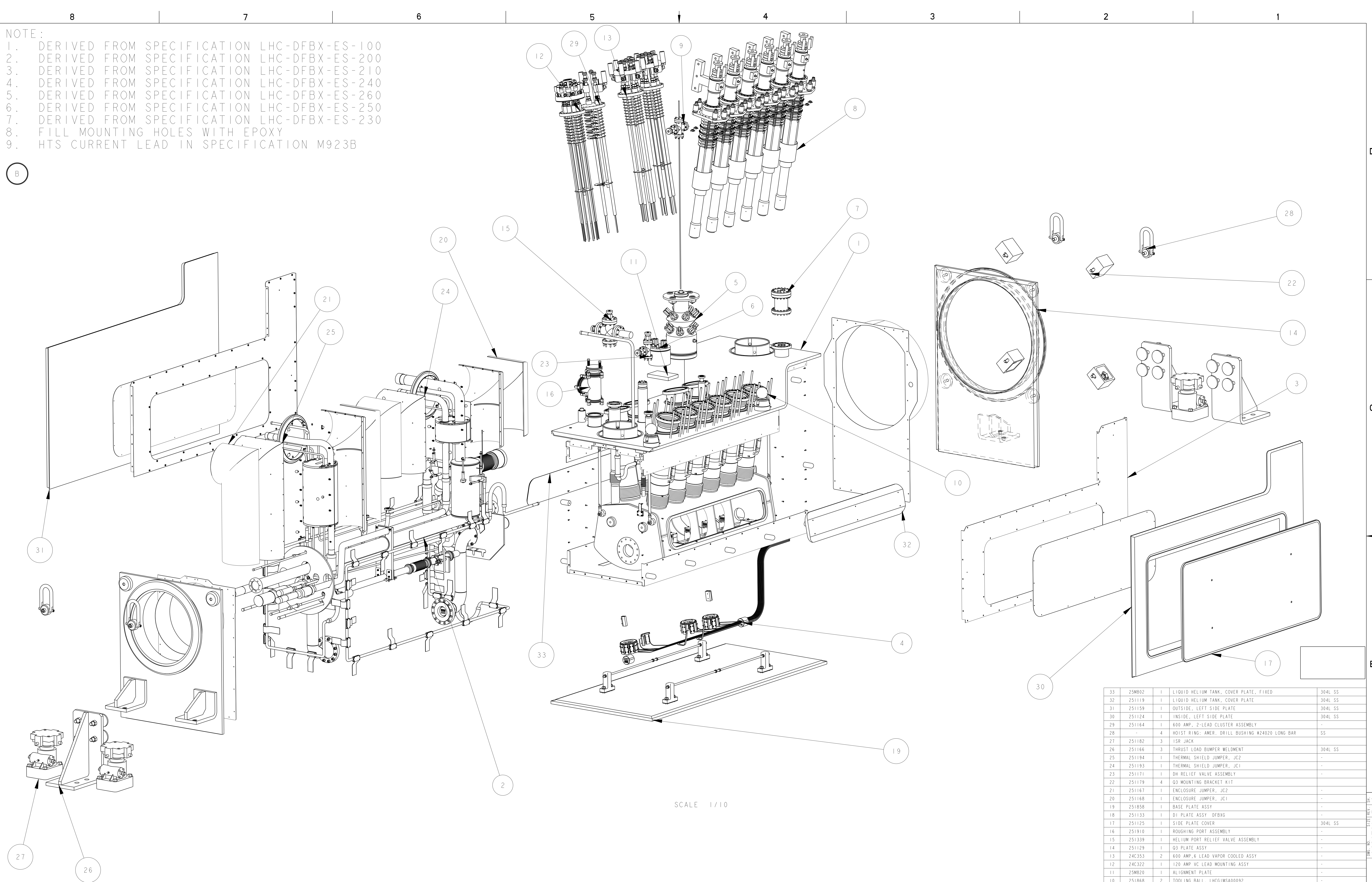


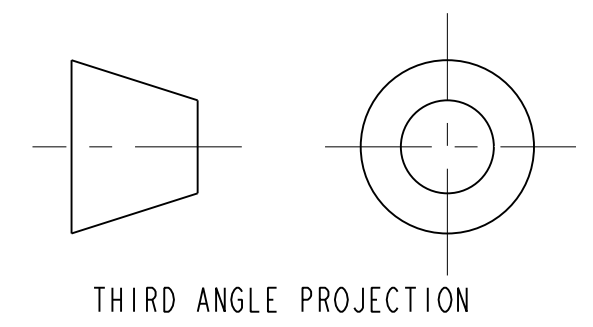
- NOTE:
1. DERIVED FROM SPECIFICATION LHC-DFBX-ES-100
  2. DERIVED FROM SPECIFICATION LHC-DFBX-ES-200
  3. DERIVED FROM SPECIFICATION LHC-DFBX-ES-210
  4. DERIVED FROM SPECIFICATION LHC-DFBX-ES-240
  5. DERIVED FROM SPECIFICATION LHC-DFBX-ES-260
  6. DERIVED FROM SPECIFICATION LHC-DFBX-ES-250
  7. DERIVED FROM SPECIFICATION LHC-DFBX-ES-230
  8. FILL MOUNTING HOLES WITH EPOXY
  9. HTS CURRENT LEAD IN SPECIFICATION M923B

(B)



SCALE 1/10

11. SOLDER JOINT USING SN60PB40 SOLDER; ROSIN FLUX, USE SPLICE PLATE IF REQUIRED
12. CLOSEOUT WELD PROCEDURE TO BE APPROVED BY LBNL
13. WELD PROCEDURE TO BE APPROVED BY LBNL, USE GTAW PROCESS
14. BELLOWS TO BE WITHIN 0.03" OF FREE CONFIGURATION AFTER CLOSEOUT WELDING
15. DIMENSIONS FROM DFBX FLANGE FACE ON DI SIDE, ADD -2367.2 MM TO OBTAIN POSITION RELEVATE TO DFBX COORDINATE SYSTEM
16. SHIM TANK SUPPORTS TO LIMIT STATIC DEFLECTION OF THE LOWER TANK SUPPORT RODS TO LESS THAN 0.25"
17. DIMENSIONS SHOW IN INSPECTION OVAL ARE REFERENCED IN THE FABRICATION TRAVELER
18. COPPER STRAP ATTACHED TO THE THERMAL ANCHORS DO NOT HAVE TO BE EVENLY SPACED.
19. ALL DIMENSIONS GIVEN AT ROOM TEMPERATURE



REV	DWG	CHK	ZONE	DATE	CHANGES
A	JDRDPO			12/09/02	REMOVED NOTE 10: BOM CORRECTION SHEET 4 TOL CHANGE FROM .03 TO ADD DATUM FLAGS
A	JDRDPO			10/03/02	INITIAL RELEASE

ITEM	PART NO.	REQD	DESCRIPTION	MATERIAL
33	25M802	1	L LIQUID HELIUM TANK, COVER PLATE, FIXED	304L SS
32	25I119	1	L LIQUID HELIUM TANK, COVER PLATE	304L SS
31	25I159	1	OUTSIDE, LEFT SIDE PLATE	304L SS
30	25I124	1	INSIDE, LEFT SIDE PLATE	304L SS
29	25I164	1	600 AMP, 2-LEAD CLUSTER ASSEMBLY	
28	4	1	MOIST RING: AMER, DRILL BUSHING #24020 LONG BAR	SS
27	25I182	3	ISR JACK	
26	25I166	3	THRUST LOAD BUMPER WELDMENT	304L SS
25	25I194	1	THERMAL SHIELD JUMPER, JC2	
24	25I193	1	THERMAL SHIELD JUMPER, JC1	
23	25I171	1	DH RELIEF VALVE ASSEMBLY	
22	25I179	4	O3 MOUNTING BRACKET KIT	
21	25I167	1	ENCLOSURE JUMPER, JC2	
20	25I168	1	ENCLOSURE JUMPER, JC1	
19	25I858	1	BASE PLATE ASSY	
18	25I133	1	D1 PLATE ASSY DFBXG	
17	25I125	1	SIDE PLATE COVER	304L SS
16	25I910	1	ROUGHING PORT ASSEMBLY	
15	25I339	1	HELIUM PORT RELIEF VALVE ASSEMBLY	
14	25I129	1	O3 PLATE ASSY	
13	24C353	2	600 AMP, 6 LEAD VAPOR COOLED ASSY	
12	24C322	1	120 AMP VC LEAD MOUNTING ASSY	
11	25M820	1	ALIGNMENT PLATE	
10	25I868	2	TOOLING BALL, LHC61MGAD0092	
9	25I162	1	LHE DIAGNOSTIC ASSY	
8	25I156	6	PIRELLI HTS LEAD KIT	
7	25I851	1	HELIUM GUARD ASSEMBLY	
6	25I163	1	LHX DIAGNOSTIC ASSY	
5	25I831	1	LHX DIAGNOSTIC ASSEMBLY	
4	25I864	1	BUS DUCT ASSEMBLY	
3	25I079	1	THERMAL SHIELD ASSY, DFBXG	
2	25I226	1	PIPING ASSEMBLY DFBXG, DFBXC	
1	25I137	1	DFBX C AND G	

UNLESS OTHERWISE SPECIFIED

SHOP ORDERS

ERNEST ORLANDO LAWRENCE  
BERKELEY NATIONAL LABORATORY  
UNIVERSITY OF CALIFORNIA BERKELEY

LHC IR FEEDBOX  
MAJOR ASSEMBLY  
DFBXC&G (1P2&8, LEFT) FEED BOX ASSY

SCALE: 13/100

SHEET 1 OF 11

24C3526 B

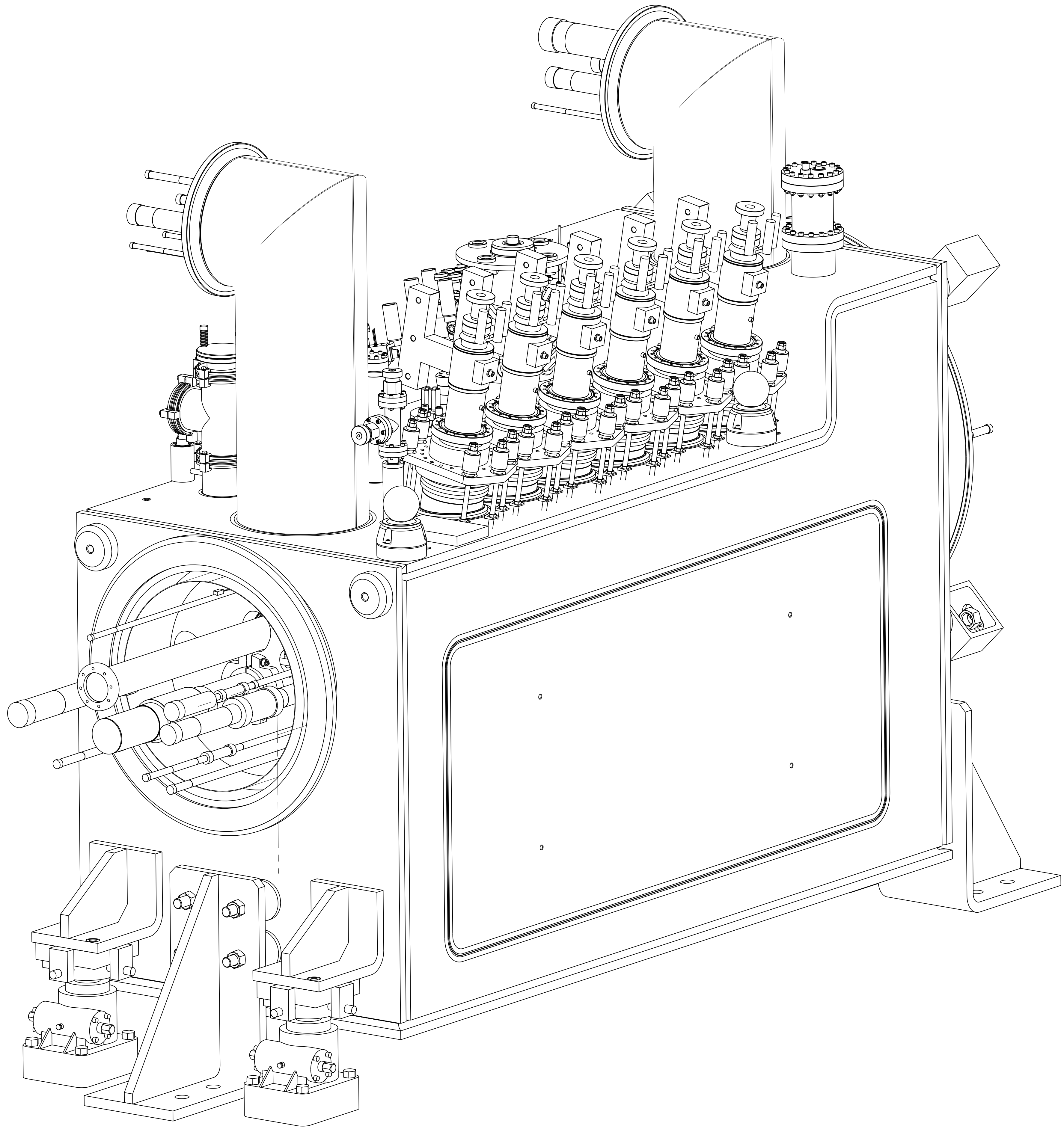
8 7 6 5 4 3 2 1

D

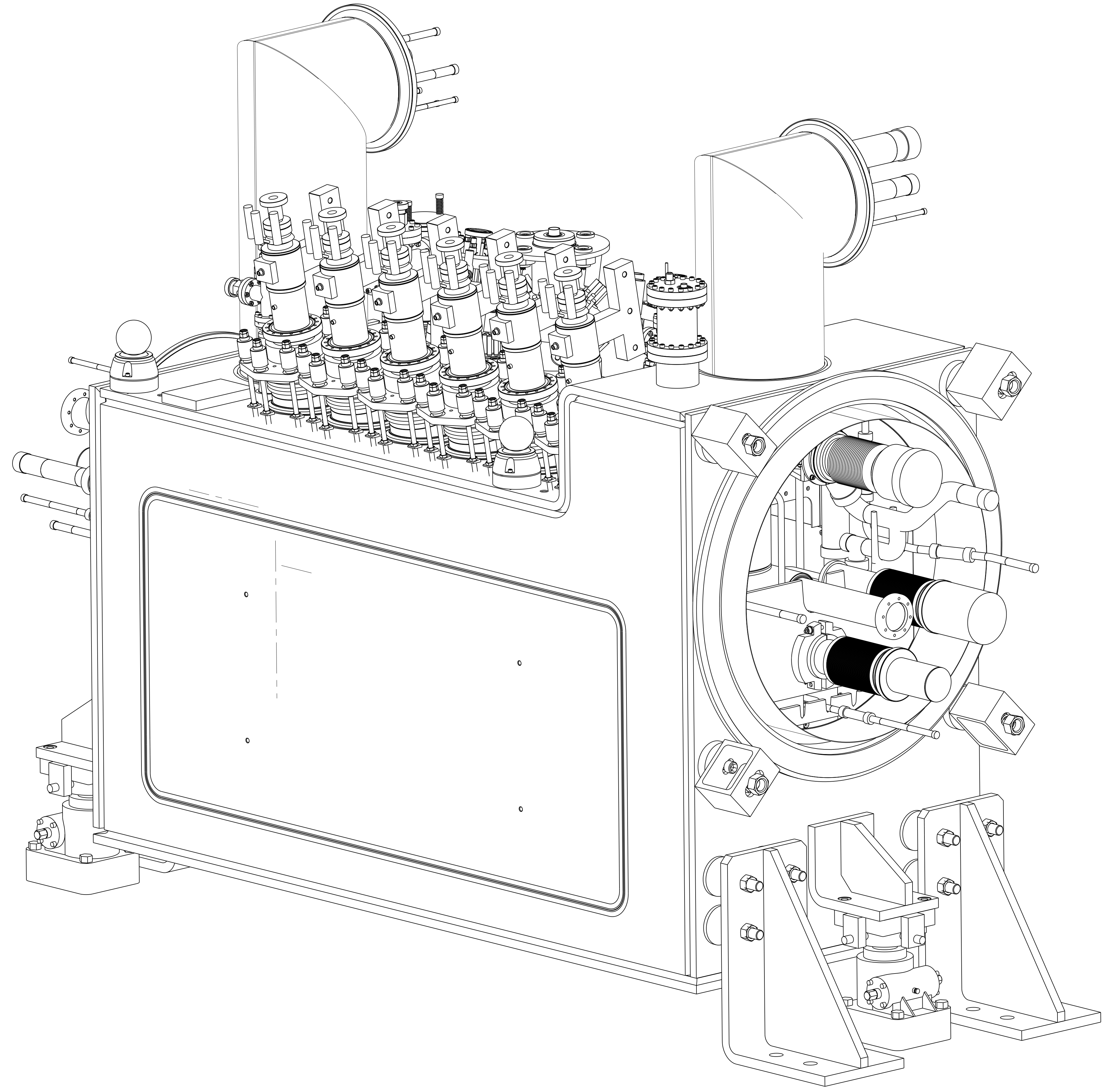
C

B

A

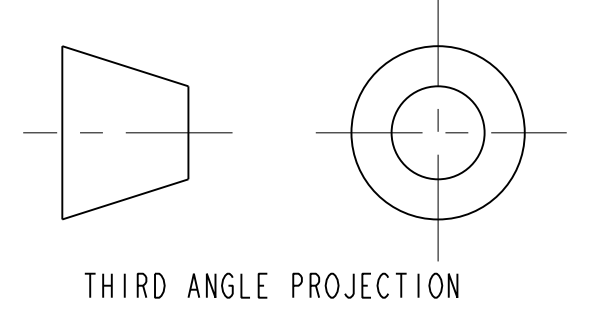


D1 END



Q3 END

DFBXC, IP2 (LEFT)  
 DFBXG, IP8 (LEFT)



THIRD ANGLE PROJECTION

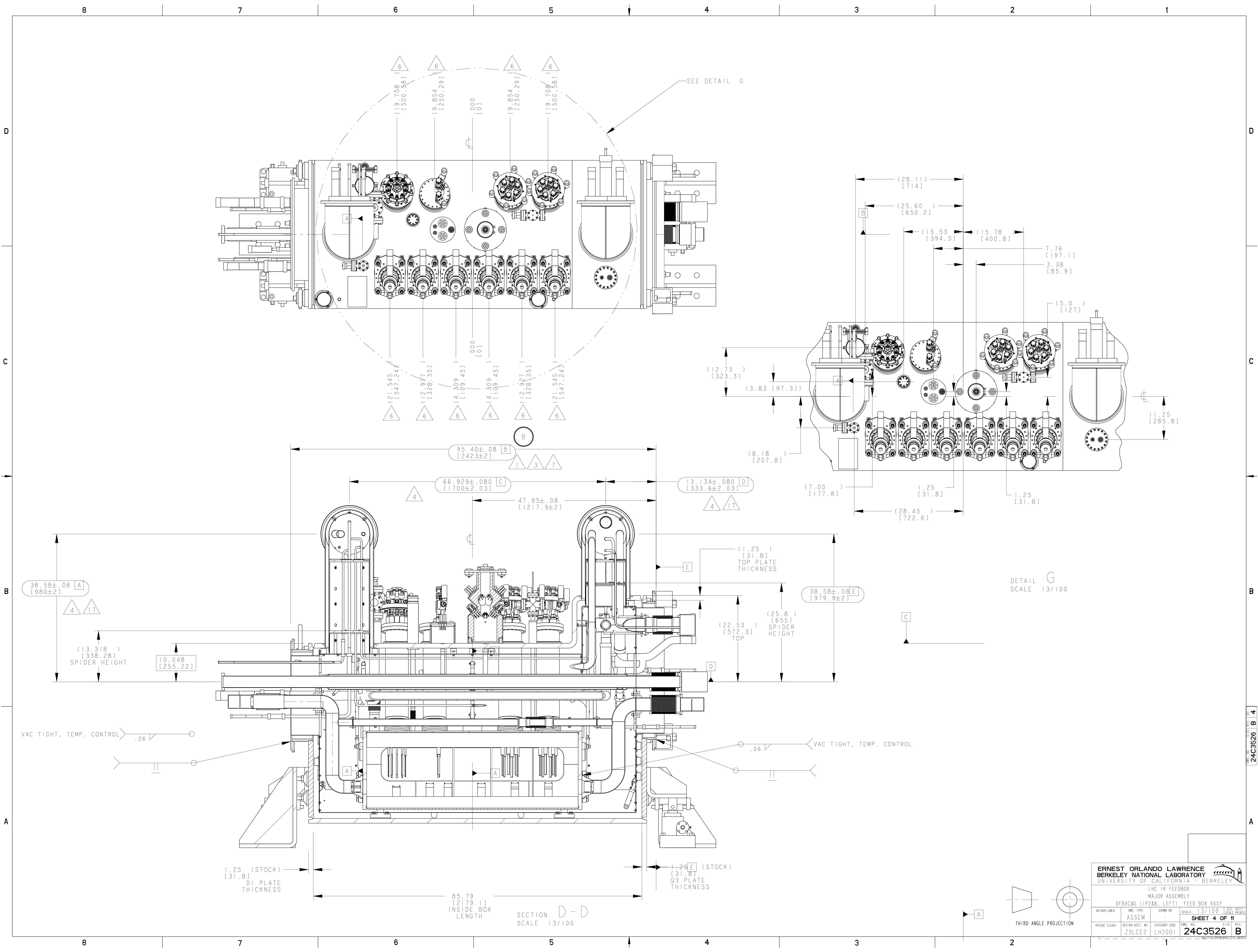
ERNEST ORLANDO LAWRENCE				UNIVERSITY OF CALIFORNIA BERKELEY	
LHC IR FEEDBOX					
MAJOR ASSEMBLY					
DFBXC8G (IP2&8, LEFT) FEED BOX ASSY					
MICROFILMED:	DWG. TYPE:	SHOWN ON:	SCALE:	9/50	DO NOT SCALE PRINTS
	ASSEM				
PATENT CLEAR:			DESIGN ACCT. NO:	CATEGORY CODE:	DWG. NO.:
			ZSLCE2	LH2001	24C3526
				SHEET 2 OF 11	REV. B

8 7 6 5 4 3 2 1

DWG. NO. 24C3526 B 2

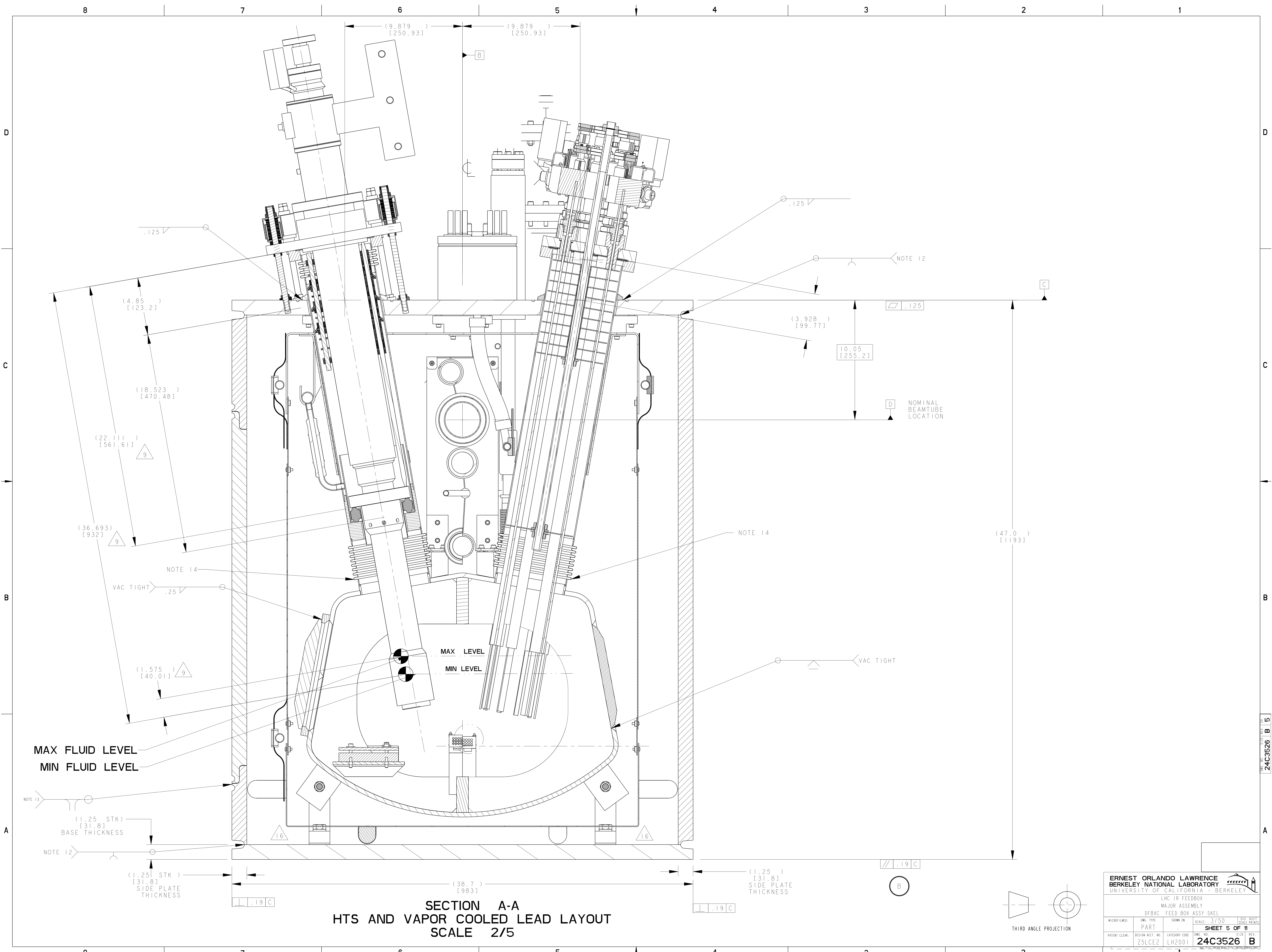
A





ERNEST ORLANDO LAWRENCE				UNIVERSITY OF CALIFORNIA - BERKELEY	
LHC IR FEEDBOX MAJOR ASSEMBLY					
DFBXC8G (IP288, LEFT) FEED BOX ASSY					
MICROFILMED:	DWG. TYPE:	SHOWN ON:	SCALE:	DO NOT SCALE PRINTS	
	ASSEM		13/100	SHEET 4 OF 11	
PATENT CLEAR:	DESIGN ACCT. NO:	CATEGORY CODE:	DWG. NO.:	SHEET REV.:	
	ZSLCE2	LH2001	24C3526	B	

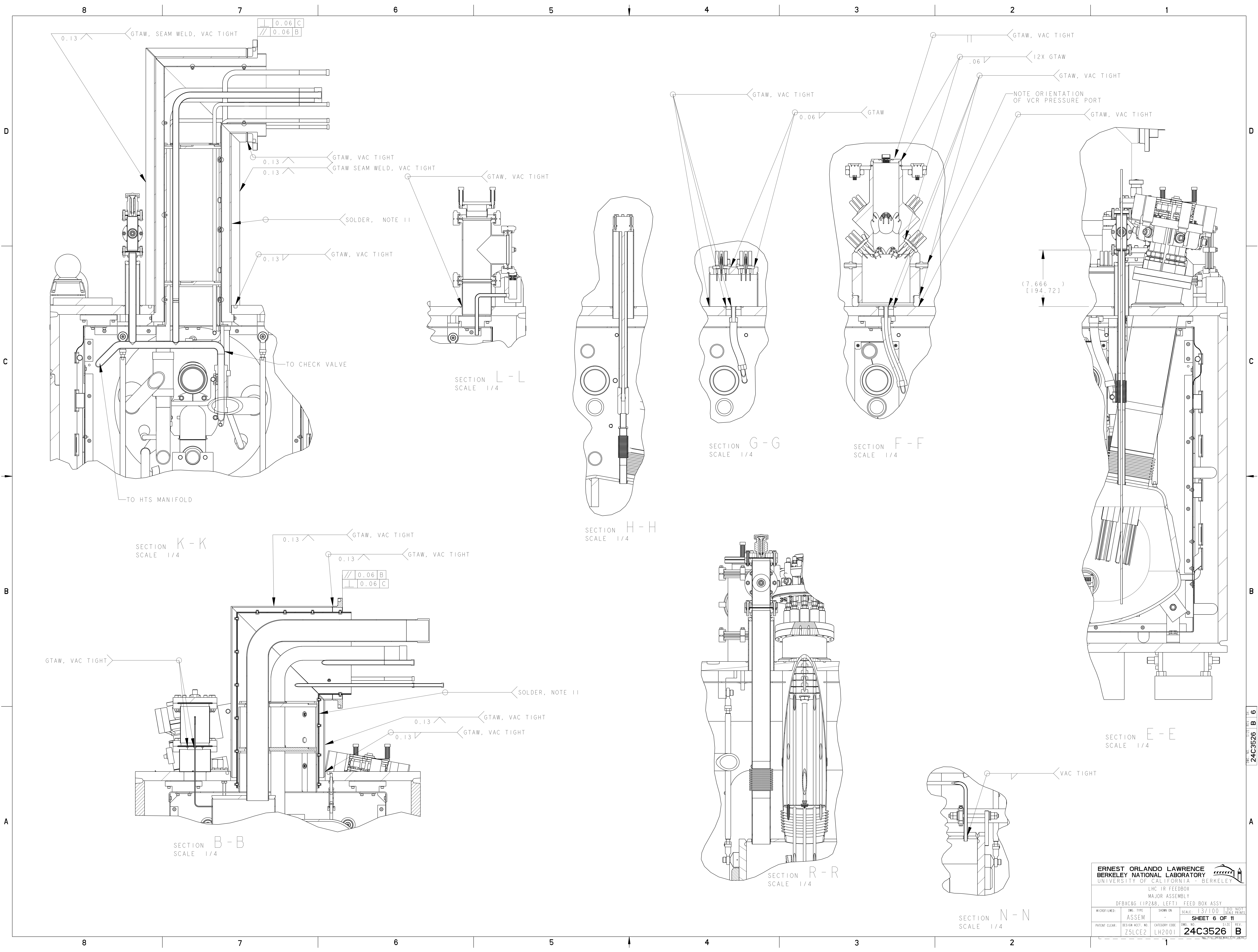
DWG. NO. 24C3526 B 4



**SECTION A-A**  
**HTS AND VAPOR COOLED LEAD LAYOUT**  
**SCALE 2/5**

<b>ERNEST ORLANDO LAWRENCE</b> <b>BERKELEY NATIONAL LABORATORY</b> <small>UNIVERSITY OF CALIFORNIA - BERKELEY</small>			
LHC IR FEEDBOX MAJOR ASSEMBLY DFBXC FEED BOX ASSY SKEL			
MICROFILMED:	DWG. TYPE:	SHOWN ON:	SCALE: 2/5
PART:	DESIGN ACCT. NO.:	CATEGORY CODE:	LH2001
PATENT CLEAR:	ZSLCE2	DWG. NO.:	24C3526
			DO NOT SCALE PRINTS
			<b>SHEET 5 OF 11</b>
			REV. <b>B</b>

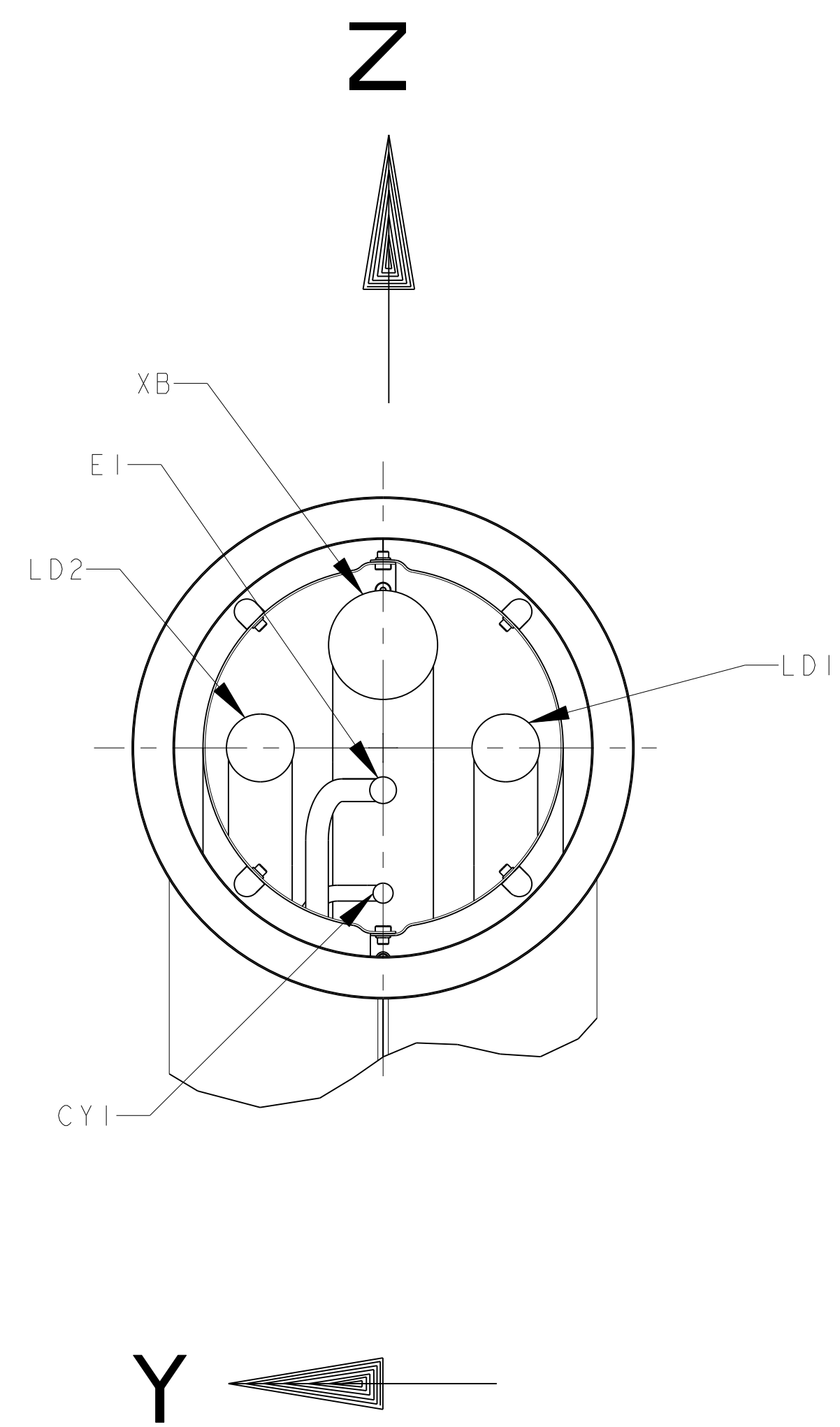
DWG. NO. 24C3526 B 5



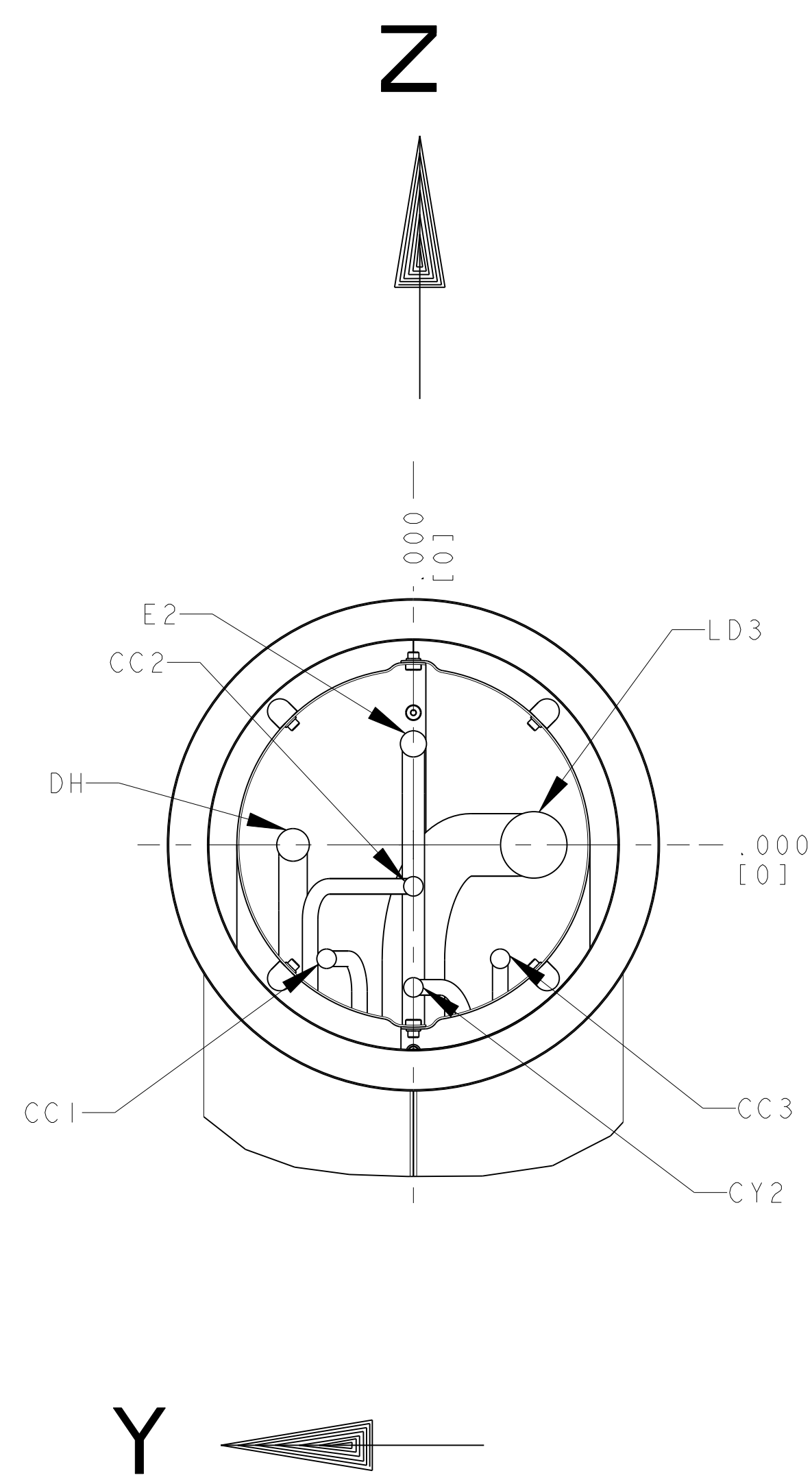
<b>ERNEST ORLANDO LAWRENCE</b> <b>BERKELEY NATIONAL LABORATORY</b> <small>UNIVERSITY OF CALIFORNIA - BERKELEY</small>			
LHC IR FEEDBOX MAJOR ASSEMBLY DFBXC8G (IP288, LEFT) FEED BOX ASSY			
MICROFILMED:	DWG. TYPE:	SHOWN ON:	SCALE: 1/3/100
	ASSEM		
PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CODE:	DWG. NO. SHEET 6 OF 11
	ZSLCE2	LH2001	24C3526 B

DWG. NO. 24C3526 B 6

8 7 6 5 4 3 2 1



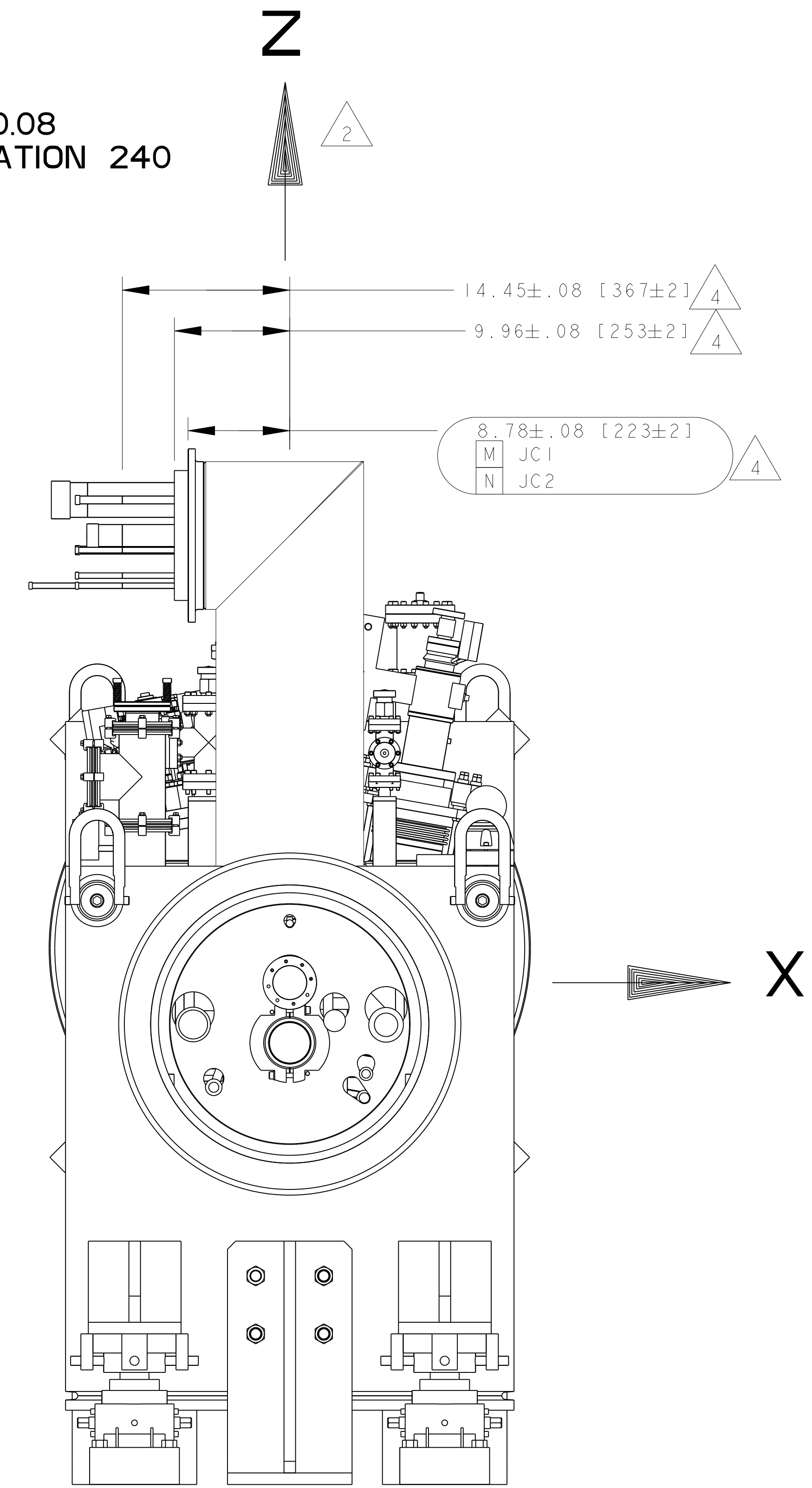
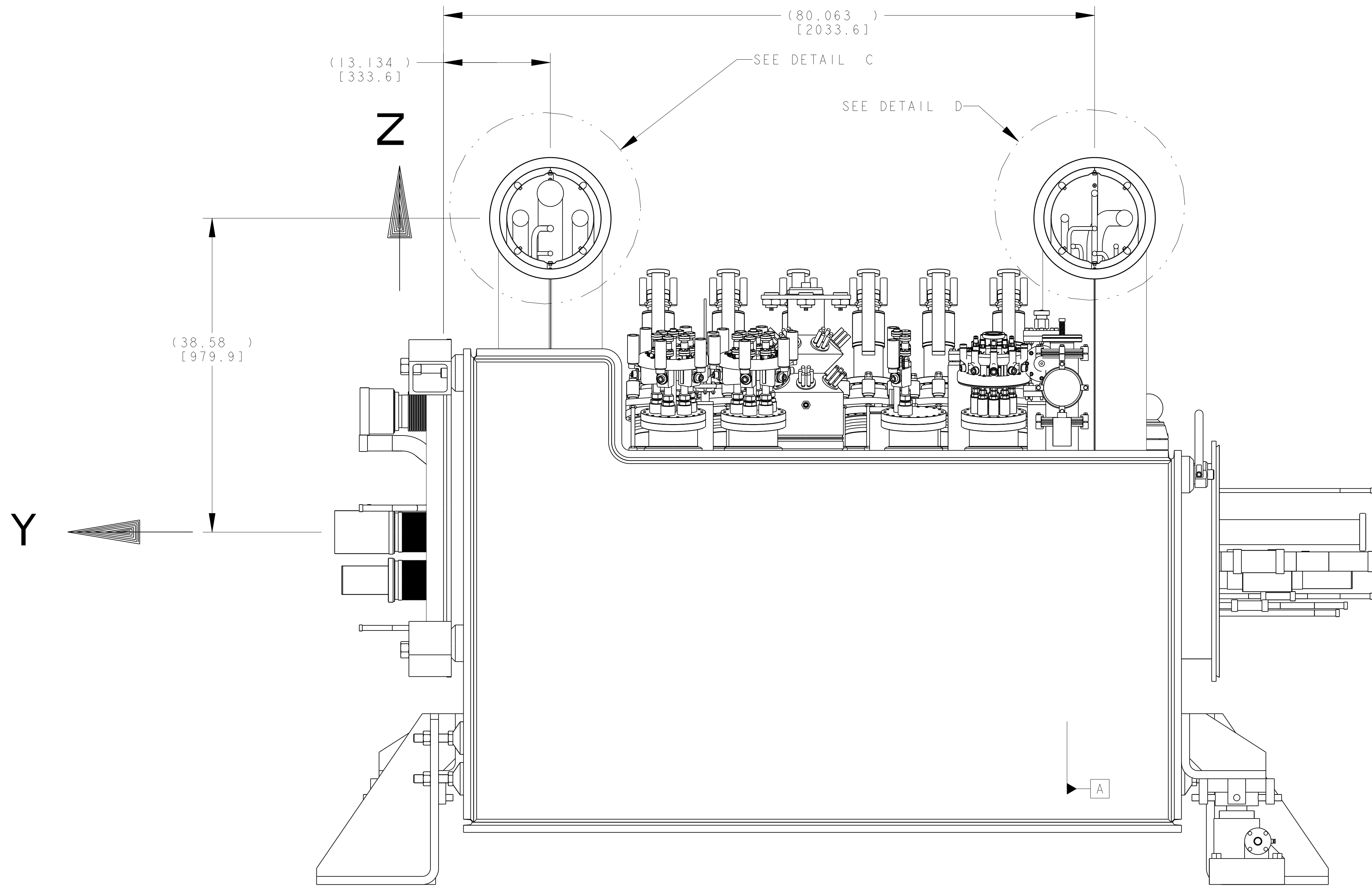
PIPE	X	DIM'S MEASURED FROM FLANGE CENTER	
		Y ±0.08	Z ±0.08
XB	-11.85±.08 [301±2]	0	3.07 [78]
LD2	-11.85±.08 [301±2]	3.66 [93]	0
LD1	-11.85±.08 [301±2]	-3.66 [93]	0
E1	-14.45±.08 [367±2]	0	-1.26 [32]
CY1	-14.45±.08 [367±2]	0	-4.33 [110]



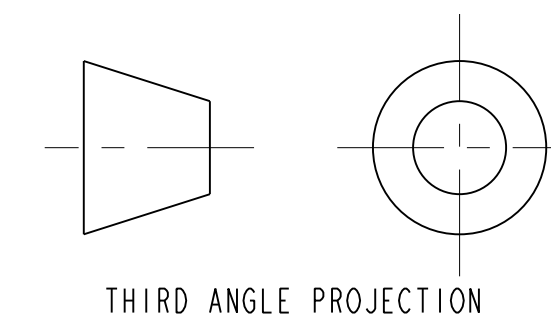
PIPE	X	DIM'S MEASURED FROM FLANGE CENTER	
		Y ±0.08	Z ±0.08
E2	-14.45±.08 [367±2]	0	3.07 [78]
DH	-14.45±.08 [367±2]	3.66 [93]	0
LD3	-11.85±.08 [301±2]	-3.66 [93]	0
CC2	-14.45±.08 [367±2]	0	-1.26 [32]
CC1	-14.45±.08 [367±2]	2.64 [67]	-3.46 [88]
CC3	-14.45±.08 [367±2]	-2.64 [67]	-3.46 [88]
CY2	-14.45±.08 [367±2]	0	-4.33 [110]

DETAIL C  
JC1 / QQSC  
DIMENSIONAL TOLERANCE ± 0.08  
ORIENTATION OPPOSITE OF SPECIFICATION 240  
SCALE 1/4

DETAIL D  
JC2 / QQSD  
DIMENSIONAL TOLERANCE ± 0.08  
ORIENTATION OPPOSITE OF SPECIFICATION 240  
SCALE 1/4



VIEW M - M  
ROTATED 180°



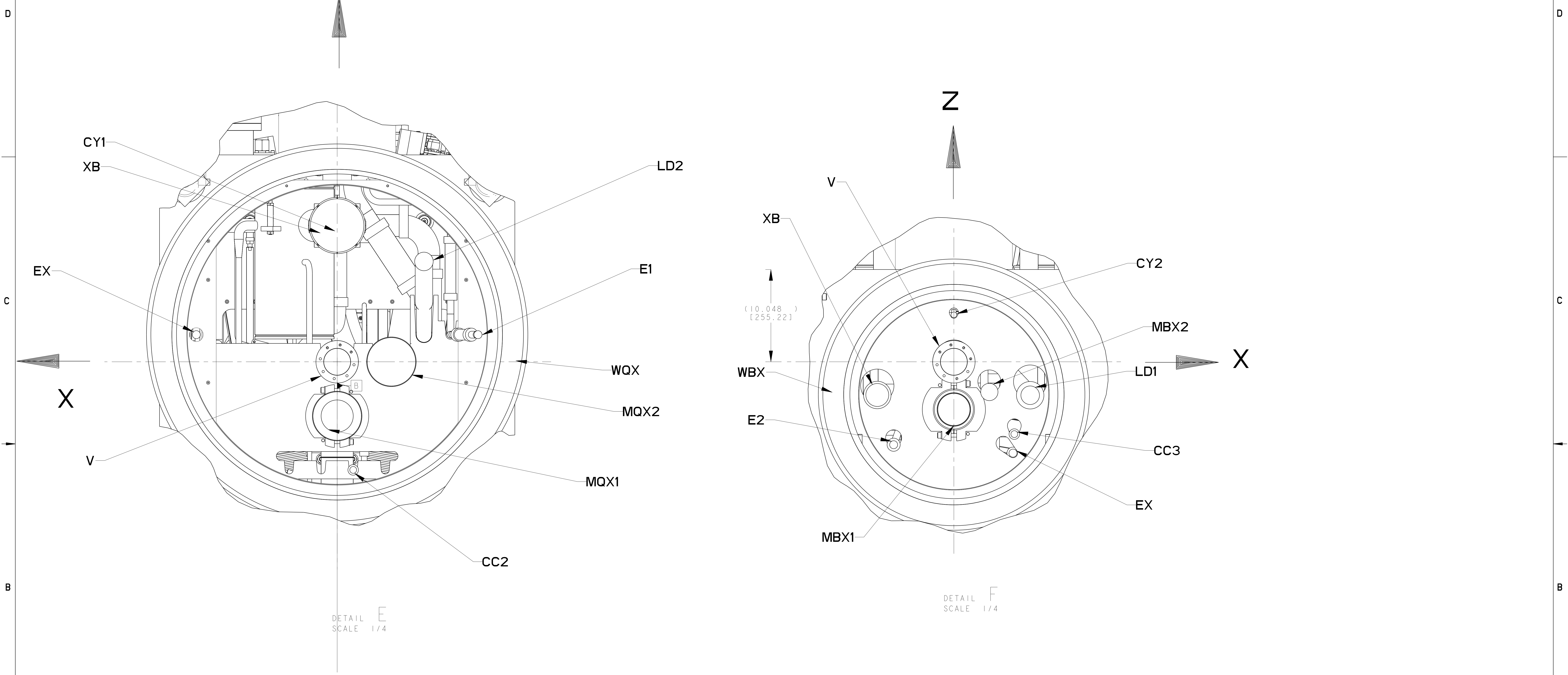
ERNEST ORLANDO LAWRENCE  
BERKELEY NATIONAL LABORATORY  
UNIVERSITY OF CALIFORNIA - BERKELEY

LHC IR FEEDBOX  
MAJOR ASSEMBLY  
DFBXC FEED BOX ASSY SKEL

MICROFILMED:	DWG. TYPE:	SHOWN ON:	SCALE:	3/50	DO NOT SCALE PRINTS
PART					
PATENT CLEAR:	DESIGN ACCT. NO:	CATEGORY CODE:	DWG. NO.:	24C3526	SHEET 7 OF 11
ZSLCE2	LH2001				REV. B

8 7 6 5 4 3 2 1

24C3526 B 7



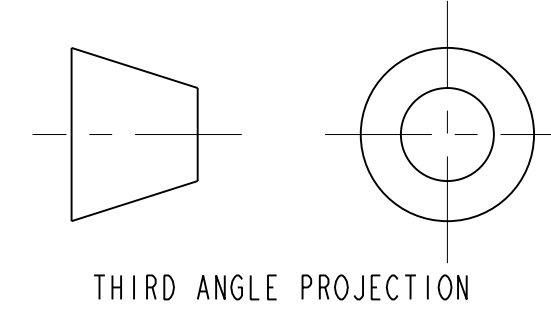
**Q3 PIPING INTERFACE**  
PER SPEC. LHC-DFBX-ES-210.00 REV 1.0

DFBX	PIPE OD/ID		PIPE COORDINATES AT 300 K		
	OD in [mm]	ID in [mm]	X in [mm] ±.08	Z in [mm] ±.08	Y in [mm] ±.08
V	3.071 [78]	2.913 [73.99]	.000 [0]	.000 [0]	2.032 [51.61]
LD2	1.748 [44.4]	1.650 [41.91]	-9.449 [-240]	10.925 [277.5]	6.299 [159.99]
CC3	.626 [15.9]	.528 [13.41]	-1.744 [44.3]	-11.772 [-299.01]	6.299 [159.99]
CC2	.626 [15.9]	.528 [13.41]	-1.744 [-44.3]	-11.772 [-299.01]	6.299 [159.99]
CY1	.626 [15.9]	.528 [13.41]	.000 [0]	14.173 [359.99]	6.299 [159.99]
E1	1.500 [38.1]	1.370 [34.8]	-15.339 [-389.61]	2.953 [75.01]	6.299 [159.99]
EX	1.500 [38.1]	1.370 [34.8]	15.339 [389.61]	2.953 [75.01]	6.299 [159.99]
MQX1	3.500 [88.9]	3.370 [85.6]	.000 [0]	-5.906 [-150.01]	6.299 [159.99]
MQX2	3.500 [88.9]	3.370 [85.6]	-5.906 [-150.01]	.000 [0]	6.299 [159.99]
WQX	41.535 [1055]	35.039 [890]	.000 [0]	2.953 [75.01]	.000 [0]
XB	3.500 [88.9]	3.370 [85.6]	.000 [0]	14.839 [376.91]	6.299 [159.99]

**D1 PIPING INTERFACE**  
PER SPEC. LHC-DFBX-ES-230.00 REV 1.1

DFBX	PIPE OD/ID		PIPE COORDINATES AT 300 K		
	OD in [mm]	ID in [mm]	X in [mm] ±.08	Z in [mm] ±.08	Y in [mm] ±.08
V	3.06 [77.7]	2.91 [73.9]	.000 [0]	.000 [0]	-13.504 [-343]
LD1	1.75 [44.5]	1.66 [42.2]	8.311 [211.1]	-3.642 [-92.51]	-13.465 [-342.01]
CC2	.63 [16]	.53 [13.5]	5.429 [137.9]	.811 [20.6]	-14.843 [-377.01]
END TRANSITION	.50 [12.7]	.41 [10.4]			
CC3	.63 [16]	.53 [13.5]	6.583 [167.21]	-7.874 [-200]	-14.843 [-377.01]
CY2	.63 [16]	.53 [13.5]	.000 [0]	5.114 [129.9]	-14.843 [-377.01]
END TRANSITION	.50 [12.7]	.41 [10.4]			
Ex	1.50 [38.1]	1.38 [35.1]	6.437 [163.5]	-9.945 [-252.6]	-11.693 [-297]
E2	1.50 [38.1]	1.38 [35.1]	-6.559 [-166.6]	-9.031 [-229.39]	-11.693 [-297]
MBX1	3.50 [88.9]	3.38 [85.9]	.000 [0]	-5.193 [-131.9]	-1.732 [-43.99]
MBX2	.50 [12.7]	.38 [9.7]	3.862 [98.09]	-3.287 [-83.49]	-5.465 [-138.81]
END TRANSITION	1.47 [37.3]	1.34 [34]			
WBX	29.53 [750.1]	23.50 [596.9]	.000 [0]	-3.528 [-89.61]	.000 [0]
XB	2.88 [73.2]	2.72 [69.1]	-8.339 [-211.81]	-3.614 [-91.8]	-13.465 [-342.01]
END TRANSITION	2.00 [50.8]	1.88 [47.8]			

15



ERNEST ORLANDO LAWRENCE  
BERKELEY NATIONAL LABORATORY  
UNIVERSITY OF CALIFORNIA - BERKELEY

LHC IR FEEDBOX  
MAJOR ASSEMBLY  
DFBXC FEED BOX ASSY SKEL

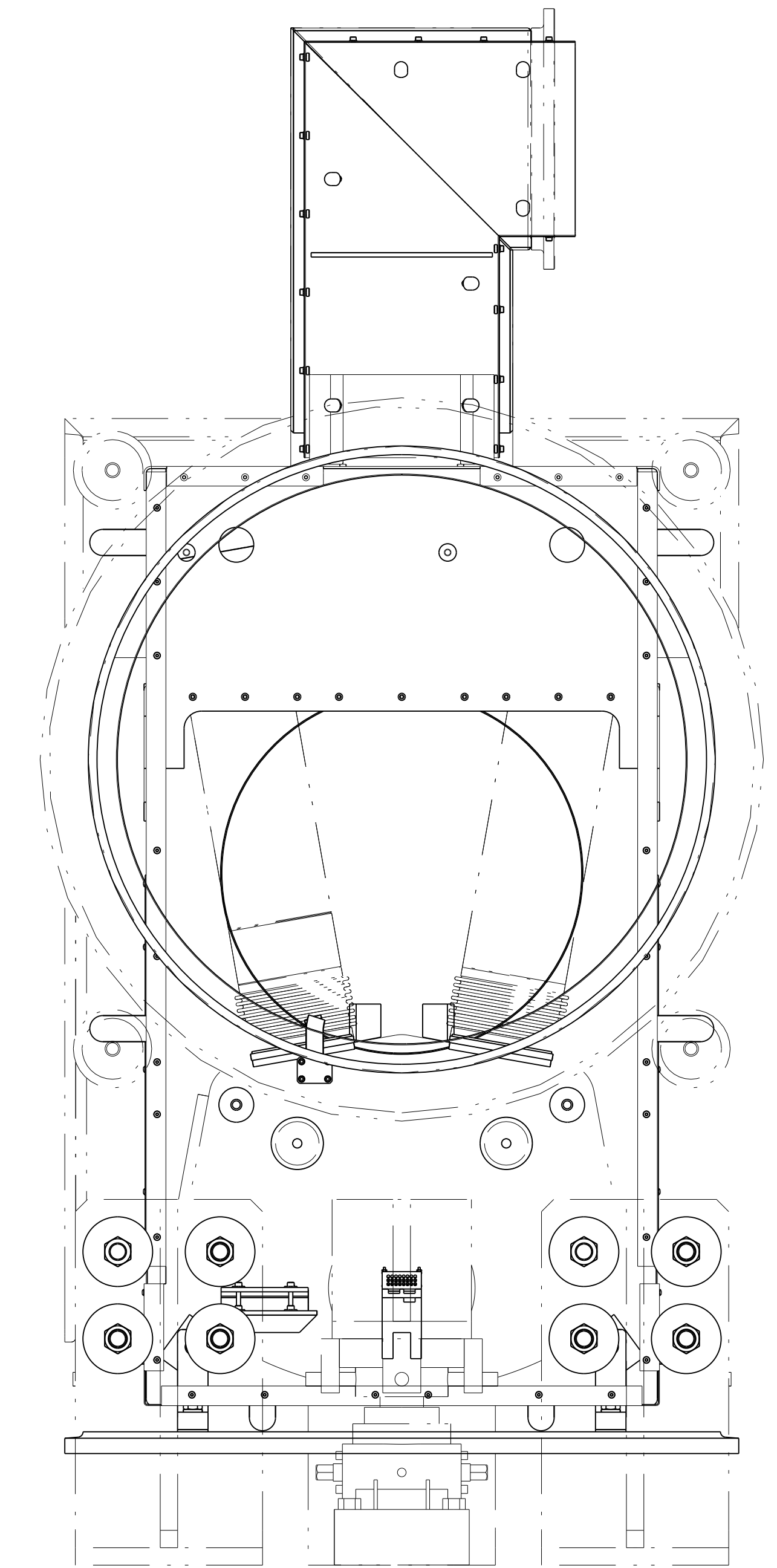
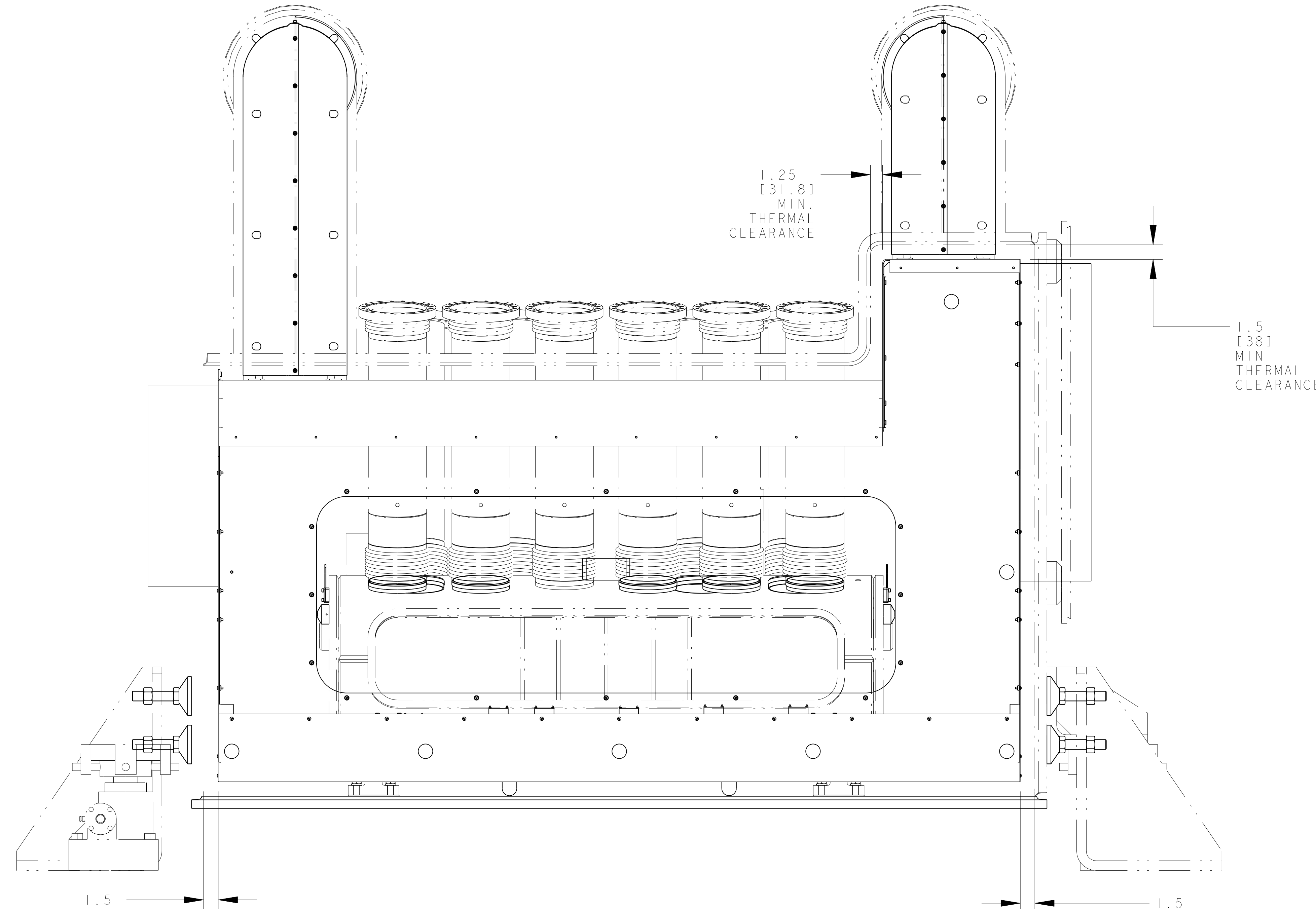
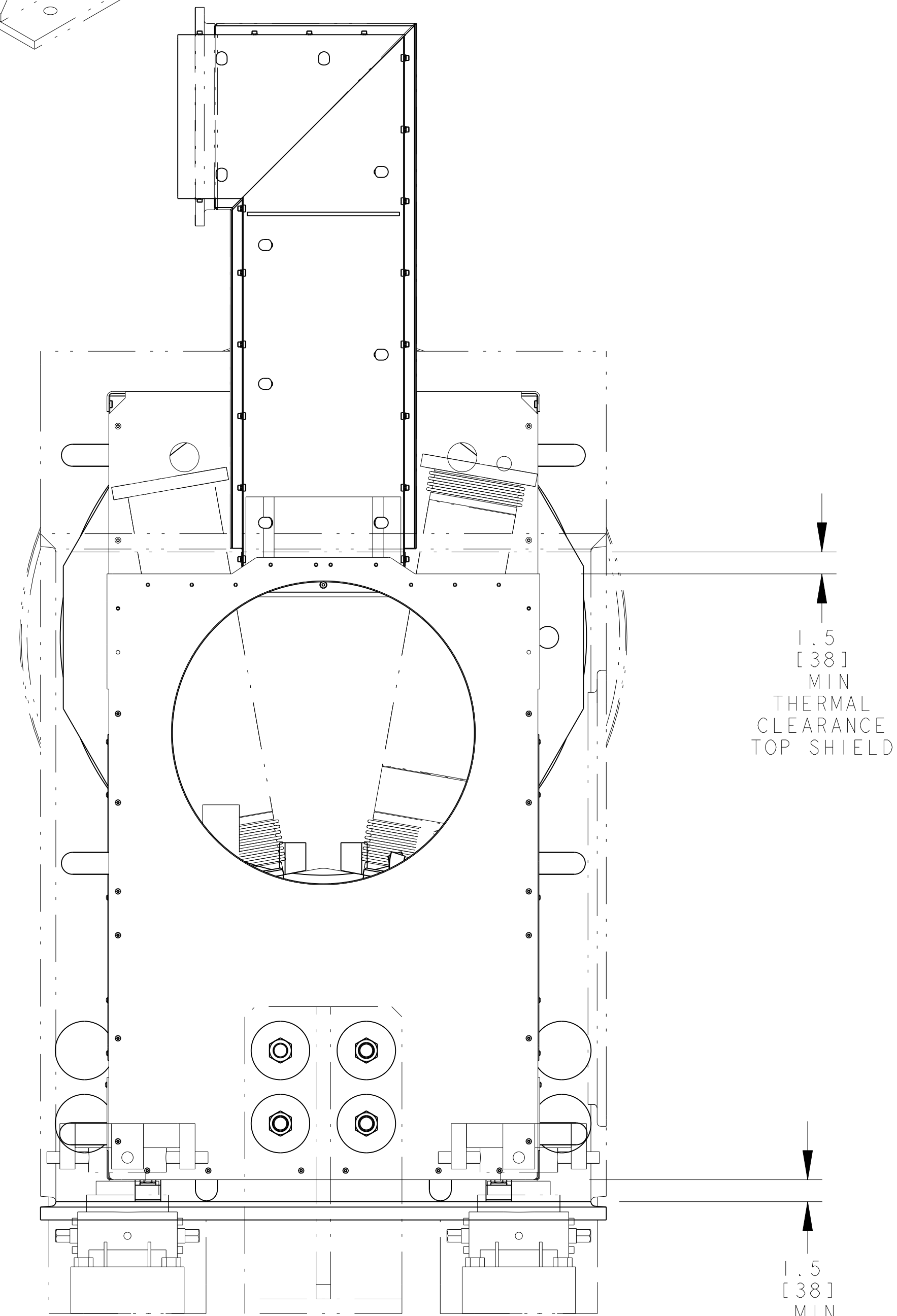
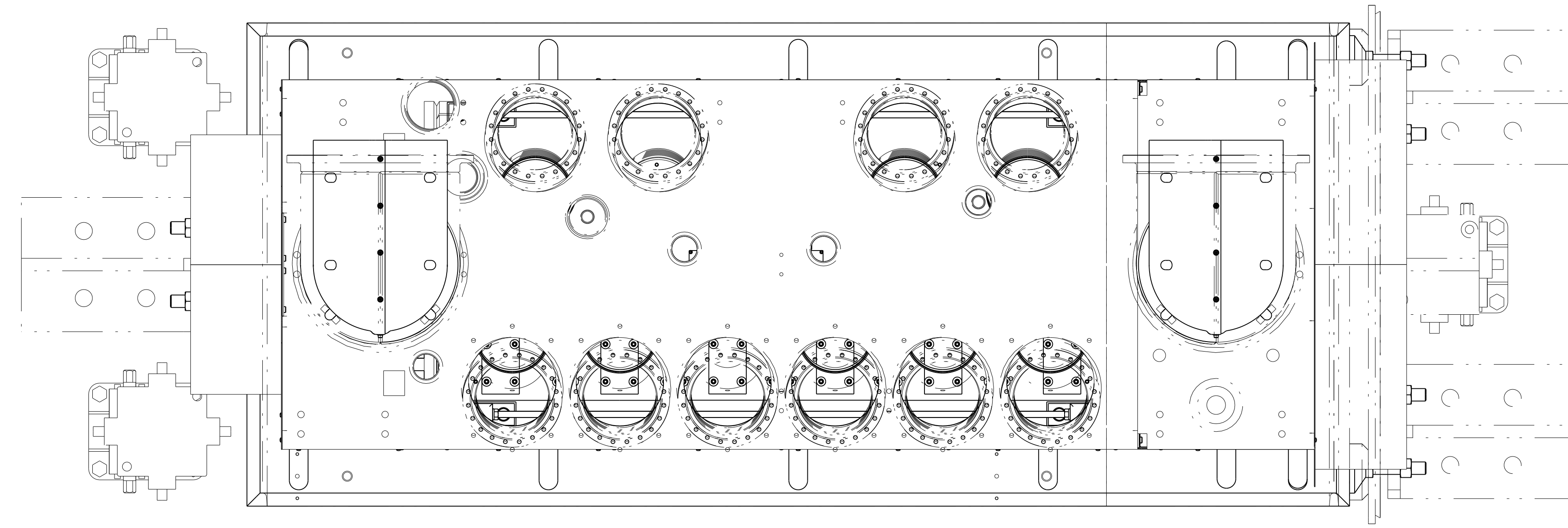
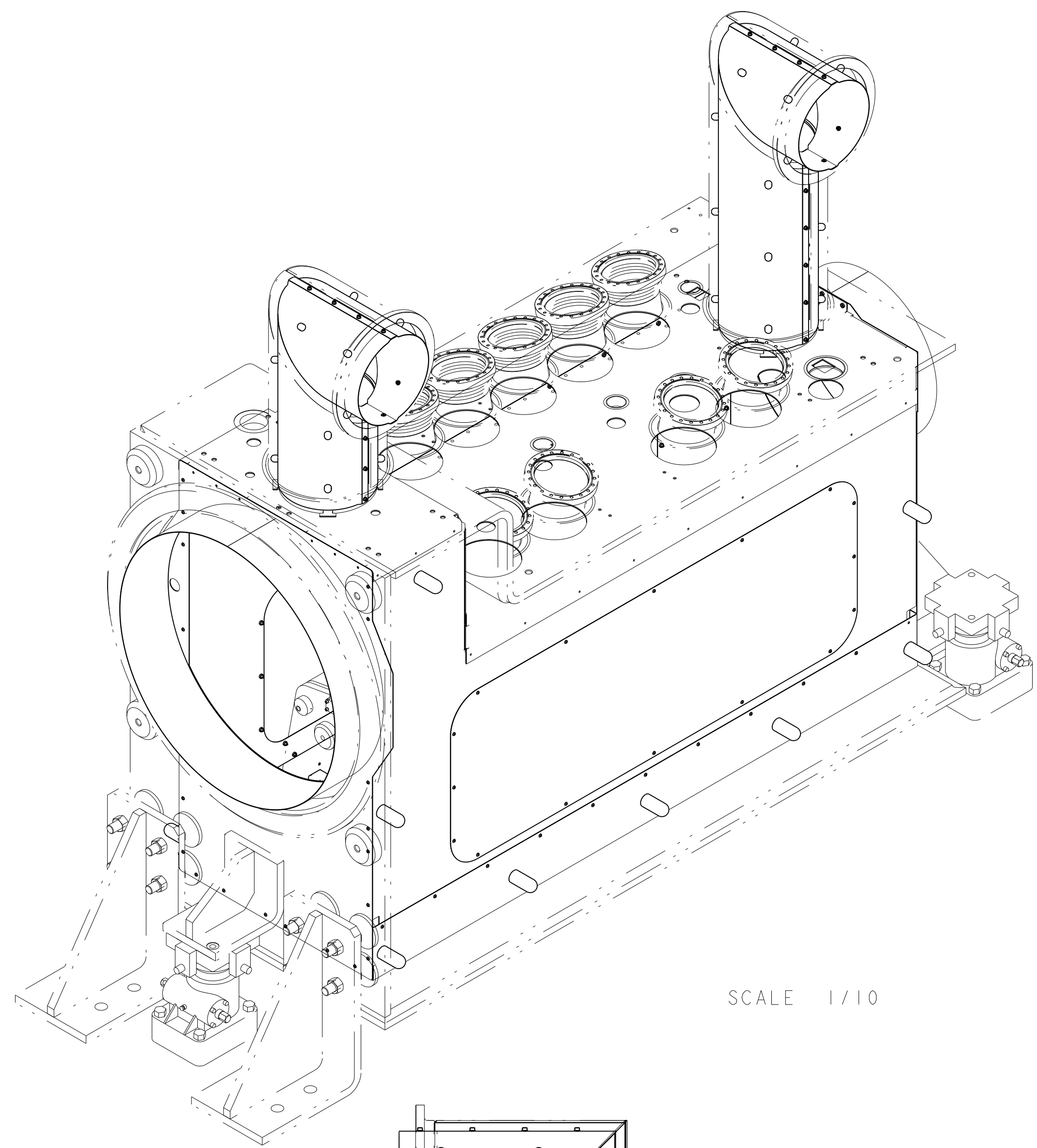
MICROFILMED: DWG. TYPE: PART SHOWN ON: SCALE: 3/50 DO NOT SCALE PRINTS

PATENT CLEAR: DESIGN ACCT. NO. ZSLCE2 CATEGORY CODE LH2001 DWG. NO. 24C3526 SHEET 8 OF 11

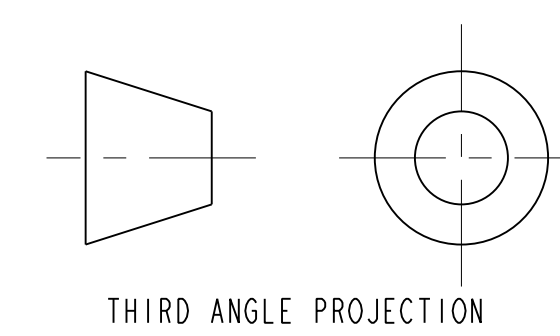


8 7 6 5 4 3 2 1

D  
C  
B  
A



THERMAL SHIELD LAYOUT  
COMPONENTS REMOVED FOR CLARITY  
SCALE 3/20

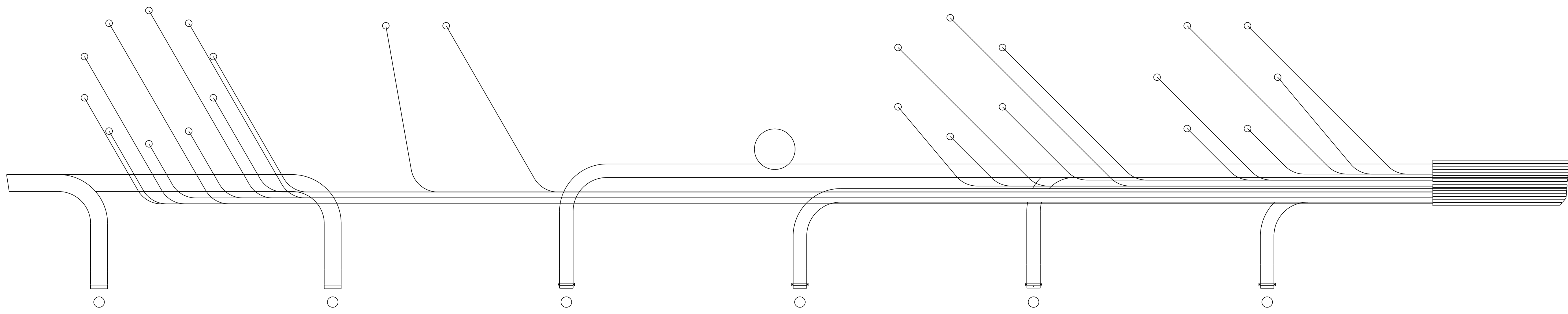


ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY		UNIVERSITY OF CALIFORNIA BERKELEY	
LHC IR FEEDBOX MAJOR ASSEMBLY			
DFBXC FEED BOX ASSY SKEL			
MICROFILMED:	DWG. TYPE:	SHOWN ON:	SCALE: 3/50
PART			DO NOT SCALE PRINTS
PATENT CLEAR:		DESIGN ACCT. NO:	CATEGORY CODE:
ZSLCE2	LH2001	DWG. NO:	REV.
24C3526		SHEET 9 OF 11	
B		B	

8 7 6 5 4 3 2 1

24C3526 B 9

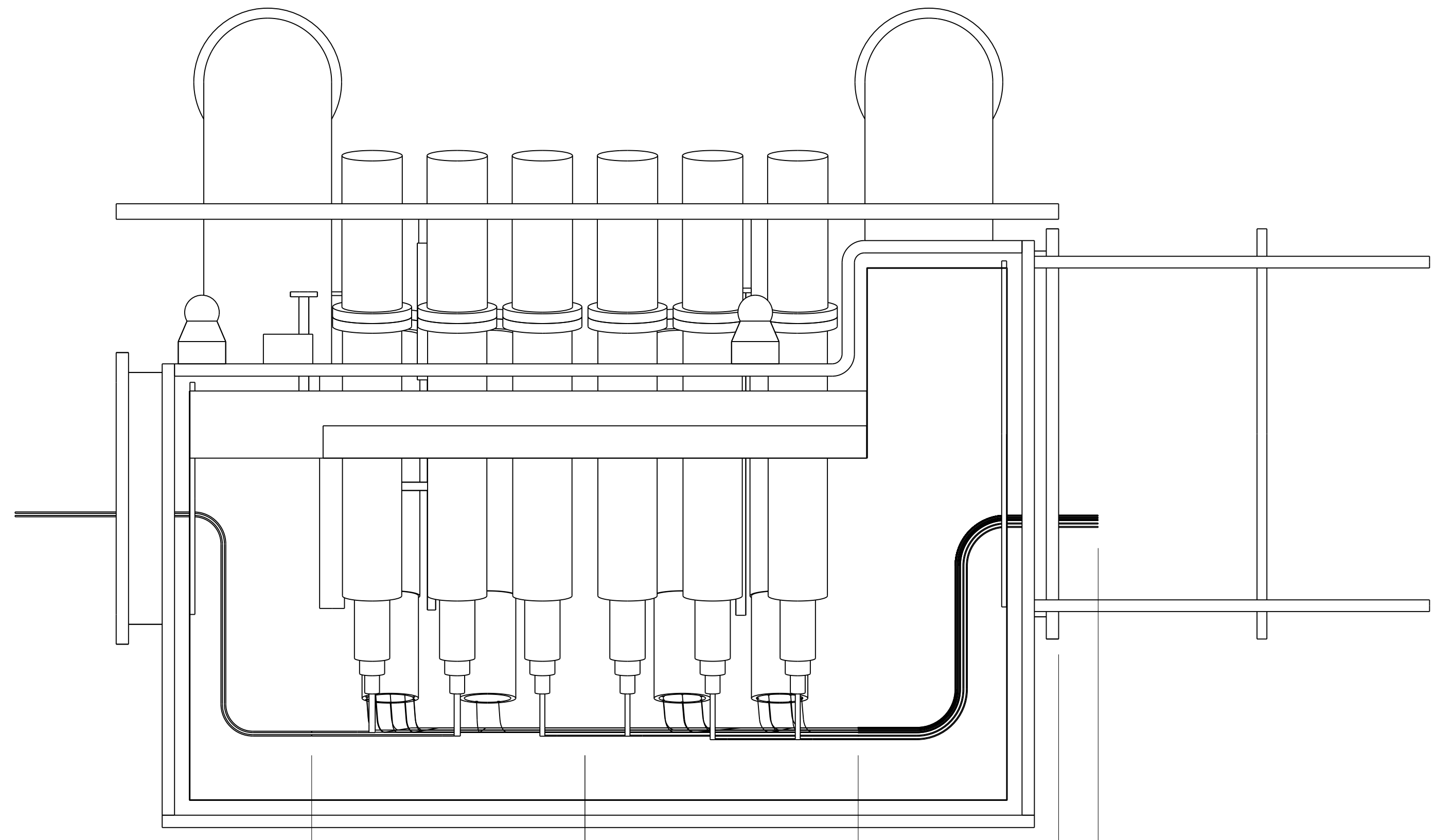
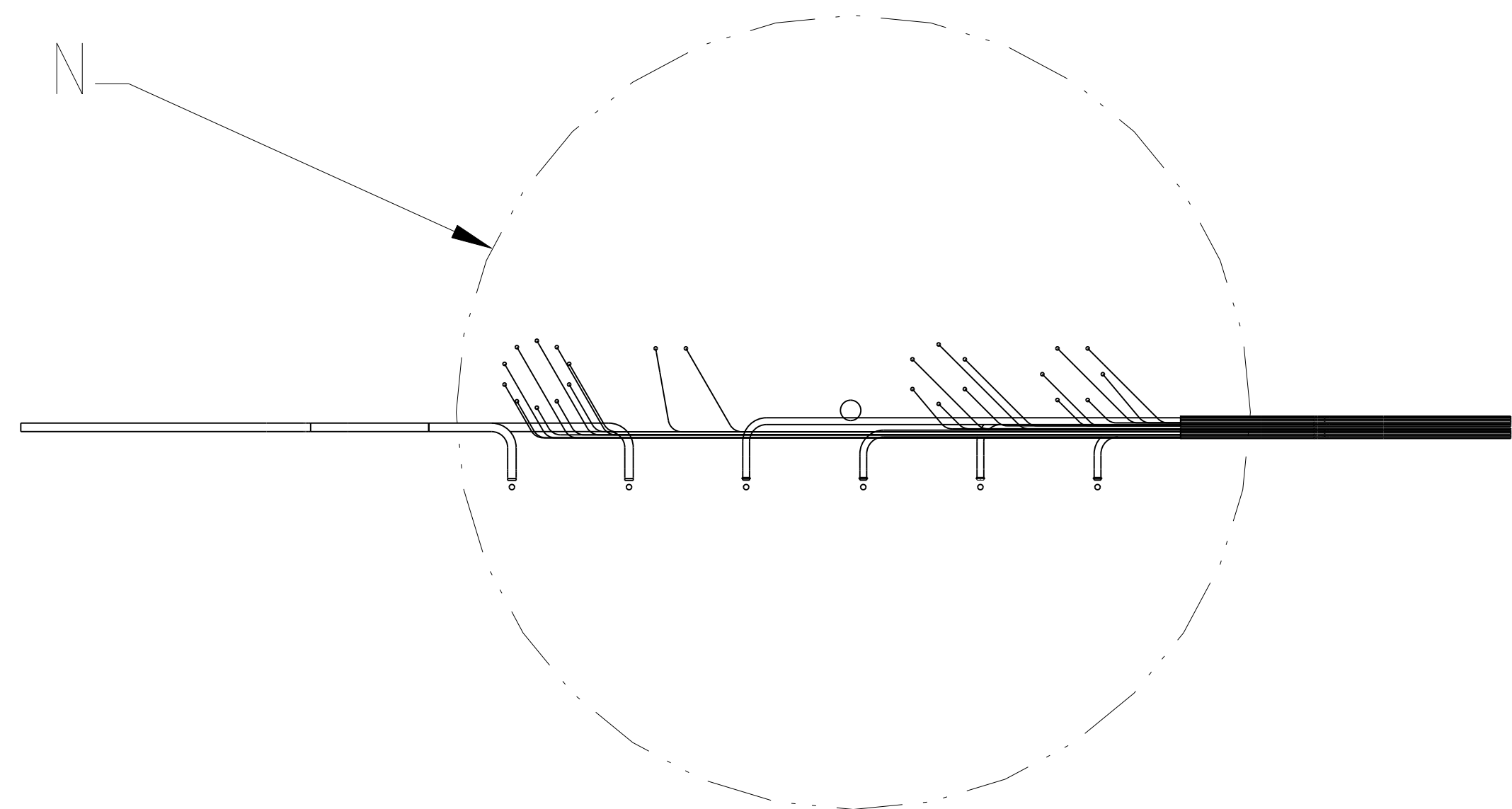
8 7 6 5 4 3 2 1



### BUS CONDUCTOR RUNS

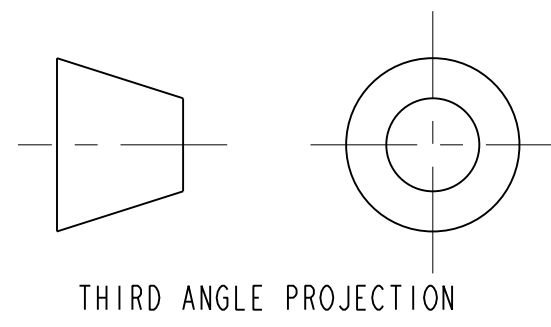
DETAIL N  
SCALE 1/2

SEE DETAIL N



27.660 [702.56]      27.660 [702.56]      4.000 [101.6]

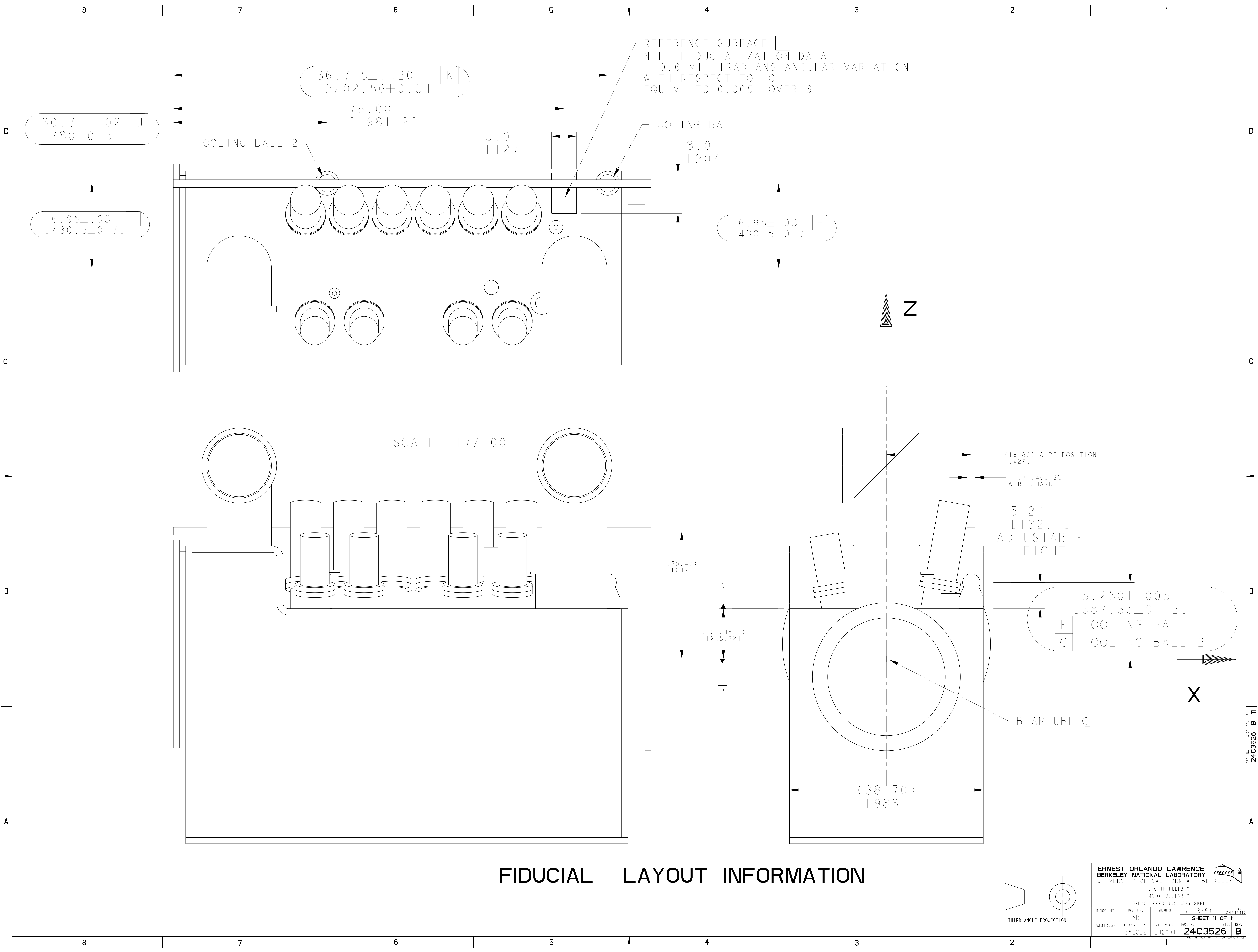
SCALE 1/10



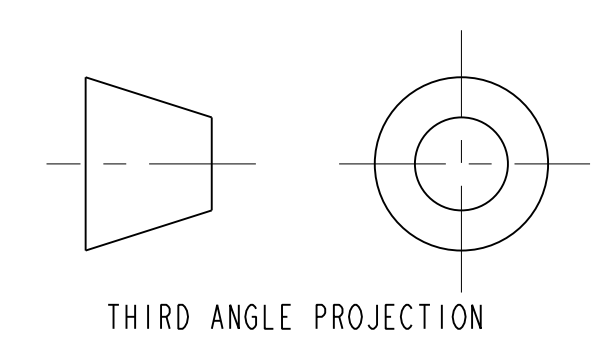
ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY			
LHC IR FEEDBOX MAJOR ASSEMBLY DFBXC FEED BOX ASSY SKEL			
MICROFILMED:	DWG. TYPE	SHOWN ON	SCALE: 3/50
PART			DO NOT SCALE PRINTS
PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CODE	DWG. NO.
ZSLCE2	LH2001		24C3526
			SHEET 10 OF 11
			SIZE: REV. B

8 7 6 5 4 3 2 1

24C3526 B 10



### FIDUCIAL LAYOUT INFORMATION



ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY UNIVERSITY OF CALIFORNIA - BERKELEY			
LHC IR FEEDBOX MAJOR ASSEMBLY DFBXC FEED BOX ASSY SKEL			
MICROFILMED:	DWG. TYPE:	SHOWN ON:	SCALE: 3/50
PART:	ZSLCE2	LH2001	24C3526
SHEET 11 OF 11			DO NOT SCALE PRINTS
PATENT CLEAR:	DESIGN ACCT. NO.	CATEGORY CODE:	DWG. NO. REV.
			24C3526 B