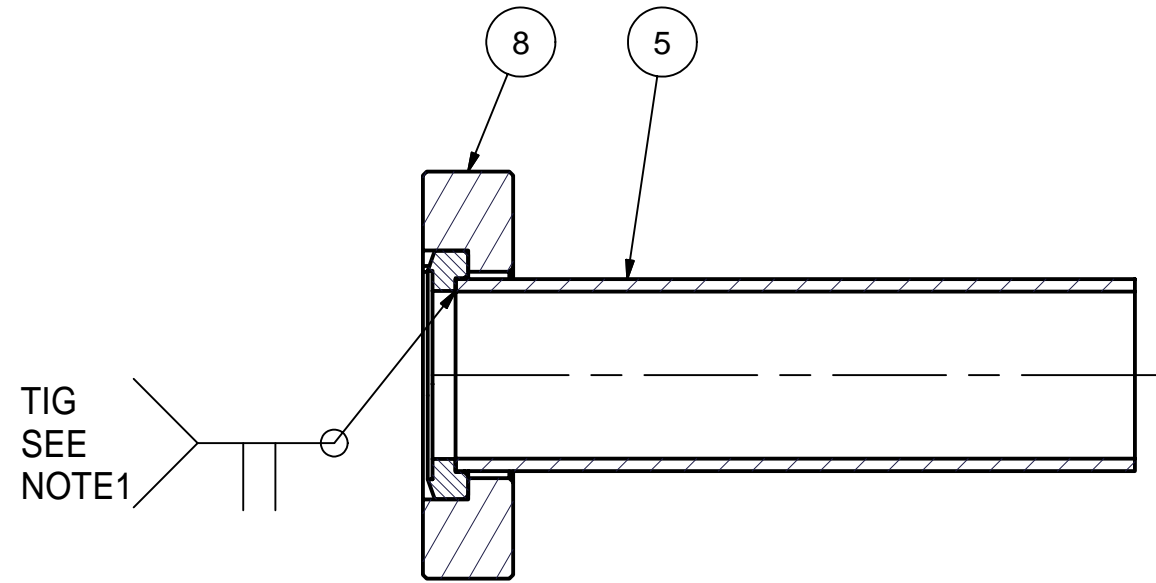
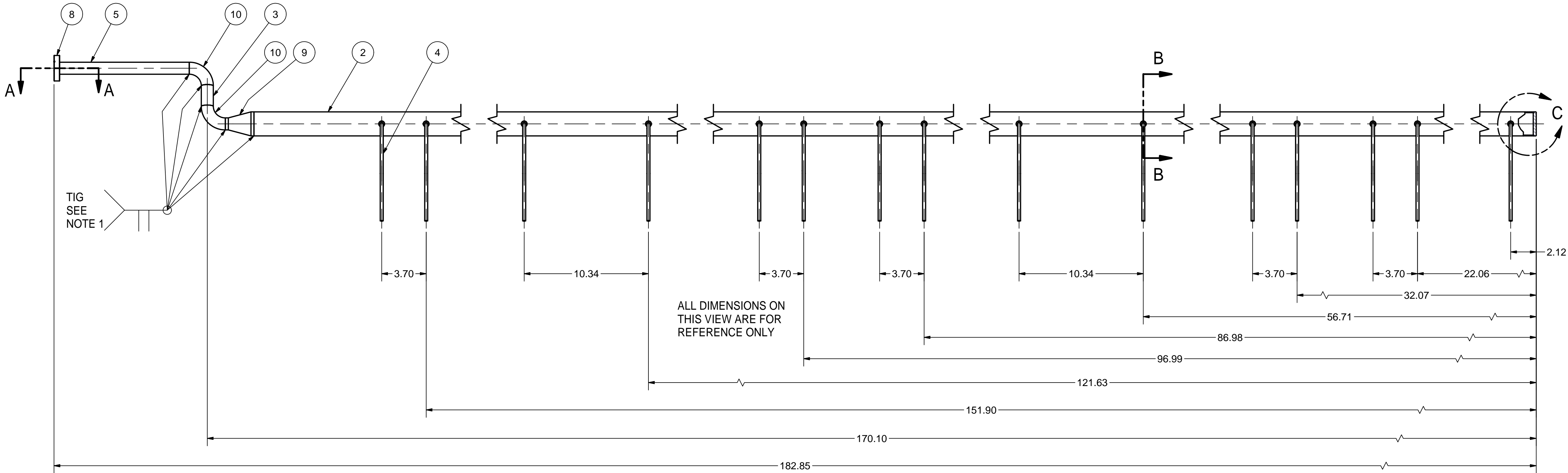
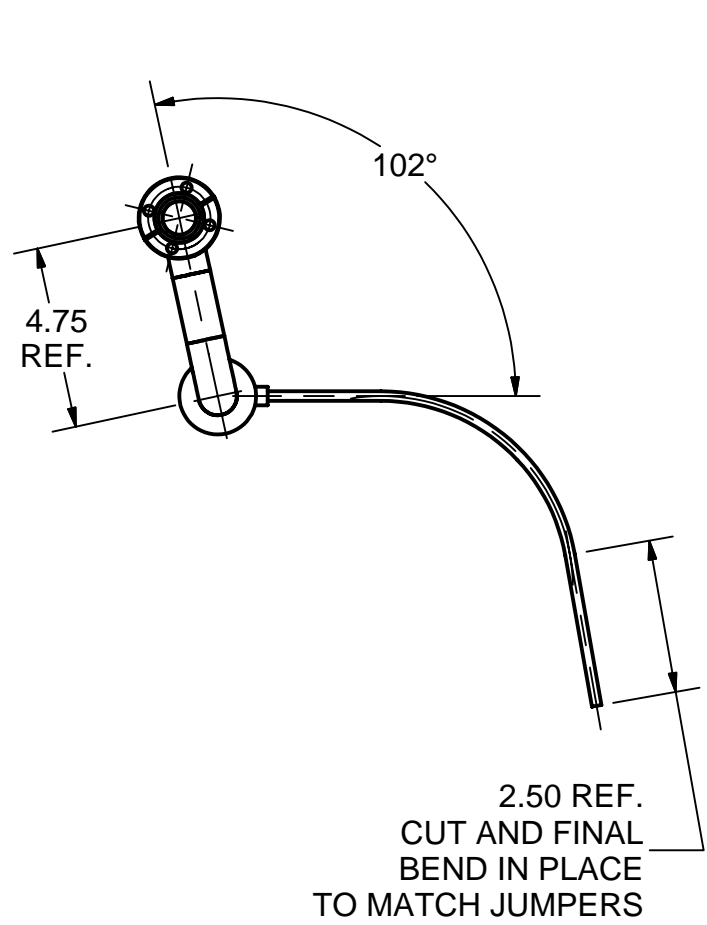
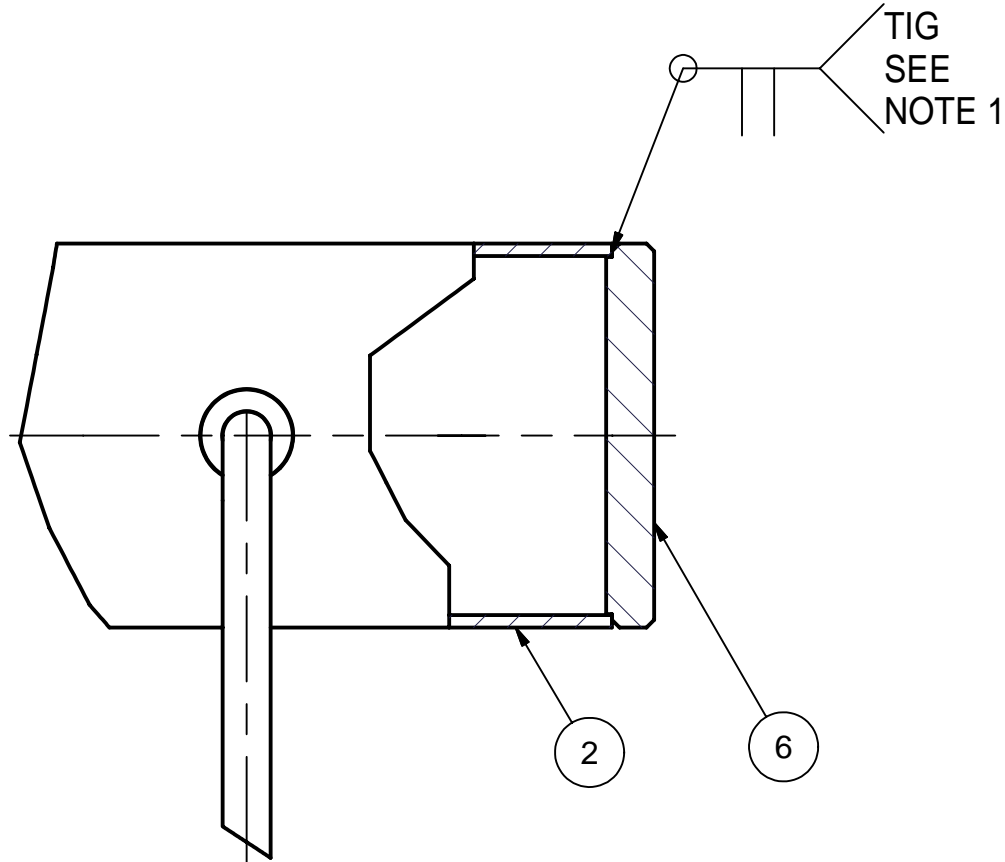


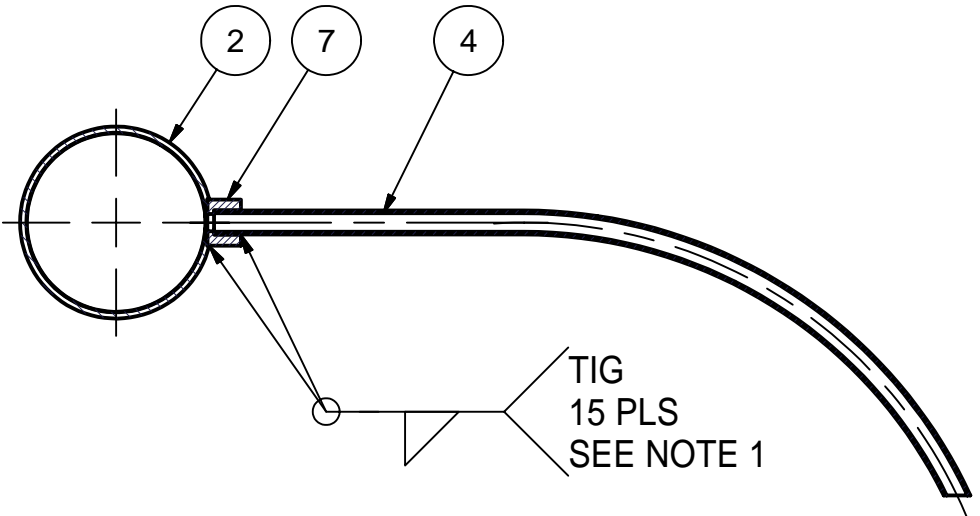
REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.



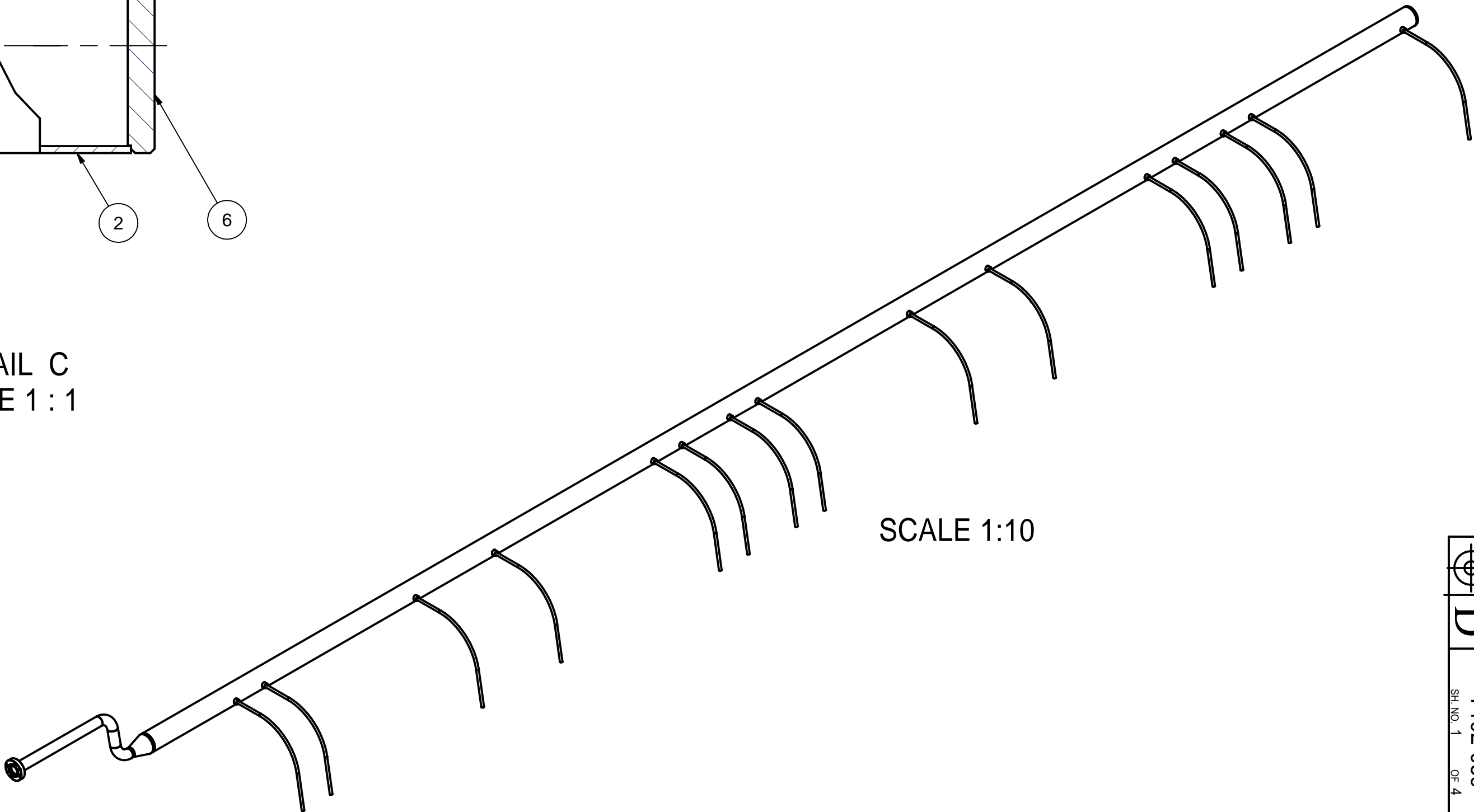
SECTION A-A  
SCALE 1 : 1



DETAIL C  
SCALE 1 : 1



SECTION B-B  
SCALE 1 : 2






SCALE 1:10

1 5 K LEFT TUBE ASSEMBLY

FILE NAME: 7102-059  
SHEET NO.: 1  
DFT. SCALE: 1 : 5  
MATERIAL:  
QTY: 1 PER CRYOMODULE  
NOTES: 1. WELDS CONFORM TO UHV SPEC  
2. MAKE LN THERMAL COLD SHOCK AND LEAK TEST;  
LEAK RATE: < 2.0E-10 TORR-L/SEC.

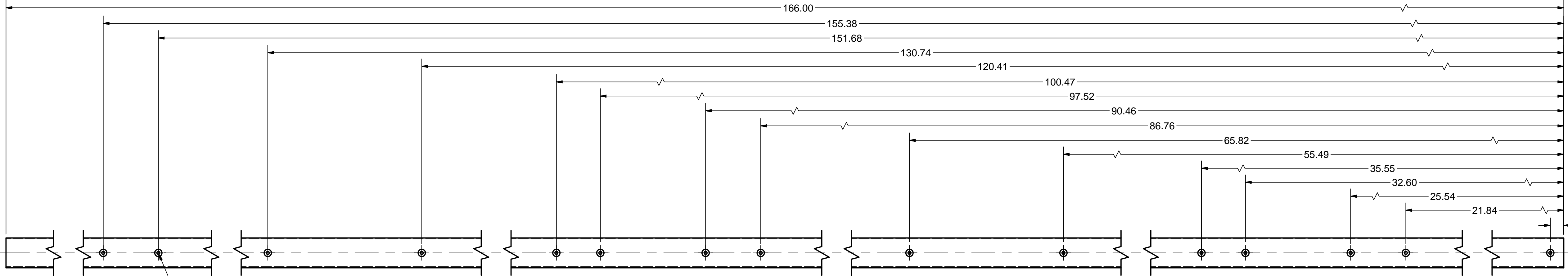
Release of final PO version for Meyer Tool - July 11, 2007.

10	PUR.	1"OD, 90 DEG. ELBOW, 316L S.S.	2			VARIAN'S WE90100 OR EQUIV.	
9	PUR.	2" OD TO 1" OD CONICAL REDUCER, 316L St.St.	1			VARIAN'S WRC200100 OR EQUIV.	
8	PUR.	2-1/8" CF 1" Tube Rotatable Flange, 316L St.St.	1			Varian's F0212-0100-RC or equiv.	
7	7102-058 (SH. 2, ITEM 12)	1/4" WELD COUPLING	15			PUR & MODIFIED	
6	7102-058 (SH. 2, ITEM 3)	2" END CAP	1				
5	7102-058 (SH. 2, ITEM 9)	1" TUBE TO FLANGE	1				
4	7102-059 (SH. 3)	SMALL TUBE LEFT	15				
3	7102-059 (SH. 2)	1" OD TUBE C	1				
2	7102-059 (SH. 2)	5K TUBE - LEFT	1				
1	7102-059 (SH. 1)	5 K LEFT TUBE ASSEMBLY	X				

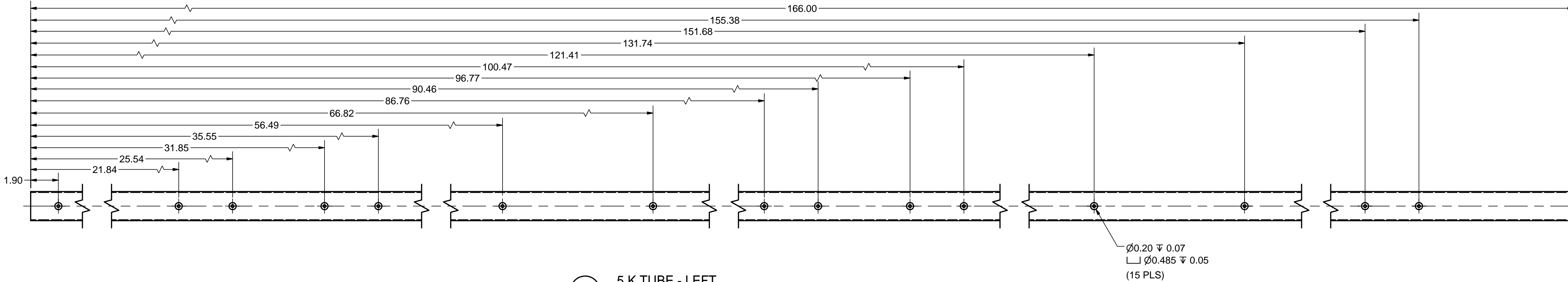
		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS		REV.
								QUANTITY				
D	PRINT DISTR.	PLOT DATE: 7/11/2007 CAD FILE NAME: 7102-059.idw										
7102-059 SH. NO. 1 OF 4	CR1	UNLESS OTHERWISE SPECIFIED:		<div>CORNELL UNIVERSITY  CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div> <div>LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS</div>								
		DIMENSIONS ARE IN INCHES; TOLERANCES ON:										
		.0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES 		ERL Injector Cryomodule 5 K Cooling Pipes 5 K Left Tube Assembly Details								
		CHECKED BY: EPC		DRAWN BY V.Medjidzade	DRAWN FOR M. Liepe	DATE 2/1/2007	SCALE	D	7102-059 SH. NO. 1 OF 4	REV.		
REV.		APPROVED BY: EPC										

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OR EQUIVALENT APPROVED BY CORNELL LEPP

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.

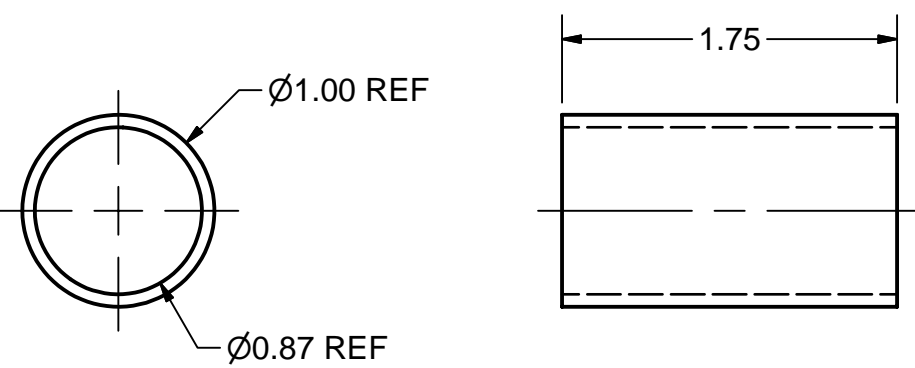


12 5 K TUBE - RIGHT  
FILE NAME: 7102-059  
SHEET NO.: 2  
DFT. SCALE: 1 : 4  
MATERIAL: 2" OD x 0.065" W 316 L, STAINLESS STEEL TUBE  
QTY: 1 PER ASSEMBLY  
NOTES:



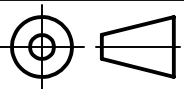




2 5 K TUBE - LEFT  
FILE NAME: 7102-059  
SHEET NO.: 2  
DFT. SCALE: 1 : 4  
MATERIAL: 2" OD x 0.065" W 316 L, STAINLESS STEEL TUBE  
QTY: 1 PER ASSEMBLY  
NOTES:

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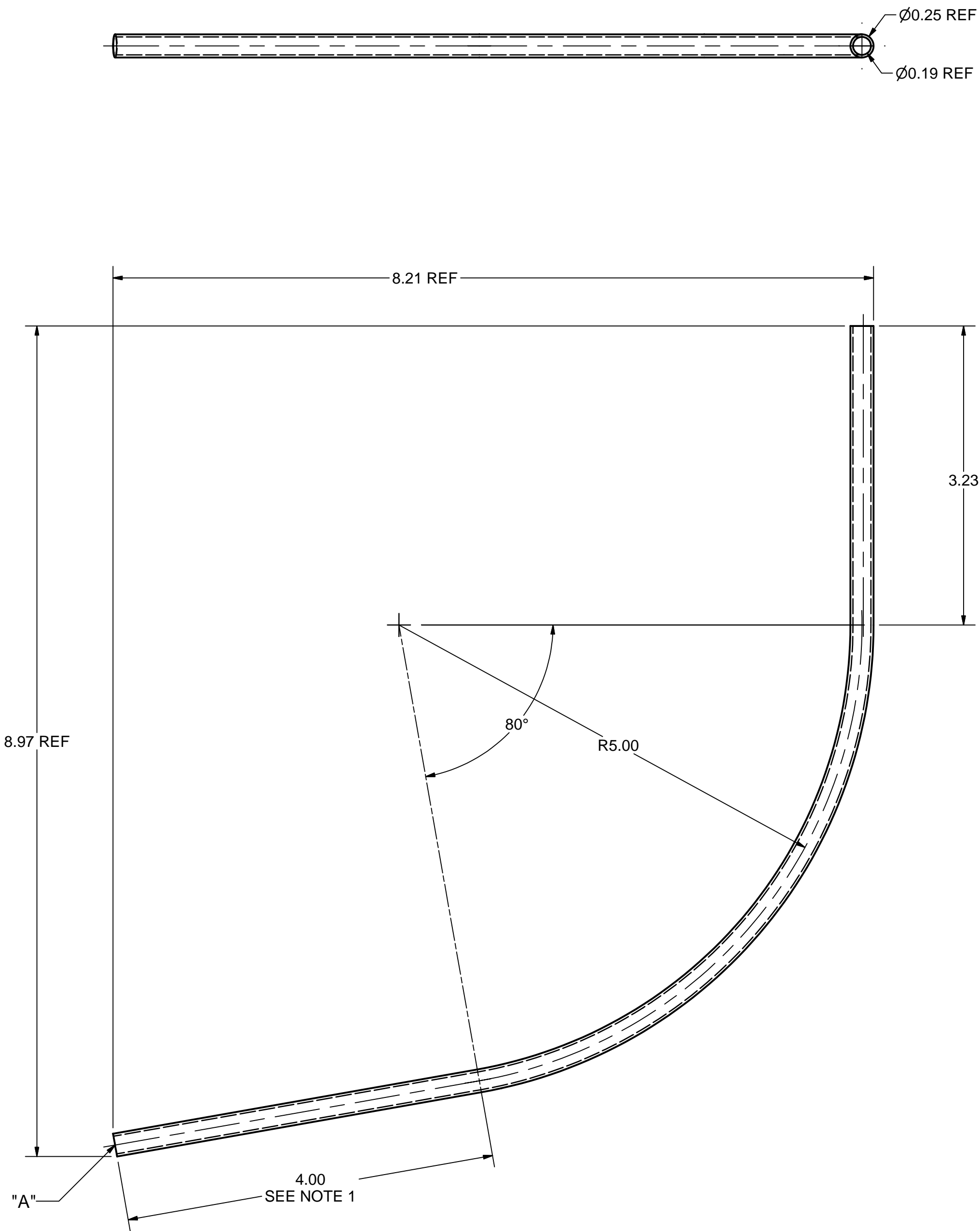


3 1" OD TUBE C  
FILE NAME: 7102-059  
SHEET NO.: 2  
DFT. SCALE: 1 : 1  
MATERIAL: 1" OD x 0.065" W 316 L, STAINLESS STEEL TUBE  
QTY: 1 PER ASSEMBLY; 2 TOTAL  
NOTES:

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ALKALINE DETERGENT LUBRICANT CIMSTAR 40  
OR EQUIVALENT APPROVED BY CORNELL LEPP

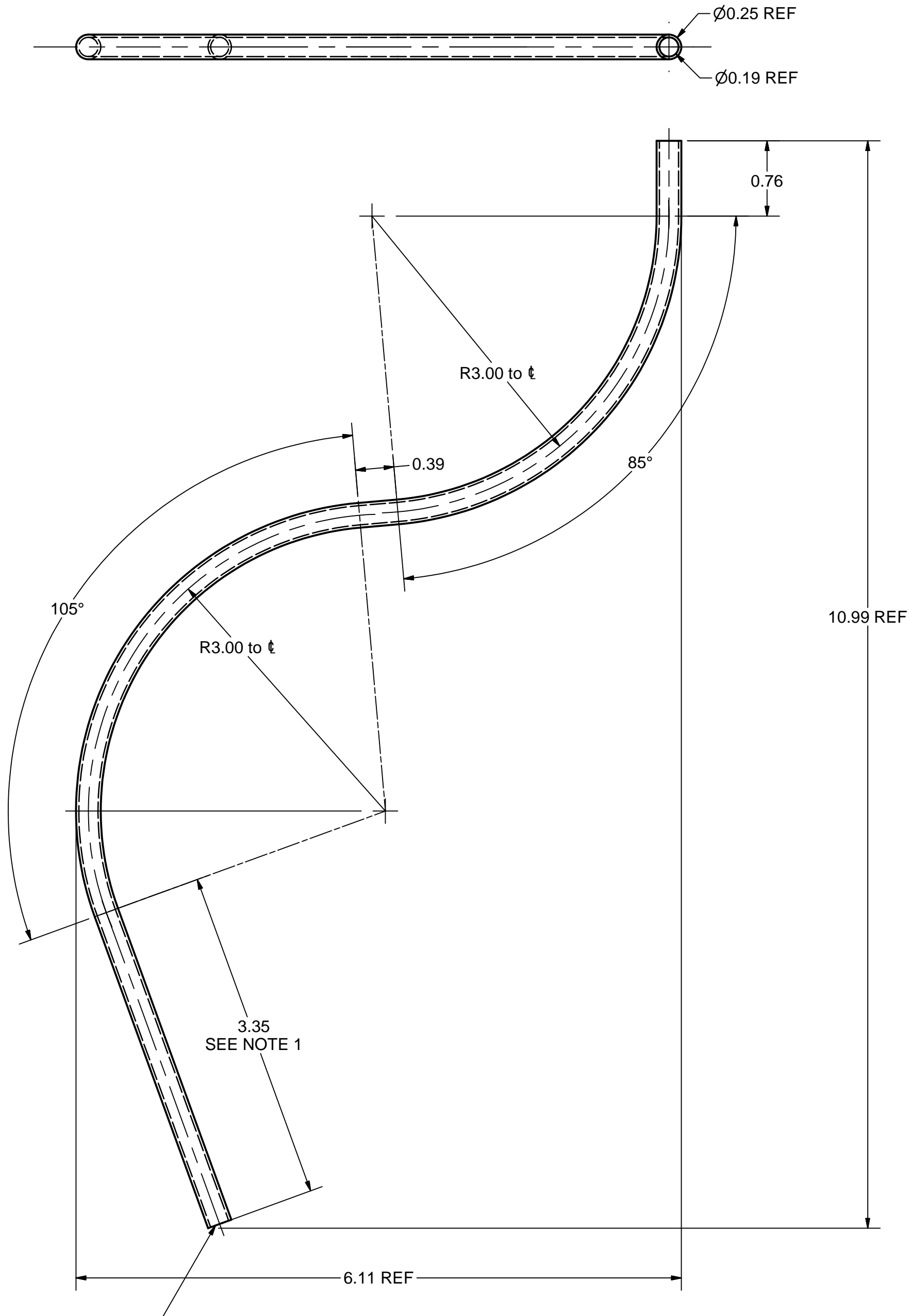
	ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.
							QUANTITY			
	PRINT DISTR.	PLOT DATE: 7/11/2007 CAD FILE NAME: 7102-059.idw								
	CR1	UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES 		<div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div> <div>ERL Injector Cryomodule 5 K Cooling Pipes 5K Left and Right Tube Details</div>						
7102-059 SH. NO. 2 OF 4	REV.	CHECKED BY: EPC APPROVED BY: EPC	DRAWN BY V.Medjdzade	DRAWN FOR M. Liepe	DATE 2/1/2007	SCALE		7102-059 SH. NO. 2 OF 4		REV.

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.



**4 SMALL TUBE LEFT**

FILE NAME: 7102-059  
SHEET NO.: 3  
DFT. SCALE: 1 : 1  
MATERIAL: 0.25" OD x 0.028" W 316L, STAINLESS STEEL TUBE  
QTY: 15 PER ASSEMBLY  
NOTES: 1. DIMENSION 1.5" LONGER THAN NOMINAL. WILL BE SHORTEN IN PLACE DURING FINAL ASSEMBLY.  
2. PINCH END "A" AND TIG WELD SEAL FOR PRESSURE, UHV, AND COLD SHOCK TEST.

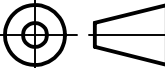






**13 SMALL TUBE RIGHT**

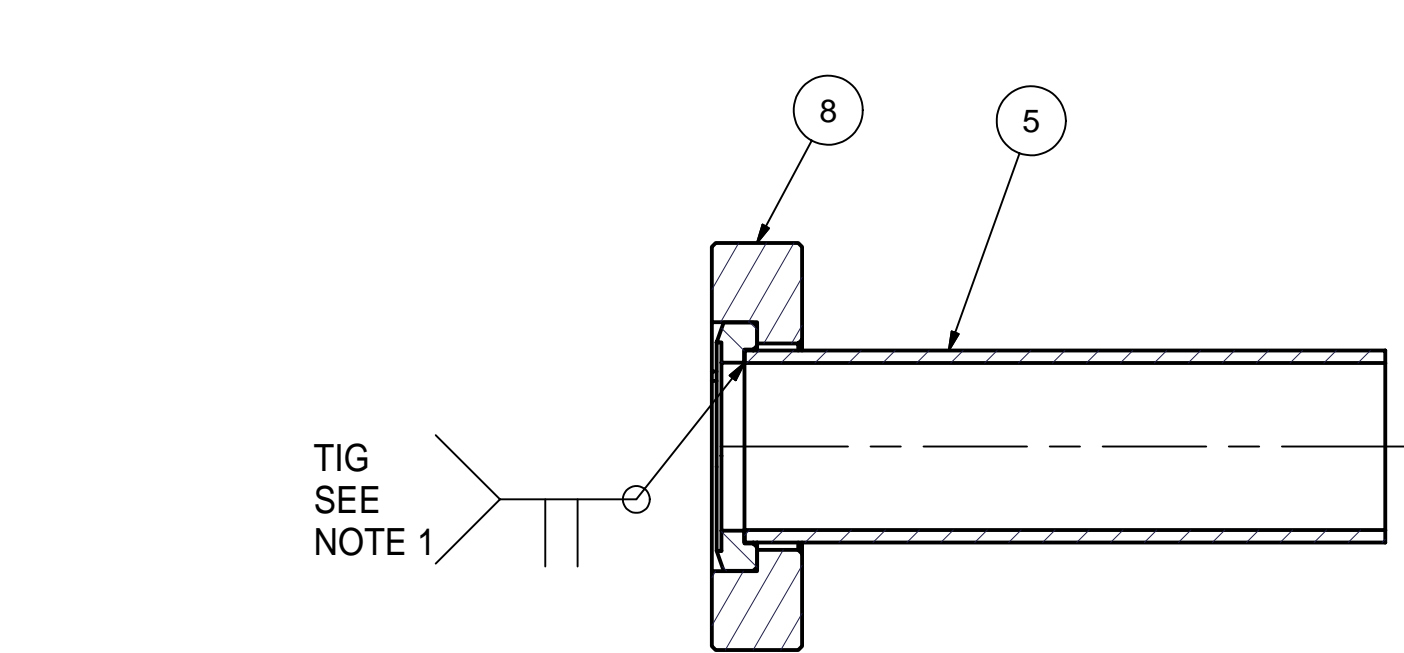
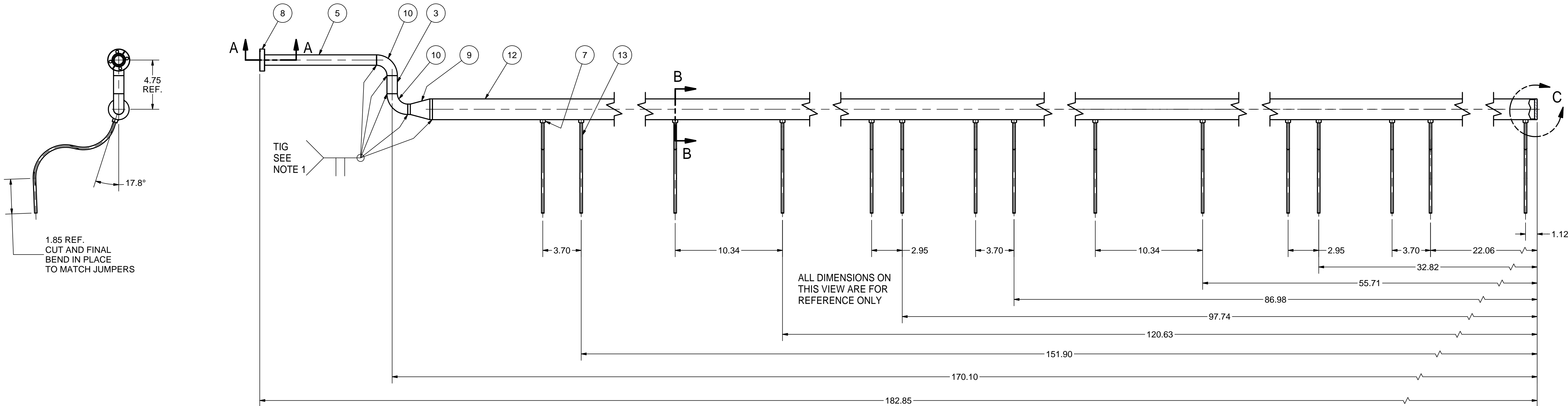
FILE NAME: 7102-059  
SHEET NO.: 3  
DFT. SCALE: 1 : 1  
MATERIAL: 0.25" OD x 0.028" W 316L, STAINLESS STEEL TUBE  
QTY: 15 PER ASSEMBLY  
NOTES: 1. DIMENSION 1.5" LONGER THAN NOMINAL. WILL BE SHORTEN IN PLACE DURING FINAL ASSEMBLY.  
2. PINCH END "B" AND TIG WELD SEAL FOR PRESSURE, UHV, AND COLD SHOCK TEST.

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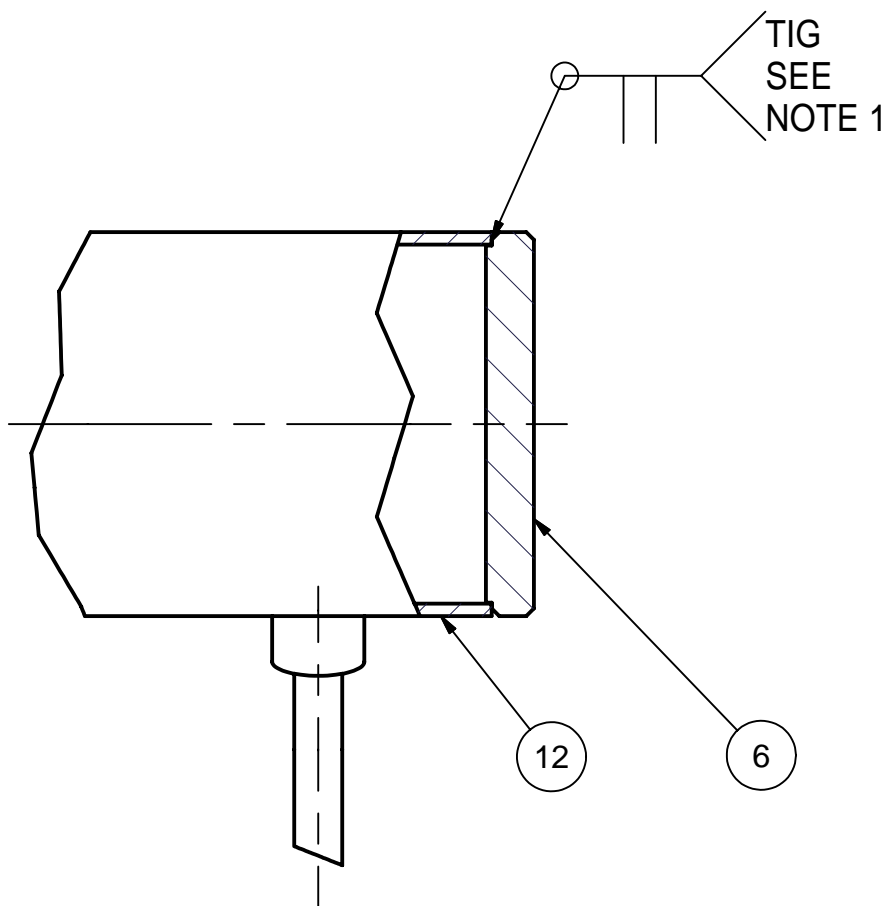
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OR EQUIVALENT APPROVED BY CORNELL LEPP

	ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS	REV.
				QUANTITY						
	PRINT DISTR.	PLOT DATE: 7/11/2007 CAD FILE NAME: 7102-059.idw								
7102-059 SH. NO. 3 OF 4	CR1	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>ERL Injector Cryomodule 5 K Cooling Pipes Left and Right Small Tube Details</div>							
		REV.	CHECKED BY: EPC APPROVED BY: EPC	DRAWN BY V.Medjdzade	DRAWN FOR M. Liepe	DATE 2/1/2007	SCALE		7102-059 SH. NO. 3 OF 4	

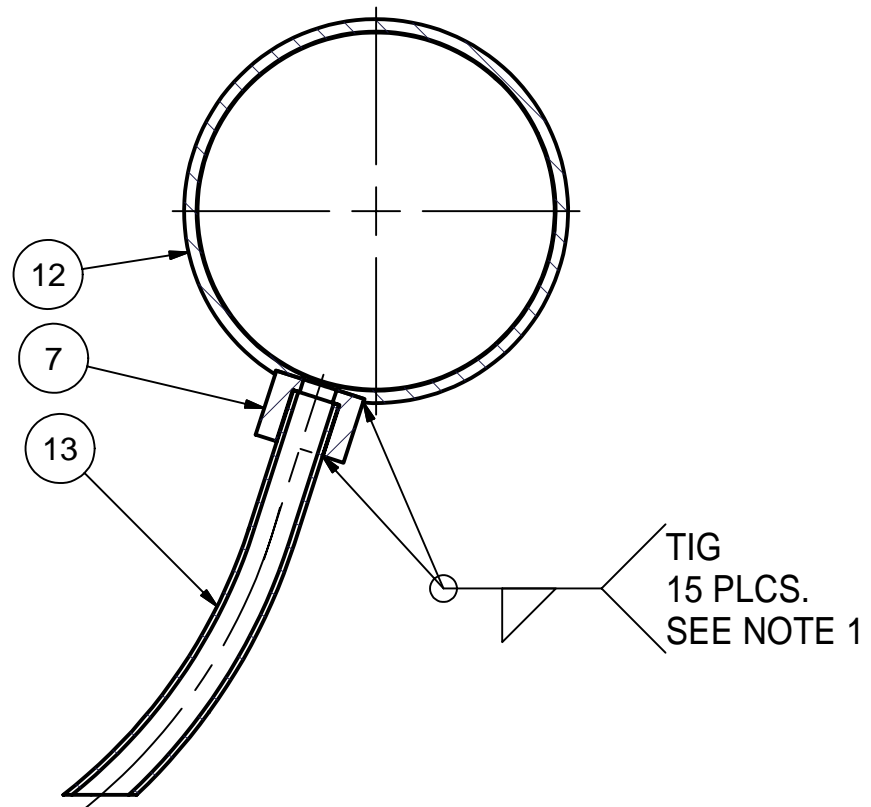
REVISIONS			
SYM.	ZONE	DESCRIPTION	DATE APP.



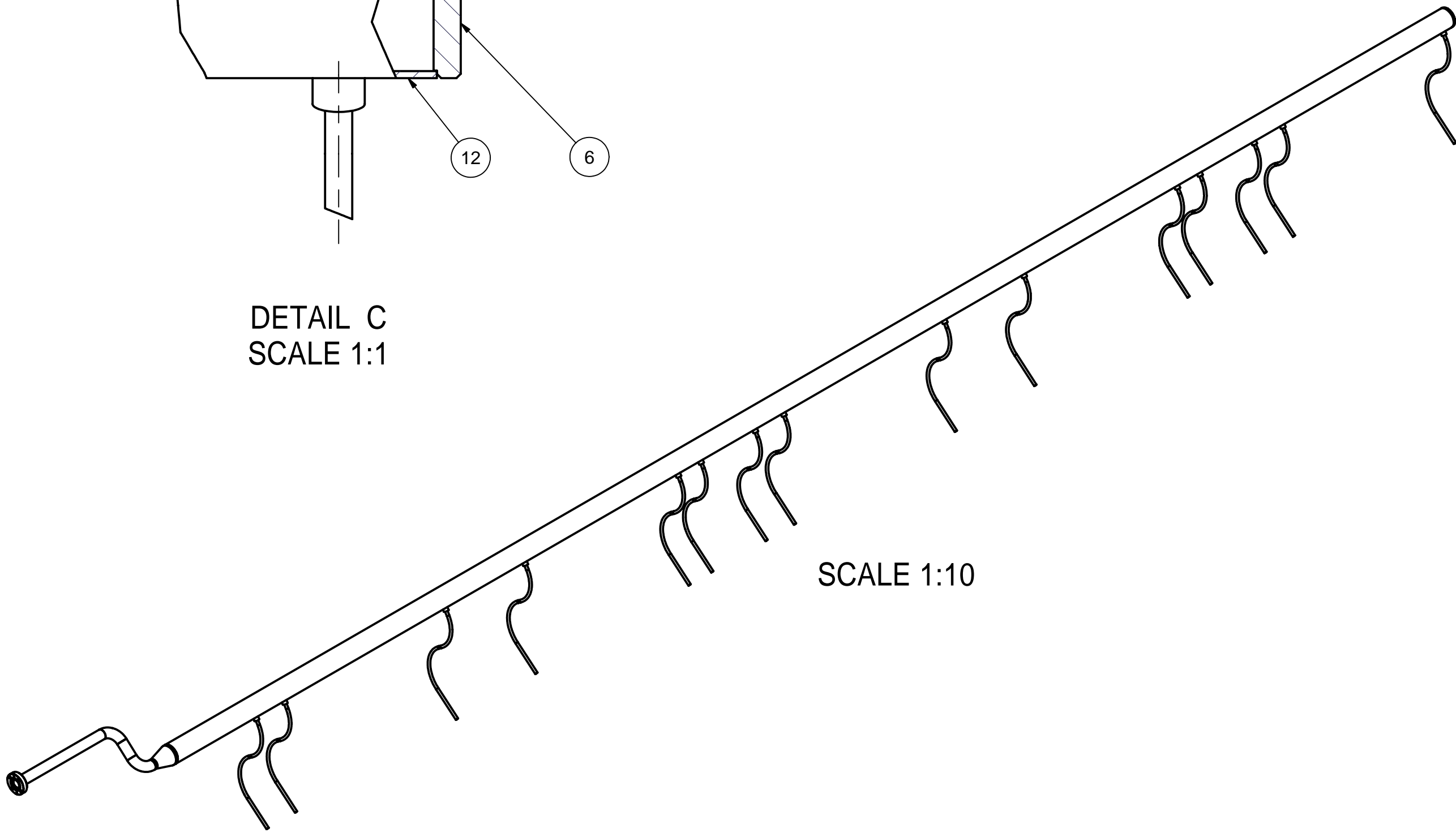
SECTION A-A  
SCALE 1:1



DETAIL C  
SCALE 1:1



SECTION B-B  
SCALE 1:1



SCALE 1:10

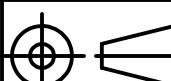




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OR EQUIVALENT APPROVED BY CORNELL LEPP

11 5 K RIGHT TUBE ASSEMBLY

FILE NAME: 7102-059  
SHEET NO.: 4  
DFT. SCALE: 1 : 5  
MATERIAL:  
QTY: 1 PER CRYOMODULE  
NOTES: 1. WELDS CONFORM TO UHV SPEC  
2. MAKE LN THERMAL COLD SHOCK AND LEAK TEST;  
LEAK RATE: < 2.0E-10 TORR-L/SEC.

Release of final PO version for Meyer Tool - July 11, 2007.

13	7102-059 (SH. 3)	SMALL TUBE RIGHT	15				
12	7102-059 (SH. 3)	5 K TUBE - RIGHT	1				
10	PUR.	1"OD, 90 DEG. ELBOW, 316L S.S.	2			VARIAN'S WE90100 OR EQUIV.	
9	PUR.	2" OD TO 1" OD CONICAL REDUCER, 316L St.St.	1			VARIAN'S WRC200100 OR EQUIV.	
8	PUR.	2-1/8" CF 1" Tube Rotatable Flange, 316L St.St.	1			Varian's F0212-0100-RC or equiv.	
7	7102-058 (SH. 2, ITEM 12)	1/4" WELD COUPLING	15			PUR & MODIFIED	
6	7102-058 (SH. 2, ITEM 3)	2" END CAP	1				
5	7102-058 (SH. 2, ITEM 9)	1" TUBE TO FLANGE	1				
3	7102-059 (SH. 2)	1" OD TUBE C	1				
11	7102-059 (SH. 4)	5 K RIGHT TUBE ASSEMBLY	X				

		ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
					QUANTITY				
 D	PRINT DISTR.	PLOT DATE: 7/11/2007 CAD FILE NAME: 7102-059.idw							
	7102-059 SH. NO. 4 OF 4	CR1	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 5 K Cooling Pipes 5 K Right Tube Assembly Details							
REV.	CHECKED BY: EPC	DRAWN BY V.Medjdzade		DRAWN FOR M. Liepe	DATE 2/1/2007	SCALE	 D	7102-059	REV.
	APPROVED BY: EPC							SH. NO. 4 OF 4	