

REAR VIEW

SIDE VIEW

FRONT TOP VIEW

FRONT FLOOR PLAN

GREENVILLE UTILITIES
GREENVILLE, NORTH CAROLINA

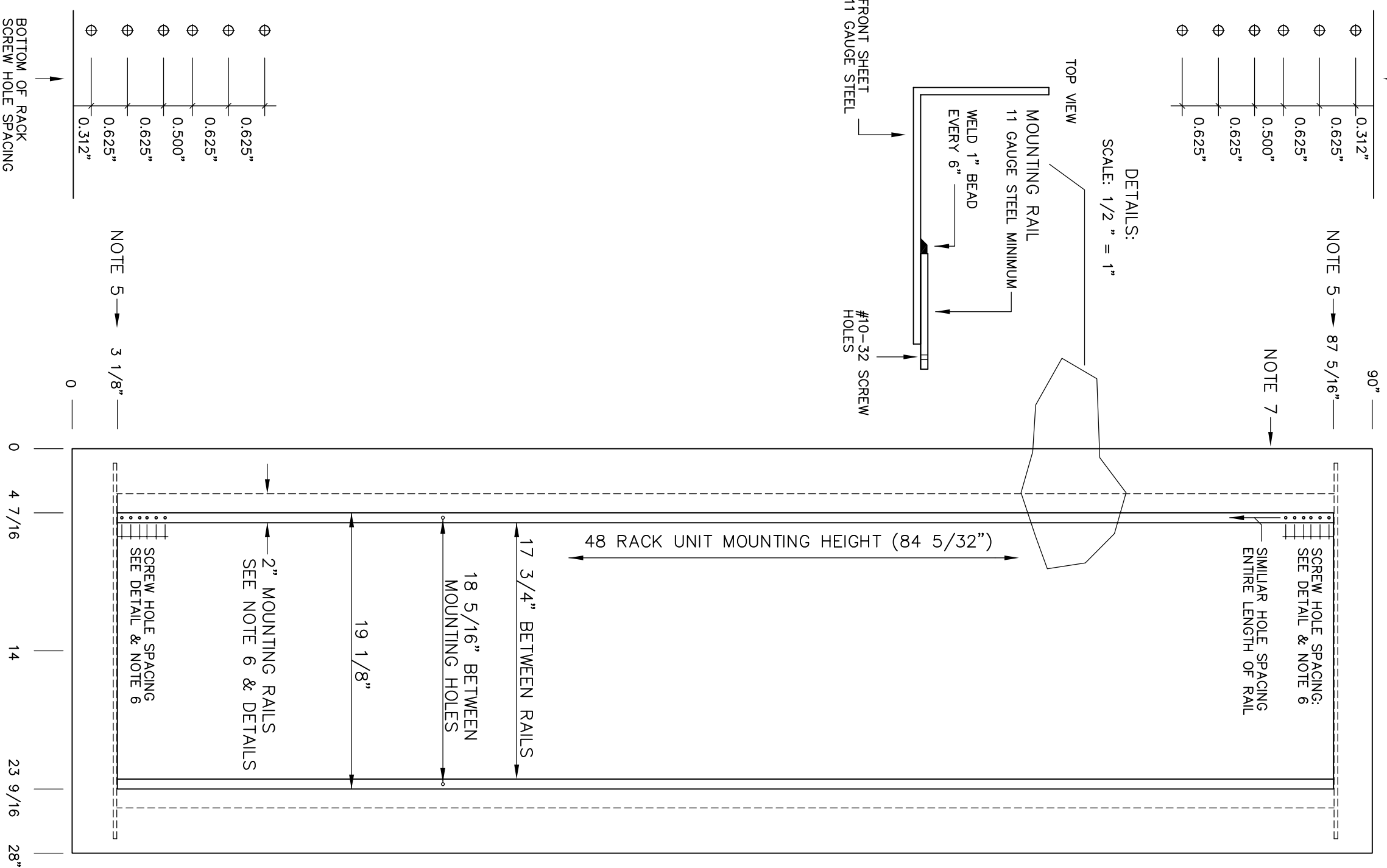
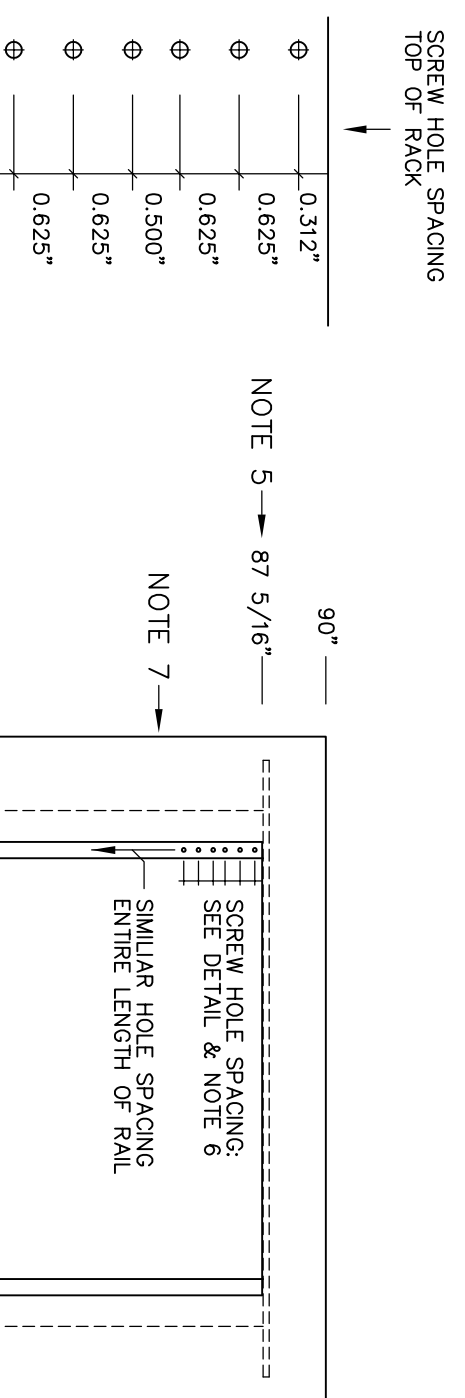
GREENVILLE WEST 230KV POD #2
DUAL PANEL DETAILS
REAR, SIDE, TOP, & FLOOR

Booth & Associates, LLC
DATE: 09/06/18
DWG. NO. 14020

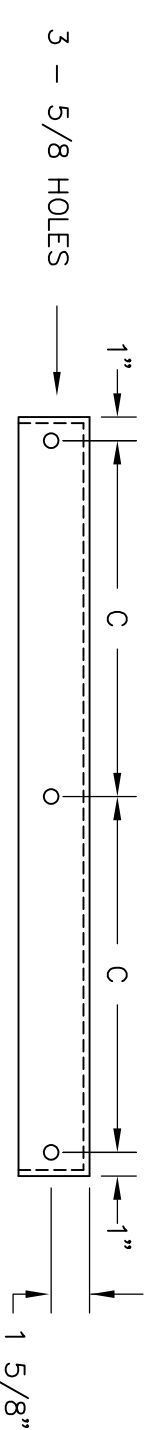
NO.	REVISIONS	DATE	DMB: BNC ICD: BCW	DATE: 09/06/18 APPD: BCW	DWG. NO. 14020
0	RELEASE FOR CONSTRUCTION	10/25/18			E045A

SCALE: 1/8"=1'-0" PLOT: 1:36 14020-E045A (ID: 71716).DWG

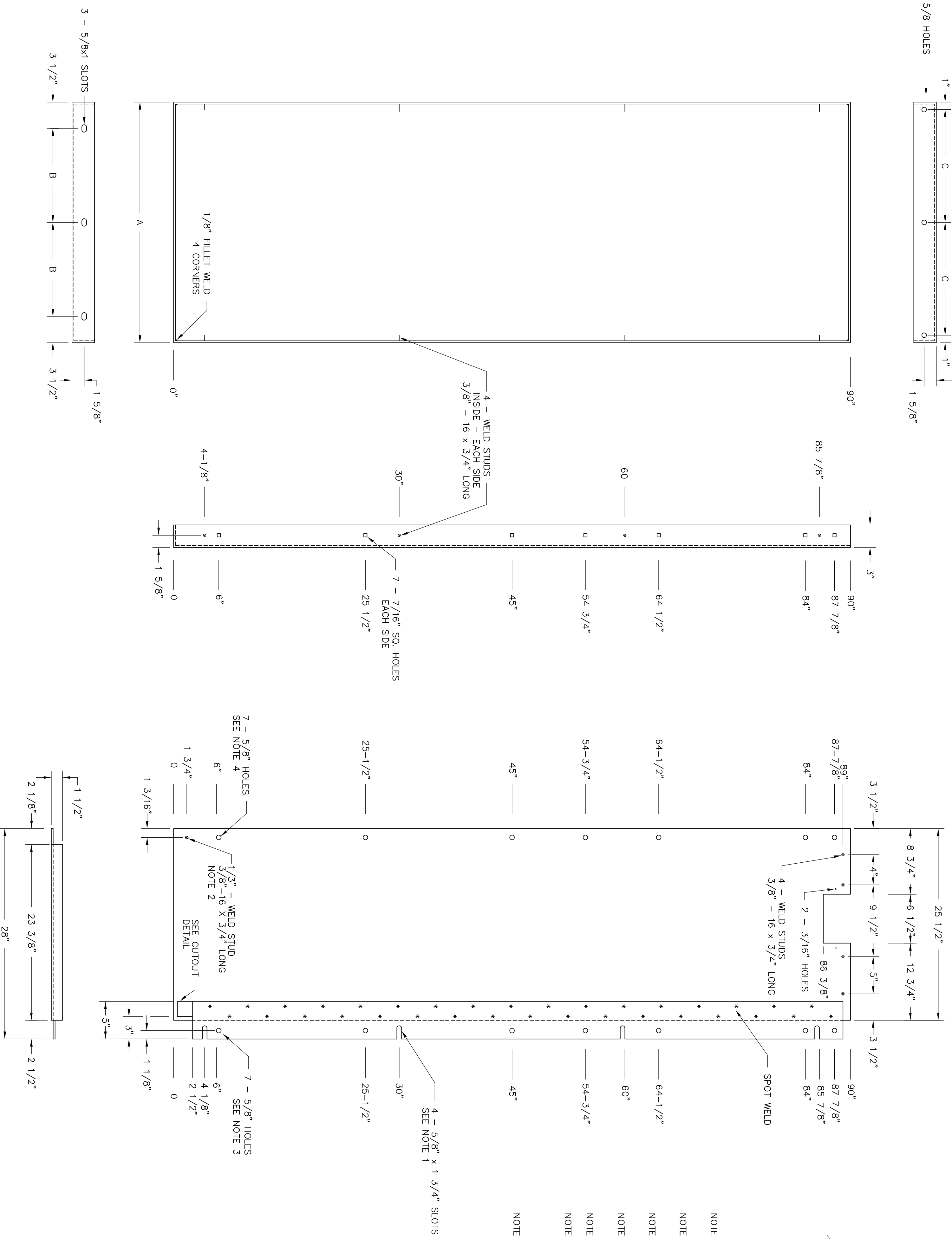
OPTIONAL (28" WIDE)
CLOSED-BACK W/DOOR
TYPE PANEL MOUNTING
WITH 19" RACK MOUNTING



UNIT FRONT PANEL - 11 GA. STEEL

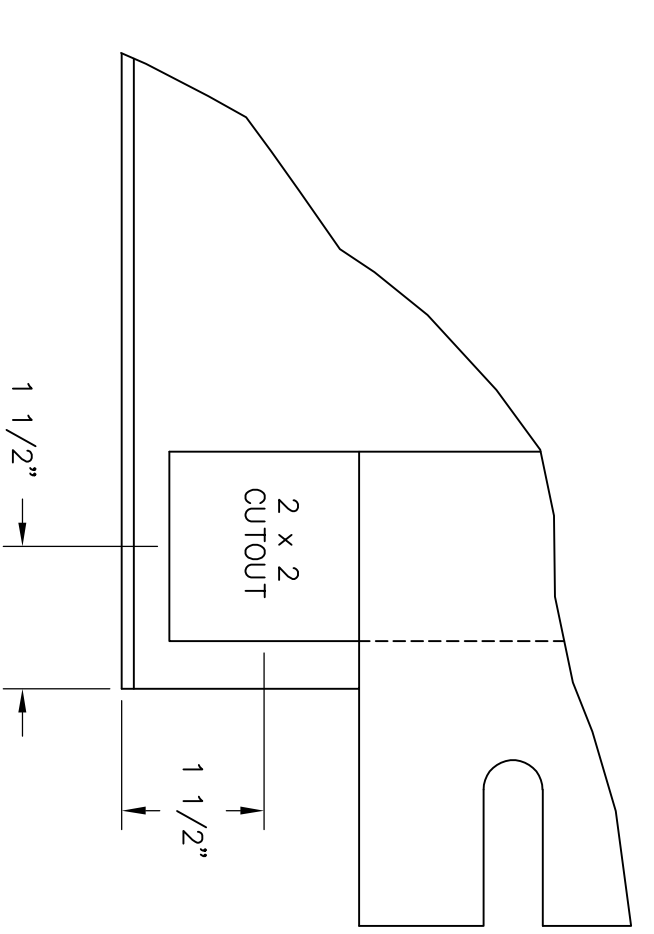


SIDE SHEET - 11 GA. STEEL

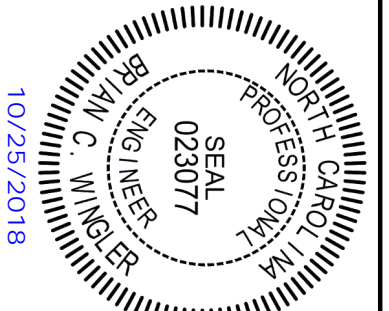


UNIT WIDTH	DIMENSION		
"A"	"B"	"C"	
28"	10 1/2"	13"	
32"	12 1/2"	15"	

- NOTE 1 ASSEMBLE WITH FOUR 3/8"-16 NUTS, FLAT WASHER AND LOCK WASHER - EACH SIDE.
- NOTE 2 ASSEMBLE WITH ONE 3/8"-16 NUT, FLAT WASHER AND LOCK WASHER - EACH SIDE.
- NOTE 3 ASSEMBLE WITH SEVEN 3/8"-16 x 1 1/4" CARRIAGE BOLT, NUT, FLAT WASHER AND LOCK WASHER - EACH SIDE.
- NOTE 4 ASSEMBLE WITH SEVEN 3/8"-16 x 1 1/2" BOLT, NUT, FLAT WASHER AND LOCK WASHER - EACH SIDE.
- NOTE 5 WELDED PANEL REINFORCEMENT 1/4" X 26".
- NOTE 6 2" MOUNTING RAILS OF 1 1/2" STEEL, WELDED TO BACK OF FRONT SHEET. PREPARED FOR STANDARD RACK MOUNTING (PER EIA STANDARD RS-310-C), AND #10-32 SCREWS.
- NOTE 7 FRONT PANEL SECTION FORMED FROM SINGLE SHEET OF 11 GAUGE (MIN.) STRETCHER-LEVELED COLD-ROLLED STEEL, NOT WELDED PIECES.



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



NO.	REVISIONS	DATE	DMW, BNC ICDD, BCW	APRD, BCW	DWG. NO. 14020	EQ#5B
0	RELEASE FOR CONSTRUCTION	10/25/18	SCALE: 1/8"=1'-0"	1:36	14020-EQ#5B	(ID: 71717)DWG

GREENVILLE UTILITIES
GREENVILLE, NORTH CAROLINA

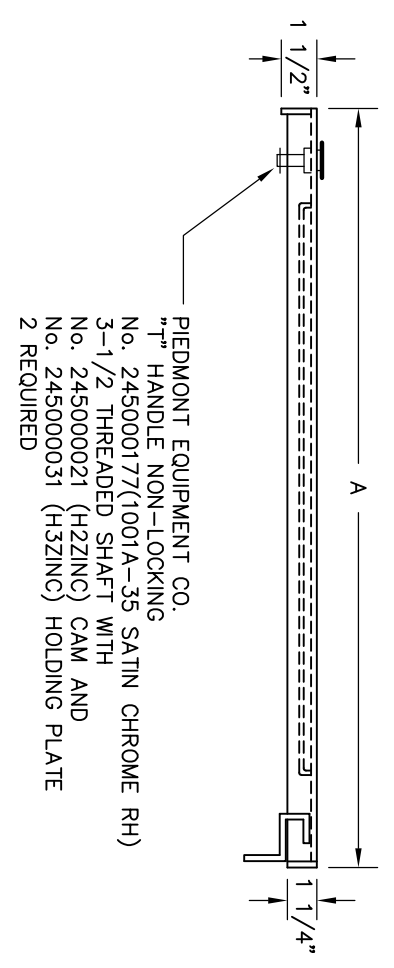
GREENVILLE WEST 230KV POD #2
DUAL PANEL DETAILS
FRONT SHEET & SIDE SHEET

Booth & Associates, LLC.

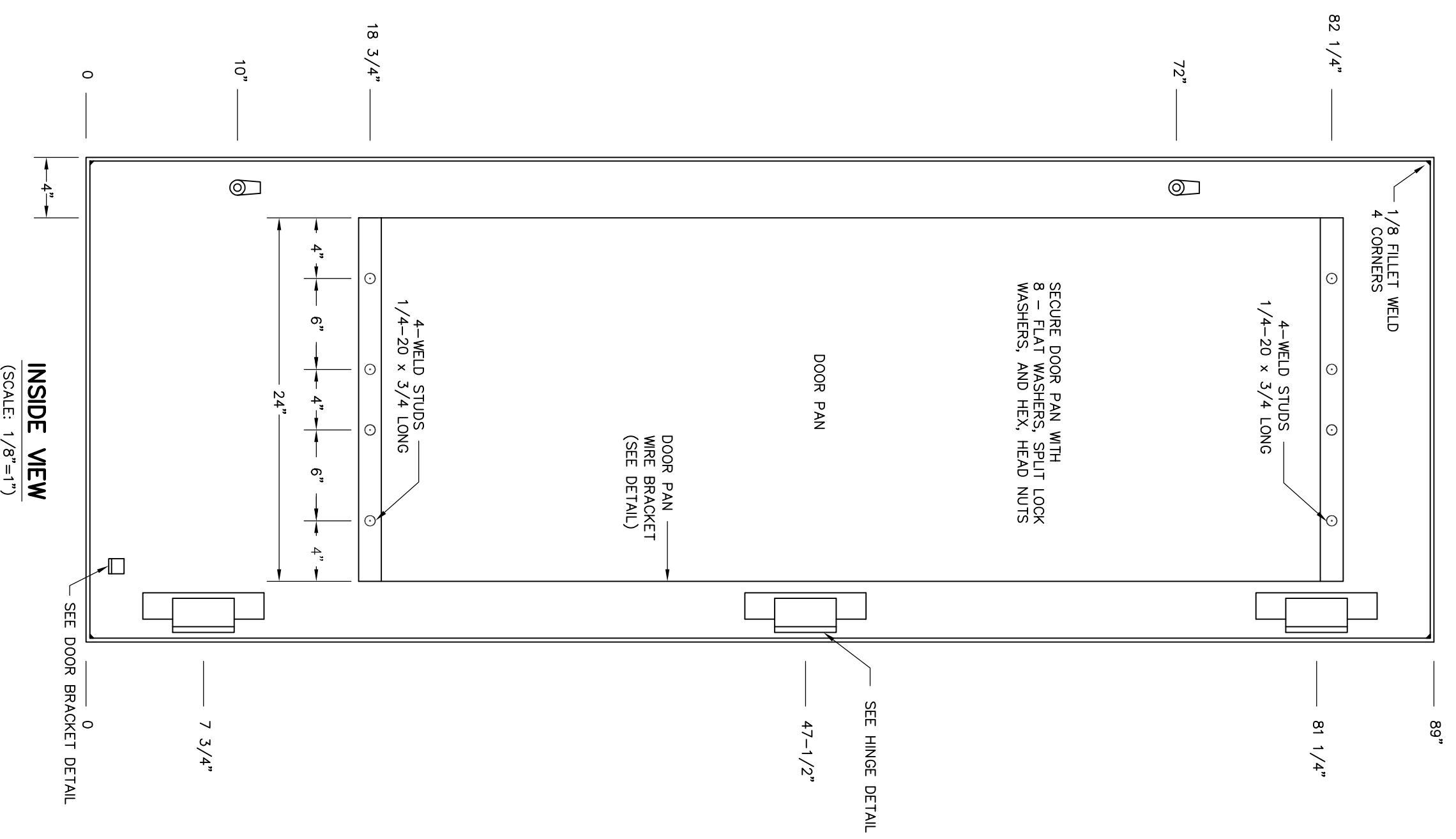
© 09/18

BLV

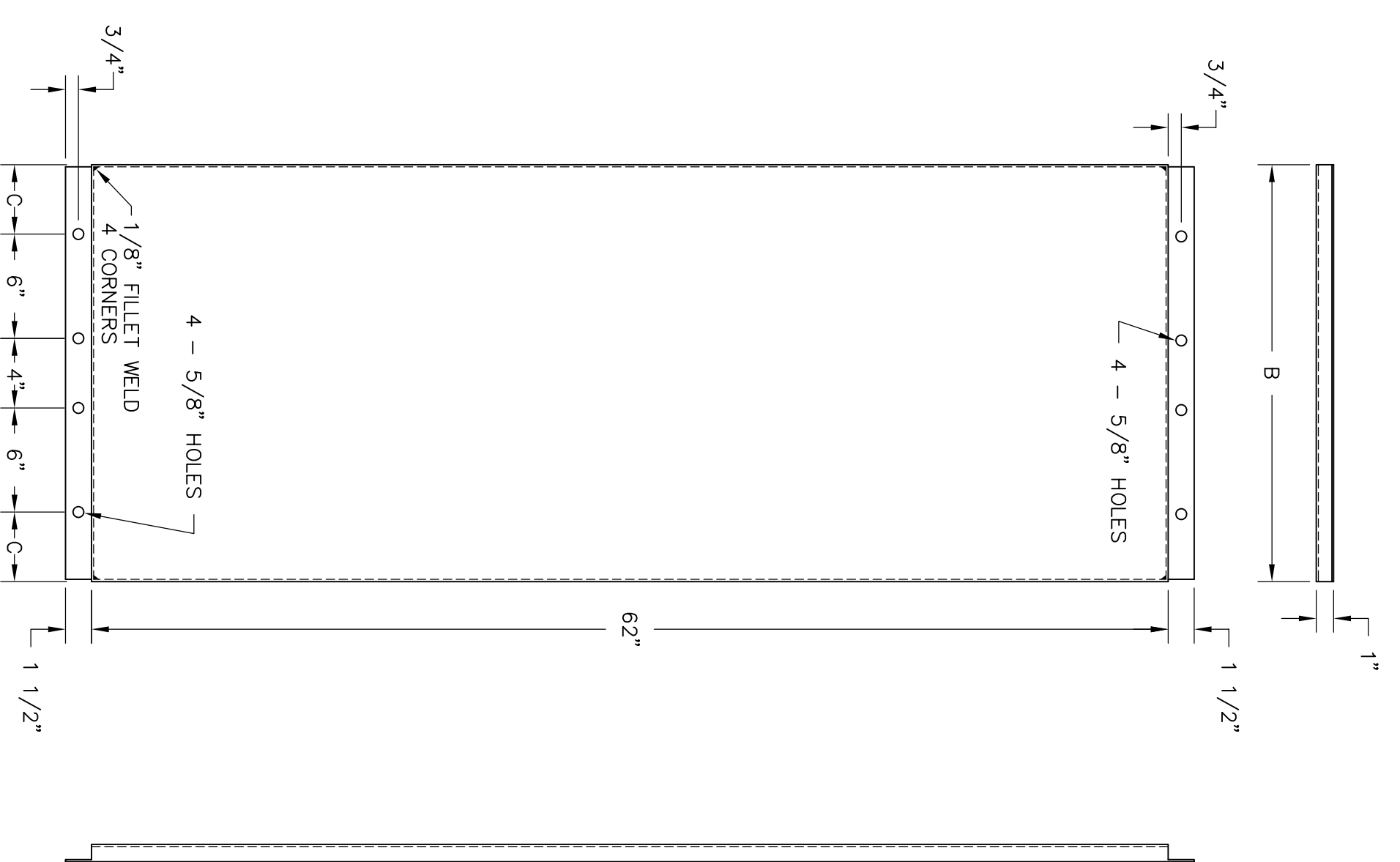
UNIT REAR DOOR - 11 GA. STEEL



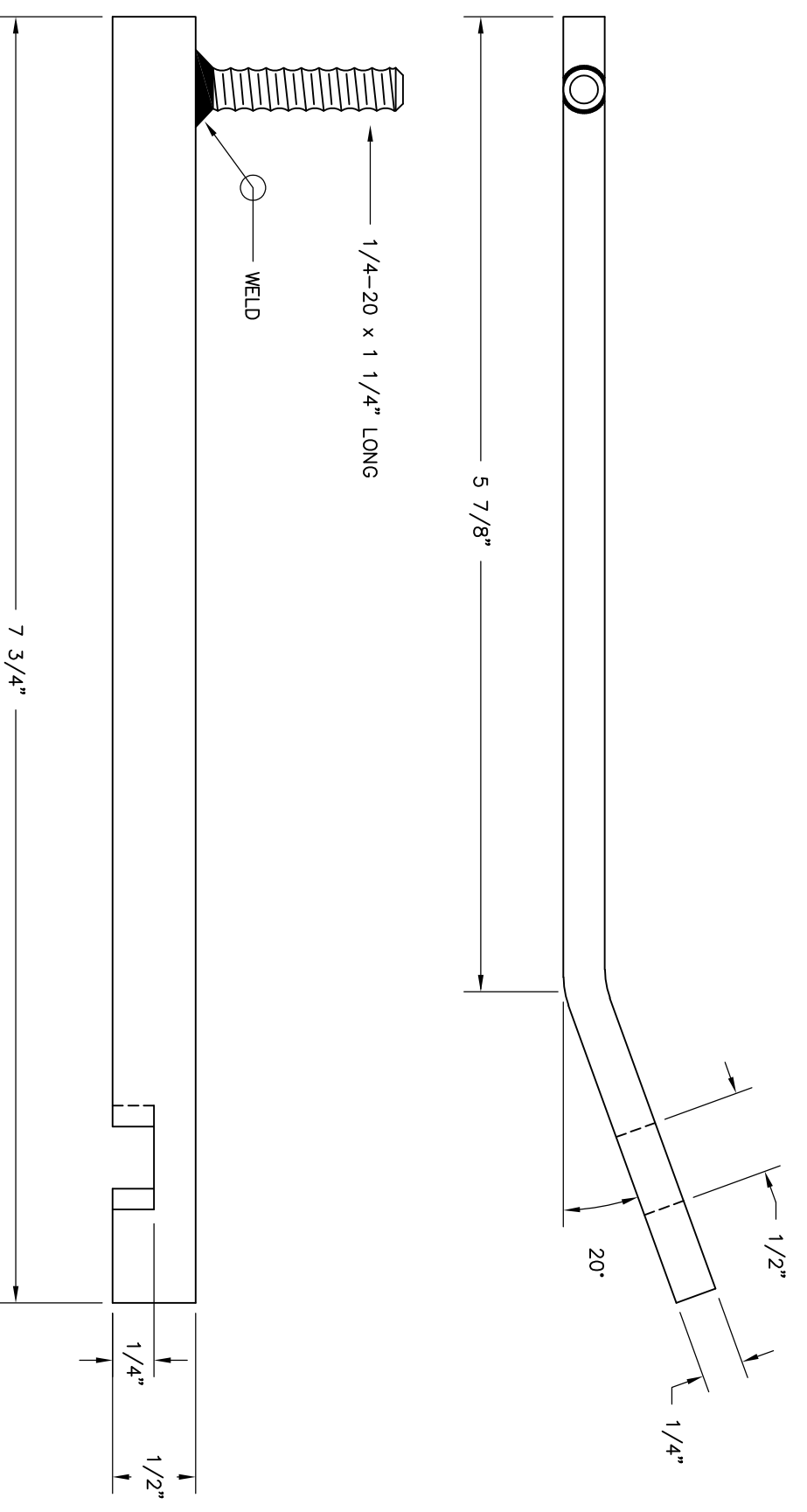
PEDEMONT EQUIPMENT CO.
 11 HANDLE NON-LOOKING SATIN CHROME RH)
 3-1/2" THREADED SHAFT WITH
 No. 245600021 (H22ND) CAM AND
 2 REQUIRED



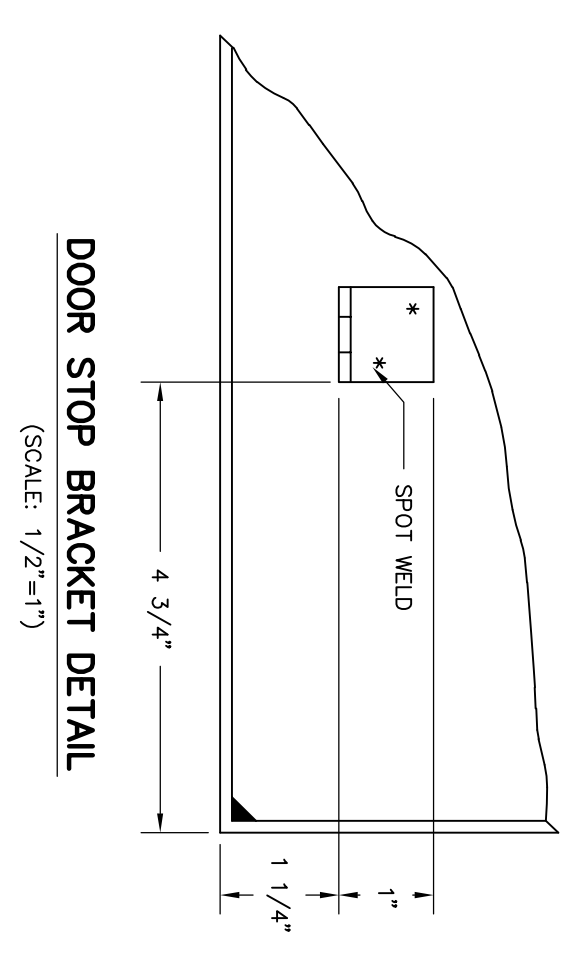
INSIDE VIEW
 (SCALE: 1/8"=1")



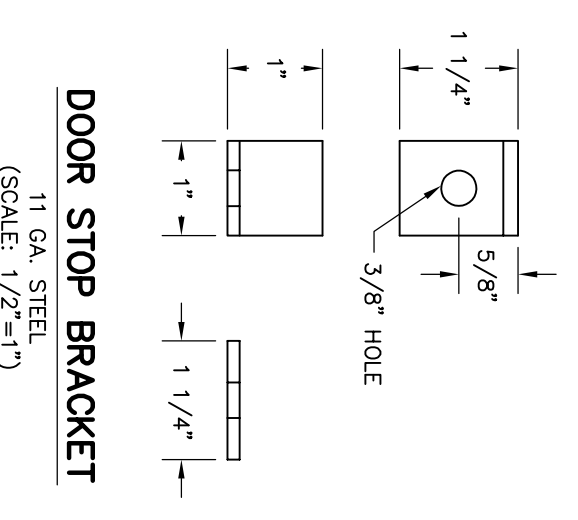
DOOR PAN
 11 GA. STEEL
 (SCALE: 1/8"=1")



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

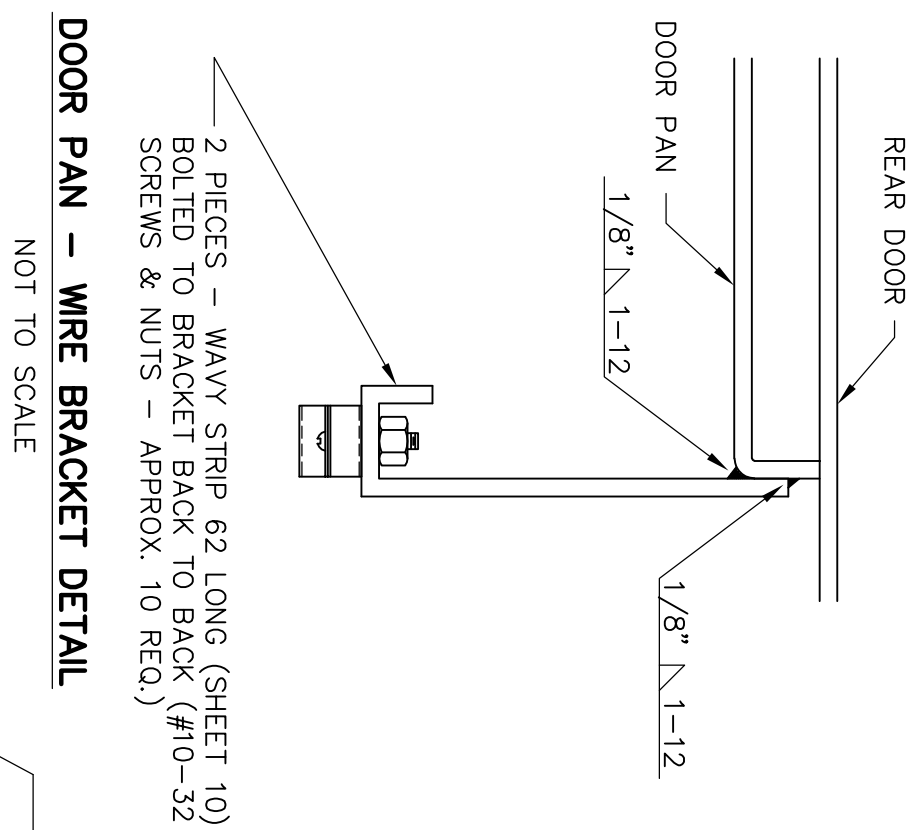


DOOR STOP BRACKET DETAIL
 (SCALE: 1/2"=1")

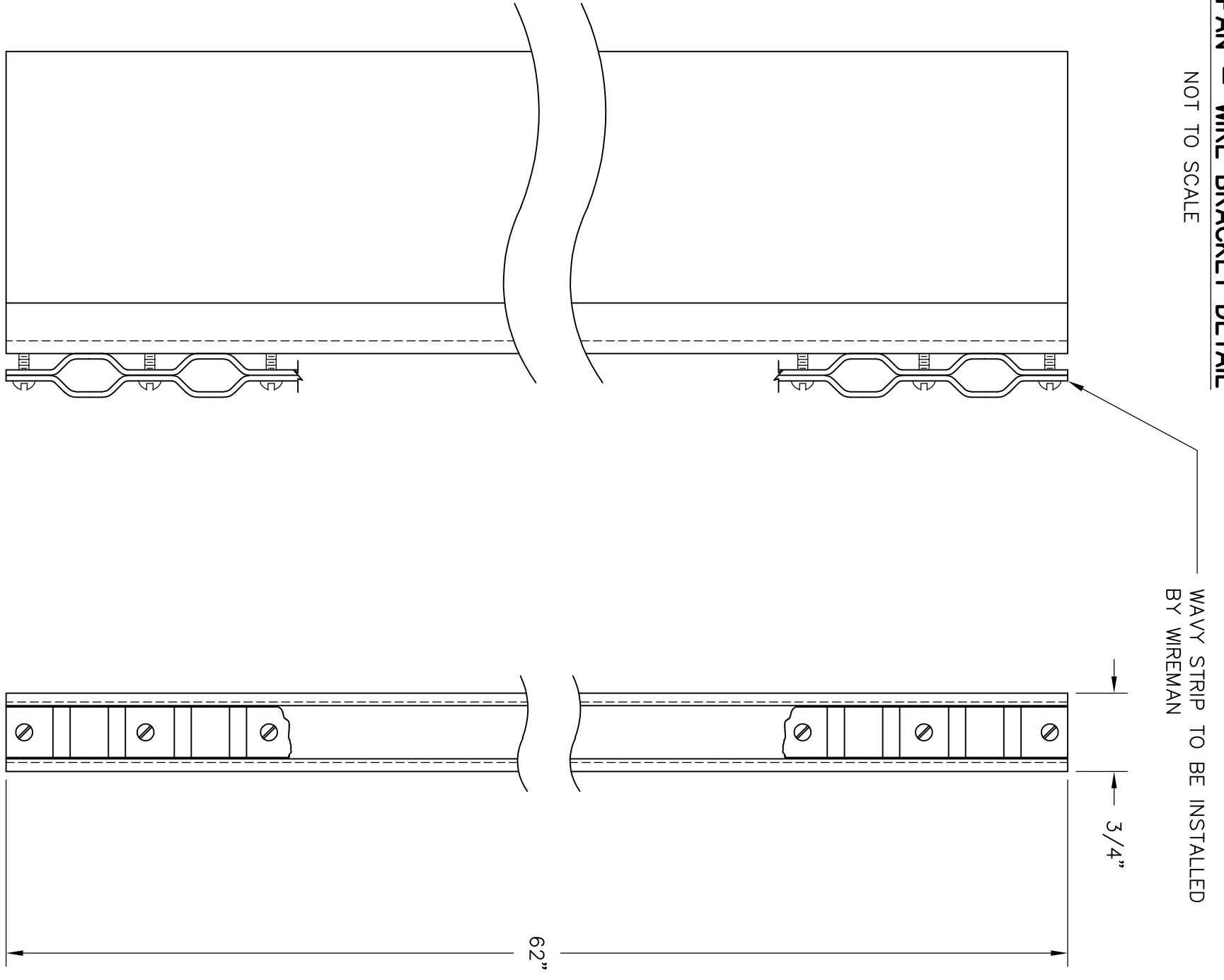


DOOR STOP BRACKET
 11 GA. STEEL
 (SCALE: 1/2"=1")

UNIT WIDTH		DIMENSION	
28"	32"	27 3/4"	20"
		31 3/4"	2"
			4"



DOOR PAN - WIRE BRACKET DETAIL
 NOT TO SCALE



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

GREENVILLE UTILITIES
 GREENVILLE, NORTH CAROLINA

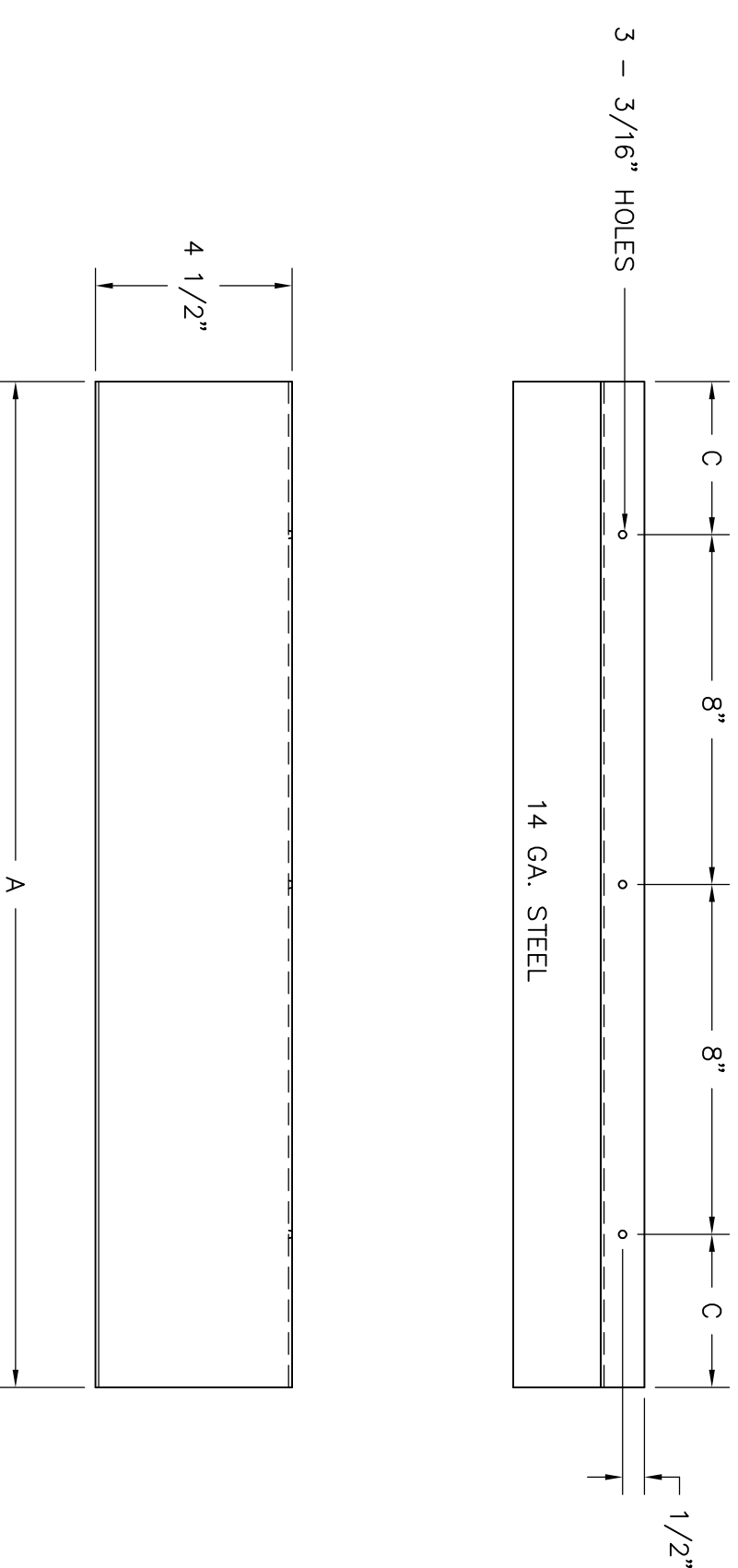
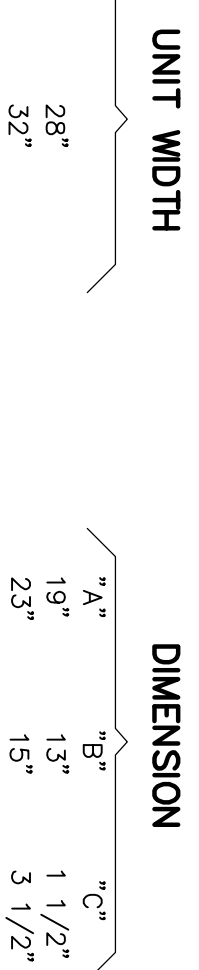
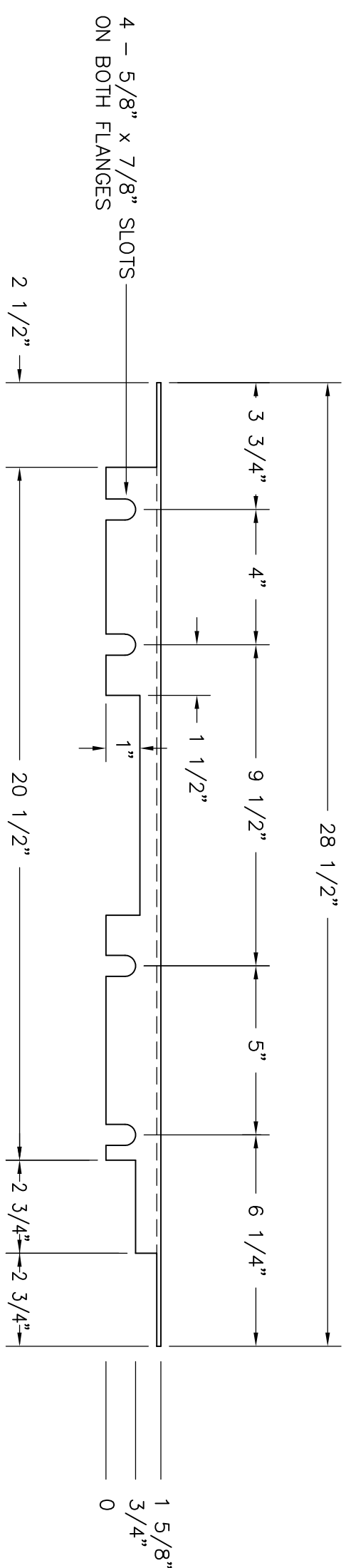
GREENVILLE WEST 230KV POD #2
 DUAL PANEL DETAILS
 DOOR & DOOR PAN

Booth & Associates, LLC
 ENGINEERS ARCHITECTS INTERIORS

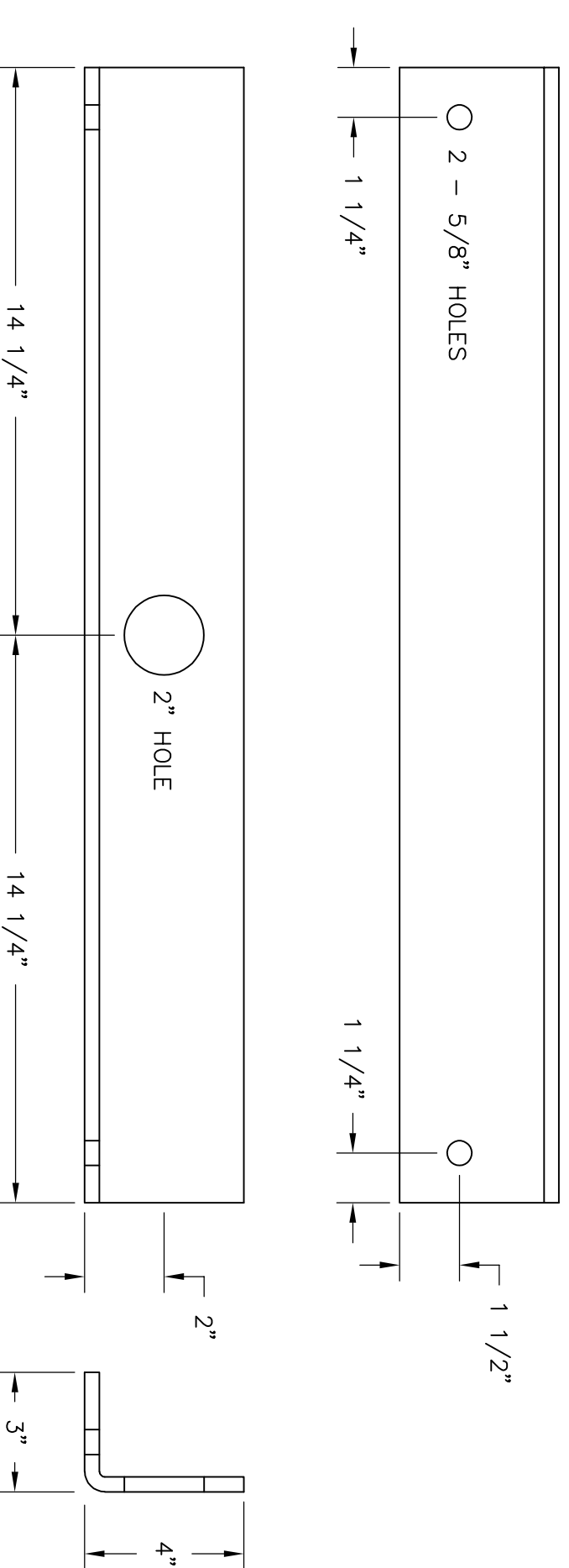
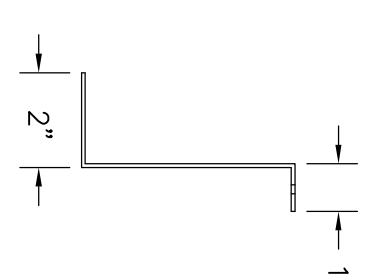
NO.	REVISIONS	DATE	SCALE AS NOTED	DWG. NO.
0	RELEASE FOR CONSTRUCTION	10/25/18		14020

DATE: 09/06/18
 APPD. BCW
 FLD: 1:36
 DWG. NO. 14020
 EQ45C

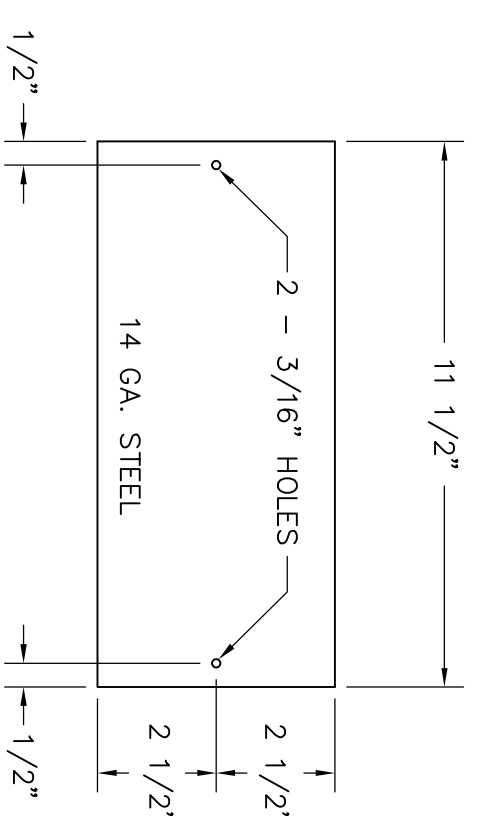
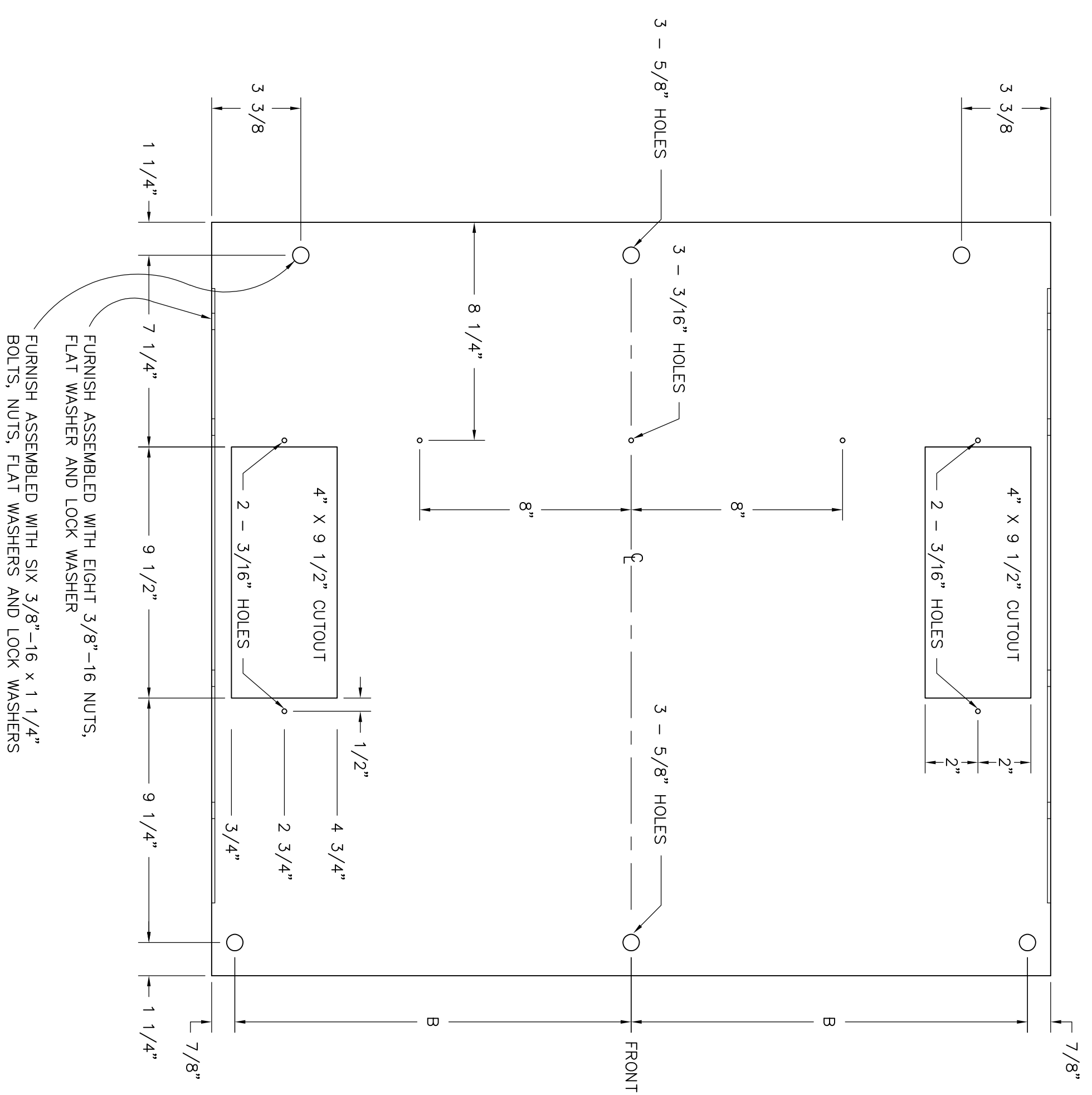
UNIT COVER - 11 GA. STEEL



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



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



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

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

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

10/25/2018

BCW

NO.	REVISIONS	DATE	DMR: BNC	DATE: 09/08/18	DWG. NO.
0	RELEASE FOR CONSTRUCTION	10/25/18	CRD: BCW	APPD: BCW	14020
			SCALE: 1/4"=1"	PLT: E:96	EQ45D

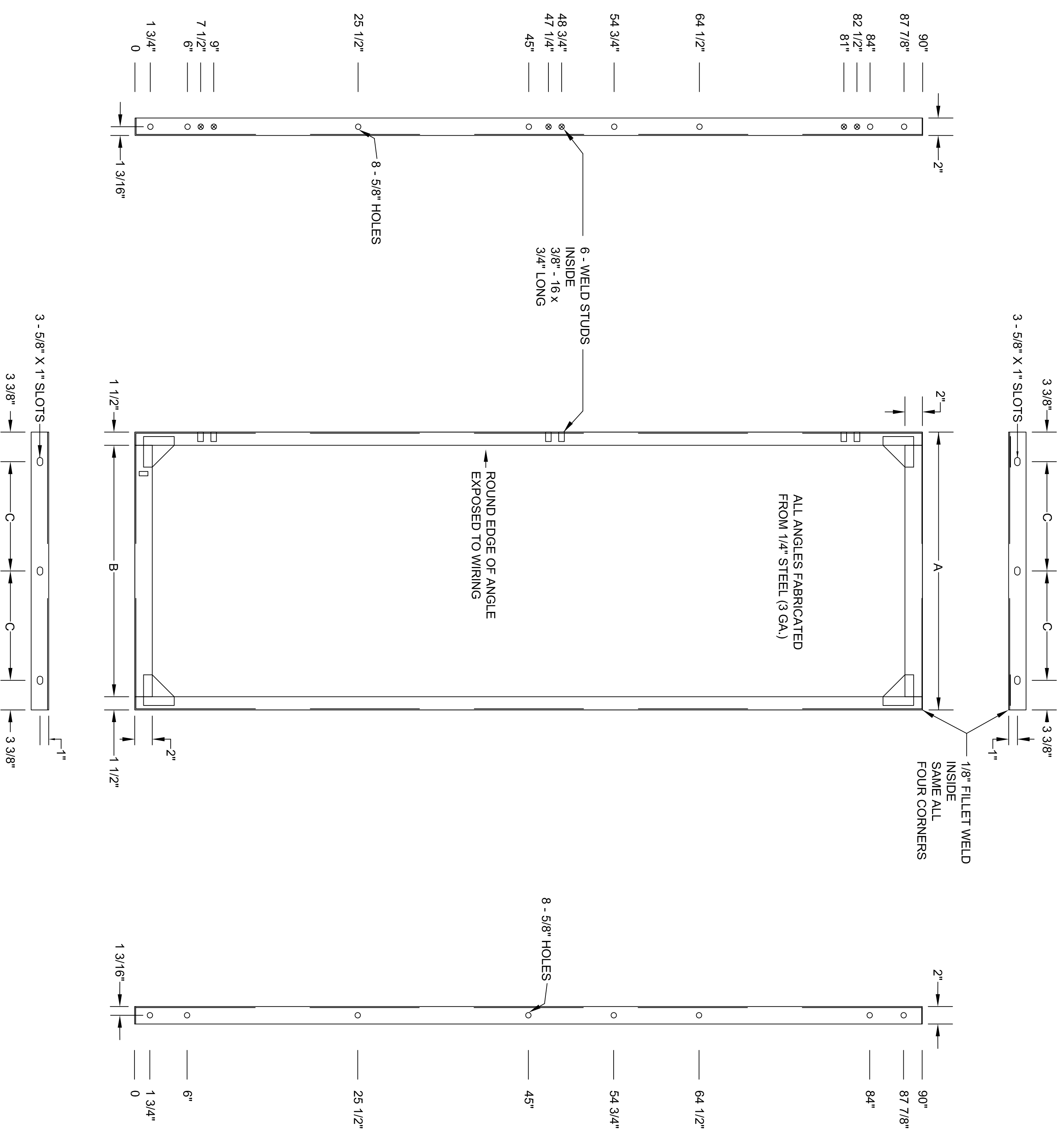
GREENVILLE UTILITIES
 GREENVILLE, NORTH CAROLINA

GREENVILLE WEST 230KV POD #2
 DUAL PANEL DETAILS
 TOP & LIFTING ANGLE

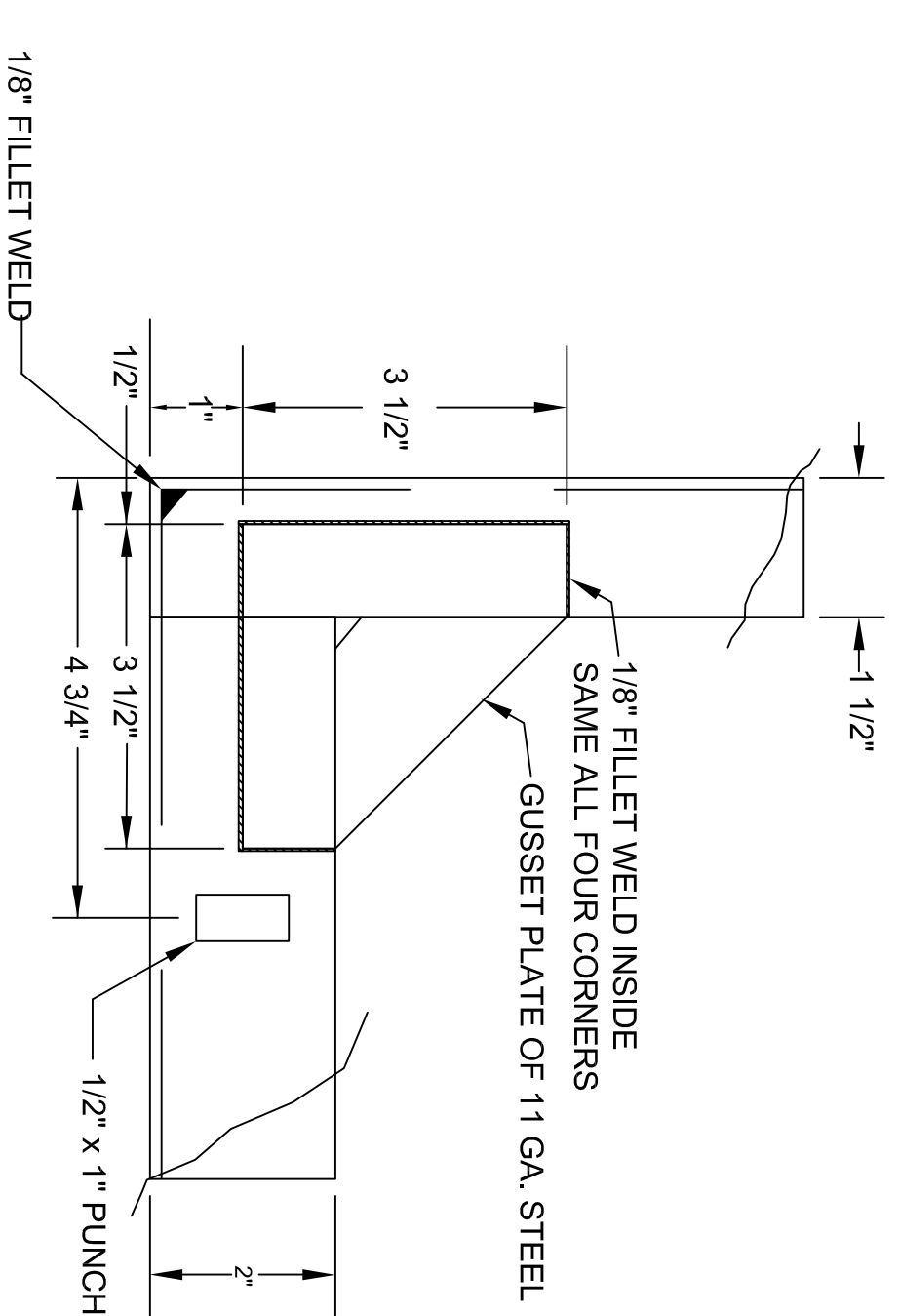
Booth & Associates, LLC
 14020-0450 (ID 71720)DWG

UNIT REAR FRAME

SCALE: 1/8" = 1"



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



GUSSET PLATE & DOOR STOP PUNCH DETAIL

SCALE: 1/2" = 1"

SEAN C. WININGER
PROFESSIONAL ENGINEER
LICENSE NO. 023077
STATE OF NORTH CAROLINA
10/25/2018

GREENVILLE UTILITIES
GREENVILLE, NORTH CAROLINA

GREENVILLE WEST 230KV POD #2
DUAL PANEL DETAILS
REAR FRAME

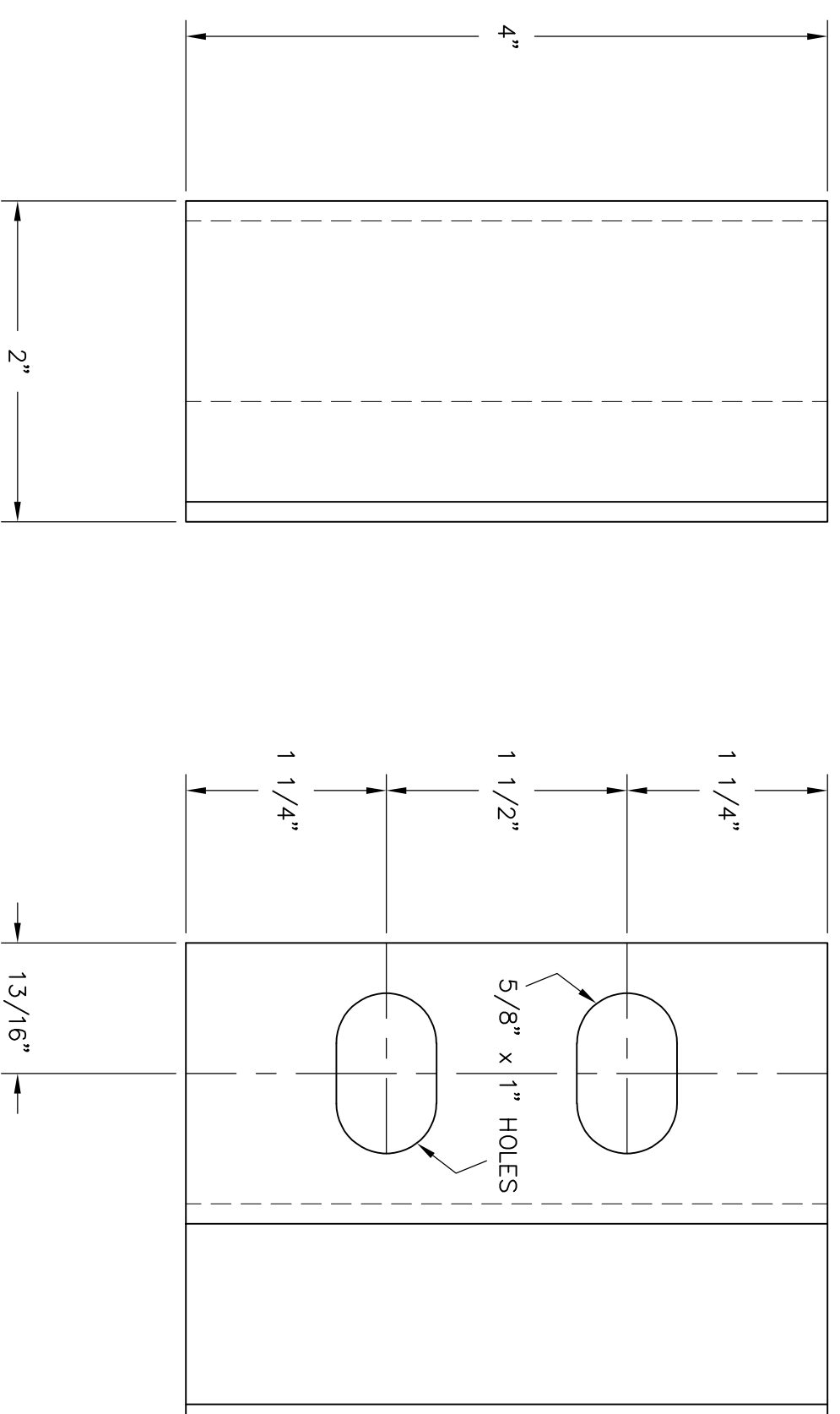
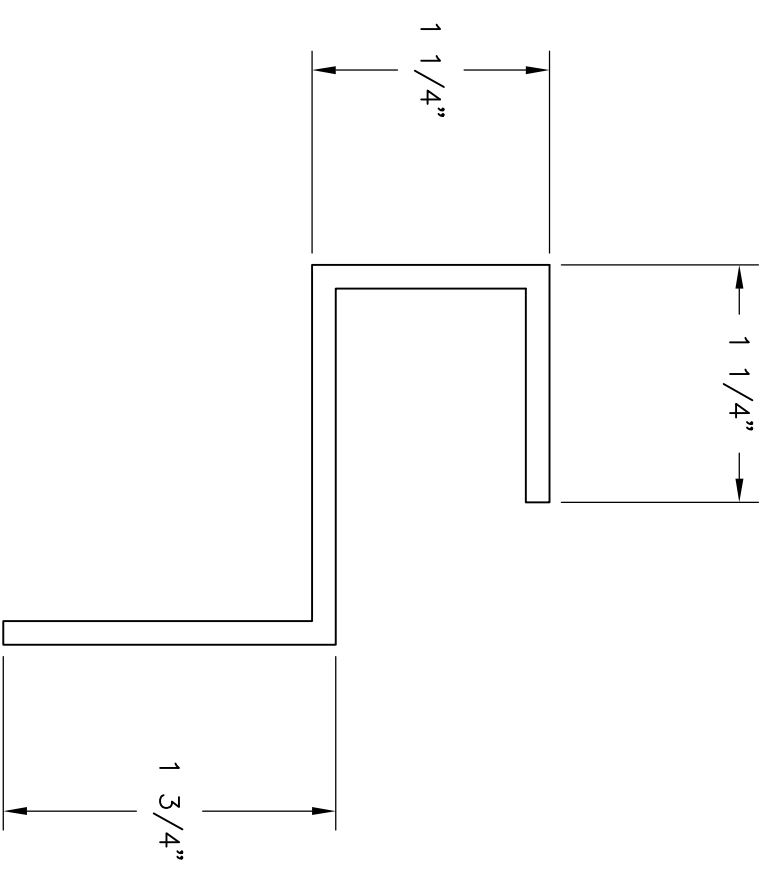
NO.	0	RELEASE FOR CONSTRUCTION	DATE	10/25/18
REVISIONS				

Booth & Associates, LLC
14020 ECHASE

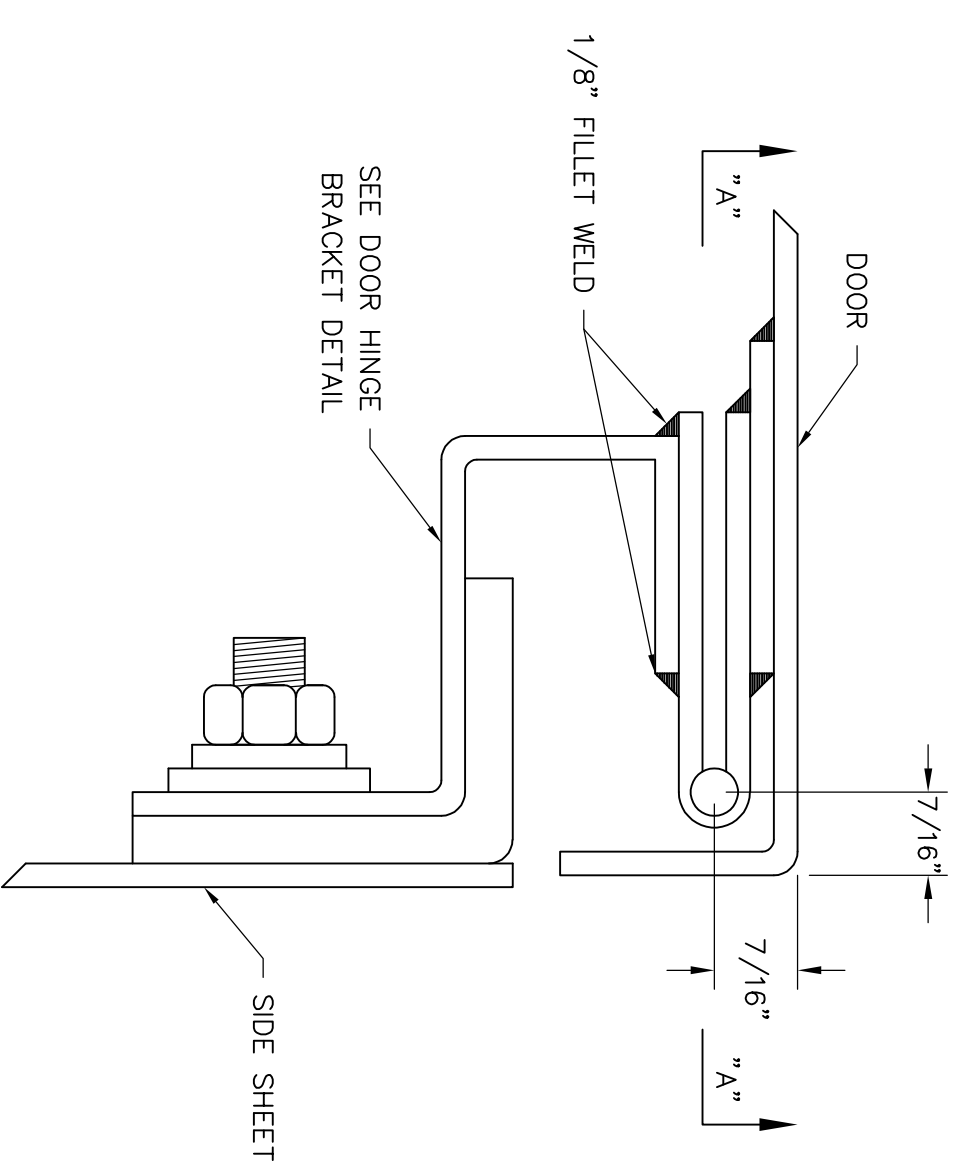
DATE: 09/06/18
APP'D. BCW

DWG. NO. 14020 E045E

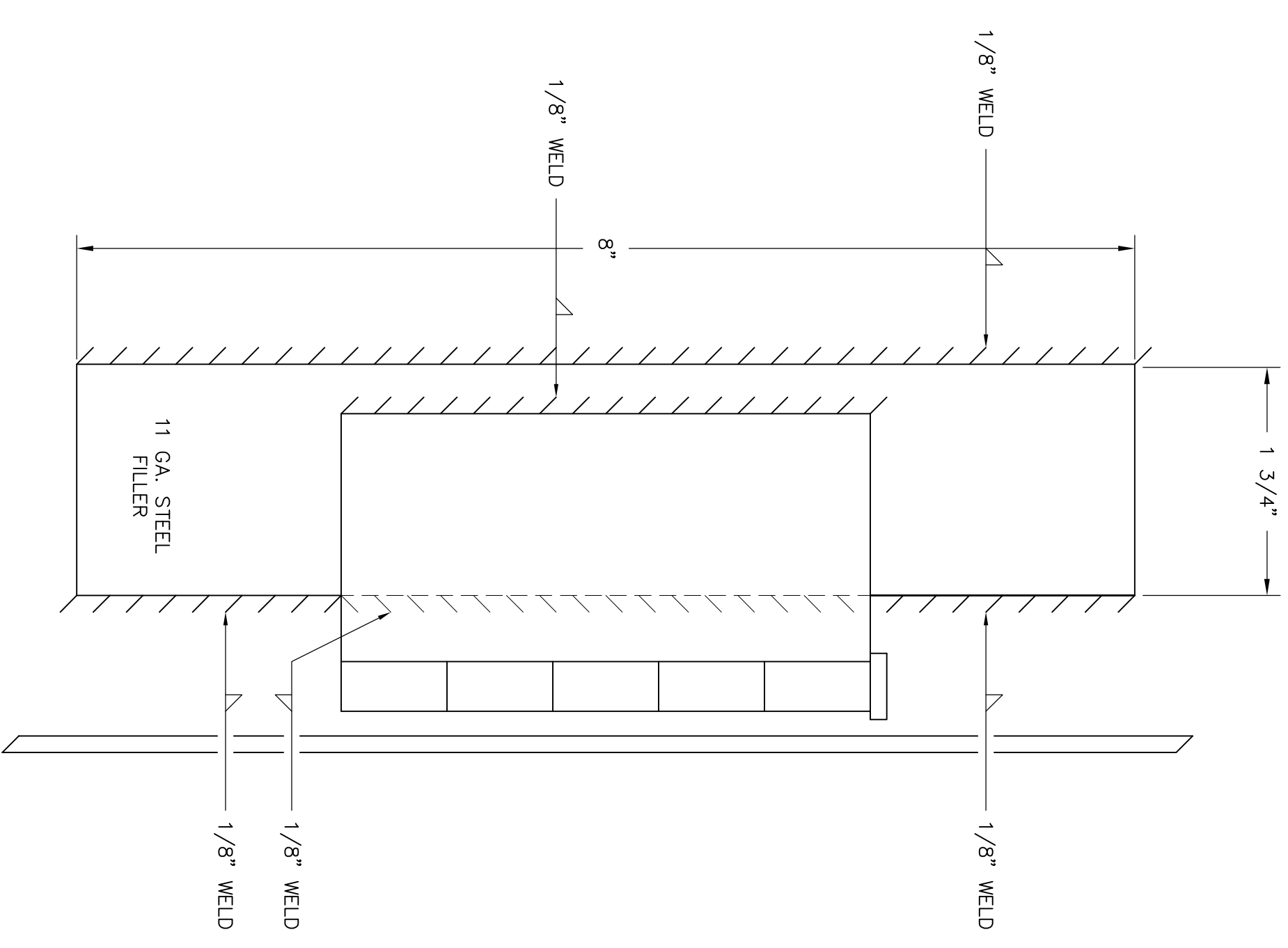
© 09/18



DOOR HINGE BRACKET - 11 GA. STEEL
3-REQD.
SCALE: 1"=1"

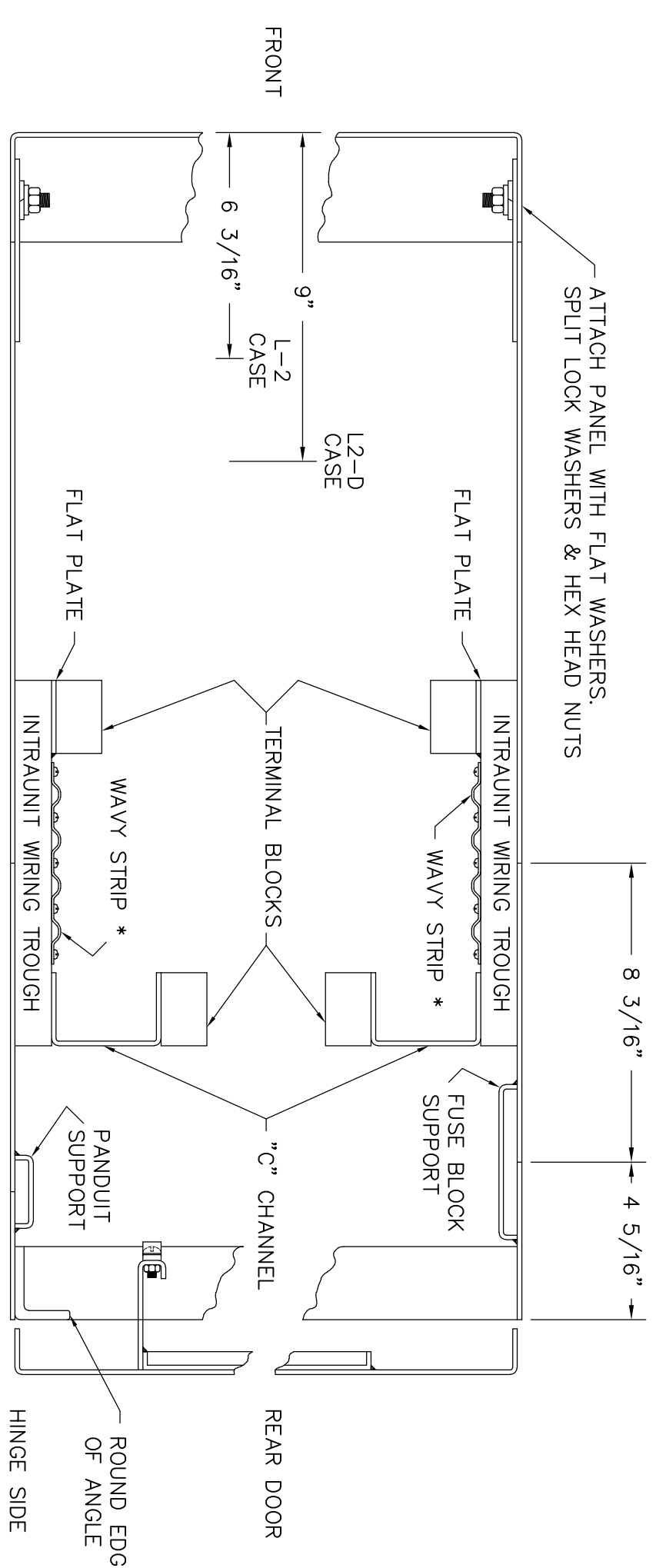


DOOR HINGE DETAIL
SCALE: 1"=1"

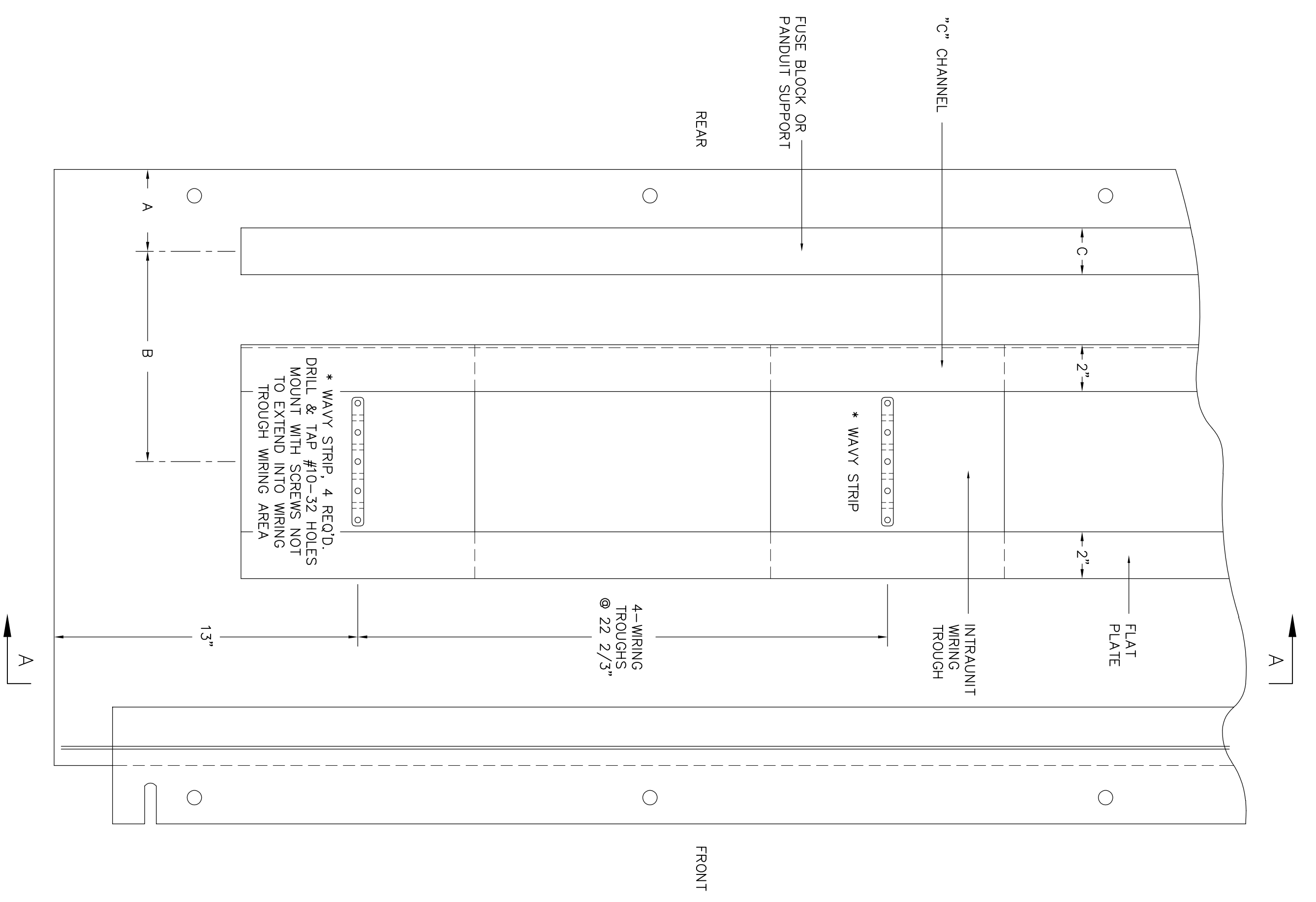


HINGE SECTION "A-A"
SCALE: 1"=1"

		GREENVILLE UTILITIES GREENVILLE, NORTH CAROLINA GREENVILLE WEST 230KV POD #2 DUAL PANEL DETAILS PANEL HINGE	
Booth & Associates, LLC 14020 E. 45th Street, Suite 200, Greenwood Village, CO 80111		Booth & Associates, LLC DATE: 09/06/18 APPD. BCW	
NO.	REVISIONS	DATE	SCALE: 1"=1"
0	RELEASE FOR CONSTRUCTION	10/29/18	DMN, BNC ORD. BCW
© 09/18	BCU		DWG. NO. 14020 E045F



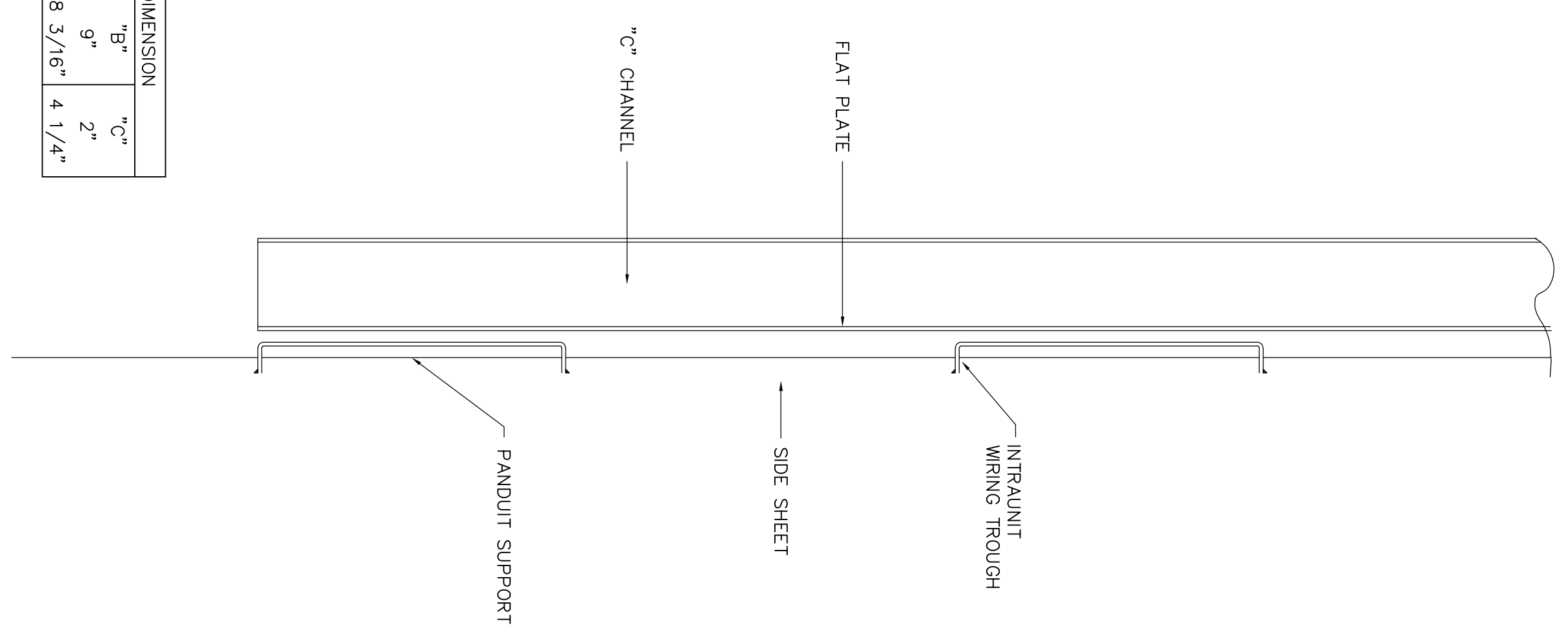
UNIT SECTIONAL VIEW
SCALE: 1/4"=1"



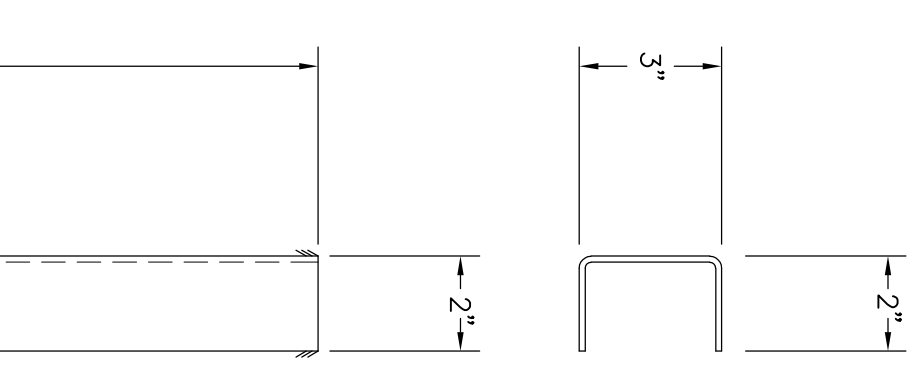
SIDE SHEET	DIMENSION		
RIGHT	"A" 3 1/2"	"B" 9"	"C" 2"
LEFT	4 5/16"	8 3/16"	4 1/4"

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

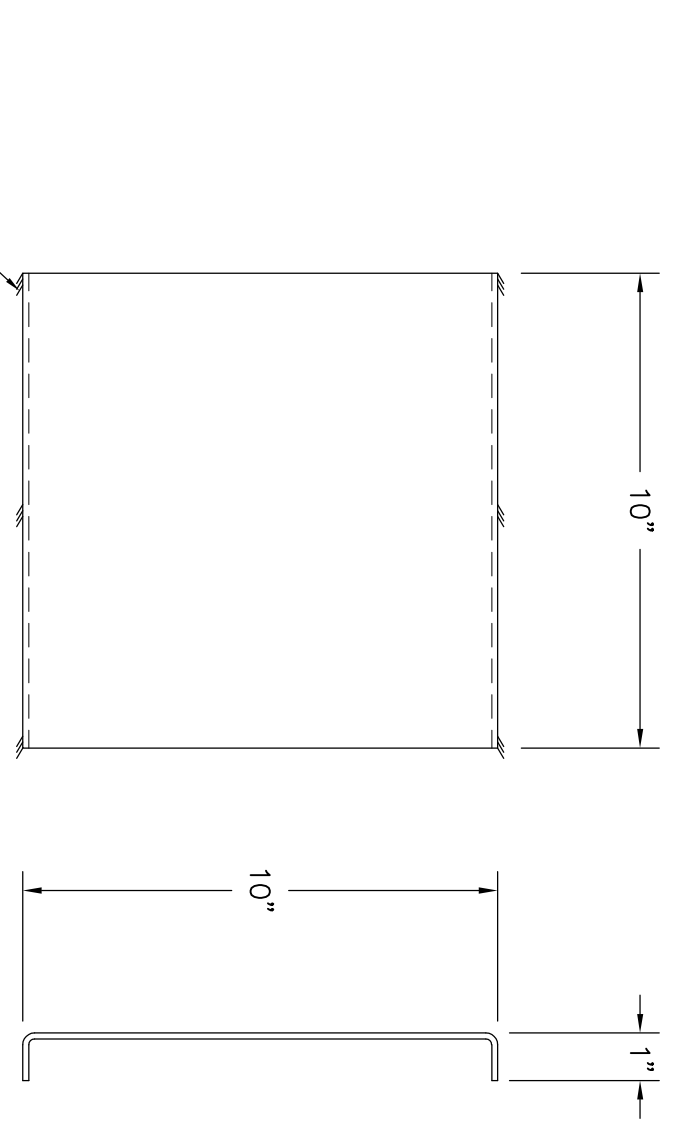
NOTE:
INSIDE VIEW OF RIGHT HAND SIDE SHEET SHOWN:
LEFT HAND SIDE SHEET TO BE SIMILAR BUT
OPPOSITE HAND.



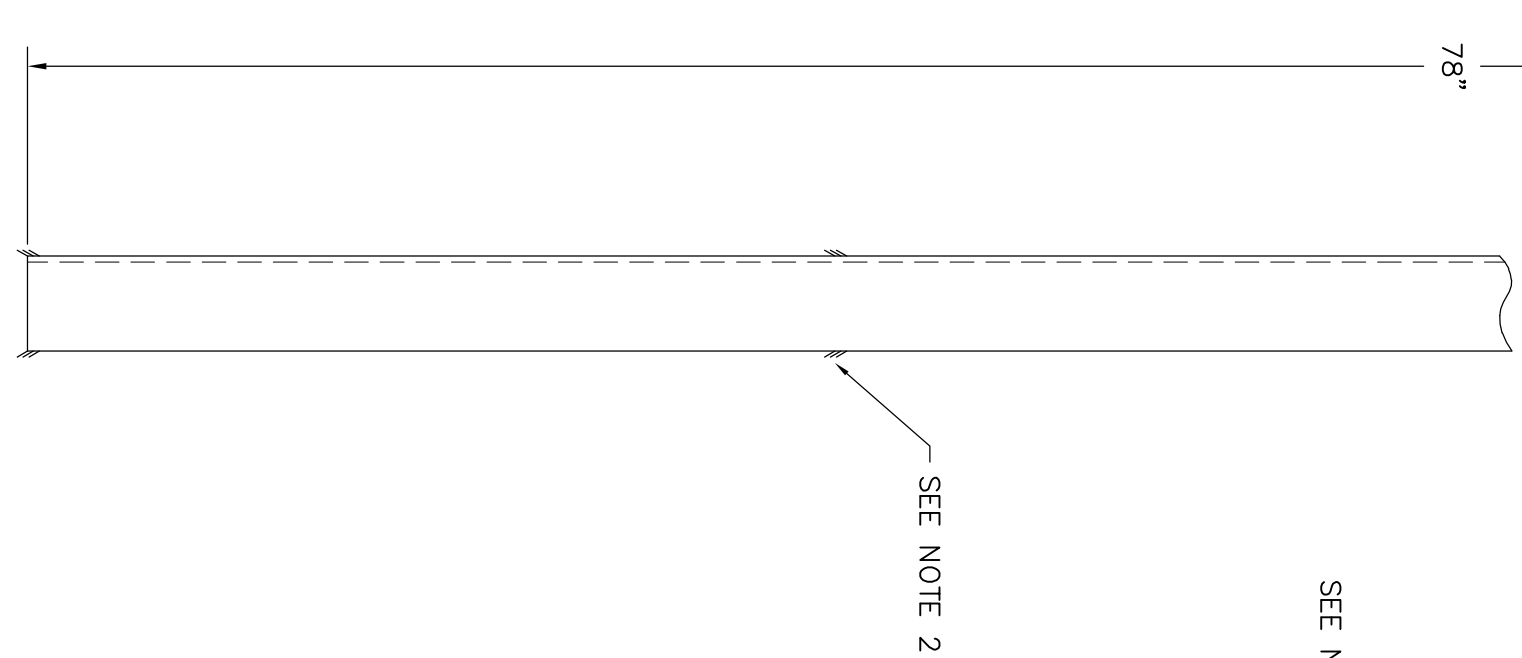
SECTION A-A
SCALE: 1/4"=1"



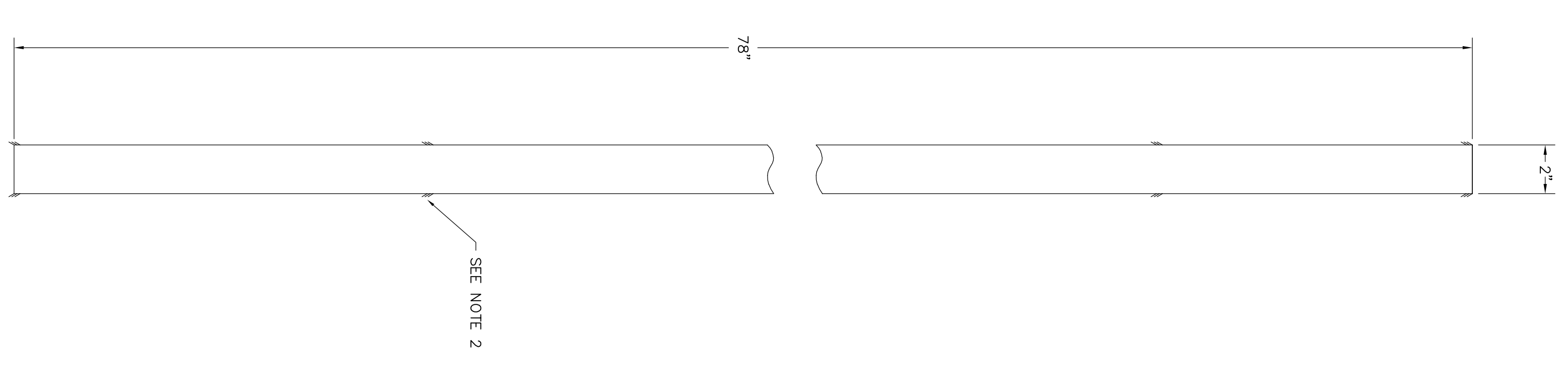
WAVEY STRIP
SCALE: 3/4"=1"
1/16" x 1/2" ROUNDED STEEL BAR
13 PIECES REQUIRED



INTRAUNIT WIRING TROUGH
11 G. STEEL--8 REOD.



"C" CHANNEL
11 GA. STEEL--2 REOD.
SCALE: 1/4"=1"



FLAT PLATE
11 GA. STEEL--2 REOD.
SCALE: 1/4"=1"

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

GREENVILLE UTILITIES
GREENVILLE, NORTH CAROLINA

GREENVILLE WEST 230KV POD #2
DUAL PANEL DETAILS
T.B. MOUNTING PLATES, WAVY STRIP

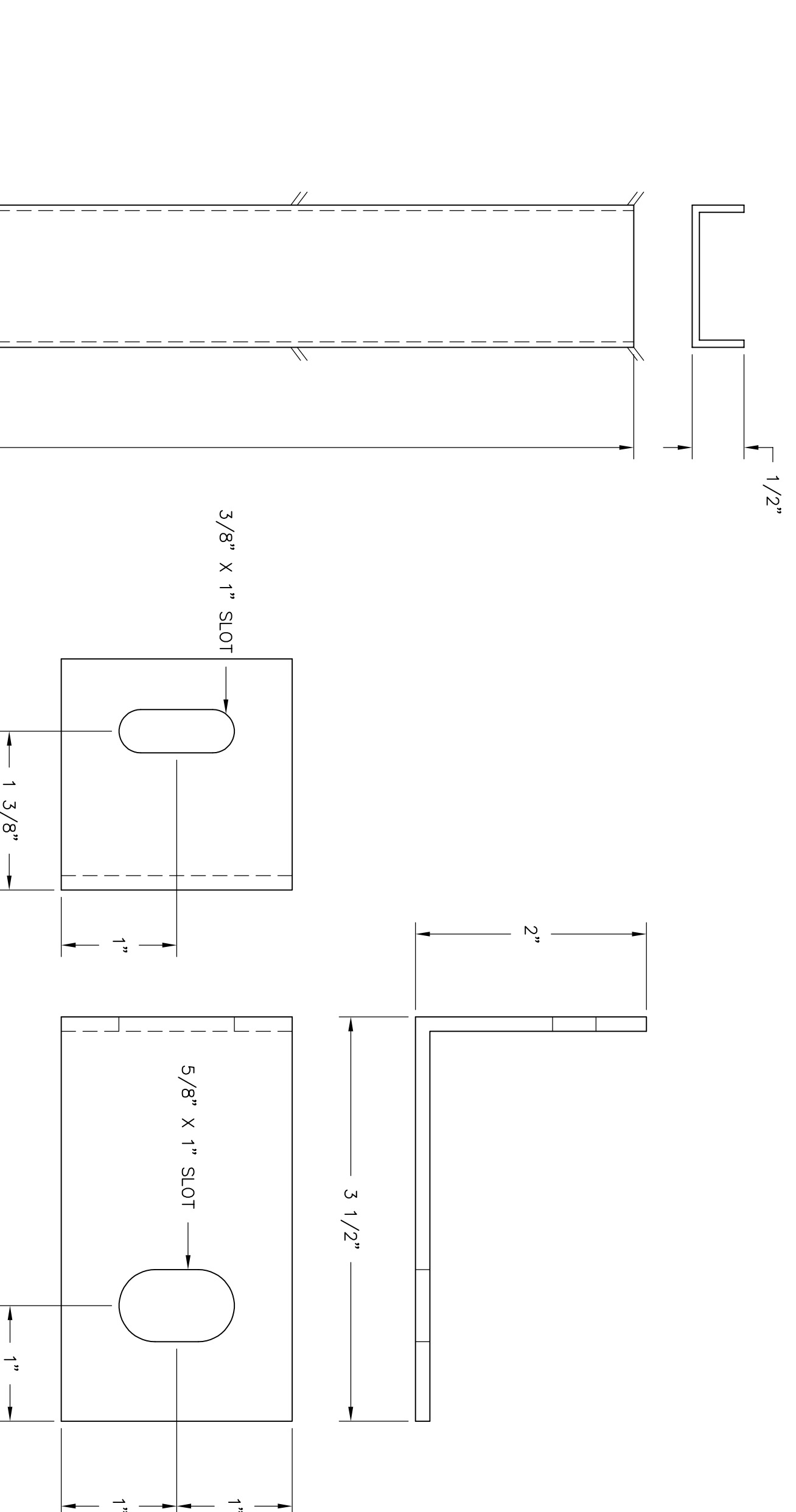
Booth & Associates, LLC
14020 ECHOLS DRIVE, GREENVILLE, NC 27603

DESIGNED BY DMM: ENC	DATE: 09/08/18	CHECKED BY CRO: BOW	DATE: 09/08/18
RELEASE FOR CONSTRUCTION	NO. 0	APPRO. BY	DATE
REVISIONS		SCALE AS NOTED	PLOT: 1:96

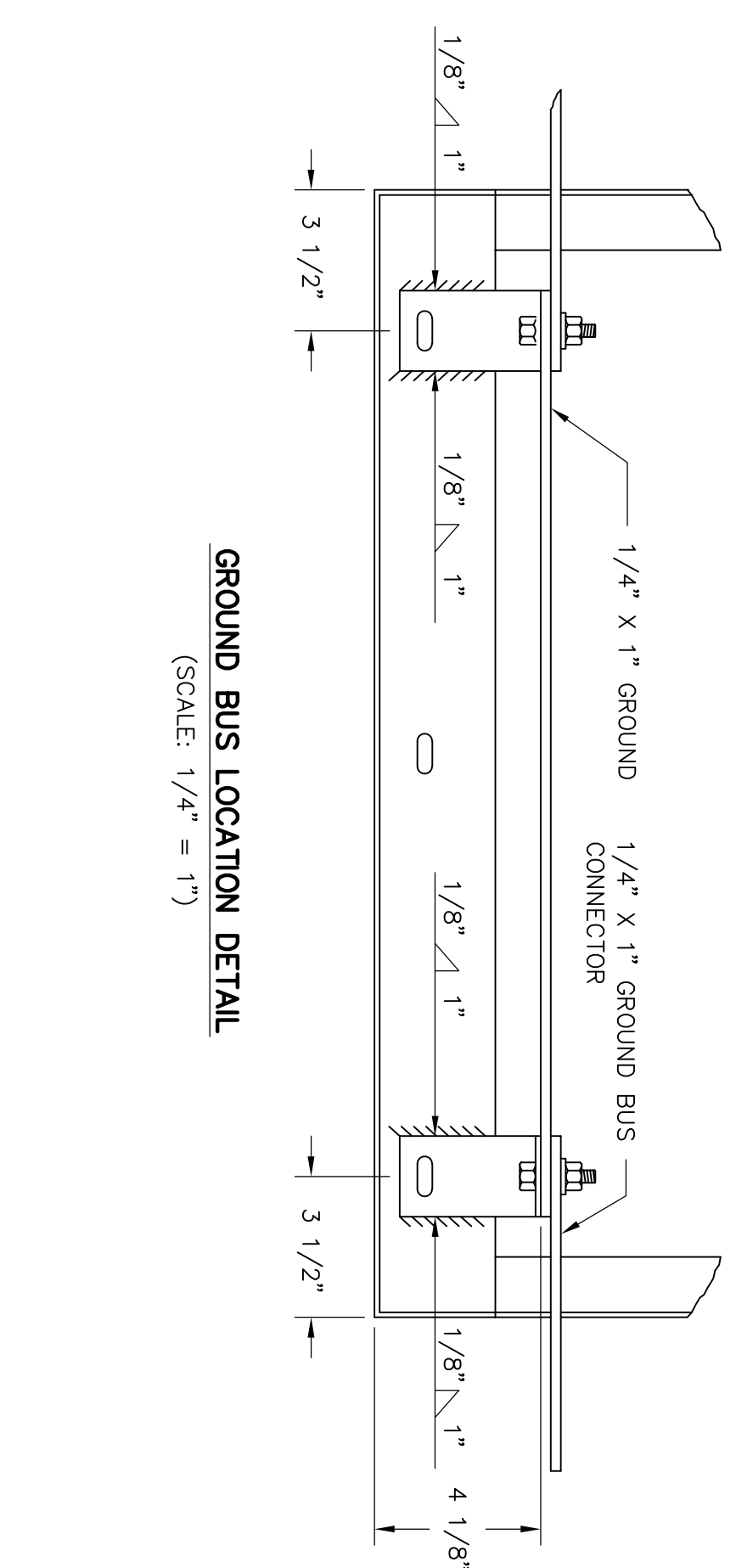
10/25/2018
Blw

DMG. NO.
14020
E045G

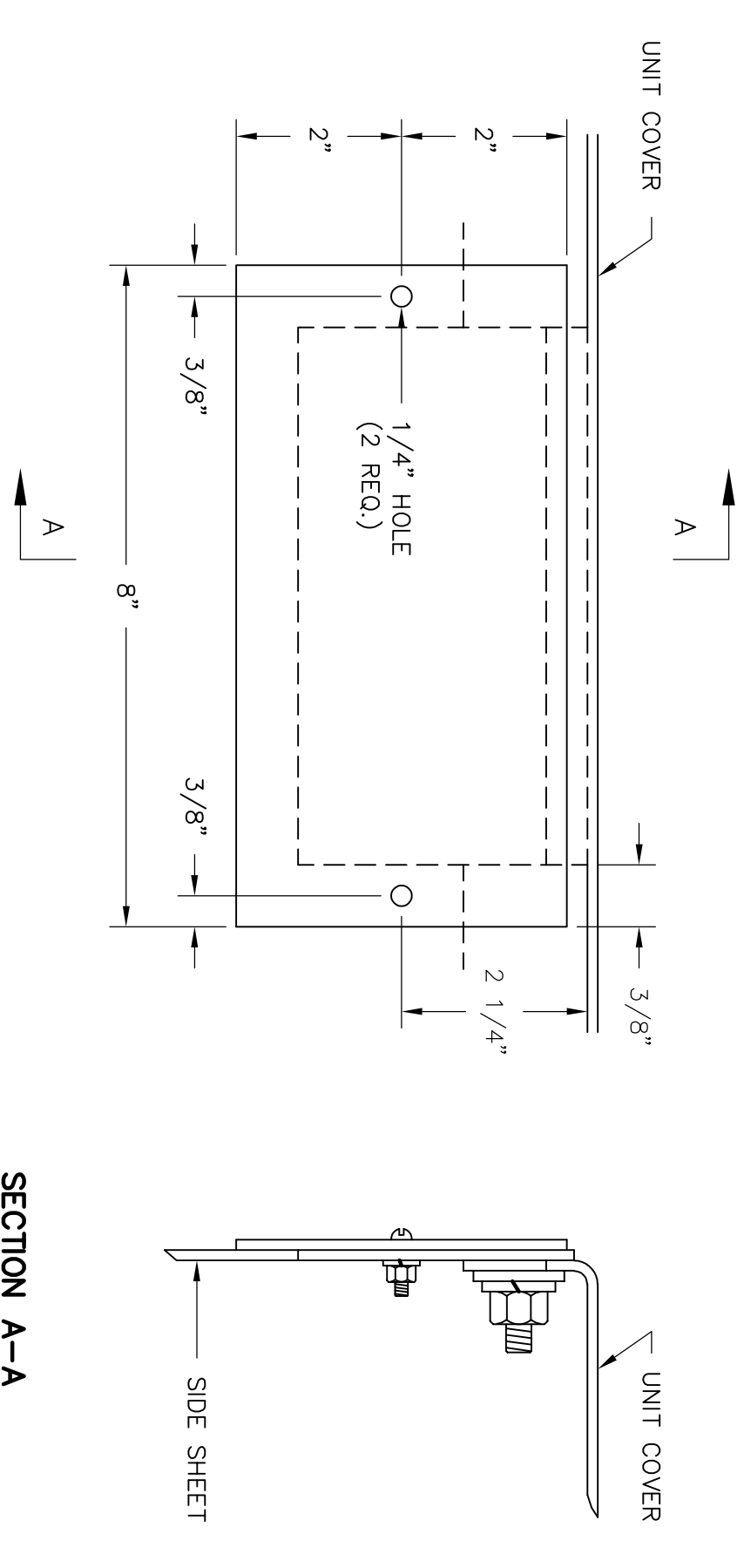
14020-E045G (ID: 71723).DWG



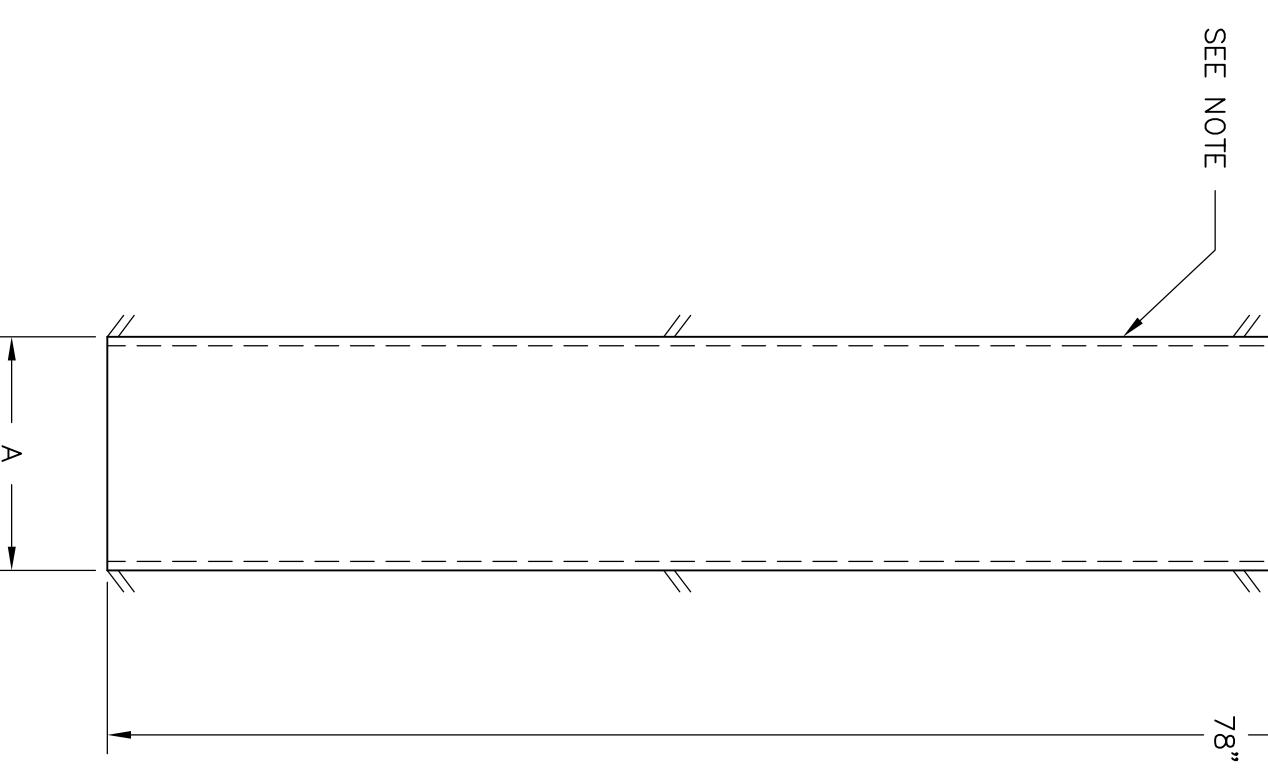
GROUND BUS SUPPORT BRACKET
11 GA. - 2 REQ'D
(FULL SCALE)



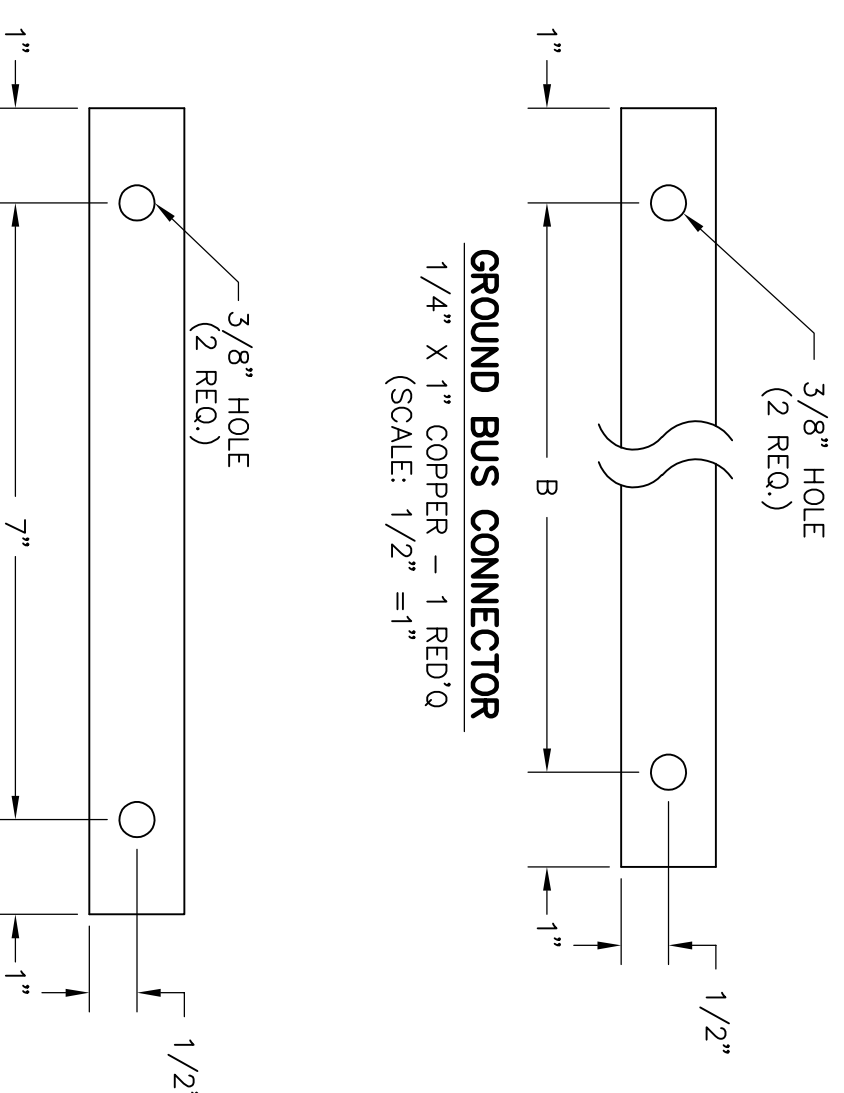
GROUND BUS LOCATION DETAIL
(SCALE: 1/4" = 1")



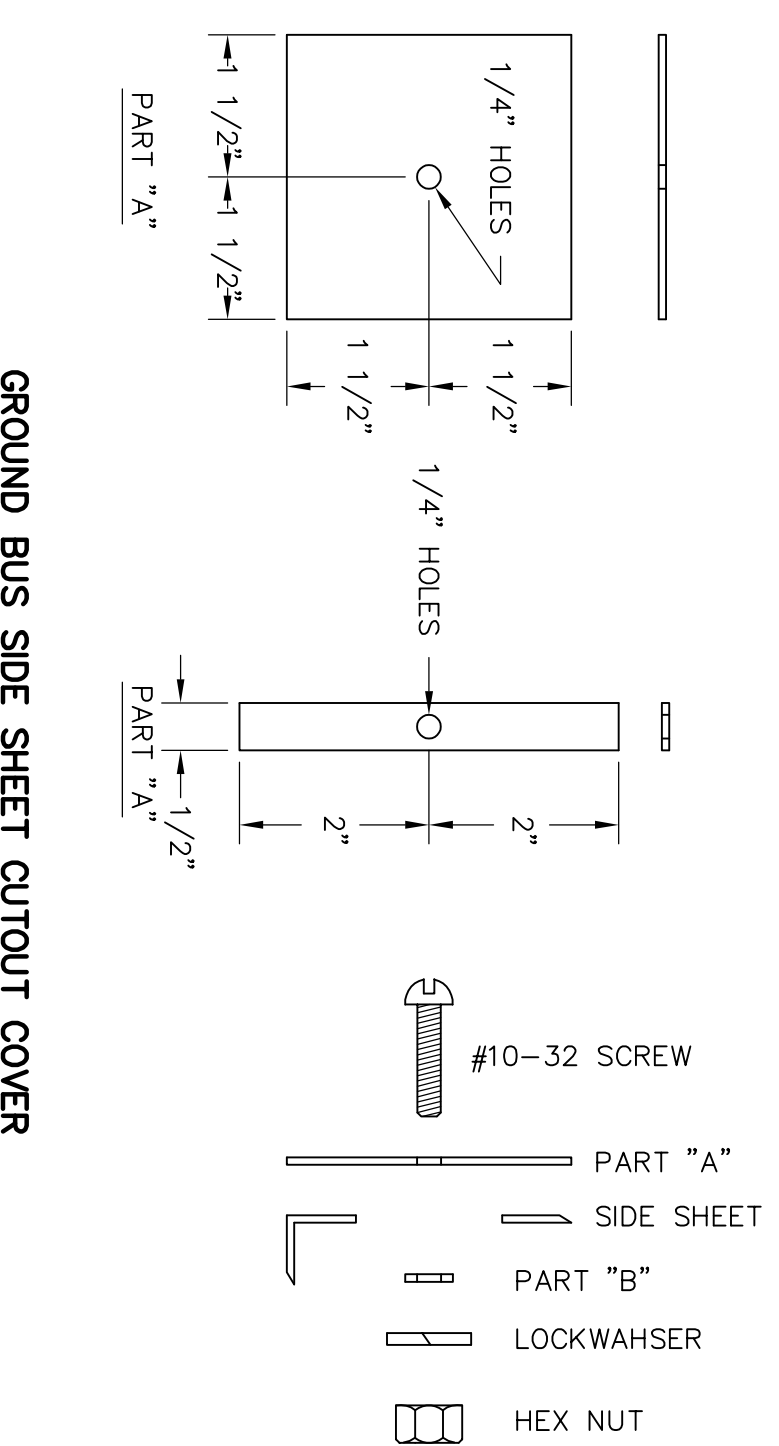
INTERUNIT WIRING CUTOUT COVER PLATE DETAIL - 14 GA. STEEL
SECURE COVER PLATE WITH 2, #10-32 MACHINE SCREWS, LOCKWASHERS & HEX. HEAD NUTS
(SCALE: 1/2" = 1")



FUSE BLOCK & PANDUIT SUPPORT
11 GA. STEEL (NOT TO SCALE)
FUSE BLOCK SUPPORT "A" = 4 1/4"
PANDUIT SUPPORT "A" = 2"



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



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

UNIT WIDTH	DIMENSIONS
28"	8"
32"	21"
	25"

SEAL
02807
BRIAN C. BOOTH
REGISTERED PROFESSIONAL ENGINEER
STATE OF NORTH CAROLINA
10/23/2018

© 09/18

B&A

NO.	REVISIONS	DATE	DMR: BNC	DATE: 09/08/18	SCALE AS NOTED	FIG. NO.	FIG. NO.
0	RELEASE FOR CONSTRUCTION	10/23/18	DMR: BNC	09/08/18	SCALE AS NOTED	FIG. NO.	FIG. NO.

Booth & Associates, LLC
1000 W. GREENVILLE AVENUE, SUITE 200
GREENVILLE, NORTH CAROLINA 27601

GREENVILLE UTILITIES
GREENVILLE, NORTH CAROLINA

GREENVILLE WEST 230KV POD #2
DUAL PANEL DETAILS
GROUND BUS & COVER PLATE

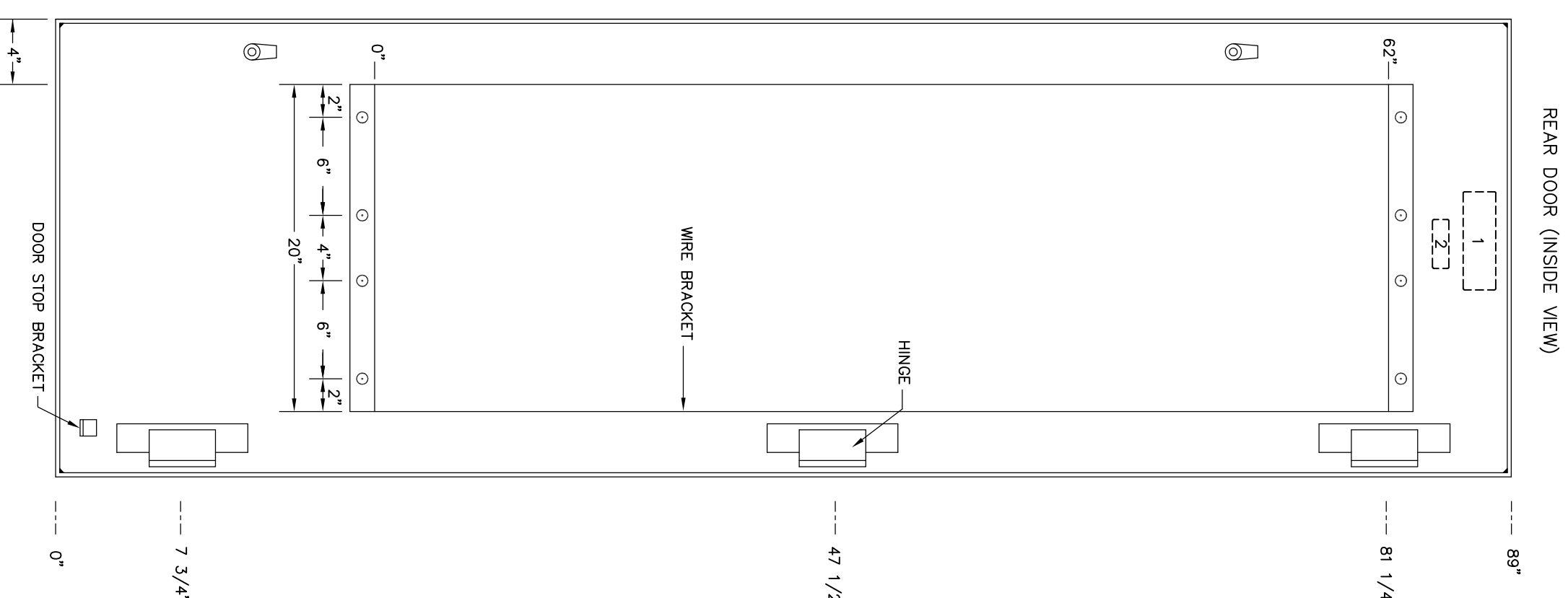
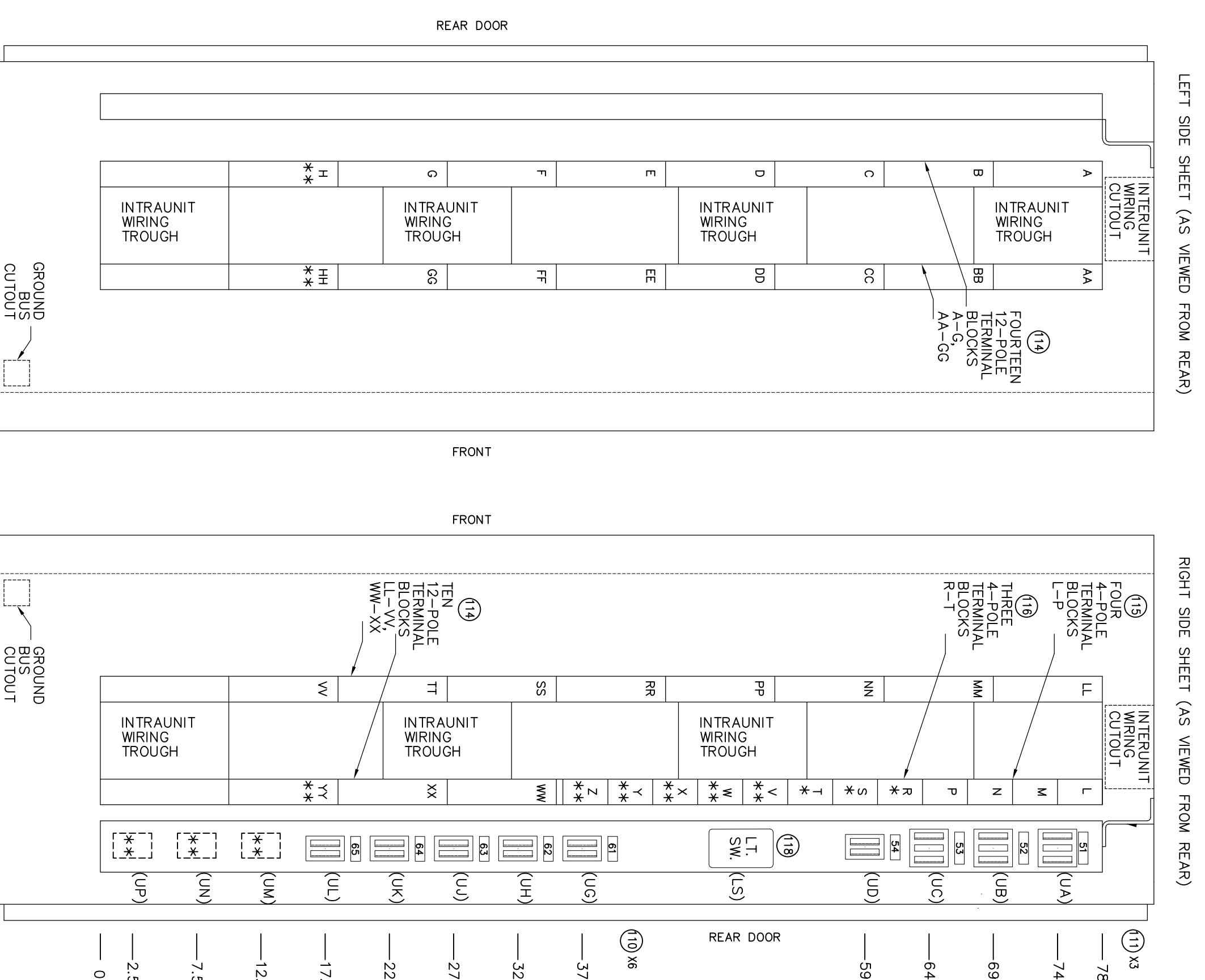
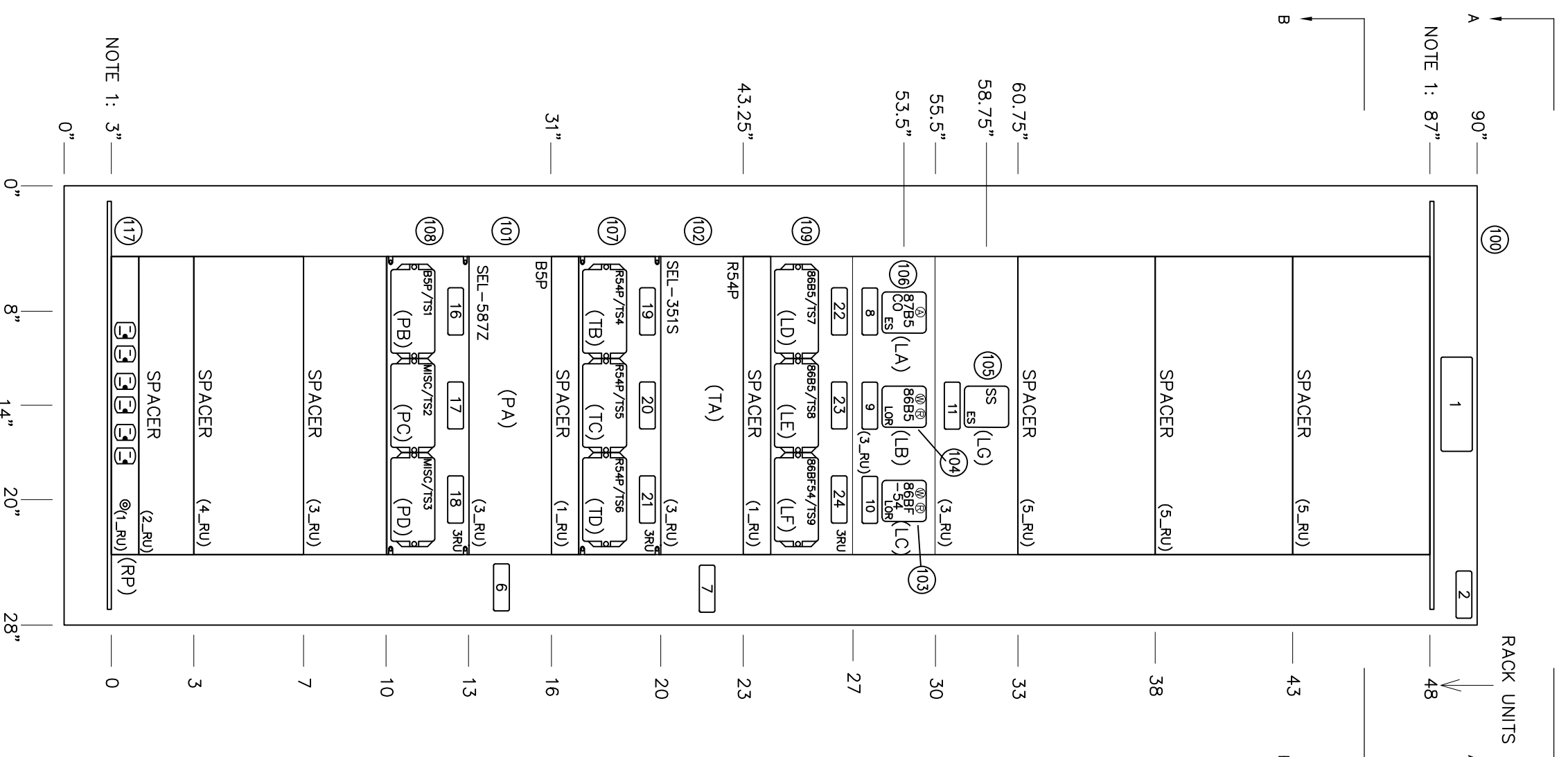
NO. 14020-E045H (ID 71724).DWG

DWG. NO. 14020-E045H

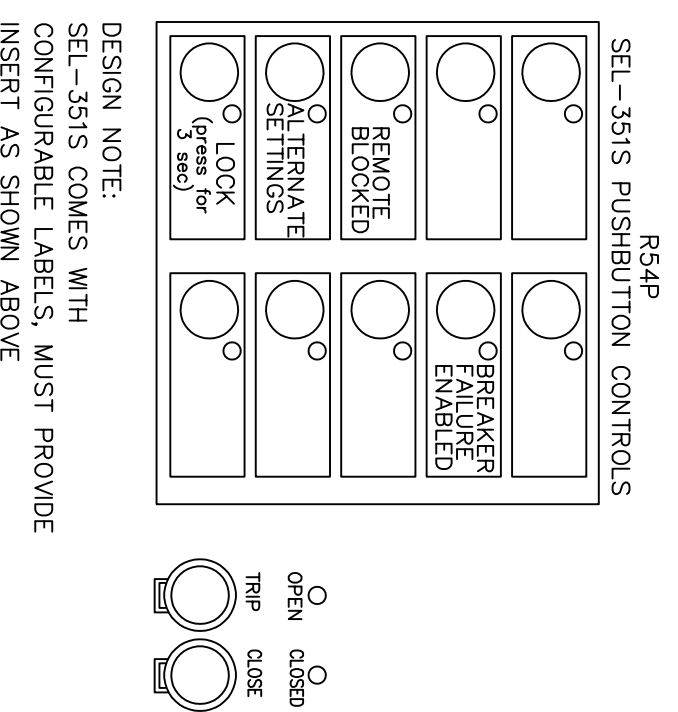
115KV BUS NO.5 PROTECTION PANEL
115KV BREAKER NO. 54 CONTROL

PANEL 7 FRONT VIEW

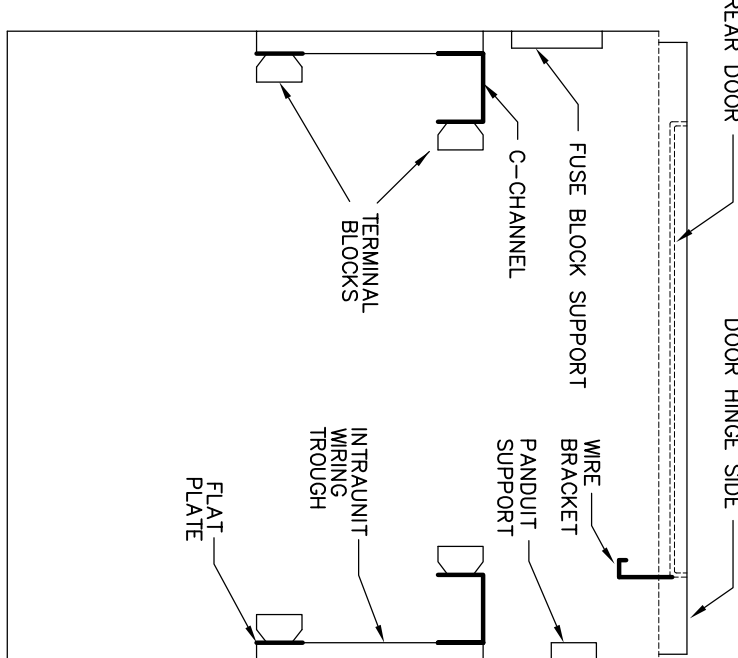
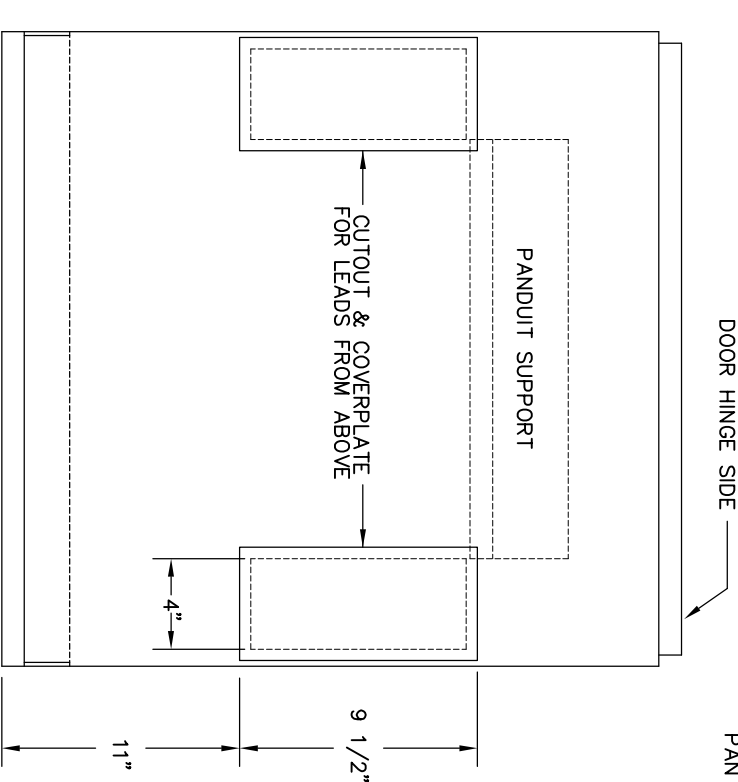
PANEL 7 SIDE VIEWS (INSIDE)



(XX): INDICATES WIRING DIAGRAM DEVICE DESIGNATION



- NOTES
1 - PANEL REINFORCEMENT PER PANEL STEEL DETAILS
LEGEND
* - SHORTING TYPE TERMINAL BLOCK
** - SPACE ONLY FOR FUTURE TERMINAL BLOCK
(XX) - ITEM NUMBER FROM SPECIFICATION



NO.	ID NO.	FIG. NO.	CARD SIZE	FIRST LINE	SECOND LINE	THIRD LINE	REMARK
1		1/2	2 X 6	115KV BUS NO.5 RELAY	BREAKER 52-54 CONTROL		QTY: 2
2		1/2	1 X 3	PANEL NO. 7			QTY: 2
3							
4							
5							
6		3/16	1 X 3	115KV BUS NO.5	PRIMARY RELAY (BSP)		
7		3/16	1 X 3	115KV BREAKER NO.54	BREAKER RELAY (R54P)		
8		3/16	1 X 3	115KV BUS DIFFERENTIAL	CUTOFF (B7B9/CO)		
9		3/16	1 X 3	115KV BUS LOCKS	LOCKOUT RELAY (B8B9)		
10		3/16	1 X 3	115KV BREAKER NO.54	B7 LOCKOUT RELAY (B8B9/54)		
11		3/16	1 X 3	SYNCHRONIZING	B7 LOCKOUT RELAY (B8B9/54)		
12							
13							
14							
15							
16		3/16	1 X 3	SEL-587Z B5P	TEST SWITCH 1		
17		3/16	1 X 3	MISCELLANEOUS	TEST SWITCH 2		
18		3/16	1 X 3	MISCELLANEOUS	TEST SWITCH 3		
19		3/16	1 X 3	SEL-3515 R54P	TEST SWITCH 4		
20		3/16	1 X 3	SEL-3515 R54P	TEST SWITCH 5		
21		3/16	1 X 3	SEL-3515 R54P	TEST SWITCH 6		
22		3/16	1 X 3	B8B9 LOCKOUT RELAY	TEST SWITCH 7		
23		3/16	1 X 3	B8B9 LOCKOUT RELAY	TEST SWITCH 8		
24		3/16	1 X 3	B8B9/54 LOCKOUT RELAY	TEST SWITCH 9		
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51		1/8	1 X 3	115KV BUS NO.5 POTENTIAL	115VAC PH-N	A-15A	B-15A
52		1/8	1 X 3	115KV BUS NO.4 POTENTIAL	115VAC PH-N	A-15A	B-15A
53		1/8	1 X 3	SPARE			
54		1/8	1 X 3	LIGHT AND RECEPABLE	120 VAC	X-15A	X-NIS
55							
56							
57							
58							
59							
60		1/8	1 X 3	SEL-587Z B5P RELAY POWER	125 VDC	P-15A	N-15A
61		1/8	1 X 3	SEL-587Z B5P RELAY POWER	125 VDC	P-15A	N-15A
62		1/8	1 X 3	B8B9/54 BREAKER FAILURE LOCKOUT	125 VDC	P-30A	N-30A
63		1/8	1 X 3	B8B9/54 BREAKER FAILURE LOCKOUT	125 VDC	P-30A	N-30A
64		1/8	1 X 3	SPARE	125 VDC	P-NIS	N-NIS
65		1/8	1 X 3	SPARE	125 VDC	P-NIS	N-NIS
66							
67							
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							
84							
85							
86							
87							
88							
89							
90							

GREENVILLE UTILITIES
GREENVILLE, NORTH CAROLINA

GREENVILLE WEST 230KV SUBSTATION
115KV BUS NO.5 & BREAKER NO.54
PANEL FRONT VIEW (PANEL NO.7)

Booth & Associates, LLC
14020 EDWARDS DRIVE, GREENVILLE, NC 27607
TEL: 252-338-1111 FAX: 252-338-1112

DATE: 07/28/18
DRAWN BY: [Signature]
CHECKED BY: [Signature]
SCALE: NONE

DATE: 10/25/18
RELEASE FOR CONSTRUCTION

DATE: 07/18
REV: 0

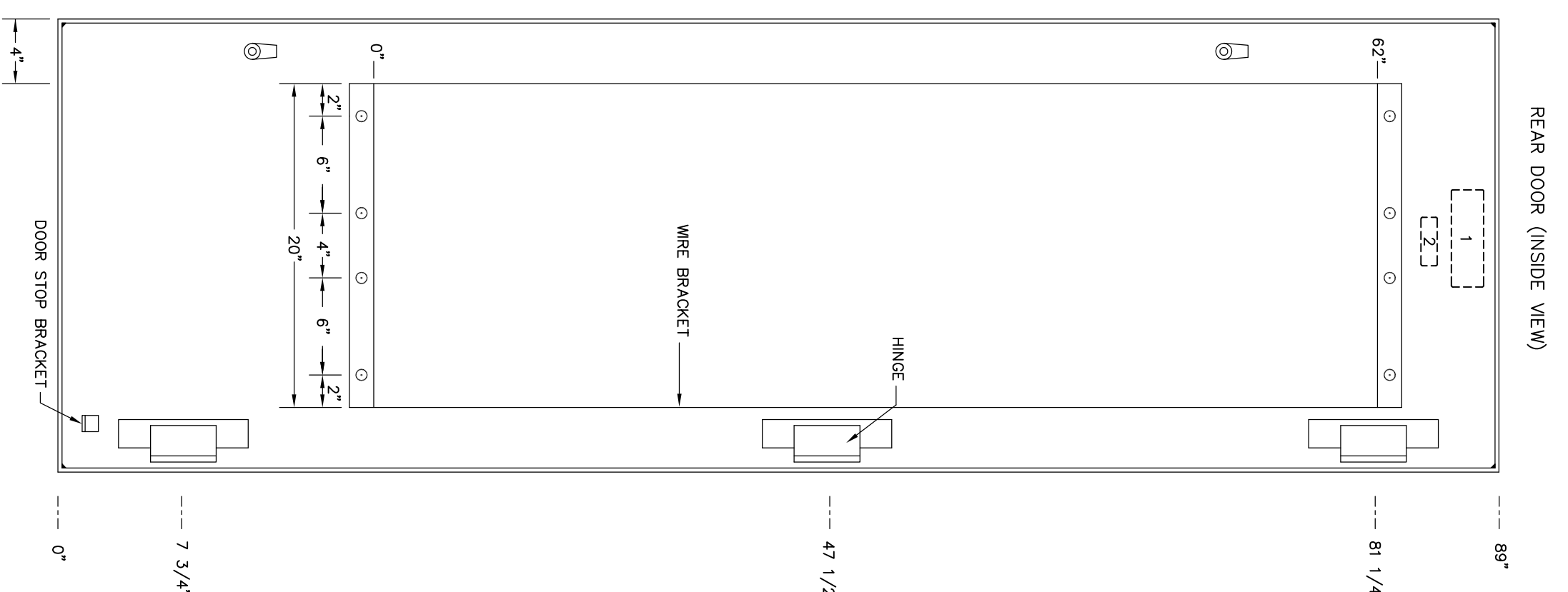
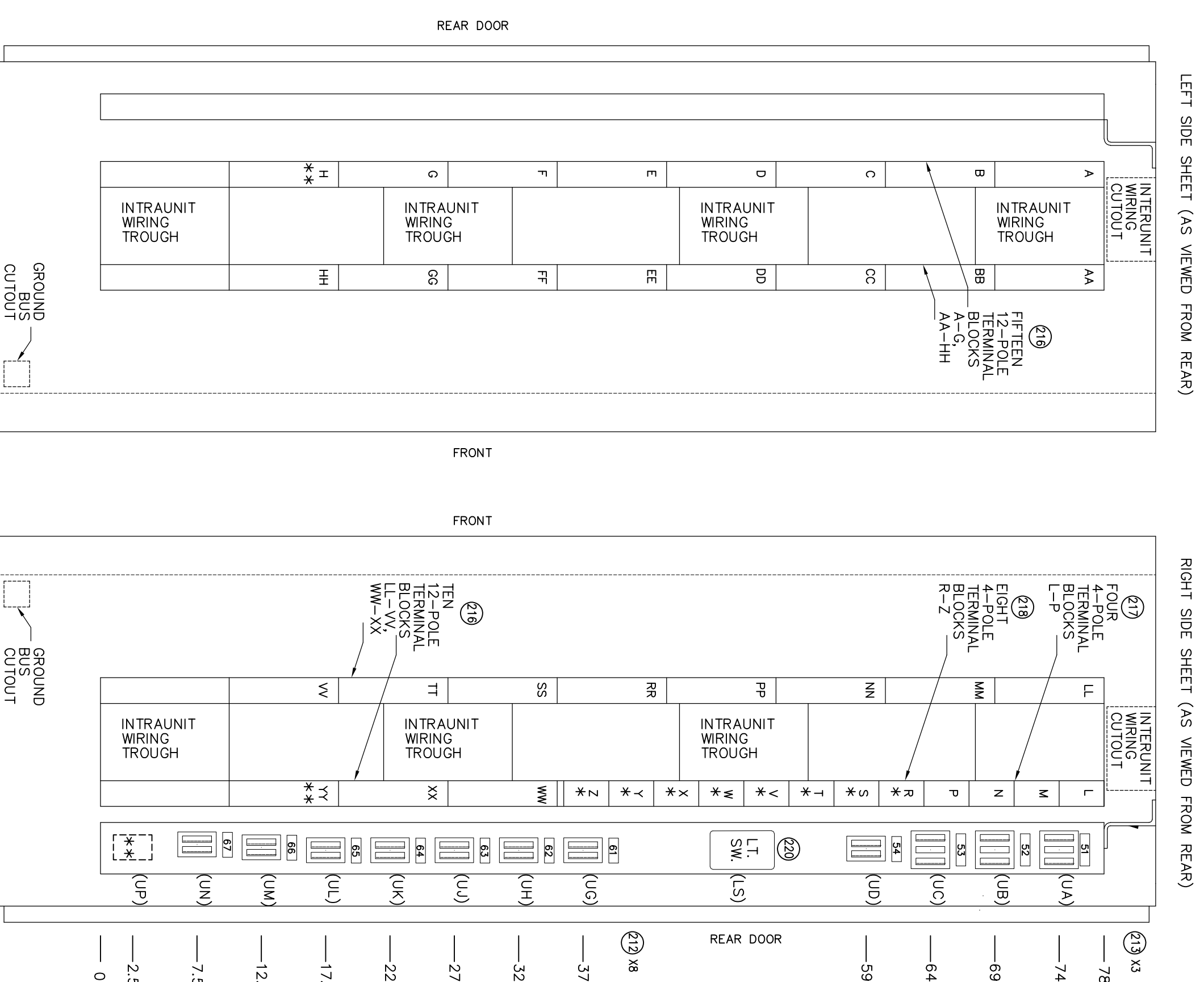
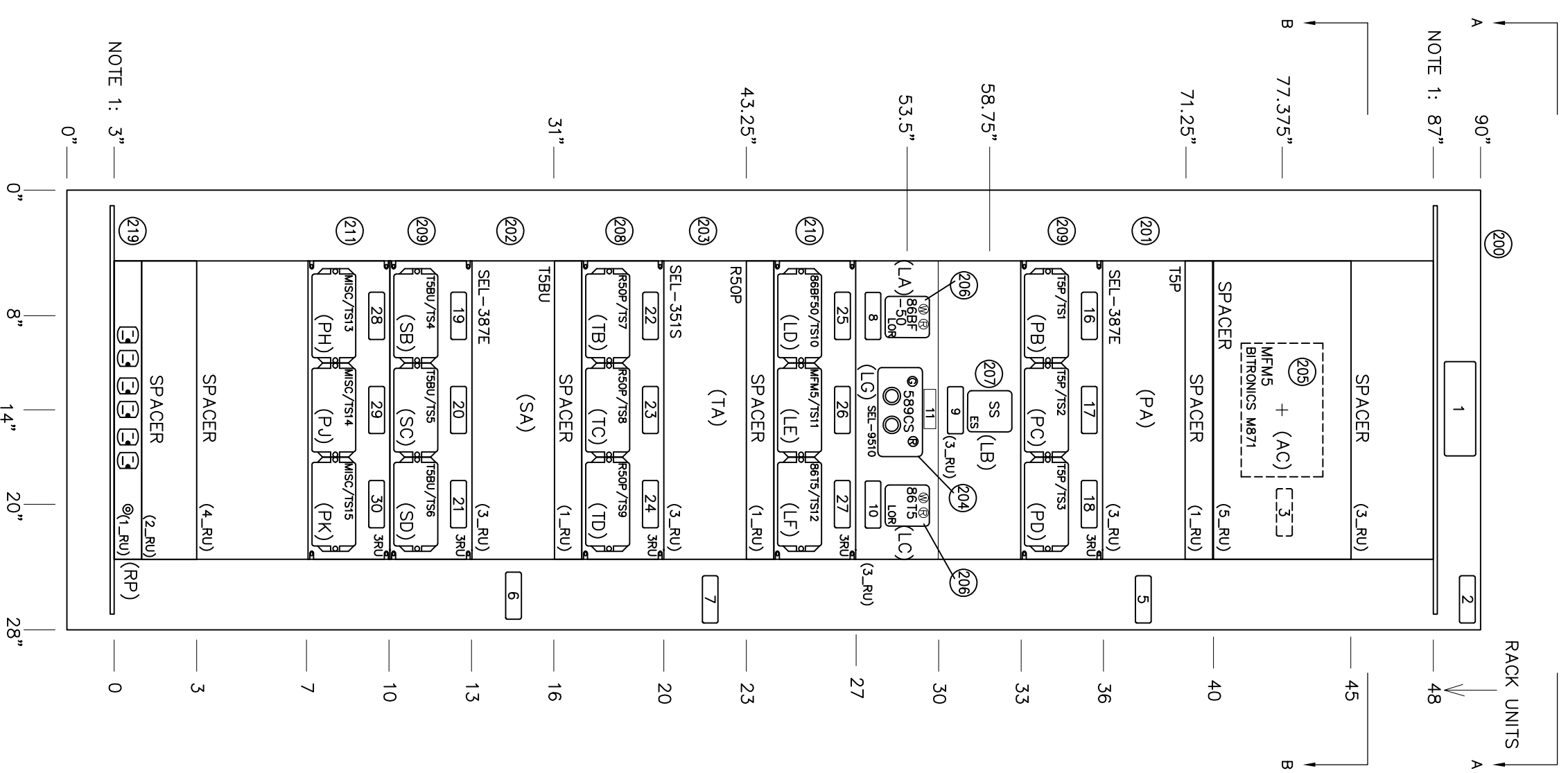
DATE: 10/25/18
REV: 0

DATE: 07/18
REV: 0

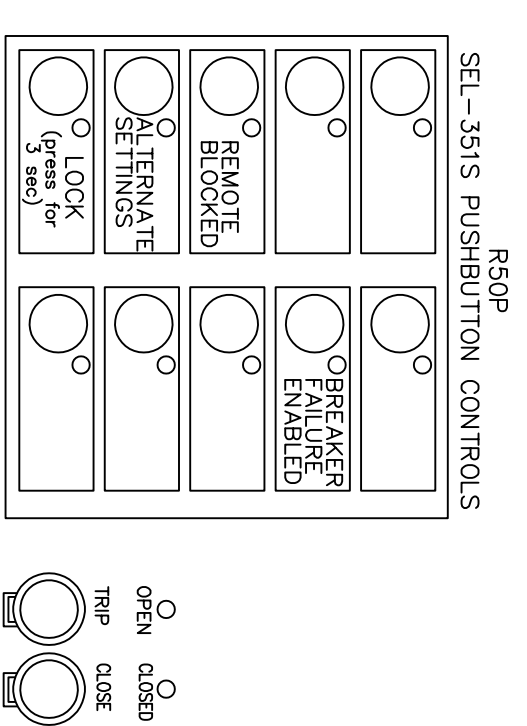
230/115KV BANK NO.5 PROTECTION PANEL
115KV BREAKER NO. 50 CONTROL

PANEL 8 FRONT VIEW

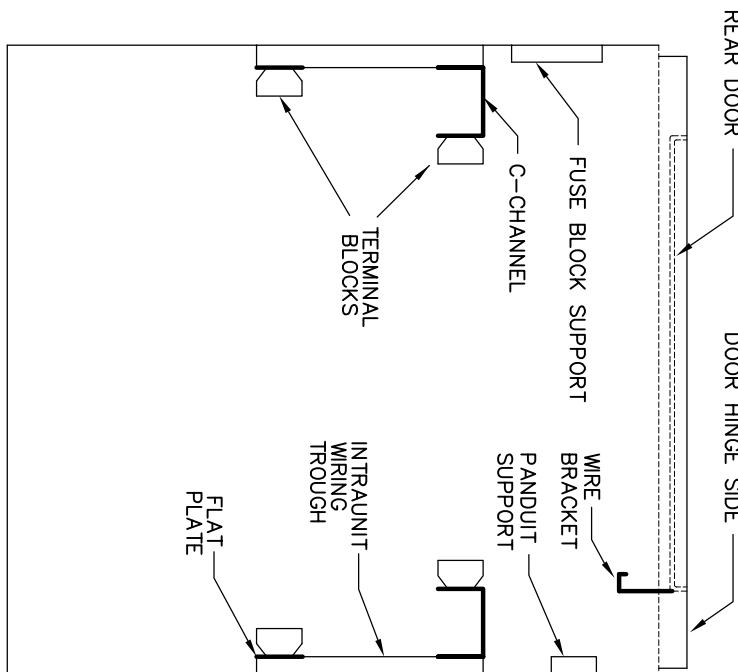
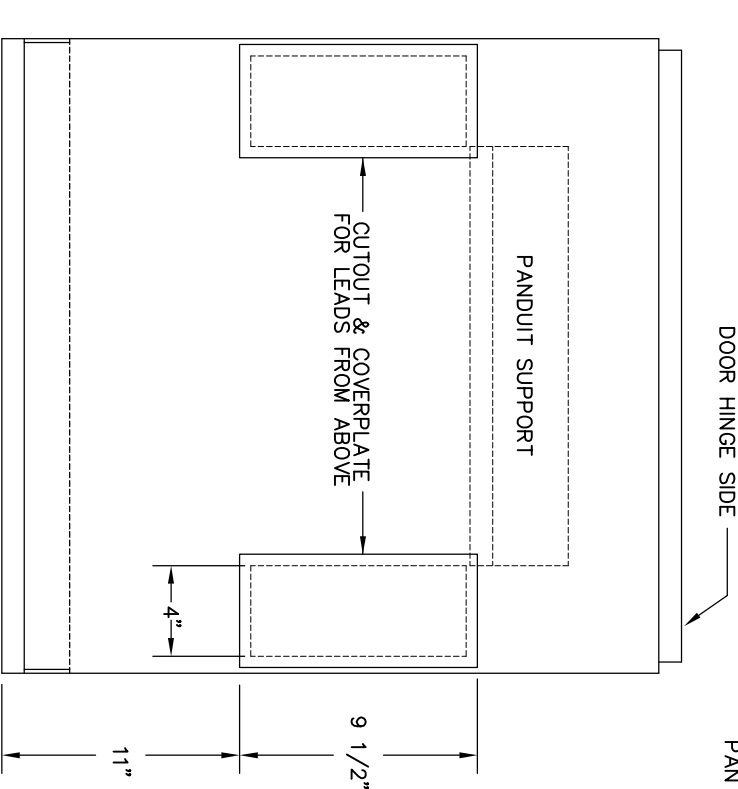
PANEL 8 SIDE VIEWS (INSIDE)



(XX): INDICATES WIRING DIAGRAM DEVICE DESIGNATION



NOTES
1 - PANEL REINFORCEMENT PER PANEL STEEL DETAILS
LEGEND
* - SHORTING TYPE TERMINAL BLOCK
** - SPACE ONLY FOR FUTURE TERMINAL BLOCK
--- DEVICE MOUNTED ON REAR OF PANEL.
--- ITEM NUMBER FROM SPECIFICATION



NO.	ID NO.	FIG. SIZE	CARD SIZE	FIRST LINE	SECOND LINE	THIRD LINE	REMARK
1		1/2	2 X 6	230/115KV BANK NO.5 RELAY	BREAKER 52-50 CONTROL		QTY: 2
2		1/2	1 X 3	PANEL NO. 8			QTY: 2
3		3/16	1 X 3	BANK NO.5 METERING (MFM5)			
4		3/16	1 X 3	TRANSFORMER NO.5	PRIMARY RELAY (TSP)		
5		3/16	1 X 3	TRANSFORMER NO.5	BACKUP RELAY (T5BU)		
6		3/16	1 X 3	115KV BREAKER NO.50	BREAKER RELAY (R50P)		
7		3/16	1 X 3	115KV BREAKER NO.50	BF LOCKOUT RELAY (BBBF50)		
8		3/16	1 X 3	TRANSFORMER NO.5	LOCKOUT RELAY (LRT5)		
10		3/16	1 X 3	TRANSFORMER NO.5	LOCKOUT RELAY (LRT5)		
11		3/16	1 X 3	230KV/115KV BANK NO. 5	230KV CIRCUIT SW. CONTROL (589)		
12							
13							
14							
15		3/16	1 X 3	SEL-387E TSP	TEST SWITCH 1		
16		3/16	1 X 3	SEL-387E TSP	TEST SWITCH 2		
17		3/16	1 X 3	SEL-387E TSP	TEST SWITCH 3		
18		3/16	1 X 3	SEL-387E TSP	TEST SWITCH 4		
19		3/16	1 X 3	SEL-387E TSP	TEST SWITCH 5		
20		3/16	1 X 3	SEL-387E TSP	TEST SWITCH 6		
21		3/16	1 X 3	SEL-387E TSP	TEST SWITCH 7		
22		3/16	1 X 3	SEL-387E TSP	TEST SWITCH 8		
23		3/16	1 X 3	SEL-387E TSP	TEST SWITCH 9		
24		3/16	1 X 3	SEL-387E TSP	TEST SWITCH 10		
25		3/16	1 X 3	SEL-387E TSP	TEST SWITCH 11		
26		3/16	1 X 3	SEL-387E TSP	TEST SWITCH 12		
27		3/16	1 X 3	MISCELLANEOUS	TEST SWITCH 13		
28		3/16	1 X 3	MISCELLANEOUS	TEST SWITCH 14		
29		3/16	1 X 3	MISCELLANEOUS	TEST SWITCH 15		
30		3/16	1 X 3	MISCELLANEOUS			
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							
61		1/8	1 X 3	SEL-3515 R50P RELAY POWER	125 VDC	P-15A	N-15A
62		1/8	1 X 3	SEL-387E TSP RELAY POWER	125 VDC	P-15A	N-15A
63		1/8	1 X 3	SEL-387E TSP RELAY POWER	125 VDC	P-15A	N-15A
64		1/8	1 X 3	50-50 BREAKER FLAME LOCKOUT	125 VDC	P-30A	N-30A
65		1/8	1 X 3	8675 BANK LOCKOUT	125 VDC	P-15A	N-15A
66		1/8	1 X 3	BITRONICS M871 LED POWER	125 VDC	P-15A	N-15A
67		1/8	1 X 3	SPARE	125 VDC	P-NIS	N-NIS
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							
84							
85							
86							
87							
88							
89							
90							

GREENVILLE UTILITIES
GREENVILLE, NORTH CAROLINA

Booth & Associates, LLC
14020-EO47 (10/08/92).DWG

10/29/2018
023077
BCL

RELEASE FOR CONSTRUCTION DATE 10/29/18

NO. 0 REVISIONS DATE

DMK: BOW DATE 07/26/18
APD: BOW
SCALE: NONE

GREENVILLE WEST 230KV SUBSTATION
230/115KV BANK NO.5 & BKR. NO.50
PANEL FRONT VIEW (PANEL NO.8)