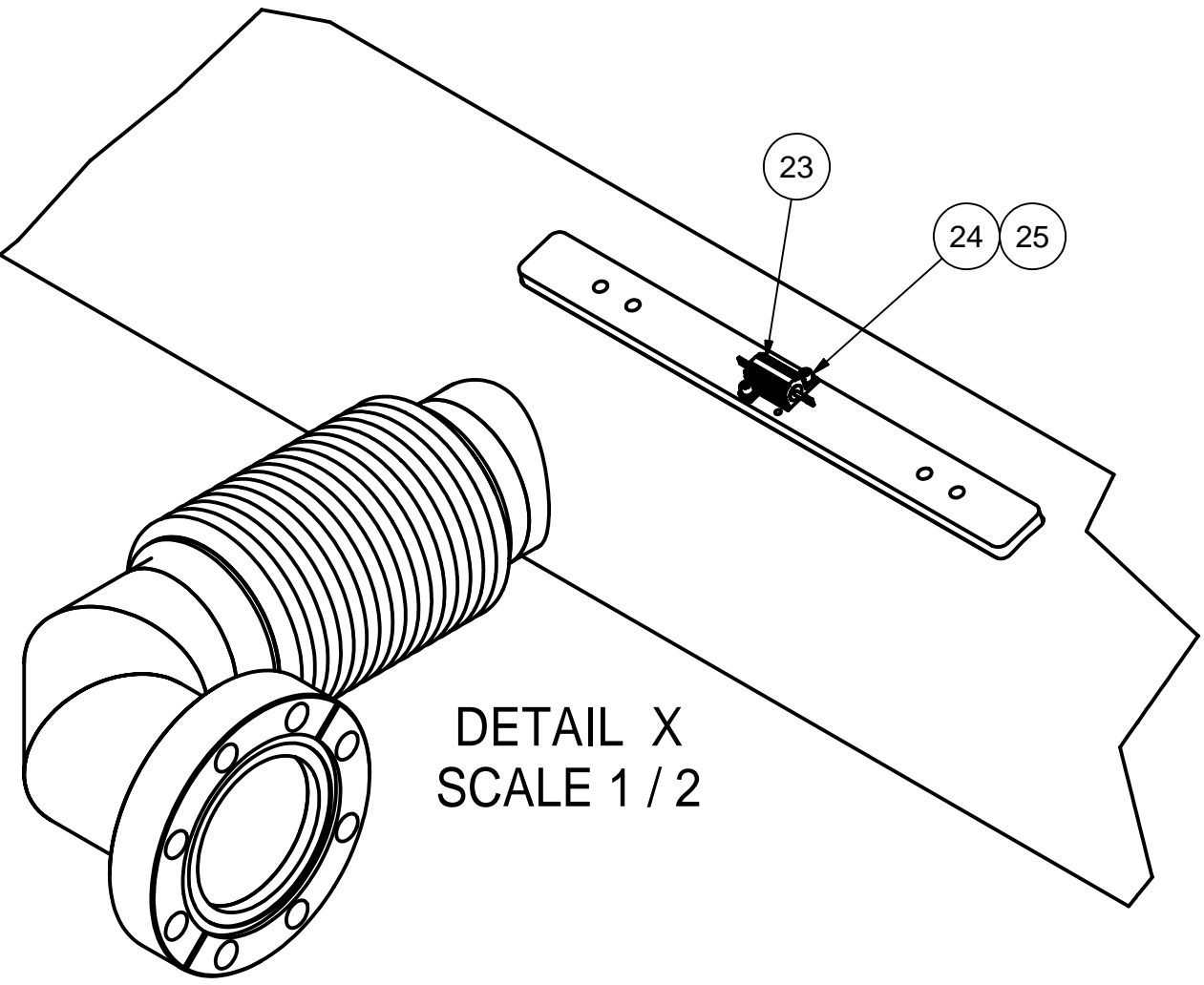
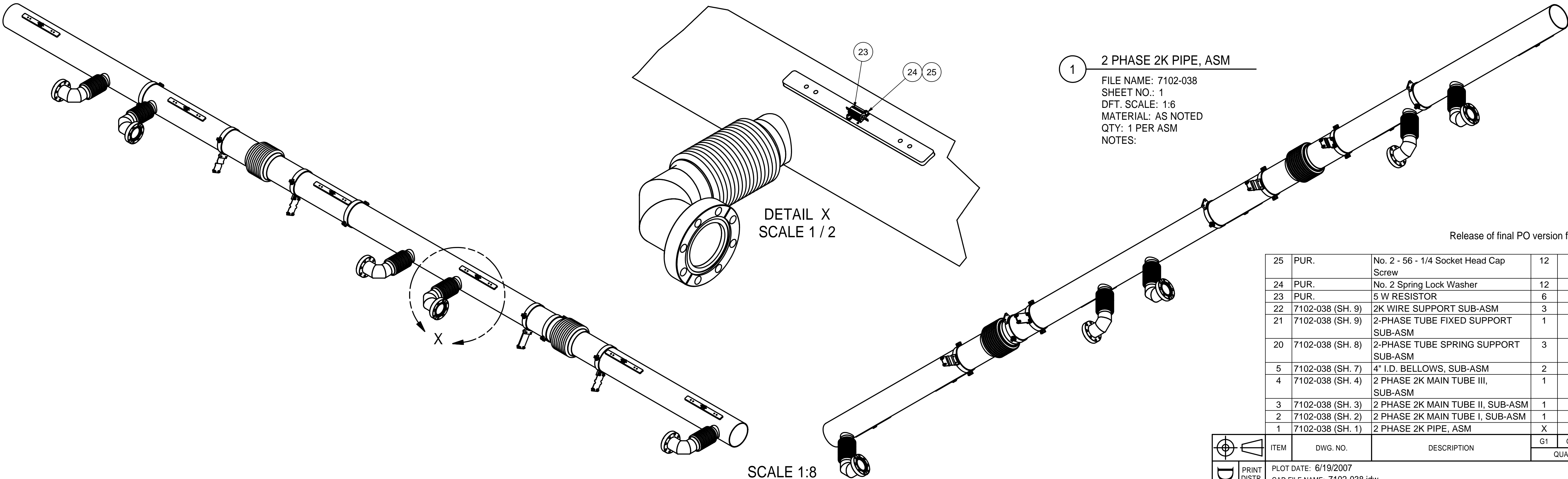
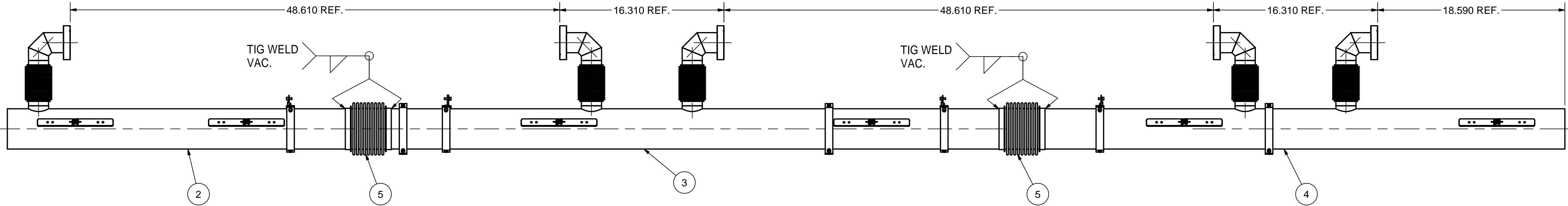
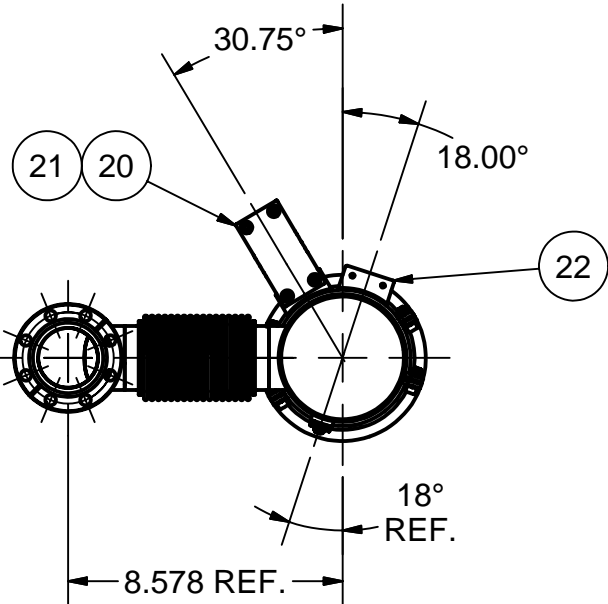
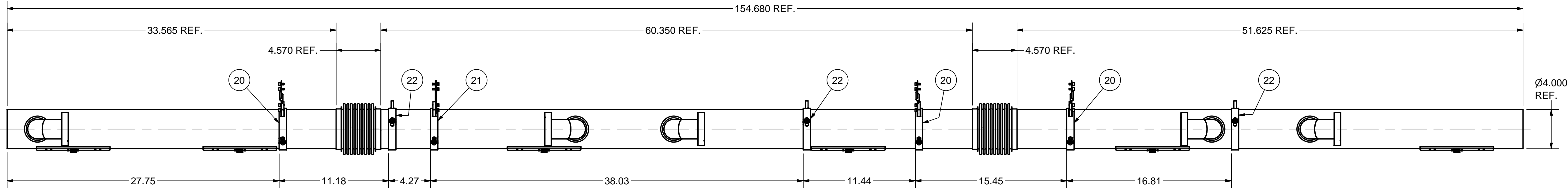


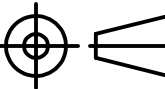




REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.



1 2 PHASE 2K PIPE, ASM
FILE NAME: 7102-038
SHEET NO.: 1
DFT. SCALE: 1:6
MATERIAL: AS NOTED
QTY: 1 PER ASM
NOTES:

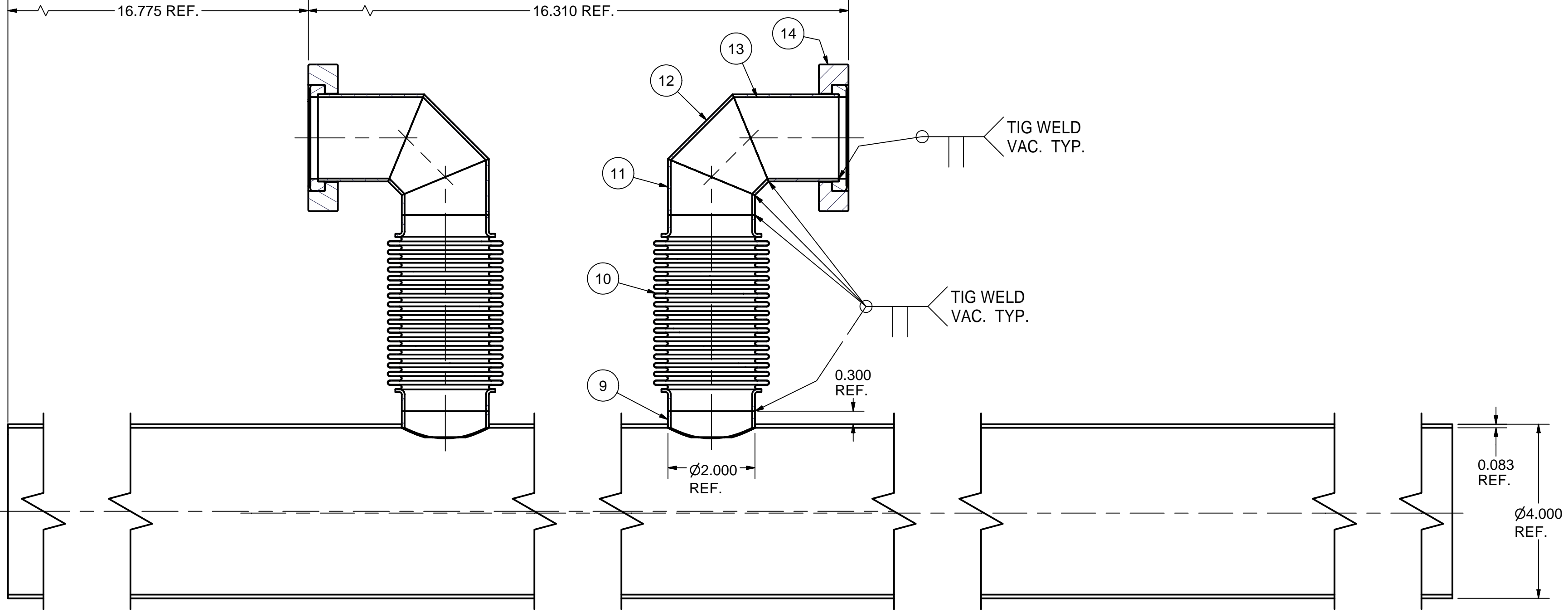
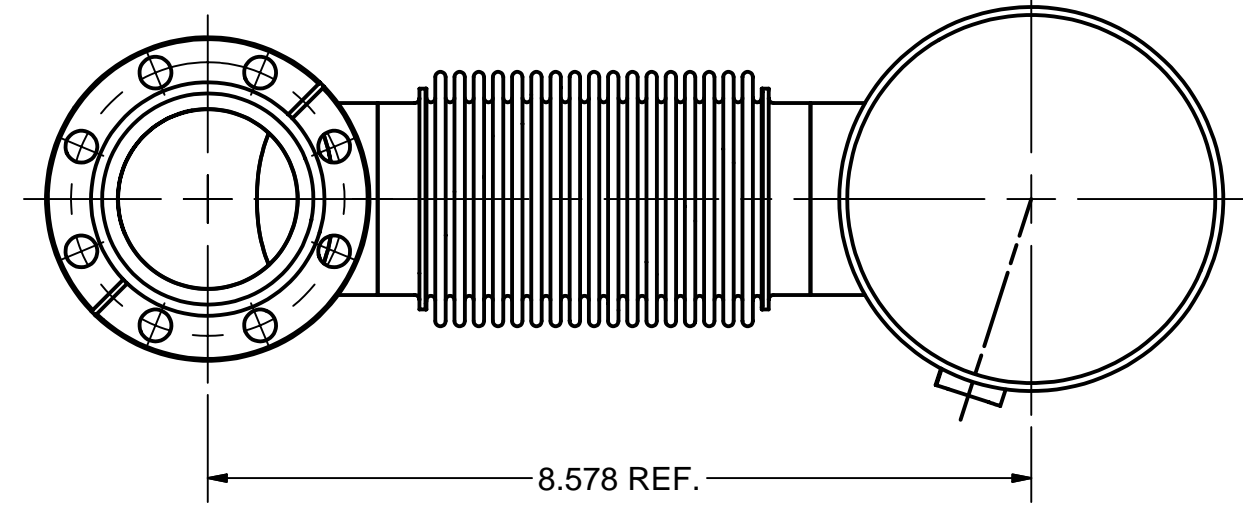
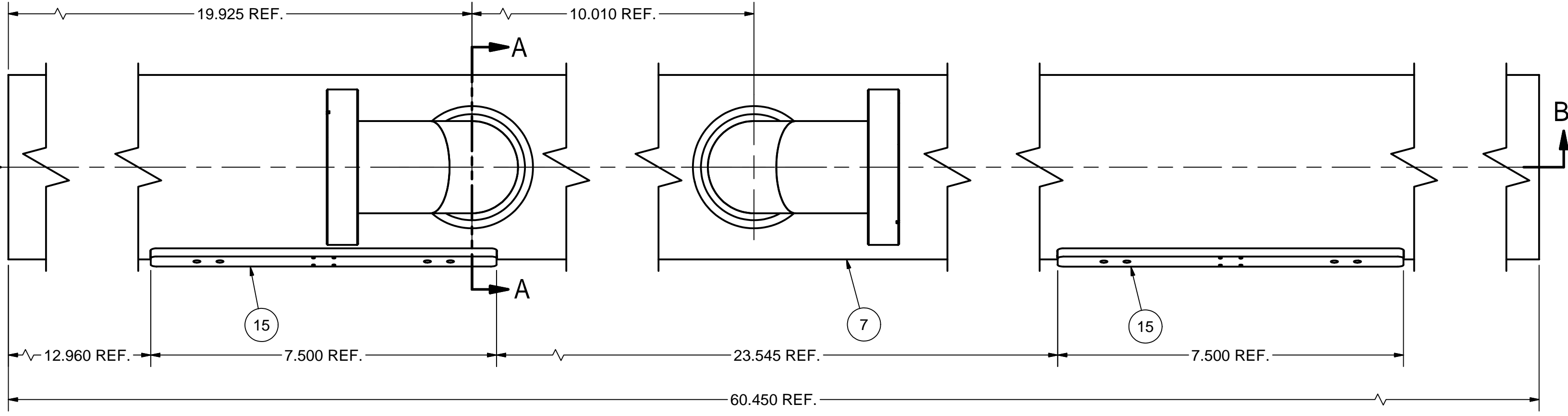
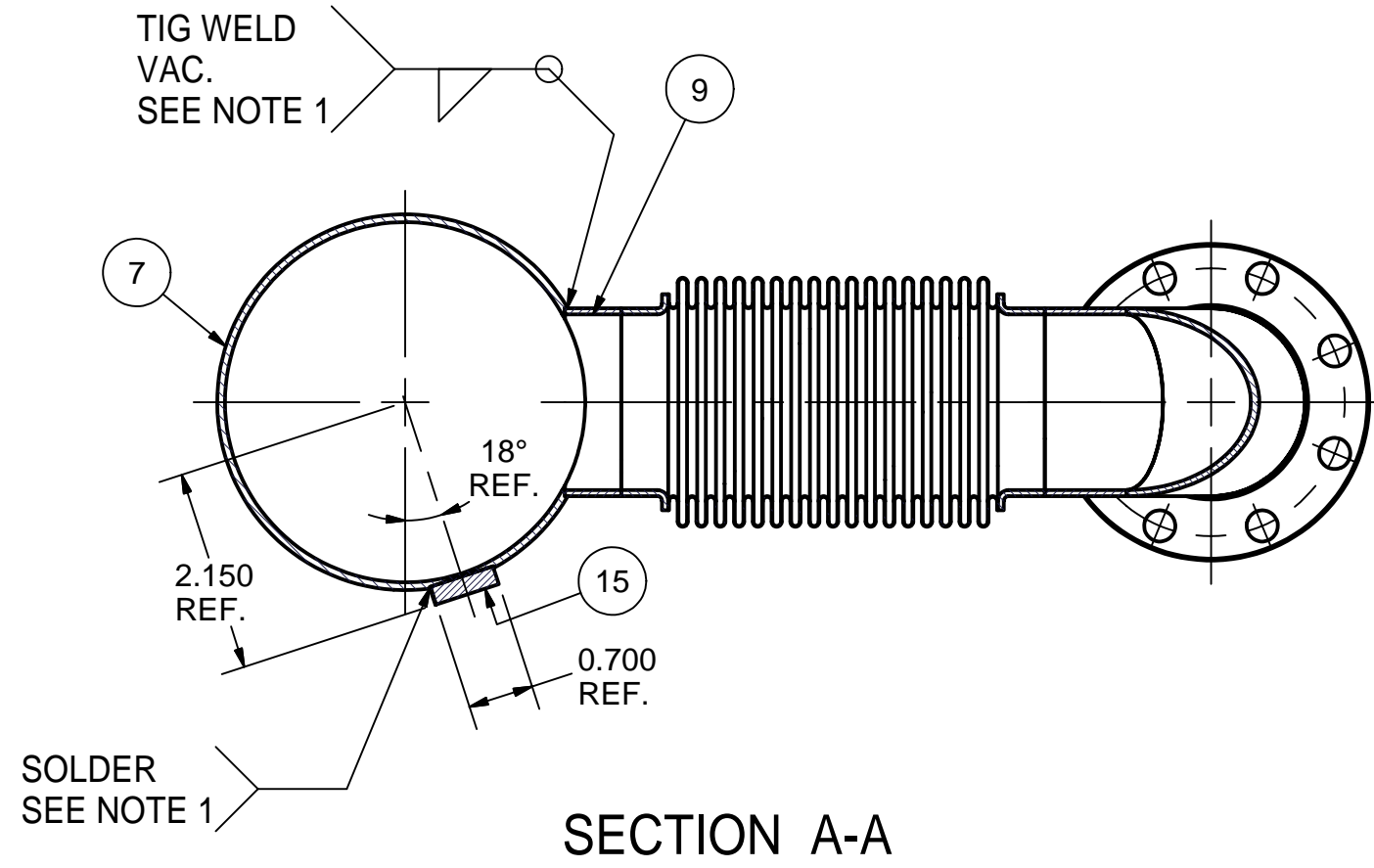
Release of final PO version for Meyer Tool - June 19, 2007.

25	PUR.	No. 2 - 56 - 1/4 Socket Head Cap Screw	12			316L ST. STEEL	
24	PUR.	No. 2 Spring Lock Washer	12			316L ST. STEEL	
23	PUR.	5 W RESISTOR	6			RH005 TYPE	
22	7102-038 (SH. 9)	2K WIRE SUPPORT SUB-ASM	3				
21	7102-038 (SH. 9)	2-PHASE TUBE FIXED SUPPORT SUB-ASM	1				
20	7102-038 (SH. 8)	2-PHASE TUBE SPRING SUPPORT SUB-ASM	3				
5	7102-038 (SH. 7)	4" I.D. BELLOWS, SUB-ASM	2				
4	7102-038 (SH. 4)	2 PHASE 2K MAIN TUBE III, SUB-ASM	1				
3	7102-038 (SH. 3)	2 PHASE 2K MAIN TUBE II, SUB-ASM	1				
2	7102-038 (SH. 2)	2 PHASE 2K MAIN TUBE I, SUB-ASM	1				
1	7102-038 (SH. 1)	2 PHASE 2K PIPE, ASM	X				

	ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.
							QUANTITY			
	PRINT DISTR.	PLOT DATE: 6/19/2007 CAD FILE NAME: 7102-038.idw								
SH. NO. 1 OF 9	7102-038	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 Floyd R. Newman Laboratory Ithaca, NY 14853</div></div> <div>ERL Injector Cryomodule 2 Phase 2 K Pipe Assembly</div>						
REV.		CHECKED BY: ML	DRAWN BY	DRAWN FOR	DATE	SCALE		7102-038	SH. NO. 1 OF 9	REV.
		APPROVED BY: ML	RHE/Di	M.Liepe	2/19/2007					

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REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.



SECTION B-B


3 2 PHASE 2 K MAIN TUBE II, SUB-ASM

FILE NAME: 7102-038
SHEET NO.: 3
DFT. SCALE: 1:2
MATERIAL: AS NOTED
QTY: 1 PER ASM

NOTES: 1. FIRST WELD ITEM 9. THEN SOLDER PARTS 15 WITH STAY BRIGHT #8 (OR EQUIVALENT) SOLDER. REMOVE FLUX AND THOROUGHLY CLEAN PARTS. CONTINUE WELDING - PROTECT SOLDERED PLACES FROM OVERHEATING.

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

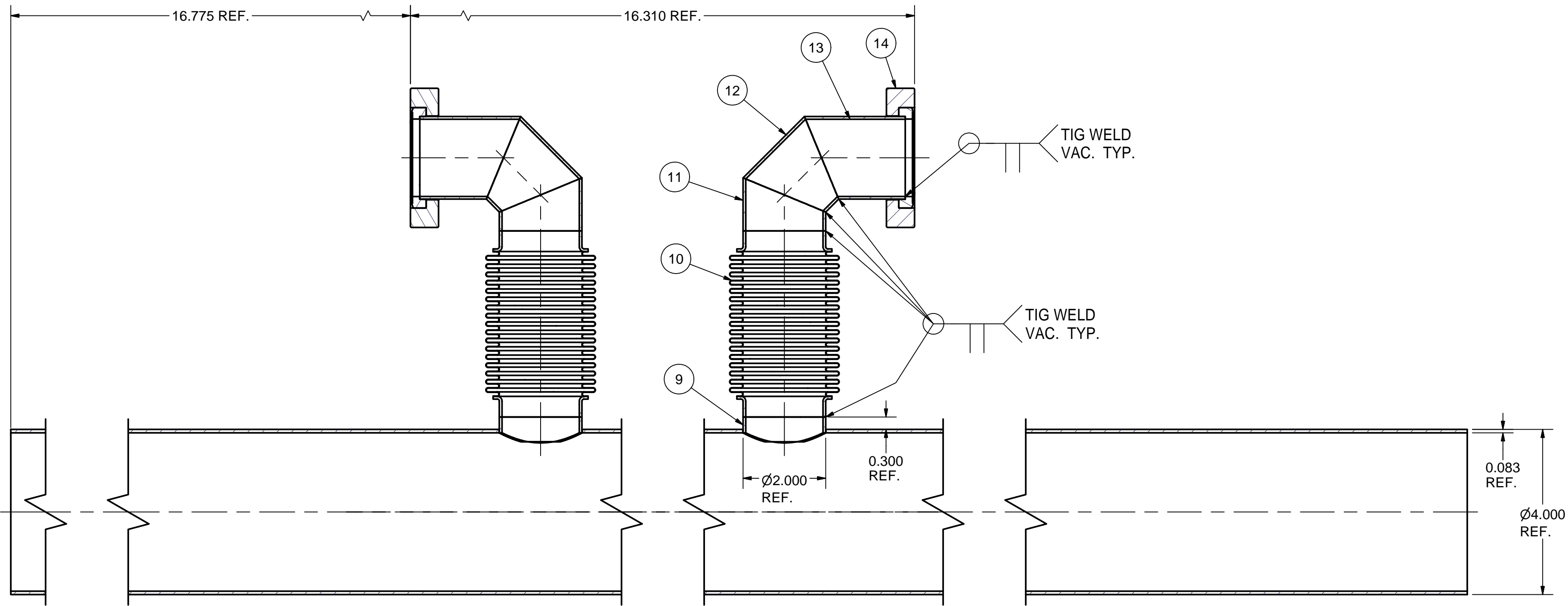
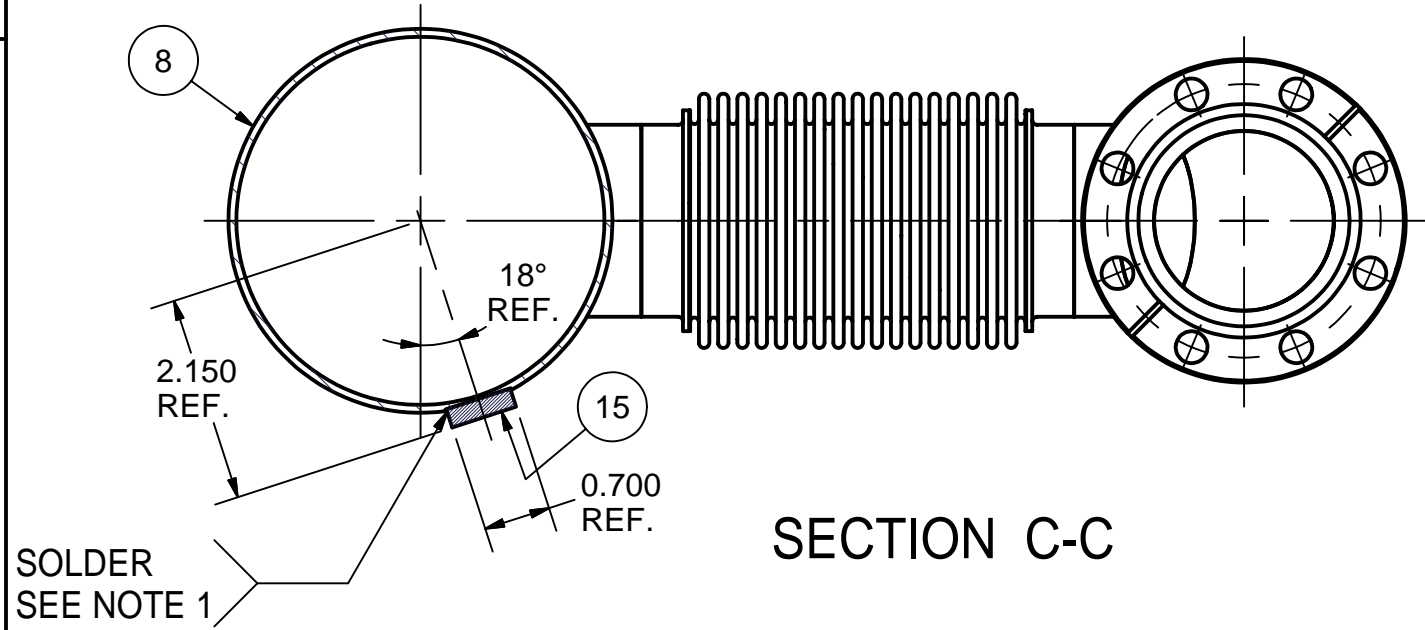
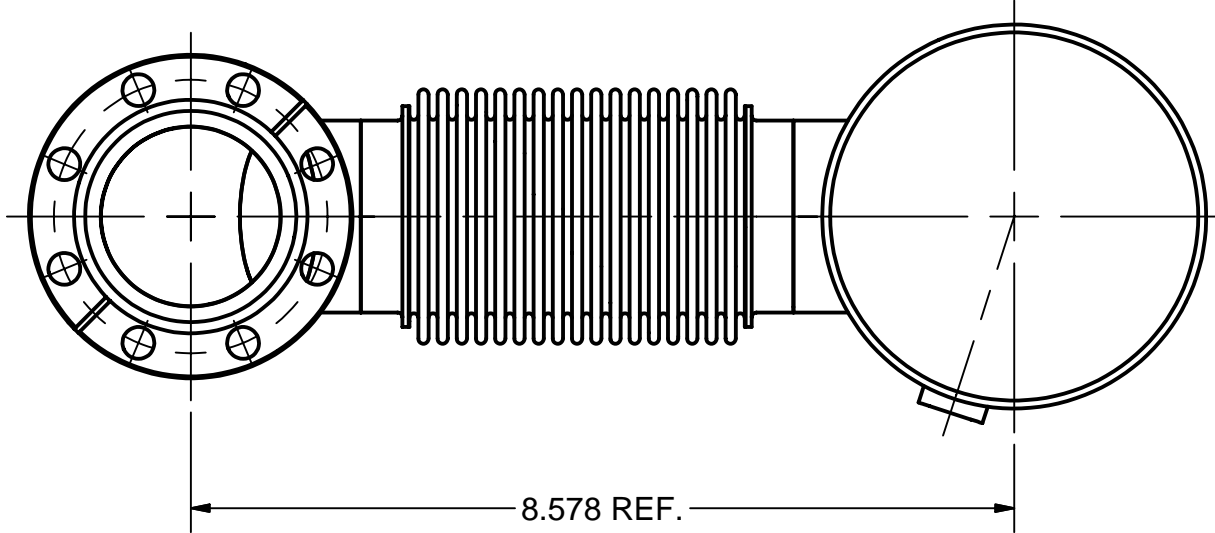
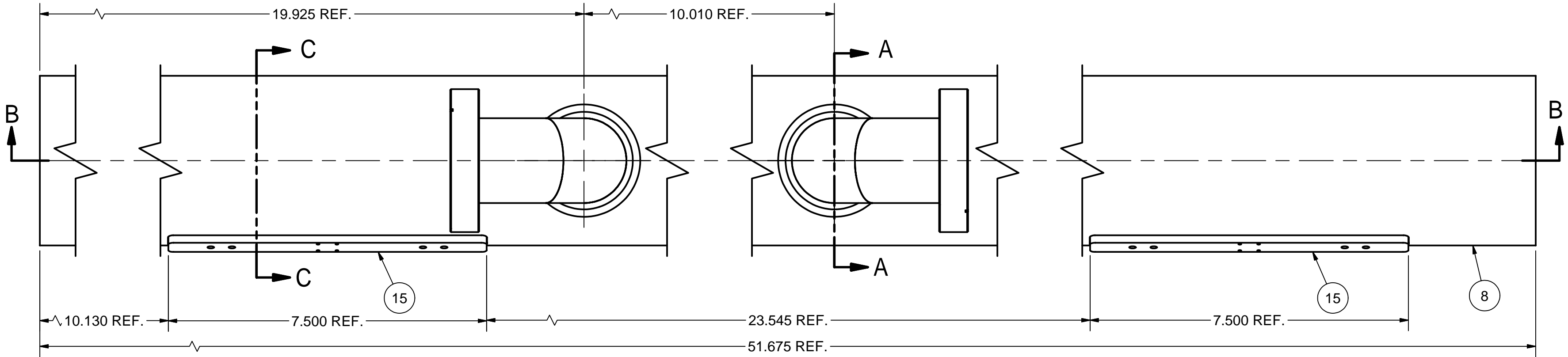
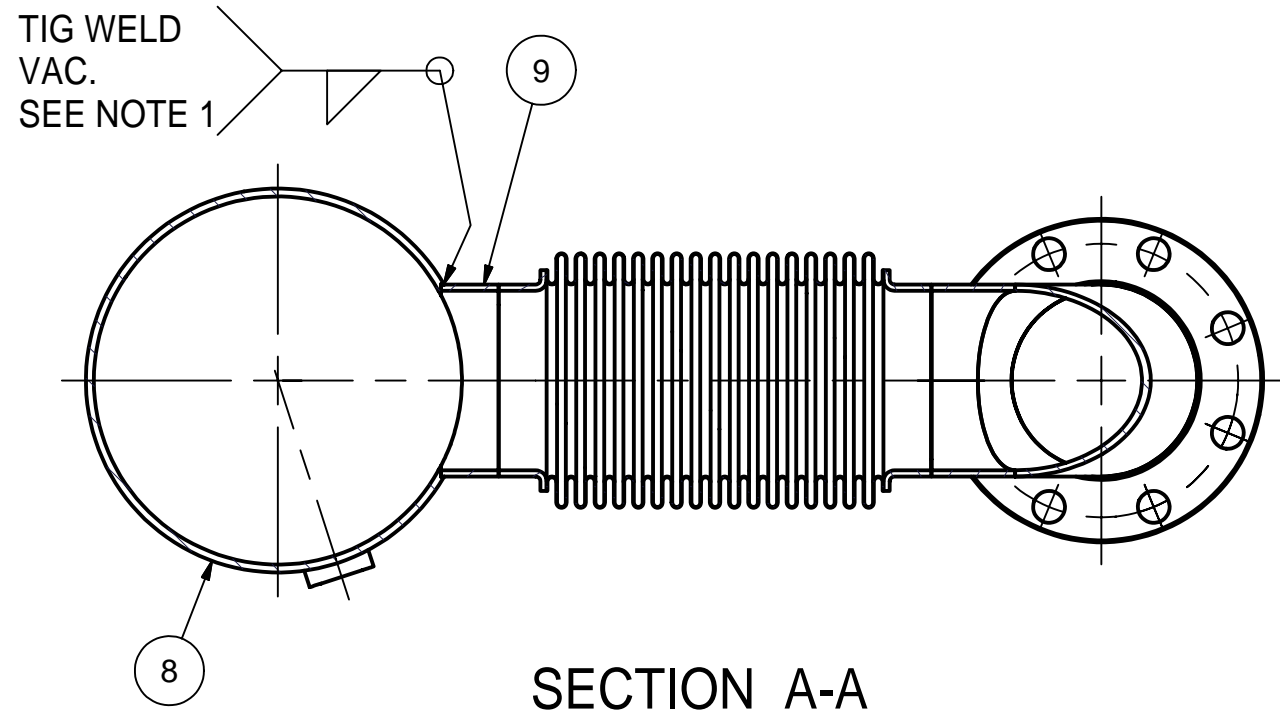
15	7102-038 (SH.6)	COPPER PLATE	2						
14	7102-038 (SH. 6)	3-3/8" CF Rotatable 2" Tube Flange	2						
13	7102-038 (SH. 6)	2K CF TUBE	2						
12	7102-038 (SH. 6)	2K WEDGE TUBE	2						
11	7102-038 (SH. 6)	2K BRANCH TUBE II	2						
10	7102-038 (SH. 7)	2" I.D. BELLOWS, SUB-ASM	2						
9	7102-038 (SH. 6)	2K BRANCH TUBE I	2						
7	7102-038 (SH. 5)	2K MAIN TUBE II	1						
3	7102-038 (SH. 3)	2 PHASE 2 K MAIN TUBE II; SUB-ASM	X						

		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.
							QUANTITY				
D	PRINT DISTR.	PLOT DATE: 6/19/2007 CAD FILE NAME: 7102-038.idw									
	7102-038 SH. NO. 3 OF 9	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>CORNELL UNIVERSITY</div><div></div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div> <div>ERL Injector Cryomodule 2 Phase 2 K Pipe 2 Phase 2 K Main Tube II, Sub-Asm</div>							
CHECKED BY: ML				DRAWN BY	DRAWN FOR	DATE	SCALE	D	7102-038 SH. NO. 3 OF 9		
REV.	APPROVED BY: ML	RHE/Di	M.Liepe	2/19/2007							

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OR EQUIVALENT APPROVED BY CORNELL LEPP

SCALE 1 / 3

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.



SECTION B-B

4 2 PHASE 2 K MAIN TUBE III, SUB-ASM

FILE NAME: 7102-038
SHEET NO.: 4
DFT. SCALE: 1:2
MATERIAL: AS NOTED
QTY: 1 PER ASM
NOTES: 1. FIRST WELD ITEM 9. THEN SOLDER PARTS 15 WITH STAY BRIGHT #8
(OR EQUIVALENT) SOLDER. REMOVE FLUX AND THOROUGHLY CLEAN PARTS.
CONTINUE WELDING - PROTECT SOLDERED PLACES FROM OVERHEATING.

SCALE 1 / 3

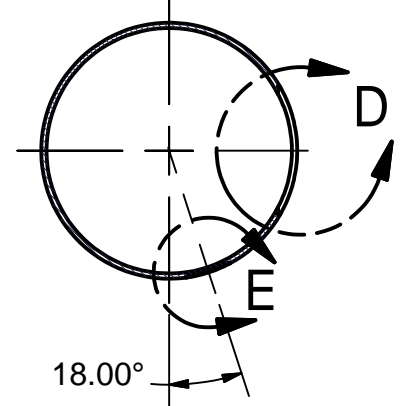
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ALKALINE DETERGENT LUBRICANT CIMSTAR 40
OR EQUIVALENT APPROVED BY CORNELL LEPP

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

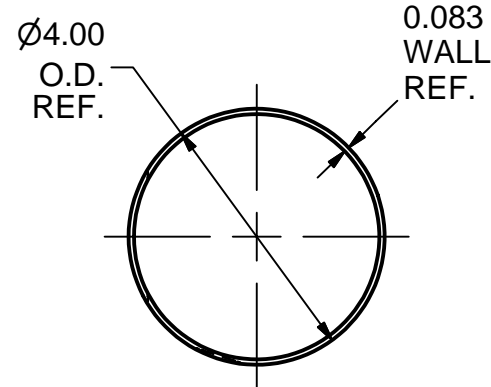
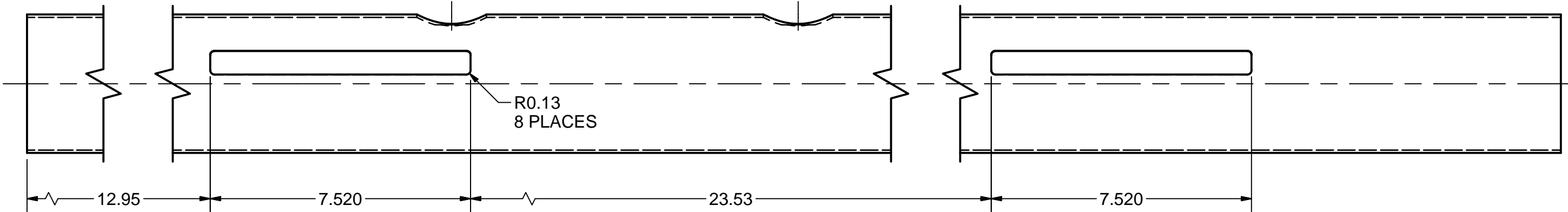
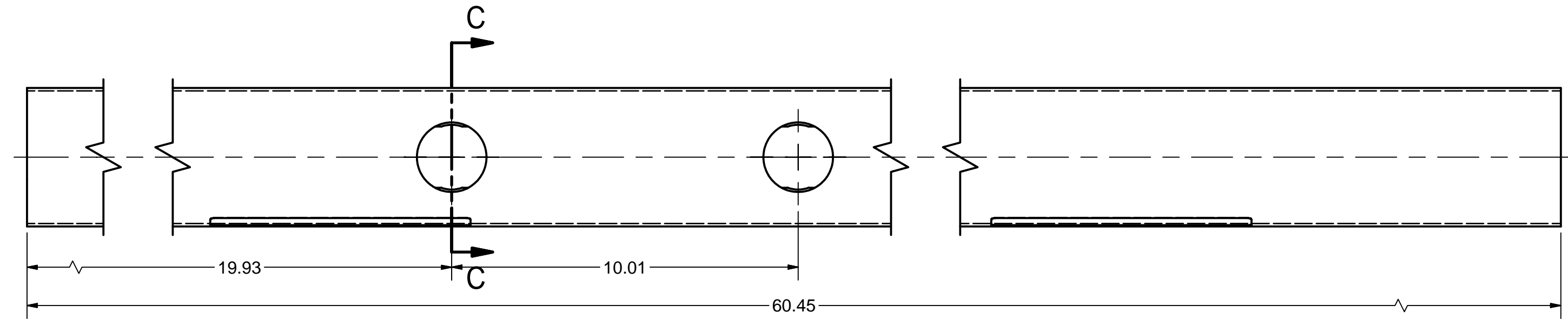
15	7102-038 (SH.6)	COPPER PLATE	2						
14	7102-038 (SH. 6)	3-3/8" CF Rotatable 2" Tube Flange	2						
13	7102-038 (SH. 6)	2K CF TUBE	2						
12	7102-038 (SH. 6)	2K WEDGE TUBE	2						
11	7102-038 (SH. 6)	2K BRANCH TUBE II	2						
10	7102-038 (SH. 7)	2" I.D. BELLWS, SUB-ASM	2						
9	7102-038 (SH. 6)	2K BRANCH TUBE I	2						
8	7102-038 (SH. 5)	2K MAIN TUBE III	1						
4	7102-038 (SH. 4)	2 PHASE 2 K MAIN TUBE III, SUB-ASM	X						

		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS		REV.	
		QUANTITY											
D	PRINT DISTR.	PLOT DATE: 6/19/2007 CAD FILE NAME: 7102-038.idw											
SH NO. 4 OF 9	7102-038	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> <div>ERL Injector Cryomodule 2 Phase 2 K Pipe 2 Phase 2 K Main Tube III, Sub-Asm</div>								REV.	
				CHECKED BY: ML		DRAWN BY: RHE/Di		DRAWN FOR: M.Liepe		DATE: 2/19/2007			SCALE
REV.			APPROVED BY: ML									SH NO. 4 OF 9	

REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.

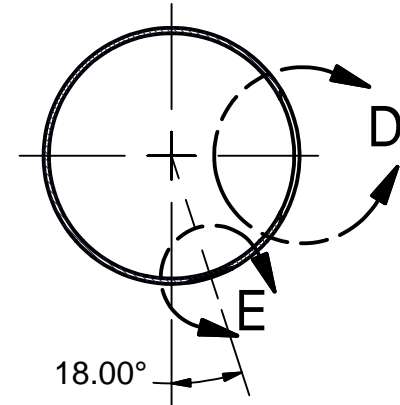
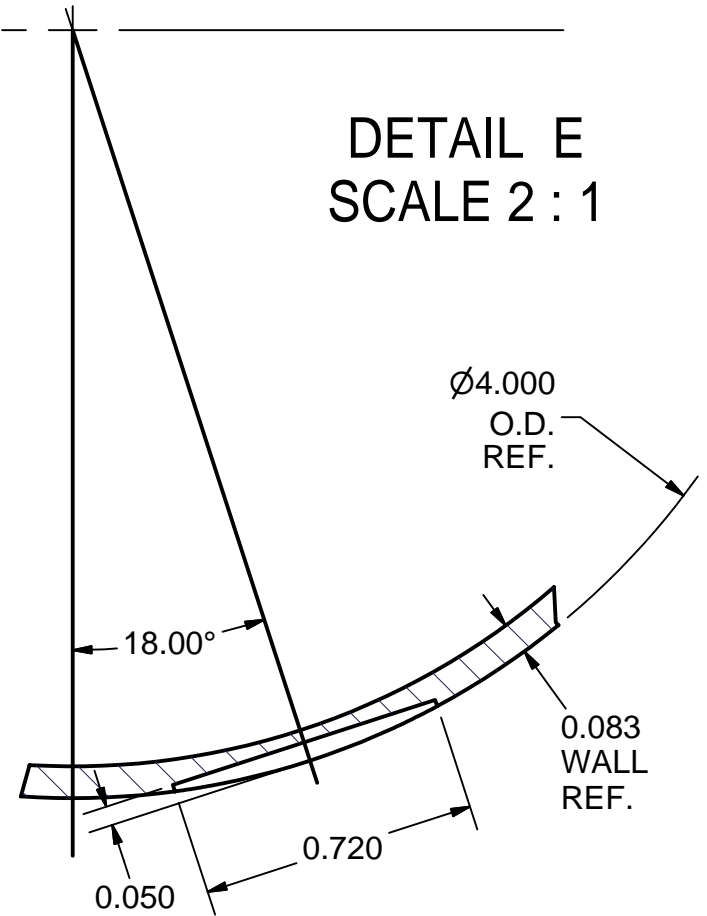


SECTION C-C

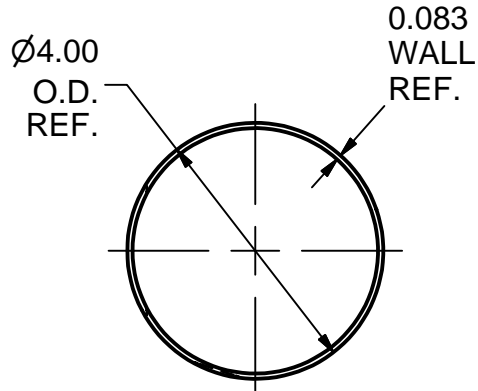
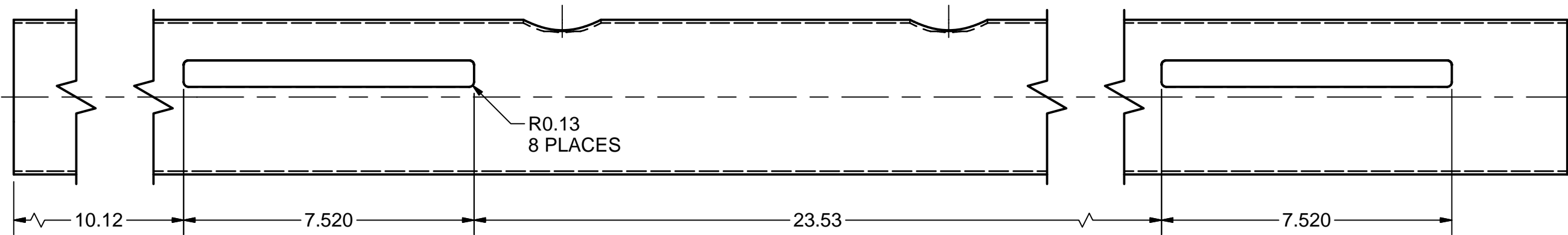
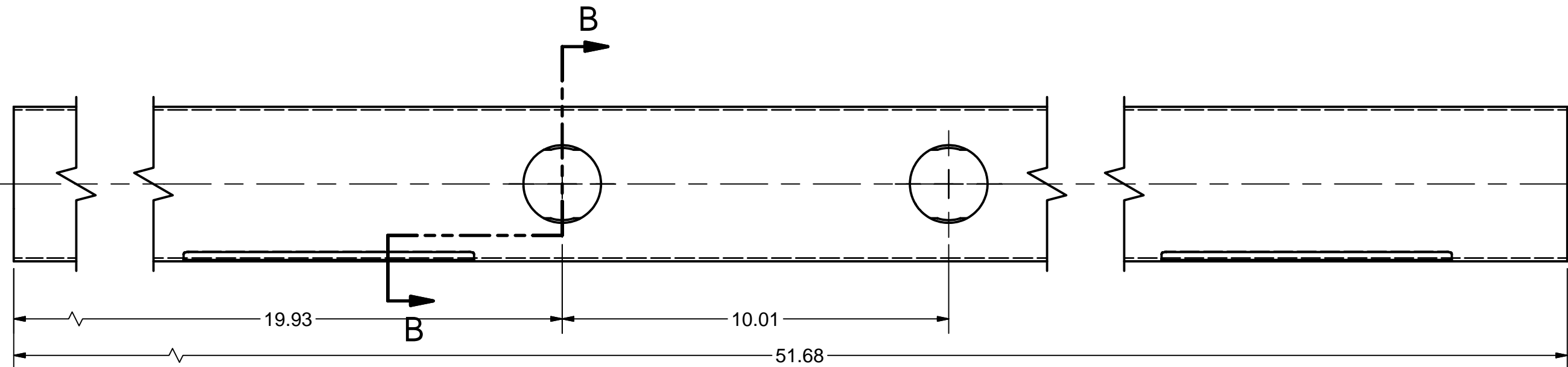


7 2K MAIN TUBE II

FILE NAME: 7102-038
SHEET NO.: 5
DFT. SCALE: 1:3
MATERIAL: 4" O.D. x 0.083 WALL UHV GRADE 316L STN STL TUBE
QTY: 1 TOTAL
NOTES:

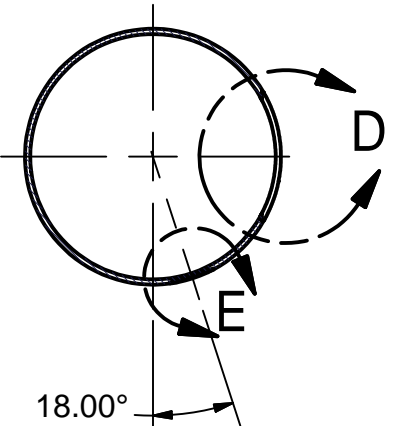
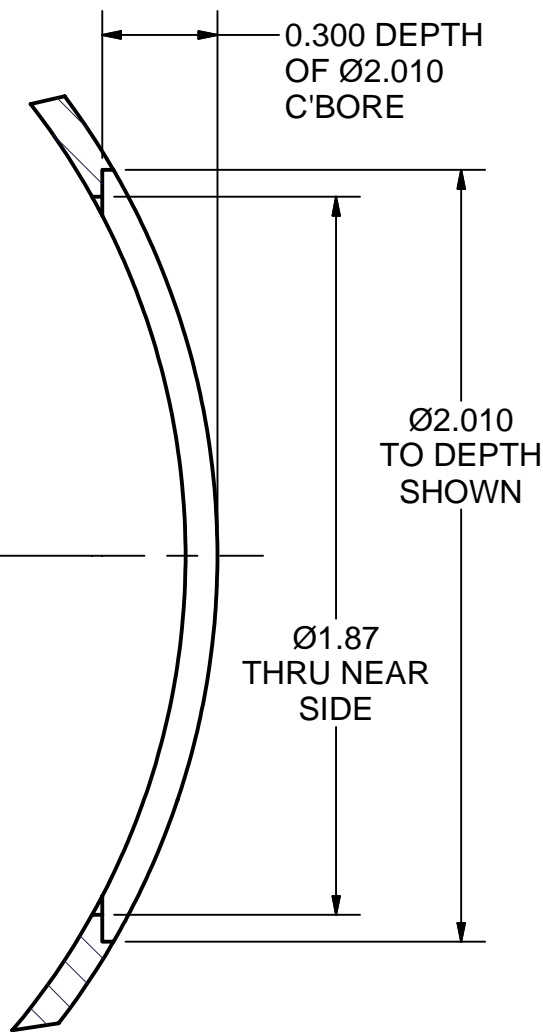


SECTION B-B

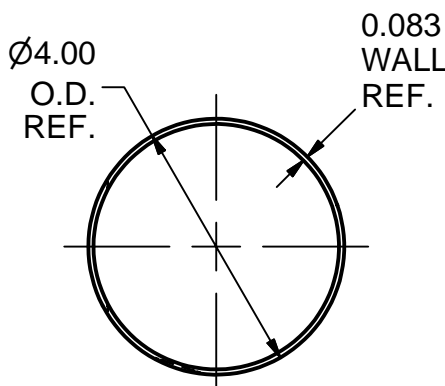
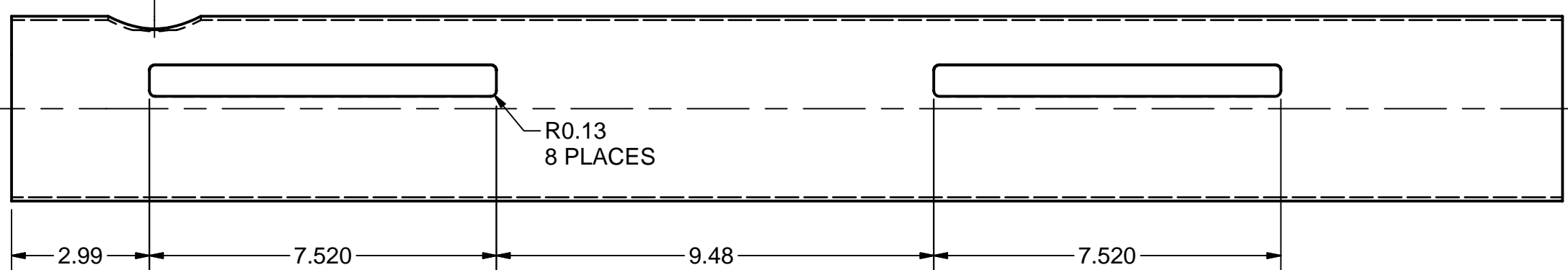
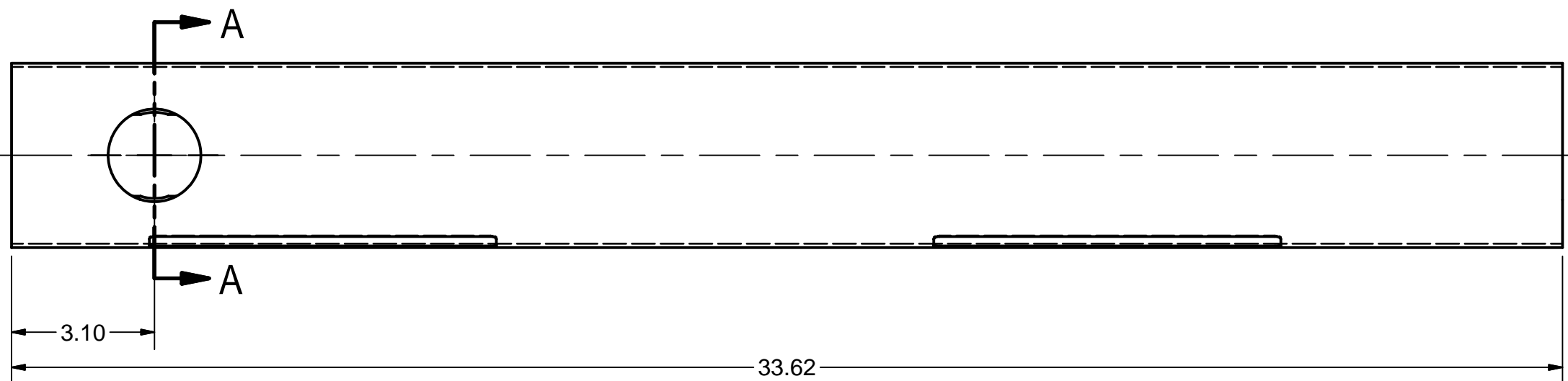


8 2K MAIN TUBE III

FILE NAME: 7102-038
SHEET NO.: 5
DFT. SCALE: 1:3
MATERIAL: 4" O.D. x 0.083 WALL UHV GRADE 316L STN STL TUBE
QTY: 1 TOTAL
NOTES:



SECTION A-A





6 2K MAIN TUBE I

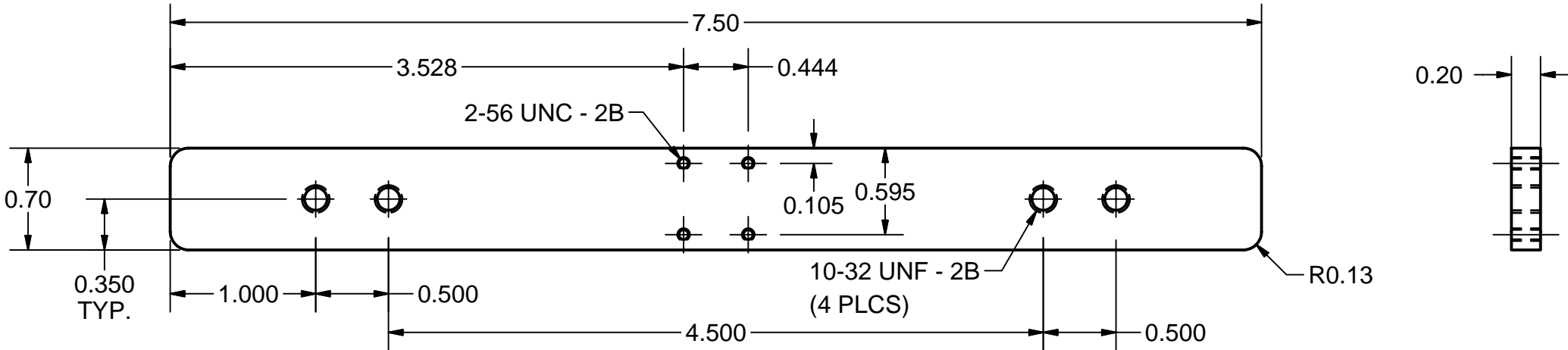
FILE NAME: 7102-038
SHEET NO.: 5
DFT. SCALE: 1:3
MATERIAL: 4" O.D. x 0.083 WALL UHV GRADE 316L STN STL TUBE
QTY: 1 TOTAL
NOTES:

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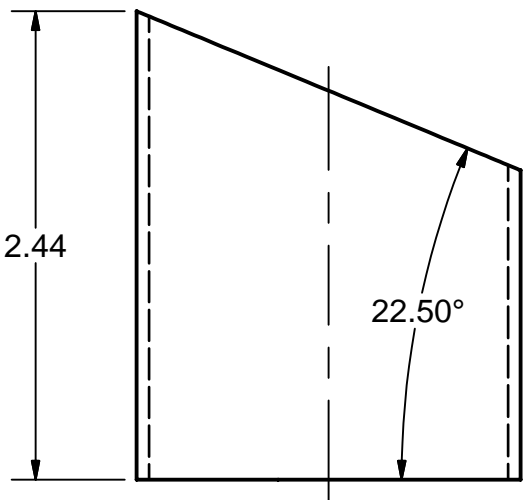
Release of final PO version for Meyer Tool - June 19, 2007.

		ITEM	DWG. NO.		DESCRIPTION			G1	G2	G3	REMARKS		REV.	
								QUANTITY						
D	PRINT DISTR.	PLOT DATE: 6/19/2007 CAD FILE NAME: 7102-038.idw												
7102-038 SH. NO. 5 OF 9	CR-1	UNLESS OTHERWISE SPECIFIED:		<div><div><div>CORNELL UNIVERSITY</div><div></div><div>LEPP</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 												
				ERL Injector Cryomodule										
				2 Phase 2 K Pipe										
				2K Main Tube I, II, III										
REV.		CHECKED BY: ML		DRAWN BY		DRAWN FOR		DATE		SCALE		D	7102-038 SH. NO. 5 OF 9	REV.
		APPROVED BY: ML		RHE/Di		M.Liepe		2/19/2007						

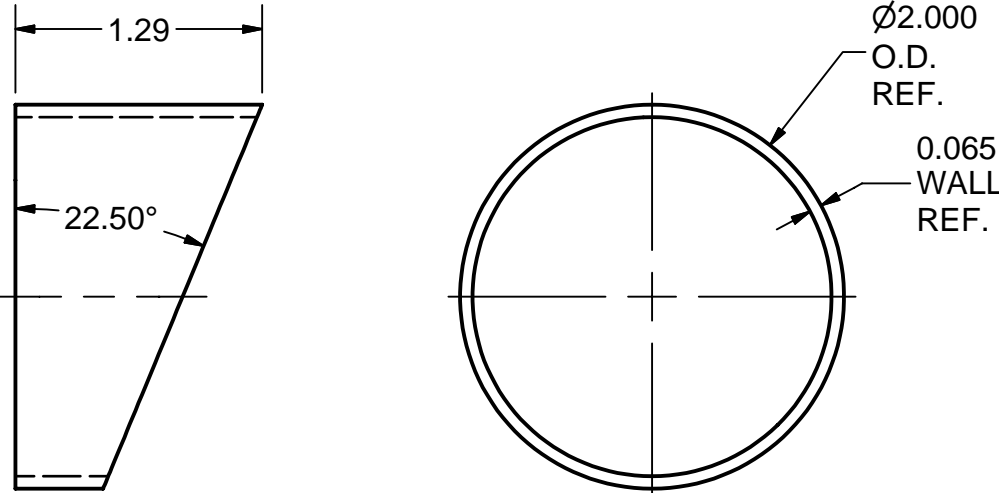
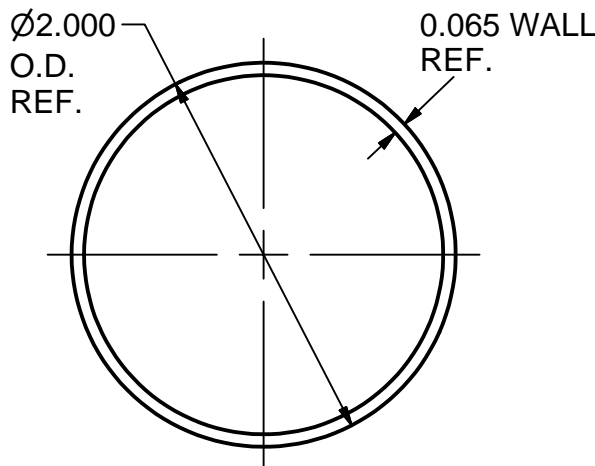
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A	A8	Item #14 - Material 316L was 316LN	6/18/07	TIO



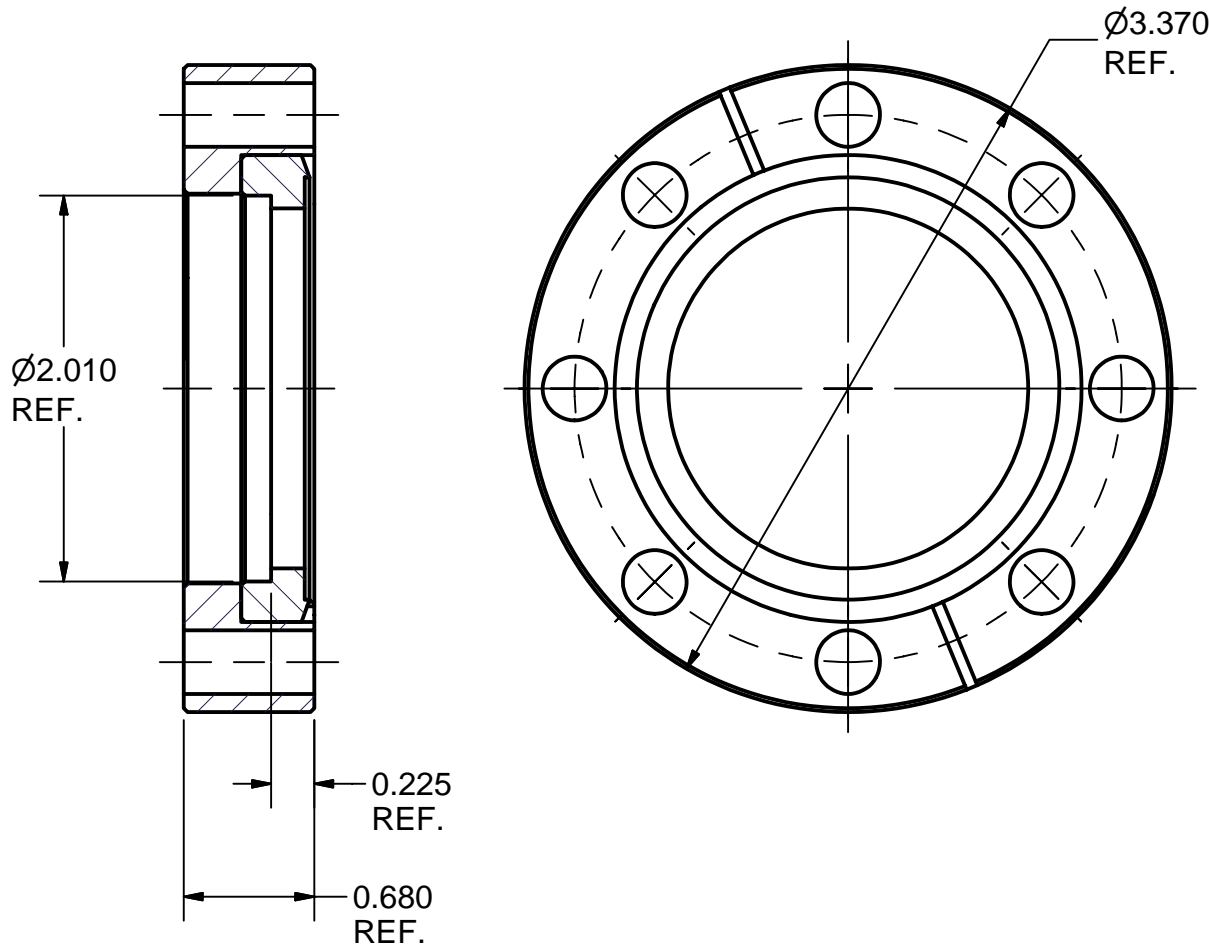
15 **COPPER PLATE**
FILE NAME: 7102-038
SHEET NO.: 6
DFT. SCALE: 1:1
MATERIAL: OFE COPPER
QTY: 6 TOTAL
NOTES:



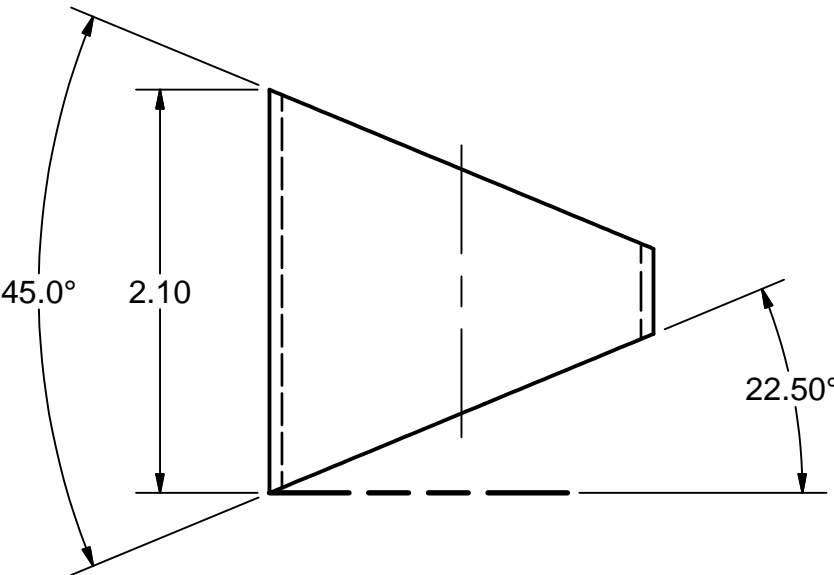
13 **2K CF TUBE**
FILE NAME: 7102-038
SHEET NO.: 6
DFT. SCALE: 1:1
MATERIAL: 2" O.D. x 0.065 WALL UHV GRADE 316L STN STL TUBE
QTY: 5 TOTAL
NOTES:



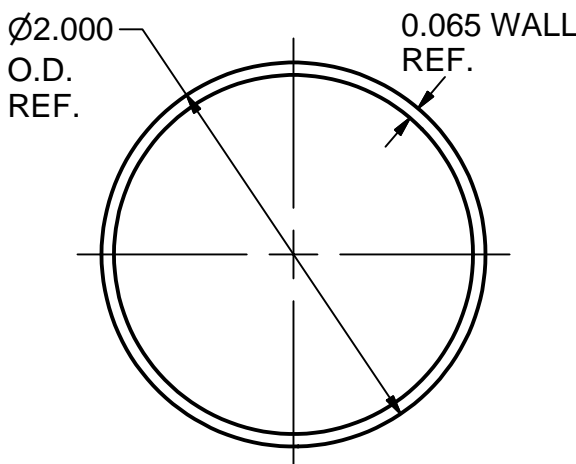
11 **2K BRANCH TUBE II**
FILE NAME: 7102-038
SHEET NO.: 6
DFT. SCALE: 1:1
MATERIAL: 2" O.D. x 0.065 WALL UHV GRADE 316L STN STL TUBE
QTY: 5 TOTAL
NOTES:



14 **3-3/8" CF ROTATABLE 2" TUBE FLANGE**
FILE NAME: 7102-038
SHEET NO.: 6
DFT. SCALE: 1:1
MATERIAL: SEE NOTE 1
QTY: 5 TOTAL
NOTES: 1. MATERIAL - 316L ST. STEEL
KURT J. LESKER F0337X200R OR EQUIV
(WITH STANDARD 3/8 BOLT PATTERN, KNIFE EDGE ETC)

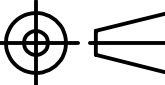







12 **2K WEDGE TUBE**
FILE NAME: 7102-038
SHEET NO.: 6
DFT. SCALE: 1:1
MATERIAL: 2" O.D. x 0.065 WALL UHV GRADE 316L STN STL TUBE
QTY: 5 TOTAL
NOTES:



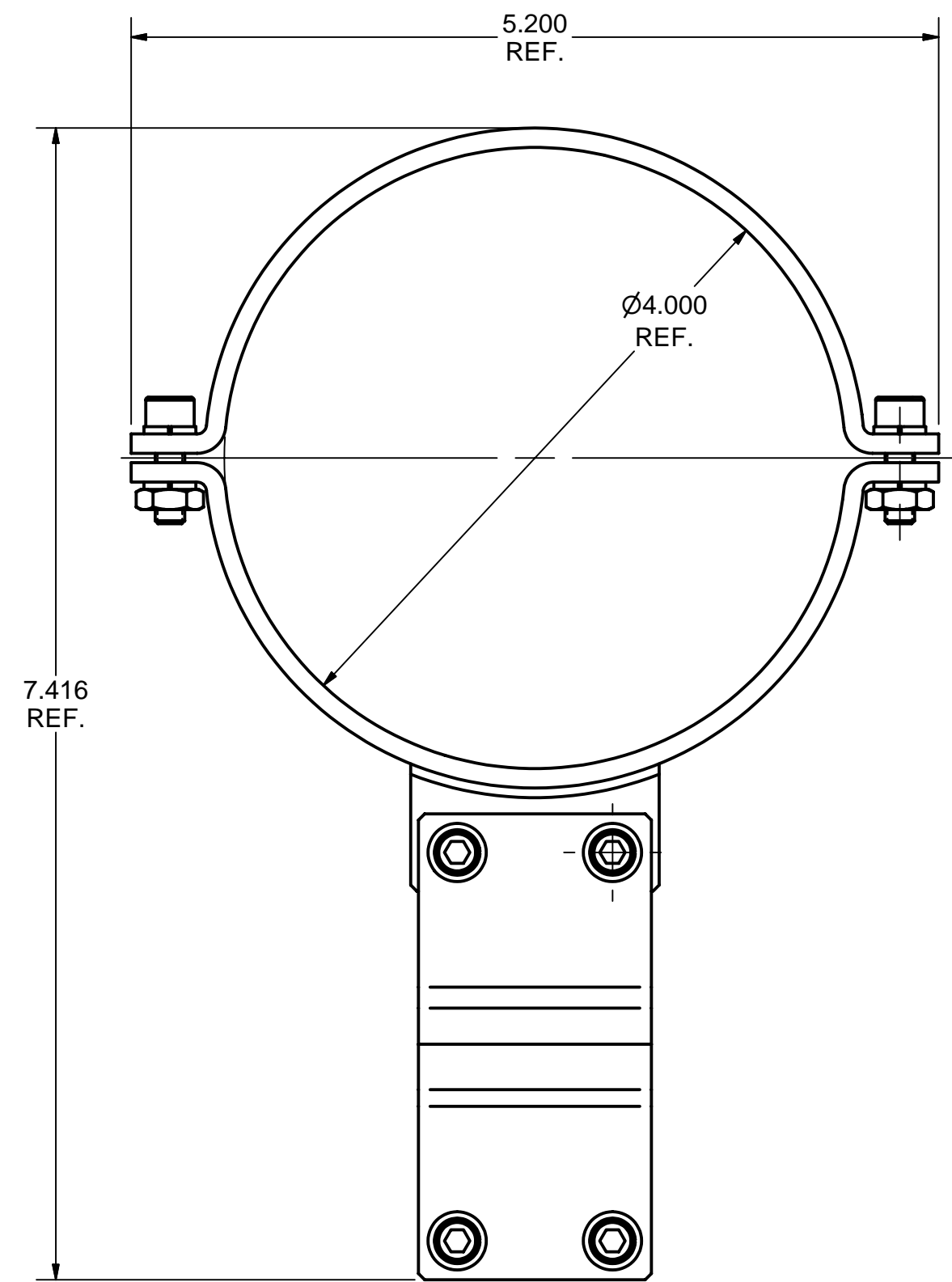
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Release of final PO version for Meyer Tool - June 19, 2007.

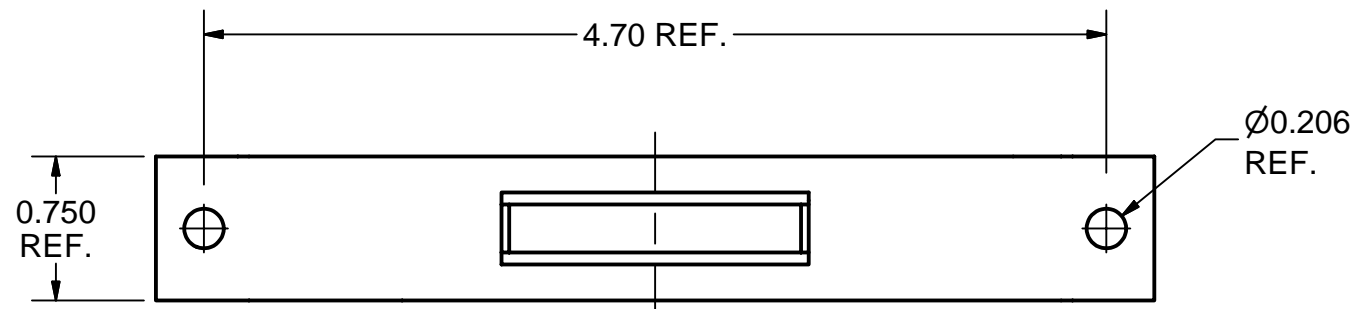
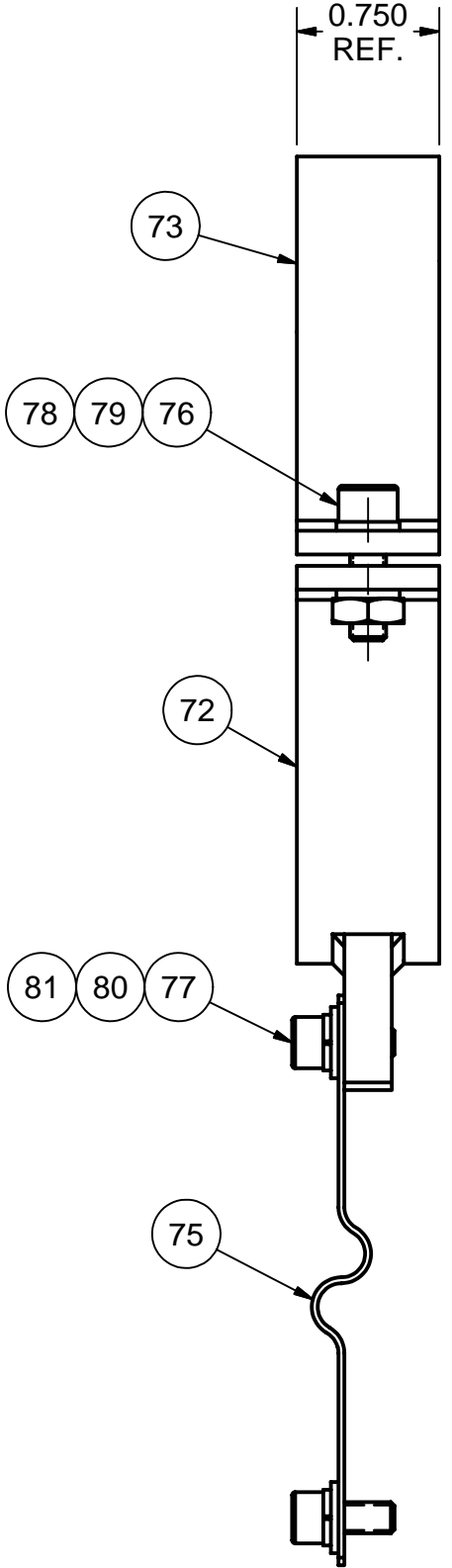
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							QUANTITY			
	PRINT DISTR.	PLOT DATE: 6/19/2007 CAD FILE NAME: 7102-038.idw								
7102-038 SH. NO. 6 OF 9	CR-1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES 	<div> </div> <div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div> <div>ERL Injector Cryomodule 2 Phase 2 K Pipe Details - 2K Main Tube</div>							
REV. A	CHECKED BY: ML	DRAWN BY	DRAWN FOR	DATE	SCALE		7102-038		REV. A	
	APPROVED BY: ML	RHE/Di	M.Liepe	2/19/2007			SH. NO. 6 OF 9			

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ALKALINE DETERGENT LUBRICANT CIMSTAR 40
OR EQUIVALENT APPROVED BY CORNELL LEPP

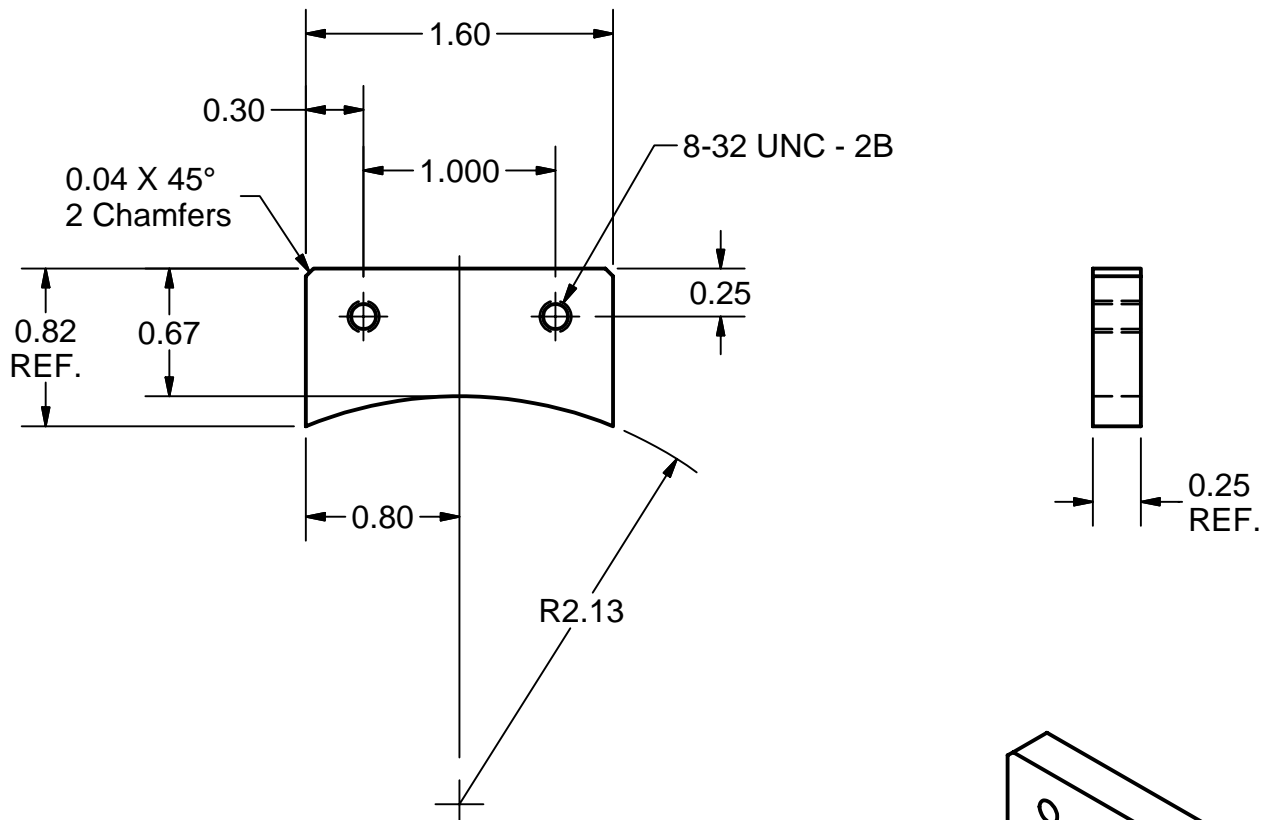
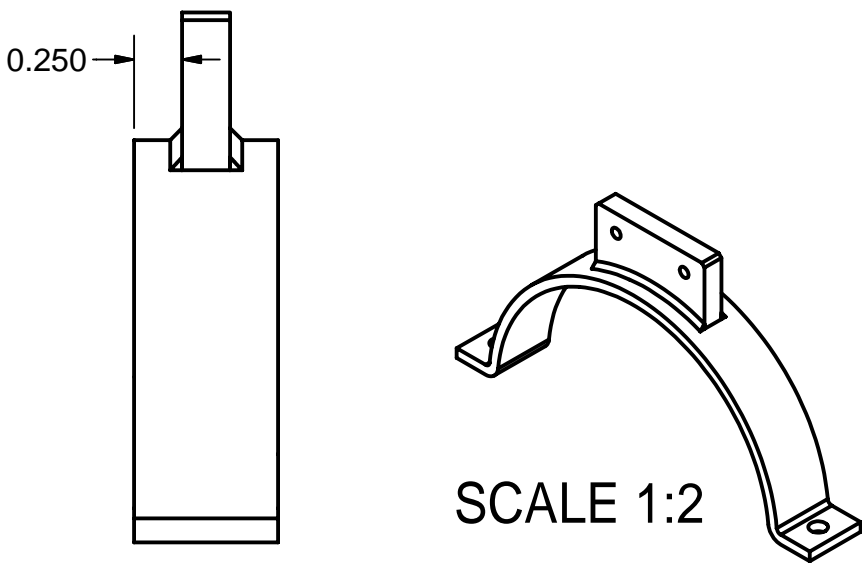
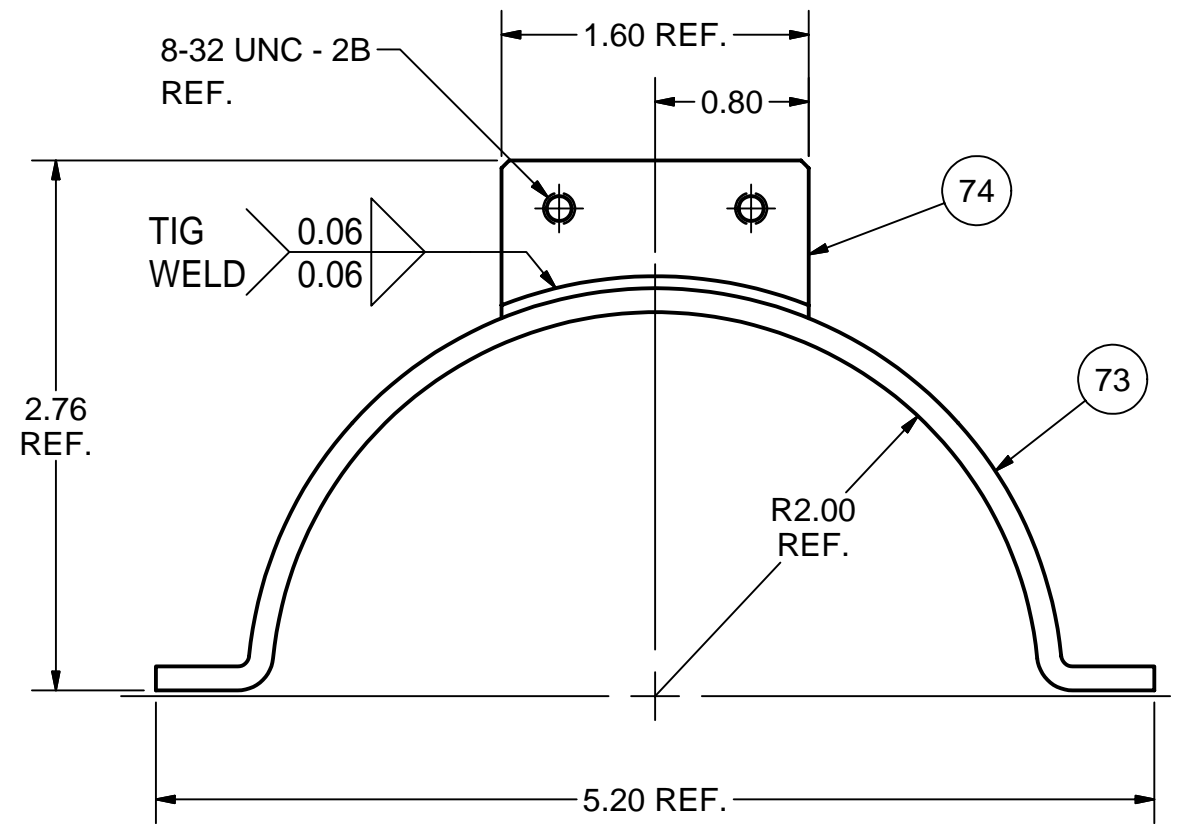
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		Changed many 3 place decimal dms to 2 place	6/18/07	TIO



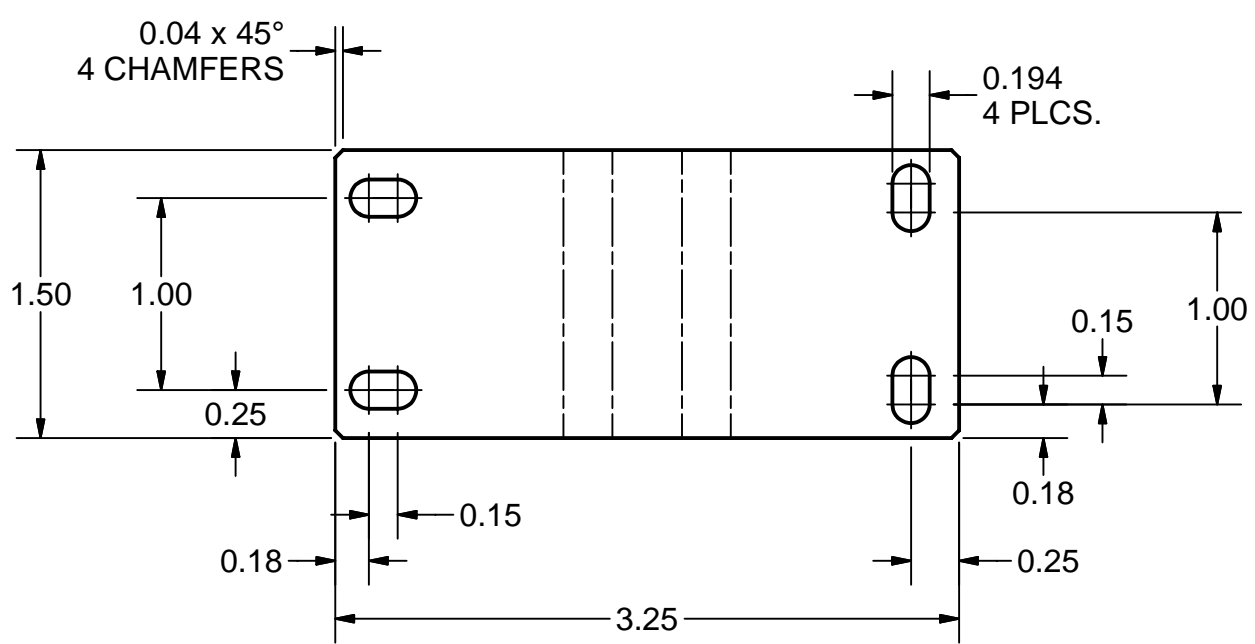
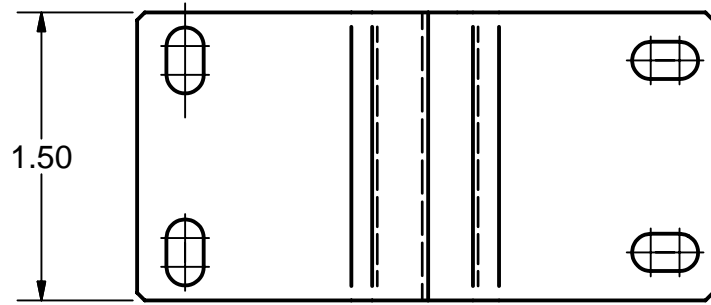
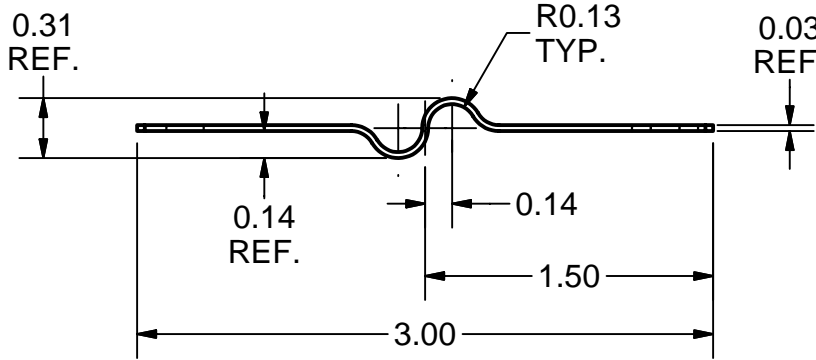
20 2-PHASE TUBE SPRING SUPPORT SUB-ASM
FILE NAME: 7102-038
SHEET NO.: 8
DFT. SCALE: 1:1
MATERIAL:
QTY: 3 TOTAL
NOTES:



72 4" TUBE CLAMP HALF SUB-ASM
FILE NAME: 7102-038
SHEET NO.: 8
DFT. SCALE: 1:1
MATERIAL:
QTY: 7 TOTAL
NOTES:



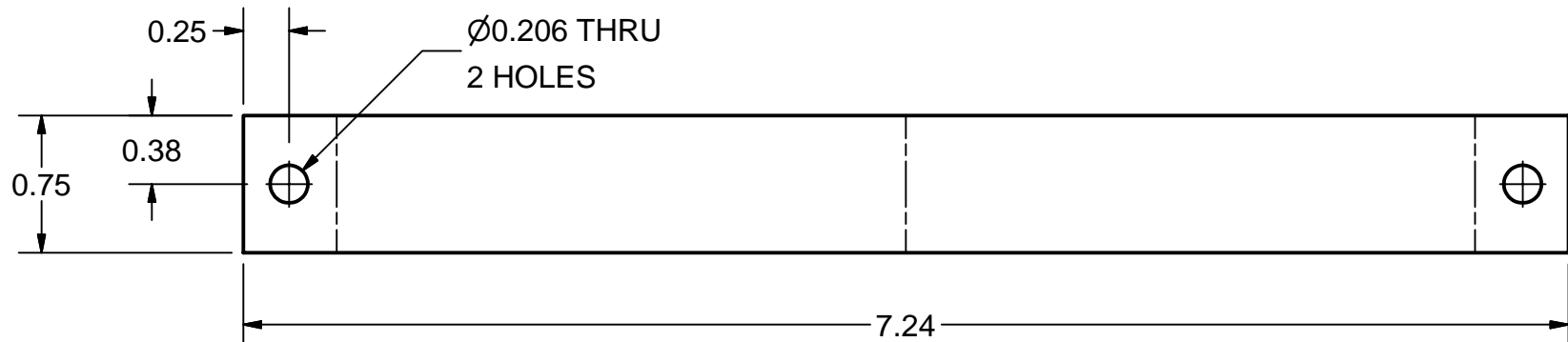
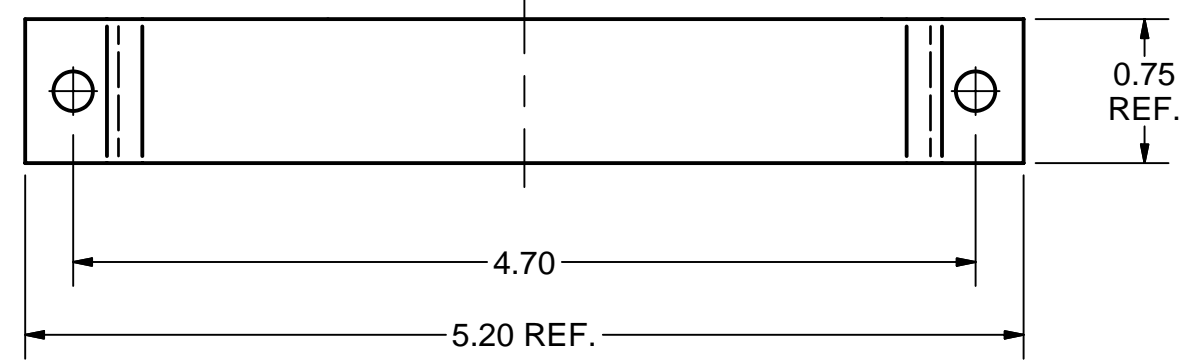
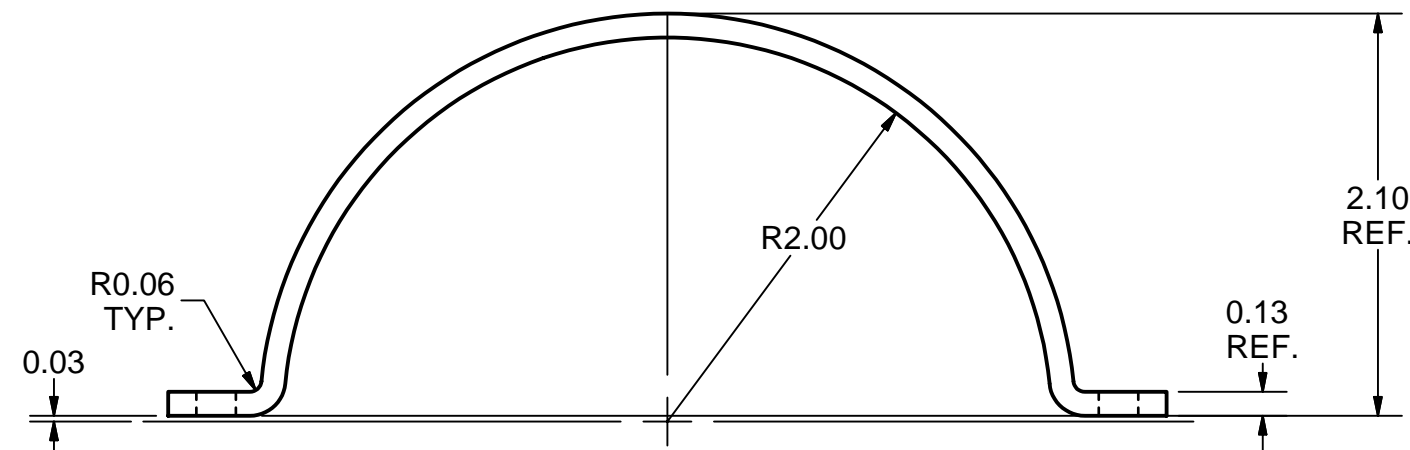
74 4" TUBE CLAMP TAB
FILE NAME: 7102-038
SHEET NO.: 8
DFT. SCALE: 1:1
MATERIAL: 1/4" 316L ST. STEEL SHEET
QTY: 7 TOTAL
NOTES:



75 SPRING SUPPORT PLATE
FILE NAME: 7102-038
SHEET NO.: 8
DFT. SCALE: 1:1
MATERIAL: 1/32" 316L ST. STEEL SHEET
QTY: 3 TOTAL
NOTES:

FLAT PATTERN

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



FLAT PATTERN

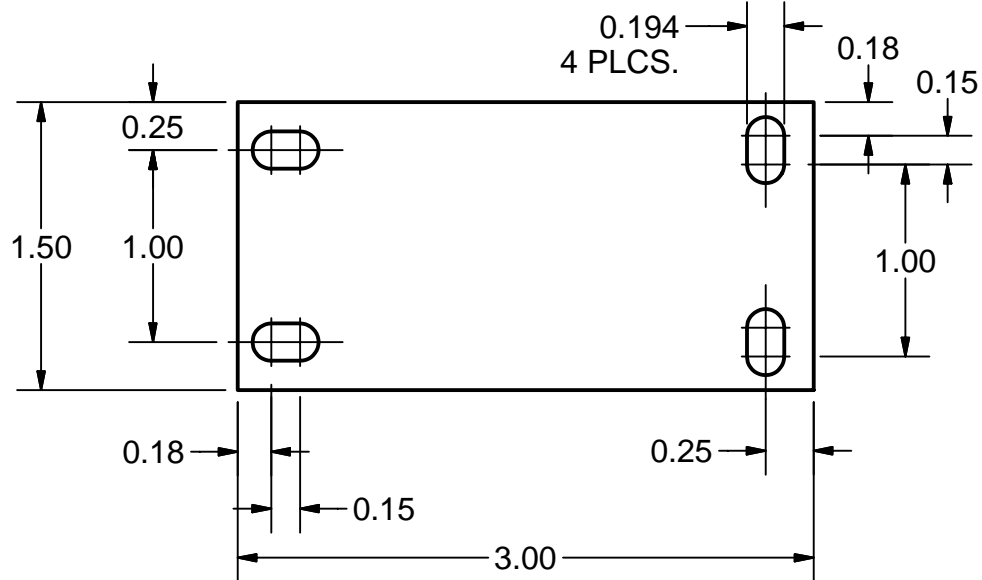
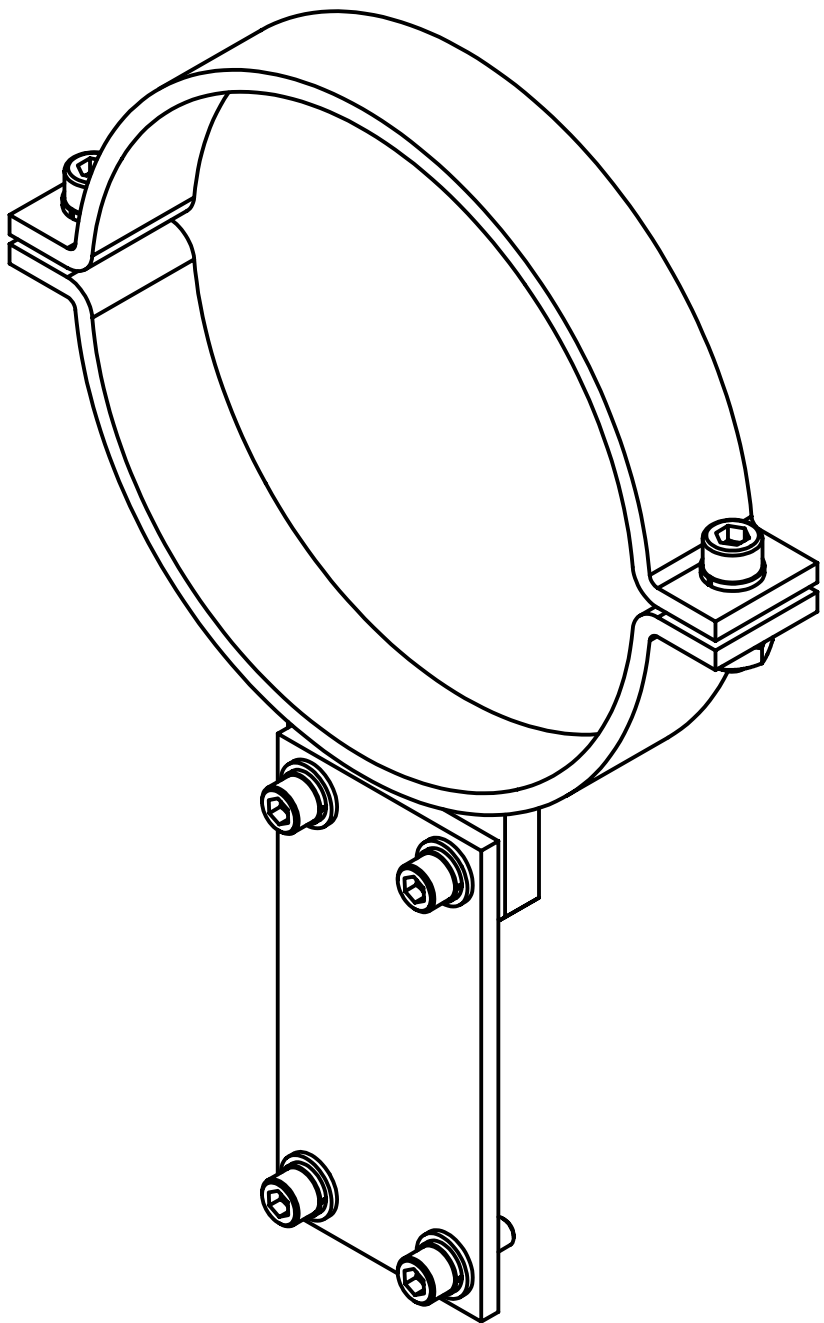
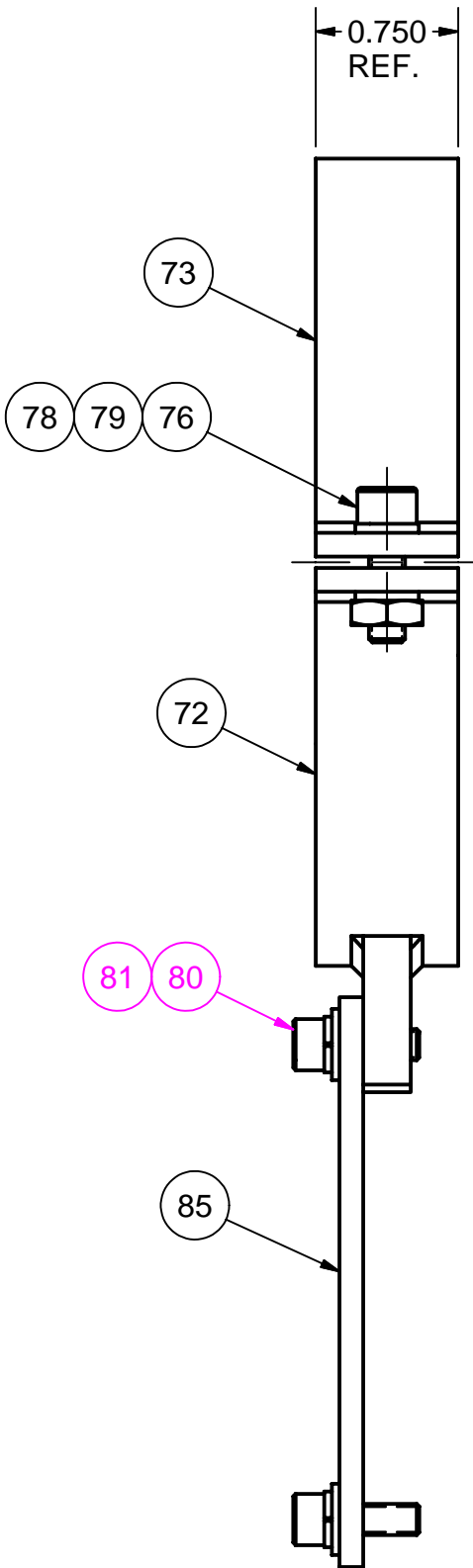
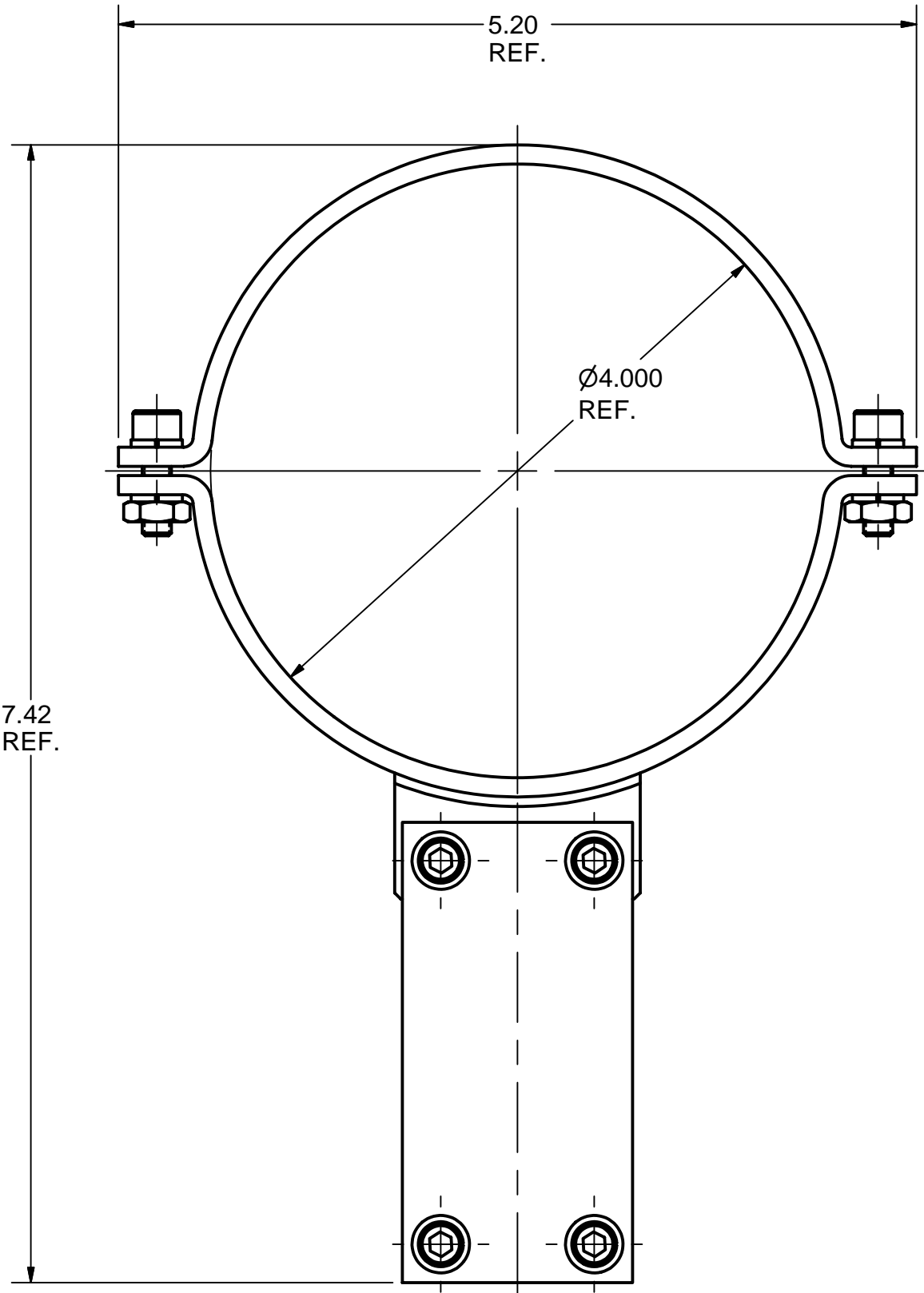
73 4" TUBE CLAMP HALF
FILE NAME: 7102-038
SHEET NO.: 8
DFT. SCALE: 1:1
MATERIAL: 1/8" 316L ST. STEEL SHEET
QTY: 14 TOTAL
NOTES:

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

81	-	#8 Washer A	4			316L St. Steel	
80	-	#8 Spring Lock Washer	4			316L St. Steel	
79	-	#10 Spring Lock Washer	4			316L St. Steel	
78	-	10-32 Hex Nut	2			Silicon Bronze	
77	-	8-32 x 3/8 Socket Head Cap Screw	4			316L St. Steel, Diconited	
76	-	10-32 x 5/8 Socket Head Cap Screw	2			316L St. Steel	
75	7102-038 (SH. 8)	SPRING SUPPORT PLATE	1				
74	7102-038 (SH. 8)	4" TUBE CLAMP TAB		1			
73	7102-038 (SH. 8)	4" TUBE CLAMP HALF	1	1			
72	7102-038 (SH. 8)	4" TUBE CLAMP HALF SUB-ASM	1	X			
20	7102-038 (SH. 8)	2-PHASE TUBE SPRING SUPPORT, SUB-ASM	X				

ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
QUANTITY							
7102-038	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				
7102-038	CR-1	ERL Injector Cryomodule 2 Phase 2 K Pipe 2 Phase Tube Spring Support, Sub-Asm + Details	CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853				
7102-038	CR-1	CHECKED BY: ML APPROVED BY: ML	DRAWN BY: RHE/DI	DRAWN FOR: M.Liepe	DATE: 2/19/2007	SCALE: D	7102-038 SH. NO. 8 OF 9

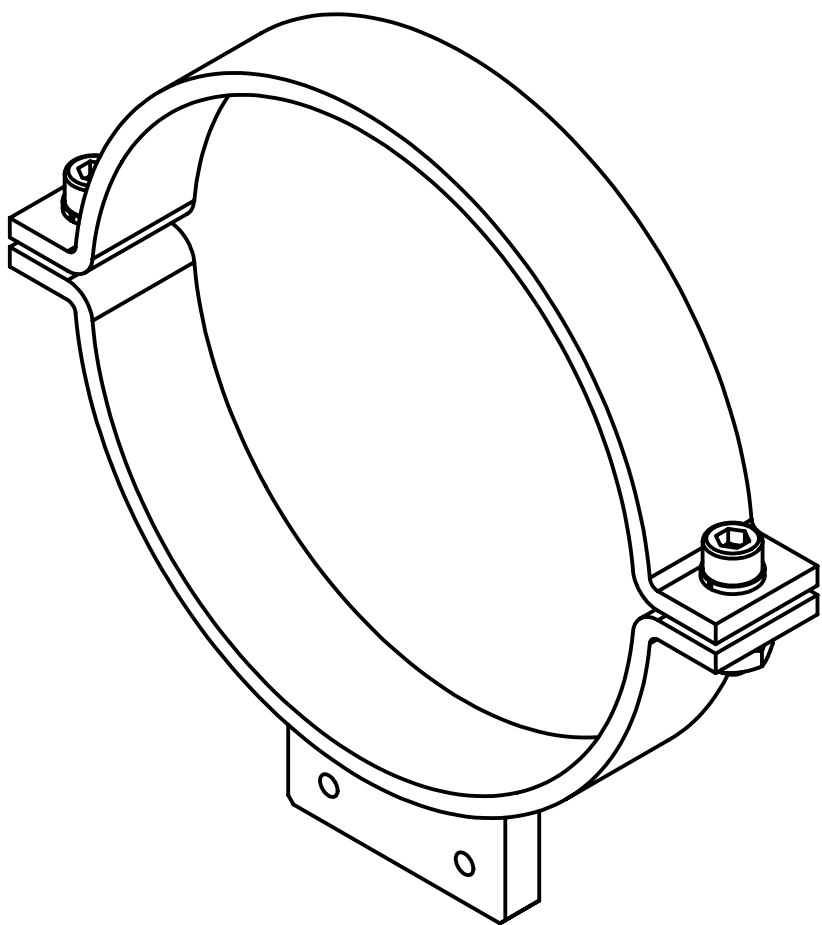
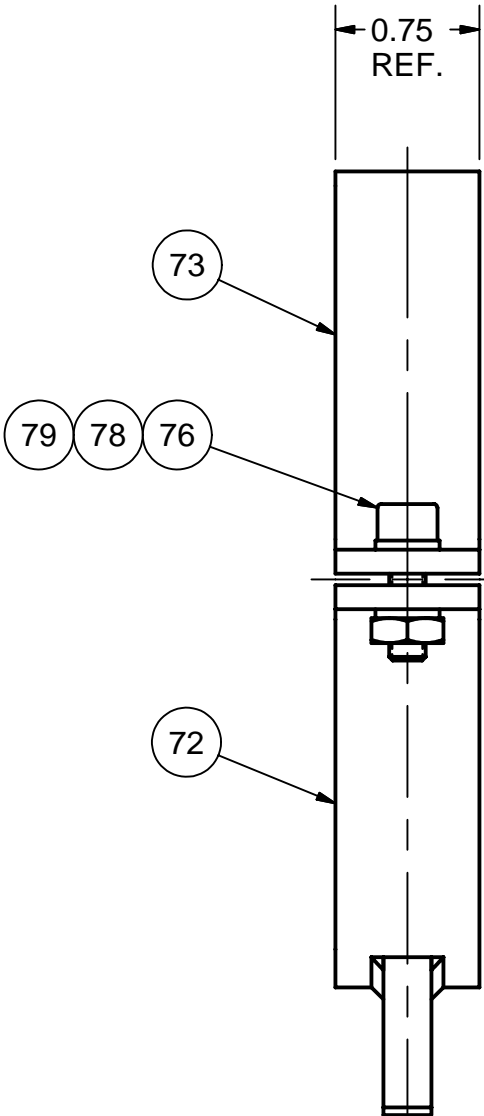
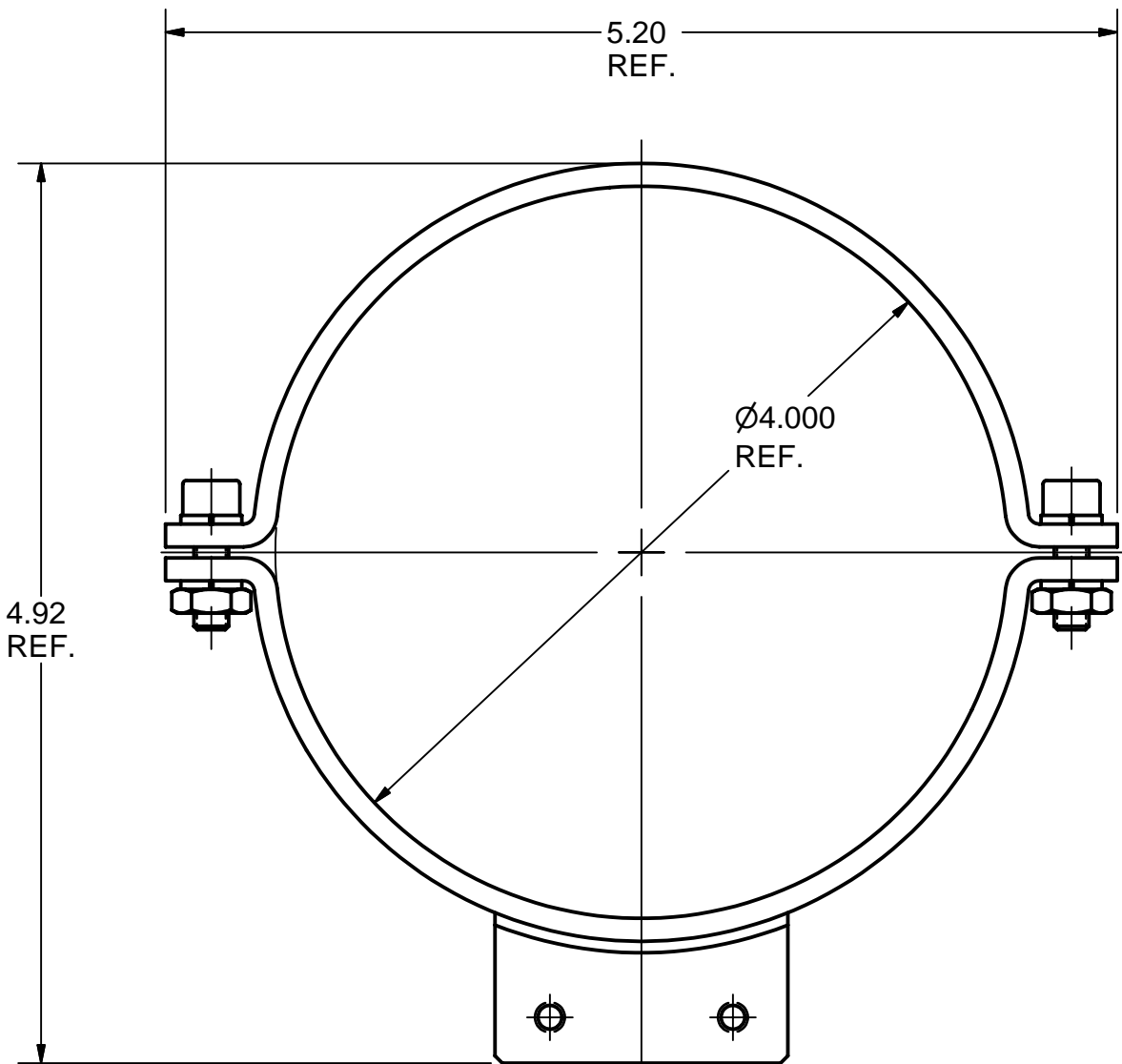
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		Changed many 3 place decimal dms to 2 place	6/18/07	TIO



85 **FIXED SUPPORT PLATE**
FILE NAME: 7102-038
SHEET NO.: 9
DFT. SCALE: 1:1
MATERIAL: 1/8" 316L ST. STEEL SHEET
QTY: 1 TOTAL
NOTES:

21 **2-PHASE TUBE FIXED SUPPORT SUB-ASM**
FILE NAME: 7102-038
SHEET NO.: 9
DFT. SCALE: 1:1
MATERIAL:
QTY: 1 TOTAL
NOTES:

10	socket-head-screw -8-32x0.5-316ss	#8-32 x 1/2 Socket Head Cap Screw, 316 SS	4		McMaster-Carr's 92185A194	
81	-	#8 Washer A	4		316L St. Steel	
80	-	#8 Spring Lock Washer	4		316L St. Steel	
79	-	#10 Spring Lock Washer	4		316L St. Steel	
78	-	10-32 Hex Nut	2		Silicon Bronze	
76	-	10-32 x 5/8 Socket Head Cap Screw	2		316L St. Steel	
85	7102-038 (SH. 9)	FIXED SUPPORT PLATE	1			
73	7102-038 (SH. 8)	4" TUBE CLAMP HALF	1			
72	7102-038 (SH. 8)	4" TUBE CLAMP HALF SUB-ASM	1			
21	7102-038 (SH. 9)	2-PHASE TUBE FIXED SUPPORT SUB-ASM	X			








22 **2K WIRE SUPPORT SUB-ASM**
FILE NAME: 7102-038
SHEET NO.: 9
DFT. SCALE: 1:1
MATERIAL:
QTY: 3 TOTAL
NOTES:

79	-	#10 Spring Lock Washer	4		316L St. Steel	
78	-	10-32 Hex Nut	2		Silicon Bronze	
76	-	10-32 x 5/8 Socket Head Cap Screw	2		316L St. Steel	
73	7102-038 (SH. 8)	4" TUBE CLAMP HALF	1			
72	7102-038 (SH. 8)	4" TUBE CLAMP HALF SUB-ASM	1			
22	7102-038 (SH. 9)	2K WIRE SUPPORT SUB-ASM	X			

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

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

	ITEM		DWG. NO.		DESCRIPTION			G1	G2	G3	REMARKS	REV.
							QUANTITY					
	PRINT DISTR.	PLOT DATE: 6/19/2007 CAD FILE NAME: 7102-038.idw										
	7102-038 SH. NO. 9 OF 9	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 2 Phase 2 K Pipe 2 Phase Tube + Wire Support, Sub-Asms								
CHECKED BY: ML				DRAWN BY	DRAWN FOR	DATE	SCALE		7102-038 SH. NO. 9 OF 9	REV. A		
APPROVED BY: ML				RHE/Di	M.Liepe	2/19/2007						