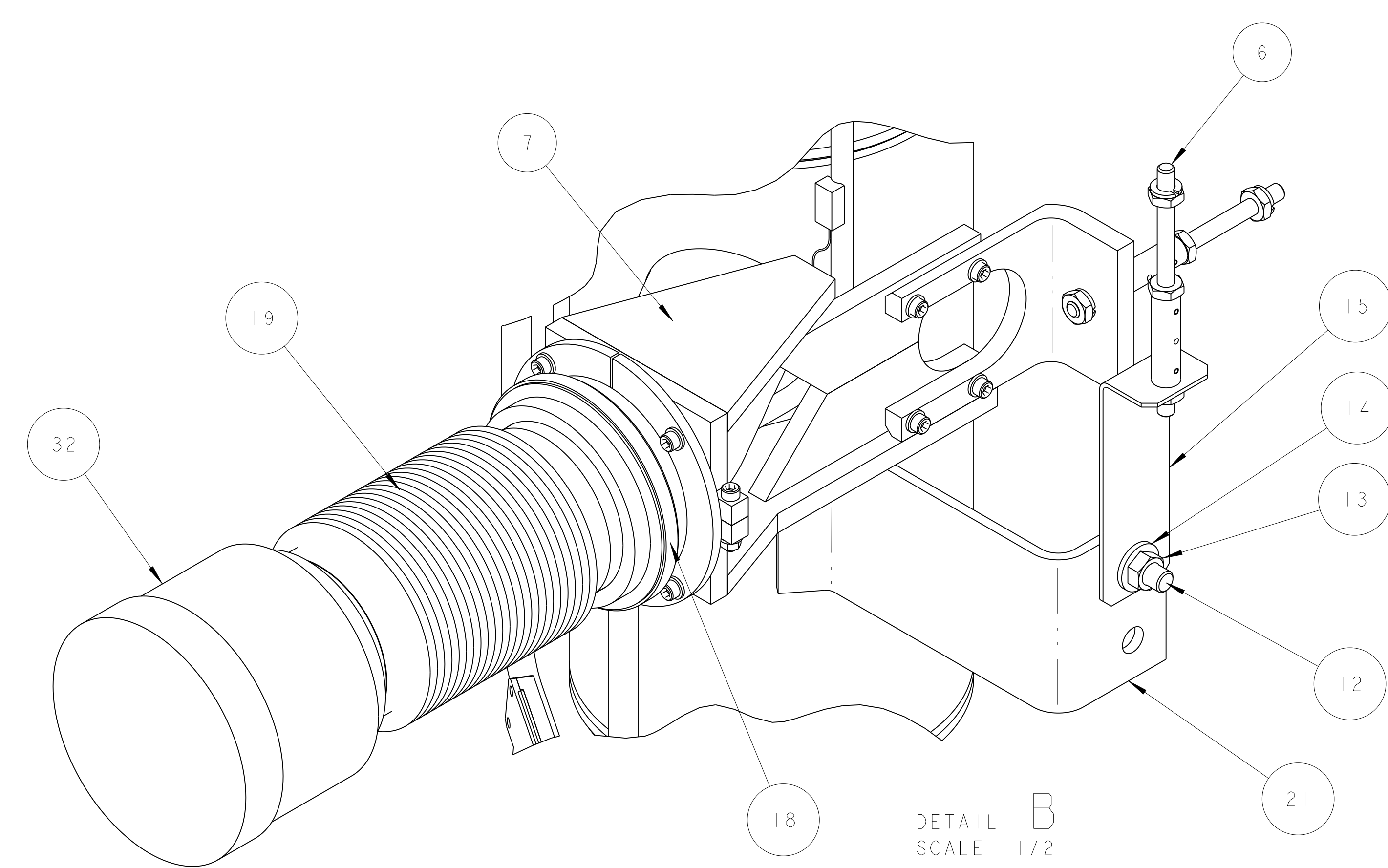
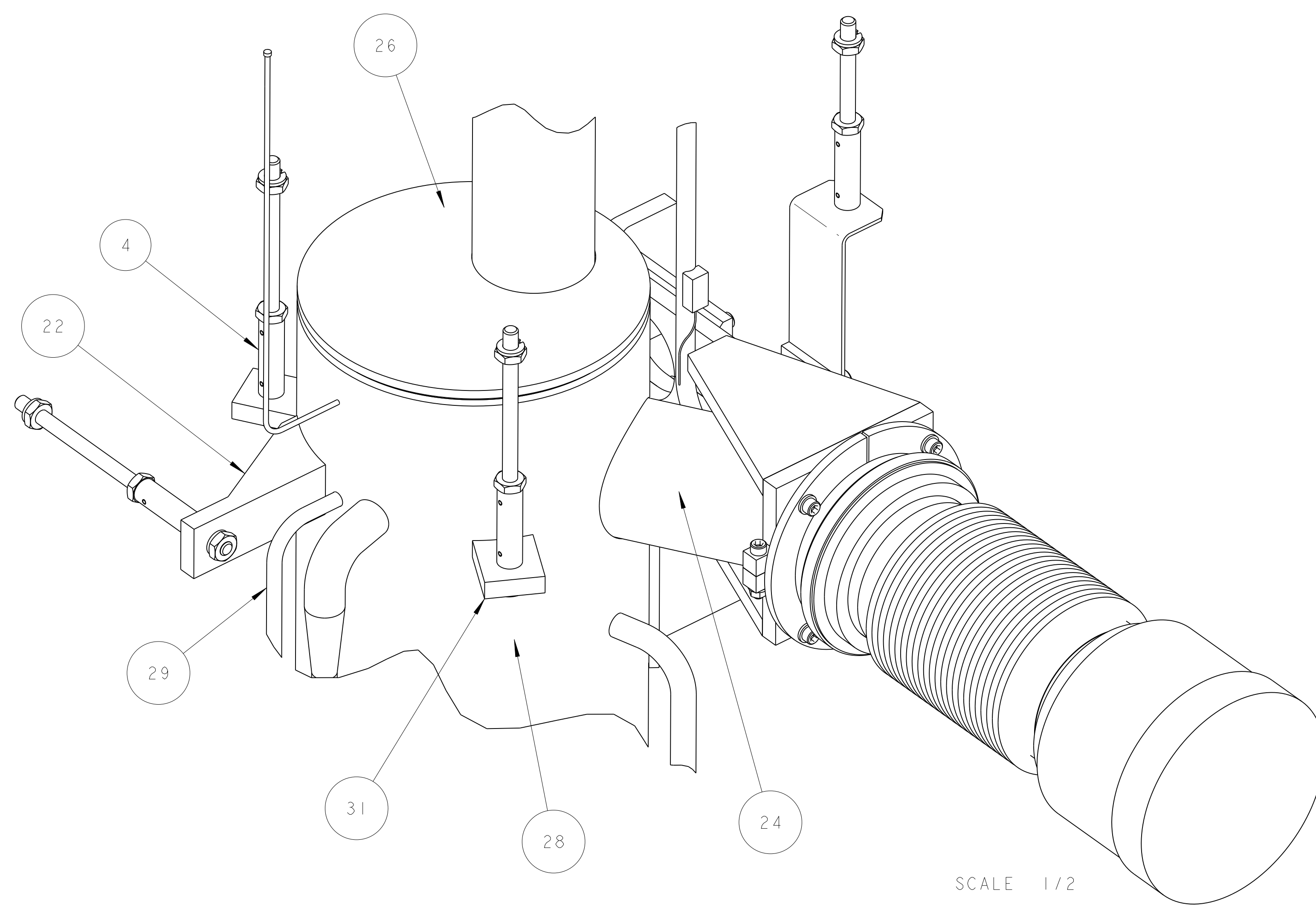


SCALE 3/8



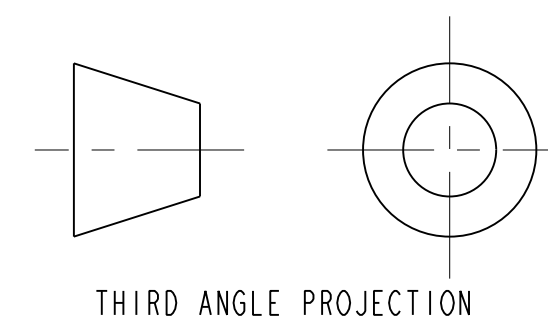
DETAIL B
SCALE 1/2



SCALE 1/2

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. THIS IS A CRYOGENIC VACUUM COMPONENT.
2. WELDING PROCEDURE: PER VENDOR SPECIFICATION WITH LBNL APPROVAL.
3. CLEANING PROCEDURE: PER VENDOR SPECIFICATION WITH LBNL APPROVAL.
4. PACKAGING AND STORAGE PROCEDURE OF THE COMPONENTS: PER VENDOR SPECIFICATION WITH LBNL APPROVAL.
5. DIMENSIONS AND TOLERANCING PER ANSI Y14.5M-1982. UNITS ARE IN INCHES [mm] UNLESS OTHERWISE SPECIFIED.
6. USE OF SULFUR OR SILICONE BEARING OILS, LUBRICANTS, OR COOLANTS ARE STRICTLY PROHIBITED.
7. USE OF RESIN OR RUBBER BONDED ABRASIVES UNDER POWER IS STRICTLY PROHIBITED. USE VITREOUS BONDED ABRASIVES ONLY.
8. VENDOR SUGGESTED CHANGES TO WELD PREPS; SUBJECT TO LBNL APPROVAL.
9. FITTINGS MAY BE USED IN PLACE OF BENDS; SUBJECT TO LBNL APPROVAL.
10. VENDOR SUGGESTED CHANGES TO TOLERANCES TO FACILITATE FABRICATION OR ASSEMBLY; SUBJECT TO LBNL APPROVAL.
11. REMOVE ALL THE BURRS AND REAM THE ENDS FOR CIRCULARITY AND CLEAN ENDS.
12. TUBE END SURFACE MUST BE PERPENDICULAR TO THE TUBE AXIS WITHIN +/- .010.
13. PERFORM ACCEPTANCE TESTS PER SECTION 3.2 OF LBNL SPECIFICATION M856.
14. A MARK DESIGNATING THE INSTALLED LENGTH WILL BE UTILIZED DURING FINAL INSTALLATION OF THE FEEDBOX ASSEMBLY. MARK, SCRIBE OR ETCH THIS LOCATION IN A PERMANENT MANNER, SUBJECT TO LBNL APPROVAL, TO AN ACCURACY OF ± 0.063 ".
15. PROVIDE A MINIMUM LENGTH OF 4.0" OF STRAIGHT, SMOOTH PIPE ON THE INDICATED SIDE OF THE INSTALLED LENGTH MARK FOR PIPE WELDING DURING FINAL INSTALLATION OF THE FEEDBOX ASSEMBLY.
16. PIPE MUST BE STRAIGHT AND SMOOTH (NO BUMPS) FOR 0.5" ON EITHER SIDE OF THE CENTER-PLANE OF THE SUPPORT.
17. CAP BOTH ENDS OF PIPE AFTER ACCEPTANCE TESTS PER SECTION 3.2 OF LBNL SPECIFICATION M856.
18. INSTALL TEMPERATURE SENSOR PER LHC SPECIFICATION LHC-OIT-ES-0002. SENSOR TO BE PROVIDED BY LBNL.



ITEM	PART NO	REQD	DESCRIPTION	MATERIAL
32	-	1	PIPE, PER ASTM A312	SS 304L
31	251913	2	SUPPORT BRACKET, SURGE TANK	SS 304L
30	251850	1	TRANSDUCER TUBING	SS 304L
29	251840	1	HEATER TUBE	SS 304L
28	251572	1	SURGE TANK BODY	SS 304L
27	251358	1	SURGE TANK BOTTOM	SS 304L
26	251357	1	SURGE TANK TOP	SS 304L
25	251221	1	PIPE, XB, SURGE TANK ATTACHMENT	SS 304L
24	251220	1	PIPE, XB, SURGE TANK ATTACHMENT	SS 304L
23	251210	1	PIPE, CYI	SS 304L
22	25M821	1	XB BELLOWS SUPPORT BRACKET	SS 304L
21	25M828	1	XB VERTICAL SUPPORT BRACKET	SS 304L
20	25M826	1	WELD BRACKET	SS 304L
19	251314	1	BELLOWS, FINAL# 5520-MD-390065	SS 309 SERIES
18	251306	1	FLANGE, FINAL# 5520-MC-390032	SS 309 SERIES
17	25M877	1	CLAMP BASE PLATE, 5/8 TUBE X 5.00"	OFHC C101
16	251426	1	CLAMP BASE PLATE	OFHC C101
15	25M826	1	XB HANGER, ANGLE PLATE	304 SS
14	-	1	1/2" FLAT WASHER	18-8 SS
13	-	1	1/2" HEX NUT	18-8 SS
12	-	1	HEX HD BOLT, 1/2-13 X 1-1/4 LG	18-8 SS
11	-	1	STANDARD BRAIDED COPPER CABLE 4"	-
10	-	1	CERNOX, TEMP SENSOR	-
9	-	1	CERNOX, TEMP SENSOR	-
8	-	1	CERNOX, TEMP SENSOR	-
7	25M863	1	XB BELLOWS SUPPORT BRACKET	-
6	25M810	1	THRUST SUPPORT WITH THERMAL BREAK	-
5	25M810	1	THRUST SUPPORT WITH THERMAL BREAK	-
4	25H413	3	THRUST SUPPORT WITH THERMAL BREAK	-
3	25M814	1	WELD RING, ID 134mm, FINAL SUPPLIED	-
2	25M814	1	CLAMP COVER 4"	OFHC, C101
1	25M813	1	CLAMP COVER 1"	OFHC, C101

UNLESS OTHERWISE SPECIFIED
 X.X ± 0.1 FRACTION ± 1/64
 X.XX ± 0.03 ANGLES ± 1.00°
 X.XXX ± 0.010 FINISH 12.5
 CHAMFER ENDS OF ALL SCREEN THREADS 30°
 BREAK EDGES .016 MAX. ON MACHINED WORK
 REMOVE BURRS, WELD SPATTER & LOOSE SCALE
 IN ACCORDANCE WITH SEMI E14.3M & B.6.1

SHOP ORDERS
 SET -
 DATE 07-Dec-01
 DATE 20-Nov-02
 DATE 4-02-02

ERNEST ORLANDO LAWRENCE
 BERKELEY NATIONAL LABORATORY
 UNIVERSITY OF CALIFORNIA BERKELEY

LHC IR FEEDBOX
 CRYOGENICS
 PIPE, XB DFBXA

SCALE: 1/4
 SHEET 1 OF 3
 Z5LCE2 LH2003 2515266 A

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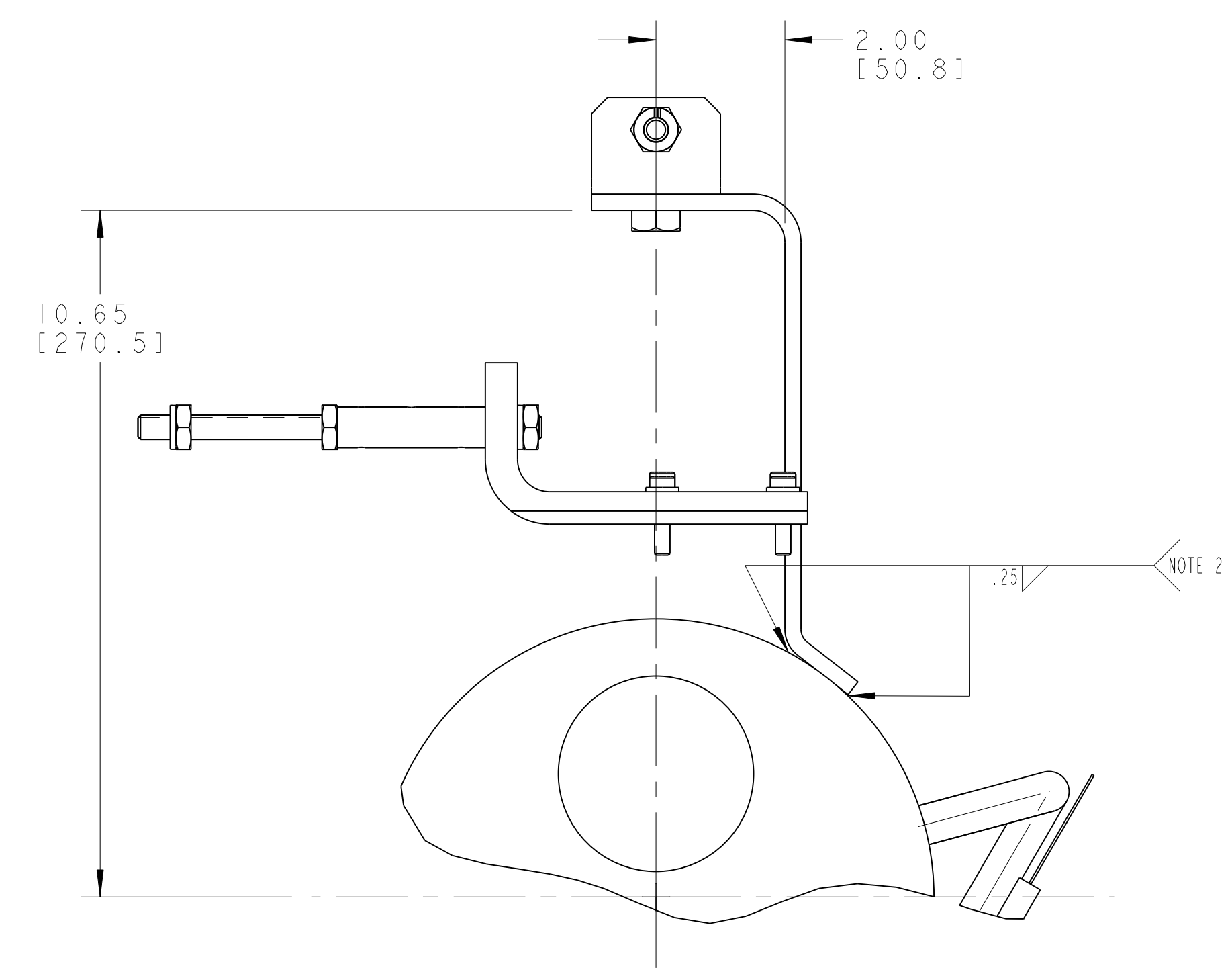
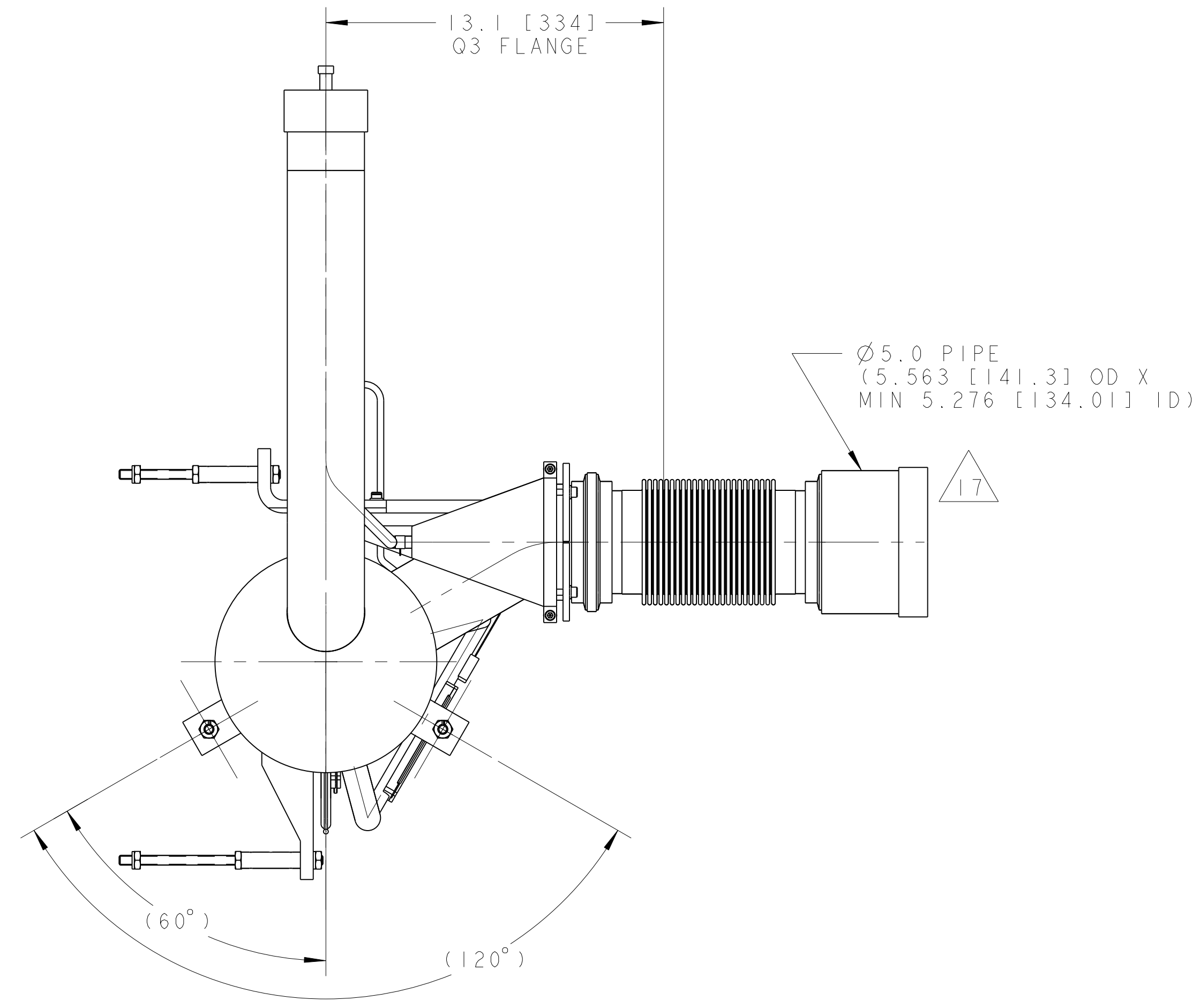
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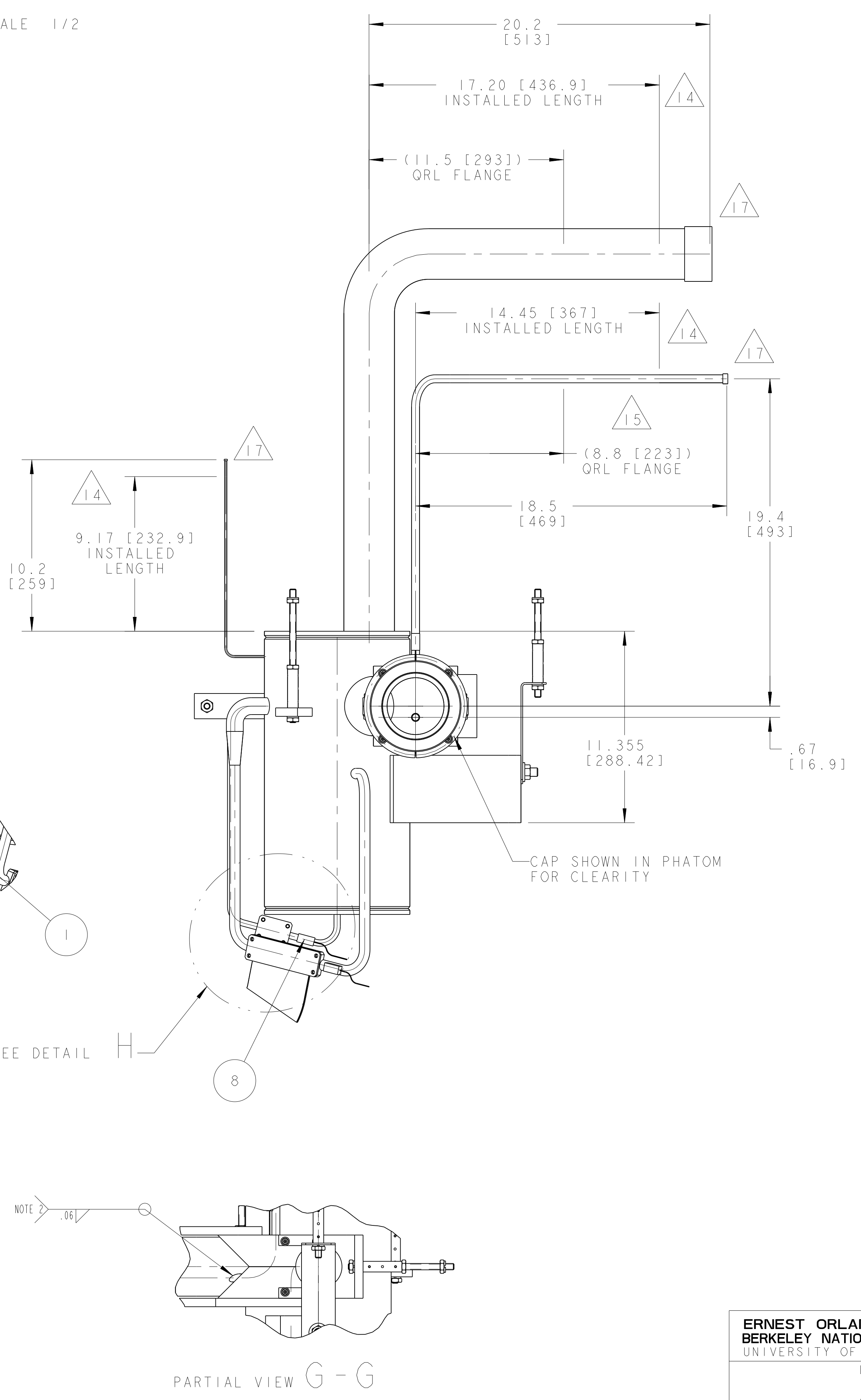
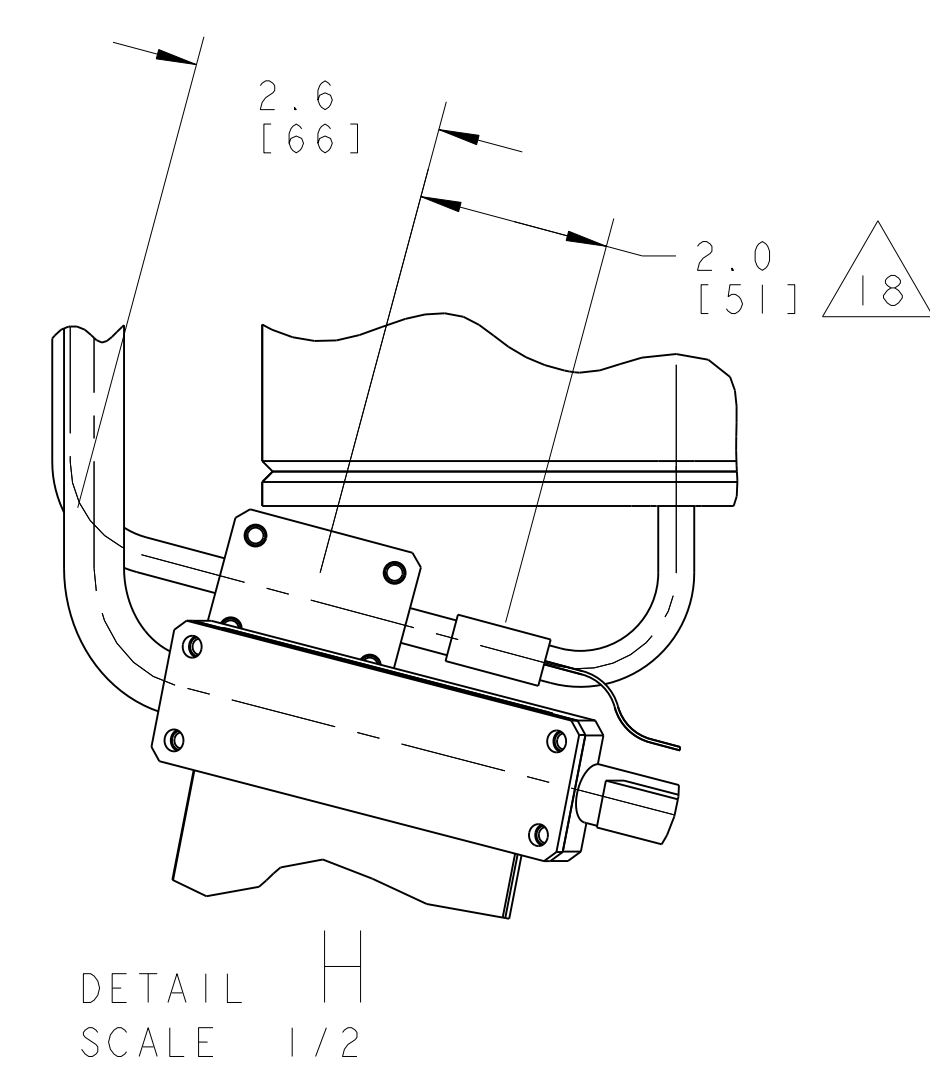
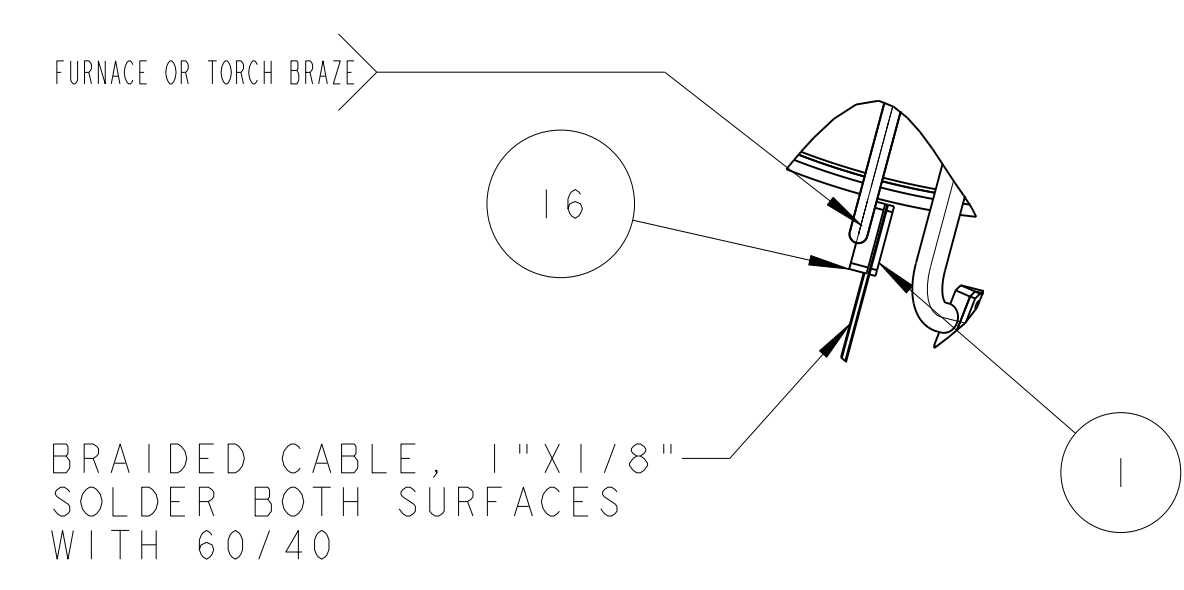
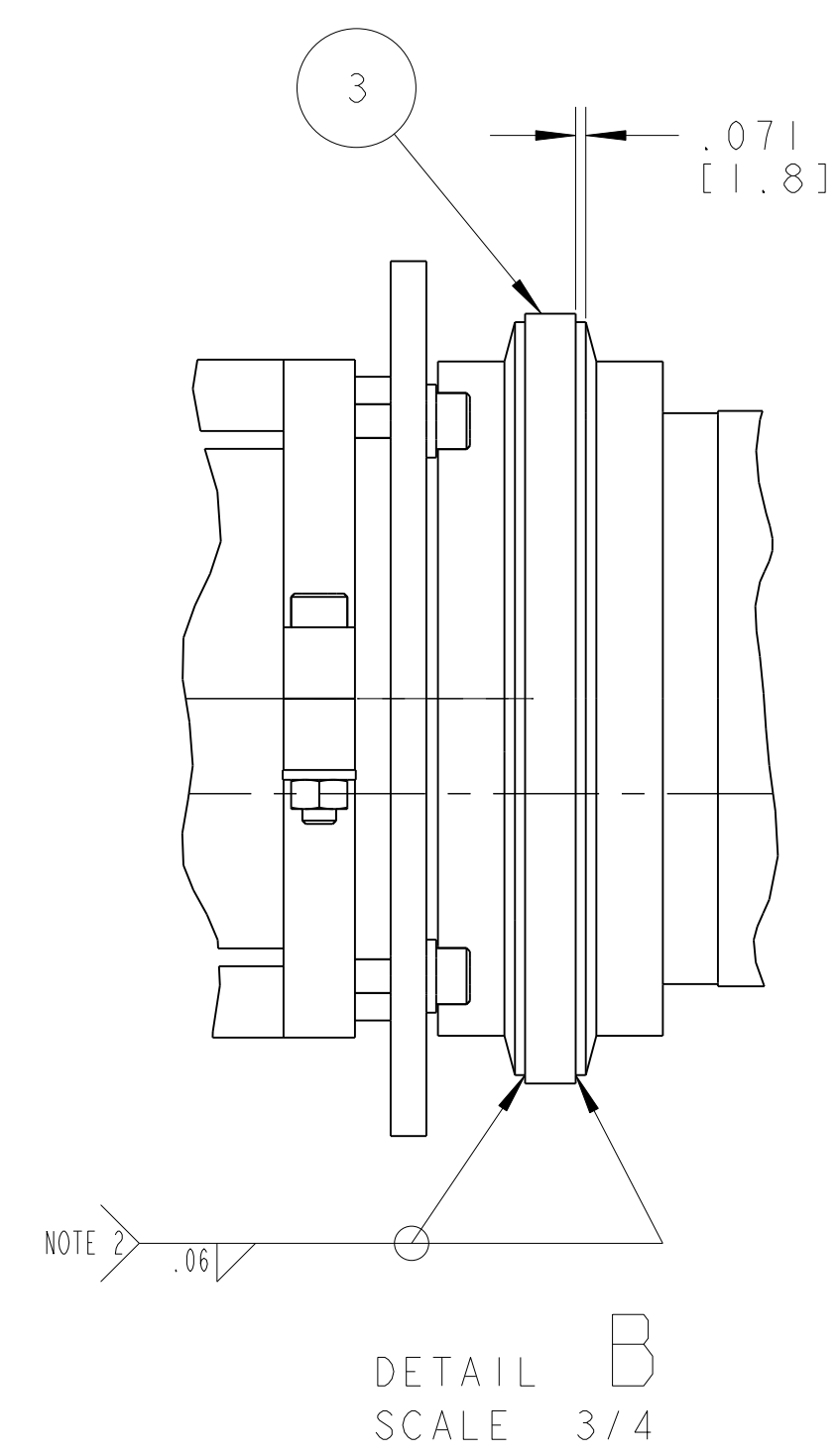
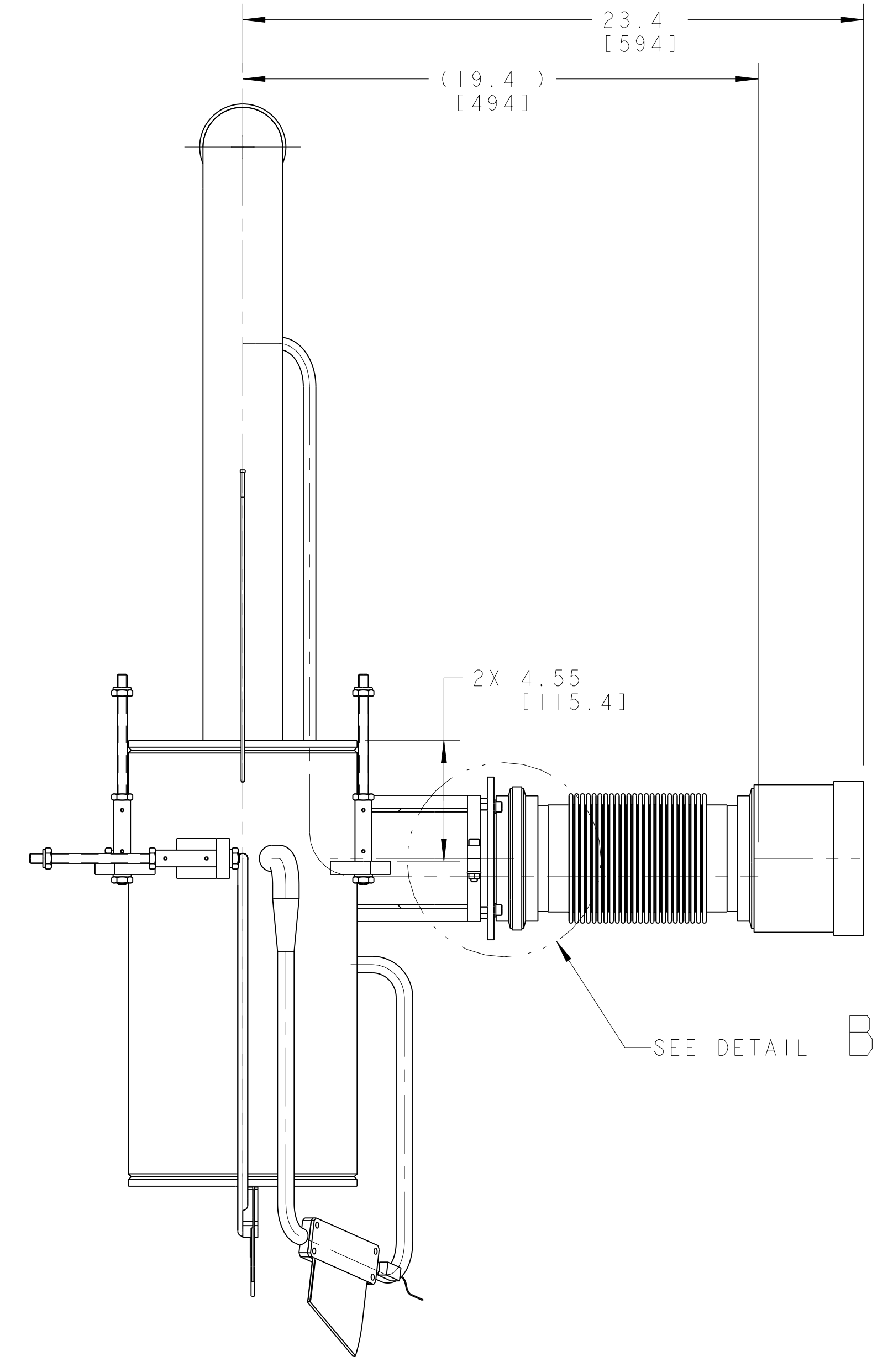
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SCALE 1/2



ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY				UNIVERSITY OF CALIFORNIA BERKELEY	
LHC IR FEEDBOX CRYOGENICS PIPE_XB_DFBXA					
MICROFILMED:	ENG. TYPE	SHOW ON	SCALE	1/4	DO NOT EXCEED
	ASSEM				
PATENT CLEAR:			REVISION NO.:	CATEGORY CODE:	ENG. NO.:
	Z5LCE2	LH2003			2515266
				SHEET 2 OF 3	SIZE: A

NAME: ARHARRIS OBJECT: 2515266.2 DATE: 02-Dec-02 13:37:25

2515266 A 12

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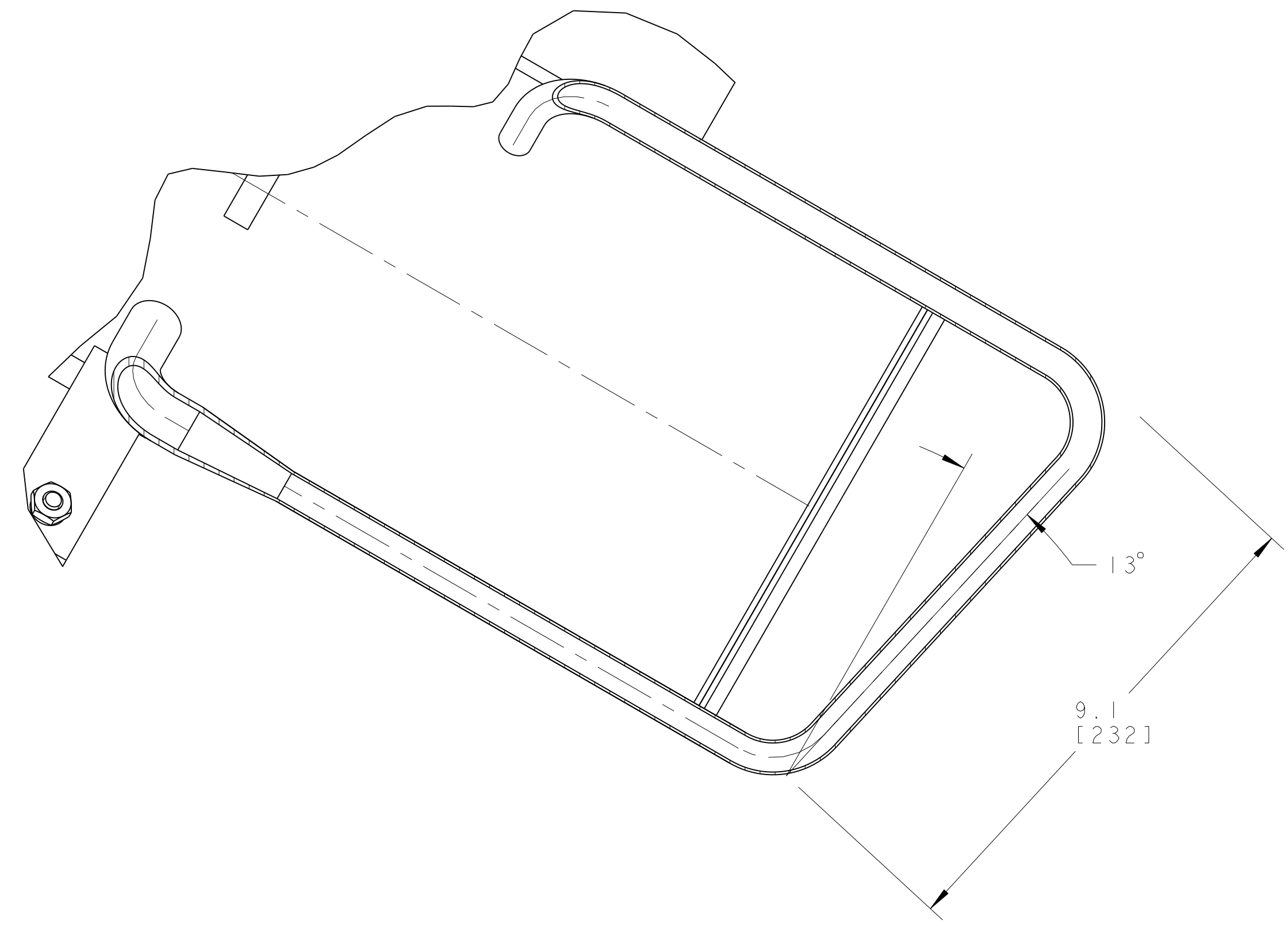
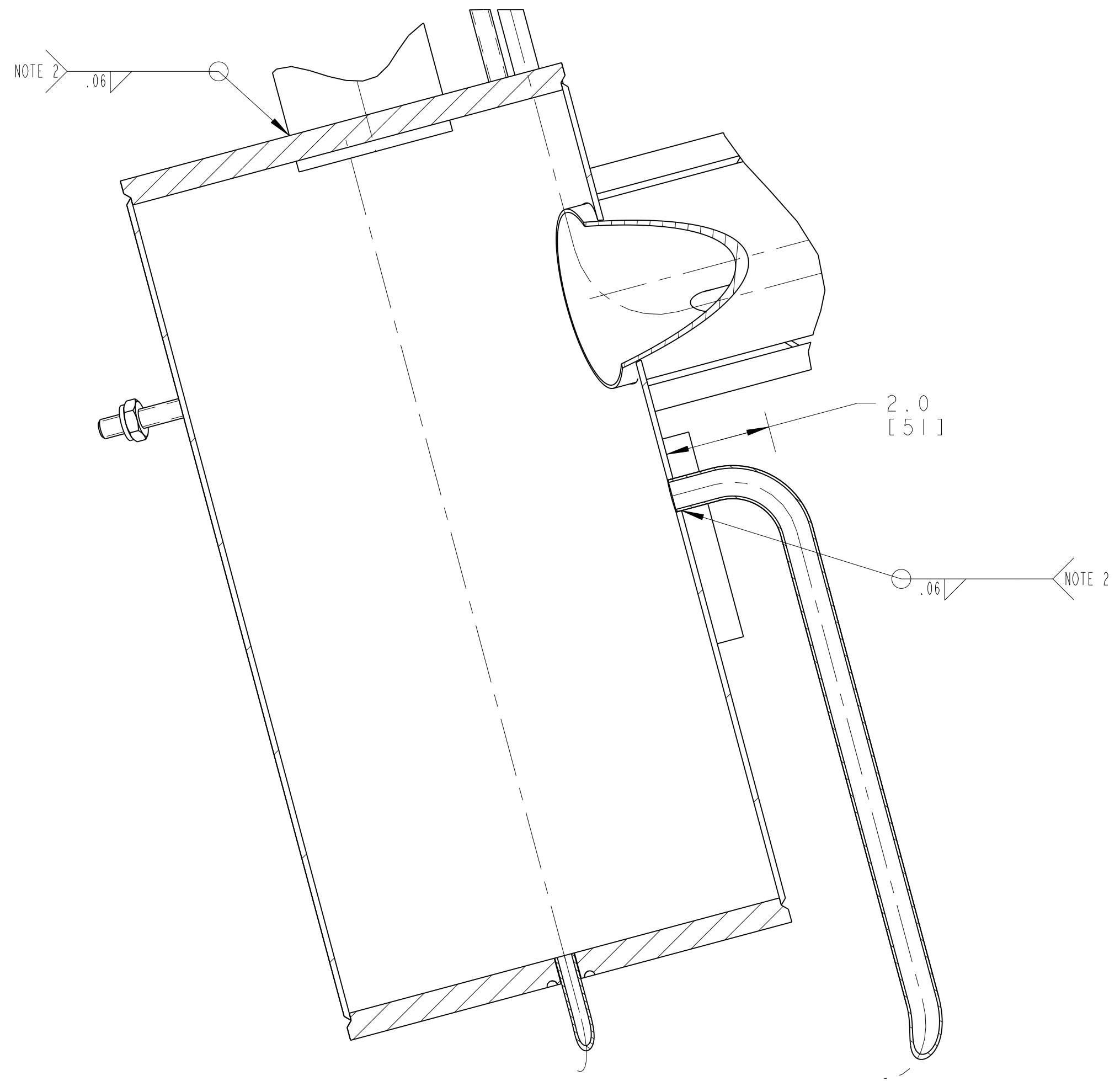
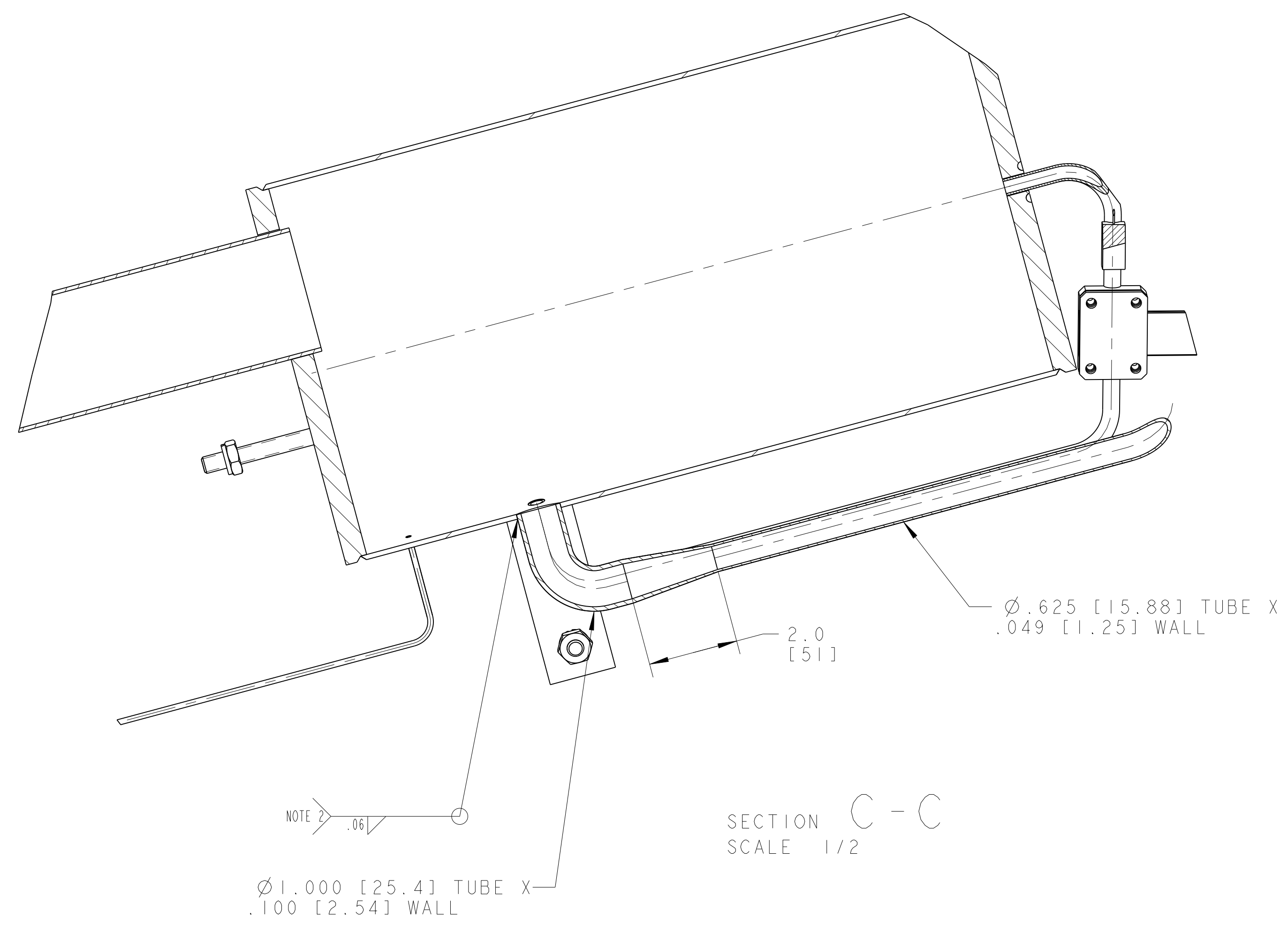
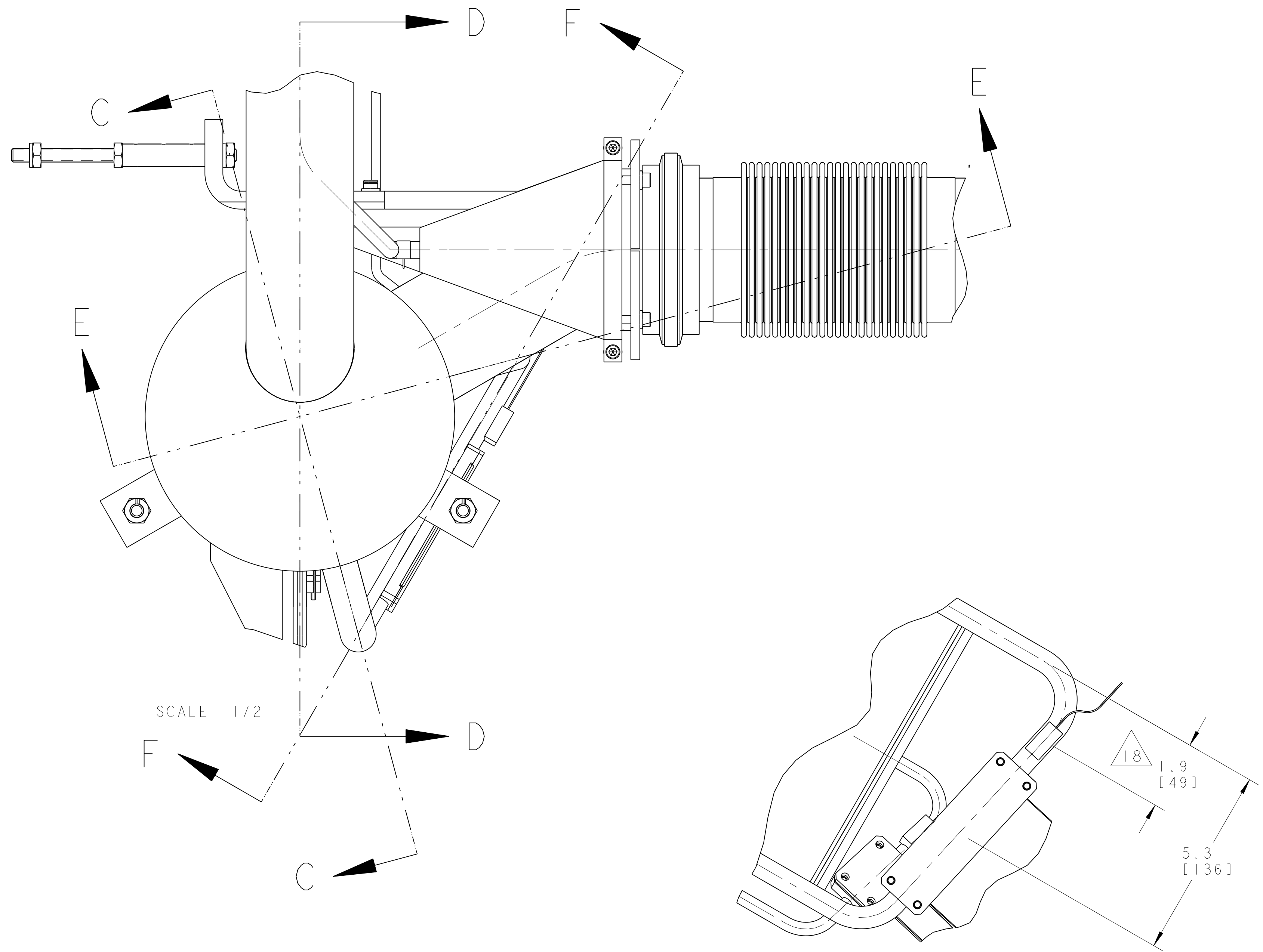
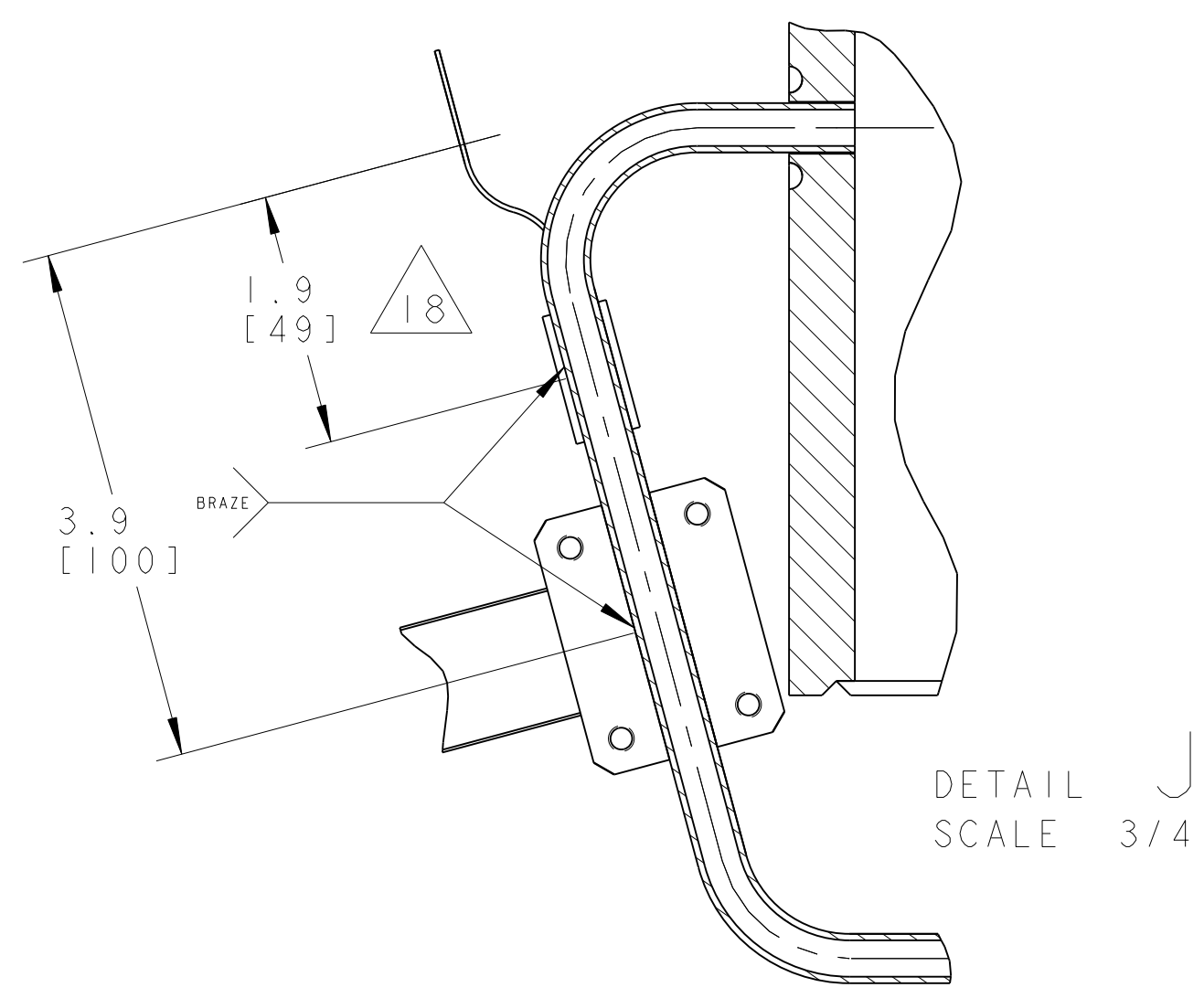
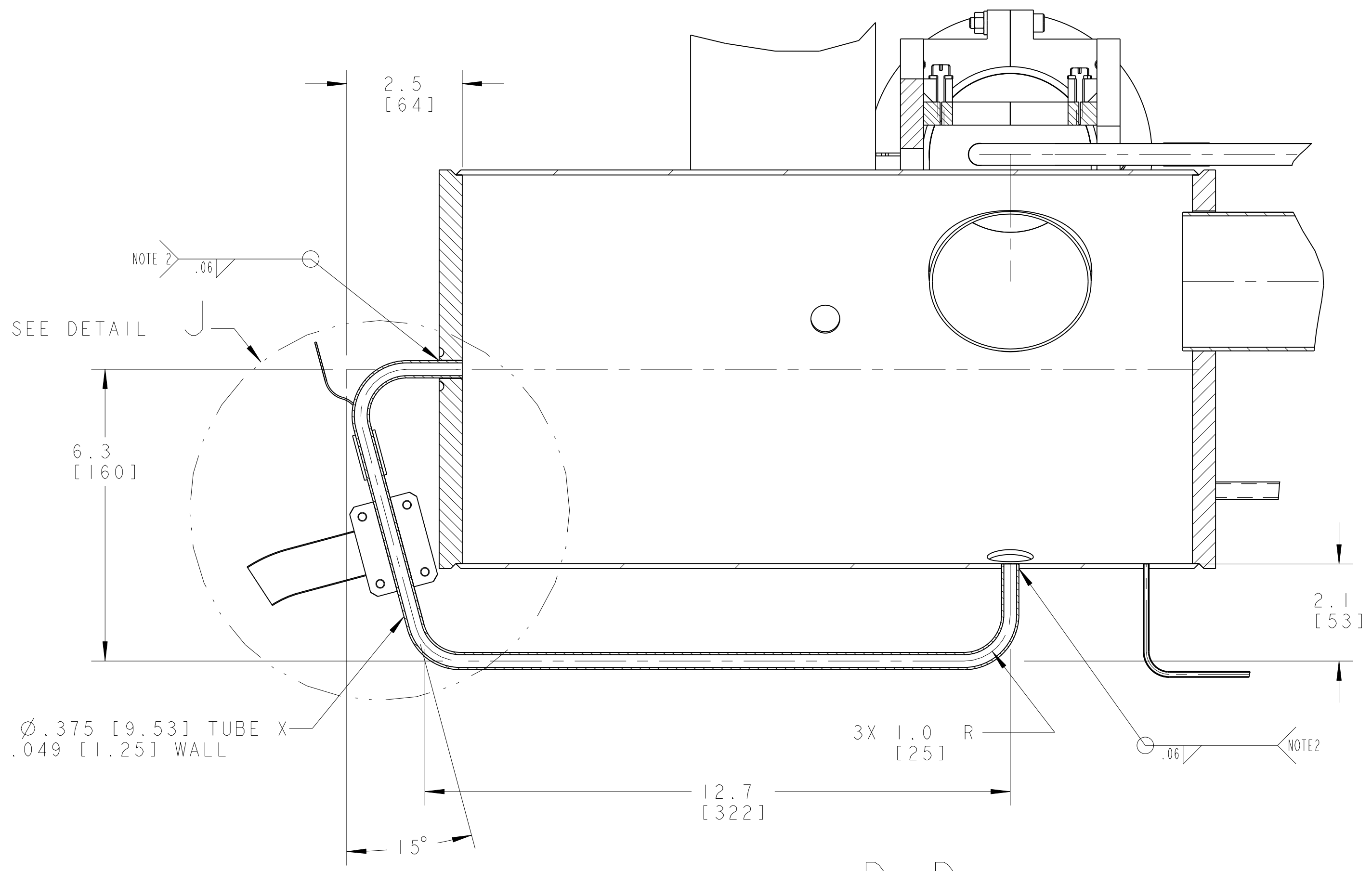
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ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY				UNIVERSITY OF CALIFORNIA BERKELEY	
LHC IR FEEDBOX CRYGENICS PIPE, XB DFBXA					
MICROFILMED:	ENG. TYPE	SHOW ON	SCALE	DO NOT CHECK PRINTS	
	ASSEM		1/4	SHEET 3 OF 3	
PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CODE	ENG. NO.	SIZE	REV.
	Z5LCE2	LH2003	2515266	A	

NAME: ARHARRIS OBJECT: 2515266.3 DATE: 02-Dec-02 13:37:27

2515266 A 3

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