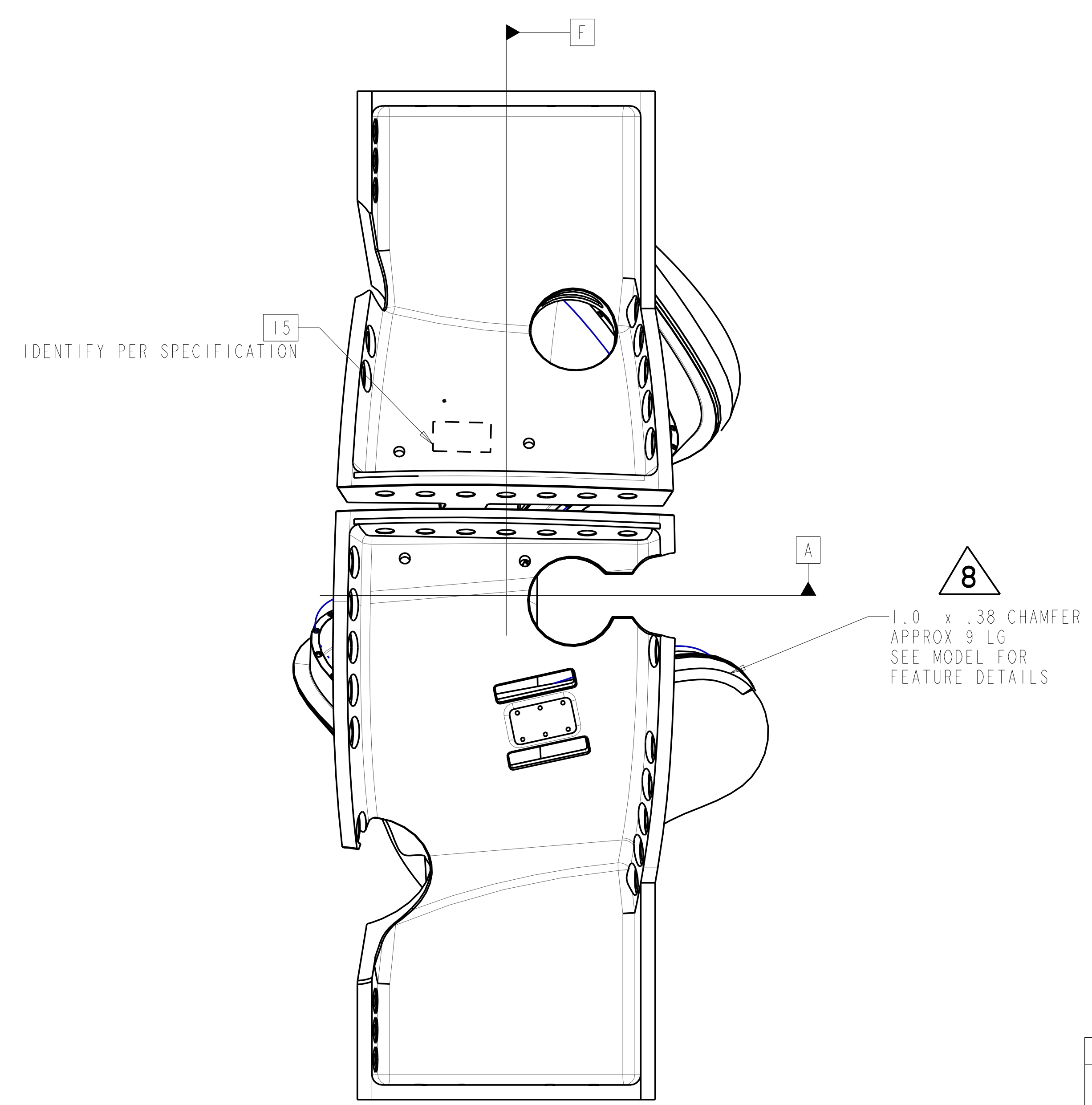
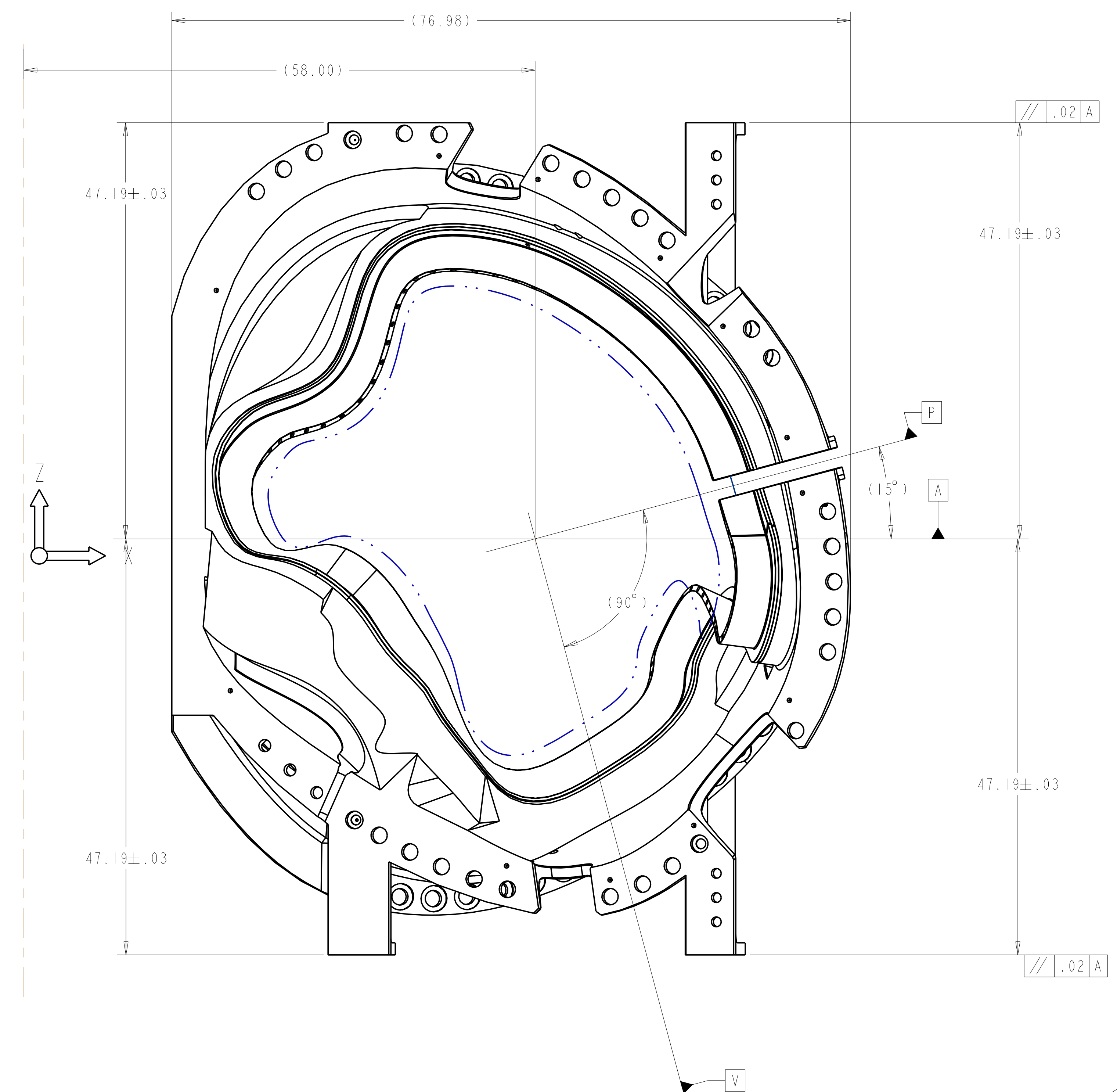


ISOMETRIC VIEW

- 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 SE141-116.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 = ± 0.25 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 OF -0.12 TO -0.25 IN. WHERE POSITIVE INDICATES OUTWARD SURFACE NORMAL DIRECTION (ADDS MATERIAL).
 - 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 = ± 0.01 IN.
 - BACK SPOTFACE ALL THRU HOLES MINIMUM TO CLEAN UP.
 - SEE LATEST REVISION OF SPECIFICATION NCSX-CSPEC-141-03 FOR ADDITIONAL REQUIREMENTS.
 - GRIND TEE BASE AS REQUIRED TO ACHIEVE CLEARANCE DEFINED BY TEMPLATE SHOWN IN THE SPECIFICATION.



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 PPPL Drafting:

AR	X	SE141-116	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			

SCALE .125

REV	DESCRIPTION	BY	DATE	CHK	DEPT	DATE	PE	REQ	DATE	ORNL	DOE	DATE
8	REVISE PART AND DRAWING PER ECN 5064	GLL	01-06	MJC			DEW					
7	REVISED PART AND DRAWING PER ECN 5026	GLL	10-03	MJC			DEW					
6	REVISED PART AND DRAWING PER ECN 5009	GLL	7-03	MJC			DEW					
5	REVISED PART AND DRAWING PER ECN 4994	GLL	5-03	MJC			DEW					
4	REVISED DRAWING AND MODEL PER ECN 4965	GLL	3-03	MJC			DEW					
3	REVISED DRAWING AND MODEL PER ECN 4944	GLL	1/03	MJC			DEW					
2	SHEET 11 REMOVED TABLES 111 & 114	GLL	9/04	MJC			DEW					
1	SHEET 2: DETAIL B REMOVED SPHERICAL SEATS MODIFIED TEE RELIEF TO .1 R; .03 CHAMFER WAS .06 PER ECN 4903	DEW	7/04	TGB			DEW					
	CHANGED LN2 INLET/OUTLET HOLE DIAMETER. MODIFIED LEAD BLOCK DIMS PER ECN-4883.											

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		
		REQ		
		REP		
		PPPL DRFT	J. SIEGEL	6-25-04

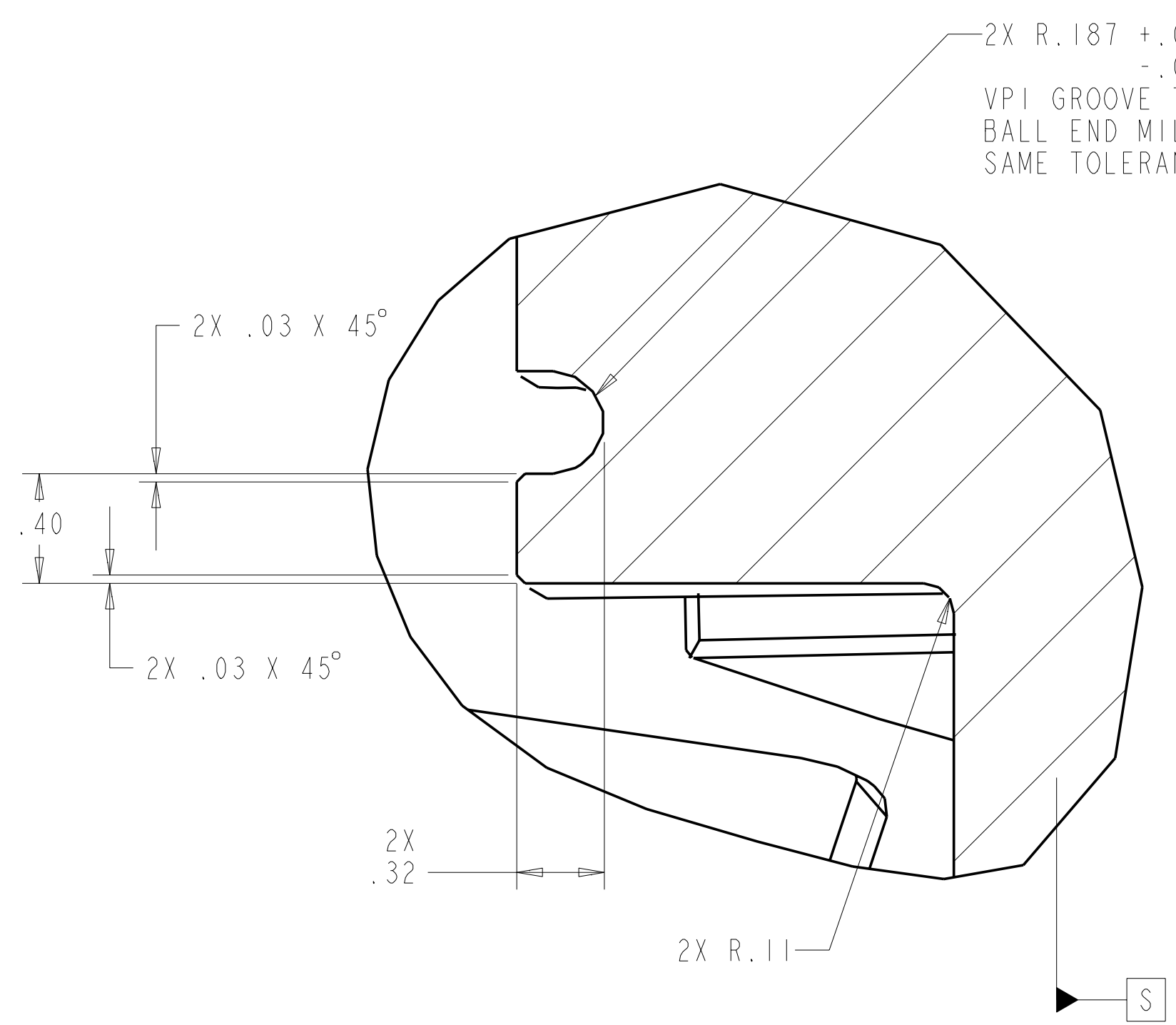
UT-BATTELLE		Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC. Oak Ridge, Tennessee	
PROJECT NAME: NATIONAL COMPACT STELLARATOR EXPERIMENT			
PRODUCTION WINDING FORM TYPE-C			
VERSION NO.	PLANT	BLDG	FL
II	X-10	5700	3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

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.

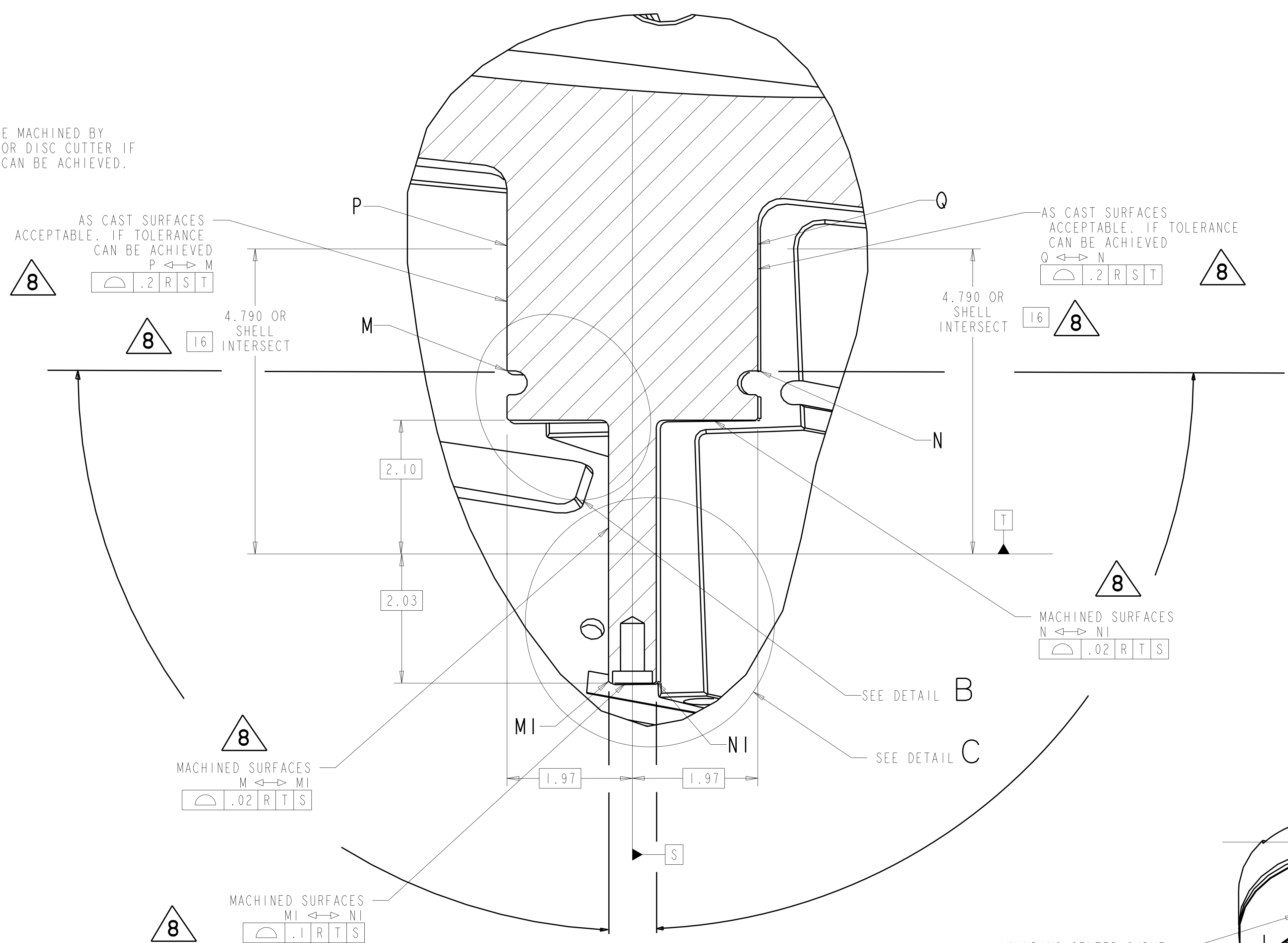
P THIS DRAWING PRODUCED ON PRO-ENGINEER

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FOR NOTES AND PARTS LIST SEE SHEET 1

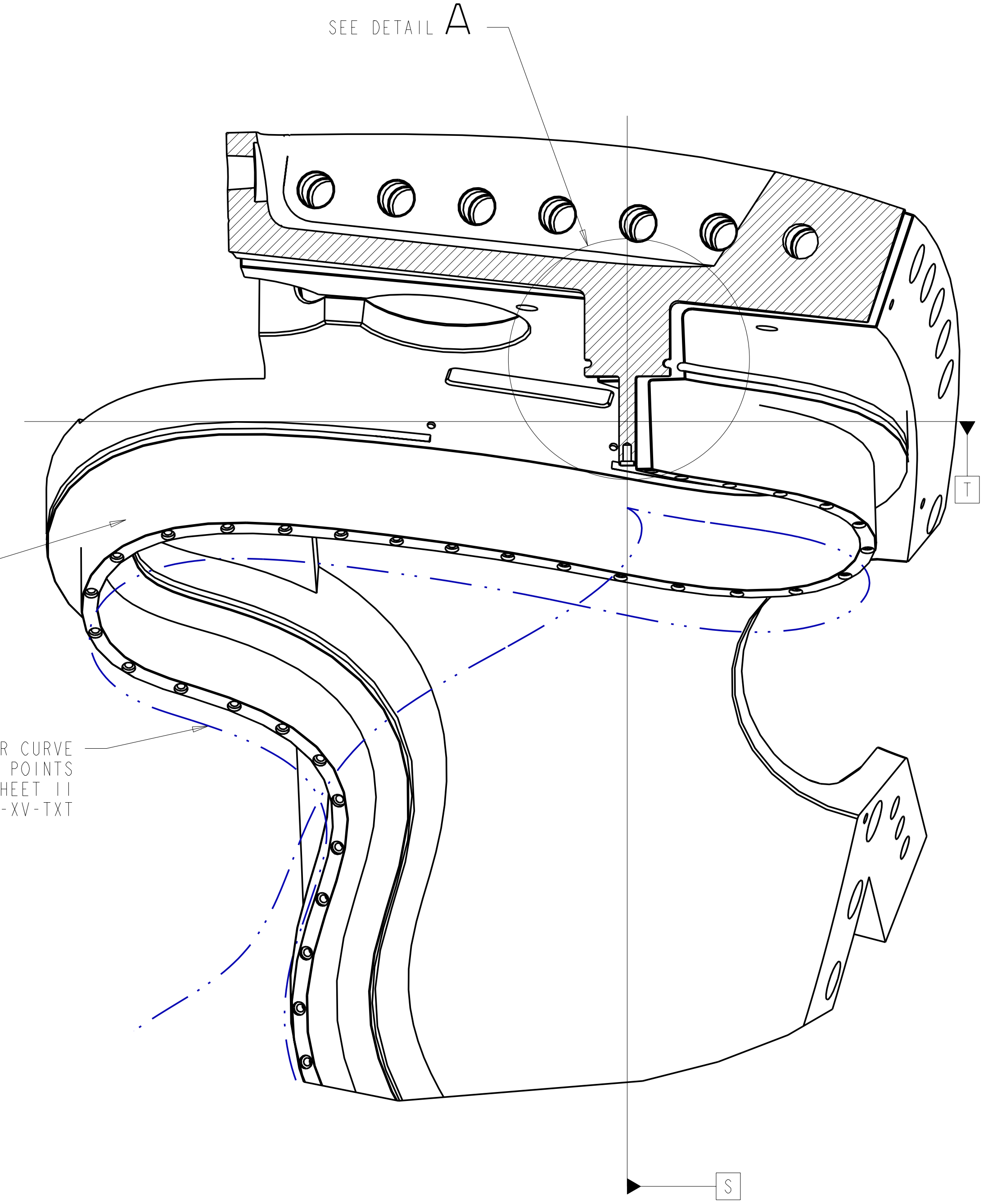


DETAIL B
SCALE 2.000

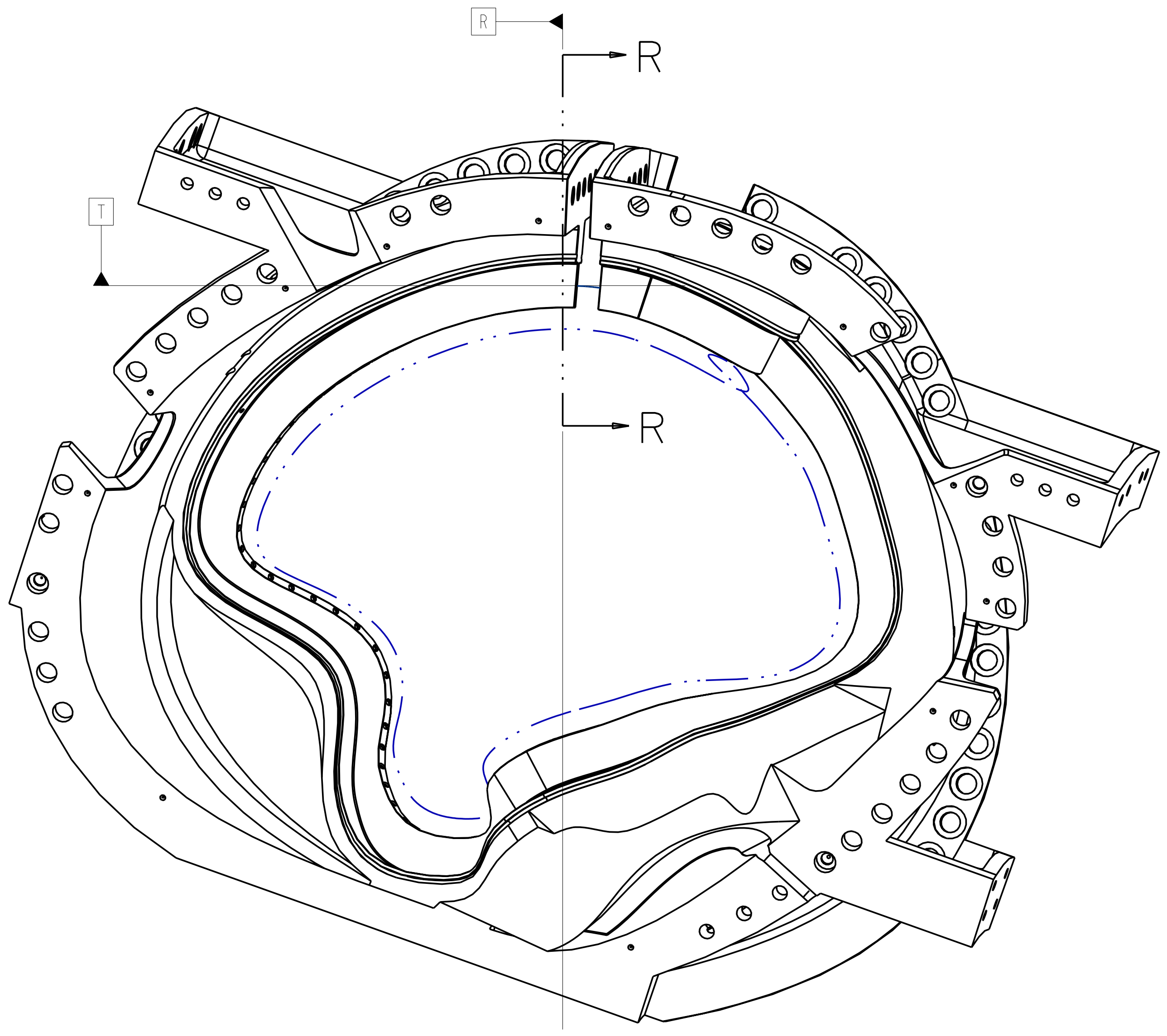


DETAIL A
SCALE 1.00

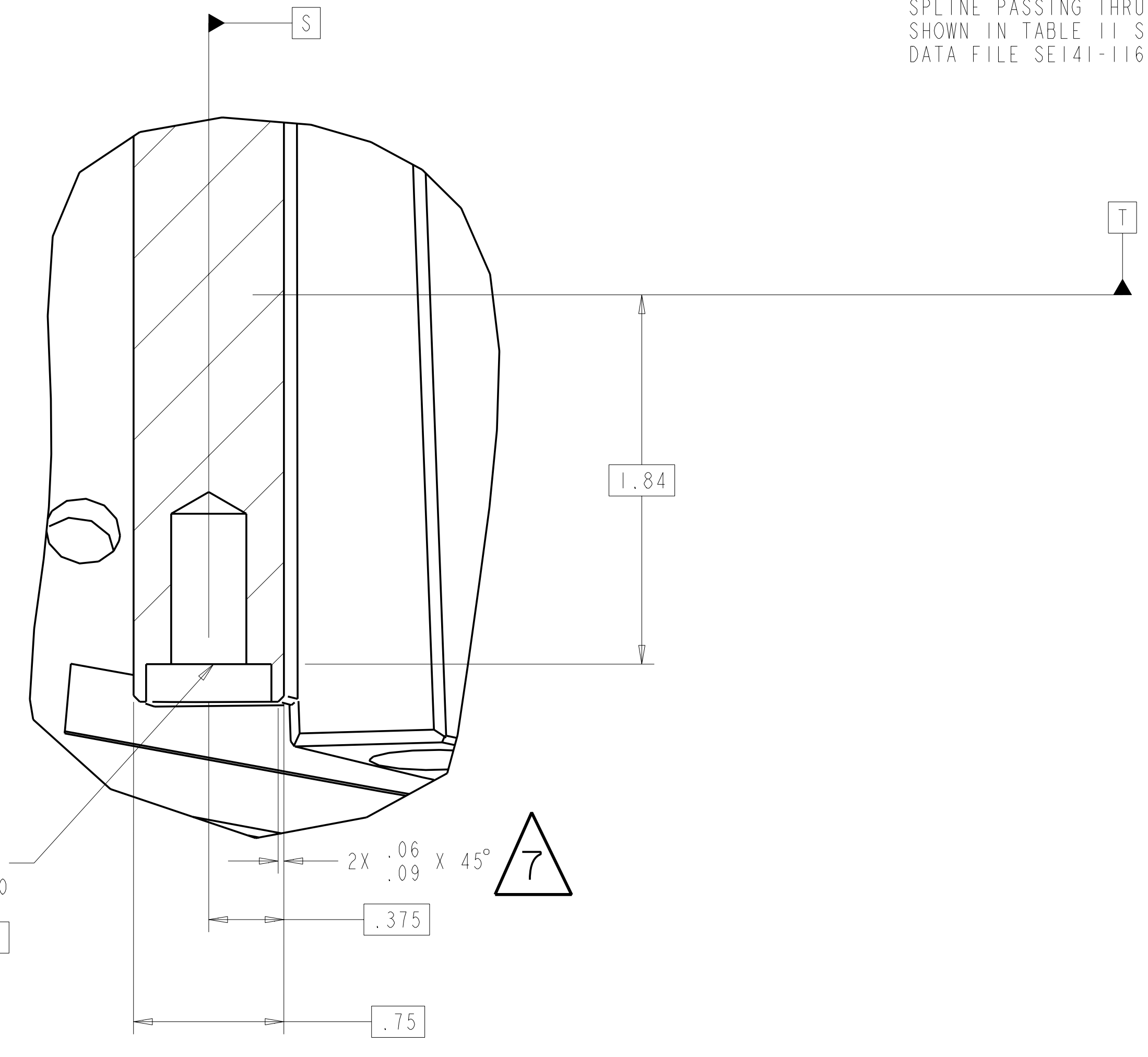
TYPICAL FOR ALL POINTS ALONG WINDING CENTER



SECTION R-R
SCALE 0.25



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

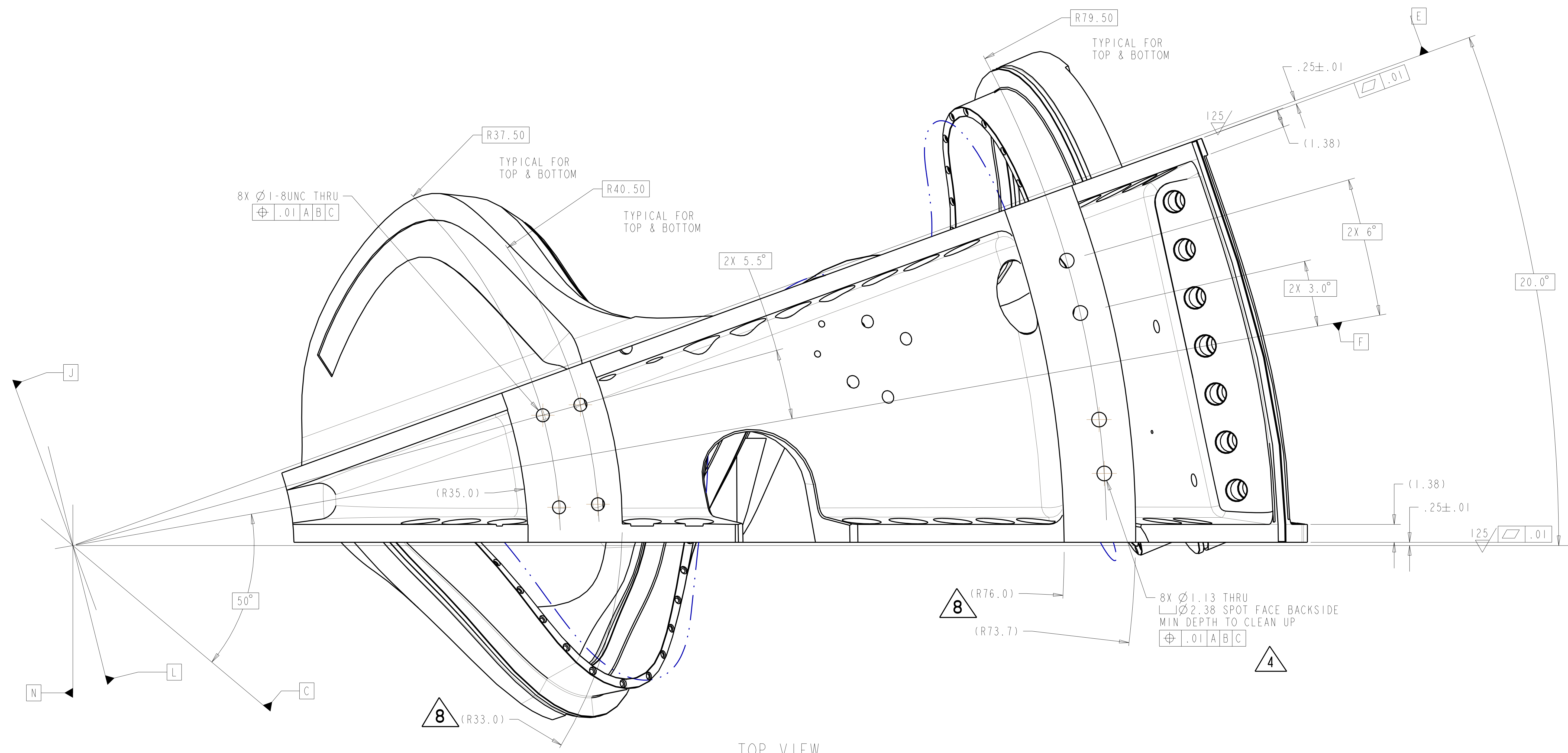
3 4
 96X
 Ø.375 -16 UNC Ψ.750
 .625 Ψ.188
 .06 R S T
 TRUE POSITION APPLIES TO DEPTH OF COUNTERSINK
 THREADED HOLE DEPTH +.1/-0

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 PPPL Drafting:

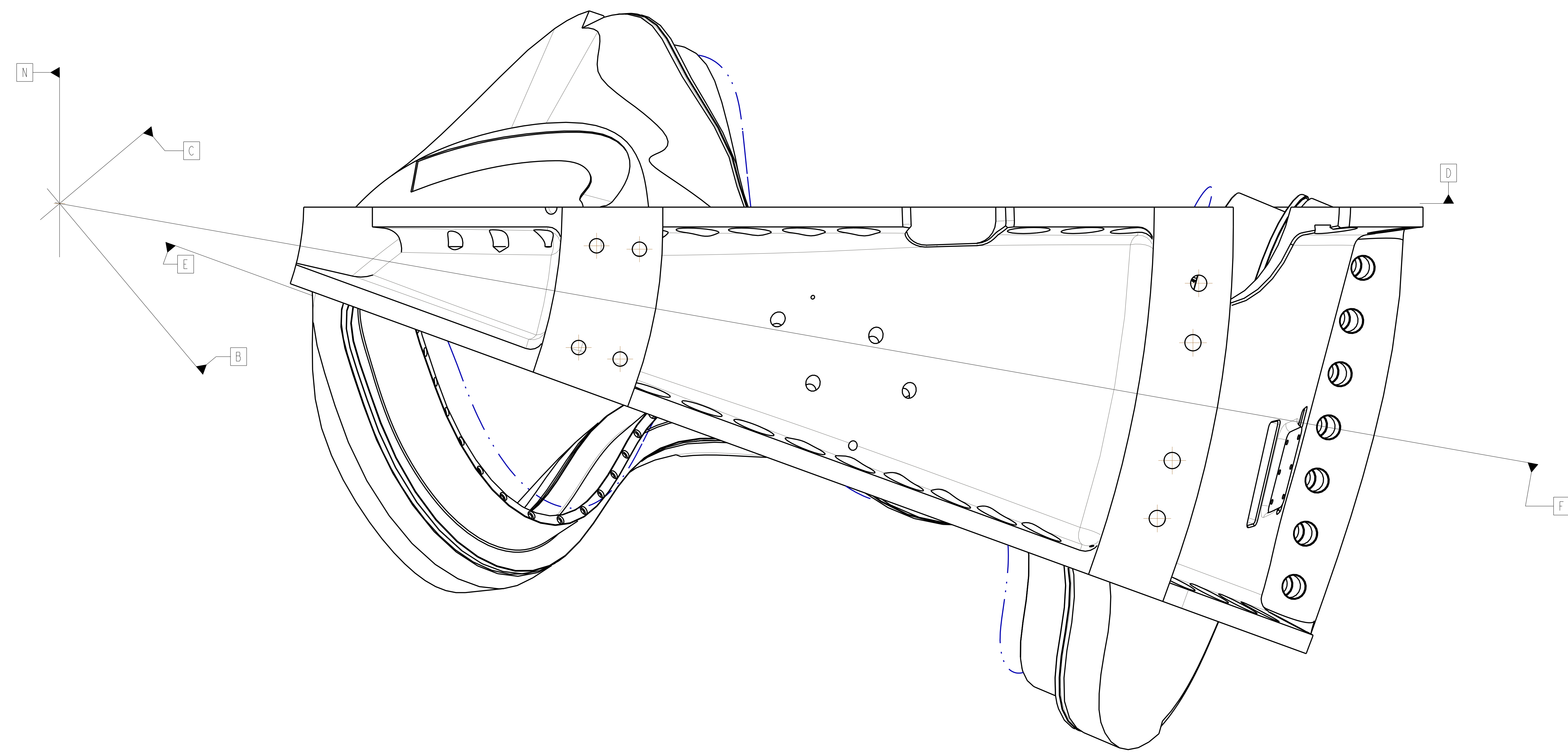
Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC. Oak Ridge, Tennessee PROJECT NAME:							
NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING FORM TYPE-C							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
11	X-10	5700	3	2	11	S	U
RELEASE LEVEL	SEI41-116						REV
Fabrication							8

H G F E D C B A

FOR NOTES AND PARTS LIST SEE SHEET 1



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



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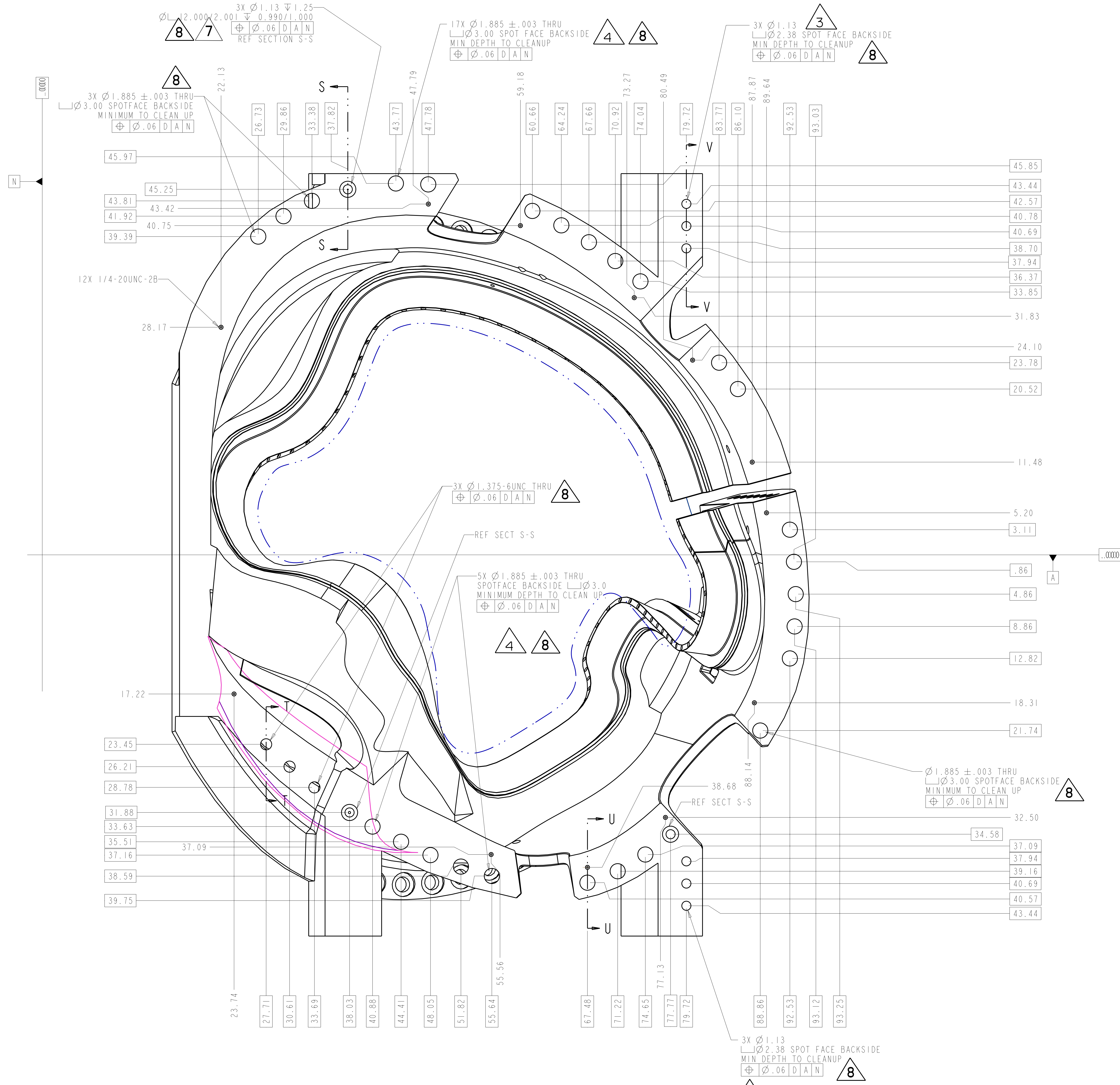
PPPL Drafting:

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-C							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
11	X-10	5700	3	3	11	S	U
RELEASE LEVEL	SEI41-116						REV
Fabrication							8

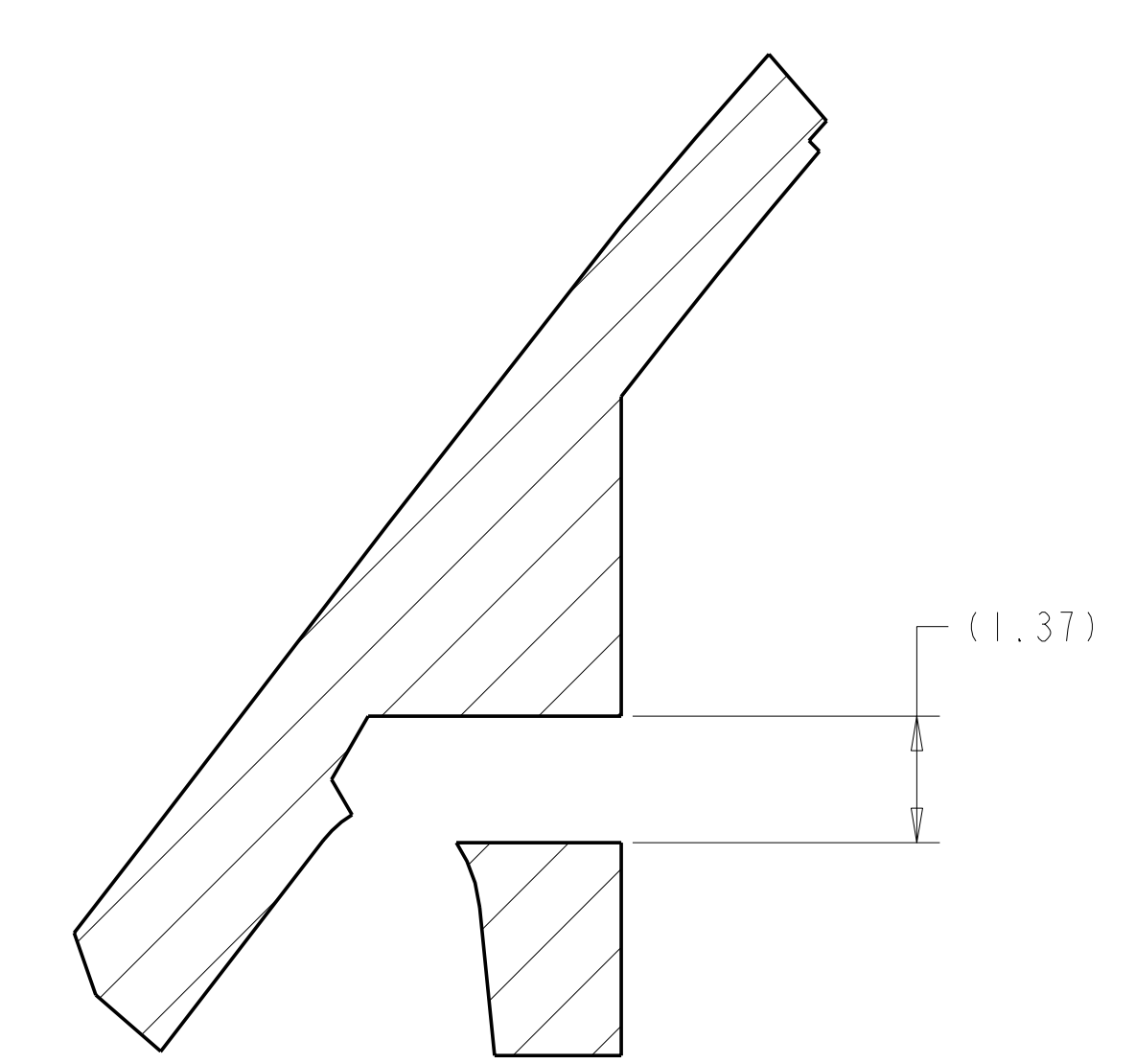
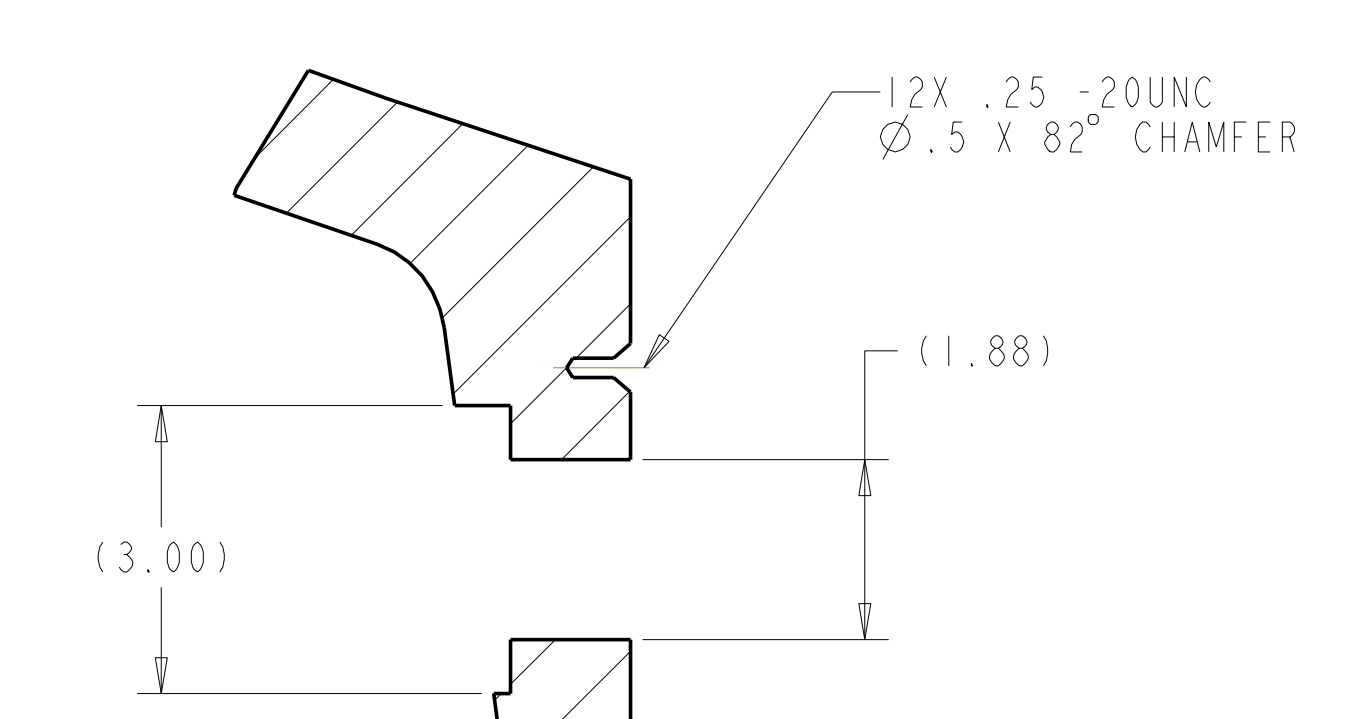
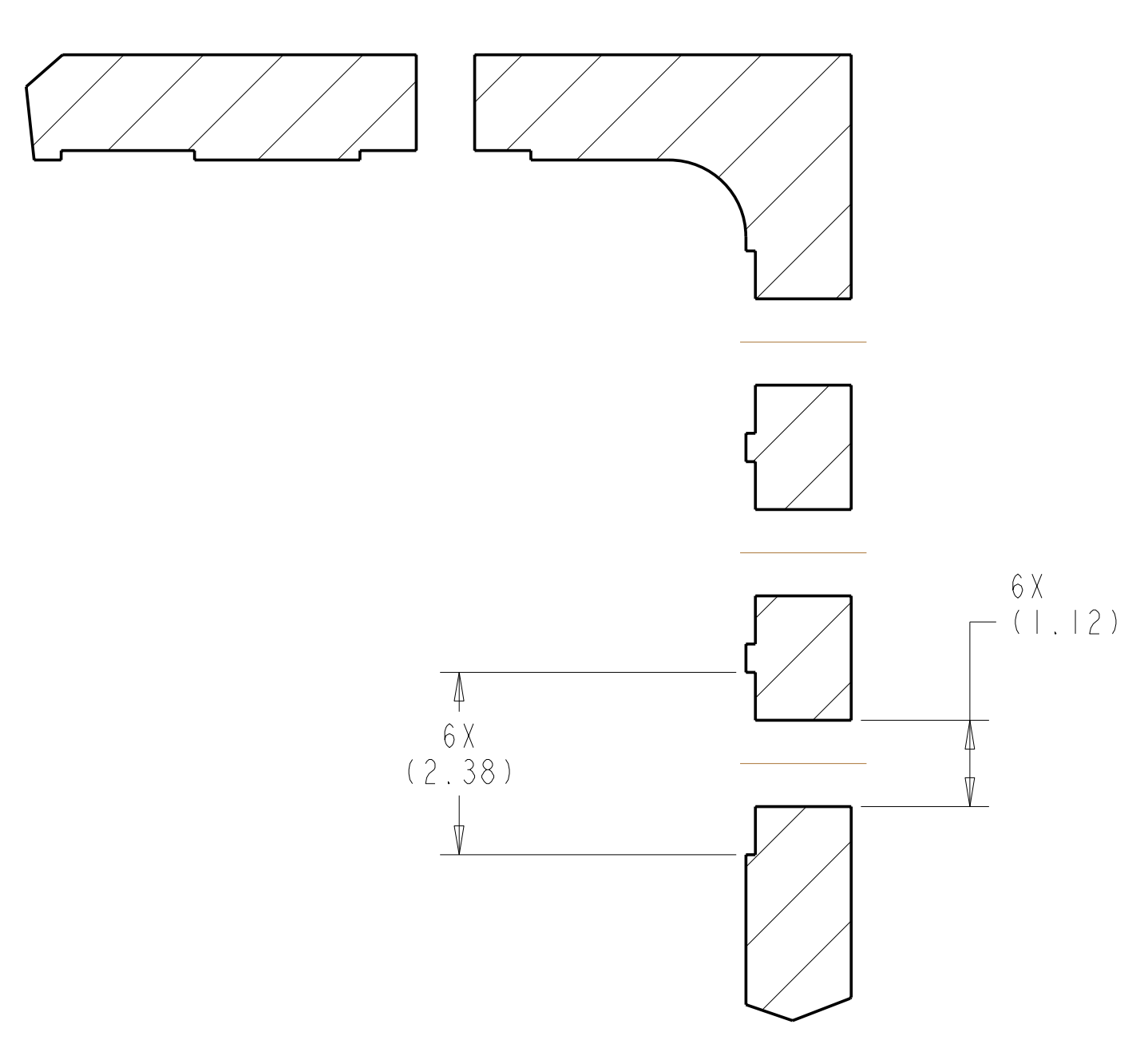
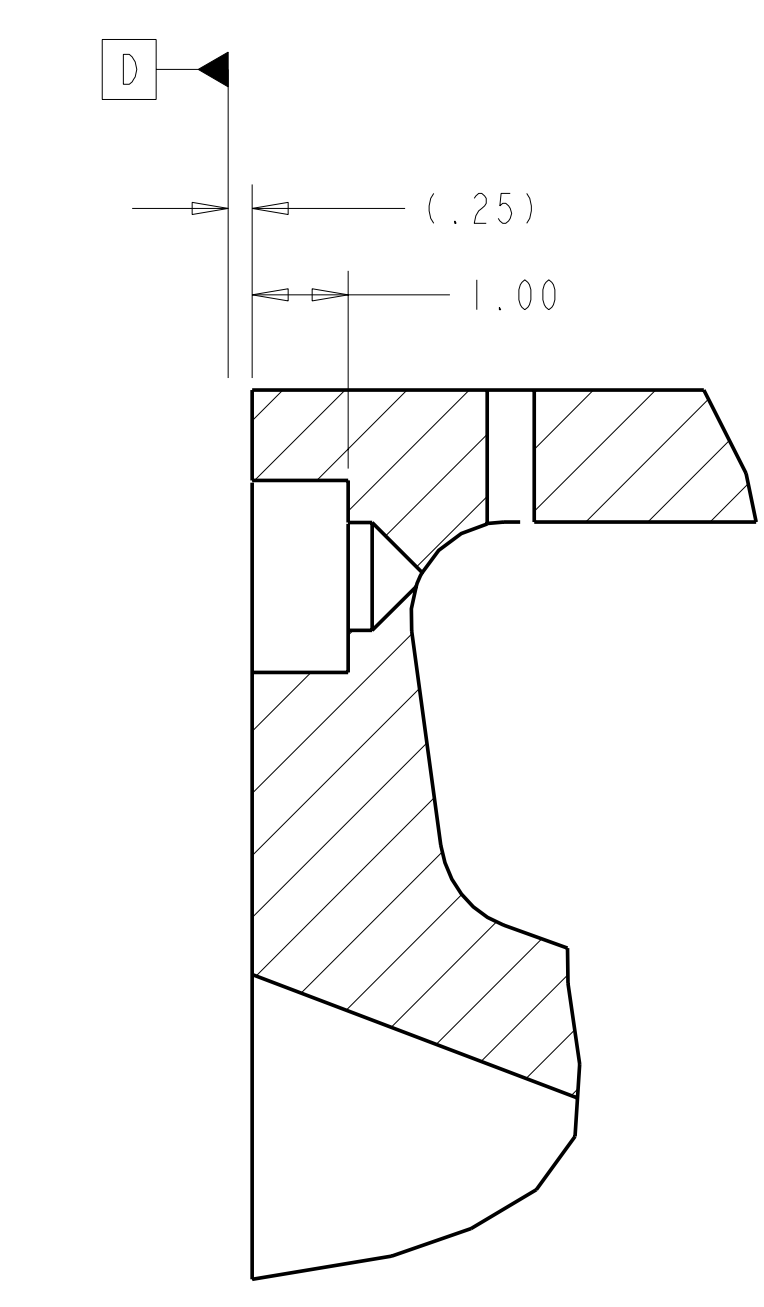
SEI41-116

A

FOR NOTES AND PARTS LIST SEE SHEET I



VIEW AT DATUM D
SCALE 0.20



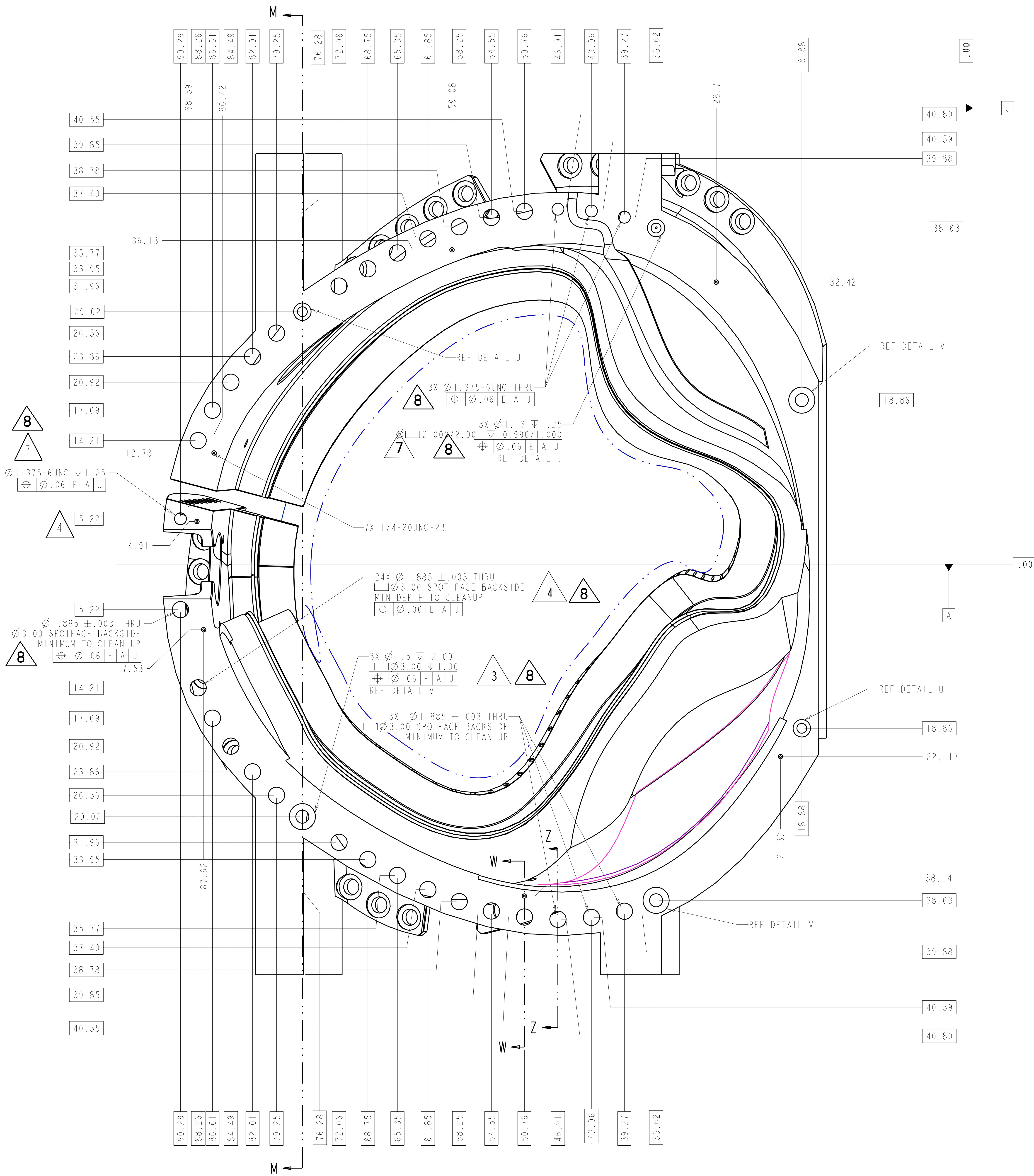
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Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC. Oak Ridge, Tennessee PROJECT NAME:							
UT-BATTELLE NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING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

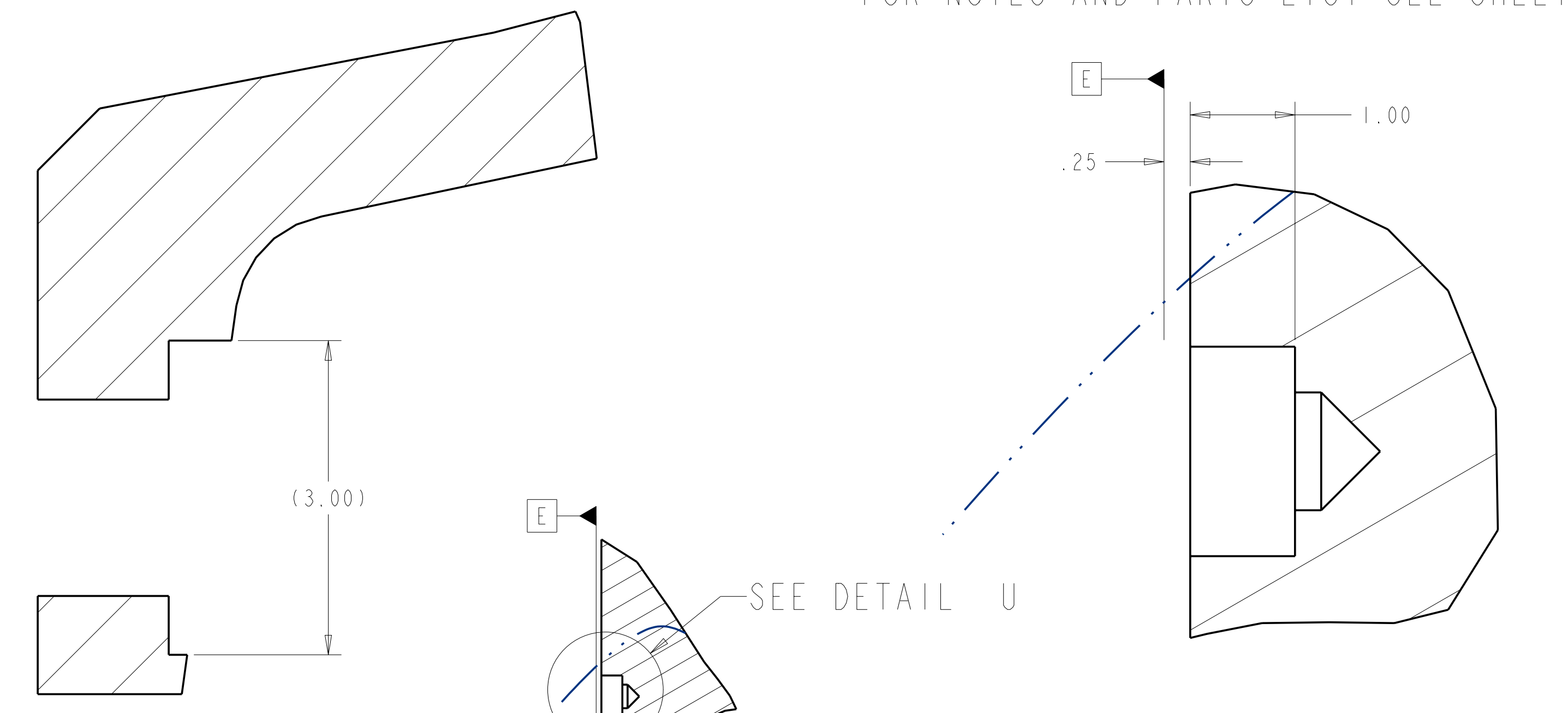
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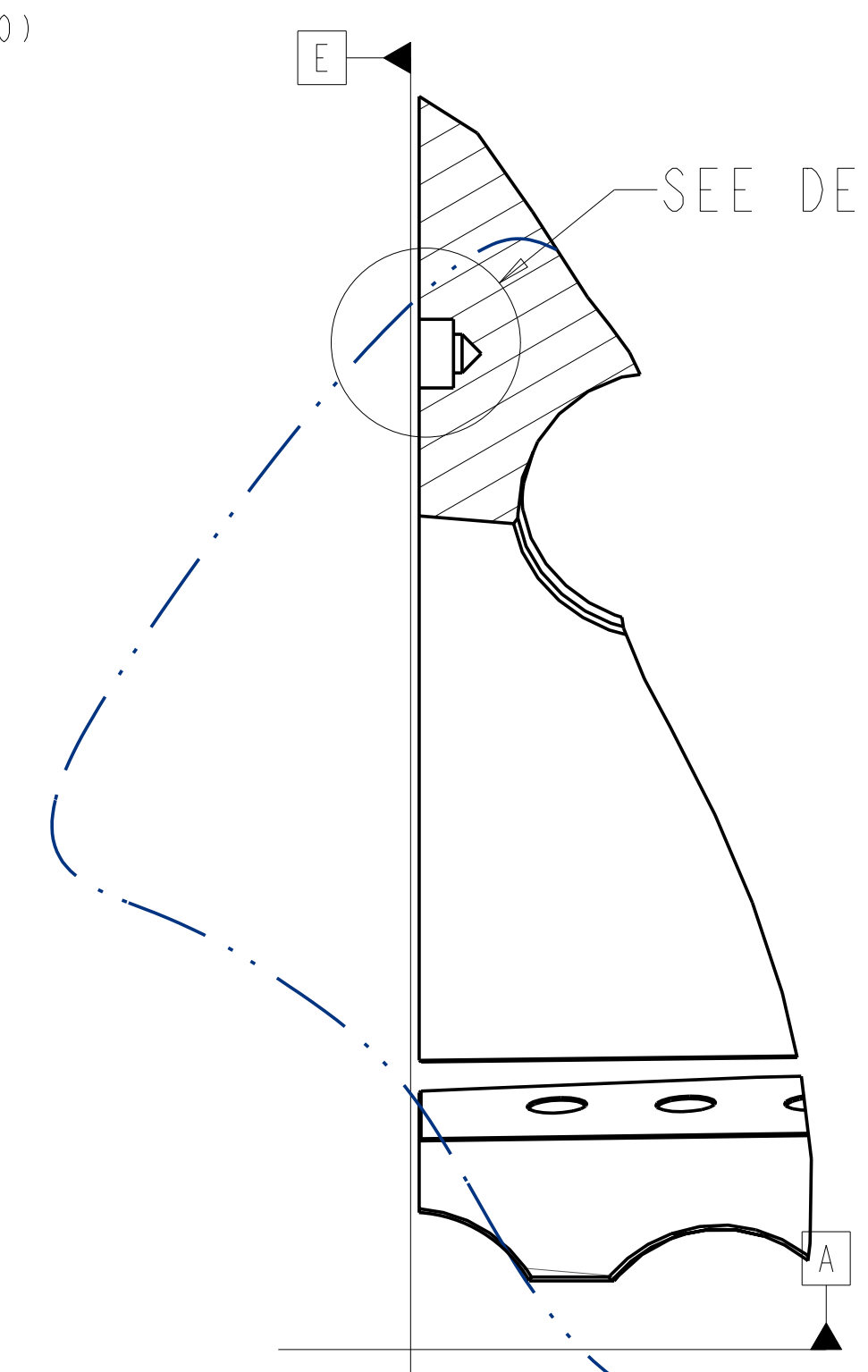
FOR NOTES AND PARTS LIST SEE SHEET 1



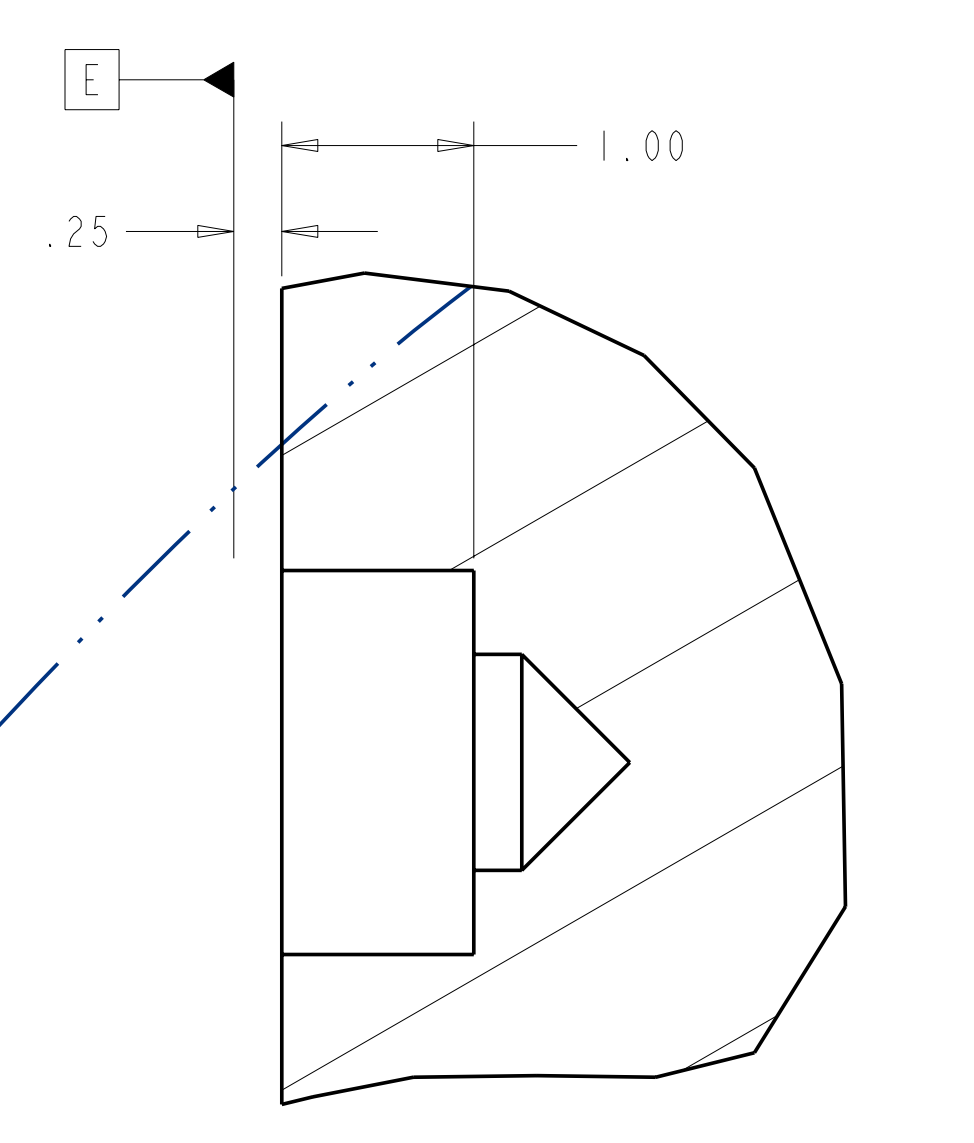
VIEW AT DATUM E
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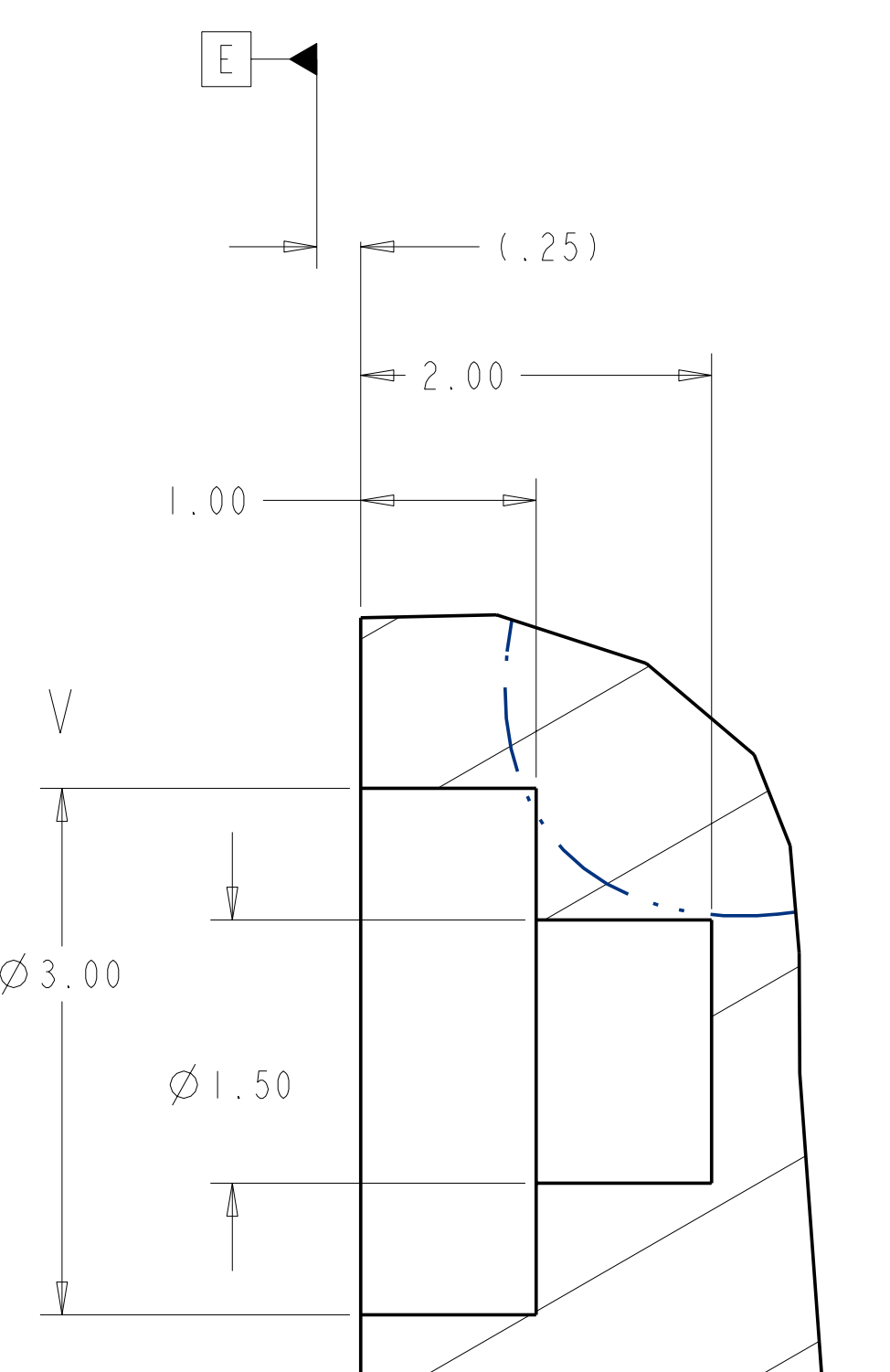
SECTION 7-Z
SCALE 1.00



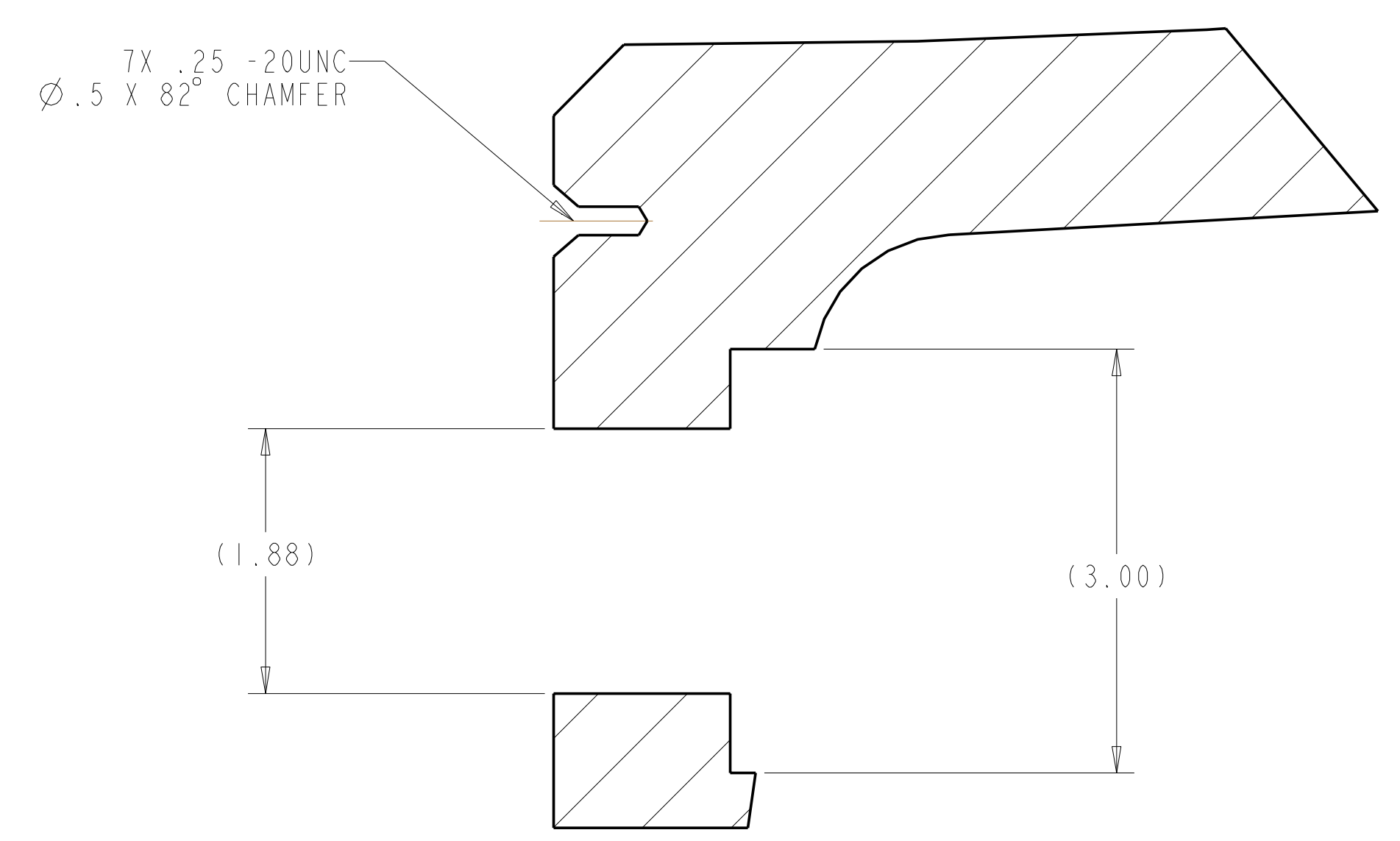
SECTION M-M



DETAIL U
SCALE 1.00



DETAIL V
SCALE 1.00



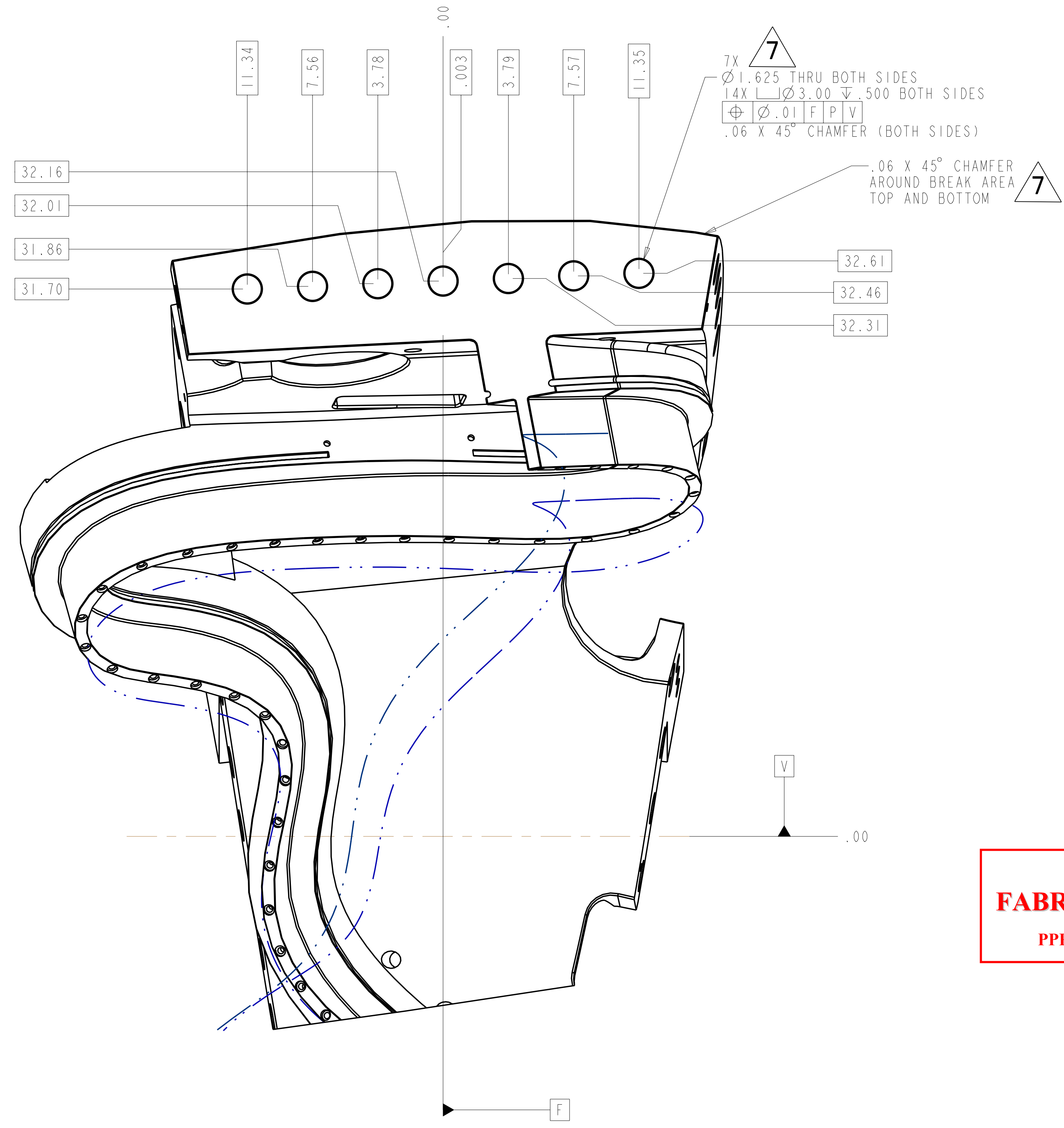
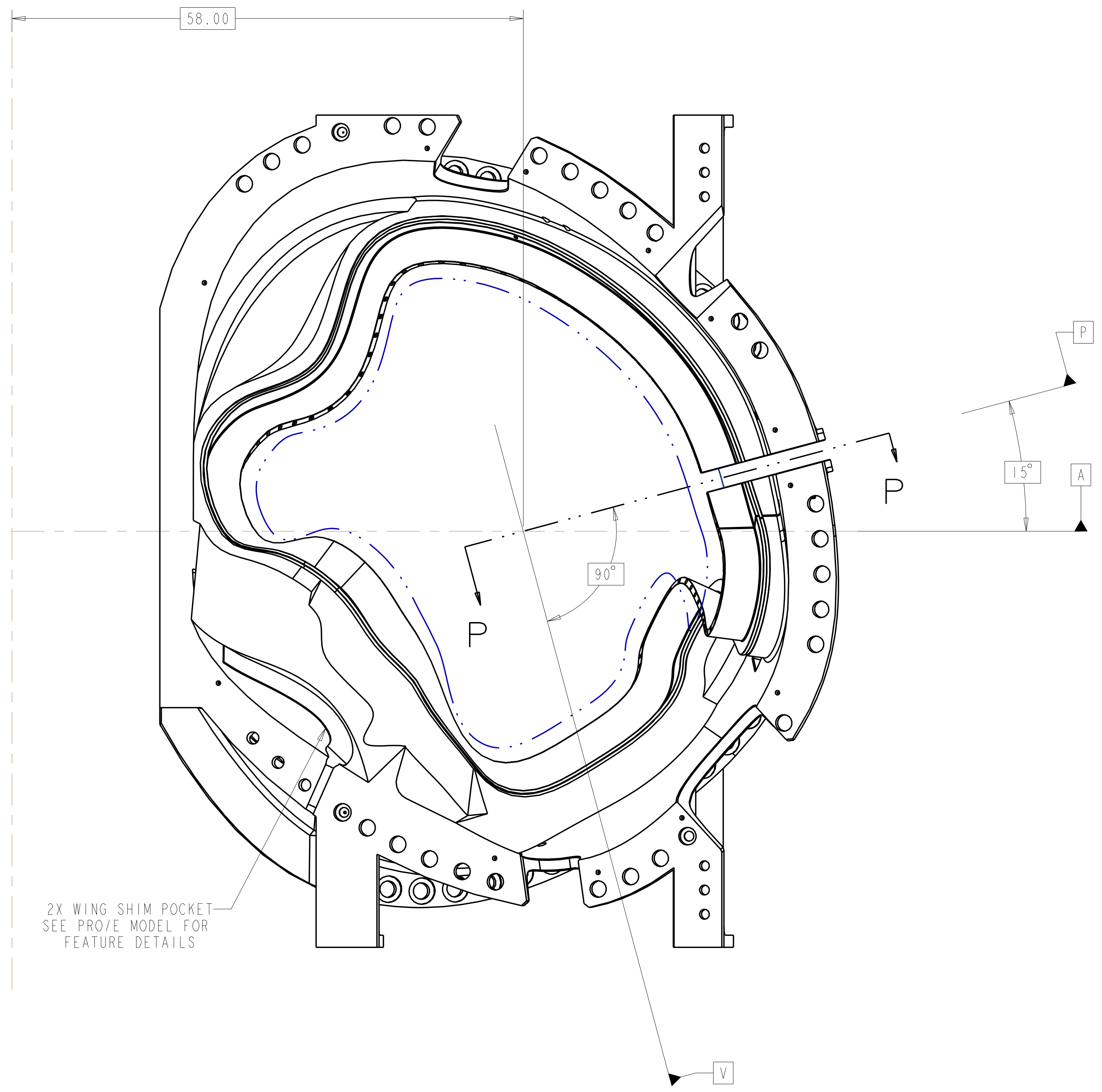
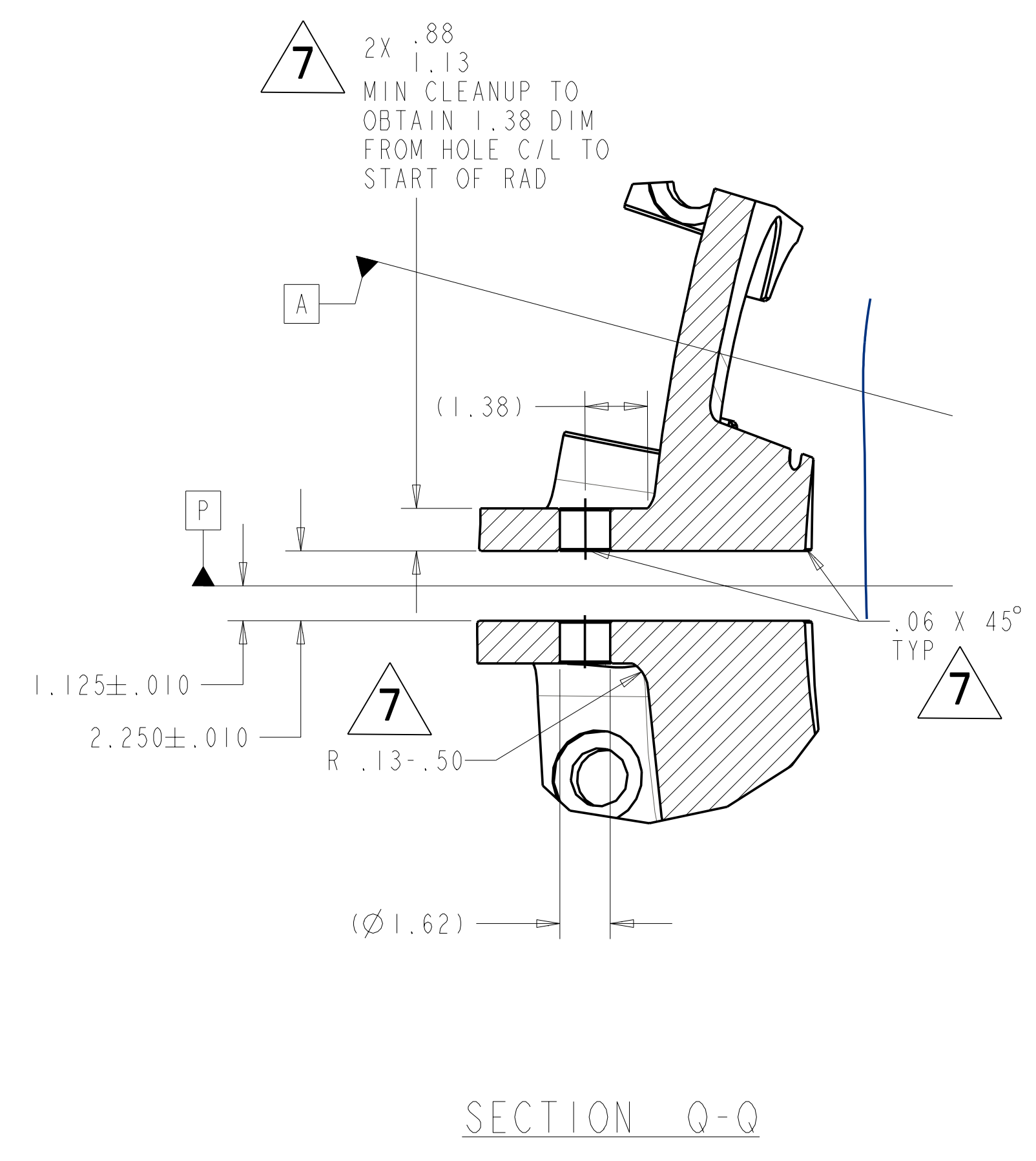
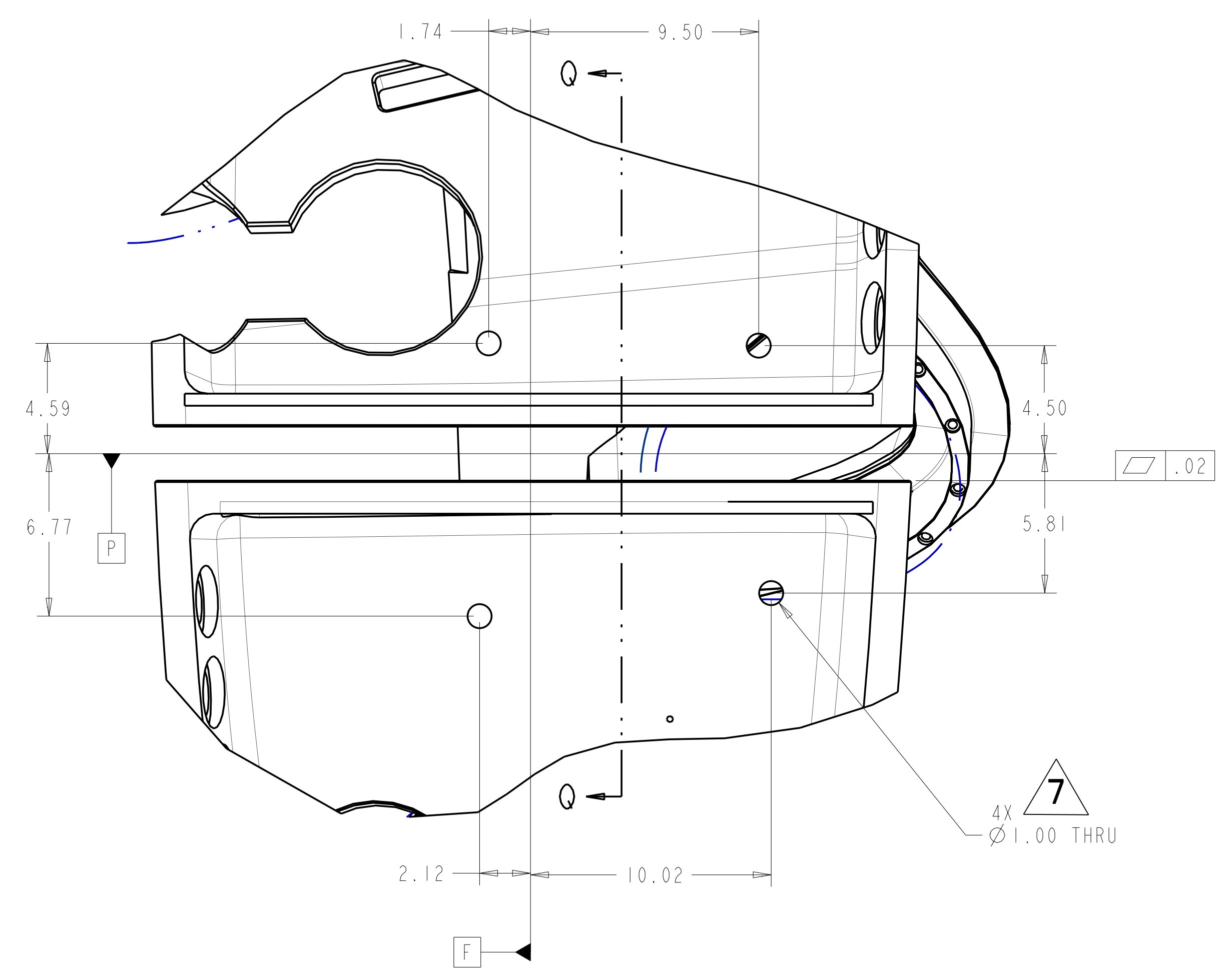
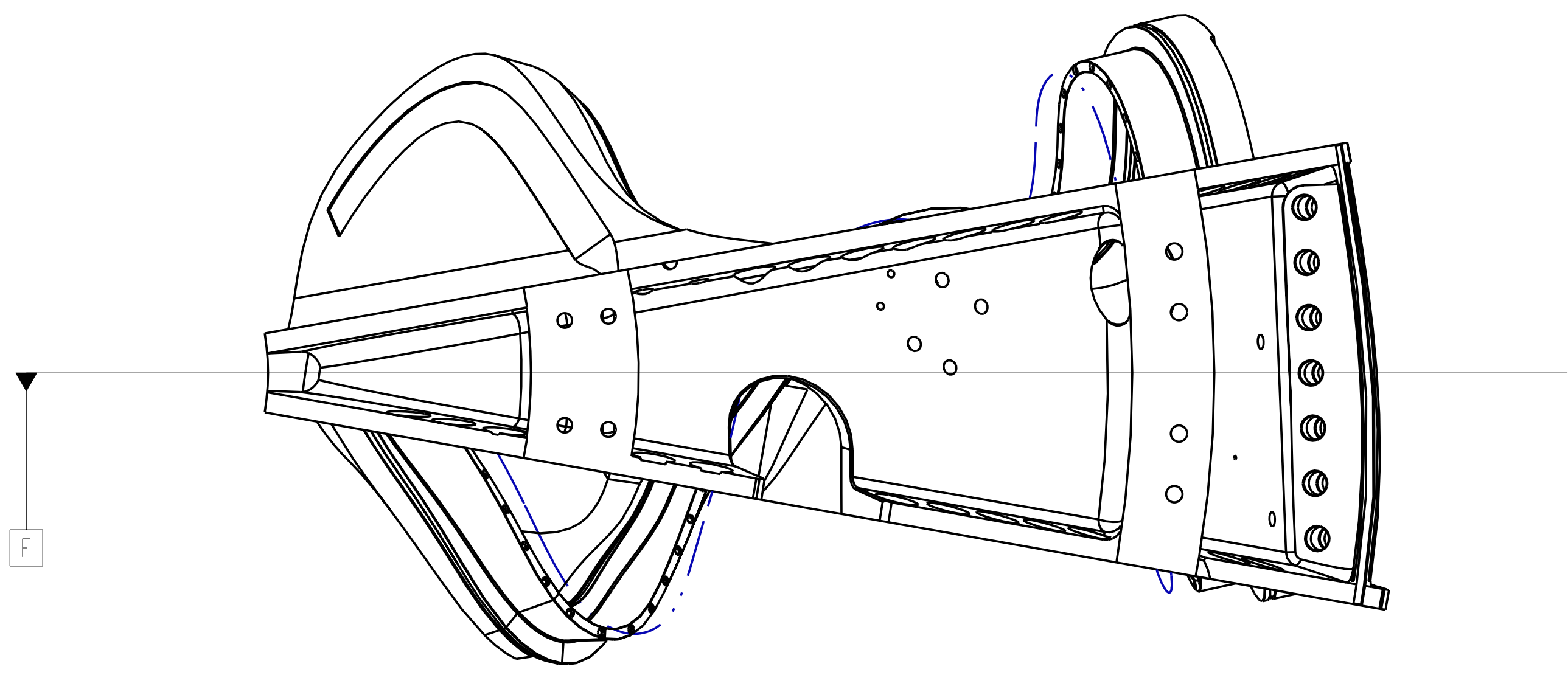
SECTION W-W
SCALE 1.00

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UT-BATTELLE							
PROJECT NAME NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING FORM TYPE-C							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
11	X-10	5700	3	5	111	S	U
RELEASE LEVEL	SEI41-116						REV
Fabrication							8

SEI41-116

FOR NOTES AND PARTS LIST SEE SHEET 1



POLOIDAL BREAK DETAIL

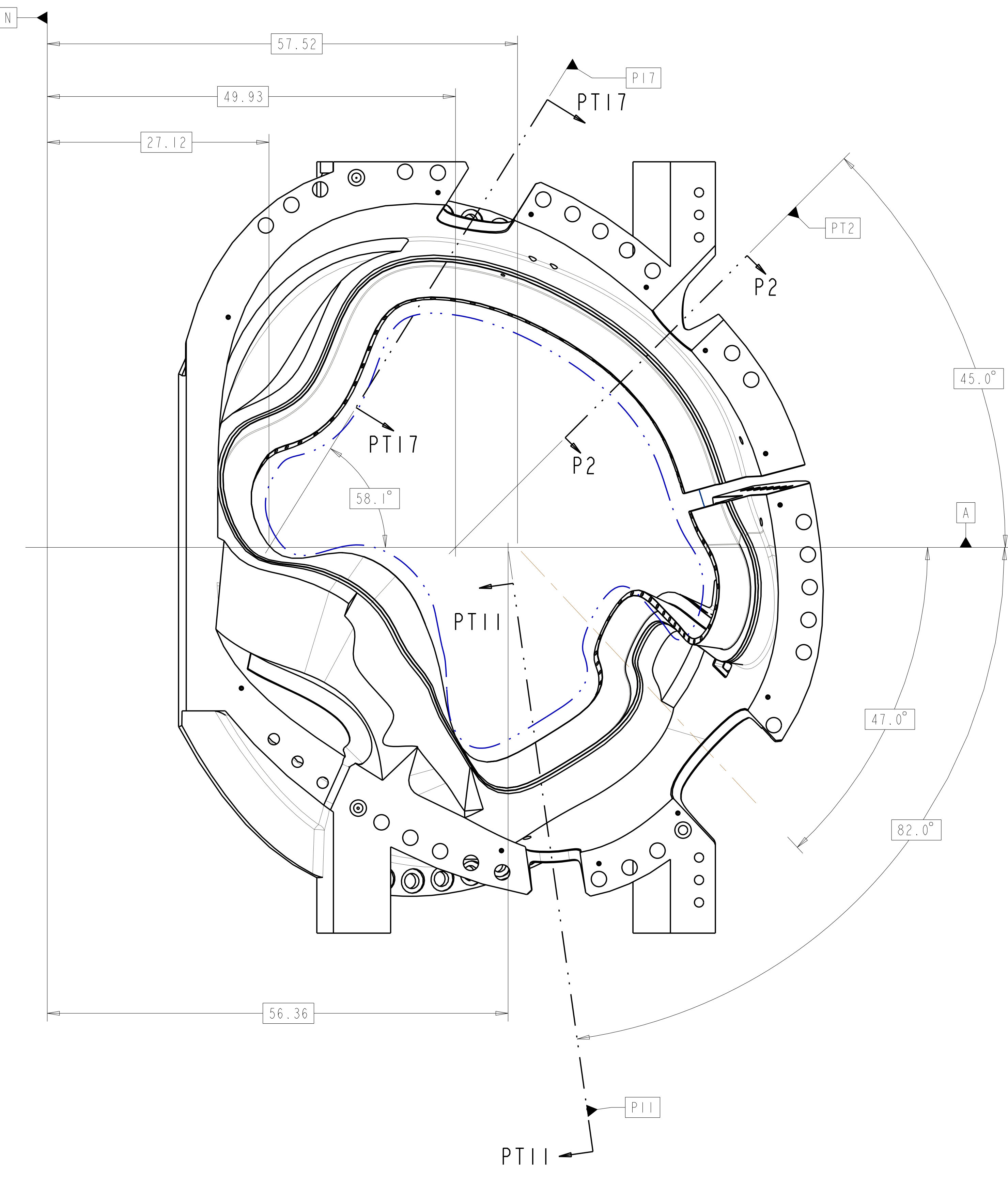
SECTION P-P
SCALE 0.25

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PPPL Drafting:

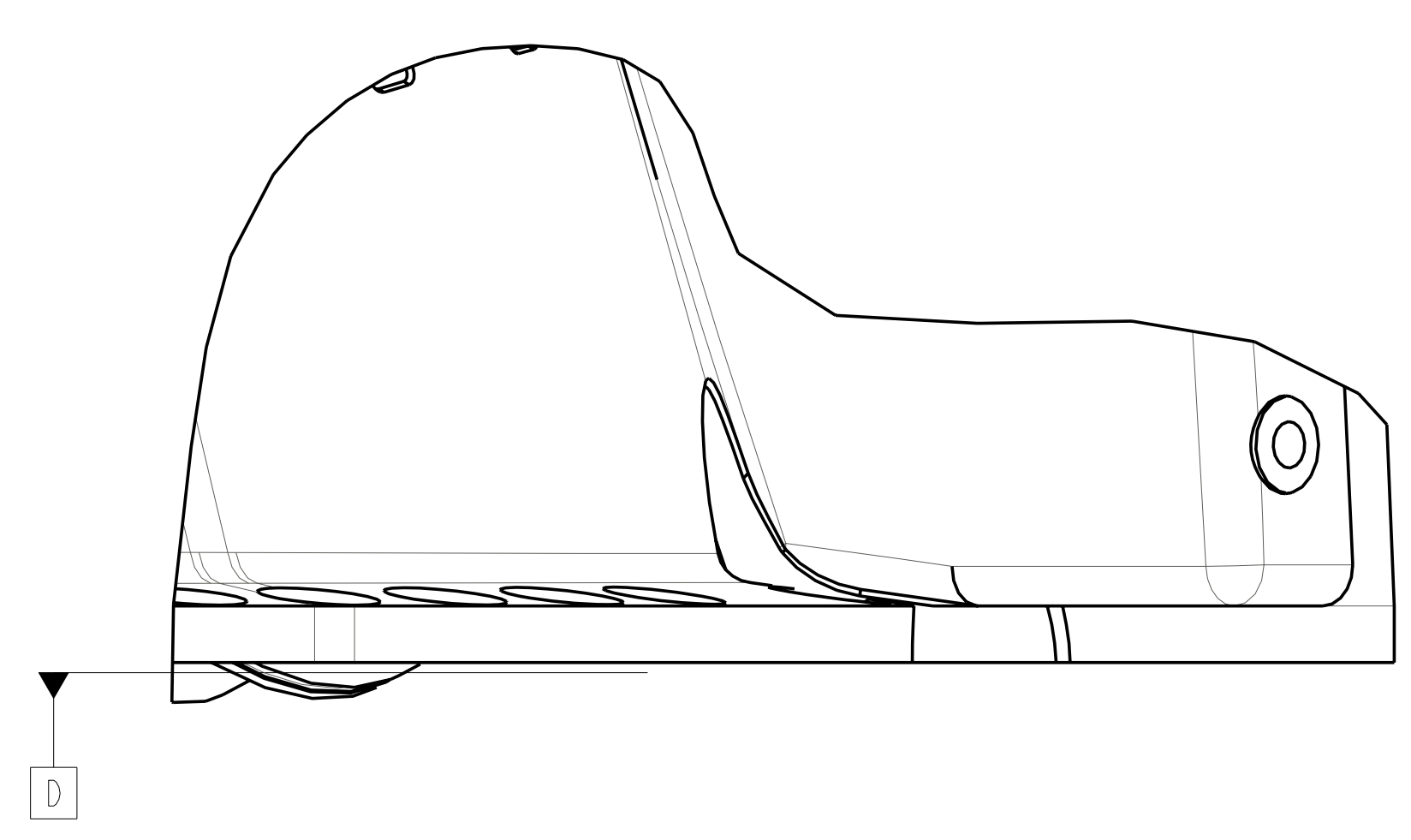
Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee								
UT-BATTELLE								
NATIONAL COMPACT STELLARATOR EXPERIMENT								
PRODUCTION WINDING FORM TYPE-C								
VERSION NO.	PLANT	BLDG	FL	SHT OF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

SEI41-116

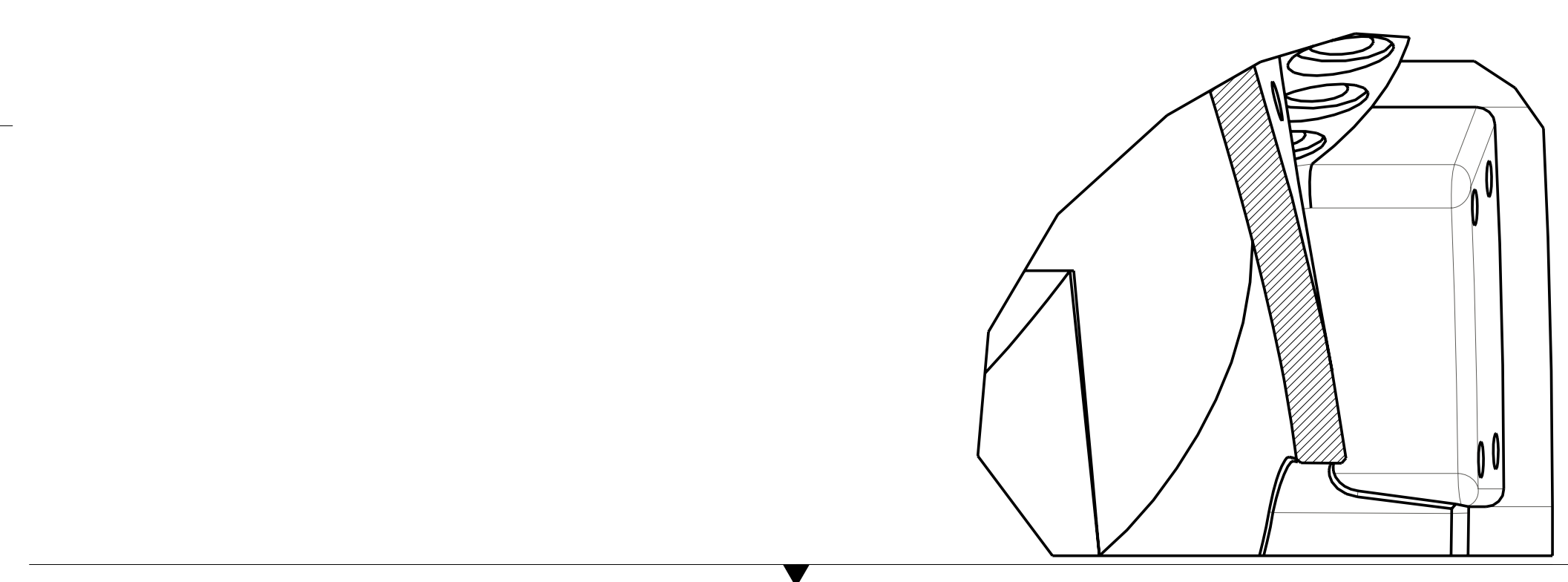
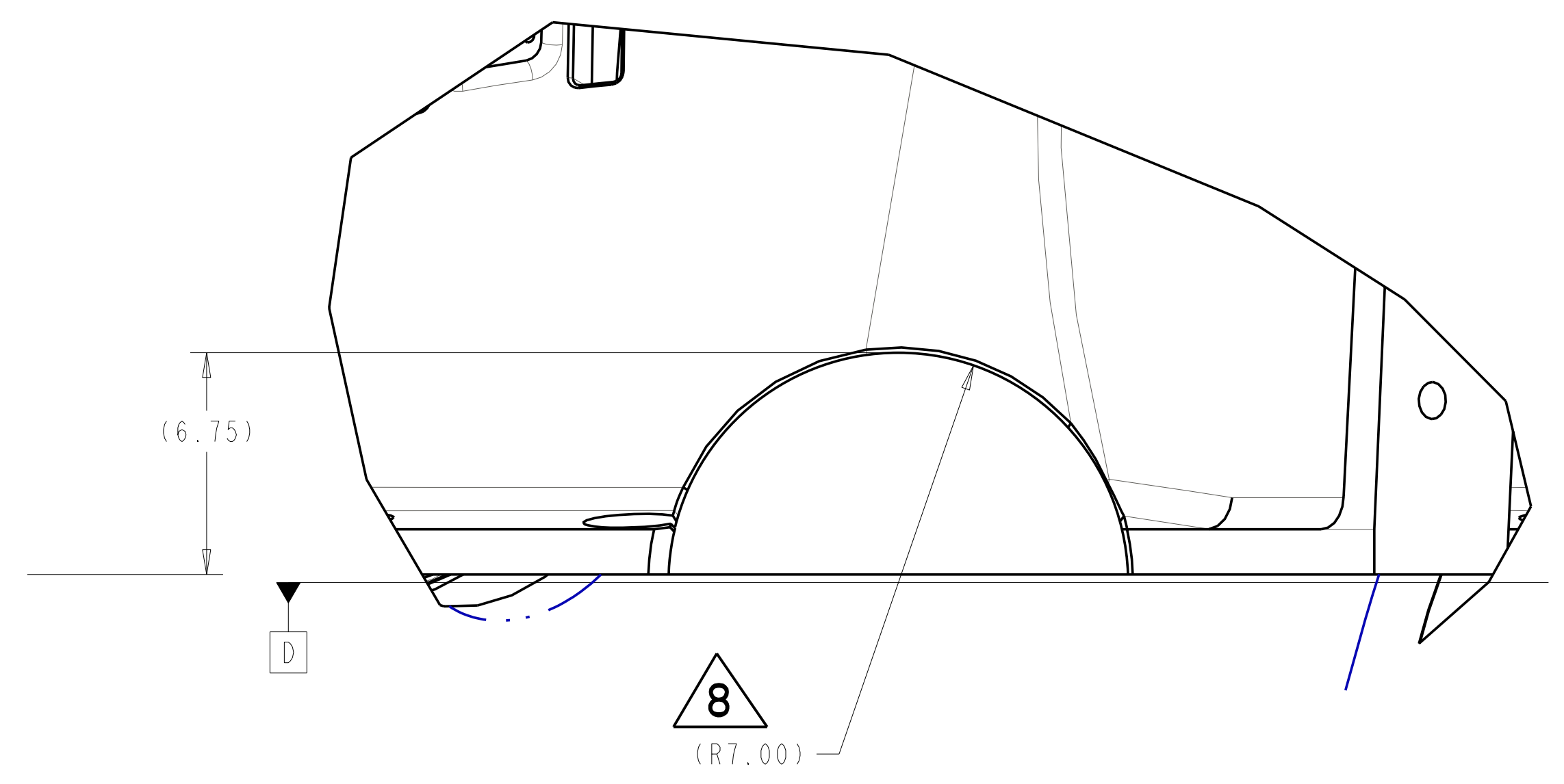
FOR NOTES AND PARTS LIST SEE SHEET 1



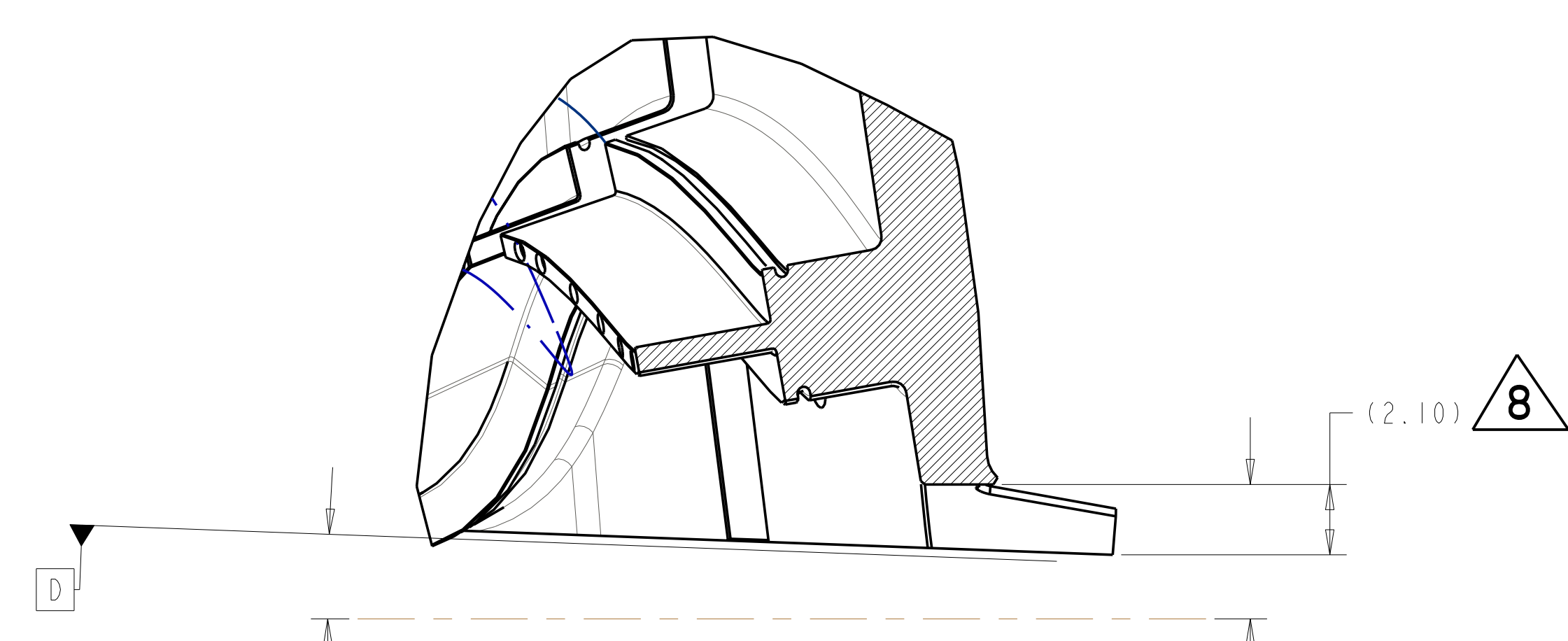
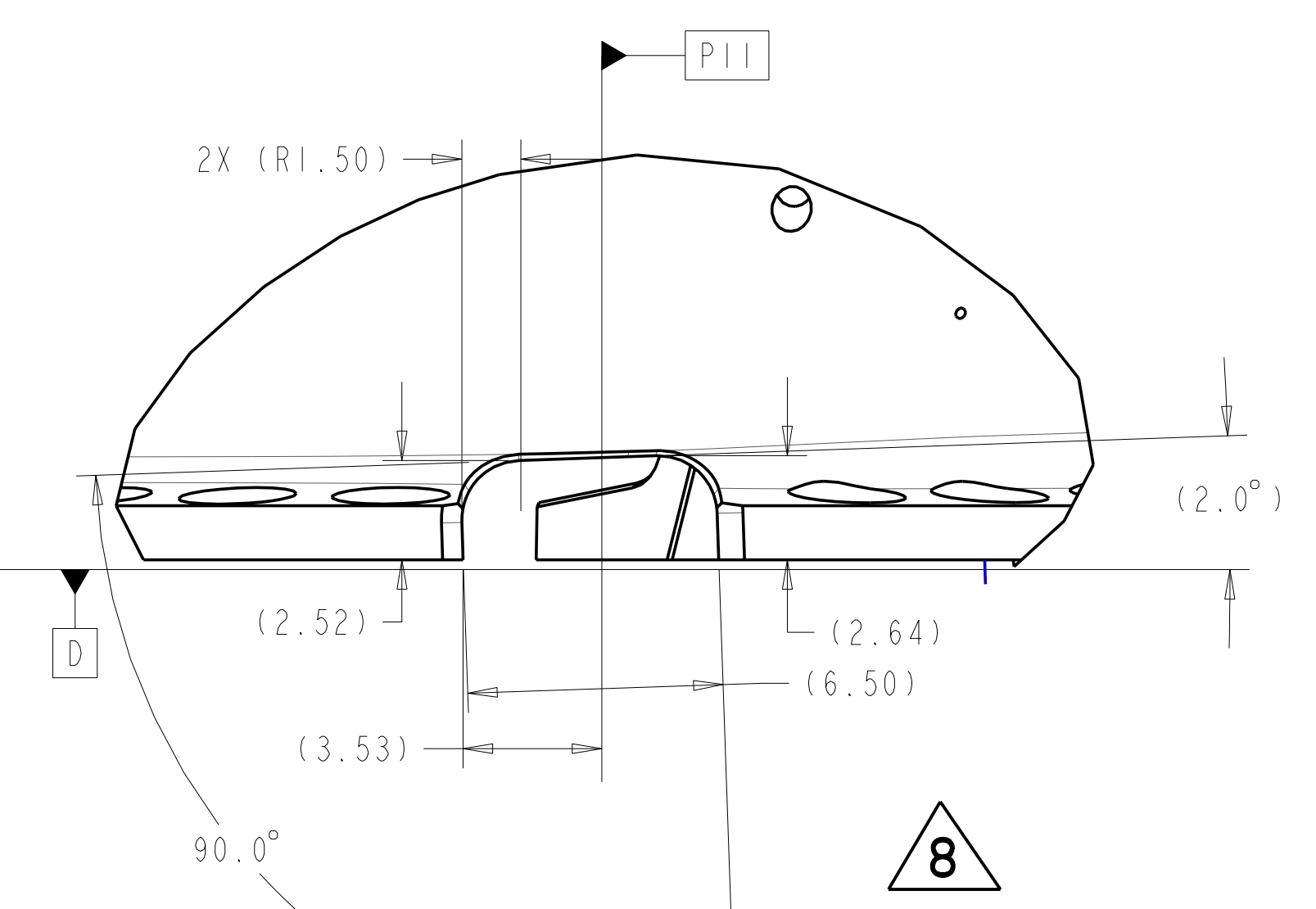
VIEW AT DATUM D
SCALE 0.13



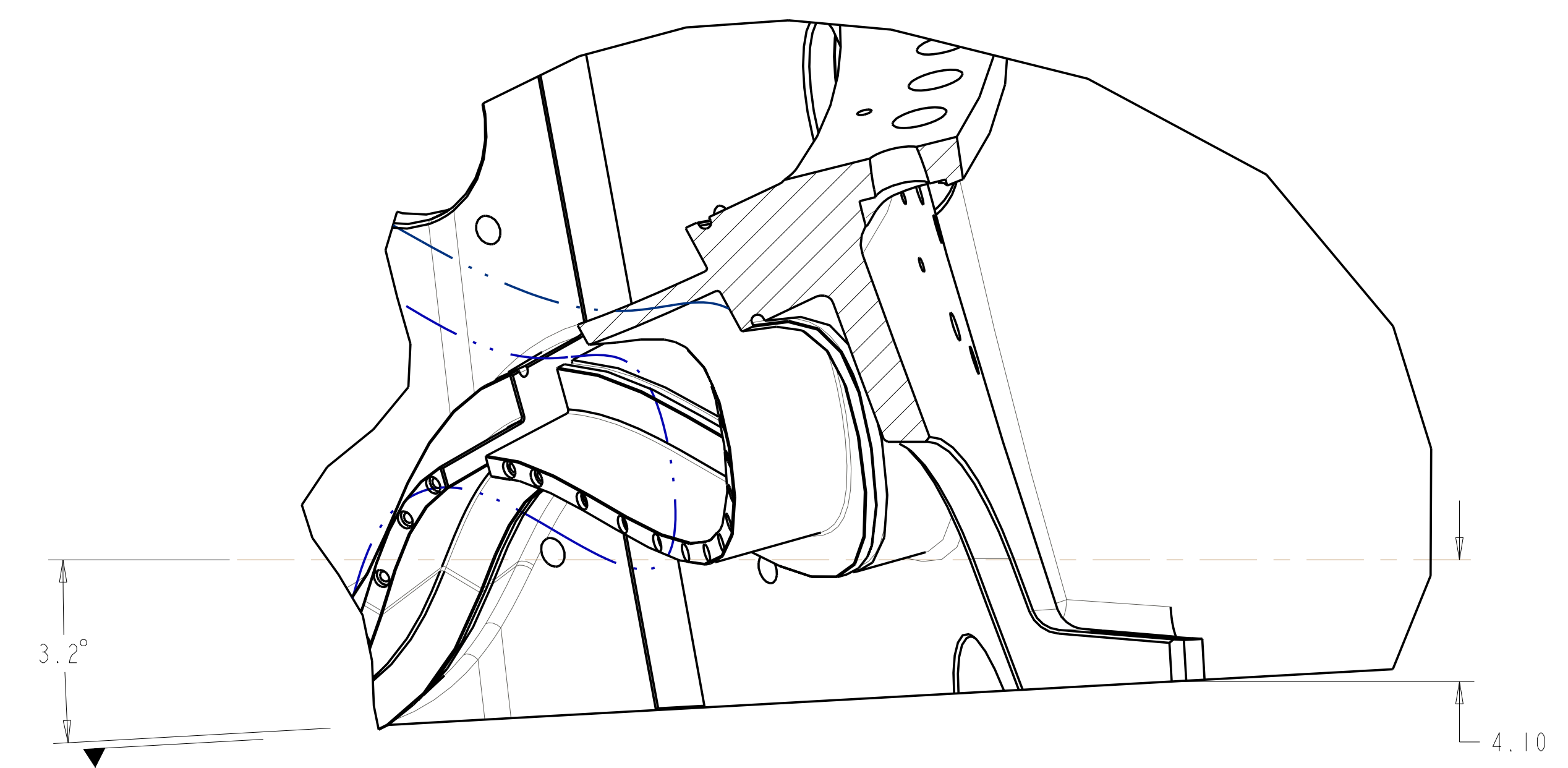
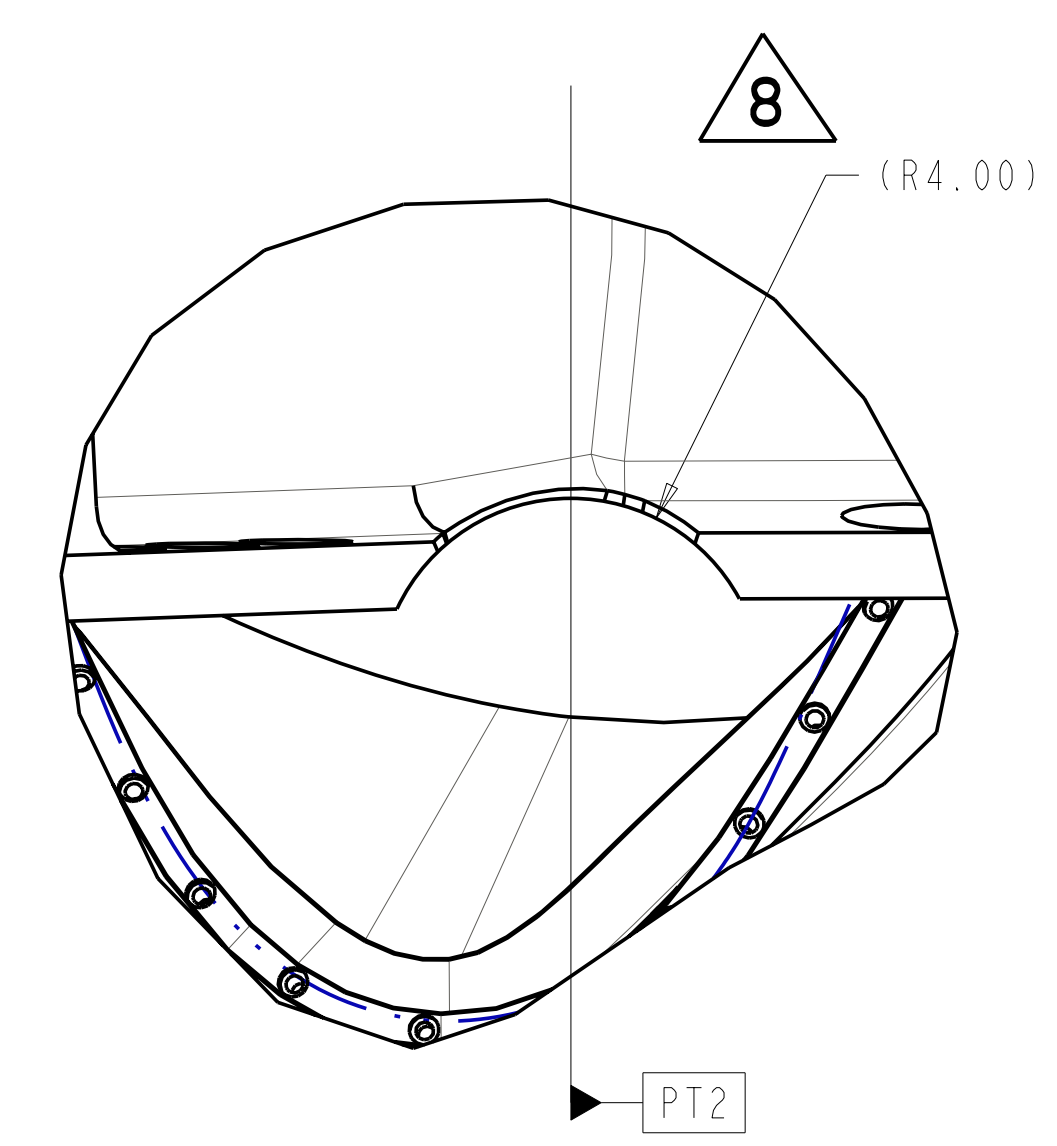
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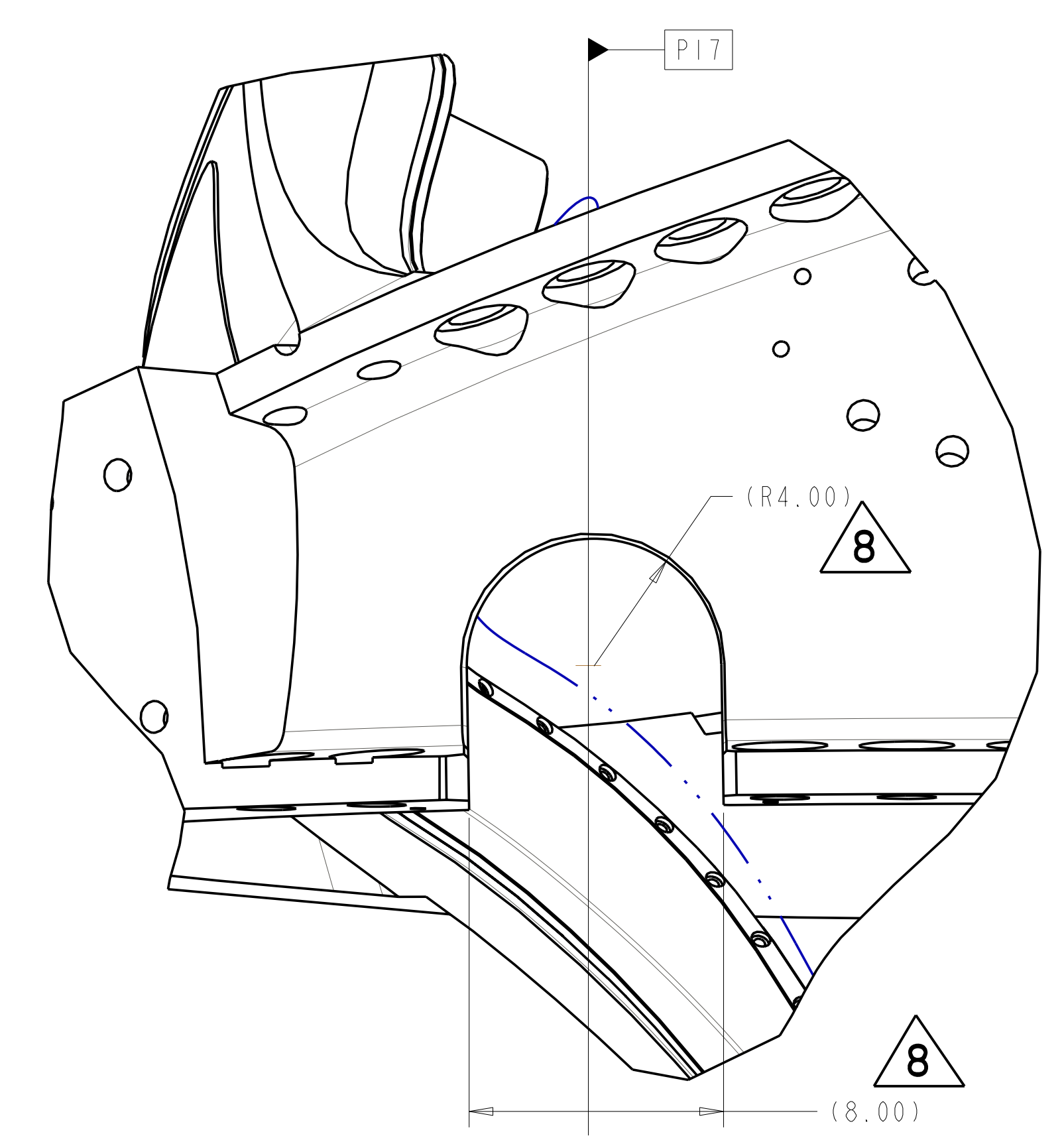
SECTION PT11-PT11
SCALE 0.25



SECTION P2-P2
SCALE 0.25



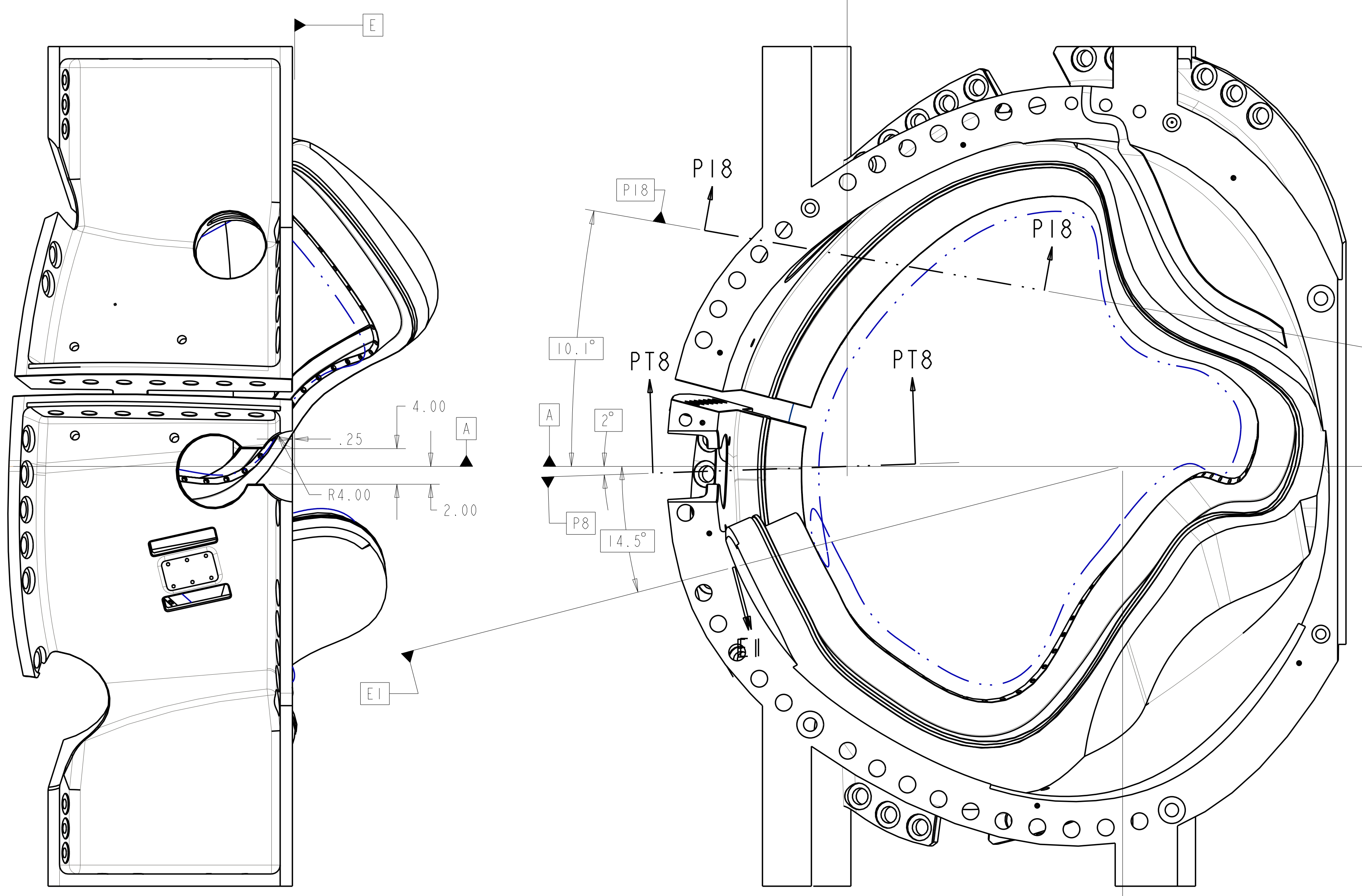
SECTION PT17-PT17
SCALE 0.25



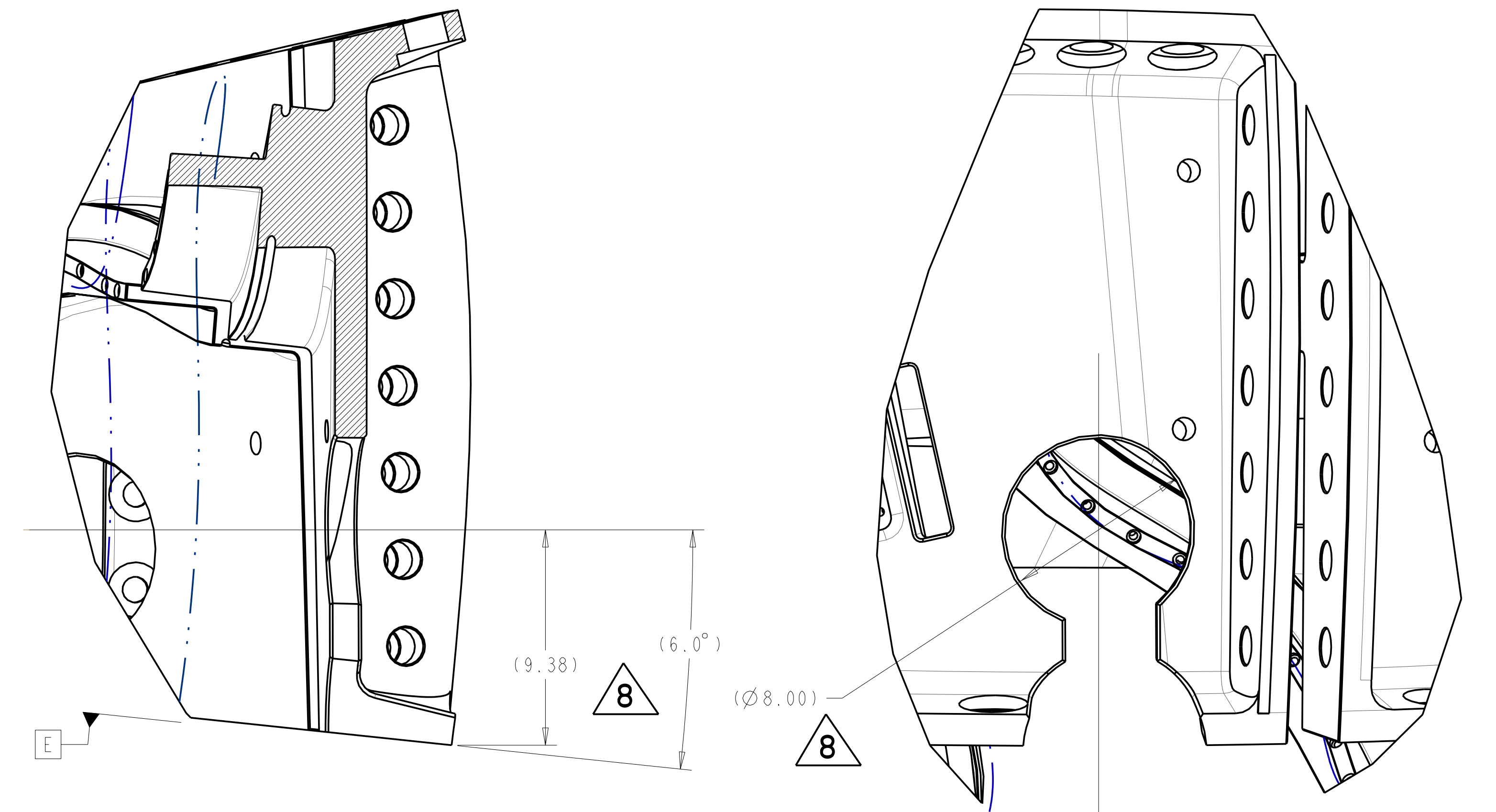
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UT-BATTELLE							
NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING FORM TYPE-C							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
11	X-10	5700	3	7	11	S	U
RELEASE LEVEL		SEI41-116				REV	
Fabrication						8	

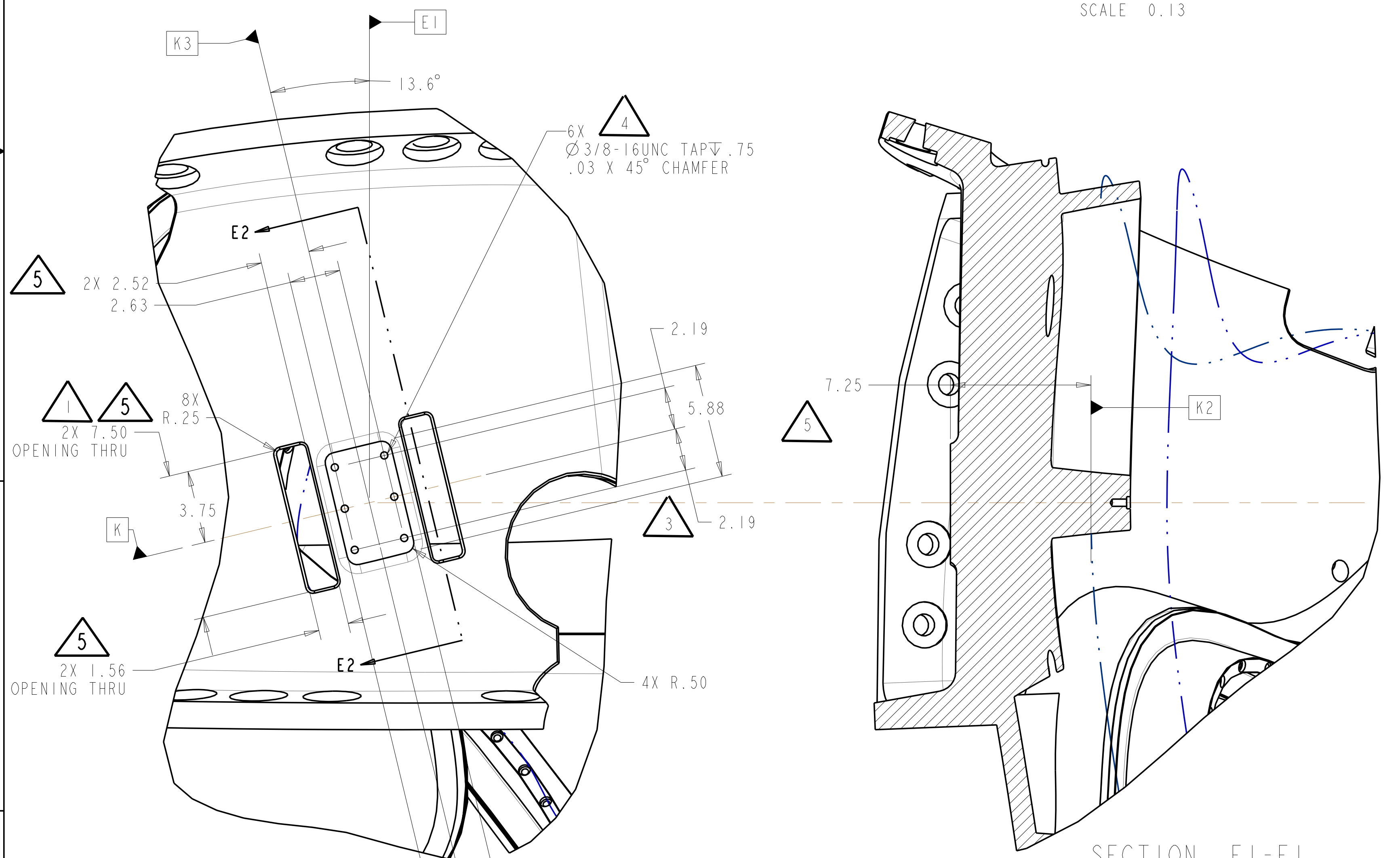
FOR NOTES AND PARTS LIST SEE SHEET 1



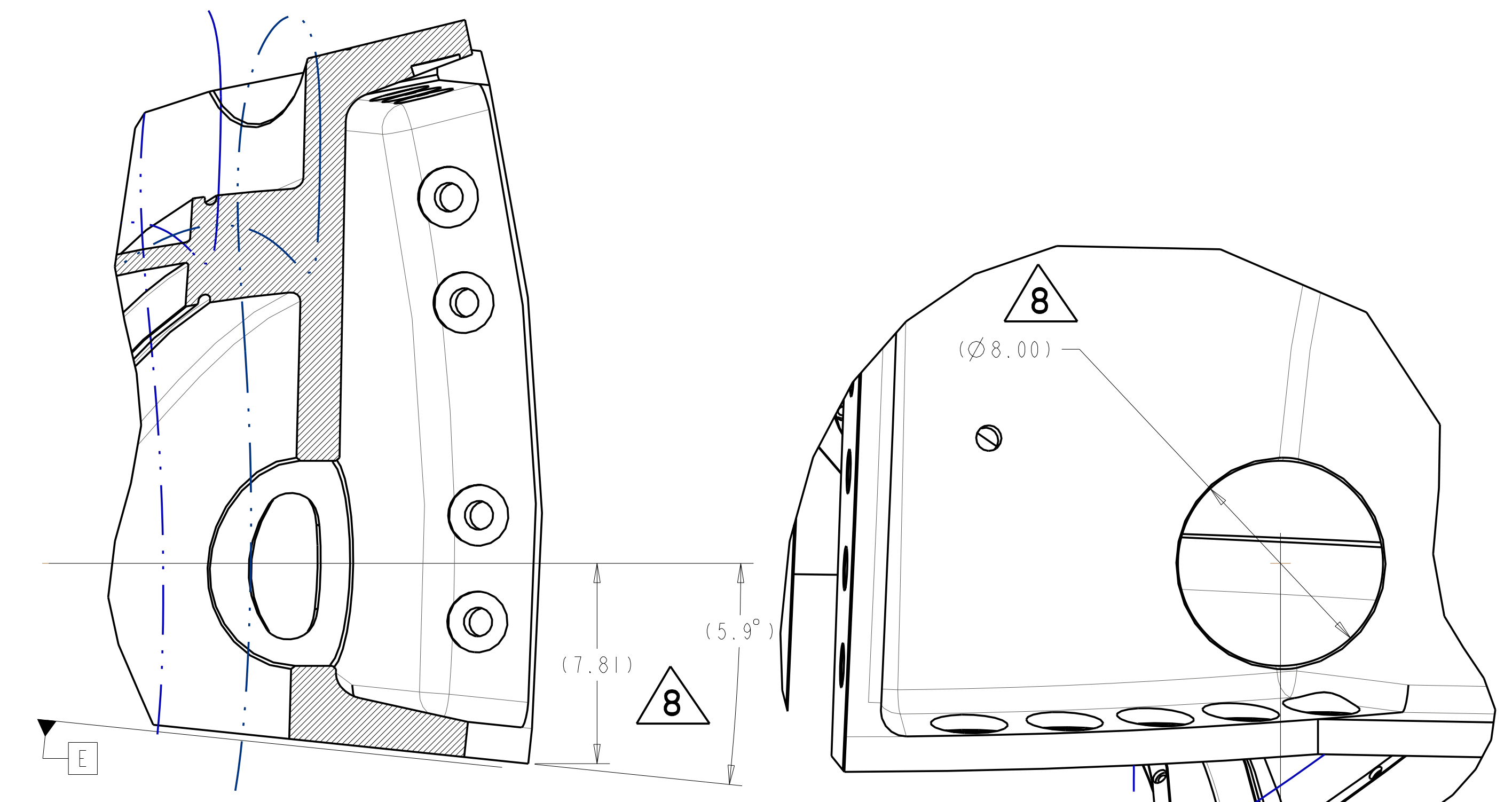
VIEW AT DATUM E
SCALE 0.13



SECTION PT8-PT8
SCALE 0.25

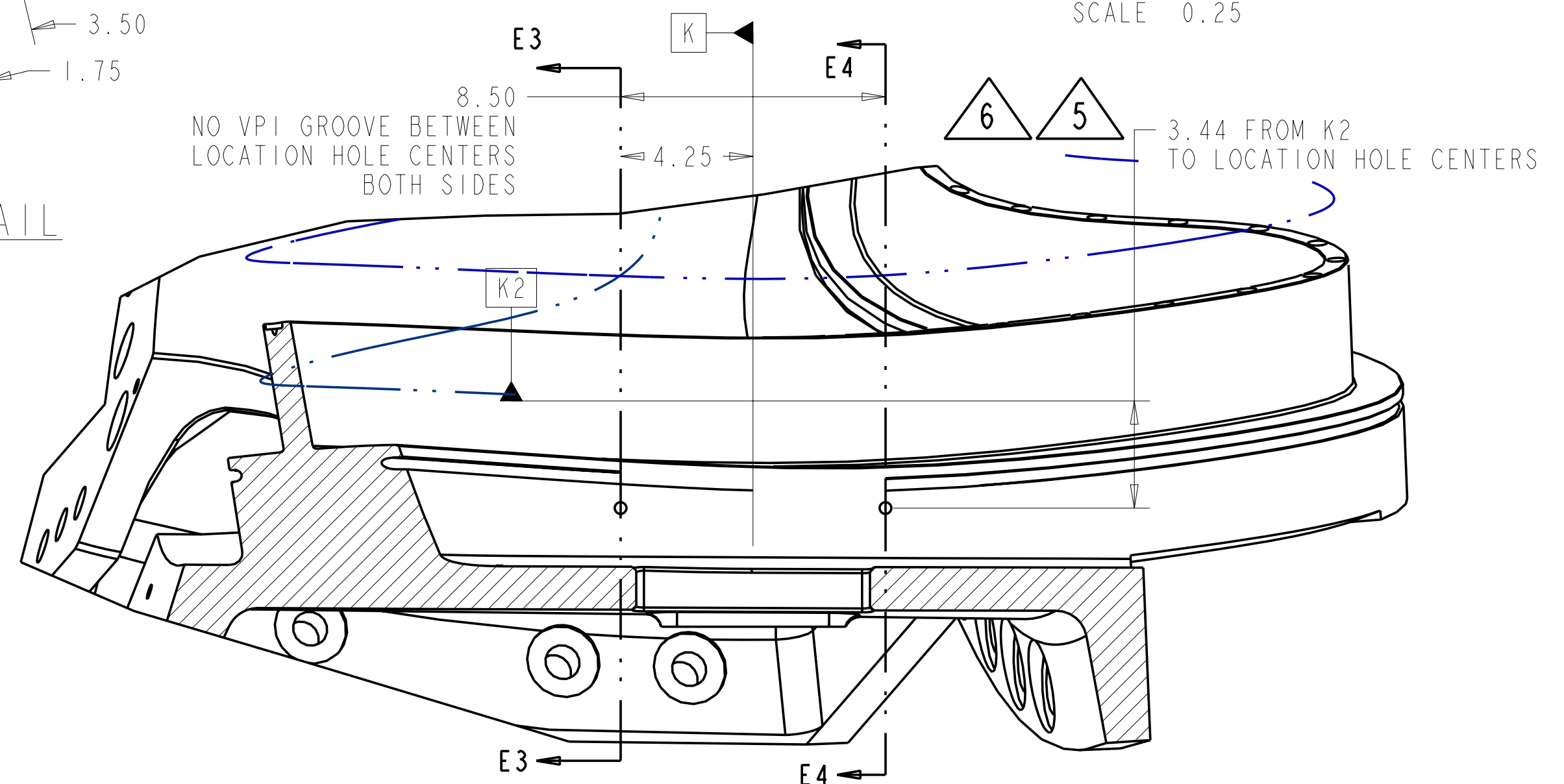


SECTION E1-E1
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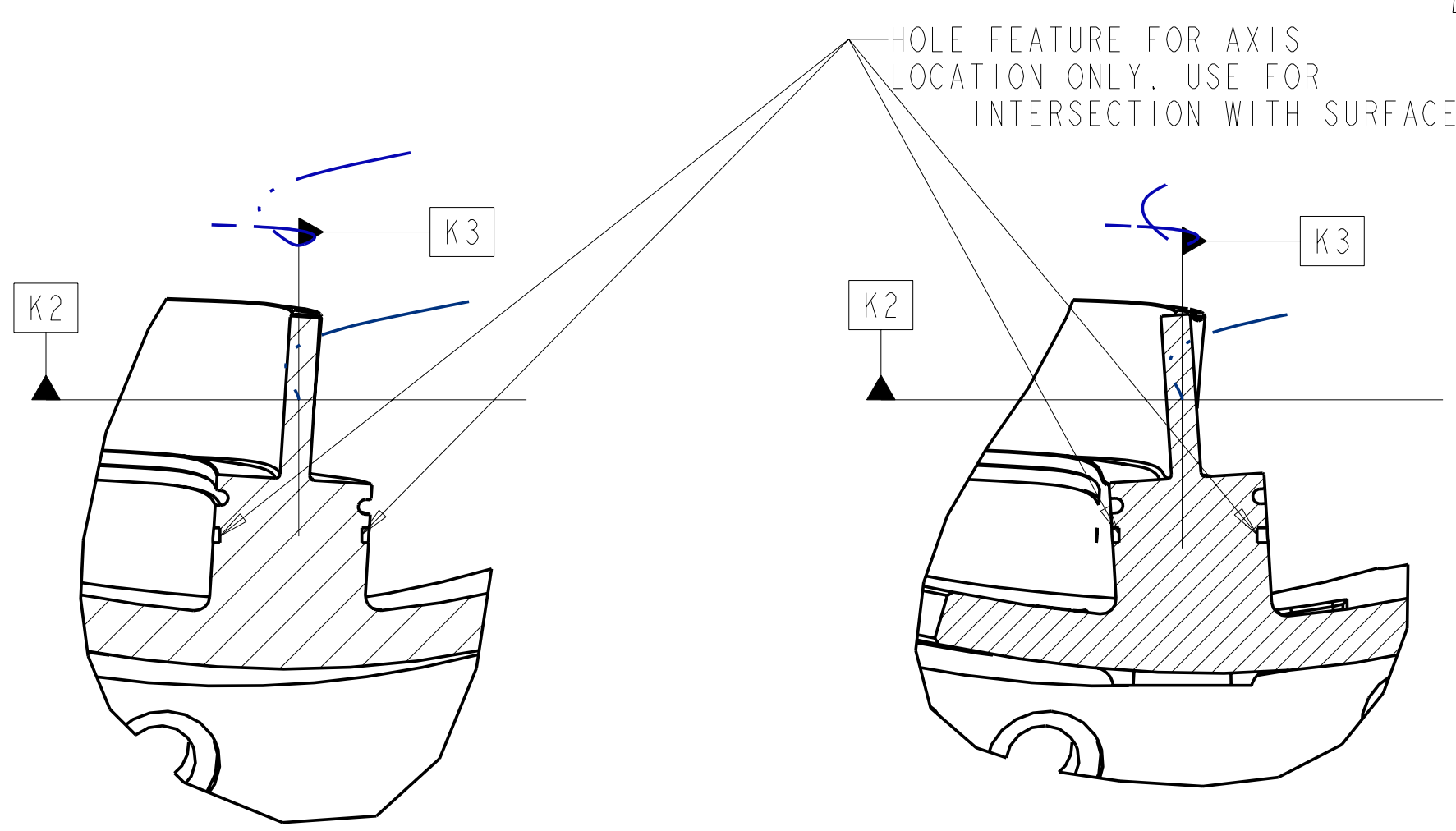


SECTION P18-P18
SCALE 0.25

LEAD BLOCK DETAIL



SECTION E2-E2
SCALE 0.250



SECTION E3-E3

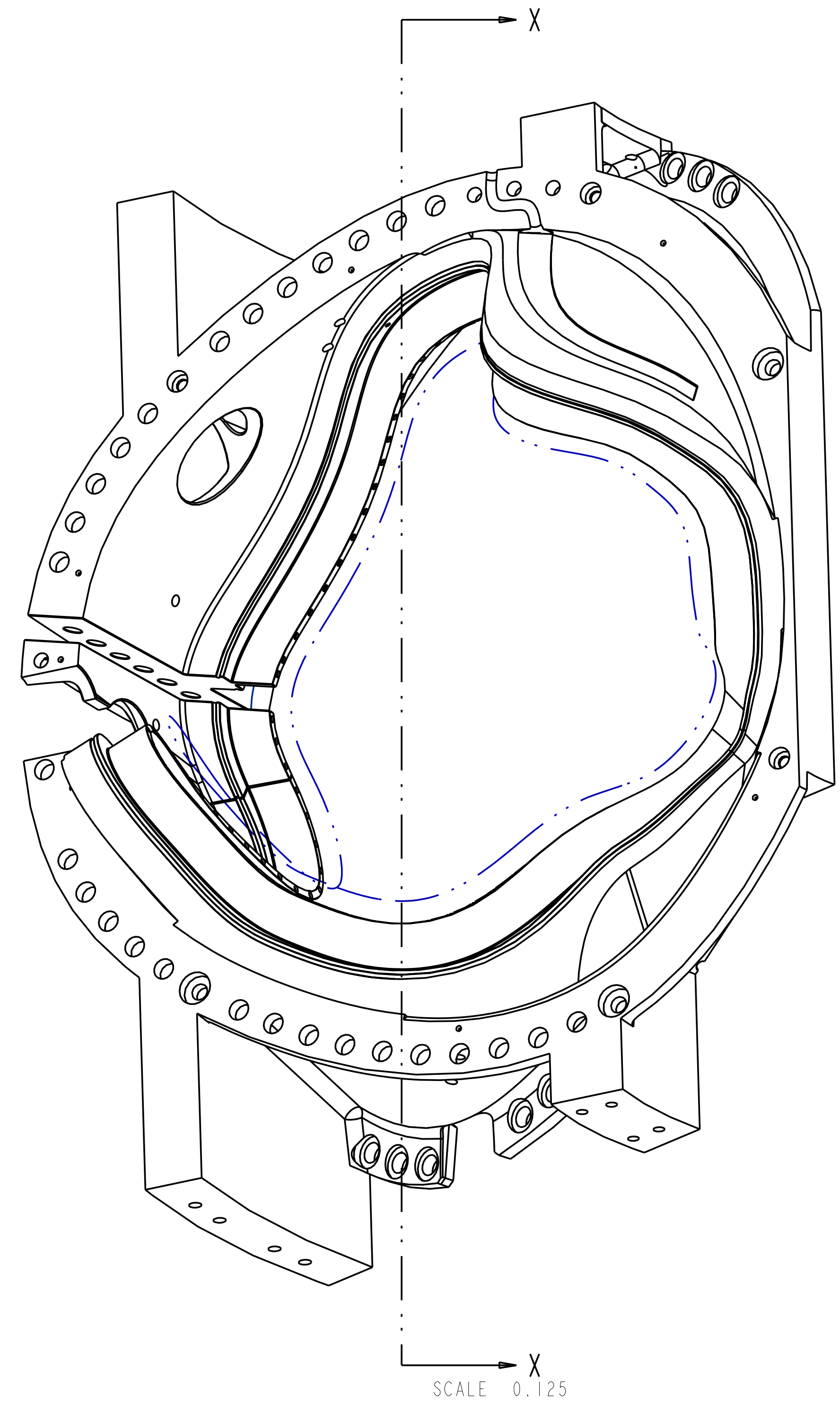
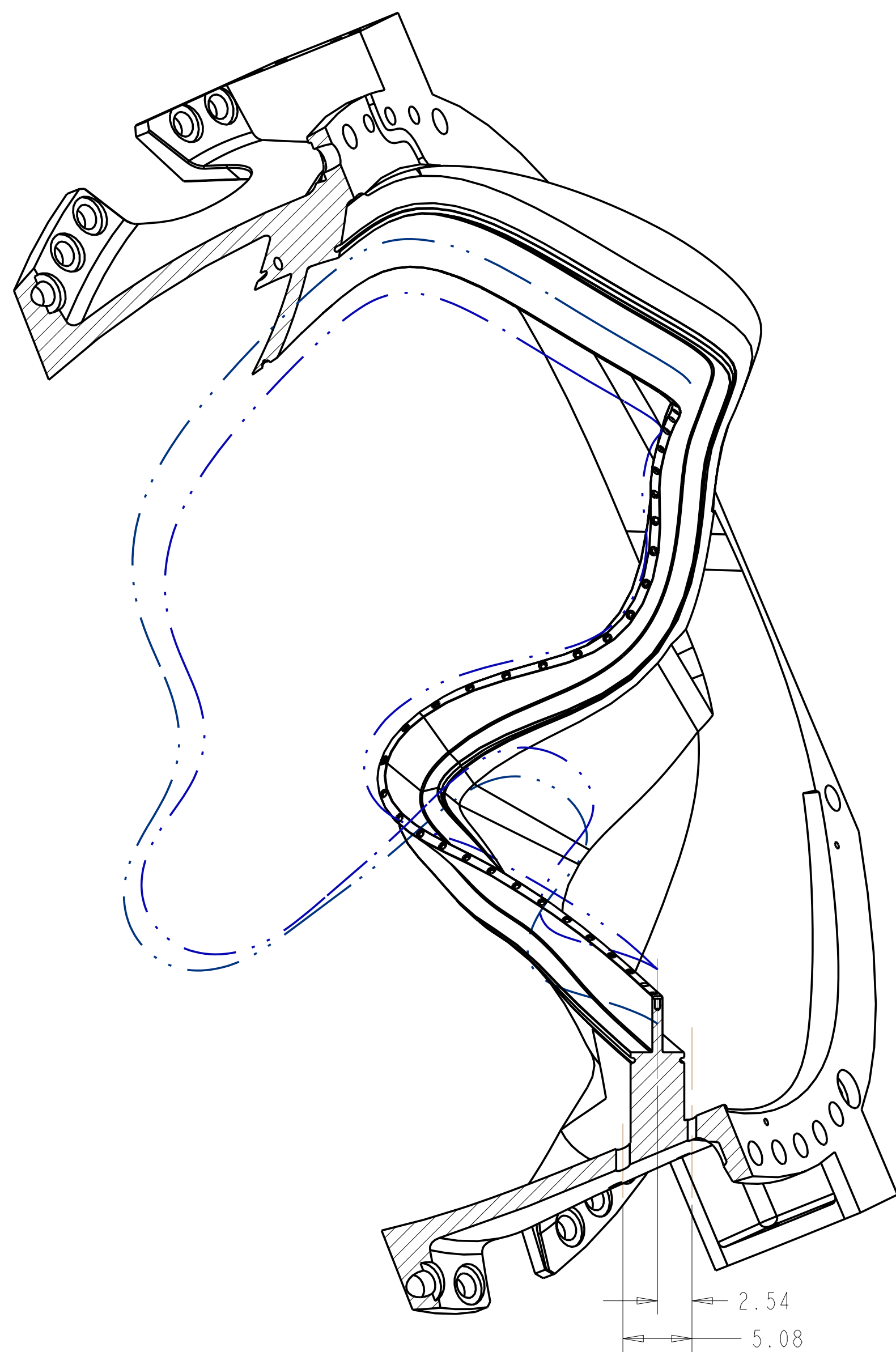
SECTION E4-E4

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NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING FORM TYPE-C							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
11	X-10	5700	3	8	111	S	U
RELEASE LEVEL		SE141-116				REV	
Fabrication						8	

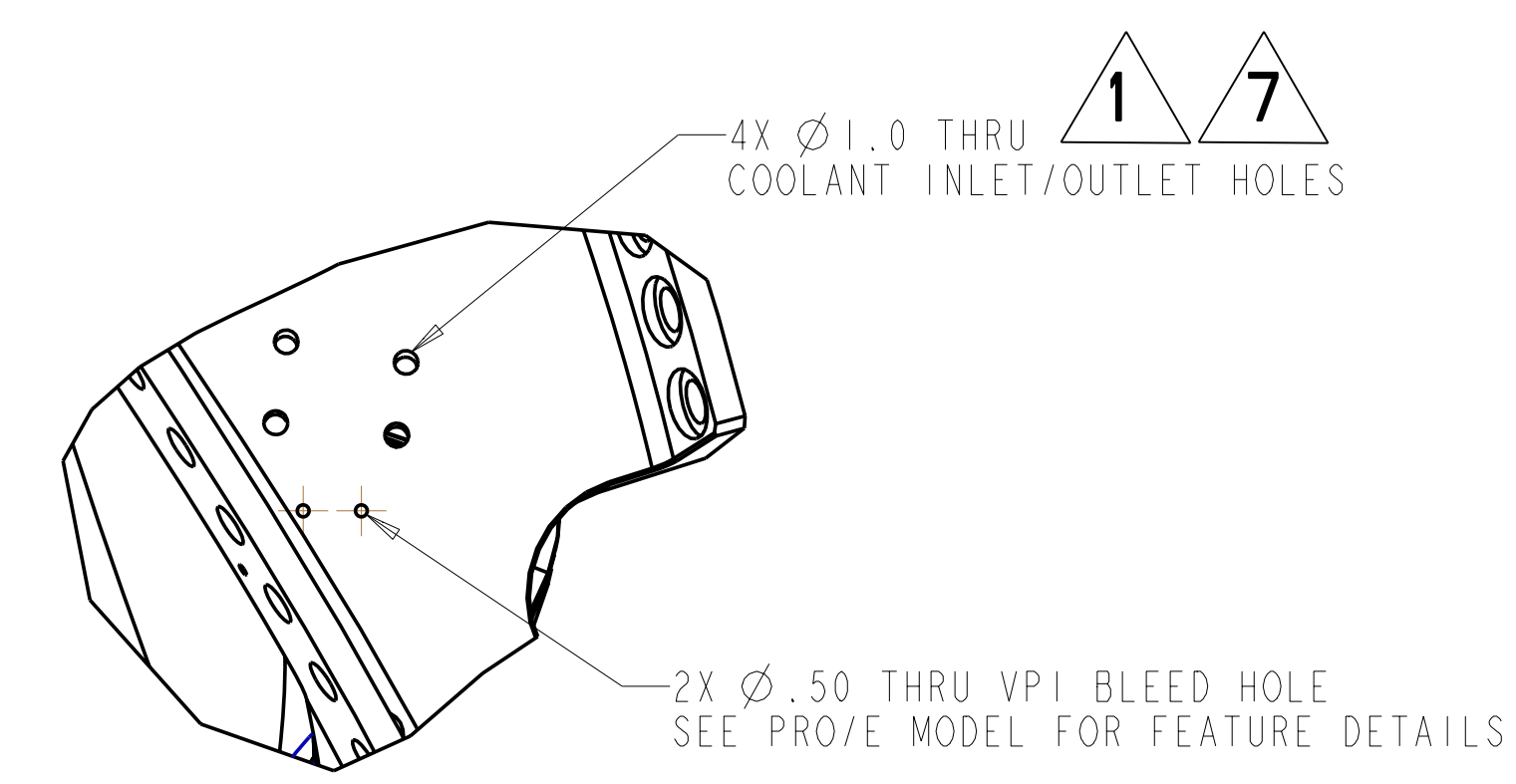
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FOR NOTES AND PARTS LIST SEE SHEET 1



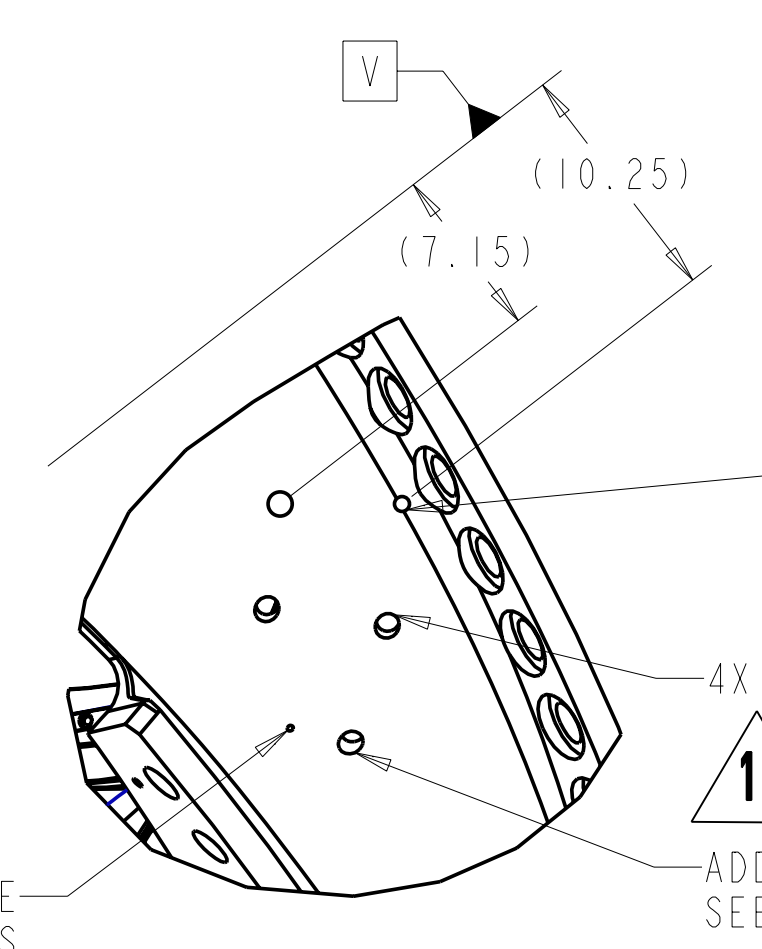
SECTION X-X
 USE PRO/E MODEL GEOMETRY TO DETERMINE SECTION ORIENTATION

SCALE 0.125



4X \varnothing 1.0 THRU COOLANT INLET/OUTLET HOLES

2X \varnothing .50 THRU VPI BLEED HOLE SEE PRO/E MODEL FOR FEATURE DETAILS



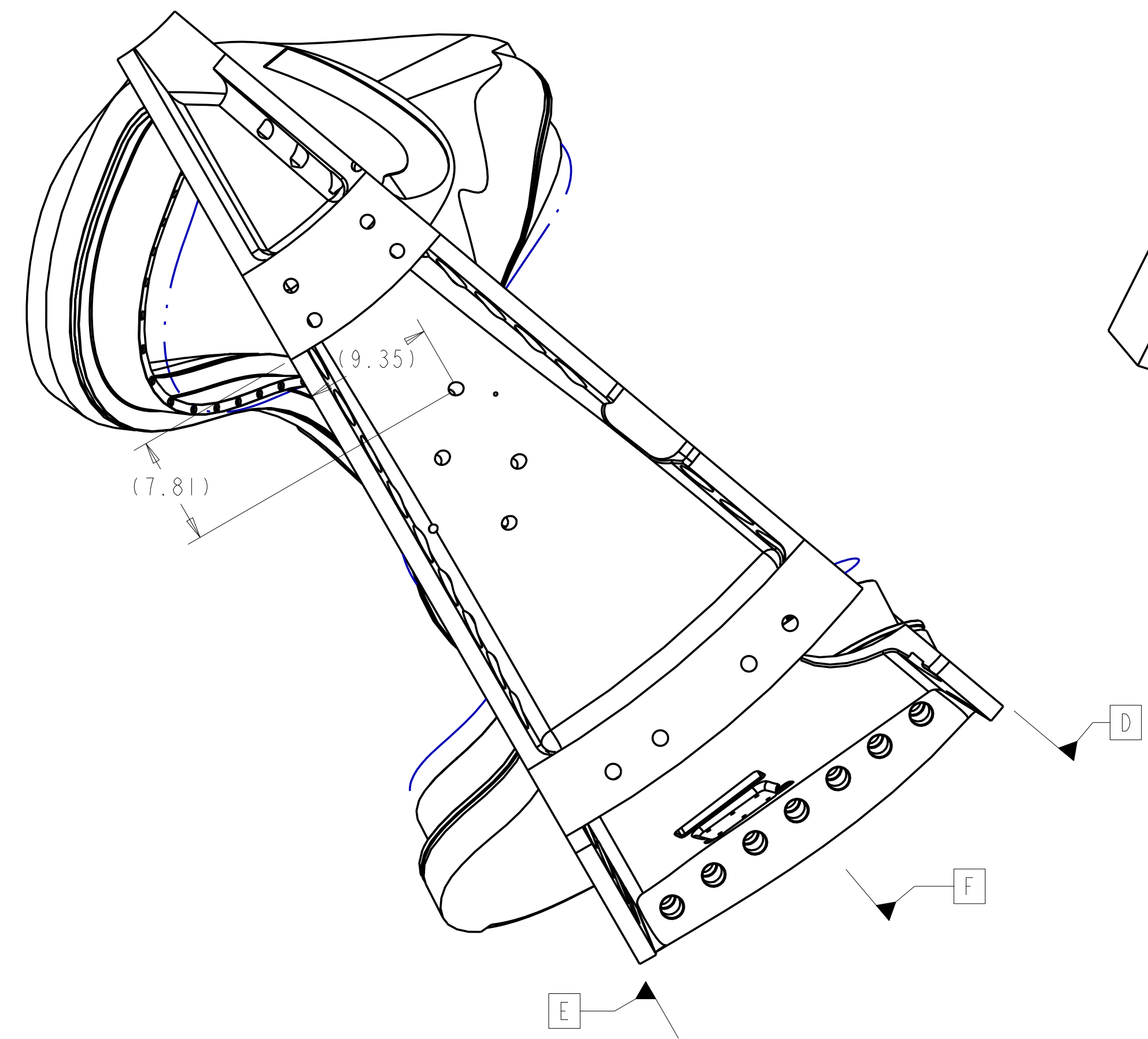
HOLE NOT USED DELETE FOR C3 - C6

4X \varnothing 1.0 THRU

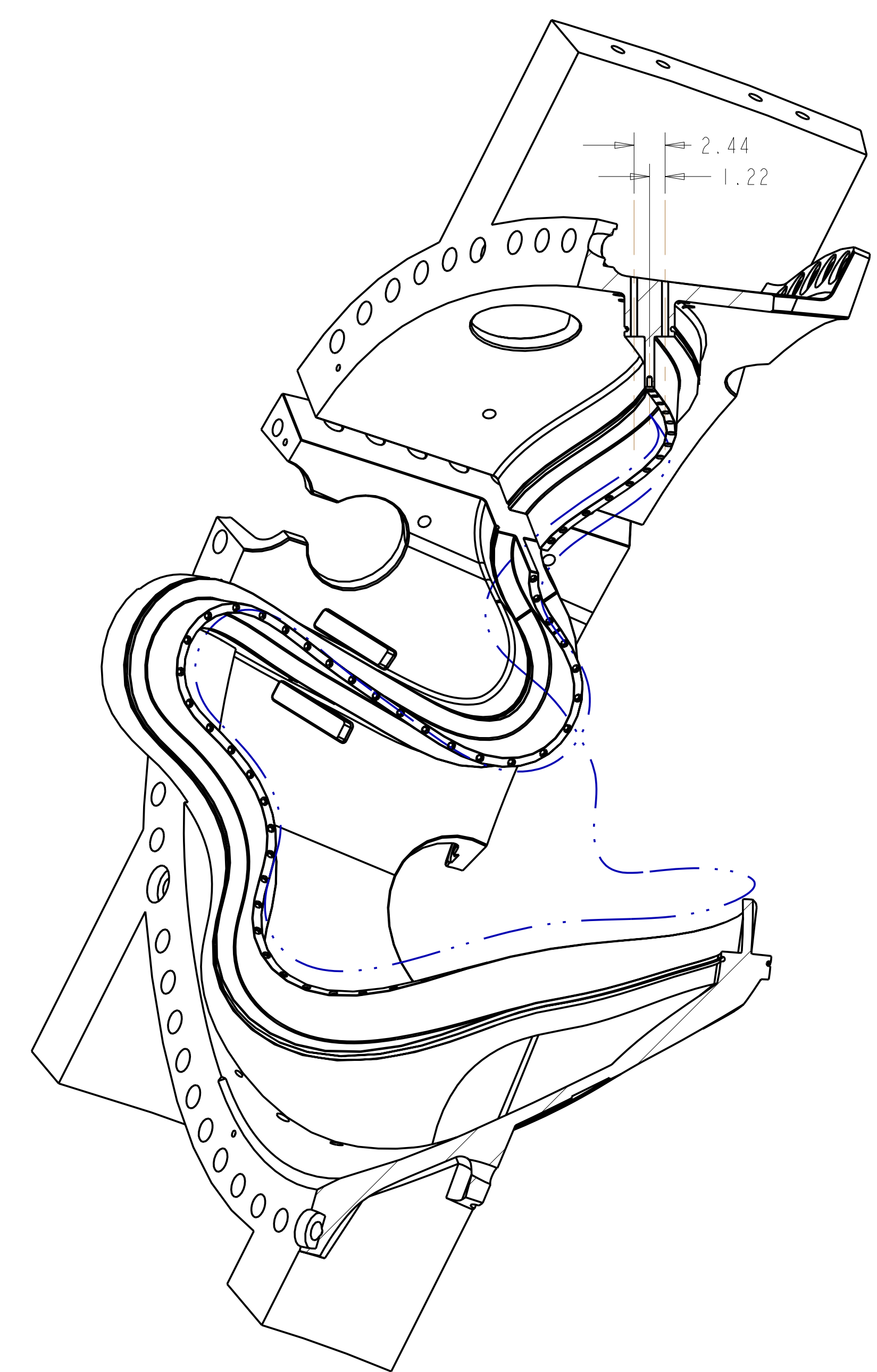
ADD HOLE PER REV 7 SEE BOTTOM VIEW (THIS SHEET)

2X \varnothing .25 THERMOCOUPLE HOLE SEE PRO/E MODEL FOR FEATURE DETAILS

COOLING INLET / OUTLET HOLES
 TYPICAL 2 PLACES



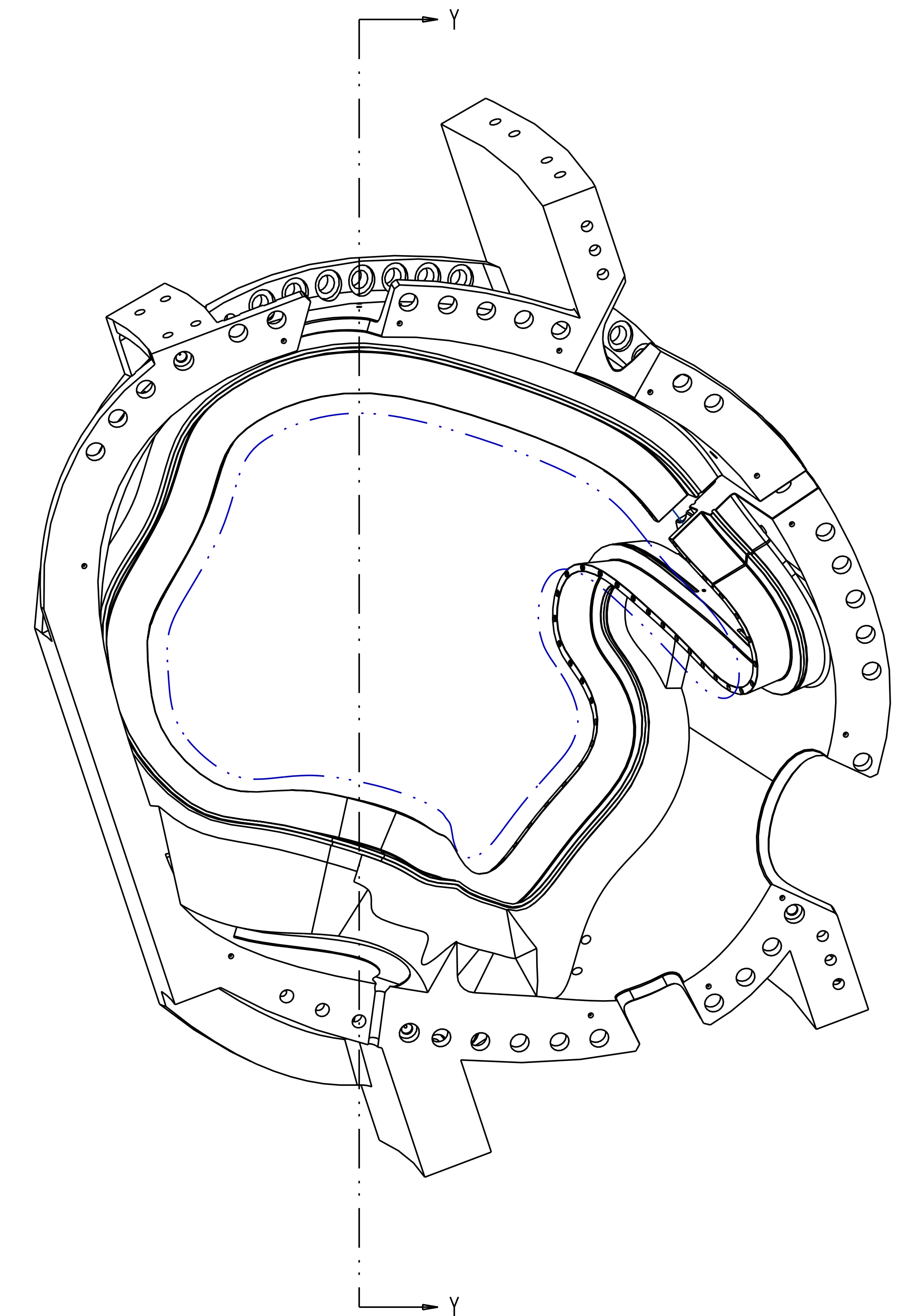
BOTTOM VIEW
 SCALE 0.125



SECTION Y-Y

SCALE 0.125

USE PRO/E MODEL GEOMETRY TO DETERMINE SECTION ORIENTATION

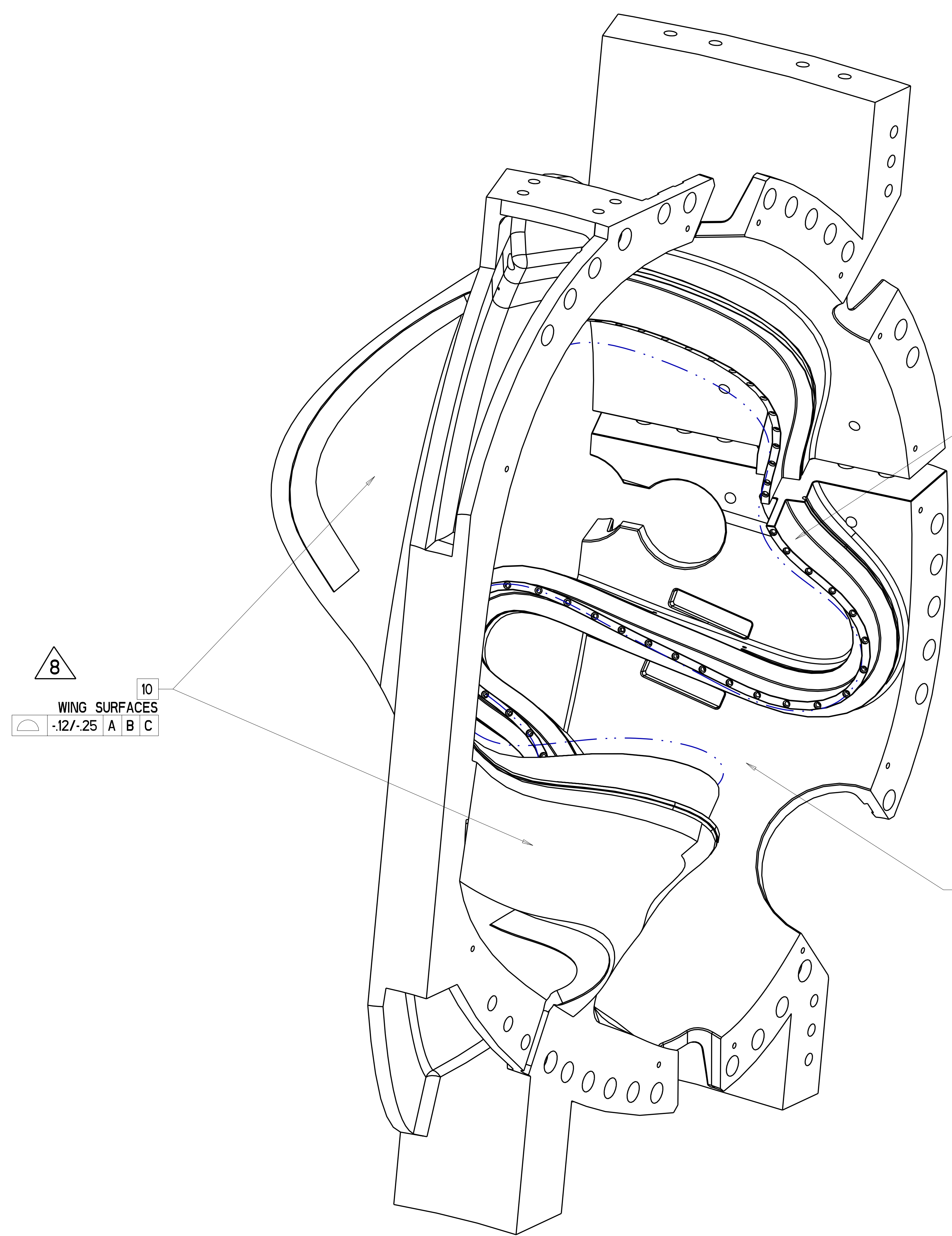


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 PPPL Drafting:

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-C							
VERSION NO. 11	PLANT X-10	BLDG 5700	FL 3	SHT OF 9	TYPE III	CLASS S	REV U
RELEASE LEVEL Fabrication		SEI41-116				REV 8	

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 SEI41-116

FOR NOTES AND PARTS LIST SEE SHEET 1



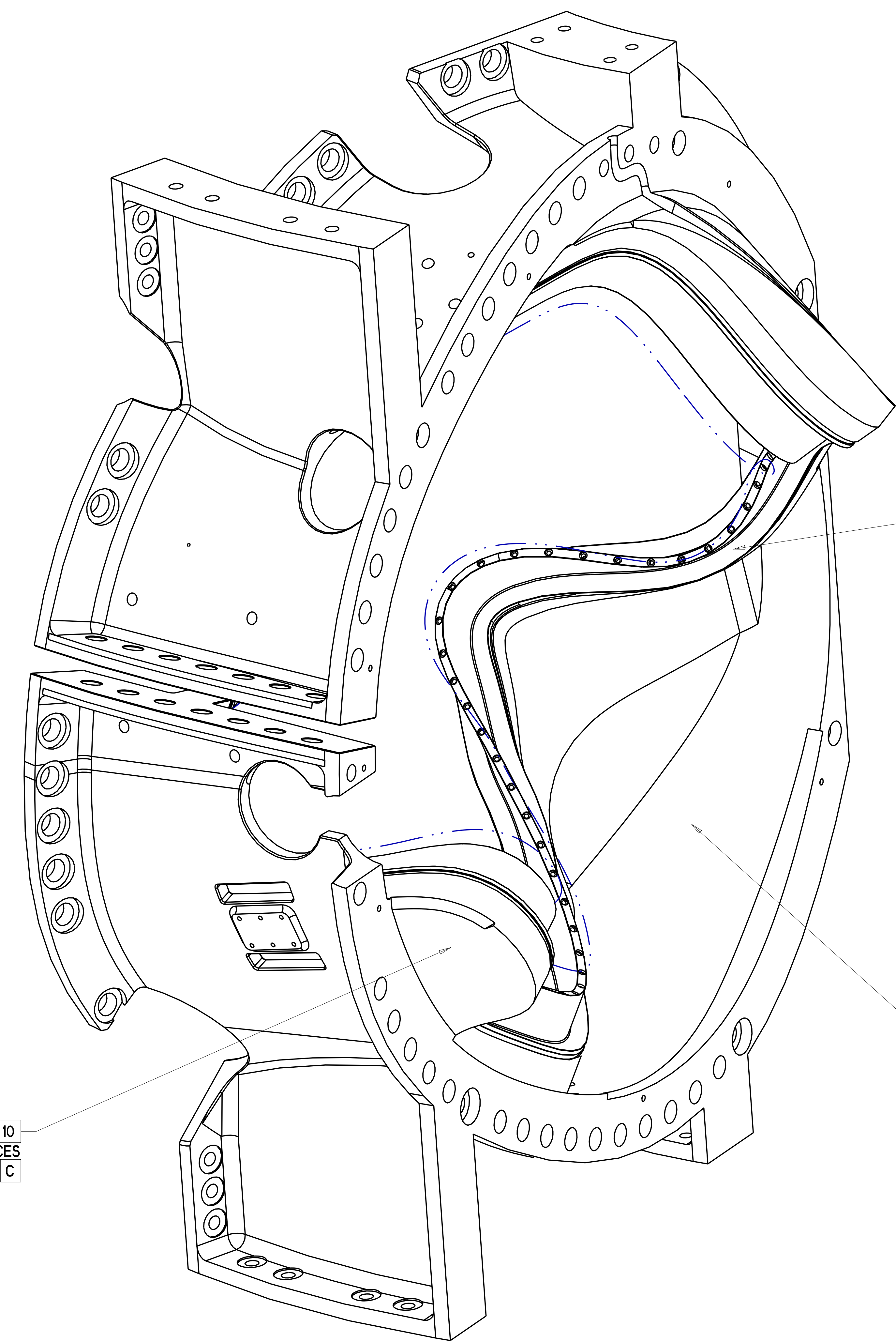
ISOMETRIC VIEW
 SCALE 0.200

8
 WING SURFACES
 .12/- .25 A B C

13
 MACHINED SURFACES
 .02 R T S

9
 AS CAST SURFACES
 .5 A B C

8
 WING SURFACES
 .12/- .25 A B C



ISOMETRIC VIEW
 SCALE 0.200

13
 MACHINED SURFACES
 .02 R T S

9
 AS CAST SURFACES
 .5 A B C

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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							
UT-BATTELLE							
NATIONAL COMPACT STELLARATOR EXPERIMENT							
PRODUCTION WINDING FORM TYPE-C							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
11	X-10	5700	3	10	11	S	U
RELEASE LEVEL	SEI41-116						REV
Fabrication							8

H
G
F
E
D
C
B
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