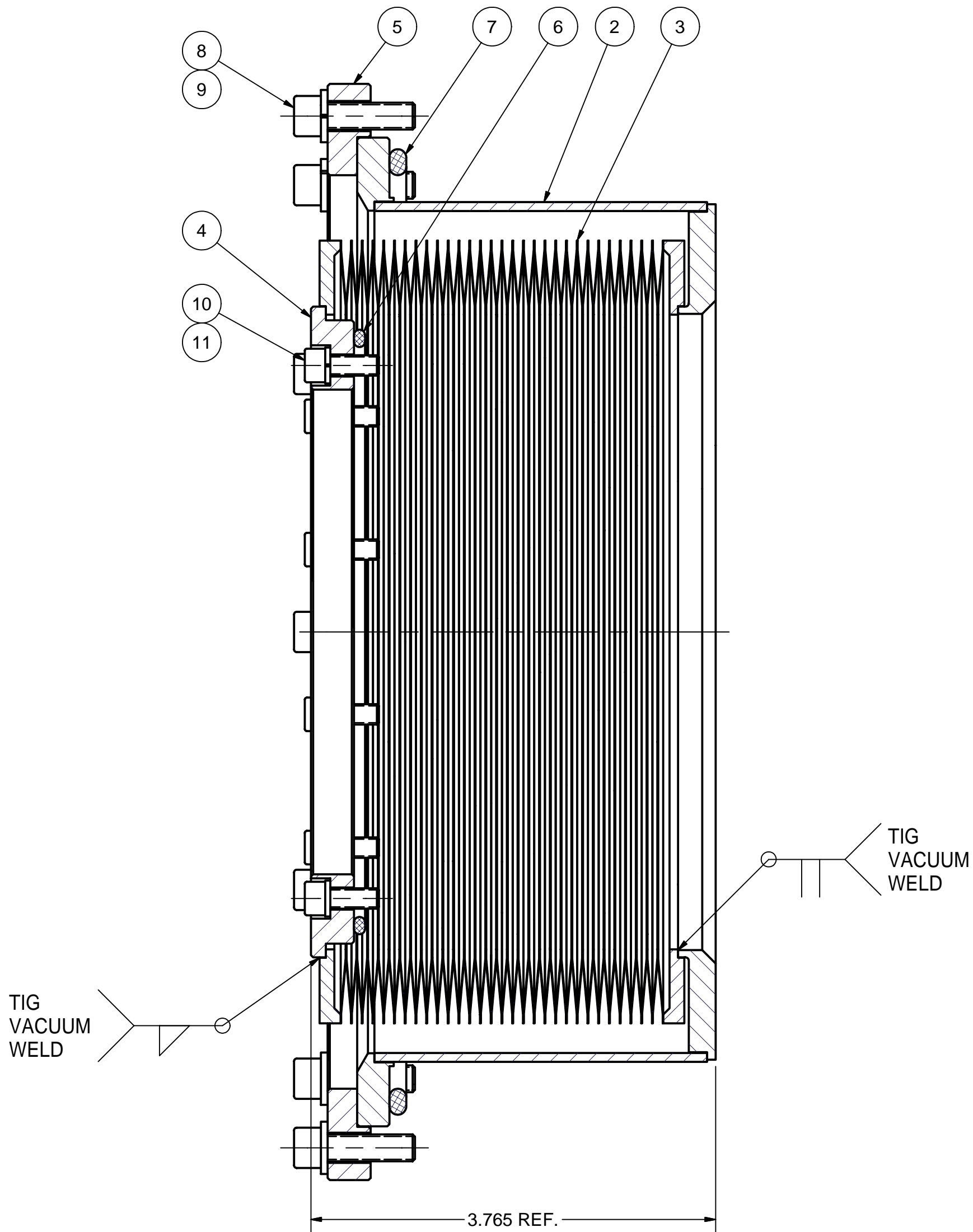
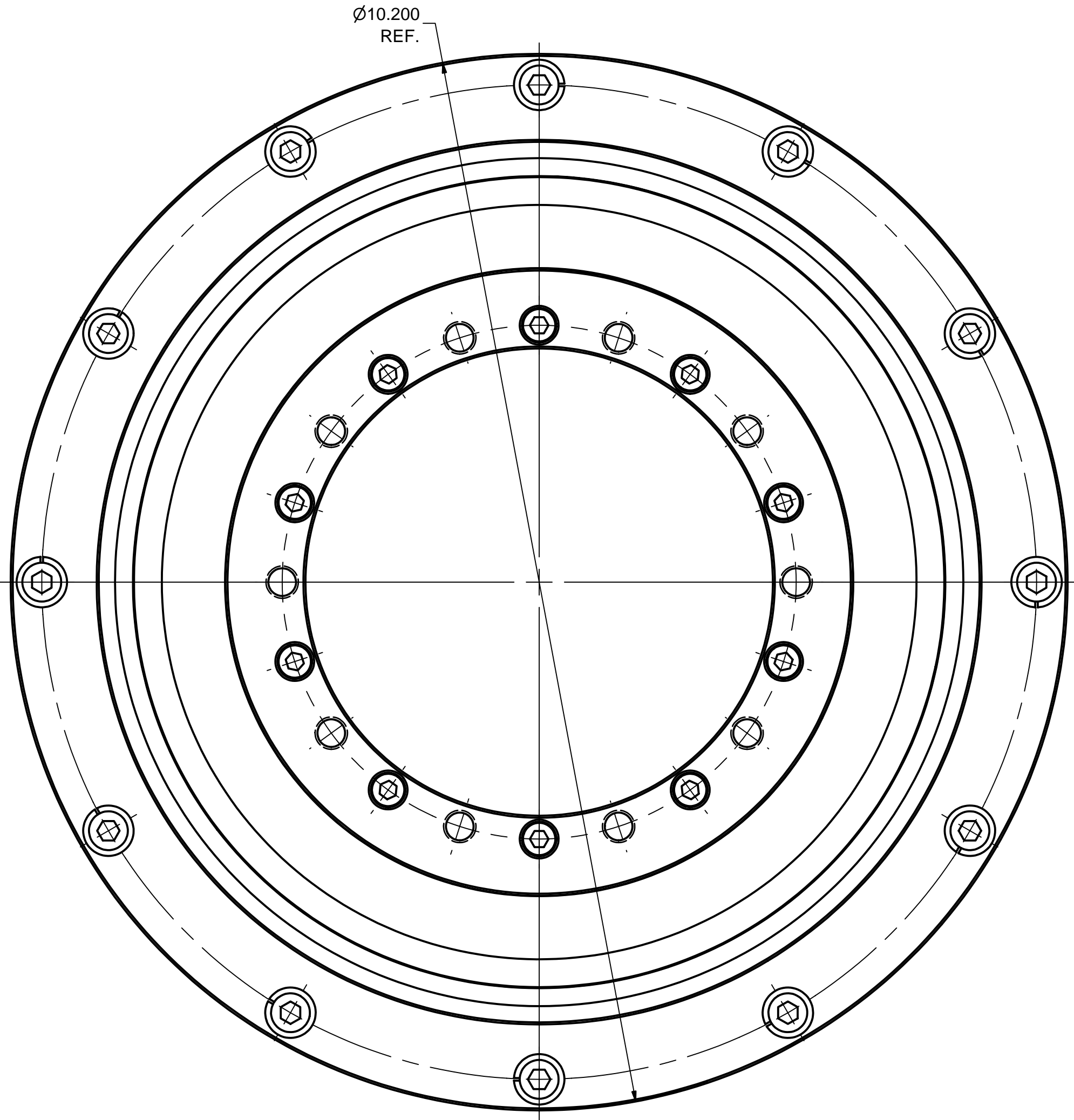


REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		5/16-24UNF HOLES ADDED TO ITEM 4 (4/16/07) TMK	4-16-07	TOC
B	F-1	IN P.L. MAT'L FOR ITEMS 8-11 WAS "316 St. Steel"	5-24-07	TIO



1 VACUUM VESSEL BEAM TUBE BELLOWS UNIT ASSEMBLY

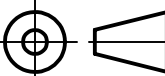

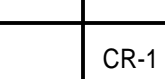



FILE NAME: 7102-048
SHEET NO.: 1
DFT. SCALE: 1:1
MATERIAL:
QTY: SEE NOTE 1
NOTES: 1. QTY.: 1 PER TEST CRYOMODULE, 2 PER FULL SIZE CRYOMODULE.
2. O-RINGS 6 AND 7 SHOWN SQUEEZED.
3. LEAK CHECK. LEAK RATE: < 2.0 E-8 Torr-l/sec. PROTECT BELLOWS FROM COLLAPSING.

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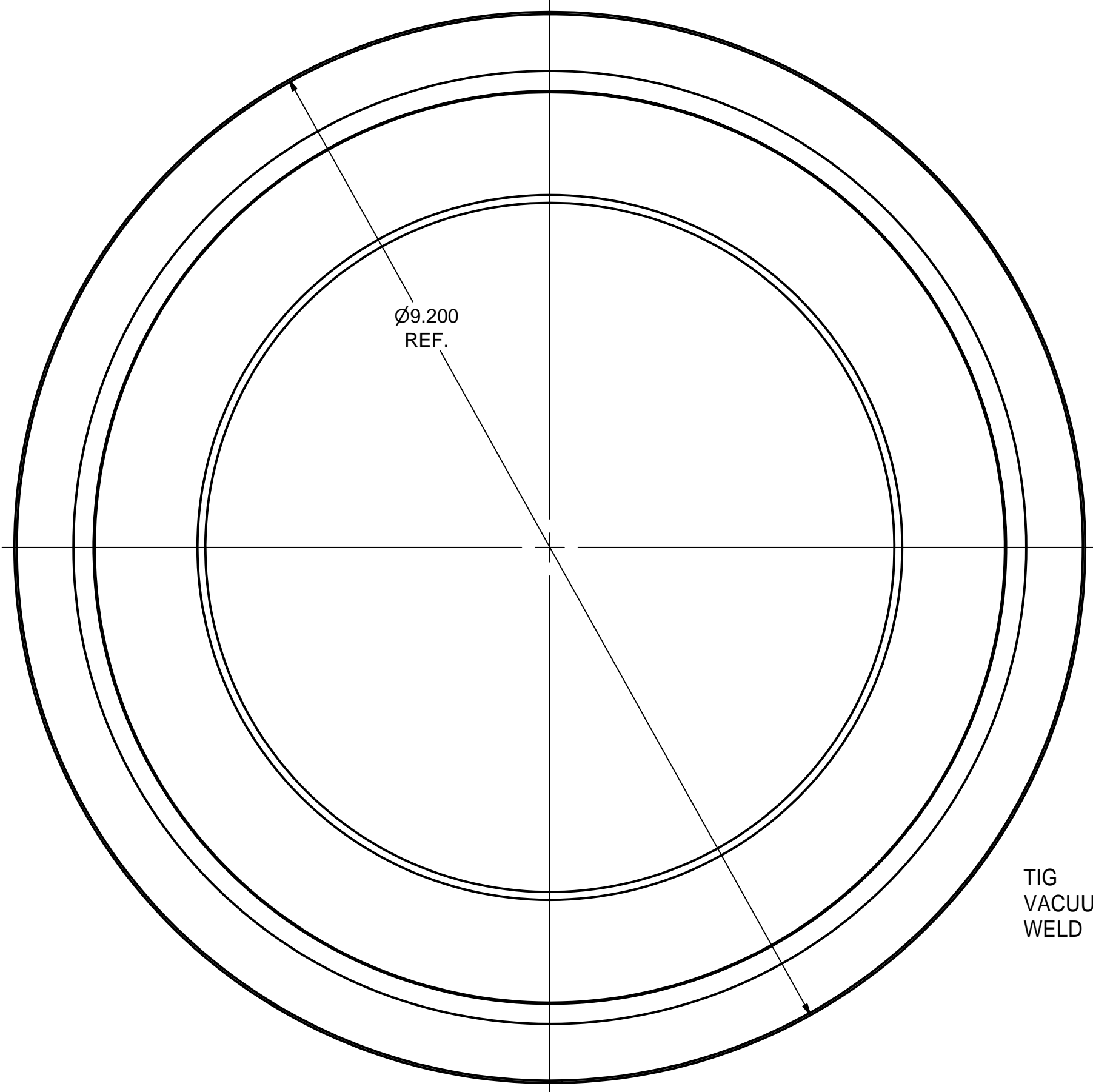
11	-	#10 Spring Lock Washer	10		304L St. Steel	
10	-	#10-32 - 1/2 Socket Hd. Cap Screw	10		304L St. Steel, Diconited	
9	-	1/4 Spring Lock Washer	12		304L St. Steel	
8	-	1/4-28 x 7/8 Socket Hd. Cap Screw	12		304L St. Steel, Diconited	
7	-	8.5 ID x 3/16 W (#371) O-RING	1		Viton or EPDM	
6	-	5.375 ID x 1/8 W (#253) O-RING	1		Viton or EPDM	
5	7102-048 (SH.4)	ROTATABLE FLANGE	1			
4	7102-048 (SH.4)	INNER FLANGE	1			
3	7102-048 (SH.3)	DN 160 WELDED BELLOWS (30 CONV., R2 CUFFS)	1		UHV Design Ltd.	
2	7102-048 (SH.2)	OUTER FLANGE SUB-ASM	1			
1	7102-048 (SH.1)	VACUUM VESSEL BEAM TUBE BELLOWS UNIT ASSEMBLY	X			

FOR MACHINING LUBRICANT USE ONLY
ALKALINE DETERGENT LUBRICANT CIMSTAR 40
OR EQUIVALENT APPROVED BY CORNELL LEPP

TECHNICAL RESOURCE APPROVALS REQUIRED BEFORE FABRICATION			
	OK	DATE	N/A
DRAFTING (O'Connel):			
MACHINE SHOP (Kaminski):			
CHEMISTRY (Conklin):			
ELECTRONICS SHOP (Barley):			
FURNACE BRAZING (Sherwood):			
BEAM WELDING (Sears):			
WELDING OTHER (Gallagher):			
UTILITIES INTEGRATION (Gallagher):			
STOCKROOMS (Lockwood):			

	ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.
				QUANTITY						
	PLOT DATE: 6/19/2007 CAD FILE NAME: 7102-048.idw									
	PRINT DISTR.									
 SH. NO. 1 OF 4	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><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div><div>LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</div></div> ERL INJECTOR CRYOMODULE VACUUM VESSEL BEAM TUBE BELLOWS UNIT							
		CHECKED BY: V.M. APPROVED BY: M.L.								DRAWN BY V.Medjdzade

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.



TIG
VACUUM
WELD

0.02 x 45°
2 CHAMFERS

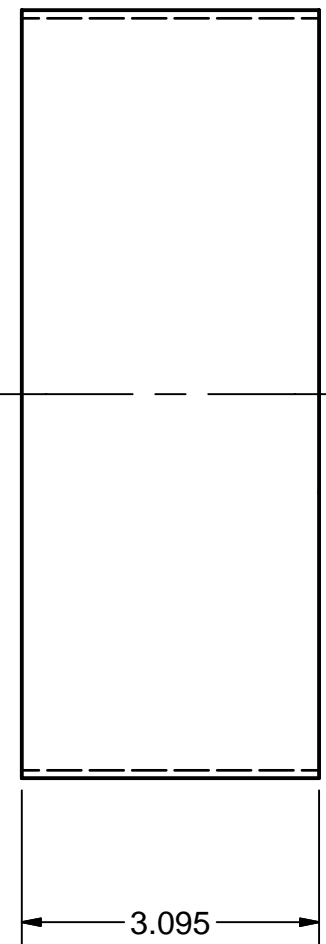
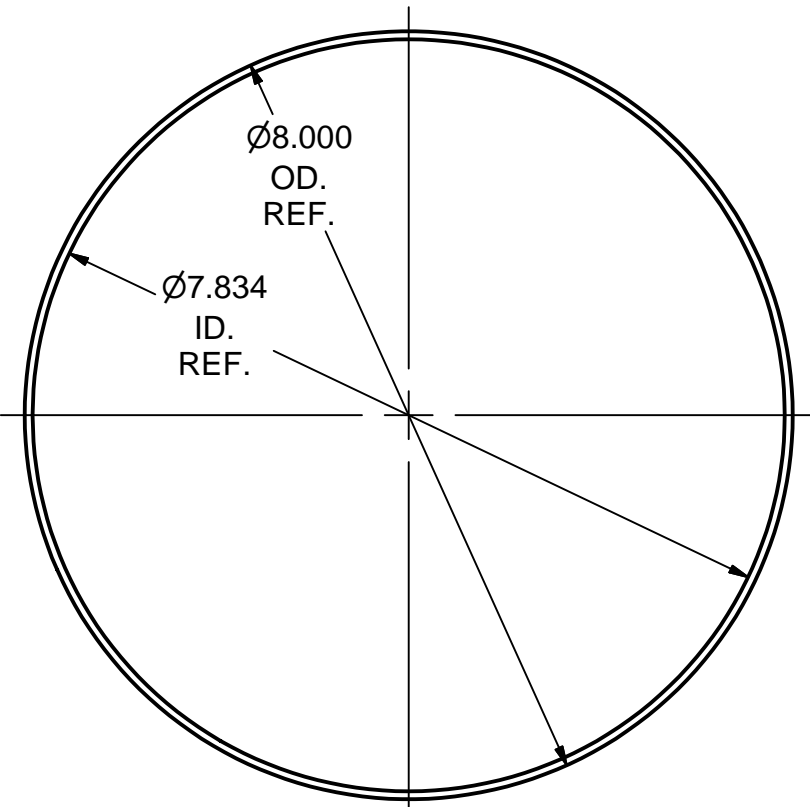
32

0.300

TIG
VACUUM
WELD

2 OUTER FLANGE SUB-ASM

FILE NAME: 7102-048
SHEET NO.: 2
DFT. SCALE: 1:1
MATERIAL:
QTY: 1 PER ASSEMBLY
NOTES: 1. LEAK CHECK WELDED JOINTS.
LEAK RATE: < 2.0 E-8 Torr-l/sec.

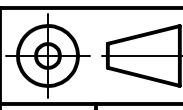


13 TUBE

FILE NAME: 7102-048
SHEET NO.: 2
DFT. SCALE: 1:2
MATERIAL: 8" OD x 0.083 W 316L ST. STEEL TUBE
QTY: 1 PER ASSEMBLY
NOTES:

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ALKALINE DETERGENT LUBRICANT CIMSTAR 40
OR EQUIVALENT APPROVED BY CORNELL LEPP

TECHNICAL RESOURCE APPROVALS REQUIRED BEFORE FABRICATION			
	OK	DATE	N/A
DRAFTING (O'Connel):			
MACHINE SHOP (Kaminski):			
CHEMISTRY (Conklin):			
ELECTRONICS SHOP (Barley):			
FURNACE BRAZING (Sherwood):			
BEAM WELDING (Sears):			
WELDING OTHER (Gallagher):			
UTILITIES INTEGRATION (Gallagher):			
STOCKROOMS (Lockwood):			



PRINT
DISTR.



D

SH. NO. 2
OF 4

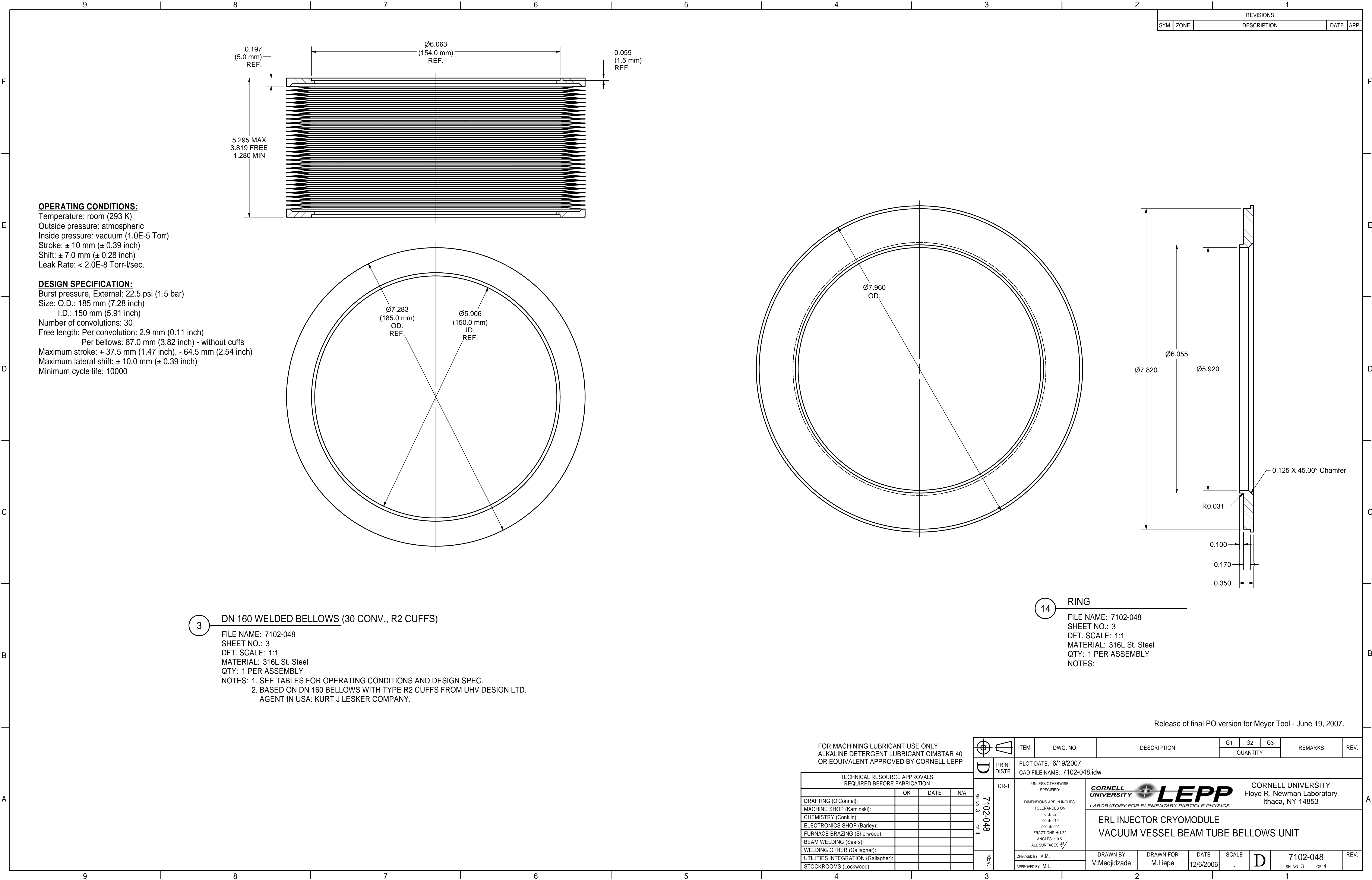
7102-048

REV.

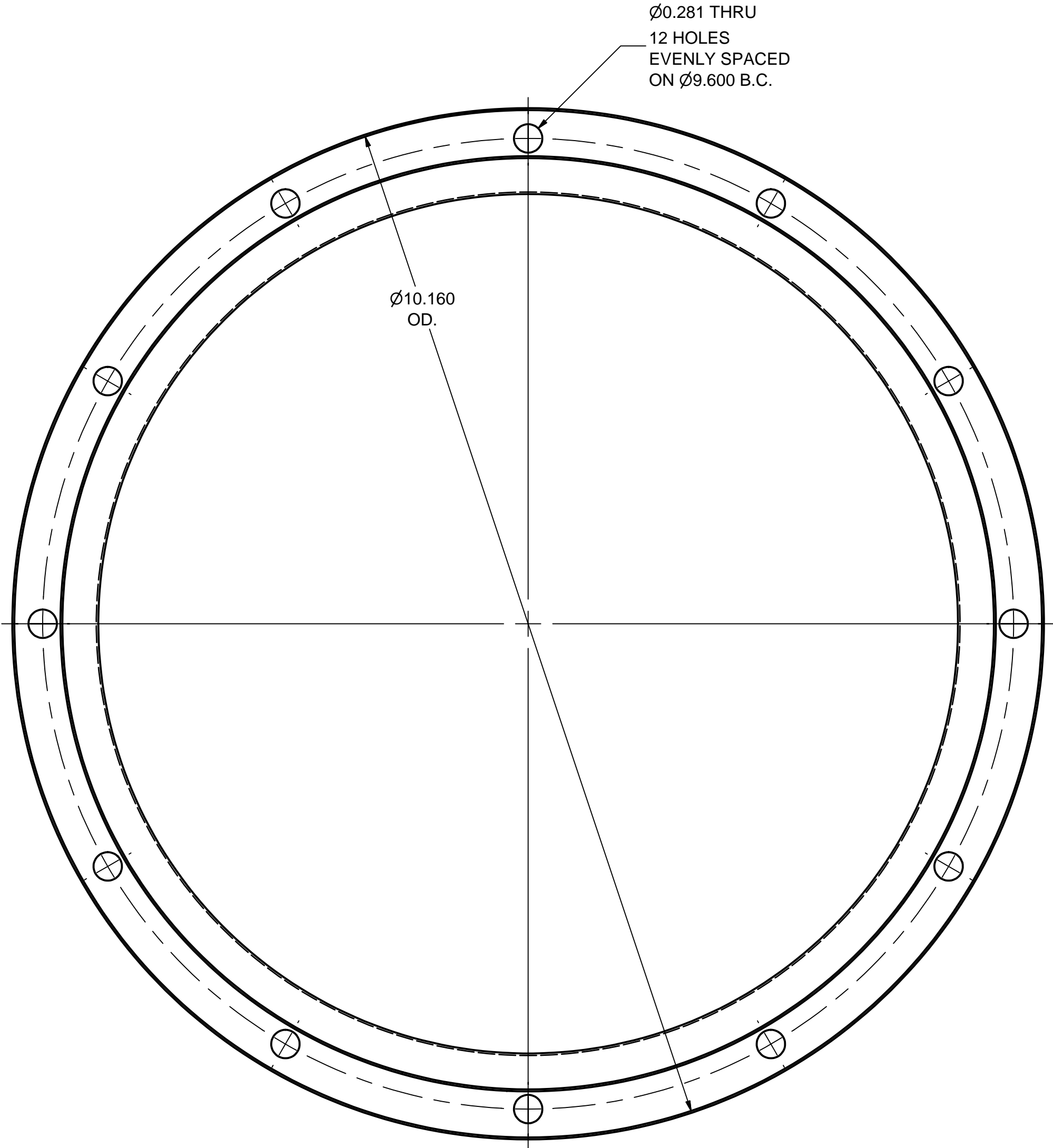
3

14	7102-048 (SH.3)	RING	1					
13	7102-048 (SH.2)	TUBE	1					
12	7102-048 (SH.2)	OUTER FLANGE	1					
2	7102-048 (SH.2)	OUTER FLANGE SUB-ASM	X					
ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.	
			QUANTITY					
PLOT DATE: 6/19/2007 CAD FILE NAME: 7102-048.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 LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS		ERL INJECTOR CRYOMODULE VACUUM VESSEL BEAM TUBE BELLOWS UNIT				
CHECKED BY: V.M. APPROVED BY: M.L.		DRAWN BY V.Medjdzade	DRAWN FOR M.Liepe	DATE 12/6/2006	SCALE -	D	7102-048 SH. NO. 2 OF 4	REV.

Release of final PO version for Meyer Tool - June 19, 2007.

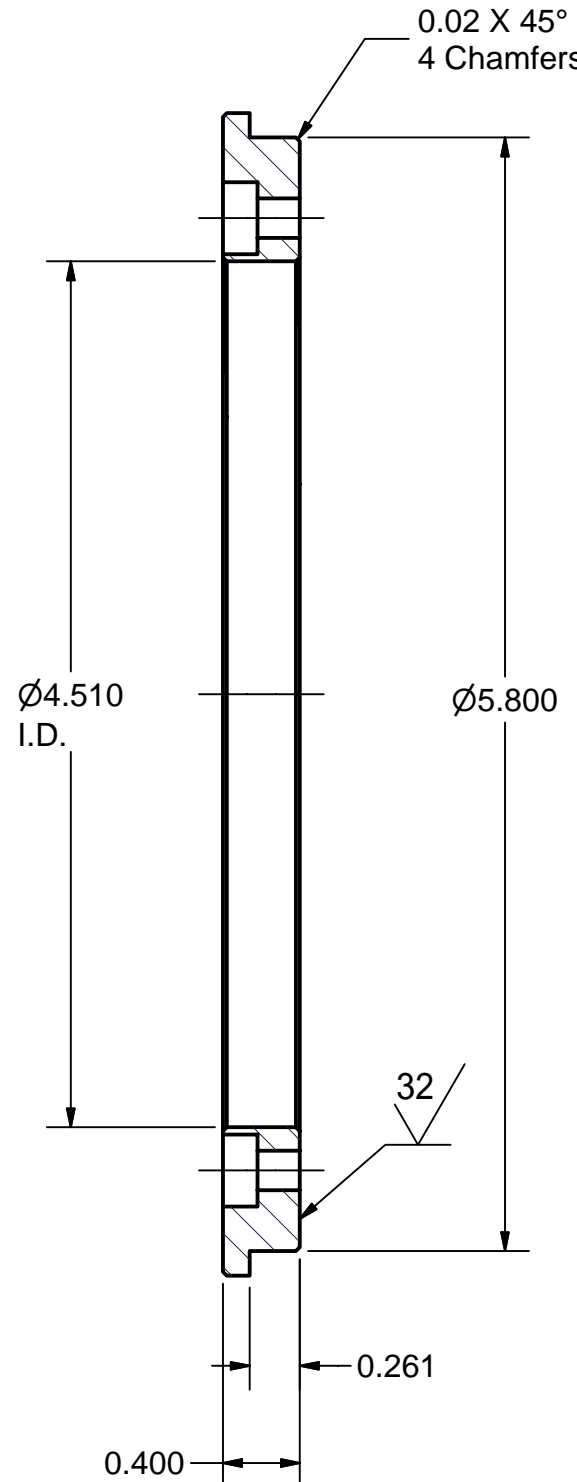
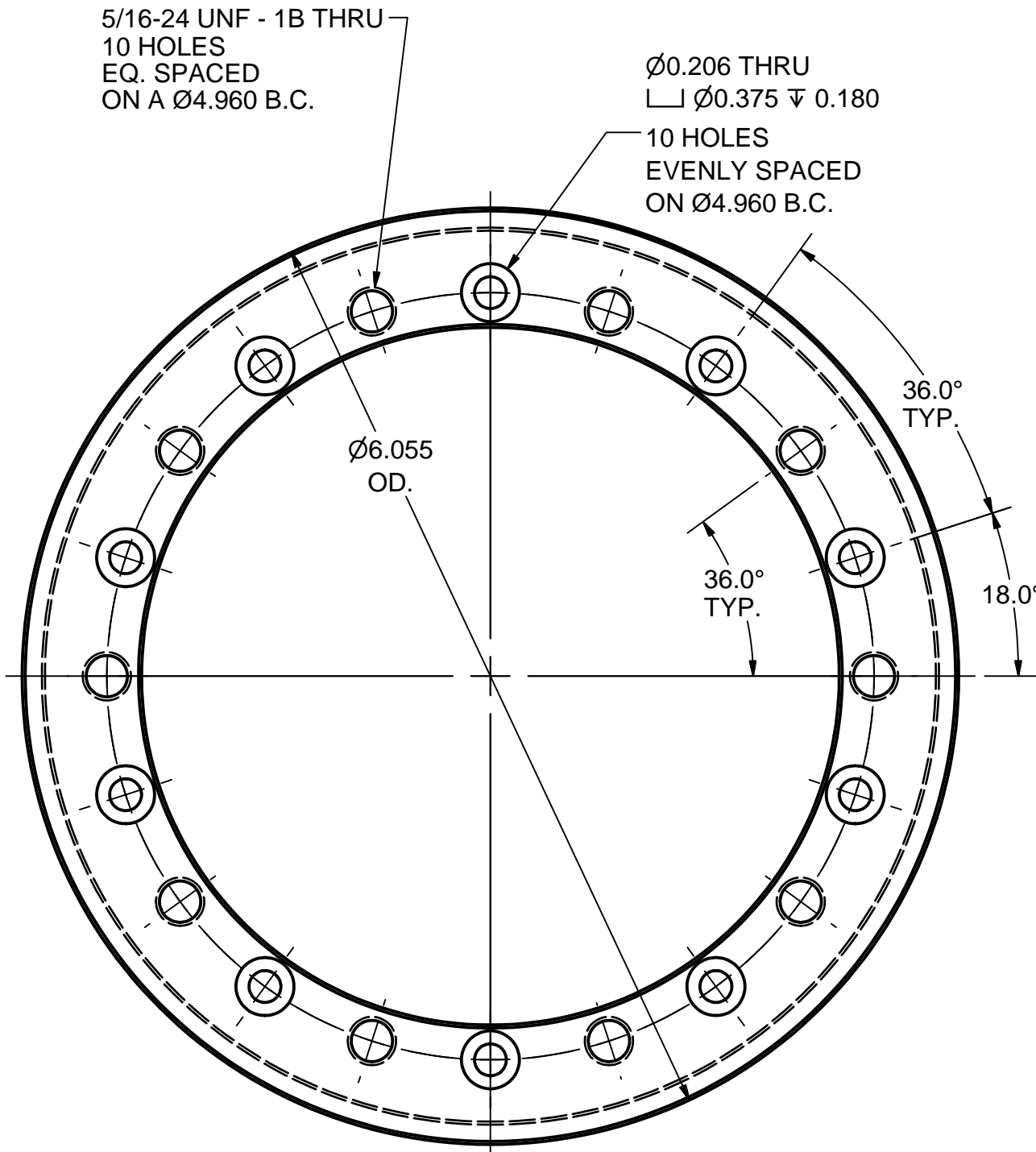
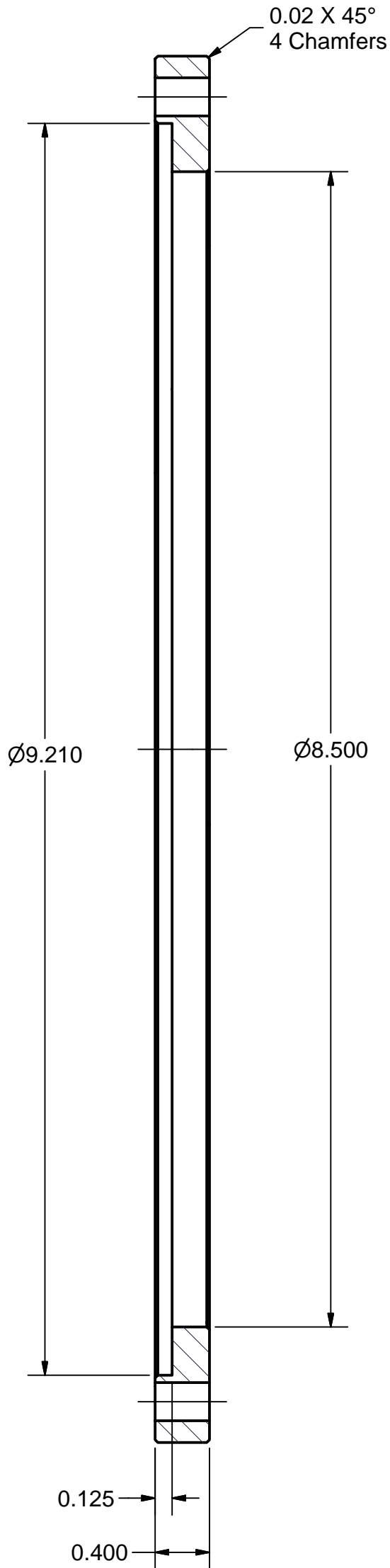


REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A	D3	ADDED 5/16-24UNF HOLES TO ITEM 4	4-16-07	TOC
B		Mat'l for Items 4 & 5 was 316L St. Steel	JGL 5/24/07	TIO



5 ROTATABLE FLANGE

FILE NAME: 7102-048
SHEET NO.: 4
DFT. SCALE: 1:1
MATERIAL: 304L St. Steel
QTY: 1 PER ASSEMBLY
NOTES:



4 INNER FLANGE

FILE NAME: 7102-048
SHEET NO.: 4
DFT. SCALE: 1:1
MATERIAL: 304L St. STEEL
QTY: 1 PER ASSEMBLY
NOTES:

Release of final PO version for Meyer Tool - June 19, 2007.

FOR MACHINING LUBRICANT USE ONLY ALKALINE DETERGENT LUBRICANT CIMSTAR 40 OR EQUIVALENT APPROVED BY CORNELL LEPP		ITEM		DWG. NO.		DESCRIPTION		G1G2G3		REMARKS		REV.									
		PRINT DISTR.		PLOT DATE: 6/19/2007 CAD FILE NAME: 7102-048.idw				QUANTITY													
TECHNICAL RESOURCE APPROVALS REQUIRED BEFORE FABRICATION		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 INJECTOR CRYOMODULE VACUUM VESSEL BEAM TUBE BELLOWS UNIT													
DRAFTING (O'Connel): MACHINE SHOP (Kaminski): CHEMISTRY (Conklin): ELECTRONICS SHOP (Barley): FURNACE BRAZING (Sherwood): BEAM WELDING (Sears): WELDING OTHER (Gallagher): UTILITIES INTEGRATION (Gallagher): STOCKROOMS (Lockwood):		SH. NO. 4 OF 4		REV. B		CHECKED BY: V.M. APPROVED BY: M.L.		DRAWN BY V.Medjdzade		DRAWN FOR M.Liepe		DATE 12/6/2006		SCALE -		D		7102-048 SH. NO. 4 OF 4		REV. B	