

INVITATION FOR BID

PWC2425002

Substation Disconnect Switches

Date of Issue: Tuesday, July 9, 2024 Date of Opening: Tuesday, July 25, 2024 2:00 p.m.

Direct all inquiries concerning this IFB to:

JoAnn Bowman Procurement Advisor procurement@faypwc.com

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ADVERTISEMENT FOR BID FAYETTEVILLE PUBLIC WORKS COMMISSION SUBSTATION DISCONNECT SWITCHES

Cumberland County North Carolina

Bids are solicited and will be received at Fayetteville Public Works Commission, Administration Building, Procurement Department/Conference Room 107, 955 Old Wilmington Road, Fayetteville, NC 28301, until <u>2:00 p.m., EST Thursday, July 25, 2024</u>, for the SUBSTATION DISCONNECT SWITCHES.

Enclosed please find the Instructions to Bidders, Detailed Specifications, and Bid Pricing Form. Bids shall be submitted on the forms provided herein, or exact copies thereof, and the bidder shall return one copy of the entire bid packet along with the completed Bid Pricing Form and any other information specified in the bid documents.

Questions regarding this bid must be submitted in writing to the attention of JoAnn Bowman, at procurement@faypwc.com no later than <u>5:00 p.m., EST insert Tuesday, July 16,</u> <u>2024</u>, in order to be considered for a response.

Mailed bids must be addressed to **JoAnn Bowman** Procurement Advisor, Fayetteville Public Works Commission, 955 Old Wilmington Road, Fayetteville, North Carolina 28301. The outside of the envelope must be marked **BID: PWC2425002 SUBSTATION DISCONNECT SWITCHES** and shall indicate the name, and address of the bidder.

Fayetteville Public Works Commission reserves the right to reject any or all bids for any reason determined by PWC to be in its best interest, or to award the bid to the lowest responsible bidder or bidders, taking into consideration quality, performance, and the time specified in the bids for the performance of the contract.

FAYETTEVILLE PUBLIC WORKS COMMISSION Candice S. Kirtz Director of Supply Chain

INSTRUCTIONS TO BIDDERS FAYETTEVILLE PUBLIC WORKS COMMISSION SUBSTATION DISCONNECT SWITCHES

PURPOSE AND BACKGROUND

The **SUBSTATION DISCONNECT SWITCHES** will be installed at the P.O. Hoffer 69 TO 15 x 25 kV Substation and at the Cumberland Road 69 TO 15 x 25 kV Substation.

OBJECTIVE OF THE REQUEST

It is the intent of this bid invitation to obtain pricing for **SUBSTATION DISCONNECT SWITCHES** within the detailed specifications section of this Invitation for Bid (IFB). PWC intends to make a single award for all items. You are requested to submit your bid on the enclosed 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
Submit Written Questions	Bidders	Tuesday, July 16, 2024, 5:00 p.m.
Provide Response to Questions	PWC	Thursday, July 18, 2024, 5:00 p.m.
Submit IFB	Bidders	Thursday, July 25, 2024, 2:00 p.m.
Target Commission Date	PWC	Wednesday, August 14, 2024
Target Council Date	PWC	Monday, August 26, 2024
Award /Sale of Goods Agreement	PWC	Tuesday, August 27, 2324

QUESTIONS

Written questions shall be e-mailed to <u>procurement@faypwc.com</u> by the date and time specified in the IFB schedule. Bidders will enter "IFB **PWC2425002** – 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. Firms shall rely only on 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 interpretations shall have no effect.

MINORITY, WOMEN, AND DISADVANTAGED BUSINESS ENTERPRISE (MWDBE) PROGRAM / SMALL LOCAL SUPPLIER (SLS) PROGRAM

PWC is committed to promoting the utilization of Minority, Women, and Disadvantaged Businesses in PWC's geographical statistical area (GSA) by providing equal opportunity for

SUBSTATION DISCONNECT SWITCHES

participating in all aspects of PWC's contracting and procurement programs. The GSA consists of NCDOT division areas 3-8, and 10. PWC is also committed to promoting the utilization of small, local businesses in the Fayetteville Metropolitan Statistical Area (MSA) by increasing opportunities for those businesses to participate in PWC procurements. The MSA consists of Cumberland County, Hoke County, and Harnett County.

PWC requires Firms to report efforts to utilize Minority, Women, and Disadvantaged Business Enterprises (MWDBEs) and Historically Underutilized Businesses (HUBs) for specific projects and requires all Firms to report all such efforts for MWDBEs, HUBs, and Small Local Suppliers regardless of the requirements of a specific project. Bidders shall document any good-faith efforts and utilization in the MWDBE forms provided within Attachment G.

In accordance with PWC's MWDBE Program, the goal shall be to award four percent (4%) of the total contract dollars to MBE firms and four percent (4%) to WBE firms. A complete copy of PWC's MWDBE Program is available for inspection at PWC Procurement Department.

The following is a list of the efforts that should be made by the prime service provider to encourage MWDBE participation. In order to receive credit for having made "good faith efforts", the prime service provider should document all actions taken to include the following:

- 1) Attending pre-bid meetings scheduled by the department;
- 2) Identifying selected specific items of the project which could be executed by a MWDBE;
- **3)** Soliciting MWDBE service provider participation in a reasonable time before the proposals are due through advertisements in circulation media, trade publications, and minority-focused media;
- 4) Contacting local firms, firms owned by minorities or women, and associations or business development centers which disseminate information to local businesses and businesses owned by minorities or women in a timely manner to allow sufficient time for MWDBEs to respond;
- 5) Following up on initial solicitations of interest by contacting the MWDBE to determine whether the MWDBE was interested in performing specific items of the project;
- 6) Attempting to enter into joint venture or partnership arrangements with MWDBEs and provide interested MWDBEs with information about the requirements for the project;
- 7) Providing assistance to MWDBEs in the review of proposals and work to be done by subservice providers;
- 8) Using available directories of certified MWDBEs and other available resources;
- 9) Ensuring that the proposer negotiated in good faith with the MWDBE and did not unjustifiably reject as unsatisfactory quotes prepared by any Minority, Women, or Disadvantaged Business Enterprise;
- **10)** Making every effort to obtain Minority, Women, or Disadvantaged Business Enterprise participation that could reasonably be expected to produce a level of participation sufficient to

meet the goals of PWC; and

11) Providing interested minority, women, and disadvantaged businesses with information relative to project requirements

REFERENCES

Bidders shall provide at least three (3) different references for which your company has supplied the exact model of equipment offered. PWC may contact these references to determine the commodity provided are substantially similar in scope to those requested in Attachment A and that the bidder's performance has been satisfactory. The information obtained shall be considered in the evaluation of the bid. If PWC is referenced, it cannot be counted towards your three (3) required references but may be included in addition to.

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. If the bid includes any comment over and above the specific information requested in the IFB, the bidder should include this information as a separate appendix to its bid. Bids that include clarifications or modifications to any of the IFB's contractual requirements, or a bidder's standard terms and conditions, may be deemed non-responsive and not considered for award at PWC's discretion.

Unsolicited bid samples or descriptive literature will 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. PWC reserves the right to accept or reject any bid and to

annul the bidding process and reject all bids at any time prior to award of a Sale of Goods Agreement, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders the reasons for PWC's action.

- 2) 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.
- 3) Bids submitted in an envelope must have the bid title, date, and time of the bid submittal deadline on the front of the envelope no later than the bid due date and time. The bid will be due at the Fayetteville Public Works Commission, Administration Building, Procurement Department, 955 Old Wilmington Road, Fayetteville, NC 28301.
- 4) 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.
- 5) Bidders shall submit bids only on the Bid Pricing Forms provided herein, or exact copies thereof (See Exhibit B Bid Pricing Form). Failure to provide full and complete Bid Pricing Forms may result in a bid being deemed non-responsive.
- 6) 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.
- 7) Do not submit alternate bids unless specifically called for on the Bid Pricing Forms.

QUANTITIES AND PRICING

- 1) Quantities listed are estimates ONLY based on historical usage. PWC does not guarantee a minimum or maximum quantity to be purchased.
- 2) All bidders are advised to include all costs incurred by the bidder in delivering the SUBSTATION DISCONNECT SWITCHES to the PWC Warehouse in their bid submittal. The invoice submitted for payment shall not reflect any other costs (fuel surcharge, toll, etc.). PWC is not tax-exempt.

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 intends to make a single award for all 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) The Sale of Goods Agreement will be awarded for one (1) year to begin on or about July 23, 2024. The Sale of Goods Agreement may be extended for an additional one-year period upon the agreement of both parties.

DELIVERY AND PAYMENT

- 1) Delivery to be made F.O.B. Public Works Commission 1097 Public Works Drive, Fayetteville, NC 28301.
- 2) 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.
- **3)** 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.

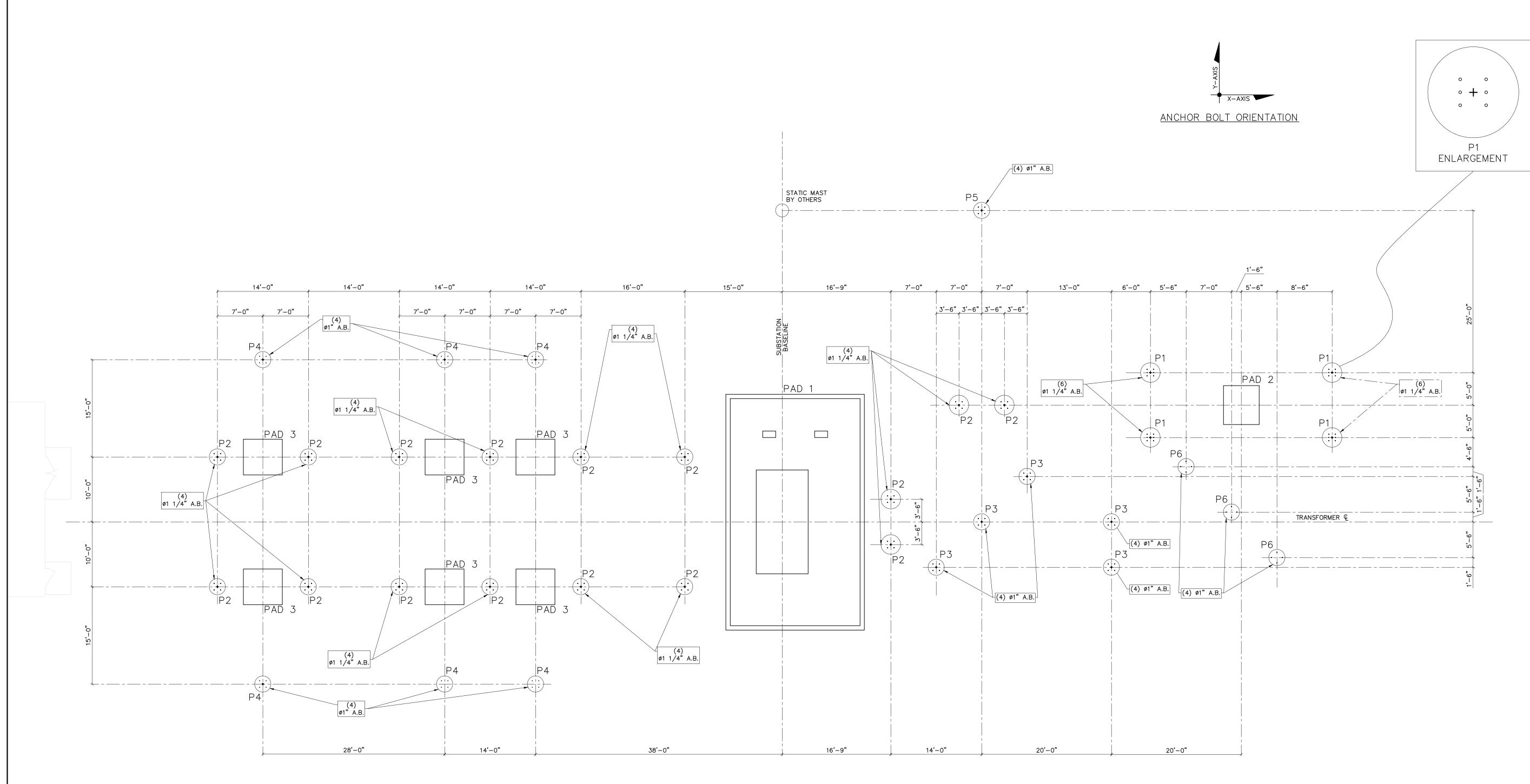
ATTACHMENT A: DETAILED SPECIFICATIONS

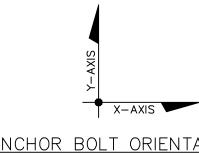
Approved Manufacturers:

	USCO	Pascor	SEECO	СРР	Royal Switchgear
DESCRIPTION	CATALOG NO/TYPE	CATALOG NO/TYPE	CATALOG NO/TYPE	CATALOG NO/TYPE	CATALOG NO/TYPE
Vee-Center Disconnect Switch, 72.5 kV, 350 kV BIL, 1,200 Ampere, 61,000 Ampere momentary, horizontally- mounted, outdoor type, three-pole, group-operated, complete with pipe handle operating mechanism, outboard bearings, guide, arcing horns with four-hole NEMA flat pads to suit locations on drawings to be provided later.	AGCH 5V- 06912	CBSA 69/1200	CH06912S- V	CB-AV C26A018G01	AV6912STD
Vertical-Break Disconnect Switch, 72.5 kV, 350 kV BIL, 1,200 Ampere, 61,000 Ampere momentary, horizontally-mounted, outdoor type, three-pole, group-operated, complete with pipe handle operating mechanism, outboard bearings, guide, arcing horns with four-hole NEMA flat pads to suit location on Drawings to be provided later.	AVR- 06912	VBPA 69/1200	VIPA- H06912S	V2-CA C06A032G22	VTX6912STD
Hook-stick Disconnect Switch, 72.5 kV, 350 kV BIL, 1200 Ampere, 61,000 Ampere momentary, horizontally- mounted, outdoor type with four-hole NEMA flat pads. Terminals to suit location with copper live parts. Shown on drawings to be provided later	HH6- 06912	HPL 69/1200	n/a	LCO-C C102A150G17	13015CSTD
Outdoor Hook-stick Disconnect Switch, 27 kV, 150 kV BIL, single- pole, 1,200 Ampere continuous, 61,000 Ampere momentary, vertically-mounted, with four-hole NEMA flat pads. Terminals to suit location with copper live parts. Shown on drawings to be provided later.	HH6- 02312	HPL 23/1200	n/a	LOC-C C102A230G08	13008CSTD

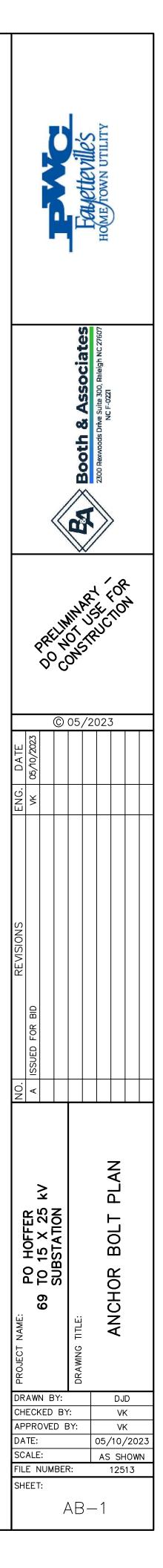
Vee-Center-Break Disconnect Switch, 27 kV, 150 kV BIL, 2,000 Ampere, 80,000 Ampere momentary, horizontally- mounted, outdoor type, three-pole, group-operated, complete with pipe handle operating mechanism, outboard bearings, guide, arcing horns with NEMA four-hole flat pads to suit the location shown on the Drawings to be provided later, and have tinned copper live parts.	AGCH4V- 02320	CBSC 23/2000	CH02320S- V	CB-CV C26A039G02	AV2320STD
Vee-Center-Break Disconnect Switch, 25 kV, 150 kV BIL, 1,200 Ampere, 61,000 Ampere momentary, horizontally, mounted, outdoor type, three (3) pole, group operated, complete with pipe handle operating mechanism, outboard bearings, guide arcing horns with NEMA four-hole flat pads to suit the location	AGCH4V-	CBSC	CH02312S-	CB-CV	
shown on the Drawings, with copper live parts	02312	23/1200	V	C26A038G02	AV2312STD

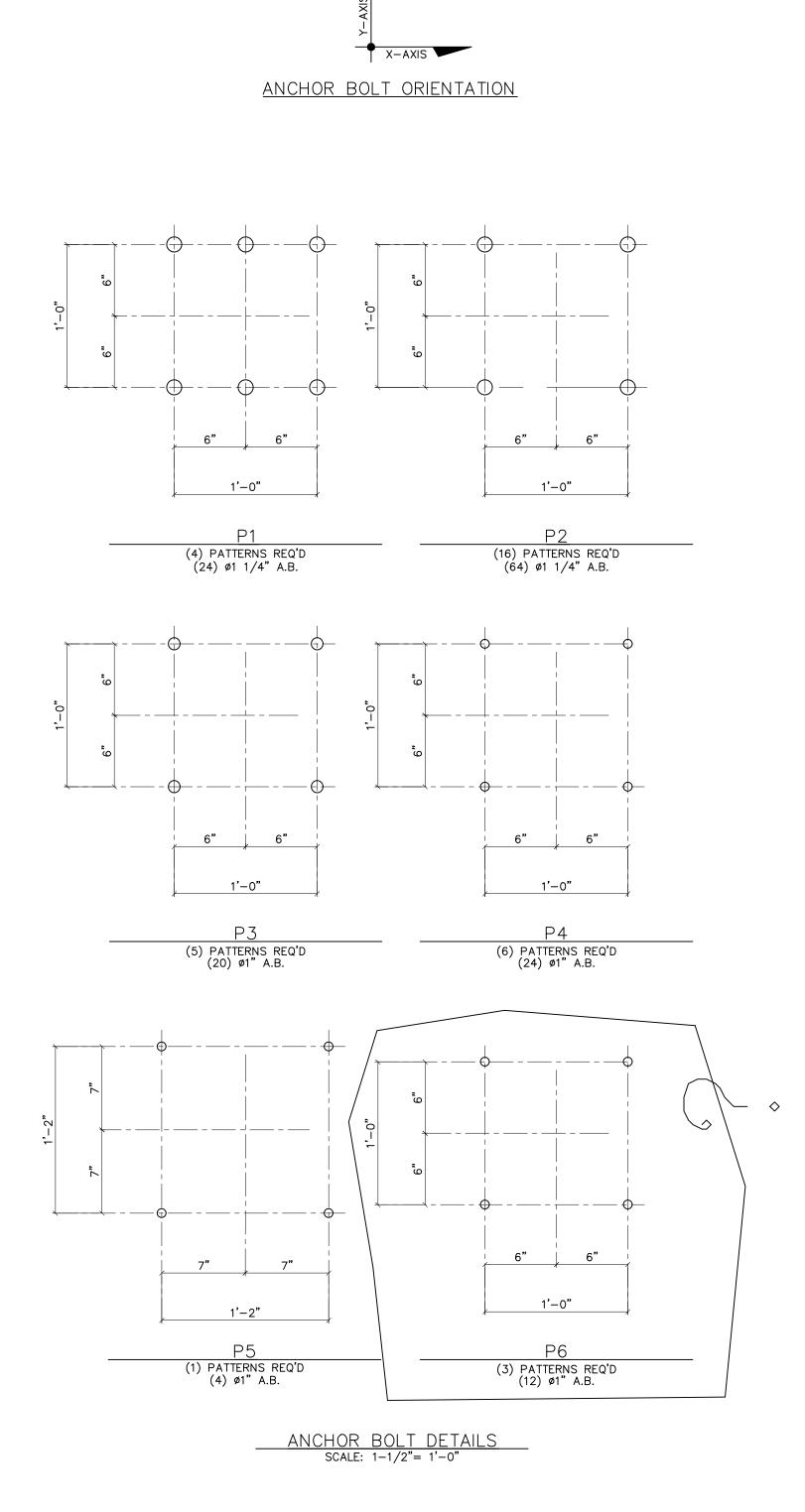




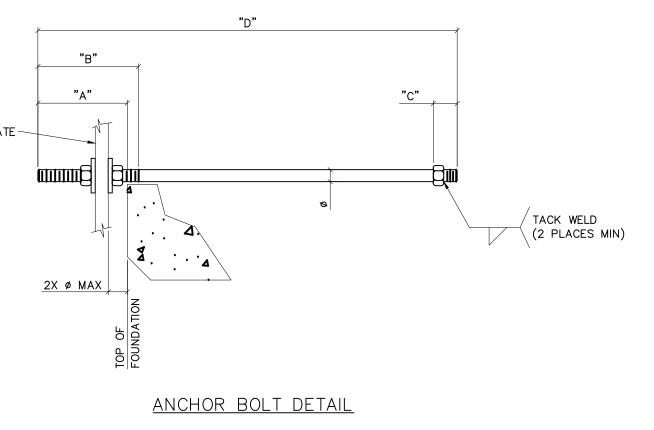


ANCHOR BOLT PLAN SCALE: 1/8"=1'-0"

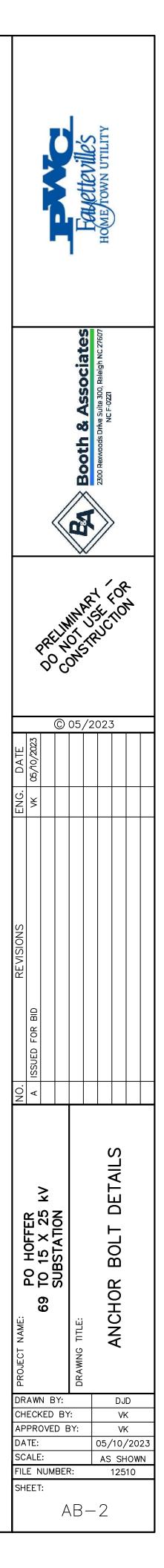


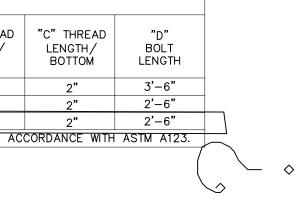


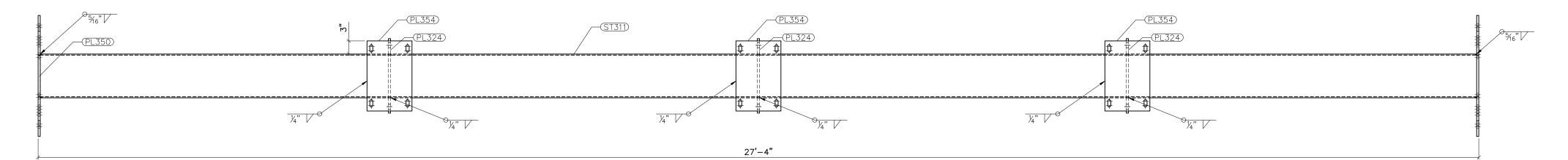
BASEPLATE

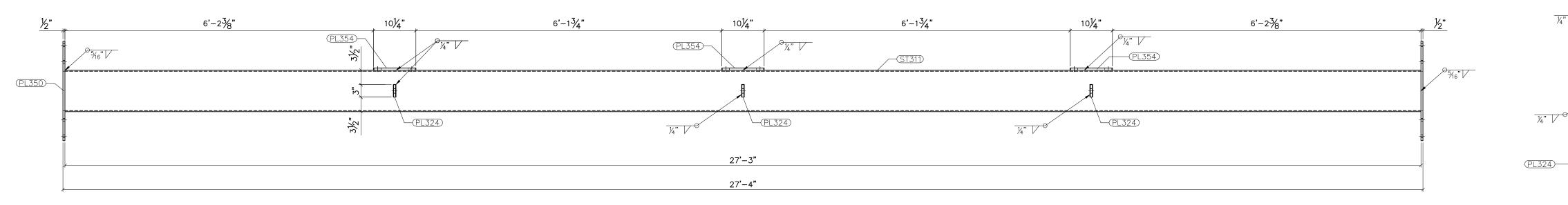


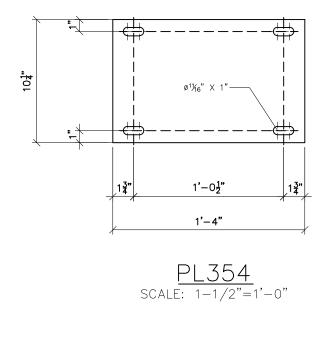
ANCHOR BOLT SUMMARY							
ANCHOR BOLTS PATTERN No.	ANCHOR BOLTS ITEM No.	QTY.	DIAMETER ø	"A" PROJECTION LENGTH	"B" THREAD LENGTH/ TOP		
P1, P2	AB-1	88	1 1/4"	6"	6"		
P3, P4, P5	AB-2	48	1"	4%"	5"		
P6	AB-3	12	1"	4½"	5"		
NOTE: BOL	TS SHALL	BE HOT	-DIP GALVA	NIZED PAST TO	THREAD IN A		

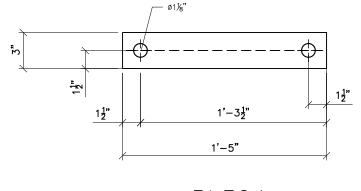




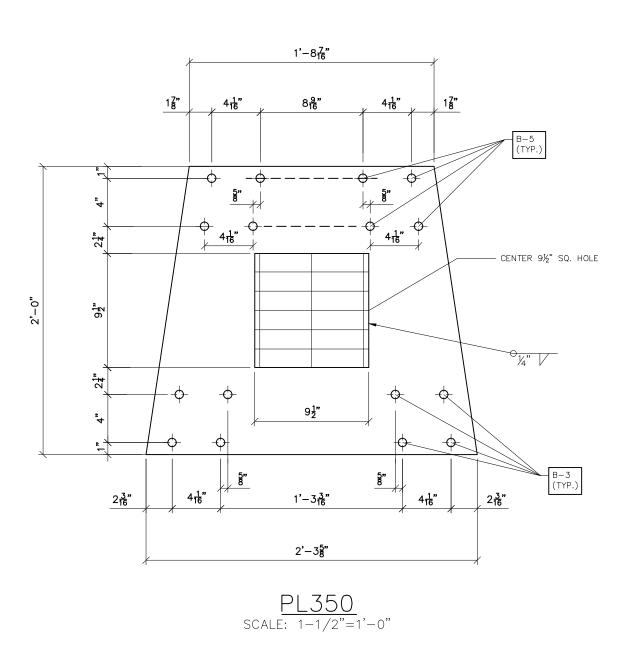








PL324 scale: 1-1/2"=1'-0"



<u>top view</u>

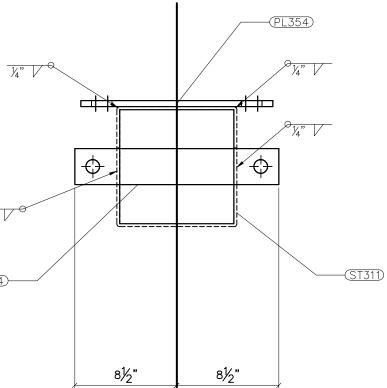
<u>Front view</u>

<u>G311</u> scale: 3/8"=1'-0"

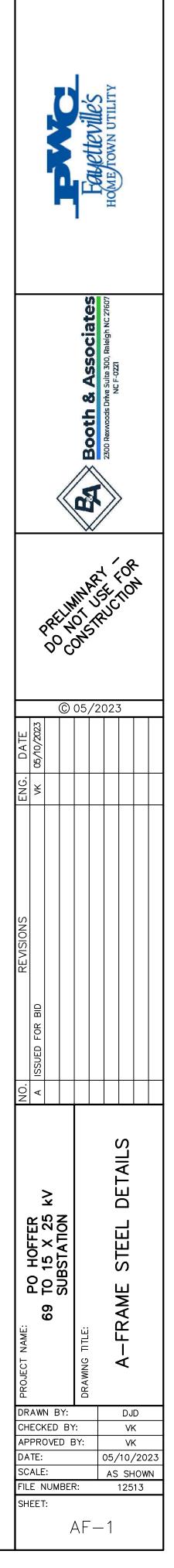
NOTES:

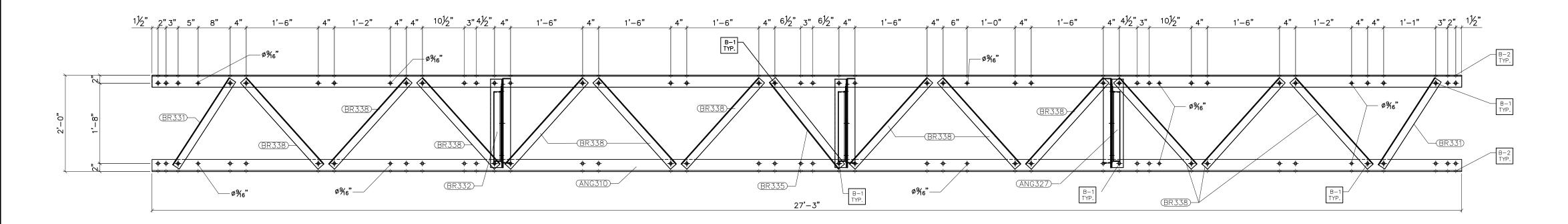
- 1) ASTM 325 ERECTION BOLTS
- 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
- ALL HOT DIP GALVANIZED AFTER FABRICATION (ASIM AT23)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED

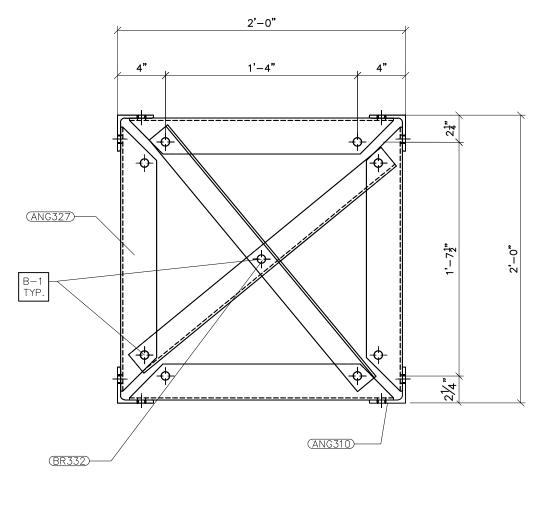
	BILL OF MATERIAL				
POS. NO.	QTY	DESC.	LENGTH	WEIGHT	
G311	1	FOR ONE GROUP G311:			
PL324	3	PL 1/2"x3"	1'-5"	21.69	
PL350	2	PL 1/2"X2'-0"	2'-3 5/8"	163.69	
PL354	3	PL 1/2"x10 1/4"	1'-4"	69.90	
ST311	1	HSS10x10x1/4	27'-3"	888.28	
GR1	2	STD GRA 9 [°] 3/8"	9 3/8"	9.00	
	BLACK WEIGHT: 1152.56 LBS.				
	GALVANIZED WEIGHT: 46.10 LBS.			46.10 LBS.	
		TOTAL WEIGHT:		1198.66 LBS.	

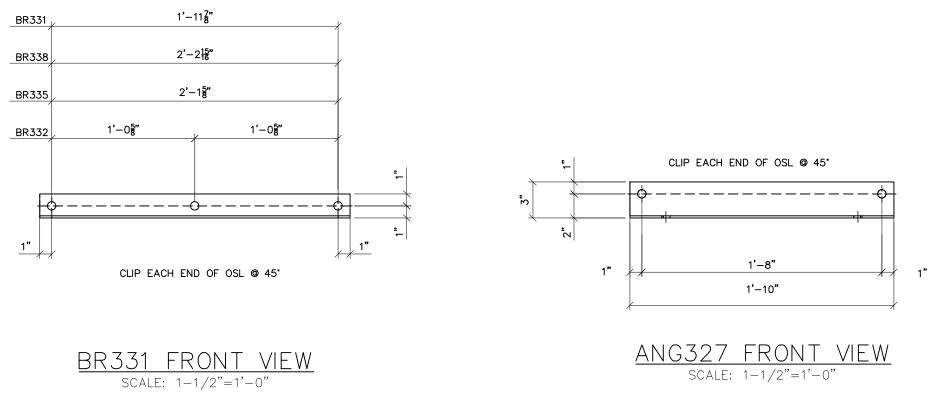


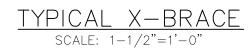








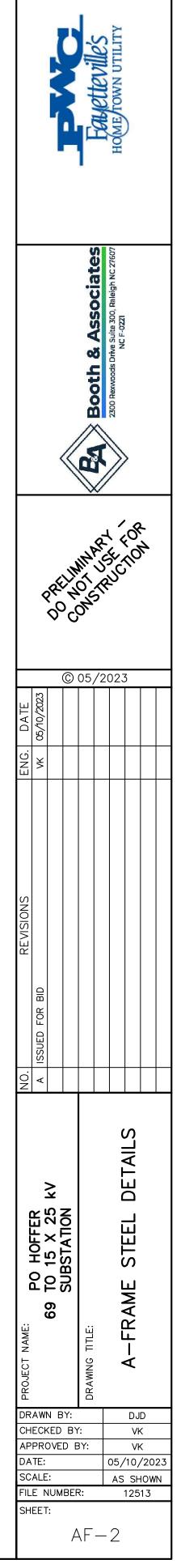


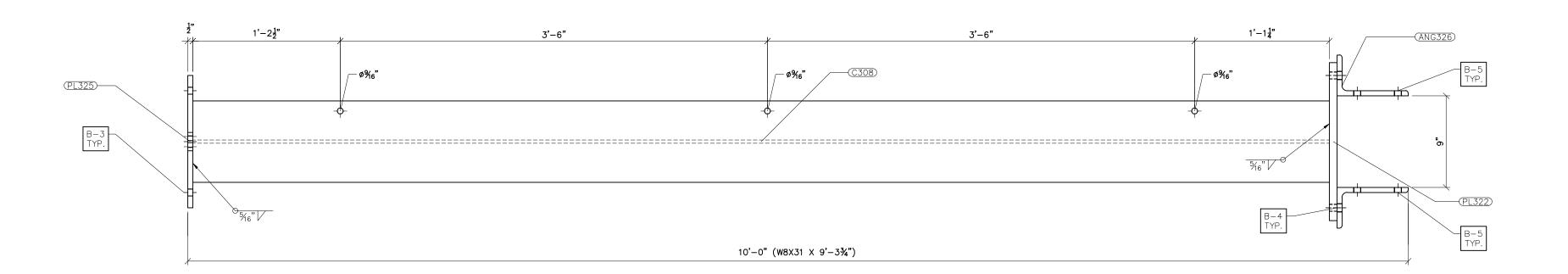


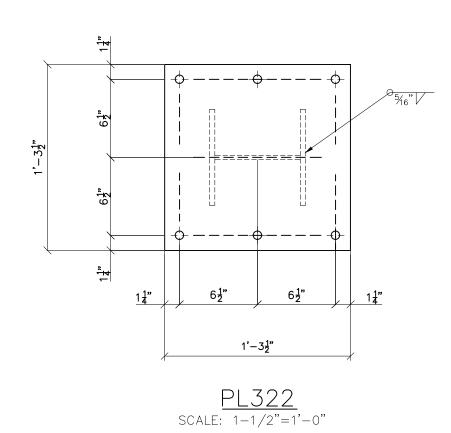
G310 BOX TRUSS (ALL FOR SIDES ALIKE) SCALE: 3/4"=1'-0"

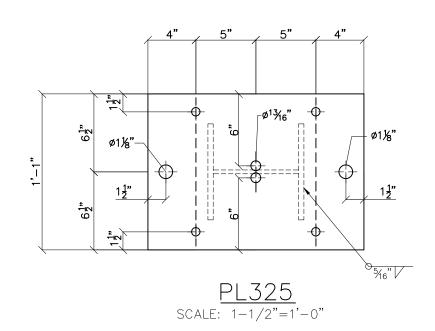
NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN $3/8"$
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

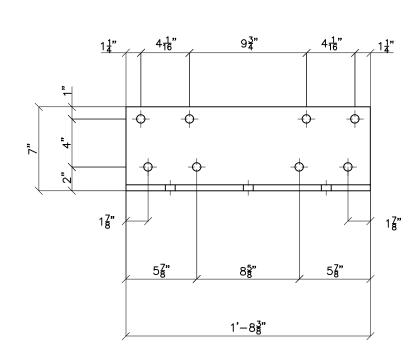
BILL OF MATERIAL				
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G310	1	FOR ONE GROUP G310:		
ANG310	4	L3x3x1/4	27'-3"	534.10
ANG327	12	L3x3x3/16	1'-10"	81.62
BR331	8	L2x2x3/16	2'-1 7/8"	42.04
BR332	6	L2x2x3/16	2'-3 1/4"	33.21
BR335	4	L2x2x3/16	2'-3 5/8"	22.46
BR338	48	L2x2x3/16	2'-4 15/16"	282.43
	BLACK WEIGHT: 995.86 LBS.			
	GALVANIZED WEIGHT: 39.83 LBS.			39.83 LBS.
		TOTAL WEIGHT:		1035.69 LBS.







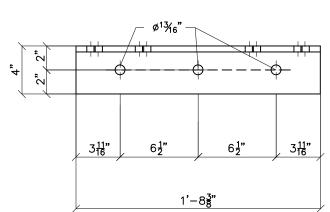






<u>Front view</u>



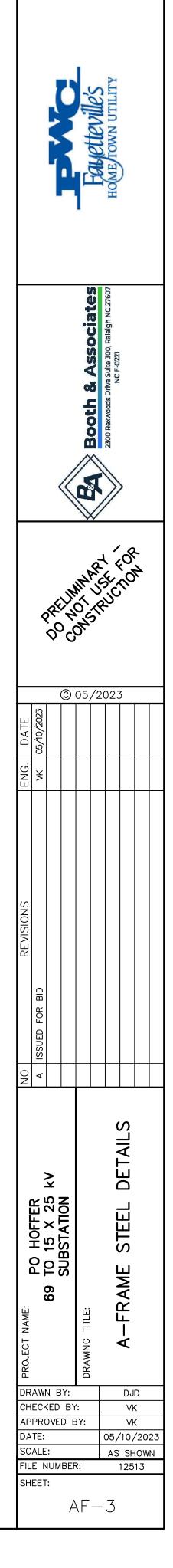


<u>G308 FRONT VIEW</u> scale: 3/4"=1'-0"

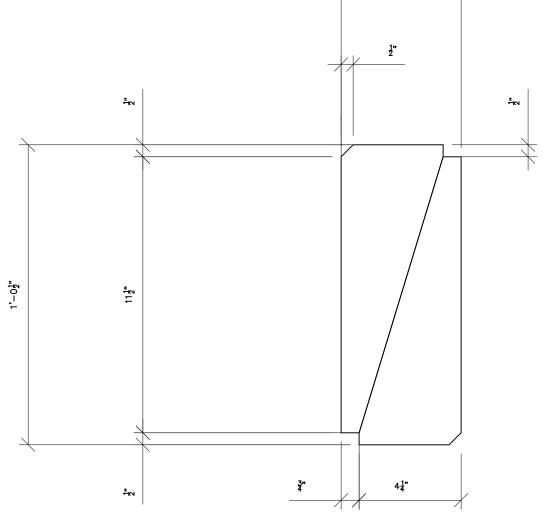


NOTES: 1) ASTM 325 ERECTION BOLTS ASTM 325 ERECTION BOLTS ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING ALL WELDING ELECTRODES SHALL BE E7021 EDGE DISTANCE 1" UNLESS NOTED

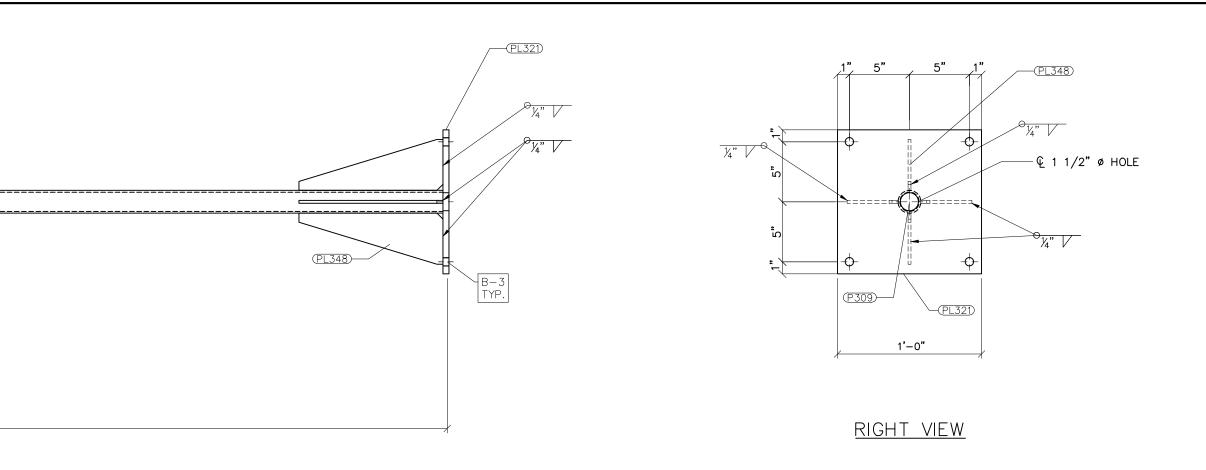
	BILL OF MATERIAL					
S. NO.	QTY	DESC.	LENGTH	WEIGHT		
08	2	FOR ONE GROUP G308:				
L322	1	PL 3/4"x1'-3 1/2" PL 1/2"x1'-1"	1'-3 1/2"	51.20		
L325	1	PL 1/2"x1'-1"	1'-6'"	33.24		
NG326	2	L7x4x1/2	1'-8 3/8"	60.79		
308	1	W8x31	9'-3 3/4"	288.69		
		BLACK WEIGHT:	:	416.59 LBS.		
GALVANIZED WEIGHT:				17.36 LBS.		
		TOTAL WEIGHT:		433.95 LBS.		







PL348 (makes two) scale: 3"=1'-0"

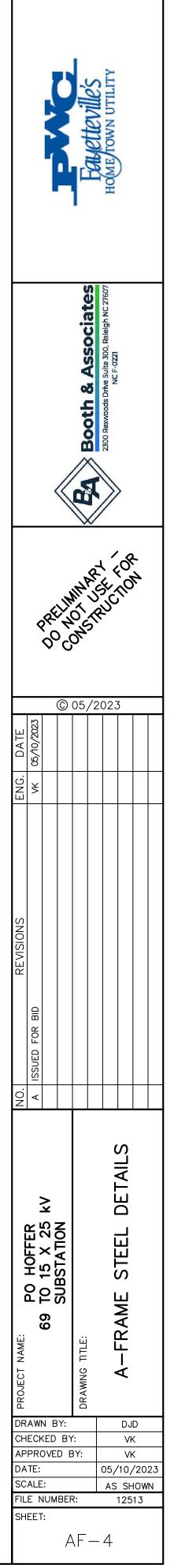


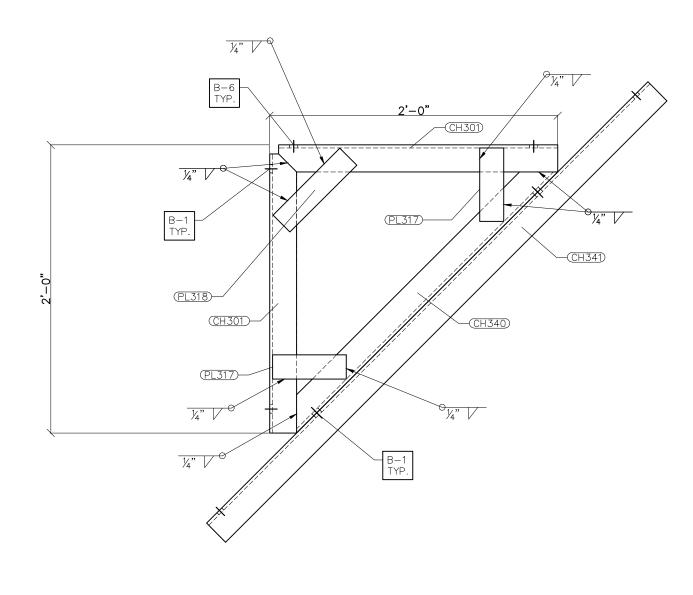
<u>G309</u> scale: 1-1/2"=1'-0"

NO	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AF
7)	ALL HOLES 11 /16" DIA FOD

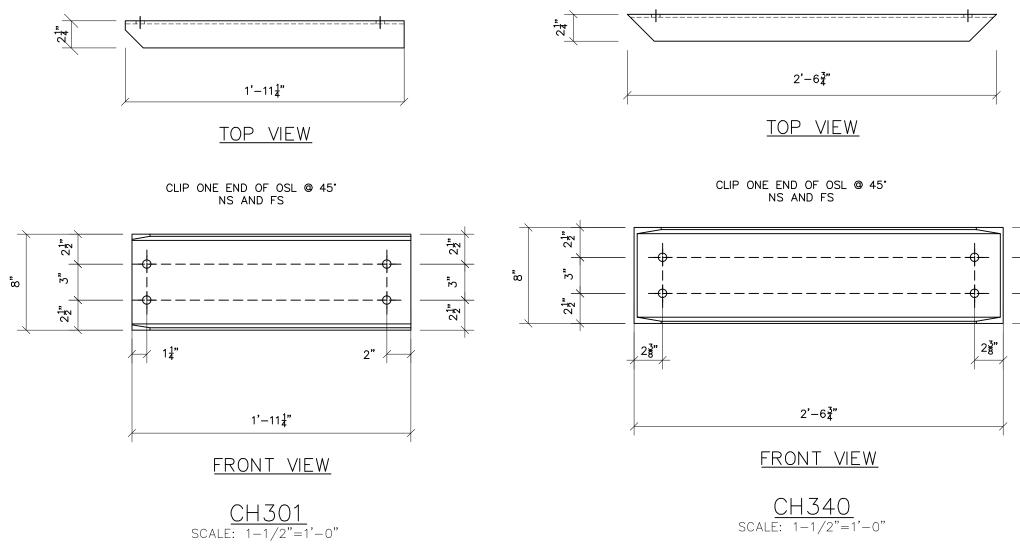
- ASIM 325 ERECTION BOLTS
 ALL HOT DIP GALVANIZED AFTER FABRICATION (ASIM A123)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED

BILL OF MATERIAL					
POS. NO.	QTY	DESC.	LENGTH	WEIGHT	
G309	2	FOR ONE GROUP G309:			
PL321	1	PL 1/2"x1'	1'	20.46	
P309	1	PIPE1-1/2STD	9'-11 1/2"	27.09	
PL348	2	BAR 5 X 1/4	1'-0 1/2"	8.74	
	BLACK WEIGHT: 56.29 LBS.				
	GALVANIZED WEIGHT: 2.25 LBS.				
		total weight:		58.54 LBS	

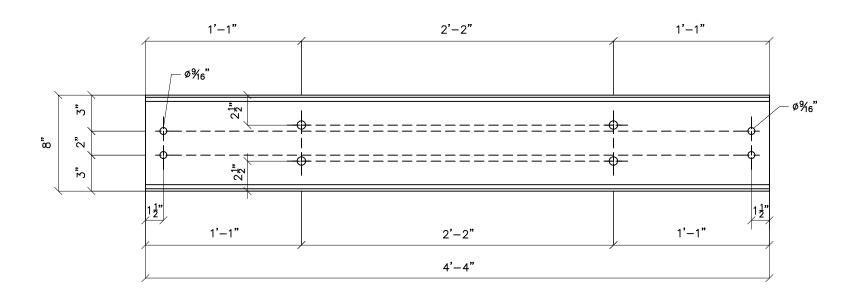




G301 FRONT VIEW scale: 1-1/2"=1'-0"



2¹ 3" 2¹

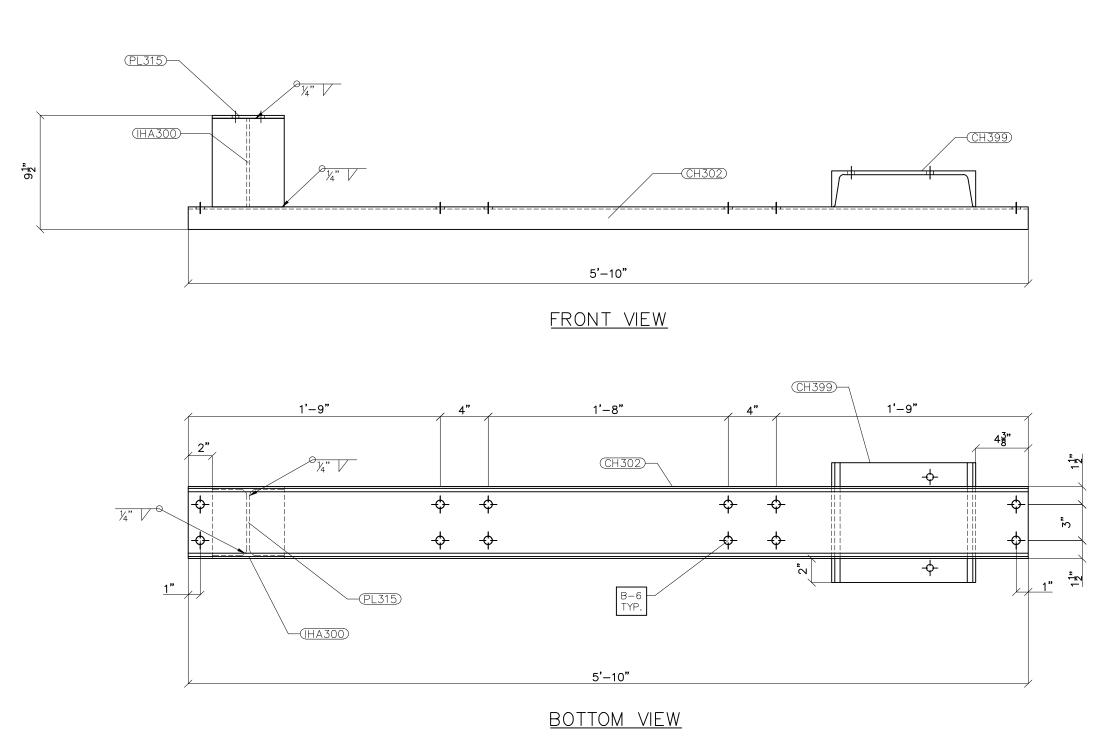


CH341 FRONT VIEW SCALE: 1-1/2"=1'-0"

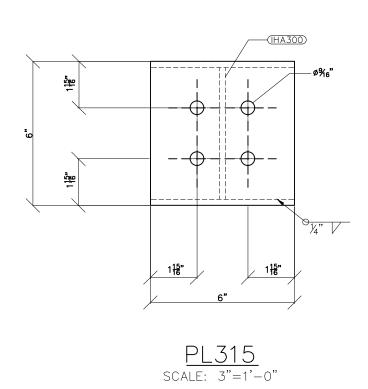
NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN $3/8"$
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED
0)	EDGE DISTANCE I UNLESS NOTED

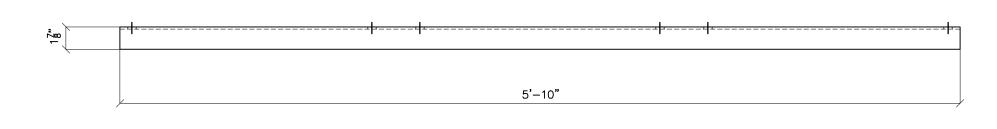
	BILL OF MATERIAL					
POS. NO.	QTY	DESC.	LENGTH	WEIGHT		
G301	6	FOR ONE GROUP G301:				
CH301	2	C8x11.5	1'-11 1/4"	44.56		
CH340	1	C8x11.5	2'-6 3/4"	29.48		
CH341	1	C8x11.5	4'-4"	49.83		
PL317	4	PL 1/4"x2"	6 1/8"	3.47		
PL318	2	PL 1/4"x2"	7 7 /8"	2.23		
		BLACK WEIGHT:		129.57 LBS.		
		GALVANIZED W	EIGHT:	5.18 LBS.		
		TOTAL WEIGHT:		134.75 LBS.		

	Falletteville's Home rown urilitry							
	Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221							
PR	PRELIMINART FOR PRELIMINART FOR DOCONSTRUCTION DOCONSTRUCTION							
ENG. DATE vk 05/10/2023		05/	/2(3			
NO. REVISIONS A ISSUED FOR BID								
PROJECT NAME: PO HOFFER 69 TO 15 X 25 kV		DRAWING TITLE:			A-FRAME SIEEL DEIAILS			
DRAWN E CHECKEE APPROVE DATE: SCALE: FILE NUN SHEET:	D B	IY:		AS		< < /20: IOW		

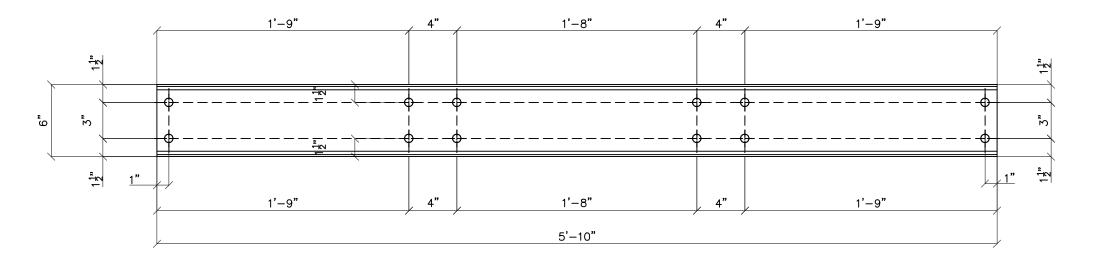


<u>G302</u> SCALE: 1-1/2"=1'-0"



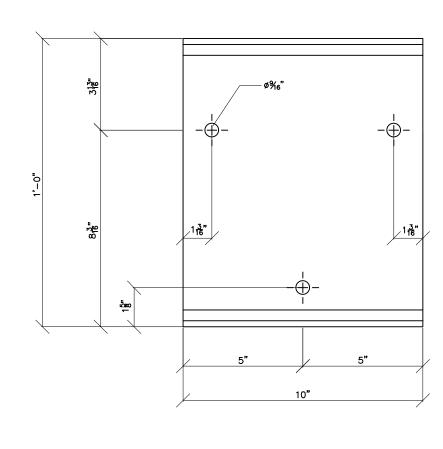


<u>top view</u>



<u>Front view</u>

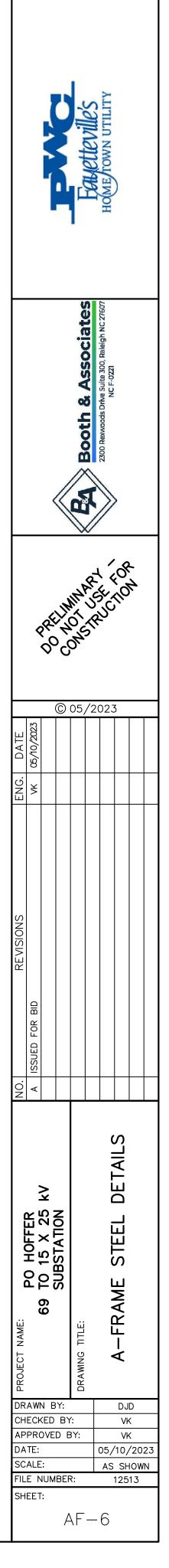
CH302 scale: 1-1/2"=1'-0"

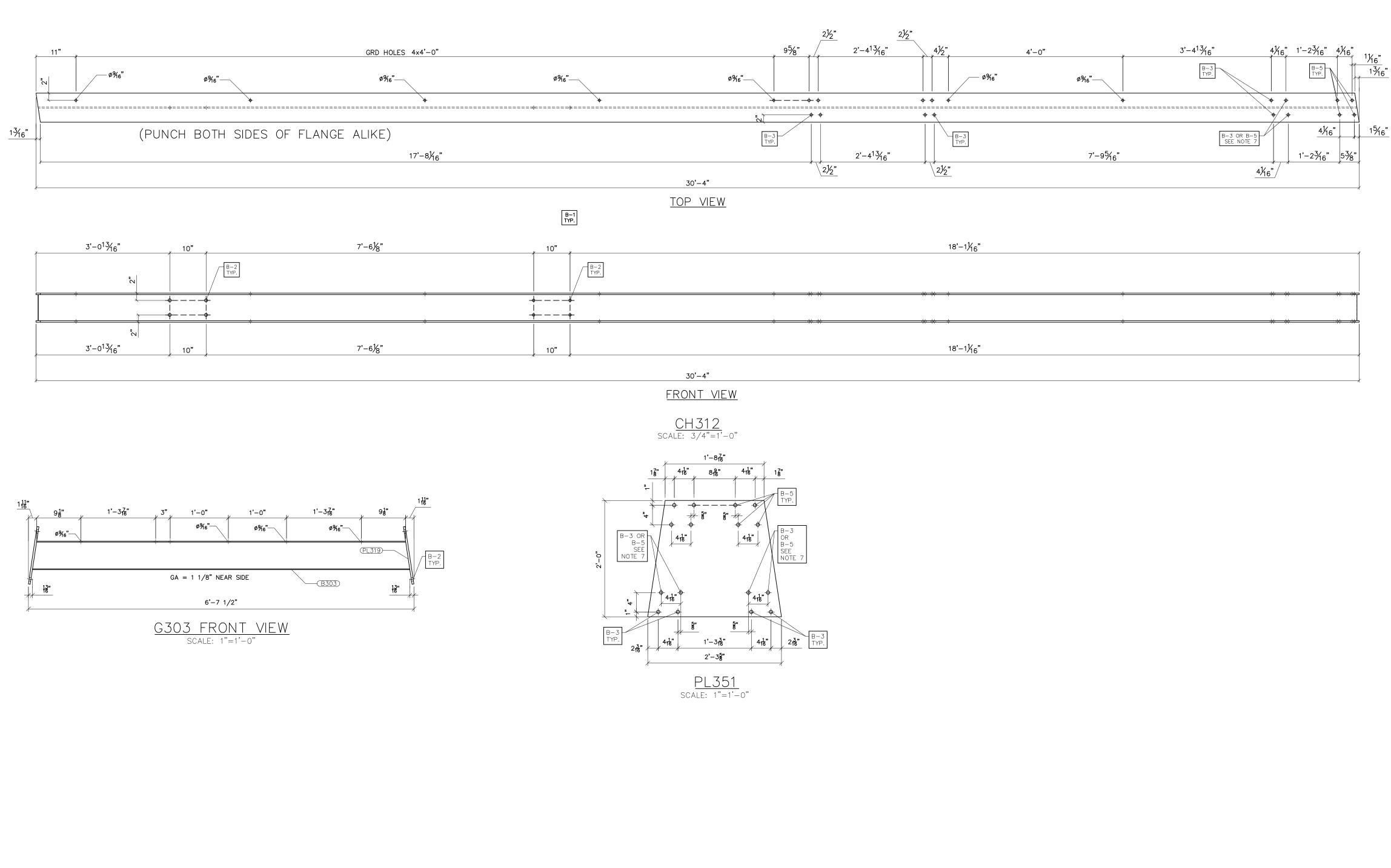


CH399 Scale: 3"=1'-0"

- NOTES:
 1) ASTM 325 ERECTION BOLTS
 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 5) ALL WELDING ELECTRODES SHALL BE E7021
 6) EDGE DISTANCE 1" UNLESS NOTED

BILL OF MATERIAL						
POS. NO.	QTY	DESC.	LENGTH	WEIGHT		
G302	3	FOR ONE GROUP G302:				
CH302	1	C6x8.2	5'-10"	47.83		
CH399	1	C12x20.7	10"	17.22		
IHA300	1	W6x15	7 3/8"	9.22		
PL315	1	PL 1/4"x6"	6"	2.55		
	BLACK WEIGHT: 76.82 LBS.					
	GALVANIZED WEIGHT: 3.07 LBS.					
	TOTAL WEIGHT: 79.89 LBS.					

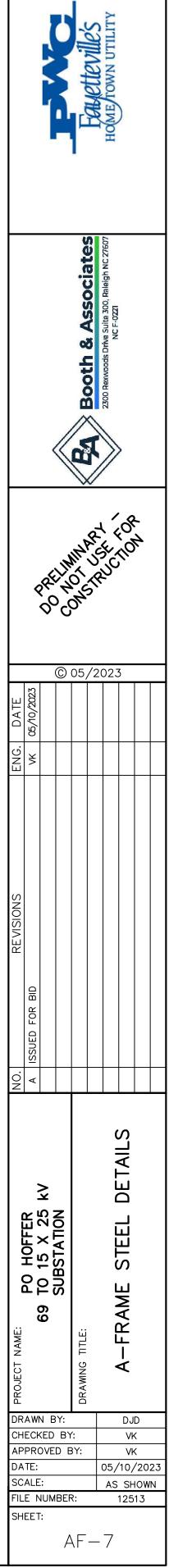


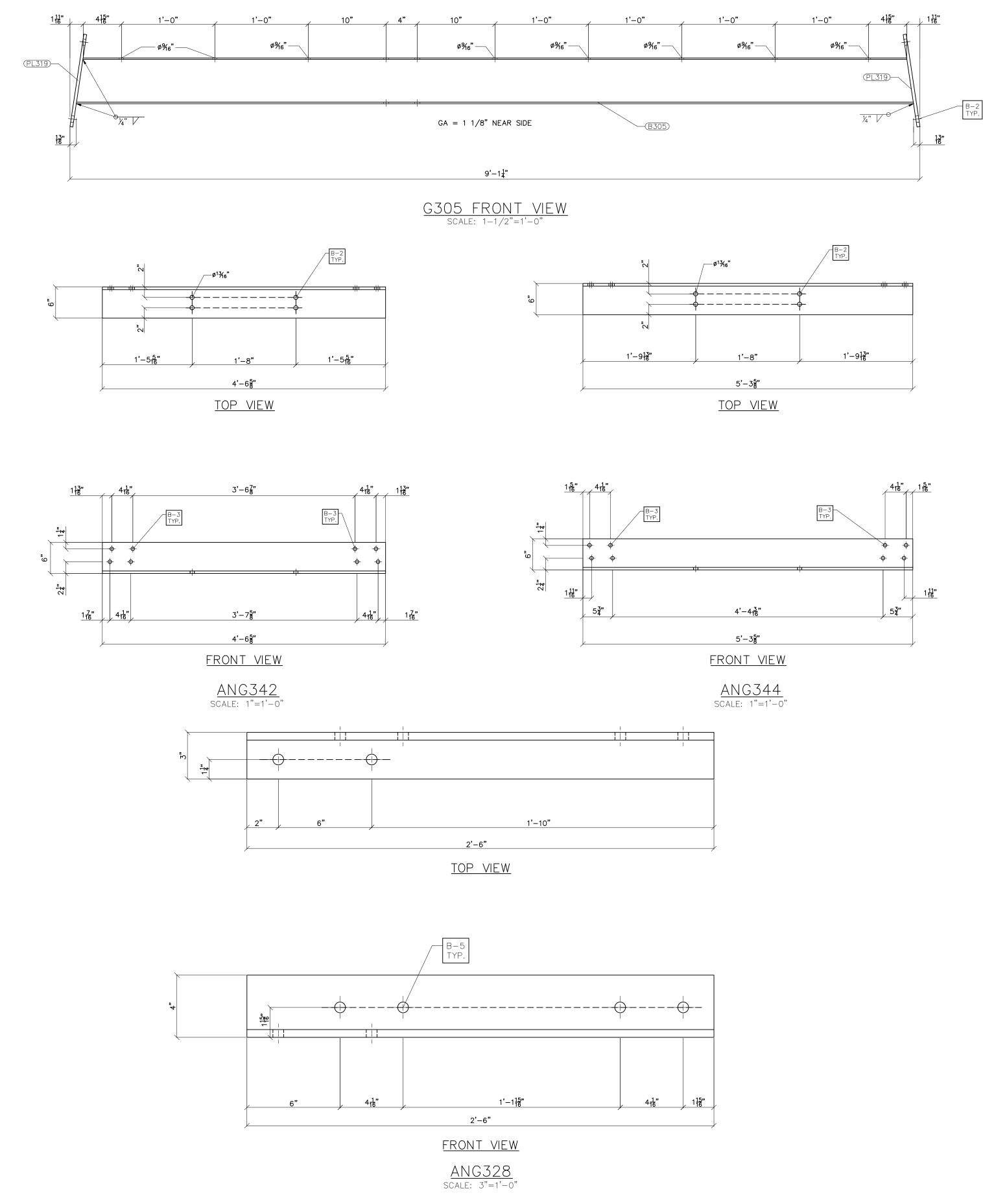


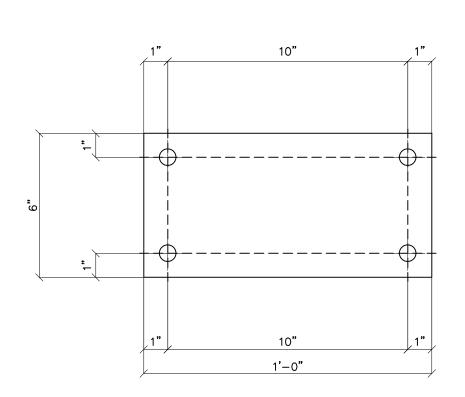
- NOTES: 1) ASTM 325 ERECTION BOLTS 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123) 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING 5) ALL WELDING ELECTRODES SHALL BE E7021 6) EDCE DISTANCE 1" UNLESS NOTED

6) EDGE DISTANCE 1" UNLESS NOTED
7) ERRECTION BOLT LENGTH VARIES WHERE NOTED IN CASES WHERE ANG 328 IS REQUIRED , B-5 SHALL BE USED. IN OTHER CASES, B-3 SHALL BE USED.

		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G303	2	FOR ONE GROUP G303:		
B303	1	W6x9	6'-5 7/8"	58.41
PL319	2	PL 3/8"x6"	1'	15.34
		INDIVIDUAL SINGLE PARTS:		
PL351	2	PL 1/2"x2'-0"	2'-3 5/8"	376.01
C312	4	W8x31	30'-4"	7522.67
BASE323	4	PL 1 1/4"x1'-4"	1'-4"	725.93
		BLACK WEIGHT:		8624.61 LBS.
		GALVANIZED W	EIGHT:	344.98 LBS.
		TOTAL WEIGHT:		8969.59 LBS.





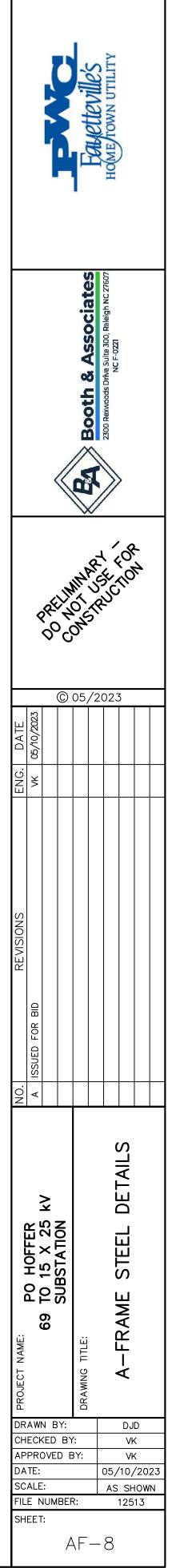


PL319 scale: 3"=1'-0"

- NOTES: 1) ASTM 325 ERECTION BOLTS 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123) 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING 5) ALL WEIDING ELECTRODES SHALL BE E7021
- 5) ALL WELDING ELECTRODES SHALL BE E7021
- 6) EDGE DISTANCE 1" UNLESS NOTED

7) ERRECTION BOLT LENGTH VARIES WHERE NOTED IN CASES WHERE ANG 328 IS REQUIRED , B-5 SHALL BE USED. IN OTHER CASES, B-3 SHALL BE USED.

		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G305	2	FOR ONE GROUP G305:		
B305	1	W6×9	8'-11 5/8"	80.70
PL319	2	PL 3/8"x6"	1' ́	15.34
		INDIVIDUAL SINGLE PARTS:		
ANG328	1	L4x3x1/2	2'-6"	55.50
ANG342	2	L6x6x1/2	4'-6 5/8"	356.88
ANG344	2	L6x6x1/2	5'-3 5/8"	415.68
		BLACK WEIGHT:		828.06 LBS.
		GALVANIZED W	EIGHT:	33.12 LBS.
		TOTAL WEIGHT:		861.18 LBS.



	ERECTION BOLT SUMMARY FOR LOWSIDE		
BOLT NUMBER	ASTM A325-N BOLTS	BOLT TYPE	QUANTITY
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	294
B-2	5/8" DIAMETER x 2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	308
B-4	5/8" DIAMETER x 2 1/2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	40
B-5	5/8" DIAMETER x 2 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	48

ERECTION BOLT SUMMARY FOR URD STAND				
BOLT NUMBE	ASTM A325-N BOLTS	BOLT TYPE	QUANTITY	
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	96	
B-2	5/8" DIAMETER x 2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	192	
	ERECTION BOLT SUMMARY FOR A-FRAM	ME		
BOLT NUMBE		ME BOLT TYPE	QUANTITY	
BOLT NUMBE B-1			QUAN TITY 195	
	ASTM A325-N BOLTS	BOLT TYPE		

	ERECTION BOLT SUMMARY FOR A-FRAME	
BOLT NUMBER	ASTM A325-N BOLTS	BOLT TYP
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD
B-2	5/8" DIAMETER x 2" H.S.G.B. W/(1)FW + (1)HHN	FIELD
B-3	5/8" DIAMETER x 2 1/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD
B-4	5/8" DIAMETER x 2 1/2" H.S.G.B. W/(1)FW + (1)HHN	FIELD
B-5	5/8" DIAMETER x 2 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD
B-6	5/8" DIAMETER x 3 1/2" H.S.G.B. W/(1)FW + (1)HHN	FIELD

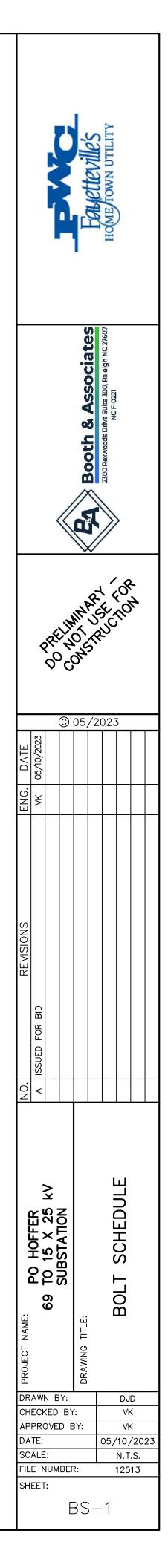
ERECTION BOLT SUMMARY FOR LOW SWITCH STAND					
BOLT NUMBER	ASTM A325-N BOLTS	BOLT TYPE	QUANTITY		
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	70		
B-3	5/8" DIAMETER x 2 1/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	8		

	ERECTION BOLT SUMMARY FOR HIGH SWITCH STAND					
BOLT NUMBER	ASTM A325-N BOLTS	BOLT TYPE	QUANTITY			
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	70			
B-3	5/8" DIAMETER x 2 1/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	8			

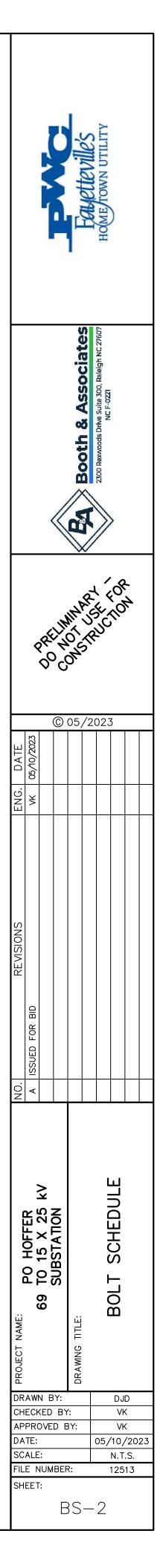
	ERECTION BOLT SUMMARY FOR THREE PHASE BUS	STAND	
BOLT NUMBER	ASTM A325-N BOLTS	BOLT TYPE	QUANTITY
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	4
B-2	5/8" DIAMETER x 2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	8

	ERECTION BOLT SUMMARY FOR STATIC POLE											
BOLT NUMBER	ASTM A325-N BOLTS	BOLT TYPE	QUANTITY									
B-7	1" DIAMETER x 2 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	4									

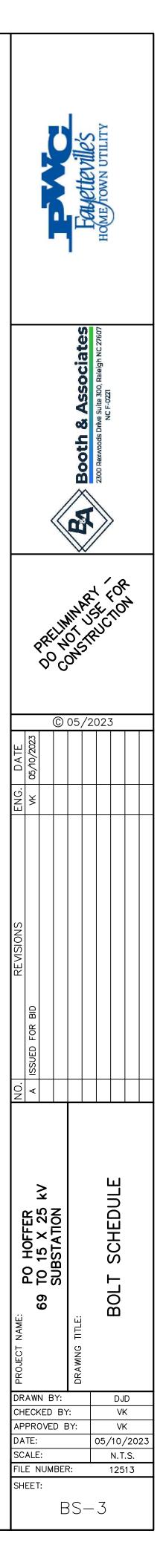
	ERECTION BOLT TOTAL SUMMARY		
BOLT NUMBER	ASTM A325-N BOLTS	BOLT TYPE	QUANTITY
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	729
B-2	5/8" DIAMETER x 2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	556
B-3	5/8" DIAMETER x 2 1/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	84
B-4	5/8" DIAMETER x 2 1/2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	52
B-5	5/8" DIAMETER x 2 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	84
B-6	5/8" DIAMETER x 3 1/2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	36
B-7	1" DIAMETER x 2 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	4



				BOLT	SCHEDULE	FOR LOWSI	DE				
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
LS-16	G114	ANG157	G114	ANG157	G114	B114	FIELD	2	5/8	2 1/2	B-4
LS-16	G114	ANG157	G114	ANG157	G114	B114	FIELD	2	5/8	2 1/2	B-4
LS-16	G114	ANG157	G114	ANG157	G114	B114	FIELD	2	5/8	2 1/2	B-4
LS-16	G114	ANG157	G114	ANG157	G114	B114	FIELD	2	5/8	2 1/2	B-4
LS-19	G120	ANG157	G120	ANG157	G120	B120	FIELD	4	5/8	2 1/2	B-4
LS-19	G120	ANG157	G120	ANG157	G120	B120	FIELD	4	5/8	2 1/2	B-4
LS-19	G120	ANG157	G120	ANG157	G120	B120	FIELD	4	5/8	2 1/2	B-4
LS-19	G120	ANG157	G120	ANG157	G120	B120	FIELD	4	5/8	2 1/2	B-4
LS-11	G111	ANG147	G111	CH111			FIELD	4	5/8	2	B-2
LS-11	G111	ANG147	G111	CH111			FIELD	4	5/8	2	B-2
LS-11	G111	ANG147	G111	CH120			FIELD	4	5/8	2	B-2
LS-11	G111	ANG147	G111	CH120			FIELD	4	5/8	2	B-2
LS-11	G111	PL149	G111	ANG137			FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137			FIELD	1	5/8	1 3/4	B-1
LS-12	G112	ANG147	G112	CH112			FIELD	4	5/8	1 3/4	B-1
LS-12	G112	ANG147	G112	CH112			FIELD	4	5/8	1 3/4	B-1
LS-12	G112	ANG147	G112	CH121			FIELD	4	5/8	1 3/4	B-1
LS-12	G112	ANG147	G112	CH121			FIELD	4	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG137			FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG137	G112	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG131	G112	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG131	G112	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG131	G112	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG125	G112	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG125	G112	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG125	G112	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG131	G112	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG131	G112	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG131	G112	ANG131	FIELD	1	5/8	1 3/4	B-1



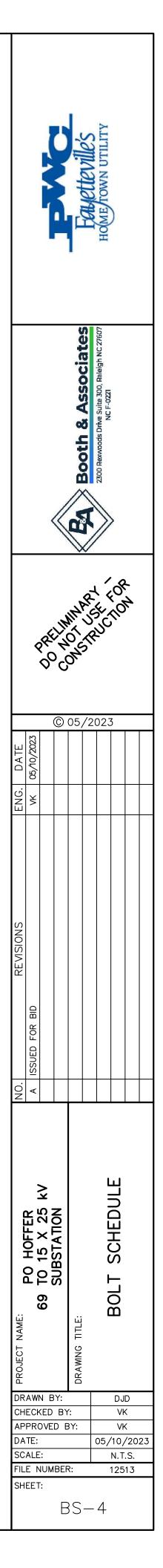
	BOLT SCHEDULE FOR LOWSIDE (CONT.)													
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER			
LS-12	G112	PL149	G112	ANG137	G112	ANG131	FIELD	1	5/8	1 3/4	B-1			
LS-12	G112	PL149	G112	ANG137			FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	ANG147	G111	CH111			FIELD	4	5/8	1 3/4	B-1			
LS-11	G111	ANG147	G111	CH111			FIELD	4	5/8	1 3/4	B-1			
LS-11	G111	ANG147	G111	CH120			FIELD	4	5/8	1 3/4	B-1			
LS-11	G111	ANG147	G111	CH120			FIELD	4	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG137			FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG137	G111	ANG131	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG131	G111	ANG125	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG131	G111	ANG125	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG137	G111	ANG131	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG137			FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	ANG147	G111	CH111			FIELD	4	5/8	1 3/4	B-1			
LS-11	G111	ANG147	G111	CH111			FIELD	4	5/8	1 3/4	B-1			
LS-11	G111	ANG147	G111	CH120			FIELD	4	5/8	1 3/4	B-1			
LS-11	G111	ANG147	G111	CH120			FIELD	4	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG137			FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG137	G111	ANG131	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG131	G111	ANG125	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG131	G111	ANG125	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG137	G111	ANG131	FIELD	1	5/8	1 3/4	B-1			
LS-11	G111	PL149	G111	ANG137			FIELD	1	5/8	1 3/4	B-1			
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1			
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1			
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1			
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1			



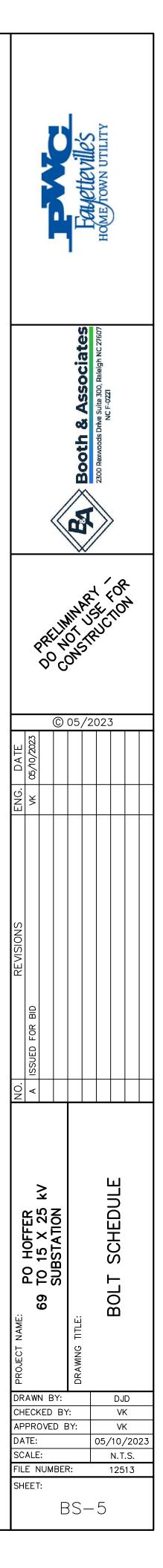
BOLT SCHEDULE FOR

									BOLT	BOLT	
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	DIAMETER (in.)	LENGTH (in.)	BOLT NUMBER
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1

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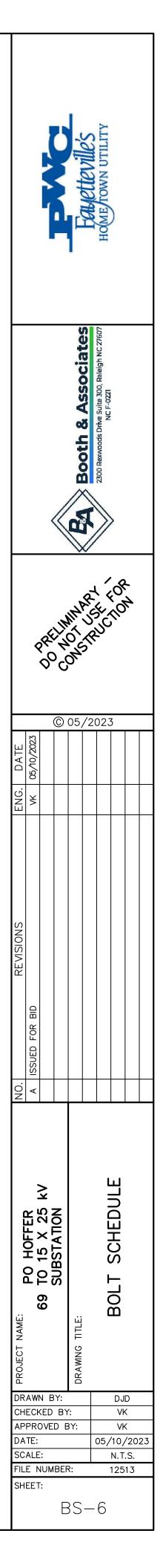


				BOLT SCH		R LOWSIDE (O	CONT.)				
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS- <mark>1</mark> 4	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	<mark>B-1</mark>
LS- <mark>1</mark> 4	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	<mark>B-1</mark>
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G117	PL155	G100.2	PL155		1	FIELD	4	5/8	2	B-2
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G118	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G118	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G118	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2



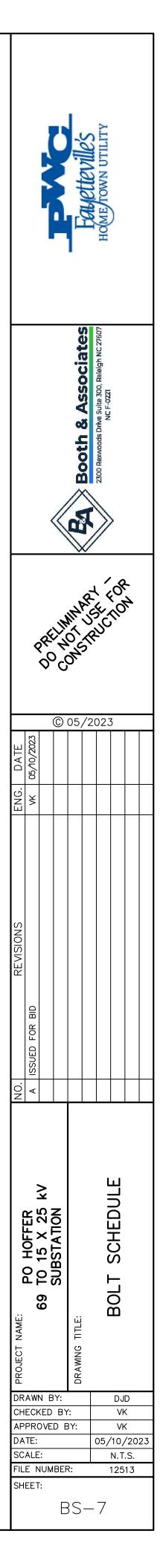
BOLT SCHEDULE FOR LOWSIDE (CONT.)

REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-01; LS-17	G118	PL155	G100	PL155			FIELD	4	5/8	2	B-2
LS-01; LS-17	G118	PL155	G100	PL155			FIELD	4	5/8	2	B-2
LS-01; LS-17	G118	PL155	G100	PL155			FIELD	4	5/8	2	B-2
LS-02; LS-17	G118	PL155	G100.1	PL155			FIELD	4	5/8	2	B-2
LS-02; LS-17	G118	PL155	G100.1	PL155			FIELD	4	5/8	2	B-2
LS-02; LS-17	G118	PL155	G100.1	PL155			FIELD	4	5/8	2	B-2
LS-01; LS-17	G118	PL155	G100	PL155			FIELD	4	5/8	2	B-2
LS-01; LS-17	G118	PL155	G100	PL155			FIELD	4	5/8	2	B-2
LS-01; LS-17	G118	PL155	G100	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G118	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G118	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G118	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2
LS-08.1	G102.1	ANG141.1	G102.1	C102.1			FIELD	2	5/8	2	B-2
LS-09	G109	ANG143	G109	C109			FIELD	2	5/8	2	B-2
LS-08	G102	ANG141	G102	C102			FIELD	2	5/8	2	B-2
LS-09	G109	ANG143	G109	C109			FIELD	2	5/8	2	B-2
LS-07	G104	ANG141	G104	C104			FIELD	2	5/8	2	B-2
LS-06	G101	ANG143	G101	C101			FIELD	2	5/8	2	B-2
LS-08	G102	ANG141	G102	C102			FIELD	2	5/8	2	B-2
LS-09	G109	ANG143	G109	C109			FIELD	2	5/8	2	B-2
LS-08	G102	ANG141	G102	C102			FIELD	2	5/8	2	B-2
LS-09	G109	ANG143	G109	C109			FIELD	2	5/8	2	B-2
LS-07	G104	ANG141	G104	C104			FIELD	2	5/8	2	B-2
LS-06	G101	ANG143	G101	C101			FIELD	2	5/8	2	B-2
LS-08.1; LS-17	ANG116	ANG116	G102.1	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-04; LS-17	ANG116	ANG116	G100.3	WT135			FIELD	1	5/8	1 3/4	B-1
LS-04; LS-17	ANG116	ANG116	G100.3	WT135			FIELD	1	5/8	1 3/4	B-1
LS-08; LS-17	ANG116	ANG116	G102	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-08; LS-17	ANG116	ANG116	G102	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1

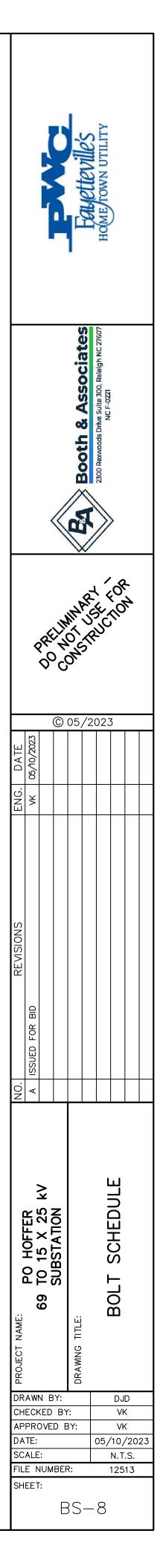


BOLT SCHEDULE FOR LOWSIDE (CONT.)

BOLT SCHEDULE FOR LOWSIDE (CONT.)											
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-07; LS-17	ANG116	ANG116	G104	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-07; LS-17	ANG116	ANG116	G104	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-06; LS-17	ANG116	ANG116	G101	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-06; LS-17	ANG116	ANG116	G101	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	<mark>5/8</mark>	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-08; LS-17	ANG116	ANG116	G102	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-08; LS-17	ANG116	ANG116	G102	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-02; LS-17	ANG116	ANG116	G100.1	WT135			FIELD	1	5/8	1 3/4	B-1
LS-02; LS-17	ANG116	ANG116	G100.1	WT135			FIELD	1	5/8	1 3/4	B-1
LS-02; LS-17	ANG116	ANG116	G100.1	WT135			FIELD	1	5/8	1 3/4	B-1
LS-02; LS-17	ANG116	ANG116	G100.1	WT135	-		FIELD	1	5/8	1 3/4	B-1
LS-08; LS-17	ANG116	ANG116	G102	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-08; LS-17	ANG116	ANG116	G102	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-07; LS-17	ANG116	ANG116	G104	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-07; LS-17	ANG116	ANG116	G104	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-06; LS-17	ANG116	ANG116	G101	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-06; LS-17	ANG116	ANG116	G101	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
ED-7; LS-04; LS-08.1	G100.3	PL152	G102.1	PL152			FIELD	4	<mark>5/8</mark>	2 3/4	B-5
ED-7; LS-04; LS-09	G100.3	PL152	G109	PL152			FIELD	4	5/8	2 3/4	B-5
LS-03; LS-08	G100.2	PL152	G102	PL152			FIELD	4	5/8	2 3/4	B-5



	BOLT SCHEDULE FOR LOWSIDE (CONT.)													
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER			
LS-03; LS-09	G100.2	PL152	G109	PL152			FIELD	4	5/8	2 3/4	B-5			
ED-8; LS-01; LS-07	G100	PL152	G104	PL152			FIELD	4	5/8	2 3/4	B-5			
ED-8; LS-01; LS-06	G100	PL152	G101	PL152			FIELD	4	5/8	2 3/4	B-5			
ED-9; LS-02; LS-08	G100.1	PL152	G102	PL152			FIELD	4	5/8	2 3/4	B-5			
ED-9; LS-02; LS-09	G100.1	PL152	G109	PL152			FIELD	4	5/8	2 3/4	B-5			
LS-01; LS-08	G100	PL152	G102	PL152			FIELD	4	5/8	2 3/4	B-5			
LS-01; LS-09	G100	PL152	G109	PL152			FIELD	4	5/8	2 3/4	B-5			
ED-10; LS-03; LS-07	G100.2	PL152	G104	PL152			FIELD	4	5/8	2 3/4	<mark>B-5</mark>			
ED-10; LS-03; LS-06	G100.2	PL152	G101	PL152			FIELD	4	5/8	2 3/4	B-5			
ED-6; LS-19; LS-08.1	G120	ANG157	G102.1	C102.1			FIELD	4	5/8	2	B-2			
ED-6; LS-19; LS-08	G120	ANG157	G102	C102			FIELD	4	5/8	2	B-2			
LS-19; LS-09	G120	ANG157	G109	C109			FIELD	4	5/8	2	B-2			
LS-19; LS-09	G120	ANG157	G109	C109			FIELD	4	5/8	2	B-2			
ED-6; LS-16; LS-08	G114	ANG157	G102	C102			FIELD	4	5/8	2	B-2			
ED-6; LS-16; LS-08	G114	ANG157	G102	C102			FIELD	4	5/8	2	B-2			
LS-16; LS-09	G114	ANG157	G109	C109			FIELD	4	5/8	2	B-2			
LS-16; LS-09	G114	ANG157	G109	C109			FIELD	4	5/8	2	B-2			
ED-7; LS-11; LS-08.1	G111	ANG147	G102.1	C102.1			FIELD	4	5/8	2	B-2			
ED-7; LS-11; LS-08.1	G111	ANG147	G102.1	C102.1			FIELD	4	5/8	2	B-2			
ED-7; LS-11; LS-09	G111	ANG147	G109	C109			FIELD	4	5/8	2	B-2			
ED-7; LS-11; LS-09	G111	ANG147	G109	C109			FIELD	4	<mark>5/8</mark>	2	B-2			
LS-12; LS-08	G112	ANG147	G102	C102			FIELD	4	5/8	2	B-2			
LS-12; LS-08	G112	ANG147	G102	C102			FIELD	4	5/8	2	B-2			
LS-11; LS-09	G112	ANG147	G109	C109			FIELD	4	5/8	2	B-2			
LS-11; LS-09	G112	ANG147	G109	C109			FIELD	4	5/8	2	B-2			
ED-9; LS-11; LS-08	G111	ANG147	G102	C102			FIELD	4	5/8	2	B-2			
ED-9; LS-11; LS-08	G111	ANG147	G102	C102			FIELD	4	5/8	2	B-2			
ED-9; LS-11; LS-09	G111	ANG147	G109	C109			FIELD	4	5/8	2	B-2			
ED-9; LS-11; LS-09	G111	ANG147	G109	C109			FIELD	4	5/8	2	B-2			
ED-10; LS-11; LS-07	G111	ANG147	G104	C104			FIELD	4	<mark>5/8</mark>	2	B-2			
ED-10; LS-11; LS-07	G111	ANG147	G104	C104			FIELD	4	5/8	2	B-2			
ED-10; LS-11; LS-06	G111	ANG147	G101	C101			FIELD	4	5/8	2	B-2			
ED-10; LS-11; LS-06	G111	ANG147	G101	C101			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-08	G115	ANG147	G102	C102			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-08	G115	ANG147	G102	C102			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-07	G115	ANG147	G104	C104	G115	ANG147	FIELD	4	5/8	2 1/2	B-4			
ED-6; LS-14; LS-07	G115	ANG147	G104	C104	G115	ANG147	FIELD	4	5/8	2 1/2	B-4			
ED-6; LS-14; LS-08	G115	ANG147	G102	C102			FIELD	4	<mark>5/8</mark>	2	B-2			
ED-6; LS-14; LS-08	G115	ANG147	G102	C102			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-08	G115	ANG147	G102	C102			FIELD	4	5/8	2	B-2			

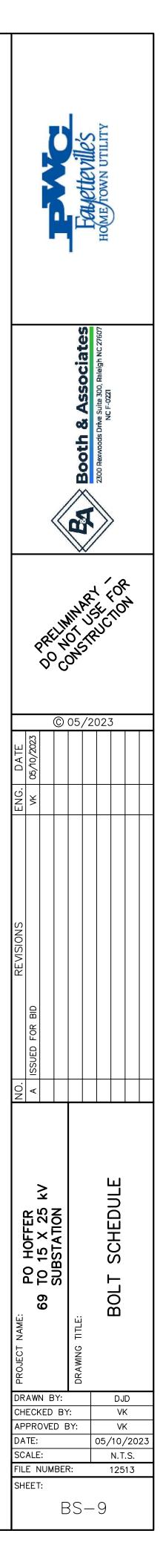


BOLT SCHEDULE FOR LOWSIDE (CONT.)

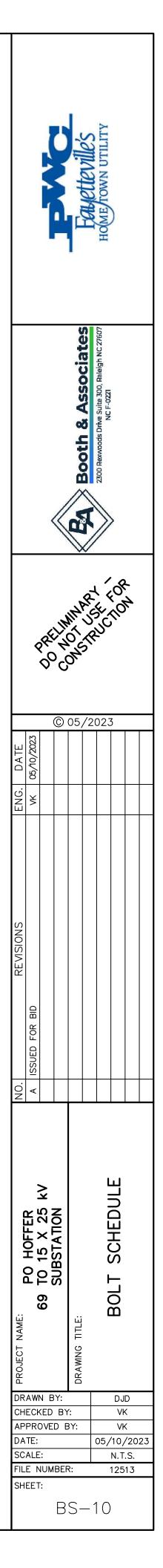
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REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
ED-6; LS-14; LS-08	G115	ANG147	G102	C102			FIELD	4	5/8	2	B-2
ED-6; LS-14; LS-07	G115	ANG147	G104	C104			FIELD	4	5/8	2	B-2
ED-6; LS-14; LS-07	G115	ANG147	G104	C104			FIELD	4	5/8	2	B-2
ED-6; LS-14; LS-09	G115	ANG147	G109	C109			FIELD	4	5/8	2	B-2
ED-6; LS-14; LS-09	G115	ANG147	G109	C109			FIELD	4	5/8	2	B-2
ED-6; LS-14; LS-06	G115	ANG147	G101	C101	G115	ANG147	FIELD	4	5/8	2 1/2	B-4
ED-6; LS-14; LS-06	G115	ANG147	G101	C101	G115	ANG147	FIELD	4	5/8	2 1/2	B-4
ED-6; LS-14; LS-09	G115	ANG147	G109	C109			FIELD	4	5/8	2	B-2
ED-6; LS-14; LS-09	G115	ANG147	G109	C109			FIELD	4	5/8	2	B-2
ED-6; LS-14; LS-09	G115	ANG147	G109	C109			FIELD	4	5/8	2	B-2
ED-6; LS-14; LS-09	G115	ANG147	G109	C109			FIELD	4	5/8	2	B-2
ED-6; LS-14; LS-06	G115	ANG147	G101	C101			FIELD	4	5/8	2	B-2
ED-6; LS-14; LS-06	G115	ANG147	G101	C101			FIELD	4	5/8	2	B-2

BOLT SCHEDULE FOR URD STAND

REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
URD-3	G203	B203	G203	ANG217			FIELD	4	5/8	2	B-2
URD-3	G203	B203	G203	ANG217			FIELD	4	5/8	2	B-2
ED-5; URD-1; URD-3	G200	C200	G203	ANG217			FIELD	4	5/8	2	B-2
ED-5; URD-1; URD-3	G200	C200	G203	ANG217			FIELD	4	5/8	2	B-2
URD-2	G201	ANG201	G201	ANG216			FIELD	4	5/8	1 3/4	B-1
URD-2	G201	ANG201	G201	ANG216			FIELD	4	<mark>5/8</mark>	1 3/4	B-1
URD-2	G201	ANG201	G201	ANG216			FIELD	4	5/8	1 3/4	B-1
URD-2	G201	ANG201	G201	ANG209			FIELD	2	5/8	1 3/4	B-1
URD-2	G201	ANG201	G201	ANG210			FIELD	2	5/8	1 3/4	B-1
ED-5; URD-1; URD-2	G200	C200	G201	ANG209			FIELD	2	5/8	2	B-2
ED-5; URD-1; URD-3	G200	C200	G201	ANG210			FIELD	2	5/8	2	B-2
URD-3	G204	ANG204	G204	ANG213			FIELD	1	5/8	2	B-2
URD-3	G206	ANG204	G204	ANG213			FIELD	1	5/8	2	B-2
URD-3	G204	ANG204	G204	ANG213			FIELD	1	5/8	2	B-2
URD-3	G206	ANG204	G204	ANG213			FIELD	1	5/8	2	B-2
ED-5; URD-1; URD-3	G200	C200	G204	ANG204			FIELD	2	5/8	2	B-2
ED-5; URD-1; URD-3	G200	C200	G204	ANG206			FIELD	2	5/8	2	B-2
ED-5; URD-1; URD-3	G200	C200	G204	ANG204			FIELD	2	5/8	2	B-2
ED-5; URD-1; URD-3	G200	C200	G204	ANG206			FIELD	2	5/8	2	B-2

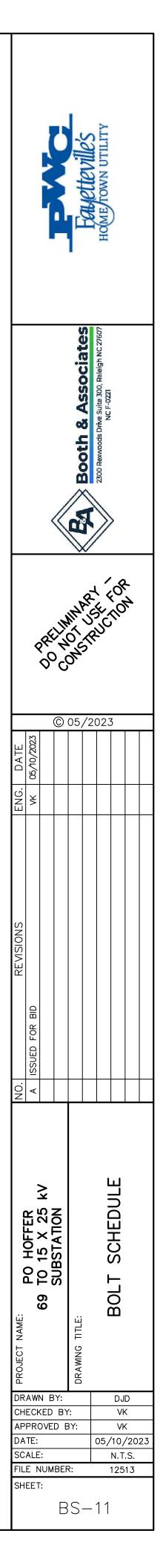


				BOLT	SCHEDULE	FOR A-FRAM	1E				
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR335			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR335	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327		A the set of section (sector	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1

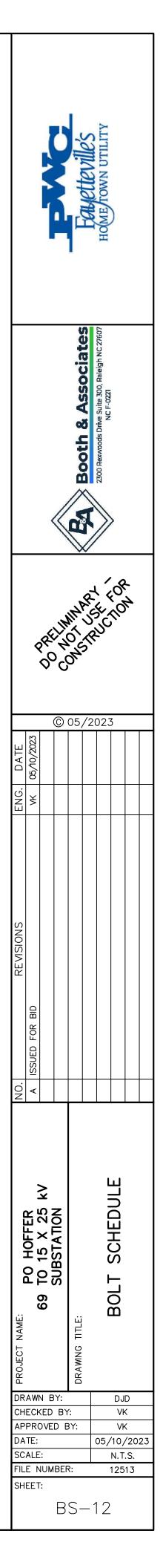


BOLT SCHEDULE FOR A-FRAME (CONT.)

REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR335			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR335	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338		1	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338		1	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1

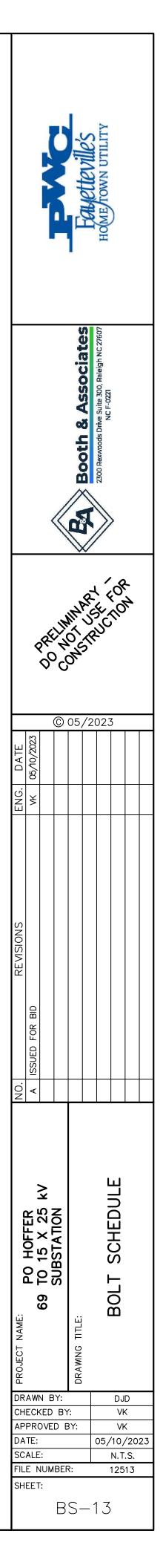


	BOLT SCHEDULE FOR A-FRAME (CONT.)												
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR335			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR335	G310	ANG327	FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR335			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR335	G310	ANG327	FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1		



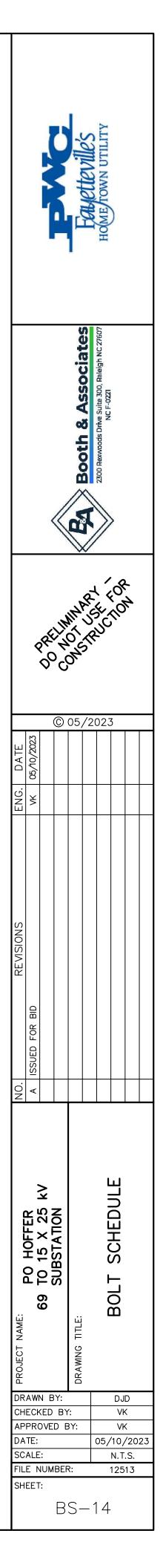
BOLT SCHEDULE FOR A-FRAME (CONT.)

REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	<mark>B-1</mark>
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	<mark>5/8</mark>	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	BR332	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	BR332	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	BR332	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-5	G301	C340	G301	C341			FIELD	4	5/8	1 3/4	B-1
AF-5	G301	C340	G301	C341			FIELD	4	5/8	1 3/4	B-1
AF-5	G301	C340	G301	C341			FIELD	4	<mark>5/8</mark>	1 3/4	B-1
AF-5	G301	C340	G301	C341			FIELD	4	5/8	1 3/4	<mark>B-1</mark>
AF-5	G301	C340	G301	C341			FIELD	4	5/8	1 3/4	B-1
AF-5	G301	C340	G301	C341			FIELD	4	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1



BOLT SCHEDULE FOR A-FRAME (CONT.)

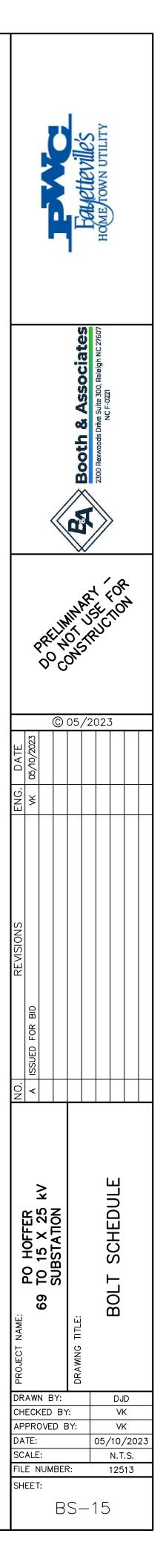
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	<mark>1 3</mark> /4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310		ANG342			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG342			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG342			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG342			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG344			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG344			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG344			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG344			FIELD	2	5/8	2	B-2
AF-2; AF-7		C312		ANG342			FIELD	4	5/8	2 1/4	B-3
AF-2; AF-7		C312		ANG342			FIELD	4	5/8	2 1/4	B-3
AF-2; AF-7		C312		ANG342			FIELD	4	5/8	2 1/4	B-3
AF-2; AF-7		C312		ANG342			FIELD	4	5/8	2 1/4	B-3
AF-2; AF-7		C312		ANG344			FIELD	4	5/8	2 1/4	B-3
AF-2; AF-7		C312		ANG344			FIELD	4	<mark>5/8</mark>	2 1/4	B-3
AF-2; AF-7		C312		ANG344			FIELD	4	5/8	2 1/4	B-3
AF-2; AF-7		C312		ANG344			FIELD	4	5/8	2 1/4	B-3
AF-7; AF-8		C312	G303	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G303	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G303	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G303	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G305	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G305	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G305	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G305	PL319			FIELD	4	5/8	2	B-2
AF-1; AF-7		C312	G311	PL350			FIELD	4	5/8	2 1/4	B-3
AF-1; AF-3; AF-7		C312	G311	PL350	G308	ANG326	FIELD	4	5/8	2 3/4	B-5
AF-1; AF-7		C312	G311	PL350			FIELD	4	5/8	2 1/4	B-3
AF-1; AF-3; AF-7		C312	G311	PL350	G308	ANG326	FIELD	4	5/8	2 3/4	B-5
AF-1; AF-7		C312	G311	PL350			FIELD	4	5/8	2 1/4	B-3
AF-1; AF-3; AF-7		C312	G311	PL350	G308	ANG326	FIELD	4	5/8	2 3/4	B-5
AF-1; AF-7		C312	G311	PL350			FIELD	4	5/8	2 1/4	B-3
AF-1; AF-3; AF-7		C312	G311	PL350	G308	ANG326	FIELD	4	5/8	2 3/4	B-5
AF-7		C312		PL351			FIELD	2	5/8	2 1/4	B-3
AF-7; AF-8		C312		PL351		ANG328	FIELD	2	5/8	2 3/4	B-5
AF-3; AF-7		C312		PL351	G308	ANG326	FIELD	4	5/8	2 3/4	B-5



BOLT SCHEDULE FOR A

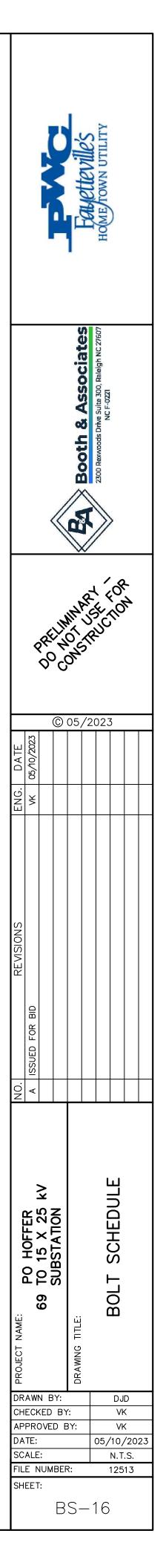
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AF-7		C312		PL351			FIELD	2	5/8	2 1/4	B-3			
AF-7; AF-8		C312		PL351		ANG328	FIELD	2	5/8	2 3/4	B-5			
AF-3; AF-7		C312		PL351	G308	ANG326	FIELD	4	5/8	2 3/4	B-5			
AF-7		C312		PL351			FIELD	4	5/8	2 1/4	B-3			
AF-3; AF-7		C312		PL351	G308	ANG326	FIELD	4	5/8	2 3/4	B-5			
AF-7		C312		PL351			FIELD	4	5/8	2 1/4	B-3			
AF-3; AF-7		C312		PL351	G308	ANG326	FIELD	4	5/8	2 3/4	B-5			
AF-3	G308	PL322	G308	ANG326			FIELD	3	5/8	2 1/2	B-4			
AF-3	G308	PL322	G308	ANG326			FIELD	3	5/8	2 1/2	B-4			
AF-3	G308	PL322	G308	ANG326			FIELD	3	5/8	2 1/2	B-4			
AF-3	G308	PL322	G308	ANG326			FIELD	3	5/8	2 1/2	B-4			
AF-3	G309	PL321	G308	PL325			FIELD	4	5/8	2 1/4	B-3			
AF-3	G309	PL321	G308	PL325			FIELD	4	5/8	2 1/4	B-3			
AF-5; AF-6	G302	CH302	G301	CH301			FIELD	4	5/8	3 1/2	B-6			
AF-2; AF-6	G302	CH302	G310	ANG310			FIELD	4	5/8	3 1/2	B-6			
AF-5; AF-6	G302	CH302	G301	CH301			FIELD	4	5/8	3 1/2	B-6			
AF-5; AF-6	G302	CH302	G301	CH301			FIELD	4	5/8	3 1/2	B-6			
AF-2; AF-6	G302	CH302	G310	ANG310			FIELD	4	5/8	3 1/2	B-6			
AF-5; AF-6	G302	CH302	G301	CH301			FIELD	4	5/8	3 1/2	B-6			
AF-5; AF-6	G302	CH302	G301	CH301			FIELD	4	5/8	3 1/2	B-6			
AF-2; AF-6	G302	CH302	G310	ANG310			FIELD	4	5/8	3 1/2	B-6			
AF-5; AF-6	G302	CH302	G301	CH301			FIELD	4	5/8	3 1/2	B-6			

A-FRAME	(CONT.)
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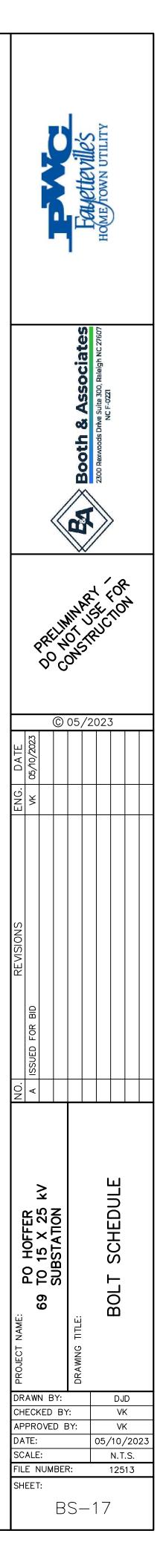


BOLT SCHEDULE FOR LOW SWITCH STAND

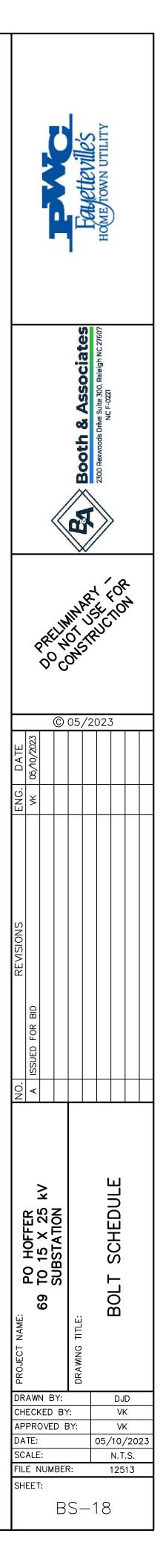
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REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	DIAMETER (in.)	LENGTH (in.)	BOLT NUMBER
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401	,		FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401	G401	ANG407	FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401	G401	ANG407	FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	ANG407			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	ANG407			FIELD	1	<mark>5/8</mark>	1 3/4	B-1
SS-5	G401	ANG407	G401	ANG407			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	ANG407			FIELD	1	5/8	1 3/4	B-1



	BOLT SCHEDULE FOR LOW SWITCH STAND (CONT.)										
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
SS-1; SS-5	G401	PL416	G400	PL416			FIELD	4	5/8	2 1/4	B-3
SS-1; SS-5; SS-6	G401	ANG408	G400	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-1; SS-5; SS-6	G401	ANG408	G400	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	<mark>5/8</mark>	1 3/4	<mark>B</mark> -1
SS-2; SS-5	G401	PL416	G400.1	PL416			FIELD	4	5/8	2 1/4	B-3
SS-1; SS-5	G401	ANG408	G400.1	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-1; SS-5	G401	ANG408	G400.1	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1



REFERENCE						HIGH SWITCH		BOLT	BOLT	BOLT	BOLT
DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	QUANTITY	DIAMETER (in.)	LENGTH (in.)	NUMBER
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G <mark>4</mark> 01	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G4 <mark>01</mark>	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G <mark>401</mark>	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G4 <mark>01</mark>	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401	G401	ANG407	FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401	G401	ANG407	FIELD	1	5/8	1 3/4	B-1
SS-5	G4 <mark>0</mark> 1	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G <mark>40</mark> 1	ANG407	G4 <mark>0</mark> 1	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	ANG407			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	ANG407			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	ANG407			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	ANG407			FIELD	1	5/8	1 3/4	B-1



BOLT SCHEDULE FOR HIGH SWITCH STAND (CONT.)

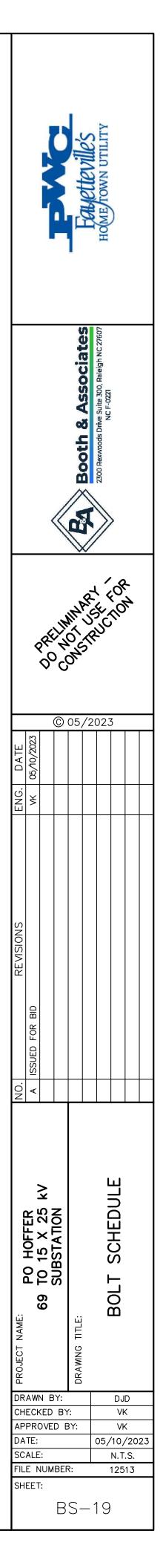
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SS-1; SS-5	G401	PL416	G450	PL416			FIELD	4	5/8	2 1/4	B-3
SS-1; SS-5; SS-6	G401	ANG408	G450	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-1; SS-5; SS-6	G401	ANG408	G450	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-2; SS-5	G401	PL416	G450.1	PL416			FIELD	4	5/8	2 1/4	B-3
SS-1; SS-5	G401	ANG408	G450.1	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-1; SS-5	G401	ANG408	G450.1	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1

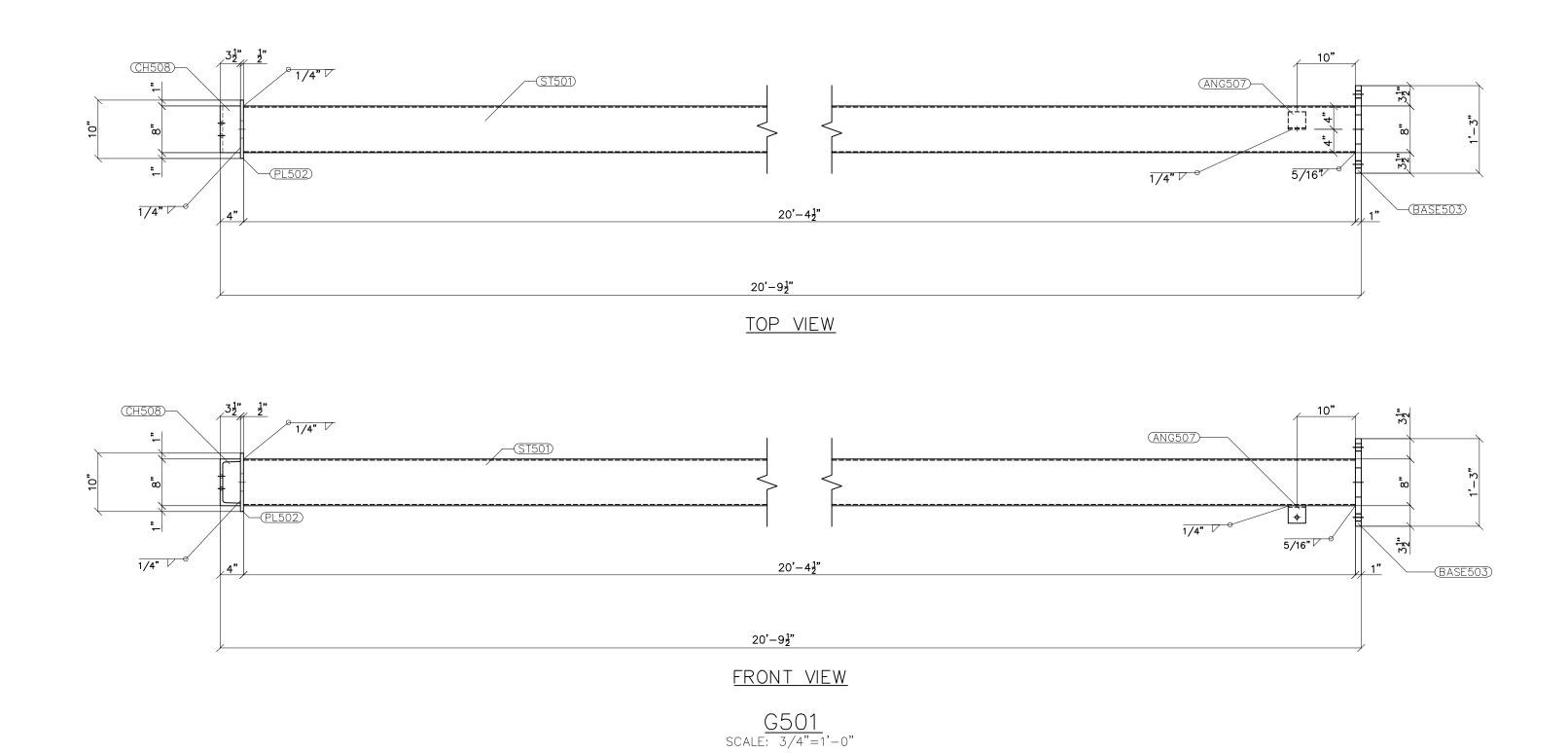
BOLT SCHEDULE FOR THREE PHASE BUS STAND

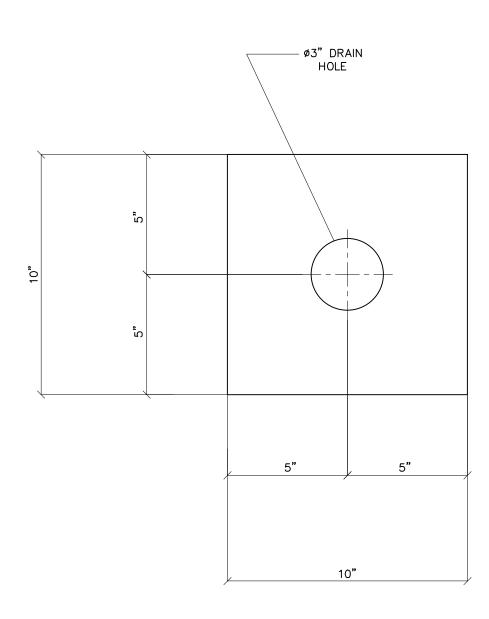
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
TPB-1; TPB-2; TPB-3	G600	PL607	G605	B605			FIELD	8	5/8	2	<mark>B-2</mark>
TPB-1; TPB-2; TPB-3	G600	PL608	G600	ANG610			FIELD	1	5/8	1 3/4	B-1
TPB-1; TPB-2; TPB-3	G600	PL608	G600	ANG610			FIELD	1	5/8	1 3/4	B-1
TPB-1; TPB-2; TPB-3	G605	PL608	G600	ANG610			FIELD	1	5/8	1 3/4	B-1
TPB-1; TPB-2; TPB-3	G605	PL608	G600	ANG610			FIELD	1	5/8	1 3/4	B-1

REFERENCE
DRAWINGGROUP 1MEMBER 1GROUP 2MEMBER 2GROUP 3MESM-1; SM-3; SM-4G401PL401G402PL402FL402FL402FL402

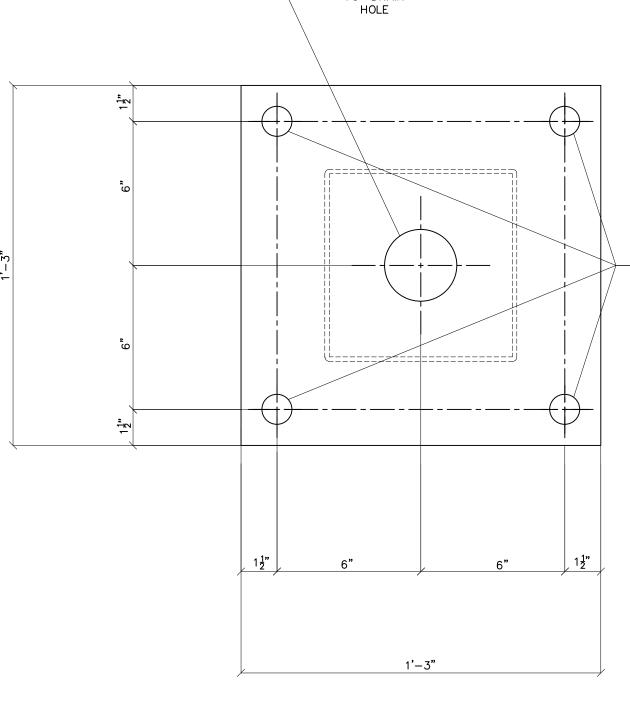
R STATIC P									
MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER				
	FIELD	4	1	2 3/4	B-7				

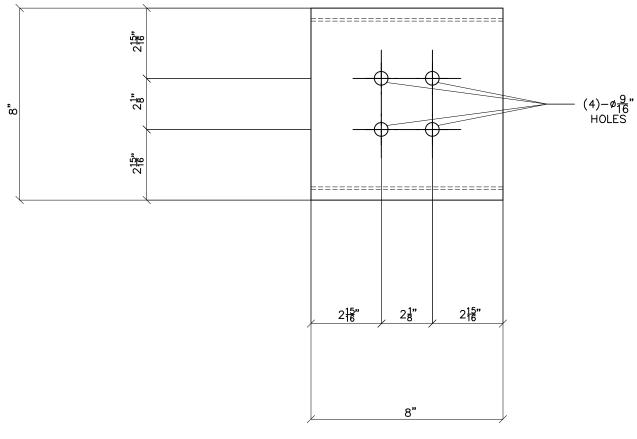






PL502 scale: 3"=1'-0"



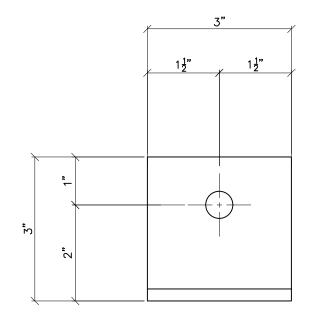


CH508 FRONT VIEW scale: 3"=1'-0"

— ø3" DRAIN HOLE

– (4)–ø1<u>1</u>" HOLES

BASE503 scale: 3"=1'-0"



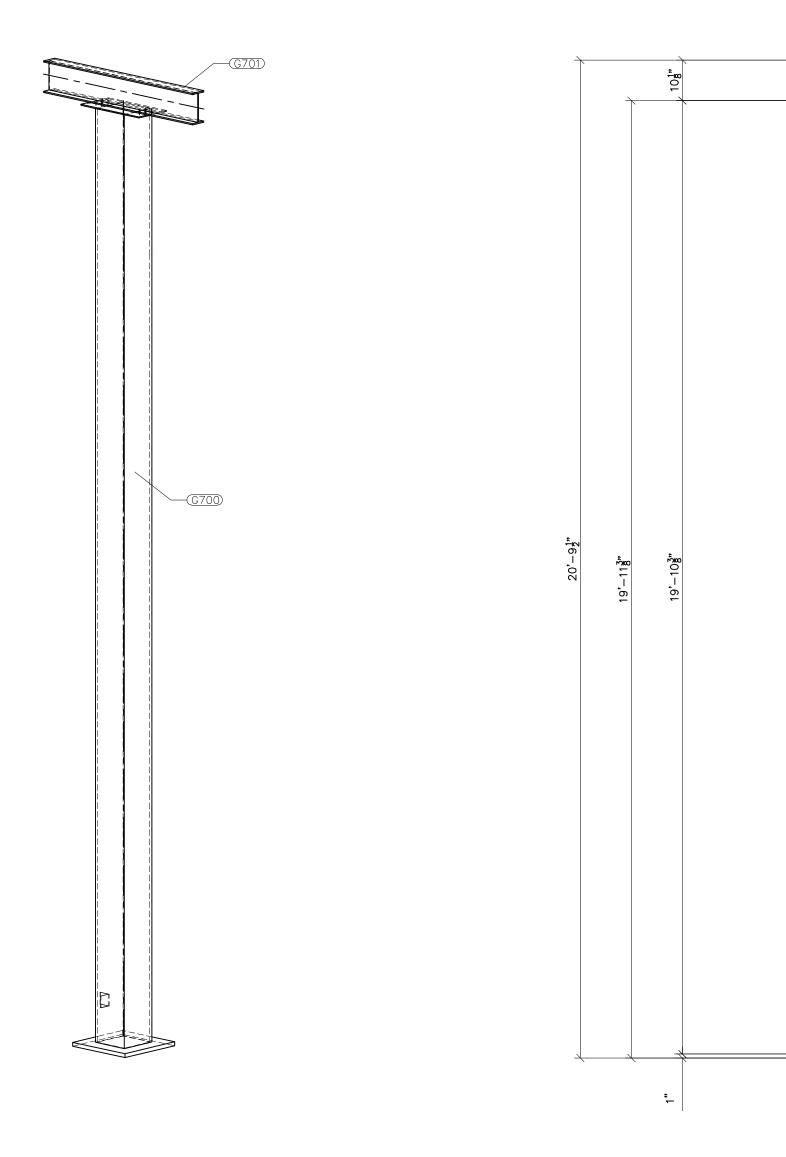
ANG507 FRONT VIEW scale: 6"=1'-0"

NOTES:

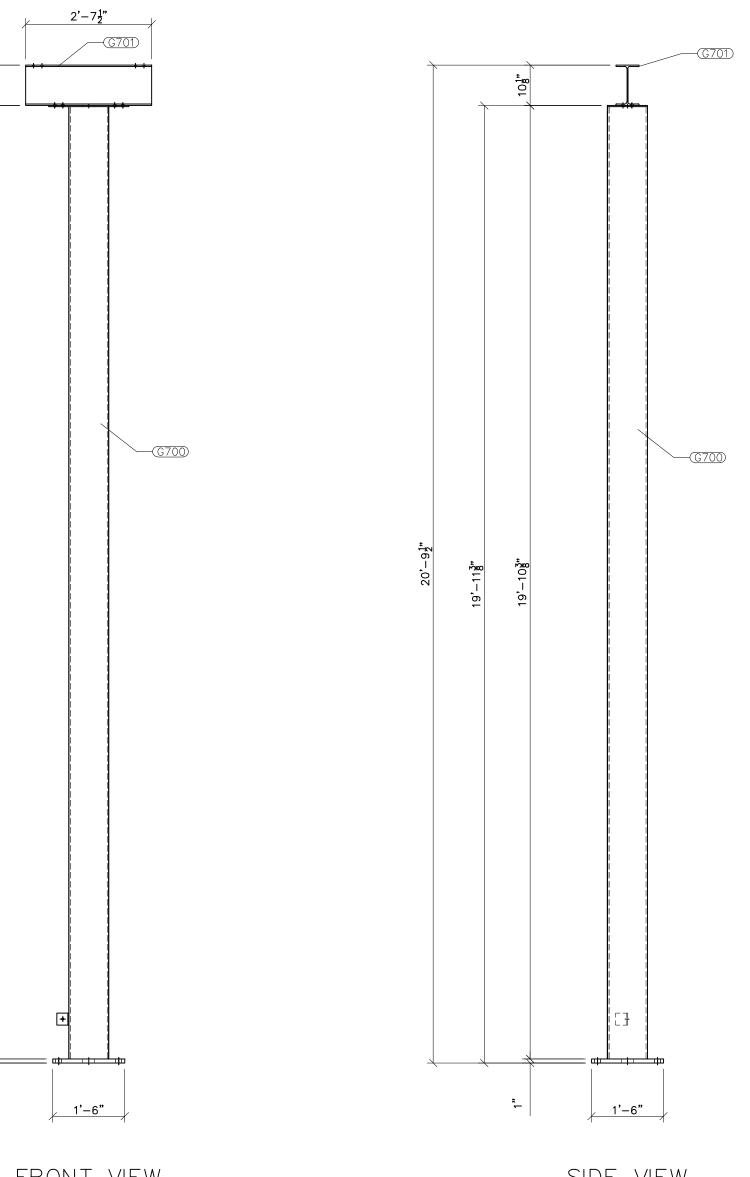
- ASTM 325 ERECTION BOLTS
 ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
- ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED

		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G501	3	FOR ONE GROUP G501:		
ANG507	1	L3x3x1/4	3"	1.23
BASE503	1	Plate 1'-3"×1"	1'-3"	63.93
CH508	1	MC8x22.8	8"	15.20
PL502	1	PL 10"x1/2"	10"	14.21
ST501	1	HSS8x8x3/16	20'-4 1/2"	399.55
		BLACK WEIGHT:	L	194.12 LBS.
		GALVANIZED WEIGH	T:	19.76 LBS.
		TOTAL WEIGHT:	Ę	513.88 LBS.

Booth & Associates MINART FOR © 05/2023 I₹ JED FOR . N N N PO HOFFER 69 TO 15 X 25 kV SUBSTATION STAND BUS 10 DRAWN BY: DJD CHECKED BY: VK APPROVED BY: VK DATE: 05/10/2023 SCALE: AS SHOWN FILE NUMBER: 12513 AS SHOWN SHEET: BUS-1

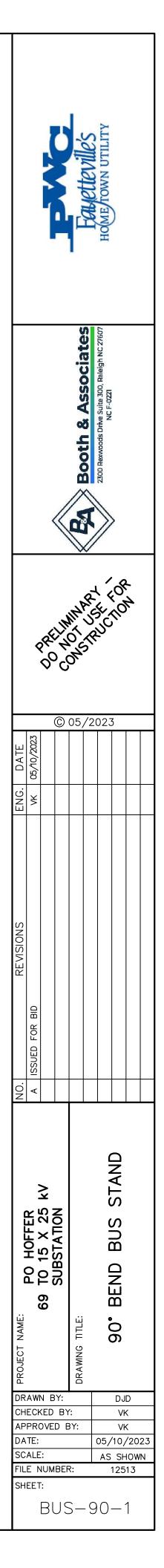


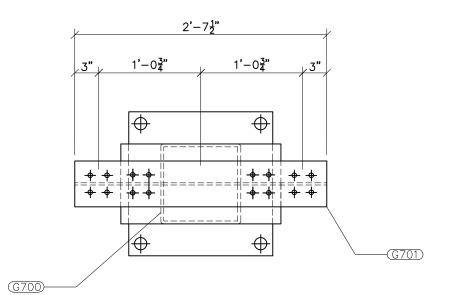
ISOMETRIC VIEW scale: n.t.s.



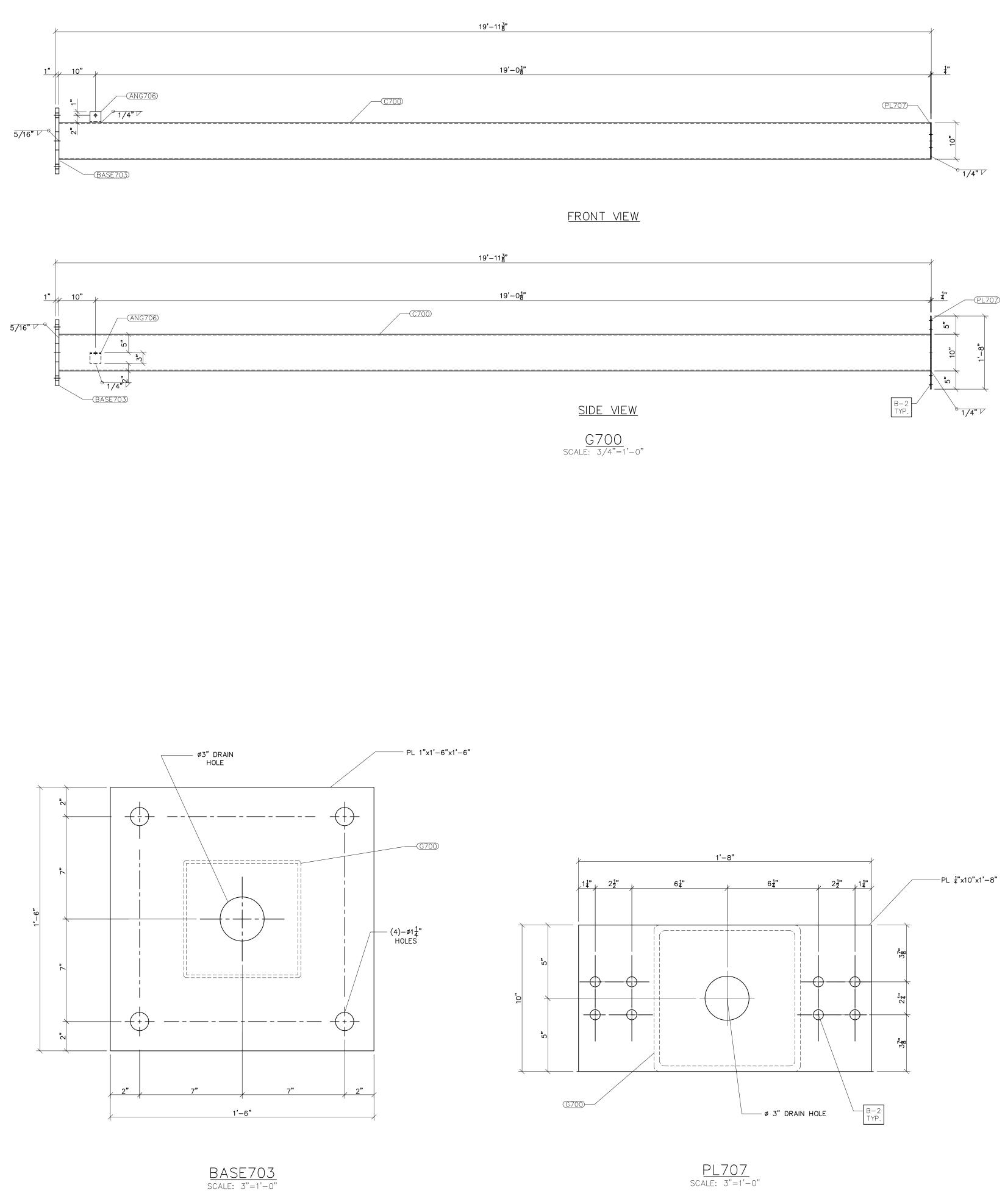
FRONT VIEW scale: 1/2"=1'-0"

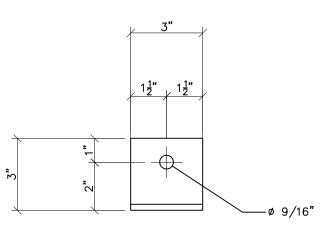
SCALE: 1/2"=1'-0"





TOP VIEW Scale: 1/2"=1'-0"





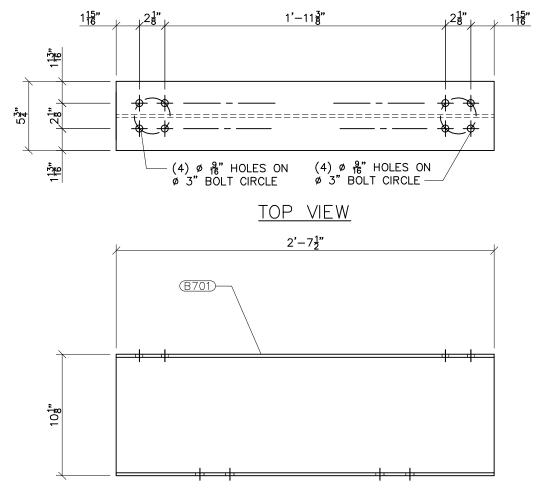
NOT 1)	ES: ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8 HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED
	BILL OF MATERIAL

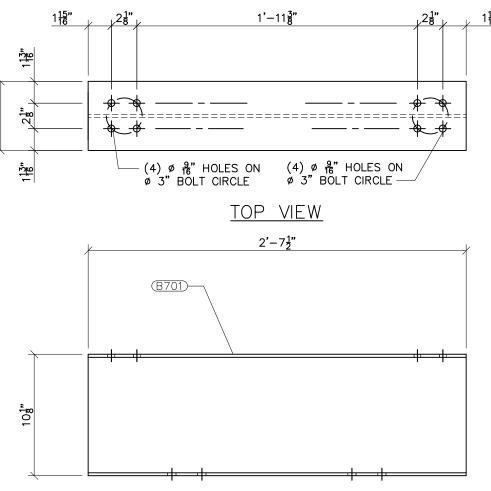
		BIEL OF MIXTERIAL		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G700	1	FOR ONE GROUP G700:		
C700 BASE703 PL707 ANG706	1 1 1 1	HSS10x10x3/8 PL 1"x 1'-6" PL 1/4"x10" L3x3x1/4	19'-10 1/8" 1'-6" 1'-8" 3"	948.98 91.88 14.18 1.23
		BLACK WEIGHT:		056.27 LBS.
		GALVANIZED WEIGH	T:	42.25 LBS.
		TOTAL WEIGHT:	1(098.52 LBS.

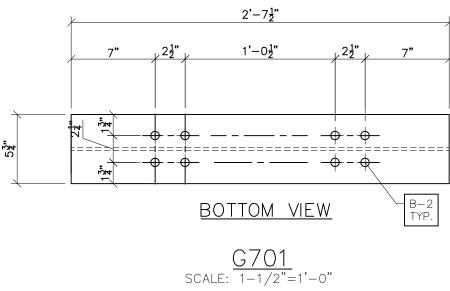
SEE BUS-90-1 FOR GROUP G700 LOCATION



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		~		RA Booth & Accocintac		2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221	>		
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PROJECT NAME: PO HOFFER 69 TO 15 X 25 KV SUBSTATION			DRAWNG TITLE: 90° BEND BUS STAND						
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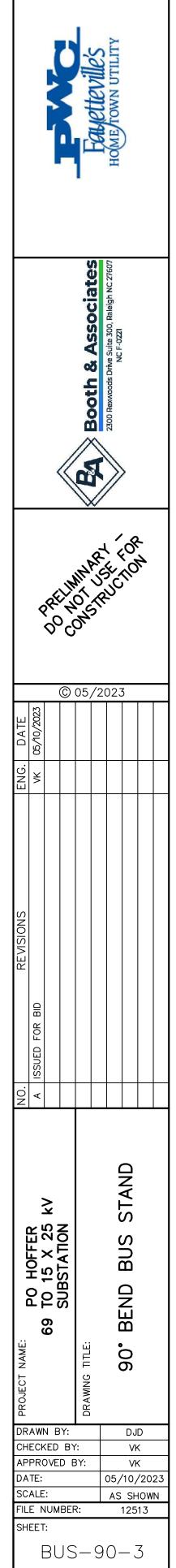


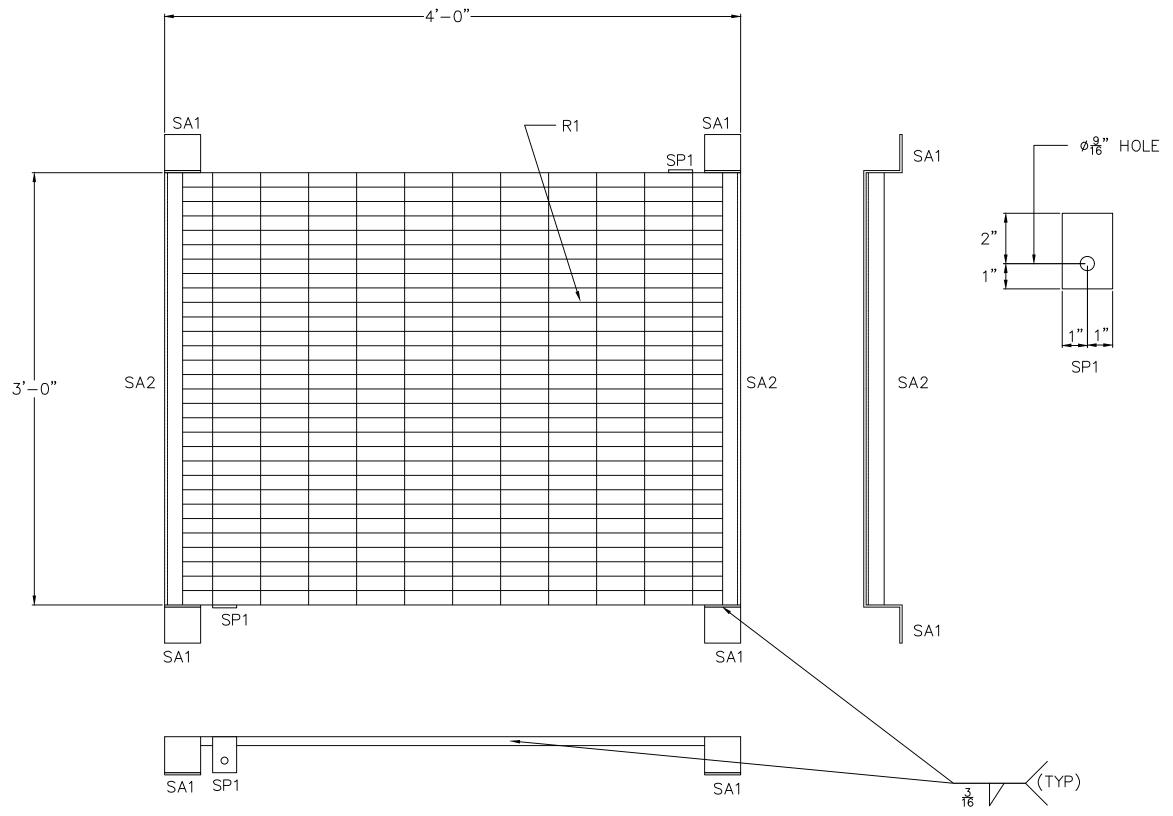


NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

		BILL OF MATERIAL				
POS. NO.	QTY	DESC.	LENGTH	WEIGHT		
G701	1	FOR ONE GROUP G701:				
B701	1	W10x22	2'-7 1/2"	57.75		
		BLACK WEIGHT:	57.75 LBS.			
		GALVANIZED WEIGH	T: 2.31 LBS.			
		TOTAL WEIGHT:	60.06 LBS.			

SEE BUS-90-1 FOR GROUP G705 LOCATIONS





<u>GROUND MAT – GM34</u> (TWO REQUIRED) SCALE: 1–1/2"=1'-0"

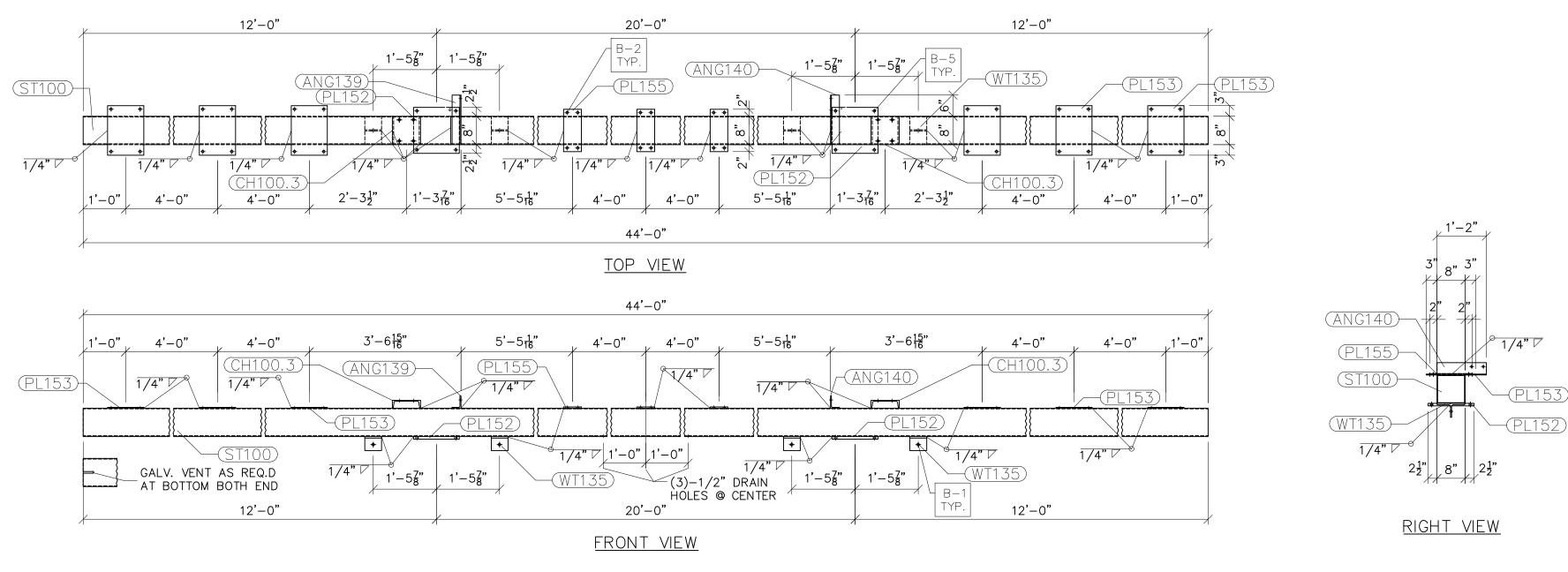


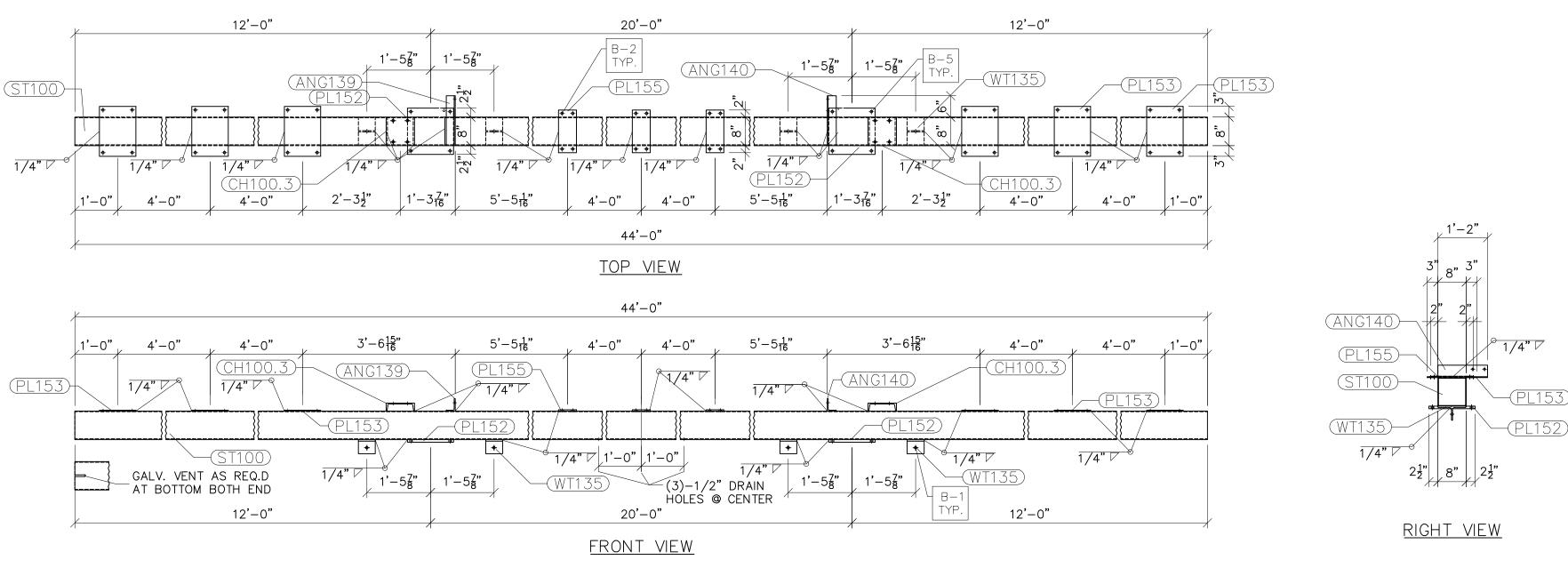
NOTES:

- 1) ASTM 325 ERECTION BOLTS
- 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123) 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
- PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
- 5) ALL WELDING ELECTRODES SHALL BE E70216) EDGE DISTANCE 1" UNLESS NOTED

		BILL OF MATERIAL	-		
S. NO.	QTY	DESC.	LENGTH	WEIGHT	
M-1	10	FOR ONE GROUNDING MAT:			
1 41 42 21	2 8 4 4	3'x3/4"x3/16"(19W4 GRATING) L3"x3"x3/16" L1-3/4"x1-3/4"x3/16" PL 2x1/4"	4'-0" 3" 3'-0" 3"	134.0 7.4 26.0 2.0	
		BLACK WEIGHT:		169.4 LBS.	
		GALVANIZED WEIGH	HT:	6.8 LBS.	
		TOTAL WEIGHT:		176.2 LBS.	

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	Booth & Associates 2300 Rexvoods Drive Sulte 300, Paleigh NC 27607 NC F-0221								
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PROJECT NAME:		VX CZ X CL 01 69	SUBSIAIION	DRAWING TITLE: GROUNDING MAT DETAILS					
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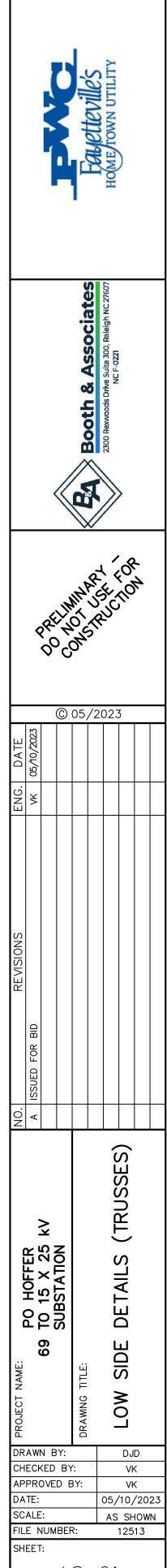
NOTES:

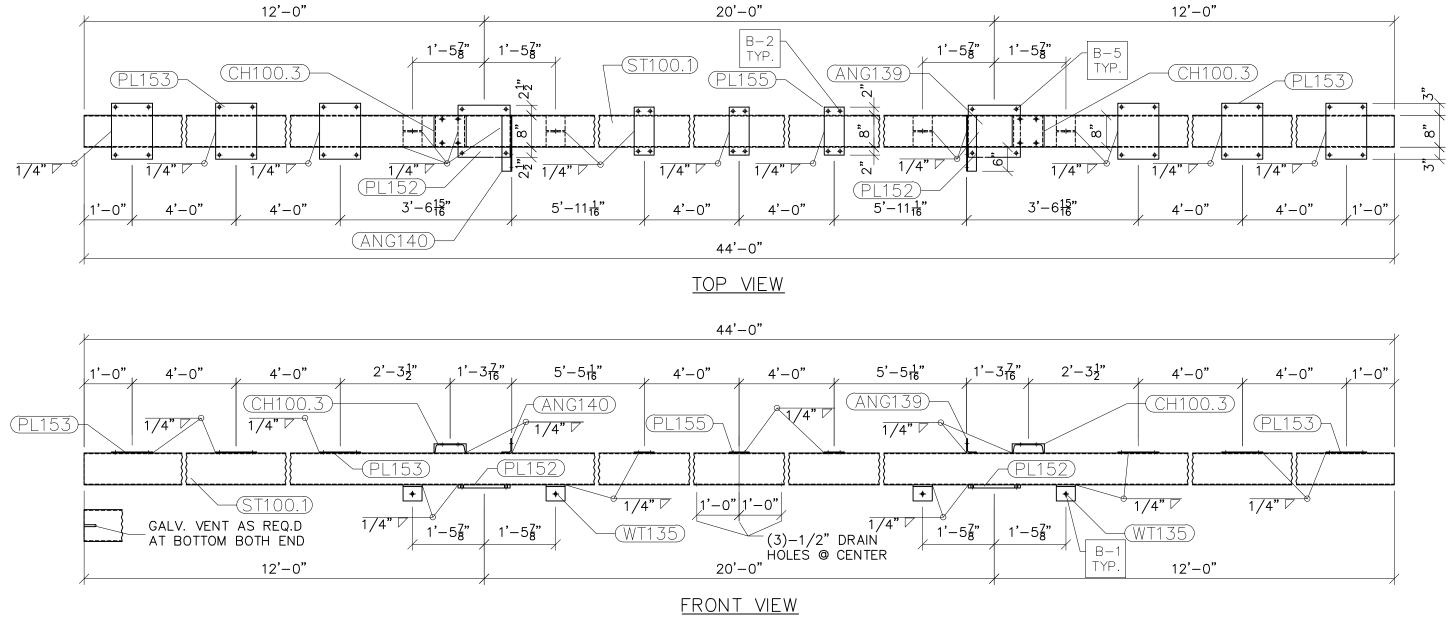
- 1) ASTM 325 ERECTION BOLTS
- 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
- 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED 4) PIECE MARK STAMPED INTO MÉTAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
- 5) ALL WELDING ELECTRODES SHALL BE E70216) EDGE DISTANCE 1" UNLESS NOTED

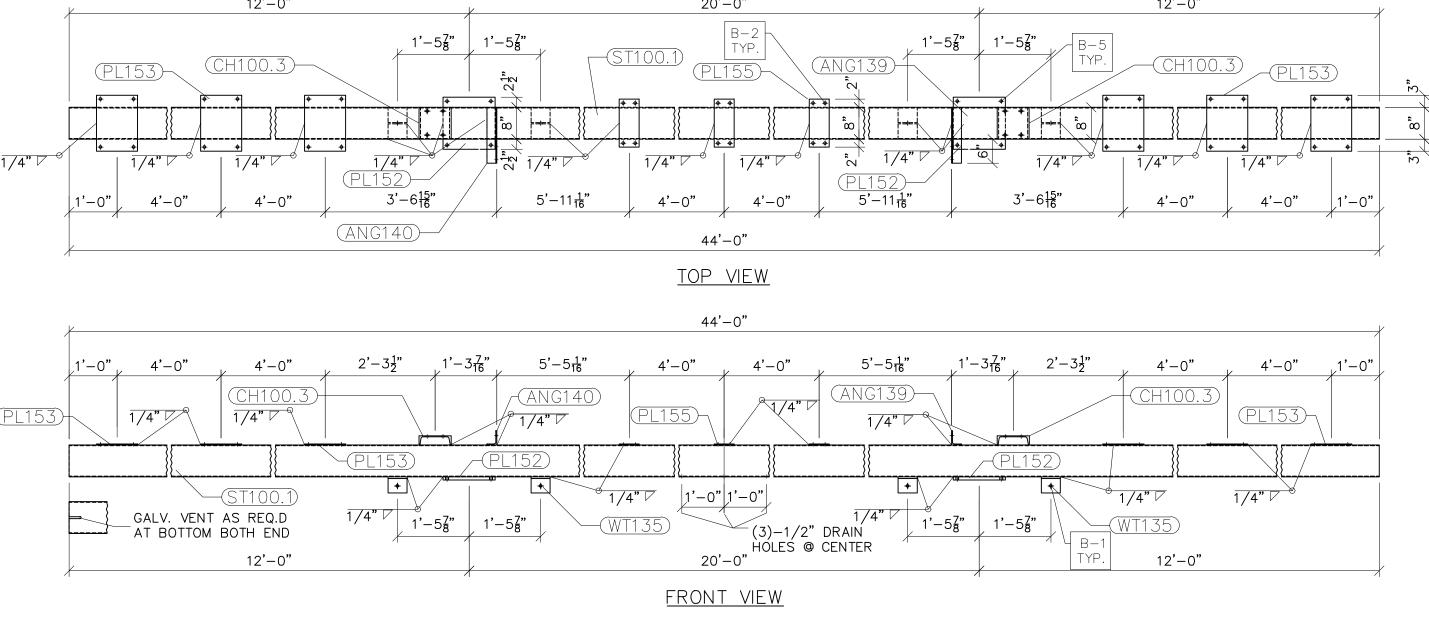
	BILL OF MATERIAL		
QTY	DESC.	LENGTH	
2	FOR ONE GROUP G100		
1	L3-1/2x2-1/2x1/4	1'-2"	5.72
1	$L3 - 1/2 \times 2 - 1/2 \times 1/4$	1'-2"	5.72
2	PL 3/4"×1'-1"	1'-1"	72.03
6	PL 1/4"x10 1/4"	1'-2"	61.16
3	PL 3/8"x5"	1'-0"	19.18
1	HSS8x8x3/16	44'-0"	862.90
4	WT4x15.5	4 3/4" 8"	24.54
2	C8x11.5	8"	15.34
	BLACK WEIGHT:	10)66.59 LBS.
	GALVANIZED WEIGH	T:	42.66 LBS.
		4.4	00.05.100

 TOTAL WEIGHT:
 1109.25 LBS.

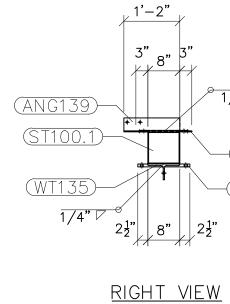
 SEE DRAWING No. LS-05 FOR CH 100.3, ANG139, ANG140, PL152, PL155, WT135 & END COVER DETAILS.











G100.1 scale: n.t.s.

NOTES: 1) ASTM 325 ERECTION BOLTS

- 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
- 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
- HIGH CHARACTERS BEFORE GALVANIZING
- 5) ALL WELDING ELECTRODES SHALL BE E7021
- 6) EDGE DISTANCE 1" UNLESS NOTED

	BILL OF MATERIAL		
QTY	DESC.	LENGTH	
1			
1	L3-1/2x2-1/2x1/4	1'-2"	5.72
1	$L3 - 1/2 \times 2 - 1/2 \times 1/4$	1'-2"	5.72
2	PL 3/4"x1'-1"	1'-1"	72.03
6	PL 1/4"x10 1/4"	1'-2"	61.04
3	PL 3/8"x5"	1'-0"	19.18
1	HSS8x8x3/16	44'-0"	862.90
4	WT4×15.5	4 3/4"	24.54
2	C8x11.5	8"	15.34

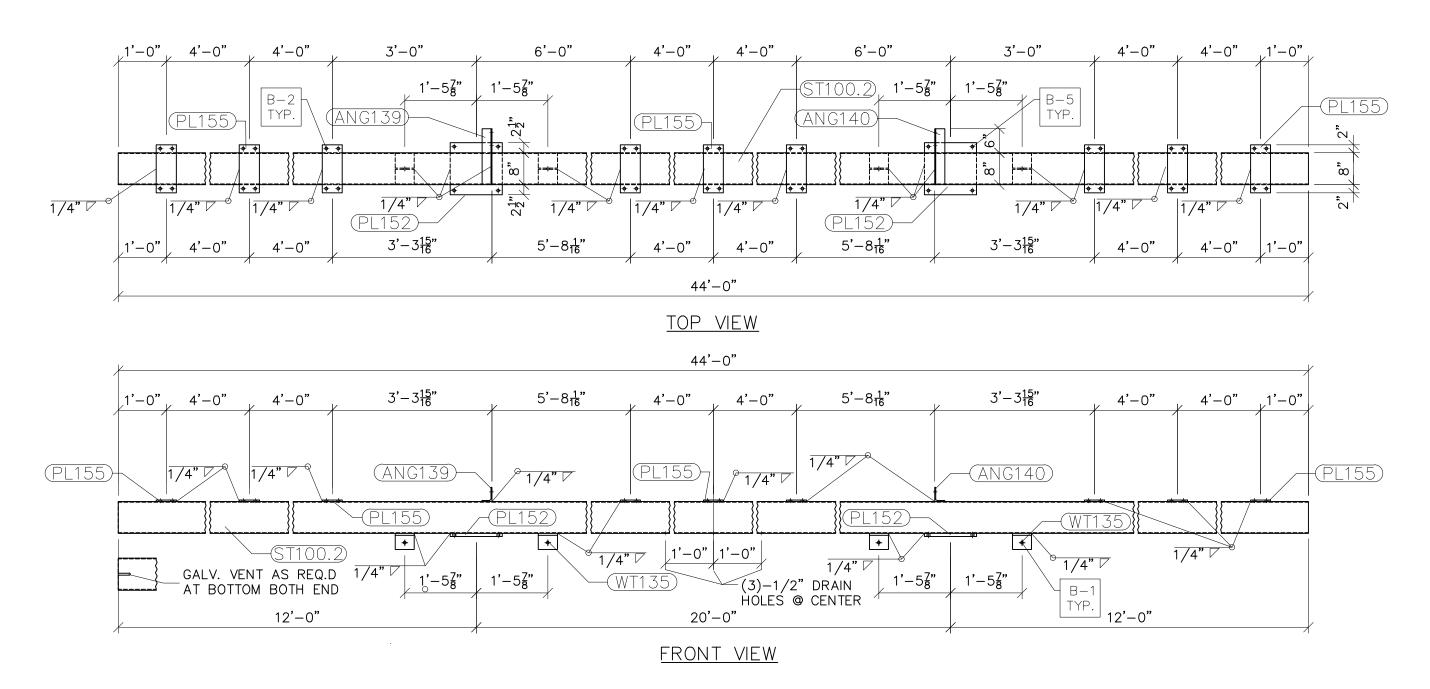
BLACK WEIGHT: GALVANIZED WEIGHT: TOTAL WEIGHT: 1066.47 LBS. 42.66 LBS. 1109.13 LBS.

SEE DRAWING No. LS-05 FOR CH100.3, ANG139, ANG140, PL152, PL153, WT135 & END COVER DETAILS.

0		
\nearrow	1/4"	\bigtriangledown
	'	

 $\overline{PL153}$ -(PL152)

				The salt of the		HOME/TOWN UTILITY)		
Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221									
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2¹" 8" 2¹"

<mark>, 1'−2"</mark>

2"8" 2"

● 1/4" ▽

<u>PL152</u>

(ANG140) 2 8" 2 11 11

(PL155)-

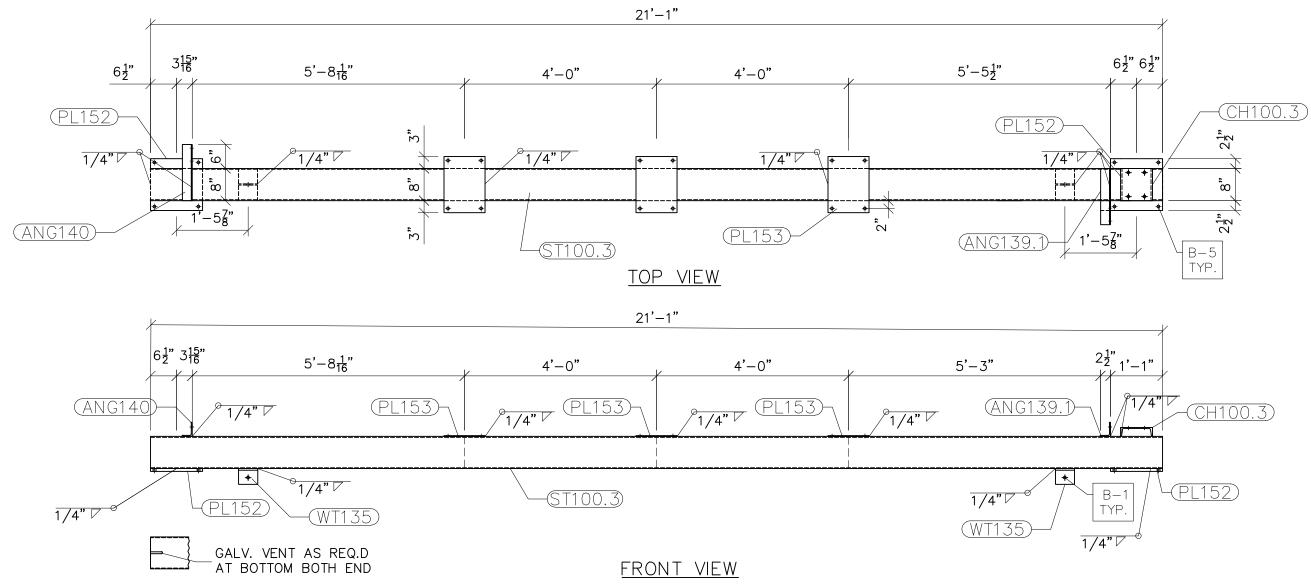
(ST100.2)-

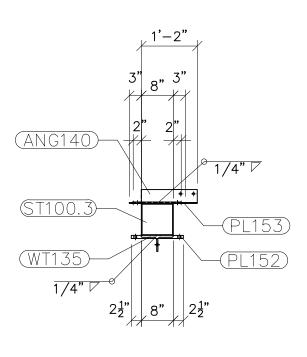
(WT135)-

SEE DRAWING No.

) ALL HO) PIECE HIGH O) ALL WE	DLES 11 MARK S HARAC ELDING	GALVANIZED AFTER FABRIC 1/16" DIA. FOR 5/8" DIA. E STAMPED INTO METAL WITH TERS BEFORE GALVANIZING ELECTRODES SHALL BE E7 CE 1" UNLESS NOTED	BOLTS UNLESS NO NOT LESS THAN	DTÉD	
		BILL OF MATERIA			
POS. NO.	QTY	DESC.	LENGTH		<u> </u>
G100.2	2				
ANG139	1	L3-1/2x2-1/2x1/4	1'-2"	5.72	
ANG140	1	$L3 - 1/2 \times 2 - 1/2 \times 1/4$	1'-2"	5.72	5_6
PL152	2 9 1	PL 3/4"×1'-1"	1'-1"	72.03	
PL155	9	PL 3/8"x5"	1'-0"	57.54	
ST100.2	1	HSS8x8x3/16	44'-0"	862.90	- 1
WT135	4	WT4x15.5	4 3/4"	24.54	
		BLACK WEIGHT:	1	028.45 LBS.	
		GALVANIZED WE		41.14 LBS.	
		TOTAL WEIGHT:	1	069.59 LBS.	

	Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221								
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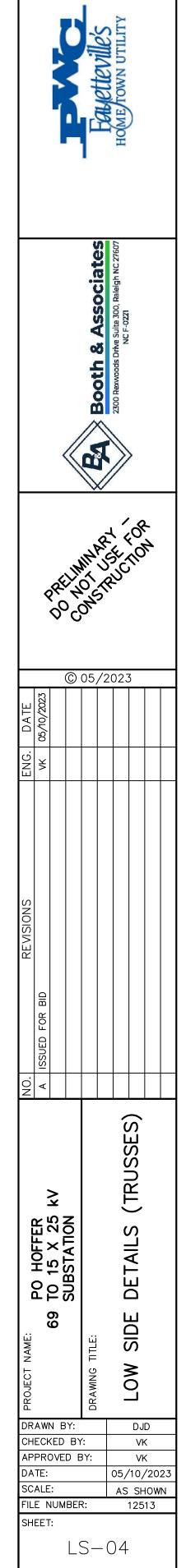
<u>right view</u>

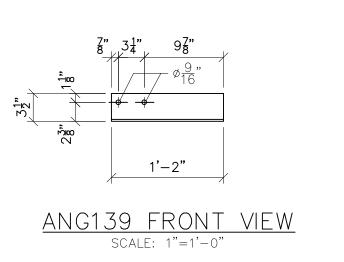


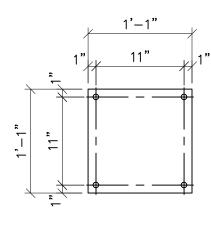
<u>G100.3</u> scale: 1/2"=1'-0"

1) 2 3 4) ALL) ALL) PIE HIG) ALL	IM 325 ERECTION BOLTS HOT DIP GALVANIZED AFTER HOLES 11/16" DIA. FOR 5/8 CE MARK STAMPED INTO MET H CHARACTERS BEFORE GALV WELDING ELECTRODES SHALL GE DISTANCE 1" UNLESS NOTE	" DIA. BOLTS U AL WITH NOT L (ANIZING - BE E7021	JNLESS NOTED
		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH	
G100.3 ANG139.1 ANG140 PL152 PL153 ST100.3 WT135 CH100.3	1 1 2 3 1 2 1	L3-1/2x2-1/2x1/4 L3-1/2x2-1/2x1/4 PL 3/4"x1'-1" PL 1/4"x10 1/4" HSS8x8x3/16 WT4x15.5 C8x11.5	$ \begin{array}{c} 1'-2''\\ 1'-2''\\ 1'-1''\\ 1'-2''\\ 21'-1''\\ 4 3/4''\\ 8'' \end{array} $	5.72 5.72 72.03 30.58 413.47 12.27 7.67

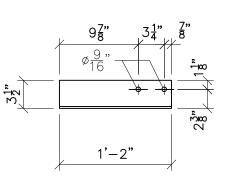
547.46 LBS. 21.90 LBS. 569.36 LBS. BLACK WEIGHT: GALVANIZED WEIGHT: TOTAL WEIGHT: SEE DRAWING No. LS-05 FOR ANG139.1, ANG140, PL152, PL153, & WT135 DETAILS.



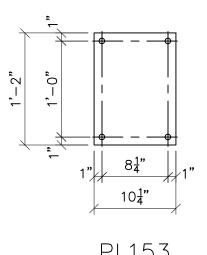


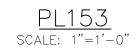


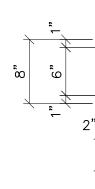
PL152 scale: 1"=1'-0"

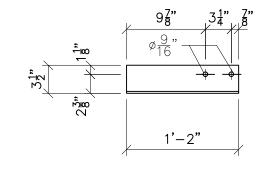




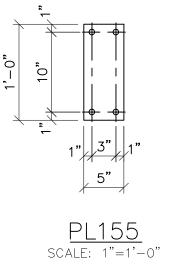


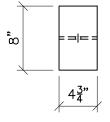




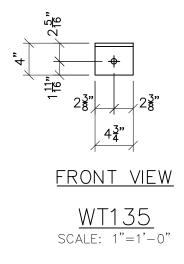


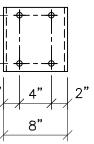
ANG139.1 FRONT VIEW scale: 1"=1'-0"



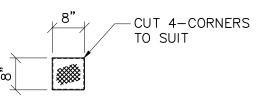


<u>top view</u>





CH100.3 Scale: 1"=1'-0"

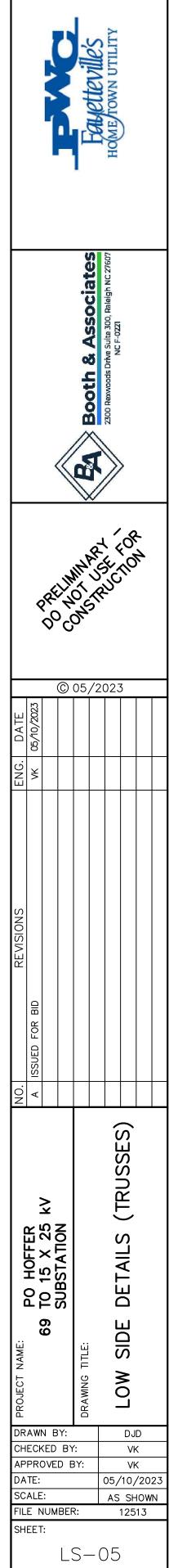


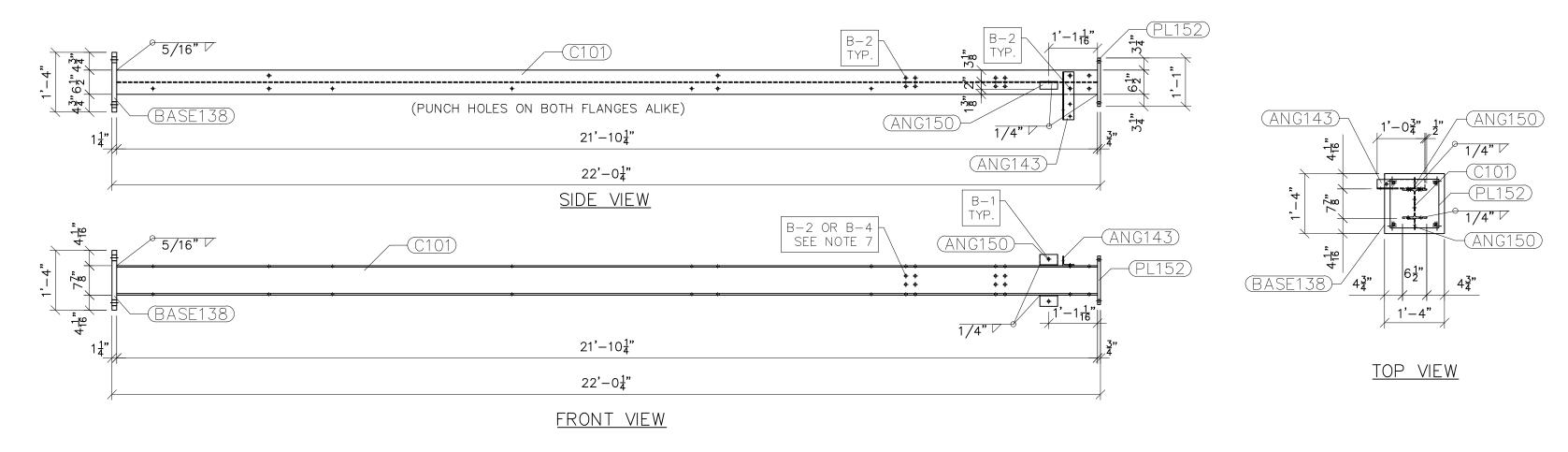
FOR ST 100, 100.1, 100.2 & 100.3 BOTH END EXPANDED METAL STD. STYLE 1/2 316 GAUGE, APPOX. WGT.=0.86Lbs/SQ. FT. (1=0.38 Lbs.)

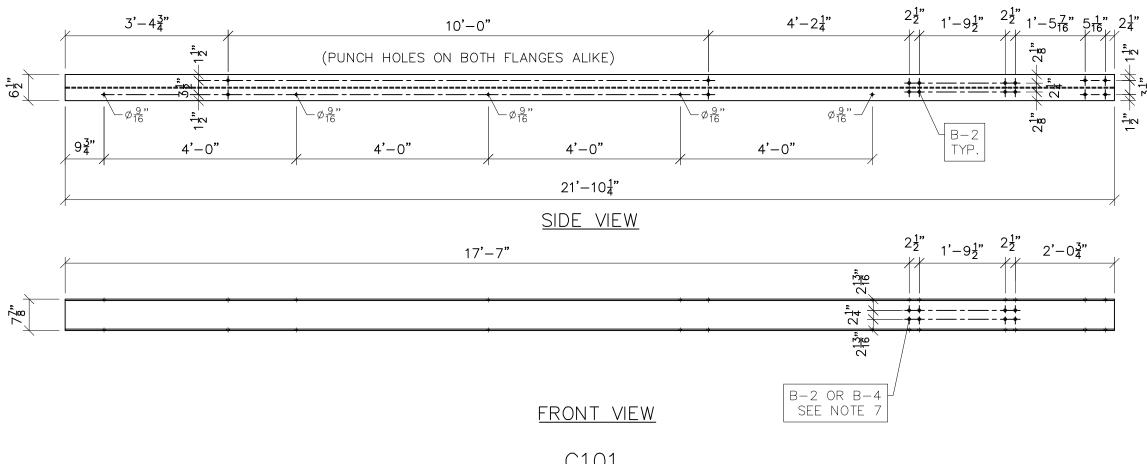
TYP. END COVER scale: 1/2"=1'-0"

)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)́	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
<i>,</i>	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

BILL OF MATERIAL										
POS. NO.	QTY	DESC.	LENGTHXWIDTH	WEIGHT						
END COVER	10	8"x8"	3.80							
		BLACK WEIGHT:		3.80 LBS.						
	GALVANIZED WEIGHT: 0.15 LBS.									
	TOTAL WEIGHT: 3.95 LBS.									







<u>G101</u> scale: 1/2"=1'-0"

<u>C101</u> Scale: 1/2"=1'-0"

NOTES:

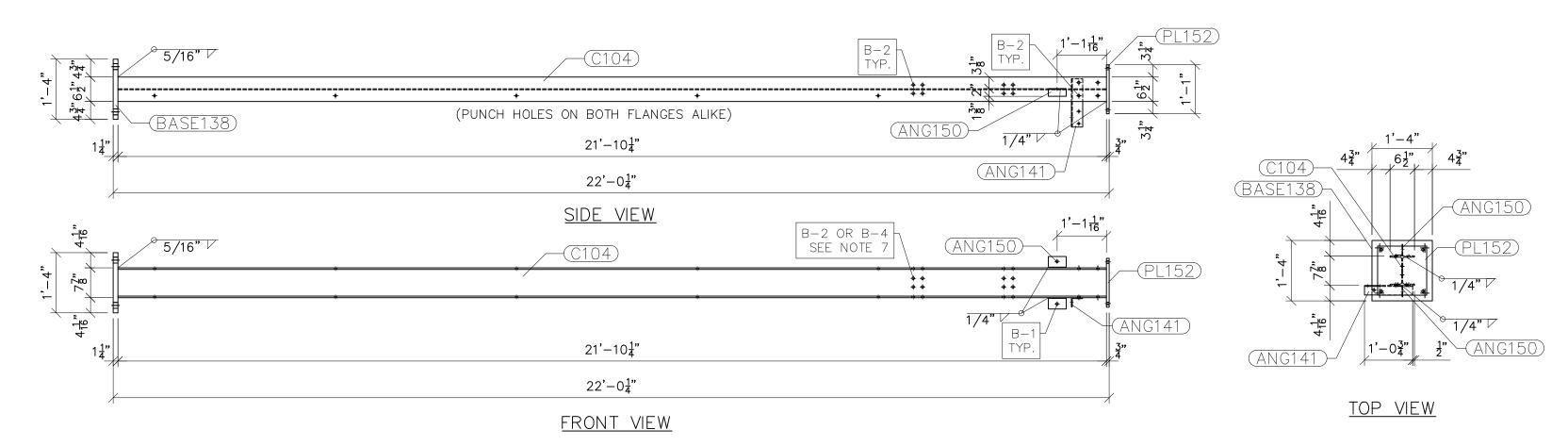
- 1) ASTM 325 ERECTION BOLTS
- 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)

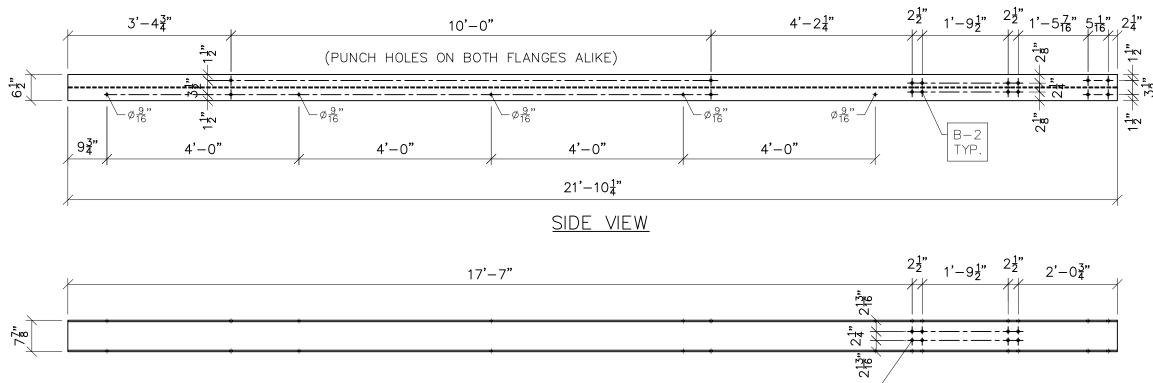
- ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED
 ERECTION BOLT LENGTH VARIES WHERE NOTED. B2 TO BE USED IN CASES WHERE A SINGLE TRUSS IS CONNECTED TO COLUMN. B-4 TO BE USED IN CASES WHERE TWO TRUSSES ARE CONNECTED TO COLUMN.

		BILL OF MATERIA	1L	
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G101	2	FOR ONE GROUP G101		
ANG143	1	L3x2-1/2x1/4	1'-0 3/4"	4.78
ANG150	2	L3x2x3/16	4 3/4"	2.43
BASE138	1	PL 1 1/4"x1'-4"	1'-4"	90.93
C101	1	W8x24	21'-10 1/4"	524.50
PL152	1	PL 3/4"x1'-1"	1'-1"	36.01
		BLACK WEIGHT:	6	58.65 LBS.
		GALVANIZED WEIGH	T:	26.35 LBS.
		TOTAL WEIGHT:	6	85.00 LBS.

SEE DRAWING No. LS-11 FOR ANG143, ANG150, BASE138 & PL152 DETAILS AND NOTES.

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Booth & Associates 2300 Rexvoads Drive Suite 300, Raleigh NC 27607 NC F-027										
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ENG.	VK 05/10/2023									
. REVISIONS	ISSUED FOR BID									
PROJECT NAME:	č			LOW SIDE DETAILS (TRUSSES)						
CH AP DA	EC⊧ PR(TE:	N B (ED DVE	Βì		(05/	DJ Vł Vł ′10,	<	23	
FIL	ALE E N EET	IUM					125	10W	N	
				S-	-(96				





<u>FRONT VIEW</u>

<u>C104</u> scale: 1/2"=1'-0"

<u>G104</u> scale: 1/2"=1'-0"

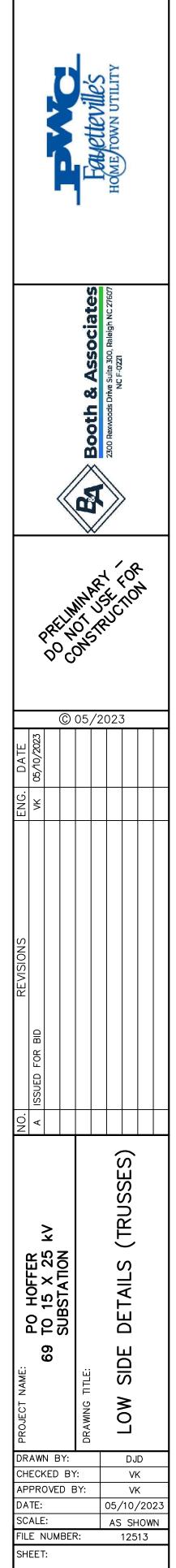
B-2 OR B-4 SEE NOTE 7

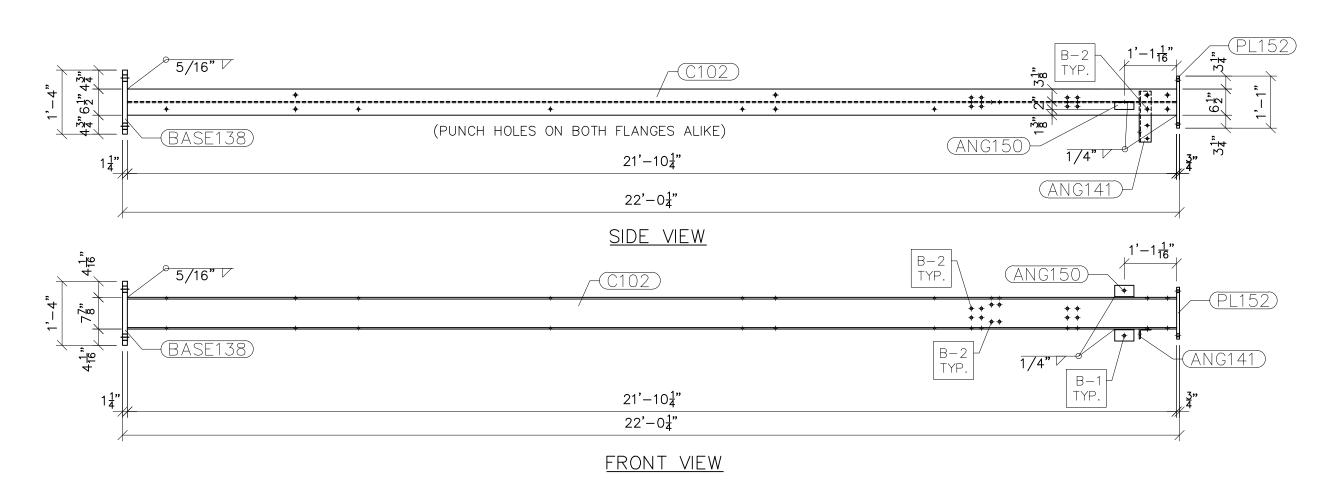
NOTES:

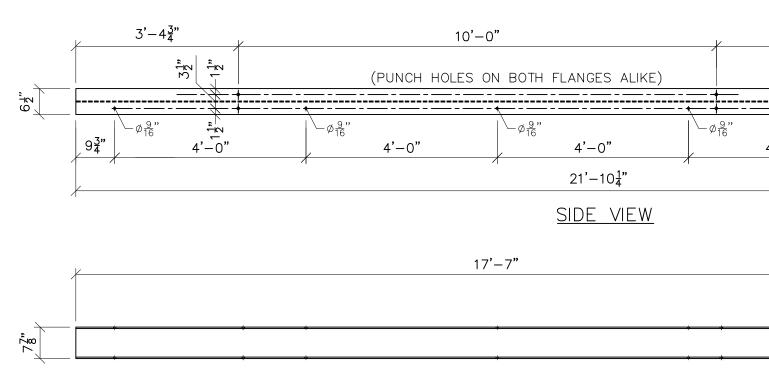
- NOTES:
 1) ASTM 325 ERECTION BOLTS
 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 5) ALL WELDING ELECTRODES SHALL BE E7021
 6) EDGE DISTANCE 1" UNLESS NOTED
 7) ERECTION BOLT LENGTH VARIES WHERE NOTED. B2 TO BE USED IN CASES WHERE A SINGLE TRUSS IS CONNECTED TO COLUMN. B-4 TO BE USED IN CASES WHERE TWO TRUSSES ARE CONNECTED TO COLUMN.

	_	BILL OF MATERIA	4L	
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G104	2	FOR ONE GROUP G104		
ANG141	1	L3x2-1/2x1/4	1'-0 3/4"	4.78
ANG150	2	L3x2x3/16	4 3/4"	2.43
BASE138	1	PL 1 1/4"×1'-4"	1'-4"	90.93
C104	1	W8x24	21'-10 1/4"	524.50
PL152	1	PL 3/4"×1'-1"	1'-1"	36.01
		BLACK WEIGHT:		58.65 LBS.
		GALVANIZED WEIGH	IT:	26.35 LBS.
		TOTAL WEIGHT:	6	85.00 LBS.

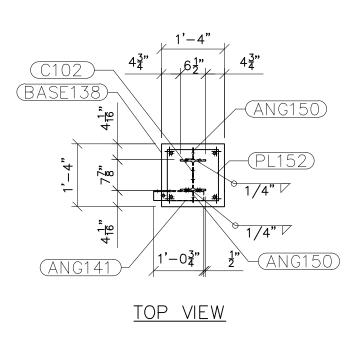
SEE DRAWING No. LS-11 FOR ANG141, ANG150, BASE138 & PL152 DETAILS AND NOTES.







C102 SCALE: 1/2"=1'-0"



<u>G102</u>	
SCALE: 1/2"=1'-0"	

4'-2 ¹	$2\frac{1}{2}$ 1'-9 $\frac{1}{2}$ "	$\begin{array}{c} 2\frac{1}{2}^{2} & 1'-5\frac{7}{16}^{2} & 5\frac{1}{16}^{2} & 2\frac{1}{4}^{2} \\ \hline \\ \hline \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $
	B-2 TYP.	
,		

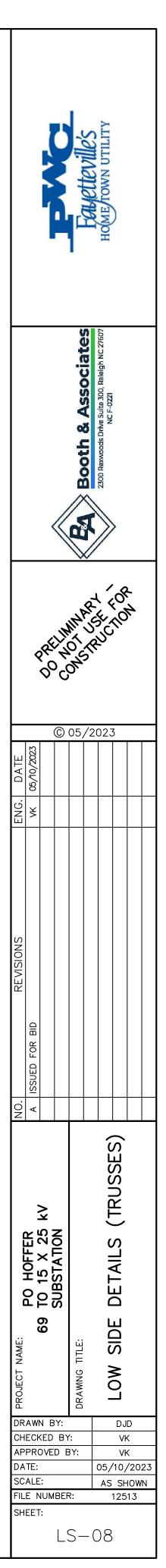
2 10, 10,	2 ¹ / ₂ " 1'-9 ¹ / ₂ "	2 ¹ 2'-0 ³ B-2 TYP.	
24"		++ ++	
213.	2"	3'-8 <u>1</u> "	
B-2 TYP.	- 11		1

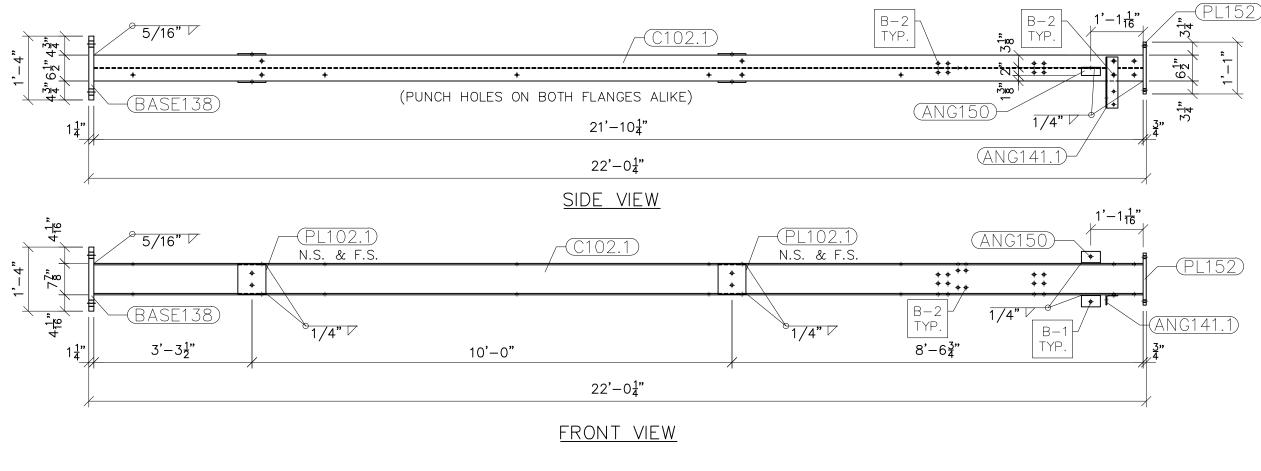
NOTES: 1) ASTM 325 ERECTION BOLTS

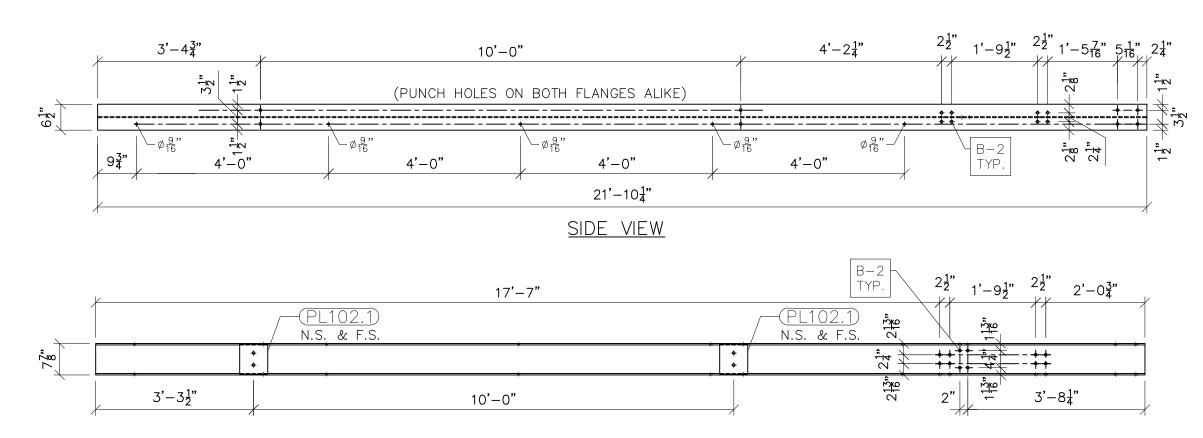
- 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
- ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED

		BILL OF MATERIA	1L	
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G102	3	FOR ONE GROUP G102		
ANG141	1	L3x2-1/2x1/4	1'-0 3/4"	4.78
ANG150	2	L3x2x3/16	4 3/4"	2.43
BASE138	1	PL 1 1/4"x1'-4"	1'-4"	90.93
C102	1	W8x24	21'-10 1/4"	524.50
PL152	1	PL 3/4"x1'-1"	1'-1"	36.01
		BLACK WEIGHT:	6	58.65 LBS.
		GALVANIZED WEIGH	Τ:	26.35 LBS.
		TOTAL WEIGHT:	6	85.00 LBS.

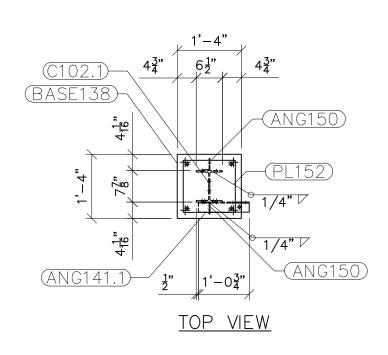
TOTAL WEIGHT: SEE DRAWING No. LS-11 FOR ANG141, ANG150, BASE138 & PL152 DETAILS AND NOTES.







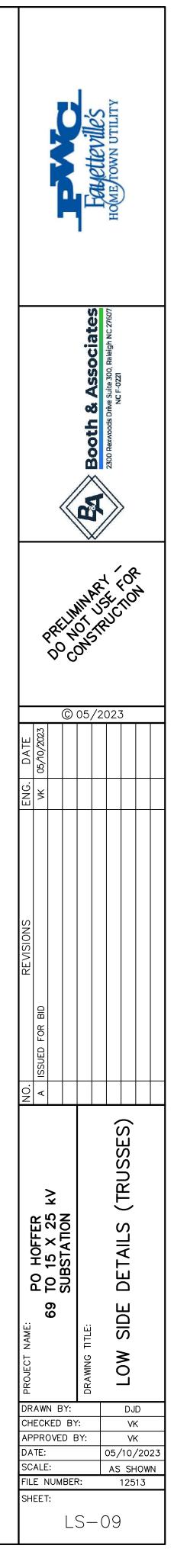
C102.1 scale: 1/2"=1'-0"

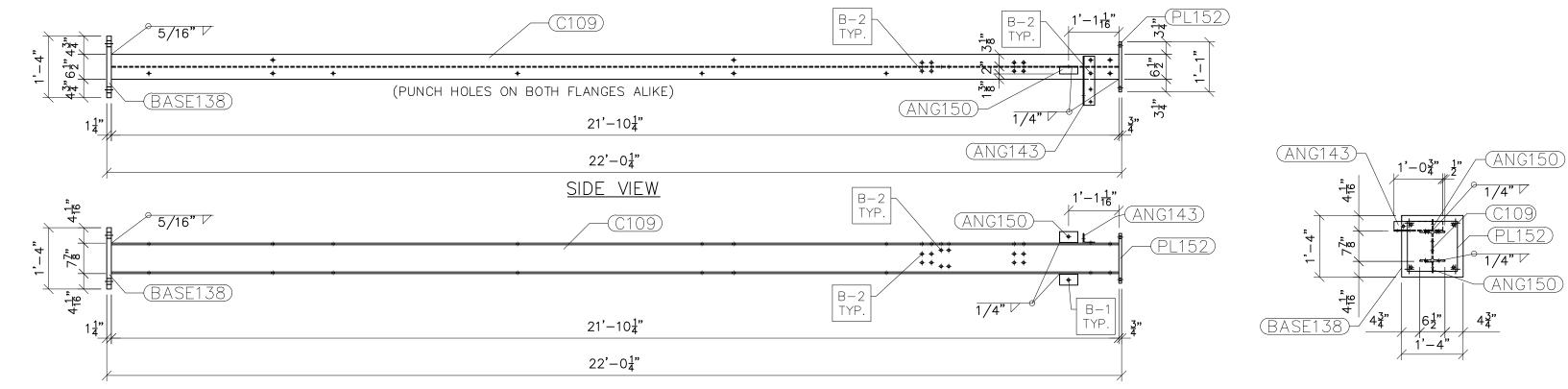


<u>G102.1</u> scale: 1/2"=1'-0"

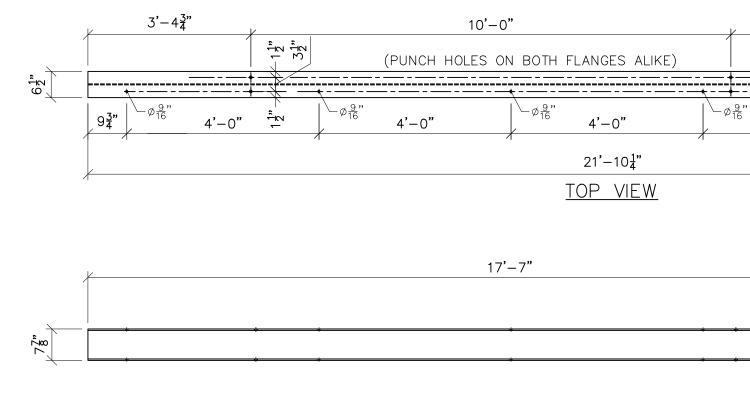
	ASTM ALL HO ALL HO PIECE HIGH O ALL WI	DLES 11/16" MARK STAM CHARACTERS ELDING ELEC	DN BOLTS /ANIZED AFTER FA DIA. FOR 5/8" D PED INTO METAL BEFORE GALVANI TRODES SHALL BE UNLESS NOTED	IA. BOLTS UNI WITH NOT LES ZING	LESS NOTED
			BILL OF MATERIA	AL	
POS. NO.	QTY	DESC.		LENGTH	WEIGHT
G102.1 ANG141.1 ANG150 BASE138 C102.1 PL152 PL102.1	1 2 1 1 1 4	FOR ONE G L3x2-1/2x L3x2x3/16 PL 1 1/4"x W8x24 PL 3/4"x1'- PL 3/8"x7"	1'-4" -1"	1'-0 3/4" 4 3/4" 1'-4" 21'-10 1/4" 1'-1" 7 1/2"	4.78 2.43 90.93 524.50 36.01 22.34
			BLACK WEIGHT: GALVANIZED WEIGH TOTAL WEIGHT:	IT:	680.99 LBS. 27.24 LBS. 708.23 LBS.

TOTAL WEIGHT: SEE DRAWING No. LS-11 FOR ANG141.1, ANG150, BASE138 & PL152 DETAILS AND NOTES.





<u>Front view</u>

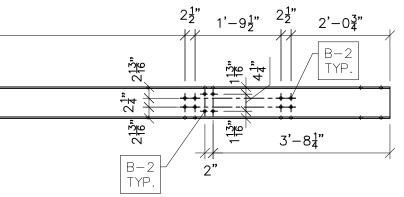


<u>C109</u> scale: 1/2"=1'-0"

<u>top view</u>

<u>G109</u> scale: 1/2"=1'-0"

4'-2 ¹ "	² ¹ / ₂ " 1'-9 ¹ / ₂ "	$\begin{array}{c} 2\frac{1}{2}^{1} \\ 1^{2} - 5\frac{7}{16}^{1} \\ 5\frac{1}{16}^{1} \\ 5\frac{1}{16}^{1} \\ 2\frac{1}{4}^{1} \\ \frac{1}{16}^{1} \\ 1$
4'-0"	B-2 TYP.	

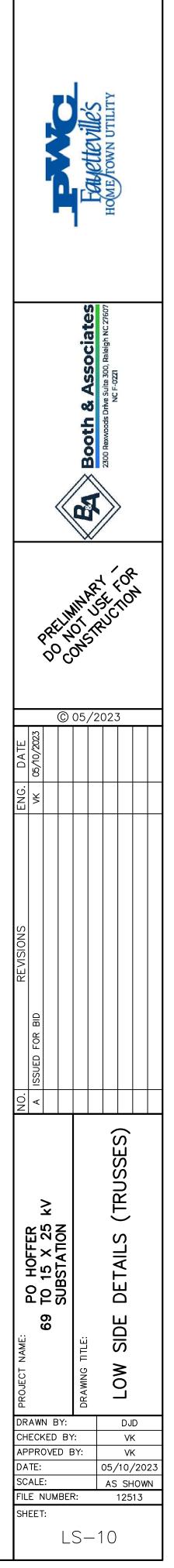


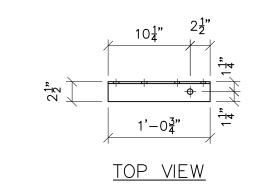
NOTES:

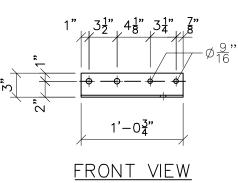
- NOTES:
 ASTM 325 ERECTION BOLTS
 ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED

		BILL OF MATERIA	AL	
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G109	4	FOR ONE GROUP G109		
ANG143	1	L3x2-1/2x1/4	1'-0 3/4"	4.78
ANG150	2	L3x2x3/16	4 3/4"	2.43
BASE138	1	PL 1 1/4"x1'-4"	1'-4"	90.93
C109	1	W8x24	21'-10 1/4"	524.50
PL152	1	PL 3/4"x1'-1"	1'-1"	36.01
		BLACK WEIGHT:	6	58.65 LBS.
		GALVANIZED WEIGH	IT:	26.35 LBS.
		TOTAL WEIGHT:	6	85.00 LBS.
		SEE DRAWING No. LS-11 FOR .	ANG143,	

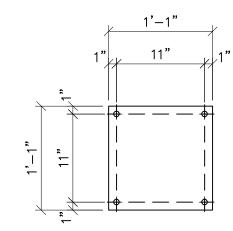
ANG150, BASE138 & PL152 DETAILS AND NOTES.



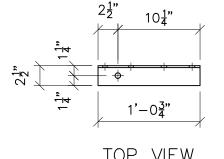




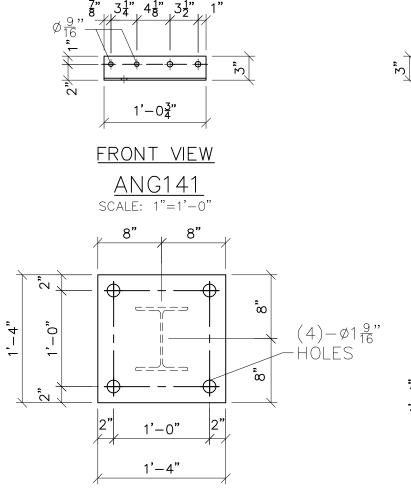
ANG143 Scale: 1"=1'-0"



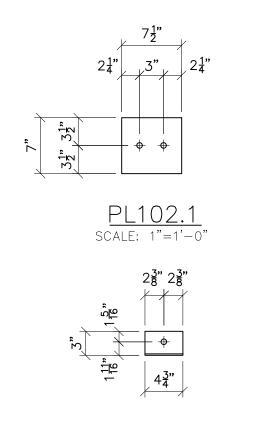
PL152 scale: 1"=1'-0"



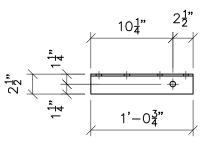
<u>top view</u>



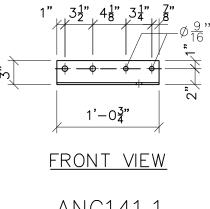
BASE138 scale: 1"=1'-0"



ANG150 FRONT VIEW scale: 1"=1'-0"



<u>top view</u>

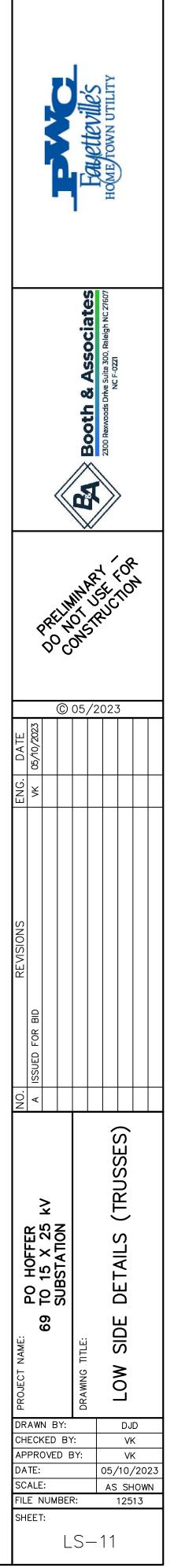


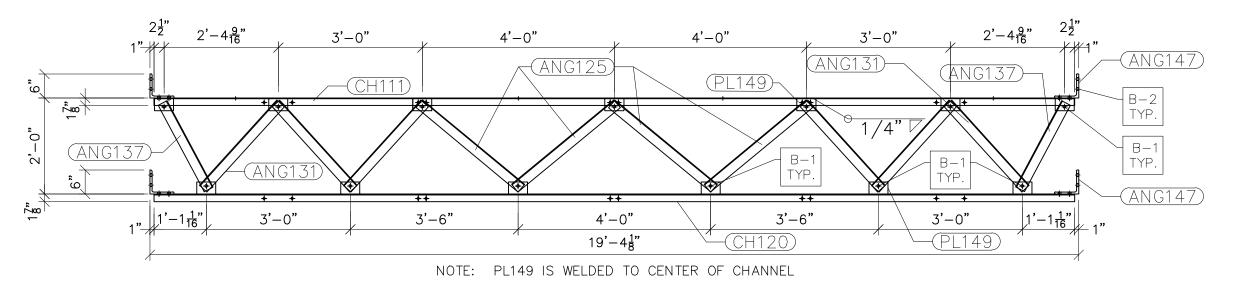
ANG141.1 Scale: 1"=1'-0"

NO	TES:				
1)	ASTM	325	ERECTION	BOLTS	

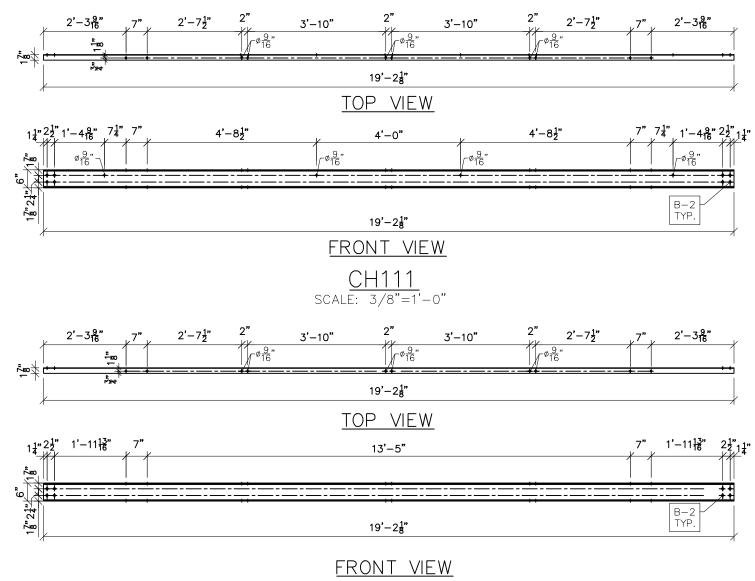
- 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
- 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTÉD

- ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED
 ERECTION BOLT LENGTH VARIES WHERE NOTED. B2 TO BE USED IN CASES WHERE A SINGLE TRUSS IS CONNECTED TO COLUMN. B-4 TO BE USED IN CASES WHERE TWO TRUSSES ARE CONNECTED TO COLUMN.

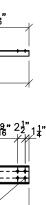






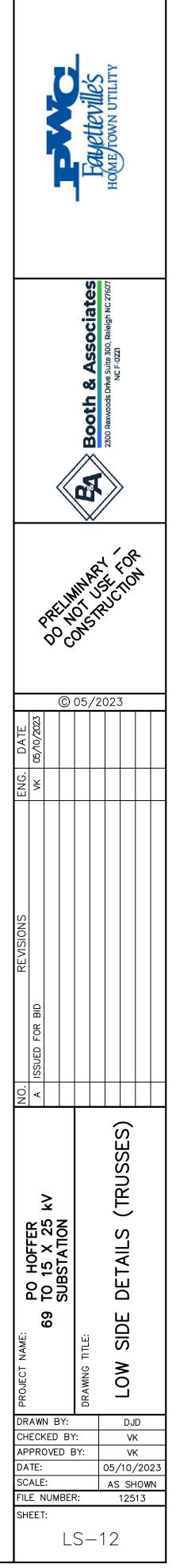


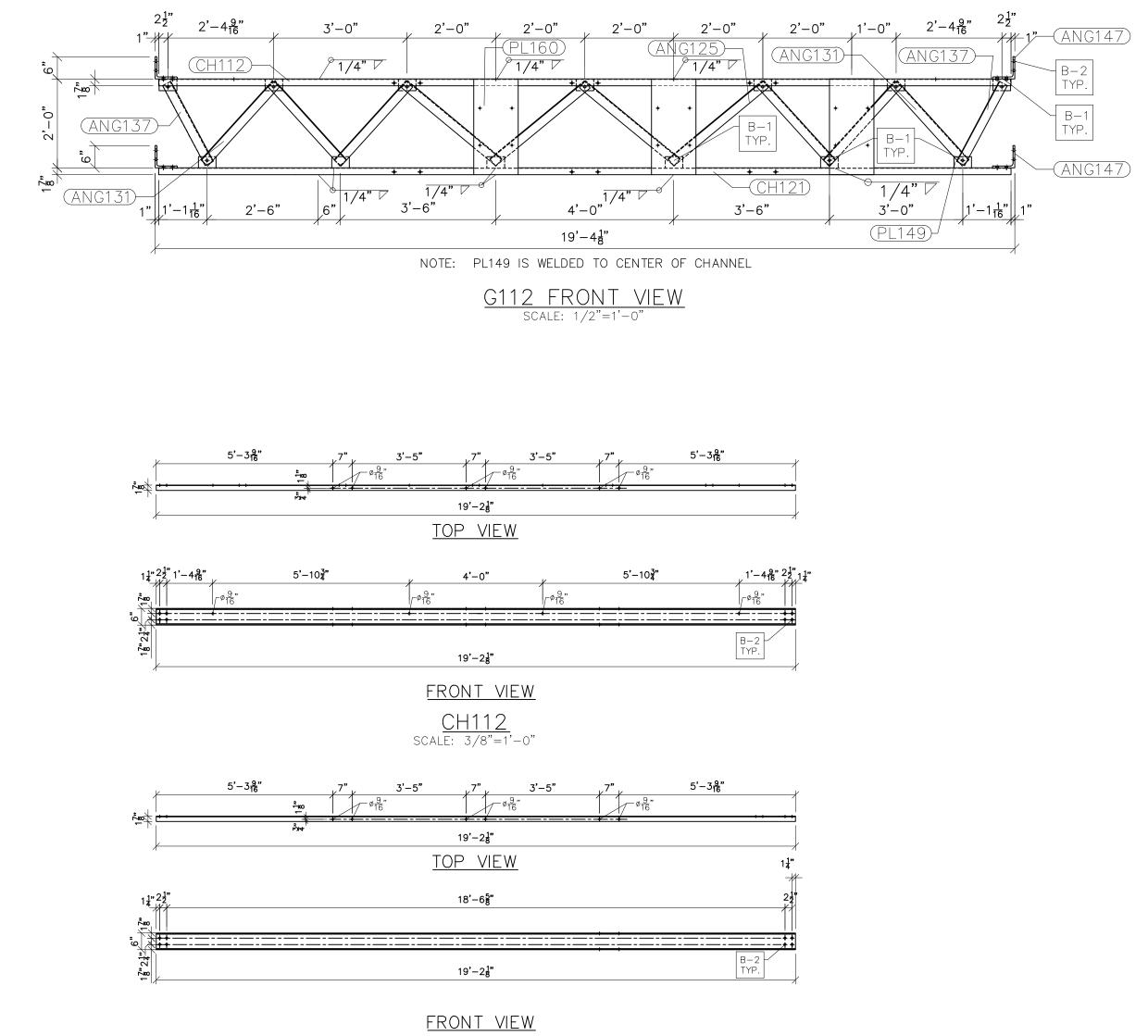
CH120 SCALE: 3/8"=1'-0"





2) ALL 3) ALL 4) PIEC HIGH 5) ALL	HOT D HOLES CE MAR H CHAR WELDIN	ERECTION BOLTS IP GALVANIZED AFTER FABRIC 11/16" DIA. FOR 5/8" DIA. E K STAMPED INTO METAL WITH ACTERS BEFORE GALVANIZING NG ELECTRODES SHALL BE E7 ANCE 1" UNLESS NOTED	BOLTS UNLESS NOT LESS TH ;	NOTED
		BILL OF MATERIA		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G111 ANG125 ANG131 ANG137 ANG147 CH111 CH120 PL149	3 4 6 2 4 1 1 13	FOR ONE GROUP G111 L2-1/2x2-1/2x3/16 L2-1/2x2-1/2x3/16 L2-1/2x2-1/2x3/16 L6x6x1/2 C6x8.2 PL 1/4" x 4 3/4"	2'-9 3/16" 2'-4 3/4" 2'-0 7/16" 6" 19'-2 1/8" 19'-2 1/8" 3"	33.96 44.16 12.50 39.18 157.25 157.25 13.15
		BLACK WEIGHT: GALVANIZED WEIGH		57.45 LBS. 18.30 LBS.
		TOTAL WEIGHT:	4	75.75 LBS.





CH121 scale: 3/8"=1'-0"

$1'-4\frac{9}{16}"2\frac{2}{7}"1$	
B-2 TYP.	

) EDGE DISTANCE 1" UNLESS NOTED BILL OF M/ S. NO. QTY DESC. 12 1 FOR ONE GROUP G112: NG125 4 L2-1/2x2-1/2x3/16 NG137 2 L2-1/2x2-1/2x3/16 NG147 4 L6x6x1/2 L149 13 PL 1/4" x 4 3/4" H112 1 C6x8.2 H121 1 C6x8.2 L160 3 PL 1/4"x1'-0"	ATERIAL 2'-9 3/1 2'-4 3/ 2'-0 7/1 6" 3" 19'-2 1/ 19'-2 1/ 2'-1 7/2	6" 33.96 4" 44.16 6" 12.50 39.18 13.15 (8" 157.25 (8" 157.25			Faulettevil	HOME TOWN UTI
BLACK WEIG GALVANIZED TOTAL WEIGH	WEIGHT:	523.62 LBS. 20.95 LBS. 544.57 LBS.			es	10012
				4	Booth & Associat	NC F-021
				PREL	ART ARTS	FOR
				0	05/20	23
			ATE			
			ENG. DATE	VK 05/10/2023		
				05/10/2023		

PO HOFFER 69 TO 15 X 25 kV SUBSTATION

DRAWN BY:

SHEET:

CHECKED BY:

APPROVED BY: DATE:

DETAILS

SIDE

LOW

DJD

VK 05/10/2023

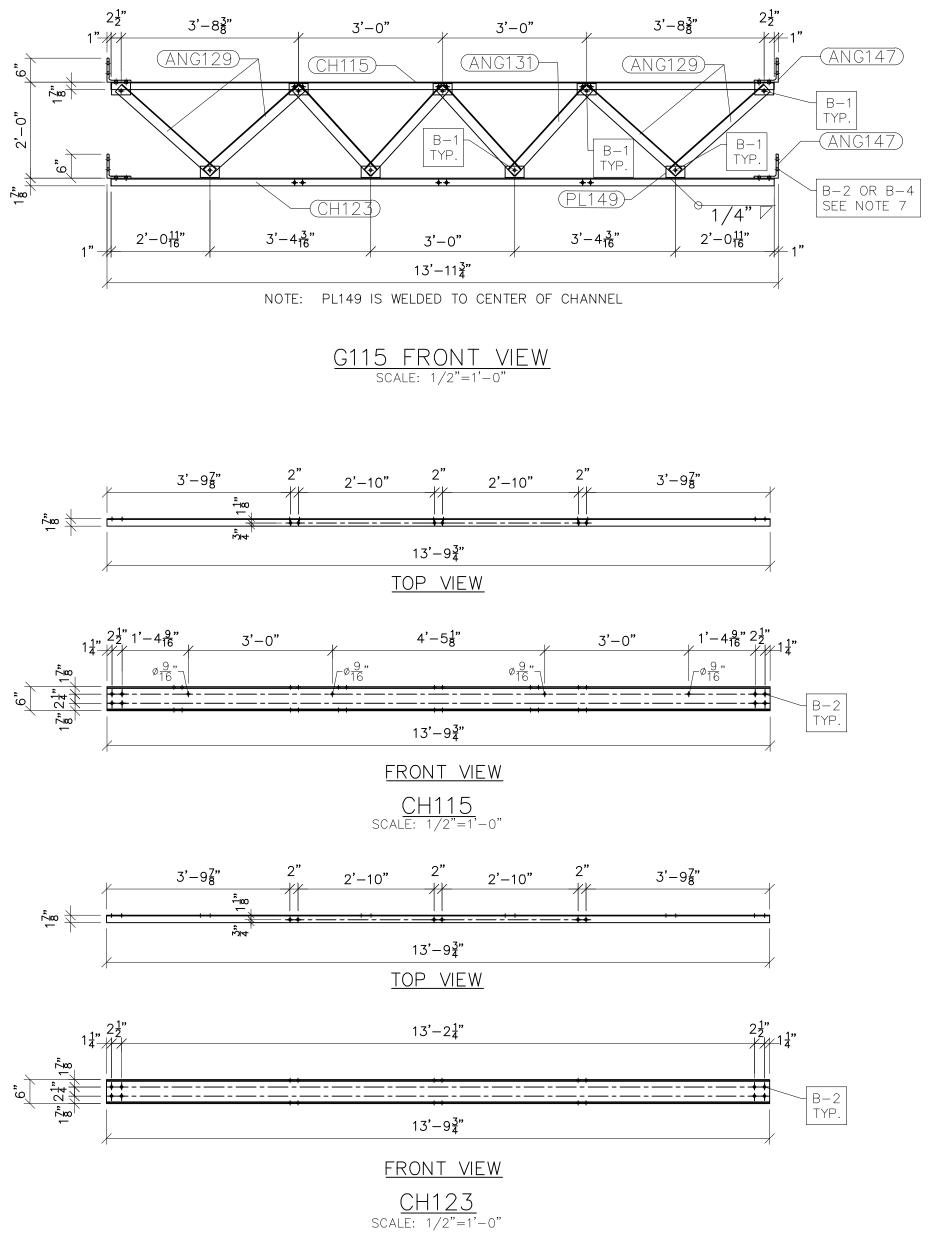
AS SHOWN

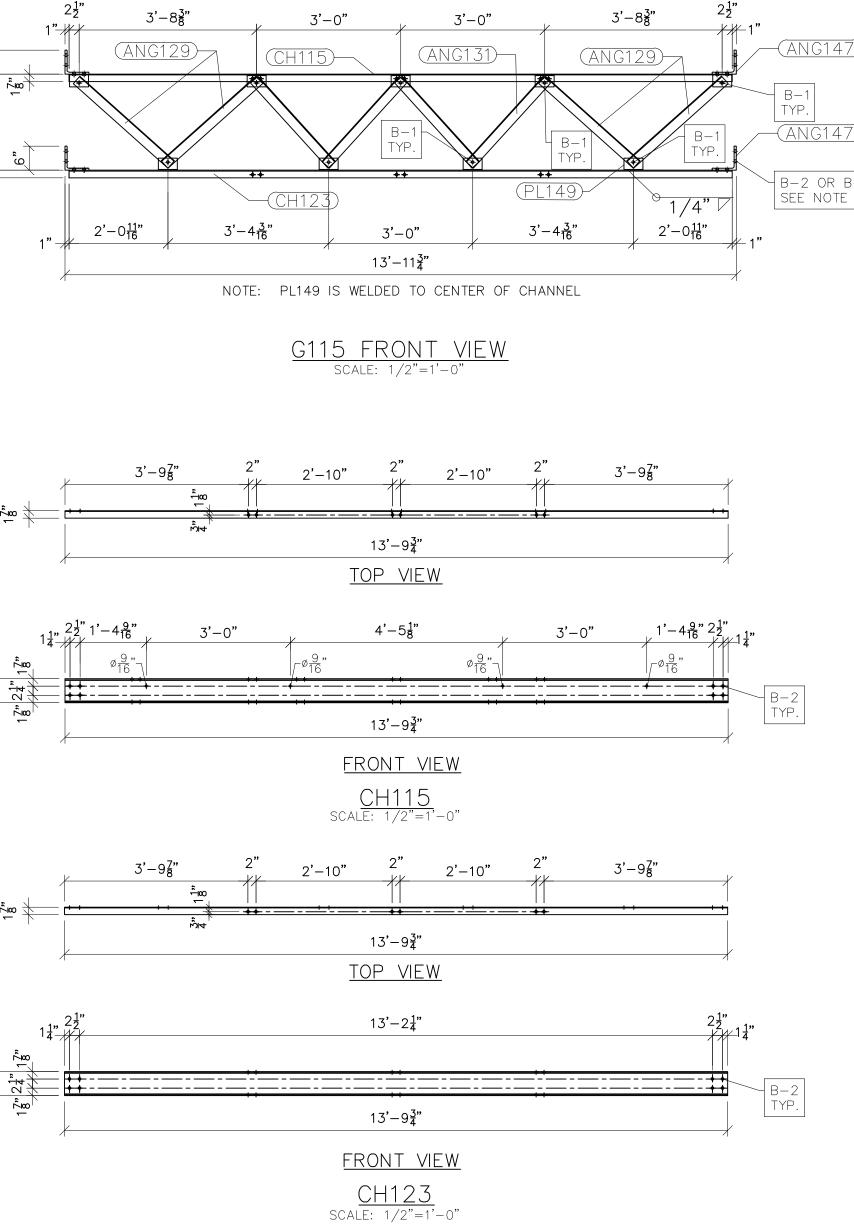
VK

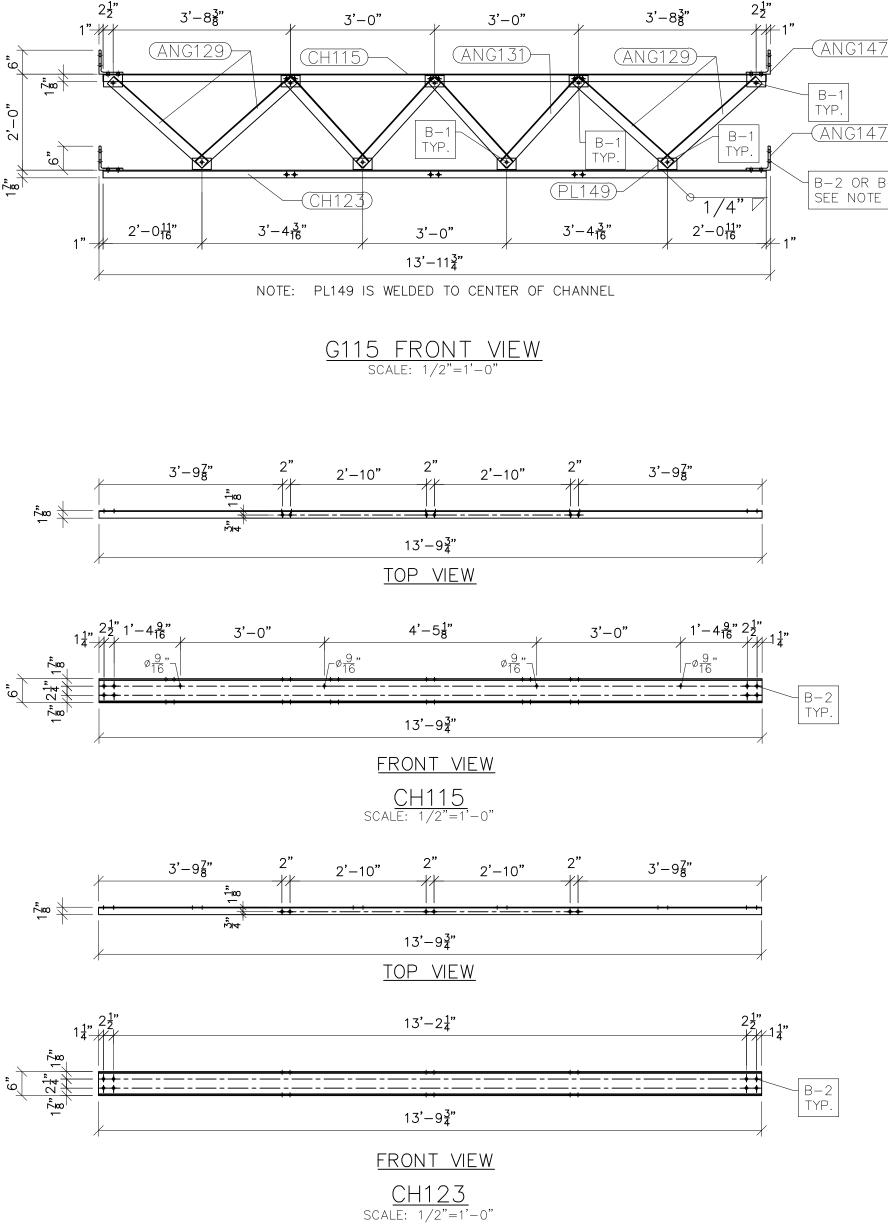
Ë

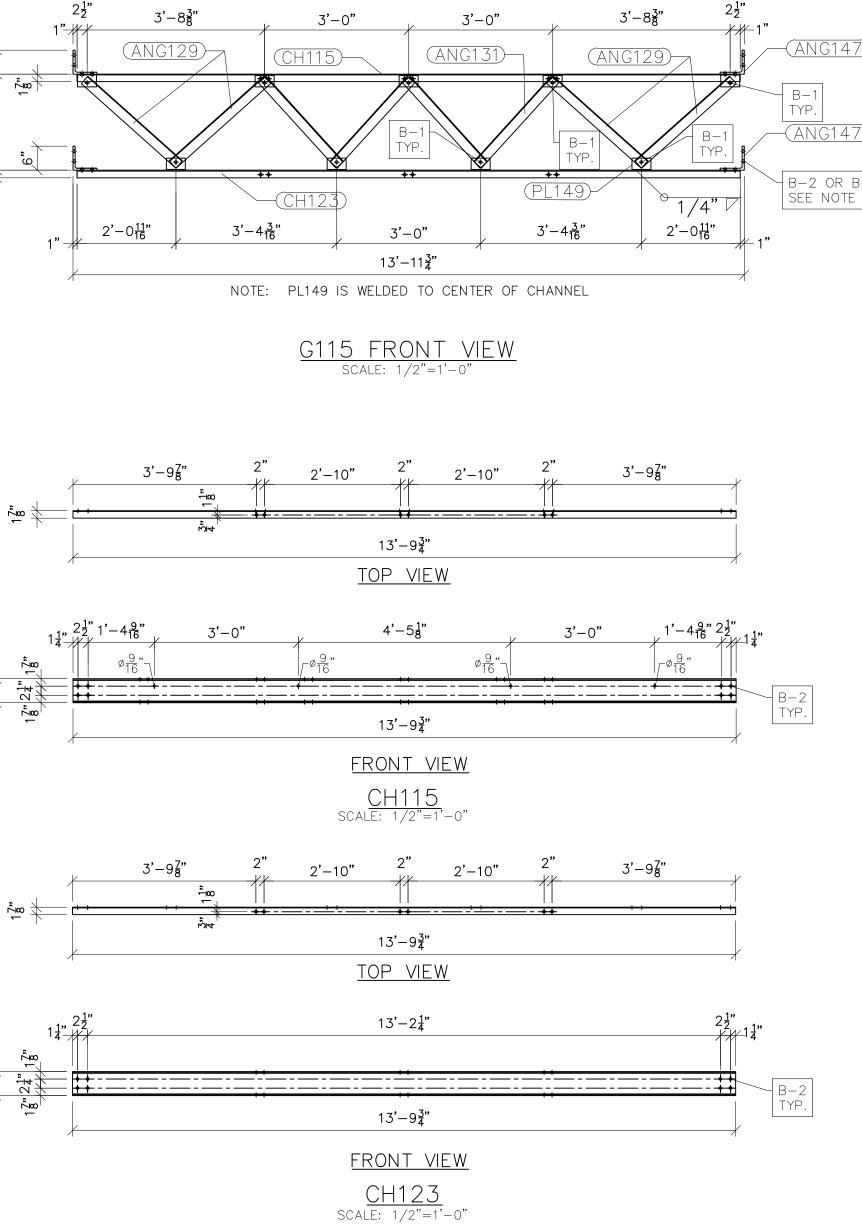
SCALE:ASSHOWNFILE NUMBER:12513

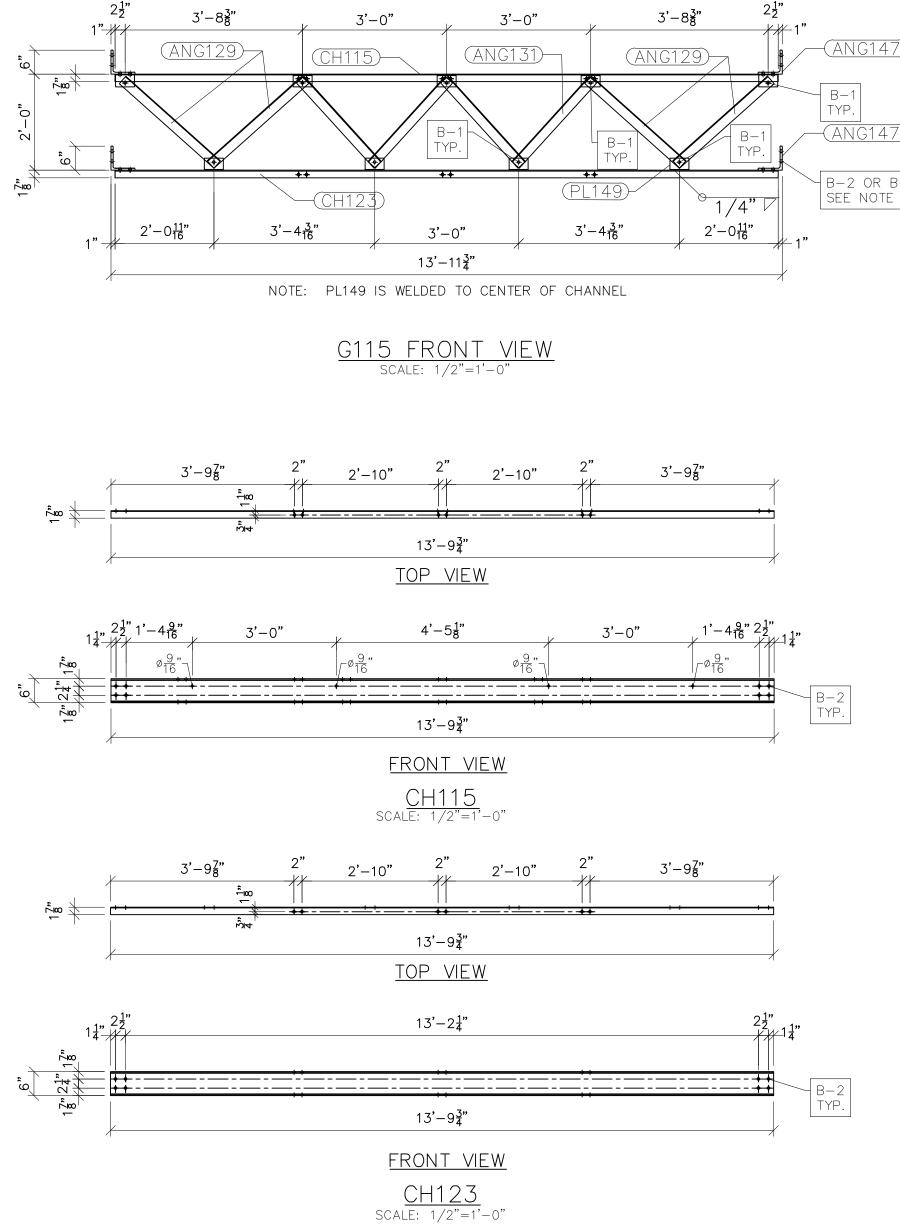
LS-13







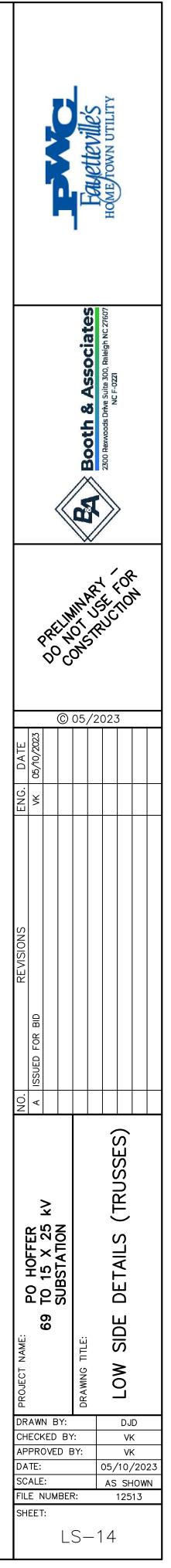


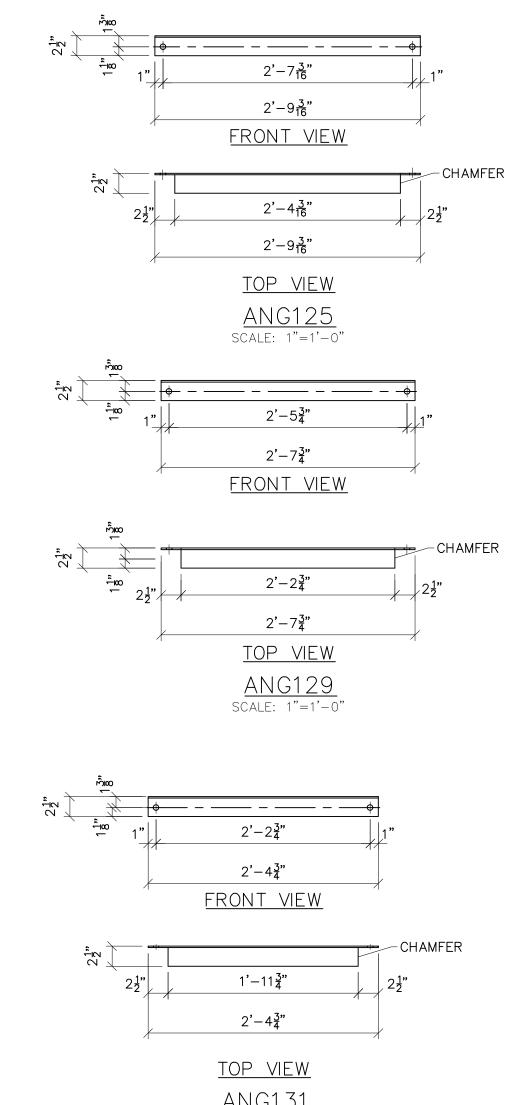


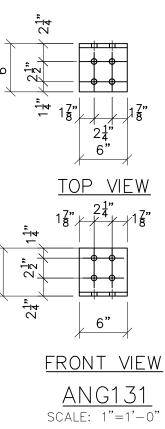
- NOTES: 1) ASTM 325 ERECTION BOLTS
- 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123) 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
- 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
- HIGH CHARACTERS BEFORE GALVANIZING
- 5) ALL WELDING ELECTRODES SHALL BE E7021 6) EDGE DISTANCE 1" UNLESS NOTED
- 7) ERECTION BOLT LENGTH VARIES WHERE NOTED. B2 TO BE USED IN CASES WHERE A SINGLE TRUSS IS CONNECTED TO COLUMN. B-4 TO BE USED IN CASES WHERE TWO TRUSSES ARE CONNECTED TO COLUMN.

		BILL OF MATERIA	.1	
	0.7.1			
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G115	6	FOR ONE GROUP G115		
ANG129	4	L2-1/2x2-1/2x3/16	2'-7 3/4"	32.46
ANG131	4	L2-1/2x2-1/2x3/16	2'-4 3/4"	29.39
ANG147	4	L6x6x1/2	6"	39.18
PL149	9	PL 1/4" x 4 3/4"	3"	9.10
CH115	1	C6x8.2	13'-9 3/4"	113.26
CH123	1	C6x8.2	13'-9 3/4"	113.26
		BLACK WEIGHT:	3	36.65 LBS.
		GALVANIZED WEIGH	T:	13.47 LBS.
		TOTAL WEIGHT:	3	50.12 LBS.

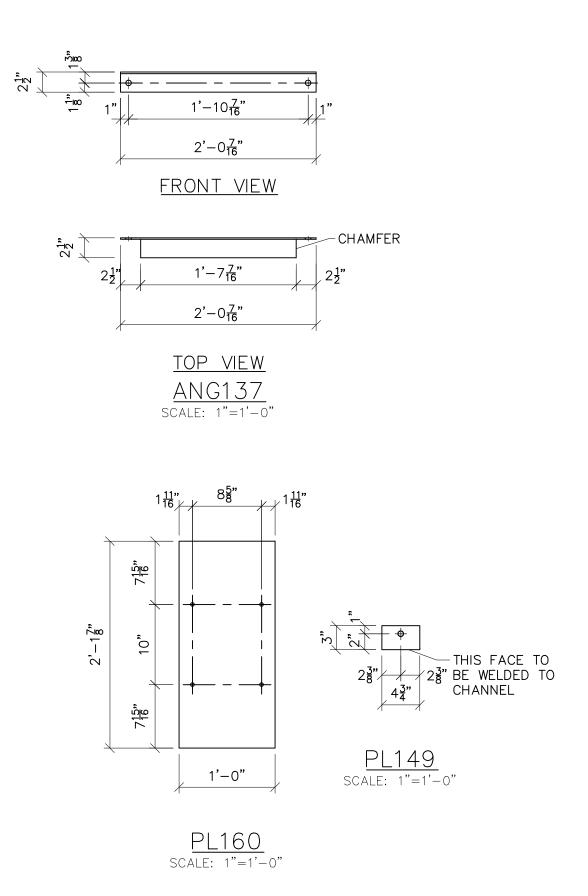
SEE DRAWING No. LS-15 FOR ANG129, ANG131, ANG137 & PL149 DETAILS.



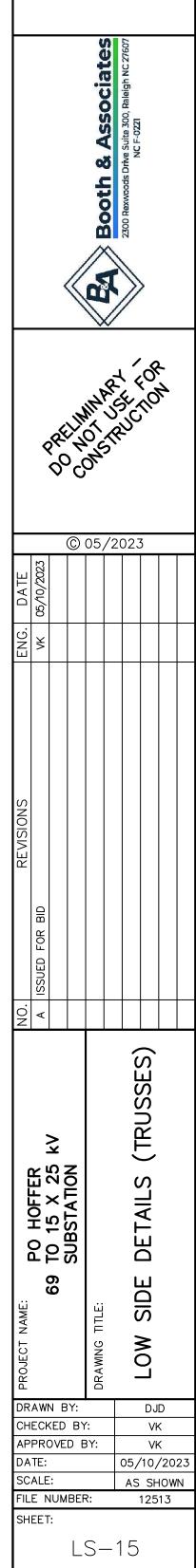




ANG131 scale: 1"=1'-0"

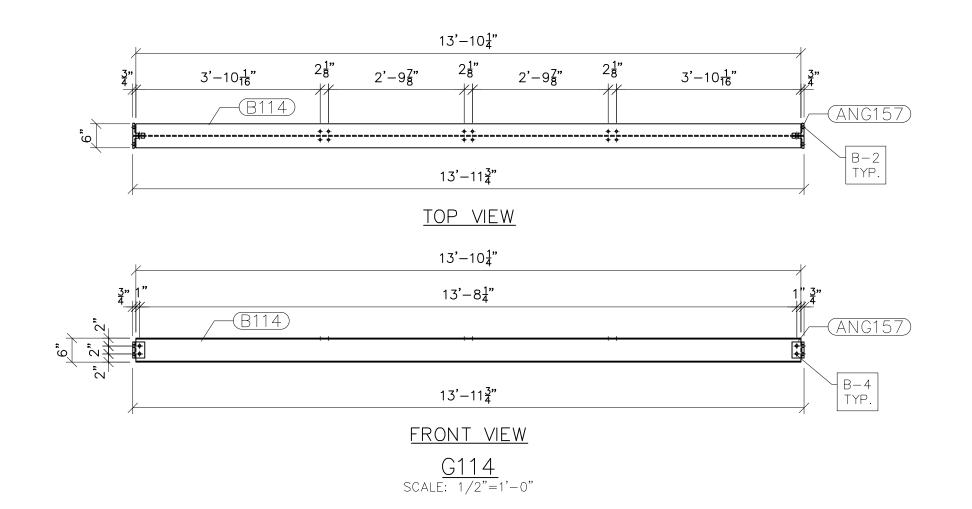


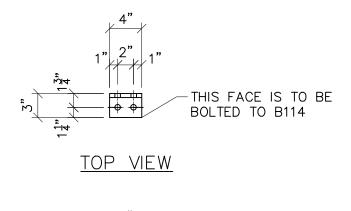
NOTI 1)	ES: ASTM 325 ERECTION BOLTS	
	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)	
	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED	
+)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING	
	ALL WELDING ELECTRODES SHALL BE E7021	
5)	EDGE DISTANCE 1" UNLESS NOTED	

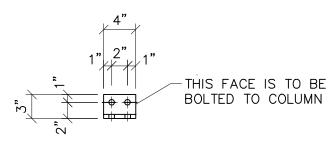


North A

For the Home North UTI



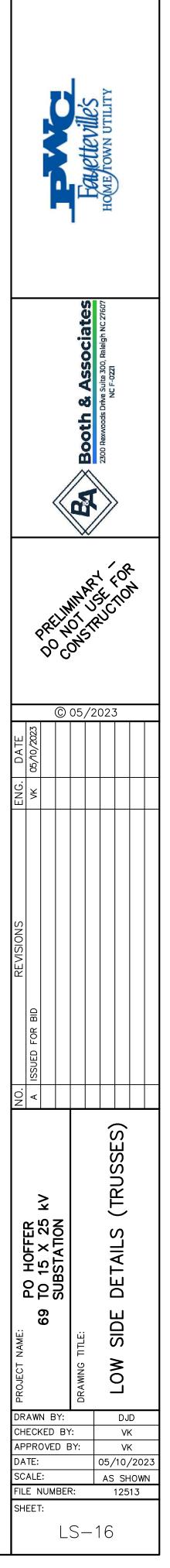


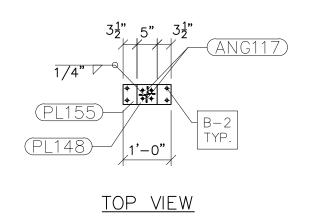


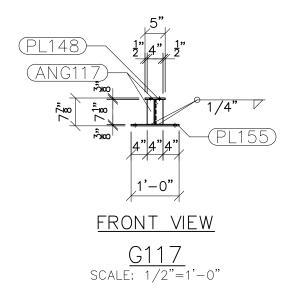
FRONT VIEW ANG157 scale: 1"=1'-0"

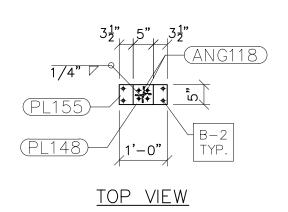
- NOTES:
 1) ASTM 325 ERECTION BOLTS
 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 5) ALL WELDING ELECTRODES SHALL BE E7021
 6) EDGE DISTANCE 1" UNLESS NOTED

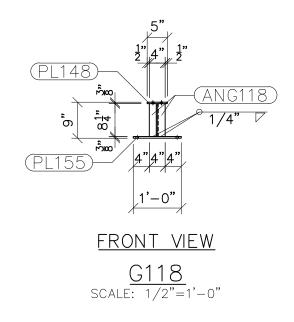
BILL OF MATERIAL										
POS. NO.	QTY	DESC.	LENGTH	WEIGHT						
G114	2	FOR ONE GROUP G114								
ANG157	4	L3x3x1/2	4"	12.53						
B114	1	W6x15	13'-10 1/4"	207.81						
		BLACK WEIGHT:	2	20.34 LBS.						
		GALVANIZED WEIGH	IT:	8.81 LBS.						
TOTAL WEIGHT: 229.15 LBS.										

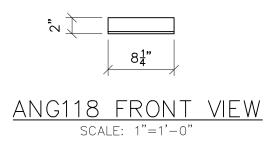


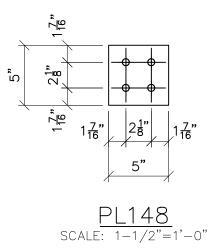


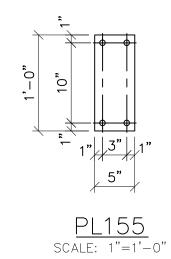


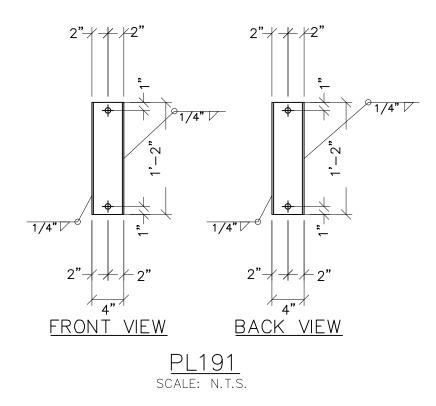


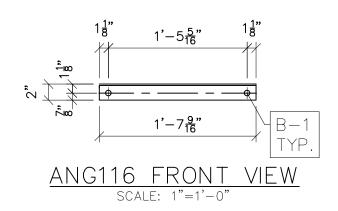


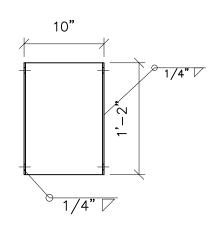


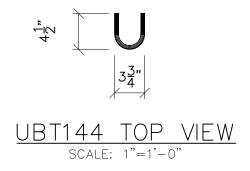




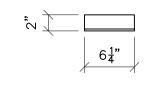












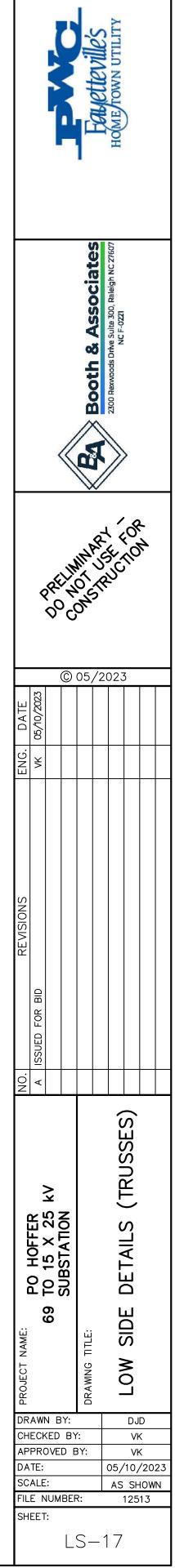


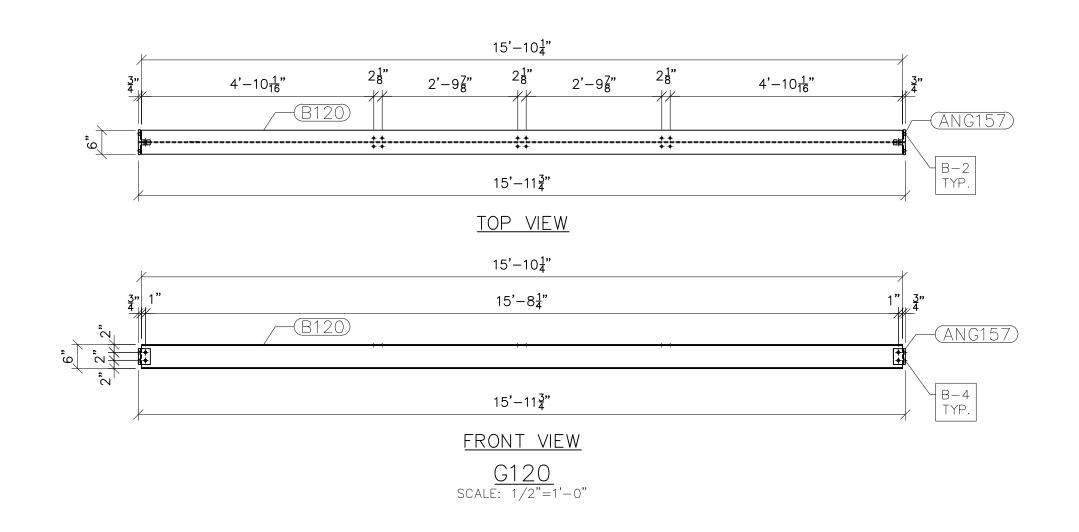
11'-6<u>9</u>"

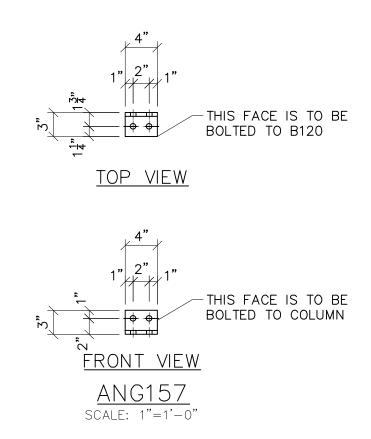
P124 FRONT VIEW scale: 1/2"=1'-0"

NOTE	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

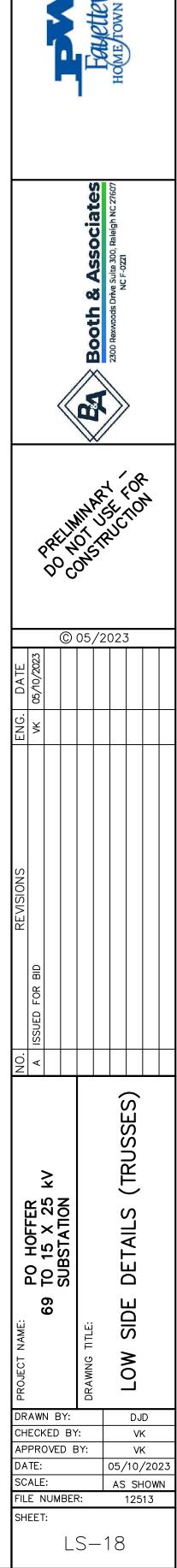
		BILL OF M.	ATERIAL		
POS. NO.	QTY	DESC.	LE	ENGTH	WEIGHT
G117	12	FOR ONE G117			
ANG117	2	L2x2x1/4	7	1/8"	3.79
PL148	2 1 1	PL 3/8x5		5″	2.66
PL155	1	PL 3/8x5		1/8" 5" 1'-0"	6.39
		BLACK WEIGI			12.84 LBS.
		GALVANIZED			0.51 LBS.
	=	TOTAL WEIGH	11:		13.35 LBS.
G118	15	FOR ONE G118			4 7 0
ANG118	2	L2x2x1/4	8	1/4" 5" 1'-0"	4.39
PL148	1	PL 3/8×5		5	2.66
PL155	1	PL 3/8x5		1'-0"	6.39
		BLACK WEIGI			13.44 LBS.
		GALVANIZED			0.54 LBS.
		TOTAL WEIGH	HT:		13.98 LBS.
INDIVIDUAL	SINGLE	PARTS			
ANG116	22	L2x2x3/16	1'-	7 9/16" 6 9/16") 3/8" 1'-2"	79.63
P124	12	PIPE1-1/2STD	11'-	6 9/16"	314.08
UBT144	24	RB1/2	10) 3/8"	11.50
PL190	2 2	PL 1/4x10		1'-2"	19.88
PL191	2	PL 1/4x4		1'-2"	7.95
		BLACK WEIGI			33.04 LBS.
		GALVANIZED			17.32 LBS.
		TOTAL WEIGH	11:	4	50.36 LBS.

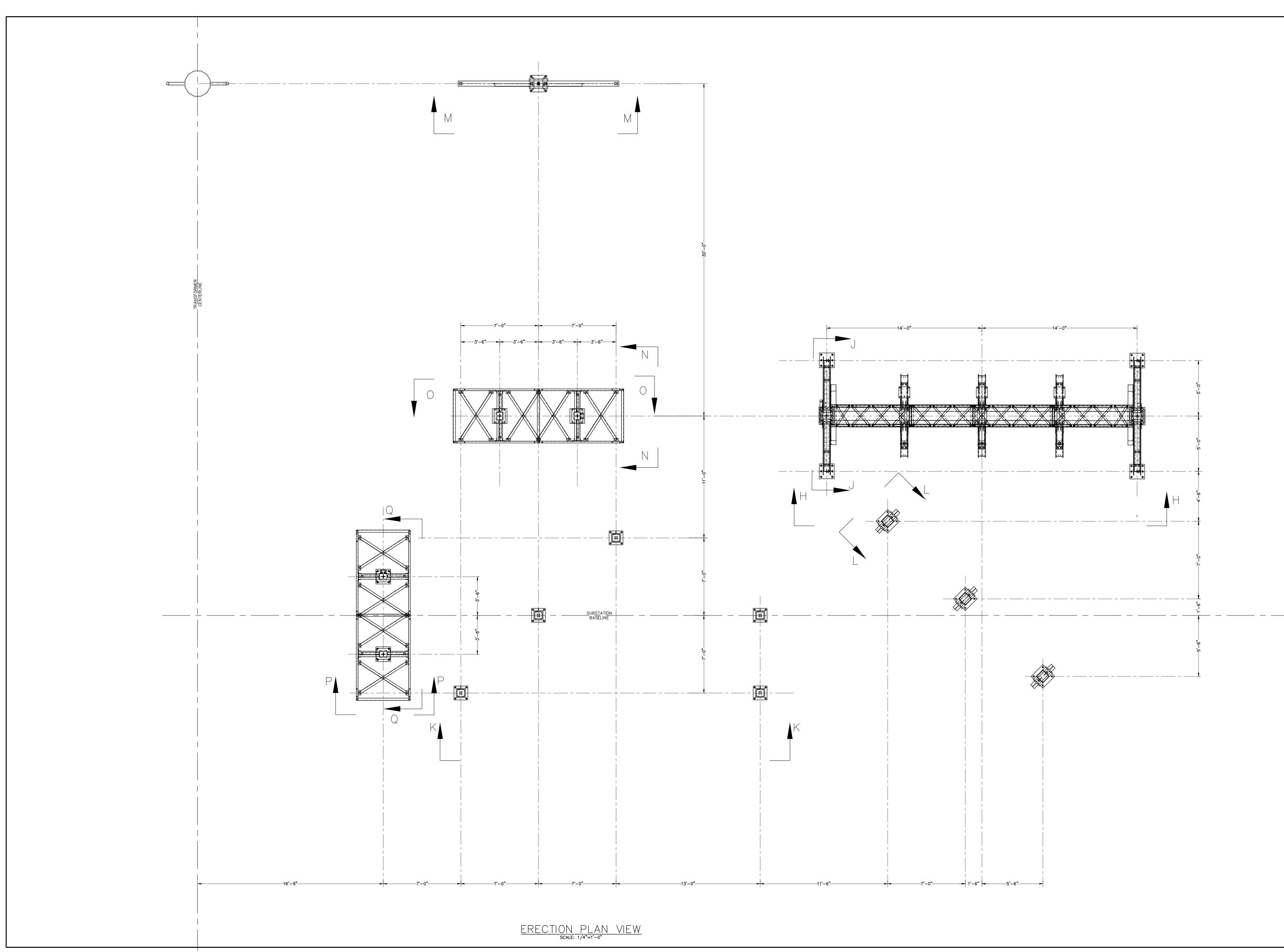


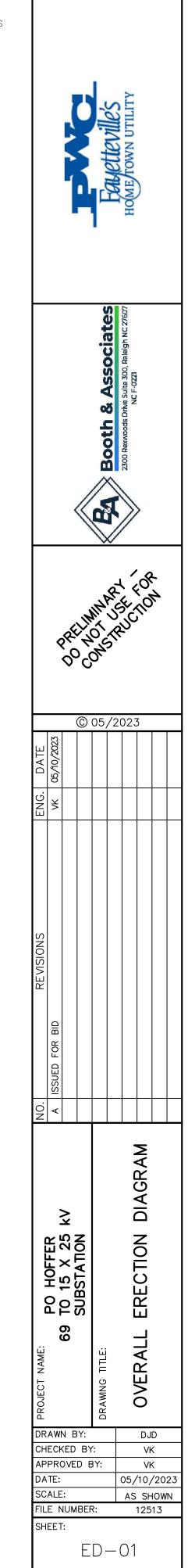


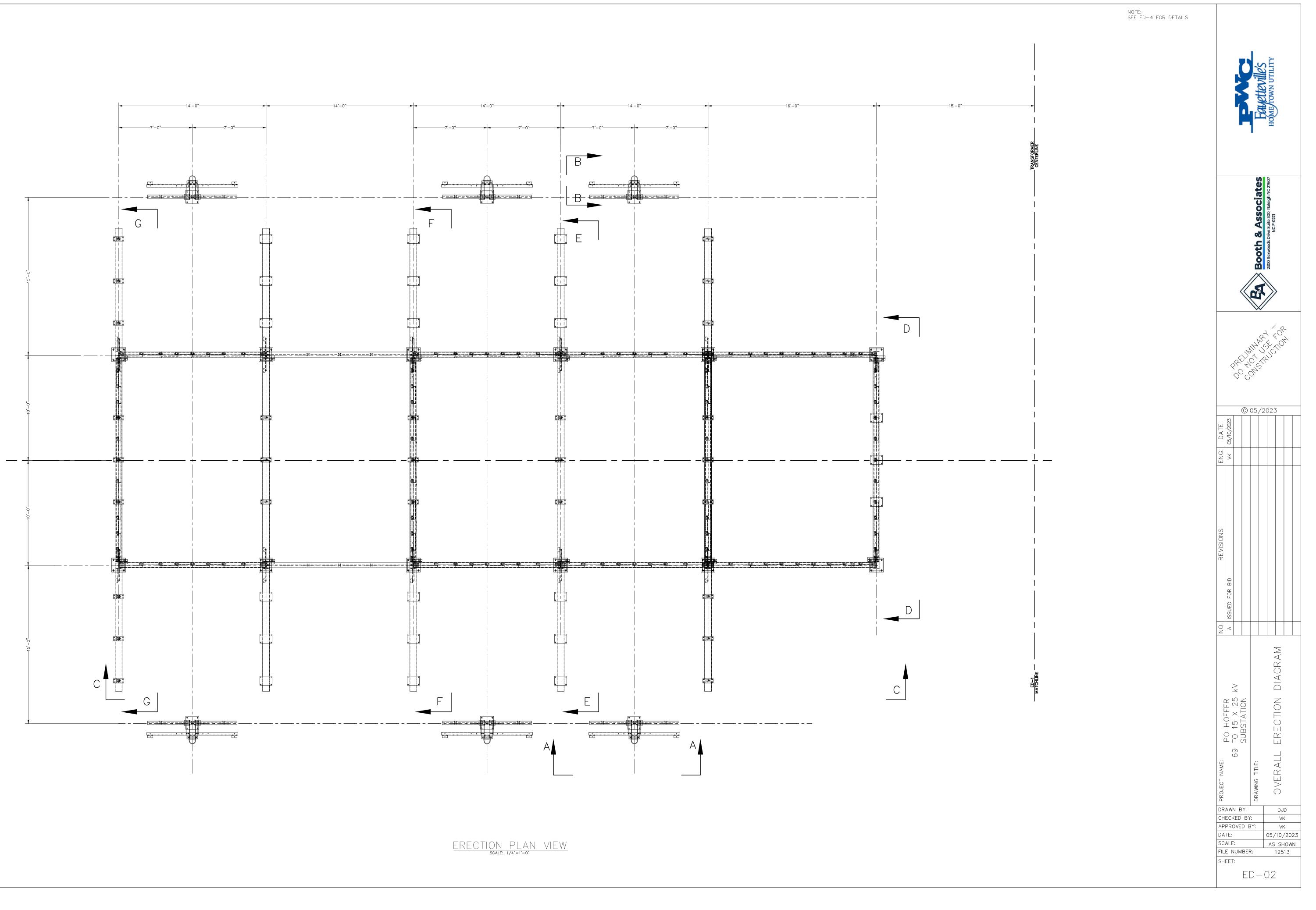


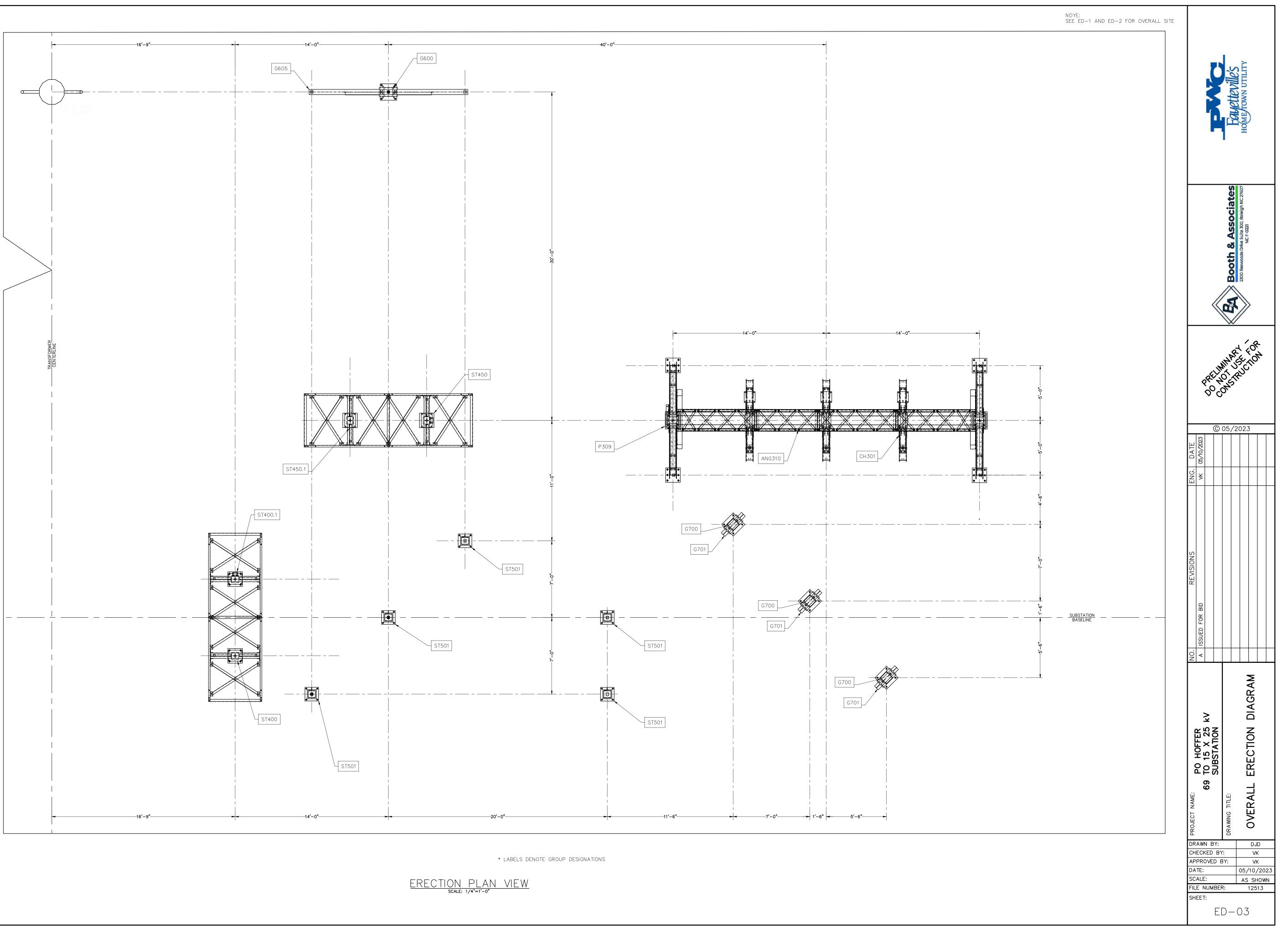
 NOTES: 1) ASTM 325 ERECTION BOLTS 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123) 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING 5) ALL WELDING ELECTRODES SHALL BE E7021 6) EDGE DISTANCE 1" UNLESS NOTED 										
	1	BILL OF MATERIA								
POS. NO.	QTY	DESC.	LENGTH	WEIGHT						
G120	2	FOR ONE GROUP G120								
ANG157	4	L3x3x1/2	4"	12.53						
B120	1	W6x15	15'-10 1/4"	237.81						
		BLACK WEIGHT:	2	50.34 LBS.						
		GALVANIZED WEIGH	T:	10.01 LBS.						
		TOTAL WEIGHT:	2	60.35 LBS.						

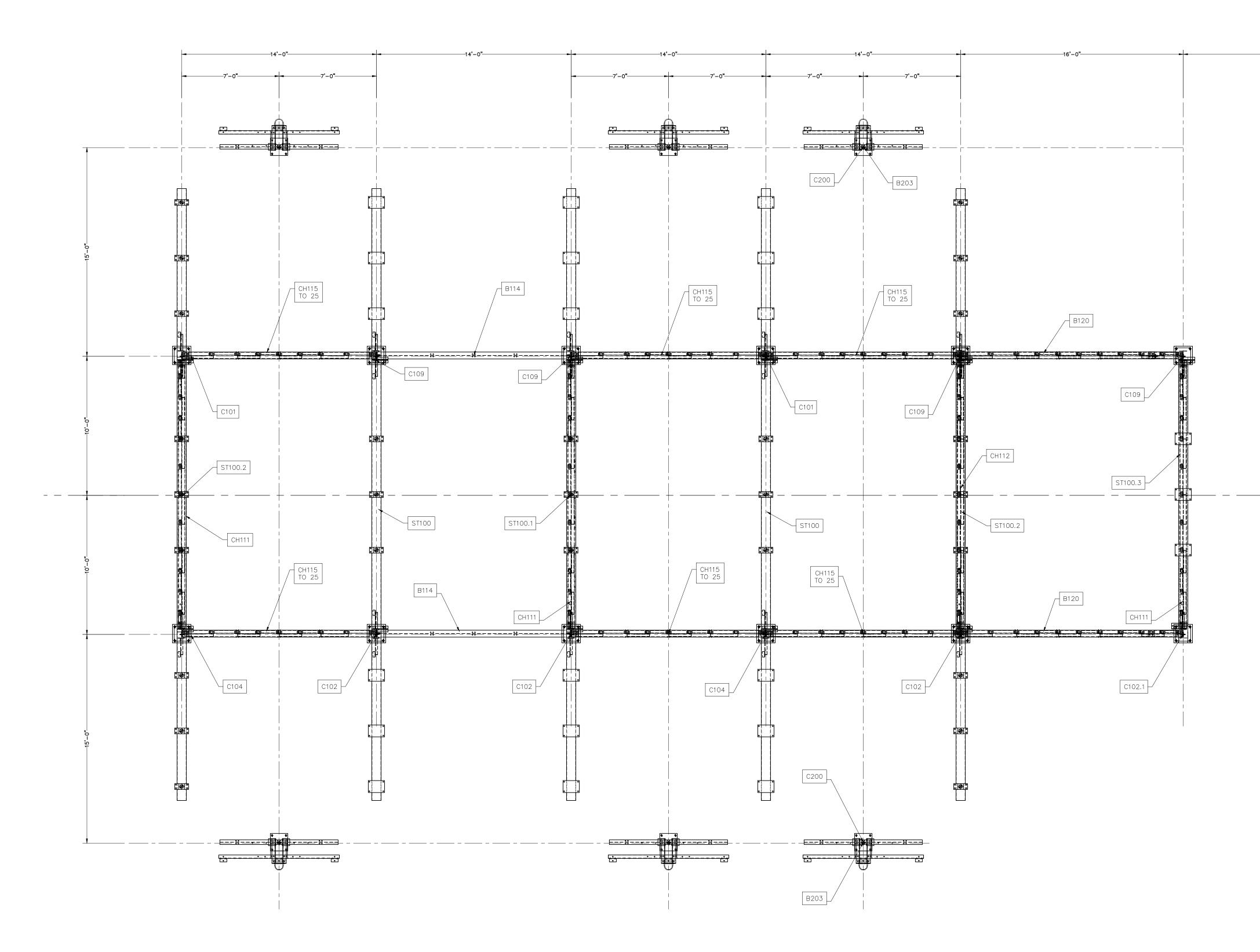








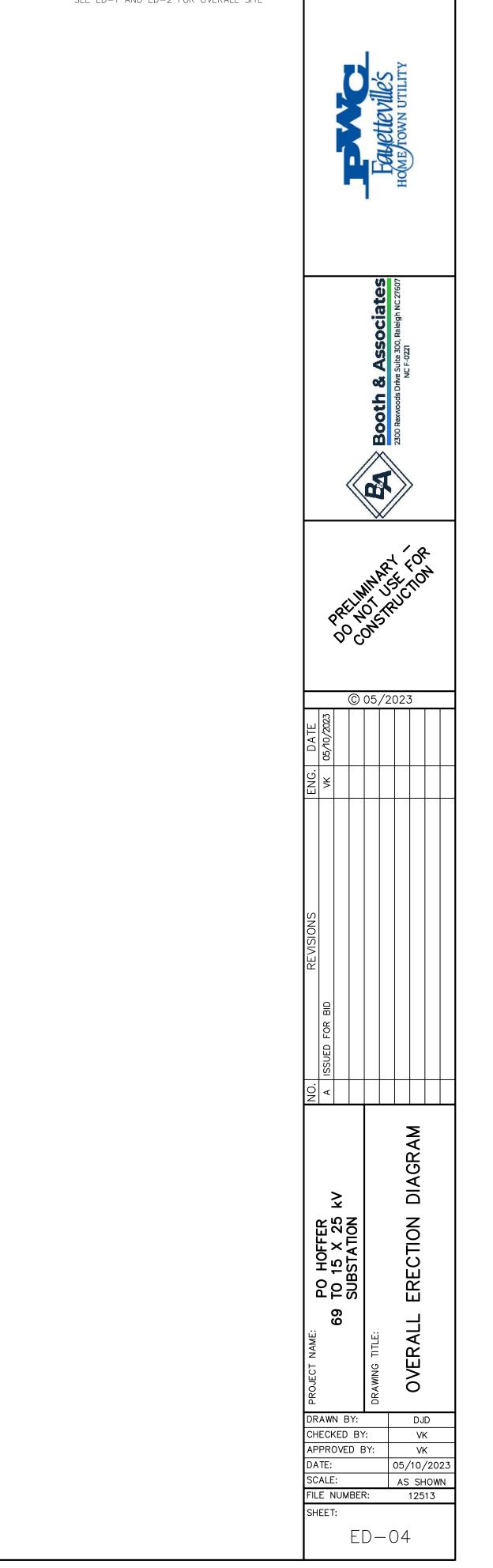


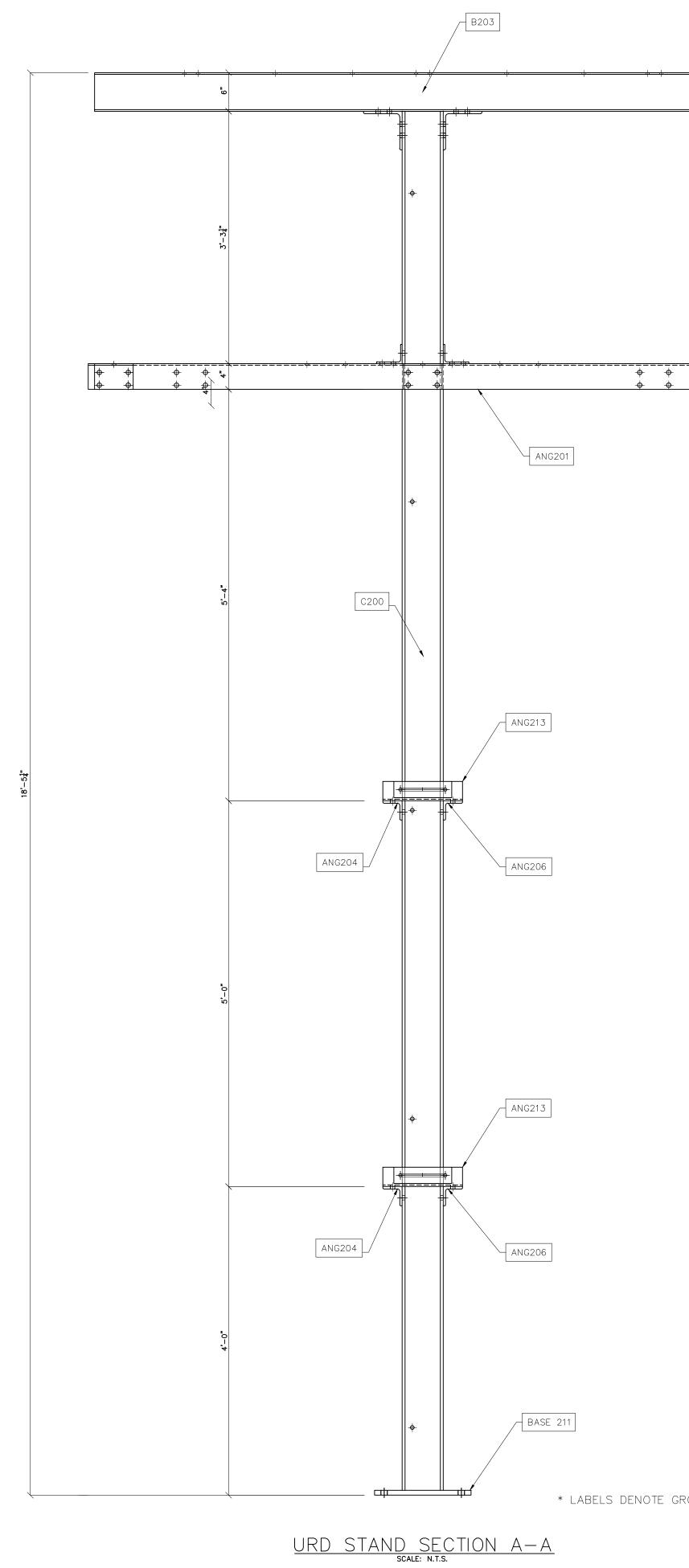


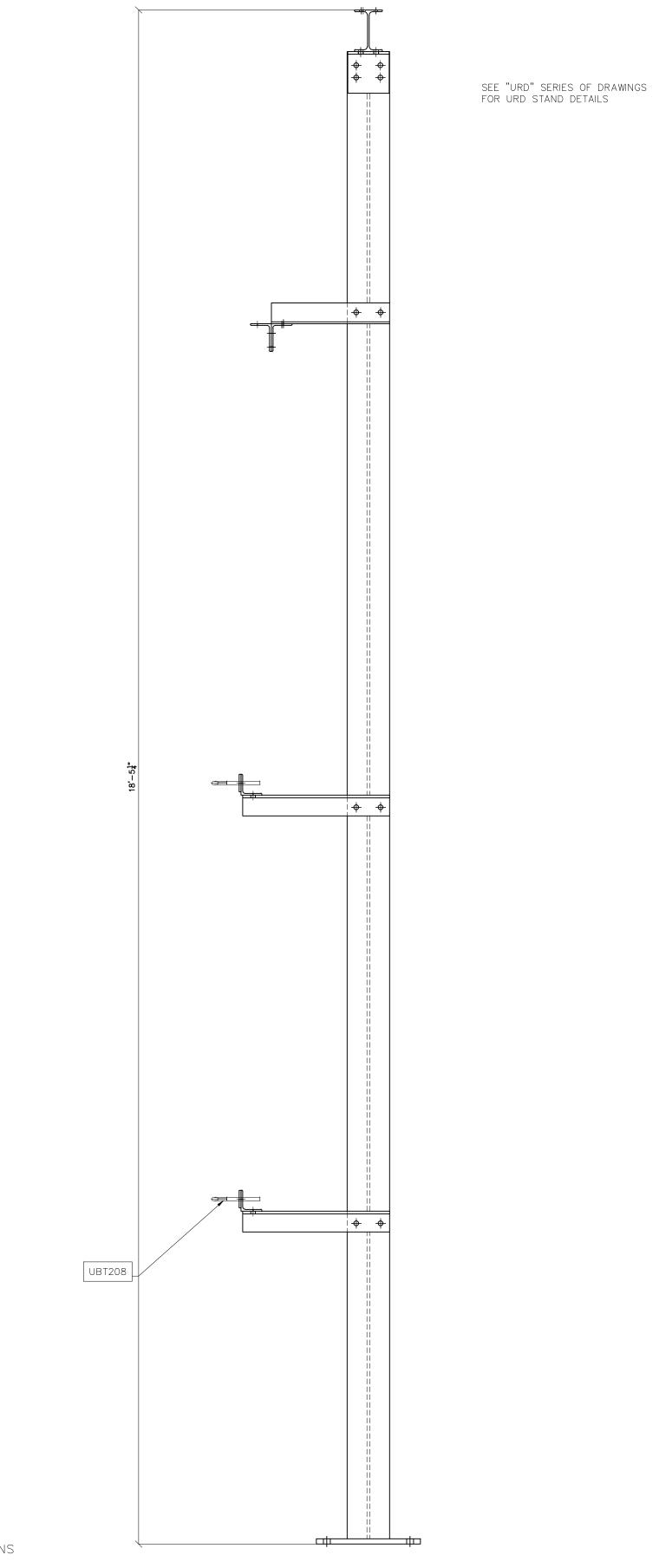
ERECTION PLAN VIEW

* LABELS DENOTE GROUP DESIGNATIONS

—15'—0"——







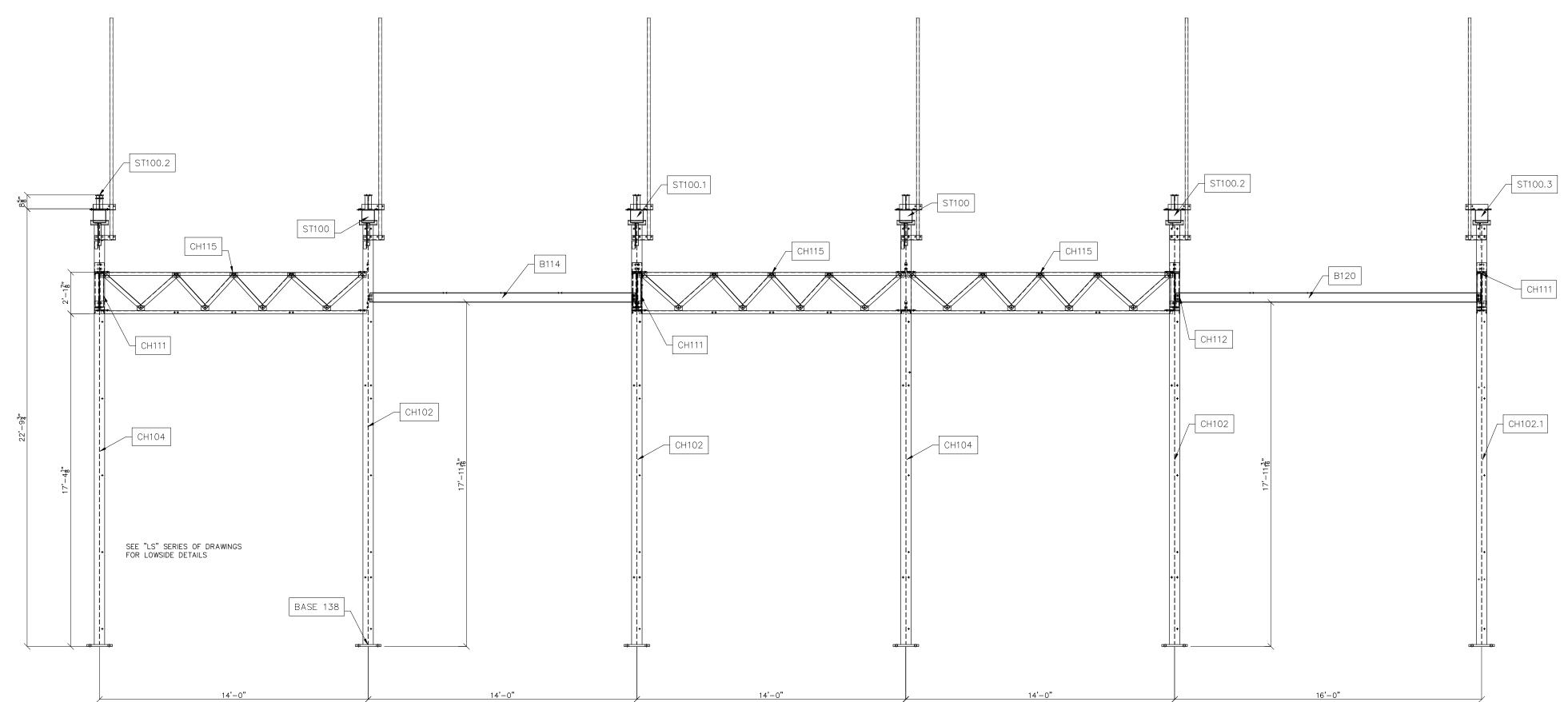
* LABELS DENOTE GROUP DESIGNATIONS

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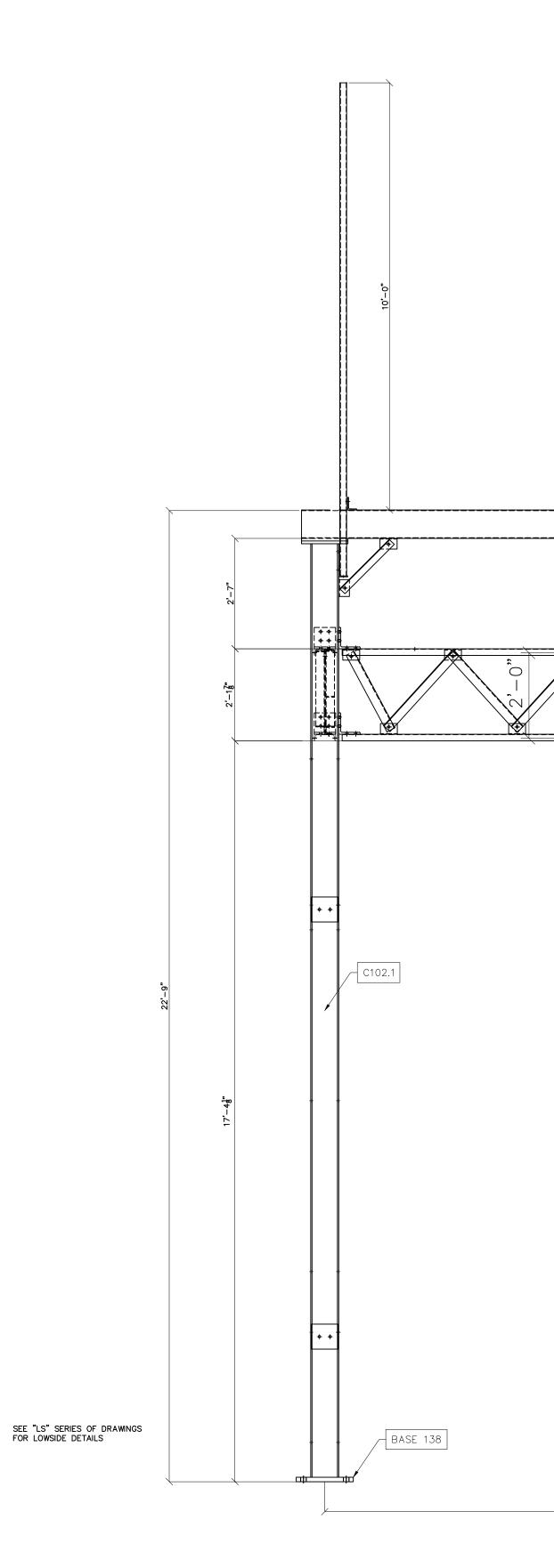
URD STAND SECTION B-B scale: n.t.s.

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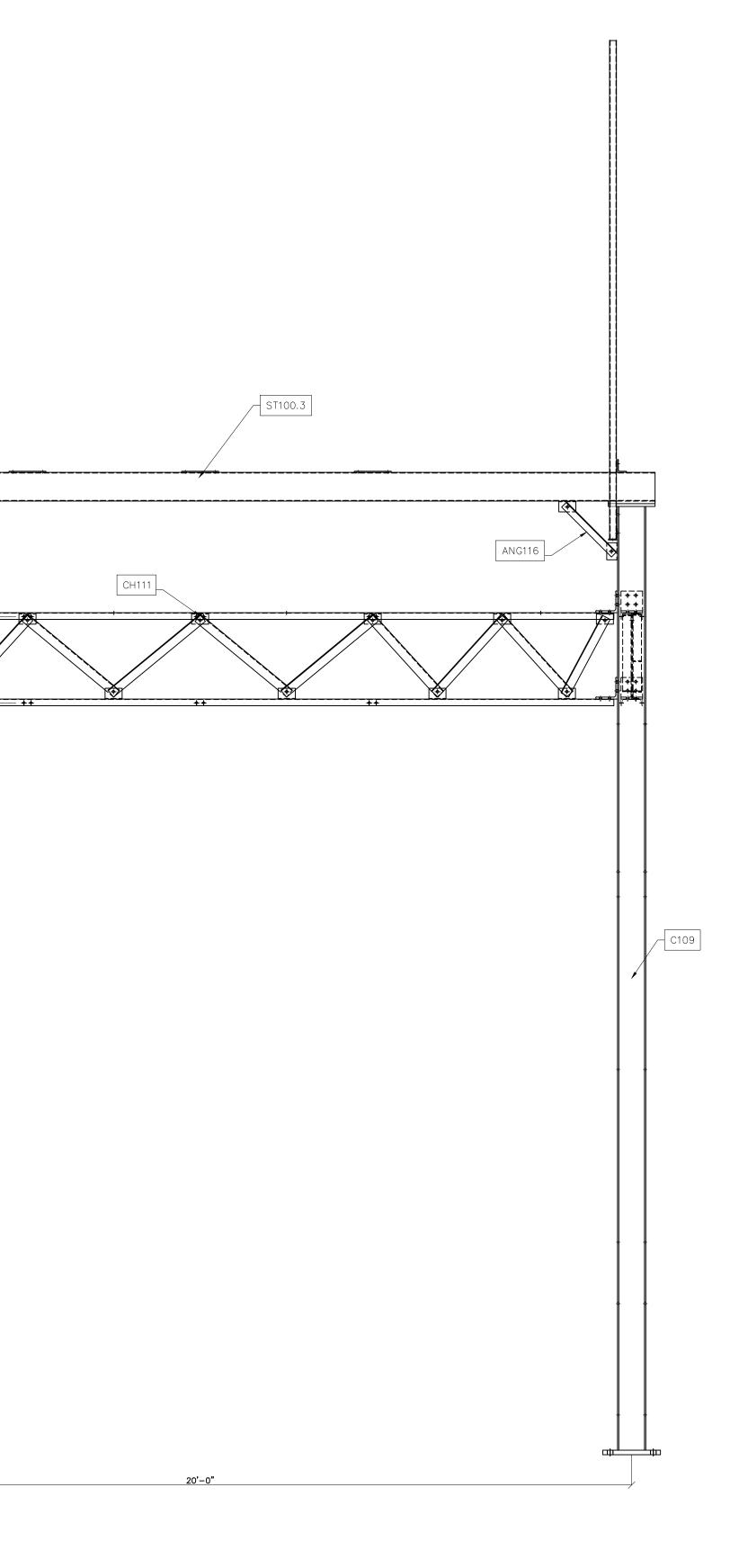
LOWSIDE SECTION C-C

Eduction UT Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221 © 05/2023 A0,01 ીંઝી REVISIONS NO. A ISSUED FOR BID DIAGRAM × × ERECTION PO HOFFER TO 15 X 25 SUBSTATION 69 OVERALL TITLE: G DRAWN BY: DJD CHECKED BY: VK APPROVED BY: DATE: SCALE: FILE NUMBER: VK 05/10/2023 AS SHOWN 12513 SHEET: ED-06

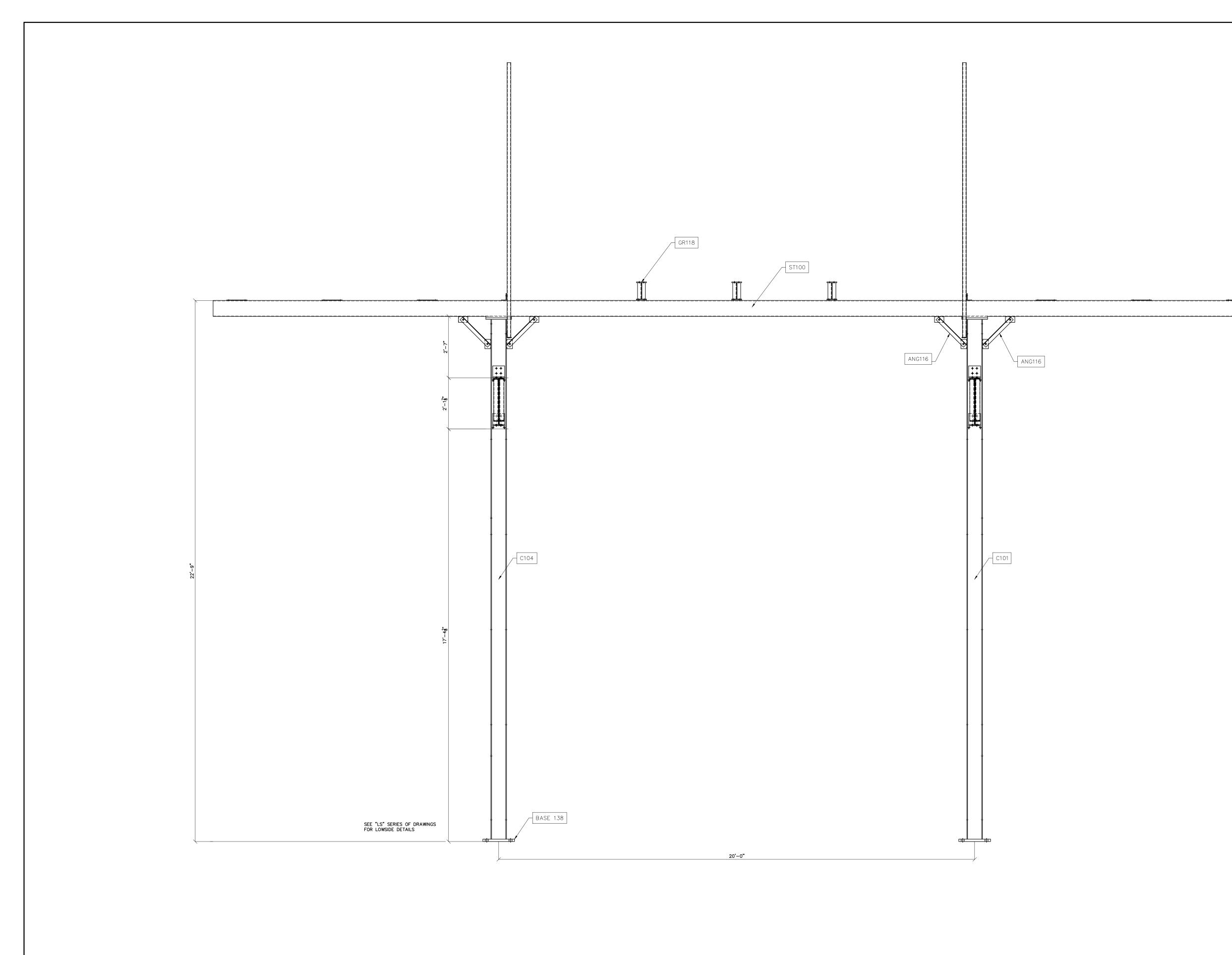




* LABELS DENOTE GROUP DESIGNATIONS



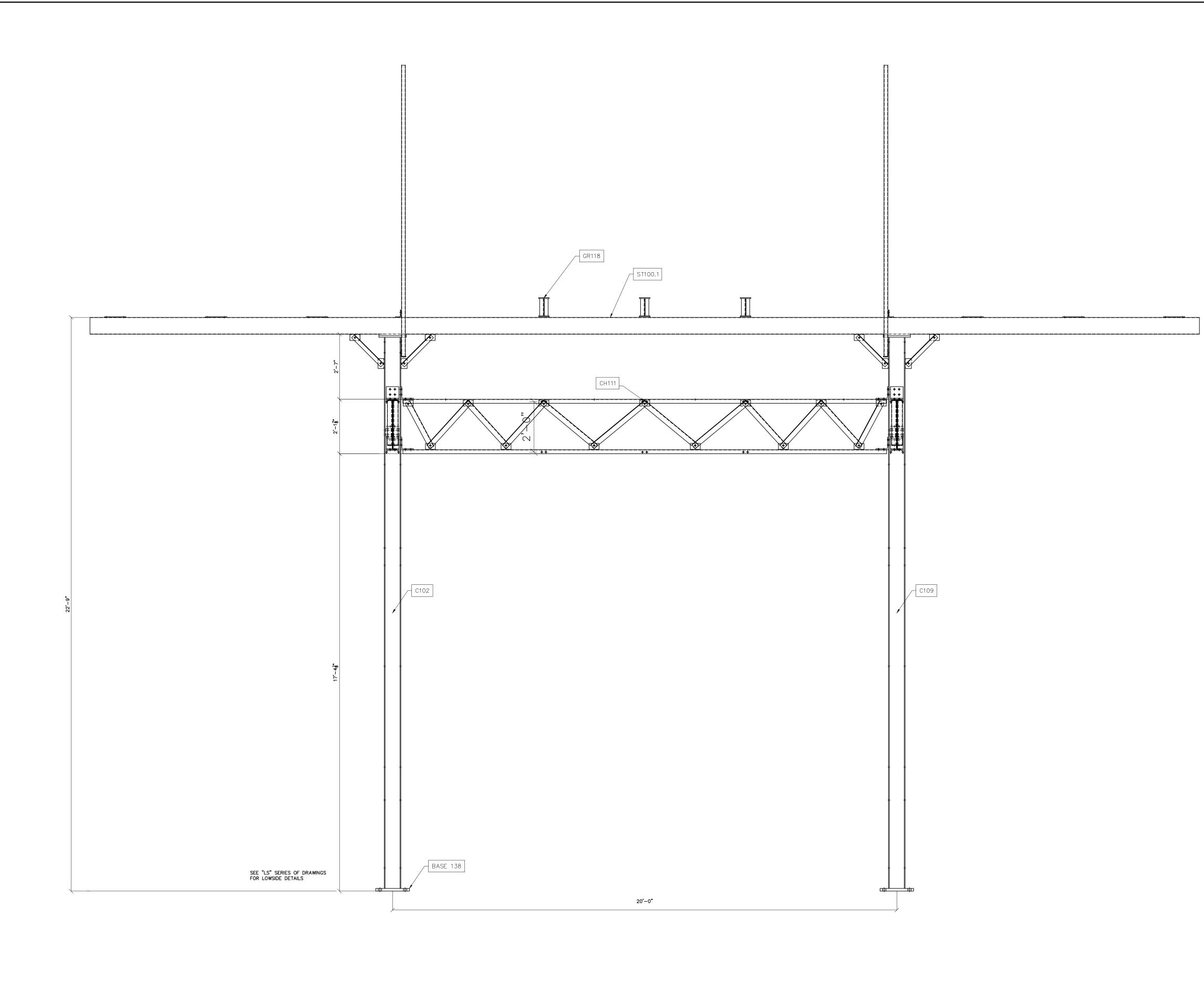
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LOWSIDE SECTION E-E scale: n.t.s.



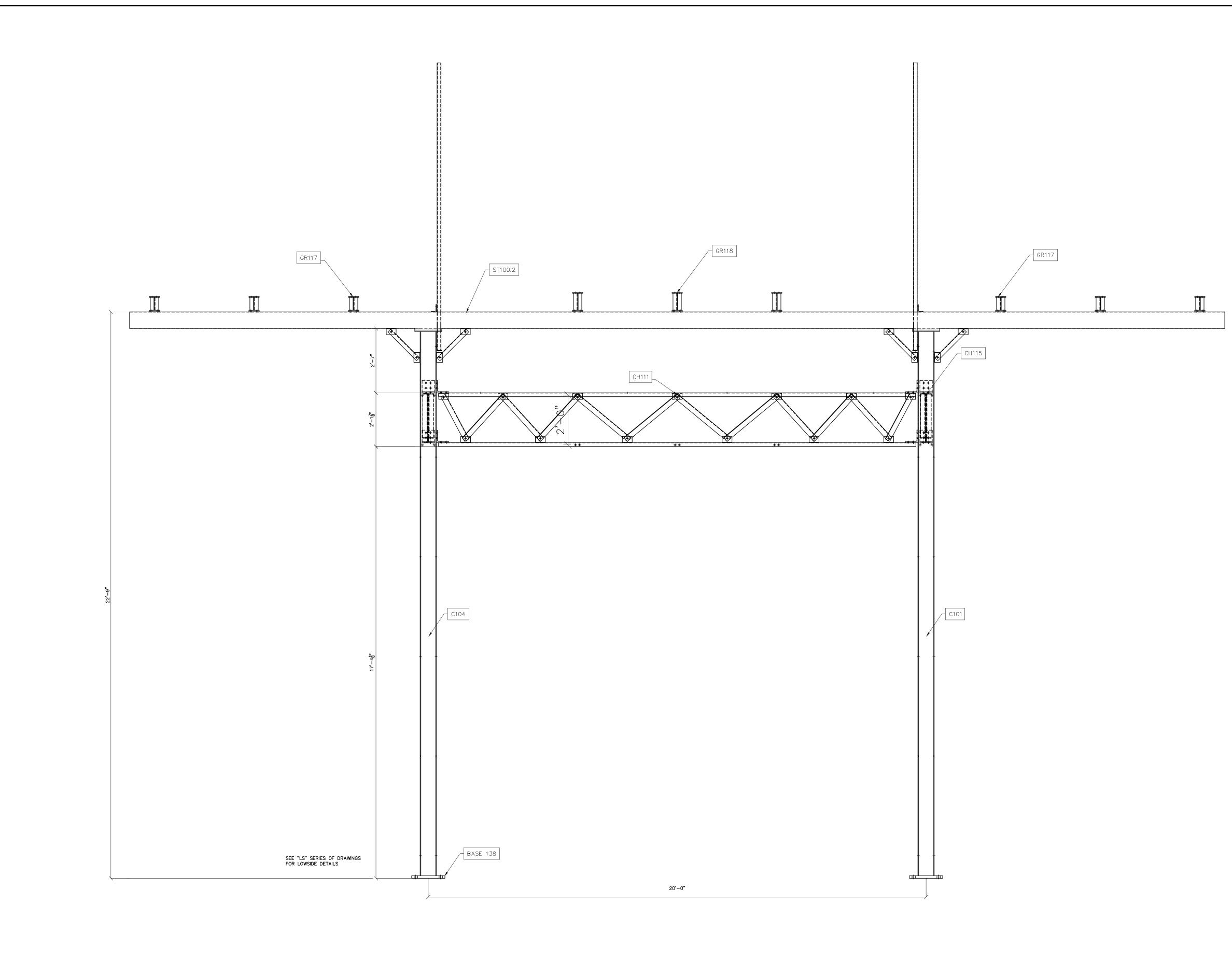
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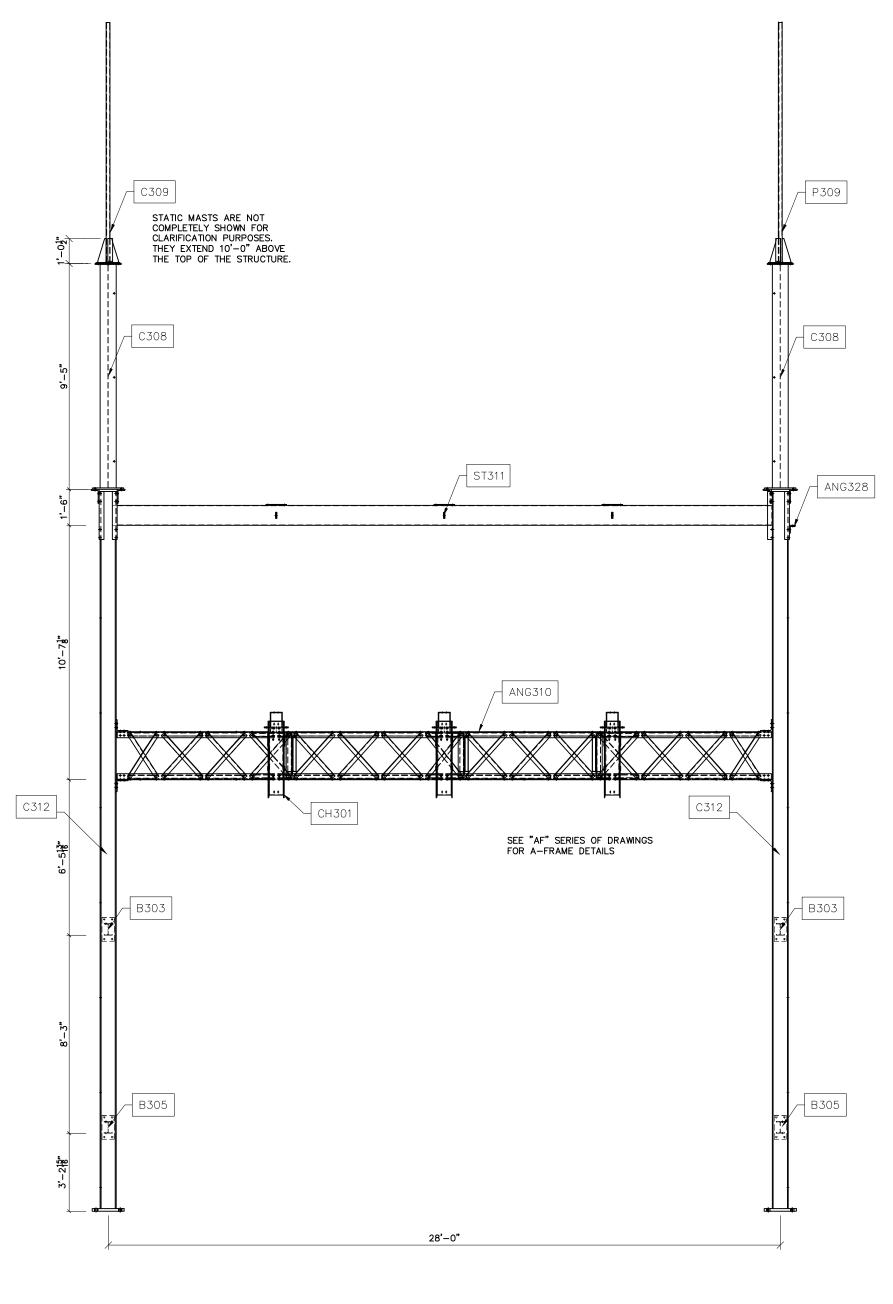
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LOWSIDE SECTION G-G scale: n.t.s.

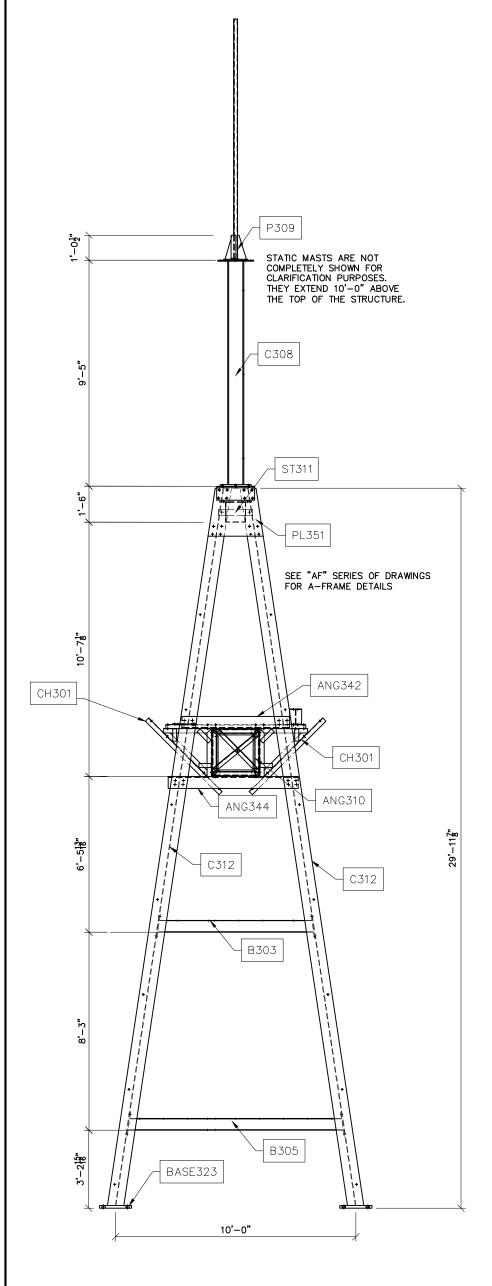
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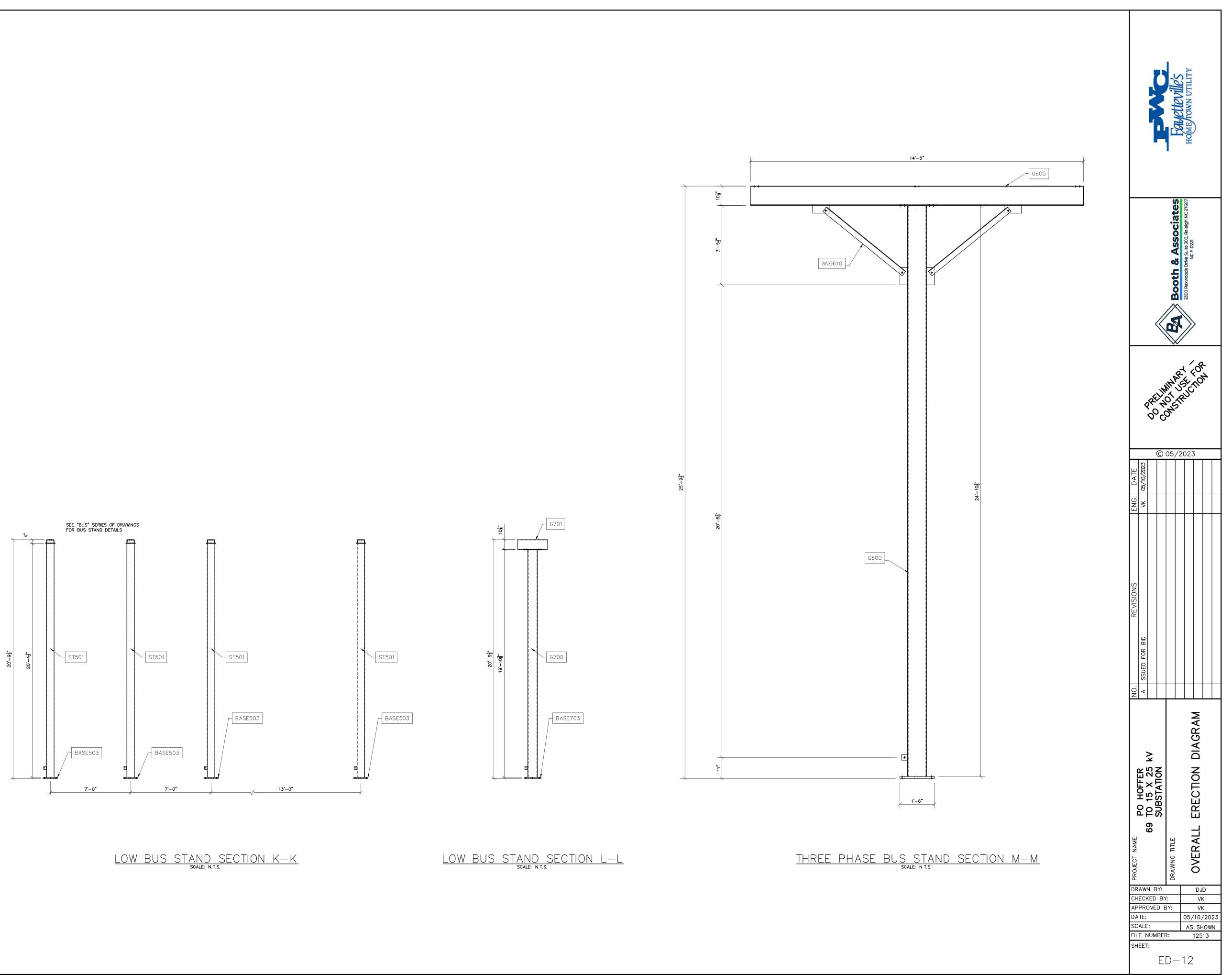


* LABELS DENOTE GROUP DESIGNATIONS

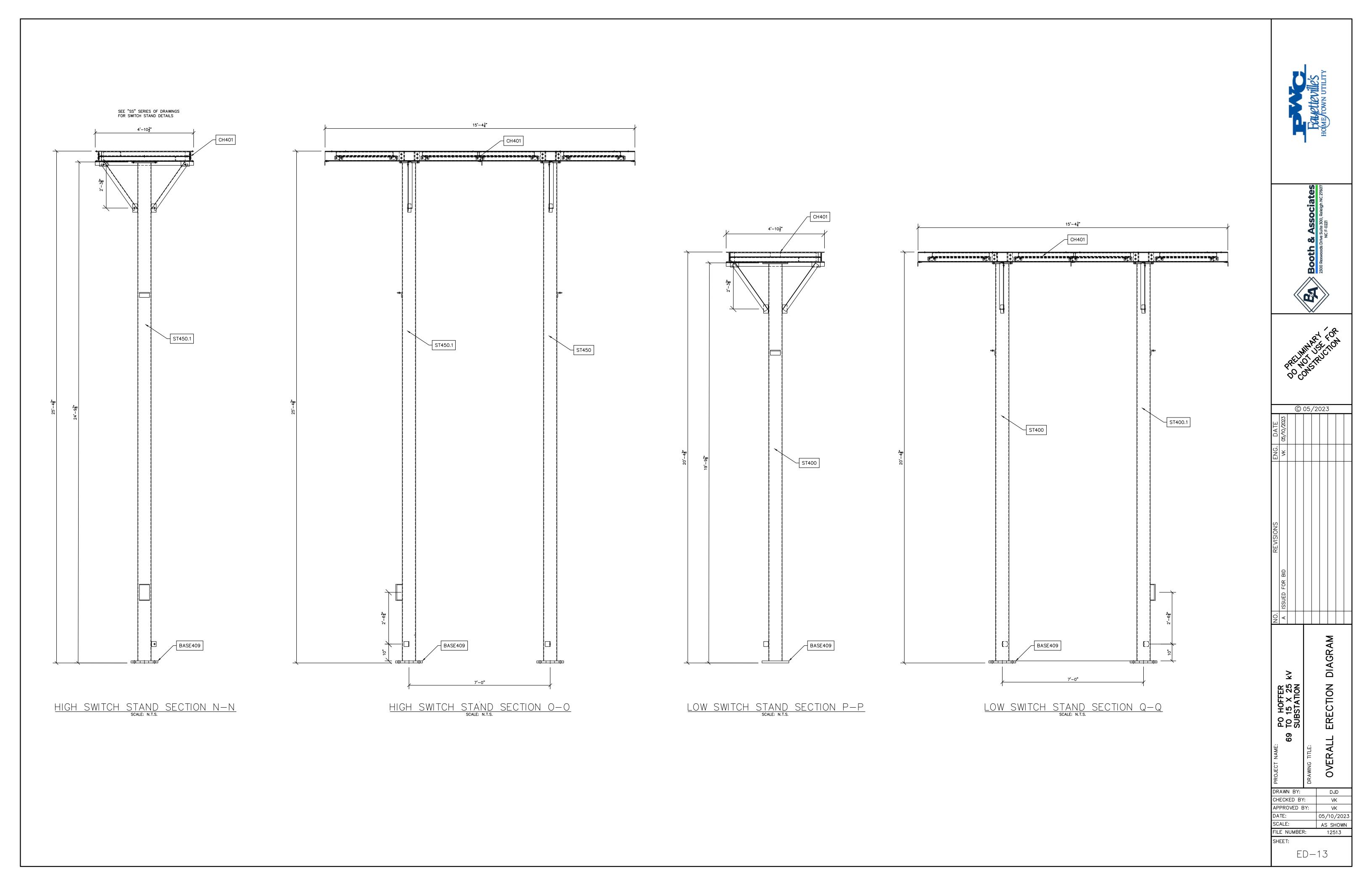
A-FRAME SECTION H-H scale: n.t.s.

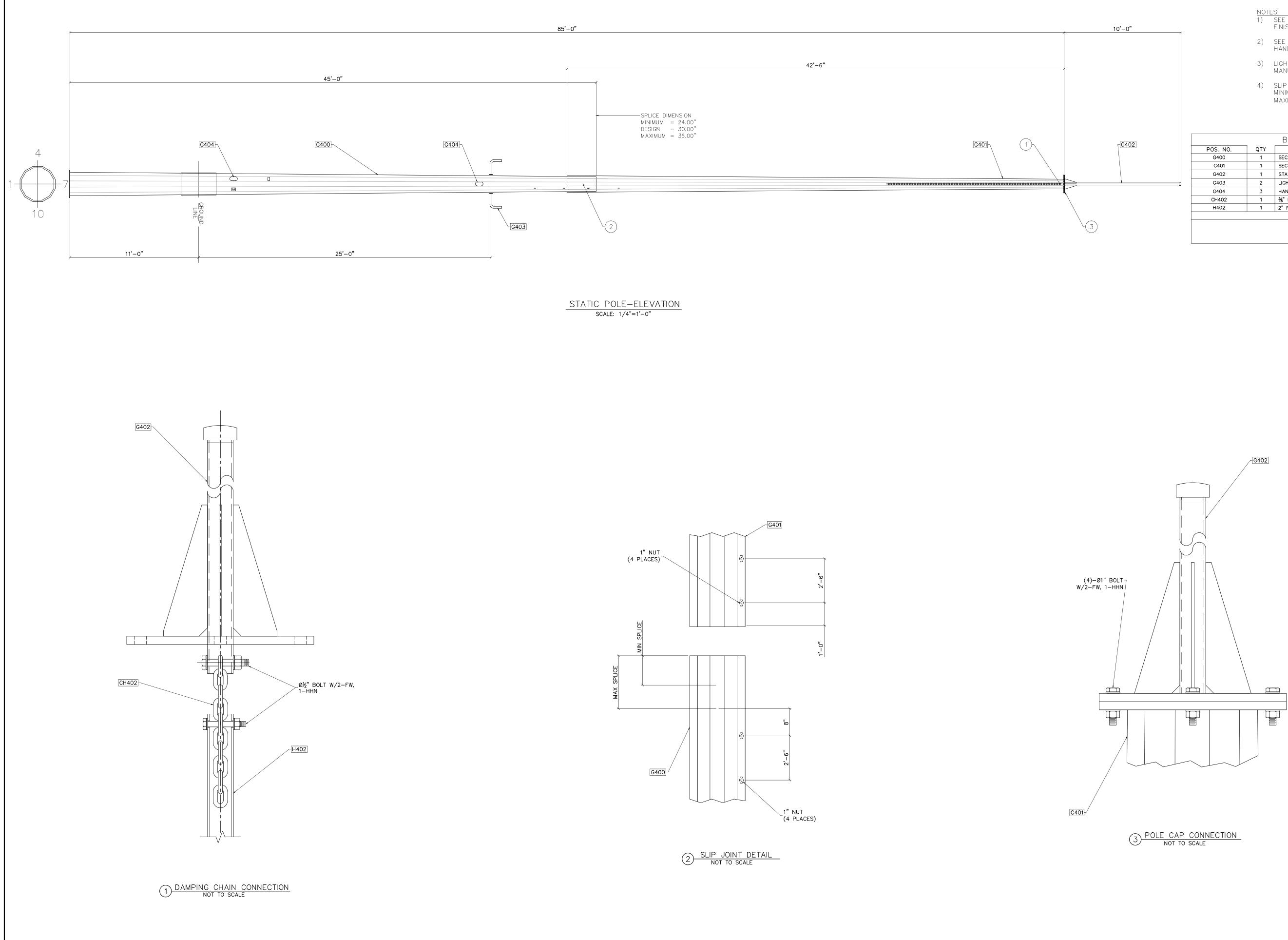
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A-FRAME SECTION J-J

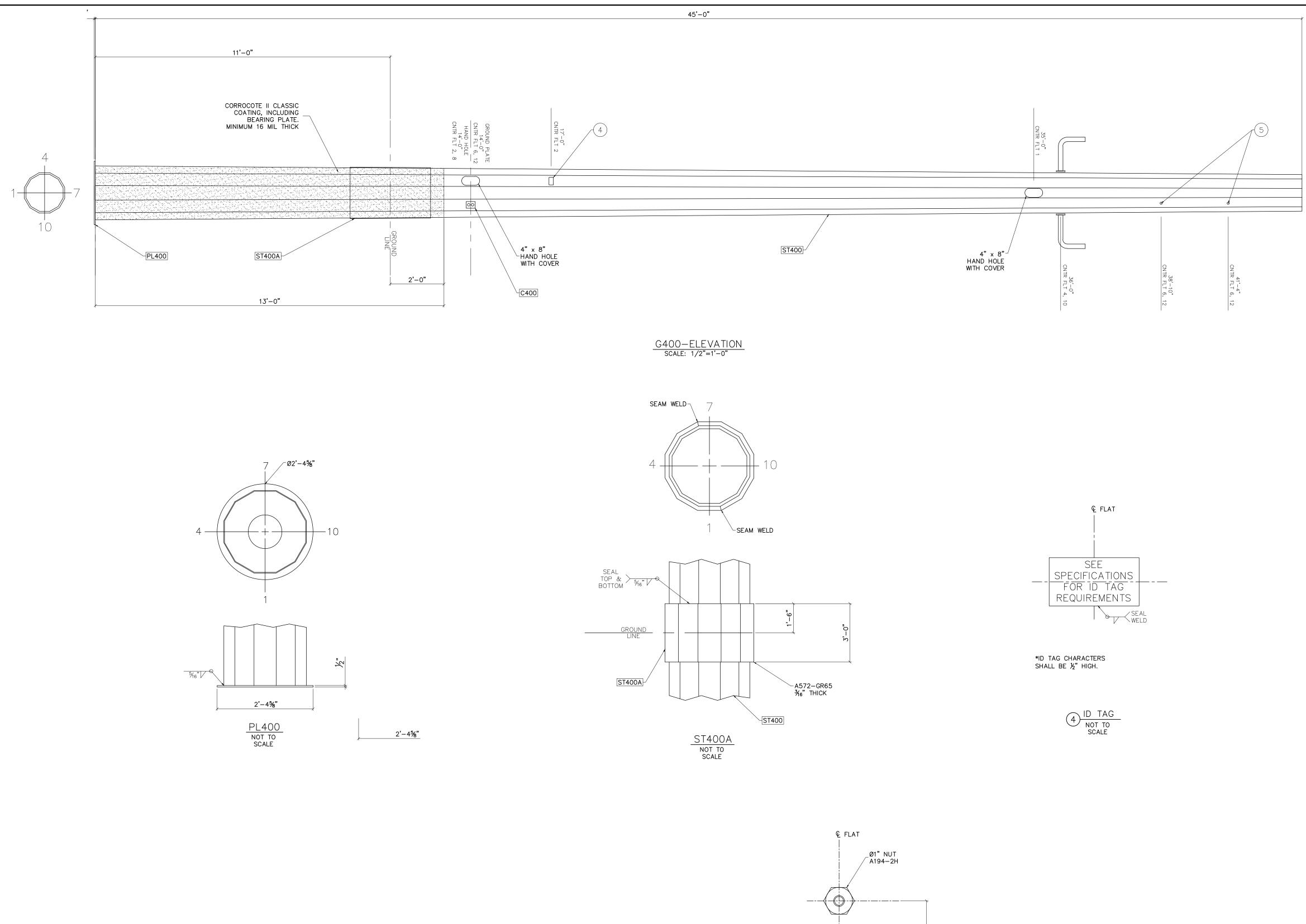


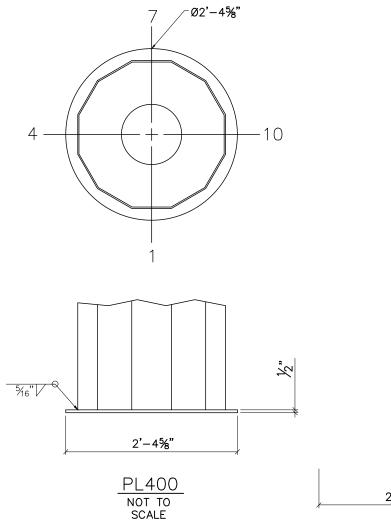


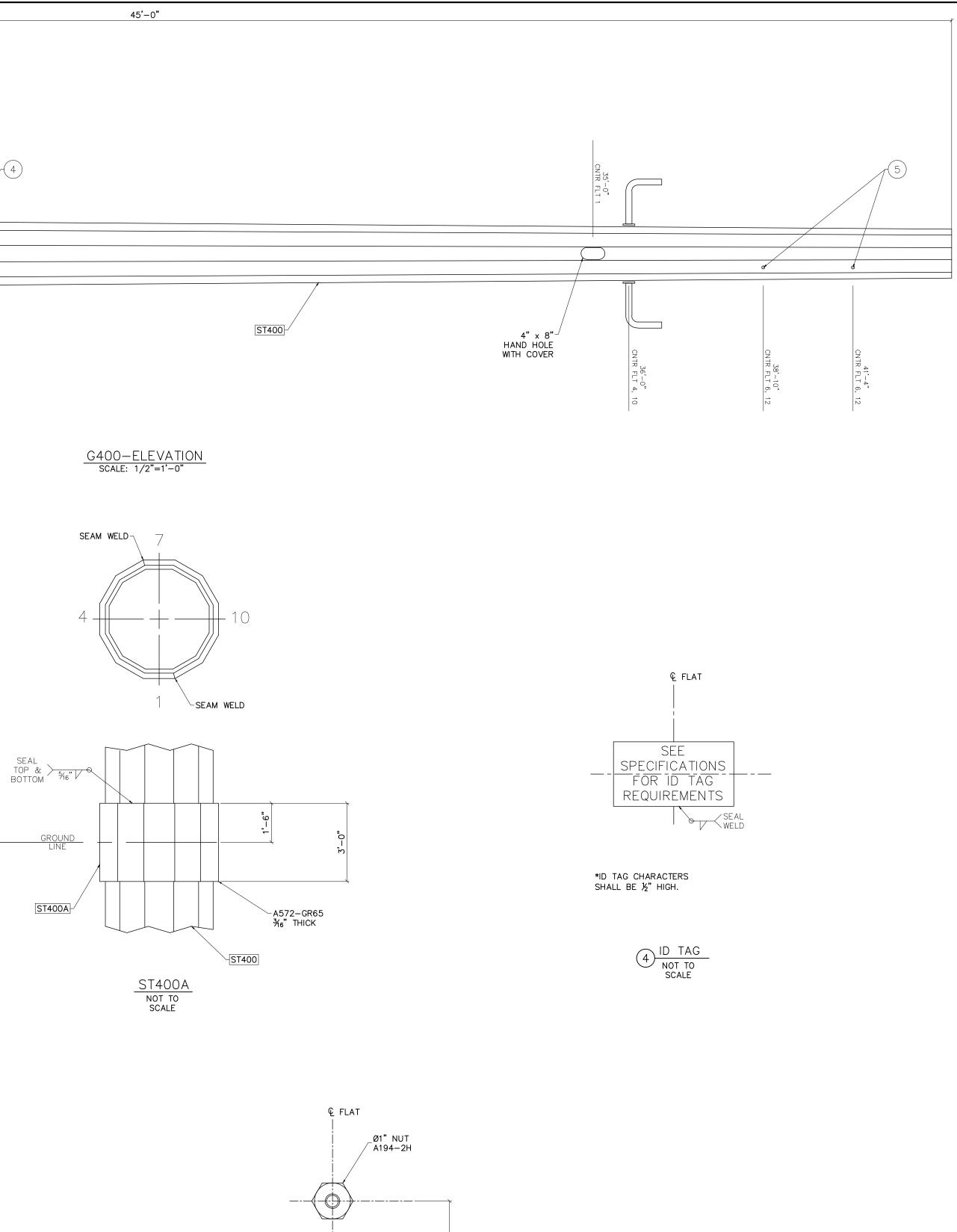
- NOTES: 1) SEE TECHNICAL REQUIREMENTS FOR MATERIAL AND FINISH REQUIREMENTS.
- 2) SEE POLE MANUFACTURER SPECIFICATIONS FOR HANDLING AND ERECTION GUIDELINES.
- LIGHTING ASSEMBLY TO BE MOUNTED PER POLE MANUFACTURER PROVIDED CONNECTION.
- 4) SLIP JOINT JACKING FORCE: MINIMUM = 10,000 LBS. AT EACH SIDE MAXIMUM = PER MANUFACTURER'S SPECIFICATION

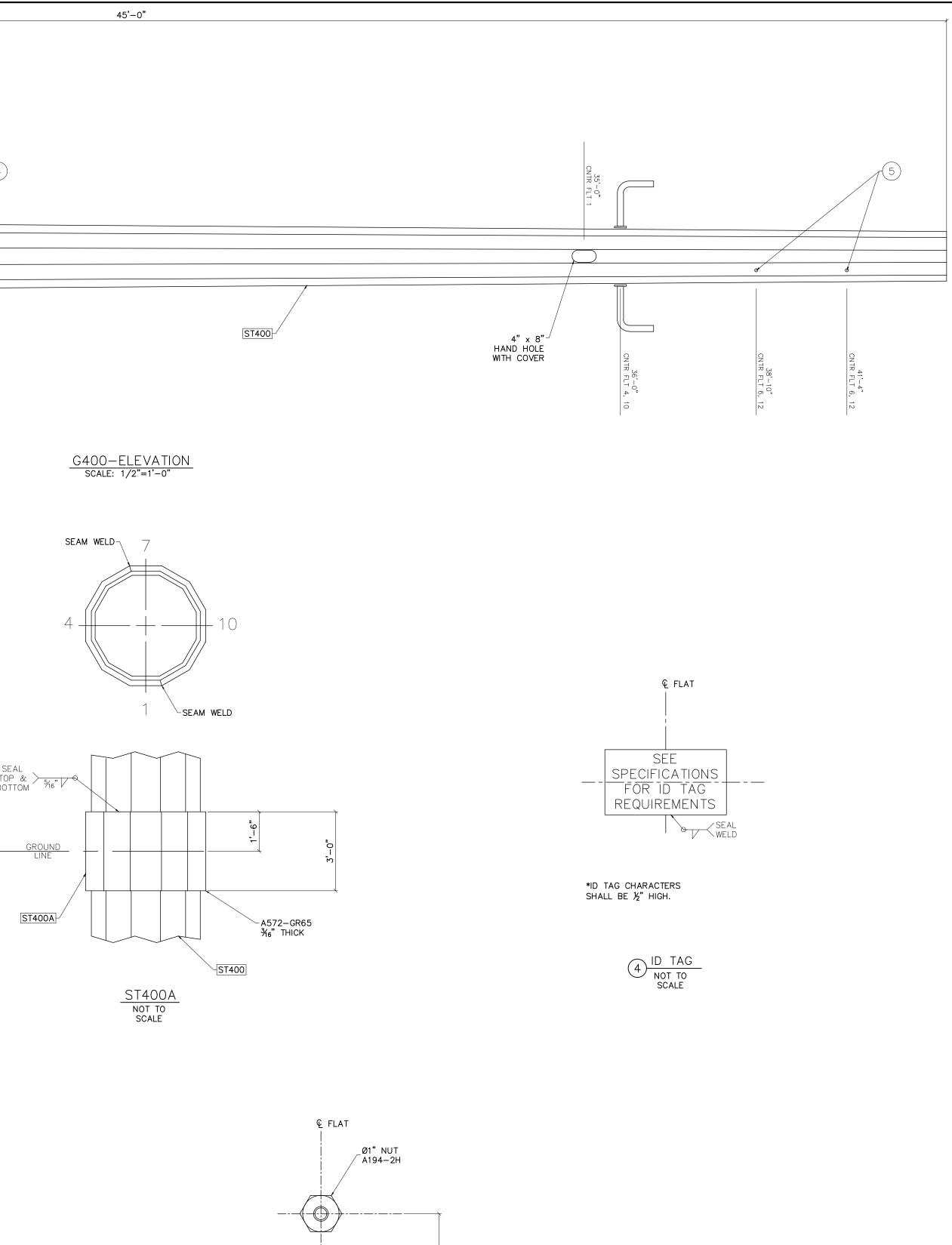
		BILL OF MATERI	AL	
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G400	1	SECTION ASSEMBLY	45'-0"	2,094.08
G401	1	SECTION ASSEMBLY	42'-6"	1,206.66
G402	1	STATIC MAST ASSEMBLY	10'-0"	84.46
G403	2	LIGHTING ASSEMBLY	-	14.00
G404	3	HANDHOLE ASSEMBLY	-	-
CH402	1	¾" HDGV CHAIN	25'-0"	36.25
H402	1	2" RUBBER HOSE	25'—0"	-
		BLACK WEIG	GHT:	3,435.45 LE
		GALVANIZED	WEIGHT:	137.42 LE
		TOTAL WEIG	HT:	3,572.87 LE

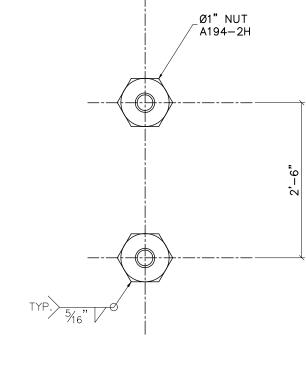
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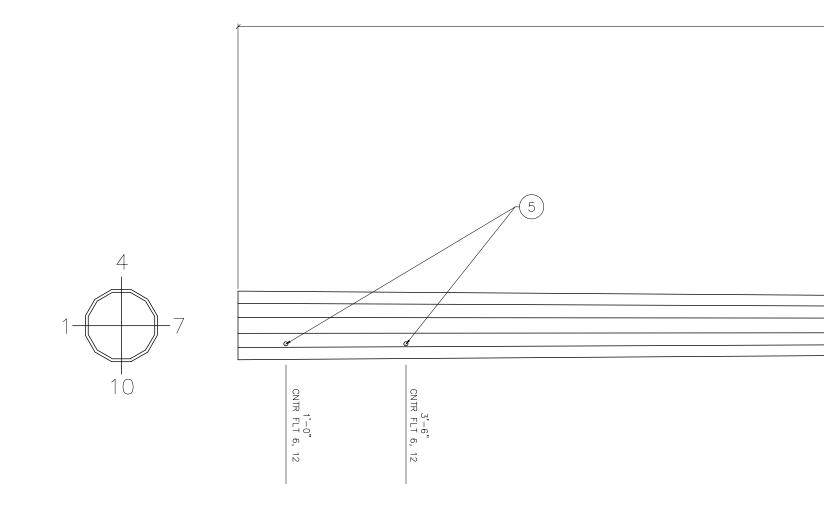


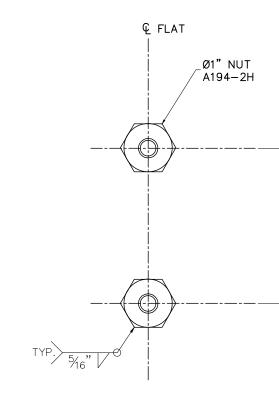




5 JACKING NUTS NOT TO SCALE

POS. NO. G400 ST400 ST400A PL400 C400	ASTM SPE – A572–GR6 A572–GR6 A36 A36	EC QTY 1 65 1 65 1 1 2	L OF MATERIAL DESC. FOR ONE GROUP 400: SHAFT ¾6" GROUND SLEEVE PL ½" X Ø2'-4%" C 4 X 5.4 BLACK WEIGH GALVANIZED TOTAL WEIGH O (MEASURED ACROSS FLATS	WEIGHT: 1T:	WEIGHT 		
SHAPE 12-SIDED		BASE O.D. 24.00"	2" (WEASURED ACROSS FLATS TOP 0.D. TAPER 16.39" 0.16912 0.1691	R ТНК	ASTM A572-GR65	NO. HEVILLONS REVISIONS NO. HOFFER NO.	





5 JACKING NUTS NOT TO SCALE

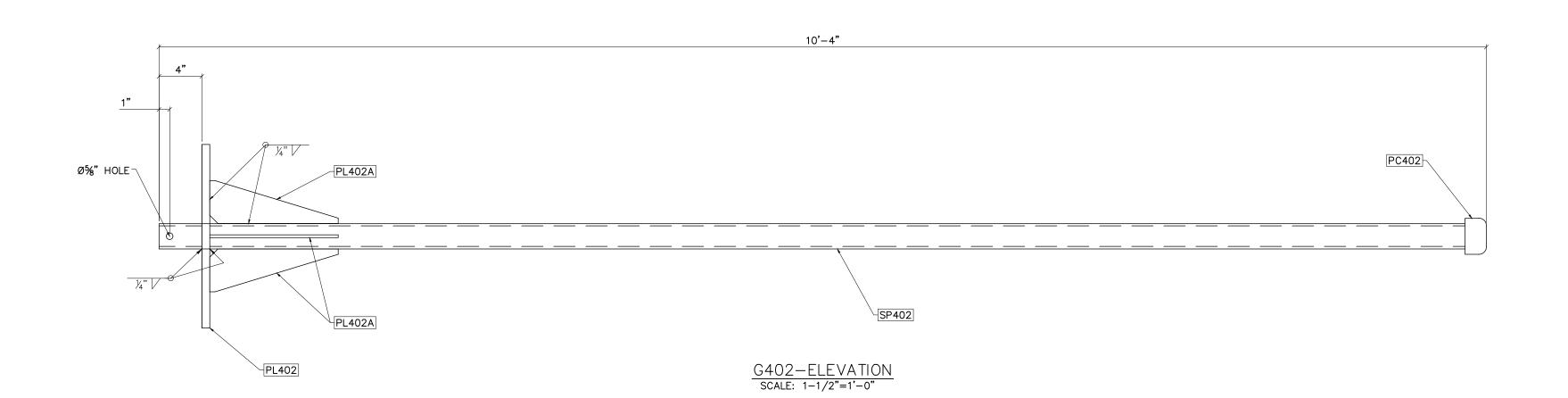
ST401

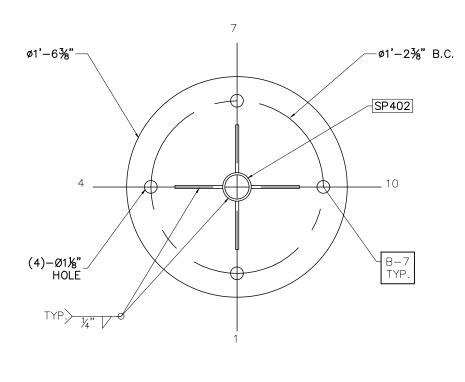
G401-ELEVATION SCALE: 1/2"=1'-0"

42'-6"

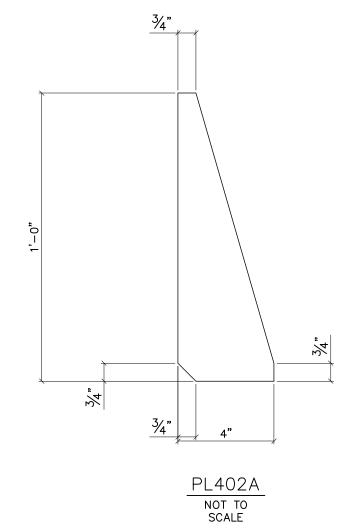
PL401 NOT TO SCALE

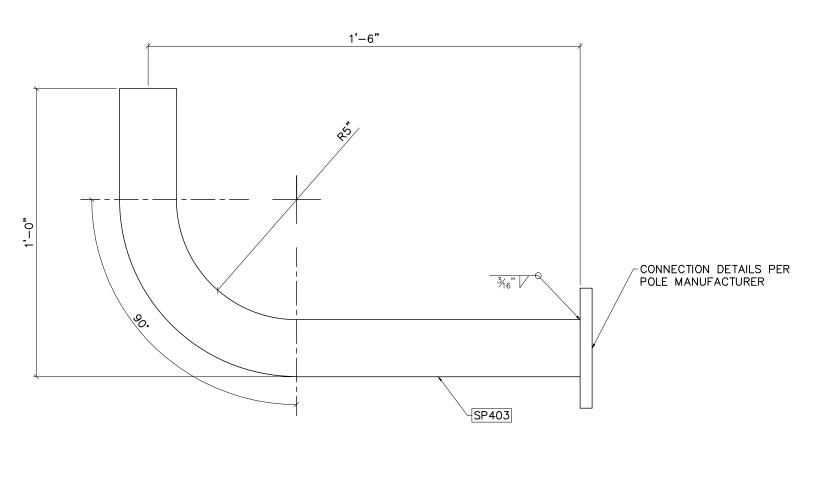
BILL OF MATERIAL POS. NO. ASTM SPEC QTY DESC. LENGTH WEIGH G401 - 1 FOR ONE GROUP 401: - - - ST401 A572-GR65 1 SHAFT 42'-6" 1,169.0 PL401 A572-GR65 1 PL ½" X Ø1'-6%" - 48.27 BLACK WEIGHT: 1,206.1 GALVANIZED WEIGHT: 1,206.1 GALVANIZED WEIGHT: 1,206.4 TOTAL WEIGHT: 1,206.4 SHAFT INFO (MEASURED ACROSS FLATS) - 48.3 SHAFT INFO (MEASURED ACROSS FLATS) - - SHAPE LENGTH BASE O.D. TAPER THK AST 12-SIDED 42'-6" 17.19" 10.00" 0.16912" .188" A572-0	00 66 LB 27 LB 93 LB
<u><u>½</u>"</u>	Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221
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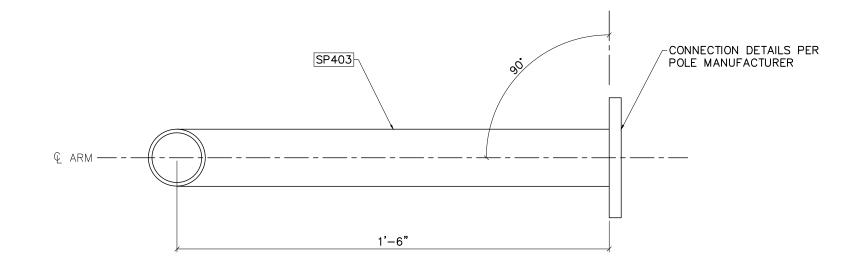








G403-SIDE VIEW



G403-TOP VIEW NOT TO SCALE

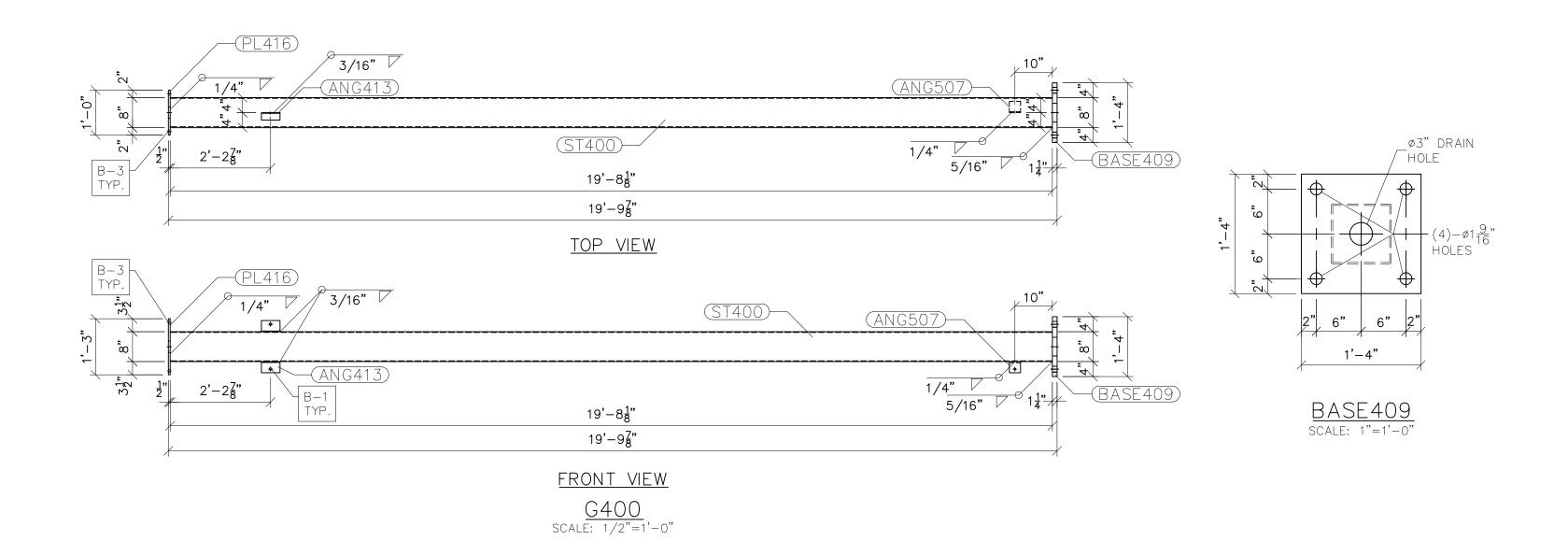
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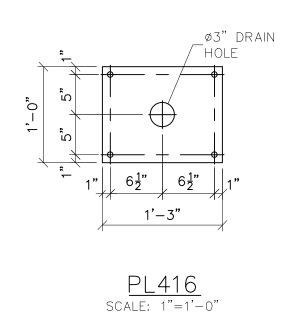
	BILL OF MATERIAL								
POS. NO.	ASTM GRADE	QTY	DESC.	LENGTH	WEIGHT				
G402	-	1	FOR ONE GROUP 402:	_	-				
SP402	A53	1	PIPE 2" STD	10'-4"	37.74				
PL402	A36	1	PL ½" X Ø1'-6¾"	-	37.66				
PL402A	A36	4	PL ½" X 4" (HALF)	1'-0"	7.88				
PC402	A53	1	2" SCH 40 GV CAP	-	1.18				
			BLACK W	/EIGHT:	84.46 LB				
			GALVANIZE	D WEIGHT:	3.38 LB				
			TOTAL W	/EIGHT:	87.84 LB				

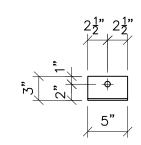
		BILL	OF MATERIAL		
POS. NO.	ASTM GRADE	QTY	DESC.	LENGTH	WEIGHT
G403	-	2	FOR ONE GROUP 403:	-	-
SP403	A53	1	2" SCH 40 GV PIPE	1'—11"	14.00
			BLACK V	VEIGHT:	14.00 LB
			GALVANIZE	D WEIGHT:	0.56 LB
			TOTAL V	VEIGHT:	14.56 LB

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CHECKED BY	′ :	VK		
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DATE:	05/10/2023			
SCALE:	AS SHOWN			
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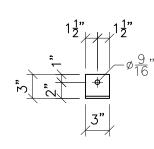
STATIC MAST







ANG413 FRONT VIEW scale: 1"=1'-0"



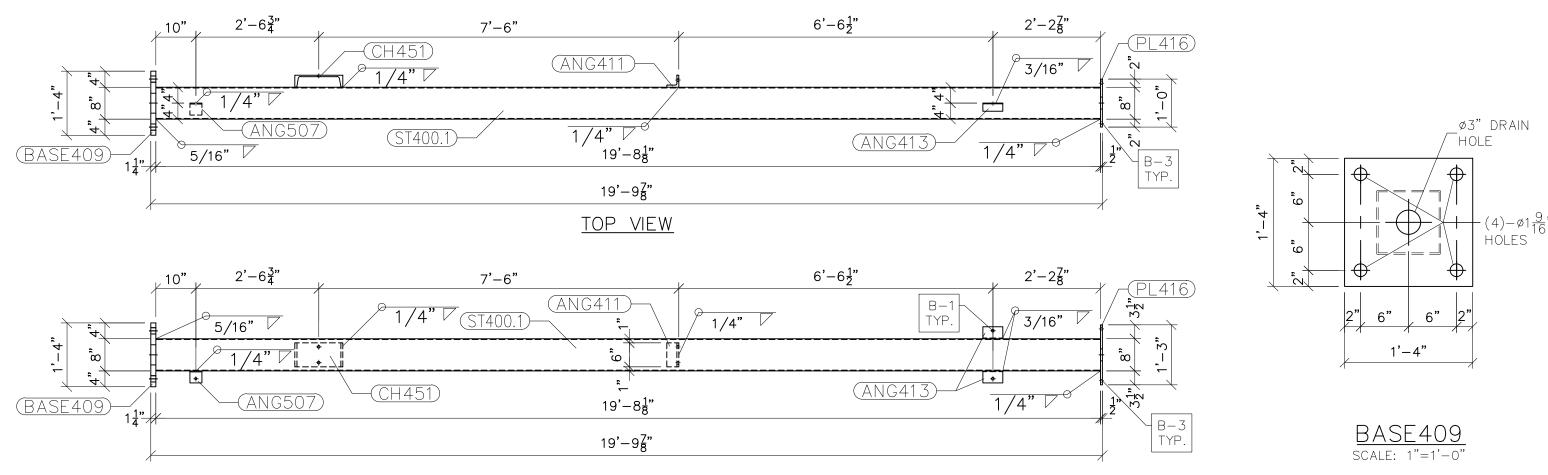
ANG507 FRONT VIEW scale: 1"=1'-0"

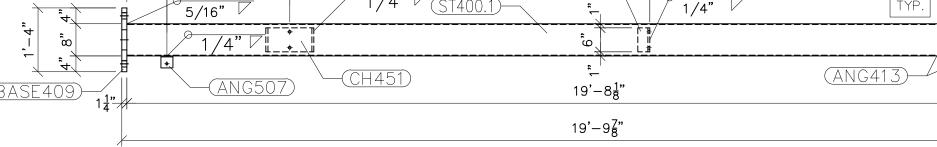
NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
,	LUCH CHARACTERS REFORE CALVANUZING

- HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED

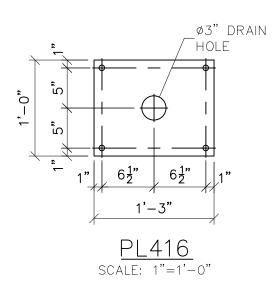
		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G400	1	FOR ONE GROUP G400:		
ANG413	2	L3x2x3/16	5"	2.56
ANG507	1	L3x3x1/4	3"	1.23
BASE409	1	PL 1 1/4"x1'-4" PL 1/2"x1'-0"	1'-4"	90.93
PL416	1	PL 1/2"x1'-0"	1'-3"	25.57
ST400	1	HSSÁx8x3/16	19'-8 1/8"	386.26
		BLACK WEIGHT	:	506.55 LBS.
		GALVANIZED W	EIGHT:	20.26 LBS.
		TOTAL WEIGHT:		526.81 LBS.

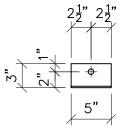
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PROJECT NAME:		60		DRAWING TITLE:		CINE CHITCH CTAND			
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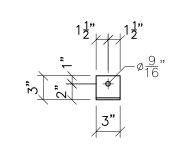


FRONT VIEW G400.1 scale: 1/2"=1'-0"

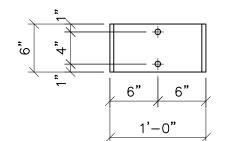




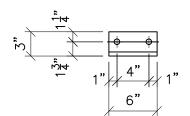
ANG413 FRONT VIEW scale: 1"=1'-0"



ANG507 FRONT VIEW scale: 1"=1'-0"



CH451 FRONT VIEW Scale: 1"=1'-0"



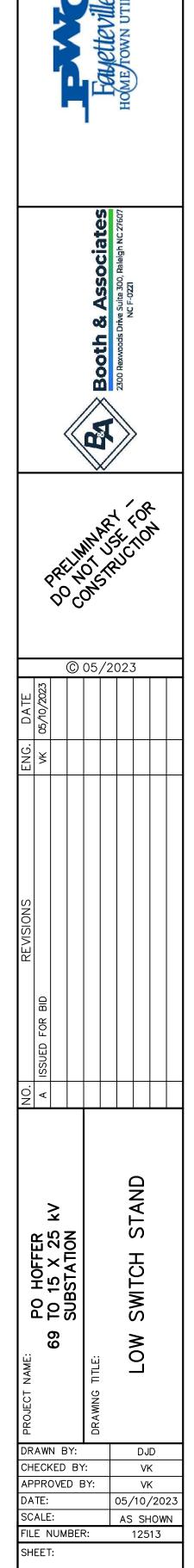
ANG411 FRONT VIEW scale: 1"=1'-0"

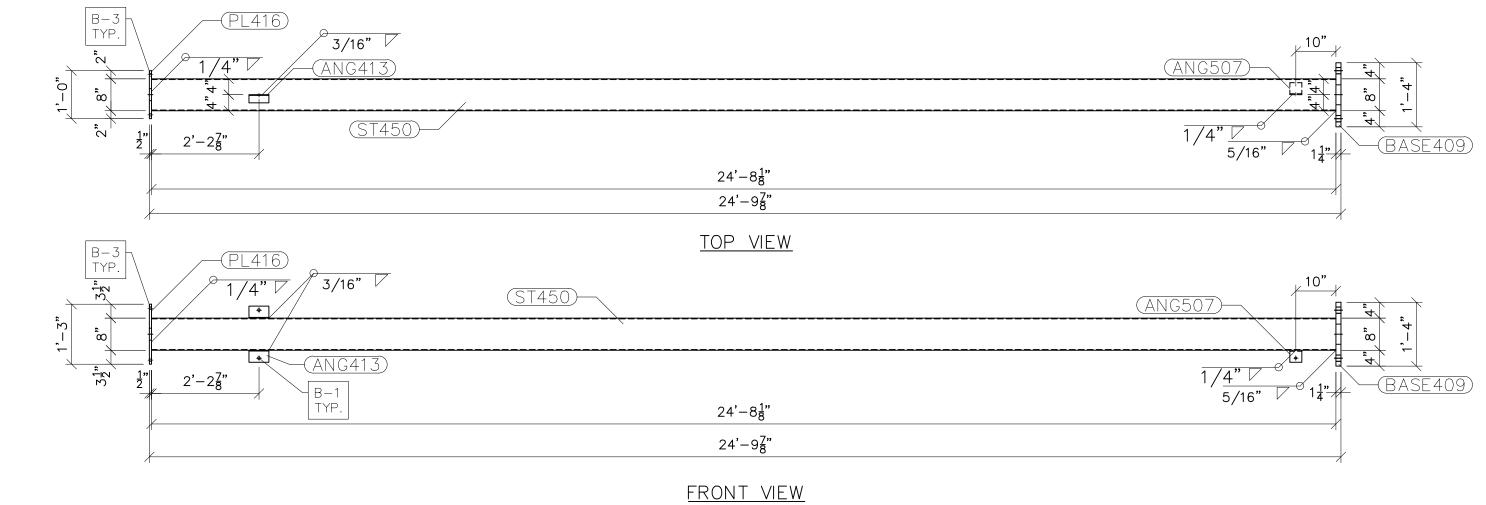
NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

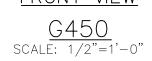
	BILL OF MATERIAL					
POS. NO.	QTY	DESC.	LENGTH	WEIGHT		
G400.1	1	FOR ONE GROUP G400.1:				
ANG411	1	L3x3x1/2	6"	4.70		
ANG413	2	L3x2x3/16	5"	2.56		
ANG507	1	L3x3x1/4	3"	1.23		
BASE409	1	PL 1 1/4"×1'-4"	1'-4"	90.93		
CH451	1	C12x25	6"	12.50		
PL416	1	PL 1/2"x1'-0"	1'-3"	25.57		
ST400.1	1	HSSÁx8x3/16	19'-8 1/8"	386.26		

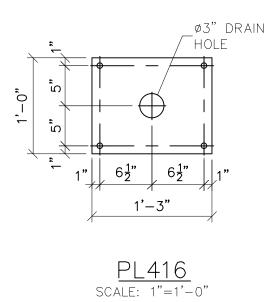
BLACK WEIGHT: GALVANIZED WEIGHT: TOTAL WEIGHT:

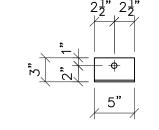
523.75 LBS. 20.95 LBS. 544.70 LBS.





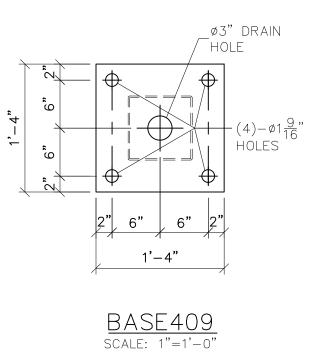






ANG413 FRONT VIEW scale: 1"=1'-0"

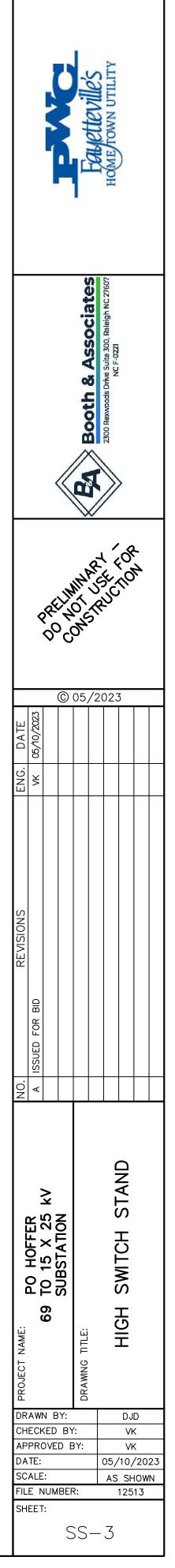
ANG507	FRONT	VIEW
SCAL	E: 1"=1'-0"	

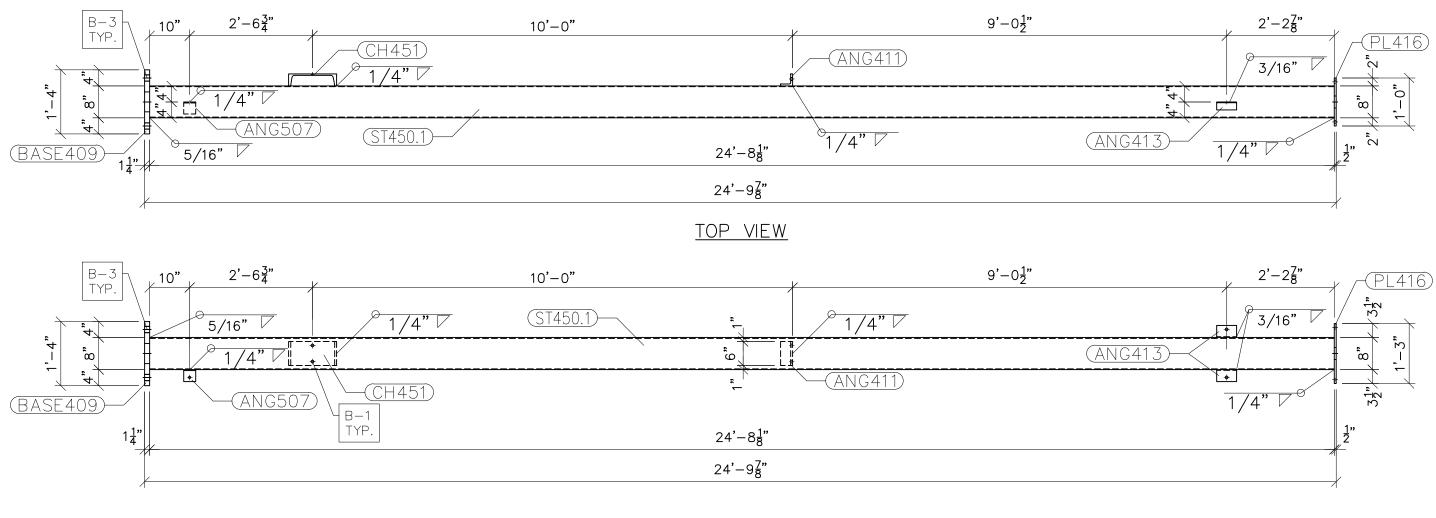


NOTE	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER F

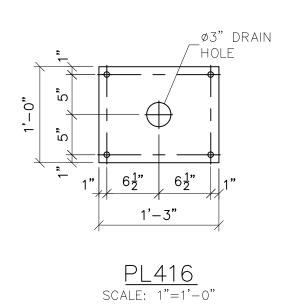
- ASIM 325 ERECTION BOLTS
 ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED

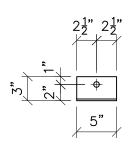
		BILL OF MATERIAL						
POS. NO.	QTY	DESC.	LENGTH	WEIGHT				
G450	1	FOR ONE GROUP G450:						
ANG413	2	L3x2x3/16	L3x2x3/16 5"					
ANG507	1	L3x3x1/4	3"	1.23				
BASE409	1	PL 1 1/4"x1'-4"	1'-4"	90.93				
PL416	1	PL 1 1/4"x1'-4" PL 1/2"x1'-0"	1'-3"	25.57				
ST450	1	HSS8x8x3/16	24'-8 1/8"	484.41				
BLACK WEIGHT: 604.70 LBS.								
		GALVANIZED W	EIGHT:	24.19 LBS.				
		TOTAL WEIGHT:		628.89 LBS.				



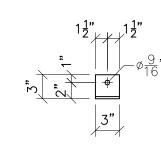


<u>Front view</u> <u>G450.1</u> scale: 1/2"=1'-0"

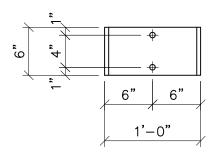




ANG413 FRONT VIEW scale: 1"=1'-0"



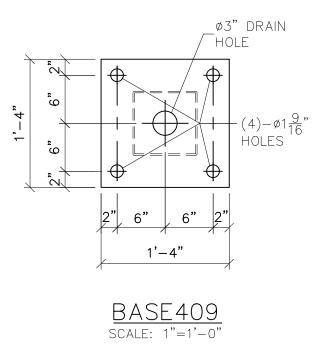
ANG507 FRONT VIEW scale: 1"=1'-0"

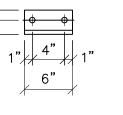


CH451 FRONT VIEW SCALE: 1"=1'-0"



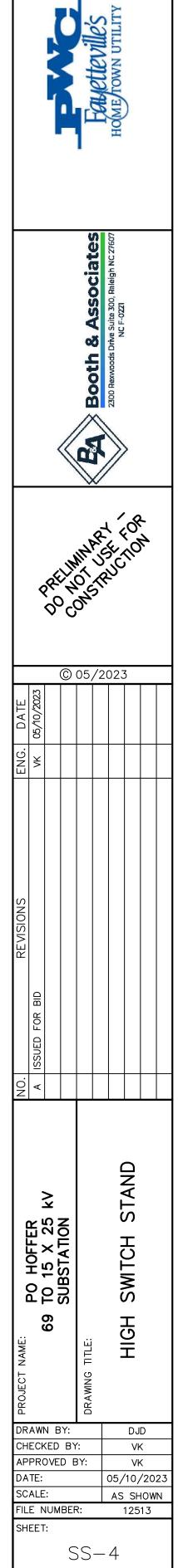
ANG411 FRONT VIEW scale: 1"=1'-0"

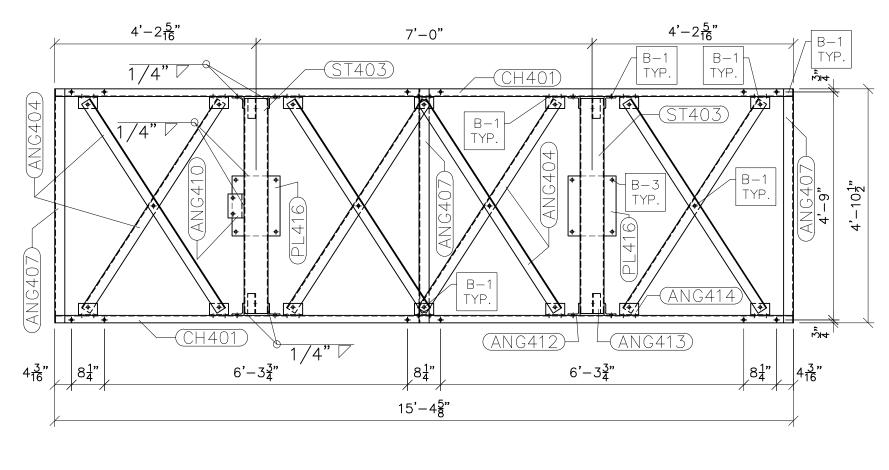




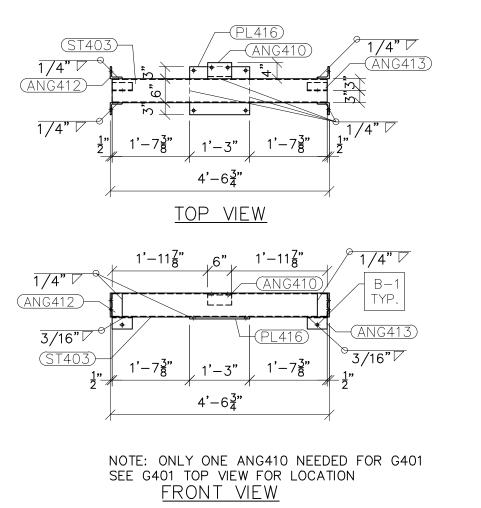
NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

BILL OF MATERIAL					
POS. NO.	QTY	DESC.	LENGTH	WEIGHT	
G450.1	1	FOR ONE GROUP G450.1:			
ANG411	1	L3x3x1/2	6"	4.70	
ANG413	2	L3x2x3/16	5"	2.56	
ANG507	1	L3x3x1/4	3"	1.23	
BASE409	1	PL 1 1/4"x1'-4"	1'-4"	90.93	
CH451	1	C12x25	6"	12.50	
PL416	1	PL 1/2"x1'-0"	1'-3"	25.57	
ST450.1	1	HSS8x8x3/16	24'-8 1/8"	484.41	
BLACK WEIGHT: 621.90 LBS.					
		GALVANIZED W	EIGHT:	24.88 LBS.	
TOTAL WEIGHT: 646.78 LBS.					



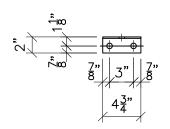


<u>G401 TOP VIEW</u> scale: 1/2"=1'-0"

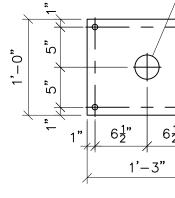


G	403
SCALE:	1/2"=1'-0"

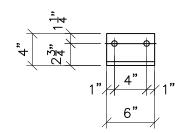
 $2\frac{3}{8}$ $2\frac{3}{8}$ $+ \bullet$ 4<u>3</u>" BOTTOM VIEW



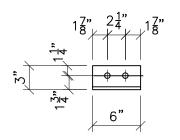
FRONT VIEW ANG414 Scale: 1"=1'-0"

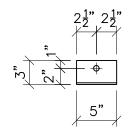


PL416 SCALE: 1"=1'-0"



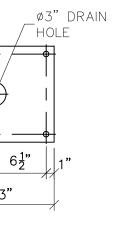






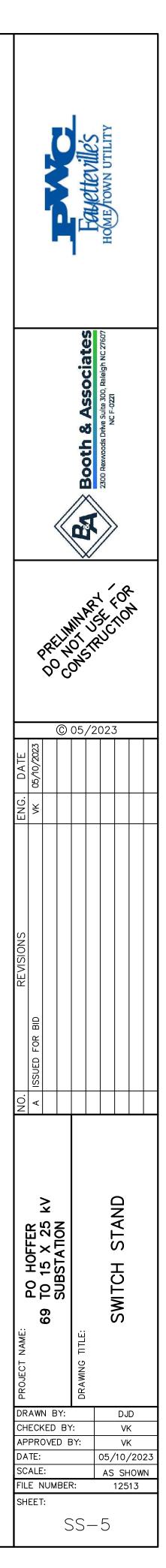
ANG412 FRONT VIEW scale: 1"=1'-0"

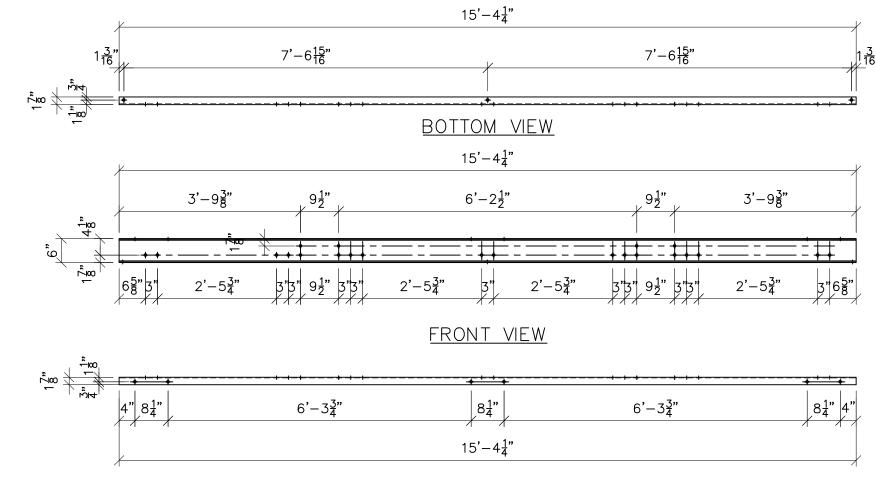
ANG413 FRONT VIEW scale: 1"=1'-0"



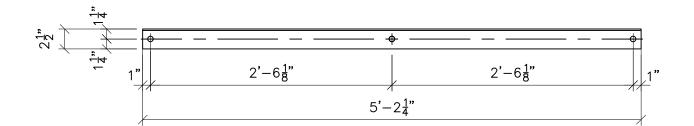
BILL OF MATERIAL POS. NO. QTY DESC. LENGTH WEIGHT G401 2 FOR ONE GROUP G401: 6" 5.55 ANG410 1 L4x3x1/2 6" 28.80 ANG412 8 L3x3x3/8 6" 28.80 ANG413 4 L3x2x3/16 5" 5.12 ANG414 14 L3x2x3/16 4 3/4" 17.01 ST403 2 HSS6x6x3/16 4'-5 3/4" 129.96 PL416 2 PL 1/2"x1'-0" 1'-3" 51.15 CH401 2 C6x8.2 15'-4 1/4" 251.80 ANG404 8 L2 1/2x2 1/2x3/16 5'-2 1/4" 127.44 ANG407 3 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 WG408 4 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 BLACK WEIGHT: C96.19 LBS. GALVANIZED WEIGHT: 27.85 LBS.	 NOTES: ASTM 325 ERECTION BOLTS ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING ALL WELDING ELECTRODES SHALL BE E7021 EDGE DISTANCE 1" UNLESS NOTED 							
POS. NO. QTY DESC. LENGTH WEIGHT G401 2 FOR ONE GROUP G401: 6" 5.55 ANG410 1 L4x3x1/2 6" 28.80 ANG412 8 L3x3x3/8 6" 28.80 ANG413 4 L3x2x3/16 5" 5.12 ANG414 14 L3x2x3/16 4 '3/4" 17.01 ST403 2 HSS6x6x3/16 4 '-5 3/4" 129.96 PL416 2 PL 1/2"x1'-0" 1'-3" 51.15 CH401 2 C6x8.2 15'-4 1/4" 251.80 ANG404 8 L2 1/2x2 1/2x3/16 5'-2 1/4" 127.44 ANG407 3 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 MG408 4 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 BLACK WEIGHT: 696.19 LBS. GALVANIZED WEIGHT: 27.85 LBS.			BILL OF MATERIAL					
G401 2 FOR ONE GROUP G401: 6" 5.55 ANG410 1 L4x3x1/2 6" 5.55 ANG412 8 L3x3x3/8 6" 28.80 ANG413 4 L3x2x3/16 5" 5.12 ANG414 14 L3x2x3/16 4 3/4" 17.01 ST403 2 HSS6x6x3/16 4'-5 3/4" 129.96 PL416 2 PL 1/2"x1'-0" 1'-3" 51.15 CH401 2 C6x8.2 15'-4 1/4" 251.80 ANG404 8 L2 1/2x2 1/2x3/16 5'-2 1/4" 127.44 ANG407 3 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 MG408 4 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 BLACK WEIGHT: 696.19 LBS. GALVANIZED WEIGHT: 27.85 LBS. 57.85 LBS.	POS. NO.	QTY		LENGTH	WEIGHT			
ANG412 8 L3x3x3/8 6" 28.80 ANG413 4 L3x2x3/16 5" 5.12 ANG414 14 L3x2x3/16 4 3/4" 17.01 ST403 2 HSS6x6x3/16 4'-5 3/4" 129.96 PL416 2 PL 1/2"x1'-0" 1'-3" 51.15 CH401 2 C6x8.2 15'-4 1/4" 251.80 ANG404 8 L2 1/2x2 1/2x3/16 5'-2 1/4" 127.44 ANG407 3 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 ANG408 4 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46		2	FOR ONE GROUP G401:					
ANG407 3 L2 1/2x2 1/2x3/16 4'-10 1/2" 44.90 ANG408 4 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 BLACK WEIGHT: GALVANIZED WEIGHT: 696.19 LBS.	ANG410	1	L4x3x1/2	6"	5.55			
ANG407 3 L2 1/2x2 1/2x3/16 4'-10 1/2" 44.90 ANG408 4 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 BLACK WEIGHT: GALVANIZED WEIGHT: 696.19 LBS.		8	L3x3x3/8	6"	28.80			
ANG407 3 L2 1/2x2 1/2x3/16 4'-10 1/2" 44.90 ANG408 4 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 BLACK WEIGHT: GALVANIZED WEIGHT: 696.19 LBS.	ANG413	4	L3x2x3/16	5"	5.12			
ANG407 3 L2 1/2x2 1/2x3/16 4'-10 1/2" 44.90 ANG408 4 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 BLACK WEIGHT: GALVANIZED WEIGHT: 696.19 LBS.	ANG414	14	L3x2x3/16	4 3/4"	17.01			
ANG407 3 L2 1/2x2 1/2x3/16 4'-10 1/2" 44.90 ANG408 4 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 BLACK WEIGHT: GALVANIZED WEIGHT: 696.19 LBS.	ST403	2	HSS6x6x3/16	4'-5'3/4"	129.96			
ANG407 3 L2 1/2x2 1/2x3/16 4'-10 1/2" 44.90 ANG408 4 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 BLACK WEIGHT: GALVANIZED WEIGHT: 696.19 LBS.	PL416	2	PL 1/2"x1'-0"	1'-3"	51.15			
ANG407 3 L2 1/2x2 1/2x3/16 4'-10 1/2" 44.90 ANG408 4 L2 1/2x2 1/2x3/16 2'-9 11/16" 34.46 BLACK WEIGHT: GALVANIZED WEIGHT: 696.19 LBS.	CH401	2	C6x8.2	15'-4 1/4"	251.80			
ANG408 4 L2 1/2x2 1/2x3/16 2'-9 11/16'' 34.46 BLACK WEIGHT: 696.19 LBS. GALVANIZED WEIGHT: 27.85 LBS.	ANG404	8	L2 1/2x2 1/2x3/16	5'-2 1/4"	127.44			
ANG408 4 L2 1/2x2 1/2x3/16 2'-9 11/16'' 34.46 BLACK WEIGHT: 696.19 LBS. GALVANIZED WEIGHT: 27.85 LBS.	ANG407 3 12 1/2x2 1/2x3/16		L2 1/2x2 1/2x3/16	4'-10 1/2"	44.90			
BLACK WEIGHT: 696.19 LBS. GALVANIZED WEIGHT: 27.85 LBS.	ANG408	1		2'-9 11/16"	34.46			
GALVANIZED WEIGHT: 27.85 LBS.								
GALVANIZED WEIGHT: 27.85 LBS.								
			GALVANIZED W TOTAL WEIGHT:					

SEE DRAWING No. SS-4 FOR CH401, ANG404, ANG407 & ANG408 DETAILS.

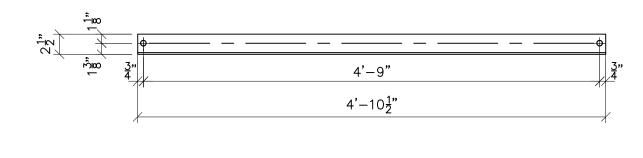




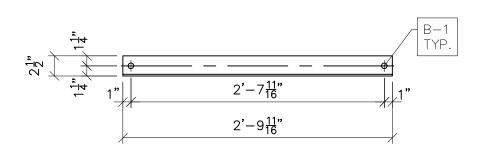
<u>top view</u> CH401 SCALE: 1/2"=1'-0"



ANG404 FRONT VIEW Scale: 1"=1'-0"



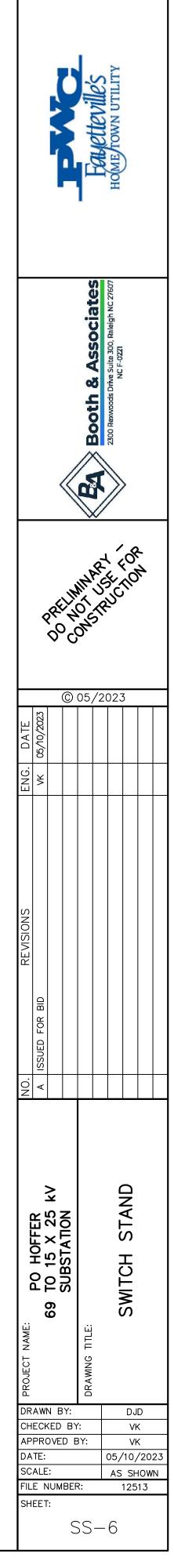


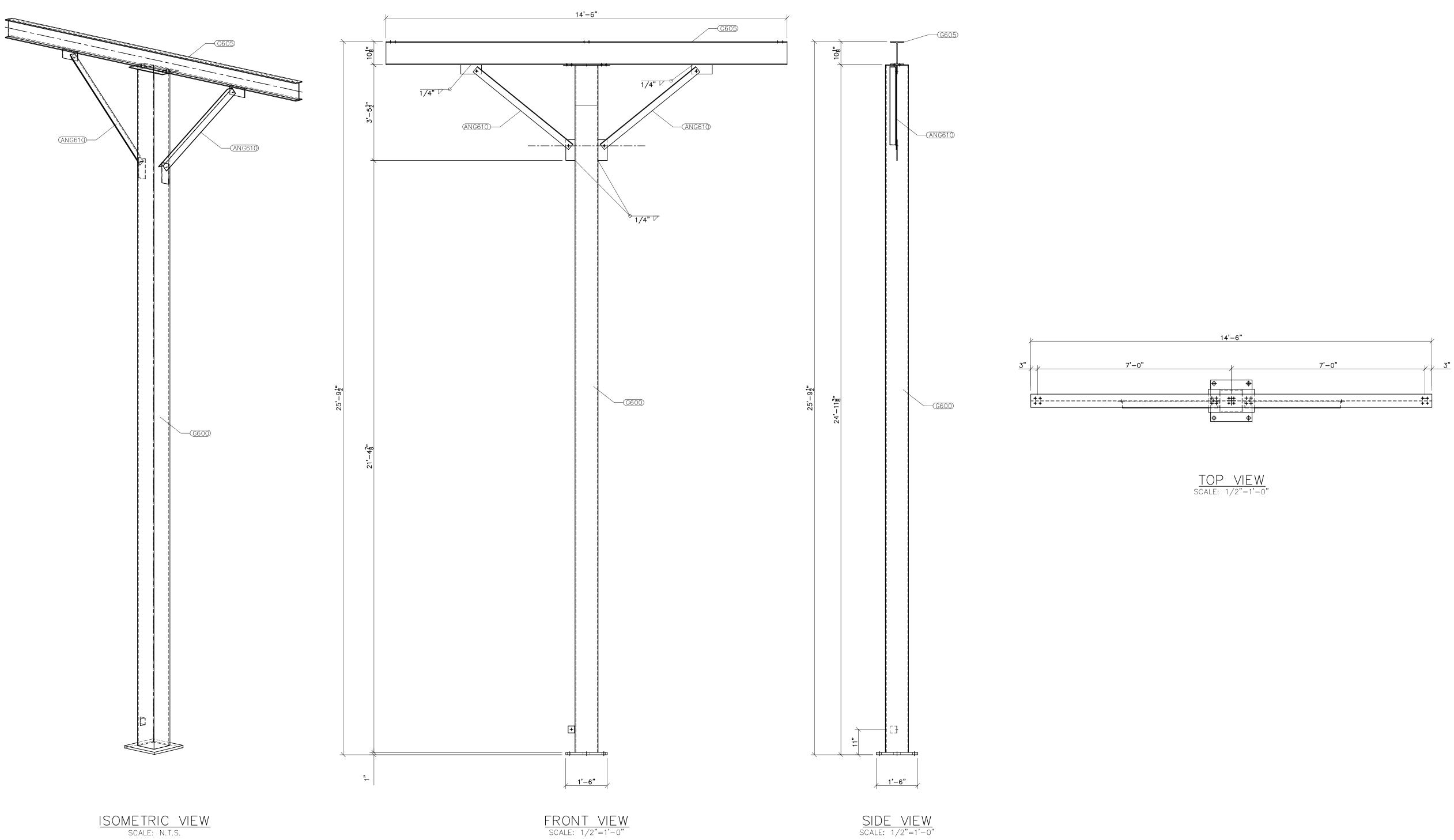


ANG408 FRONT VIEW SCALE: 1"=1'-0"

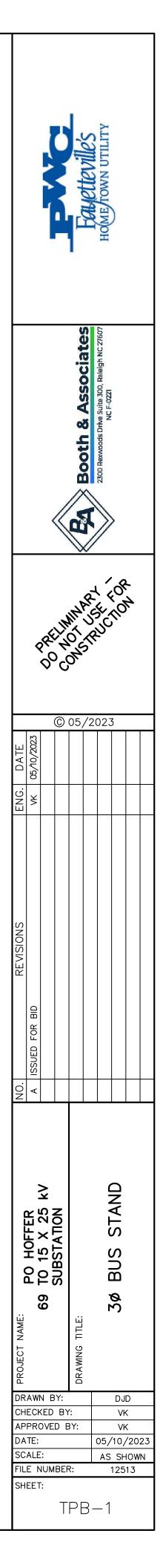
NOTE	ES:			
1)	ASTM	325	ERECTION	BOLTS

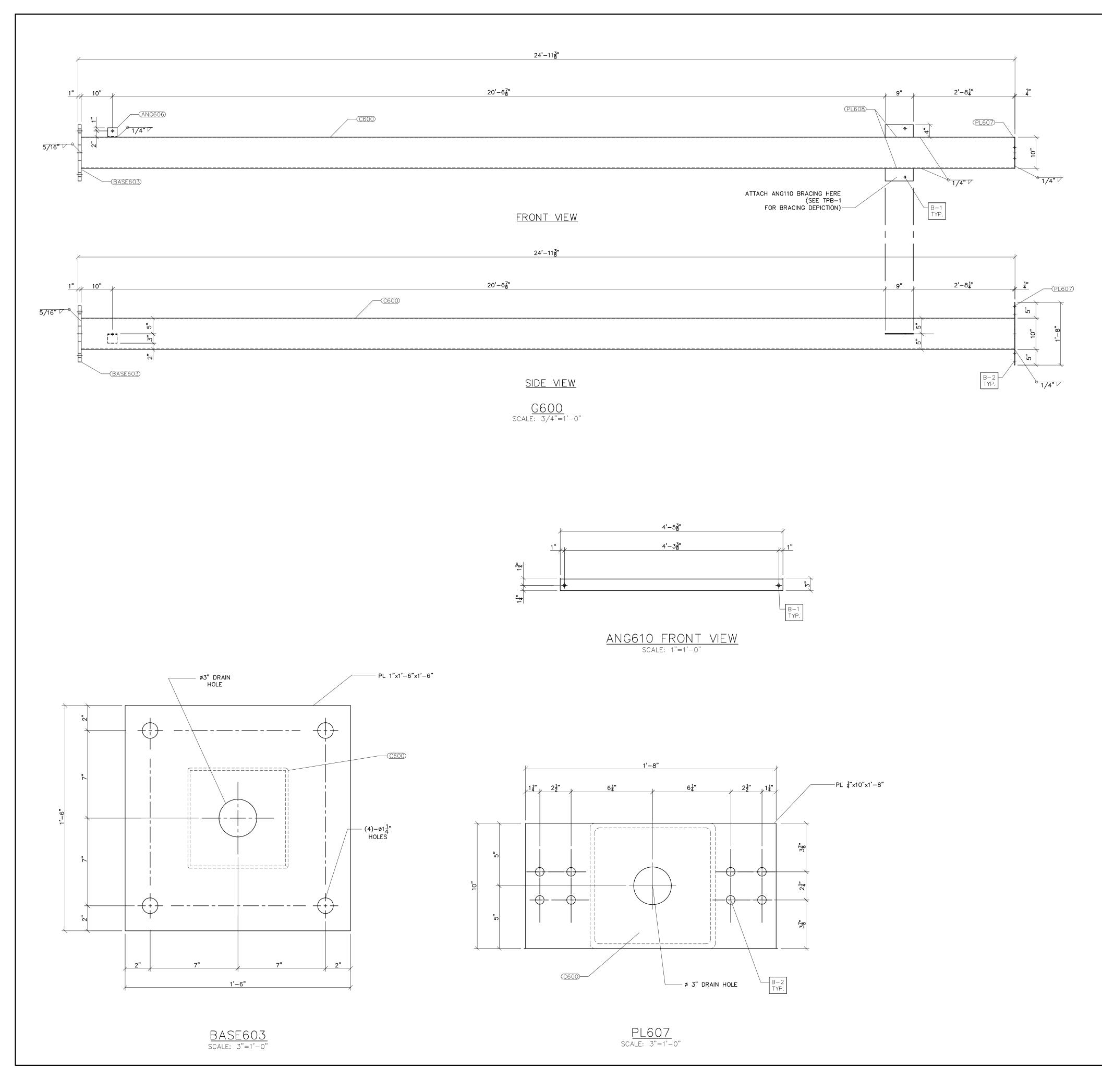
- ASIM 325 ERECTION BOLIS
 ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED

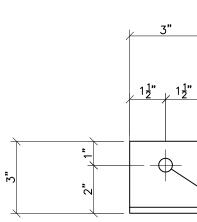




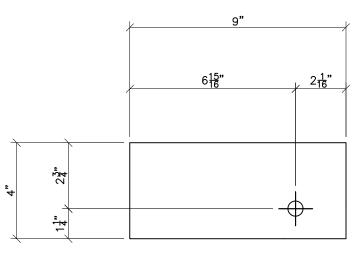
SCALE: 1/2"=1'-0"







ANG606 FRONT scale: n.t.s.



PL608 FRONT VIEW scale: n.t.s.

BILL OF MATERIAL POS. NO. QTY DESC. G600 1 FOR ONE GROUP G600: C600 1 HSS10x10x3/8 BASE603 1 PL 1"x 1'-6" PL607 1 PL 1/4"x10" PL608 2 PL 1/4"x4" ANG606 1 L3x3x1/4 ANG610 2 L3x3x1/4	LENGTH 24'-10 1/8" 1'-6" 1'-8" 9" 3" 4'-5 3/8"	WEIGHT 1188.09 91.88 14.18 5.10 1.23 43.59		Fould Home Town UTIL
BLACK WEIGH GALVANIZED TOTAL WEIGH SEE TPB-1 FOR GROUP G	WEIGHT: 5 T: 139	44.07 LBS. 53.76 LBS. 97.83 LBS.		2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221
				0.05/2023
			REVISIONS ENG. BID VK	

PO HOFFER 69 TO 15 X 25 kV SUBSTATION

DRAWN BY:

DATE:

SHEET:

CHECKED BY:

APPROVED BY:

SCALE: AS SHOWN FILE NUMBER: 12513

TPB-2

STAND

BUS

3ø

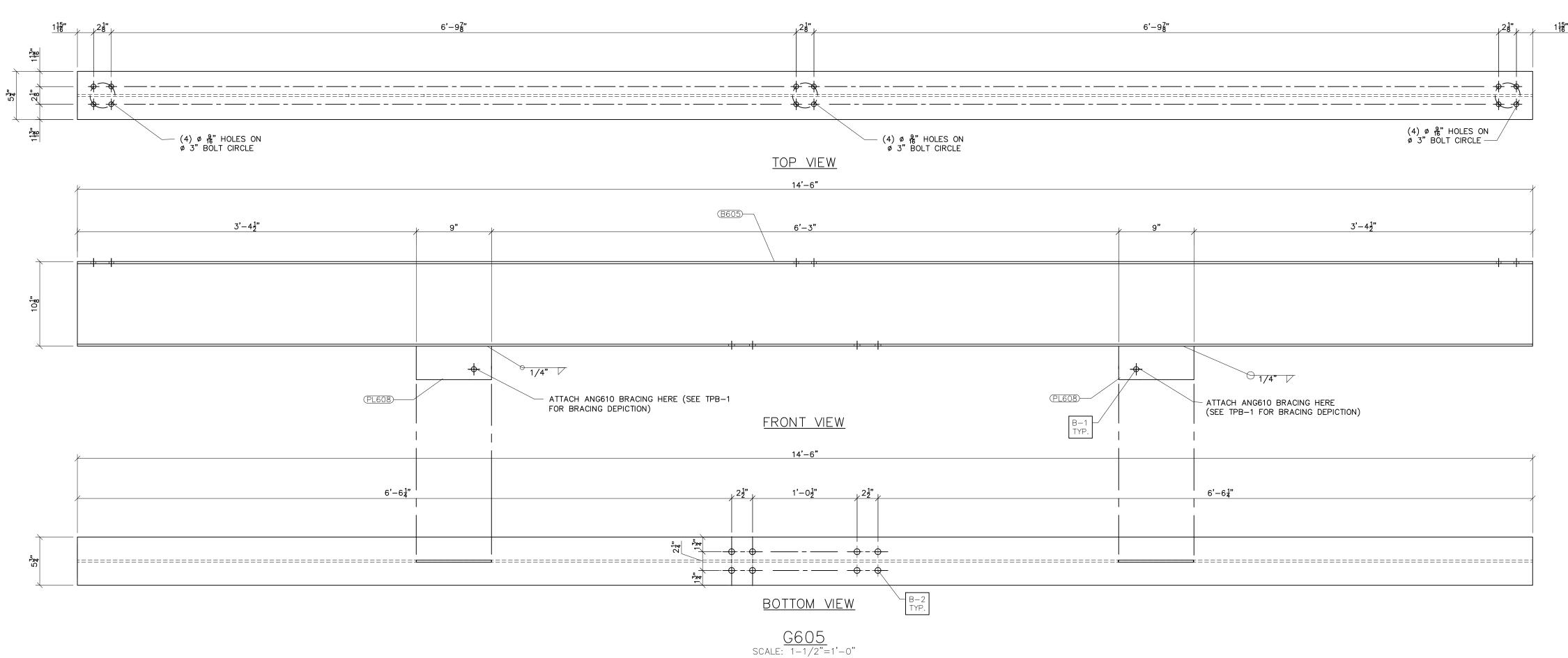
DJD

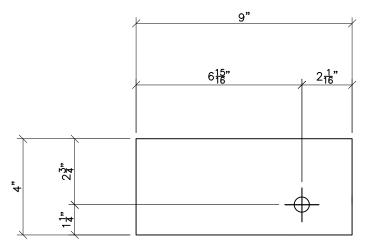
VK

VK

05/10/2023

AS SHOWN



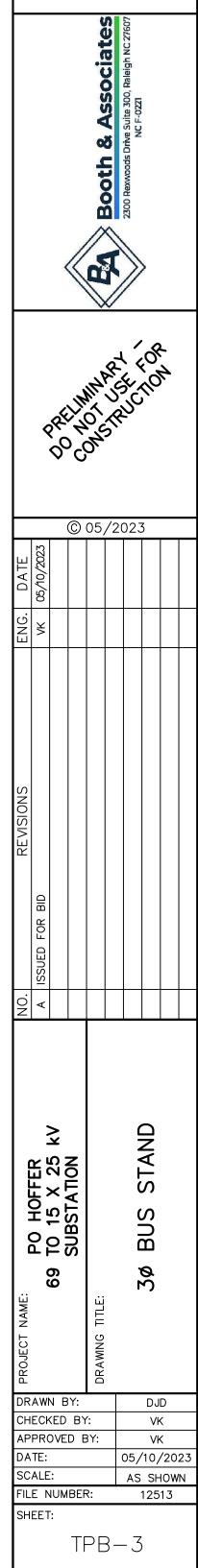


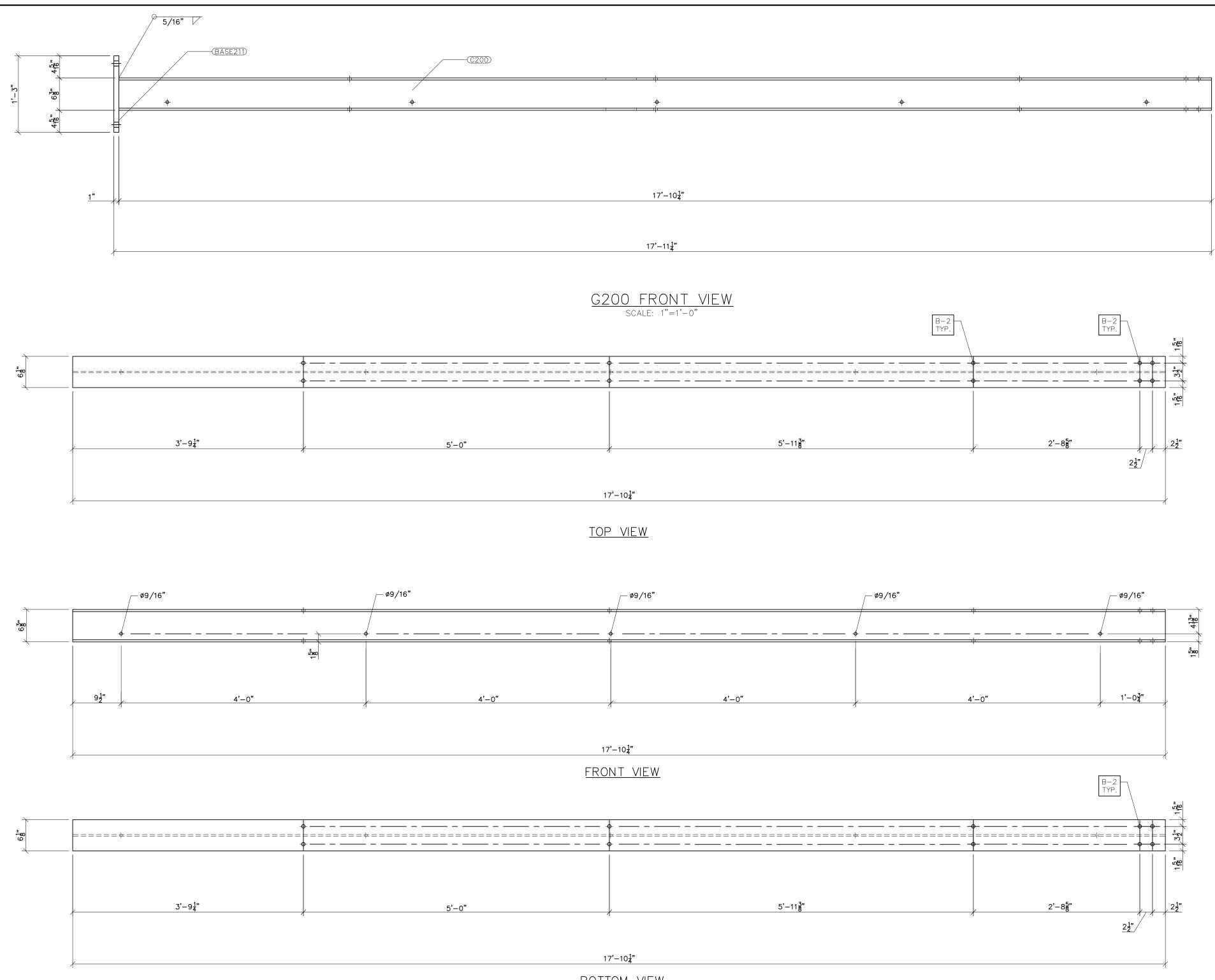
PL608 FRONT VIEW scale: n.t.s.

1) 2 3 4 5) AL) AL) PIE HIC) AL	TM 325 ERECTION BOLTS L HOT DIP GALVANIZED AFTER FAI L HOLES 11/16" DIA. FOR 5/8" DI CE MARK STAMPED INTO METAL W GH CHARACTERS BEFORE GALVANIZ L WELDING ELECTRODES SHALL BE GE DISTANCE 1" UNLESS NOTED BILL OF MATERIAL	A. BOLTS UNI WITH NOT LES ZING	ESS NOTÉD	Miles Miles
	QTY	DESC.	LENGTH	WEIGHT	
	1	FOR ONE GROUP G605:	22110111		
	1 2	W10x22 PL 1/4"x4"	14'-6" 9"	319.00 5.10	
					-
		BLACK WEIGHT:		324.10 LBS.	
		GALVANIZED WEIGH		12.96 LBS.	_
		TOTAL WEIGHT:		37.06 LBS.	
		SEE TPB-1 FOR GROUP G605 A	ND BRACING	LOCATIONS	

B605

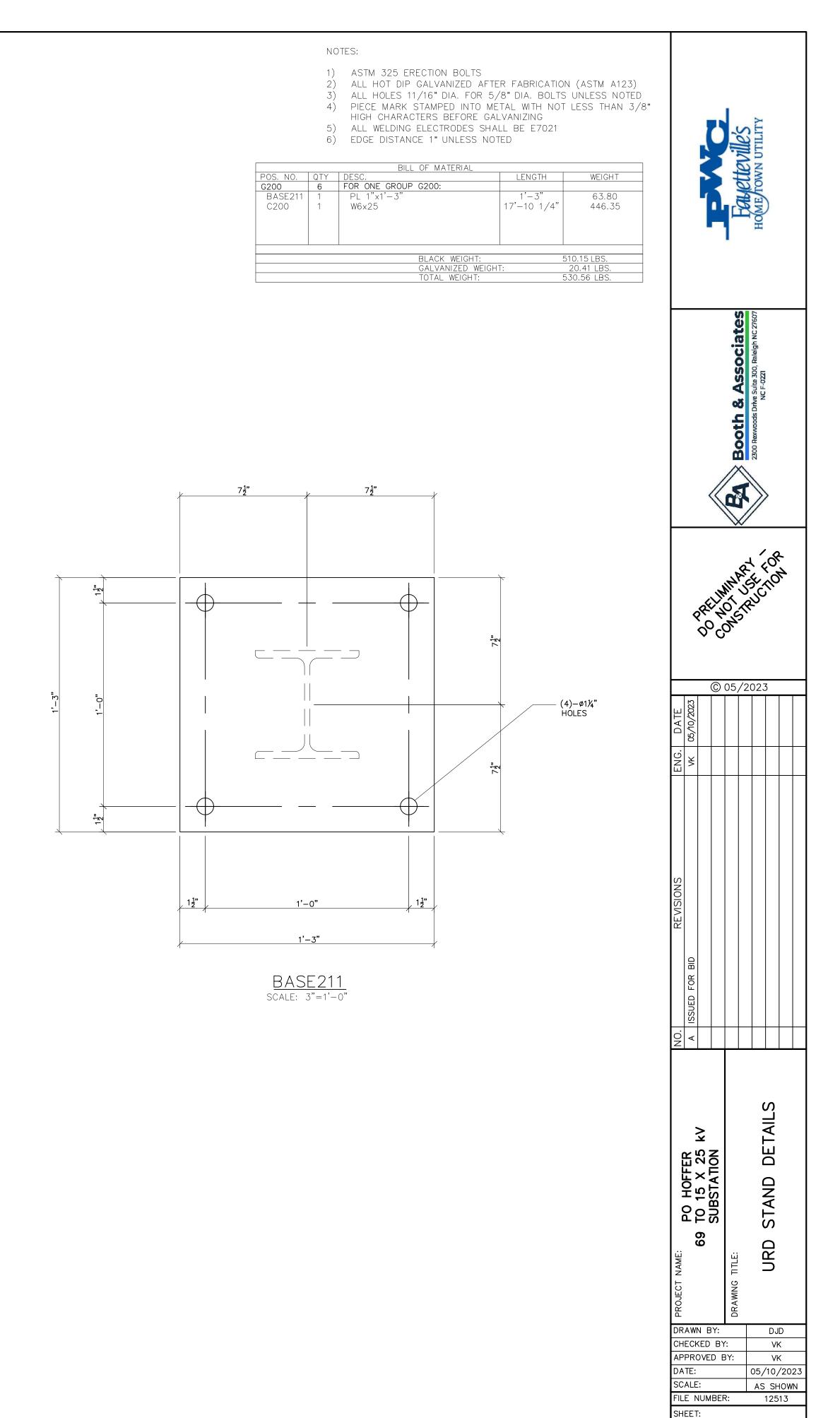
PL608



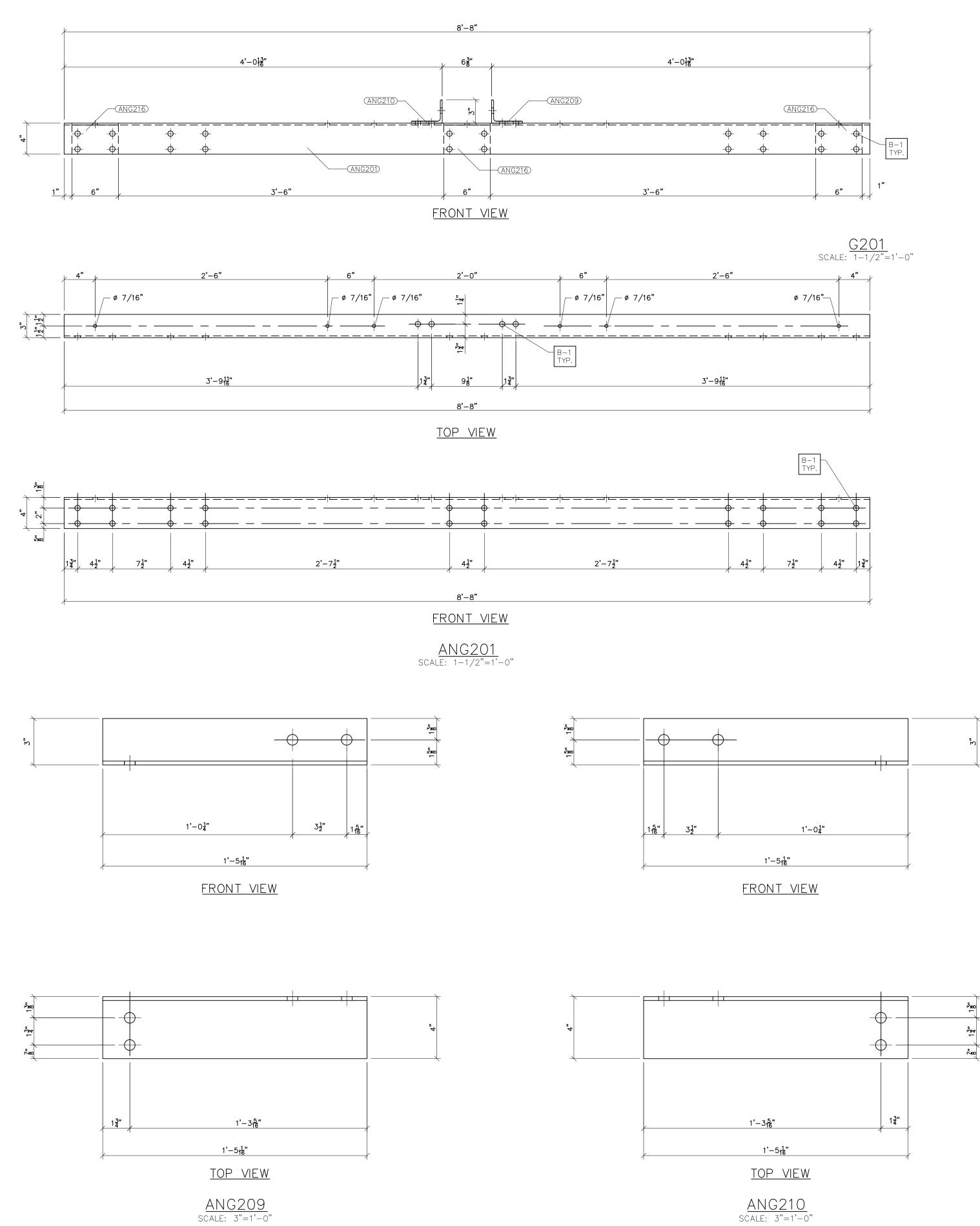


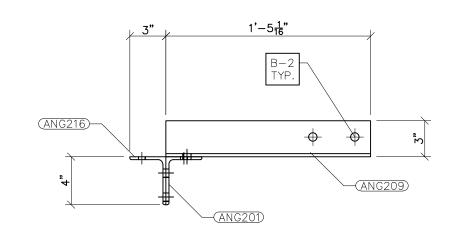
BOTTOM VIEW

<u>C200</u> SCALE: 1"=1'-0"

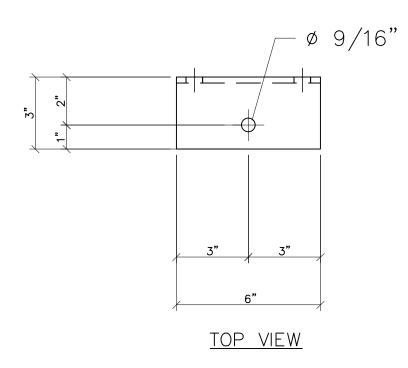


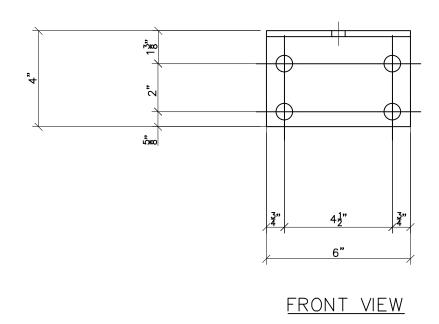
URD-1





<u>right view</u>

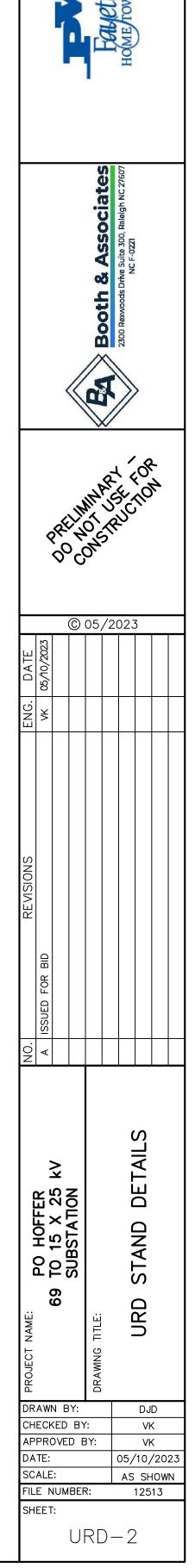


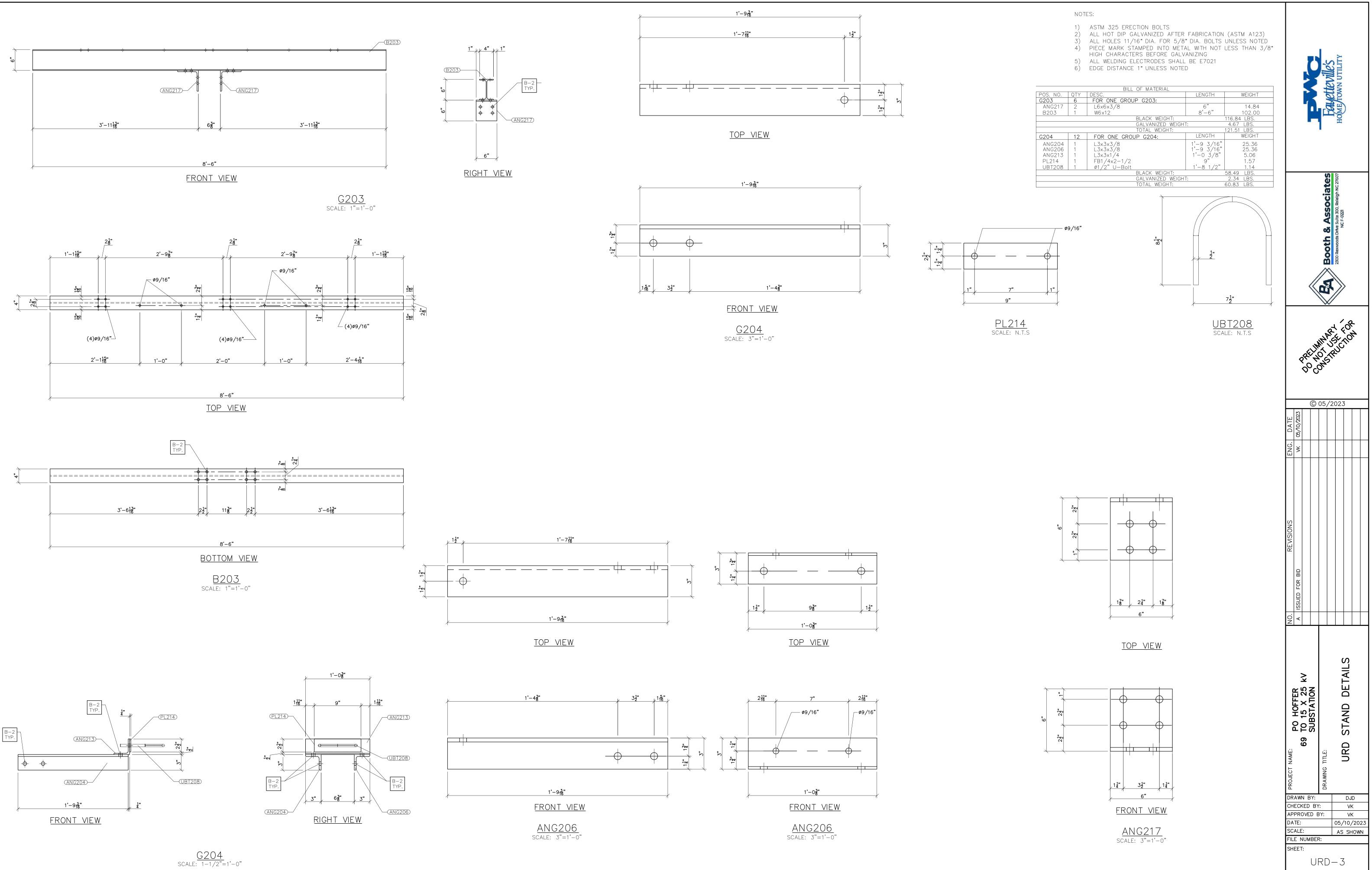


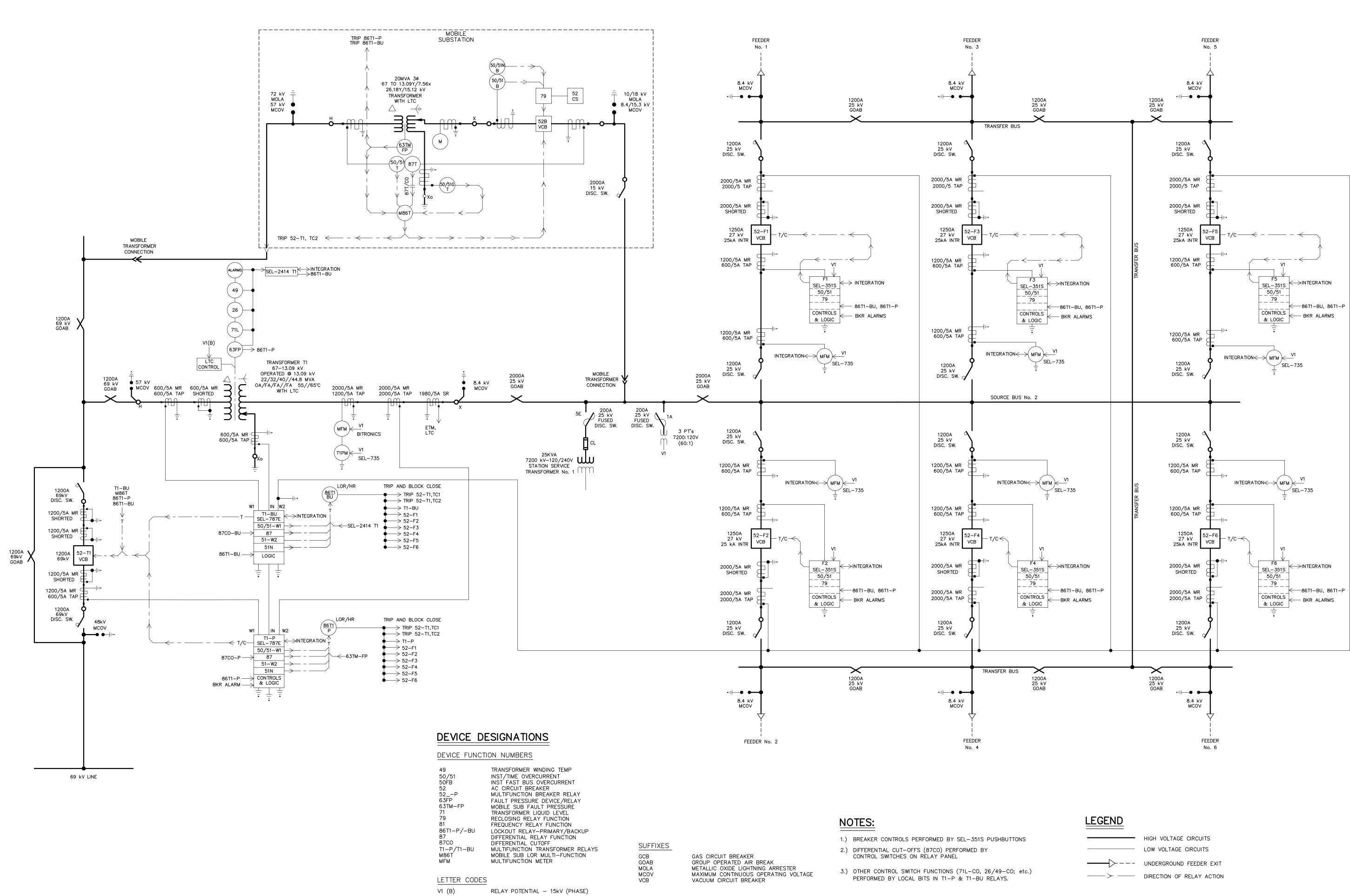
ANG216 SCALE: 3"=1'-0"

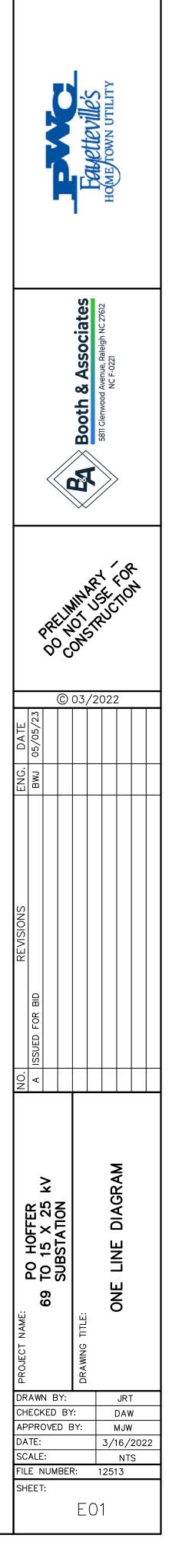
NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

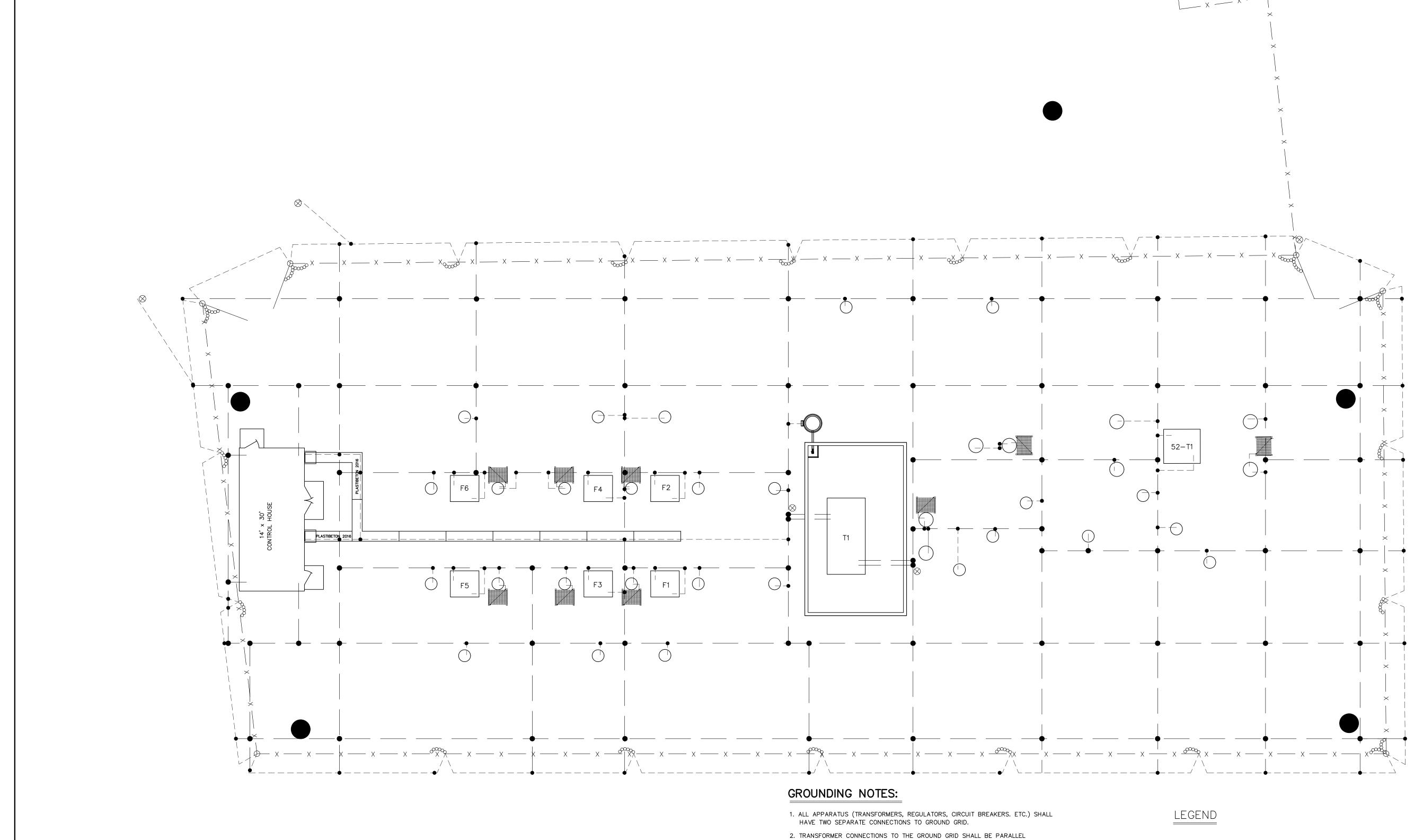
		BILL OF MATERIAL						
POS. NO.	QTY	DESC.	LENGTH	WEIGHT				
G201	6	FOR ONE GROUP G201:						
ANG201	1	L4x3x1/4	8'-8"	50.27				
ANG209	1	L4x3x1/4	1'-5 1/16"	8.25				
ANG210	1	L4x3x1/4	1'-5 1/16"	8.25				
ANG216	3	L4x3x1/4	6"	8.70				
		•						
	BLACK WEIGHT: 75.47 LBS.							
		GALVANIZED WEIGH	T:	3.01 LBS.				
		TOTAL WEIGHT:		78.99 LBS				

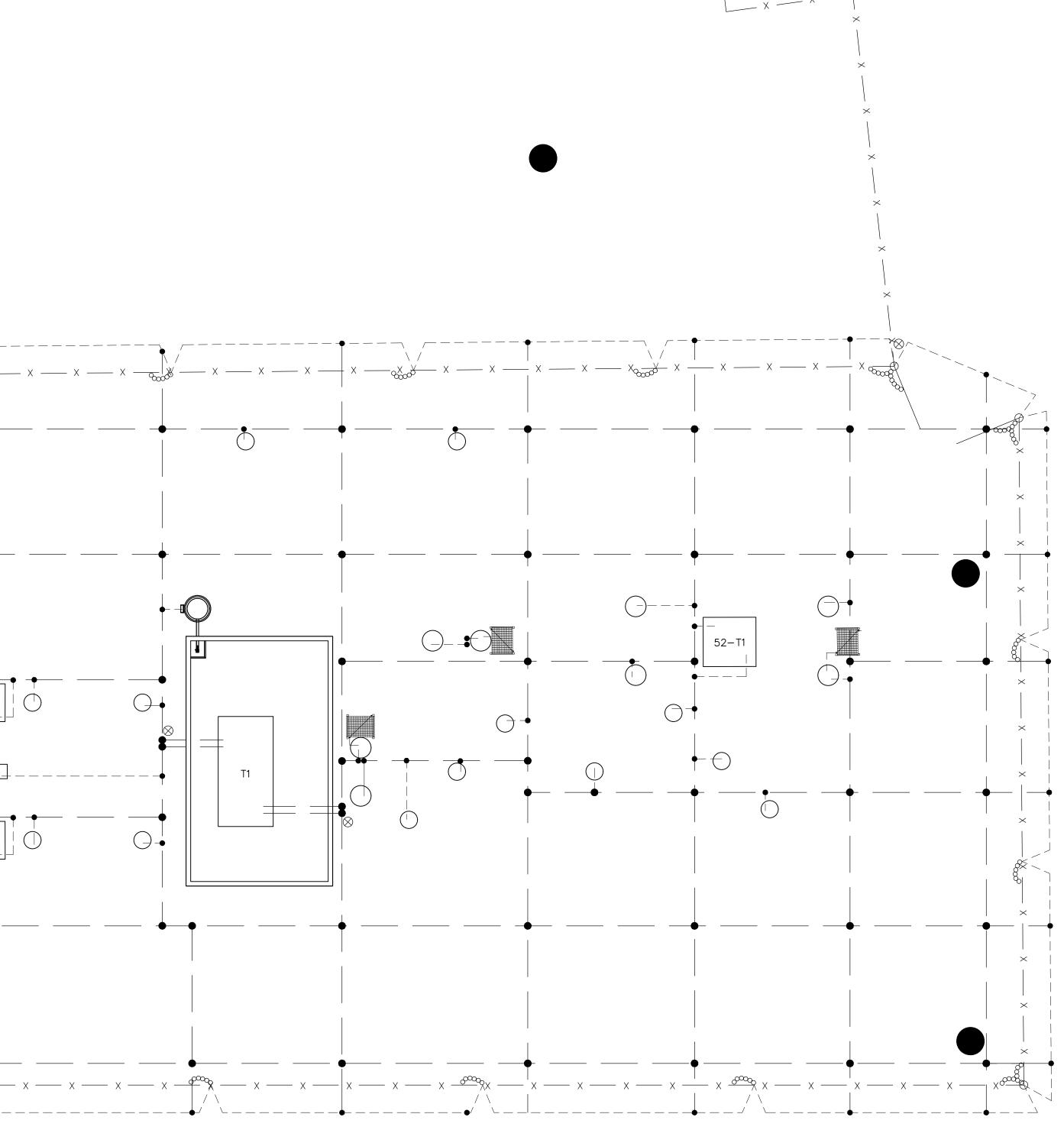












1. ALL APPARATUS (TRANSFORMERS, REGULATORS, CIRCUIT BREAKERS. ETC.) SHALL HAVE TWO SEPARATE CONNECTIONS TO GROUND GRID.	LEGEND	
 TRANSFORMER CONNECTIONS TO THE GROUND GRID SHALL BE PARALLEL 4/0 AWG BARE COPPER. 	— X — F	ENCE
3. GROUND GRID SHALL BE BURIED A MINIMUM OF 36" BELOW FINISHED SUBSTATION GRAD	DE	4/0 AWG. S
 FINISHED SUBSTATION GRADE INCLUDES 3" WASHED STONE AND 3" OF CRUSHER RUN ABOVE SUBGRADE. 		2/0 AWG. S
 LOCATE ALL UNDERGROUND FACILITIES (DUCT BANKS, TRENCH, CONTROL OR POWER CABLES, ETC.) BEFORE INSTALLING GRID CONDUCTORS. COORDINATE CONSTRUCTION WITH BELOW GRADE UTILITIES. 		GRID CONNE
6. SWITCH OPERATOR PLATFORMS SHALL BE LOCATED ON THE SAME SIDE OF SWITCH AS OPERATING HANDLE.		/8" DIA. C 30') 3–10' (UNLESS
 TEST EACH GROUND ROD PRIOR TO CONNECTION TO THE GROUND GRID. EACH 30' GROUND ROD SHOULD READ 10 OHMS OR LESS. IF THE READING EXCEEDS THIS VALUE CONTACT THE ENGINEER. 	s s	SWITCH OPE
8. TEST THE GROUND GRID SYSTEM BEFORE ENERGIZING THE SUBSTATION AND WHILE ISOLATED FROM TRANSMISSION OR DISTRIBUTION SYSTEM(S). IF THE READING EXCEEDS 5 OHMS, CONTACT THE ENGINEER.	C	CONCRETE F
9. GROUND GRID MUST BE INSTALLED BEFORE THE OIL CONTAINMENT SYSTEM.		
10. INSTALL GROUND GRID BEFORE INSTALLING CABLE TRENCH. COORDINATE CONSTRUCTION EFFORTS.	\odot c	CONCRETE F
11. INSTALL 2/0 AWG. CU. GROUND ALONG LENGTH OF ALL TRECH. SUPPORT GROUND AT TOP OF TRENCH INSIDE WALL. BOND TO GROUND GRID AT EACH INTERSEC		CABLE TREN

GROUNDING PLAN

SCALE: 3/32"=1'-0"

AWG. S.D. BARE COPPER

AWG. S.D. BARE COPPER

CONNECTORS: CADWELD TYPE

" DIA. COPPERWELD GROUND RODS,) 3–10' SECTIONS AT EACH LOCATION (UNLESS NOTED OTHERWISE)

TCH OPERATOR PLATFORM

CRETE PAD

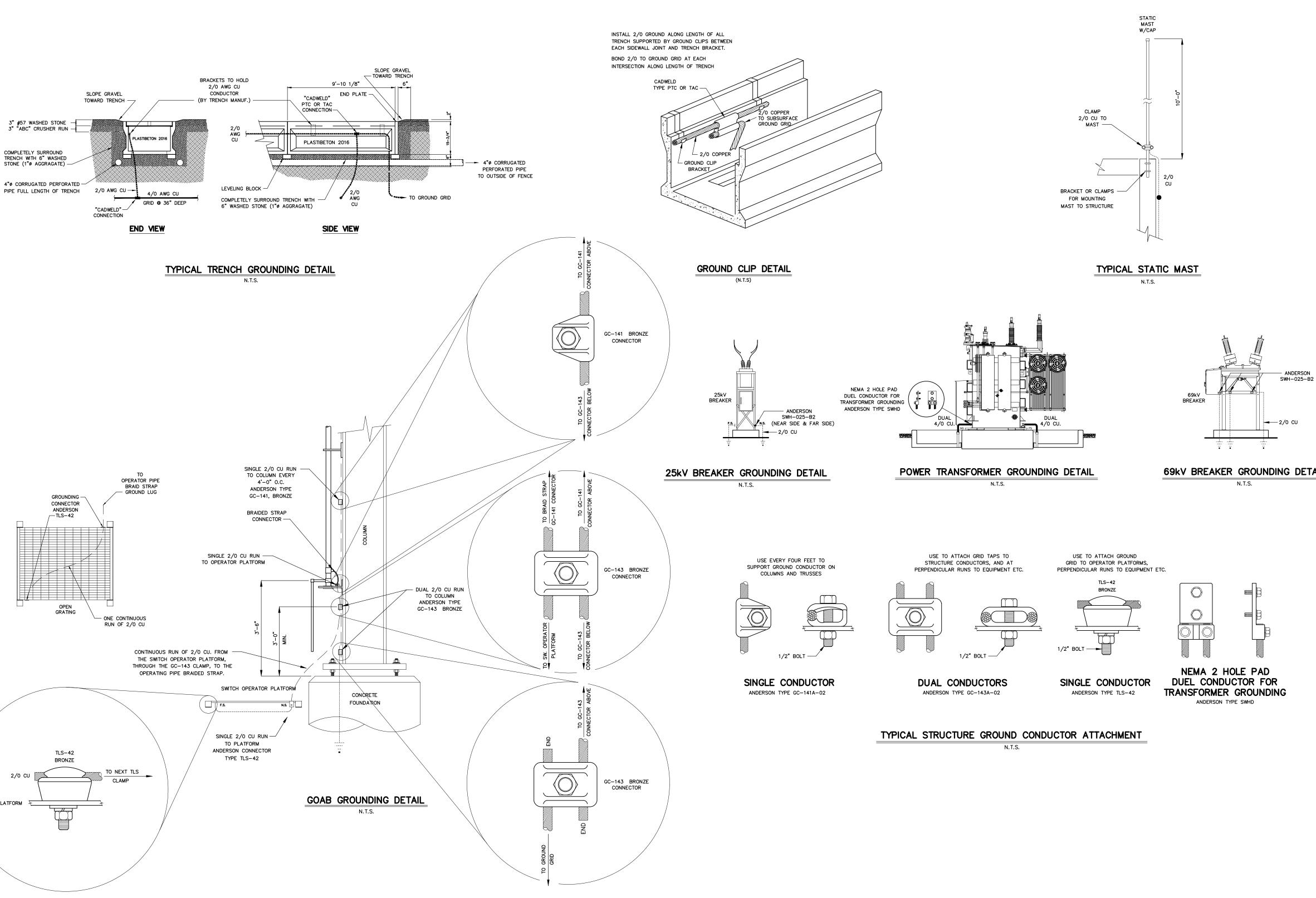
CRETE PIER

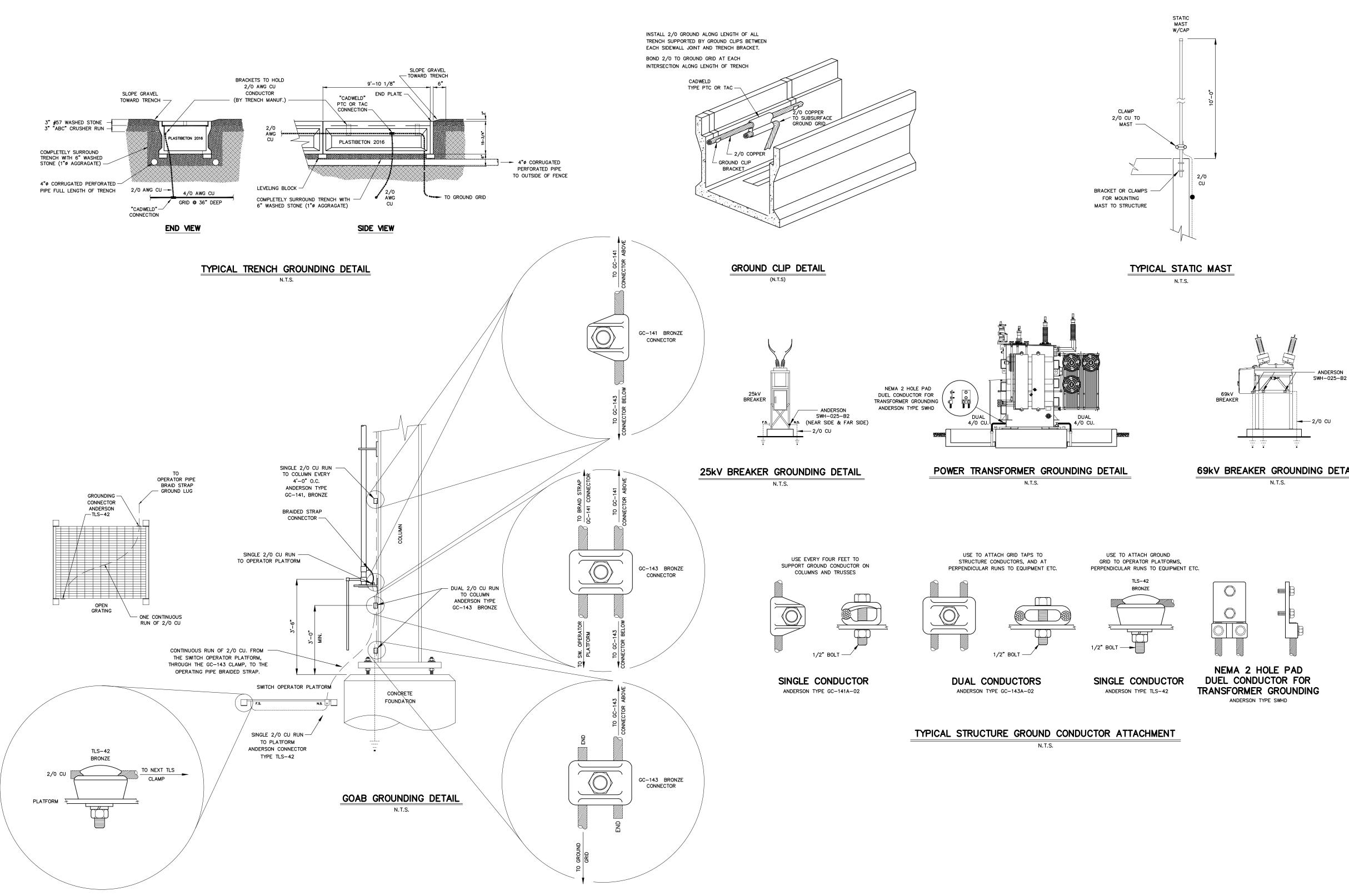
BLE TRENCH

REFERENCE:

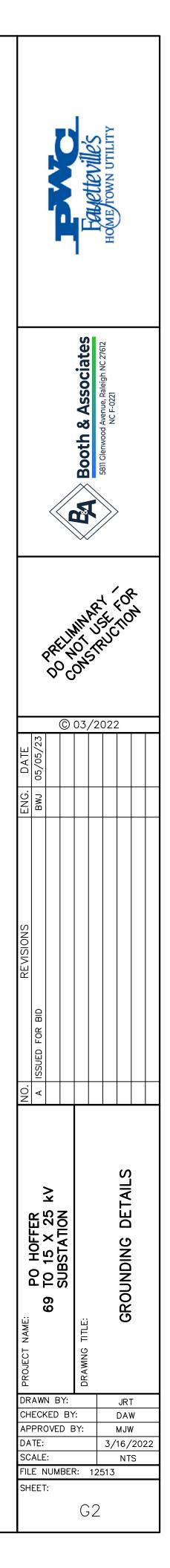
GROUNDING DETAILS 12513G2 FOUNDATION PLAN 12513FP1

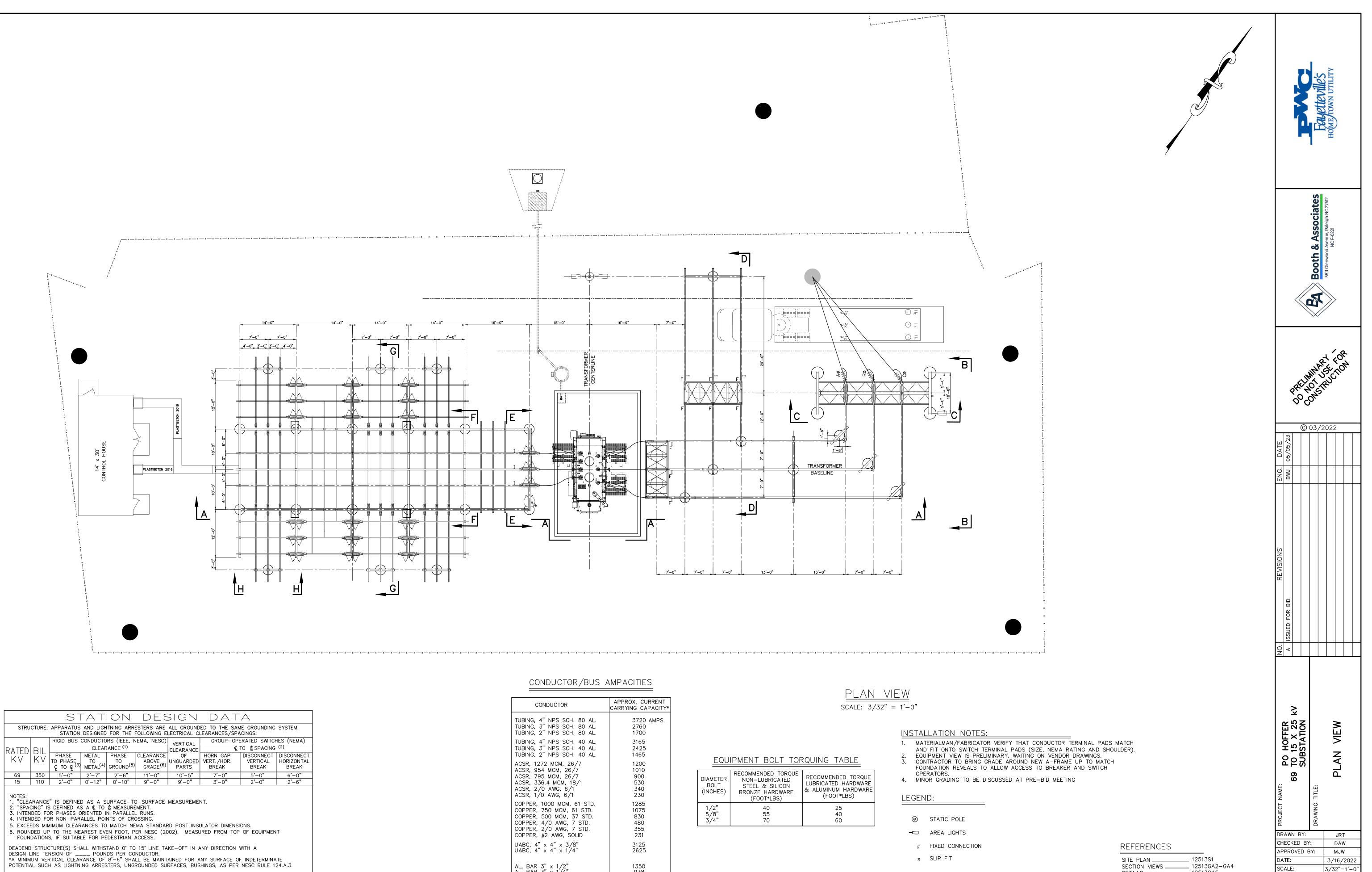
	FOR ELEVILES HOME FOWN UTILITY								
	Booth & Associates 5811 Clenwood Avenue, Raleigh NC 27612 NC F-0221								
	Ç	100 100	5 4 H		1000 P			1.1.	
ENG. DATE	BWJ 05/05/23			03,	/20				
NO. REVISIONS	A ISSUED FOR BID								
PROJECT NAME:				DRAWING TITLE:				-	
CH AP DA SC FIL	AWI ECK PR(TE: ALE E N EET	(ED DVE ::	BY D E	8Y: R:		3/ 3/3:		N	





69kV BREAKER GROUNDING DETAIL





STATION DESIGN DATA									
STRU	STRUCTURE, APPARATUS AND LIGHTNING ARRESTERS ARE ALL GROUNDED TO THE SAME GROUNDING SYSTEM. STATION DESIGNED FOR THE FOLLOWING ELECTRICAL CLEARANCES/SPACINGS:								
		RIGID BUS			IEMA, NESC)	VERTICAL		ERATED SWITCH	
RATED	BIL		CLEAF	RANCE (1)		CLEARANCE	¢	TO 🖞 SPACING	(2)
I KV	1211	PHASE	METAL	PHASE	CLEARANCE	OF	HORN GAP	DISCONNECT	
r v	ΝV	TO PHASE	TO (4)	TO (5)	ABOVE GRADE ⁽⁶⁾	UNGUARDED	VERT./HOR.	VERTICAL	HORIZONTAL
				GROUND	GRADE	PARTS	BREAK	BREAK	BREAK
69	350	5'-0"	2'-7"	2'-6"	11'-0"	10'-5"	7'-0"	5'-0"	6'-0"
15	110	<u>2'-0" 0'-12" 0'-10" 9"-0" 9'-0" 3'-0" 2'-0" 2'-6"</u>							
NOTES: 1. "CLEARANCE" IS DEFINED AS A SURFACE-TO-SURFACE MEASUREMENT. 2. "SPACING" IS DEFINED AS A ⊈ TO ⊈ MEASUREMENT. 3. INTENDED FOR PHASES ORIENTED IN PARALLEL RUNS. 4. INTENDED FOR NON-PARALLEL POINTS OF CROSSING. 5. EXCEEDS MIMIMUM CLEARANCES TO MATCH NEMA STANDARD POST INSULATOR DIMENSIONS. 6. ROUNDED UP TO THE NEAREST EVEN FOOT, PER NESC (2002). MEASURED FROM TOP OF EQUIPMENT FOUNDATIONS, IF SUITABLE FOR PEDESTRIAN ACCESS.									
DESIGN L	INE TEN	NSION OF	POUN	DS PER CO	NDUCTOR.		ANY DIRECTION		TE

	APPROX. CURRENT
	CARRYING CAPACITY*
TUBING, 4" NPS SCH. 80 AL.	3720 AMPS.
TUBING, 3" NPS SCH. 80 AL.	2760
TUBING, 2" NPS SCH. 80 AL.	1700
TUBING, 4" NPS SCH. 40 AL.	3165
TUBING, 3" NPS SCH. 40 AL.	2425
TUBING, 2" NPS SCH. 40 AL.	1465
ACSR, 1272 MCM, 26/7	1200
ACSR, 954 MCM, 26/7	1010
ACSR, 795 MCM, 26/7	900
ACSR, 336.4 MCM, 18/1	530
ACSR, 2/0 AWG, 6/1	340
ACSR, 1/0 AWG, 6/1	230
COPPER, 1000 MCM, 61 STD.	1285
COPPER, 750 MCM, 61 STD.	1075
COPPER, 500 MCM, 37 STD.	830
COPPER, 4/0 AWG, 7 STD.	480
COPPER, 2/0 AWG, 7 STD.	355
COPPER, #2 AWG, SOLID	231
UABC, 4" x 4" x 3/8"	3125
UABC, 4" x 4" x 1/4"	2625
AL, BAR 3" x 1/2"	1350
AL, BAR 3" x 1/4"	938
INSUL. 1/0 34.5KV J.C.N.	235
* AC. 60 HZ, 40° C AMBIENT, 50 ORIENTATION, OUTDOORS, WIND	

PL	AN	VIE	W
	z/-	xo" —	 1'∩

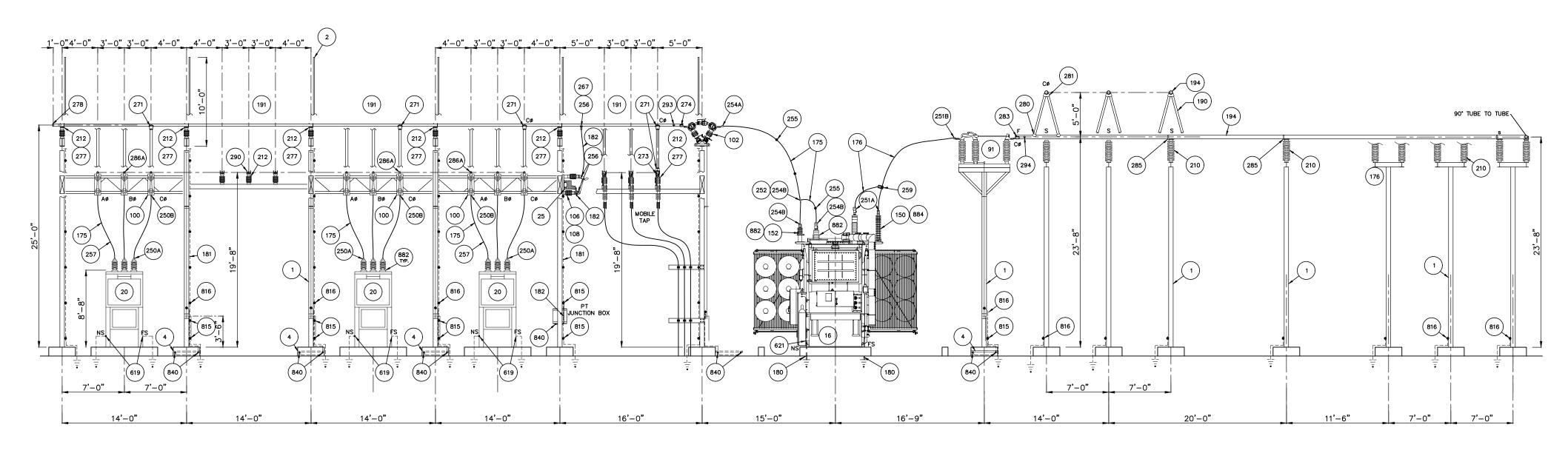
INS	FALLATION	NOTES:

_	
0	STATIC POLE
-0	AREA LIGHTS
F	FIXED CONNECTION
S	SLIP FIT

SITE PLAN	12513S1
SECTION VIEWS	. 12513GA2-0
DETAILS	12513GA5
FOUNDATION PLAN	12513FD1

FILE NUMBER: 12513

SHEET:



SECTION A-A SCALE: 1/8"=1'-0"

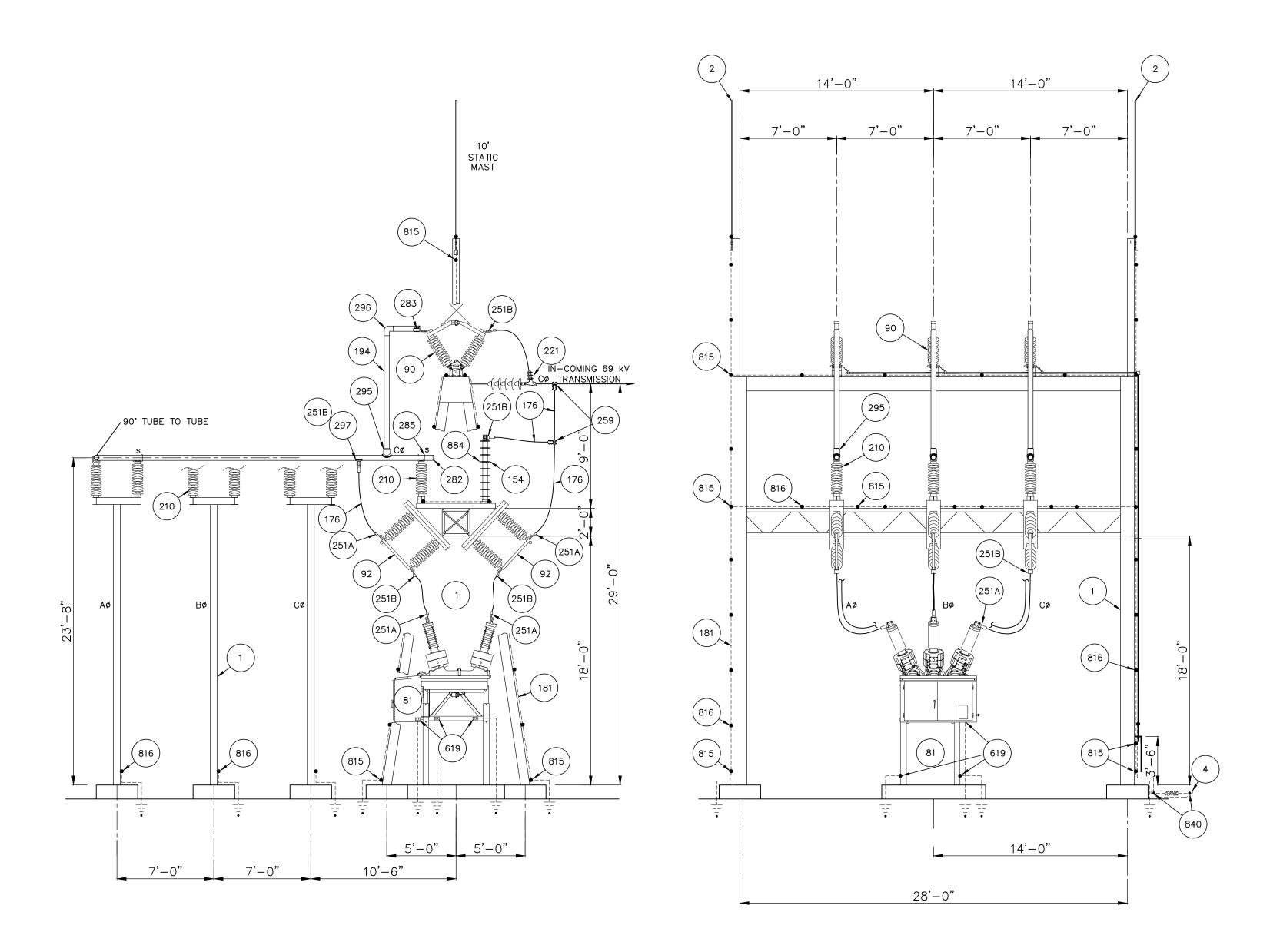
INSTALLATION NOTES:

MATERIALMAN/FABRICATOR VERIFY THAT CONDUCTOR TERMINAL PADS MATCH AND FIT ONTO SWITCH TERMINAL PADS (SIZE, NEMA RATING AND SHOULDER).
 EQUIPMENT VIEW IS PRELIMINARY. WAITING ON VENDOR DRAWINGS.
 CONTRACTOR TO BRING GRADE AROUND NEW A-FRAME UP TO MATCH FOUNDATION REVEALS TO ALLOW ACCESS TO BREAKER AND SWITCH OPERATORS.

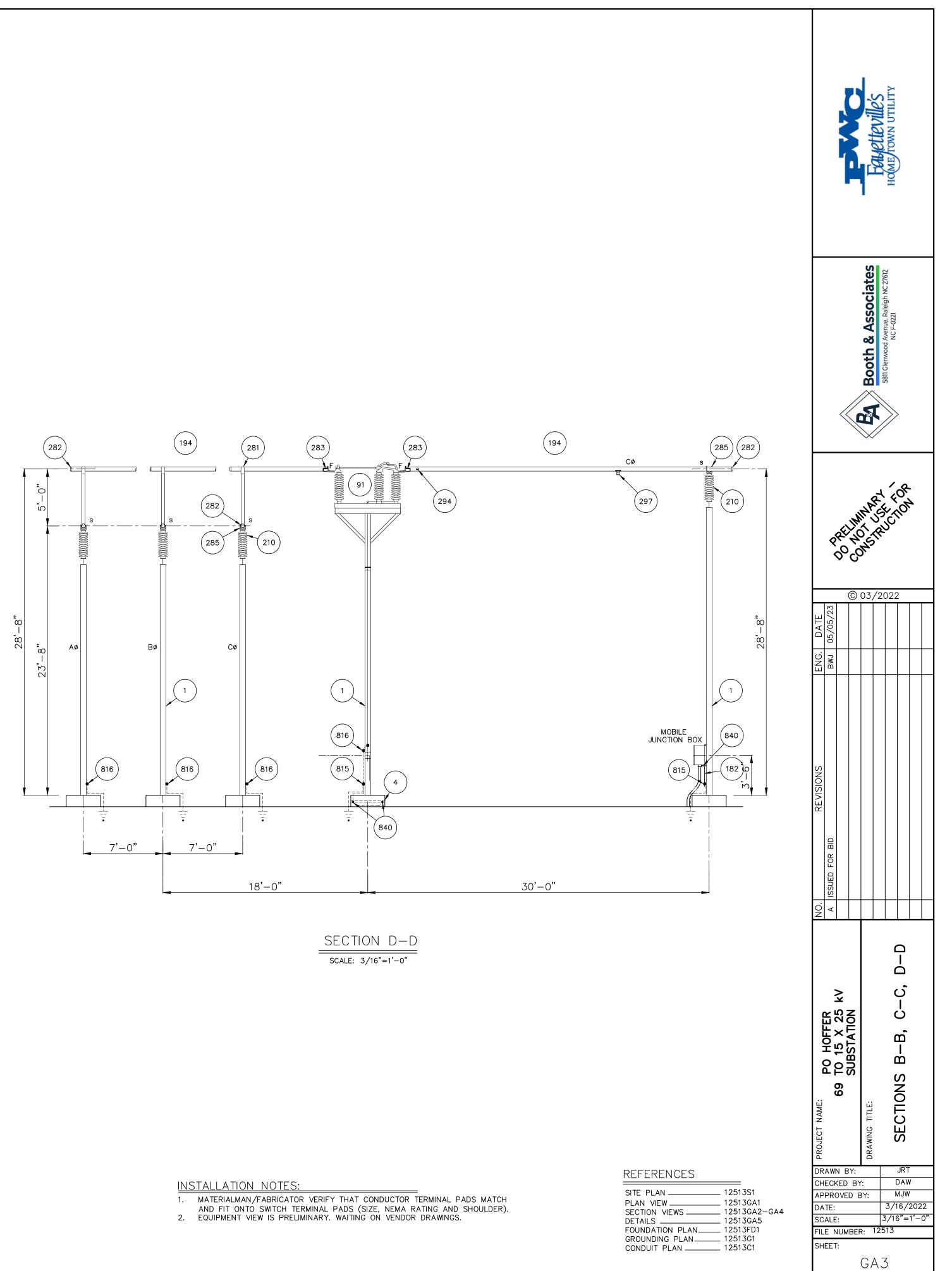
	Booth & Associates BBI Glenwood Avenue, Raleigh NC 27612 NC F-0221								
		0 6	A C		A COMP			1.4	
				03,		022			
ENG. DATE	05/05/23								
ENG.	BWJ								
NO. REVISIONS	ISSUED FOR BID								
PROJECT NAME: BROJECT NAME: BROJEC									
AP DA SC FIL	PRC TE: ALE	DVE : IUM	D E	8Y:	125	3/ 1/8 513	мЈV 16/		222

REFERENCES

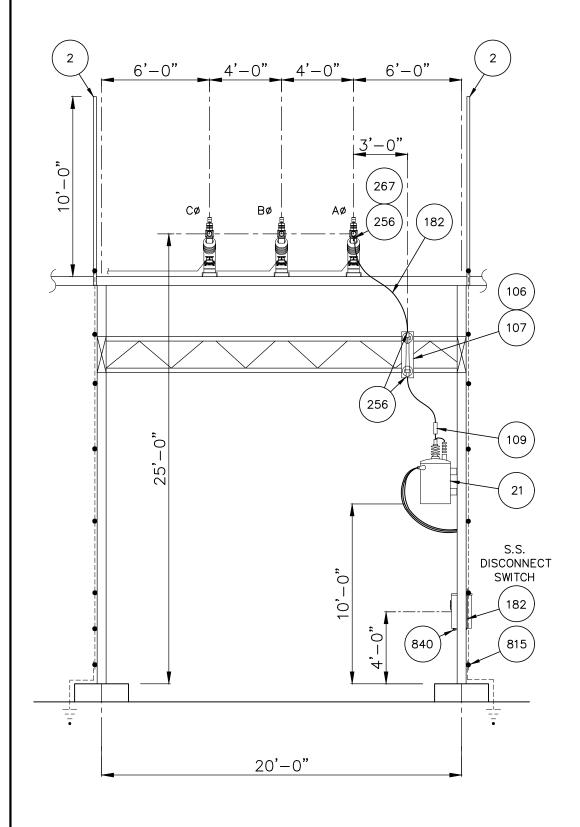
SITE PLAN	12513S1
PLAN VIEW	12513GA1
SECTION VIEWS	12513GA2-GA4
DETAILS	12513GA5
FOUNDATION PLAN	12513FD1
GROUNDING PLAN	12513G1
CONDUIT PLAN	12513C1



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



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



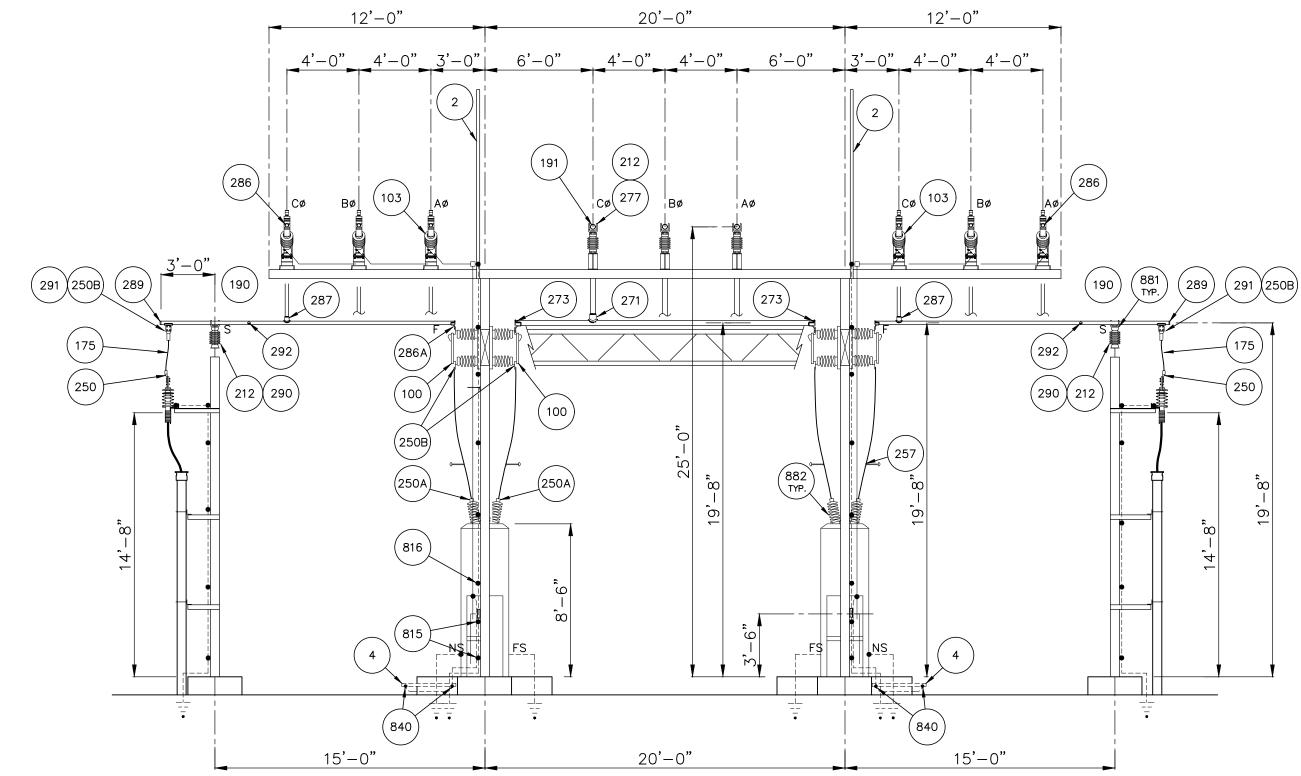
191 267 256 840 ΡT JUNCTION BOX 20'-0"

6'-0" + 4'-0" + 4'-0" + 6'-0" + 2

(2)

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

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

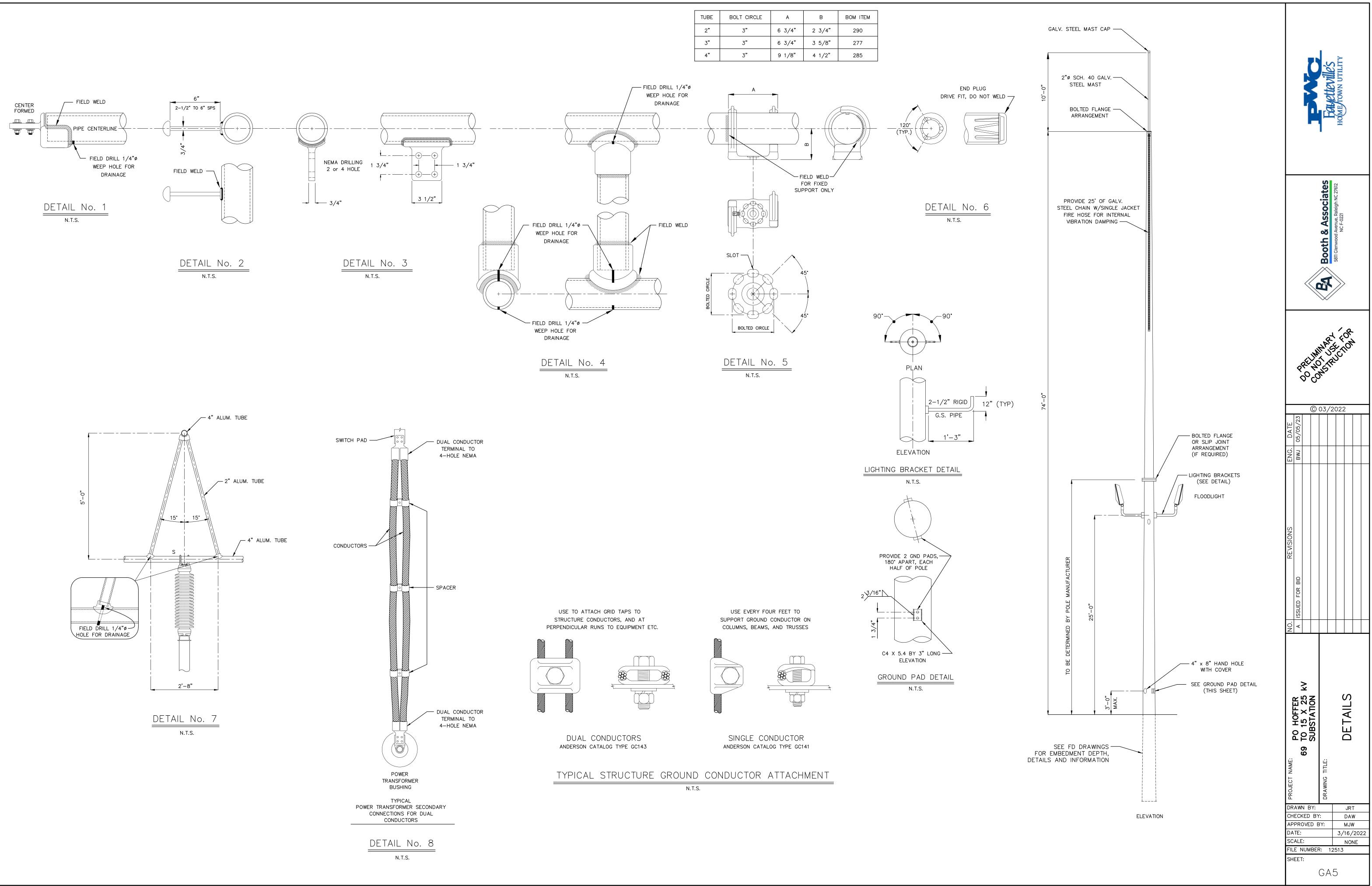


SECTION G-G SCALE: 3/16"=1'-0"

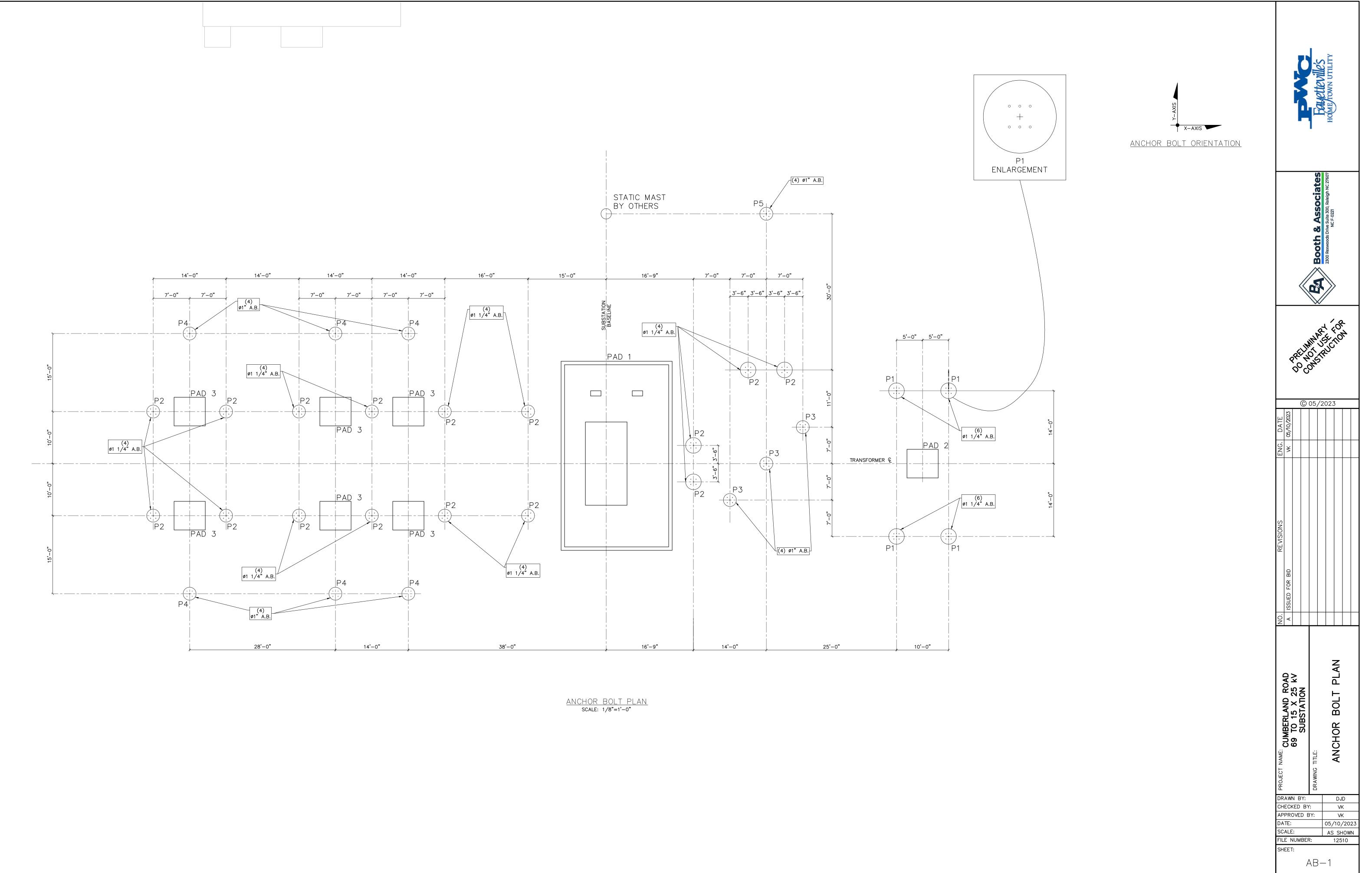
INSTALLATION NOTES:

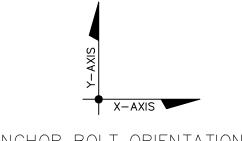
- MATERIALMAN/FABRICATOR VERIFY THAT CONDUCTOR TERMINAL PADS MATCH AND FIT ONTO SWITCH TERMINAL PADS (SIZE, NEMA RATING AND SHOULDER).
 EQUIPMENT VIEW IS PRELIMINARY. WAITING ON VENDOR DRAWINGS.

Booth & Associates SBII Glenwood Avenue, Raleigh NC 27612 NC F-0221 0°04 <u>'-0" 3'-0"</u> 212 290 (291 (250В) © 03/2022 (245) 246 (175) 155), 250 (815) œ (816) <u></u> (815) BID FOR Q ▼ I İ ပ် SECTION H-H ₹ Ċ SCALE: 3/16"=1'-0" PO HOFFER TO 15 X 25 SUBSTATION لب غا யி ய் SECTIONS 69 DRAWN BY: JRT REFERENCES CHECKED BY: DAW APPROVED BY: MJW SITE PLAN ______ 12513S1 PLAN VIEW ______ 12513GA1 DATE: 3/16/2022 PLAN VIEW12513GA1SECTION VIEWS12513GA2-GA4DETAILS12513GA5FOUNDATION PLAN12513FD1GROUNDING PLAN12513G1CONDUIT PLAN12513C1 SCALE: 3/16"=1'-0' FILE NUMBER: 12513 SHEET: GA4

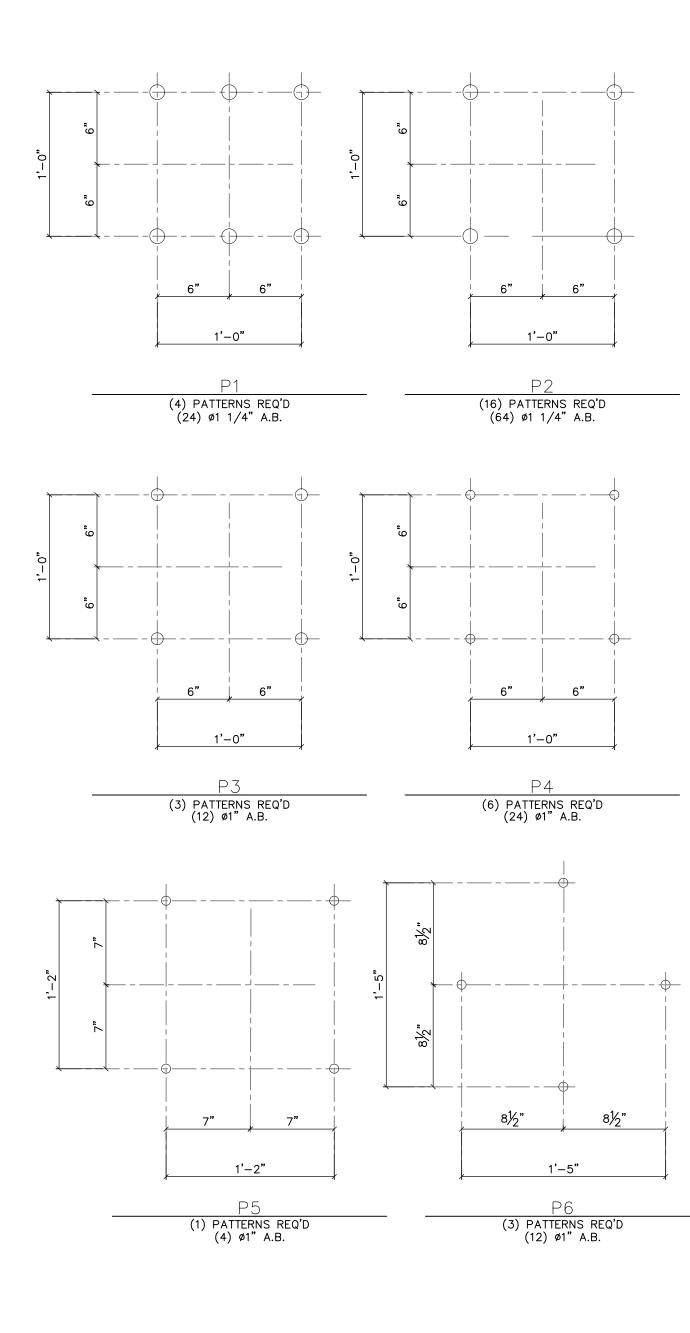


TUBE	BOLT CIRCLE	А	В	BOM ITEM
2"	3"	6 3/4"	2 3/4"	290
3"	3"	6 3/4"	3 5/8"	277
4"	3"	9 1/8"	4 1/2"	285

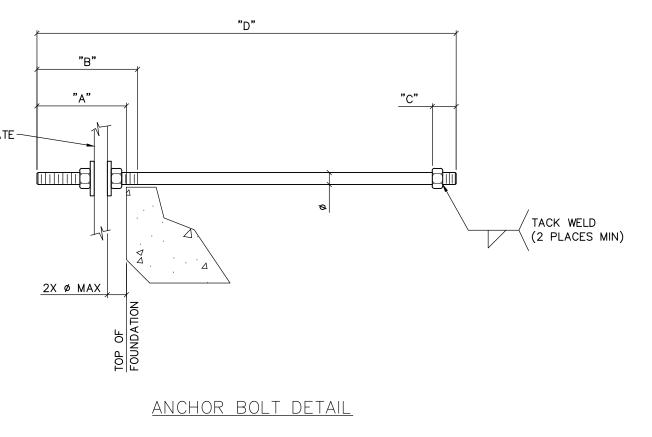






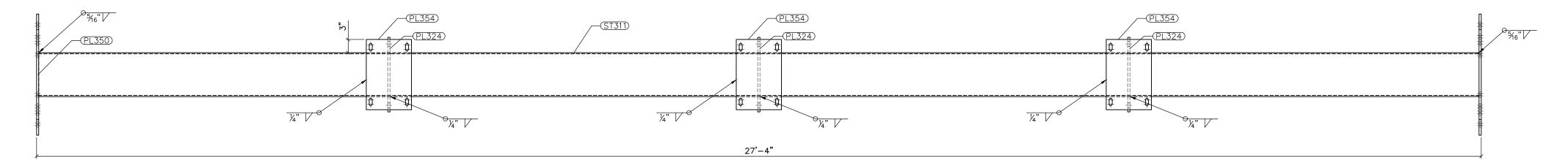


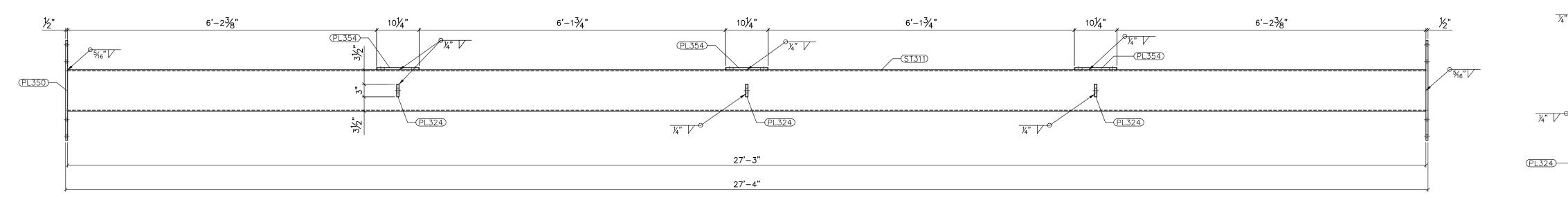
ANCHOR BOLT DETAILS SCALE: 1-1/2"= 1'-0" BASEPLATE —

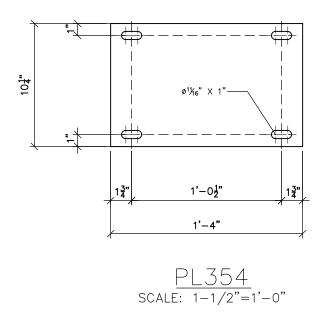


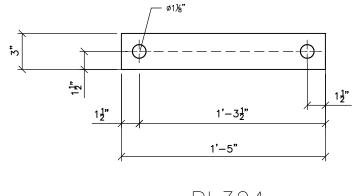
ANCHOR BOLT SUMMARY							
ANCHOR BOLTS PATTERN No.	ANCHOR BOLTS ITEM No.	QTY.	DIAMETER Ø	"A" PROJECTION LENGTH	"B" THREAD LENGTH/ TOP	"C" THREAD LENGTH/ BOTTOM	"D" BOLT LENGTH
P1, P2	AB-1	88	1 1/4"	6"	6"	2"	3'-6"
P3, P4, P5, P6	AB-2	52	1"	4½"	5"	2"	2'-6"
NOTE: BOLTS	SHALL B	Е НОТ-	DIP GALVANI	ZED PAST TO T	HREAD IN ACCO	DRDANCE WITH	ASTM A123.

SH	AF DA SC FIL	PROJECT NAME:	NO.	REVISIONS	ENG. DATE			
	PRO TE: ALE	CUMBERLAND ROAD	A ISSUED FOR BID		VK 05/10/2023	<		
•	DVE :: IUM	N B					<	
Α	DE	Y:						
νB	3Y:	DRAWING TITLE:			05,		RA Booth & Accoriates	The soft on all of
	(/20			TANKIN MES
2	AS						2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221	HOME TOWN UTILITY
	۷ł /10	ANCHUR BULI DE IAILS					>)
	< /20 10W					- 4		

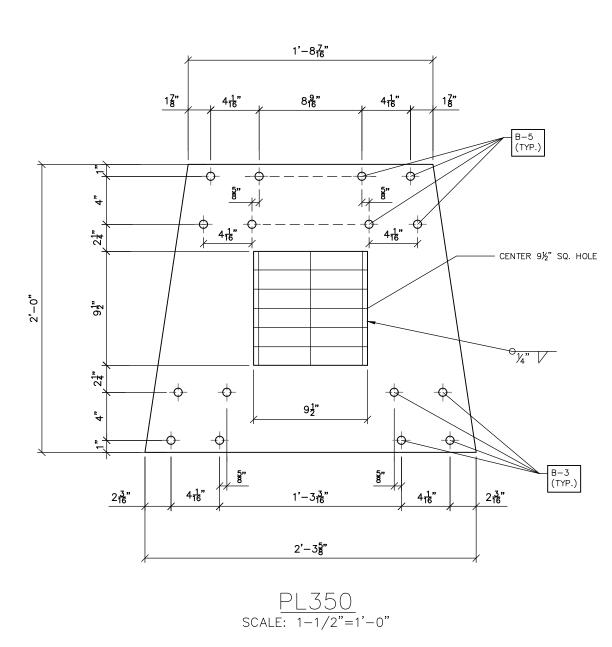








<u>PL324</u> scale: 1-1/2"=1'-0"



<u>top view</u>

FRONT VIEW

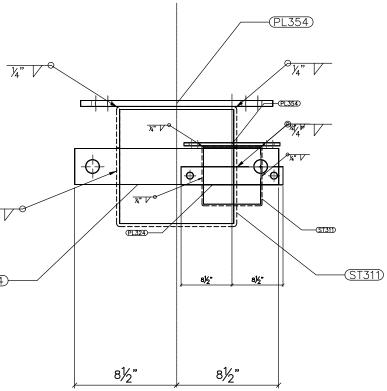
<u>G311</u> scale: 3/8"=1'-0"

NOTES:

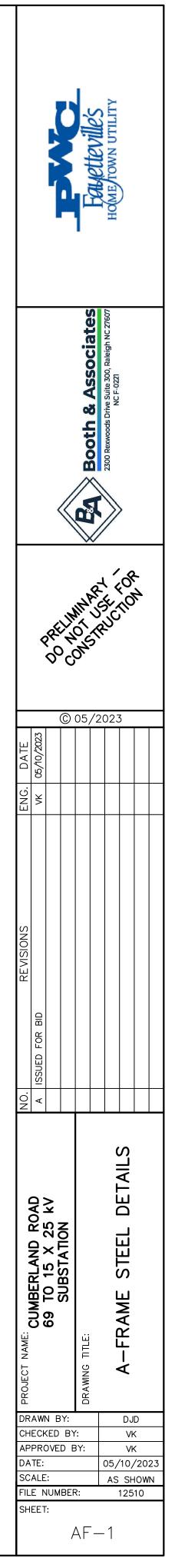
- ASTM 325 ERECTION BOLTS
 ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING

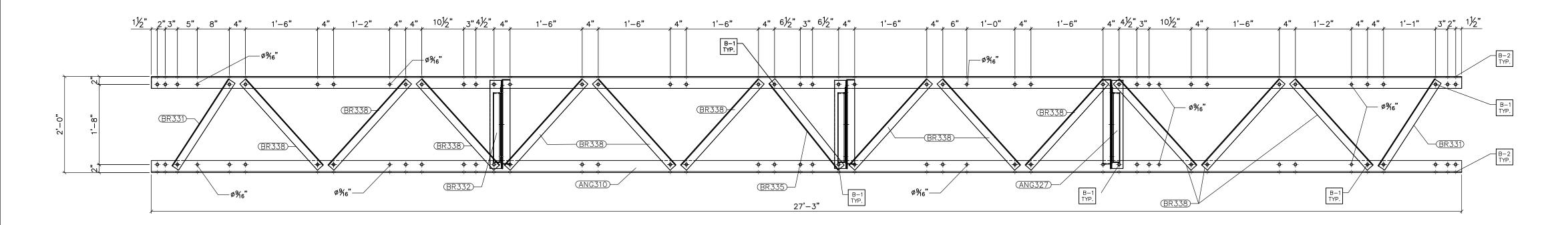
- 5) ALL WELDING ELECTRODES SHALL BE E70216) EDGE DISTANCE 1" UNLESS NOTED

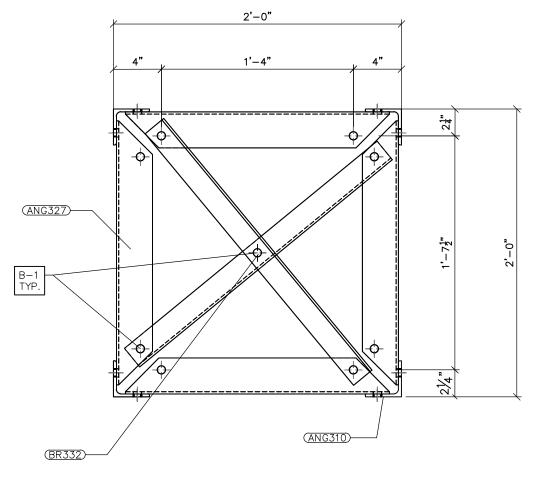
	BILL OF MATERIAL				
POS. NO.	QTY	DESC.	LENGTH	WEIGHT	
G311	1	FOR ONE GROUP G311:			
PL324	3	PL 1/2"x3"	1'-5"	21.69	
PL350	2	PL 1/2"X2'-0"	2'-3 5/8"	163.69	
PL354	3	PL 1/2"x10 1/4"	1'-4"	69.90	
ST311	1	HSS10x10x1/4	27'-3"	888.28	
GR1	2	STD GRA 9 3/8"	9 3/8"	9.00	
	•	BLACK WEIGHT:		1152.56 LBS.	
		GALVANIZED W	EIGHT:	46.10 LBS.	
		TOTAL WEIGHT:		1198.66 LBS.	

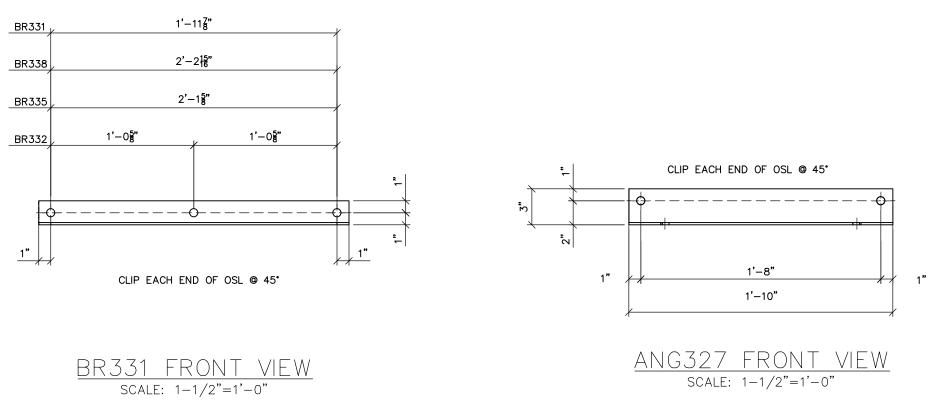


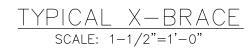
<u>right view</u>







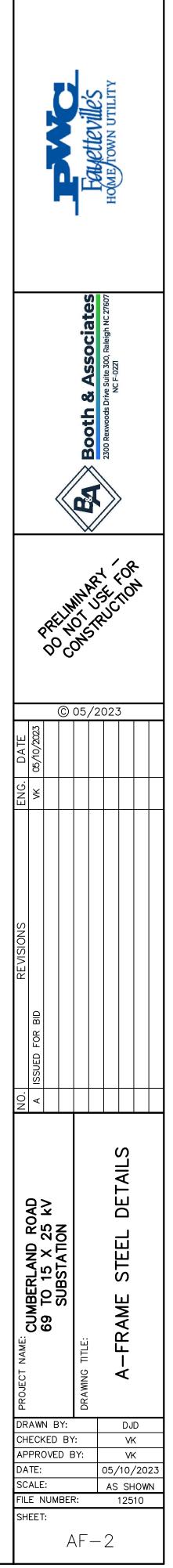


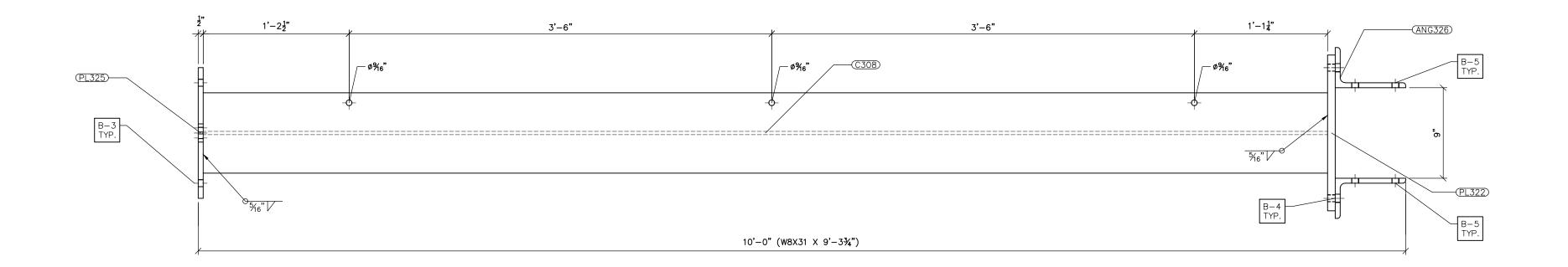


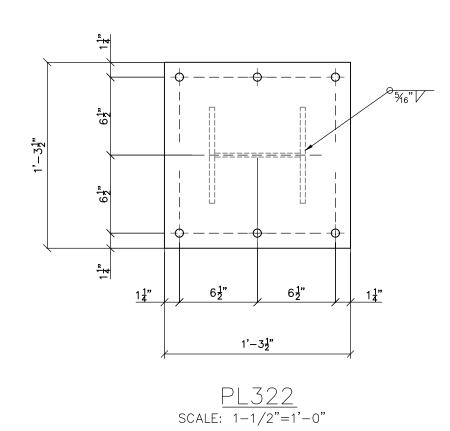
G310 BOX TRUSS (all for sides alike) scale: 3/4"=1'-0"

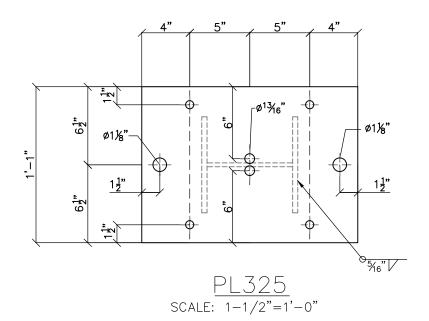
NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN $3/8"$
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

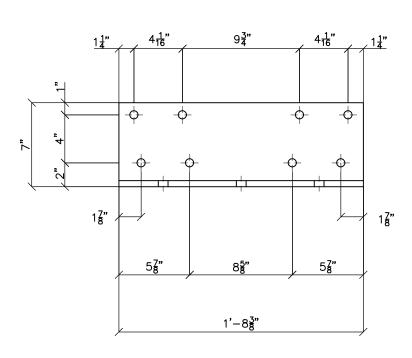
	BILL OF MATERIAL				
POS. NO.	QTY	DESC.	LENGTH	WEIGHT	
G310	1	FOR ONE GROUP G310:			
ANG310	4	L3x3x1/4	27'-3"	534.10	
ANG327	12	L3x3x3/16	1'-10"	81.62	
BR331	8	L2x2x3/16	2'-1 7/8"	42.04	
BR332	6	L2x2x3/16	2'-3 1/4"	33.21	
BR335	4	L2x2x3/16	2'-3 5/8"	22.46	
BR338	48	L2x2x3/16	2'-4 15/16"	282.43	
		BLACK WEIGHT		995.86 LBS.	
		GALVANIZED W	EIGHT:	39.83 LBS.	
		TOTAL WEIGHT:		1035.69 LBS.	



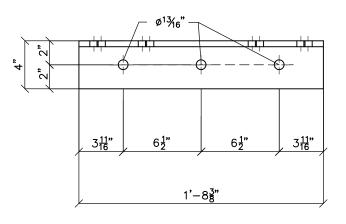








<u>G308 FRONT VIEW</u> scale: 3/4"=1'-0"



top view

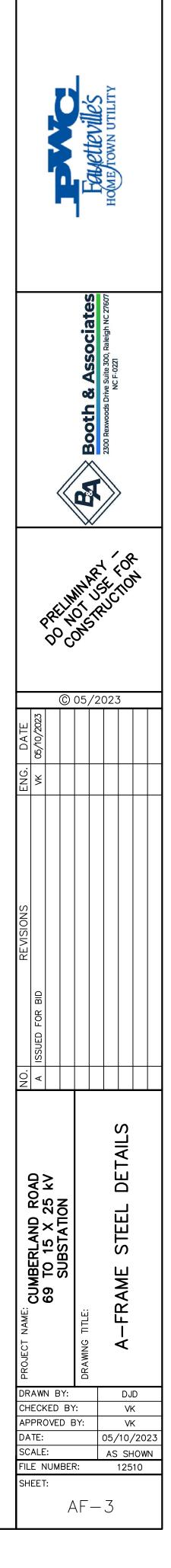
FRONT VIEW

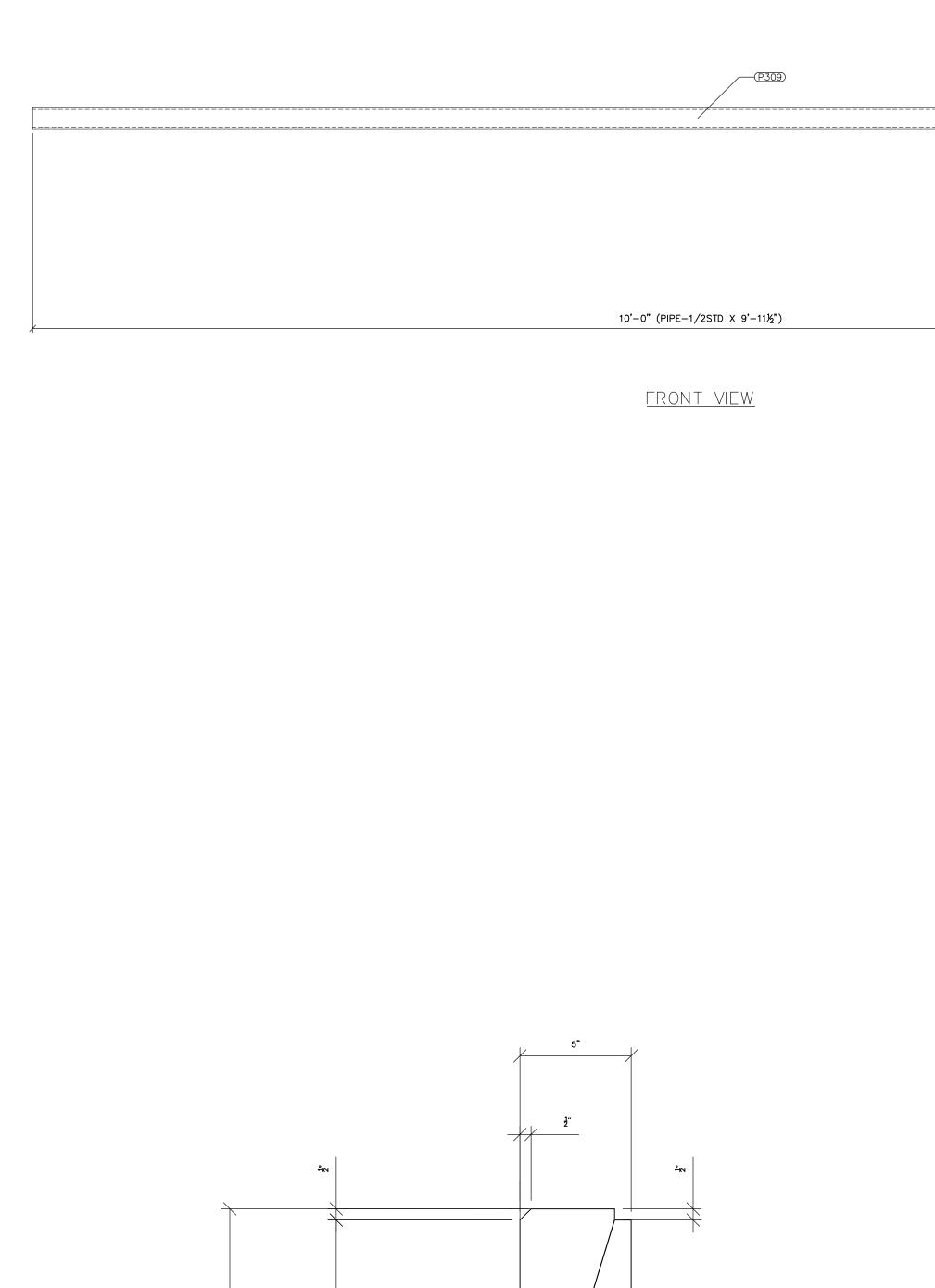
ANG326 scale: 1-1/2"=1'-0"

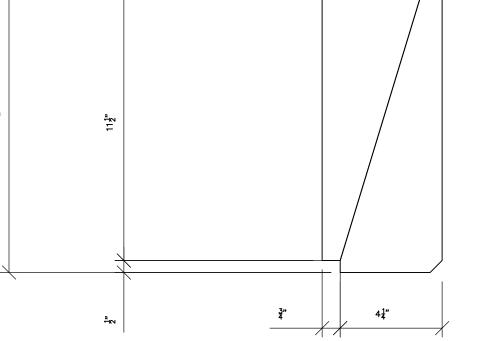
NOT	FS:
	ASTM 325 ERECTION BOLTS
	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
2) 3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021

5) ALL WELDING ELECTRODES SHALL BE E70216) EDGE DISTANCE 1" UNLESS NOTED

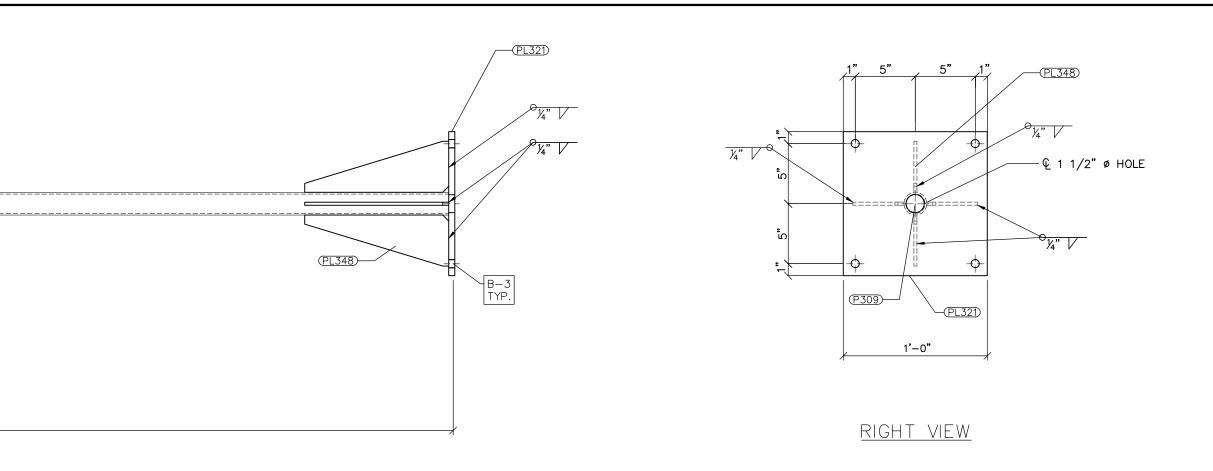
		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G308	2	FOR ONE GROUP G308:		
PL322	1	PL 3/4"x1'-3 1/2"	1'-3 1/2"	51.20
PL325	1	PL 3/4"x1'-3 1/2" PL 1/2"x1'-1"	1'-6'"	33.24
ANG326	2	L7x4x1/2	1'-8 3/8"	60.79
C308	1	W8x31	9'-3 3'/4"	288.69
		1	11	
		BLACK WEIGHT:	:	416.59 LBS.
		GALVANIZED W	EIGHT:	17.36 LBS.
		TOTAL WEIGHT:		433.95 LBS.



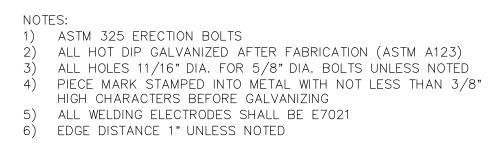




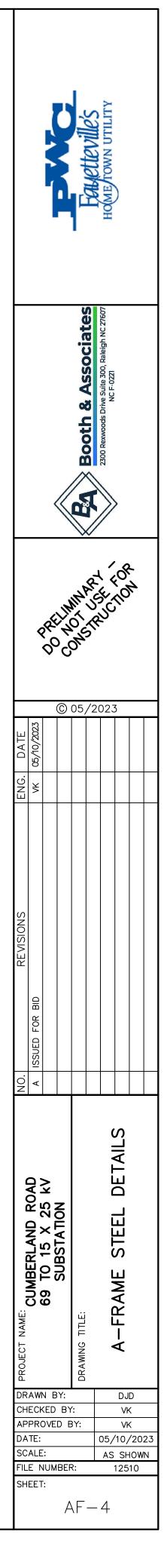
PL348 (makes two) scale: 3"=1'-0"

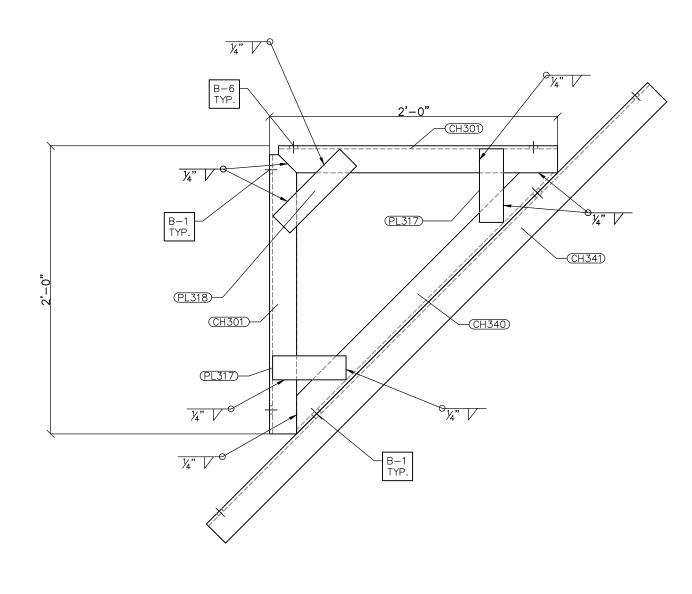


<u>G309</u> SCALE: 1-1/2"=1'-0"

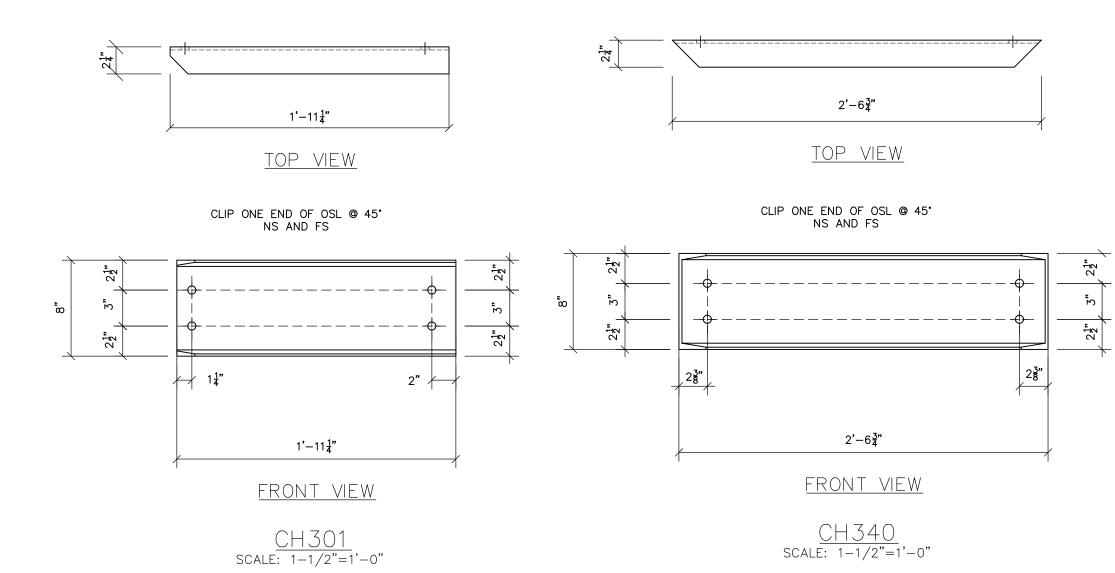


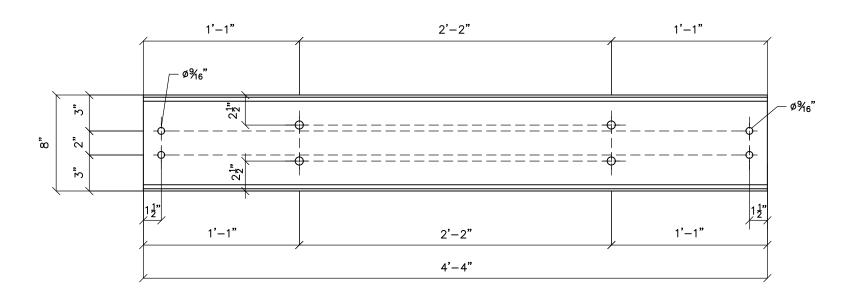
		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G309	2	FOR ONE GROUP G309:		
PL321	1	PL 1/2"x1'	1'	20.46
P309	1	PIPE1-1/2STD	9'-11 1/2" 1'-0 1/2"	27.09
PL348	2	BAR 5 X 1/4	1'-0 1/2"	8.74
		BLACK WEIGHT	:	56.29 LBS.
		GALVANIZED W	EIGHT:	2.25 LBS.
		TOTAL WEIGHT:		58.54 LBS.





<u>G301 FRONT VIEW</u> scale: 1-1/2"=1'-0"

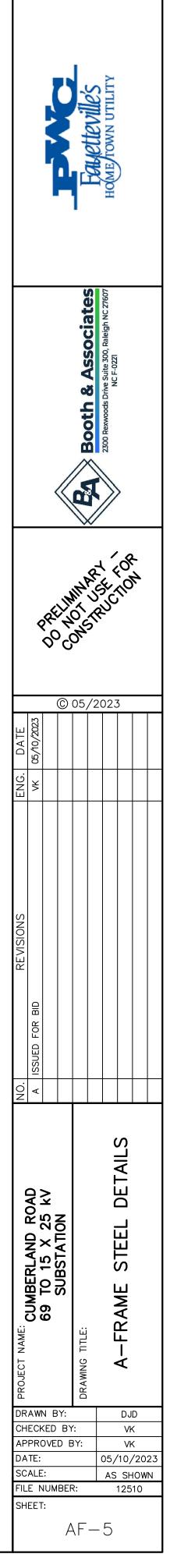


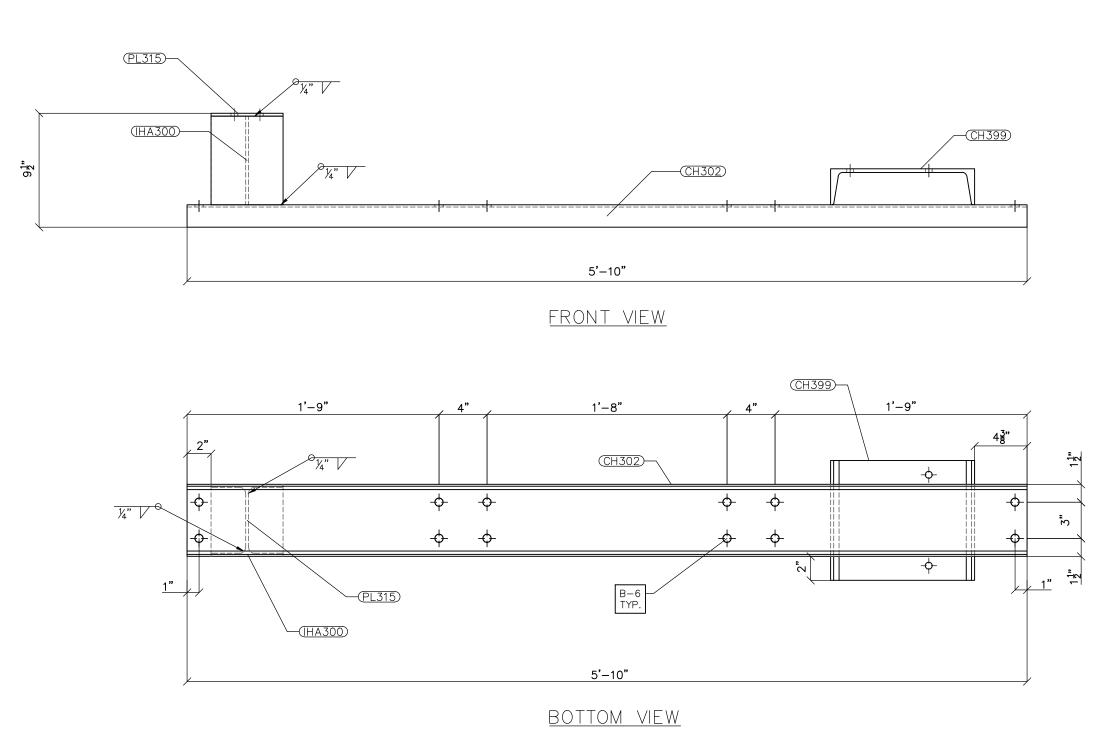


<u>CH341 FRONT VIEW</u> scale: 1-1/2"=1'-0"

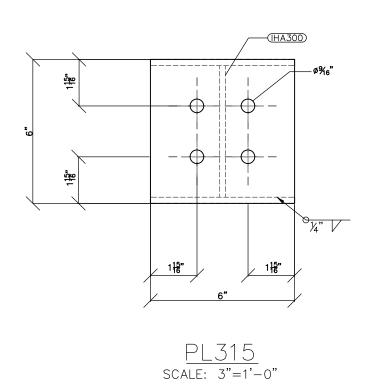
NOTE	ES:
1)	ASTM 325 ERECTION BOLTS
	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

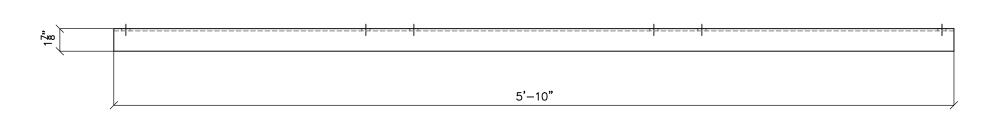
		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G301	6	FOR ONE GROUP G301:		
CH301	2	C8x11.5	1'-11 1/4"	44.56
CH340	1	C8x11.5	2'-6 3/4"	29.48
CH341	1	C8x11.5	4'-4"	49.83
PL317	4	PL 1/4"x2"	6 1/8"	3.47
PL318	2	PL 1/4"x2"	7 7 /8"	2.23
		BLACK WEIGHT:		129.57 LBS.
		GALVANIZED W	EIGHT:	5.18 LBS.
		TOTAL WEIGHT:		134.75 LBS



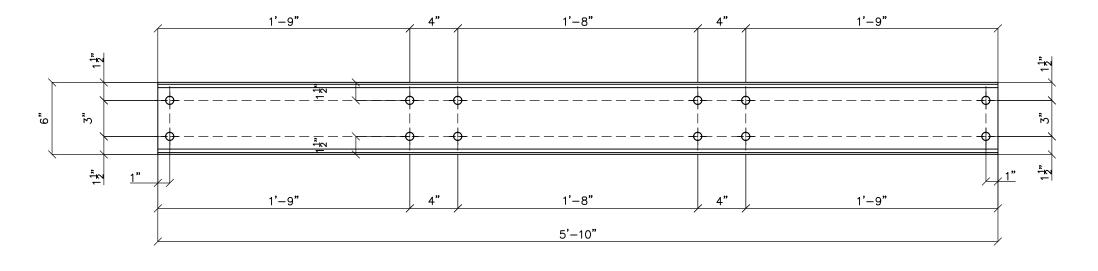


<u>G302</u> scale: 1-1/2"=1'-0"



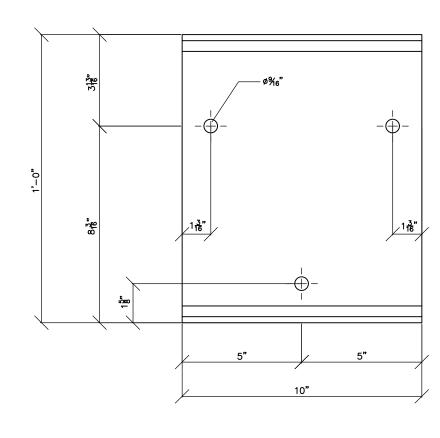


<u>top view</u>





<u>CH302</u> scale: 1-1/2"=1'-0"

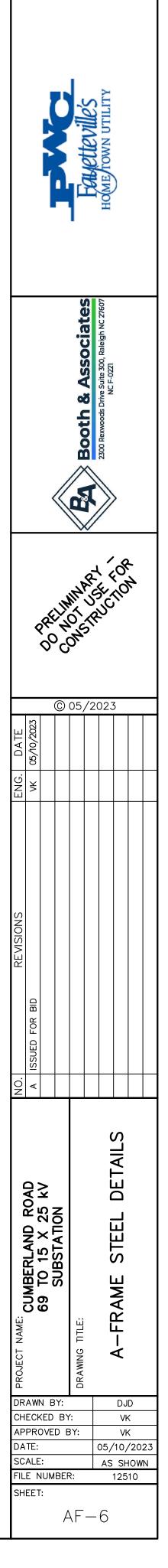


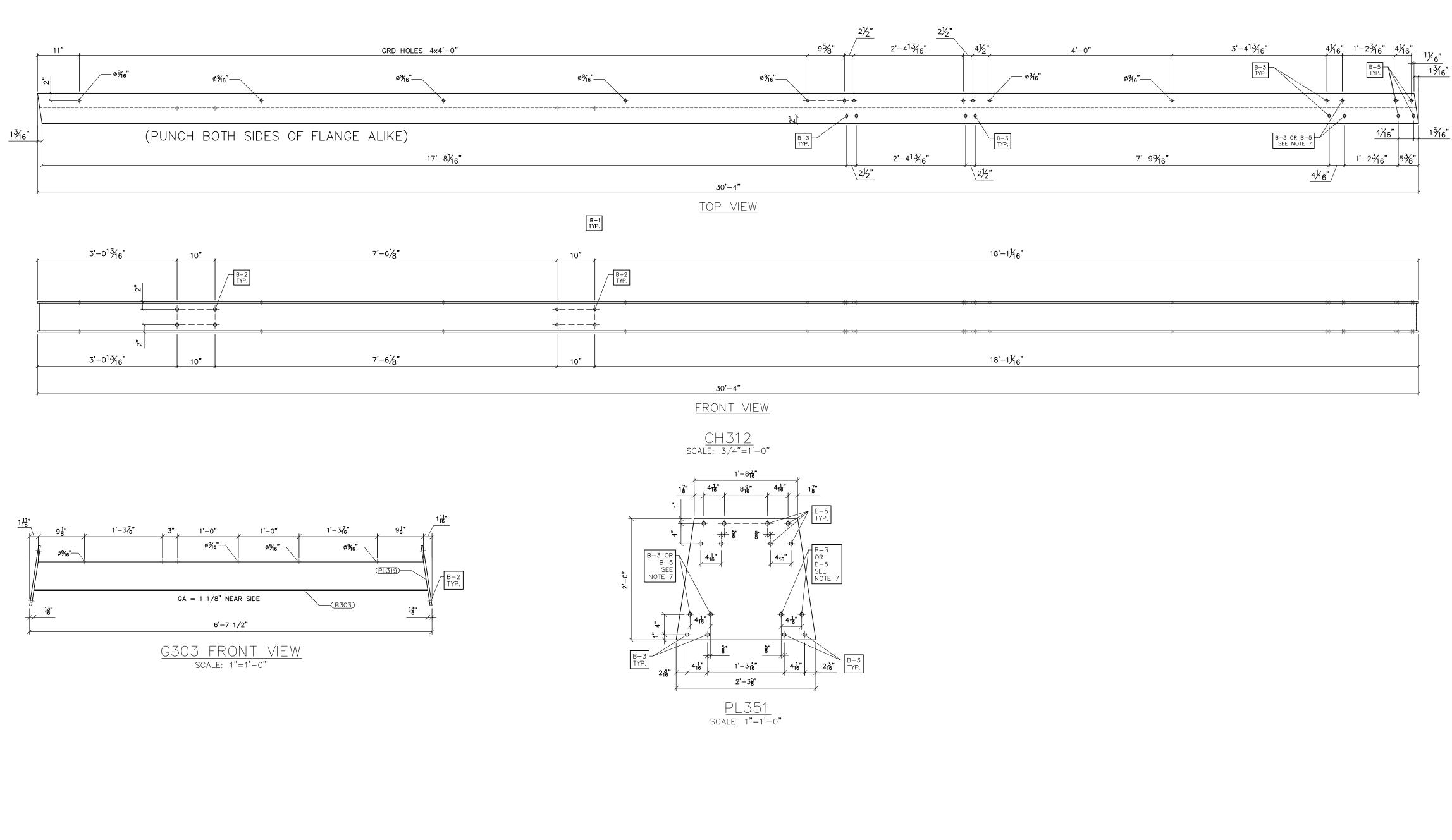
<u>CH399</u> scale: 3"=1'-0"

NO	TES:		
1)	ASTM	325	ERE
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- NOTES:
 ASTM 325 ERECTION BOLTS
 ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED

BILL OF MATERIAL							
POS. NO.	QTY	DESC.	LENGTH	WEIGHT			
G302	3	FOR ONE GROUP G302:					
CH302	1	C6x8.2	5'-10"	47.83			
CH399	1	C12x20.7	10"	17.22			
IHA300	1	W6×15	7 3/8"	9.22			
PL315	1	PL 1/4"x6"	7 3/8" 6"	2.55			
	76.82 LBS.						
	3.07 LBS.						
TOTAL WEIGHT:				79.89 LBS.			





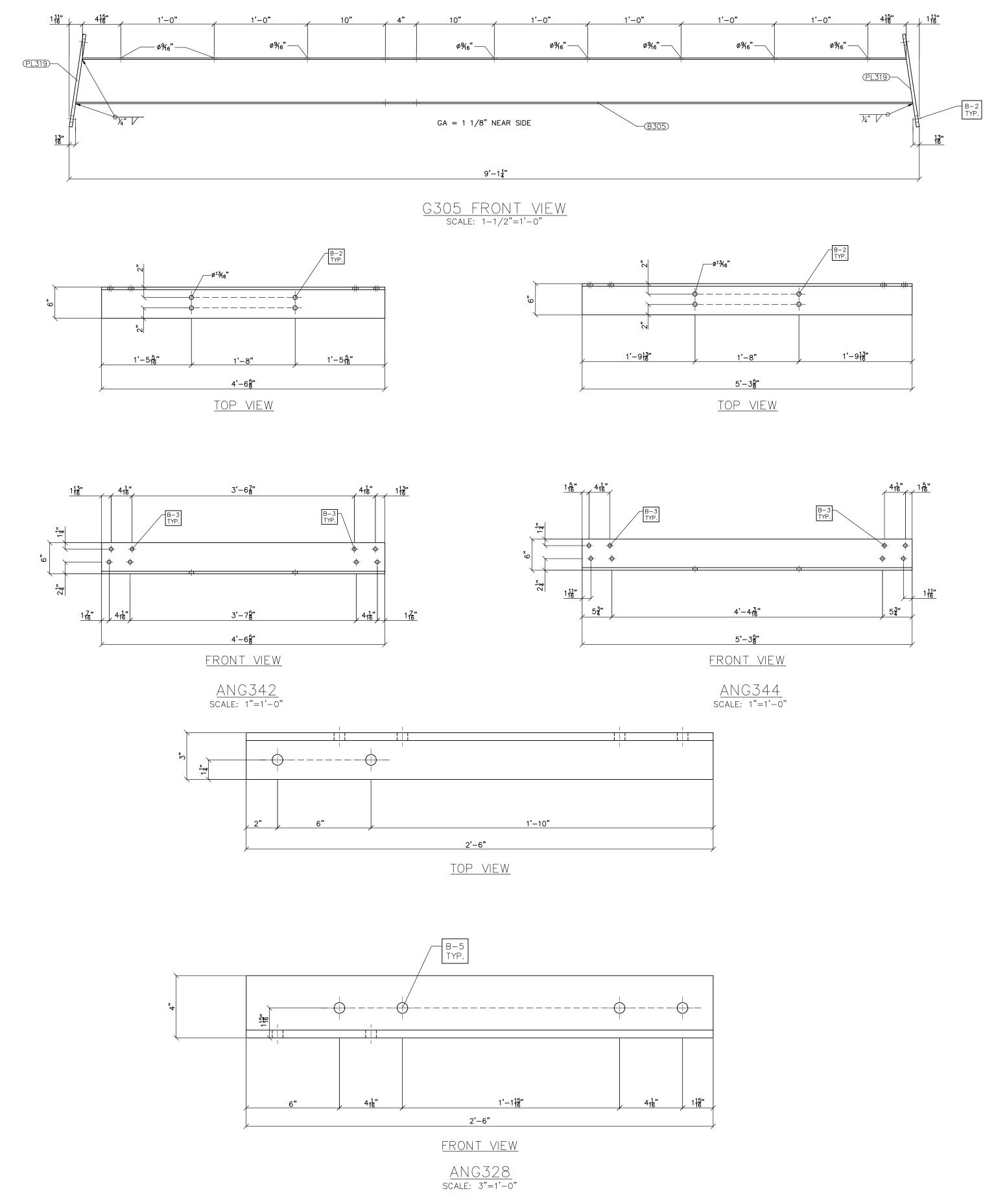
- NOTES: 1) ASTM 325 ERECTION BOLTS 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123) 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING 5) ALL WELDING ELECTRODES SHALL BE E7021 6) EDCE DISTANCE 1" UNLESS NOTED

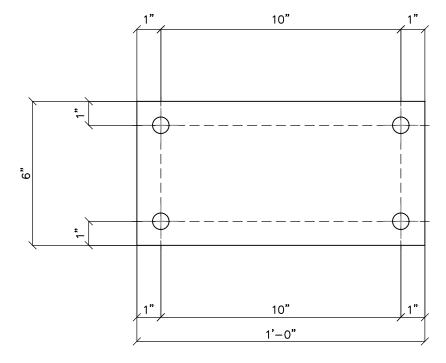
6) EDGE DISTANCE 1" UNLESS NOTED
7) ERRECTION BOLT LENGTH VARIES WHERE NOTED IN CASES WHERE ANG 328 IS REQUIRED , B-5 SHALL BE USED. IN OTHER CASES, B-3 SHALL BE USED.



BILL OF MATERIAL									
POS. NO.	QTY	DESC.	LENGTH	WEIGHT					
G303	2	FOR ONE GROUP G303:							
B303	1	W6×9	6'-5 7/8"	58.41					
PL319	2	PL 3/8"x6"	1'	15.34					
	INDIVIDUAL SINGLE PARTS:								
PL351	2	PL 1/2"x2'-0"	1/2"×2'-0" 2'-3 5/8"						
C312	4	W8x31	30'-4"	7522.67					
BASE323	4	PL 1 1/4"x1'-4"	1'-4"	725.93					
BLACK WEIGHT:				8624.61 LBS.					
		GALVANIZED W	GALVANIZED WEIGHT:						
TOTAL WEIGHT:				8969.59 LBS.					

Booth & Associates 2300 Rewoods Drive Suite 300, Raleigh NC 27607 NC F-0221									
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ENG. DATE	VK 05/10/2023			05,	/20		3		
NO. REVISIONS	A ISSUED FOR BID								
PROJECT NAME: CUMBERLAND ROAD 69 TO 15 X 25 KV SUBSTATION			A-FRAME STEEL DETAILS						
DR CH DA SC FIL	AWN ECK PRC TE: ALE E N EET	ED VE : IUM	BY DE			AS		< < /20 10W	



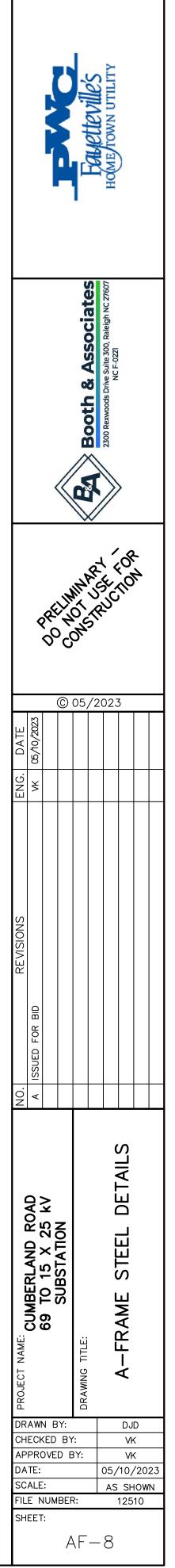


<u>PL319</u> scale: 3"=1'-0"

- NOTES: 1) ASTM 325 ERECTION BOLTS 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123) 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING 5) ALL WEIDING ELECTRODES SHALL BE 57021
- 5) ALL WELDING ELECTRODES SHALL BE E7021
- 6) EDGE DISTANCE 1" UNLESS NOTED

7) ERRECTION BOLT LENGTH VARIES WHERE NOTED IN CASES WHERE ANG 328 IS REQUIRED , B-5 SHALL BE USED. IN OTHER CASES, B-3 SHALL BE USED.

	BILL OF MATERIAL								
POS. NO.	QTY	LENGTH	WEIGHT						
G305	2	FOR ONE GROUP G305:							
B305	1	W6×9	8'-11 5/8"	80.70					
PL319	2	PL 3/8"x6"	1'	15.34					
		INDIVIDUAL SINGLE PARTS:							
ANG328	1	L4x3x1/2	2'-6"	55.50					
ANG342	2	L6x6x1/2	4'-6 5/8"	356.88					
ANG344	2	L6x6x1/2	5'-3 5/8" 415.68						
	BLACK WEIGHT: 828.06								
	GALVANIZED WEIGHT:								
	TOTAL WEIGHT:								



	ERECTION BOLT SUMMARY FOR LOWSIDE		
BOLT NUMBER	ASTM A325-N BOLTS	BOLT TYPE	QUANTITY
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	294
B-2	5/8" DIAMETER x 2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	308
B-4	5/8" DIAMETER x 2 1/2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	40
B-5	5/8" DIAMETER x 2 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	48

ERECTION BOLT SUMMARY FOR URD STAND								
BOLT NUMBER	ASTM A325-N BOLTS	BOLT TYPE	QUANTITY					
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	96					
B-2	5/8" DIAMETER x 2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	192					

	ERECTION BOLT SUMMARY FOR A-FRAME	
BOLT NUMBER	ASTM A325-N BOLTS	BOLT TYP
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD
B-2	5/8" DIAMETER x 2" H.S.G.B. W/(1)FW + (1)HHN	FIELD
B-3	5/8" DIAMETER x 2 1/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD
B-4	5/8" DIAMETER x 2 1/2" H.S.G.B. W/(1)FW + (1)HHN	FIELD
B-5	5/8" DIAMETER x 2 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD
B-6	5/8" DIAMETER x 3 1/2" H.S.G.B. W/(1)FW + (1)HHN	FIELD

ERECTION BOLT SUMMARY FOR LOW SWITCH STAND								
BOLT NUMBER ASTM A325-N BOLTS BOLT TYPE QUANTIT								
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	70					
B-3	5/8" DIAMETER x 2 1/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	8					

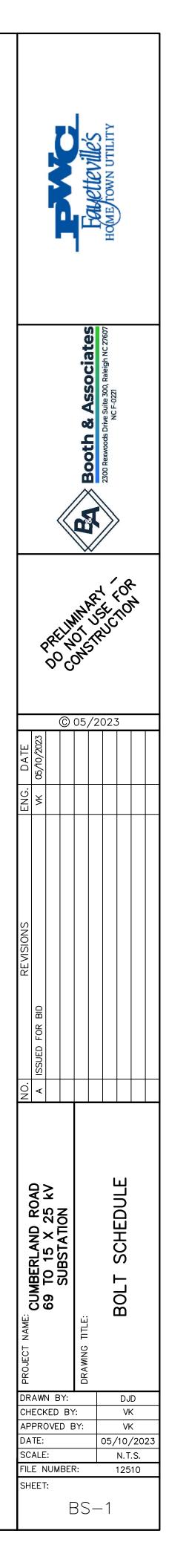
ERECTION BOLT SUMMARY FOR HIGH SWITCH STAND								
BOLT NUMBER ASTM A325-N BOLTS BOLT TYPE QUAN								
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	70					
B-3	5/8" DIAMETER x 2 1/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	8					

ERECTION BOLT SUMMARY FOR THREE PHASE BUS STAND								
BOLT NUMBER	ASTM A325-N BOLTS	BOLT TYPE	QUANTITY					
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	4					
B-2	5/8" DIAMETER x 2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	8					

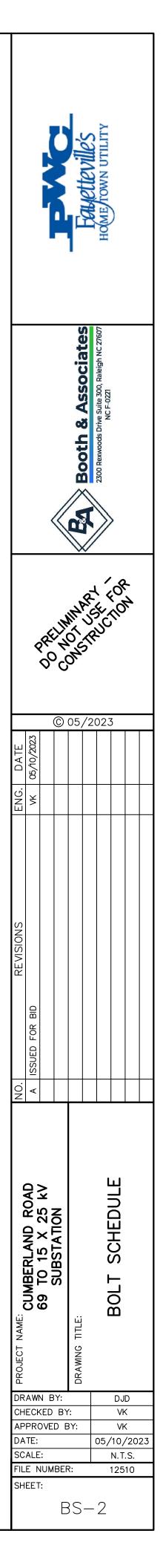
ERECTION BOLT SUMMARY FOR STATIC POLE								
BOLT NUMBER	BOLT NUMBER ASTM A325-N BOLTS BOLT TYPE QUANTIT							
B-7	1" DIAMETER x 2 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	4					

LD	192	
TYPE	QUANTITY	
LD	195	
LD	48	
LD	68	
LD	12	
LD	36	
LD	36	

	ERECTION BOLT TOTAL SUMMARY		
BOLT NUMBER	ASTM A325-N BOLTS	BOLT TYPE	QUANTITY
B-1	5/8" DIAMETER x 1 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	729
B-2	5/8" DIAMETER x 2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	556
B-3	5/8" DIAMETER x 2 1/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	84
B-4	5/8" DIAMETER x 2 1/2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	52
B-5	5/8" DIAMETER x 2 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	84
B-6	5/8" DIAMETER x 3 1/2" H.S.G.B. W/(1)FW + (1)HHN	FIELD	36
B-7	1" DIAMETER x 2 3/4" H.S.G.B. W/(1)FW + (1)HHN	FIELD	4

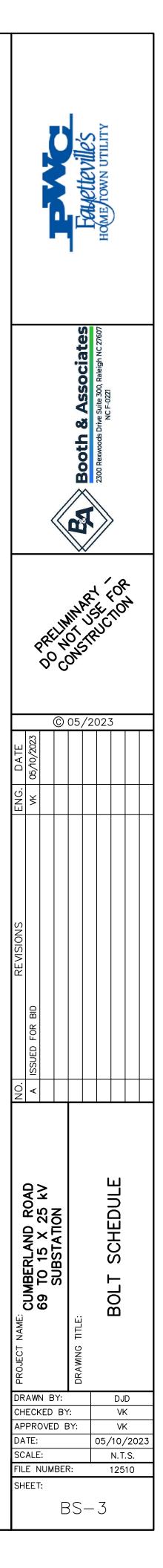


BOLT SCHEDULE FOR LOWSIDE											
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
LS-16	G114	ANG157	G114	ANG157	G114	B114	FIELD	2	5/8	2 1/2	B-4
LS-16	G114	ANG157	G114	ANG157	G114	B114	FIELD	2	5/8	2 1/2	B-4
LS-16	G114	ANG157	G114	ANG157	G114	B114	FIELD	2	5/8	2 1/2	B-4
LS-16	G114	ANG157	G114	ANG157	G114	B114	FIELD	2	5/8	2 1/2	B-4
LS-19	G120	ANG157	G120	ANG157	G120	B120	FIELD	4	5/8	2 1/2	B-4
LS-19	G120	ANG157	G120	ANG157	G120	B120	FIELD	4	5/8	2 1/2	B-4
LS-19	G120	ANG157	G120	ANG157	G120	B120	FIELD	4	5/8	2 1/2	B-4
LS-19	G120	ANG157	G120	ANG157	G120	B120	FIELD	4	5/8	2 1/2	B-4
LS-11	G111	ANG147	G111	CH111			FIELD	4	5/8	2	B-2
LS-11	G111	ANG147	G111	CH111			FIELD	4	5/8	2	B-2
LS-11	G111	ANG147	G111	CH120			FIELD	4	5/8	2	B-2
LS-11	G111	ANG147	G111	CH120			FIELD	4	5/8	2	B-2
LS-11	G111	PL149	G111	ANG137			FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137			FIELD	1	5/8	1 3/4	B-1
LS-12	G112	ANG147	G112	CH112			FIELD	4	5/8	1 3/4	B-1
LS-12	G112	ANG147	G112	CH112			FIELD	4	5/8	1 3/4	B-1
LS-12	G112	ANG147	G112	CH121			FIELD	4	5/8	1 3/4	B-1
LS-12	G112	ANG147	G112	CH121			FIELD	4	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG137			FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG137	G112	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG131	G112	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG131	G112	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG131	G112	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG125	G112	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG125	G112	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG125	G112	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG131	G112	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG131	G112	ANG120	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG131	G112	ANG131	FIELD	1	5/8	1 3/4	B-1



BOLT SCHEDULE FOR LOWSIDE (CONT.)

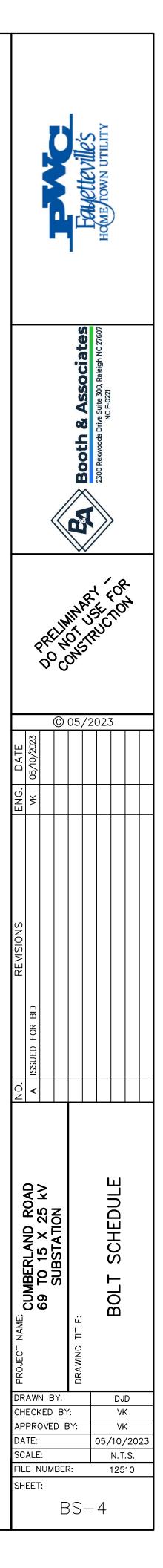
				BOEI OOI			John .,				
REFERENCE DRAWNG	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
LS-12	G112	PL149	G112	ANG137	G112	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-12	G112	PL149	G112	ANG137			FIELD	1	5/8	1 3/4	B-1
LS-11	G111	ANG147	G111	CH111			FIELD	4	5/8	1 3/4	B-1
LS-11	G111	ANG147	G111	CH111			FIELD	4	5/8	1 3/4	B-1
LS-11	G111	ANG147	G111	CH120			FIELD	4	5/8	1 3/4	B-1
LS-11	G111	ANG147	G111	CH120			FIELD	4	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137			FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137			FIELD	1	5/8	1 3/4	B-1
LS-11	G111	ANG147	G111	CH111			FIELD	4	5/8	1 3/4	B-1
LS-11	G111	ANG147	G111	CH111			FIELD	4	5/8	1 3/4	B-1
LS-11	G111	ANG147	G111	CH120			FIELD	4	5/8	1 3/4	B-1
LS-11	G111	ANG147	G111	CH120			FIELD	4	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137			FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG125	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG125	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG131	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137	G111	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-11	G111	PL149	G111	ANG137			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1



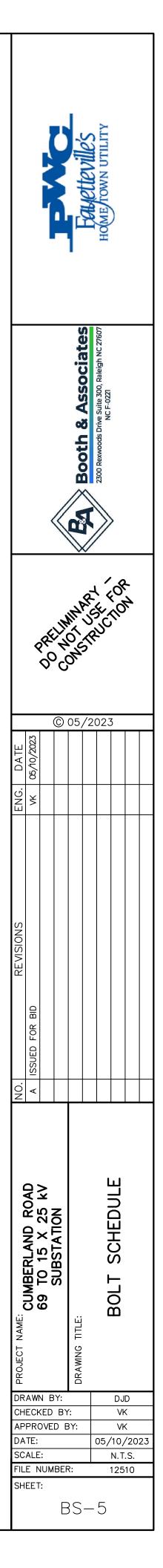
BOLT SCHEDULE FOR

REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1

(CONT.)
(CONT.)



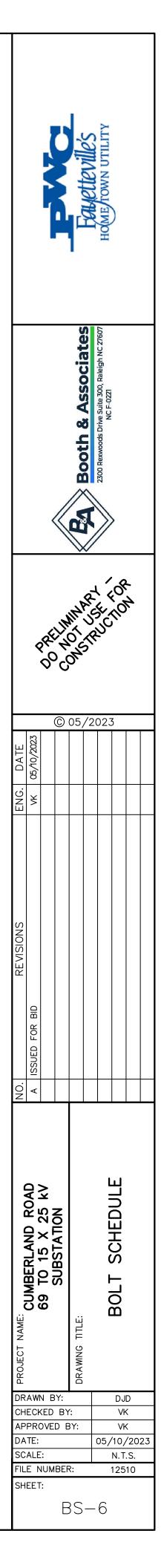
BOLT SCHEDULE FOR LOWSIDE (CONT.)													
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER		
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1		
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1		
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1		
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1		
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1		
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1		
LS-14	G115	ANG147	G115	CH115			FIELD	4	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG131	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129	G115	ANG131	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129	G115	ANG129	FIELD	1	5/8	1 3/4	B-1		
LS-14	G115	PL149	G115	ANG129			FIELD	1	5/8	1 3/4	B-1		
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2		
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2		
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2		
LS-03; LS-17	G118	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2		
LS-03; LS-17	G118	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2		
LS-03; LS-17	G118	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2		



BOLT SCHEDULE FOR L

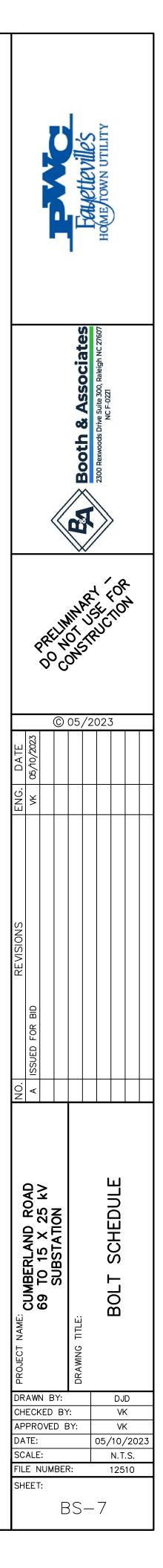
BOLT SCHEDULE FOR LOWSIDE (CONT.)												
REFERENCE DRAMING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER	
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2	
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2	
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2	
LS-01; LS-17	G118	PL155	G100	PL155			FIELD	4	5/8	2	B-2	
LS-01; LS-17	G118	PL155	G100	PL155			FIELD	4	5/8	2	B-2	
LS-01; LS-17	G118	PL155	G100	PL155			FIELD	4	5/8	2	B-2	
LS-02; LS-17	G118	PL155	G100.1	PL155			FIELD	4	5/8	2	B-2	
LS-02; LS-17	G118	PL155	G100.1	PL155			FIELD	4	5/8	2	B-2	
LS-02; LS-17	G118	PL155	G100.1	PL155			FIELD	4	5/8	2	B-2	
LS-01; LS-17	G118	PL155	G100	PL155			FIELD	4	5/8	2	B-2	
LS-01; LS-17	G118	PL155	G100	PL155			FIELD	4	5/8	2	B-2	
LS-01; LS-17	G118	PL155	G100	PL155			FIELD	4	5/8	2	B-2	
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2	
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2	
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2	
LS-03; LS-17	G118	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2	
LS-03; LS-17	G118	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2	
LS-03; LS-17	G118	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2	
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2	
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2	
LS-03; LS-17	G117	PL155	G100.2	PL155			FIELD	4	5/8	2	B-2	
LS-08.1	G102.1	ANG141.1	G102.1	C102.1			FIELD	2	5/8	2	B-2	
LS-09	G109	ANG143	G109	C109			FIELD	2	5/8	2	B-2	
LS-08	G102	ANG141	G102	C102			FIELD	2	5/8	2	B-2	
LS-09	G102	ANG143	G102	C109			FIELD	2	5/8	2	B-2	
LS-07	G104	ANG141	G100	C104			FIELD	2	5/8	2	B-2	
LS-06	G101	ANG143	G104	C101			FIELD	2	5/8	2	B-2	
LS-08	G102	ANG141	G101	C102			FIELD	2	5/8	2	B-2	
LS-00	G102	ANG143	G102	C102			FIELD	2	5/8	2	B-2	
LS-08	G103	ANG143	G103	C103			FIELD	2	5/8	2	B-2 B-2	
LS-00	G102	ANG143	G102	C102			FIELD	2	5/8	2	B-2 B-2	
LS-09 LS-07	G103 G104	ANG143 ANG141	G103 G104	C109 C104			FIELD	2	5/8	2	B-2 B-2	
LS-07 LS-06	G104 G101	ANG141 ANG143	G104 G101	C104 C101			FIELD	2	5/8	2	В-2 В-2	
							FIELD	<u> </u>	5/8		в-2 В-1	
LS-08.1; LS-17	ANG116	ANG116	G102.1	ANG150						1 3/4		
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1	
LS-04; LS-17	ANG116	ANG116	G100.3	WT135			FIELD		5/8	1 3/4	B-1	
LS-04; LS-17	ANG116	ANG116	G100.3	WT135			FIELD		5/8	1 3/4	B-1	
LS-08; LS-17	ANG116	ANG116	G102	ANG150			FIELD	1	5/8	1 3/4	B-1	
LS-08; LS-17	ANG116	ANG116	G102	ANG150			FIELD		5/8	1 3/4	B-1	
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1	

LOWSIDE (CONT.)
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BOLT SCHEDULE FOR LOWSIDE (CONT.)

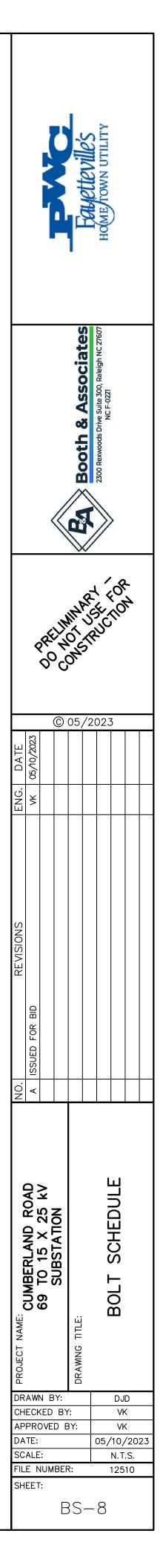
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-07; LS-17	ANG116	ANG116	G104	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-07; LS-17	ANG116	ANG116	G104	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-06; LS-17	ANG116	ANG116	G101	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-06; LS-17	ANG116	ANG116	G101	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-08; LS-17	ANG116	ANG116	G102	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-08; LS-17	ANG116	ANG116	G102	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-02; LS-17	ANG116	ANG116	G100.1	WT135			FIELD	1	5/8	1 3/4	B-1
LS-02; LS-17	ANG116	ANG116	G100.1	WT135			FIELD	1	5/8	1 3/4	B-1
LS-02; LS-17	ANG116	ANG116	G100.1	WT135			FIELD	1	5/8	1 3/4	B-1
LS-02; LS-17	ANG116	ANG116	G100.1	WT135			FIELD	1	5/8	1 3/4	B-1
LS-08; LS-17	ANG116	ANG116	G102	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-08; LS-17	ANG116	ANG116	G102	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-09; LS-17	ANG116	ANG116	G109	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-01; LS-17	ANG116	ANG116	G100	WT135			FIELD	1	5/8	1 3/4	B-1
LS-07; LS-17	ANG116	ANG116	G104	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-07; LS-17	ANG116	ANG116	G104	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-06; LS-17	ANG116	ANG116	G101	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-06; LS-17	ANG116	ANG116	G101	ANG150			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
LS-03; LS-17	ANG116	ANG116	G100.2	WT135			FIELD	1	5/8	1 3/4	B-1
ED-7; LS-04; LS-08.1	G100.3	PL152	G102.1	PL152			FIELD	4	5/8	2 3/4	B-5
ED-7; LS-04; LS-09	G100.3	PL152	G109	PL152			FIELD	4	5/8	2 3/4	B-5
LS-03; LS-08	G100.2	PL152	G102	PL152			FIELD	4	5/8	2 3/4	B-5



BOLT SCHEDULE FOR L

REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER	
LS-03; LS-09	G100.2	PL152	G109	PL152			FIELD	4	5/8	2 3/4	B-5	
ED-8; LS-01; LS-07	G100	PL152	G104	PL152			FIELD	4	5/8	2 3/4	B-5	
ED-8; LS-01; LS-06	G100	PL152	G101	PL152			FIELD	4	5/8	2 3/4	B-5	
ED-9; LS-02; LS-08	G100.1	PL152	G102	PL152			FIELD	4	5/8	2 3/4	B-5	
ED-9; LS-02; LS-09	G100.1	PL152	G109	PL152			FIELD	4	5/8	2 3/4	B-5	
LS-01; LS-08	G100	PL152	G102	PL152			FIELD	4	5/8	2 3/4	B-5	
LS-01; LS-09	G100	PL152	G109	PL152			FIELD	4	5/8	2 3/4	B-5	
ED-10; LS-03; LS-07	G100.2	PL152	G104	PL152			FIELD	4	5/8	2 3/4	B-5	
ED-10; LS-03; LS-06	G100.2	PL152	G101	PL152			FIELD	4	5/8	2 3/4	B-5	
ED-6; LS-19; LS-08.1	G120	ANG157	G102.1	C102.1			FIELD	4	5/8	2	B-2	
ED-6; LS-19; LS-08	G120	ANG157	G102	C102			FIELD	4	5/8	2	B-2	
LS-19; LS-09	G120	ANG157	G109	C109			FIELD	4	5/8	2	B-2	
LS-19; LS-09	G120	ANG157	G109	C109			FIELD	4	5/8	2	B-2	
ED-6; LS-16; LS-08	G114	ANG157	G102	C102			FIELD	4	5/8	2	B-2	
ED-6; LS-16; LS-08	G114	ANG157	G102	C102			FIELD	4	5/8	2	B-2	
LS-16; LS-09	G114	ANG157	G109	C109			FIELD	4	5/8	2	B-2	
LS-16; LS-09	G114	ANG157	G109	C109			FIELD	4	5/8	2	B-2	
ED-7; LS-11; LS-08.1	G111	ANG147	G102.1	C102.1			FIELD	4	5/8	2	B-2	
ED-7; LS-11; LS-08.1	G111	ANG147	G102.1	C102.1			FIELD	4	5/8	2	B-2	
ED-7; LS-11; LS-09	G111	ANG147	G109	C109			FIELD	4	5/8	2	B-2	
ED-7; LS-11; LS-09	G111	ANG147	G109	C109			FIELD	4	5/8	2	B-2	
LS-12; LS-08	G112	ANG147	G102	C102			FIELD	4	5/8	2	B-2	
LS-12; LS-08	G112	ANG147	G102	C102			FIELD	4	5/8	2	B-2	
LS-11; LS-09	G112	ANG147	G109	C109			FIELD	4	5/8	2	B-2	
LS-11; LS-09	G112	ANG147	G109	C109			FIELD	4	5/8	2	B-2	
ED-9; LS-11; LS-08	G111	ANG147	G102	C102			FIELD	4	5/8	2	B-2	
ED-9; LS-11; LS-08	G111	ANG147	G102	C102			FIELD	4	5/8	2	B-2	
ED-9; LS-11; LS-09	G111	ANG147	G109	C109			FIELD	4	5/8	2	B-2	
ED-9; LS-11; LS-09	G111	ANG147	G109	C109			FIELD	4	5/8	2	B-2	
ED-10; LS-11; LS-07	G111	ANG147	G104	C104			FIELD	4	5/8	2	B-2	
ED-10; LS-11; LS-07	G111	ANG147	G104	C104			FIELD	4	5/8	2	B-2	
ED-10; LS-11; LS-06	G111	ANG147	G101	C101			FIELD	4	5/8	2	B-2	
ED-10; LS-11; LS-06	G111	ANG147	G101	C101			FIELD	4	5/8	2	B-2	
ED-6; LS-14; LS-08	G115	ANG147	G102	C102			FIELD	4	5/8	2	B-2	
ED-6; LS-14; LS-08	G115	ANG147	G102	C102			FIELD	4	5/8	2	B-2	
ED-6; LS-14; LS-07	G115	ANG147	G104	C104	G115	ANG147	FIELD	4	5/8	2 1/2	B-4	
ED-6; LS-14; LS-07	G115	ANG147	G104	C104	G115	ANG147	FIELD	4	5/8	2 1/2	B-4	
ED-6; LS-14; LS-08	G115	ANG147	G102	C102			FIELD	4	5/8	2	B-2	
ED-6; LS-14; LS-08	G115	ANG147	G102	C102			FIELD	4	5/8	2	B-2	
ED-6; LS-14; LS-08	G115	ANG147	G102	C102			FIELD	4	5/8	2	B-2	

LOWSIDE	(CONT.)

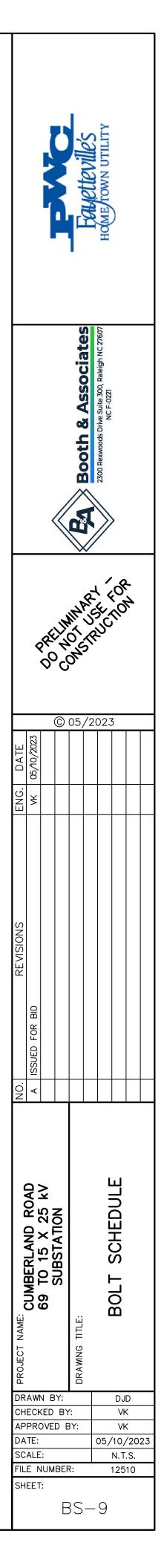


BOLT SCHEDULE FOR LOWSIDE (CONT.)

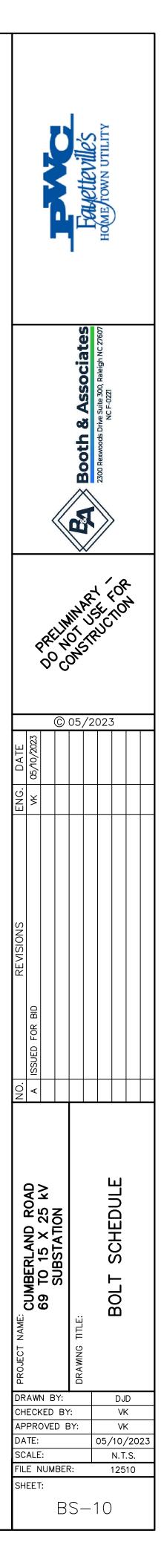
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER			
ED-6; LS-14; LS-08	G115	ANG147	G102	C102			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-07	G115	ANG147	G104	C104			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-07	G115	ANG147	G104	C104			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-09	G115	ANG147	G109	C109			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-09	G115	ANG147	G109	C109			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-06	G115	ANG147	G101	C101	G115	ANG147	FIELD	4	5/8	2 1/2	B-4			
ED-6; LS-14; LS-06	G115	ANG147	G101	C101	G115	ANG147	FIELD	4	5/8	2 1/2	B-4			
ED-6; LS-14; LS-09	G115	ANG147	G109	C109			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-09	G115	ANG147	G109	C109			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-09	G115	ANG147	G109	C109			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-09	G115	ANG147	G109	C109			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-06	G115	ANG147	G101	C101			FIELD	4	5/8	2	B-2			
ED-6; LS-14; LS-06	G115	ANG147	G101	C101			FIELD	4	5/8	2	B-2			

BOLT SCHEDULE FOR URD STAND

REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER		
URD-3	G203	B203	G203	ANG217			FIELD	4	5/8	2	B-2		
URD-3	G203	B203	G203	ANG217			FIELD	4	5/8	2	B-2		
ED-5; URD-1; URD-3	G200	C200	G203	ANG217			FIELD	4	5/8	2	B-2		
ED-5; URD-1; URD-3	G200	C200	G203	ANG217			FIELD	4	5/8	2	B-2		
URD-2	G201	ANG201	G201	ANG216			FIELD	4	5/8	1 3/4	B-1		
URD-2	G201	ANG201	G201	ANG216			FIELD	4	5/8	1 3/4	B-1		
URD-2	G201	ANG201	G201	ANG216			FIELD	4	5/8	1 3/4	B-1		
URD-2	G201	ANG201	G201	ANG209			FIELD	2	5/8	1 3/4	B-1		
URD-2	G201	ANG201	G201	ANG210			FIELD	2	5/8	1 3/4	B-1		
ED-5; URD-1; URD-2	G200	C200	G201	ANG209			FIELD	2	5/8	2	B-2		
ED-5; URD-1; URD-3	G200	C200	G201	ANG210			FIELD	2	5/8	2	B-2		
URD-3	G204	ANG204	G204	ANG213			FIELD	1	5/8	2	B-2		
URD-3	G206	ANG204	G204	ANG213			FIELD	1	5/8	2	B-2		
URD-3	G204	ANG204	G204	ANG213			FIELD	1	5/8	2	B-2		
URD-3	G206	ANG204	G204	ANG213			FIELD	1	5/8	2	B-2		
ED-5; URD-1; URD-3	G200	C200	G204	ANG204			FIELD	2	5/8	2	B-2		
ED-5; URD-1; URD-3	G200	C200	G204	ANG206			FIELD	2	5/8	2	B-2		
ED-5; URD-1; URD-3	G200	C200	G204	ANG204			FIELD	2	5/8	2	B-2		
ED-5; URD-1; URD-3	G200	C200	G204	ANG206			FIELD	2	5/8	2	B-2		

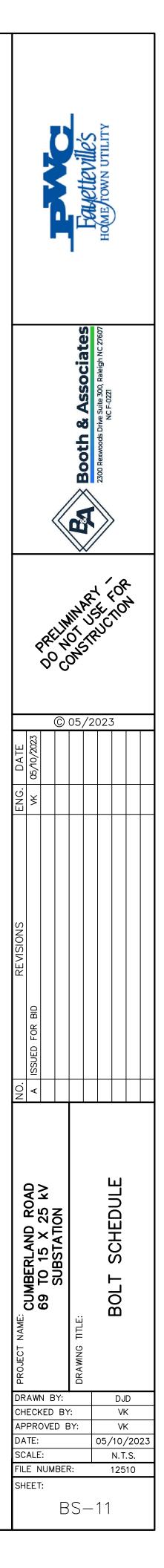


	BOLT SCHEDULE FOR A-FRAME													
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER			
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR335			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR335	G310	ANG327	FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1			

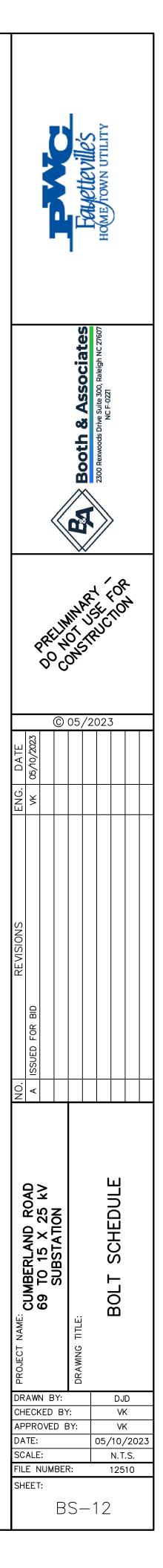


BOLT SCHEDULE FOR A-FRAME (CONT.)

REFERENCE DRAWNG	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR335			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR335	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327	RP R1		FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1



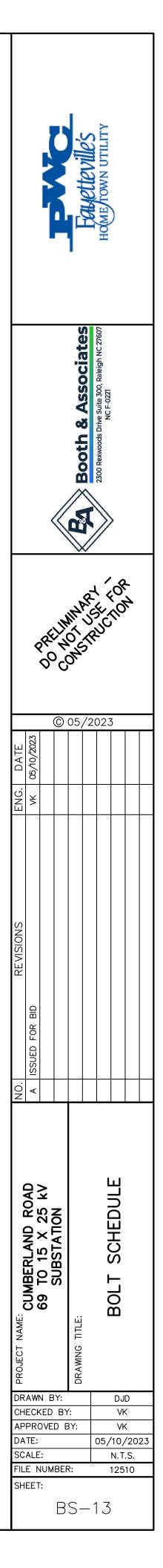
				BOLT SCH	IEDULE FOI	R A-FRAME (C	CONT.)				
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR335			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR335	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR335			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR335	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327		7.110021	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1



BOLT SCHEDULE FOR

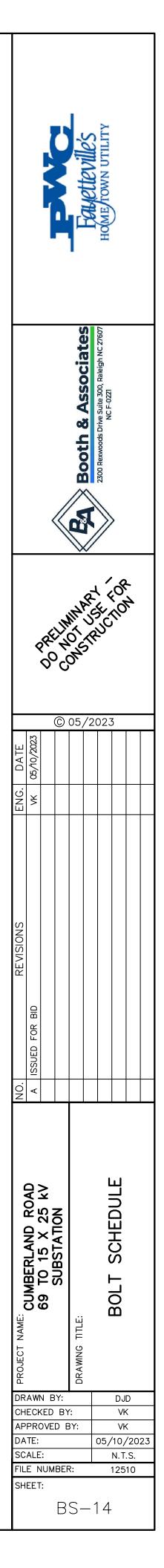
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338	G310	ANG327	FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	ANG327			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR338			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG310	G310	BR331			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	BR332	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	BR332	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	ANG327	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-2	G310	BR332	G310	BR332			FIELD	1	5/8	1 3/4	B-1
AF-5	G301	C340	G301	C341			FIELD	4	5/8	1 3/4	B-1
AF-5	G301	C340	G301	C341			FIELD	4	5/8	1 3/4	B-1
AF-5	G301	C340	G301	C341			FIELD	4	5/8	1 3/4	B-1
AF-5	G301	C340	G301	C341			FIELD	4	5/8	1 3/4	B-1
AF-5	G301	C340	G301	C341			FIELD	4	5/8	1 3/4	B-1 B-1
AF-5	G301	C340	G301	C341			FIELD	4	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1

		00	
A-FRAM	VIE (CO	NI.)

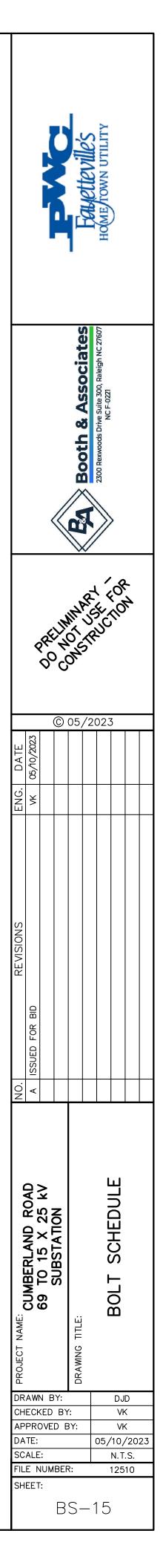


BOLT SCHEDULE FOR A-FRAME (CONT.)

REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER	BOLT LENGTH	BOLT NUMBER
Brownice								Qortini	(in.)	(in.)	HOMBER
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310	G301	CH301			FIELD	2	5/8	1 3/4	B-1
AF-2; AF-5	G310	ANG310		ANG342			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG342			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG342			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG342			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG344			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG344			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG344			FIELD	2	5/8	2	B-2
AF-2; AF-5	G310	ANG310		ANG344			FIELD	2	5/8	2	B-2
AF-2; AF-7		C312		ANG342			FIELD	4	5/8	2 1/4	B-3
AF-2; AF-7		C312		ANG342			FIELD	4	5/8	2 1/4	B-3
AF-2; AF-7		C312		ANG342			FIELD	4	5/8	2 1/4	B-3
AF-2; AF-7		C312		ANG342			FIELD	4	5/8	2 1/4	B-3
AF-2; AF-7		C312		ANG344			FIELD	4	5/8	2 1/4	B-3
AF-2; AF-7		C312		ANG344			FIELD	4	5/8	2 1/4	B-3
AF-2; AF-7		C312		ANG344			FIELD	4	5/8	2 1/4	B-3
AF-2; AF-7		C312		ANG344			FIELD	4	5/8	2 1/4	B-3
AF-7; AF-8		C312	G303	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G303	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G303	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G303	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G305	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G305	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G305	PL319			FIELD	4	5/8	2	B-2
AF-7; AF-8		C312	G305	PL319			FIELD	4	5/8	2	B-2
AF-1; AF-7		C312	G311	PL350			FIELD	4	5/8	2 1/4	B-3
AF-1; AF-3; AF-7		C312	G311	PL350	G308	ANG326	FIELD	4	5/8	2 3/4	B-5
AF-1; AF-7		C312	G311	PL350			FIELD	4	5/8	2 1/4	B-3
AF-1; AF-3; AF-7		C312	G311	PL350	G308	ANG326	FIELD	4	5/8	2 3/4	B-5
AF-1; AF-7		C312	G311	PL350			FIELD	4	5/8	2 1/4	B-3
AF-1; AF-3; AF-7		C312	G311	PL350	G308	ANG326	FIELD	4	5/8	2 3/4	B-5
AF-1; AF-7		C312	G311	PL350			FIELD	4	5/8	2 1/4	B-3
AF-1; AF-3; AF-7		C312	G311	PL350	G308	ANG326	FIELD	4	5/8	2 3/4	B-5
AF-7		C312		PL351			FIELD	2	5/8	2 1/4	B-3
AF-7; AF-8		C312		PL351		ANG328	FIELD	2	5/8	2 3/4	B-5
AF-3; AF-7		C312		PL351	G308	ANG326	FIELD	4	5/8	2 3/4	B-5

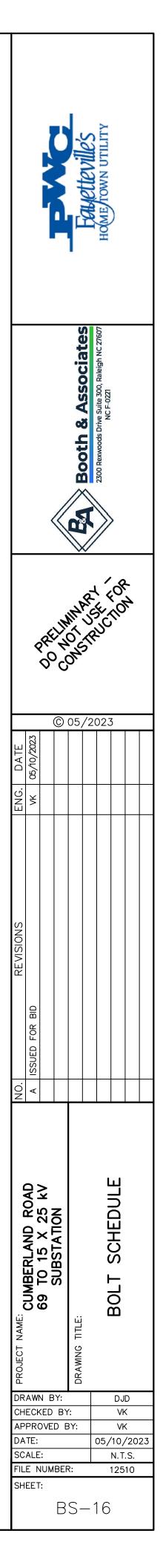


				BOLT SCH	IEDULE FOR	R A-FRAME (C	CONT.)				
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
AF-7		C312		PL351			FIELD	2	5/8	2 1/4	B-3
AF-7; AF-8		C312		PL351		ANG328	FIELD	2	5/8	2 3/4	B-5
AF-3; AF-7		C312		PL351	G308	ANG326	FIELD	4	5/8	2 3/4	B-5
AF-7		C312		PL351			FIELD	4	5/8	2 1/4	B-3
AF-3; AF-7		C312		PL351	G308	ANG326	FIELD	4	5/8	2 3/4	B-5
AF-7		C312		PL351			FIELD	4	5/8	2 1/4	B-3
AF-3; AF-7		C312		PL351	G308	ANG326	FIELD	4	5/8	2 3/4	B-5
AF-3	G308	PL322	G308	ANG326			FIELD	3	5/8	2 1/2	B-4
AF-3	G308	PL322	G308	ANG326			FIELD	3	5/8	2 1/2	B-4
AF-3	G308	PL322	G308	ANG326			FIELD	3	5/8	2 1/2	B-4
AF-3	G308	PL322	G308	ANG326			FIELD	3	5/8	2 1/2	B-4
AF-3	G309	PL321	G308	PL325			FIELD	4	5/8	2 1/4	B-3
AF-3	G309	PL321	G308	PL325			FIELD	4	5/8	2 1/4	B-3
AF-5; AF-6	G302	CH302	G301	CH301			FIELD	4	5/8	3 1/2	B-6
AF-2; AF-6	G302	CH302	G310	ANG310			FIELD	4	5/8	3 1/2	B-6
AF-5; AF-6	G302	CH302	G301	CH301			FIELD	4	5/8	3 1/2	B-6
AF-5; AF-6	G302	CH302	G301	CH301			FIELD	4	5/8	3 1/2	B-6
AF-2; AF-6	G302	CH302	G310	ANG310			FIELD	4	5/8	3 1/2	B-6
AF-5; AF-6	G302	CH302	G301	CH301			FIELD	4	5/8	3 1/2	B-6
AF-5; AF-6	G302	CH302	G301	CH301			FIELD	4	5/8	3 1/2	B-6
AF-2; AF-6	G302	CH302	G310	ANG310			FIELD	4	5/8	3 1/2	B-6
AF-5; AF-6	G302	CH302	G301	CH301			FIELD	4	5/8	3 1/2	B-6

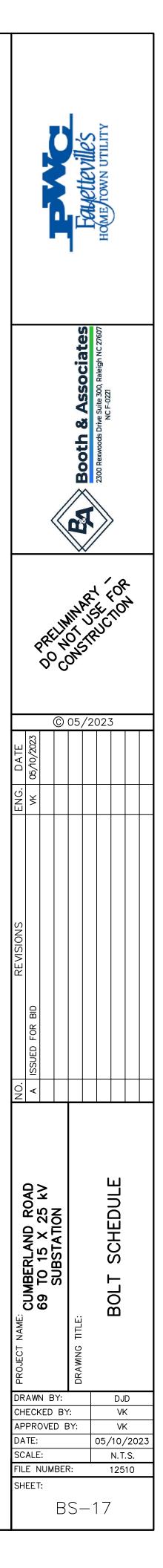


BOLT SCHEDULE FOR LO

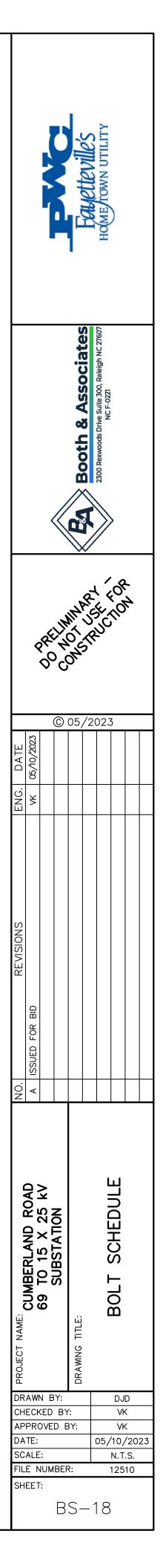
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401	G401	ANG407	FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401	G401	ANG407	FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	ANG407			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	ANG407			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	ANG407			FIELD	1	5/8	1 3/4	B-1
SS-5	G401	ANG407	G401	ANG407			FIELD	1	5/8	1 3/4	B-1



	BOLT SCHEDULE FOR LOW SWITCH STAND (CONT.)														
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER				
SS-1; SS-5	G401	PL416	G400	PL416			FIELD	4	5/8	2 1/4	B-3				
SS-1; SS-5; SS-6	G401	ANG408	G400	ANG413			FIELD	1	5/8	1 3/4	B-1				
SS-1; SS-5; SS-6	G401	ANG408	G400	ANG413			FIELD	1	5/8	1 3/4	B-1				
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1				
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1				
SS-2; SS-5	G401	PL416	G400.1	PL416			FIELD	4	5/8	2 1/4	B-3				
SS-1; SS-5	G401	ANG408	G400.1	ANG413			FIELD	1	5/8	1 3/4	B-1				
SS-1; SS-5	G401	ANG408	G400.1	ANG413			FIELD	1	5/8	1 3/4	B-1				
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1				
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1				



				BOLT SCHE	DULE FOR	HIGH SWITCH	STAND				
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG412	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
SS-5	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
	G401	ANG414	G401	CH401			FIELD	2	5/8	1 3/4	B-1
	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
	G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1
	G401 G401	ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1 B-1
	G401	ANG407	G401	CH401	G401	ANG407	FIELD	1	5/8	1 3/4	B-1
	G401	ANG407	G401	CH401	G401	ANG407	FIELD	1	5/8	1 3/4	B-1
	G401 G401	ANG407	G401	CH401		/ 110-10/	FIELD	1	5/8	1 3/4	B-1 B-1
<u> </u>	G401 G401	ANG407 ANG407	G401	CH401			FIELD	1	5/8	1 3/4	B-1 B-1
<u> </u>	G401 G401	ANG407 ANG407	G401 G401	CH401			FIELD	1	5/8	1 3/4	B-1 B-1
	G401 G401	ANG407 ANG407	G401 G401	CH401	L		FIELD	1	5/8	1 3/4	B-1 B-1
	G401 G401	ANG407 ANG407	G401 G401	CH401 CH401	L		FIELD	1	5/8	1 3/4	B-1 B-1
	G401 G401	ANG407 ANG407	G401 G401	CH401			FIELD	1	5/8	1 3/4	B-1
<u> </u>	G401 G401	ANG407 ANG407	G401 G401	ANG407			FIELD	1	5/8	1 3/4	B-1
	G401 G401	ANG407 ANG407	G401 G401	ANG407 ANG407	L		FIELD	1	5/8	1 3/4	B-1
	G401 G401	ANG407 ANG407	G401 G401	ANG407 ANG407	L		FIELD	1	5/8	1 3/4	B-1 B-1
	G401 G401	ANG407 ANG407	G401 G401	ANG407 ANG407			FIELD		5/8	1 3/4	B-1 B-1
-00	0401	ANG407	0401	ANG407			FIELD		0/0	10/4	D-I



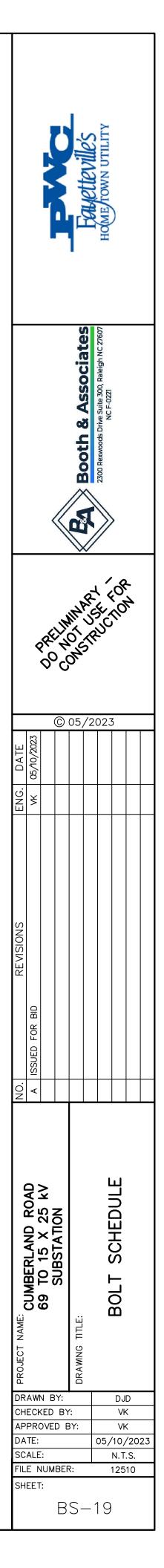
BOLT SCHEDULE FOR HIGH SWITCH STAND (CONT.)

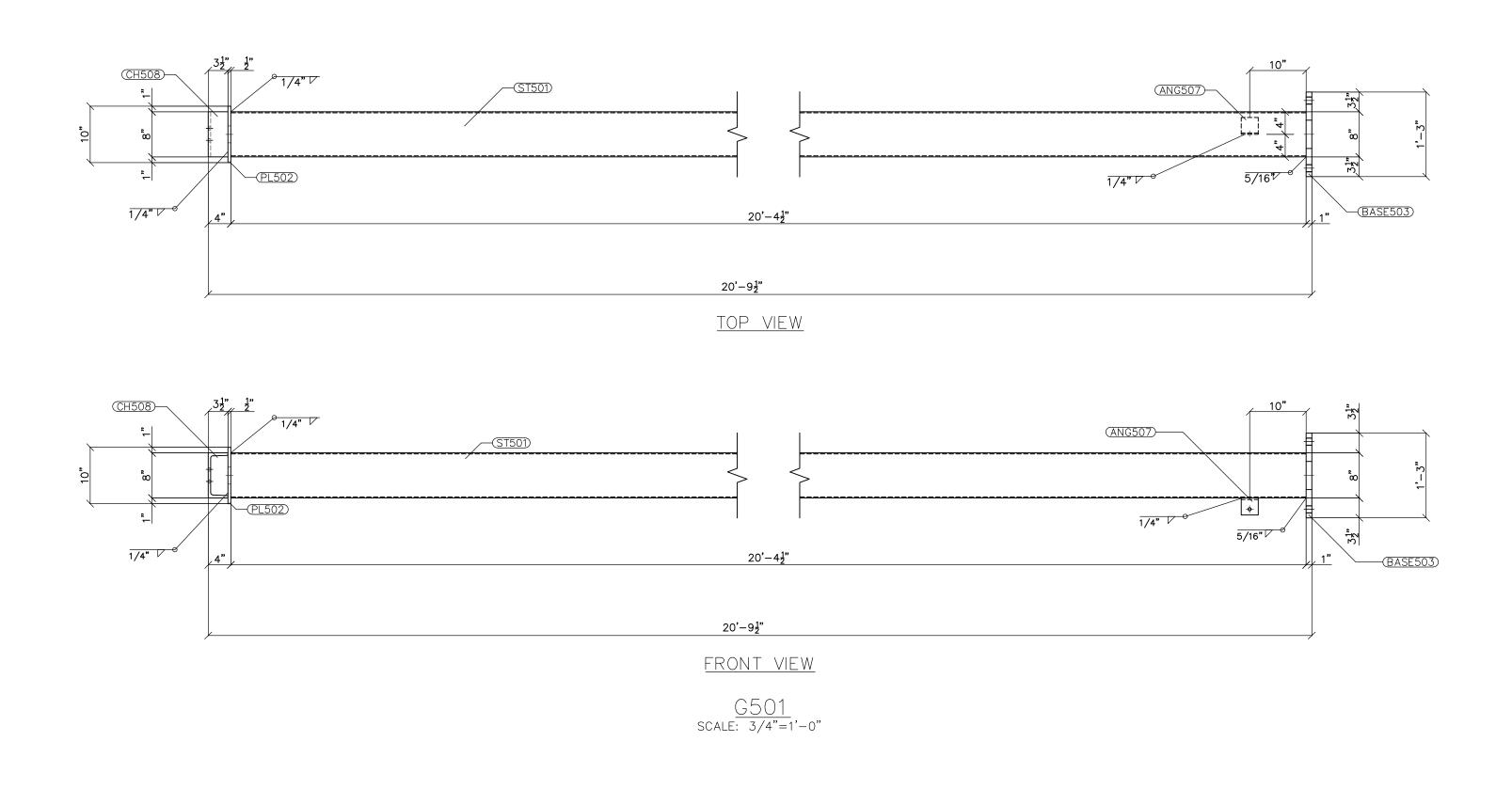
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
SS-1; SS-5	G401	PL416	G450	PL416			FIELD	4	5/8	2 1/4	B-3
SS-1; SS-5; SS-6	G401	ANG408	G450	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-1; SS-5; SS-6	G401	ANG408	G450	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-2; SS-5	G401	PL416	G450.1	PL416			FIELD	4	5/8	2 1/4	B-3
SS-1; SS-5	G401	ANG408	G450.1	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-1; SS-5	G401	ANG408	G450.1	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1
SS-5; SS-6	G401	ANG408	G401	ANG413			FIELD	1	5/8	1 3/4	B-1

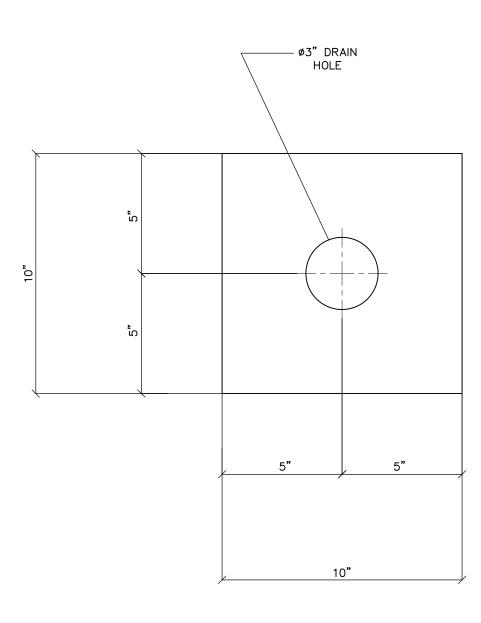
BOLT SCHEDULE FOR THREE PHASE BUS STAND

REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER
TPB-1; TPB-2; TPB-3	G600	PL607	G605	B605			FIELD	8	5/8	2	B-2
TPB-1; TPB-2; TPB-3	G600	PL608	G600	ANG610			FIELD	1	5/8	1 3/4	B-1
TPB-1; TPB-2; TPB-3	G600	PL608	G600	ANG610			FIELD	1	5/8	1 3/4	B-1
TPB-1; TPB-2; TPB-3	G605	PL608	G600	ANG610			FIELD	1	5/8	1 3/4	B-1
TPB-1; TPB-2; TPB-3	G605	PL608	G600	ANG610			FIELD	1	5/8	1 3/4	B-1

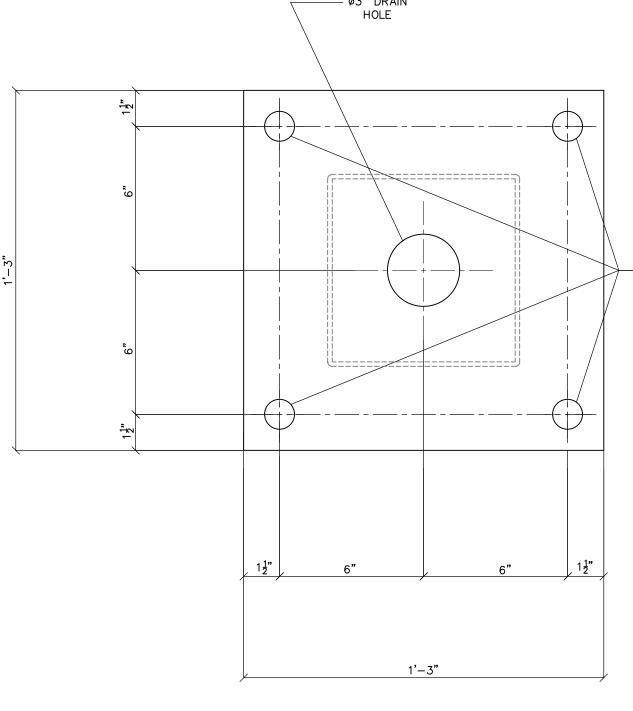
	BOLT SCHEDULE FOR STATIC POLE												
REFERENCE DRAWING	GROUP 1	MEMBER 1	GROUP 2	MEMBER 2	GROUP 3	MEMBER 3	SHOP/FIELD	BOLT QUANTITY	BOLT DIAMETER (in.)	BOLT LENGTH (in.)	BOLT NUMBER		
SM-1; SM-3; SM-4													

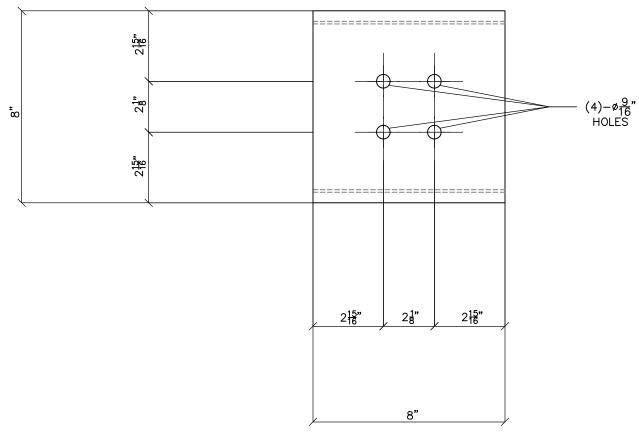






PL502 scale: 3"=1'-0"





CH508 FRONT VIEW scale: 3"=1'-0"

— ø3" DRAIN HOLE

BASE503 scale: 3"=1'-0"

— (4)–ø1<u>1</u>" HOLES

 $1\frac{1}{2}$ $1\frac{1}{2}$

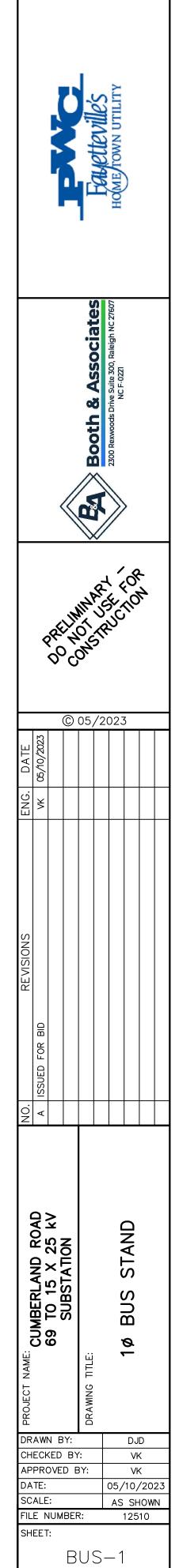
ANG507 FRONT VIEW scale: 6"=1'-0"

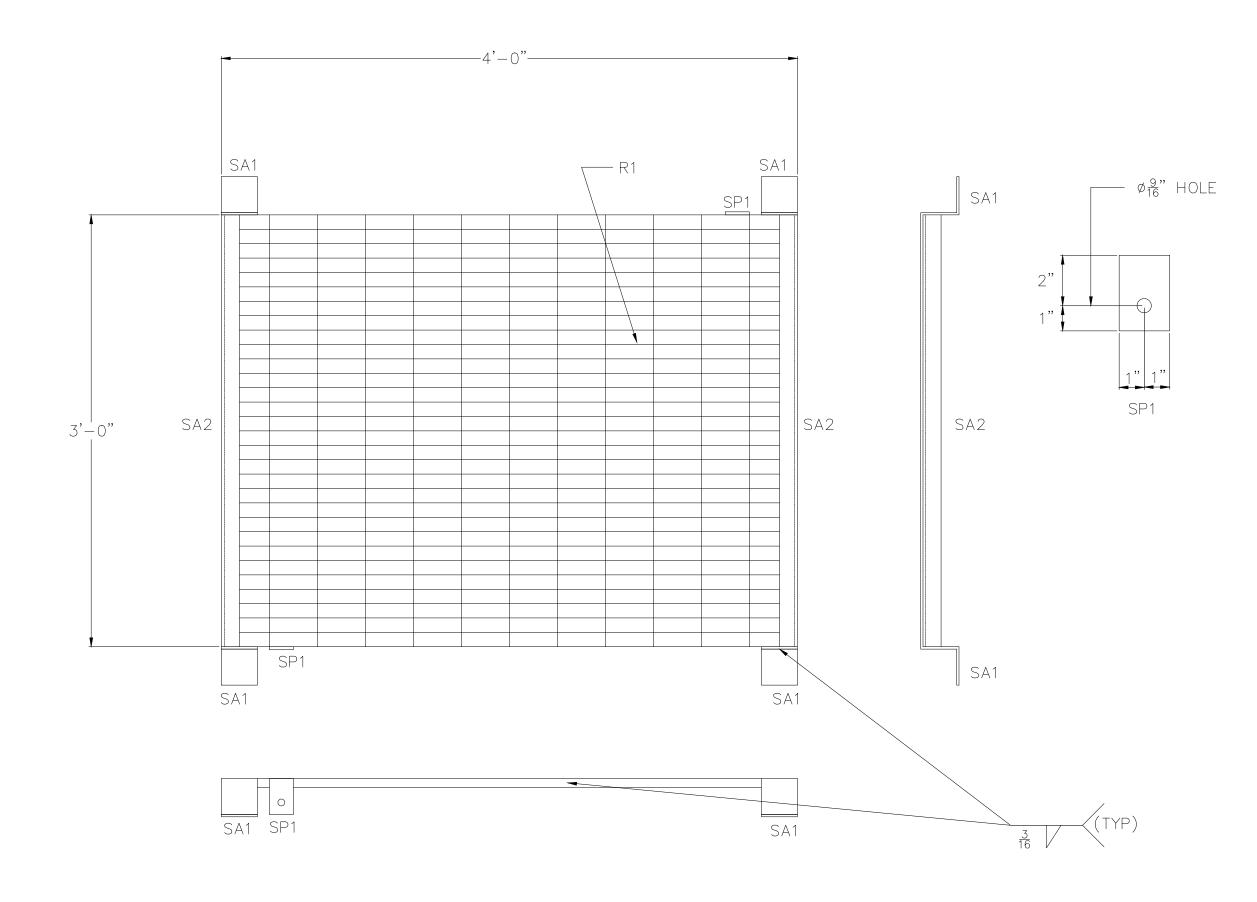
3"

NOTES:

- NOTES:
 ASTM 325 ERECTION BOLTS
 ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED

		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G501	3	FOR ONE GROUP G501:		
ANG507	1	L3x3x1/4	3"	1.23
BASE503	1	Plate 1'-3"x1"	1'-3"	63.93
CH508	1	MC8x22.8	8"	15.20
PL502	1	PL 10"x1/2"	10"	14.21
ST501	1	HSS8x8x3/16	20'-4 1/2"	399.55
			1	
		BLACK WEIGHT:	4	94.12 LBS.
		GALVANIZED WEIGH	T:	19.76 LBS.
		TOTAL WEIGHT:	Ę	513.88 LBS.





<u>GROUND MAT – GM34</u> (two required) scale: 1–1/2"=1'-0"

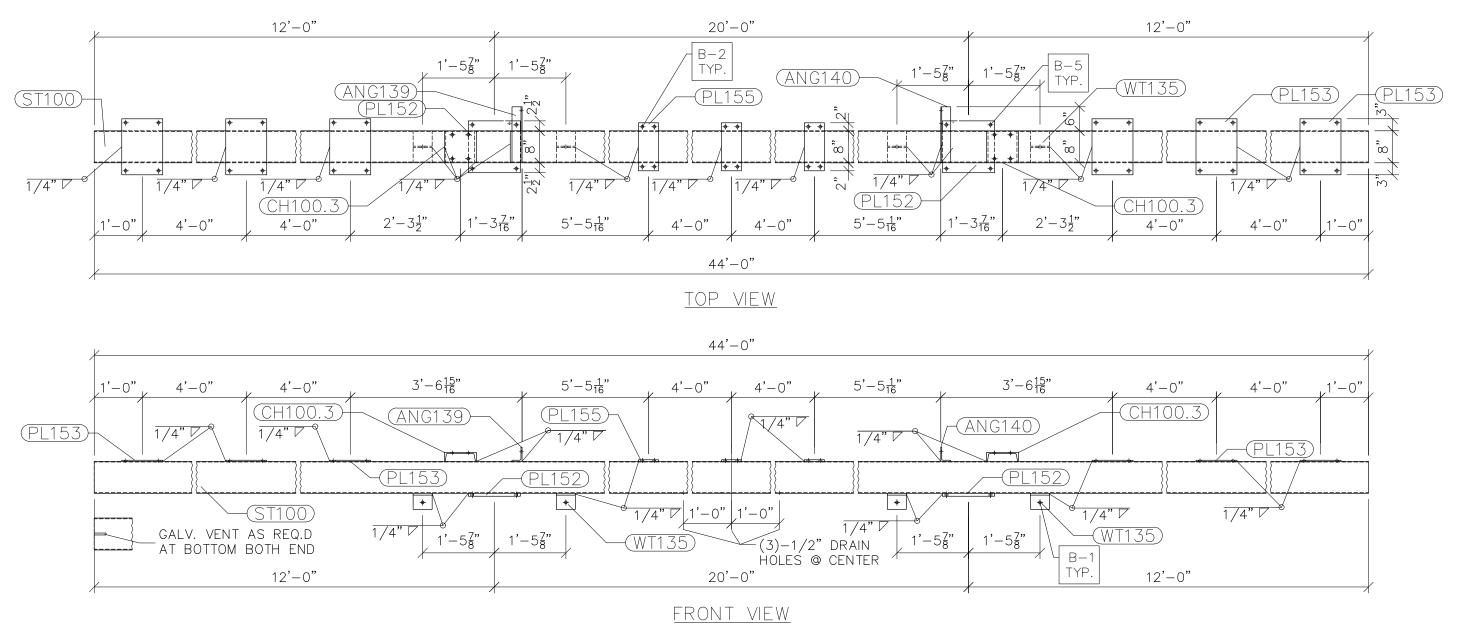


NOTES:

- 1) ASTM 325 ERECTION BOLTS
- ASTM 325 ERECTION BOLTS
 ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED

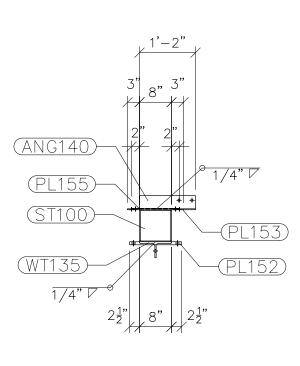
	BILL OF MATERIAL								
POS. NO.	QTY	DESC.	LENGTH	WEIGHT					
GM-1	10	FOR ONE GROUNDING MAT:							
R1	2	3'x3/4"x3/16"(19W4 GRATING) L3"x3"x3/16"	4'-0" 3"	134.0					
SA1	8	L3"x3"x3/16"	3"	7.4					
SA2	4	L1-3/4"x1-3/4"x3/16"	3'-0"	26.0					
SP1	4	PL 2x1/4"	3"	2.0					
		BLACK WEIGHT:		169.4 LBS.					
		GALVANIZED WEIGH	HT:	6.8 LBS.					
		TOTAL WEIGHT:		176.2 LBS.					

Fayetteville's Home rown utility									
	Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221								
								1.1	
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NG. D/	VK 05/10/2023								
REVISIONS	A ISSUED FOR BID								
NO.	A								
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AP DA	ECP PRC TE: ALE	DVE			(۷۴ /10		
FIL	E N	IUM					SF 125		14
			(GN	1—	. 1			



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<u>right view</u>

<u>G100</u> scale: n.t.s.

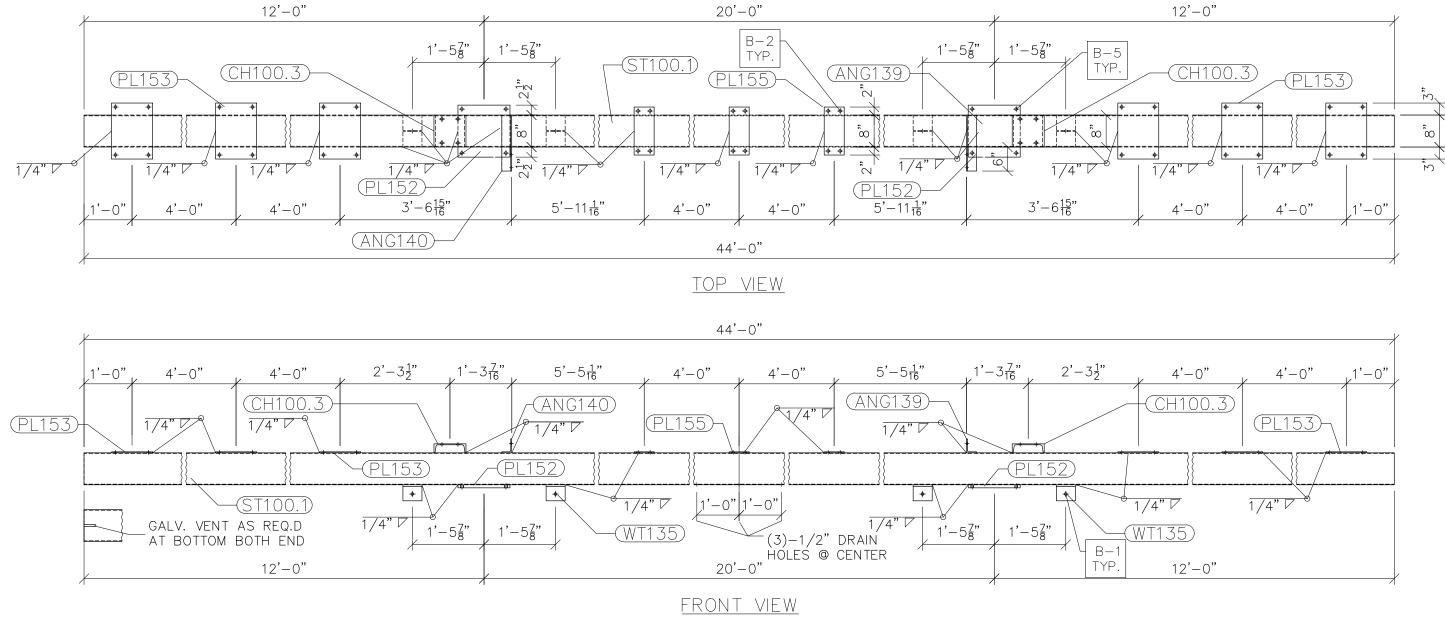
NOTES:

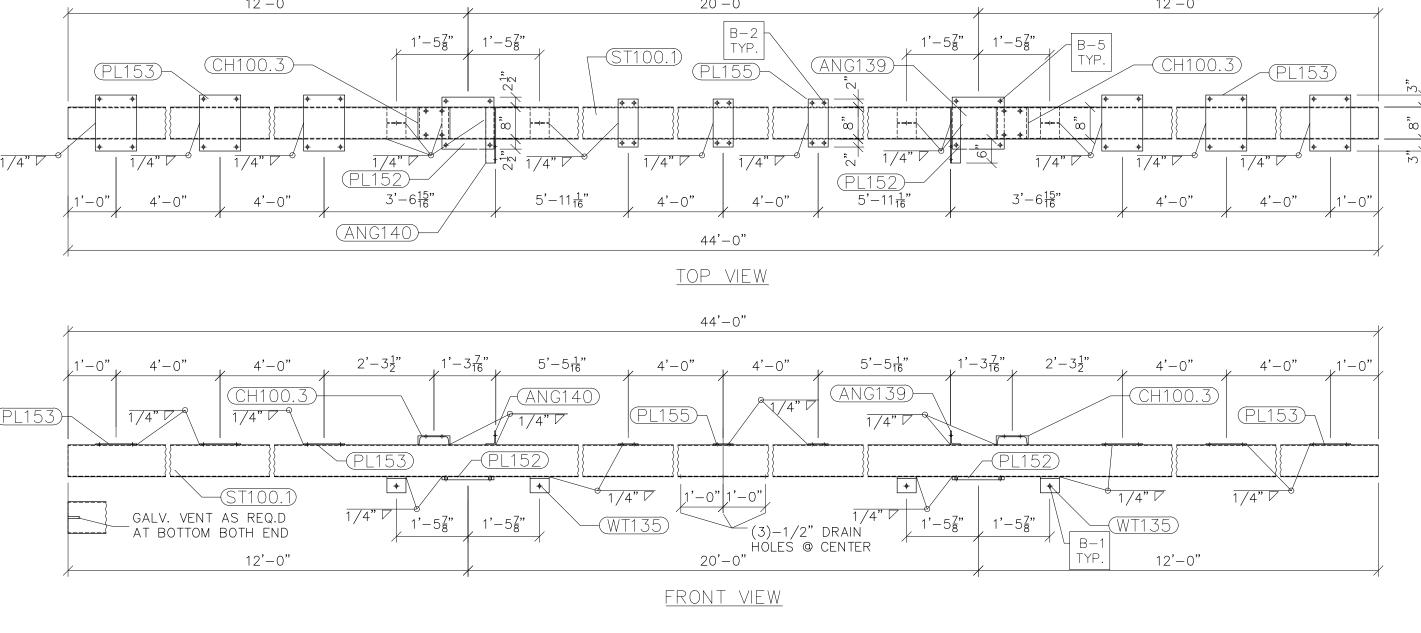
- 1) ASTM 325 ERECTION BOLTS
- 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
- 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
- 5) ALL WELDING ELECTRODES SHALL BE E7021
- 6) EDGE DISTANCE 1" UNLESS NOTED

	BILL OF MATERIAL		
QTY	DESC.	LENGTH	
2	FOR ONE GROUP G100		
1	L3-1/2x2-1/2x1/4	1'-2"	5.72
1	$L3 - 1/2 \times 2 - 1/2 \times 1/4$	1'-2"	5.72
2	PL 3/4"x1'-1"	1'-1"	72.03
6	PL 1/4"x10 1/4"	1'-2"	61.16
3	PL 3/8"x5"	1'-0"	19.18
1	HSS8x8x3/16	44'-0"	862.90
4	WT4x15.5	4 3/4"	24.54
2	C8x11.5	8"	15.34
	BLACK WEIGHT:	10)66.59 LBS.
	GALVANIZED WEIGH	T:	42.66 LBS.
	TOTAL WEIGHT.	11	09.25 LBS

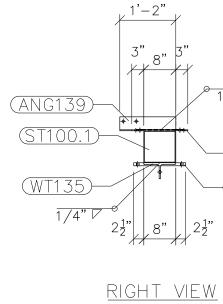
TOTAL WEIGHT: 1109.25 LBS. SEE DRAWING No. LS-05 FOR CH 100.3, ANG139, ANG140, PL152, PL155, WT135 & END COVER DETAILS.

	FOR ETTEVILES HOME TOWN UTILITY								
		<		RA Booth & Accoriator		2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221	>		
	<								
ENG. DATE	VK 05/10/2023			05,	/20		3		
NO. REVISIONS	A ISSUED FOR BID								
TI 2 D A A A A D PROJECT NAME:	T T T T T T T T T T T T T T T T T T T	N B (ED)VE :	BY D E BEF	8Y: R:		05/ AS		< < /20 IOW	









<u>G100.1</u> scale: n.t.s.

NOTES: 1) ASTM 325 ERECTION BOLTS

- 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
- 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
- 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
- 5) ALL WELDING ELECTRODES SHALL BE E70216) EDGE DISTANCE 1" UNLESS NOTED

	BILL OF MATERIAL		
QTY	DESC.	LENGTH	
1			
1	L3-1/2x2-1/2x1/4	1'-2"	5.72
1	$L3 - 1/2 \times 2 - 1/2 \times 1/4$	1'-2"	5.72
2	PL 3/4"x1'-1"	1'-1"	72.03
6	PL 1/4"x10 1/4"	1'-2"	61.04
3	PL 3/8"x5"	1'-0"	19.18
1	HSS8x8x3/16	44'-0"	862.90
4	WT4x15.5	4 3/4"	24.54
2	C8x11.5	8"	15.34
		10	

1066.47 LBS. 42.66 LBS. 1109.13 LBS. BLACK WEIGHT: GALVANIZED WEIGHT TOTAL WEIGHT: SEE DRAWING No. LS-05 FOR CH100.3, ANG139, ANG140, PL152, PL153, WT135 & END COVER DETAILS.

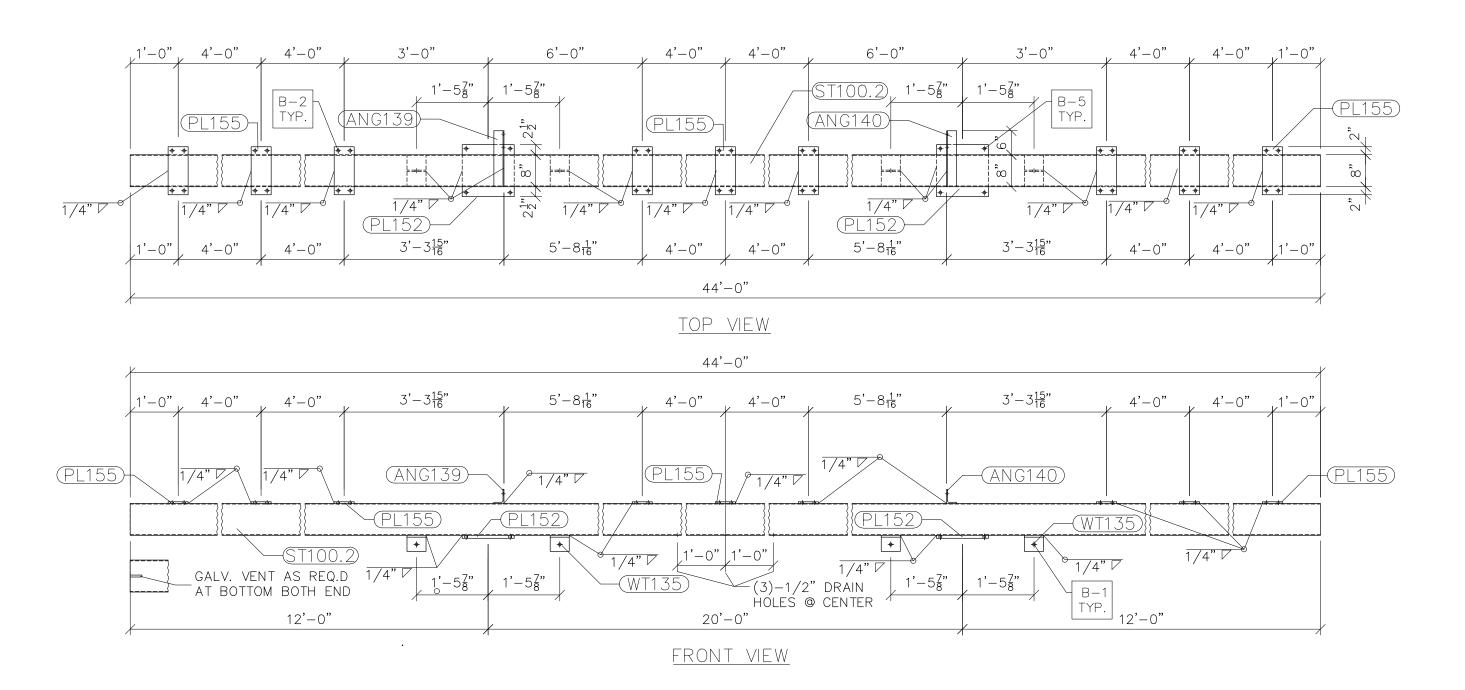
∕ 1/4" ⊄

<u>PL153</u>

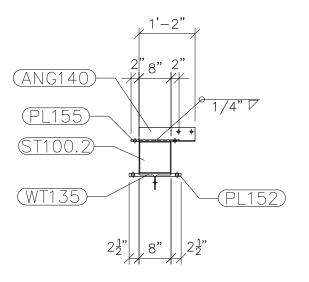
-(PL152)

© 05/2023 <u>|</u> ମୁ ZX REVISIONS SUED FOR BID NO. A ISSL (TRUSSES) CUMBERLAND ROAD 69 TO 15 X 25 kV SUBSTATION DETAILS SIDF TITLE: NOJ MING DRAWN BY: DJD CHECKED BY: VK APPROVED BY: DATE: SCALE: FILE NUMBER: VK 05/10/2023 AS SHOWN 12510 SHEET: LS-02

Booth & Associates



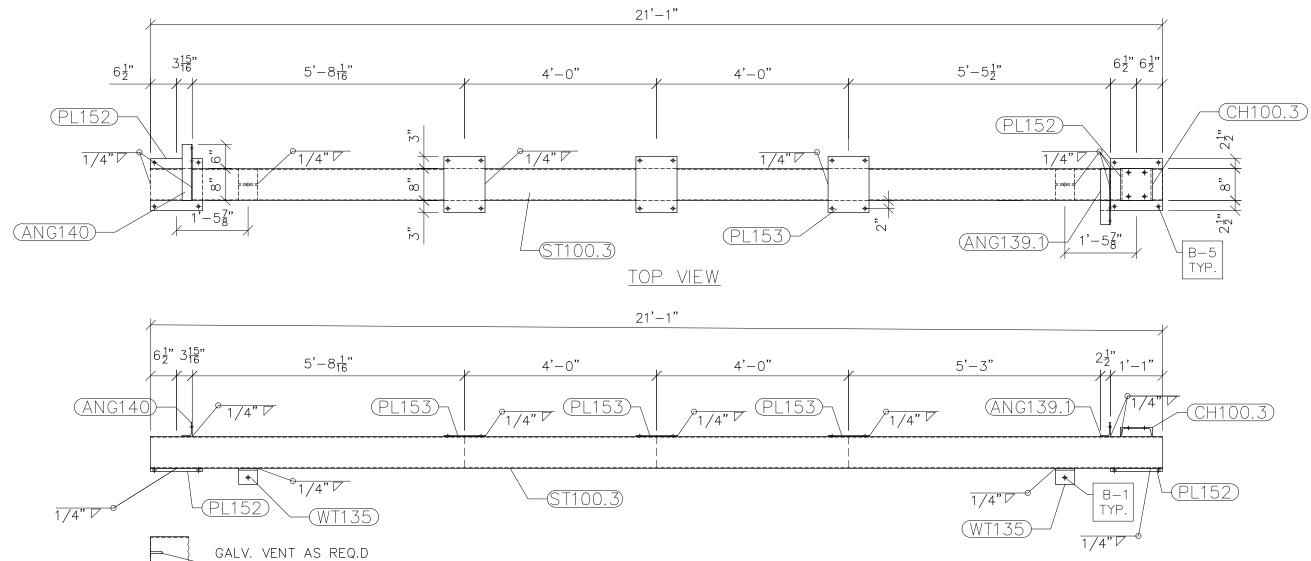
SEE DRAWING No. LS-05 FOR AN



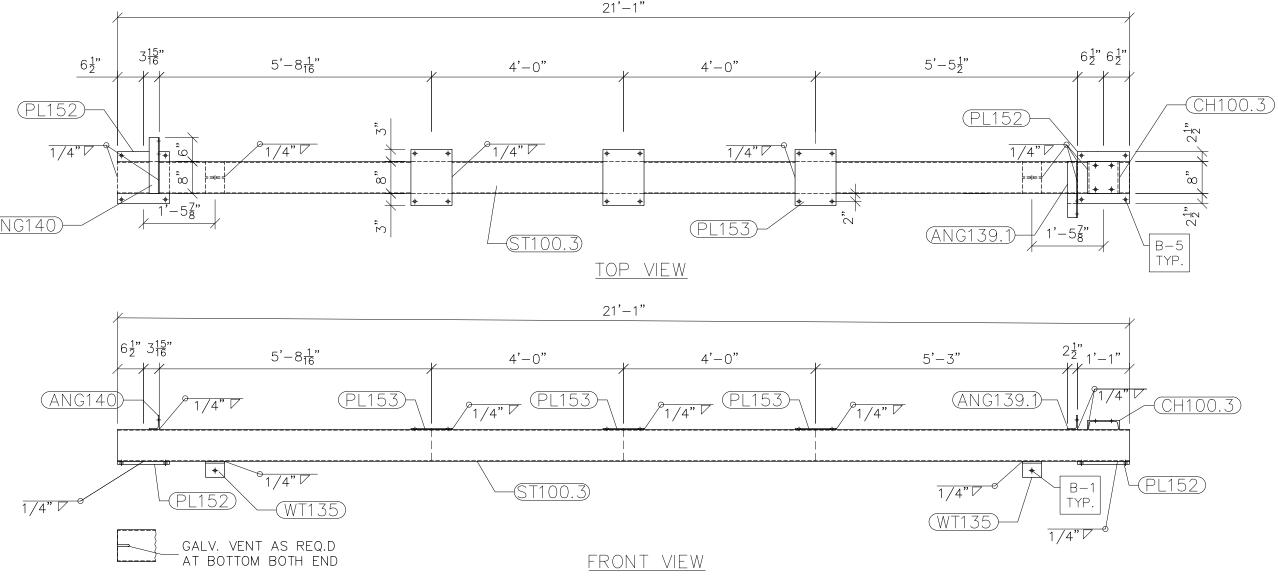
<u>right view</u>

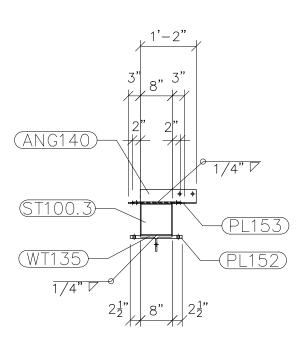
<u>G100.2</u> scale: n.t.s.

EDGE DISTANCE 1" UI OS. NO. QTY DESC. OO.2 2 ANG139 1 L3-1/ ANG140 1 L3-1/ PL152 2 PL 3/ PL155 9 PL 3/ ST100.2 1 HSS8× WT135 4 WT4×1 -O5 FOR ANG139, ANG1	BILL OF MATERIAL 2x2-1/2x1/4 4'x1'-1" 8'x5" 8x3/16 5.5 BLACK WEIGHT: GALVANIZED WEIGH TOTAL WEIGHT:	HT: 1	5.72 5.72 72.03 57.54 862.90 24.54 028.45 LBS. 41.14 LBS. 069.59 LBS. /ER DETAILS.		HOME TOWN UTIL
				c	2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221
				PRELIMIT DO CON	R T FOR JSCTION JRUCION
				C0 © ENG. DATE VK 05/10/2023	/2023
				REVISIONS ISSUED FOR BID	
				<u>v</u>	(TRUSSES)
				PROJECT NAME: CUMBERLAND ROAD 69 TO 15 X 25 kV SUBSTATION DRAWING TITLE-	LOW SIDE DETAILS (TRUSSES)
				DRAWN BY: CHECKED BY: APPROVED BY: DATE: SCALE: FILE NUMBER: SHEET:	DJD VK



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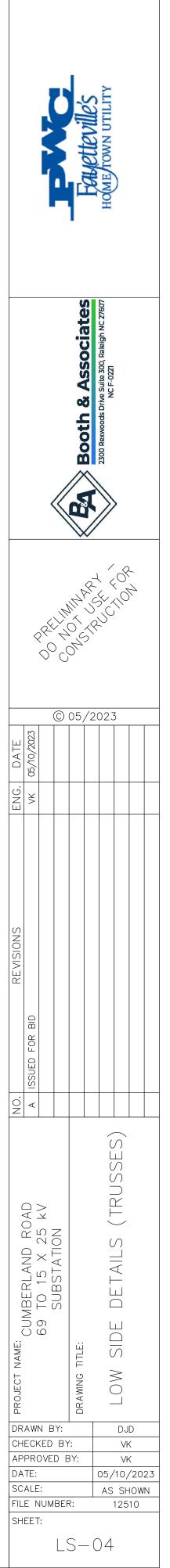


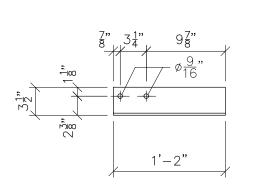
<u>right view</u>

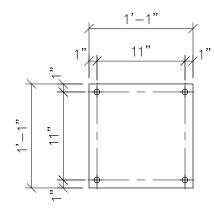
<u>G100.3</u> scale: 1/2"=1'-0"

G100.31L3-1/2x2-1/2x1/41'-2"5.72ANG139.11L3-1/2x2-1/2x1/41'-2"5.72PL1522PL 3/4"x1'-1"1'-1"72.03PL1533PL 1/4"x10 1/4"1'-2"30.58ST100.31HSS8x8x3/1621'-1"413.47WT1352WT4x15.54 3/4"12.27						
		BILL OF MATERIAL				
POS. NO.	QTY	DESC.	LENGTH			
G100.3 1 L3-1/2x2-1/2x1/4 1'-2" 5.72 ANG139.1 1 L3-1/2x2-1/2x1/4 1'-2" 5.72 ANG140 1 L3-1/2x2-1/2x1/4 1'-2" 5.72 PL152 2 PL 3/4"x1'-1" 1'-1" 72.03 PL153 3 PL 1/4"x10 1/4" 1'-2" 30.58 ST100.3 1 HSS8x8x3/16 21'-1" 413.47						
		BLACK WEIGHT:	lĘ	1. 547.46 LBS.		
		GALVANIZED WEIGH TOTAL WEIGHT:	T:	21.90 LBS. 569.36 LBS.		

SEE DRAWING No. LS-05 FOR ANG139.1, ANG140, PL152, PL153, & WT135 DETAILS.

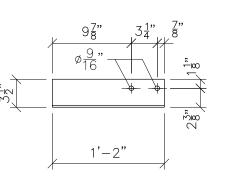




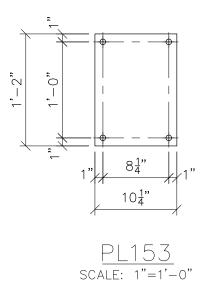


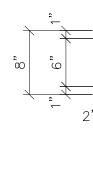
ANG139 FRONT VIEW scale: 1"=1'-0"

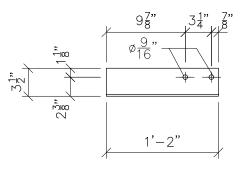
PL152 scale: 1"=1'-0"



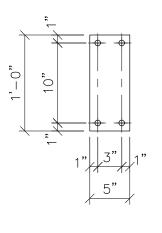




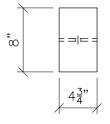




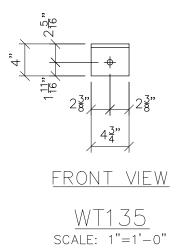
ANG139.1 FRONT VIEW scale: 1"=1'-0"

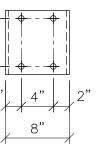


<u>PL155</u> scale: 1"=1'-0"

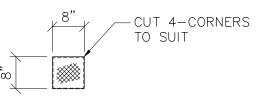


top view





CH100.3 scale: 1"=1'-0"

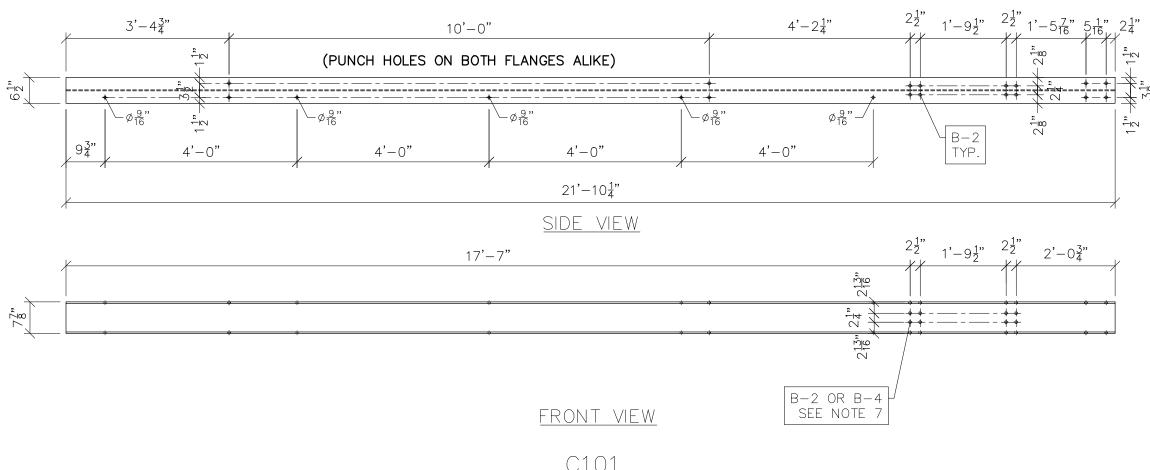


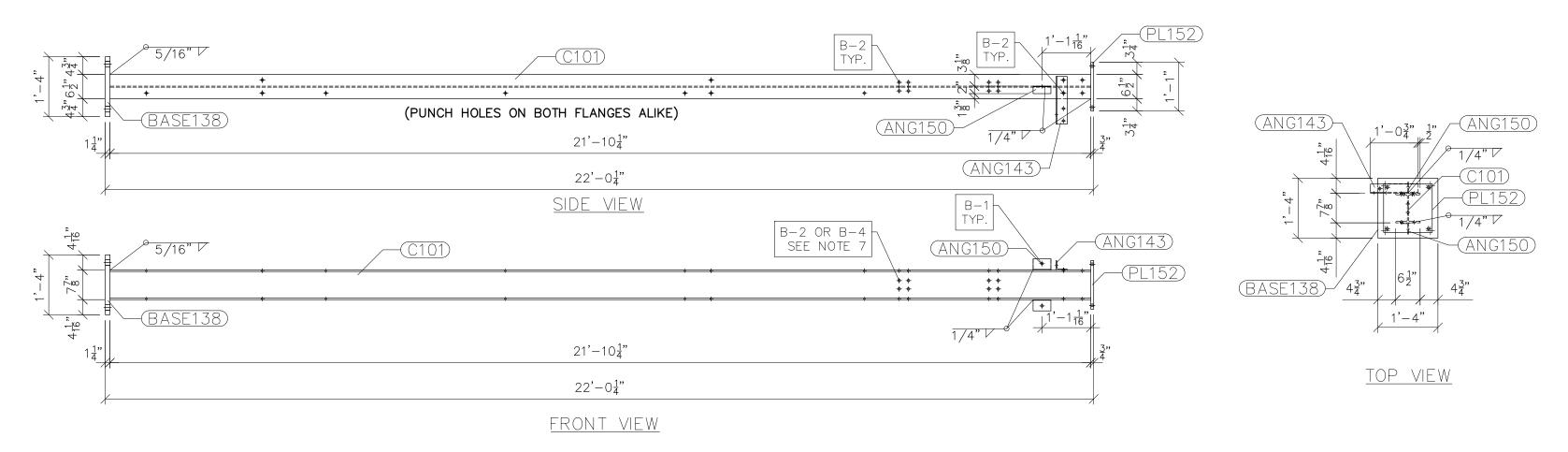
FOR ST 100, 100.1, 100.2 & 100.3 BOTH END EXPANDED METAL STD. STYLE 1/2 316 GAUGE, APPOX. WGT.=0.86Lbs/SQ. FT. (1=0.38 Lbs.)

TYP. END COVER scale: 1/2"=1'-0"

05. NO. G	B TY DESC.	" UNLESS NOTED BILL OF MATERIAL #16 GAUGE BLACK WEIGHT: GALVANIZED WEIG TOTAL WEIGHT:	LENGTH×WIDTH 8"×8"	WEIGHT 3.80 3.80 LBS. 0.15 LBS. 3.95 LBS.		FOLDE FOUNN UTIL
						Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221
					©	05/2023
					ENG. DATE vk a5/10/2023	
					REVISIONS ISSUED FOR BID	
					PROJECT NAME: CUMBERLAND ROAD 69 TO 15 X 25 kV SUBSTATION	LOW SIDE DETAILS (TRUSSES)
					DRAWN BY: CHECKED BY APPROVED E DATE: SCALE: FILE NUMBE SHEET:	DJD Y: VK BY: VK 05/10/2023 AS SHOWN

		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH×WIDTH	WEIGHT
END COVER	10	MESH 1/2 #16 GAUGE	8"×8"	3.80
		BLACK WEIGHT:		3.80 LBS.
		GALVANIZED WEIGH	IT:	0.15 LBS.
		TOTAL WEIGHT:		3.95 LBS.





<u>G101</u> scale: 1/2"=1'-0"

<u>C101</u> scale: 1/2"=1'-0"

NOTES:

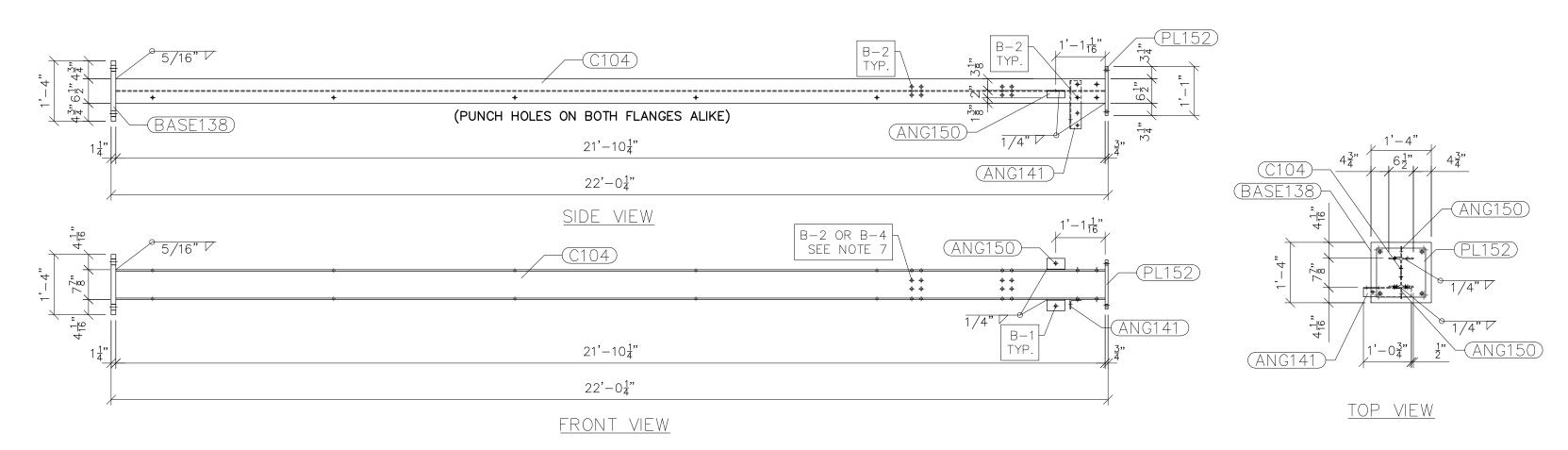
- 1) ASTM 325 ERECTION BOLTS
- 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)

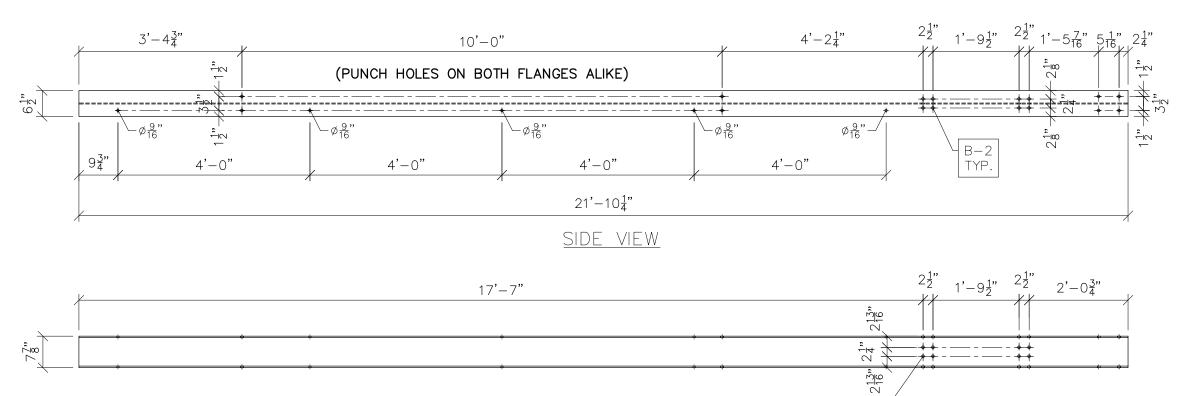
- ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED
 ERECTION BOLT LENGTH VARIES WHERE NOTED. B2 TO BE USED IN CASES WHERE A SINGLE TRUSS IS CONNECTED TO COLUMN. B-4 TO BE USED IN CASES WHERE TWO TRUSSES ARE CONNECTED TO COLUMN.

		BILL OF MATERIA	4L	
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G101	2	FOR ONE GROUP G101		
ANG143	1	L3x2-1/2x1/4	1'-0 3/4"	4.78
ANG150	2	L3x2x3/16	4 3/4"	2.43
BASE138	1	PL 1 1/4"×1'-4"	1'-4"	90.93
C101	1	W8x24	21'-10 1/4"	524.50
PL152	1	PL 3/4"x1'-1"	1'-1"	36.01
		BLACK WEIGHT:	6	58.65 LBS.
		GALVANIZED WEIGH	IT:	26.35 LBS.
		TOTAL WEIGHT:	6	85.00 LBS.

SEE DRAWING No. LS-11 FOR ANG143, ANG150, BASE138 & PL152 DETAILS AND NOTES.

	Fouretteville's Home rown utility								
	Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221								
	~	\$ \$ \$ \$							
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<u>Front view</u>

<u>C104</u> SCALE: 1/2"=1'-0"

.

<u>G104</u> scale: 1/2"=1'-0"

B-2 OR B-4 SEE NOTE 7

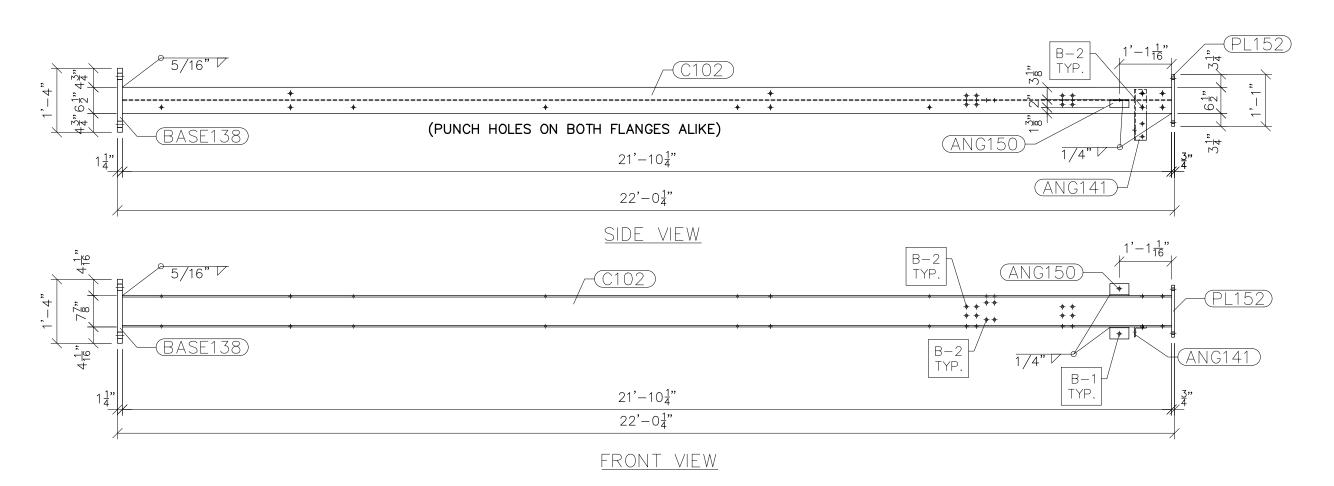
NOTES:

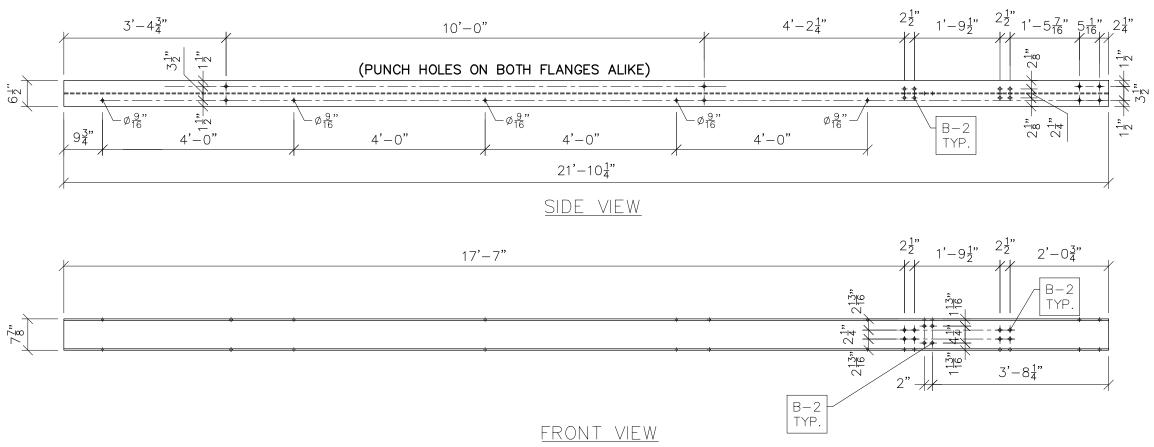
- NOTES:
 1) ASTM 325 ERECTION BOLTS
 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 5) ALL WELDING ELECTRODES SHALL BE E7021
 6) EDGE DISTANCE 1" UNLESS NOTED
 7) ERECTION BOLT LENGTH VARIES WHERE NOTED. B2 TO BE USED IN CASES WHERE A SINGLE TRUSS IS CONNECTED TO COLUMN. B-4 TO BE USED IN CASES WHERE TWO TRUSSES ARE CONNECTED TO COLUMN.

BILL OF MATERIAL								
POS. NO.	QTY	DESC.	LENGTH	WEIGHT				
G104	2	FOR ONE GROUP G104						
ANG141	1	L3x2-1/2x1/4	1'-0 3/4"	4.78				
ANG150	2	L3x2x3/16	4 3/4"	2.43				
BASE138	1	PL 1 1/4"x1'-4"	1'-4"	90.93				
C104	1	W8x24	21'-10 1/4"	524.50				
PL152	1	PL 3/4"x1'-1"	1'-1"	36.01				
	BLACK WEIGHT: 658.65 LBS.							
		GALVANIZED WEIGH	T:	26.35 LBS.				
		TOTAL WEIGHT:	6	85.00 LBS.				

SEE DRAWING No. LS-11 FOR ANG141, ANG150, BASE138 & PL152 DETAILS AND NOTES.

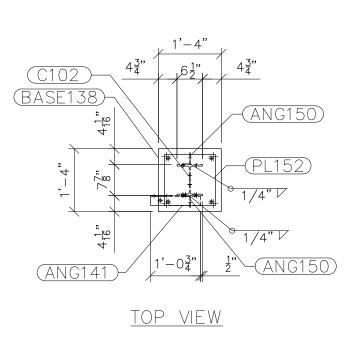
HOME TOWN UTILITY									
Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221									
	PRELIMINART FOR PRELIMINAUSE TION DOCONSTRUCTION DOCONSTRUCTION								
ENG. DATE	VK 05/10/2023			05,	/20		3		
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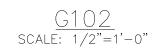




<u>C102</u> scale: 1/2"=1'-0"

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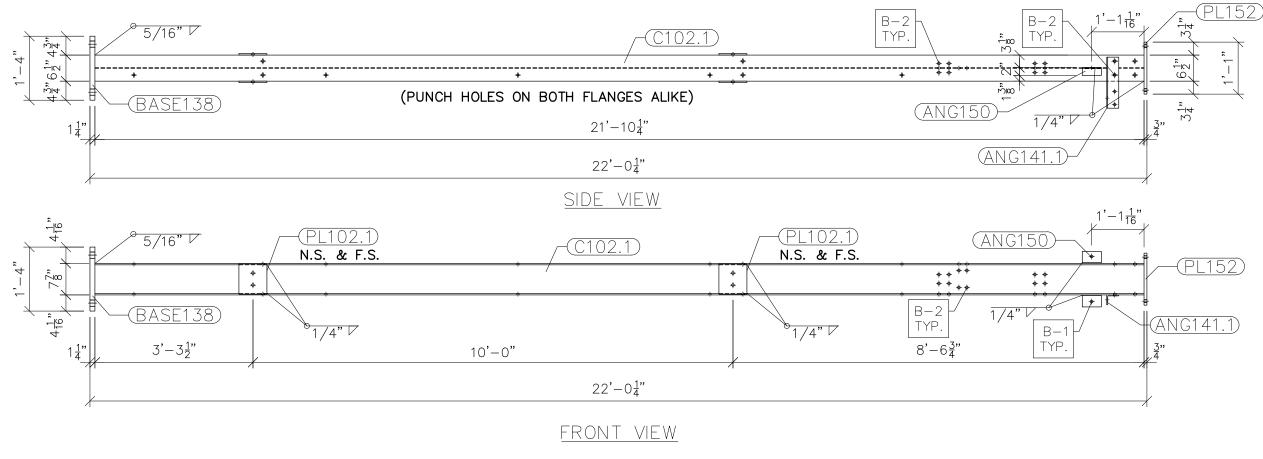
NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

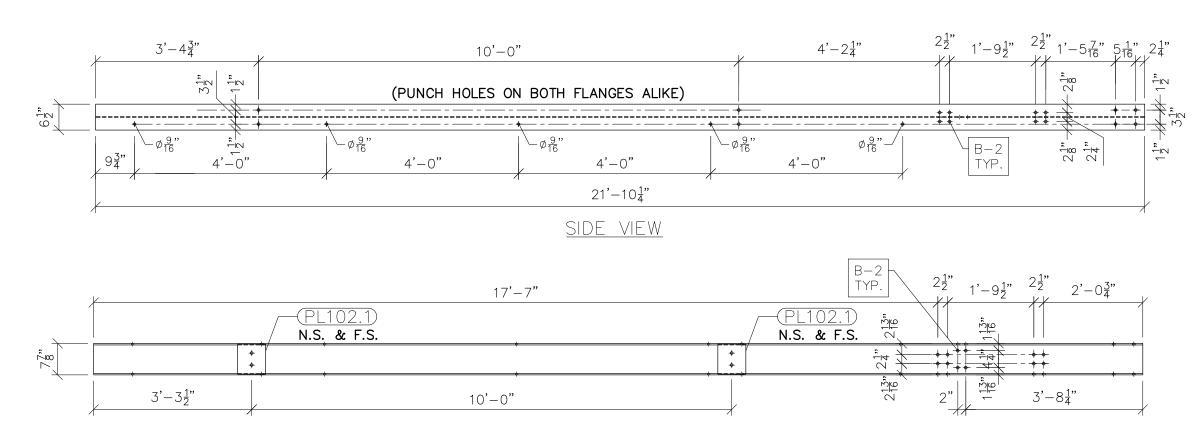
	BILL OF MATERIAL										
POS. NO.	QTY	DESC.	LENGTH	WEIGHT							
G102	3	FOR ONE GROUP G102									
ANG141	1	L3x2-1/2x1/4	1'-0 3/4"	4.78							
ANG150	2	L3x2x3/16	4 3/4"	2.43							
BASE138	1	PL 1 1/4"x1'-4"	1'-4"	90.93							
C102	1	W8x24	21'-10 1/4"	524.50							
PL152	1	PL 3/4"x1'-1"	1'-1"	36.01							
		BLACK WEIGHT:		58.65 LBS.							
		GALVANIZED WEIGH	IT:	26.35 LBS.							
		TOTAL WEIGHT:	6	85.00 LBS.							
	_										

SEE DRAWING No. LS-11 FOR ANG141, ANG150, BASE138 & PL152 DETAILS AND NOTES.

FOLVERTECVILLE'S HOME FOWN UTILITY									
Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0271									
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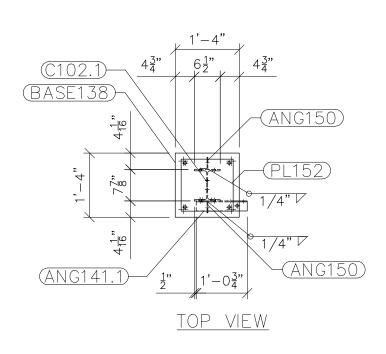
LS-08





FRONT VIEW

<u>C102.1</u> scale: 1/2"=1'-0"

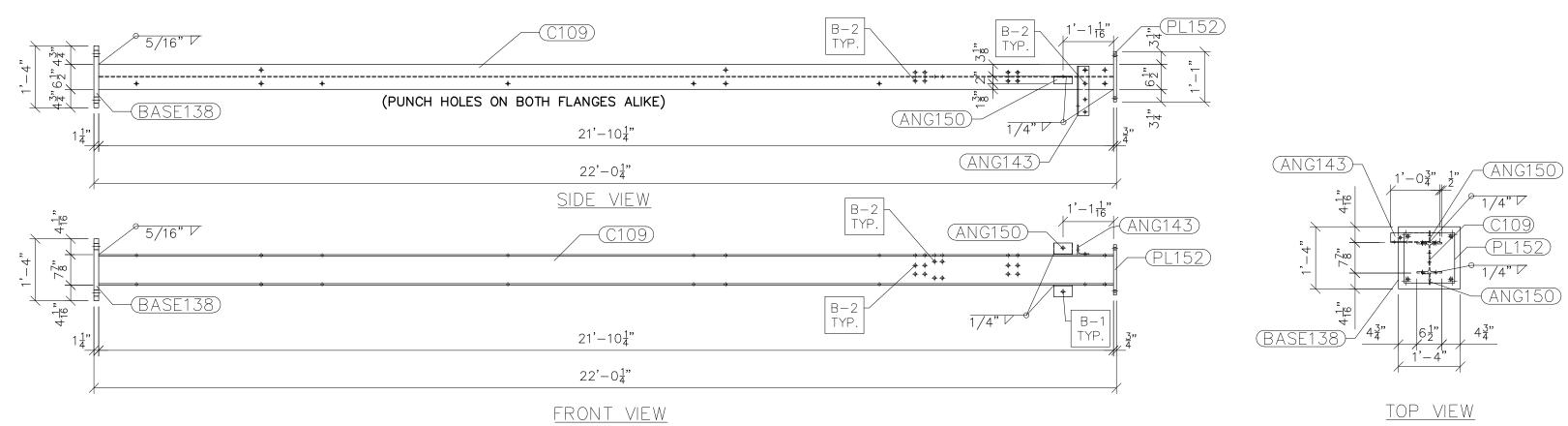


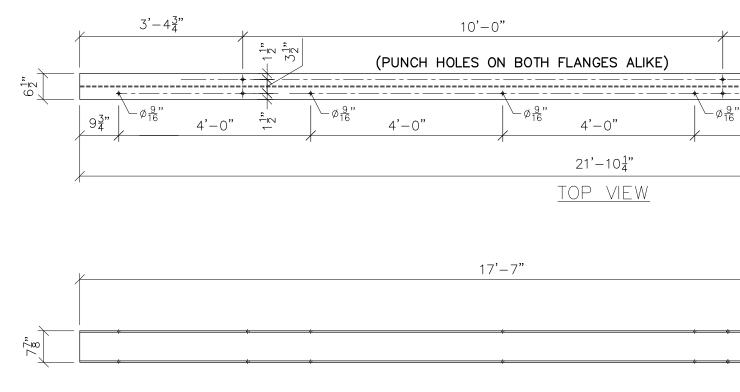
<u>G102.1</u> scale: 1/2"=1'-0"

NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
- >	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

	BILL OF MATERIAL						
POS. NO.	QTY	DESC.	LENGTH	WEIGHT			
G102.1 ANG141.1 ANG150 BASE138 C102.1 PL152 PL102.1	1 1 2 1 1 1 4	FOR ONE GROUP G102.1 L3x2-1/2x1/4 L3x2x3/16 PL 1 1/4"x1'-4" W8x24 PL 3/4"x1'-1" PL 3/8"x7"	1'-0 3/4" 4 3/4" 1'-4" 21'-10 1/4" 1'-1" 7 1/2"	4.78 2.43 90.93 524.50 36.01 22.34			
		,	/				
		BLACK WEIGHT:	6	80.99 LBS.			
	GALVANIZED WEIGHT: 27.24 LBS.						
	TOTAL WEIGHT: 708.23 LBS.						
SEE DRAWING No. LS-11 FOR ANG141.1, ANG150, BASE138 & PL152 DETAILS AND NOTES.							

FOLVERTERVILLES HOME FOWN UTILITY							
Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221							
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ENG. DATE vk 05/10/2023	05/2023						
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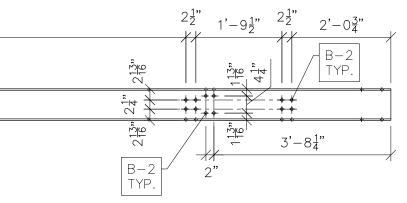


FRONT VIEW

<u>C109</u> scale: 1/2"=1'-0"

<u>G109</u> scale: 1/2"=1'-0"

4'-2 <u>1</u> "	² ¹ / ₂ 1'-9 ¹ / ₂ "	$\begin{array}{c} 2\frac{1}{2}^{2} & 1^{\prime} - 5\frac{7}{16}^{\prime} & 5\frac{1}{16}^{\prime} & 2\frac{1}{4}^{\prime} \\ & & & & \\ & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\$
4'-0"	B-2 TYP.	

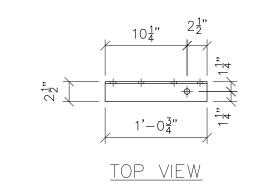


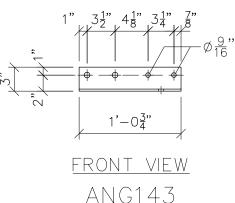
- NOTES:
 ASTM 325 ERECTION BOLTS
 ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED

BILL OF MATERIAL								
POS. NO.	QTY	DESC.	LENGTH	WEIGHT				
G109	4	FOR ONE GROUP G109						
ANG143	1	L3x2-1/2x1/4	1'-0 3/4"	4.78				
ANG150	2	L3x2x3/16	4 3/4"	2.43				
BASE138	1	PL 1 1/4"x1'-4"	1'-4"	90.93				
C109	1	W8x24	21'-10 1/4"	524.50				
PL152	1	PL 3/4"×1'-1"	1'-1"	36.01				
BLACK WEIGHT: 658.65 LBS.								
GALVANIZED WEIGHT: 26.35 LBS.								
	TOTAL WEIGHT: 685.00 LBS.							
SEE DRAWING No. LS-11 FOR ANG143,								

ANG150, BASE138 & PL152 DETAILS AND NOTES.

FORME FOWN UTILITY							
Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221							
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ÖZ ◀							
PROJECT NAME: CUMBERLAND ROAD 69 TO 15 X 25 kV SUBSTATION DRAWING TITLE:	LOW SIDE DETAILS (TRUSSES)						
DRAWN BY: CHECKED BY: APPROVED BY: DATE:	DJD VK VK 05/10/2023						
SCALE: FILE NUMBER: SHEET:	AS SHOWN 12510						

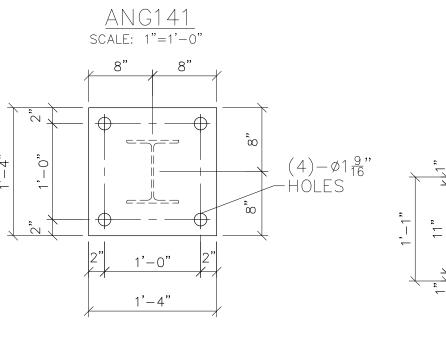






1'-1"

11"



BASE138 scale: 1"=1'-0"

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2<u>1</u>"

5 37

14,

10<u>1</u>"

1'-0<u>3</u>"

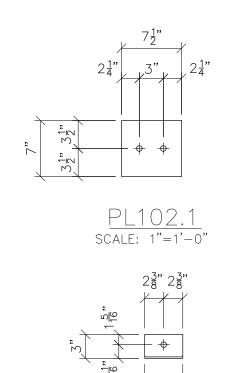
<u>top view</u>

- + - + - +

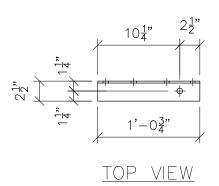
1'-0<u>3</u>"

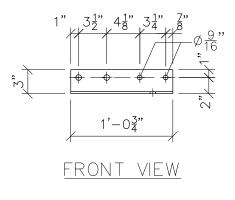
FRONT VIEW

<u>PL152</u> scale: 1"=1'-0"







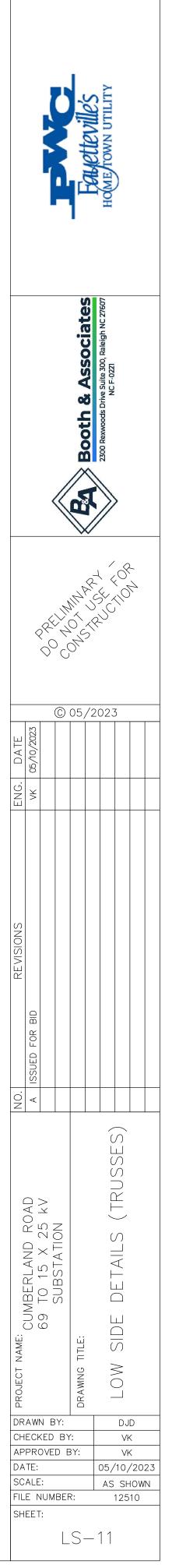


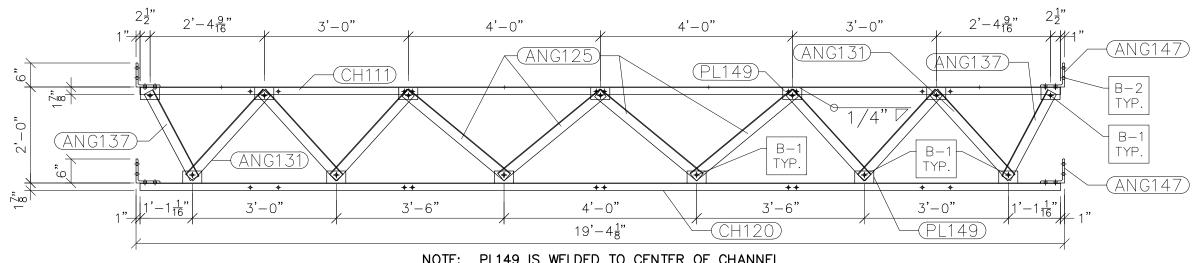
ANG141.1 scale: 1"=1'-0"

NOT	ES:						
1)	ASTM	325	EREC	TION	BOLT	S	
\sim	A 1 1 1			1. X. Z. A. N.			

- 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123) 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED

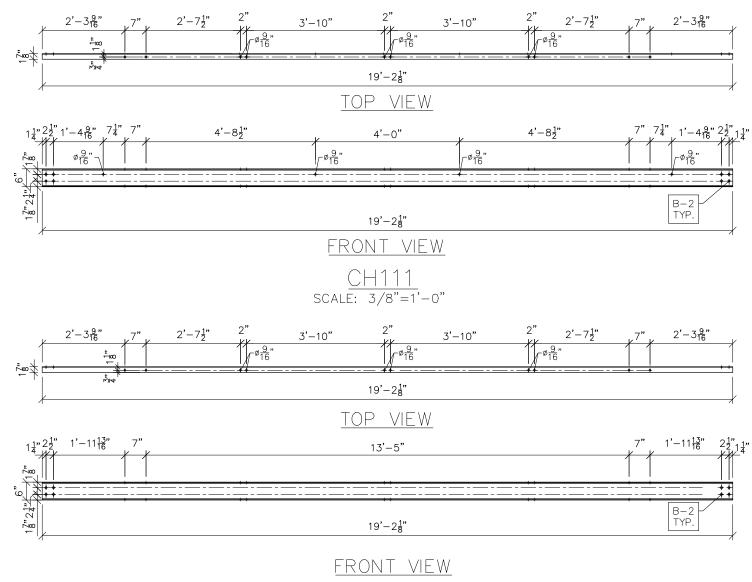
- ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED
 ERECTION BOLT LENGTH VARIES WHERE NOTED. B2 TO BE USED IN CASES WHERE A SINGLE TRUSS IS CONNECTED TO COLUMN. B-4 TO BE USED IN CASES WHERE TWO TRUSSES ARE CONNECTED TO COLUMN.





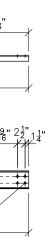
NOTE: PL149 IS WELDED TO CENTER OF CHANNEL

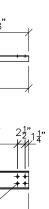
<u>G111 FRONT VIEW</u> scale: 1/2"=1'-0"



<u>CH120</u> scale: 3/8"=1'-0"

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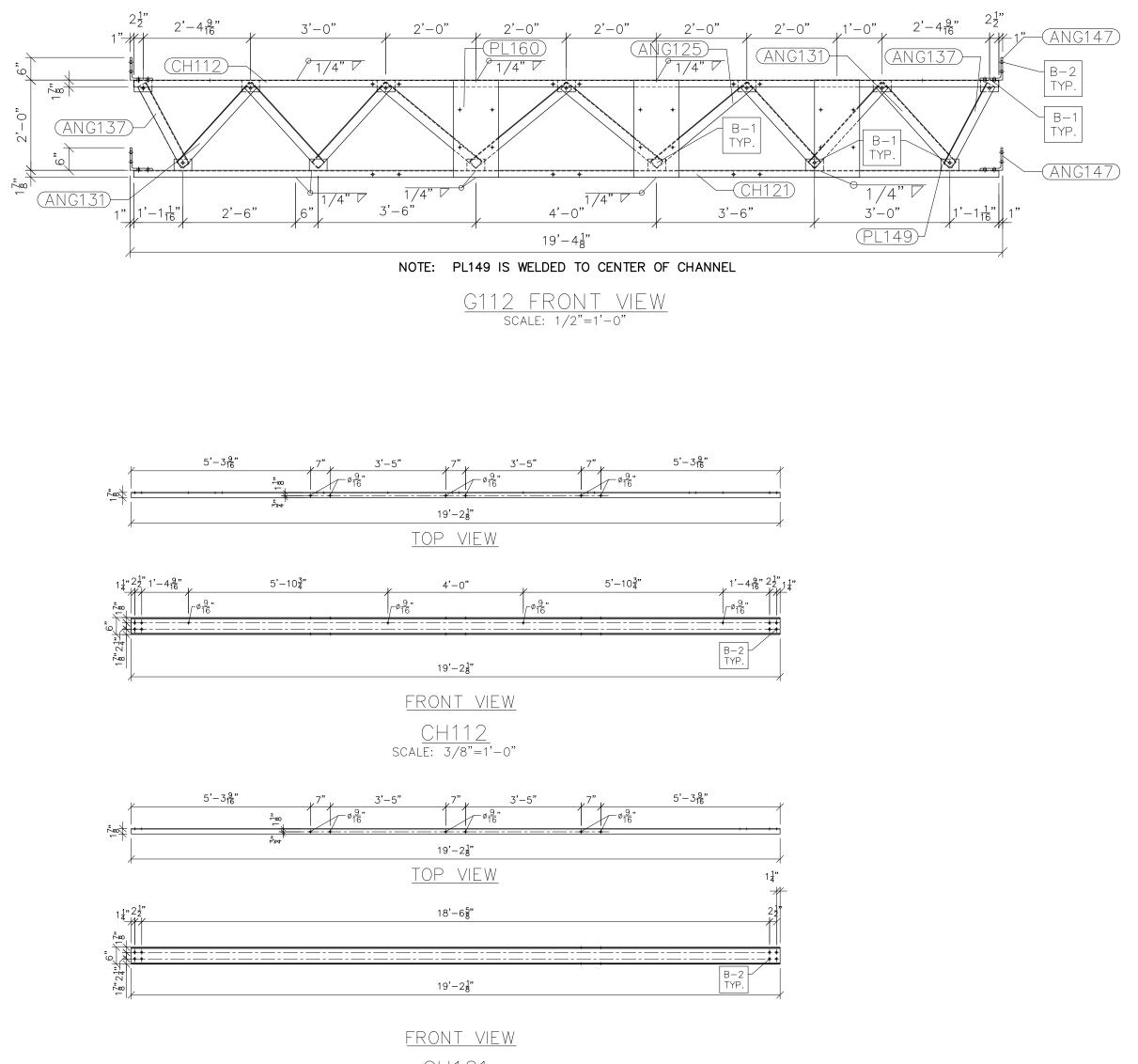




3) ALL 4) PIE(HIG 5) ALL	HOLES CE MAR H CHAF WELDII	DIP GALVANIZED AFTER FABRIC 5 11/16" DIA. FOR 5/8" DIA. E 2K STAMPED INTO METAL WITH RACTERS BEFORE GALVANIZING NG ELECTRODES SHALL BE E7 ANCE 1" UNLESS NOTED	BOLTS UNLESS I NOT LESS TH ;	NOTÉD
		BILL OF MATERIA	AL.	
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G111 ANG125 ANG131 ANG137 ANG147 CH111 CH120 PL149	3 4 6 2 4 1 1 13	FOR ONE GROUP G111 L2-1/2x2-1/2x3/16 L2-1/2x2-1/2x3/16 L2-1/2x2-1/2x3/16 L6x6x1/2 C6x8.2 PL 1/4" x 4 3/4"	2'-9 3/16" 2'-4 3/4" 2'-0 7/16" 6" 19'-2 1/8" 19'-2 1/8" 3"	33.96 44.16 12.50 39.18 157.25 157.25 13.15
		BLACK WEIGHT: GALVANIZED WEIGH TOTAL WEIGHT:	IT:	57.45 LBS. 18.30 LBS. 75.75 LBS.

NOTES: 1) ASTM 325 ERECTION BOLTS

Former town utility									
Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0271									
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<u>CH121</u> scale: 3/8"=1'-0"

$1'-4\frac{9}{16}"$	2 <u>1</u> "
	∓∓ †∕†
B-2 TYP.	

POS. NO. QTY C112 1 ANG125 4 ANG131 6 ANG137 2 ANG147 4 PL149 13 CH112 1 CH121 1 PL160 3	BILL OF MAT DESC. FOR ONE GROUP G112: L2-1/2x2-1/2x3/16 L2-1/2x2-1/2x3/16 L2-1/2x2-1/2x3/16 L6x6x1/2 PL 1/4" x 4 3/4" C6x8.2 C6x8.2 PL 1/4"x1'-0"	TERIAL 2'-9 3/16" 2'-4 3/4" 2'-0 7/16" 6" 3" 19'-2 1/8" 19'-2 1/8" 2'-1 7/8"	WEIGHT 33.96 44.16 12.50 39.18 13.15 157.25 157.25 66.17	FOLDE FOUNN UT
SEE DRAWING N PL149 & PL152	BLACK WEIGHT GALVANIZED W TOTAL WEIGHT Io. LS–15 FOR ANG125, ANG DETAILS.	VEIGHT: 2 7: 54	23.62 LBS. 20.95 LBS. 14.57 LBS.	Booth & Associates 2300 Retwoods Drive Suite 300, Raleigh NC 27607 NC F-0271
				PRELIMINAL FOR PRELIMINAL FETTOR DOCONNEL
				© 05/2023 ENC. DATE vk 05/10/2023
				FOR BID
				NO.

LOW SIDE

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VK VK

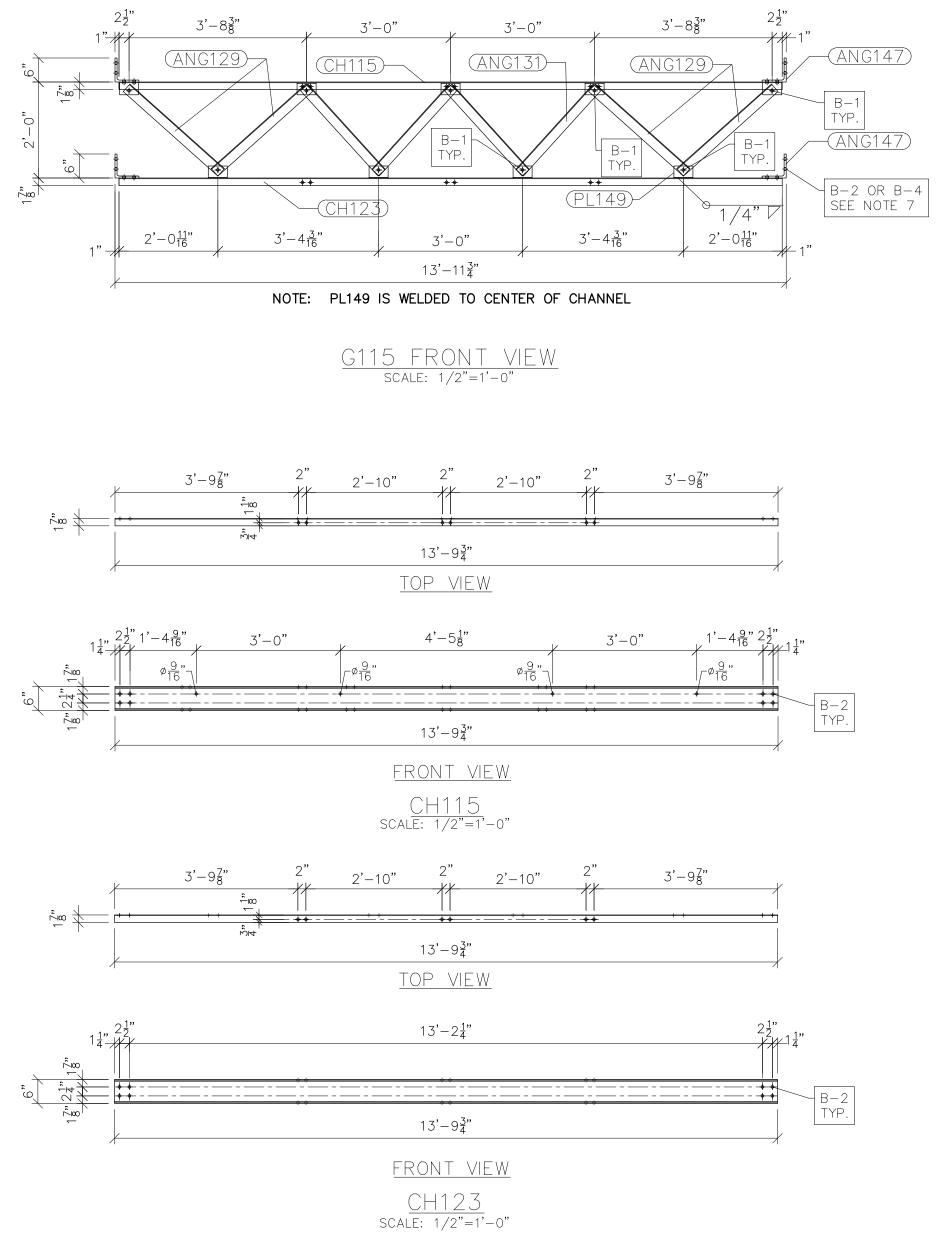
05/10/2023 AS SHOWN 12510

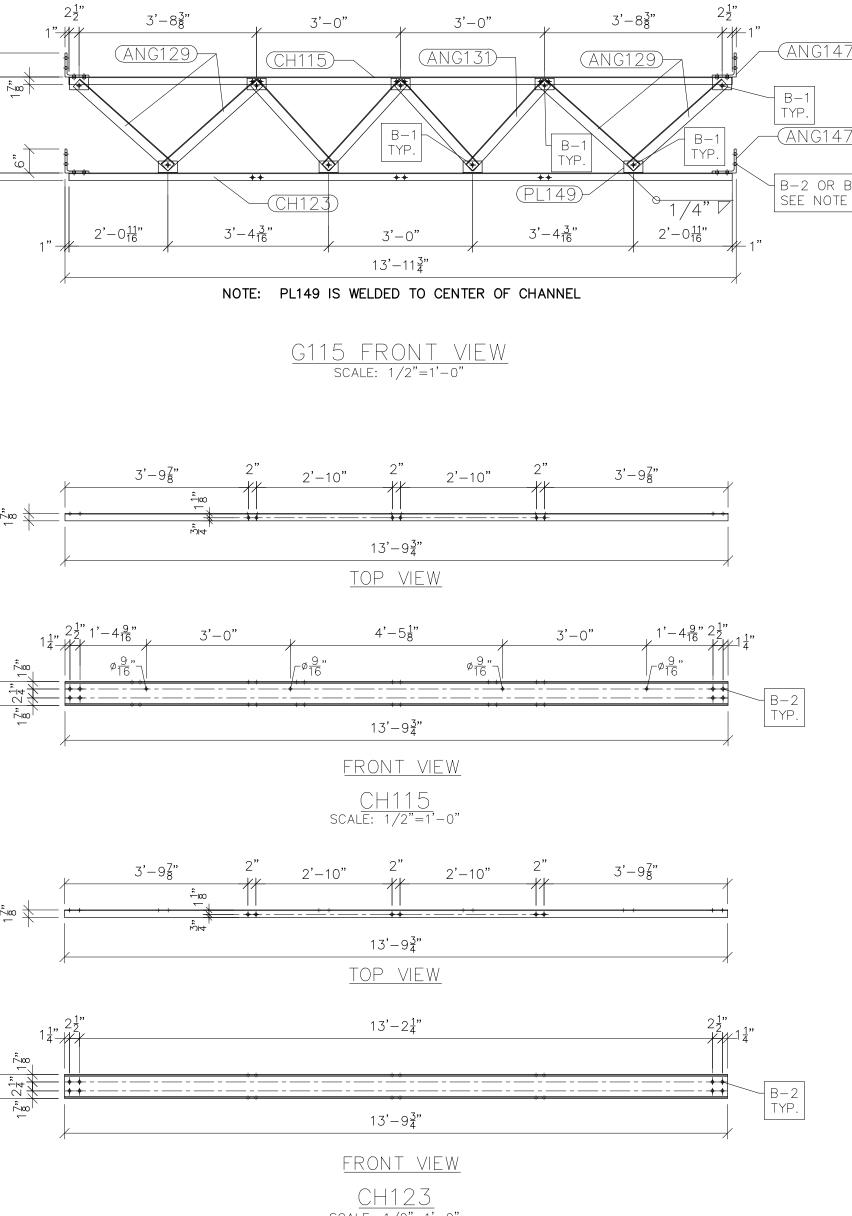
TITLE:

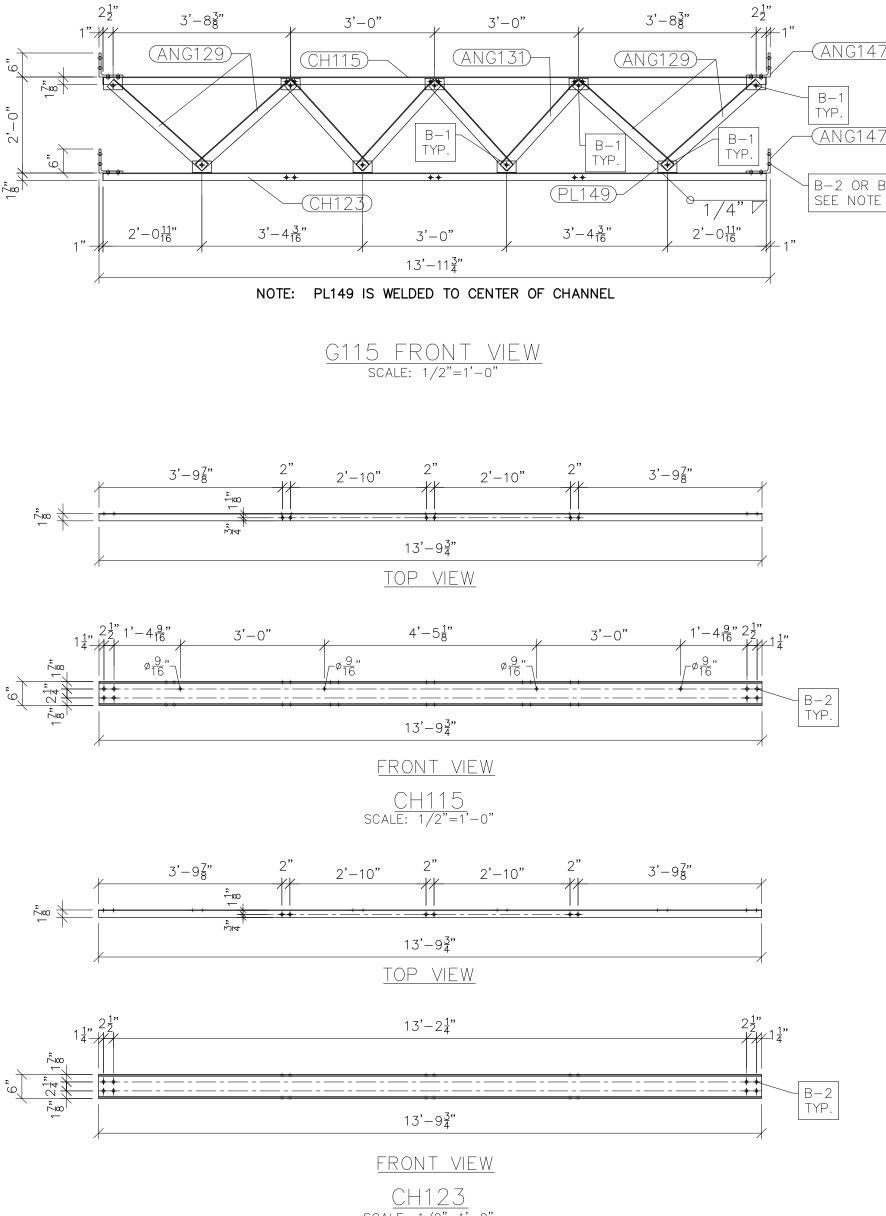
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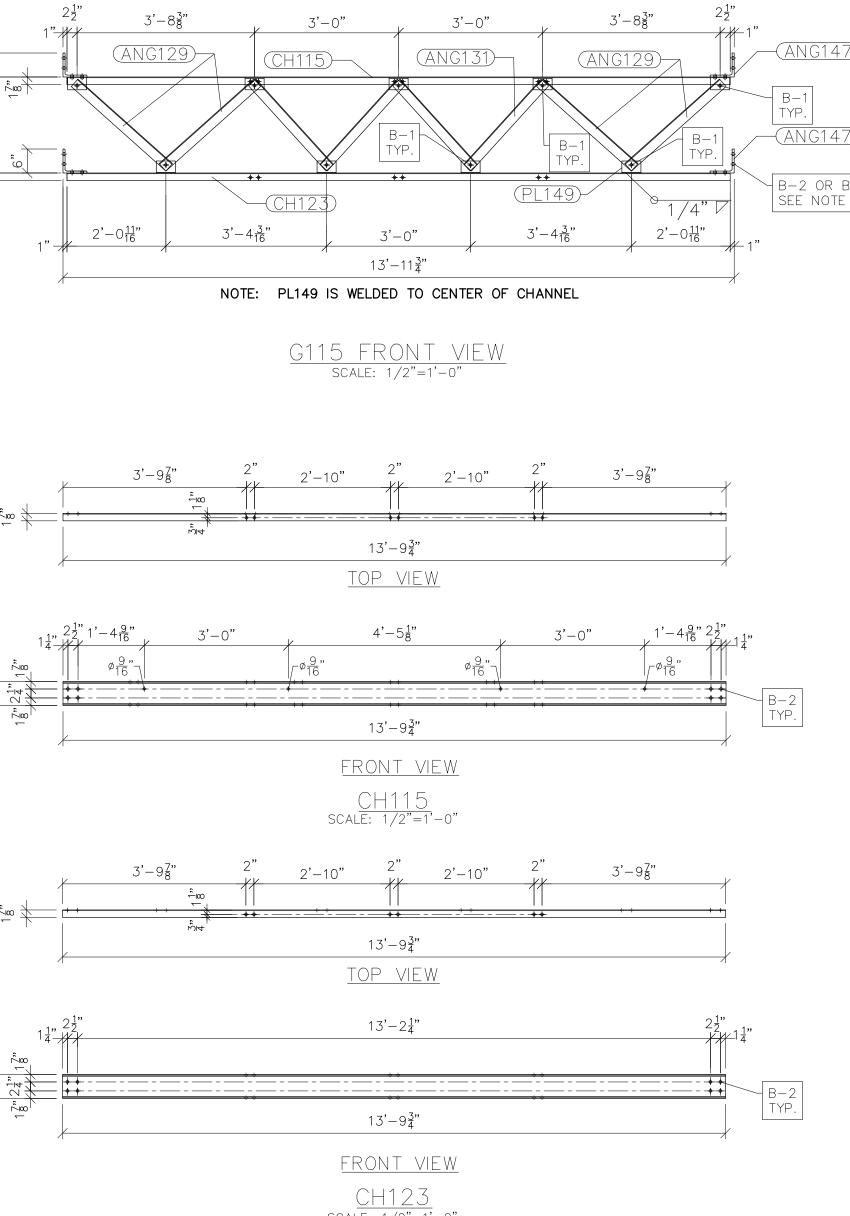
LS-13

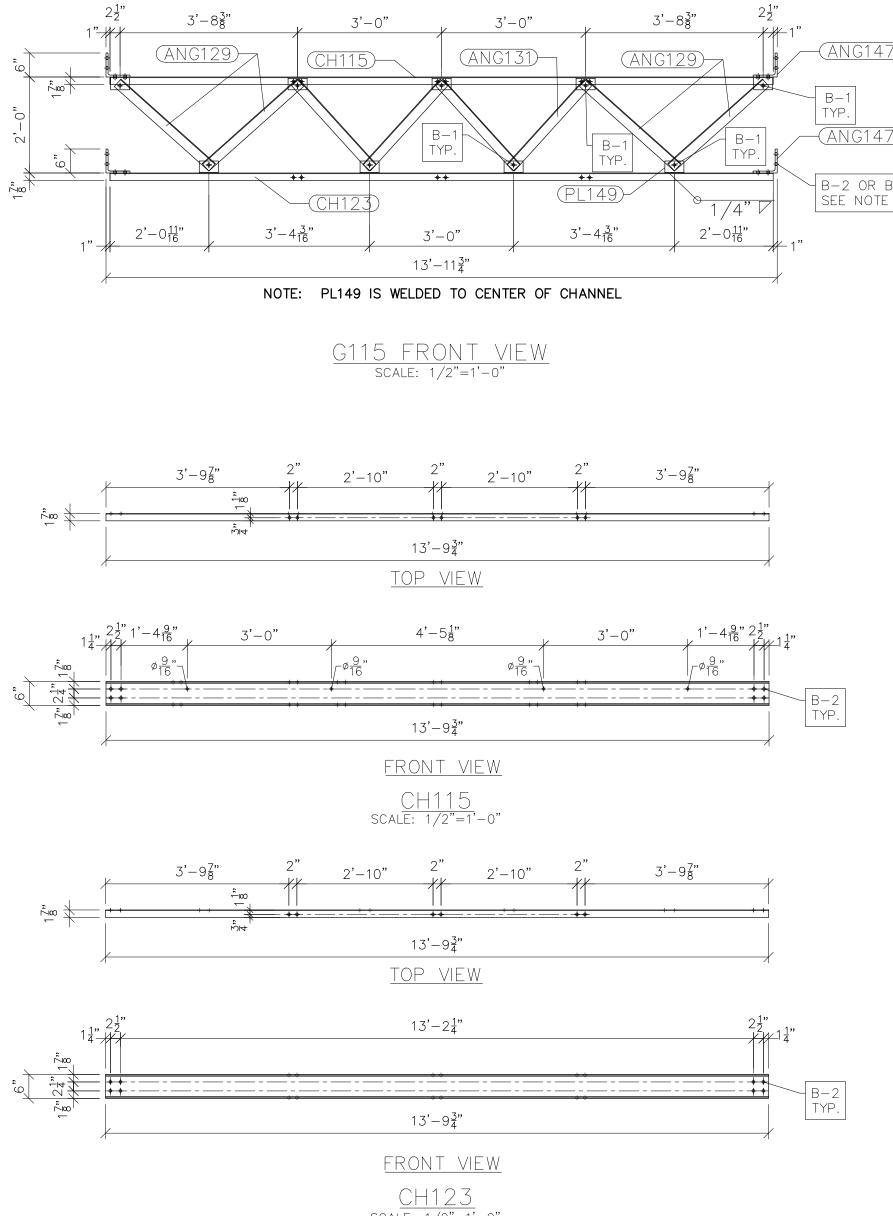
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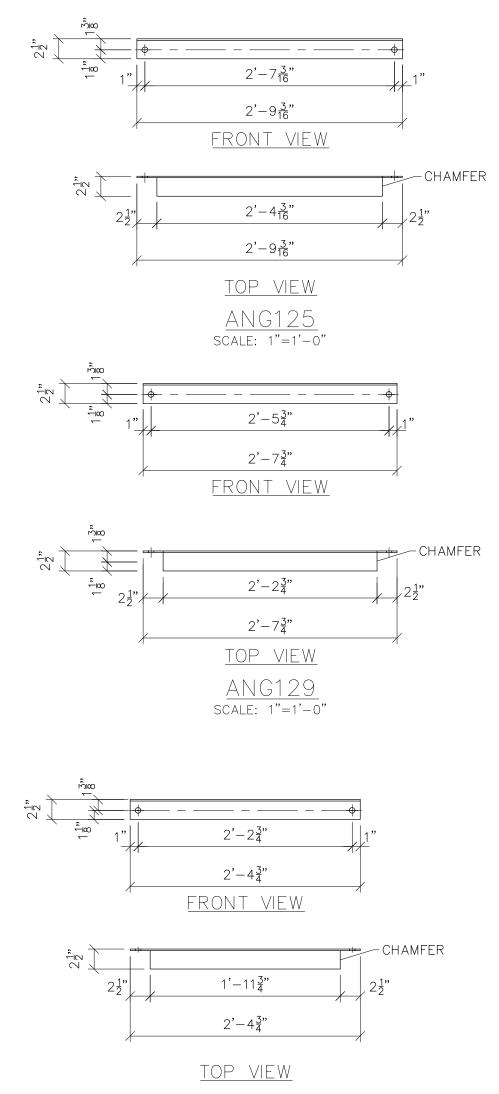
NOTES:	
1) ASTM 325 ERECTION BOLTS	
2) ALL HOT DIP CALVANIZED AFTER FARRICA	TION (ASTM A123)

- 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123) 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
- 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
- HIGH CHARACTERS BEFORE GALVANIZING 5) ALL WELDING ELECTRODES SHALL BE E7021
- 6) EDGE DISTANCE 1" UNLESS NOTED
- 7) ERECTION BOLT LENGTH VARIES WHERE NOTED. B2 TO BE USED
 IN CASES WHERE A SINGLE TRUSS IS CONNECTED TO COLUMN.
 B-4 TO BE USED IN CASES WHERE TWO TRUSSES ARE
 CONNECTED TO COLUMN.

BILL OF MATERIAL								
POS. NO.	QTY	DESC.	LENGTH	WEIGHT				
G115	6	FOR ONE GROUP G115						
ANG129	4	L2-1/2x2-1/2x3/16	2'-7 3/4"	32.46				
ANG131	4	L2-1/2x2-1/2x3/16	2'-4 3/4"	29.39				
ANG147	4	L6x6x1/2	6"	39.18				
PL149	9	PL 1/4" x 4 3/4"	3"	9.10				
CH115	1	C6x8.2	13'-9 3/4"	113.26				
CH123	1	C6x8.2	13'-9 3/4"	113.26				
BLACK WEIGHT: 336.65 LBS.								
GALVANIZED WEIGHT: 13.47 LBS.								
		TOTAL WEIGHT:	3	50.12 LBS.				

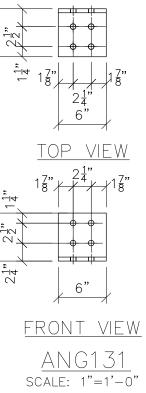
SEE DRAWING No. LS-15 FOR ANG129, ANG131, ANG137 & PL149 DETAILS.

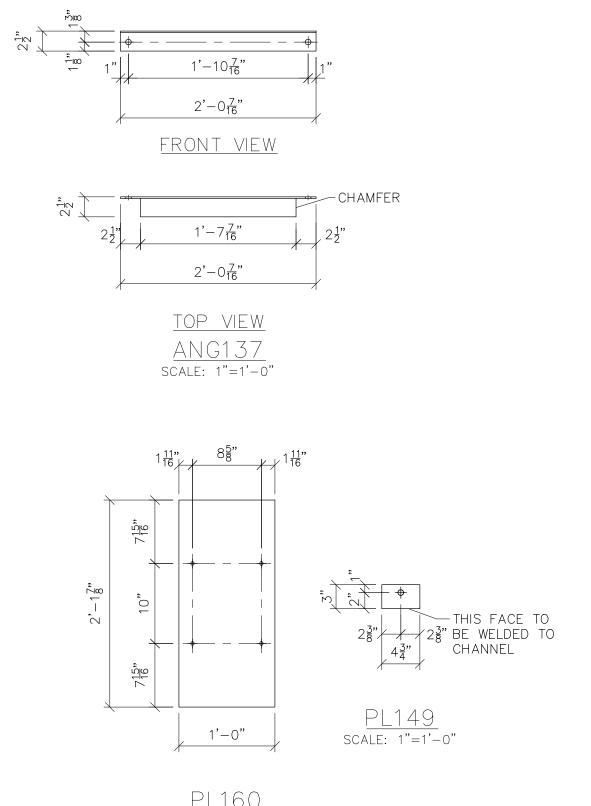
FORME FOWN UTILITY									
		<		RA Booth & Accoriates		2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221	>		
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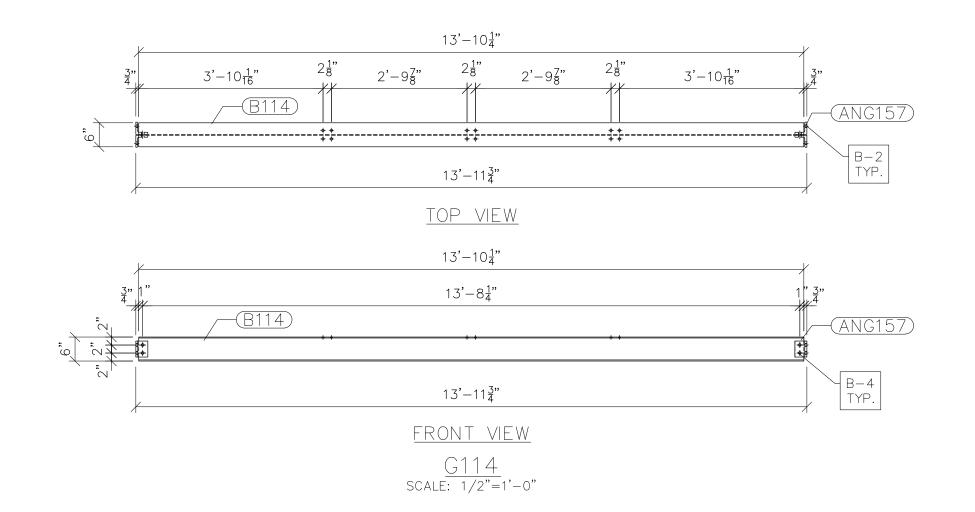


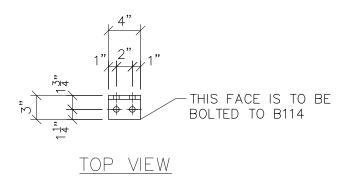


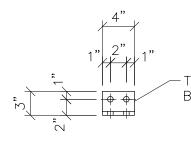
3) ED 3/8"	HOME FOWN UTILITY						
	Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-027						
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NOTE	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDCE DISTANCE 1" LINEESS NOTED

6) EDGE DISTANCE 1" UNLESS NOTED







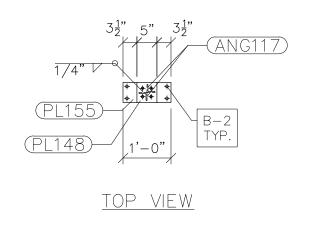


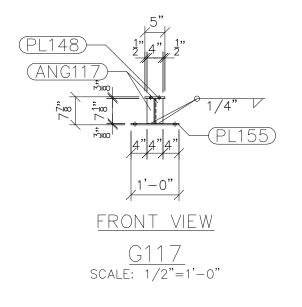
FRONT VIEW <u>ANG157</u> scale: 1"=1'-0"

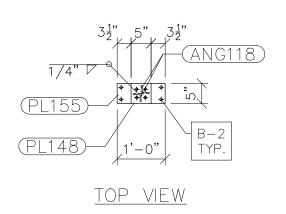
- NOTES:
 1) ASTM 325 ERECTION BOLTS
 2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 3) ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 4) PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 5) ALL WELDING ELECTRODES SHALL BE E7021
 6) EDGE DISTANCE 1" UNLESS NOTED

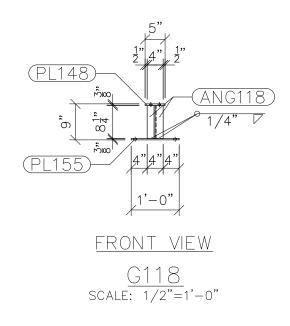
BILL OF MATERIAL								
POS. NO.	QTY	DESC.	LENGTH	WEIGHT				
G114	2	FOR ONE GROUP G114						
ANG157	4	L3x3x1/2	4"	12.53				
B114	1	W6x15	13'-10 1/4"	207.81				
	BLACK WEIGHT: 220.34 LBS.							
		GALVANIZED WEIGHT: 8.81 LBS.						
		TOTAL WEIGHT:	TOTAL WEIGHT: 229.15 LBS.					

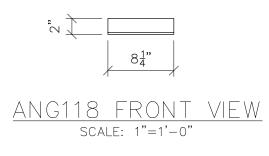
	Fouretteville's HOME TOWN UTILITY								
	Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221								
ENG. DATE	VK 05/10/2023								
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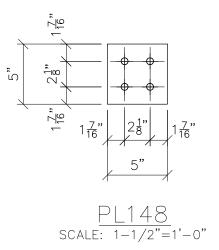




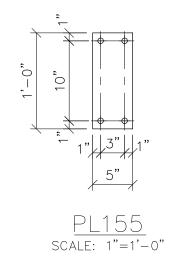


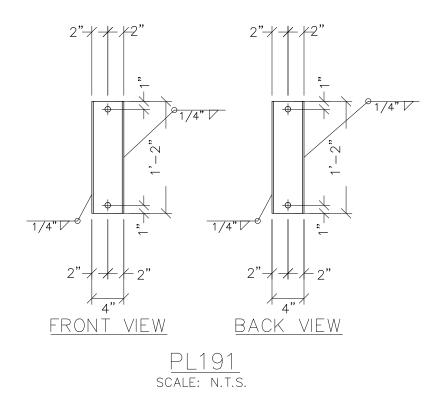


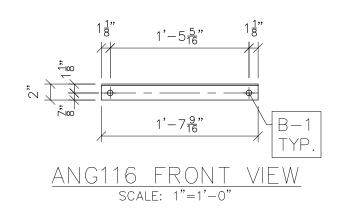


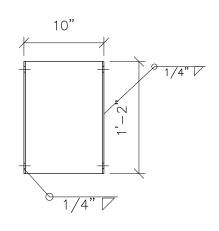


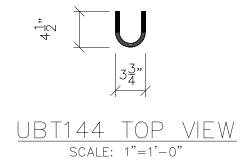
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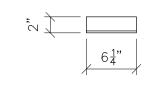




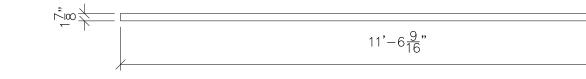




PL190 SIDE VIEW scale: n.t.s.



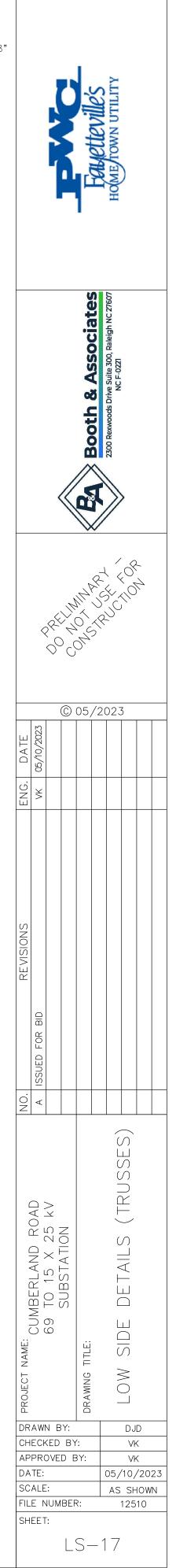
ANG117 FRONT VIEW scale: 1"=1'-0"

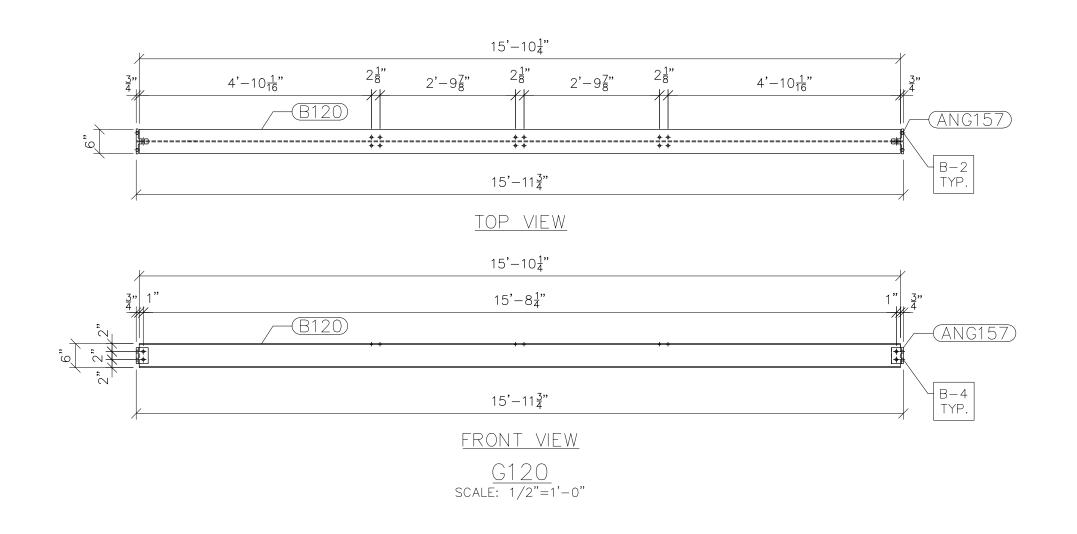


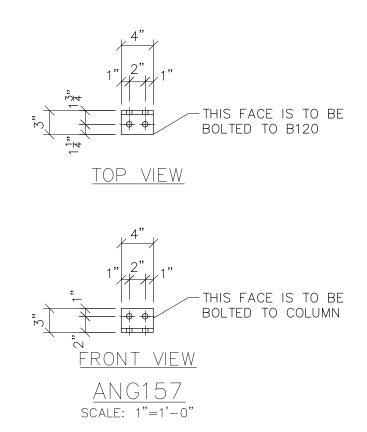
P124 FRONT VIEW scale: 1/2"=1'-0"

NOTE	ES:
	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

			BILL OF MATERIA	L	
POS. NO.	QTY	DESC.		LENGTH	WEIGHT
G117	12	FOR ONE G1	17		
ANG117	2 1	L2x2x1/4		7 1/8"	3.79
PL148	1	PL 3/8x5		5"	2.66
PL155	1	PL 3/8x5		7 1/8" 5" 1'-0"	6.39
			BLACK WEIGHT:		12.84 LBS.
			GALVANIZED WEIGH	T:	0.51 LBS.
			TOTAL WEIGHT:		13.35 LBS.
G118	15	FOR ONE G1	18		
ANG118	2	L2x2x1/4		8 1/4"	4.39
PL148	2 1 1	PL 3/8x5		8 1/4" 5"	2.66
PL155	1	PL 3/8x5		1'-0"	6.39
			BLACK WEIGHT:		13.44 LBS.
			GALVANIZED WEIGH	T:	0.54 LBS.
			TOTAL WEIGHT:		13.98 LBS.
INDIVIDUAL	SINGLE	PARTS			
ANG116	22	L2x2x3/16		1'-7 9/16"	79.63
P124	12	PIPE1-1/2S	TD	11'-6 9/16"	314.08
UBT144	24	RB1/2		10 3/8"	11.50
PL190	2 2	RB1/2 PL 1/4x10		1'-7 9/16" 11'-6 9/16" 10 3/8" 1'-2"	19.88
PL191	2	PL 1/4x4		1'-2"	7.95
			BLACK WEIGHT:		33.04 LBS.
			GALVANIZED WEIGH		17.32 LBS.
			TOTAL WEIGHT:	4	50.36 LBS.





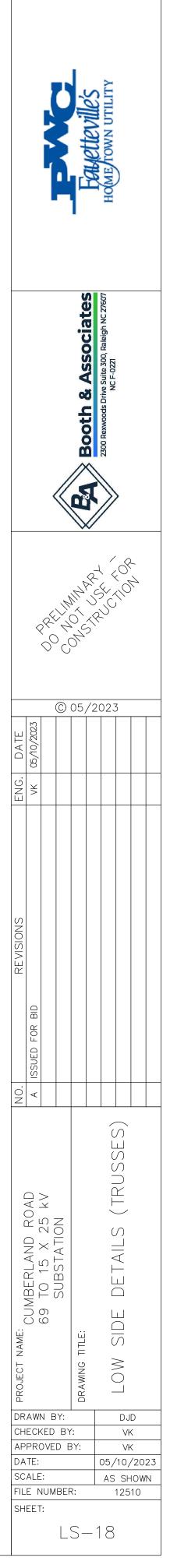


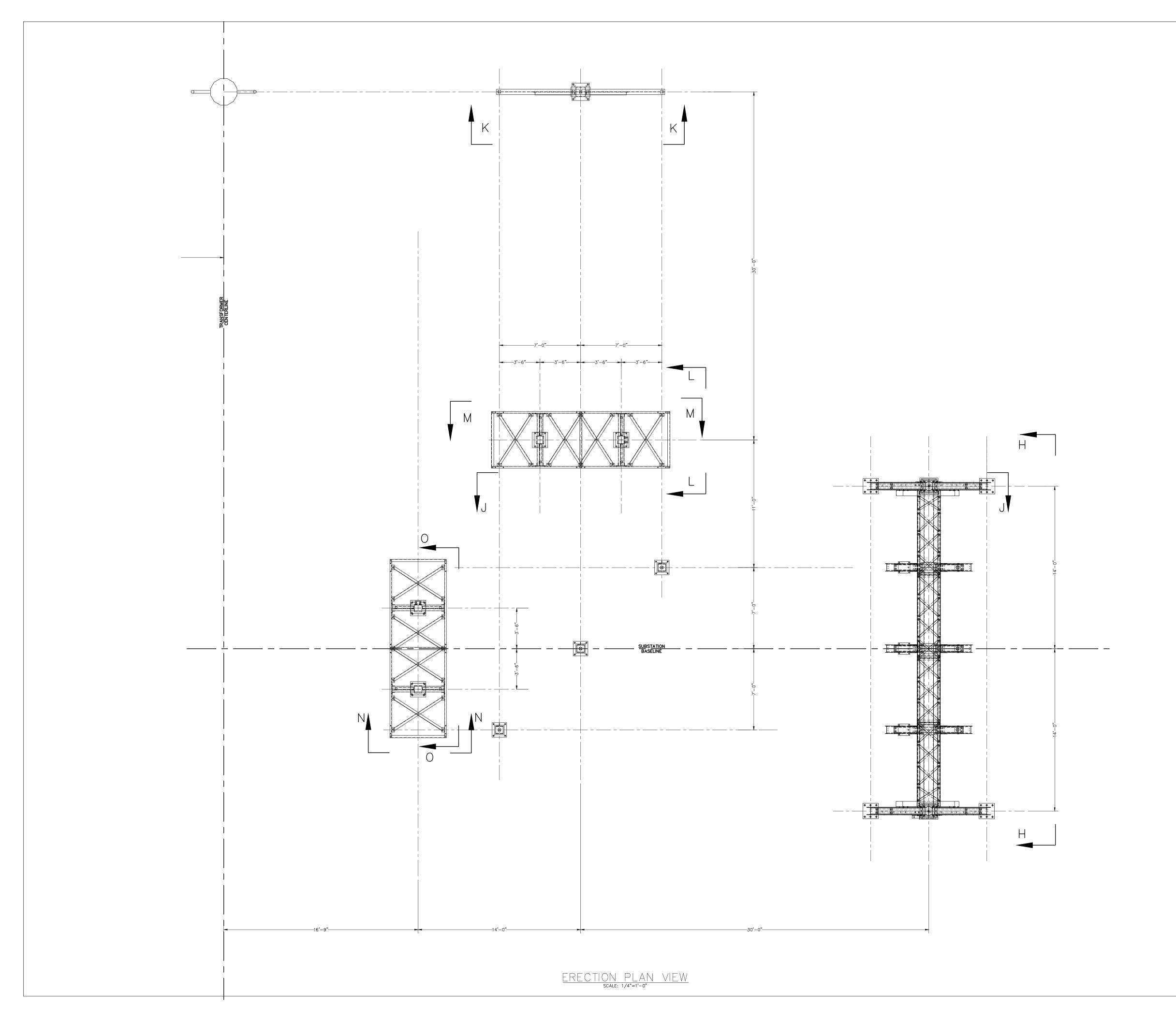
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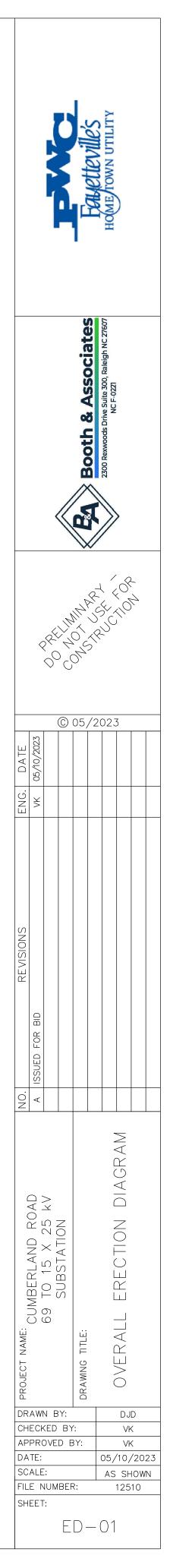
NOTE	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)́	
	HIGH CHARACTERS BEFORE GALVANIZING
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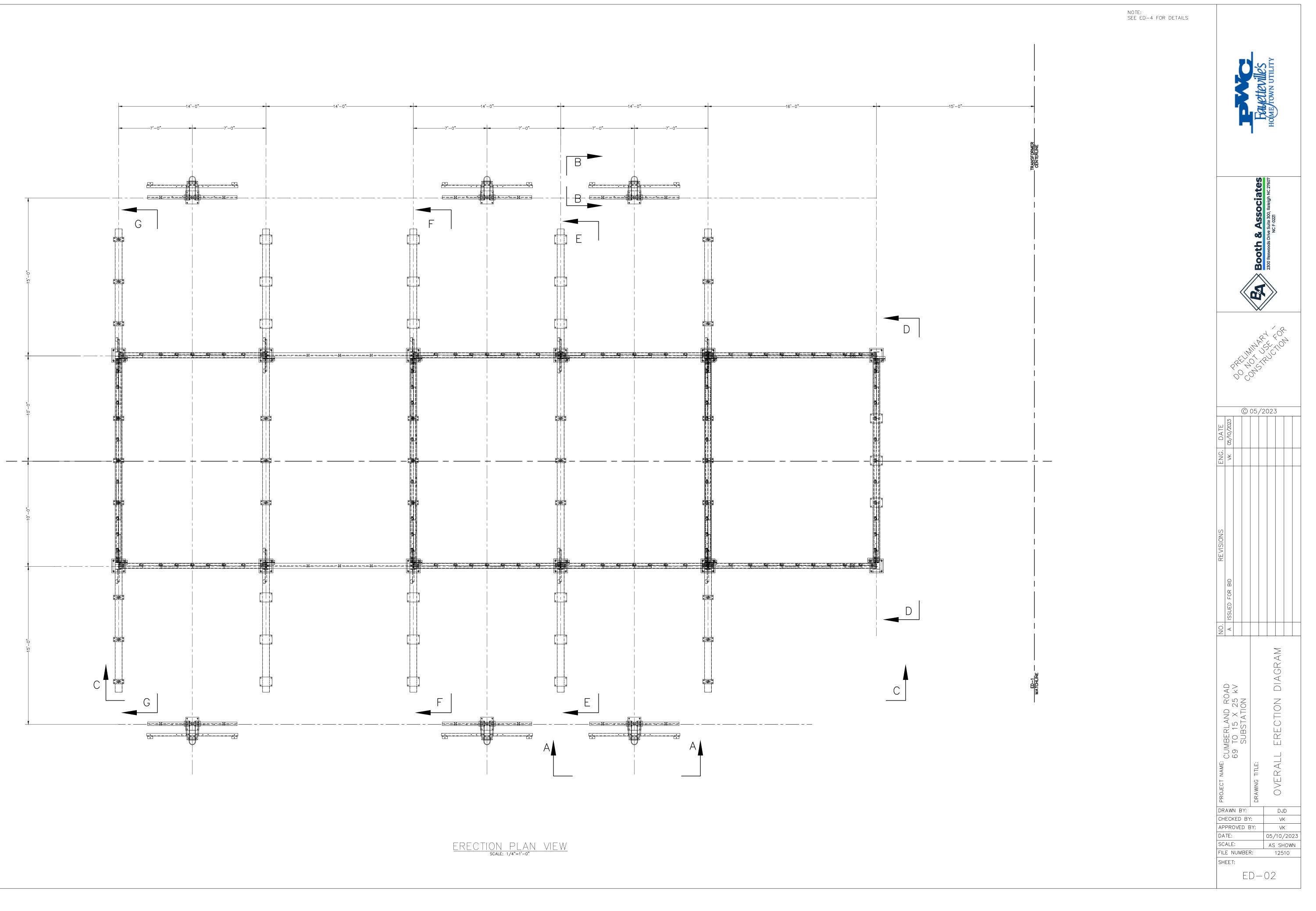
5) ALL WELDING ELECTRODES SHALL BE E70216) EDGE DISTANCE 1" UNLESS NOTED

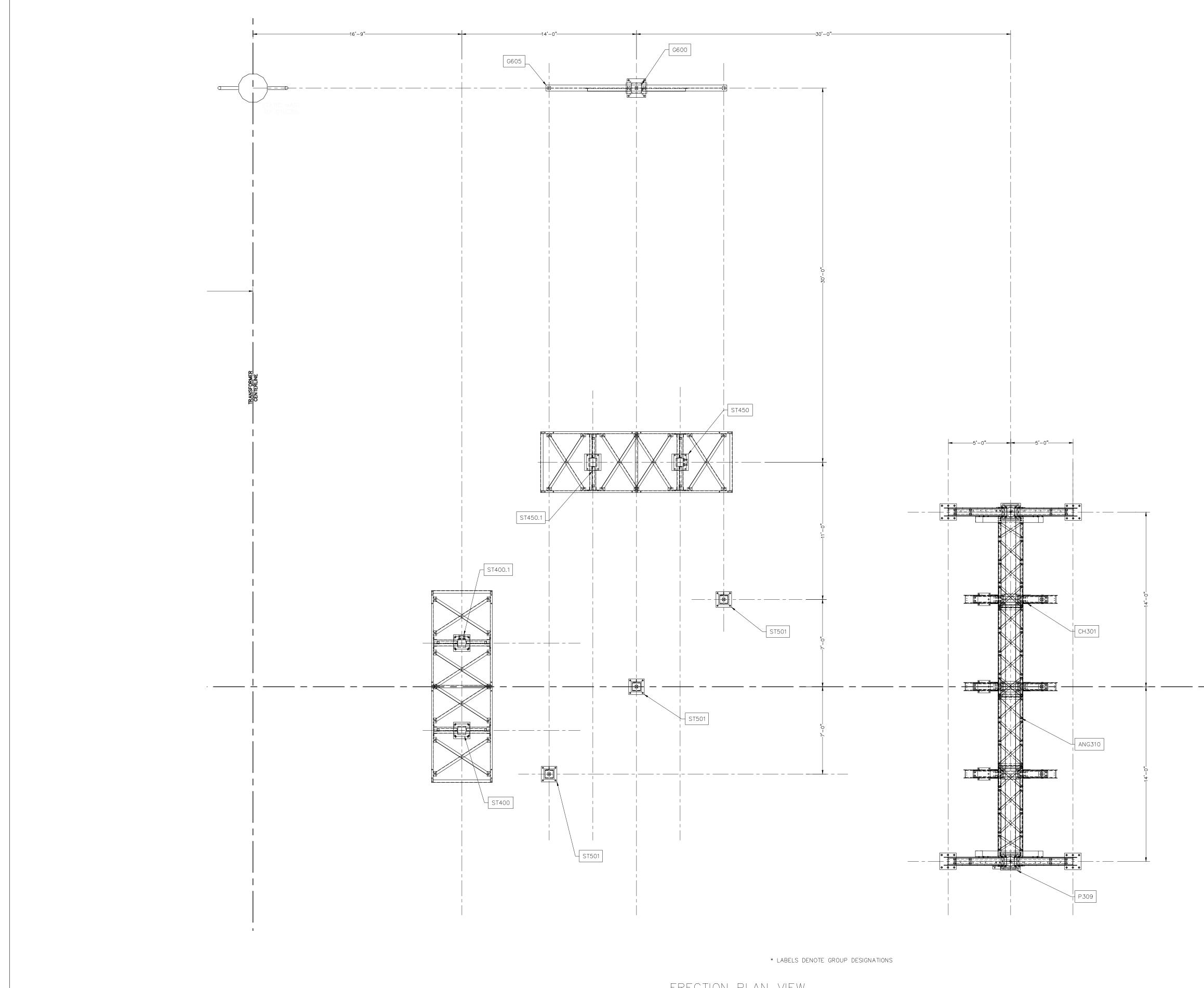
BILL OF MATERIAL								
POS. NO.	QTY	DESC.	LENGTH	WEIGHT				
G120	2	FOR ONE GROUP G120						
ANG157	4	L3x3x1/2	4"	12.53				
B120	1	W6×15	15'-10 1/4"	237.81				
	BLACK WEIGHT: 250.34 LBS.							
	GALVANIZED WEIGHT: 10.01 LBS.							
TOTAL WEIGHT: 260.35 LBS.								



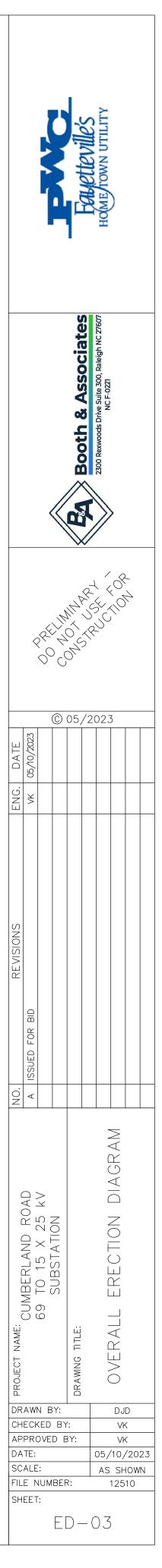






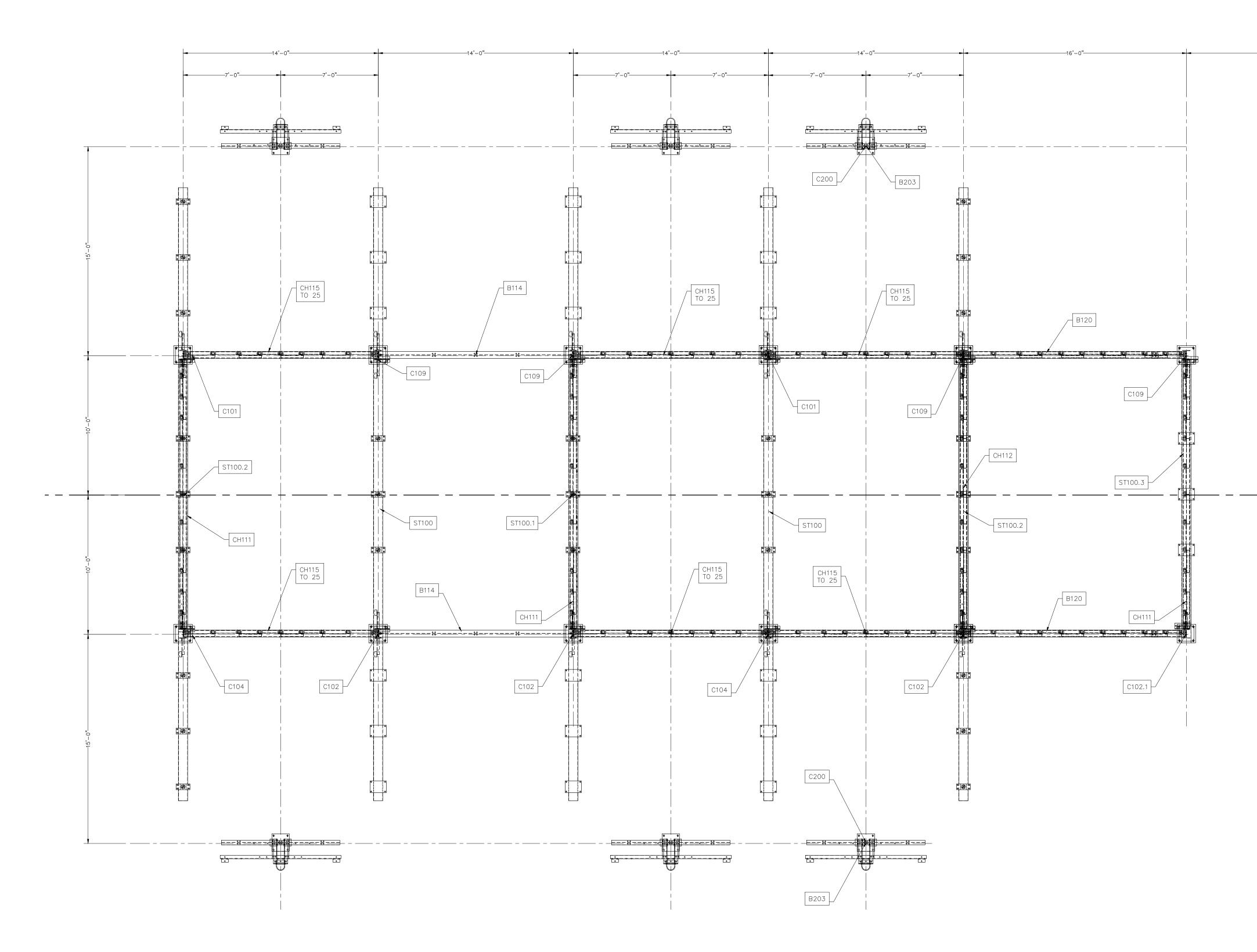


ERECTION PLAN VIEW scale: 1/4"=1'-0"



SUBSTATION BASELINE

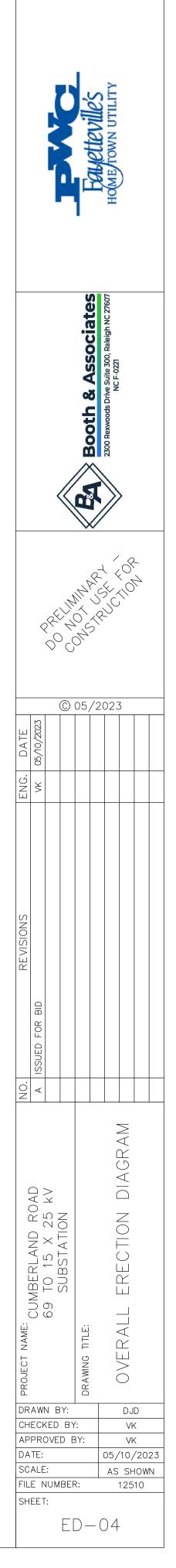
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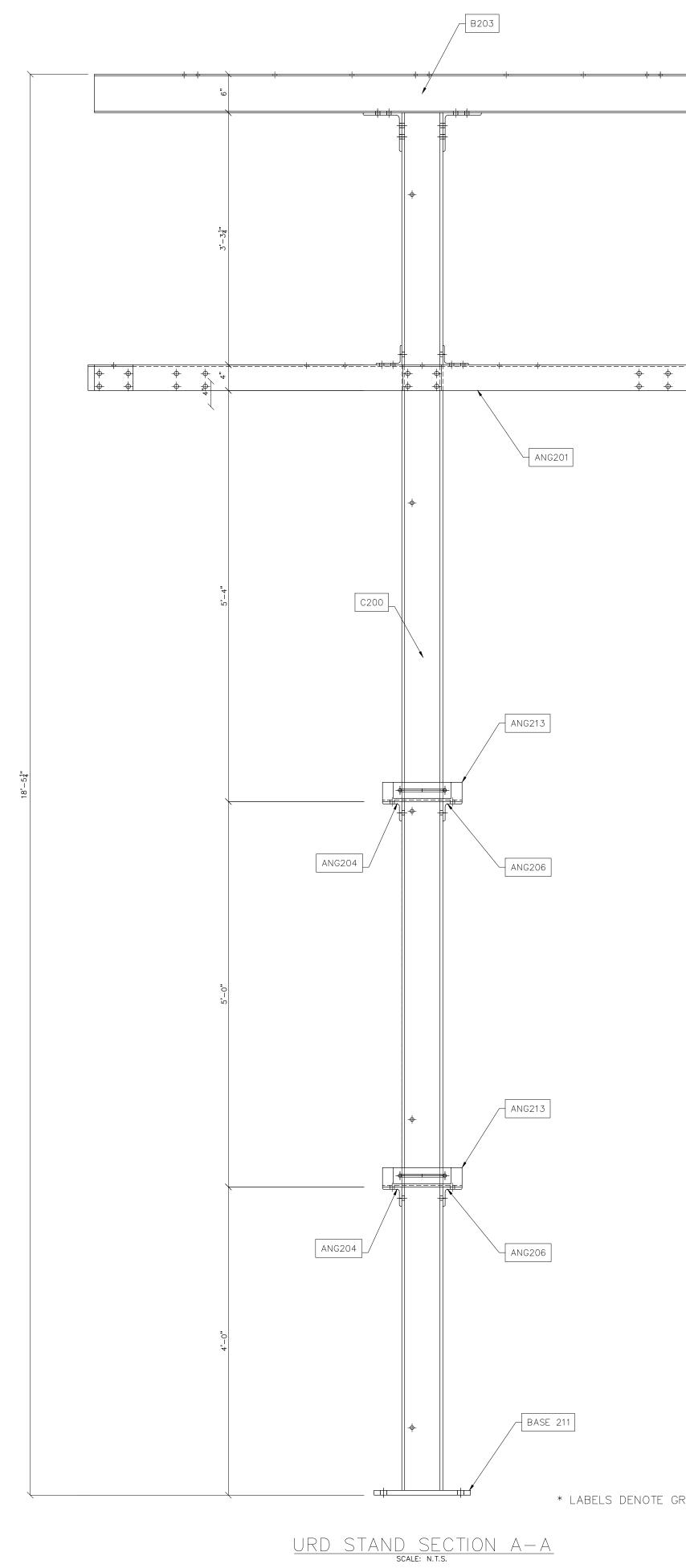


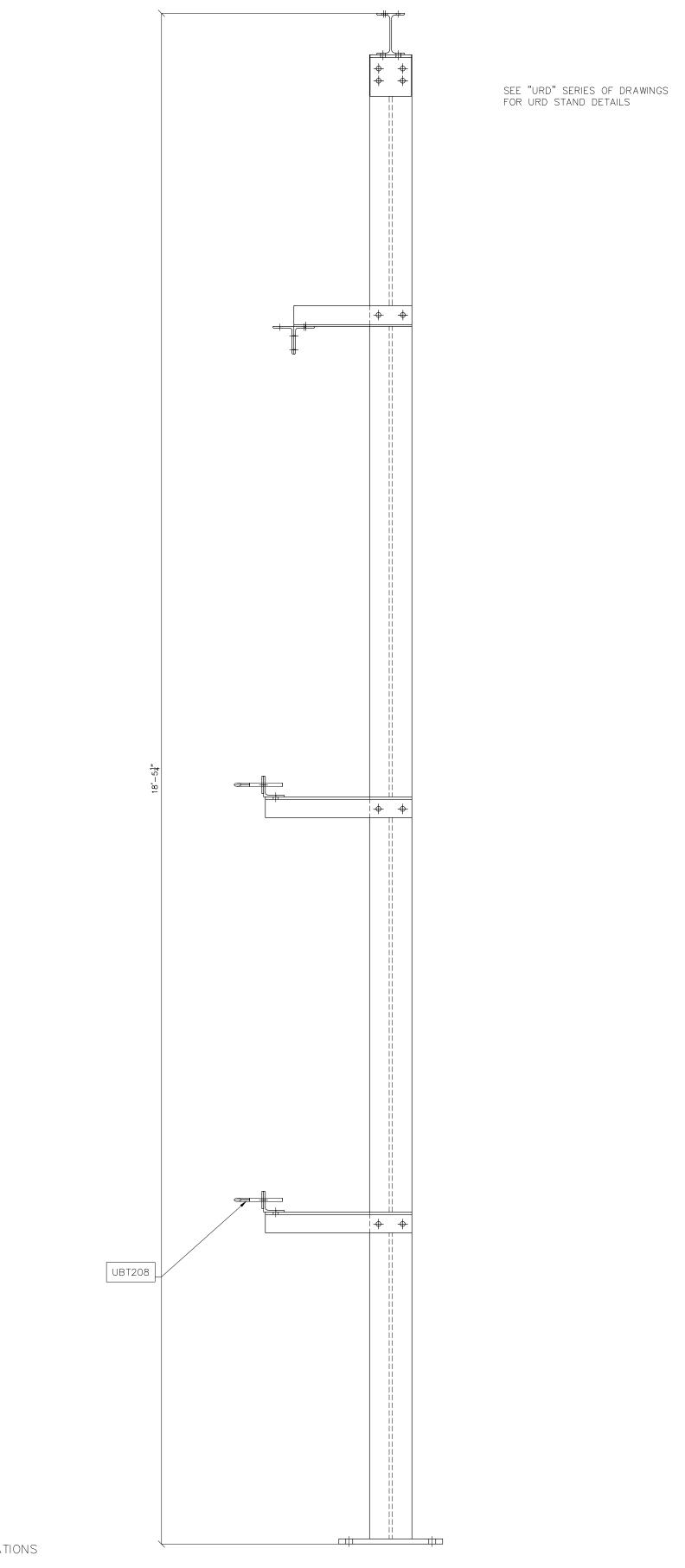
ERECTION PLAN VIEW scale: 1/4"=1"-0"

* LABELS DENOTE GROUP DESIGNATIONS

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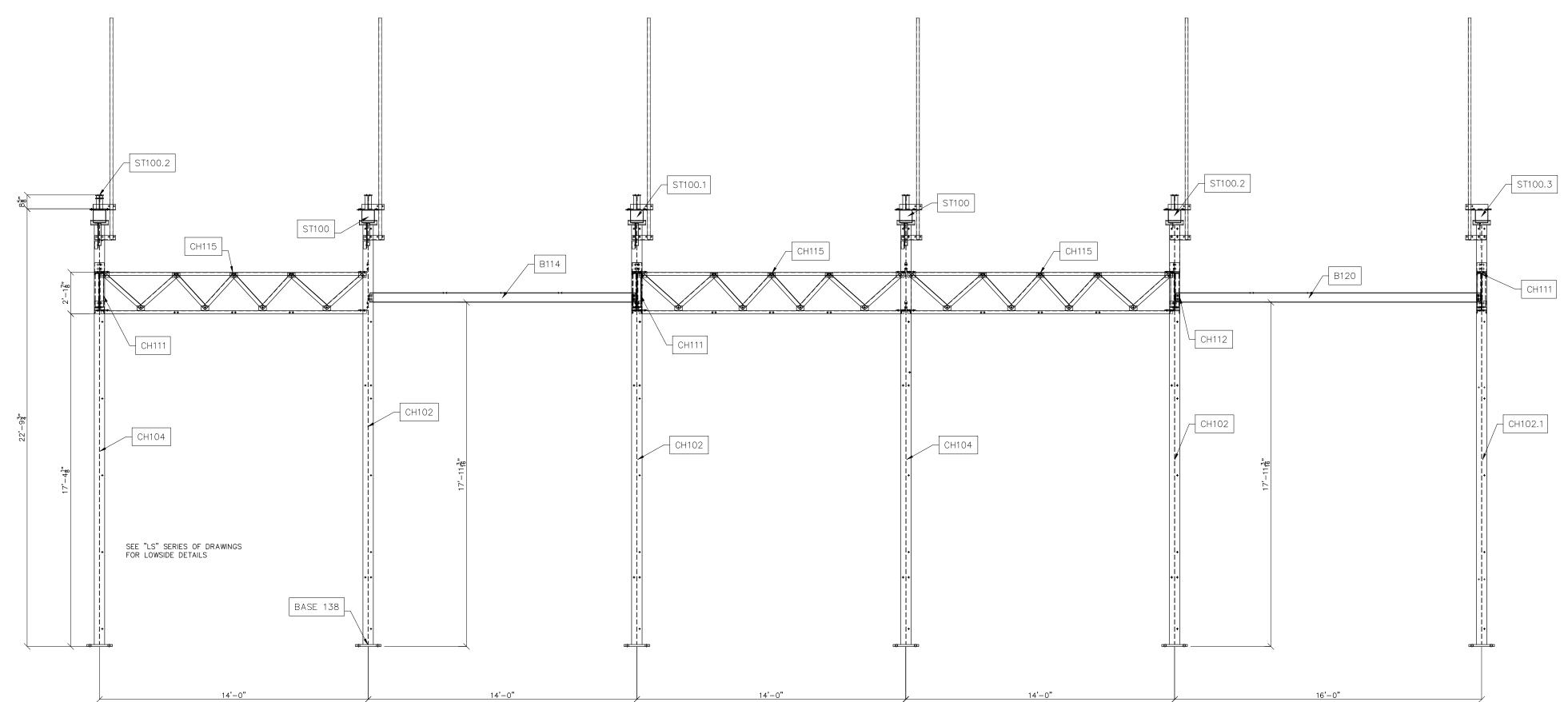


URD STAND SECTION B-B scale: n.t.s.

* LABELS DENOTE GROUP DESIGNATIONS

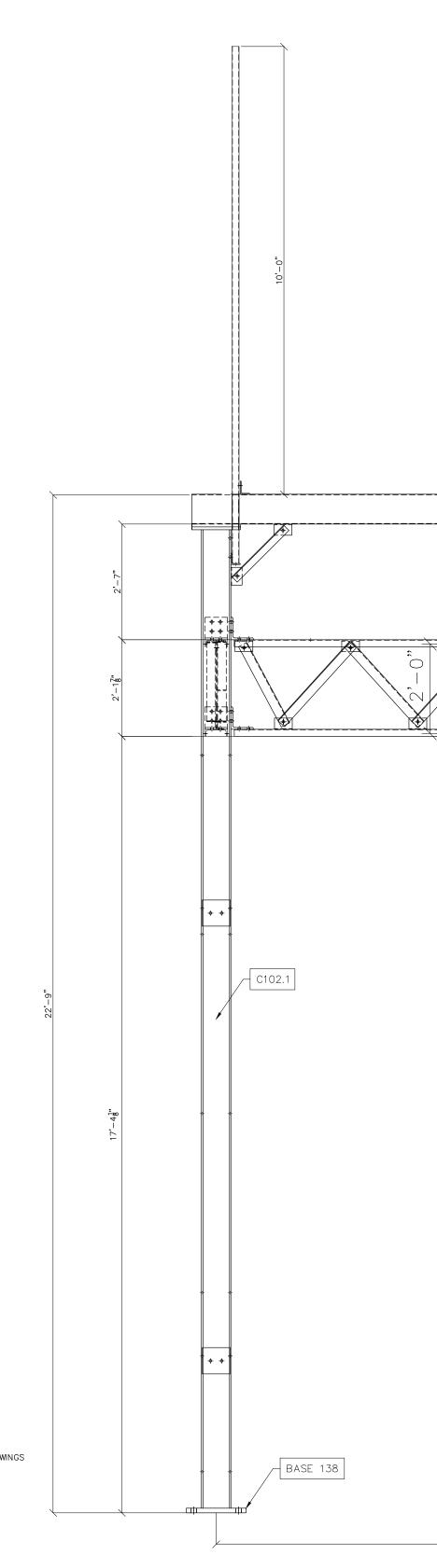
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LOWSIDE SECTION C-C

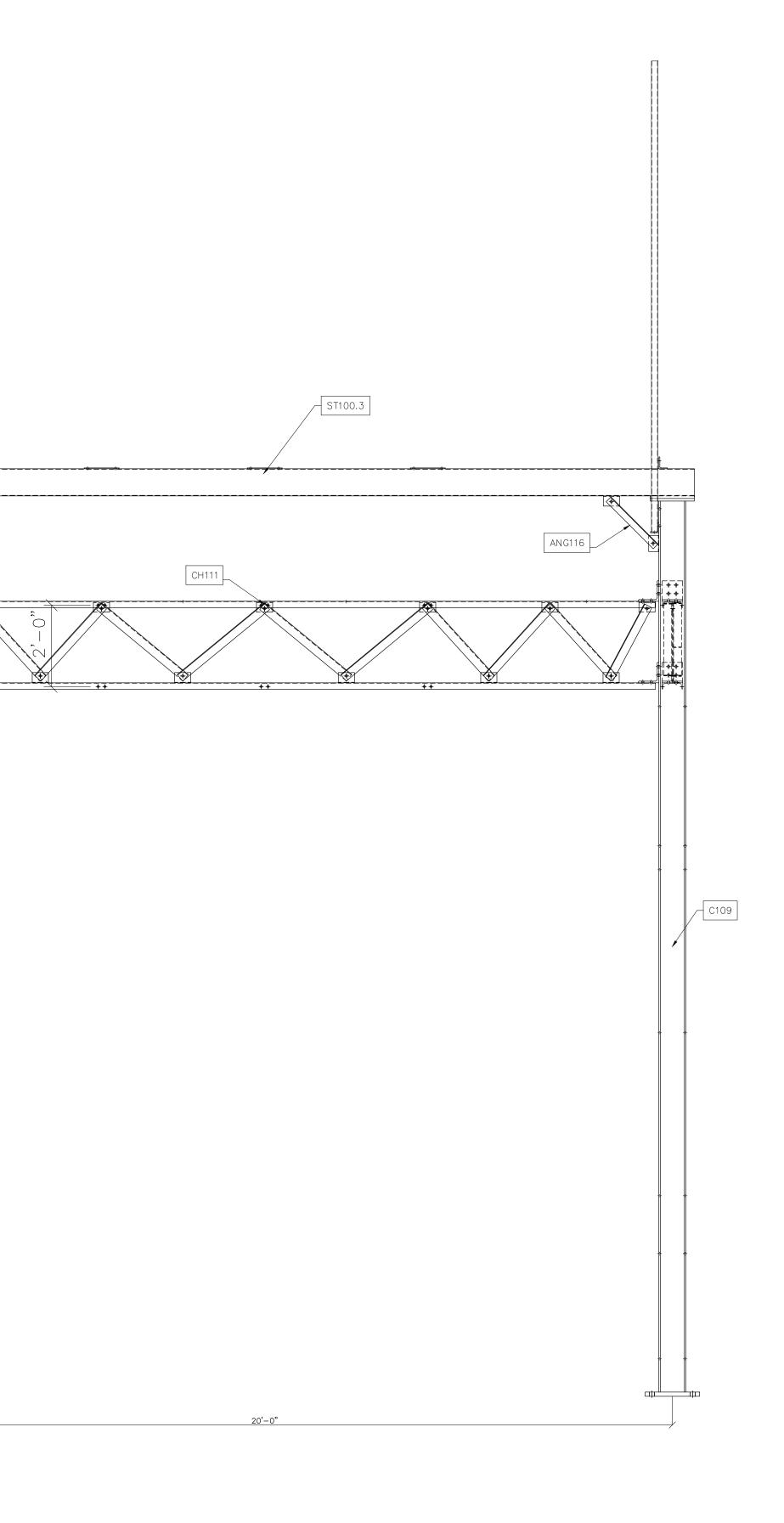
Eductievi Ho(ME/TOWN U Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221 000 © 05/2023 A0,01 ીંઝી REVISIONS NO. A ISSUED FOR BID DIAGRAM CUMBERLAND ROAD 69 TO 15 X 25 kV SUBSTATION ERECTION OVERALL TITLE: 5 DRAWN BY: DJD CHECKED BY: VK APPROVED BY: DATE: SCALE: FILE NUMBER: VK 05/10/2023 AS SHOWN 12510 SHEET: ED-06



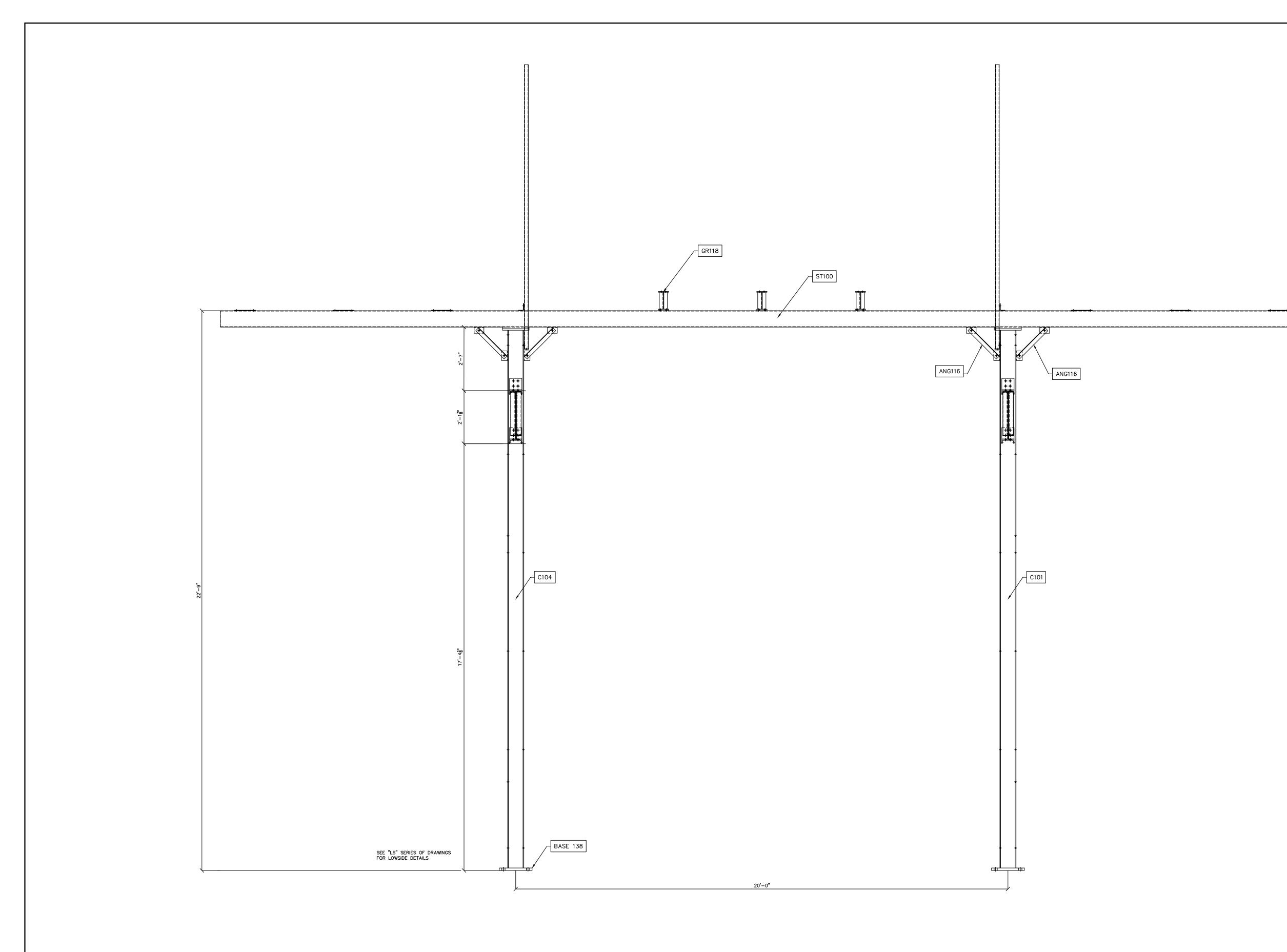
SEE "LS" SERIES OF DRAWINGS FOR LOWSIDE DETAILS



* LABELS DENOTE GROUP DESIGNATIONS

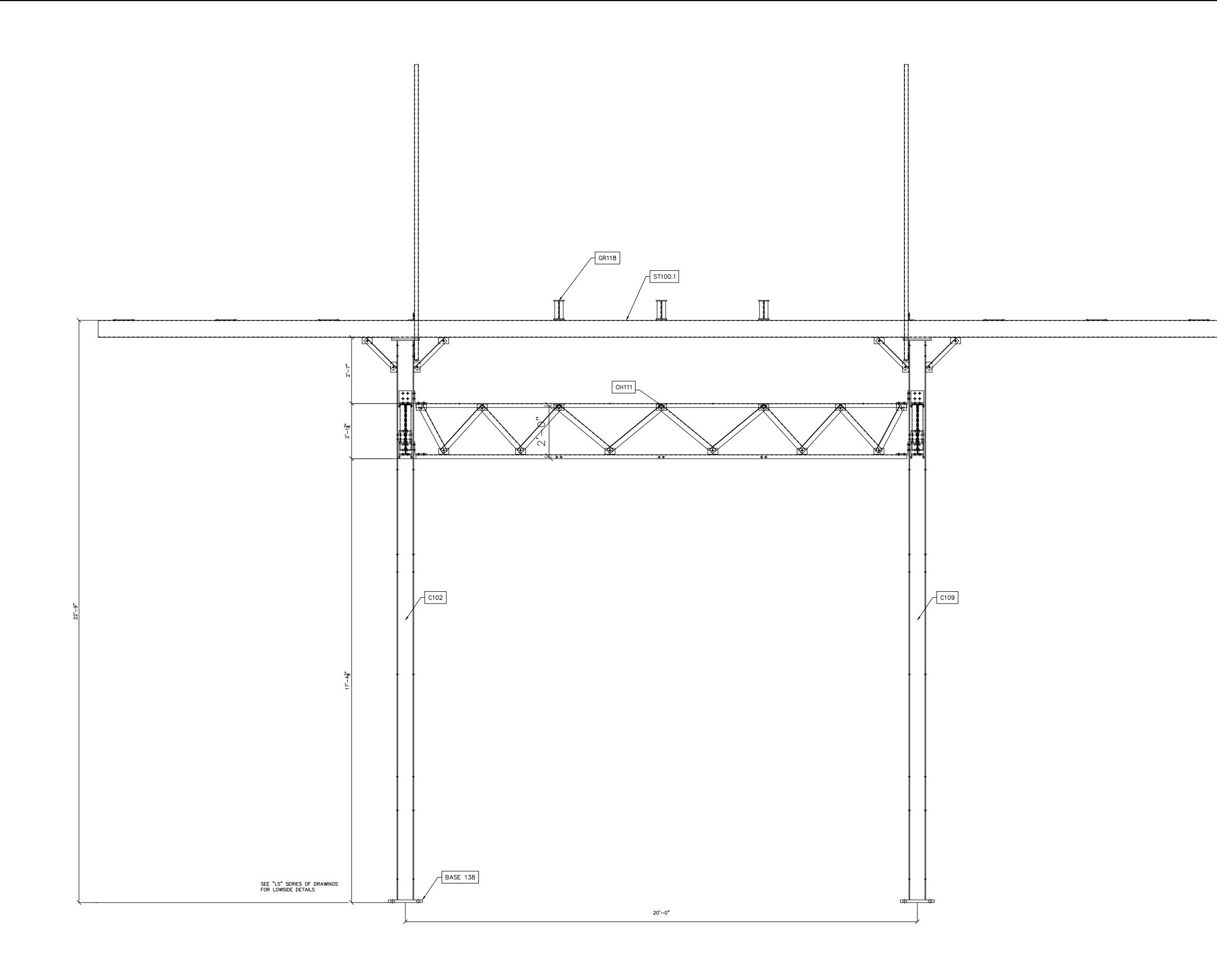


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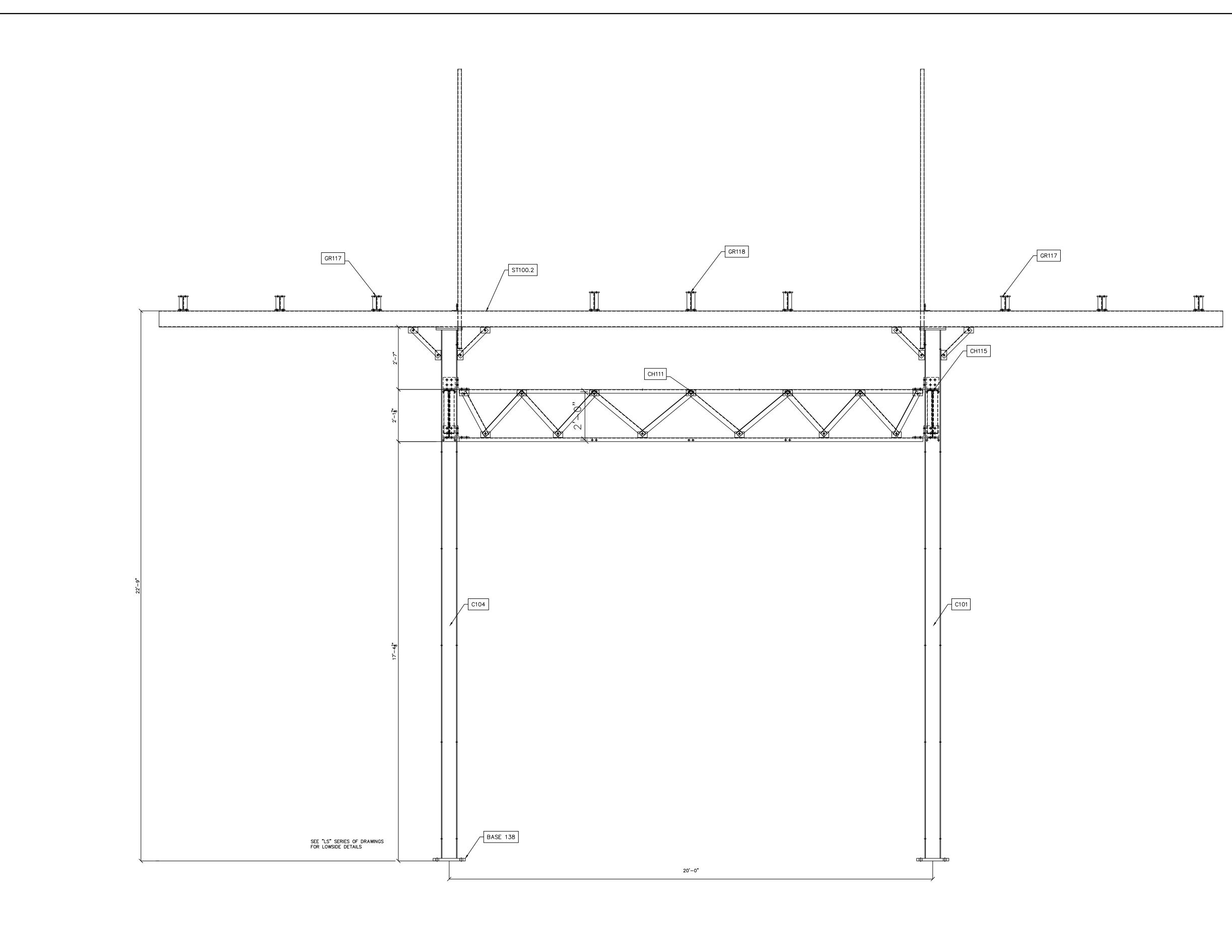
LOWSIDE SECTION E-E scale: n.t.s.

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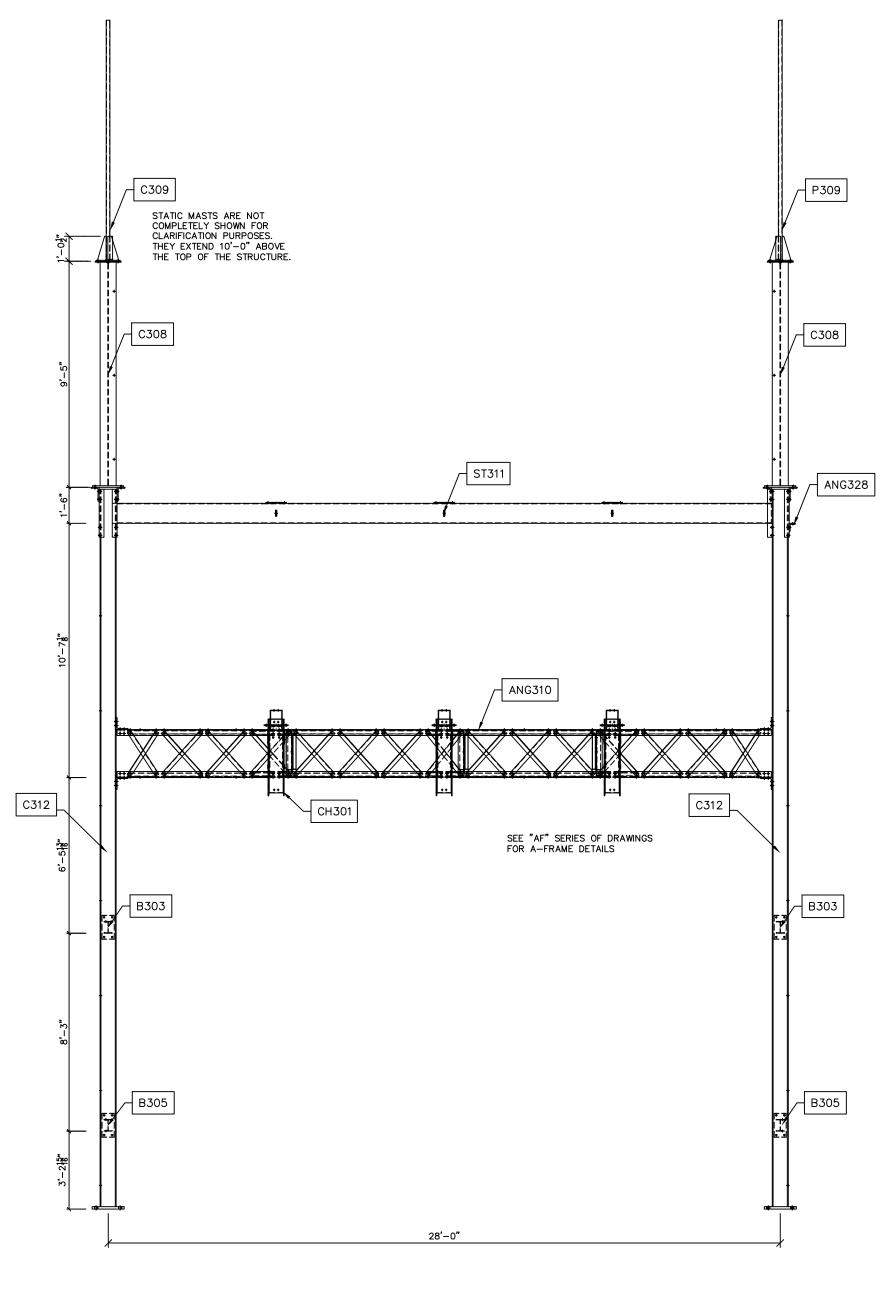


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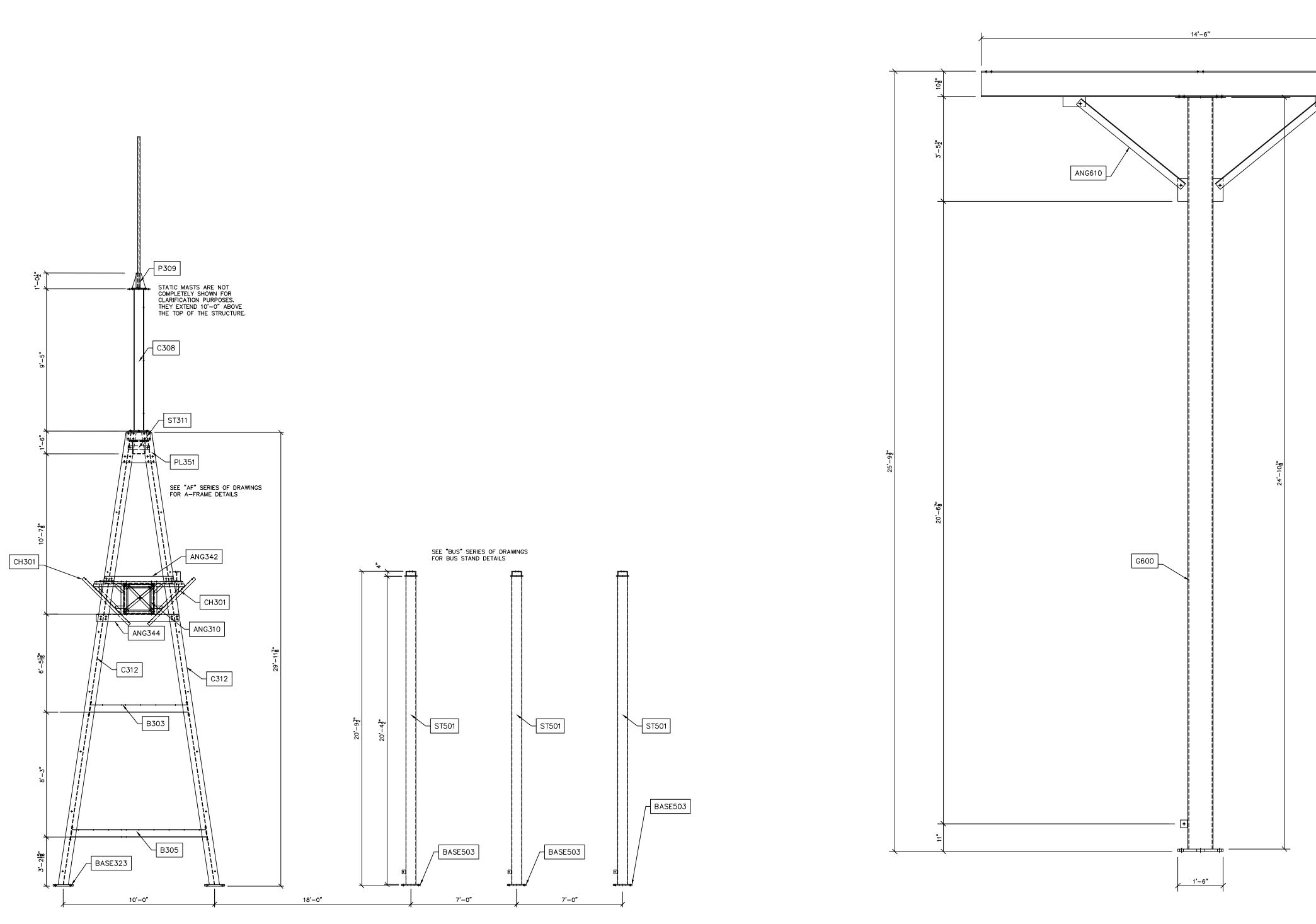


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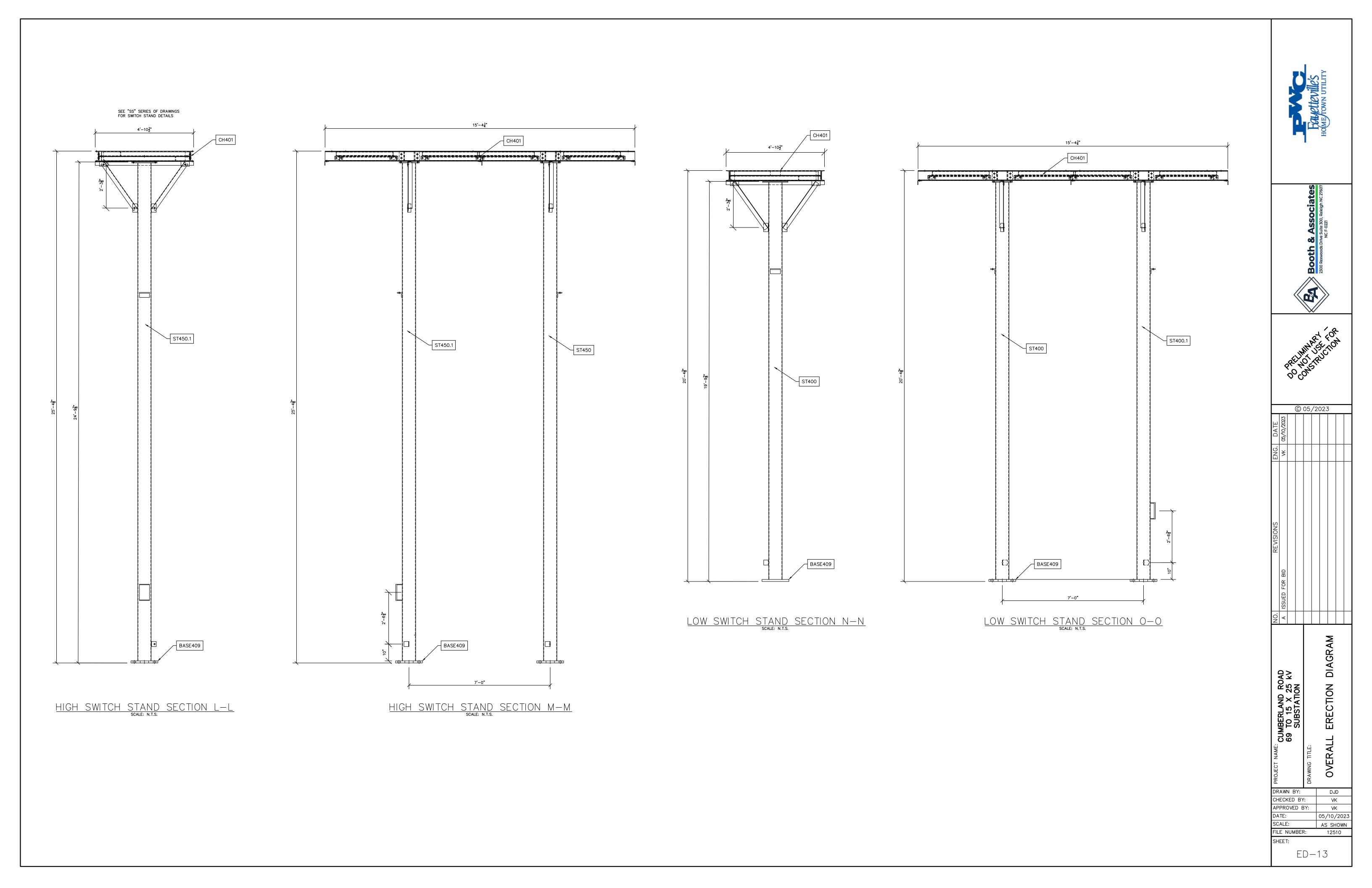


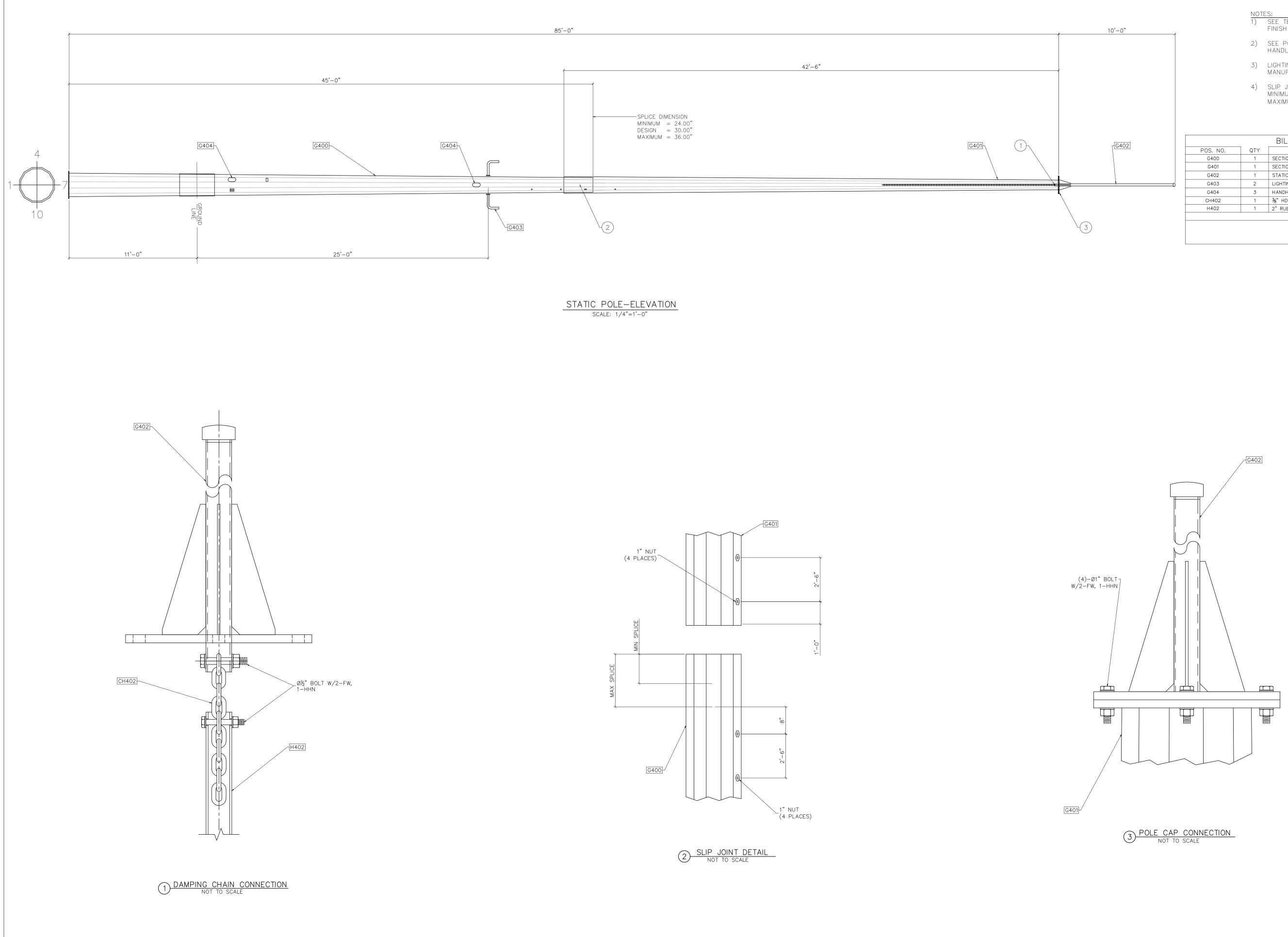
LOW BUS STAND/A-FRAME SECTION J-J scale: n.t.s.

THREE PHASE BUS STAND SECTION K-K

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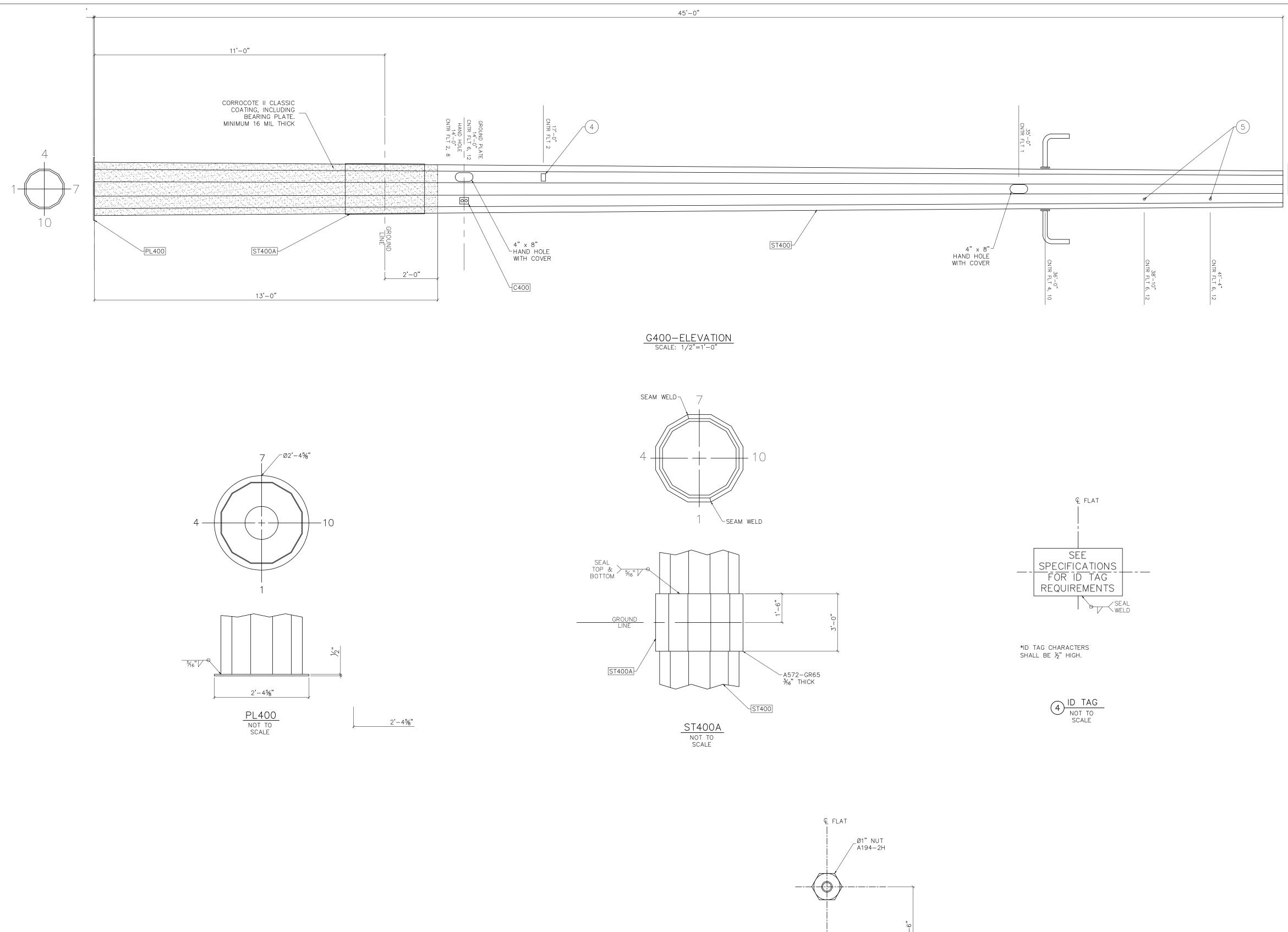


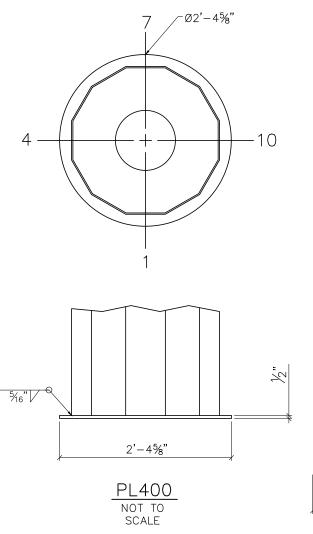


- NOTES: 1) SEE TECHNICAL REQUIREMENTS FOR MATERIAL AND FINISH REQUIREMENTS.
- 2) SEE POLE MANUFACTURER SPECIFICATIONS FOR HANDLING AND ERECTION GUIDELINES.
- LIGHTING ASSEMBLY TO BE MOUNTED PER POLE MANUFACTURER PROVIDED CONNECTION.
- 4) SLIP JOINT JACKING FORCE: MINIMUM = 10,000 LBS. AT EACH SIDE MAXIMUM = PER MANUFACTURER'S SPECIFICATION

		BILL OF MATERI	AL						
POS. NO.	QTY	DESC.	LENGTH	WEIGHT					
G400	1	SECTION ASSEMBLY	45'-0"	2,094.08					
G401	1	SECTION ASSEMBLY	42'-6"	1,206.66					
G402	1	STATIC MAST ASSEMBLY	10'-0"	84.46					
G403	2	LIGHTING ASSEMBLY	_	14.00					
G404	3	HANDHOLE ASSEMBLY	_	-					
CH402	1	¾" HDGV CHAIN	25'-0"	36.25					
H402	1	2" RUBBER HOSE	25'-0"	-					
		BLACK WEIG	GHT:	3,435.45 LB					
		GALVANIZED	WEIGHT:	137.42 LB					
	TOTAL WEIGHT: 3,572.87 LB								

Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-027									
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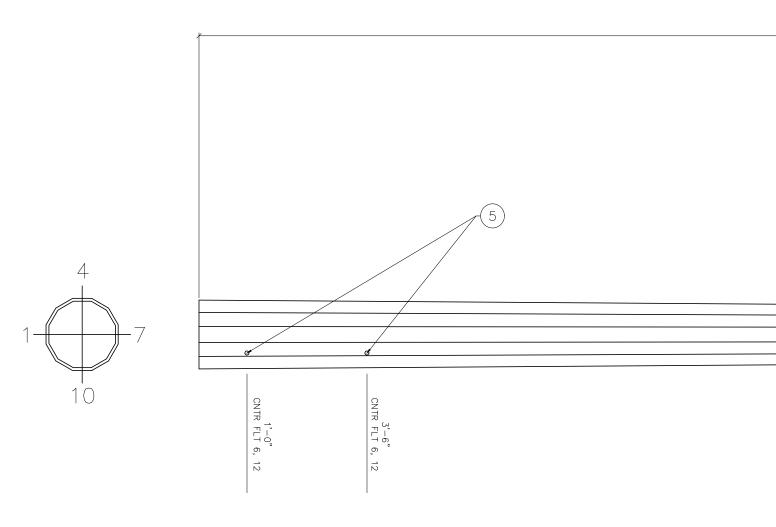


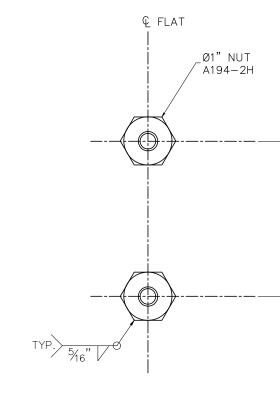




TYP. 5/16" 0 5 JACKING NUTS NOT TO SCALE

		BILI	_ OF MATER												
POS. NO. G400 ST400 ST400A PL400 C400	ASTM SPEC – A572–GR65 A572–GR65 A36 A36 A36	QTY 1 1 1 1 2	DESC. FOR ONE GROU SHAFT ¾6" GROUND SLEE PL ½" X Ø2'-4% C 4 X 5.4	JP 400: EVE	LENG1 - 45'-C 3'-0' - 3"	"	WEIGHT 	-		Ľ	willo's	CULEVULES TOWN ITTILITY			
			GAI TO	ACK WEIGI LVANIZED DTAL WEIG	WEIGHT: HT:		2,094.08 LB 83.76 LB 2,177.84 LB				Education	HOMETOWN	þ		
SHAPE 12-SIDED	LENGTH BA	AFT INFO ASE O.D. 24.00"	(MEASURED ACR TOP O.D. 16.39"	COSS FLAT TAPE 0.1691	R	ГНК 188"	ASTM A572-GR65								
		¢ FLAT)-Ø%6"				코 영 및 코 우 및 PROJECT NAME: ENG. DATE NO. REVISIONS	THE THE THE CUMBERLAND ROAD A Issued for Bid IN IN IN IN IN IN IN				STATIC MAST DETAIL	2023 DWN	

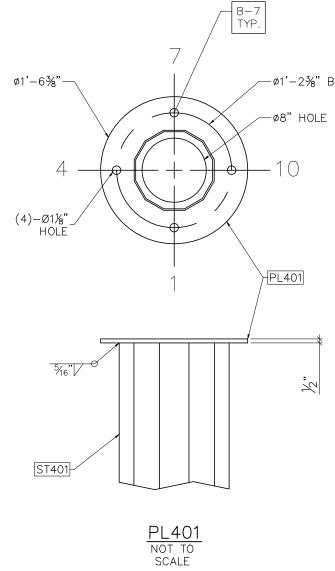




5 JACKING NUTS NOT TO SCALE

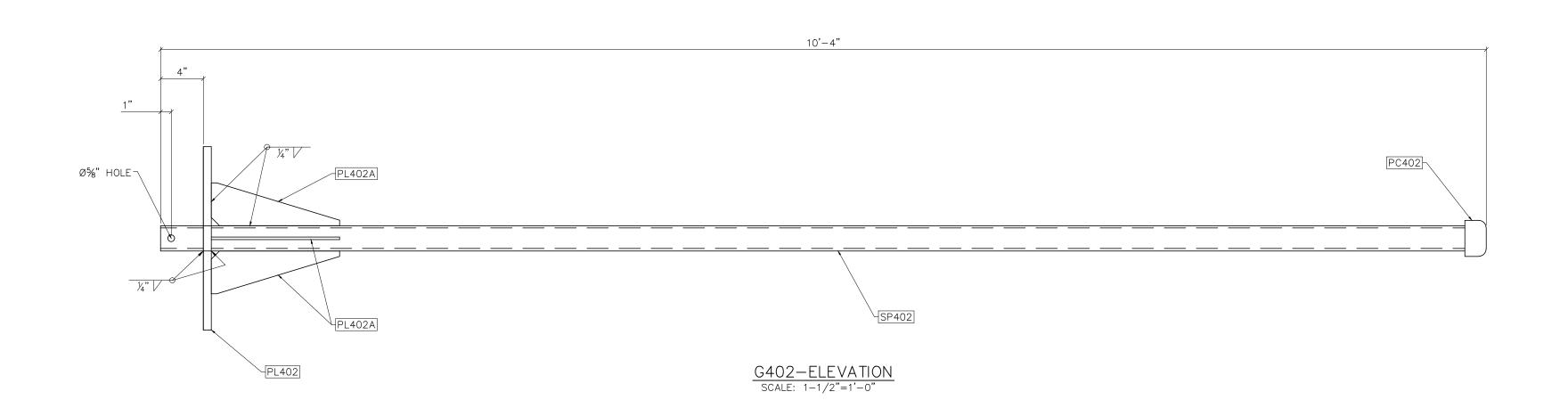
ISTAOL SCALE: 1/2"=1"-0"

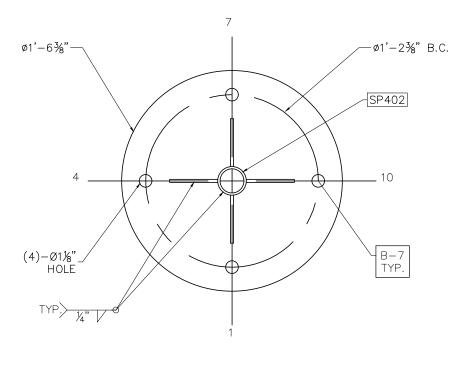
42'-6"



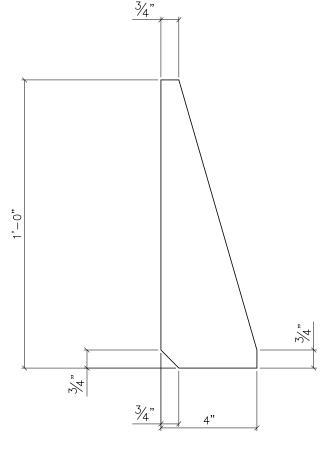
		BILI	OF MATERIAL				
POS. NO. G401	ASTM SPEC	QTY	DESC. FOR ONE GROUP 401:	LENGTH	WEIGHT		
ST401 PL401	A572-GR65 A572-GR65	1 S	бНАГТ Р∟ ½" X Ø1'6¾"	42'-6"	1,169.00 48.27		
			BLACK WEI GALVANIZEI		1,206.66 LB 48.27 LB		
			TOTAL WEI		1,254.93 LB		
]	Prown	
SHAPE	LENGTH BA	ASE O.D.	IEASURED ACROSS FLA	ER THK	ASTM		
12-SIDED	42'-6"	17.19"	10.00" 0.169	.188"	A572-GR65		
			<u> ¹/2"</u>			Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-027	
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			PL401			0,0 0,0 1,1 1,1 1,1 1,1 1,1 1,1 1,1 1,1	
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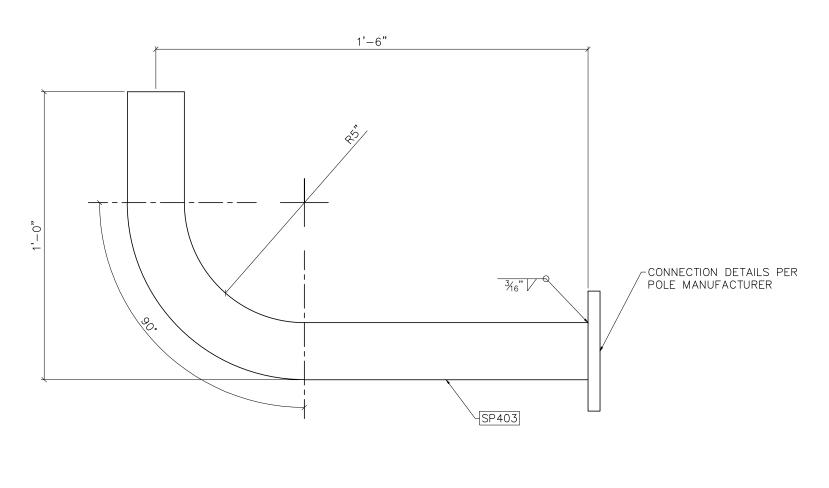
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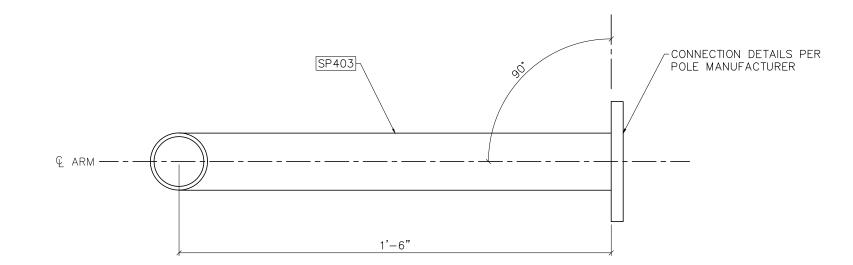






G403-SIDE VIEW



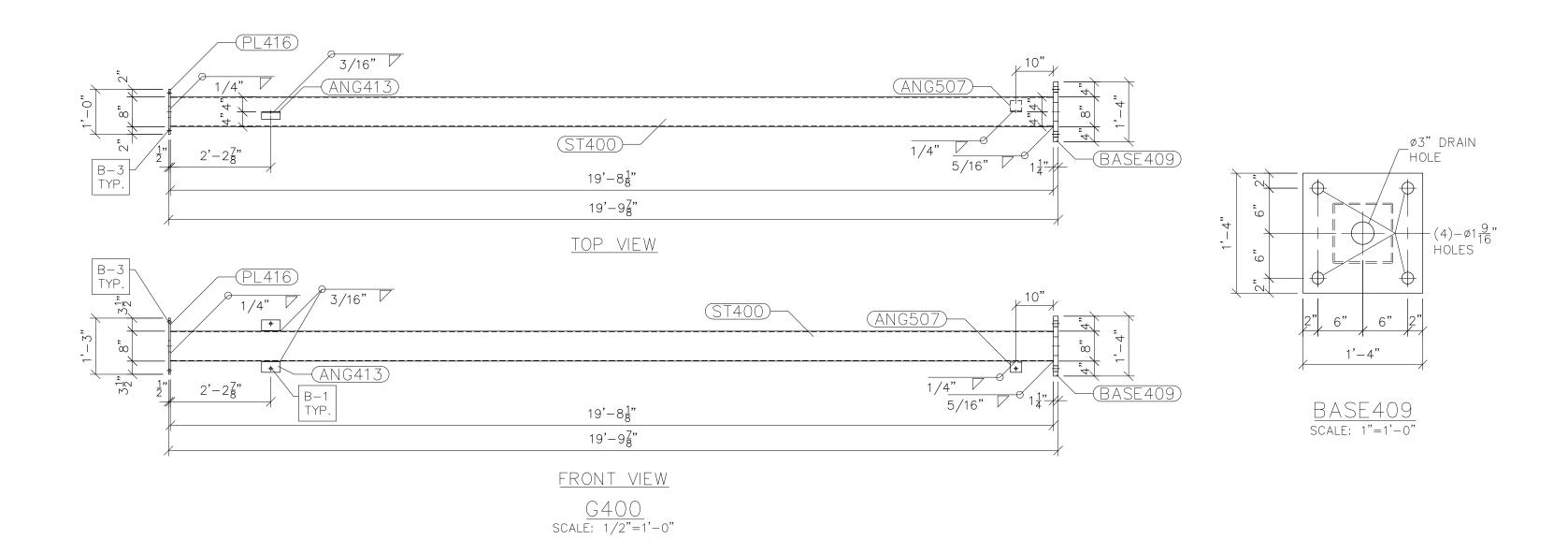


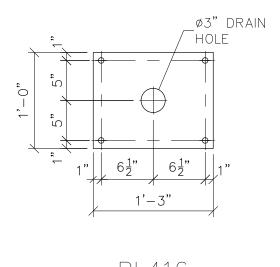
G403-TOP VIEW

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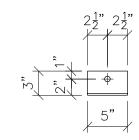
BILL OF MATERIAL										
ASTM GRADE	QTY	DESC.	LENGTH	WEIGHT						
_	1	FOR ONE GROUP 402:	—	—						
A53	1	PIPE 2" STD	10'-4"	37.74						
A36	1	PL ½" X Ø1'-6¾"	-	37.66						
A36	4	PL ½" X 4" (HALF)	1'-0"	7.88						
A53	1	2" SCH 40 GV CAP	_	1.18						
		BLACK W	EIGHT:	84.46 LB						
		GALVANIZE	D WEIGHT:	3.38 LB						
		TOTAL W	EIGHT:	87.84 LB						
-	– A53 A36 A36	ASTM GRADE QTY - 1 A53 1 A36 1 A36 4	ASTM GRADE QTY DESC. - 1 FOR ONE GROUP 402: A53 1 PIPE 2" STD A36 1 PL ½" X Ø1'-6¾" A36 4 PL ½" X 4" (HALF) A53 1 2" SCH 40 GV CAP BLACK W GALVANIZE	ASTM GRADE QTY DESC. LENGTH - 1 FOR ONE GROUP 402: - A53 1 PIPE 2" STD 10'-4" A36 1 PL ½" X Ø1'-6¾" - A36 4 PL ½" X 4" (HALF) 1'-0"						

		BILL	OF MATERIAL		
POS. NO.	ASTM GRADE	QTY	DESC.	LENGTH	WEIGHT
G403	-	2	FOR ONE GROUP 403:	—	—
SP403	A53	1	2" SCH 40 GV PIPE	1'-11"	14.00
			BLACK V	VEIGHT:	14.00 LB
			GALVANIZE	D WEIGHT:	0.56 LB
			TOTAL V	VEIGHT:	14.56 LB

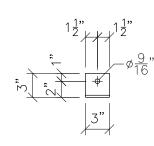




PL416 scale: 1"=1'-0"



ANG413 FRONT VIEW scale: 1"=1'-0"



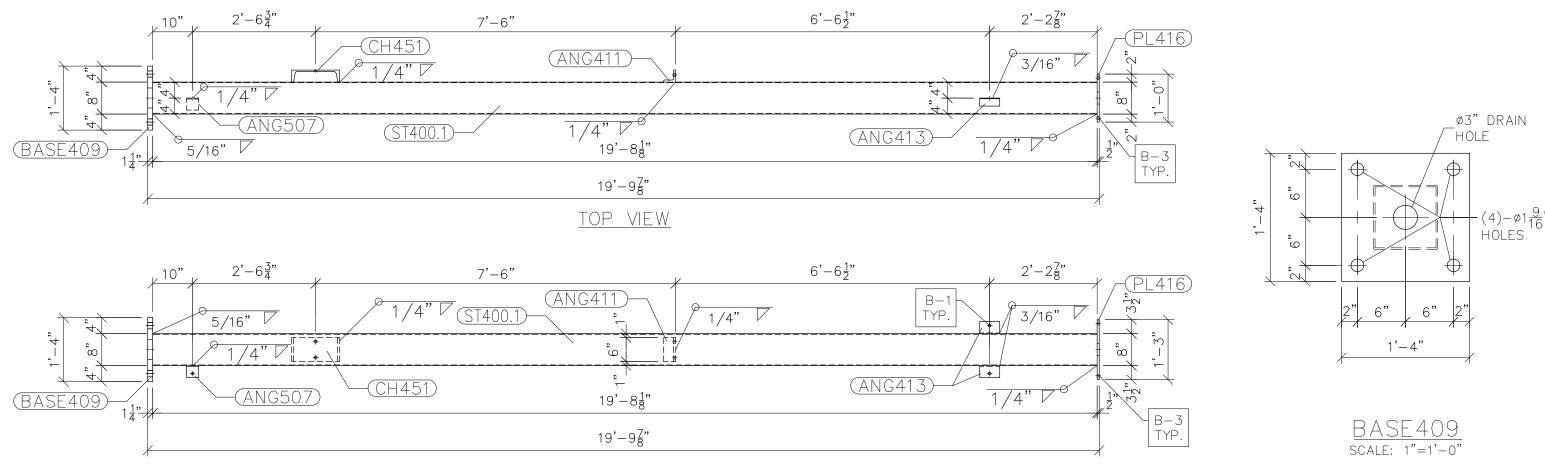
ANG507 FRONT VIEW scale: 1"=1'-0"

NOTE	ES:
1)	ASTM 325 ERECTION BOLTS
	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8"
,	HIGH CHARACTERS BEFORE GALVANIZING
E	ALL WELDING ELECTRODES SUALL DE EZON

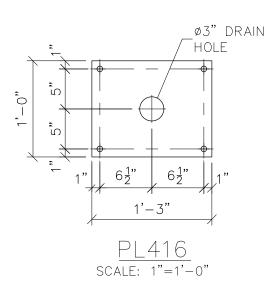
5) ALL WELDING ELECTRODES SHALL BE E70216) EDGE DISTANCE 1" UNLESS NOTED

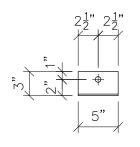
		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G400	1	FOR ONE GROUP G400:		
ANG413	2	L3x2x3/16	5"	2.56
ANG507	1	L3x3x1/4	3"	1.23
BASE409	1	PL 1 1/4"x1'-4" PL 1/2"x1'-0"	1'-4"	90.93
PL416	1	PL 1/2"x1'-0"	1'-3"	25.57
ST400	1	HSS8x8x3/16	19'-8 1/8"	386.26
		BLACK WEIGHT:		506.55 LBS.
		GALVANIZED W	EIGHT:	20.26 LBS.
		TOTAL WEIGHT:		526.81 LBS.

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	Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0271							
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FRONT VIEW <u>G400.1</u> scale: 1/2"=1'-0"

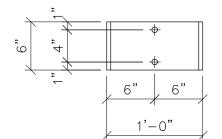




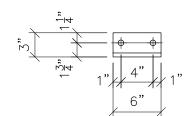
3"

ANG413 FRONT VIEW scale: 1"=1'-0"

ANG507 FRONT VIEW scale: 1"=1'-0"



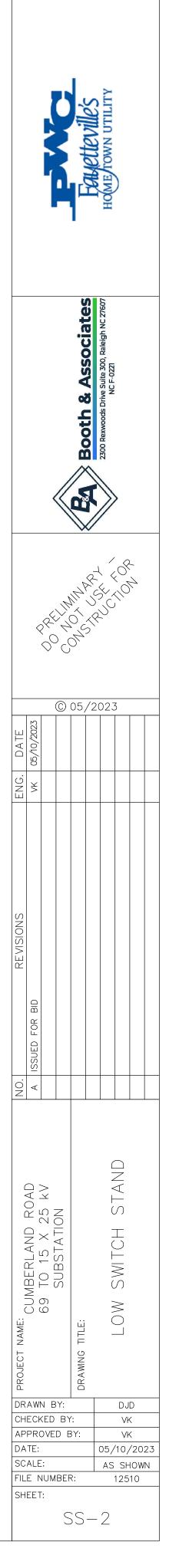
CH451 FRONT VIEW scale: 1"=1'-0"

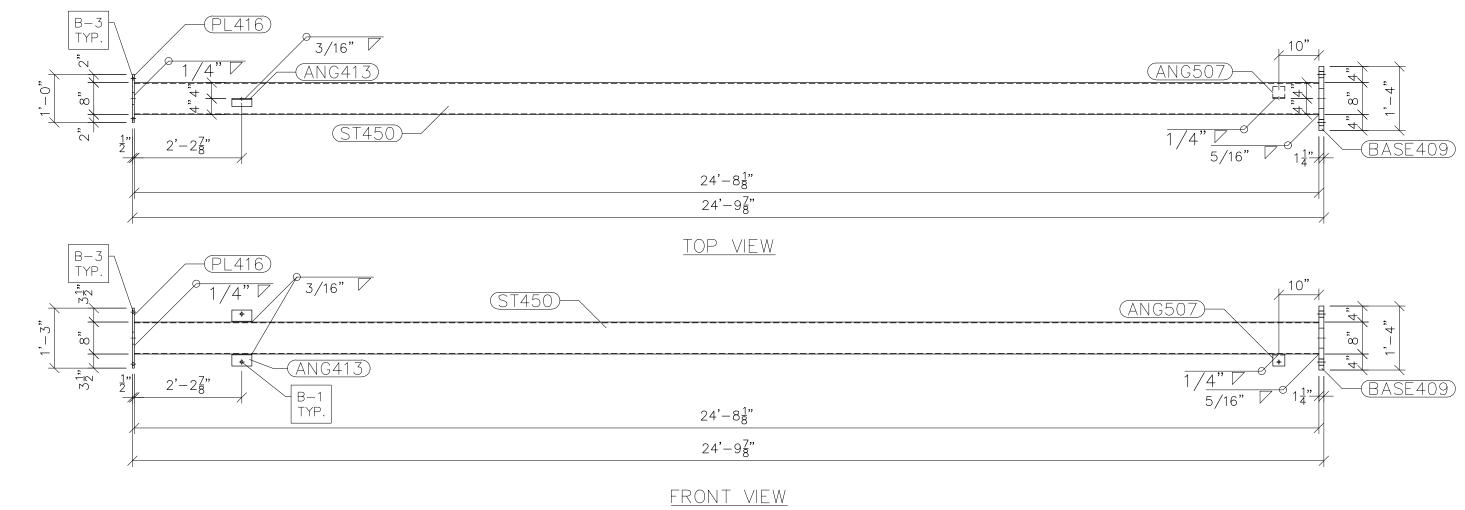


ANG411 FRONT VIEW scale: 1"=1'-0"

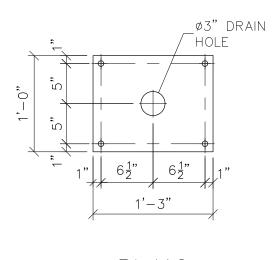
NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
E)	
5) 6)	ALL WELDING ELECTRODES SHALL BE E7021 EDGE DISTANCE 1" UNLESS NOTED

		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G400.1	1	FOR ONE GROUP G400.1:		
ANG411	1	L3x3x1/2	6"	4.70
ANG413	2	L3x2x3/16	5"	2.56
ANG507	1	L3x3x1/4	3"	1.23
BASE409	1	PL 1 1/4"x1'-4"	1'-4"	90.93
CH451	1	C12x25	6"	12.50
PL416	1	PL 1/2"x1'-0"	1'-3"	25.57
ST400.1	1	HSS8x8x3/16	19'-8 1/8"	386.26
		1	I	
		BLACK WEIGHT		523.75 LBS.
		GALVANIZED W	EIGHT:	20.95 LBS.
		TOTAL WEIGHT:		544.70 LBS

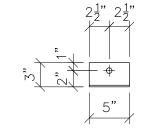




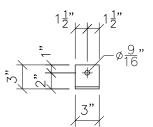
<u>FRONT_VIEW</u> <u>G450</u> scale: 1/2"=1'-0"



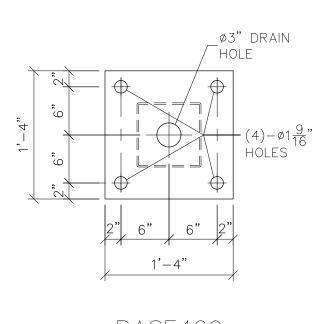
<u>PL416</u> scale: 1"=1'-0"







ANG507 FRONT VIEW scale: 1"=1'-0"

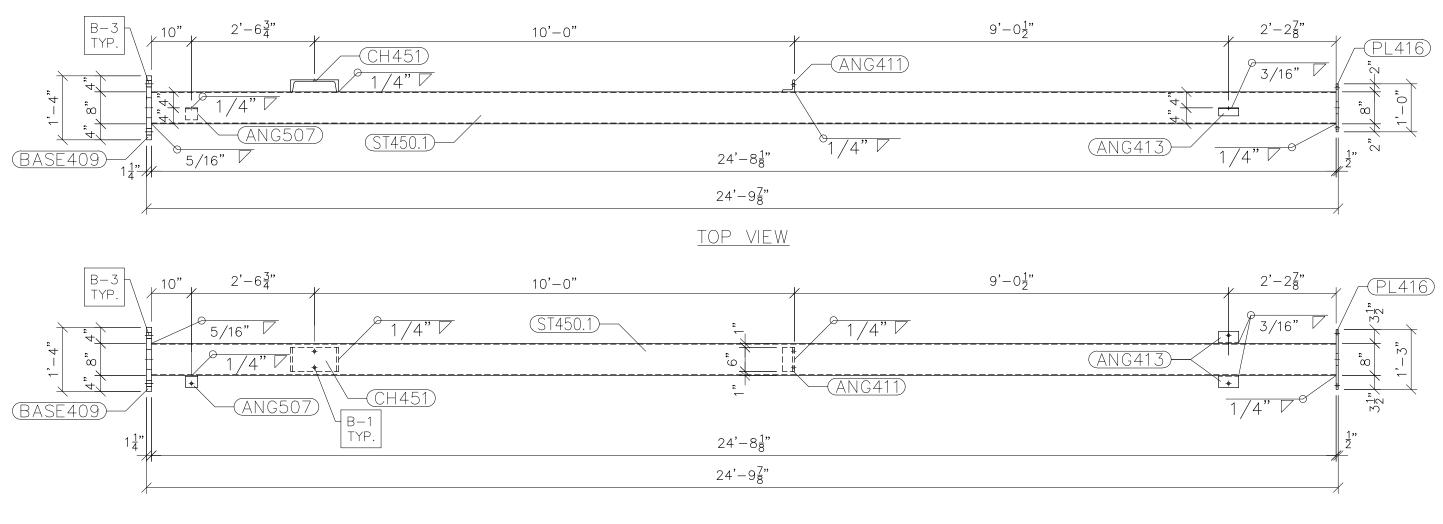


BASE409 scale: 1"=1'-0"

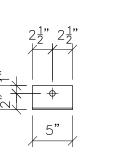
NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN $3/8"$
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

		BILL OF MATERIAL	1	
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G450	1	FOR ONE GROUP G450:		
ANG413	2	L3x2x3/16	5"	2.56
ANG507	1	L3x3x1/4	3"	1.23
BASE409	1	PL 1 1/4"×1'-4"	1'-4"	90.93
PL416	1	PL 1/2"x1'-0"	1'-3"	25.57
ST450	1	HSS8x8x3/16	24'-8 1/8"	484.41
		BLACK WEIGHT	:	604.70 LBS.
		GALVANIZED V	/EIGHT:	24.19 LBS.
		TOTAL WEIGHT	•	628.89 LBS

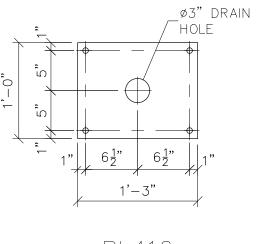
	Four UTILITY HOME TOWN UTILITY								
				11		2300 Rexwoods Driv			
	PRELIMINAR T FOR PRELIMINAL SETION DOCOMPENSION								
ENG. DATE	VK 05/10/2023			05)	/2	02	3		
NO. REVISIONS	A ISSUED FOR BID								
TH ST D A C A C A C A C A C A C A C A C A C A	TI II I	BY ED I		BY:		05, AS	HIGH SWITCH STAND	< < /20 10W	



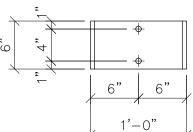
FRONT VIEW <u>G450.1</u> scale: 1/2"=1'-0"



ANG413 FRONT VIEW scale: 1"=1'-0"



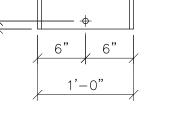




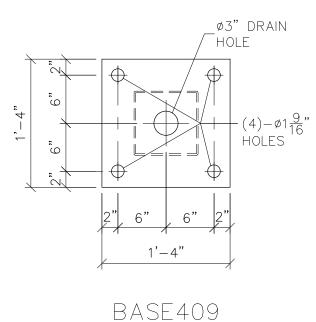
3"

ANG507 FRONT VIEW scale: 1"=1'-0"

1'-0"



CH451 FRONT VIEW scale: 1"=1'-0"



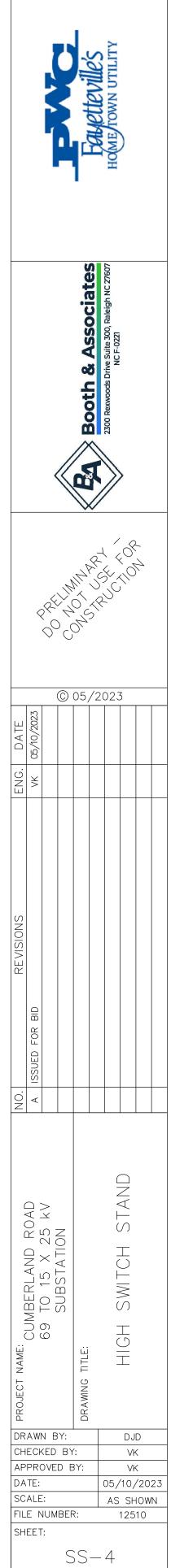
BASE409 scale: 1"=1'-0"

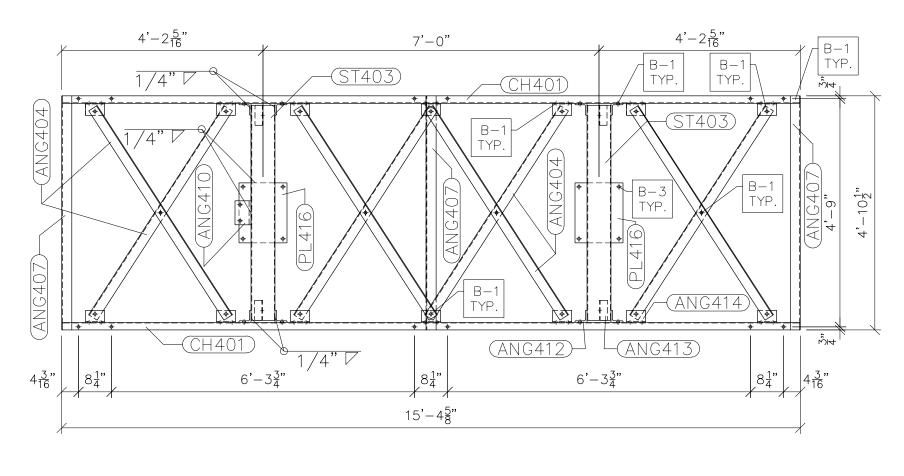
1" 4" 6"

ANG411 FRONT VIEW scale: 1"=1'-0"

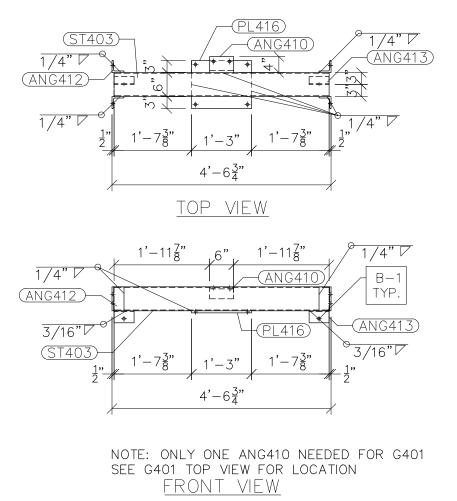
NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN $3/8$ "
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G450.1	1	FOR ONE GROUP G450.1:		
ANG411	1	L3x3x1/2	6"	4.70
ANG413	2	L3x2x3/16	5"	2.56
ANG507	1	L3x3x1/4	3"	1.23
BASE409	1	PL 1 1/4"x1'-4"	1'-4" 6"	90.93
CH451	1	C12x25	6"	12.50
PL416	1	PL 1/2"x1'-0"	1'-3"	25.57
ST450.1	1	HSS8x8x3/16	24'-8 1/8"	484.41
			1	
		BLACK WEIGHT	:	621.90 LBS.
		GALVANIZED W	EIGHT:	24.88 LBS.
		TOTAL WEIGHT:		646.78 LBS.



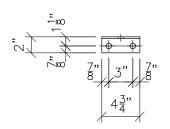


<u>G401 TOP VIEW</u> scale: 1/2"=1'-0"

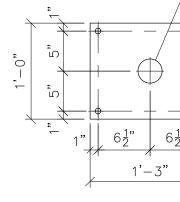


G403	
SCALE: 1/2"=1'-0"	

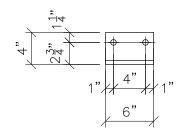
4<u>3</u>" BOTTOM VIEW



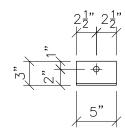
FRONT VIEW <u>ANG414</u> scale: 1"=1'-0"



PL416 scale: 1"=1'-0"

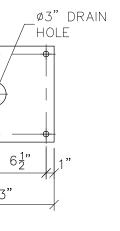


ANG410 FRONT VIEW scale: 1"=1'-0"



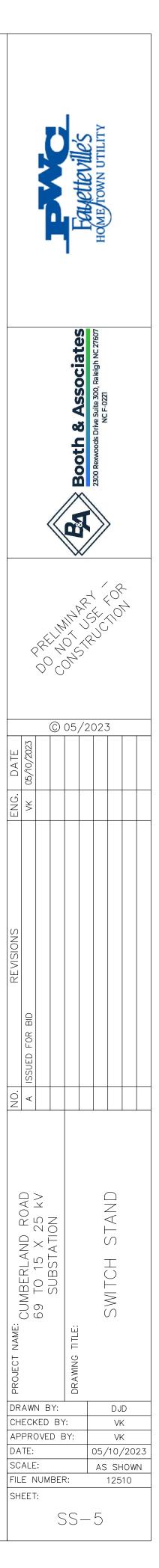
ANG412 FRONT VIEW scale: 1"=1'-0"

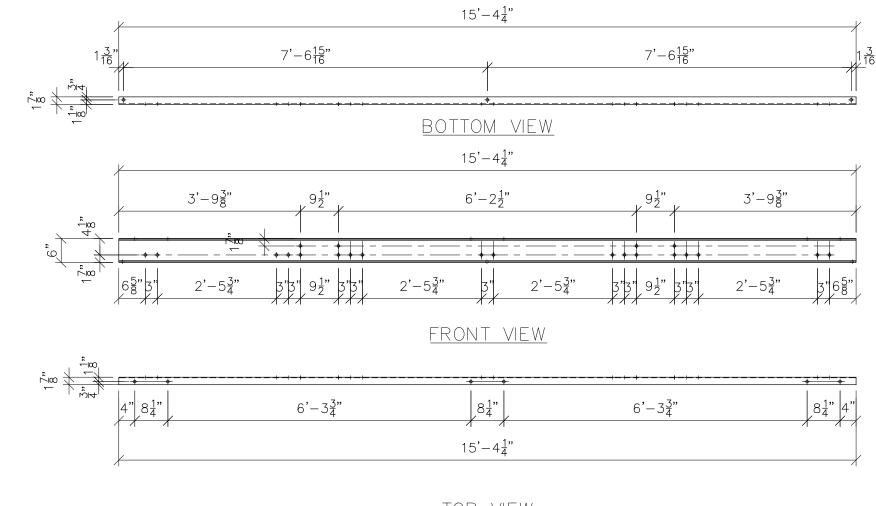
ANG413 FRONT VIEW scale: 1"=1'-0"



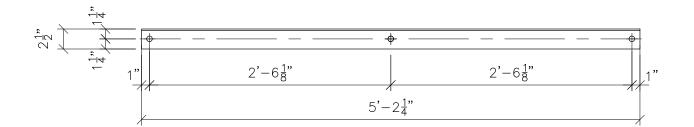
2) ALL 3) ALL 4) PIEC HIGH 5) ALL	HOT E HOLES CE MAR H CHAF WELDII	ERECTION BOLTS DIP GALVANIZED AFTER FABRICATIO 5 11/16" DIA. FOR 5/8" DIA. BOLT K STAMPED INTO METAL WITH NO RACTERS BEFORE GALVANIZING NG ELECTRODES SHALL BE E7021 ANCE 1" UNLESS NOTED	S UNLESS NO	TED
		BILL OF MATERIAL		
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G401	2	FOR ONE GROUP G401:		
ANG410	1	L4x3x1/2	6"	5.55
ANG412	8	L3x3x3/8	6" 5"	28.80
ANG413	4	L3x2x3/16	5"	5.12
ANG414	14	L3x2x3/16	4 3/4" 4'-5 3/4" 1'-3"	17.01
ST403	2	HSS6x6x3/16	/ / E Z / / "	129.96
PL416	2	PL 1/2"x1'-0"	1'-3"	51.15
CH401	2	C6x8.2	15'-4 1/4"	251.80
ST403 PL416 CH401 ANG404 ANG407	8	L2 1/2x2 1/2x3/16	$4-5 \ 5/4$ 1'-3'' $15'-4 \ 1/4''$ $5'-2 \ 1/4''$ $4'-10 \ 1/2''$ $2'-9 \ 11/16''$	127.44
ANG407	3	L2 1/2x2 1/2x3/16	4'-10 1/2"	44.90
ANG408	4	L2 1/2x2 1/2x3/16	2'-9 11/16"	34.46
		BLACK WEIGHT		696.19 LBS.
		GALVANIZED W		27.85 LBS.
		TOTAL WEIGHT:		724.04 LBS.

SEE DRAWING No. SS-4 FOR CH401, ANG404, ANG407 & ANG408 DETAILS.

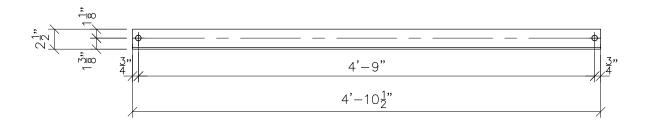




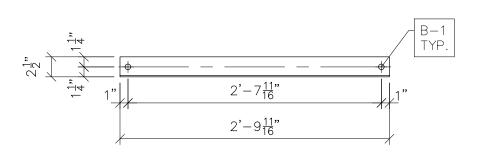
top view <u>CH401</u> scale: 1/2"=1'-0"



ANG404 FRONT VIEW scale: 1"=1'-0"



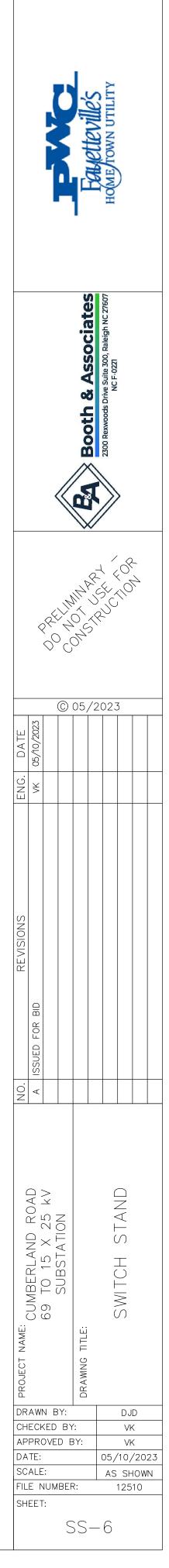


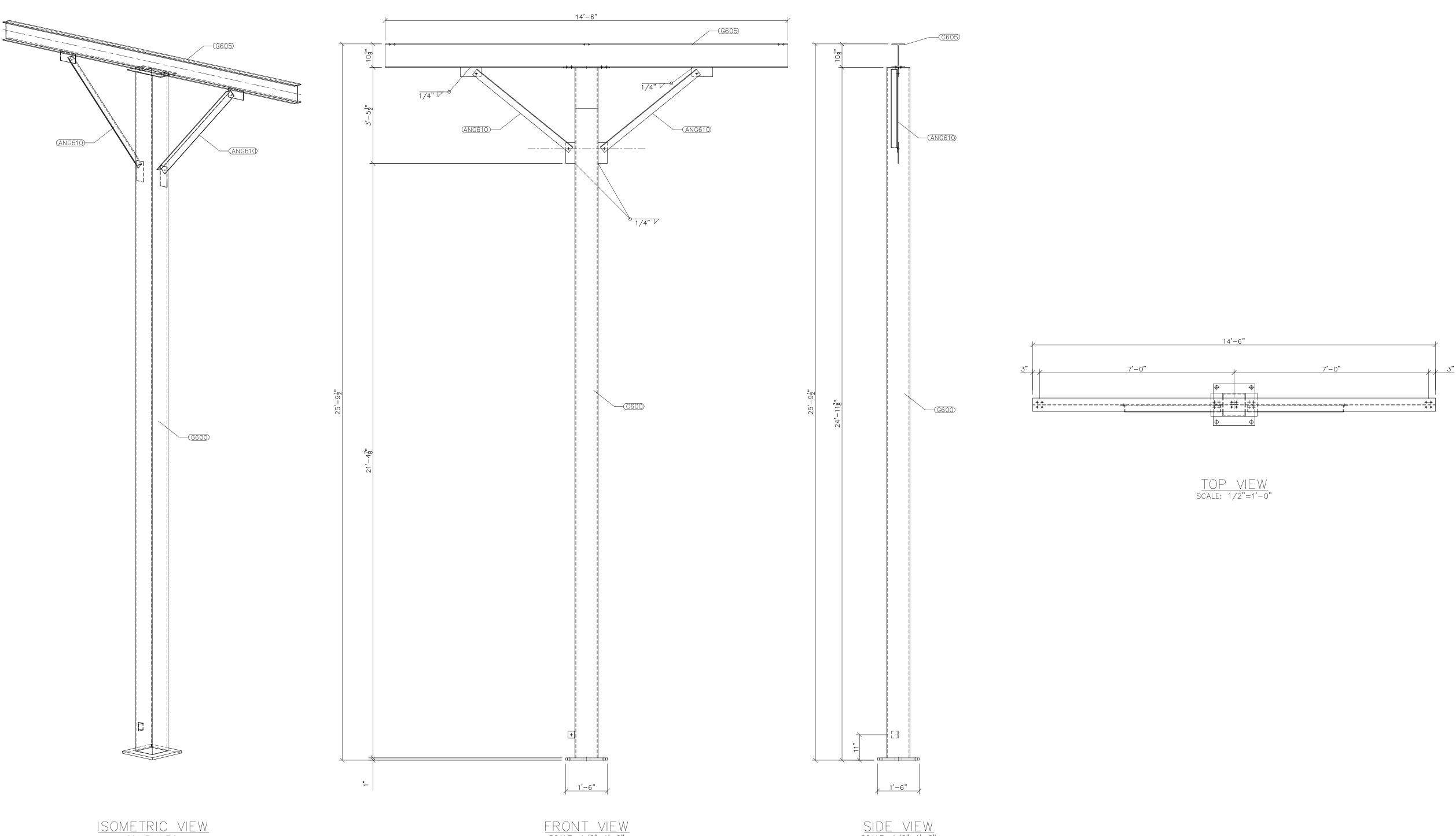


ANG408 FRONT VIEW scale: 1"=1'-0"

NOTE	ES:				
1)	ASTM	325	ERECTION	BOLTS	

- ASIM 325 ERECTION BOLIS
 ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
 ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
 PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN 3/8" HIGH CHARACTERS BEFORE GALVANIZING
 ALL WELDING ELECTRODES SHALL BE E7021
 EDGE DISTANCE 1" UNLESS NOTED



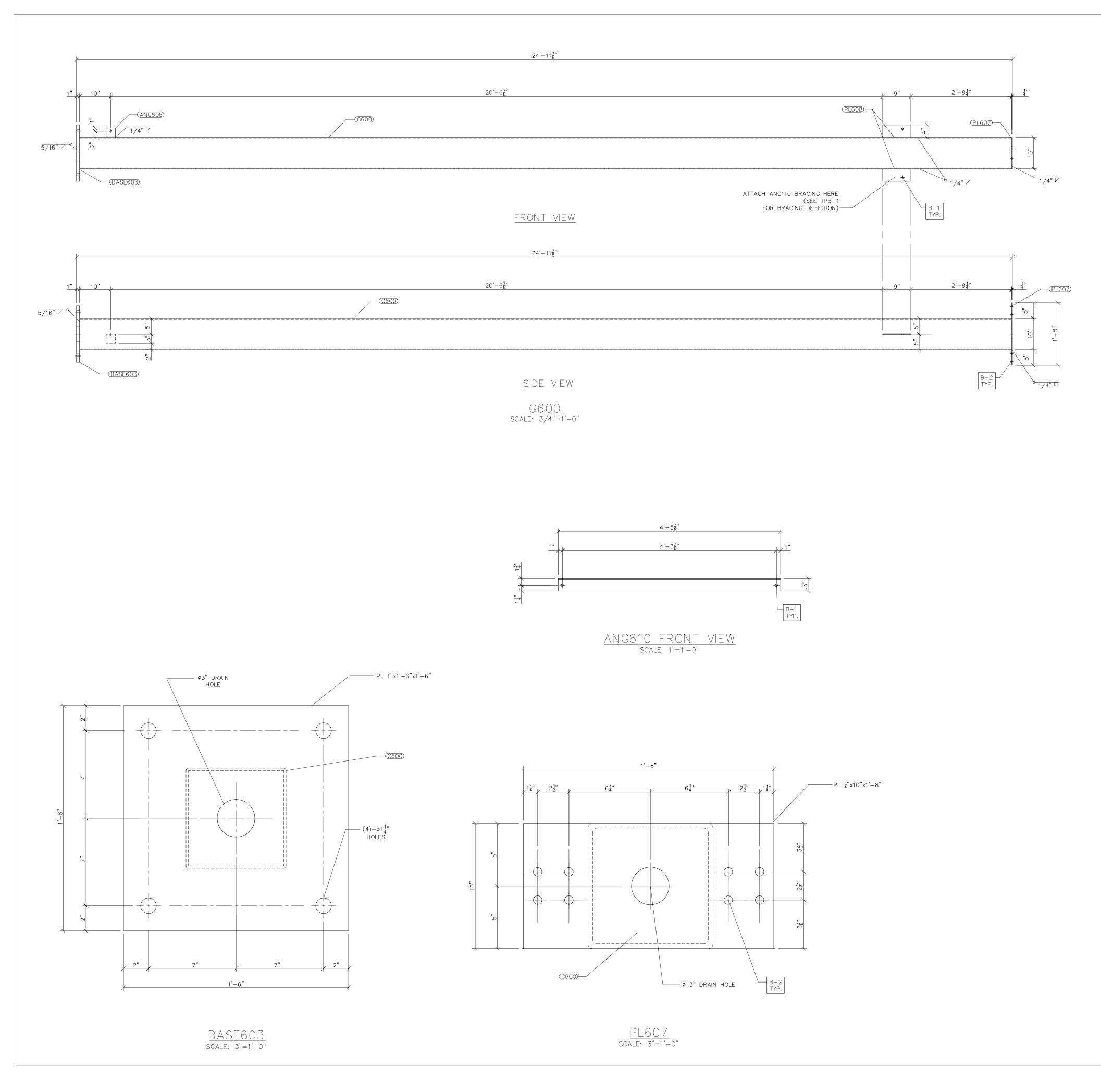


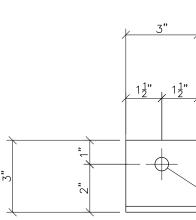
ISOMETRIC VIEW scale: n.t.s.

FRONT VIEW scale: 1/2"=1'-0"

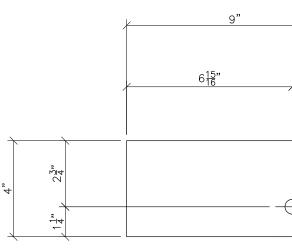
SIDE VIEW scale: 1/2"=1'-0"

	Fault to Miles Home rown utility								
	Booth & Associates 2300 Rexwoods Drive Suite 300, Raleigh NC 27607 NC F-0221								
	PRELIMITARY FOR DOCOMPRELIMITARY								
ENG. DATE	VK 05/10/2023			05,	/20		3		
REVISIONS	A ISSUED FOR BID								
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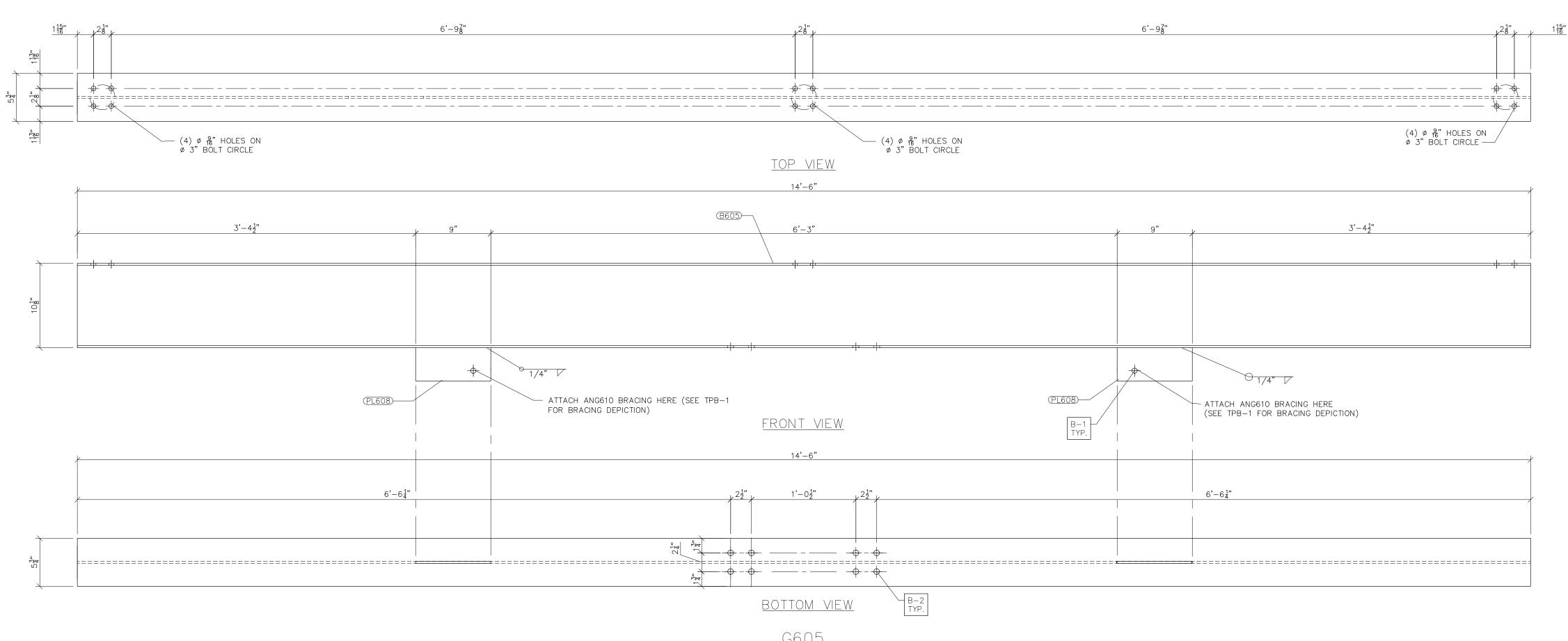


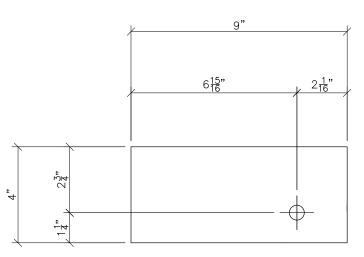
ANG606 FRON scale: n.t.s.



PL608 FRONT scale: n.t.s.

3) ALL HOLES 11/16" DIA.	ZED AFTER FABRICATION (ASTM A123) . FOR 5/8" DIA. BOLTS UNLESS NOTED INTO METAL WITH NOT LESS THAN 3/8' FORE GALVANIZING DES SHALL BE E7021 .ESS NOTED ERIAL LENGTH WEIGHT	HOME FOWN UTILITY
BLACK M GALVANI TOTAL W SEE TPB-1 FOR GROU	ZED WEIGHT: 53.76 LBS. /EIGHT: 1397.83 LBS.	Booth & Associates In Front Revealed In the States of Rategin NC 27607 NC F-027
		Line Line <thlin< th=""> <thline< th=""> Line <t< th=""></t<></thline<></thlin<>
$\frac{VT VIEW}{.s.}$		PROJECT NAME: CUMBERLAND ROAD 69 TO 15 X 25 kV 69 TO 15 X 25 kV SUBSTATION DRAWNG TITLE: 3Ø BUS STAND 3Ø BUS STAND
<u>VIEW</u>		DRAWN BY: DJD CHECKED BY: VK APPROVED BY: VK DATE: 05/10/2023 SCALE: AS SHOWN FILE NUMBER: 12510 SHEET: TPB-2





PL608 FRONT VIEW scale: n.t.s. <u>G605</u> SCALE: 1-1/2"=1'-0

	Fauetteville's Home Town UTILITY							
	Booth & Associates 2300 Rexwoods Drive Sulta 300, Rateigh NC 27607 NC F-0221							
	PRELIMINART FOR PRELIMINART FOR DOCOMPRUTION DOCOMPRUTING							
DATE 05/10/2023	/ /	©	05,	/20	023	3		
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SCAL FILE SHEE	NUM		א: ⊃E	3-		125	10W 10	

2 3 4 5 6) AL) PIE HI() AL	L HOLES 11/16" DIA. FOR 5/8" DIA TECE MARK STAMPED INTO METAL V GH CHARACTERS BEFORE GALVANIZ L WELDING ELECTRODES SHALL BE GE DISTANCE 1" UNLESS NOTED	A. BOLTS UN WITH NOT LES ZING	LESS NOTÉD
		BILL OF MATERIAL		
OS. NO.	QTY	DESC.	LENGTH	WEIGHT
G605	1	FOR ONE GROUP G605:		
B605 PL608	1 2	W10x22 PL 1/4"x4"	14'-6" 9"	319.00 5.10
		BLACK WEIGHT:		324.10 LBS.
		GALVANIZED WEIGH	Γ:	12.96 LBS.
		TOTAL WEICHT.	-	337 06 LBS

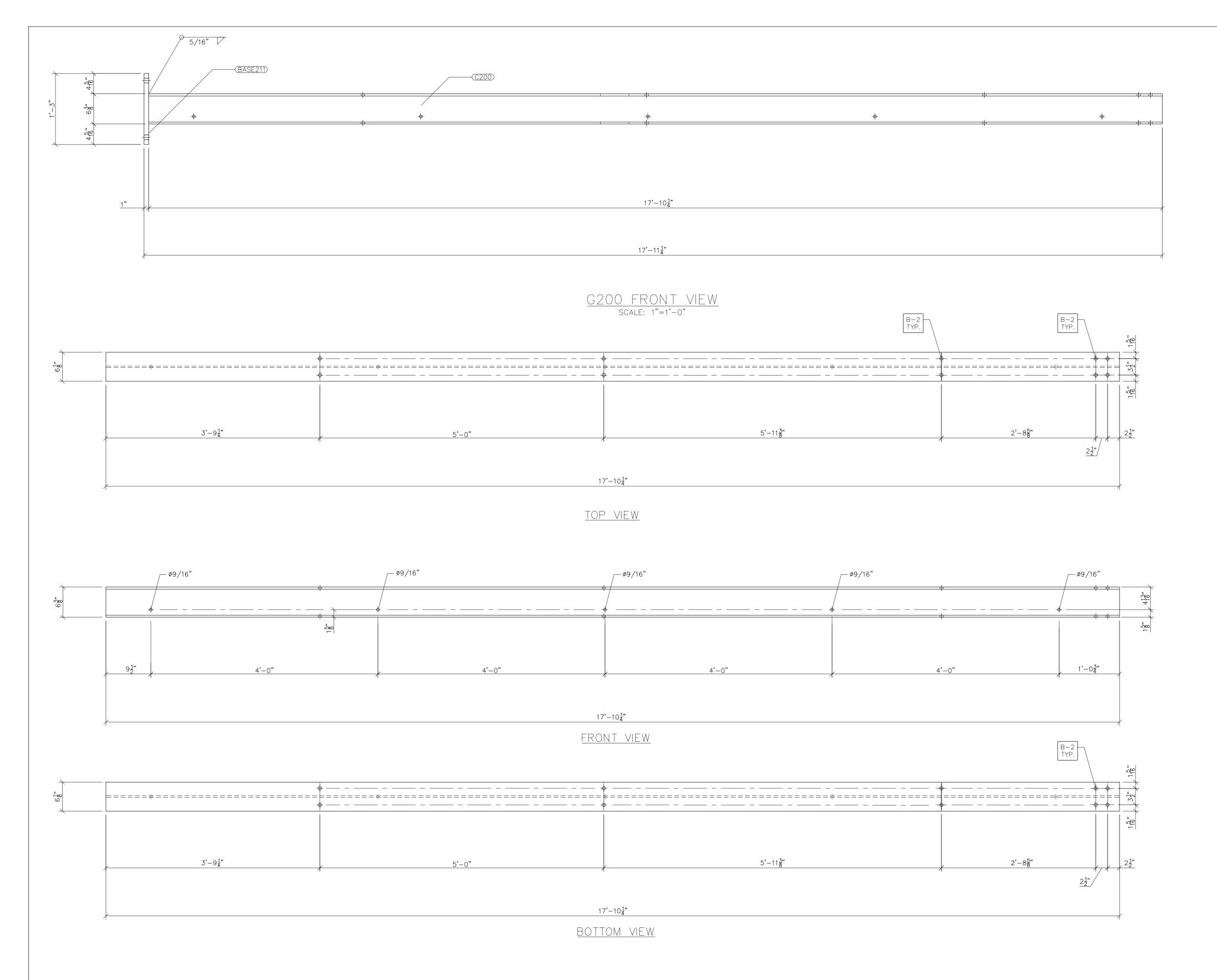
2) ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)

NOTES:

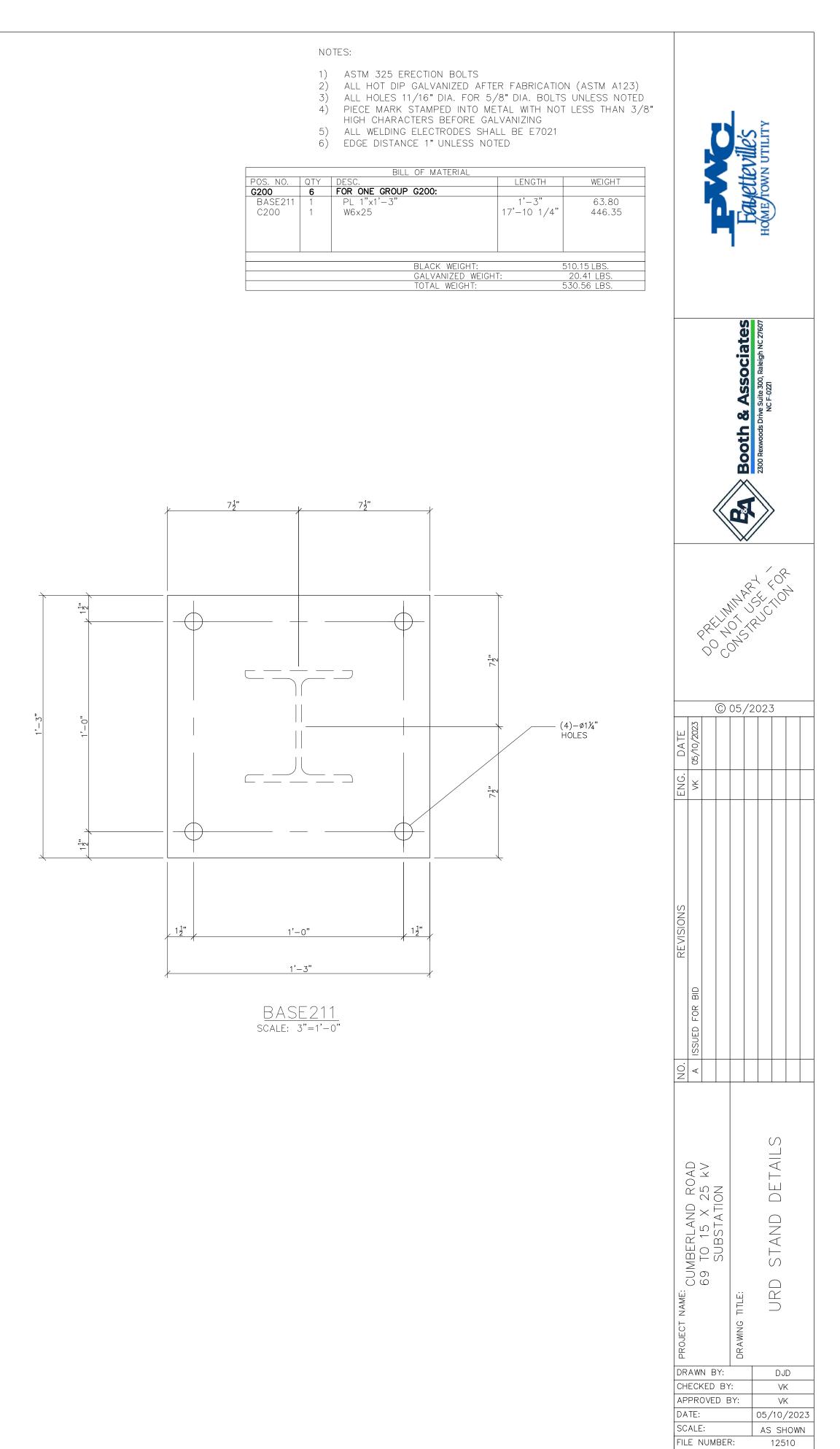
1) ASTM 325 ERECTION BOLTS

 TOTAL WEIGHT:
 337.06 LBS.

 SEE TPB-1 FOR GROUP G605 AND BRACING LOCATIONS

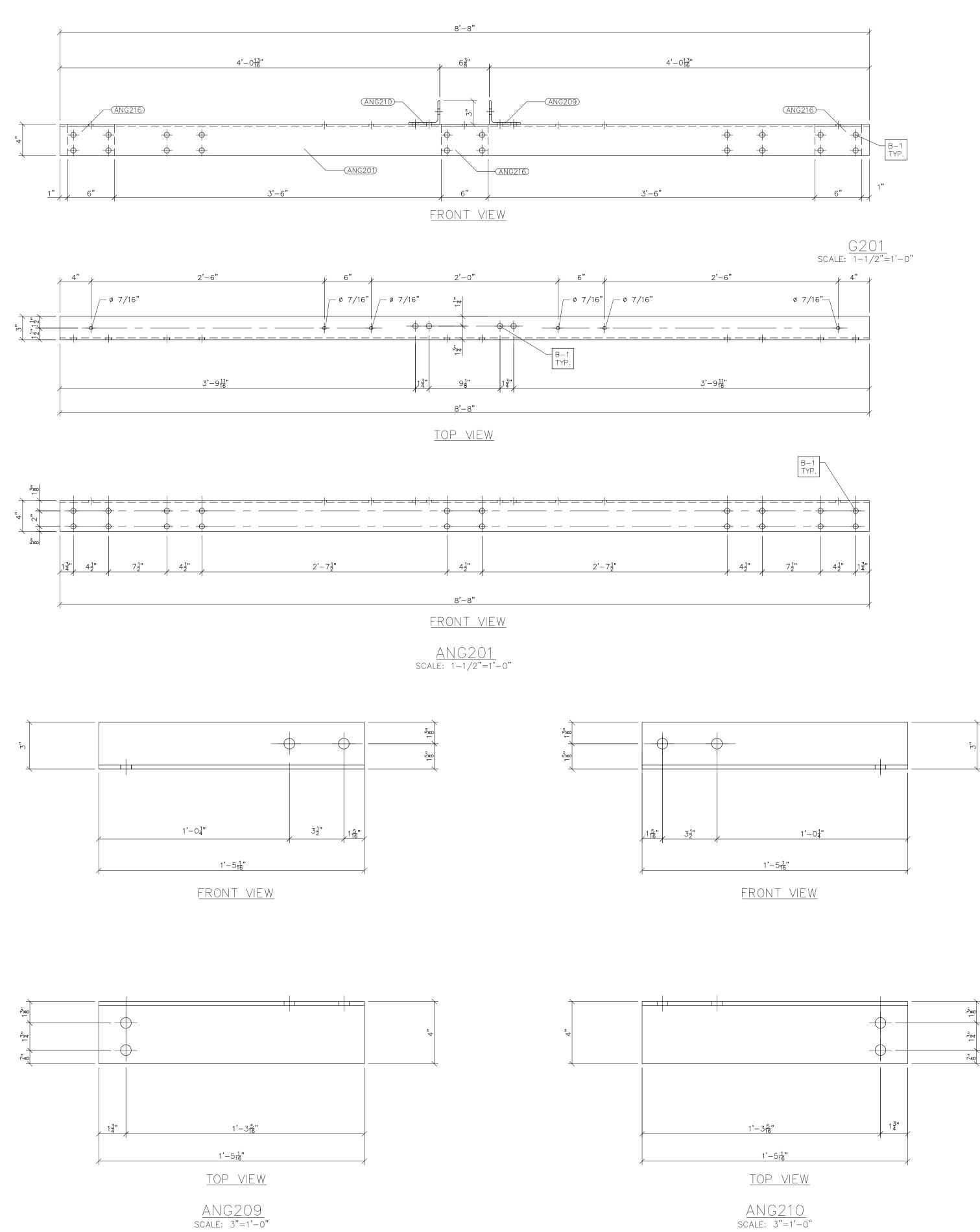


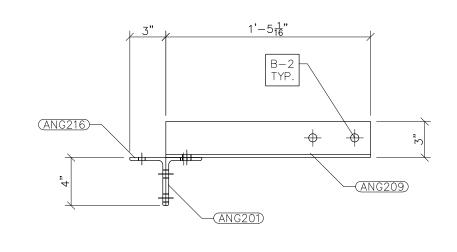
<u>C200</u> SCALE: 1"=1'-0"



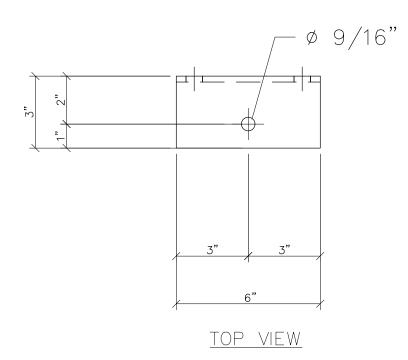
SHEET:

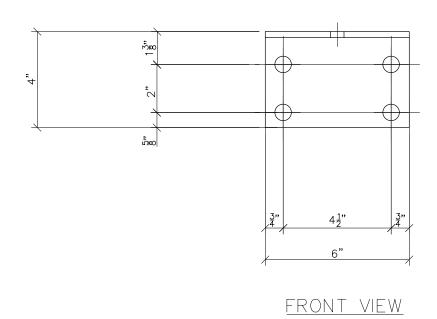
URD-1





<u>right view</u>

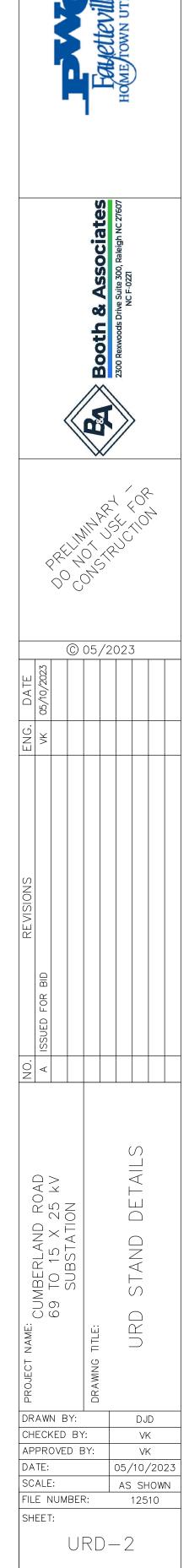


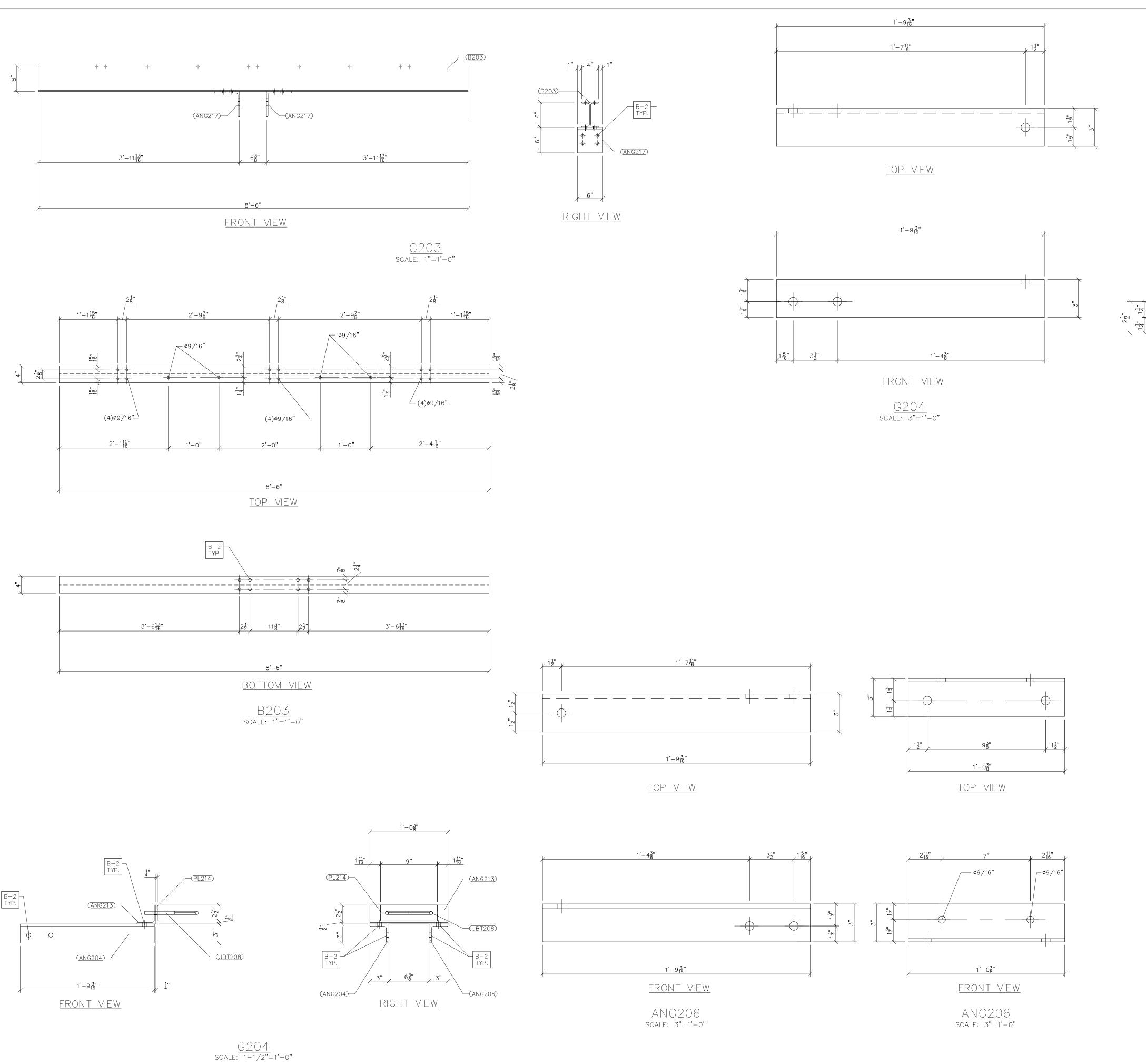


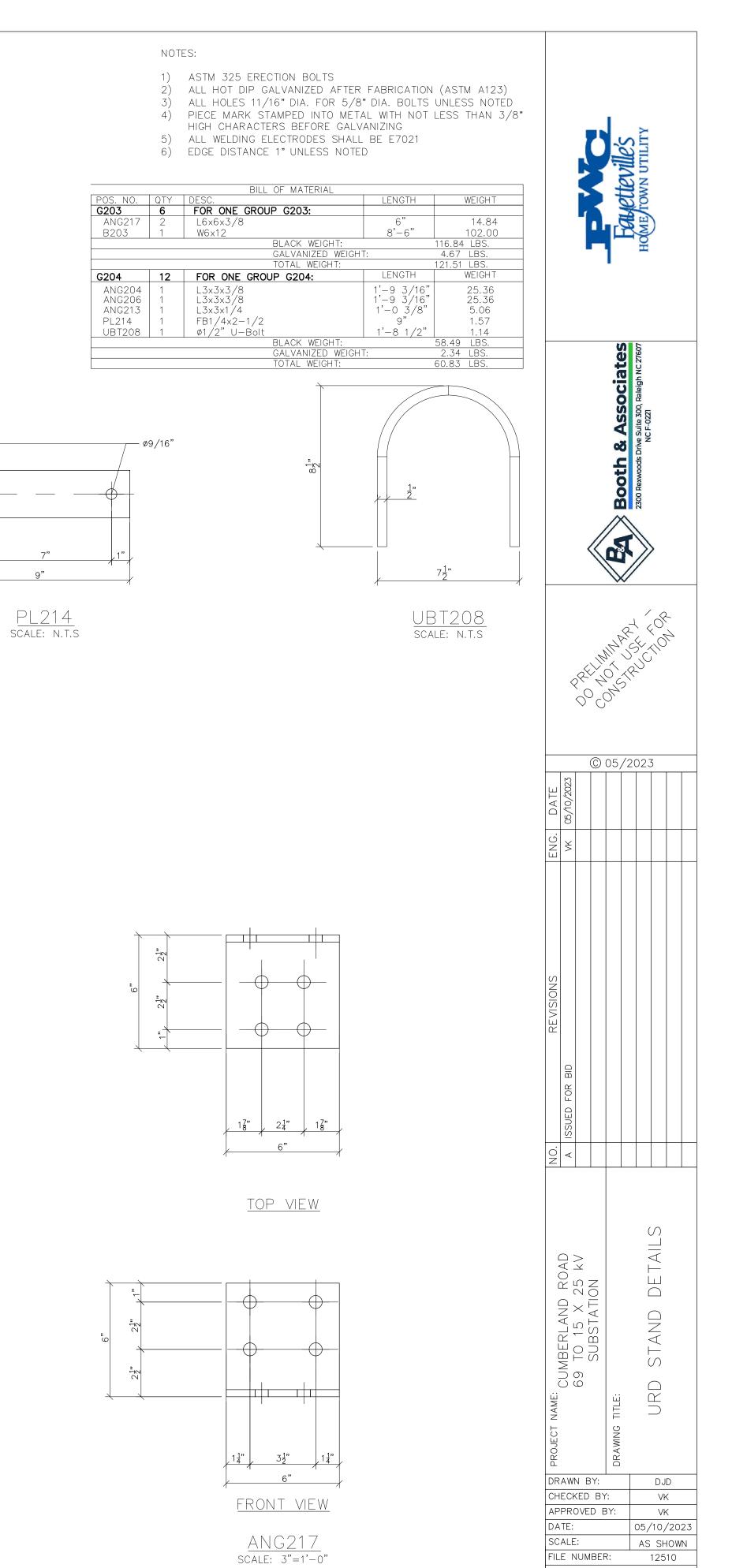
ANG216 scale: 3"=1'-0"

NOT	ES:
1)	ASTM 325 ERECTION BOLTS
2)	ALL HOT DIP GALVANIZED AFTER FABRICATION (ASTM A123)
3)	ALL HOLES 11/16" DIA. FOR 5/8" DIA. BOLTS UNLESS NOTED
4)	PIECE MARK STAMPED INTO METAL WITH NOT LESS THAN $3/8$ "
	HIGH CHARACTERS BEFORE GALVANIZING
5)	ALL WELDING ELECTRODES SHALL BE E7021
6)	EDGE DISTANCE 1" UNLESS NOTED

BILL OF MATERIAL				
POS. NO.	QTY	DESC.	LENGTH	WEIGHT
G201	6	FOR ONE GROUP G201:		
ANG201	1	L4x3x1/4	8'-8"	50.27
ANG209	1	L4x3x1/4	1'-5 1/16"	8.25
ANG210	1	L4x3x1/4	1'-5 1/16"	8.25
ANG216	3	L4x3x1/4	6"	8.70
			1	1
BLACK WEIGHT: 75.47 LBS.				
GALVANIZED WEIGHT: 3.01 LBS.				3.01 LBS.
TOTAL WEIGHT: 78.99 LBS.				





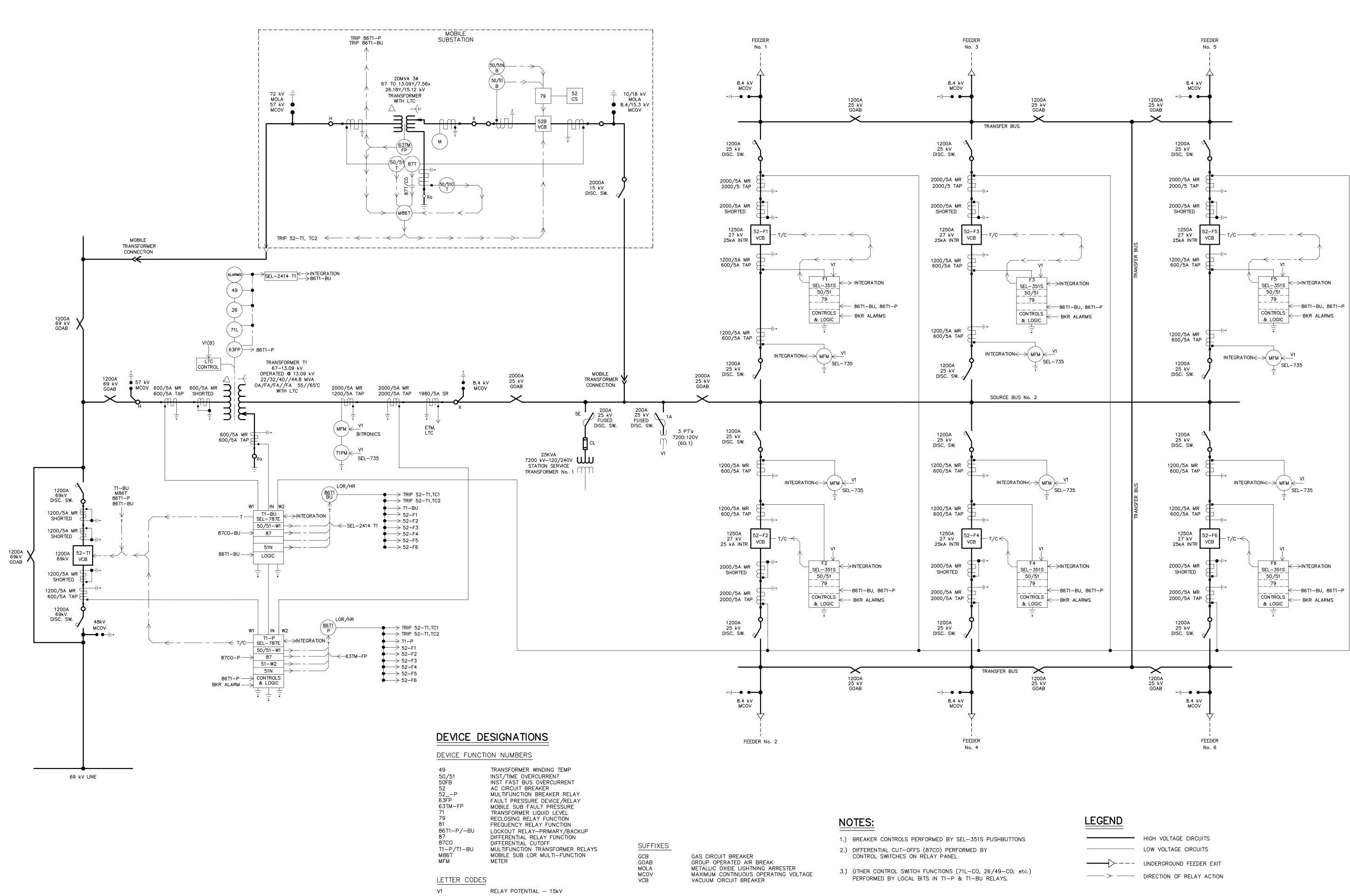


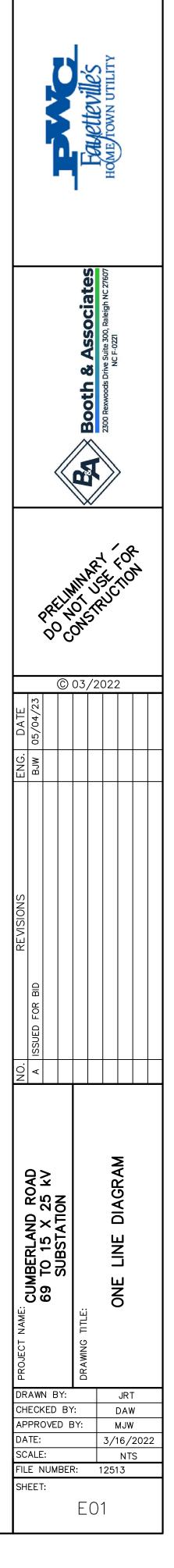


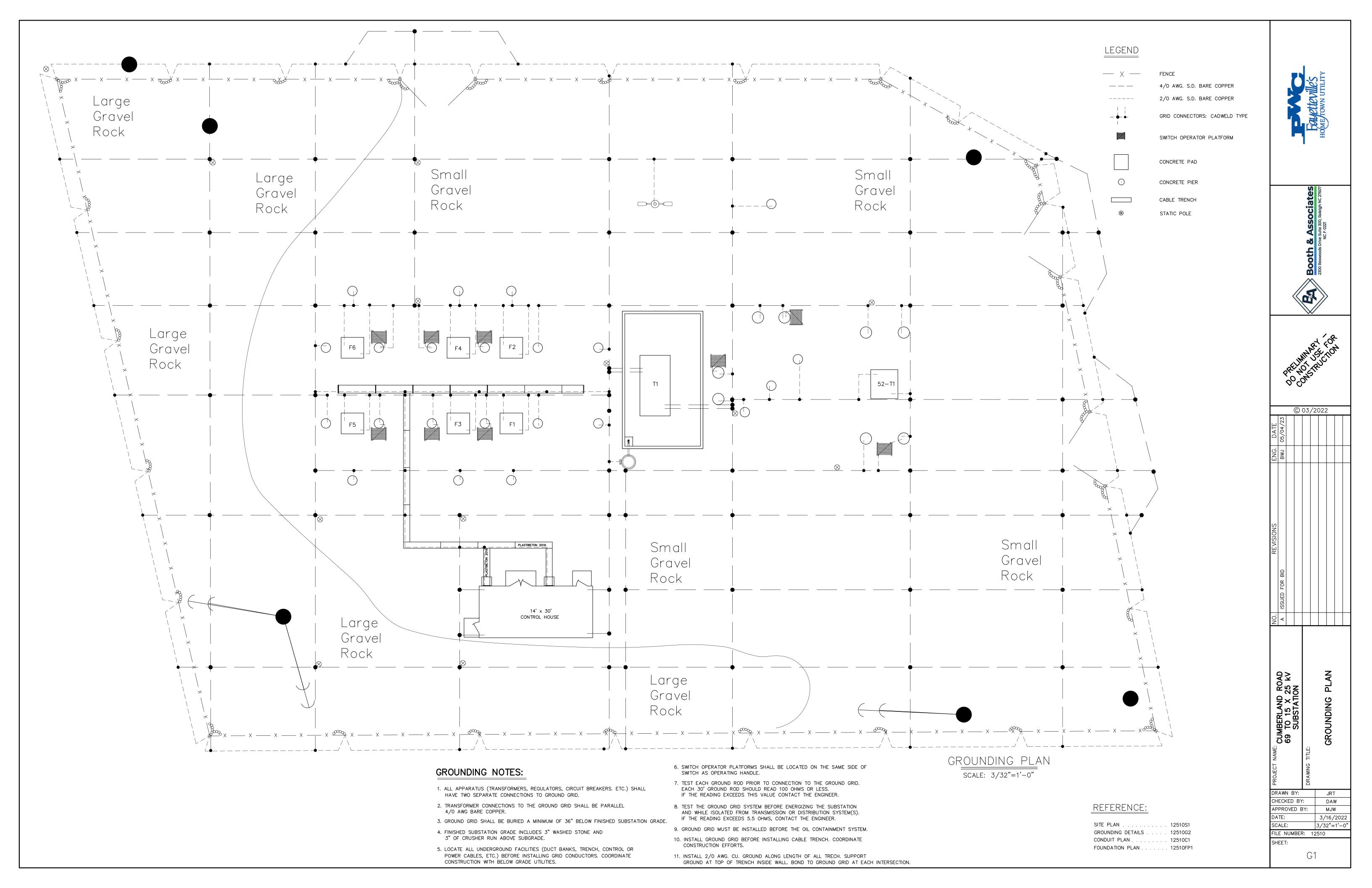
SHEET: URD-3

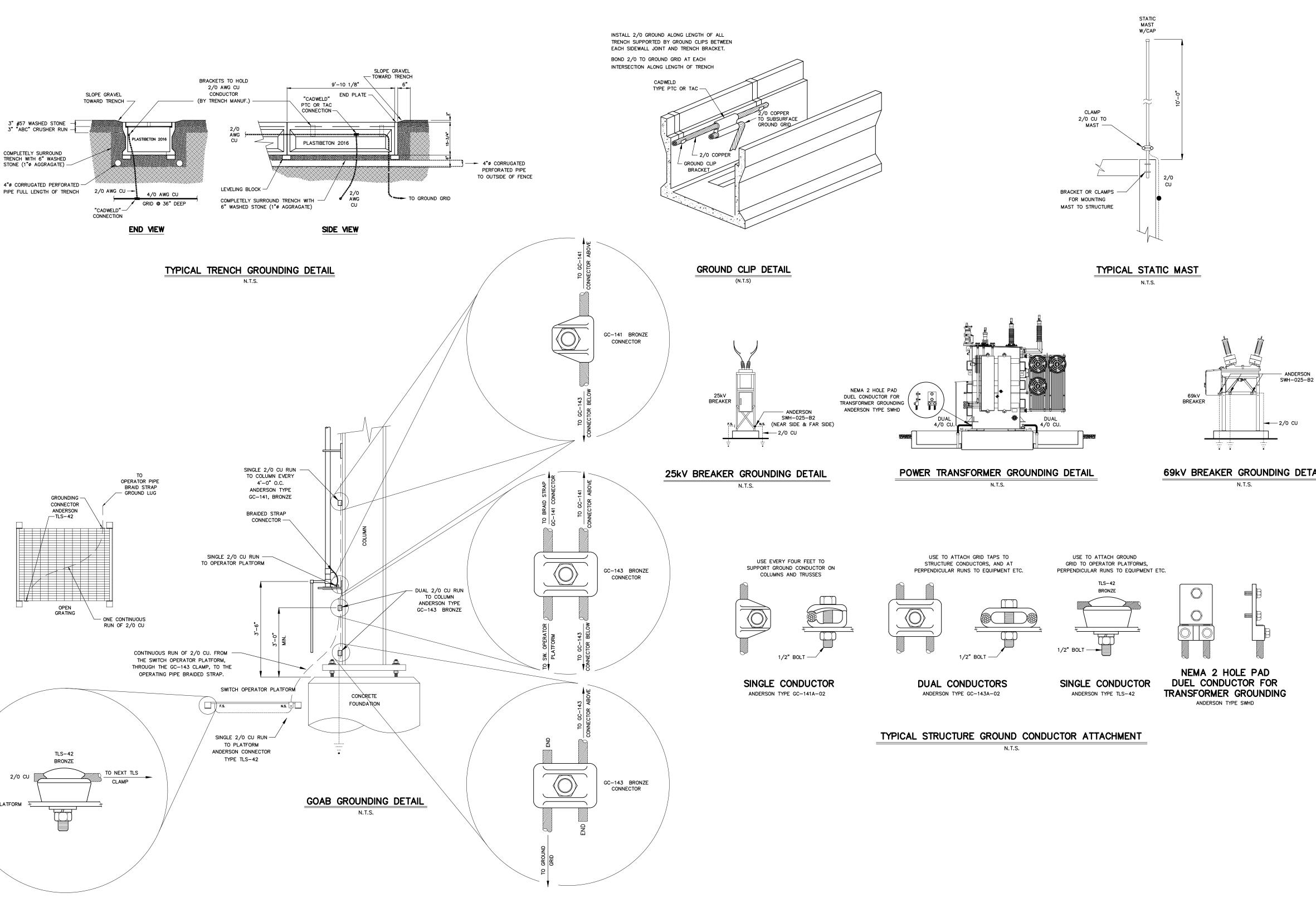
05/10/2023

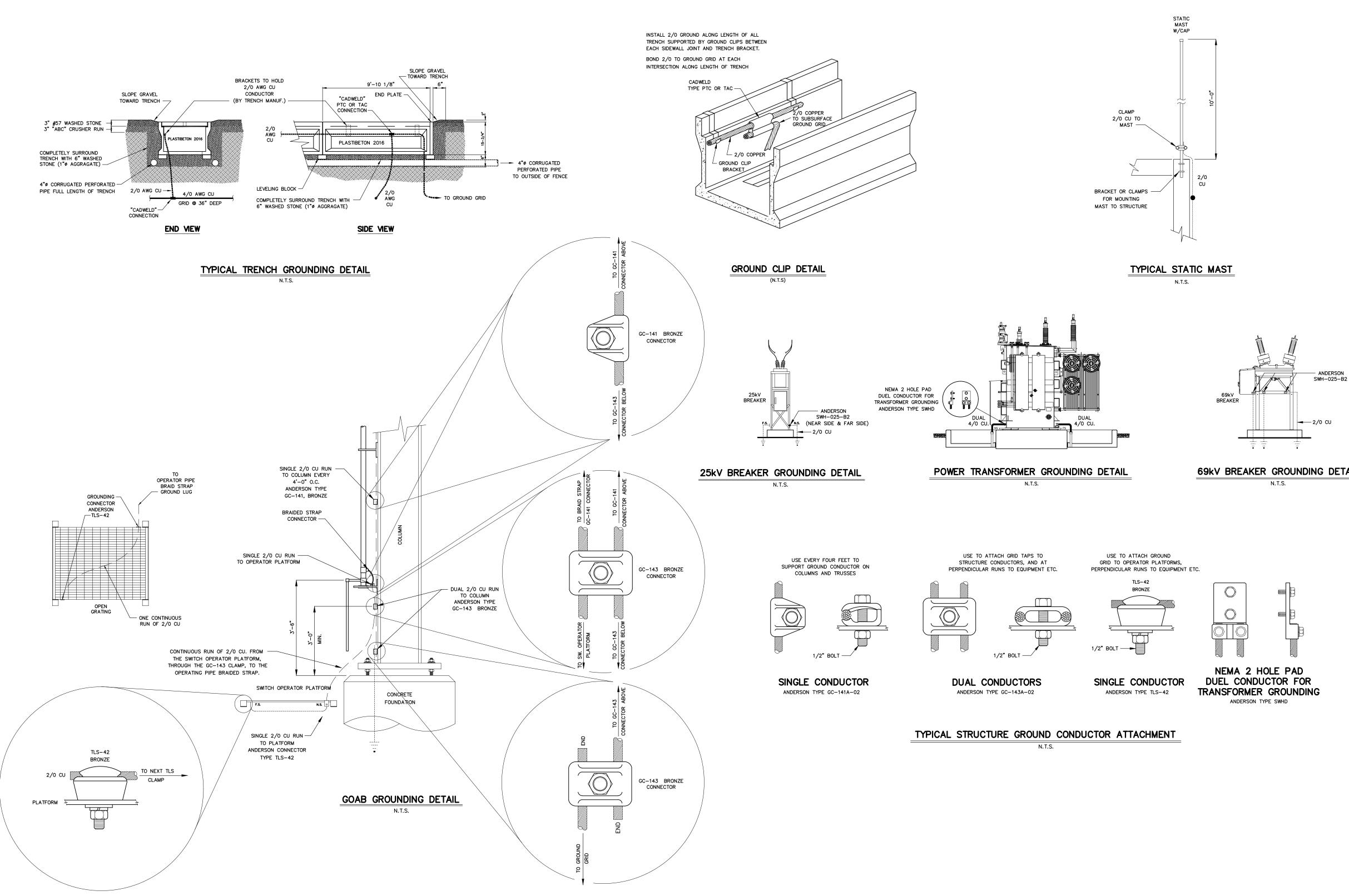
AS SHOWN 12510



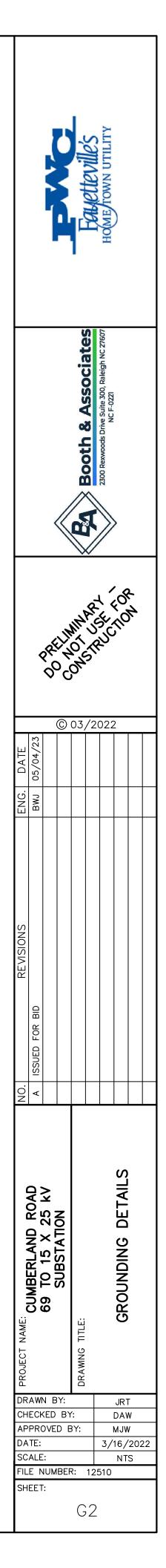


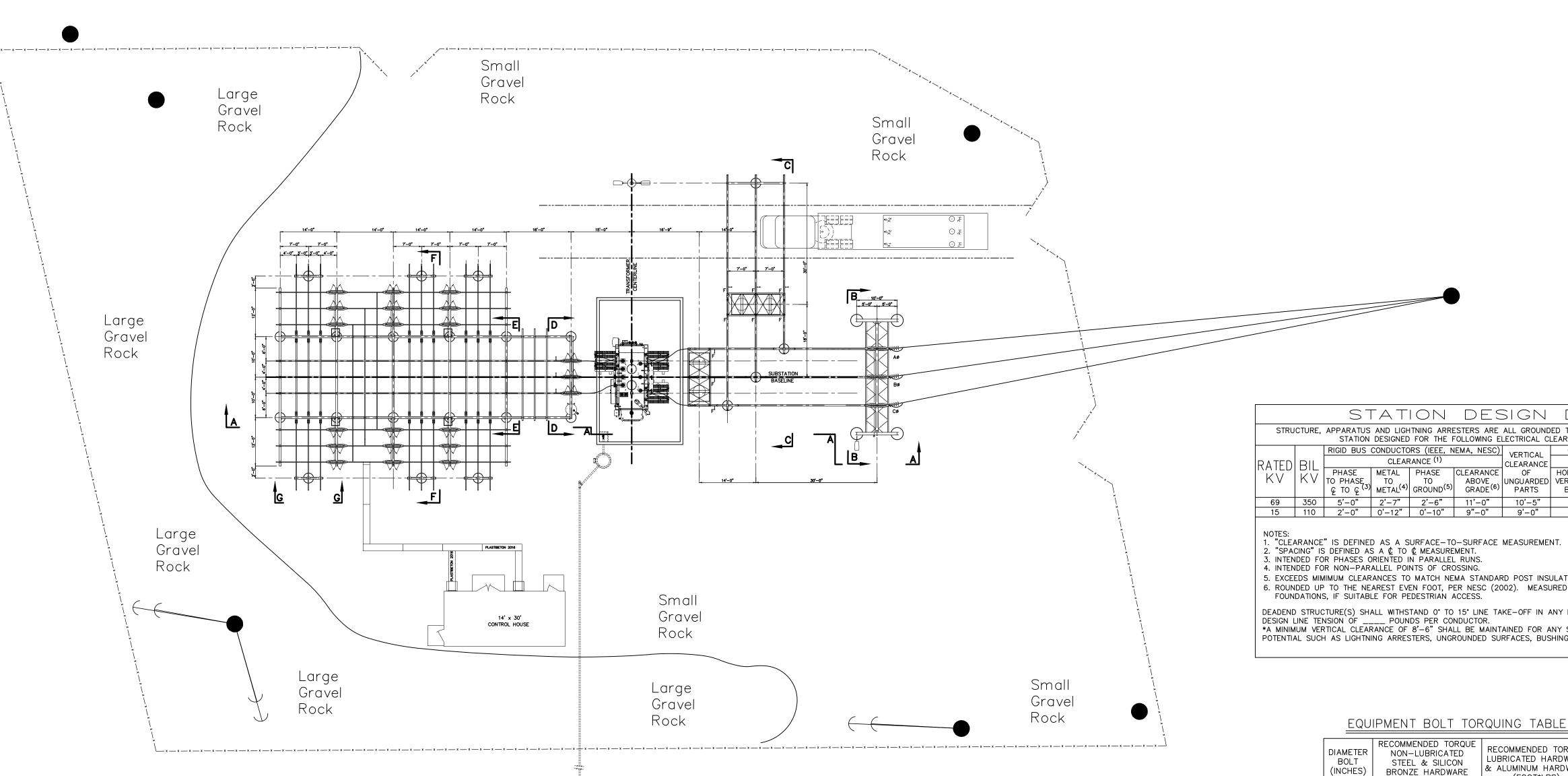






69kV BREAKER GROUNDING DETAIL





<u>plan view</u> SCALE: 3/32" = 1'-0" the second

0

CONDUCTOR/BUS AMPACITIES

CONDUCTOR	APPROX. CURRENT CARRYING CAPACITY*
TUBING, 4" NPS SCH. 80 AL.	3720 AMPS.
TUBING, 3" NPS SCH. 80 AL.	2760
TUBING, 2" NPS SCH. 80 AL.	1700
TUBING, 4" NPS SCH. 40 AL.	3165
TUBING, 3" NPS SCH. 40 AL.	2425
TUBING, 2" NPS SCH. 40 AL.	1465
ACSR, 1272 MCM, 26/7	1200
ACSR, 954 MCM, 26/7	1010
ACSR, 795 MCM, 26/7	900
ACSR, 336.4 MCM, 18/1	530
ACSR, 2/0 AWG, 6/1	340
ACSR, 1/0 AWG, 6/1	230
COPPER, 1000 MCM, 61 STD.	1285
COPPER, 750 MCM, 61 STD.	1075
COPPER, 500 MCM, 37 STD.	830
COPPER, 4/0 AWG, 7 STD.	480
COPPER, 2/0 AWG, 7 STD.	355
COPPER, #2 AWG, SOLID	231
UABC, 4" x 4" x 3/8"	3125
UABC, 4" x 4" x 1/4"	2625
AL, BAR 3" x 1/2"	1350
AL, BAR 3" x 1/4"	938
INSUL. 1/0 34.5KV J.C.N.	235

* AC. 60 HZ, 40° C AMBIENT, 50° C RISE HORIZONTAL ORIENTATION, OUTDOORS, WIND = 2 FPS

S٦	ΓAT	ION	DES	SIGN	DAT	А	
	RATUS AND LIGHTNING ARRESTERS ARE ALL GROUNDED TO THE SAME GROUNDING SYSTEM. TATION DESIGNED FOR THE FOLLOWING ELECTRICAL CLEARANCES/SPACINGS:						
) BUS (CONDUCTO	RS (IEEE, N	IEMA, NESC)	VERTICAL	GROUP-OPE	ERATED SWITCH	HES (NEMA)
CLEARANCE ⁽¹⁾			CLEARANCE	Ę.	TO 🖞 SPACING	(2)	
ASE HASE ၀ ၇ ⁽³⁾	METAL TO METAL ⁽⁴⁾		CLEARANCE ABOVE GRADE ⁽⁶⁾	OF UNGUARDED PARTS	HORN GAP VERT./HOR. BREAK	DISCONNECT VERTICAL BREAK	DISCONNECT HORIZONTAL BREAK
-0"	2'-7"	2'-6"	11'-0"	10'-5"	7'-0"	5'-0"	6'-0"
-0"	0'-12"	0'–10"	9"-0"	9'-0"	3'-0"	2'-0"	2'-6"

4. INTENDED FOR NON-PARALLEL POINTS OF CROSSING.

5. EXCEEDS MIMIMUM CLEARANCES TO MATCH NEMA STANDARD POST INSULATOR DIMENSIONS.
 6. ROUNDED UP TO THE NEAREST EVEN FOOT, PER NESC (2002). MEASURED FROM TOP OF EQUIPMENT FOUNDATIONS, IF SUITABLE FOR PEDESTRIAN ACCESS.

DEADEND STRUCTURE(S) SHALL WITHSTAND 0° TO 15° LINE TAKE-OFF IN ANY DIRECTION WITH A DESIGN LINE TENSION OF _____ POUNDS PER CONDUCTOR. *A MINIMUM VERTICAL CLEARANCE OF 8'-6" SHALL BE MAINTAINED FOR ANY SURFACE OF INDETERMINATE

POTENTIAL SUCH AS LIGHTNING ARRESTERS, UNGROUNDED SURFACES, BUSHINGS, AS PER NESC RULE 124.A.3.

EQUIPMENT BOLT TORQUING TABLE

DIAMETER BOLT (INCHES)	RECOMMENDED TORQUE NON-LUBRICATED STEEL & SILICON BRONZE HARDWARE (FOOT*LBS)	RECOMMENDED TORQUE LUBRICATED HARDWARE & ALUMINUM HARDWARE (FOOT*LBS)			
1/2" 5/8" 3/4"	40 55 70	25 40 60			

INSTALLATION NOTES:

1. MATERIALMAN/FABRICATOR VERIFY THAT CONDUCTOR TERMINAL PADS MATCH AND FIT ONTO SWITCH TERMINAL PADS (SIZE, NEMA RATING AND SHOULDER). EQUIPMENT VIEW IS PRELIMINARY. WAITING ON VENDOR DRAWINGS. CONTRACTOR TO BRING GRADE AROUND NEW A-FRAME UP TO MATCH FOUNDATION REVEALS TO ALLOW ACCESS TO BREAKER AND SWITCH OPERATORS. 4. MINOR GRADING TO BE DISCUSSED AT PRE-BID MEETING

LEGEND:

STATIC POLE

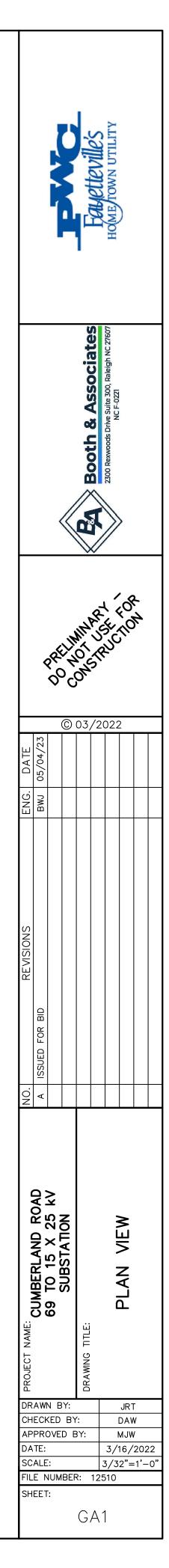
- AREA LIGHTS

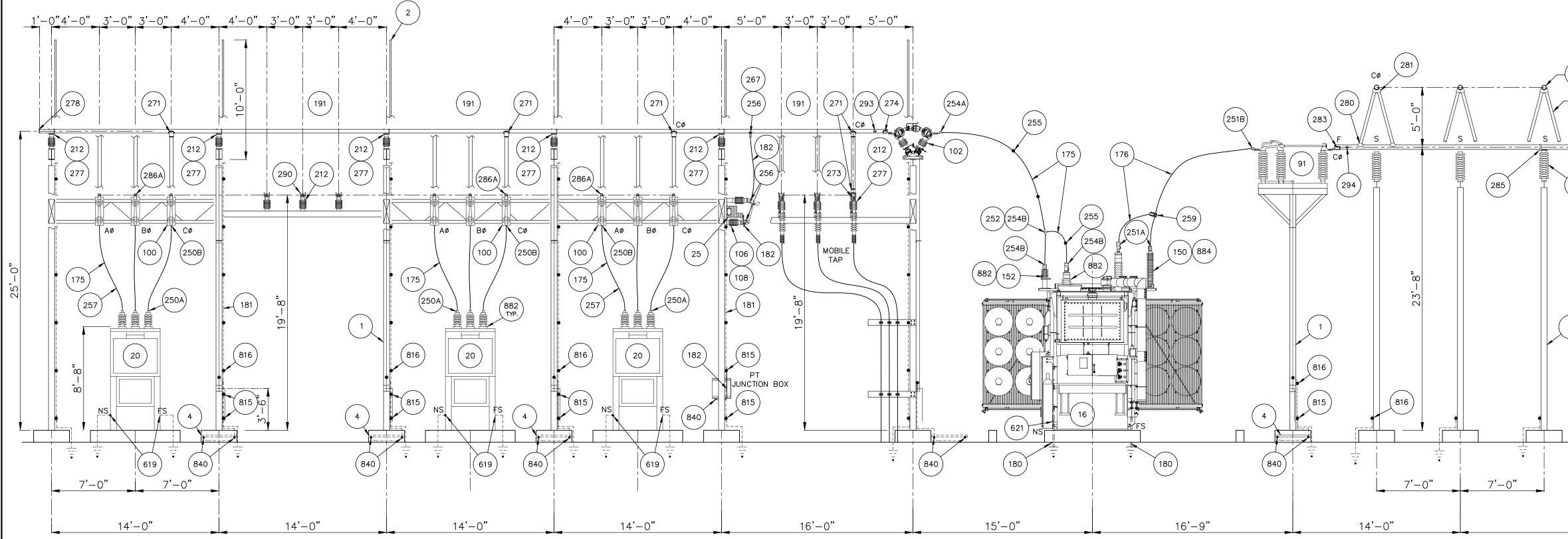
F FIXED CONNECTION

s SLIP FIT

REFERENCES

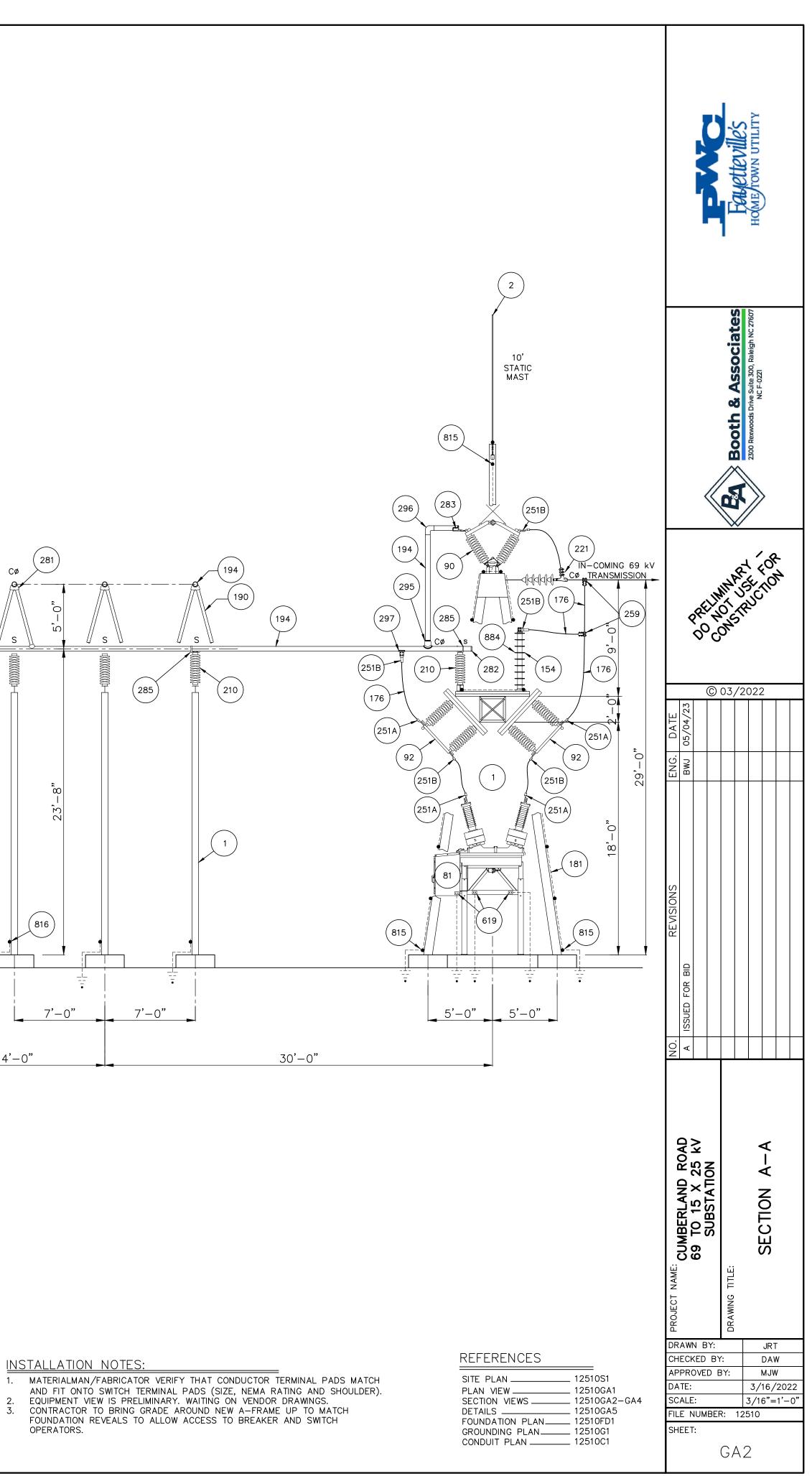
SITE PLAN	12510S1
0	
SECTION VIEWS	12510GA2-GA4
	120100/12 0/11
DETAILS	12510GA5
	120100/10
FOUNDATION PLAN	12510FD1
	12010101

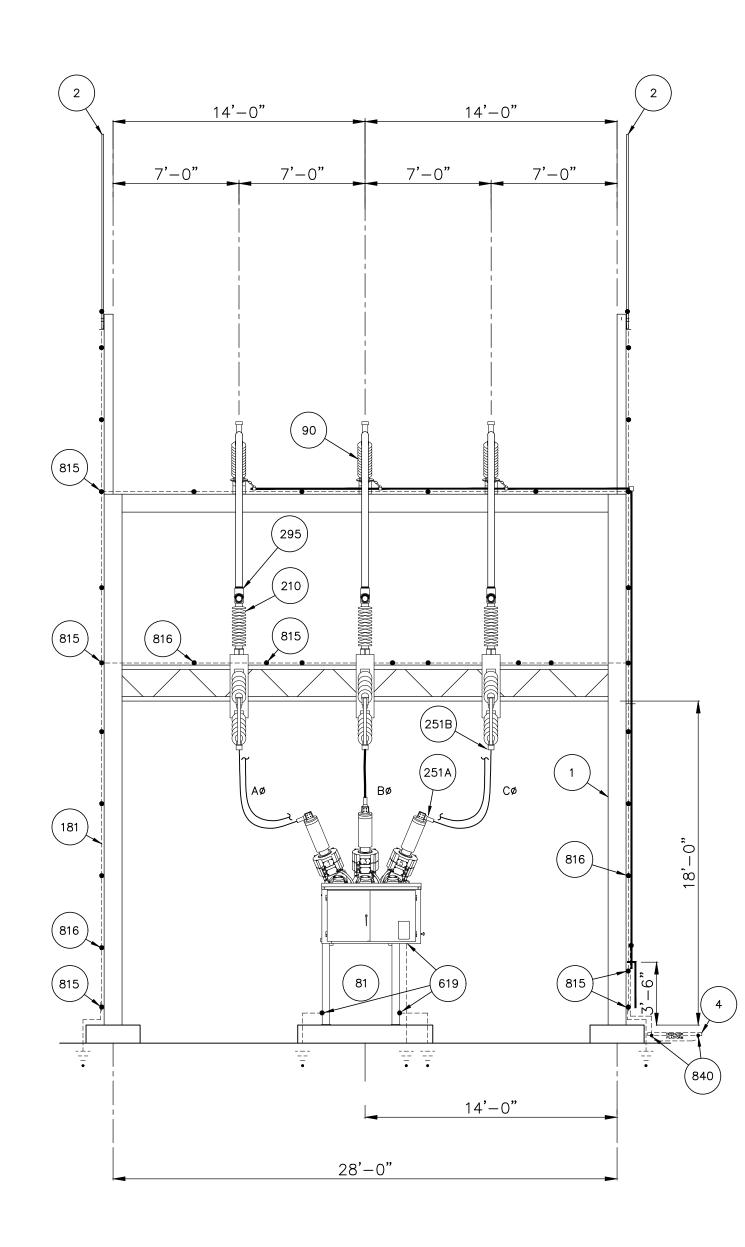




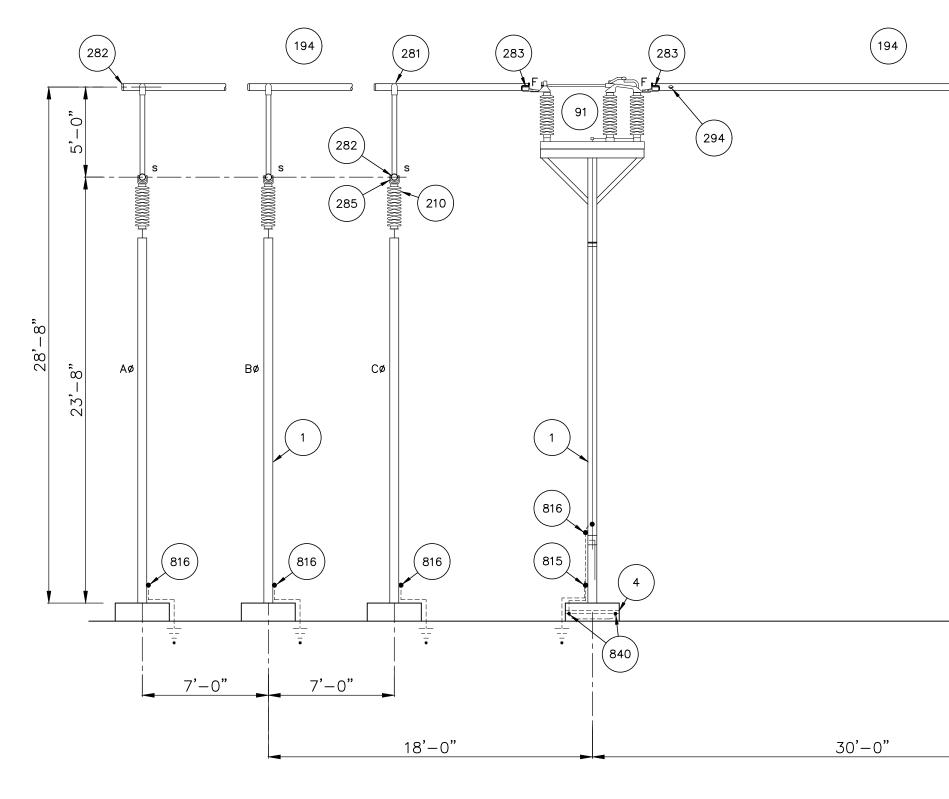
- INSTALLATION NOTES:
- AND FIT ONTO SWITCH TERMINAL PADS (SIZE, NEMA RATING AND SHOULDER). EQUIPMENT VIEW IS PRELIMINARY. WAITING ON VENDOR DRAWINGS. CONTRACTOR TO BRING GRADE AROUND NEW A-FRAME UP TO MATCH FOUNDATION REVEALS TO ALLOW ACCESS TO BREAKER AND SWITCH OPERATORS.

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





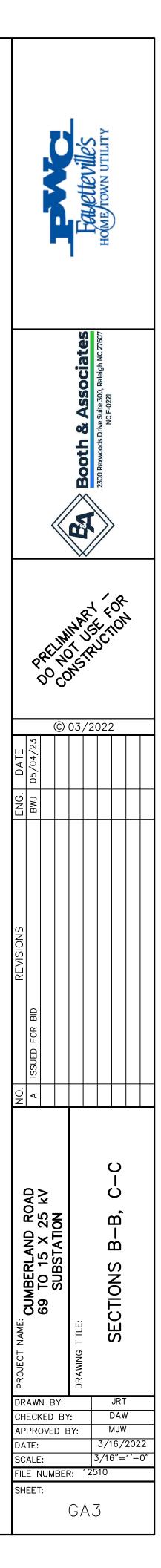
SECTION B-B SCALE: 3/16"=1'-0"

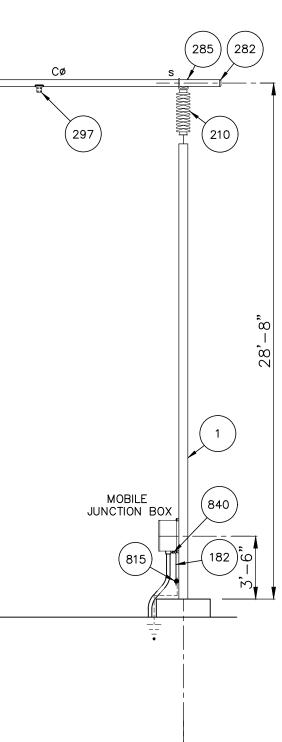


SECTION C-C _____ SCALE: 3/16"=1'-0"

INSTALLATION NOTES:

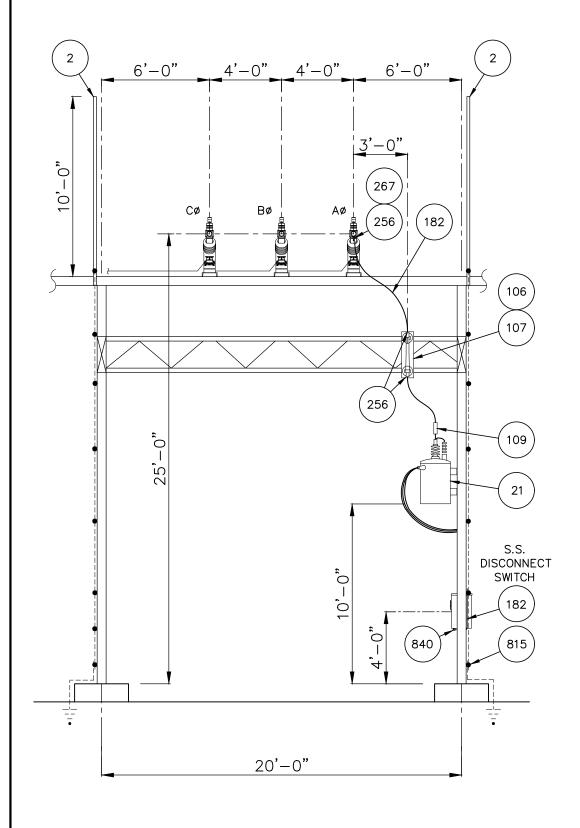
MATERIALMAN/FABRICATOR VERIFY THAT CONDUCTOR TERMINAL PADS MATCH AND FIT ONTO SWITCH TERMINAL PADS (SIZE, NEMA RATING AND SHOULDER).
 EQUIPMENT VIEW IS PRELIMINARY. WAITING ON VENDOR DRAWINGS.





RFFFRFNCFS

SITE PLAN PLAN VIEW SECTION VIEWS DETAILS FOUNDATION PLAN GROUNDING PLAN CONDUIT PLAN	12510GA1 12510GA2-GA4 12510GA5 12510FD1 12510G1



191 267 256 ΡT JUNCTION BOX 20'-0"

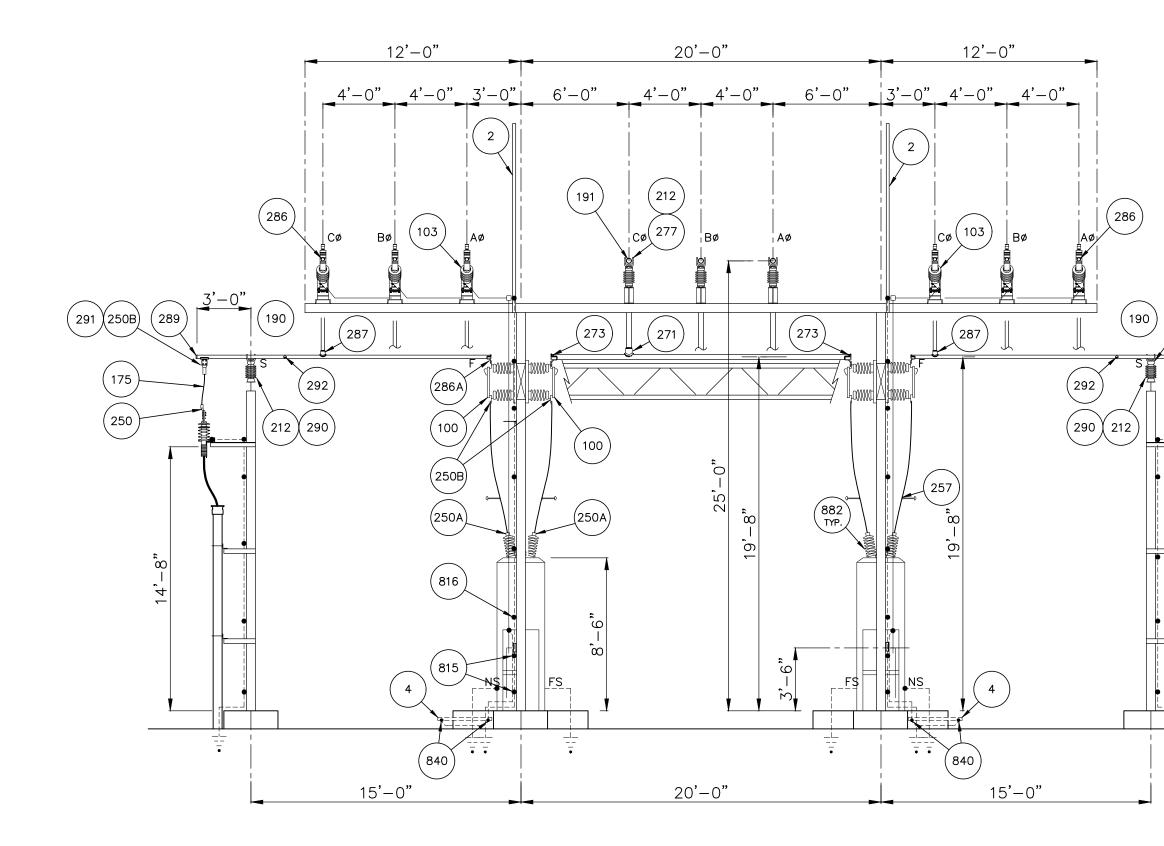
840

6'-0" + 4'-0" + 4'-0" + 6'-0" + 2

(2)

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

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

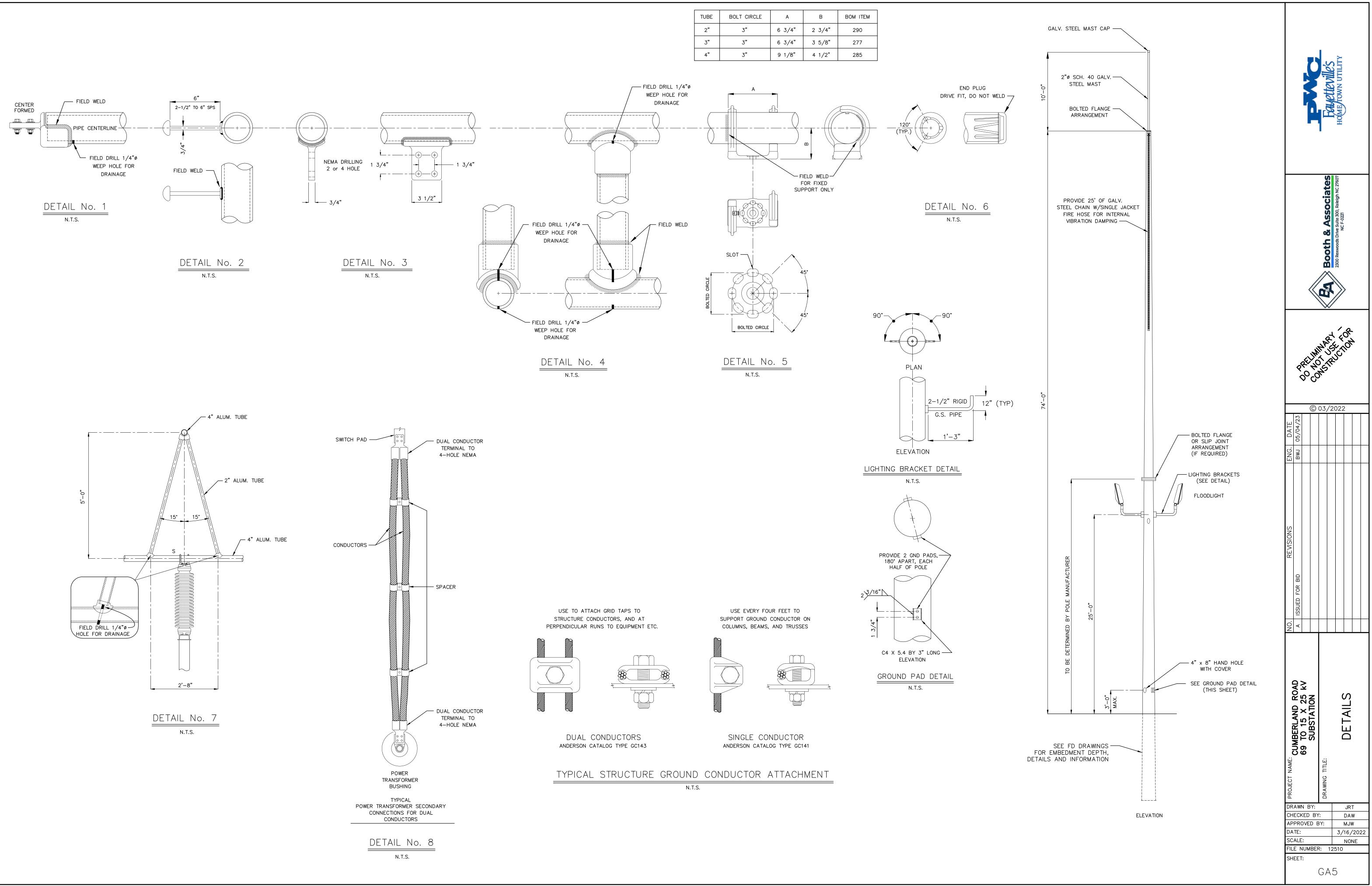


SECTION F-F SCALE: 3/16"=1'-0"

INSTALLATION NOTES:

- MATERIALMAN/FABRICATOR VERIFY THAT CONDUCTOR TERMINAL PADS MATCH AND FIT ONTO SWITCH TERMINAL PADS (SIZE, NEMA RATING AND SHOULDER).
 EQUIPMENT VIEW IS PRELIMINARY. WAITING ON VENDOR DRAWINGS.

Booth & Associates A So Con <u>5'-0" 3'-0"</u> (190) (881) (289) (291) (250B) 212 290 (291)(250B) © 03/2022 (245) 246 175 (250) (175) 155), 250 (815) Ω0 (816) <u></u> 4 (815) ----FOR Q ▼ C Ċ Ŀ SECTION G-G CUMBERLAND ROAD 69 TO 15 X 25 KV SUBSTATION لت SCALE: 3/16"=1'-0" யி ய் Ū. Ò SECTIONS DRAWN BY: JRT REFERENCES CHECKED BY: DAW APPROVED BY: MJW SITE PLAN ______ 12510S1 PLAN VIEW ______ 12510GA1 DATE: 3/16/2022 PLAN VIEW12510GA1SECTION VIEWS12510GA2-GA4DETAILS12510GA5FOUNDATION PLAN12510FD1GROUNDING PLAN12510G1CONDUIT PLAN12510C1 SCALE: 3/16"=1'-0' FILE NUMBER: 12510 SHEET: GA4



TUBE	BOLT CIRCLE	А	В	BOM ITEM
2"	3"	6 3/4"	2 3/4"	290
3"	3"	6 3/4"	3 5/8"	277
4"	3"	9 1/8"	4 1/2"	285

ATTACHMENT B: BID PRICING FORM

Bidder Information:	
Name of Company	
Address	
Phone Number	
Email Address	
Federal ID No.	
Is the business SDBE, MWBE, DBE, or HUB	
Printed Name	
Title	
Signature	
Date	

Disclosure: PWC intends to make a single award for all items.

Item #	QTY.	UOM	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
1	2	EA	Vee-Center Disconnect Switch, 72.5 kV, 350 kV BIL, 1,200 Ampere, 61,000 Ampere momentary, horizontally- mounted, outdoor type, three-pole, group-operated, complete with pipe handle operating mechanism, outboard	\$	\$

			bearings, guide, arcing horns with four-hole NEMA flat pads to suit locations on drawings to be provided later. Manufacturer: Lead Time:		
2	4	EA	Vertical-Break Disconnect Switch, 72.5 kV, 350 kV BIL, 1,200 Ampere, 61,000 Ampere momentary, horizontally- mounted, outdoor type, three-pole, group-operated, complete with pipe handle operating mechanism, outboard bearings, guide, arcing horns with four-hole NEMA flat pads to suit location on Drawings to be provided later. Manufacturer: Lead Time:	\$ \$	
3	12	EA	 Hook-stick Disconnect Switch, 72.5 kV, 350 kV BIL, 1200 Ampere, 61,000 Ampere momentary, horizontally- mounted, outdoor type with four-hole NEMA flat pads. Terminals to suit location with copper live parts. Shown on drawings to be provided later. Manufacturer: Lead Time: 	\$ \$	
4	72	EA	Outdoor Hook-stick Disconnect Switch, 27 kV, 150 kV BIL, single-pole, 1,200 Ampere continuous, 61,000 Ampere momentary, vertically-mounted, with four-hole NEMA flat pads. Terminals to suit location with copper live parts. Shown on drawings to be provided later. Manufacturer: Lead Time:	\$ \$	
5	2	EA	Vee-Center-Break Disconnect Switch, 27 kV, 150 kV BIL, 2,000 Ampere, 80,000 Ampere momentary, horizontally- mounted, outdoor type, three-pole, group-operated, complete with pipe handle operating mechanism, outboard bearings, guide, arcing horns with NEMA four-hole flat	\$ \$	

pads to suit the location shown on the Drawings to be provided later, and have tinned copper live parts. Manufacturer: Lead Time:	
Vee-Center-Break Disconnect Switch, 25 kV, 150 kV BIL, 1,200 Ampere, 61,000 Ampere momentary, horizontally, mounted, outdoor type, three (3) pole, group operated, complete with pipe handle operating mechanism, outboard bearings, guide arcing horns with NEMA four-hole flat pads to suit the location shown on the Drawings, with copper live parts.	\$ \$
Lead Time:	

TOTAL EXTENDED PRICE: \$_____

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

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 or 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 (116 years)
- Provide Electric, Water and Wastewater Services
- Total Customers: 119,380
- Number of Services: 273,794
 - •Electric: 82,304
 - •Water: 90,430
- •Wastewater: 89,913• Customers with 2+ services: 75%
- Annual Customer Turnover: 20-25%

Customer Service

- Annual Customer Contacts: 433,794
- Average Monthly Calls: 31,452
- Annual Bills Generated: 1.4 Million
- Customer Incentive Programs: 13
- Annual Water Leak Notifications: 21,850

Employees

- _____
- Number of Employees: 651
- Average Tenure of Employees: 10.37 years
- Average Age: 44.59
- Annual Turnover: 6.0%*
- Annual Hours Worked: 1.2 Million
 *non retirement

Facilities

- Butler-Warner Generation Plant (268 MW)
- PO Hoffer Water Treatment Facility (39.5 MGD)
- Glenville Lake Water Treatment Facility (18.0 MGD)
- Cross Creek Water Reclamation Facility (25 MGD)
- Electric Service Area: 147 Sq. Miles
- Water Service Area: 163 Sq. Miles
- Wastwater Service Area: 142 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: 268 MW
- Annual MWH Sold: 1.9 Million
- System Peak: 499 MW (Feb. 9, 2015)
- Reliability Rate: 99.9906%
- Electric Distribution Substations: 32
- Distribution Lines: 1,351 miles
- Transmission Lines: 142 miles
- Streetlights/Area Lights: 37,441

Water/Wastewater Operations

- Population Served: 225,000
- Drinking Water Treated: 11.2 Billion Gallons/Year
- 100% Complaint for all EPA Drinking Water Standards
- Daily Water Treatment Capacity: 57.5 Million Gallons
- Daily Wastewater Treatment Capacity: 46 Million Gallons
- Water/Wastewater Infrastructure: 2,700 miles
- Hydrants: 8,300
- Sanitary Sewer Lift Stations: 82

Financial

- Annual Operating Budget: \$405.2 Million
- Total Assets: \$1.44 Billion
- Bond Rating: Aa2 (Moody's), AA (Standard and Poor), AA (Fitch)
- Annual Local Purchases: \$25 Million
- Operations & Maintenance Expenses per
- Customer: \$432 (\$556 National Median)
- Annual Contributions to City of Fayetteville in Lieu
 of Taxes: \$11.4 Million
- Annual Streetlight Services: \$3.9 Million
- Annual Economic Development: \$1.2 Million (thru 2021)



ΠD



Attachment E

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 _________ [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. <u>Sale of Goods</u>. 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. <u>Contract Documents</u>. "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:

This Agreement a. Notice to Prospective Bidders b. C. Definitions d. Instructions to Bidders e. General Conditions Materialman's Proposal f. Bid Bond g. **Technical Specifications** h. Purchase Order(s) Addenda

3. <u>Delivery of Goods</u>. 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. <u>Title and Risk of Loss</u>. 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. <u>Packaging</u>. 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.

Inspection and Rejection of Nonconforming Goods. PWC has the right to inspect 6. 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. <u>Price</u>. 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. <u>Billing and Payment</u>. 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 <u>not</u> 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. <u>Termination</u>. 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. <u>Insurance</u>. 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. <u>Notices</u>. 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.

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

> To Seller: [INSERT MAILING ADDRESS]

14. <u>Compliance</u>. 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 gualified 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. <u>Cumulative Remedies</u>. 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. <u>Miscellaneous Provisions</u>. 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. <u>Conflicts</u>. Except with PWC's knowledge and prior written consent, the Seller shall not engage in any activity or accept any employment, interest or contribution that would reasonably appear to compromise the Seller's professional judgment with respect to the Goods. The 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	Ву:		
	(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 Haskins, Chief Financial Officer

Approved as to form:

Legal Dept.

FAYETTEVILLE PUBLIC WORKS COMMISSION'S

MWDBE COMPLIANCE PROVISIONS

APPLICATION:

The requirements of Fayetteville Public Works Commission (PWC) Minority, Women, and Disadvantaged Business Enterprise (MWDBE) Program for participation specific contracts are hereby made part of the Contract Documents. Copies of the Program may be obtained from:

Fayetteville Public Works Commission Economic Inclusion Programs P.O. Box 1089 Fayetteville, North Carolina 28302 Phone (910) 223-4016 Fax (910) 483-1429 E-mail: ElProgram@faypwc.com

NCDOT DBE Directory: <u>www.ebs.nc.gov/VendorDirectory</u> HUB Directory: <u>https://ncadmin.nc.gov/businesses/hub</u>

MWDBE Compliance Requirements:

- 1. The Bidder shall provide, with their Bid Form, at the time bids are due, the documents set forth below, properly executed. Returning executed copies indicates and establishes that the Bidder understands and agrees to any incorporated MWDBE contract provisions.
- 2. All Bidders must provide with their Bid Form, at the time bids are due, a properly completed and executed copy of <u>either:</u>
 - Affidavit A Listing of Good-Faith Efforts **OR**
 - *Affidavit B Intent to Self-Perform with Own Workforce.

*Affidavit B should **only** be used if the Contractor will perform **ALL Elements** of the Work on this project with their own forces **AND** will complete **ALL Elements** of this project **WITHOUT** the use of subcontractors, material suppliers, or providers of professional services.

- 3. Upon being identified as the apparent lowest responsive, responsible Bidder, a Bidder shall, within <u>twenty-four (24) hours</u> of PWC's notification provide a properly completed and executed copy of <u>either:</u>
 - Affidavit C Percentage of MWDBE Participation **OR**
 - Affidavit D Good-Faith Efforts.
- 4. All Bidders must provide with their Bid Form, at the time bids are due, a properly completed and executed copy of Affidavit E- Identification of MWDBE/Local Participation Form

All written statements, certifications, or intentions made by the Bidder shall become a part of the agreement between the Contractor and Fayetteville Public Works Commission for performance of this contract.

SUBCONTRACTOR PAYMENT REQUIREMENTS:

North Carolina General Statutes 143-134.1 (N.C.G.S.) states that the percentage of retainage on payments made by the prime contractor to the subcontractor shall not exceed the percentage of retainage on payments made by the Fayetteville Public Works Commission to the prime contractor. Failure to comply with this provision shall be considered a breach of the contract, and the contract may be terminated in accordance with the termination provisions of the contract.

The Contractor shall provide an itemized statement of payments to each MWDBE subcontractor before final payment is processed.

The Contractor shall provide an itemized statement of payments to each NON-MWDBE subcontractor before final payment is processed.

Contractor

Signature

Printed Name

Title

Date

Affidavit A: Listing of the Good Faith Efforts

Affidavit of _____

(Name of Bidder)

I have made a good faith effort to comply under the following areas checked:

Total Available	GFE Points: 155	Minimum Number GFE Points Required: 50	
Points			
10	Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government-maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed.		
10		becifications and requirements available for review by or providing these documents to them at least 10 are due.	
15		nents of work into economically feasible units to	
10	Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.		
10	Attending any pre-bid meetings so	cheduled by the public owner.	
20	Providing assistance in getting re to bonding or insurance for subco	quired bonding or insurance or providing alternatives intractors.	
15	Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.		
25	Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.		
20	Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.		
20	Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.		
Total GFE Poin	ts (Claimed by Bidder):	Total GFE Points (Assessed by PWC):	

In accordance with NCGS 143-128.2(d) the undersigned will enter into a formal agreement with the firms listed in the Identification of Small Disadvantaged Business Participation schedule conditional upon execution of a contract with the Owner. Failure to abide by any applicable statutory provision may constitute a breach of the contract. The undersigned hereby certifies that he or she has read the terms of the MWDBE business commitment and is authorized to bind the Bidder to the commitment herein set forth.

Date:	Name of Authorized Officer:	
	State of North Carolina, County of	
	Subscribed and sworn to before me thisday of 20 Notary Public	
	My commission expires	

Affidavit B: Intent to Perform Contract with Own Workforce

Affidavit of	
Annuavit	

(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for contract:

(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform <u>all elements of the work</u> on this project with his/her own current workforces; and will complete all elements of this project <u>without</u> the use of subcontractors, material suppliers, or providers of professional services.

The Bidder agrees to provide any additional information or documentation requested by the Owner in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date:	Name of Authorized Officer:		
	State of North Carolina, County of		
	Subscribed and sworn to before me this Notary Public	day of 20	
	My commission expires		

Affidavit C: Percentage of MWDBE Participation

Affidavit of		
	(Name of Bidder)	
I hereby certify that on contract:		
	(Name of Project)	

\$_

(Dollar Amount of Total Bid)

I will expend a minimum of _____% of the total dollar amount of the contract with Minority, Women, and Disadvantaged Business Enterprises (MWDBE). MWDBEs will be employed as subcontractors, vendors, or providers of professional services. Such work will be subcontracted to the following firms listed below.

Name, Address, & Phone No.	*MWDBE Category	<u>NAICS</u>	<u>Dollar Value</u>	<u>% of</u> <u>Contract</u>

*MWDBE categories: Black-African Americans (B), Hispanic-Americans (H), Asian- Americans (A), Native-Americans (I), Women (F), Socially/Economically Disadvantaged (D)

Pursuant to NCGS 143-128.2(d), the undersigned will enter into a formal agreement with MWDBEs for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the Bidder to the commitment herein set forth.

Date:	Name of Authorized Officer:	
	State of North Carolina, County of	
	Subscribed and sworn to before me thisday of 20 Notary Public	
	My commission expires	

Affidavit D: Good Faith Efforts

If Owner determines using reasonable discretion that Affidavit C is insufficient, Bidder agrees to provide the following information regarding any good-faith efforts.

<u>Name, Address, & Phone No.</u>	*MWDBE Category	NAICS	<u>Dollar Value</u>

*MWDBE categories: Black-African Americans (B), Hispanic-Americans (H), Asian- Americans (A), Native-Americans (I), Women (F), Socially/Economically Disadvantaged (D)

Bidder may be requested to provide documentation of the Bidder's good-faith efforts. Examples of documentation may include the following:

- a. Copies of solicitations for quotes to MWDBEs. Each solicitation may include a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- b. Copies of quotes or responses received from each firm responding to the solicitation.
- c. A telephone log of follow-up calls to each firm sent a solicitation.
- d. For subcontracts where a MWDBE is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- e. Documentation of any contacts or correspondence to MWDBE, community or contractor organizations in an attempt to meet the goal.
- f. Copy of pre-bid roster.
- g. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for MWDBEs.
- h. Letter detailing reasons for rejection of a MWDBE due to lack of qualification.
- i. Letter documenting proposed assistance offered to MWDBEs in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive Bidder.

Date:	Name of Authorized Officer:
	State of North Carolina, County of
	Subscribed and sworn to before me thisday of 20 Notary Public
	My commission expires

Affidavit E: Identification of MWDBE/Local Participation

	(Name of Bidder)	
I hereby certify that on contract: _		

(Name of Project)

We will use the following Minority, Women, and Disadvantaged Business Enterprises (MWDBE), and Local (Cumberland, Hoke, Harnett County) as construction subcontractors, vendors, suppliers, or providers of professional services.

Name, Address, & Phone No.	*MWDBE Category / **Local	<u>NAICS</u>	<u>Dollar Value</u>

*MWDBE categories: Black-African Americans (B), Hispanic-Americans (H), Asian- Americans (A), Native-Americans (I), Women (F), Socially/Economically Disadvantaged (D)

**Local: Fayetteville Metropolitan Statistical Area (MSA) comprising of Cumberland County, Hoke County, and Harnett County. PWC is requesting this information for reporting purposes only, and use of local entities will not be considered for compliance with the requirements of the MWDBE Program.

The total value of MWDBE/local business contracting will be \$_____

Date:	Name of Authorized Officer:
	State of North Carolina, County of
	Subscribed and sworn to before me thisday of 20 Notary Public
	My commission expires

FAYETTEVILLE PUBLIC WORKS COMMISSION MWDBE ADD / CHANGE FORM

If a MWDBE subcontractor fails to complete work under the subcontract for any reason, the recipient must require the prime contractor to employ the good faith efforts set forth in the MWDBE Program if soliciting a replacement or additional subcontractor.

For MWDBE Change Request, please provide all information below:

New Subcontractor:	MWDBE Category:	
Reason this for change request:		-
Previous Subcontractor:		-
Subcontracted Work:		
Prime Contractor:		

To Add MWDBE Subcontractor/Subcontracted work:

If this is a new trade being subcontracted or a subcontractor that was not documented in the original Project Bid Information submittal, then good faith efforts to solicit a MWDBE must be documented, as the original MWDBE instructions indicate. Please provide all good faith efforts below showing all the MWDBE firms contacted to perform this work along with any additional good faith efforts or evidence that there are not reasonably available firms in the work area. PWC's MWDBE Program requires that good faith efforts are to be carried out to the fullest extent practicable. If solicitations were not carried out due to being impracticable, please attach this explanation to this form.

Name, Address, & Contact Information	MBE or WBE and Certifying agency	How was this firm contacted (email, letter, or Phone) and what was the result of the solicitation? *

*Must submit copies of emails or letters. If phone calls were made this sheet can serve as documentation of calls

Date:	Name of Authorized Officer:
	State of North Carolina, County of
	Subscribed and sworn to before me thisday of 20 Notary Public
	My commission expires

SMALL LOCAL SUPPLIER / MWDBE SUBCONTRACTOR DISCLOSURE FORM

Contractor:	
Address & Phone:	
Project:	
Name:	
Pay Application #	

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

Firm Name, Address, and Contact Information	Payment Amount	Type of Work/Commodity (Include NAICS Code)

Signature

Printed Name

Title

Date