

NOTES:

1. MATERIAL: REFER TO SAO-INST-MGT-00262 STATEMENT OF WORK: G-CLEF VACUUM CHAMBER ASSEMBLY
2. PRIMARY DIMENSIONS mm, DIMENSIONS IN [] ARE INCH
3. BREAK AND DEBUR SHARP EDGES
4. MAXIMUM SURFACE ROUGHNESS UNLESS NOTED: 0.8 um
5. THIS IS A MINIMALLY DIMENSIONED DRAWING. ALL FEATURES NOT SPECIFICALLY NOTED ON THE DRAWING ARE DEFINED BY THE CAD FILE. THE CAD FILENAME WILL MATCH THE DRAWING NUMBER AND REVISION OF THIS DRAWING . ALL HOLES AND THEIR LOCATIONS SHALL BE ±0.25. ALL OTHER FEATURES SHALL BE ±0.50 UNLESS OTHERWISE SPECIFIED ON THIS DRAWING.
6. MANUFACTURING PROCESS TREE

1. FAB0002_STOCK

2. FAB0002_WATERJET

3. FAB0002_ROLL

4. FAB0002_WELD1

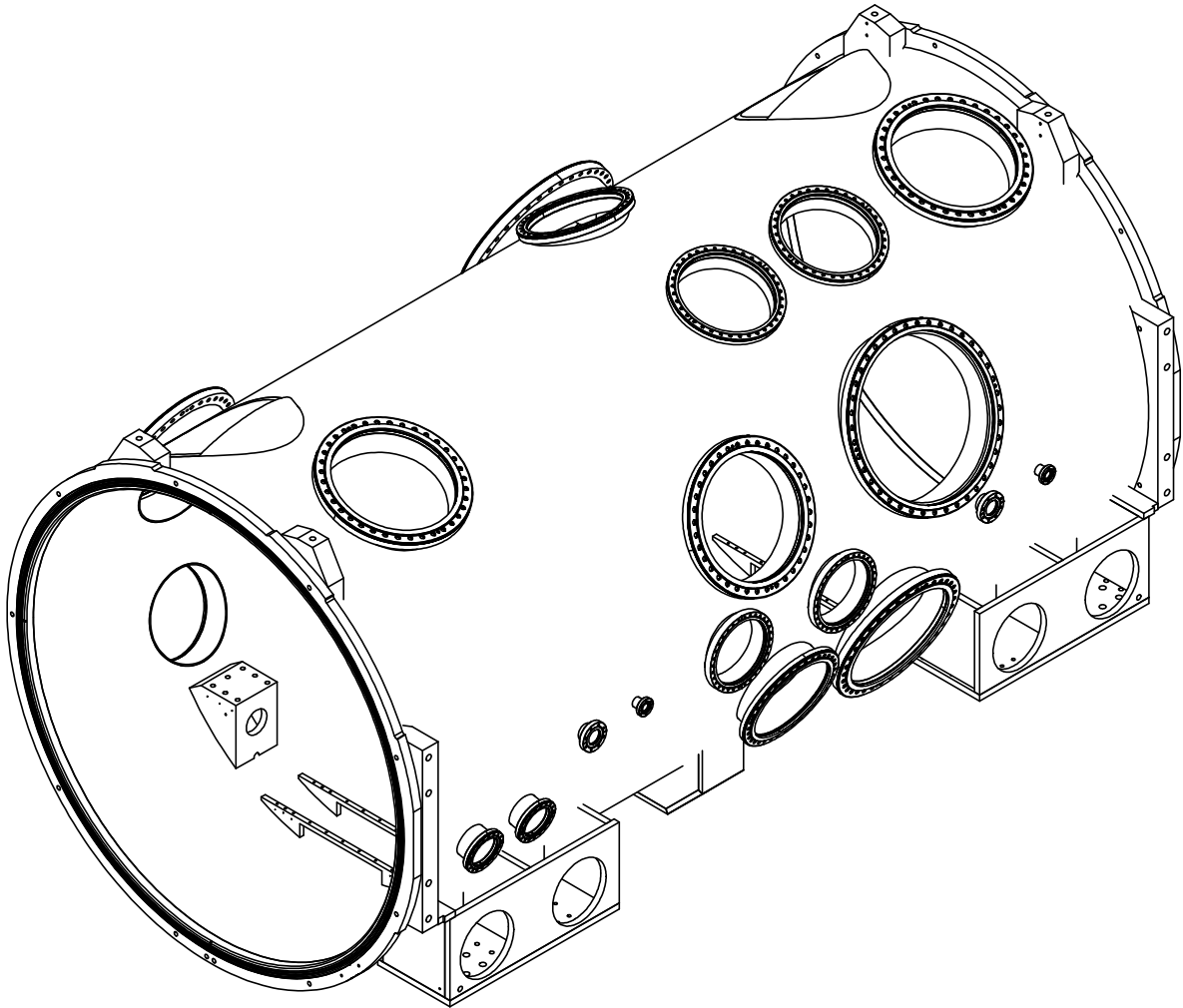
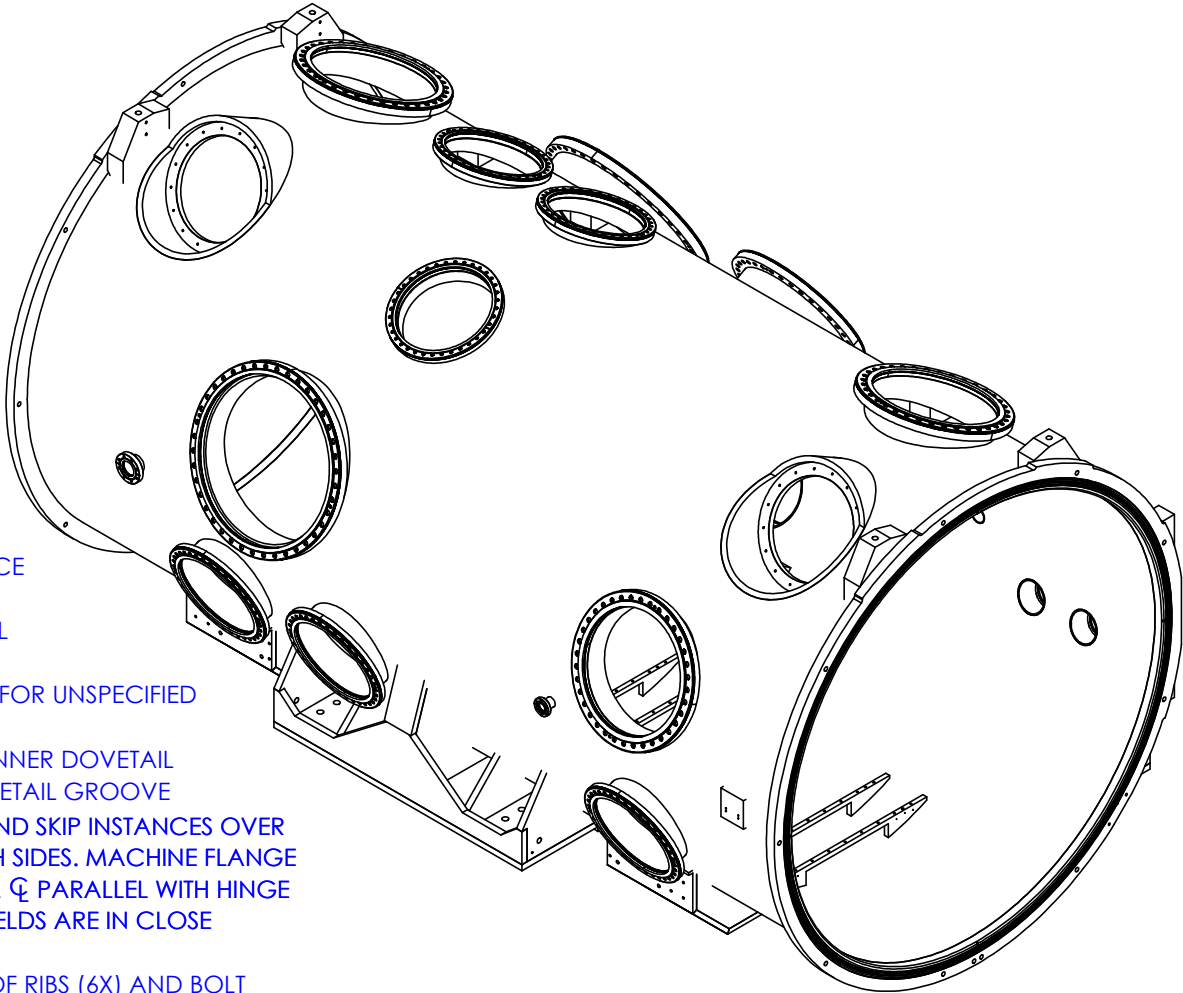
5. FAB0002_MACHINE1

6. FAB0002_WELD2

7. **FAB0002_MACHINE2**

8. FAB0002_WELD3
7. DIMENSIONS AND GEOMETRIC FEATURES TO BE INSPECTED AND AS-BUILTS REPORTED PER SAO-INST-MGT-00262 STATEMENT OF WORK: G-CLEF VACUUM CHAMBER ASSEMBLY
8. EXCESS STOCK PROVIDED FOR THIS MACHINING PROCEDURE
9. BLIND HOLE THIS INSTANCE ONLY, ALL OTHER Ø16.50 HOLES FOR M16X2 HELICOIL ARE THRU FLANGE
10. ALL DIMENSIONS INCLUDING O-RING GROOVES ARE MIRRORED FOR FLANGES BOTH SIDES OF VESSEL
11. OUTER FLANGE FACE TO FLANGE FACE EITHER SIDE OF RECTANGULAR VENT GROOVE AND INSIDE INNER DOVETAIL GROOVE
12. 2X DOVETAIL CUTTER ENTRY, RE: CAD FOR UNSPECIFIED DIMENSIONS
13. 4X RADIAL VENT EXTENDS THROUGH INNER DOVETAIL GROOVE TO CENTER OF OUTER DOVETAIL GROOVE
14. MACHINE FLANGE OD TO Ø1980.0 AND SKIP INSTANCES OVER HINGE BLOCKS AND LIFT POINTS, BOTH SIDES. MACHINE FLANGE FLAT CENTERED ACROSS HORIZONTAL C PARALLEL WITH HINGE BLOCK. DO NOT MACHINE WELDS. WELDS ARE IN CLOSE PROXIMITY OF MACHINE AREAS.
15. CHANGE PER REV E. MACHINE TOPS OF RIBS (6X) AND BOLT PATTERN AS SHOWN.
16. DO NOT MACHINE WELDS. WELDS ARE IN CLOSE PROXIMITY OF MACHINE AREA. ALLOWABLE MACHINE AREA SHOWN AS HATCH REGION. MACHINE HATCH AREA ONLY TO FINAL DIMENSION AS SHOWN.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE - REVIEW/QUOTE ONLY	9/7/2022	T. TALBOT
B	O-RING GROOVE, LIFT LUG UPDATE	1/9/2023	T. TALBOT
C	UPDATE FLAG NOTE NUMBERS, SHEET 7	5/5/2023	T. TALBOT
D	INCREASE MAIN FLANGE OD OVER HINGE BLOCK	6/16/2023	T. TALBOT
E	STIFFENER TABLE RE-DESIGN	7/14/2023	T. TALBOT
F	HATCH MACHINE AREA BOTTOM FEATURES	1/12/2024	T. TALBOT
G	FIX M8 BOLT PATTERN, SHEET 2, SEC. 2B	1/31/2024	T. TALBOT
H	MODEL UPDATED PER REV F MACHINE AREAS, FLANGE OD MACHINE AREA SHEET 3	5/10/2024	T. TALBOT



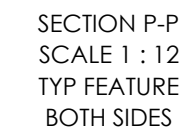
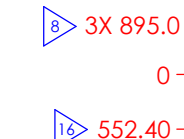
QC CHECK: _____ DATE: _____

SHOP CHECK: _____ DATE: _____

ENG CHECK: _____ DATE: _____

UNLESS OTHERWISE SPECIFIED:		DRAWN BY T. TALBOT	DATE 5/10/2024	REDLINE CHAMBERS, INC. SALES@REDLINECHAMBERS.COM	
TOLERANCES: MACHINING [mm]: DECIMAL .X ±.25 DECIMAL .XX ±.13 FABRICATION [INCH]: DECIMAL .XX ±.03 DECIMAL .XXX ±.03 FRACTIONAL ±1/16 ANGLES ALL ±1°		JOB NUMBER 22-0026 (G-CLEF)	MATERIAL 5086-H116 AL RE: SAO-INST-MGT-00262 PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF REDLINE CHAMBERS, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF REDLINE CHAMBERS, INC. IS PROHIBITED.	TITLE: MAIN CHAMBER	
DIMENSIONS ARE mm.		SIZE B	DWG. NO. / PART NO. FAB0002_MACHINE2	REV H	SCALE: 1:26 QTY: 1 SHEET 1 OF 7

9
Ø 16.50
TAP FOR AN
M16X2.0 NI
HELICOIL INSERT



QC CHECK
SHOP CHECK
ENG CHECK

UNLESS OTHERWISE SPECIFIED:

TOLERANCES:

MACHINING [mm]:

DECIMAL	.X	±.25
DECIMAL	.XX	±.13

FABRICATION [INCH]:

DECIMAL	.XX	±.03
DECIMAL	.XXX	±.03
FRACTIONAL		±1/16

ANGLES

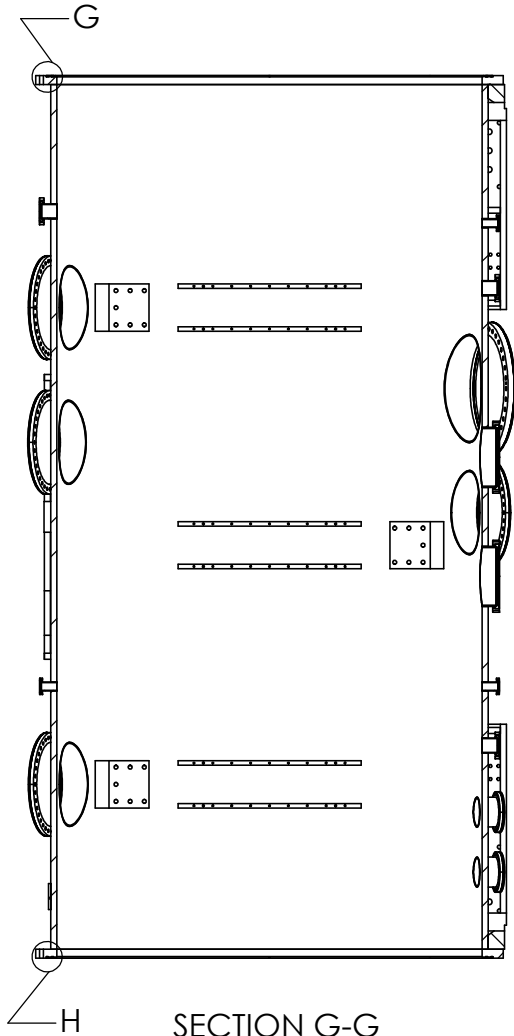
ALL	±1°
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DIMENSIONS ARE mm

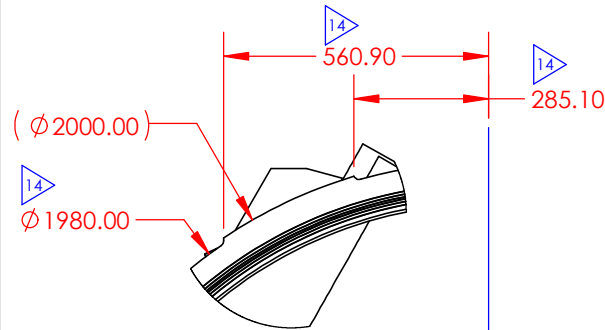
DRAWN BY T. TALBOT	DATE 5/10/2024
JOB NUMBER 22-0026	
MATERIAL 5086-H116 AL RE: SAO-INST-MGT-00262	
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF REDLINE CHAMBERS, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF REDLINE CHAMBERS, INC. IS PROHIBITED.	

REDLINE CHAMBERS, INC.			
SALES@REDLINECHAMBERS.COM			
TITLE:			
MAIN CHAMBER			
SIZE	DWG. NO. / PART NO.		REV
B	FAB0002_MACHINE2		H
SCALE: 1:32 QTY: 1		SHEET 2 OF 7	

NOTES:

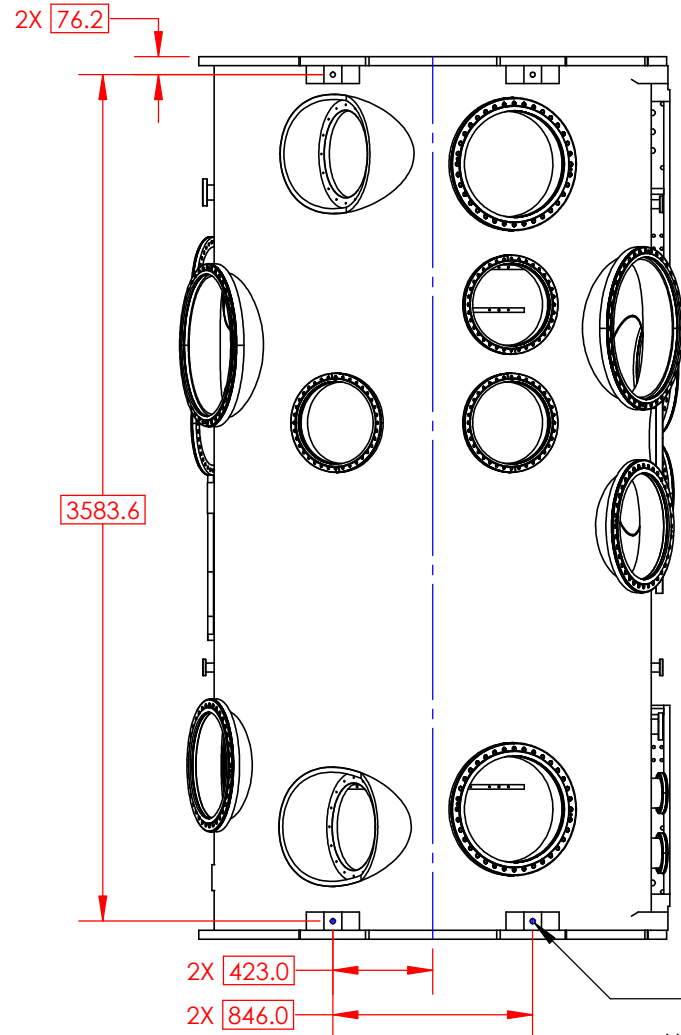


SECTION G-G
SEE SHEET (6) DETAIL G & H



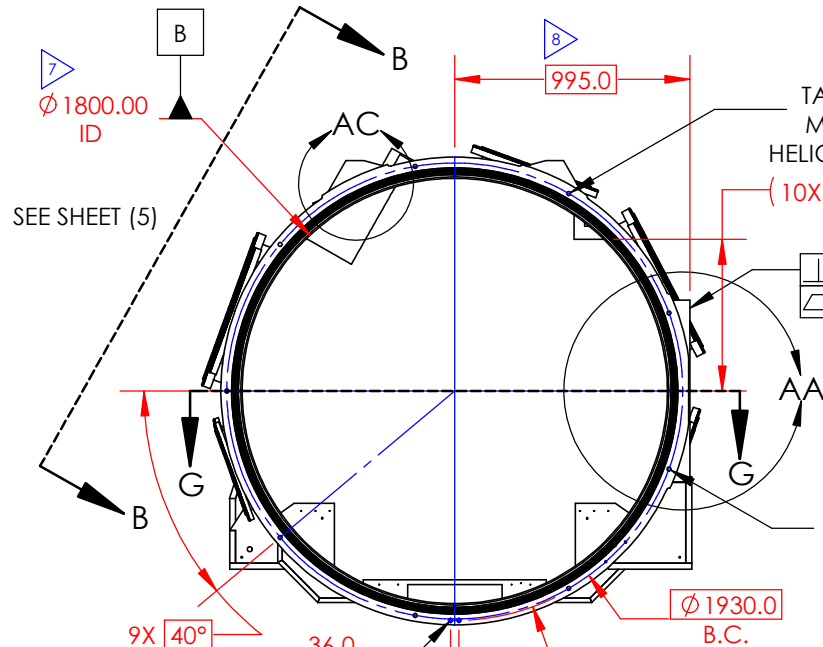
DETAIL AC
SCALE 1 : 16

TYP (4) PLACES, LIFT POINTS
ON MAIN FLANGE



8X Ø 24.75 ∇ 54.38
TAP FOR AND INSTALL
M24X3.0 NITRONIC 60
HELICOIL INSERT = 1.5 * DIA.

Ø 20.75 ∇ 55.80
TAP FOR AND INSTALL
M20X2.5 NITRONIC 60
HELICOIL INSERT = 2.0 * DIA.

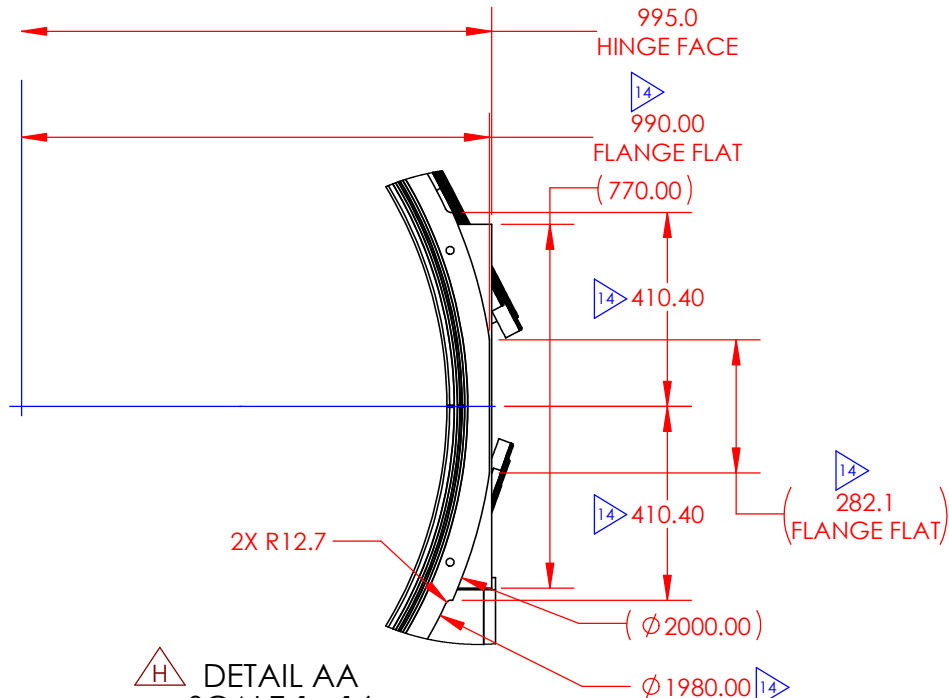
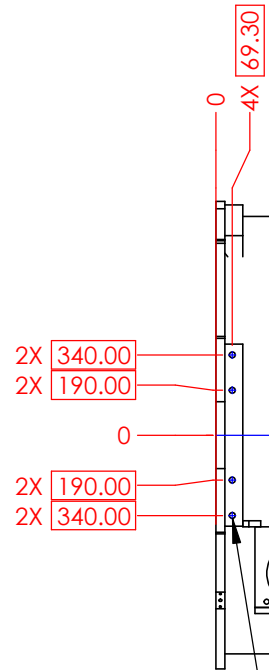


2X Ø 16.50 THRU ALL
TAP FOR AND INSTALL M16X2.0
NITRONIC 60 HELICOIL INSERT = 1.5 * DIA.

Ø 16.50 ∇ 32.25
TAP FOR AND INSTALL
M16X2.0 NITRONIC 60
HELICOIL INSERT = 1.5 * DIA.

8X Ø 16.50 THRU
TAP FOR AND INSTALL
M16X2.0 NITRONIC 60 HELICOIL
INSERT = 2.0 * DIA.

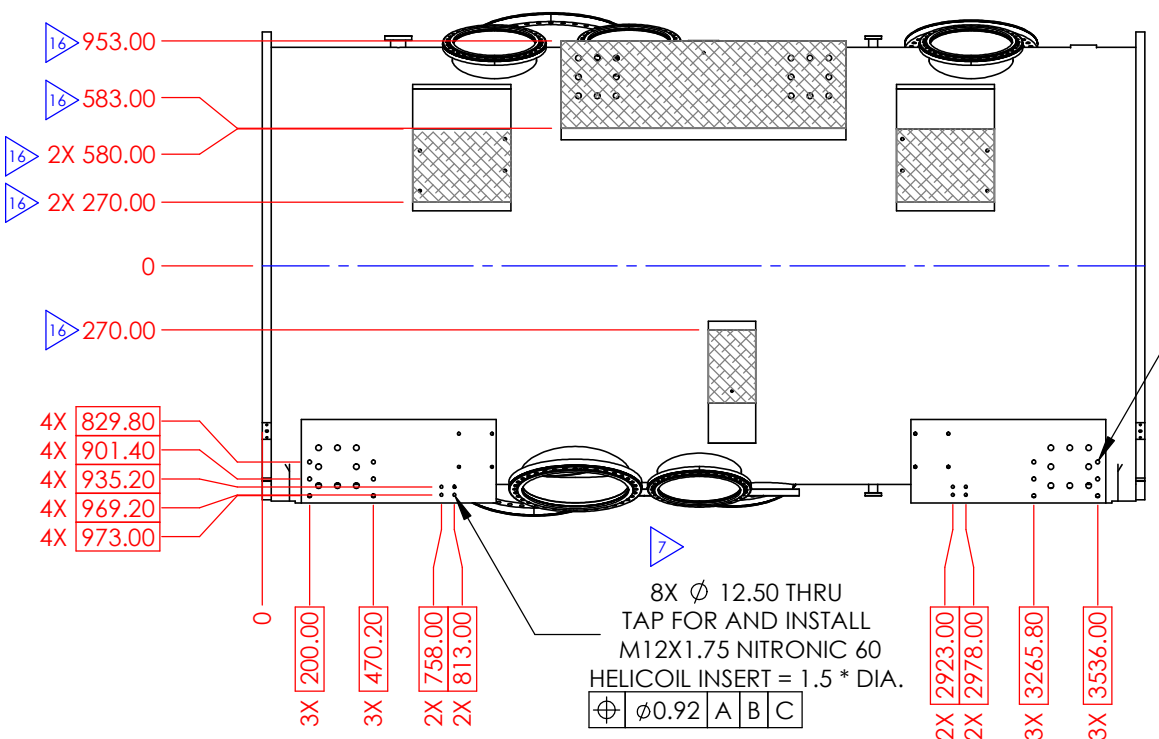
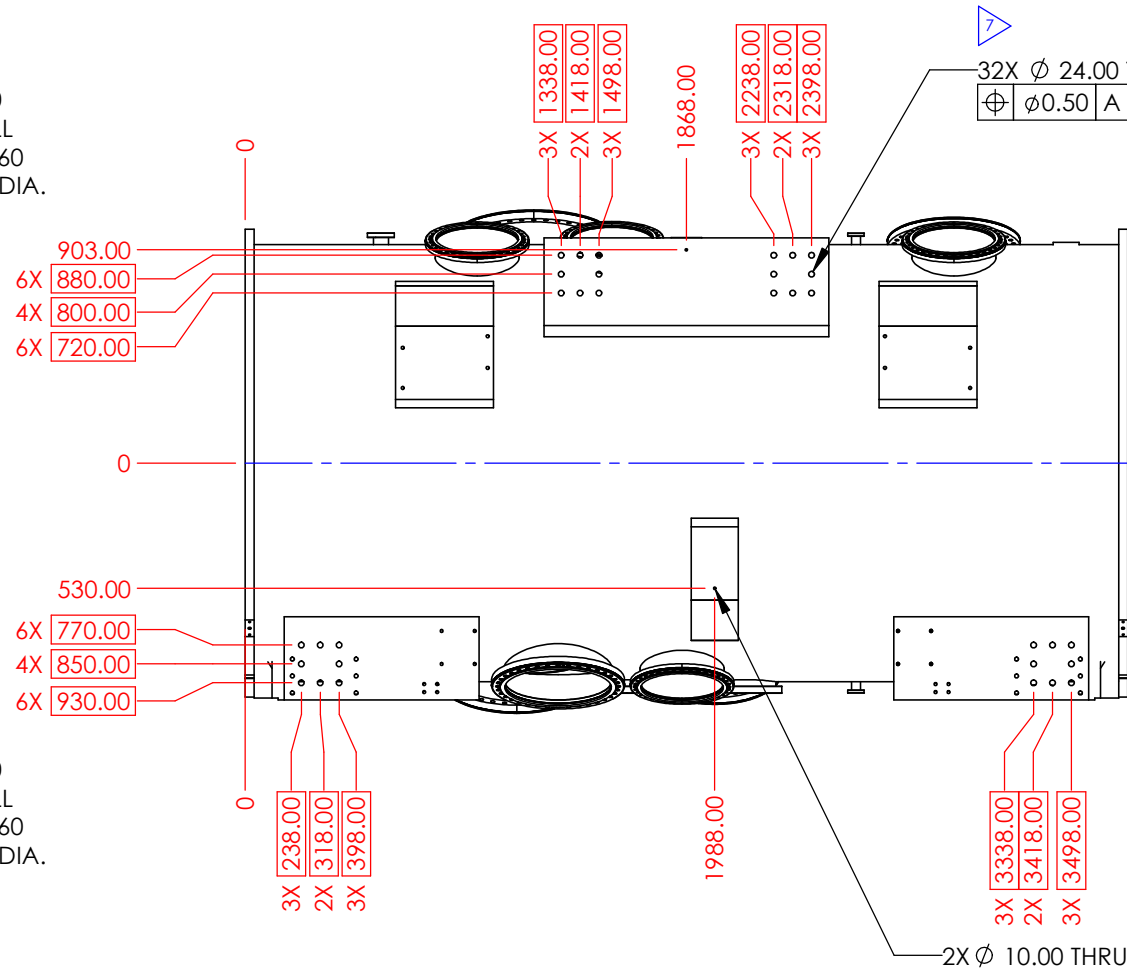
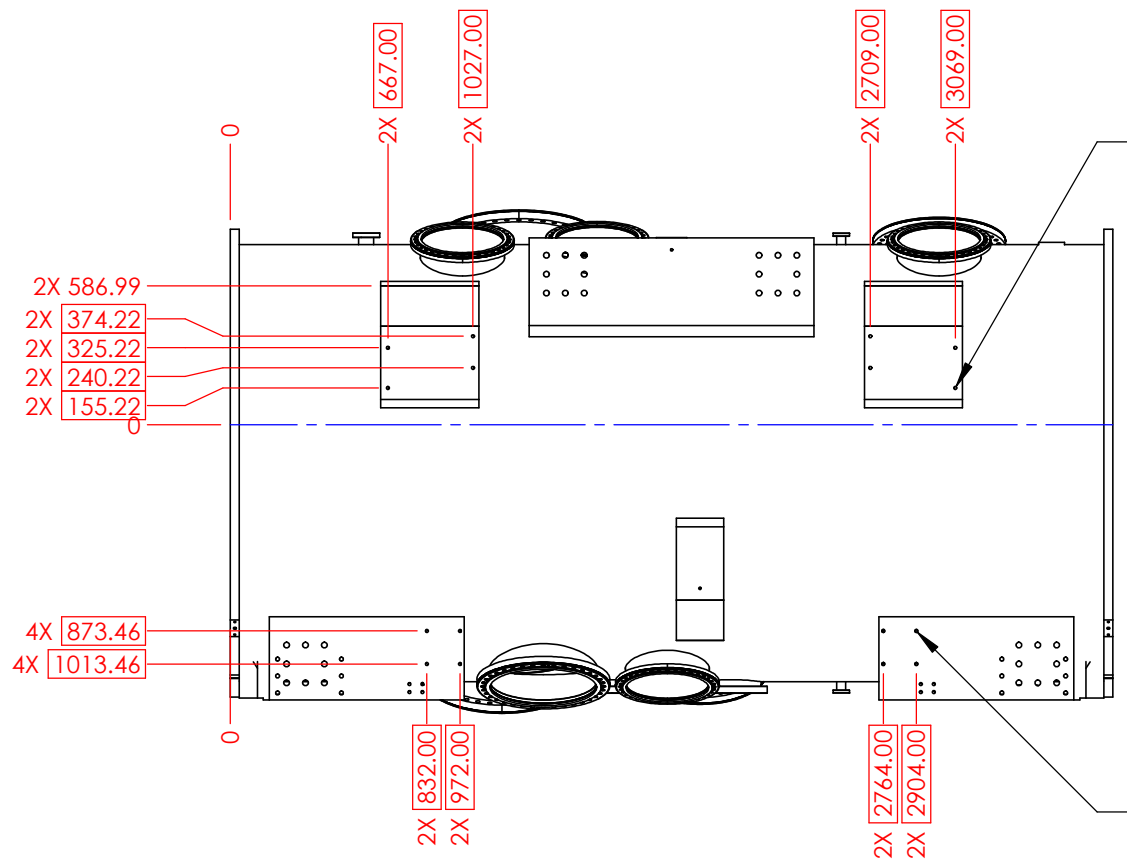
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SHOP CHECK: _____ DATE: _____
ENG CHECK: _____ DATE: _____



DETAIL AA
SCALE 1 : 16
2X, BOTH ENDS

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TOLERANCES: MACHINING [mm]: DECIMAL .X ±.25 DECIMAL .XX ±.13 FABRICATION [INCH]: DECIMAL .XX ±.03 DECIMAL .XXX ±.03 FRACTIONAL ±1/16 ANGLES ALL ±1°		JOB NUMBER 22-0026	MATERIAL 5086-H116 AL RE: SAO-INST-MGT-00262	TITLE: MAIN CHAMBER	
DIMENSIONS ARE mm		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF REDLINE CHAMBERS, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF REDLINE CHAMBERS, INC. IS PROHIBITED.		SIZE B	DWG. NO. / PART NO. FAB0002_MACHINE2
				SCALE: 1:32 QTY: 1	REV H SHEET 3 OF 7

NOTES:

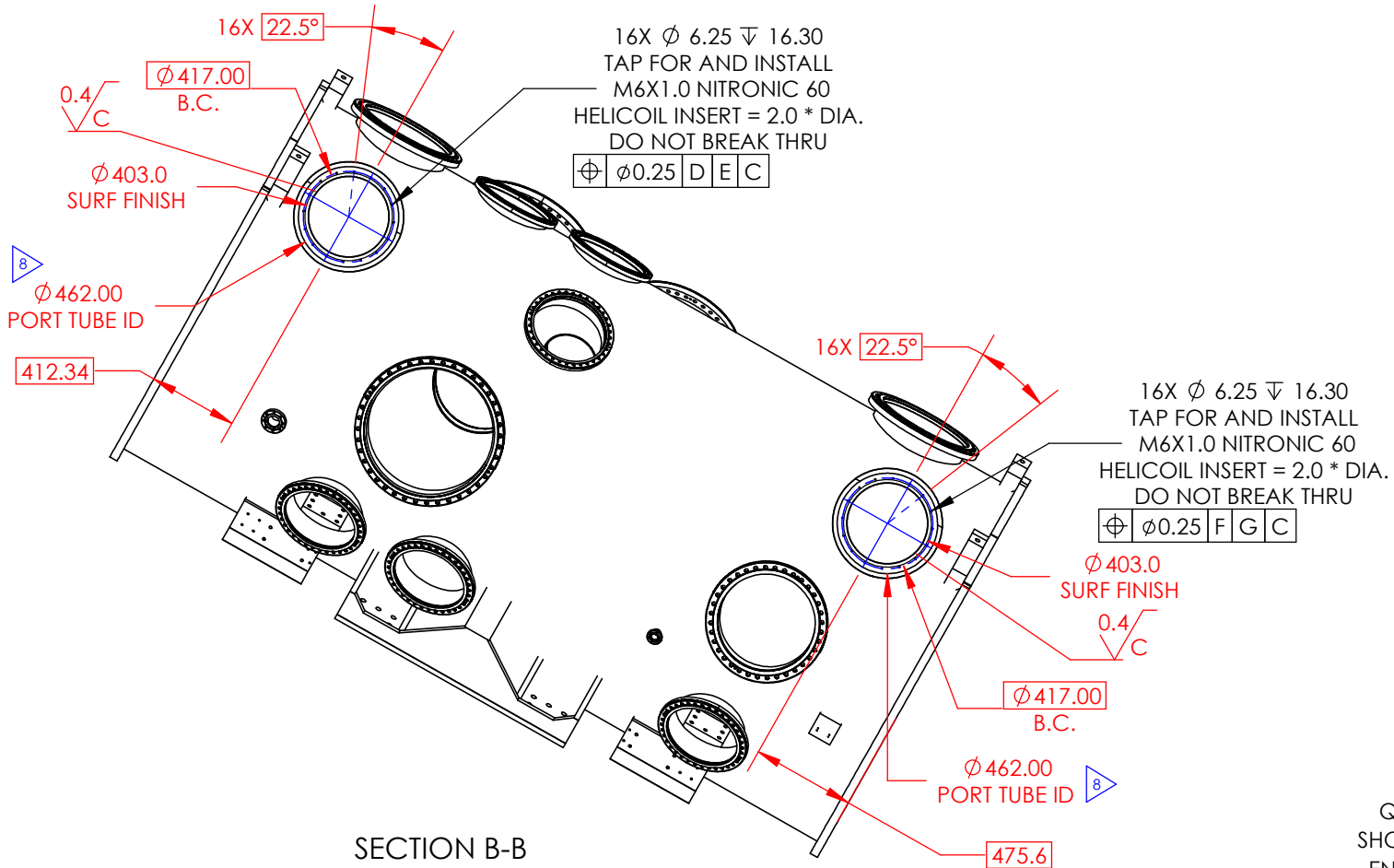
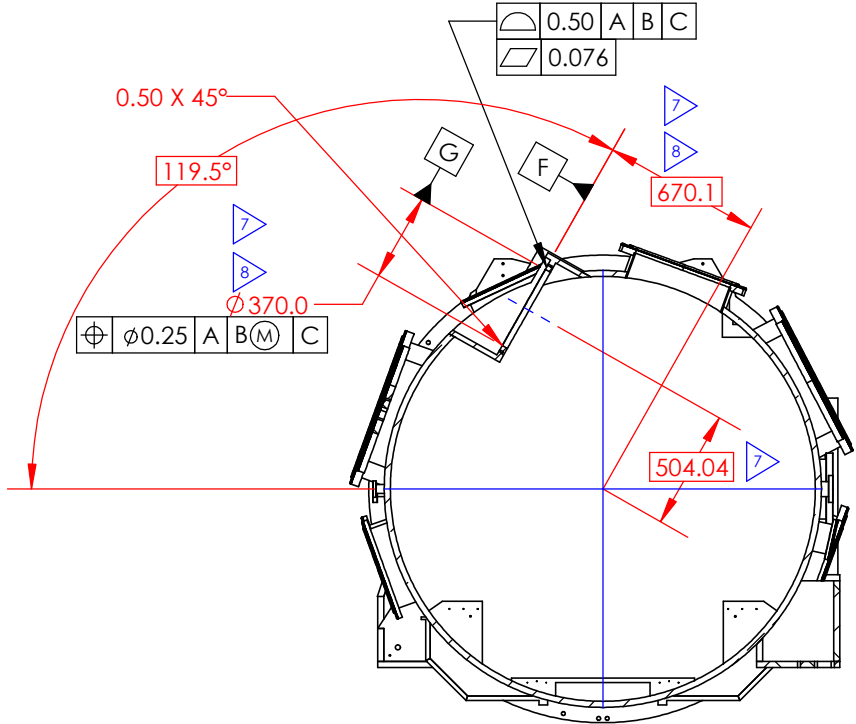
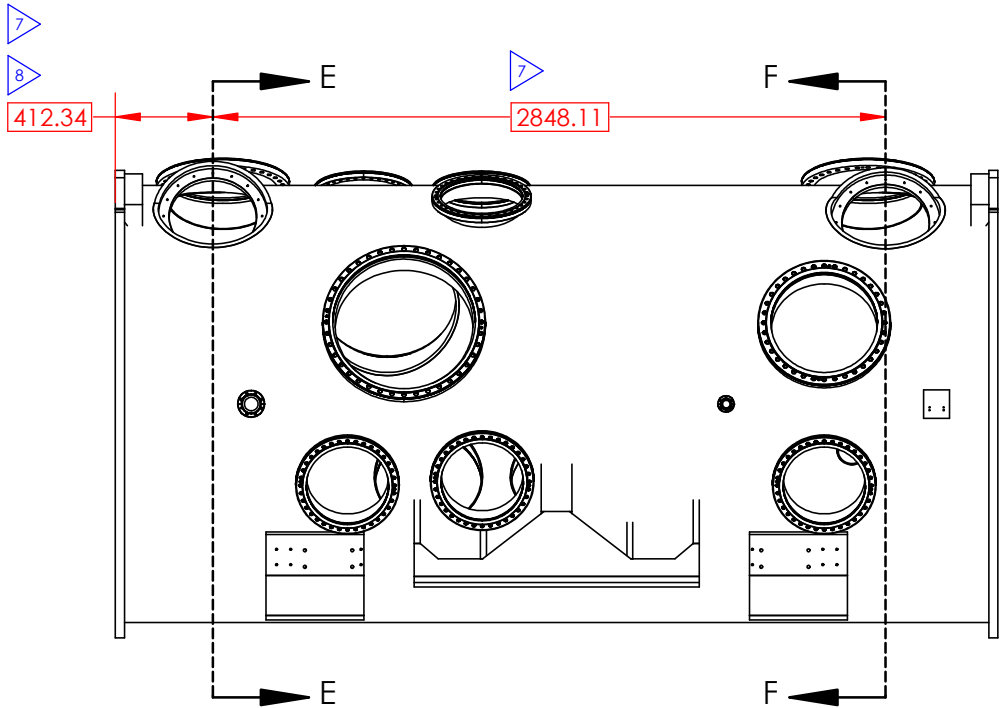
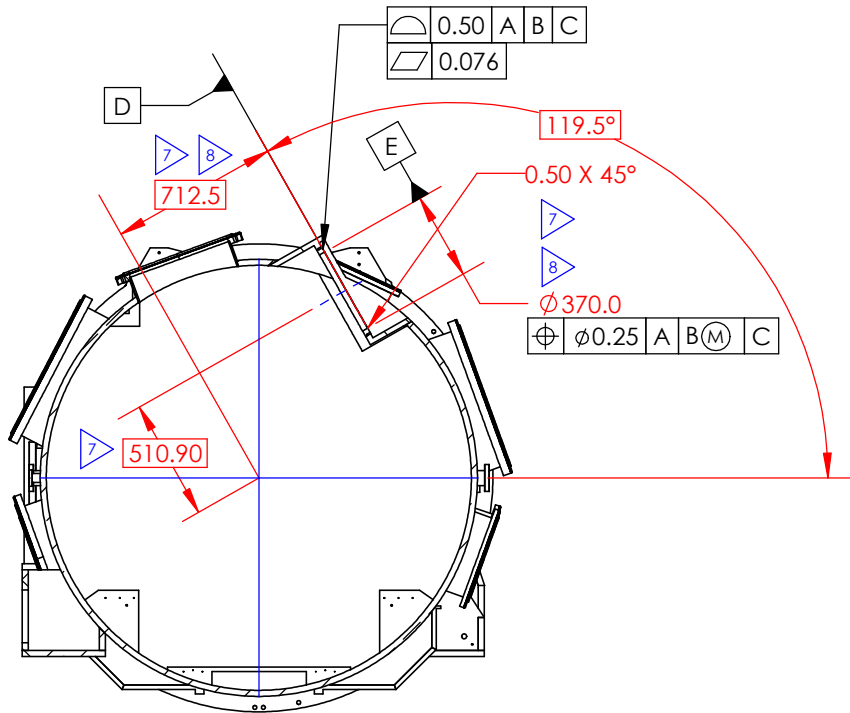


12X Ø 16.50 TAP FOR AND INSTALL M16X2.0 NITRONIC 60 HELICOIL INSERT = 1.5 * DIA. ±0.92 A B C

QC CHECK: _____ DATE: _____
SHOP CHECK: _____ DATE: _____
ENG CHECK: _____ DATE: _____

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TOLERANCES: MACHINING [mm]: DECIMAL .X ±.25 DECIMAL .XX ±.13 FABRICATION [INCH]: DECIMAL .XX ±.03 DECIMAL .XXX ±.03 FRACTIONAL ±1/16 ANGLES ALL ±1°		JOB NUMBER 22-0026	MATERIAL 5086-H116 AL RE: SAO-INST-MGT-00262	TITLE: BENCH/FOOT MACHINE	
DIMENSIONS ARE mm		THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF REDLINE CHAMBERS, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF REDLINE CHAMBERS, INC. IS PROHIBITED.		SIZE B	DWG. NO. / PART NO. FAB0002_MACHINE2
				SCALE: 1:32 QTY: 1	REV H
				SHEET 4 OF 7	

NOTES:

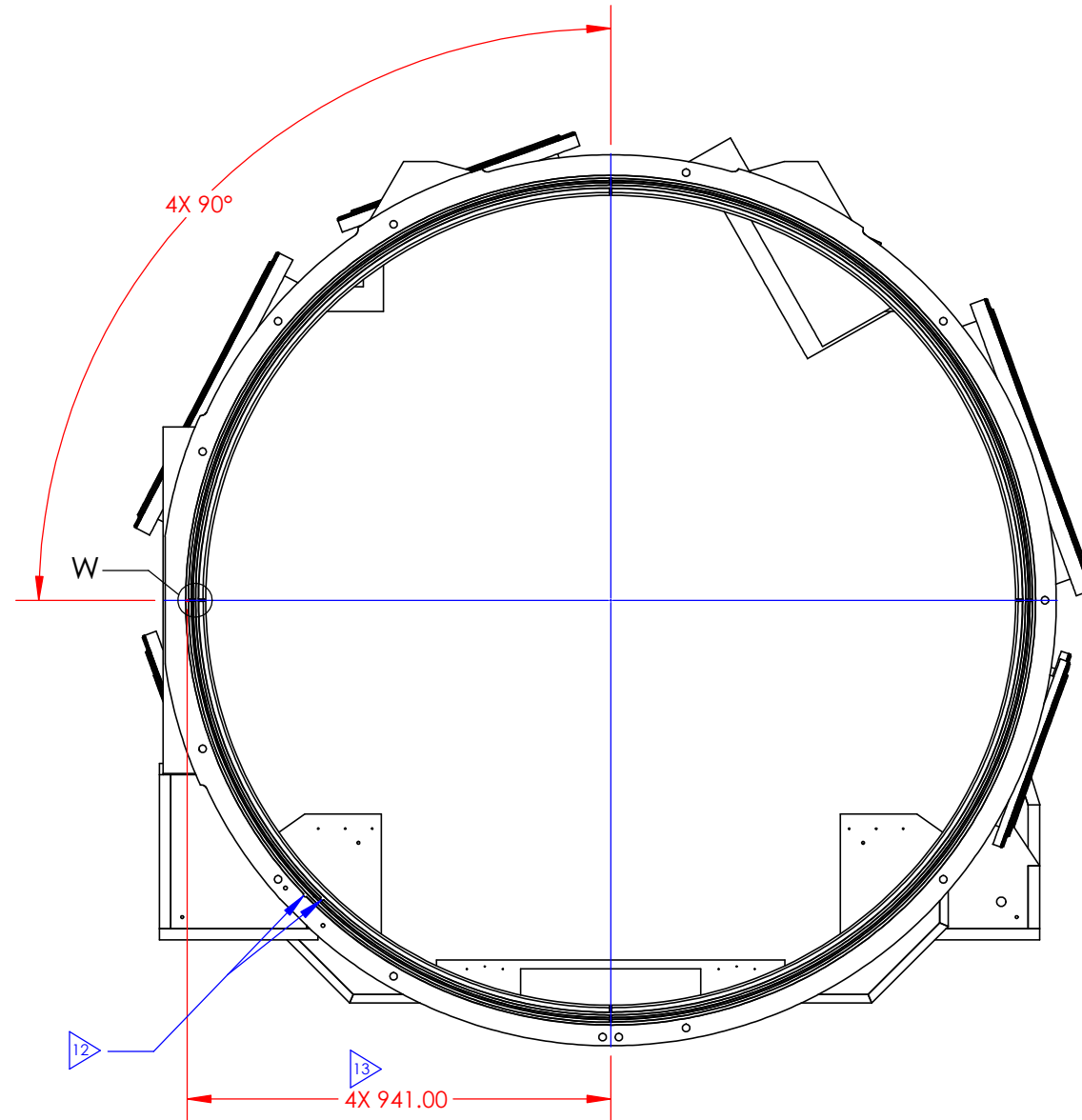
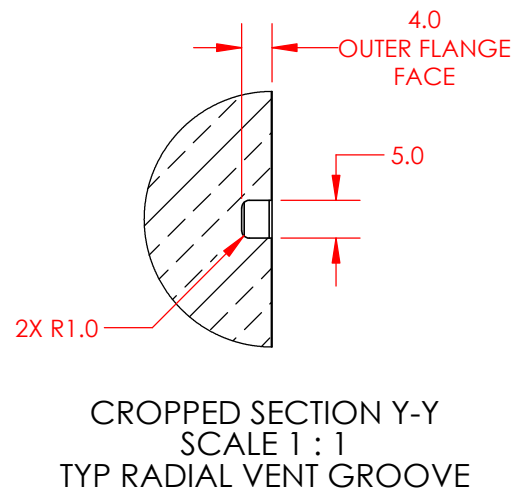
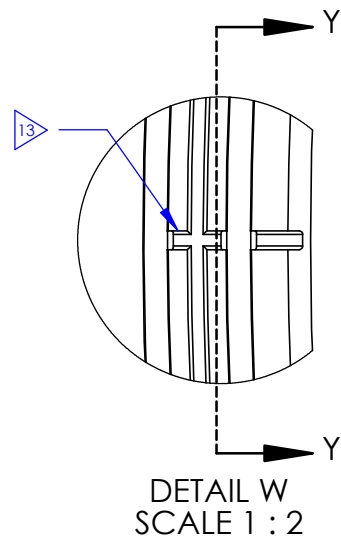
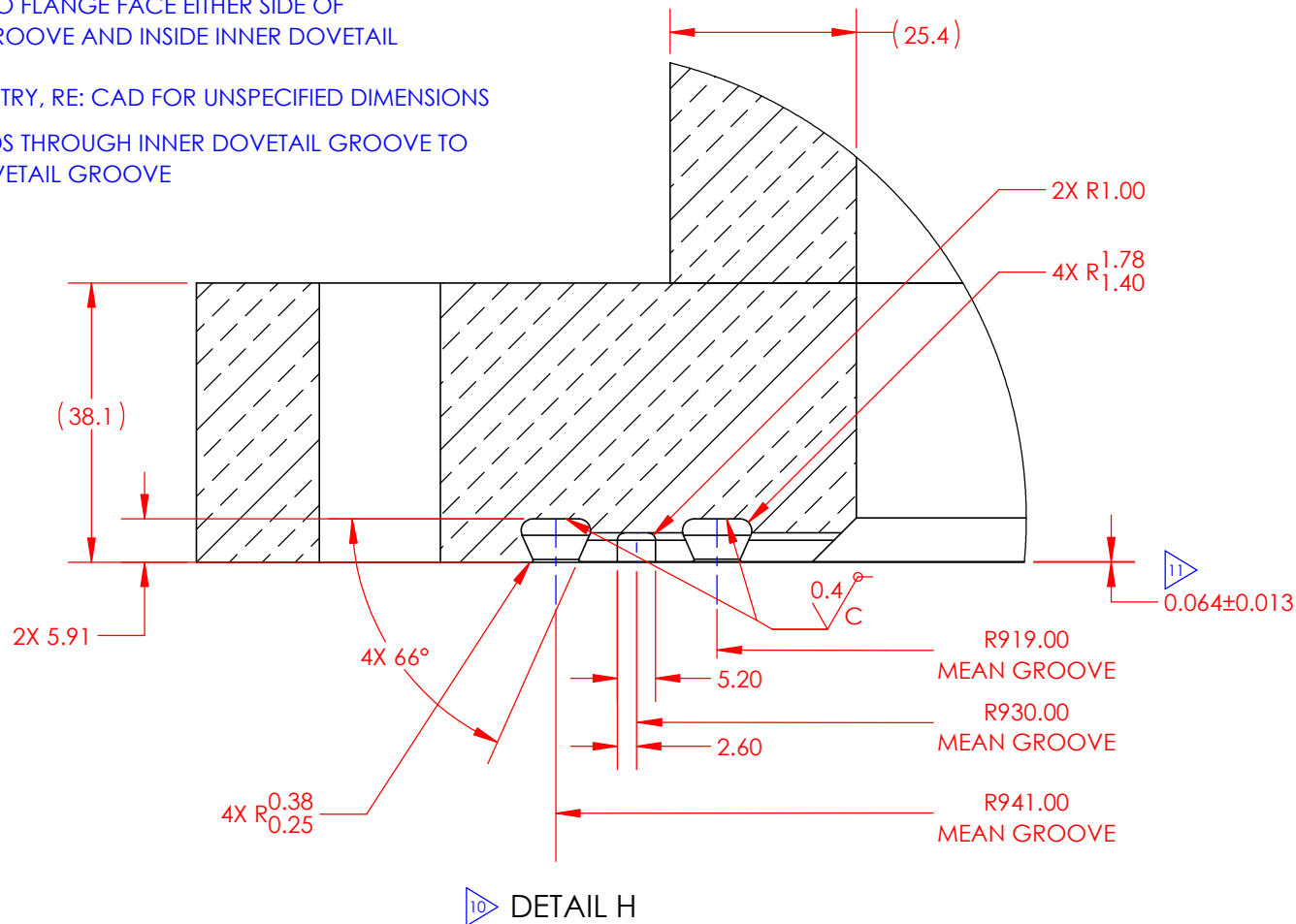


QC CHECK: _____ DATE: _____
SHOP CHECK: _____ DATE: _____
ENG CHECK: _____ DATE: _____

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TOLERANCES: MACHINING [mm]: DECIMAL .X ±.25 DECIMAL .XX ±.13 FABRICATION [INCH]: DECIMAL .XX ±.03 DECIMAL .XXX ±.03 FRACTIONAL ±1/16 ANGLES ALL ±1°		JOB NUMBER 22-0026	MATERIAL 5086-H116 AL RE: SAO-INST-MGT-00262	TITLE: SCIENCE CAMERA MACHINE DETAIL	
DIMENSIONS ARE mm		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF REDLINE CHAMBERS, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF REDLINE CHAMBERS, INC. IS PROHIBITED.		SIZE B	DWG. NO. / PART NO. FAB0002_MACHINE2
				SCALE: 1:32 QTY: 1	REV H SHEET 5 OF 7

NOTES:

- 10 ALL DIMENSIONS INCLUDING O-RING GROOVES ARE MIRRORED FOR FLANGES BOTH SIDES OF VESSEL
- 11 OUTER FLANGE FACE TO FLANGE FACE EITHER SIDE OF RECTANGULAR VENT GROOVE AND INSIDE INNER DOVETAIL GROOVE
- 12 2X DOVETAIL CUTTER ENTRY, RE: CAD FOR UNSPECIFIED DIMENSIONS
- 13 4X RADIAL VENT EXTENDS THROUGH INNER DOVETAIL GROOVE TO CENTER OF OUTER DOVETAIL GROOVE



RADIAL VENT
GROOVE DETAIL
SCALE 1 : 16

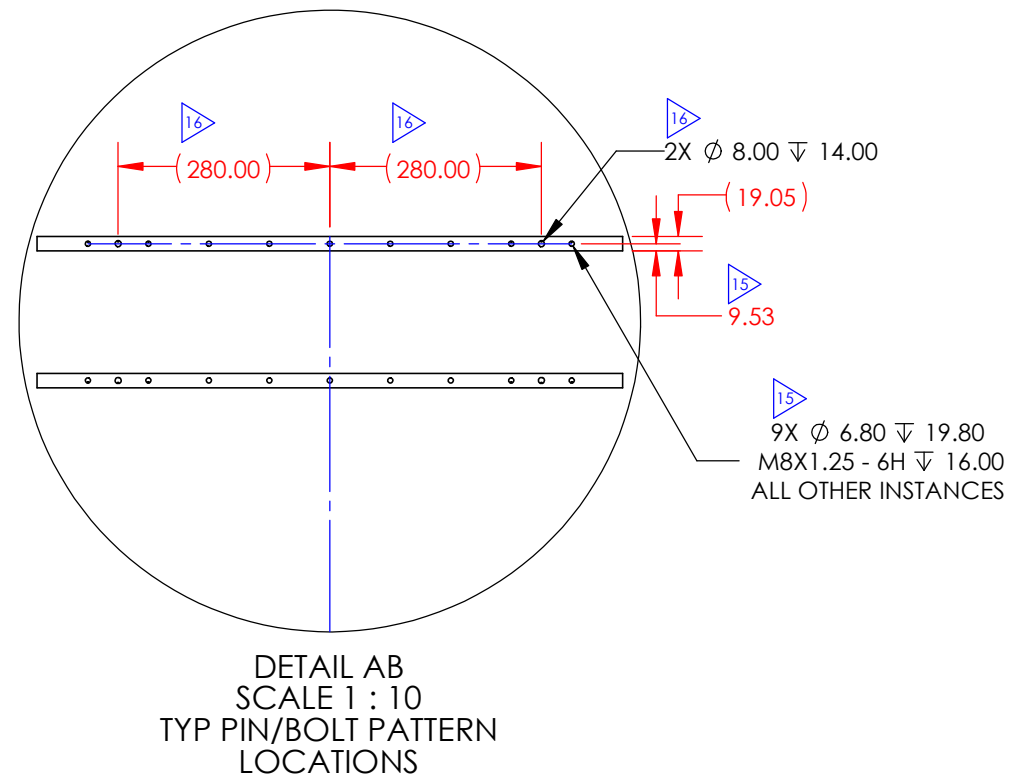
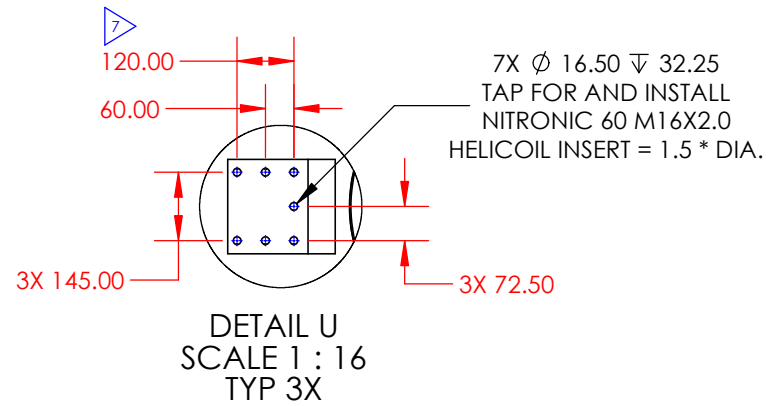
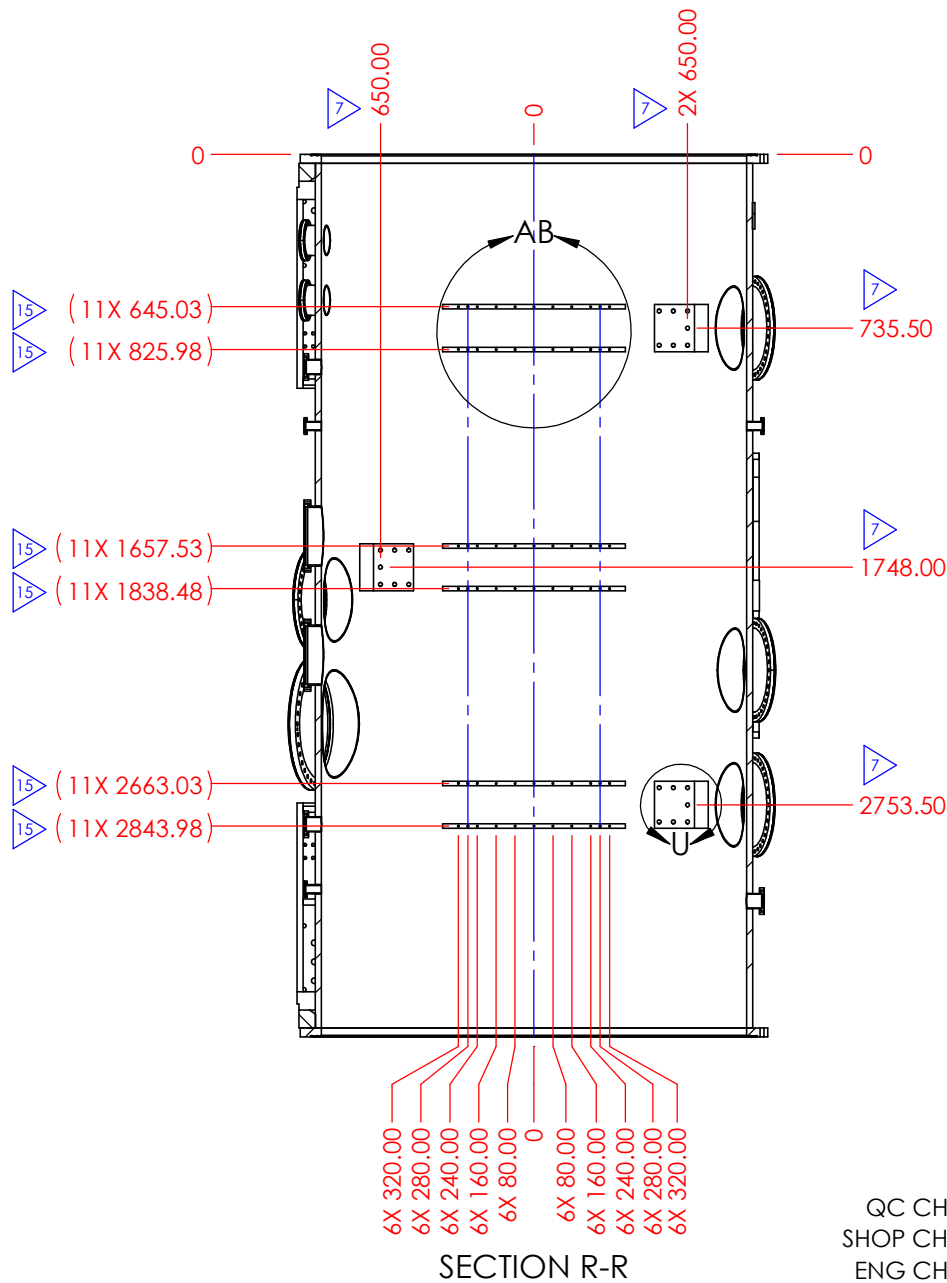
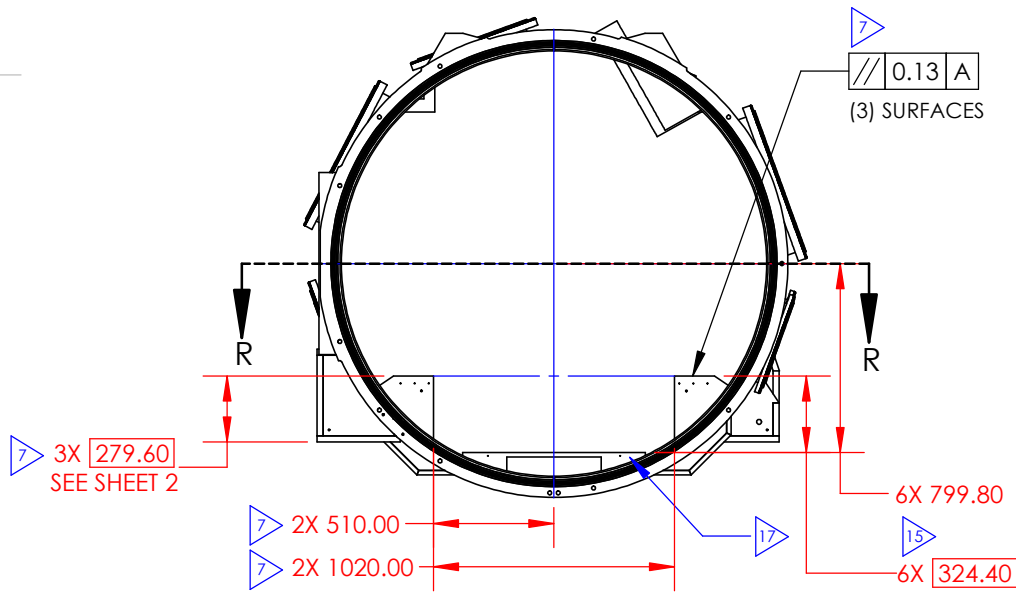


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TOLERANCES: MACHINING [mm]: DECIMAL .X ±.25 DECIMAL .XX ±.13 FABRICATION [INCH]: DECIMAL .XX ±.03 DECIMAL .XXX ±.03 FRACTIONAL ±1/16 ANGLES ALL ±1°		JOB NUMBER 22-0026	MATERIAL 5086-H116 AL RE: SAO-INST-MGT-00262 PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF REDLINE CHAMBERS, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF REDLINE CHAMBERS, INC. IS PROHIBITED.	TITLE: DOOR O-RING DETAIL	
DIMENSIONS ARE mm		SIZE B	DWG. NO. / PART NO. FAB0002_MACHINE2	REV H	SCALE: 1:1 QTY: 1 SHEET 6 OF 7

QC CHECK: _____ DATE: _____
SHOP CHECK: _____ DATE: _____
ENG CHECK: _____ DATE: _____

NOTES:

- 15 CHANGE PER REV E. MACHINE TOPS OF RIBS (6X) AND BOLT PATTERN. DIMENSION SHOWN FOR REFERENCE ONLY. DRILL/TAP 9-HOLE PATTERN ON CENTERLINE OF EACH RIB AND DUPLICATE PATTERN ON R0209.
- 16 PIN LOCATIONS SHOWN FOR REFERENCE ONLY, DO NOT DRILL DURING THIS MACHINE OPERATION. PINS TO BE MATCH DRILLED BY RLC AFTER COMPLETION OF MACHINE OP 2 AND ASSEMBLY OF STIFFNER TABLE, R0209. RE: R0209_B FOR CONTINUED PROCESS.
- 17 24X VENT HOLES ON RIBS TO BE DRILLED BY HAND TO MATCH BLIND BOLT HOLE LOCATIONS, (4) LOCATIONS ON EACH RIB. THIS OPERATION TO BE DONE BY REDLINE.



UNLESS OTHERWISE SPECIFIED:		DRAWN BY T. TALBOT	DATE 5/10/2024	REDLINE CHAMBERS, INC. SALES@REDLINECHAMBERS.COM	
TOLERANCES: MACHINING: DECIMAL .XX $\pm$.01 DECIMAL .XXX $\pm$.005 FABRICATION: DECIMAL .XX $\pm$.03 DECIMAL .XXX $\pm$.03 FRACTIONAL $\pm$ 1/16 ANGLES ALL $\pm$ 1°		JOB NUMBER 22-0026	MATERIAL 5086-H116	TITLE: INTERNAL FEATURES	
DIMENSIONS ARE mm		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF REDLINE CHAMBERS, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF REDLINE CHAMBERS, INC. IS PROHIBITED.		SIZE B	DWG. NO. / PART NO. FAB0002_MACHINE2
QC CHECK: _____ DATE: _____ SHOP CHECK: _____ DATE: _____ ENG CHECK: _____ DATE: _____		SCALE: 1:32 QTY: 1		REV H	SHEET 7 OF 7