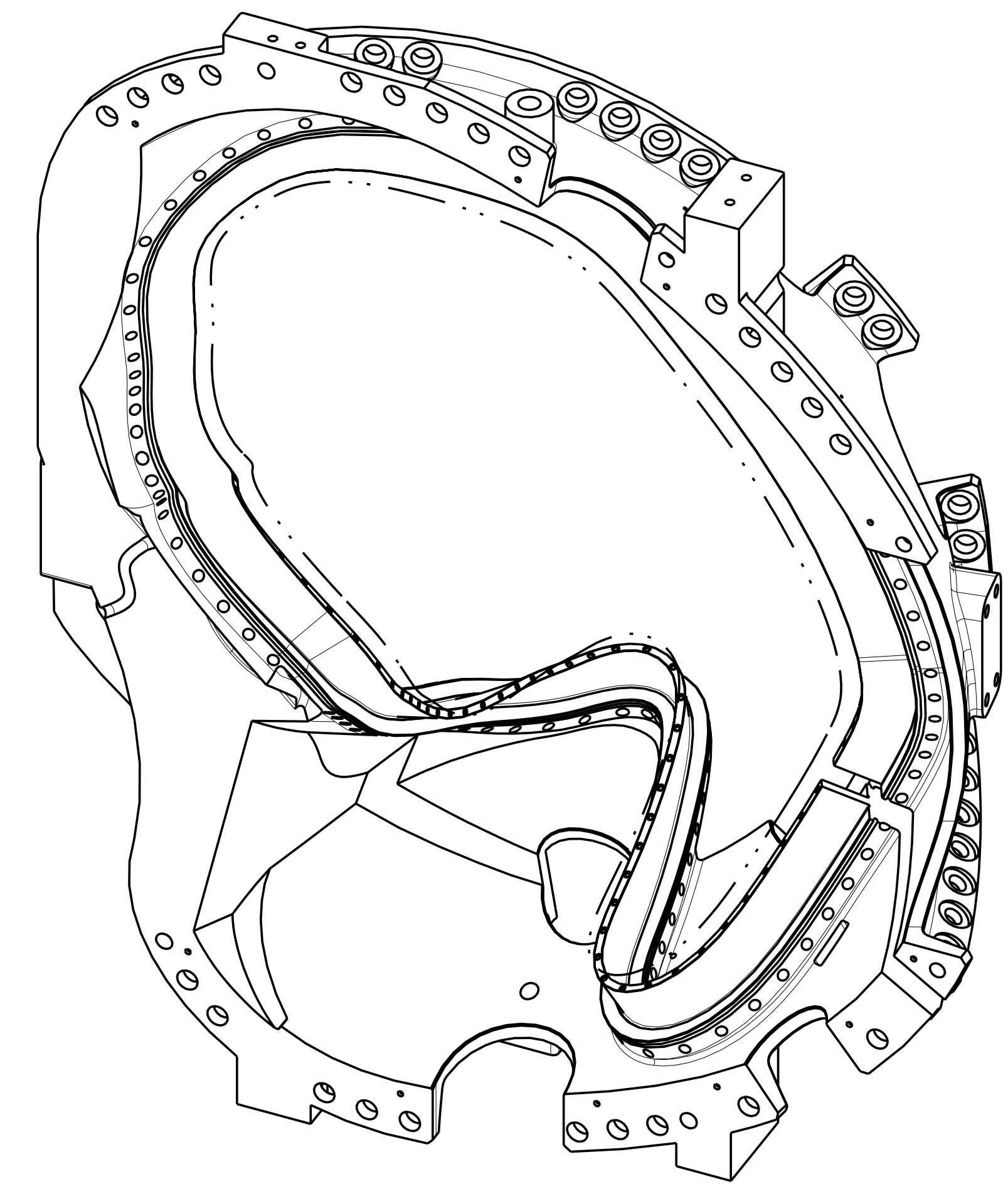
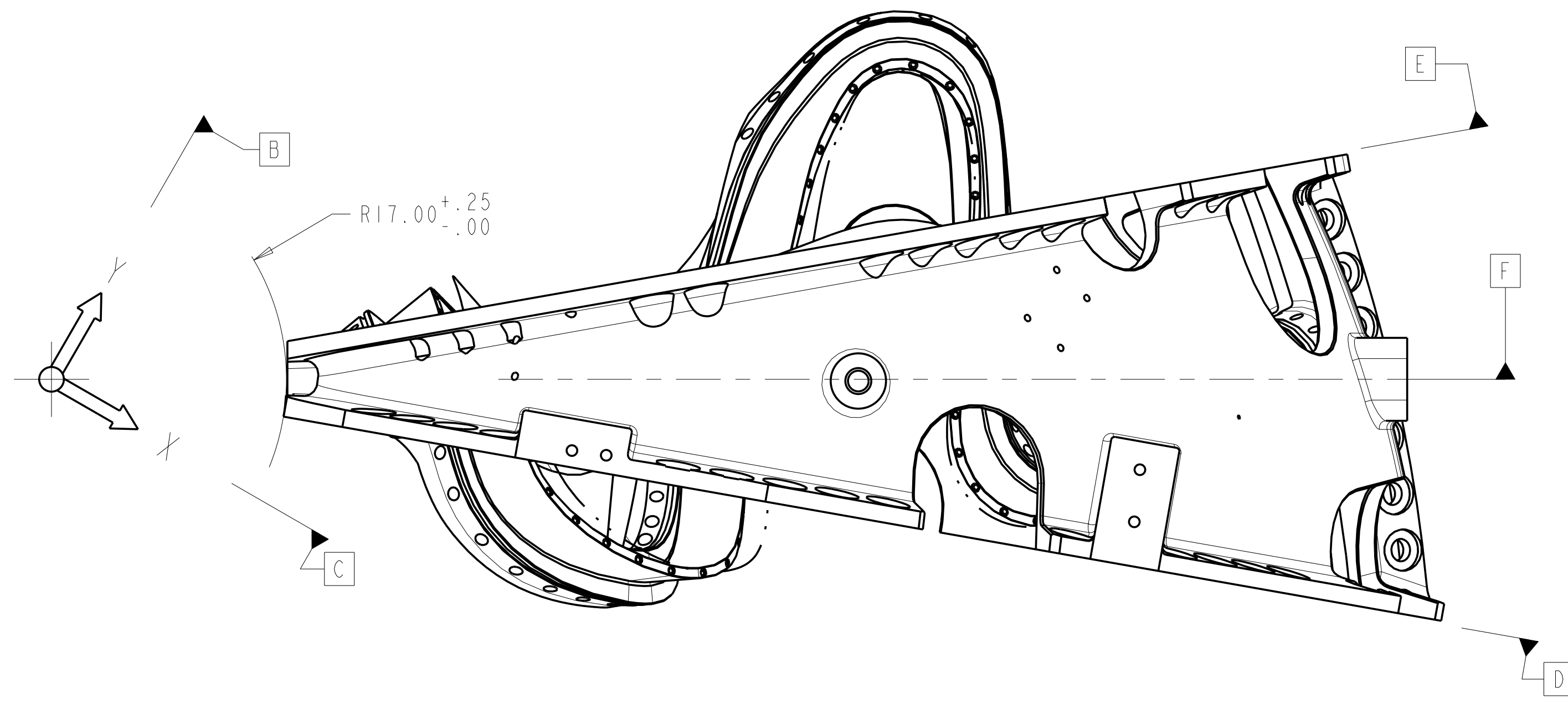
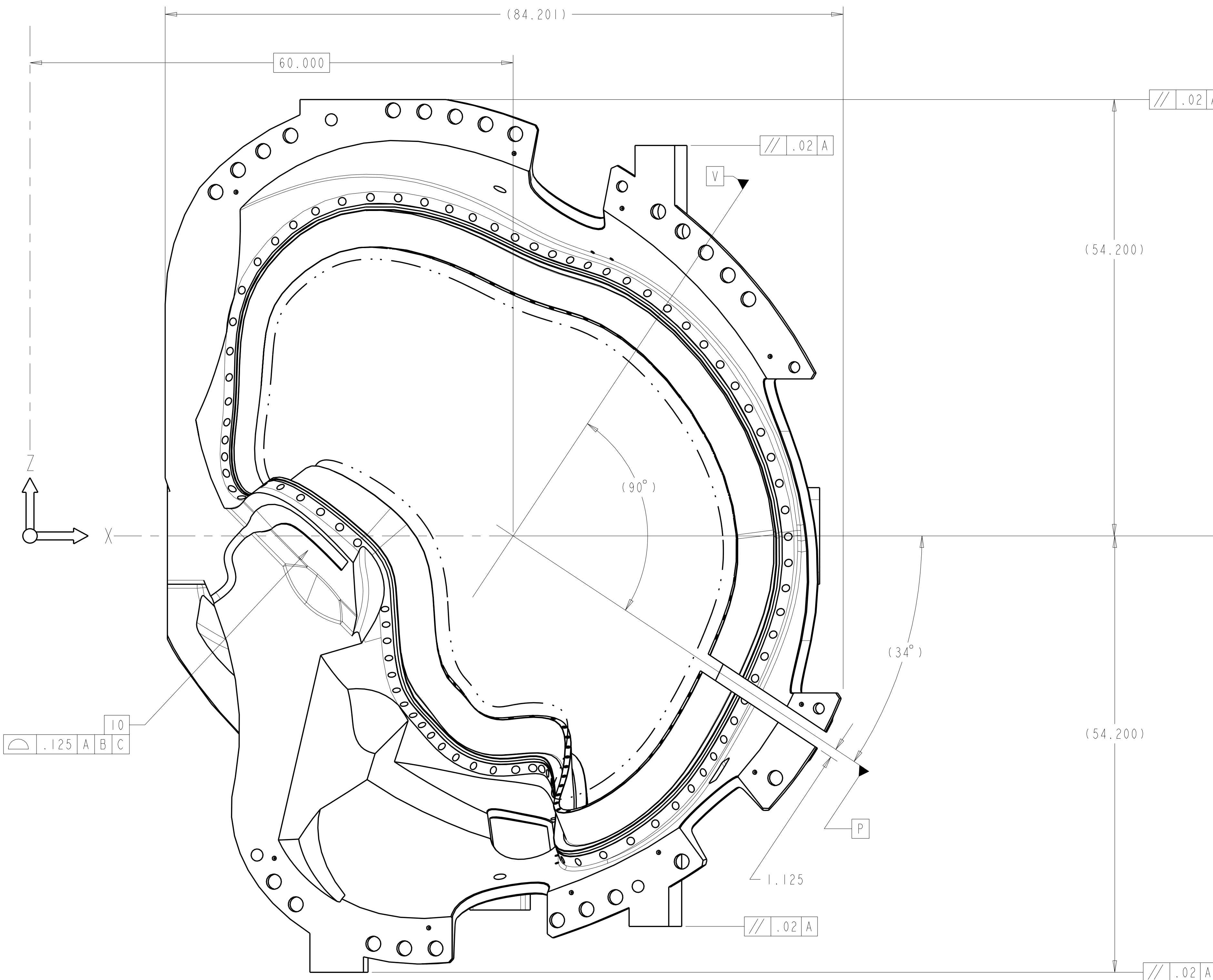


NOTES:

- DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.8M-1996.
- INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1994.
- DIMENSIONS ARE IN INCHES.
- DRAWING DEPICTS FINAL MACHINED STATE OF PART DEFINED BY PRO/ENGINEER FILE SEI41-115.PRT.
- UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE RELATED TO DATUM A- (PRIMARY X-Y PLANE, TOP) DATUM B- (SECONDARY Y-Z PLANE, SIDE) DATUM C- (TERTIARY X-Z PLANE, FRONT)
- DIMENSIONS APPLY AT TEMPERATURE OF 20-30°C (68-86°F).
- DIMENSIONS AND TOLERANCES EXCLUDE PROCESS MATERIAL ALLOWANCES WHICH MAY ADD MASS.
- APPROXIMATE WEIGHT = 4368 LBS. WEIGHT OF FINISHED PART NOT TO EXCEED 6000 LBS.
- UNLESS OTHERWISE SPECIFIED, AS-CAST SURFACE PROFILE TOLERANCE = +/- .25 - INCH, WITH EXEMPTION FOR INTERSECTING SURFACES WHERE FILLETS ARE EXPECTED. MIN FILLET AND CORNER RADII = 0.5 +/- 0.1-IN.
- DESIGNATED SURFACE REGIONS HAVE PROFILE TOLERANCE = +/- 0.125-IN.
- MIN THICKNESS PER CAD GEOMETRY, TOLERANCE = +0.25-IN / -0.0-IN.
- PARTING LINE EDGES, FLASH, GATES, RUNNER, AND RISER EXTENSIONS 0.25-IN MAX
- UNLESS OTHERWISE SPECIFIED, MACHINED SURFACE PROFILE TOLERANCE = +/- 0.02-IN.
- BACK SPOTFACE ALL THRU HOLES MINIMUM TO CLEAN UP.
- SEE LATEST REVISION OF SPECIFICATION NCSX-CSPEC-141-03 FOR ADDITIONAL REQUIREMENTS.

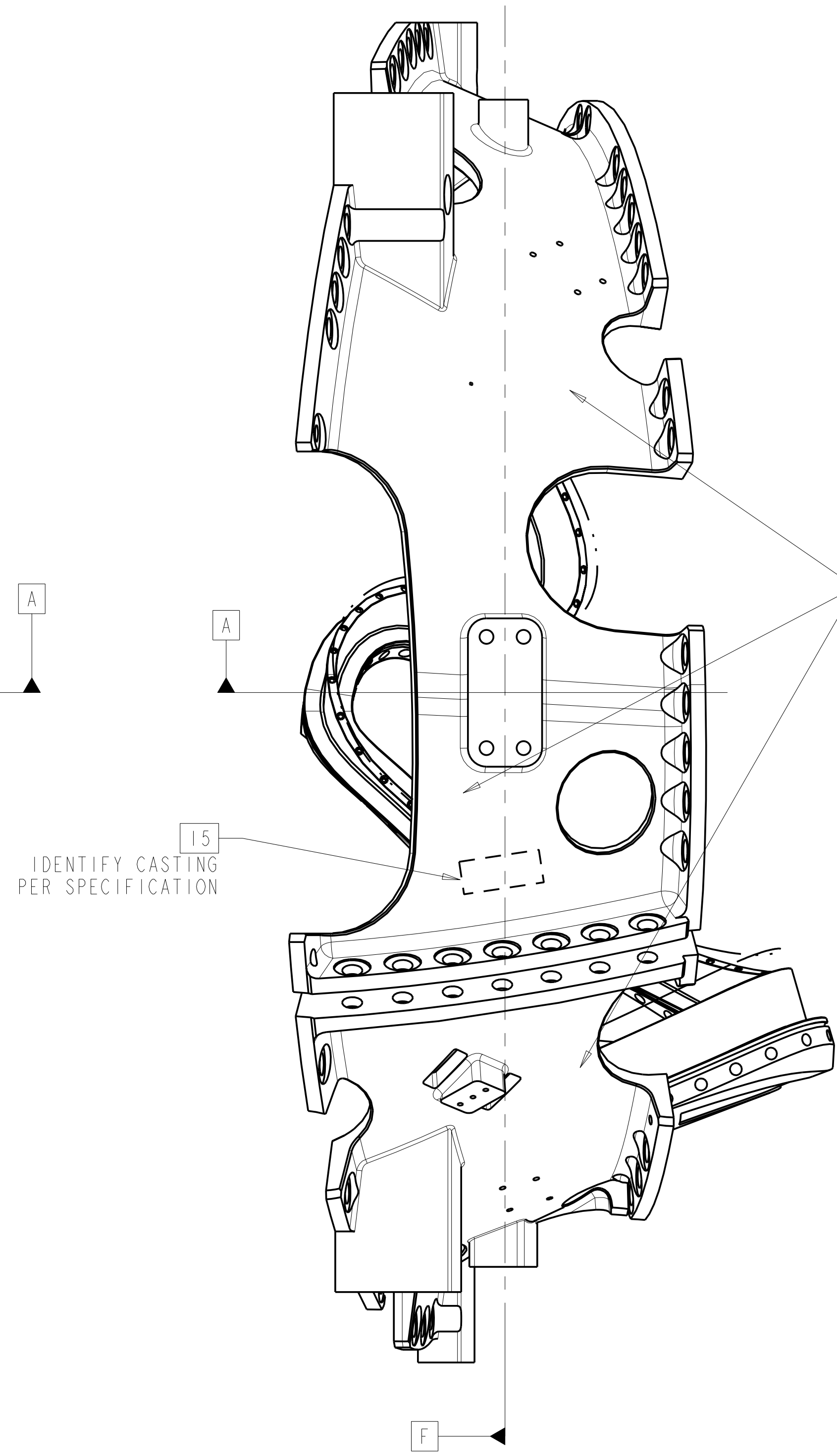


ISOMETRIC VIEW



DATUM PLANE A = PLANE THRU "XY"
 DATUM PLANE B = PLANE THRU "YZ"
 DATUM PLANE C = PLANE THRU "XZ"

SCALE 0.13



RELEASED FOR FABRICATION / INSTALLATION
 PPPL Drafting:

REV	DESCRIPTION	BY	DATE	CHK	DEPT	DATE	PE	REQ	DATE	ORNL	DOE	DATE

SCALE NOTED	DES T BROWN 6-30-04	DRW PAUL MILLER 6-30-04	CHK M COLE 6-30-04	SECT :	DEPT :	PE D WILLIAMSON 6/25/04	CR :	PJ :	REO :	PPPL DRFT J SIEGEL 6/25/04	VERSION NO. 27	PLANT X-10	BLDG 5700	FL 3	SHT OF 12	TYPE S	CLASS U
TOLERANCES UNLESS OTHERWISE SPECIFIED	NATIONAL COMPACT STELLARATOR EXPERIMENT			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													
FRACTIONS ± .01	PRODUCTION WINDING FORM TYPE-B			RELEASE LEVEL Fabrication													
XX DECIMALS ± .005	PARTS LIST			SEE NOTE #15													
XXX DECIMALS ± .0015	NEXT ASSEMBLY			SEE NOTE #15													
ANGLES ± 0°15'	NEXT ASSEMBLY			SEE NOTE #15													
BREAK SHARP EDGES 06 MAX	NEXT ASSEMBLY			SEE NOTE #15													
FINISH .125 UNLESS OTHERWISE SPECIFIED	NEXT ASSEMBLY			SEE NOTE #15													

NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, IS MADE AS TO THE ACCURACY, COMPLETENESS OR USEFULNESS OF THE INFORMATION OR STATEMENTS CONTAINED IN THESE DRAWINGS, OR THAT THE USE OR DISCLOSURE OF ANY INFORMATION, APPARATUS, METHOD OR PROCESS DISCLOSED IN THESE DRAWINGS MAY NOT INFRINGE PRIVATE RIGHTS OF OTHERS. NO LIABILITY IS ASSUMED WITH RESPECT TO THE USE OF, OR FOR DAMAGES RESULTING FROM THE USE OF, ANY INFORMATION, APPARATUS, METHOD OR PROCESS DISCLOSED IN THESE DRAWINGS. DRAWINGS MADE AVAILABLE FOR INFORMATION TO BIDDER ARE NOT TO BE USED FOR OTHER PURPOSES, AND ARE TO BE RETURNED UPON REQUEST OF THE FORWARDING CONTRACTOR.

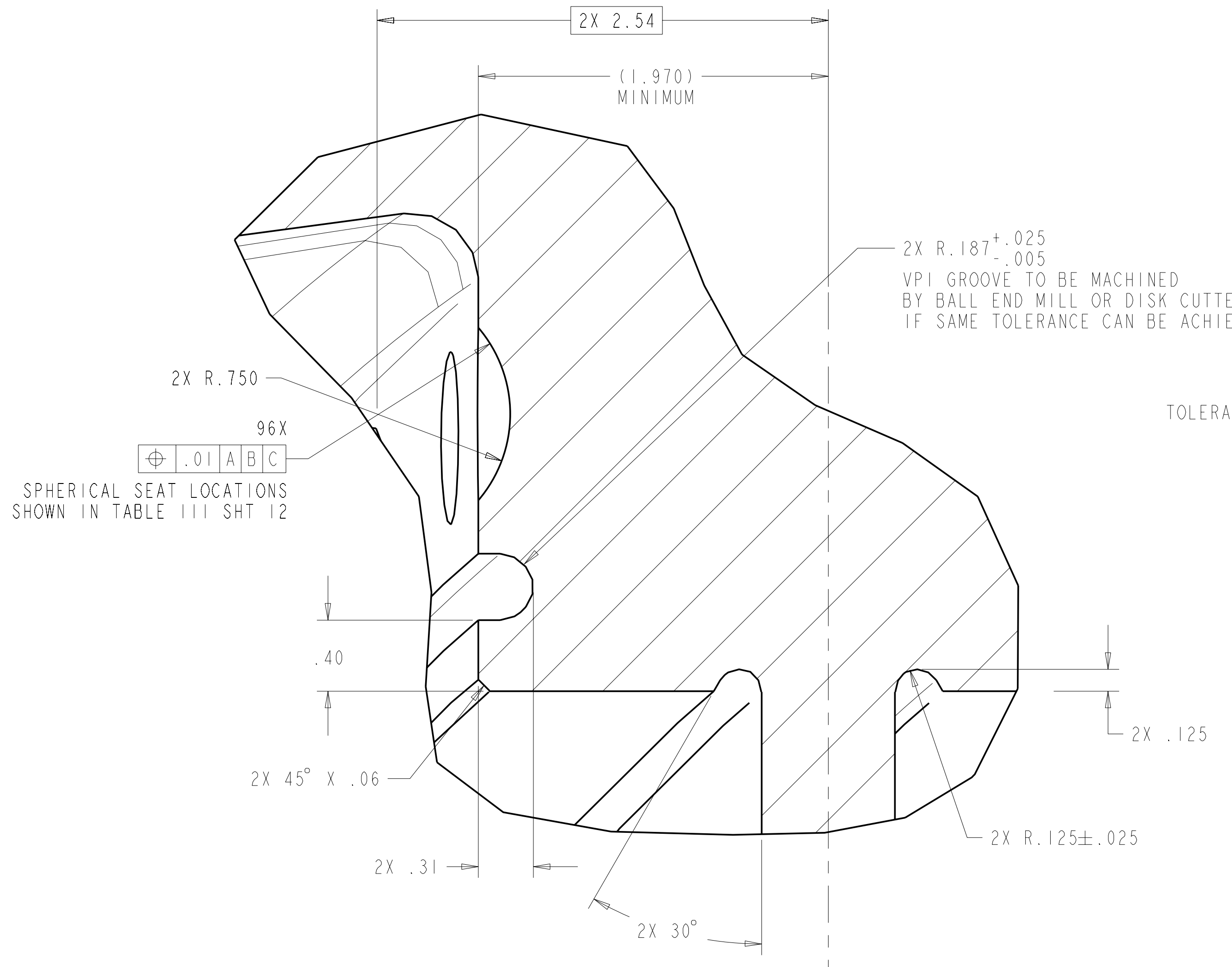
P THIS DRAWING PRODUCED ON PRO-ENGINEER

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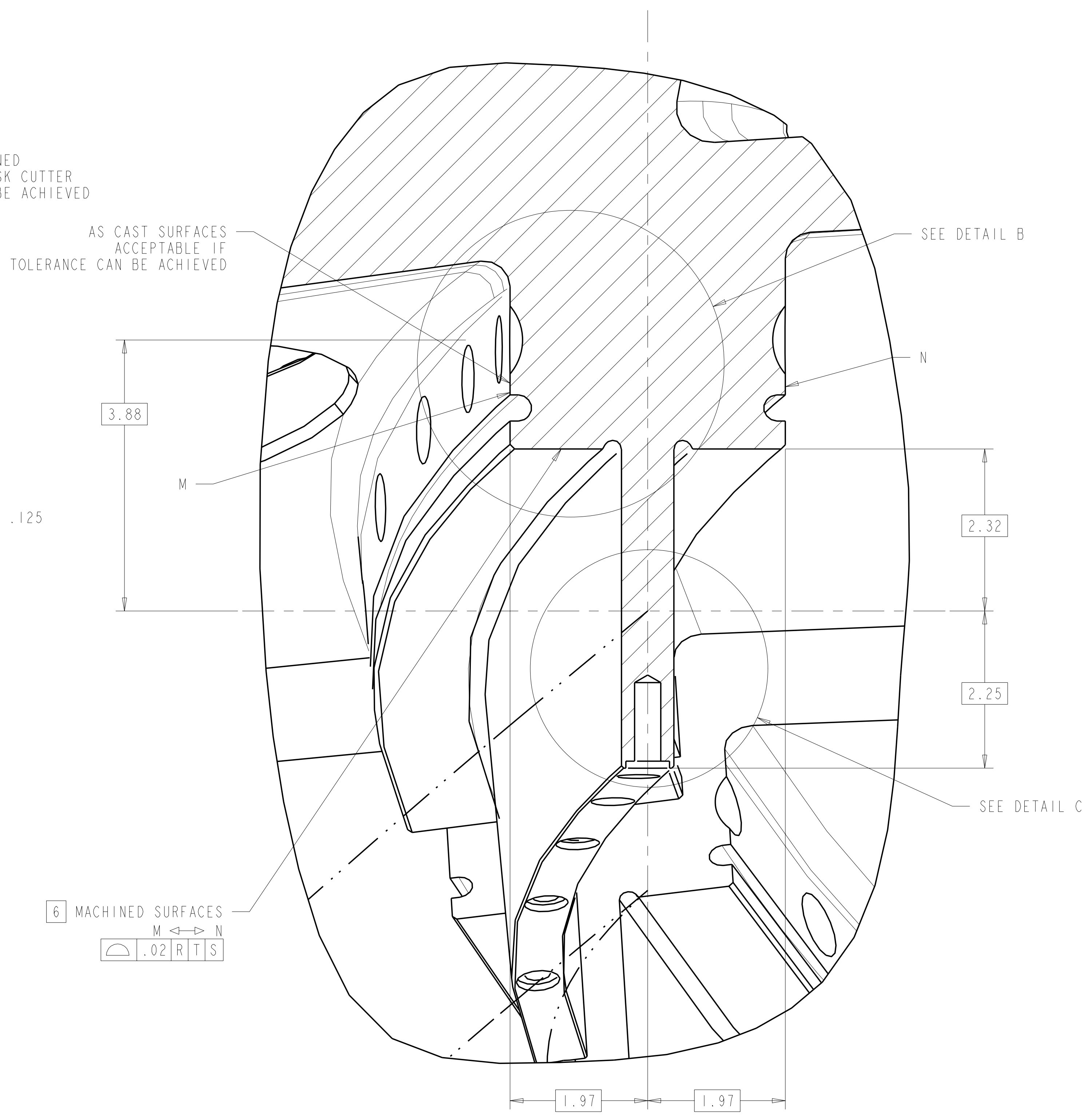
SEI41-115

A

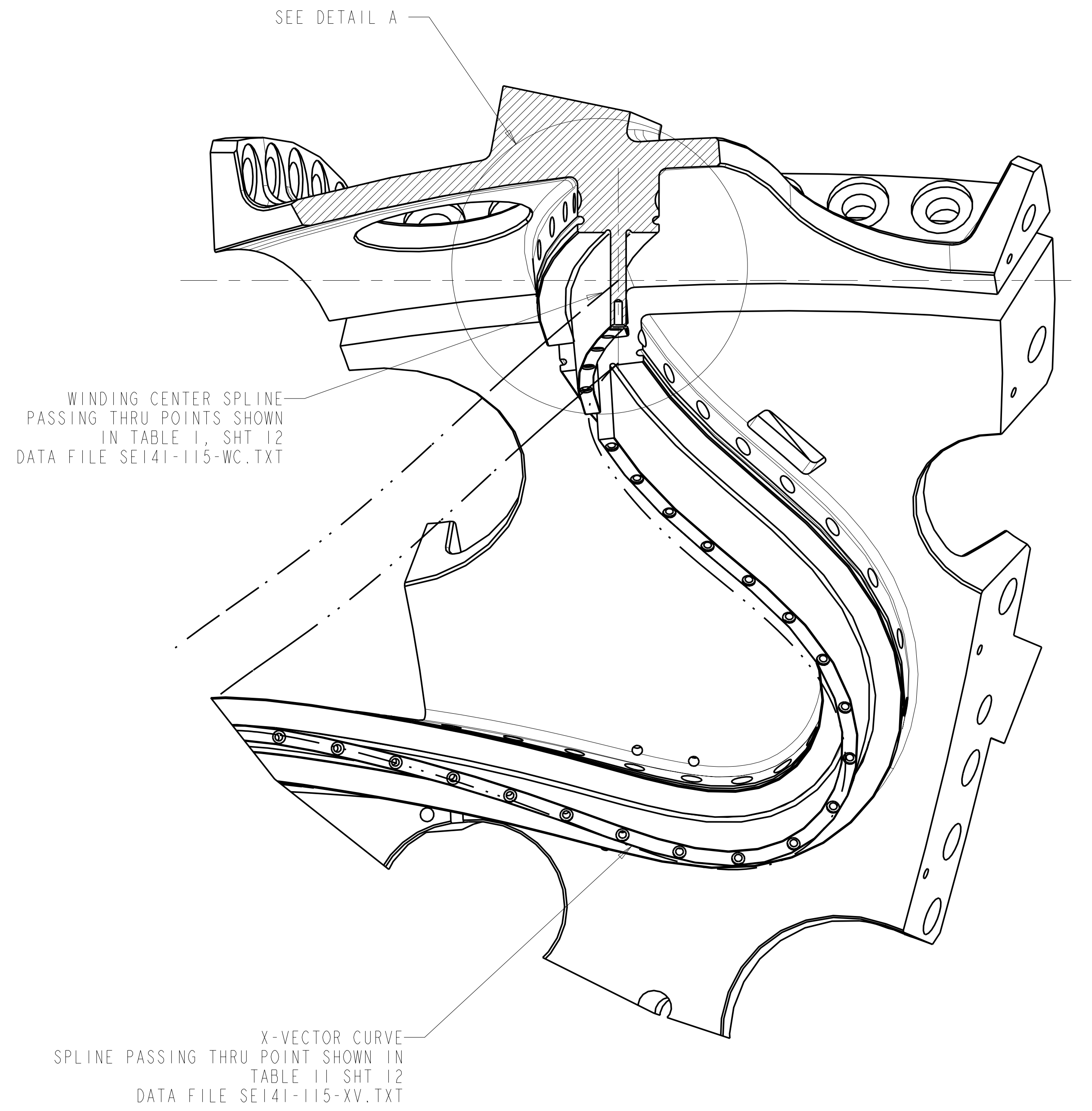
FOR NOTES AND PARTS LIST SEE SHEET 1



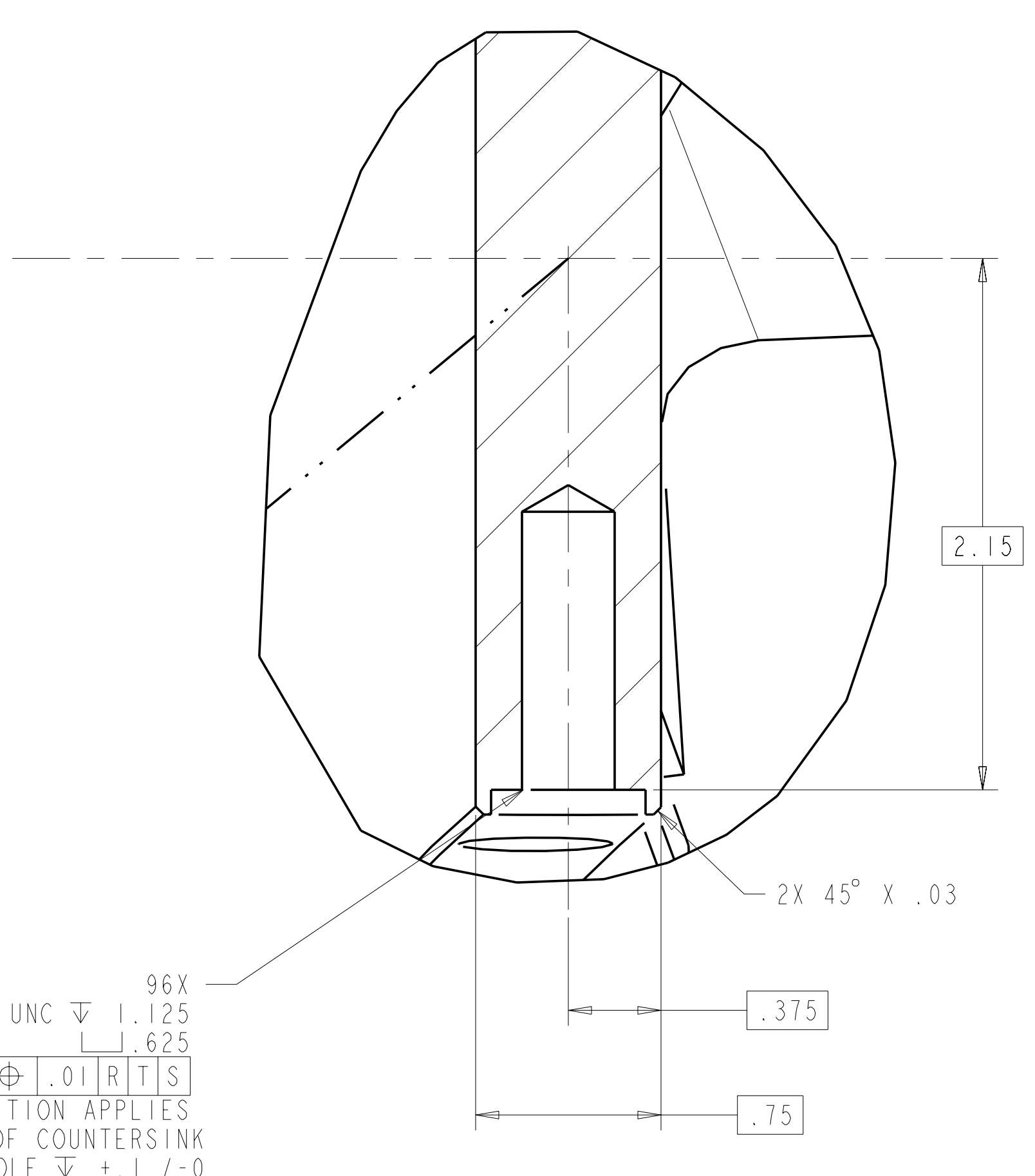
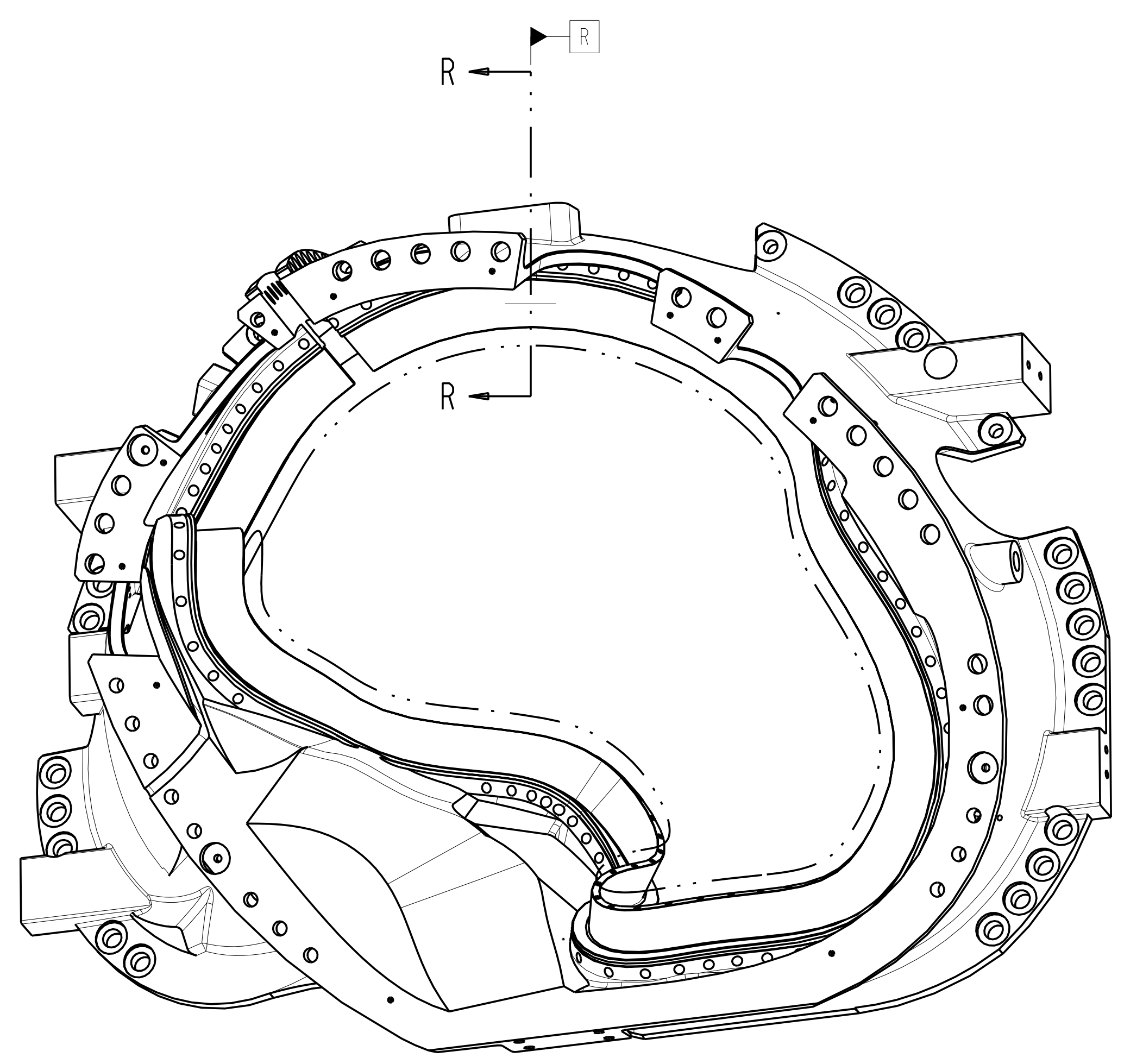
DETAIL B
SCALE 2.00



DETAIL A
SCALE 1.00
TYPICAL FOR ALL POINTS ALONG WINDING CENTER



SECTION R-R
SCALE 0.25



DETAIL C
SCALE 2.00

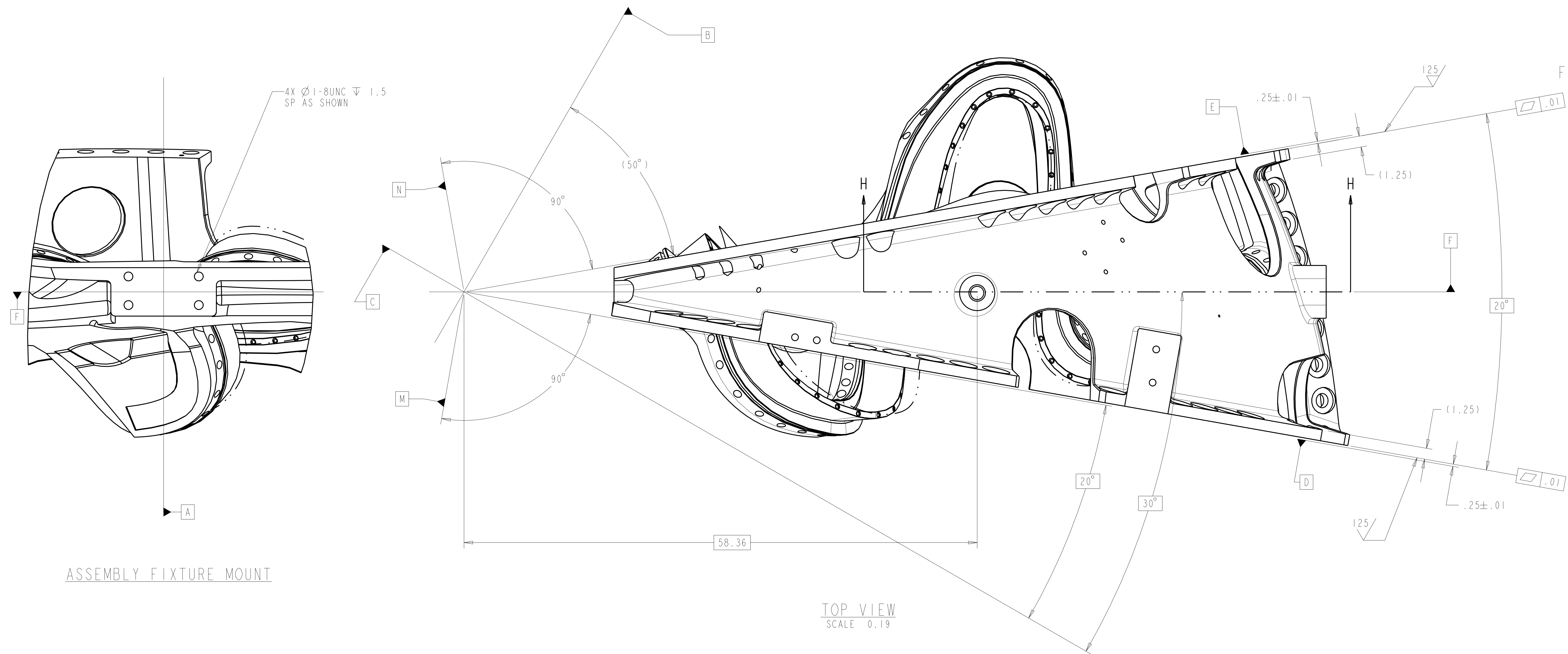
RELEASED FOR FABRICATION / INSTALLATION
PPPL Drafting:

DATUM R = PLANE NORMAL TO WINDING CENTER
DATUM S = PLANE PASSING THRU WINDING CENTER AND X VECTOR AT DATUM R
DATUM T = PLANE PASSING THRU WINDING CENTER ORTHOGONAL TO DATUM S

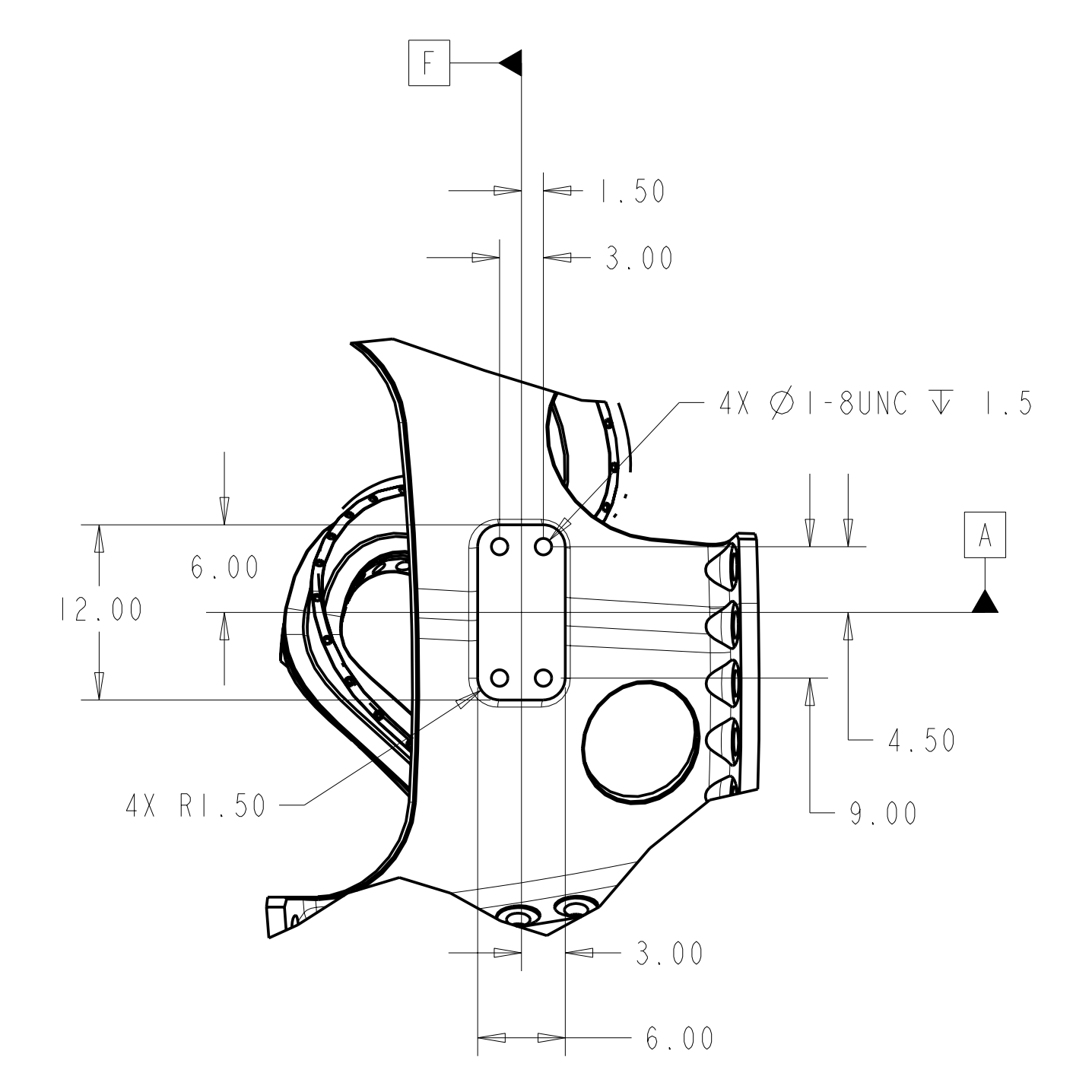
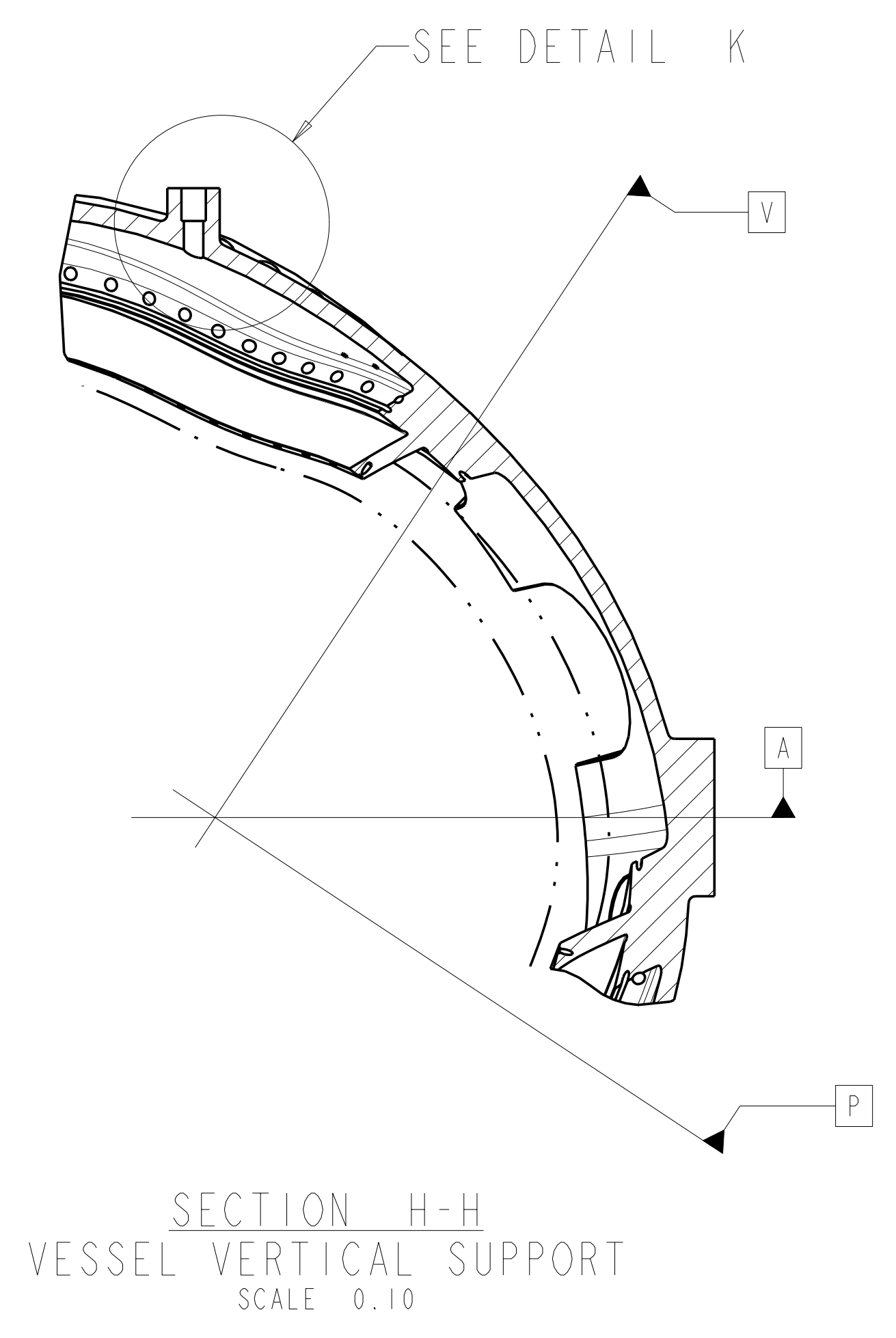
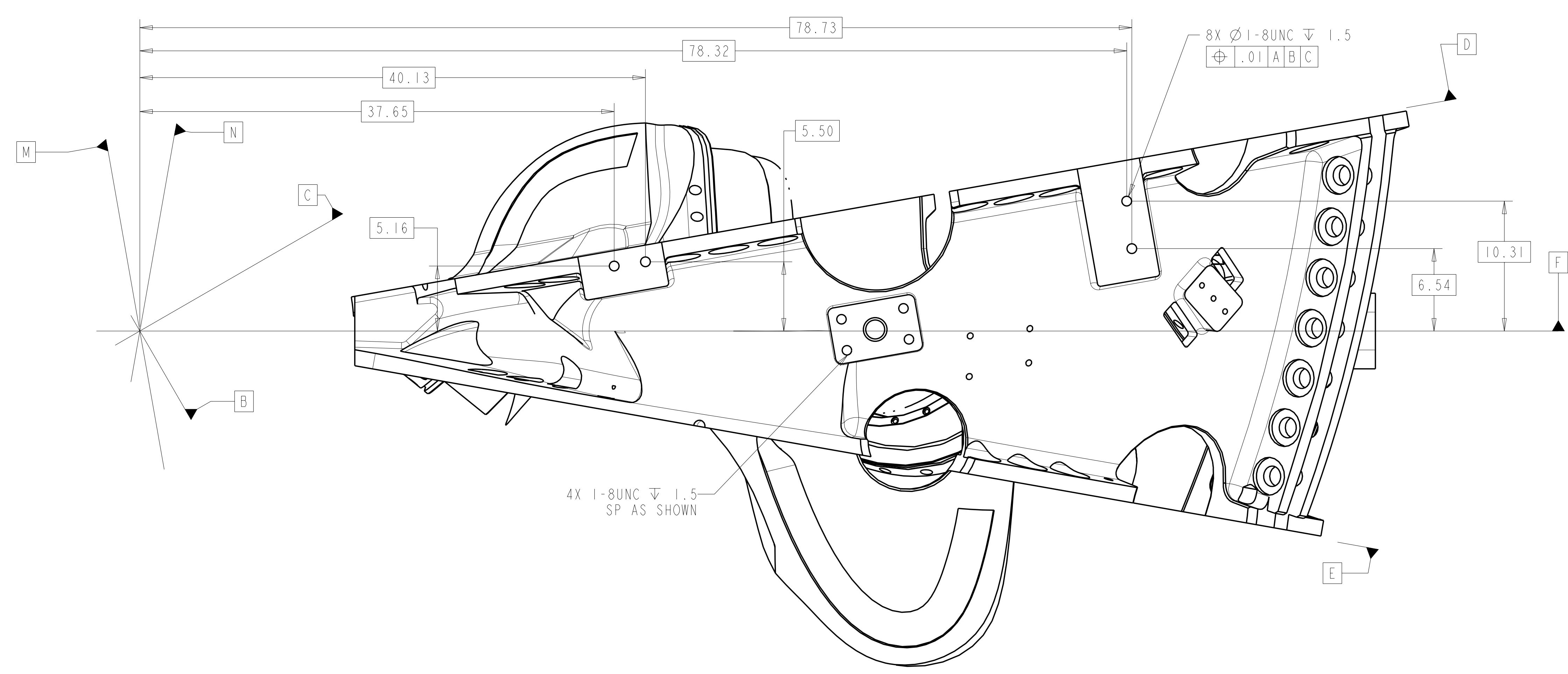
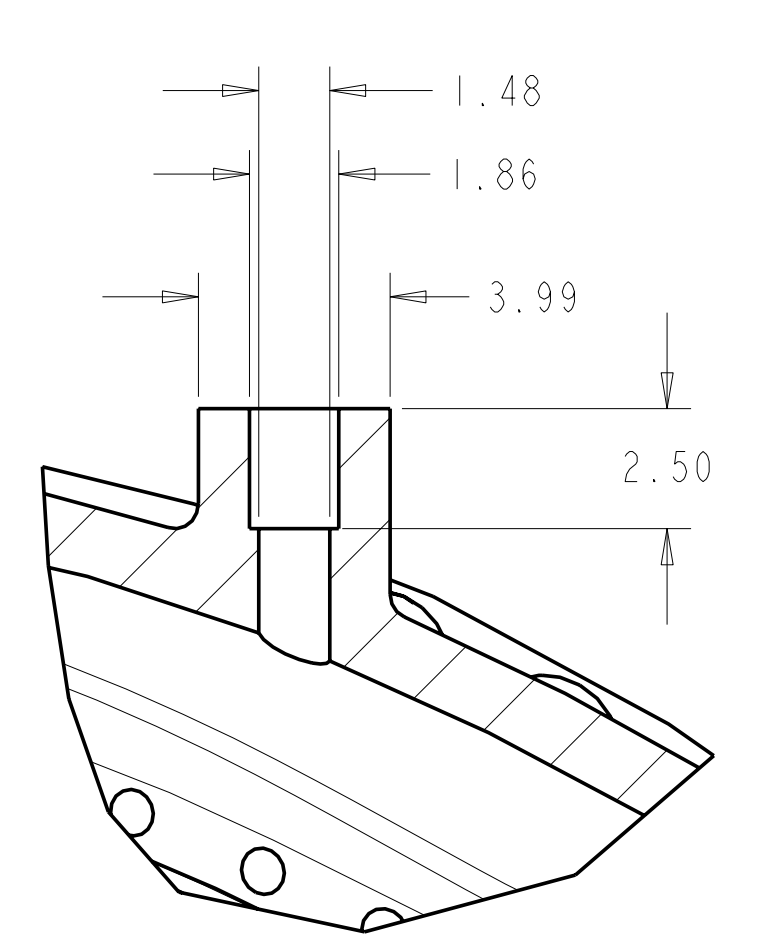
Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee PROJECT NAME NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING FORM TYPE-B							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
27	X-10	5700	3	2	12	S	U
RELEASE LEVEL		SE141-115				REV 0	
Fabrication							

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FOR NOTES AND PARTS LIST SEE SHEET I



ASSEMBLY FIXTURE MOUNT

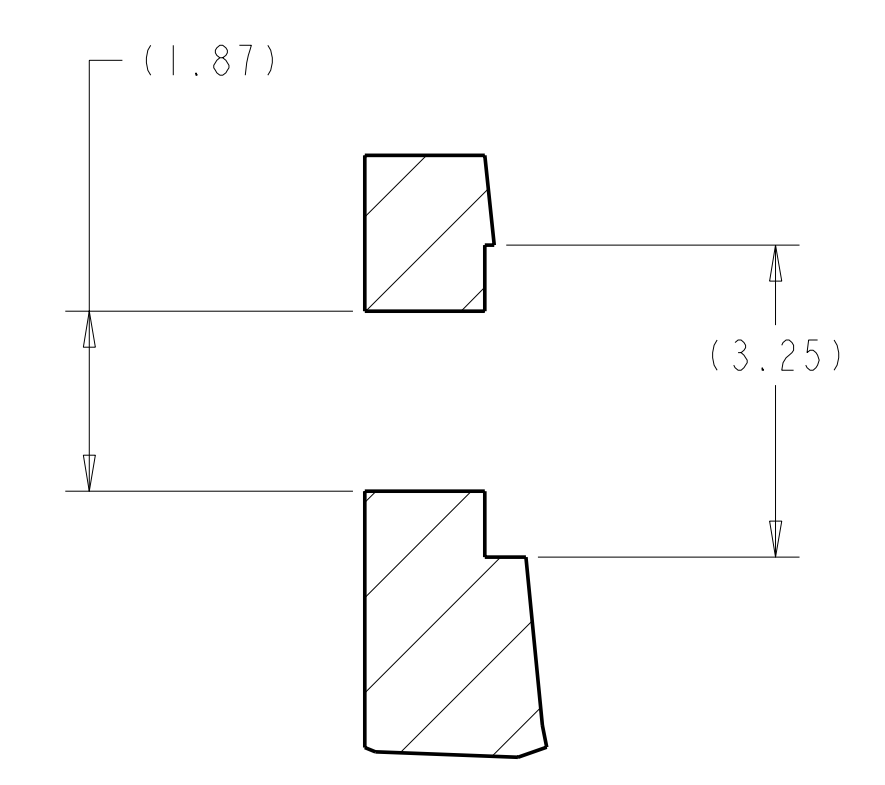
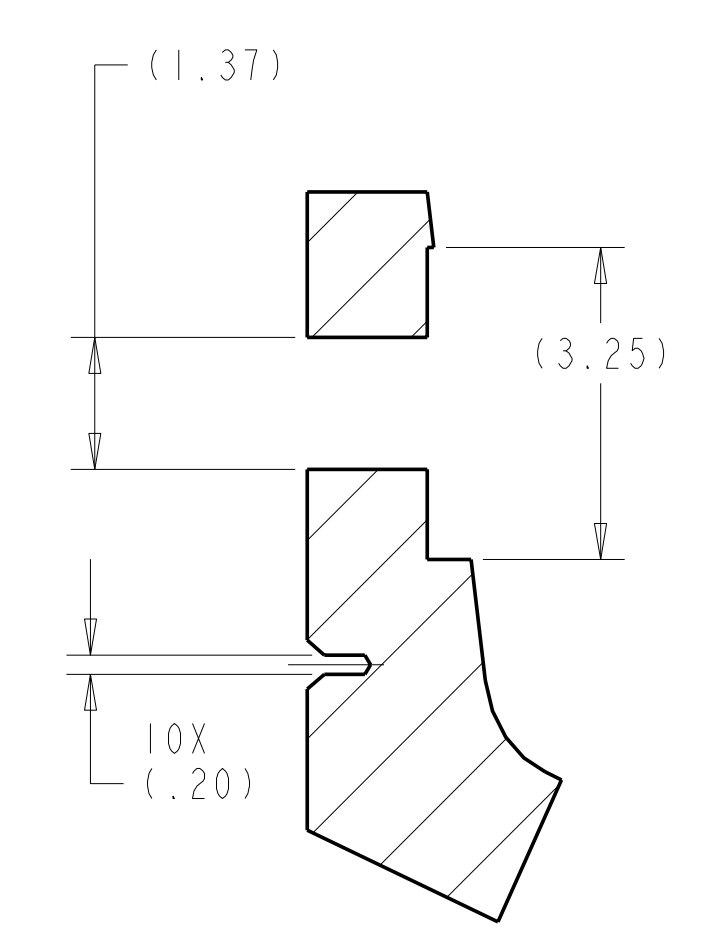
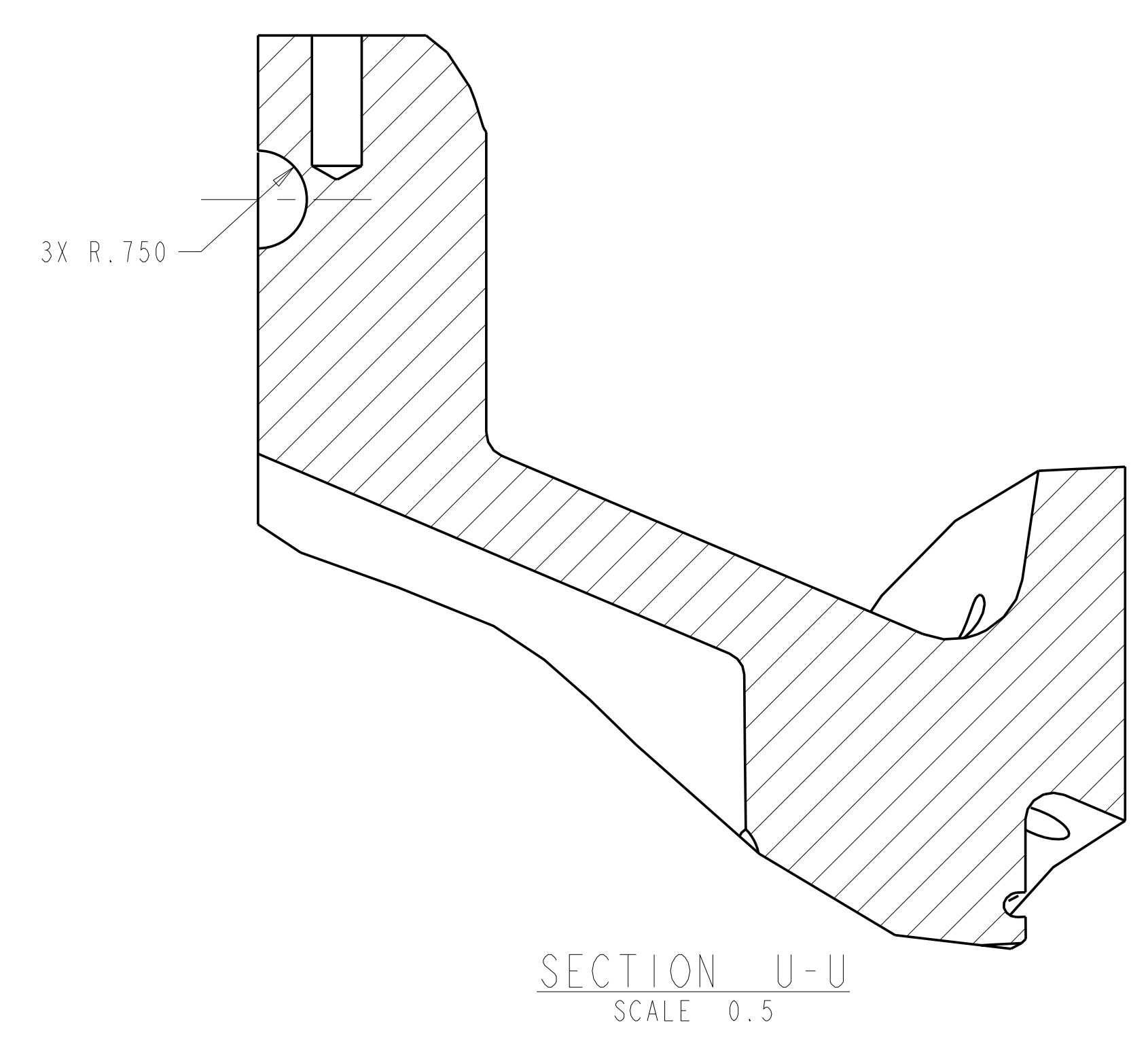
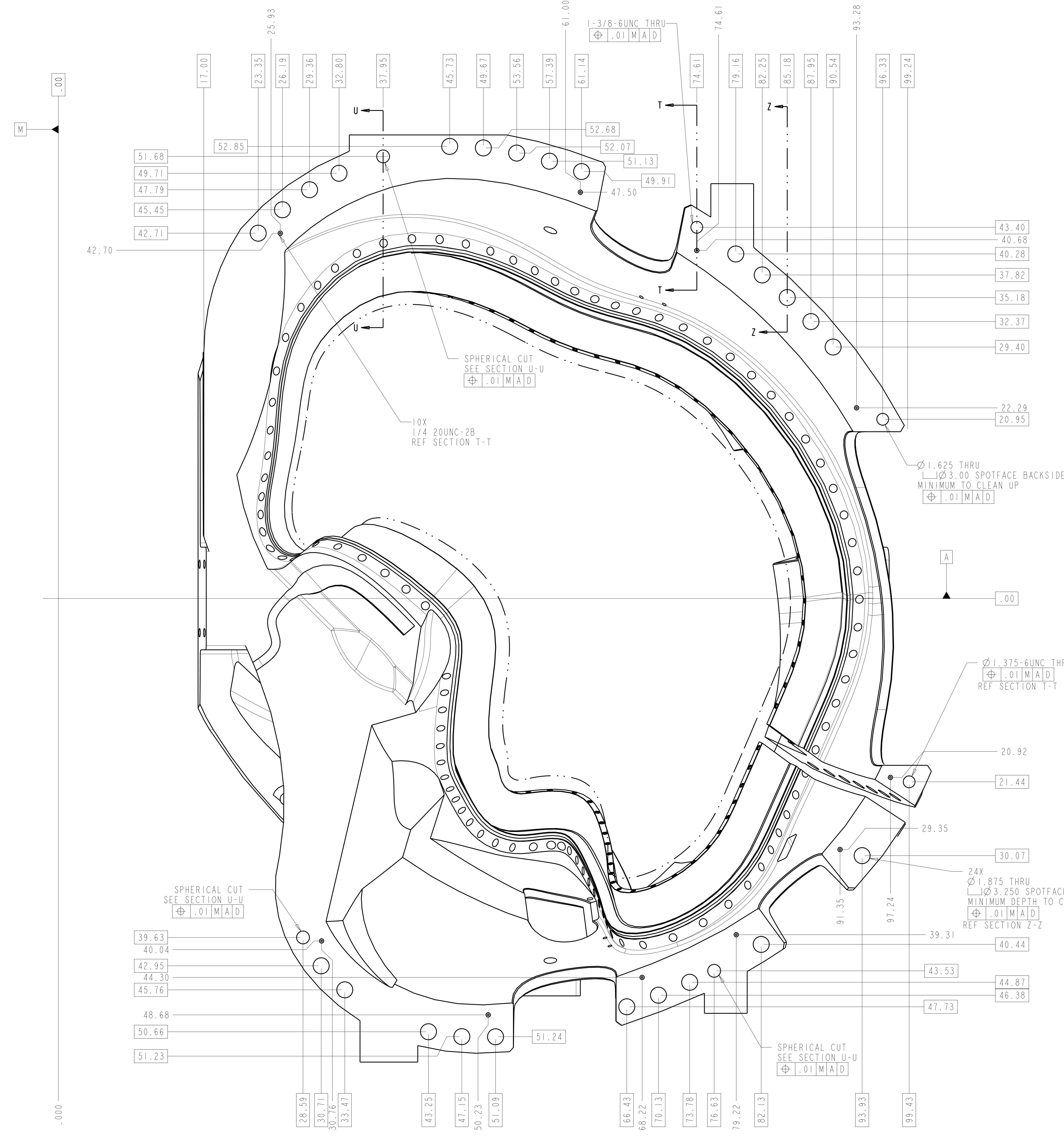


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Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee PROJECT NAME:						
UT-BATTELLE NATIONAL COMPACT STELLARATOR EXPERIMENT						
PRODUCTION WINDING FORM TYPE-B						
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS
27	X-10	5700	3	3	12	S U
RELEASE LEVEL	SEI41-115					REV
Fabrication						0

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FOR NOTES AND PARTS LIST SEE SHEET I



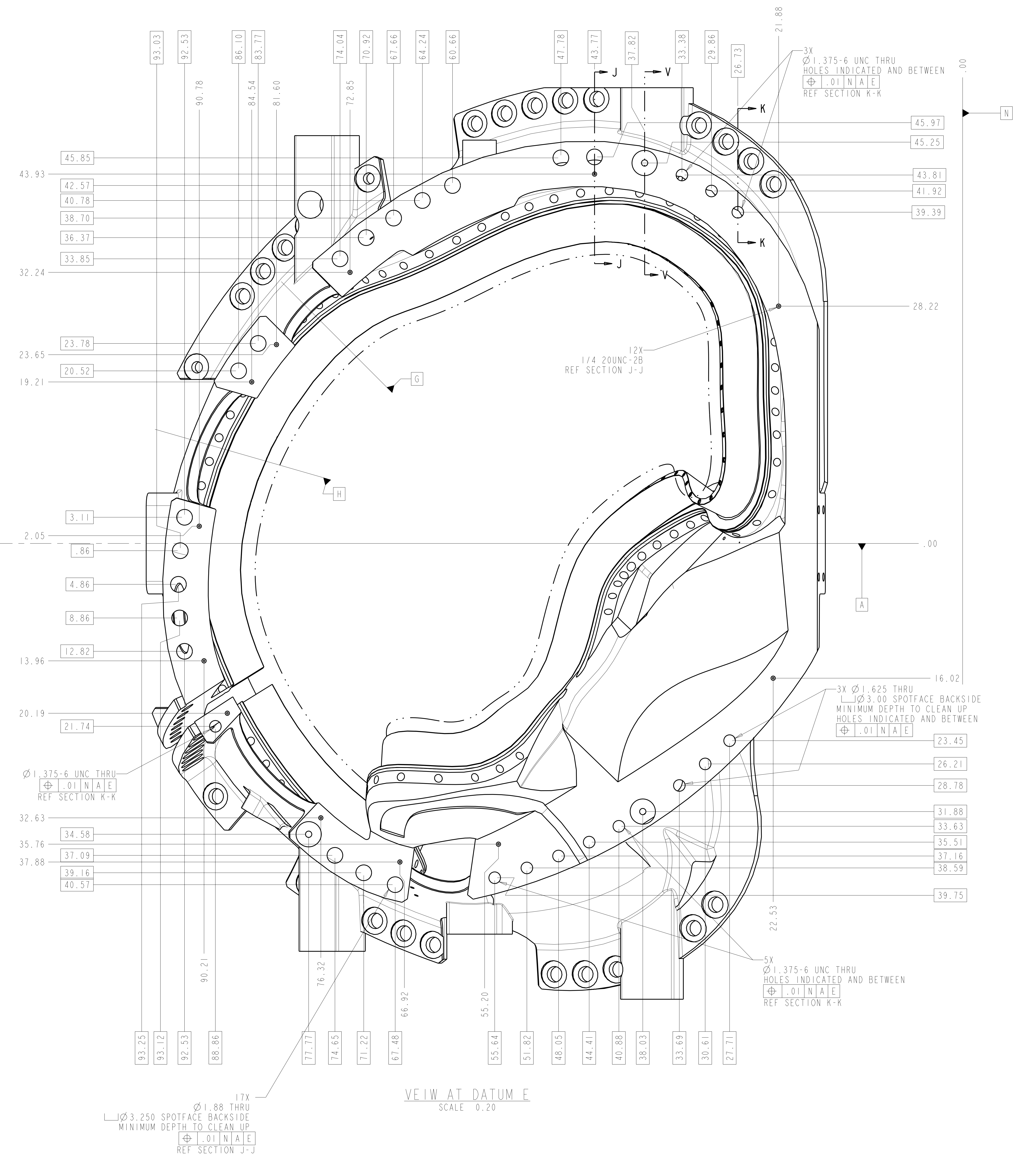
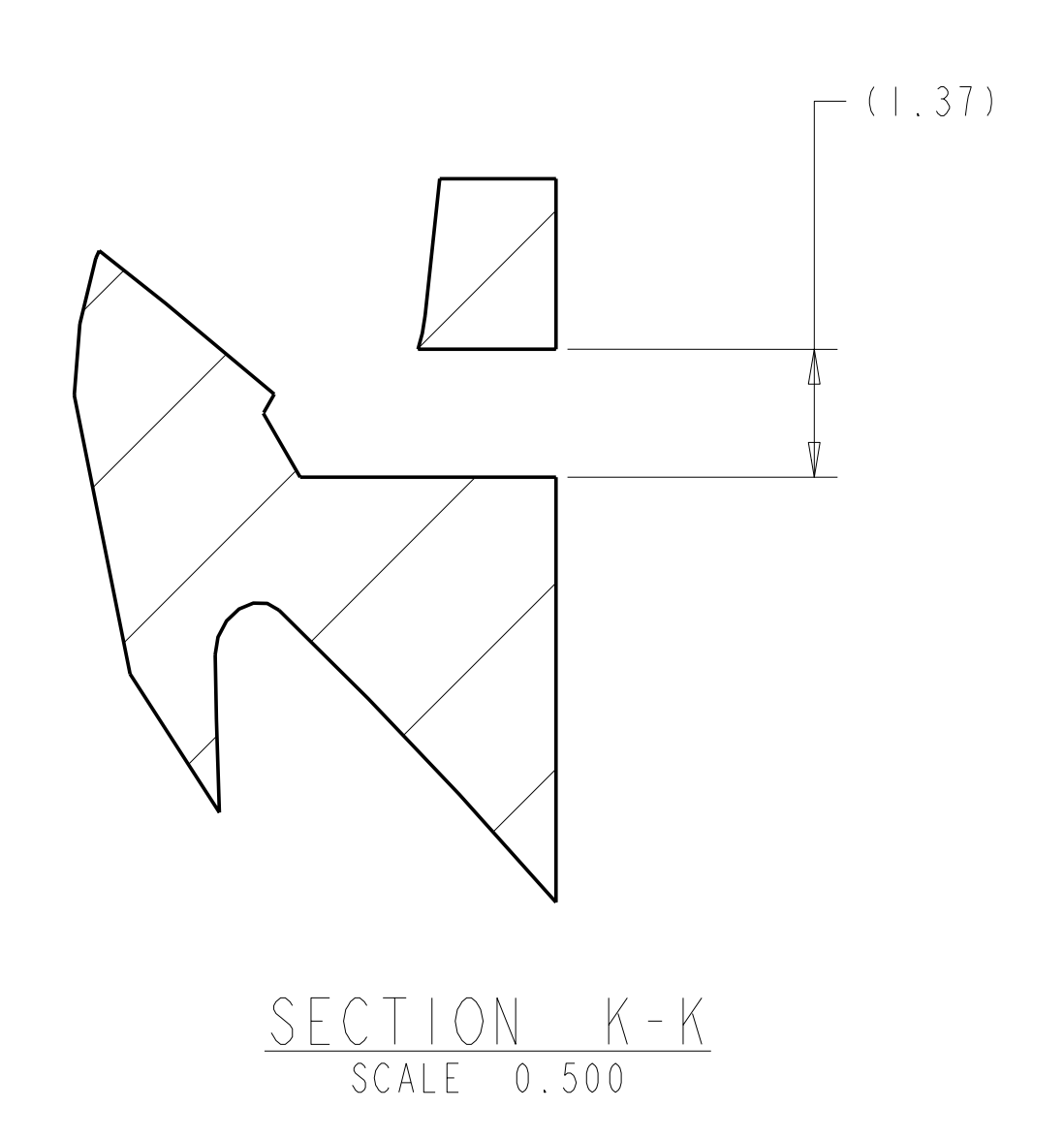
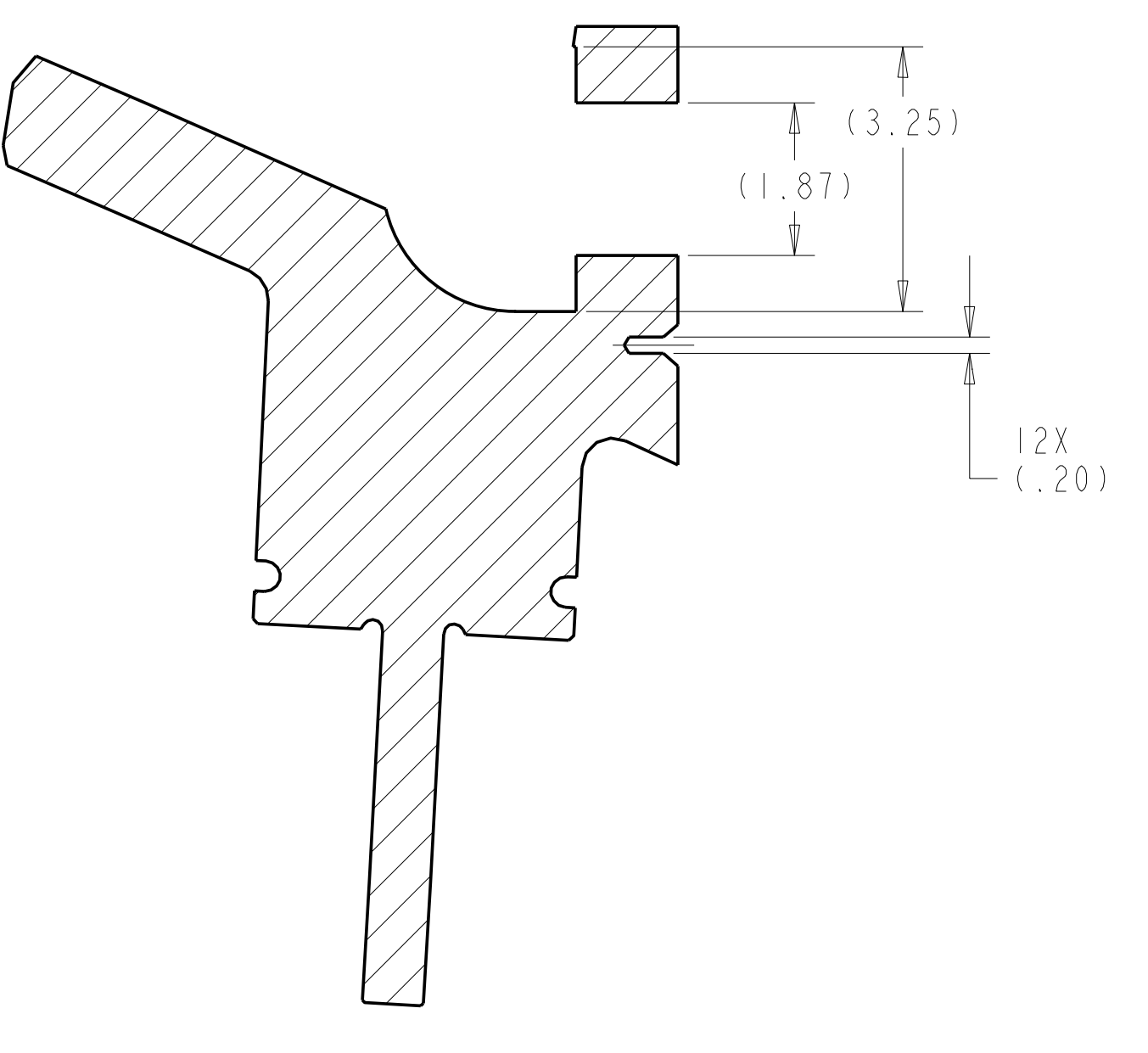
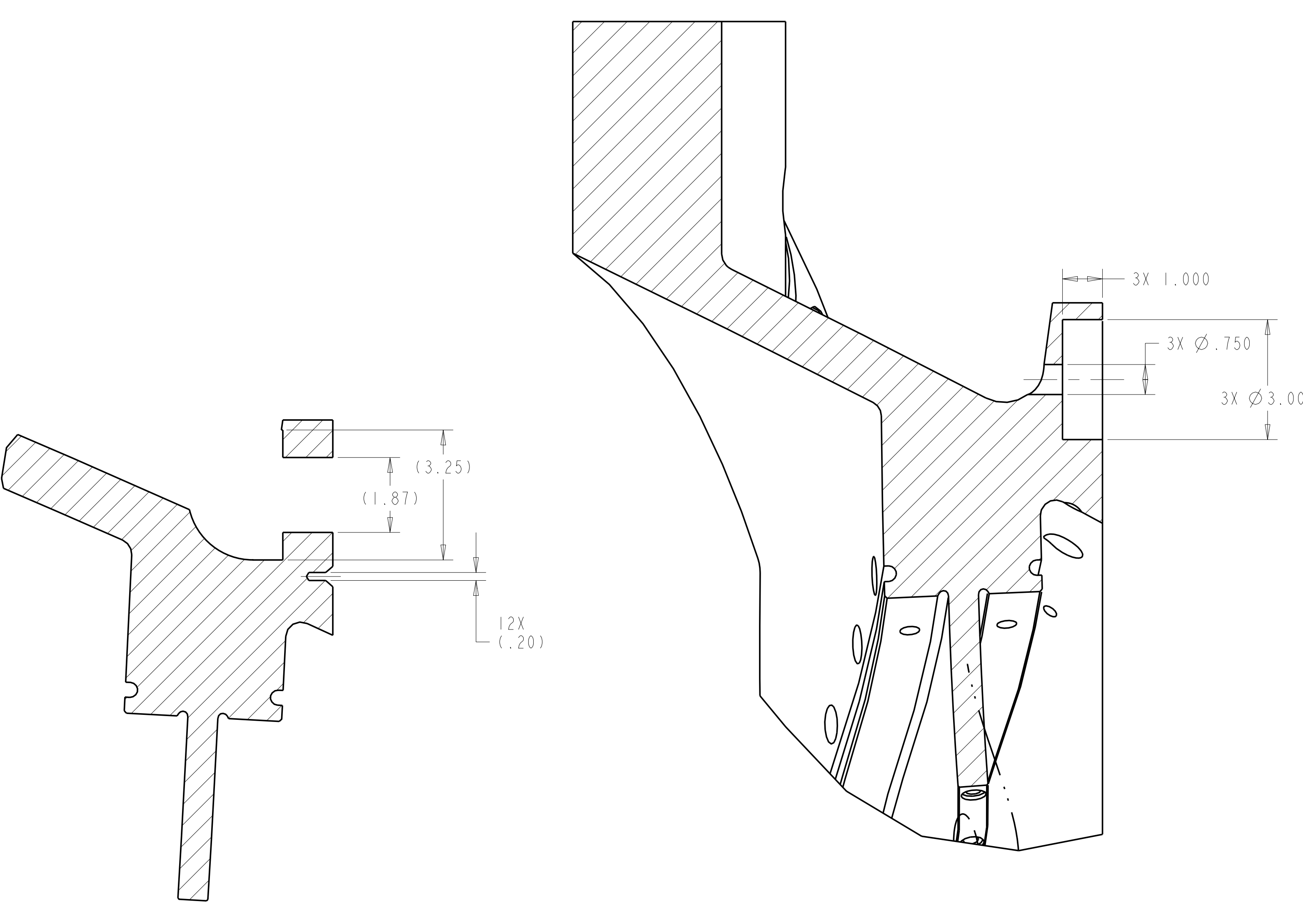
VIEW AT DATUM D
SCALE 0.20

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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					
NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING FORM TYPE-B							
VERSION NO. 27	PLANT X-10	BLDG 5700	FL 3	SHT OF 4	TYPE 12 S	CLASS U	
RELEASE LEVEL Fabrication		SEI41-115			REV 0		

SEI41-115

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**RELEASED FOR
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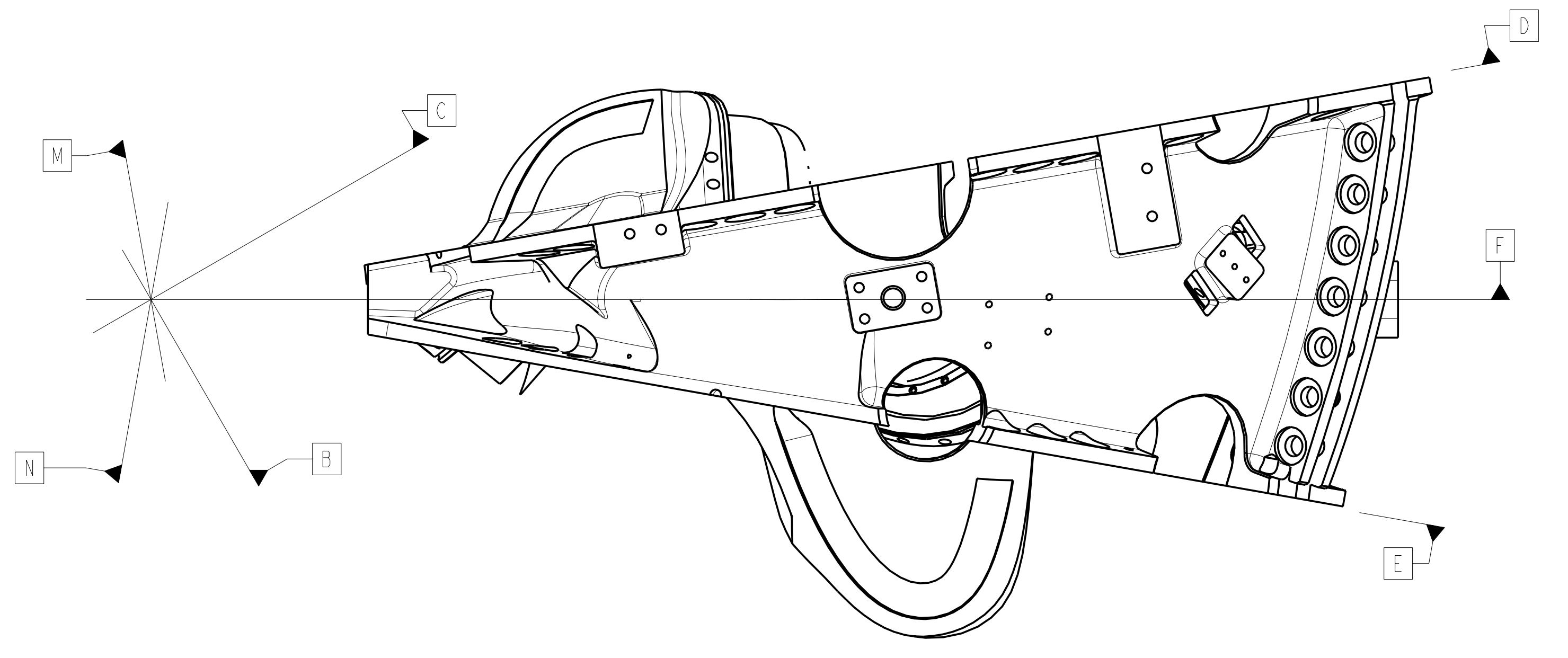
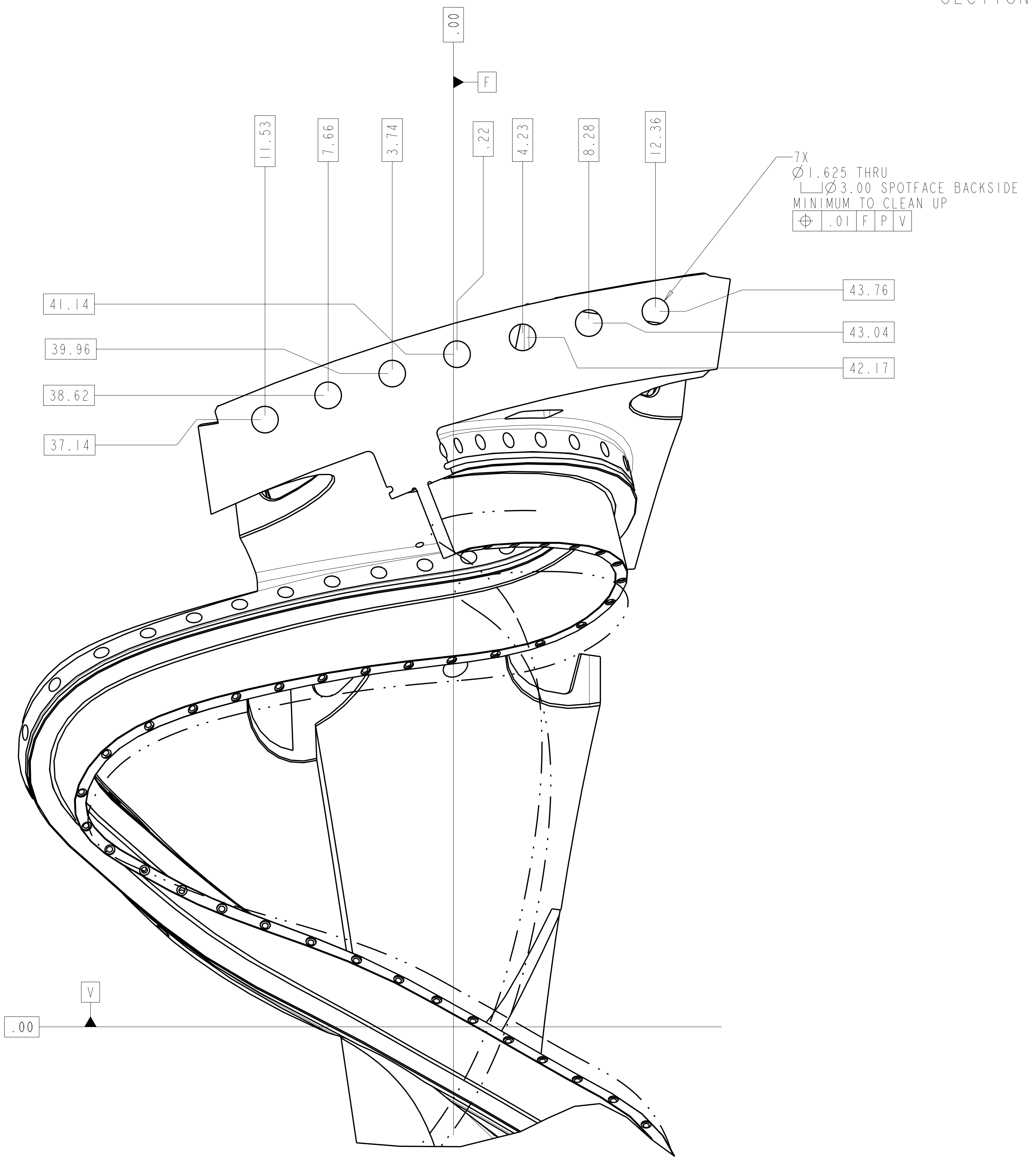
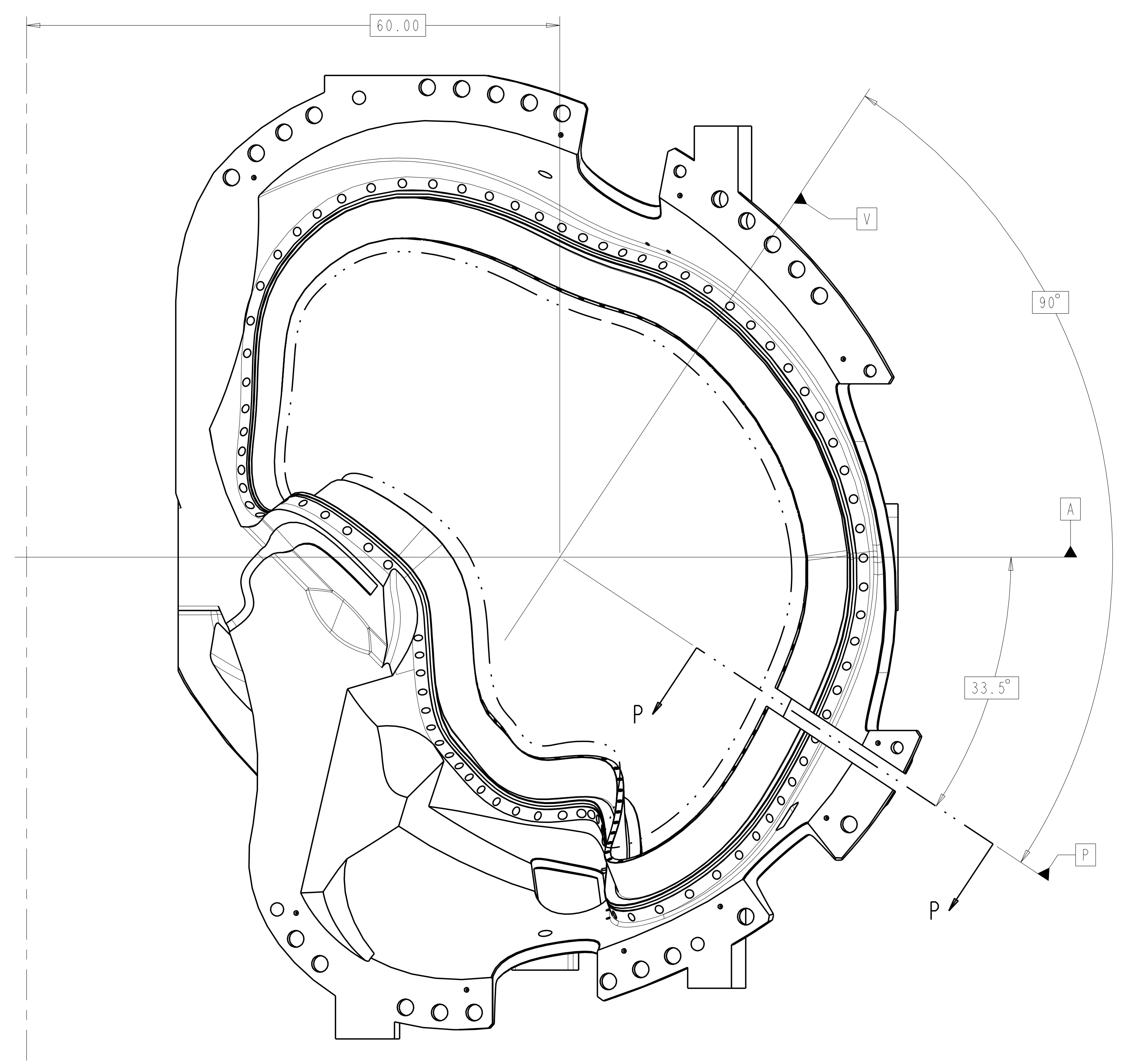
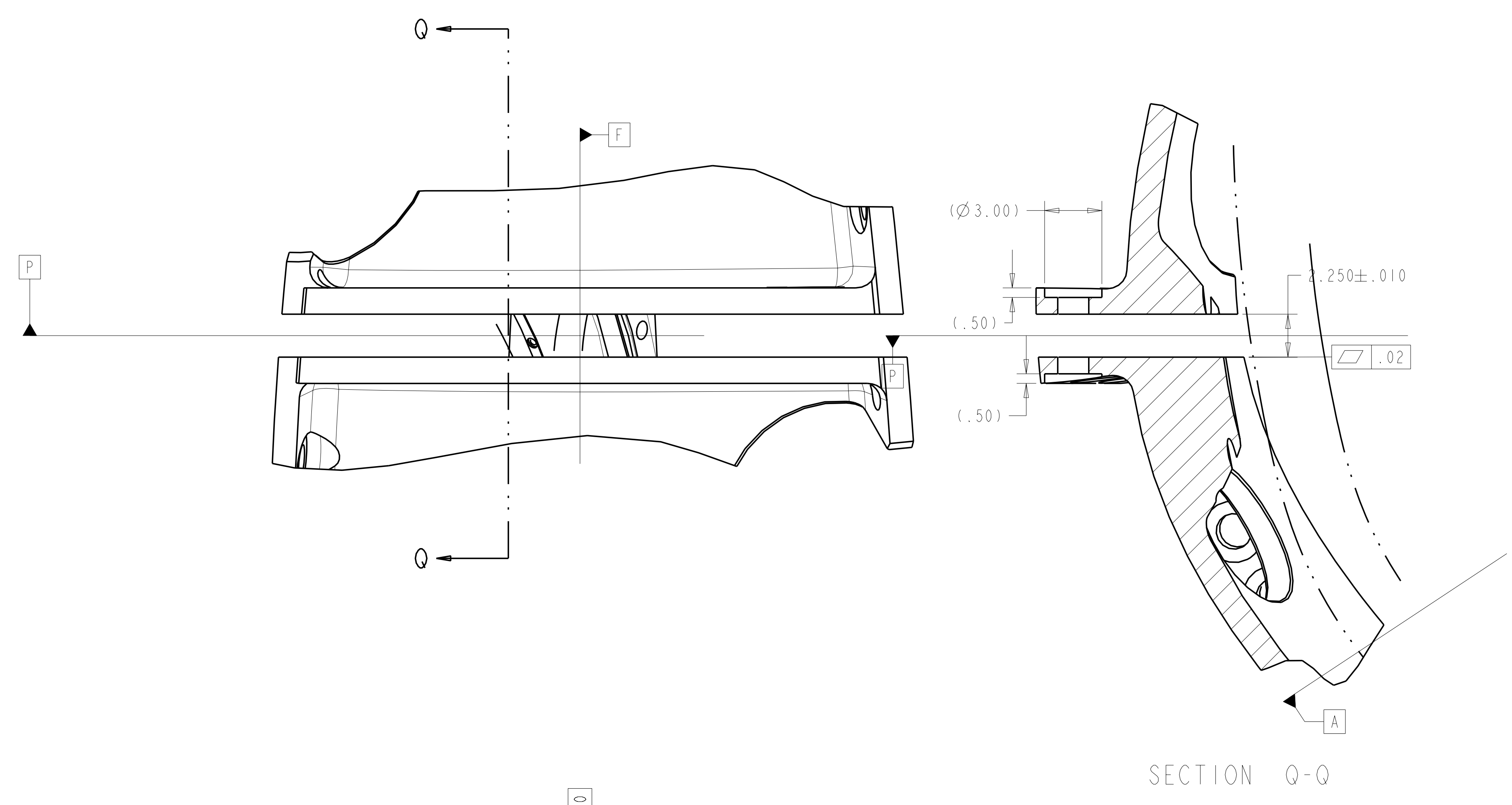
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Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC. Oak Ridge, Tennessee PROJECT NAME:							
UT-BATTELLE NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING FORM TYPE-B							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
27	X-10	5700	3	5	12	S	U
RELEASE LEVEL		SEI41-115					
Fabrication							
							REV 0

SEI41-115

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FOR NOTES AND PARTS LIST SEE SHEET 1

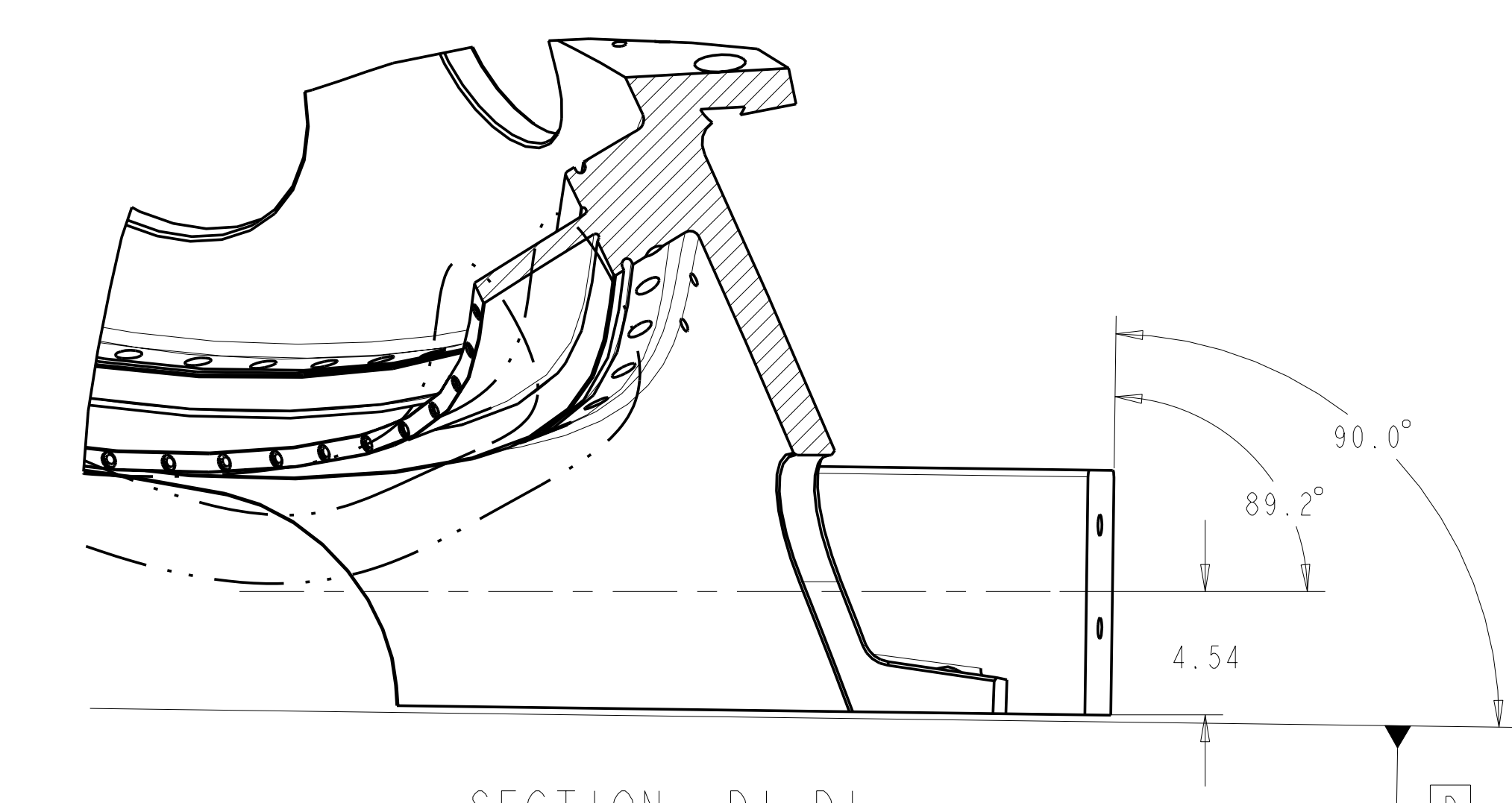


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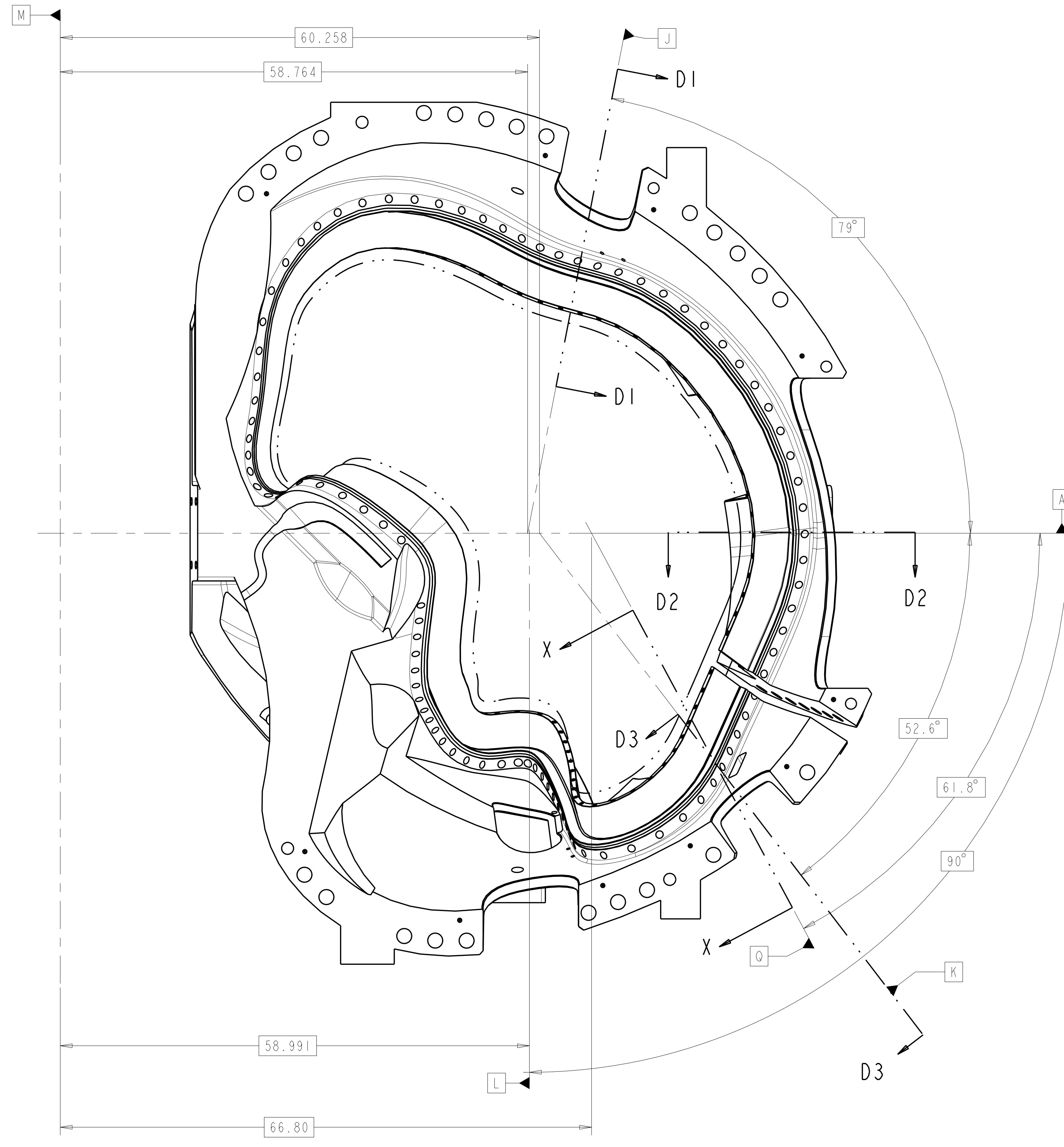
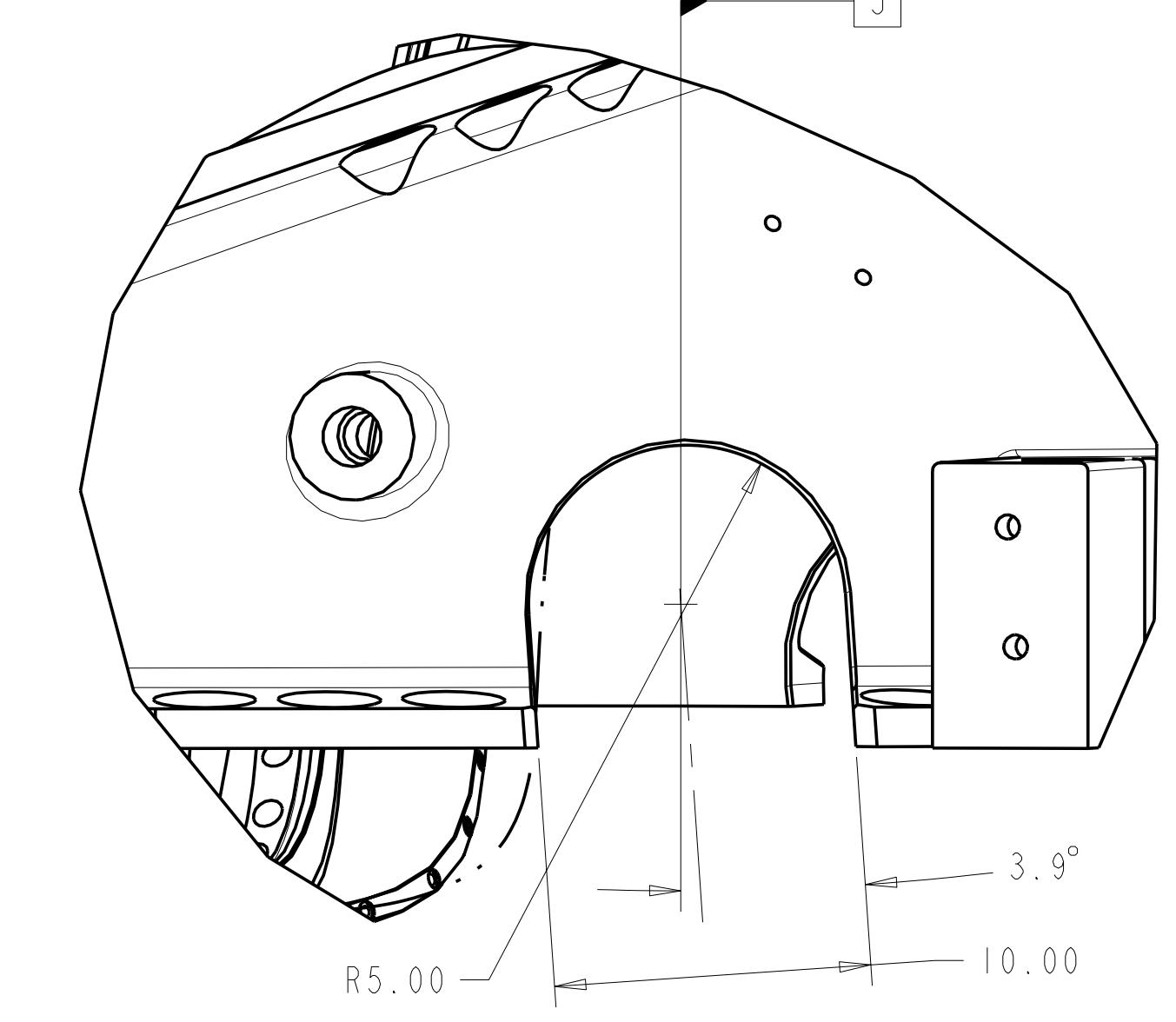
UT-BATTELLE		Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee	
PROJECT NAME NATIONAL COMPACT STELLARATOR EXPERIMENT			
PRODUCTION WINDING FORM TYPE-B			
VERSION NO. 27	PLANT X-10	BLDG 5700	FL SHT OF TYPE CLASS 3 6 12 S U
RELEASE LEVEL Fabrication	SEI41-115		REV 0

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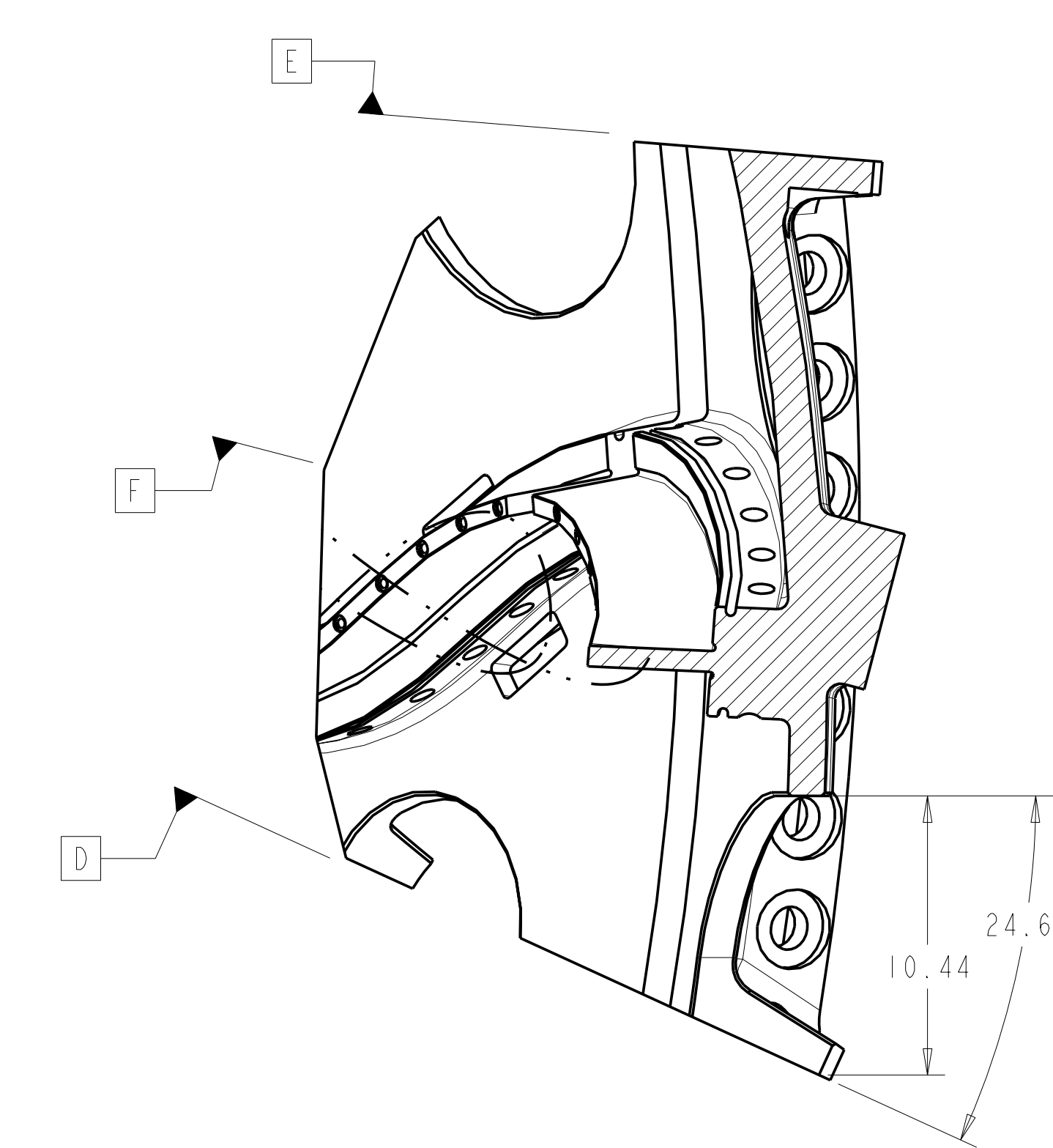
FOR NOTES AND PARTS LIST SEE SHEET 1



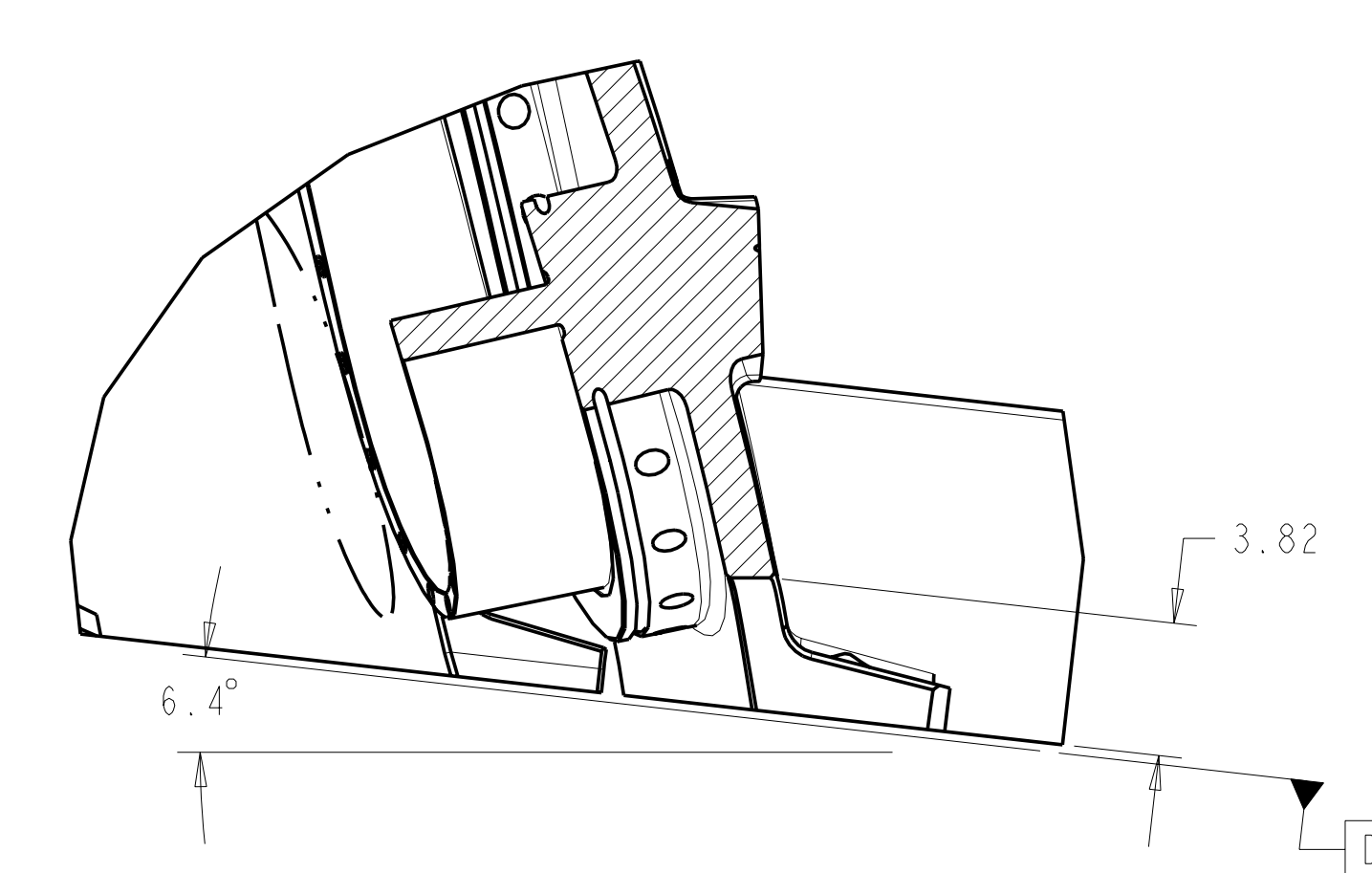
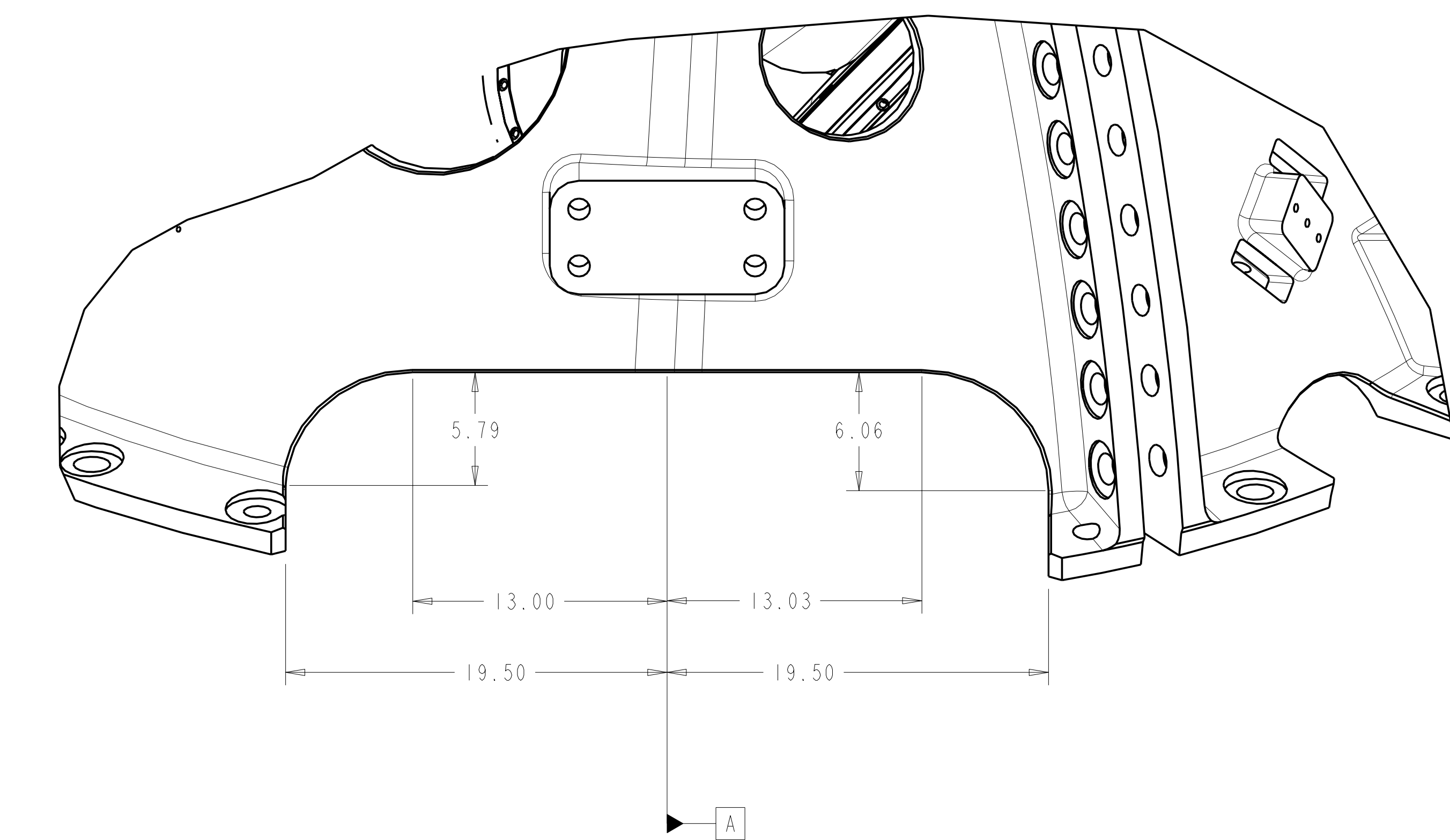
SECTION D1-D1
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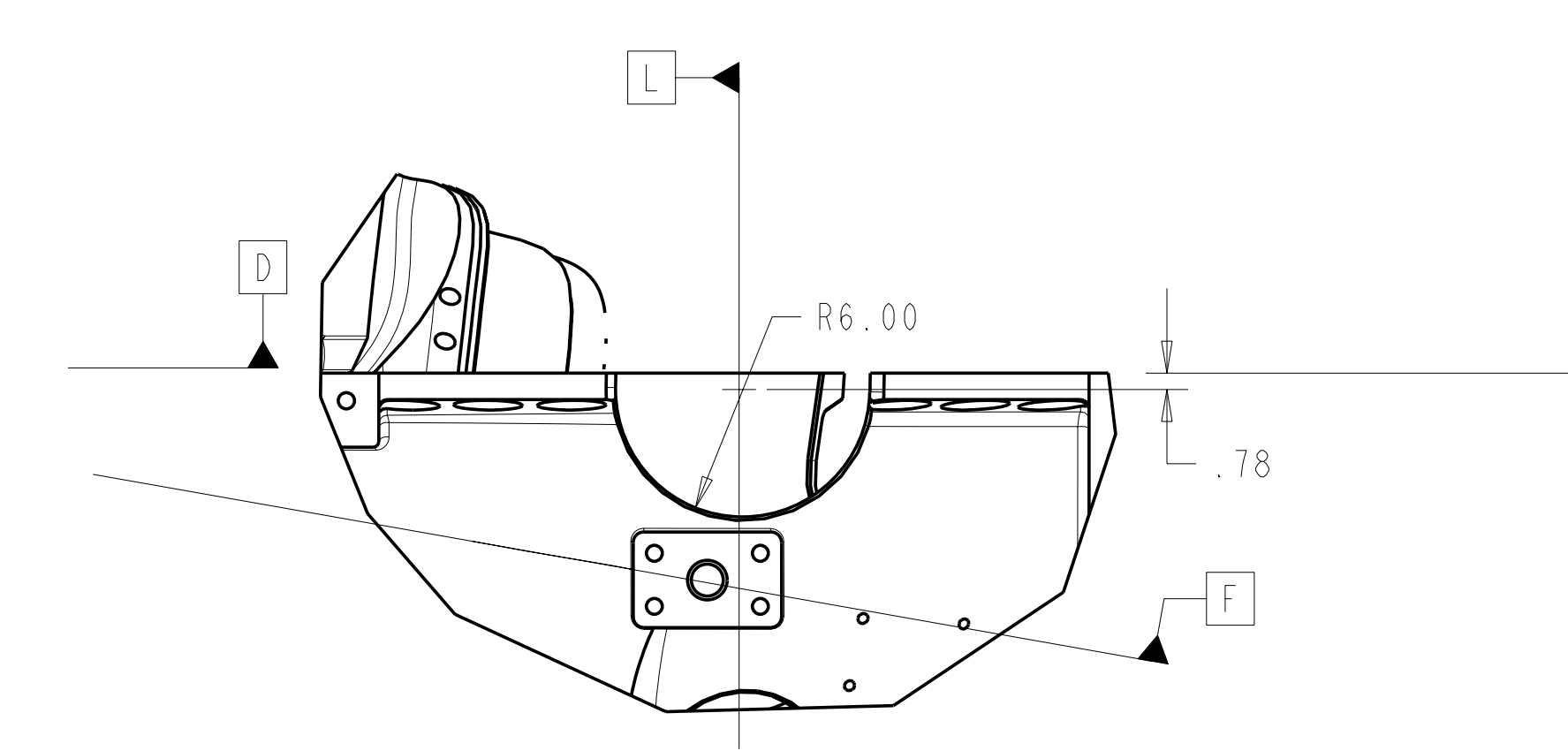
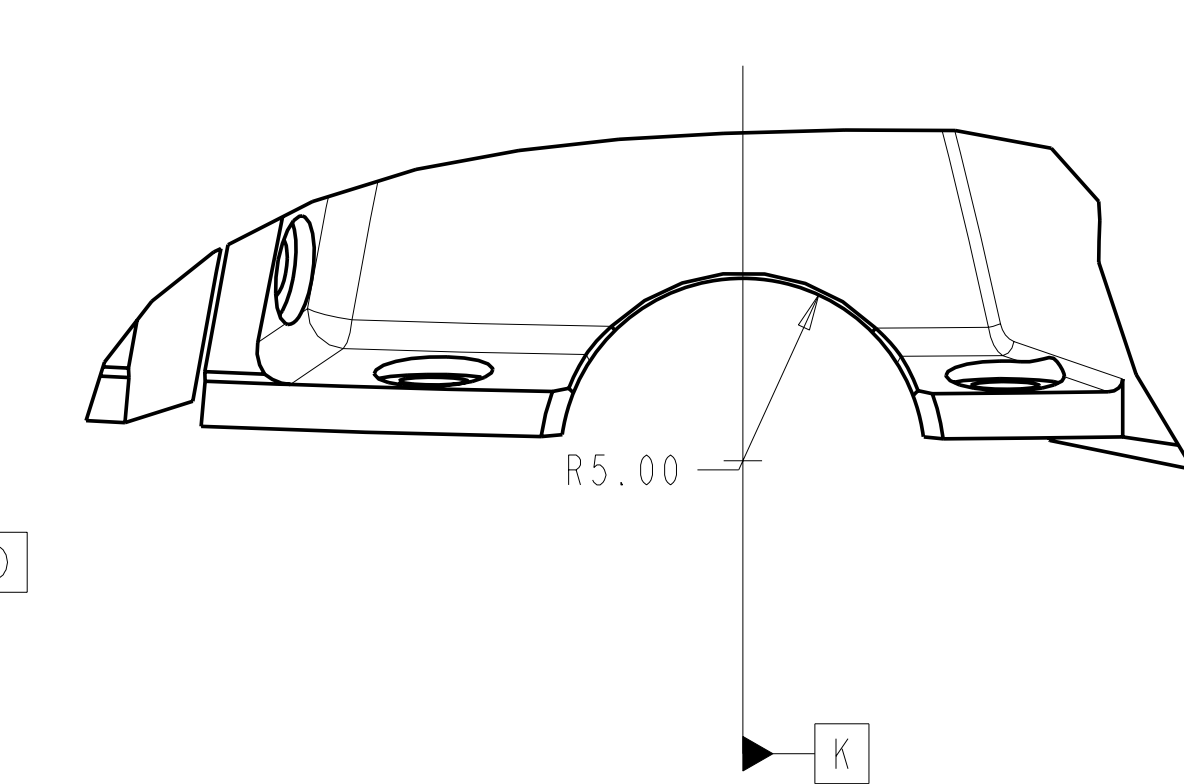
VIEW AT DATUM D
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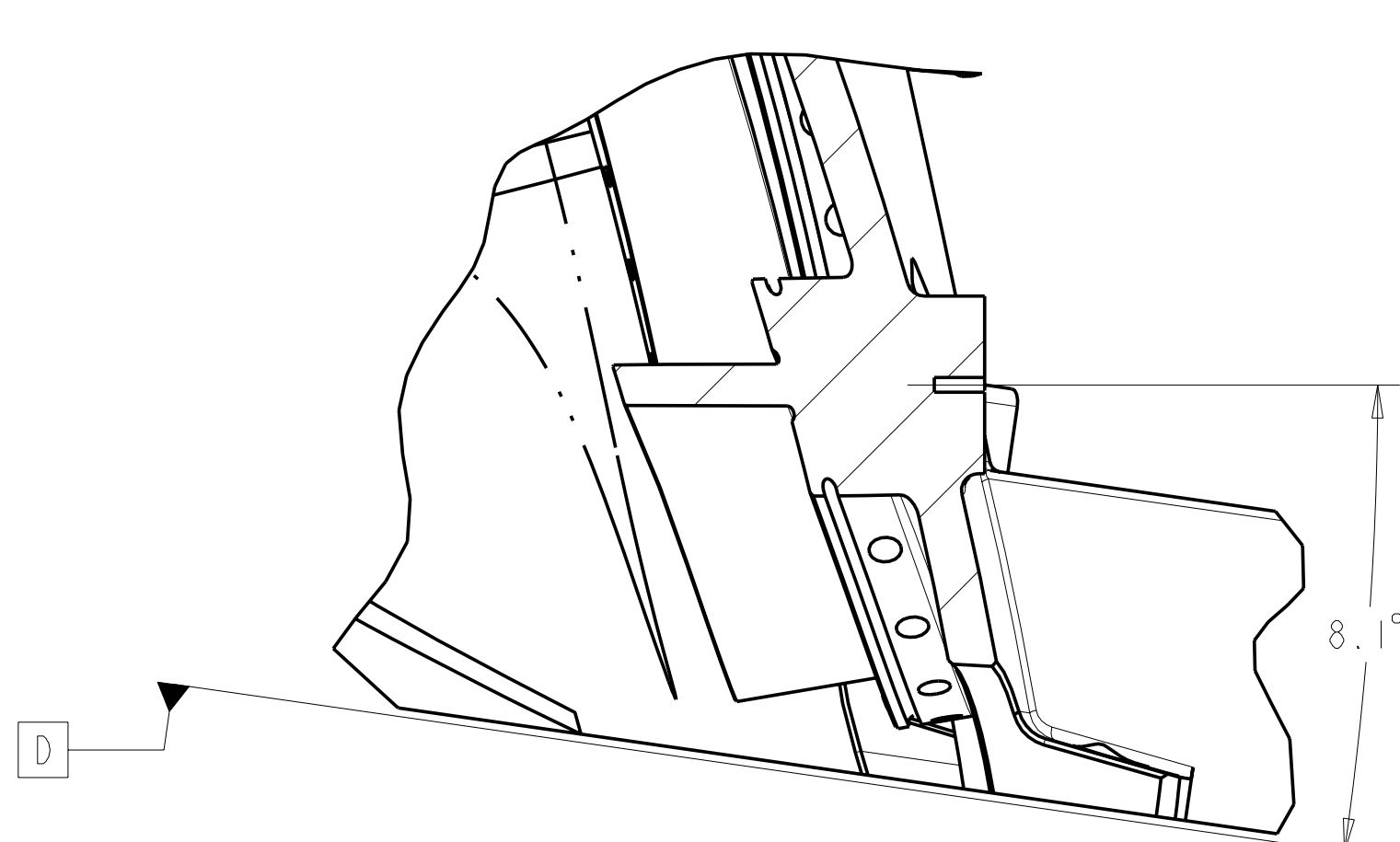
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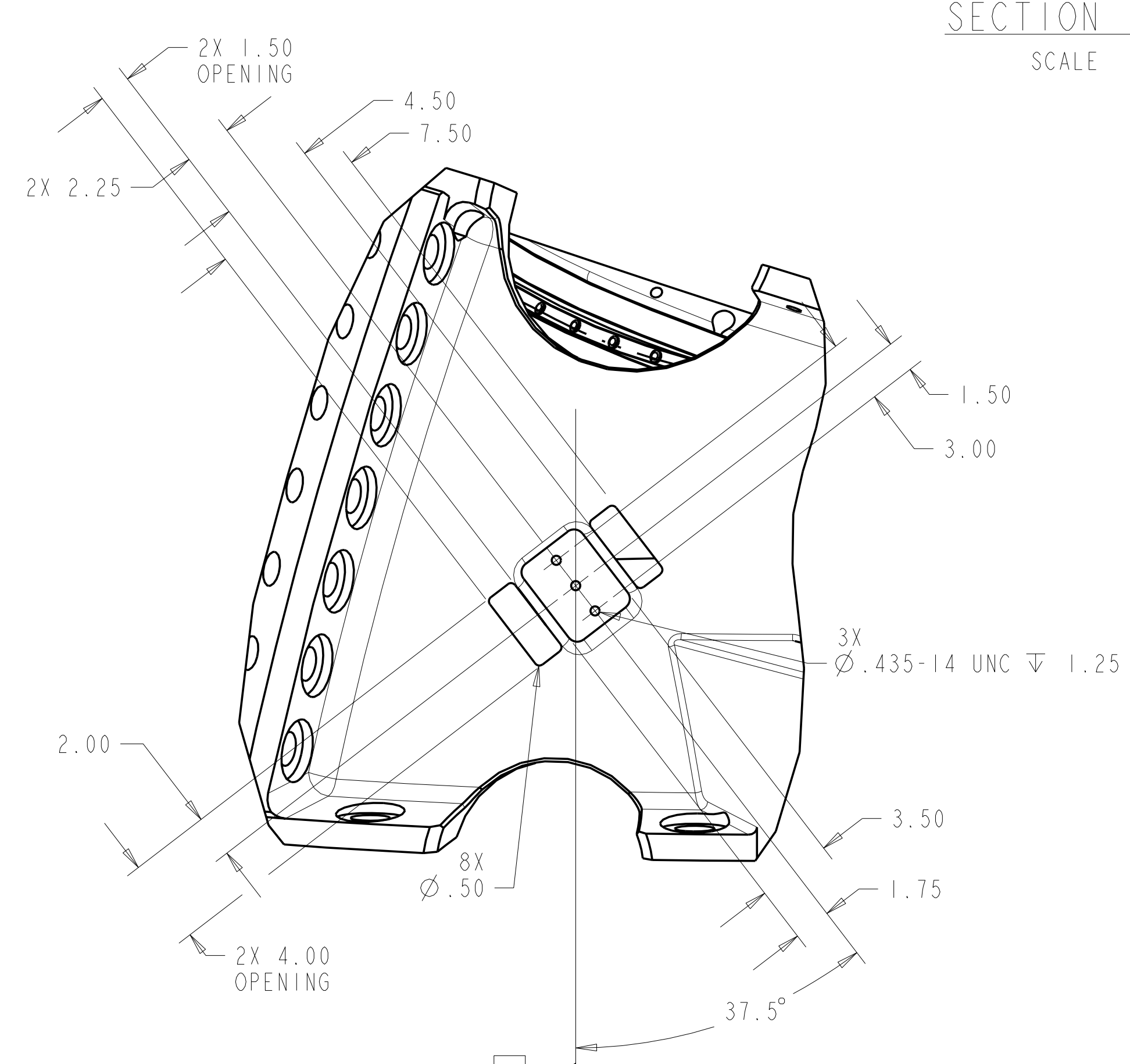
SECTION D3-D3
 SCALE 0.19



BOTTOM VIEW



SECTION X-X
 SCALE 0.19

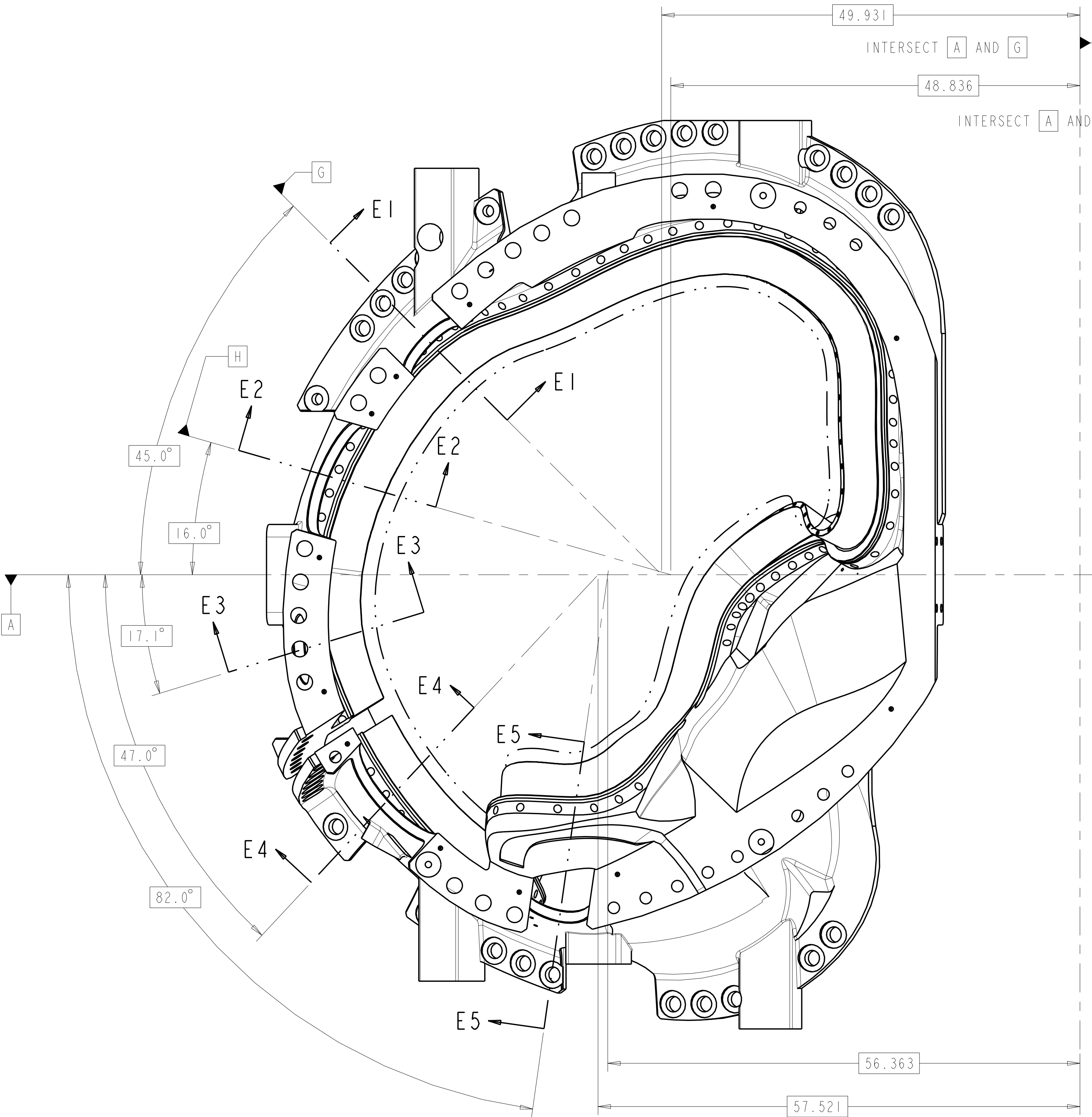


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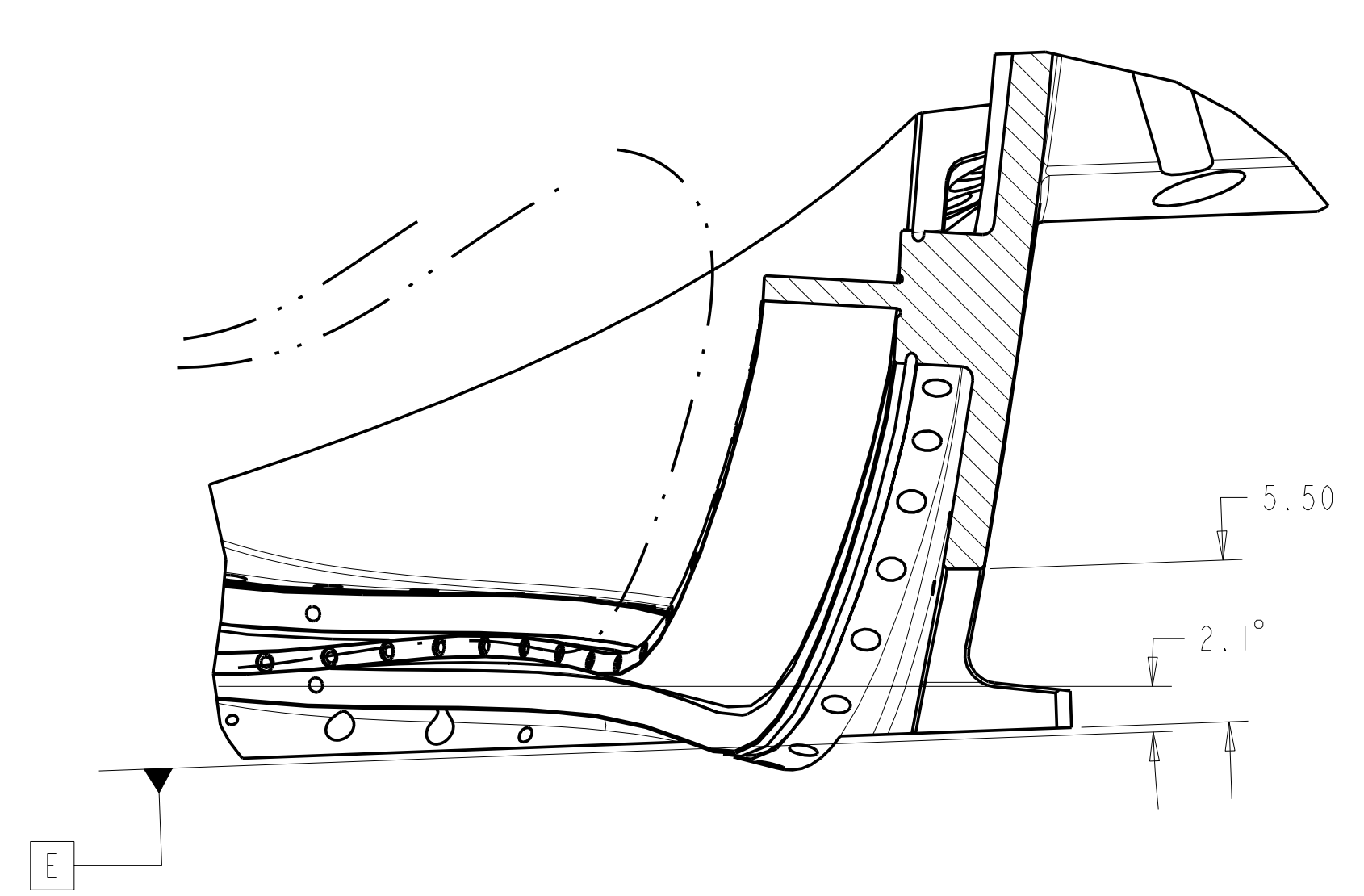
Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee							
UT-BATTELLE							
NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING FORM TYPE-B							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
27	X-10	5700	3	7	12	S	U
RELEASE LEVEL		SEI41-115				REV 0	
Fabrication							

SEI41-115

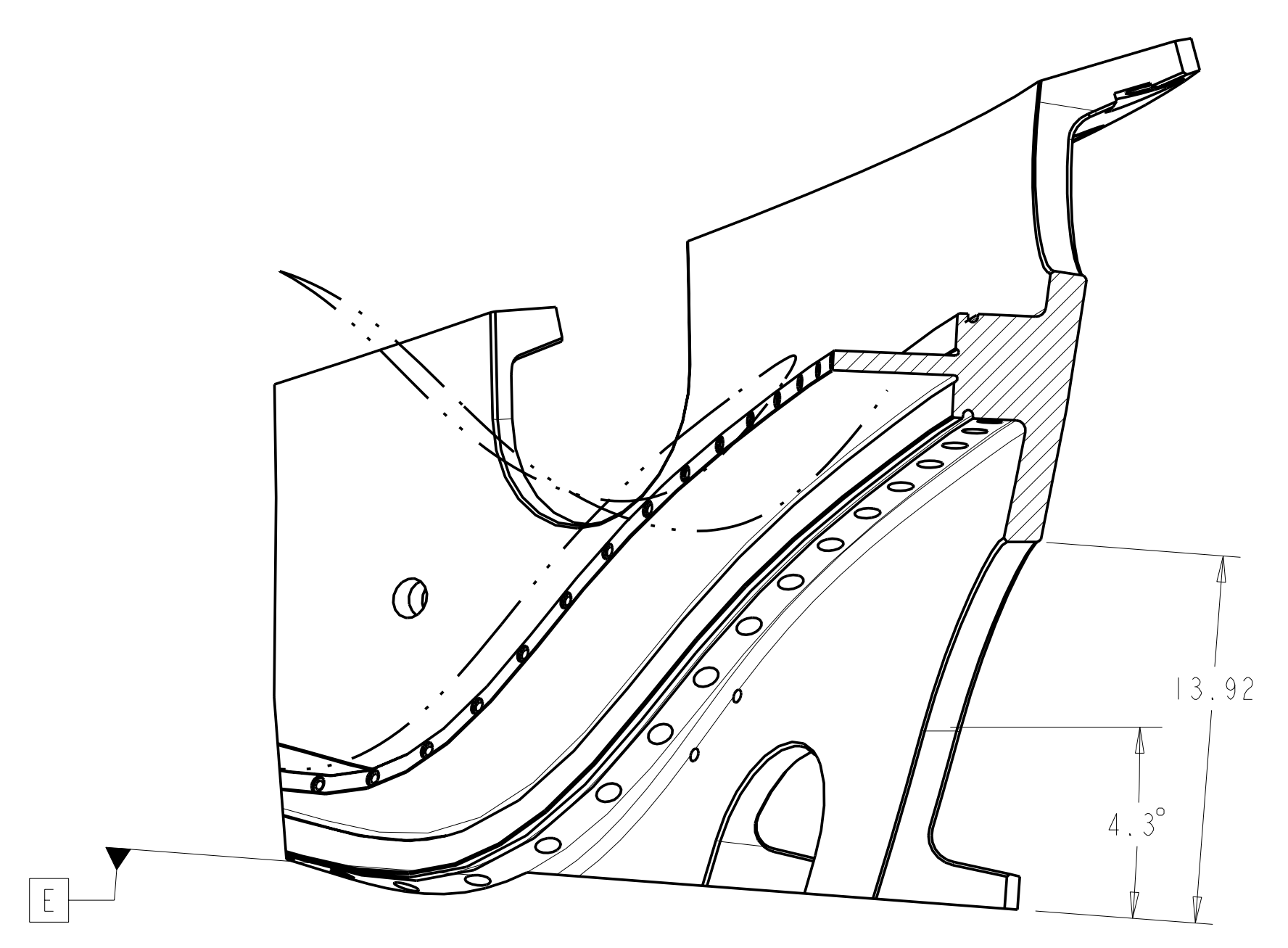
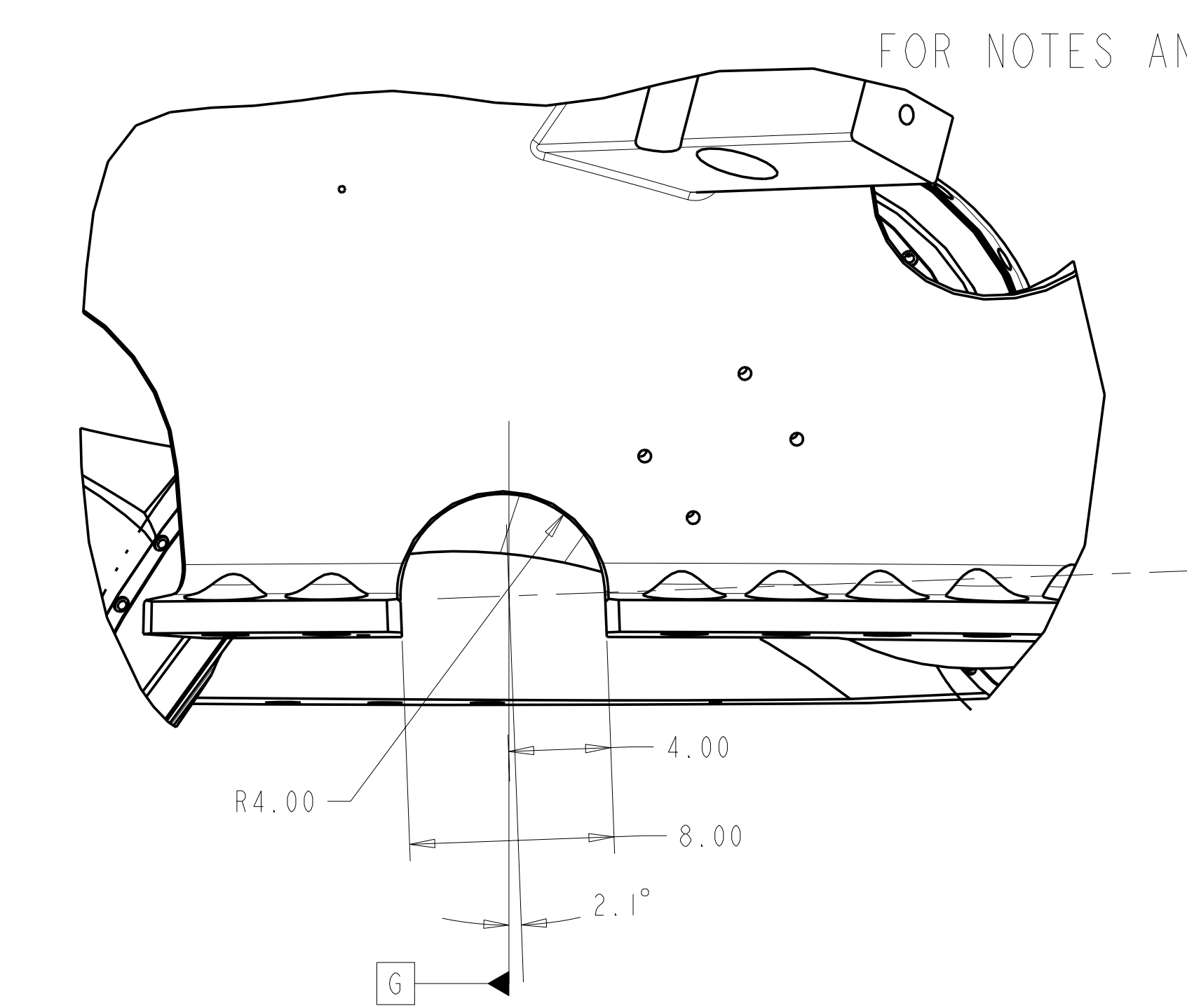
FOR NOTES AND PARTS LIST SEE SHEET 1



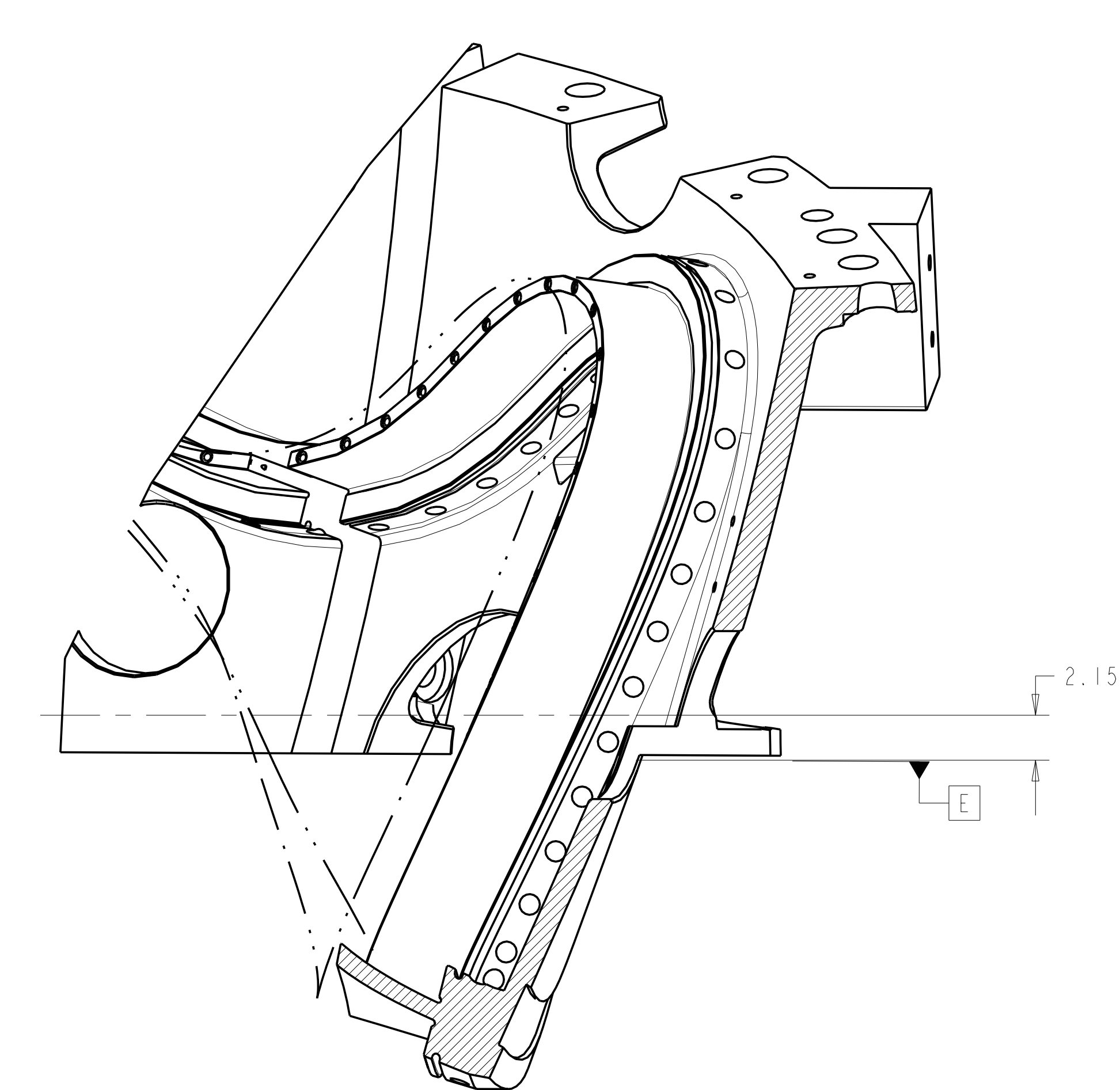
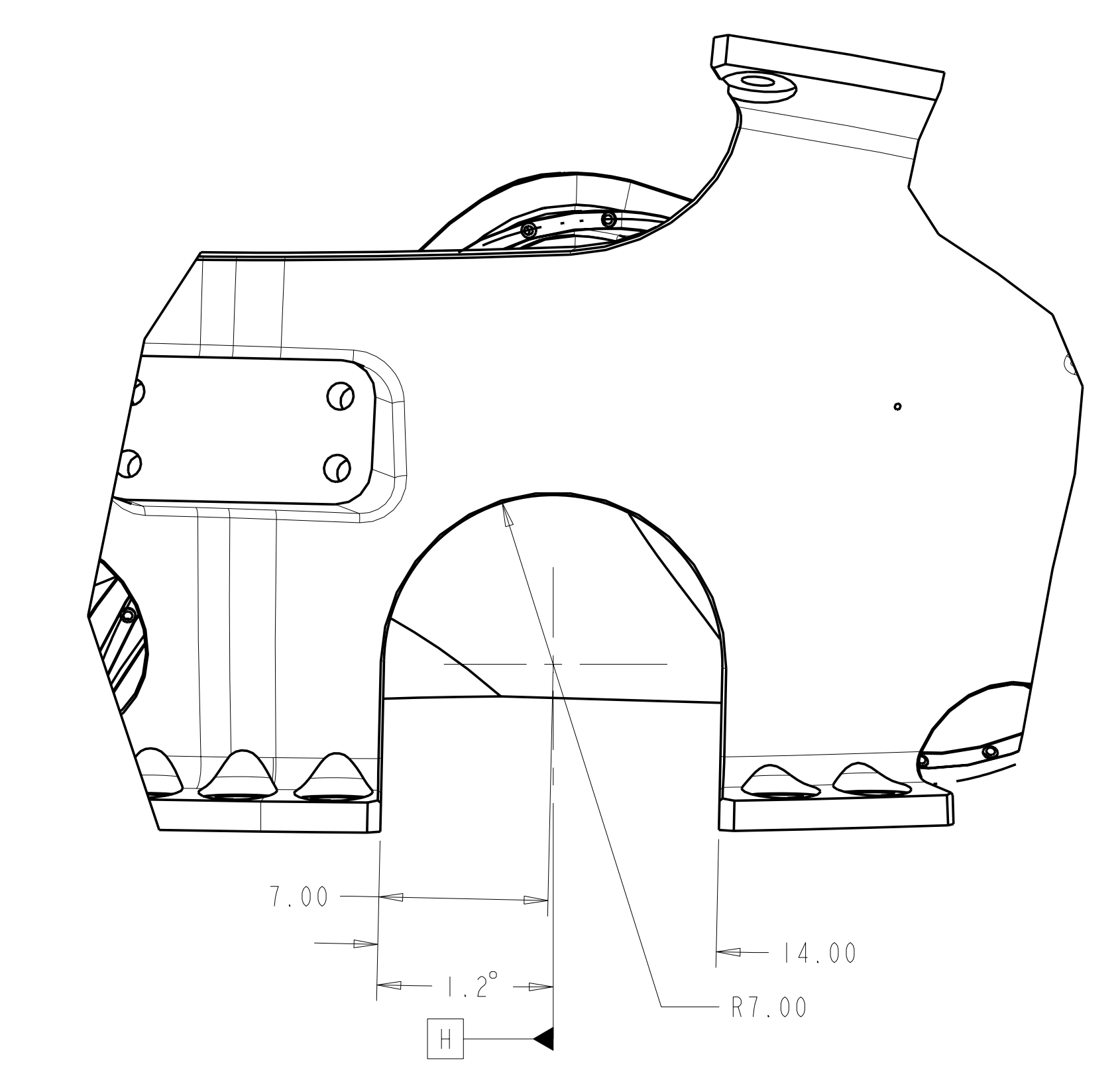
VIEW AT DATUM E
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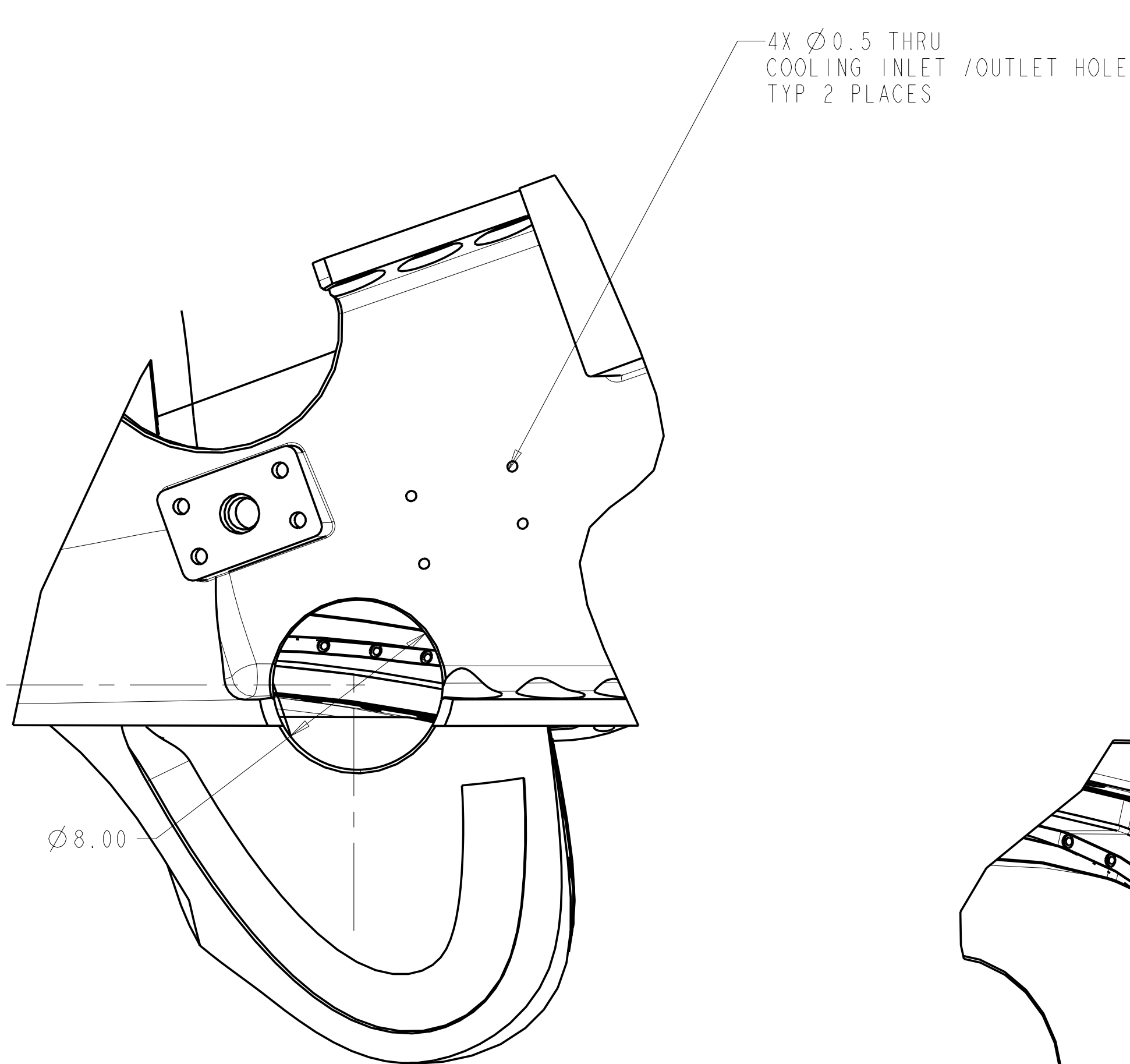
SECTION E1-E1
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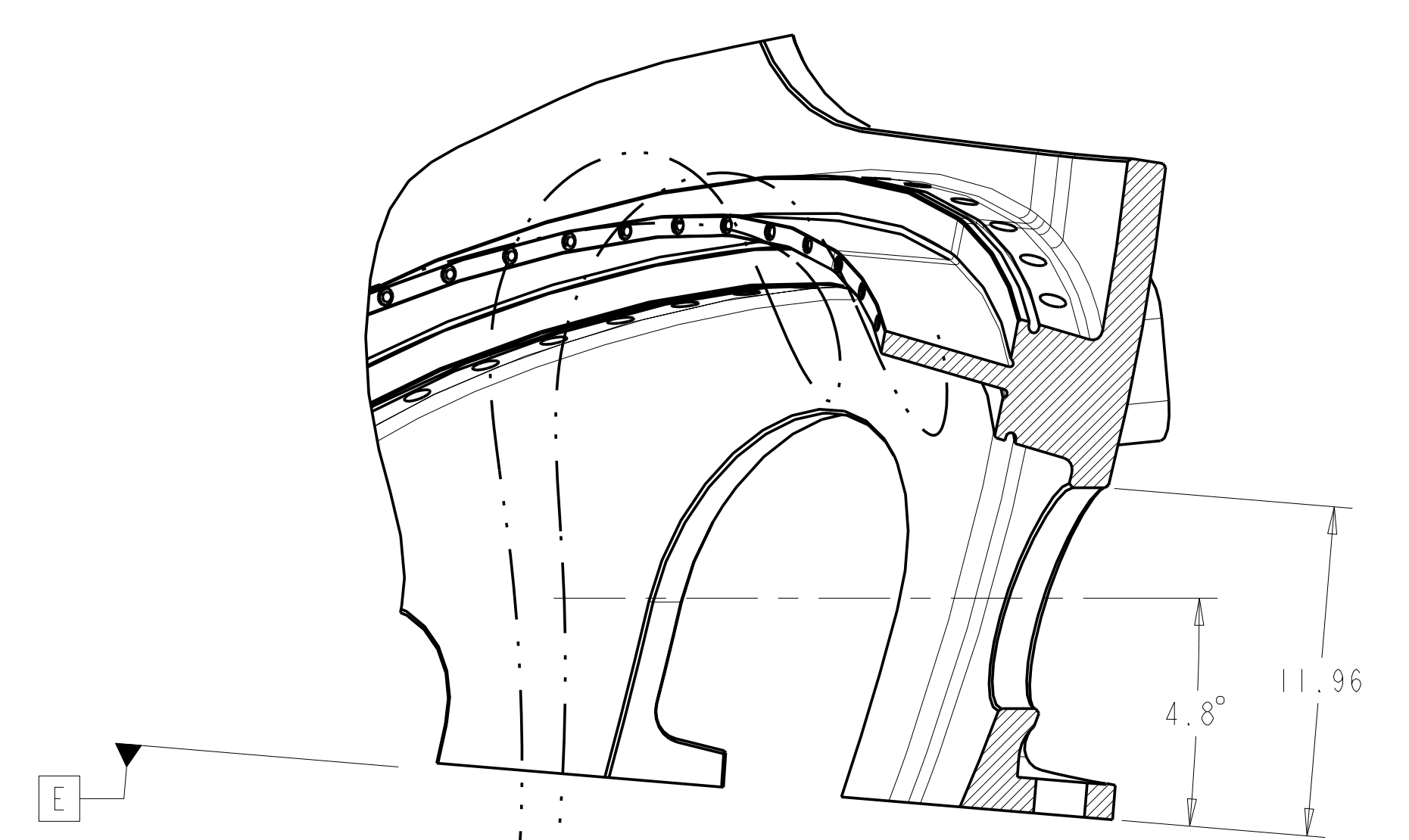
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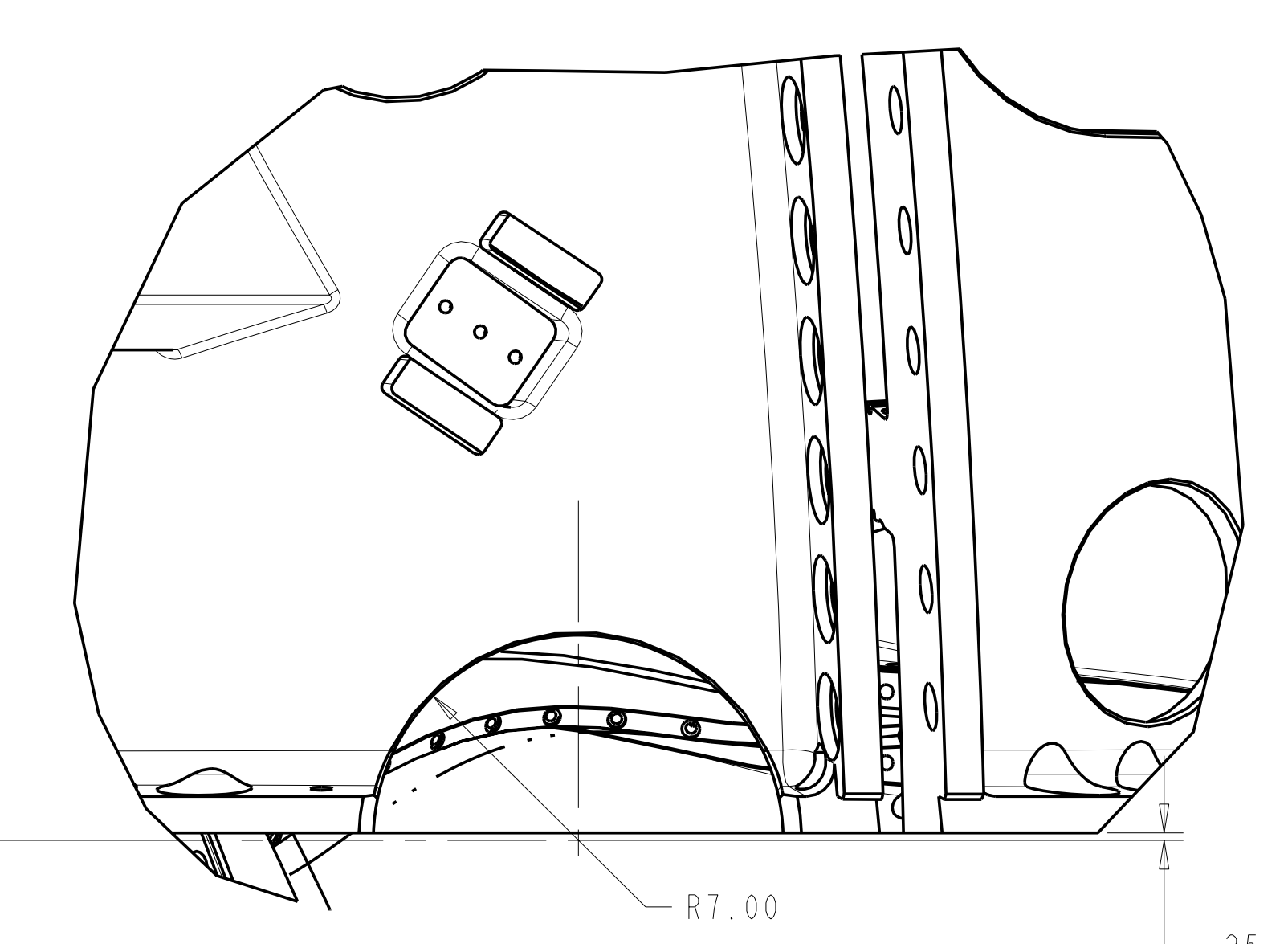
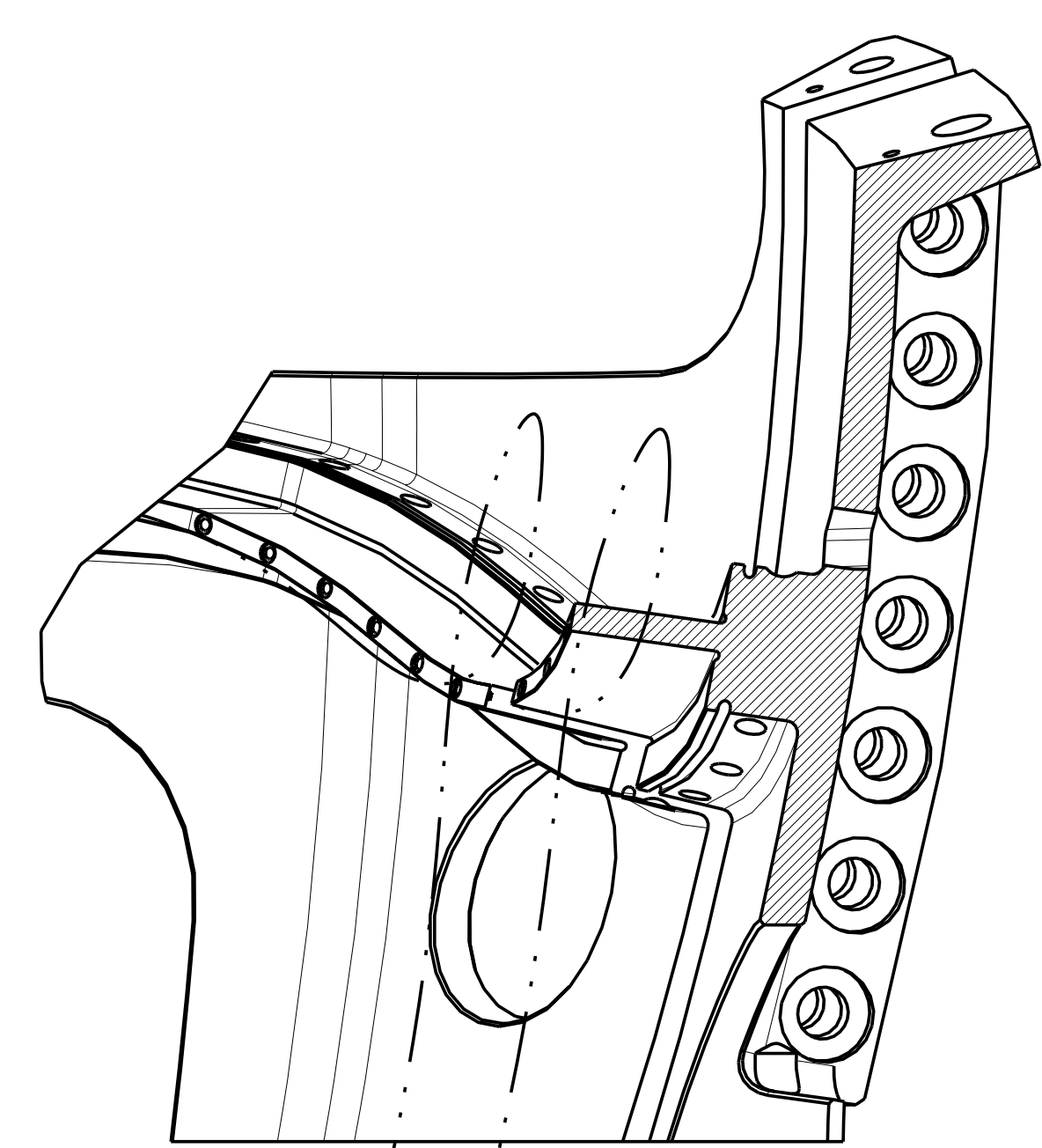
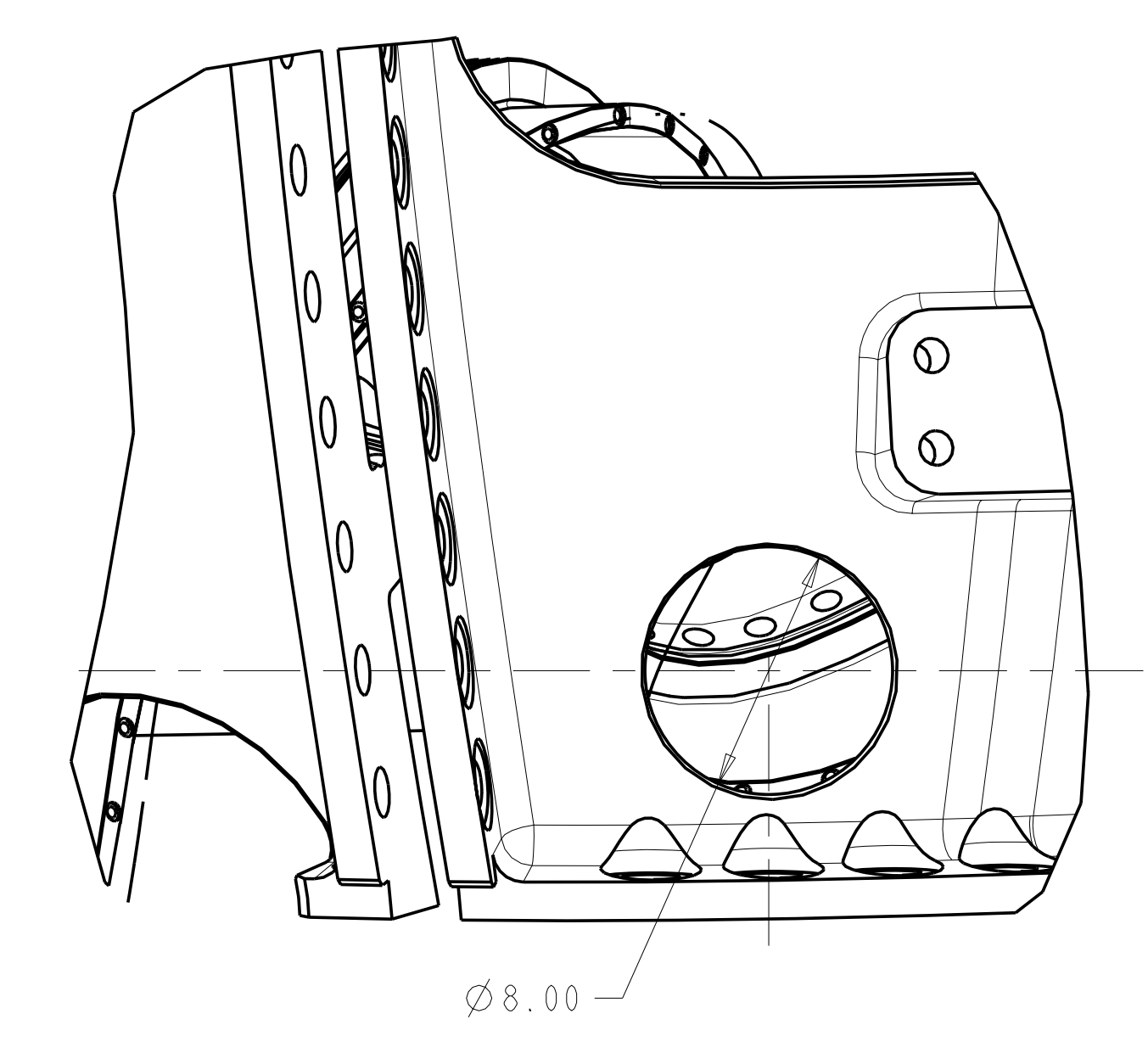
SECTION E5-E5
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SECTION E4-E4
 SCALE 0.19



SECTION E3-E3
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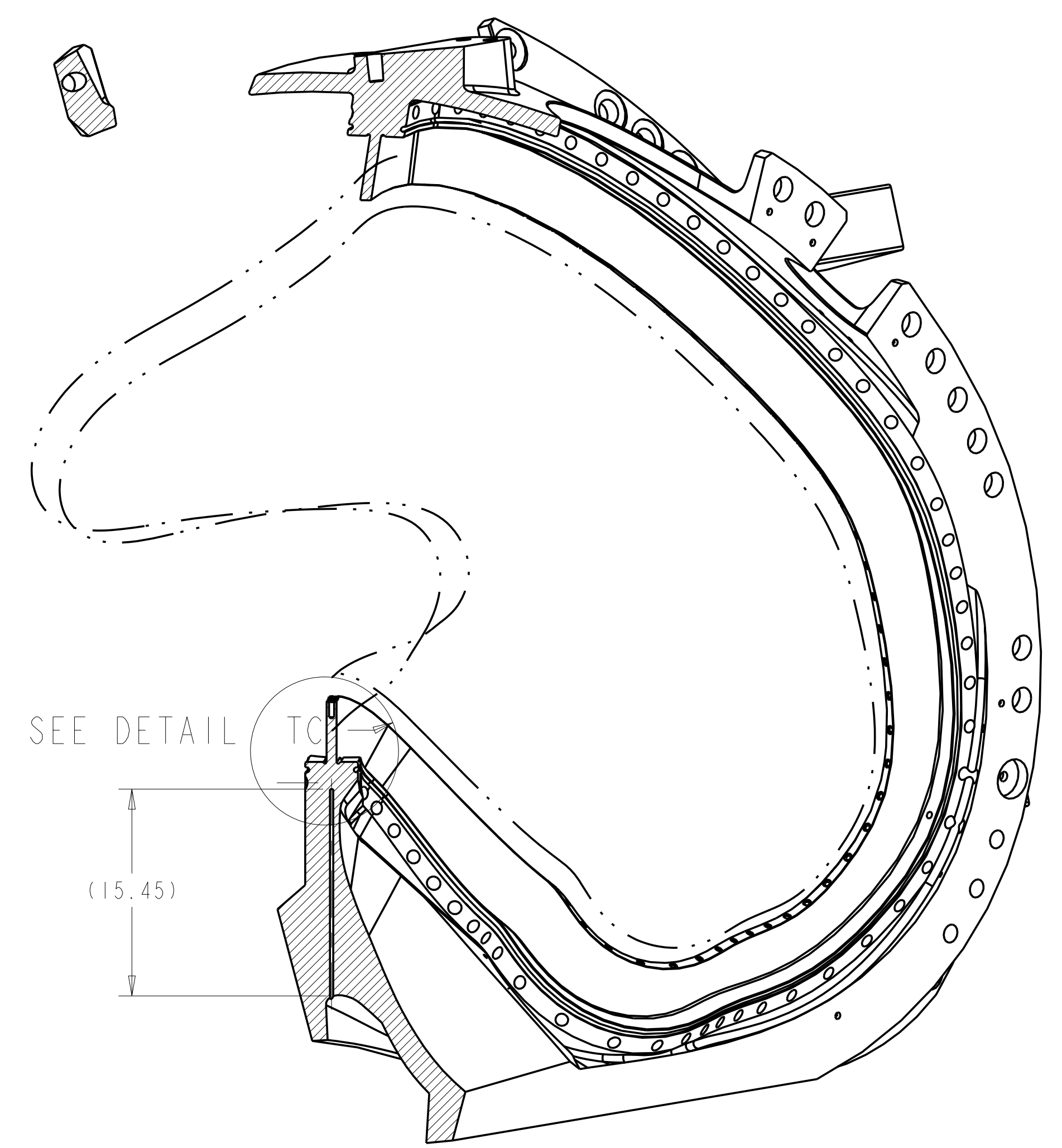


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UT-BATTELLE							
NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING FORM TYPE-B							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
27	X-10	5700	3	8	12	S	U
RELEASE LEVEL							REV
Fabrication	SEI41-115						0

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FOR NOTES AND PARTS LIST SEE SHEET 1



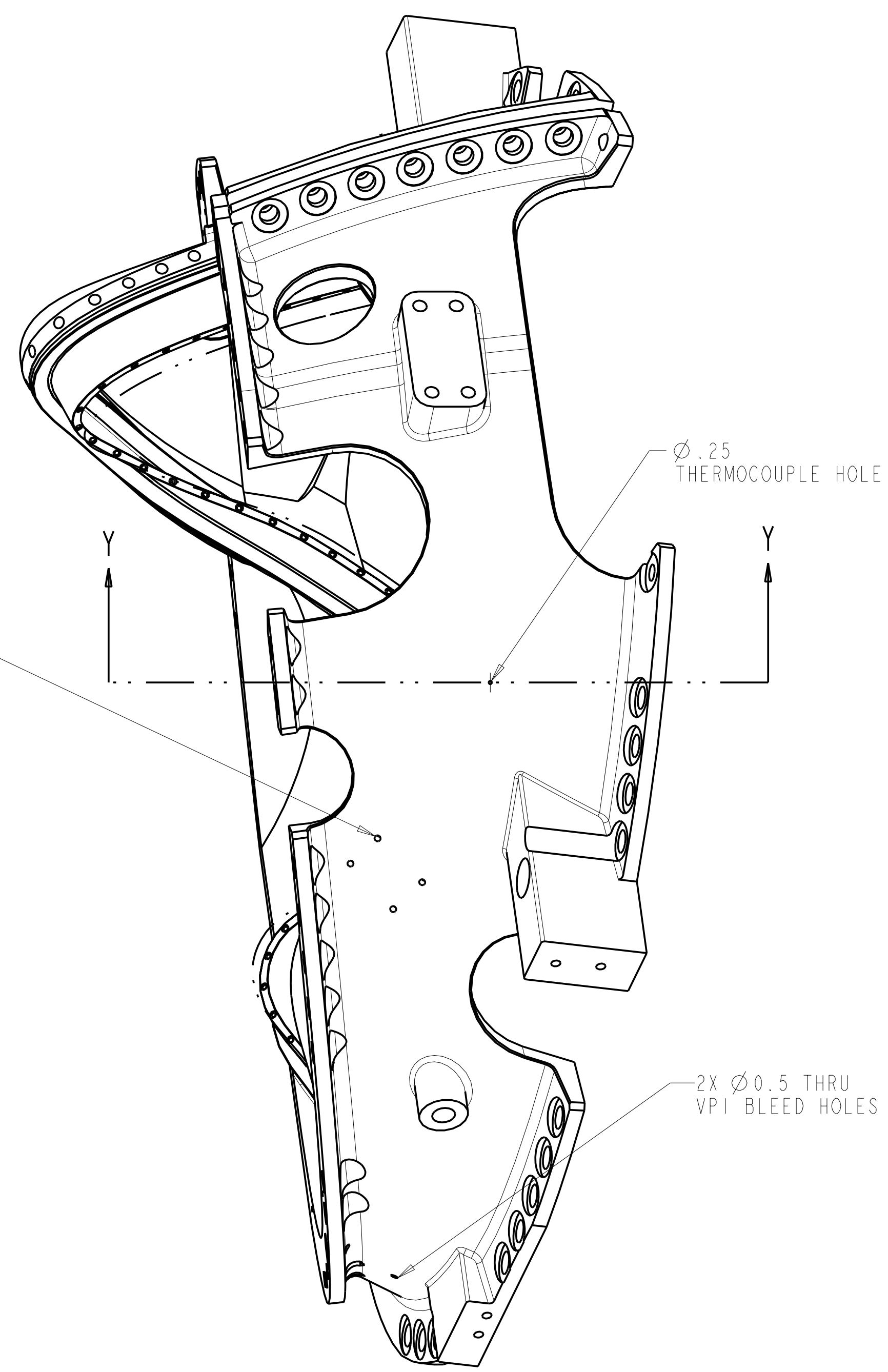
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SEE DETAIL TC1

(15.45)

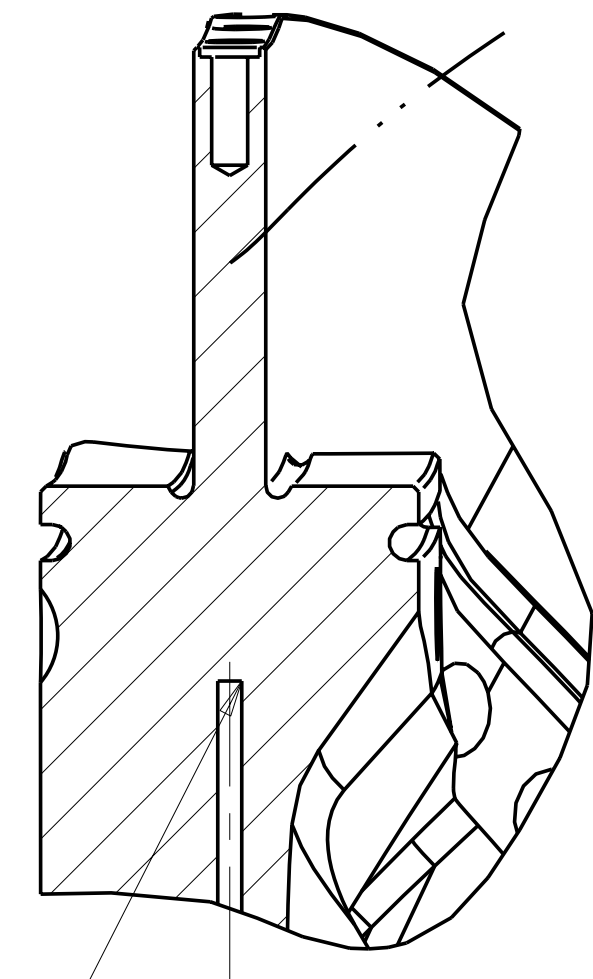
USE PROJE GEOMETRY TO DETERMINE SECTION ORIENTATION

4X Ø0.5 THRU COOLING INLET / OUTLET HOLES TYP 2 PLACES



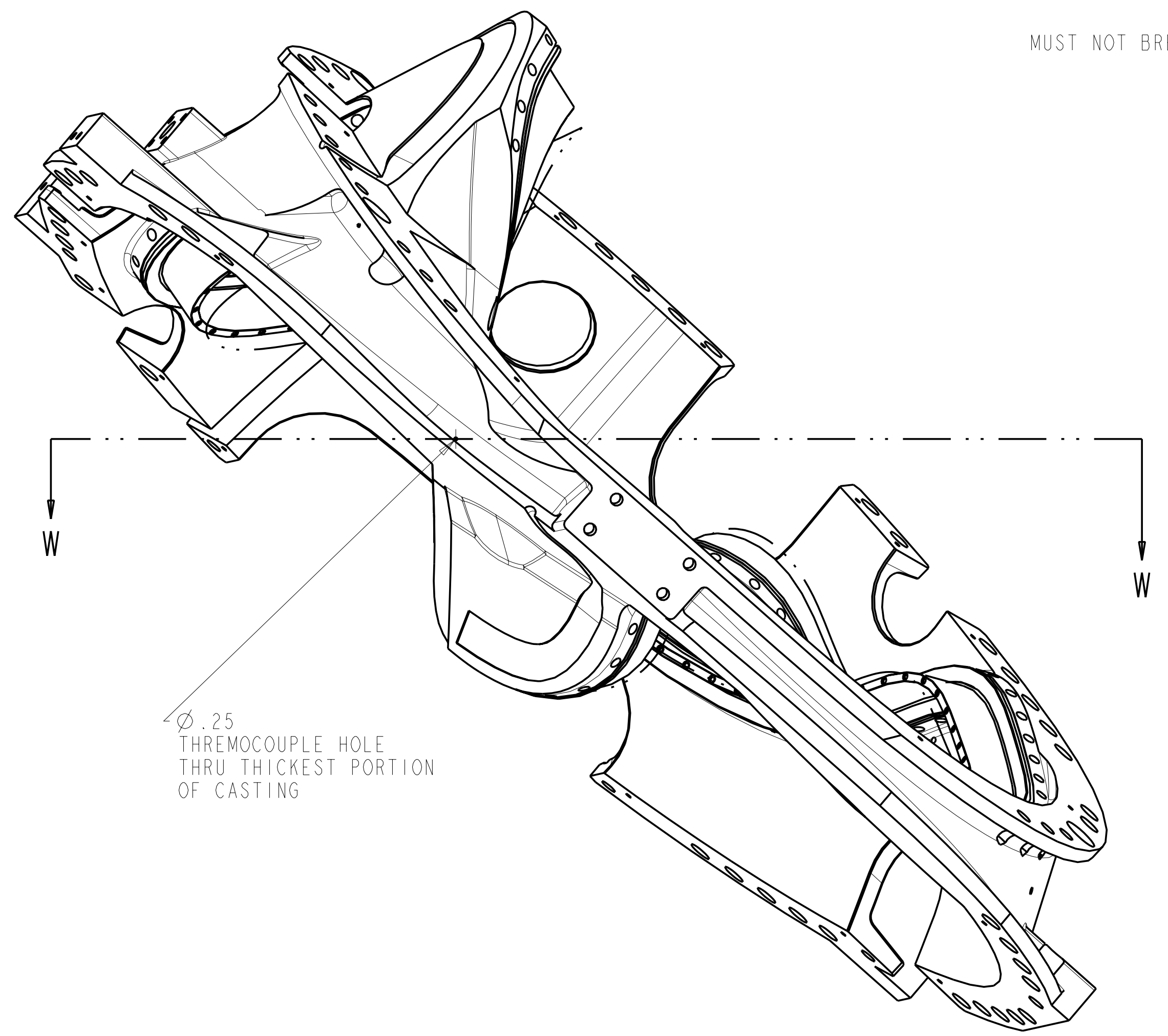
Ø.25 THERMOCOUPLE HOLE

2X Ø0.5 THRU VPI BLEED HOLES



DETAIL TC1
SCALE 0.500

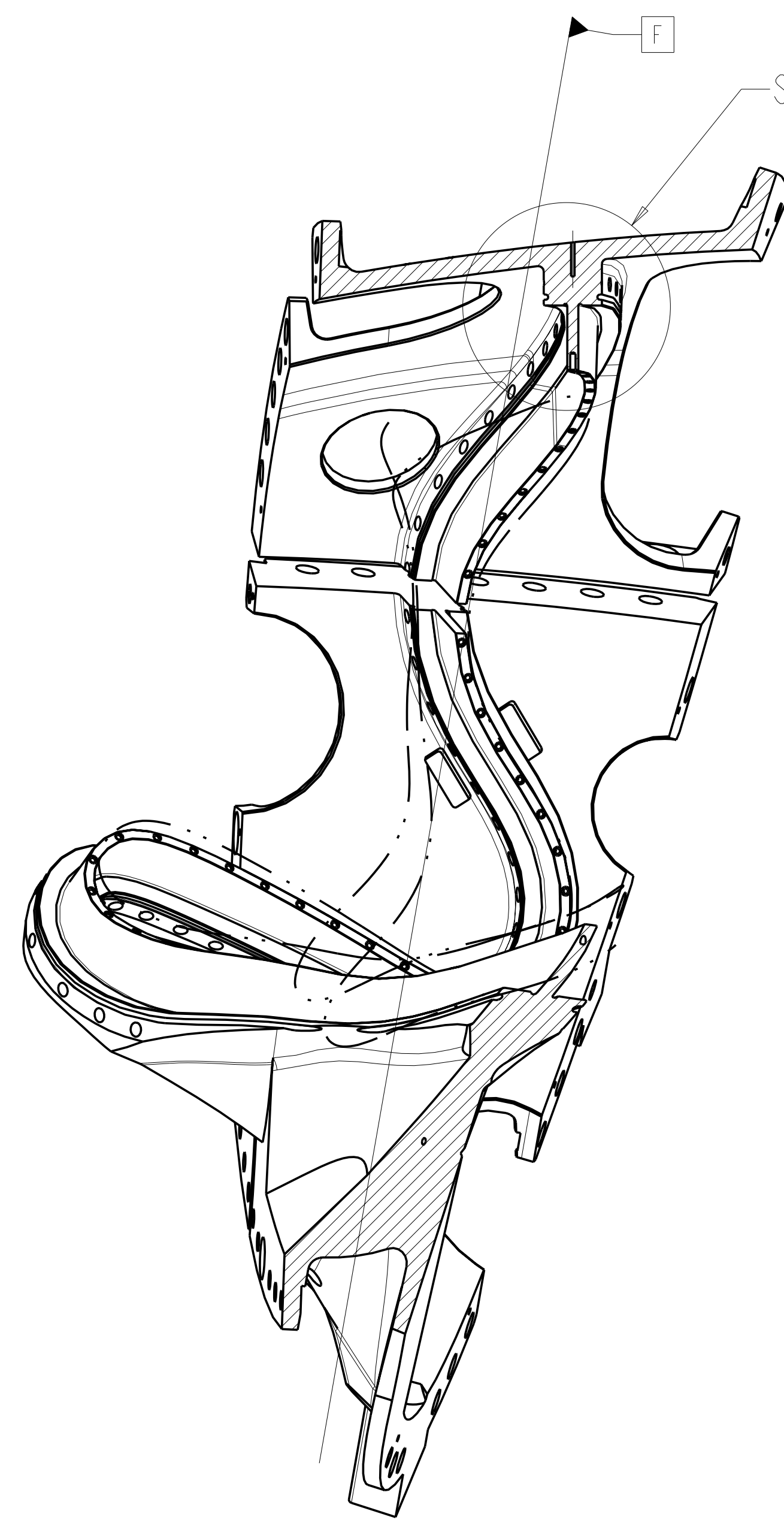
MUST NOT BREAK THRU



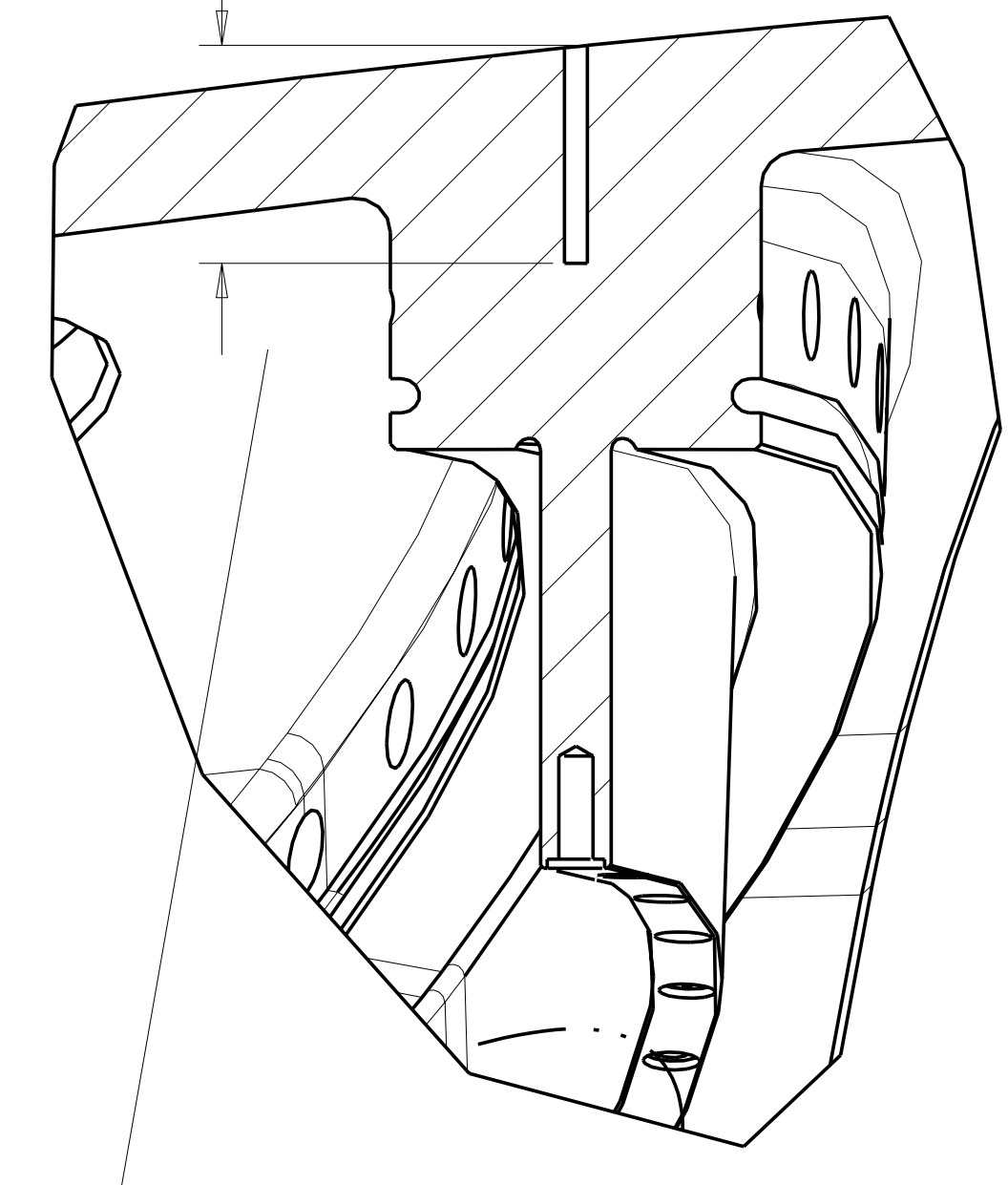
Ø.25 THERMOCOUPLE HOLE THRU THICKEST PORTION OF CASTING

SEE DETAIL TC2

(2.38)



SECTION Y-Y
SCALE 0.125



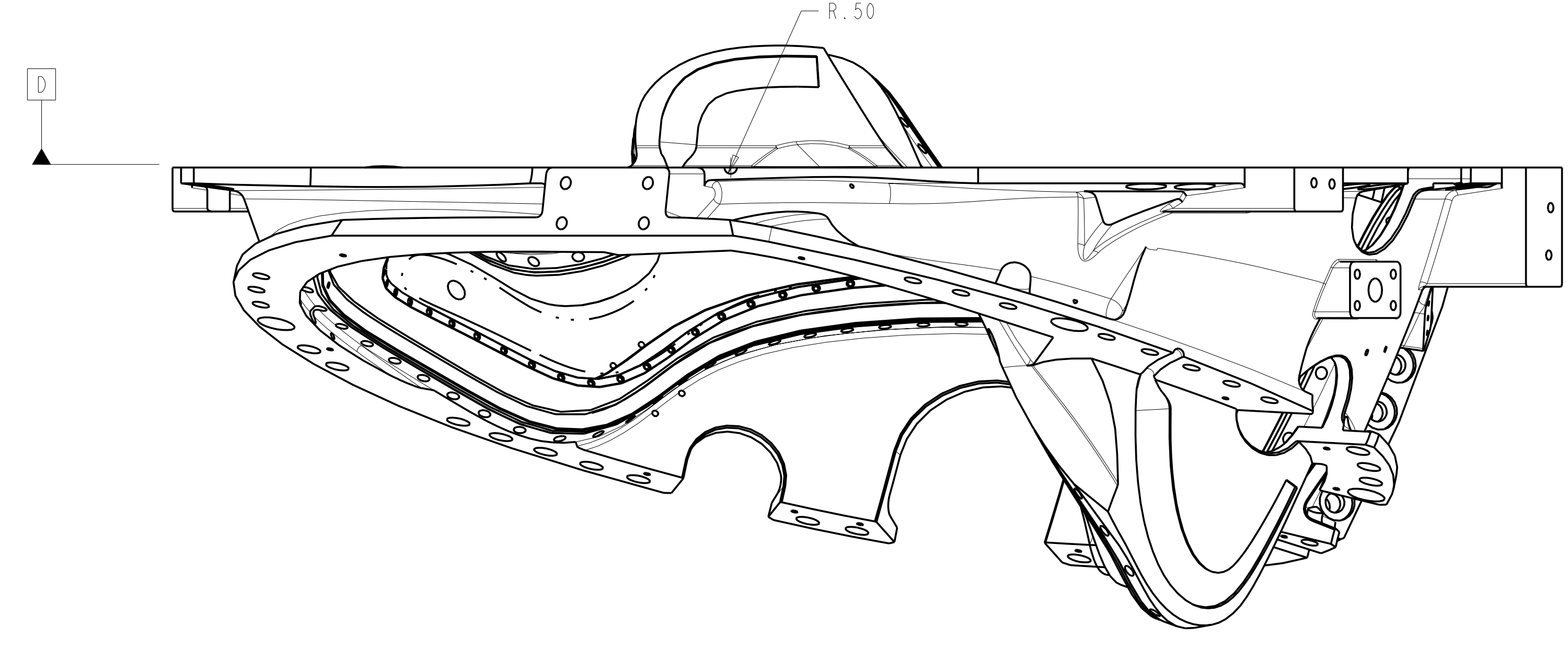
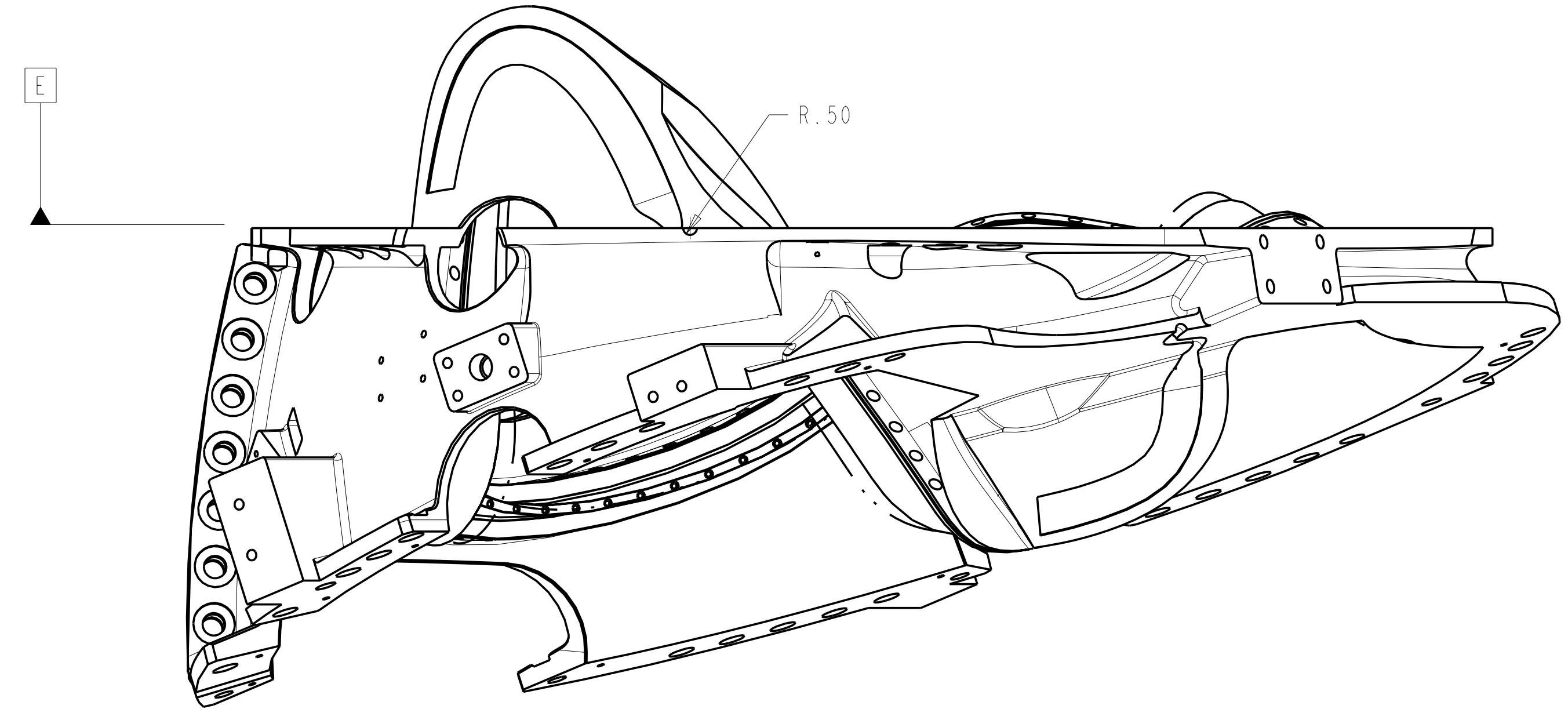
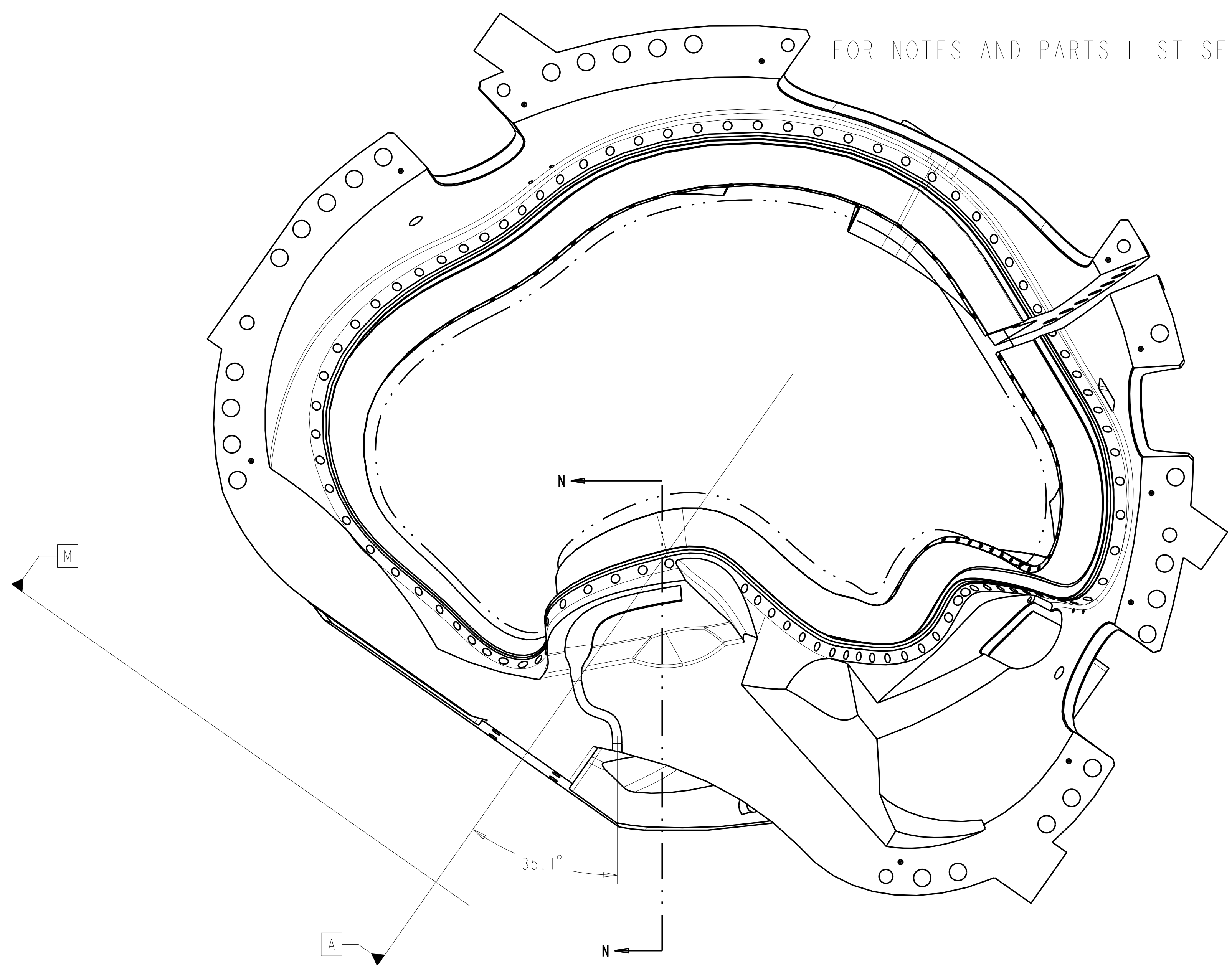
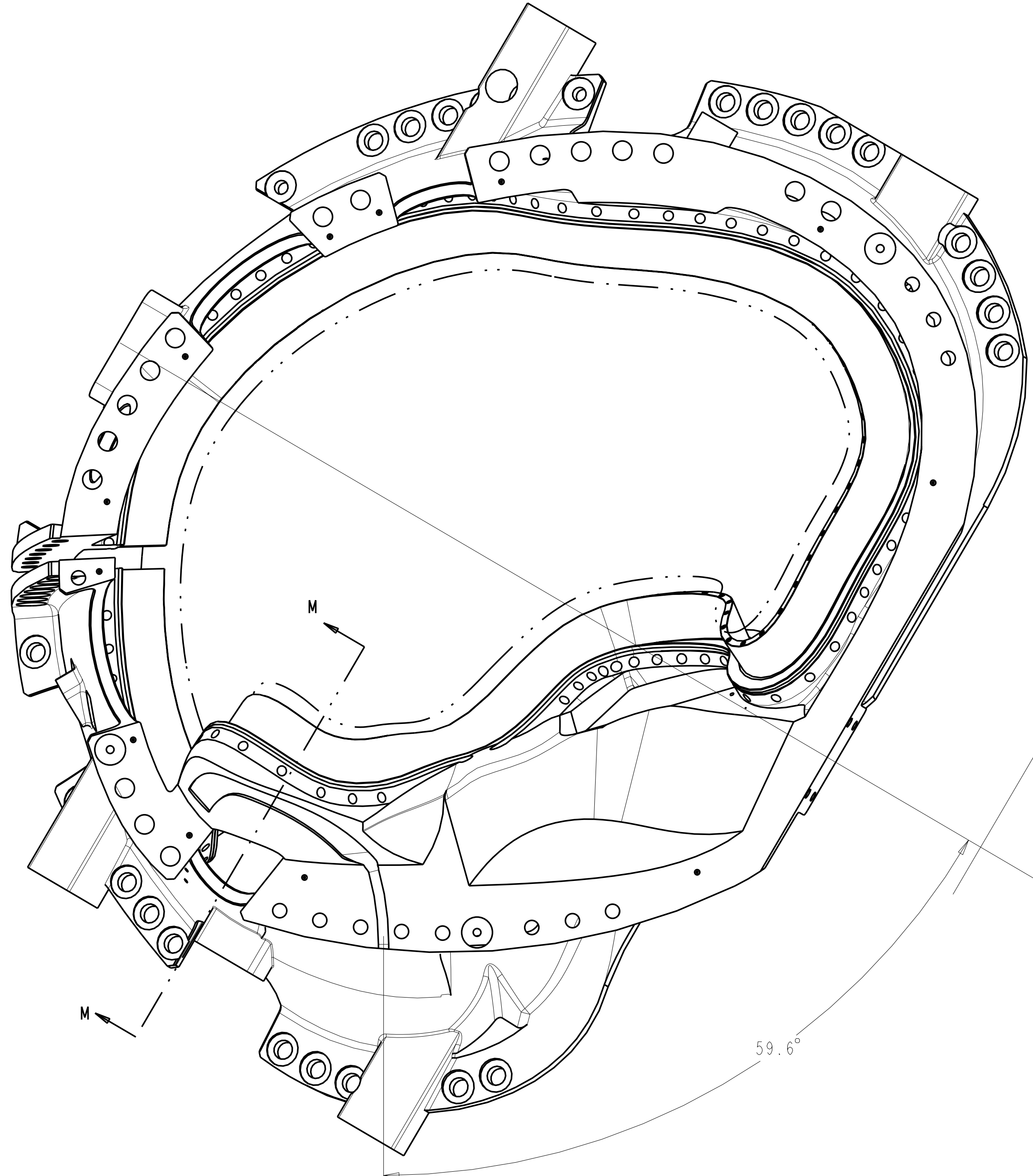
DETAIL TC2
SCALE 0.500

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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:							
UT-BATTELLE NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING FORM TYPE-B							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
27	X-10	5700	3	9 12	S	U	
RELEASE LEVEL	SEI41-115						REV
Fabrication							0

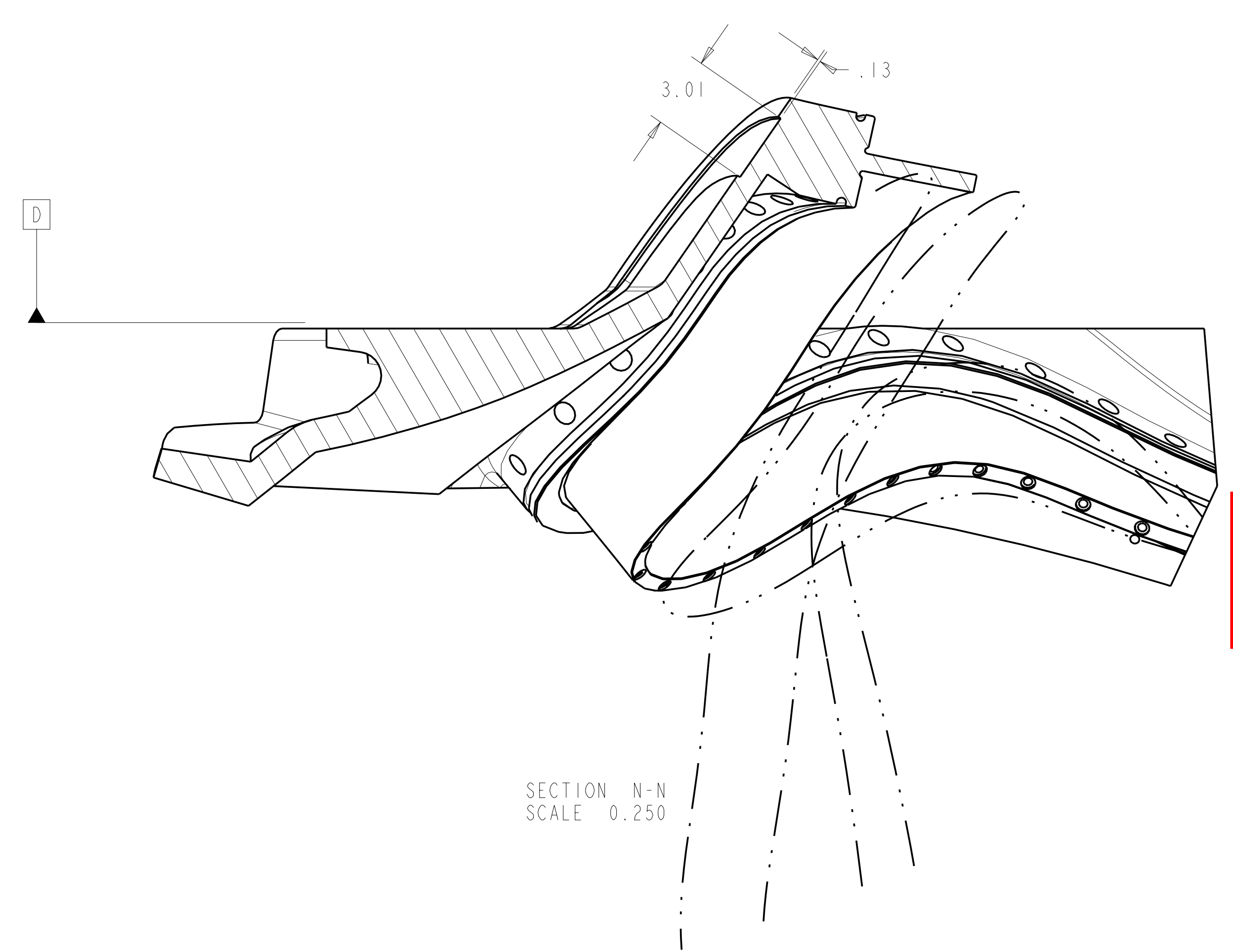
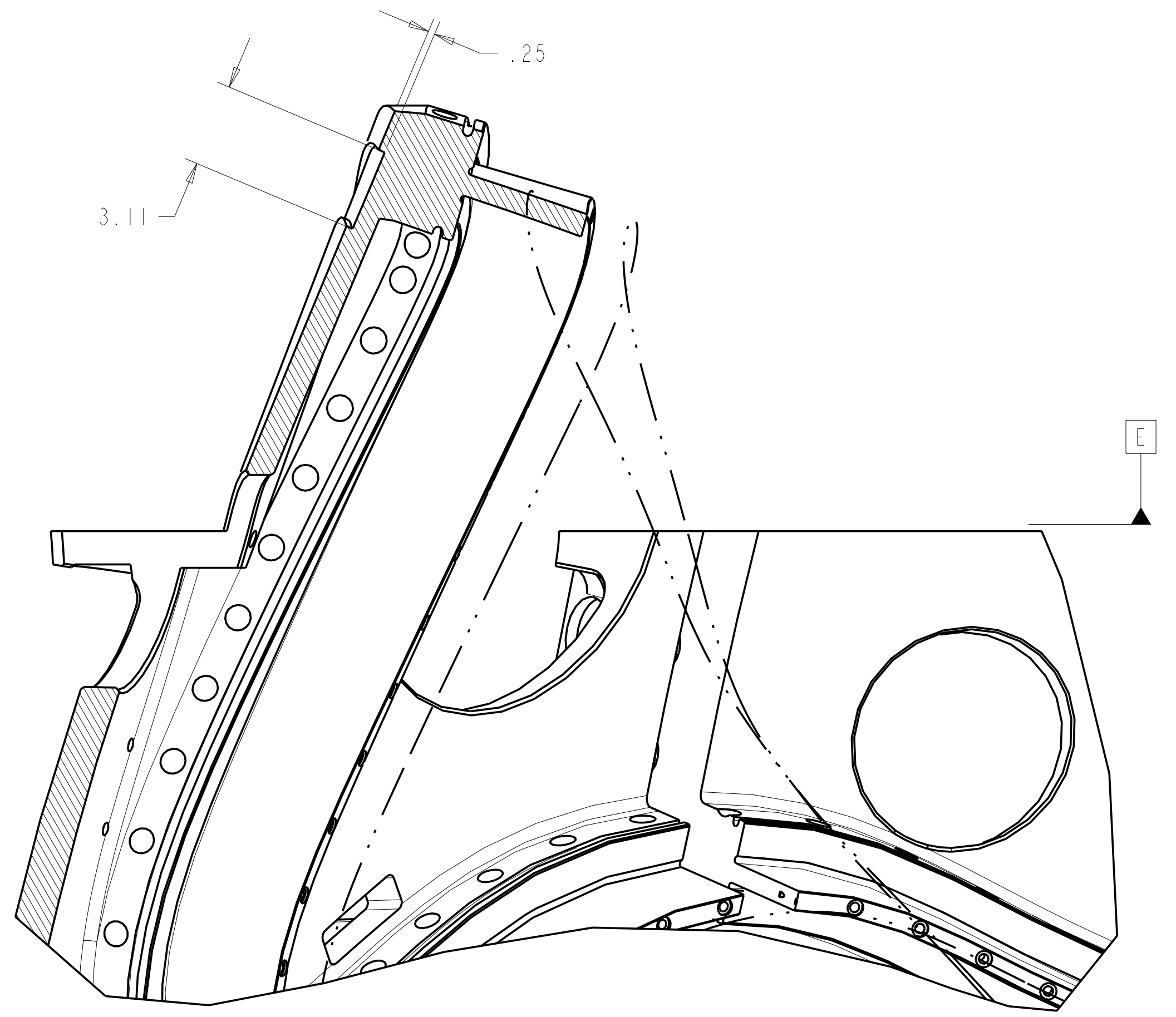
SEI41-115

FOR NOTES AND PARTS LIST SEE SHEET 1



SCALE 0.125

SCALE 0.125



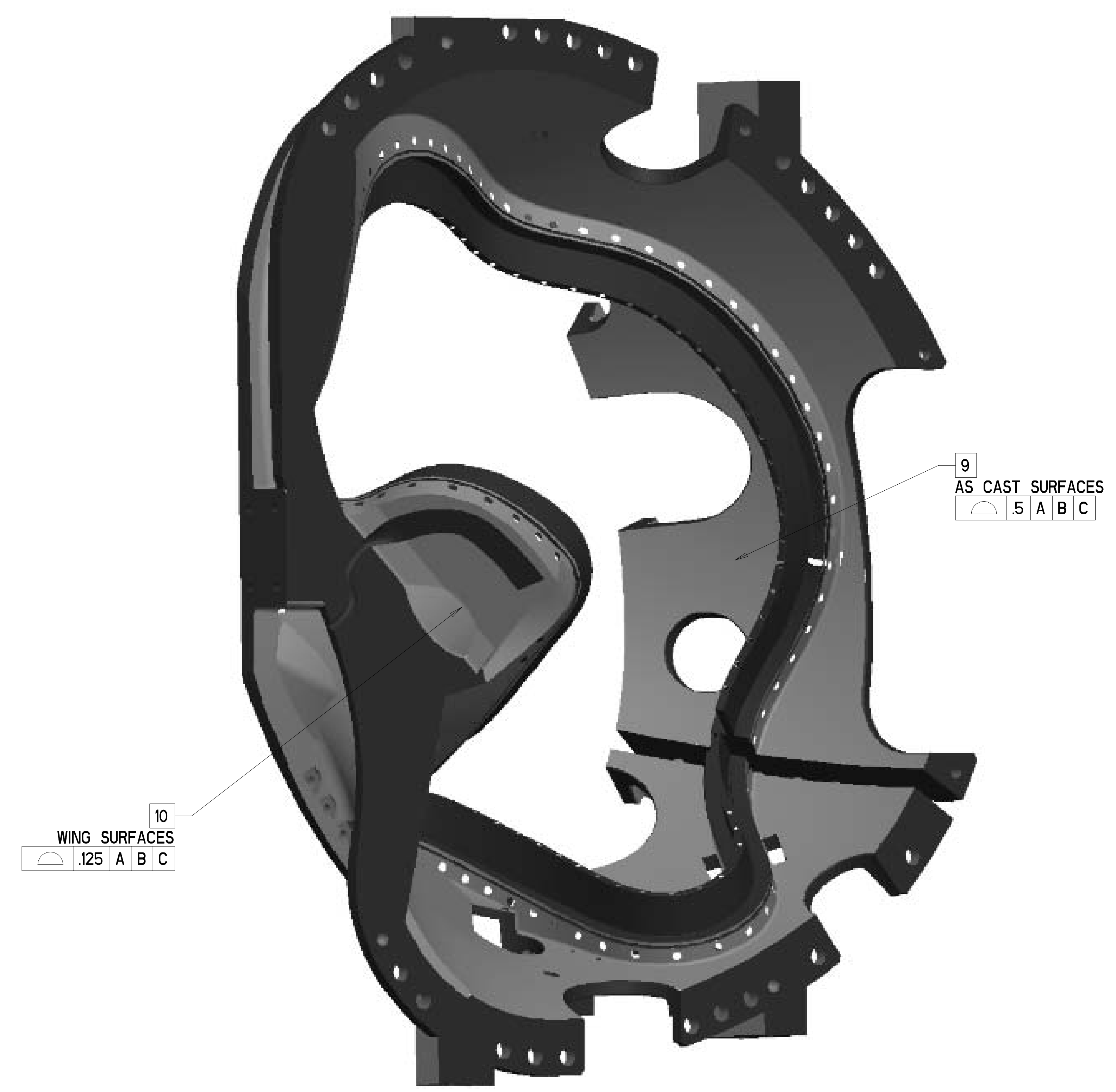
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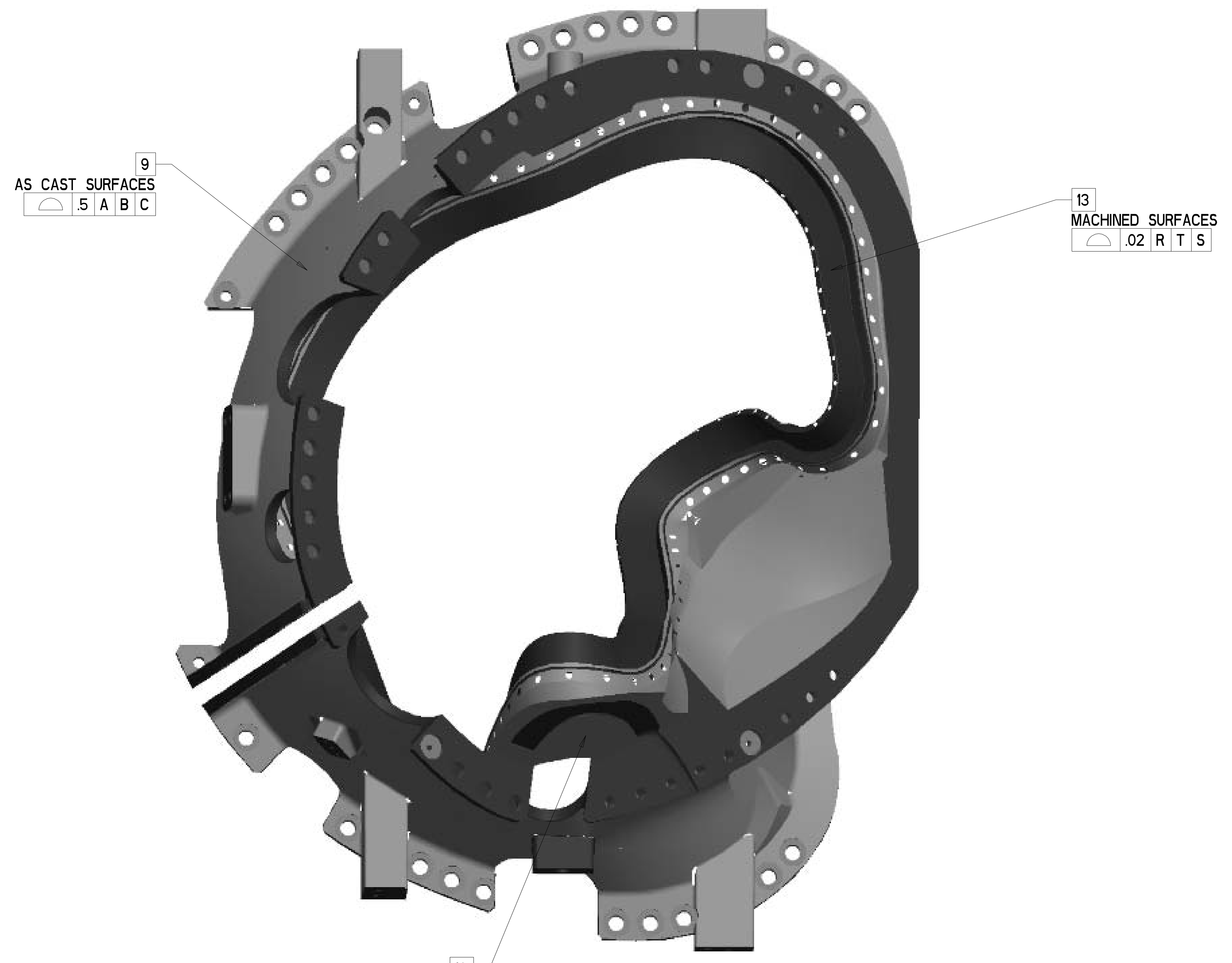
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NATIONAL COMPACT STELLARATOR EXPERIMENT							
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VERSION NO.	PLANT	BLDG	FL	SHT	OF	TYPE	CLASS
27	X-10	5700	3	10	12	S	U
RELEASE LEVEL		SEI41-115				REV	
Fabrication						0	

H
G
F
E
D
C
B
A



ISOMETRIC VIEW
NOT TO SCALE



ISOMETRIC VIEW
NOT TO SCALE

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UT-BATTELLE NATIONAL COMPACT STELLARATOR EXPERIMENT							
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27	X-10	5700	3	11	12	S	U
RELEASE LEVEL		SEI41-115				REV	
Fabrication						0	

SEI41-115

A

TABLE I: WINDING CENTER SPLINE

Table with 4 columns: #, X, Y, Z. Rows 1 to 101.

TABLE II: X-VECTOR SPLINE

Table with 4 columns: #, X, Y, Z. Rows 1 to 101.

TABLE III SPHERICAL SEAT CENTERS SA

Table with 4 columns: GROUP No., x, y, z. Rows 1 to 49.

TABLE IV SPHERICAL SEAT CENTERS SIDE SB

Table with 4 columns: GROUP No., x, y, z. Rows 1 to 49.

ALL POINT LOCATIONS ARE BASIC FOR NOTES AND PARTS LIST SEE SHEET I

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