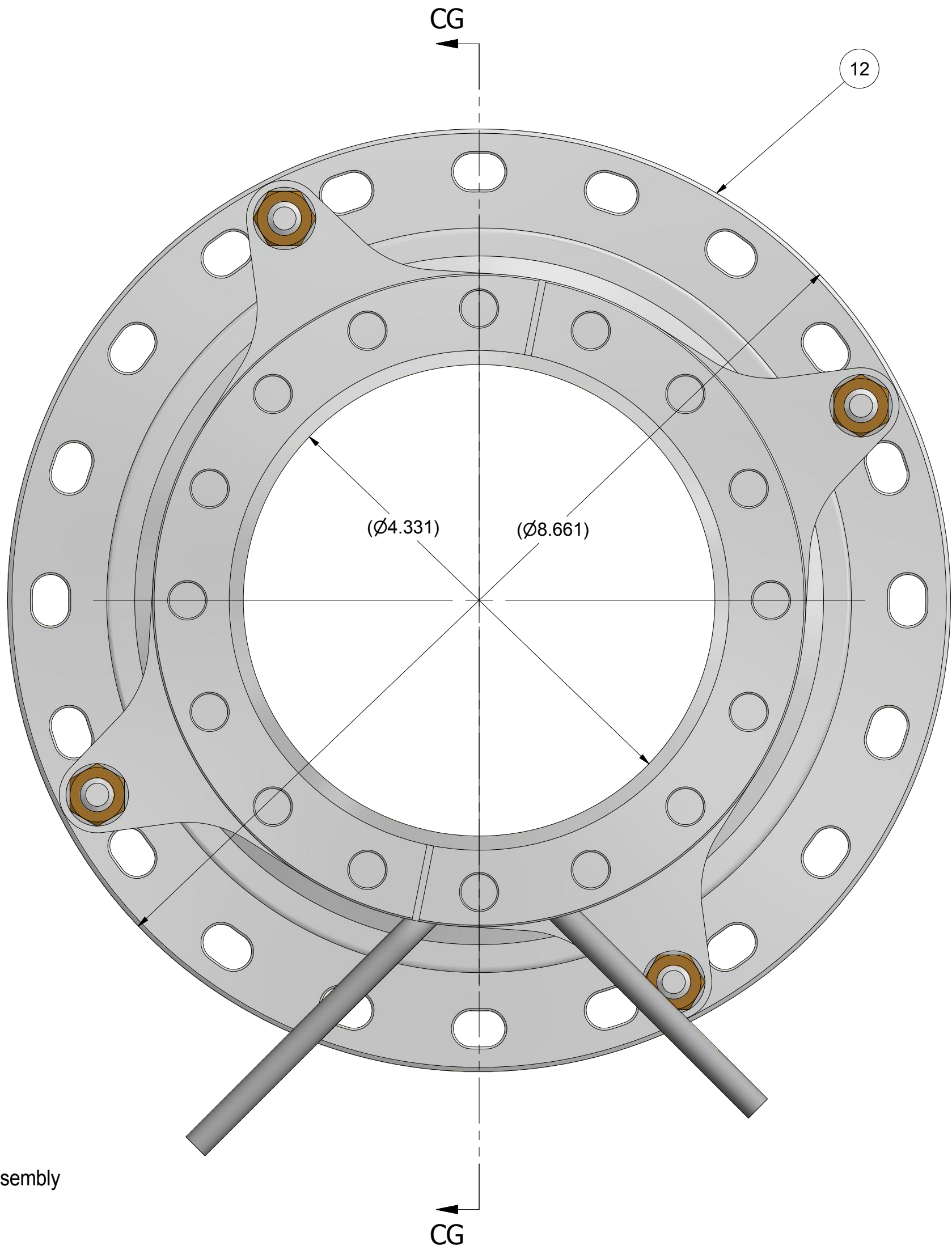
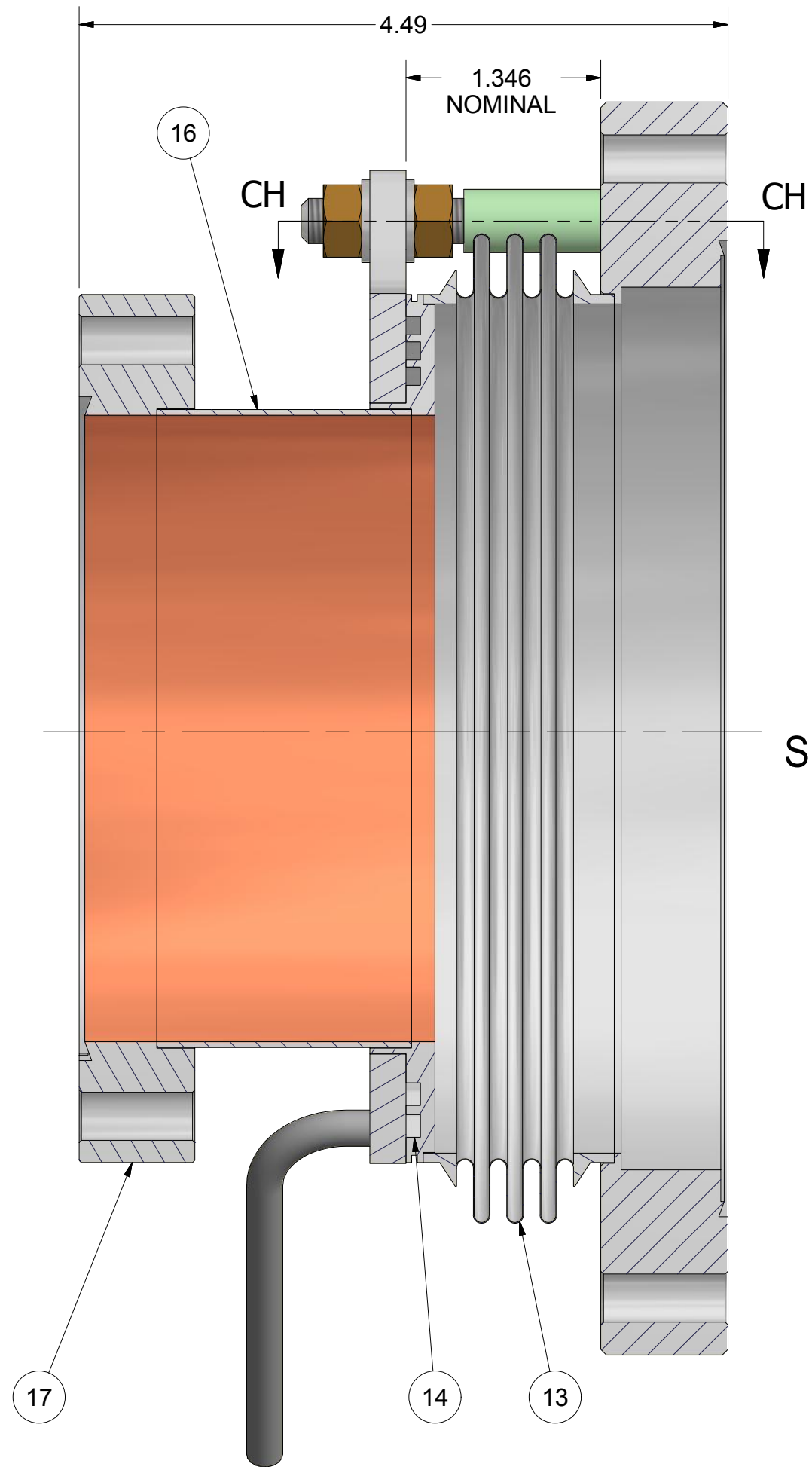
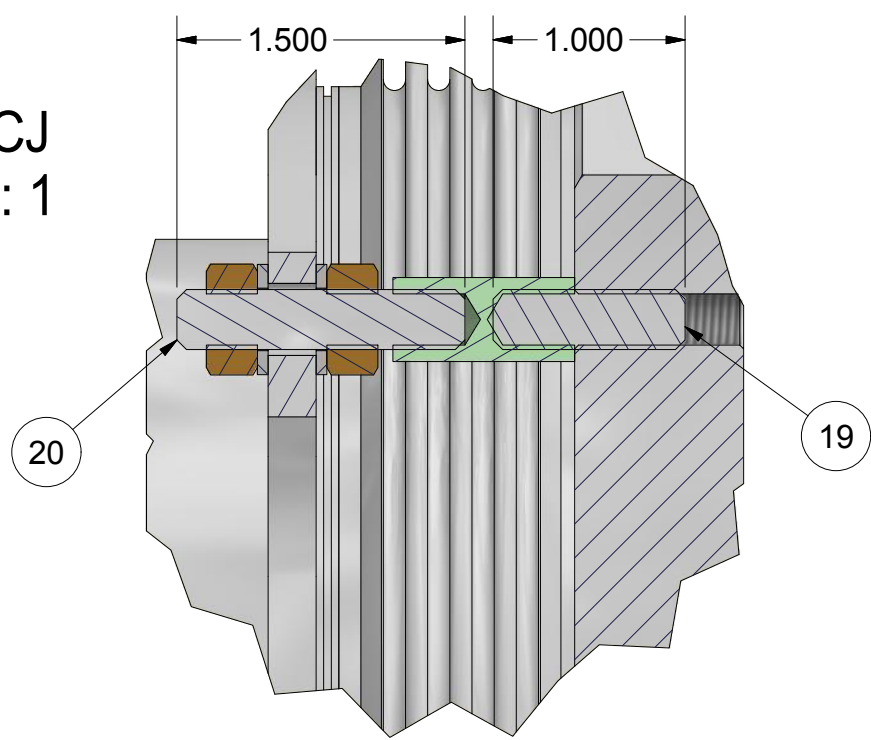


4 HOM Bellows End Group Assembly
FILE NAME: 7103-217
SHEET NO.: 2
DFT. SCALE: 1:1
MATERIAL:
QTY: 2 per HOM Absorber Full Assembly; 1 per HOM Absorber End Taper Assembly
NOTES:



DETAIL CJ
SCALE 1 : 1





SECTION CG-CG
SCALE 1 : 1

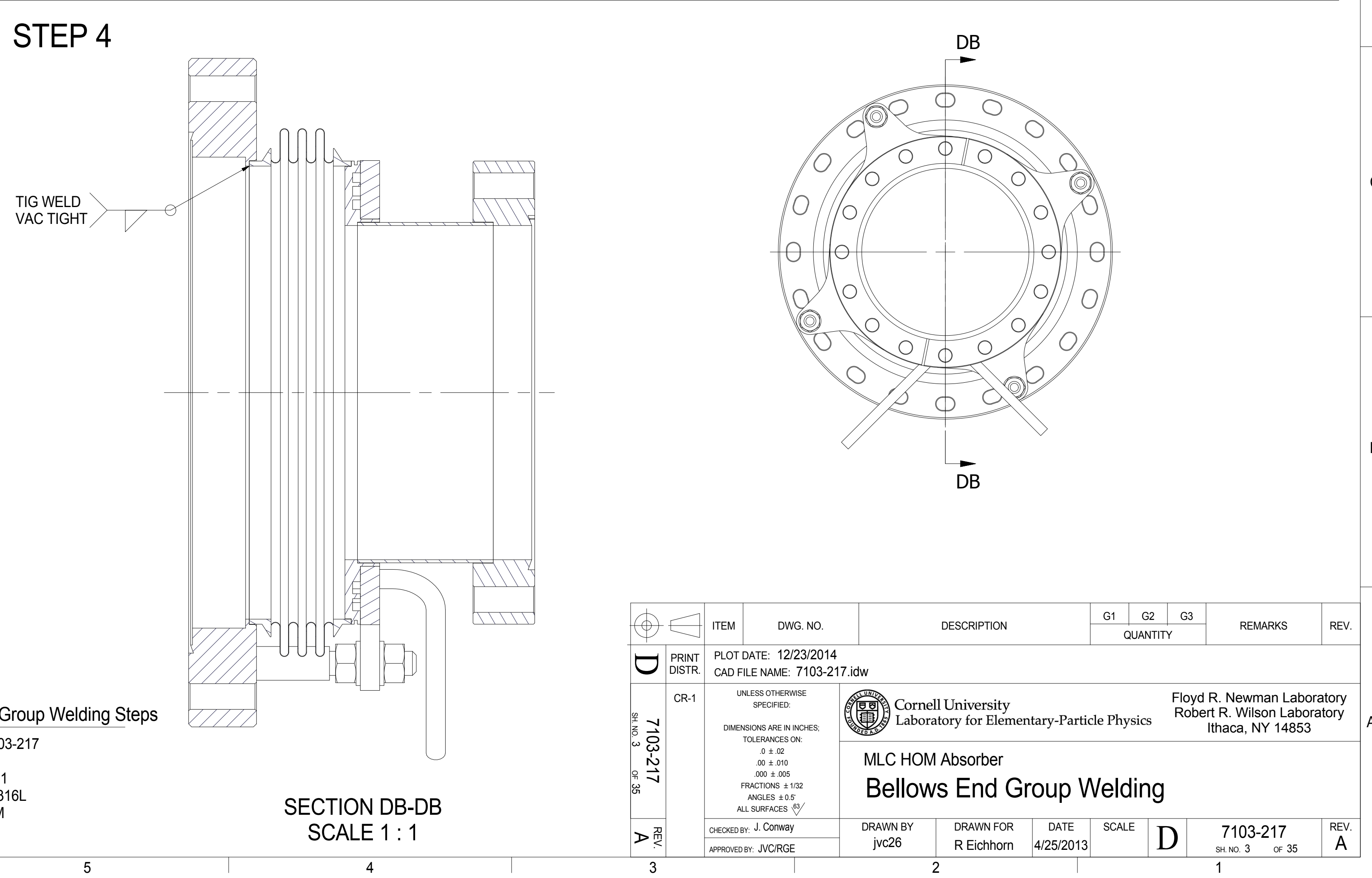
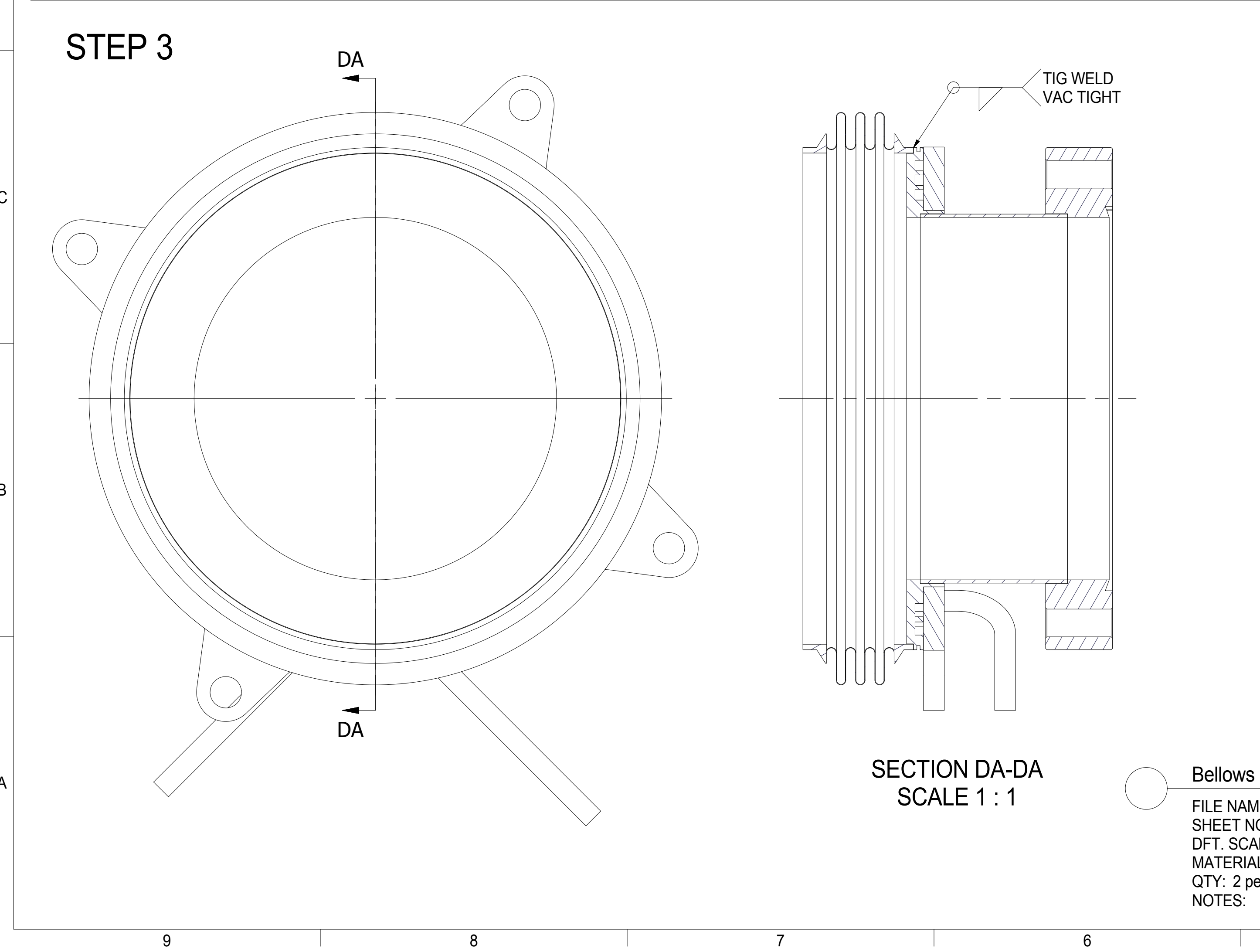
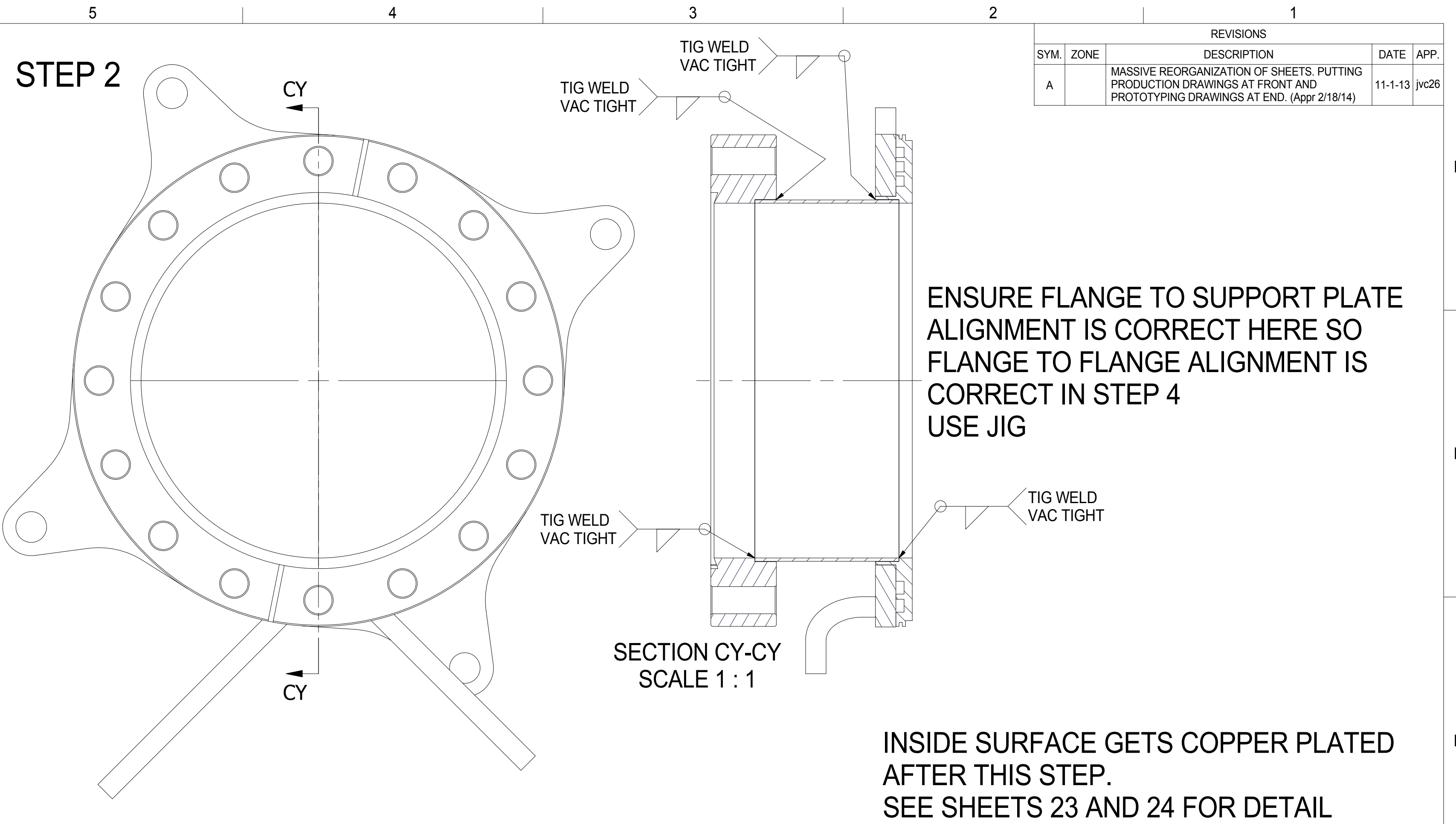
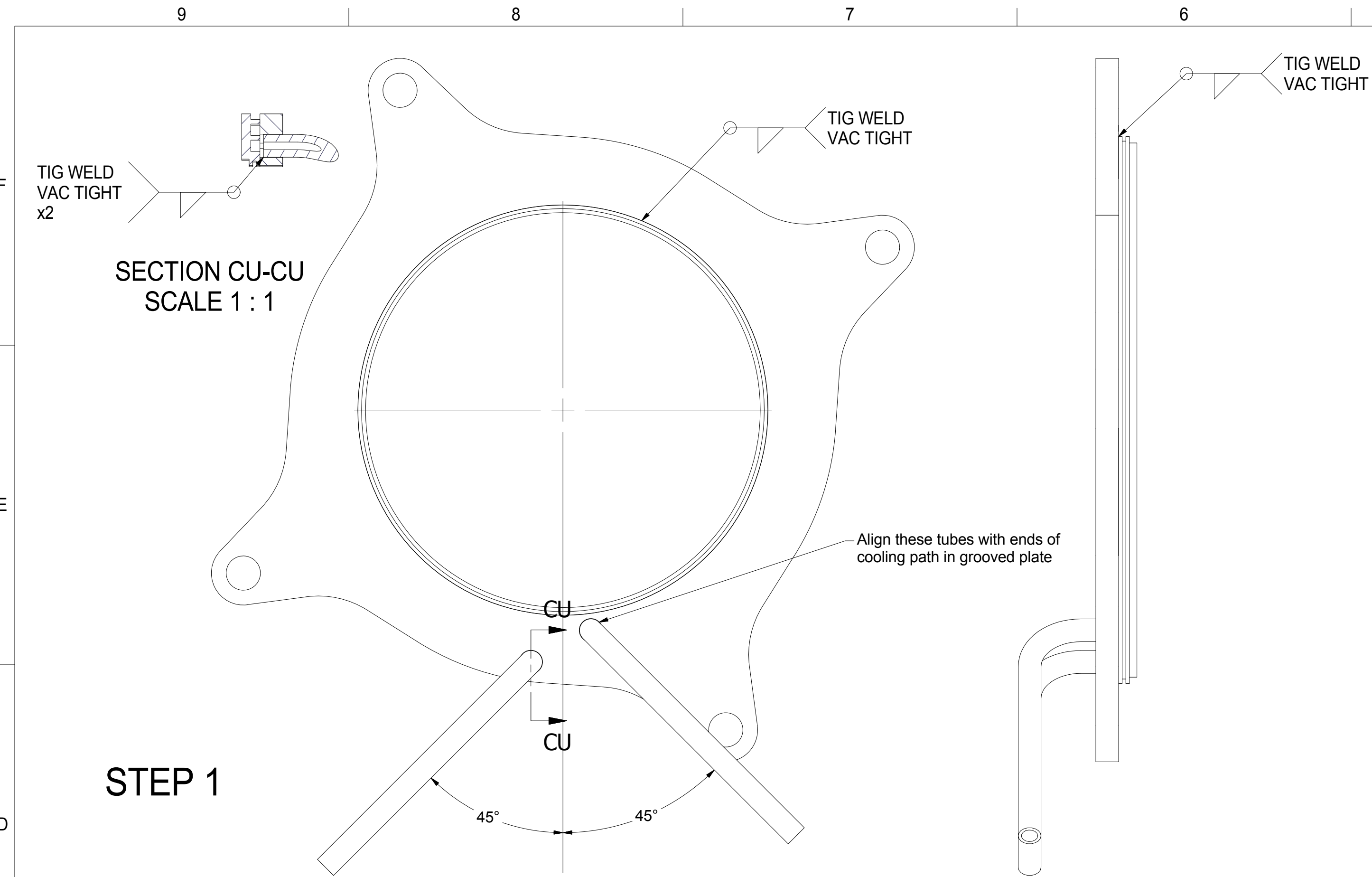
REVISIONS									
SYM.	ZONE	DESCRIPTION					DATE	APP.	
A		MASSIVE REORGANIZATION OF SHEETS. PUTTING PRODUCTION DRAWINGS AT FRONT AND PROTOTYPING DRAWINGS AT END.					11-1-13	jvc26	


ITEM	QTY	DESCRIPTION	QTY	REMARKS	REV.
6.16	1	HOM_3_Heater_Bank_E1A53-BD12			
58	8	5/16-24 Hex Nut - Silicon Bronze		From CF Pkg.	
57	8	5/16 Washer		From CF Pkg.	
21	4	5K Cooling Elbow			
20	8	Bellows Spacer Threaded Rod 2			
19	8	Bellows Spacer Threaded Rod			
18	8	G10 Bellows Spacer			
17	2	110mm Taper Seal Flange			
16	2	HOM Beam Tube			
15	2	5K Cooling Cover with Bellows Supports			
14	2	5K Grooved Cooling Plate			
13	2	HOM 3 Convolution Bellows			
12	2	SS Large CF Flange			
11	2	HOM Bellows End Assembly			

PRINT
DISTR.
D
7103-217
SH. NO. 2 OF 35
REV.
A

PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw							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 		 Cornell University Laboratory for Elementary-Particle Physics		MLC HOM Absorber Bellows End Group Assembly											
CHECKED BY: J. Conway		DRAWN BY: jvc26						DRAWN FOR: R Eichhorn		DATE: 4/25/2013		SCALE: D		7103-217 SH. NO. 2 OF 35	
APPROVED BY: JVC/RGE															

REVISIONS					
SYM.	ZONE	DESCRIPTION	DATE	APP.	
A		MASSIVE REORGANIZATION OF SHEETS. PUTTING PRODUCTION DRAWINGS AT FRONT AND PROTOTYPING DRAWINGS AT END. (Appr 2/18/14)	11-1-13	jvc26	



		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.		
					QUANTITY						
D	PRINT DISTR.	PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw									
	CR-1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES			<div>Cornell University Laboratory for Elementary-Particle Physics</div> <div>Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853</div>						
7103-217 SH. NO. 3 OF 35											
		MLC HOM Absorber			Bellows End Group Welding						
A	REV.	CHECKED BY: J. Conway			DRAWN BY jvc26	DRAWN FOR R Eichhorn	DATE 4/25/2013	SCALE	D	7103-217 SH. NO. 3 OF 35	REV. A
		APPROVED BY: JVC/RGE									

● Bellows End Group Welding Steps

FILE NAME: 7103-217
SHEET NO.: 3
DFT. SCALE: 1:1
MATERIAL: SS316L
QTY: 2 per HOM
NOTES:

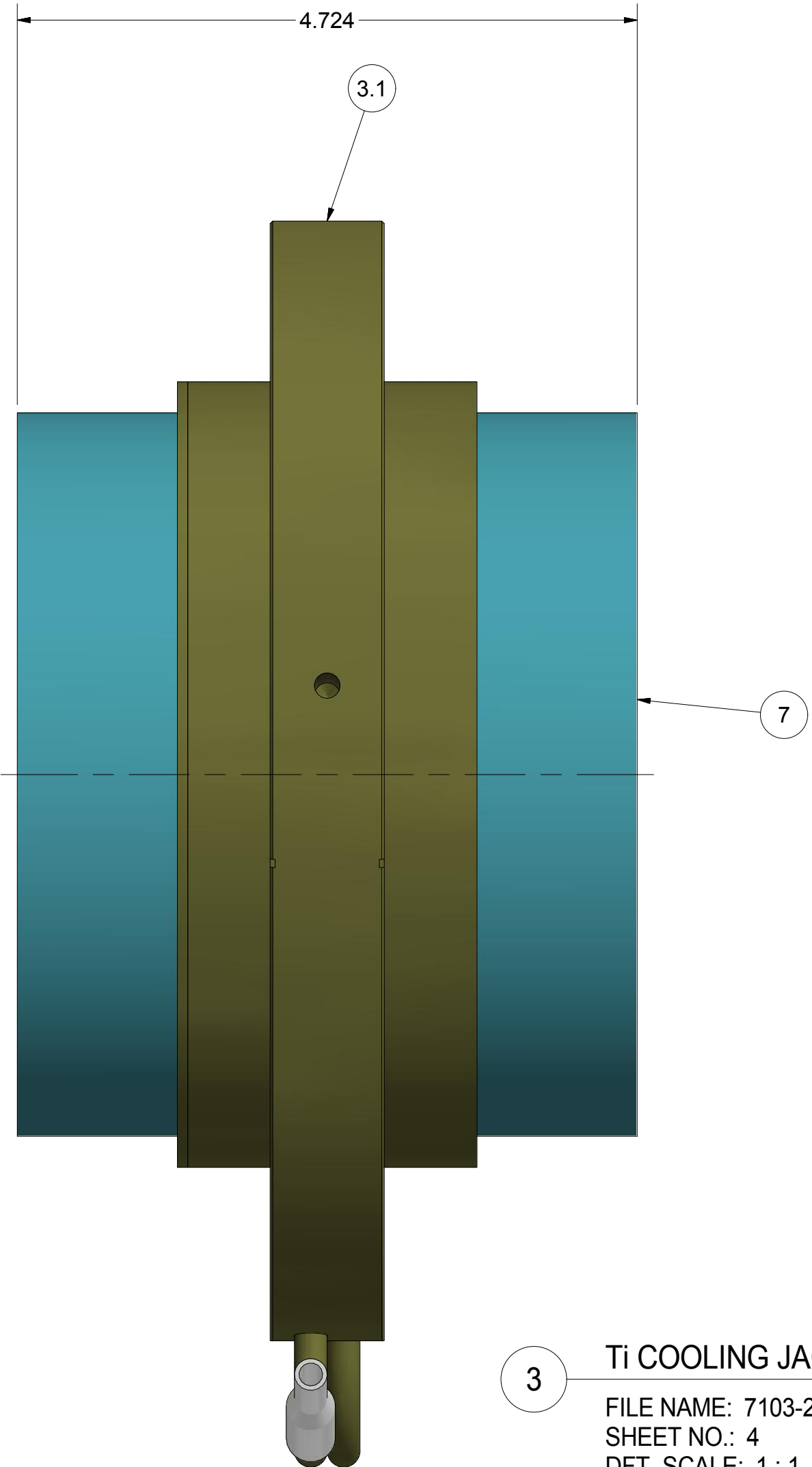
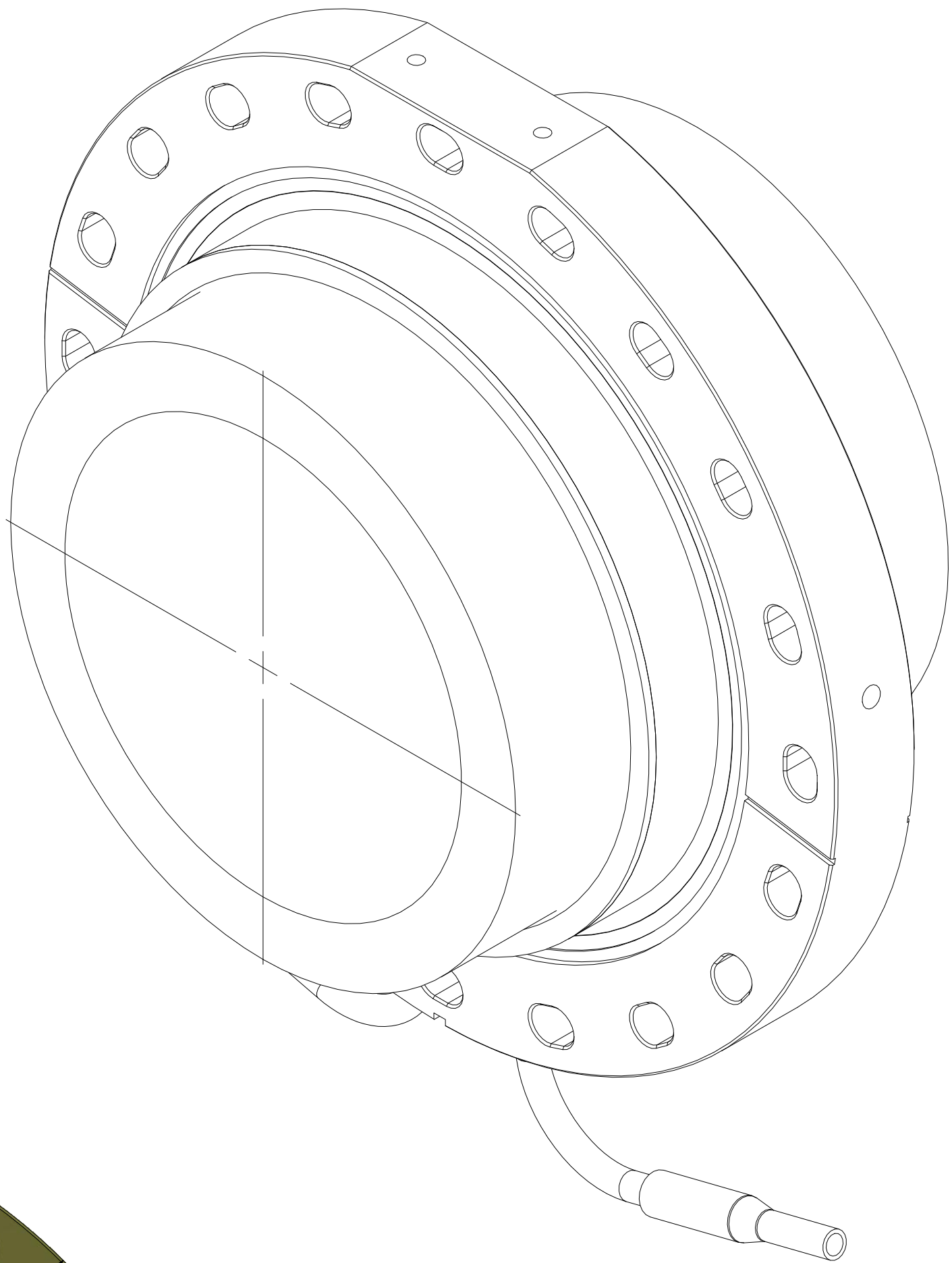
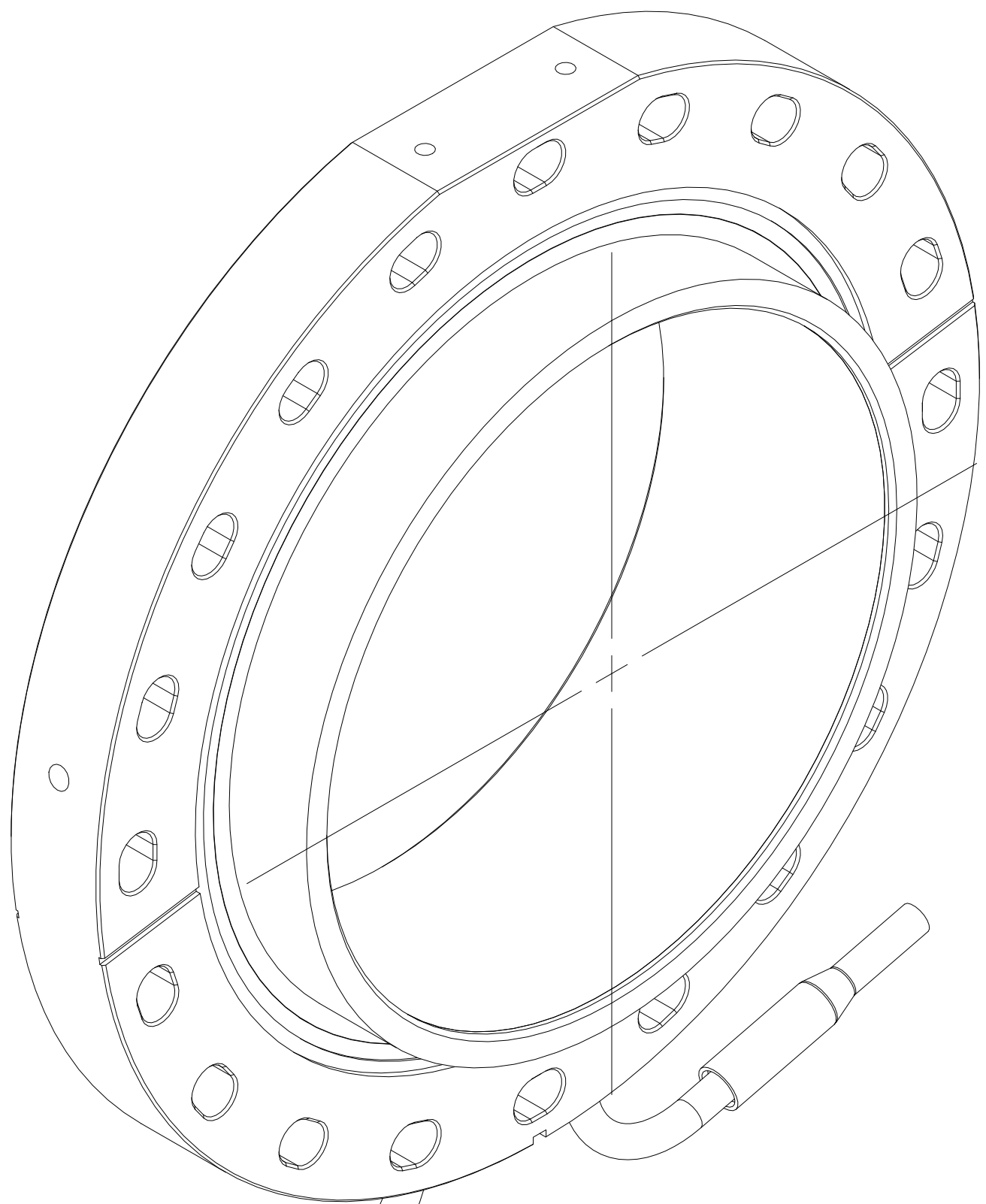


Cornell University
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Floyd R. Newman Laboratory
Robert R. Wilson Laboratory
Ithaca, NY 14853

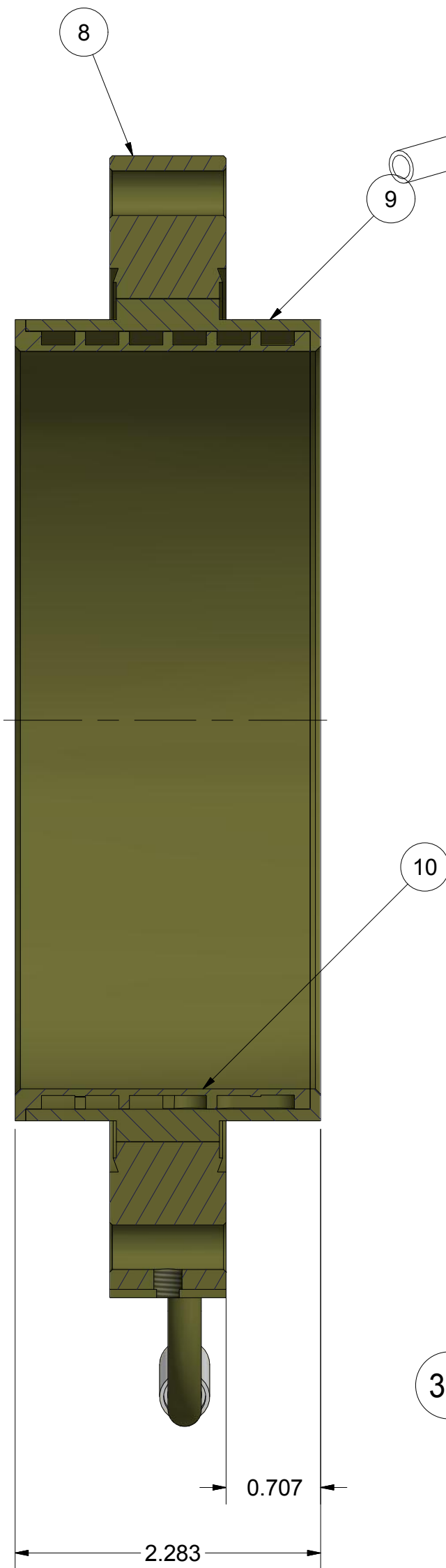
MLC HOM Absorber
Bellows End Group Welding

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		MASSIVE REORGANIZATION OF SHEETS. PUTTING PRODUCTION DRAWINGS AT FRONT AND PROTOTYPING DRAWINGS AT END.	11-1-13	jvc26

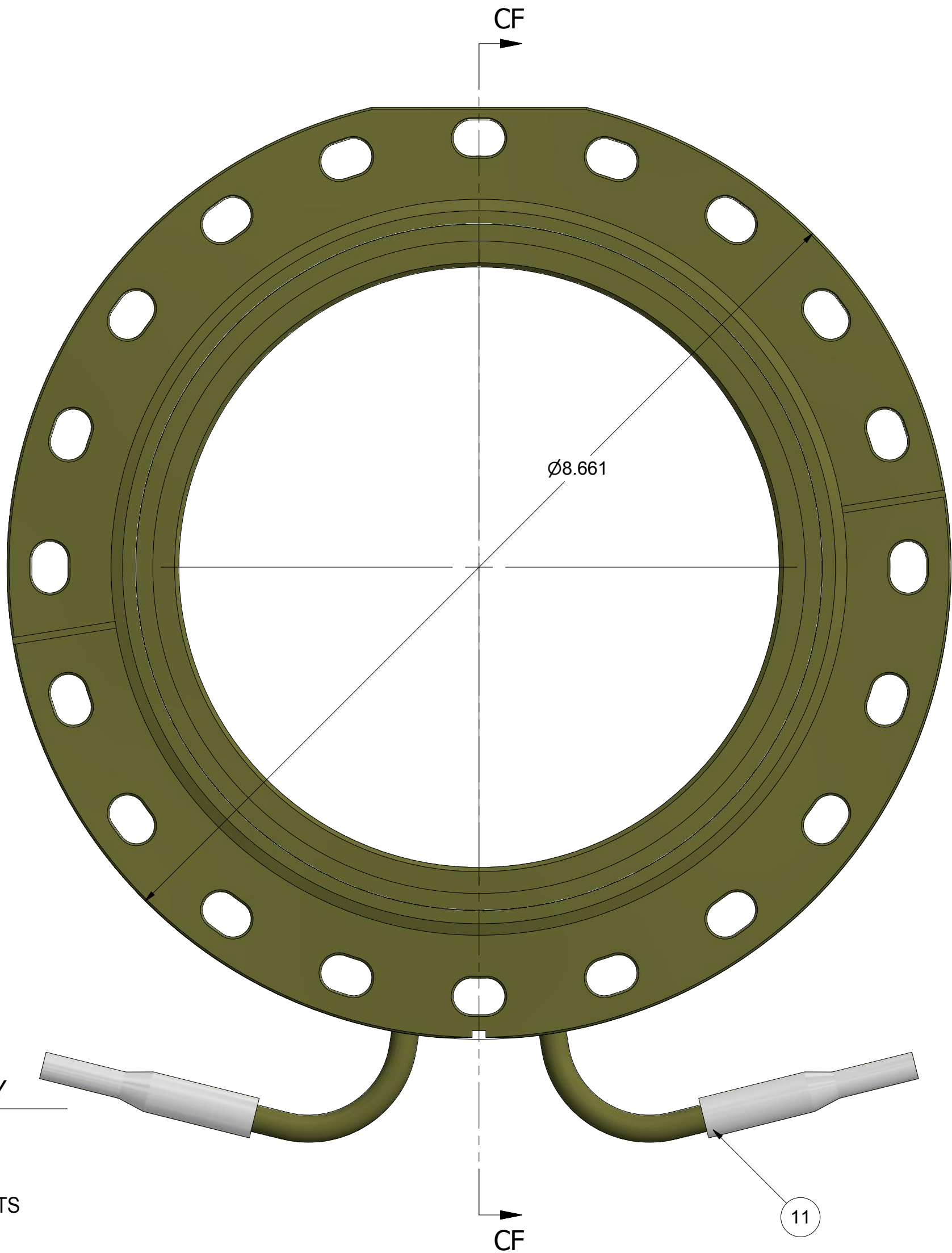


3 Ti COOLING JACKET ASSEMBLY
FILE NAME: 7103-217
SHEET NO.: 4
DFT. SCALE: 1 : 1
MATERIAL: NOTED IN PARTS
QTY: 1
NOTES:

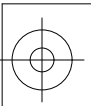
SECTION CF-CF
SCALE 1 : 1



3.1 Ti FLANGE ASSEMBLY
FILE NAME: 7103-217
SHEET NO.: 4
DFT. SCALE: 1 : 1
MATERIAL: NOTED IN PARTS
QTY: 1
NOTES:



6.16		HOM_3_Heater_Bank_E1A53-BD12	1					
7	SHEET 10	Absorbing Cylinder	1					
11	SHEET 16	80K Cooling Elbow	2					
8	SHEET 8	Ti Center Flange	1					
10	SHEET 9	Cooling Jacket Grooved Cylinder	1					
9	SHEET 8	Cooling Jacket Outer Cylinder	1					
3.1	SHEET 5	Ti Cooling Jacket Asm - Welding & Post Mach	1					
32	SHEET 19	Tubing Adapter 1_4 in x 1_4 in	2	G2	G3			
ITEM	DWG NO.	DESCRIPTION	QUANTITY	REMARKS	REV.			
7103-217	4	Ti Cooling Jacket Assembly	1					



D

7103-217
SH. NO. 4 OF 35

REV. **A**

PRINT
DISTR.

CR-1

3

PLOT DATE: 12/23/2014
CAD FILE NAME: 7103-217.idw

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



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Ithaca, NY 14853

MLC HOM Absorber
Ti Cooling Jacket Assembly

CHECKED BY: J. Conway
APPROVED BY: JVC/RGE

DRAWN BY
jvc26

DRAWN FOR
R Eichhorn

DATE
4/25/2013

SCALE
D

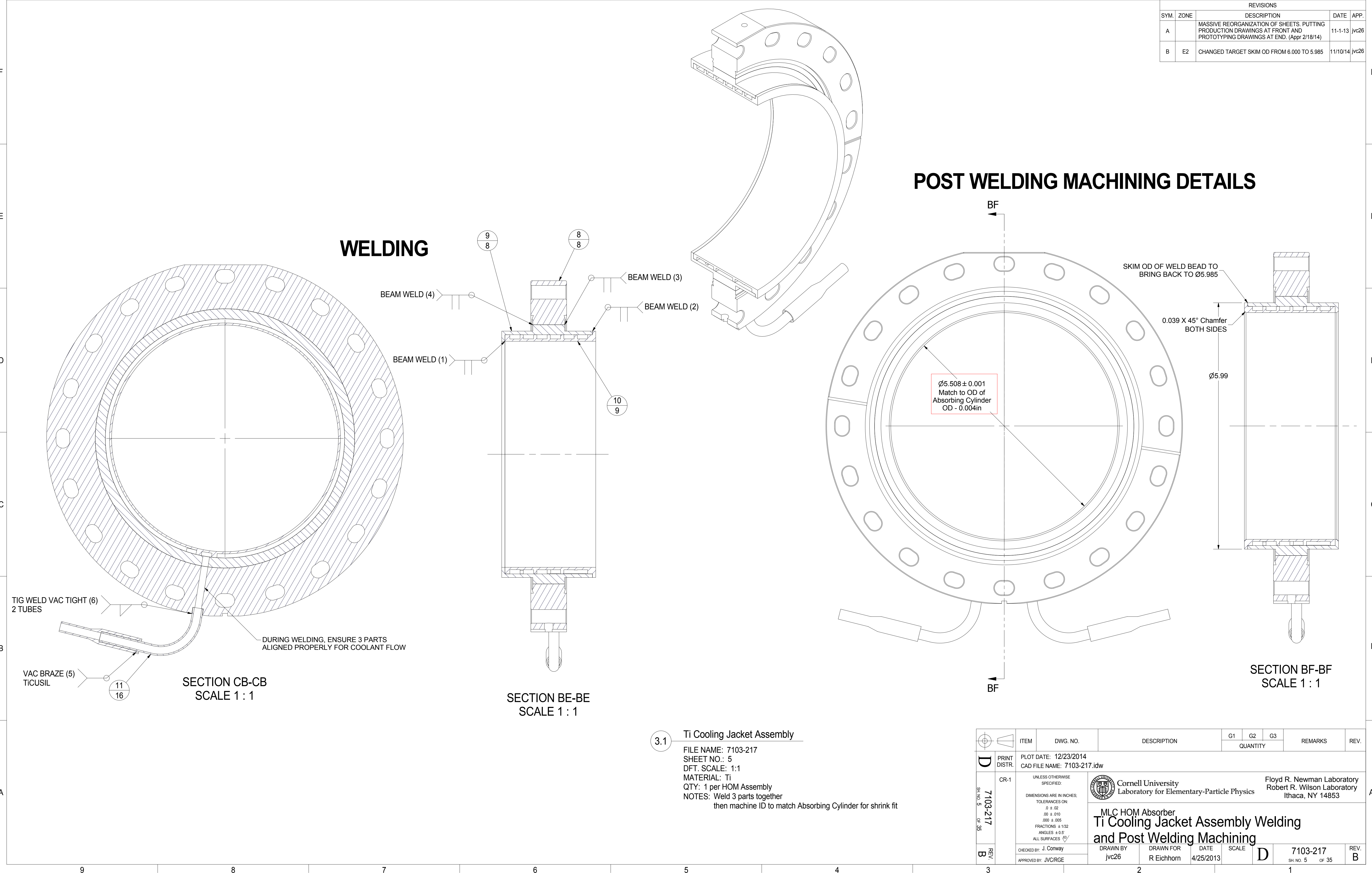
7103-217
SH. NO. 4 OF 35

REV. **A**

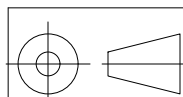


REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		MASSIVE REORGANIZATION OF SHEETS. PUTTING PRODUCTION DRAWINGS AT FRONT AND PROTOTYPING DRAWINGS AT END. (Appr 2/18/14)	11-1-13	jvc26
B	E2	CHANGED TARGET SKIM OD FROM 6.000 TO 5.985	11/10/14	jvc26

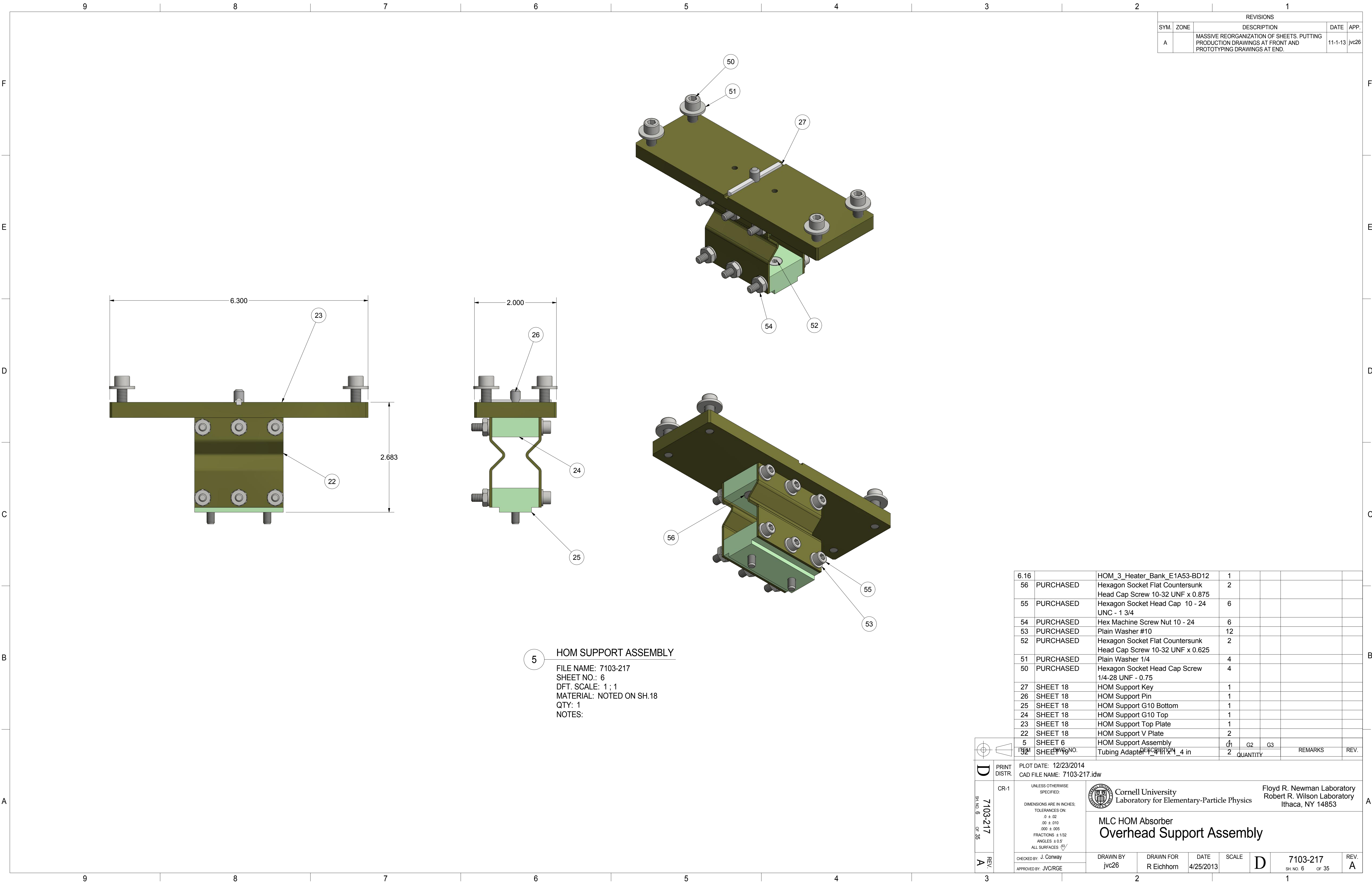
WELDING

POST WELDING MACHINING DETAILS



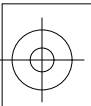
3.1 Ti Cooling Jacket Assembly
FILE NAME: 7103-217
SHEET NO.: 5
DFT. SCALE: 1:1
MATERIAL: Ti
QTY: 1 per HOM Assembly
NOTES: Weld 3 parts together
then machine ID to match Absorbing Cylinder for shrink fit

		ITEM		DWG. NO.		DESCRIPTION		G1		G2		G3		REMARKS		REV.					
								QUANTITY													
D		PRINT DISTR.		PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw																	
7103-217 SH. NO. 5 OF 35		CR-1		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					
						MLC HOM Absorber Ti Cooling Jacket Assembly Welding and Post Welding Machining															
						CHECKED BY: J. Conway		DRAWN BY: jvc26		DRAWN FOR: R Eichhorn		DATE: 4/25/2013		SCALE: D		7103-217 SH. NO. 5 OF 35				REV. B	
REV. B				APPROVED BY: JVC/RGE																	




REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		MASSIVE REORGANIZATION OF SHEETS. PUTTING PRODUCTION DRAWINGS AT FRONT AND PROTOTYPING DRAWINGS AT END.	11-1-13	jvc26

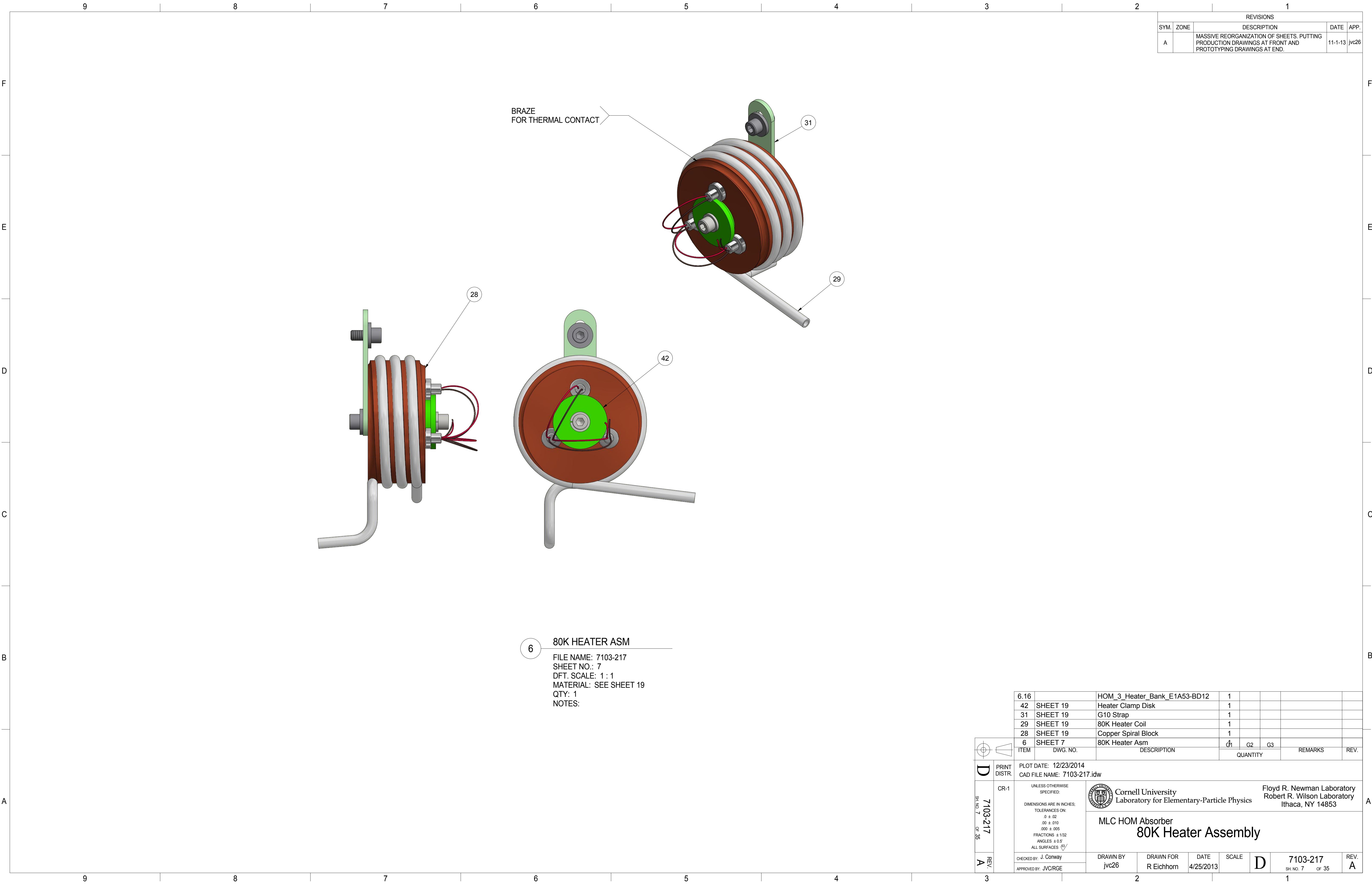
6.16		HOM_3_Heater_Bank_E1A53-BD12	1				
56	PURCHASED	Hexagon Socket Flat Countersunk Head Cap Screw 10-32 UNF x 0.875	2				
55	PURCHASED	Hexagon Socket Head Cap 10 - 24 UNC - 1 3/4	6				
54	PURCHASED	Hex Machine Screw Nut 10 - 24	6				
53	PURCHASED	Plain Washer #10	12				
52	PURCHASED	Hexagon Socket Flat Countersunk Head Cap Screw 10-32 UNF x 0.625	2				
51	PURCHASED	Plain Washer 1/4	4				
50	PURCHASED	Hexagon Socket Head Cap Screw 1/4-28 UNF - 0.75	4				
27	SHEET 18	HOM Support Key	1				
26	SHEET 18	HOM Support Pin	1				
25	SHEET 18	HOM Support G10 Bottom	1				
24	SHEET 18	HOM Support G10 Top	1				
23	SHEET 18	HOM Support Top Plate	1				
22	SHEET 18	HOM Support V Plate	2				
5	SHEET 6	HOM Support Assembly	1				
52	SHEET 18	Tubing Adapter 1/4 in x 1/4 in	2				



PRINT
DISTR.

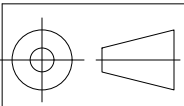
7103-217
SH. NO. 6 OF 35
REV. A

PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw		Cornell University Laboratory for Elementary-Particle Physics		Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853	
CR-1 UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: 0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES 		MLC HOM Absorber Overhead Support Assembly			
CHECKED BY: J. Conway APPROVED BY: JVC/RGE		DRAWN BY jvc26	DRAWN FOR R Eichhorn	DATE 4/25/2013	SCALE D
		7103-217 SH. NO. 6 OF 35		REV. A	



REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		MASSIVE REORGANIZATION OF SHEETS. PUTTING PRODUCTION DRAWINGS AT FRONT AND PROTOTYPING DRAWINGS AT END.	11-1-13	jvc26

6.16		HOM_3_Heater_Bank_E1A53-BD12	1					
42	SHEET 19	Heater Clamp Disk	1					
31	SHEET 19	G10 Strap	1					
29	SHEET 19	80K Heater Coil	1					
28	SHEET 19	Copper Spiral Block	1					
6	SHEET 7	80K Heater Asm	1					
ITEM	DWG. NO.	DESCRIPTION	QUANTITY	REMARKS	REV.			



PRINT
DISTR.

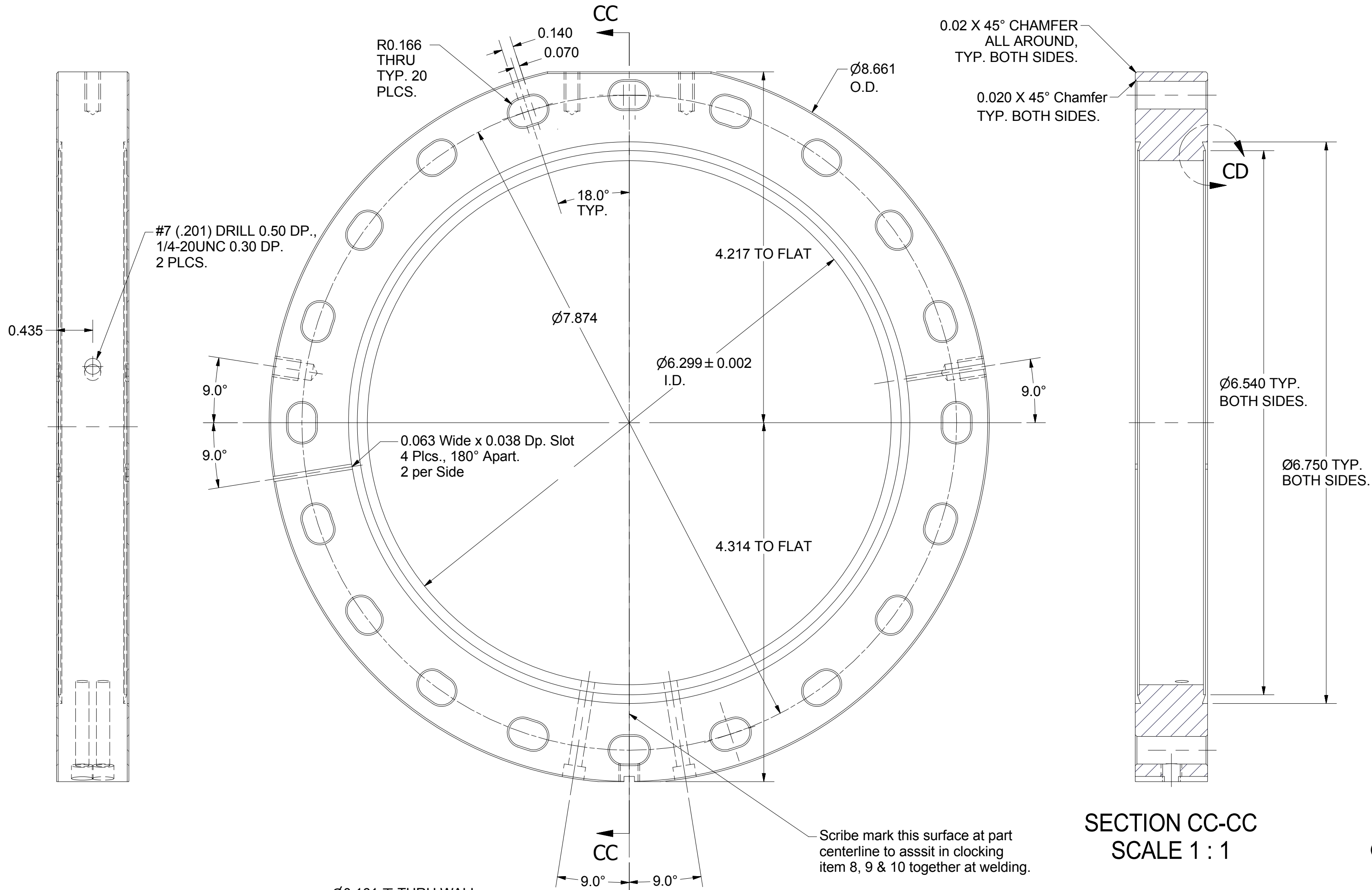
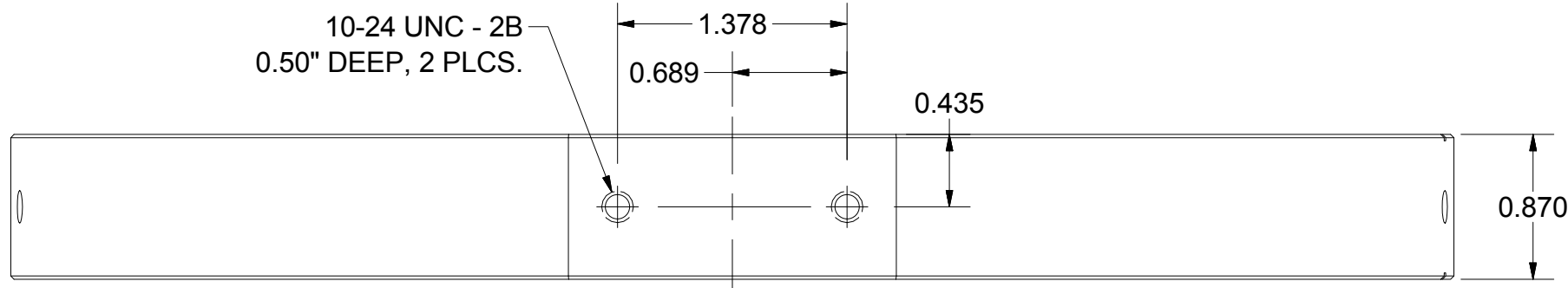
D
SH. NO. 7
OF 35

7103-217

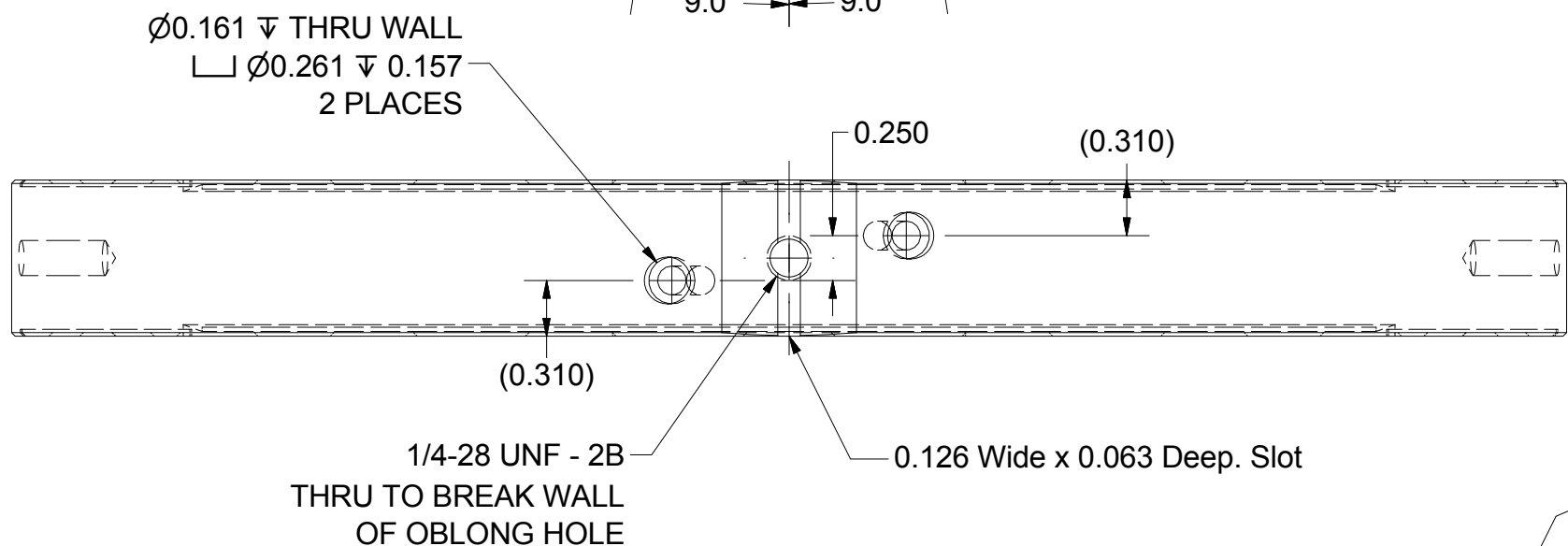
REV.
A

PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.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	
CHECKED BY: J. Conway		DRAWN BY jvc26		DRAWN FOR R Eichhorn		DATE 4/25/2013	
APPROVED BY: JVC/RGE		SCALE D		7103-217 SH. NO. 7 OF 35		REV. A	

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		MASSIVE REORGANIZATION OF SHEETS. PUTTING PRODUCTION DRAWINGS AT FRONT AND PROTOTYPING DRAWINGS AT END.	11-1-13	jvc26
B	E2	5.811 ID was 5.808, item 9. Added scribe lines for indexing in items 8 & 9.	11-25-13	TIO
C		ADDED AND EDITED DIMENSIONS AND ANNOTATIONS. D.M.E.	1-6-14	TIO
D	B8	ADDED HOLE DIMENSION TO ITEM 8 (Appr 2/18/14)	1-31-14	jvc26
E	D2	REDUCED OD OF ITEM 9 FROM 6.000 TO 5.985	11/10/14	jvc26

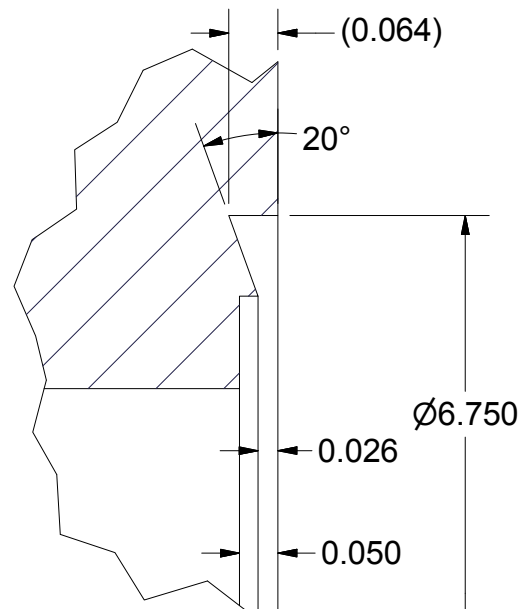


SECTION CC-CC
SCALE 1 : 1

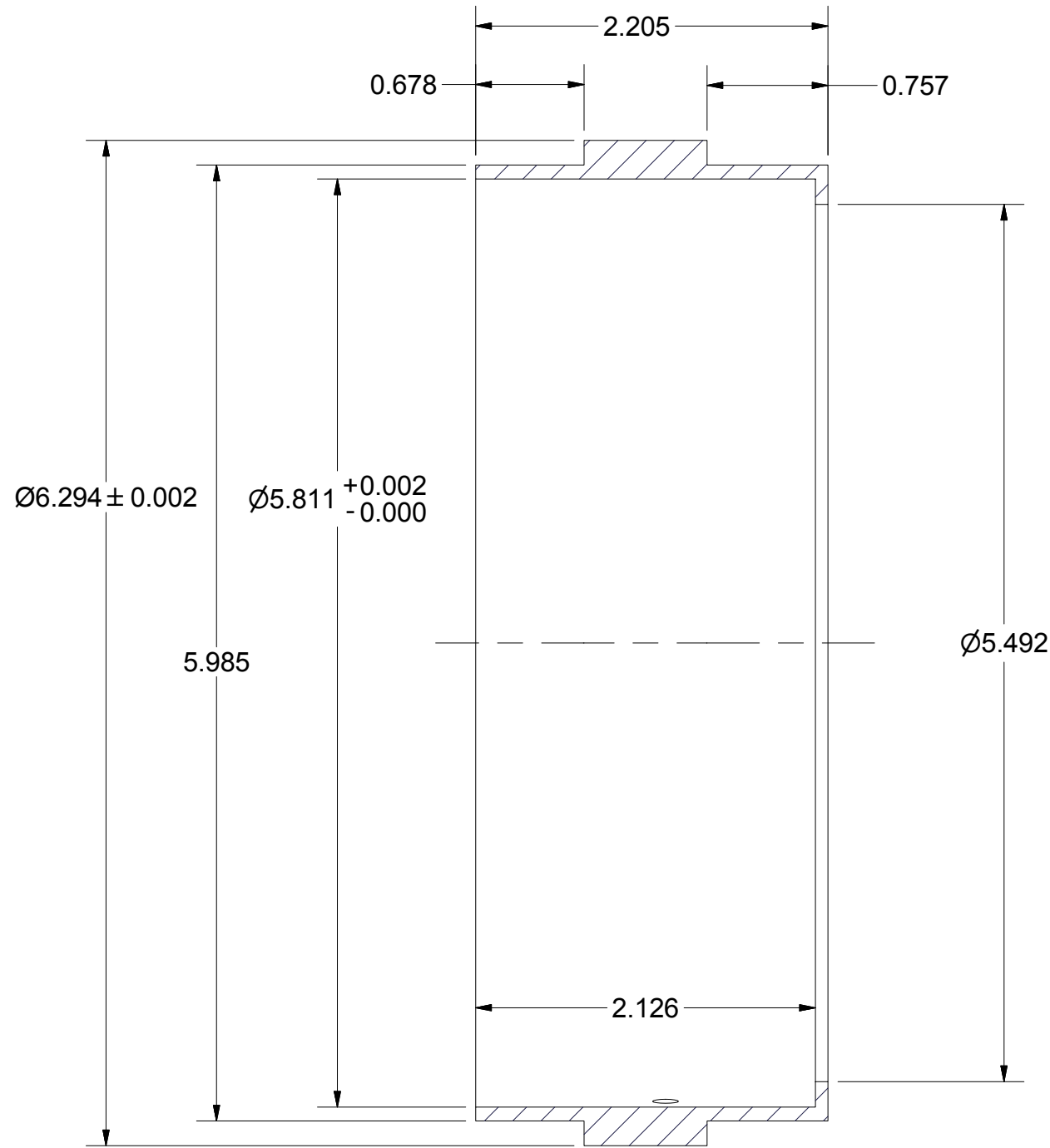
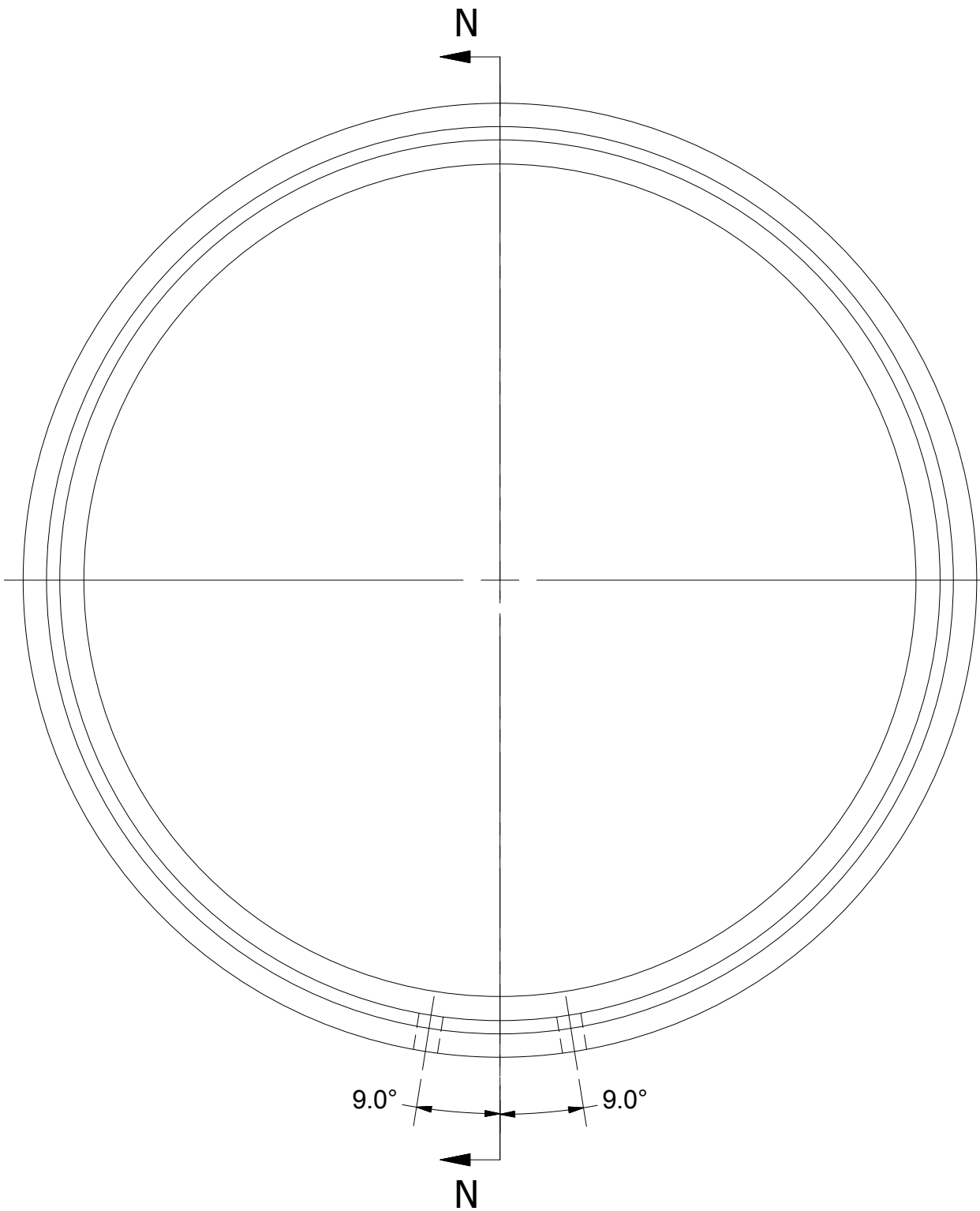


8 Ti Center Flange

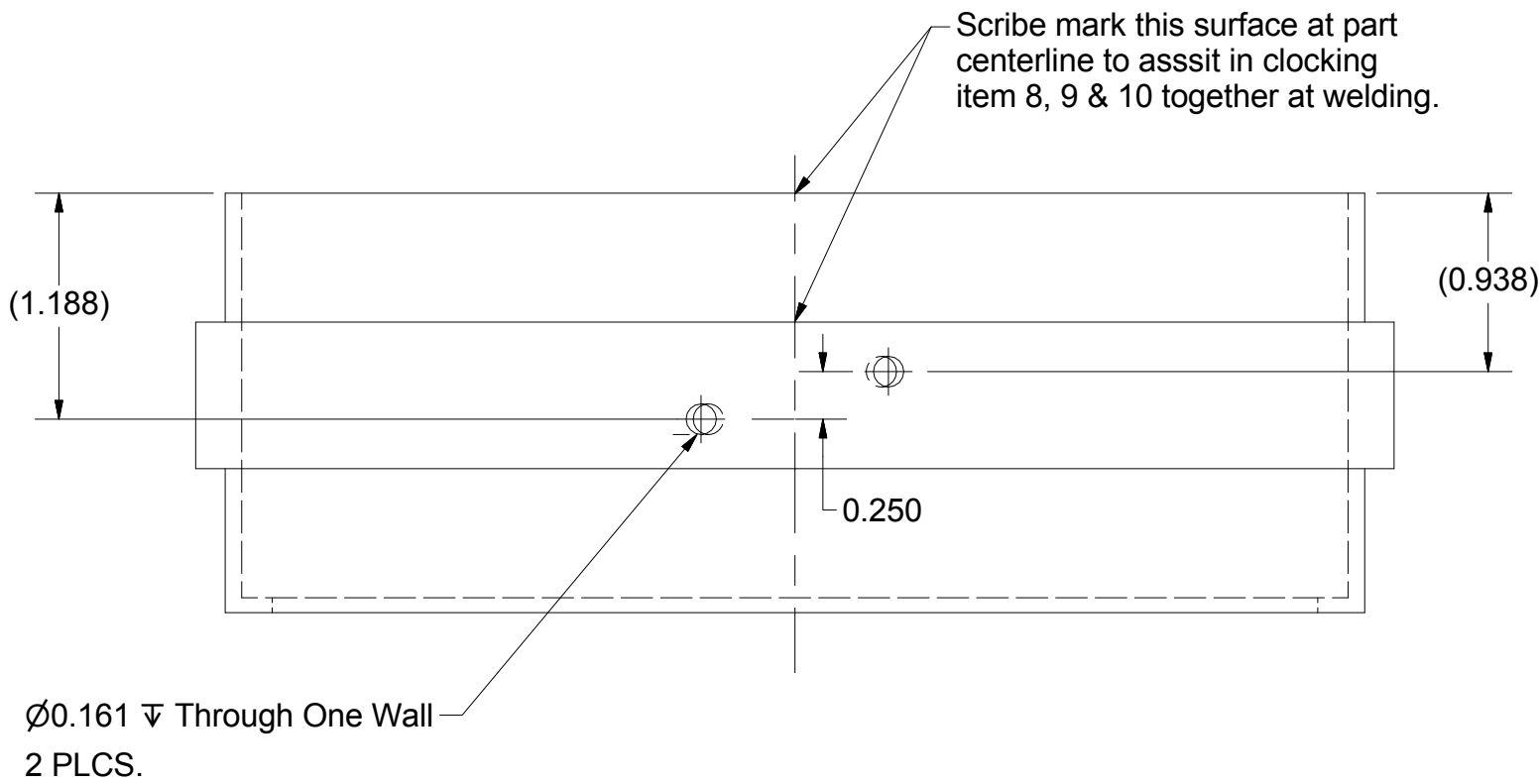
FILE NAME: 7103-217
SHEET NO.: 8
DFT. SCALE: 1:1
MATERIAL: Ti Gr5
QTY: 1 per HOM
NOTES: Rough ID and OD on Water Jet
Water Jet slots to finish dimension



DETAIL CD
SCALE 4 : 1







SECTION N-N
SCALE 1 : 1



9 Cooling Jacket Outer Cylinder

FILE NAME: 7103-217
SHEET NO.: 8
DFT. SCALE: 1:1
MATERIAL: Ti Gr2
QTY: 1 per HOM
NOTES:

		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.
					QUANTITY						
	PRINT DISTR.	PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw									
	CR-1	<div>UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES </div>				<div> Cornell University Laboratory for Elementary-Particle Physics</div> <div>Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853</div>					
SH. NO. 8 OF 35	7103-217	<div>MLC HOM Absorber</div> <div>Ti Cooling Jacket Outer Cylinder and Flange</div>									
	REV.	CHECKED BY: J. Conway	DRAWN BY jvc26	DRAWN FOR R Eichhorn	DATE 4/25/2013	SCALE	D		7103-217 SH. NO. 8 OF 35	REV. E	
		APPROVED BY: JVC/RGE									

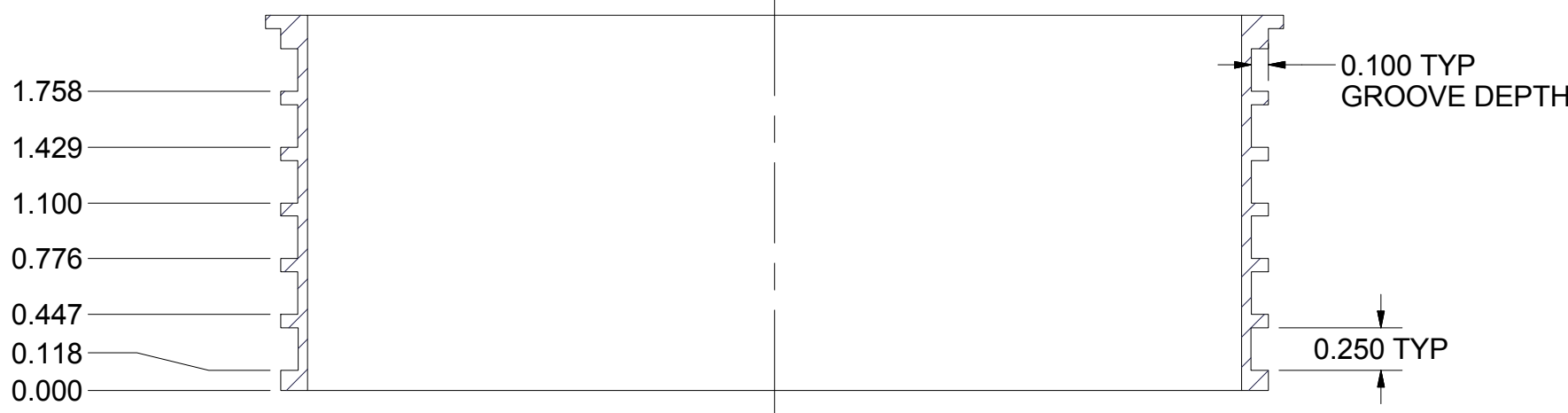


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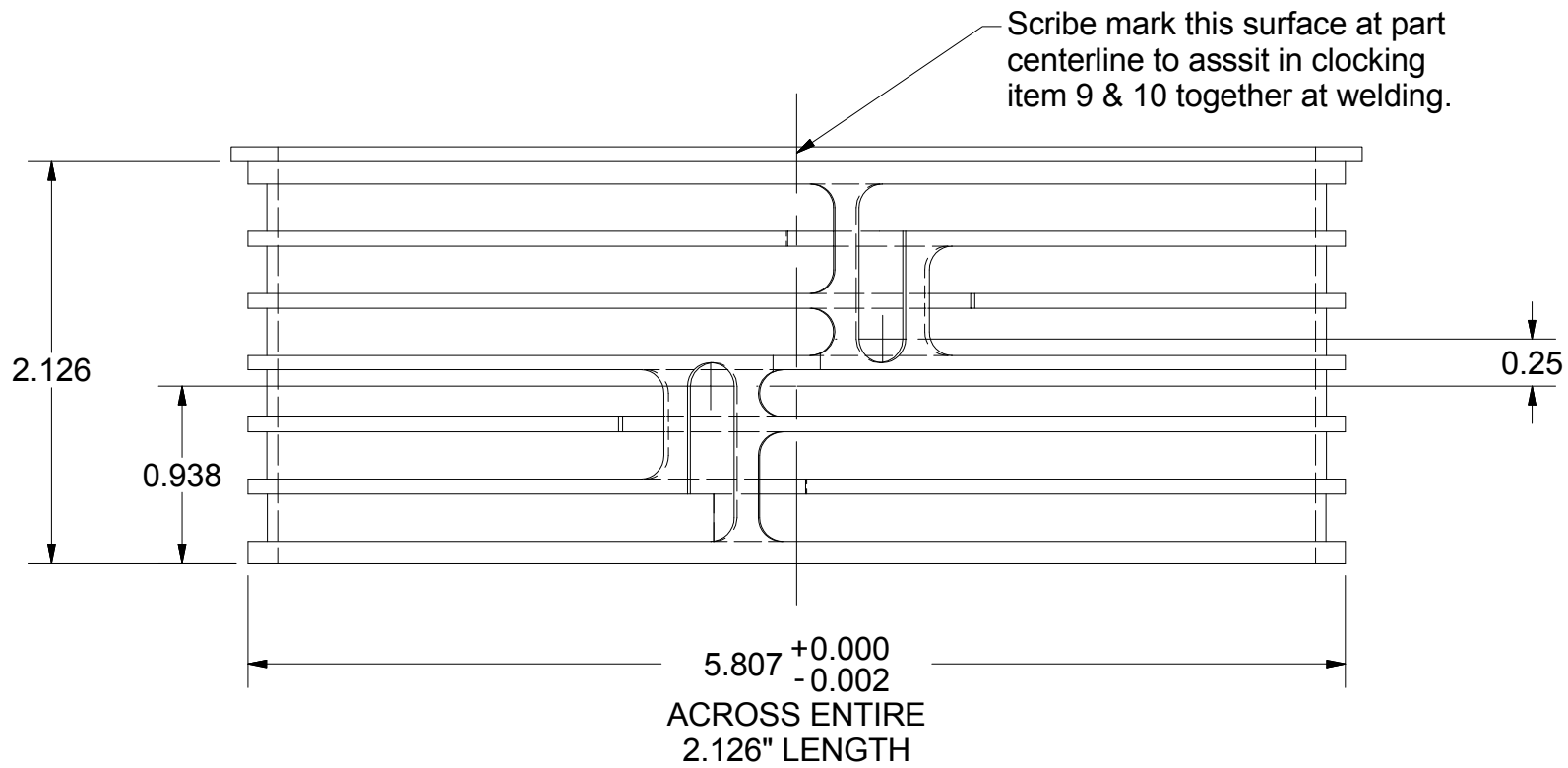
Floyd R. Newman Laboratory
Robert R. Wilson Laboratory
Ithaca, NY 14853

MLC HOM Absorber
Ti Cooling Jacket Outer Cylinder and Flange

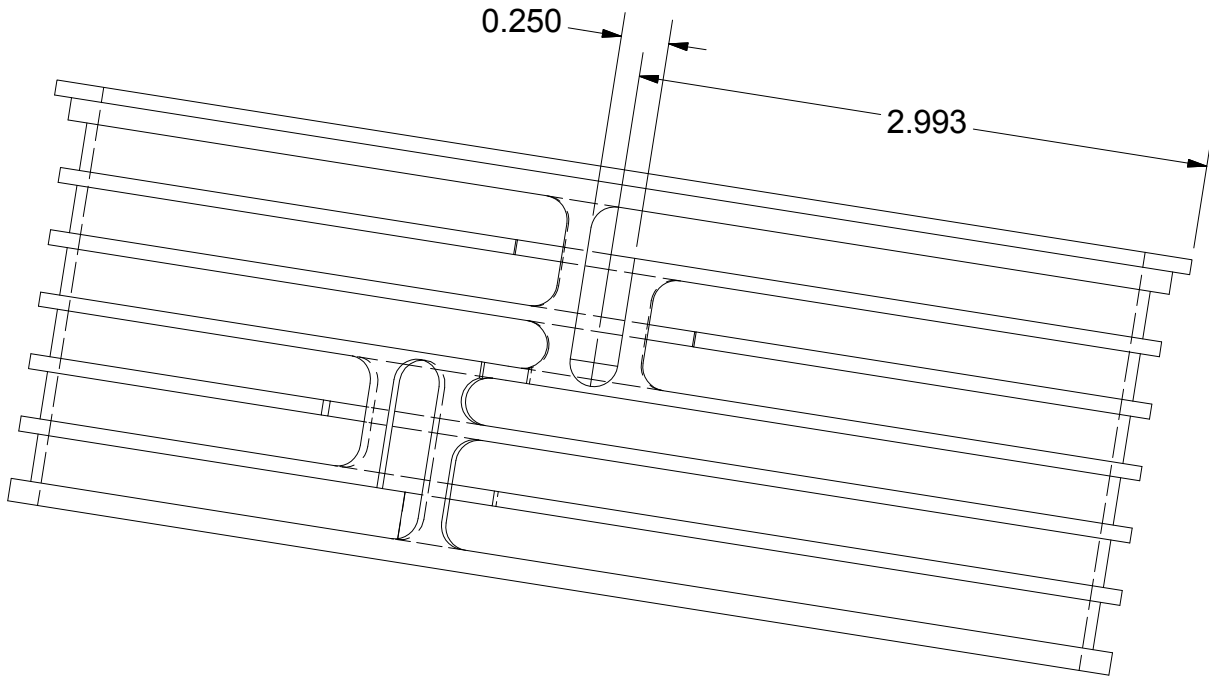
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		MASSIVE REORGANIZATION OF SHEETS. PUTTING PRODUCTION DRAWINGS AT FRONT AND PROTOTYPING DRAWINGS AT END.	11-1-13	jvc26
B	E6	Added scribe lines for indexing in item 10.	11-25-13	TIO
C		ADDED AND EDITED DIMENSIONS AND ANNOTATIONS. D.M.E.	1-6-14	TIO
D	B9	REDUCED OD OF ITEM 10 FROM 6.000 TO 5.985	11/10/14	jvc26



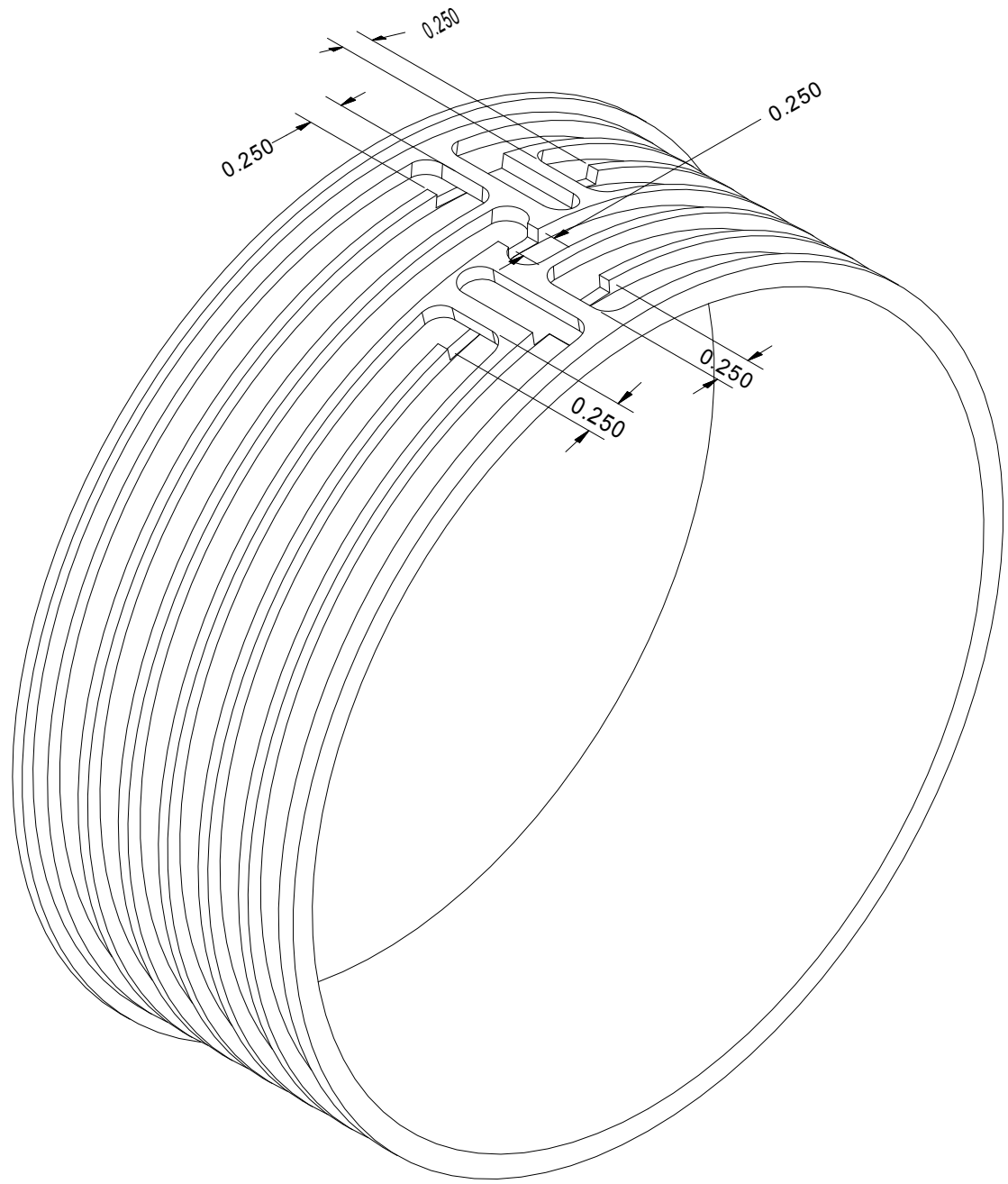
SECTION BT-BT
SCALE 1 : 1



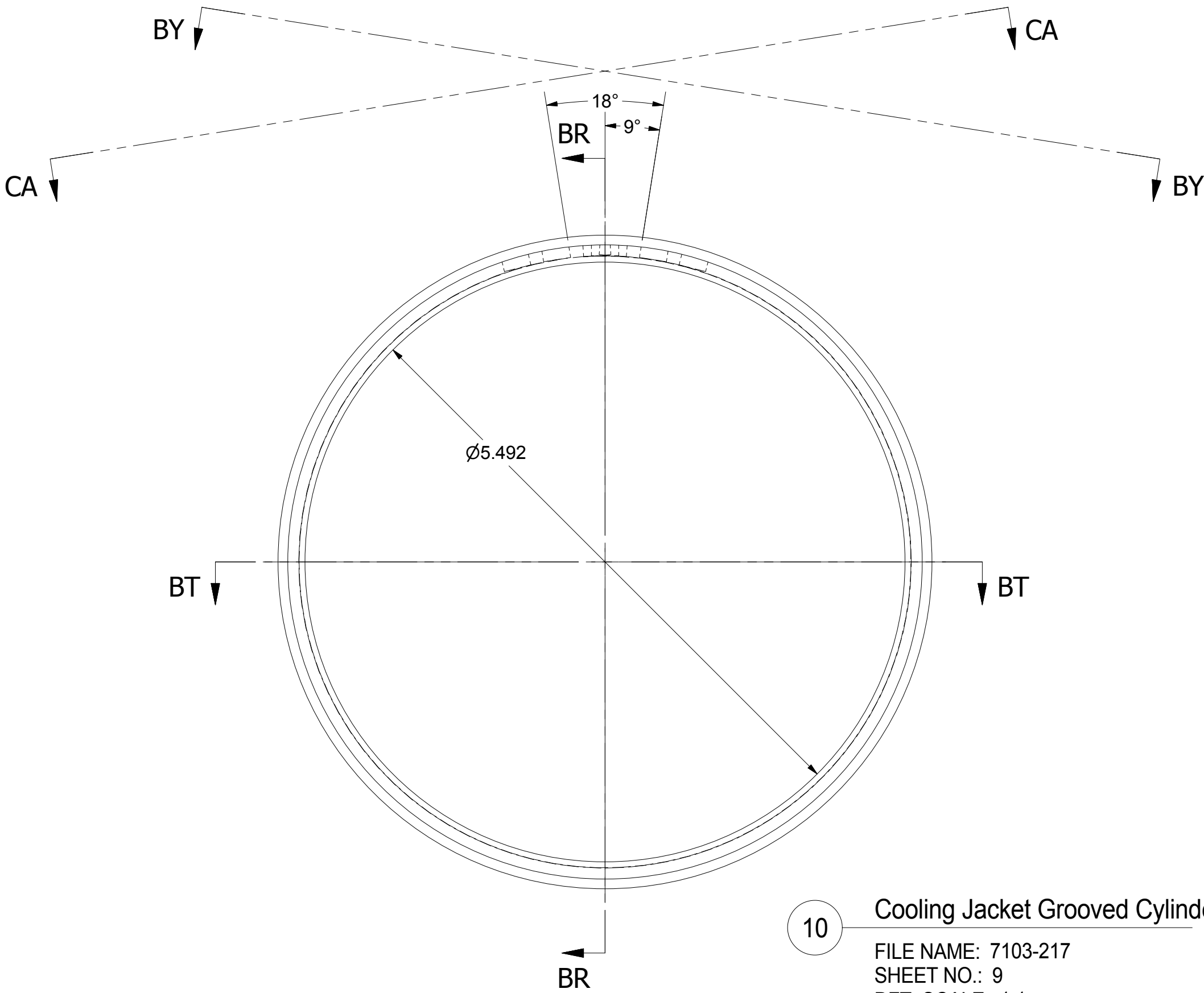
VIEW CA-CA
SCALE 1 : 1



VIEW BY-BY
SCALE 1 : 1

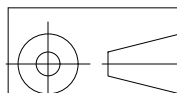




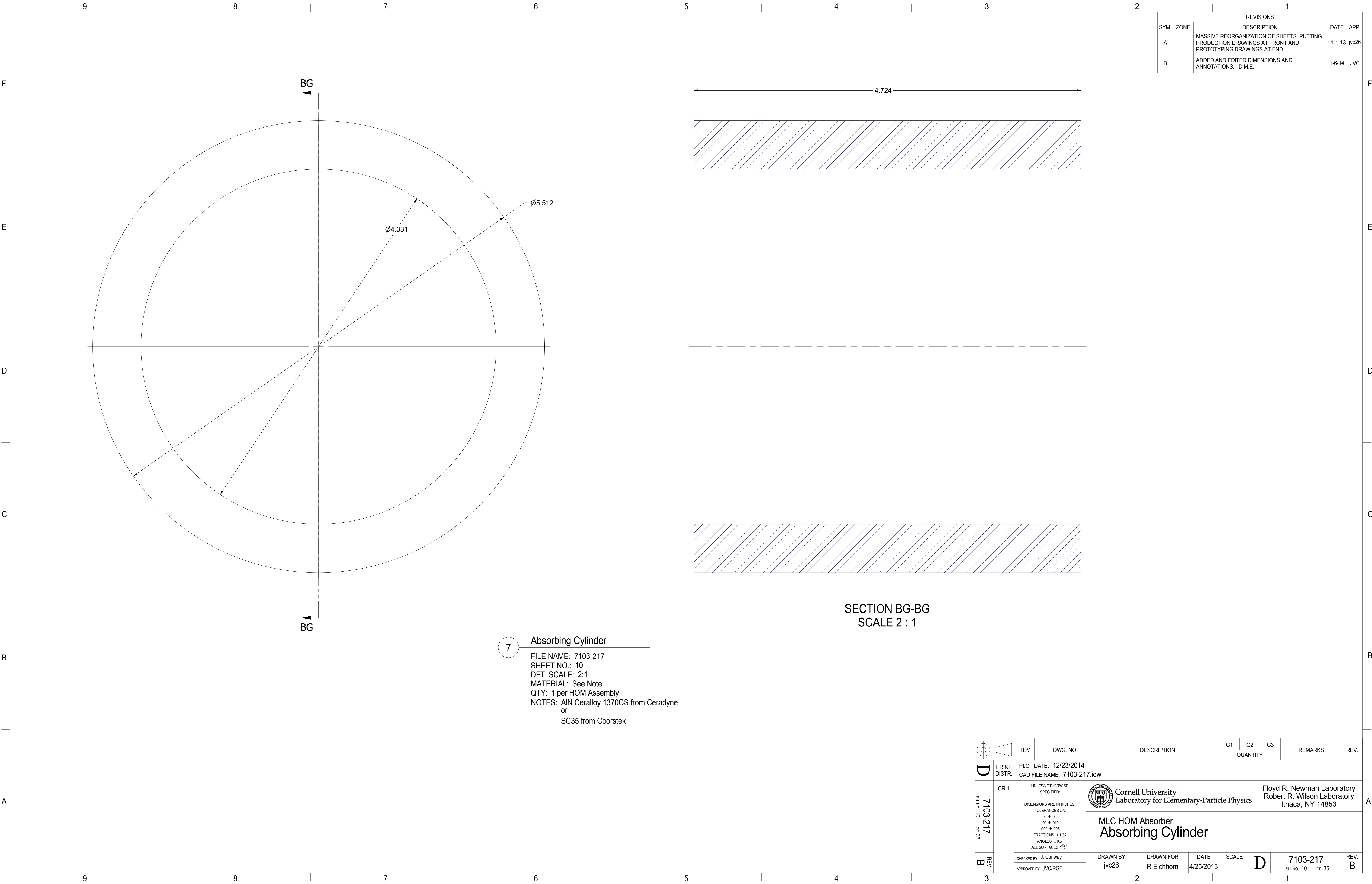
SECTION BR-BR
SCALE 1 : 1

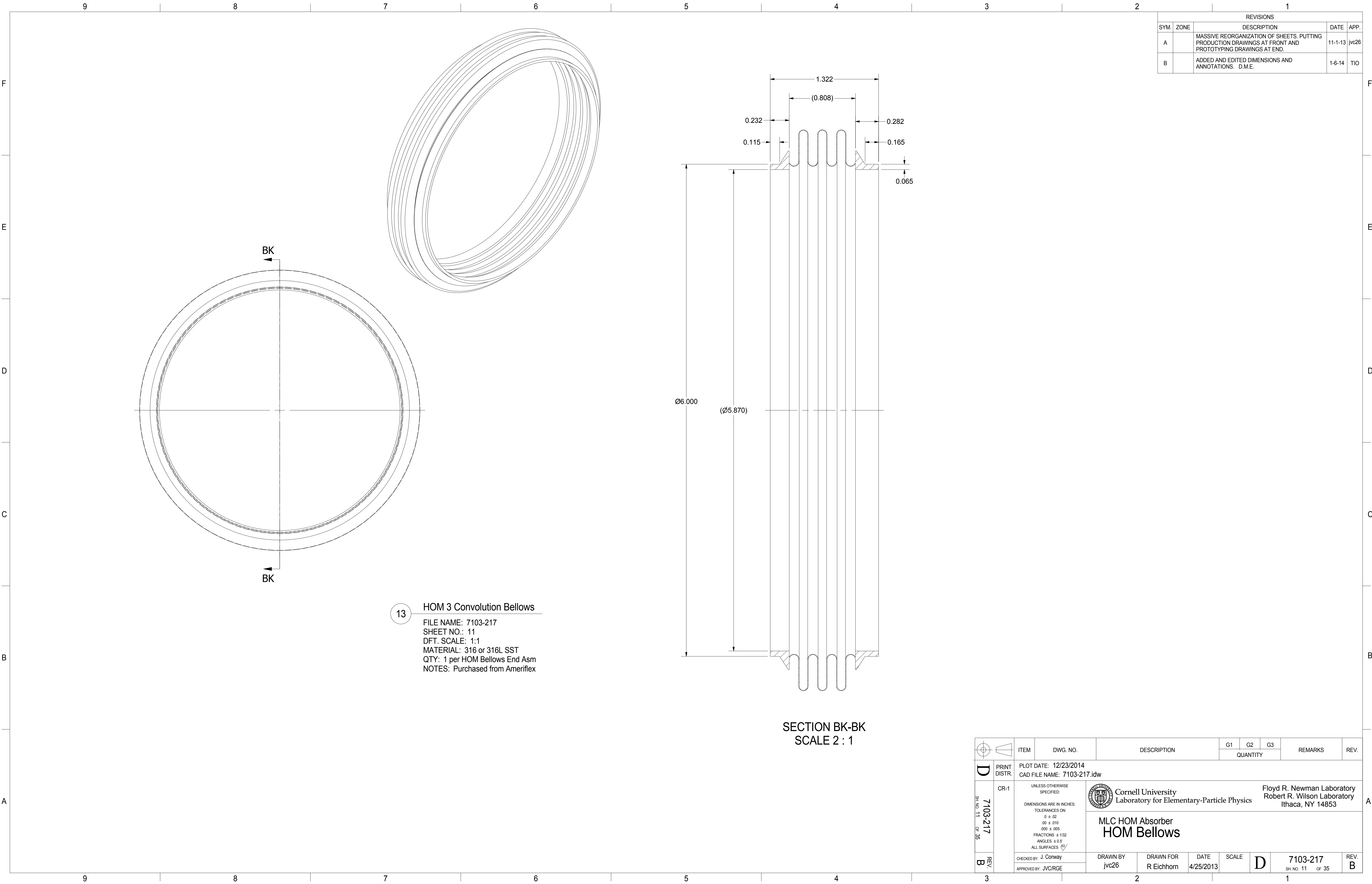


10 Cooling Jacket Grooved Cylinder


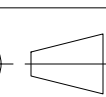




FILE NAME: 7103-217
SHEET NO.: 9
DFT. SCALE: 1:1
MATERIAL: Ti Gr2
QTY: 1 per HOM
NOTES: 1) 18 degree dim is angle offset between two plunge cuts starting the cooling loop.
2) All edges to be bedurred to ensure proper fit of mating parts.

		ITEM		DWG. NO.		DESCRIPTION			G1		G2		G3		REMARKS		REV.		
									QUANTITY										
D		PRINT DISTR.		PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw															
7103-217 SH. NO. 9 OF 35		CR-1		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	
						MLC HOM Absorber Cooling Jacket Grooved Cylinder													
REV. D		CHECKED BY: J. Conway		DRAWN BY jvc26		DRAWN FOR R Eichhorn		DATE 4/25/2013		SCALE		D		7103-217 SH. NO. 9 OF 35		REV. D			
		APPROVED BY: JVC/RGE																	





REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		MASSIVE REORGANIZATION OF SHEETS. PUTTING PRODUCTION DRAWINGS AT FRONT AND PROTOTYPING DRAWINGS AT END.	11-1-13	jvc26
B		ADDED AND EDITED DIMENSIONS AND ANNOTATIONS. D.M.E.	1-6-14	TIO

 		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
					QUANTITY				
	PRINT DISTR.	PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw							
	CR-1	<div>UNLESS OTHERWISE SPECIFIED:</div> <div>DIMENSIONS ARE IN INCHES:</div> <div>TOLERANCES ON:</div> <div>0 ± .02</div> <div>.00 ± .010</div> <div>.000 ± .005</div> <div>FRACTIONS ± 1/32</div> <div>ANGLES ± 0.5°</div> <div>ALL SURFACES </div>				<div>Cornell University Laboratory for Elementary-Particle Physics</div> <div>Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853</div>			
	7103-217 SH. NO. 11 OF 35	<div>MLC HOM Absorber</div> <div>HOM Bellows</div>							
	REV. B	CHECKED BY: J. Conway APPROVED BY: JVC/RGE	DRAWN BY: jvc26	DRAWN FOR: R Eichhorn	DATE: 4/25/2013	SCALE: D	7103-217 SH. NO. 11 OF 35	REV. B	

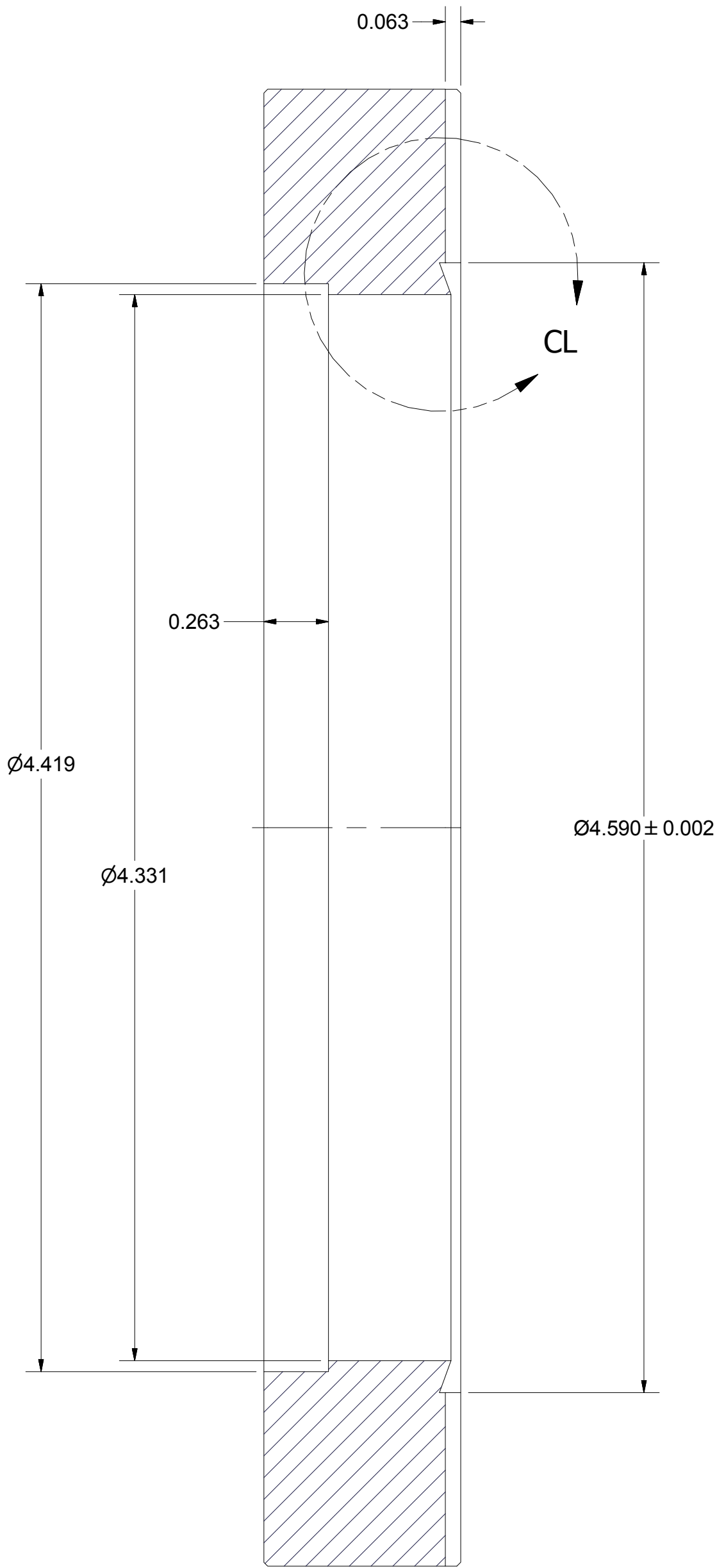
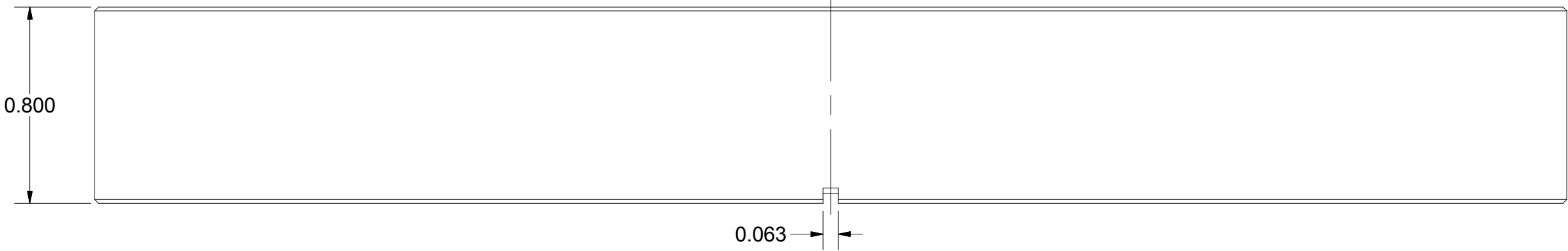


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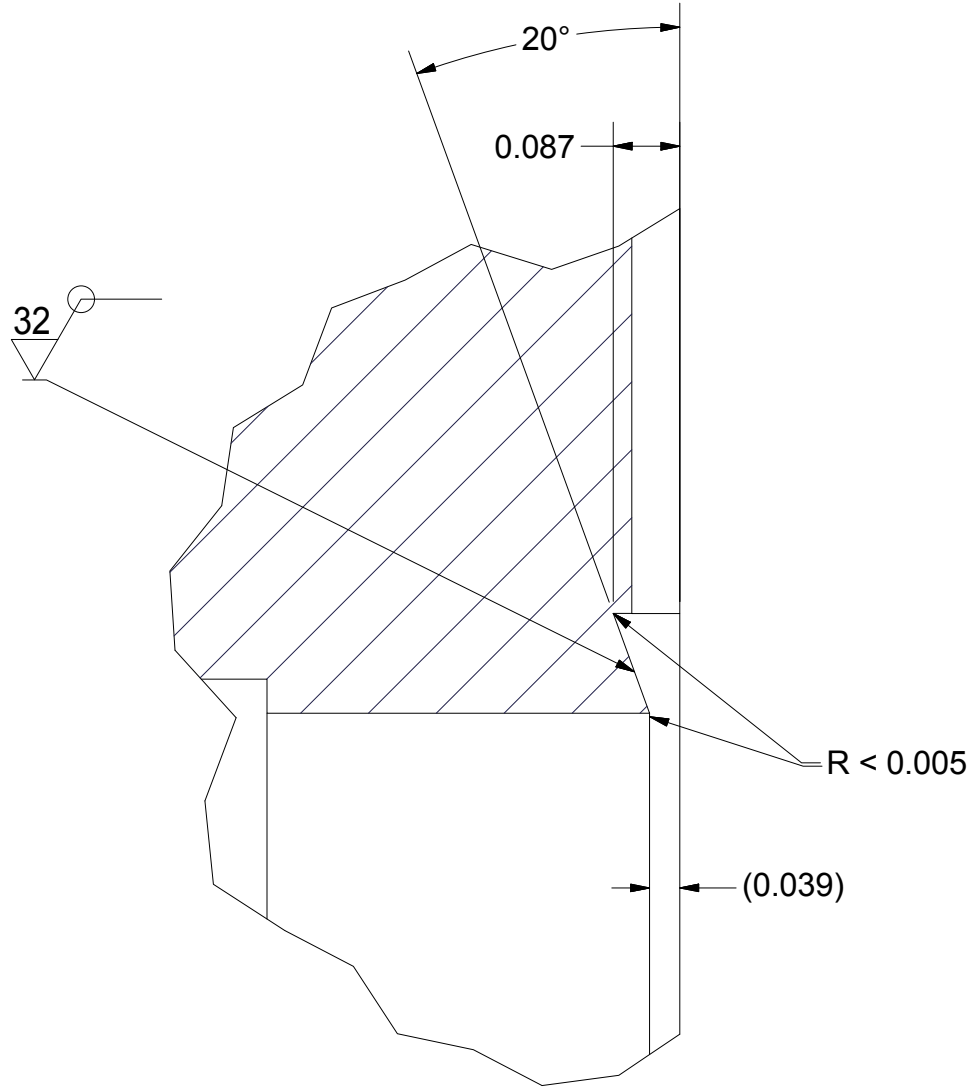
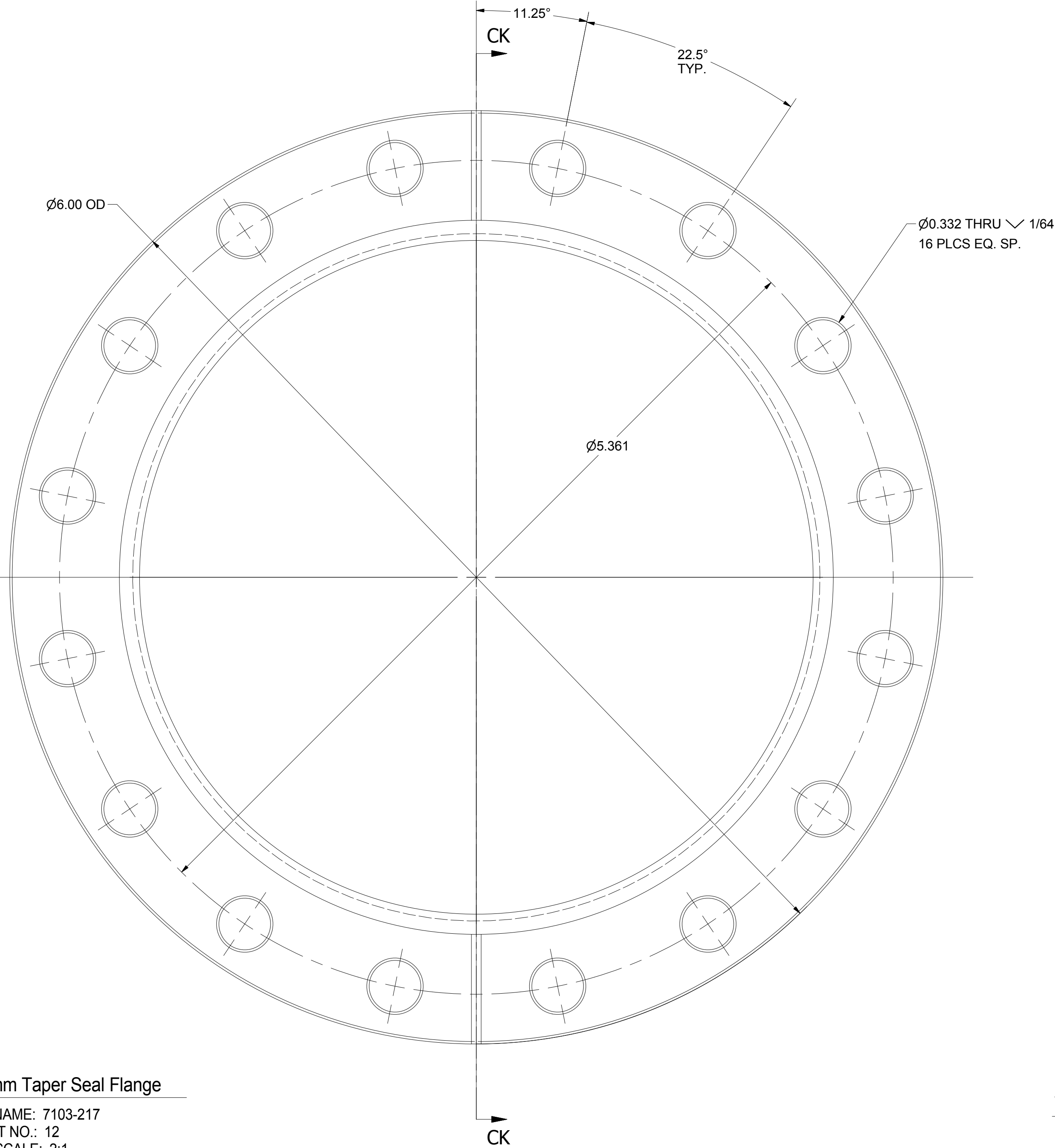
Floyd R. Newman Laboratory
Robert R. Wilson Laboratory
Ithaca, NY 14853

MLC HOM Absorber
HOM Bellows

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED AND EDITED DIMENSIONS AND ANNOTATIONS. D.M.E.	1-6-14	TIO

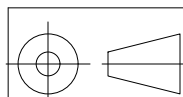




SECTION CK-CK
SCALE 2 : 1



DETAIL CL
SCALE 4 : 1

17 110mm Taper Seal Flange
FILE NAME: 7103-217
SHEET NO.: 12
DFT. SCALE: 2:1
MATERIAL: 316L SST
QTY: 2 per HOM
NOTES:

		ITEM		DWG. NO.		DESCRIPTION		G1		G2		G3		REMARKS		REV.	
								QUANTITY									
D		PRINT DISTR.		PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw													
7103-217 SH. NO. 12 OF 35		CR-1		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	
						MLC HOM Absorber 110mm Taper Seal Flange											
REV. A		CHECKED BY: J. Conway		DRAWN BY: jvc26		DRAWN FOR: R Eichhorn		DATE: 4/25/2013		SCALE: D		7103-217 SH. NO. 12 OF 35		REV. A			
		APPROVED BY: JVC/RGE															

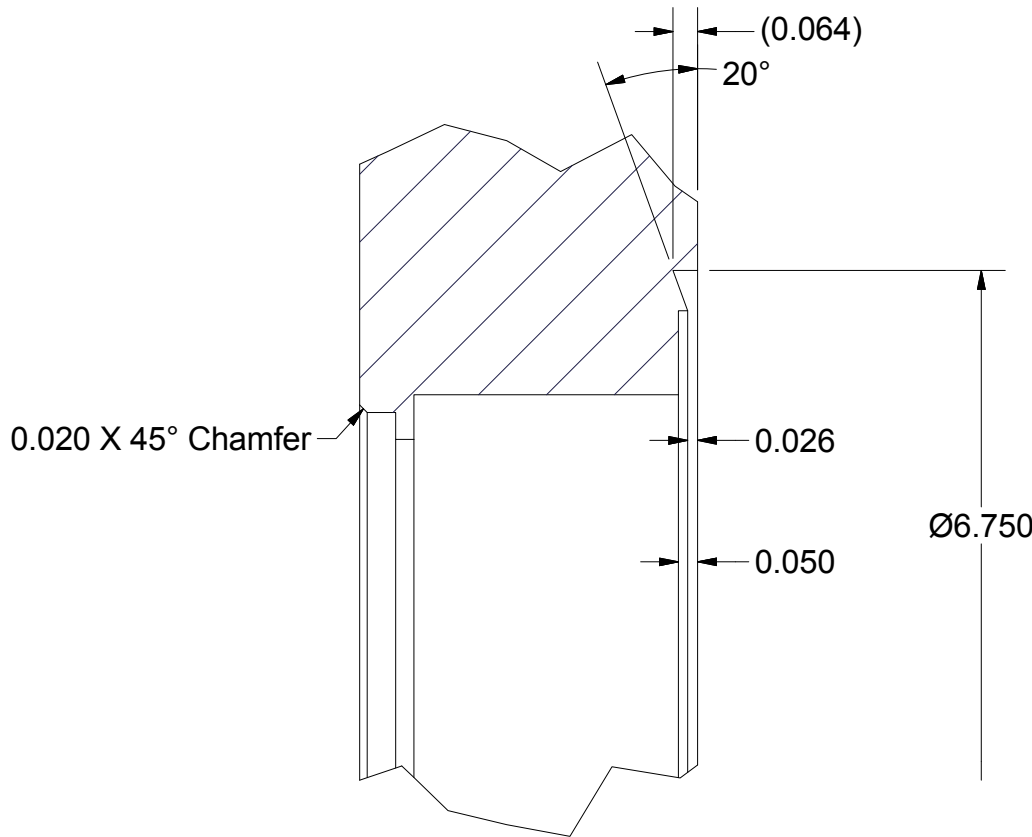
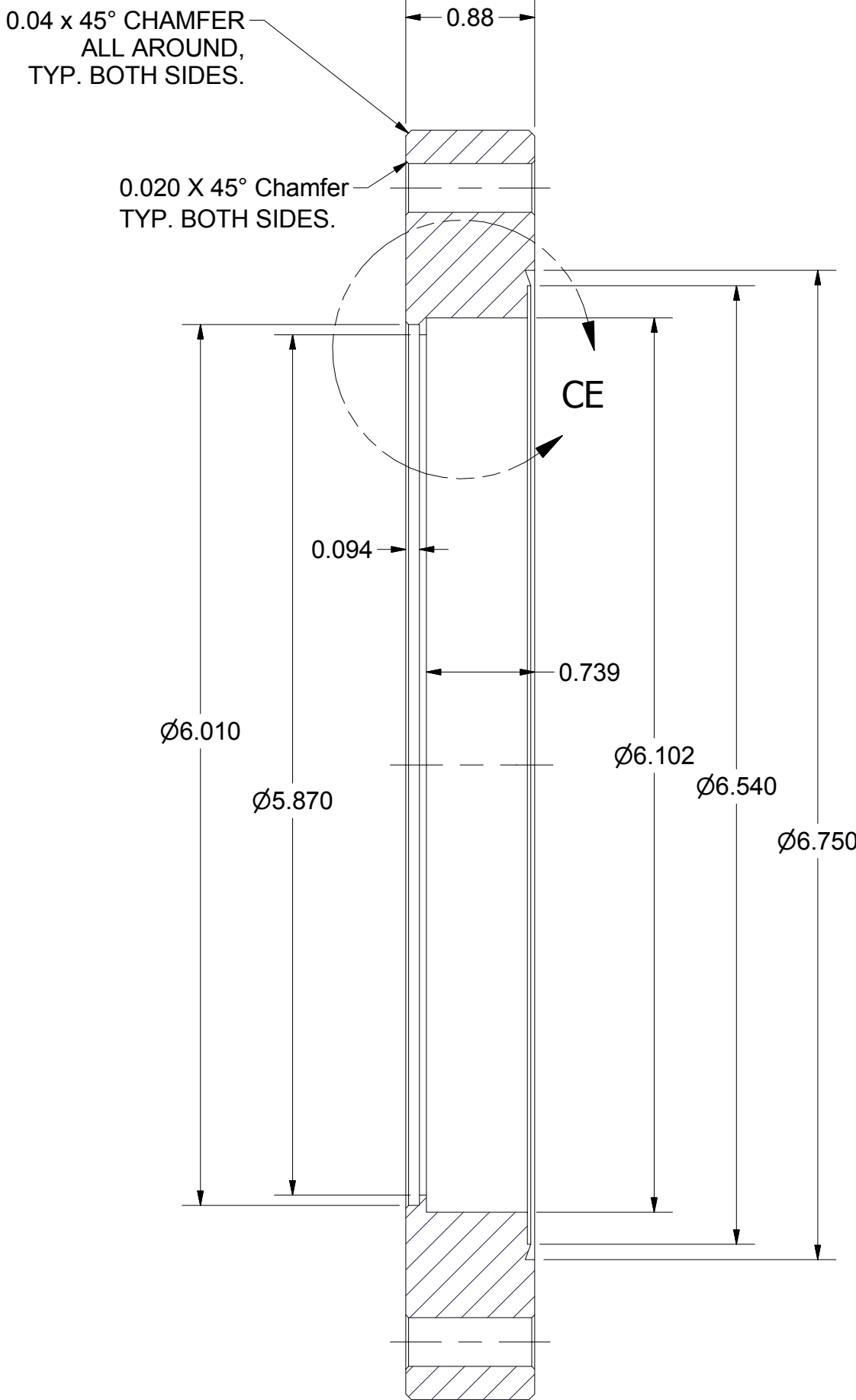
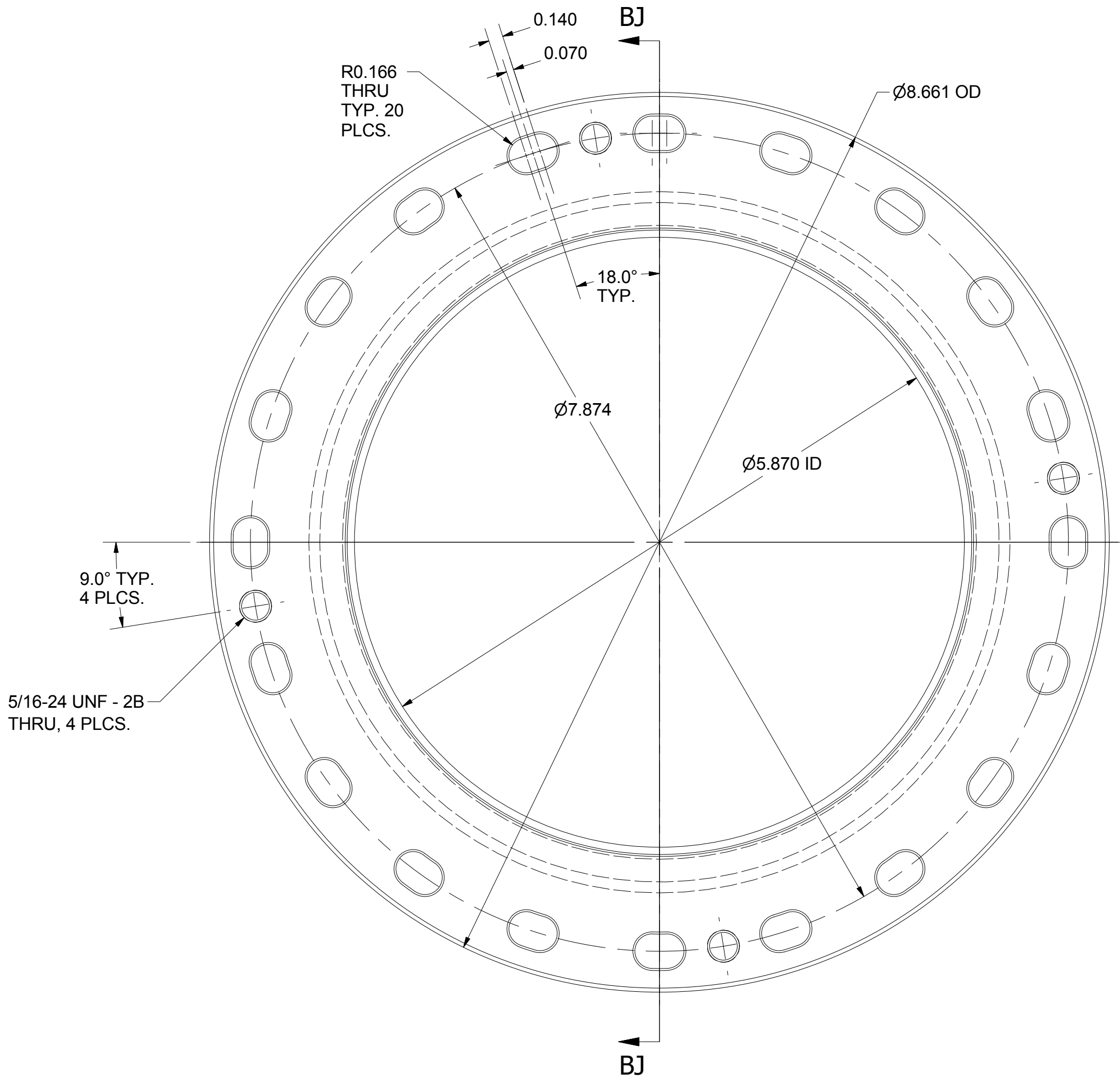


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MLC HOM Absorber
110mm Taper Seal Flange

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED AND EDITED DIMENSIONS AND ANNOTATIONS. D.M.E.	1-6-14	TIO

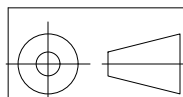




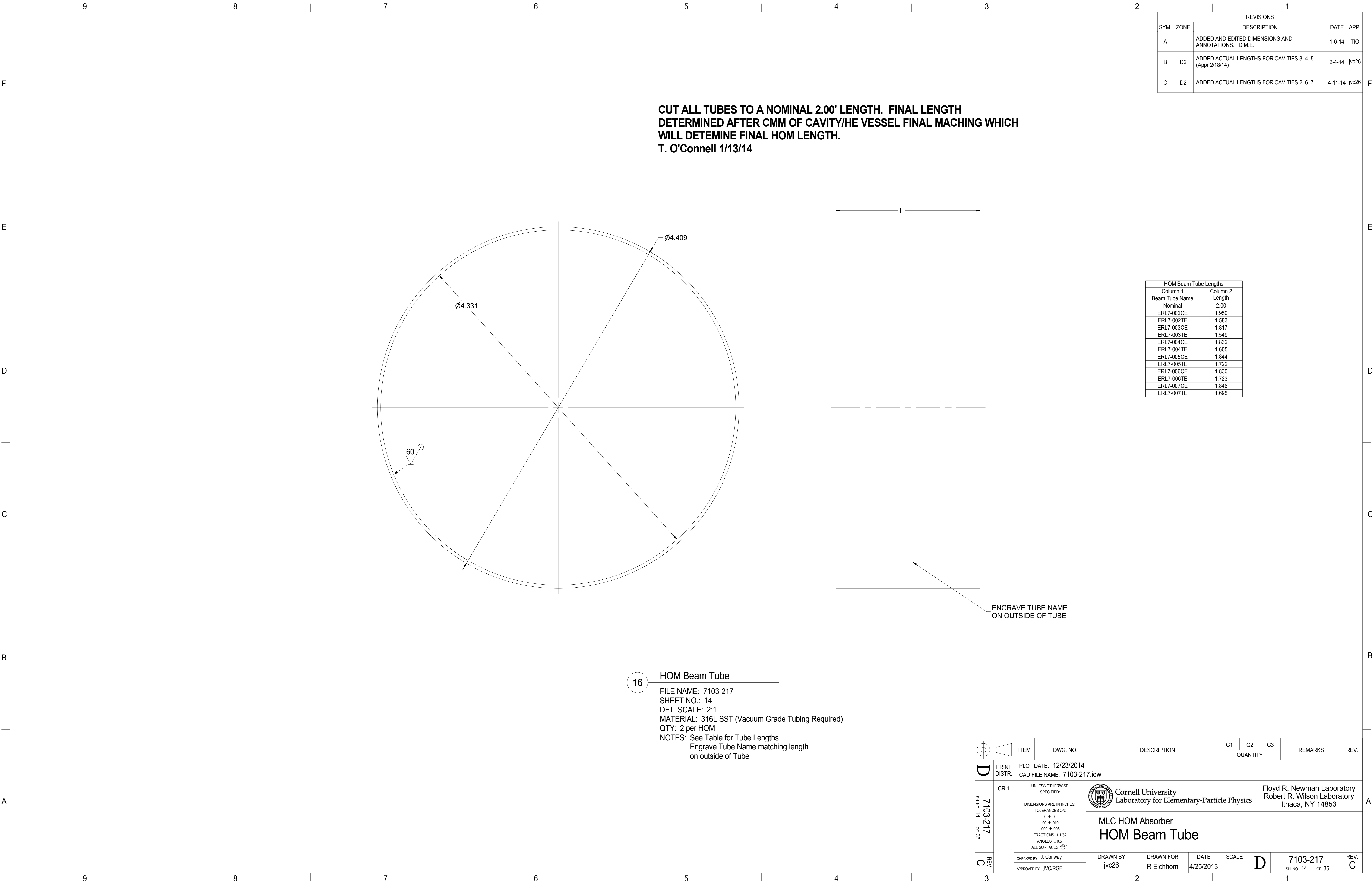
DETAIL CE
SCALE 2 : 1

SECTION BJ-BJ
SCALE 1 : 1

- 12
- SS Large CF Flange

FILE NAME: 7103-217
SHEET NO.: 13
DFT. SCALE: 1 : 1
MATERIAL: 316L SST
QTY: 1 per HOM Bellows End Asm
NOTES: Rough ID and OD on Water Jet
Water Jet slots to finish dimension

		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.		
					QUANTITY						
D	PRINT DISTR.	PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw									
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7103-217 SH. NO. 13 OF 35		MLC HOM Absorber Large SS CF Flange									
A	REV.	CHECKED BY: J. Conway			DRAWN BY jvc26	DRAWN FOR R Eichhorn	DATE 4/25/2013	SCALE	D	7103-217 SH. NO. 13 OF 35	REV. A
	APPROVED BY: JVC/RGE										



REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED AND EDITED DIMENSIONS AND ANNOTATIONS. D.M.E.	1-6-14	TIO
B	D2	ADDED ACTUAL LENGTHS FOR CAVITIES 3, 4, 5. (Appr 2/18/14)	2-4-14	jvc26
C	D2	ADDED ACTUAL LENGTHS FOR CAVITIES 2, 6, 7	4-11-14	jvc26

HOM Beam Tube Lengths	
Column 1	Column 2
Beam Tube Name	Length
Nominal	2.00
ERL7-002CE	1.950
ERL7-002TE	1.583
ERL7-003CE	1.817
ERL7-003TE	1.549
ERL7-004CE	1.832
ERL7-004TE	1.605
ERL7-005CE	1.844
ERL7-005TE	1.722
ERL7-006CE	1.830
ERL7-006TE	1.723
ERL7-007CE	1.846
ERL7-007TE	1.695

16 HOM Beam Tube

FILE NAME: 7103-217
SHEET NO.: 14
DFT. SCALE: 2:1
MATERIAL: 316L SST (Vacuum Grade Tubing Required)
QTY: 2 per HOM
NOTES: See Table for Tube Lengths
Engrave Tube Name matching length on outside of Tube

PRINT
DISTR.

D

ITEM

DWG. NO.

DESCRIPTION

G1G2G3
QUANTITY

REMARKS

REV.

PLOT DATE: 12/23/2014
CAD FILE NAME: 7103-217.idw

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

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Ithaca, NY 14853

MLC HOM Absorber
HOM Beam Tube

CHECKED BY: J. Conway
APPROVED BY: JVC/RGE

DRAWN BY
jvc26

DRAWN FOR
R Eichhorn

DATE
4/25/2013

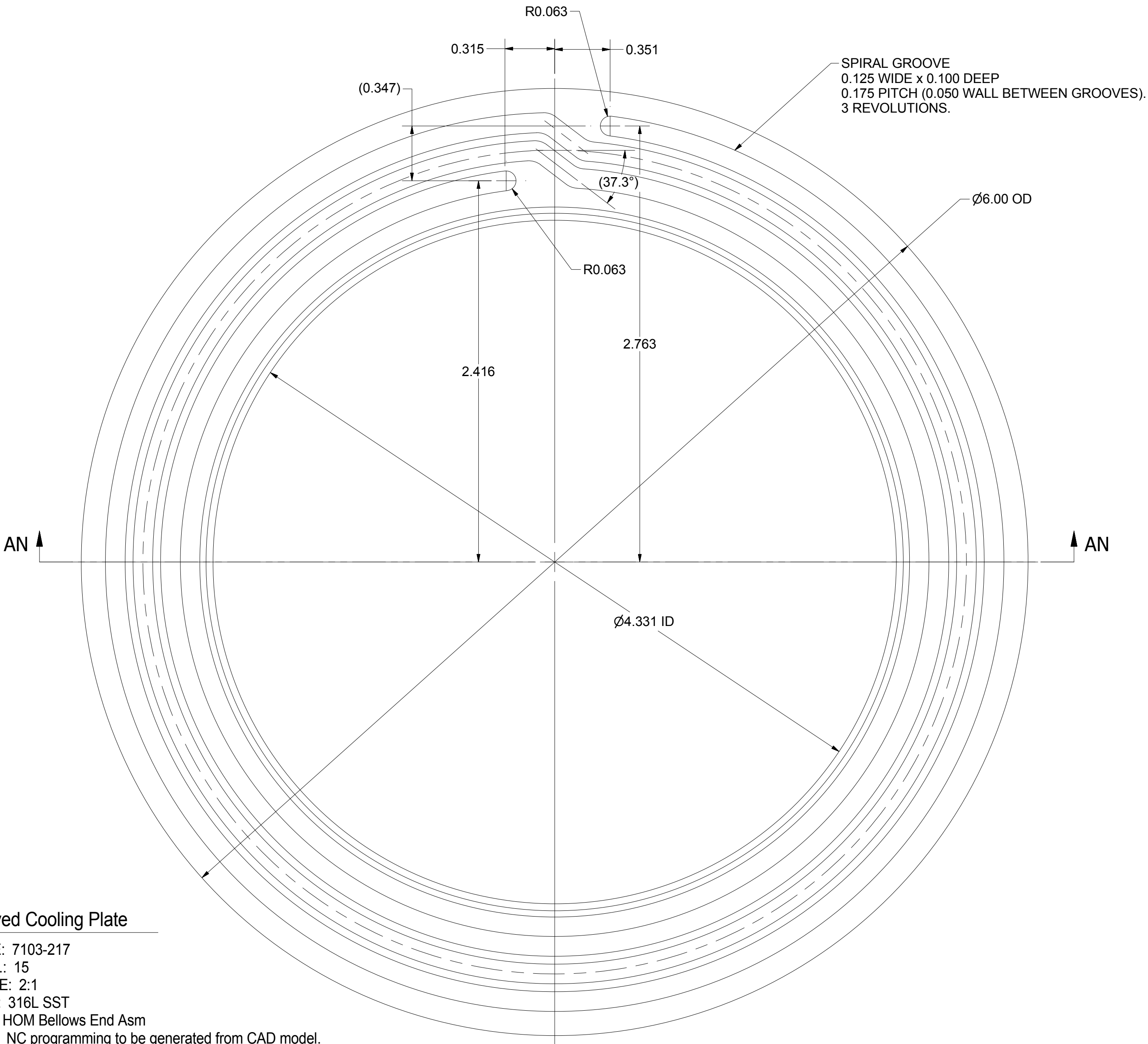
SCALE

D

7103-217
SH. NO. 14 OF 35

REV.
C

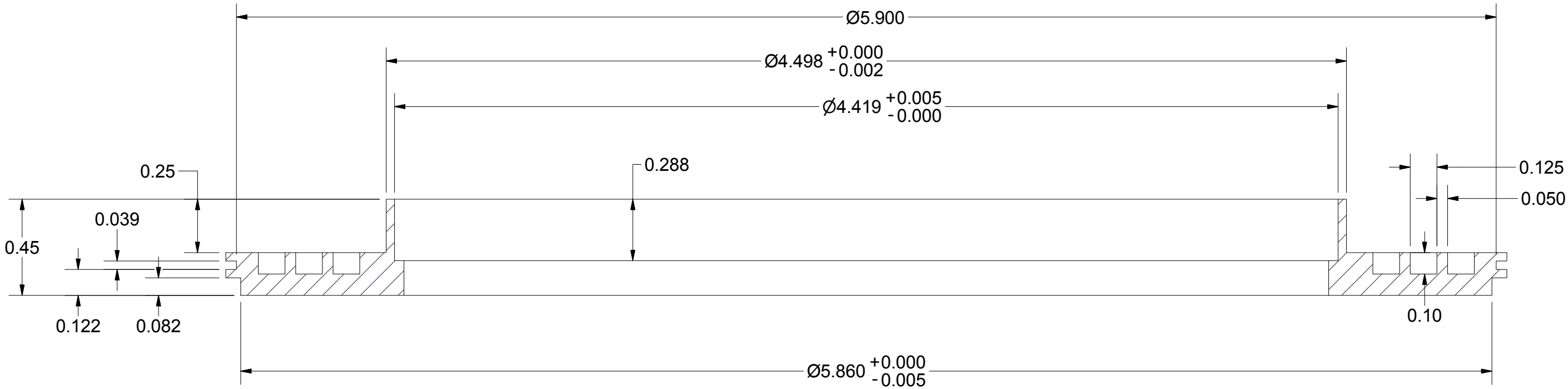
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED AND EDITED DIMENSIONS AND ANNOTATIONS. D.M.E.	1-6-14	TIO



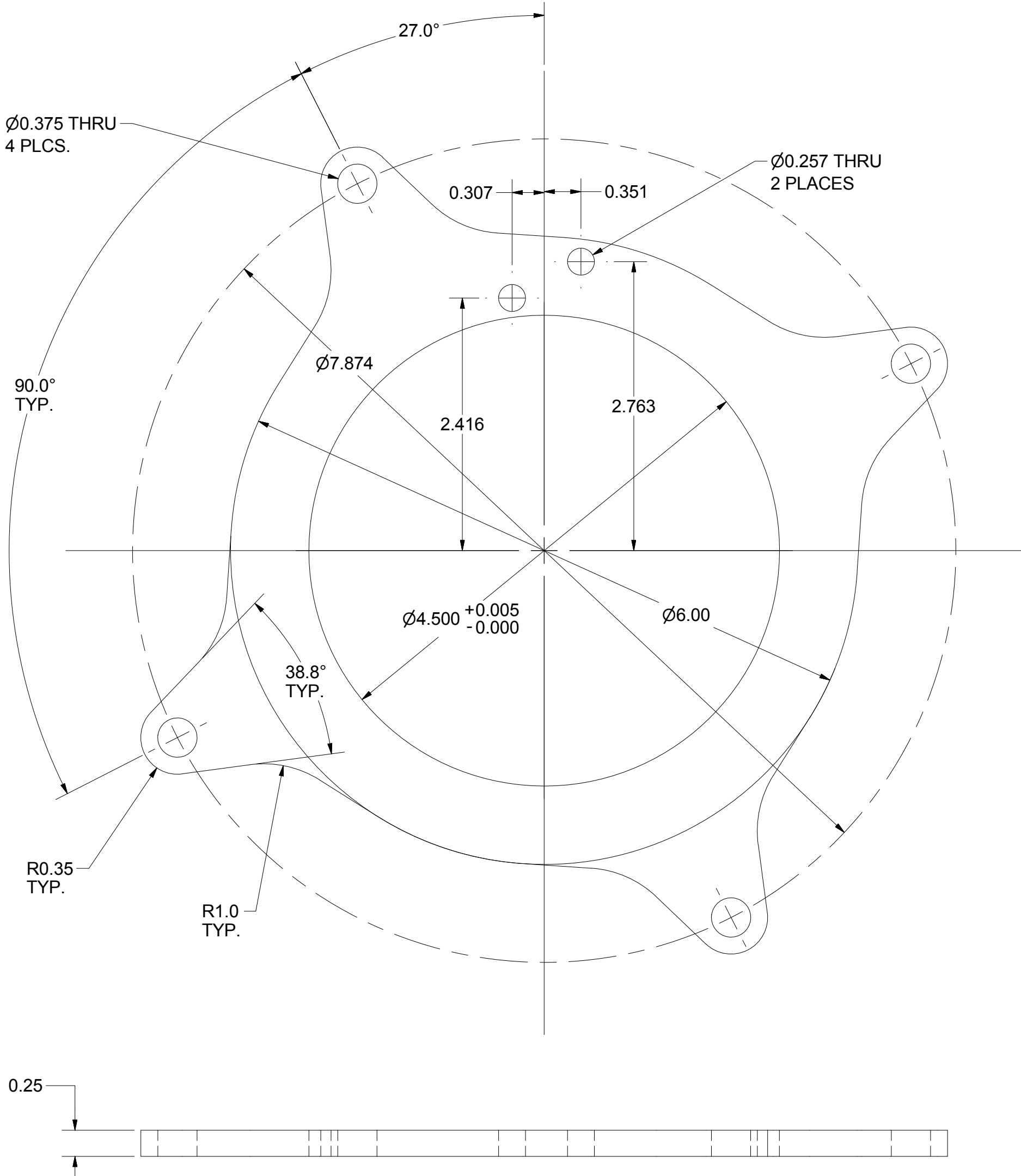
14

5K Grooved Cooling Plate

FILE NAME: 7103-217
SHEET NO.: 15
DFT. SCALE: 2:1
MATERIAL: 316L SST
QTY: 1 per HOM Bellows End Asm
NOTES: 1) NC programming to be generated from CAD model.



SECTION AN-AN
SCALE 2 : 1



15

5K Cooling Cover with Bellows Supports

FILE NAME: 7103-217
SHEET NO.: 15
DFT. SCALE: 2:1
MATERIAL: 316L SST
QTY: 1 per HOM Bellows End Asm
NOTES: Can be done on Water Jet with no finish machining

SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED AND EDITED DIMENSIONS AND ANNOTATIONS. D.M.E.	1-6-14	TIO

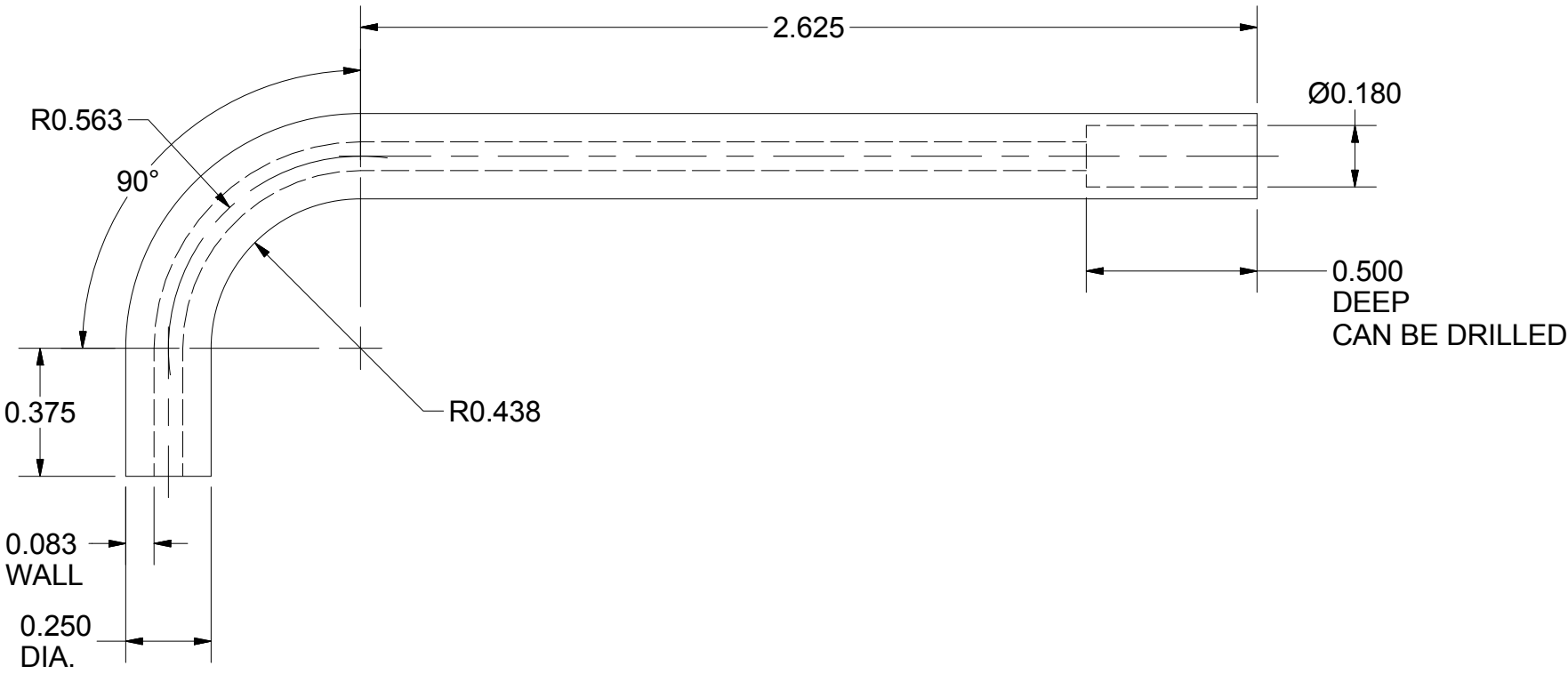
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REV.		CHECKED BY: J. Conway APPROVED BY: JVC/RGE	DRAWN BY jvc26	DRAWN FOR R Eichhorn	DATE 4/25/2013	SCALE D	7103-217 SH. NO. 15 OF 35

7103-217	REV. A
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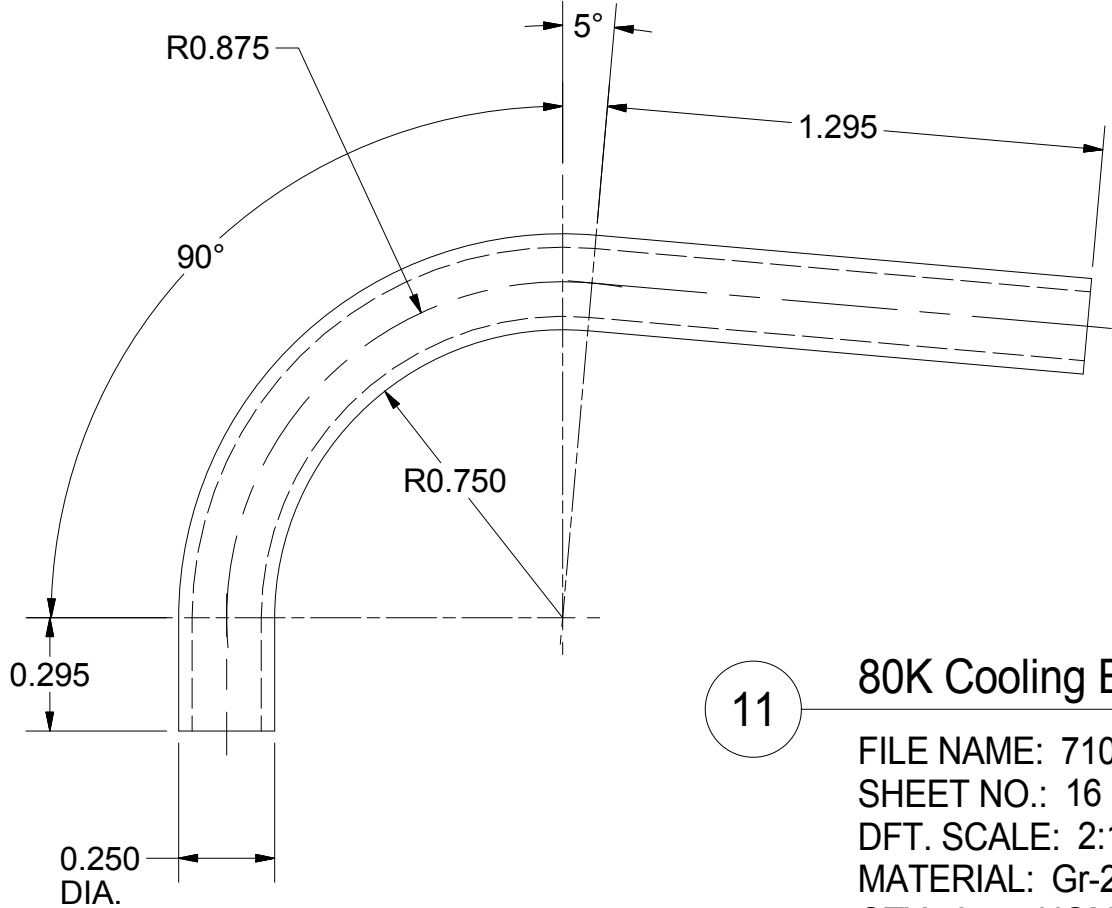
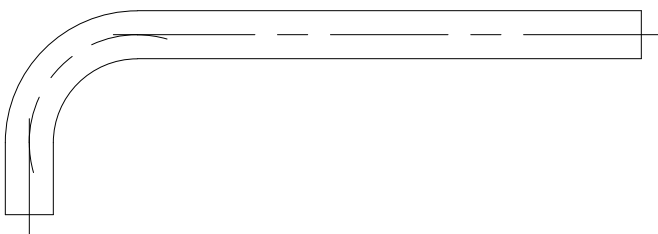
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Robert R. Wilson Laboratory
Ithaca, NY 14853

MLC HOM Absorber
HOM 5K Cooling

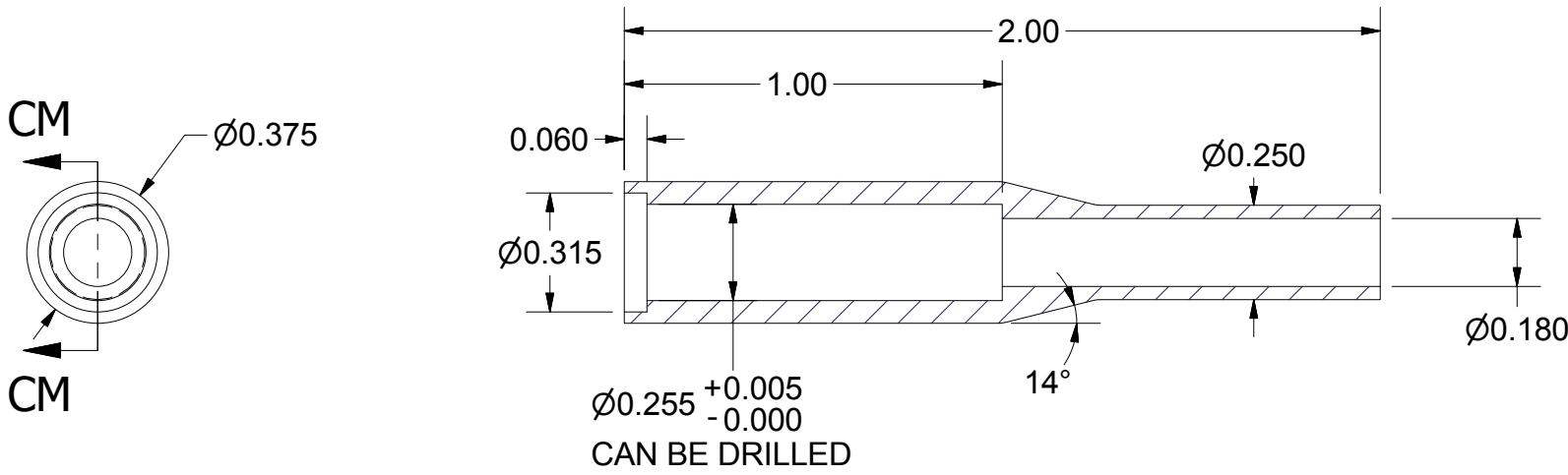
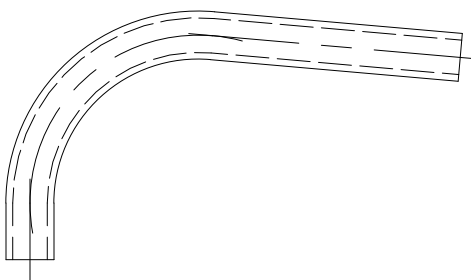
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED AND EDITED DIMENSIONS AND ANNOTATIONS. D.M.E.	1-6-14	TIO
B	F9	Changed Bend in Item 21 to 9/16in Radius (Appr 2/18/14)	1-23-14	jvc26



21 5K Cooling Elbow
FILE NAME: 7103-217
SHEET NO.: 16
DFT. SCALE: 2:1
MATERIAL: 316L/316 SST Tubing
QTY: 4 per HOM
NOTES: 1:1 template view for forming is below.

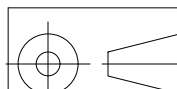




11 80K Cooling Elbow
FILE NAME: 7103-217
SHEET NO.: 16
DFT. SCALE: 2:1
MATERIAL: Gr-2 Ti Tubing
QTY: 2 per HOM
NOTES: 1:1 template view for forming is below.



SECTION CM-CM
SCALE 2 : 1

32 Tubing Adapter .25 to .25
FILE NAME: 7103-217
SHEET NO.: 16
DFT. SCALE: 2:1
MATERIAL: 316L
QTY: 2 per HOM
NOTES:

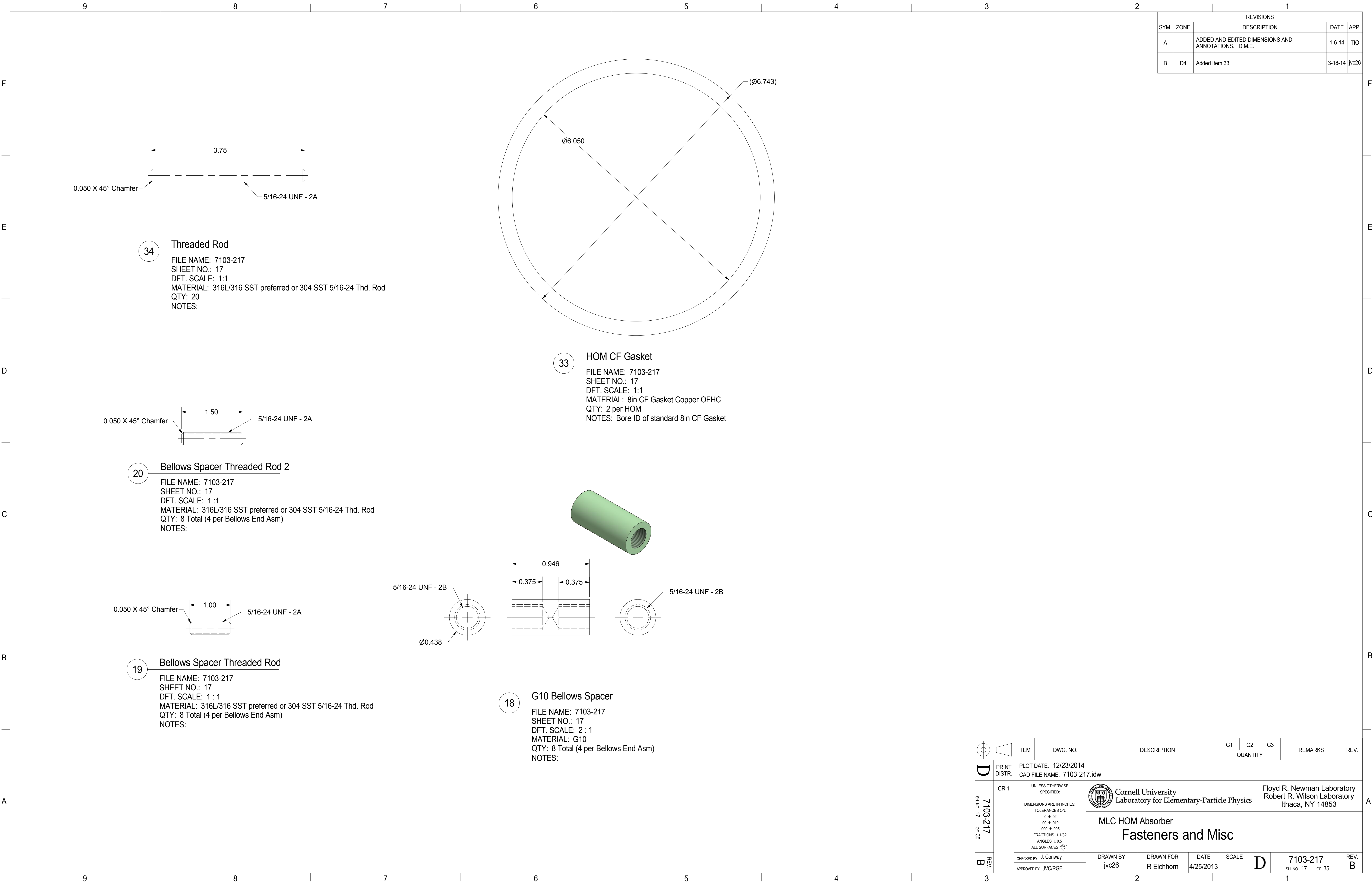
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									QUANTITY												
D		PRINT DISTR.		PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw																	
7103-217 SH. NO. 16 OF 35		CR-1		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: Ø ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 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			
						MLC HOM Absorber Cooling Tubes															
REV. B				CHECKED BY: J. Conway APPROVED BY: JVC/RGE		DRAWN BY jvc26		DRAWN FOR R Eichhorn		DATE 4/25/2013		SCALE		D		7103-217 SH. NO. 16 OF 35		REV. B			



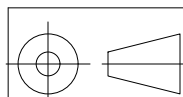


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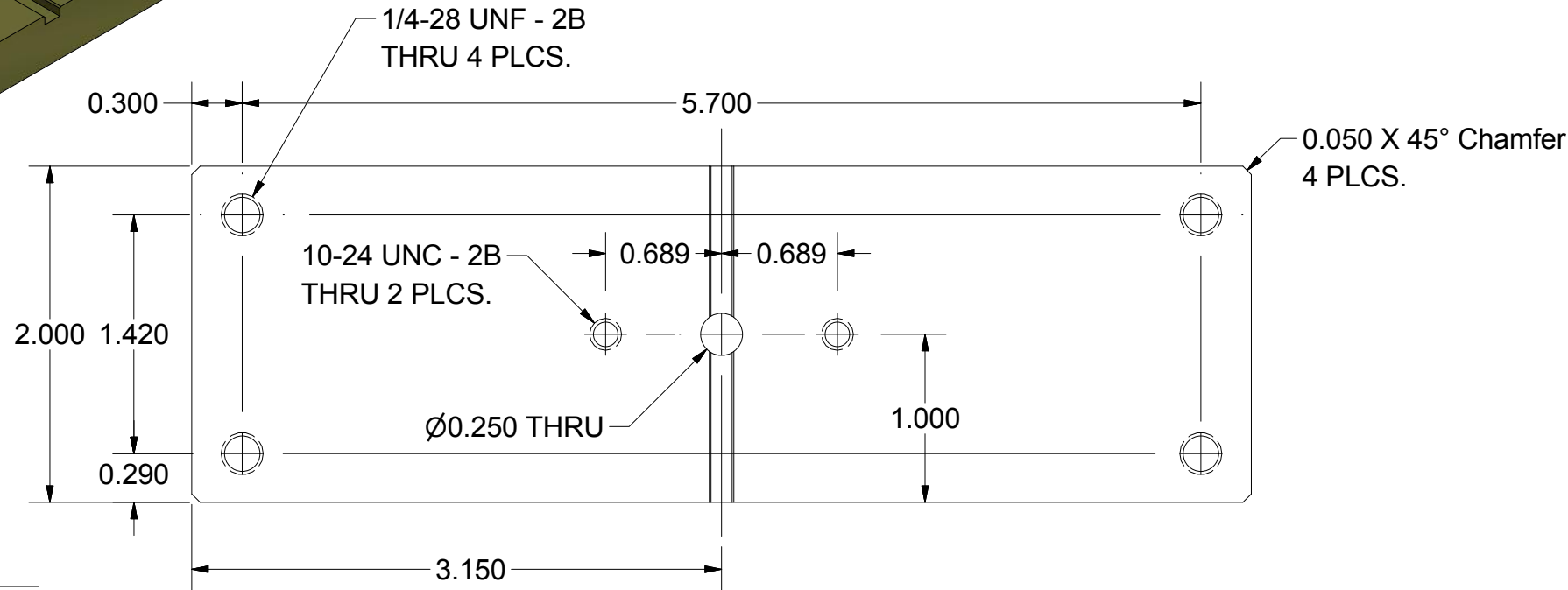
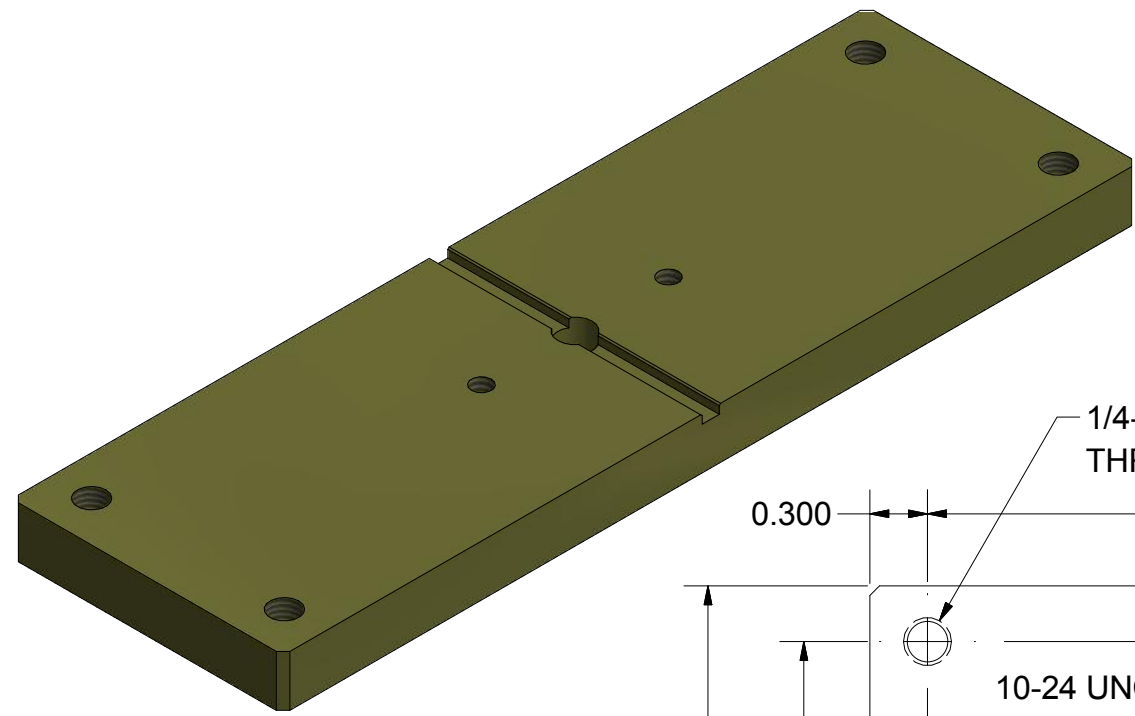
MLC HOM Absorber
Cooling Tubes



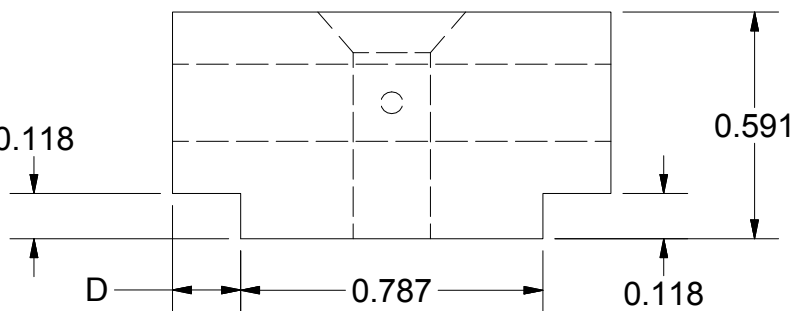
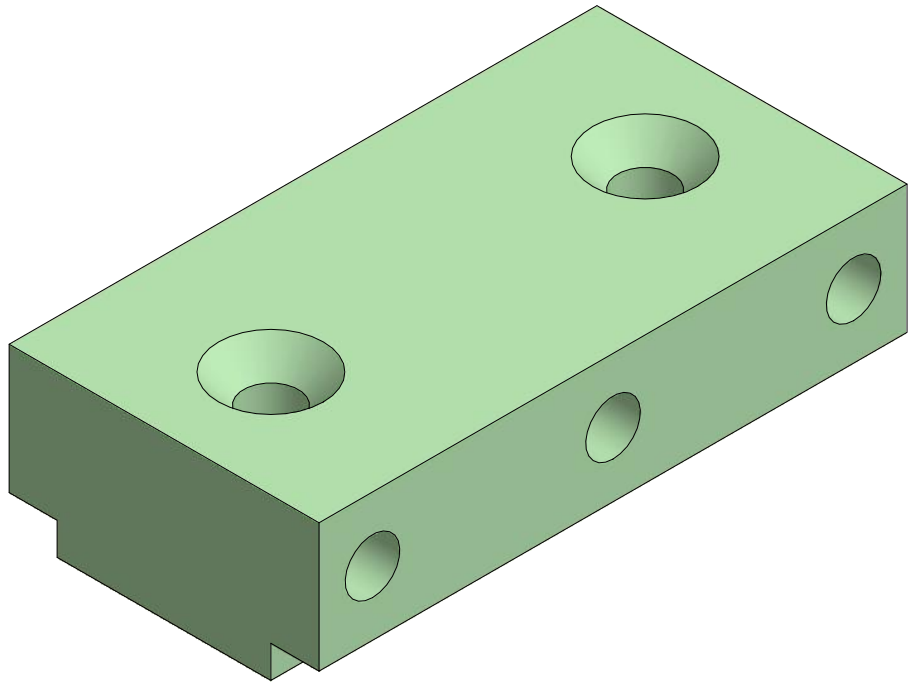
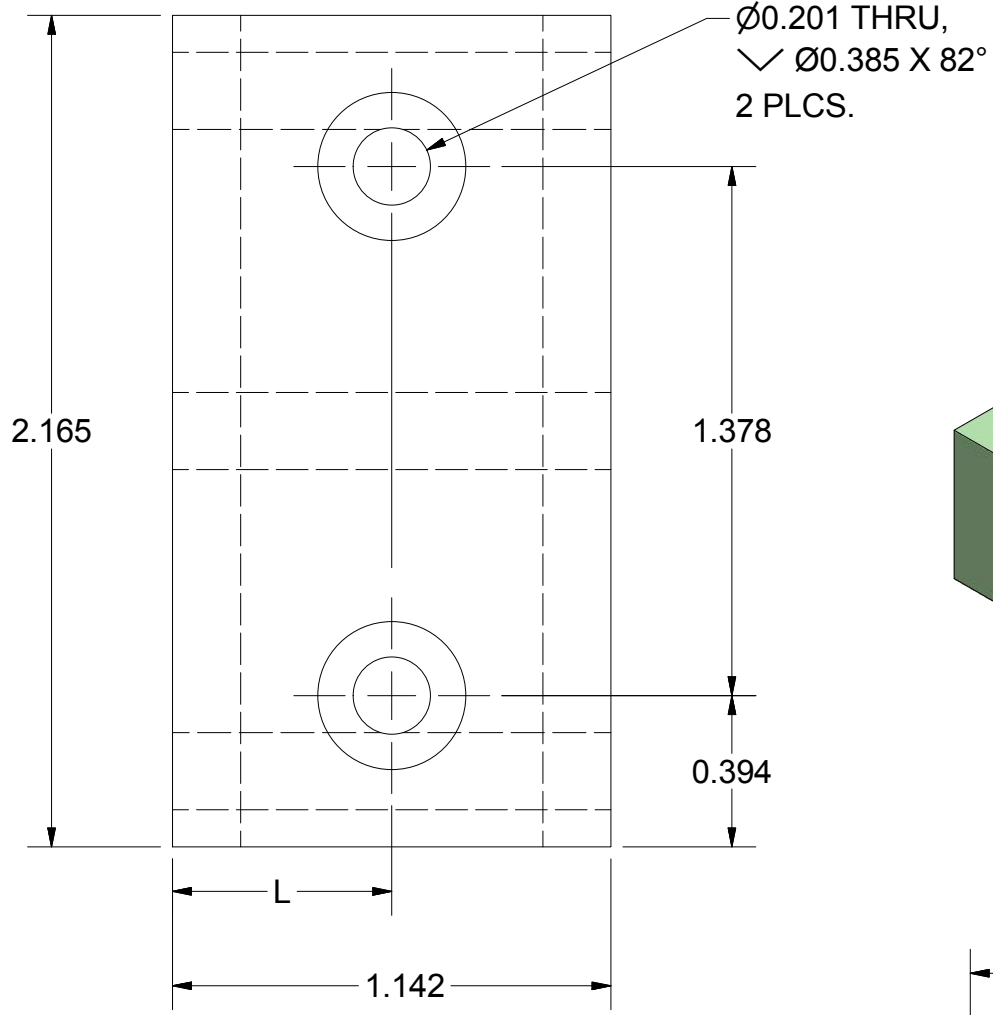
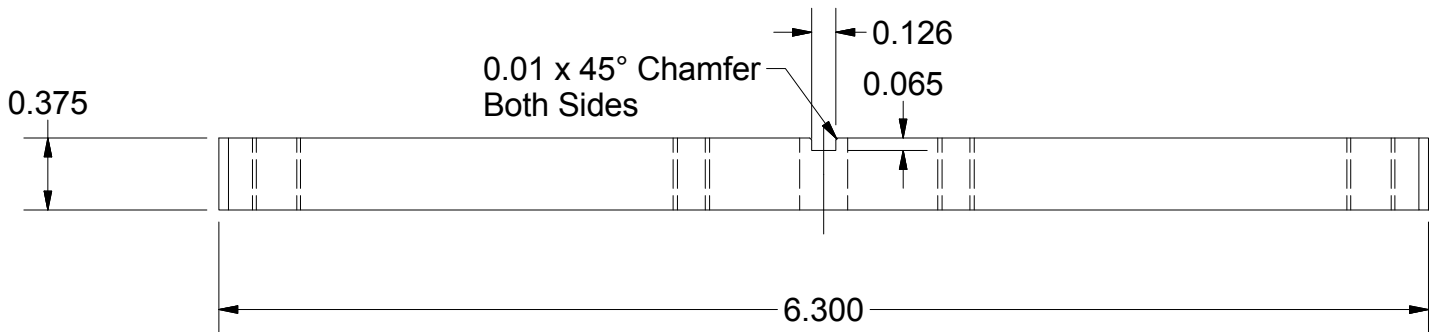
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED AND EDITED DIMENSIONS AND ANNOTATIONS. D.M.E.	1-6-14	TIO
B	D4	Added Item 33	3-18-14	jvc26

		ITEM		DWG. NO.		DESCRIPTION			G1		G2		G3		REMARKS		REV.			
									QUANTITY											
D		PRINT DISTR.		PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw																
7103-217 SH. NO. 17 OF 35		CR-1		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 MLC HOM Absorber Fasteners and Misc										Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853			
REV. B		CHECKED BY: J. Conway		DRAWN BY: jvc26			DRAWN FOR: R Eichhorn			DATE: 4/25/2013		SCALE:		D		7103-217 SH. NO. 17 OF 35		REV. B		
		APPROVED BY: JVC/RGE																		

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED AND EDITED DIMENSIONS AND ANNOTATIONS. D.M.E.	1-6-14	TIO
B	7B	Fixed Misplaced Dimension	12/23/14	KWS

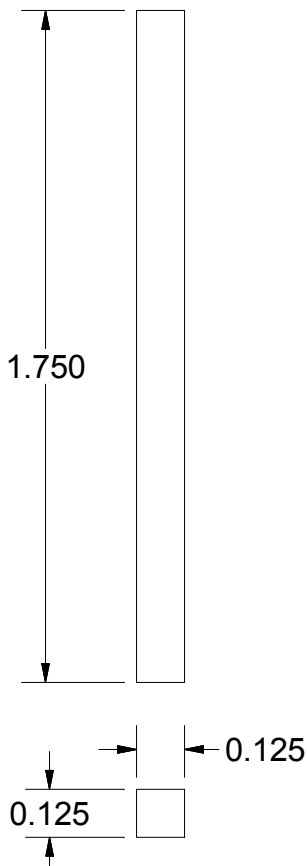
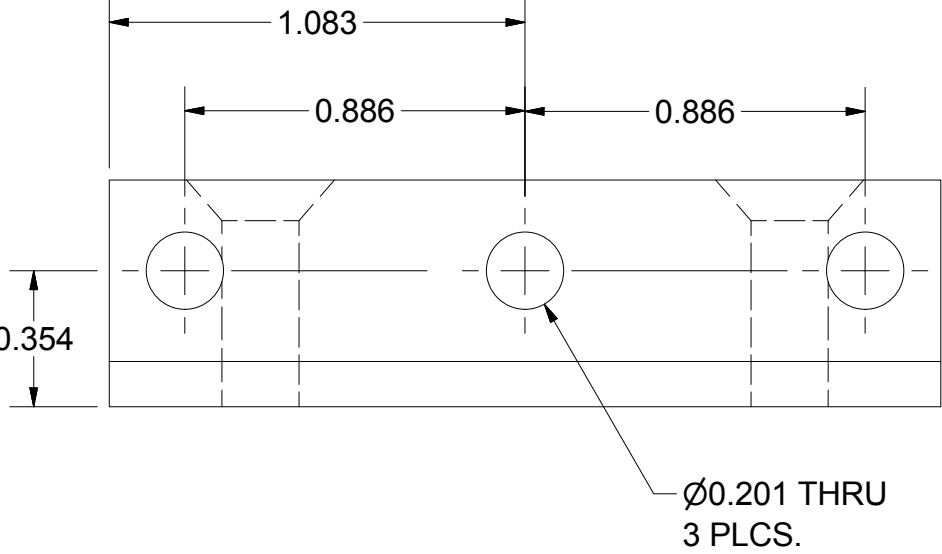


23 HOM Support Top Plate
FILE NAME: 7103-217
SHEET NO.: 18
DFT. SCALE: 1 : 1
MATERIAL: TITANIUM
QTY: 1
NOTES:

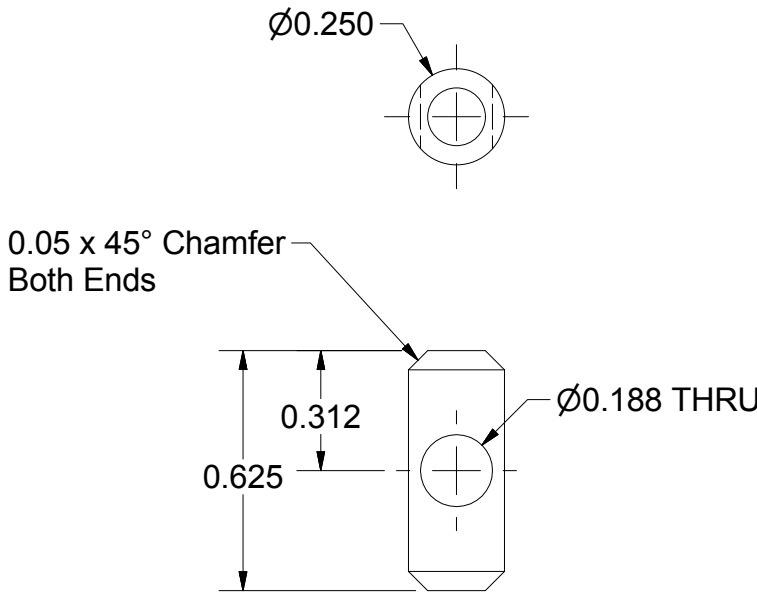


Cavity	L	D
ERL7-2A	.618	.224
ERL7-3	.595	.201
ERL7-4	.571	.177
ERL7-5	.571	.177
ERL7-6	.599	.205
ERL7-7	.602	.208

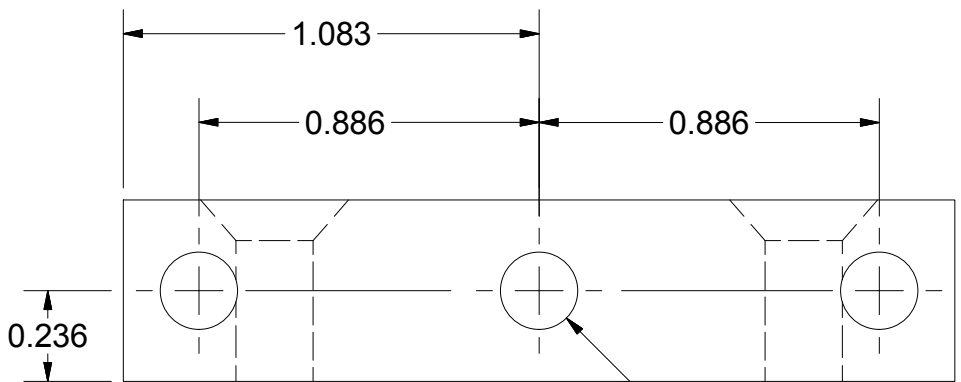
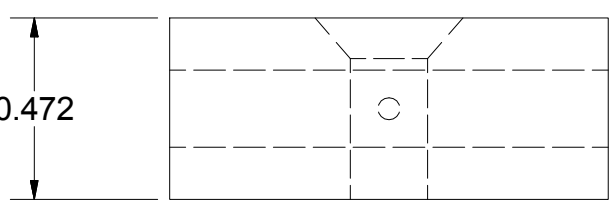
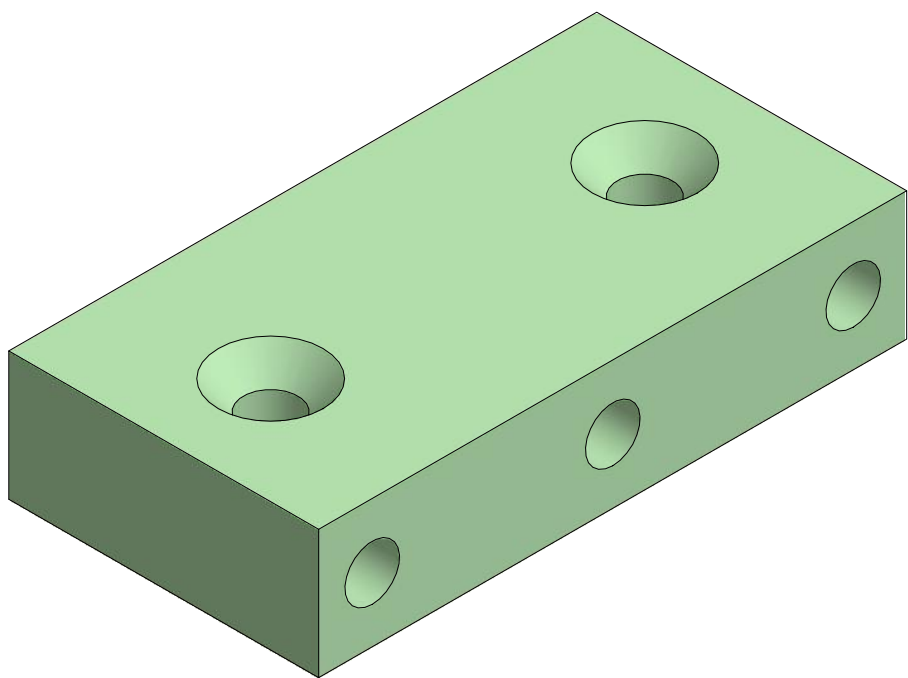
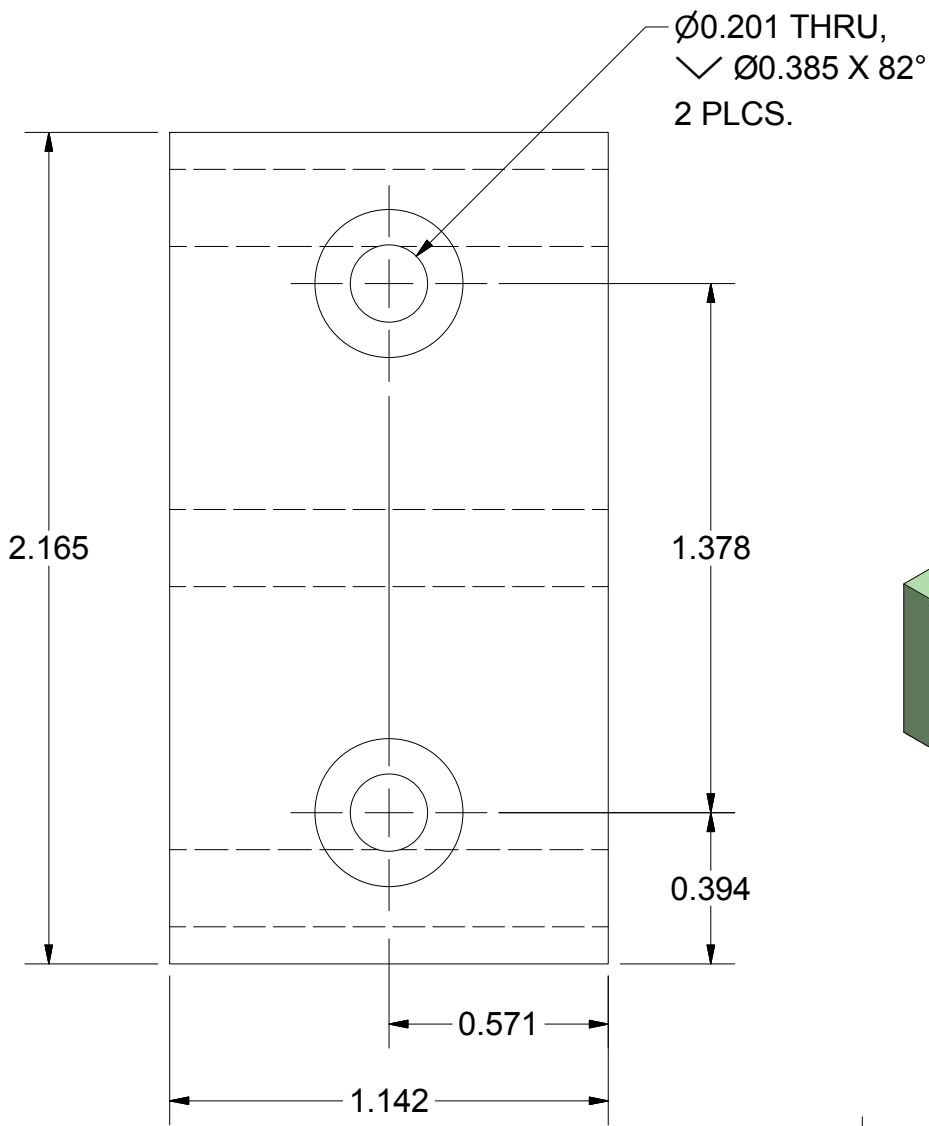
25 HOM Support G10 Bottom
FILE NAME: 7103-217
SHEET NO.: 18
DFT. SCALE: 2 : 1
MATERIAL: G10
QTY: 1
NOTES: CSnk hole location and cutout width varies to account for tuning gap



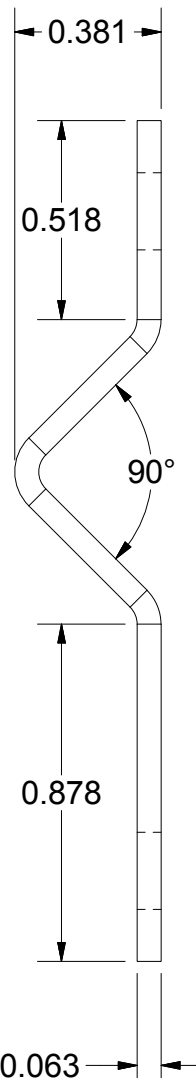
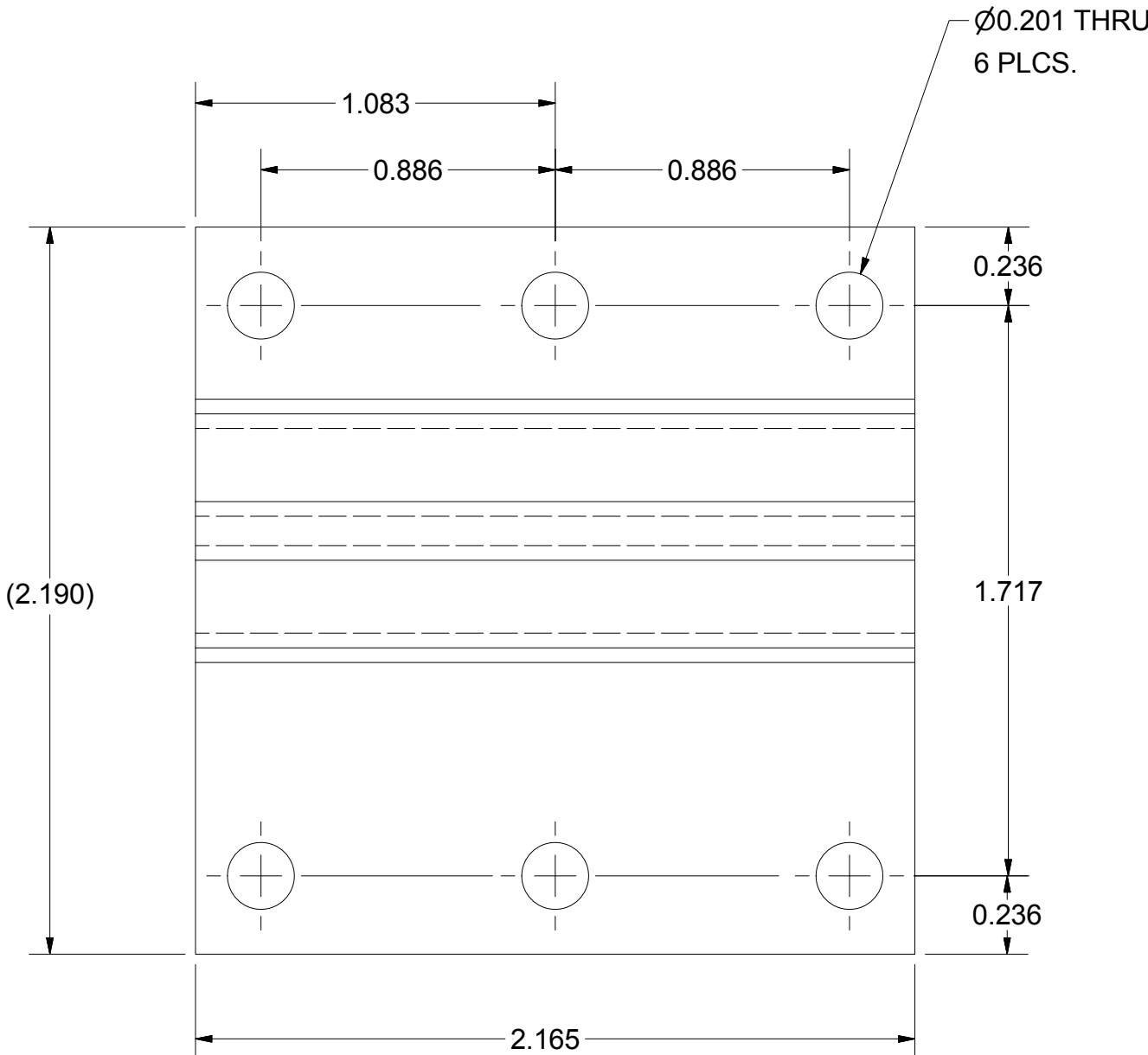
27 HOM Support Key
FILE NAME: 7103-217
SHEET NO.: 18
DFT. SCALE: 2 : 1
MATERIAL: 316 SST
QTY: 1
NOTES:



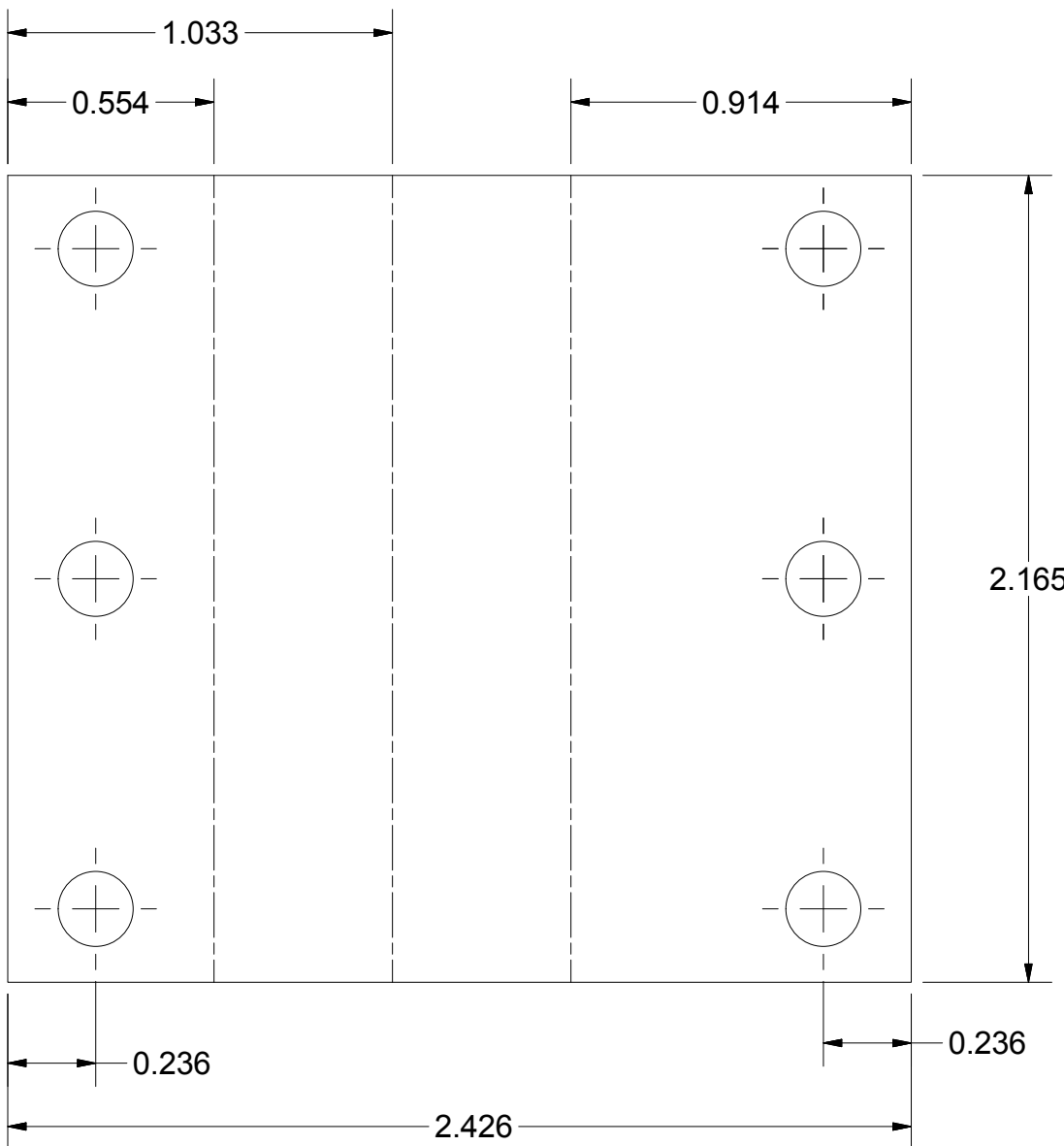
26 HOM Support Pin
FILE NAME: 7103-217
SHEET NO.: 18
DFT. SCALE: 2 : 1
MATERIAL: 316 SST
QTY: 1
NOTES:




24 HOM Support G10 Top
FILE NAME: 7103-217
SHEET NO.: 18
DFT. SCALE: 2 : 1
MATERIAL: G10
QTY: 1
NOTES:



22 HOM Support V Plate
FILE NAME: 7103-217
SHEET NO.: 18
DFT. SCALE: 2 : 1
MATERIAL: .063 in Thick Titanium
QTY: 2
NOTES:



FLAT PATTERN
SCALE 2 : 1

		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
					QUANTITY				
D	PRINT DISTR.	PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw							
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7103-217 SH. NO. 18 OF 35									
B	REV.	MLC HOM Absorber Overhead Support Parts							
		CHECKED BY: J. Conway	DRAWN BY: jvc26	DRAWN FOR: R Eichhorn	DATE: 4/25/2013	SCALE: D	7103-217 SH. NO. 18 OF 35	REV. B	
		APPROVED BY: JVC/RGE							



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Ithaca, NY 14853

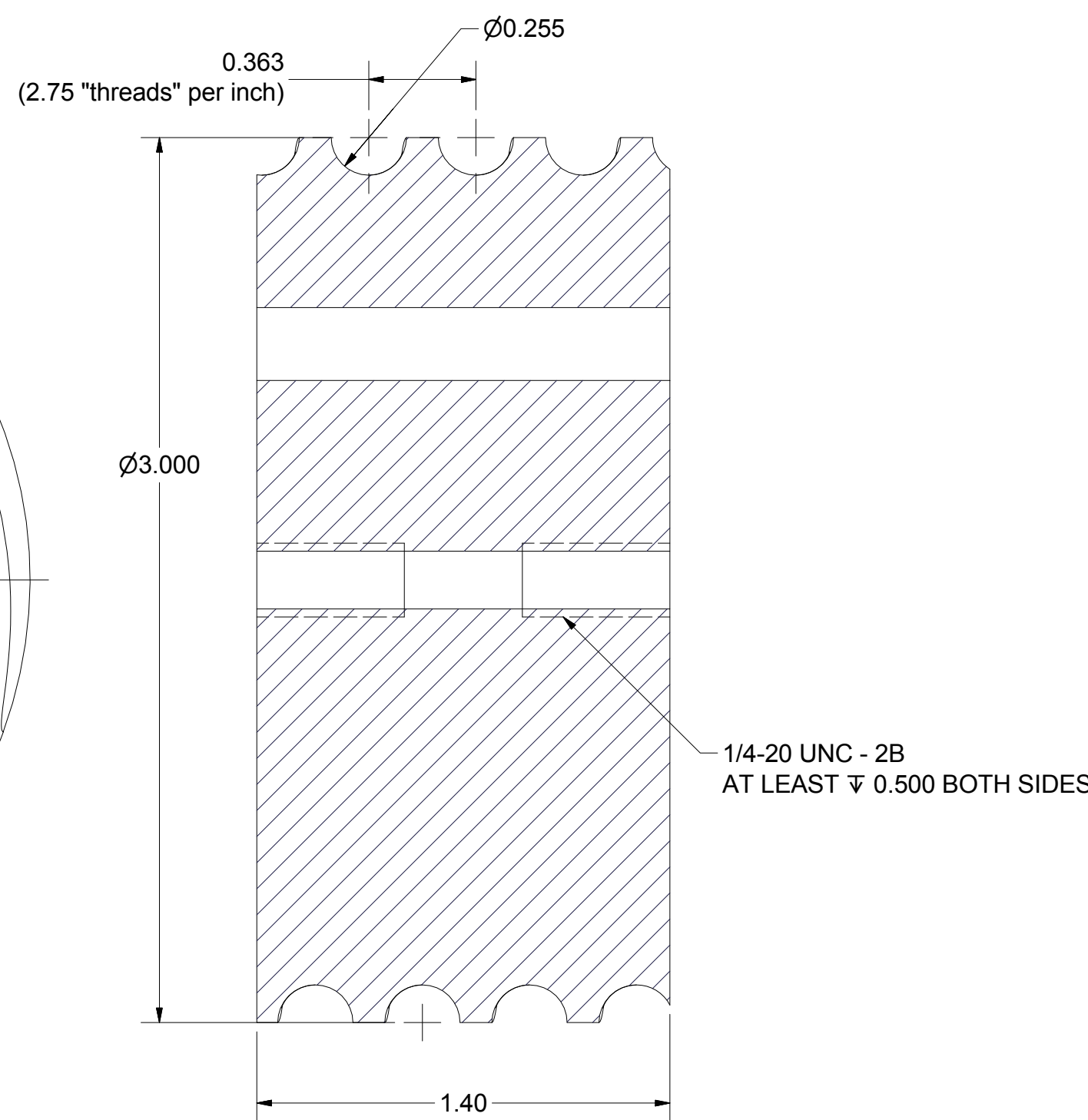
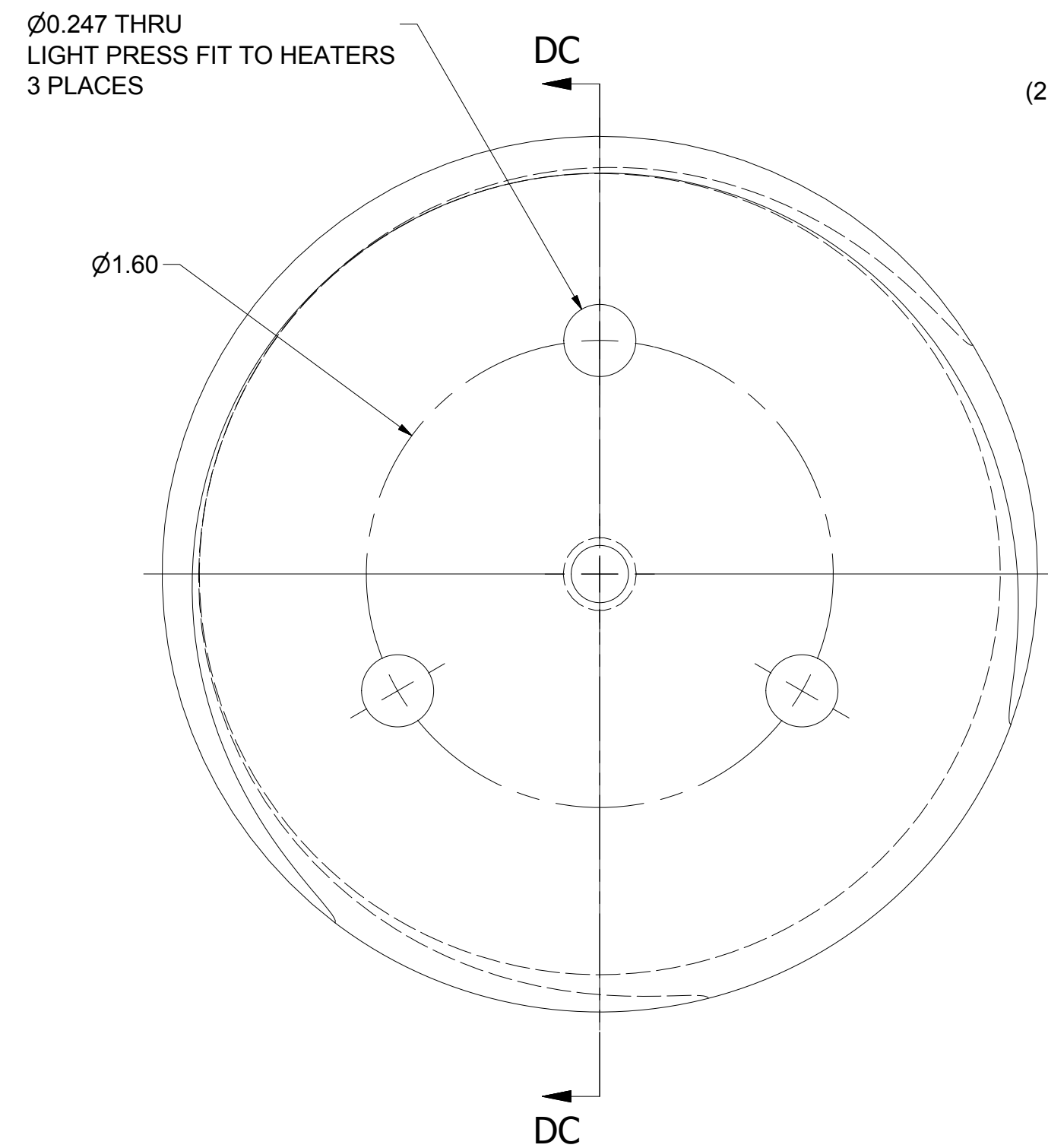
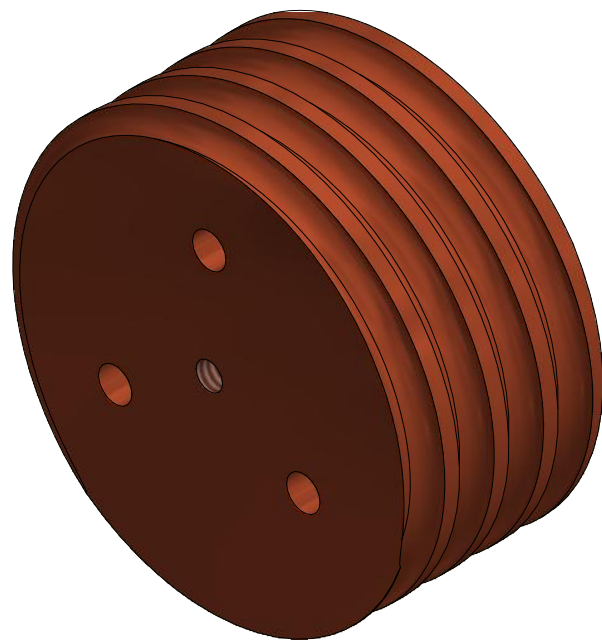
MLC HOM Absorber
Overhead Support Parts

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.

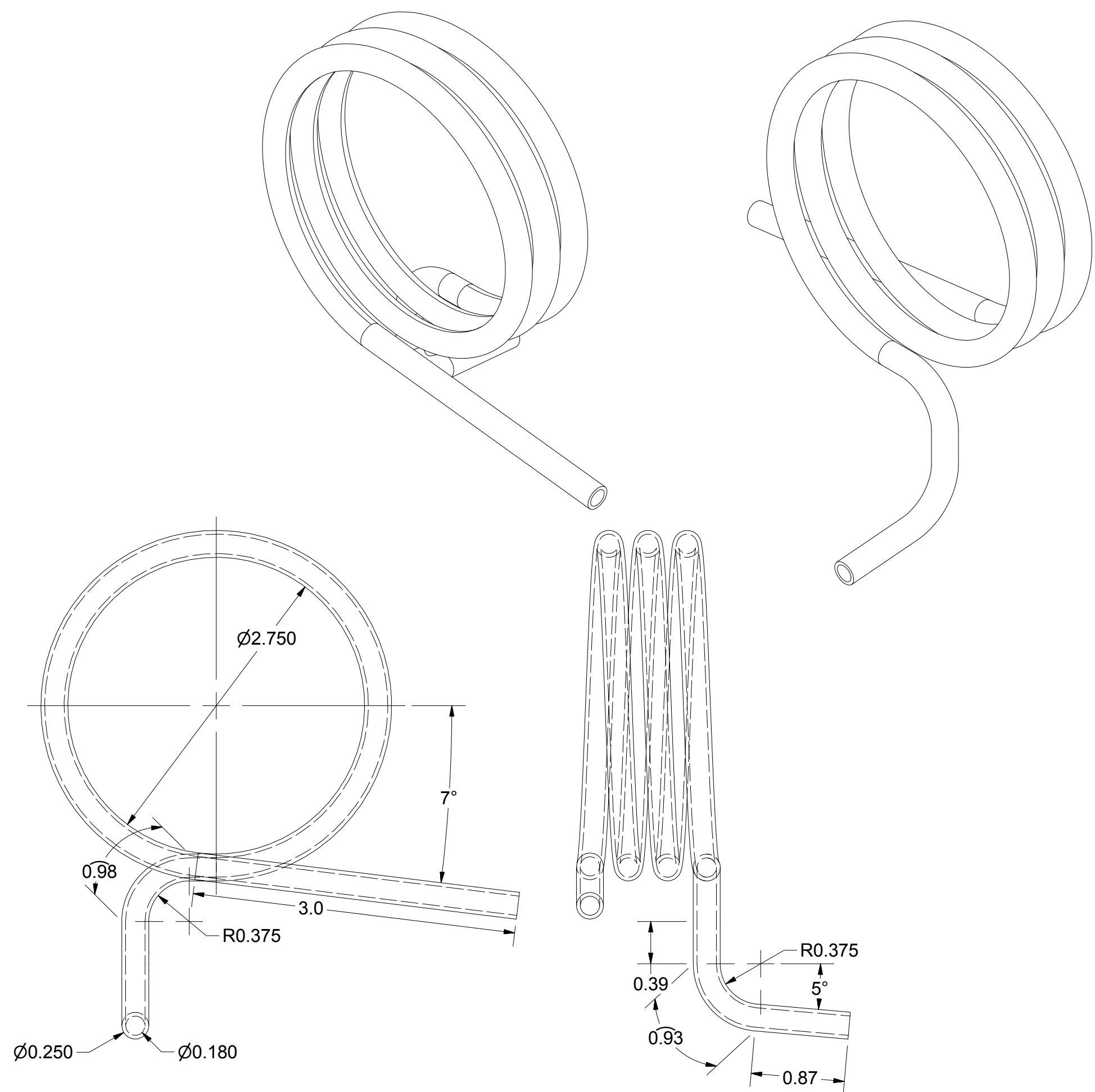
28

COPPER SPIRAL BLOCK

FILE NAME: 7103-217
SHEET NO.: 19
DFT. SCALE: 2 : 1
MATERIAL: COPPER OFHC
QTY: 1
NOTES:



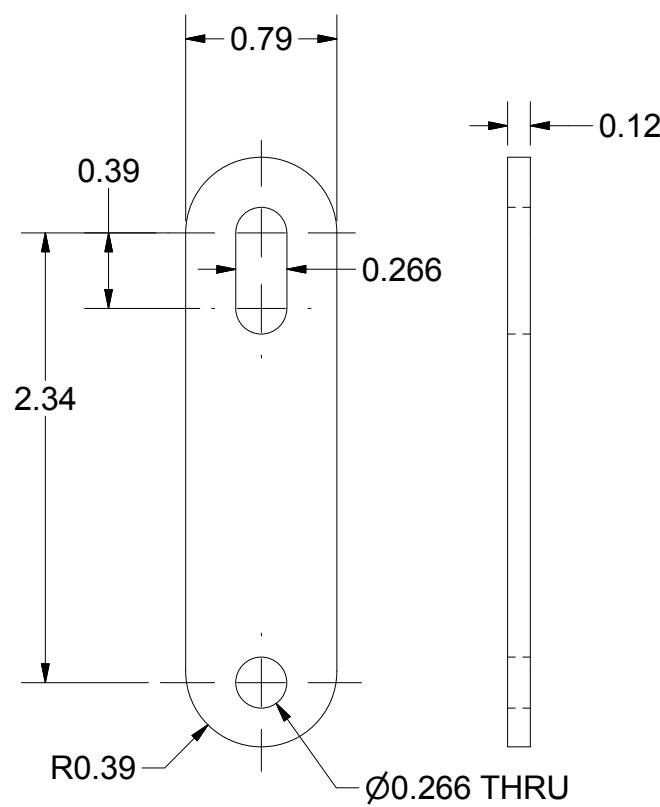
SECTION DC-DC
SCALE 2 : 1



(29

80K HEATER COIL

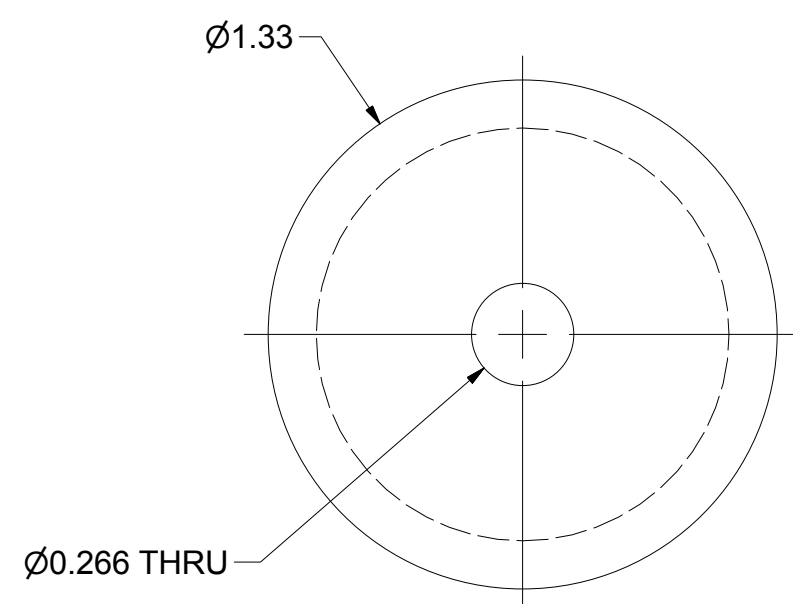
FILE NAME: 7103-217
SHEET NO.: 19
DFT. SCALE: 1 : 1
MATERIAL: 316 OR 316L SST
QTY: 1
NOTES: 0.25 OD x 0.035 Wall



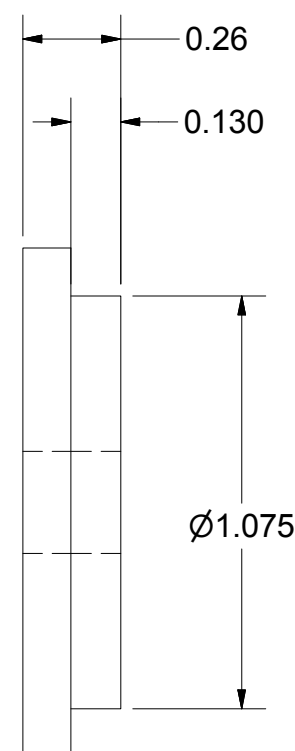
31

G10 STRAP

FILE NAME: 7103-217
SHEET NO.: 19
DFT. SCALE: 1 : 1
MATERIAL: G10
QTY: 1
NOTES:



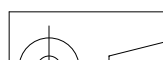




Ø0.266 THRU

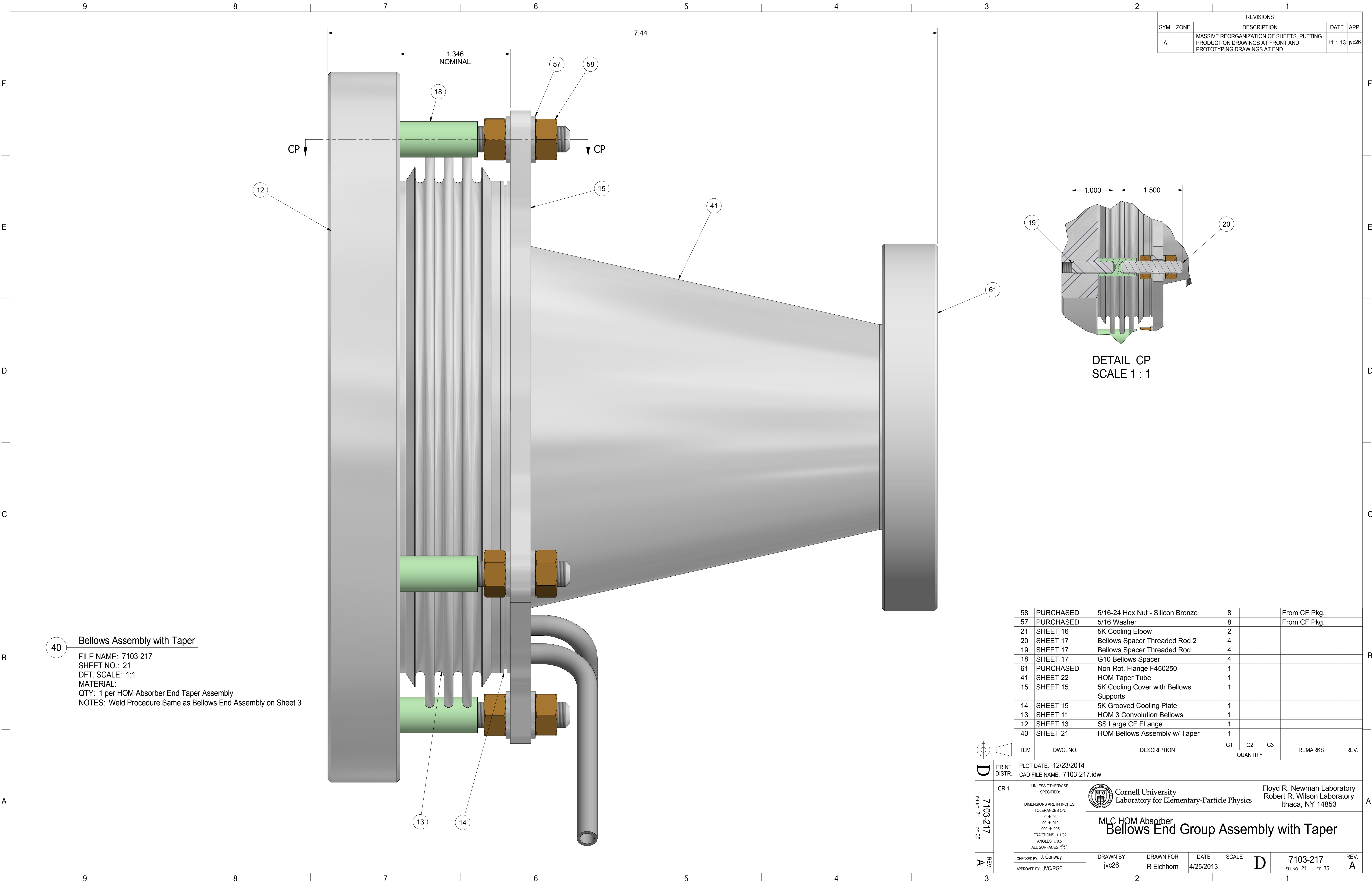


42

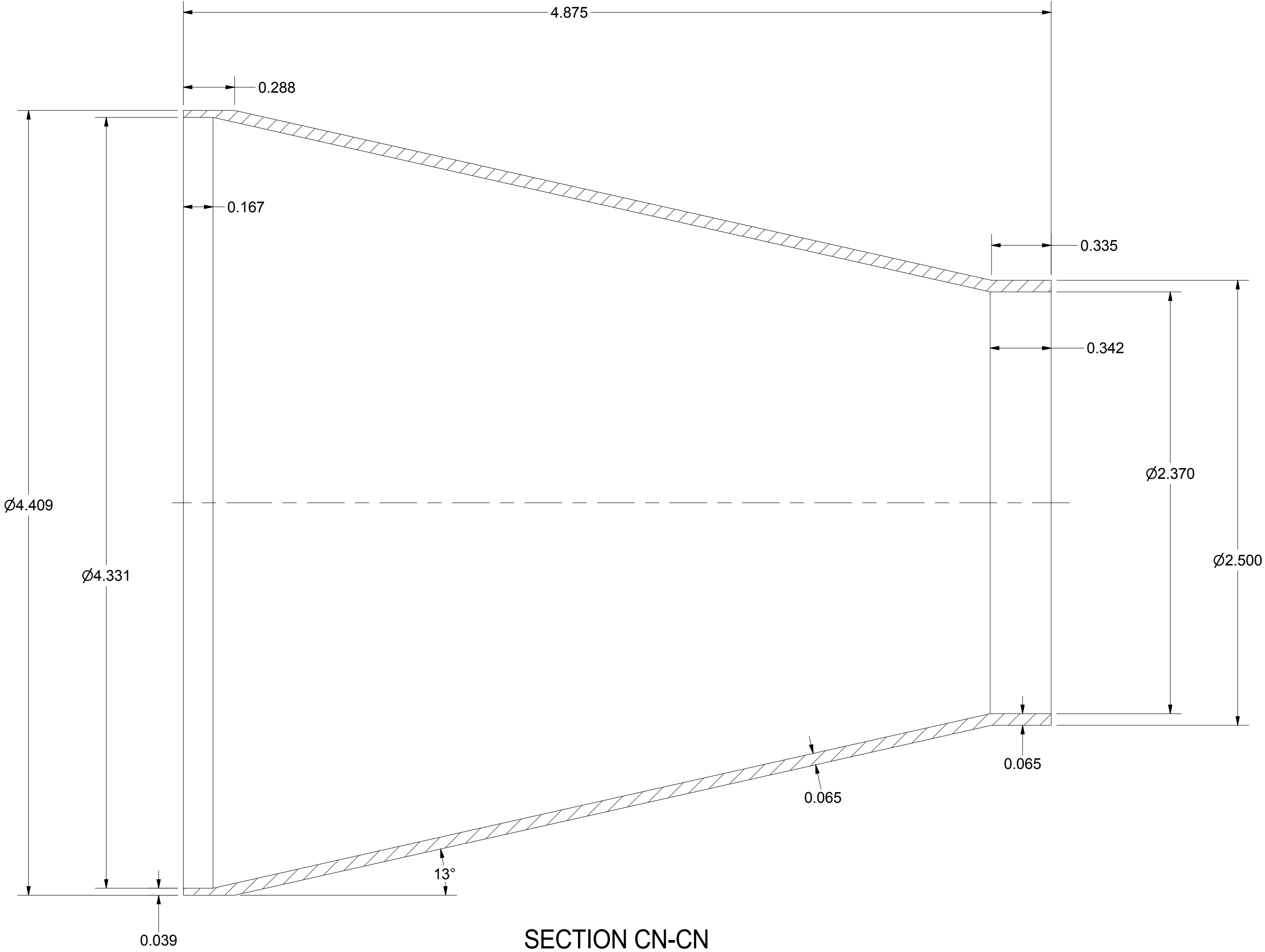
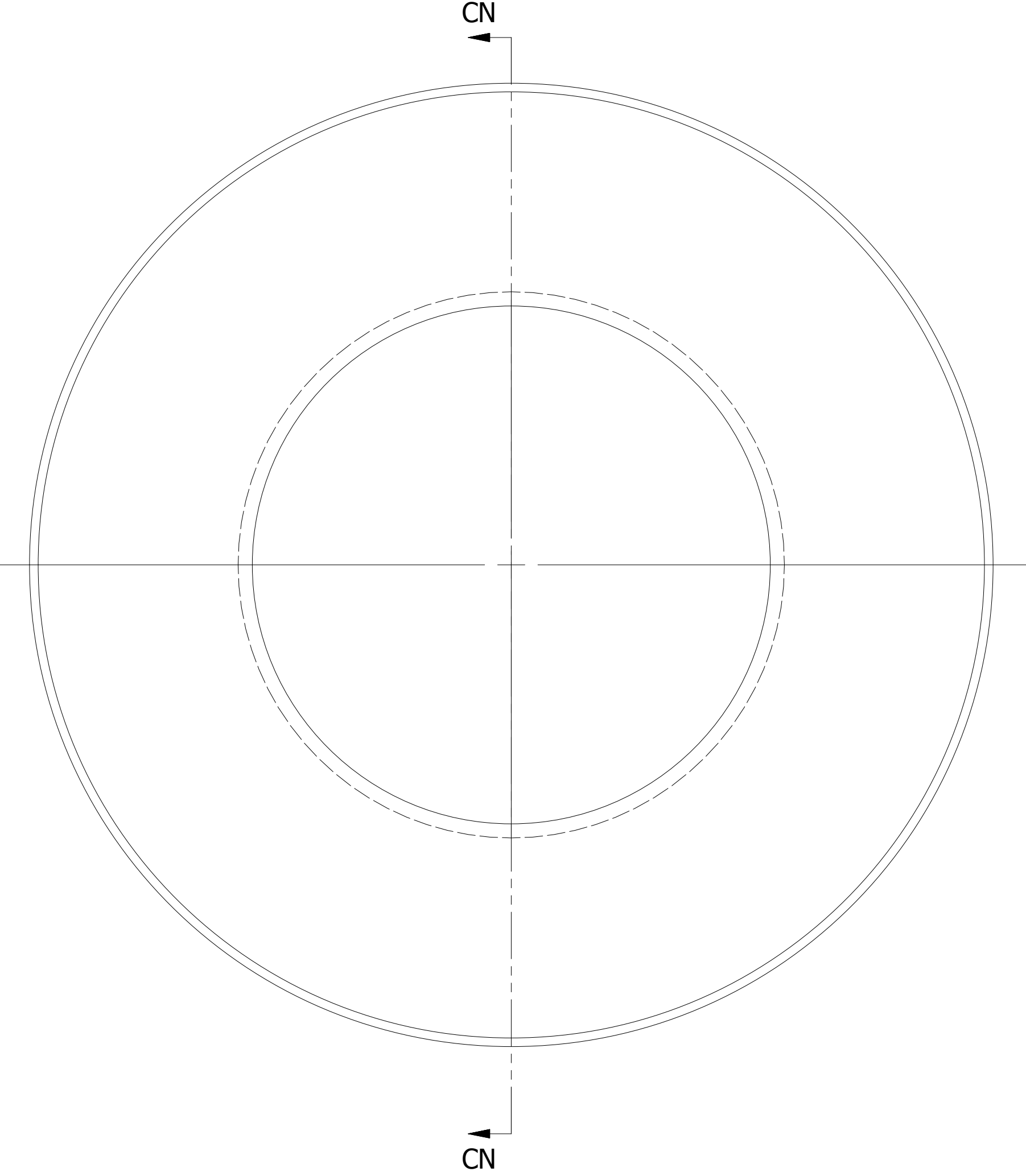
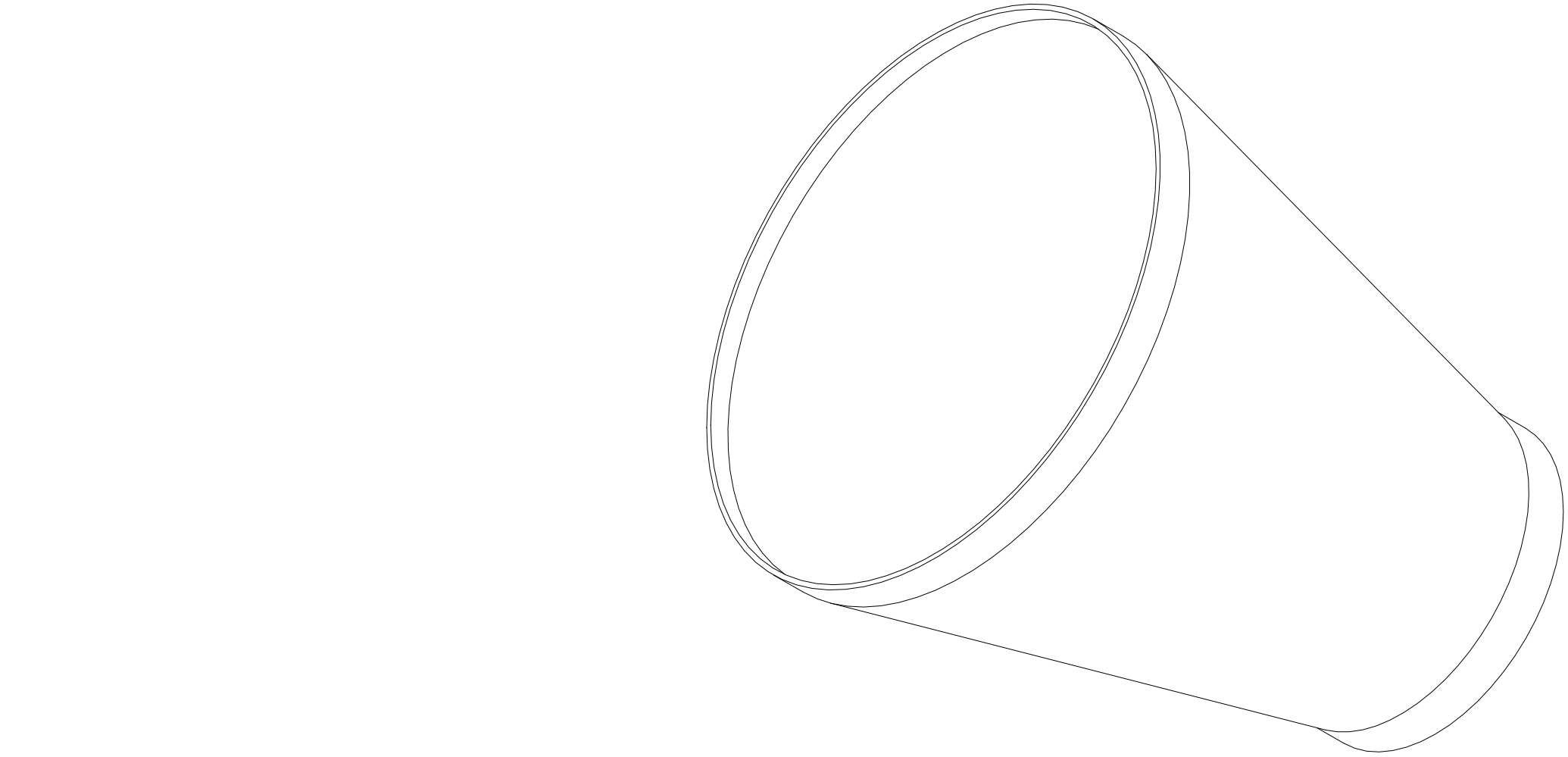
Heater Clamp Disk

FILE NAME: 7103-217
SHEET NO.: 19
DFT. SCALE: 2:1
MATERIAL: AL6061
QTY: 1
NOTES:

		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.		
						QUANTITY							
	PRINT DISTR.	PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw											
	CR-1	<p>UNLESS OTHERWISE SPECIFIED:</p> <p>DIMENSIONS ARE IN INCHES:</p> <p>TOLERANCES ON:</p> <p>0 ± .02</p> <p>.00 ± .010</p> <p>.000 ± .005</p> <p>FRACTIONS ± 1/32</p> <p>ANGLES ± 0.5°</p> <p>ALL SURFACES </p>			 Cornell University Laboratory for Elementary-Particle Physics				Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853				
SH NO. 19 OF 35 7103-217					MLC HOM Absorber 80K Heater Parts								
REV.		CHECKED BY: J. Conway		DRAWN BY jvc26		DRAWN FOR R Eichhorn		DATE 4/25/2013		SCALE		7103-217	REV.
		APPROVED BY: JVC/RGE										SH NO. 19 OF 35	



REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		MASSIVE REORGANIZATION OF SHEETS. PUTTING PRODUCTION DRAWINGS AT FRONT AND PROTOTYPING DRAWINGS AT END.	11-1-13	jvc26

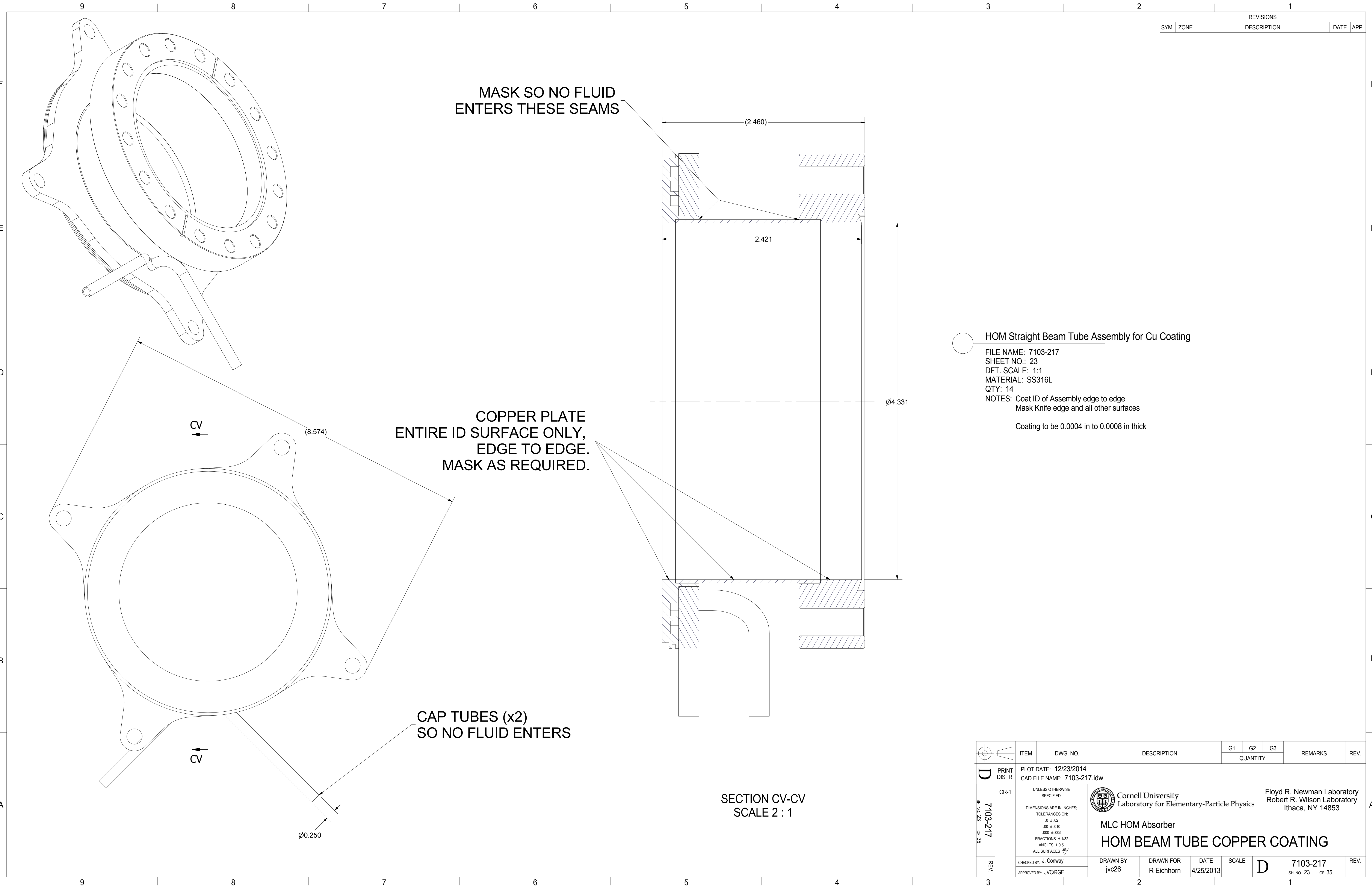


SECTION CN-CN
SCALE 2 : 1

41 Taper Beam Tube
FILE NAME: 7103-217
SHEET NO.: 22
DFT. SCALE: 2:1
MATERIAL: 316L
QTY: 1
NOTES:

		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.
					QUANTITY						
	D	PRINT DISTR.	PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw								
		7103-217 SH. NO. 22 OF 35	CR-1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: Ø ± .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				
A	REV.			CHECKED BY: J. Conway APPROVED BY: JVC/RGE		DRAWN BY jvc26		DRAWN FOR R Eichhorn	DATE 4/25/2013	SCALE D	7103-217 SH. NO. 22 OF 35

MLC HOM Absorber
TAPERED HOM ABSORBER BEAM TUBES







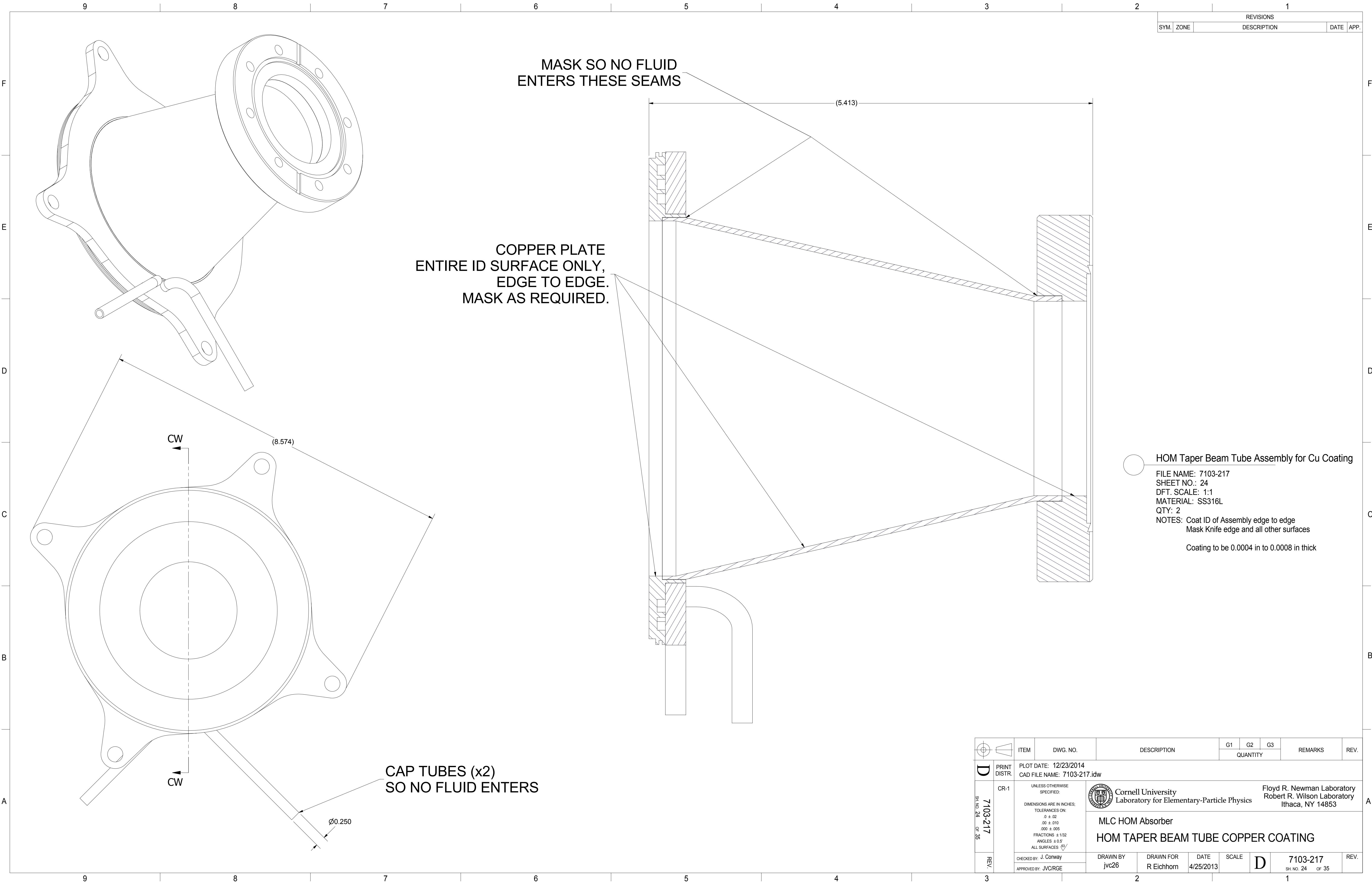
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.

HOM Straight Beam Tube Assembly for Cu Coating

FILE NAME: 7103-217
SHEET NO.: 23
DFT. SCALE: 1:1
MATERIAL: SS316L
QTY: 14
NOTES: Coat ID of Assembly edge to edge
Mask Knife edge and all other surfaces

Coating to be 0.0004 in to 0.0008 in thick

 		ITEM		DWG. NO.		DESCRIPTION			G1		G2		G3		REMARKS		REV.	
						QUANTITY												
<div>D</div>	PRINT DISTR.		PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw															
	CR-1		<div><div><div>UNLESS OTHERWISE SPECIFIED:</div><div>DIMENSIONS ARE IN INCHES:</div><div>TOLERANCES ON:</div><div>.0 ± .02</div><div>.00 ± .010</div><div>.000 ± .005</div><div>FRACTIONS ± 1/32</div><div>ANGLES ± 0.5°</div><div>ALL SURFACES </div></div><div><div>Cornell University Laboratory for Elementary-Particle Physics</div><div>Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853</div></div></div>															
	7103-217		MLC HOM Absorber															
	REV.		HOM BEAM TUBE COPPER COATING															
		CHECKED BY: J. Conway		DRAWN BY: jvc26		DRAWN FOR: R Eichhorn		DATE: 4/25/2013		SCALE: D		7103-217		REV.				
		APPROVED BY: JVC/RGE		SH. NO. 23 OF 35														



MASK SO NO FLUID
ENTERS THESE SEAMS

COPPER PLATE
ENTIRE ID SURFACE ONLY,
EDGE TO EDGE.
MASK AS REQUIRED.

CAP TUBES (x2)
SO NO FLUID ENTERS

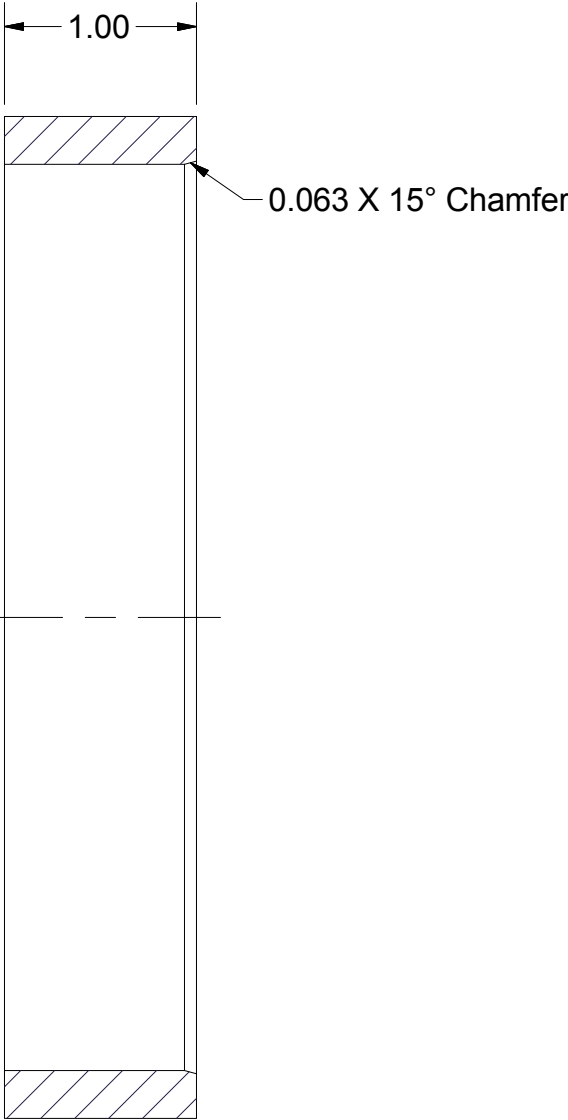
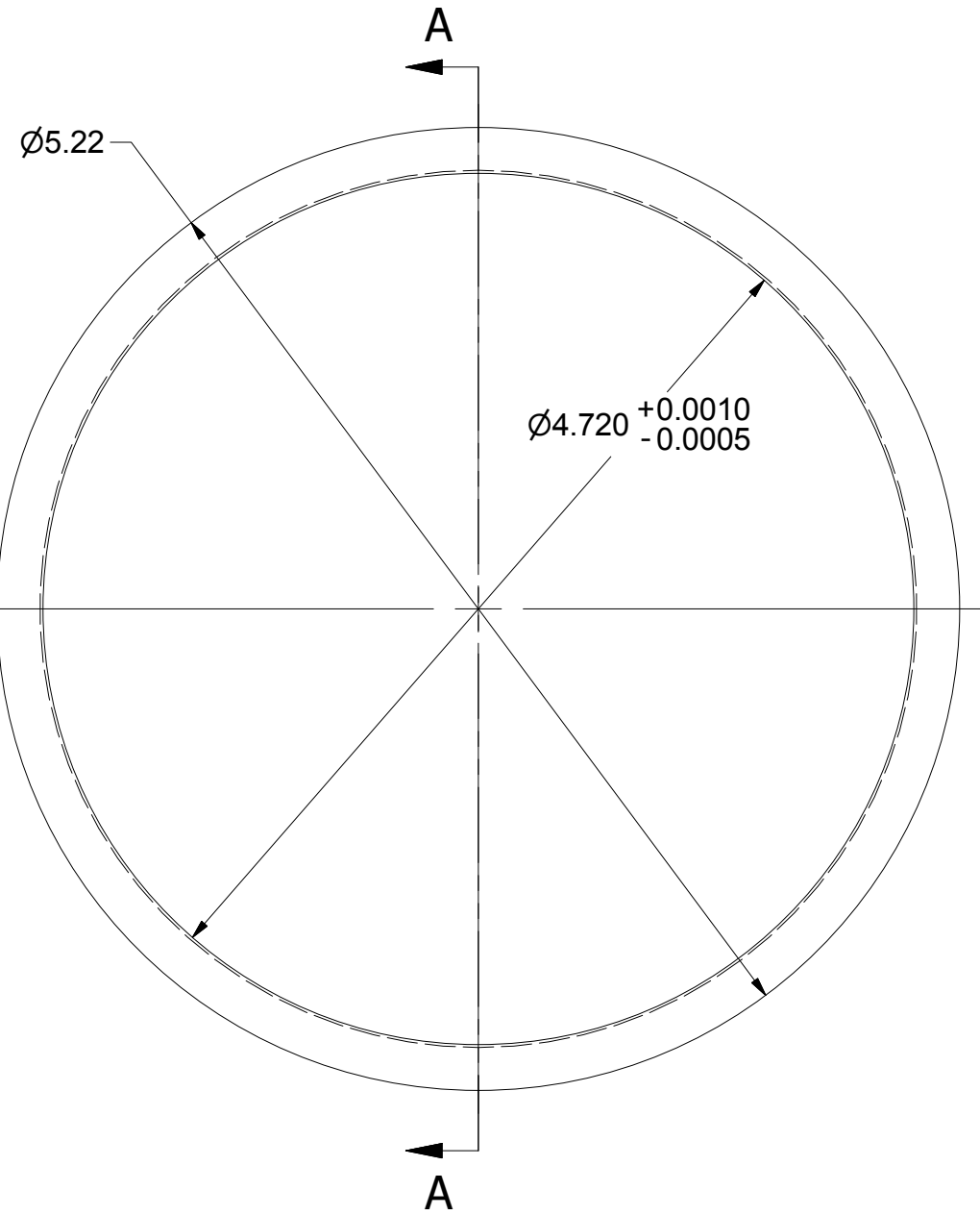
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED SHEET 26	4-8-13	jvc26

x4 EQUALLY SPACED

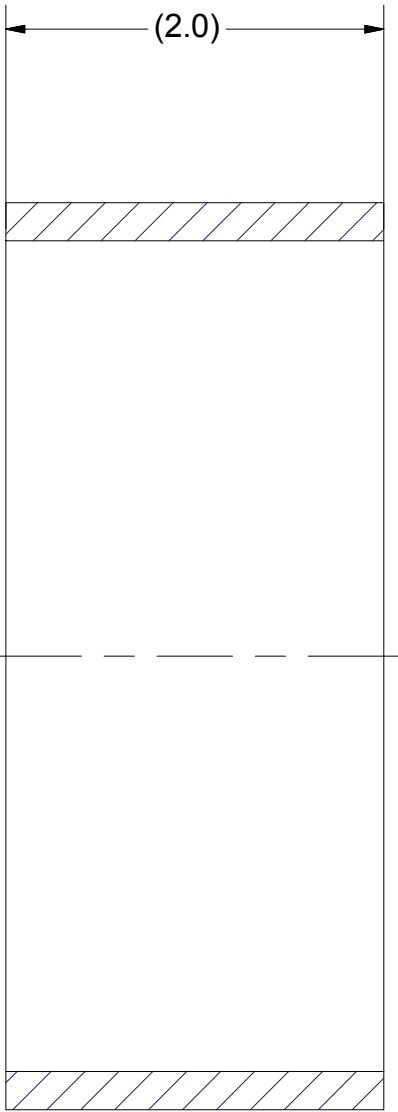
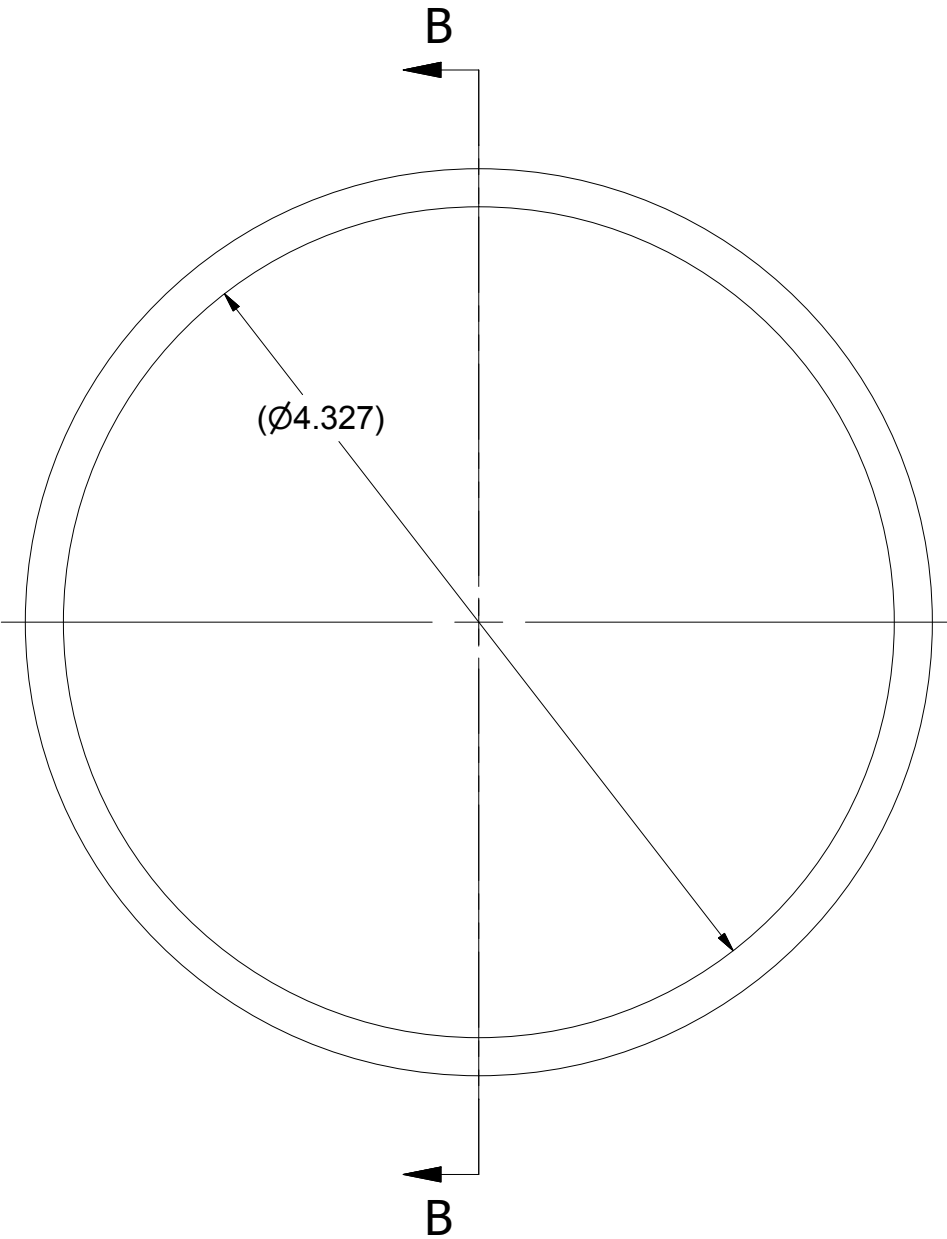
(0.500)

ROOM TEMP ASSEMBLY IN FURNACE

FURNACE HEATED TO >400°C




SECTION A-A
SCALE 1 : 1



SECTION B-B
SCALE 1 : 1

100 Ti Ring Test 1
FILE NAME: 7103-217
SHEET NO.: 25
DFT. SCALE: 1:1
MATERIAL: Ti Grade 5
QTY: 1
NOTES:

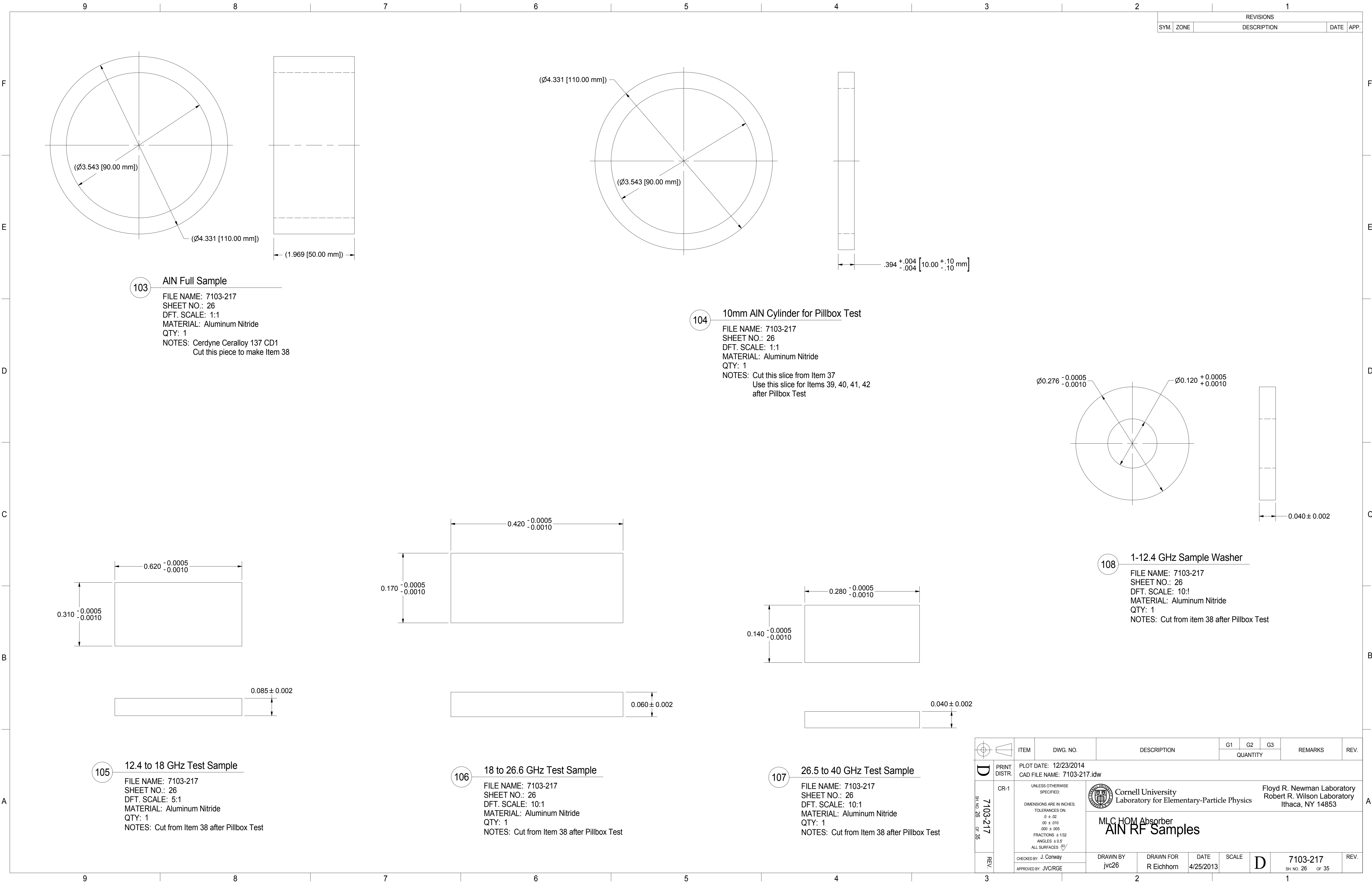
101 SiC Ring Test 1
FILE NAME: 7103-217
SHEET NO.: 25
DFT. SCALE: 1:1
MATERIAL: SiC
QTY: 1
NOTES:

		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS		REV.				
		QUANTITY														
D	PRINT DISTR.	PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw														
	CR-1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES			<div>Cornell University Laboratory for Elementary-Particle Physics</div> <div>Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853</div> <div>MLC HOM Absorber</div> <div>SiC-TI THERMAL SHRINK FIT TEST 1</div>											
7103-217 SH. NO. 25 OF 35	REV. A	CHECKED BY: J. Conway											DRAWN BY jvc26		DRAWN FOR R Eichhorn	
	APPROVED BY: JVC/RGE															


Cornell University
Laboratory for Elementary-Particle Physics

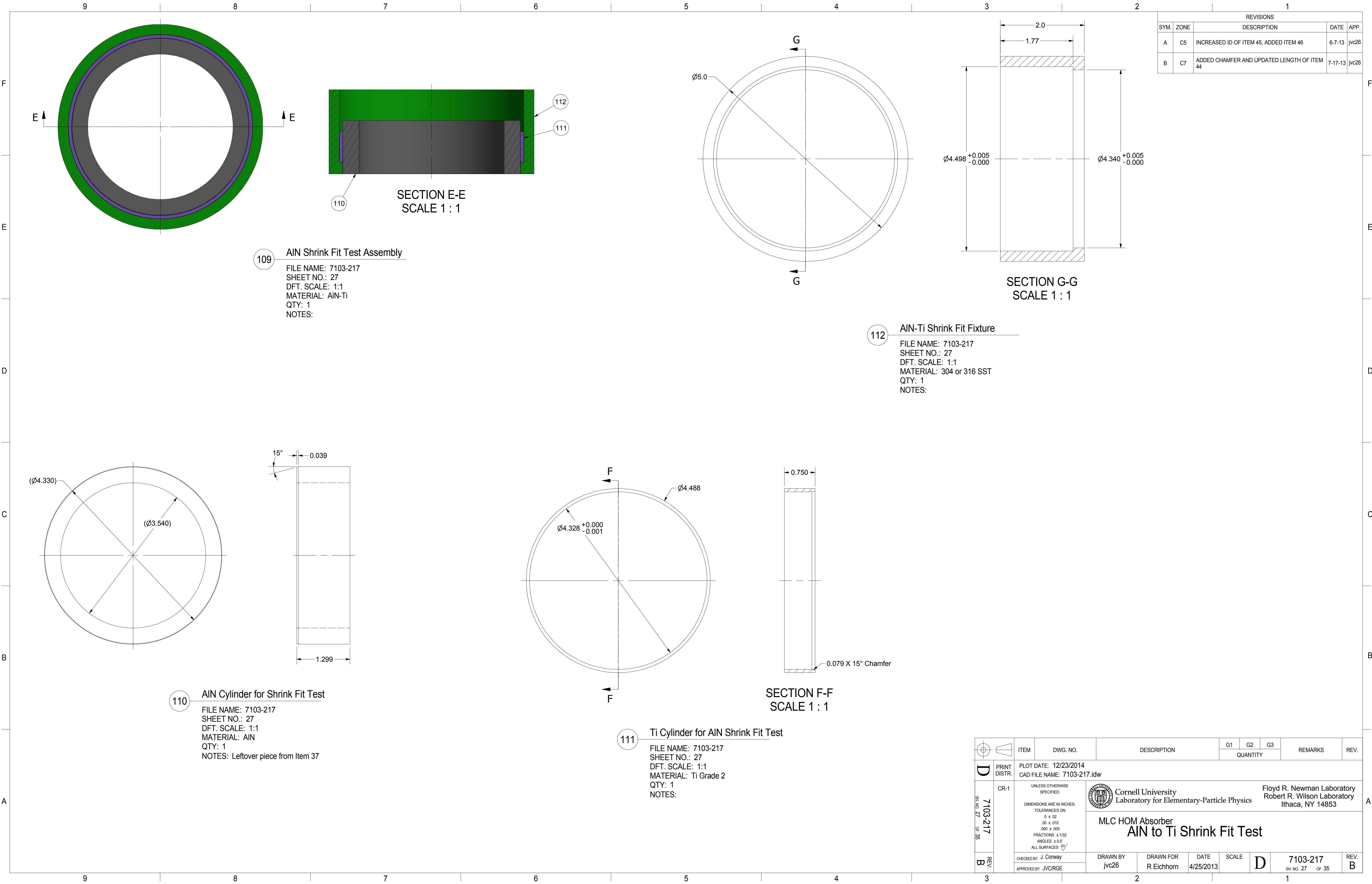
Floyd R. Newman Laboratory
Robert R. Wilson Laboratory
Ithaca, NY 14853

MLC HOM Absorber
SiC-Ti THERMAL SHRINK FIT TEST 1

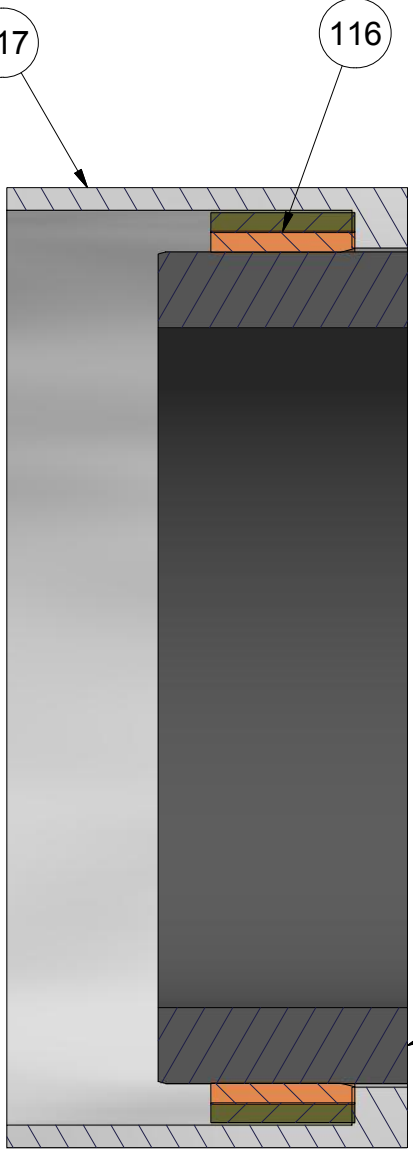
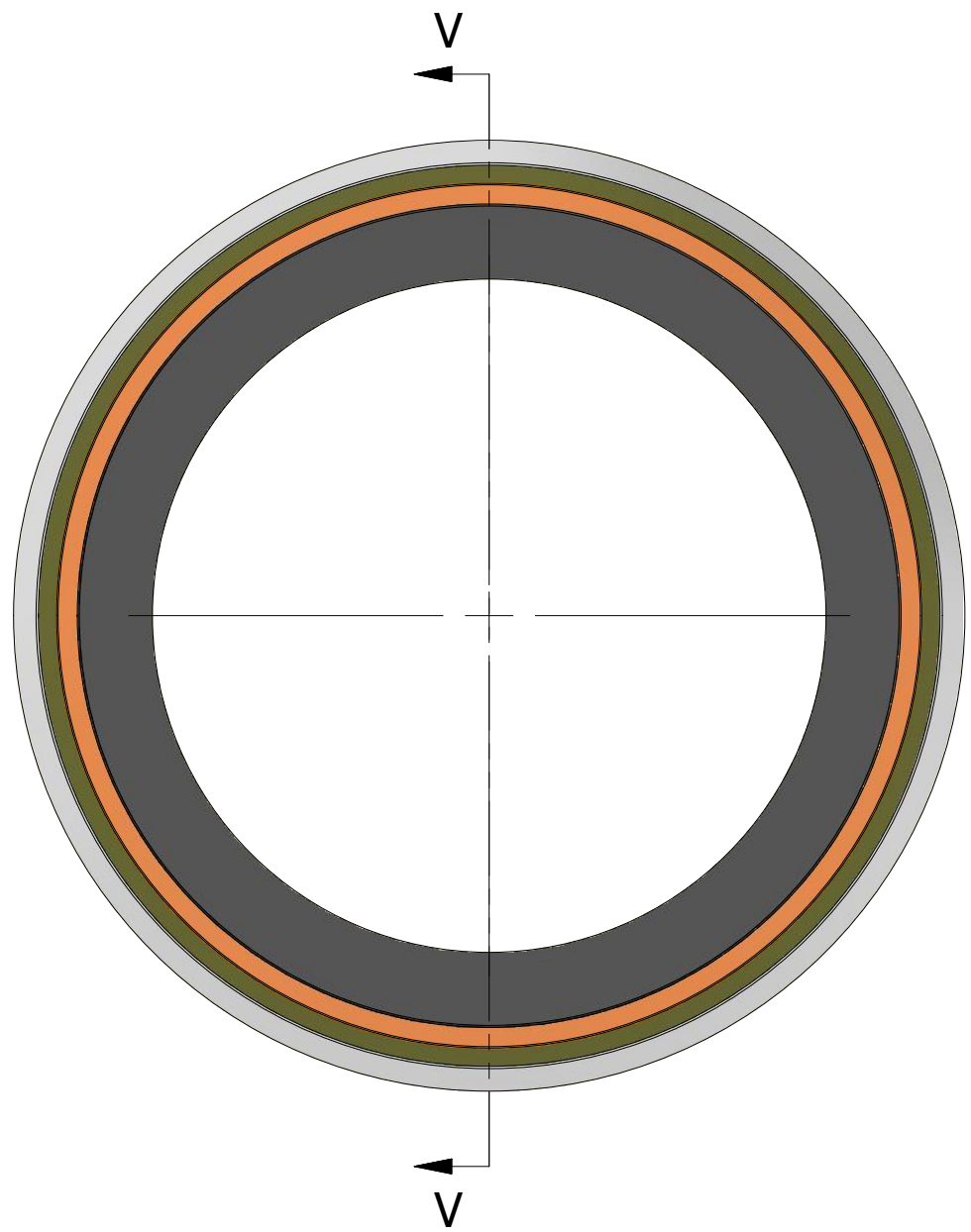


REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.

		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.	
								QUANTITY				
D	PRINT DISTR.	PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw										
	CR-1	<p>UNLESS OTHERWISE SPECIFIED:</p> <p>DIMENSIONS ARE IN INCHES:</p> <p>TOLERANCES ON:</p> <p>.0 ± .02</p> <p>.00 ± .010</p> <p>.000 ± .005</p> <p>FRACTIONS ± 1/32</p> <p>ANGLES ± 0.5°</p> <p>ALL SURFACES </p>		<div> Cornell University Laboratory for Elementary-Particle Physics</div> <div>Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853</div>								
7103-217 SH. NO. 26 OF 35	REV.			<div>MLC HOM Absorber</div> <div>AIN RF Samples</div>								
		CHECKED BY: J. Conway	DRAWN BY: jvc26	DRAWN FOR: R Eichhorn	DATE: 4/25/2013	SCALE:	D	7103-217	REV.			
APPROVED BY: JVC/RGE		SH. NO. 26 OF 35										

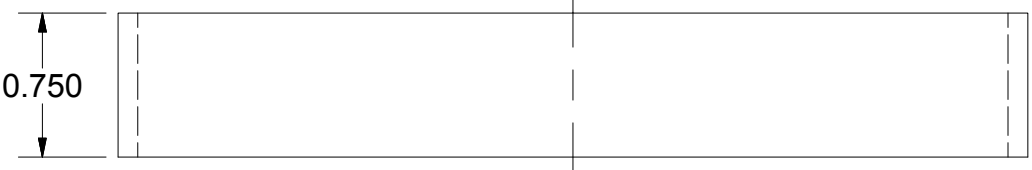
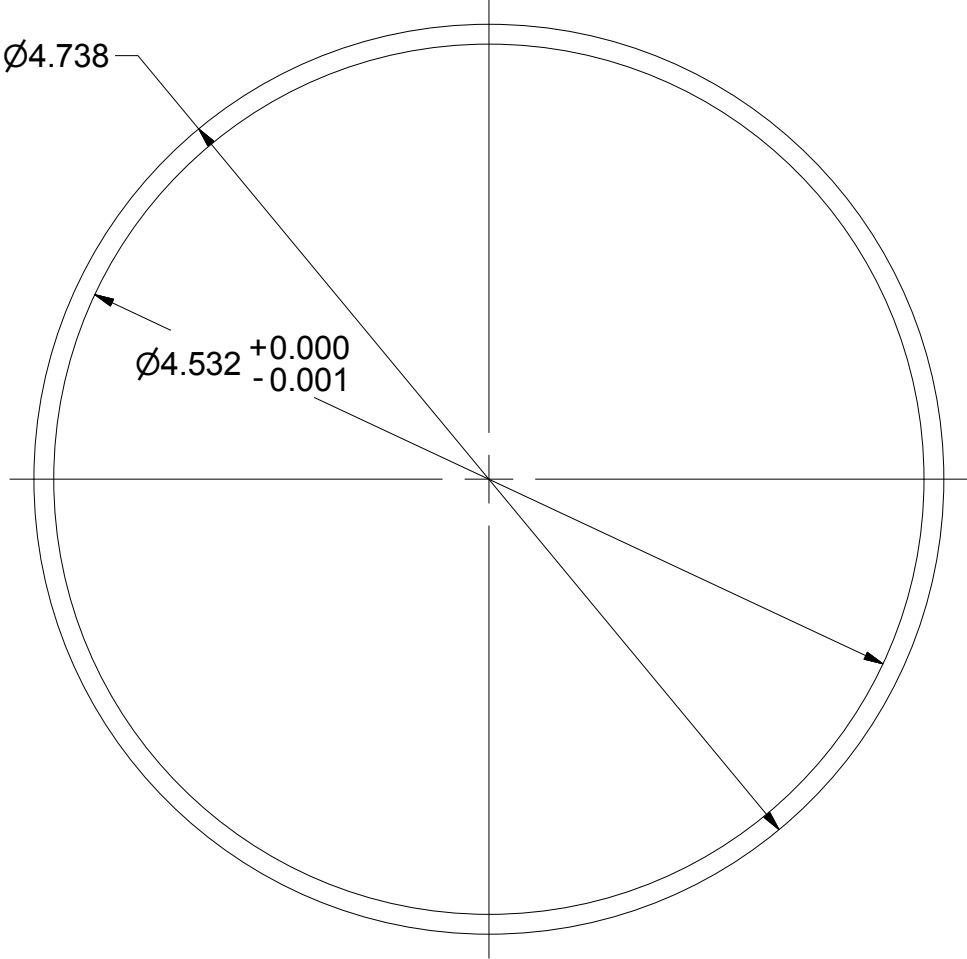


REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		UPDATED DIMENSIONS OF ITEMS 49 AND 50	7-18-13	jvc26
B		ADDED SHEETS 5 TO 11	8-19-13	jvc26

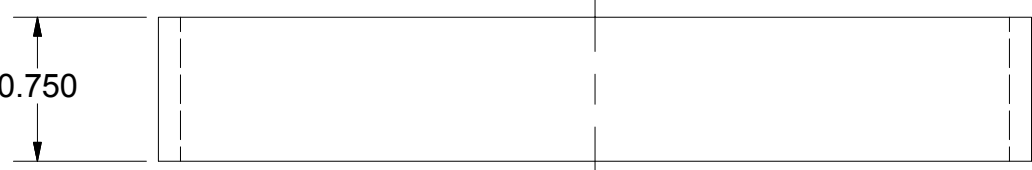
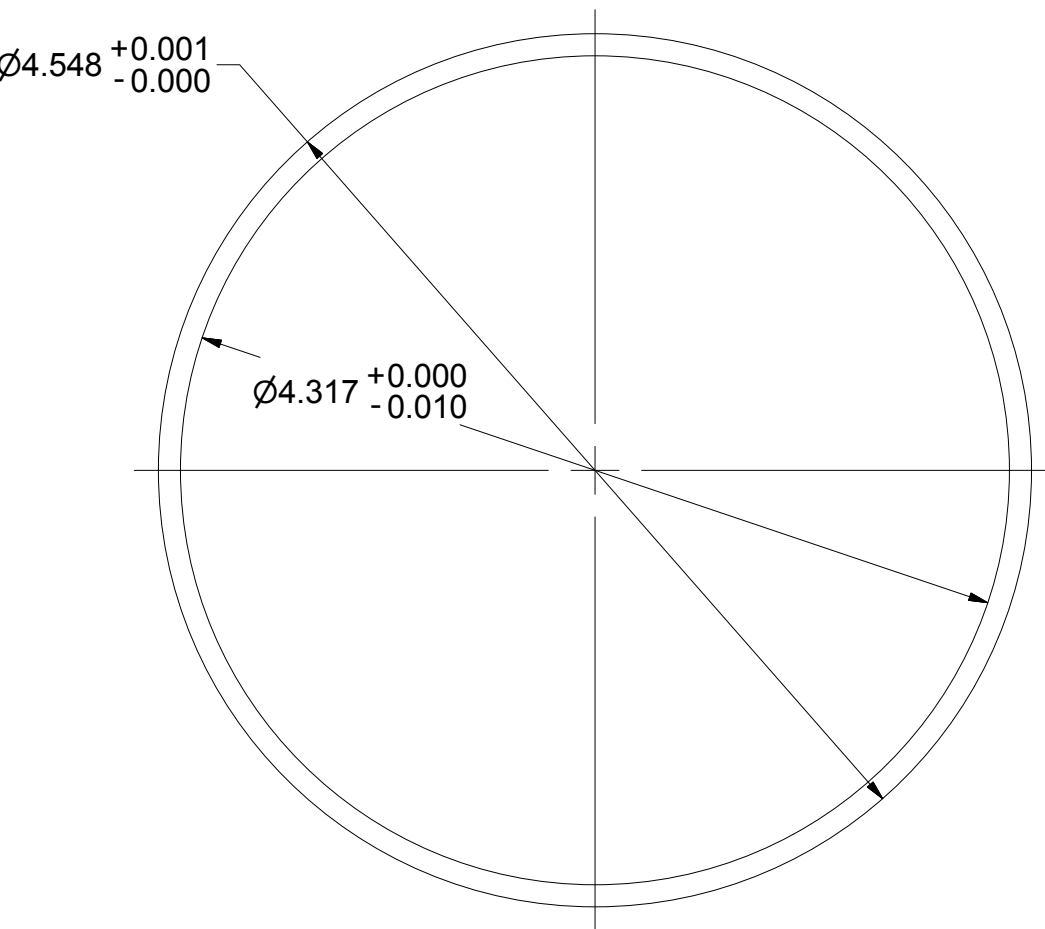


SECTION V-V
SCALE 1 : 1

113 Ceramic to Copper and Titanium Test
FILE NAME: 7103-217
SHEET NO.: 28
DFT. SCALE: 1:1
MATERIAL:
QTY: 1
NOTES:

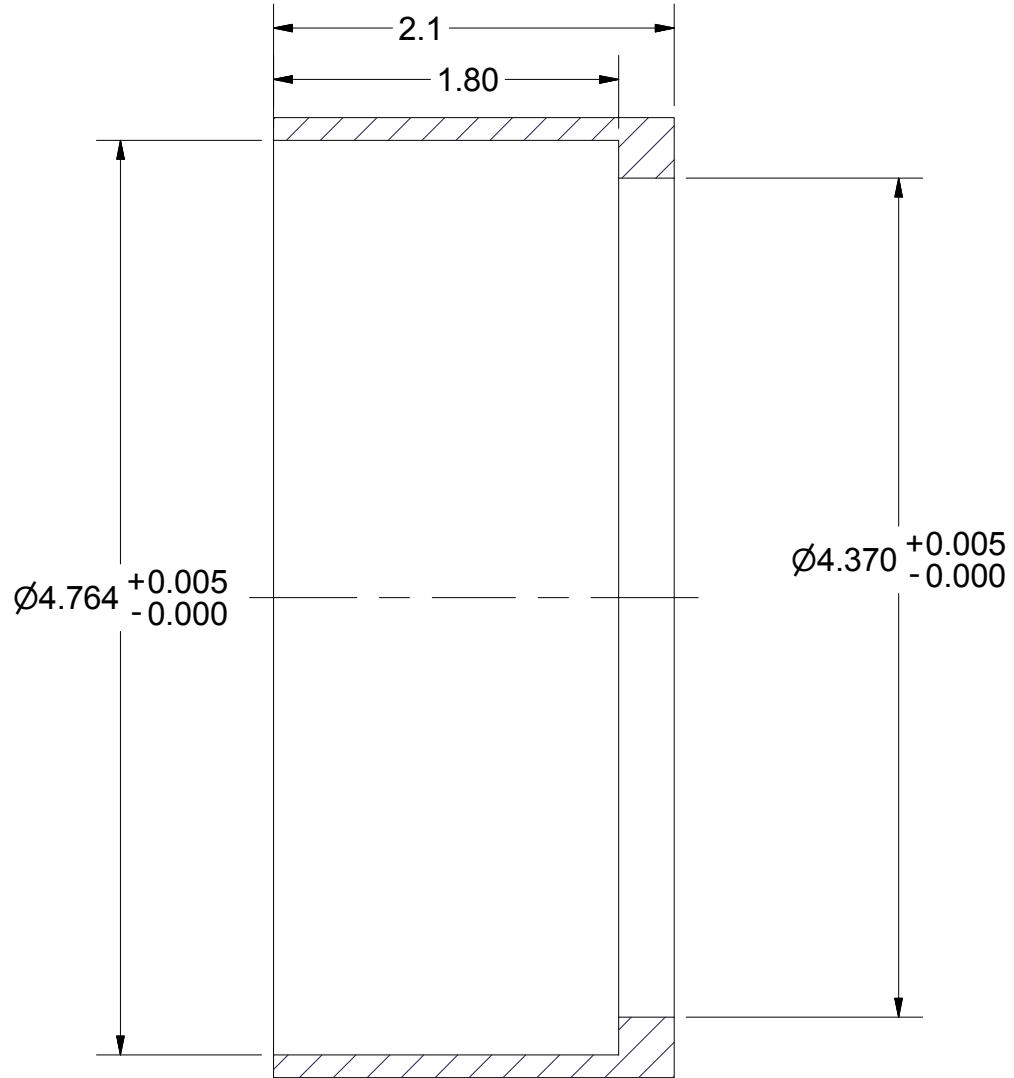
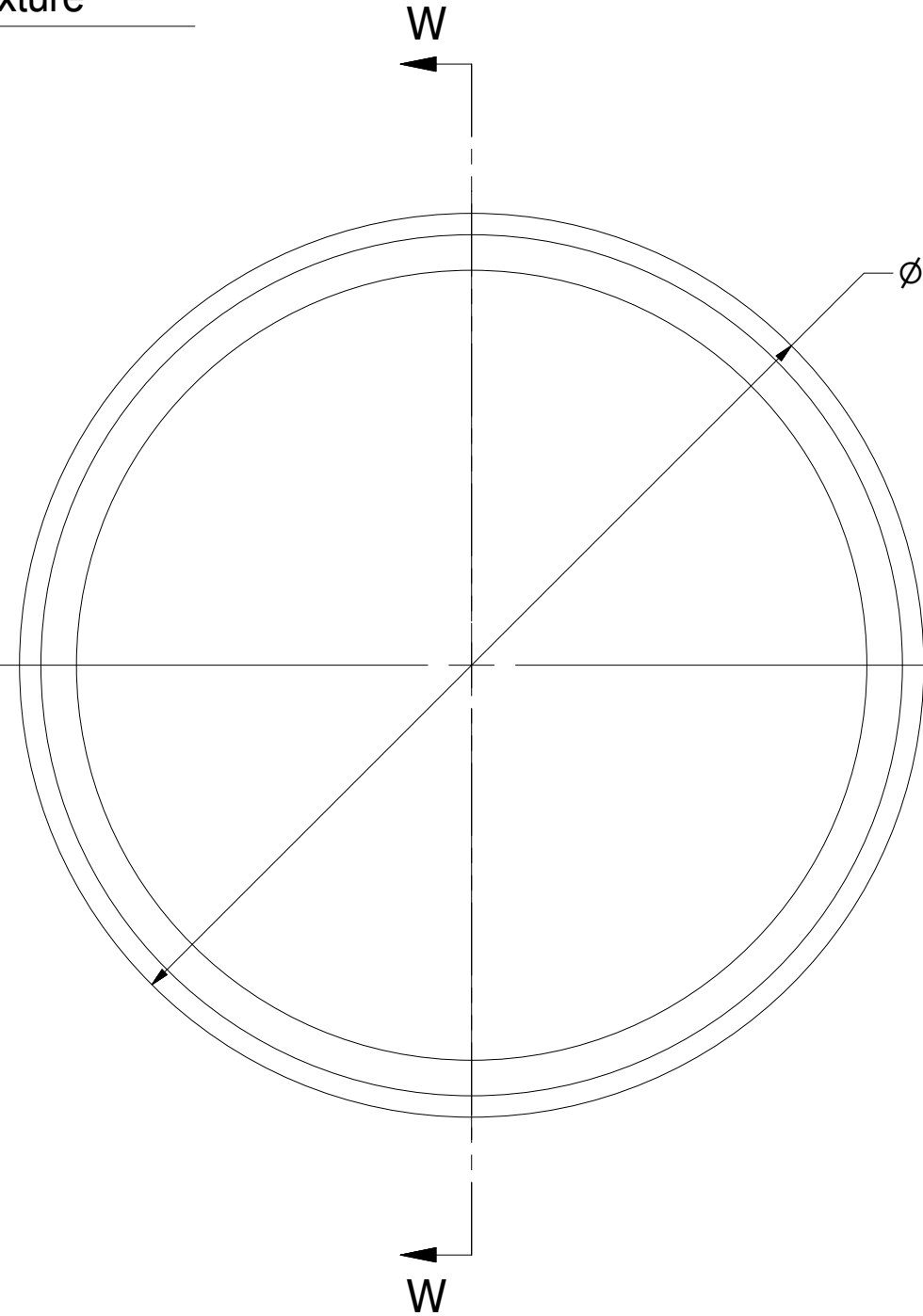


114 Titanium Ring
FILE NAME: 7103-217
SHEET NO.: 28
DFT. SCALE: 1:1
MATERIAL: Ti Gr5
QTY: 1
NOTES:

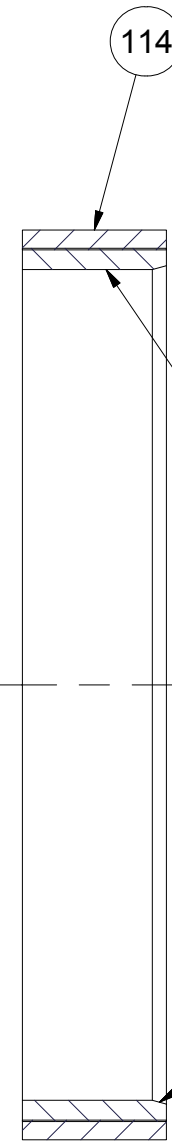
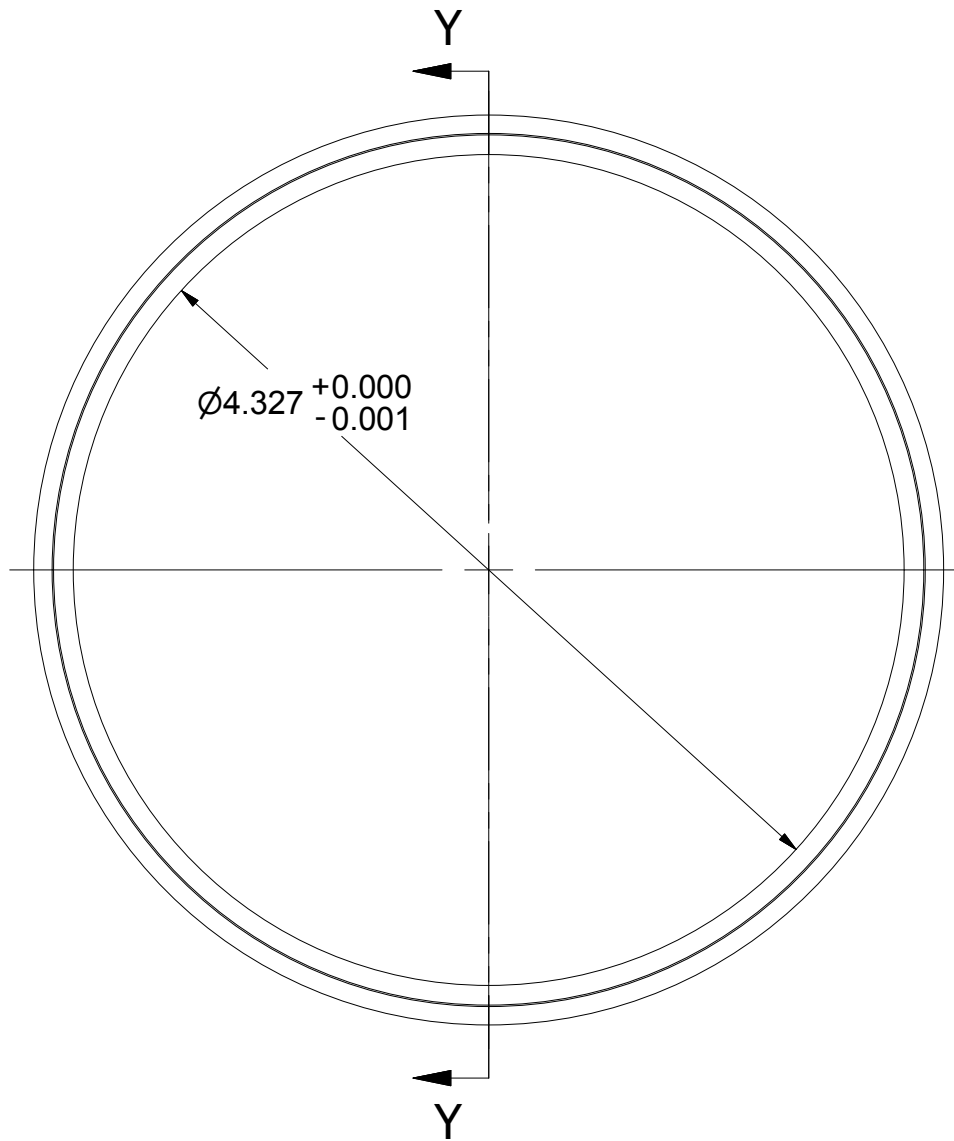


115 Copper Ring
FILE NAME: 7103-217
SHEET NO.: 28
DFT. SCALE: 1:1
MATERIAL: OFHC Copper
QTY: 1
NOTES:

117 Ti+Cu Shrink Fit Fixture
FILE NAME: 7103-217
SHEET NO.: 28
DFT. SCALE: 1:1
MATERIAL: 304 SST
QTY: 1
NOTES:

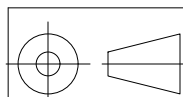




SECTION W-W
SCALE 1 : 1



SECTION Y-Y
SCALE 1 : 1

116 Cu-Ti Cylinder Asm
FILE NAME: 7103-217
SHEET NO.: 28
DFT. SCALE: 1:1
MATERIAL: Cu+Ti
QTY: 1
NOTES:

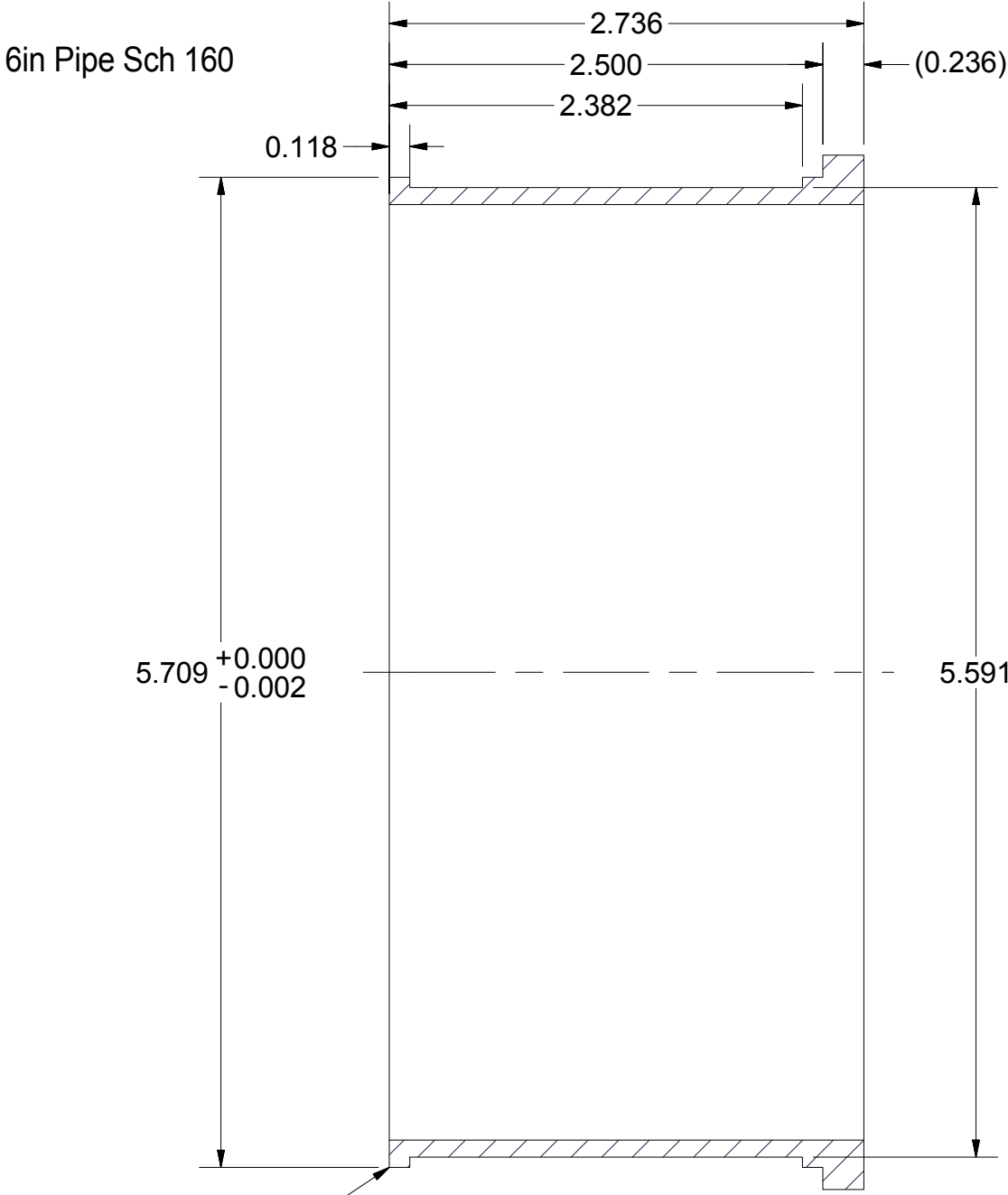
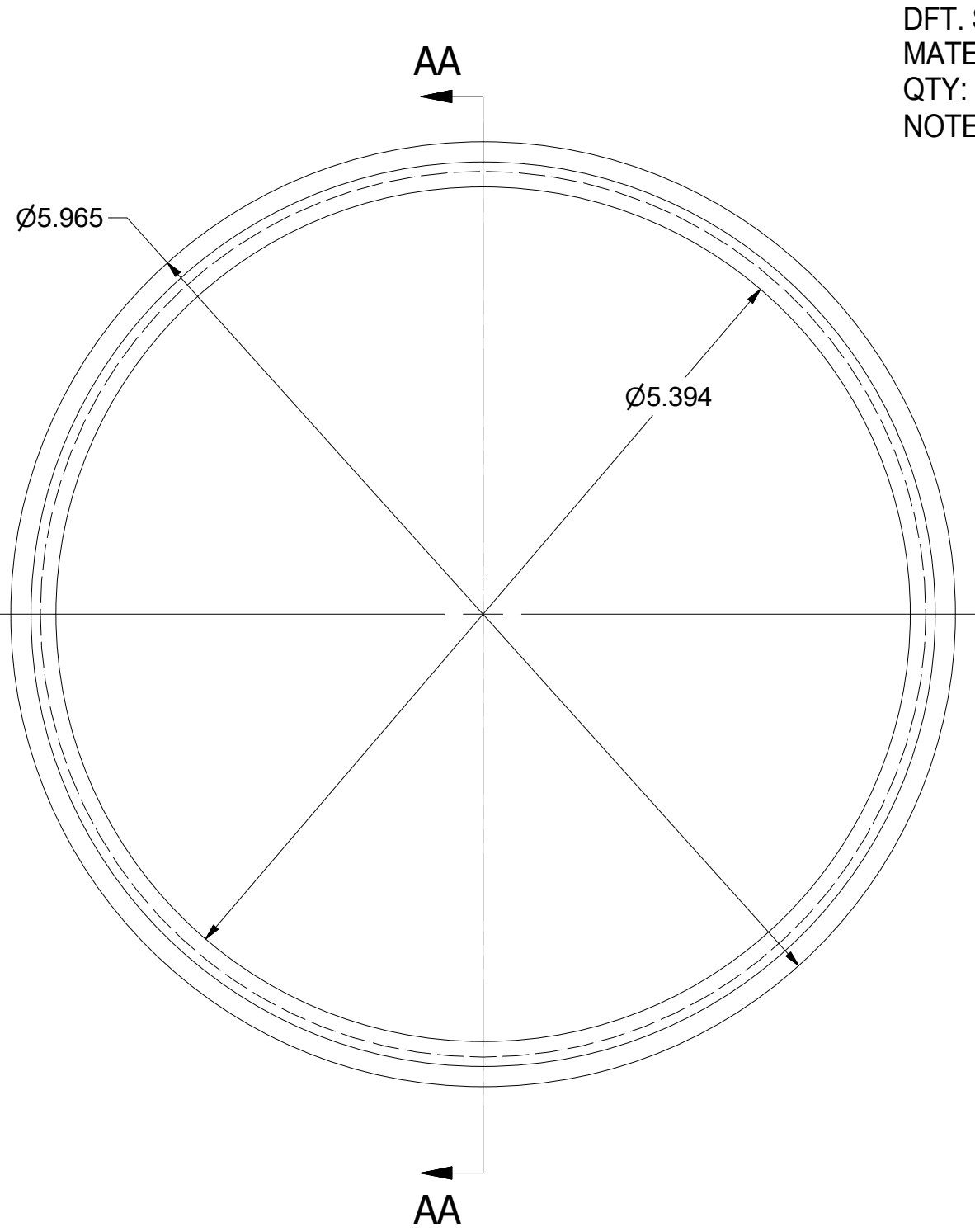
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								QUANTITY											
D		PRINT DISTR.		PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw															
7103-217 SH. NO. 28 OF 35		CR-1		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 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													
						MLC HOM Absorber AIN-Cu-Ti Shrink Fit Test													
REV. B		CHECKED BY: J. Conway		DRAWN BY: jvc26		DRAWN FOR: R Eichhorn		DATE: 4/25/2013		SCALE: D		7103-217 SH. NO. 28 OF 35		REV. B					
		APPROVED BY: JVC/RGE																	

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED ITEM 56P	9-12-13	jvc26
B		ADDED ITEM 58P	9-13-13	jvc26

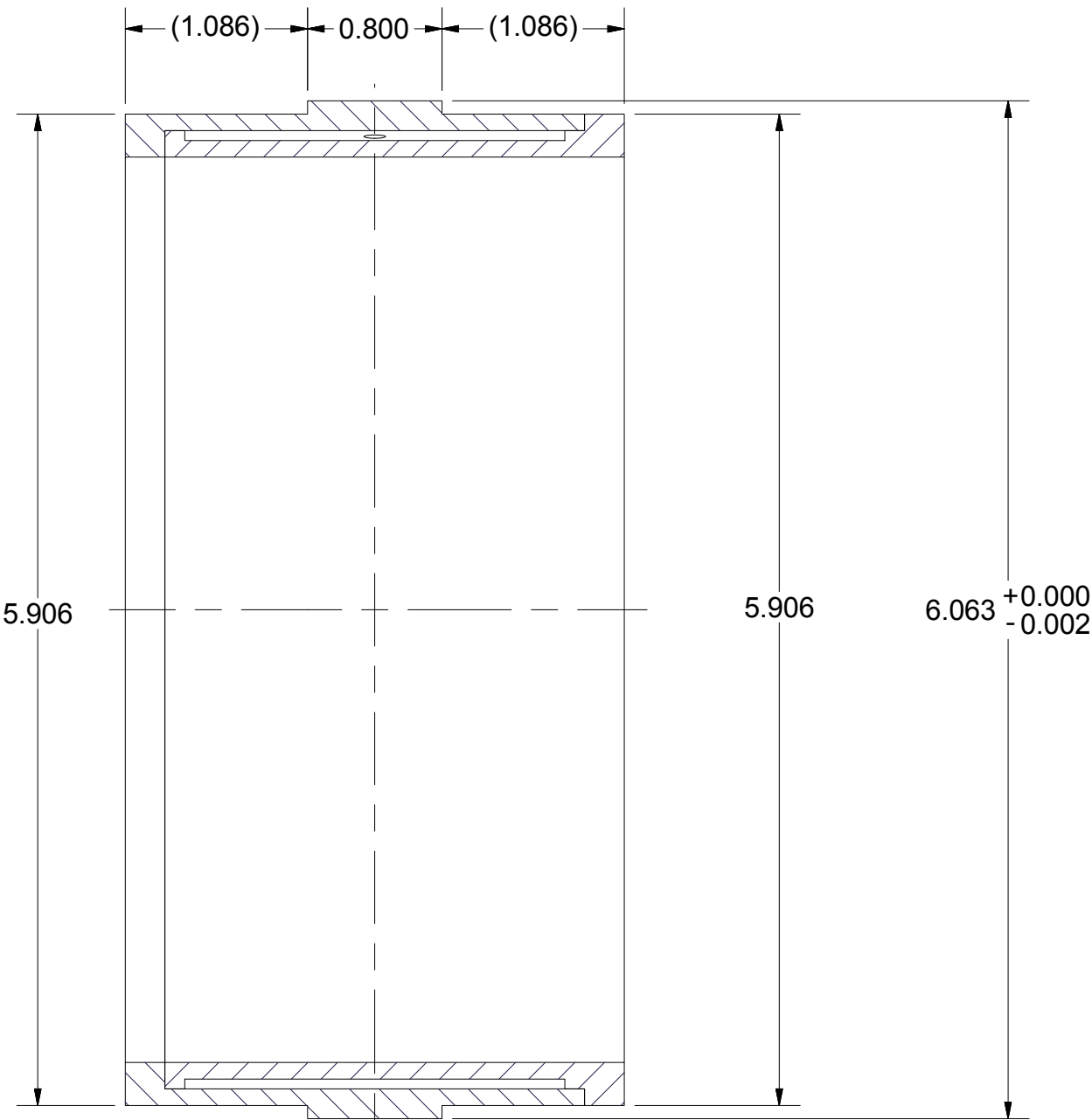
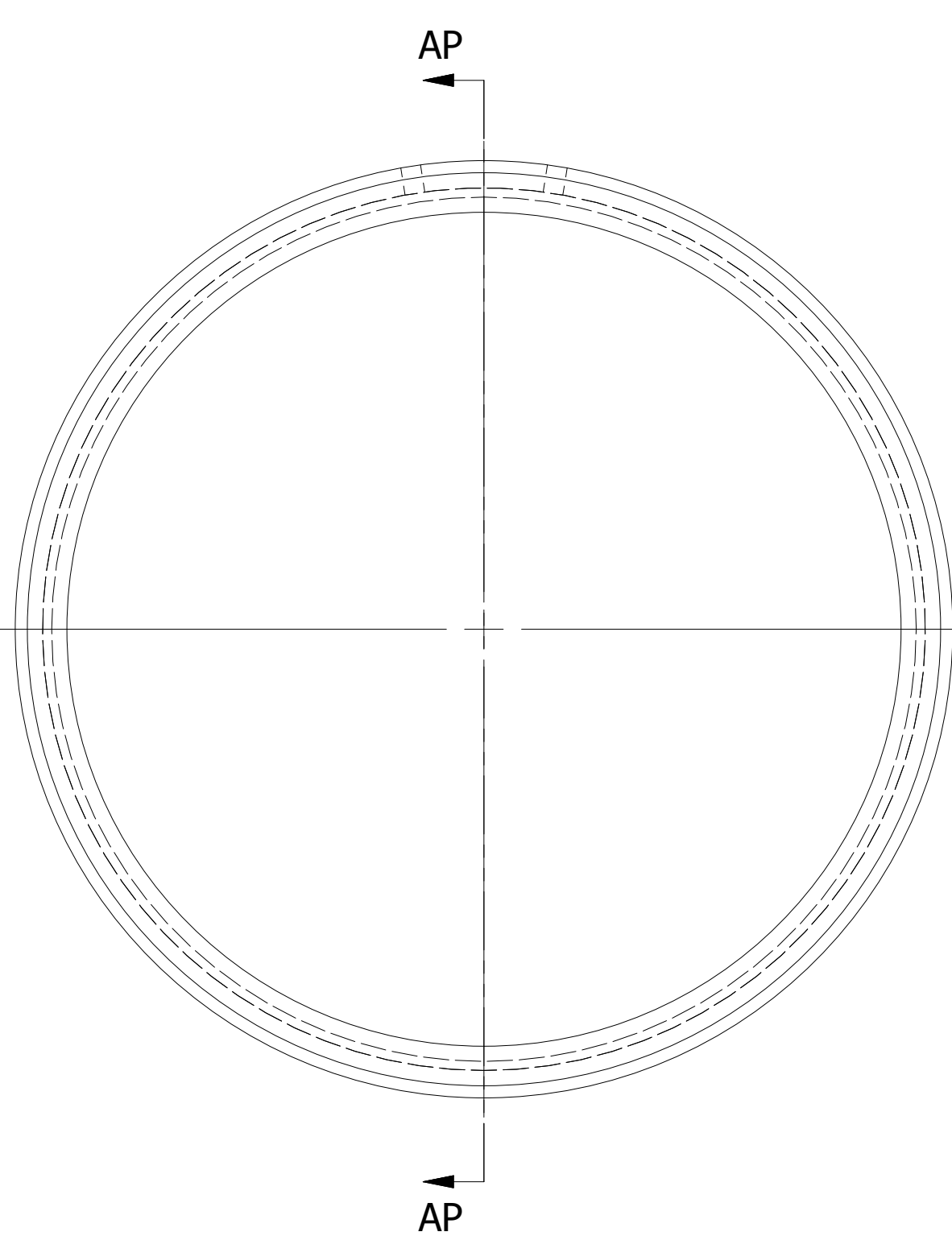
118

Ti Inner Cylinder Prototype

FILE NAME: 7103-217
SHEET NO.: 29
DFT. SCALE: 1:1
MATERIAL: Ti Gr2 6in Pipe Sch 160
QTY: 1
NOTES:



SECTION AA-AA
SCALE 1 : 1

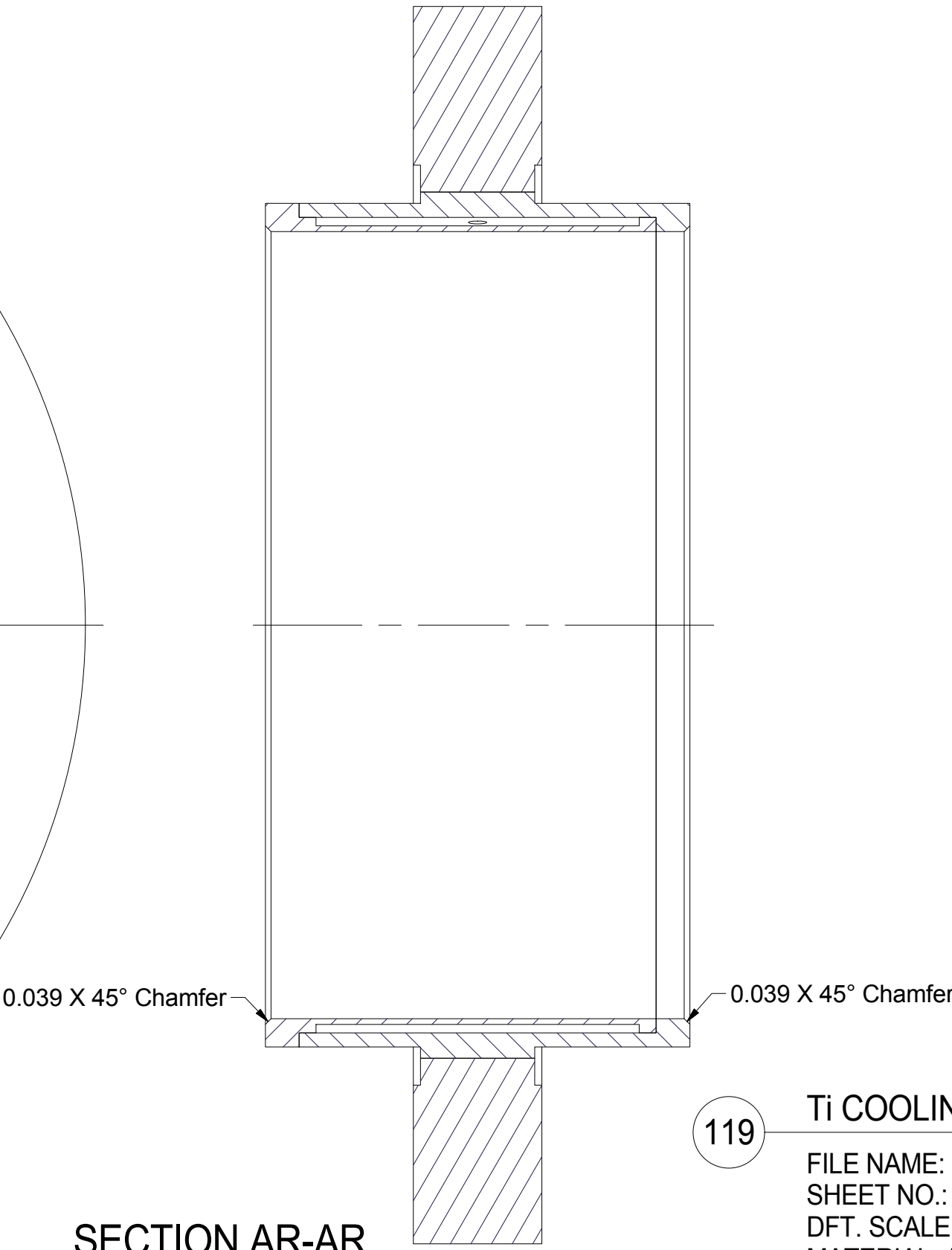
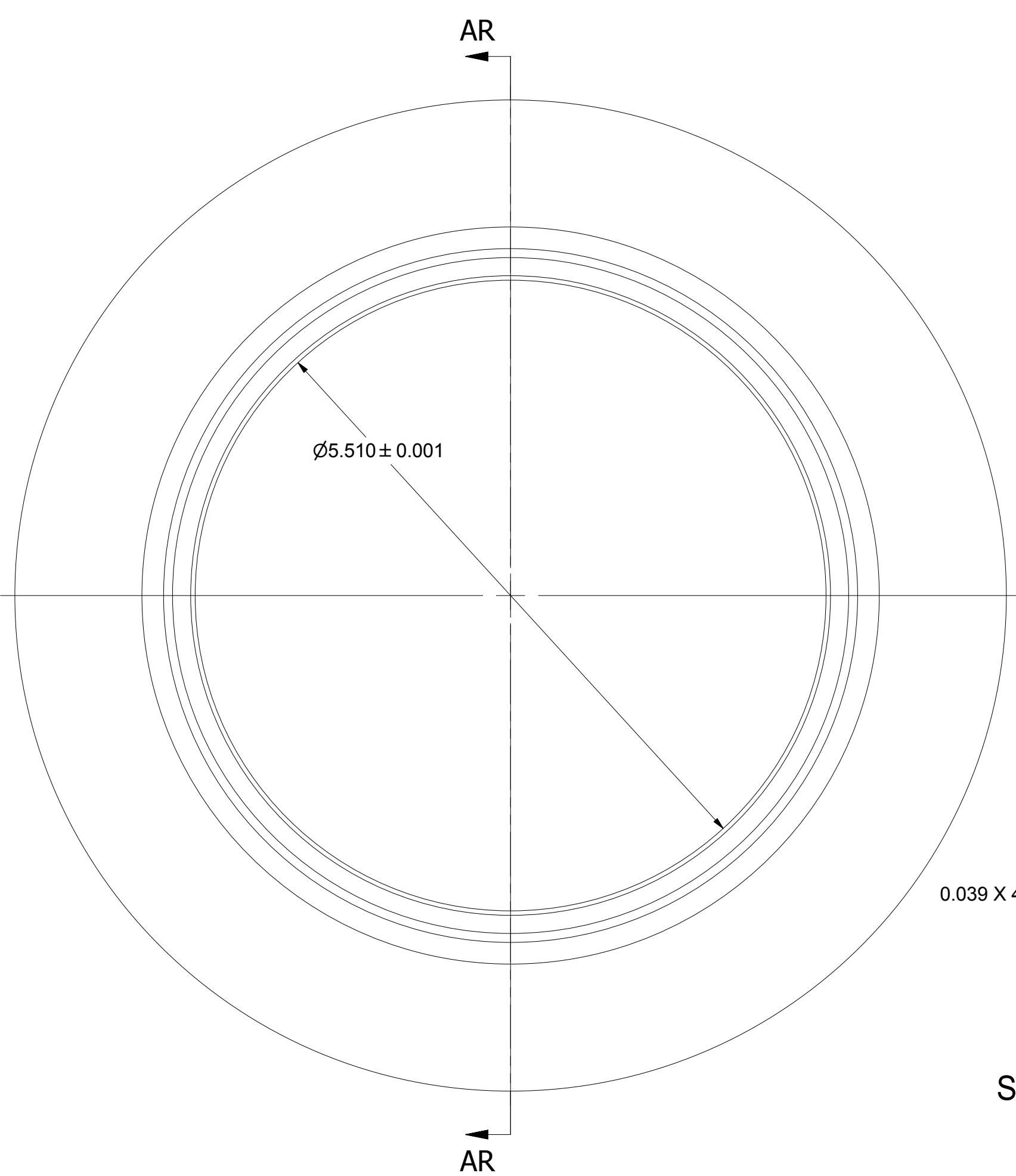


SECTION AP-AP
SCALE 1 : 1

120

Ti Cooling Jacket Prototype

FILE NAME: 7103-217
SHEET NO.: 29
DFT. SCALE: 1:1
MATERIAL: Ti Gr 2
QTY: 1
NOTES:


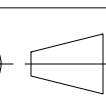




SECTION AR-AR
SCALE 1 : 1

119

Ti COOLING JACKET WITH FLANGE PROTOTYPE

FILE NAME: 7103-217
SHEET NO.: 29
DFT. SCALE: 1:1
MATERIAL: Ti Gr2
QTY: 1
NOTES:

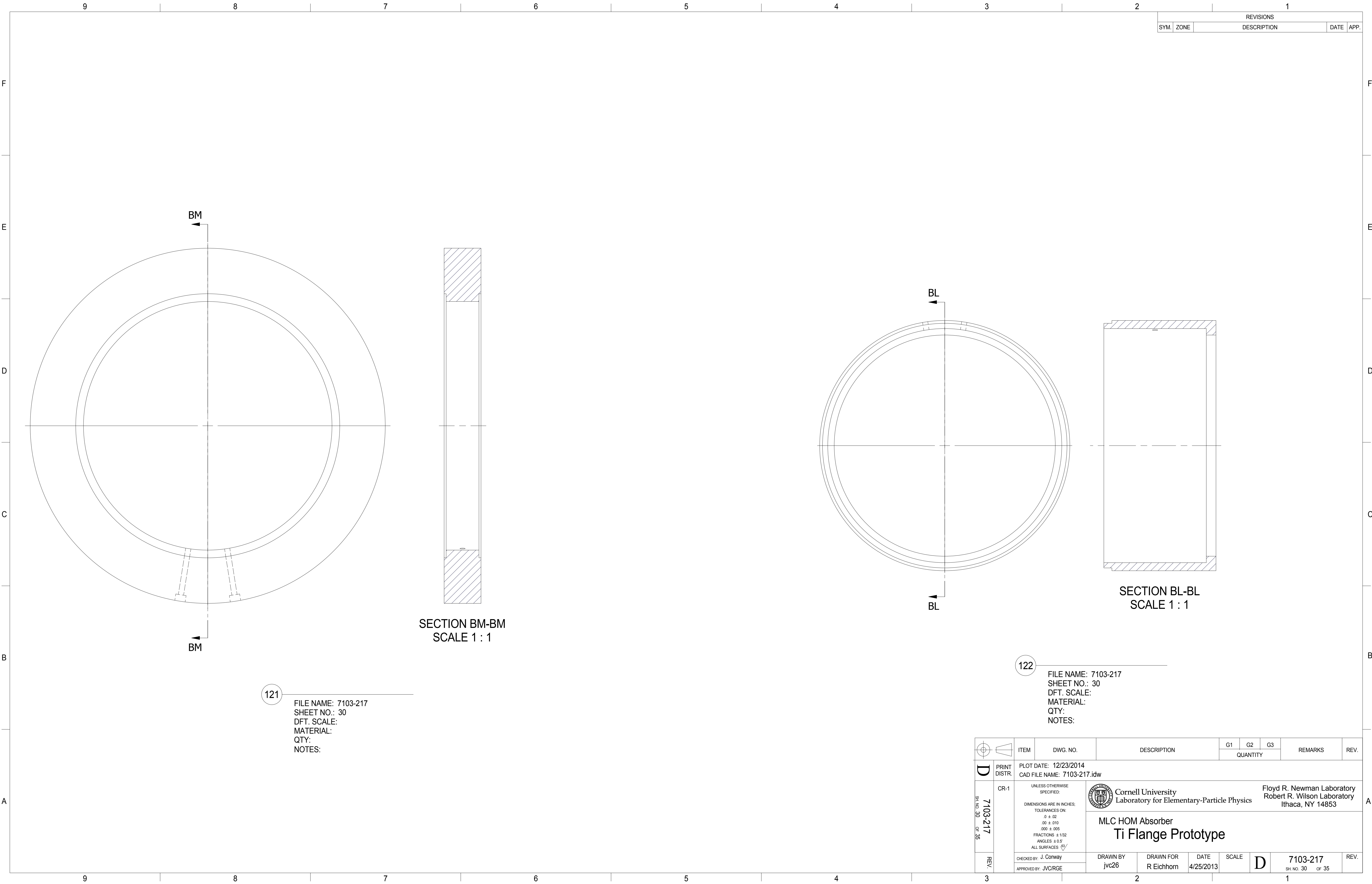
 		ITEM		DWG. NO.		DESCRIPTION			G1		G2		G3		REMARKS		REV.				
									QUANTITY												
D		PRINT DISTR.		PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw																	
7103-217 SH. NO. 29 OF 35		CR-1		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .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					
						MLC HOM Absorber										Ti Cooling Jacket and Flange Prototype					
REV. B		APPROVED BY: JVC/RGE		CHECKED BY: J. Conway		DRAWN BY: jvc26		DRAWN FOR: R Eichhorn		DATE: 4/25/2013		SCALE: D		7103-217 SH. NO. 29 OF 35							




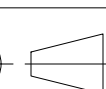

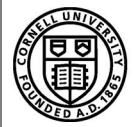
Cornell University
Laboratory for Elementary-Particle Physics

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

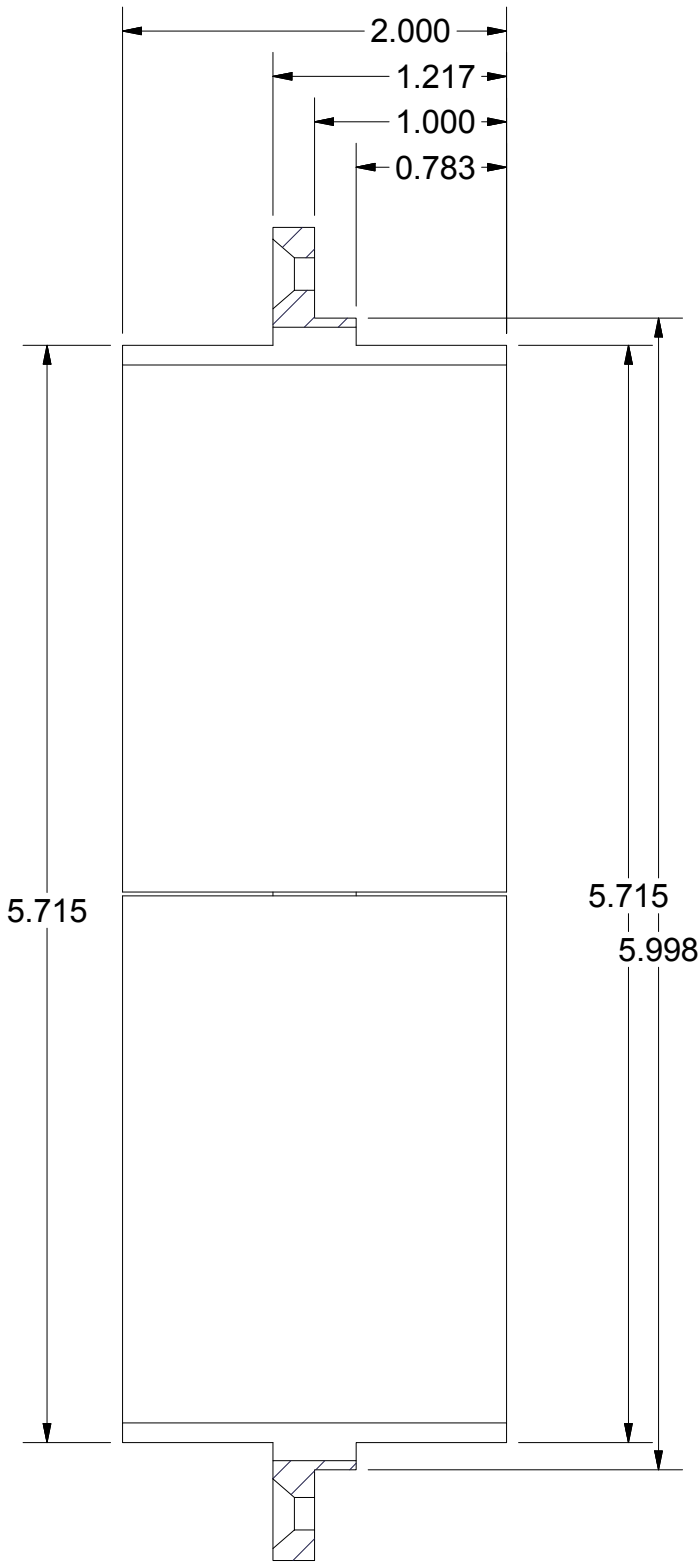
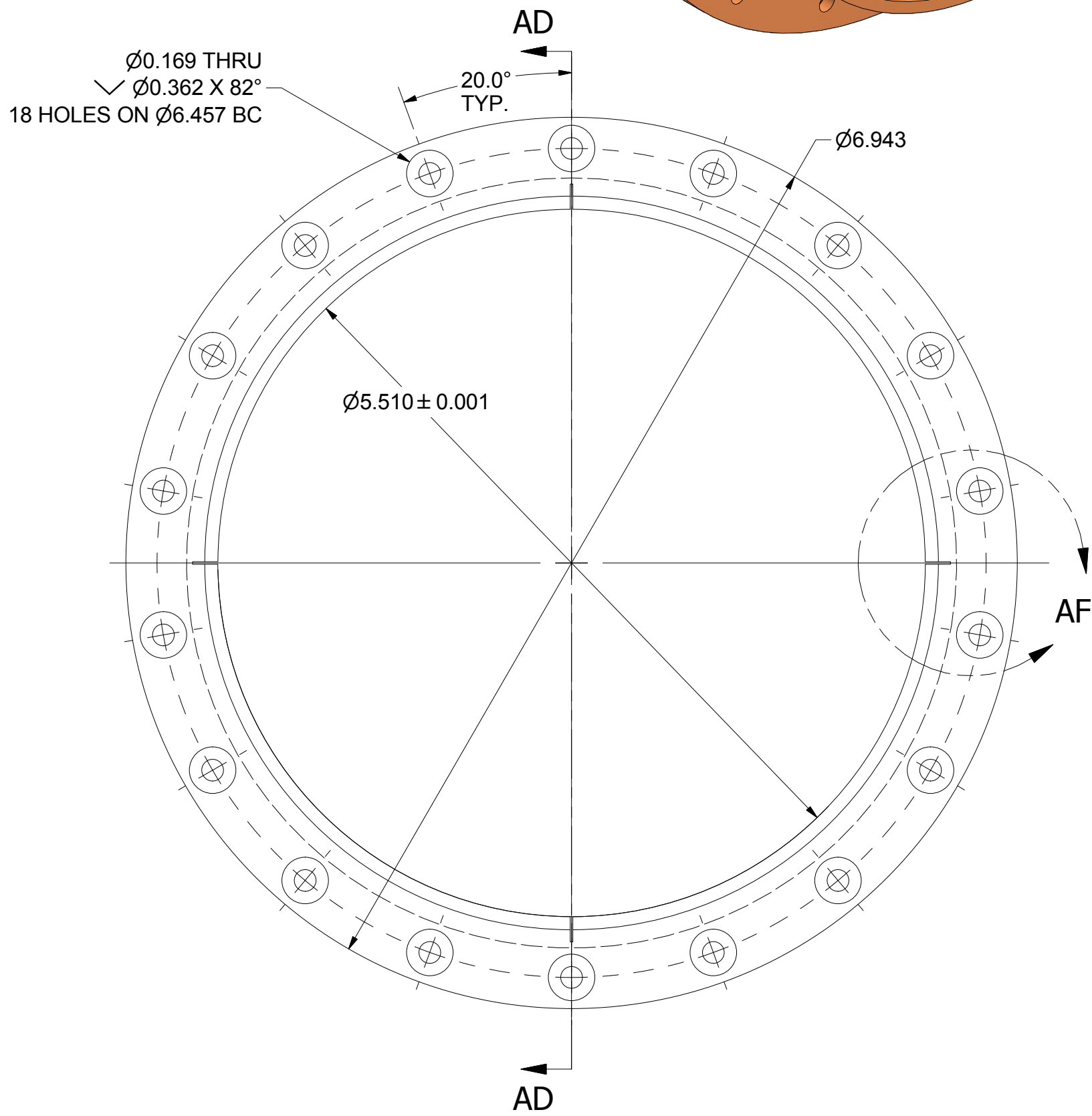
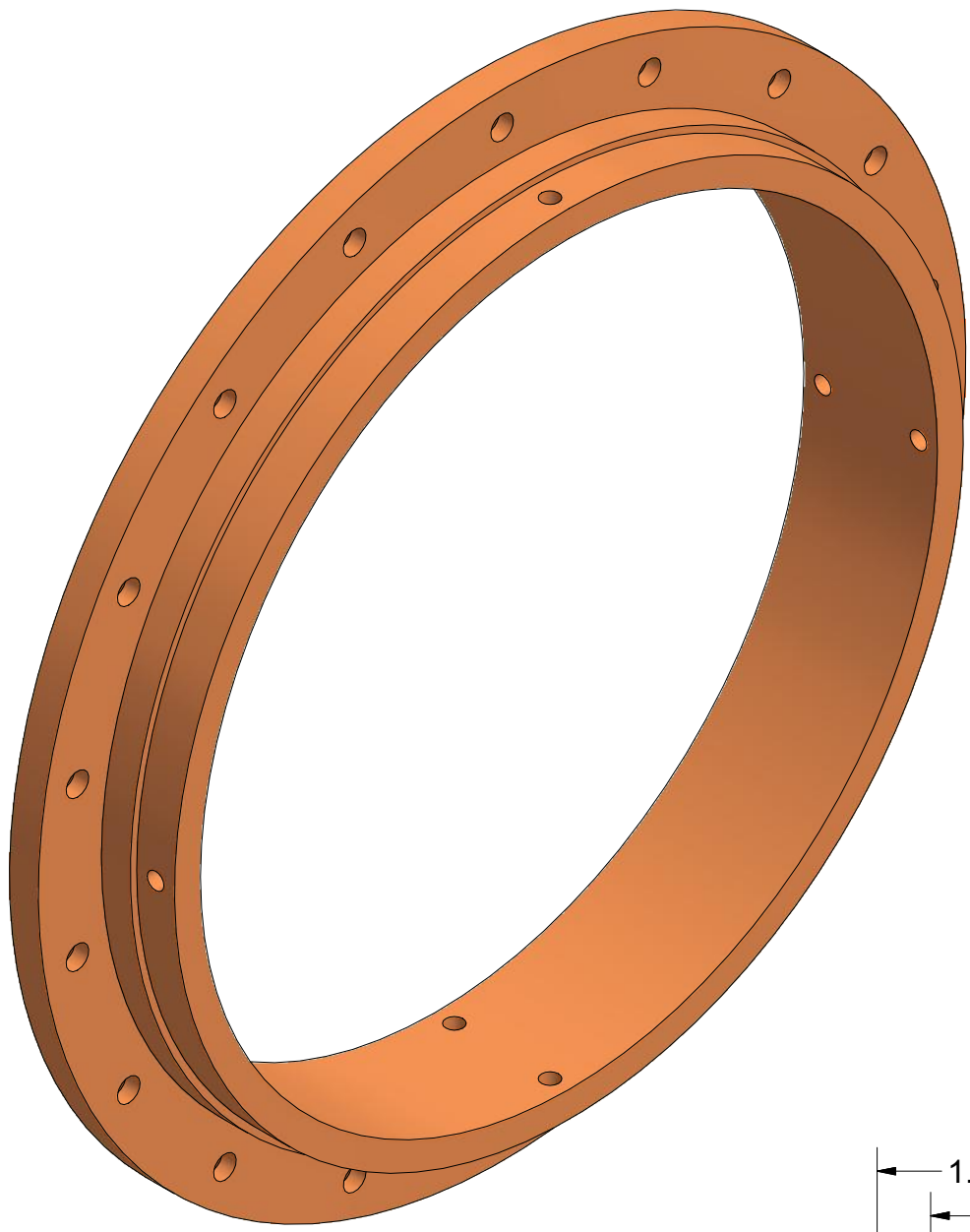
MLC HOM Absorber
Ti Cooling Jacket and Flange Prototype



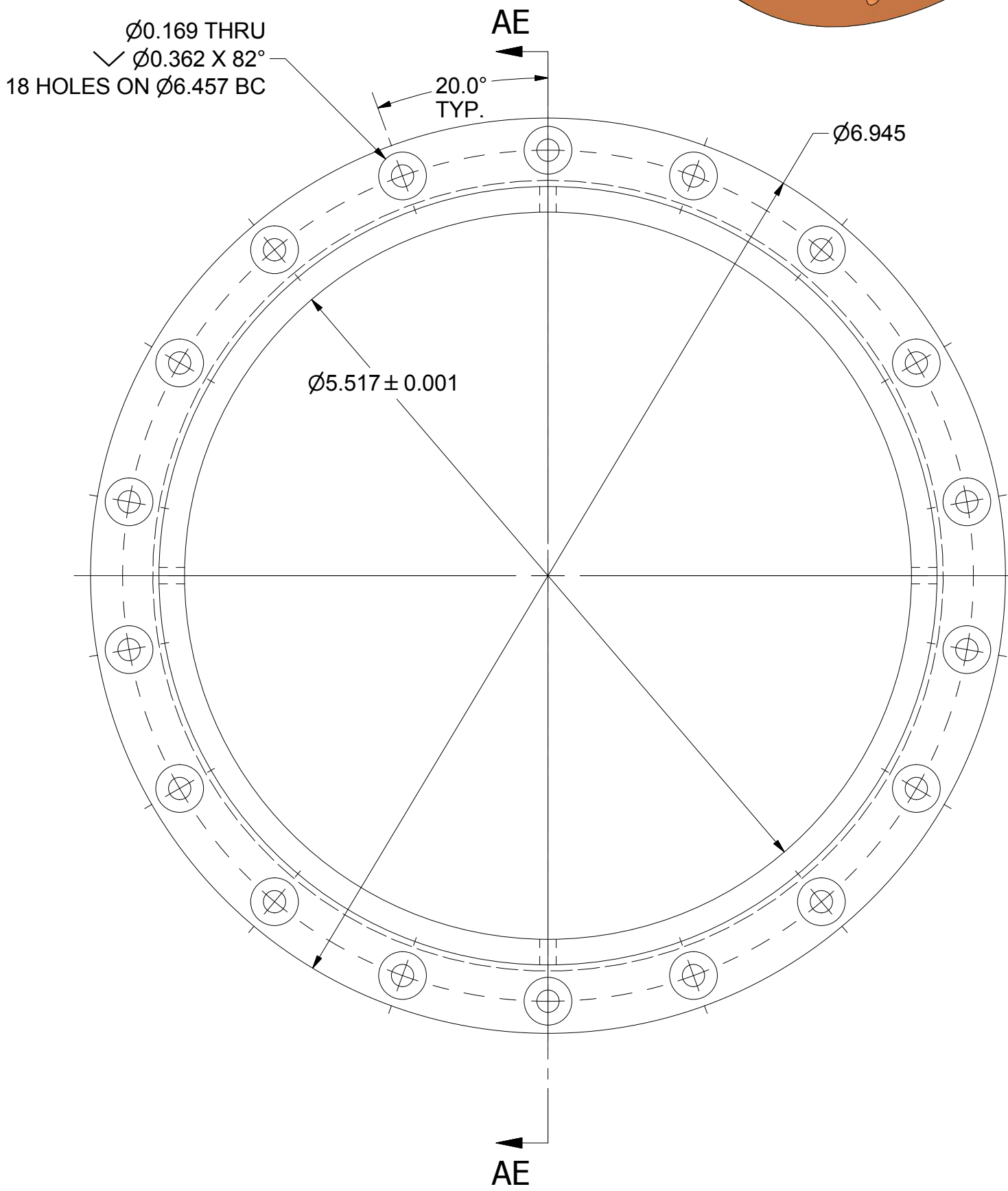
REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.

 		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS		REV.	
		QUANTITY											
D	PRINT DISTR.	PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw											
	CR-1	<div>UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: 0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES </div>			<div> Cornell University Laboratory for Elementary-Particle Physics</div>					<div>Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853</div>			
SH. NO. 30 OF 35	7103-217	<div>MLC HOM Absorber</div> <div>Ti Flange Prototype</div>											
	REV.	CHECKED BY: J. Conway APPROVED BY: JVC/RGE		DRAWN BY jvc26		DRAWN FOR R Eichhorn		DATE 4/25/2013		SCALE	D	7103-217 SH. NO. 30 OF 35	

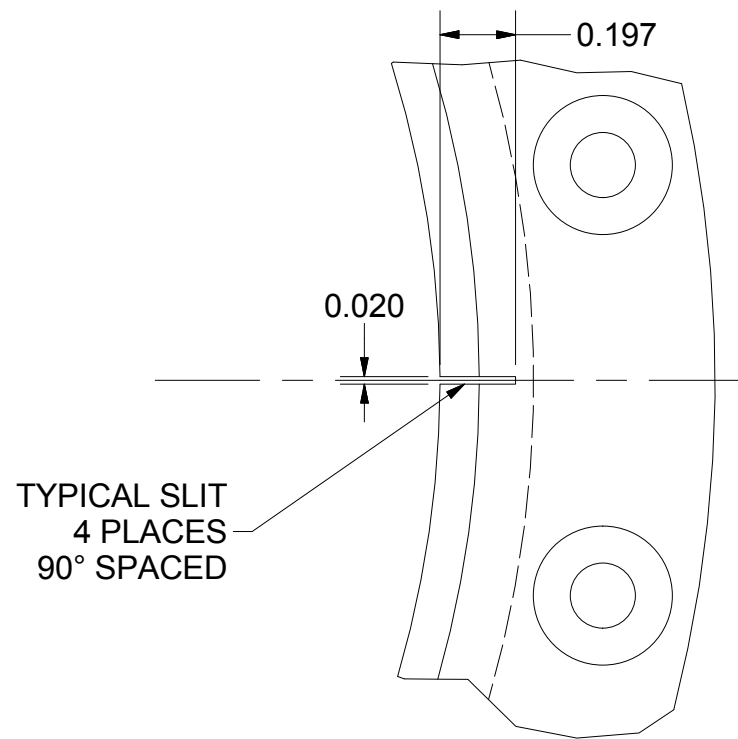
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.



SECTION AD-AD
SCALE 1 : 1




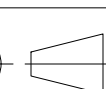

SECTION AE-AE
SCALE 1 : 1



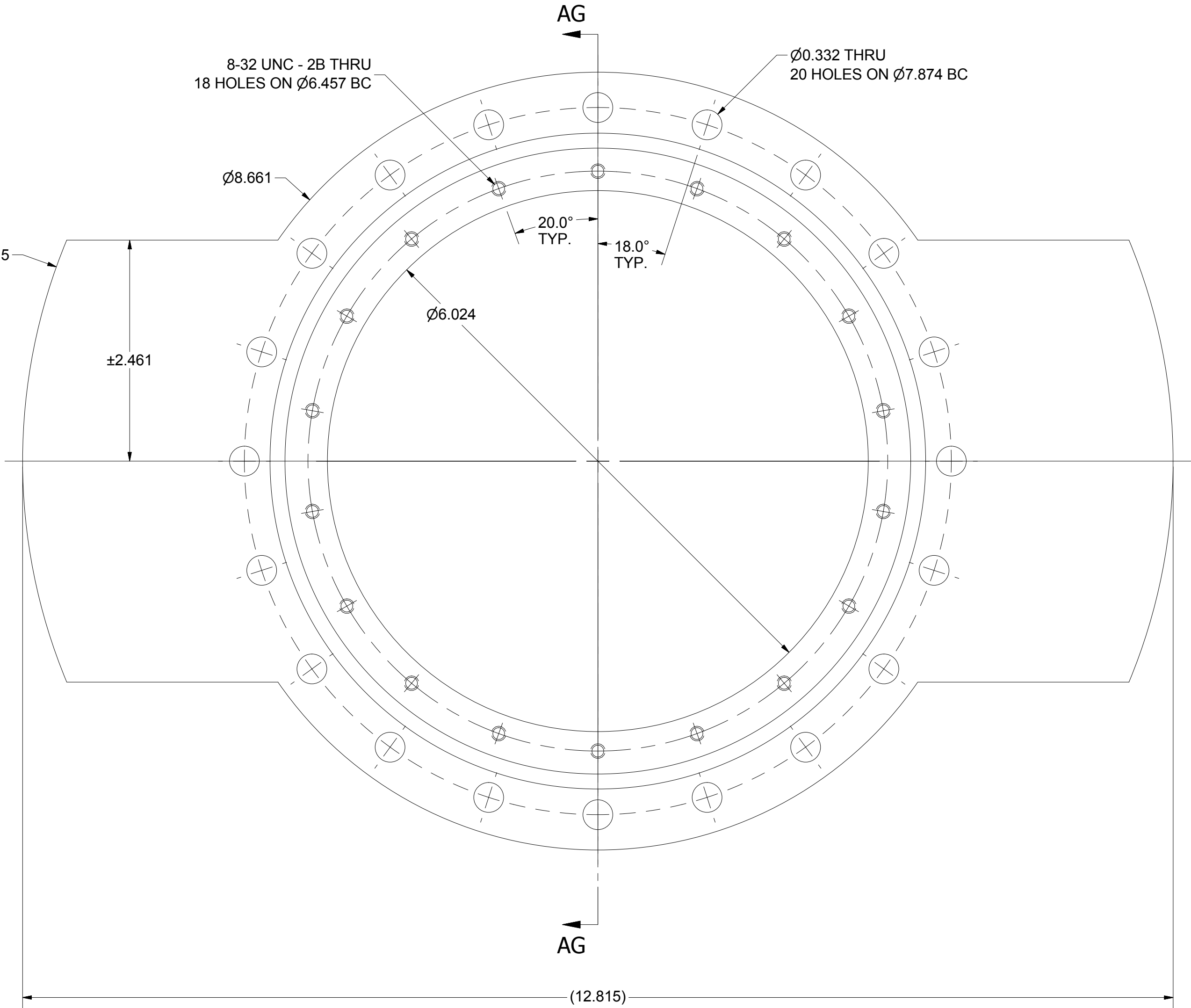
DETAIL AF
SCALE 2 : 1

123 Slitted Copper Ring Test
FILE NAME: 7103-217
SHEET NO.: 31
DFT. SCALE: 1:1
MATERIAL: OFHC Copper
QTY: 1
NOTES:

124 Loose Copper Ring Test
FILE NAME: 7103-217
SHEET NO.: 31
DFT. SCALE: 1:1
MATERIAL: OFHC Copper
QTY: 1:1
NOTES:

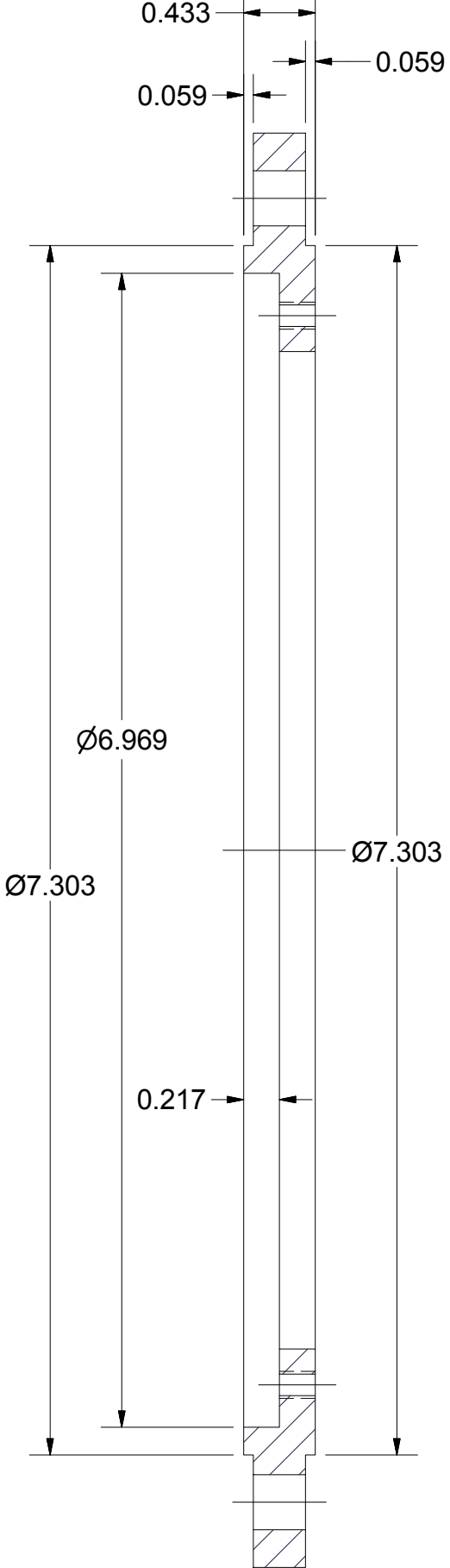
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									QUANTITY									
D		PRINT DISTR.		PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw														
7103-217 SH. NO. 31 OF 35		CR-1		<div>Cornell University Laboratory for Elementary-Particle Physics</div> <div>Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853</div>														
REV.		J. Conway		MLC HOM Absorber Loose and Slitted Cu Prototypes														
		CHECKED BY:		DRAWN BY		DRAWN FOR		DATE		SCALE		D		7103-217		REV.		
		APPROVED BY: JVC/RGE		jvc26		R Eichhorn		4/25/2013						SH. NO. 31 OF 35				

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.

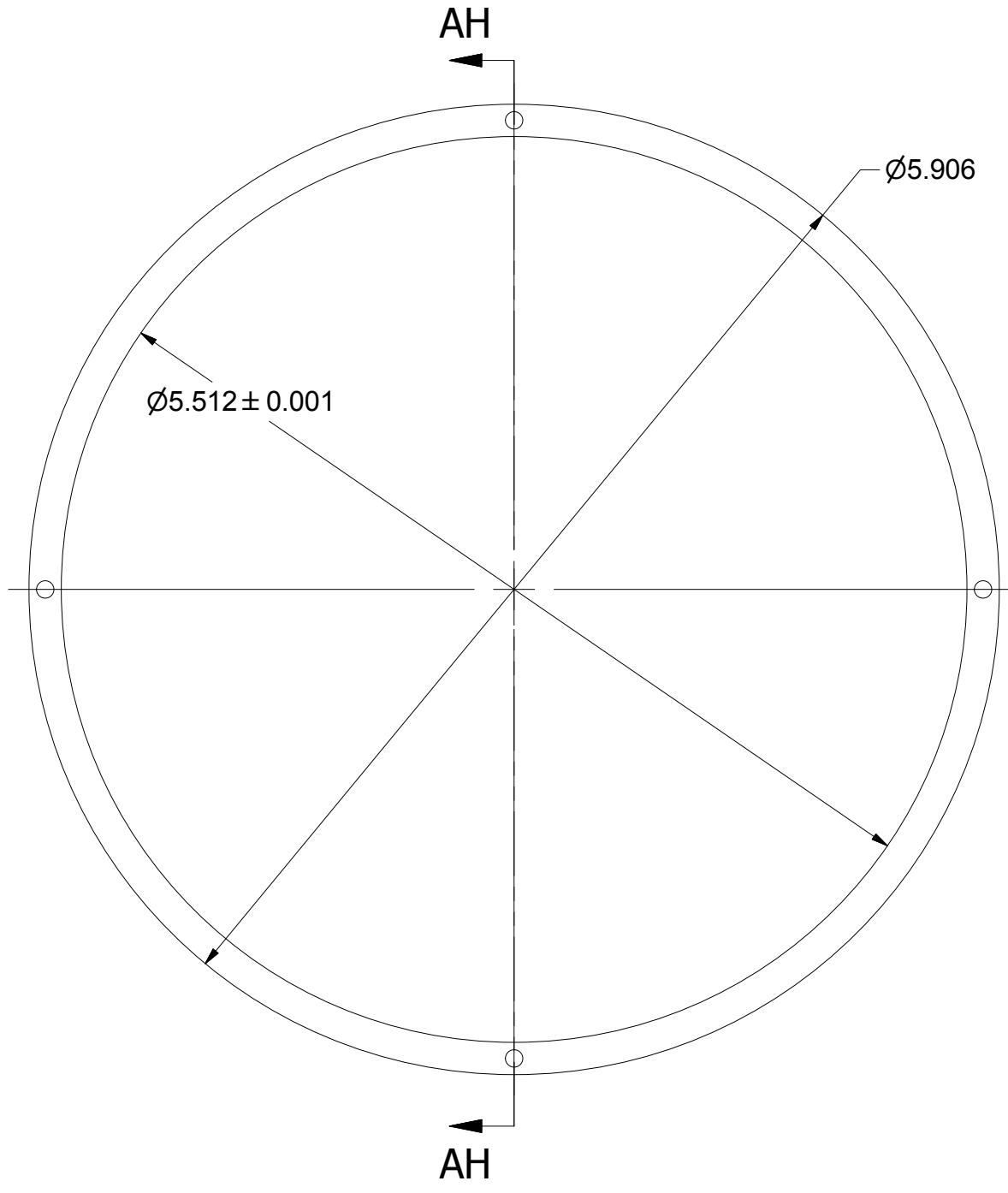


125 Copper Cooled Gasket

FILE NAME: 7103-217
SHEET NO.: 32
DFT. SCALE: 1:1
MATERIAL: OFHC Copper
QTY: 1
NOTES:





SECTION AG-AG
SCALE 1 : 1

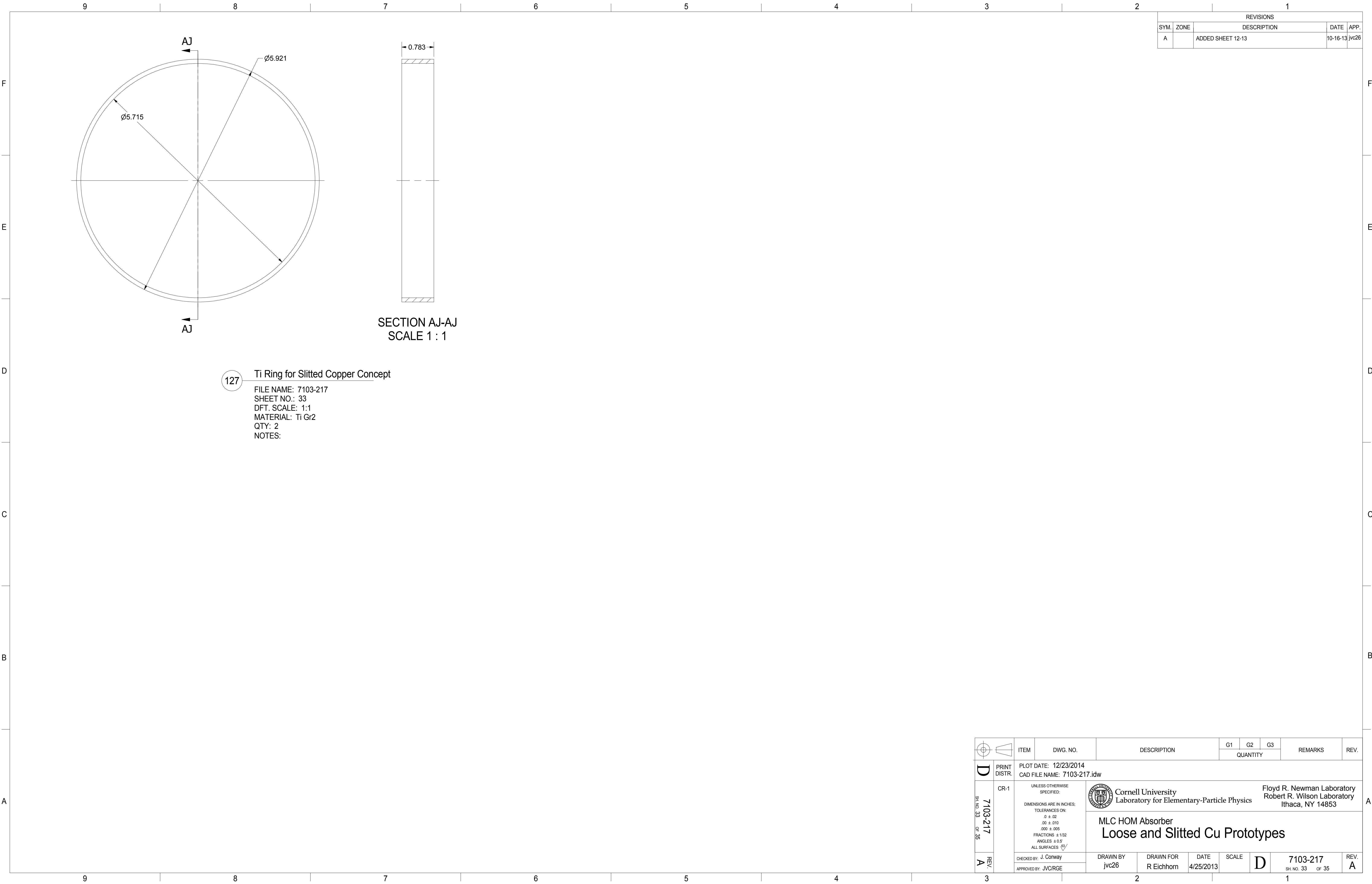


SECTION AH-AH
SCALE 1 : 1


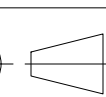


126 Titanium Retaining Ring


FILE NAME: 7103-217
SHEET NO.: 32
DFT. SCALE: 1:1
MATERIAL: Ti Gr2
QTY: 2
NOTES:

		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.	
					QUANTITY					
D	PRINT DISTR.	PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw								
	CR-1	<div>UNLESS OTHERWISE SPECIFIED:</div> <div>DIMENSIONS ARE IN INCHES;</div> <div>TOLERANCES ON:</div> <div>0 ± .02</div> <div>.00 ± .010</div> <div>.000 ± .005</div> <div>FRACTIONS ± 1/32</div> <div>ANGLES ± 0.5°</div> <div>ALL SURFACES </div>			<div>Cornell University Laboratory for Elementary-Particle Physics</div> <div>Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853</div>					
7103-217 SH. NO. 32 OF 35	REV.	CHECKED BY: J. Conway APPROVED BY: JVC/RGE			DRAWN BY jvc26	DRAWN FOR R Eichhorn	DATE 4/25/2013	SCALE D	7103-217 SH. NO. 32 OF 35	REV.
	MLC HOM Absorber Loose and Slitted Cu Prototypes									



REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED SHEET 12-13	10-16-13	jvc26

 		ITEM		DWG. NO.		DESCRIPTION		G1		G2		G3		REMARKS		REV.			
								QUANTITY											
D		PRINT DISTR.		PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw															
7103-217 SH. NO. 33 OF 35		CR-1		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			
						MLC HOM Absorber Loose and Slitted Cu Prototypes													
A		REV.		CHECKED BY: J. Conway		DRAWN BY jvc26		DRAWN FOR R Eichhorn		DATE 4/25/2013		SCALE		D		7103-217 SH. NO. 33 OF 35		REV. A	
				APPROVED BY: JVC/RGE															



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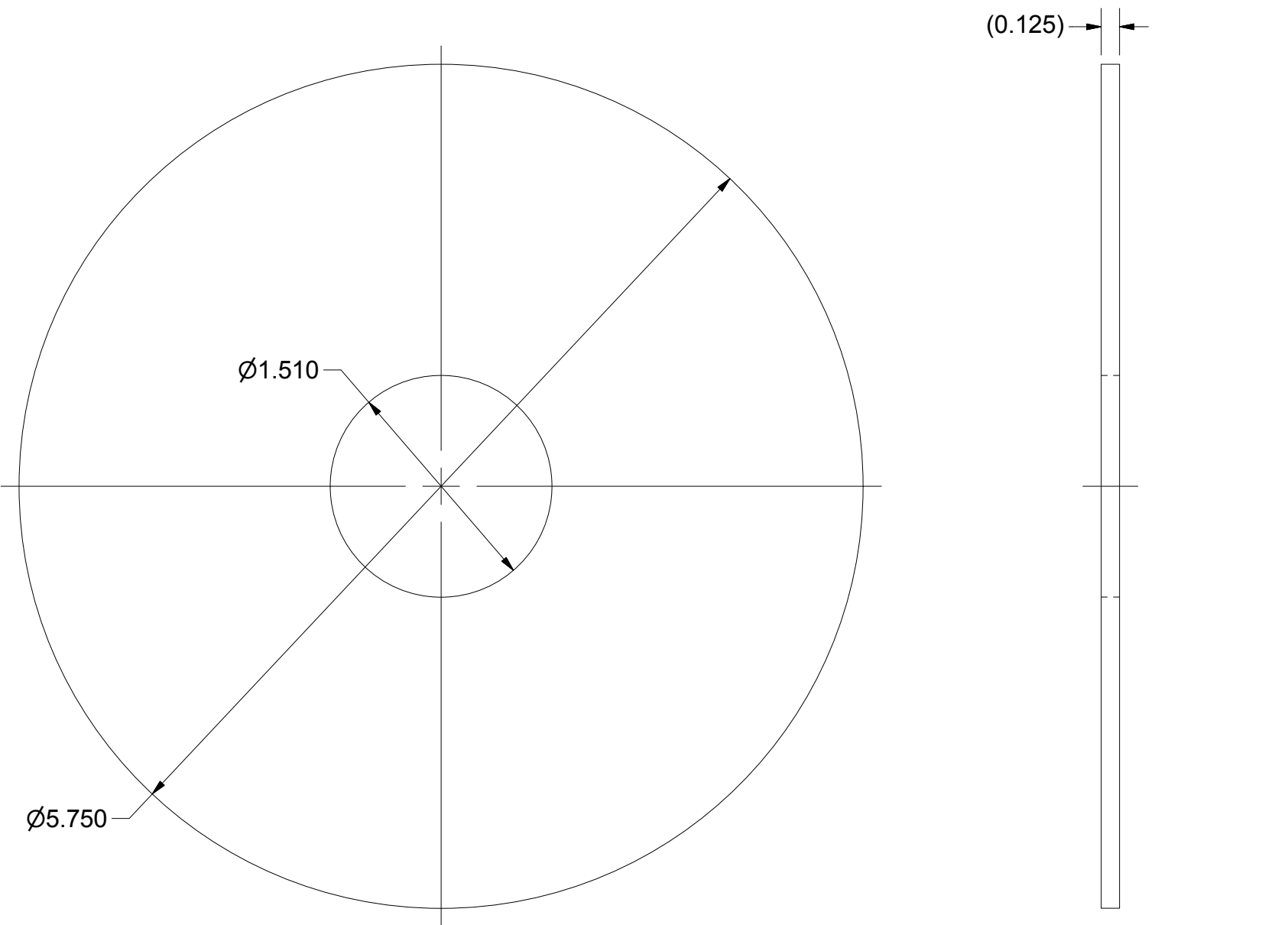
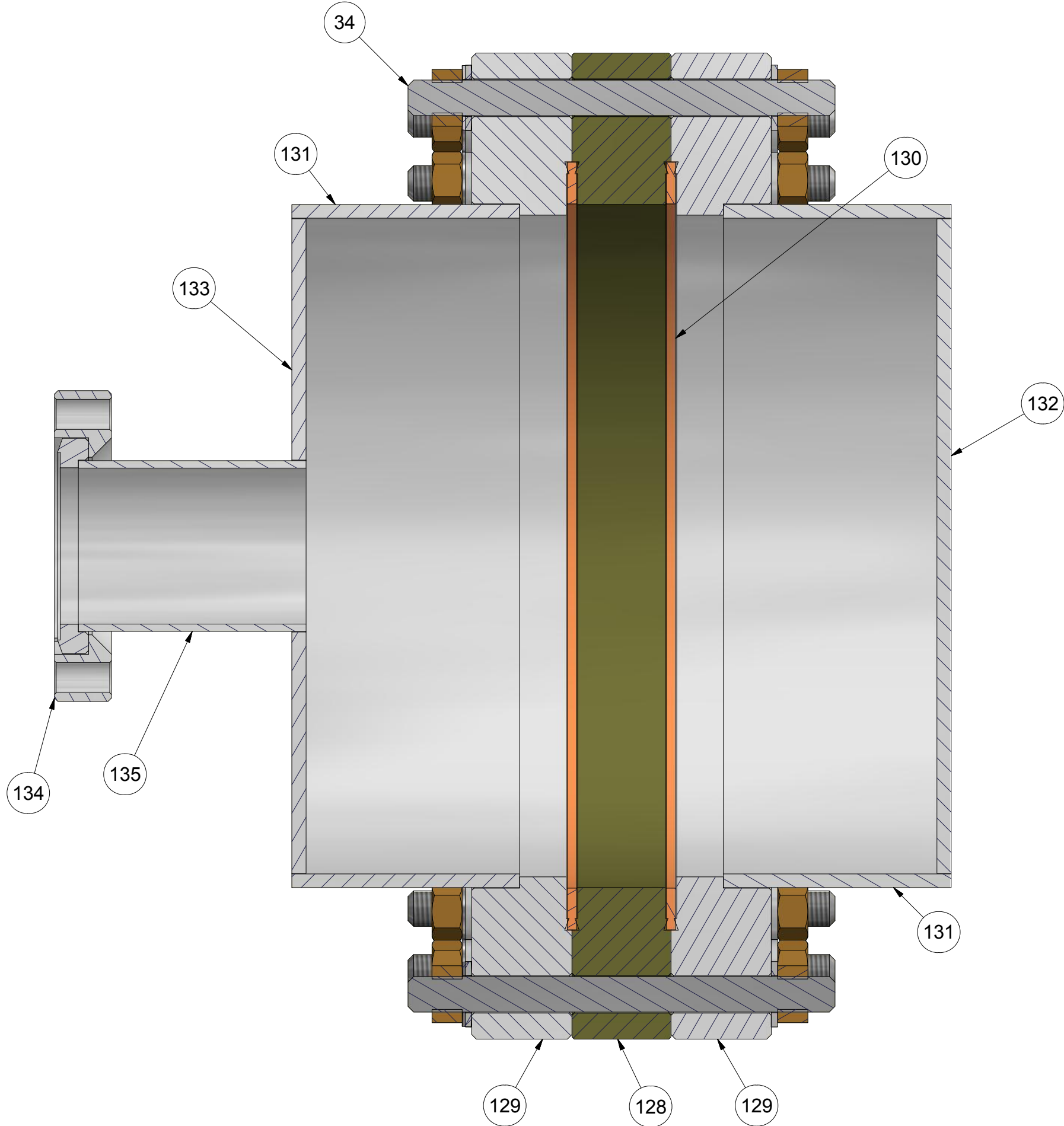
Robert R. Wilson Laboratory

Ithaca, NY 14853

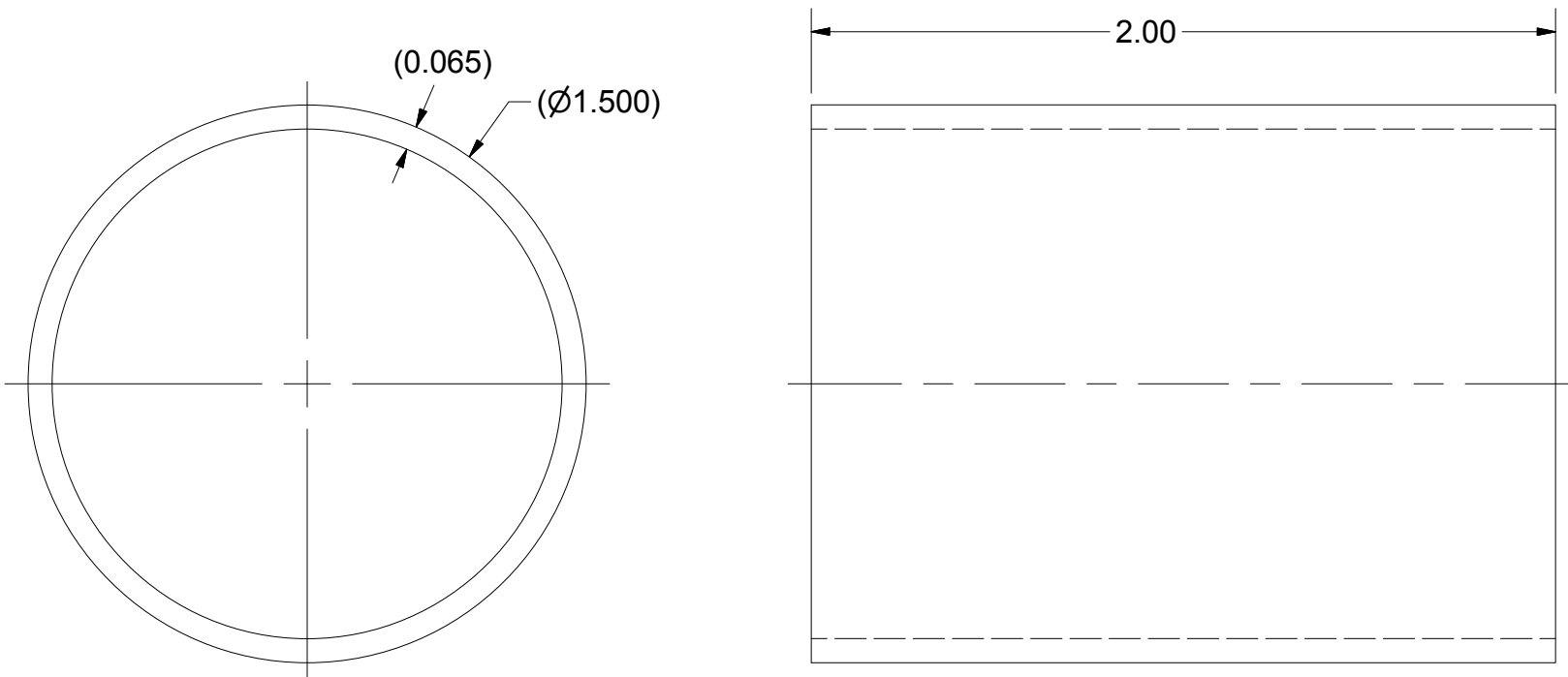
MLC HOM Absorber

Loose and Slitted Cu Prototypes

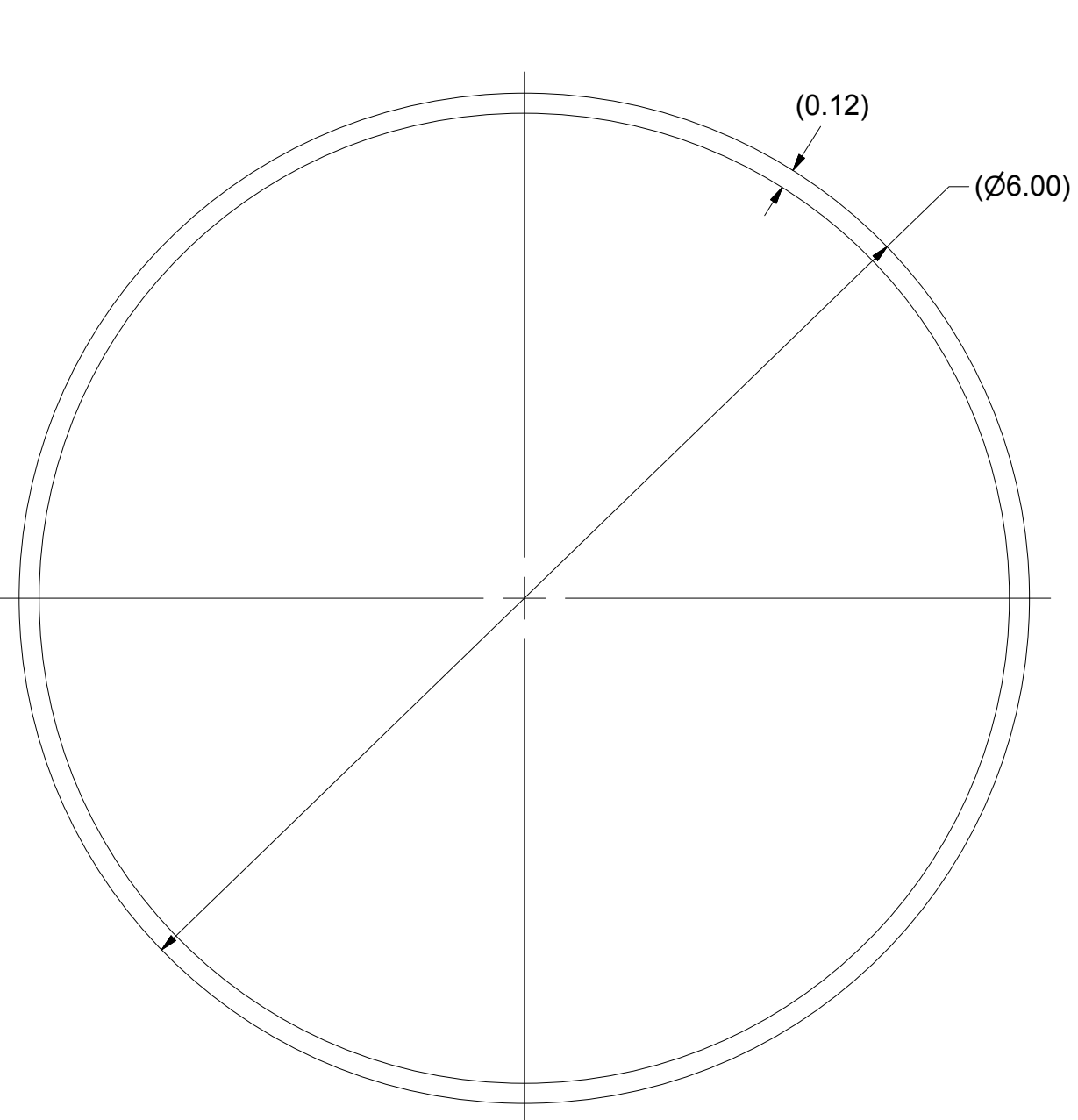
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.



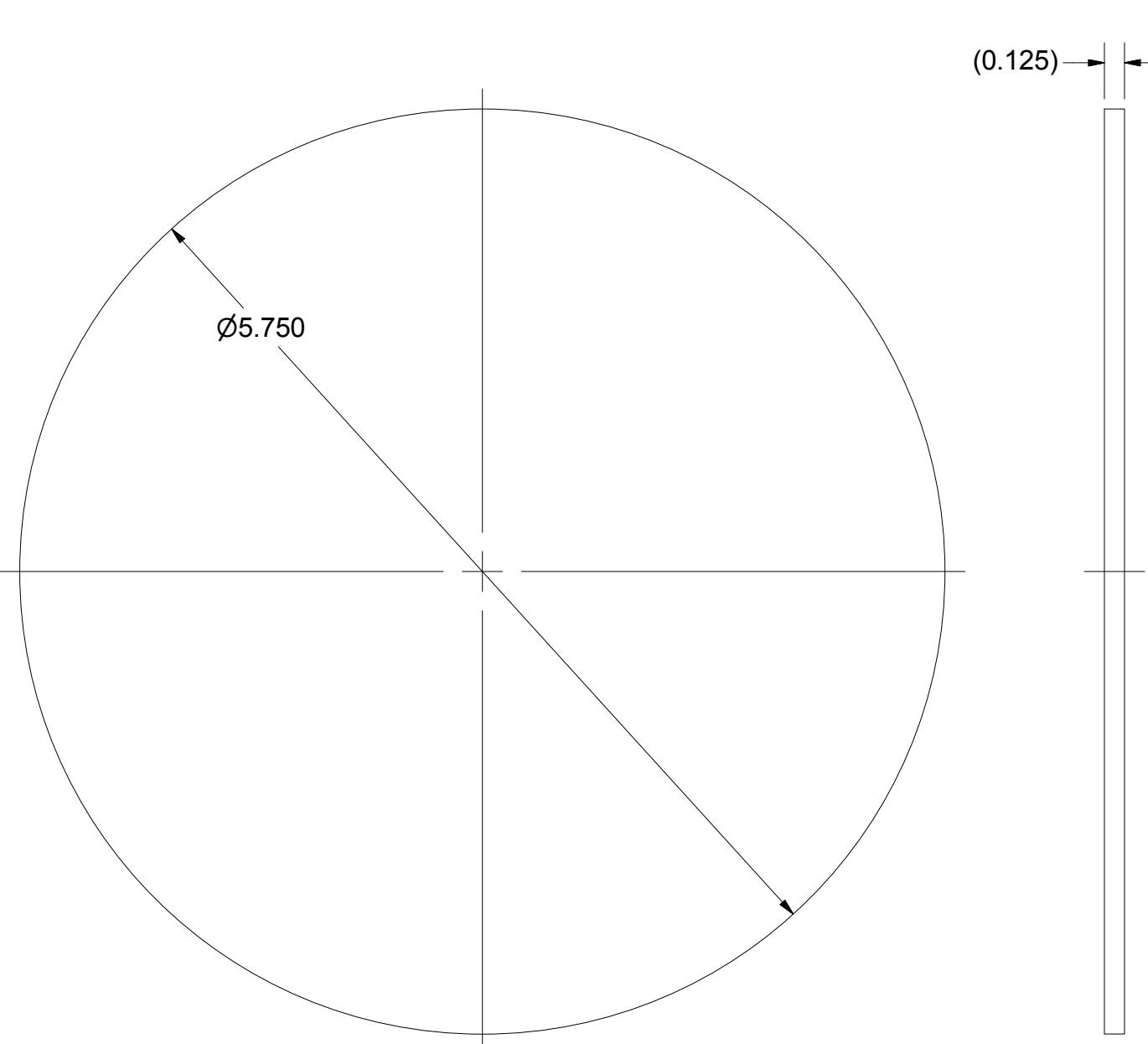
133 Pump End Plate
FILE NAME: 7103-217
SHEET NO.: 34
DFT. SCALE: 1:1
MATERIAL: SS304 1/8in plate
QTY: 1
NOTES:



135 1.5in Pump Tube
FILE NAME: 7103-217
SHEET NO.: 34
DFT. SCALE: 2:1
MATERIAL: SS304 1.5in OD Tube 0.065 wall
QTY:
NOTES:



131 6in Tube
FILE NAME: 7103-217
SHEET NO.: 34
DFT. SCALE: 1:1
MATERIAL: SS304 6in OD tube 0.12 wall
QTY: 2
NOTES:



132 Tube End Plate
FILE NAME: 7103-217
SHEET NO.: 34
DFT. SCALE: 1:1
MATERIAL: SS304 1/8in plate
QTY: 1
NOTES:

34	Sheet 17	Threaded Rod	20					
135	Sheet 30	1.5in tube	1					
134	Purchased	CF-flange-2-3_4-rot-1.5-C	1					
133	Sheet 30	pump end plate	1					
132	Sheet 30	tube end plate	1					
131	Sheet 30	6in tube	2					
130	Purchased	CF-gasket-8	2					
129	Sheet 31	SS Flange CF TEST	2					
128	Sheet 31	Ti Flange CF TEST	1					

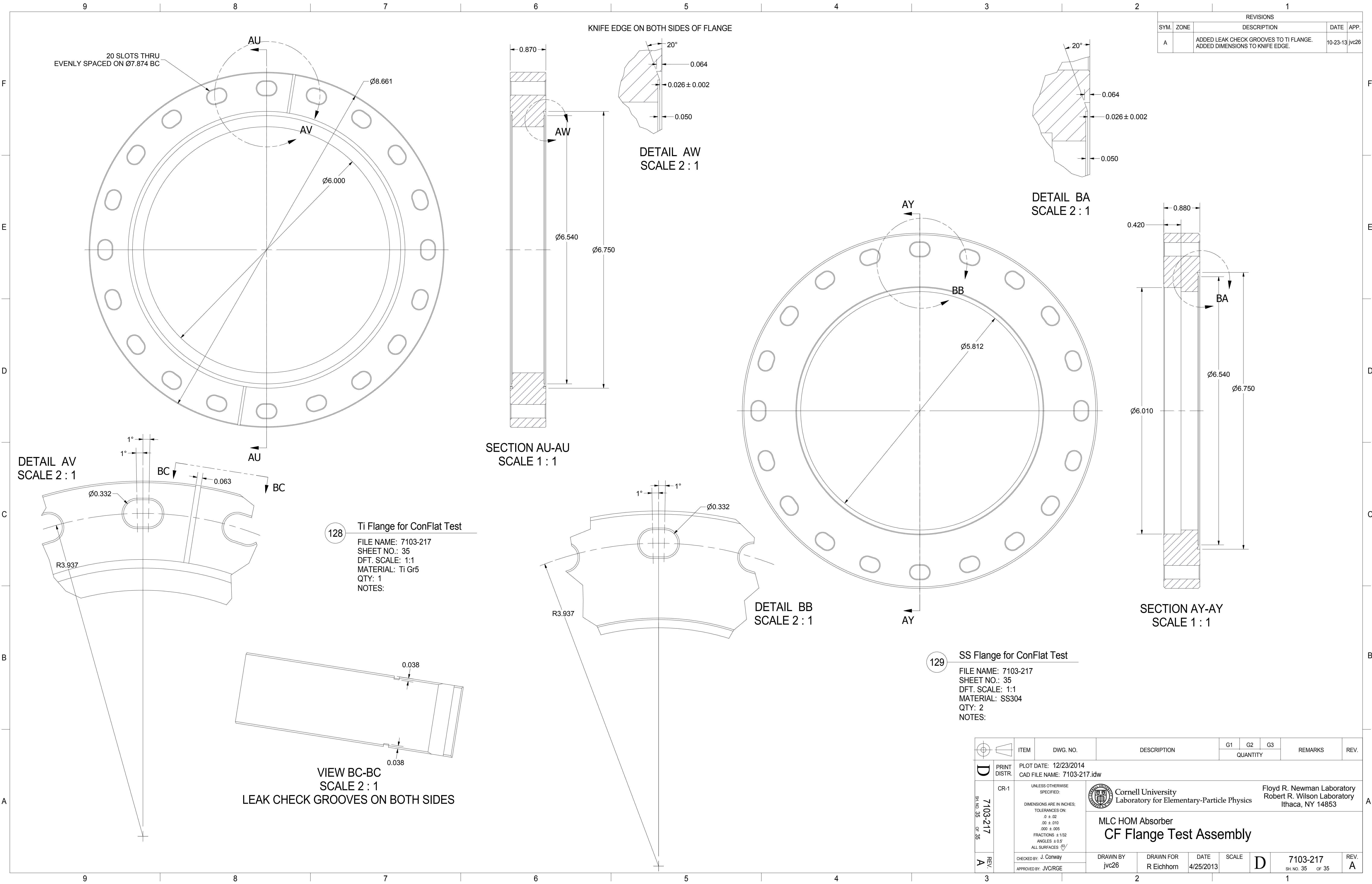
		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS		REV.
		QUANTITY										
D 7103-217 SH. NO. 34 OF 35	PRINT DISTR.	PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw										
	CR-1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: Ø ± .02 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES			Cornell University Laboratory for Elementary-Particle Physics			Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853				
				MLC HOM Absorber CF Flange Test Assembly								
REV.	CHECKED BY: J. Conway	DRAWN BY jvc26		DRAWN FOR R Eichhorn		DATE 4/25/2013	SCALE	D		7103-217 SH. NO. 34 OF 35		REV.
		APPROVED BY: JVC/RGE										



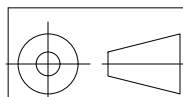


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MLC HOM Absorber CF Flange Test Assembly



REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED LEAK CHECK GROOVES TO TI FLANGE. ADDED DIMENSIONS TO KNIFE EDGE.	10-23-13	jvc26

		ITEM		DWG. NO.		DESCRIPTION		G1		G2		G3		REMARKS		REV.	
								QUANTITY									
D		PRINT DISTR.		PLOT DATE: 12/23/2014 CAD FILE NAME: 7103-217.idw													
7103-217 SH. NO. 35 OF 35		CR-1		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											
				MLC HOM Absorber CF Flange Test Assembly													
REV. A		CHECKED BY: J. Conway		DRAWN BY: jvc26		DRAWN FOR: R Eichhorn		DATE: 4/25/2013		SCALE: D		7103-217 SH. NO. 35 OF 35		REV. A			
		APPROVED BY: JVC/RGE															