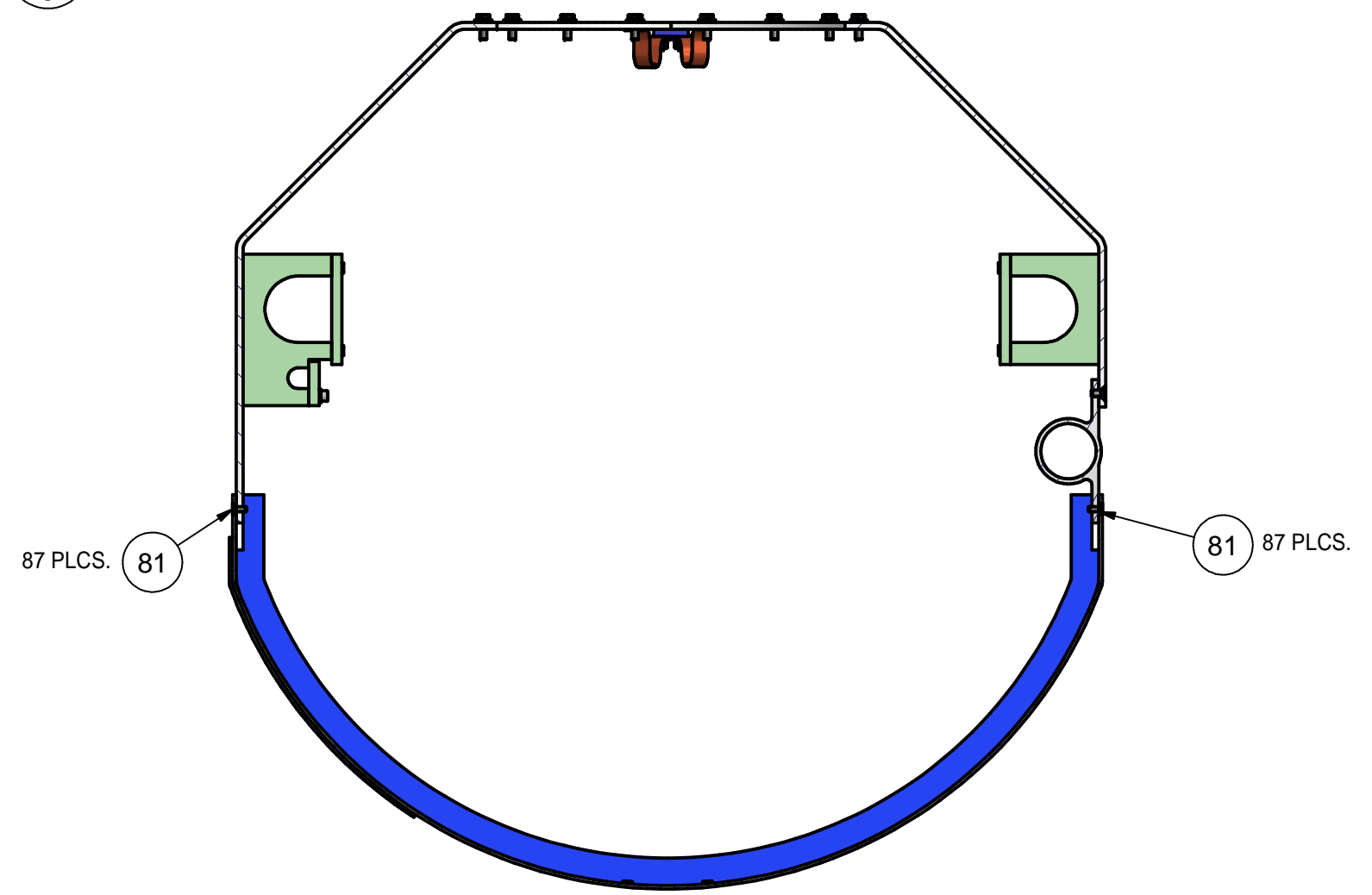
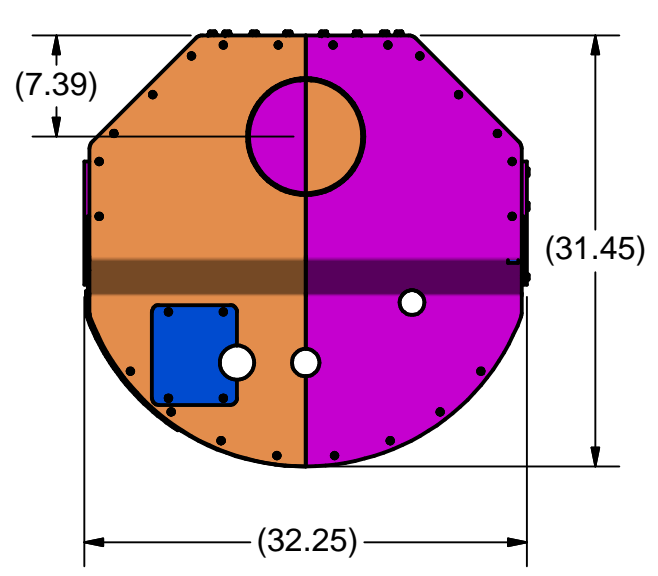
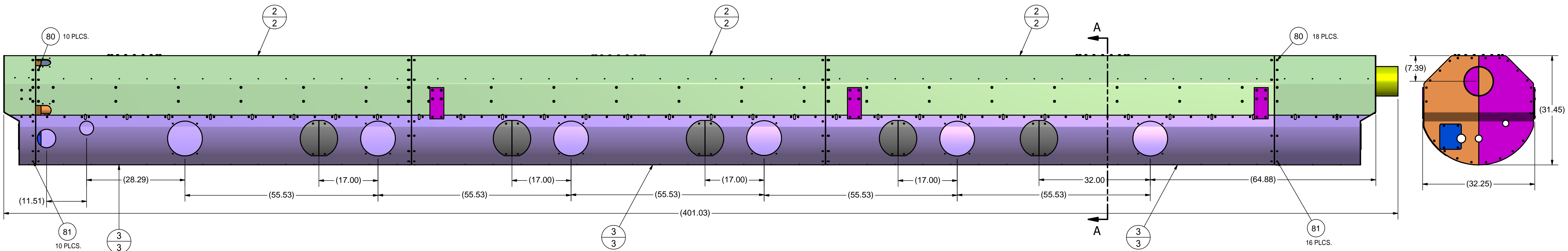
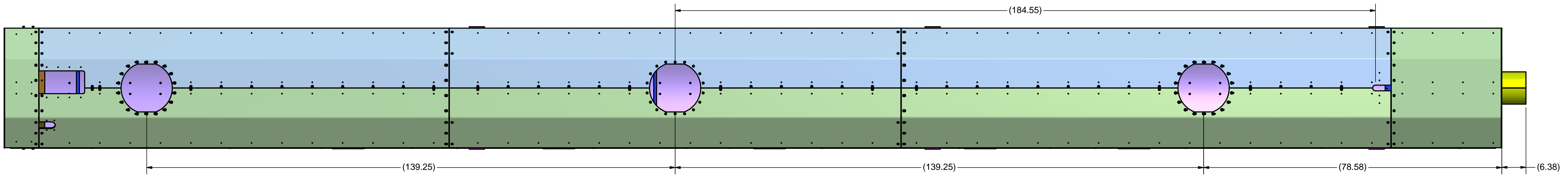


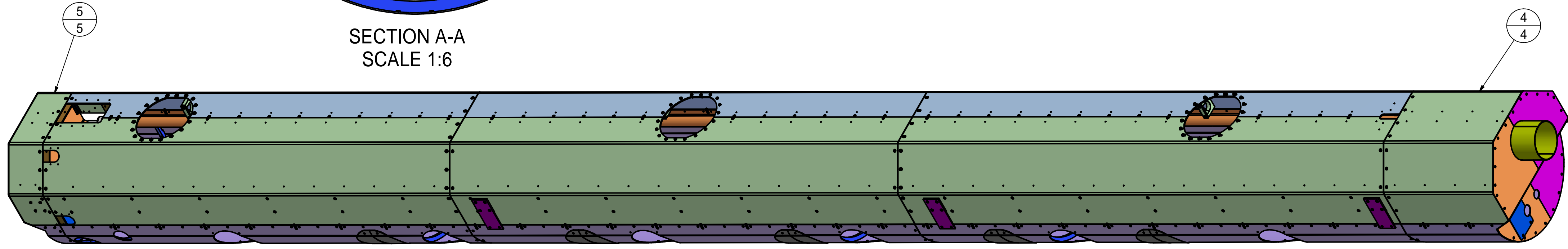
REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



SECTION A-A
SCALE 1:6

1 40 K SHIELD ASSEMBLY
 FILE NAME: 7103-166
 SHEET NO.: 1
 DFT. SCALE: 1:14
 MATERIAL:
 QTY: 1
 NOTES: FOUR SUB-ASM ARE CONNECTED BY FASTENERS WITH GOOD THERMAL CONTACT

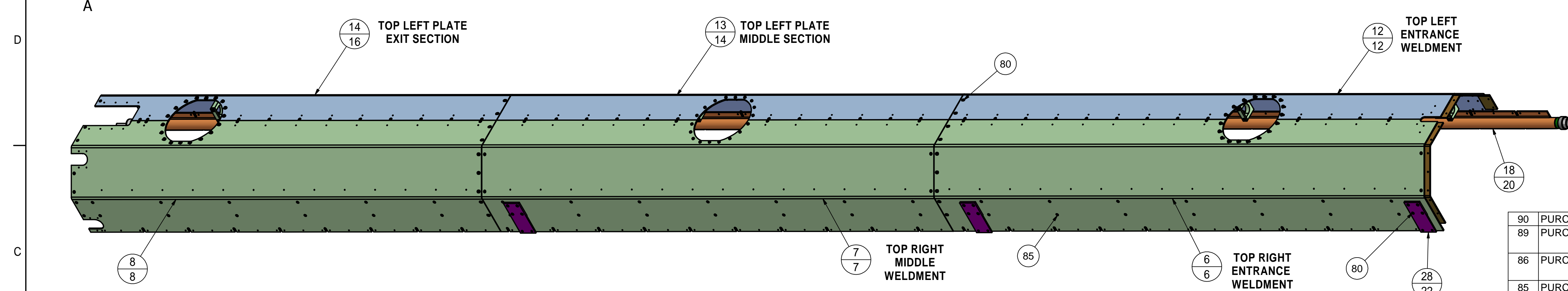
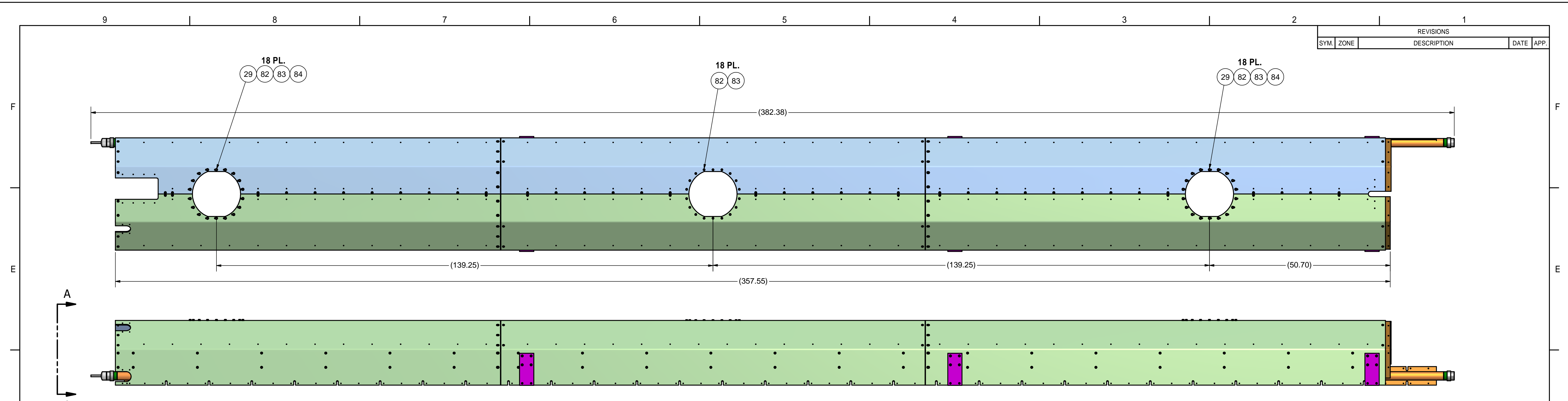
**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**



ITEM	DWG. NO.	DESCRIPTION	Q1	Q2	Q3	REMARKS	REV.
81	PURCHASE	Hexagon Socket Flat Countersunk Head Cap Screw, 10-32 UNF x 0.5	200				
80	PURCHASE	Hexagon Socket Flat Countersunk Head Cap Screw, 1/4-28 UNF x 0.5	28				
5	Sheet 5	DOWNSTREAM END SHIELD SUBASM	1				
4	Sheet 4	UPSTREAM END SHIELD SUBASM	1				
3	Sheet 3	BOTTOM CENTER SHIELD SUBASM	1				
2	Sheet 2	TOP CENTER SHIELD SUBASM	1				

D	PRINT	PLOT DATE: 9/20/2013	Floyd R. Newman Laboratory Cornell University Laboratory for Elementary-Particle Physics		Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853
	DISTR.	CAD FILE NAME: 7103-166.idw	ERL LINAC CRYOMODULE 40K THERMAL SHIELD ASSEMBLY		
7103-166	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES		DRAWN BY	DRAWN FOR	DATE
	REV.	CHECKED BY:	YH/DME	RGE/JOS	4/21/2013
	APPROVED BY:	SCALE	D	7103-166	REV.
				SH. NO. 1 OF 35	

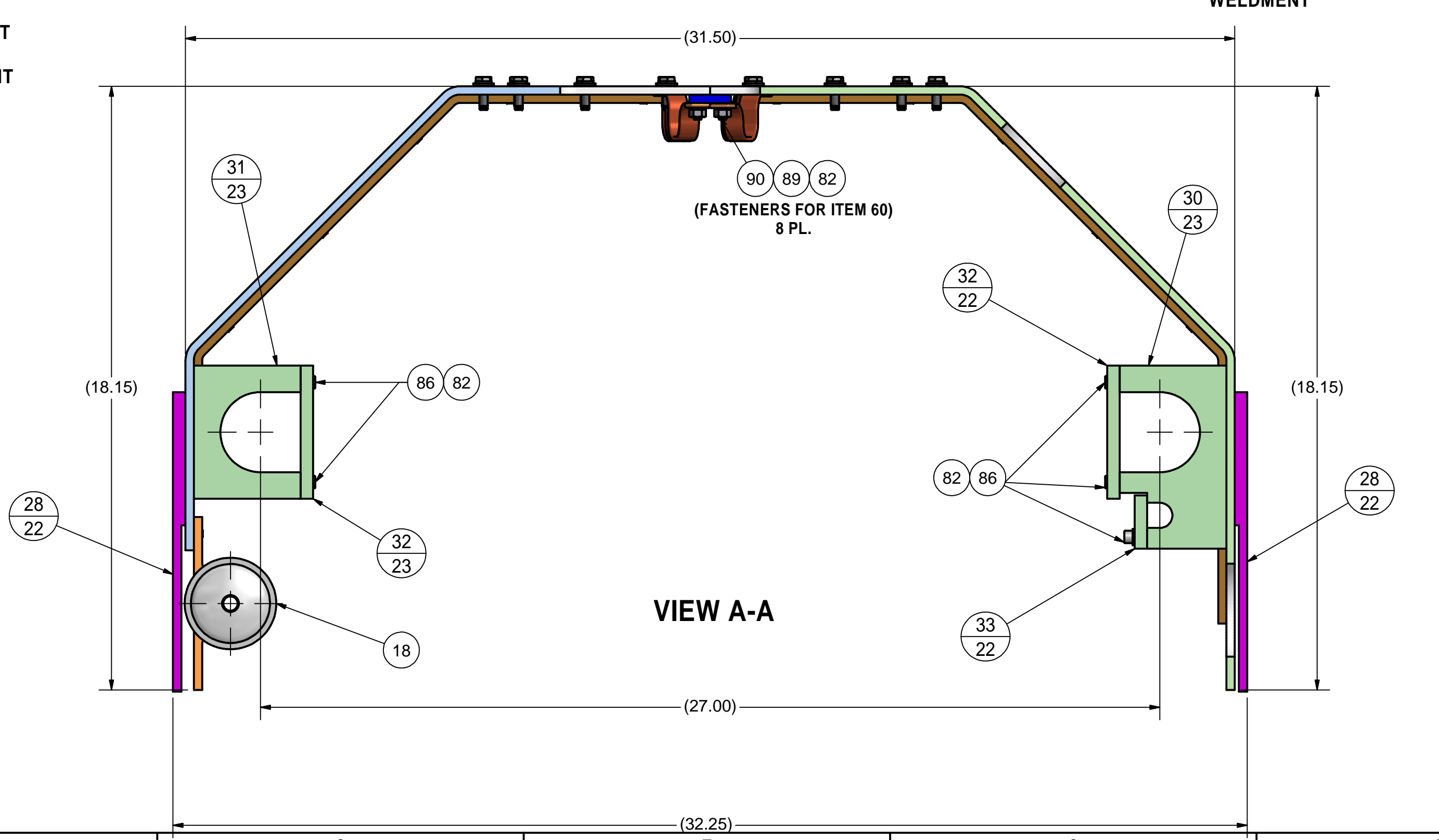
REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



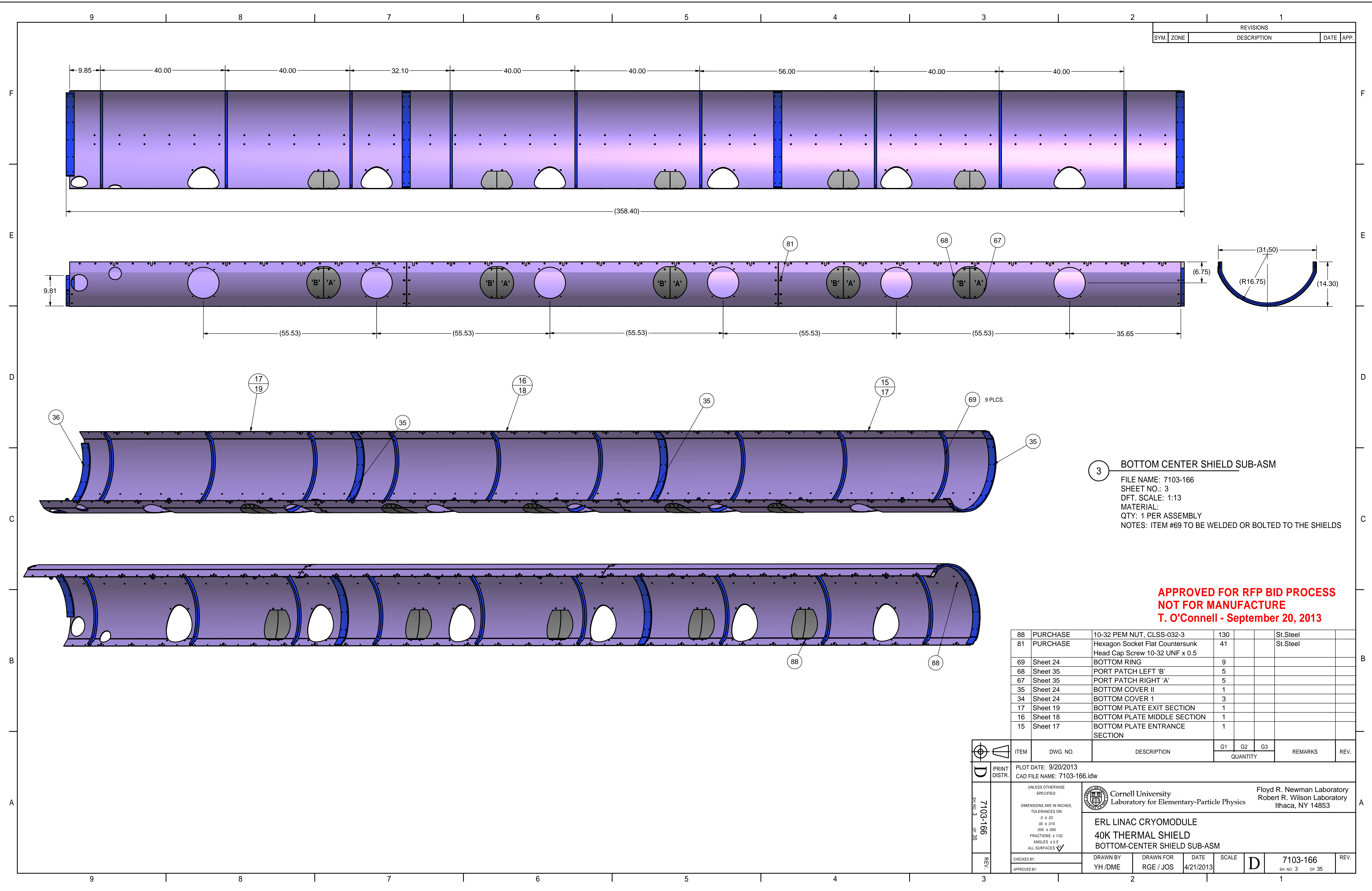
**APPROVED FOR RFP BID PROCESS
NOT FOR MANUFACTURE
T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	QTY	G1	G2	G3	REMARKS	REV.
90	PURCHASE	Hex Nuts 1/4 - 28	8					
89	PURCHASE	Hexagon Socket Flat Countersunk Head Cap Screw 1/4-28 UNF x 1	8					
86	PURCHASE	Hexagon Socket Head Cap Screw 1/4 - 20 UNC - 7/8 HS HCS	100				SS	
85	PURCHASE	Hexagon Socket Flat Countersunk Head Cap Screw 1/4-20 UNC x 0.75	80				SS	
84	PURCHASE	1/4 Washer, SS	36				SS	
83	PURCHASE	Hex Cap Screw 1/4-28 UNF - 0.875	54				SS	
82	PURCHASE	1/4 Spring Washer, SS	162				SS	
80	PURCHASE	Hexagon Socket Flat Countersunk Head Cap Screw 1/4-28 UNF x 0.5	172				SS	
60	Sheet 22	COPPER BRAID TO 80 K POST FLANGE	8				Thomas & Betts FBB-6-1	
33	Sheet 23	PIPE Clamp II	20					
32	Sheet 23	PIPE Clamp I	40					
31	Sheet 23	40K PIPE BRACKET	20					
30	Sheet 23	80K PIPE BRACKET	20					
29	Sheet 22	SPACER TUBE	36					
28	Sheet 22	SLIDING PLATE	6					
18	Sheet 20	EXTRUDED PIPE SUBASM	1					
14	Sheet 16	TOP LEFT EXIT PLATE	1					
13	Sheet 14	TOP LEFT MIDDLE WELDMENT	1					
12	Sheet 12	TOP LEFT ENTRANCE WELDMENT	1					
8	Sheet 8	TOP RIGHT EXIT WELDMENT	1					
7	Sheet 7	TOP RIGHT MIDDLE WELDMENT	1					
6	Sheet 6	TOP RIGHT ENTRANCE WELDMENT	1					

2 TOP CENTER SHIELD SUB-ASM
 FILE NAME: 7103-166
 SHEET NO.: 2
 DFT. SCALE: 1:13
 MATERIAL:
 QTY: 1 PER ASSEMBLY
 NOTES: 1. DIMENSIONS FOR REFERENCE ONLY.



	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw	Cornell University Laboratory for Elementary-Particle Physics	Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853
	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .0 & .02 .00 & .010 .000 & .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES		
7103-166 SH. NO. 2 OF 35	ERL LINAC CRYOMODULE 40K THERMAL SHIELD TOP-CENTER SHIELD SUB-ASM	DRAWN BY: YH/DME DATE: RGE / JOS 4/21/2013	SCALE: D 7103-166 SH. NO. 2 OF 35



REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.

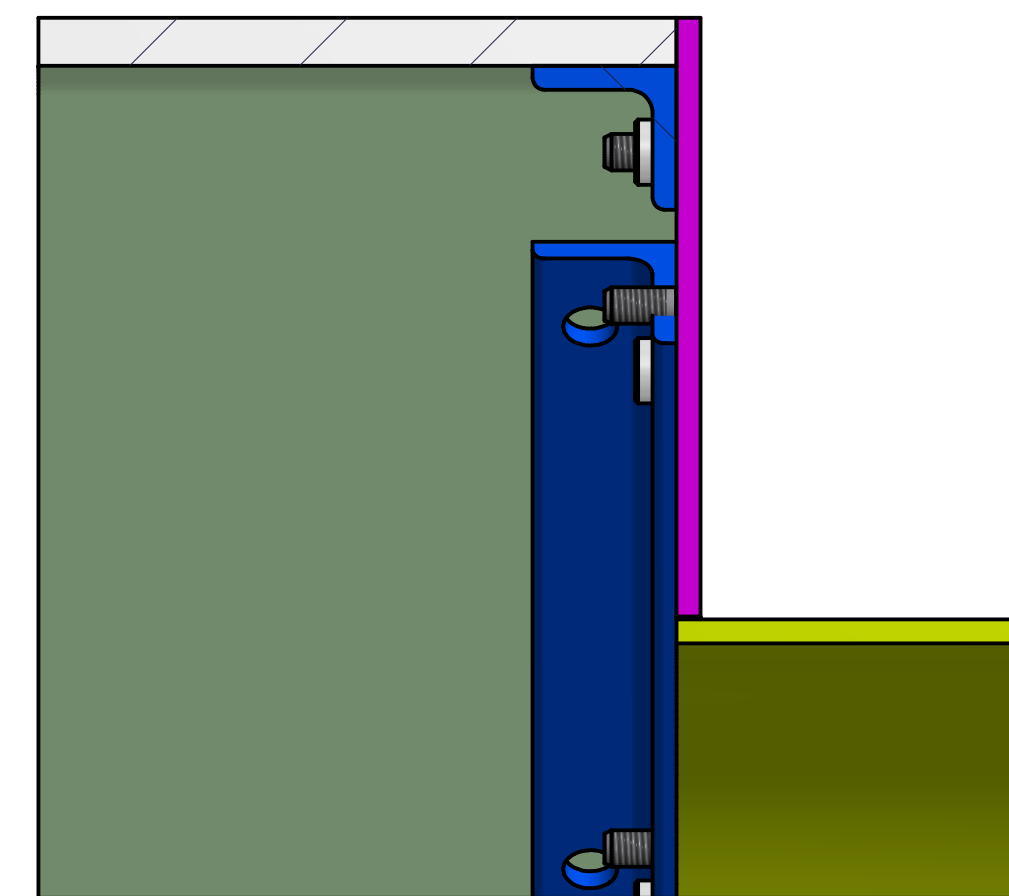
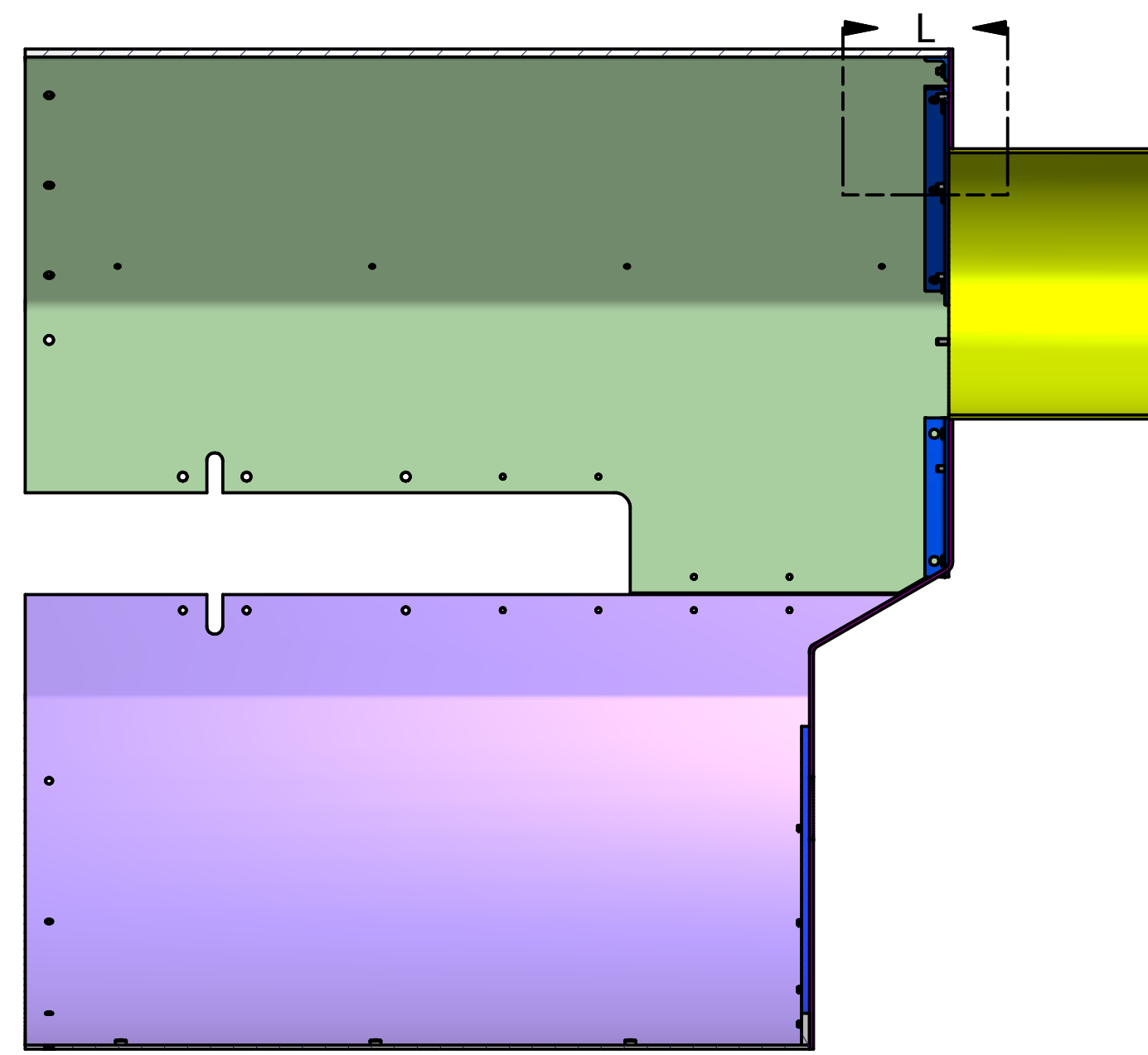
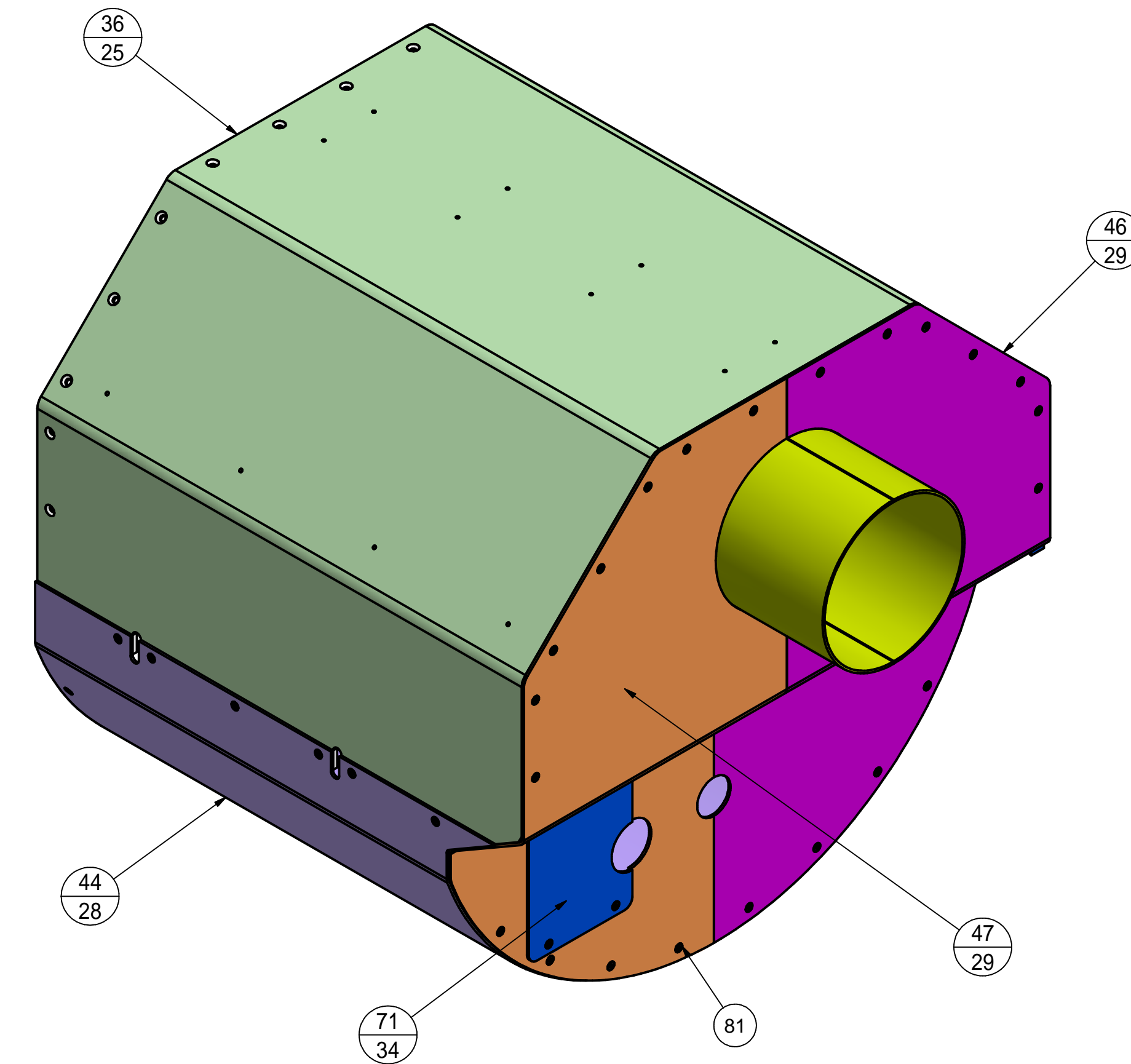
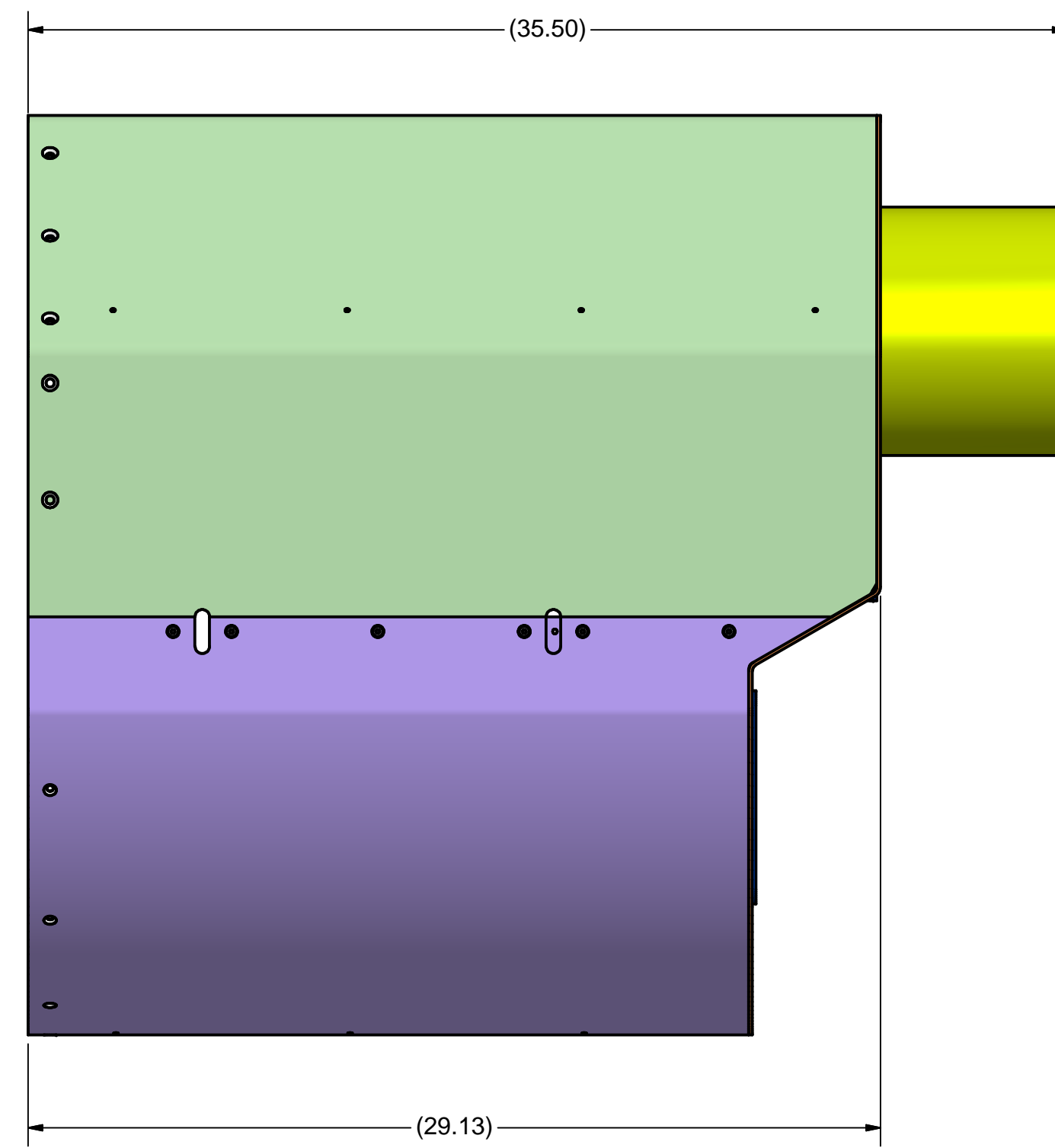
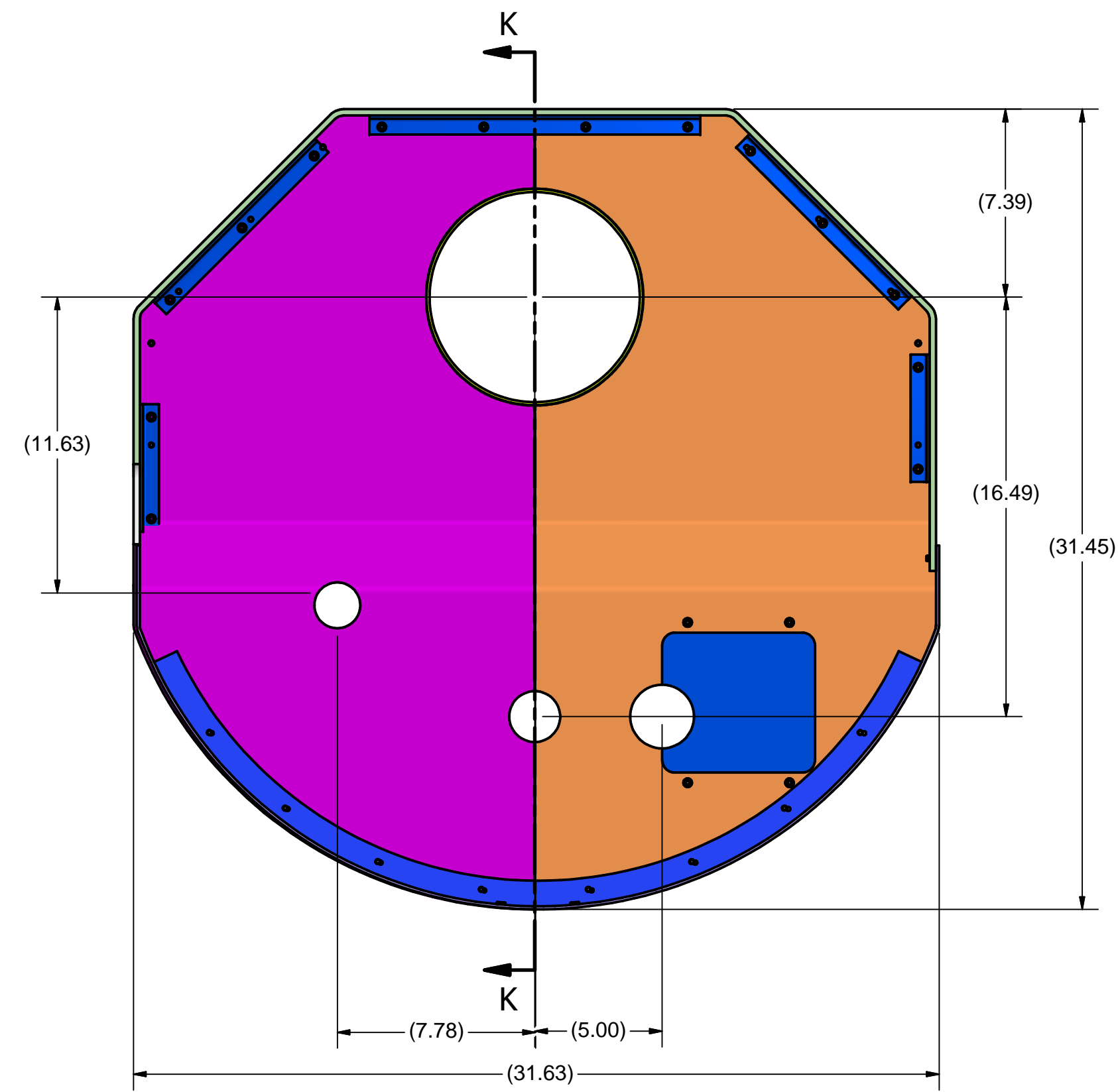
3 BOTTOM CENTER SHIELD SUB-ASM
 FILE NAME: 7103-166
 SHEET NO.: 3
 DFT. SCALE: 1:13
 MATERIAL:
 QTY: 1 PER ASSEMBLY
 NOTES: ITEM #69 TO BE WELDED OR BOLTED TO THE SHIELDS

**APPROVED FOR RFP BID PROCESS
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 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	Q1	Q2	Q3	REMARKS	REV.
88	PURCHASE	10-32 PEM NUT, CLSS-032-3	130			St.Steel	
81	PURCHASE	Hexagon Socket Flat Countersunk Head Cap Screw 10-32 UNF x 0.5	41			St.Steel	
69	Sheet 24	BOTTOM RING	9				
68	Sheet 35	PORT PATCH LEFT 'B'	5				
67	Sheet 35	PORT PATCH RIGHT 'A'	5				
35	Sheet 24	BOTTOM COVER II	1				
34	Sheet 24	BOTTOM COVER 1	3				
17	Sheet 19	BOTTOM PLATE EXIT SECTION	1				
16	Sheet 18	BOTTOM PLATE MIDDLE SECTION	1				
15	Sheet 17	BOTTOM PLATE ENTRANCE SECTION	1				

	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw	Cornell University Laboratory for Elementary-Particle Physics Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	ERL LINAC CRYOMODULE 40K THERMAL SHIELD BOTTOM-CENTER SHIELD SUB-ASM
	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0 ± 0.02 .00 ± 0.010 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES		
CHECKED BY: APPROVED BY:	DRAWN BY: YH/DME DRAWN FOR: RGE/JOS DATE: 4/21/2013 SCALE: D	7103-166 SH. NO. 3 OF 35	REV.

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



DETAIL L
SCALE 1 : 1

4 UPSTREAM END SHIELD SUB-ASM

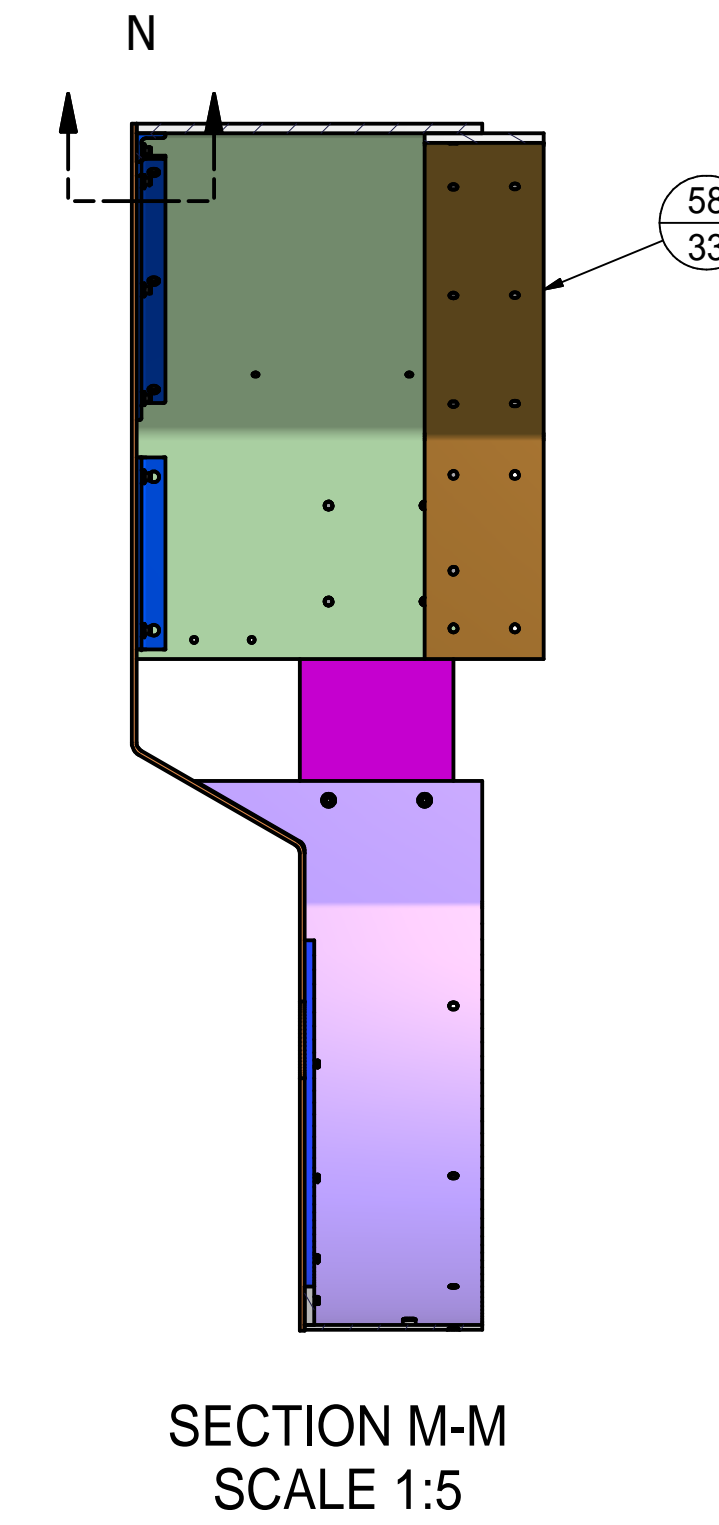
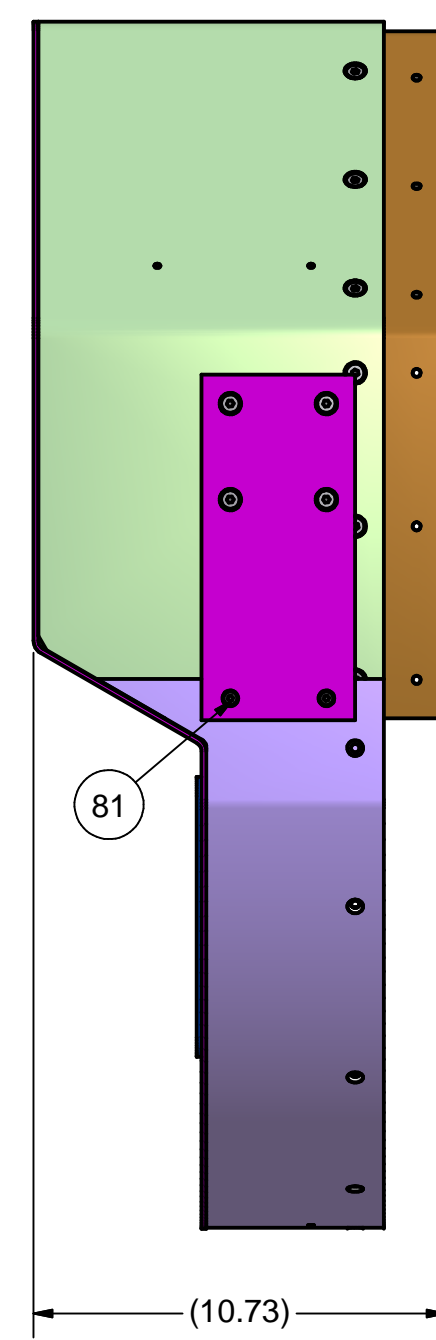
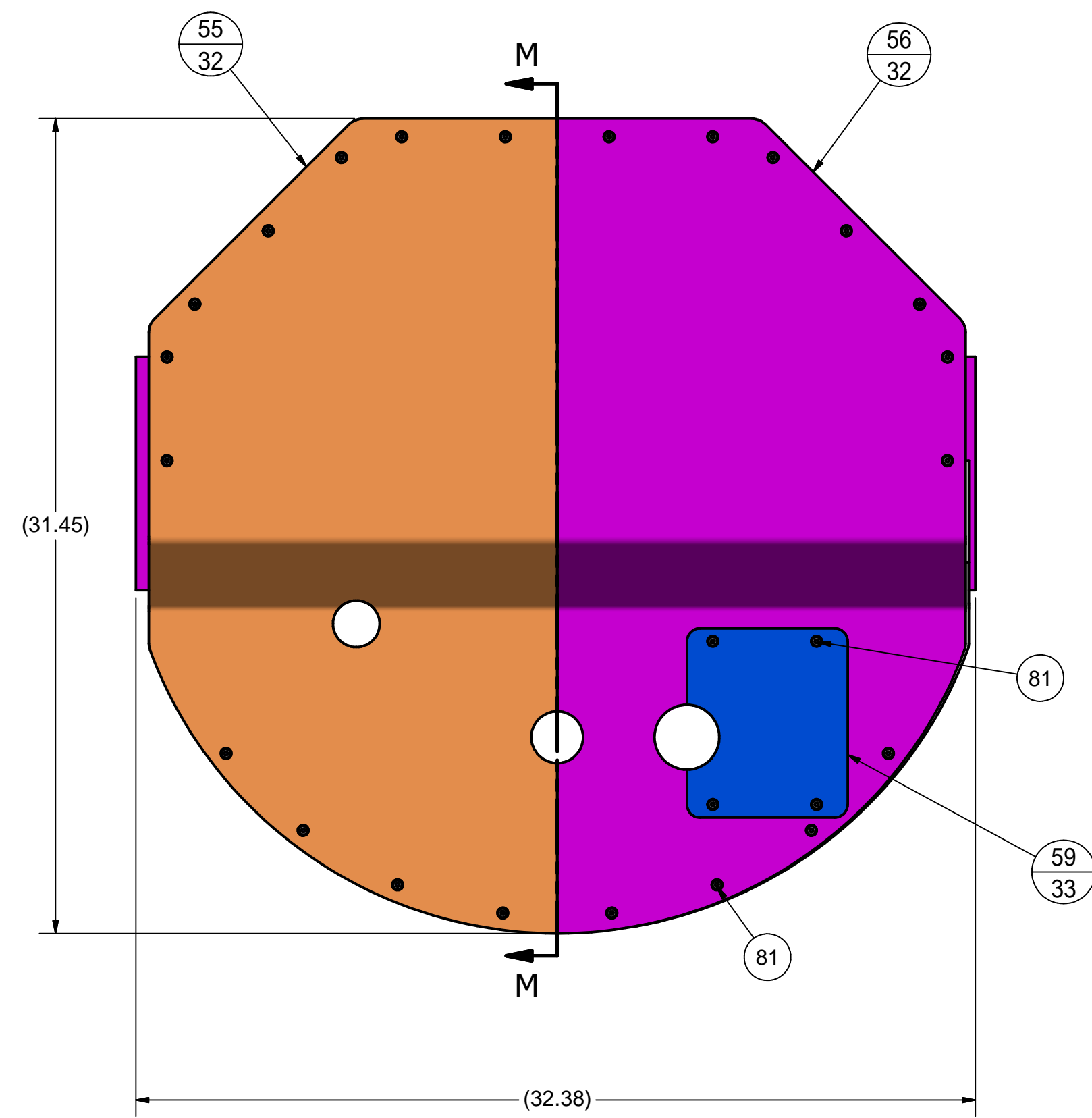
FILE NAME: 7103-166
SHEET NO.: 4
DFT. SCALE: 1:5
MATERIAL:
QTY: 1 PER ASSEMBLY
NOTES: 1. DIMENSIONS FOR REFERENCE ONLY.

**APPROVED FOR RFP BID PROCESS
NOT FOR MANUFACTURE
T. O'Connell - September 20, 2013**

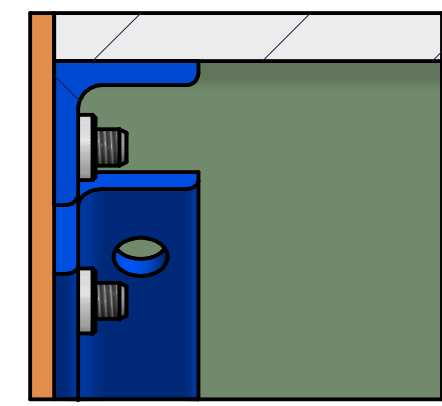
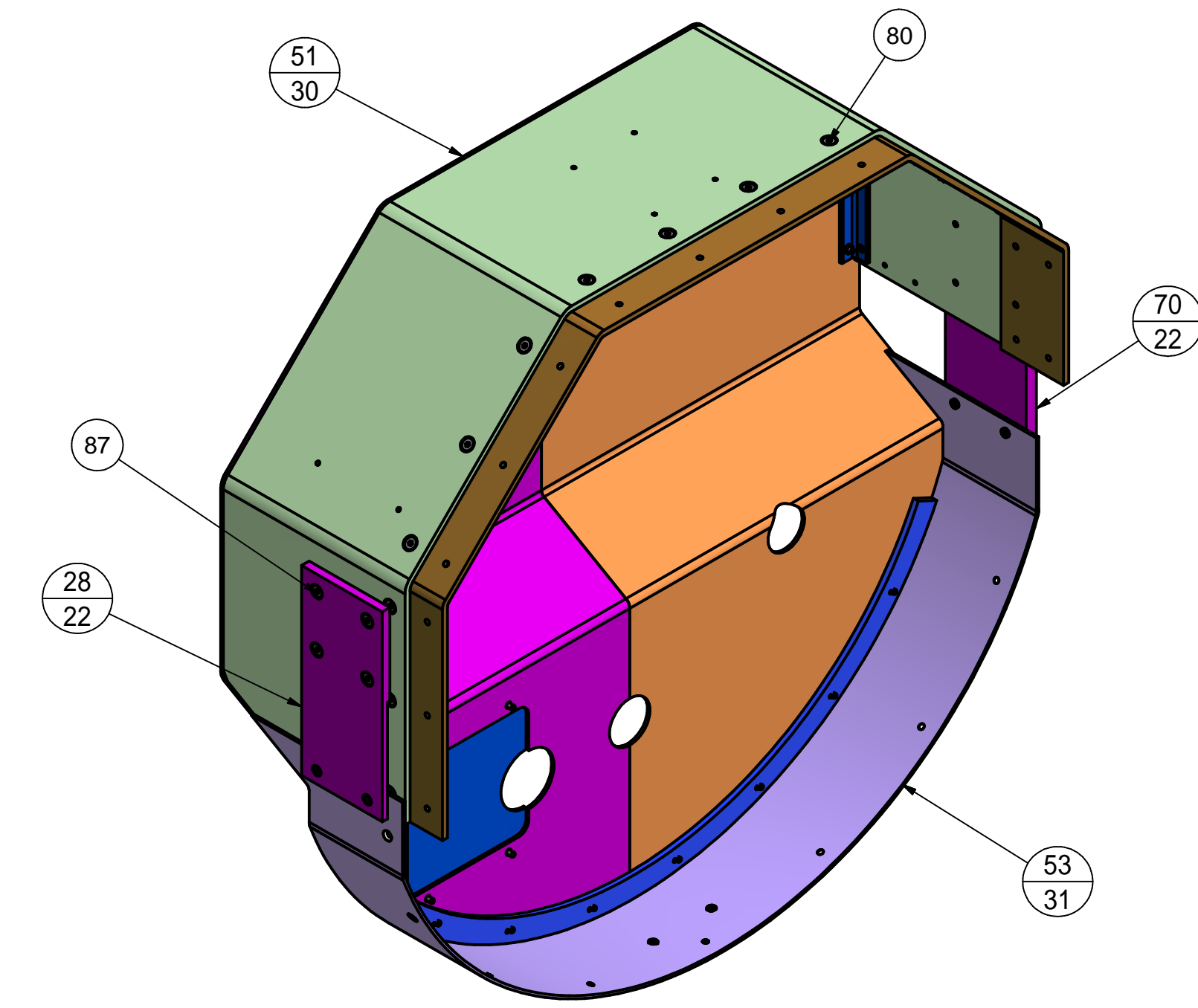
ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
81	PURCHASE	Hexagon Socket Flat Countersunk Head Cap Screw 10-32 UNF x 0.5	32				
71	Sheet 34	US END SHIELD PATCH	1				
47	Sheet 29	US END FRONT WALL RIGHT WELDMENT	1				
46	Sheet 29	US END FRONT WALL LEFT WELDMENT	1				
44	Sheet 28	US END SHIELD BOTTOM WELDMENT	1				
36	Sheet 25	US END SHIELD TOP WELDMENT	1				

ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw							
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES		Cornell University Laboratory for Elementary-Particle Physics Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853					
ERL LINAC CRYOMODULE 40K THERMAL SHIELD UPSTREAM END SHIELD SUB-ASM							
CHECKED BY:	DRAWN BY:	DRAWN FOR:	DATE:	SCALE:	7103-166		REV.
APPROVED BY:	YH/DME	RGE / JOS	4/21/2013	D	SH. NO. 4 OF 35		

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



SECTION M-M
SCALE 1:5



DETAIL N
SCALE 1:1

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T. O'Connell - September 20, 2013**

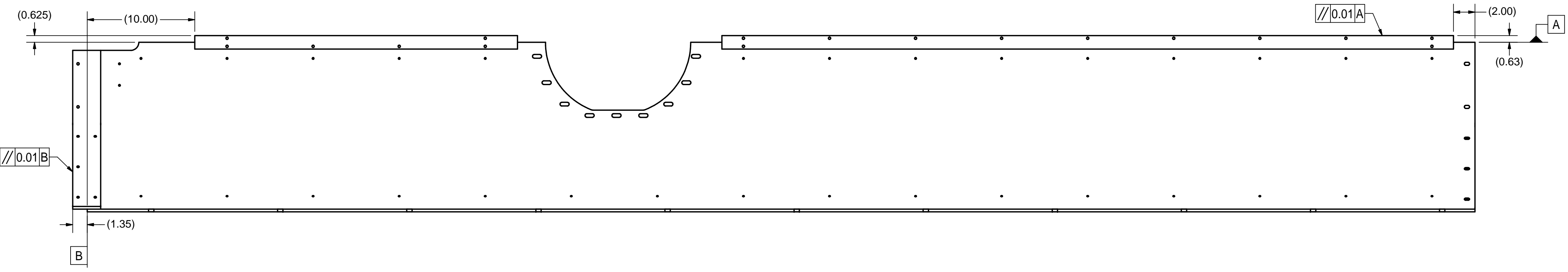
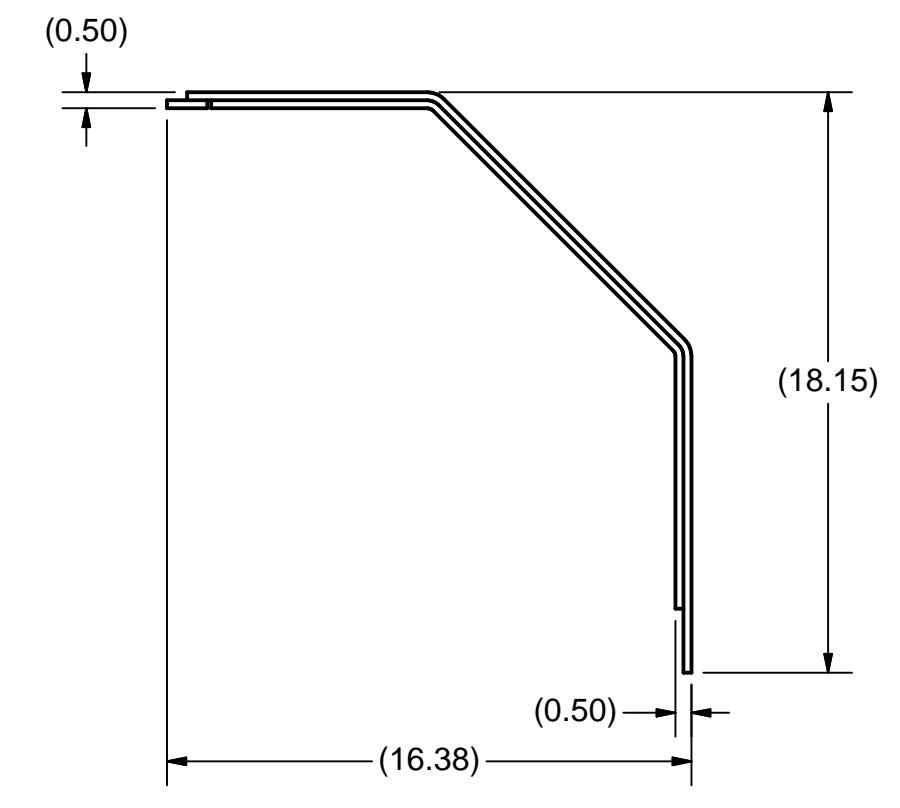
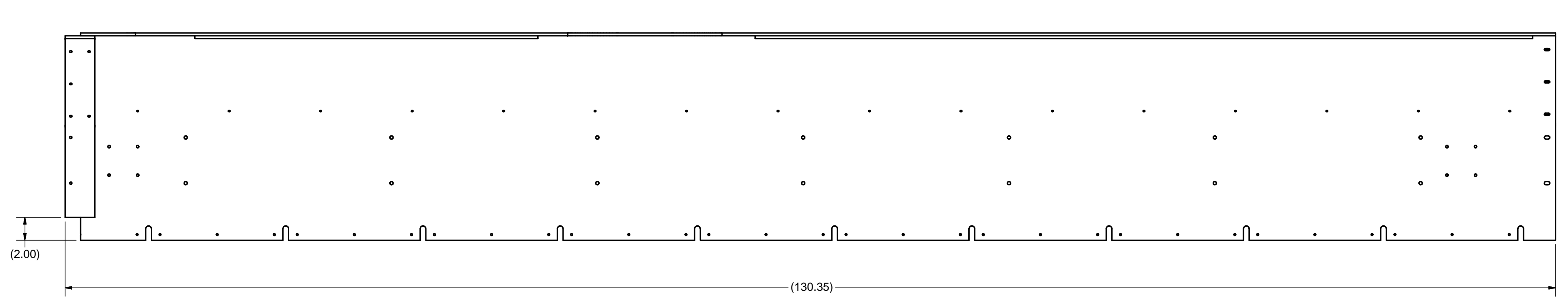
5 DOWNSTREAM END SHIELD SUB-ASM

FILE NAME: 7103-166
SHEET NO.: 5
DFT. SCALE: 1:5
MATERIAL:
QTY: 1 PER ASSEMBLY
NOTES: 1. DIMENSIONS FOR REFERENCE ONLY.

ITEM	DWG. NO.	DESCRIPTION	Q1	Q2	Q3	REMARKS	REV.
91	PURCHASE	Hexagon Socket Flat Countersunk Head Cap Screw 10-32 UNF x 0.625	2			St.Steel	
87	PURCHASE	Hexagon Socket Flat Countersunk Head Cap Screw 1/4-28 UNF x 0.625	8			St.Steel	
81	PURCHASE	Hexagon Socket Flat Countersunk Head Cap Screw 10-32 UNF x 0.5	28			St.Steel	
80	PURCHASE	Hexagon Socket Flat Countersunk Head Cap Screw 1/4-28 UNF x 0.5	15			St.Steel	
88	PURCHASE	10-32 PEM NUT, CLSS-032-3	4			St.Steel	
59	Sheet 34	DS END SHIELD PATCH	1				
70	Sheet 22	SLIDING PLATE 2	1				
58	Sheet 34	DS END SHIELD TOP COVER	1				
56	Sheet 33	DS END SHIELD BACK WALL RIGHT SHEET	1				
55	Sheet 33	DS END SHIELD BACK WALL LEFT SHEET	1				
53	Sheet 32	DS END SHIELD BOTTOM WELDMENT	1				
51	Sheet 31	DS END SHIELD TOP WELDMENT	1				
28	Sheet 22	SLIDING PLATE	1				

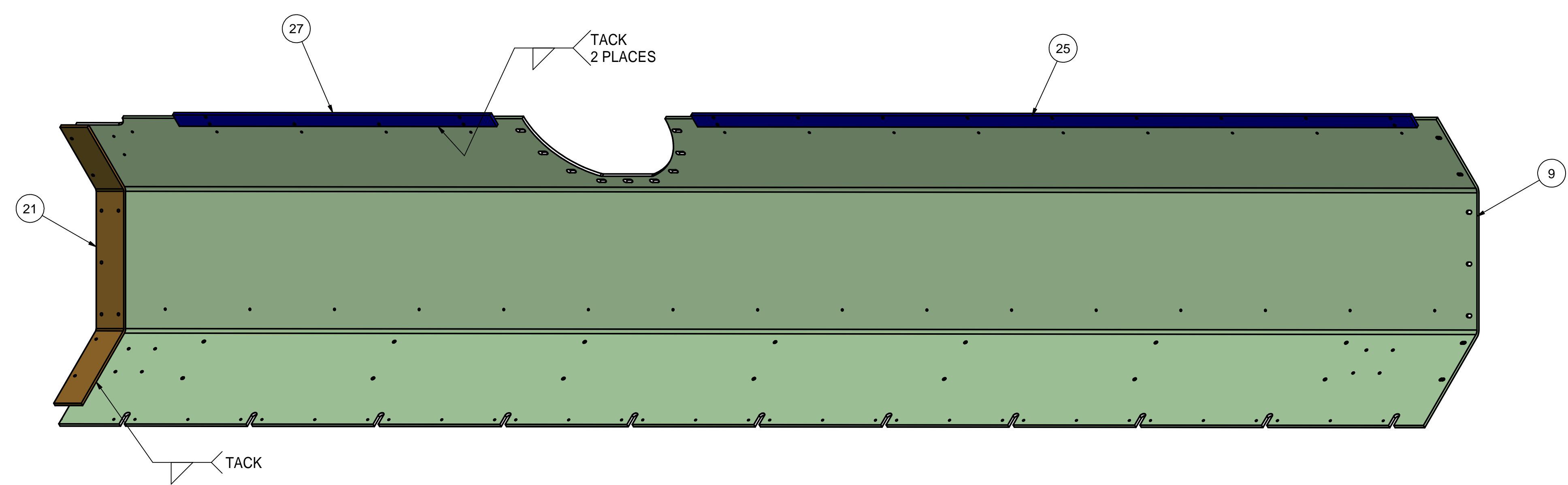
D	PRINT	PLOT DATE: 9/20/2013	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES	Cornell University Laboratory for Elementary-Particle Physics	Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853
	DISTR.	CAD FILE NAME: 7103-166.idw			
7103-166	REV.	7103-166	SCALE	D	7103-166
SH. NO. 5 OF 35	REV.	YH/DME	RGE/JOS	4/21/2013	SH. NO. 5 OF 35

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



6 TOP-RIGHT ENTRANCE WELDMENT
 FILE NAME: 7103-166
 SHEET NO.: 6
 DFT. SCALE: 1:6
 MATERIAL:
 QTY: 1 PER ASSEMBLY
 NOTES: 1. DIMENSIONS FOR REFERENCE ONLY.

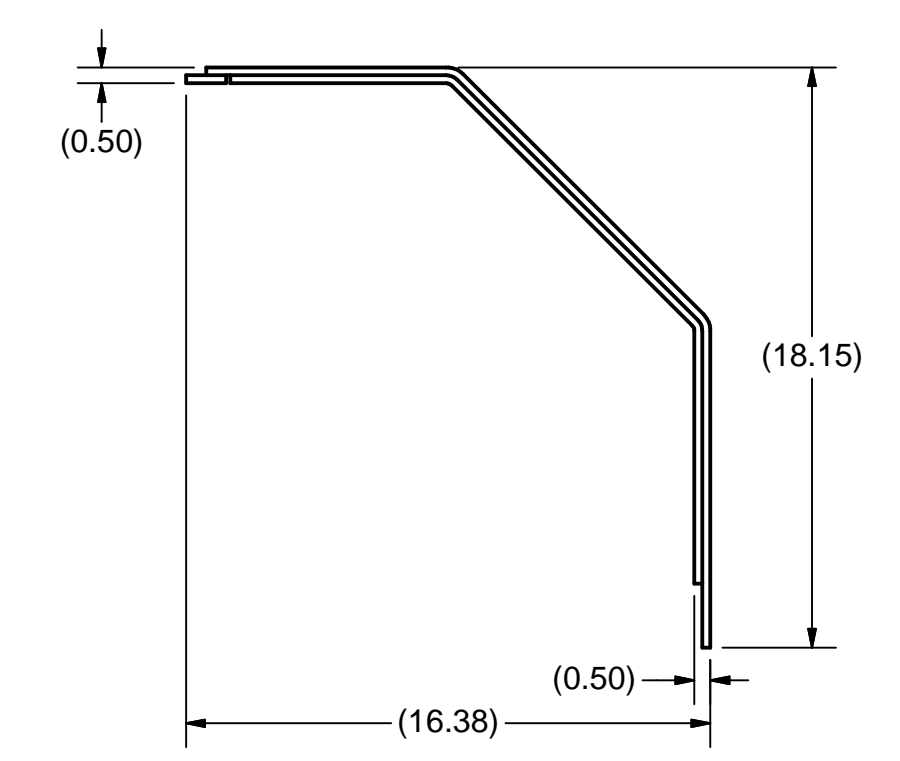
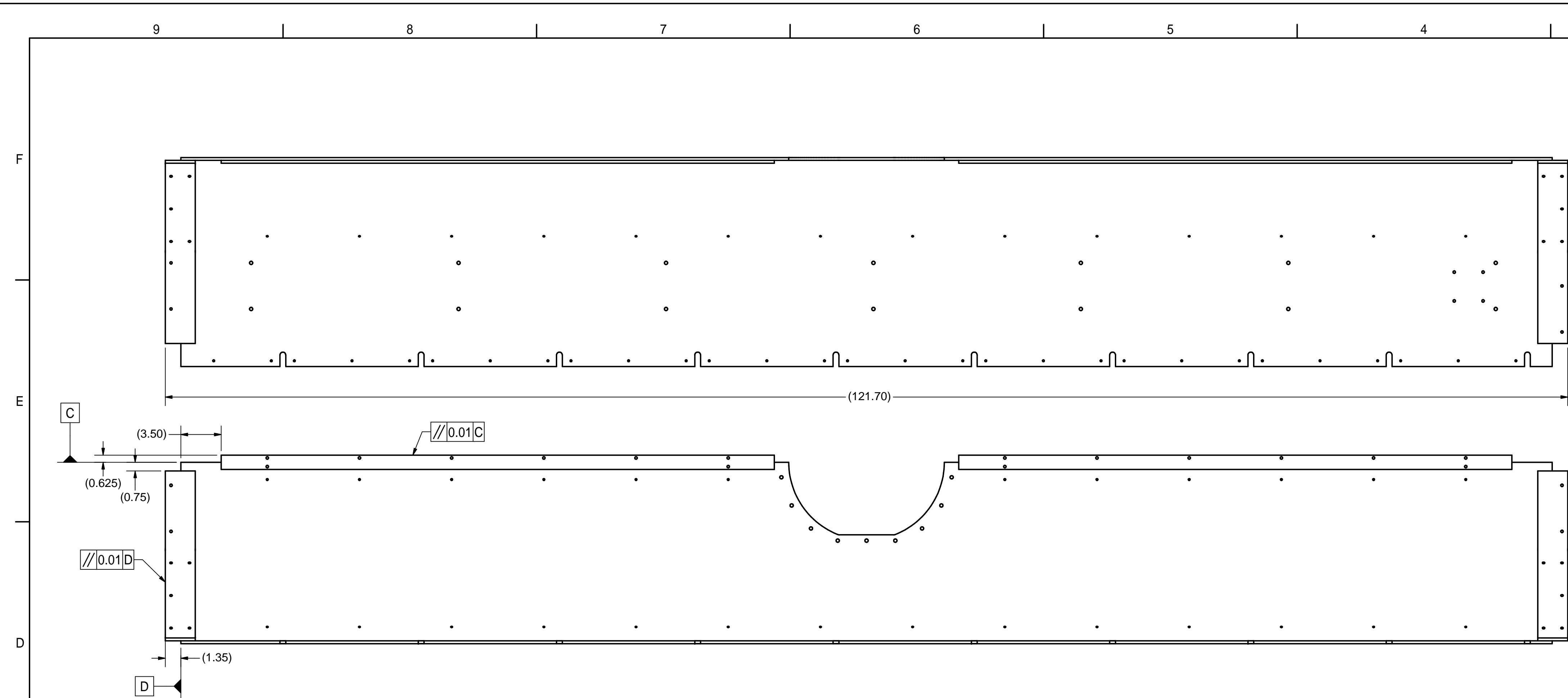
**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**



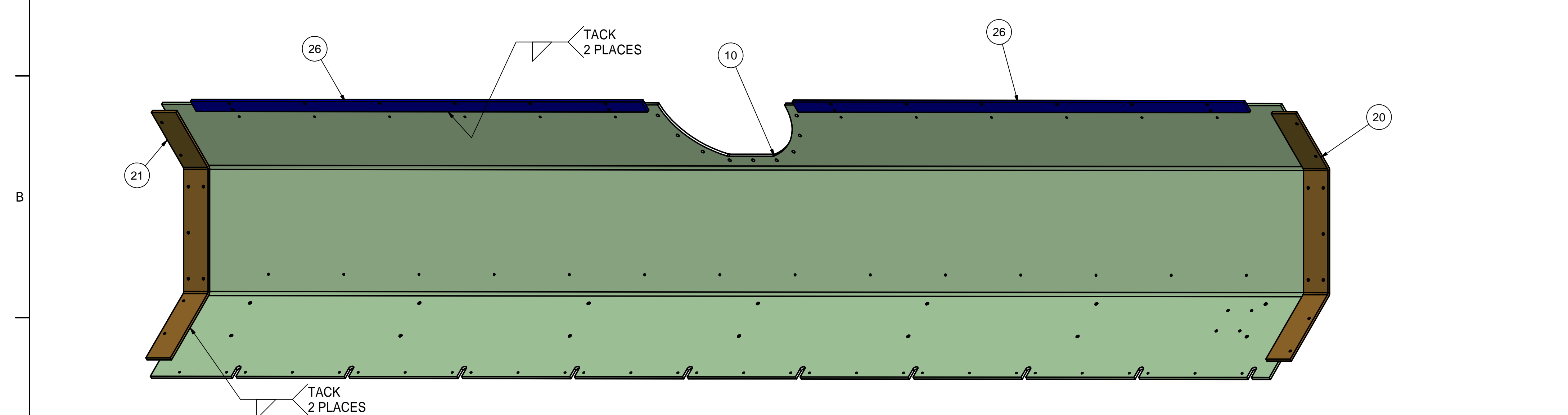
ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
27	Sheet 22	TOP STRIP 4	1				
25	Sheet 22	TOP STRIP 2	1				
21	Sheet 21	TOP RIGHT COVER II	1				
9	Sheet 9	ENTRANCE SECTION TOP RIGHT PLATE	1				

D PRINT DISTR.	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw	Cornell University Laboratory for Elementary-Particle Physics Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	ERL LINAC CRYOMODULE 40K THERMAL SHIELD TOP-RIGHT ENTRANCE WELDMENT
	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES ✓		
7103-166 SH. NO. 6 OF 35	CHECKED BY: APPROVED BY:	DRAWN BY: YH/DME DRAWN FOR: RGE / JOS DATE: 4/21/2013 SCALE: D	7103-166 SH. NO. 6 OF 35

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



**APPROVED FOR RFP BID PROCESS
NOT FOR MANUFACTURE
T. O'Connell - September 20, 2013**



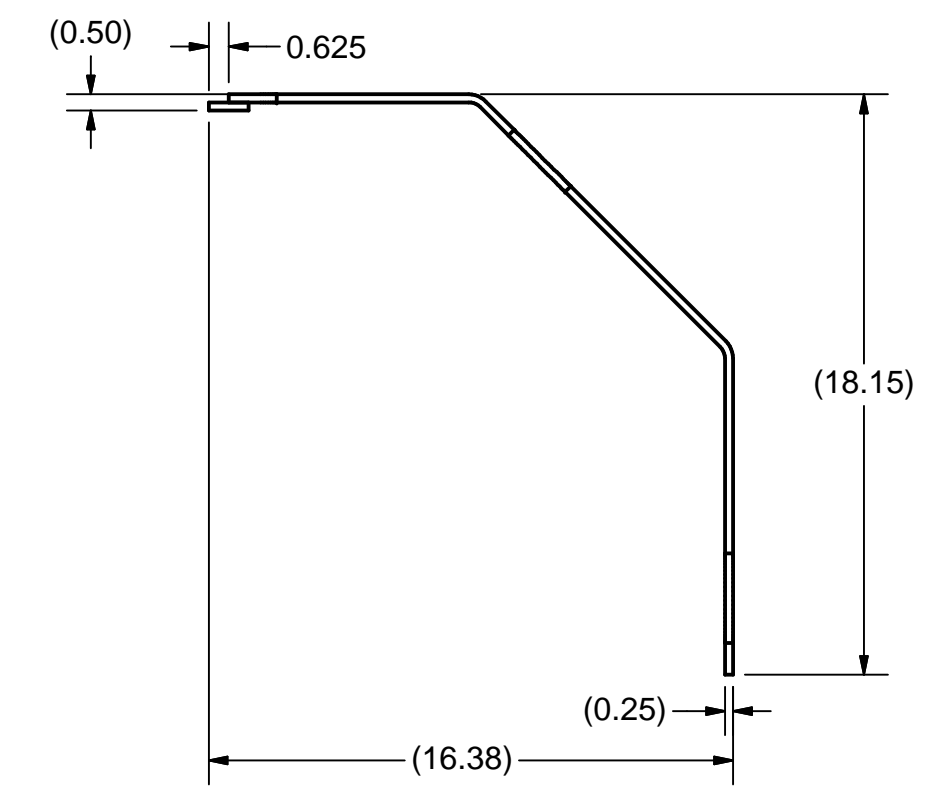
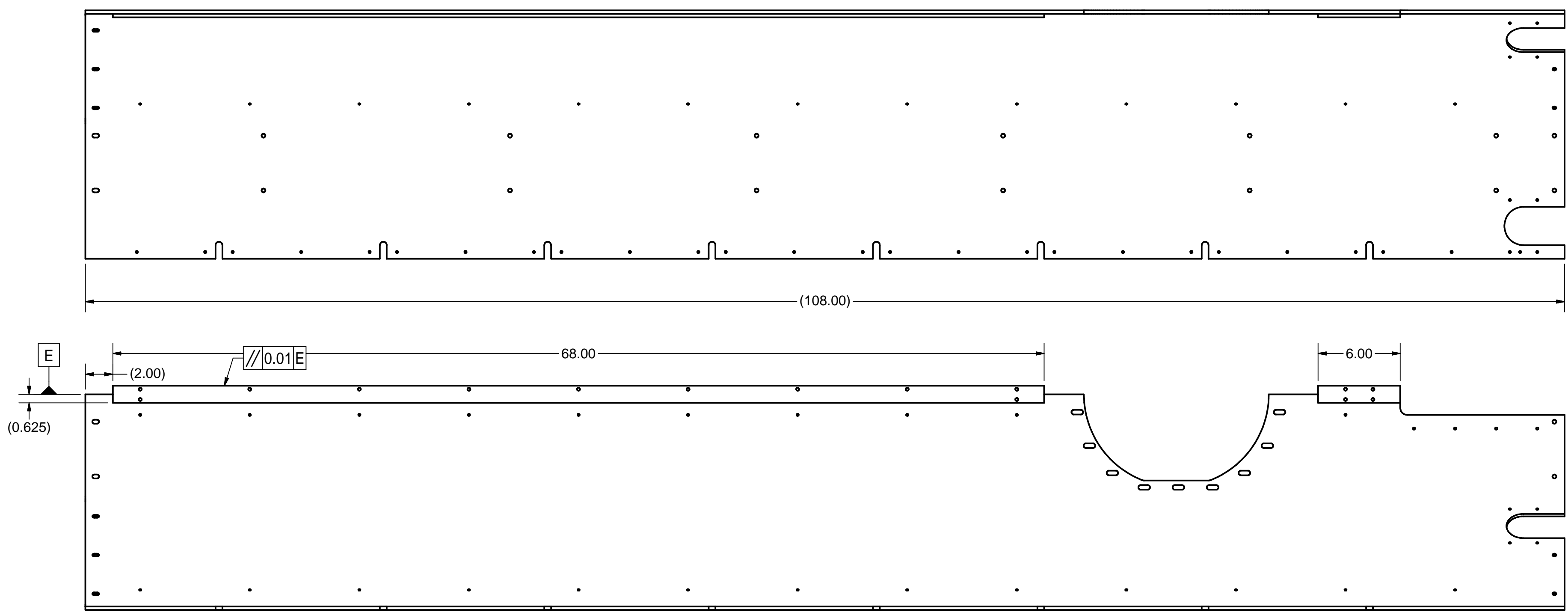
7 TOP-RIGHT MIDDLE WELDMENT

FILE NAME: 7103-166
SHEET NO.: 7
DFT. SCALE: 1:6
MATERIAL:
QTY: 1 PER ASSEMBLY
NOTES: 1. DIMENSIONS FOR REFERENCE ONLY.

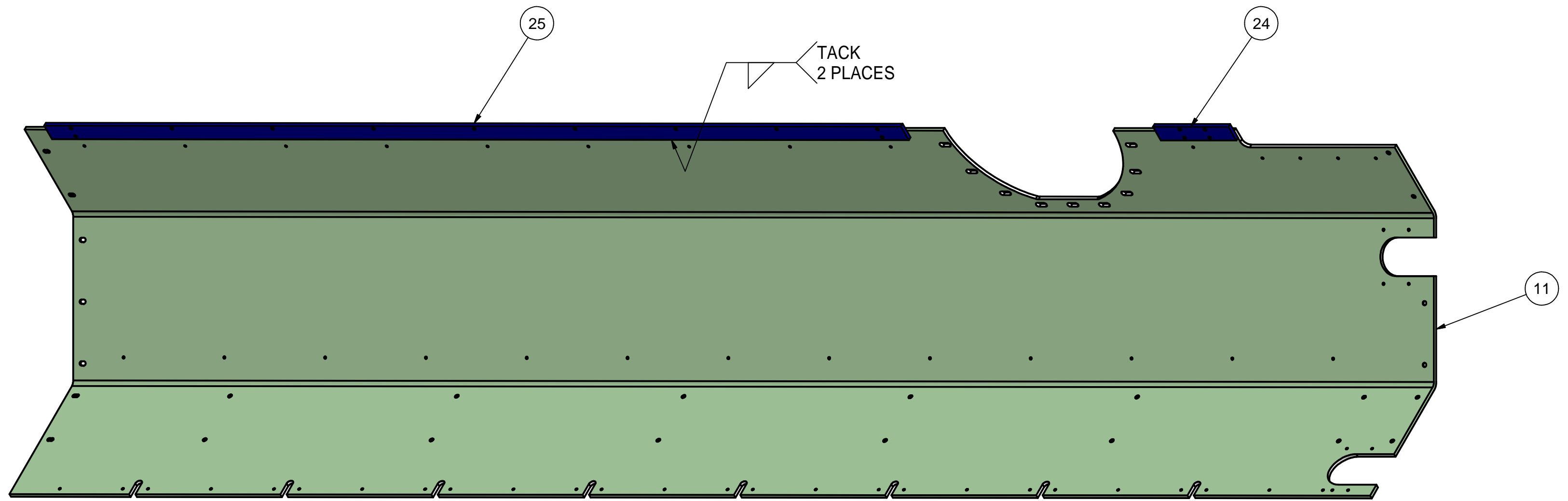
ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
26	Sheet 22	TOP STRIP 3	2				
21	Sheet 21	TOP RIGHT COVER II	1				
20	Sheet 21	TOP RIGHT COVER I	1				
10	Sheet 10	MIDDLE SECTION TOP RIGHT PLATE	1				

D PRINT DISTR.	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw		Cornell University Laboratory for Elementary-Particle Physics		Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	
	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0 ± 0.02 .00 ± 0.010 .000 ± 0.005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES		ERL LINAC CRYOMODULE 40K THERMAL SHIELD TOP-RIGHT MIDDLE WELDMENT			
7103-166 SH. NO. 7 OF 35	CHECKED BY:	DRAWN BY: YH/DME	DRAWN FOR: RGE / JOS	DATE: 4/21/2013	SCALE: D	7103-166 SH. NO. 7 OF 35

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



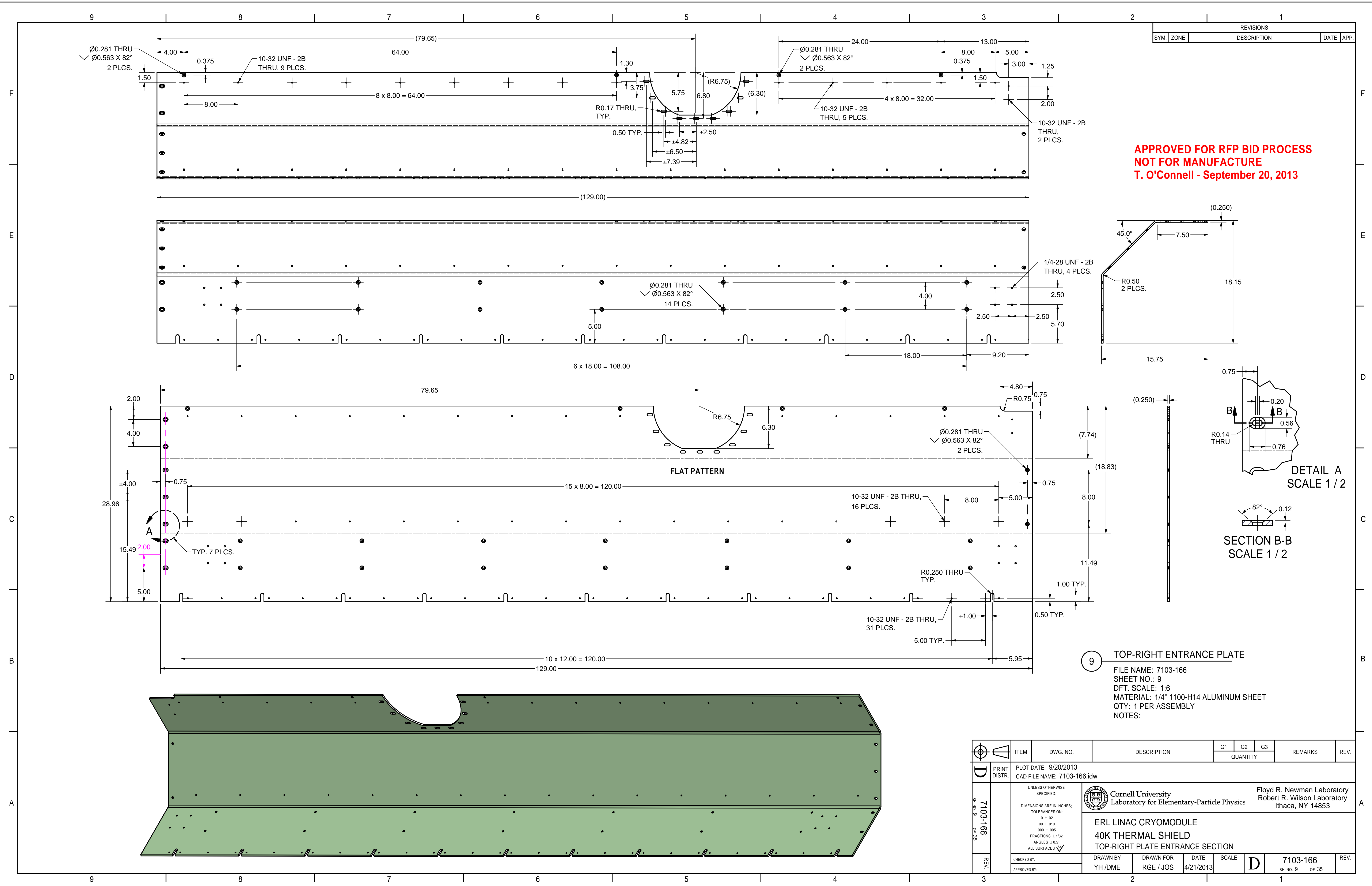
8 TOP-RIGHT EXIT WELDMENT
 FILE NAME: 7103-166
 SHEET NO.: 8
 DFT. SCALE: 1:6
 MATERIAL:
 QTY: 1 PER ASSEMBLY
 NOTES: 1. DIMENSIONS FOR REFERENCE ONLY.



**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
25	Sheet 22	TOP STRIP 2	1				
24	Sheet 22	TOP STRIP 1	1				
11	Sheet 11	TOP RIGHT PLATE EXIT PLATE	1				

D	PRINT	PLOT DATE: 9/20/2013	
	DISTR.	CAD FILE NAME: 7103-166.idw	
7103-166	REV.	UNLESS OTHERWISE SPECIFIED:	Cornell University Laboratory for Elementary-Particle Physics Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853
		DIMENSIONS ARE IN INCHES:	
		TOLERANCES ON:	ERL LINAC CRYOMODULE 40K THERMAL SHIELD TOP-RIGHT EXIT WELDMENT
		.0 ± .02	
		.00 ± .010	
		.000 ± .005	
		FRACTIONS: 1/32	
		ANGLES: ± 0.5°	
		ALL SURFACES	
		CHECKED BY:	DRAWN BY
		APPROVED BY:	YH/DME
			DRAWN FOR
			RGE / JOS
			DATE
			4/21/2013
			SCALE
			D
			7103-166
			SH. NO. 8 OF 35

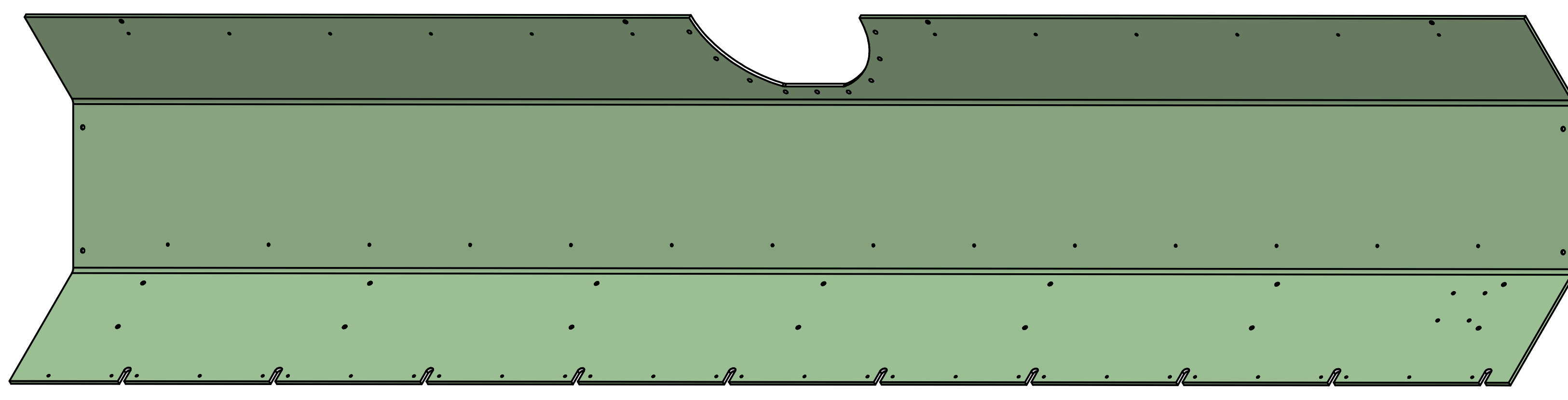
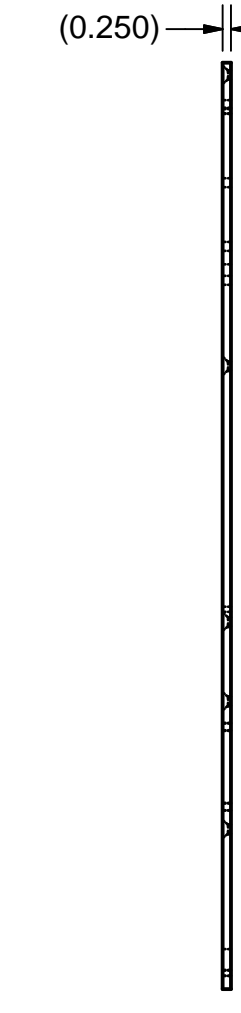
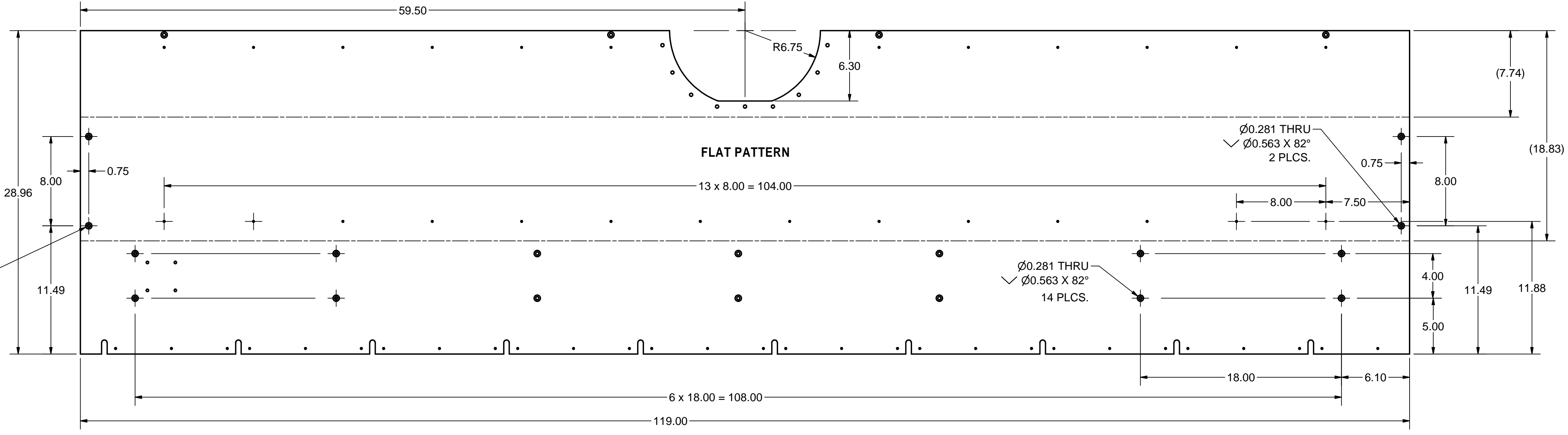
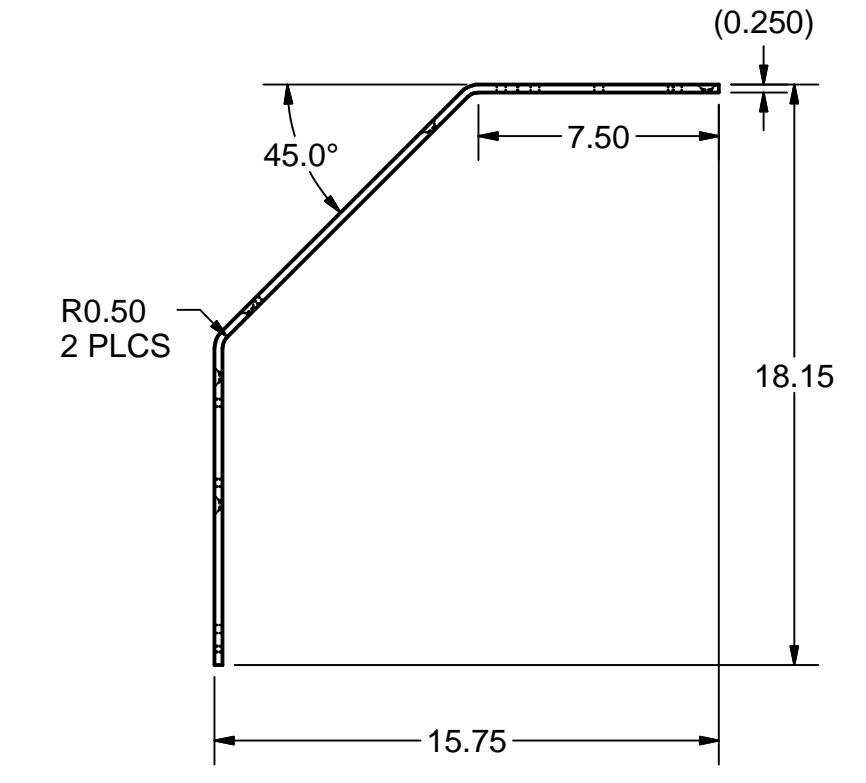
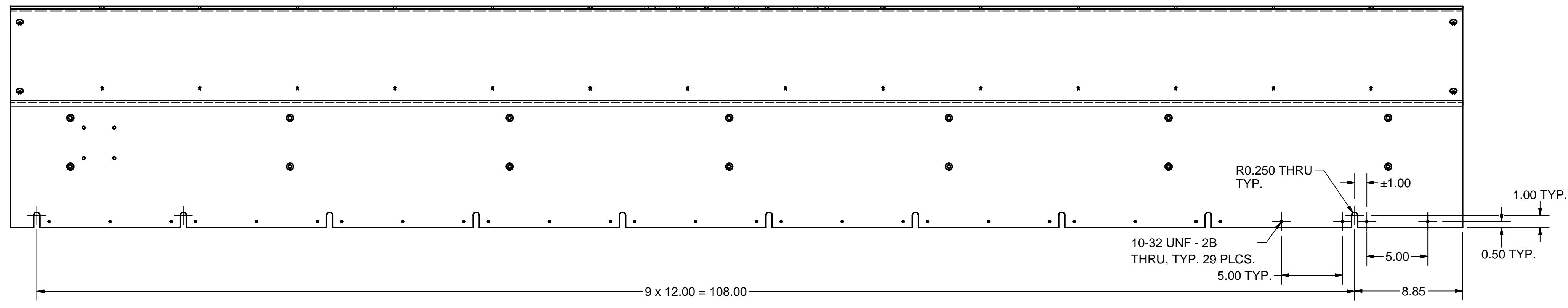
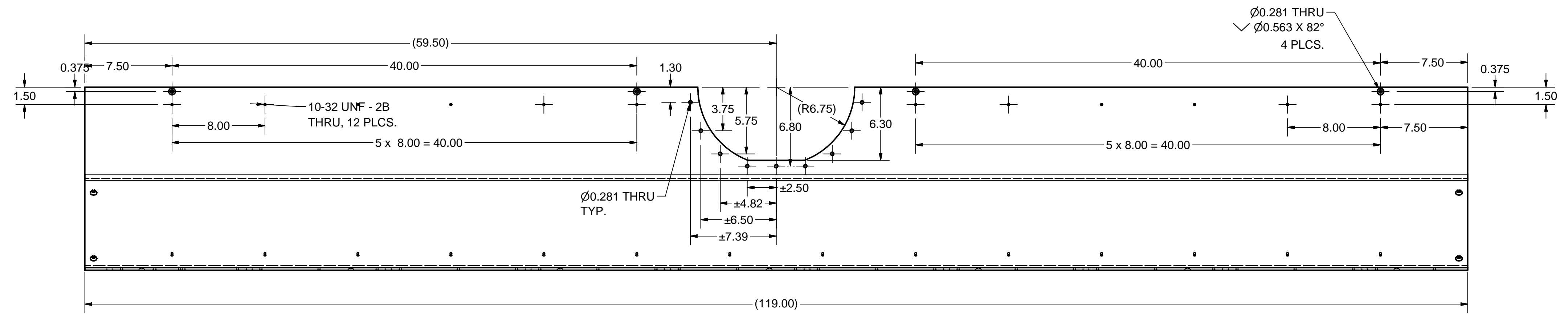


**APPROVED FOR RFP BID PROCESS
NOT FOR MANUFACTURE
T. O'Connell - September 20, 2013**

9 TOP-RIGHT ENTRANCE PLATE
 FILE NAME: 7103-166
 SHEET NO.: 9
 DFT. SCALE: 1:6
 MATERIAL: 1/4" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

REV	ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
				G1	G2	G3		
7103-166	PRINT DISTR.	7103-166	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
			UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0 ± 0.02 .00 ± 0.010 .000 ± 0.005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES ✓					
			Cornell University Laboratory for Elementary-Particle Physics				Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	
			ERL LINAC CRYOMODULE 40K THERMAL SHIELD TOP-RIGHT PLATE ENTRANCE SECTION					
	CHECKED BY:	DRAWN BY:	DATE:	SCALE:				
	APPROVED BY:	YH/DME	RGE/JOS	4/21/2013	D		7103-166 SH. NO. 9 OF 35	

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.

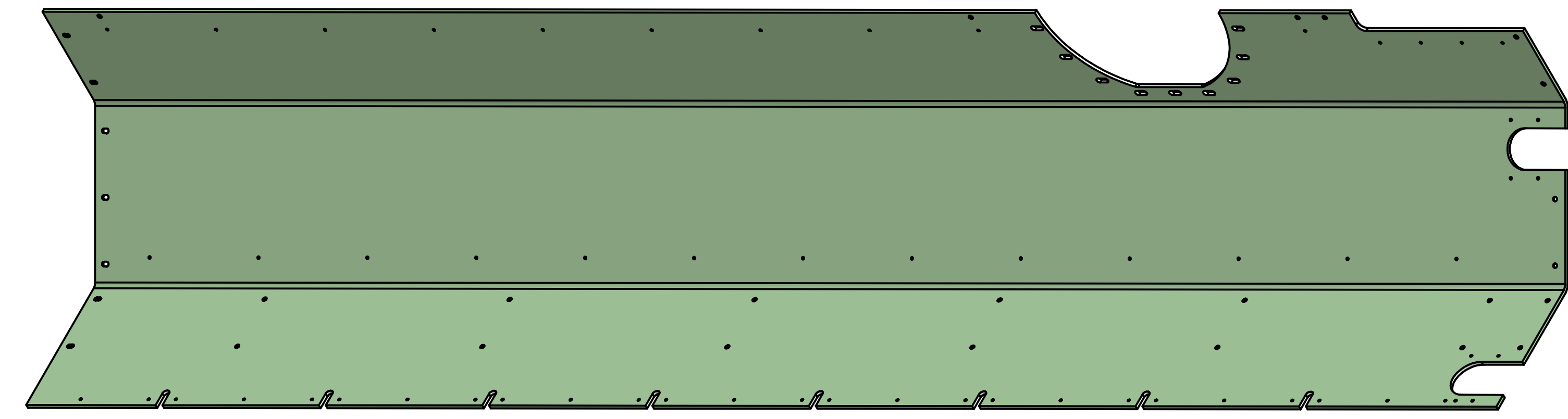
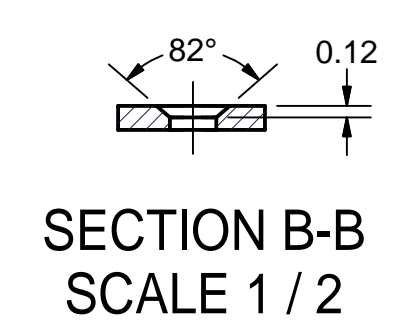
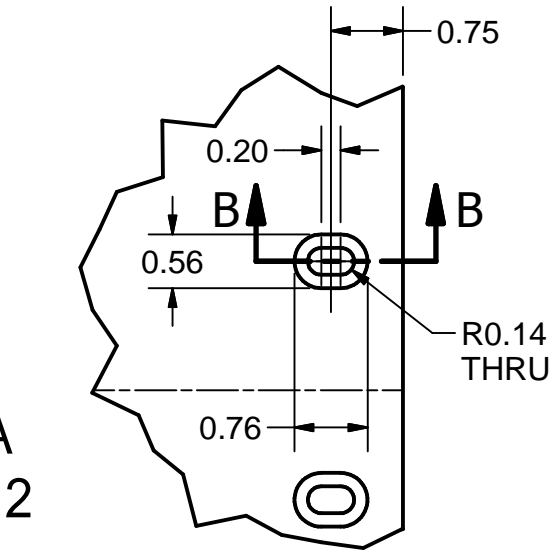
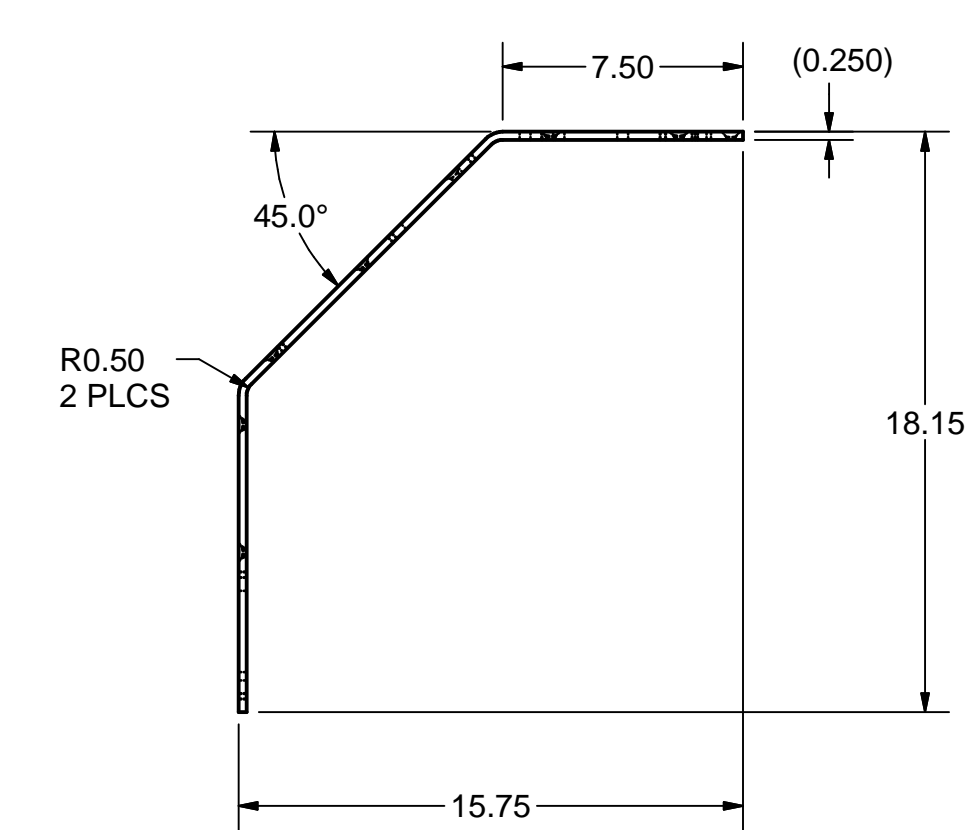
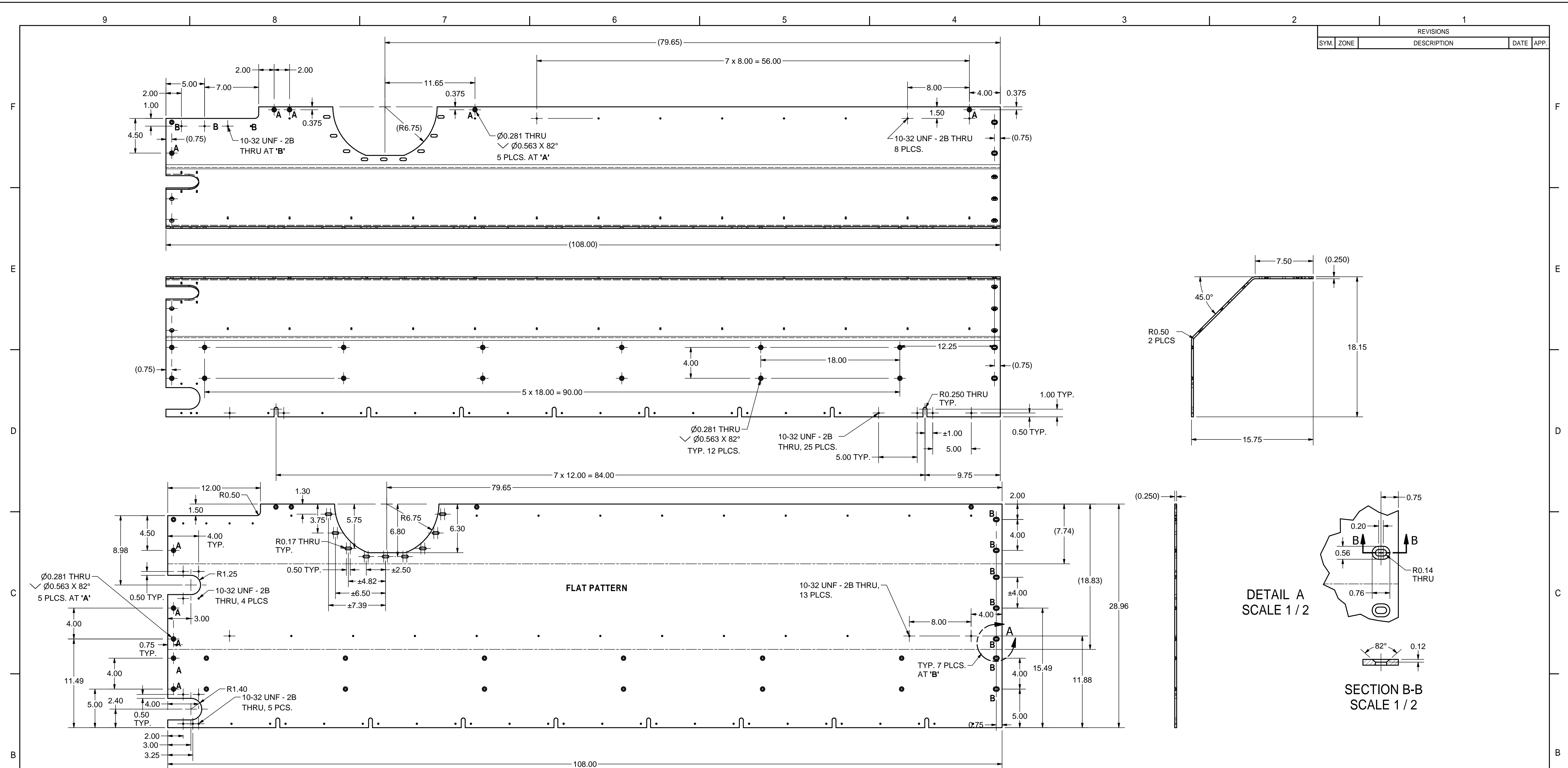


10 TOP-RIGHT MIDDLE PLATE
 FILE NAME: 7103-166
 SHEET NO.: 10
 DFT. SCALE: 1:6
 MATERIAL: 1/4" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
PRINT DISTR.	7103-166	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES ✓					
		Cornell University Laboratory for Elementary-Particle Physics					
		Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853					
		ERL LINAC CRYOMODULE 40K THERMAL SHIELD TOP-RIGHT PLATE MIDDLE SECTION					
CHECKED BY:	DRAWN BY:	DATE:	SCALE:				
APPROVED BY:	YH/DME	RGE / JOS	4/21/2013	D	7103-166	SH. NO. 10 OF 35	REV.

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.

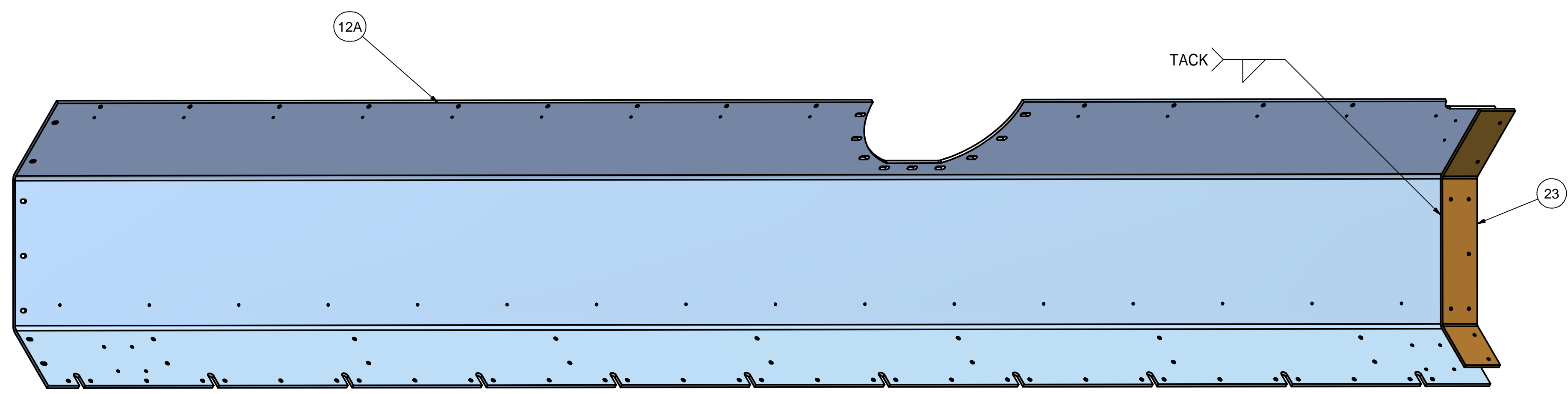
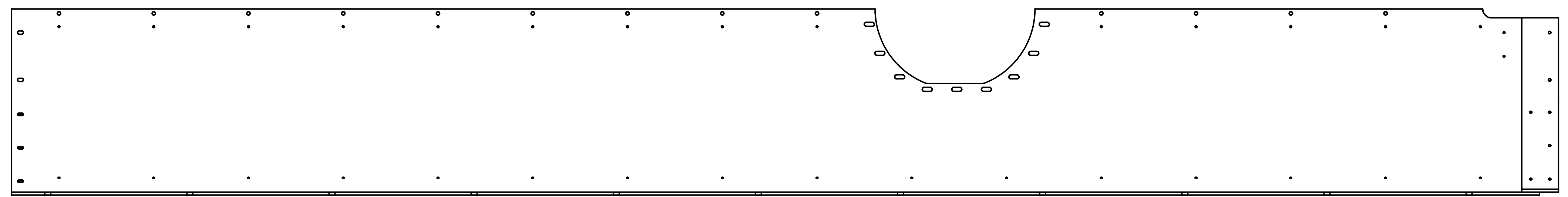
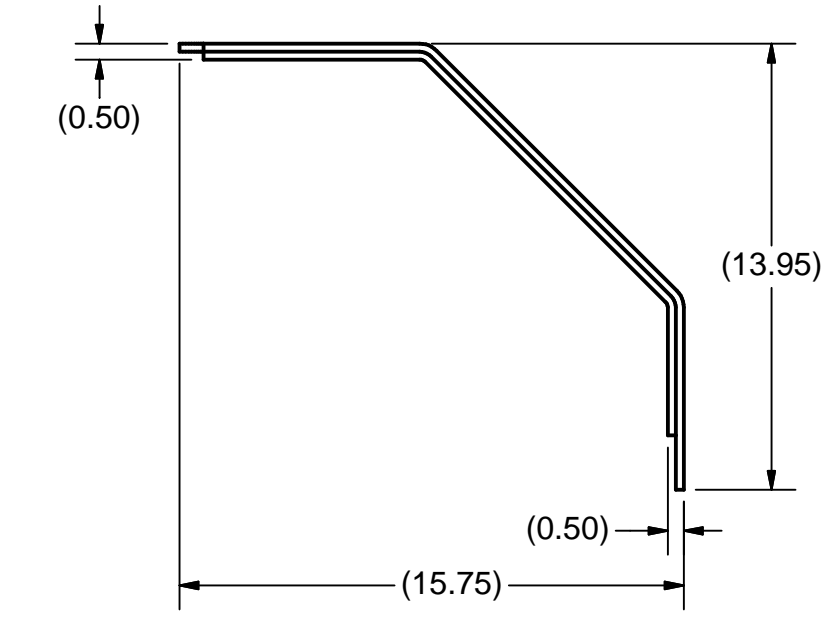
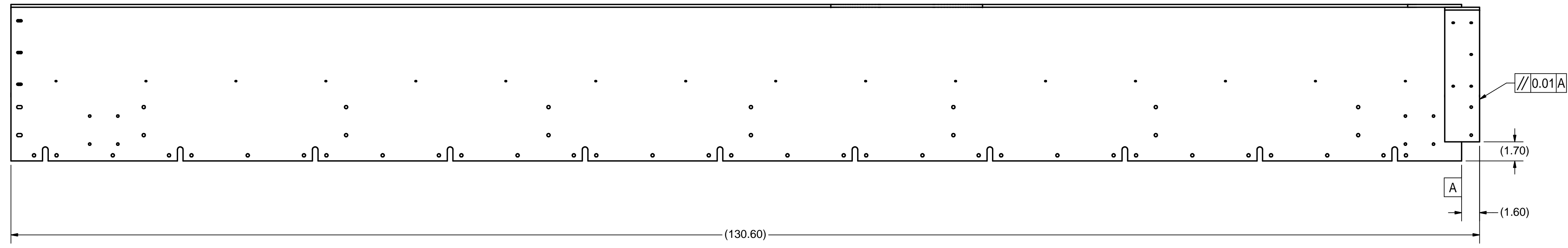


11 TOP-RIGHT EXIT PLATE
 FILE NAME: 7103-166
 SHEET NO.: 11
 DFT. SCALE: 1:6
 MATERIAL: 1/4" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
PRINT DISTR.	7103-166	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0 ± 0.02 .00 ± 0.010 .000 ± 0.005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES					
		Cornell University Laboratory for Elementary-Particle Physics					
		Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853					
		ERL LINAC CRYOMODULE 40K THERMAL SHIELD TOP-RIGHT PLATE EXIT SECTION					
CHECKED BY:	DRAWN BY:	DRAWN FOR:	DATE:	SCALE:			
APPROVED BY:	YH/DME	RGE/JOS	4/21/2013	D	7103-166		
					SH. NO. 11 OF 35		

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



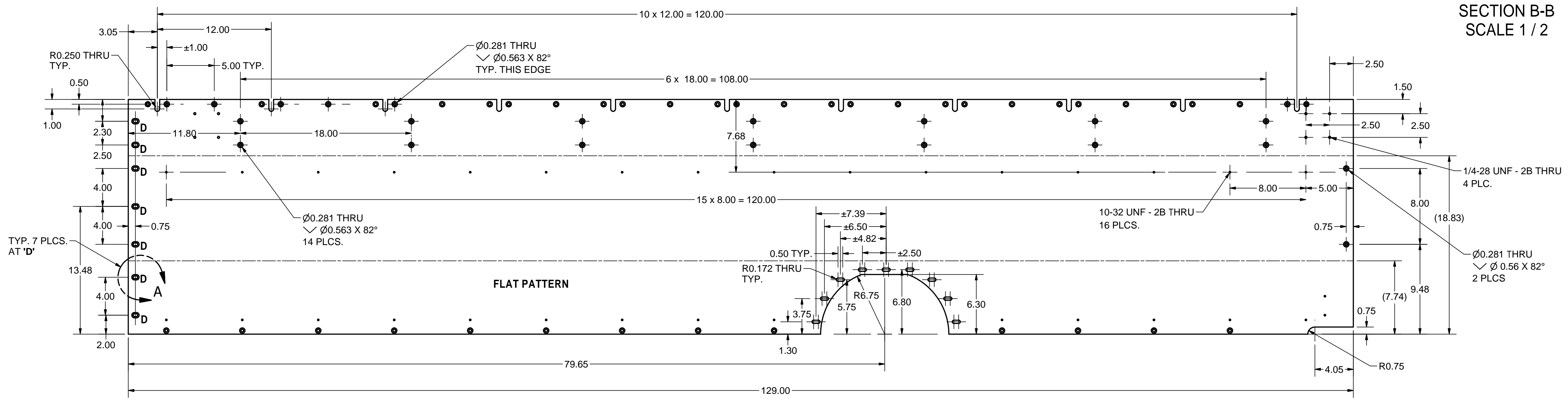
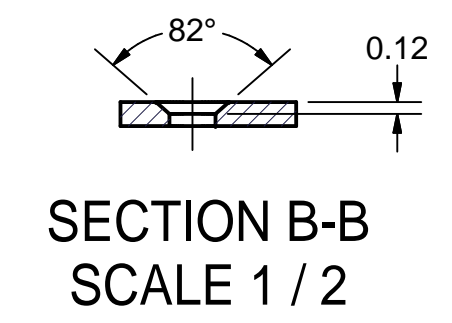
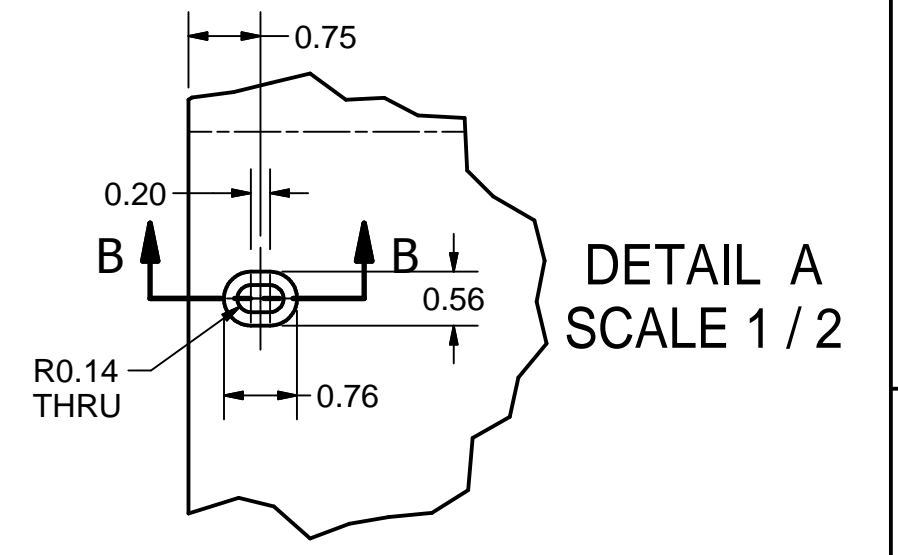
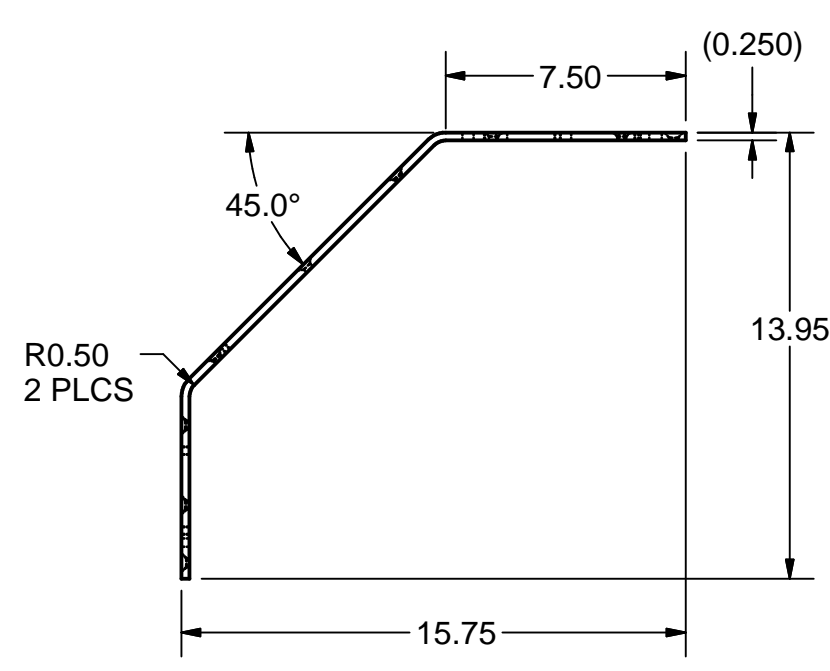
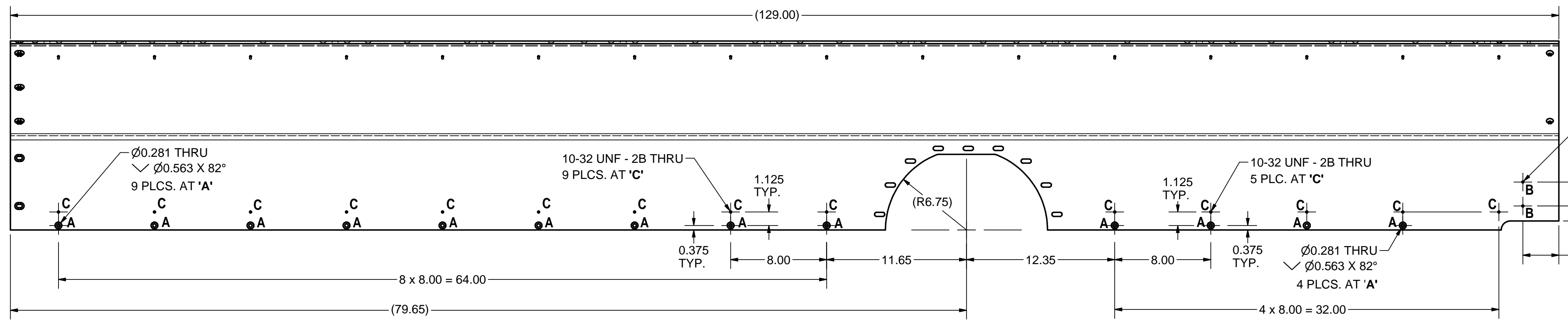
12 TOP-LEFT ENTRANCE WELDMENT
 FILE NAME: 7103-166
 SHEET NO.: 12
 DFT. SCALE: 1:6
 MATERIAL: 1/4" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
23	Sheet 21	TOP COVER STRIP II	1				
12A	Sheet 13	ENTRANCE SECTION TOP RIGHT PLATE	1				

D	PRINT	PLOT DATE: 9/20/2013	
	DISTR.	CAD FILE NAME: 7103-166.idw	
7103-166	REV.	UNLESS OTHERWISE SPECIFIED:	Cornell University Laboratory for Elementary-Particle Physics Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853
		DIMENSIONS ARE IN INCHES:	
		TOLERANCES ON:	ERL LINAC CRYOMODULE
		0 ± 0.02	40K THERMAL SHIELD
		.00 ± 0.010	TOP-LEFT PLATE ENTRANCE WELDMENT
		.000 ± 0.005	
		FRACTIONS ± 1/32	
		ANGLES ± 0.5°	
		ALL SURFACES	
	CHECKED BY:	DRAWN BY	DATE
	APPROVED BY:	YH/DME	4/21/2013
		DRAWN FOR	SCALE
		RGE / JOS	D
			7103-166
			SH. NO. 12 OF 35

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.

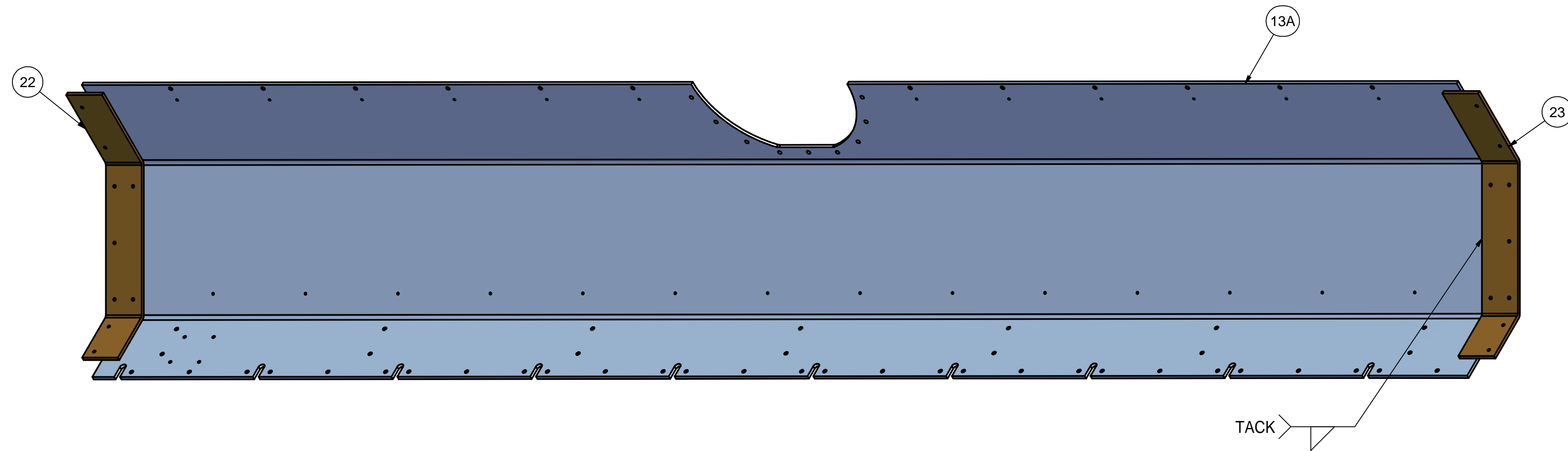
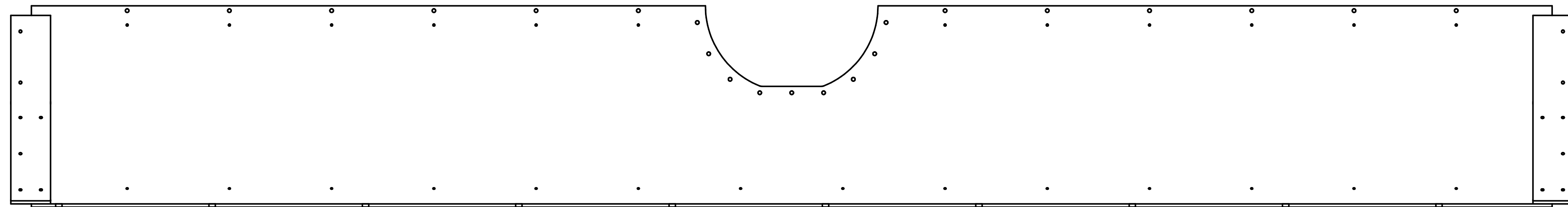
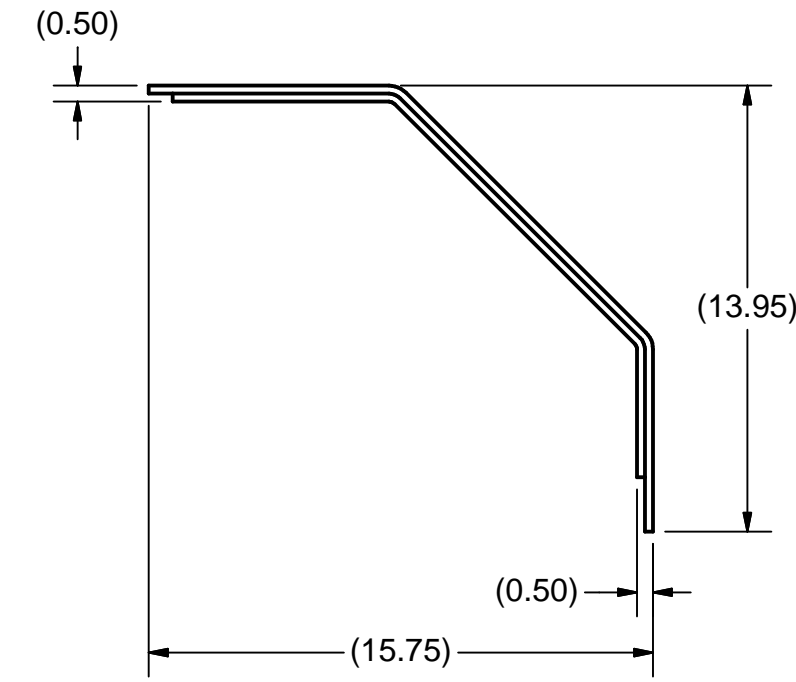
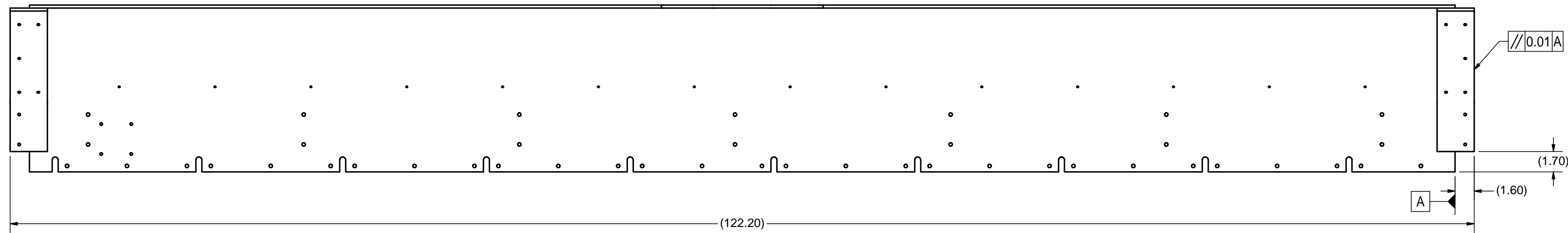


12A TOP-LEFT ENTRANCE SECTION
 FILE NAME: 7103-166
 SHEET NO.: 13
 DFT. SCALE: 1:6
 MATERIAL: 1/4" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

APPROVED FOR RFP BID PROCESS
NOT FOR MANUFACTURE
T. O'Connell - September 20, 2013

ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
PRINT DISTR.	7103-166	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0 ± 0.02 .00 ± 0.010 .000 ± 0.005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES					
		Cornell University Laboratory for Elementary-Particle Physics					
		Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853					
		ERL LINAC CRYOMODULE 40K THERMAL SHIELD TOP-LEFT PLATE ENTRANCE SECTION					
CHECKED BY:	DRAWN BY:	DATE:	SCALE:				
APPROVED BY:	YH/DME	RGE / JOS	4/21/2013	D	7103-166	SH. NO. 13 OF 35	REV.

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.

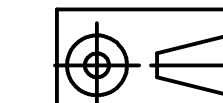


13 TOP-LEFT ENTRANCE WELDMENT

FILE NAME: 7103-166
 SHEET NO.: 14
 DFT. SCALE: 1:6
 MATERIAL: 1/4" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	Q1	Q2	Q3	REMARKS	REV.
23	Sheet 22	TOP-LEFT COVER II	1				
22	Sheet 22	TOP-LEFT COVER I	1				
13A	Sheet 15	MIDDLE SECTION TOP RIGHT PLATE	1				



PRINT
DISTR.

PLOT DATE: 9/20/2013
 CAD FILE NAME: 7103-166.idw

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES:
 TOLERANCES ON:
 .0 ± .02
 .00 ± .010
 .000 ± .005
 FRACTIONS ± 1/32
 ANGLES ± 0.5°
 ALL SURFACES

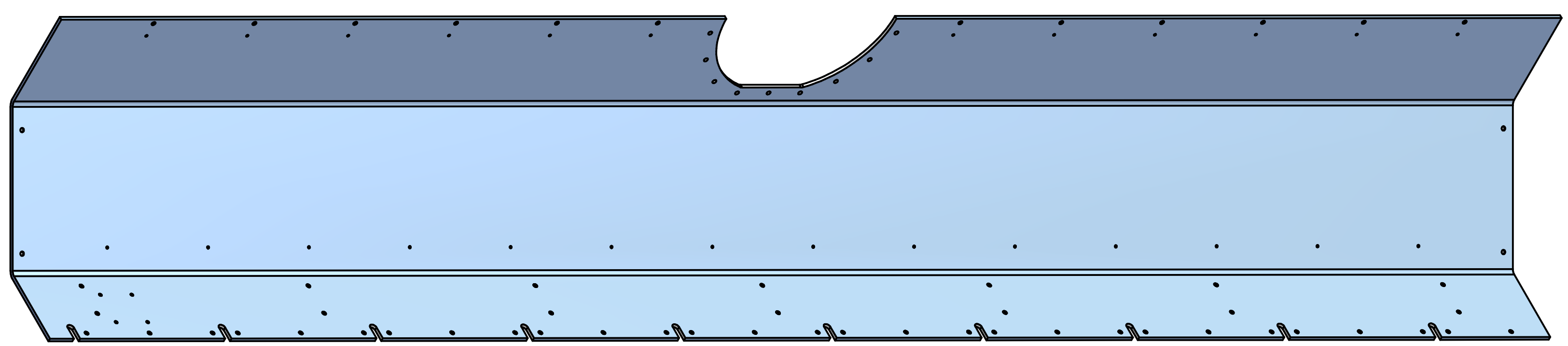
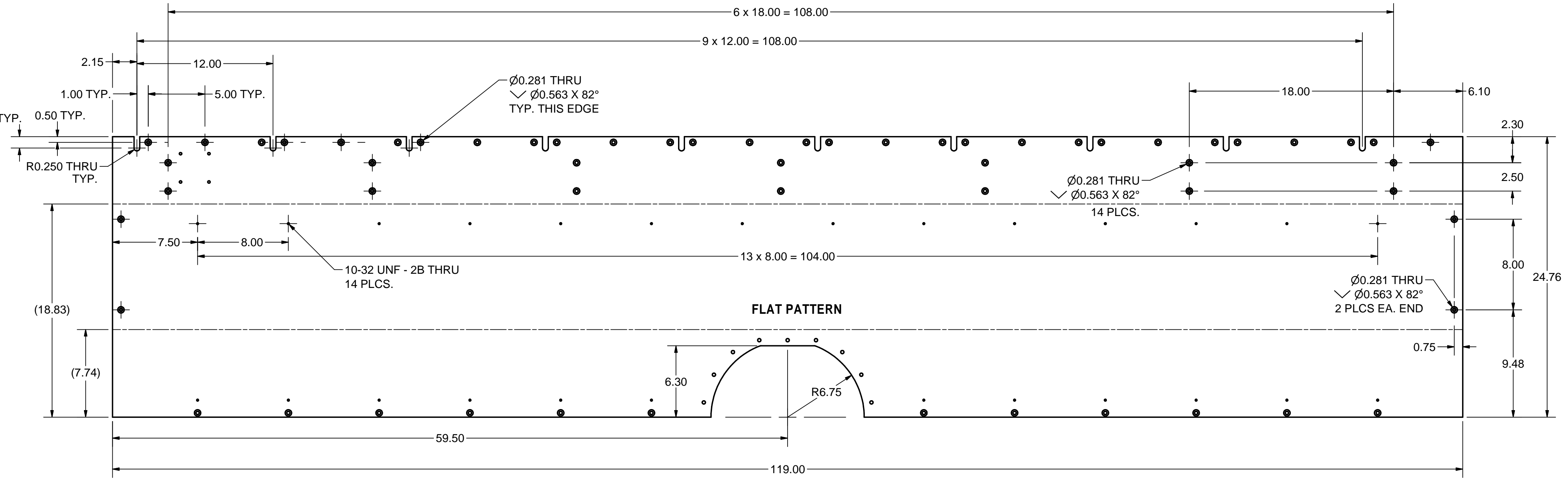
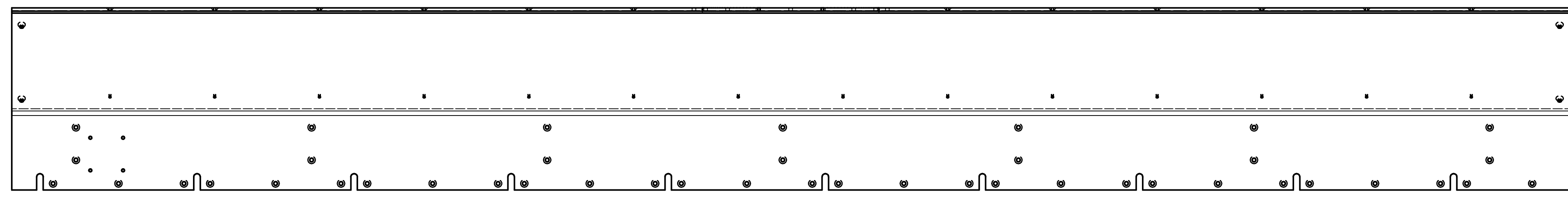
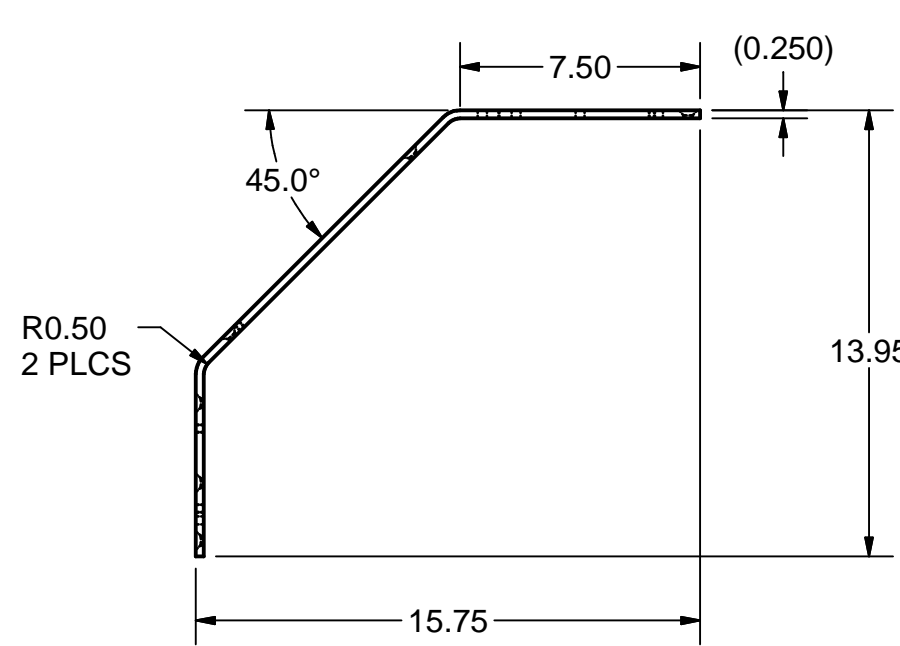
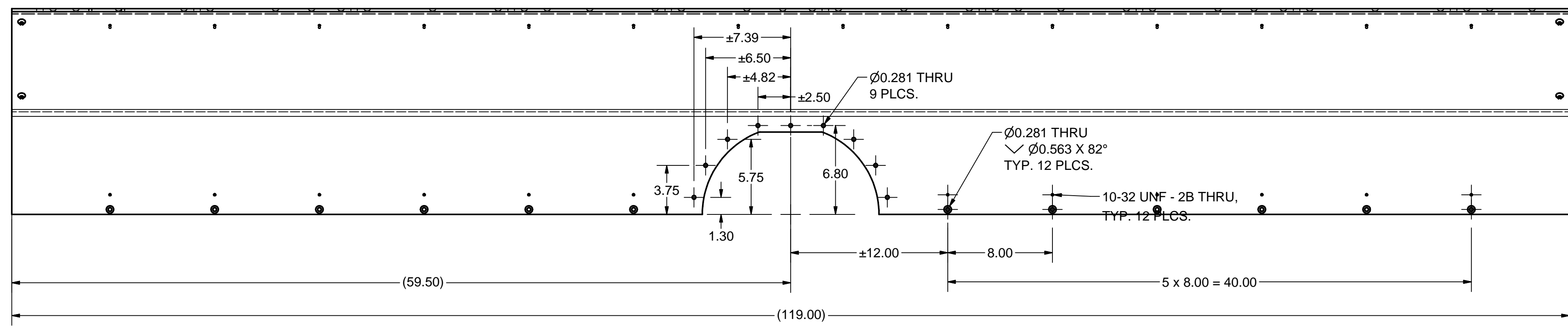
Cornell University
 Laboratory for Elementary-Particle Physics

Floyd R. Newman Laboratory
 Robert R. Wilson Laboratory
 Ithaca, NY 14853

**ERL LINAC CRYOMODULE
 40K THERMAL SHIELD
 TOP-LEFT PLATE MIDDLE WELDMENT**

CHECKED BY:	DRAWN BY:	DRAWN FOR:	DATE:	SCALE:	7103-166	REV.
APPROVED BY:	YH/DME	RGE/JOS	4/21/2013	D	SH. NO. 14 OF 35	

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.
			1

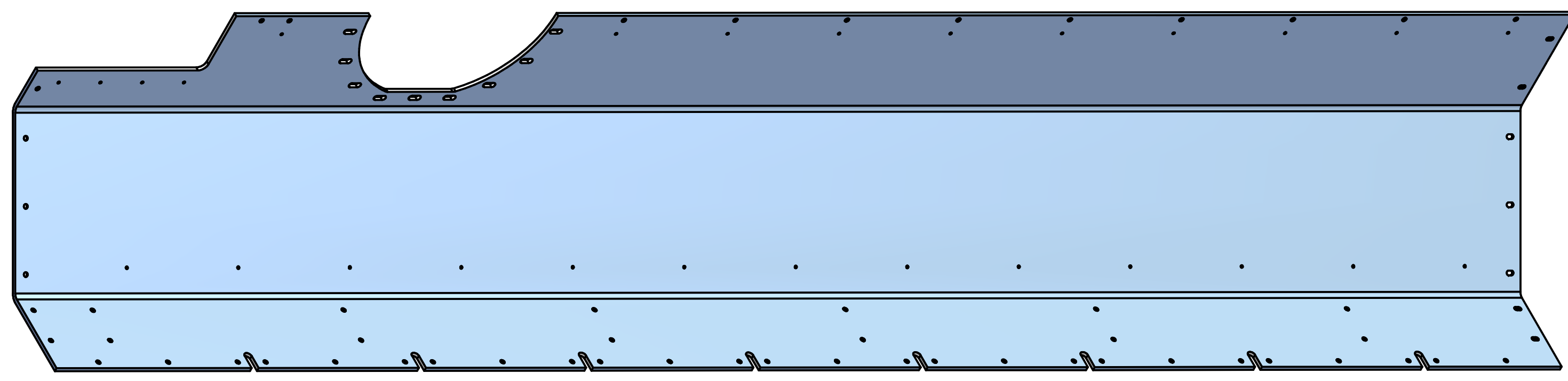
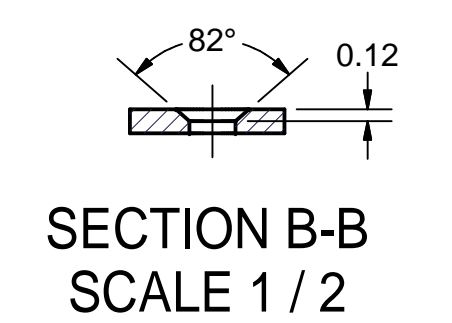
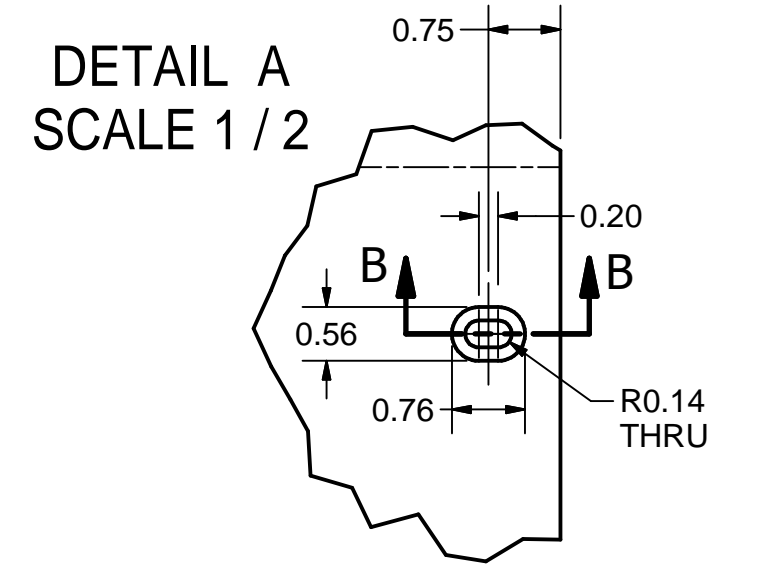
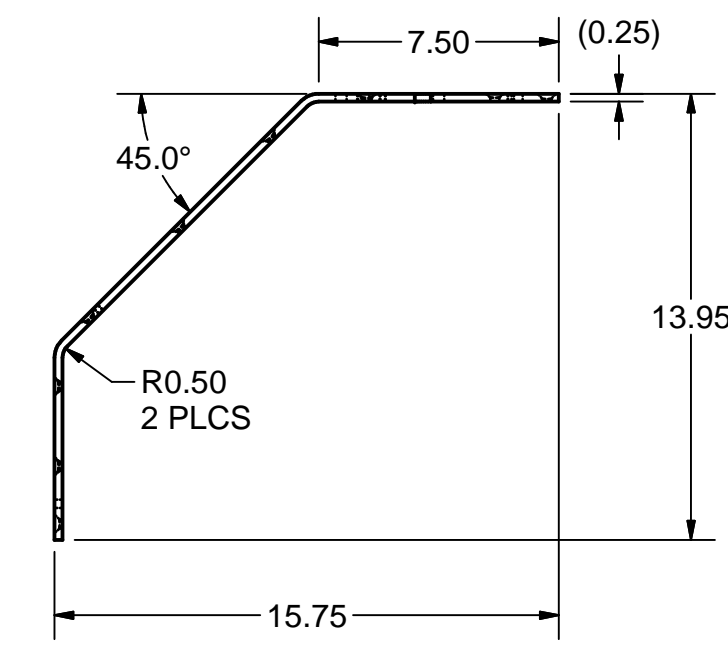
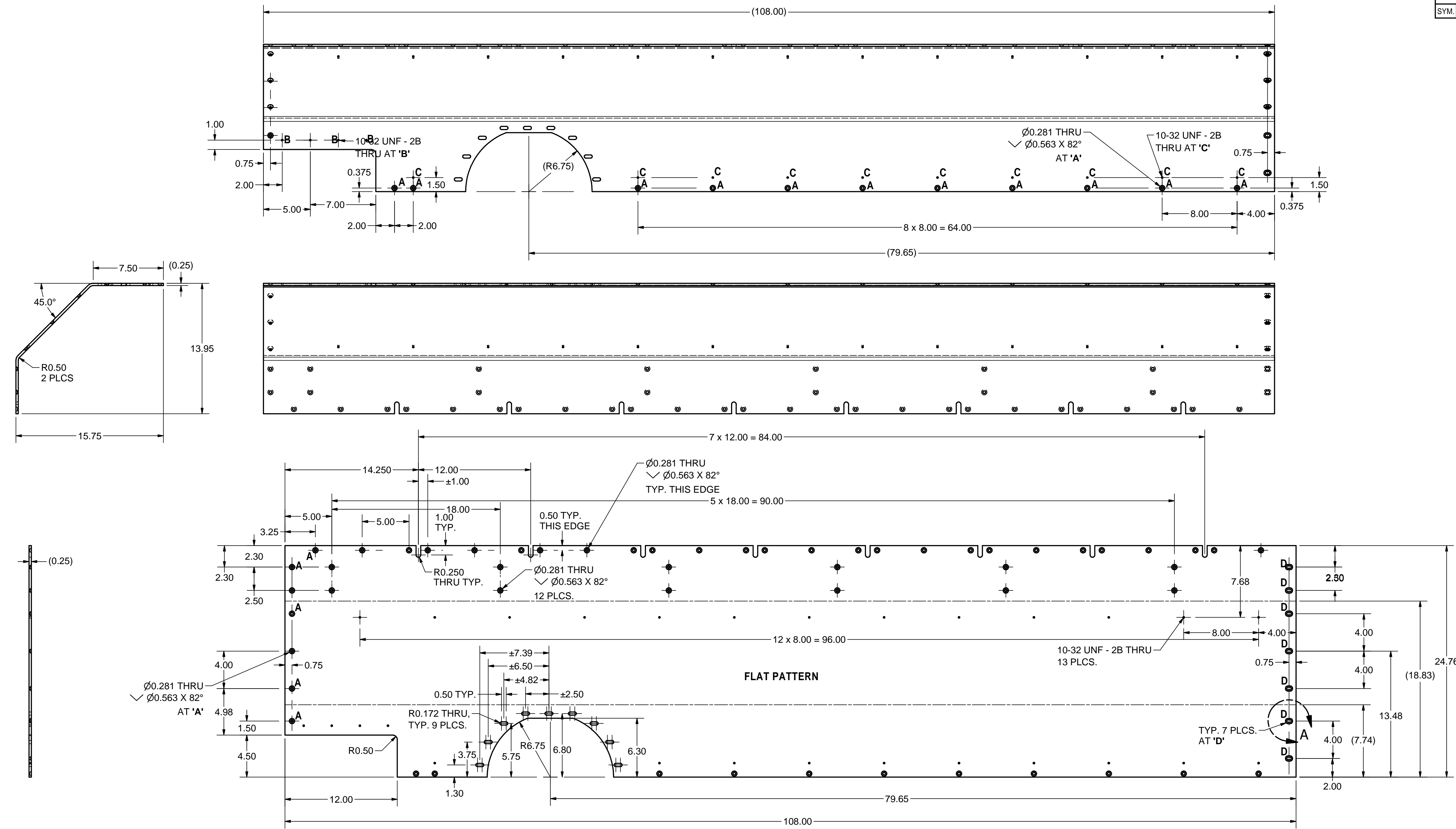


13A TOP-LEFT MIDDLE PLATE
 FILE NAME: 7103-166
 SHEET NO.: 15
 DFT. SCALE: 1:6
 MATERIAL: 1/4" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
PRINT DISTR.		PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
7103-166 SH. NO. 15 OF 35		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES ✓					
		Cornell University Laboratory for Elementary-Particle Physics					
		Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853					
		ERL LINAC CRYOMODULE 40K THERMAL SHIELD TOP-LEFT PLATE MIDDLE SECTION					
CHECKED BY:	DRAWN BY:	DATE:	SCALE:				
APPROVED BY:	YH/DME	RGE/JOS	4/21/2013	D	7103-166	SH. NO. 15 OF 35	REV.

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.

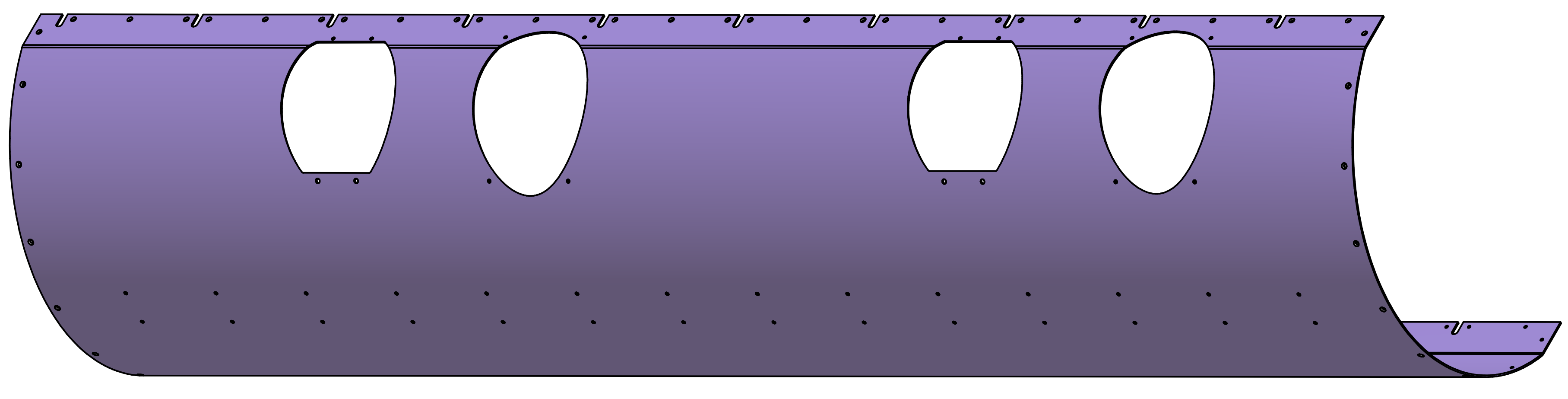
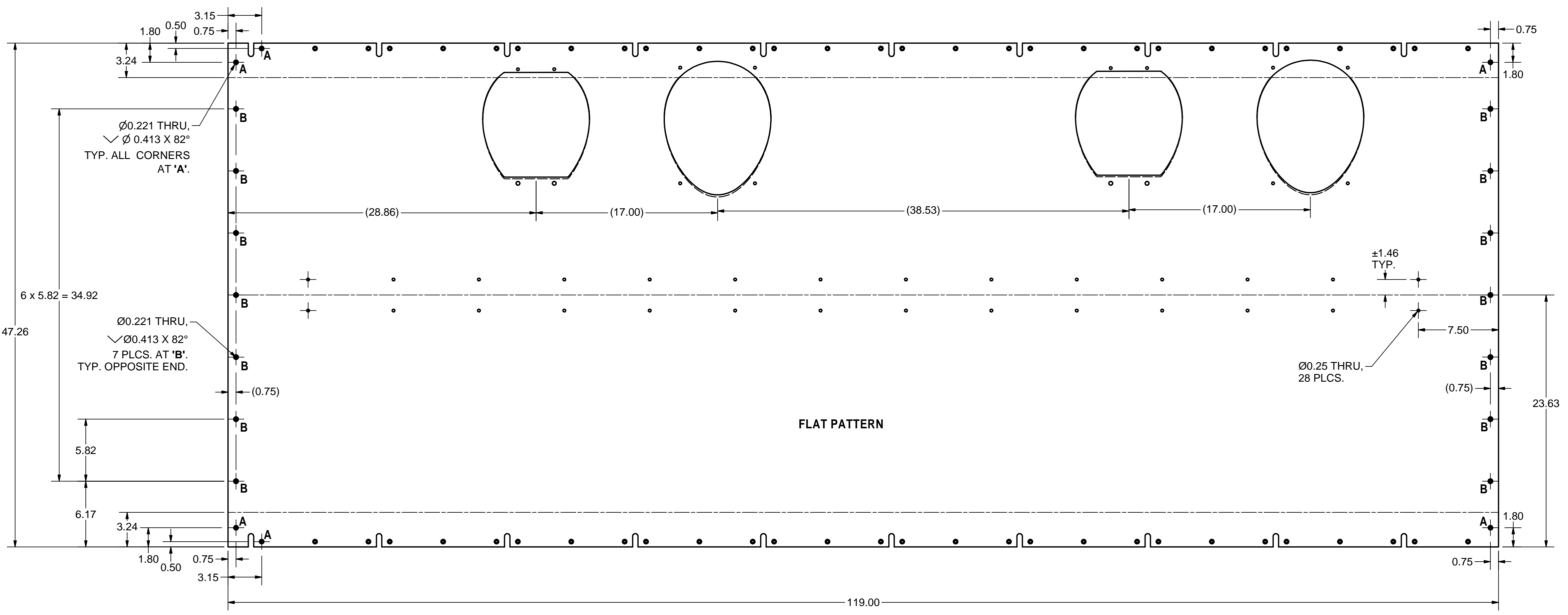
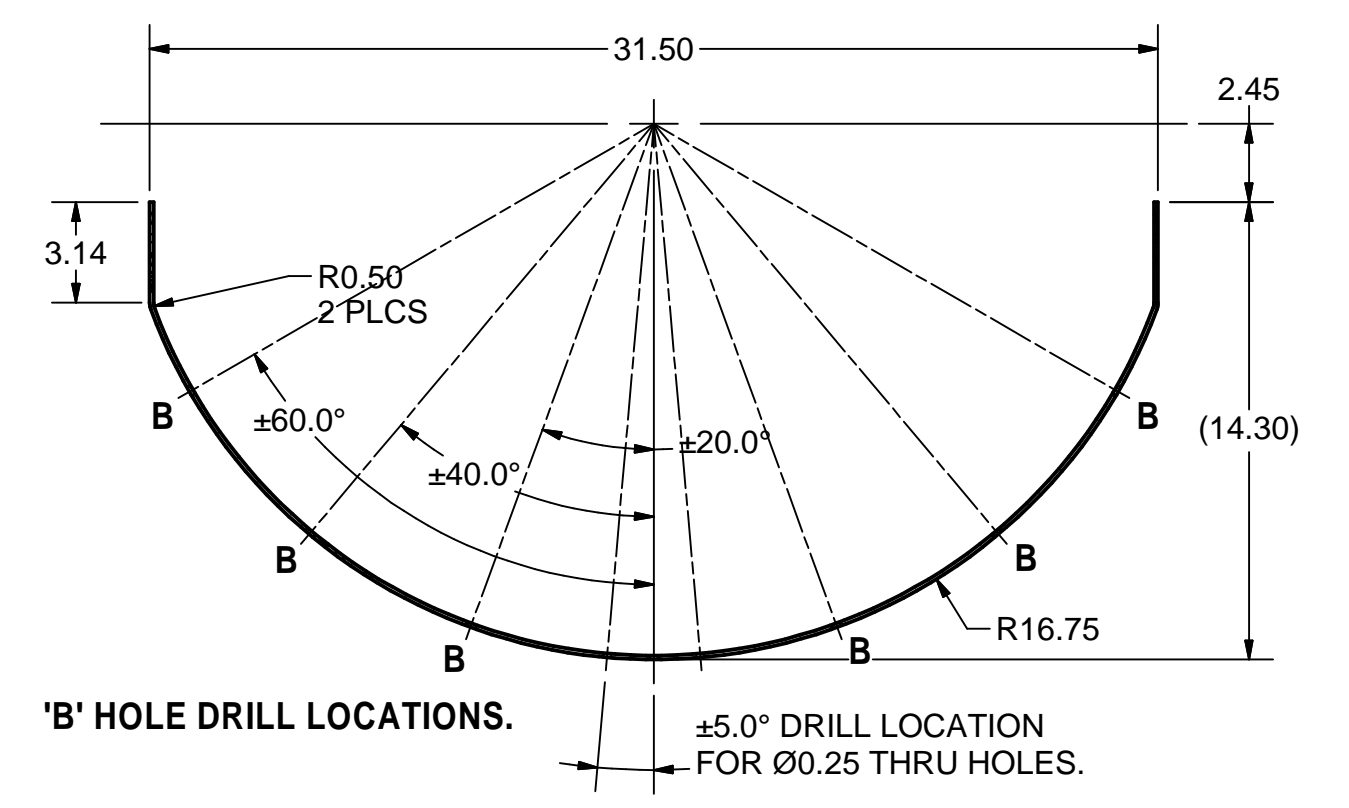
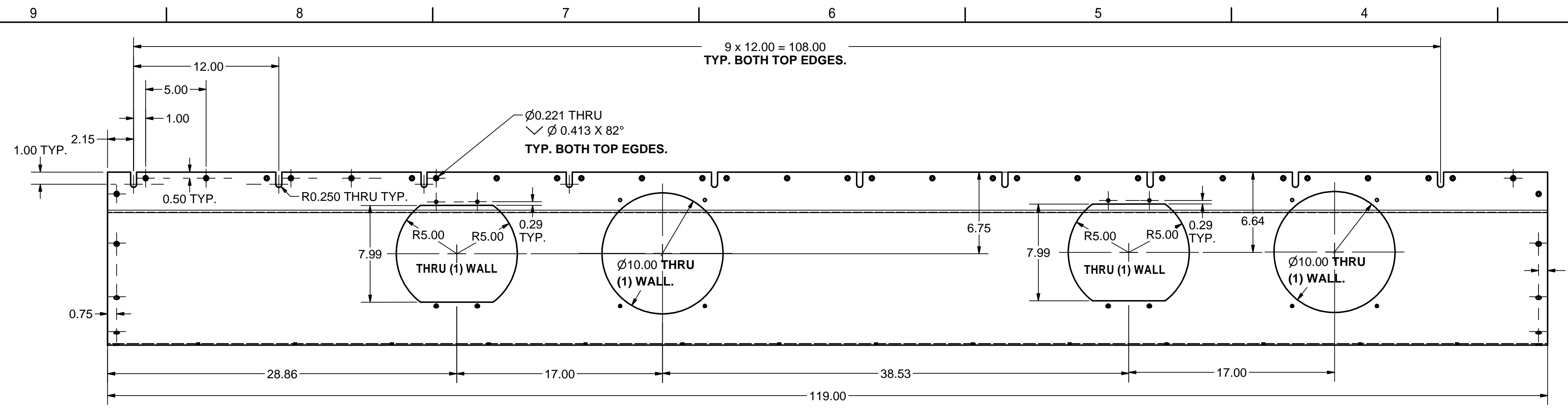


14 TOP-LEFT EXIT PLATE
 FILE NAME: 7103-166
 SHEET NO.: 16
 DFT. SCALE: 1:6
 MATERIAL: 1/4" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

REV.	PRINT DISTR.	ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
					QUANTITY				
7103-166				PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
				UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES ✓					
				Cornell University Laboratory for Elementary-Particle Physics				Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	
				ERL LINAC CRYOMODULE 40K THERMAL SHIELD TOP-LEFT PLATE EXIT SECTION					
				CHECKED BY:	DRAWN BY	DRAWN FOR	DATE	SCALE	
				APPROVED BY:	YH/DME	RGE/JOS	4/21/2013	D	7103-166 SH. NO. 16 OF 35

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.

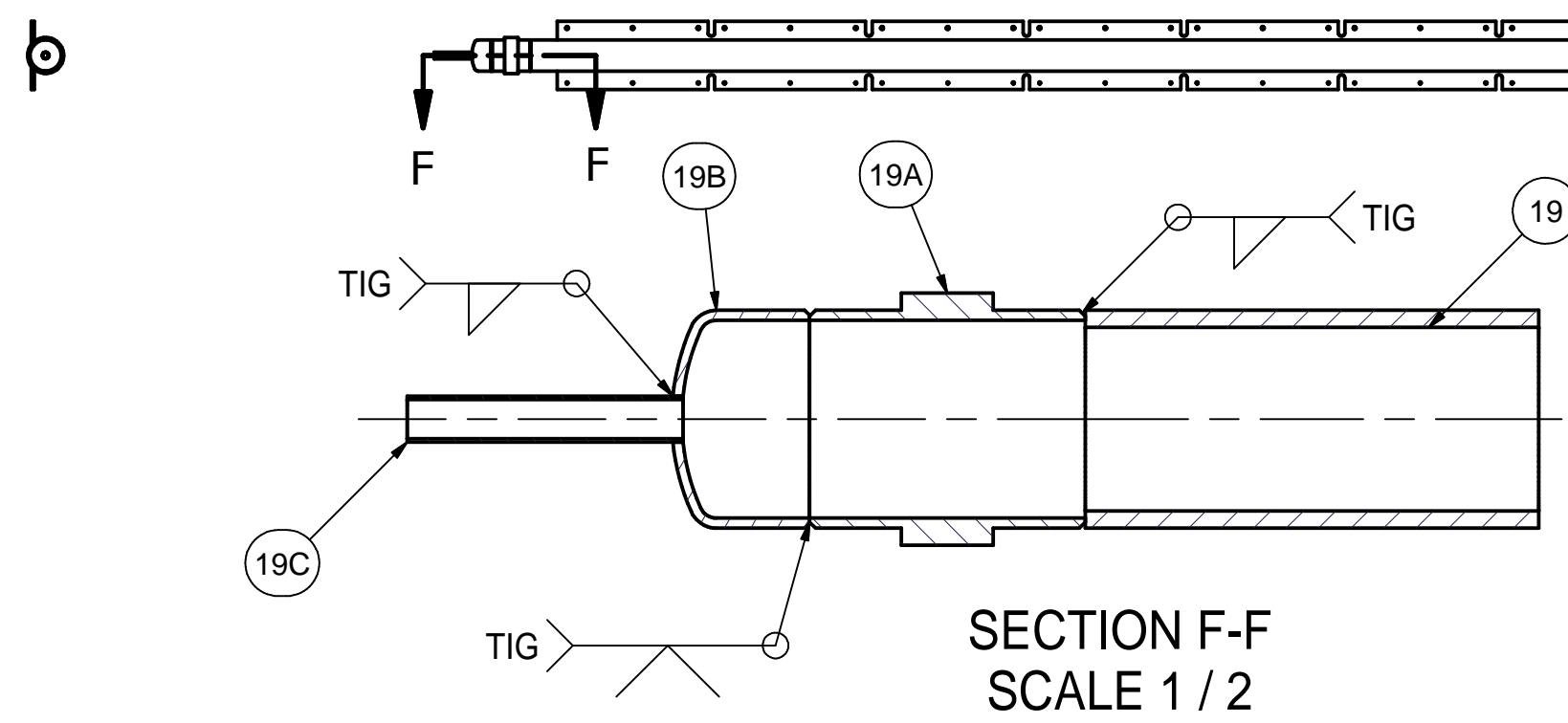


**APPROVED FOR RFP BID PROCESS
NOT FOR MANUFACTURE
T. O'Connell - September 20, 2013**

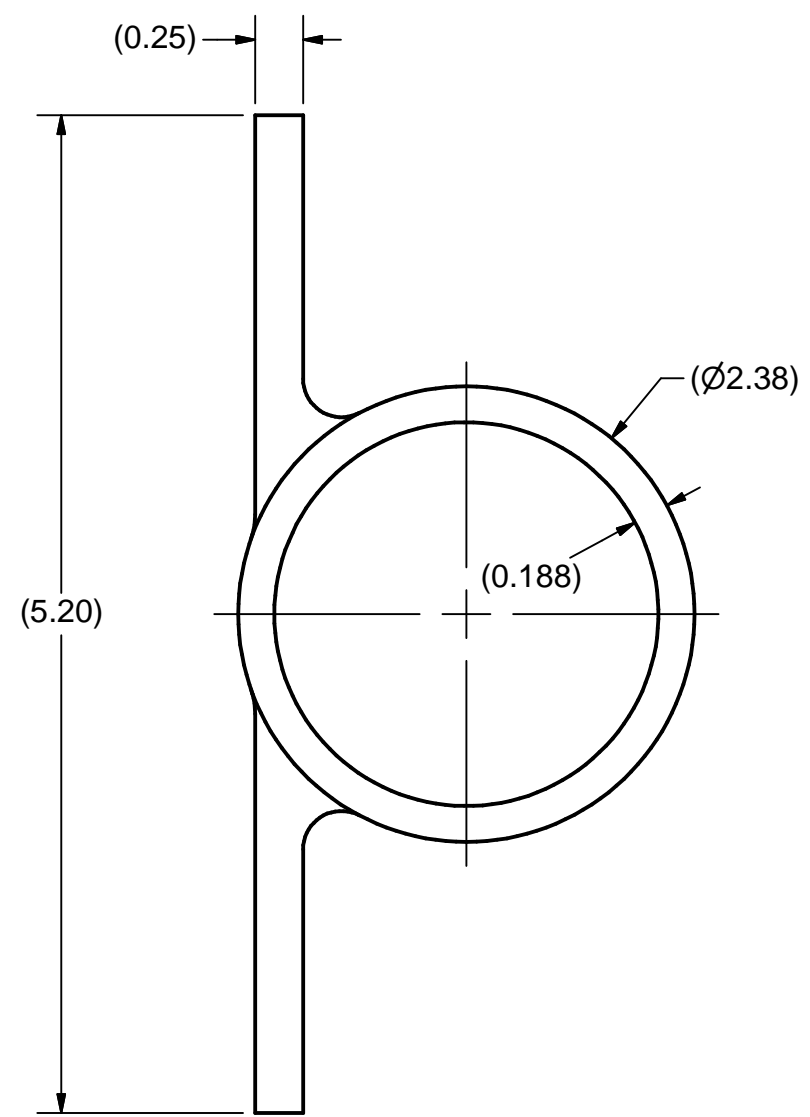
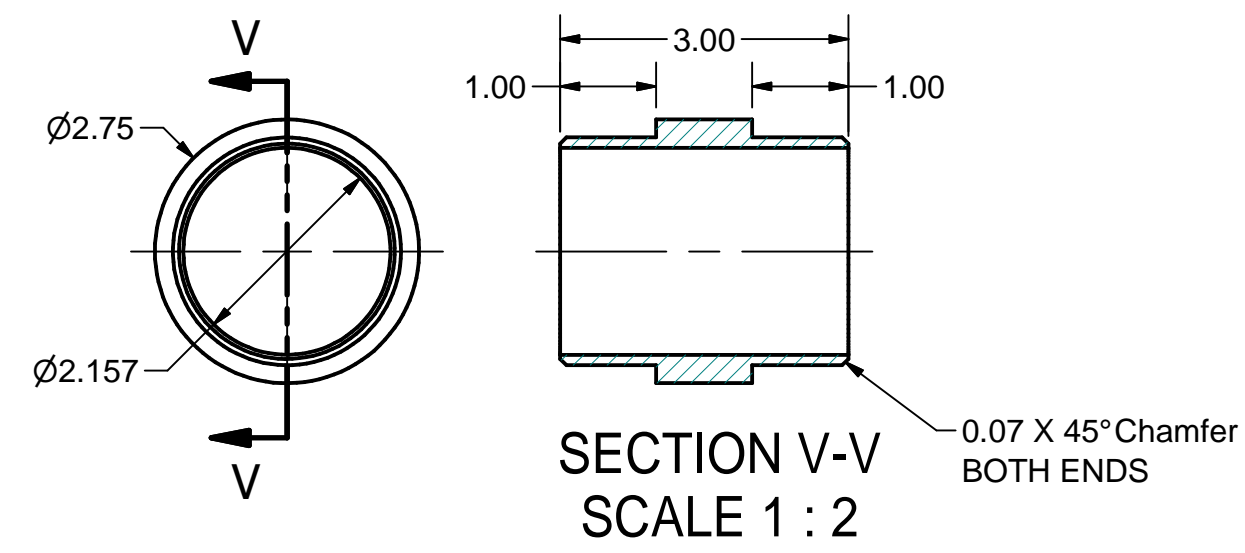
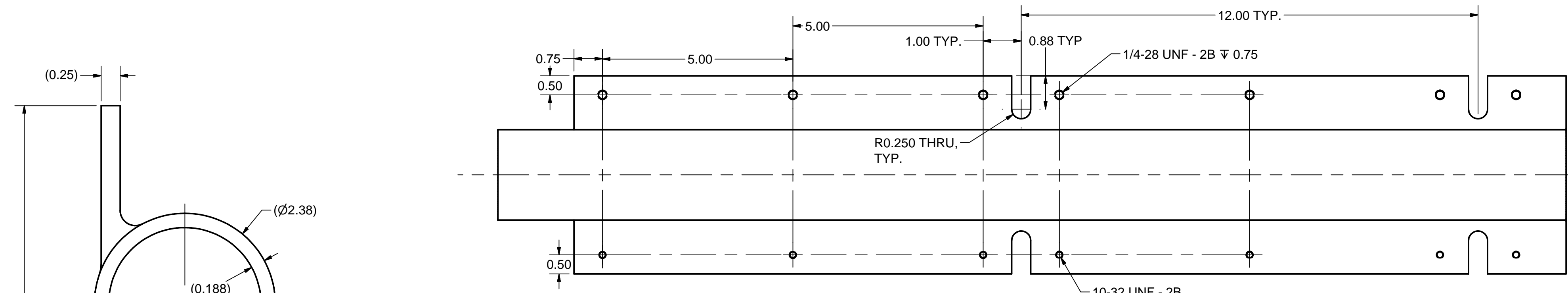
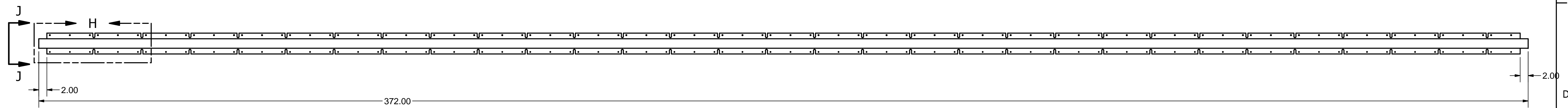
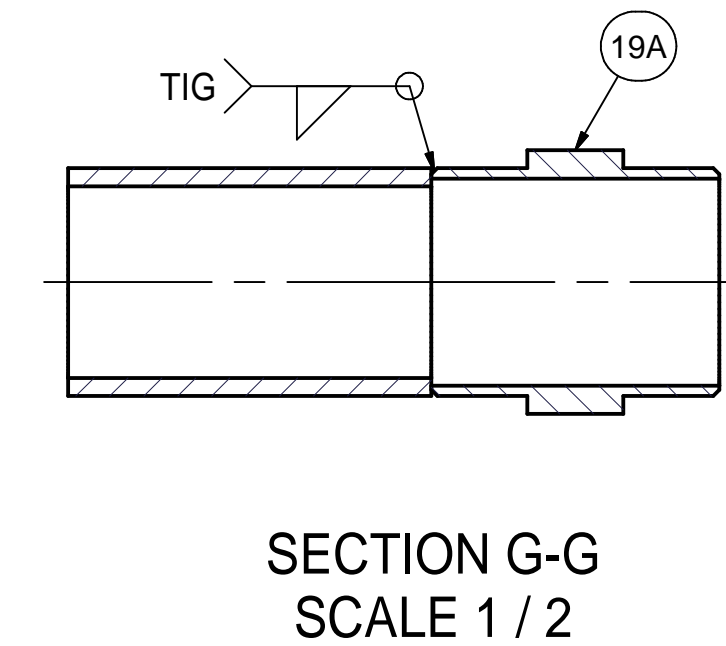
16 BOTTOM MIDDLE SHEET
 FILE NAME: 7103-166
 SHEET NO.: 18
 DFT. SCALE: 1:6
 MATERIAL: 1/8" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
PRINT DISTR.	7103-166	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES ✓					
		Cornell University Laboratory for Elementary-Particle Physics				Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	
		ERL LINAC CRYOMODULE 40K THERMAL SHIELD BOTTOM PLATE MIDDLE SECTION					
CHECKED BY:	DRAWN BY:	DATE:	SCALE:				
APPROVED BY:	YH/DME	RGE / JOS	4/21/2013	D	7103-166	SH. NO. 18 OF 35	

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.

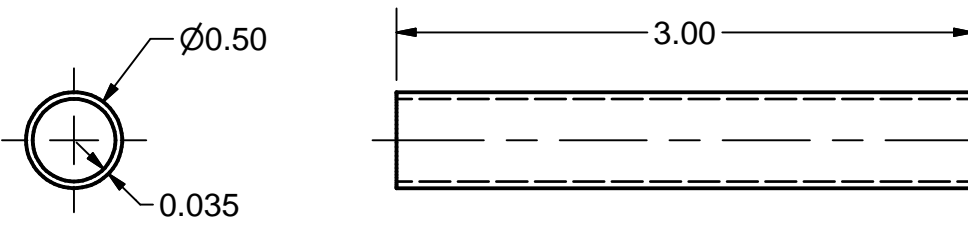
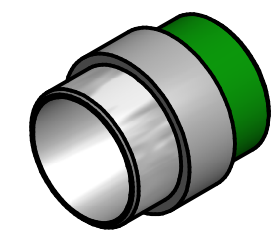


18 EXTRUDED PIPE WELDMENT
 FILE NAME: 7103-166
 SHEET NO.: 20
 DFT. SCALE: 1:6
 MATERIAL: AL 6061
 QTY: 1 PER ASSEMBLY
 NOTES:



19 EXTRUDED PIPE
 FILE NAME: 7103-166
 SHEET NO.: 20
 DFT. SCALE: 1:6
 MATERIAL: AL 6061
 QTY: 1 PER ASSEMBLY
 NOTES: MAKE FROM PURCHASED EXTRUDED PIPE

19A ALUM/SST 2" TRANSITION
 FILE NAME: 7103-166
 SHEET NO.: 20
 DFT. SCALE: 1:2
 MATERIAL: NOTED
 QTY: 2
 NOTES:



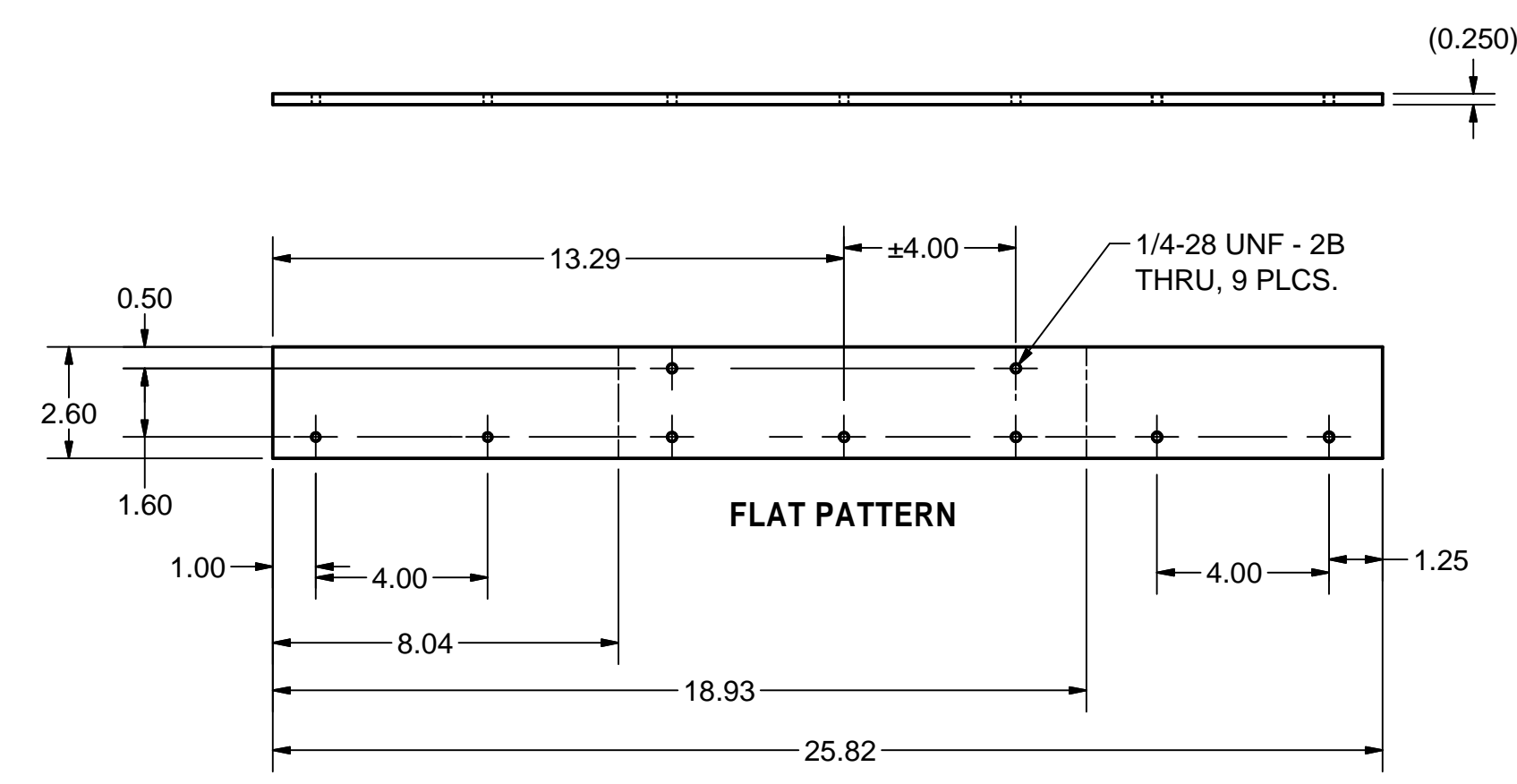
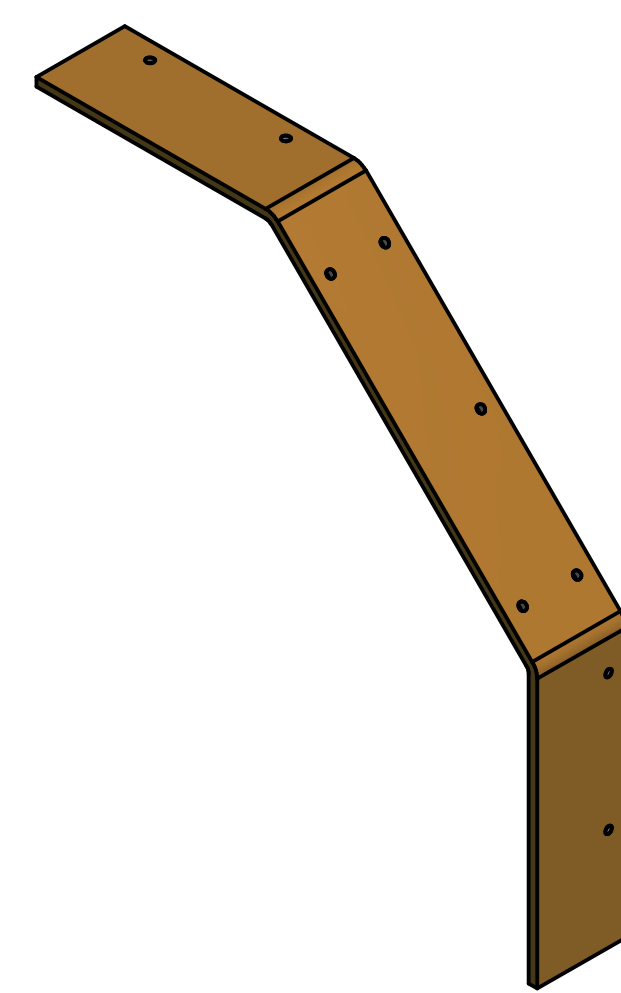
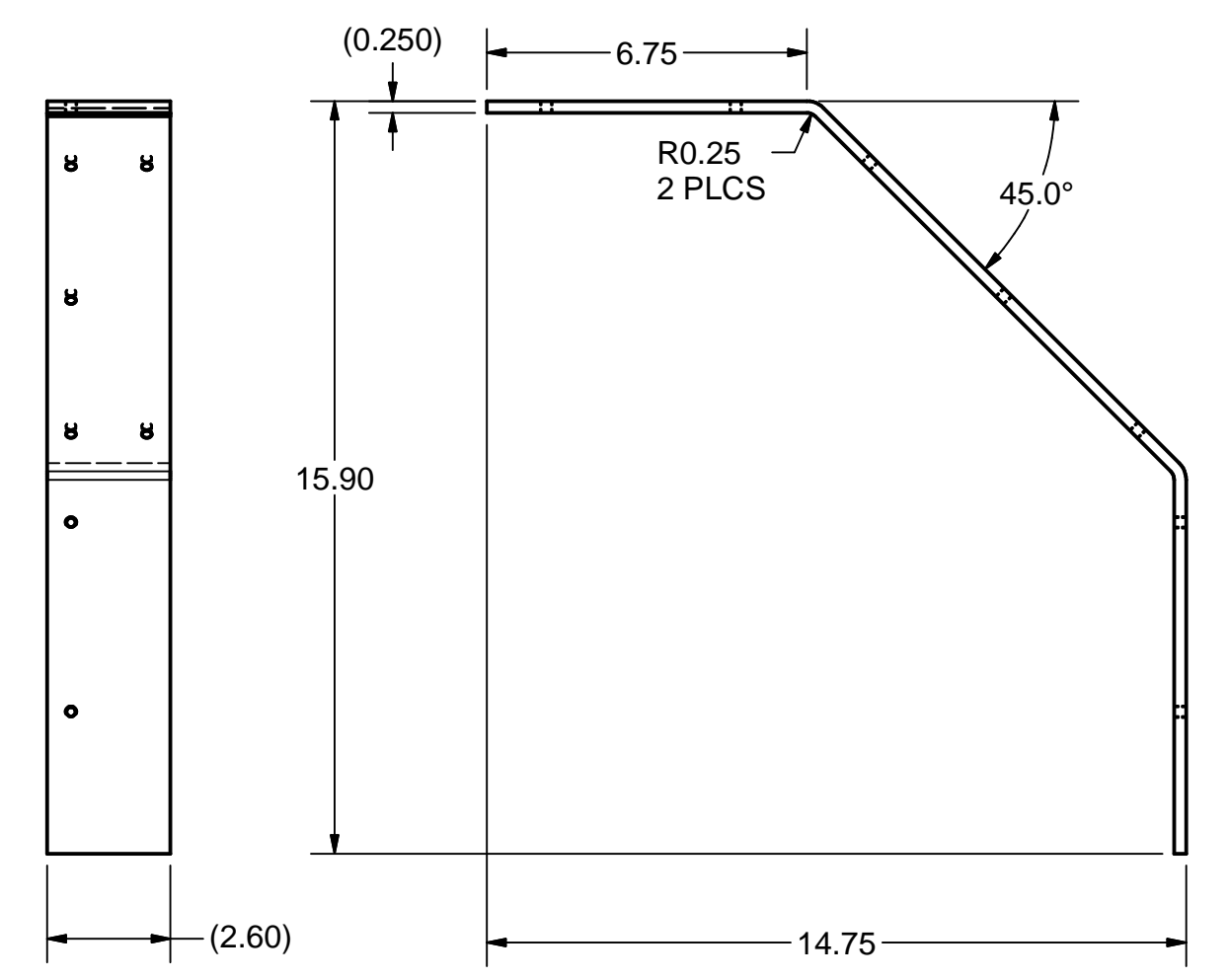
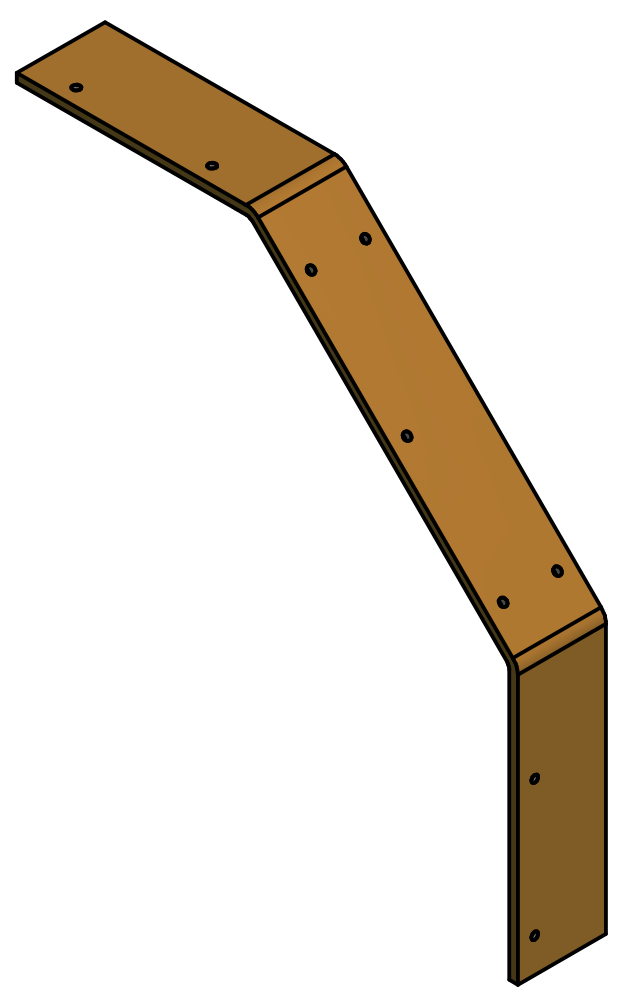
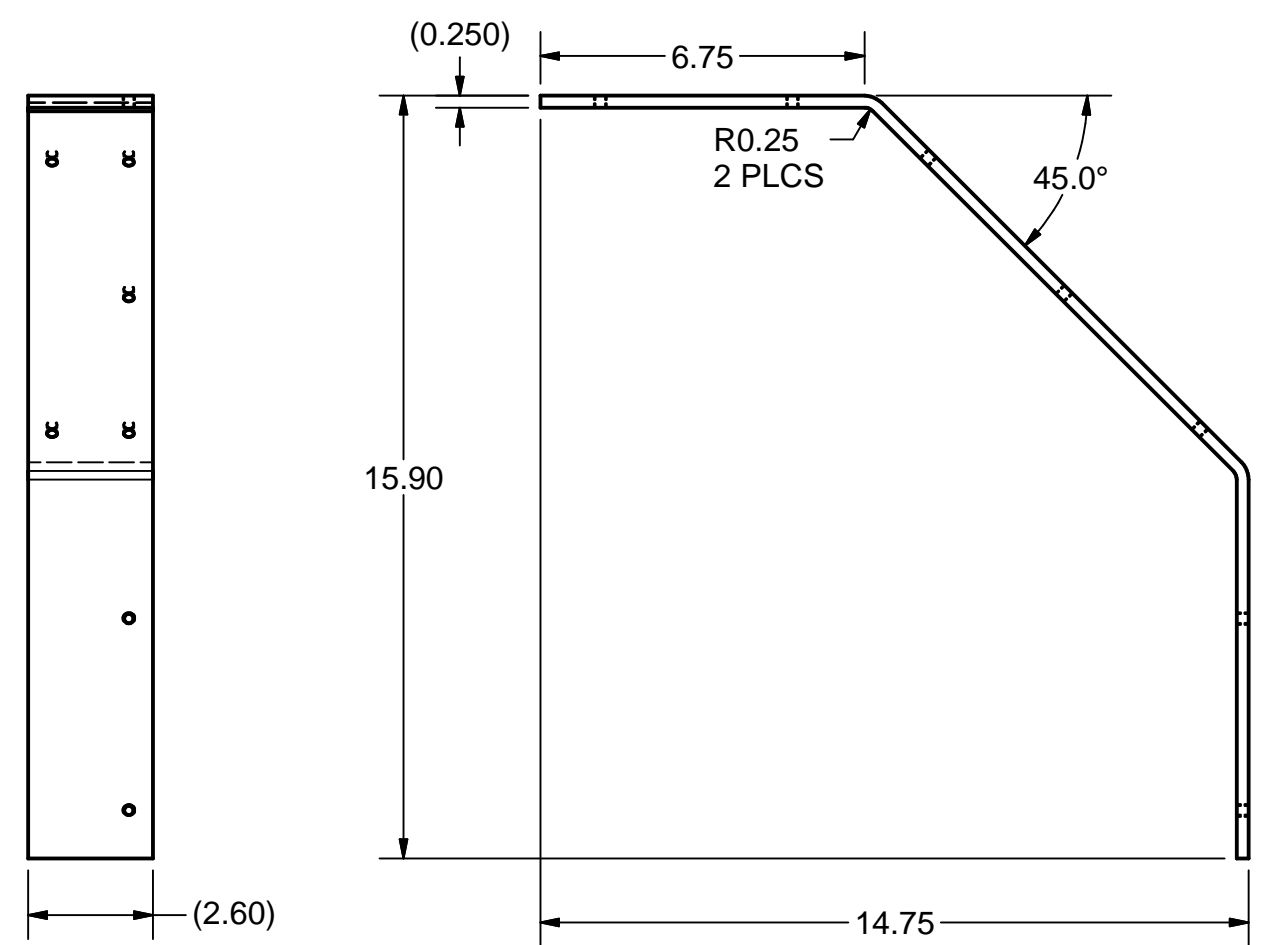
19C 0.5" TUBE STUB
 FILE NAME: 7103-166
 SHEET NO.: 20
 DFT. SCALE: 1:2
 MATERIAL: SST
 QTY: 1
 NOTES:

**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

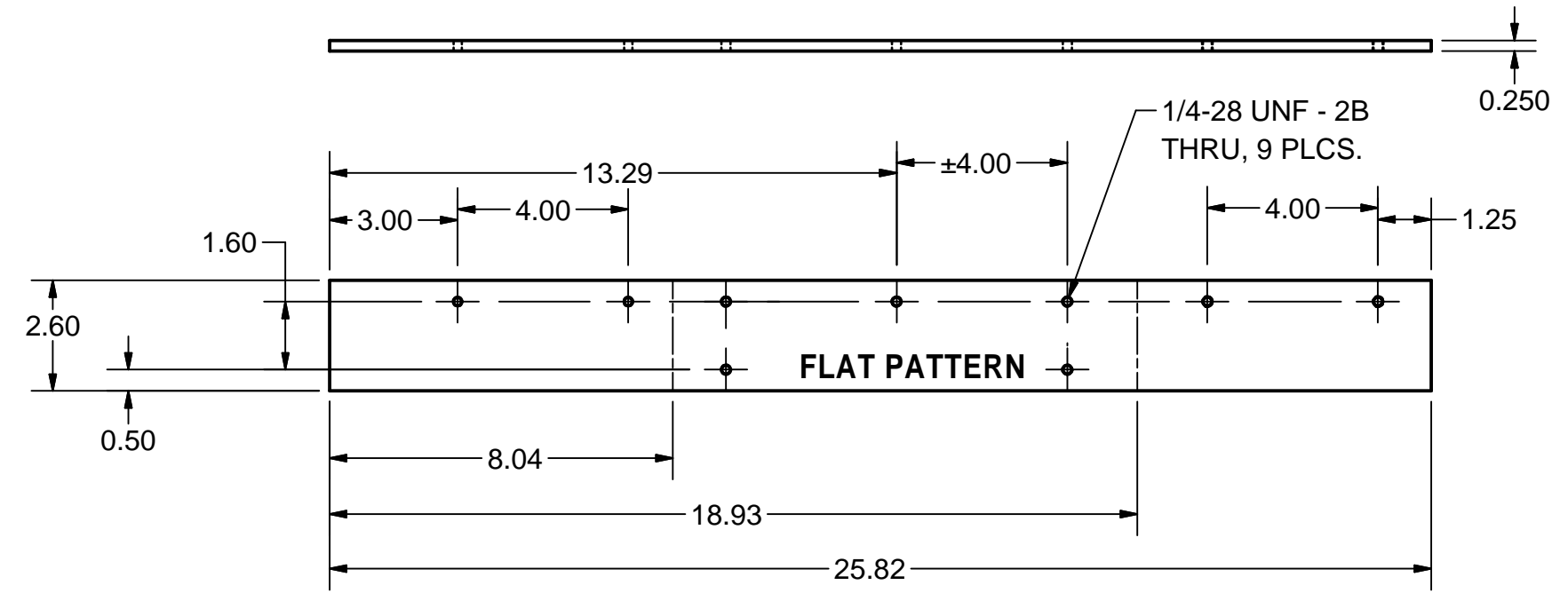
ITEM	DWG. NO.	DESCRIPTION	Q1	Q2	Q3	REMARKS	REV.
19C	This Sheet	0.5 TUBE STUB	1				
19B	This Sheet	2" PIPE CAP WITH 1/2" HOLE	1			PURCHASE	
19A	This Sheet	ALUM/SST 2" TRANSITION	2				
19	This Sheet	40K EXTRUDED PIPE	1			PURCHASE	

D	PRINT	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw	Cornell University Laboratory for Elementary-Particle Physics	Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853
	DISTR.			
7103-166	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: 0 ± 0.02 .00 ± 0.010 .000 ± 0.005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES	ERL LINAC CRYOMODULE 40K THERMAL SHIELD EXTRUDED PIPE & CONNECTION STRIPS	SCALE	D
REV.	CHECKED BY:	DRAWN BY: YH/DME	DRAWN FOR: RGE/JOS	DATE: 4/21/2013
	APPROVED BY:			7103-166 SH. NO. 20 OF 35

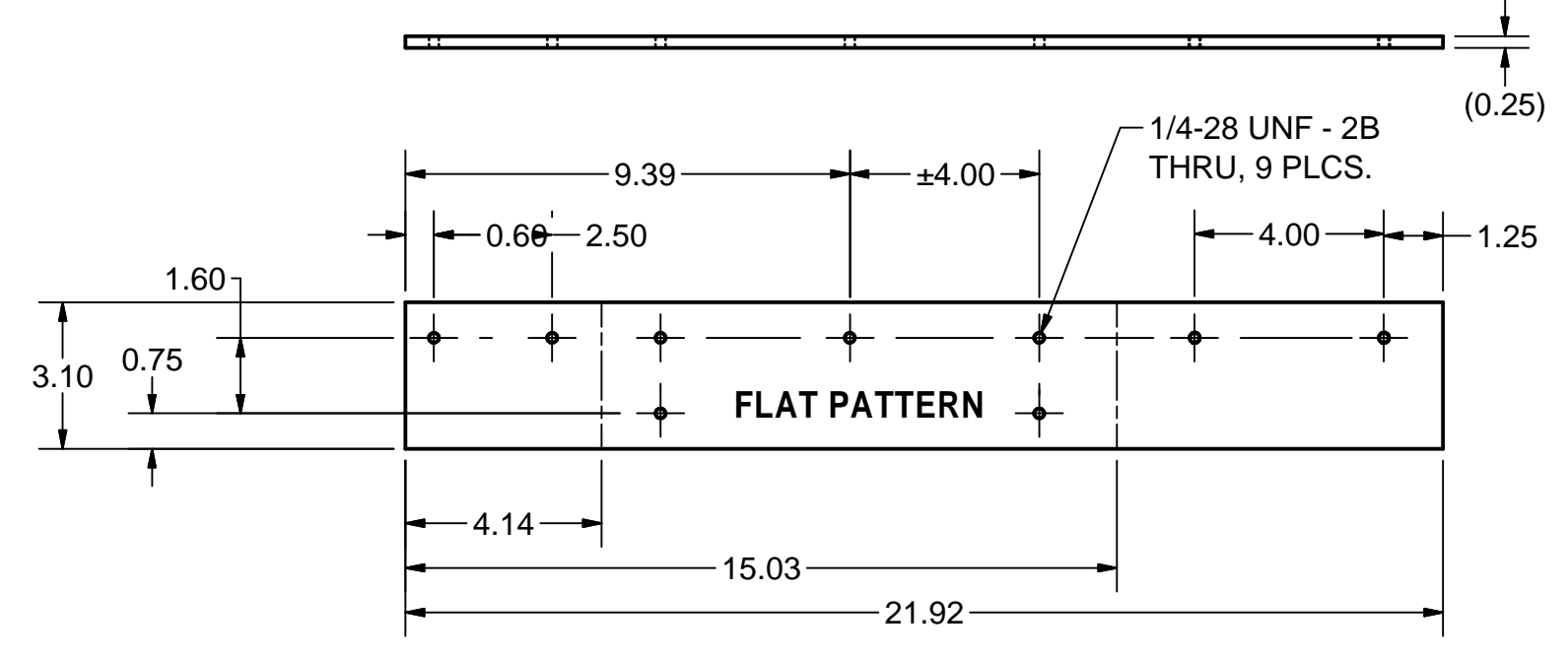
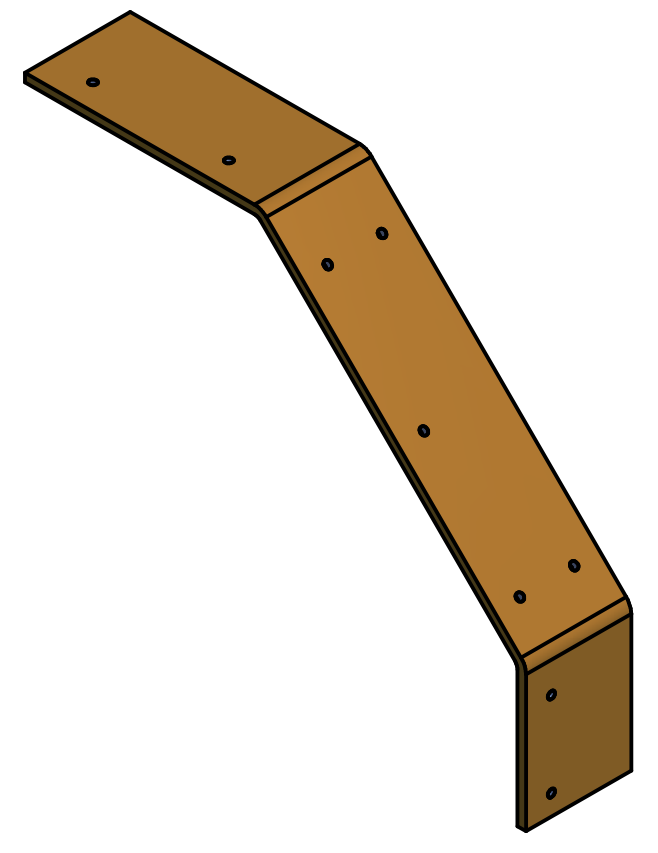
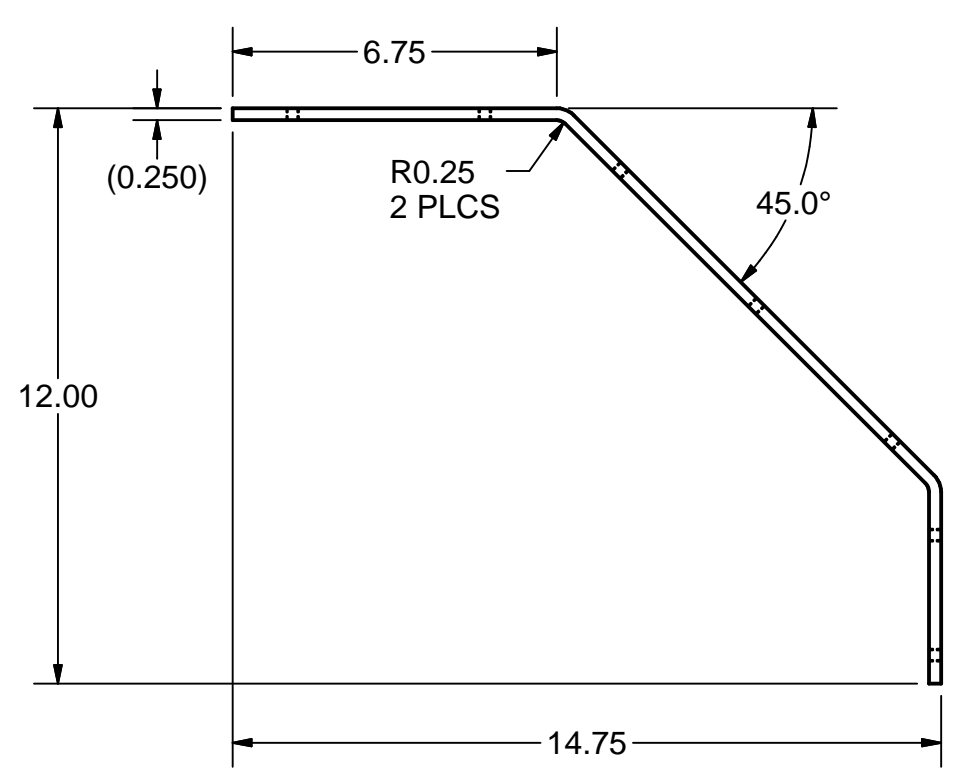
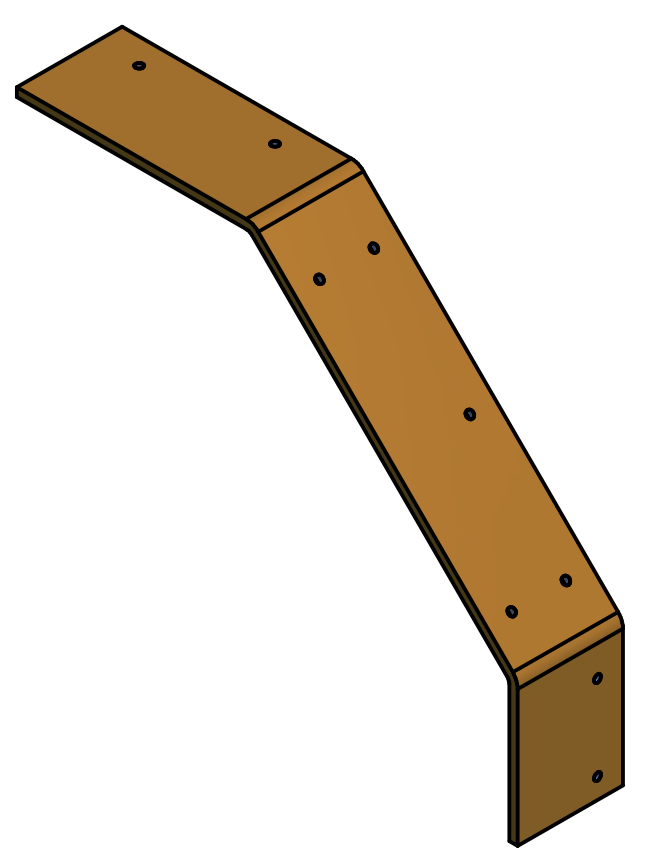
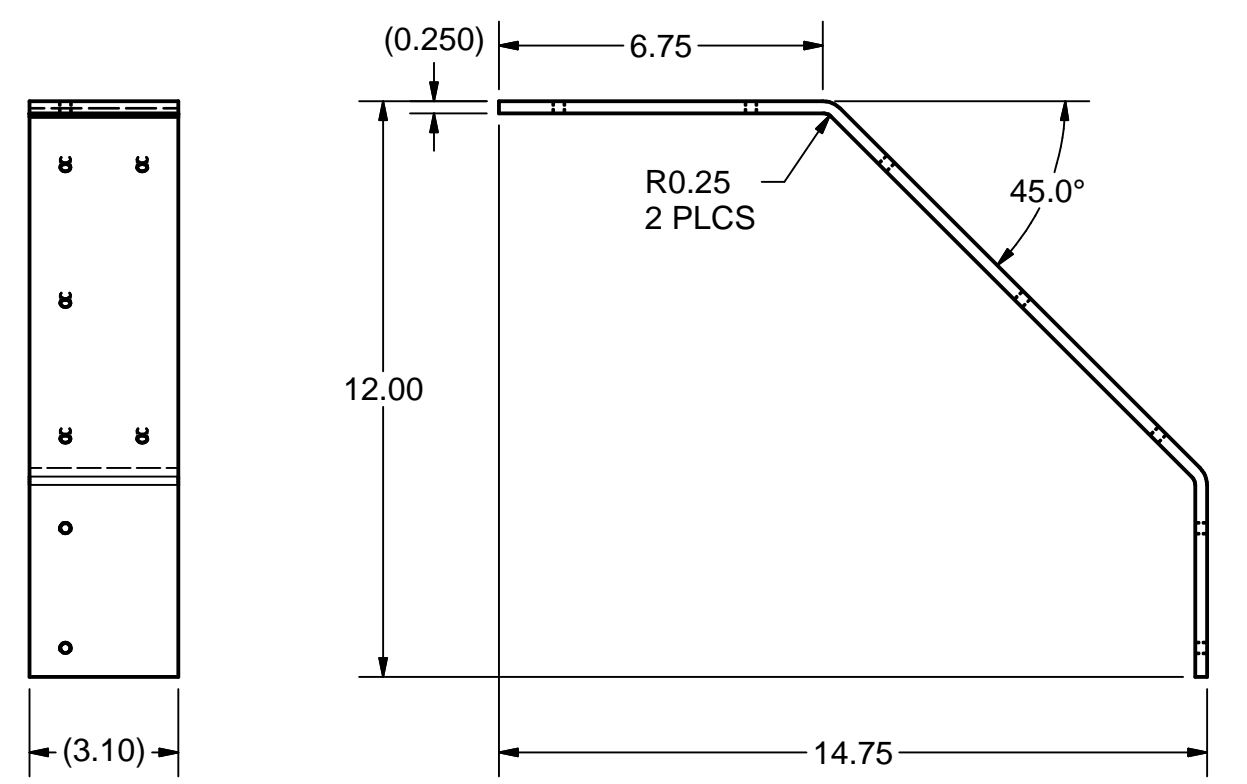
REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



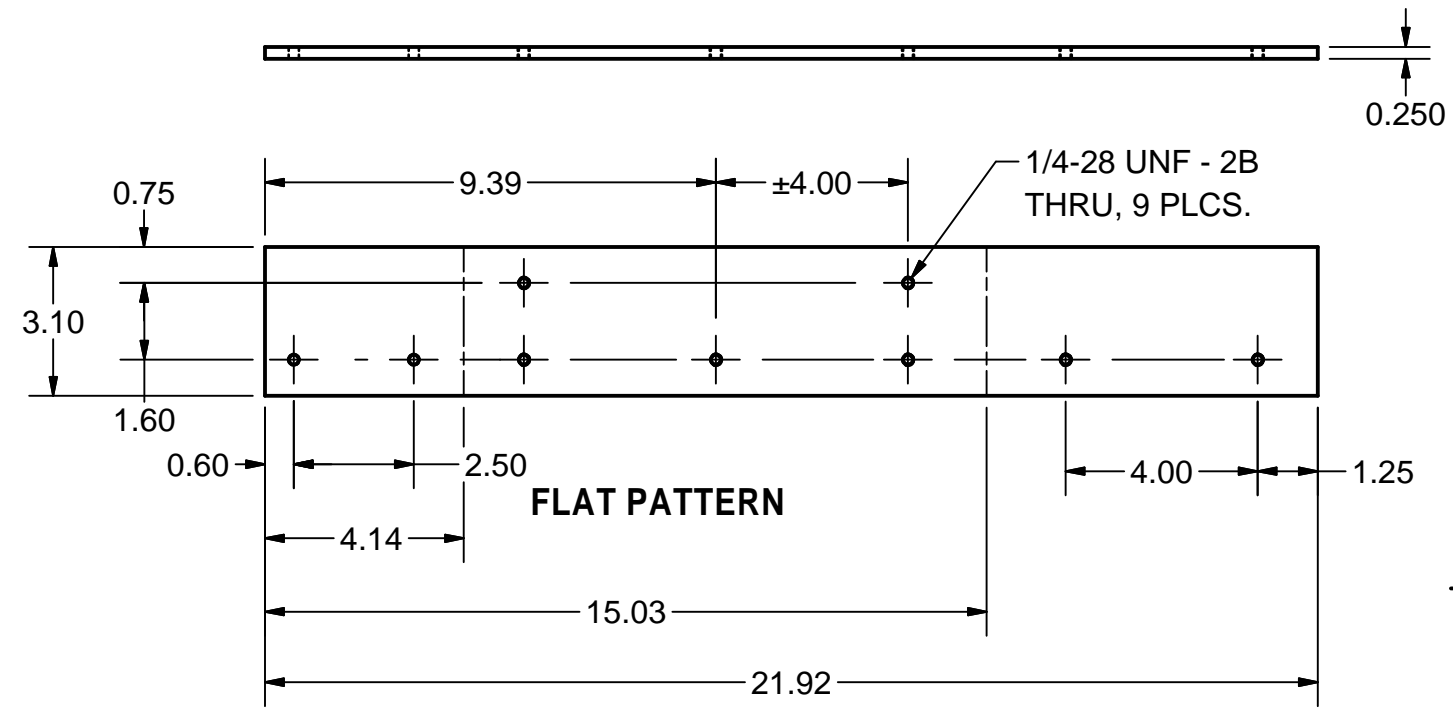
20 TOP-RIGHT COVER-I
 FILE NAME: 7103-166
 SHEET NO.: 21
 DFT. SCALE: 1:4
 MATERIAL: 1/4" 6061-T6 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:



21 TOP-RIGHT COVER-II
 FILE NAME: 7103-166
 SHEET NO.: 21
 DFT. SCALE: 1:4
 MATERIAL: 1/4" 6061-T6 ALUMINUM SHEET
 QTY: 2 PER ASSEMBLY
 NOTES:



22 TOP-LEFT COVER-I
 FILE NAME: 7103-166
 SHEET NO.: 21
 DFT. SCALE: 1:4
 MATERIAL: 1/4" 6061-T6 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:



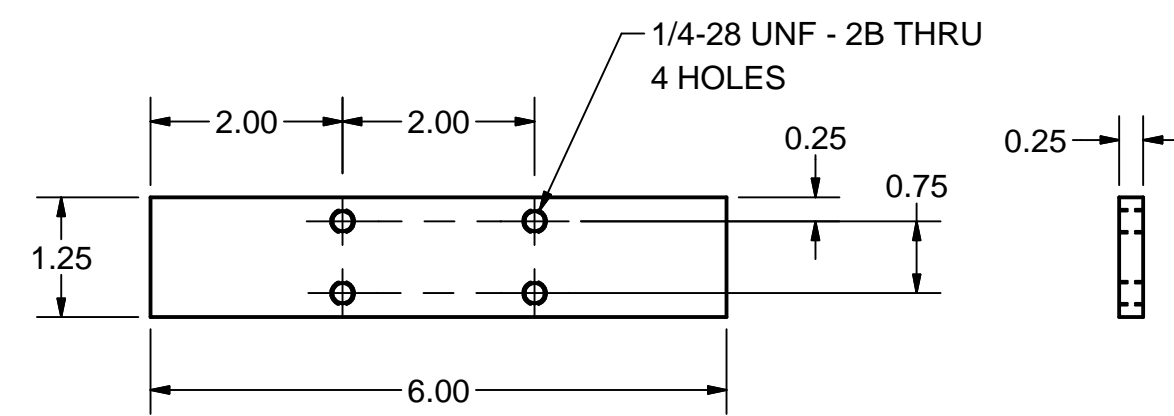
23 TOP-LEFT COVER-II
 FILE NAME: 7103-166
 SHEET NO.: 21
 DFT. SCALE: 1:4
 MATERIAL: 1/4" 6061-T6 ALUMINUM SHEET
 QTY: 2 PER ASSEMBLY
 NOTES:

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 T. O'Connell - September 20, 2013**

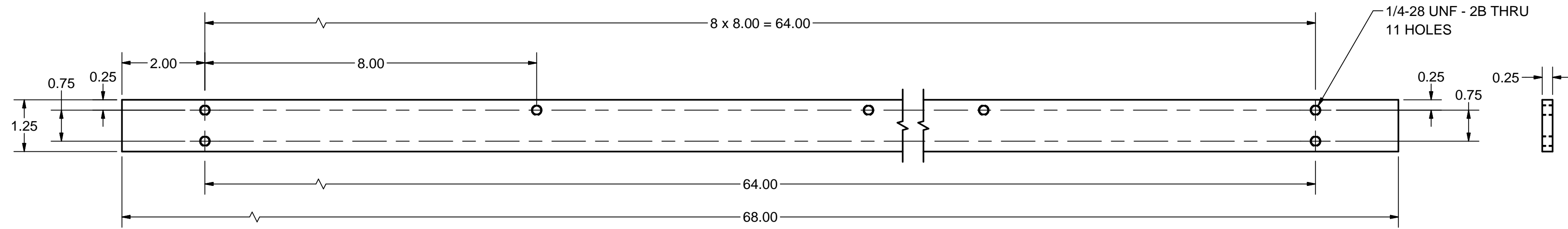
REV.	ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
				QUANTITY				

PRINT DISTR.	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw	Cornell University Laboratory for Elementary-Particle Physics Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	ERL LINAC CRYOMODULE 40K THERMAL SHIELD TOP CONNECTION PLATES			
7103-166 SH. NO. 21 OF 35	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0 ± 0.02 .00 ± 0.010 .000 ± 0.005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES					
CHECKED BY:	DRAWN BY: YH/DME	DRAWN FOR: RGE / JOS	DATE: 4/21/2013	SCALE: D	7103-166 SH. NO. 21 OF 35	REV.

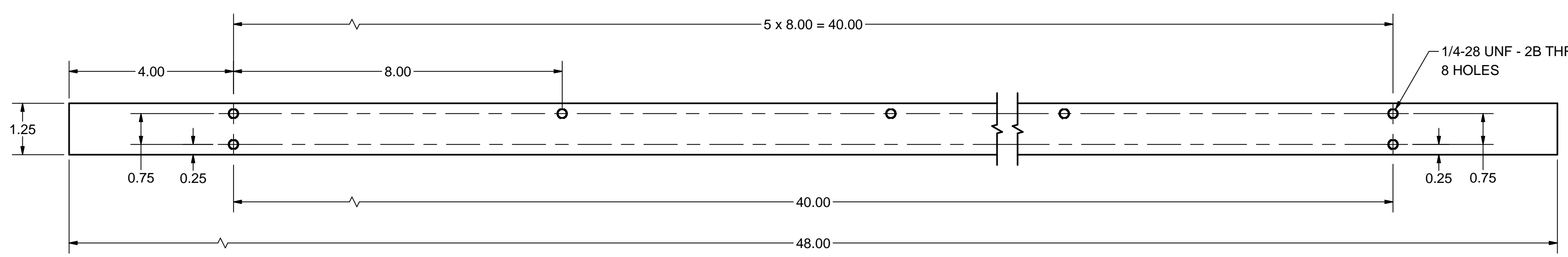
REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



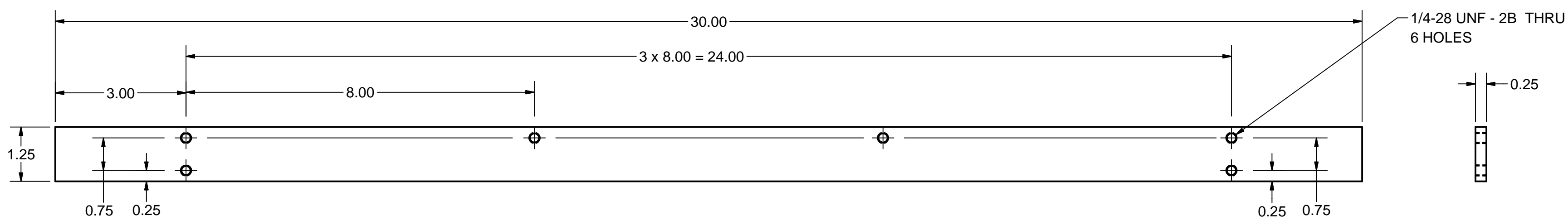
24 TOP STRIP 1
 FILE NAME: 7103-166
 SHEET NO.: 22
 DFT. SCALE: 1:2
 MATERIAL: 1/4" 6061-T6 ALUMINUM SHEET (OR 1/4" x 1-1/4" STRIP)
 QTY: 1 PER ASSEMBLY
 NOTES:



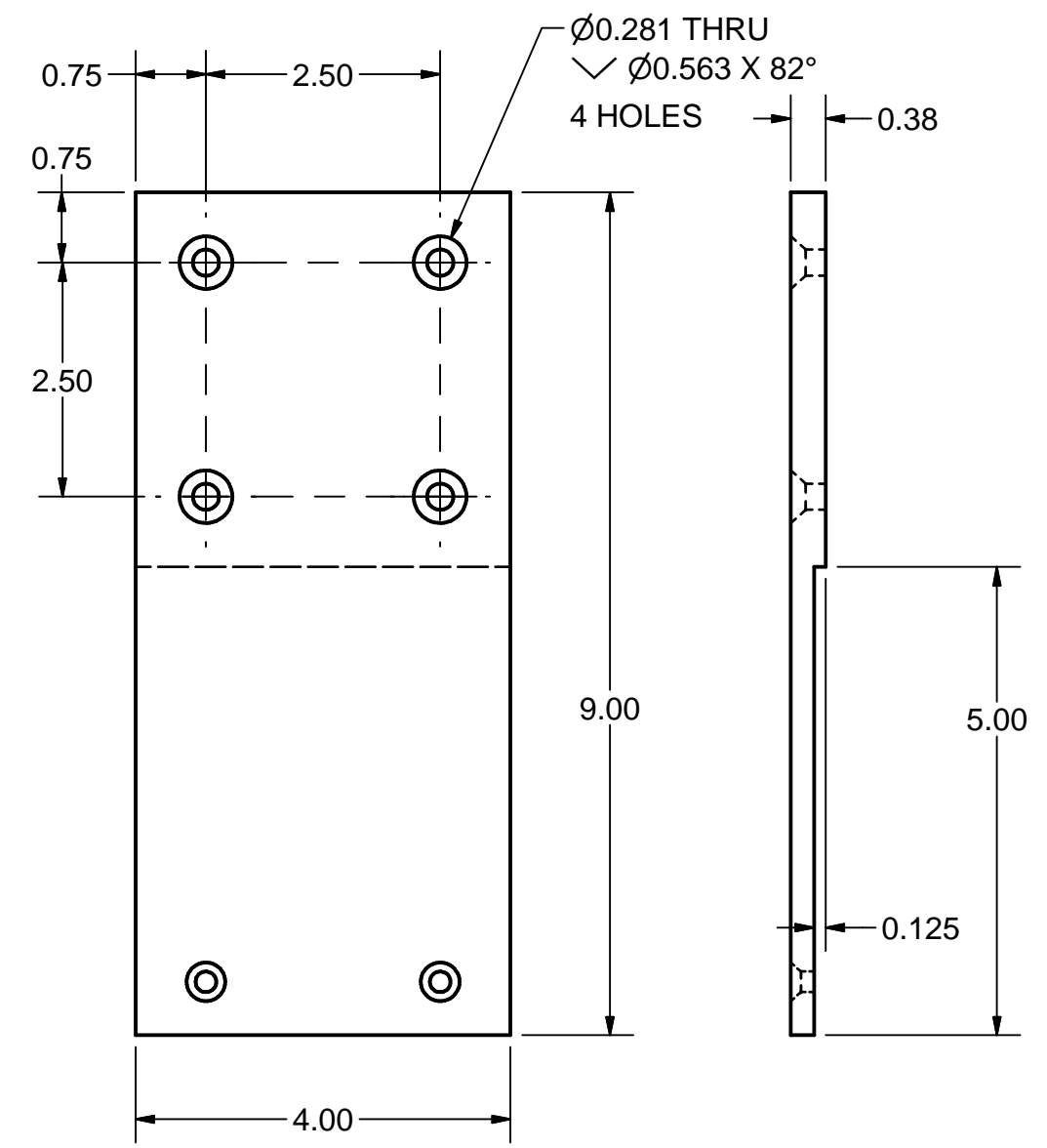
25 TOP STRIP 2
 FILE NAME: 7103-166
 SHEET NO.: 22
 DFT. SCALE: 1:2
 MATERIAL: 1/4" 6061-T6 ALUMINUM SHEET (OR 1/4" x 1-1/4" STRIP)
 QTY: 2 PER ASSEMBLY
 NOTES:



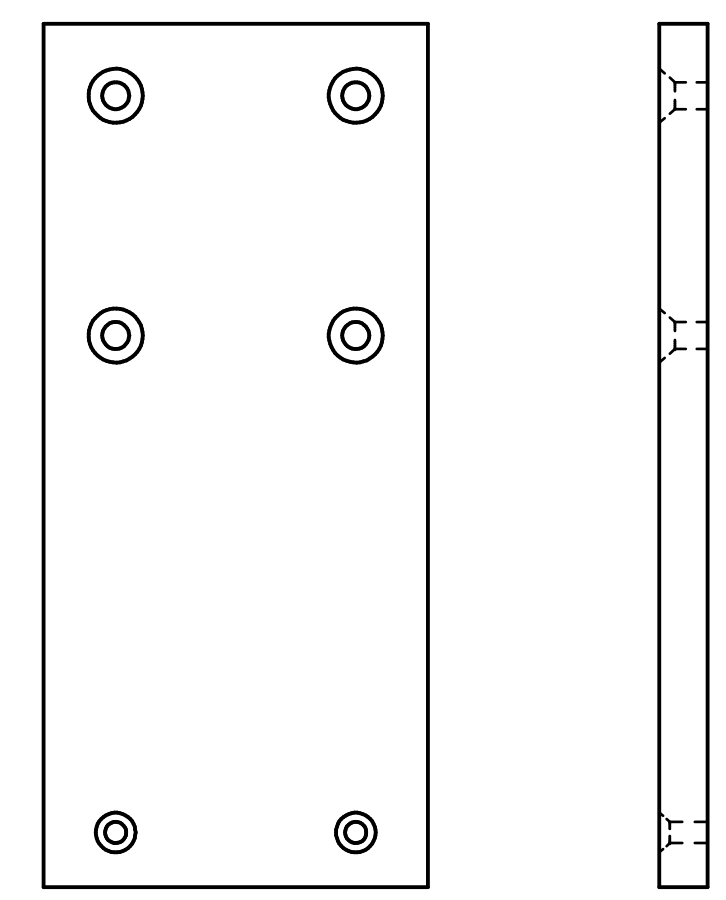
26 TOP STRIP 3
 FILE NAME: 7103-166
 SHEET NO.: 22
 DFT. SCALE: 1:2
 MATERIAL: 1/4" 6061-T6 ALUMINUM SHEET (OR 1/4" x 1-1/4" STRIP)
 QTY: 2 PER ASSEMBLY
 NOTES:



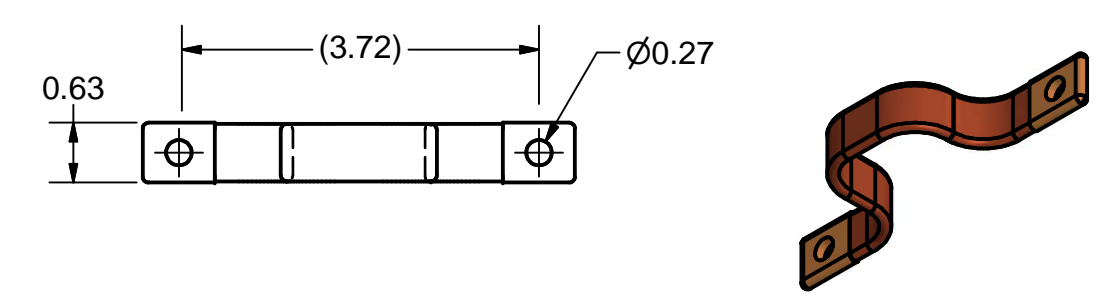
27 TOP STRIP 4
 FILE NAME: 7103-166
 SHEET NO.: 22
 DFT. SCALE: 1:2
 MATERIAL: 1/4" 6061-T6 ALUMINUM SHEET (OR 1/4" x 1-1/4" STRIP)
 QTY: 1 PER ASSEMBLY
 NOTES:



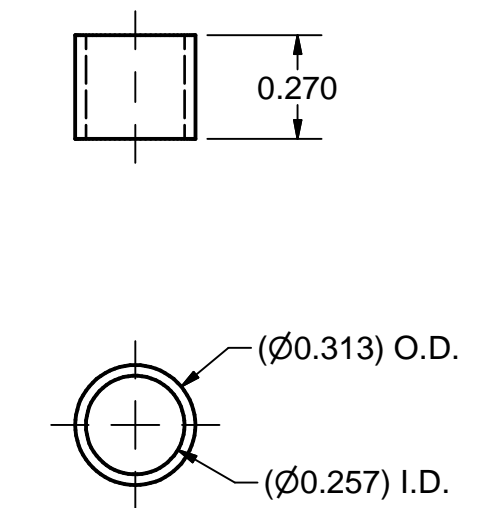
28 SLIDING PLATE
 FILE NAME: 7103-166
 SHEET NO.: 22
 DFT. SCALE: 1:2
 MATERIAL: SS 316L
 QTY: 7 PER ASSEMBLY
 NOTES:



70 SLIDING PLATE 2
 FILE NAME: 7103-166
 SHEET NO.: 22
 DFT. SCALE: 1:2
 MATERIAL: SS 316L
 QTY: 1 PER ASSEMBLY
 NOTES: SAME DIMENSIONS AS ITEM #28, BUT NO MATERIAL CUT OFF OF THE STEP 5.00" x 0.125"



60 80K SHIELD BRAID TO POST ASM
 FILE NAME: 7103-166
 SHEET NO.: 22
 DFT. SCALE: 1:2
 MATERIAL: NOTED
 QTY: 8
 NOTES:

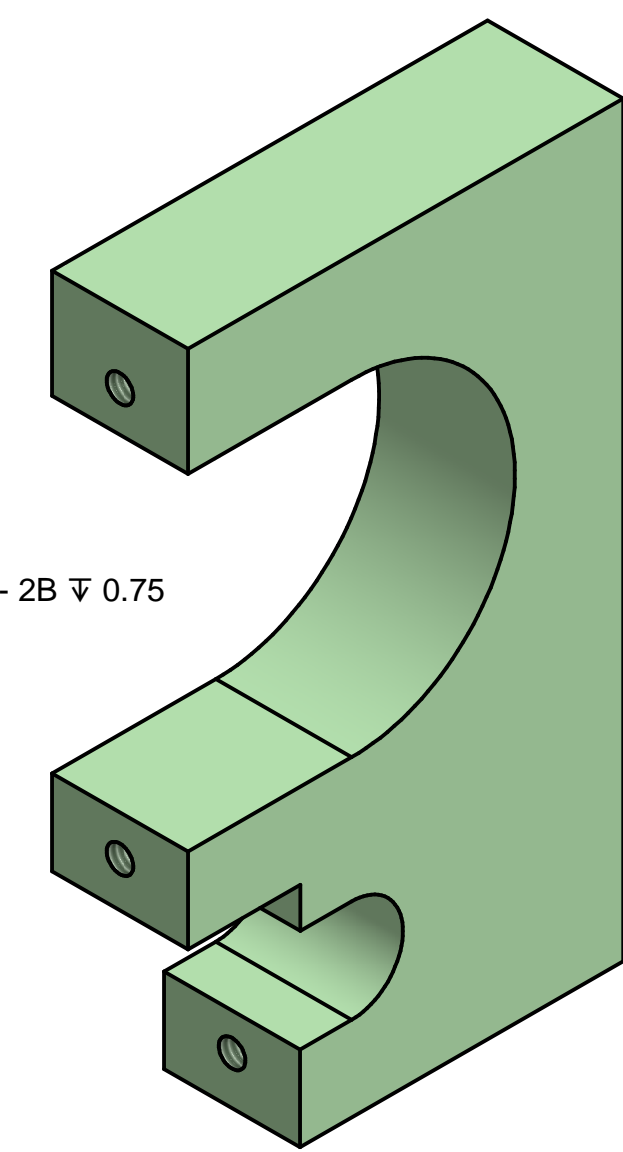
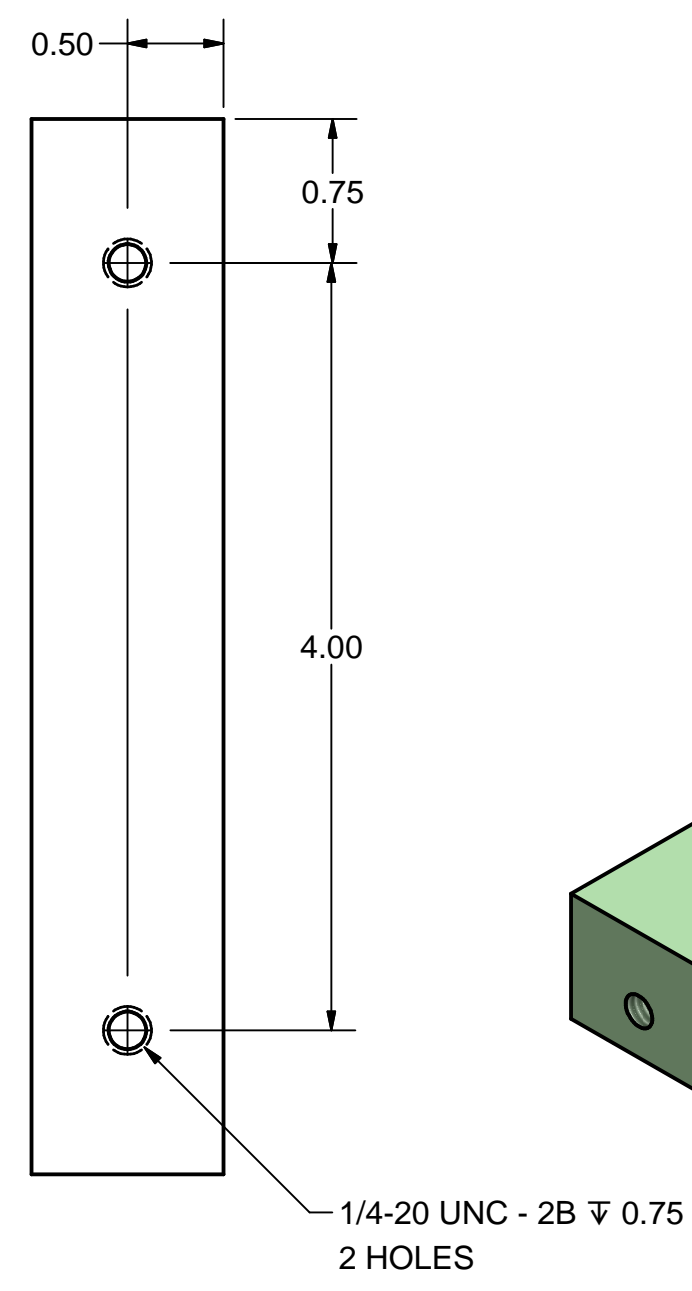
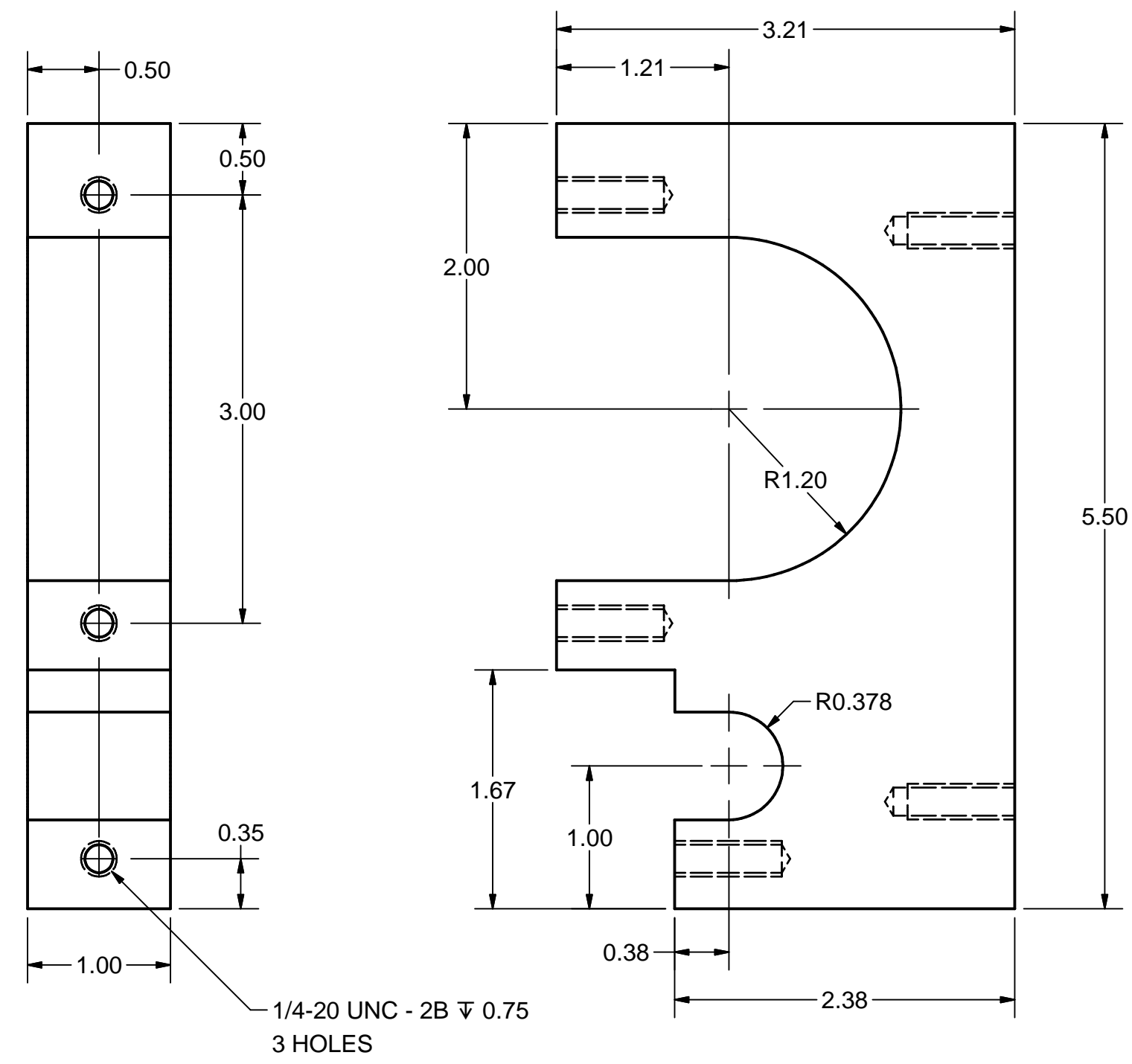


29 SPACER TUBE
 FILE NAME: 7103-166
 SHEET NO.: 22
 DFT. SCALE: 2:1
 MATERIAL: 5/16"OD x 0.028"W 304 STAINLESS STEEL TUBE
 QTY: 36 PER ASSEMBLY
 NOTES: McMaster-Carr's 8989K461

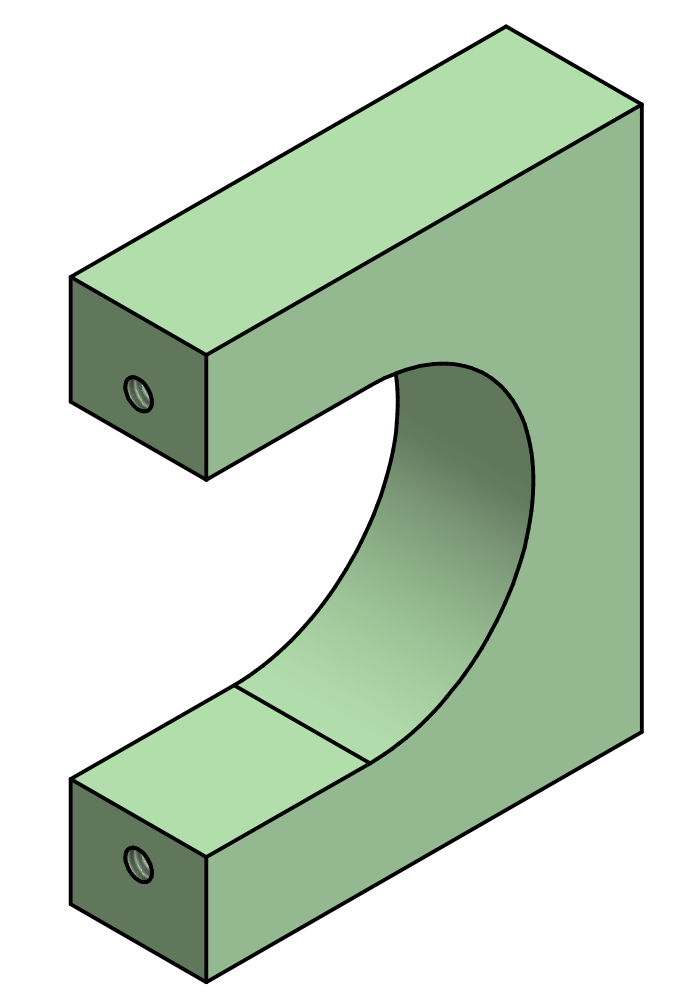
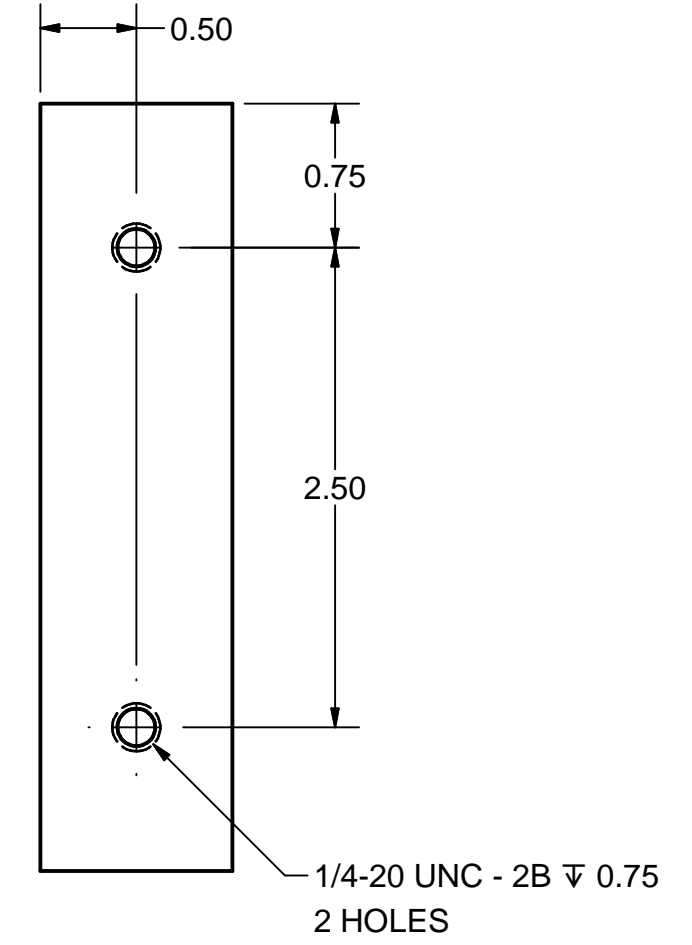
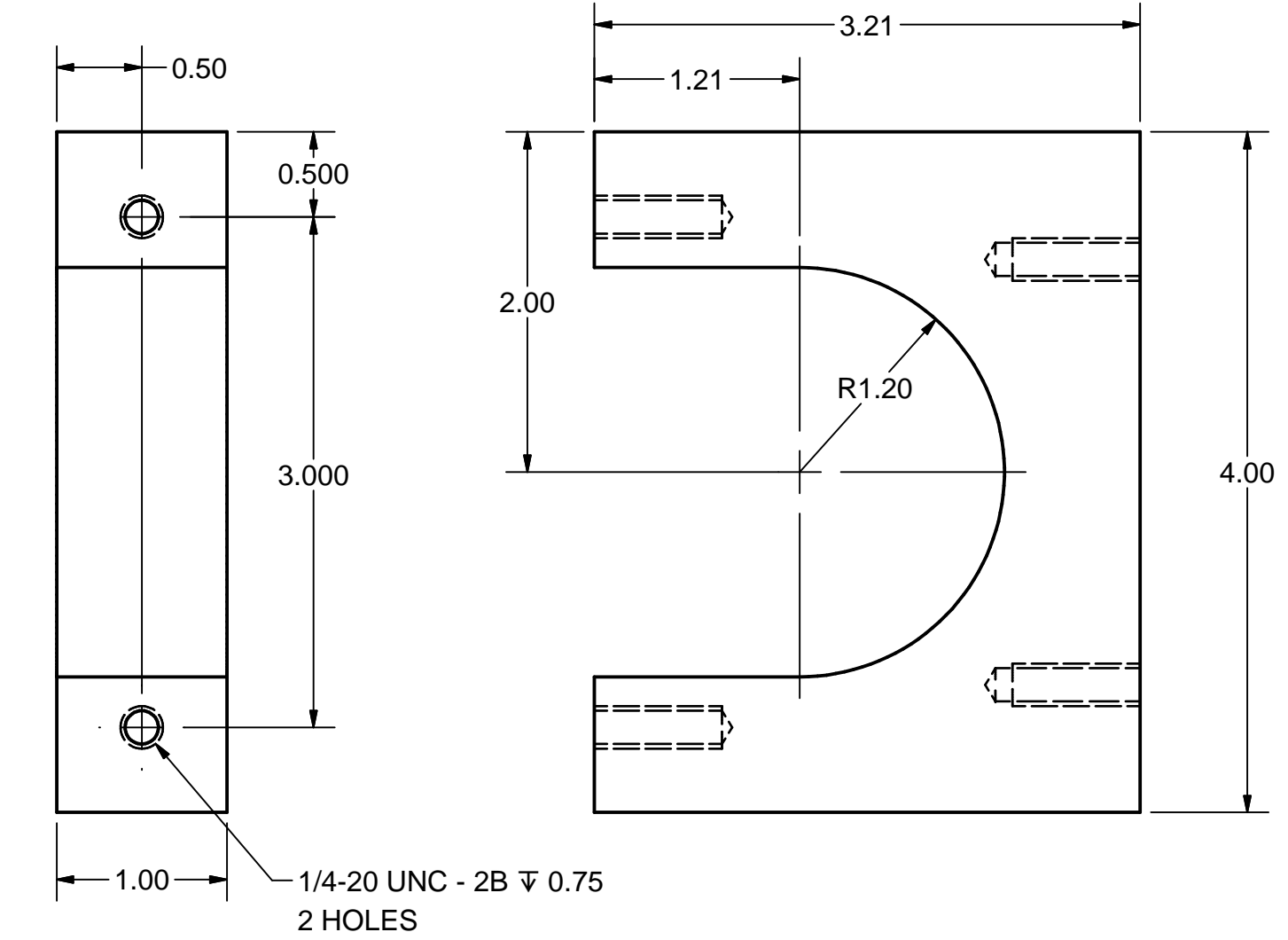
**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
PRINT DISTR.	7103-166	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES					
		Cornell University Laboratory for Elementary-Particle Physics					
		Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853					
		ERL LINAC CRYOMODULE 40K THERMAL SHIELD CONNECTION STRIPS					
CHECKED BY:	DRAWN BY:	DRAWN FOR:	DATE:	SCALE:			
APPROVED BY:	YH/DME	RGE/JOS	4/21/2013	D	7103-166		
					SH. NO. 22	OF 35	

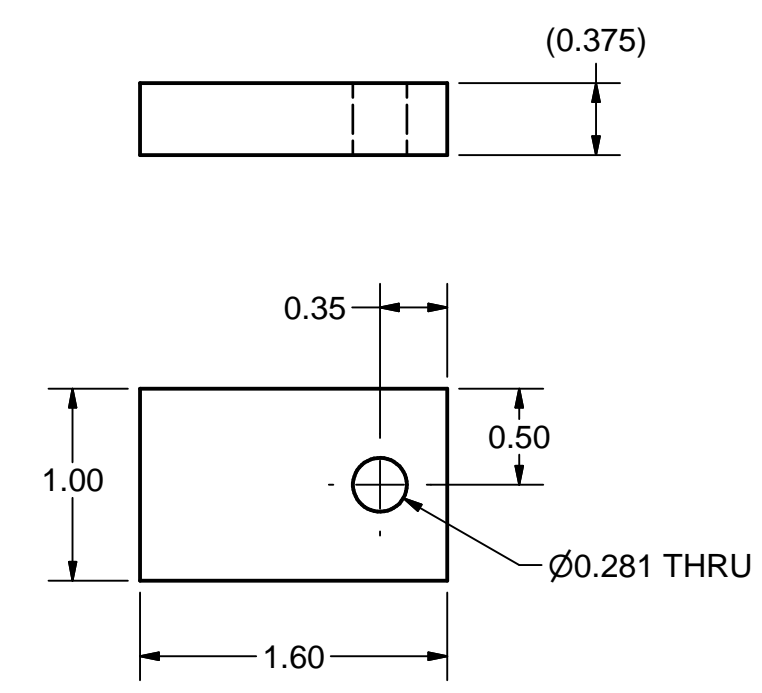
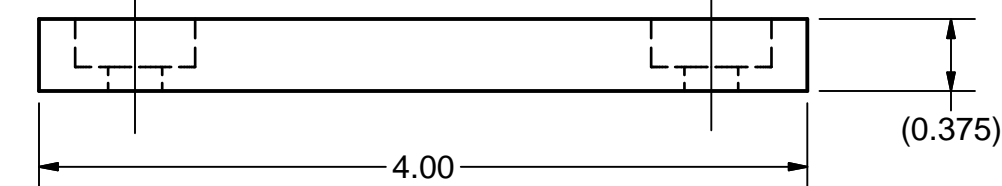
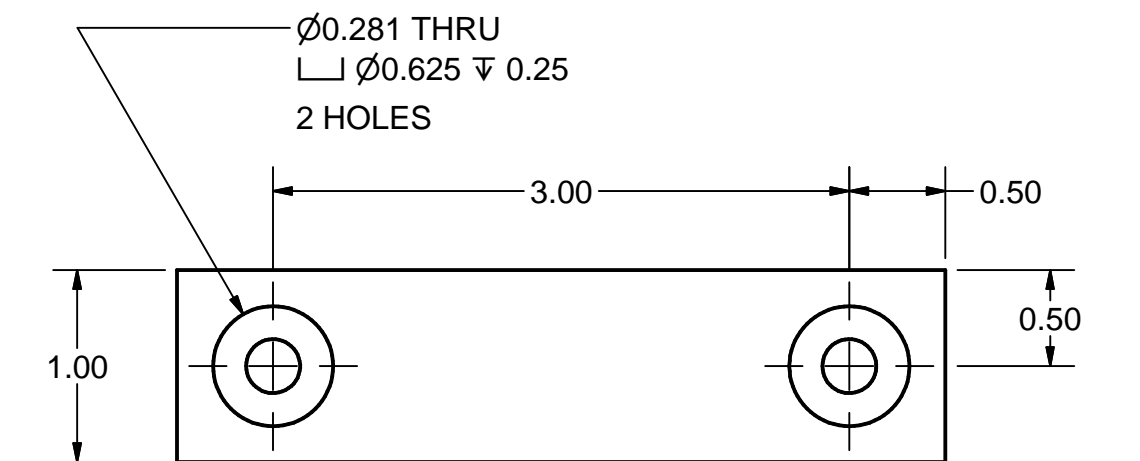
REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



30 80K PIPE BRACKET
 FILE NAME: 7103-166
 SHEET NO.: 23
 DFT. SCALE: 1:1
 MATERIAL: G10
 QTY: 20 PER ASSEMBLY
 NOTES:



31 40K PIPE BRACKET
 FILE NAME: 7103-166
 SHEET NO.: 23
 DFT. SCALE: 1:1
 MATERIAL: G10
 QTY: 20 PER ASSEMBLY
 NOTES:



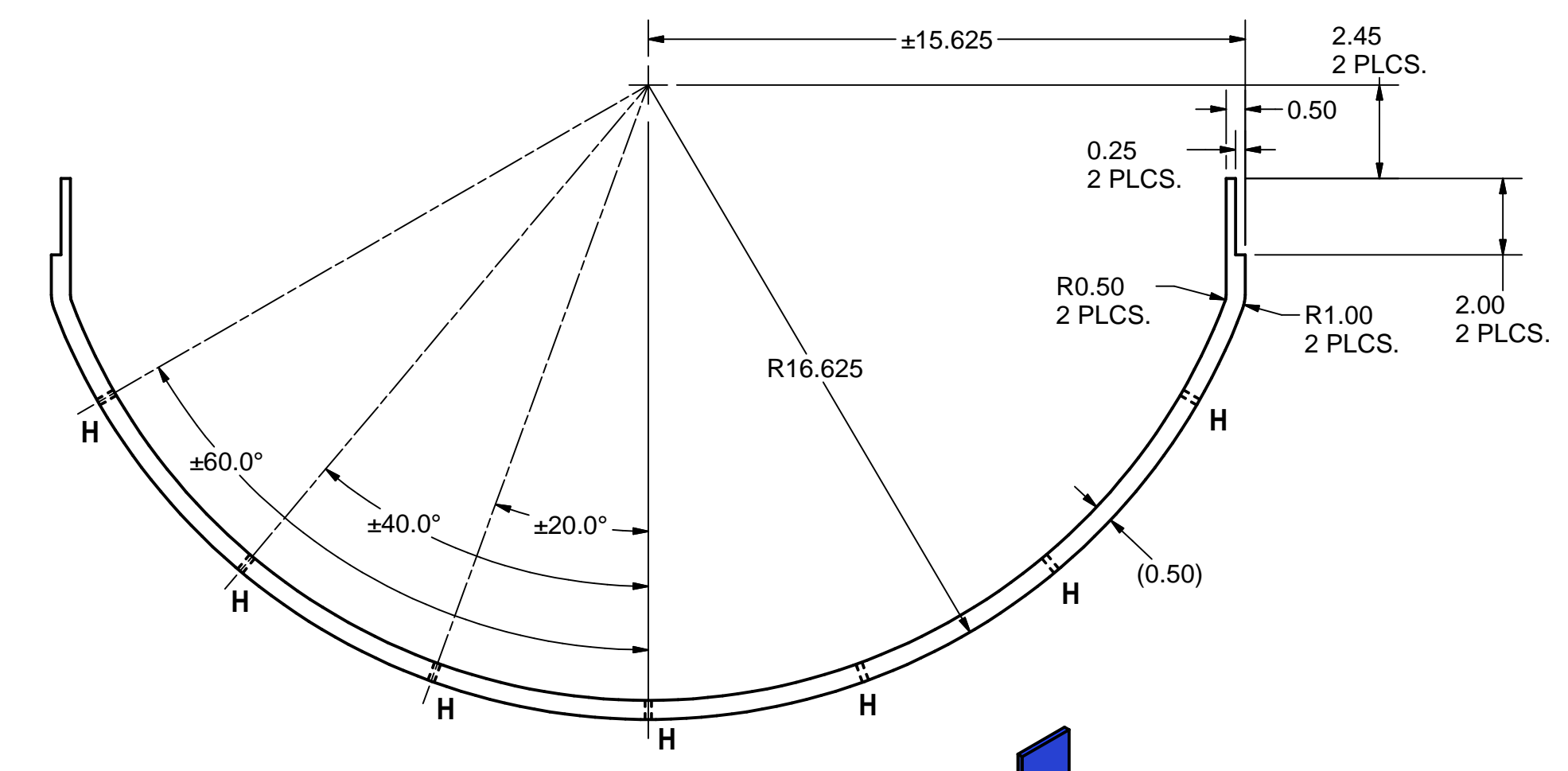
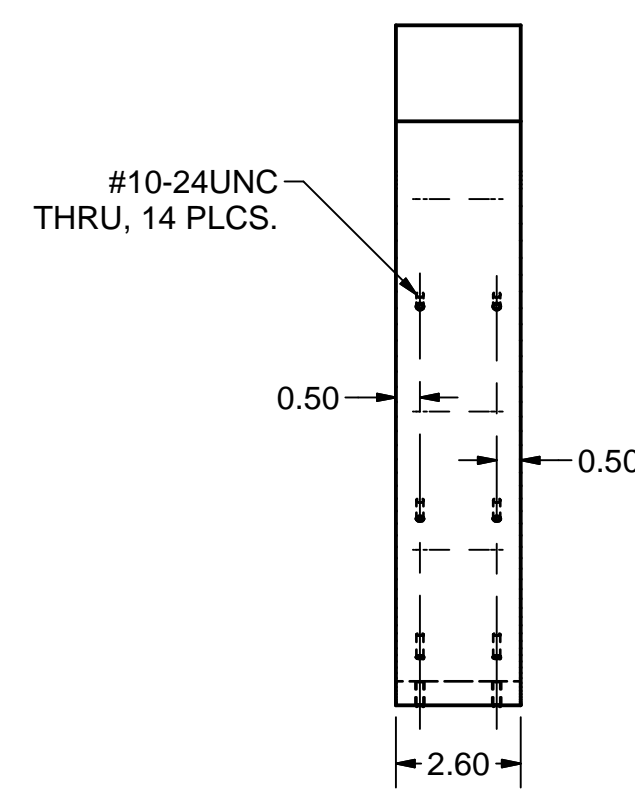
32 PIPE CLAMP I
 FILE NAME: 7103-166
 SHEET NO.: 23
 DFT. SCALE: 1:1
 MATERIAL: G10
 QTY: 40 PER ASSEMBLY
 NOTES:

33 PIPE CLAMP II
 FILE NAME: 7103-166
 SHEET NO.: 23
 DFT. SCALE: 1:1
 MATERIAL: G10
 QTY: 20 PER ASSEMBLY
 NOTES:

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 T. O'Connell - September 20, 2013**

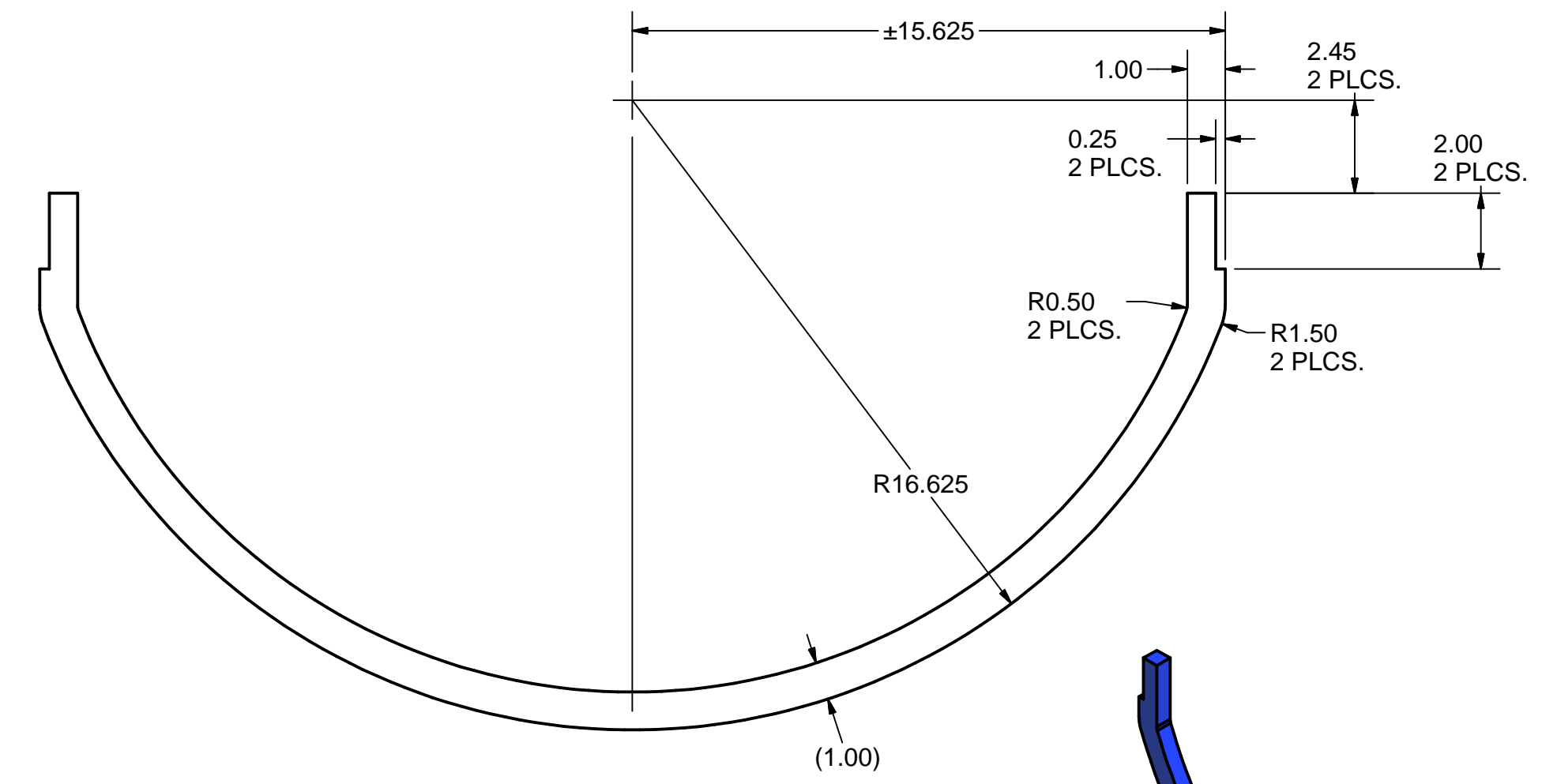
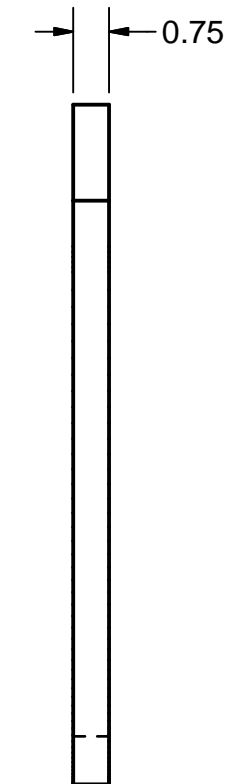
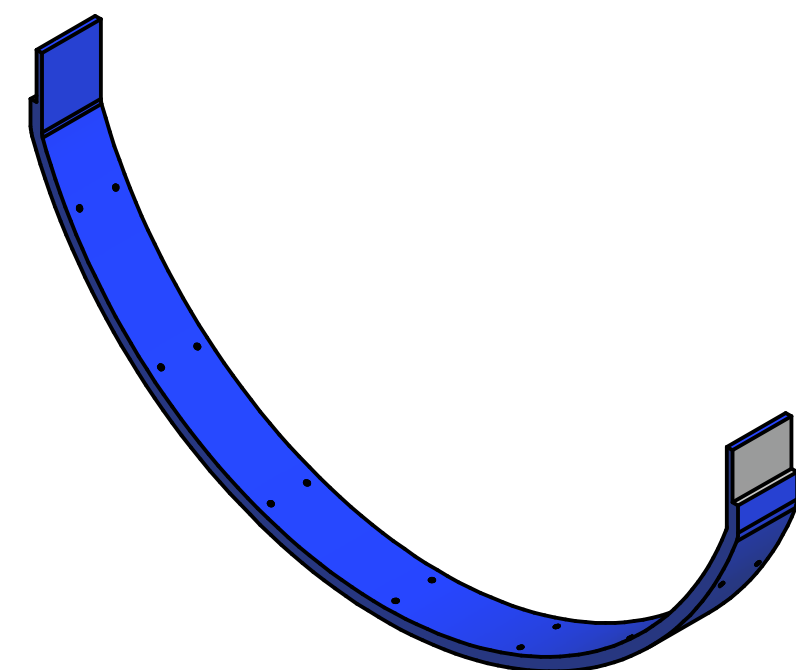
ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
			QUANTITY				
PRINT DISTR.	7103-166	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES					
		Cornell University Laboratory for Elementary-Particle Physics				Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	
		ERL LINAC CRYOMODULE 40K THERMAL SHIELD G10 CLAMPS					
CHECKED BY:	DRAWN BY	DRAWN FOR	DATE	SCALE		7103-166	REV.
APPROVED BY:	YH/DME	RGE / JOS	4/21/2013	D		SH. NO. 23 OF 35	

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.

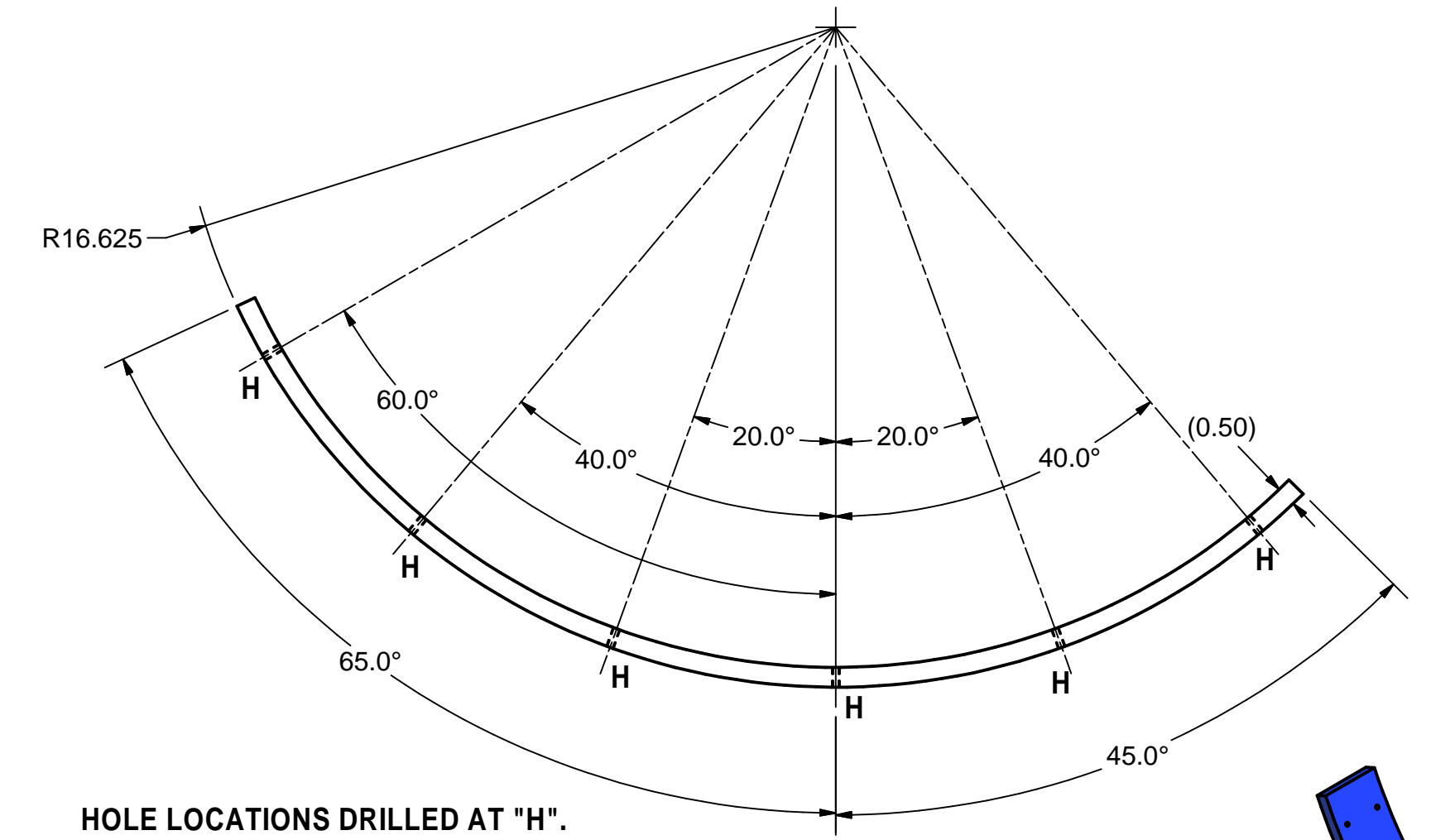
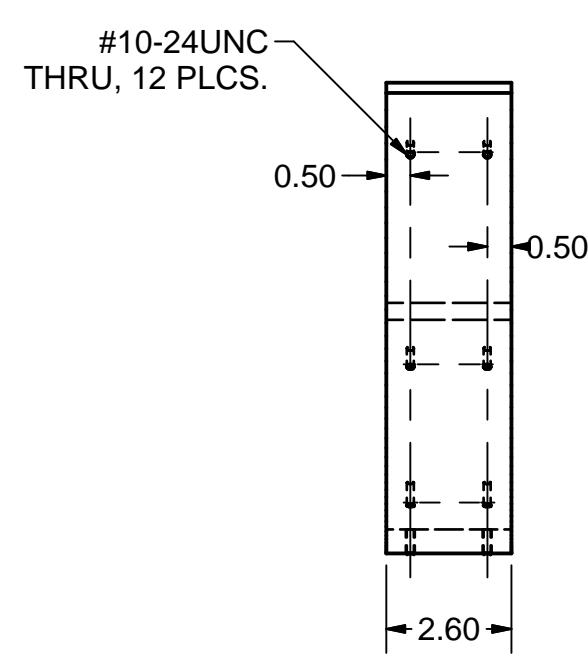
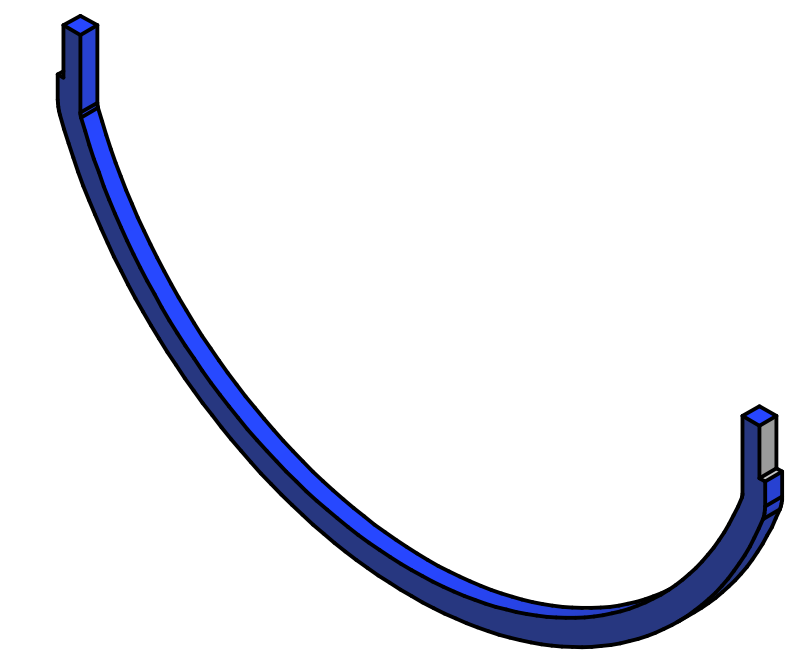


HOLE LOCATIONS DRILLED AT "H".

34 **BOTTOM COVER-I**
 FILE NAME: 7103-166
 SHEET NO.: 24
 DFT. SCALE: 1:4
 MATERIAL: 6061-T6 ALUMINUM
 QTY: 3 PER ASSEMBLY
 NOTES:

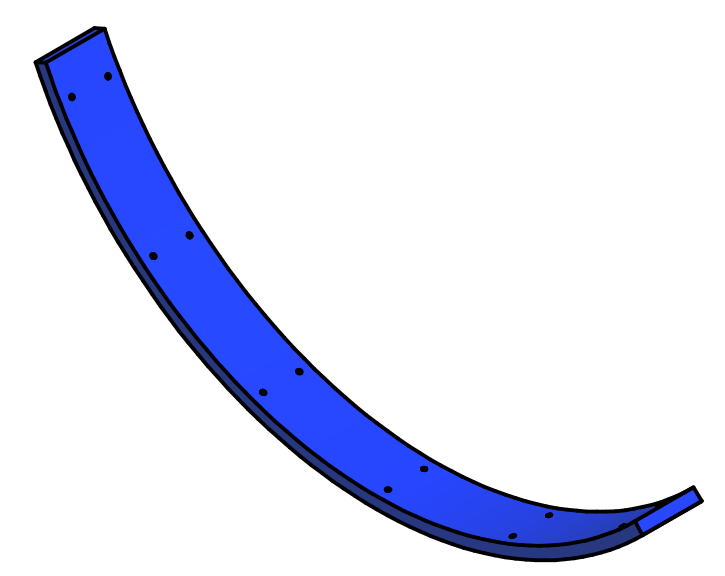


69 **BOTTOM RING**
 FILE NAME: 7103-166
 SHEET NO.: 24
 DFT. SCALE: 1:4
 MATERIAL: 6061-T6 ALUMINUM
 QTY: 9 PER ASSEMBLY
 NOTES:



HOLE LOCATIONS DRILLED AT "H".

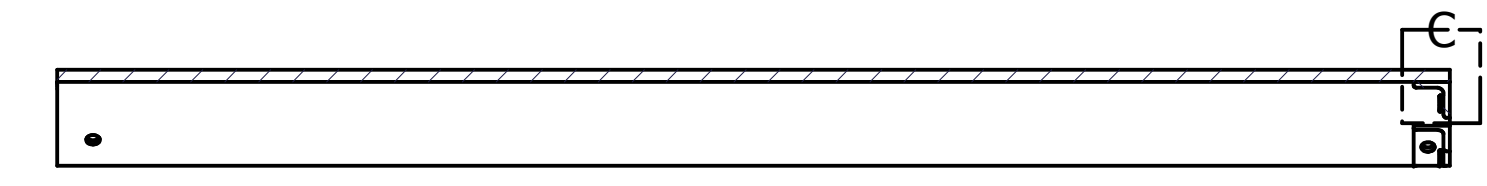
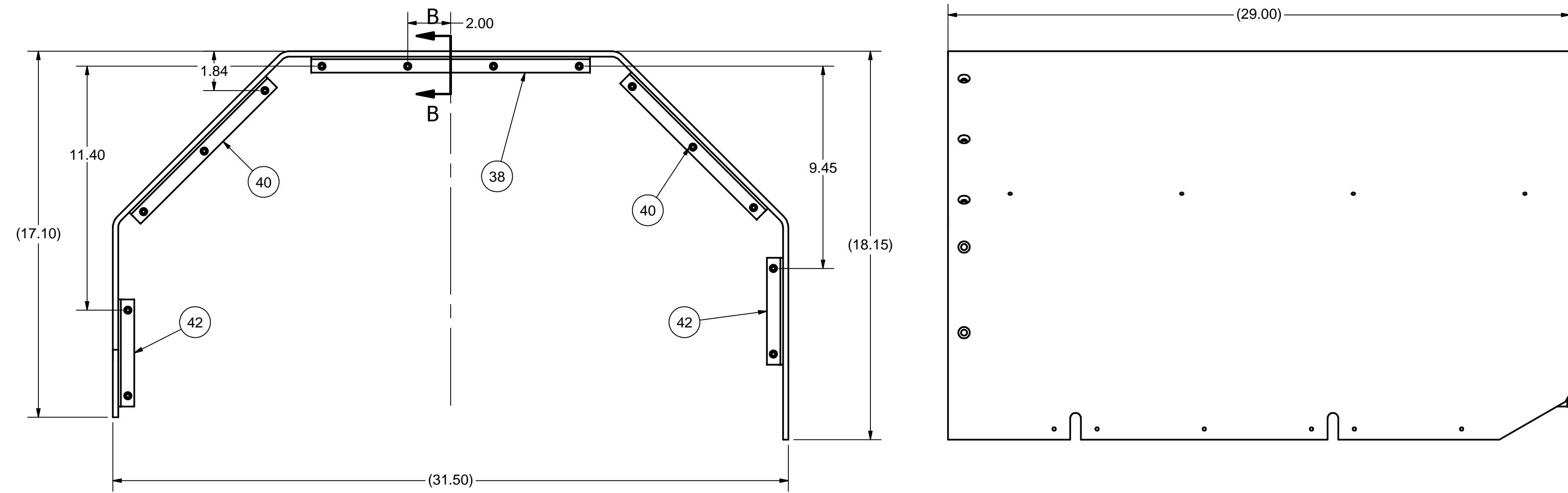
35 **BOTTOM COVER-II**
 FILE NAME: 7103-166
 SHEET NO.: 24
 DFT. SCALE: 1:4
 MATERIAL: 6061-T6 ALUMINUM
 QTY: 1 PER ASSEMBLY
 NOTES:



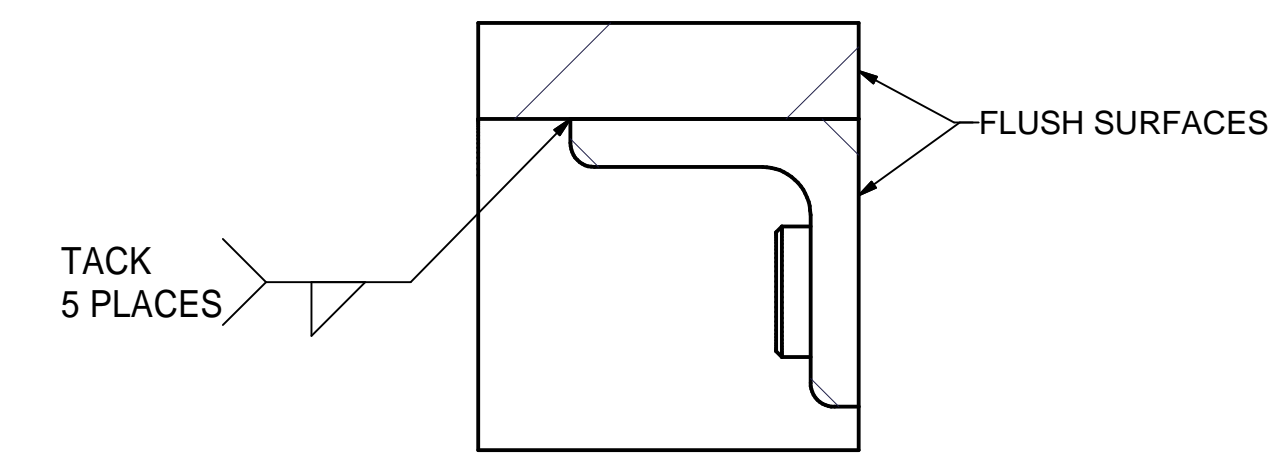
**APPROVED FOR RFP BID PROCESS
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 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
PRINT DISTR.	7103-166	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0 ± 0.2 .00 ± 0.10 .000 ± 0.005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES ✓					
		Cornell University Laboratory for Elementary-Particle Physics				Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	
		ERL LINAC CRYOMODULE 40K THERMAL SHIELD BOTTOM CONNECTION PLATES & RINGS					
CHECKED BY:	DRAWN BY:	DATE:	SCALE:				
APPROVED BY:	YH/DME	RGE/JOS	4/21/2013	D	7103-166	SH. NO. 24 OF 35	REV.

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.

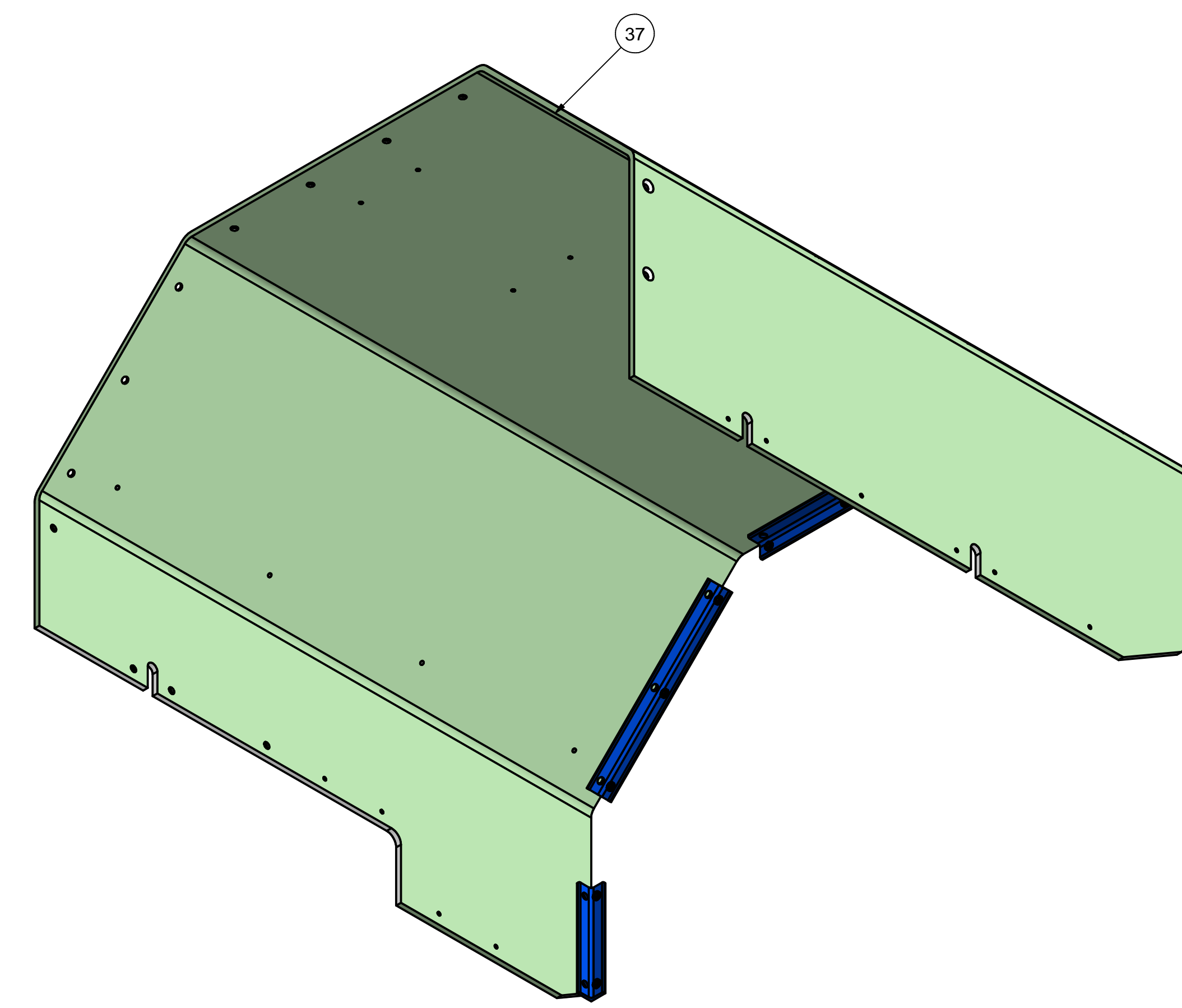


SECTION B-B
SCALE 1 / 4



DETAIL C
SCALE 2 : 1

ALIGN BOLT HOLES WITH THE ONES ON THE END WALL, ITEM #



36 UPSTREAM END TOP WELDMENT

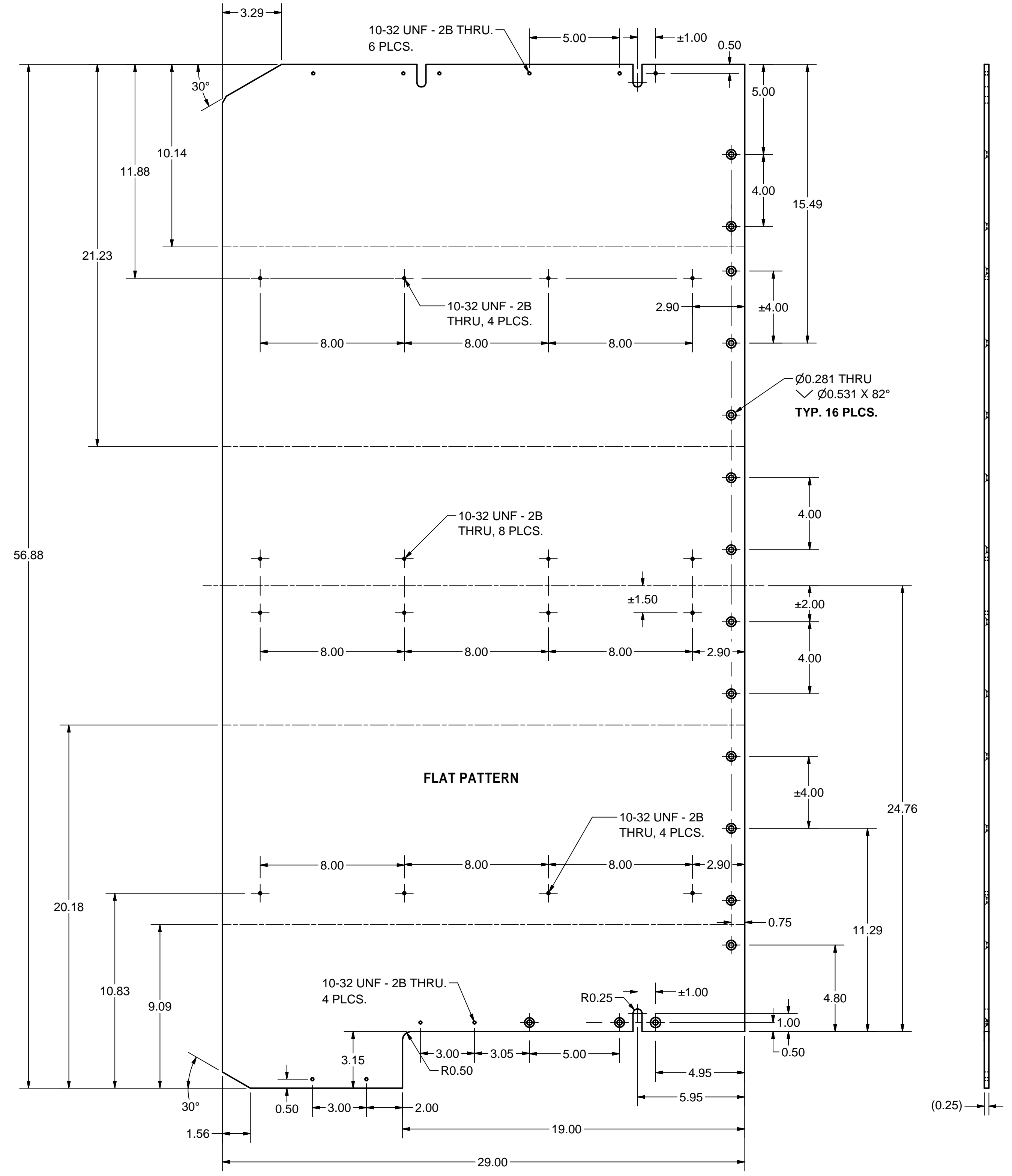
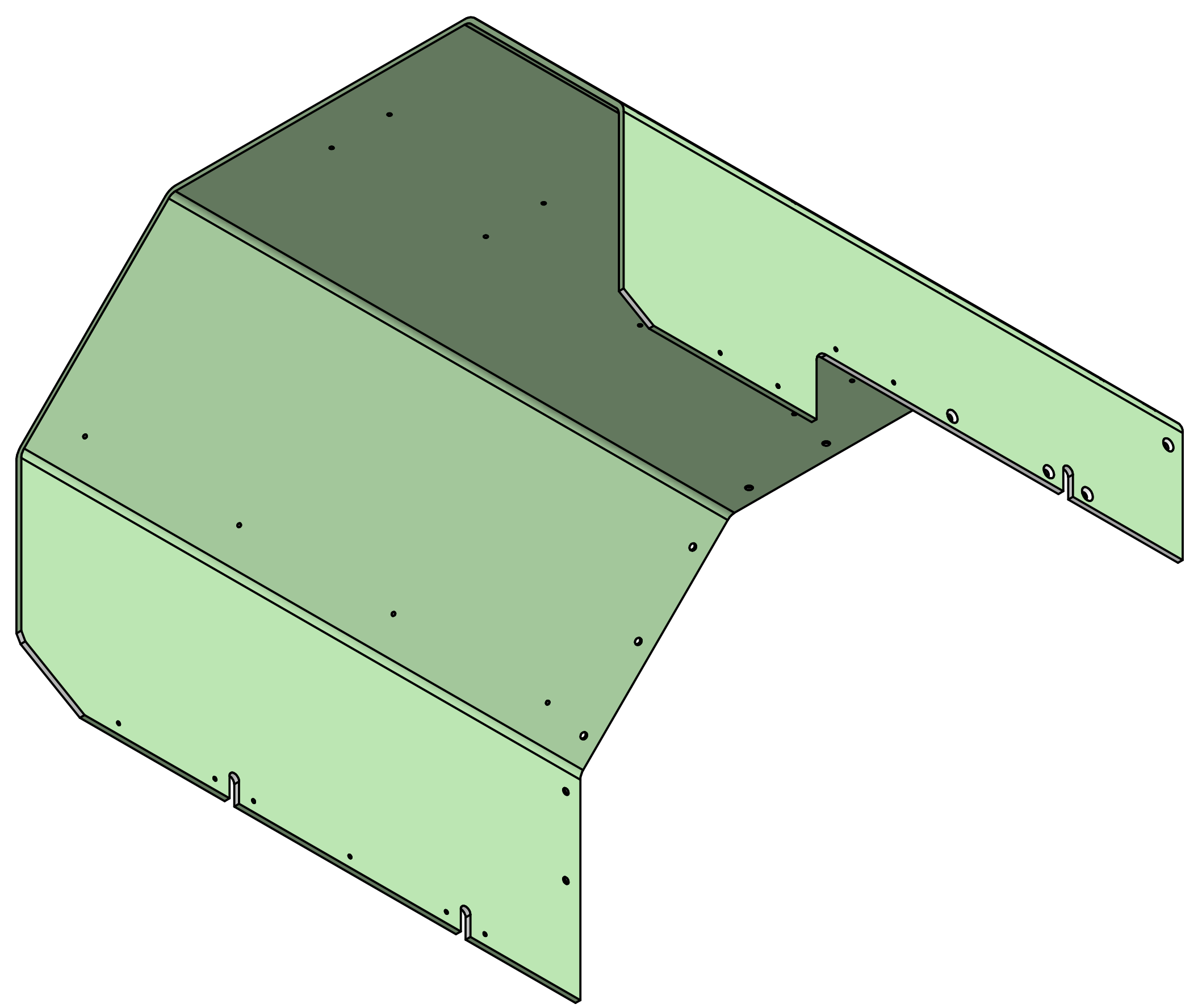
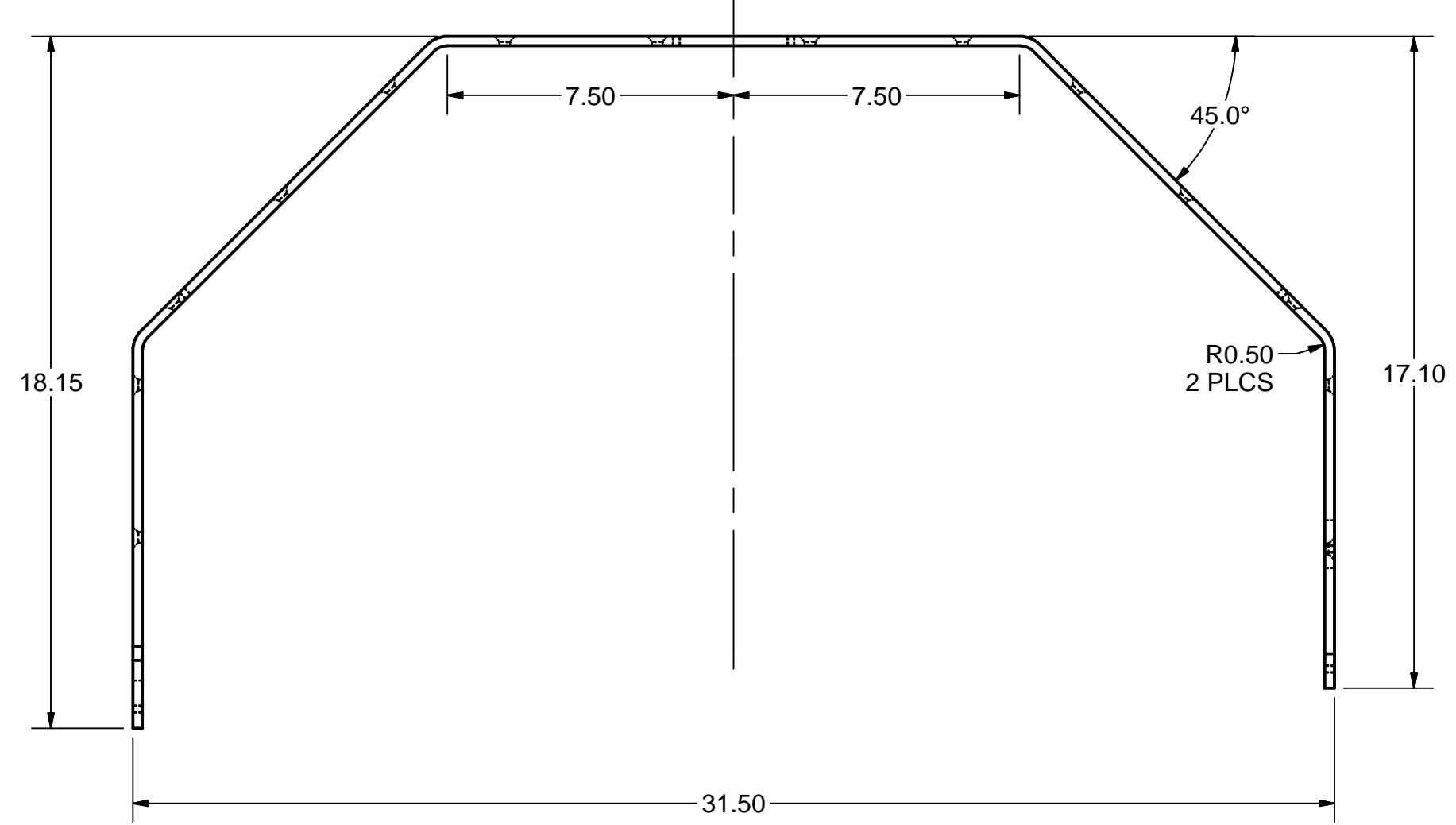
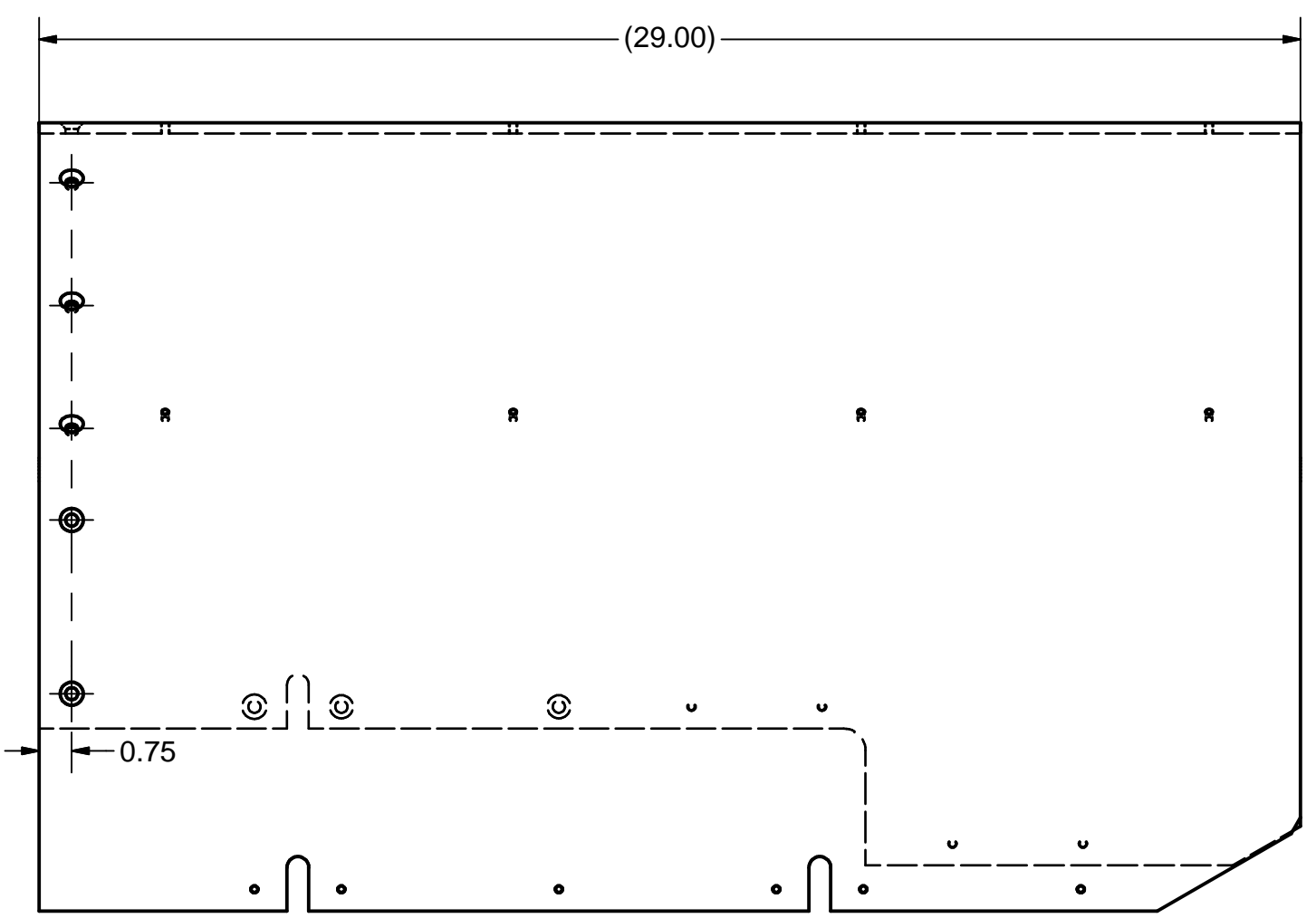
FILE NAME: 7103-166
SHEET NO.: 25
DFT. SCALE: 1:6
MATERIAL:
QTY: 1 PER ASSEMBLY
NOTES: 1. PRE_MOUNT ANGLE PLATES TO FRONT WALLS FOR HOLE ALIGNMENT BEFORE WELDING

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T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
42	Sheet 27	ANGLE 3 SUBASM	2				
40	Sheet 27	ANGLE 2 SUBASM	2				
38	Sheet 27	ANGLE 1 SUBASM	1				
37	Sheet 26	US END TOP PLATE	1				

D	PRINT	PLOT DATE: 9/20/2013		Cornell University Laboratory for Elementary-Particle Physics	Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	
	DISTR.	CAD FILE NAME: 7103-166.idw				
7103-166	REV.	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES		ERL LINAC CRYOMODULE 40K THERMAL SHIELD UPSTREAM END TOP WELDMENT		
		CHECKED BY:	DRAWN BY	DRAWN FOR	DATE	SCALE
		YH/DME	RGE / JOS	4/21/2013	D	SH. NO. 25 OF 35

REVISIONS		
SYM.	ZONE	DESCRIPTION



37 UPSTREAM END TOP PLATE

FILE NAME: 7103-166
 SHEET NO.: 26
 DFT. SCALE: 1:6
 MATERIAL: 1/4" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

**APPROVED FOR RFP BID PROCESS
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 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
			QUANTITY				
PRINT DISTR.	7103-166	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES ✓					
		Cornell University Laboratory for Elementary-Particle Physics				Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	
		ERL LINAC CRYOMODULE 40K THERMAL SHIELD UPSTREAM END TOP PLATE					
CHECKED BY:	DRAWN BY:	DATE:	SCALE:				
APPROVED BY:	YH/DME	RGE / JOS	4/21/2013	D	7103-166	SH. NO. 26 OF 35	

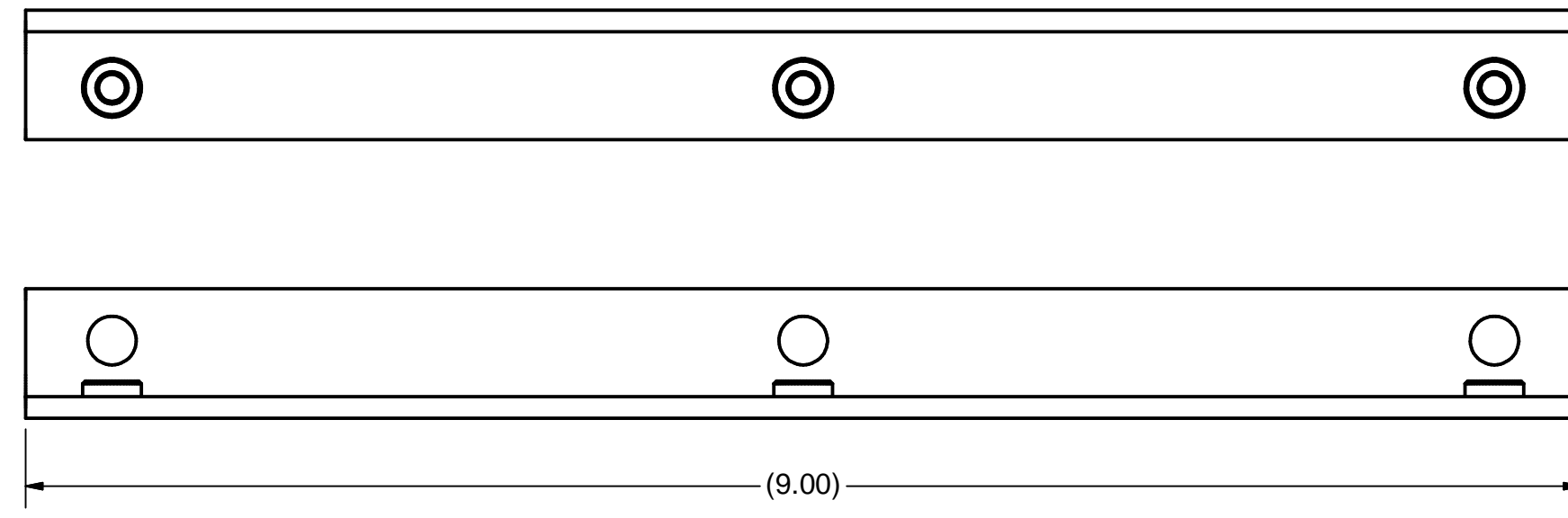
REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



38 ANGLE 1 SUB-ASM

FILE NAME: 7103-166
 SHEET NO.: 27
 DFT. SCALE: 1:1
 MATERIAL: 3/4" x 3/4" x 1/8"W 6063 OR 6061 ALUM. ANGLE
 QTY: 1 PER ASSEMBLY
 NOTES: 1. USE PRESS (PEMSERTER OR EQUIV.)
 TO INSTALL PEM NUTS ITEM 88.

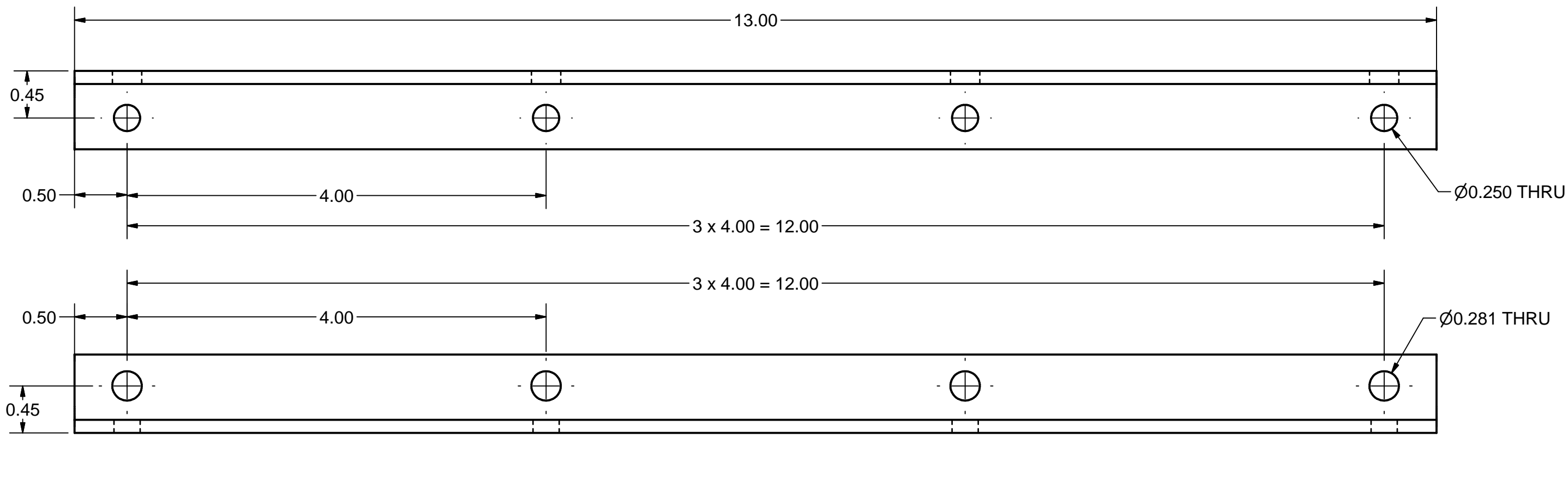
88	PURCHASE	10-32 PEM NUT, CLSS-032-3	4		St.Steel
39	Sheet 27	ANGLE 2	1		



40 ANGLE 2 SUB-ASM

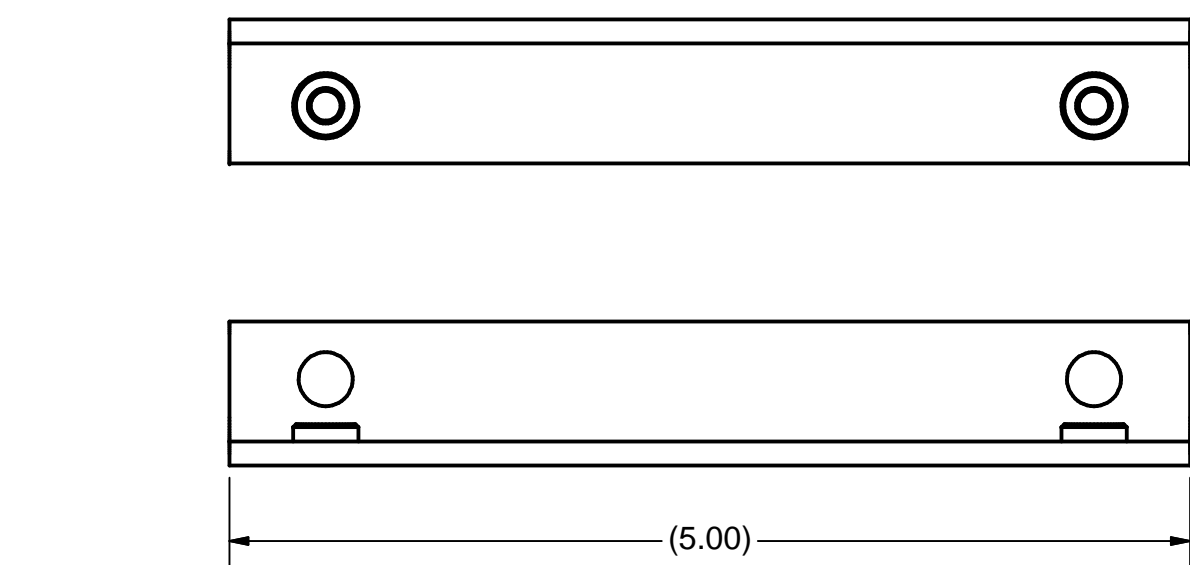
FILE NAME: 7103-166
 SHEET NO.: 27
 DFT. SCALE: 1:1
 MATERIAL: 3/4" x 3/4" x 1/8"W 6063 OR 6061 ALUM. ANGLE
 QTY: 2 PER ASSEMBLY
 NOTES: 1. USE PRESS (PEMSERTER OR EQUIV.)
 TO INSTALL PEM NUTS ITEM 88.

88	PURCHASE	10-32 PEM NUT, CLSS-032-3	3		St.Steel
41	Sheet 27	ANGLE 2	1		



39 ANGLE 1

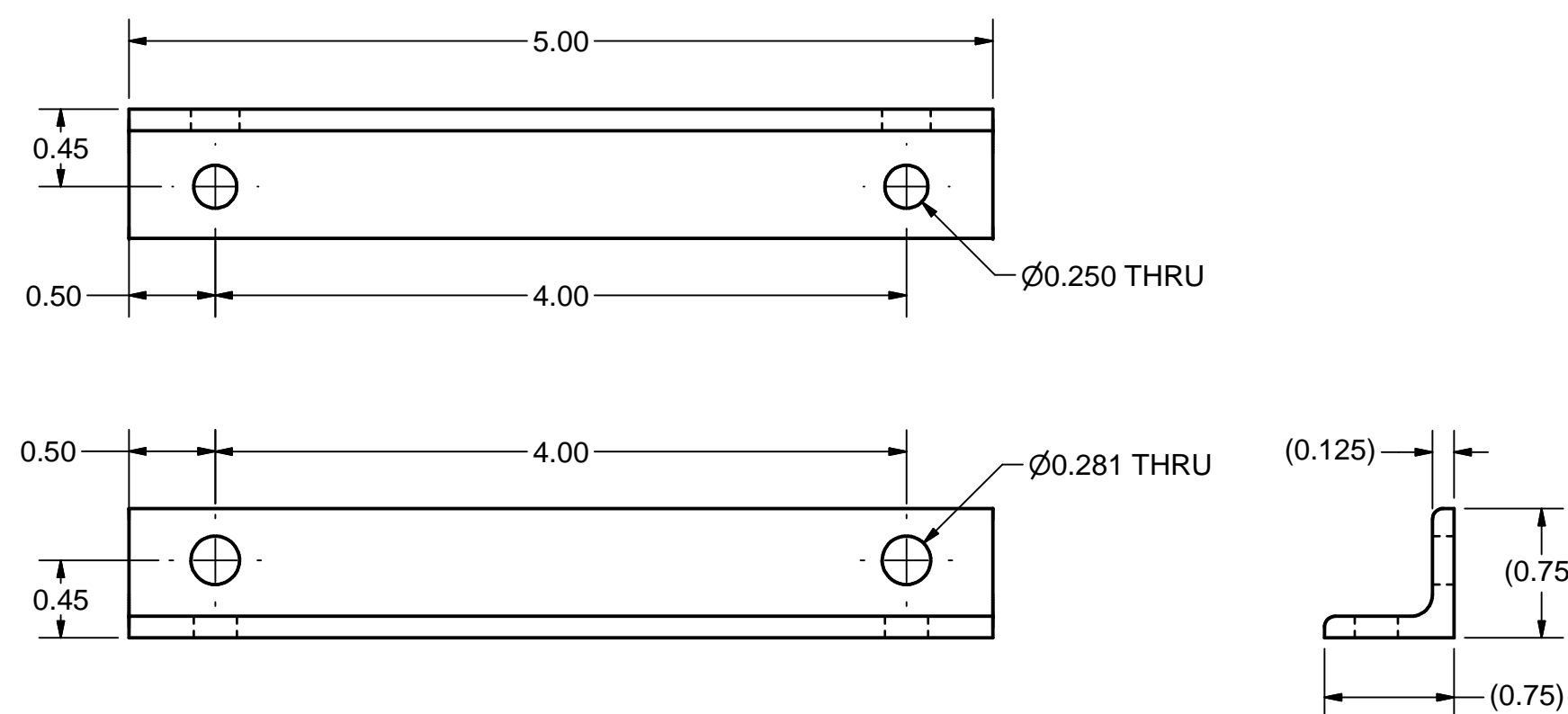
FILE NAME: 7103-166
 SHEET NO.: 27
 DFT. SCALE: 1:1
 MATERIAL: 3/4" x 3/4" x 1/8"W 6063 OR 6061 ALUM. ANGLE
 QTY: 2 PER ASSEMBLY
 NOTES:



88	PURCHASE	10-32 PEM NUT, CLSS-032-3	2		St.Steel
43	Sheet 27	ANGLE 2	1		

42 ANGLE 3 SUB-ASM

FILE NAME: 7103-166
 SHEET NO.: 27
 DFT. SCALE: 1:1
 MATERIAL: 3/4" x 3/4" x 1/8"W 6063 OR 6061 ALUM. ANGLE
 QTY: 2 PER ASSEMBLY
 NOTES: 1. USE PRESS (PEMSERTER OR EQUIV.)
 TO INSTALL PEM NUTS ITEM 88.



43 ANGLE 3

FILE NAME: 7103-166
 SHEET NO.: 27
 DFT. SCALE: 1:1
 MATERIAL: 3/4" x 3/4" x 1/8"W 6063 OR 6061 ALUM. ANGLE
 QTY: 2 PER ASSEMBLY
 NOTES:

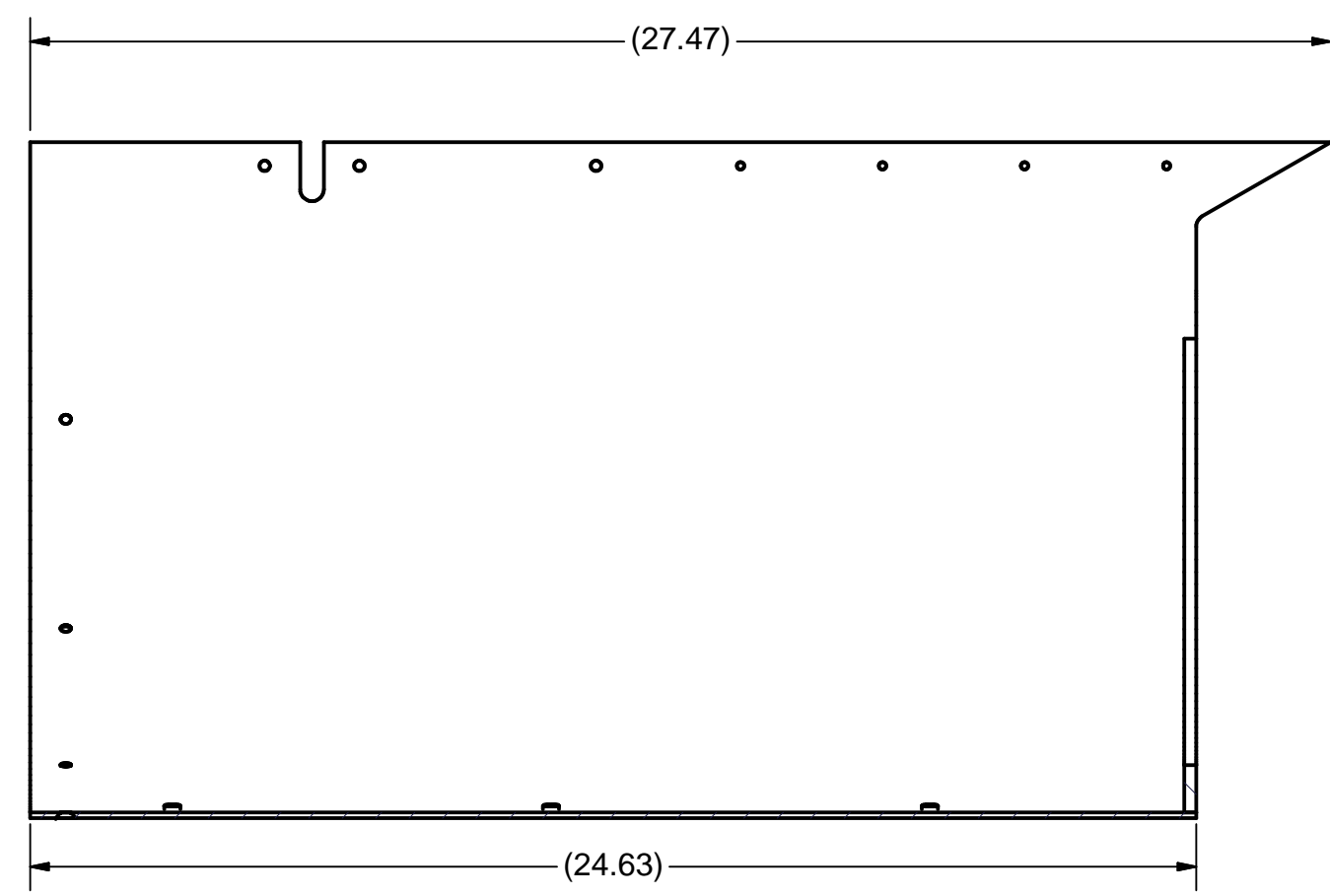
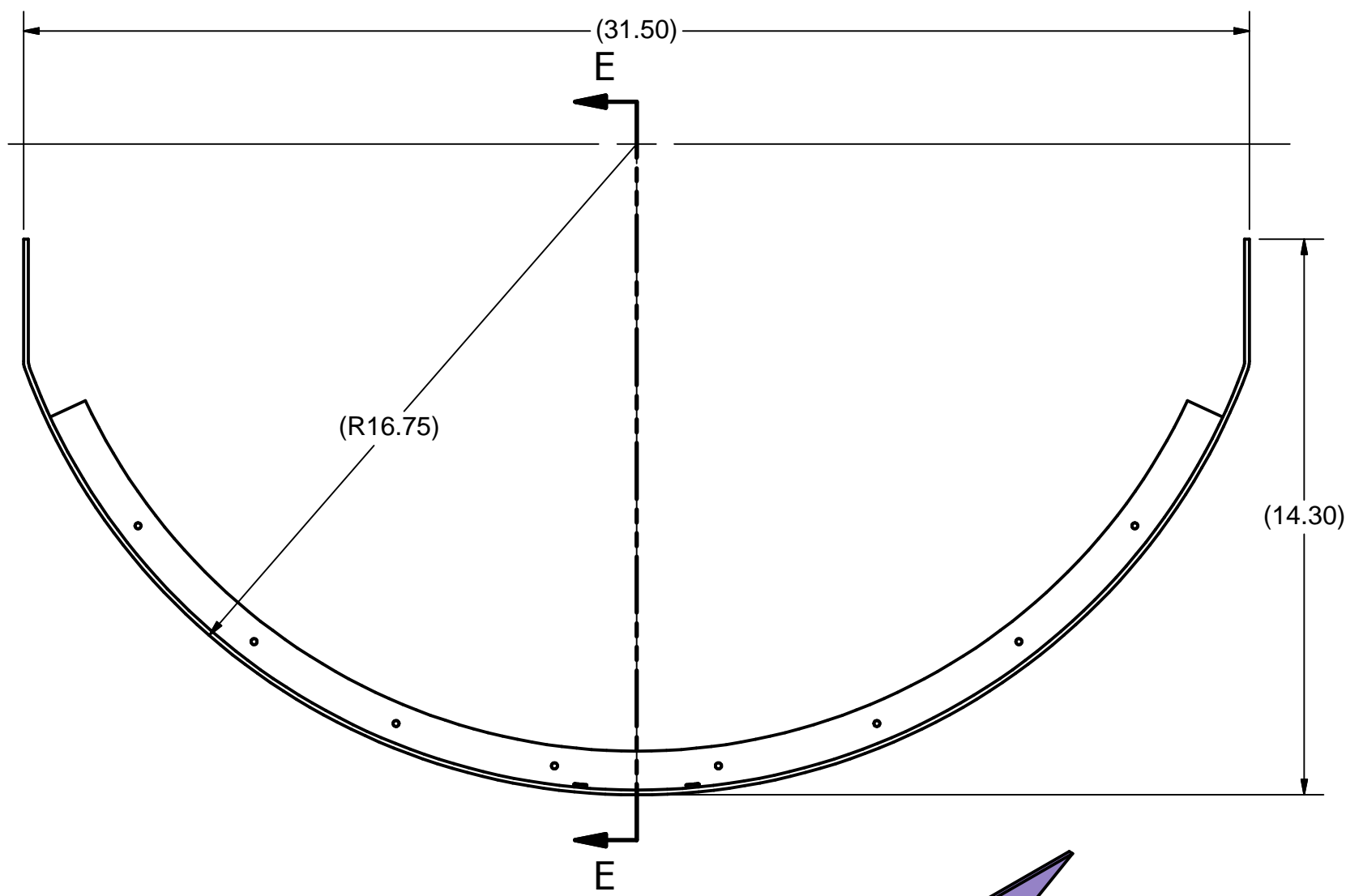
41 ANGLE 2

FILE NAME: 7103-166
 SHEET NO.: 27
 DFT. SCALE: 1:1
 MATERIAL: 3/4" x 3/4" x 1/8"W 6063 OR 6061 ALUM. ANGLE
 QTY: 2 PER ASSEMBLY
 NOTES:

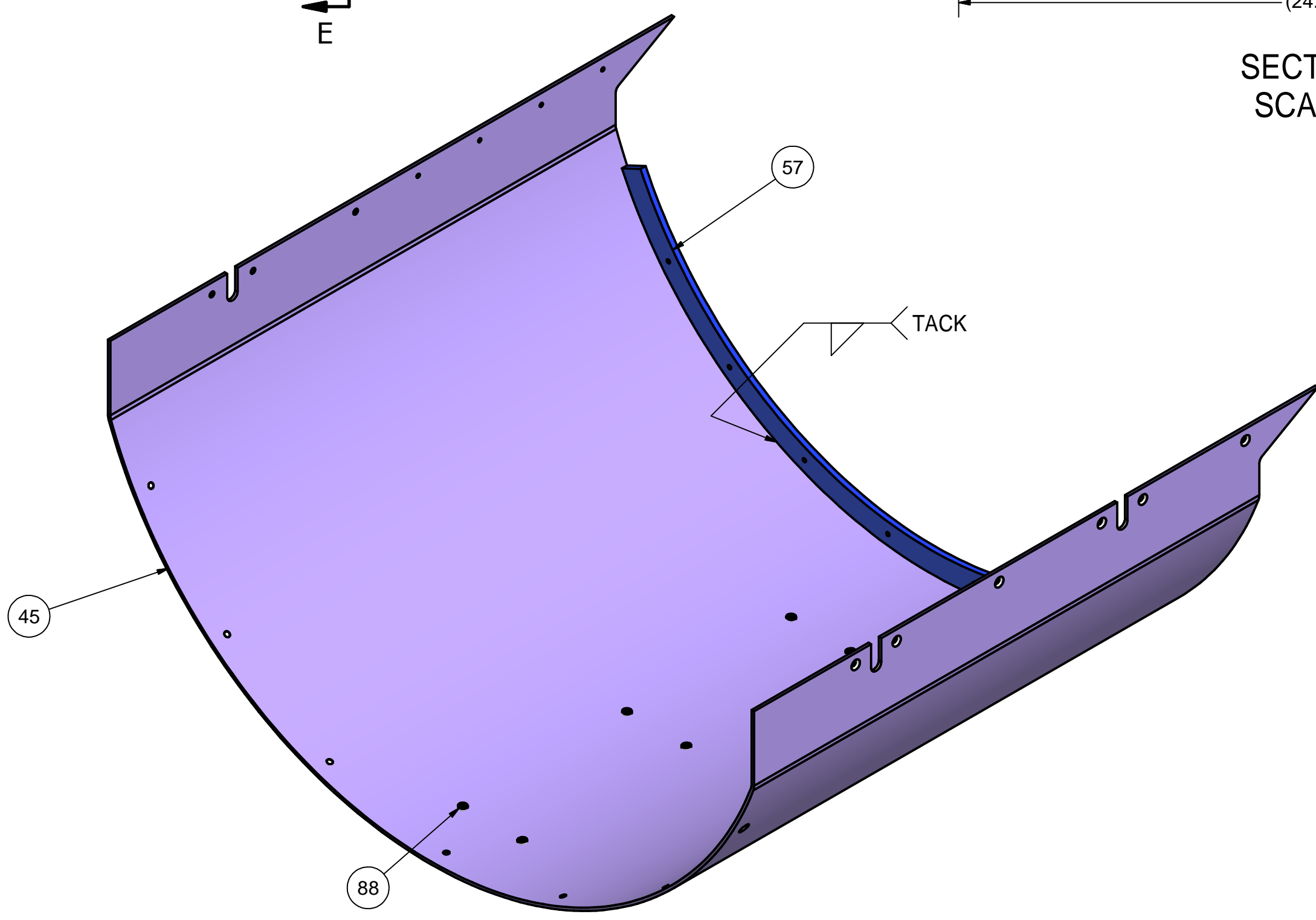
**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw							
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES		Cornell University Laboratory for Elementary-Particle Physics		Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853			
ERL LINAC CRYOMODULE 40K THERMAL SHIELD ANGLE PLATES							
CHECKED BY:	DRAWN BY:	DRAWN FOR:	DATE:	SCALE:	7103-166	REV.	
APPROVED BY:	YH/DME	RGE / JOS	4/21/2013	D	SH. NO. 27 OF 35		

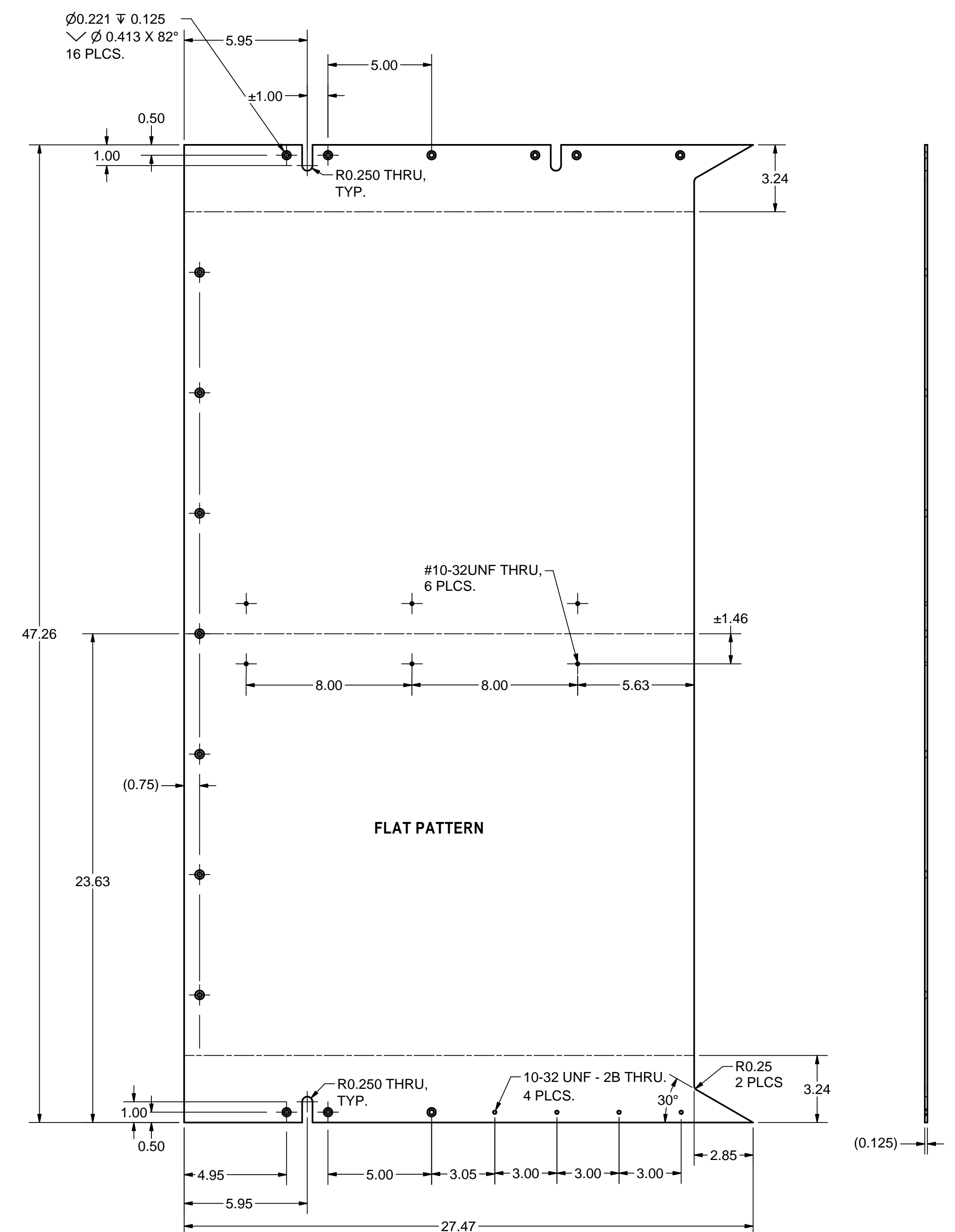
REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



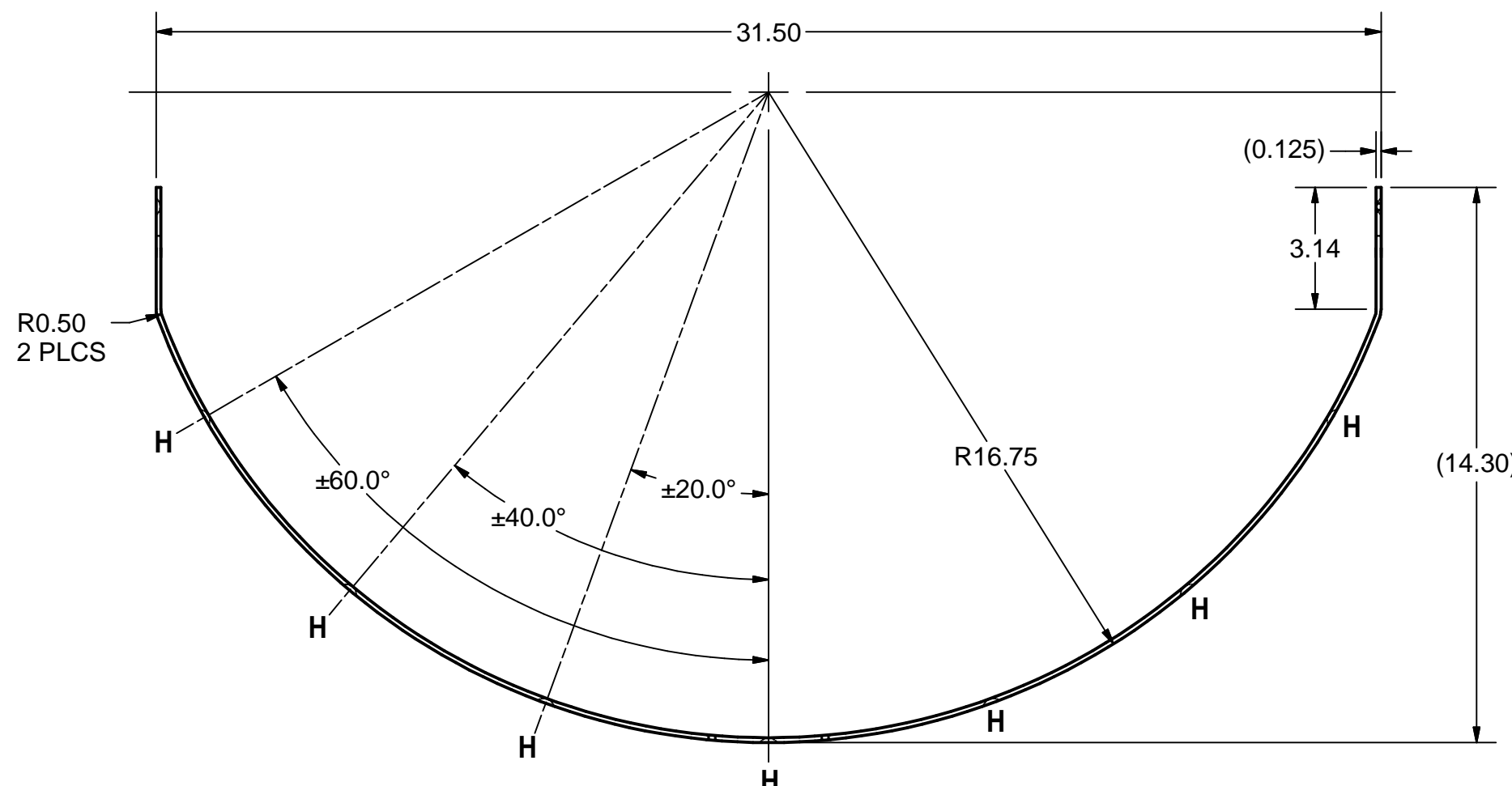
SECTION E-E
SCALE 1 / 4



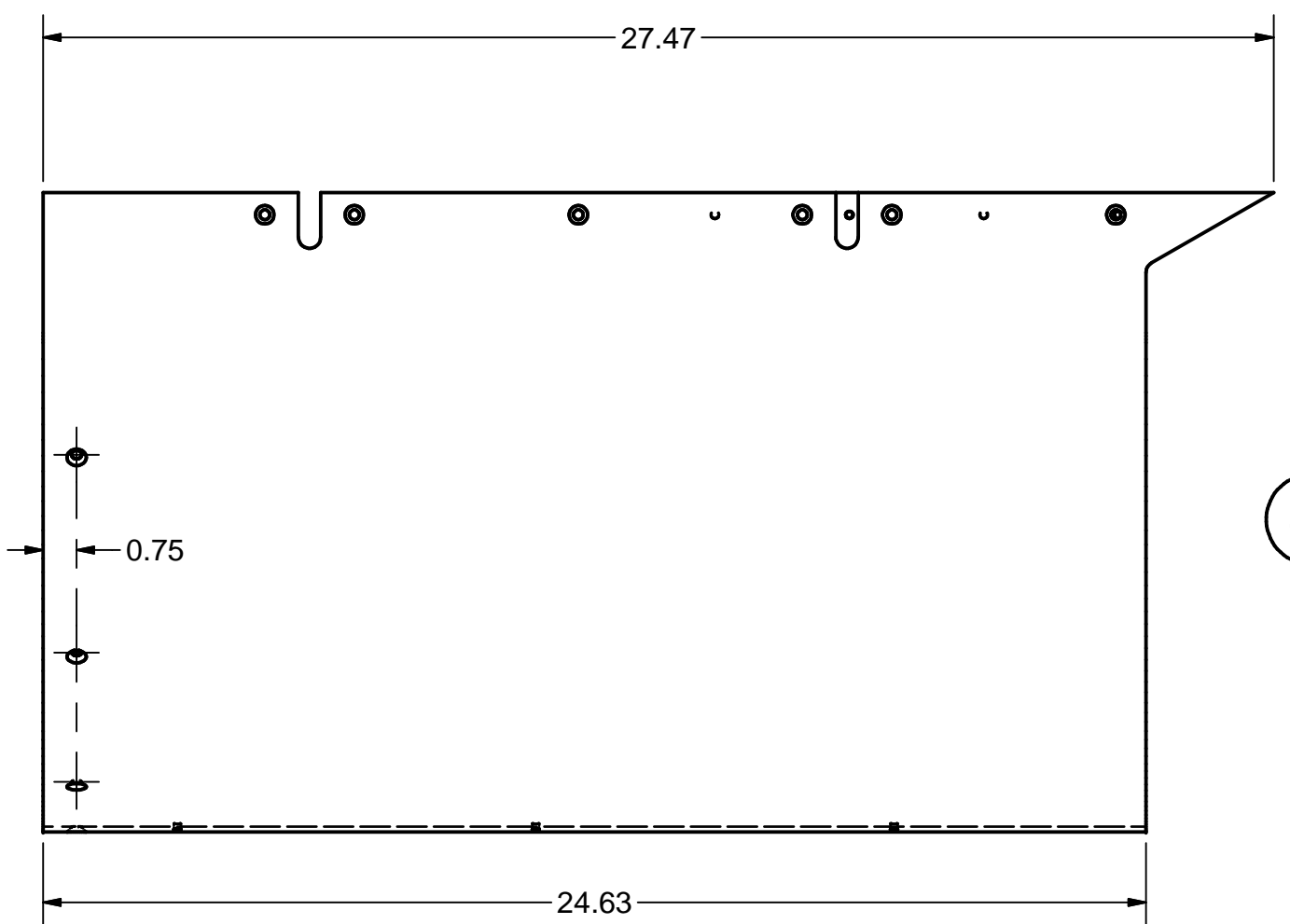
44 UPSTREAM END BOTTOM WELDMENT
 FILE NAME: 7103-166
 SHEET NO.: 28
 DFT. SCALE: 1:4
 MATERIAL:
 QTY: 1 PER ASSEMBLY
 NOTES:



FLAT PATTERN



HOLE LOCATIONS DRILLED AT "H".



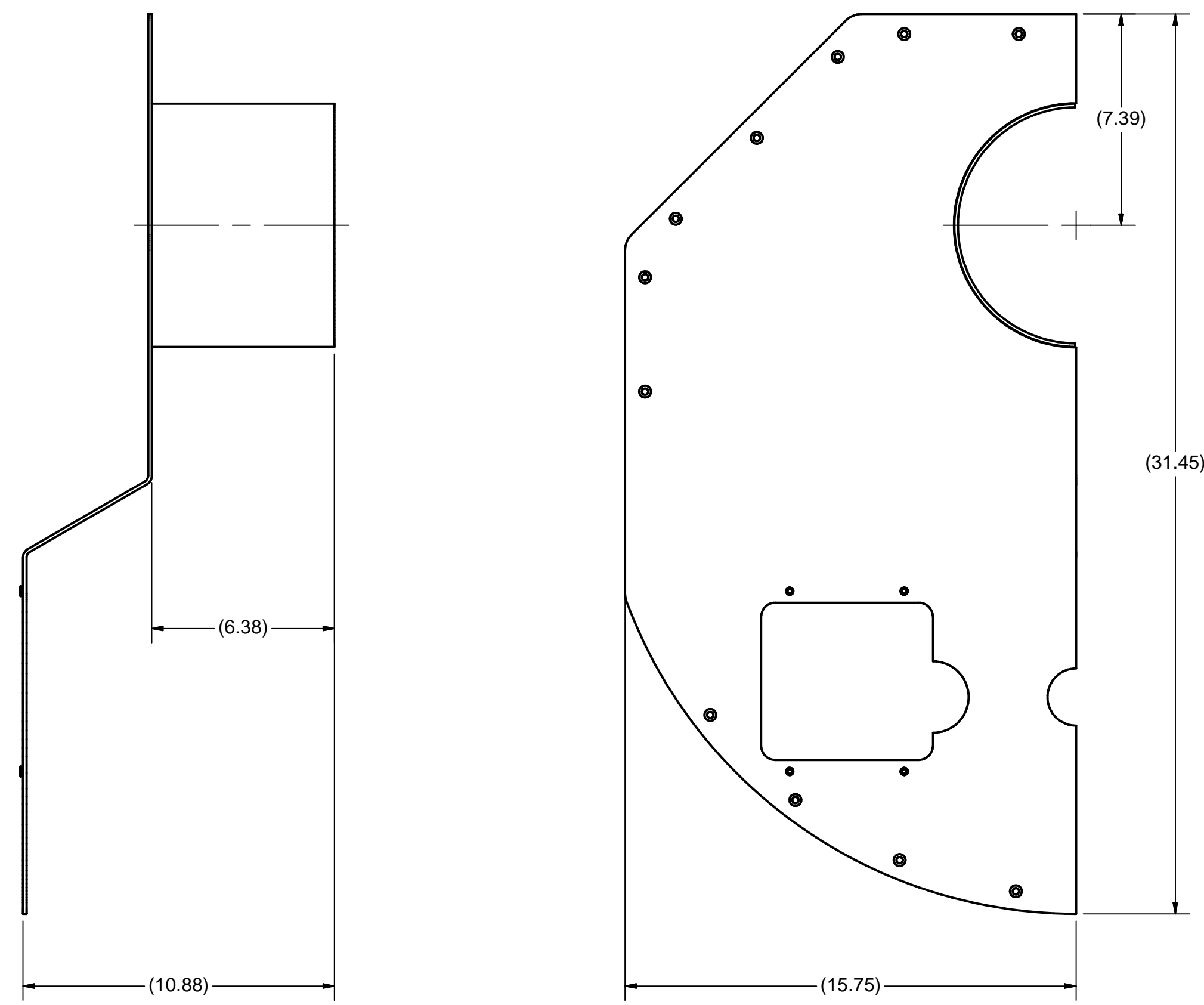
45 UPSTREAM END BOTTOM
 FILE NAME: 7103-166
 SHEET NO.: 28
 DFT. SCALE: 1:4
 MATERIAL: 1/8" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	Q1	Q2	Q3	REMARKS	REV.
88	PURCHASE	10-32 PEM NUT, CLSS-032-3	6			St. Steel	
57	Sheet 34	BOTTOM RING	1				
45	Sheet 28	US END BOTTOM	1				

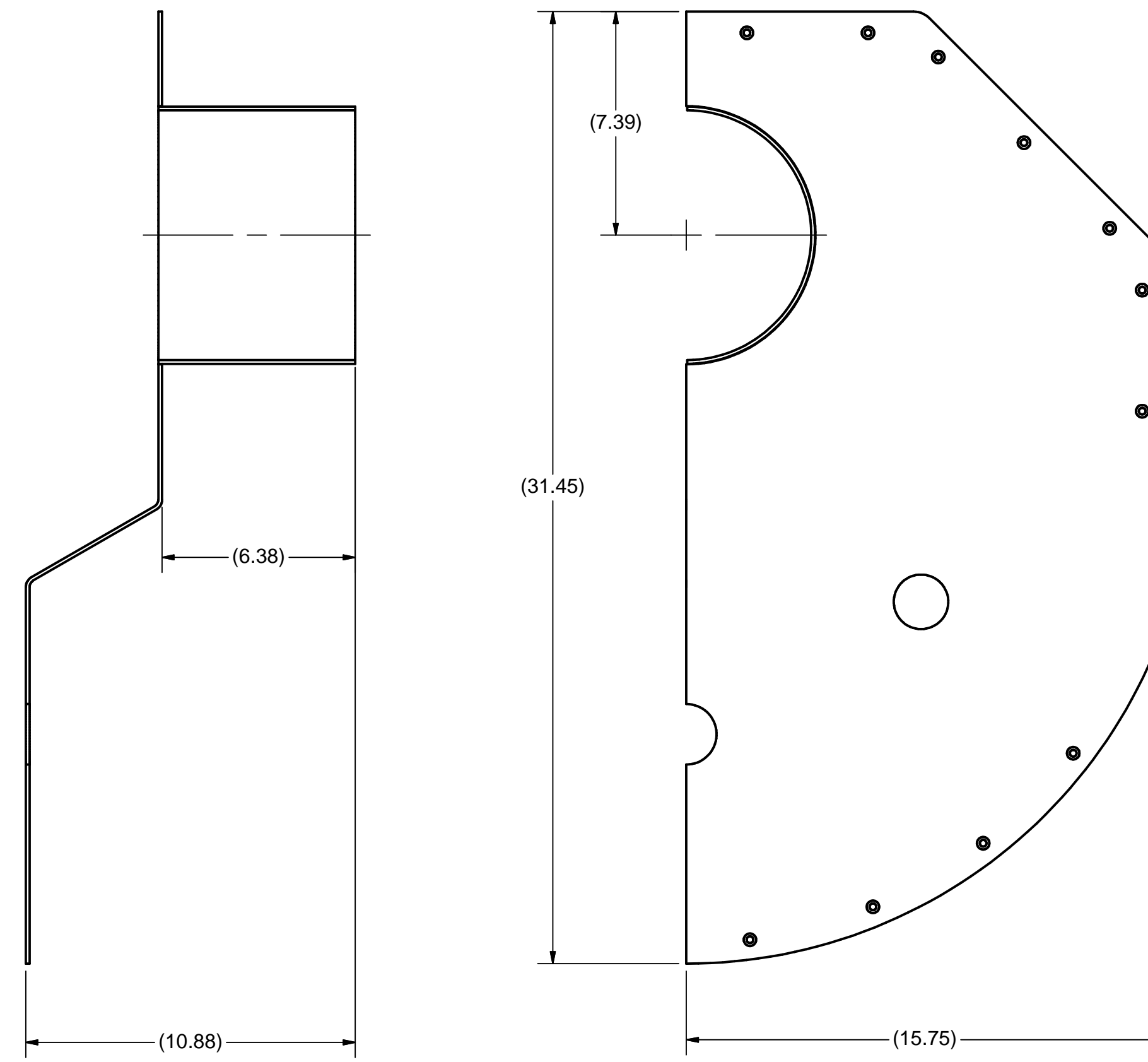
7103-166 SHEET 28 OF 35	PRINT	PLOT DATE: 9/20/2013	Cornell University Laboratory for Elementary-Particle Physics	Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853
	DISTR.	CAD FILE NAME: 7103-166.idw		
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES		ERL LINAC CRYOMODULE 40K THERMAL SHIELD UPSTREAM END BOTTOM WELDMENT & PLATE		
CHECKED BY:	DRAWN BY: YH/DME	DATE: 4/21/2013	SCALE: D	7103-166 SH. NO. 28 OF 35

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



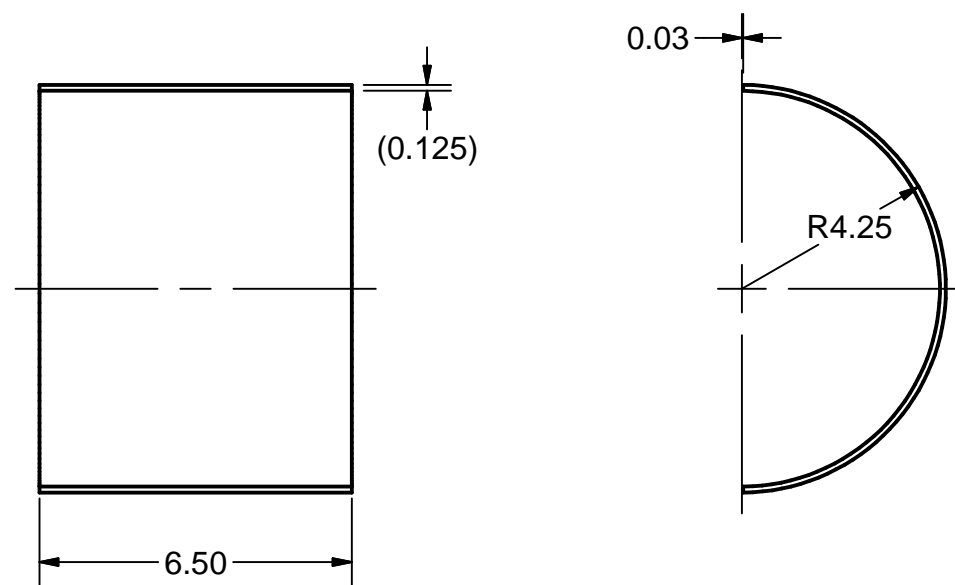
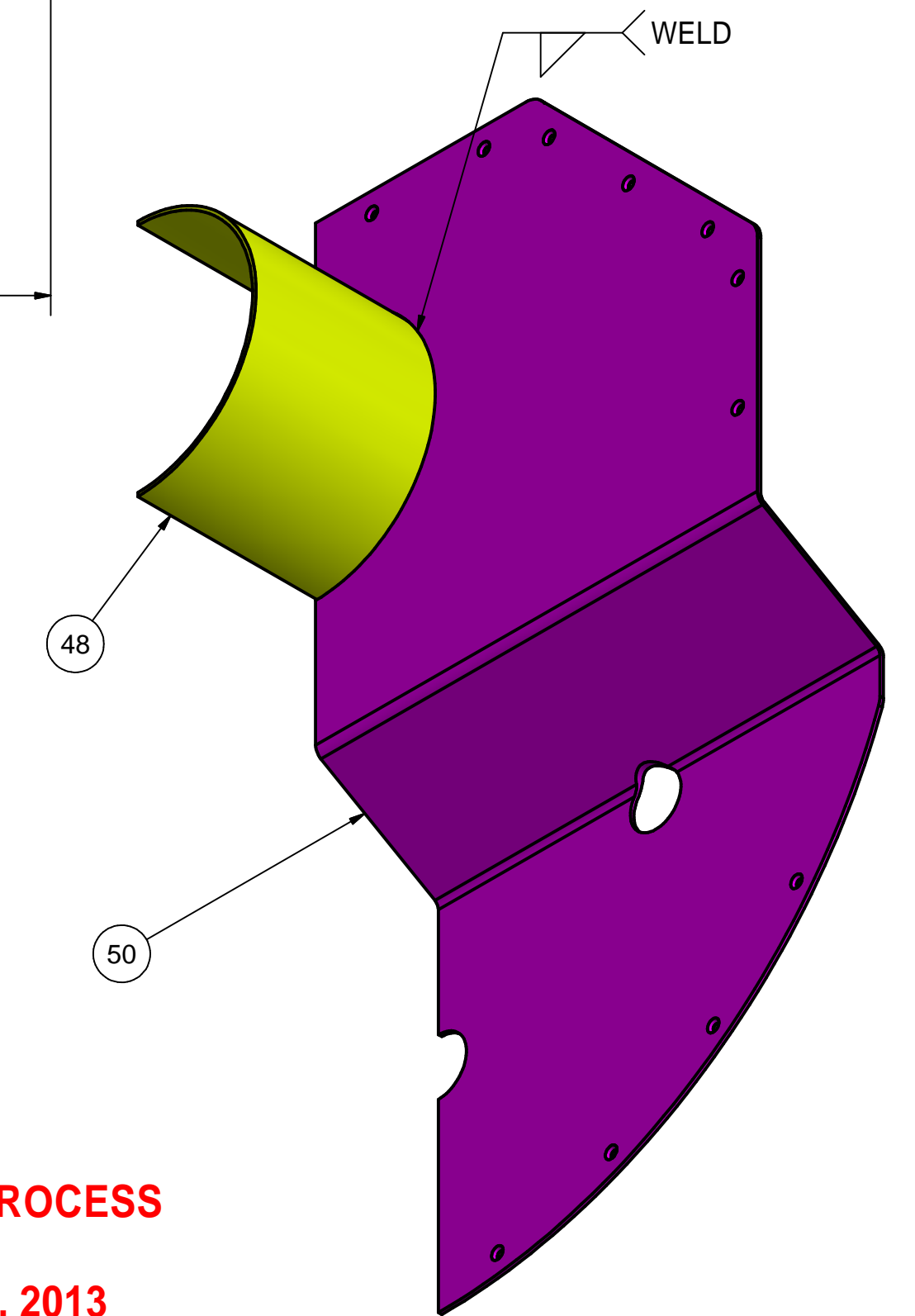
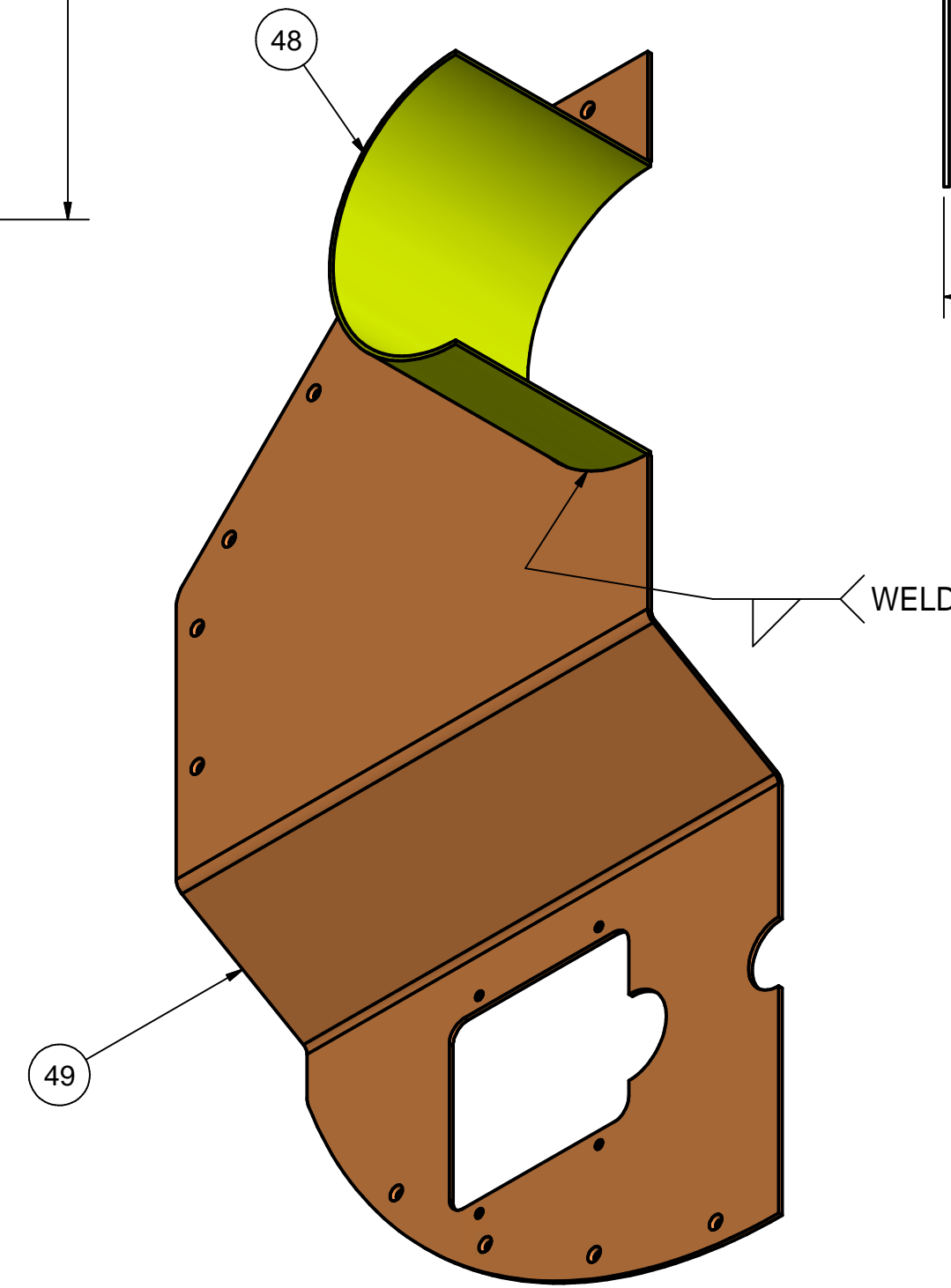
46 UPSTREAM END FRONT WALL RIGHT WELDMENT

FILE NAME: 7103-166
 SHEET NO.: 29
 DFT. SCALE: 1:6
 MATERIAL: 1/8" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:



47 UPSTREAM END FRONT WALL LEFT WELDMENT

FILE NAME: 7103-166
 SHEET NO.: 29
 DFT. SCALE: 1:6
 MATERIAL: 1/8" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

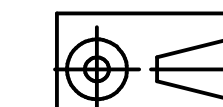


48 UPSTREAM END 8.5" HALF SHELL

FILE NAME: 7103-166
 SHEET NO.: 29
 DFT. SCALE: 1:6
 MATERIAL: 8.5" OD x 1/8" WALL 1100-H14 ALUMINUM TUBE
 QTY: 1 PAIR PER ASSEMBLY
 NOTES:

**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	QTY	REMARKS	REV.
88	PURCHASE	10-32 PEM NUT, CLSS-032-3	4	St. Steel	
50	Sheet 30	US END FRONT WALL LEFT	1		
49	Sheet 30	US END FRONT WALL RIGHT	1		
48	Sheet 29	US END 8.5" HALF SHELL	1 Pair		



PRINT
DISTR.

PLOT DATE: 9/20/2013
 CAD FILE NAME: 7103-166.idw

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES;
 TOLERANCES ON:
 .0 ± .02
 .00 ± .010
 .000 ± .005
 FRACTIONS ± 1/32
 ANGLES ± 0.5°
 ALL SURFACES

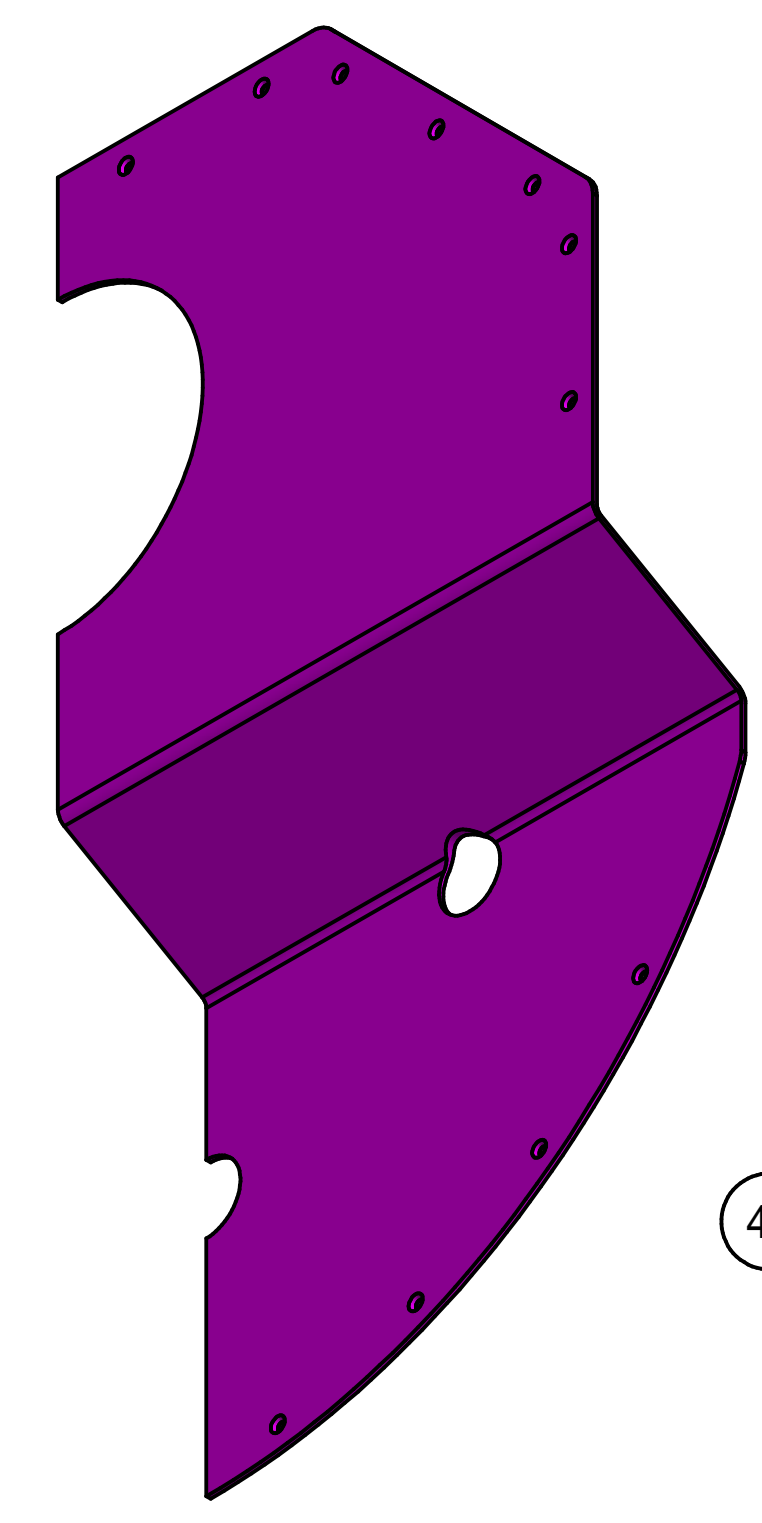
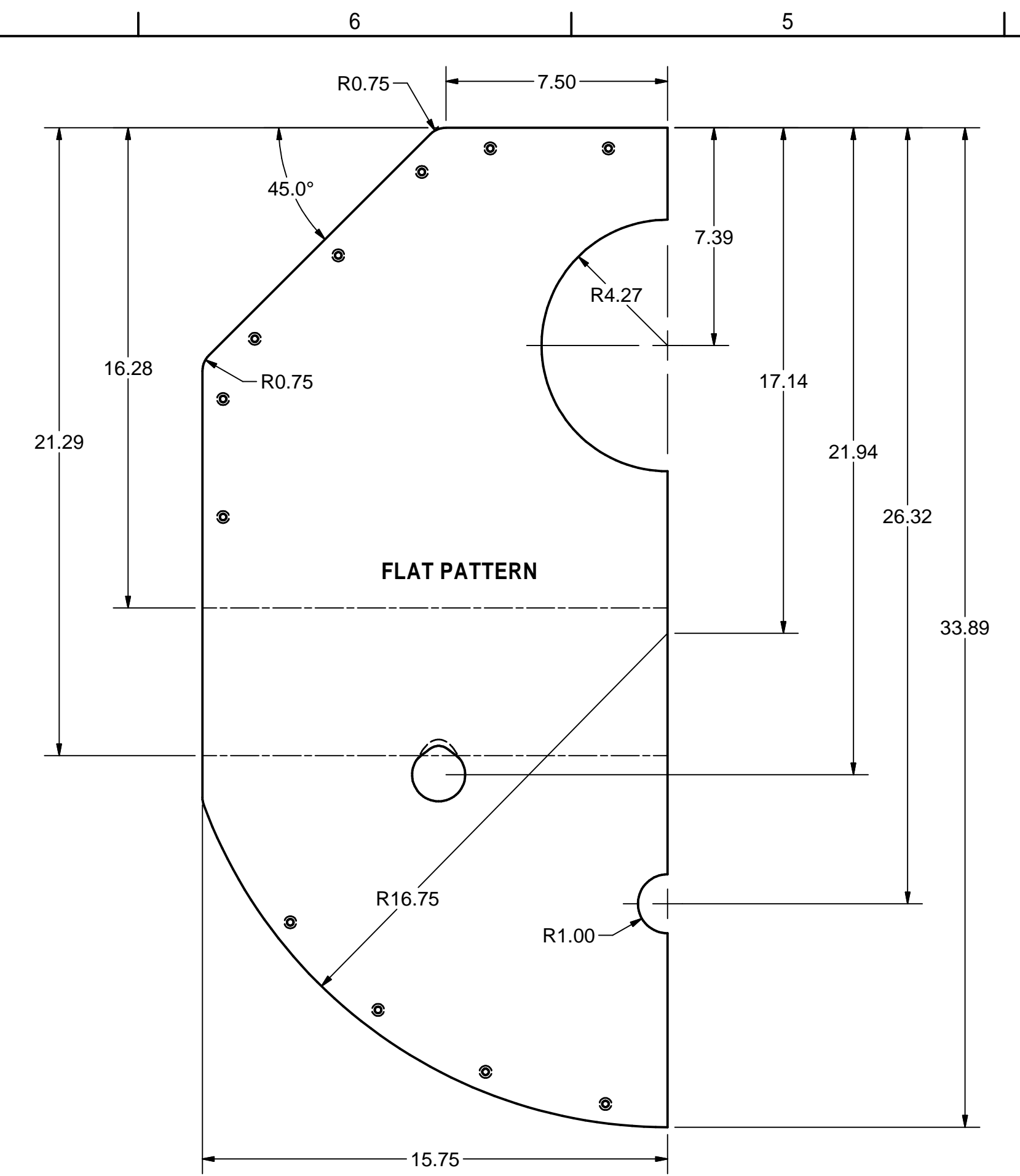
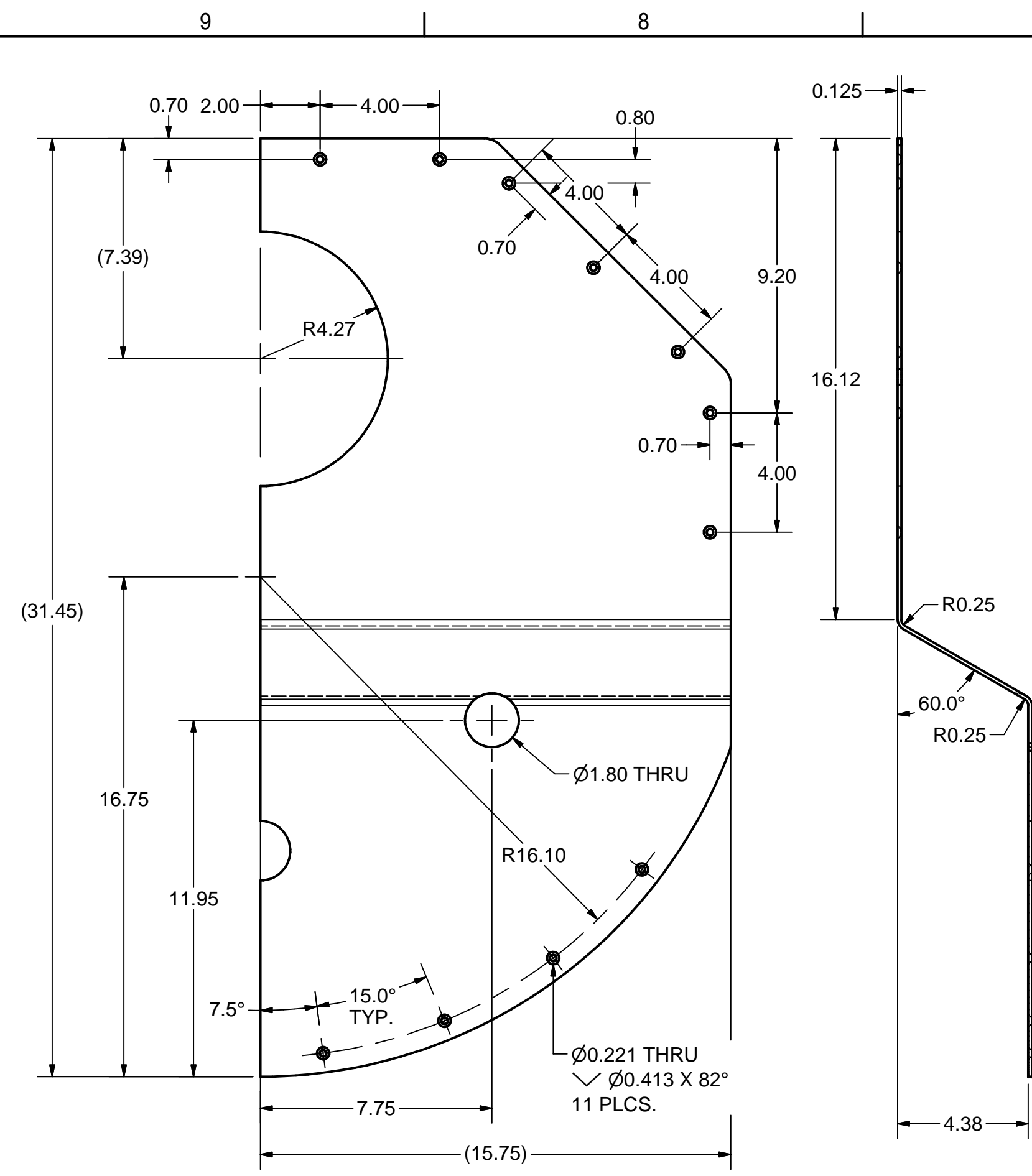
Cornell University
 Laboratory for Elementary-Particle Physics

Floyd R. Newman Laboratory
 Robert R. Wilson Laboratory
 Ithaca, NY 14853

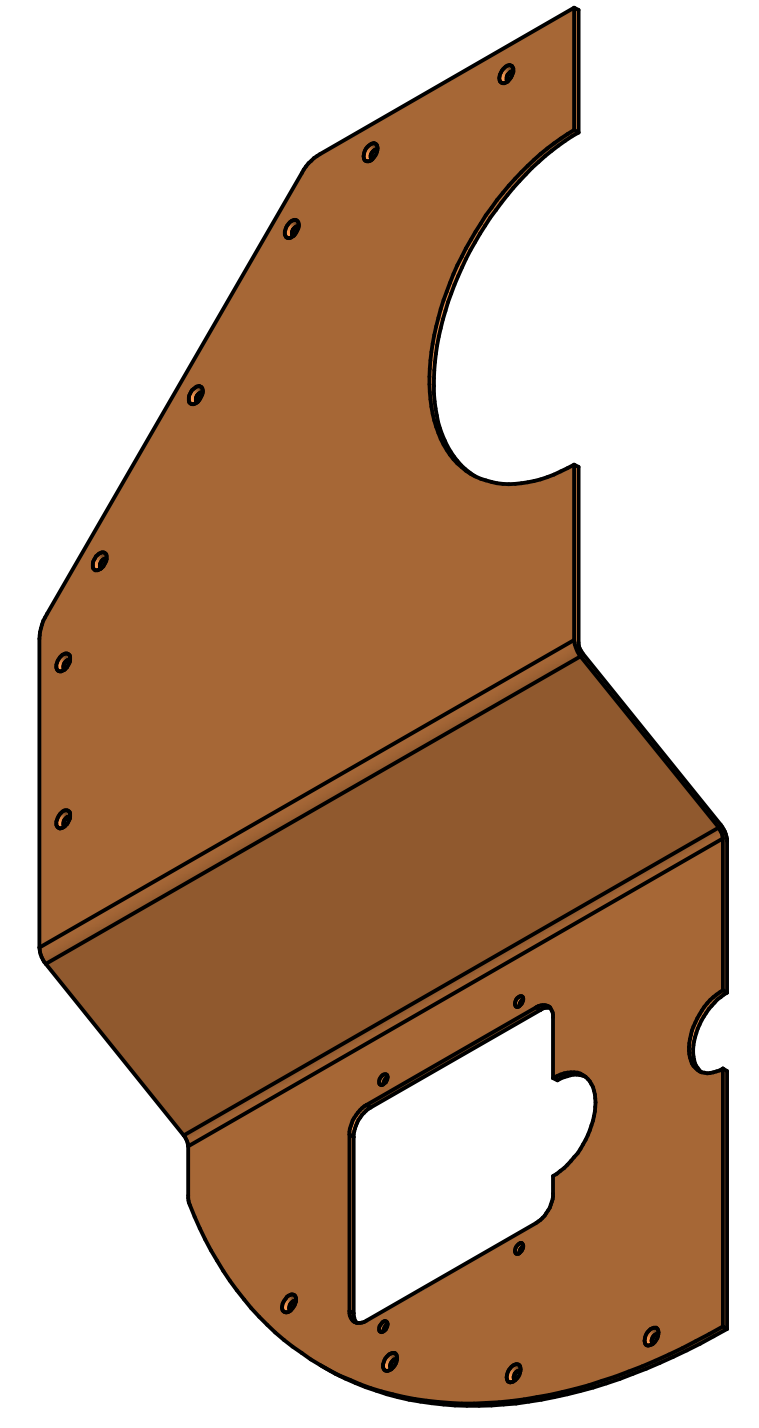
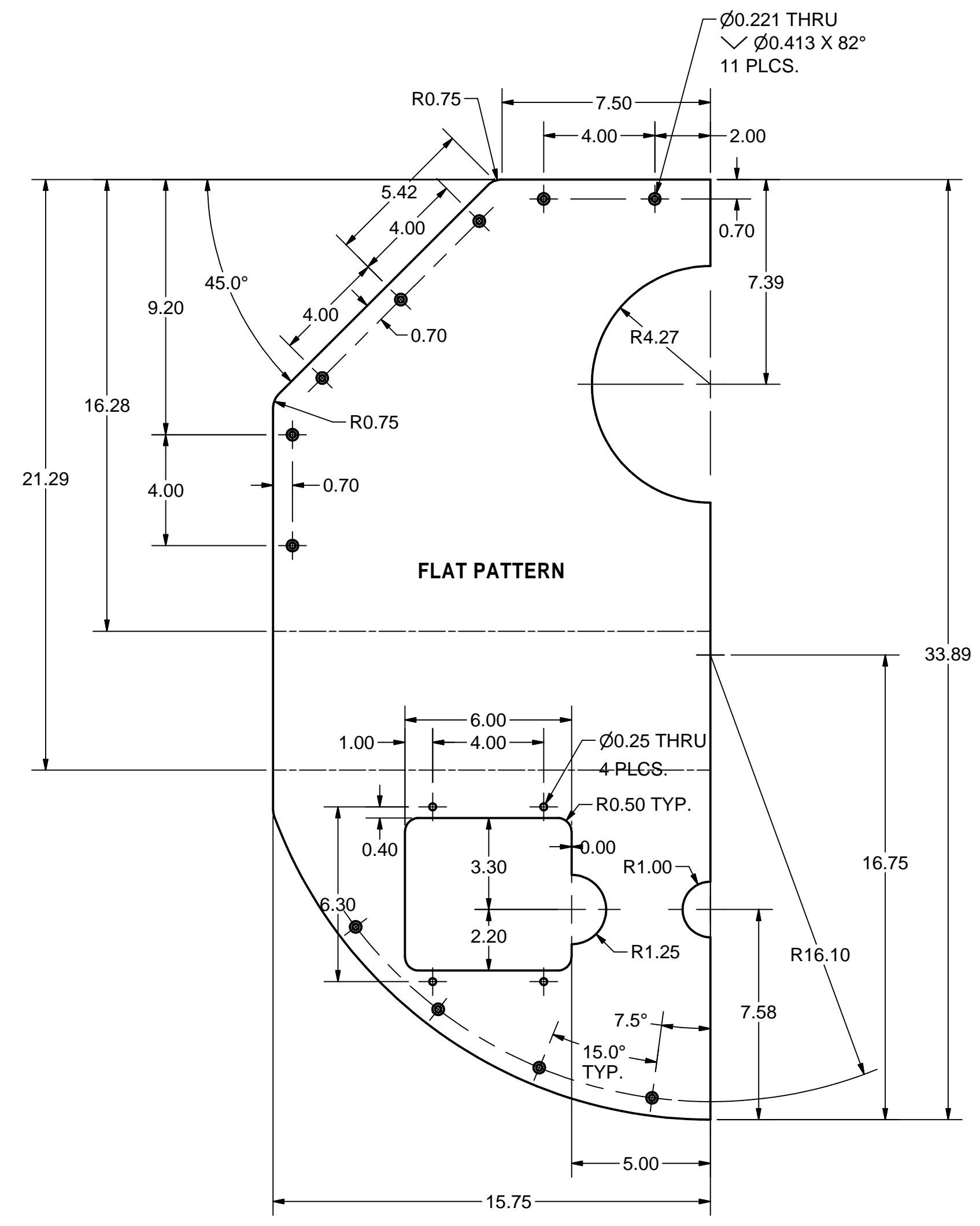
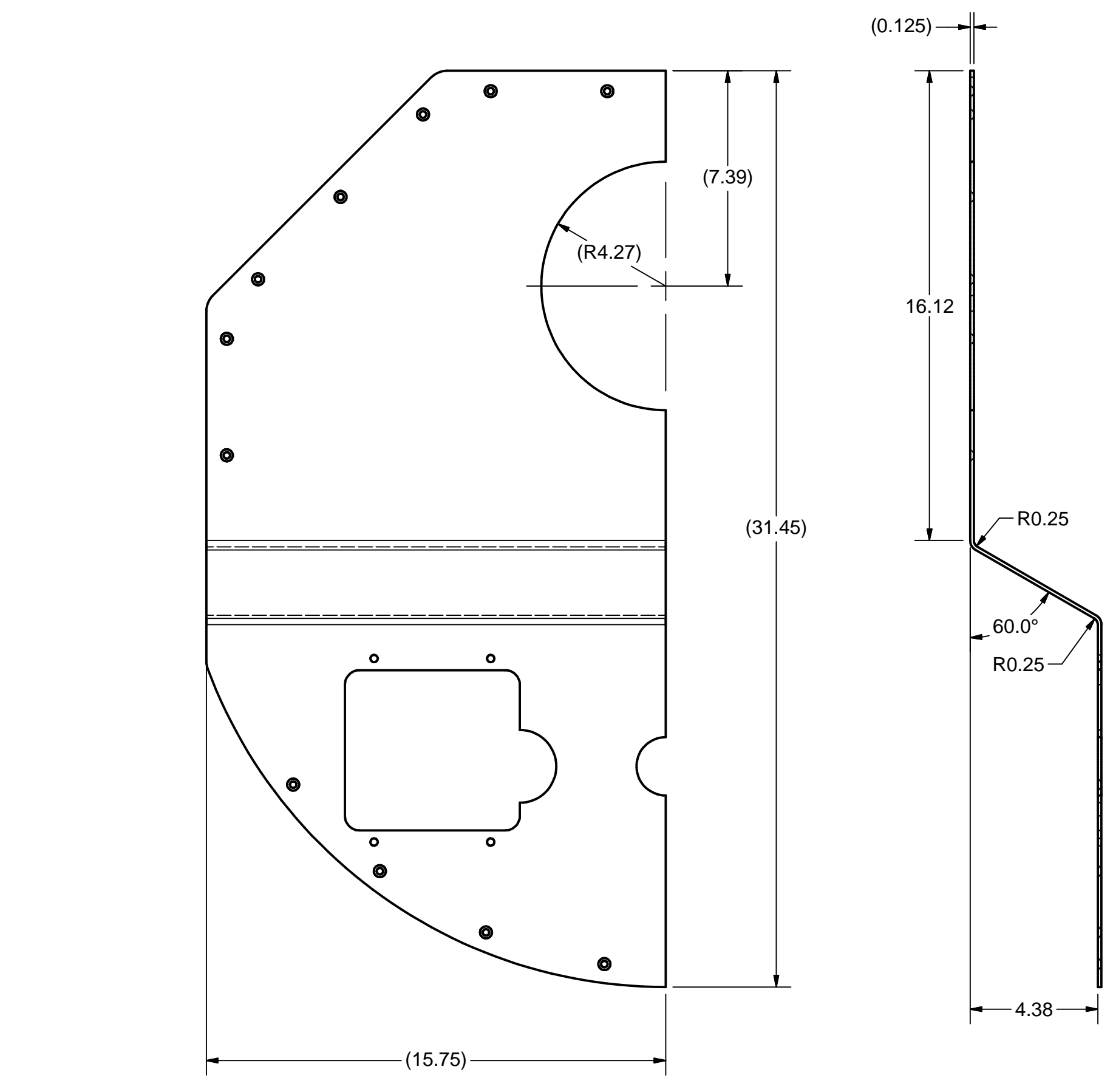
**ERL LINAC CRYOMODULE
 40K THERMAL SHIELD
 UPSTREAM END FRONT WALL WELDMENTS**

CHECKED BY:	DRAWN BY:	DATE:	SCALE:	7103-166	REV.
APPROVED BY:	YH/DME	4/21/2013	D	SH. NO. 29 OF 35	

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



49 US END FRONT WALL LEFT SHEET
 FILE NAME: 7103-166
 SHEET NO.: 30
 DFT. SCALE: 1:6
 MATERIAL: 1/8" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

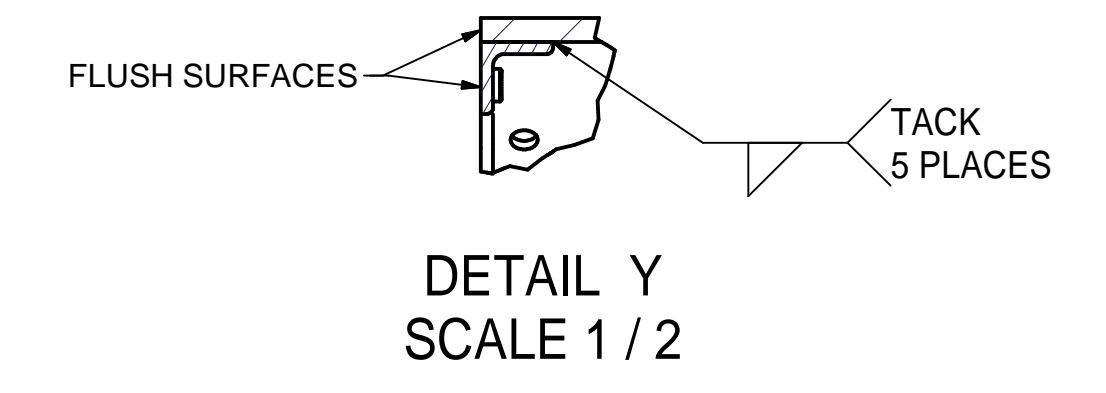
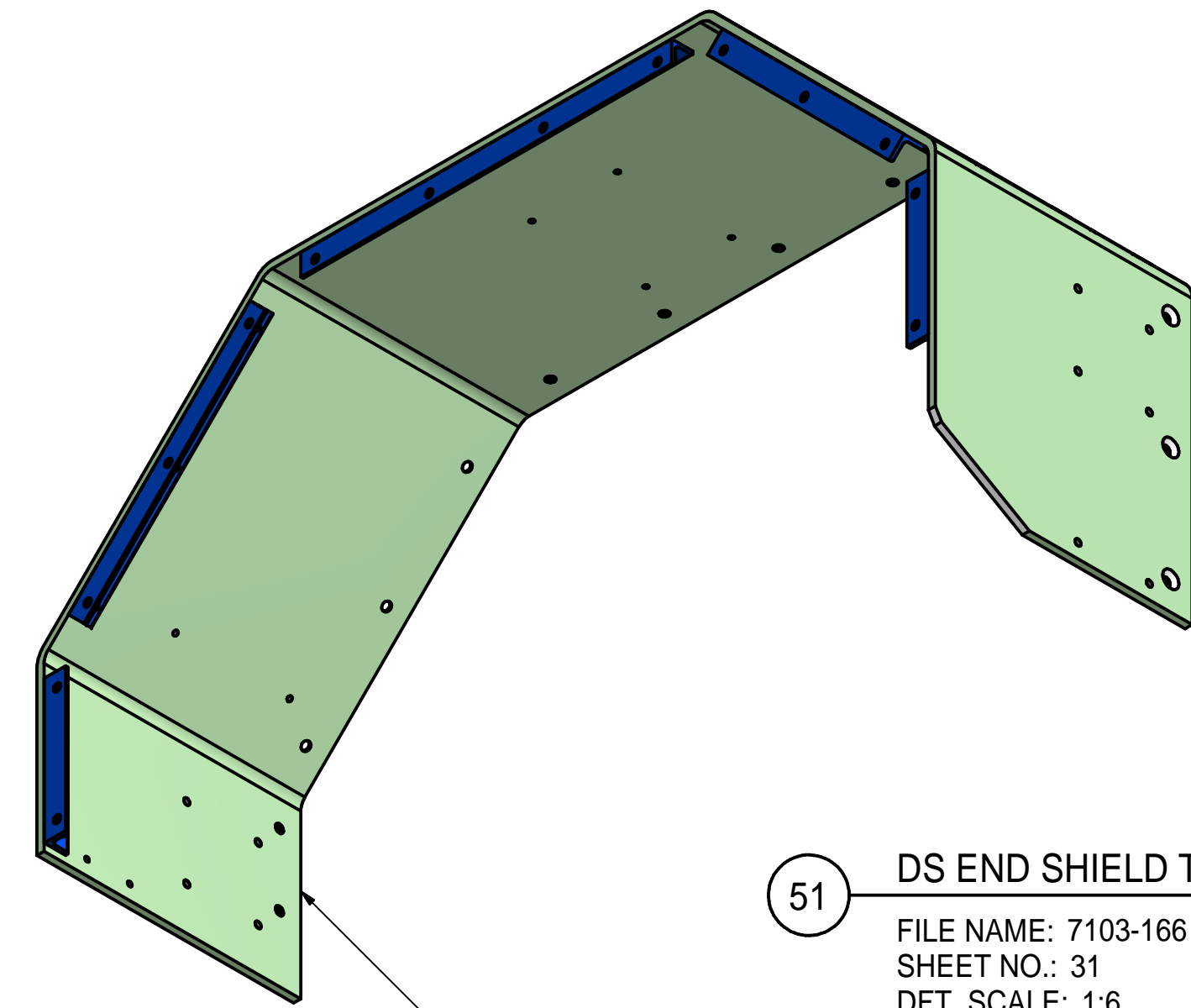
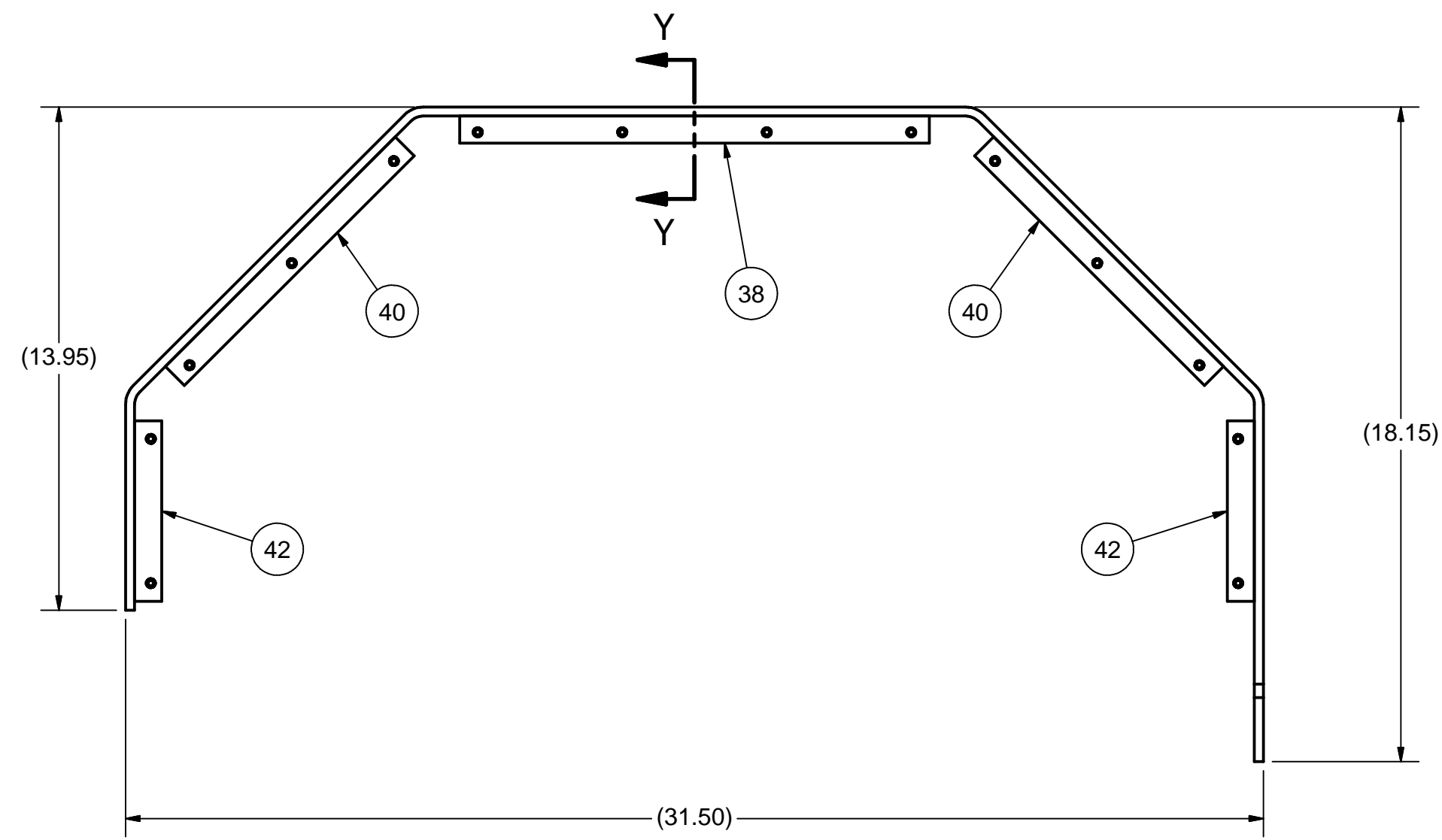
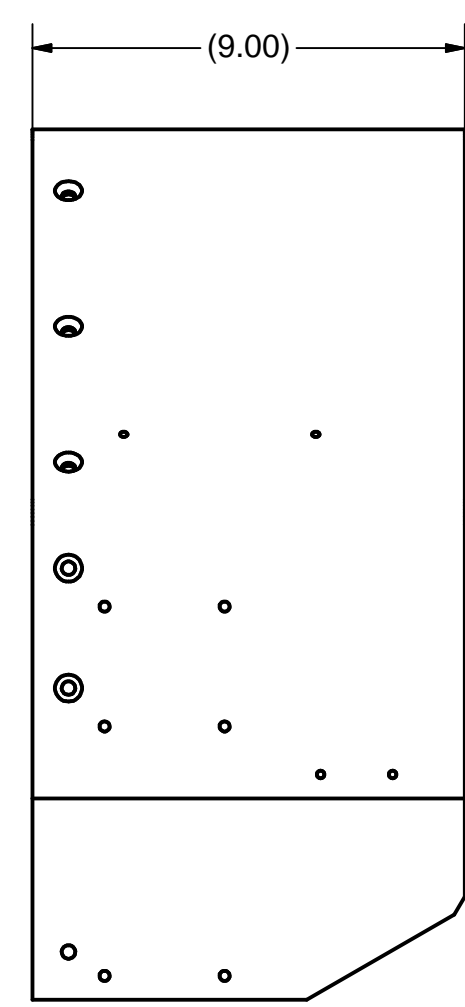


50 US END FRONT WALL RIGHT
 FILE NAME: 7103-166
 SHEET NO.: 30
 DFT. SCALE: 1:6
 MATERIAL: 1/8" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

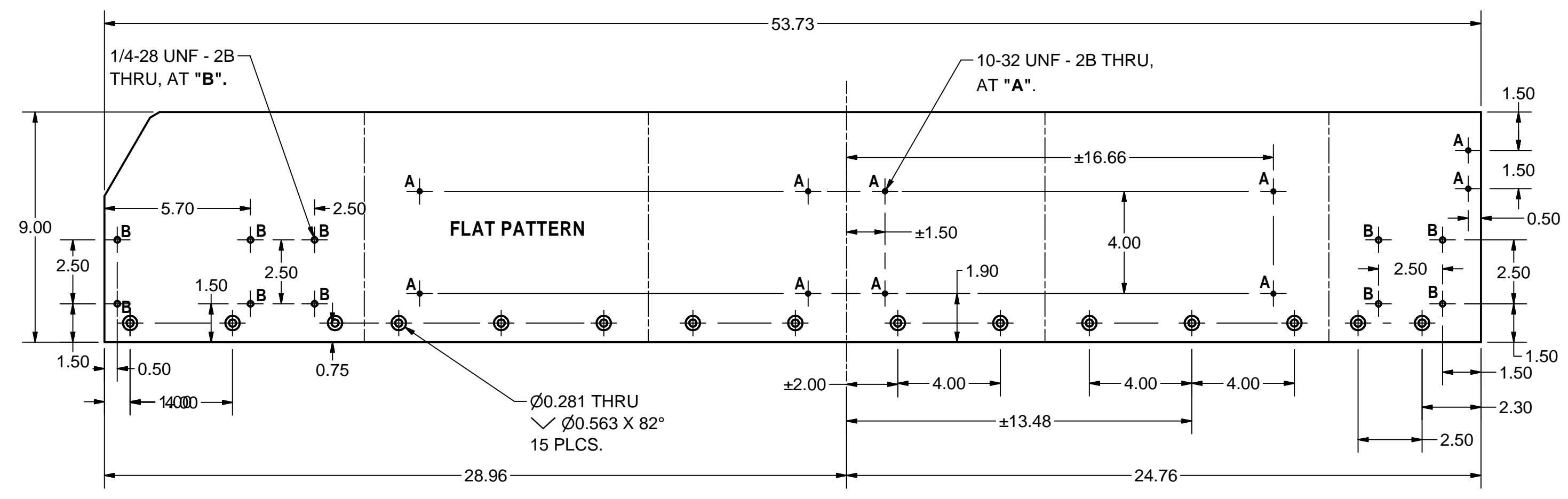
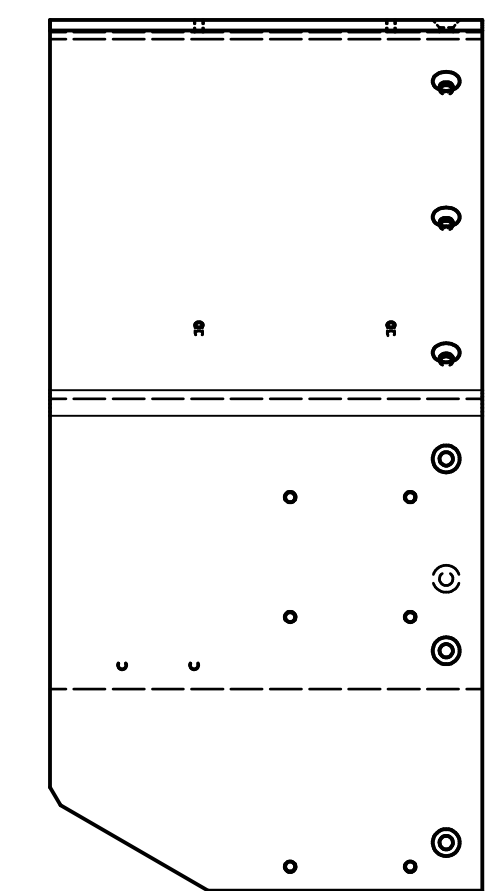
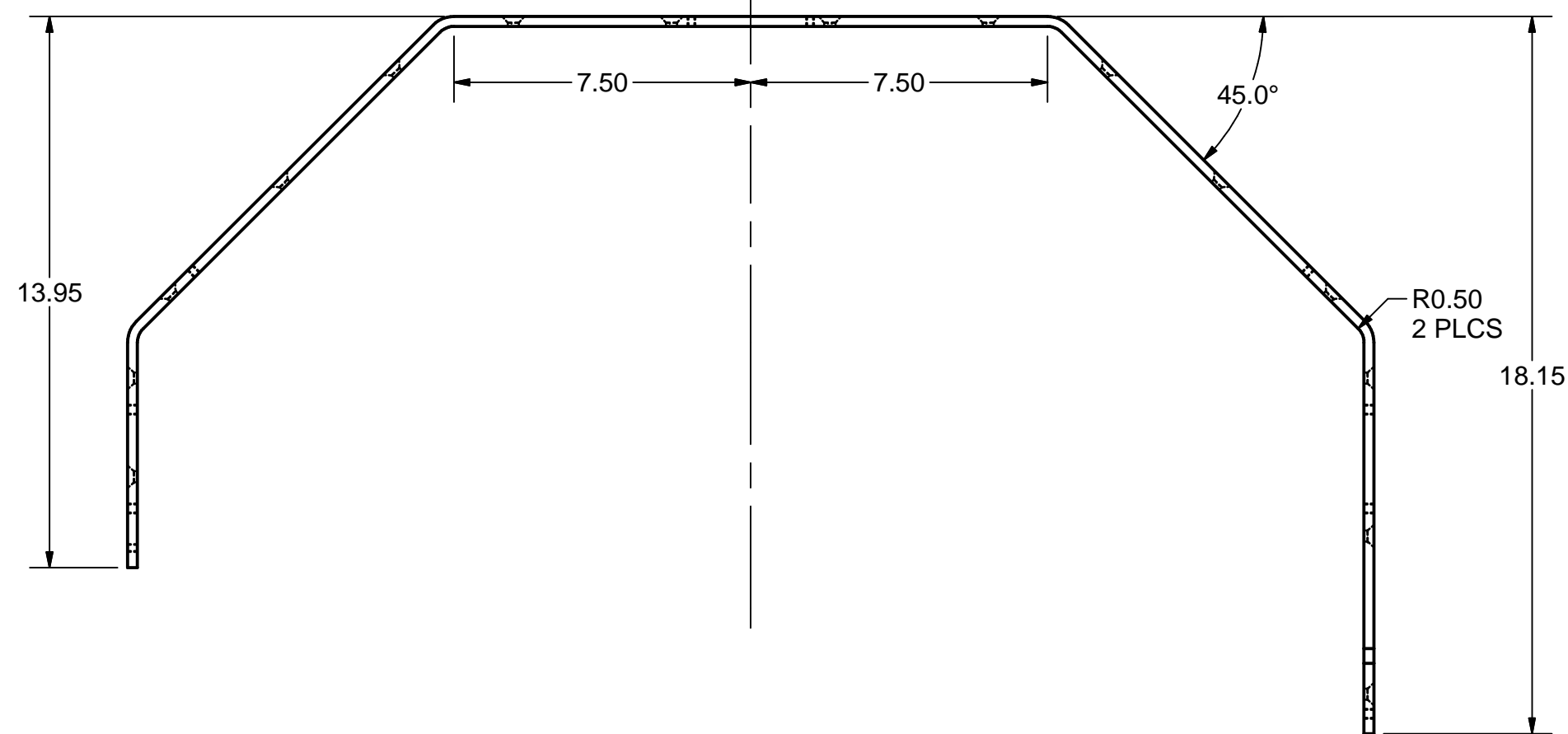
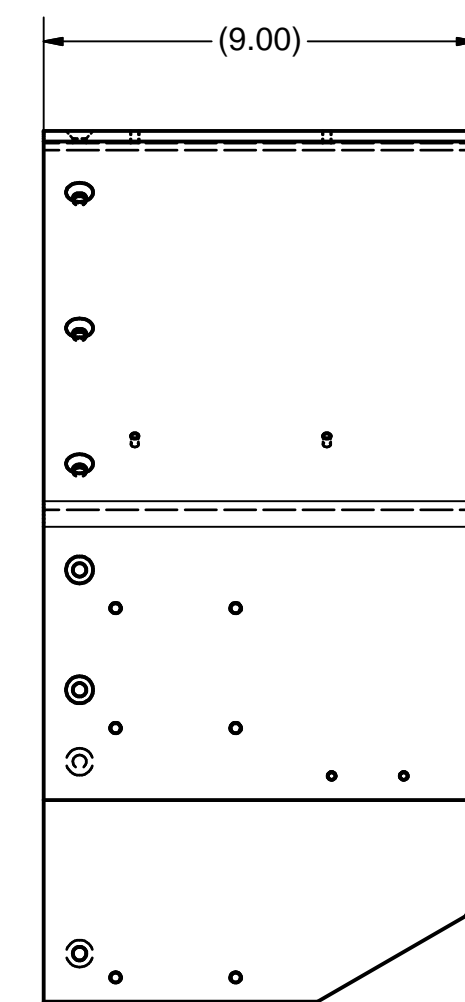
**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
PRINT DISTR.	7103-166	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES					
		Cornell University Laboratory for Elementary-Particle Physics				Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	
		ERL LINAC CRYOMODULE 40K THERMAL SHIELD US END FRONT WALLS					
CHECKED BY:	DRAWN BY:	DRAWN FOR:	DATE:	SCALE:			
	YH/DME	RGE/JOS	4/21/2013	D	7103-166	SH. NO. 30 OF 35	

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



51 DS END SHIELD TOP WELDMENT
 FILE NAME: 7103-166
 SHEET NO.: 31
 DFT. SCALE: 1:6
 MATERIAL:
 QTY: 1 PER ASSEMBLY
 NOTES: 1. PRE_MOUNT ANGLE PLATES TO FRONT WALLS FOR HOLE ALIGNMENT BEFORE WELDING



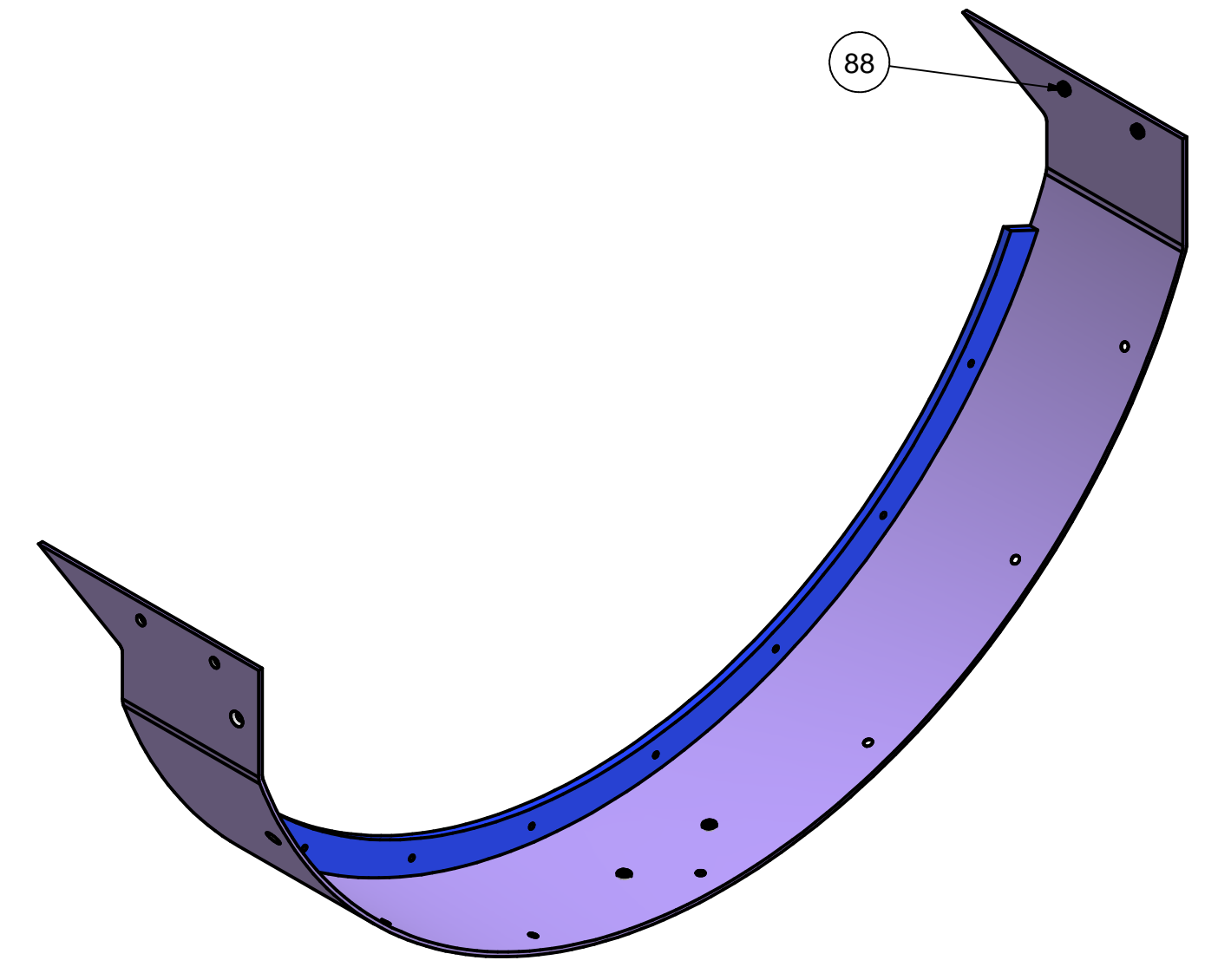
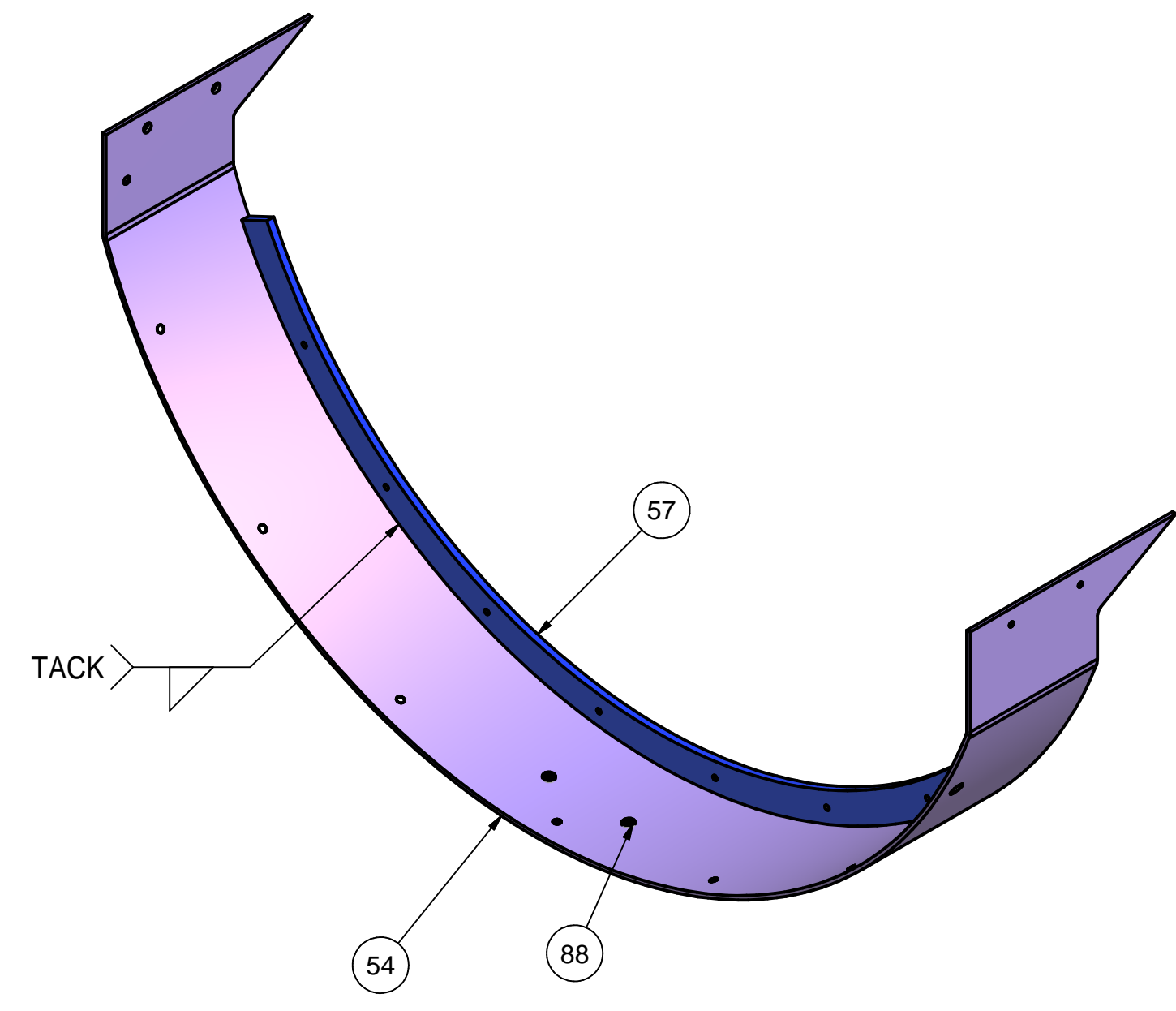
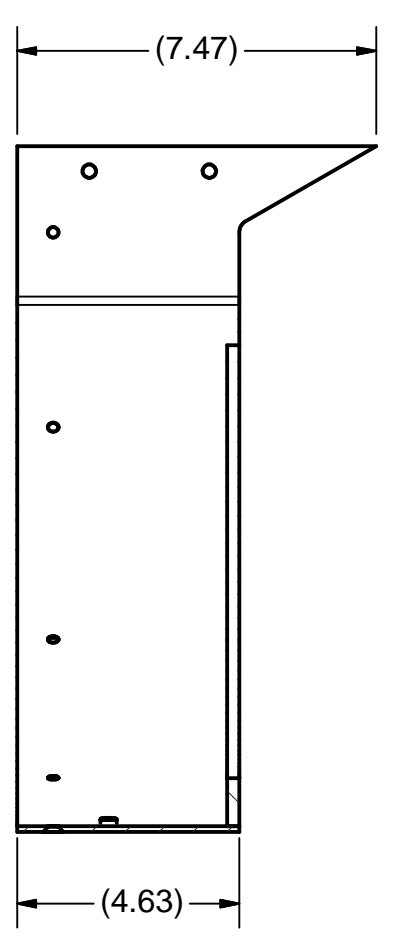
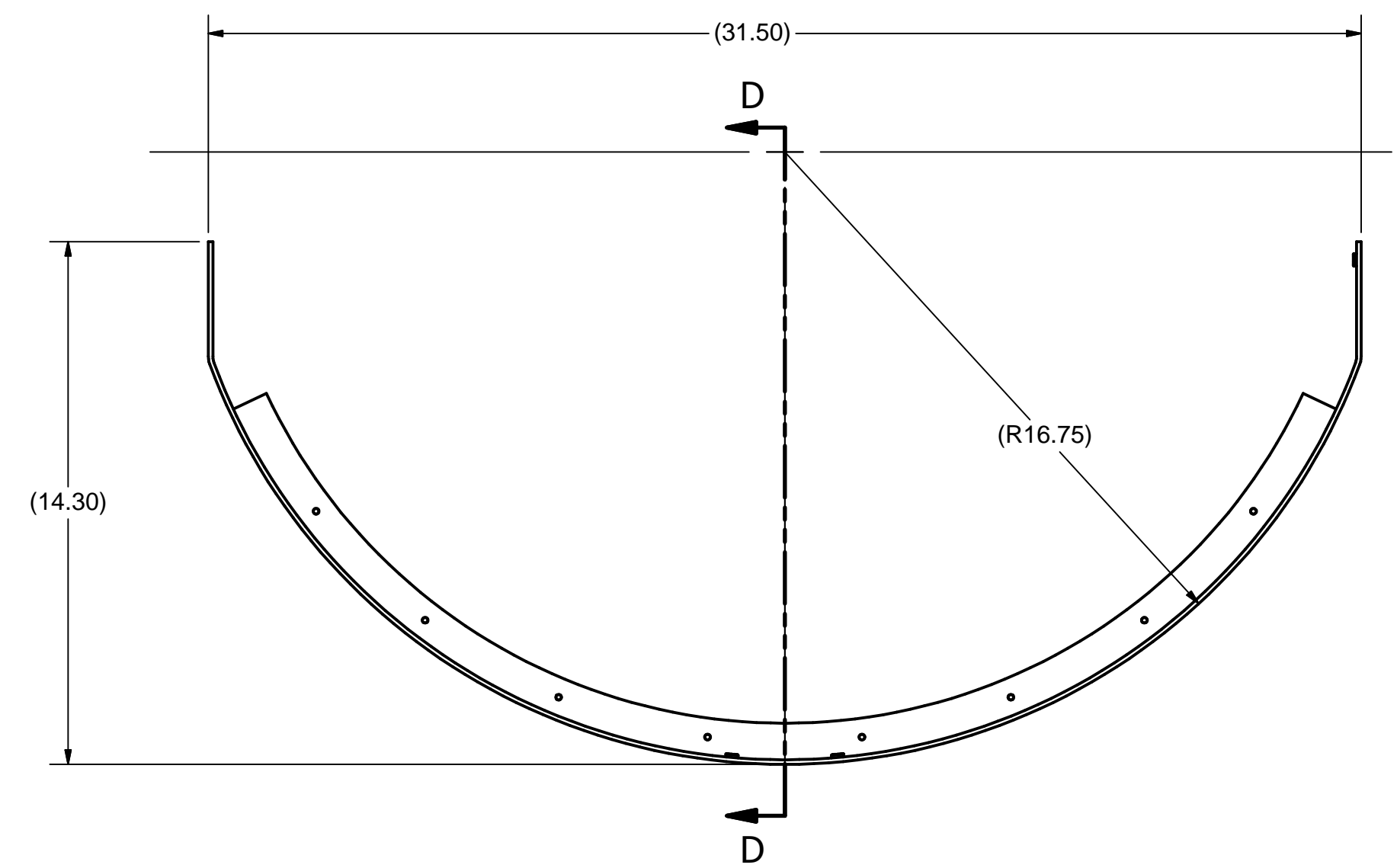
52 DS END SHIELD TOP PLATE
 FILE NAME: 7103-166
 SHEET NO.: 31
 DFT. SCALE: 1:6
 MATERIAL: 1/4" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	QUANTITY			REMARKS	REV.
			G1	G2	G3		
42	Sheet 27	ANGLE 3 SUB-ASM	2				
40	Sheet 27	ANGLE 2 SUB-ASM	2				
38	Sheet 27	ANGLE 1 SUB-ASM	1				
52	Sheet 31	DS END SHIELD TOP PLATE	1				

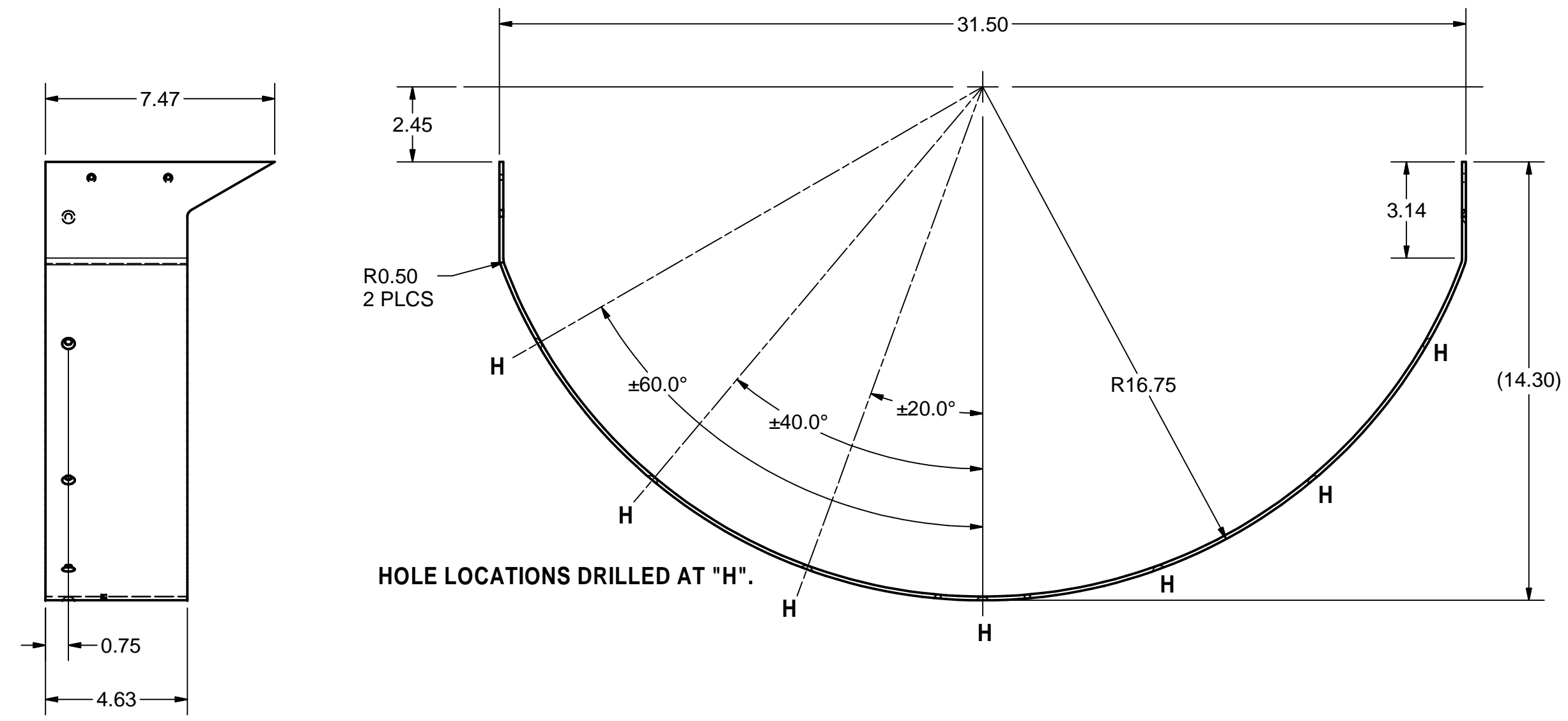
7103-166 SHEET NO. 31 OF 35	PRINT DISTR.	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw		Cornell University Laboratory for Elementary-Particle Physics Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	ERL LINAC CRYOMODULE 40K THERMAL SHIELD DS END SHIELD TOP WELDMENT & PLATE
	CHECKED BY:	DRAWN BY: YH/DME	DRAWN FOR: RGE / JOS		

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.

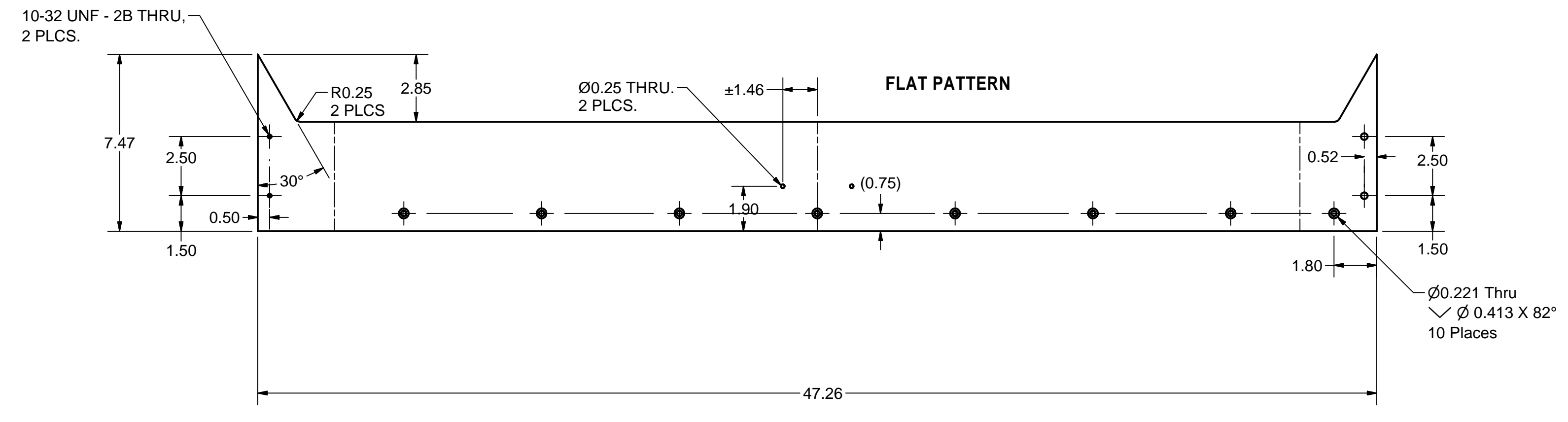


53 DS END SHIELD BOTTOM WELDMENT
 FILE NAME: 7103-166
 SHEET NO.: 32
 DFT. SCALE: 1:4
 MATERIAL:
 QTY: 1 PER ASSEMBLY
 NOTES:

SECTION D-D
SCALE 1/4



54 DS END SHIELD BOTTOM
 FILE NAME: 7103-166
 SHEET NO.: 32
 DFT. SCALE: 1:4
 MATERIAL: 1/8" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:

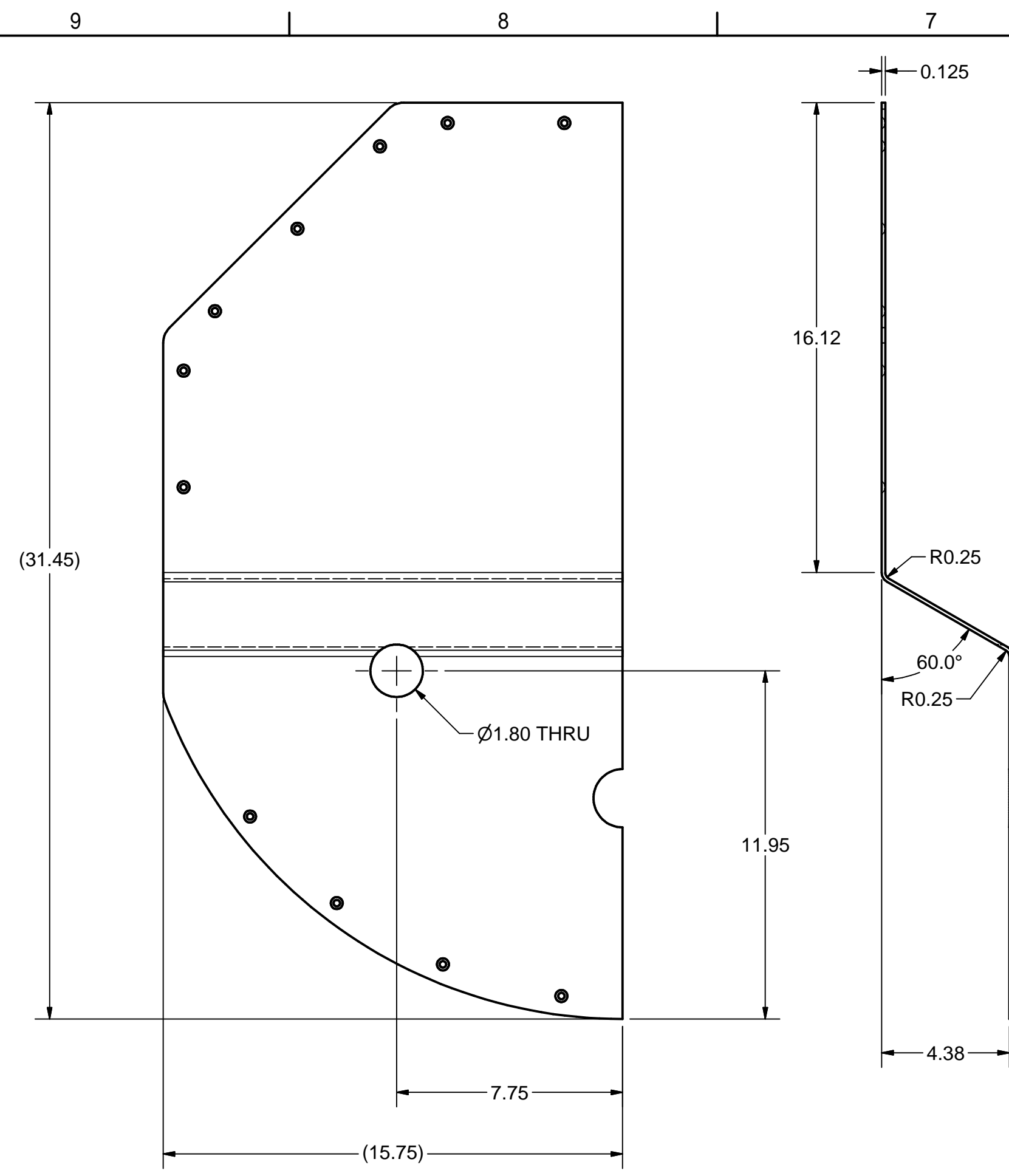


APPROVED FOR RFP BID PROCESS
NOT FOR MANUFACTURE
T. O'Connell - September 20, 2013

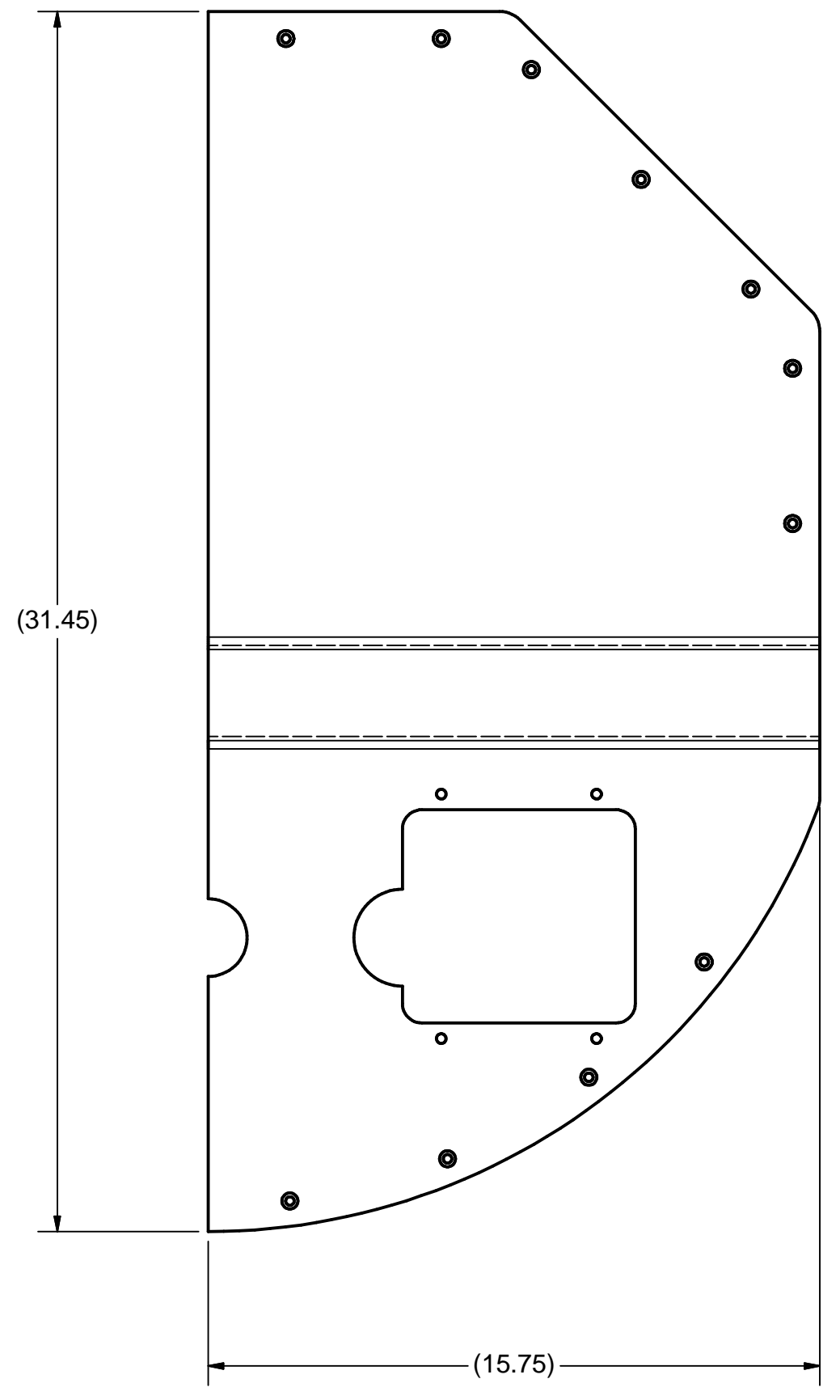
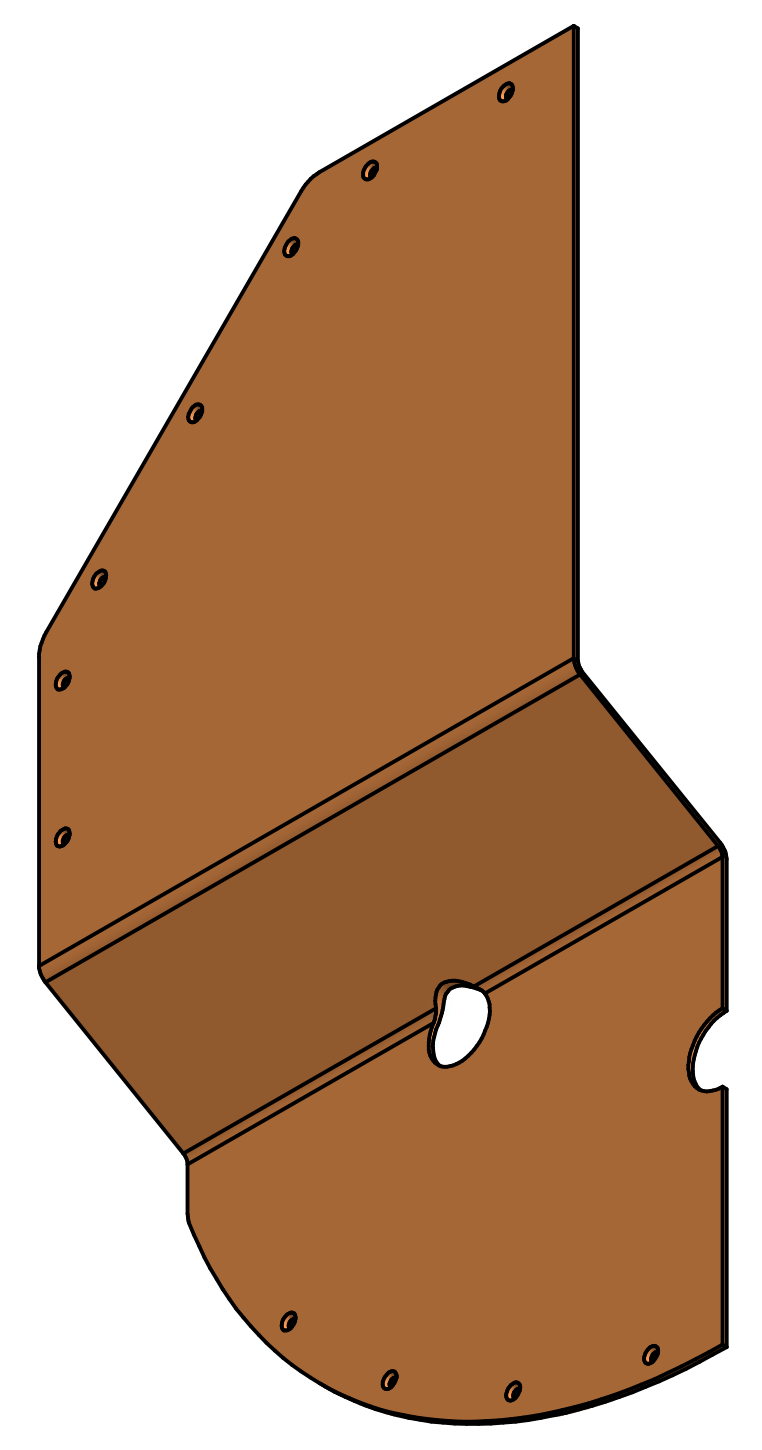
ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
88	PURCHASE	10-32 PEM NUT, CLSS-032-3	4			St.Steel	
57	Sheet 34	BOTTOM RING	1				
54	Sheet 32	DS END SHIELD BOTTOM	1				

D	PRINT	PLOT DATE: 9/20/2013		Floyd R. Newman Laboratory	
	DISTR.	CAD FILE NAME: 7103-166.idw		Cornell University Laboratory for Elementary-Particle Physics Robert R. Wilson Laboratory Ithaca, NY 14853	
7103-166	SH. NO. 32 OF 35	UNLESS OTHERWISE SPECIFIED:		ERL LINAC CRYOMODULE	
		DIMENSIONS ARE IN INCHES:		40K THERMAL SHIELD	
REV.		TOLERANCES ON:		DS END SHIELD BOTTOM WELDMENT & PLATE	
		0 ± 0.02		DRAWN BY	
		.00 ± 0.010		YH/DME	
		.000 ± 0.005		DRAWN FOR	
		FRACTIONS: 1/32		RGE / JOS	
		ANGLES: ± 0.5°		DATE	
		ALL SURFACES		4/21/2013	
				SCALE	
				D	
				7103-166	
				SH. NO. 32 OF 35	

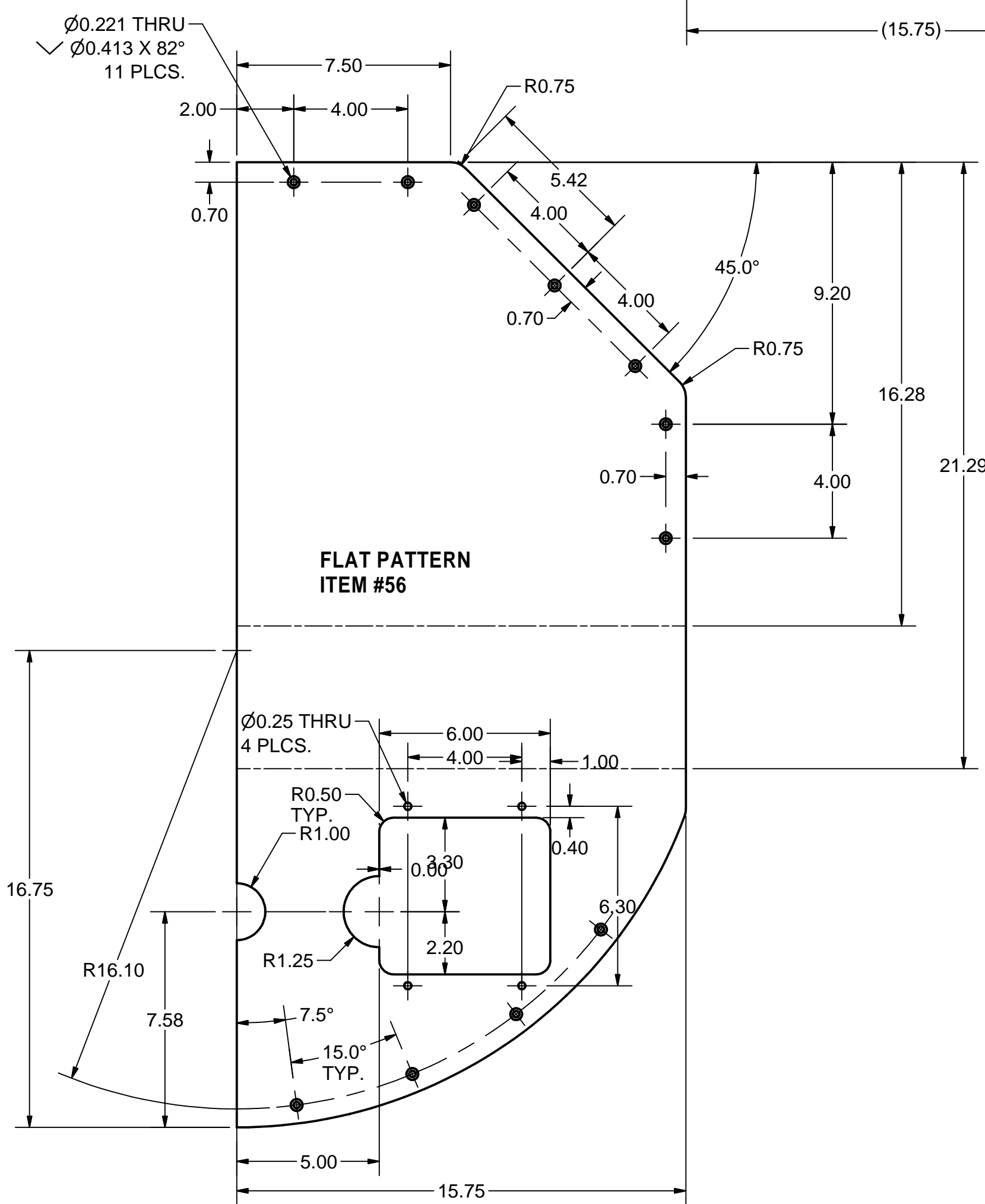
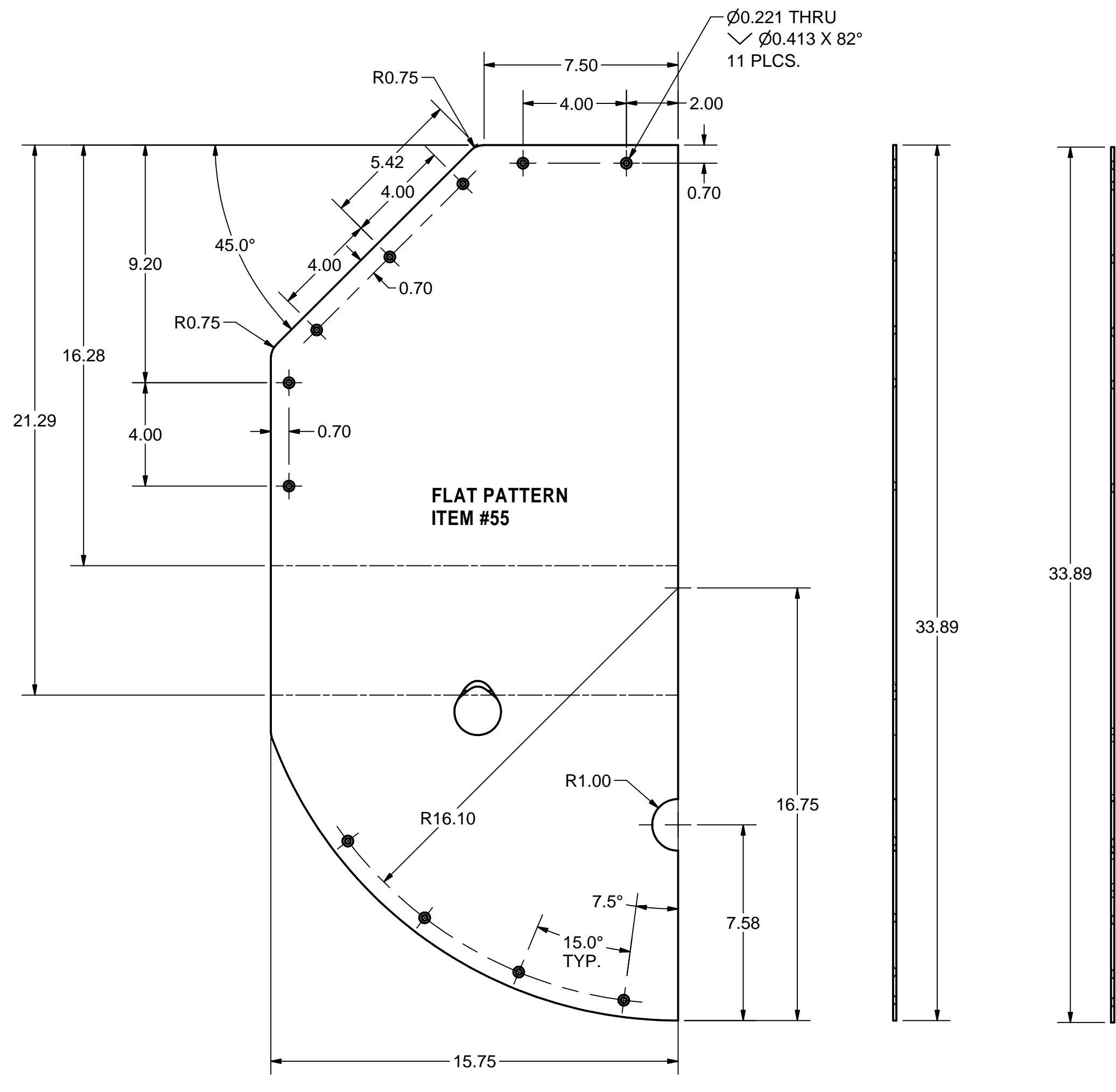
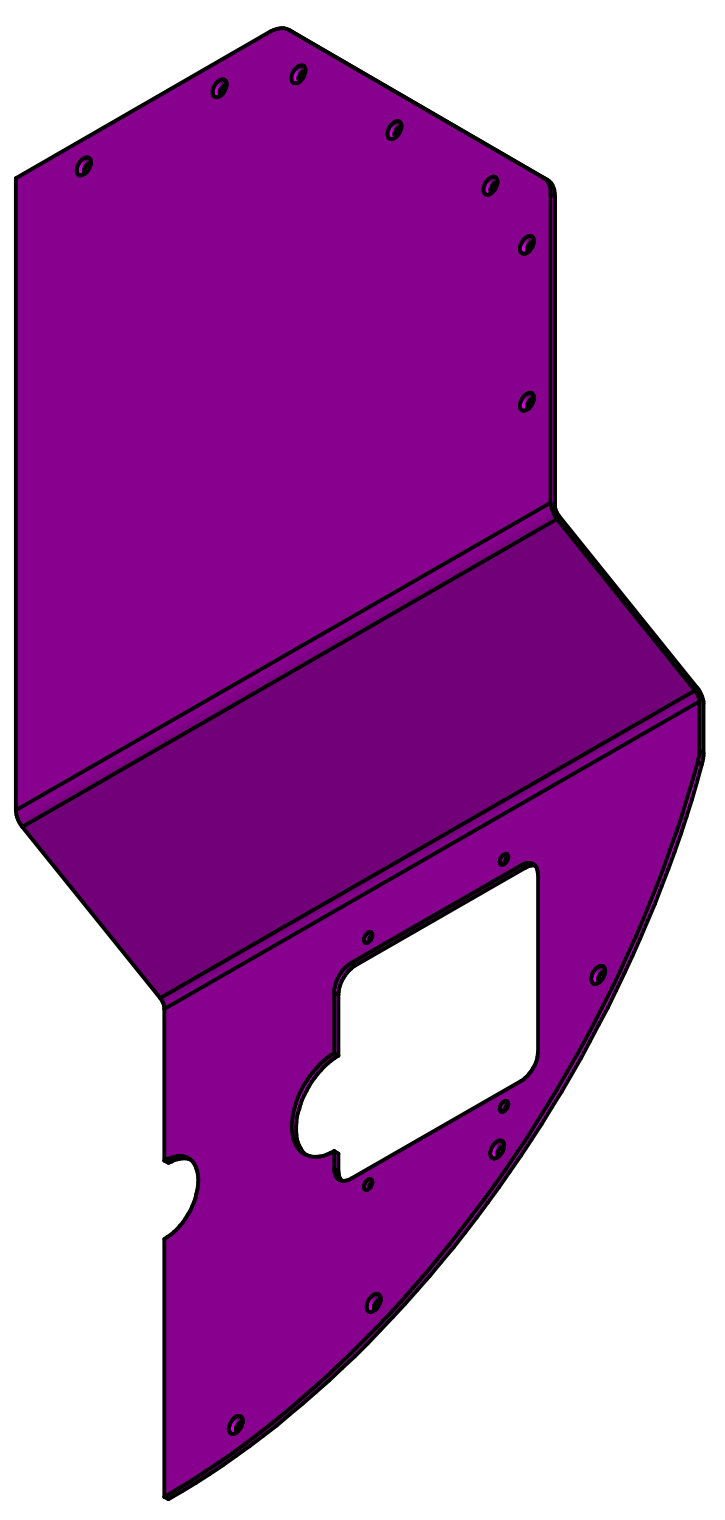
REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



55 DS END SHIELD BACK WALL LEFT SHEET
 FILE NAME: 7103-166
 SHEET NO.: 33
 DFT. SCALE: 1:6
 MATERIAL: 1/8" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:



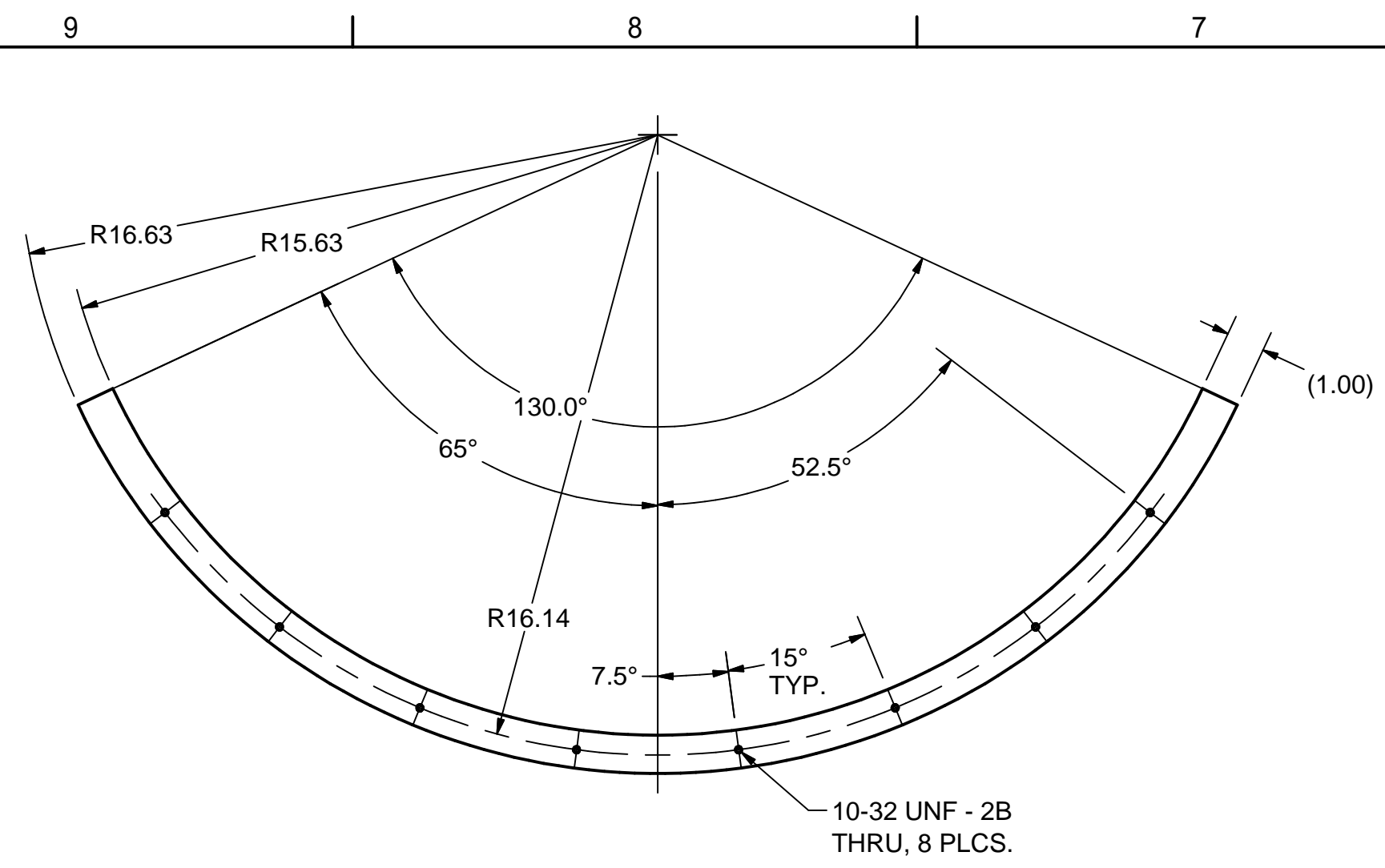
56 DS END SHIELD BACK WALL RIGHT SHEET
 FILE NAME: 7103-166
 SHEET NO.: 33
 DFT. SCALE: 1:6
 MATERIAL: 1/8" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:



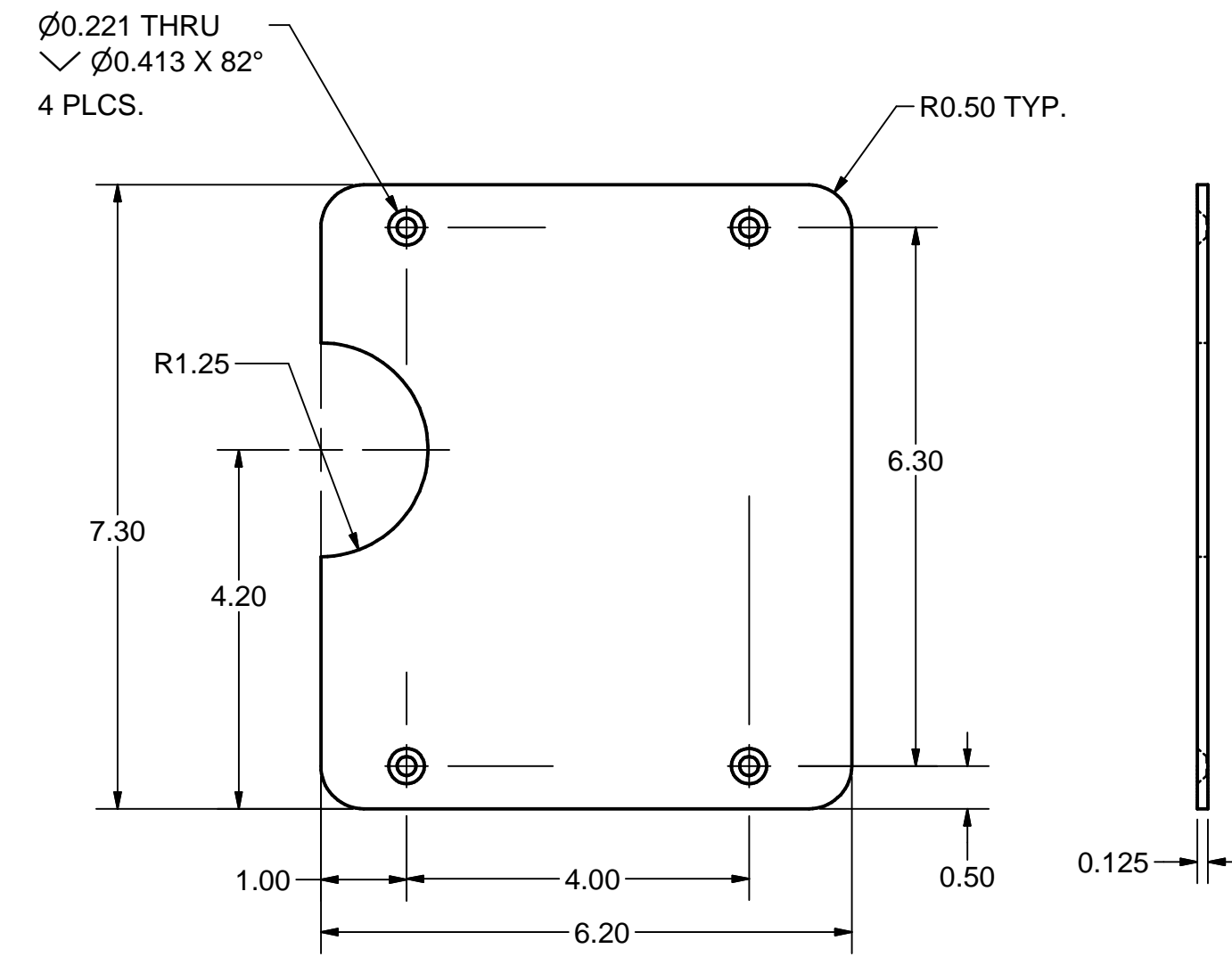
**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

REV.	PRINT DISTR.	ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
					QUANTITY				
7103-166	SH. NO. 33 OF 35			PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
				UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0 ± 0.02 .00 ± 0.010 .000 ± 0.005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES					
				Cornell University Laboratory for Elementary-Particle Physics				Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	
				ERL LINAC CRYOMODULE 40K THERMAL SHIELD DS END SHIELD BACK WALLS					
				CHECKED BY:					
				APPROVED BY:					
				DRAWN BY: YH/DME					
				DRAWN FOR: RGE / JOS					
				DATE: 4/21/2013					
				SCALE: D					
				7103-166					
				SH. NO. 33 OF 35					

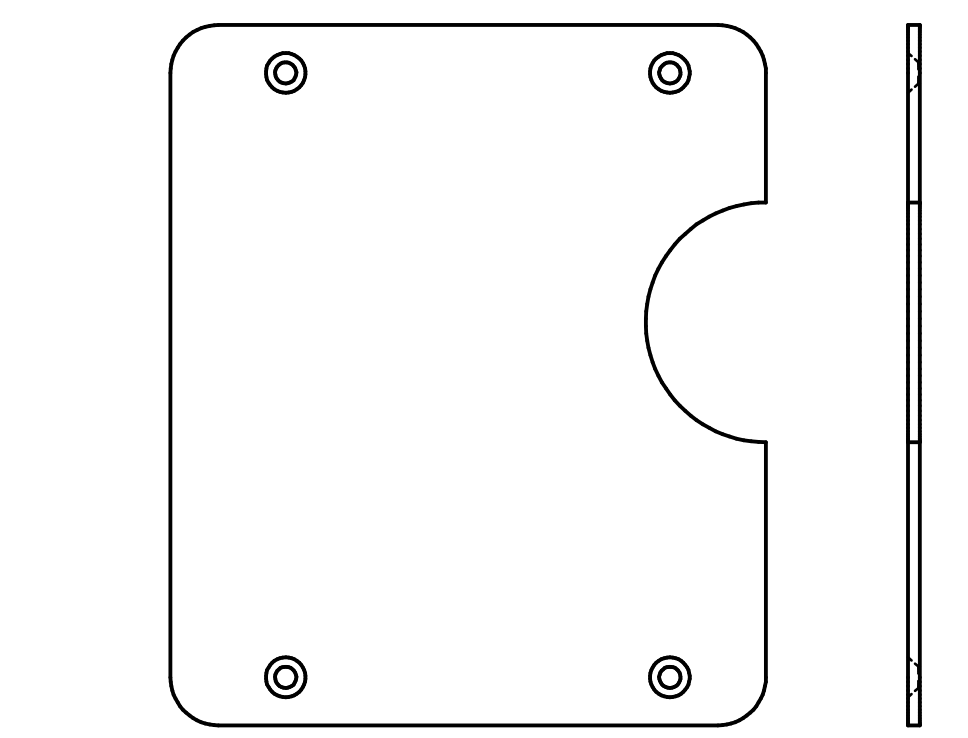
REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



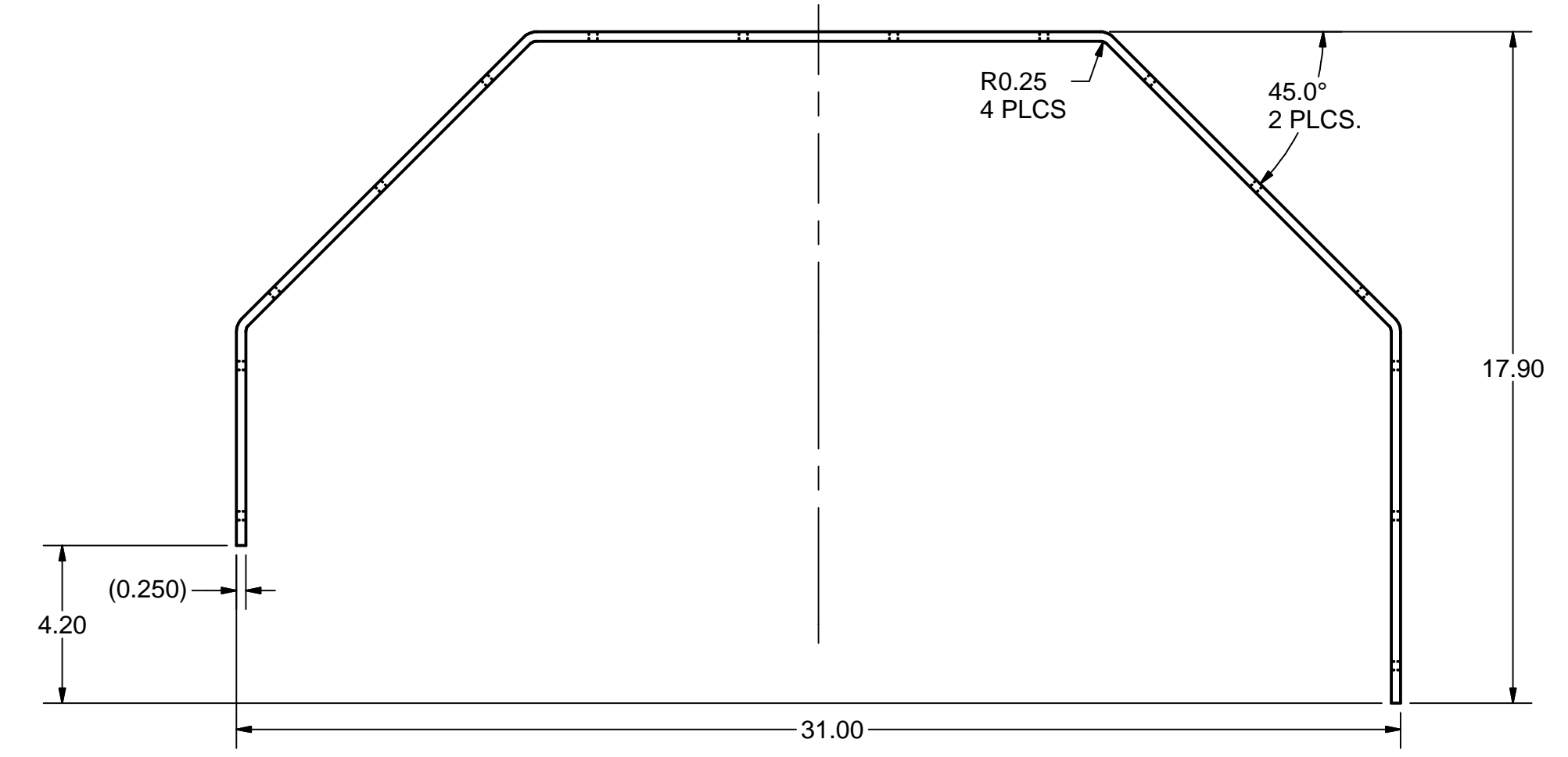
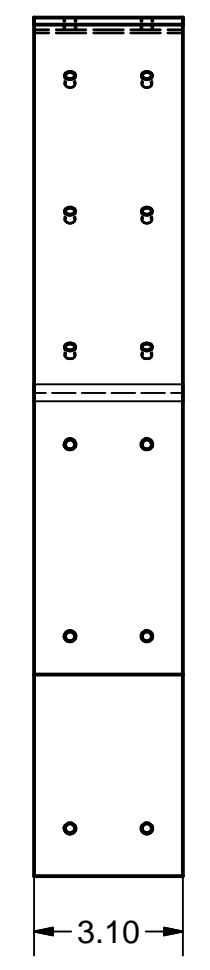
57 BOTTOM RING
 FILE NAME: 7103-166
 SHEET NO.: 34
 DFT. SCALE: 1:6
 MATERIAL: 1/4" 6061-T6 ALUMINUM SHEET
 QTY: 2 PER ASSEMBLY
 NOTES:



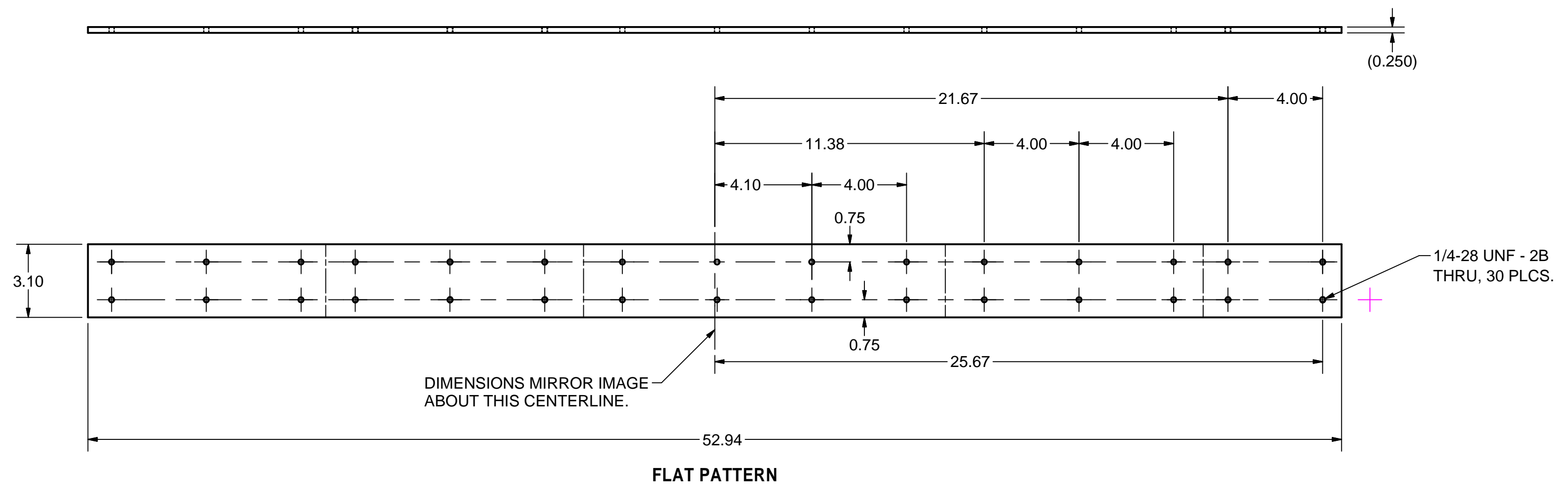
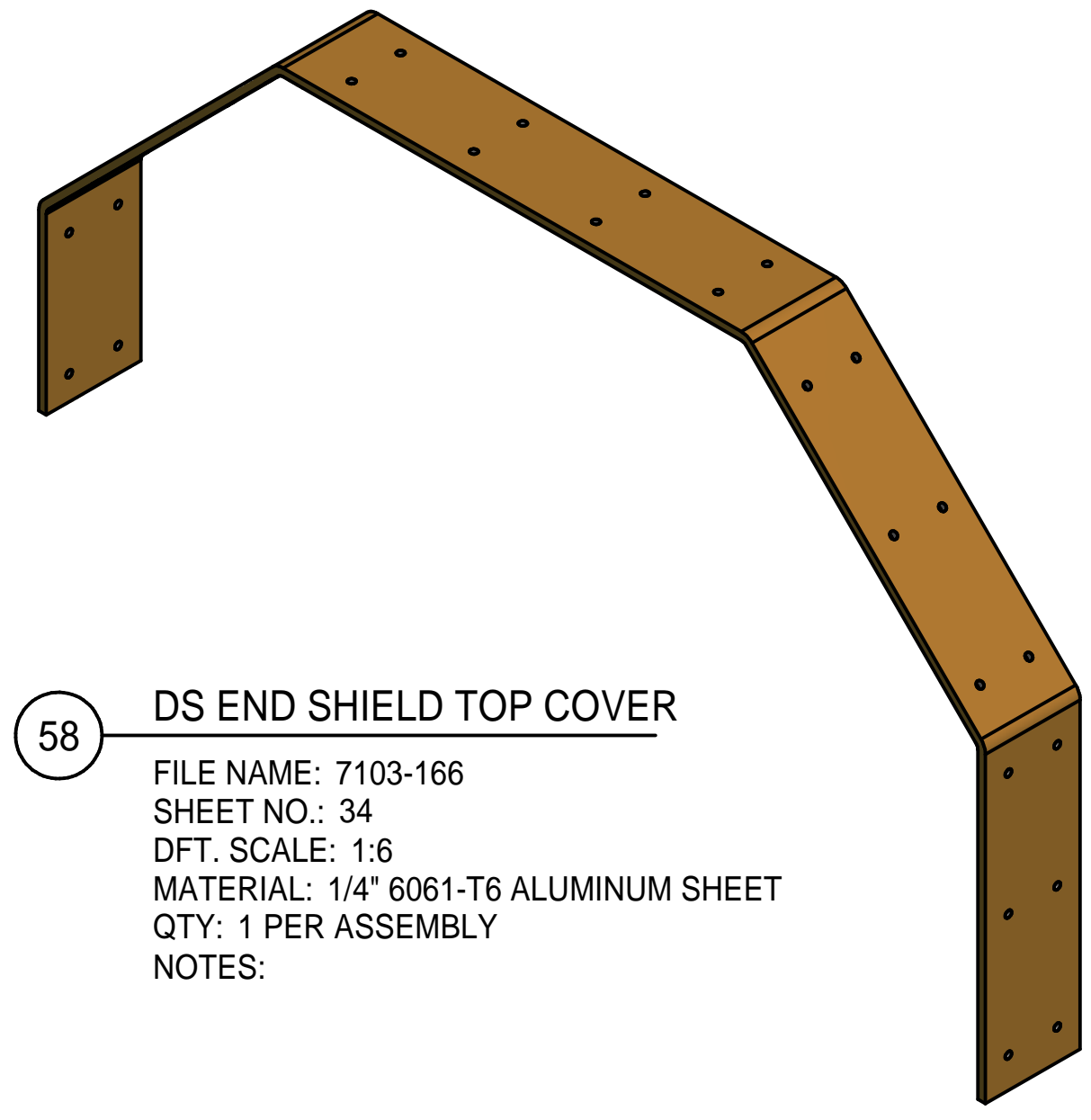
59 DS END SHIELD PATCH
 FILE NAME: 7103-166
 SHEET NO.: 34
 DFT. SCALE: 1:2
 MATERIAL: 1/8" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:



71 uS END SHIELD PATCH
 FILE NAME: 7103-166
 SHEET NO.: 34
 DFT. SCALE: 1:2
 MATERIAL: 1/8" 1100-H14 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES: THIS IS A MIRROR SHEET OF ITEM #59 ON THIS SHEET



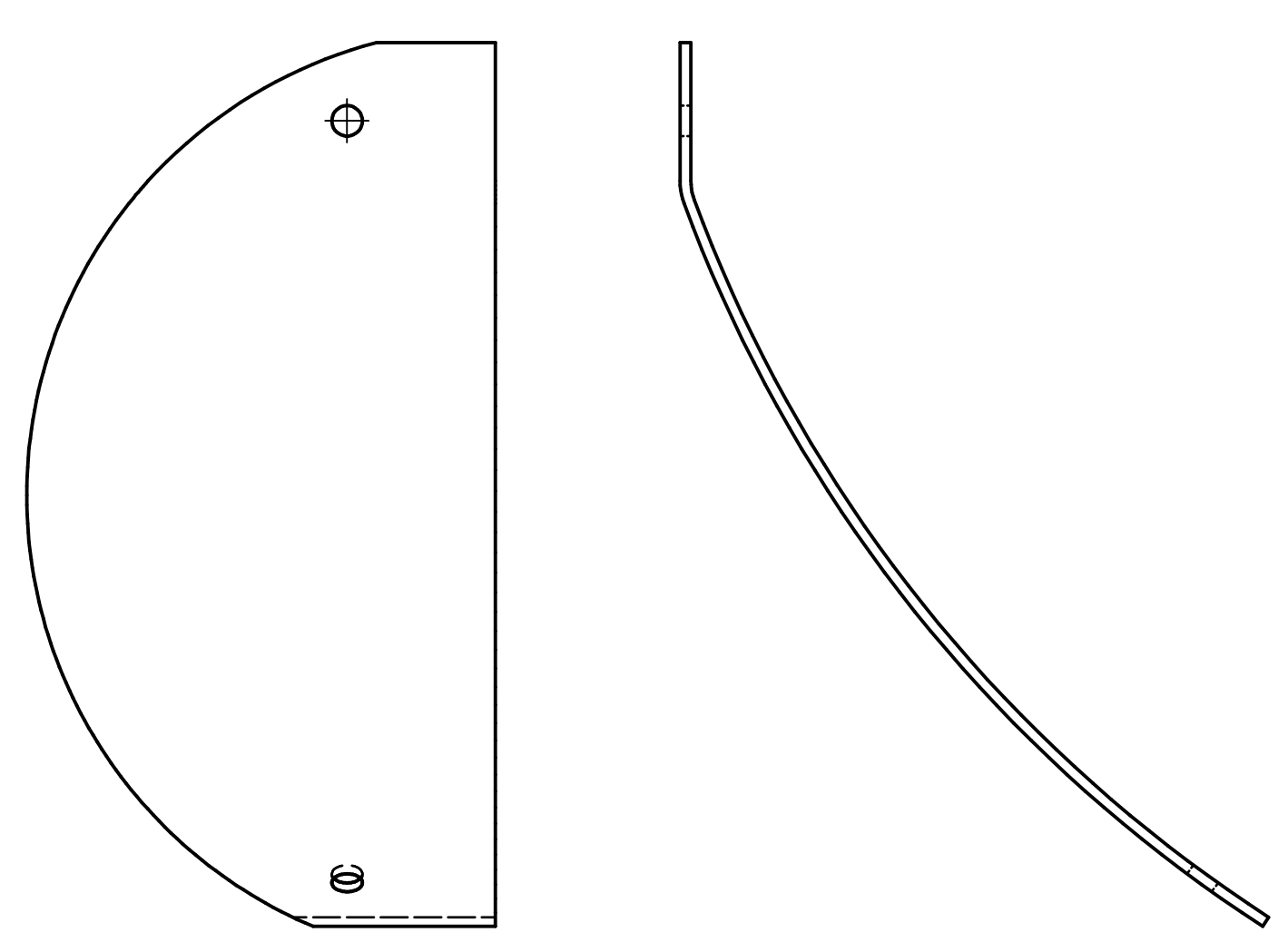
58 DS END SHIELD TOP COVER
 FILE NAME: 7103-166
 SHEET NO.: 34
 DFT. SCALE: 1:6
 MATERIAL: 1/4" 6061-T6 ALUMINUM SHEET
 QTY: 1 PER ASSEMBLY
 NOTES:



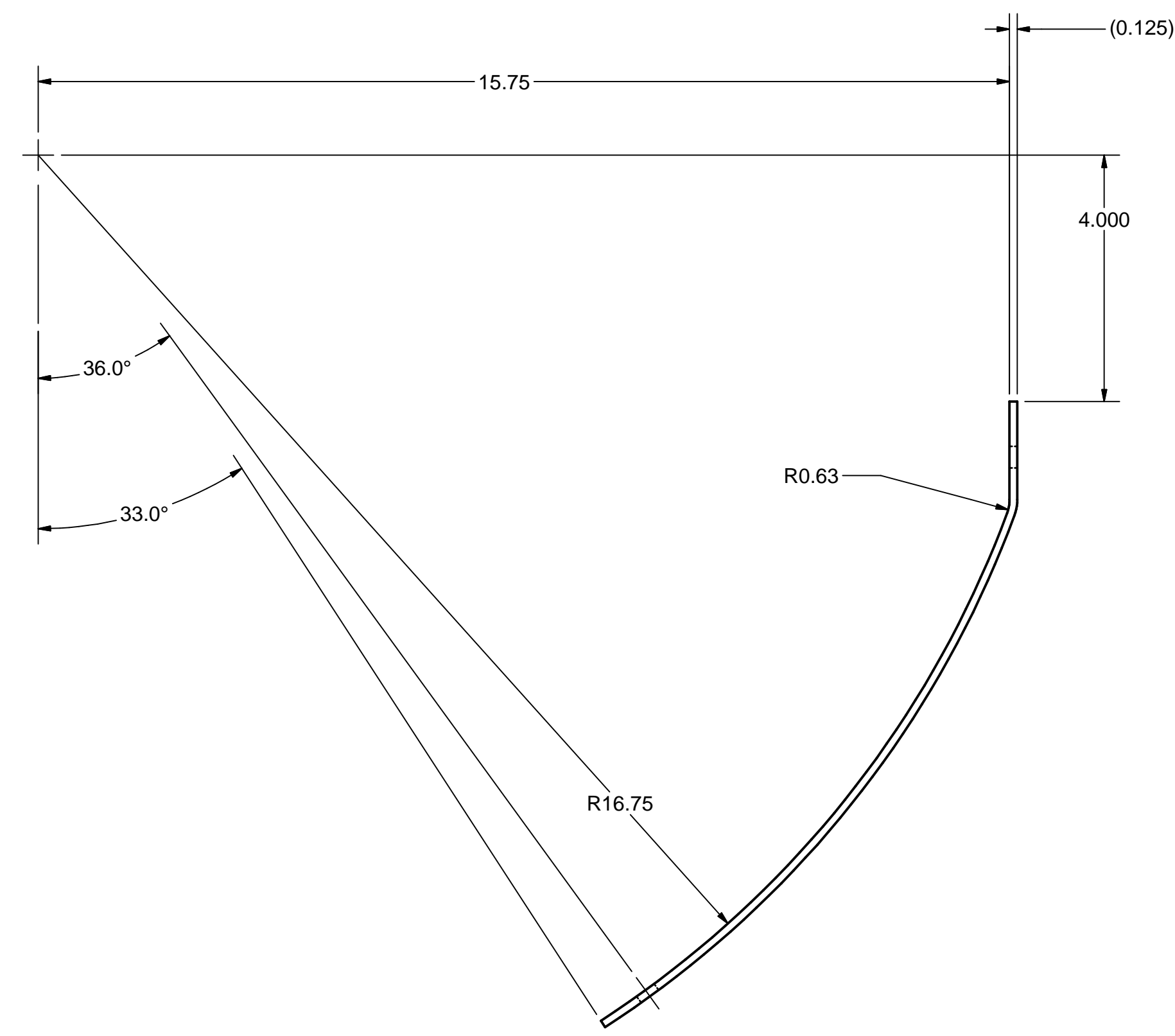
**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
			QUANTITY				
PRINT DISTR.	7103-166	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw					
		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0 ± 0.02 .00 ± 0.010 .000 ± 0.005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES					
		Cornell University Laboratory for Elementary-Particle Physics				Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	
		ERL LINAC CRYOMODULE 40K THERMAL SHIELD DS END SHIELD PARTS					
CHECKED BY:	DRAWN BY:	DATE:	SCALE:				
APPROVED BY:	YH/DME	RGE / JOS	4/21/2013	D	7103-166	SH. NO. 34 OF 35	

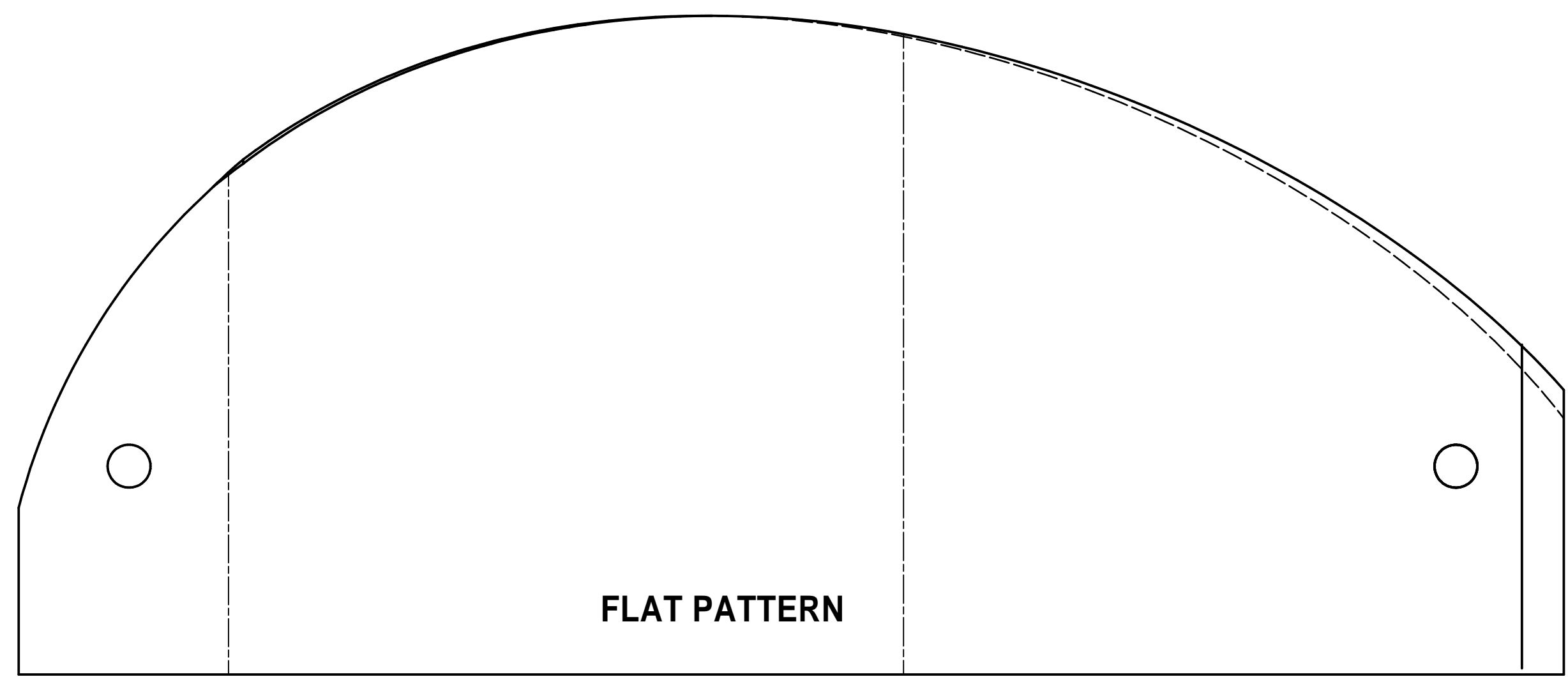
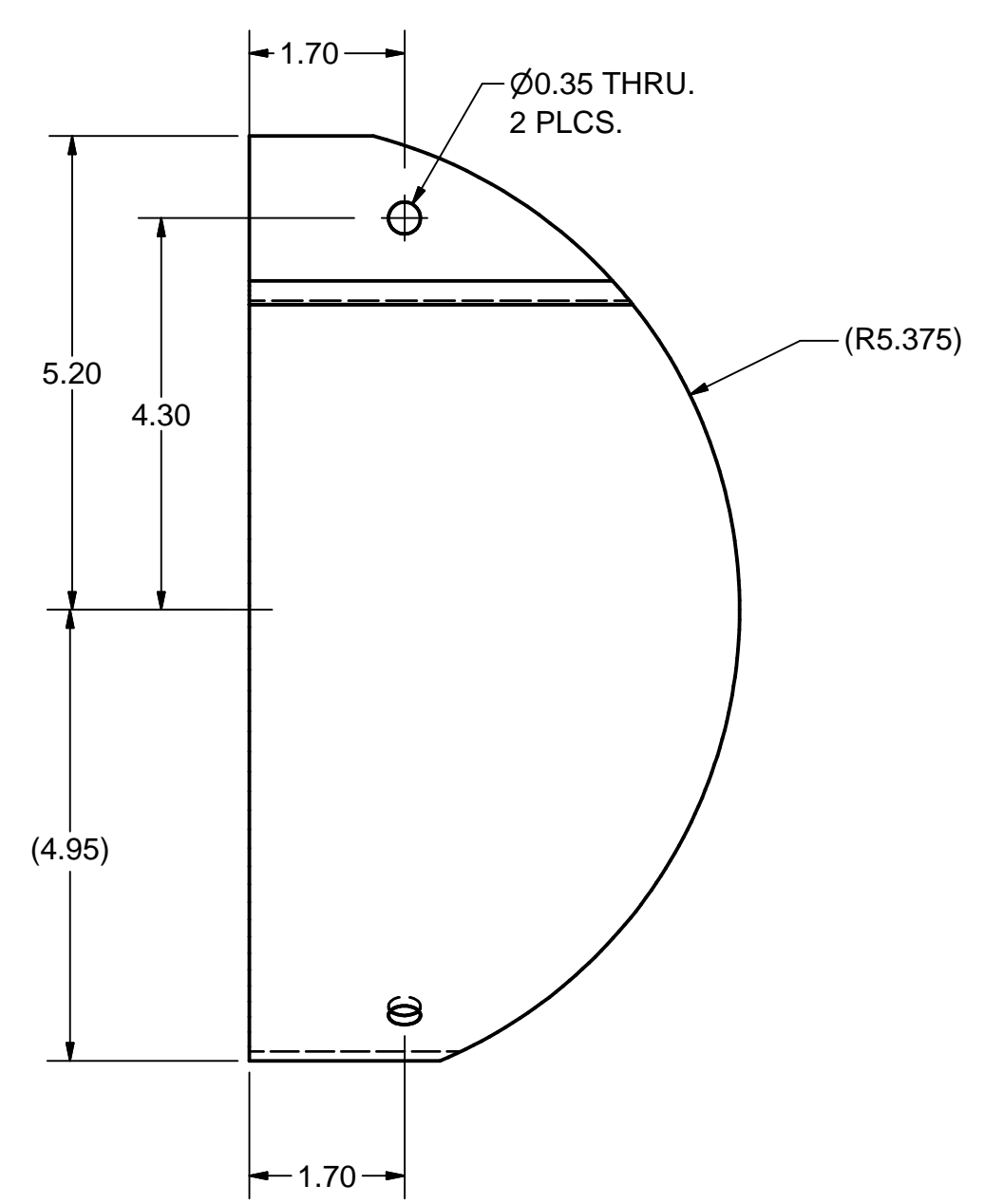
REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



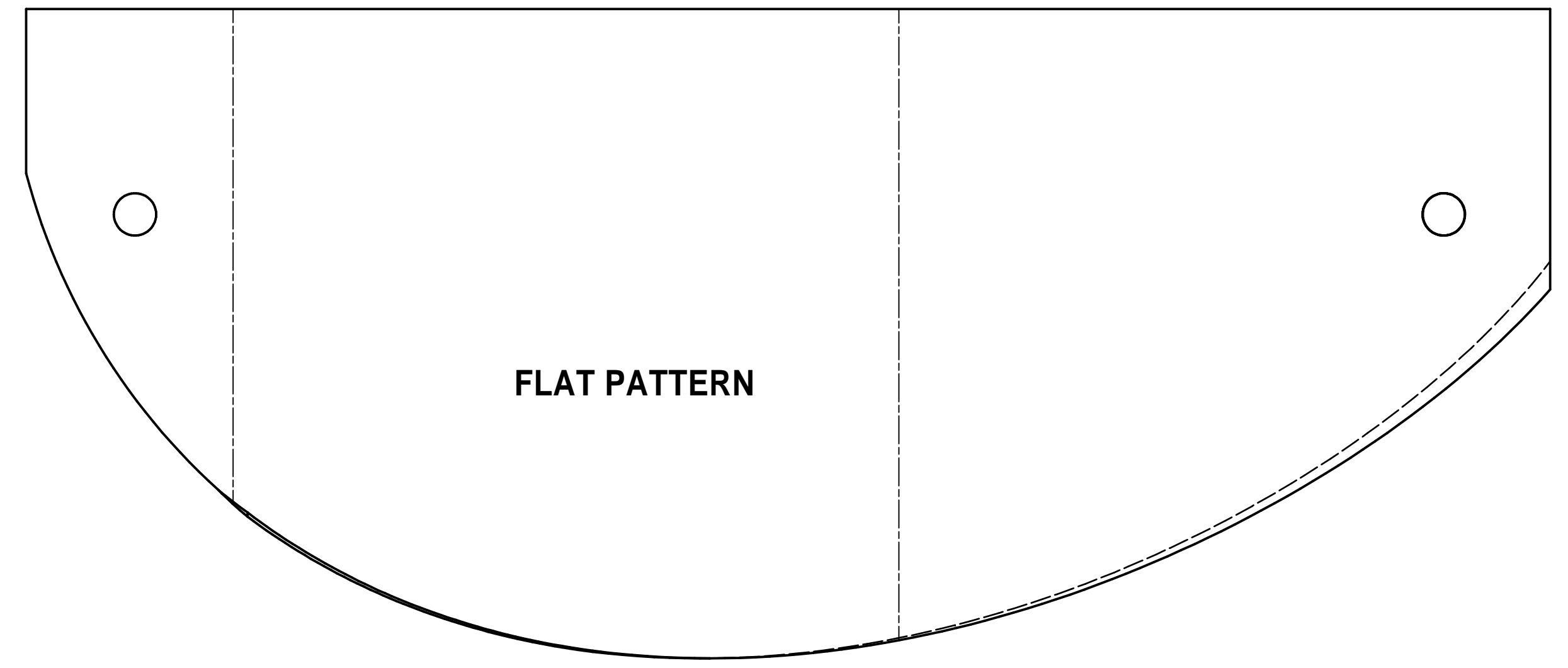
68 PORT PATCH LEFT 'B'
 FILE NAME: 7103-166
 SHEET NO.: 35
 DFT. SCALE: 1 : 2
 MATERIAL: 1/8" 1100-H14 ALUMINUM SHEET
 QTY: 5 REQ'D.
 NOTES: THIS IS A MIRROR SHEET OF ITEM #67 ON THIS SHEET



67 PORT PATCH RIGHT 'A'
 FILE NAME: 7103-166
 SHEET NO.: 35
 DFT. SCALE: 1 : 2
 MATERIAL: 1/8" 1100-H14 ALUMINUM SHEET
 QTY: 5 REQ'D.
 NOTES: SEE SHEET 3.



FLAT PATTERN



FLAT PATTERN

**APPROVED FOR RFP BID PROCESS
 NOT FOR MANUFACTURE
 T. O'Connell - September 20, 2013**

ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
			QUANTITY				
PRINT DISTR.	PLOT DATE: 9/20/2013 CAD FILE NAME: 7103-166.idw						
7103-166 SH. NO. 35 OF 35	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES		Cornell University Laboratory for Elementary-Particle Physics		Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853		
	ERL LINAC CRYOMODULE 40K THERMAL SHIELD BOTTOM PORT PATCHES						
CHECKED BY:	DRAWN BY: YH/DME	DRAWN FOR: RGE / JOS	DATE: 4/21/2013	SCALE: D	7103-166 SH. NO. 35 OF 35		REV.