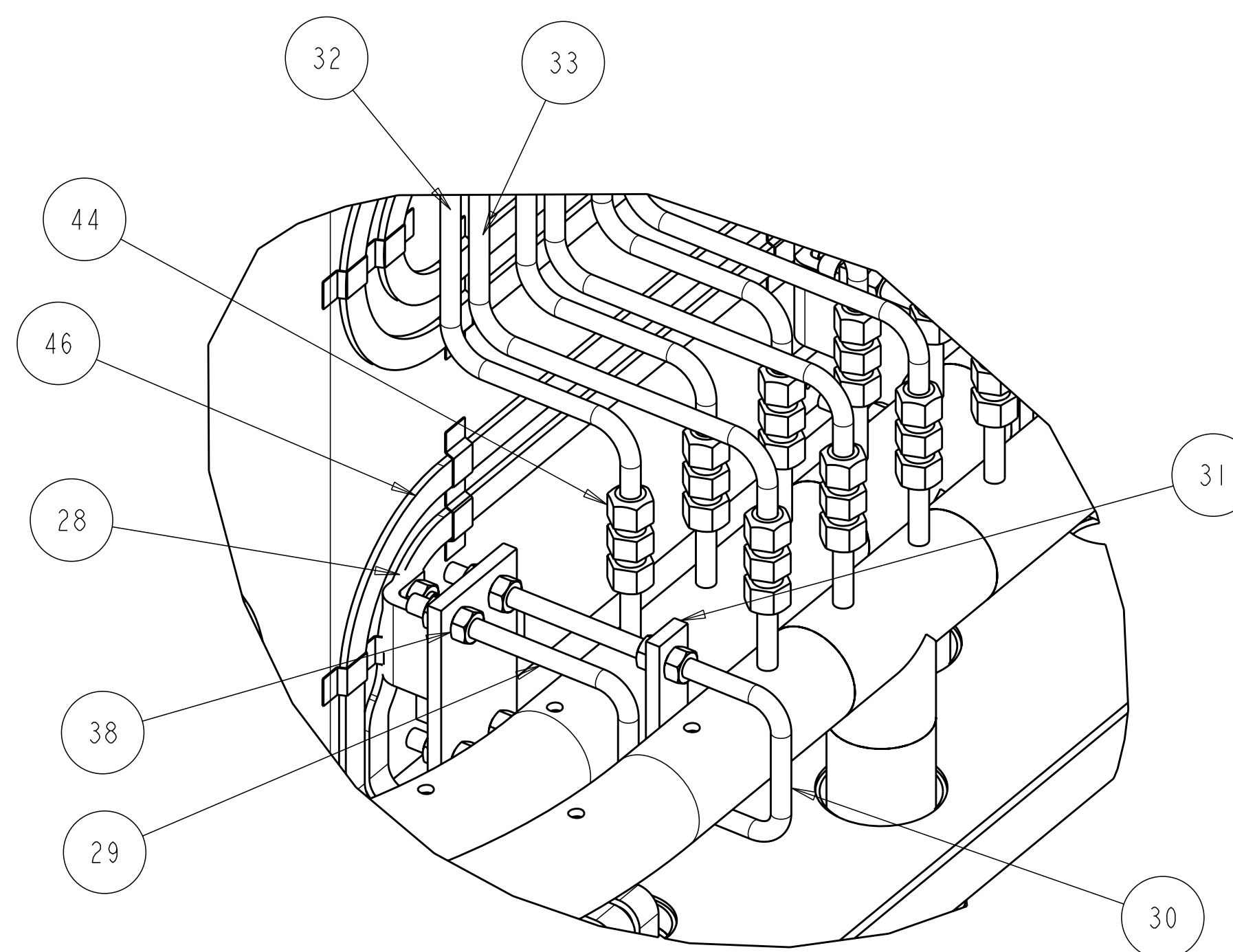


ISOMETRIC VIEW



DETAIL X

SOME COMPONENTS NOT SHOWN FOR CLARITY  
SCALE 0.50

SCALE: .13

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.100-2000.
2. INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1994
3. DIMENSIONS ARE IN INCHES
4. DIMENSIONS APPLY AT ROOM TEMPERATURE. OPERATING TEMP 20 C° TO 350 C°.
5. MAGNETIC PERMEABILITY NOT TO EXCEED 1.02 AS TESTED BY A SEVERN INDICATOR, AVAILABLE FROM:  
SEVERN ENGINEERING  
555 OLD STAGE RD., SUITE 14  
AUBURN, ALABAMA 36830
- 6 SEE DRAWING SE121-004, SE121-005, OR SE121-006 FOR INSTALLATION INSTRUCTIONS.
- 7 SEE DRAWING SE121-008 FOR INSTALLATION INSTRUCTIONS.
- 8 SEE DRAWING SE121-009 FOR INSTALLATION INSTRUCTIONS.

REV	QTY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	FIND NO
6	16	NCSX-PRL-12-004-00	HEAT TAPE .50" WIDE X .125" THK X 120" LONG			46
7	128	5FF-5-4	BRAZYTE REDUCER UNION 5/16 TO 1/4 TUBE		TRULY TUBULAR FITTINGS CORP. MOUNT VERNON, NY 10550 914-664-8686	45
8	128	5182K719	316 SS YOR-LOK COMPRESSION TUBE FITTING COUPLING FOR 5/16" TUBE OD			44
7	460	90545A030	HEX NUT 5/16-18 UNC - ASME B18.2.2 TITANIUM			43
6	20	93190A578	HEX HEAD SCREW 5/16-18 UNC X .50 LG 316 SST		McMASTER-CARR ATLANTA, GA 30336-2852 (404) 346-7000	42
7	128	91950A027	FLAT WASHER .50 OD X .219 ID X .036 THK 316 STAINLESS STL			41
7	28	91950A030	FLAT WASHER .688 OD X .344 ID X .064 THK 316 STAINLESS STL			40
7	128	92446A240	SLOTTED PAN HEAD SCREW #10-24UNC X .38 LG BRASS			39
7	120	94819A046	HEX NUT 5/16-18 UNC - ASME B18.2.2 316 SST			38
7	485	NCSX-PRL-12-002-00	5/16-18UNC X .75 LG CD INCONEL WELD STUD			37
7	128	SE123-172-3	TUBE MOUNT STRAP			36
7	2	SE123-171	SUPPORT BRKT B WELDMT			35
7	2	SE123-170	SUPPORT BRKT A WELDMT			34
6	64	SE123-169-2	VV HEATING/COOLING SUPPLY LINE DETAIL			33
6	64	SE123-169-1	VV HEATING/COOLING SUPPLY LINE DETAIL			32
8	8	SE123-168-6	U-BRACKET LONG STOP			31
8	8	SE123-168-5	U-BRACKET LONG			30
8	8	SE123-168-4	U-BRACKET			29
8	8	SE123-168-1	HEADER BRACKET STANDOFF WELDMT			28
6	4	SE123-167	MOUNT FLANGE			27
6	2	SE123-164	CRYOSTAT INTERFACE FLG WELDMT			26
8	2	SE123-163	OUTER HEADER B			25
8	2	SE123-162	OUTER HEADER A			24
8	2	SE123-161	INNER HEADER B			23
8	2	SE123-160	INNER HEADER A			22
6	29	SE123-155	THERMOCOUPLE MOUNTING PLATE			21
6	460	SE123-056	TUBE RETAINER WASHER			20
6	460	SE123-054	STRAP			19
6	460	SE123-053	CONDUCTOR			18
6	460	SE123-052	CONDUCTOR GASKET			17
6	4	SE123-145-14	HEATING/COOLING TUBE WELDMT			16
6	4	SE123-145-13	HEATING/COOLING TUBE WELDMT			15
6	4	SE123-145-12	HEATING/COOLING TUBE WELDMT			14
6	4	SE123-145-11	HEATING/COOLING TUBE WELDMT			13
6	4	SE123-145-10	HEATING/COOLING TUBE WELDMT			12
6	4	SE123-145-9	HEATING/COOLING TUBE WELDMT			11
6	4	SE123-145-8	HEATING/COOLING TUBE WELDMT			10
6	4	SE123-145-7	HEATING/COOLING TUBE WELDMT			9
6	4	SE123-145-6	HEATING/COOLING TUBE WELDMT			8
6	4	SE123-145-5	HEATING/COOLING TUBE WELDMT			7
6	4	SE123-145-4	HEATING/COOLING TUBE WELDMT			6
6	4	SE123-145-3	HEATING/COOLING TUBE WELDMT			5
6	4	SE123-145-2	HEATING/COOLING TUBE WELDMT			4
6	4	SE123-145-1	HEATING/COOLING TUBE WELDMT			3
6	1	SE120-002	VACUUM VESSEL PERIOD ASSY			2
6	1	-1	HEATING COOLING ASM			1

CAGE CODE	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	FIND NO
-1	NEXT ASSEMBLY				

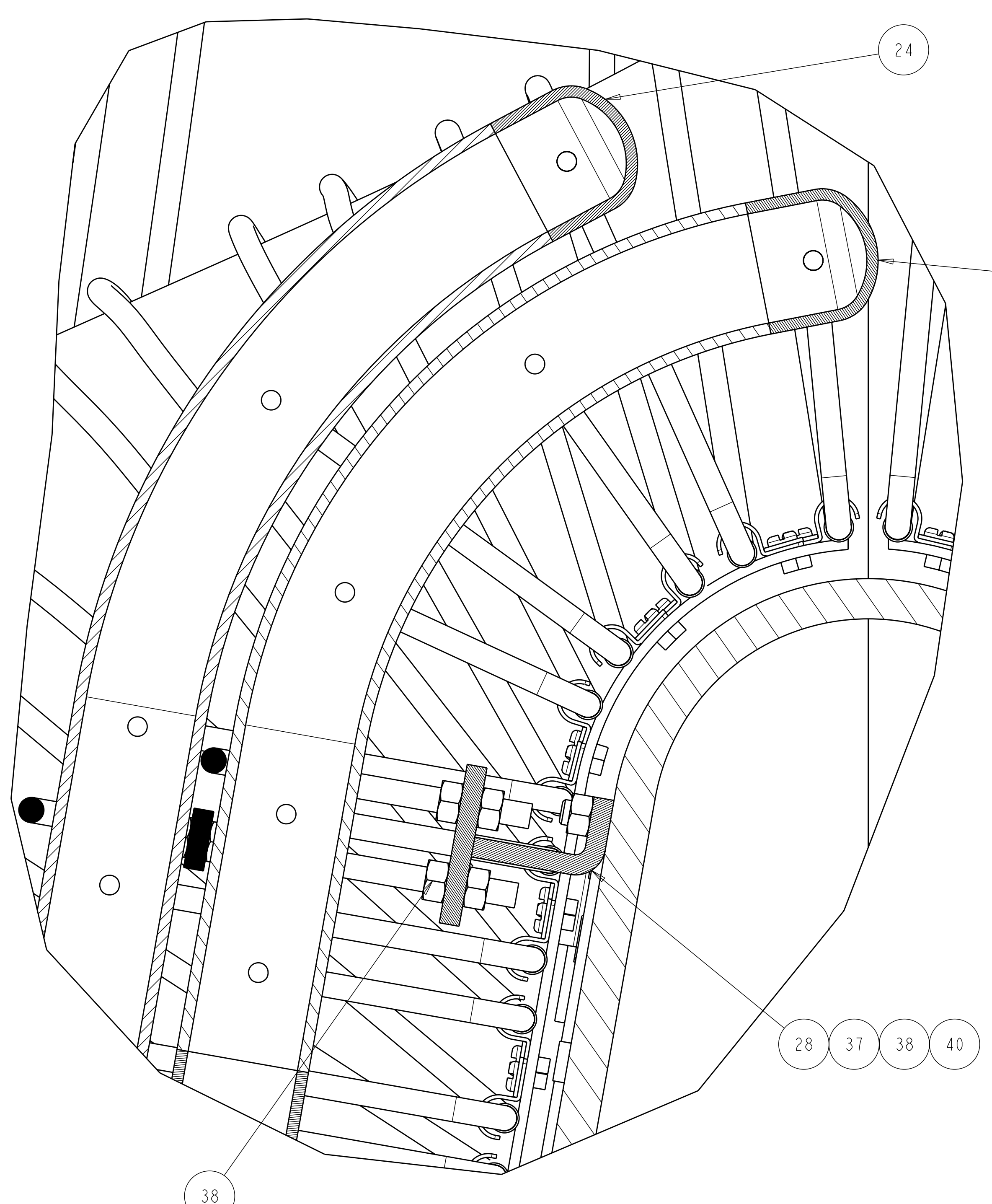
PARTS LIST

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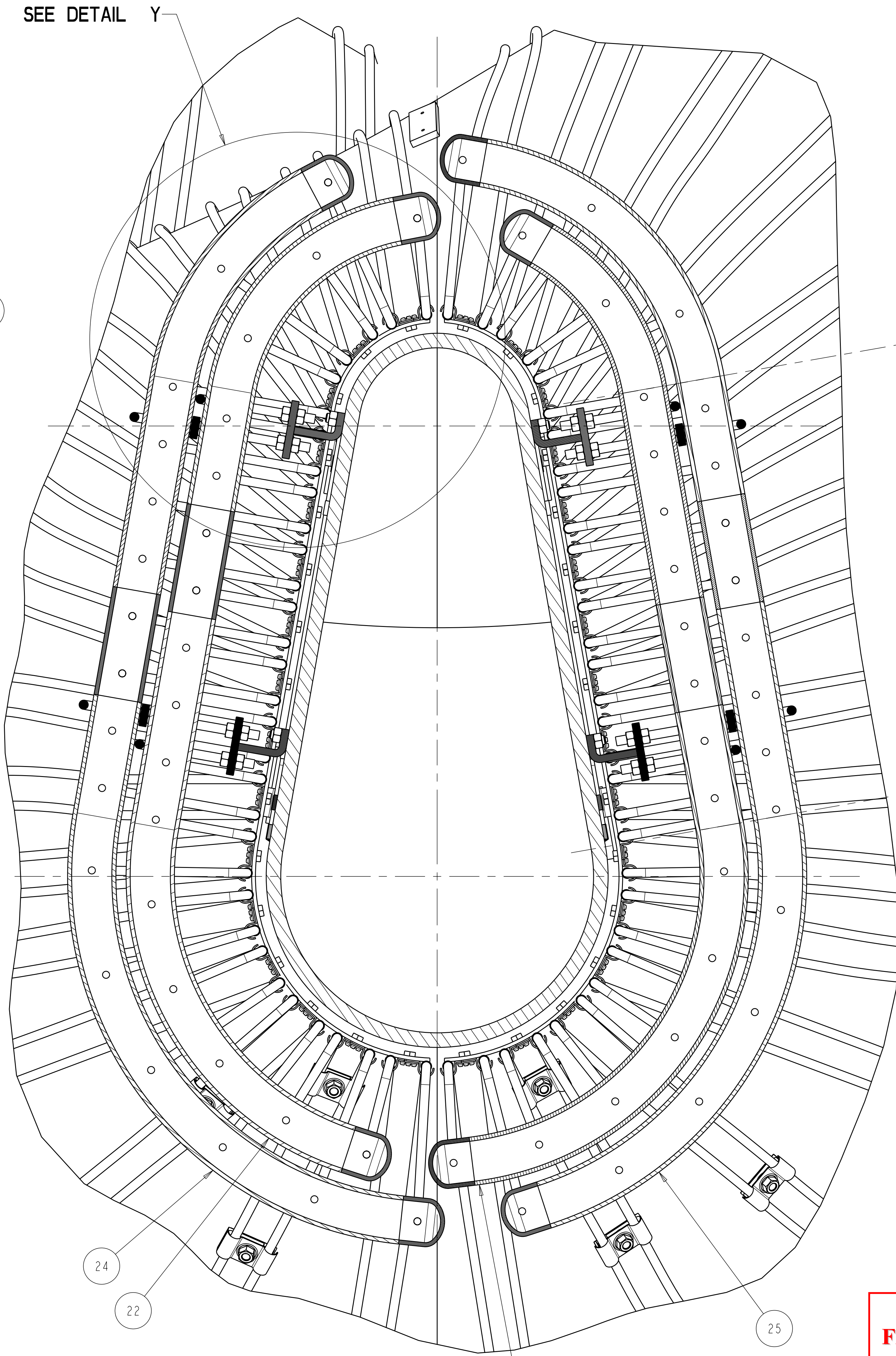
**P** THIS DRAWING PRODUCED ON PRO-ENGINEER

**RELEASED FOR FABRICATION / INSTALLATION**  
PPPL Drafting:

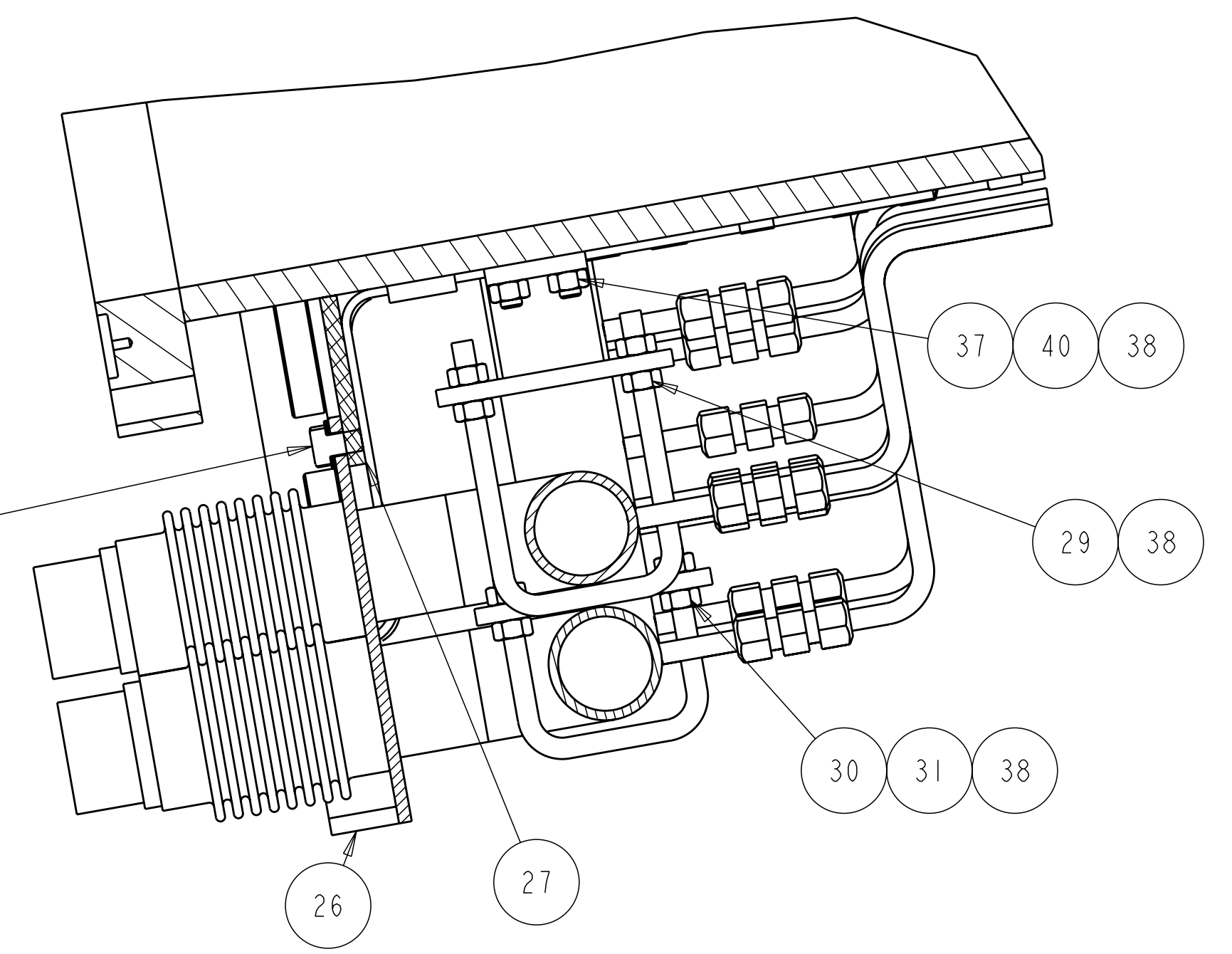
DES P. L. GORANSON 11/05	DES G. H. JONES 11/05	DES M. J. COLE 11/05	UT-BATTELLE		Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC., Oak Ridge, Tennessee	
SCALE NOTED			NATIONAL COMPACT STELLARATOR EXPERIMENT			
TOLERANCES UNLESS OTHERWISE SPECIFIED			VACUUM VESSEL HEATING/COOLING HEATING COOLING ASM ASSEMBLY			
FRACTIONS	±.01	FE	PPPL DRFT J. SIEGEL 11/05	VERSION NO. 17	PLANT X10	BLDG 5700
XX DECIMALS	±.005	CR	REVISION NO.	FL 3	SHT 1	OF 3
XXX DECIMALS	±0.15	PJ	RELEASE LEVEL	SE123-049		
ANGLES	±0.15	REO	Fabrication	REV 0		
BREAK SHARP EDGES OR MAX FINISH	UNLESS OTHERWISE SPECIFIED					
REV	DESCRIPTION	BY	DATE	CHK	DEPT	DATE
	REVISION OR ISSUE PURPOSE					



DETAIL Y  
SCALE 1.00

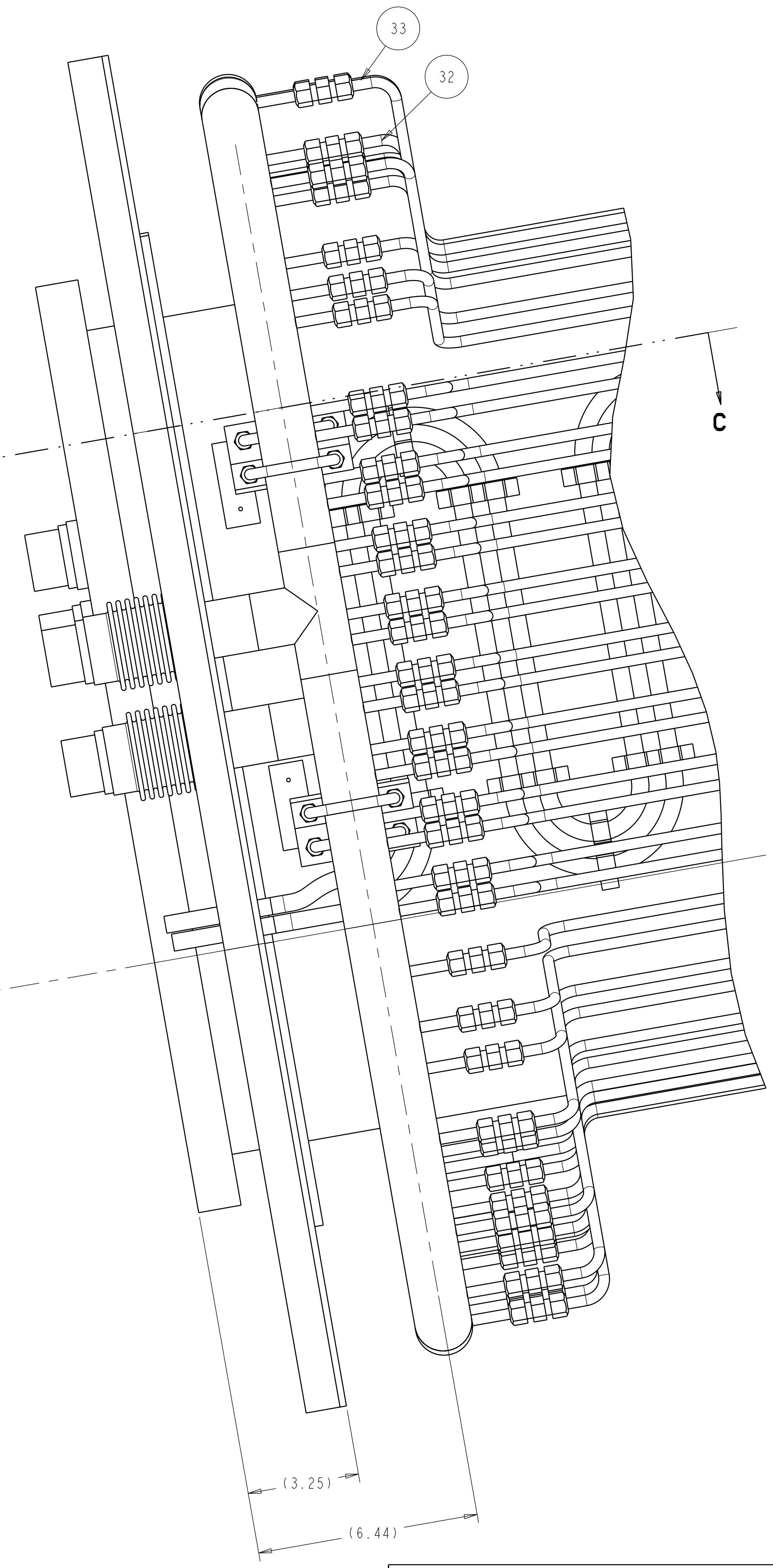


SECTION A-A  
SCALE 0.50



MATCH DRILL & TAP  
AT ASSEMBLY

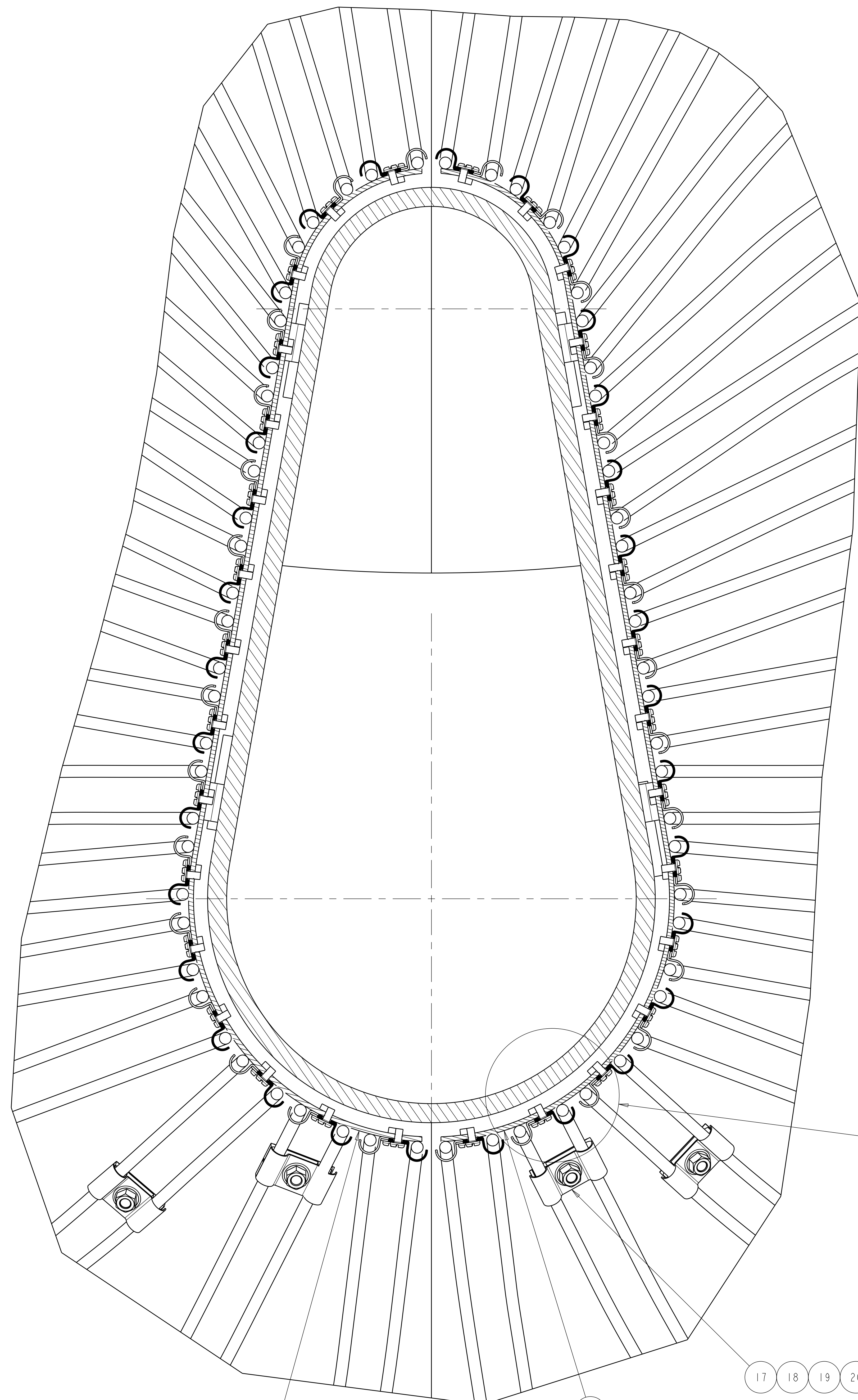
SECTION C-C



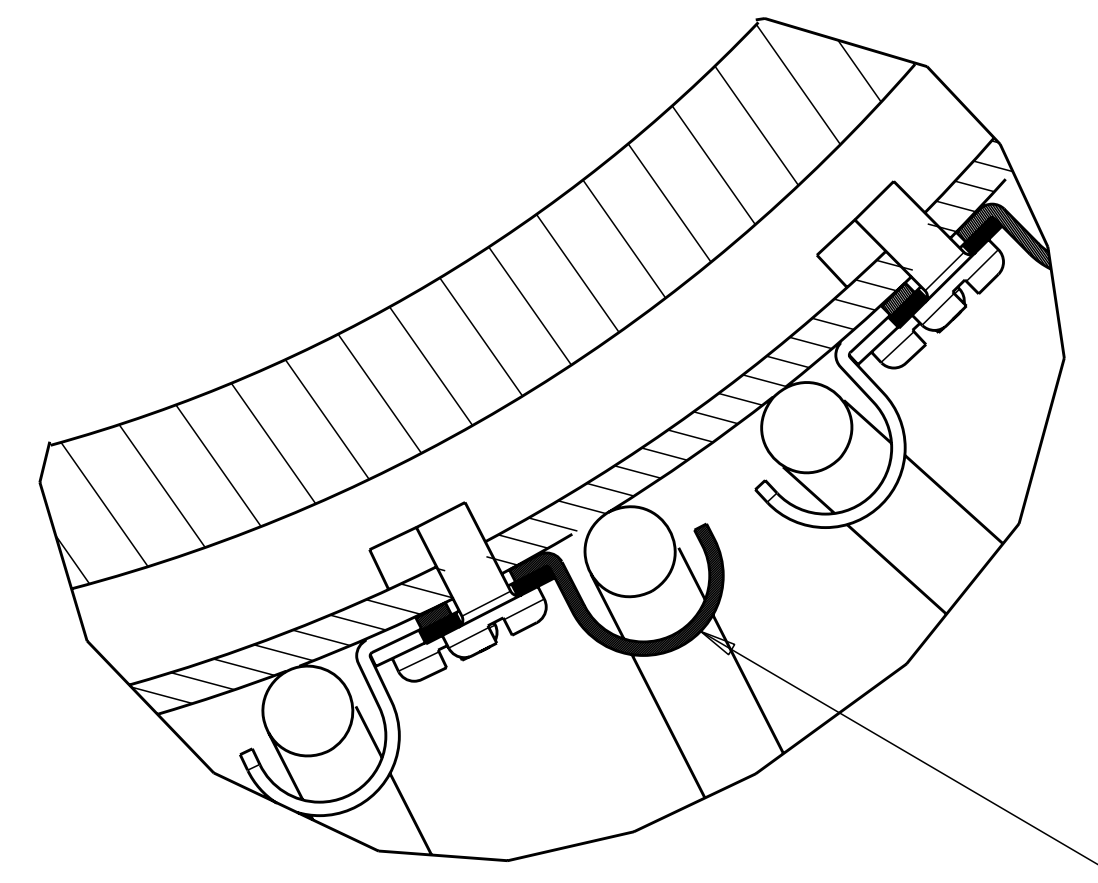
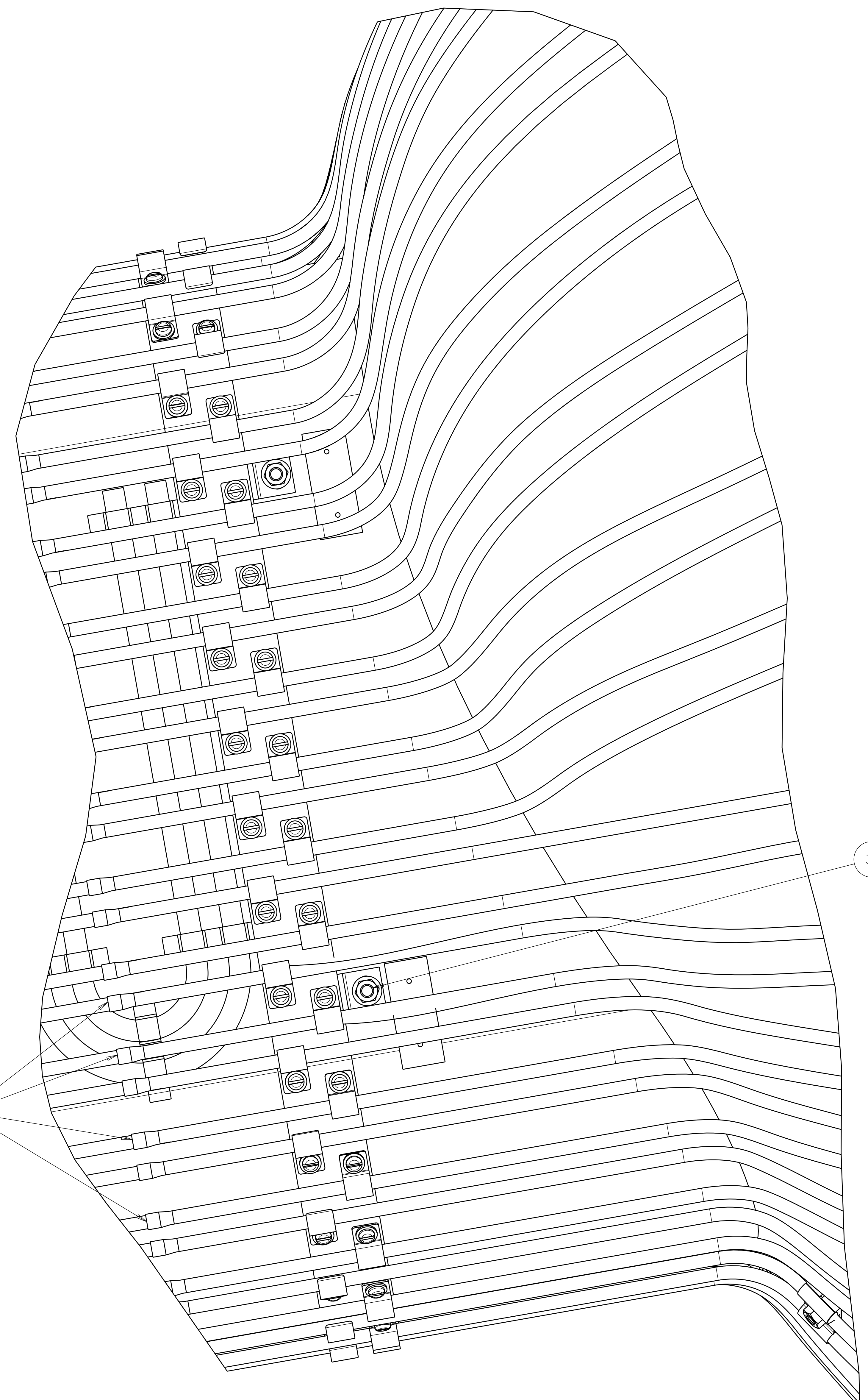
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FABRICATION / INSTALLATION**  
PPPL Drafting:

Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee PROJECT NAME:									
<b>UT-BATTELLE</b> NATIONAL COMPACT STELLARATOR EXPERIMENT VACUUM VESSEL HEATING/COOLING HEATING COOLING ASM ASSEMBLY									
VERSION NO.	PLANT	BLDG	FL	SHT	OF	TYPE	CLASS		
17	X10	5700	3	2	3	S	U		
RELEASE LEVEL		SE123-049							
Fabrication		REV 0							

SEE 123-049



SECTION B-B  
SCALE 0.75



DETAIL Z  
SCALE 1.50

SEE DETAIL Z

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FABRICATION / INSTALLATION**  
PPPL Drafting:

Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee PROJECT NAME:									
<b>NATIONAL COMPACT STELLARATOR EXPERIMENT</b> <b>VACUUM VESSEL HEATING/COOLING</b> <b>HEATING COOLING ASM</b> <b>ASSEMBLY</b>									
VERSION NO.	PLANT	BLDG	FL	SHT	OF	TYPE	CLASS		
17	X10	5700	3	3	3	S	U		
RELEASE LEVEL		SE123-049							
Fabrication		REV 0							