

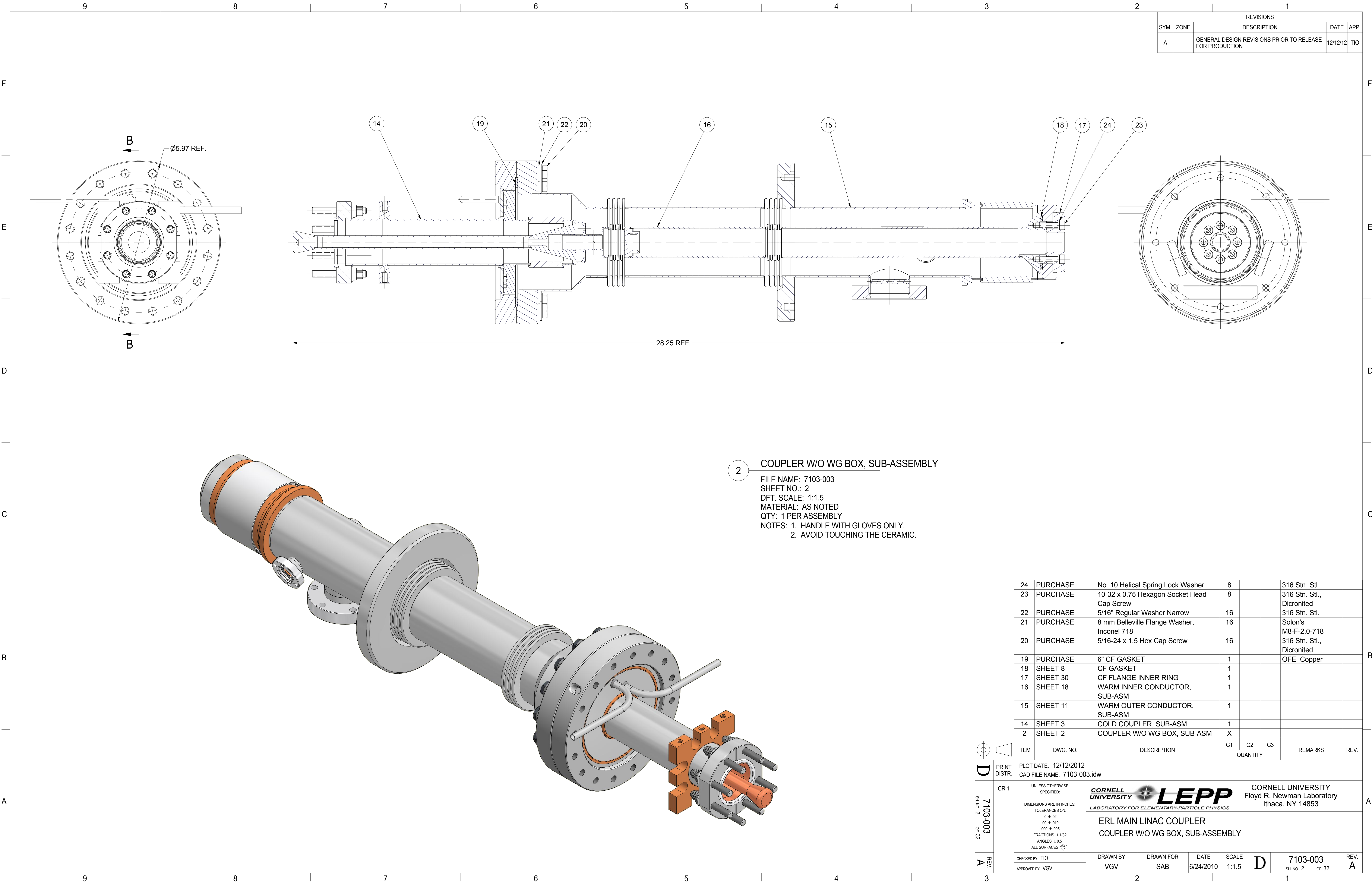
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO

1 MAIN LINAC COUPLER, ASSEMBLY

FILE NAME: 7103-003
SHEET NO.: 1
DFT. SCALE: 1:1.5
MATERIAL: AS NOTED
QTY: 6 PER CRYOMODULE
NOTES:

13	PURCHASE	No. 8 Helical Spring Lock Washer	4		Stn. Stl.	
12	PURCHASE	8-32 x 1/2 Hexagon Socket Head Cap Screw	4		Stn. Stl.	
11	PURCHASE	No. 10 Helical Spring Lock Washer	3		316 Stn. Stl.	
10	PURCHASE	10-32 x 1 Hexagon Socket Head Cap Screw	3		316 Stn. Stl.	
9	PURCHASE	O-RING #327	1		Buna-N Medium	
8	PURCHASE	O-RING #019	1		Viton	
7	SHEET 20	FINGER CONTACT	1		LAIRD TECHNOLOGIES	
6	SHEET 8	CLAMP STRIP	1			
5	SHEET 29	COOLING SOCKET, SUB-ASM	1			
4	SHEET 21	5K COOLING BLOCK	1			
3	SHEET 22	WG BOX, SUB-ASM	1			
2	SHEET 2	COUPLER W/O WG BOX, SUB-ASM	1			
1	SHEET 1	MAIN LINAC COUPLER, ASSEMBLY	X			

		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
					QUANTITY				
D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.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><div><div>CORNELL UNIVERSITY</div><div></div><div>LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</div></div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div>			
ERL MAIN LINAC COUPLER ASSEMBLY									
7103-003 SH. NO. 1 OF 32	REV. A	CHECKED BY: TIO	DRAWN BY VGV	DRAWN FOR SAB	DATE 6/24/2010	SCALE 1:1.5	D	7103-003	REV. A
		APPROVED BY: VGV						SH. NO. 1 OF 32	

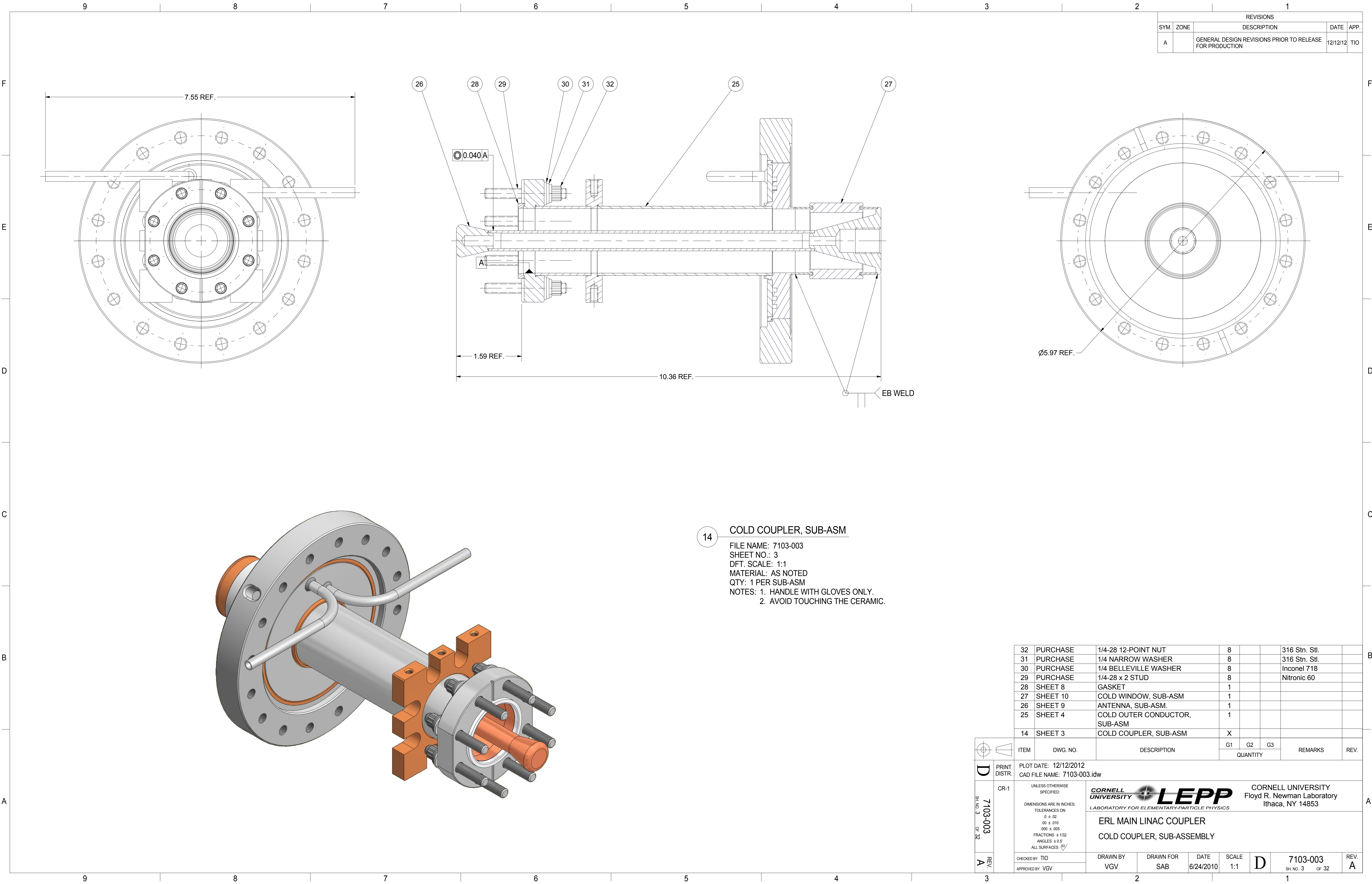


2 COUPLER W/O WG BOX, SUB-ASSEMBLY

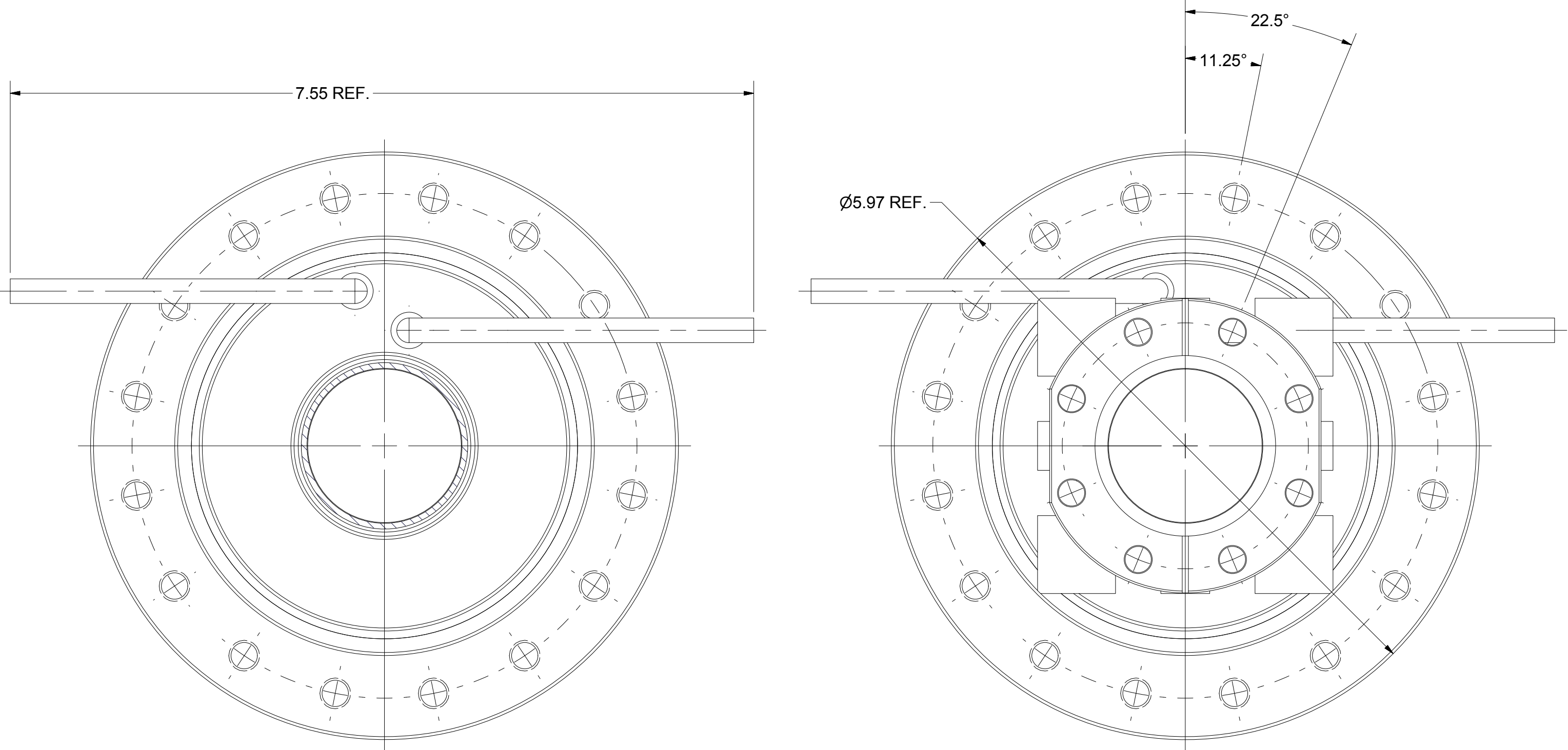
FILE NAME: 7103-003
SHEET NO.: 2
DFT. SCALE: 1:1.5
MATERIAL: AS NOTED
QTY: 1 PER ASSEMBLY
NOTES: 1. HANDLE WITH GLOVES ONLY.
2. AVOID TOUCHING THE CERAMIC.

24	PURCHASE	No. 10 Helical Spring Lock Washer	8			316 Stn. Stl.	
23	PURCHASE	10-32 x 0.75 Hexagon Socket Head Cap Screw	8			316 Stn. Stl., Diconited	
22	PURCHASE	5/16" Regular Washer Narrow	16			316 Stn. Stl.	
21	PURCHASE	8 mm Belleville Flange Washer, Inconel 718	16			Solon's M8-F-2.0-718	
20	PURCHASE	5/16-24 x 1.5 Hex Cap Screw	16			316 Stn. Stl., Diconited	
19	PURCHASE	6" CF GASKET	1			OFE Copper	
18	SHEET 8	CF GASKET	1				
17	SHEET 30	CF FLANGE INNER RING	1				
16	SHEET 18	WARM INNER CONDUCTOR, SUB-ASM	1				
15	SHEET 11	WARM OUTER CONDUCTOR, SUB-ASM	1				
14	SHEET 3	COLD COUPLER, SUB-ASM	1				
2	SHEET 2	COUPLER W/O WG BOX, SUB-ASM	X				

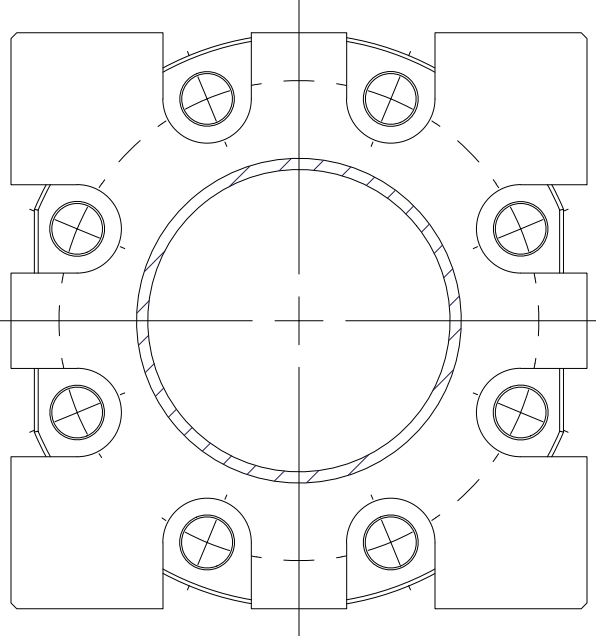
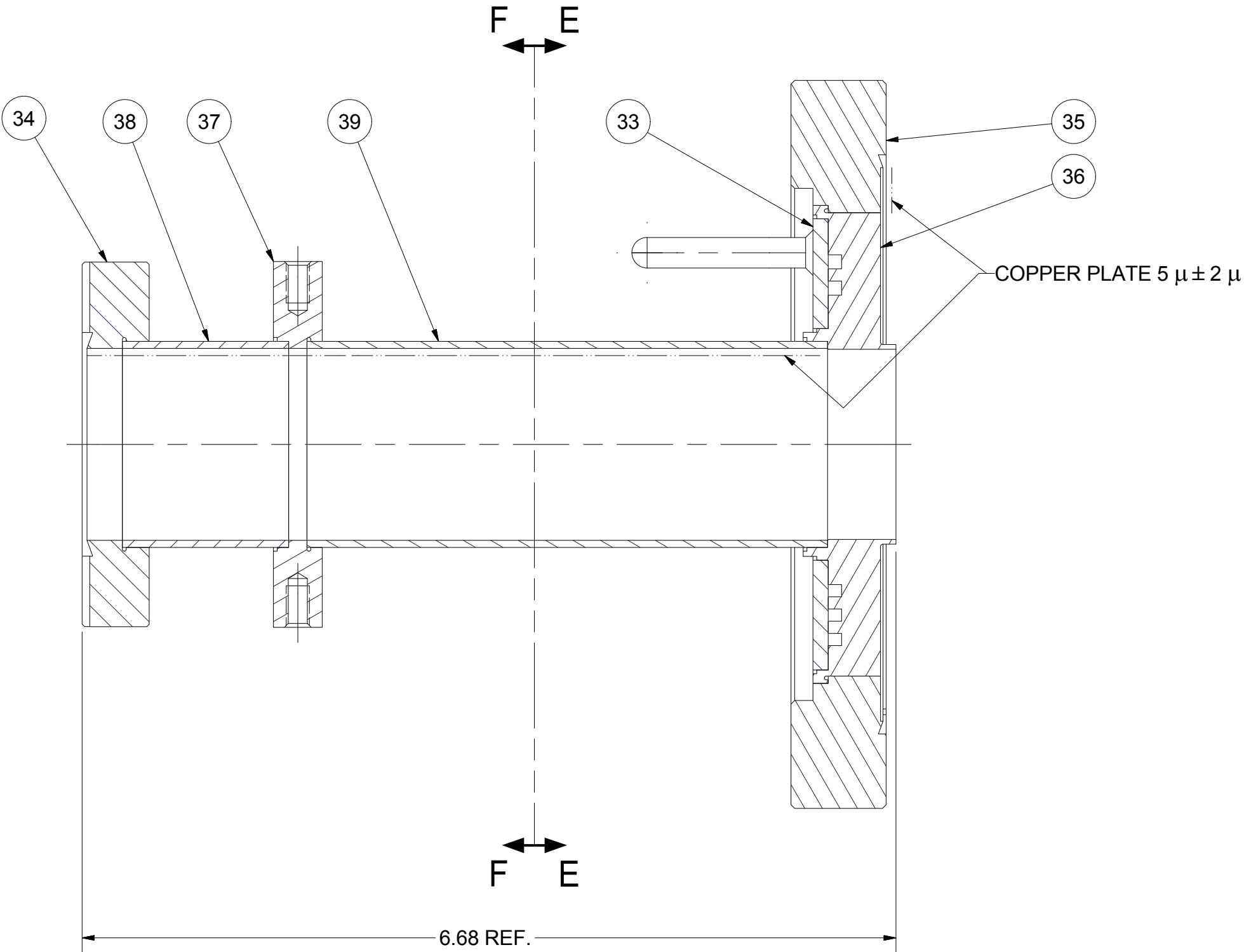
		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.	
		QUANTITY								
D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw								
	CR-1	<div>UNLESS OTHERWISE SPECIFIED:</div> <div>DIMENSIONS ARE IN INCHES;</div> <div>TOLERANCES ON:</div> <div>0 ± .02</div> <div>.00 ± .010</div> <div>.000 ± .005</div> <div>FRACTIONS ± 1/32</div> <div>ANGLES ± 0.5°</div> <div>ALL SURFACES </div>				<div><div><div>CORNELL UNIVERSITY</div><div></div><div>LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</div></div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div>				
7103-003	SH. NO. 2 OF 32	<div>ERL MAIN LINAC COUPLER</div> <div>COUPLER W/O WG BOX, SUB-ASSEMBLY</div>								
A	REV.	CHECKED BY: TIO		DRAWN BY VGV	DRAWN FOR SAB	DATE 6/24/2010	SCALE 1:1.5	D	7103-003	REV. A
		APPROVED BY: VGV		SH. NO. 2 OF 32						



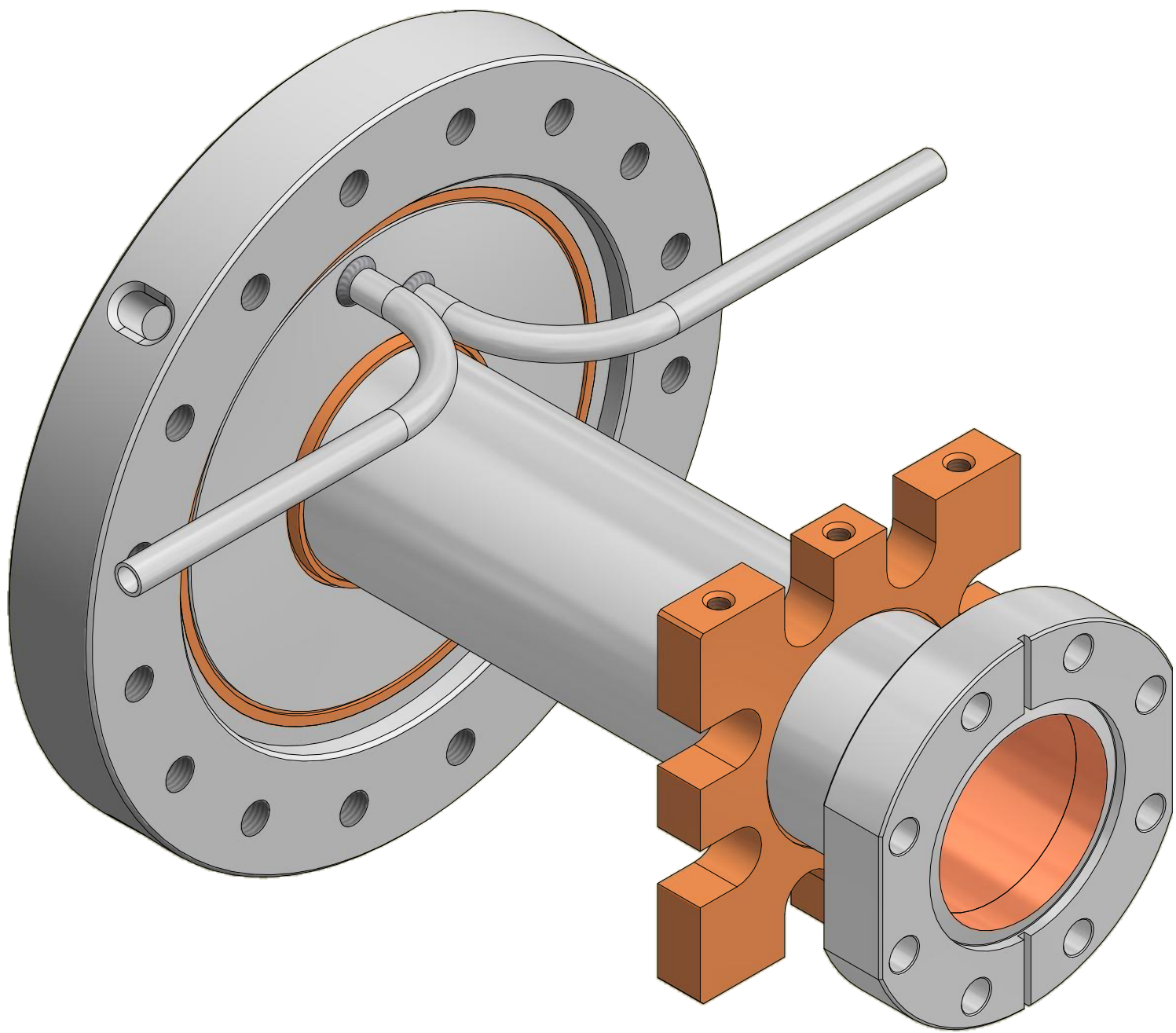
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO



SECTION E-E



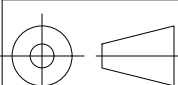


SECTION F-F



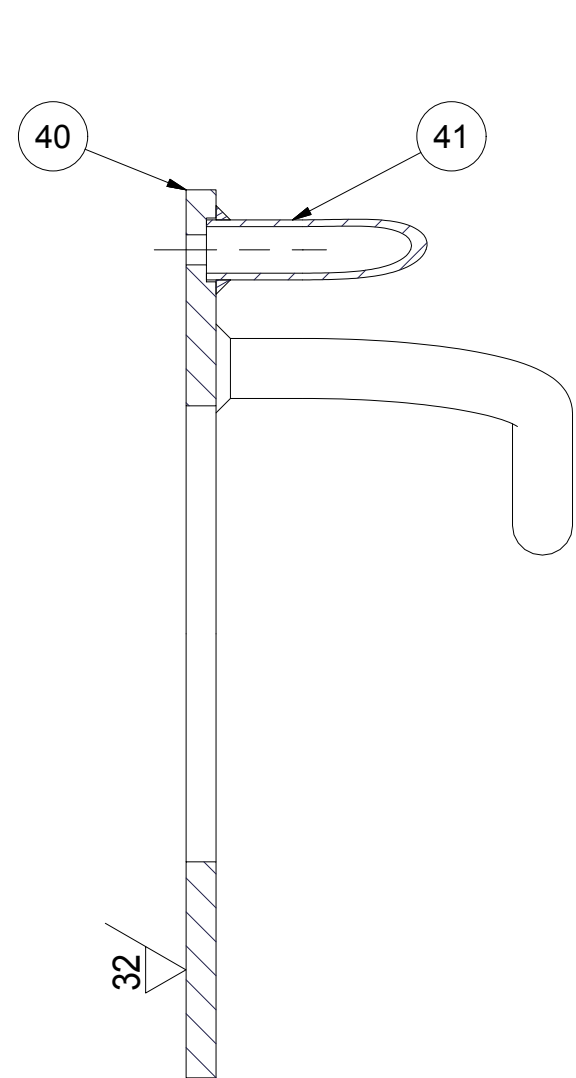
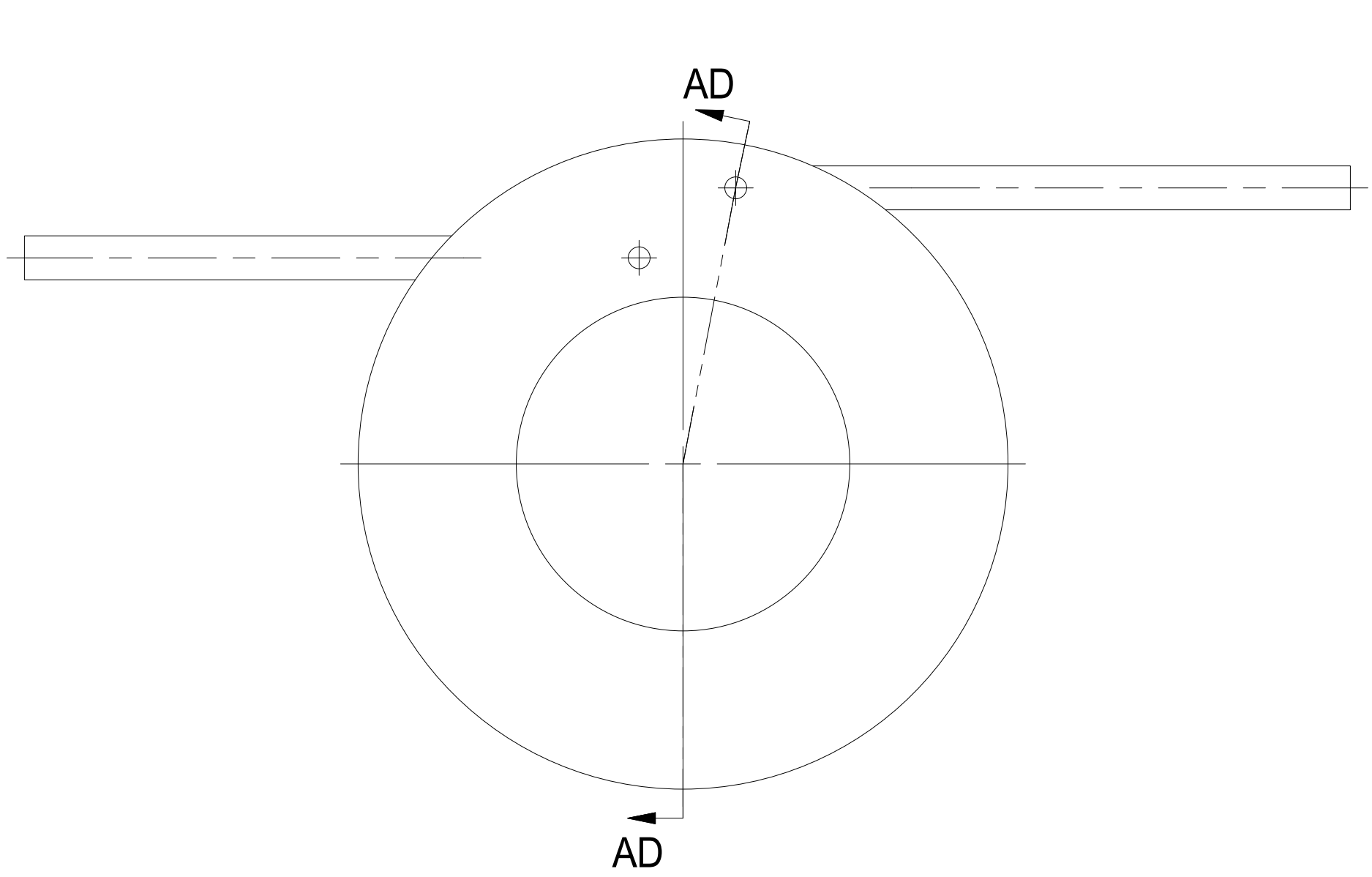
25 COLD OUTER CONDUCTOR, SUB-ASM

- FILE NAME: 7103-003
SHEET NO.: 4
DFT. SCALE: 1:1
MATERIAL: AS NOTED
QTY: 1 PER SUN-ASM
NOTES: 1. BRAZE ALL PARTS IN CLEAN VACUUM FURNACE USING 0.03" DIA. Cu-Au WIRE, RESPECT ANGULAR ORIENTATION OF PARTS.
2. COPPER PLATE AS SHOWN.
3. AFTER COPPER PLATING, BAKE ASSEMBLY IN VACUUM AT 400°C FOR 2 HRS.

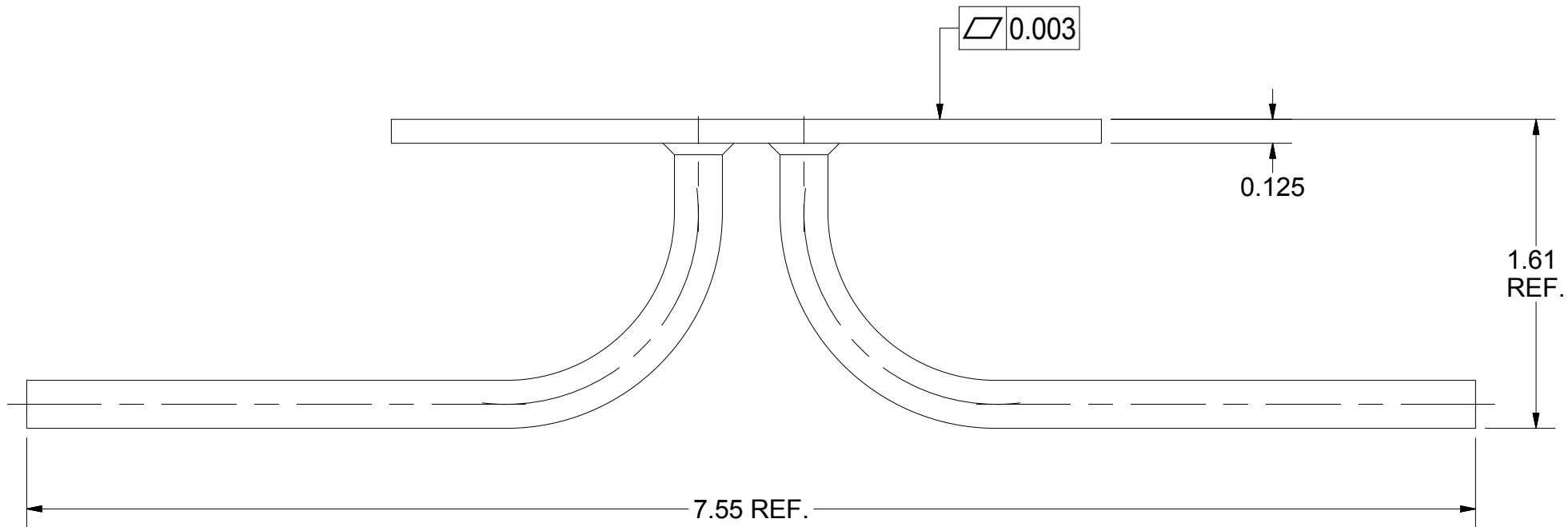
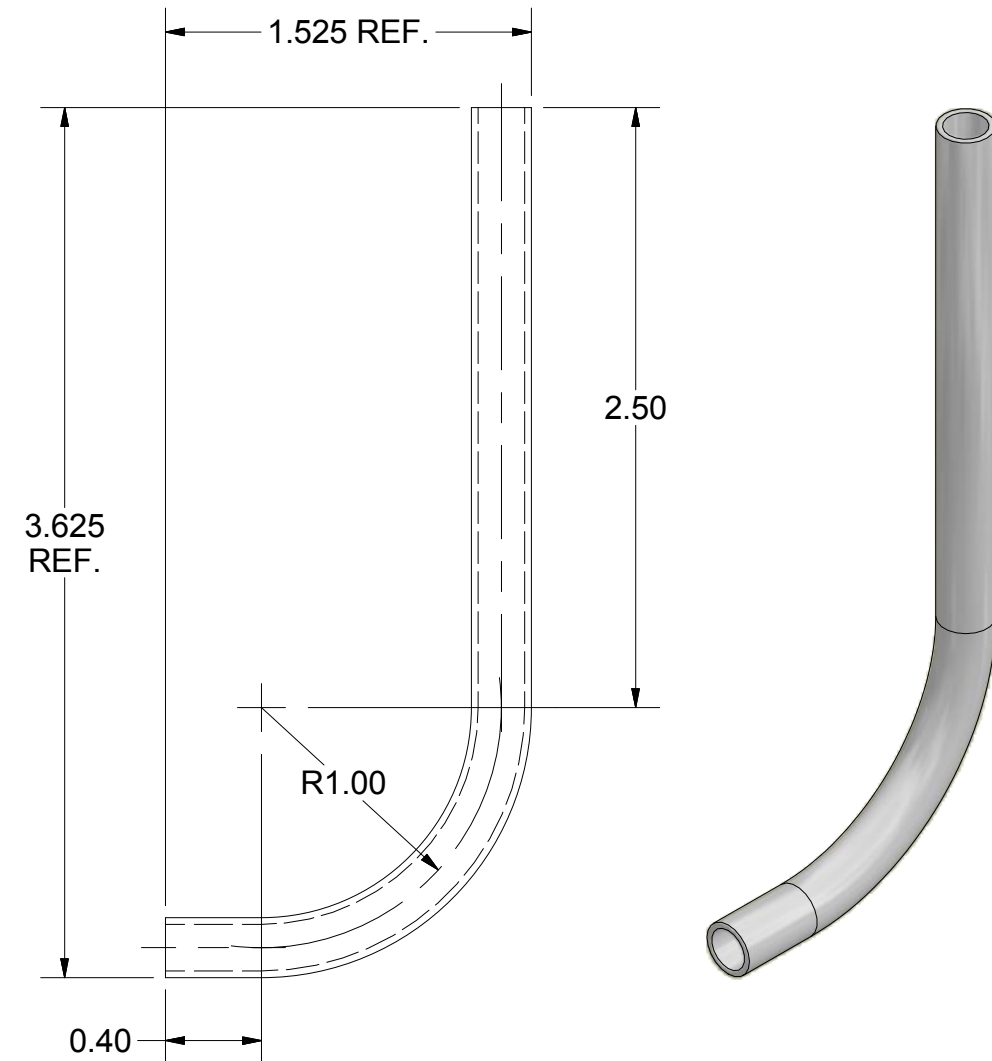
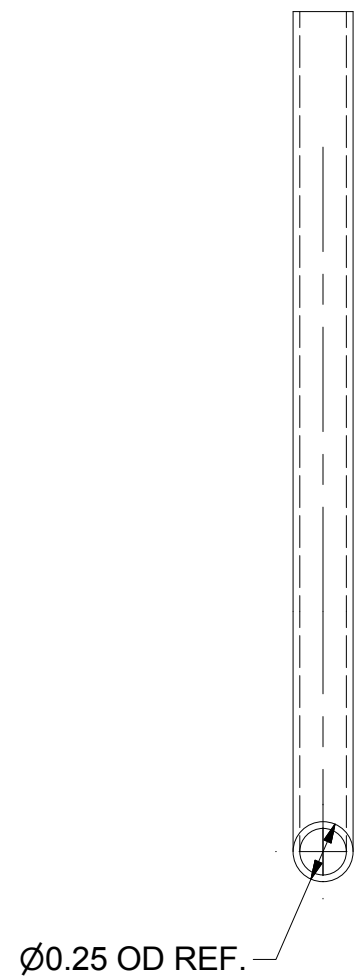
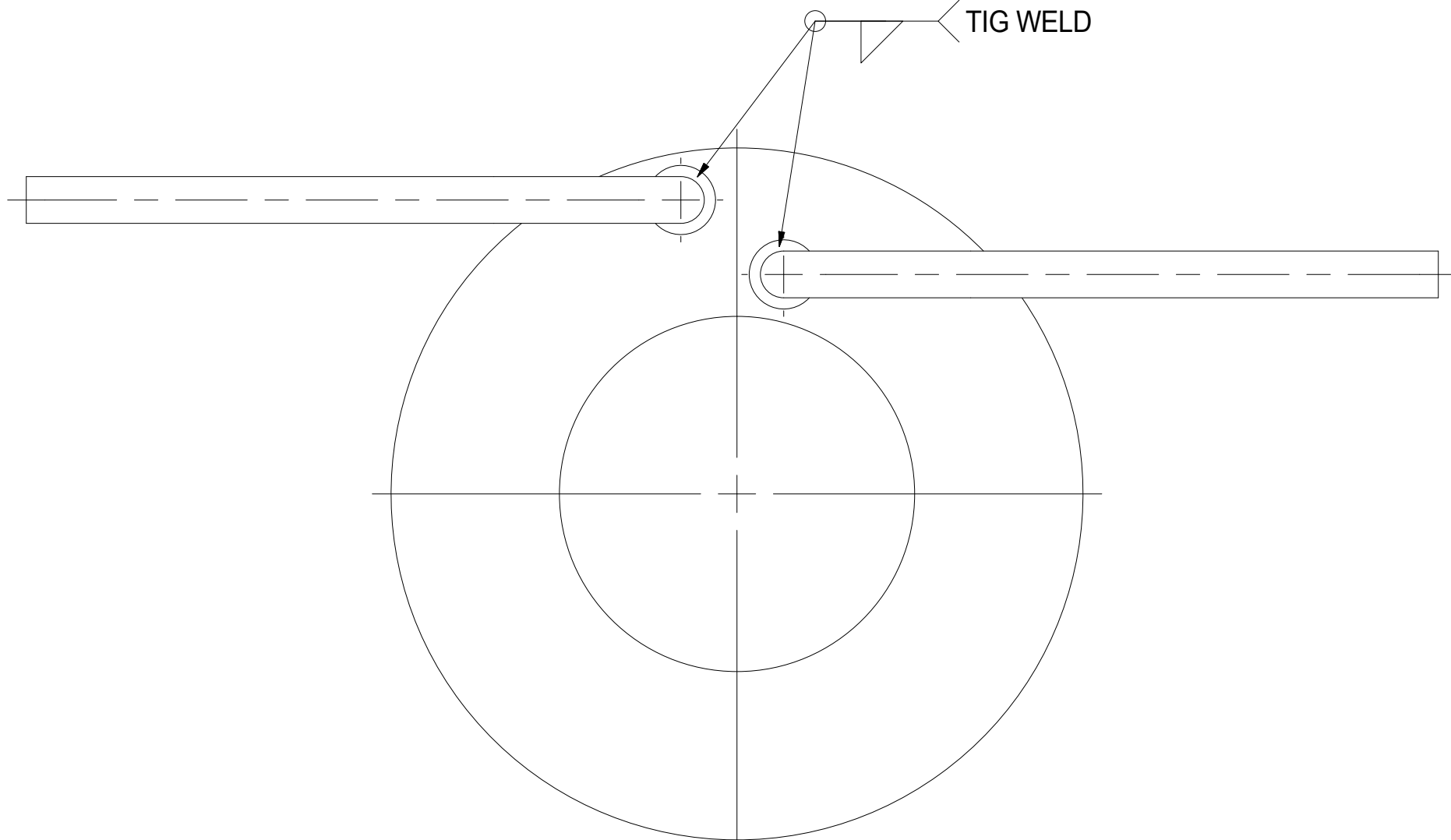
39	SHEET 8	TUBE 2	1					
38	SHEET 8	TUBE 1	1					
37	SHEET 6	HEAT SINK	1					
36	SHEET 7	6" CF FLANGE INSERT	1					
35	SHEET 6	6" CF FLANGE	1					
34	SHEET 6	2K FLANGE	1					
33	SHEET 5	40K COOLING BLOCK, SUB-ASM	1					
26	SHEET 4	COLD OUTER CONDUCTOR, SUB-ASM	X					

		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.	
					QUANTITY					
D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw								
	CR-1	<div>UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: Ø ± .02 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES </div>				<div><div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div><div>ERL MAIN LINAC COUPLER COLD OUTER CONDUCTOR, SUB-ASSEMBLY</div></div>				
7103-003 SH. NO. 4 OF 32	REV. A	CHECKED BY: TIO APPROVED BY: VGV		DRAWN BY VGV	DRAWN FOR SAB	DATE 6/24/2010	SCALE 1:1	D	7103-003 SH. NO. 4 OF 32	REV. A

REVISIONS					
SYM.	ZONE	DESCRIPTION	DATE	APP.	
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO	

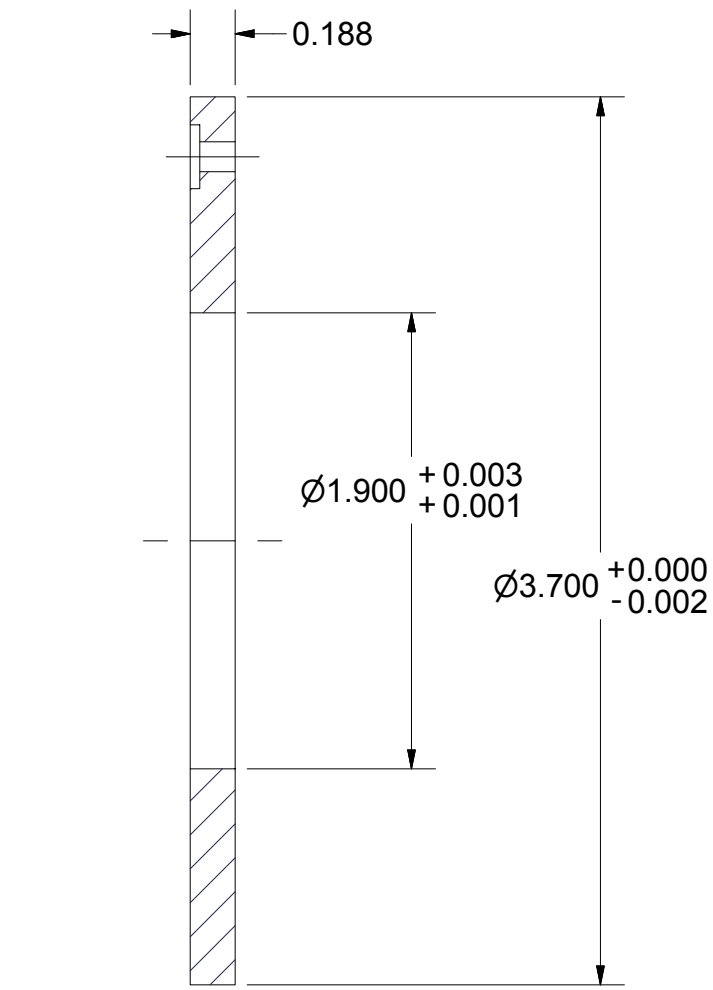
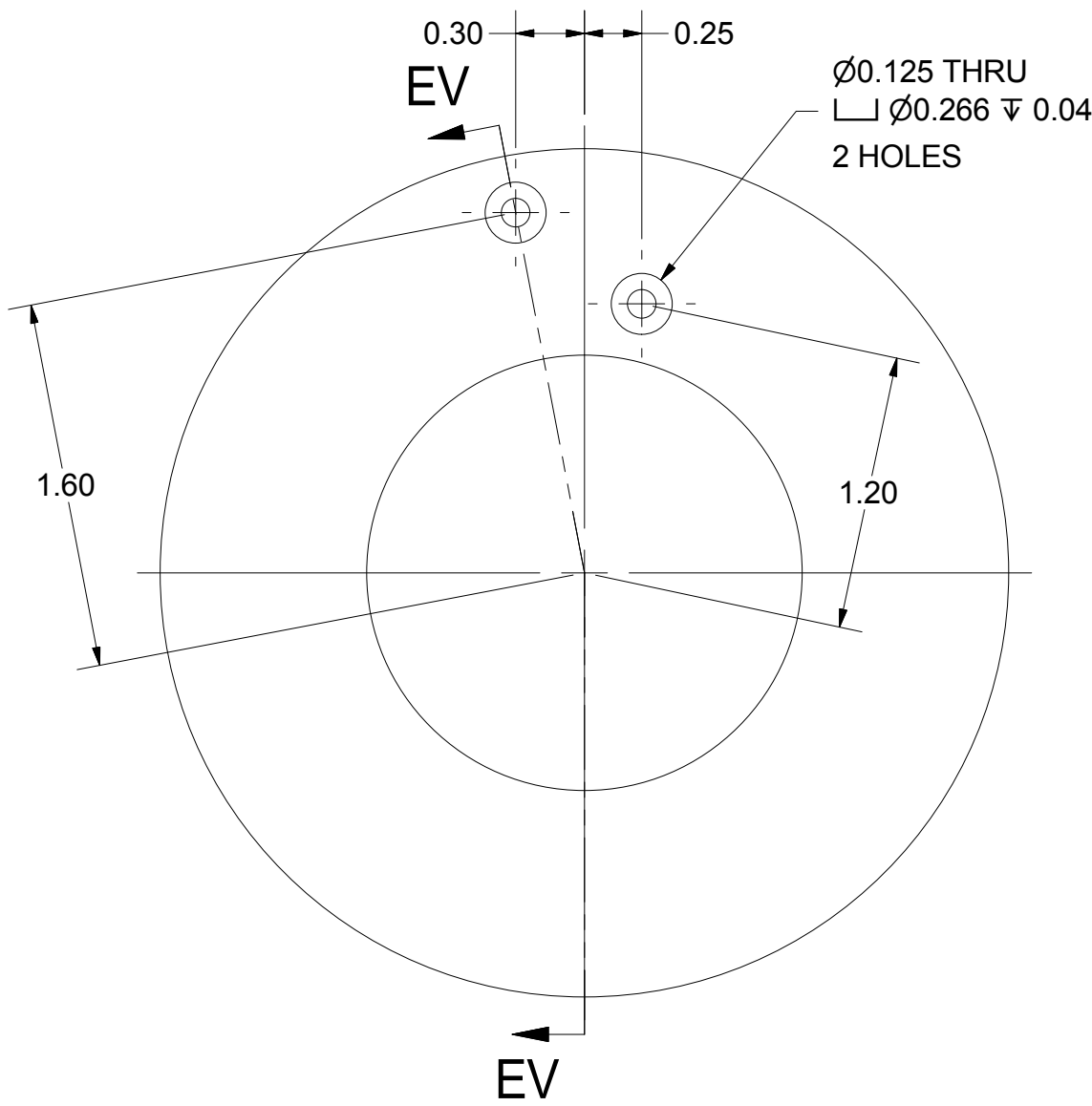


SECTION AD-AD





- 33 40K COOLING BLOCK, SUB-ASM
- FILE NAME: 7103-003
SHEET NO.: 5
DFT. SCALE: 1.25:1
MATERIAL: AS NOTED
QTY: 1 PER SUB-ASM
NOTES: 1. MACHINE AFTER WELDING

- 41 40K COOLING PIPE
- FILE NAME: 7103-003
SHEET NO.: 5
DFT. SCALE: 1.25:1
MATERIAL: 316 STN. STL. TUBE 0.250 OD x 0.028 WALL
QTY: 2 PER SUB-ASM
NOTES:

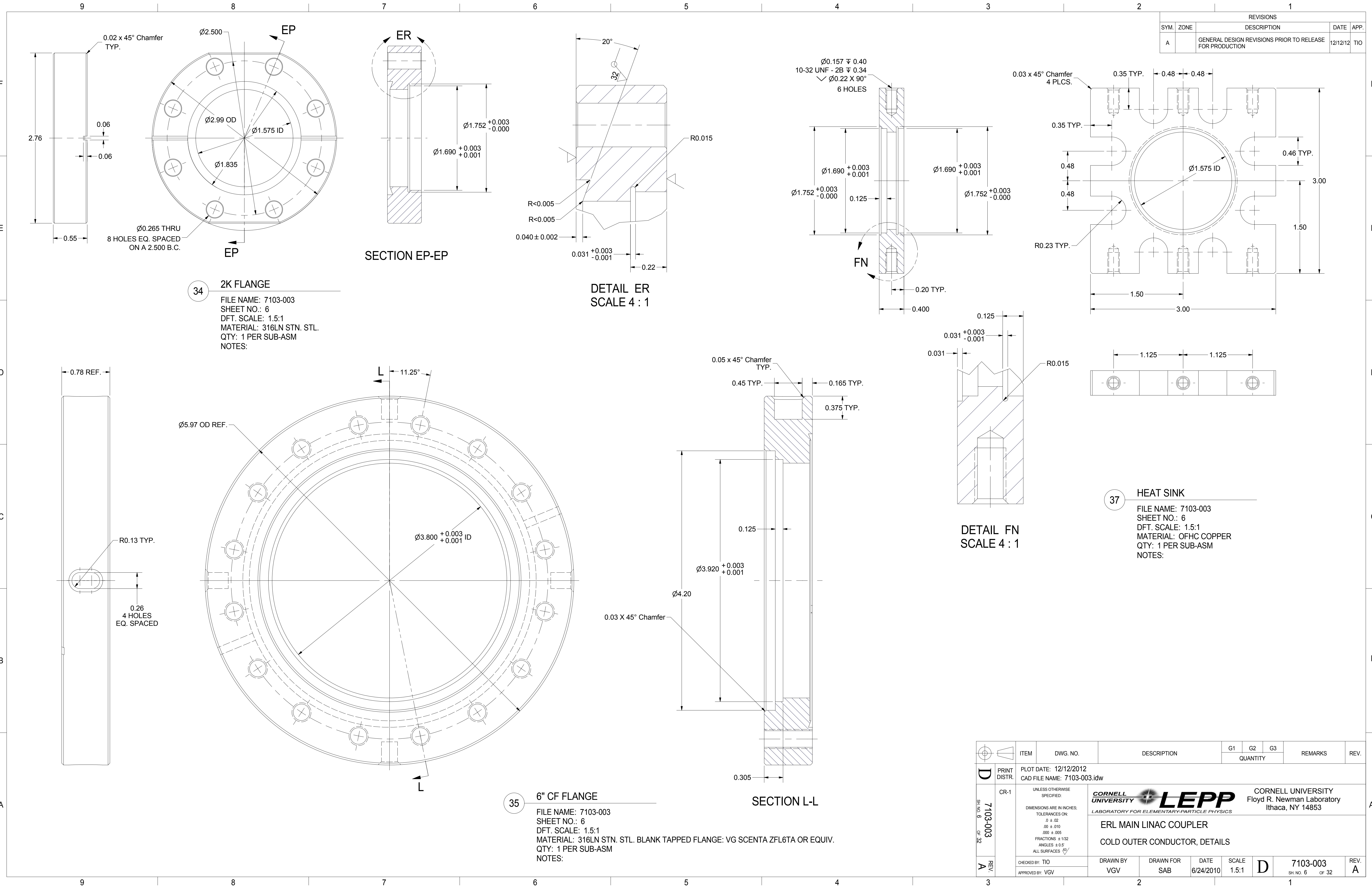





SECTION EV-EV

- 40 COVER
- FILE NAME: 7103-003
SHEET NO.: 5
DFT. SCALE: 1.25:1
MATERIAL: 316 STN. STL.
QTY: 1 PER SUB-ASM
NOTES:

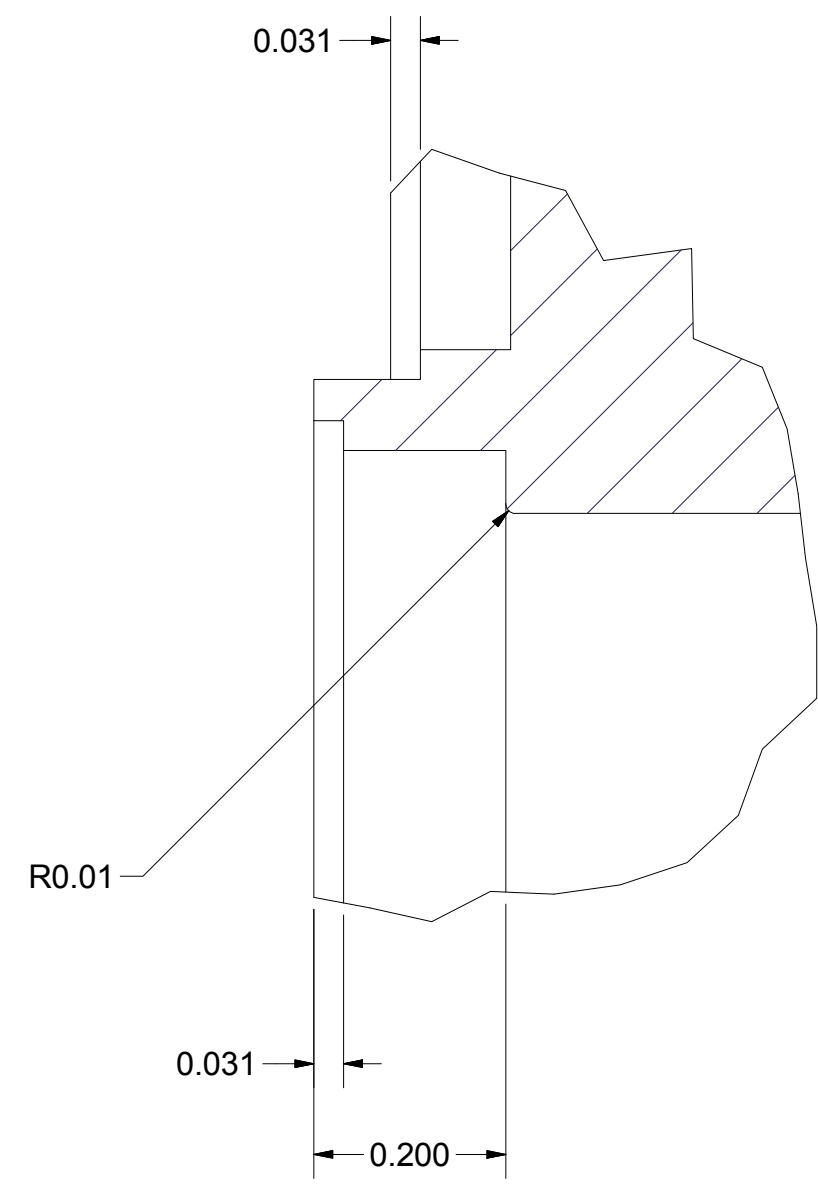
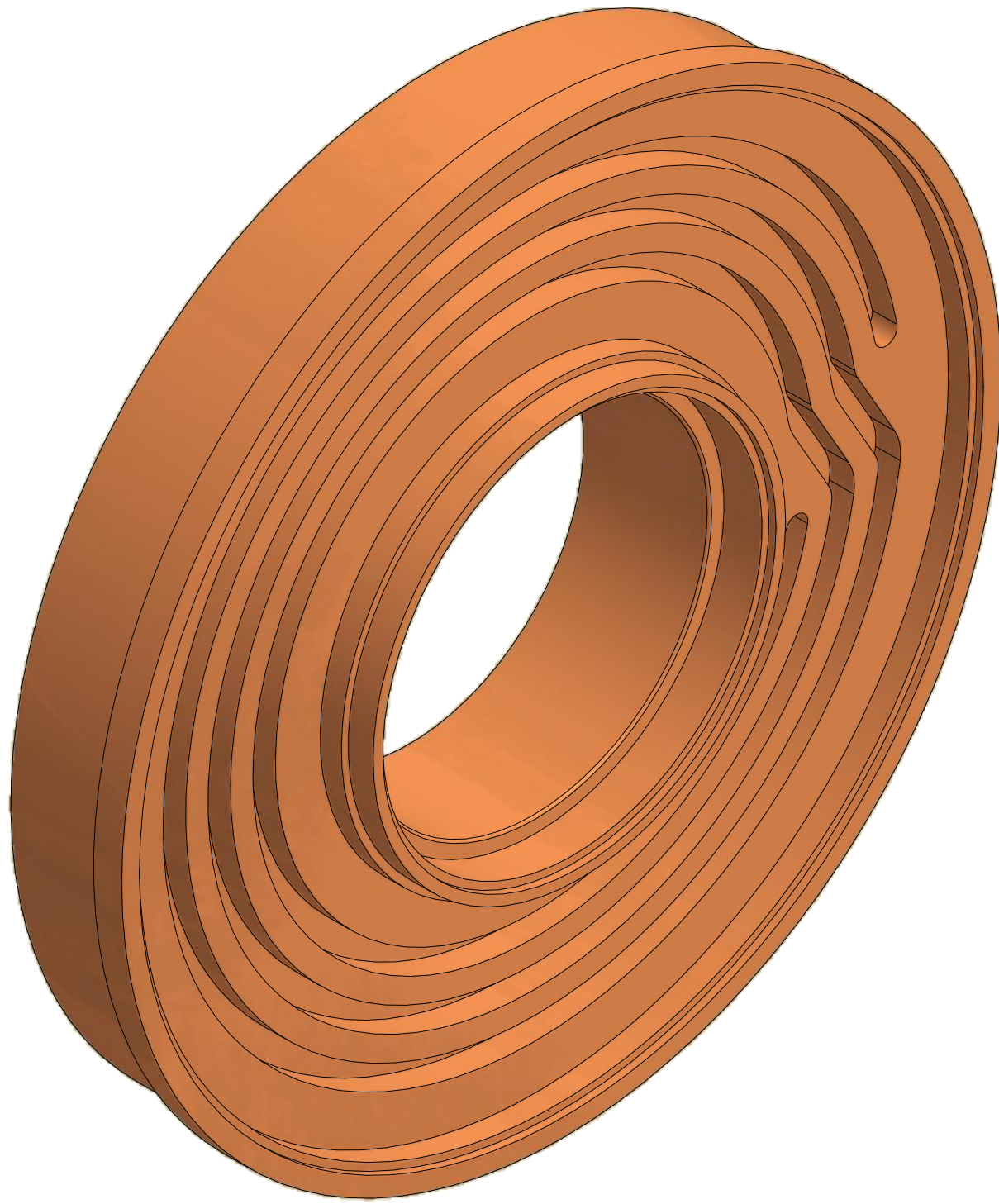
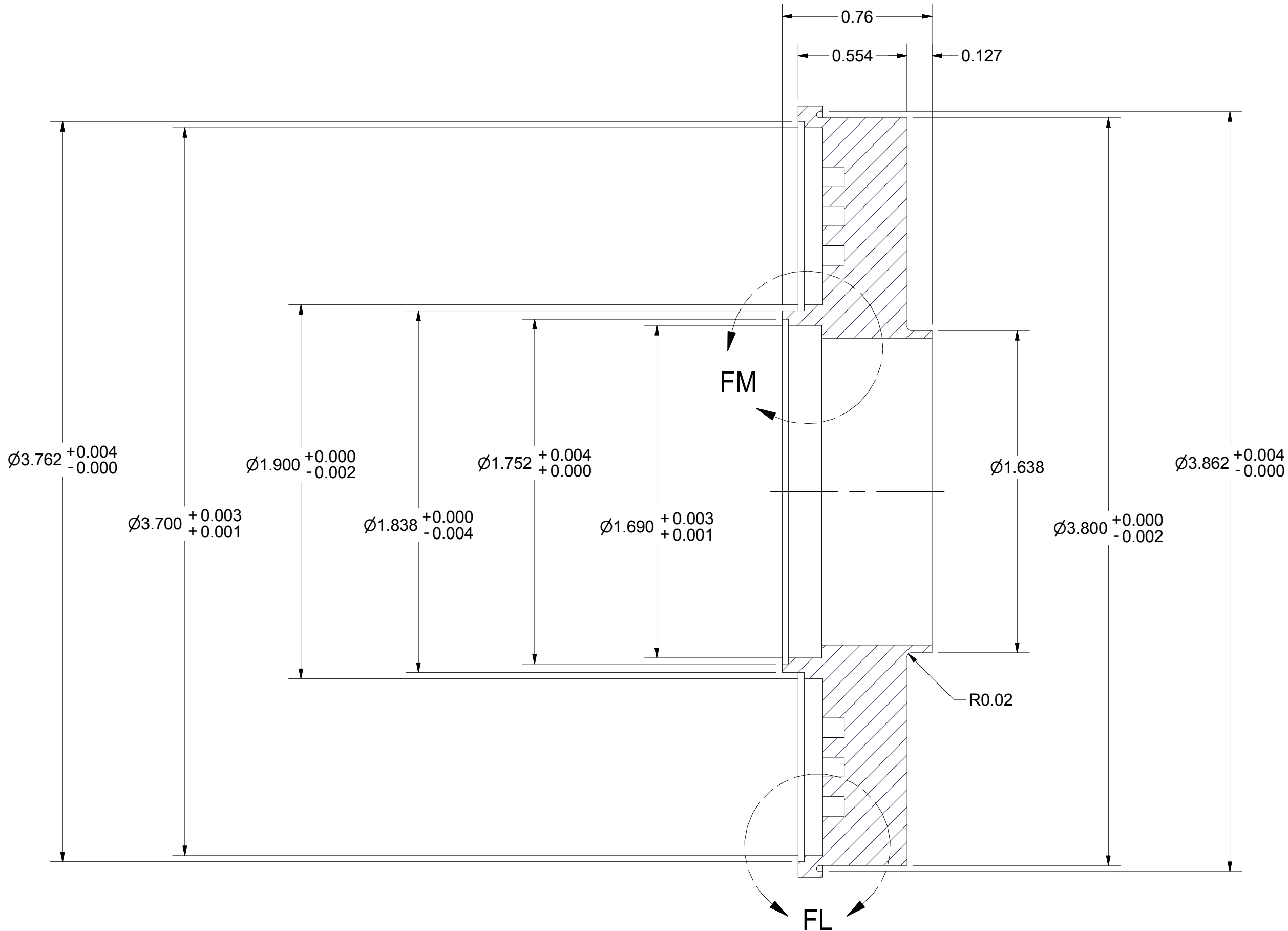
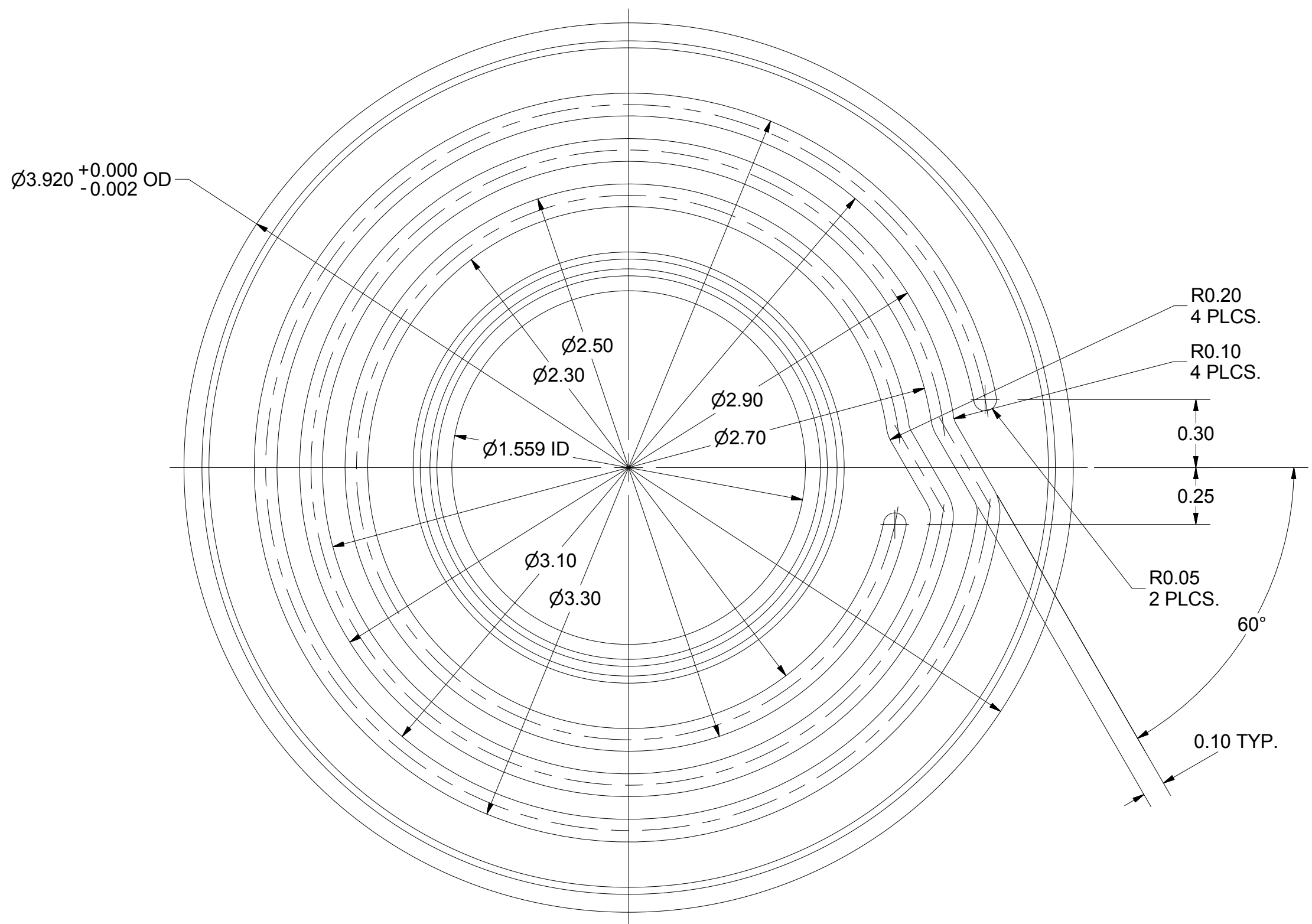
41	SHEET 5	40K COOLING PIPE	2					
40	SHEET 5	COVER	1					
33	SHEET 5	40K COOLING BLOCK, SUB-ASM	X					
ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.	
			QUANTITY					
PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw								
<div>UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: Ø ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES </div>		<div><div><div>CORNELL UNIVERSITY</div><div>LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</div></div><div><div>LEPP</div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div></div>		ERL MAIN LINAC COUPLER COOLING BLOCK, SUB-ASSEMBLY AND DETAILS				
CHECKED BY: TIO		DRAWN BY	DRAWN FOR	DATE	SCALE	D	7103-003	REV.
APPROVED BY: VGV		VGV	SAB	6/24/2010	1.25:1		SH. NO. 5 OF 32	A

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO

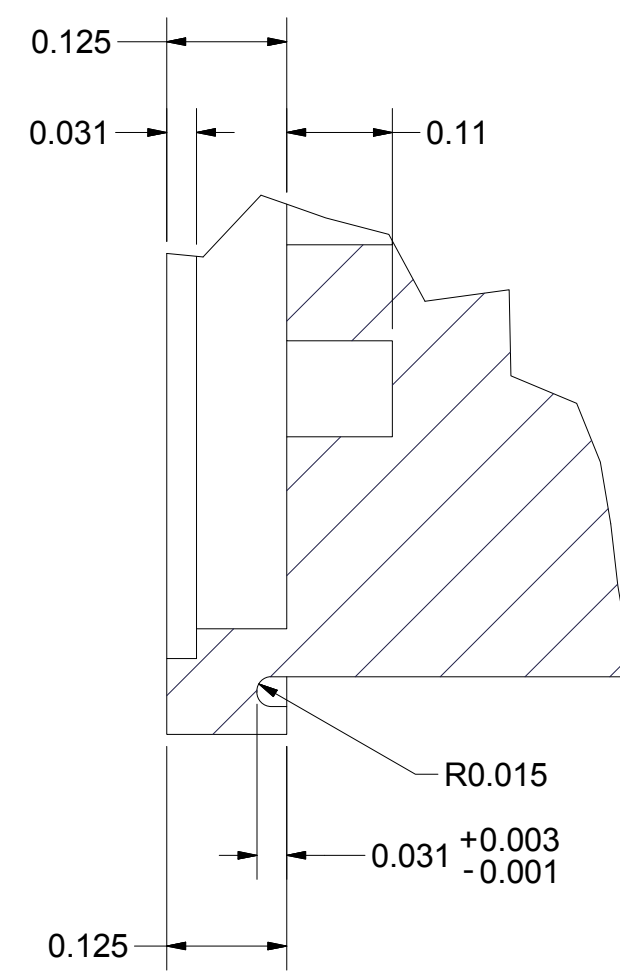


		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
					QUANTITY				
D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw							
	CR-1	<div>UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES </div>		<div><div><div>CORNELL UNIVERSITY</div><div></div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div><div>ERL MAIN LINAC COUPLER COLD OUTER CONDUCTOR, DETAILS</div></div>					
	CHECKED BY: TIO			DRAWN BY VGV	DRAWN FOR SAB	DATE 6/24/2010	SCALE 1.5:1	D	7103-003
APPROVED BY: VGV		SH NO. 6 OF 32							

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO




DETAIL FM
SCALE 5 : 1

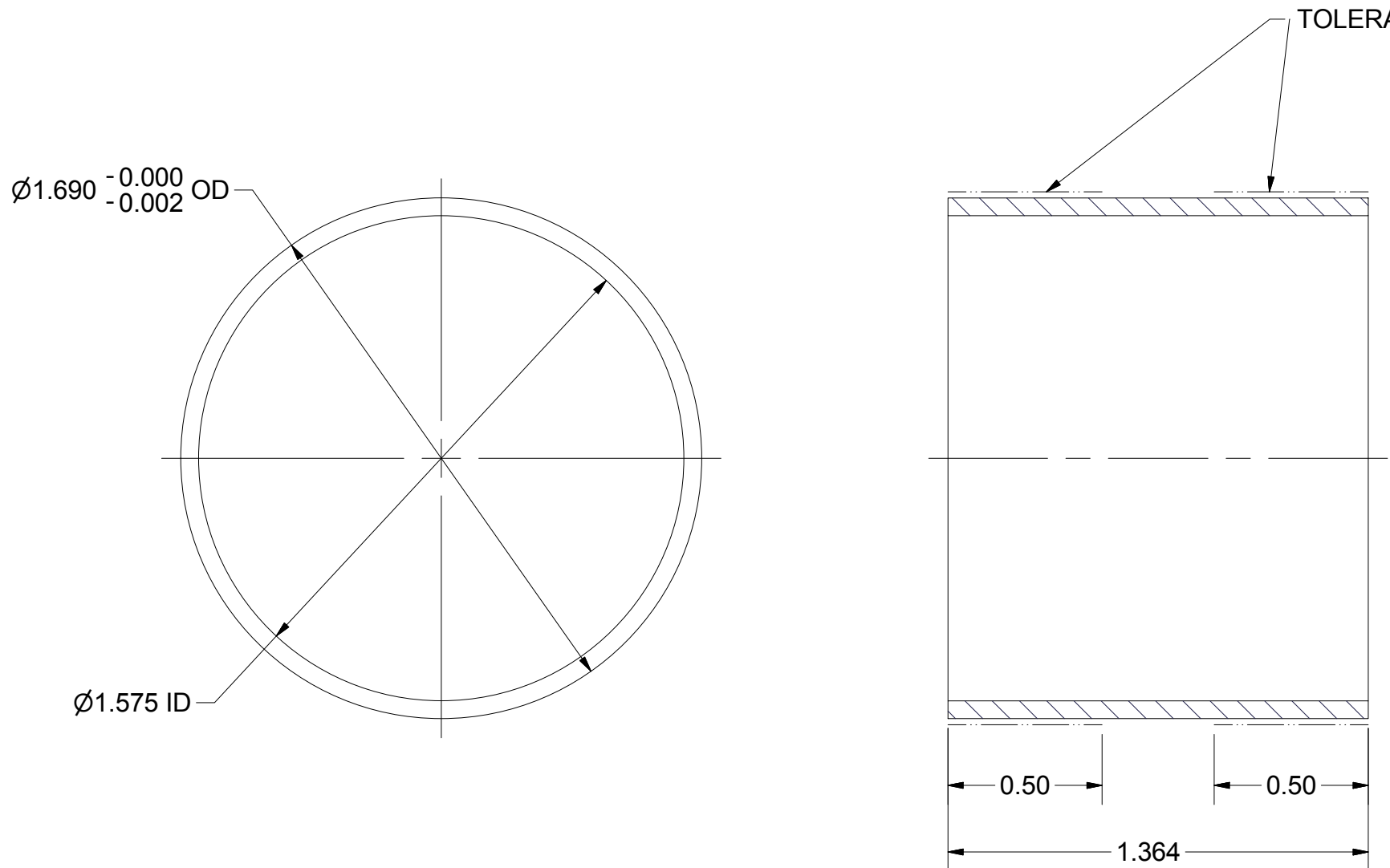


DETAIL FL
SCALE 5 : 1

36 6" CF FLANGE INSERT
FILE NAME: 7103-003
SHEET NO.: 7
DFT. SCALE: 2:1
MATERIAL: OFE COPPER
QTY: 1 PER SUB-ASM
NOTES:

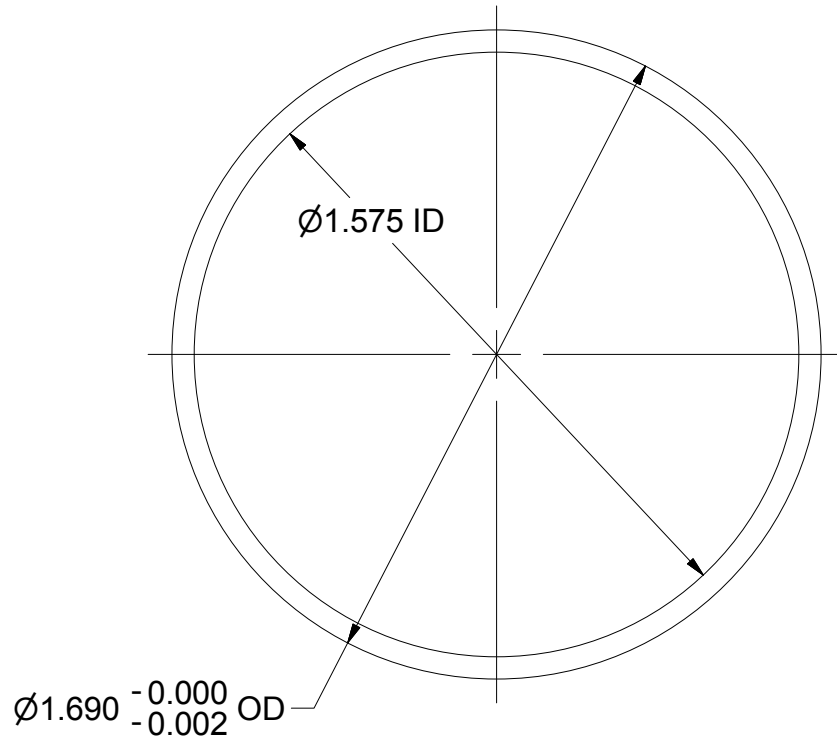
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		QUANTITY								
D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw								
	CR-1	<p>UNLESS OTHERWISE SPECIFIED:</p> <p>DIMENSIONS ARE IN INCHES; TOLERANCES ON: 0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES $\sqrt{32}$</p>		<p>CORNELL UNIVERSITY  CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</p> <p>ERL MAIN LINAC COUPLER COLD OUTER CONDUCTOR, DETAILS</p>						
SH. NO. 7 OF 32	7103-003									
A	REV.	CHECKED BY: TIO		DRAWN BY	DRAWN FOR	DATE	SCALE	D	7103-003	REV.
		APPROVED BY: VGV		VGV	SAB	6/24/2010	2:1		SH. NO. 7 OF 32	A

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO



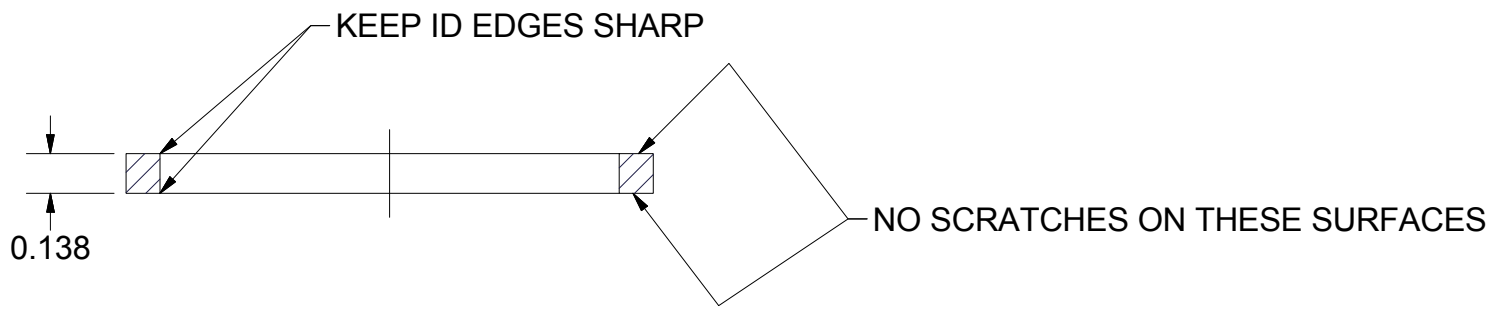
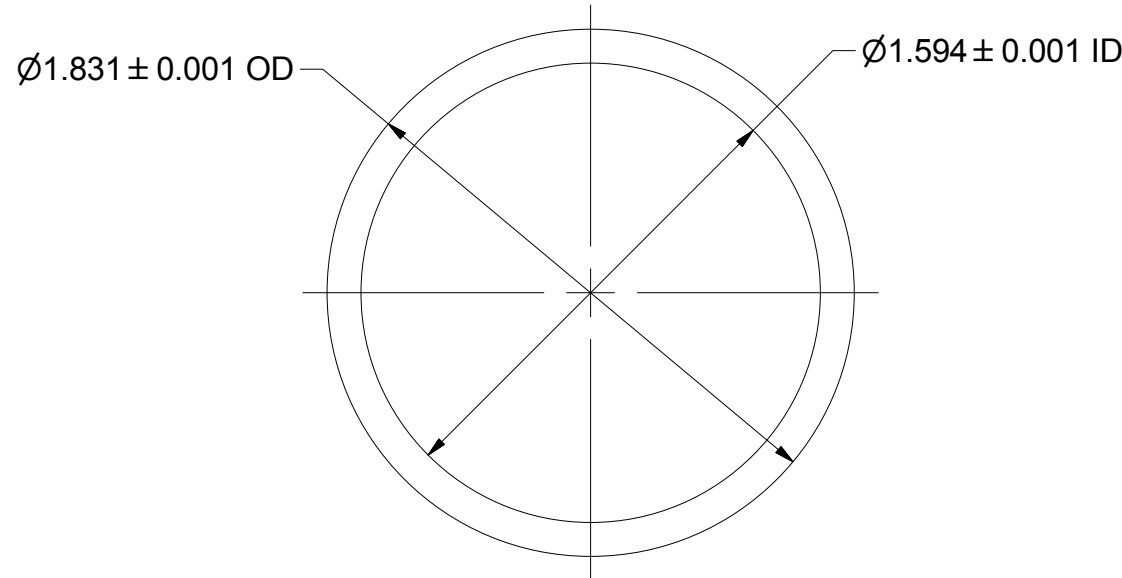
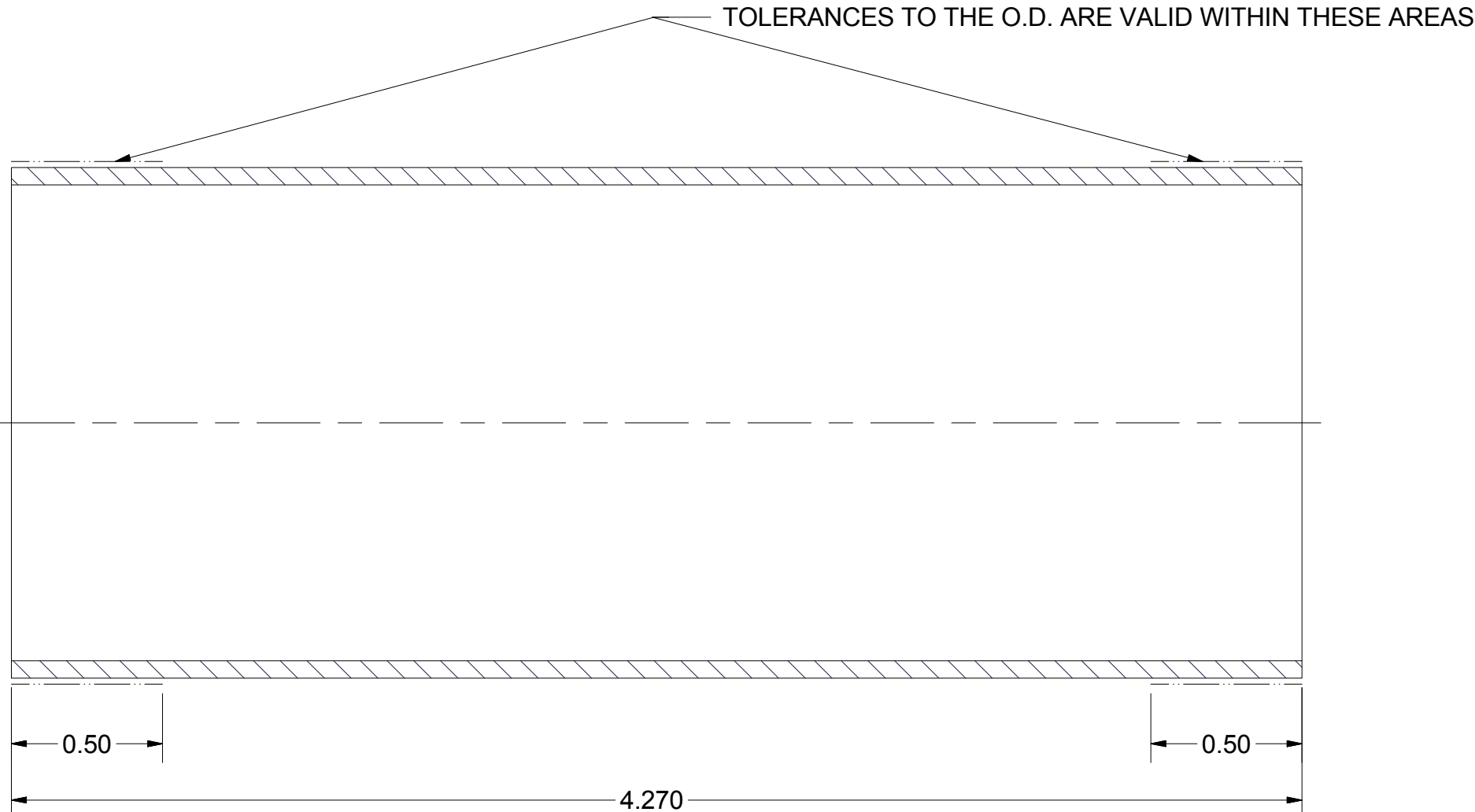
38 TUBE 1

FILE NAME: 7103-003
SHEET NO.: 8
DFT. SCALE: 2:1
MATERIAL: 316 STN. STEEL
QTY: 1 PER SUB-ASM
NOTES:



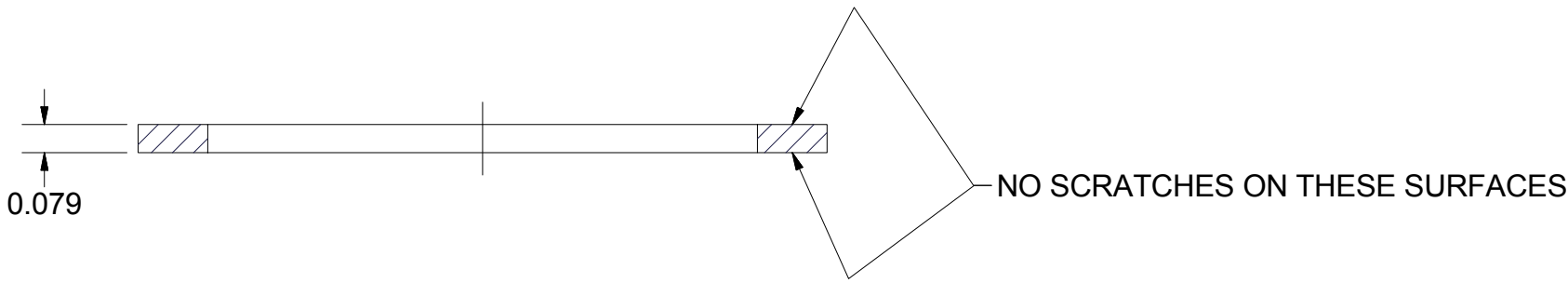
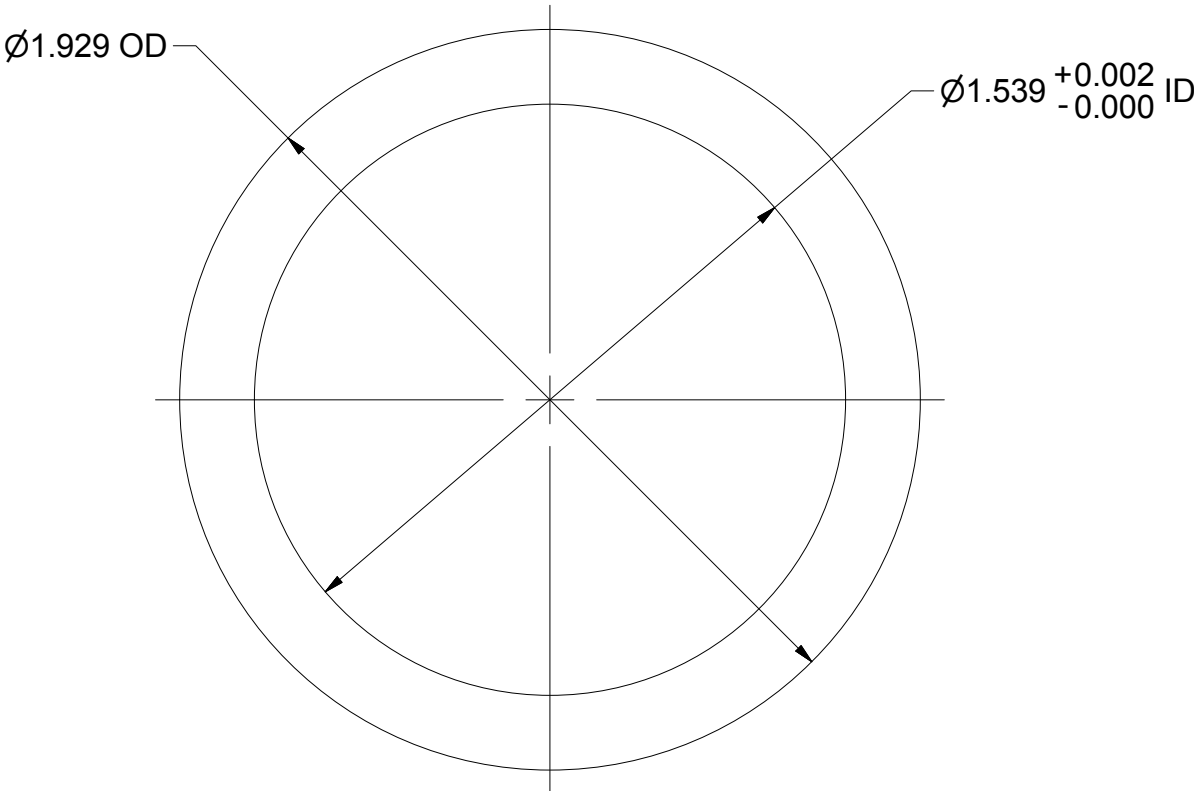
39 TUBE 2

FILE NAME: 7103-003
SHEET NO.: 8
DFT. SCALE: 2:1
MATERIAL: 316 STN. STEEL
QTY: 1 PER SUB-ASM
NOTES:



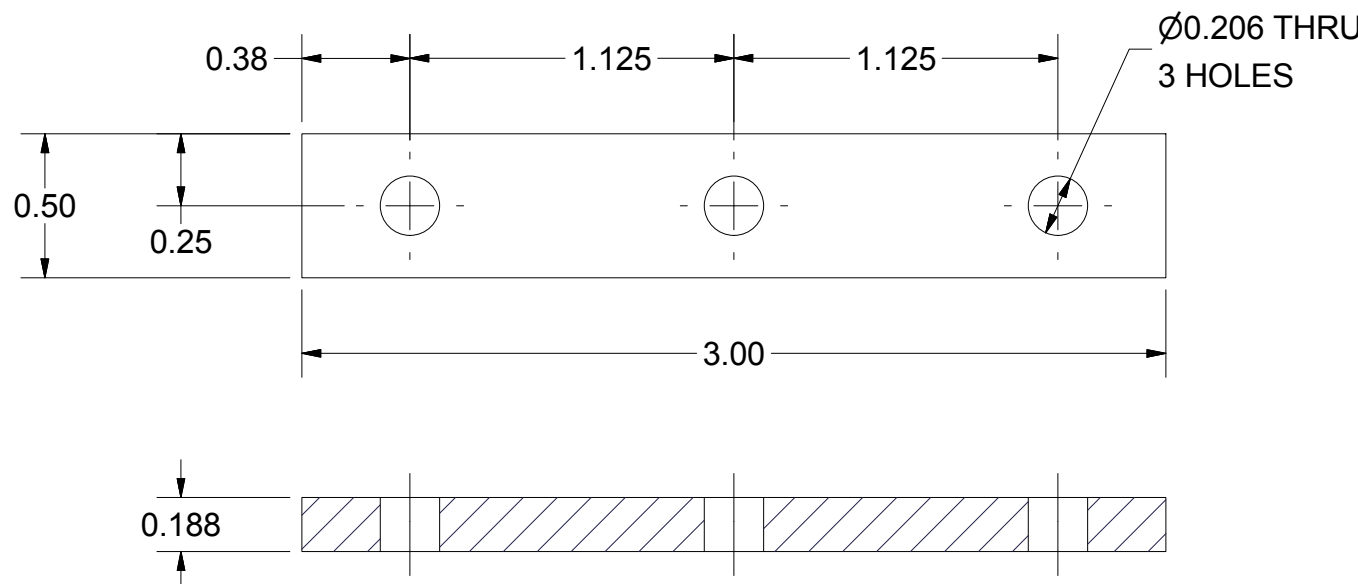
28 GASKET

FILE NAME: 7103-003
SHEET NO.: 8
DFT. SCALE: 1.5:1
MATERIAL: ALUMINUM UNS A96063 (Al Mg Si 0.5) T6 OR T52 CONDITION
QTY: 1 PER SUB-ASM + 5 SPARE
NOTES: 1. DEGREASE, CLEAN AND PACK ACCORDING TO UHV PRECEDURE.
2. SEE 5055-178 ITEM 11 FOR MODIFIED GASKET USED WITH ERL7-7






18 CF GASKET

FILE NAME: 7103-003
SHEET NO.: 8
DFT. SCALE: 1.5:1
MATERIAL: OFHC COPPER
QTY: 1 PER SUB-ASM + 5 SPARE
NOTES: 1. ANNEAL.
2. DEGREASE, CLEAN AND PACK ACCORDING TO UHV PRECEDURE.

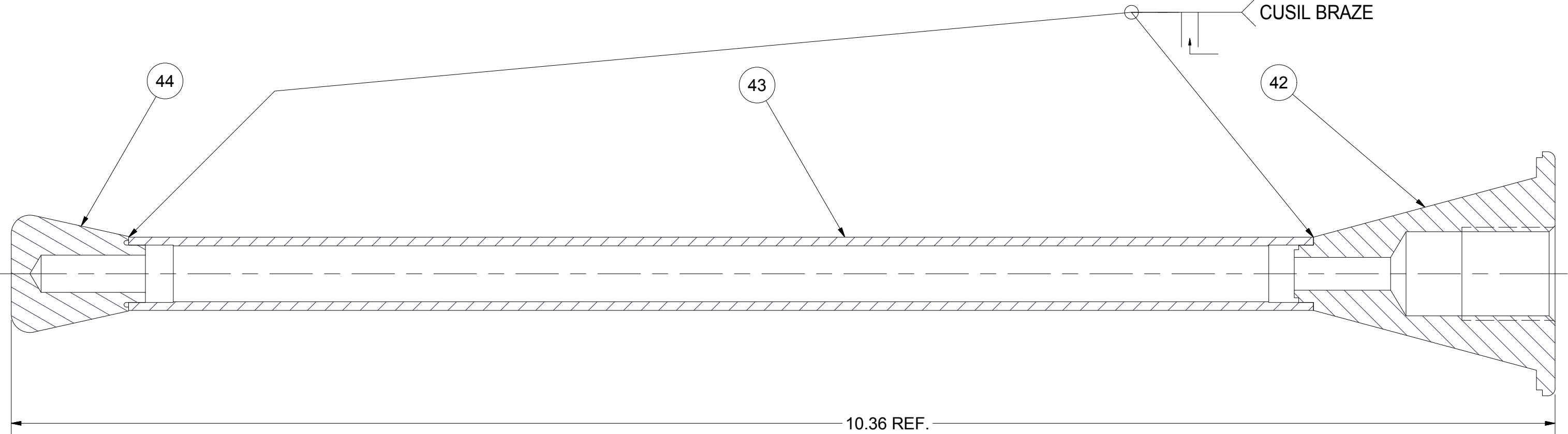
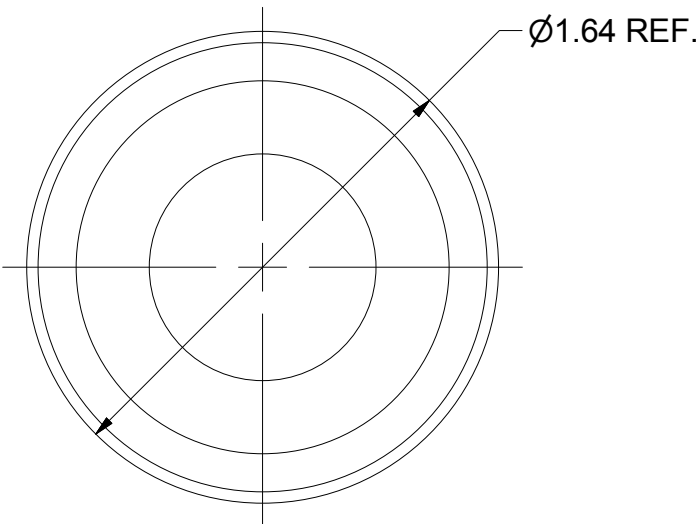


6 CLAMP STRIP

FILE NAME: 7103-003
SHEET NO.: 8
DFT. SCALE: 1.5:1
MATERIAL: 316 STN. STL. 0.188" X 0.500" BAR
QTY: 1 PER ASSEMBLY
NOTES:

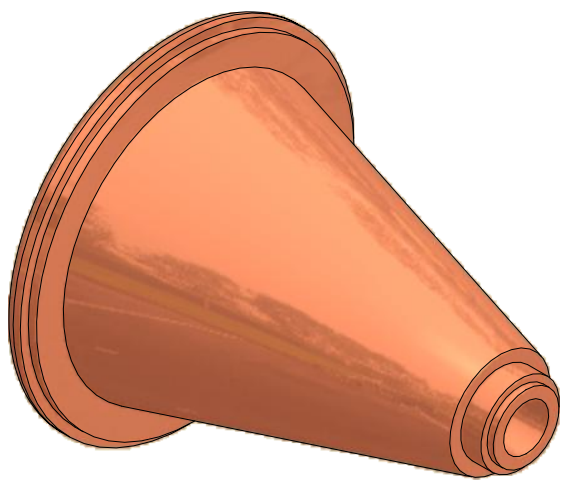
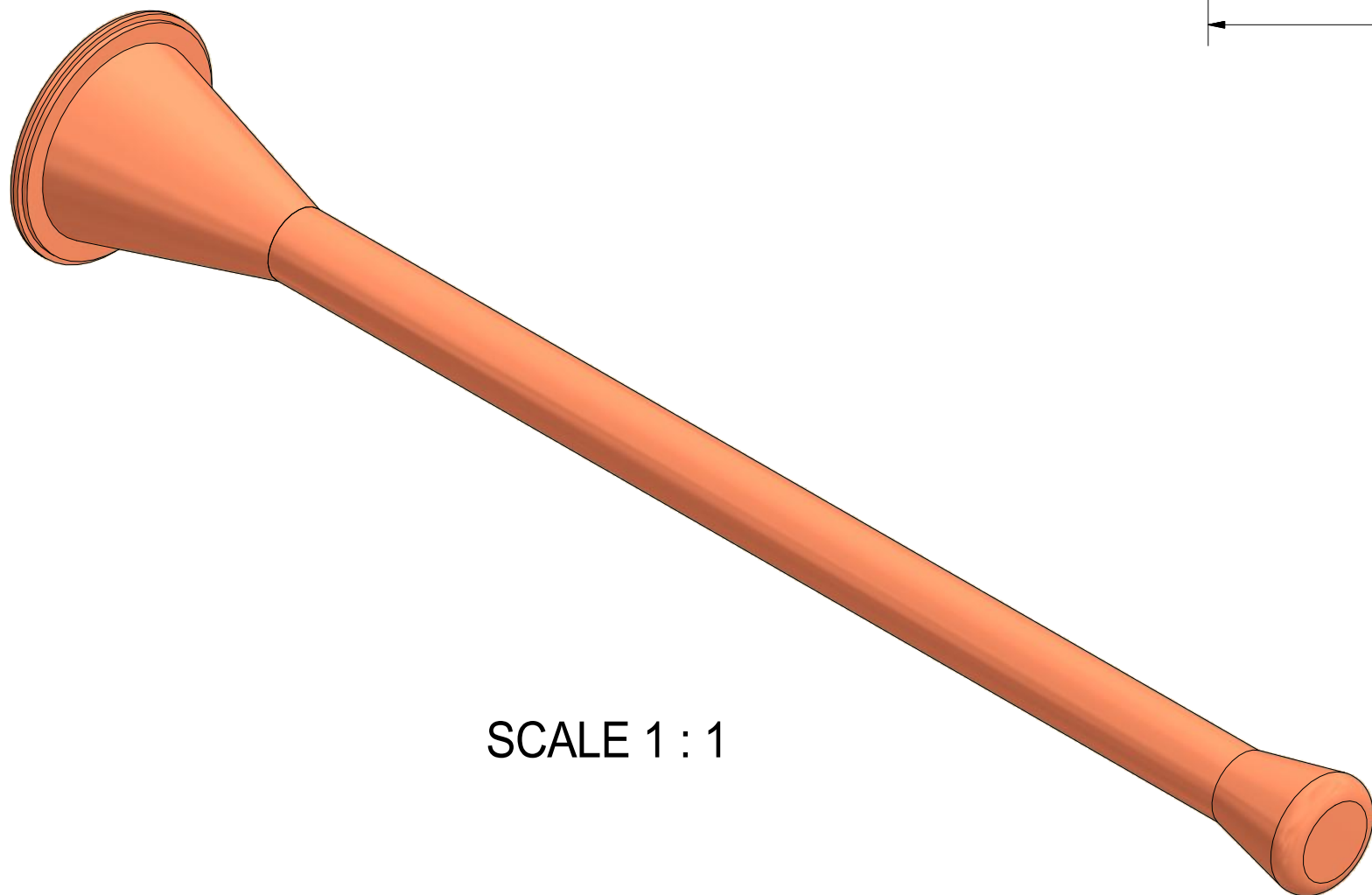
		ITEM		DWG. NO.		DESCRIPTION		G1		G2		G3		REMARKS		REV.			
								QUANTITY											
D		PRINT DISTR.		PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw															
7103-003		CR-1		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES 		<div><div>LEPP</div><div>LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</div></div> <div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div>													
SH. NO. 8 OF 32						ERL MAIN LINAC COUPLER DETAILS													
A		REV.		CHECKED BY: TJO		DRAWN BY: VGV		DRAWN FOR: SAB		DATE: 6/24/2010		SCALE: 2:1		D		7103-003 SH. NO. 8 OF 32		REV. A	
				APPROVED BY: VGV															

REVISIONS					
SYM.	ZONE	DESCRIPTION	DATE	APP.	
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO	

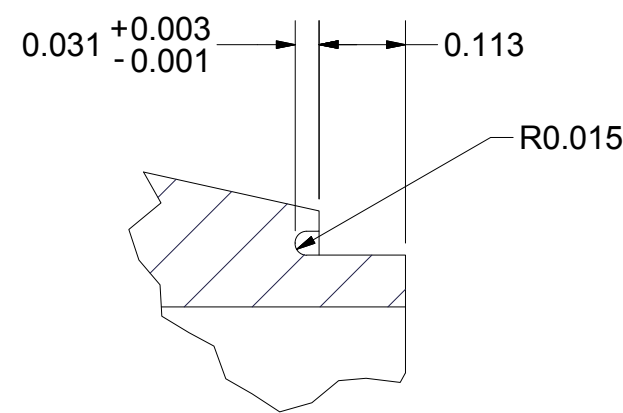


26 ANTENNA, SUB-ASM

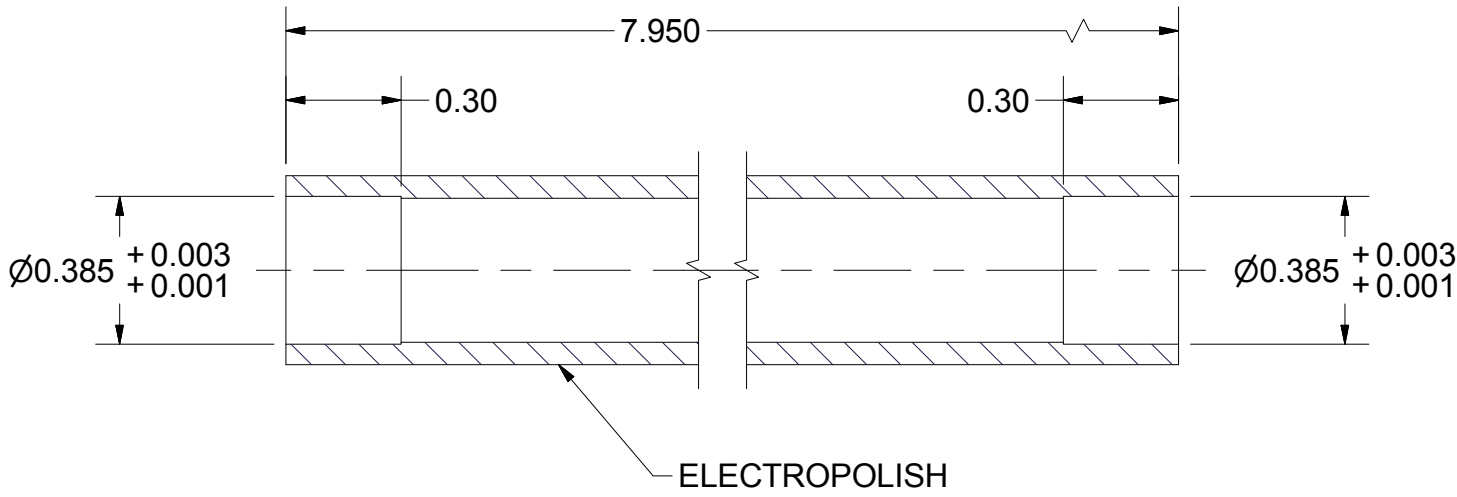
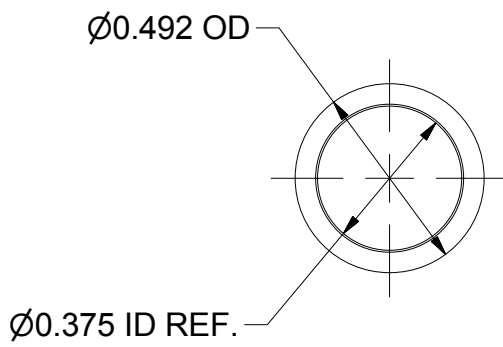
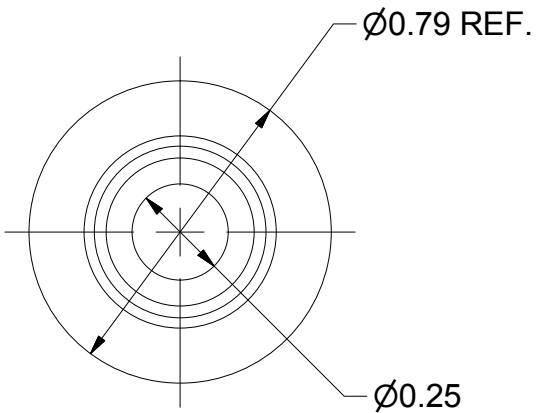
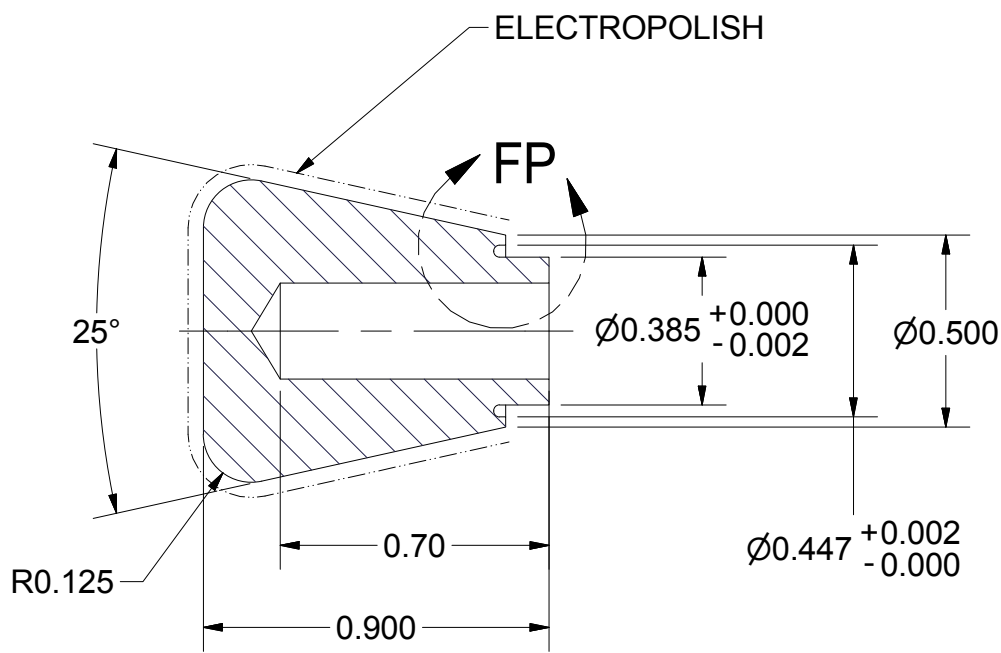
FILE NAME: 7103-003
SHEET NO.: 9
DFT. SCALE: 1.5:1
MATERIAL: AS NOTED
QTY: 1 PER SUB-ASM
NOTES:



SCALE 1.5 : 1

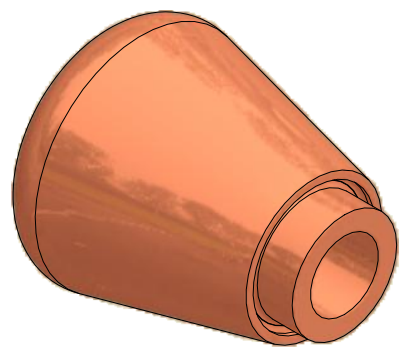


DETAIL FP
SCALE 4 : 1



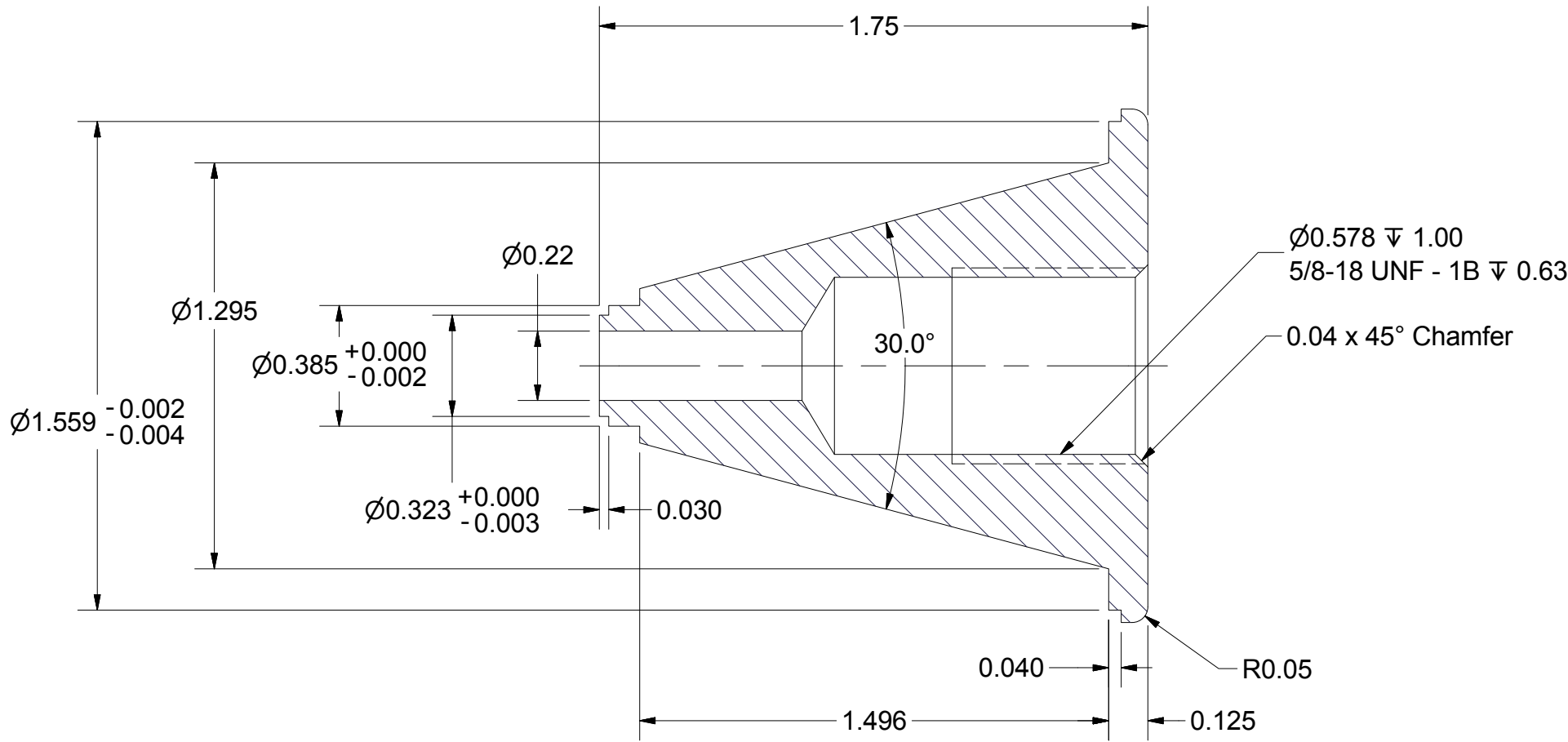
43 ANTENNA TUBE

FILE NAME: 7103-003
SHEET NO.: 9
DFT. SCALE: 2:1
MATERIAL: OFHC COPPER TUBE .500 OD x .0625 WALL
QTY: 1 PER SUB-ASM
NOTES: 1. ELECTROPOLISH EXTERIOR SURFACE.



44 ANTENNA TIP

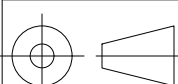


FILE NAME: 7103-003
SHEET NO.: 9
DFT. SCALE: 2:1
MATERIAL: OFHC COPPER
QTY: 1 PER SUB-ASM
NOTES: 1. ELECTROPOLISH EXTERIOR SURFACE AS SHOWN.

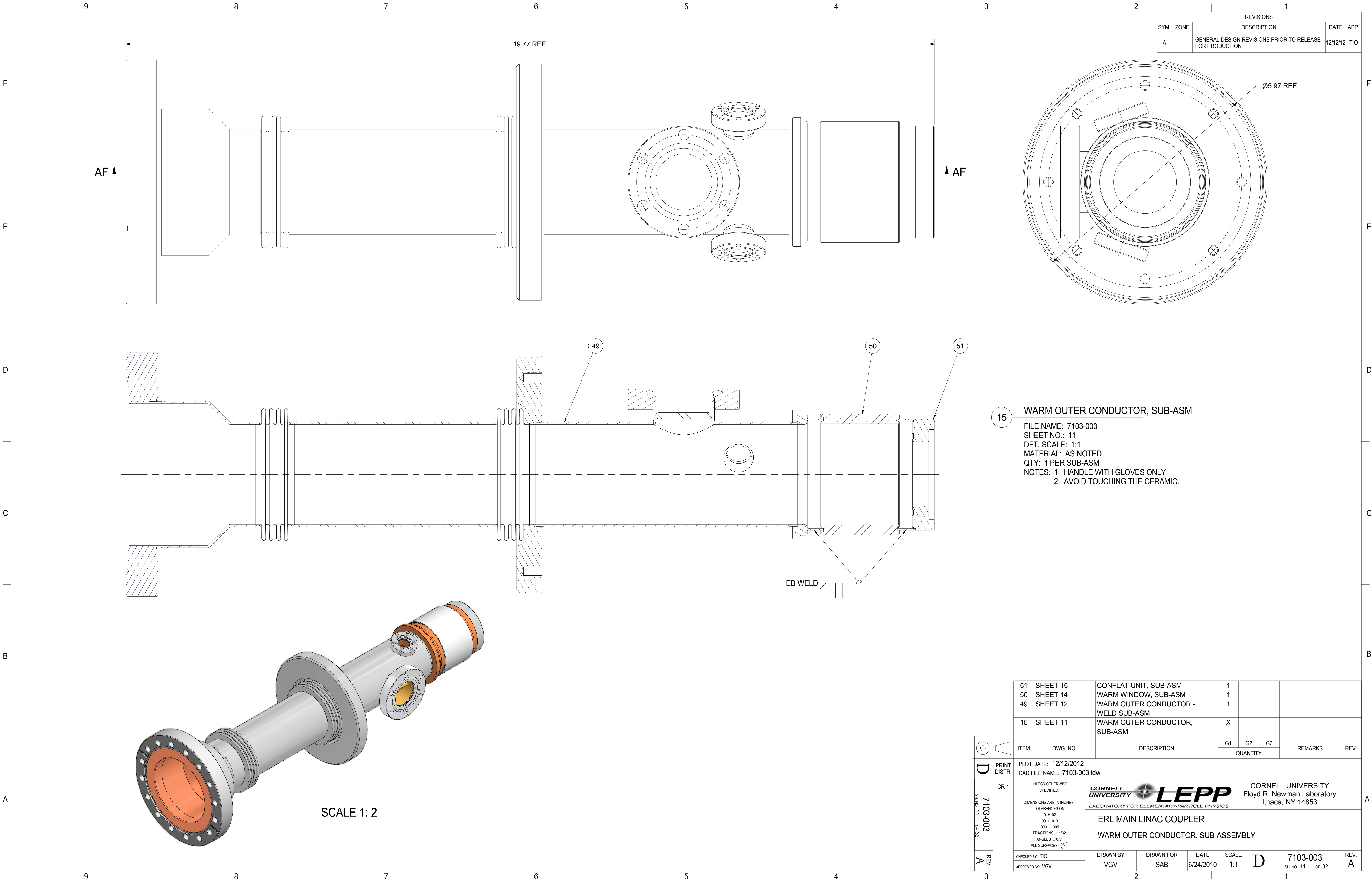


42 COLD CONE

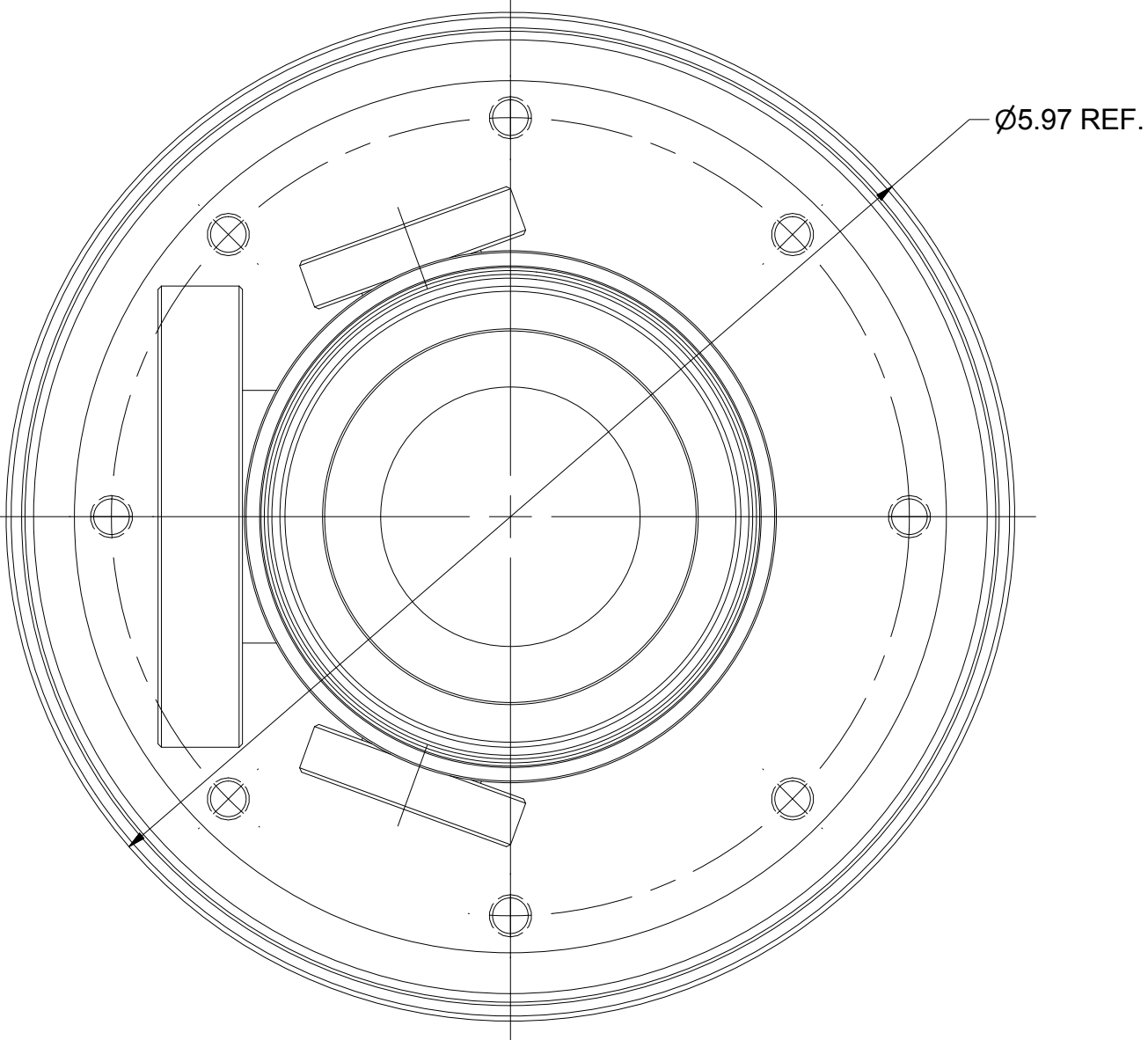
FILE NAME: 7103-003
SHEET NO.: 9
DFT. SCALE: 2:1
MATERIAL: OFHC COPPER
QTY: 1 PER SUB-ASM
NOTES:

44	SHEET 9	ANTENNA TIP	1					
43	SHEET 9	ANTENNA TUBE	1					
42	SHEET 9	COLD TAPER	1					
26	SHEET 9	ANTENNA, SUB-ASM	X					

		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.		
					QUANTITY						
D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw									
	CR-1	<p>UNLESS OTHERWISE SPECIFIED:</p> <p>DIMENSIONS ARE IN INCHES; TOLERANCES ON:</p> <p>Ø ± .02 .00 ± .010 .000 ± .005</p> <p>FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES </p>			<p>CORNELL UNIVERSITY  LEPP</p> <p><i>LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</i></p> <p>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</p>						
7103-003 SH. NO. 9 OF 32					ERL MAIN LINAC COUPLER						
					ANTENNA, SUB-ASSEMBLY AND DETAILS						
A	REV.	CHECKED BY: TIO			DRAWN BY	DRAWN FOR	DATE	SCALE	D	7103-003 SH. NO. 9 OF 32	REV. A
		APPROVED BY: VGV			VGV	SAB	6/24/2010				



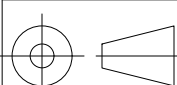


REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO



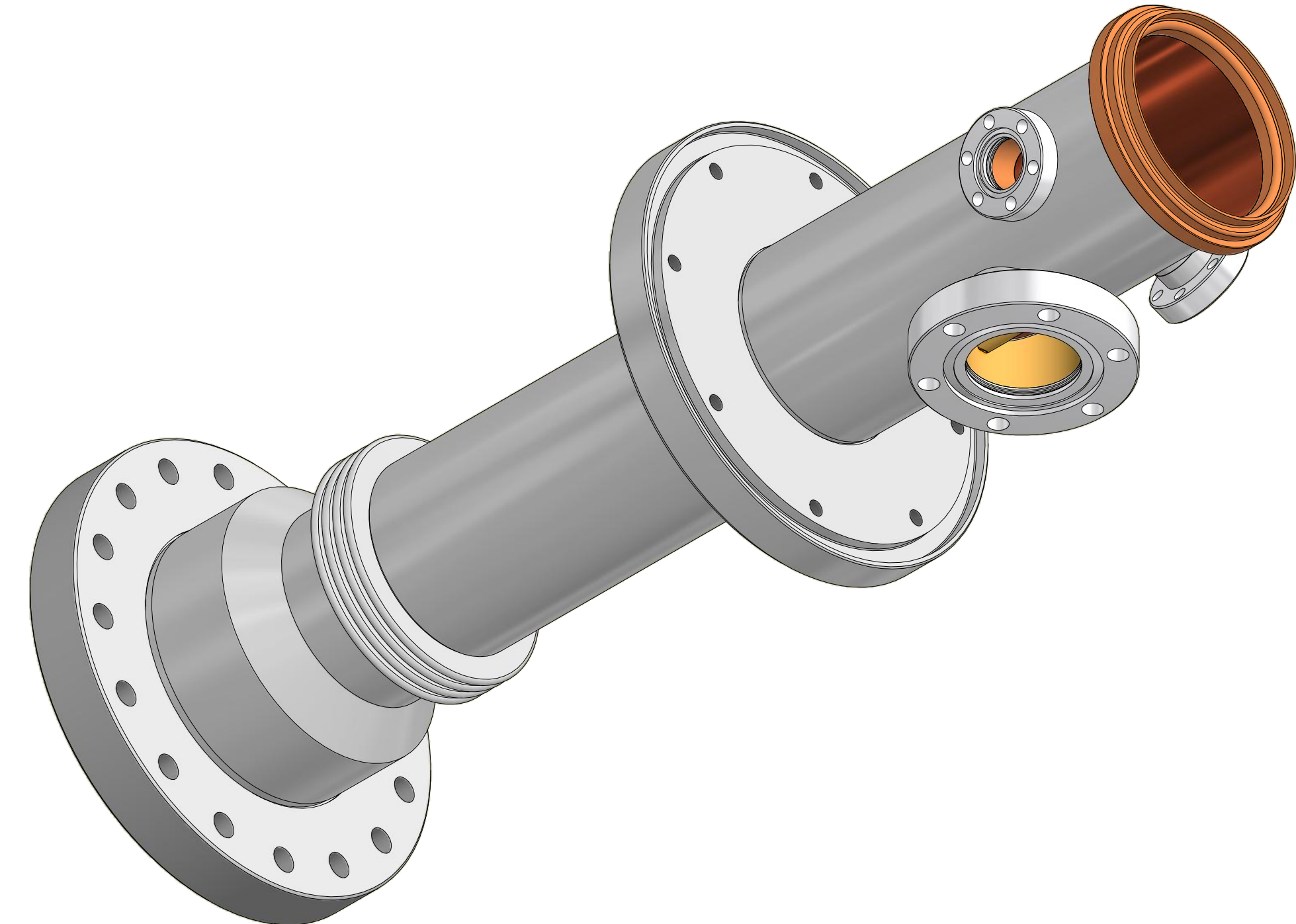
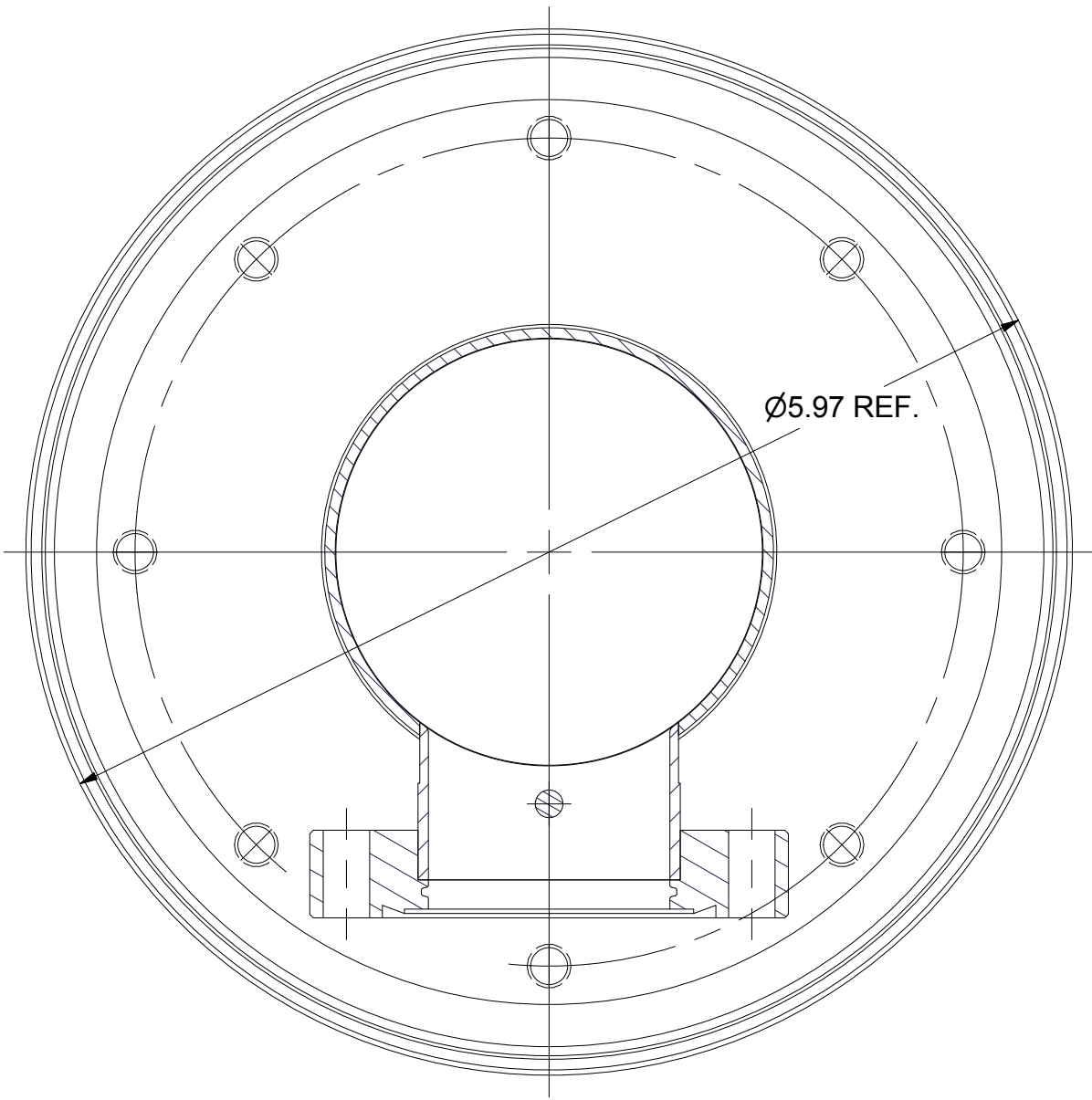
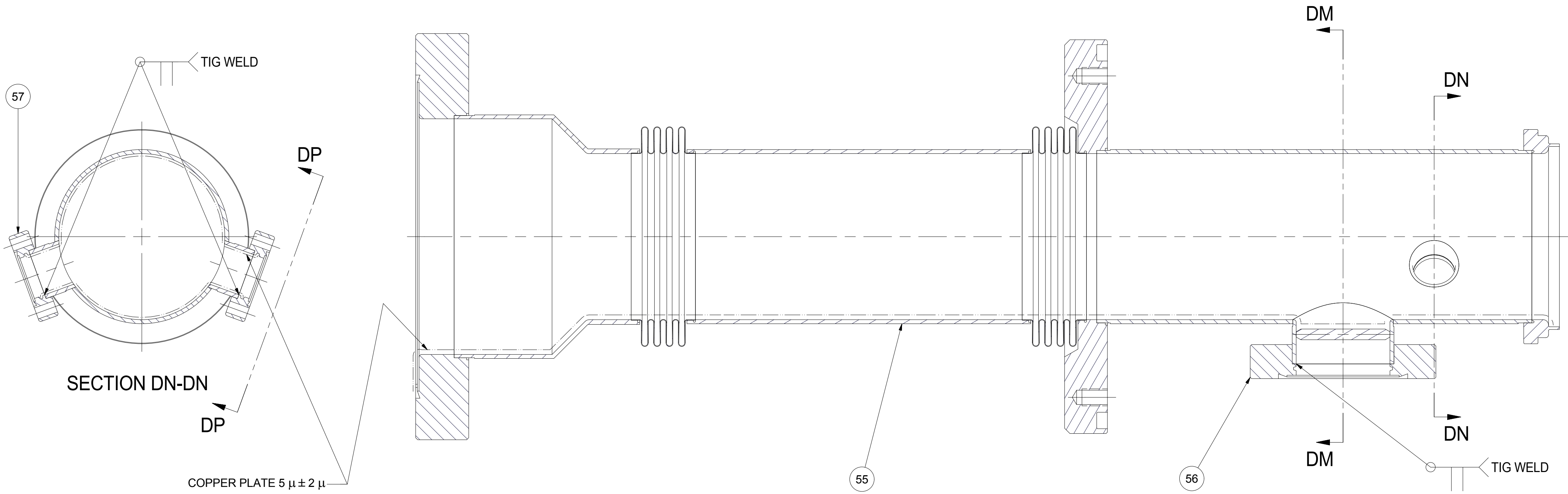
15 WARM OUTER CONDUCTOR, SUB-ASM

FILE NAME: 7103-003
SHEET NO.: 11
DFT. SCALE: 1:1
MATERIAL: AS NOTED
QTY: 1 PER SUB-ASM
NOTES: 1. HANDLE WITH GLOVES ONLY.
2. AVOID TOUCHING THE CERAMIC.

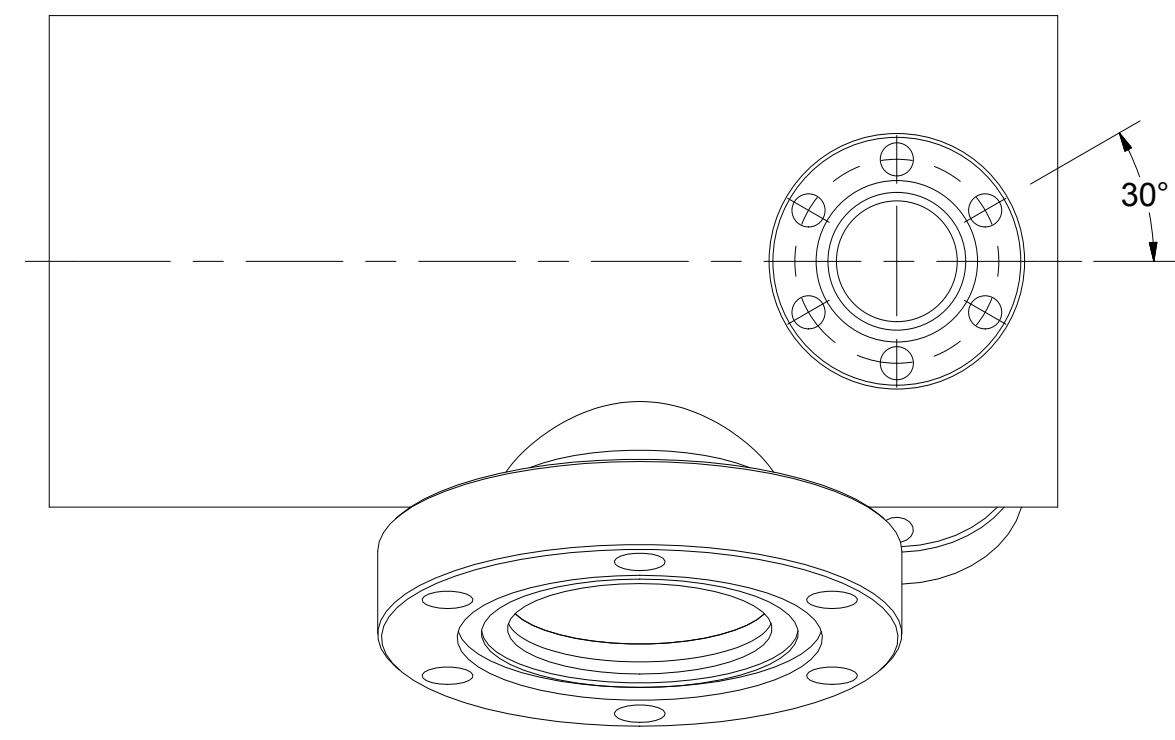
51	SHEET 15	CONFLAT UNIT, SUB-ASM	1					
50	SHEET 14	WARM WINDOW, SUB-ASM	1					
49	SHEET 12	WARM OUTER CONDUCTOR - WELD SUB-ASM	1					
15	SHEET 11	WARM OUTER CONDUCTOR, SUB-ASM	X					

		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
					QUANTITY				
D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.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><div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div><div>ERL MAIN LINAC COUPLER WARM OUTER CONDUCTOR, SUB-ASSEMBLY</div></div>					
				CHECKED BY: TIO APPROVED BY: VGV		DRAWN BY VGV	DRAWN FOR SAB	DATE 6/24/2010	SCALE 1:1

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO



SCALE 1:1.5

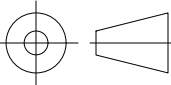
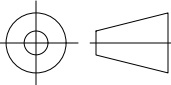





VIEW DP-DP

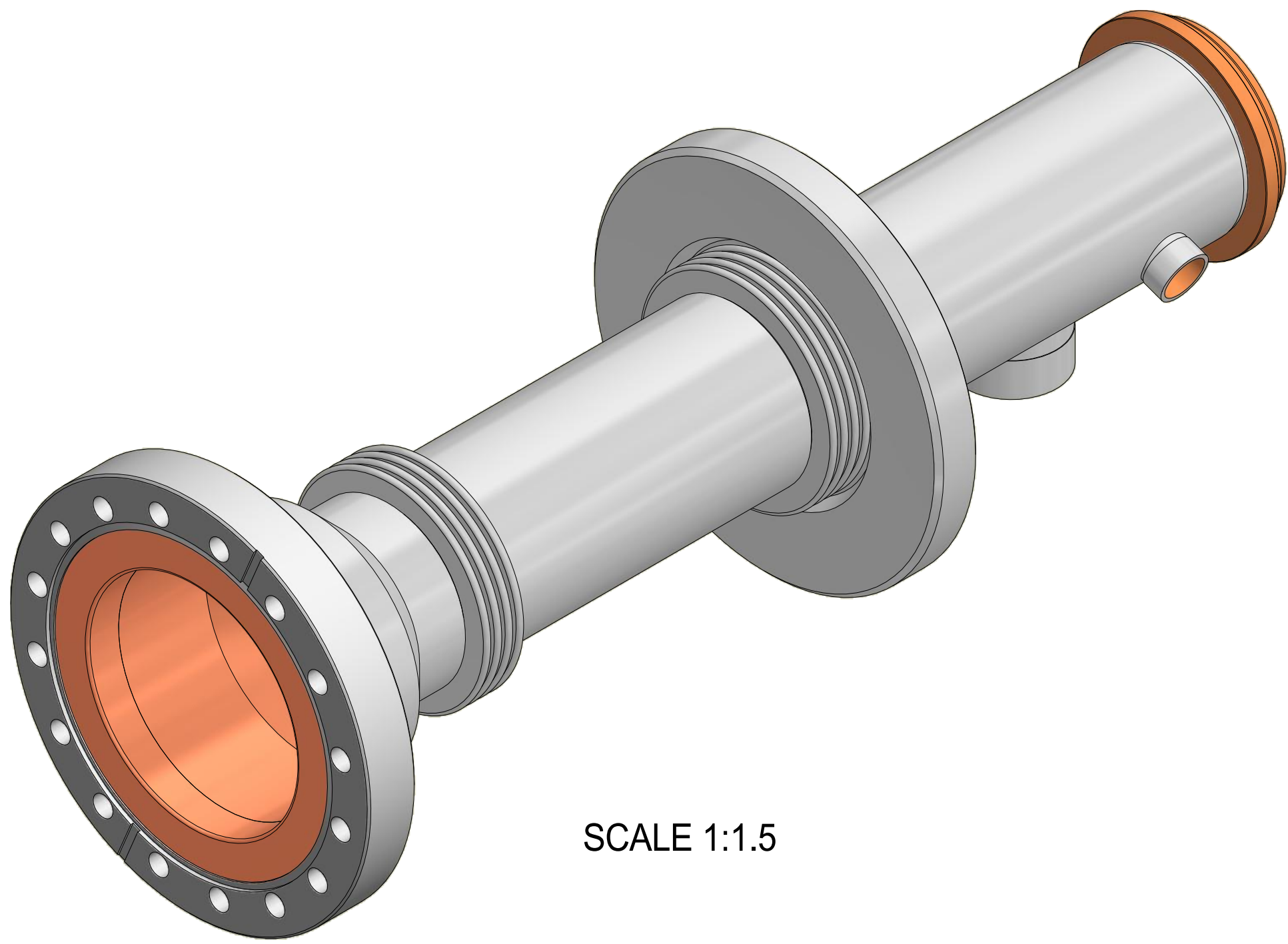
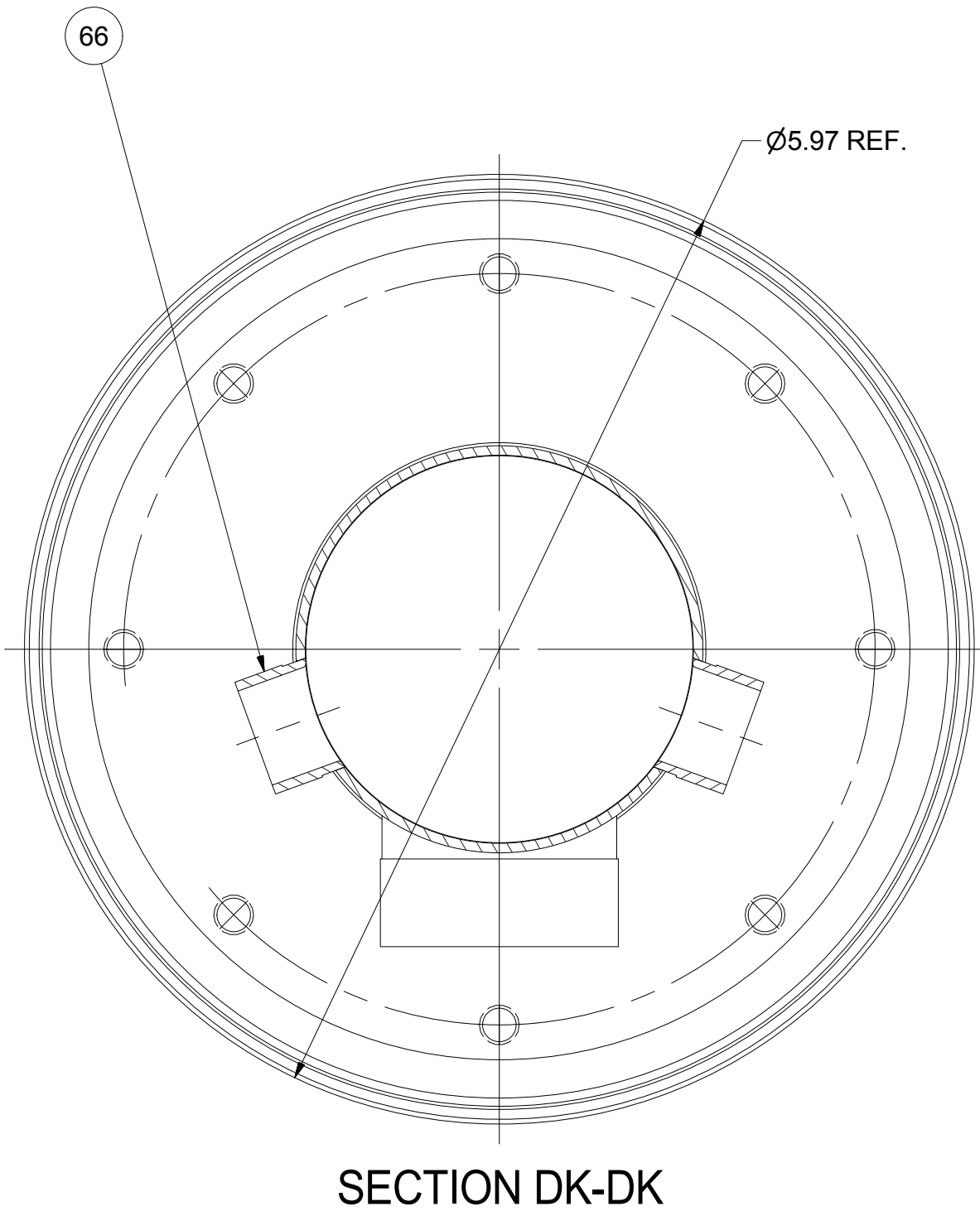
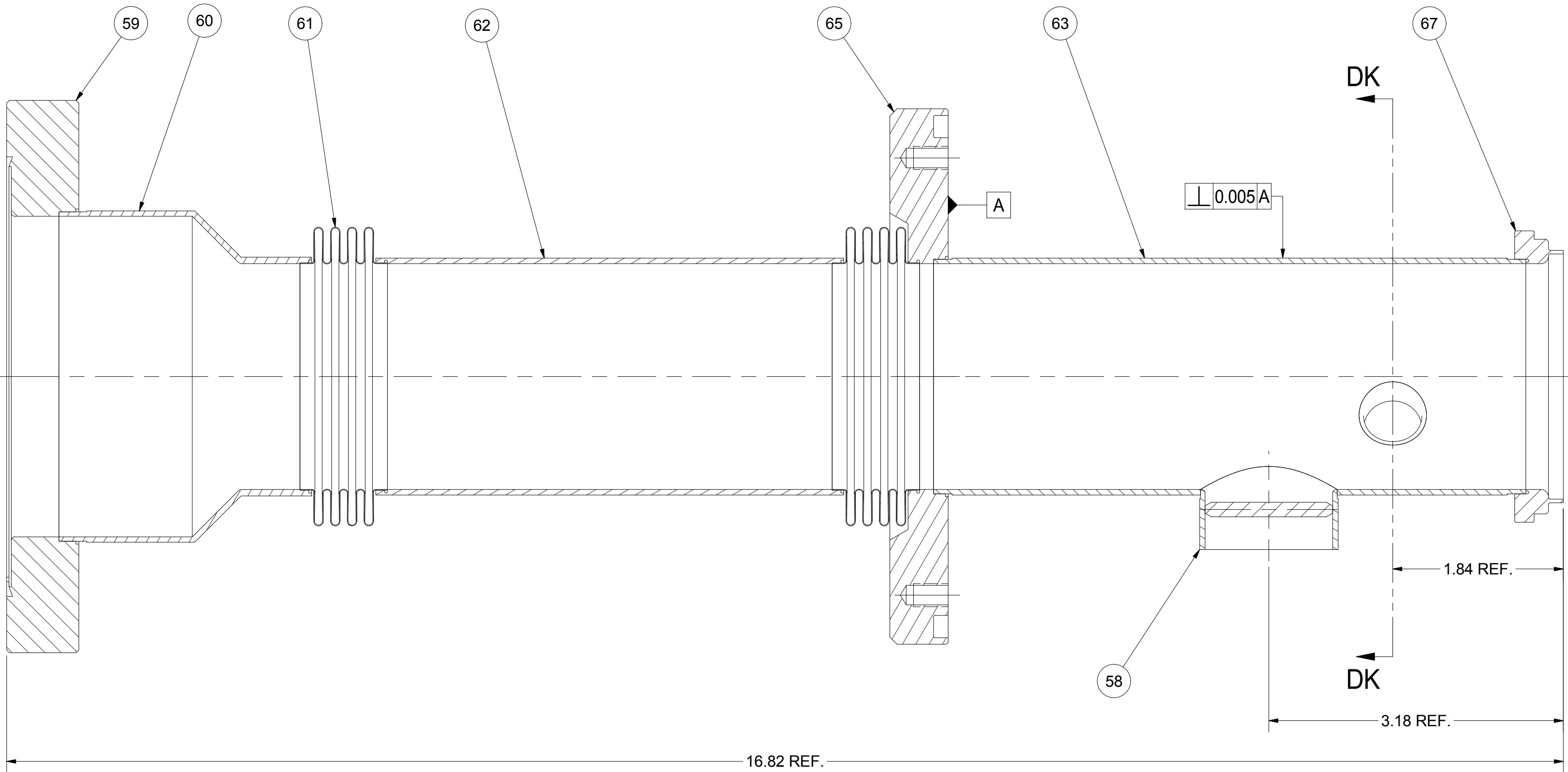
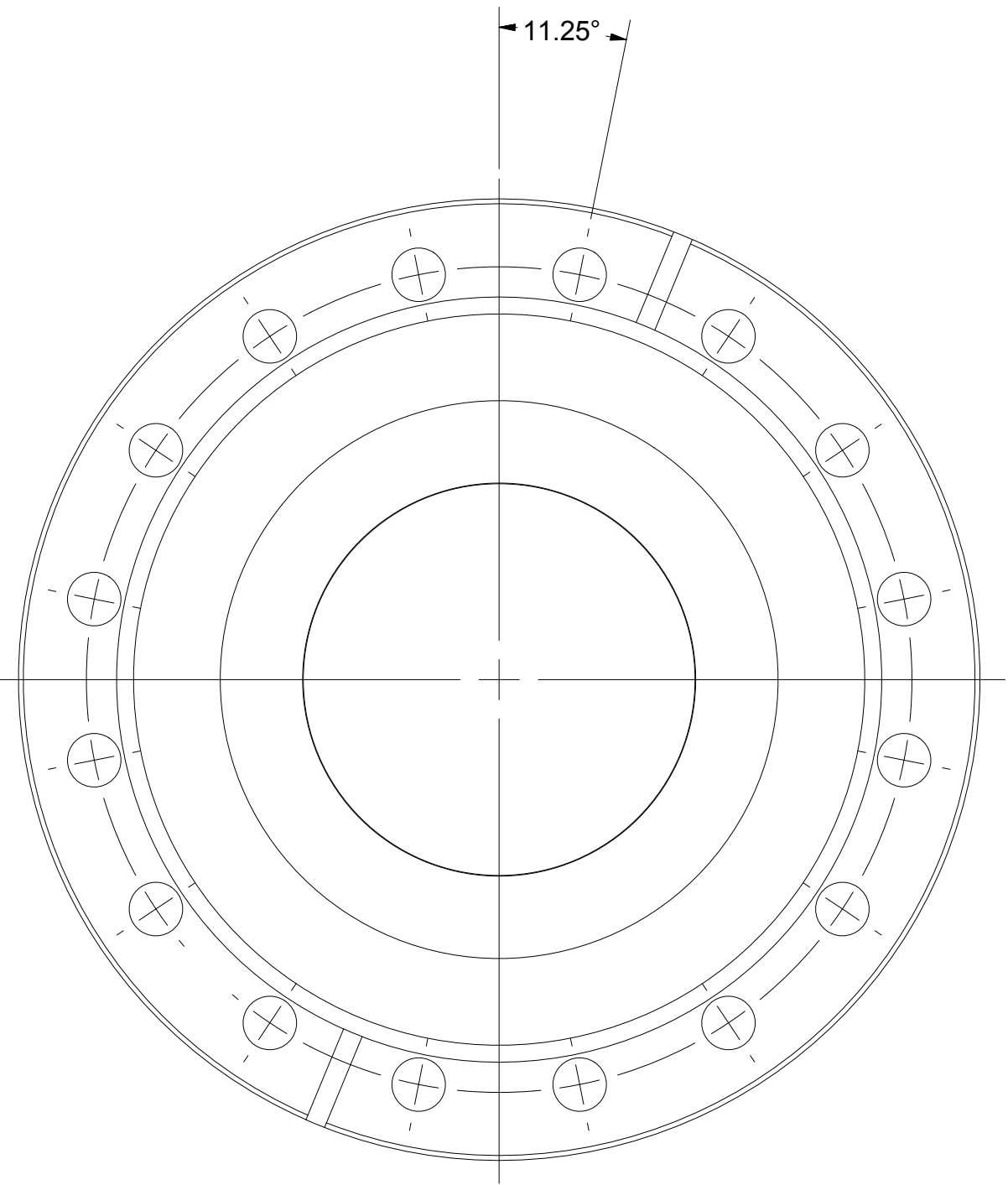
49

WARM OUTER CONDUCTOR - WELD SUB-ASM

FILE NAME: 7103-003
SHEET NO.: 12
DFT. SCALE: 1:1
MATERIAL: AS NOTED
QTY: 1 PER SUB-ASM
NOTES: 1. TIG WELD CF FLANGES. RESPECT ANGULAR ORIENTATION OF FLANGES.
2. AFTER WELDING, COPPER PLATE INNER SURFACES AS SHOWN.
3. AFTER COPPER PLATING, BAKE ASSEMBLY IN VACUUM AT 400 C FOR 2 HRS.

	57	SHEET 17	1-1/3" CF FLANGE	2				
	56	SHEET 17	2-3/4" CF FLANGE	1				
	55	SHEET 13	WARM OUTER CONDUCTOR - BRAZE, SUB-ASM	1				
	49	SHEET 12	WARM OUTER CONDUCTOR - WELD, SUB-ASM	X				
	ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
				QUANTITY				
PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.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><div><div>LEPP</div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div><div>ERL MAIN LINAC COUPLER WARM OUTER CONDUCTOR - WELD, SUB-ASSEMBLY</div></div>					
CHECKED BY: TIO APPROVED BY: VGV	DRAWN BY VGV	DRAWN FOR SAB	DATE 6/24/2010	SCALE 1:1		7103-003 SH NO. 12 OF 32		REV. A

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO



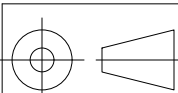


SCALE 1:1.5

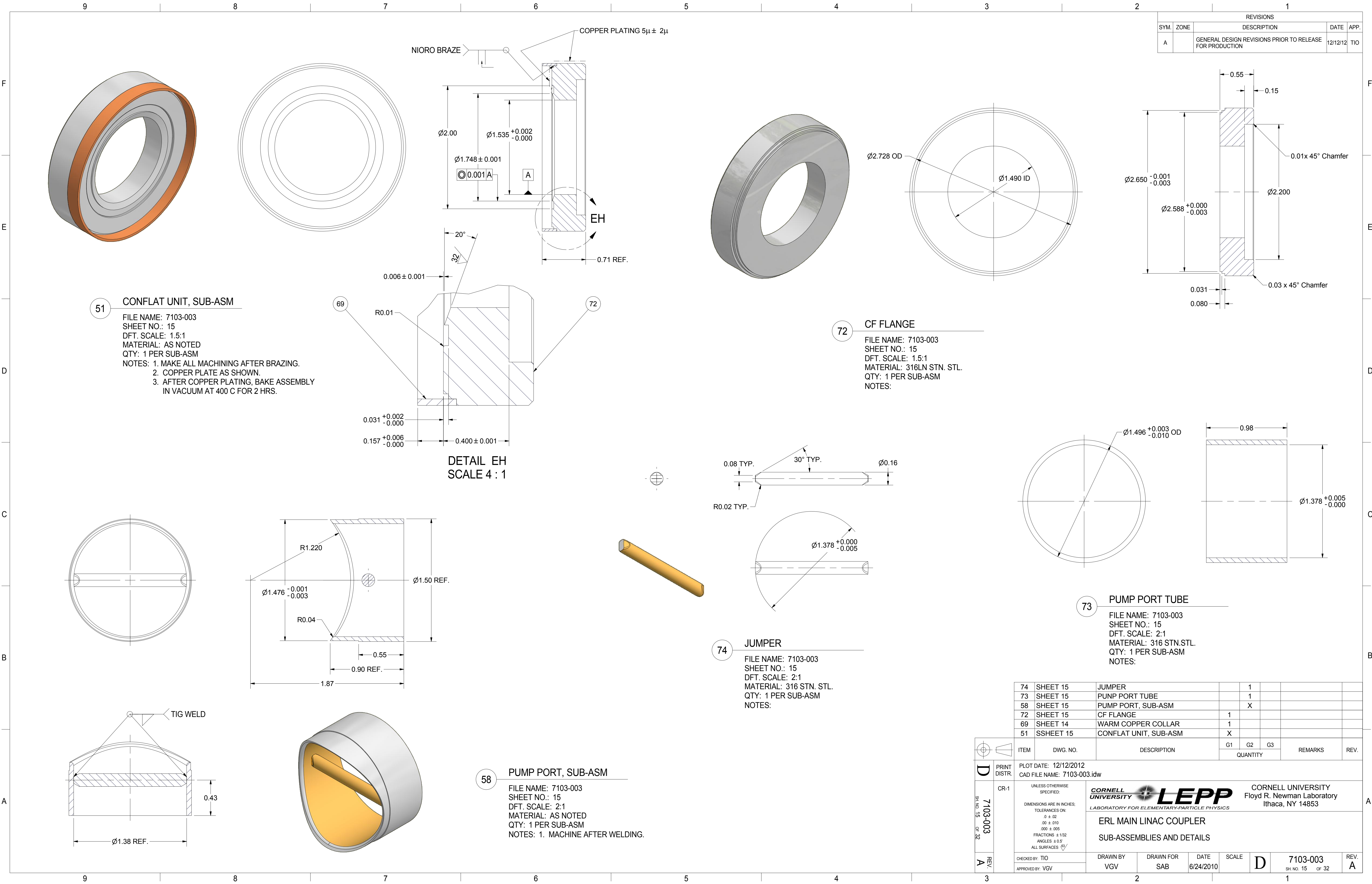
55

WARM OUTER CONDUCTOR - BRAZE SUB-ASM

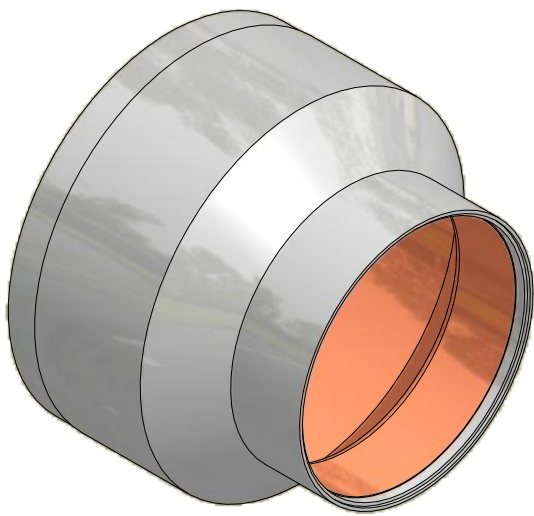
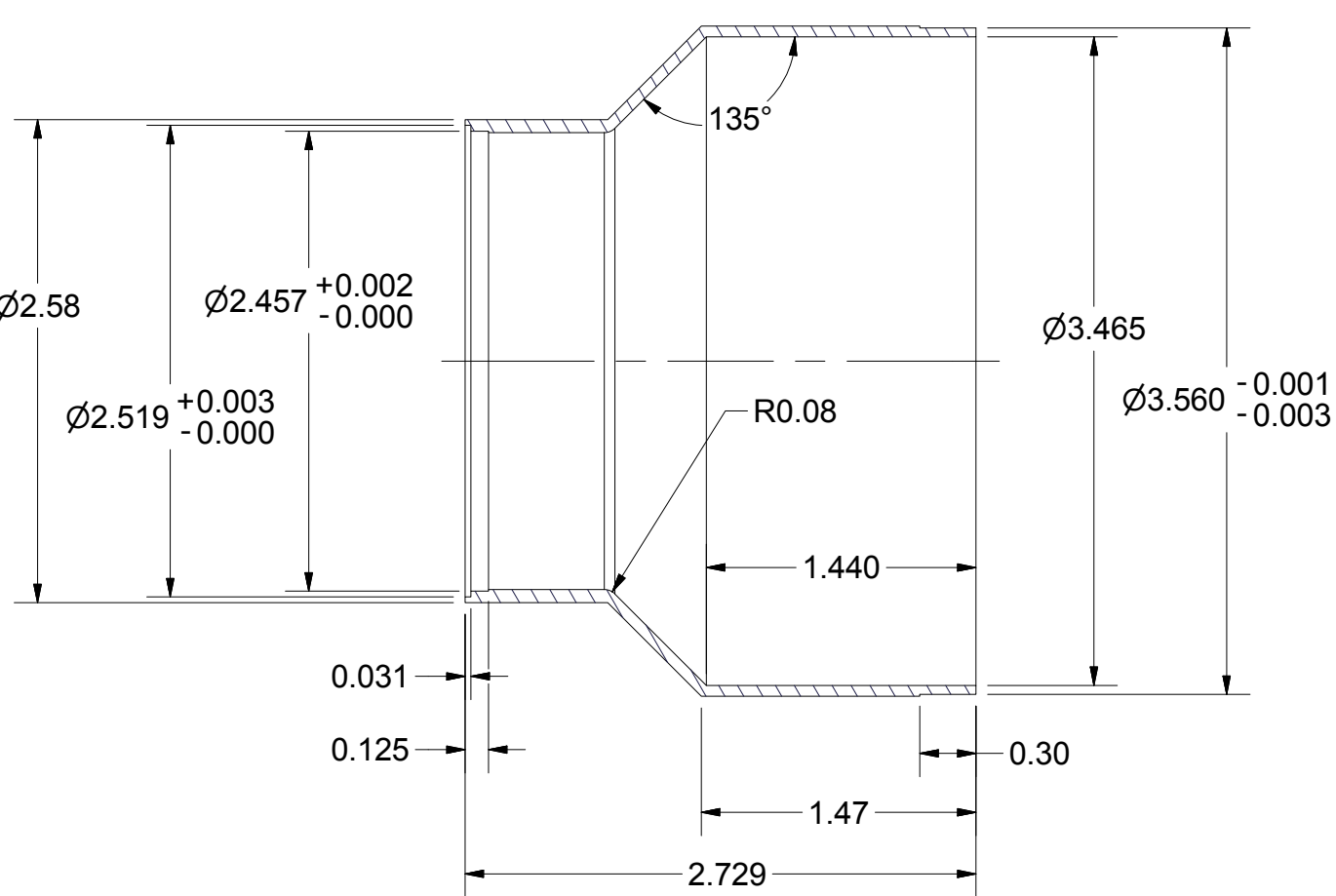
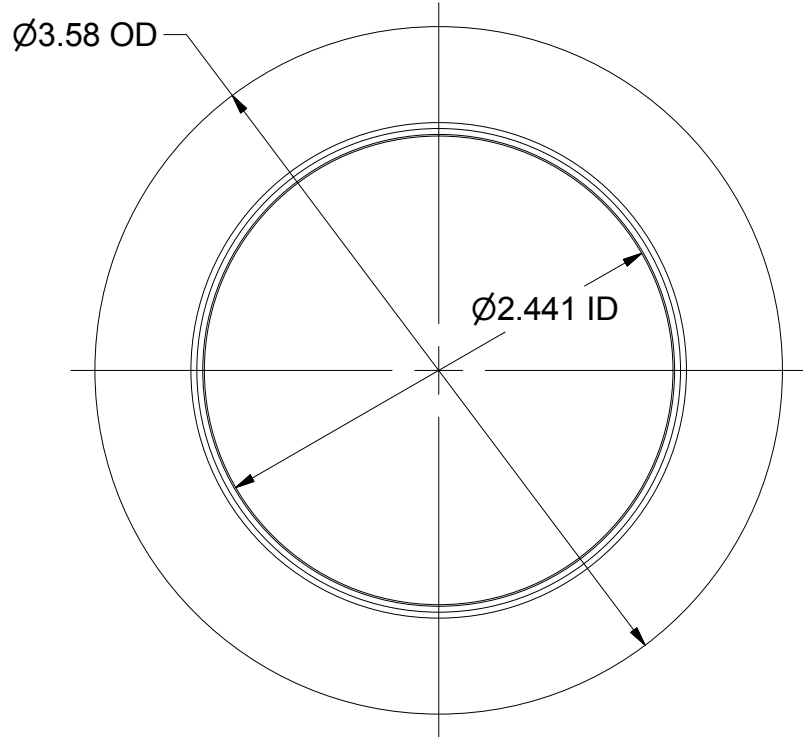
FILE NAME: 7103-003
SHEET NO.: 13
DFT. SCALE: 1:1
MATERIAL: AS NOTED
QTY: 1 PER SUB-ASM
NOTES: 1. BRAZE ALL PARTS TOGETHER. USE Cu-Au BRAZING ALLOY.
RESPECT ANGULAR ORIENTATION OF PARTS.

67	SHEET 16	WAVEGUIDE BOX RING	1					
66	SHEET 20	INSTRUMENTATION PORT TUBE	2					
65	SHEET 16	VACUUM VESSEL FLANGE	1					
63	SHEET 16	TUBE 4	1					
62	SHEET 16	TUBE 3	1					
61	SHEET 20	BELLOWS 3.22-2.44-4-0.008	2					
60	SHEET 16	TAPER	1					
59	SHEET 17	6" CF WARM FLANGE	1					
58	SHEET 15	PUMP PORT, SUB-ASM	1					
55	SHEET 13	WARM OUTER CONDUCTOR - BRAZE, SUB-ASM	X					

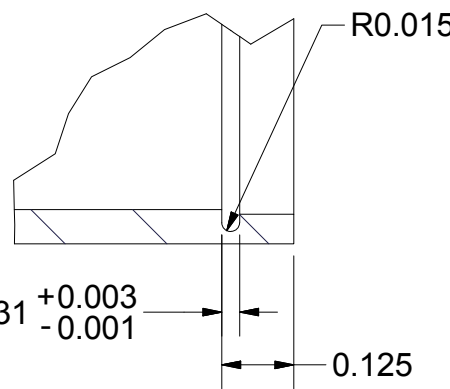
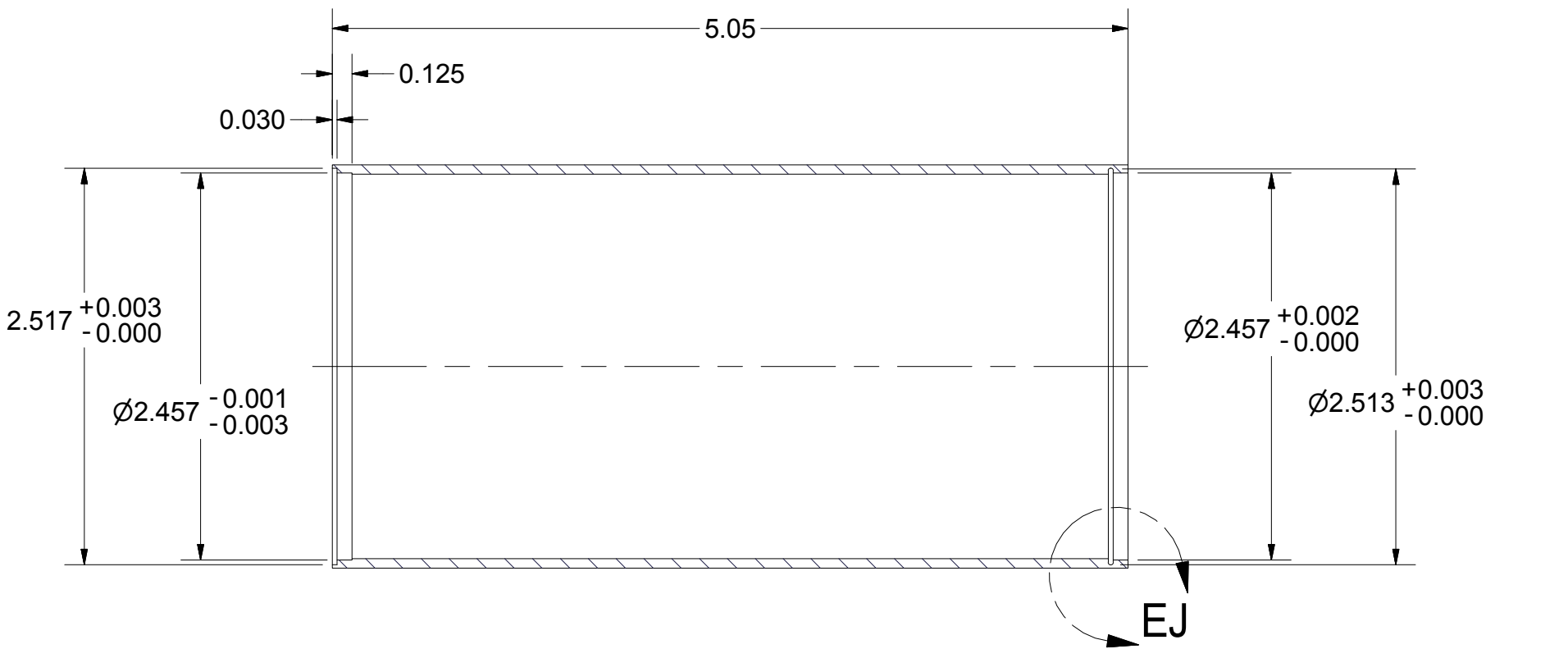
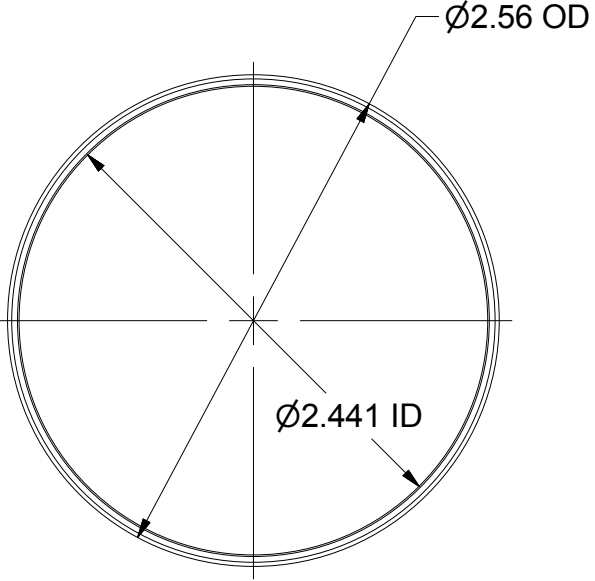
		ITEM		DWG. NO.		DESCRIPTION		G1		G2		G3		REMARKS		REV.	
								QUANTITY									
D		PRINT DISTR.		PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw													
7103-003 SH. NO. 13 OF 32		CR-1		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0.0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES 		<div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div> <div>ERL MAIN LINAC COUPLER WARM OUTER CONDUCTOR - BRAZE, SUB-ASSEMBLY</div>											
REV. A		CHECKED BY: TIO		DRAWN BY: VGV		DRAWN FOR: SAB		DATE: 6/24/2010		SCALE: 1:1		D		7103-003 SH. NO. 13 OF 32		REV. A	
		APPROVED BY: VGV															



REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO



SCALE 1 : 1.5



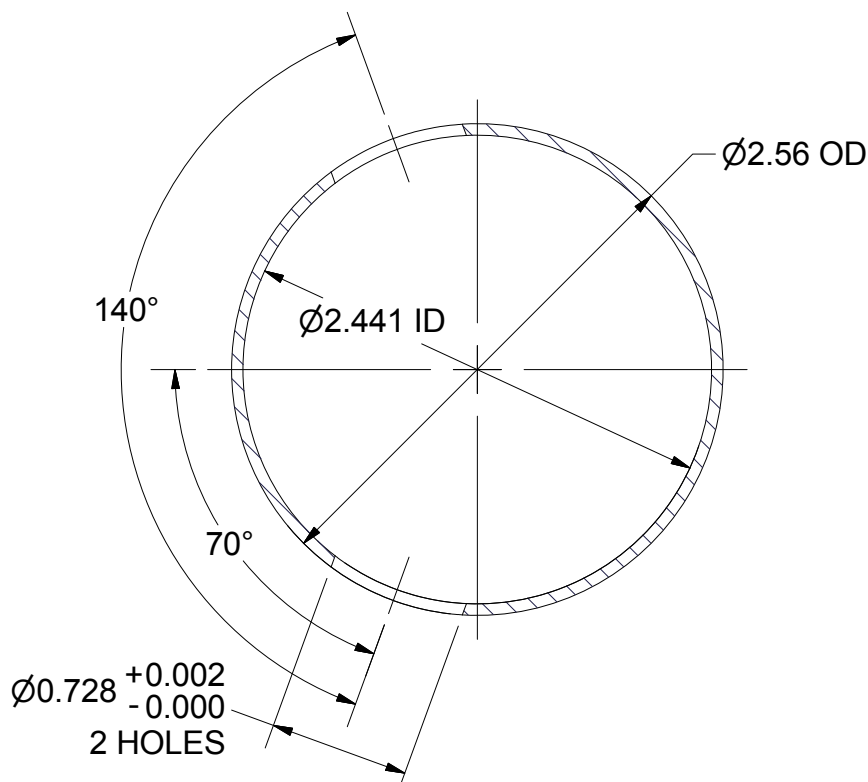
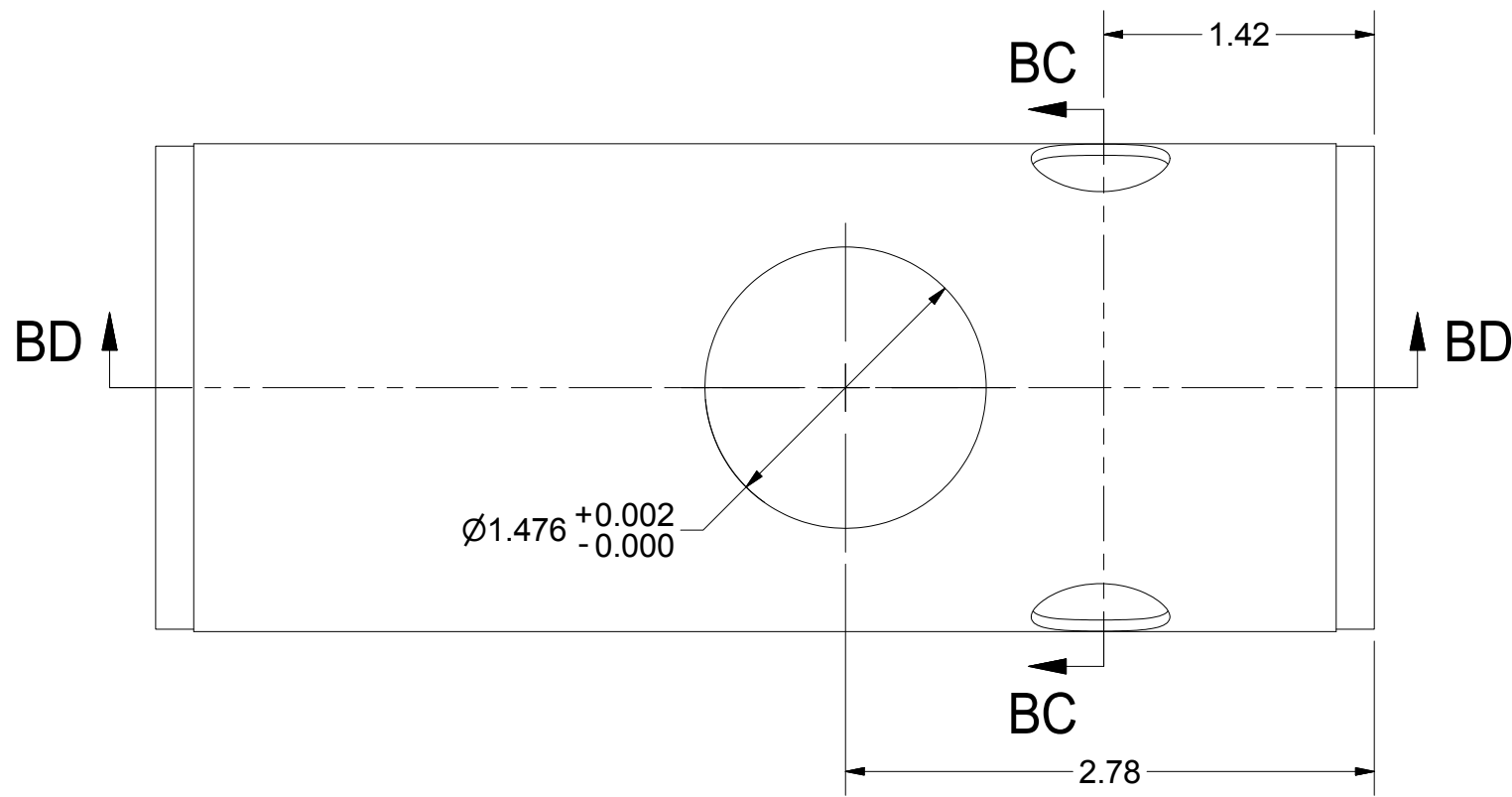
DETAIL EJ
SCALE 3 : 1

TAPER

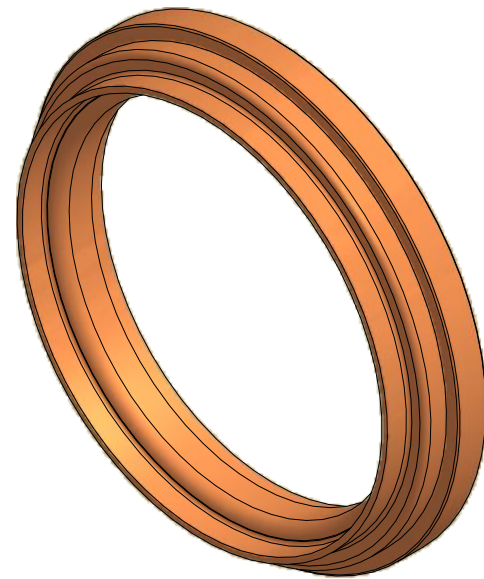
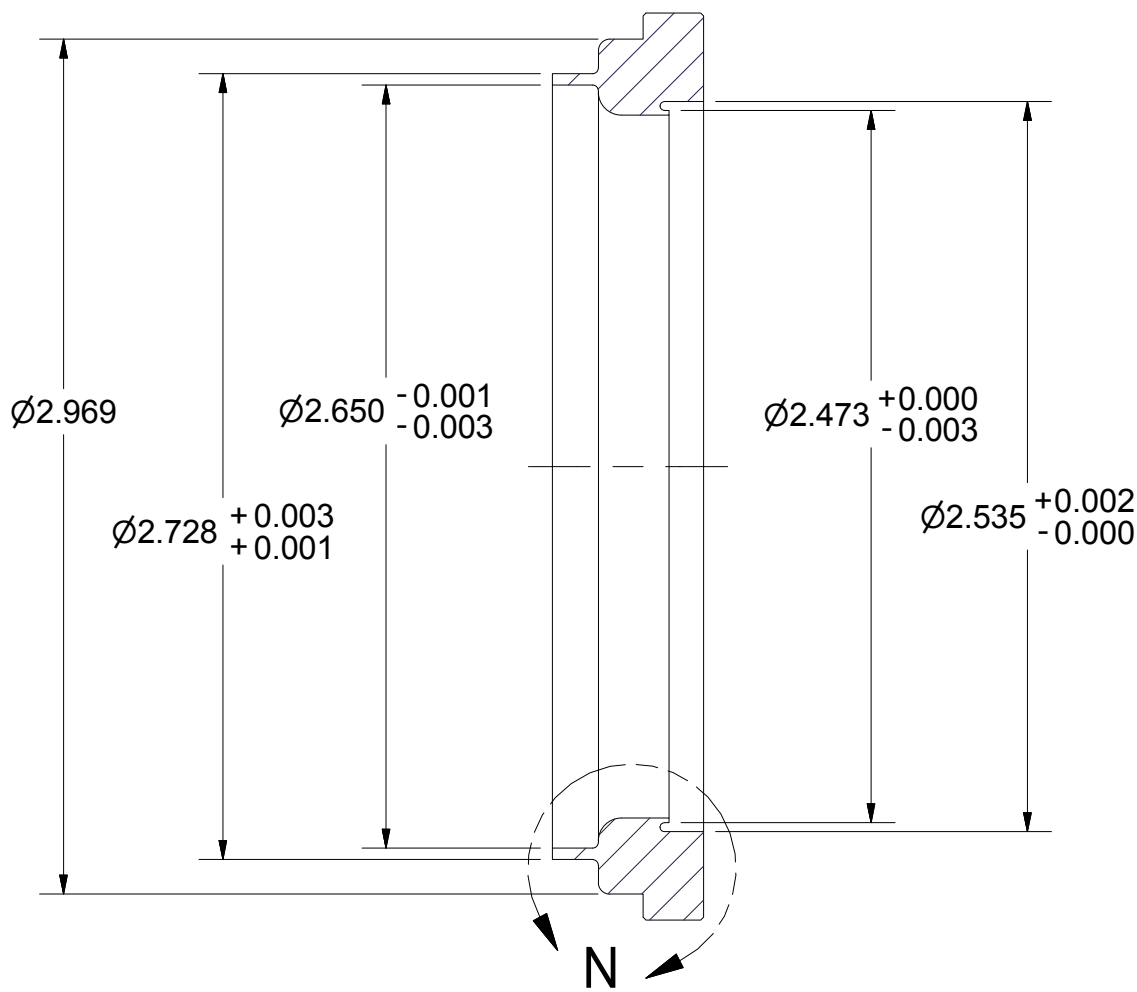
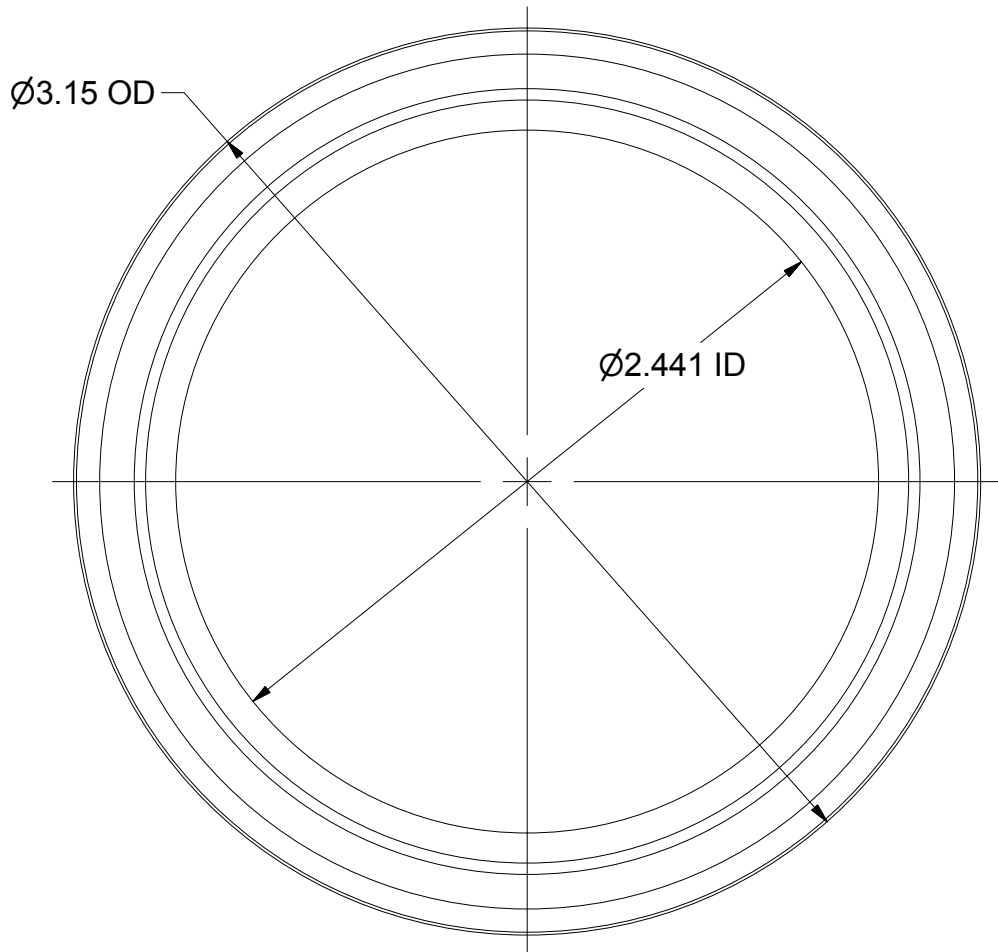
FILE NAME: 7103-003
SHEET NO.: 16
DFT. SCALE: 1:1
MATERIAL: 316 STN. STL.
QTY: 1 PER SUB-ASM
NOTES:

TUBE 3

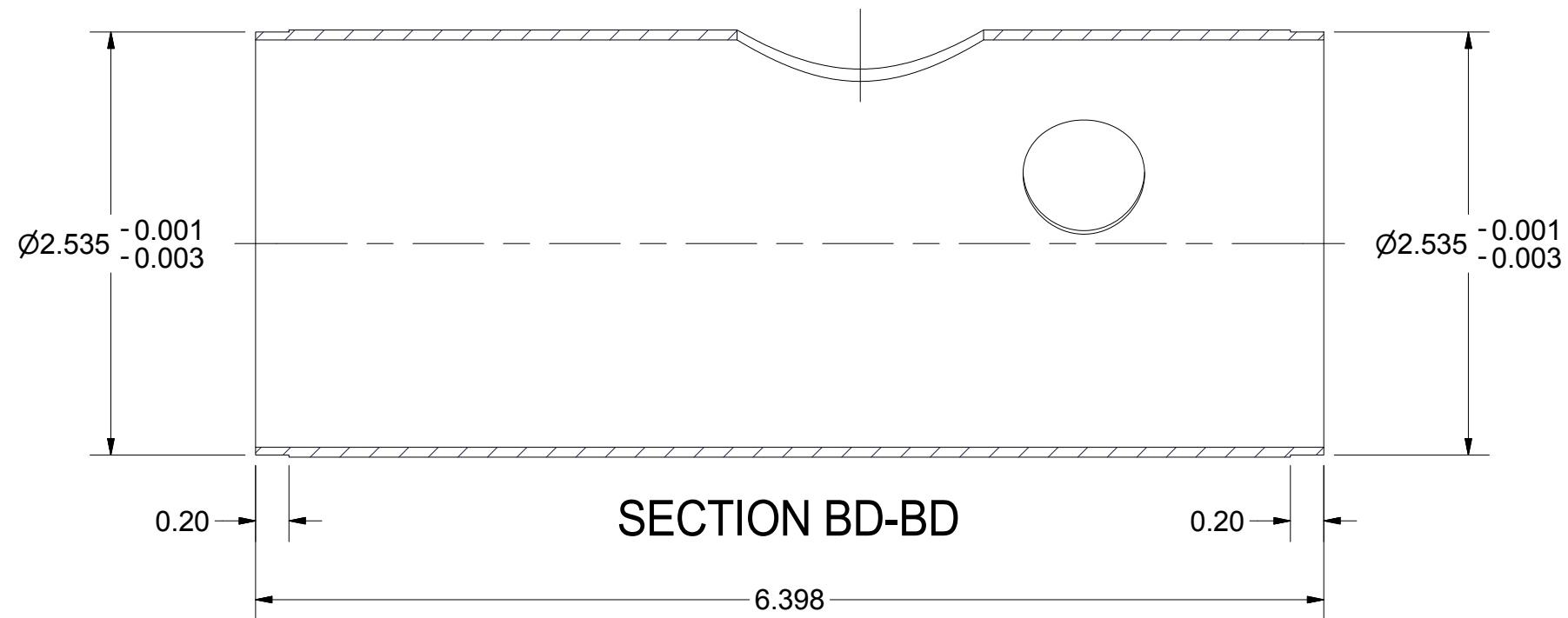
FILE NAME: 7103-003
SHEET NO.: 16
DFT. SCALE: 1:1
MATERIAL: 316 STN. STL.
QTY: 1 PER SUB-ASM
NOTES:



SECTION BC-BC



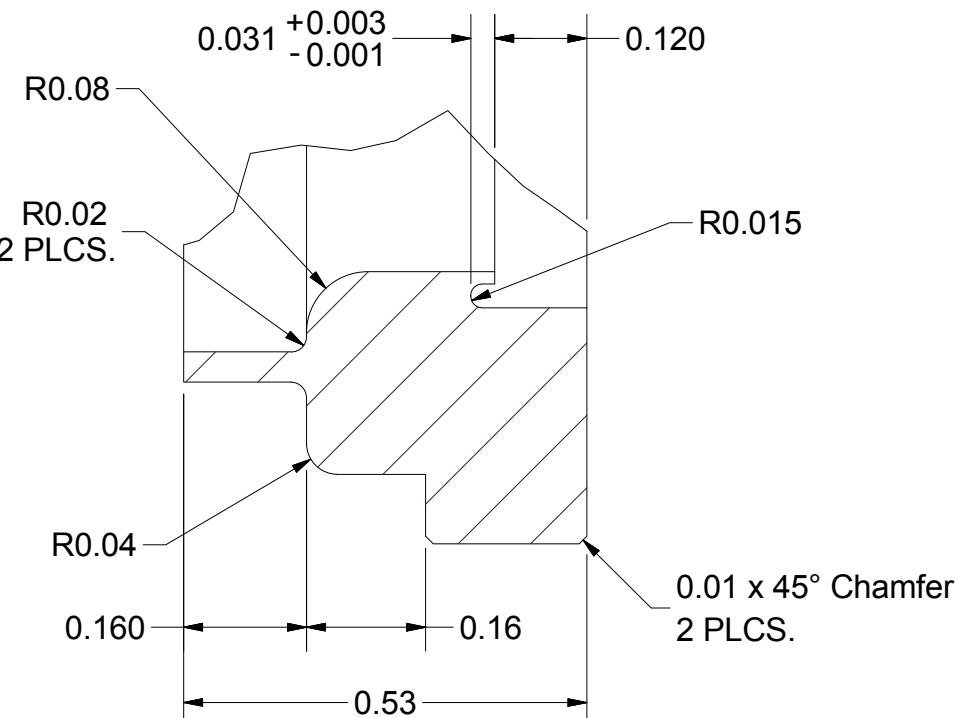
SCALE 1 : 1



SECTION BD-BD






SCALE 1 : 1.5



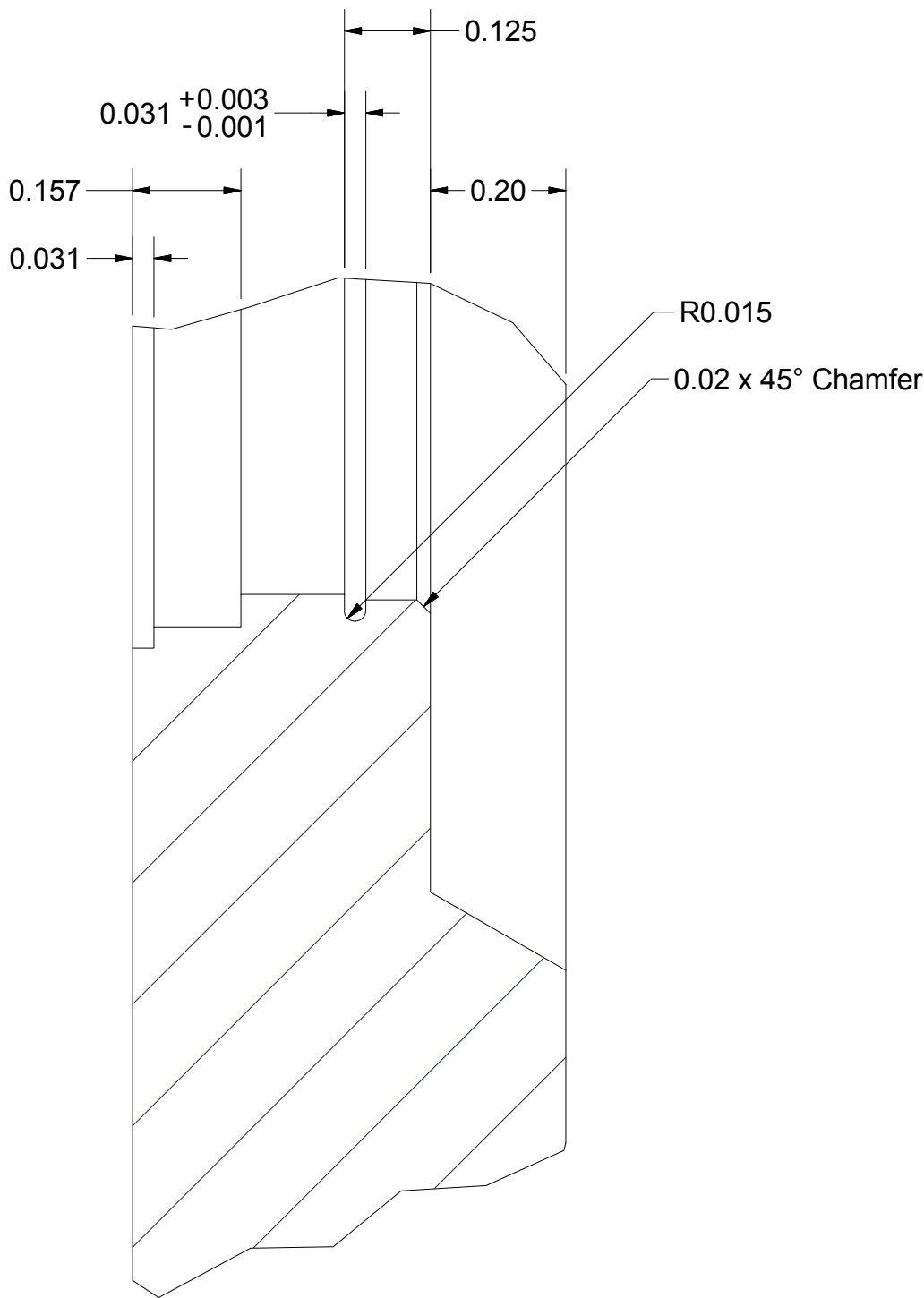
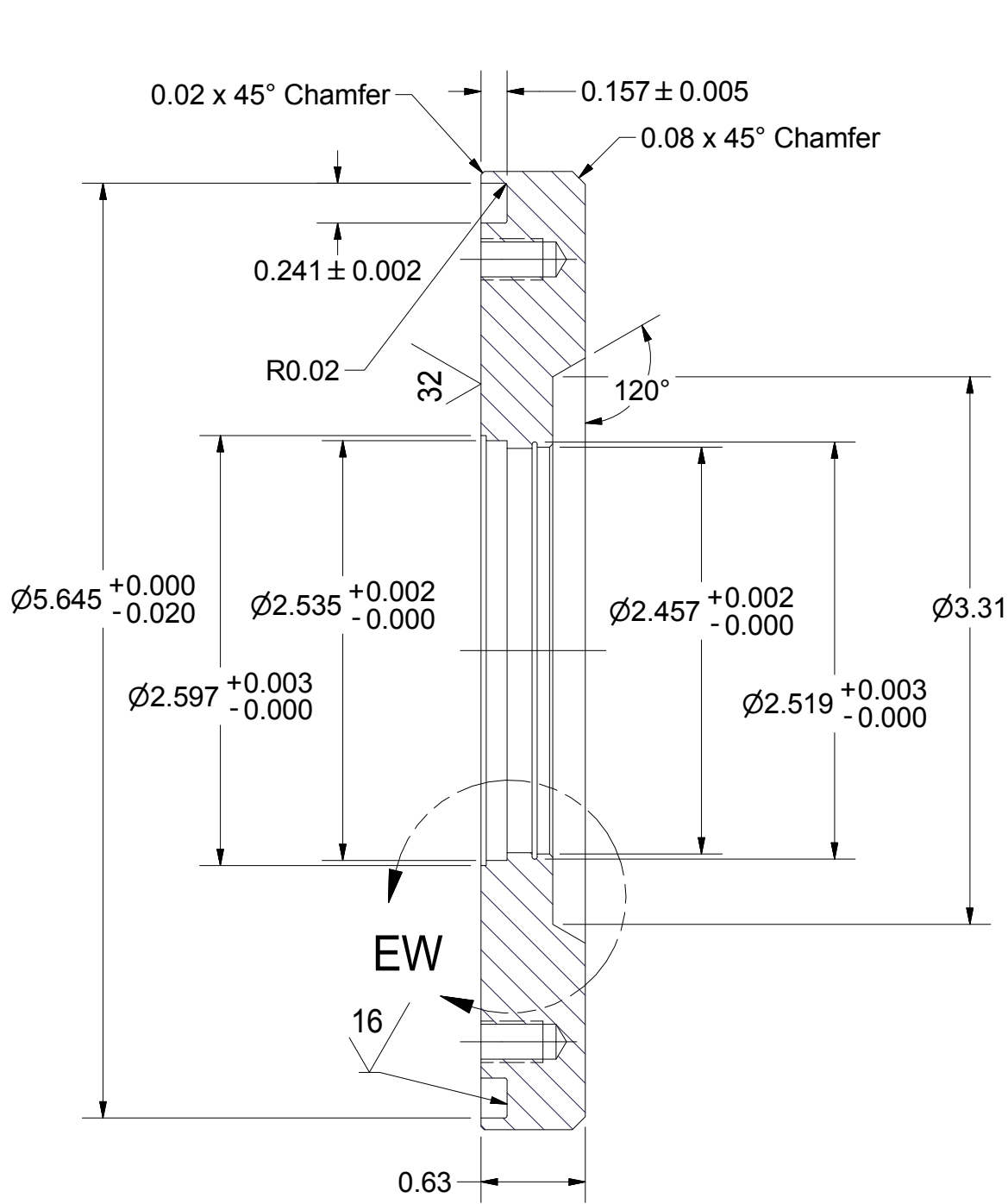
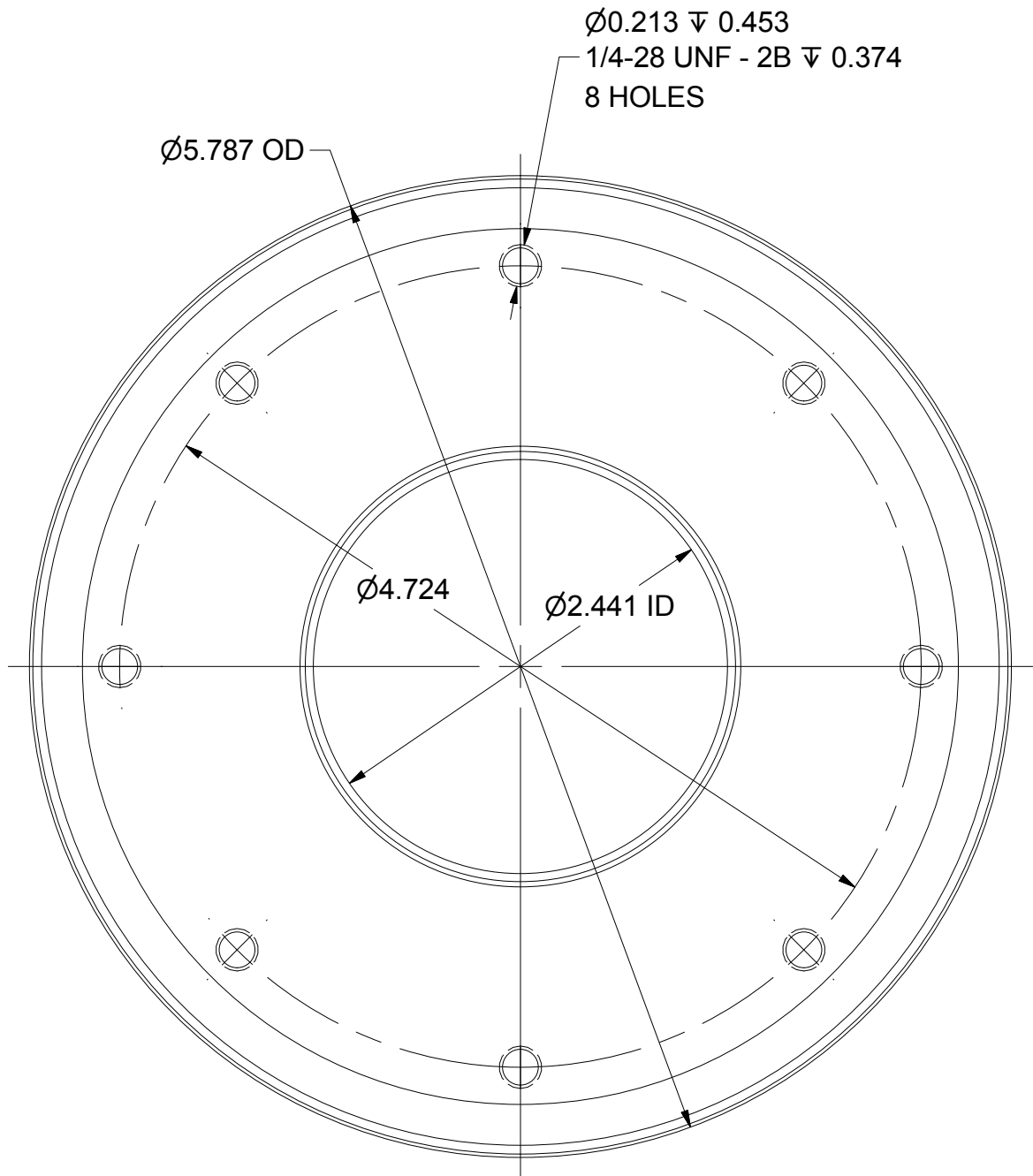
DETAIL N
SCALE 4 : 1

WAVEGUIDE BOX RING

FILE NAME: 7103-003
SHEET NO.: 16
DFT. SCALE: 1.5:1
MATERIAL: OFHC COPPER
QTY: 1 PER SUB-ASM
NOTES:

		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.
						QUANTITY					
<div>D</div>	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.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><div><div>CORNELL UNIVERSITY</div><div></div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div><div>ERL MAIN LINAC COUPLER WARM OUTER CONDUCTOR, DETAILS</div></div>							
<div>SH. NO. 16 OF 32</div>	7103-003	CHECKED BY: TIO		DRAWN BY VGV	DRAWN FOR SAB	DATE 6/24/2010	SCALE 1:1	<div>D</div>		7103-003 SH. NO. 16 OF 32	REV. A
REV. A		APPROVED BY: VGV									

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO

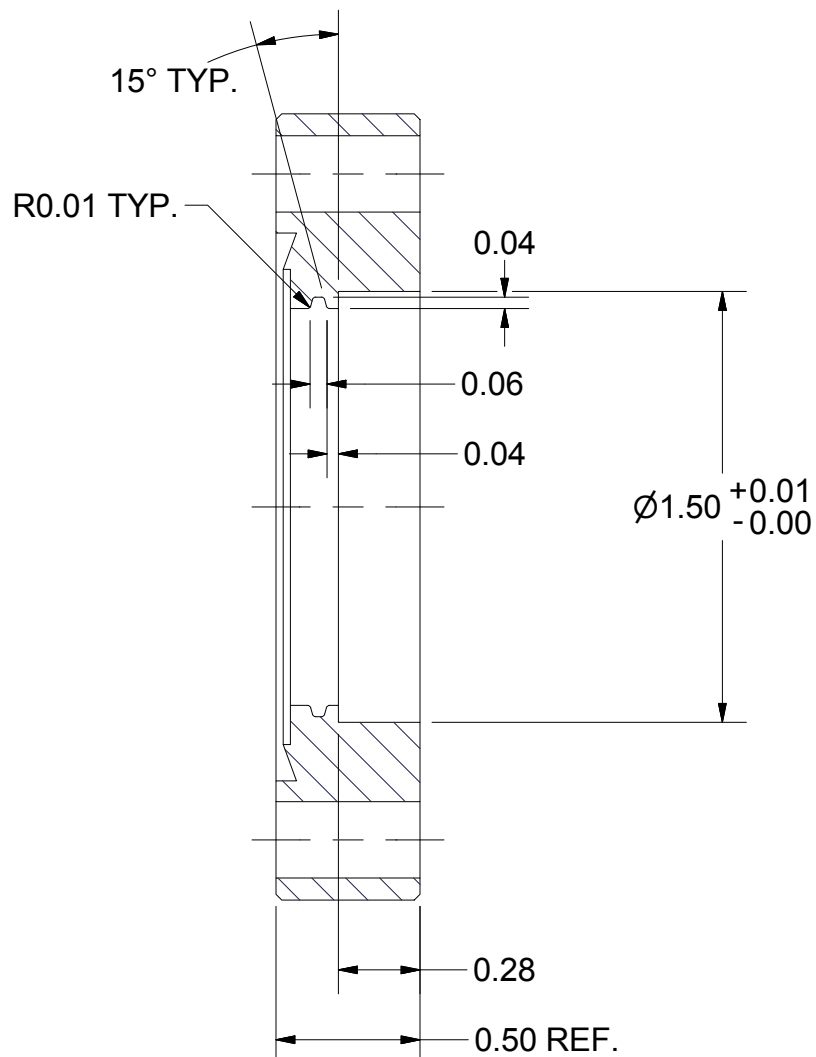
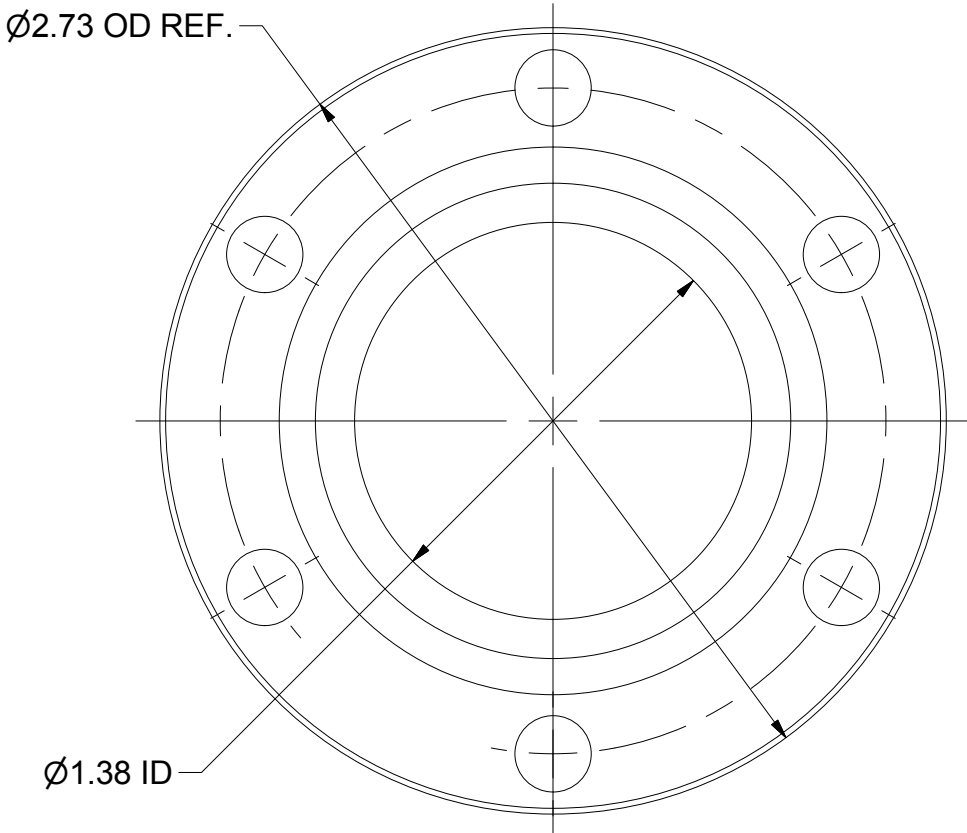
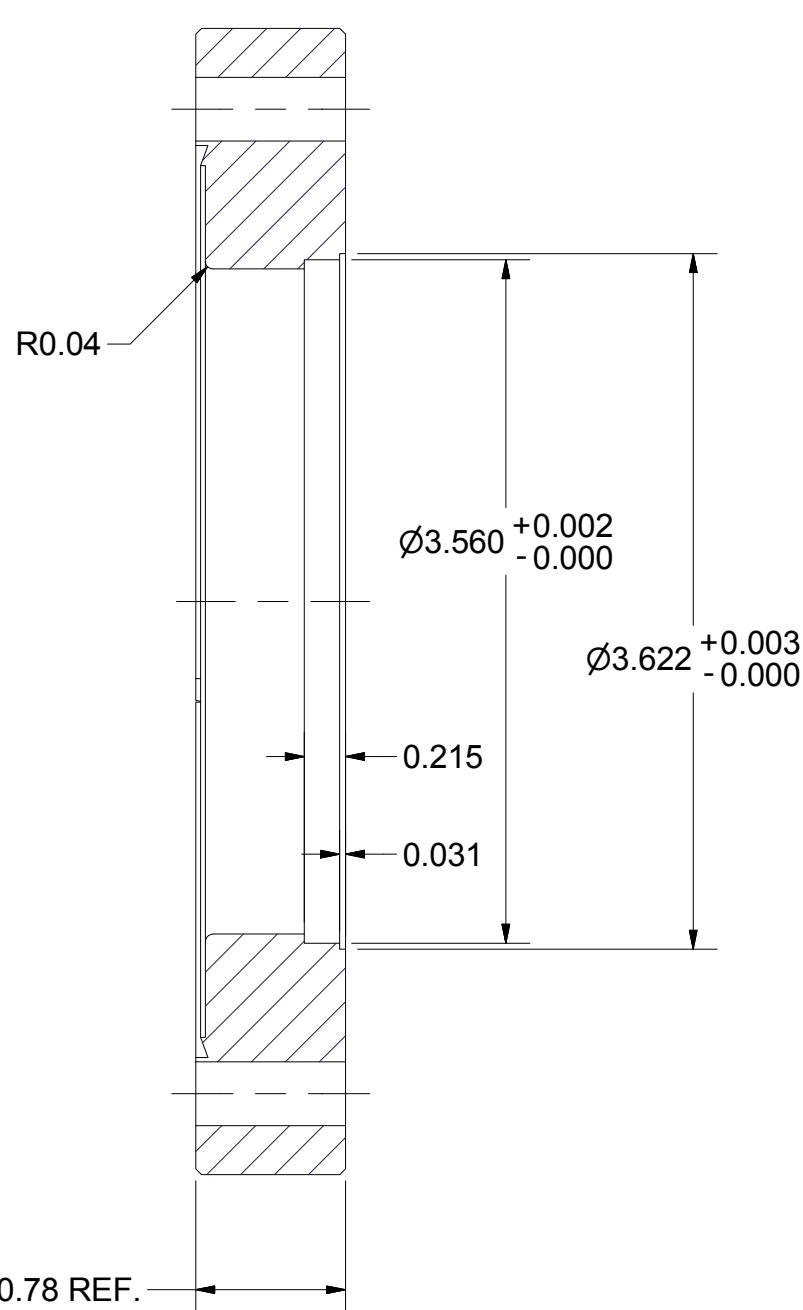
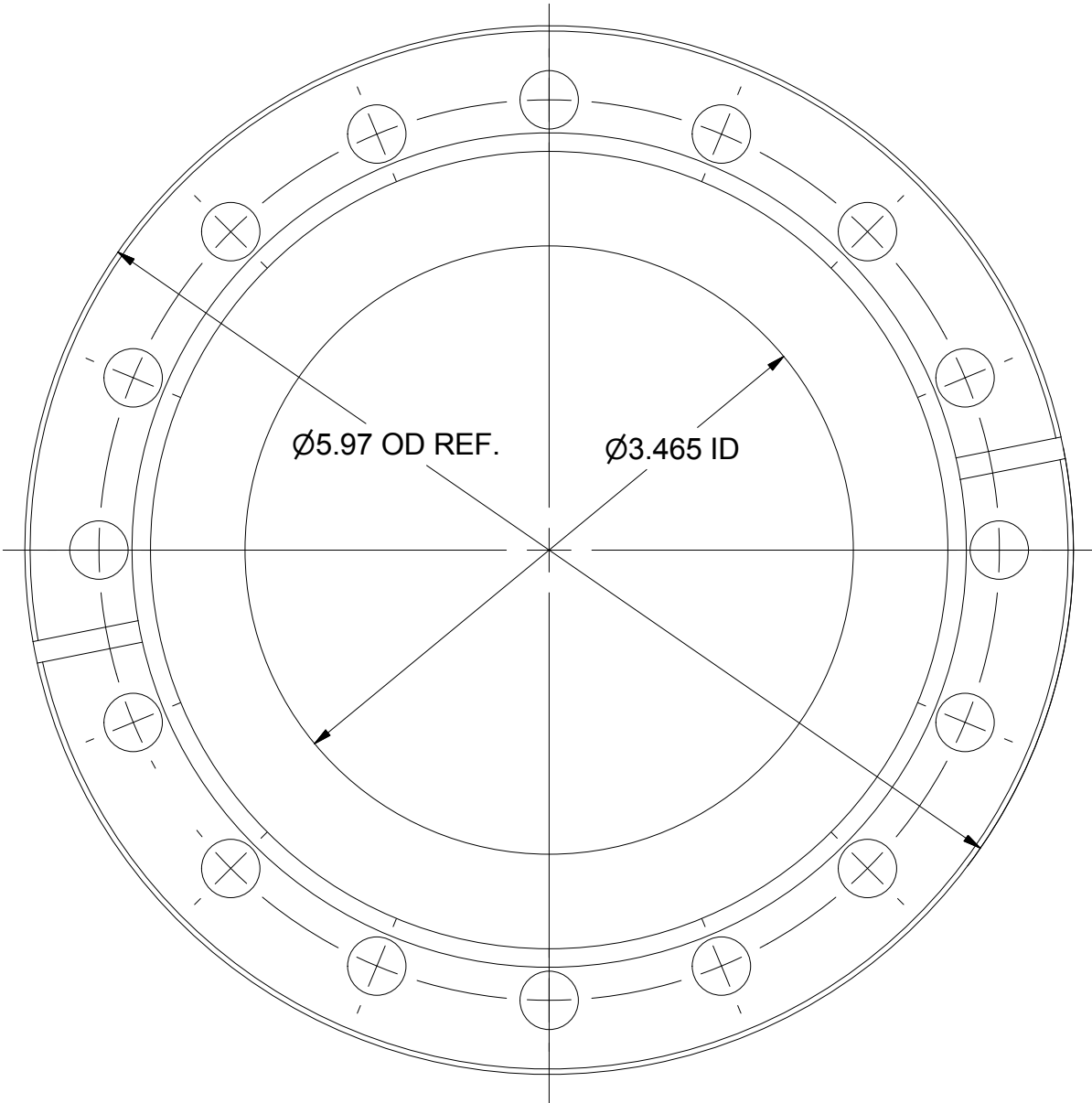


DETAIL EW
SCALE 4 : 1

65

VACUUM VESSEL FLANGE

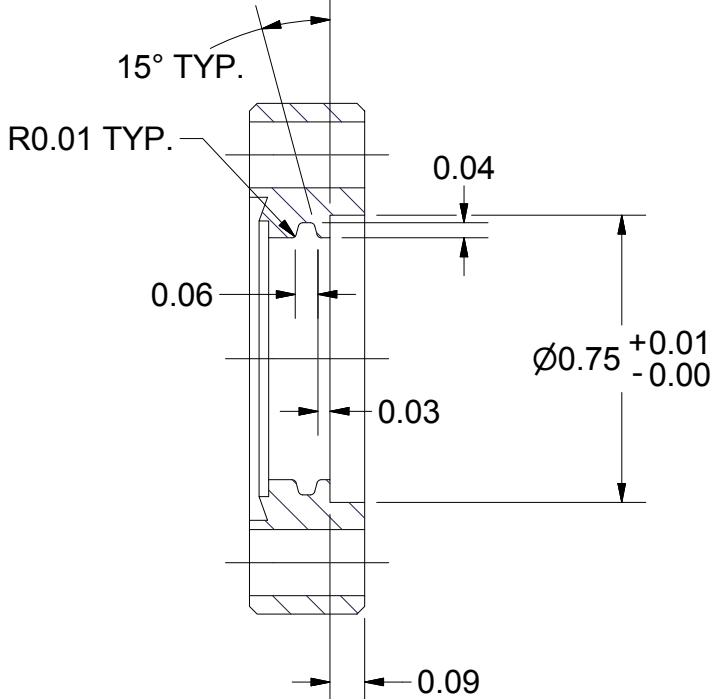
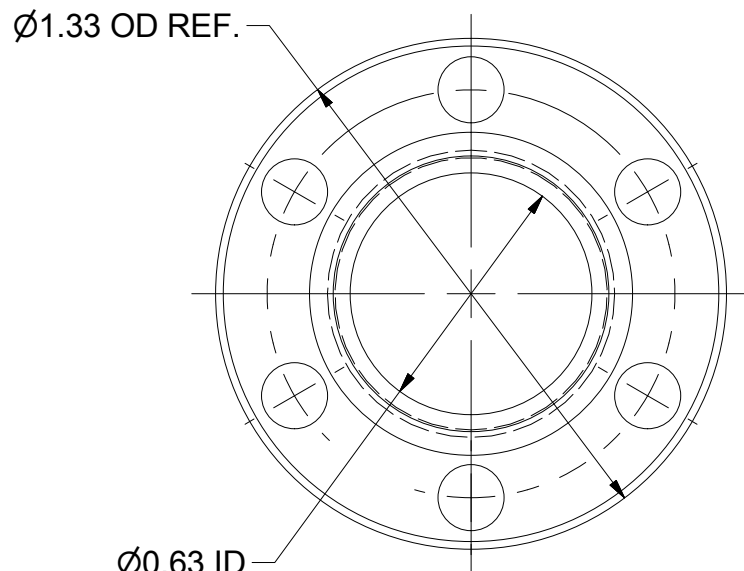
FILE NAME: 7103-003
SHEET NO.: 17
DFT. SCALE: 1:1
MATERIAL: 316 STN. STL.
QTY: 1 PER SUB-ASM
NOTES:



56

2-3/4" CF FLANGE

FILE NAME: 7103-003
SHEET NO.: 17
DFT. SCALE: 1.5:1
MATERIAL: KURT J. LESKER F0275X000N OR EQUIV.
QTY: 1 PER SUB-ASM
NOTES:



57

1-1/3" CF FLANGE

FILE NAME: 7103-003
SHEET NO.: 17
DFT. SCALE: 2:1
MATERIAL: KURT J. LESKER F0133X000N OR EQUIV.
QTY: 2 PER SUB-ASM
NOTES:

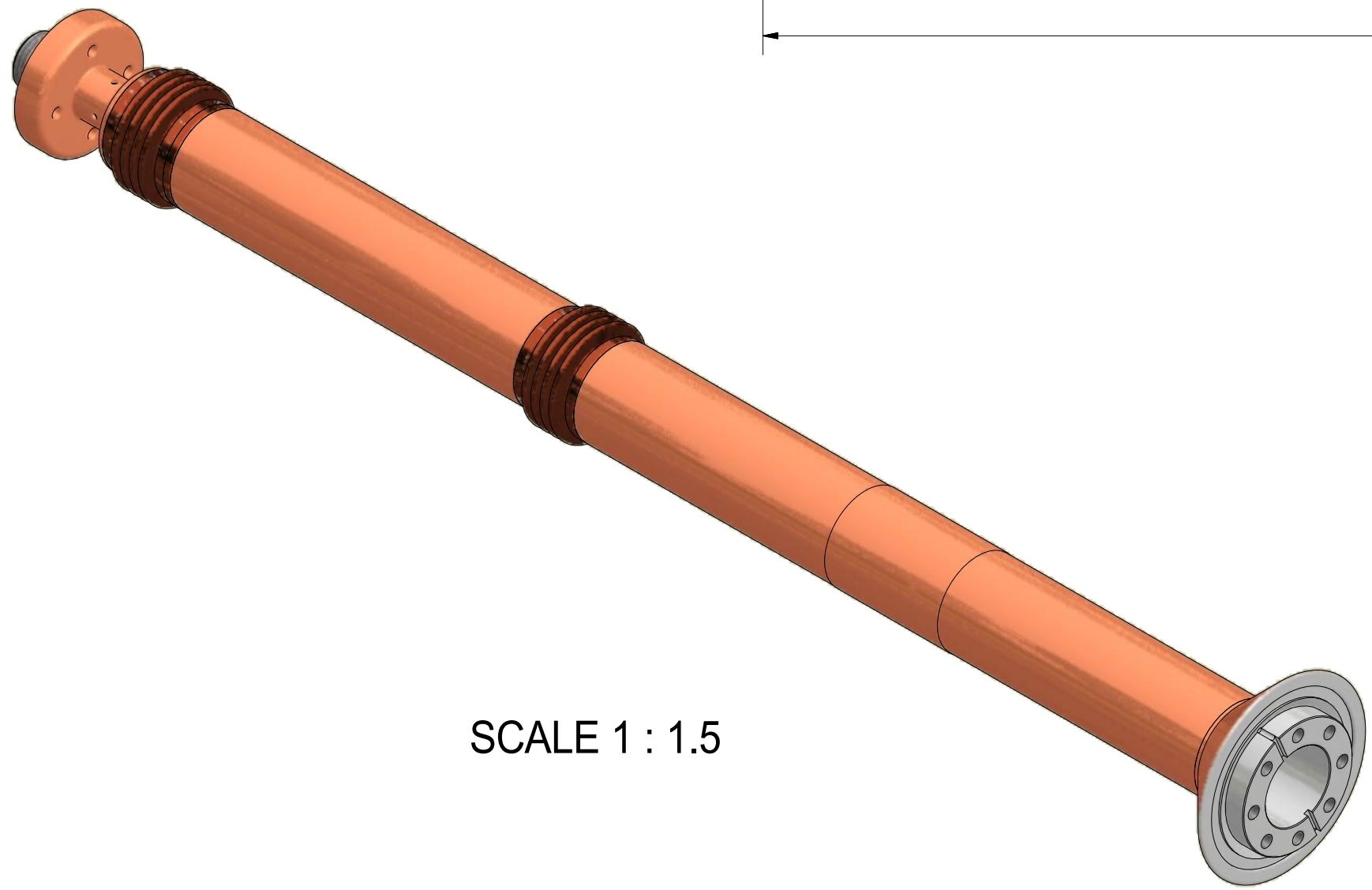
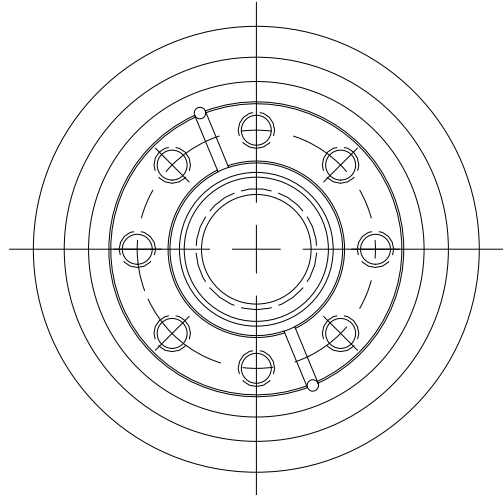
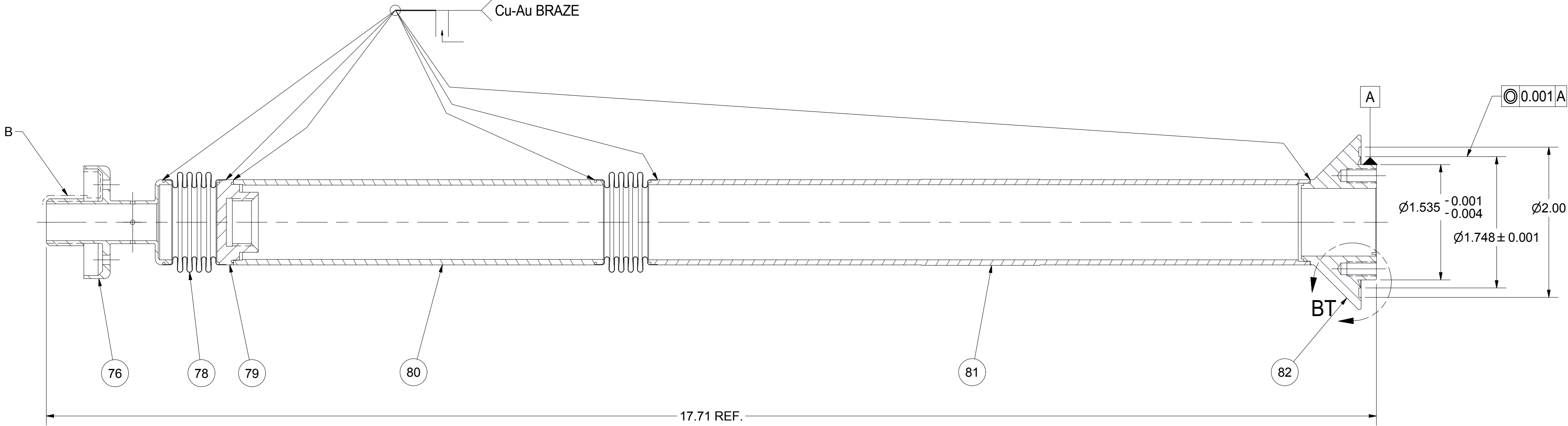
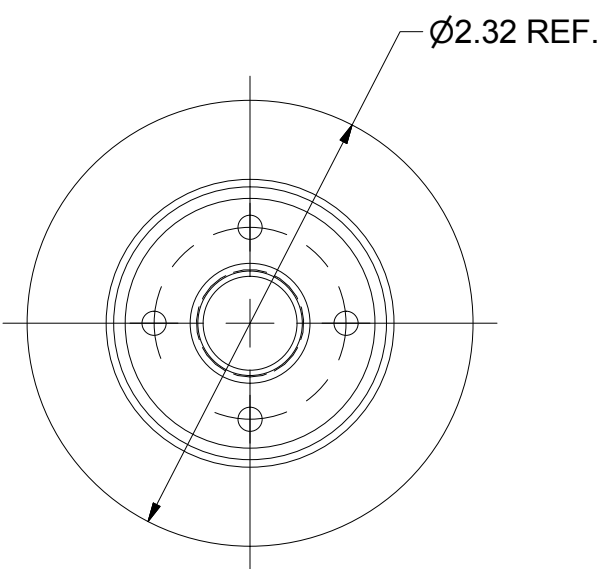
59

6" CF WARM FLANGE

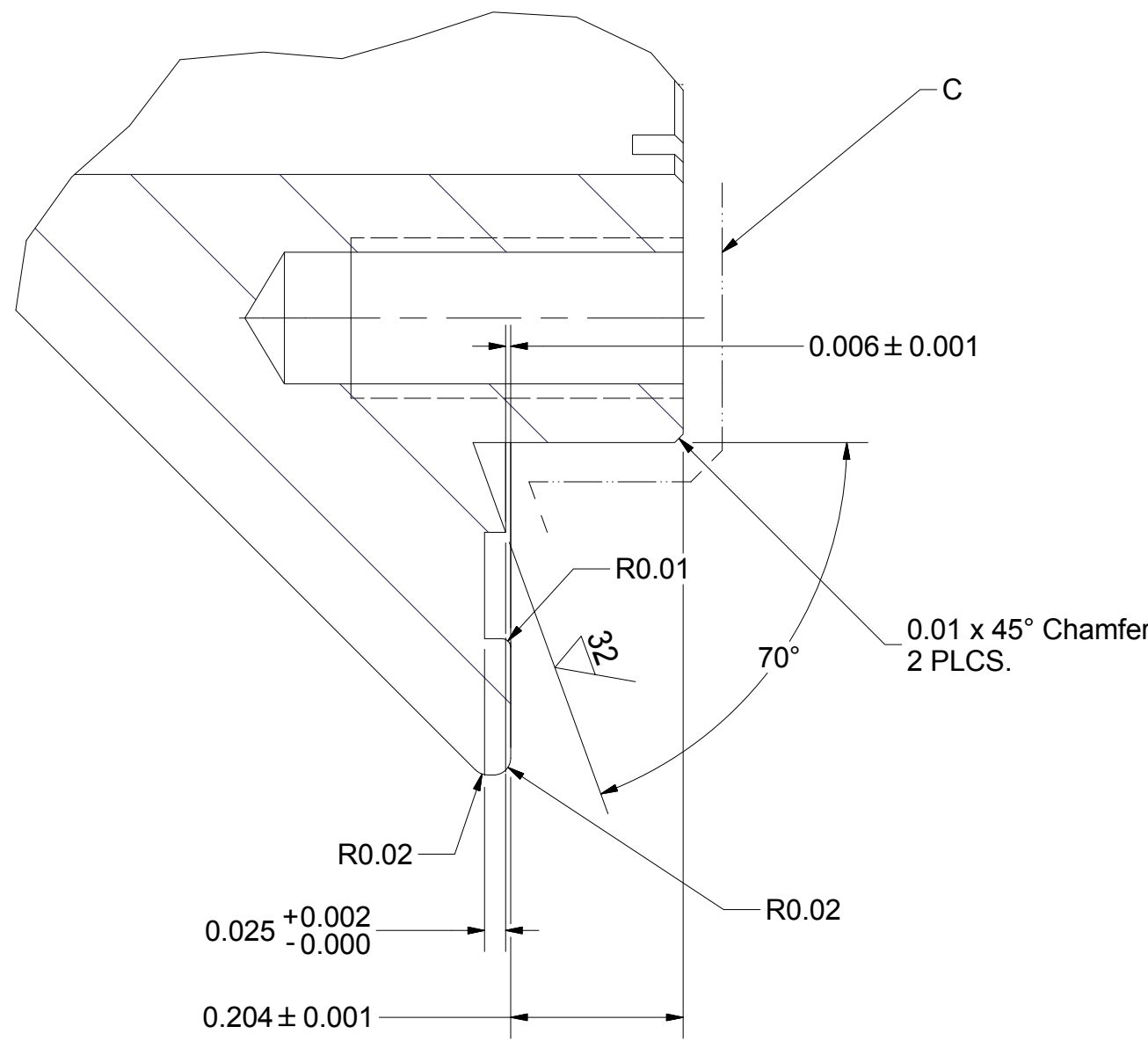
FILE NAME: 7103-003
SHEET NO.: 17
DFT. SCALE: 1:1
MATERIAL: 316LN STN. STL.: VG SIENTA ZFRL6A OR EQUIV.
QTY: 1 PER SUB-ASM.
NOTES:

		ITEM		DWG. NO.		DESCRIPTION			G1		G2		G3		REMARKS		REV.		
D		PRINT DISTR.		PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.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><div>CORNELL UNIVERSITY</div><div></div><div>LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</div></div><div><div>CORNELL UNIVERSITY</div><div>Floyd R. Newman Laboratory</div><div>Ithaca, NY 14853</div></div></div><div>ERL MAIN LINAC COUPLER</div><div>WARM OUTER CONDUCTOR, DETAILS</div></div>															
7103-003 SH. NO. 17 OF 32		REV. A		CHECKED BY: TIO		DRAWN BY: VGV		DRAWN FOR: SAB		DATE: 6/24/2010		SCALE		D		7103-003 SH. NO. 17 OF 32		REV. A	
				APPROVED BY: VGV															

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO

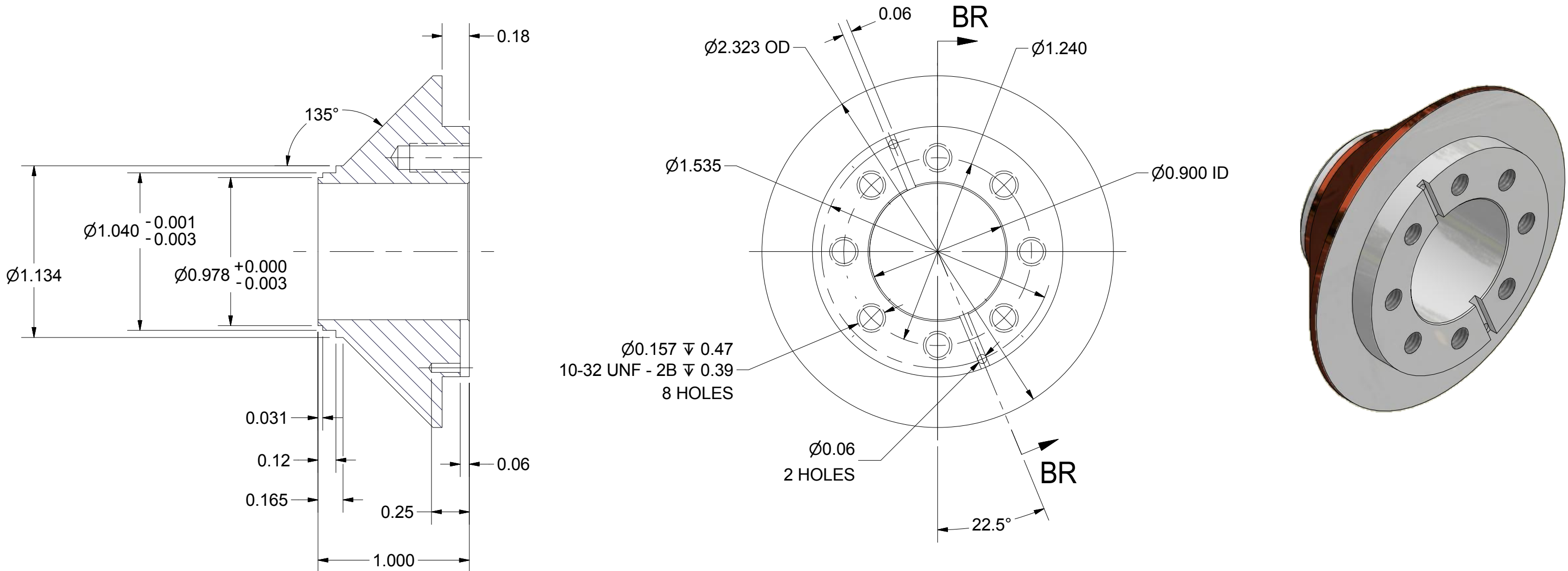


SCALE 1 : 1.5

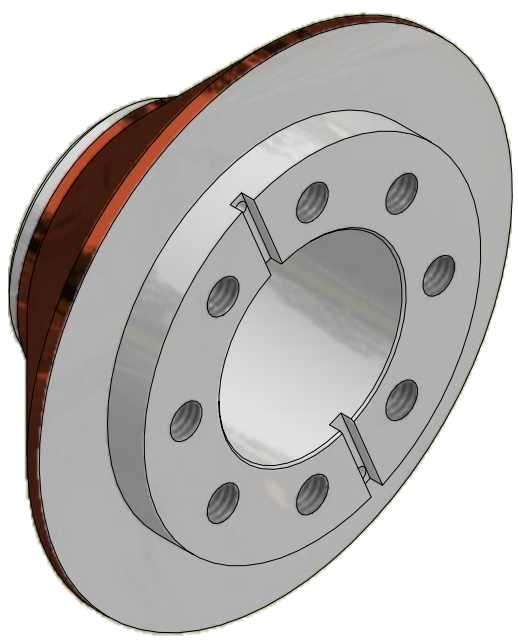


DETAIL BT
SCALE 5 : 1

- 16 WARM INNER CONDUCTOR, SUB-ASM
- FILE NAME: 7103-003
SHEET NO.: 18
DFT. SCALE: 1:1
MATERIAL: AS NOTED
QTY: 1 PER SUB-ASM
- NOTES: 1. BRAZE ALL PARTS IN CLEAN VACUUM FURNACE.
2. MACHINE AFTER BRAZING.
3. COPPER PLATE $5 \mu \pm 2 \mu$ ALL OUTER SURFACES EXCEPT SURFACES "B" AND "C".
4. AFTER COPPER PLATING, BAKE ASSEMBLY IN VACUUM AT 400°C FOR 2 HRS.







SECTION BR-BR



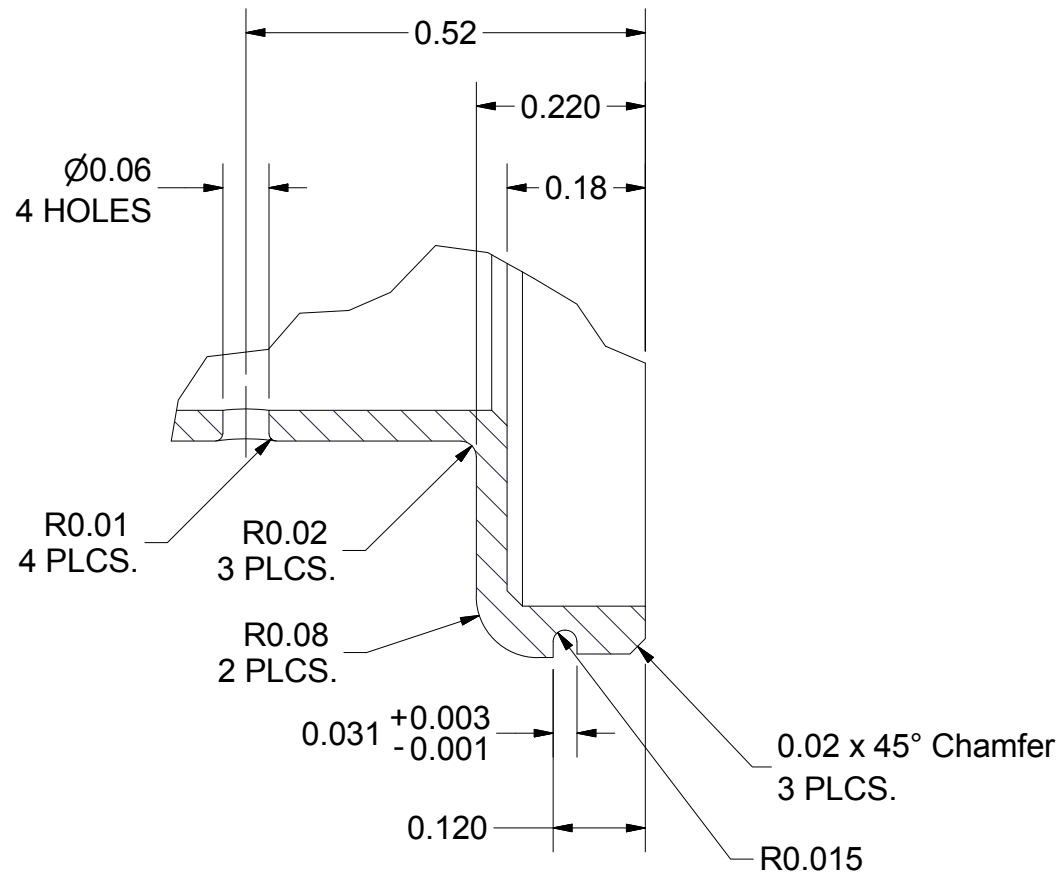
82 CONE FLANGE

FILE NAME: 7103-003
SHEET NO.: 18
DFT. SCALE: 1.5:1
MATERIAL: 316LN STN. STL.
QTY: 1 PER SUB-ASM
NOTES:

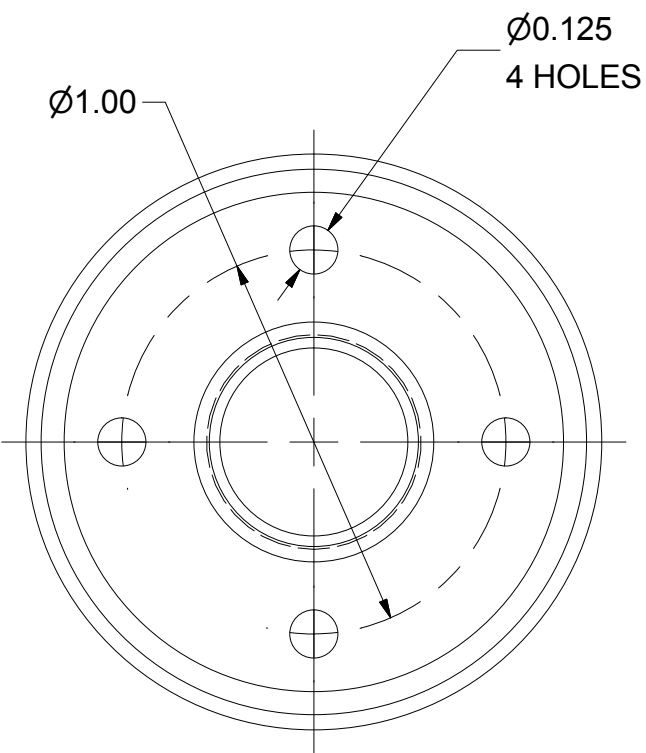
82	SHEET 18	CONE FLANGE	1				
81	SHEET 19	TUBE 5	1				
80	SHEET 19	TUBE 6	1				
79	SHEET 19	INNER PLUG	1				
78	SHEET 20	BELLOWS 1.33-0.92-4-0.005	2				
76	SHEET 19	INNER FLANGE	1				
16	SHEET 18	WARM INNER CONDUCTOR, SUB-ASM	X				

 		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.	
					QUANTITY					
D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw								
	CR-1	UNLESS OTHERWISE SPECIFIED:		<div><div><div>CORNELL UNIVERSITY</div><div></div><div>LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</div></div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div>						
	DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES 									
	7103-003		ERL MAIN LINAC COUPLER							
SH. NO. 18 OF 32		WARM INNER CONDUCTOR, SUB-ASSEMBLY AND DETAILS								
A	REV.	CHECKED BY: TIO		DRAWN BY	DRAWN FOR	DATE	SCALE	D	7103-003	REV. A
		APPROVED BY: VGV		VGV	SAB	6/24/2010				
								SH. NO. 18	OF 32	

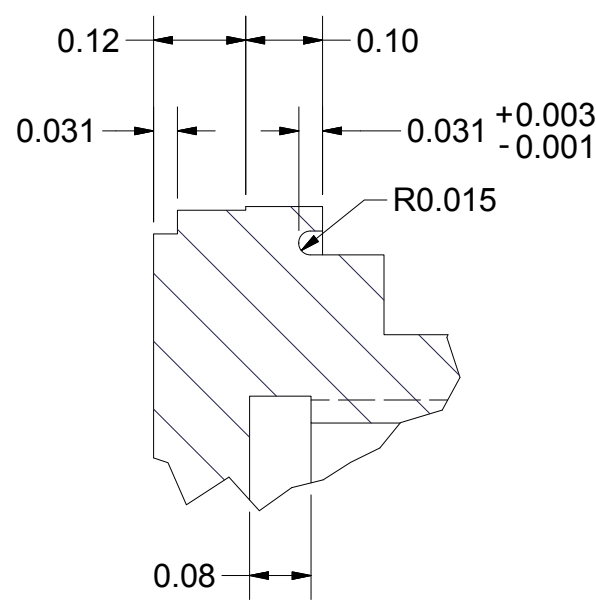
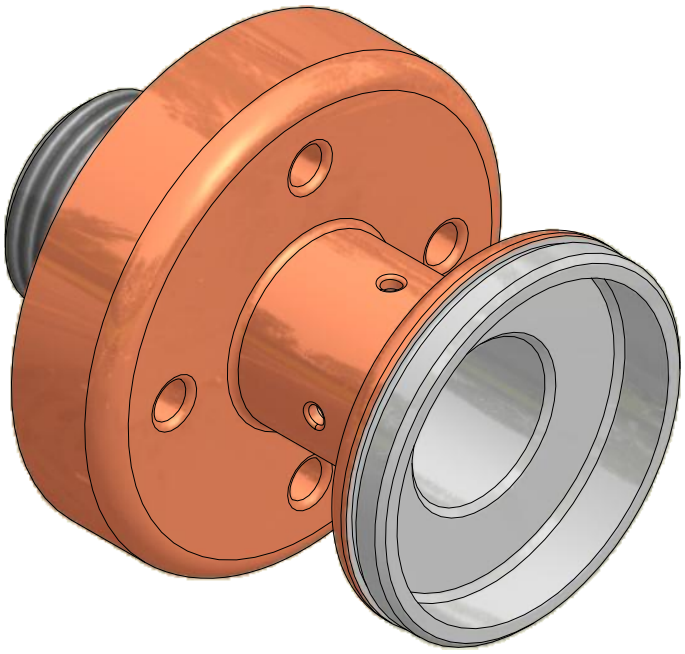
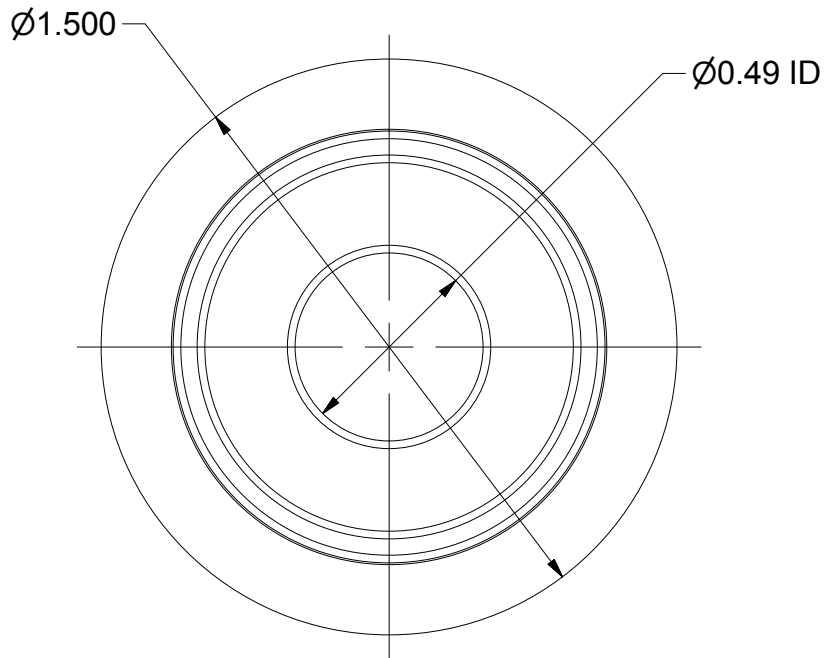
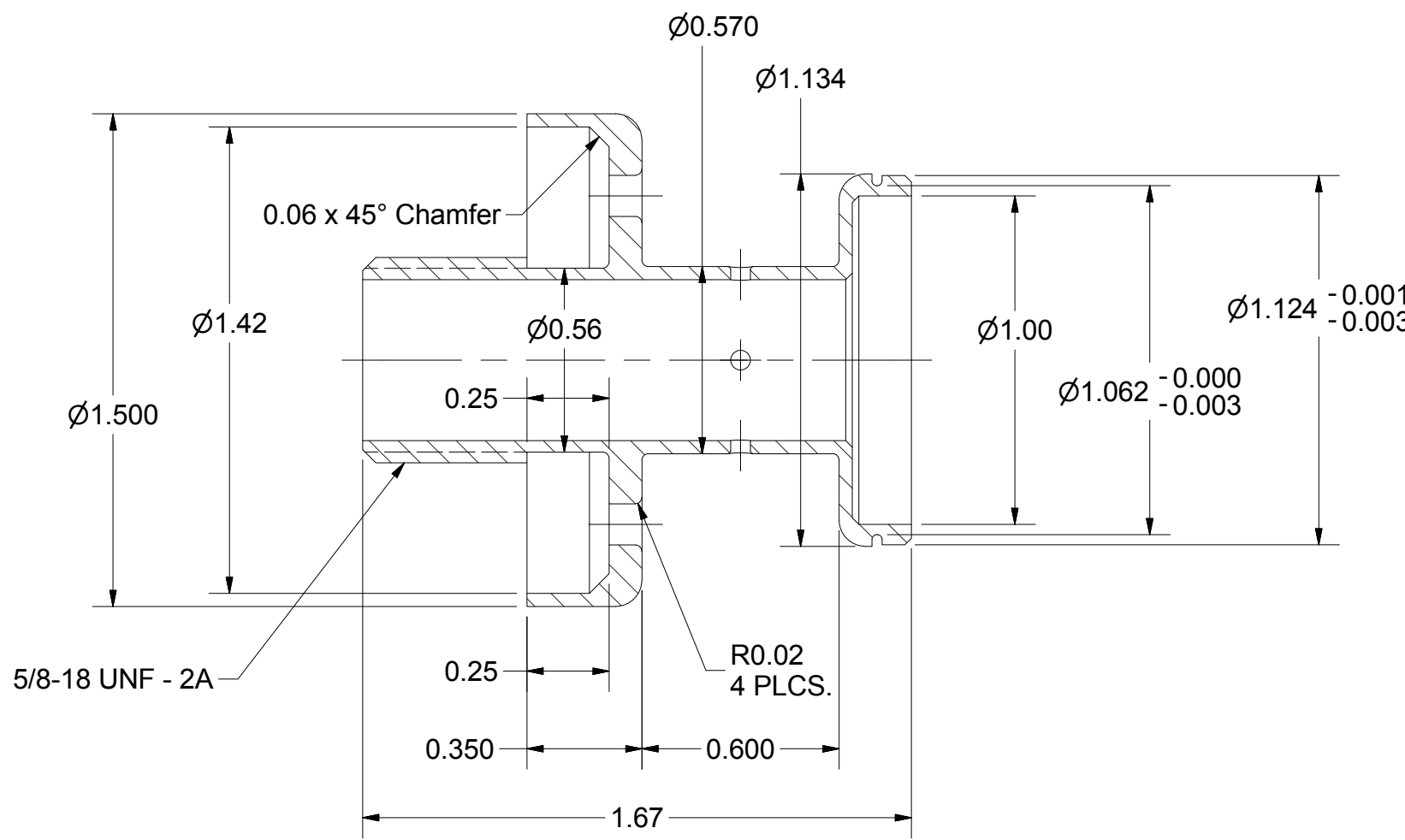
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO



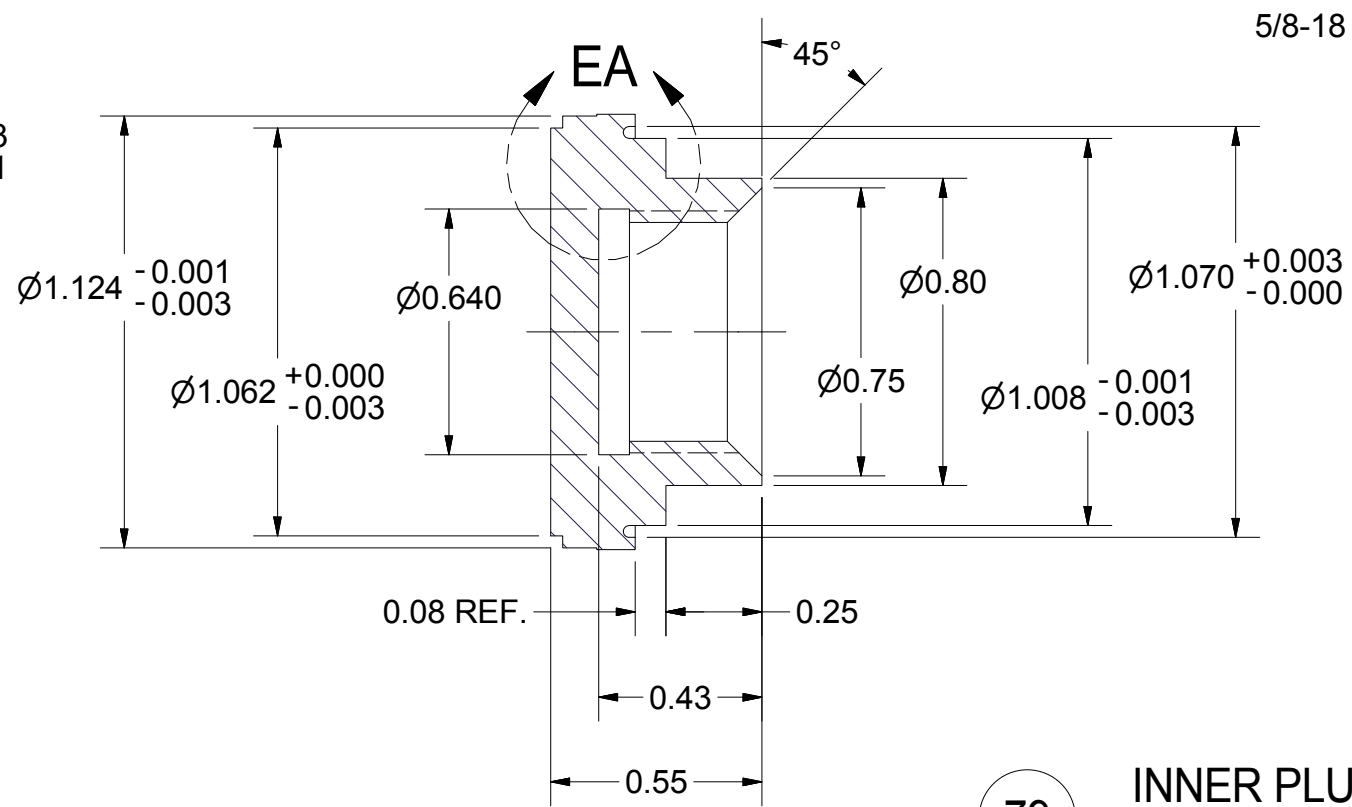
DETAIL FA
SCALE 4 : 1



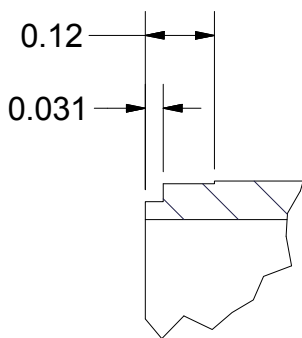
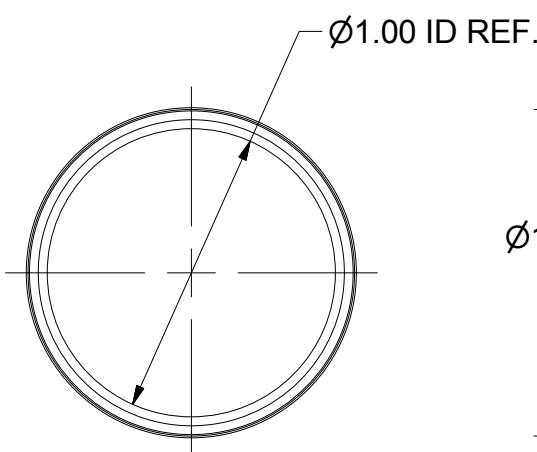
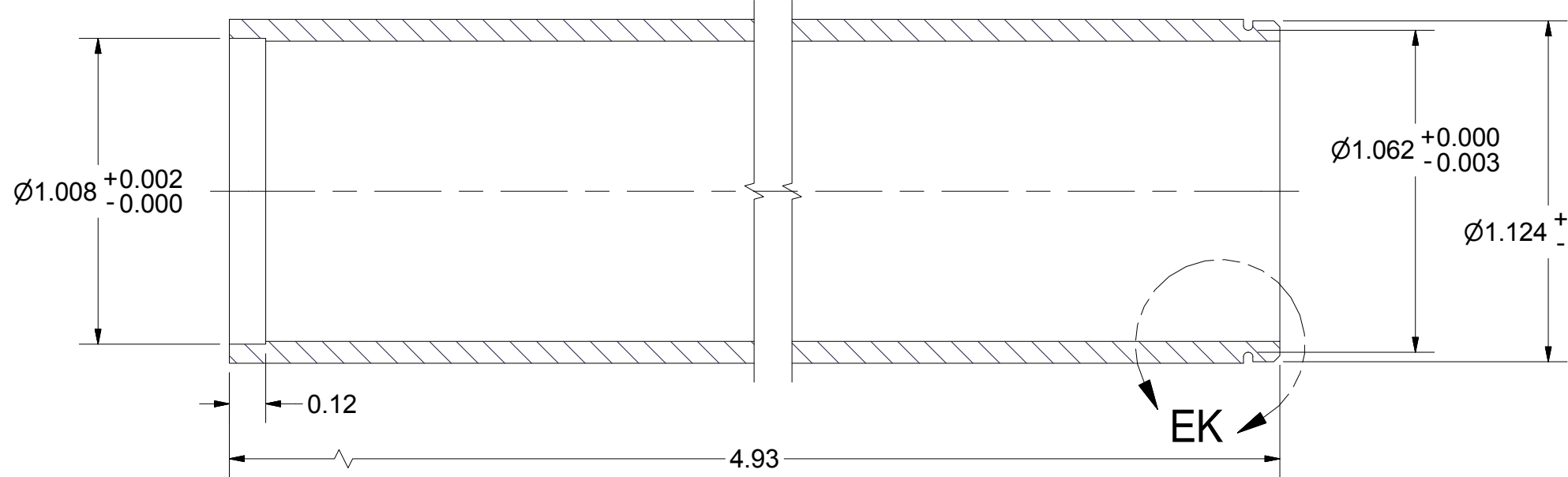
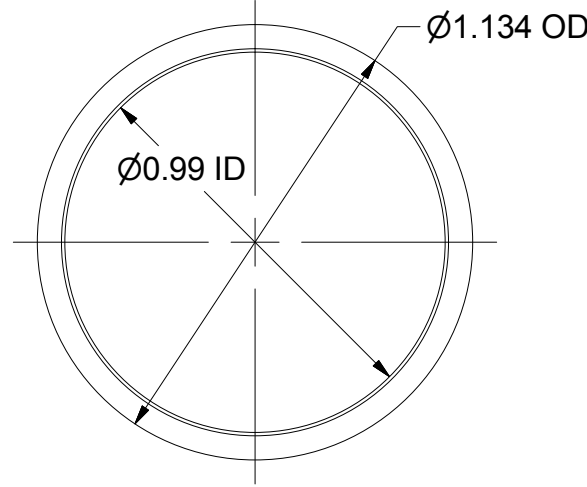
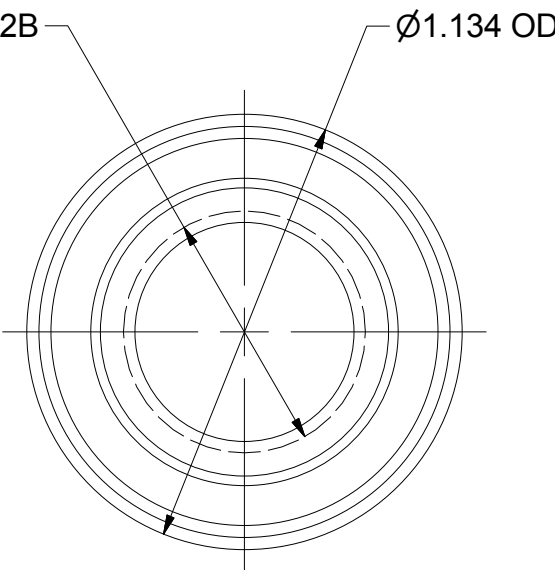
76 INNER FLANGE
FILE NAME: 7103-003
SHEET NO.: 19
DFT. SCALE: 2:1
MATERIAL: 316 STN. STL.
QTY: 1 PER SUB-ASM
NOTES:



DETAIL EA
SCALE 4 : 1



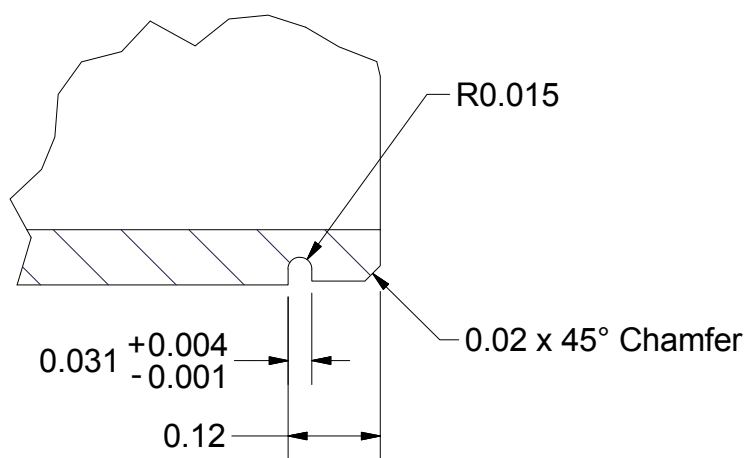
79 INNER PLUG
FILE NAME: 7103-003
SHEET NO.: 19
DFT. SCALE: 2:1
MATERIAL: 316 STN. STL.
QTY: 1 PER SUB-ASM
NOTES:









DETAIL EL
SCALE 3 : 1

81 TUBE 5
FILE NAME: 7103-003
SHEET NO.: 19
DFT. SCALE: 1.5:1
MATERIAL: 1.250 OD x 0.125 WALL OFHC COPPER TUBE
QTY: 1 PER SUB-ASM
NOTES:

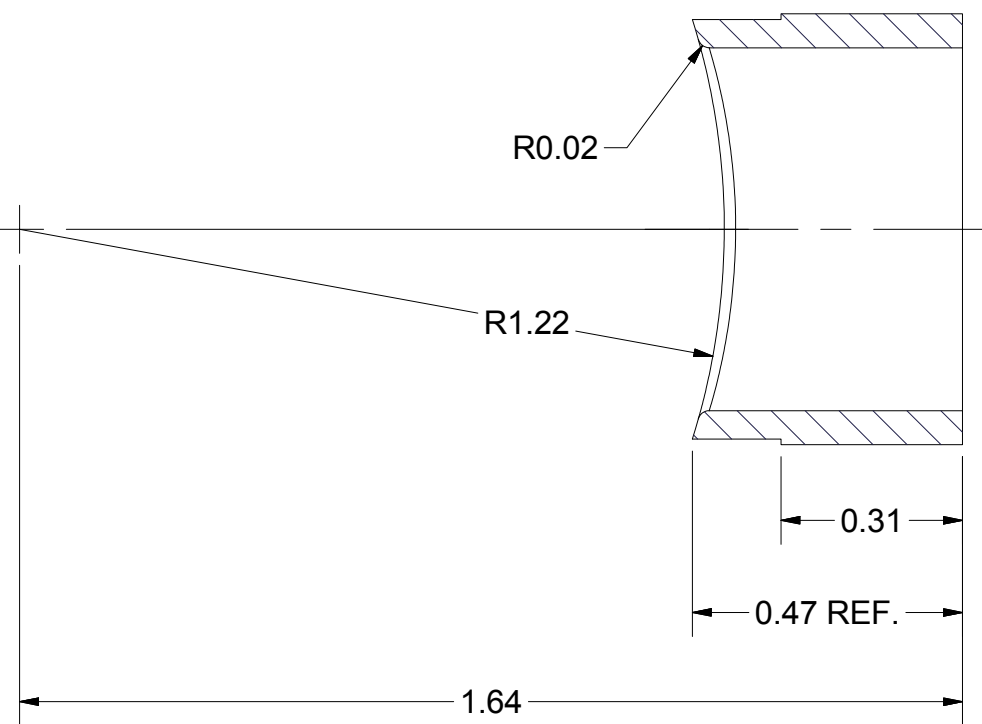
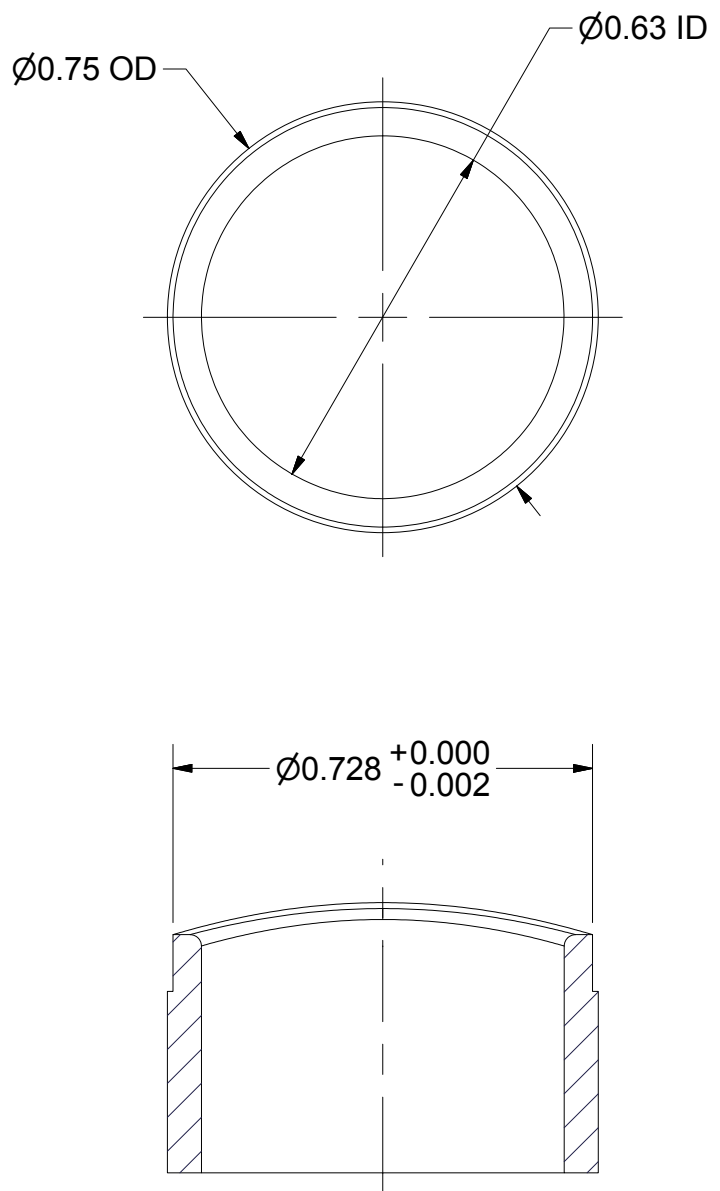
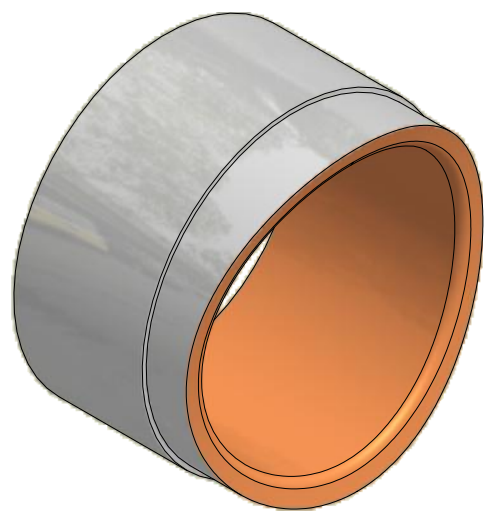
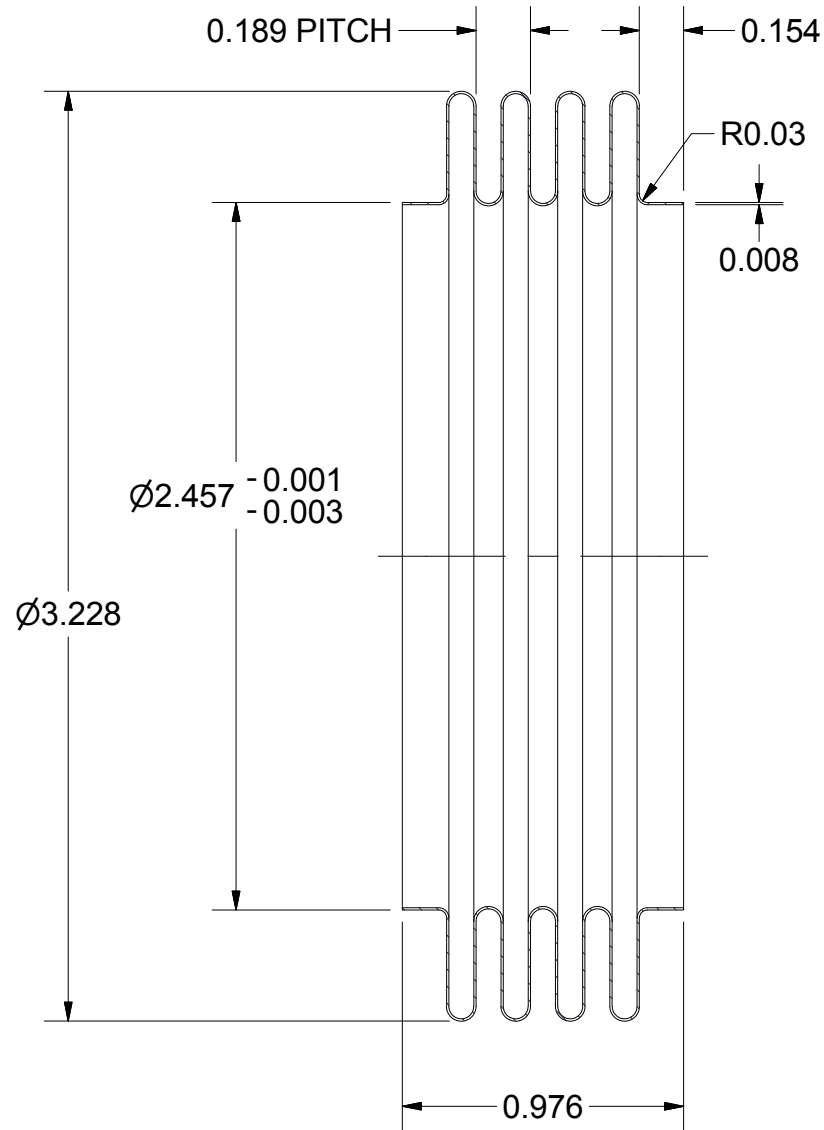
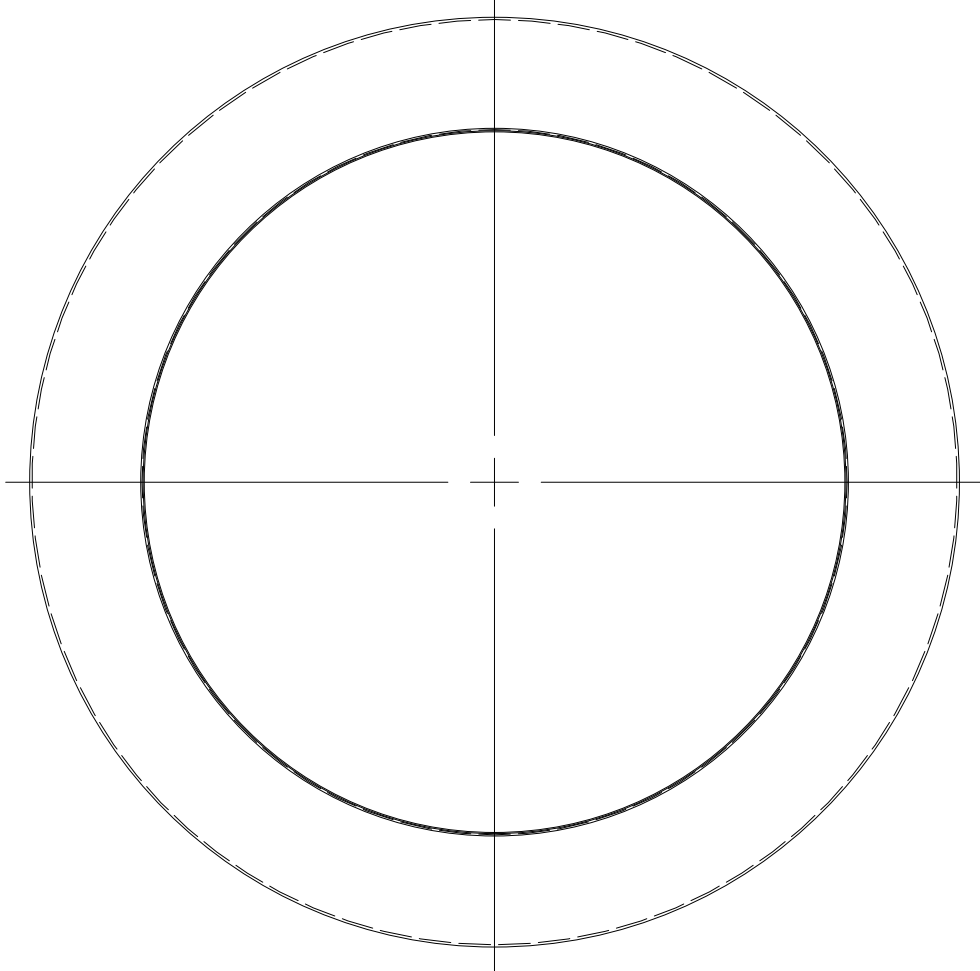
80 TUBE 6
FILE NAME: 7103-003
SHEET NO.: 19
DFT. SCALE: 2:1
MATERIAL: 316 STN. STL.
QTY: 1 PER SUB-ASM
NOTES:



DETAIL EK
SCALE 4 : 1

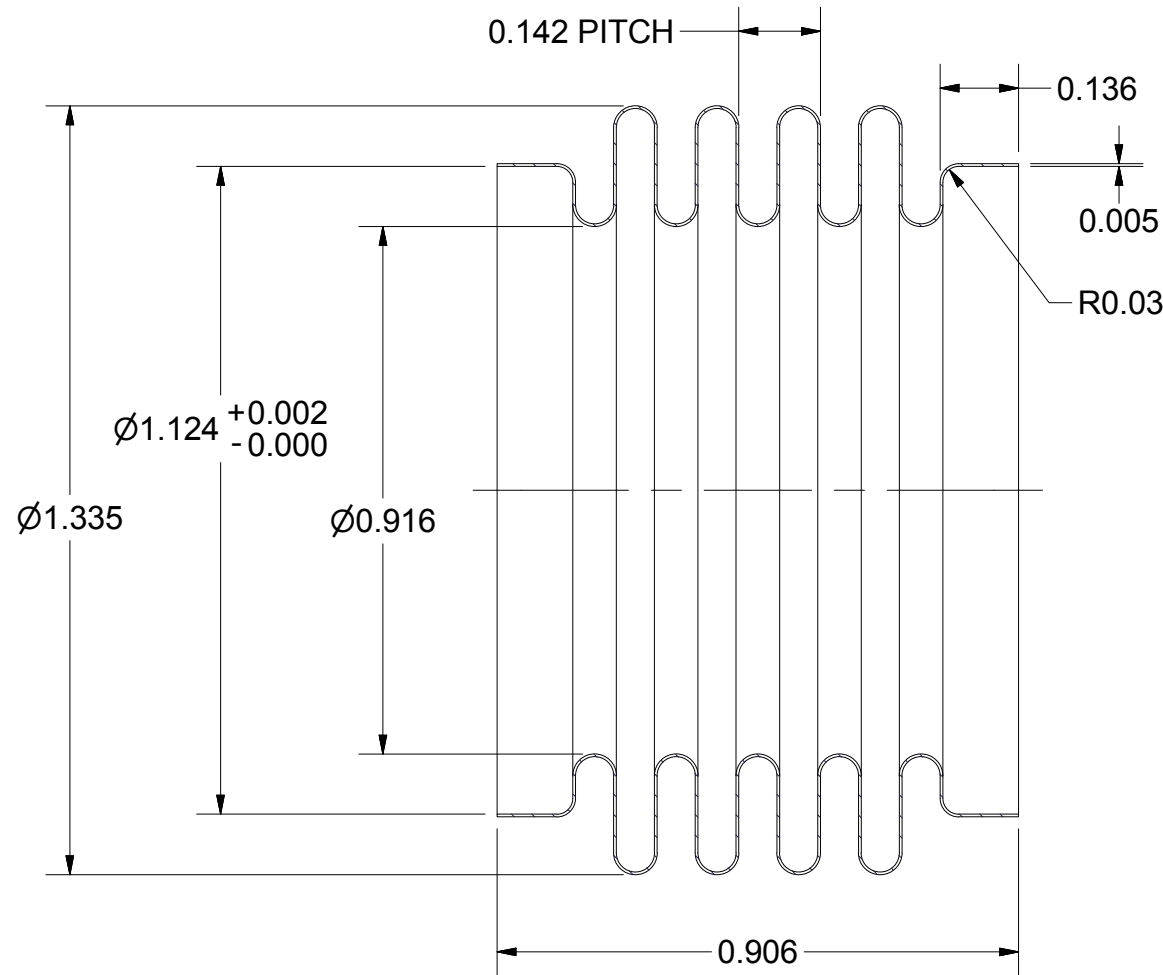
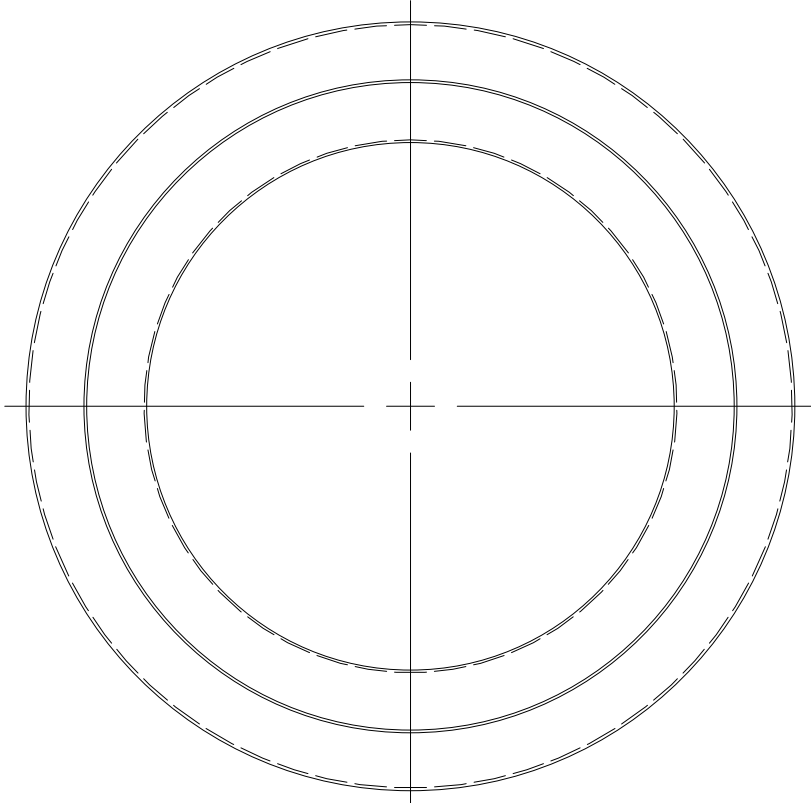
		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.
								QUANTITY			
 D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw									
	CR-1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES 		 CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853							
	ERL MAIN LINAC COUPLER WARM INNER CONDUCTOR, DETAILS										
	SH. NO. 19 OF 32 7103-003	REV. A	CHECKED BY: TIO	DRAWN BY VGV	DRAWN FOR SAB	DATE 6/24/2010	SCALE	 D	7103-003 SH. NO. 19 OF 32		REV. A
APPROVED BY: VGV											

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO

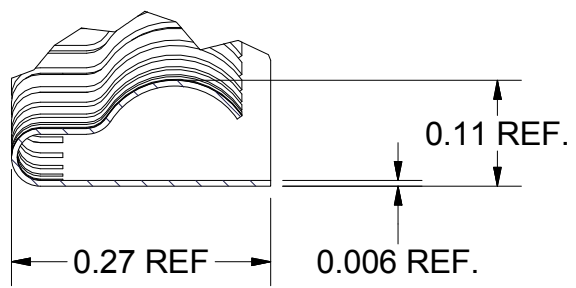
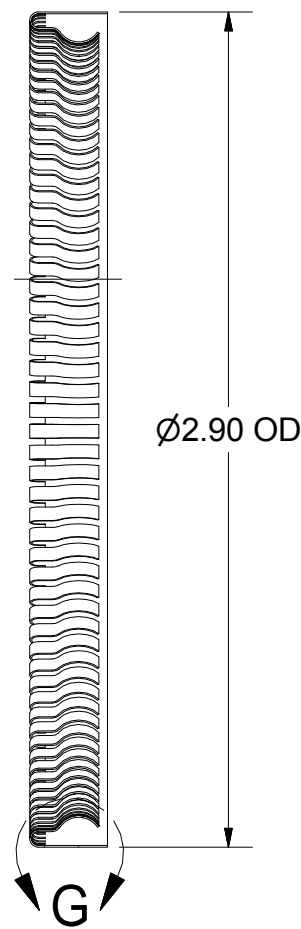
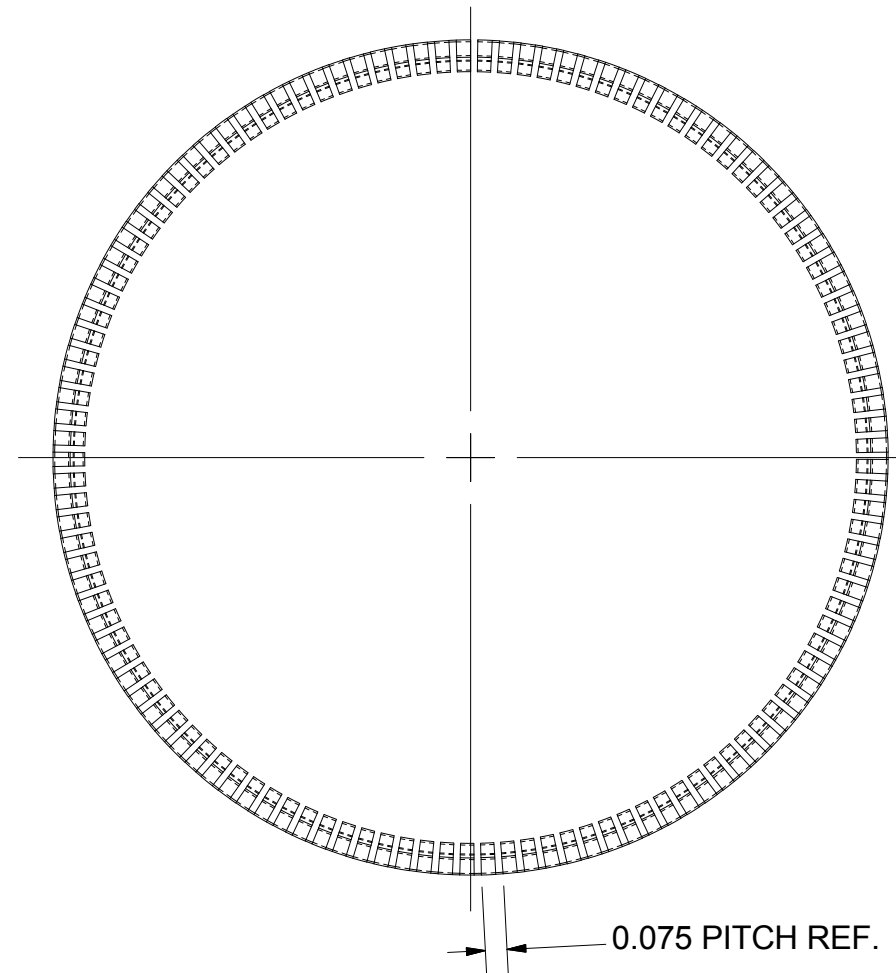
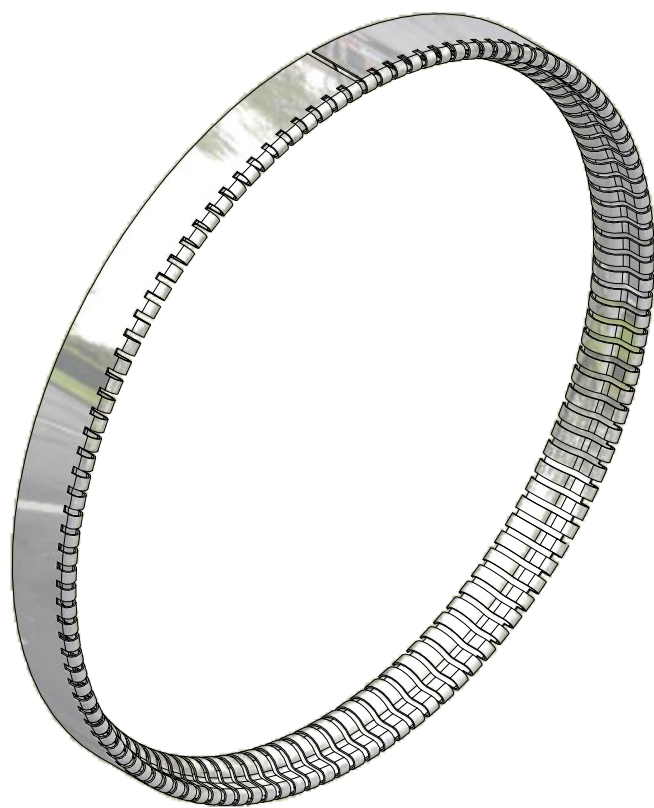


61 BELLOWS 3.22-2.44-4-0.008
FILE NAME: 7103-003
SHEET NO.: 20
DFT. SCALE: 1.51
MATERIAL: 316 STN. STL.
QTY: 2 PER SUB-ASM
NOTES: 1. NUMBER OF CONVOLUTIONS N = 4.

66 INSTRUMENTATION PORT TUBE
FILE NAME: 7103-003
SHEET NO.: 20
DFT. SCALE: 3:1
MATERIAL: 316 STN. STL.
QTY: 2 PER SUB-ASM
NOTES:






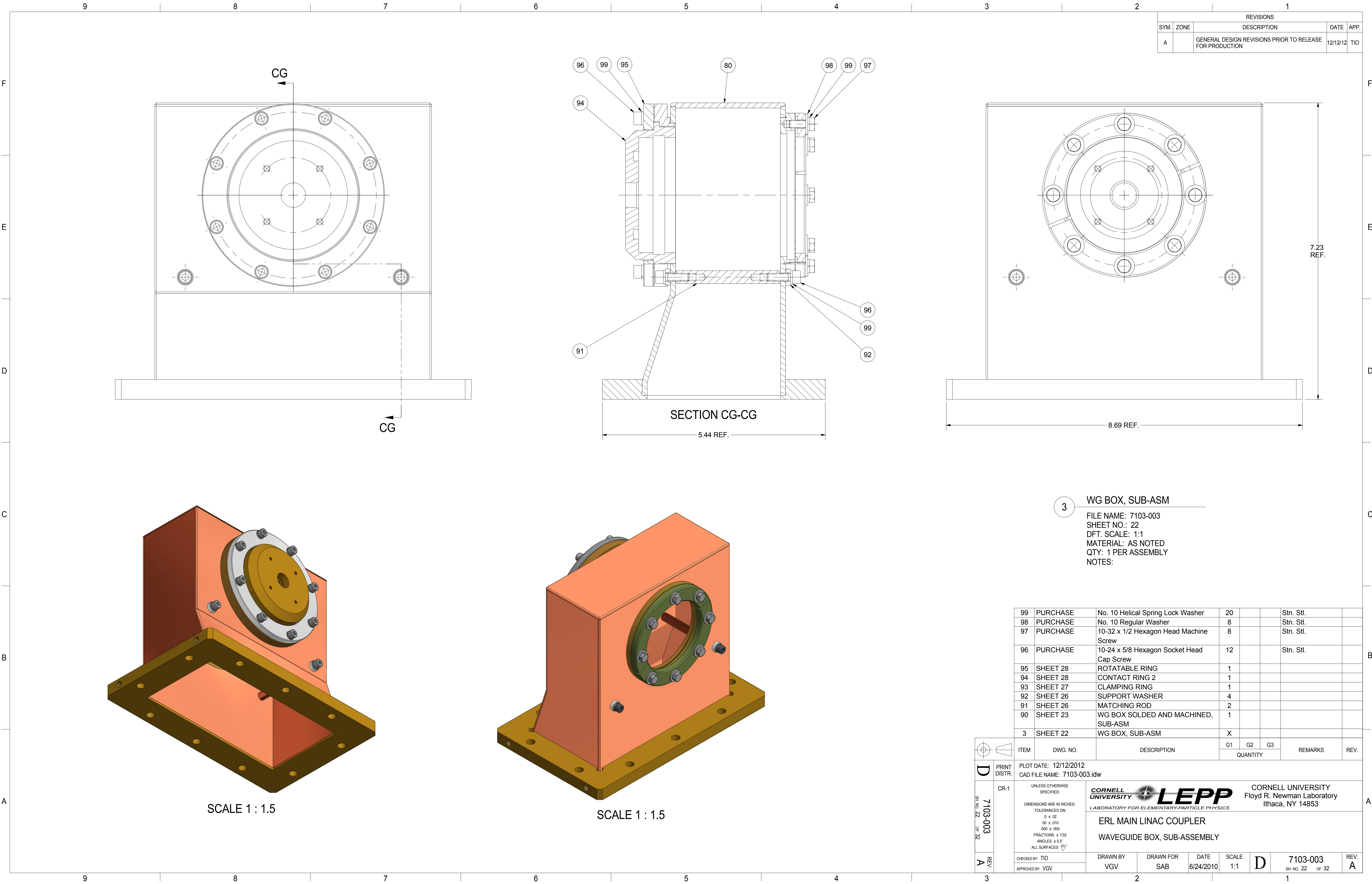
78 BELLOWS 1.33-0.92-4-0.005
FILE NAME: 7103-003
SHEET NO.: 20
DFT. SCALE: 3:1
MATERIAL: 316 STN. STL.
QTY: 2 PER SUB-ASM
NOTES: 1. NUMBER OF CONVOLUTIONS N = 4.



DETAIL G
SCALE 5 : 1

7 FINGER CONTACT
FILE NAME: 7103-003
SHEET NO.: 20
DFT. SCALE: 1.5:1
MATERIAL: ORDER FROM LAIRD TECHNOLOGIES: PART NO. 97-361-12
QTY: 1 PER ASSEMBLY + 3 SPARE
NOTES: 1. MADE FROM STRIP STOCK 97-360-12 (BERYLLIUM COPPER, SILVER PLATED WITH SILVER CONTIPS).
2. NUMBER OF FINGERS = 121.

		ITEM		DWG. NO.		DESCRIPTION		G1		G2		G3		REMARKS		REV.	
								QUANTITY									
D		PRINT DISTR.		PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw													
7103-003 SH. NO. 20 OF 32		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><div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div><div>ERL MAIN LINAC COUPLER DETAILS</div></div>													
				CHECKED BY: TIO APPROVED BY: VGV													
REV. A				DRAWN BY VGV		DRAWN FOR SAB		DATE 6/24/2010		SCALE		D		7103-003 SH. NO. 20 OF 32		REV. A	

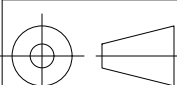




REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO

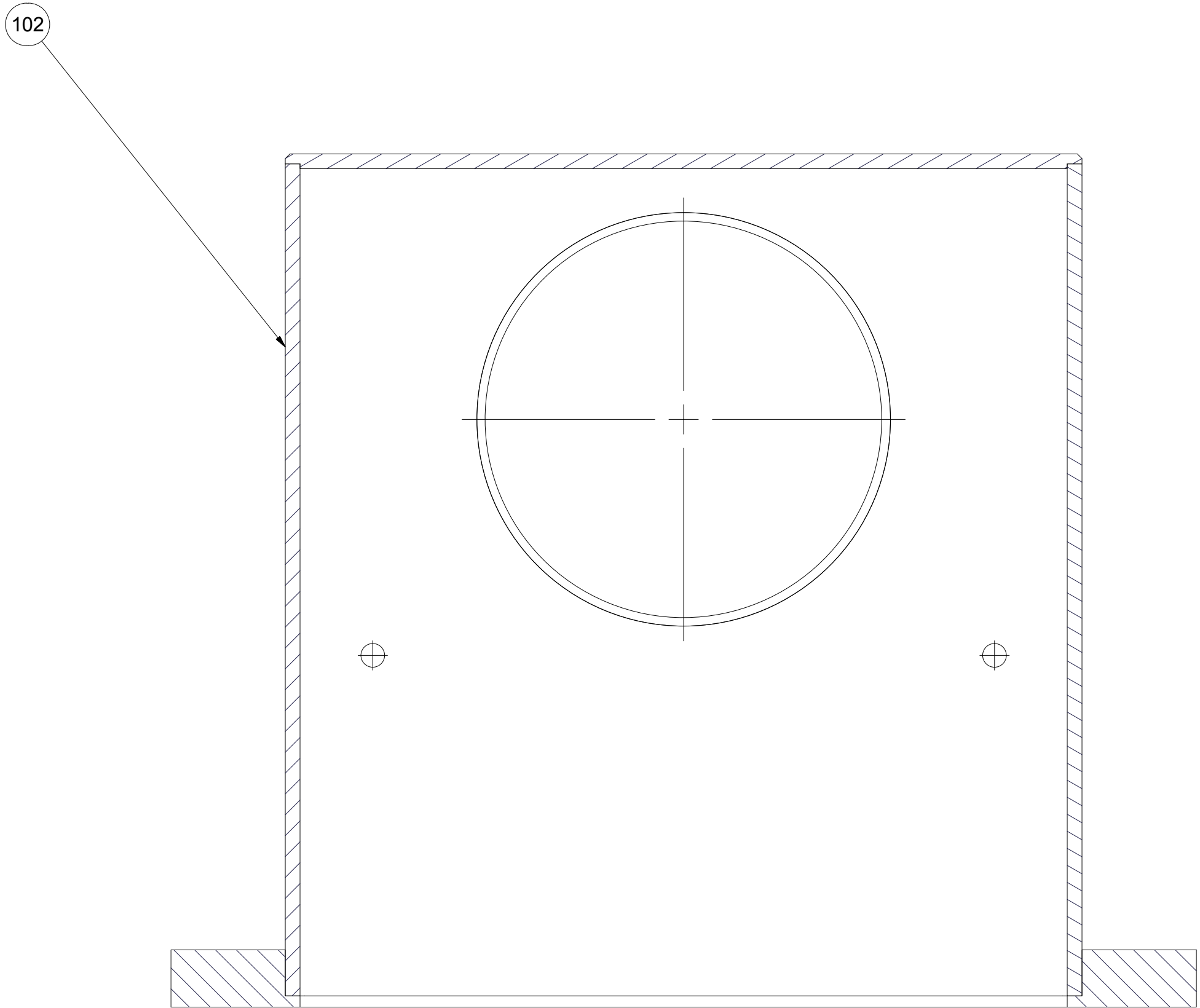
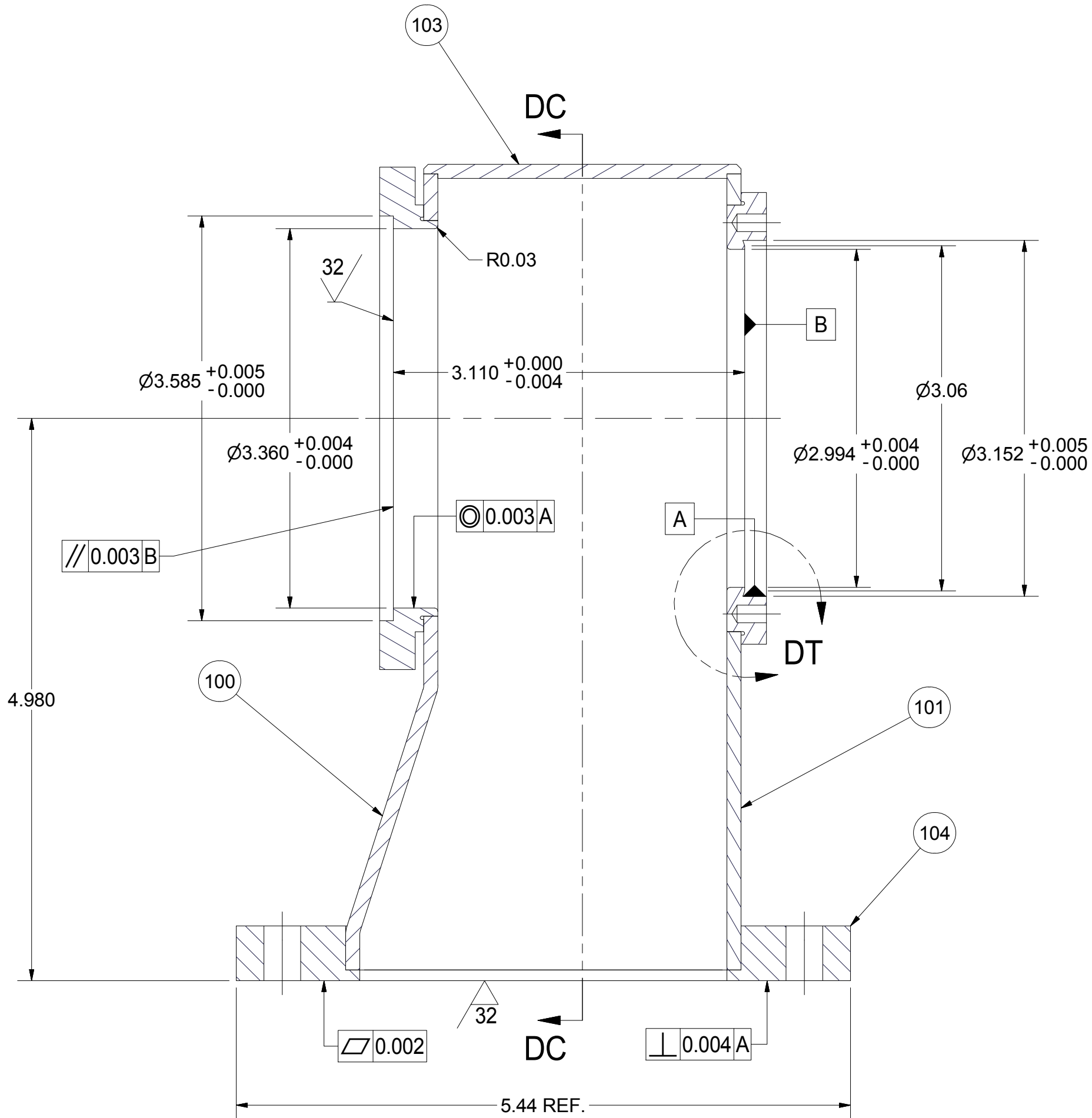
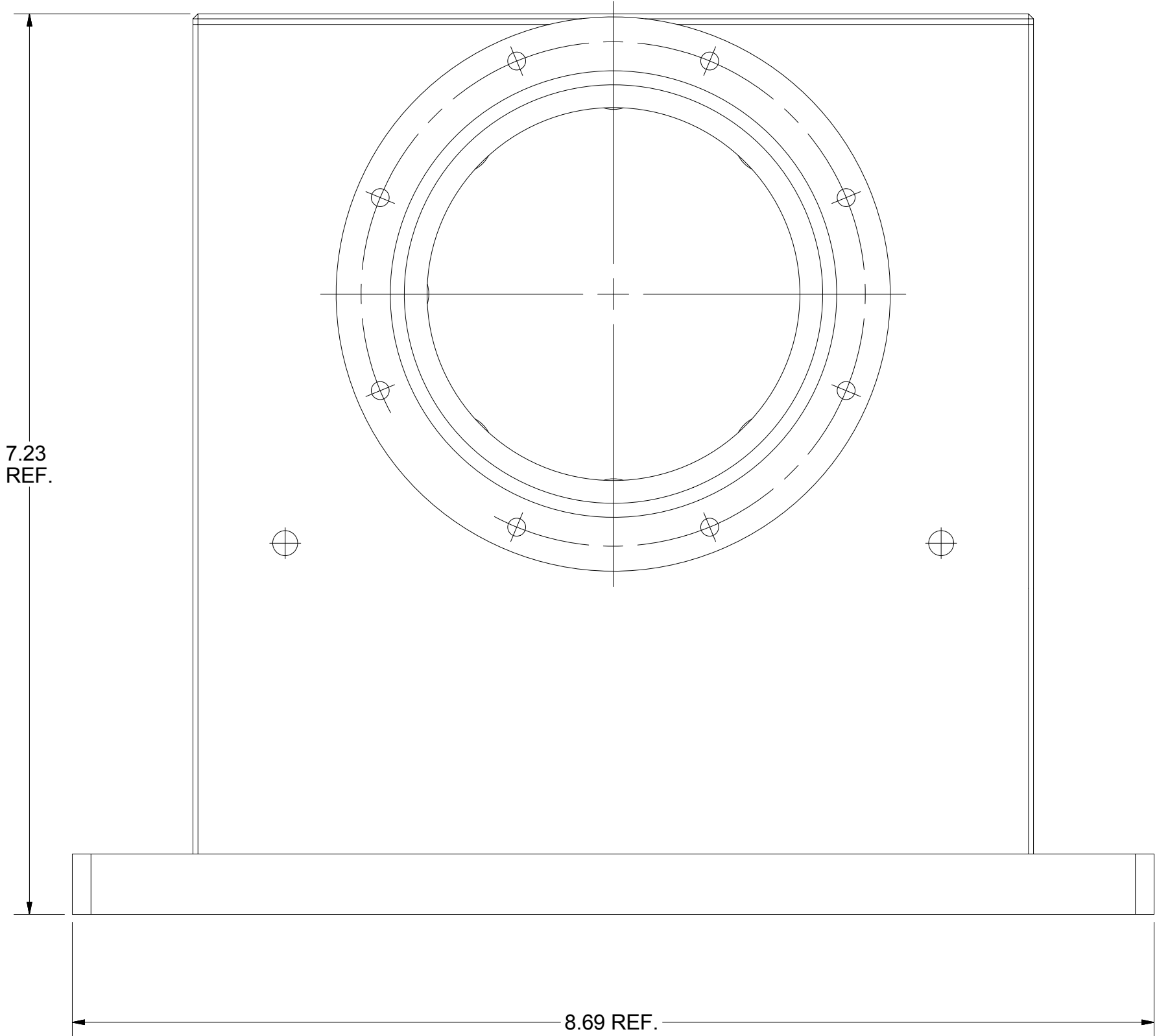
3 WG BOX, SUB-ASM

FILE NAME: 7103-003
SHEET NO.: 22
DFT. SCALE: 1:1
MATERIAL: AS NOTED
QTY: 1 PER ASSEMBLY
NOTES:

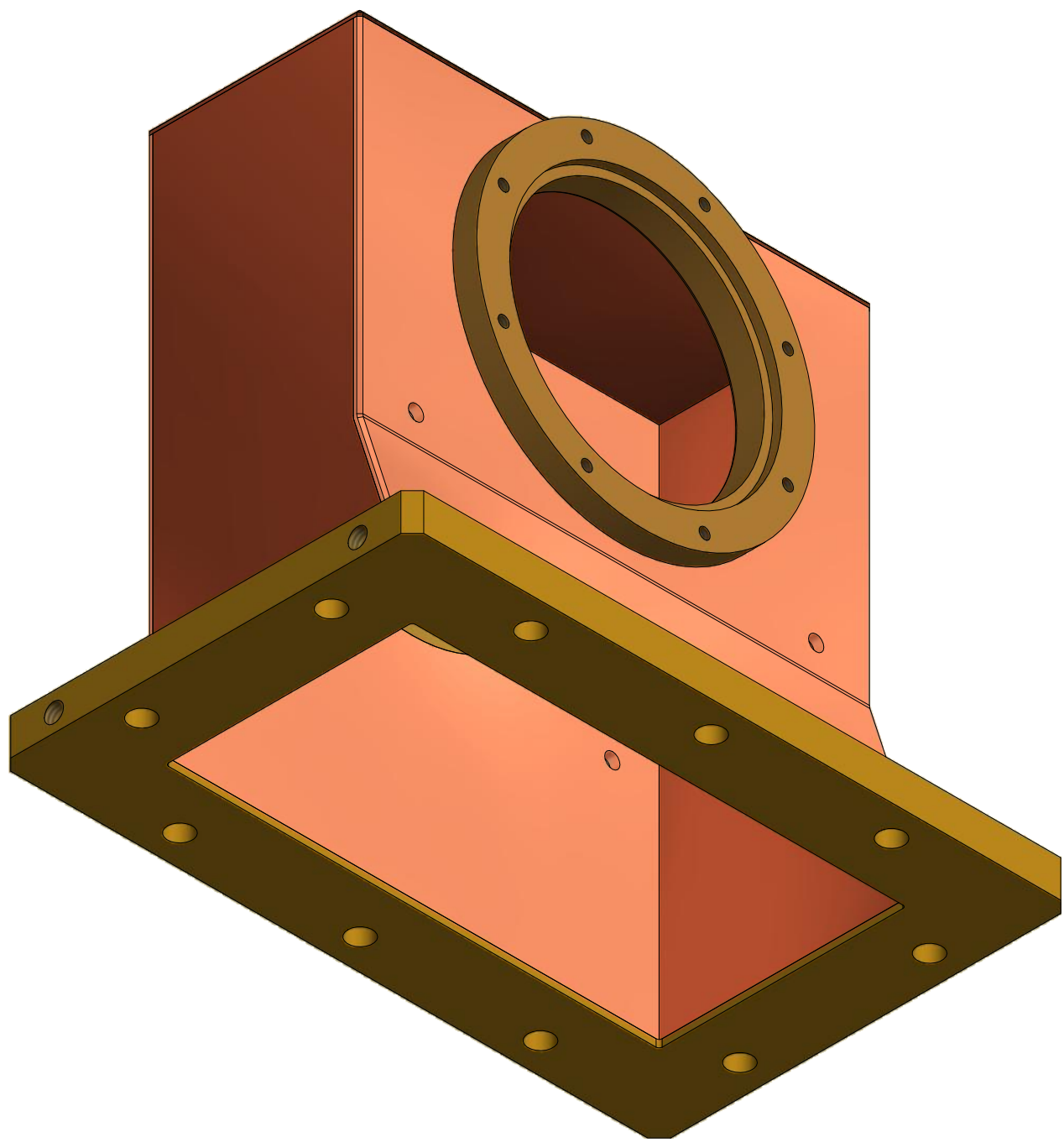
99	PURCHASE	No. 10 Helical Spring Lock Washer	20			Stn. Stl.	
98	PURCHASE	No. 10 Regular Washer	8			Stn. Stl.	
97	PURCHASE	10-32 x 1/2 Hexagon Head Machine Screw	8			Stn. Stl.	
96	PURCHASE	10-24 x 5/8 Hexagon Socket Head Cap Screw	12			Stn. Stl.	
95	SHEET 28	ROTATABLE RING	1				
94	SHEET 28	CONTACT RING 2	1				
93	SHEET 27	CLAMPING RING	1				
92	SHEET 26	SUPPORT WASHER	4				
91	SHEET 26	MATCHING ROD	2				
90	SHEET 23	WG BOX SOLDED AND MACHINED, SUB-ASM	1				
3	SHEET 22	WG BOX, SUB-ASM	X				

		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.					
					QUANTITY									
D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.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><div><div>CORNELL UNIVERSITY</div><div></div><div>LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</div></div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div>								
7103-003 SH. NO. 22 OF 32	REV. A	CHECKED BY: TIO				DRAWN BY: VGV		DRAWN FOR: SAB		DATE: 6/24/2010	SCALE: 1:1	D	7103-003 SH. NO. 22 OF 32	REV. A
		APPROVED BY: VGV												

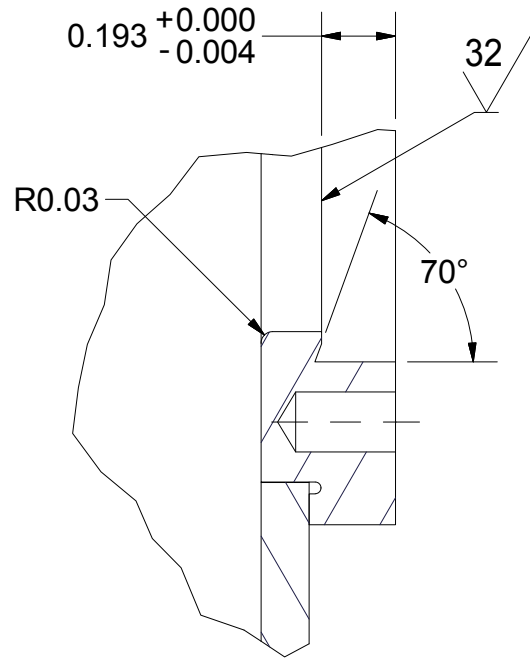
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO



SECTION DC-DC






SCALE 1 : 1.5



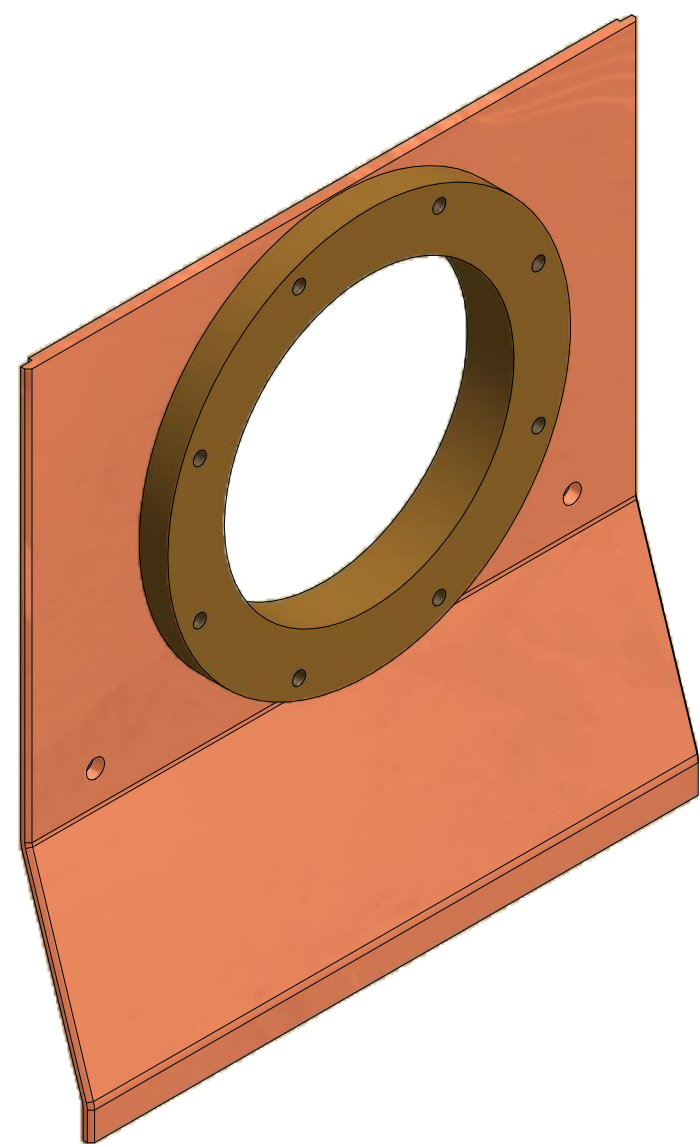
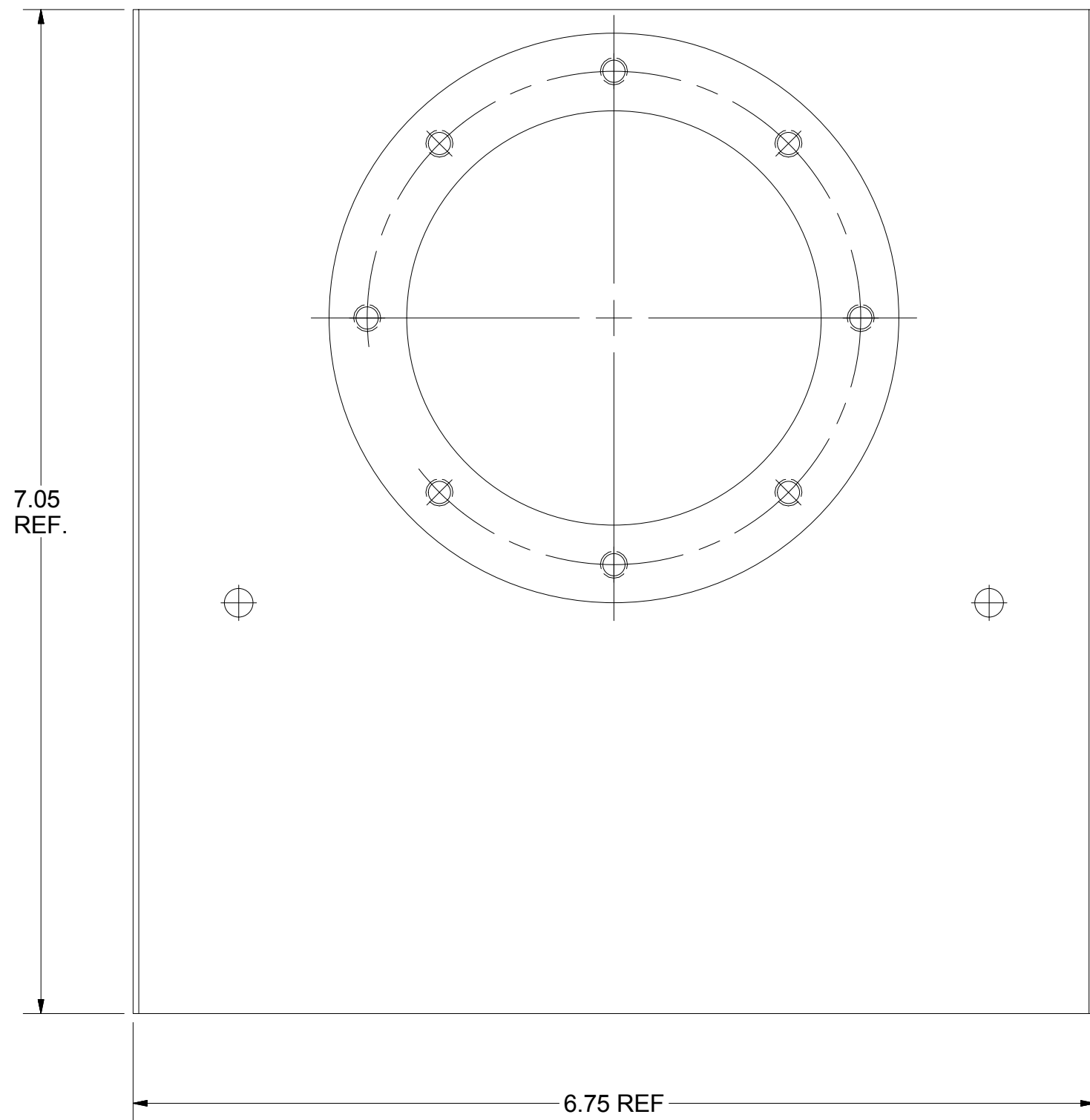
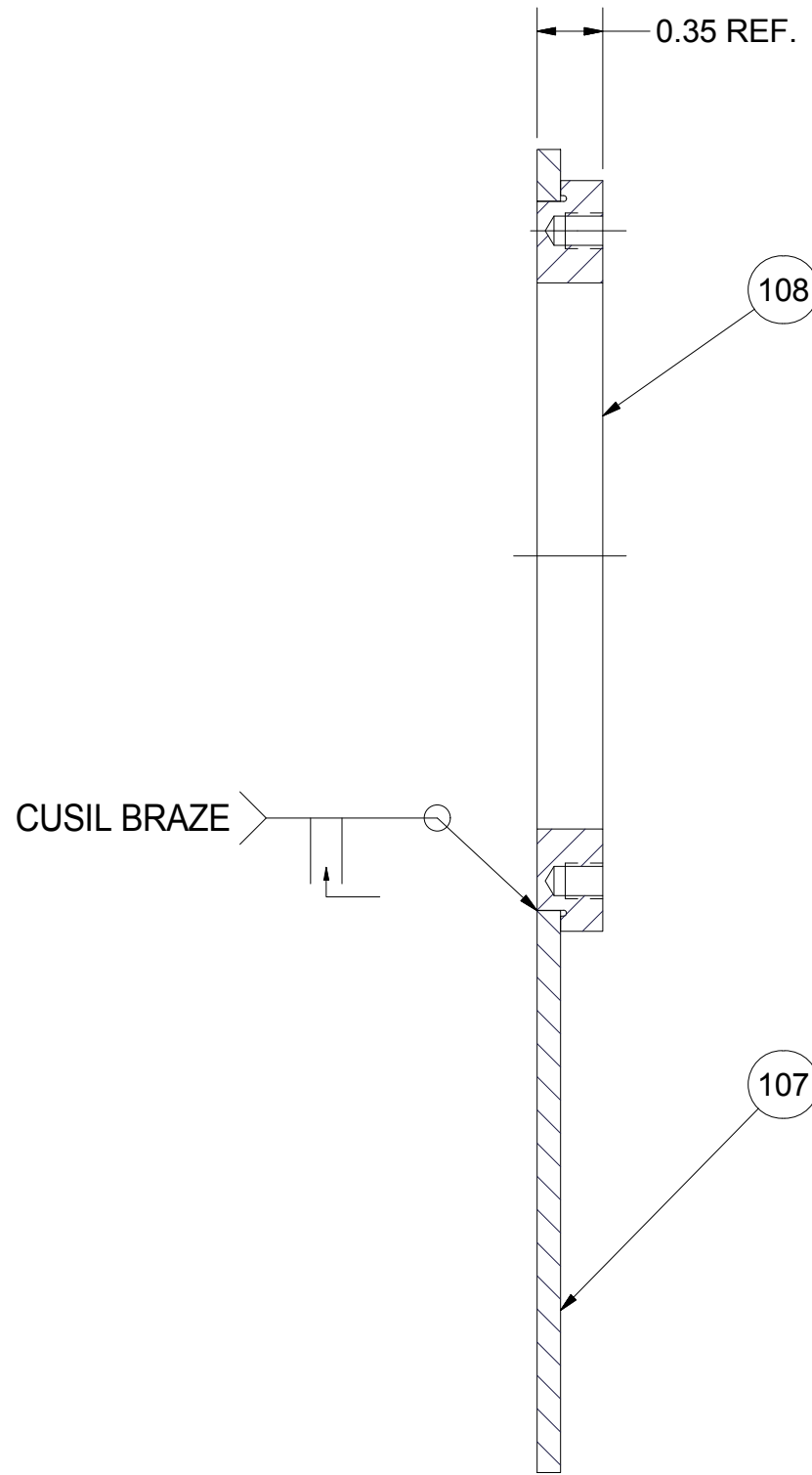
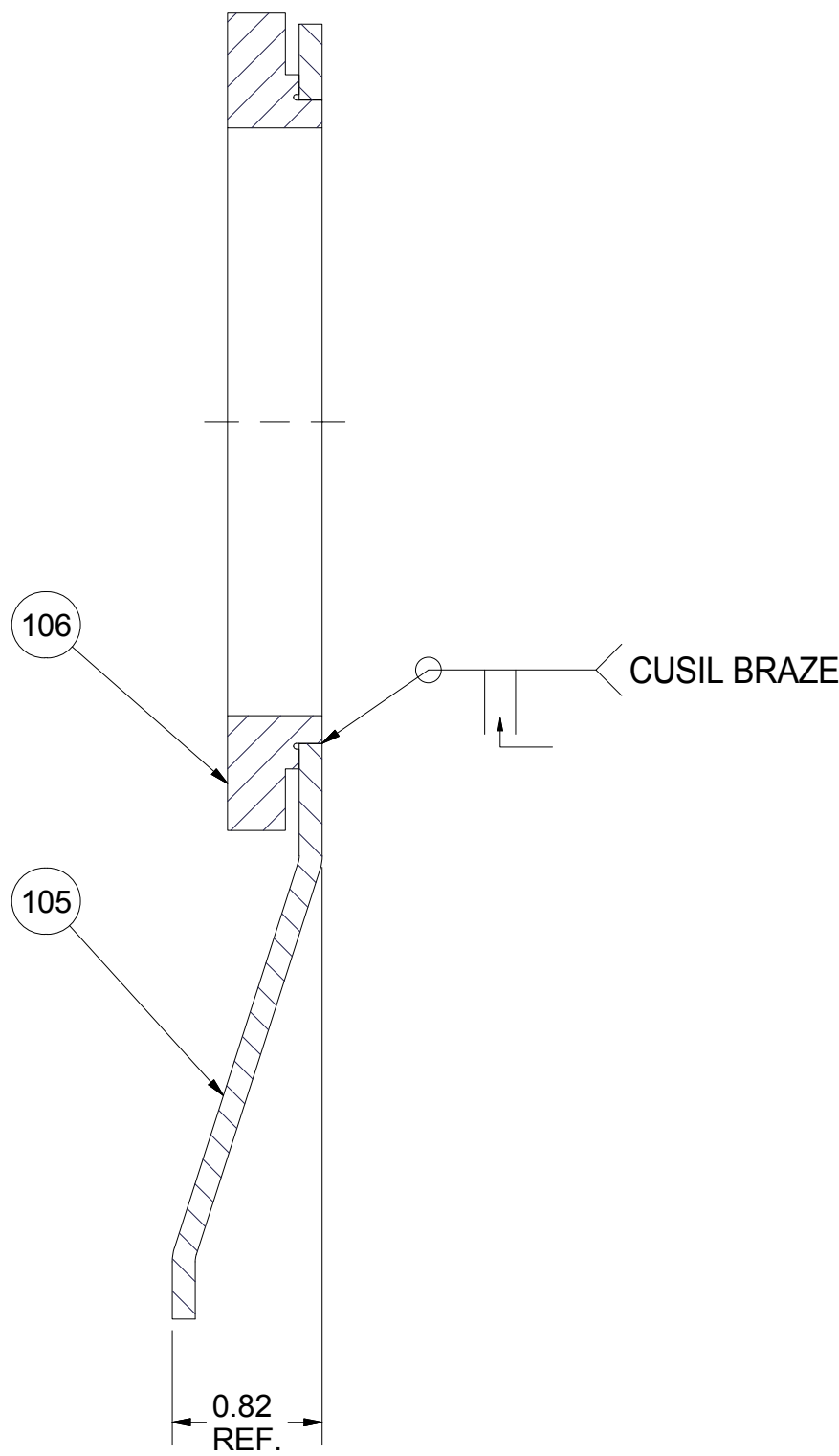
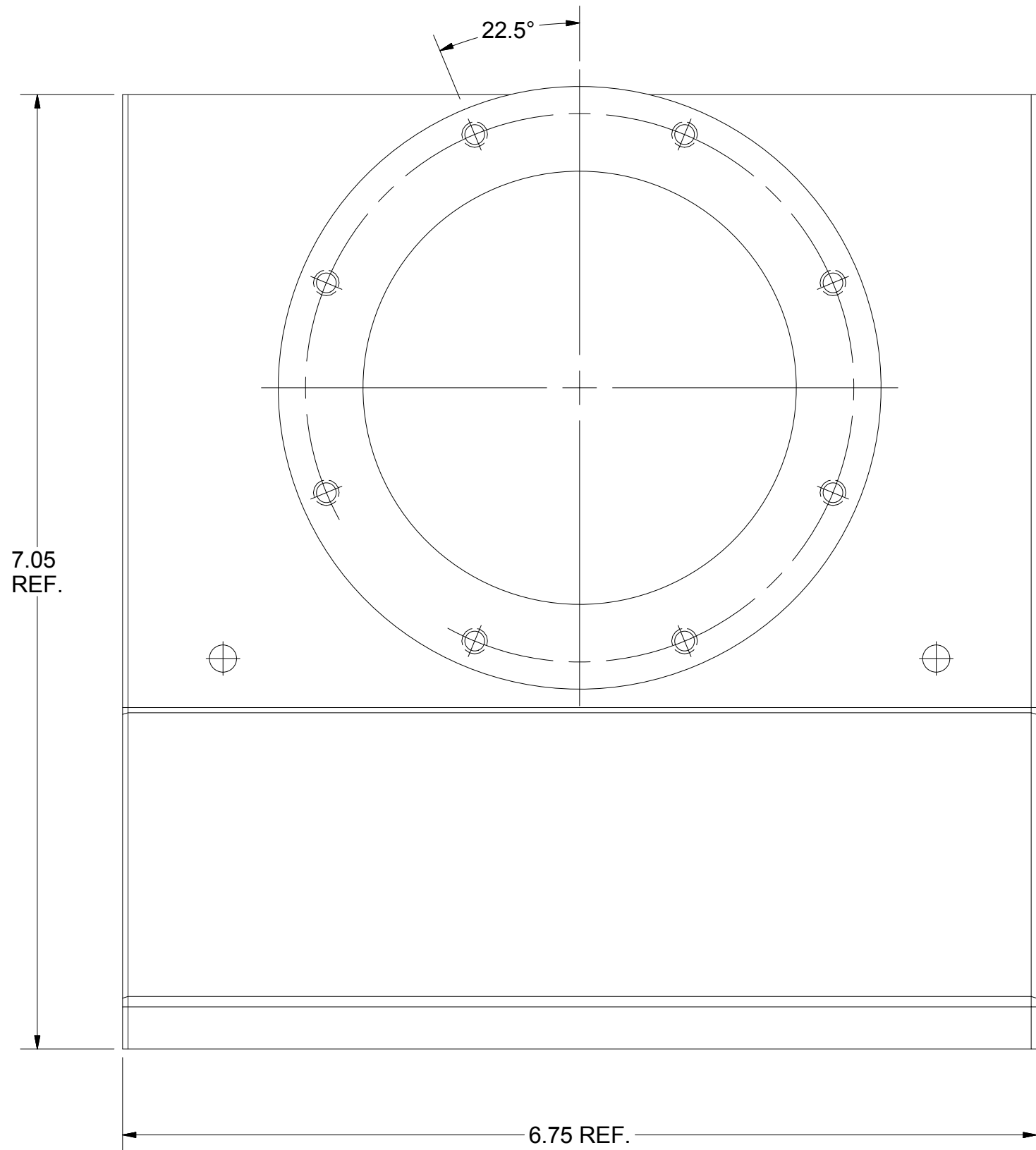
DETAIL DT
SCALE 2 : 1

90 WG BOX SOLDDED AND MACHINED, SUB-ASM
FILE NAME: 7103-003
SHEET NO.: 23
DFT. SCALE: 1:1
MATERIAL: AS NOTED
QTY: 1 PER SUB-ASM
NOTES: 1. SOLDER ALL PARTS TOGETHER.
2. MACHINE AFTER SOLDERING.

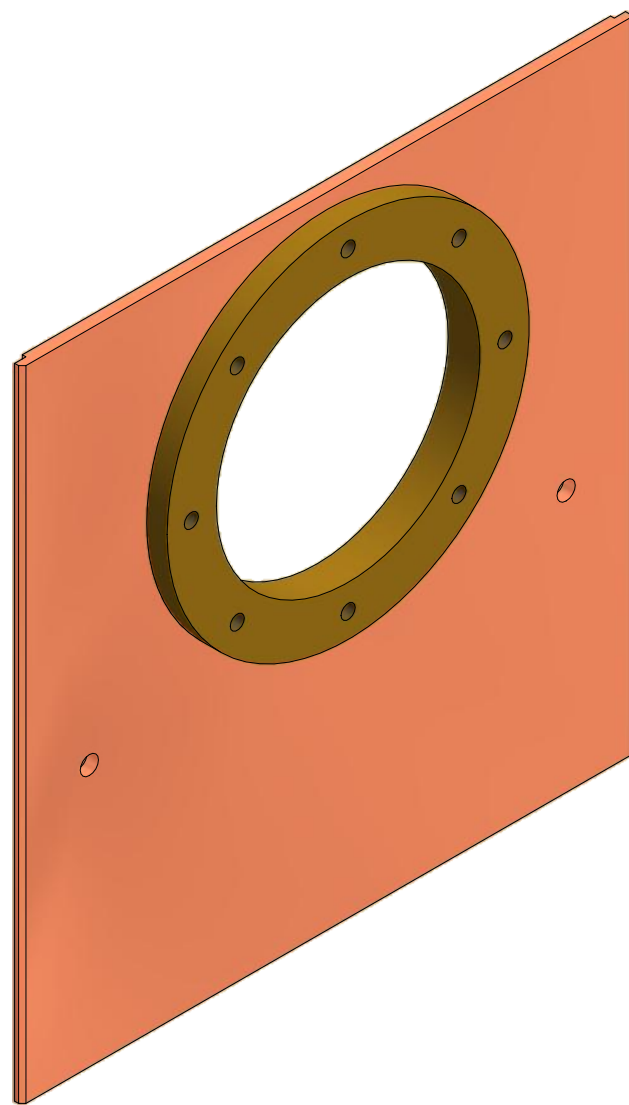
104	SHEET 27	RECTANGULAR FLANGE	1					
103	SHEET 26	TOP PANEL	1					
102	SHEET 26	SIDE WALL	2					
101	SHEET 24	WG BOX BACK PANEL, SUB-ASM	1					
100	SHEET 24	WG BOX FRONT PANEL, SUB-ASM	1					
90	SHEET 23	WG BOX SOLDDED AND MACHINED, SUB-ASM	X					

		ITEM		DWG. NO.		DESCRIPTION			G1		G2		G3		REMARKS		REV.	
									QUANTITY									
<div>D</div> <div>PRINT DISTR.</div>		PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.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><div><div>CORNELL UNIVERSITY</div><div></div><div>LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</div></div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div>											
<div>7103-003</div> <div>SH. NO. 23 OF 32</div>		ERL MAIN LINAC COUPLER WG BOX BRAZED AND MACHINED, SUB-ASSEMBLY																
		CHECKED BY: TIO		DRAWN BY: VGV		DRAWN FOR: SAB		DATE: 6/24/2010		SCALE: 1:1		D		7103-003 SH. NO. 23 OF 32		REV. A		
<div>A</div> <div>REV.</div>		APPROVED BY: VGV																

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO

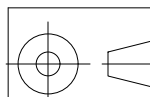


100 WG BOX FRONT PANEL, SUB-ASM
FILE NAME: 7103-003
SHEET NO.: 24
DFT. SCALE: 1:1
MATERIAL: AS NOTED
QTY: 1 PER SUB-ASM
NOTES:



101 WG BOX BACK PANEL, SUB-ASM
FILE NAME: 7103-003
SHEET NO.: 24
DFT. SCALE: 1:1
MATERIAL: AS NOTED
QTY: 1 PER SUB-ASM
NOTES:

108	SHEET 28	CONTACT RING 1		1			
107	SHEET 25	BACK PANEL		1			
101	SHEET 24	WC BOX BACK PANEL, SUB-ASM		X			
106	SHEET 28	FRONT FLANGE	1				
105	SHEET 25	FRONT PANEL	1				
100	SHEET 24	WG BOX FRONT PANEL, SUB-ASM	X				



D

7103-003

SH. NO. 24 OF 32

REV. A

PRINT

DISTR.

PLOT DATE: 12/12/2012

CAD FILE NAME: 7103-003.idw

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES;

TOLERANCES ON:

.0 ± .02

.00 ± .010

.000 ± .005

FRACTIONS ± 1/32

ANGLES ± 0.5°

ALL SURFACES 



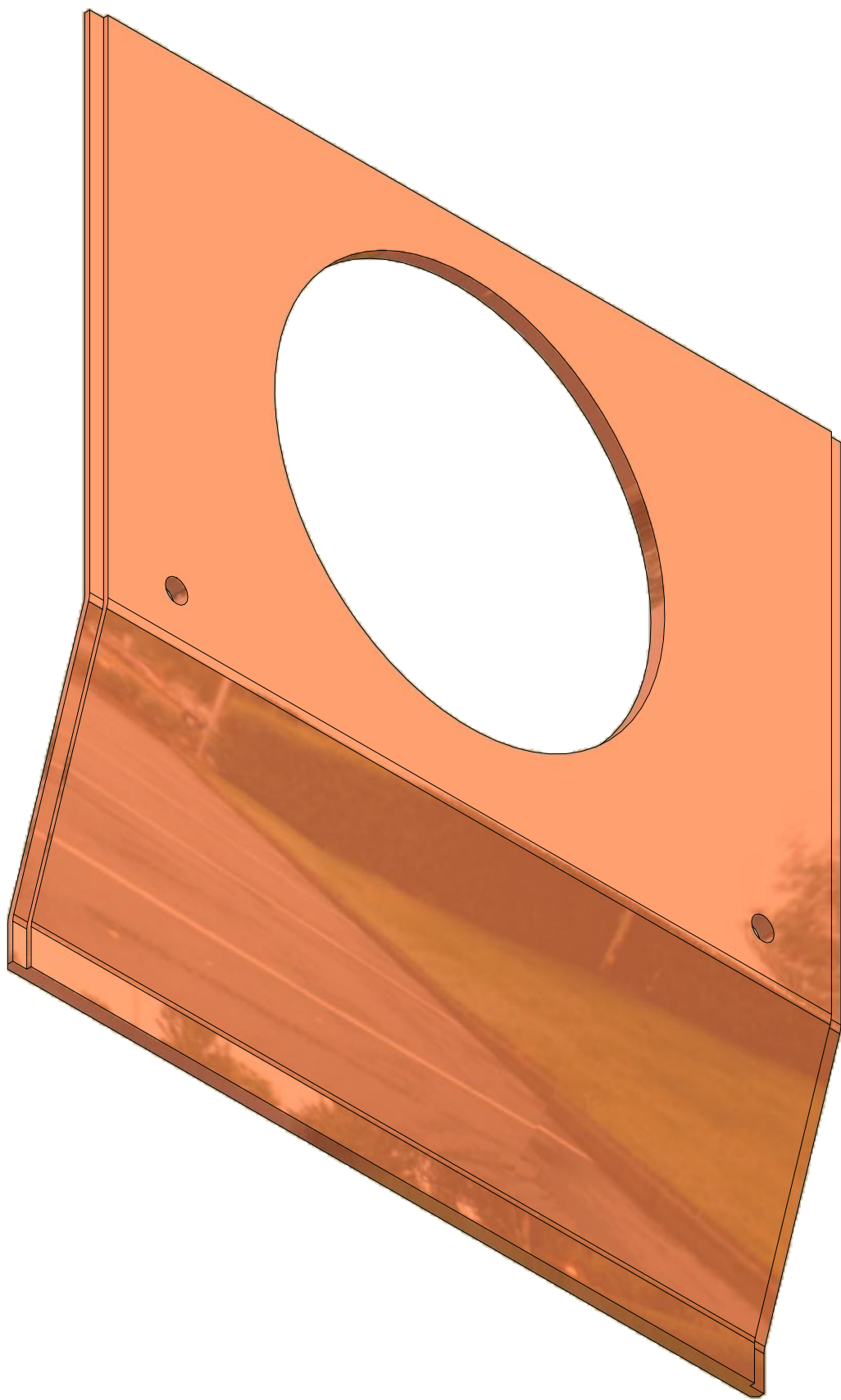
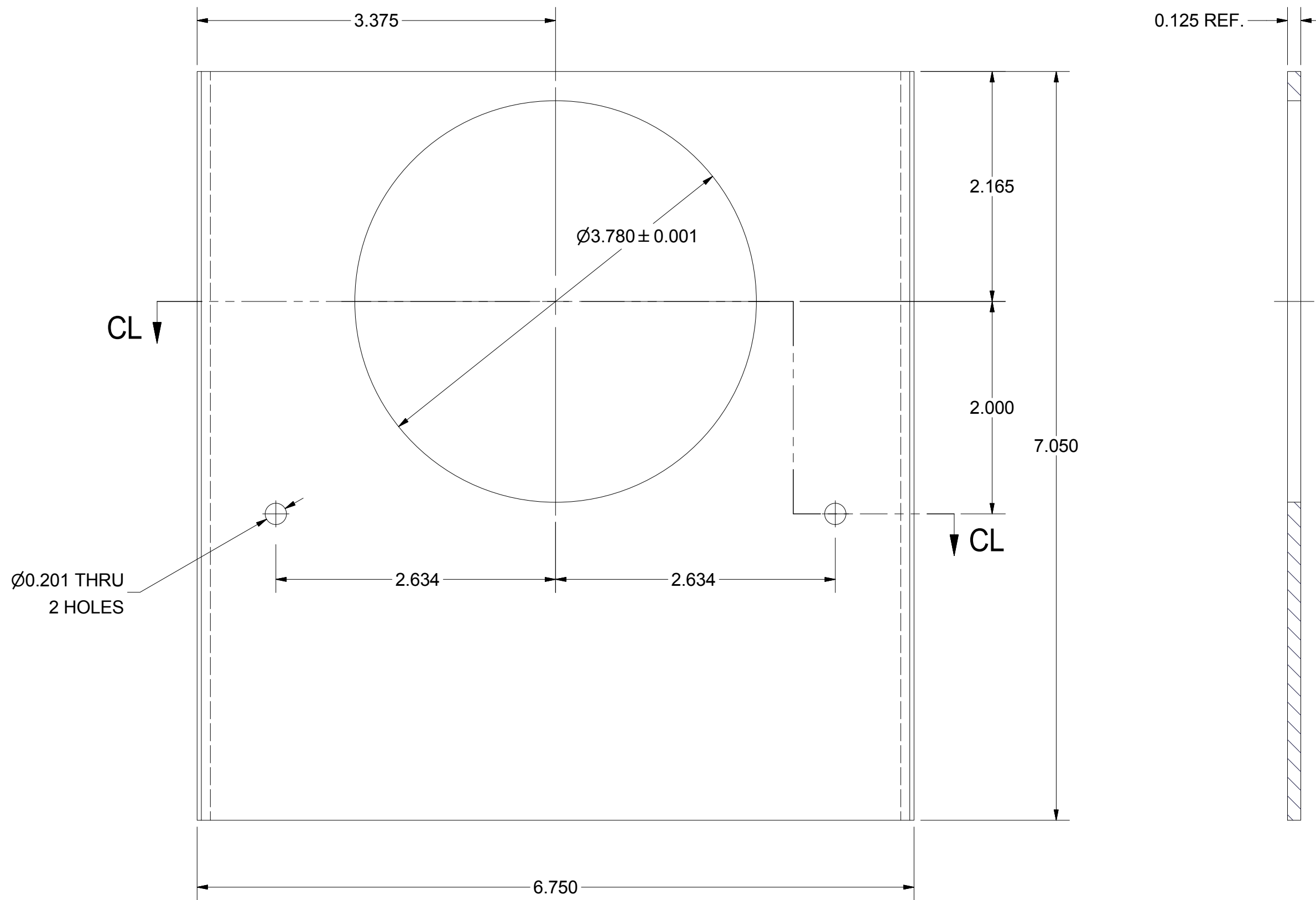
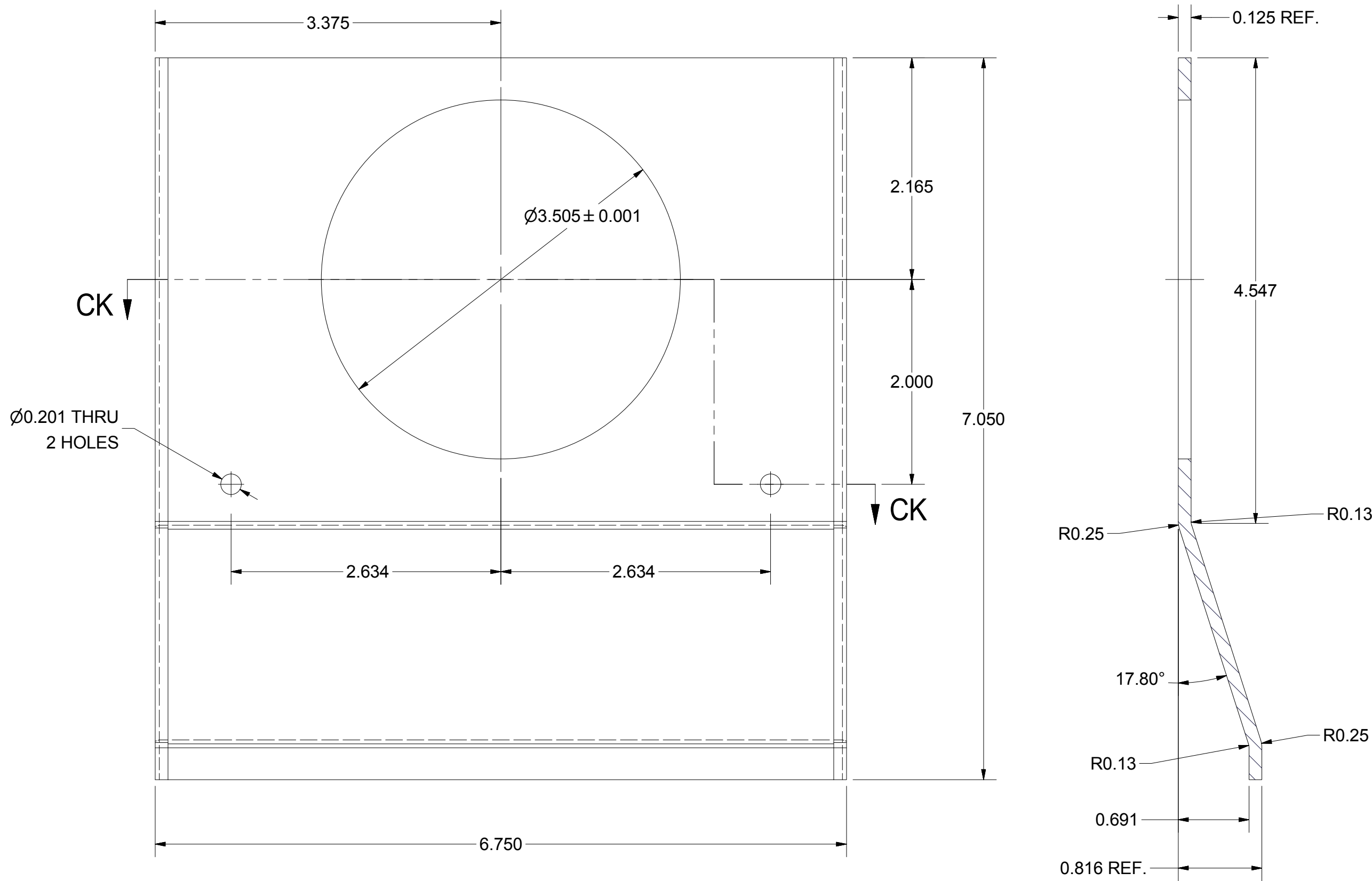
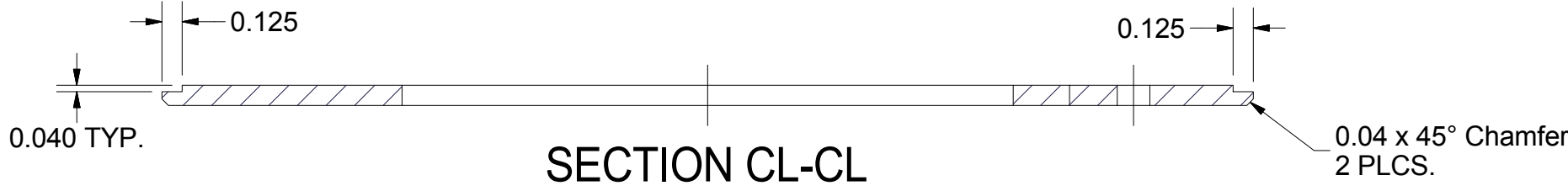
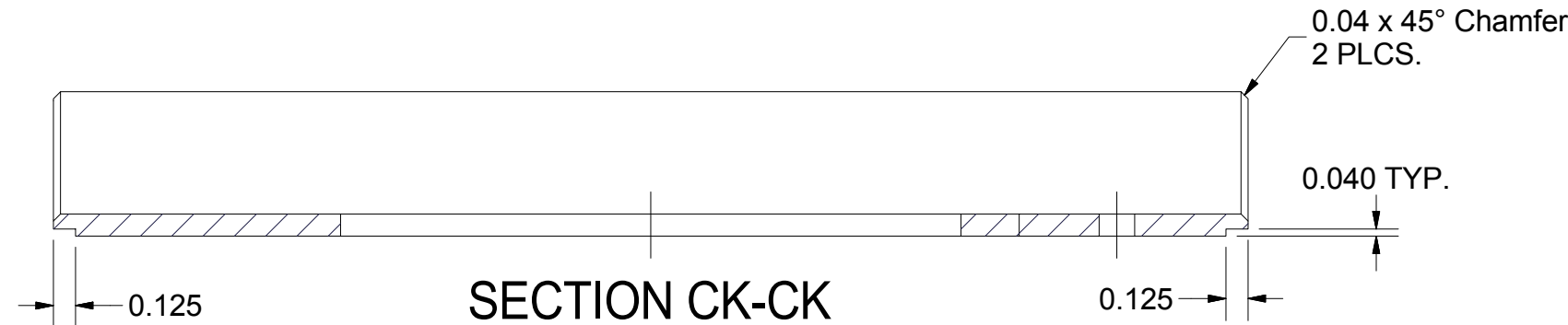
CORNELL UNIVERSITY
Floyd R. Newman Laboratory
Ithaca, NY 14853

ERL MAIN LINAC COUPLER

WG BOX FRONT AND BACK PANELS, SUB-ASSEMBLIES

CHECKED BY: TIO	DRAWN BY: VGV	DRAWN FOR: SAB	DATE: 6/24/2010	SCALE: 1:1	D	7103-003 SH. NO. 24 OF 32	REV. A
APPROVED BY: VGV							

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO




105 WG BOX FRONT PANEL

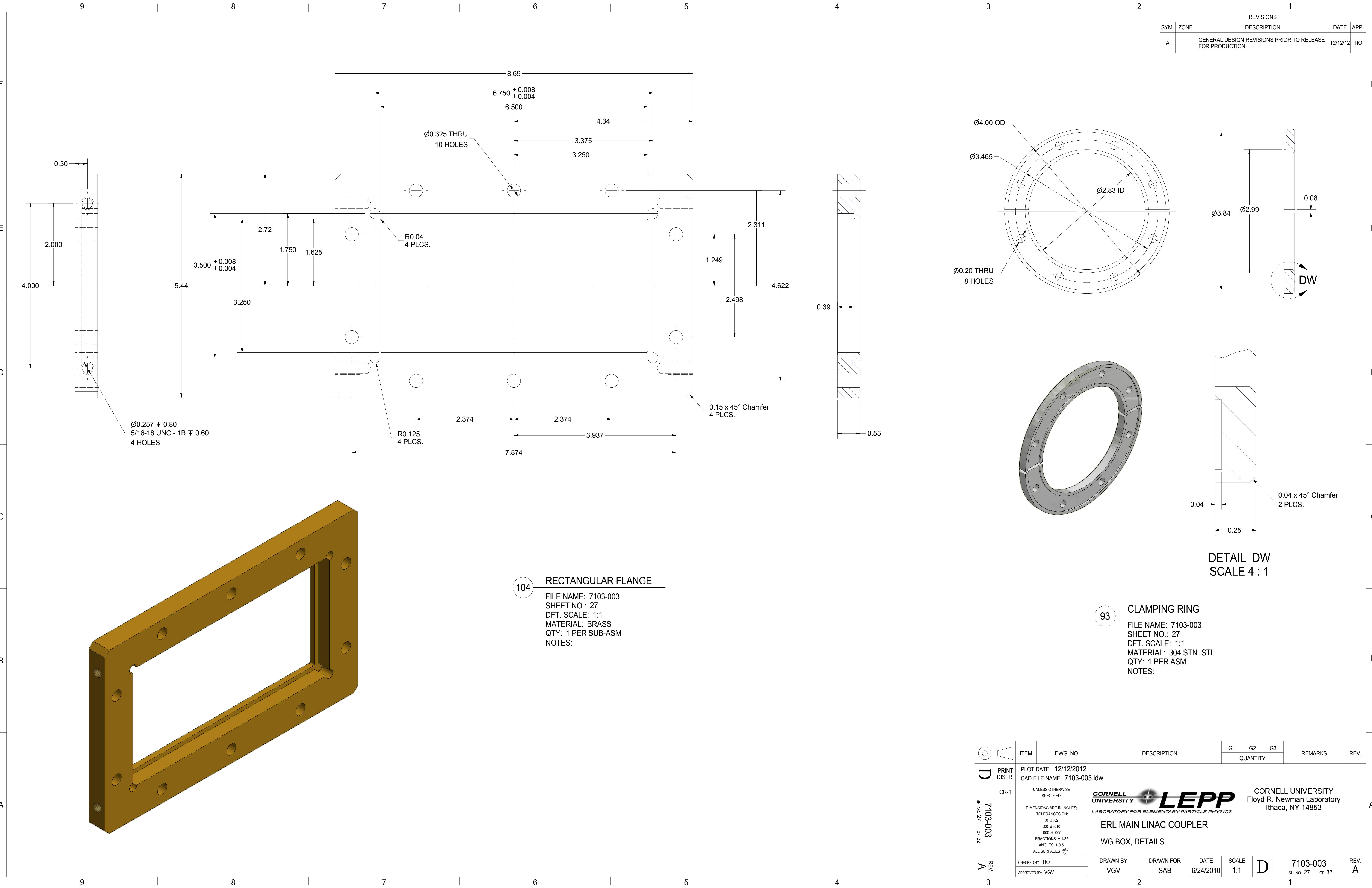
FILE NAME: 7103-003
SHEET NO.: 25
DFT. SCALE: 1:1
MATERIAL: 0.125" THK OFE COPPER SHEET
QTY: 1 PER SUB-ASM
NOTES:

107 WG BOX BACK PANEL

FILE NAME: 7103-003
SHEET NO.: 25
DFT. SCALE: 1:1
MATERIAL: 0.125" THK OFE COPPER SHEET
QTY: 1 PER SUB-ASM
NOTES:

		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS		REV.		
		QUANTITY												
D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw												
7103-003 SH. NO. 25 OF 32	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>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div>										
				ERL MAIN LINAC COUPLER										
				WG BOX, DETAILS										
A	REV.	CHECKED BY: TIO		DRAWN BY		DRAWN FOR		DATE		SCALE		D	7103-003 SH. NO. 25 OF 32	REV. A
		APPROVED BY: VGV		VGV		SAB		6/24/2010		1:1				

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO



104 RECTANGULAR FLANGE

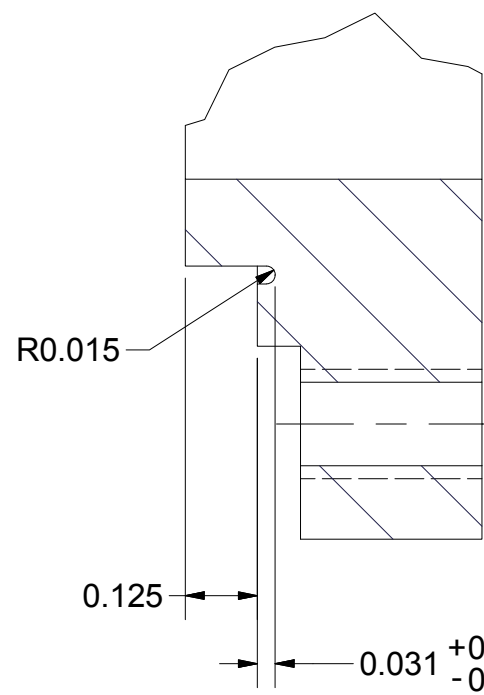
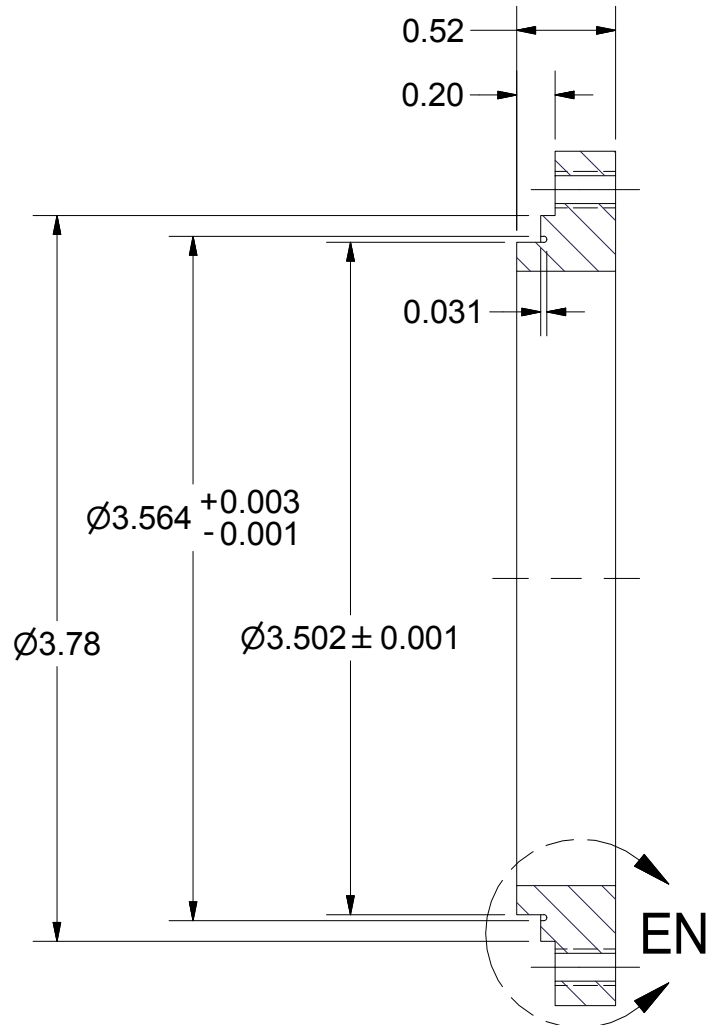
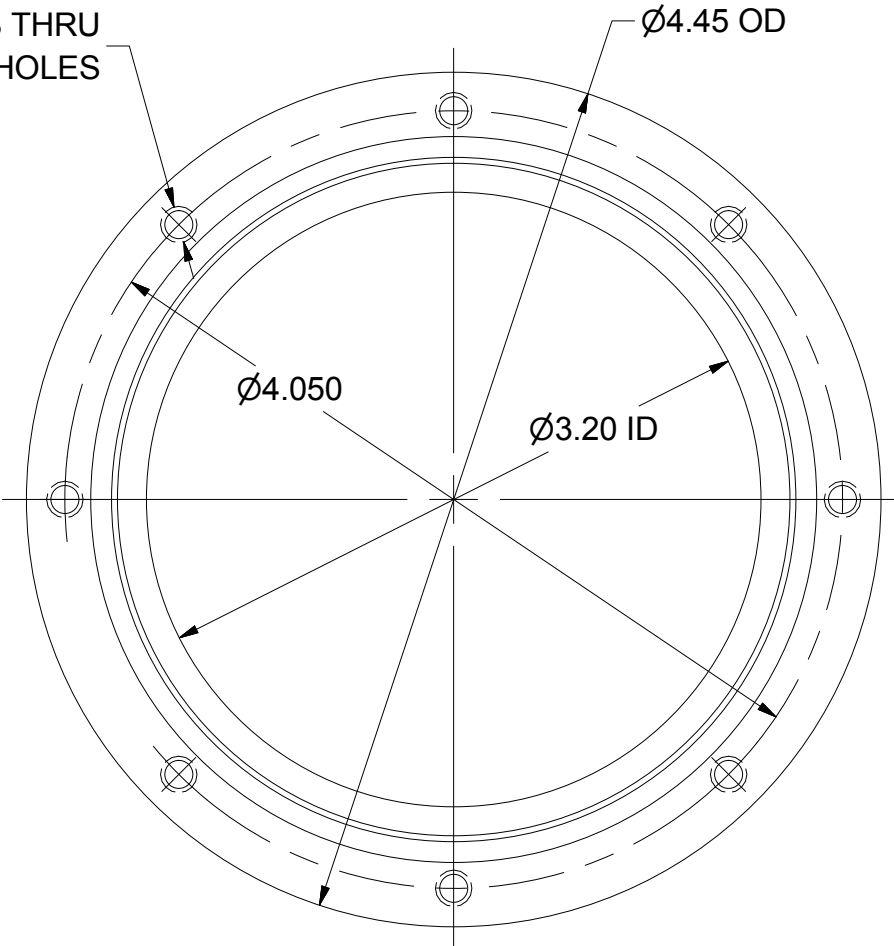
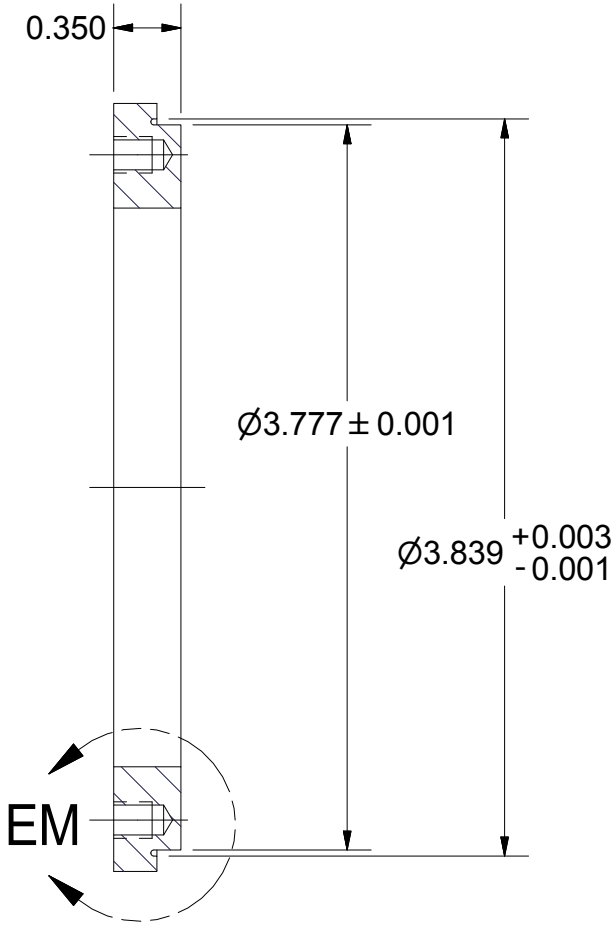
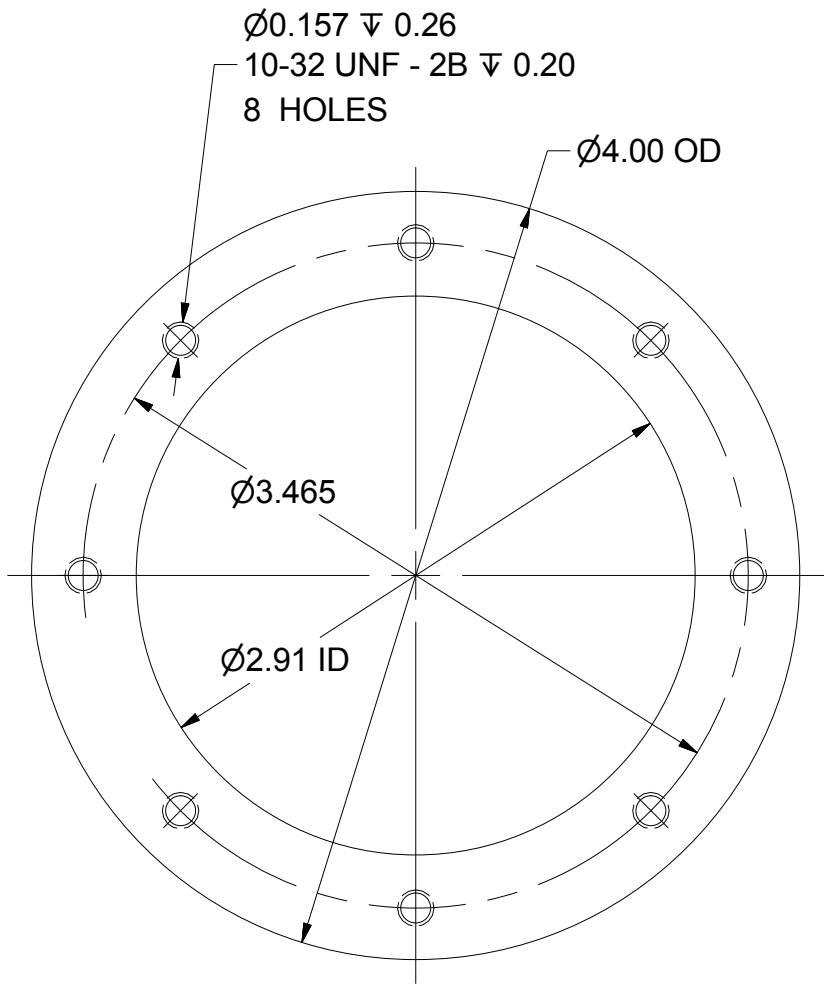
FILE NAME: 7103-003
SHEET NO.: 27
DFT. SCALE: 1:1
MATERIAL: BRASS
QTY: 1 PER SUB-ASM
NOTES:

93 CLAMPING RING

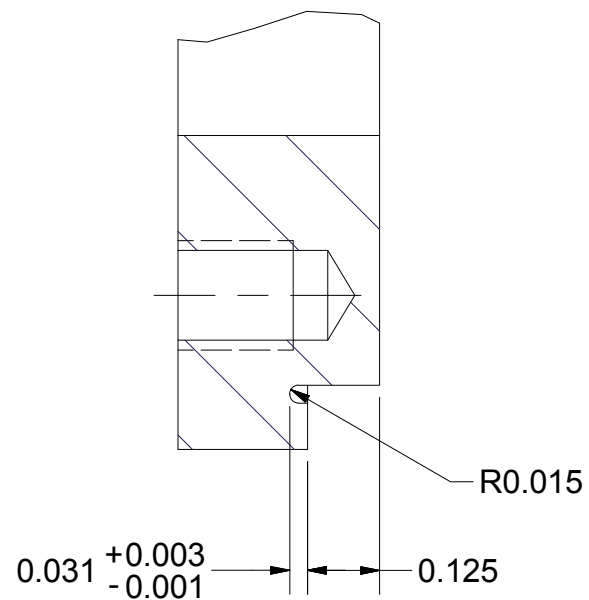
FILE NAME: 7103-003
SHEET NO.: 27
DFT. SCALE: 1:1
MATERIAL: 304 STN. STL.
QTY: 1 PER ASM
NOTES:

		ITEM		DWG. NO.		DESCRIPTION			G1		G2		G3		REMARKS		REV.		
D		PRINT DISTR.		PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw															
SH. NO. 27 OF 32		7103-003		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><div><div>CORNELL UNIVERSITY</div><div>LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</div></div><div><div>LEPP</div><div>FLOYD R. NEWMAN LABORATORY</div></div></div> <div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div>										REV. A	
								ERL MAIN LINAC COUPLER WG BOX, DETAILS											
REV. A		CHECKED BY: TIO APPROVED BY: VGV		DRAWN BY VGV		DRAWN FOR SAB		DATE 6/24/2010		SCALE 1:1		D		7103-003 SH. NO. 27 OF 32					
3						2						1							

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO



DETAIL EN
SCALE 3 : 1

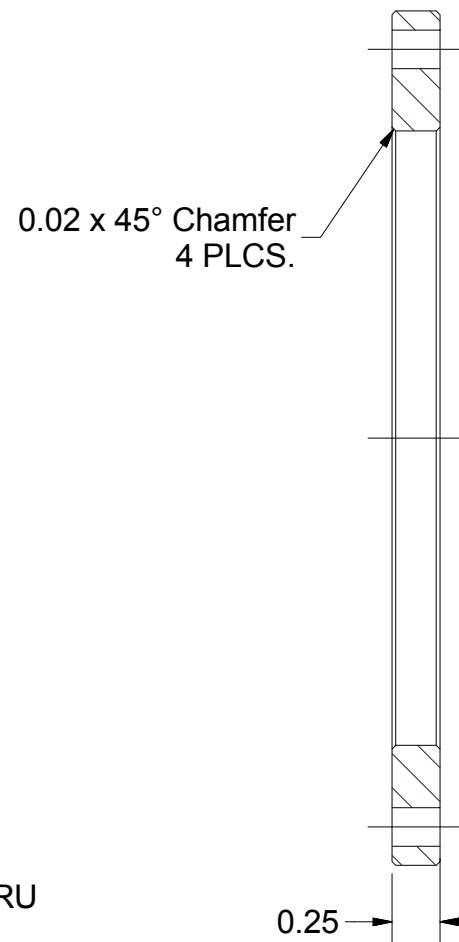
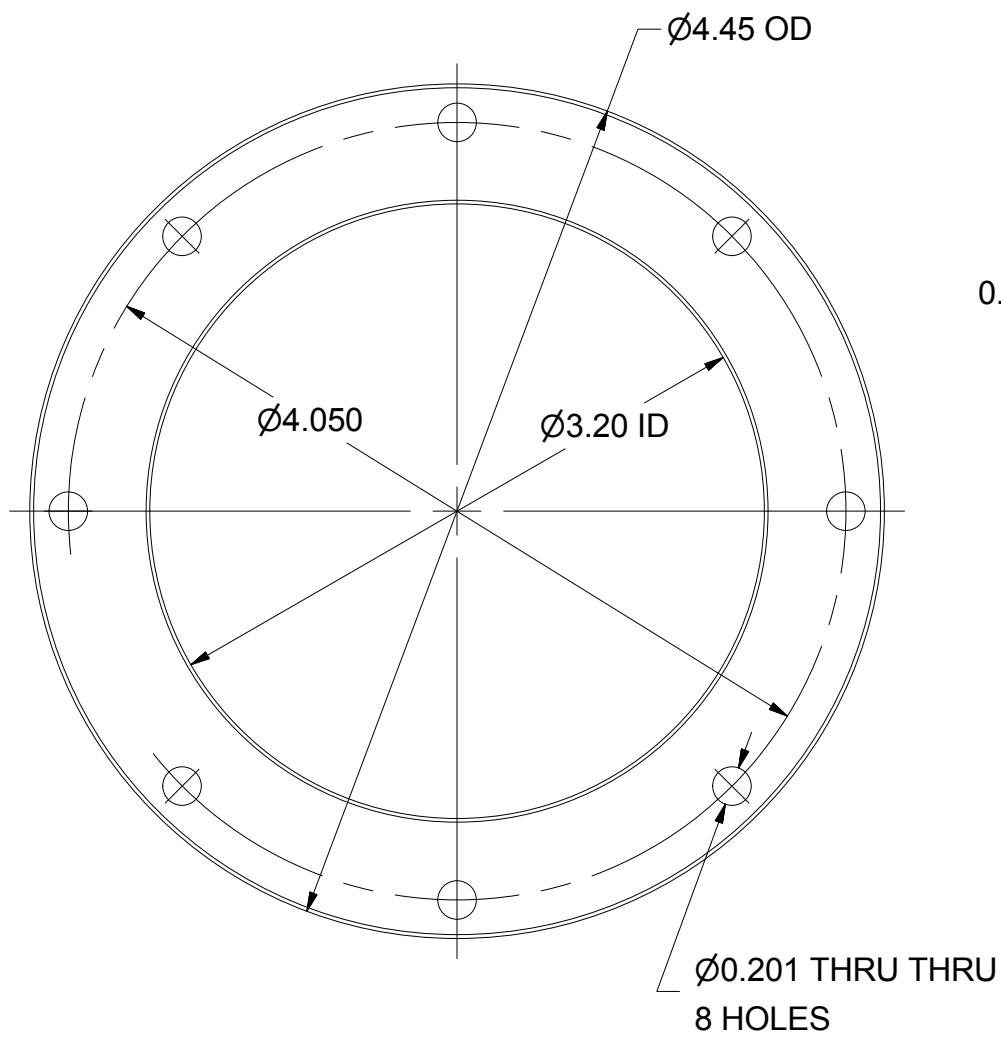
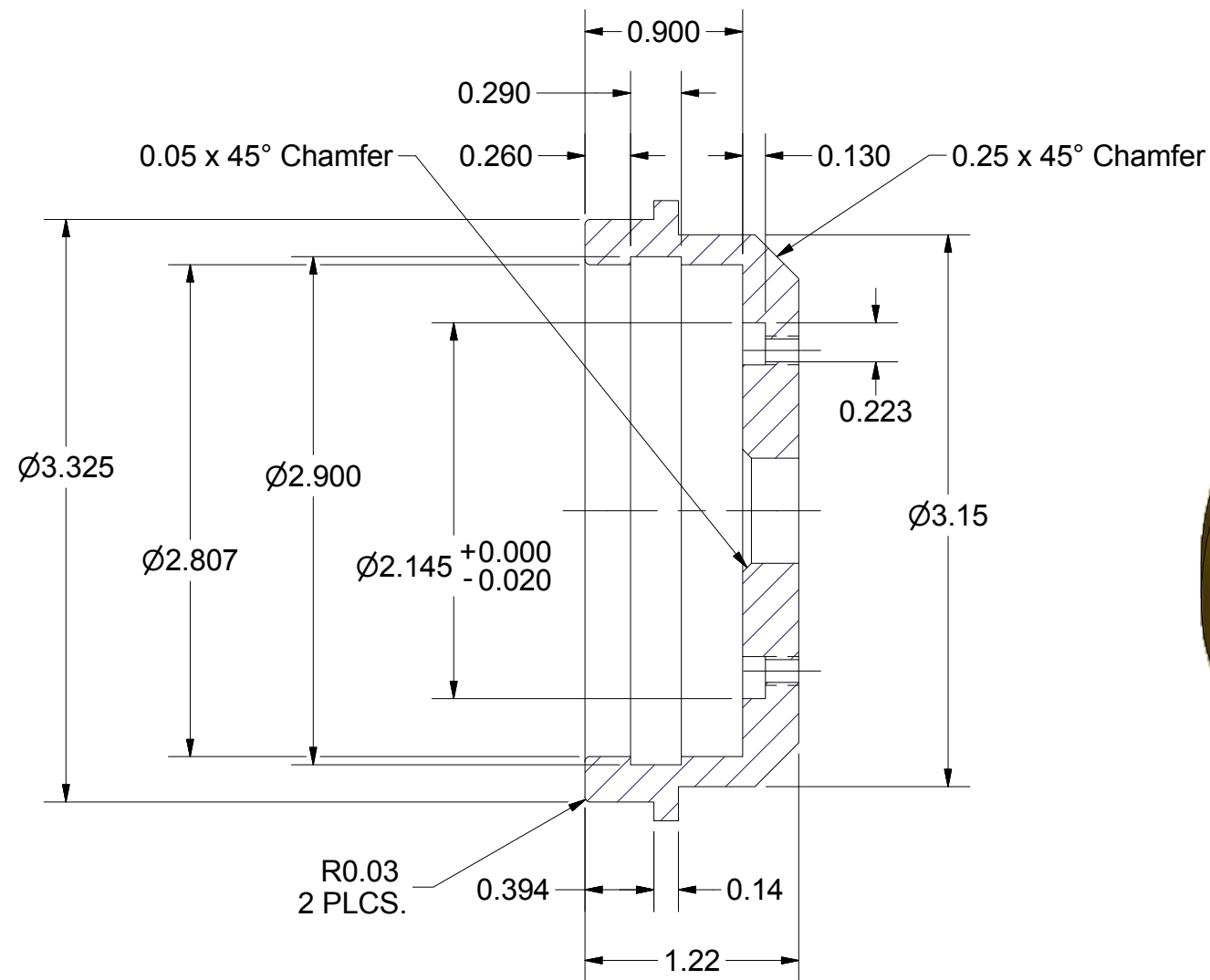
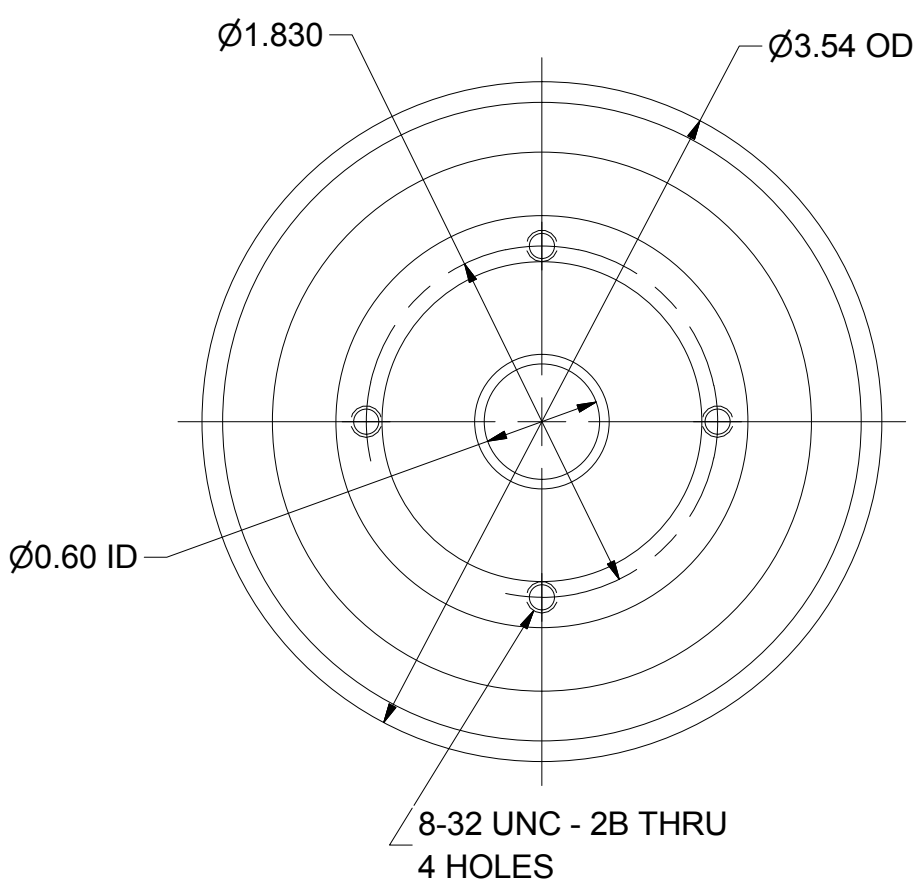


DETAIL EM
SCALE 3 : 1


108 CONTACT RING 1
FILE NAME: 7103-003
SHEET NO.: 28
DFT. SCALE: 1:1
MATERIAL: BRONZE
QTY: 1 PER SUB-ASM
NOTES:

106 FRONT FLANGE
FILE NAME: 7103-003
SHEET NO.: 28
DFT. SCALE: 1:1
MATERIAL: BRONZE
QTY: 1 PER SUB-ASM
NOTES:

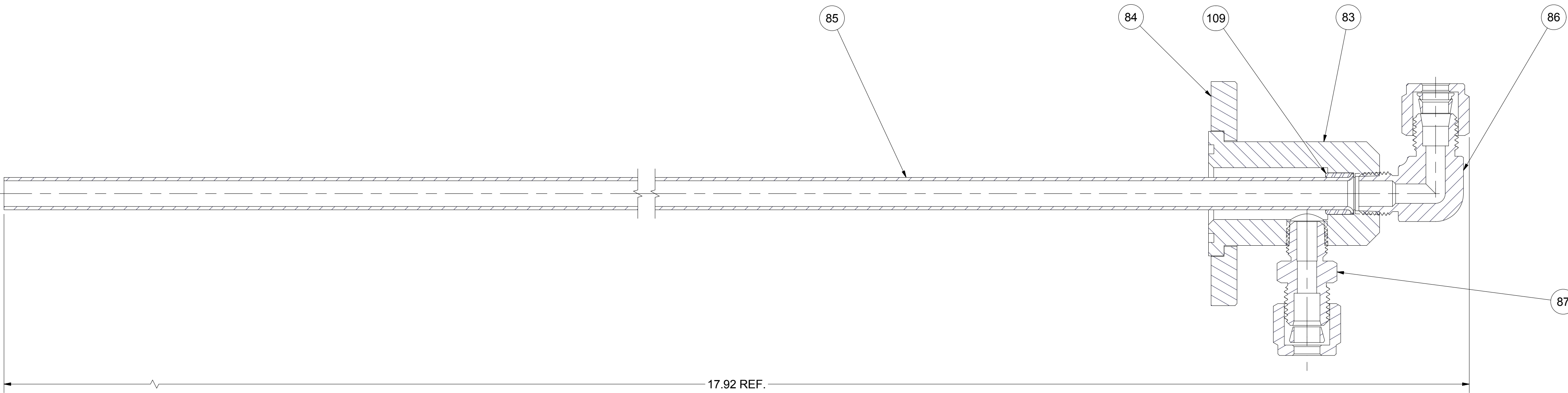
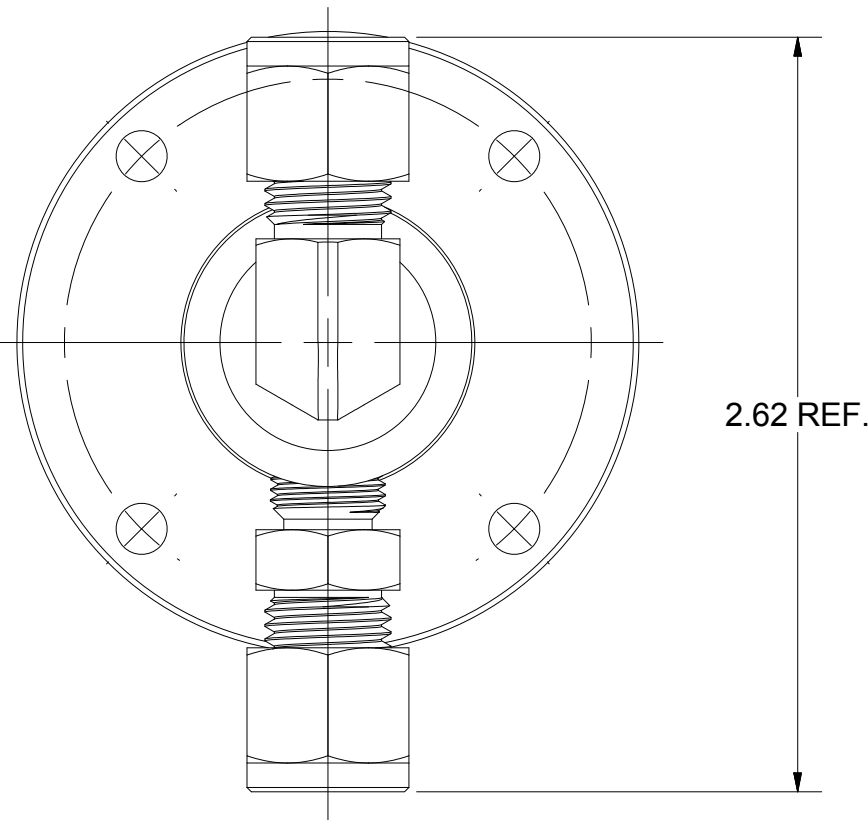
95 ROTATABLE RING
FILE NAME: 7103-003
SHEET NO.: 28
DFT. SCALE: 1:1
MATERIAL: 304 STN.STL.
QTY: 1 PER SUB-ASM
NOTES:



94 CONTACT RING 2
FILE NAME: 7103-003
SHEET NO.: 28
DFT. SCALE: 1:1
MATERIAL: BRASS
QTY: 1 PER SUB-ASM
NOTES:

	ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.
							QUANTITY			
D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw								
7103-003 SH. NO. 28 OF 32	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><div>CORNELL UNIVERSITY</div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div>					
		ERL MAIN LINAC COUPLER WG BOX, DETAILS								
		CHECKED BY: TIO APPROVED BY: VGV	DRAWN BY VGV	DRAWN FOR SAB	DATE 6/24/2010	SCALE 1:1	D	7103-003 SH. NO. 28 OF 32		REV. A

REVISIONS					
SYM.	ZONE	DESCRIPTION	DATE	APP.	
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO	



5

COOLING SOCKET

FILE NAME: 7103-003

SHEET NO.: 29

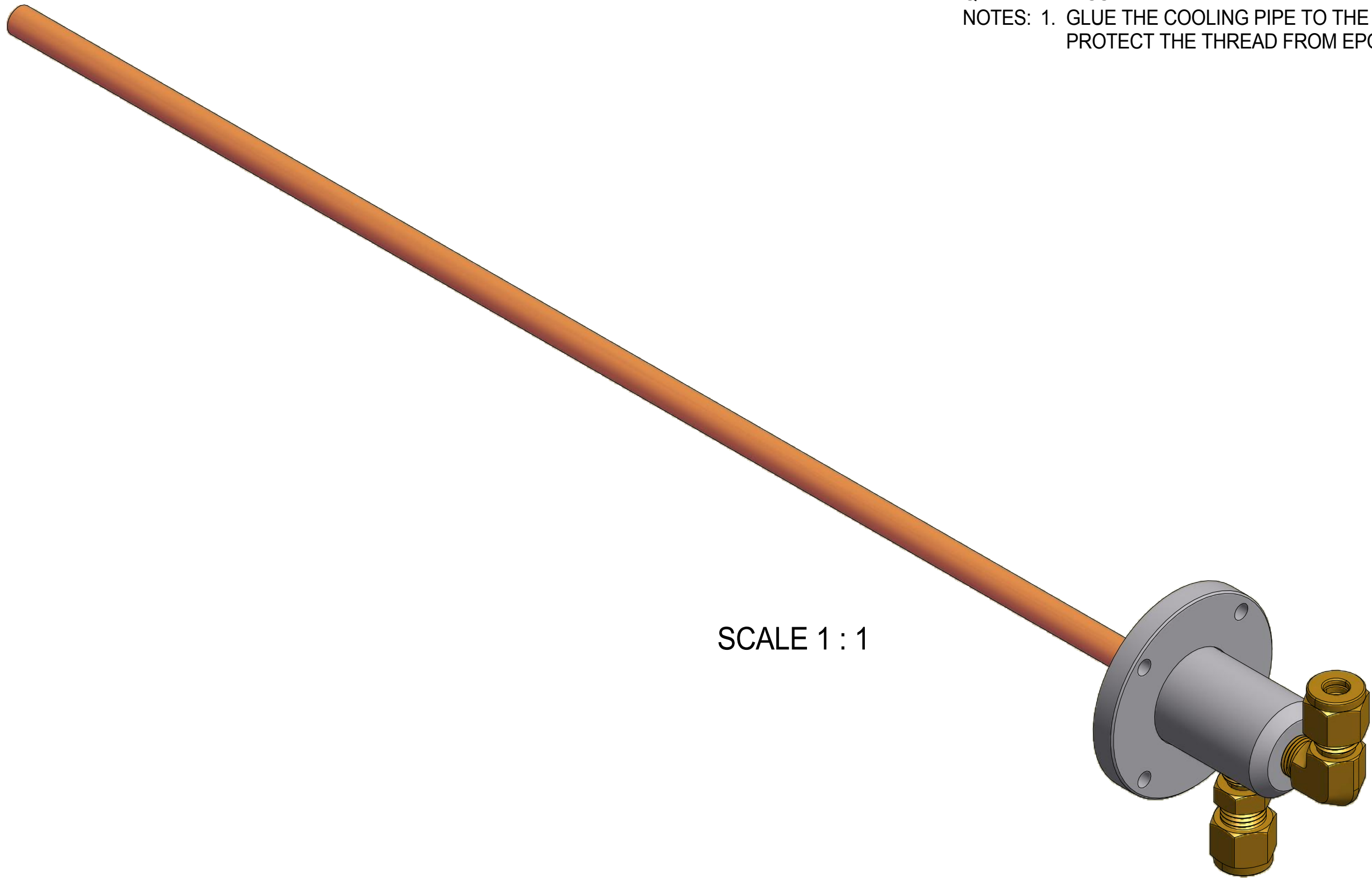
DFT. SCALE: 1.5:1

MATERIAL: AS NOTED

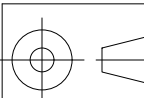
QTY: 1 PER ASSEMBLY

NOTES: 1. GLUE THE COOLING PIPE TO THE COOLING CUP.

PROTECT THE THREAD FROM EPOXY GLUE.



109	PURCHASE	EPOXY	1					
87	PURCHASE	B-400-1-2 SWAGELOK STRAIGHT FITTING	1					
86	PURCHASE	B-400-2-2 SWAGELOK 90 DEGREE ELBOW	1					
85	SHEET 30	COOLING PIPE	1					
84	SHEET 30	CUP FLANGE	1					
83	SHEET 30	COOLING CUP	1					
5	SHEET 29	COOLING SOCKET, SUB-ASM	X					



PRINT
DISTR.

D

7103-003

SH. NO. 29 OF 32

REV. A

CR-1

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES;
TOLERANCES ON:
.0 ± .02
.06 ± .010
.000 ± .005
FRACTIONS ± 1/32
ANGLES ± 0.5°
ALL SURFACES

CORNELL UNIVERSITY

LEPP

CORNELL UNIVERSITY
Floyd R. Newman Laboratory
Ithaca, NY 14853

ERL MAIN LINAC COUPLER

COOLING SOCKET, SUB-ASSEMBLY AND DETAILS

CHECKED BY: TIO

APPROVED BY: VGV

DRAWN BY VGV

DRAWN FOR SAB

DATE 6/24/2010

SCALE 1.5:1

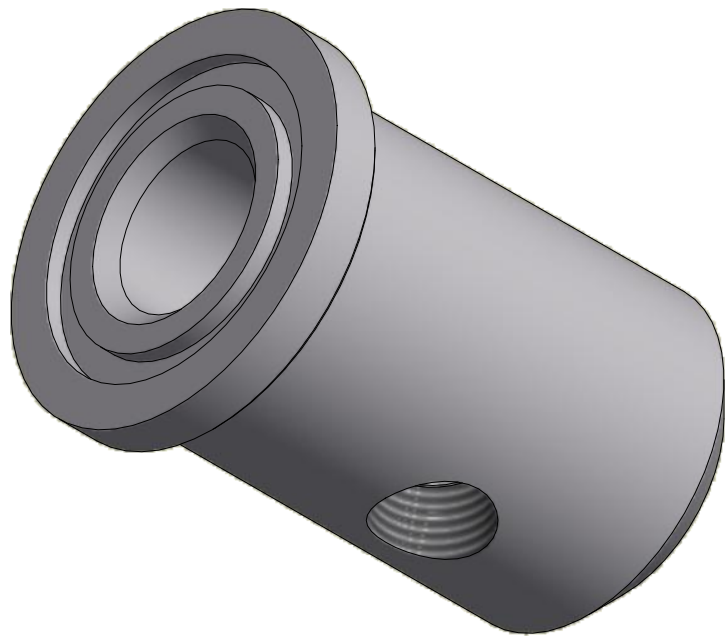
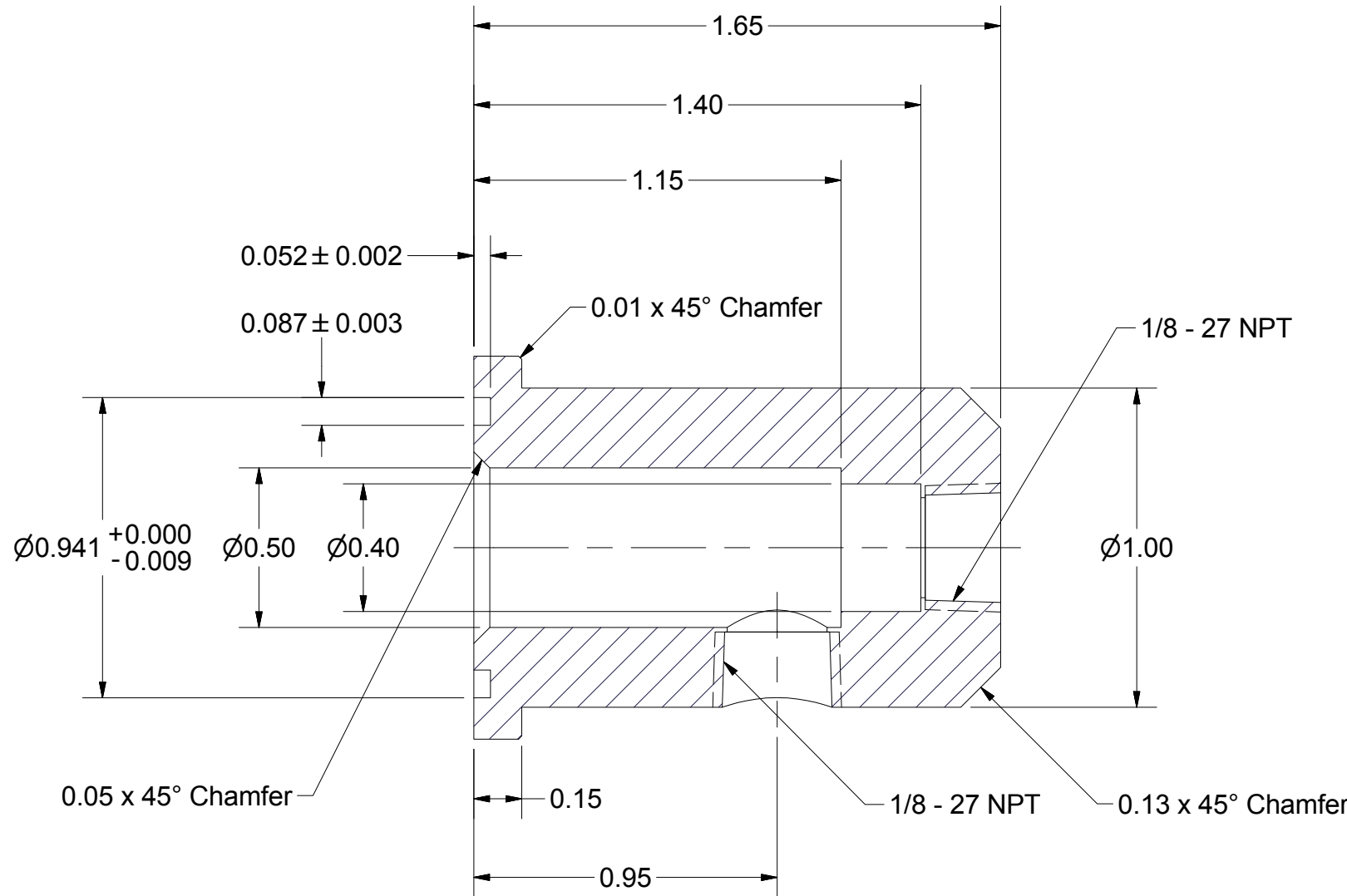
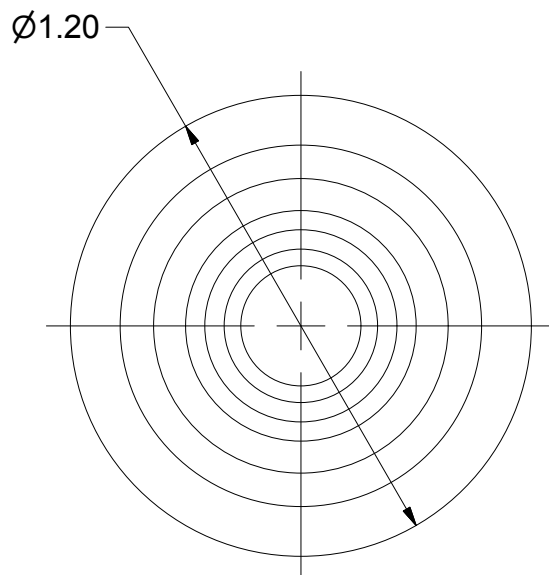
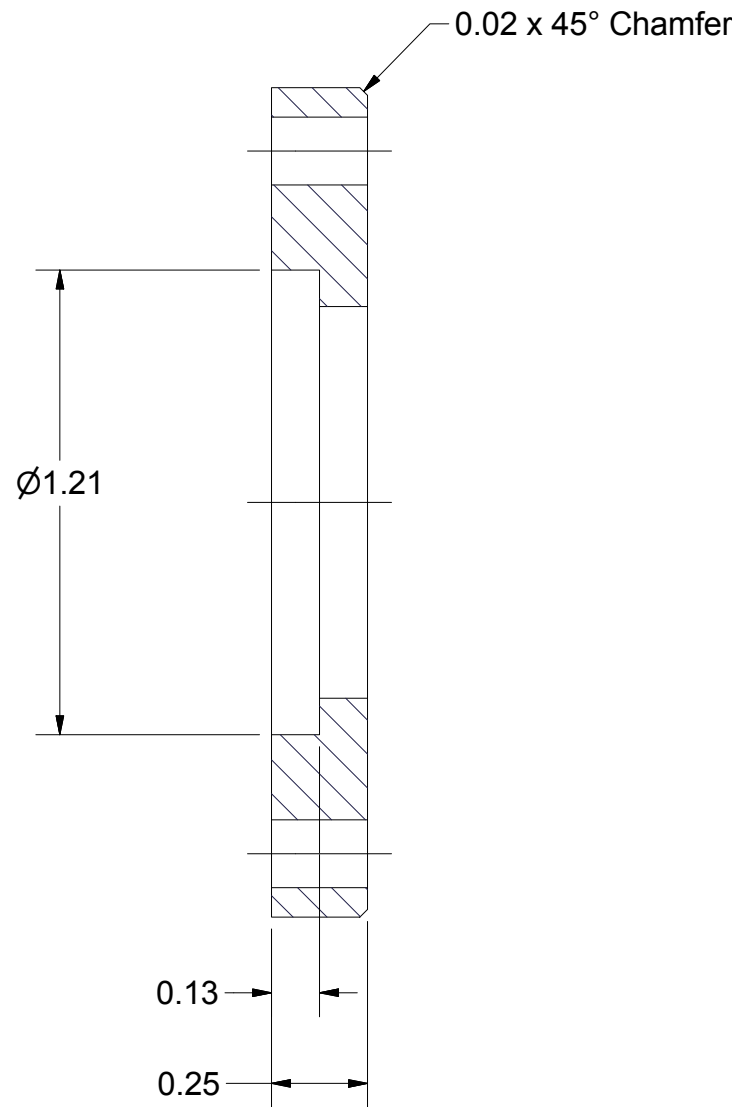
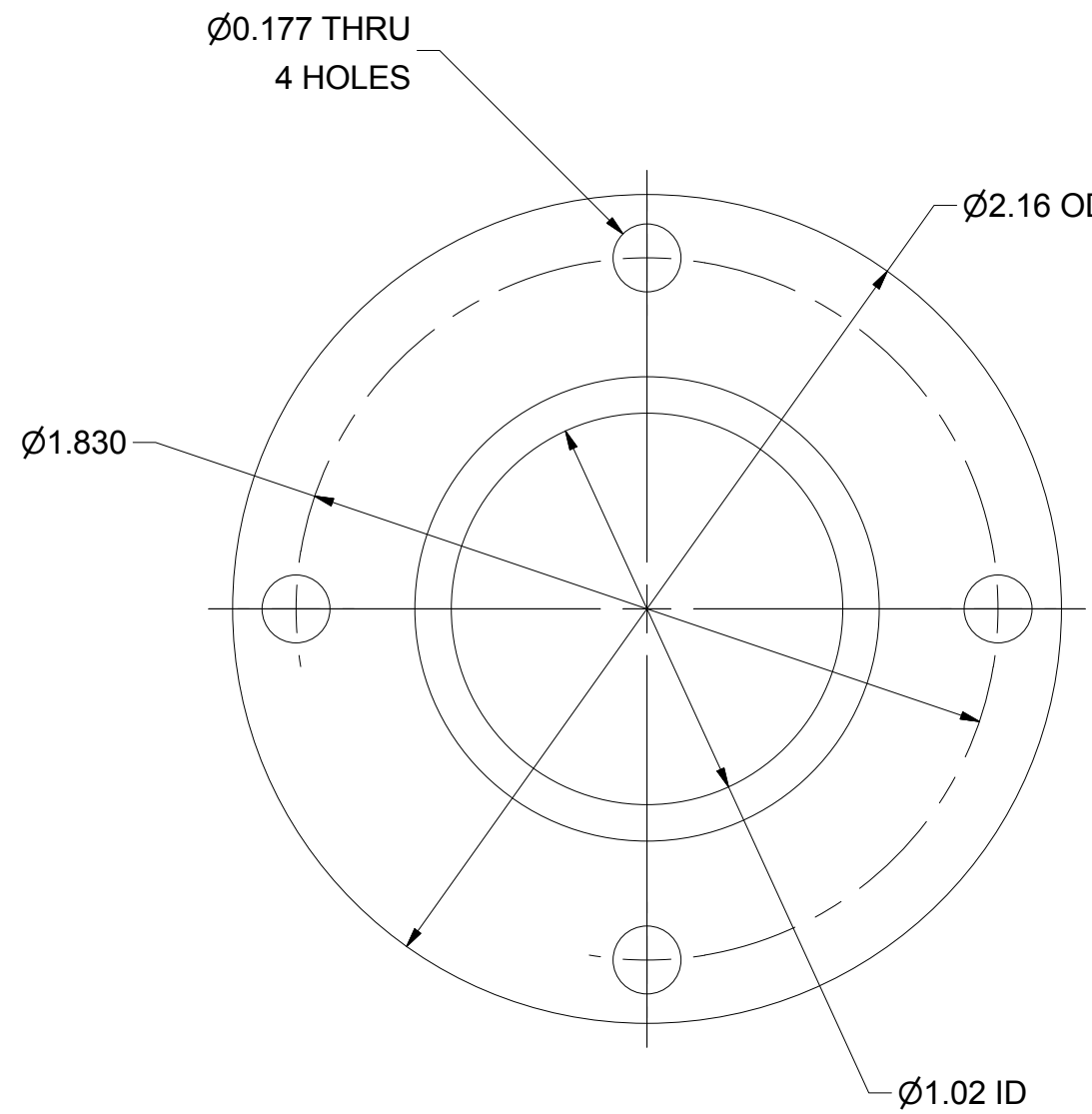
D

7103-003

SH. NO. 29 OF 32

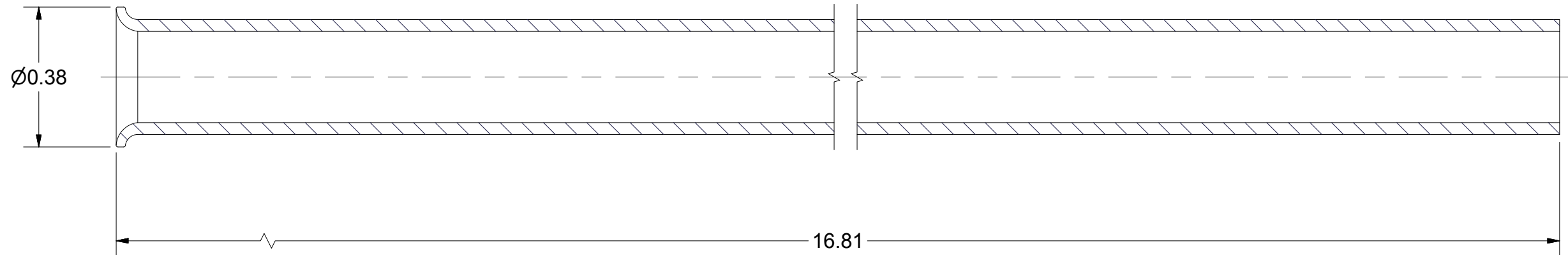
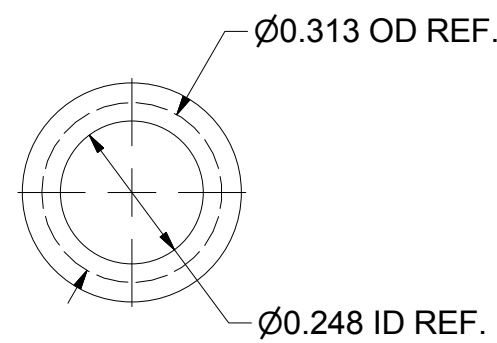
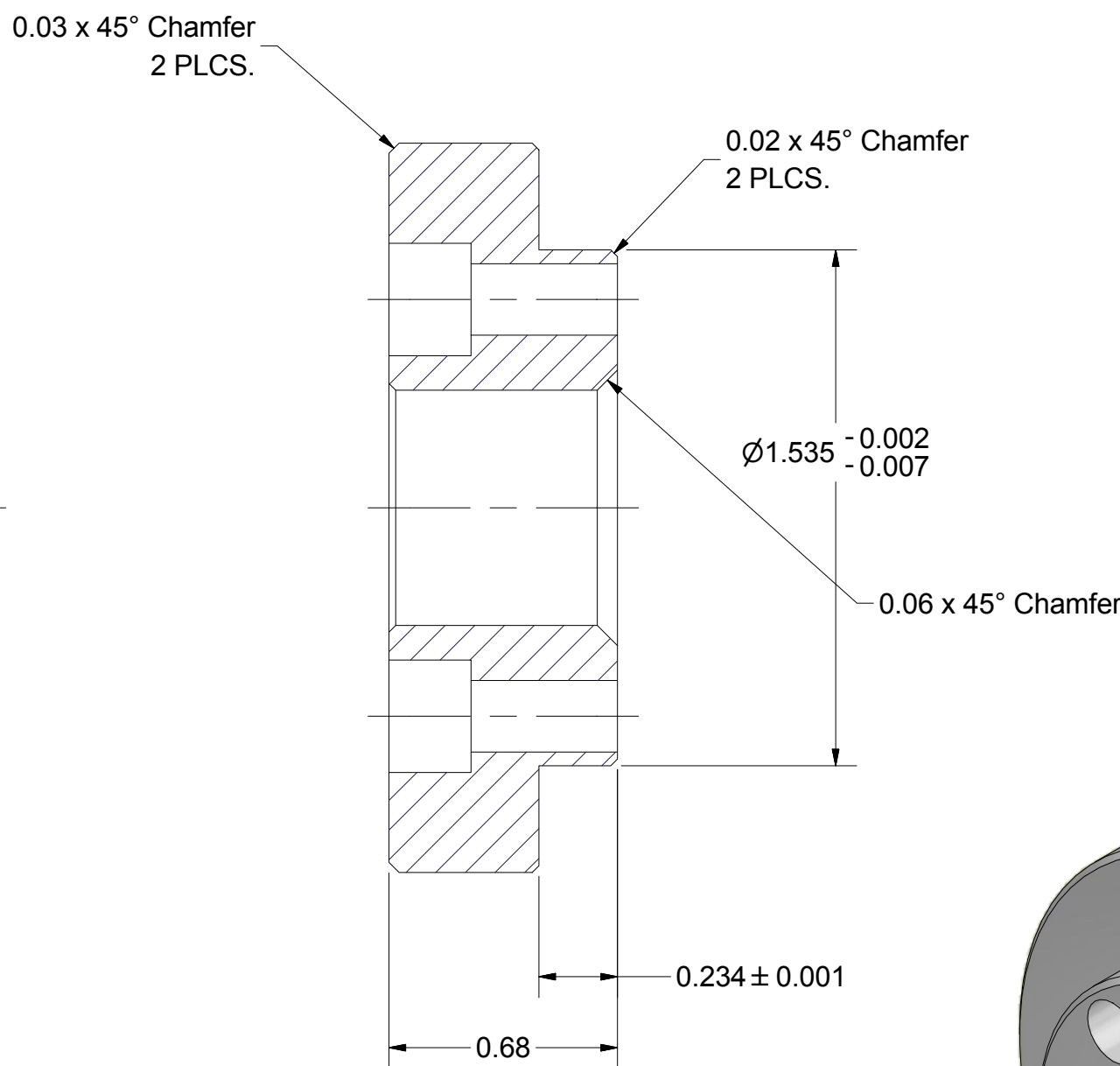
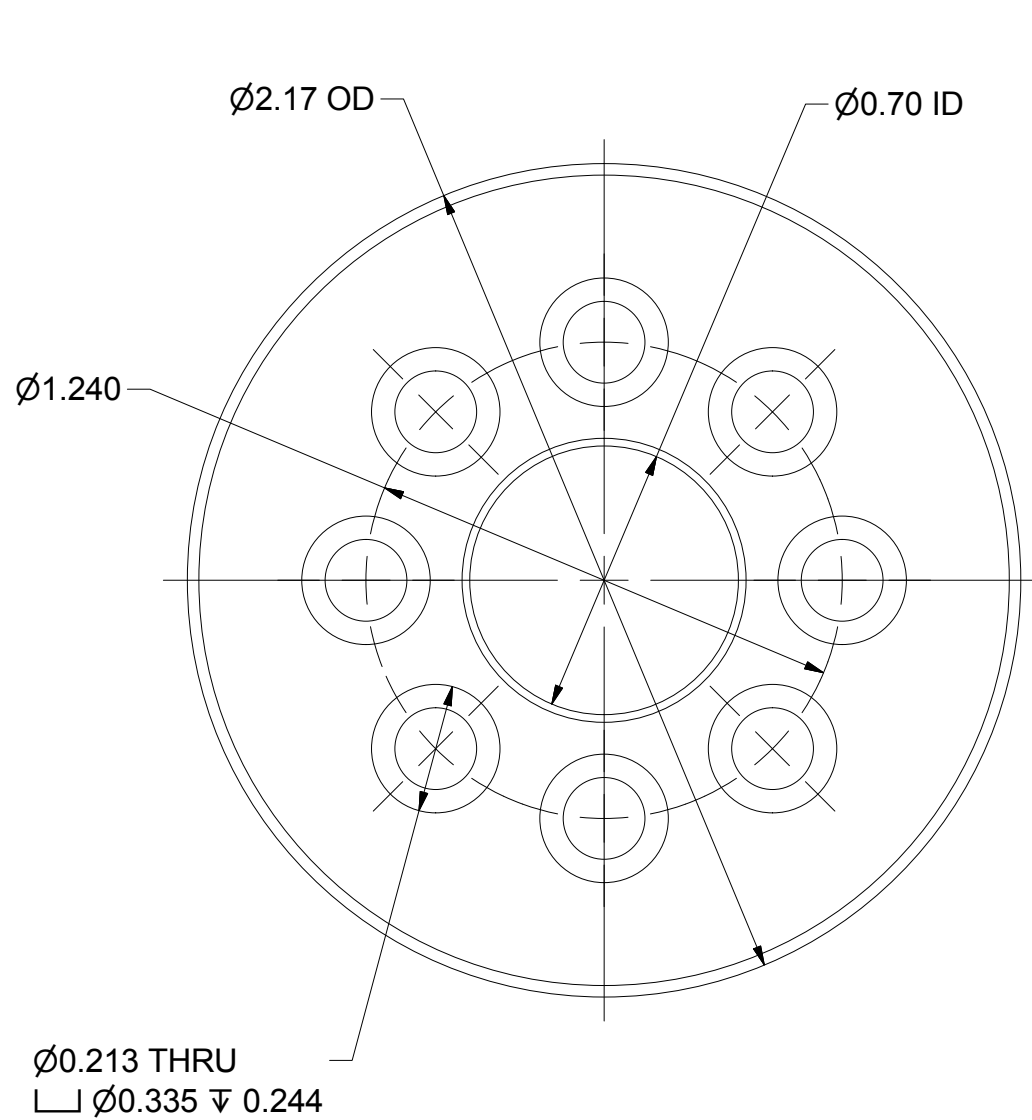
REV. A

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		GENERAL DESIGN REVISIONS PRIOR TO RELEASE FOR PRODUCTION	12/12/12	TIO



84 CUP FLANGE
FILE NAME: 7103-003
SHEET NO.: 30
DFT. SCALE: 2:1
MATERIAL: ALUMINUM
QTY: 1 PER SUB-ASM
NOTES:

83 COOLING CUP
FILE NAME: 7103-003
SHEET NO.: 30
DFT. SCALE: 2:1
MATERIAL: ALUMINUM
QTY: 1 PER SUB-ASM
NOTES:



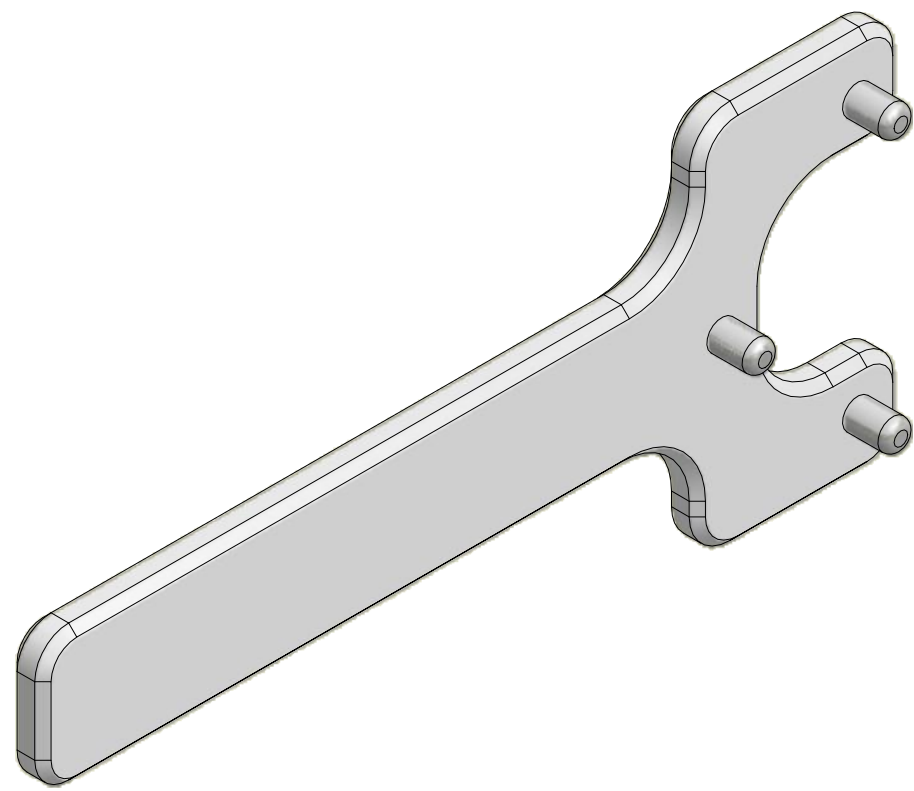
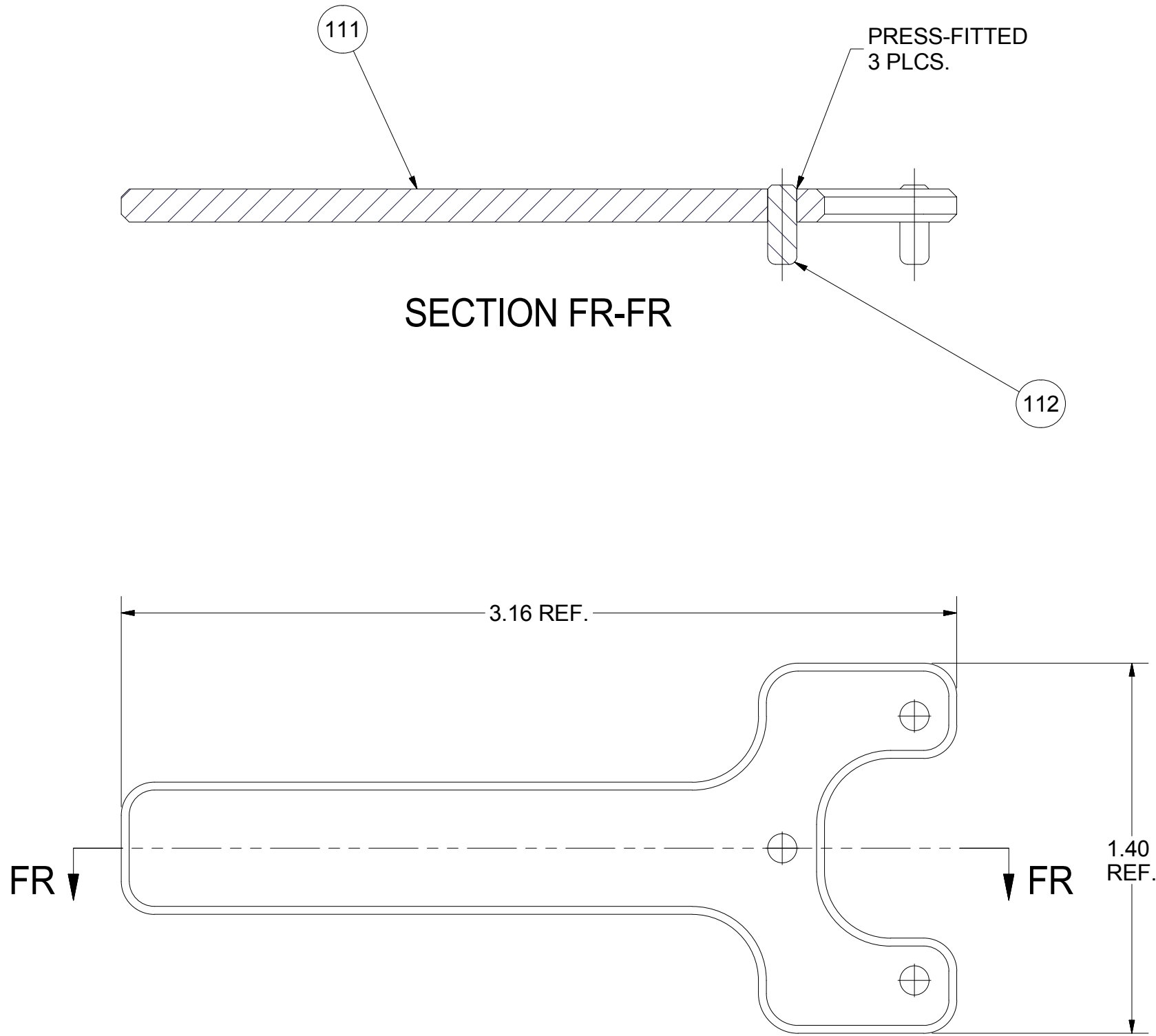
17 CF FLANGE INNER RING
FILE NAME: 7103-003
SHEET NO.: 30
DFT. SCALE: 2:1
MATERIAL: 304 STN. STL.
QTY: 1 PER SUB-ASM
NOTES:

85 COOLING PIPE
FILE NAME: 7103-003
SHEET NO.: 30
DFT. SCALE: 3:1
MATERIAL: 0.313 OD x 0.032 WALL COPPER TUBE
QTY: 1 PER SUB-ASM
NOTES: 1. FLARE ONE END OF THE PIPE AS SHOWN.

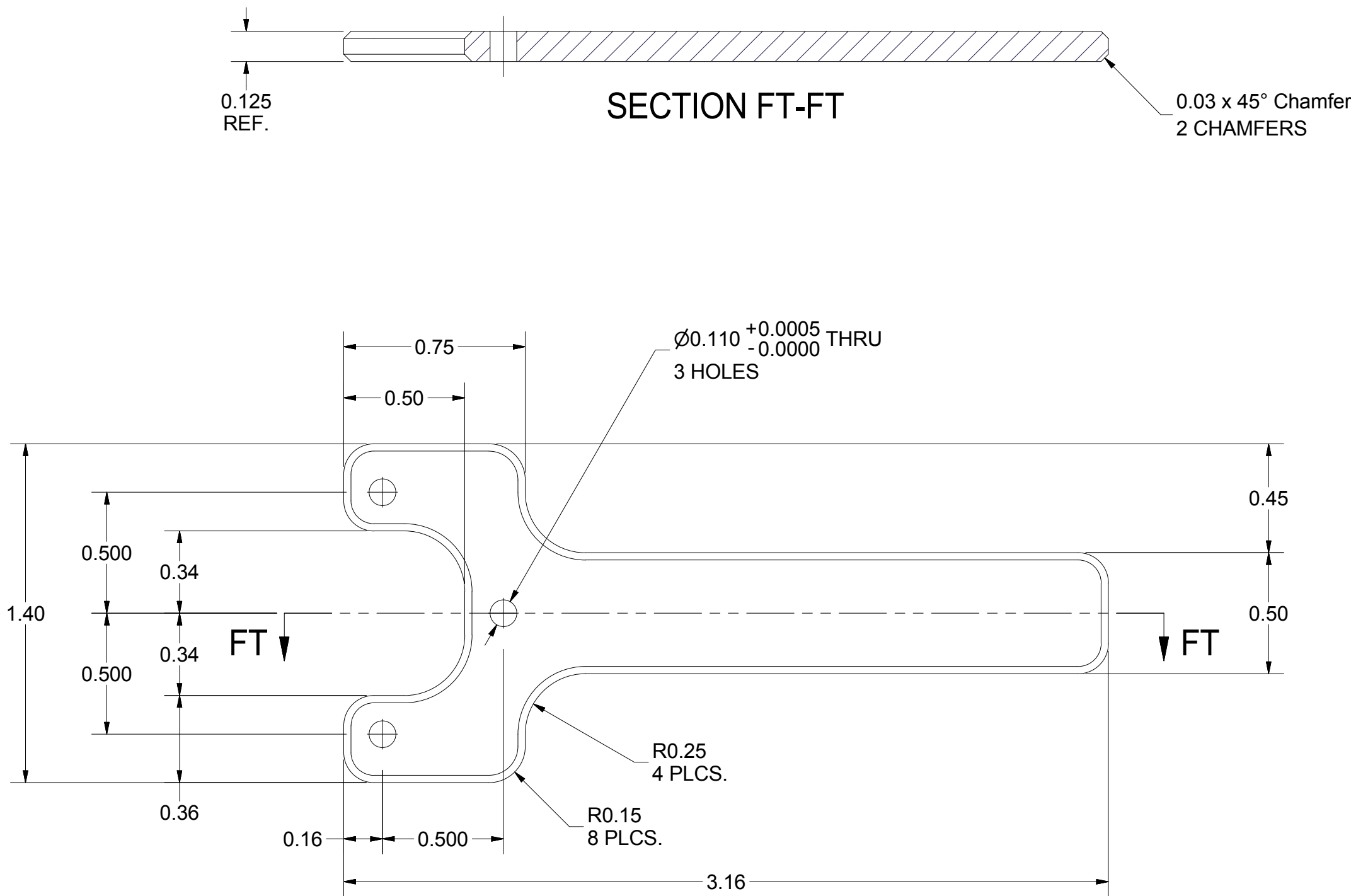


		ITEM		DWG. NO.		DESCRIPTION			G1		G2		G3		REMARKS		REV.	
									QUANTITY									
D		PRINT DISTR.		PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw														
7103-003 SH. NO. 30 OF 32		CR-1		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: 0 ± .02 00 ± .010 000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES			<div>CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853</div> <div> LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</div>											
							ERL MAIN LINAC COUPLER COOLING SOCKET, DETAILS											
A		REV.		CHECKED BY: TIO			DRAWN BY: VGV			DRAWN FOR: SAB			DATE: 6/24/2010		SCALE: D		7103-003 SH. NO. 30 OF 32 REV. A	
				APPROVED BY: VGV														

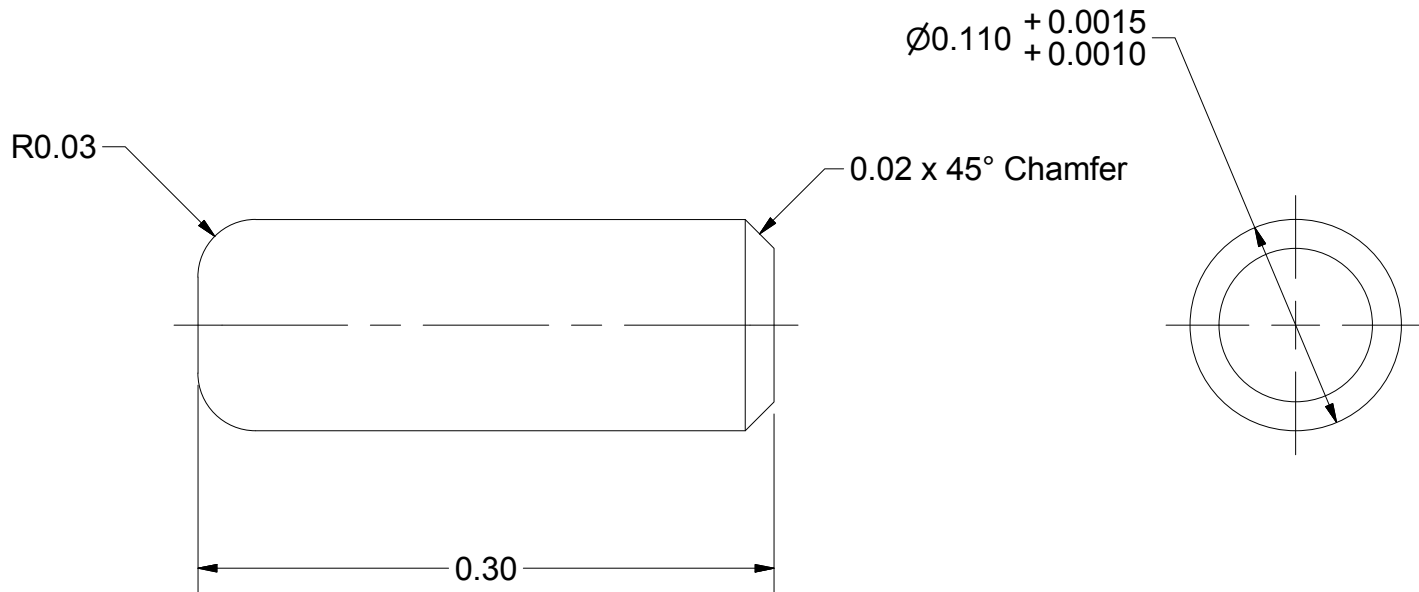
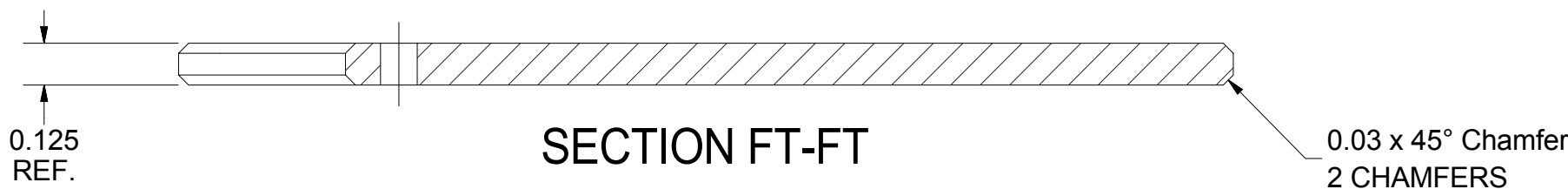
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED NEW SHEET 32	5/17/12	PQ







110 WRENCH, ASSEMBLY
FILE NAME: 7103-003
SHEET NO.: 31
DFT. SCALE: 2:1
MATERIAL: AS NOTED
QTY: AS REQ'D
NOTES: 1. PRESS PINS INTO WRENCH HANDLE



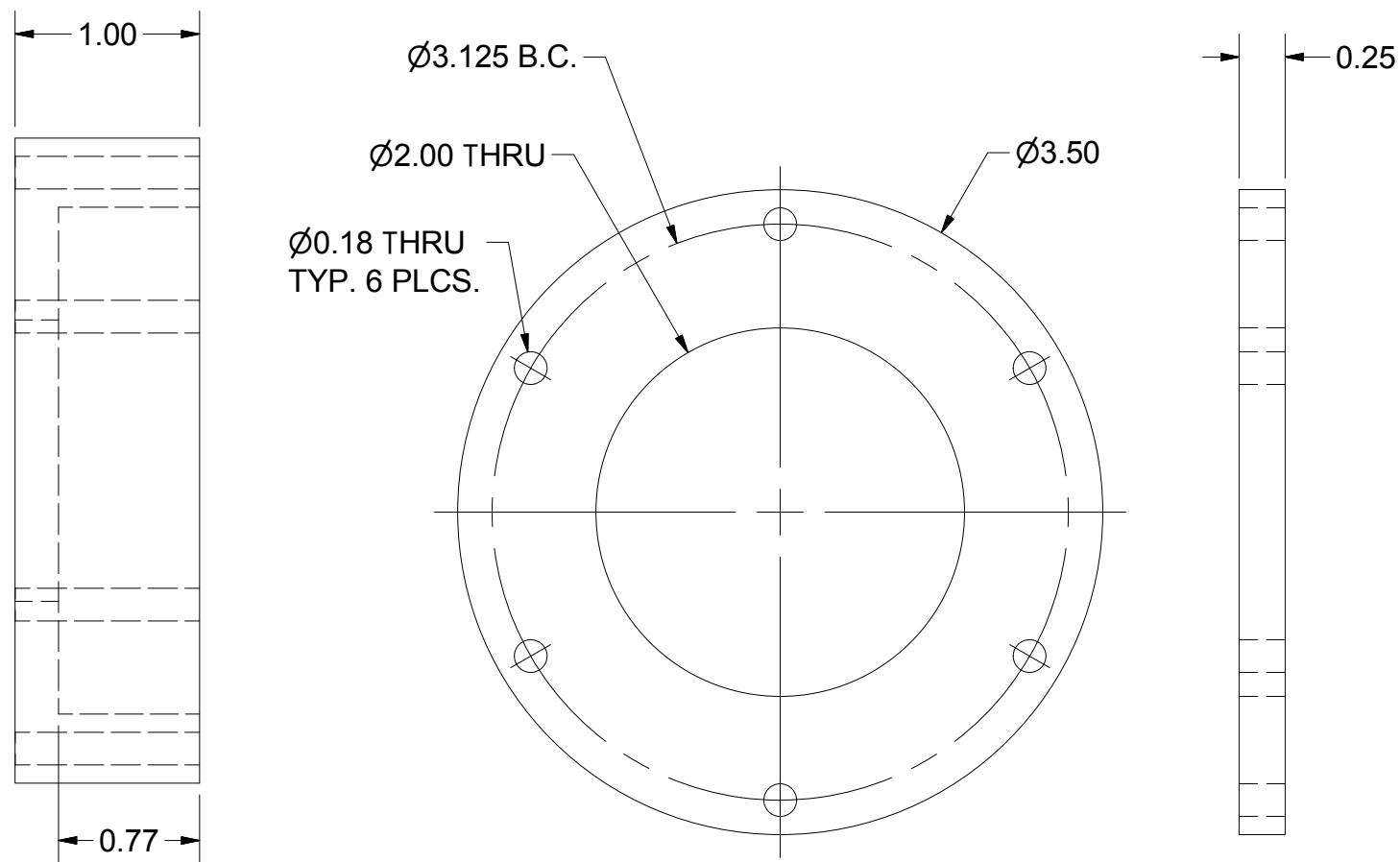
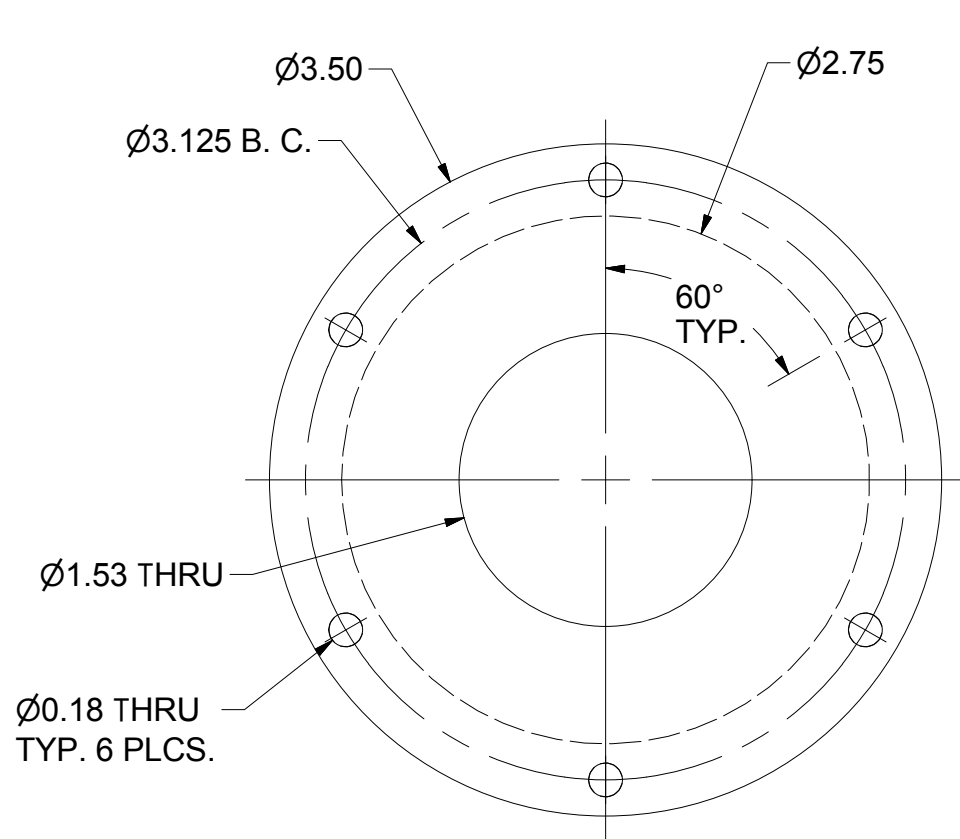
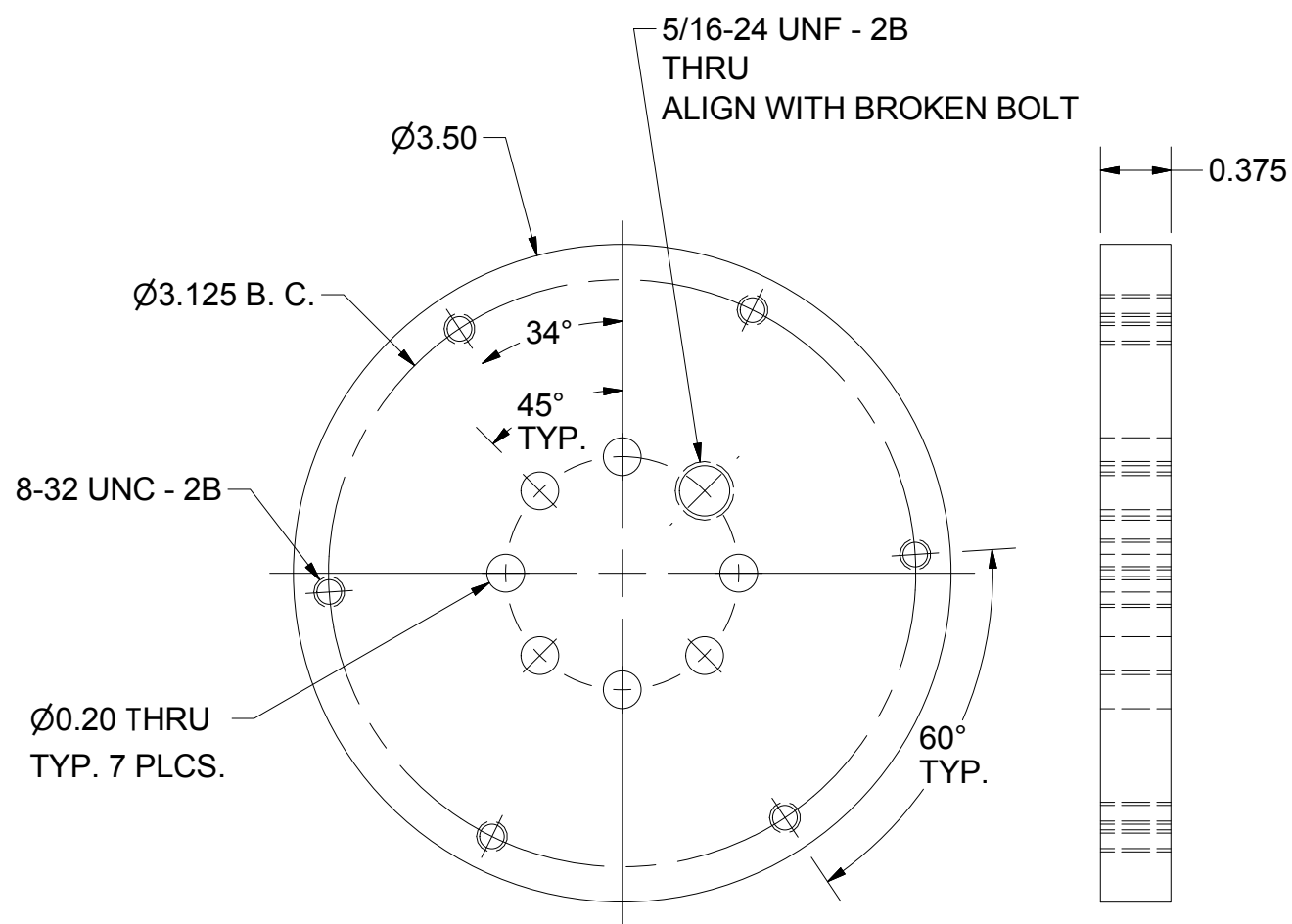
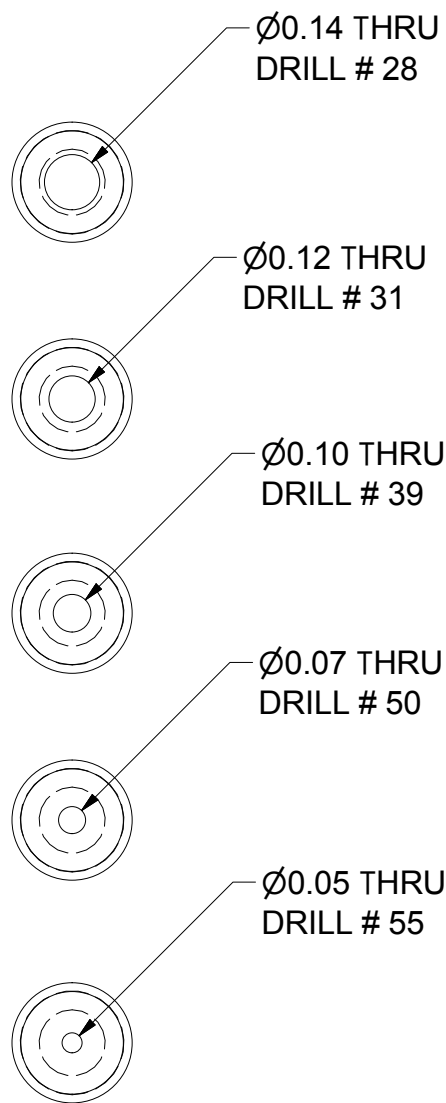
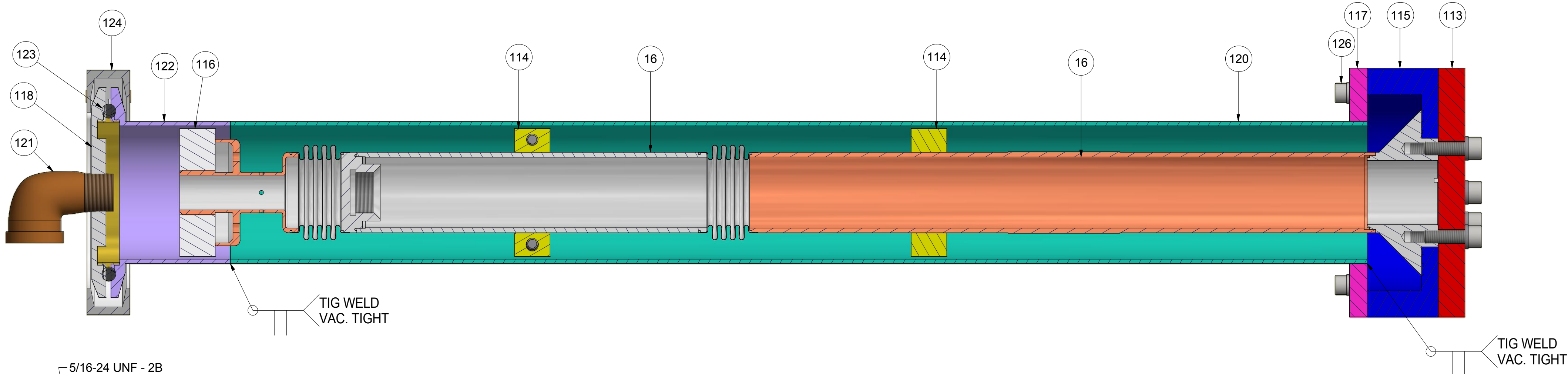
111 WRENCH HANDLE
FILE NAME: 7103-003
SHEET NO.: 31
DFT. SCALE: 2:1
MATERIAL: 0.125" 6061 ALUMINUM SHEET
QTY: 1 PER ASSEMBLY
NOTES:



112 WRENCH PIN
FILE NAME: 7103-003
SHEET NO.: 31
DFT. SCALE: 10:1
MATERIAL: 304 STN. STL.
QTY: 3 PER ASSEMBLY
NOTES:

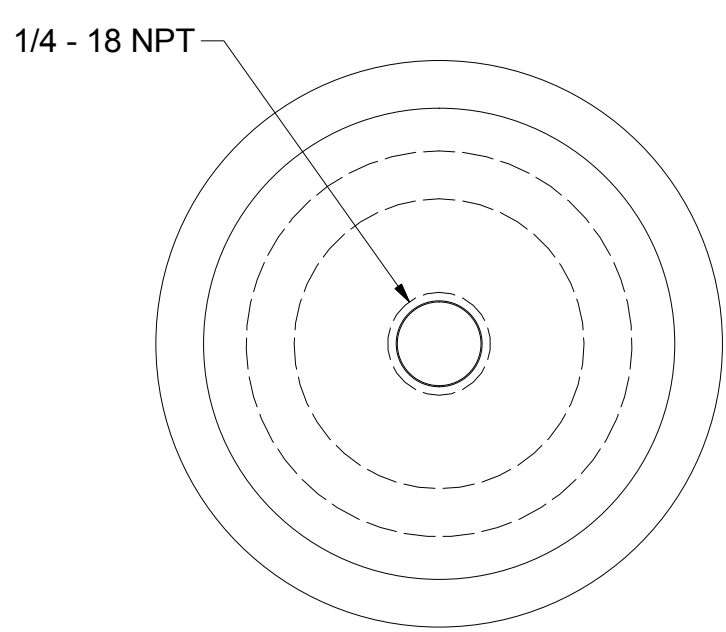
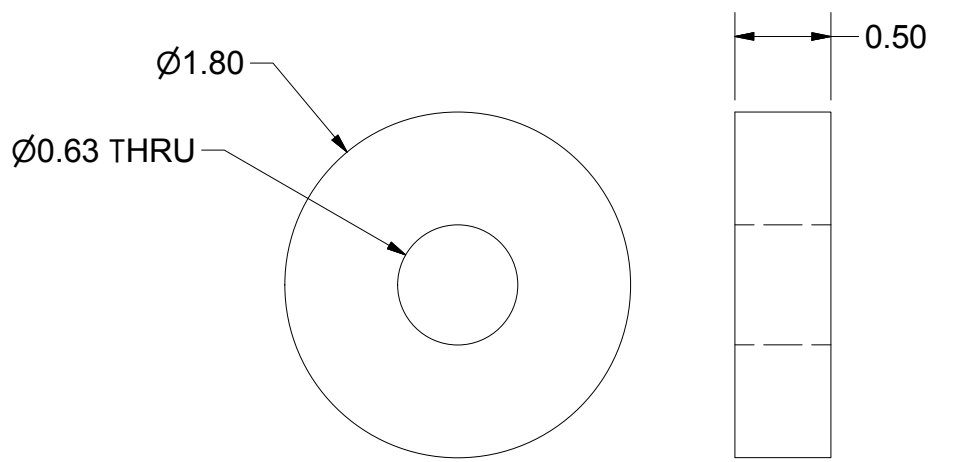
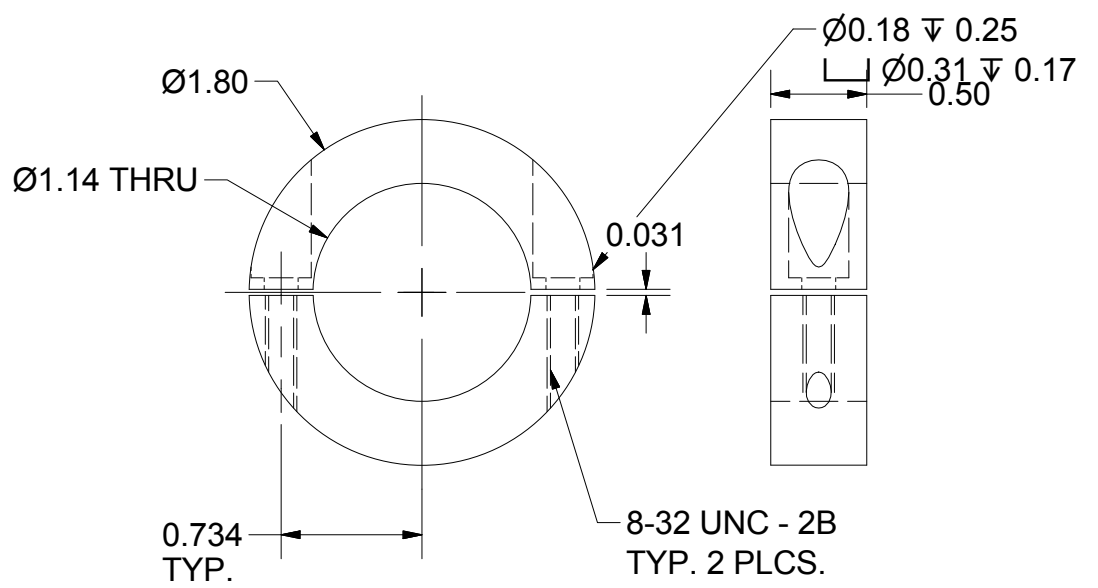
 	112	wrench pin	WRENCH PIN	3				
	111	wrench	WRENCH HANDLE	1				
	110		WRENCH, ASSEMBLY	X				
ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.	
			QUANTITY					
D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.idw						
SH. NO. 31 OF 32	CR-1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS: ± 1/32 ANGLES: ± 0.5° ALL SURFACES 	 CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853					
			ERL MAIN LINAC COUPLER					
			WRENCH, ASSEMBLY AND DETAILS					
REV. A	CHECKED BY: TIO	DRAWN BY VGW	DRAWN FOR SAB	DATE 6/24/2010	SCALE	D	7103-003 SH. NO. 31 OF 32	REV. A
	APPROVED BY: VGV							

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.



119 BRASS THREADED ROD - MODIFIED
FILE NAME: 7103-003
SHEET NO.: 32
DFT. SCALE: 2:1
MATERIAL: BRASS
QTY: 5 REQ'D
NOTES: DRILL EACH AS SHOWN

18	ANSI B18.3 - No. 8 - 32 UNC - 5/16 HS HCS	Hexagon Socket Head Cap Screw	4				
128	Purchase	Spring Lock Washers 1 - 0.164	6			McMaster # 92147A425	
127	Purchase	Spring Lock Washers 1 - 0.19	7			McMaster # 92147A430	
126	Purchase	Socket Head Cap Screw 8-36 UNF - 1.5	6			Grainger # 6ZE23	
125	Purchase	Socket Head Cap Screw 10-32 UNF - 0.625	7			McMaster # 92196A271	
124	Purchase	Kwik Flange NW-50 Hinged Clamp	1			MDC's # 701003	
123	Purchase	NW50 Gasket Assembly	1			MDC's # 710003	
122	Purchase	K50 Tube Stub, 2" OD Tube, 304 SS REF# K200-LWS	1			MDC's # 715109	
121	Purchase	90 Deg Street Elbow - 1/4" NPT , Cast Bronze, Class 125	1			MSC Direct # 41991381	
120	Purchase	Tubing, 2" OD x 0.065" Wall, 16.00" L, 304 SS	1				
119	Sheet 32	Threaded Rod, Brass, 5/16-24 UNF - 0.75 L - Modified	5			McMaster # 98813A030	
118	Sheet 32	Gas Purge (K50 Blank - Modified), REF# K200-B	1			MDC's #712003	
117	Sheet 32	Tube Flange	1				
116	Sheet 32	Teflon Plate 3	1				
115	Sheet 32	Teflon Plate	1				
114	Sheet 32	Tube Holder	2				
113	Sheet 32	End Plate	1				
16	Sheet 18	Warm Inner Conductor Sub Assembly	1				



113 END PLATE
FILE NAME: 7103-003
SHEET NO.: 32
DFT. SCALE: 1:1
MATERIAL: SS
QTY: 1 REQ'D
NOTES:





115 TEFLON PLATE 1
FILE NAME: 7103-003
SHEET NO.: 32
DFT. SCALE: 1:1
MATERIAL: TEFLON
QTY: 1 REQ'D
NOTES:

117 TUBE FLANGE
FILE NAME: 7103-003
SHEET NO.: 32
DFT. SCALE: 1:1
MATERIAL: SS
QTY: 1 REQ'D
NOTES:

114 CENTER TUBE HOLDER
FILE NAME: 7103-003
SHEET NO.: 32
DFT. SCALE: 1:1
MATERIAL: TEFLON
QTY: 2 REQ'D
NOTES:

116 TEFLON PLATE 3
FILE NAME: 7103-003
SHEET NO.: 32
DFT. SCALE: 1:1
MATERIAL: TEFLON
QTY: 1 REQ'D
NOTES:

118 GAS PURGE (K50 BLANK - MODIFIED)
FILE NAME: 7103-003
SHEET NO.: 32
DFT. SCALE: 1:1
MATERIAL: 304 SS
QTY: 1 REQ'D
NOTES:

 		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS		REV.	
							QUANTITY						
D	PRINT DISTR.	PLOT DATE: 12/12/2012 CAD FILE NAME: 7103-003.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><div> LEPP</div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div><div>LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</div></div>								
7103-003					ERL MAIN LINAC COUPLER								
SH. NO. 32 OF 32					BUSTED BOLT REMOVER SUB ASSEMBLY								
REV.	CHECKED BY: TIO	DRAWN BY VGV		DRAWN FOR SAB		DATE 6/24/2010		SCALE		D	7103-003		REV.
	APPROVED BY: VGV	SH. NO. 32 OF 32											