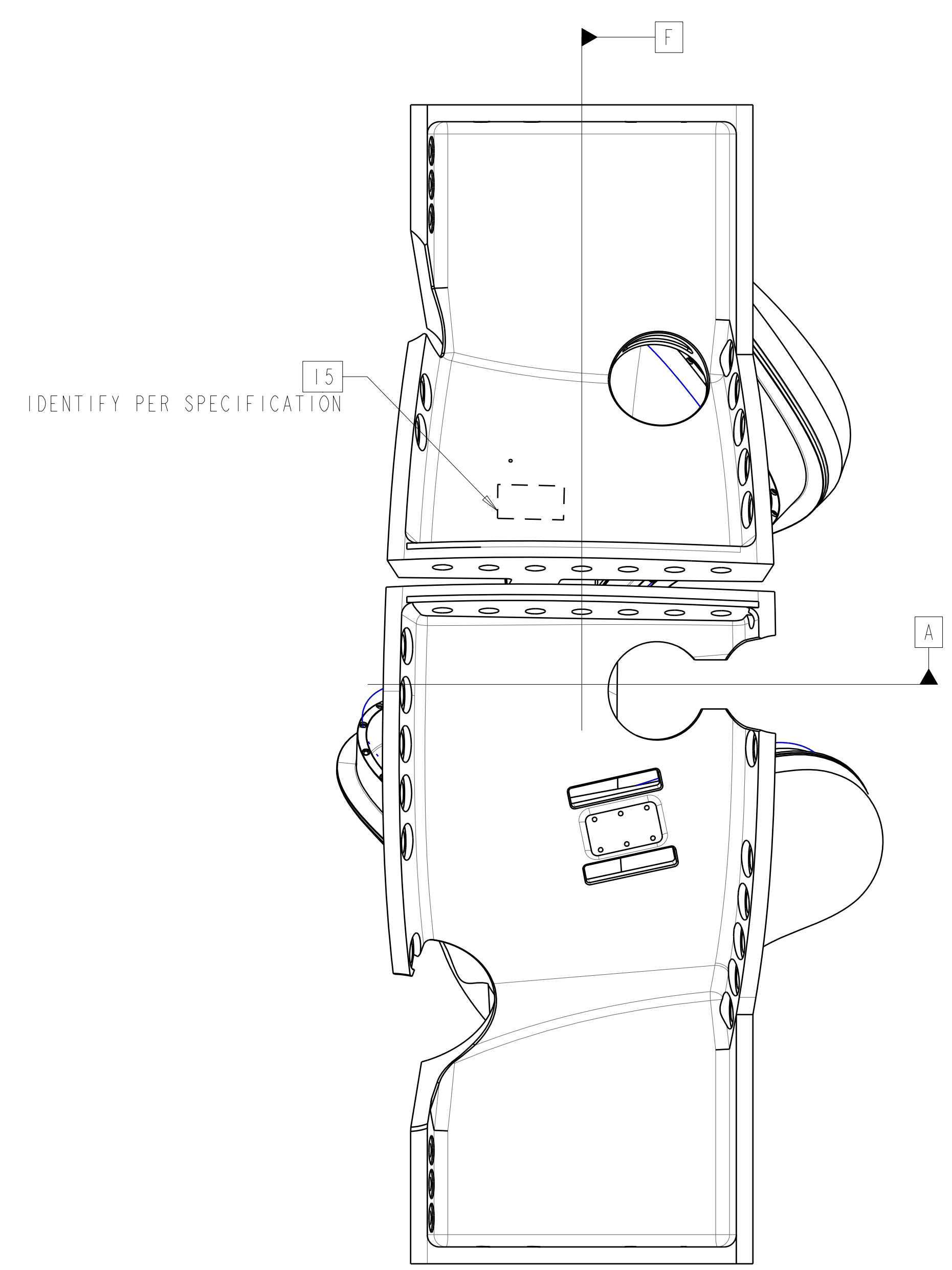
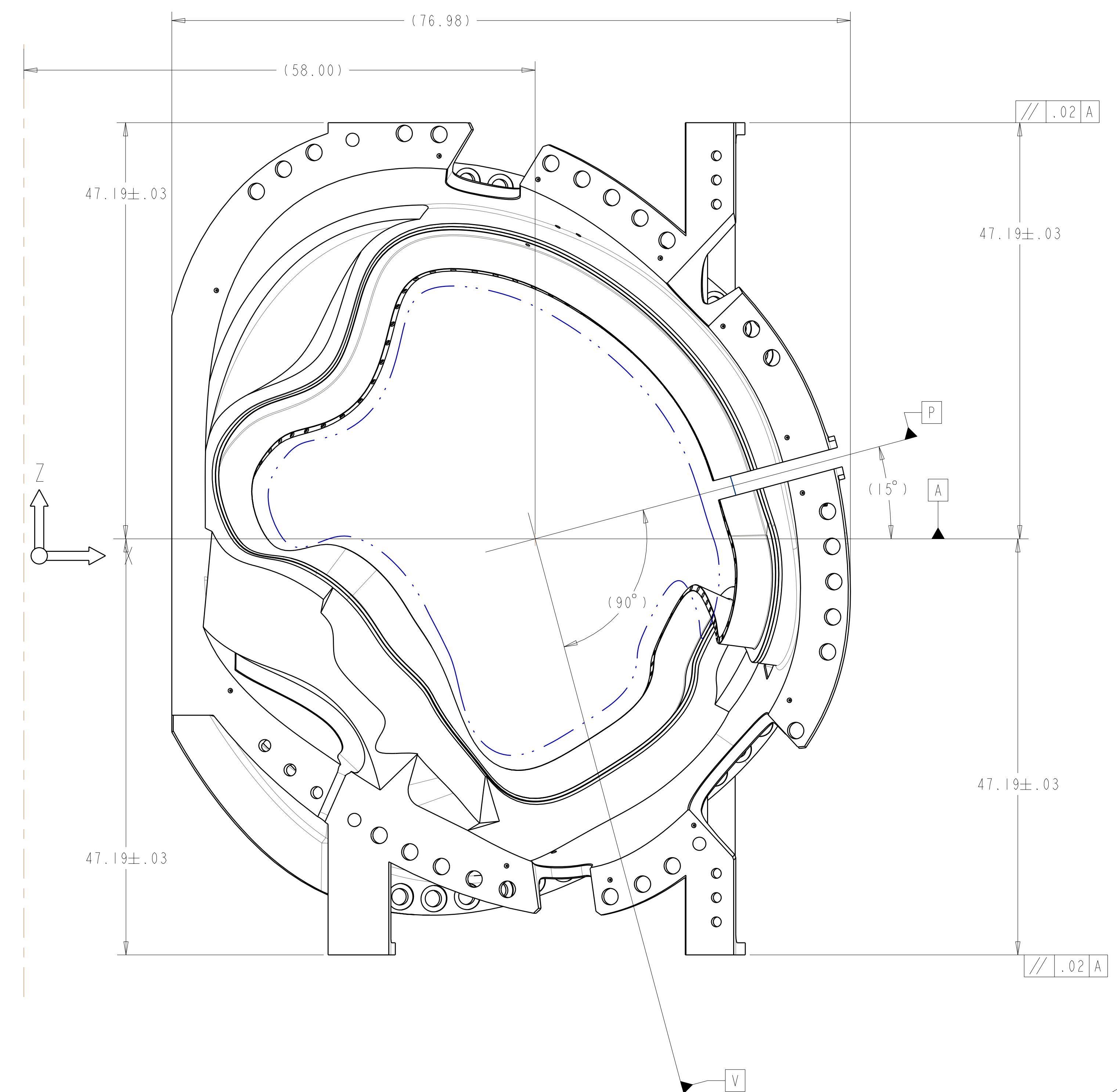


ISOMETRIC VIEW

- 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 SEI41-116.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 = 4898 LBS.  
 WEIGHT OF FINISHED PART NOT TO EXCEED 6000 LBS.
  - UNLESS OTHERWISE SPECIFIED, AS-CAST SURFACE PROFILE TOLERANCE =  $\pm 0.25$  INCH, WITH EXEMPTION FOR INTERSECTING SURFACES WHERE FILLETS ARE EXPECTED. MIN FILLET AND CORNER RADII =  $0.5 \pm 0.1$  IN.
  - DESIGNATED SURFACE REGIONS HAVE PROFILE TOLERANCE =  $\pm 0.125$  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 =  $\pm 0.01$  IN.
  - BACK SPOTFACE ALL THRU HOLES MINIMUM TO CLEAN UP.
  - SEE LATEST REVISION OF SPECIFICATION NCSX-CSPEC-141-03 FOR ADDITIONAL REQUIREMENTS.



SCALE .125

AR	X	SEI41-116	WINDING FORM TYPE-C	CAST SS	SEE NOTE #15	I
CAGE CODE	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	FIND NO	
		NEXT ASSEMBLY	PARTS LIST			

REV	DESCRIPTION	BY	DATE	CHK	DEPT	DATE	PE	REG	DATE	ORNL	DOE	DATE
6	REVISED PART AND DRAWING PER ECN 5009	GLL	7-05	MJC			DEW					
5	REVISED PART AND DRAWING PER ECN 4994	GLL	5-05	MJC			DEW					
4	REVISED DRAWING AND MODEL PER ECN 4965	GLL	3-05	MJC			DEW					
3	REVISED DRAWING AND MODEL PER ECN 4944	GLL	1/05	MJC			DEW					
2	SHEET 11 REMOVED TABLES III & IV	GLL	9/04	MJC			DEW					
1	REVERSED UPPER INB VERT SUPP POCKET.	DEW	7/04	TGB			DEW					

SCALE NOTED		DES	T BROWN	5-5-04
TOLERANCES UNLESS OTHERWISE SPECIFIED		DRW	P MILLER	5-5-04
FRACTIONS		CHK	M. COLE	6-25-04
XX DECIMALS ± .01		SECT		
XXX DECIMALS ± .005		DEPT		
ANGLES ± 0'15"		PE	D. WILLIAMSON	6-25-04
BREAK SHARP EDGES .06 MAX		CR		
FINISH .125 UNLESS OTHERWISE SPECIFIED		PJ		
		RED		
		PPPL DRFT	J. SIEGEL	6-25-04

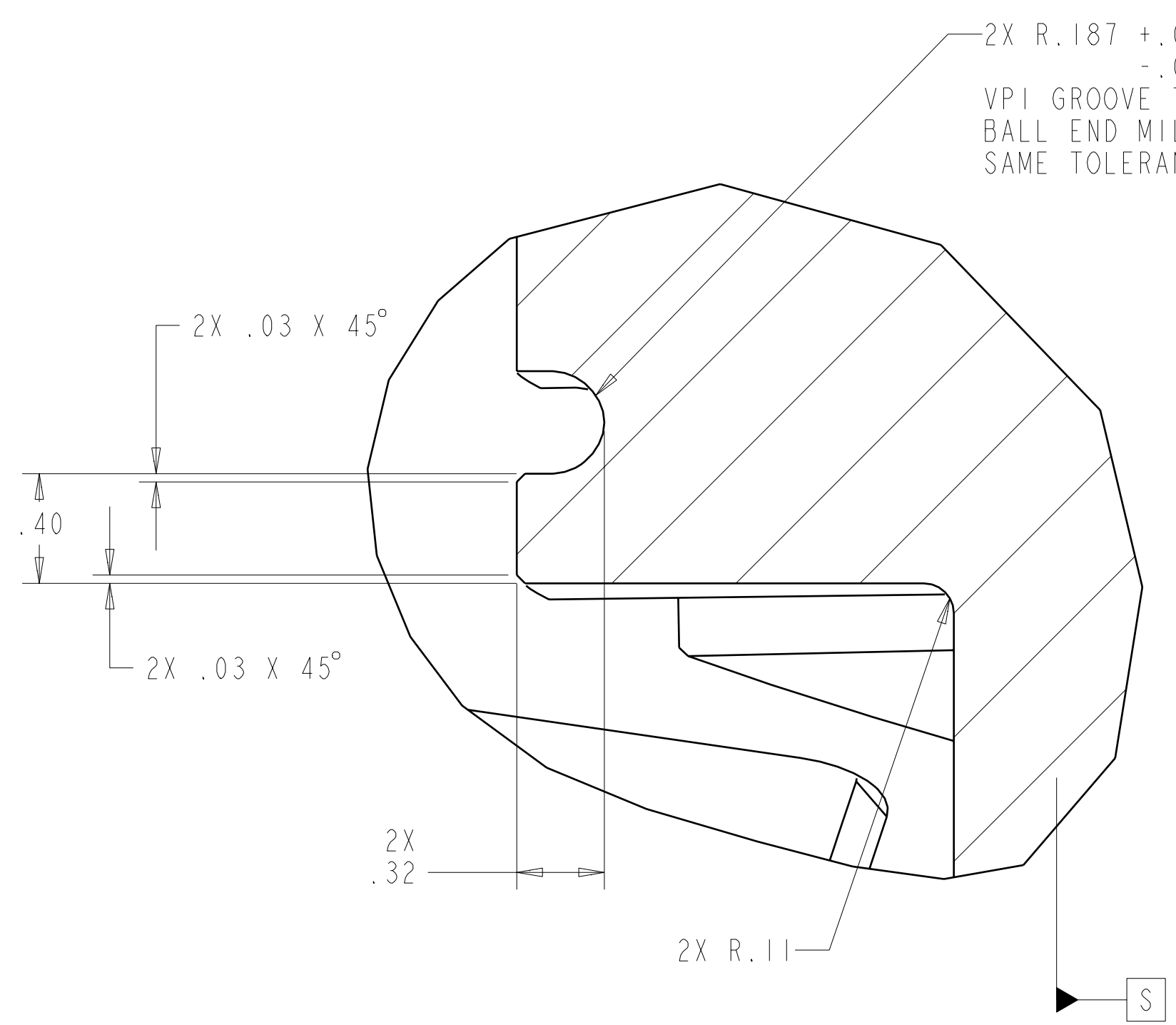
UT-BATTELLE		Oak Ridge National Laboratory	
NATIONAL COMPACT STELLARATOR EXPERIMENT		managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee	
PRODUCTION WINDING FORM TYPE-C			
VERSION NO.	4	PLANT	X-10
RELEASE LEVEL	WIP	BLDG	5700
		FL	3
		SHT OF	111
		TYPE	S
		CLASS	U
		REV	6

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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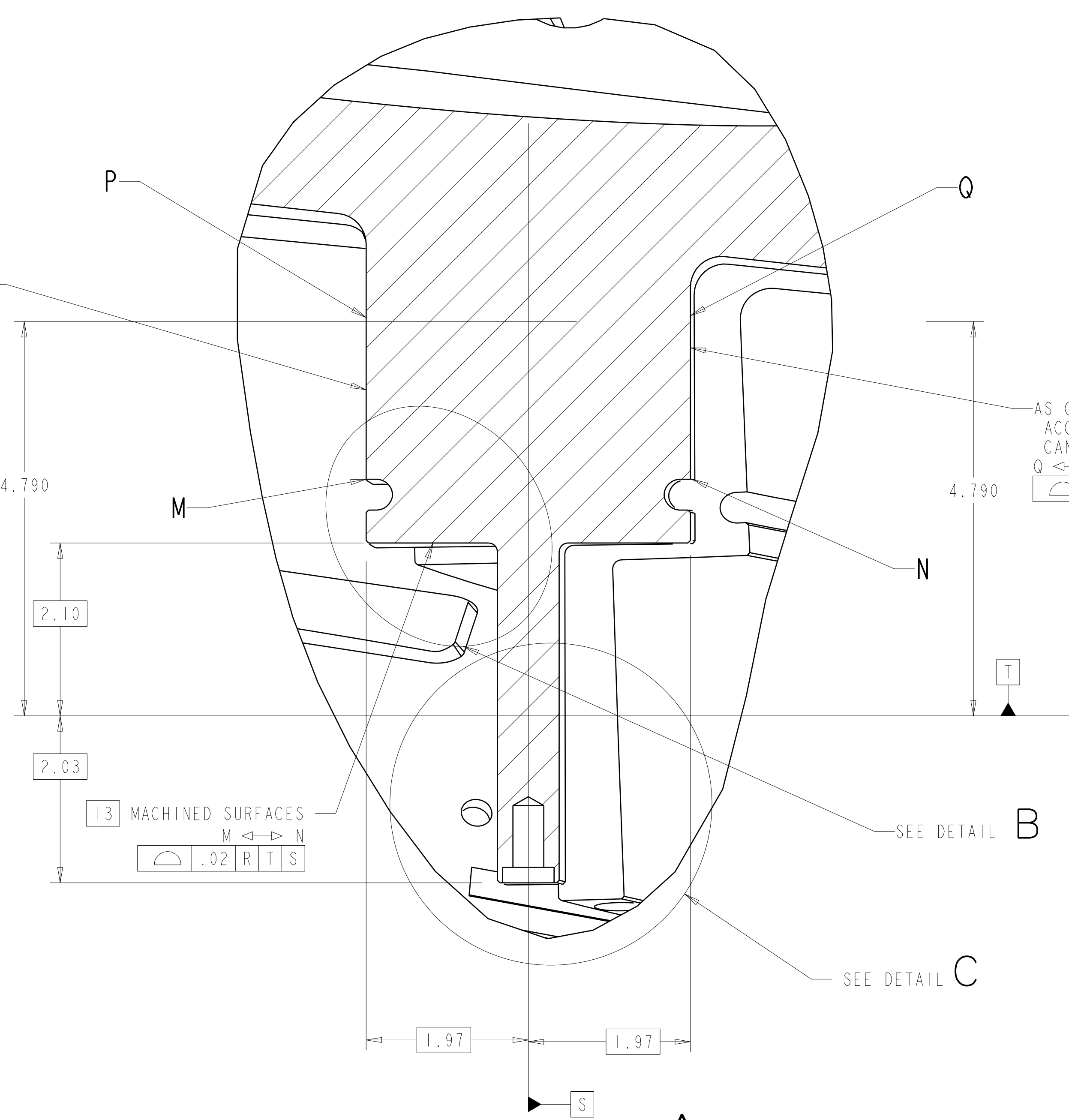
FOR NOTES AND PARTS LIST SEE SHEET 1



**DETAIL B**  
SCALE 2.000

2X R.187 +.025  
-.005  
VP1 GROOVE TO BE MACHINED BY  
BALL END MILL, OR DISC CUTTER IF  
SAME TOLERANCE CAN BE ACHIEVED.

AS CAST SURFACES  
ACCEPTABLE. IF TOLERANCE  
CAN BE ACHIEVED  
P ↔ M  
|.I|R|S|T|

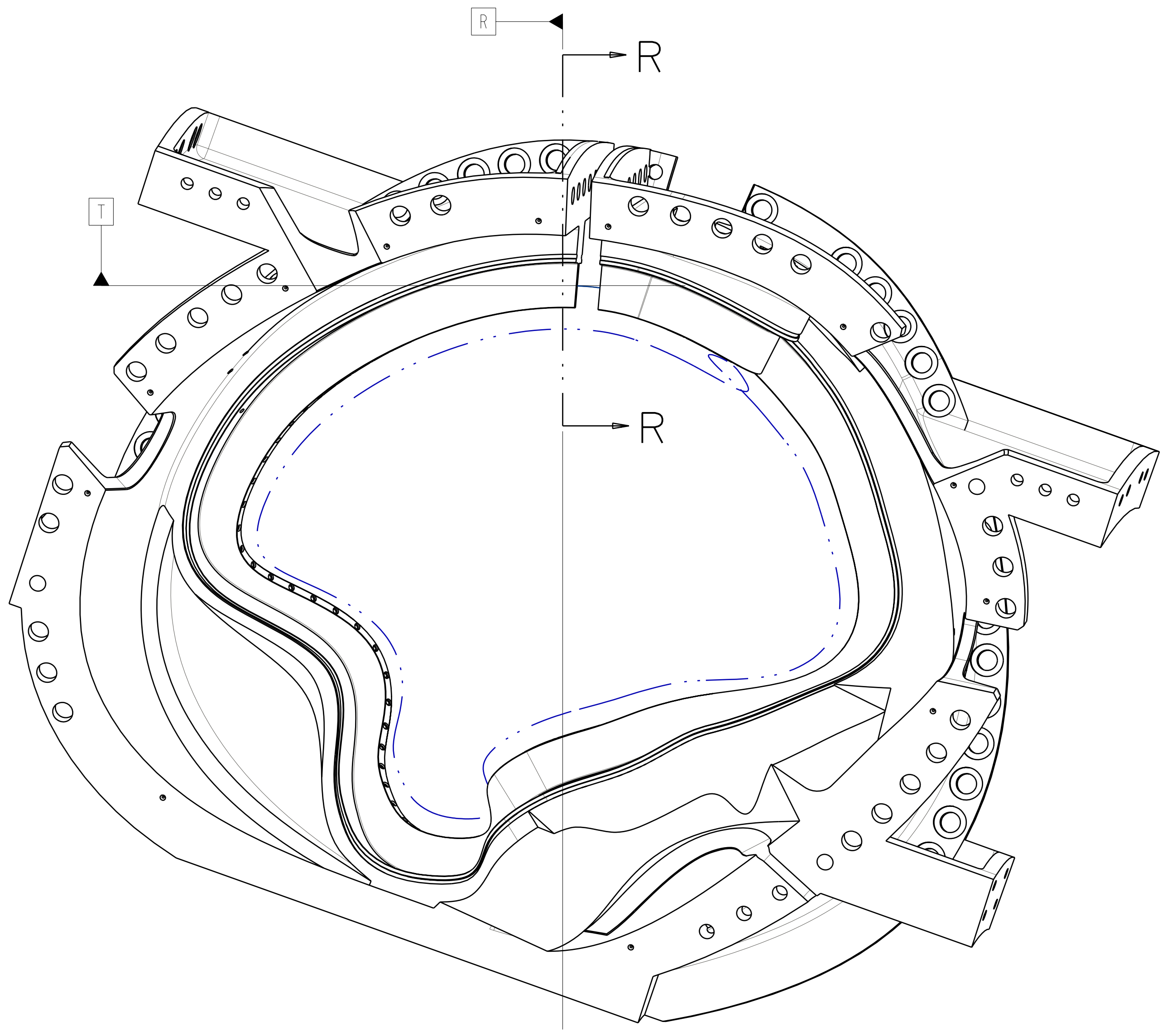


**DETAIL A**  
SCALE 1.00

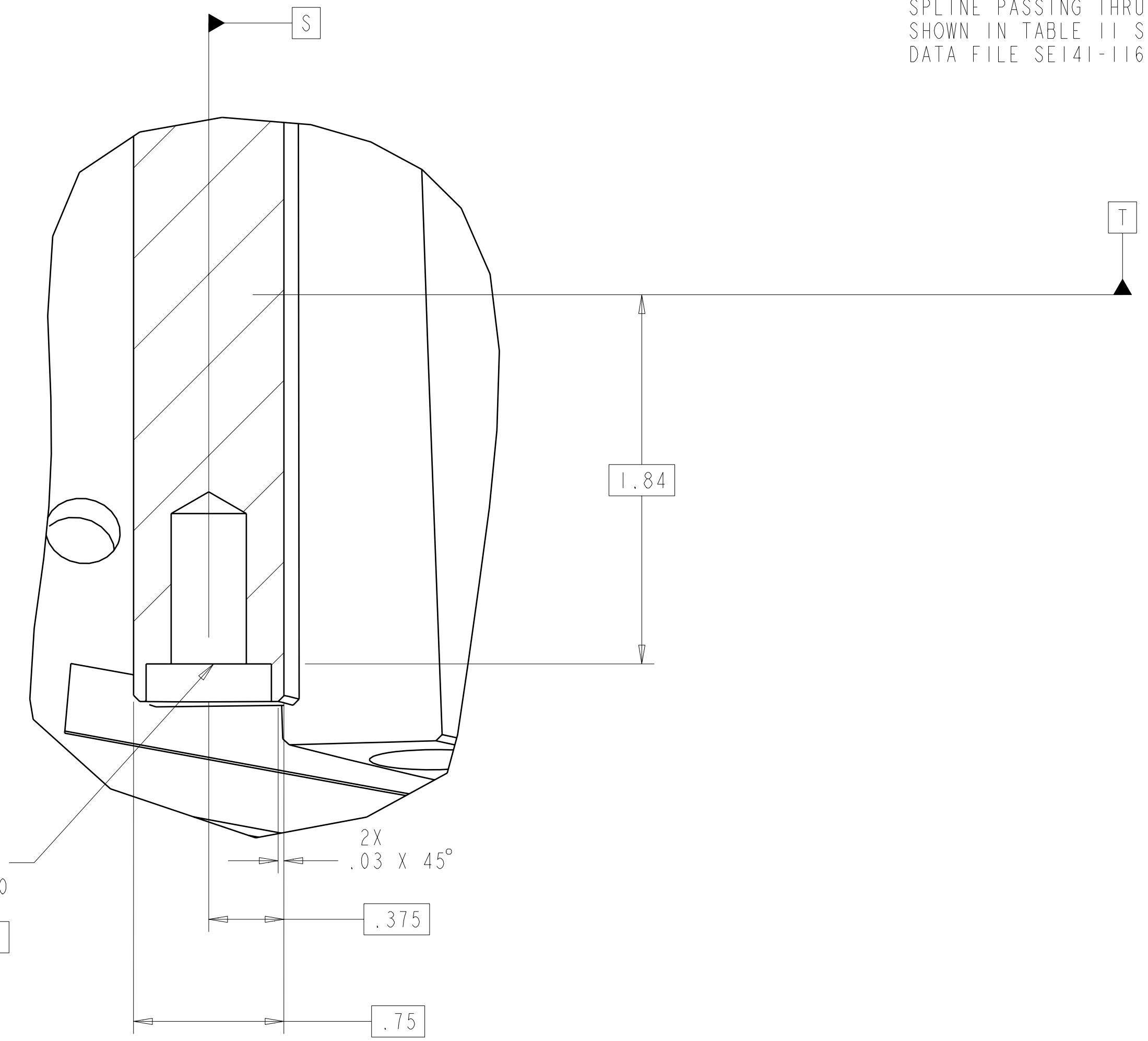
TYPICAL FOR ALL POINTS ALONG WINDING CENTER

AS CAST SURFACES  
ACCEPTABLE. IF TOLERANCE  
CAN BE ACHIEVED  
O ↔ N  
|.I|R|S|T|

13 MACHINED SURFACES  
M ↔ N  
|.02|R|T|S|

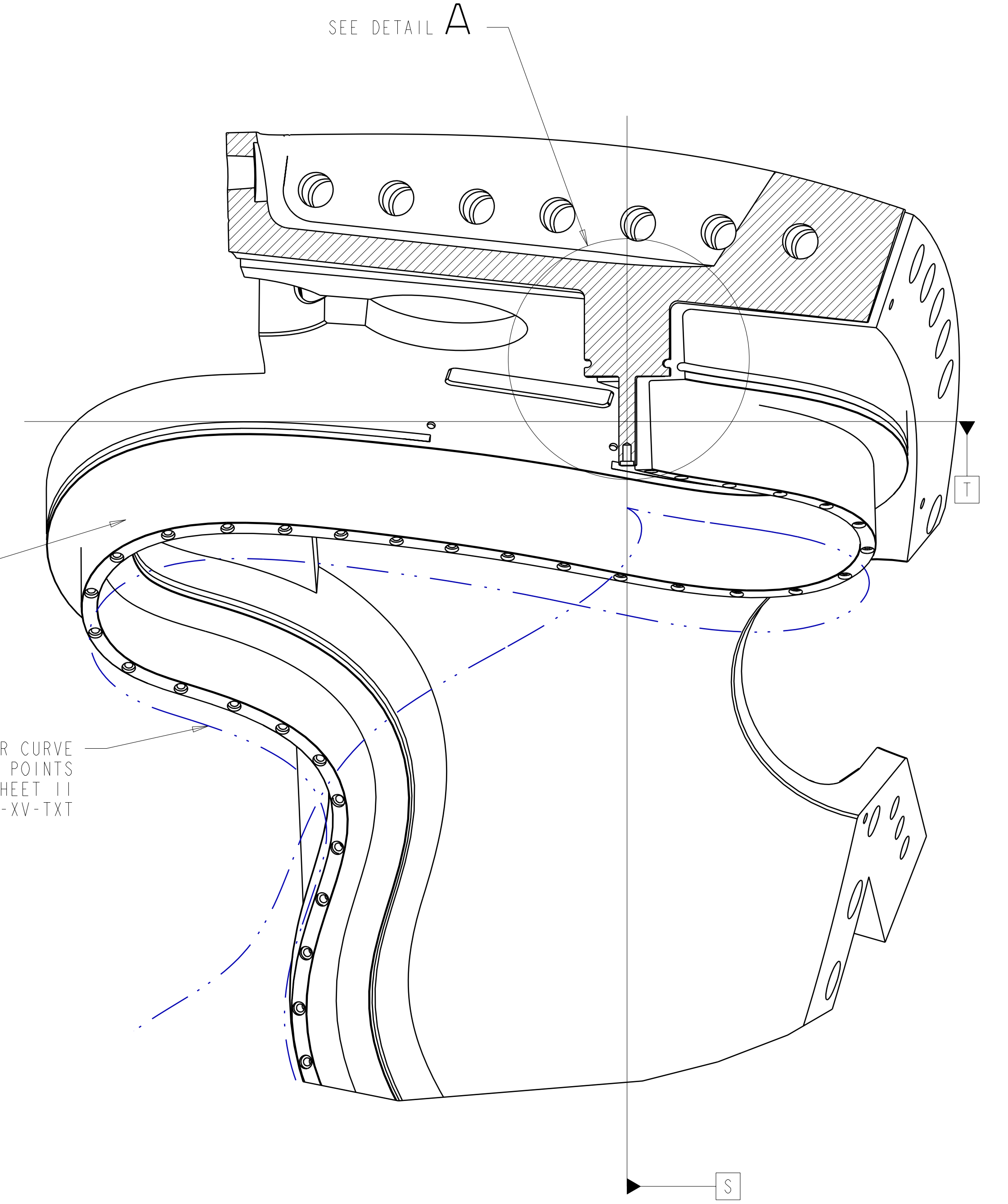


DATUM R = PLANE NORMAL TO WINDING CENTER  
DATUM S = PLANE PASSING THRU WINDING CENTER AND X VECTOR AT DATUM R  
DATUM T = PLANE PASSING THRU WINDING CENTER ORTHOGONAL TO DATUM S



**DETAIL C**  
SCALE 2.00

3 4  
96X  
Ø.375 -16 UNC Ψ.750  
.625 Ψ.188  
|.01|R|S|T|  
TRUE POSITION APPLIES  
TO DEPTH OF COUNTERSINK  
THREADED HOLE DEPTH +.1/-0



**SECTION R-R**  
SCALE 0.25

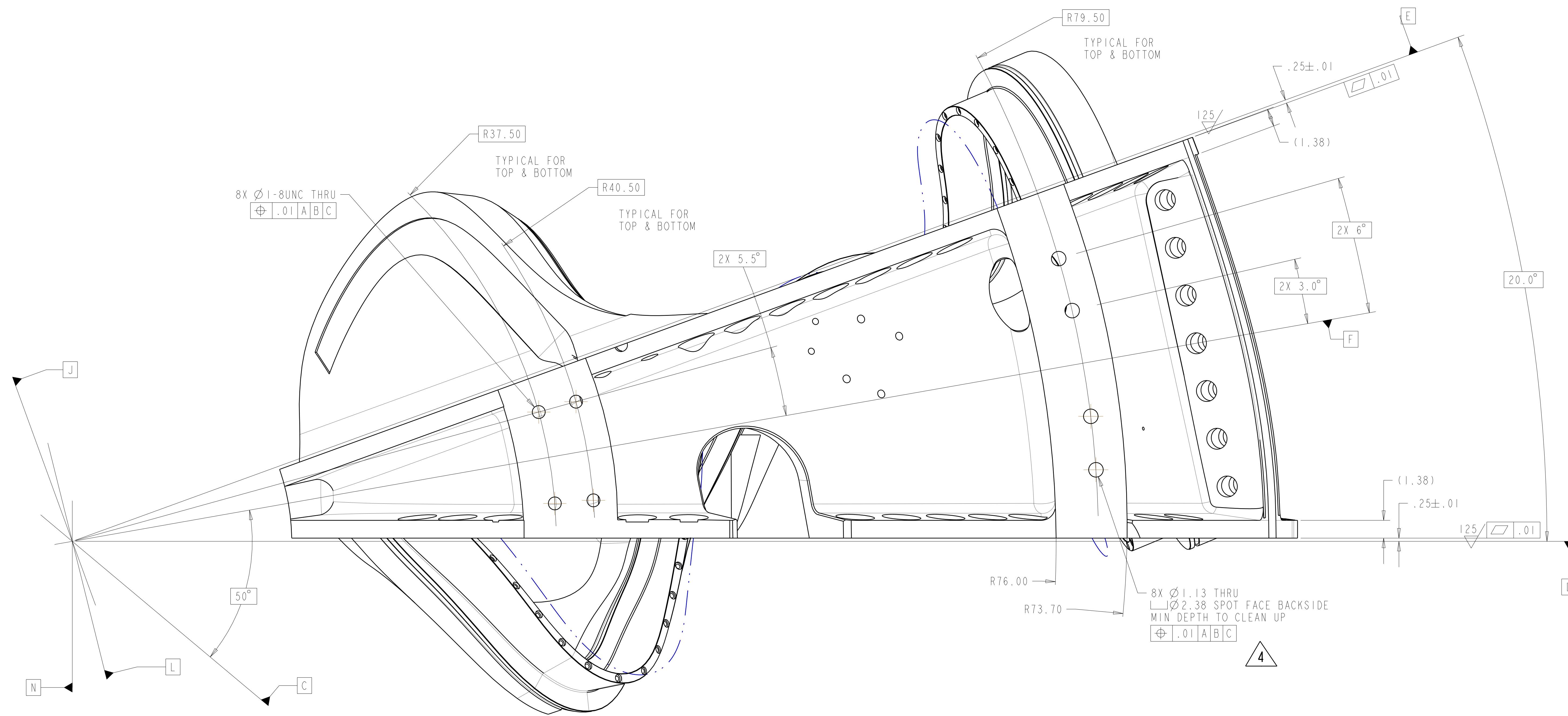
WINDING CENTER CURVE  
SPLINE PASSING THRU POINTS  
SHOWN IN TABLE I SHEET 11  
DATA FILE SE141-116-WC.TXT

X VECTOR CURVE  
SPLINE PASSING THRU POINTS  
SHOWN IN TABLE II SHEET 11  
DATA FILE SE141-116-XV.TXT

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> <b>NATIONAL COMPACT STELLARATOR EXPERIMENT</b>							
PRODUCTION WINDING FORM TYPE-C							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
4	X-10	5700	3	2	11	S	U
RELEASE LEVEL	SE141-116						REV
WIP							6

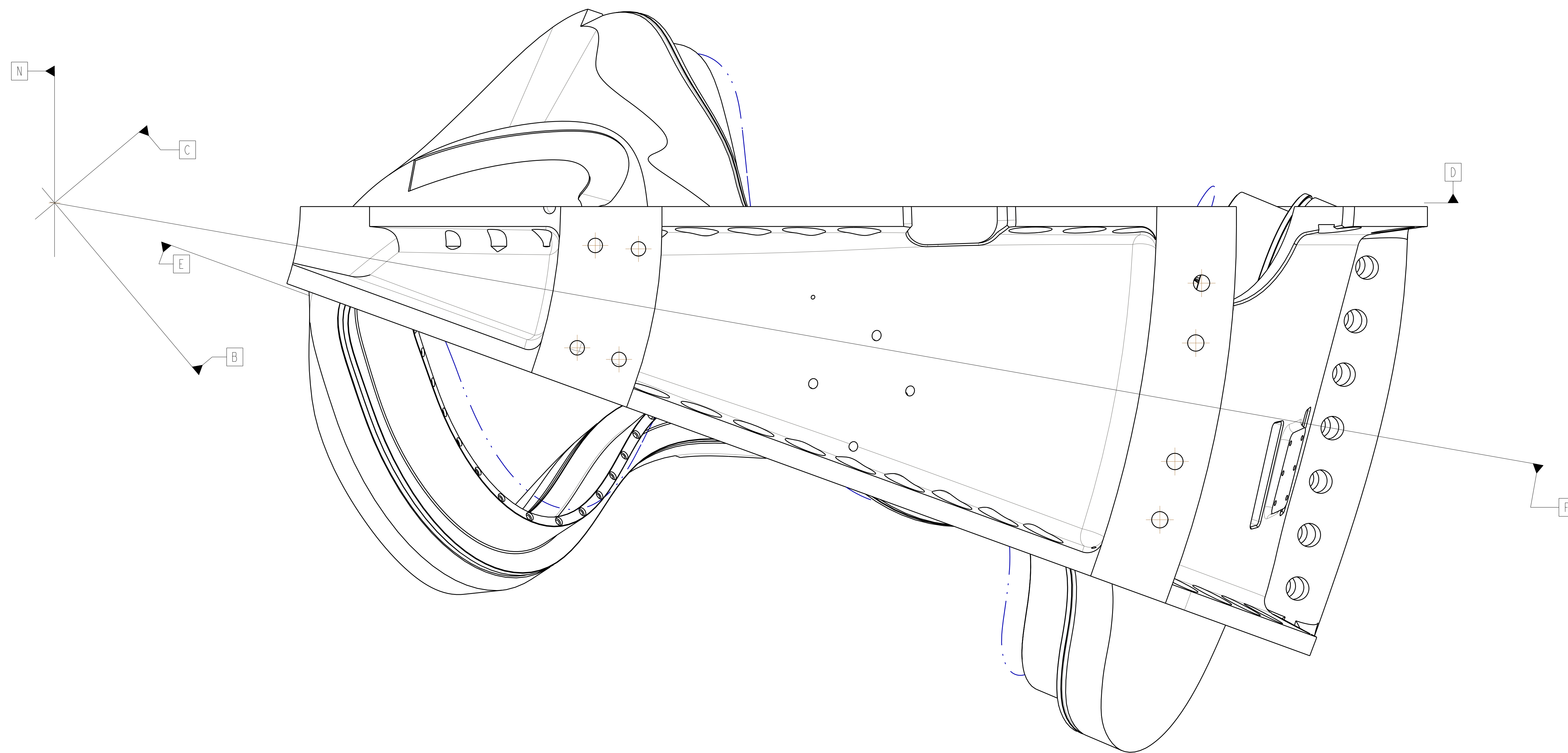
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FOR NOTES AND PARTS LIST SEE SHEET 1



TOP VIEW  
SCALE 0.25

DATUMS A B & C ARE MACHINE SPECIFIC.  
ALL OTHER DATUMS LISTED ON THIS DRAWING  
ARE SPECIFIC TO THIS PART

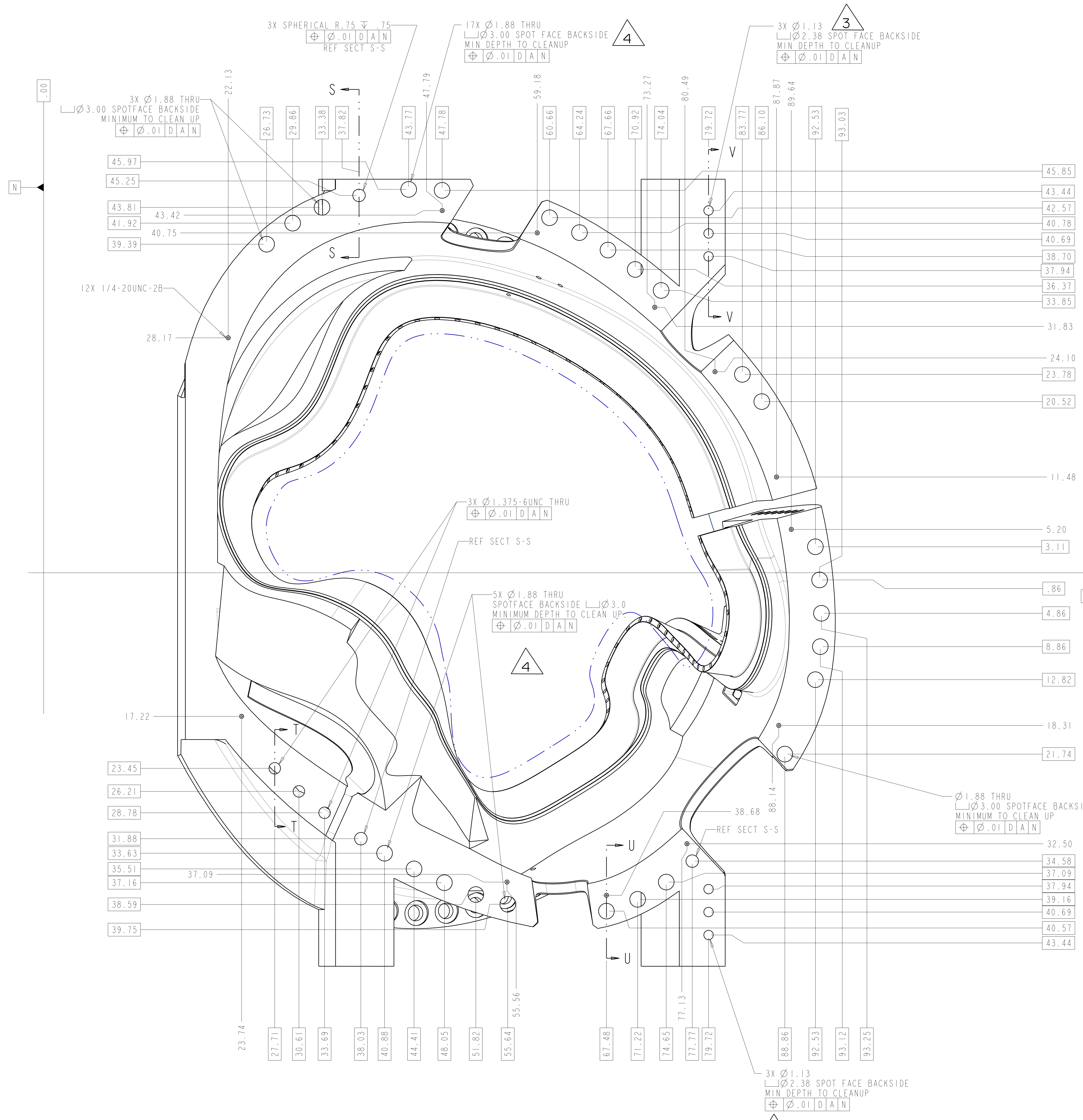


BOTTOM VIEW  
SCALE 0.25

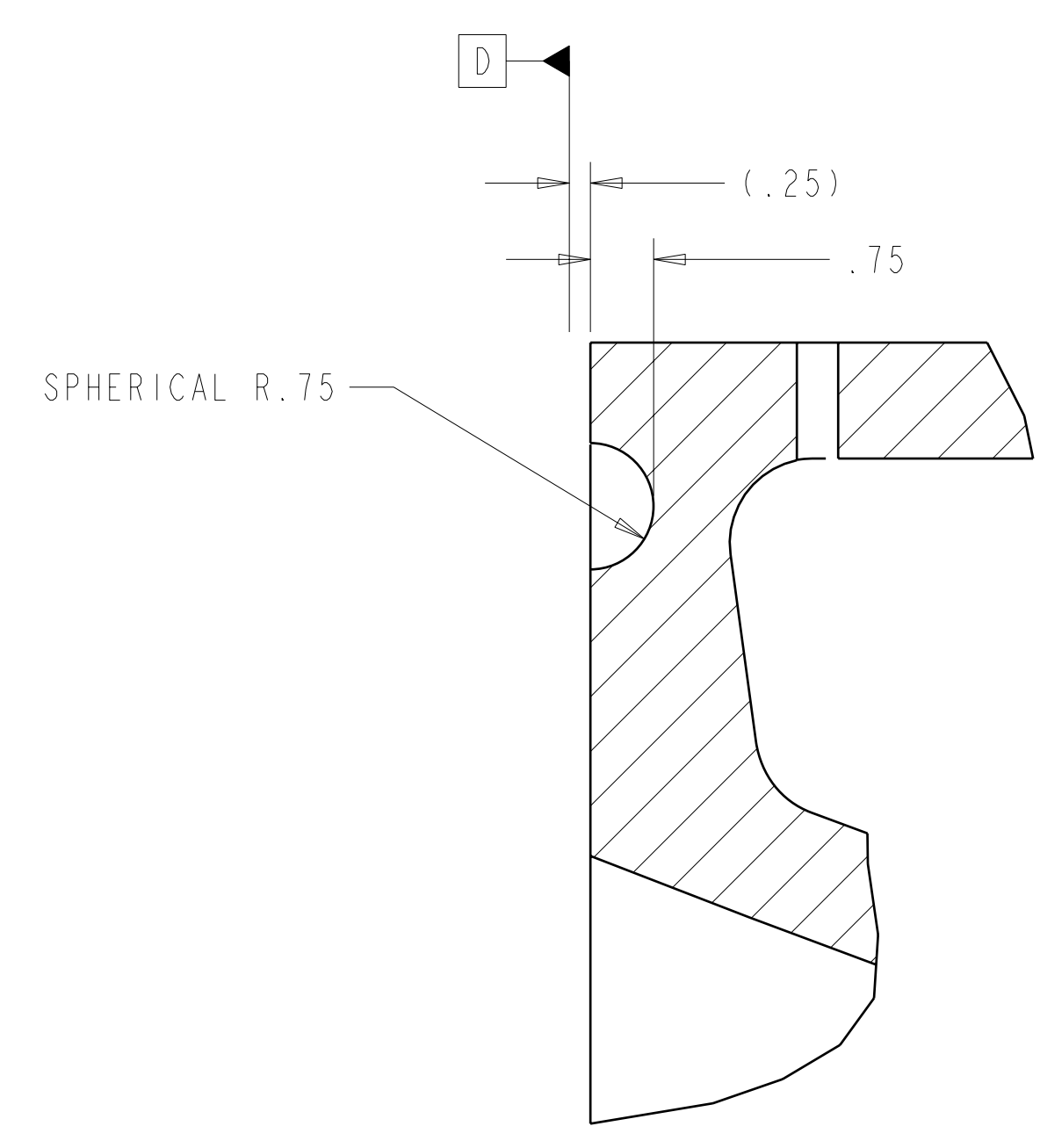
Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee PROJECT NAME							
<b>UT-BATTELLE</b> <b>NATIONAL COMPACT STELLARATOR EXPERIMENT</b>							
<b>PRODUCTION WINDING FORM TYPE-C</b>							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
4	X-10	5700	3	3	11	S	U
RELEASE LEVEL		SEI41-116				REV	
WIP						6	

SEI41-116

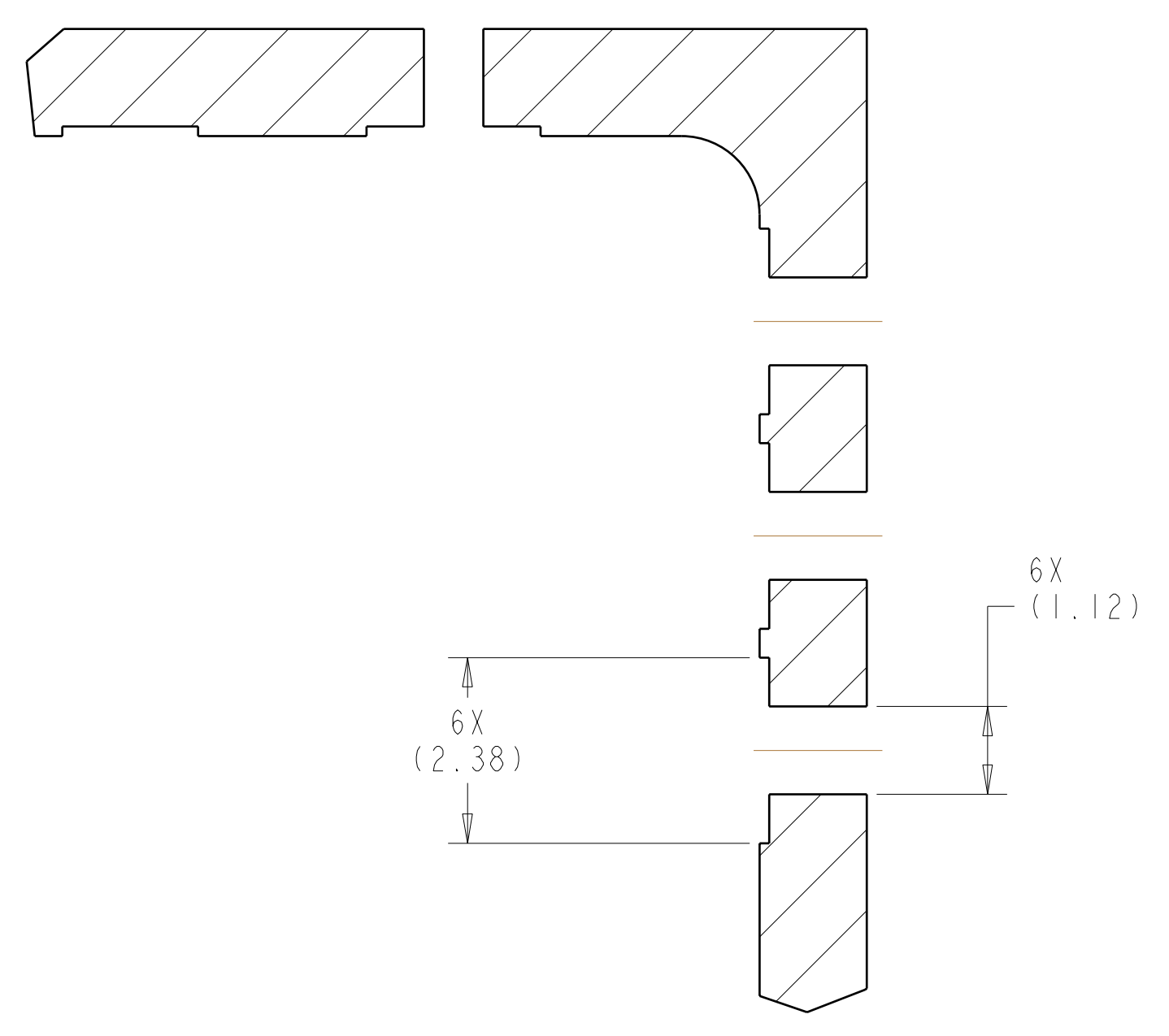
FOR NOTES AND PARTS LIST SEE SHEET 1



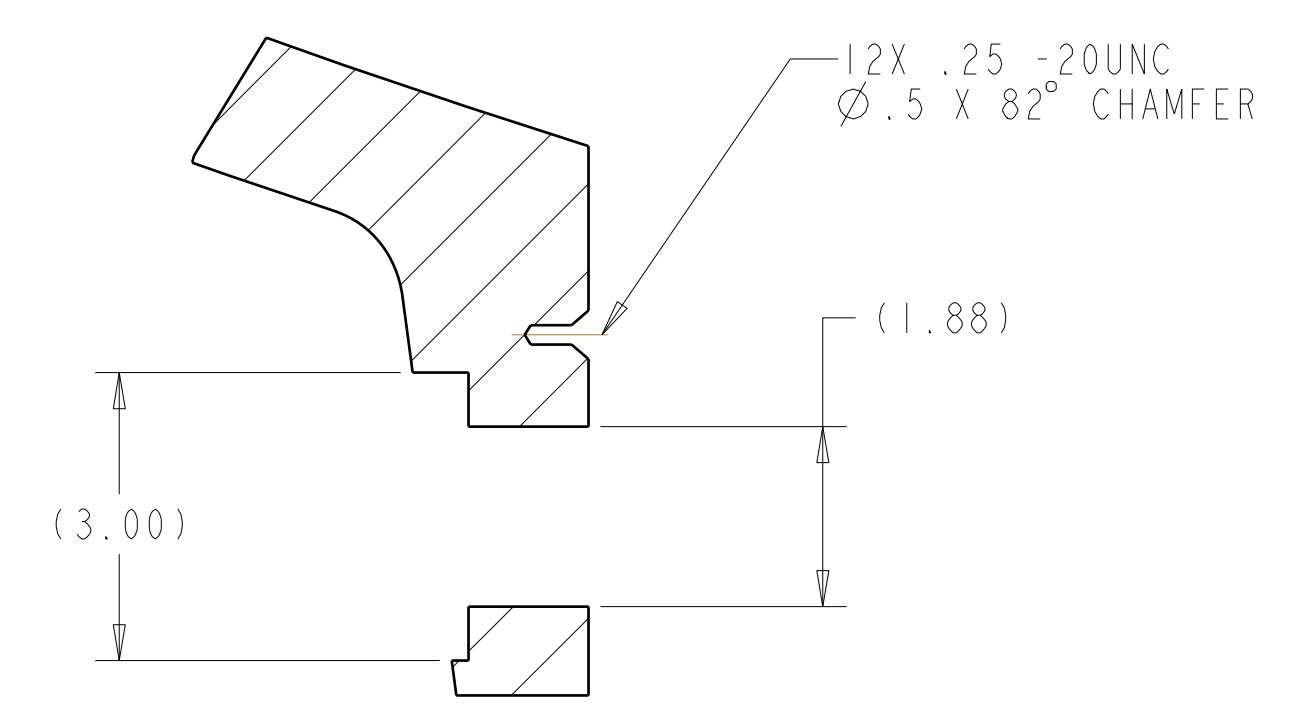
VIEW AT DATUM D  
 SCALE 0.20



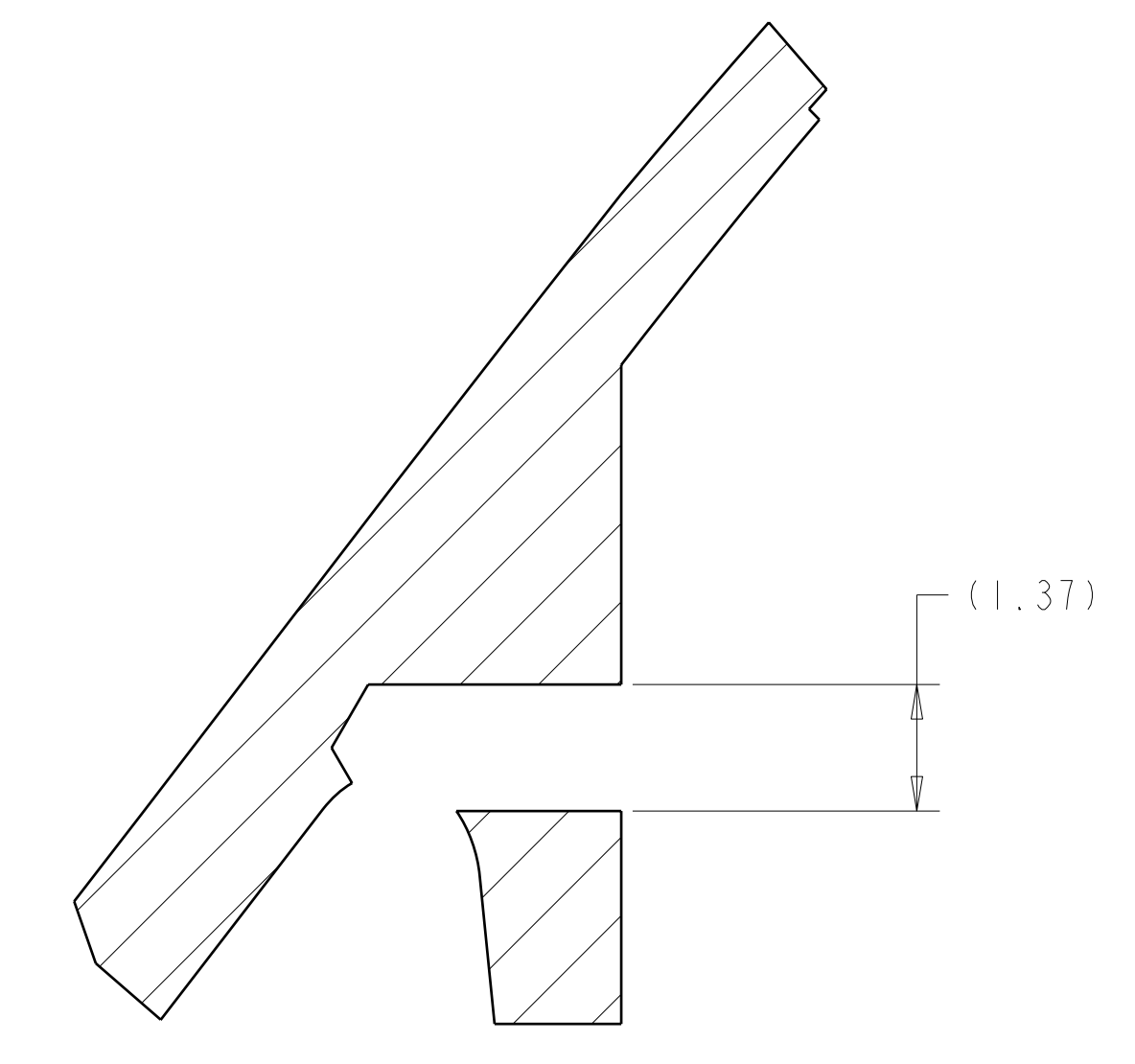
SECTION S-S  
 SCALE 0.50



SECTION V-V  
 SCALE 0.50



SECTION U-U  
 SCALE 0.50



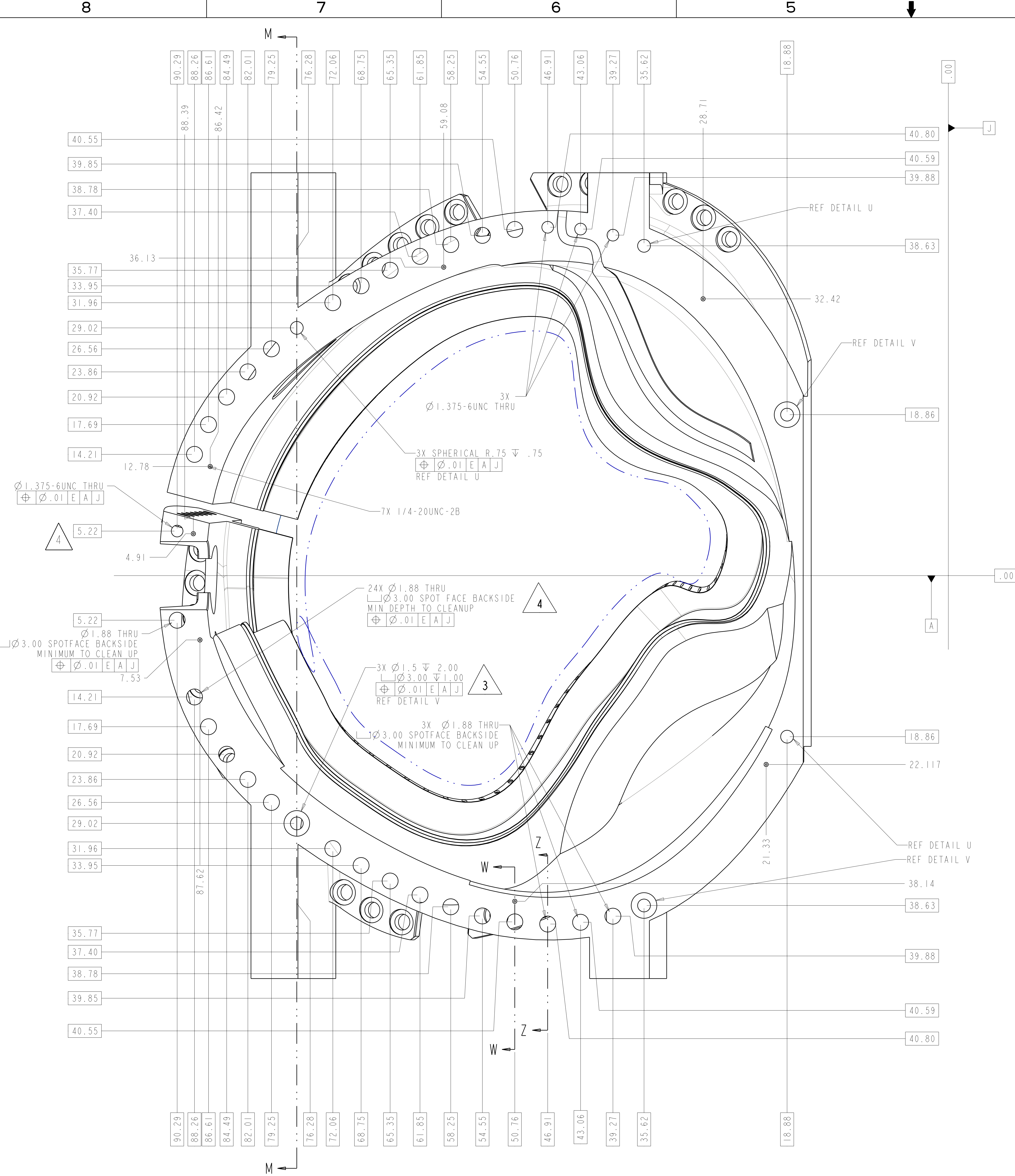
SECTION T-T  
 SCALE 0.50

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							
PRODUCTION WINDING FORM TYPE-C							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
4	X-10	5700	3	4	11	S	U
RELEASE LEVEL	SEI41-116						REV
WIP							6

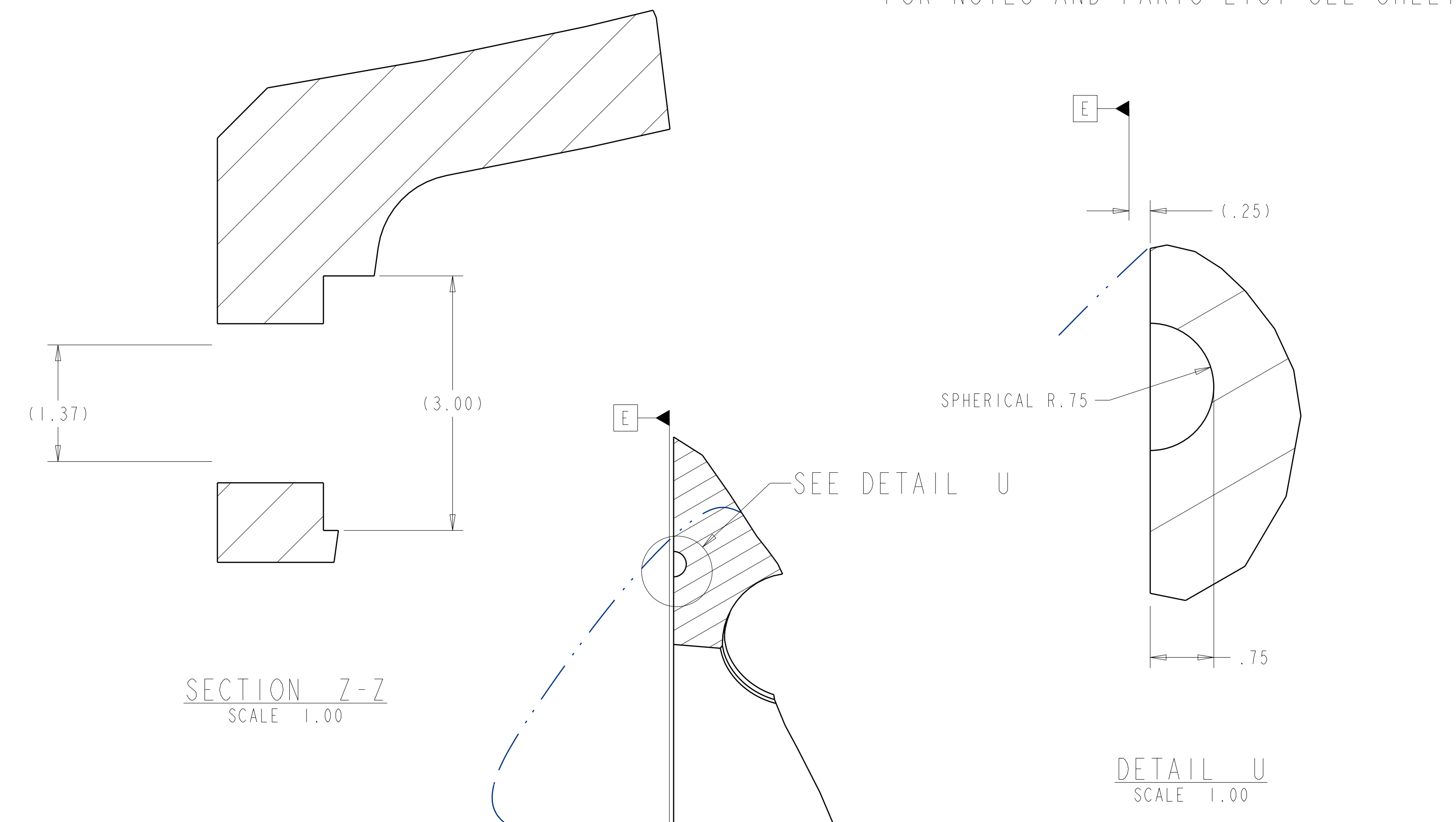
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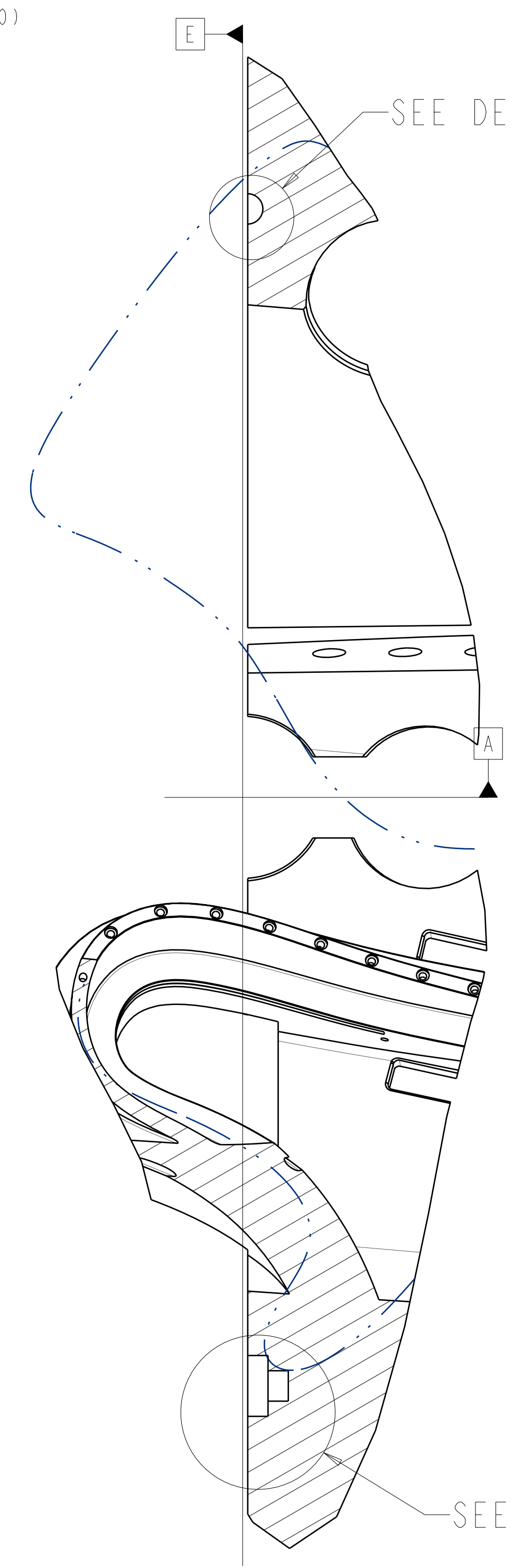
FOR NOTES AND PARTS LIST SEE SHEET 1



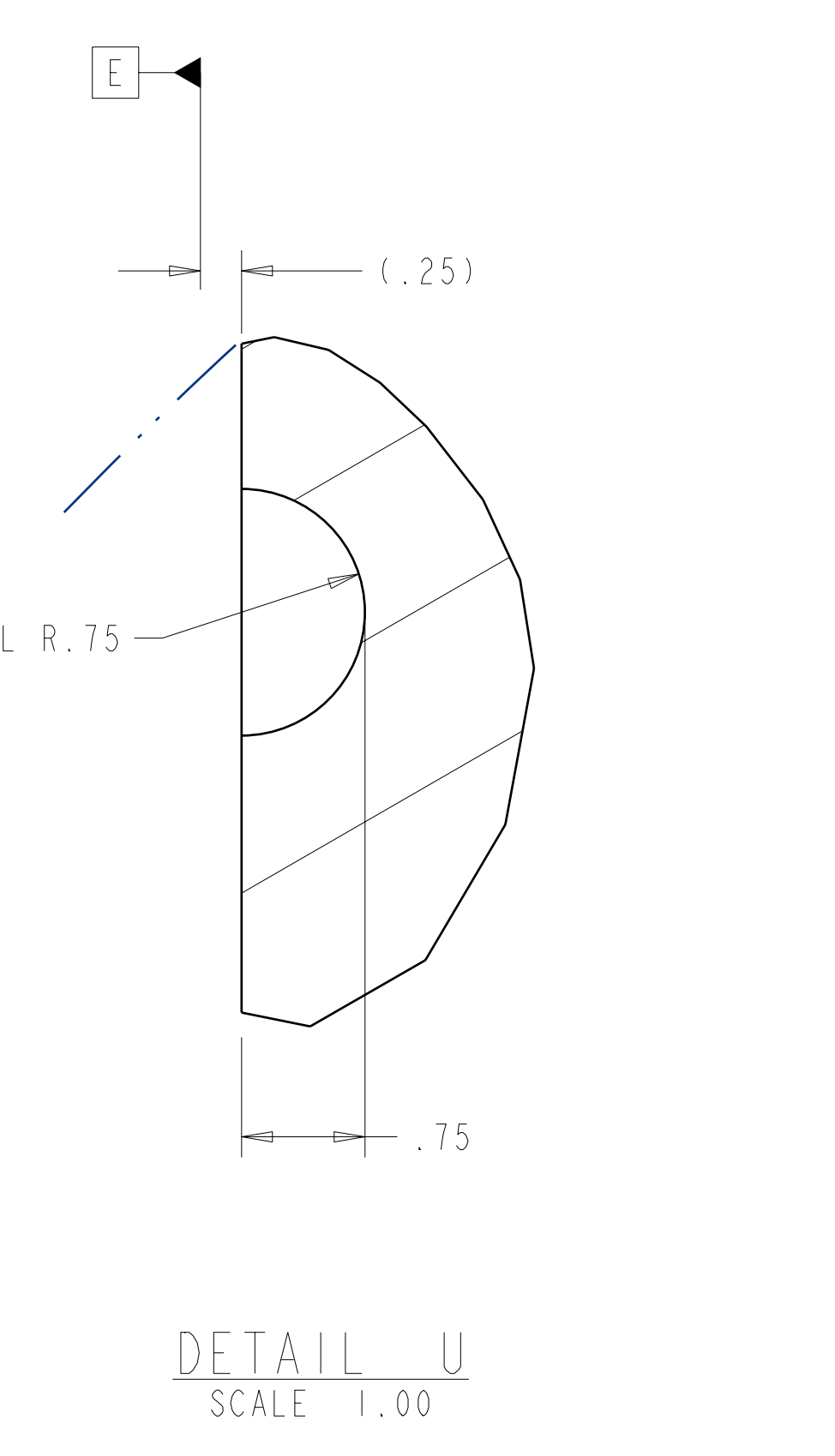
VIEW AT DATUM E  
SCALE 0.20



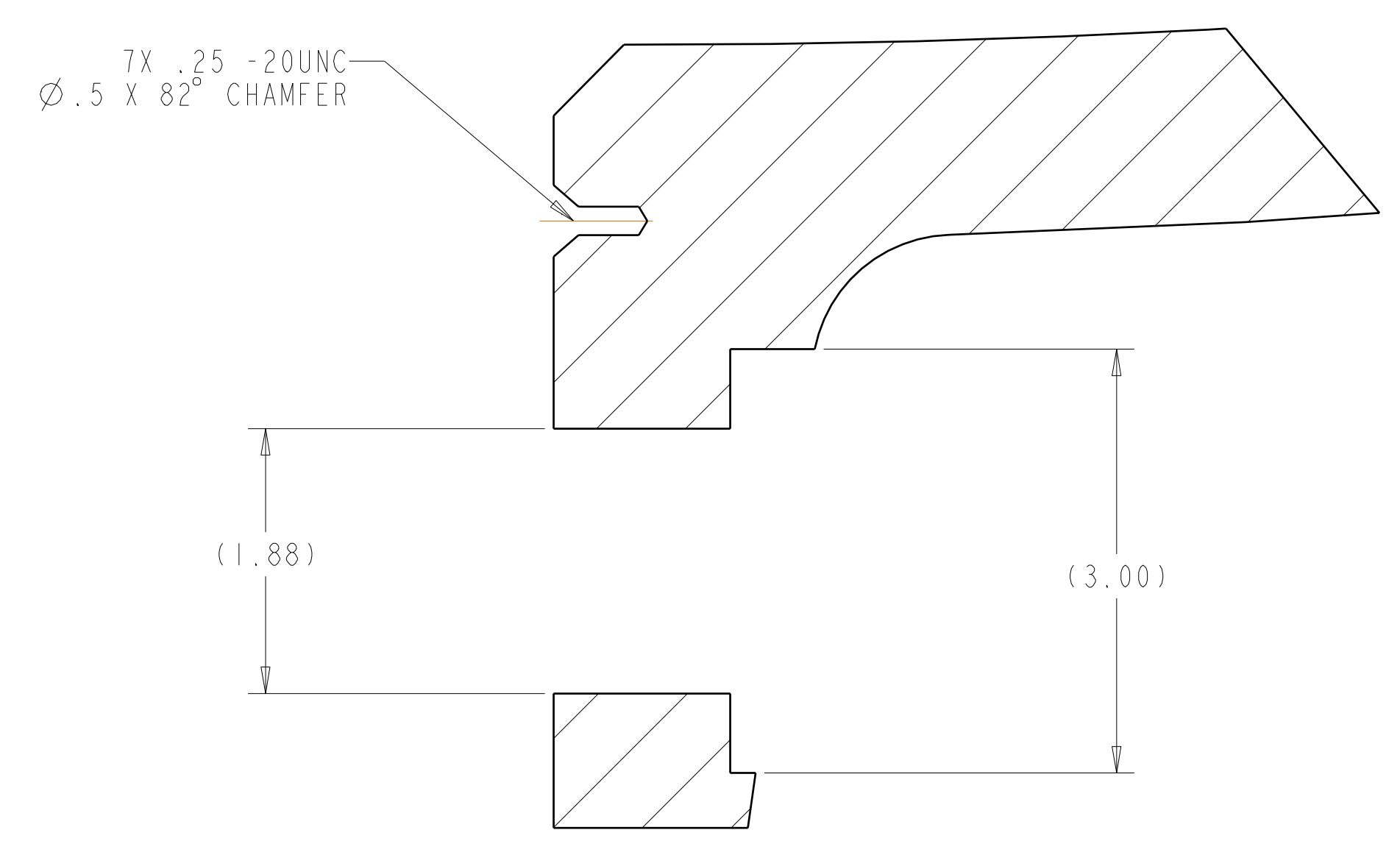
SECTION 7-7  
SCALE 1.00



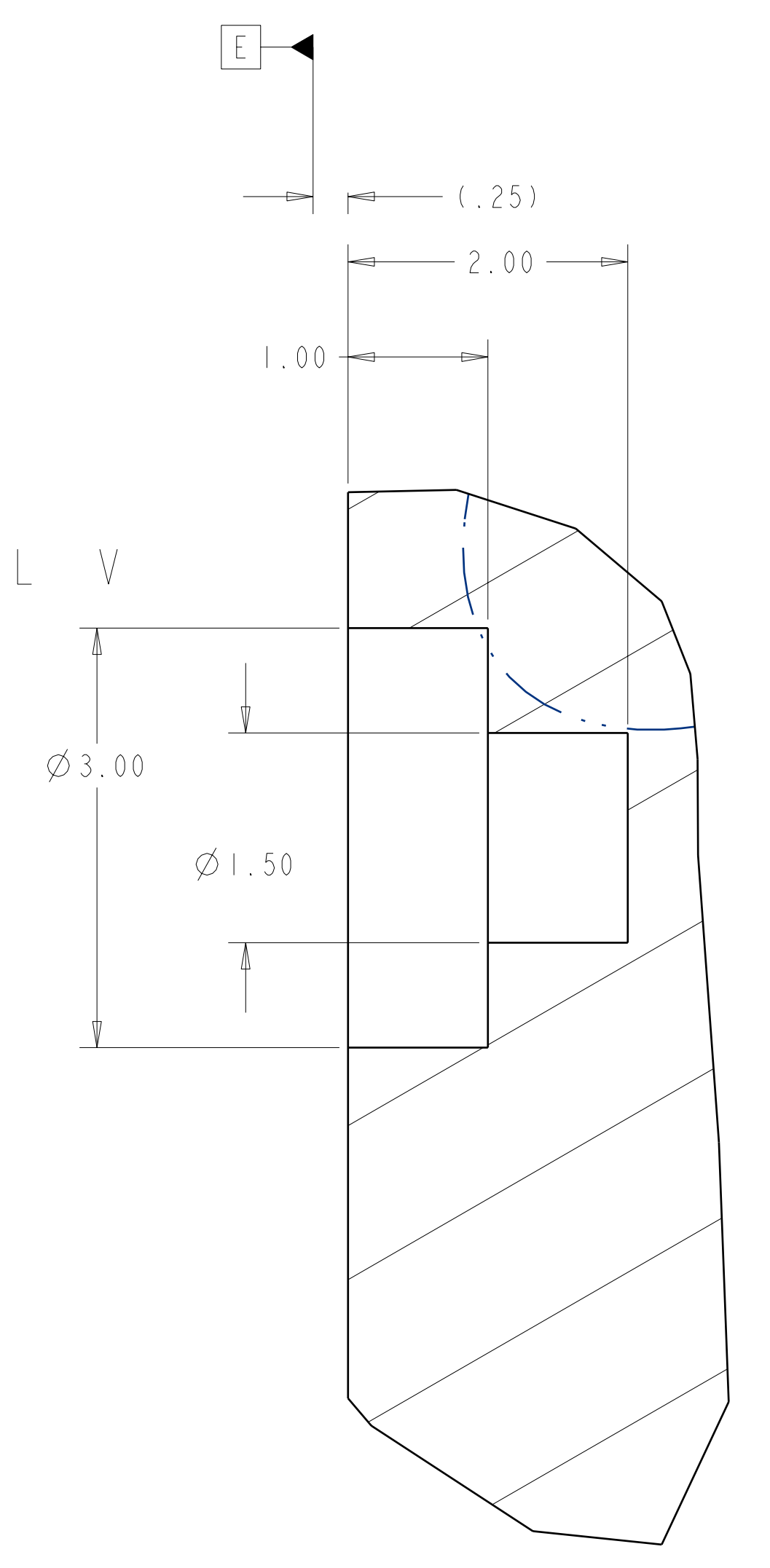
SECTION M-M  
SCALE 1.00



DETAIL U  
SCALE 1.00



SECTION W-W  
SCALE 1.00

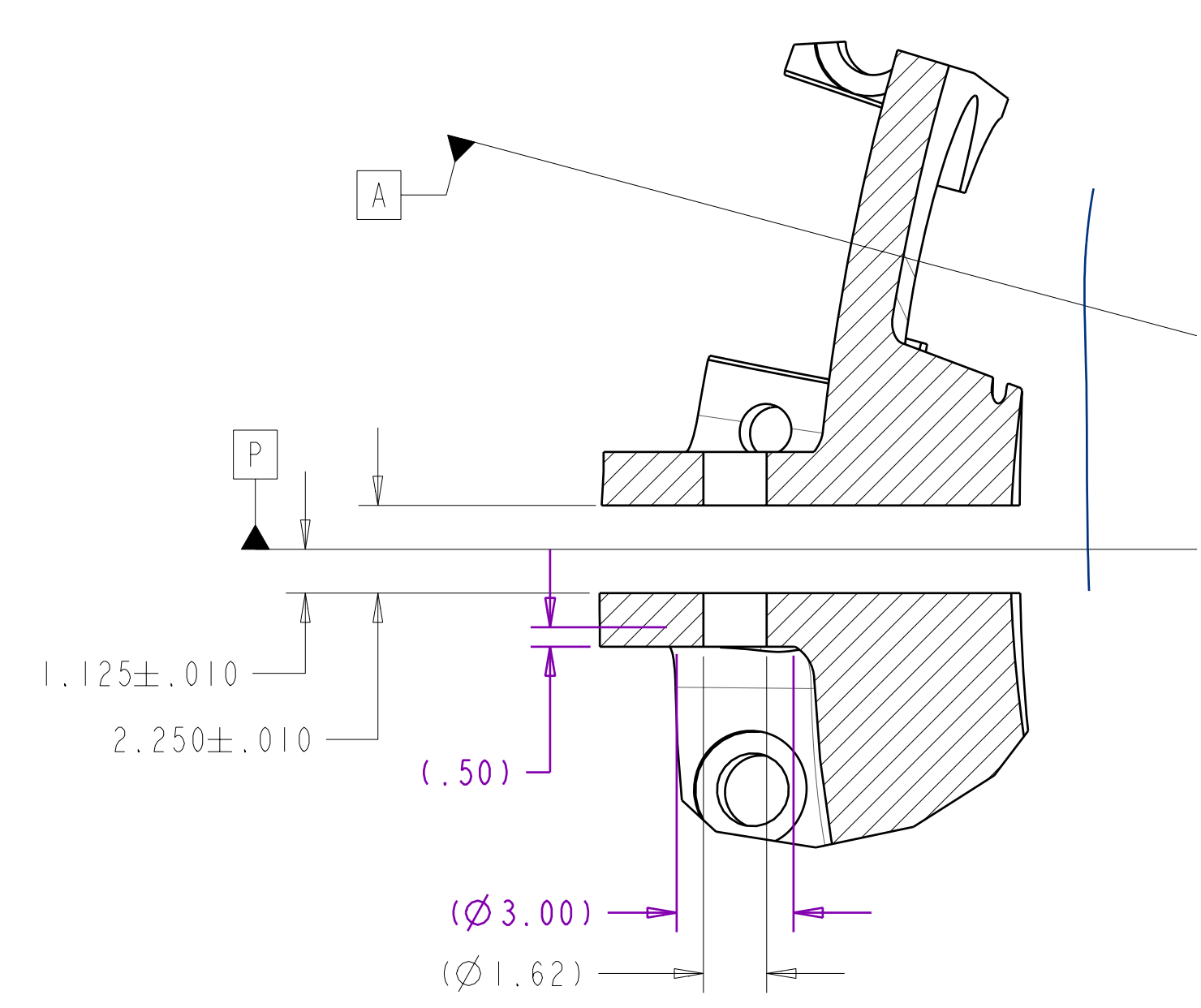
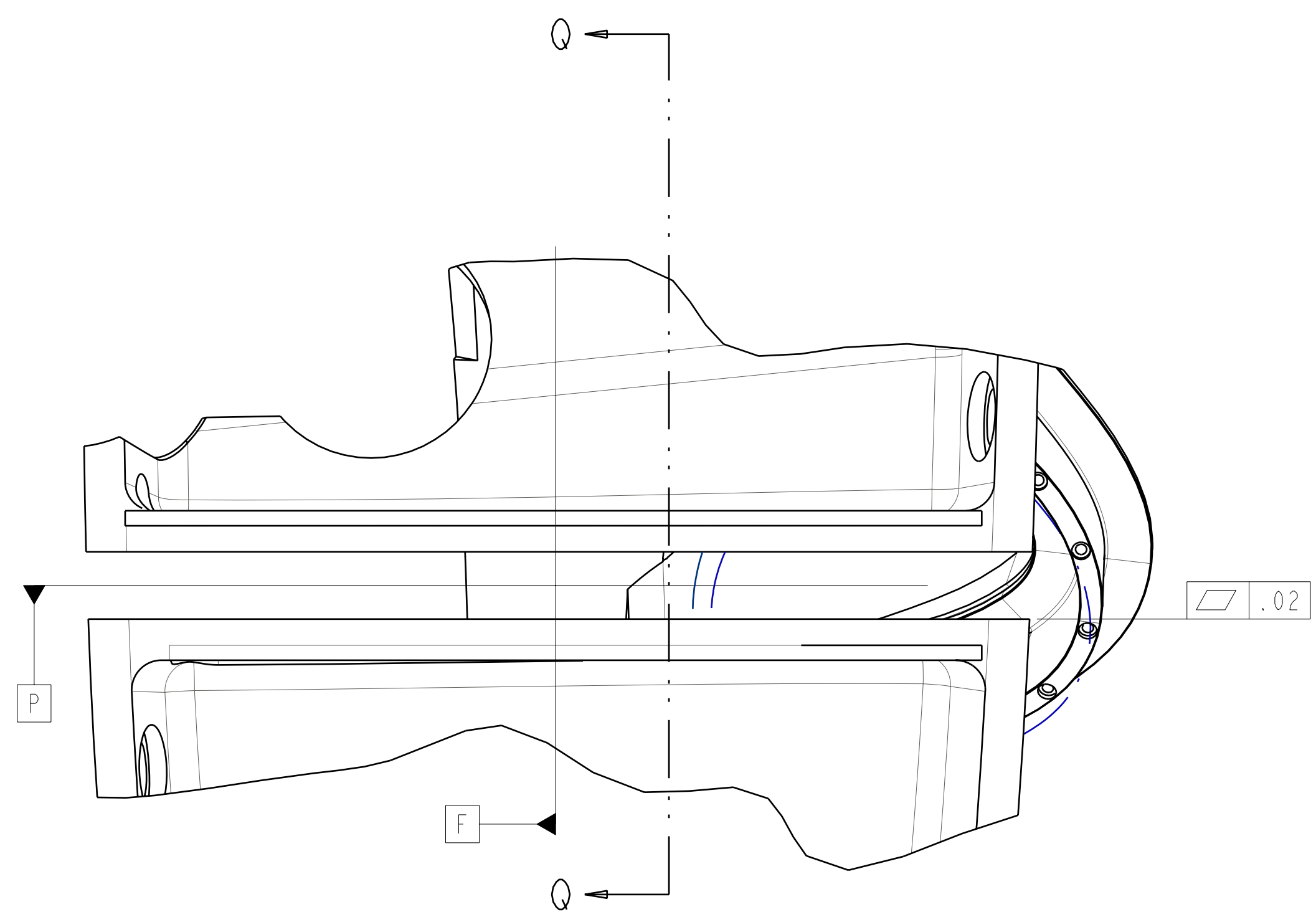
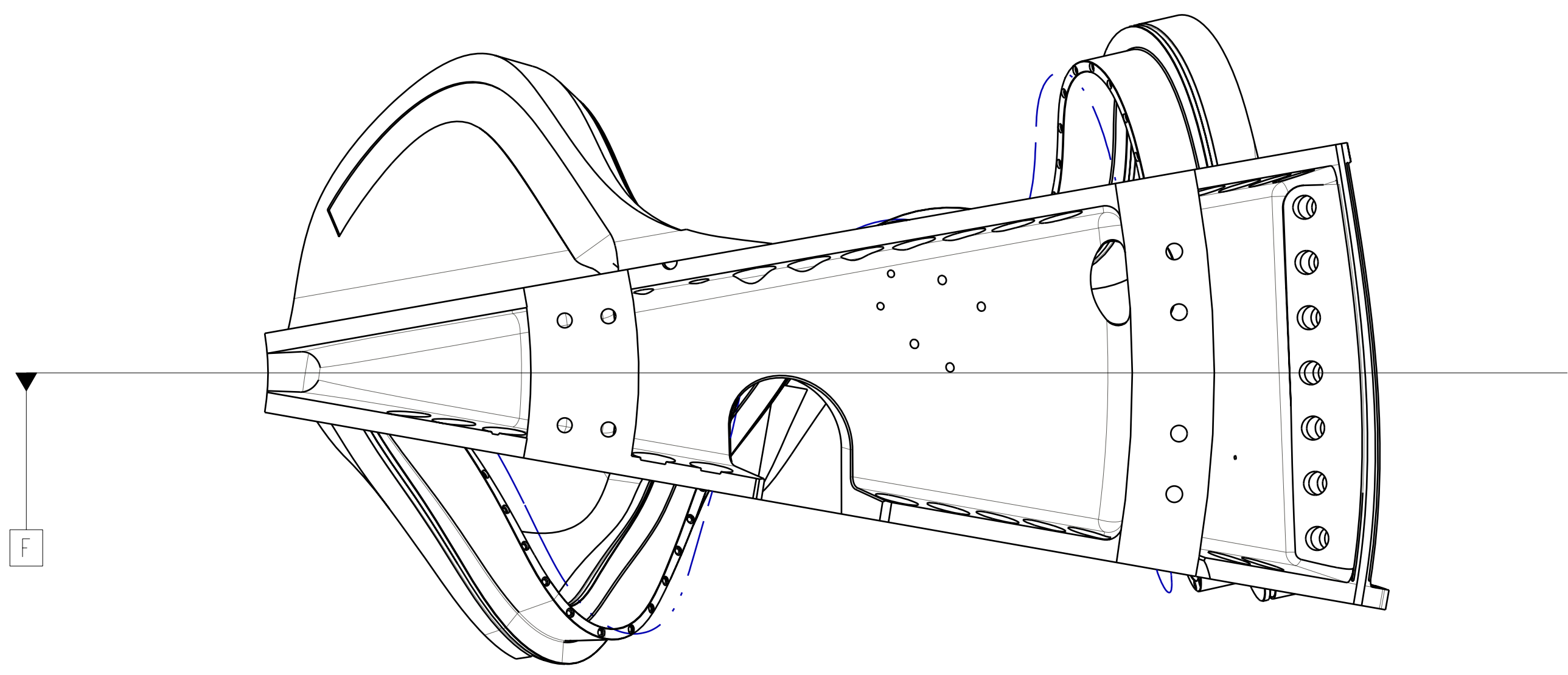


DETAIL V  
SCALE 1.00

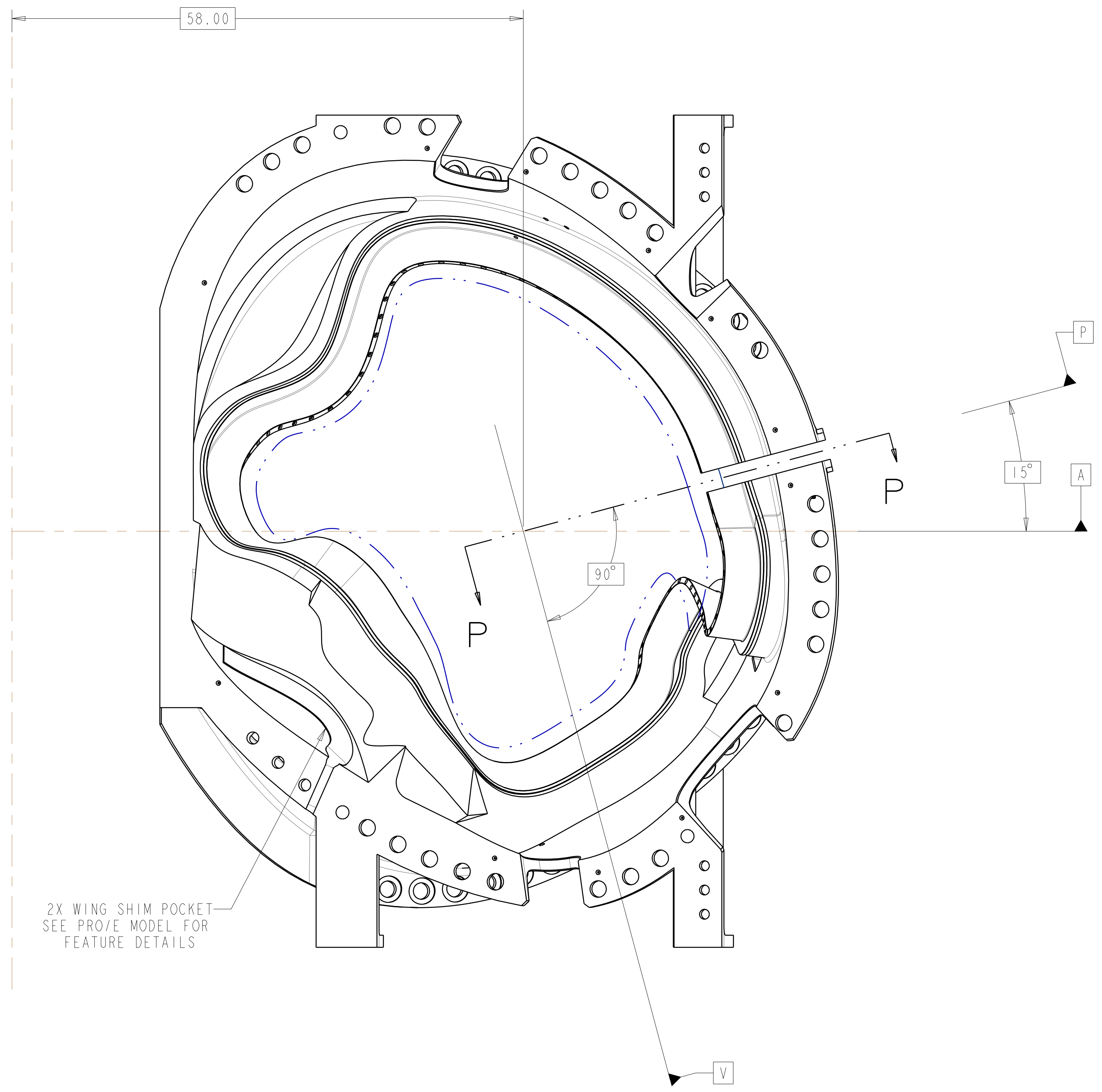
Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee PROJECT NAME						
<b>UT-BATTELLE</b> <b>NATIONAL COMPACT STELLARATOR EXPERIMENT</b>						
<b>PRODUCTION WINDING FORM TYPE-C</b>						
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS
4	X-10	5700	3	5	11	S
RELEASE LEVEL	SEI41-116					REV
WIP						6

SEI41-116

FOR NOTES AND PARTS LIST SEE SHEET 1

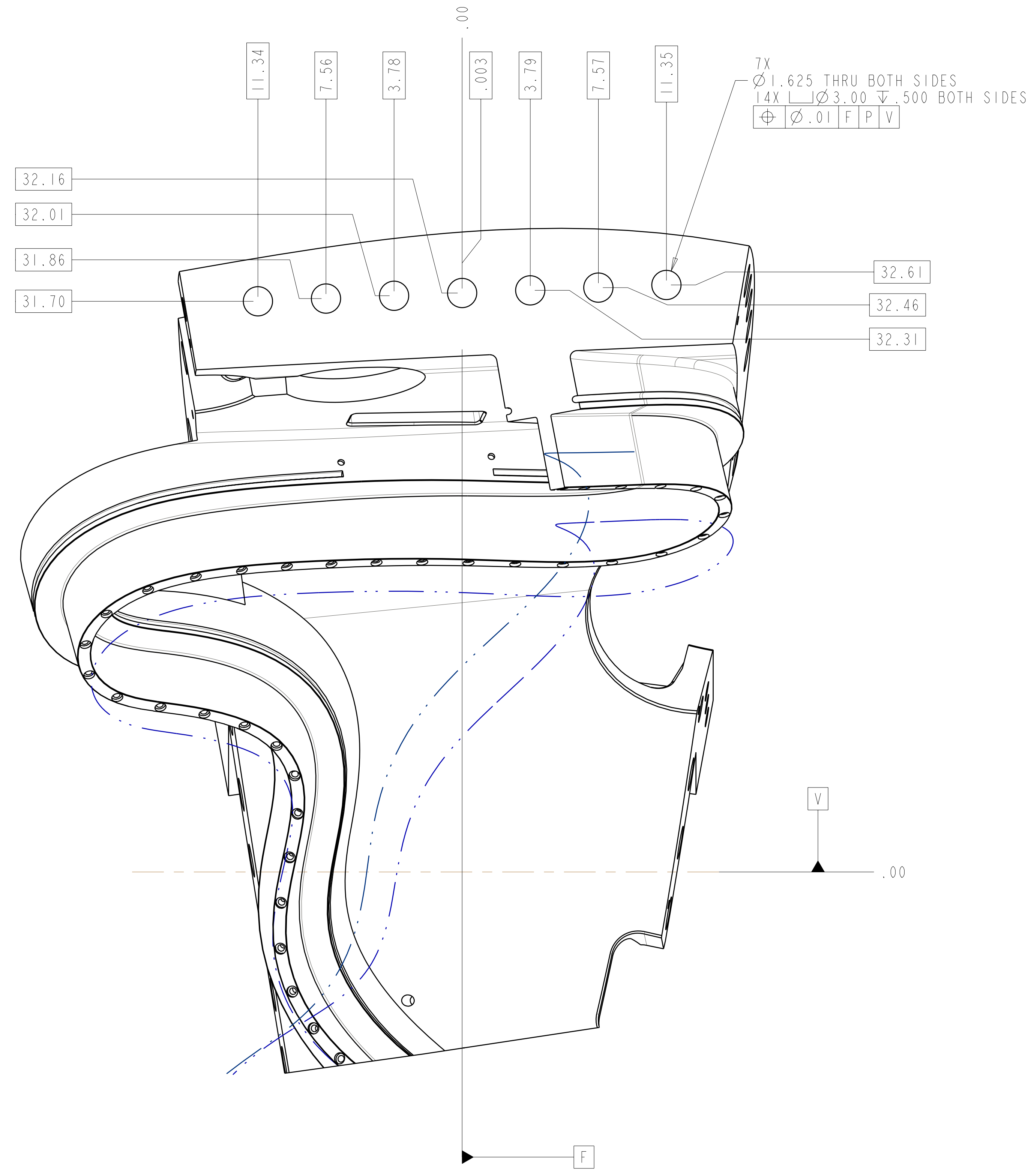


SECTION Q-Q



POLOIDAL BREAK DETAIL

2X WING SHIM POCKET  
SEE PRO/E MODEL FOR  
FEATURE DETAILS



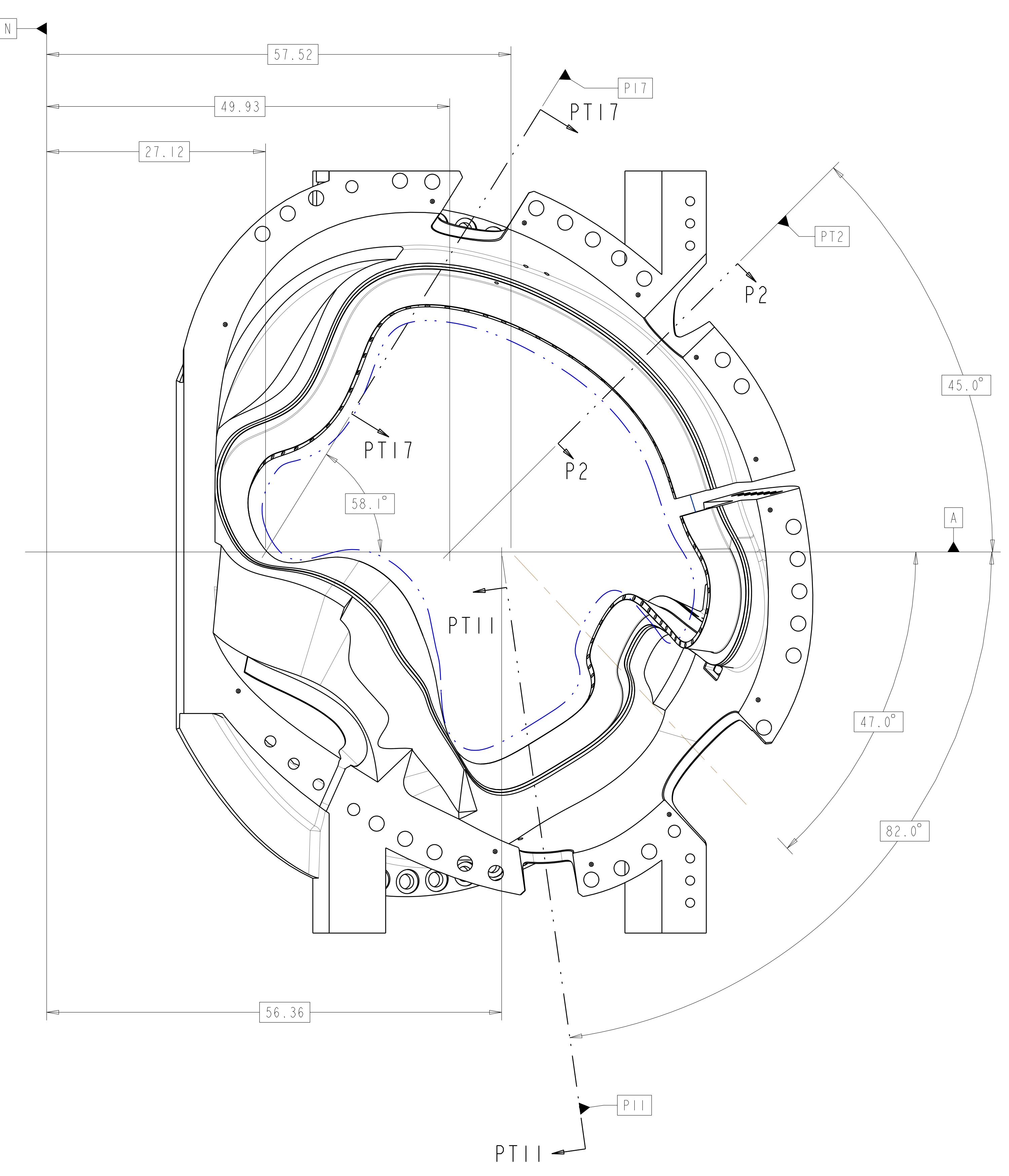
SECTION P-P  
SCALE 0.25

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<b>UT-BATTELLE</b> NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING FORM TYPE-C							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
4	X-10	5700	3	6	11	S	U
RELEASE LEVEL	SEI41-116						REV
WIP							6

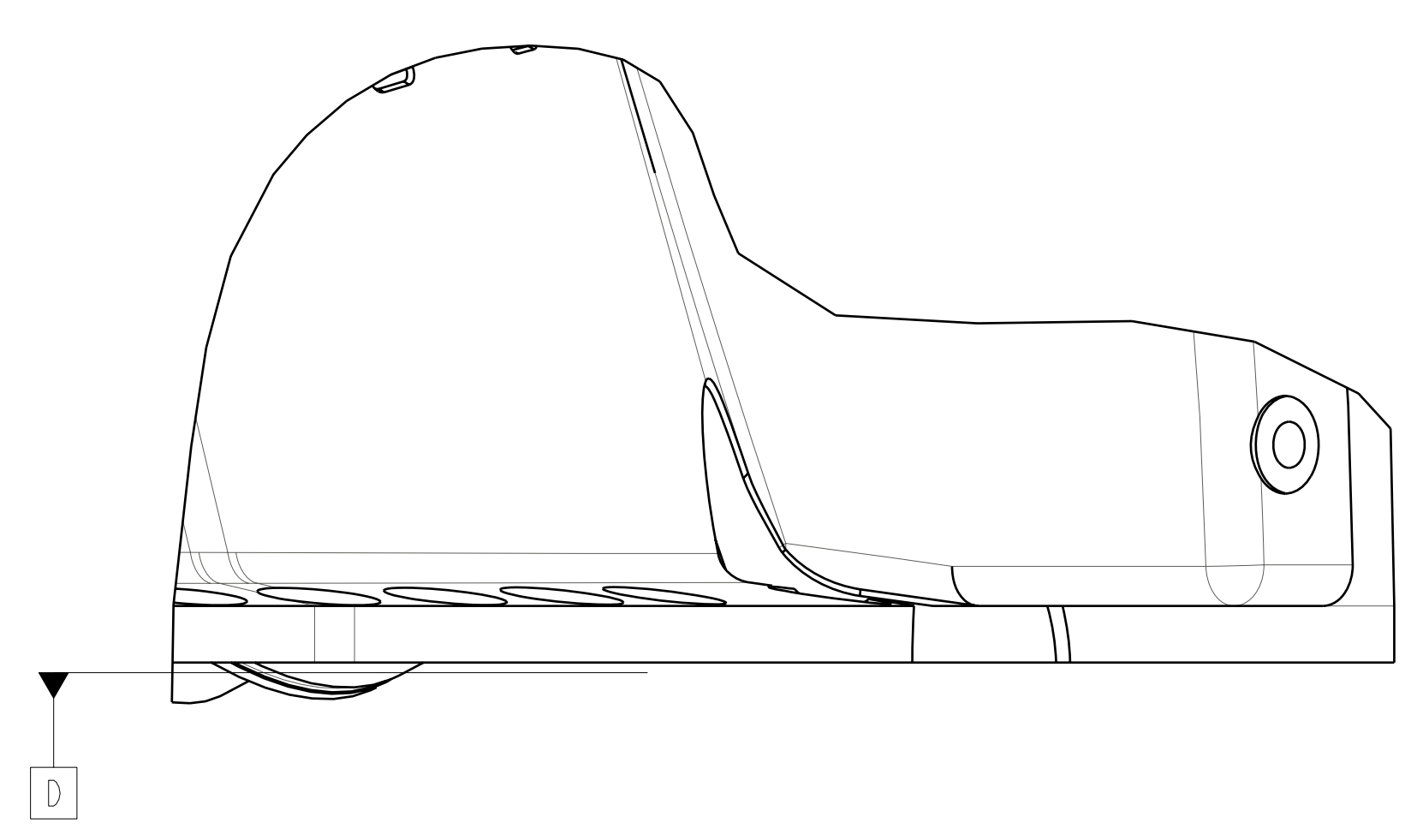
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SEI41-116

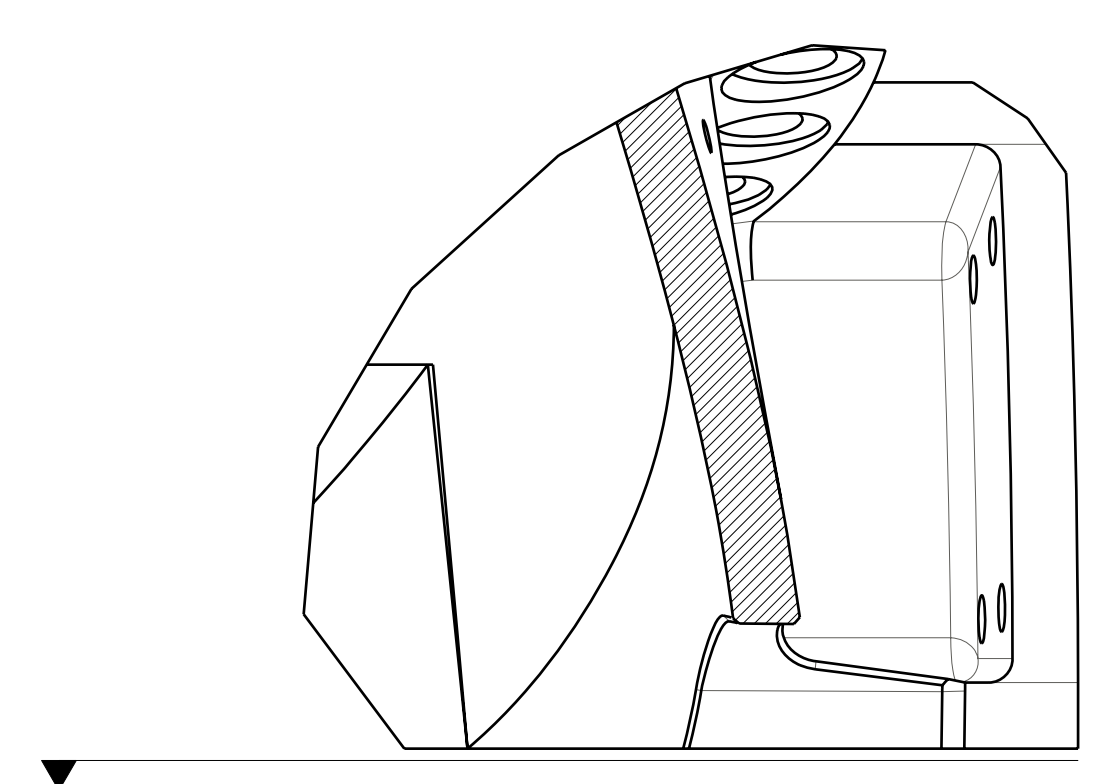
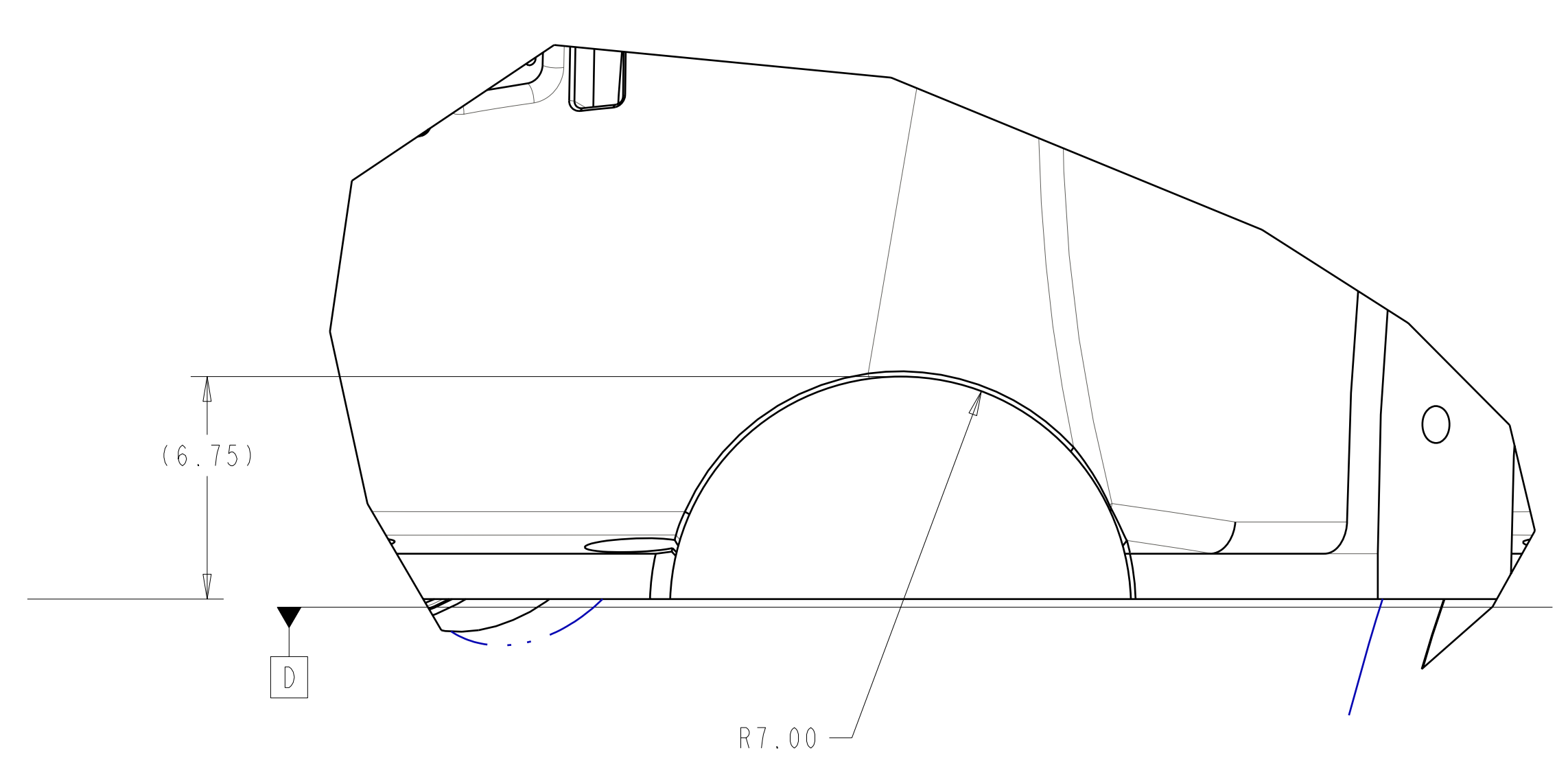
FOR NOTES AND PARTS LIST SEE SHEET 1



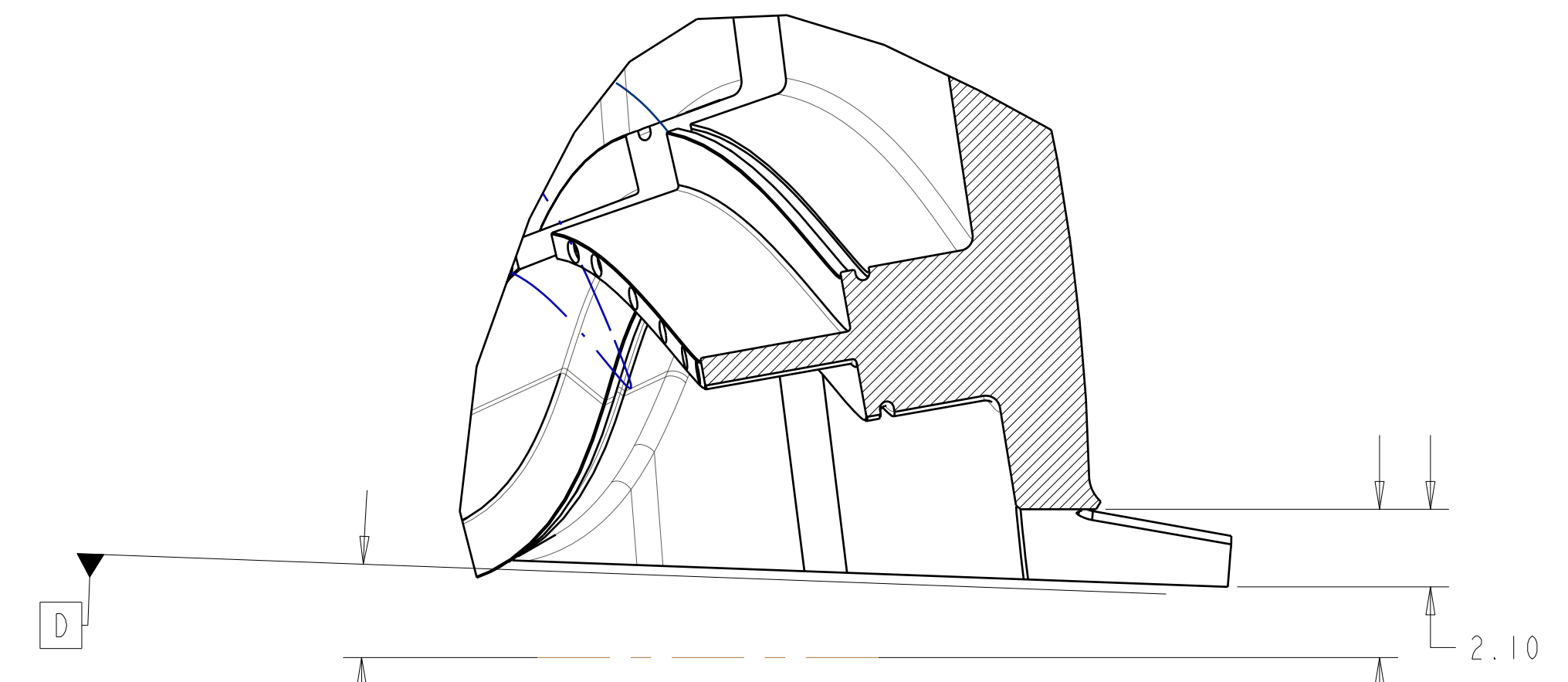
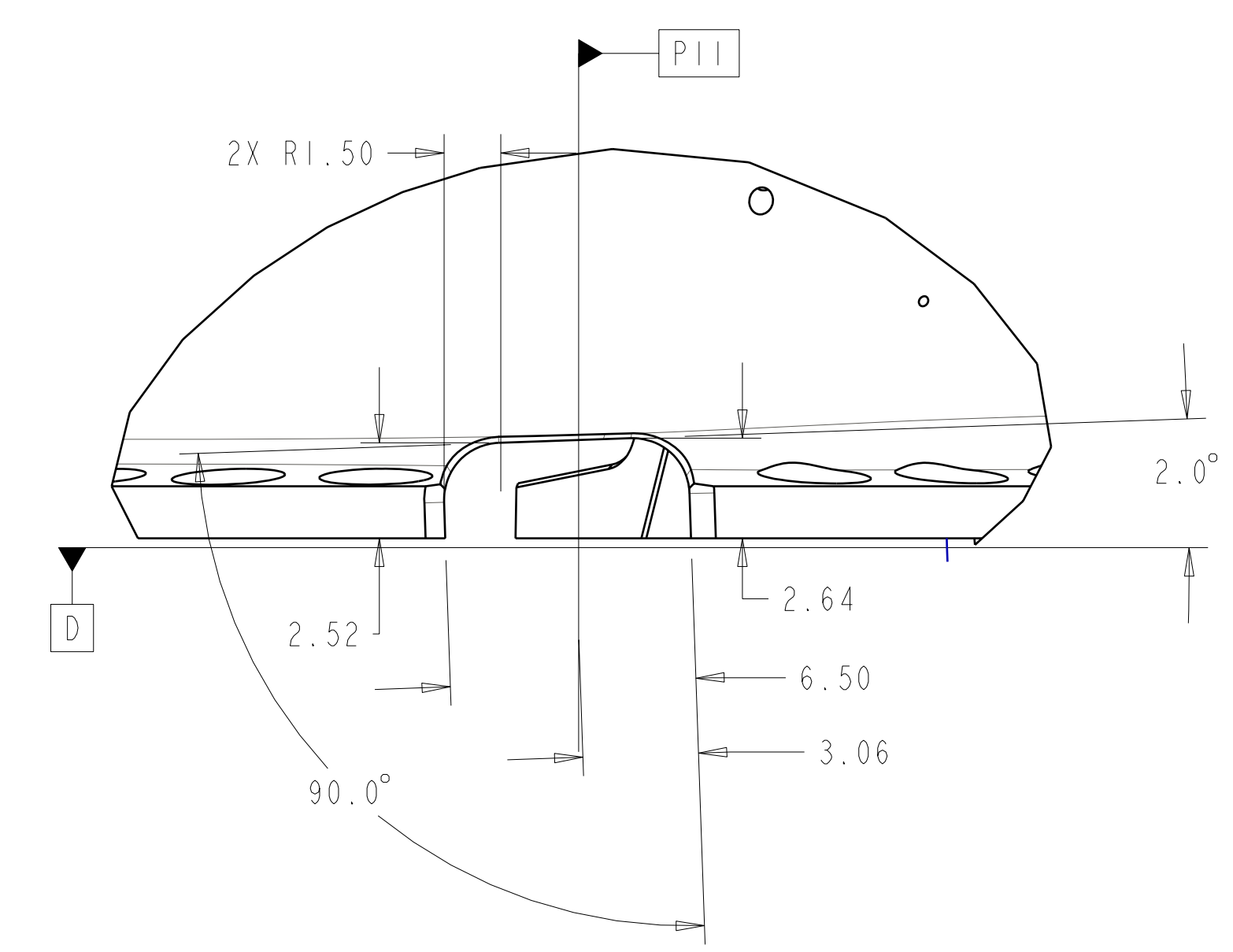
VIEW AT DATUM D  
 SCALE 0.13



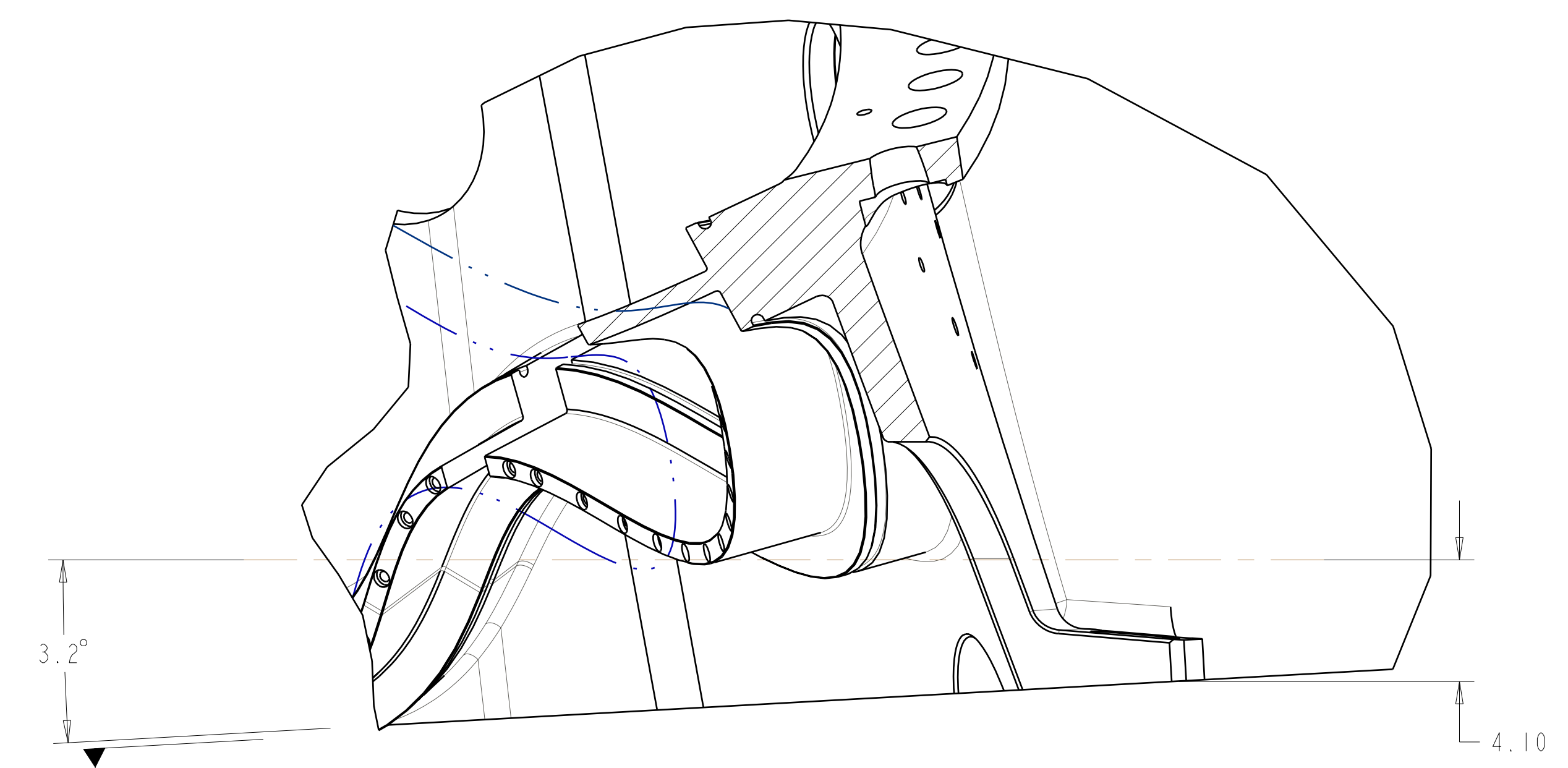
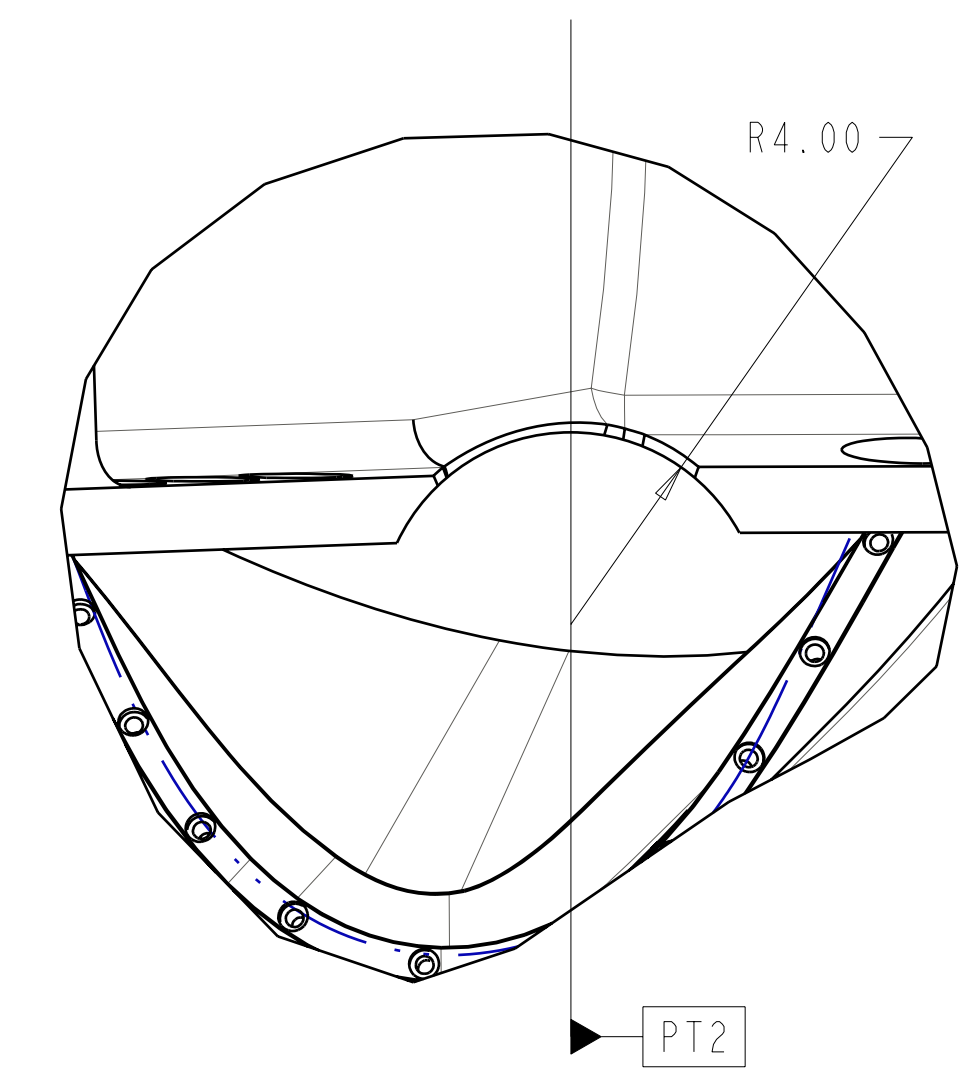
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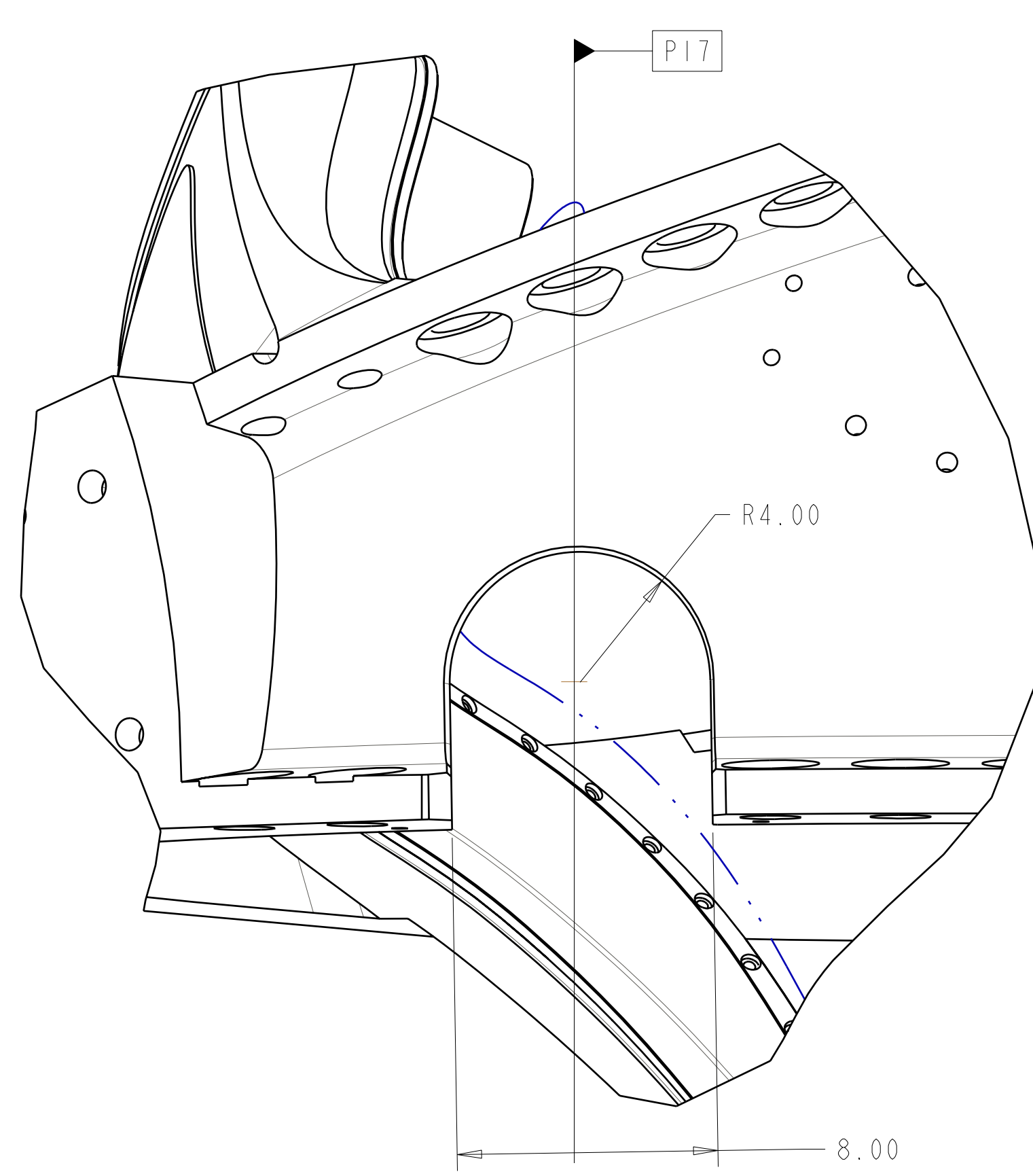
SECTION PT11-PT11  
 SCALE 0.25



SECTION P2-P2  
 SCALE 0.25



SECTION PT17-PT17  
 SCALE 0.25

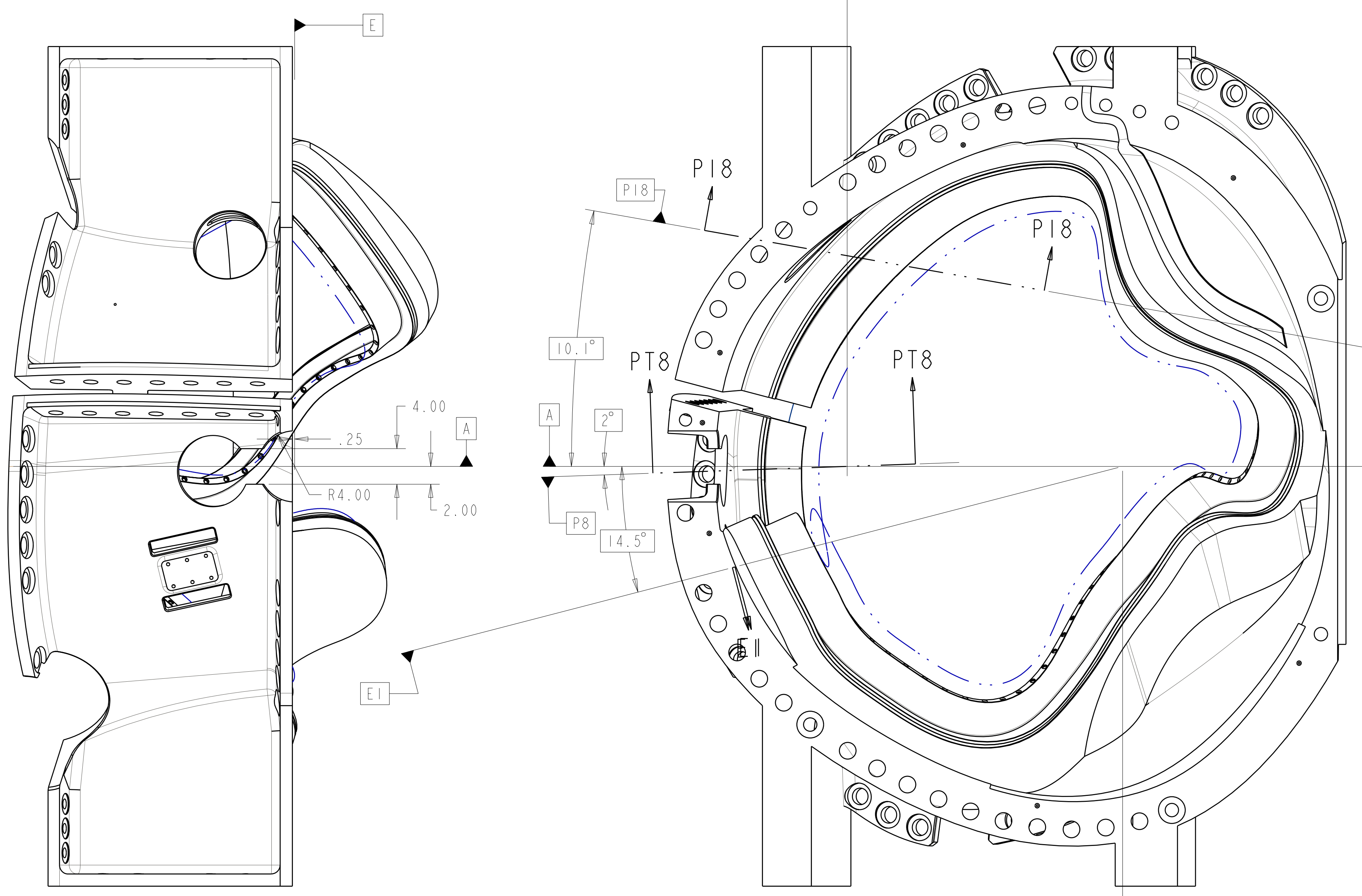


Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee PROJECT NAME						
<b>UT-BATTELLE</b> NATIONAL COMPACT STELLARATOR EXPERIMENT						
PRODUCTION WINDING FORM TYPE-C						
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS
4	X-10	5700	3	7	11	S
RELEASE LEVEL	SEI41-116				REV	U
WIP					6	

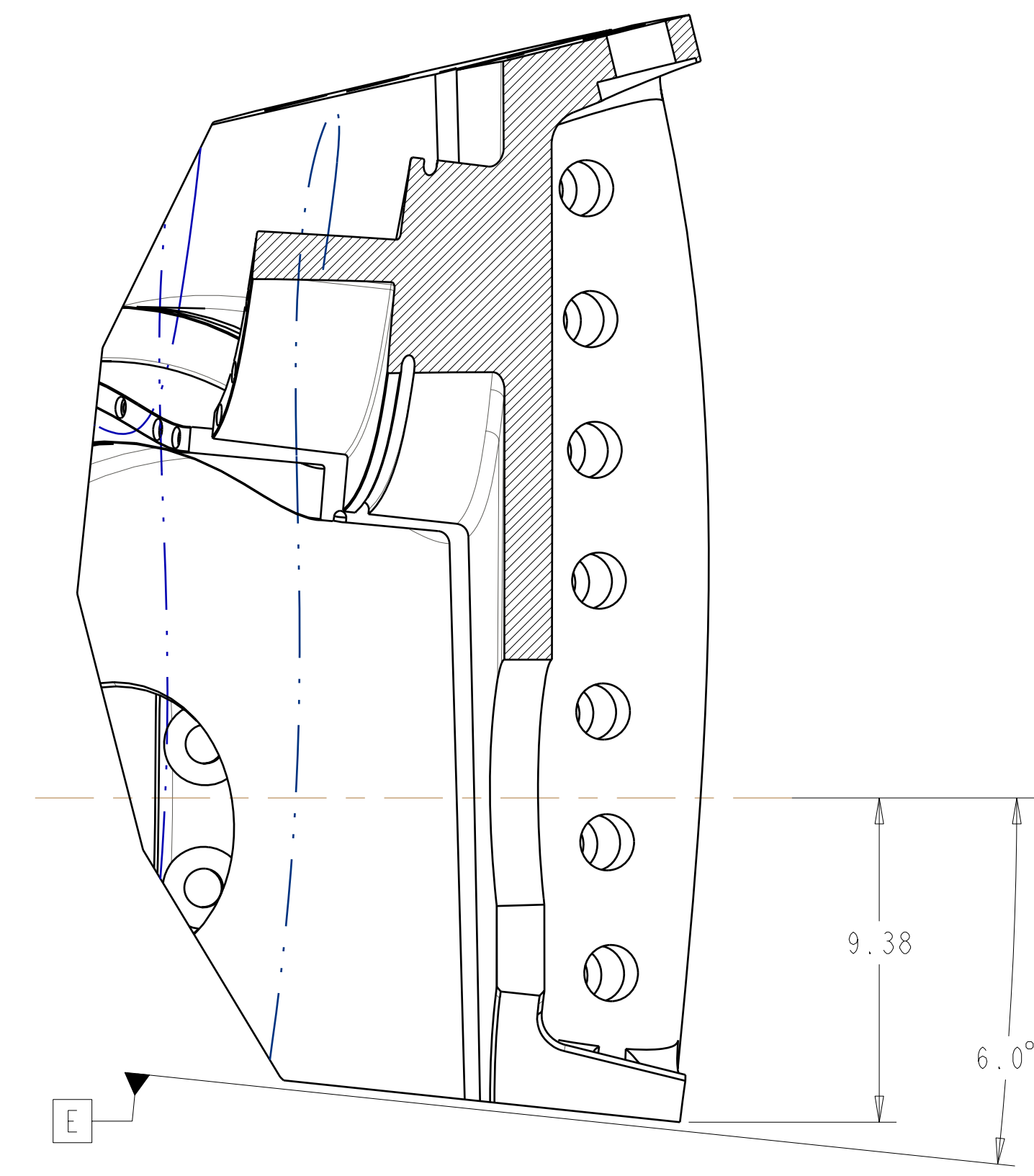
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SEI41-116

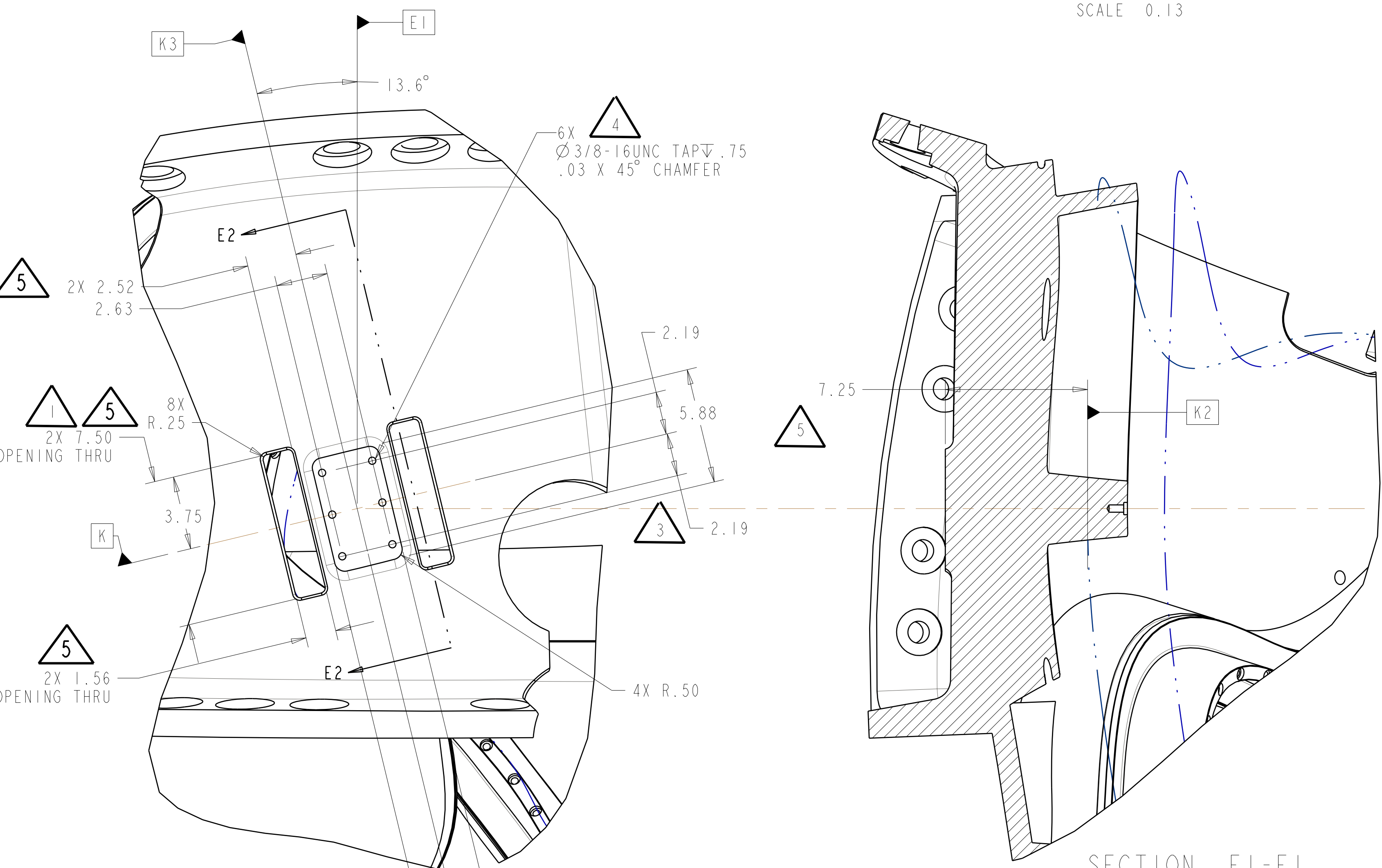
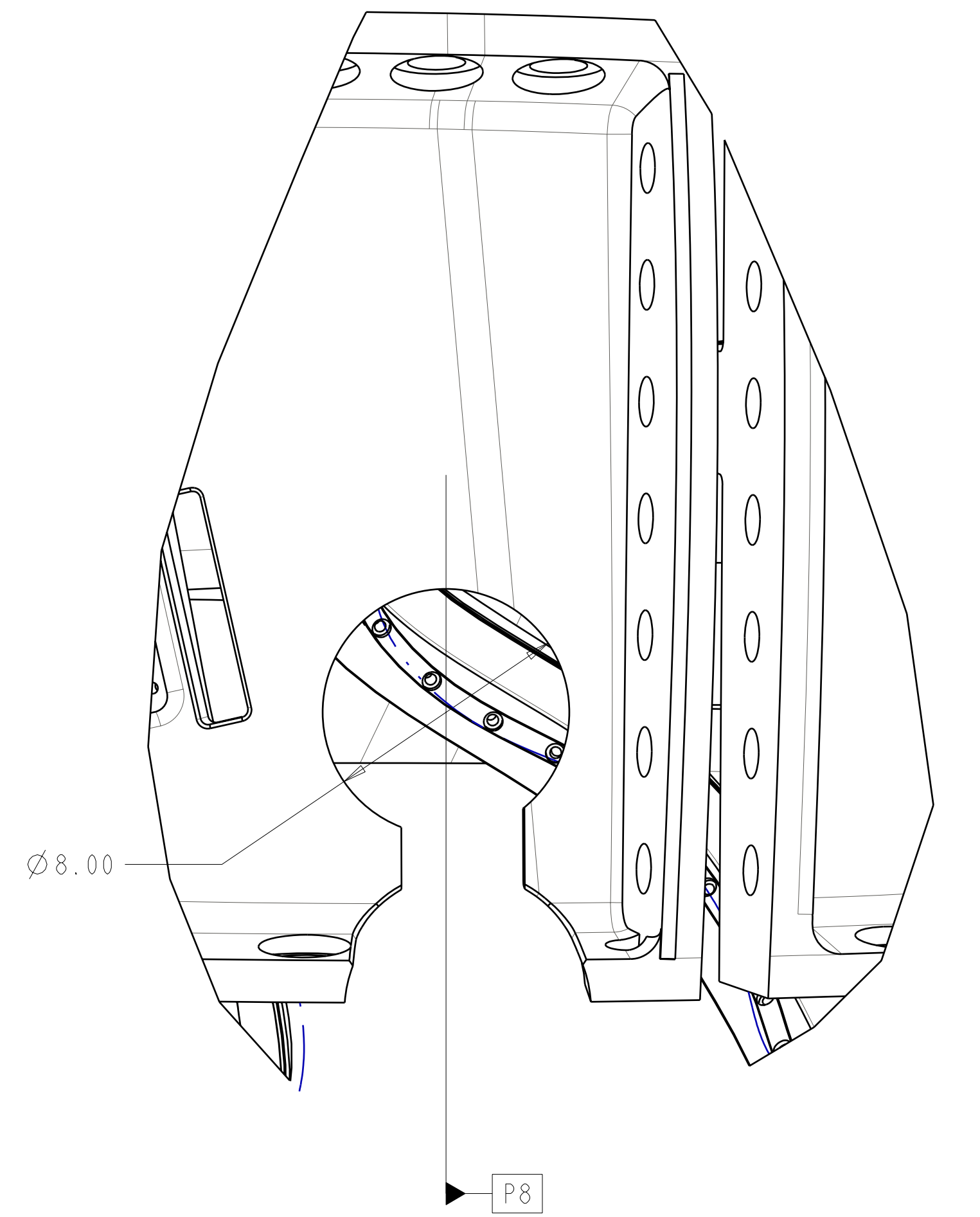
FOR NOTES AND PARTS LIST SEE SHEET 1



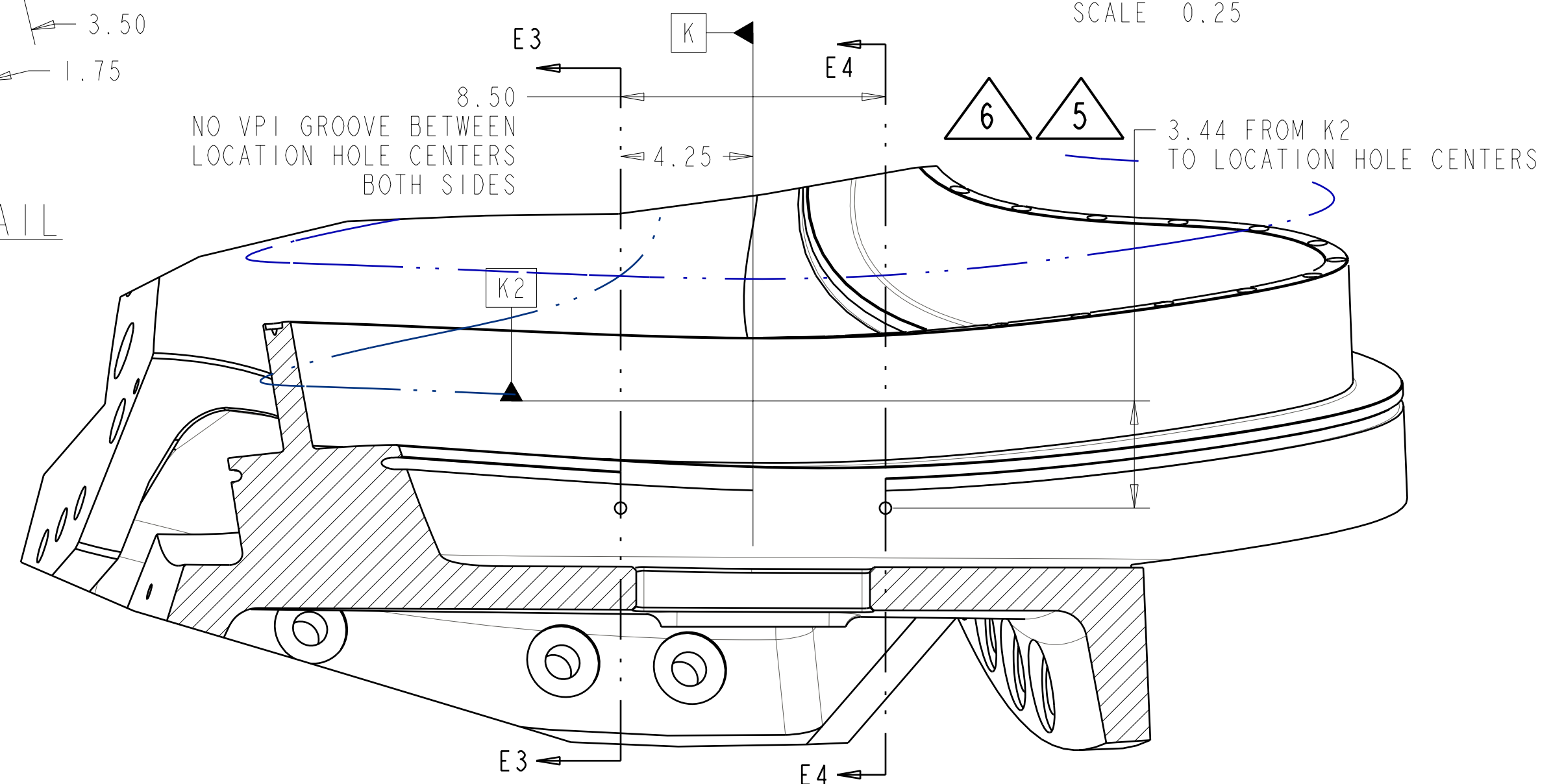
VIEW AT DATUM E  
SCALE 0.13



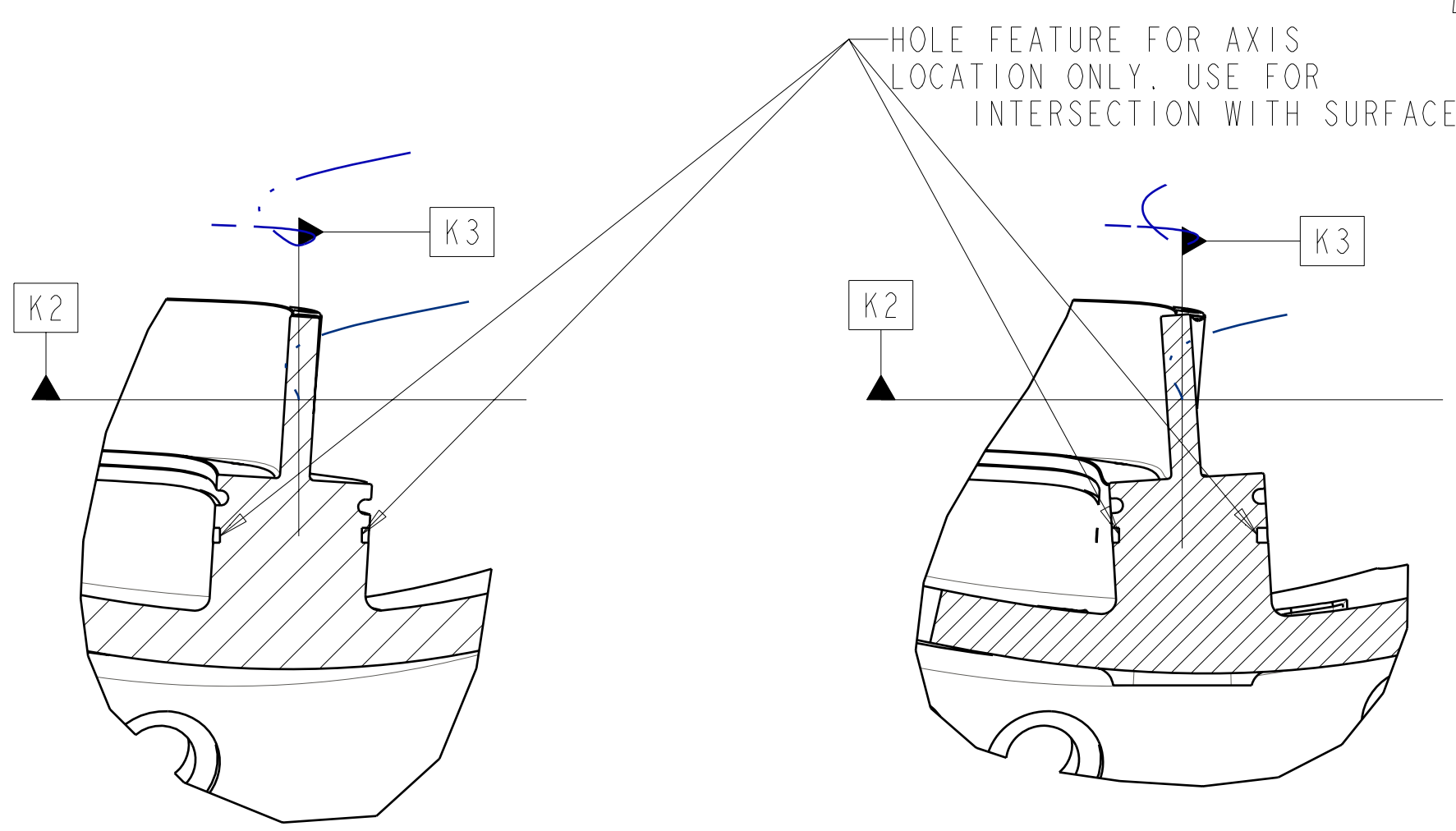
SECTION PT8-PT8  
SCALE 0.25



SECTION E1-E1  
SCALE 0.25

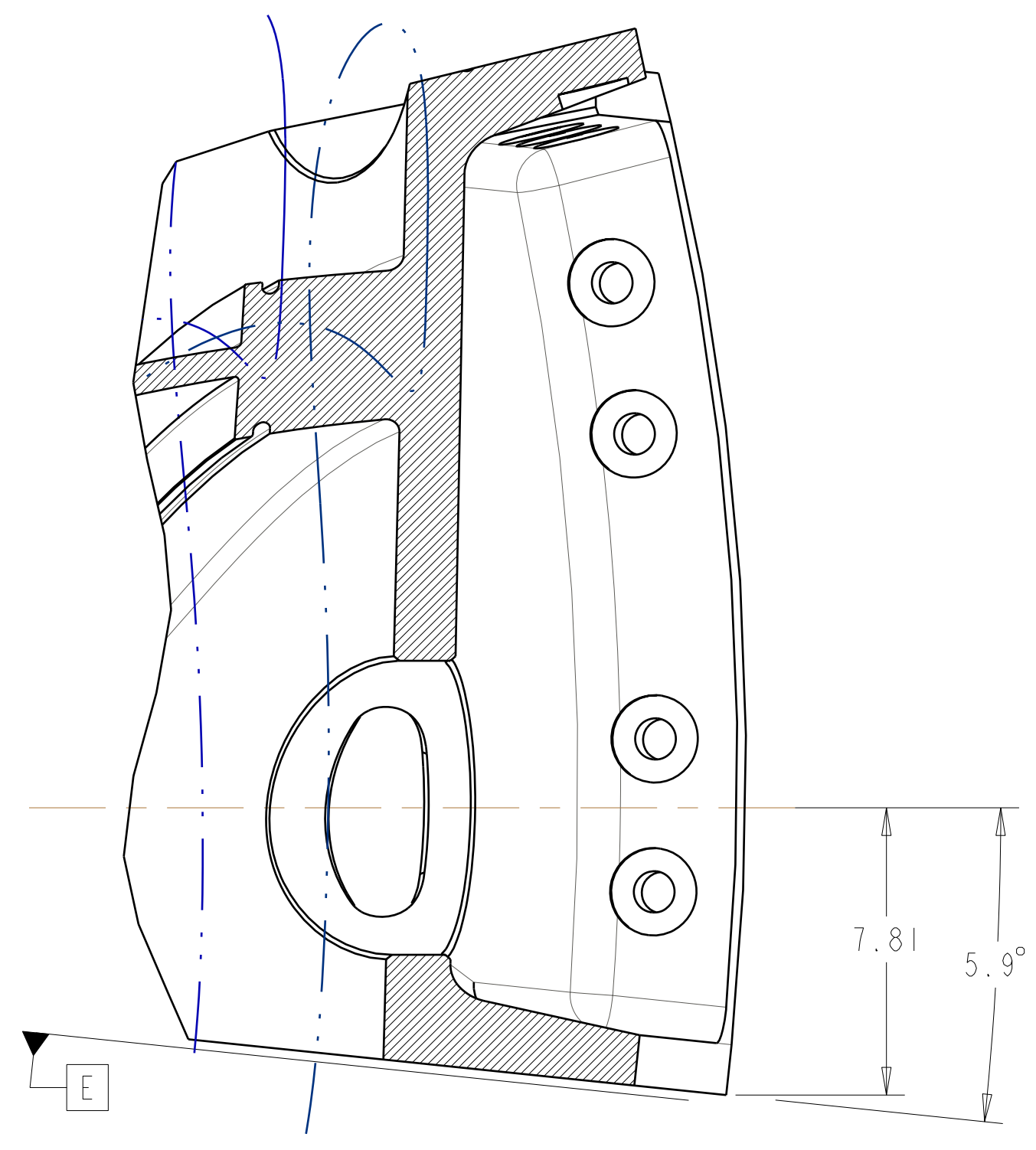


SECTION E2-E2  
SCALE 0.250

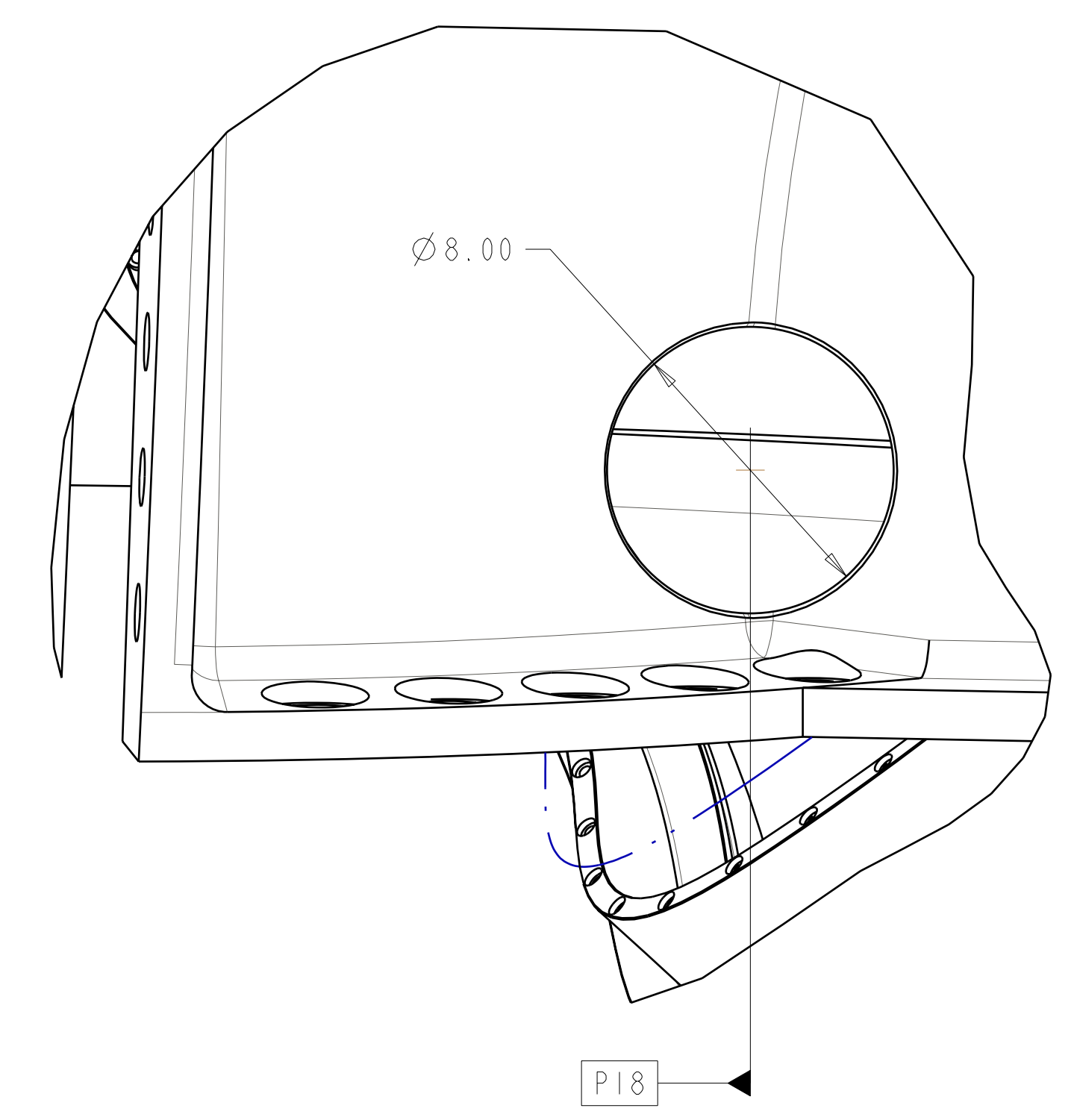


SECTION E3-E3

SECTION E4-E4



SECTION P18-P18  
SCALE 0.25



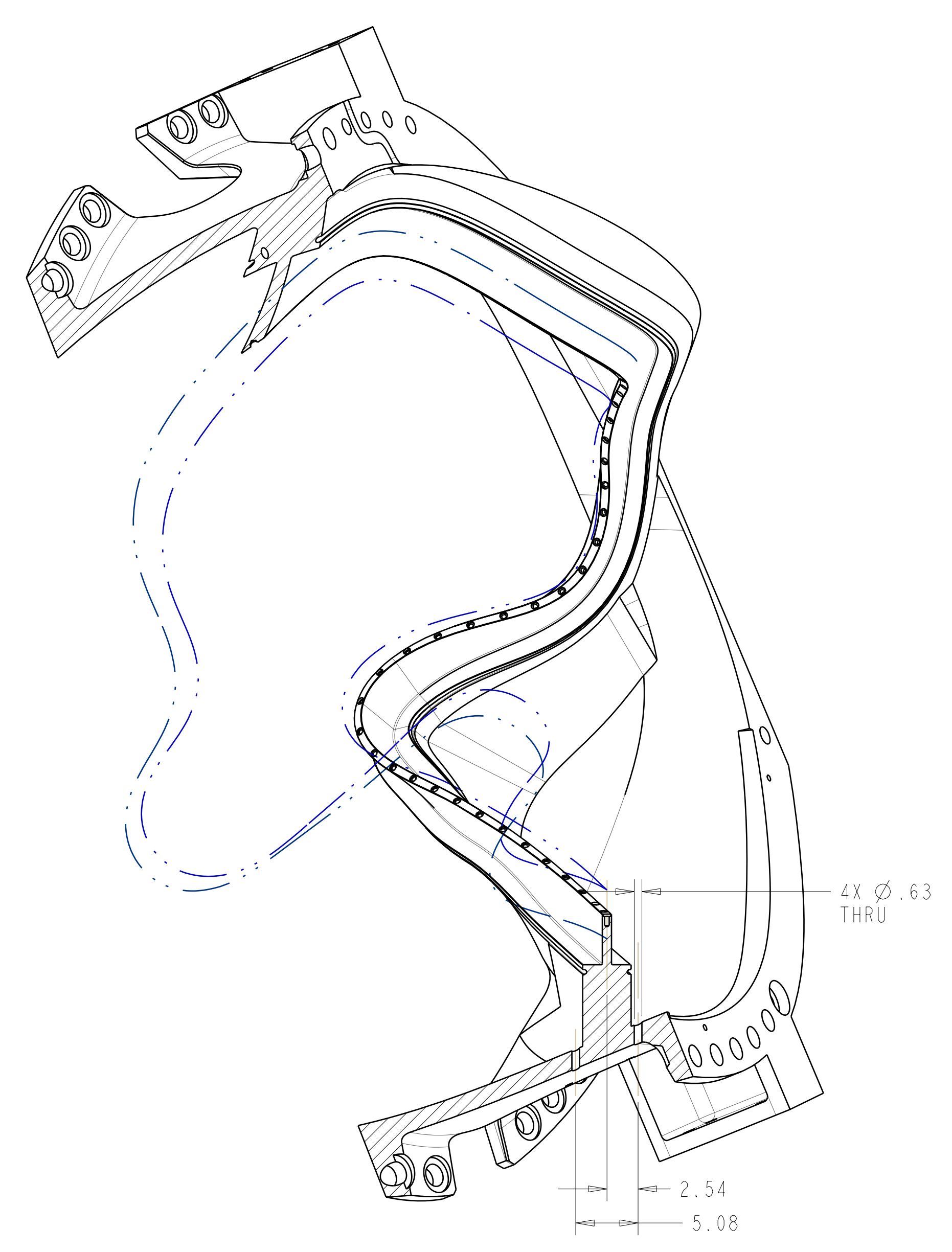
Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee PROJECT NAME:								
<b>UT-BATTELLE</b> NATIONAL COMPACT STELLARATOR EXPERIMENT								
PRODUCTION WINDING FORM TYPE-C								
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS		
4	X-10	5700	3	8	11	S	U	
RELEASE LEVEL	SEI41-116						REV	6
WIP								

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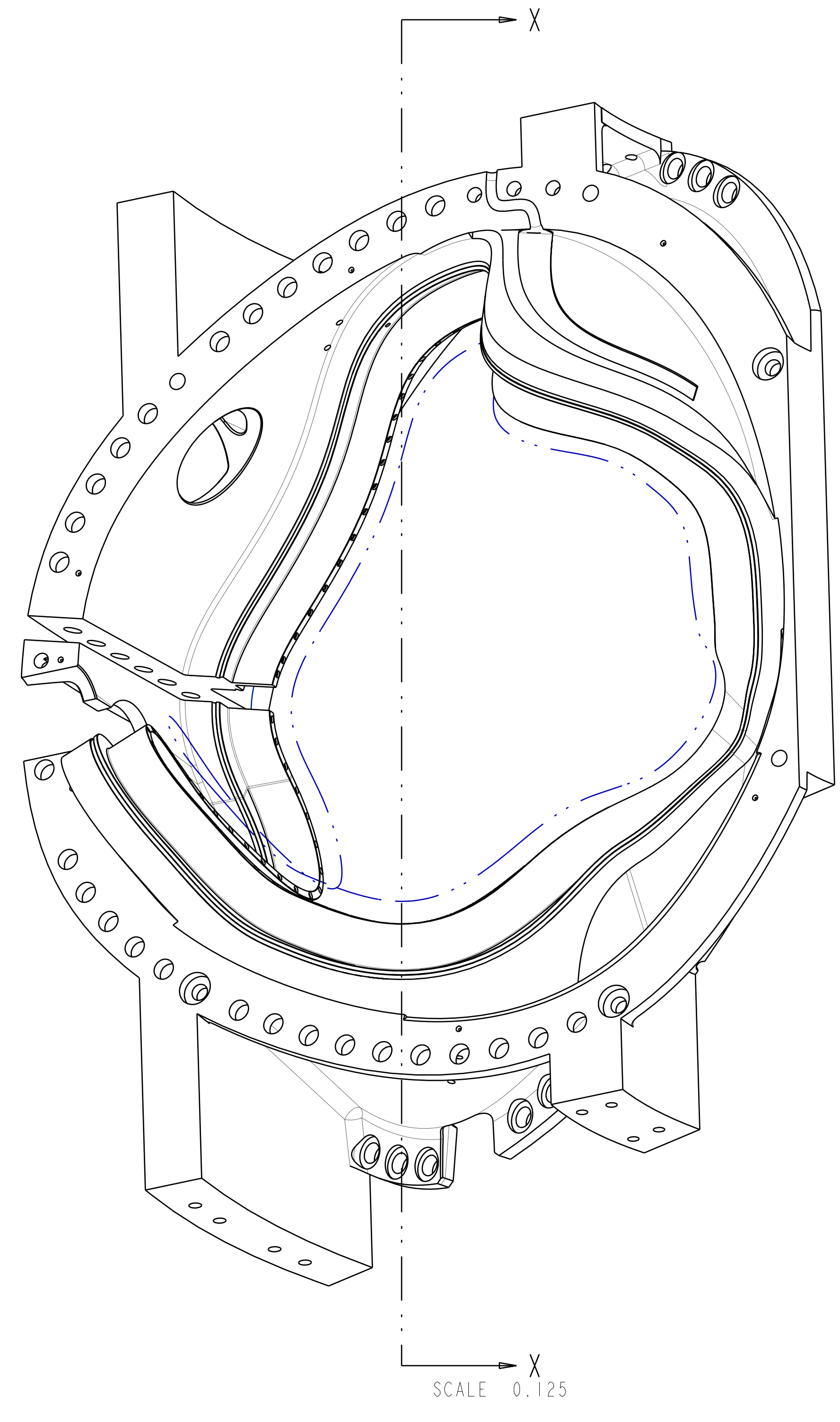
SEI41-116



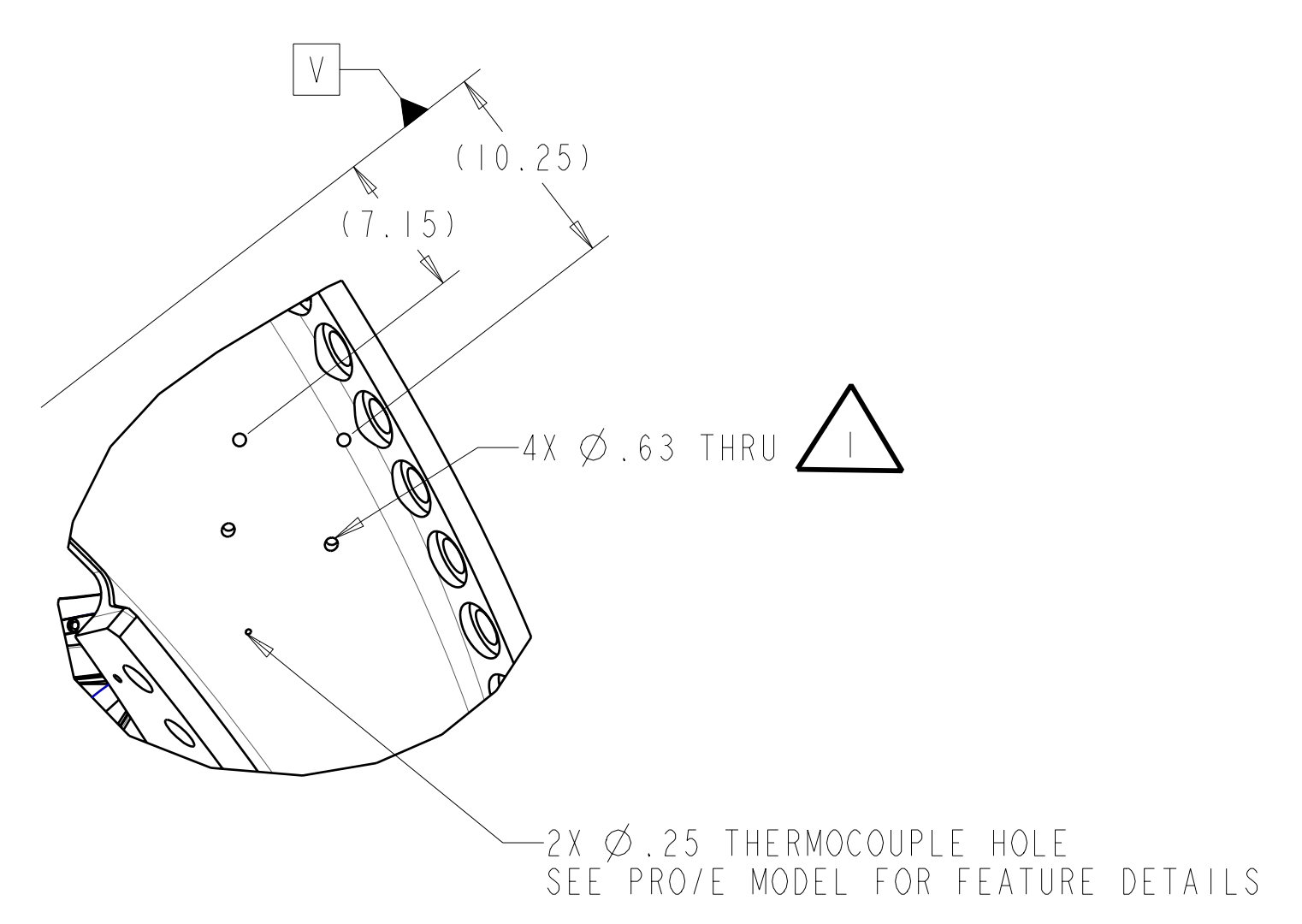
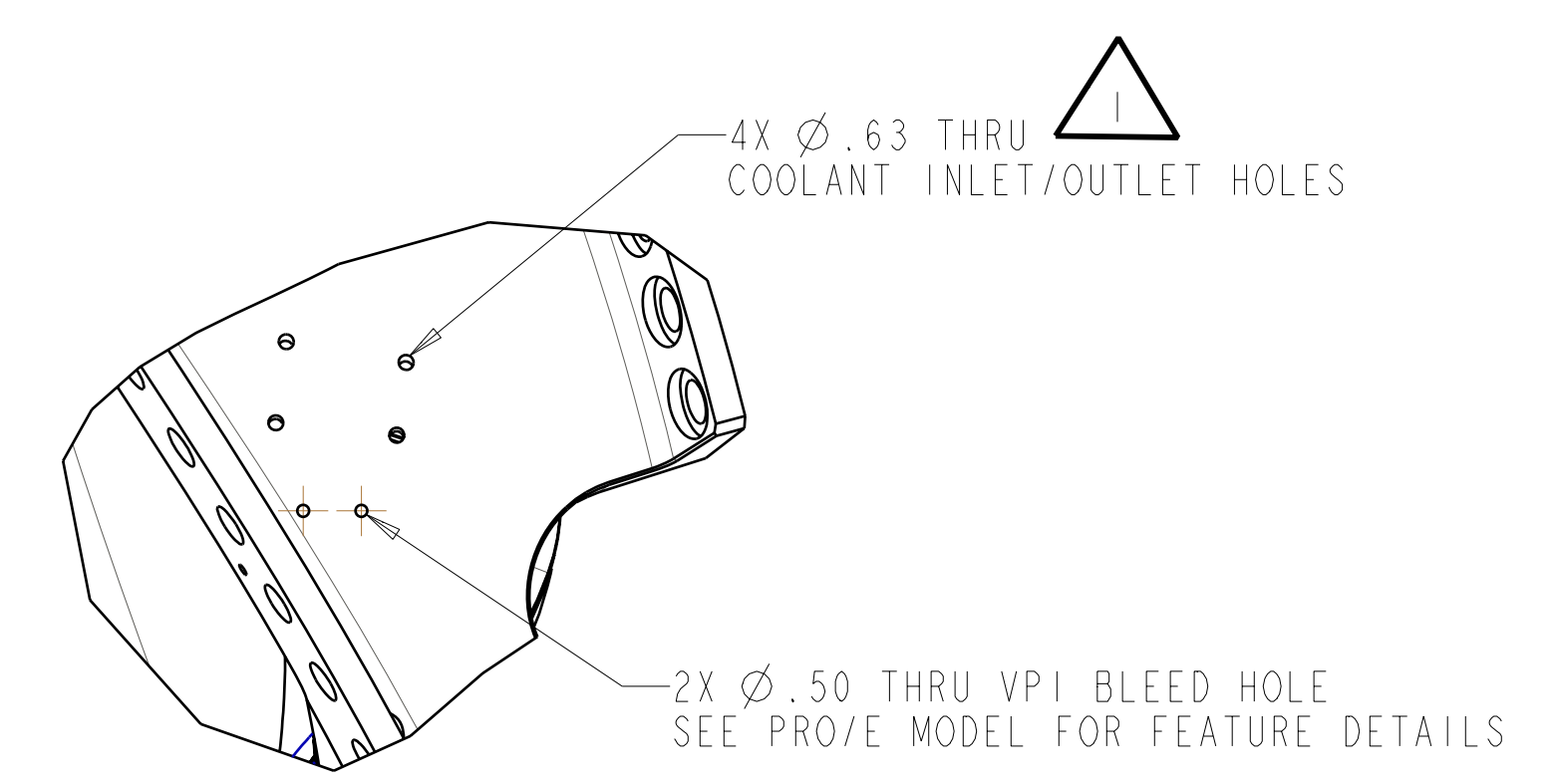
FOR NOTES AND PARTS LIST SEE SHEET 1



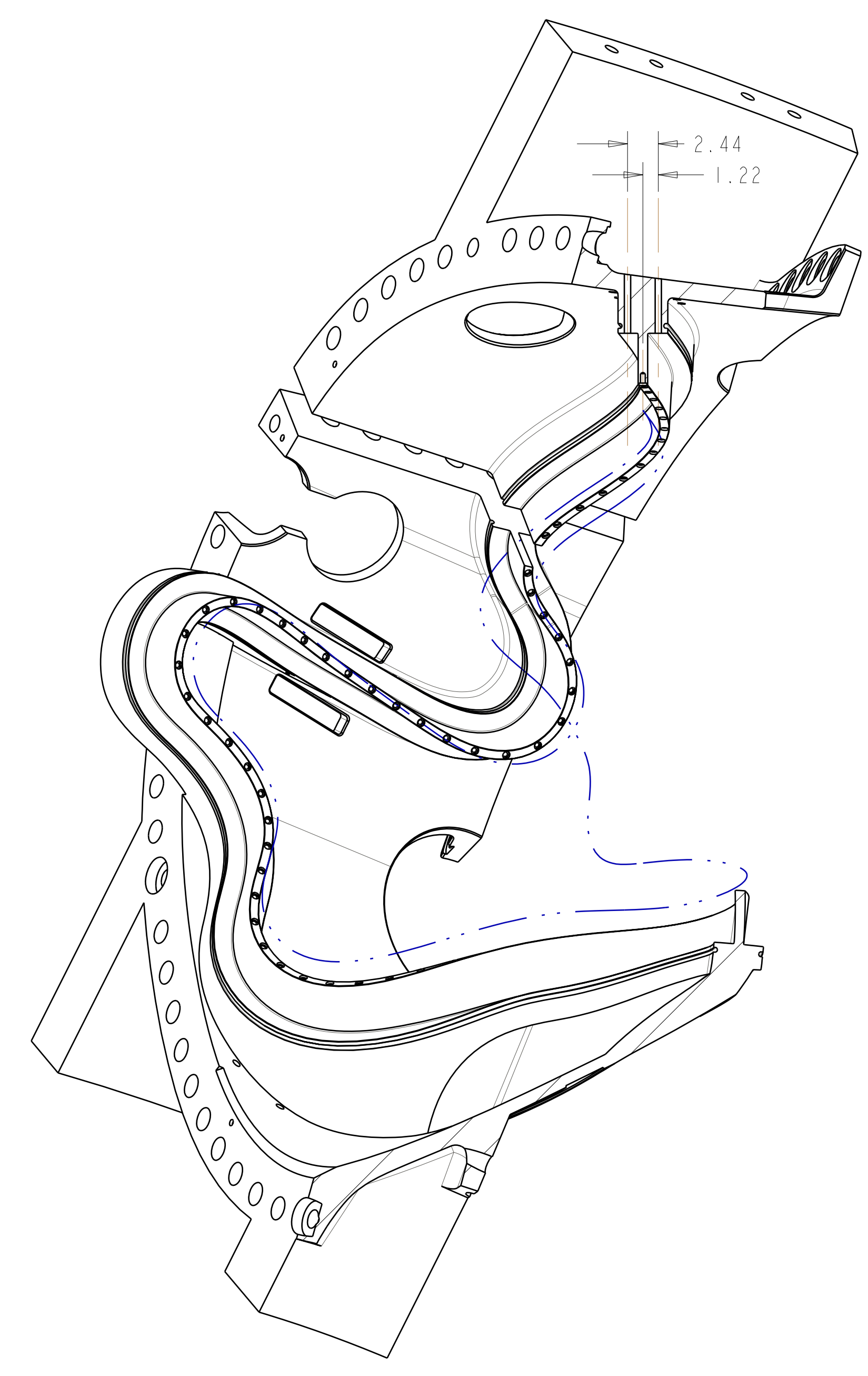
SECTION X-X  
USE PRO/E MODEL GEOMETRY TO DETERMINE SECTION ORIENTATION



SCALE 0.125

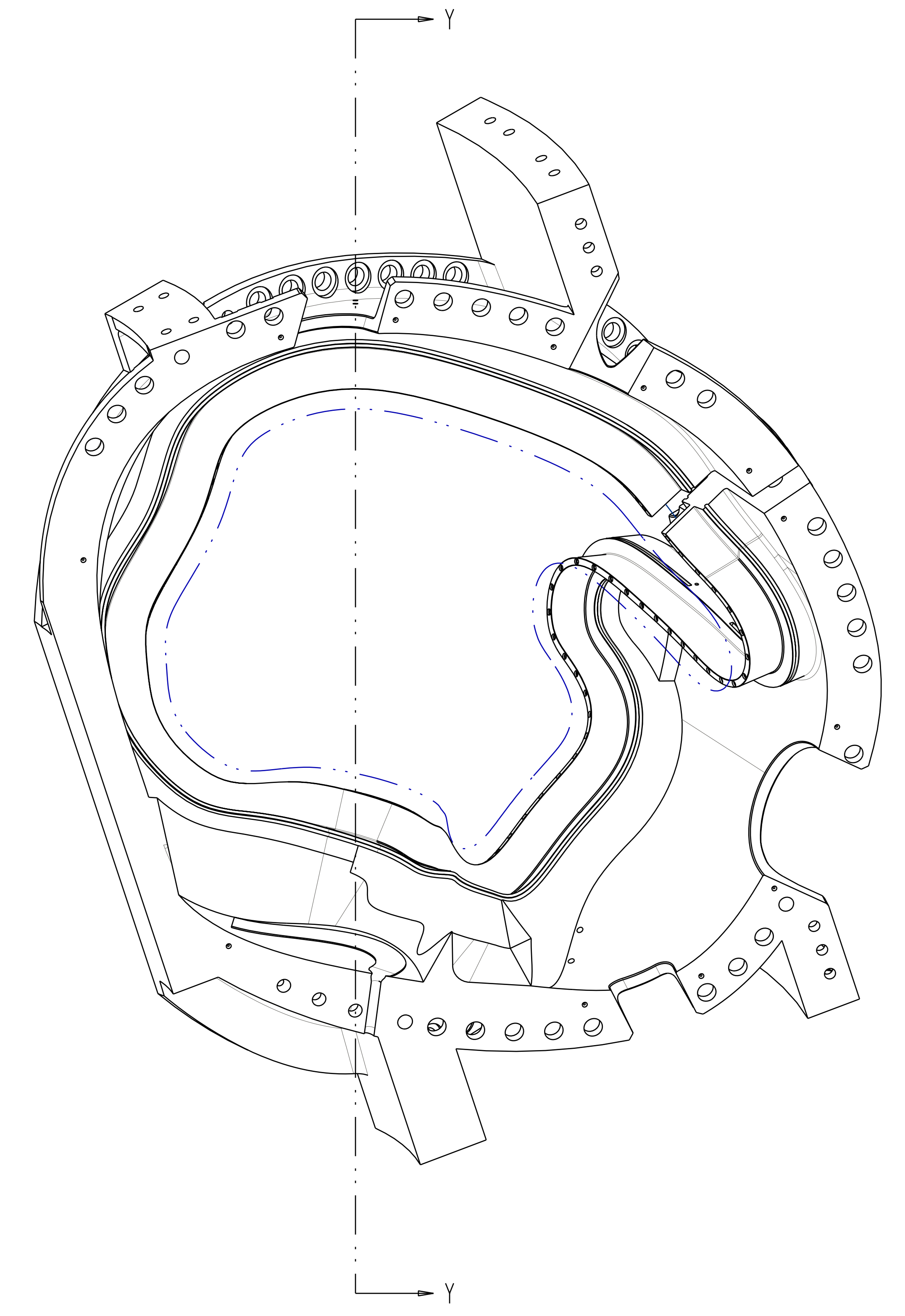


COOLING INLET / OUTLET HOLES  
TYPICAL 2 PLACES



SECTION Y-Y  
SCALE 0.125

USE PRO/E MODEL GEOMETRY TO DETERMINE SECTION ORIENTATION

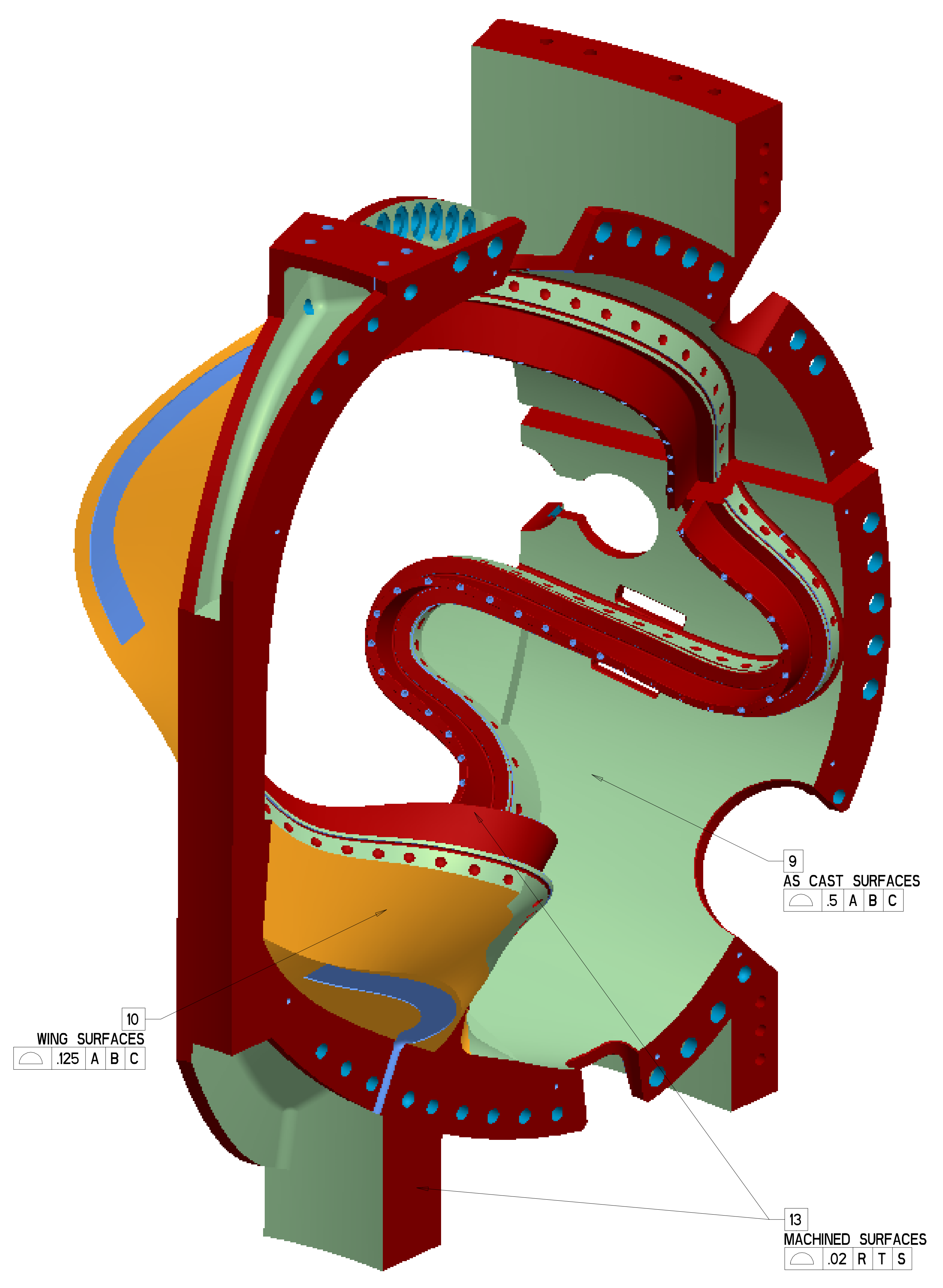


Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee PROJECT NAME							
<b>UT-BATTELLE</b> NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING FORM TYPE-C							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
4	X-10	5700	3	9	11	S	U
RELEASE LEVEL	SEI41-116						REV
WIP							6

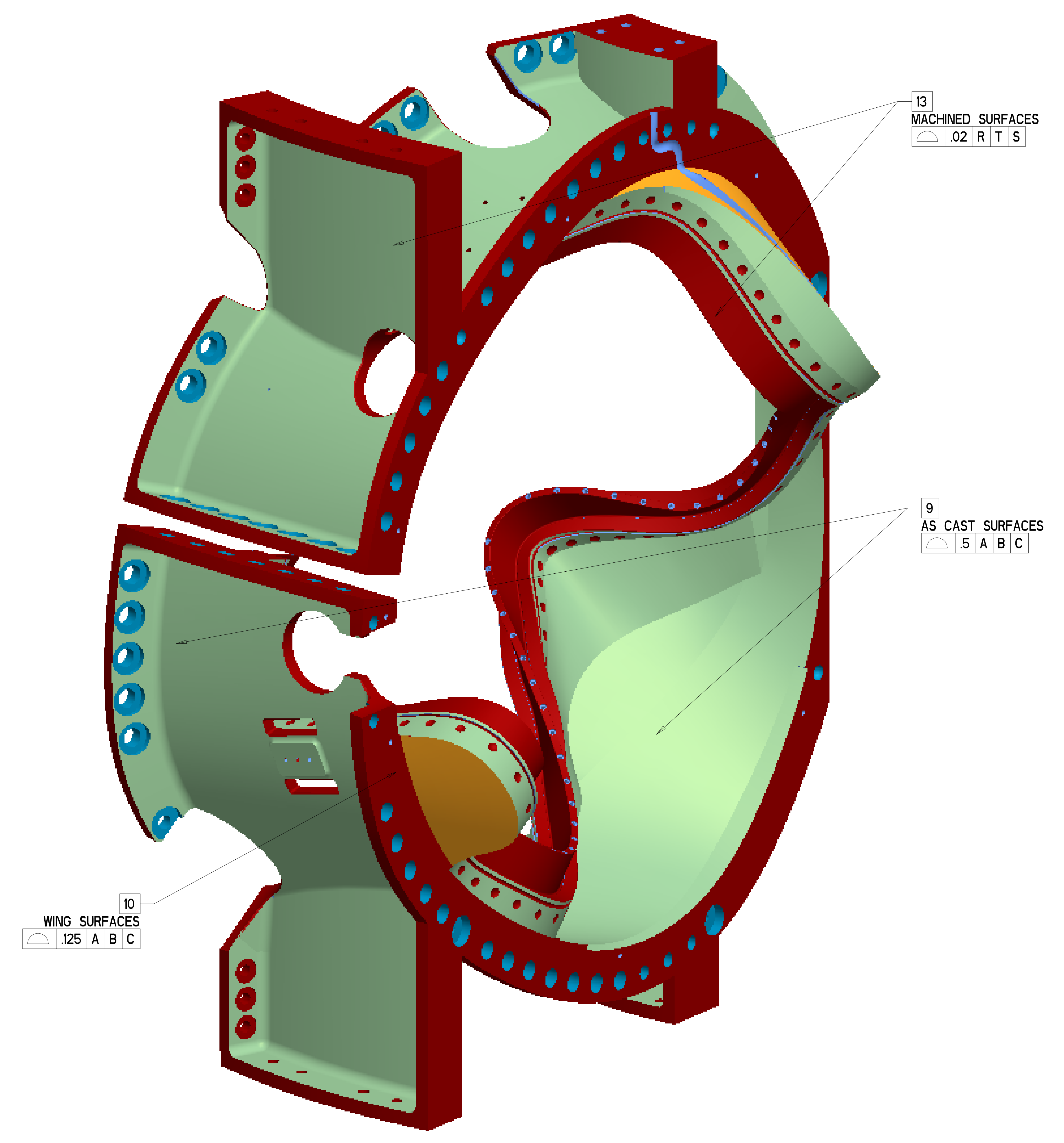
H  
G  
F  
E  
D  
C  
B  
A

SEI41-116

FOR NOTES AND PARTS LIST SEE SHEET 1



ISOMETRIC VIEW  
 NOT TO SCALE



ISOMETRIC VIEW  
 NOT TO SCALE

<b>UT-BATTELLE</b>		Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee					
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WIP						6	

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