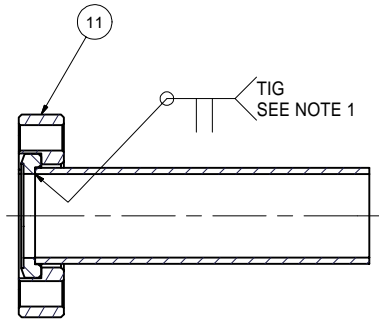
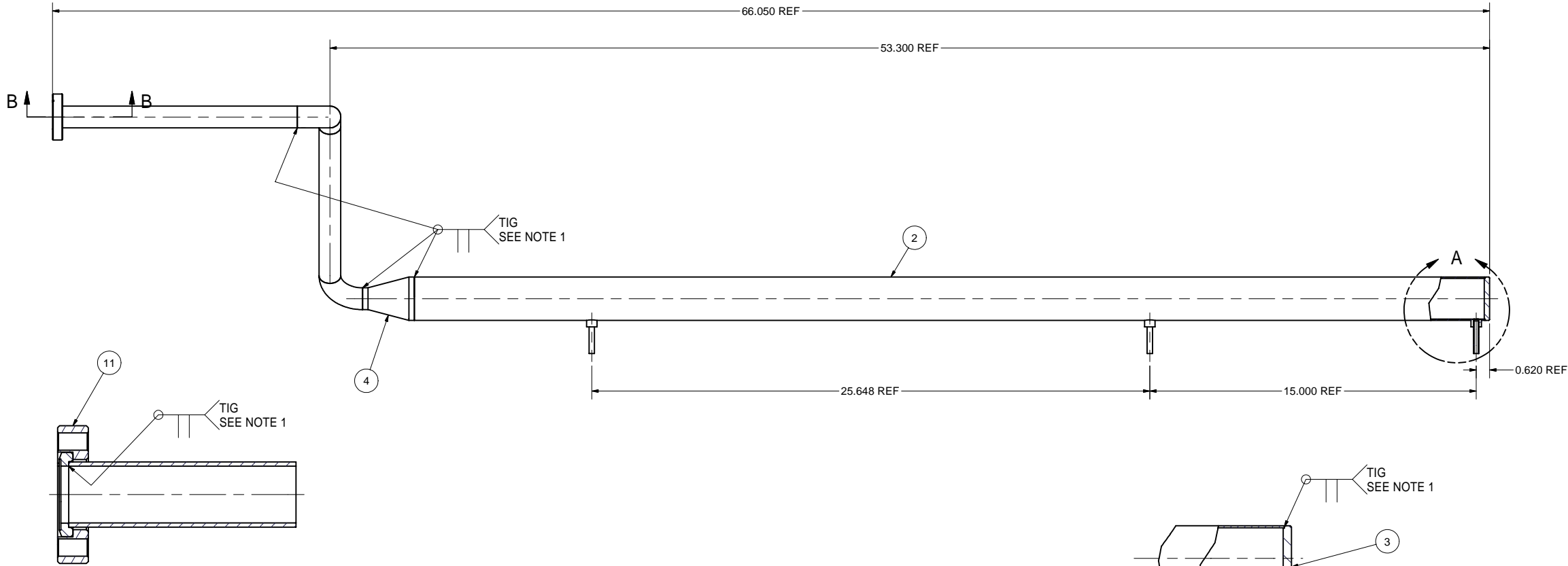
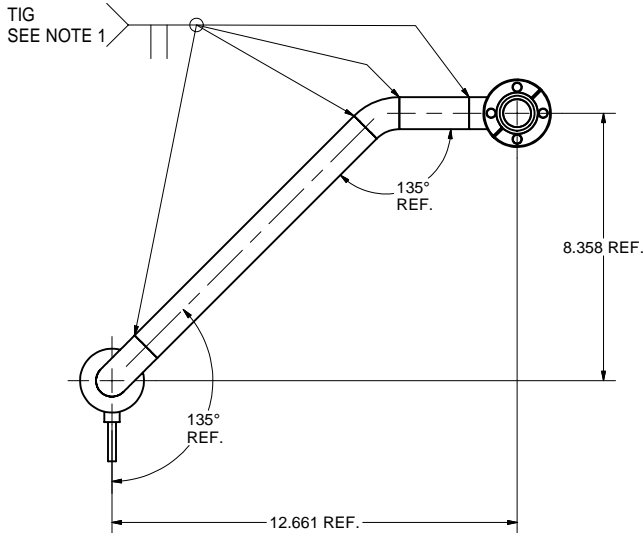
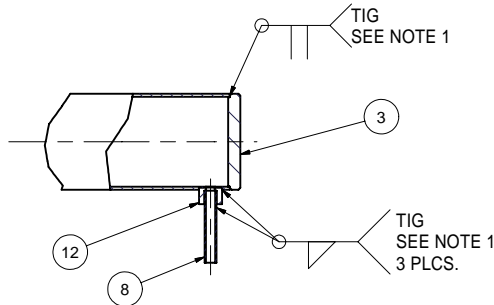


REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED ITEM #12 TO P.L. & UPDATED VIEWS TO REFLECT THIS JGL	12/7/06	JOS

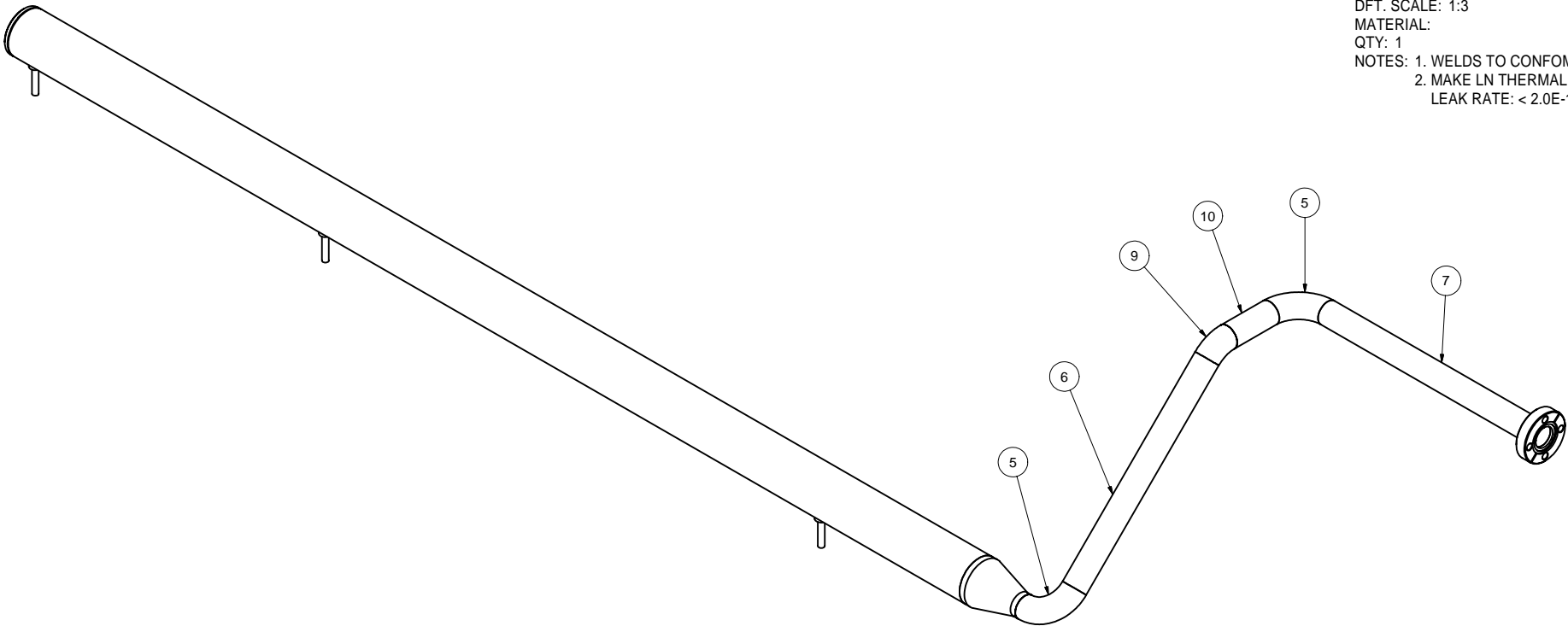


SECTION B-B
SCALE 1 : 1



DETAIL A
SCALE 1:2

- 1 LEFT OUTER 80 K COOLING PIPE ASSEMBLY**
FILE NAME: 7110-007
SHEET NO.: 1
DFT. SCALE: 1:3
MATERIAL:
QTY: 1
NOTES: 1. WELDS TO CONFORM TO UHV SPEC.
2. MAKE LN THERMAL COLD SHOCK AND LEAK TEST;
LEAK RATE: < 2.0E-10 TORR-L/SEC.

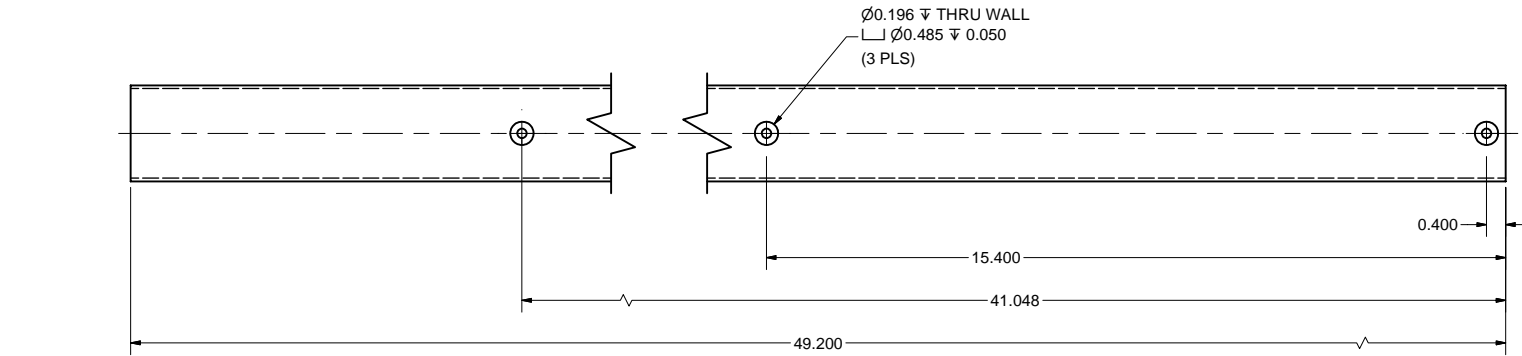


12	SHEET 2	1/4" Weld Coupling (PUR. & MODIFIED)	3		Swagelok - Union part. no. SS-4-TSW-6	
11	PUR.	2-1/8" CF Rotatable 1" Tube Flange, 316L S.S.	1		Varian's F0212-0100-RC or equiv.	
10	SHEET 2	1"OD TUBE III	1			
9	PUR.	45 DEG. ELBOW, 1" OD, 316L S. S.	1		Varian's WE45100 or equiv.	
8	SHEET 2	1/4" OD TUBE STUB	3			
7	SHEET 2	1" OD TUBE II	1			
6	SHEET 2	1" OD TUBE I	1			
5	PUR.	90 DEG. ELBOW 1" OD , 316L S.S.	2		Varian's WE90100 or equiv.	
4	PUR.	2" OD to 1" OD CONICAL REDUCER, 316L S.S.	1		Varian's WRC200100 or equiv.	
3	SHEET 2	2" END CAP	1			
2	SHEET 2	2" OD TUBE I	1			
1	SHEET 1	LEFT OUTER 80 K COOLING PIPE ASSEMBLY	X			

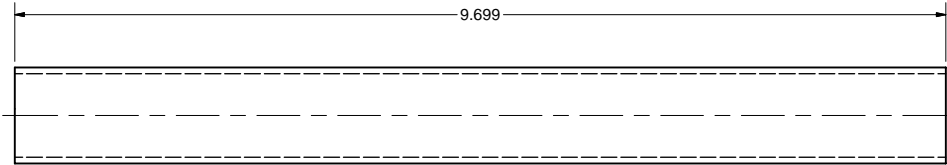
ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
PLOT DATE: 2/21/2007 CAD FILE NAME: 7110-007.idw			QUANTITY				
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES			CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853			ERL HORIZONTAL TEST CRYOMODULE 80 K COOLING PIPES LEFT OUTER 80 K COOLING PIPE ASSEMBLY DETAILS	
CHECKED BY: VM APPROVED BY: ML			DRAWN BY applin	DRAWN FOR vm	DATE 8/2/2006	SCALE D	7110-007 SH. NO. 1 OF 6

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OR EQUIVALENT APPROVED BY CORNELL LEPP

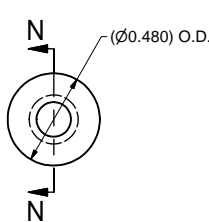
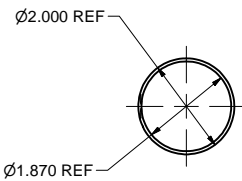
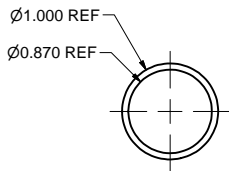
REVISIONS					
SYM.	ZONE	DESCRIPTION	DATE	APP.	
A	D-4	ADDED ITEM #12 & ON ITEM #2, CHANGED C'BORE DIA - WAS 0.260	12/7/06	JOS	
B		EDIT DIMENSION ON PARTS 8 AND 12	SX 2/21/07	toc	



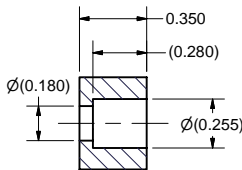
2 2" OD TUBE I
FILE NAME: 7110-007
SHEET NO.: 2
DFT. SCALE: 1:2
MATERIAL: 2" OD x 0.065" W, 316L STAINLESS STEEL TUBE
QTY: 1 PER ASSEMBLY
NOTES:



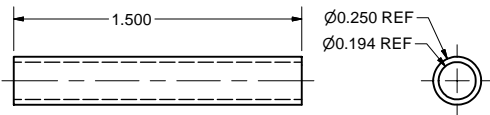
6 1" OD TUBE I
FILE NAME: 7110-007
SHEET NO.: 2
DFT. SCALE: 1:1
MATERIAL: 1" OD x 0.065" W, 316L STAINLESS STEEL TUBE
QTY: 1 PER ASSEMBLY
NOTES:



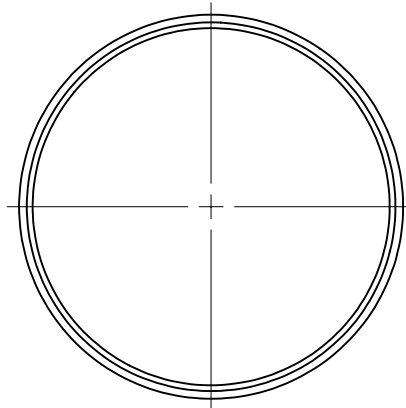
12 1/4" WELD COUPLING
FILE NAME: 7110-007
SHEET NO.: 2
DFT. SCALE: 2:1
MATERIAL: SWAGelok Union Pt. no. SS-4-TSW-6 or EQUIV.
QTY: 3 PER ASSEMBLY
NOTES:



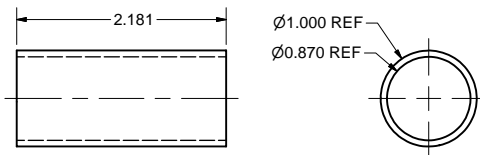
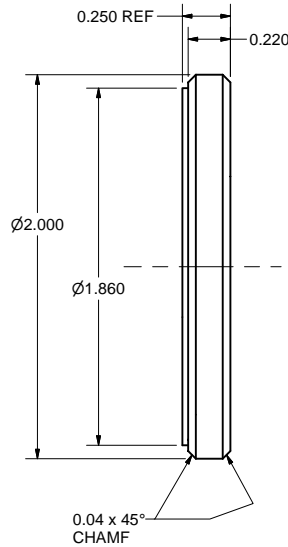
SECTION N-N



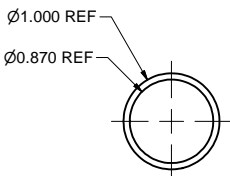
8 1/4" OD TUBE STUB
FILE NAME: 7110-007
SHEET NO.: 2
DFT. SCALE: 2:1
MATERIAL: 1/4" OD x 0.028" W, 316L STAINLESS STEEL TUBE
QTY: 3 PER ASSEMBLY
NOTES:



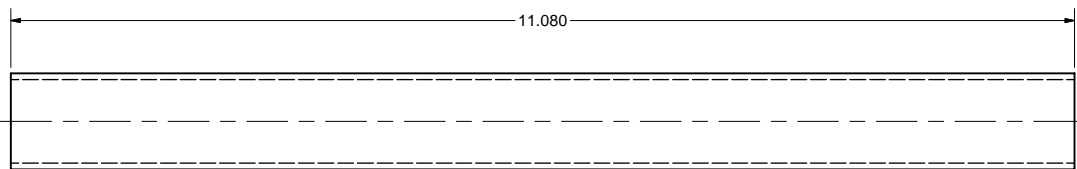
3 2" END CAP
FILE NAME: 7110-007
SHEET NO.: 2
DFT. SCALE: 2:1
MATERIAL: 1/4" 316 STAINLESS STEEL SHEET
QTY: 1 PER ASSEMBLY
NOTES:






10 1" OD TUBE III
FILE NAME: 7110-007
SHEET NO.: 2
DFT. SCALE: 1:1
MATERIAL: 1" OD x 0.065" W, 316L STAINLESS STEEL TUBE
QTY: 1 PER ASSEMBLY
NOTES:



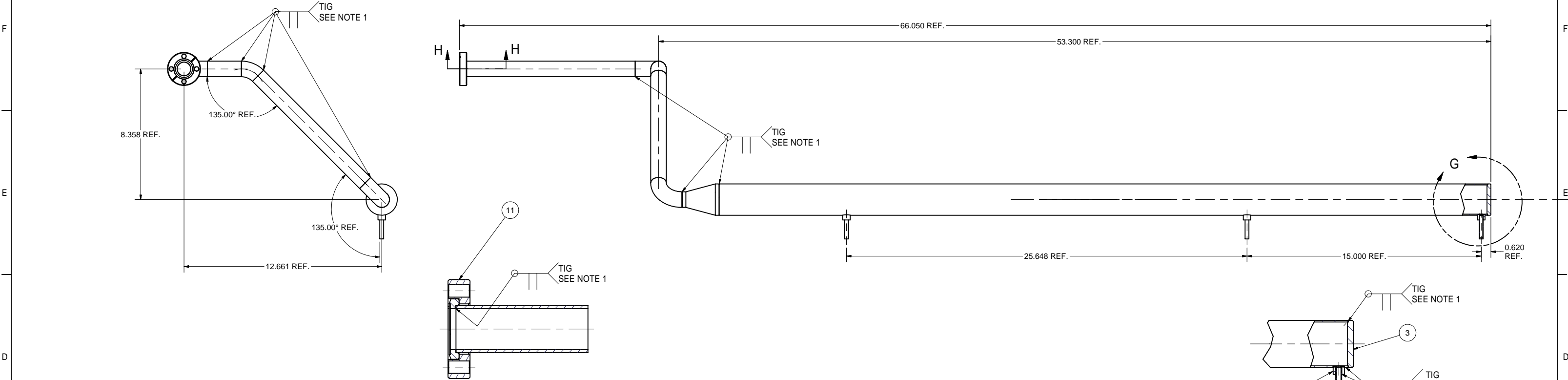
7 1" OD TUBE II
FILE NAME: 7110-007
SHEET NO.: 2
DFT. SCALE: 1:1
MATERIAL: 1" OD x 0.065" W, 316L STAINLESS STEEL TUBE
QTY: 1 PER ASSEMBLY
NOTES:



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OR EQUIVALENT APPROVED BY CORNELL LEPP

		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS		REV.		
							QUANTITY							
D	PRINT DISTR.	PLOT DATE: 2/21/2007 CAD FILE NAME: 7110-007.idw												
7110-007 SH. NO. 2 OF 6	CR1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES 		 CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY Ithaca, NY 14853				ERL HORIZONTAL TEST CRYOMODULE 80 K COOLING PIPES 80 K TUBE DETAILS						
		CHECKED BY: VM		DRAWN BY applin		DRAWN FOR vm		DATE 8/2/2006		SCALE D		7110-007 SH. NO. 2 OF 6		REV. B
		APPROVED BY: ML												

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED ITEM #12 TO P.L. & UPDATED VIEWS TO REFLECT THIS JGL	12/7/06	JOS





SECTION H-H
SCALE 1 : 1

DETAIL G
SCALE 1:2

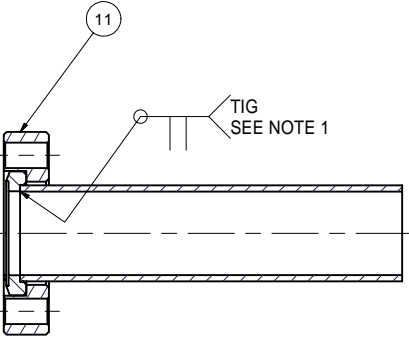
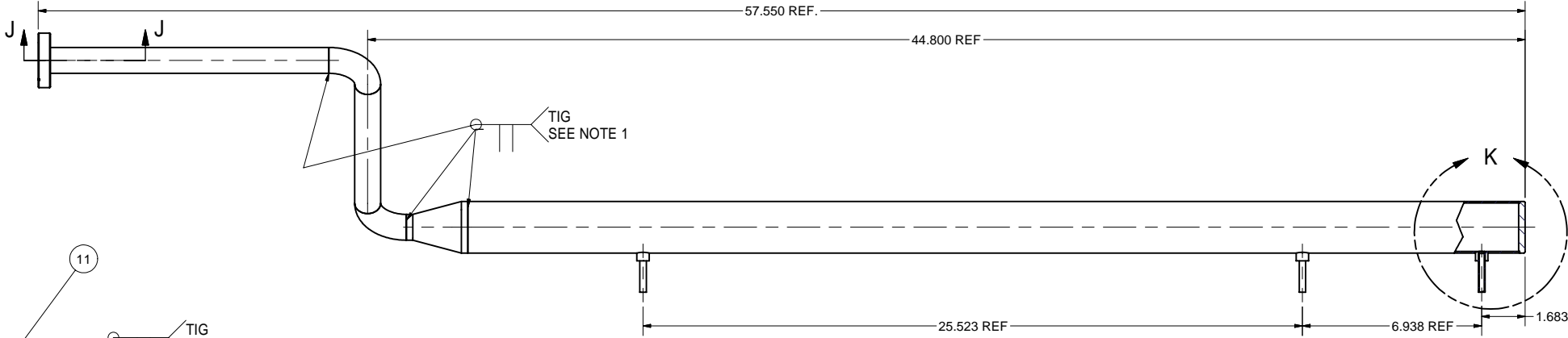
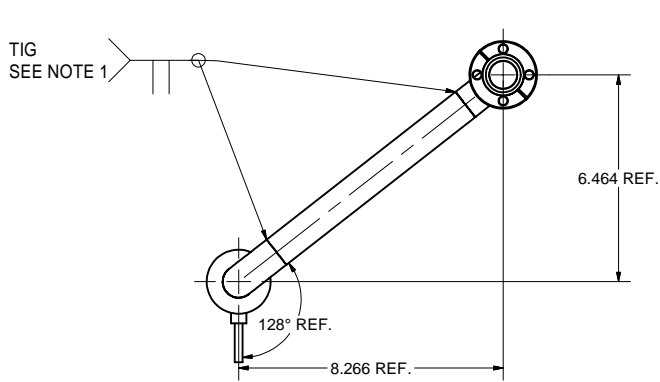
20 RIGHT OUTER 80 K COOLING PIPE ASSEMBLY
FILE NAME: 7110-007
SHEET NO.: 3
DFT. SCALE: 1:3
MATERIAL:
QTY: 1
NOTES: 1. WELDS TO CONFORM TO UHV SPEC.
2. MAKE LN THERMAL COLD SHOCK AND LEAK TEST;
LEAK RATE: < 2.0E-10 TORR-L/SEC.

12	SHEET 2	1/4" Weld Coupling (Pur. & Modified)	3		Swagelok - Union Part no. SS-4-TSW-6
11	PUR.	2-1/8" CF Rotatable 1" Tube Flange, 316L S.S.	1		Varian's F0212-0100-RC or equiv.
10	SHEET 2	1" OD TUBE III	1		
9	PUR.	45 DEG. ELBOW, 1" OD, 316L ST. STEEL	1		Varian's WE45100 or equiv.
8	SHEET 2	1/4" TUBE STUB	3		
7	SHEET 2	1" OD TUBE II	1		
6	SHEET 2	1" OD TUBE I	1		
5	PUR.	90 DEG. ELBOW 1" OD, 316L S.S.	2		Varian's WE90100 or equiv.
4	PUR.	2" OD to 1" OD CONICAL REDUCER, 316L S.S.	1		Varian's WRC200100 or equiv.
3	SHEET 2	2" END CAP	1		
2	SHEET 2	2" OD TUBE I	1		
20	SHEET 3	RIGHT OUTER 80 K COOLING PIPE ASSEMBLY	X		

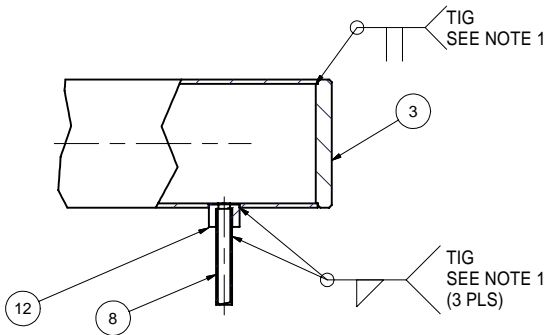
		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS		REV.
		QUANTITY										
D	PRINT DISTR.	PLOT DATE: 2/21/2007 CAD FILE NAME: 7110-007.idw										
	7110-007 SH. NO. 3 OF 6	CR1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES ✓✓		<div><div></div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div> <div>ERL HORIZONTAL TEST CRYOMODULE 80 K COOLING PIPES RIGHT OUTER 80 K COOLING PIPE ASSEMBLY DETAIL</div>							
CHECKED BY: VM APPROVED BY: ML		DRAWN BY applin	DRAWN FOR vm	DATE 8/2/2006	SCALE	D	7110-007 SH. NO. 3 OF 6		REV. A			

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OR EQUIVALENT APPROVED BY CORNELL LEPP

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED ITEM #12 TO P.L. & UPDATED VIEWS TO REFLECT THIS JGL	12/7/06	JOS



SECTION J-J
SCALE 1 : 1



DETAIL K
SCALE 2 / 3

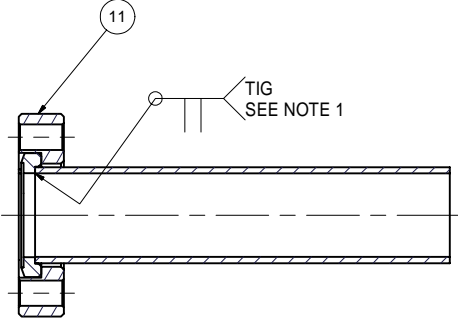
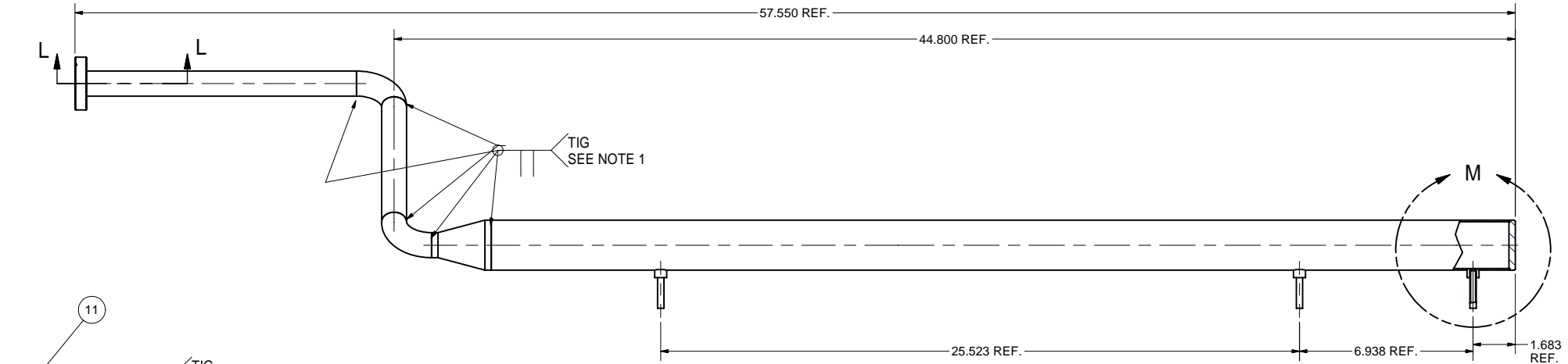
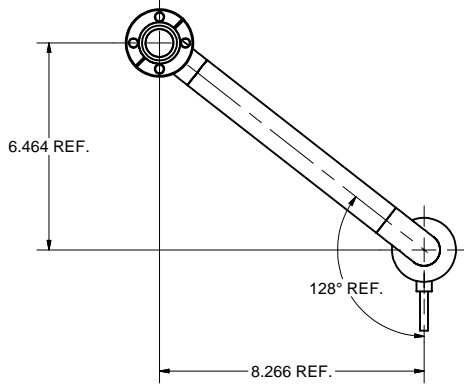
30 LEFT INNER 80 K COOLING PIPE ASSEMBLY
FILE NAME: 7110-007
SHEET NO.: 4
DFT. SCALE: 1:3
MATERIAL:
QTY: 1
NOTES: 1. WELDS TO CONFORM TO UHV SPEC.
2. MAKE LN THERMAL COLD SHOCK AND LEAK TEST;
LEAK RATE: < 2.0E-10 TORR-L/SEC.

12	SHEET 2	1/4" Weld Coupling (Pur. & Modified)	3		Swagelok - Union part no. SS-4-TSW-6	
32	SHEET 5	1" OD TUBE IV	1			
31	SHEET 5	2" OD TUBE II	1			
11	PUR.	2-1/8" CF Rotatable 1" Tube Flange, 316L S.S.	1		Varian's F0212-0100-RC or equiv.	
8	SHEET 2	1/4" TUBE STUB	3			
7	SHEET 2	1" OD TUBE II	1			
5	PUR.	90 DEG. ELBOW, 1" OD, 316L S.S.	2		Varian's WE90100 or equiv.	
4	PUR.	2" OD to 1" OD CONICAL REDUCER, 316L S.S.	1		Varian's WRC200100 or equiv.	
3	SHEET 2	2" END CAP	1			
30	SHEET 4	LEFT INNER 80 K COOLING PIPE ASSEMBLY	X			

ITEM	DWG. NO.	DESCRIPTION	G1	G2	G3	REMARKS	REV.
PLOT DATE: 2/21/2007 CAD FILE NAME: 7110-007.idw			QUANTITY				
7110-007 SH. NO. 4 OF 6	CR1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES	CORNELL UNIVERSITY FLOYD R. NEWMAN LABORATORY ITHACA, NY 14853				
DRAWN BY aplin		DRAWN FOR vm	DATE 8/2/2006	SCALE D	7110-007 SH. NO. 4 OF 6	REV. A	

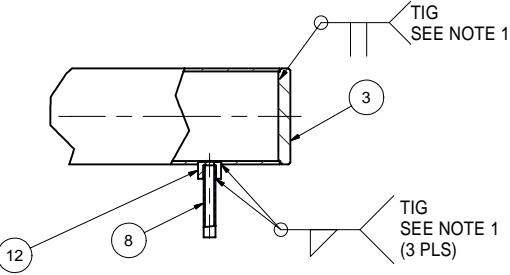
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OR EQUIVALENT APPROVED BY CORNELL LEPP

REVISIONS				
SYM.	ZONE	DESCRIPTION	DATE	APP.
A		ADDED ITEM #12 TO P.L. & UPDATED VIEWS TO REFLECT THIS JGL	12/7/06	JOS

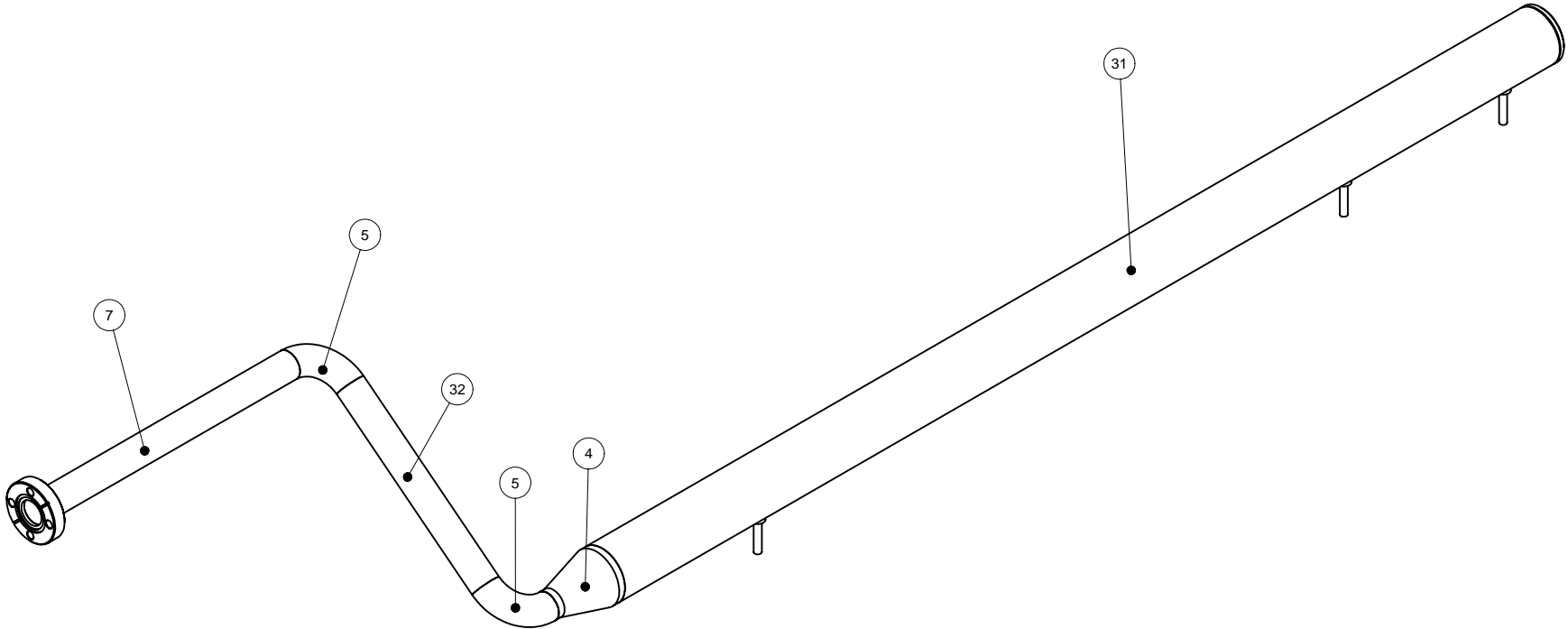


SECTION L-L
SCALE 1 : 1




40 RIGHT INNER 80 K COOLING PIPE ASSEMBLY
FILE NAME: 7110-007
SHEET NO.: 6
DFT. SCALE: 1:3
MATERIAL:
QTY: 1
NOTES: 1. WELDS TO CONFORM TO UHV SPEC.
2. MAKE LN THERMAL COLD SHOCK AND LEAK TEST;
LEAK RATE: < 2.0E-10 TORR-L/SEC.



DETAIL M
SCALE 1:2



12	SHEET 2	1/4" Weld Coupling (Pur. & Modified)	3		Swagelok - Union part no. SS-4-TSW-6
32	SHEET 5	1" OD TUBE IV	1		
31	SHEET 5	2" OD TUBE II	1		
11	PUR.	2-1/8" CF Rotatable 1" Tube Flange, 316L S.S.	1		Varian's F0212-0100-RC or equiv.
8	SHEET 2	1/4" TUBE STUB	3		
7	SHEET 2	1" OD TUBE II	1		
5	PUR.	90 DEG. ELBOW 1" OD, 316L S.S.	2		Varian's WE90100 or equiv.
4	PUR.	2" OD to 1" OD CONICAL REDUCER, 316L S.S.	1		Varian's WRC200100 or equiv.
3	SHEET 2	2" END CAP	1		
40	SHEET 6	RIGHT INNER 80 K COOLING PIPE ASSEMBLY	X		

		ITEM	DWG. NO.	DESCRIPTION			G1	G2	G3	REMARKS		REV.		
								QUANTITY						
D		PRINT DISTR.	PLOT DATE: 2/21/2007 CAD FILE NAME: 7110-007.idw											
7110-007 SH. NO. 6 OF 6		CR1	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES: TOLERANCES ON: .00 ± .010 .000 ± .005 FRACTIONS ± 1/64 ANGLES ± 0.5° ALL SURFACES 		<div><div>CORNELL UNIVERSITY Floyd R. Newman Laboratory Ithaca, NY 14853</div></div> <div>ERL HORIZONTAL TEST CRYOMODULE 80 K COOLING PIPES RIGHT INNER 80 K COOLING PIPE ASSEMBLY DETAIL</div>									
A		REV.	CHECKED BY: VM APPROVED BY: ML		DRAWN BY applin		DRAWN FOR vm		DATE 8/2/2006		SCALE D		7110-007 SH. NO. 6 OF 6	REV. A

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ALKALINE DETERGENT LUBRICANT CIMSTAR 40
OR EQUIVALENT APPROVED BY CORNELL LEPP