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NOTES: UNLESS OTHERWISE SPECIFIED

1. APPLICABLE STANDARDS/SPECIFICATIONS:
ASME Y14.5-2018, DIMENSIONING AND TOLERANCING
ASME Y14.100-2017, ENGINEERING DRAWING PRACTICES

2. MATERIAL: AL 7175-T74 IAW AMS4149G

3. REMOVE ALL BURRS AND SHARP EDGES:
BREAK EDGES R.005/R.010
INSIDE CORNER RADII .015 MAX.

4. PRIOR TO ANODIZING IN APPROXIMATE LOCATION AS SHOWN, MECHANICALLY ENGRAVE, LASER MARK, OR ELECTROCHEMICALLY ETCH ∇ 0.002-0.010 MAX CAGE CODE-DRAWING NUMBER, REVISION IDENTIFIER, SERIAL NUMBER, AND MANUFACTURER CAGE CODE WITH 0.125 $\pm$ 0.020 HIGH CHARACTERS IN FORMAT AS FOLLOWS:

"%D012-1171976"
"SN XXXX"
"MFR-XXXXX"

5. PRIOR TO GRIT-BLAST AND ANODIZING, PLUG ALL THREADED HOLES AND MASK INDICATED SURFACES. UNLESS OTHERWISE SPECIFIED, MASKING TOLERANCE SHALL BE $\pm$.06.

6. PRIOR TO ANODIZING, GRIT-BLAST UNMASKED SURFACES TO A SURFACE FINISH OF 400-700 MICRO-INCHES. GRIT-BLAST ONLY WITH ALUMINUM OXIDE HAVING GRIT SIZE NO COARSER THAN 20 AVERAGE AND PRESSURE NO GREATER THAN 100 PSI.

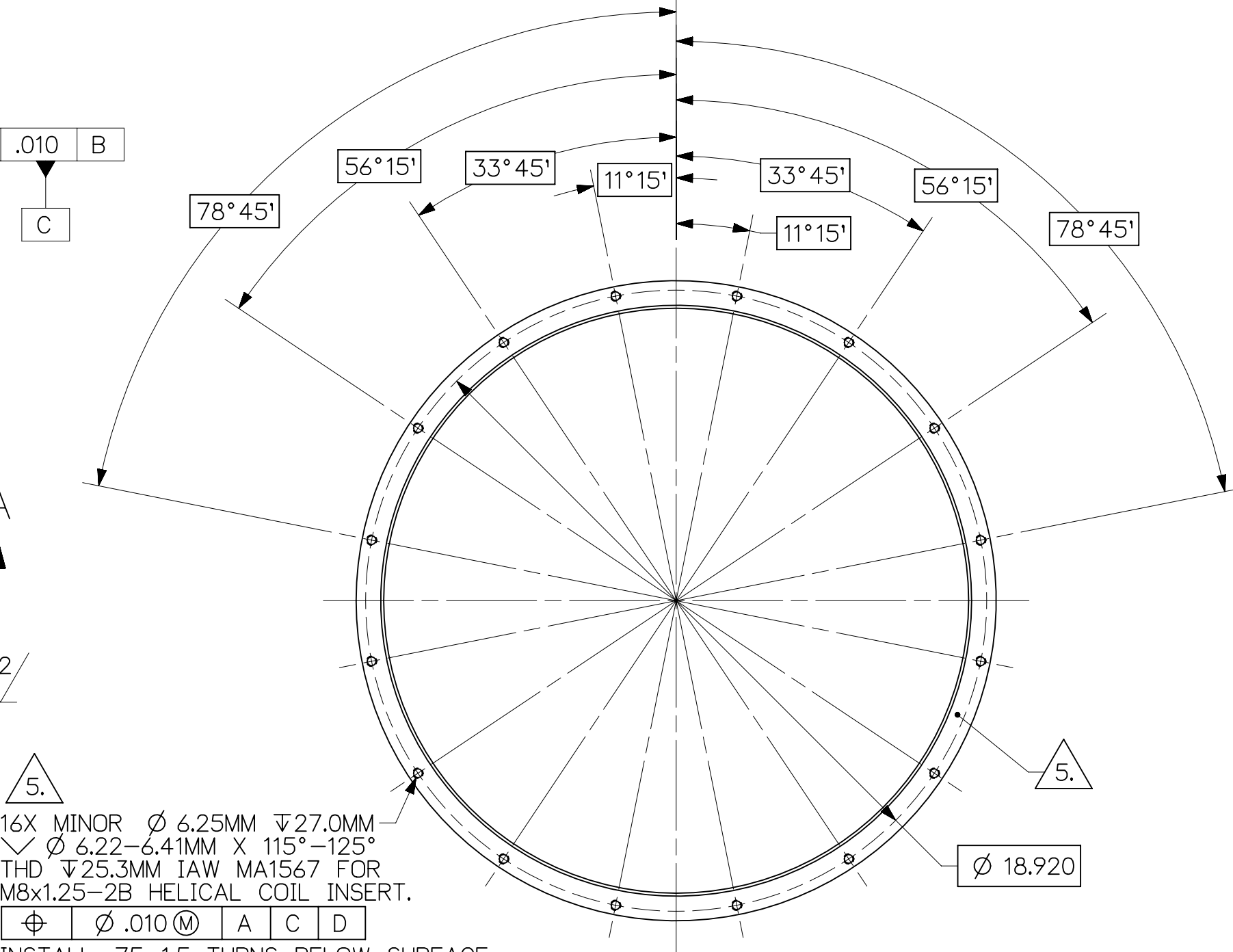
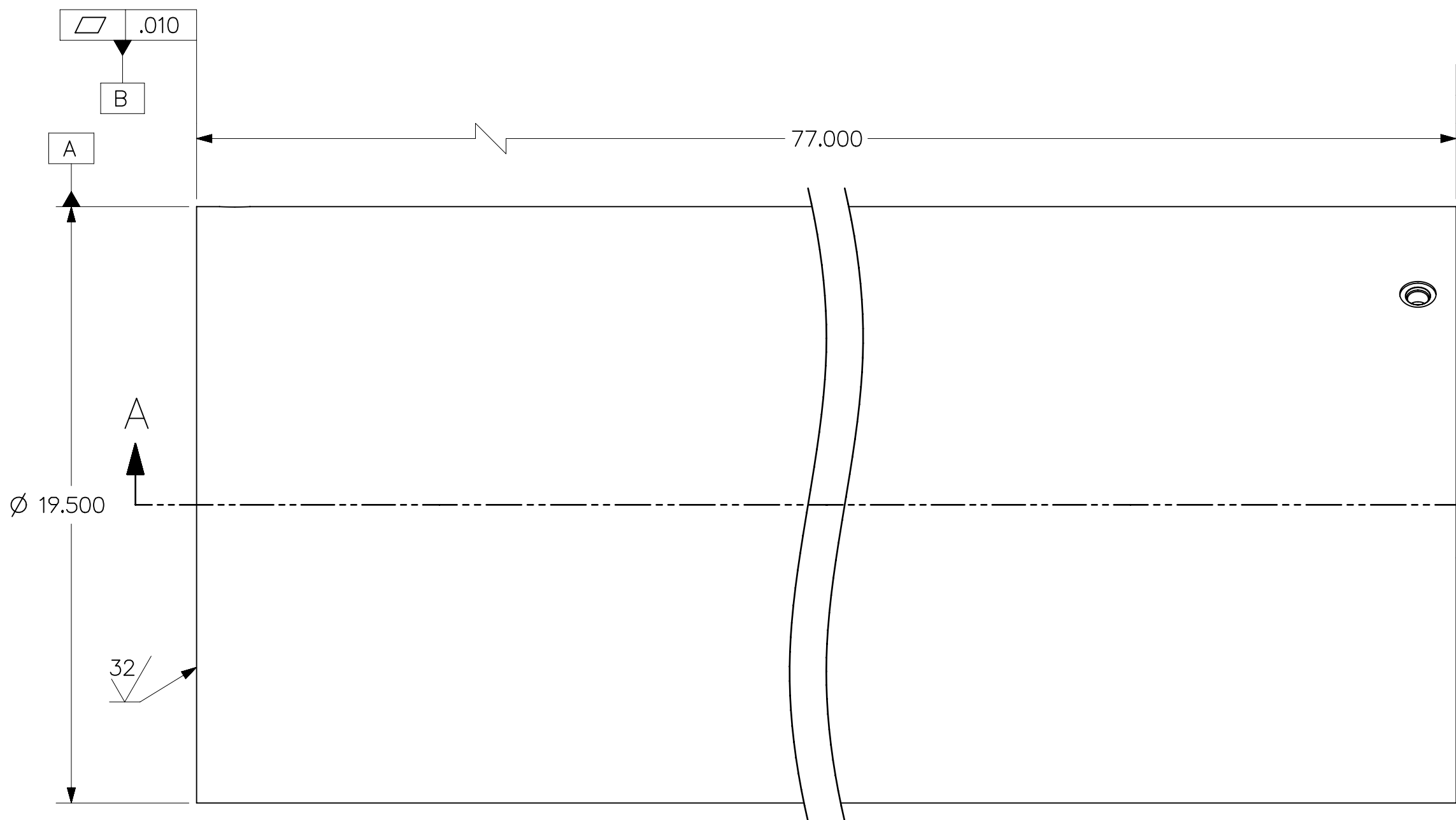
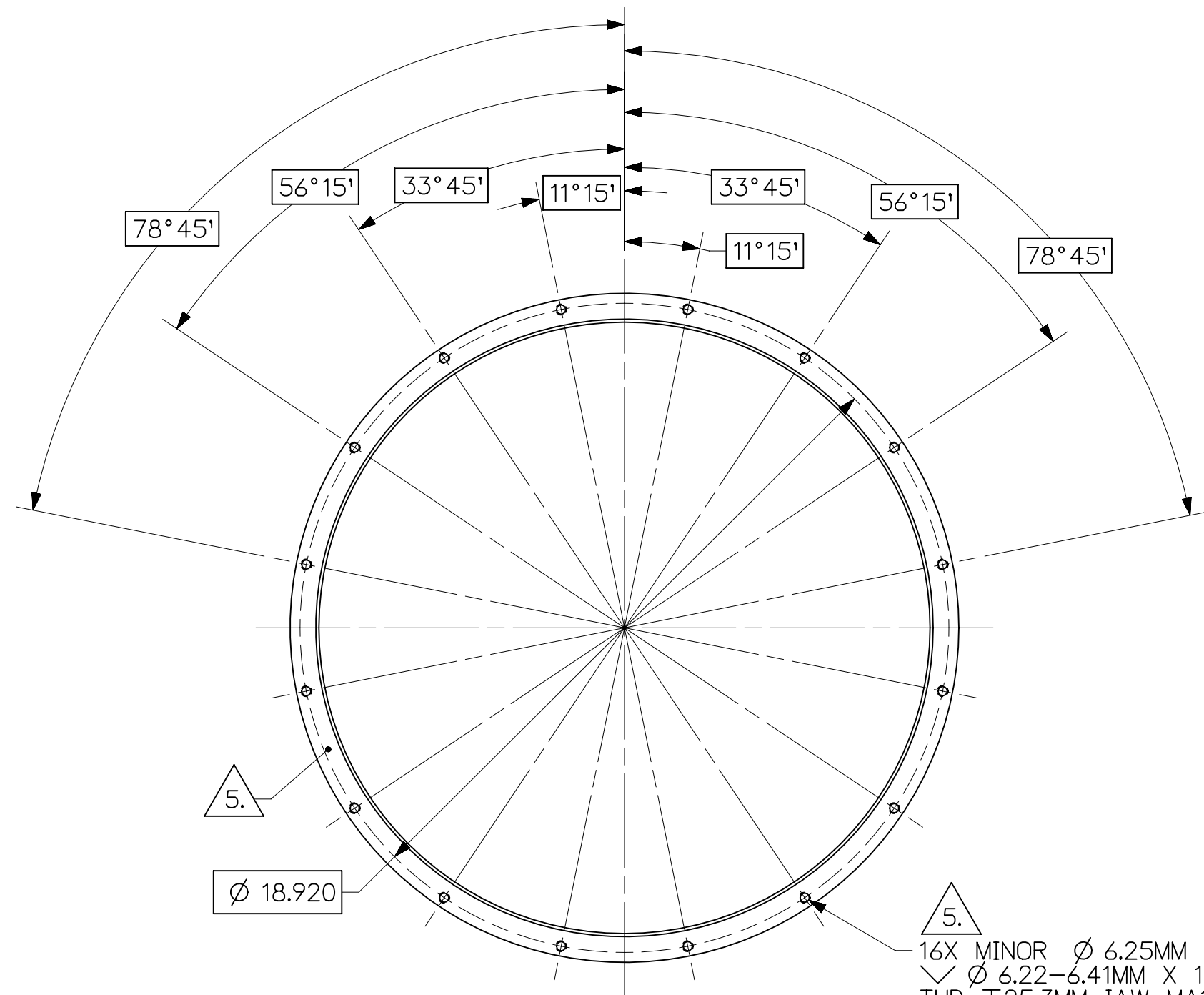
7. ANODIZE IAW MIL-A-8625, TYPE III, 0.002 $\pm$ /-20% THICK AND SEAL WITH CHEMEON TCP-HF, IAW OEM GUIDANCE FOR IMMERSION OR SPRAY APPLICATION AT A CONCENTRATION OF 25-30% BY VOLUME. ANODIZED SURFACES WHICH WILL RECEIVE PROTECTIVE COATINGS SHALL BE PROTECTED DURING SHIPMENT AND STORAGE FROM:

- PHYSICAL ABRASION, SCUFFING OR WEAR.
- CONTAMINATION FROM DUST, DIRT, PACKAGING FIBERS, CHEMICALS, GREASES OR LUBRICANTS.

8. AFTER ANODIZING AND SEALING, EPOXY COAT IAW WS22351 CLASS 2 OR CLASS 3 TO UNMASKED SURFACES. COLOR CONFIGURATION IAW WS22351 TO BE SPECIFIED BY THE PROCURING AGENCY AT THE TIME OF CONTRACTING.

9. AFTER ANODIZING AND BEFORE INSTALLING THREADED INSERTS, APPLY CHEMICAL CONVERSION COATING IAW MIL-DTL-5541F, TYPE II, CLASS 1A TO THREADED HOLES AND MASKED SURFACES.

10. ALL DIMENSIONS, TOLERANCES, AND SURFACE FINISHES APPLY AFTER ANODIZING.



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		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: DECIMALS: ANGLES: .XX ±.01 X" ±2" .XXX ±.005 X'X' ±0'15"
		MACHINE FINISH ALL OVER ∇
NEXT ASSY	USED ON	∇ 120° TAPPED HOLES TO THREAD MAJOR $\emptyset$
APPLICATION		DO NOT SCALE THIS DRAWING

1	32	01556	1084-8CN24.0	M8x1.25x24.0 mm, HELICOIL THREADED INSERT, SST	EMHART TEKNOLOGIES	
ITEM	QTY.	DAI	DWG/PART NO.	DESCRIPTION	SPECIFICATION	
PARTS LIST						
CONTRACT NUMBER N00024-18-D-6401				THE PENNSYLVANIA STATE UNIVERSITY APPLIED RESEARCH LABORATORY STATE COLLEGE, PENNSYLVANIA		
				TITLE		
APPROVED	BATTERY VESSEL, 57 RIBS					
APPROVED						
ENGR/DSG NR						
REVIEWED						
CHECKED						
DRAWN	SIZEDAIDWGNOREV					
APPROVALS						
NAME			D6D012	1171976	-	
DATE 2026-04-15			SCALE	CALC VOL (IN³)	CALC WT (LBS)	SHEET
FILE NO. XXXX.XXXX			1/4	3330.973	336.428	1 OF 2

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ASME Y14.100-2017, ENGINEERING DRAWING PRACTICES

2. MATERIAL: AL 7175-T74 IAW AMS4149G.

3. REMOVE ALL BURRS AND SHARP EDGES:
BREAK EDGES R.005/R.010
INSIDE CORNER RADII .015 MAX.

4. PRIOR TO ANODIZING IN APPROXIMATE LOCATION AS SHOWN, MECHANICALLY ENGRAVE, LASER MARK, OR ELECTROCHEMICALLY ETCH ∇ 0.002–0.010 MAX CASE CODE—DRAWING NUMBER, REVISION IDENTIFIER, SERIAL NUMBER, AND MANUFACTURER CODE WITH CODE WITH 0.125 ± 0.020 HIGH CHARACTERS IN FORMAT AS FOLLOWS:

"6D012-1172387"

"SN XXXX"
"VER. YYYYY"

MF R-XXXXX

5. PRIOR TO GRIT-BLAST AND ANODIZING, MASK INDICATED SURFACES. UNLESS OTHERWISE SPECIFIED, MASKING TOLERANCE SHALL BE $\pm .06$.

6. PRIOR TO ANODIZING, GRIT-BLAST UNMASKED SURFACES TO A SURFACE FINISH OF 400-700 MICRO-INCHES. GRIT-BLAST ONLY WITH ALUMINUM OXIDE HAVING GRIT SIZE NO COARSER THAN 20 AVERAGE AND PRESSURE NO GREATER THAN 100 PSI.

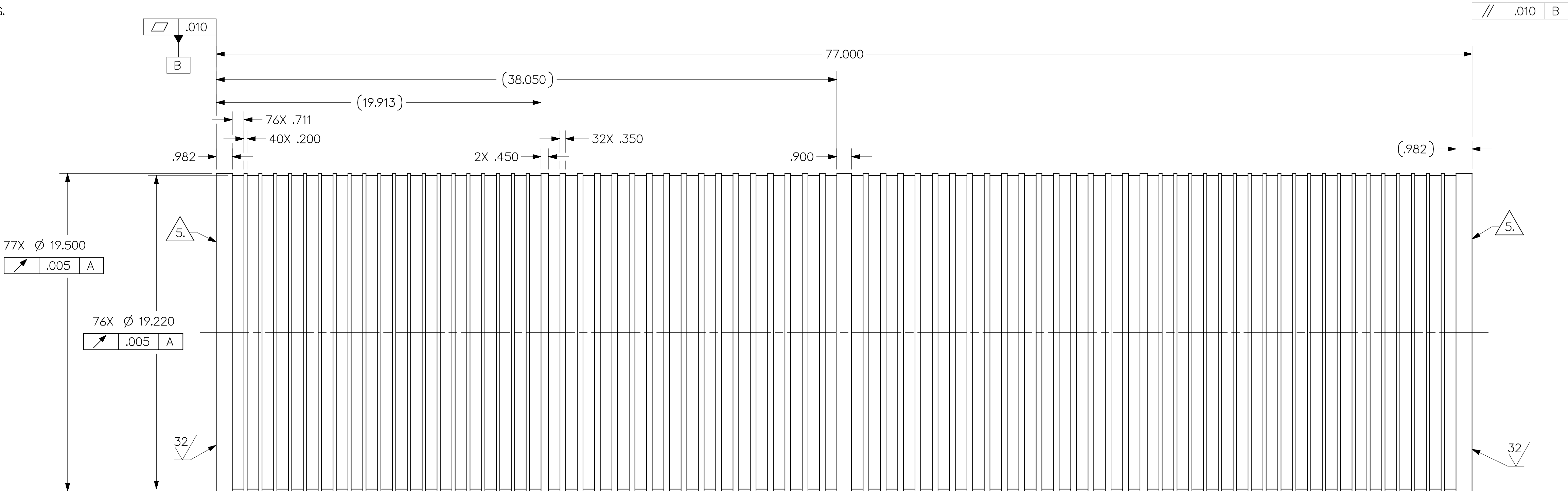
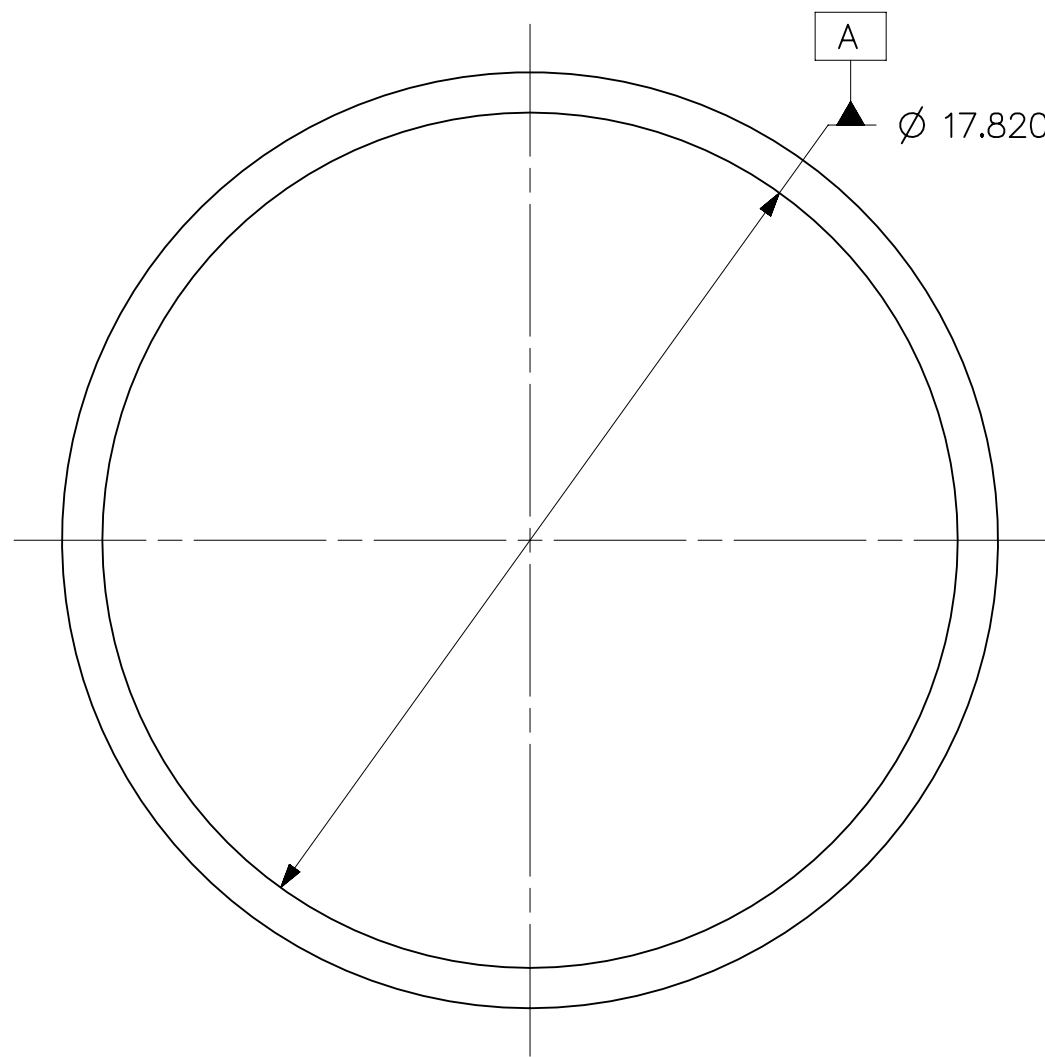
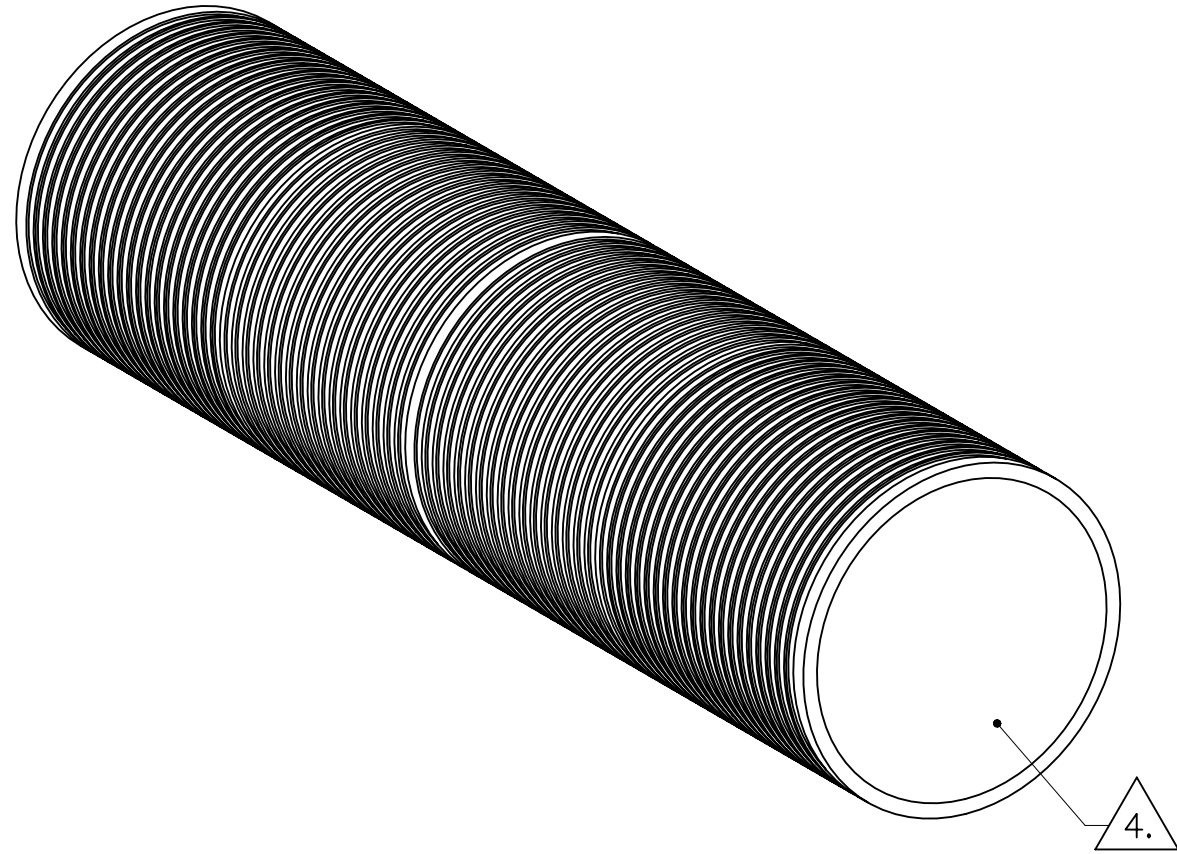
7. ANODIZE 1AW MIL-A-8625, TYPE III, CLASS 1, 0.002 +/-20% THICK AND SEAL WITH CHEMEON TCP-HF, 1AW OEM GUIDANCE FOR IMMERSION OR SPRAY APPLICATION AT A CONCENTRATION OF 25-30% BY VOLUME. ANODIZED SURFACES WHICH WILL RECEIVE PROTECTIVE COATINGS SHALL BE PROTECTED DURING SHIPMENT AND STORAGE FROM:

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8. AFTER ANODIZING AND SEALING, EPOXY COAT IAW WS22351 CLASS 2 OR CLASS 3 TO UNMASKED SURFACES.
COLOR CONFIGURATION IAW WS22351 TO BE SPECIFIED BY THE PROCURING AGENCY AT THE TIME OF CONTRACTING.

9. AFTER ANODIZING, APPLY CHEMICAL CONVERSION COATING IAW MIL-DTL-5541F, TYPE II, CLASS 1A TO UNMASKED SURFACES.

10. ALL DIMENSIONS, TOLERANCES, AND SURFACE FINISHES APPLY AFTER ANODIZING.



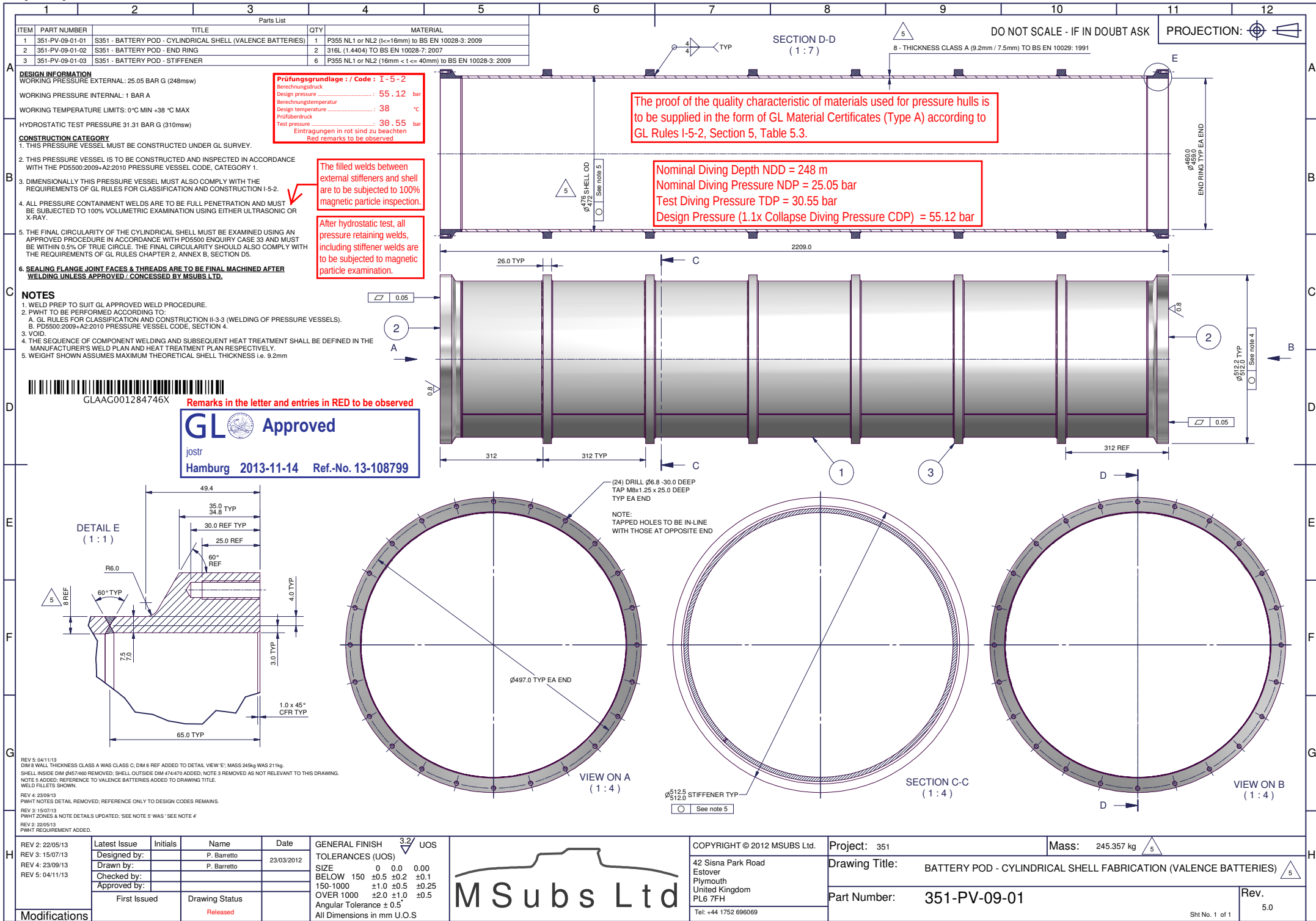
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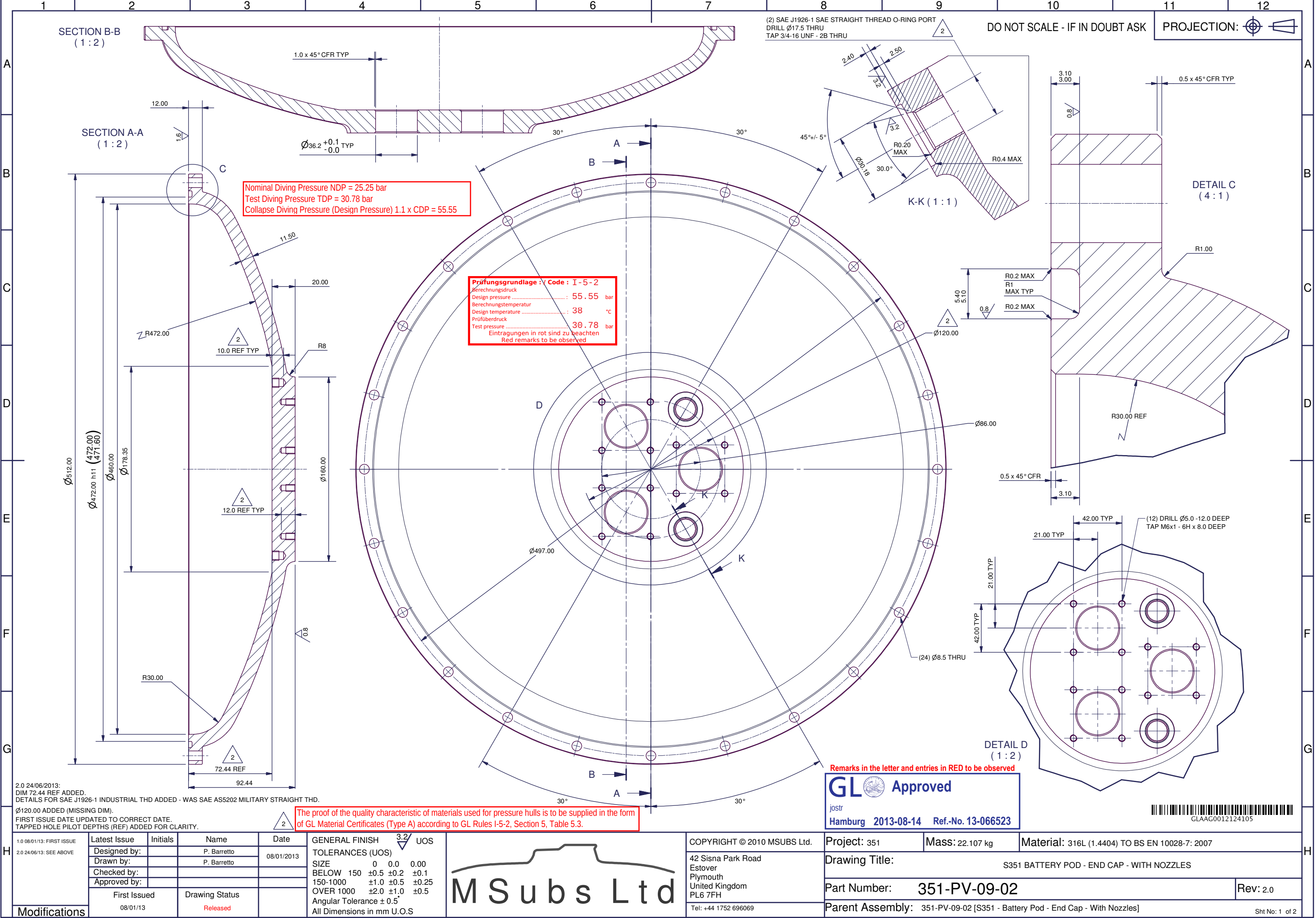
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NEXT ASSY	USED ON
APPLICATION	

CONTRACT NUMBER N00024-18-D-6401			THE PENNSYLVANIA STATE UNIVERSITY APPLIED RESEARCH LABORATORY STATE COLLEGE, PENNSYLVANIA			
			TITLE			
APPROVED			BATTERY VESSEL, K3+			
APPROVED						
ENGR/DSGNR						
REVIEWED						
CHECKED						
DRAWN			SIZE	DAI	DWG NO.	REV
APPROVALS	NAME		D	6D012	1172387	-
ARL PSU-SIEMENS NX	DATE	2026-06-02	SCALE	CALC VOL (IN³)	CALC WT (LBS)	SHEET
	FILE NO.	XXXX.XXXX	1/4	3331.564	336.488	1 OF 1





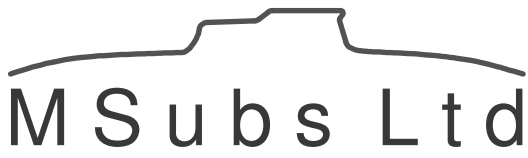
2.0 24/06/2013:
DIM 72.44 REF ADDED.
DETAILS FOR SAE J1926-1 INDUSTRIAL THD ADDED - WAS SAE AS5202 MILITARY STRAIGHT THD.
Ø120.00 ADDED (MISSING DIM).
FIRST ISSUE DATE UPDATED TO CORRECT DATE.
TAPPED HOLE PILOT DEPTHS (REF) ADDED FOR CLARITY.

1.0 08/01/13: FIRST ISSUE	Latest Issue	Initials	Name	Date
2.0 24/06/13: SEE ABOVE	Designed by:		P. Barretto	08/01/2013
	Drawn by:		P. Barretto	
	Checked by:			
	Approved by:			
	First Issued		Drawing Status	
	08/01/13		Released	

Modifications

The proof of the quality characteristic of materials used for pressure hulls is to be supplied in the form of GL Material Certificates (Type A) according to GL Rules I-5-2, Section 5, Table 5.3.

GENERAL FINISH	3.2	UOS
TOLERANCES (UOS)		
SIZE	0	0.0 0.00
BELOW 150	±0.5	±0.2 ±0.1
150-1000	±1.0	±0.5 ±0.25
OVER 1000	±2.0	±1.0 ±0.5
Angular Tolerance	± 0.5°	
All Dimensions in mm	U.O.S	

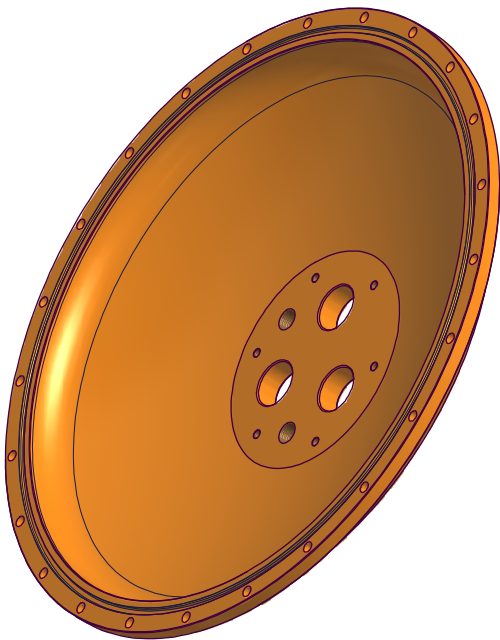
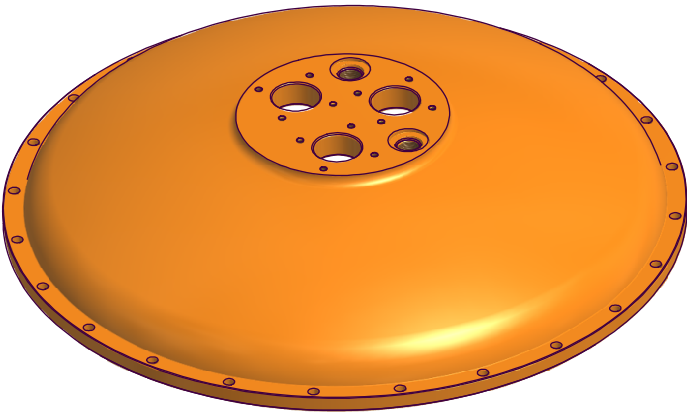
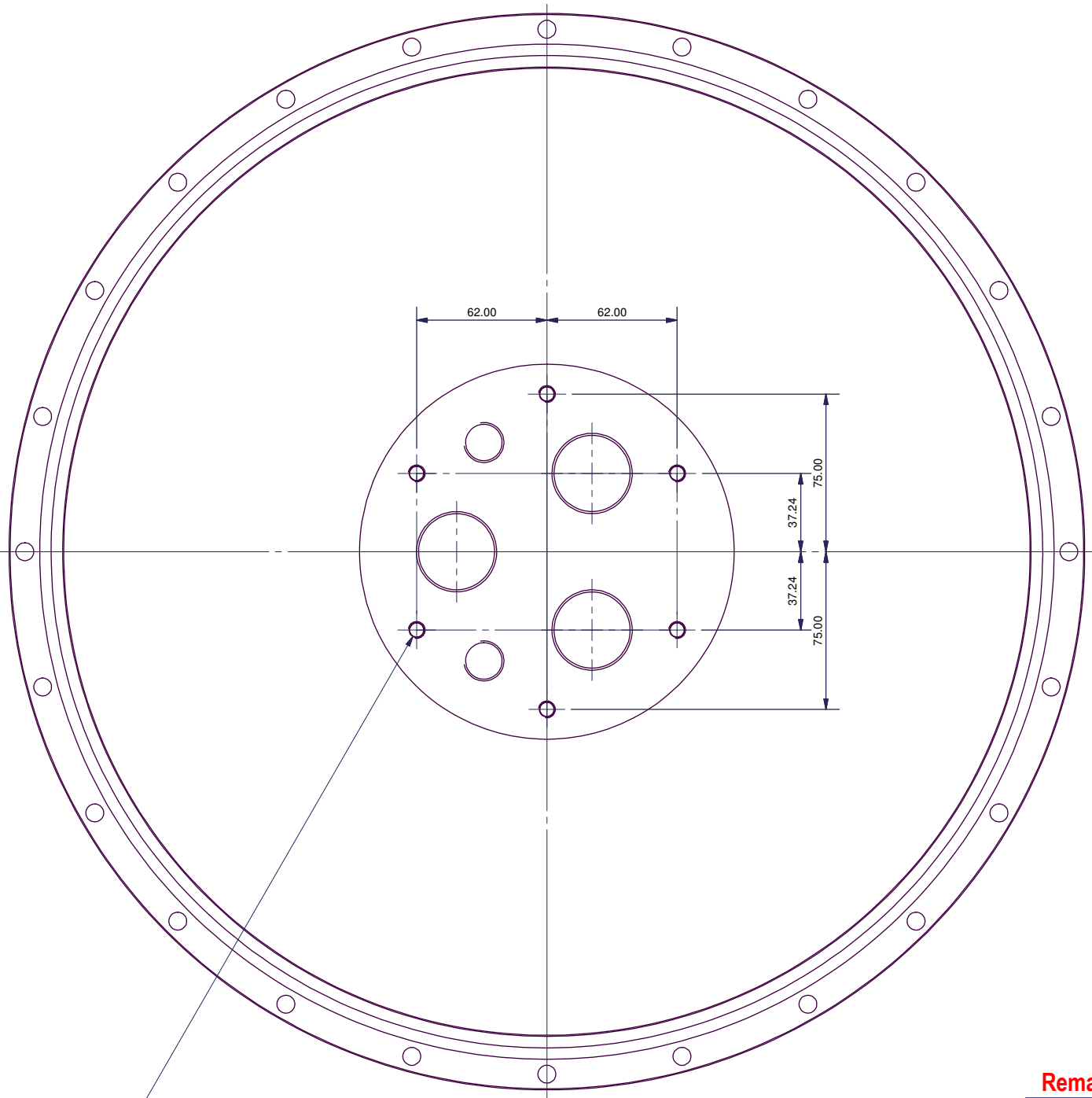


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42 Sisna Park Road
Estover
Plymouth
United Kingdom
PL6 7FH
Tel: +44 1752 696069

Remarks in the letter and entries in RED to be observed

GL Approved
jostr
Hamburg 2013-08-14 Ref-No. 13-066523

Project: 351	Mass: 22.107 kg	Material: 316L (1.4404) TO BS EN 10028-7: 2007
Drawing Title:	S351 BATTERY POD - END CAP - WITH NOZZLES	
Part Number:	351-PV-09-02	Rev: 2.0
Parent Assembly:	351-PV-09-02 [S351 - Battery Pod - End Cap - With Nozzles]	



(6) Ø6.8 - 10.0 DEEP
TAP M8x1.25 - 6H x 6.0 DEEP

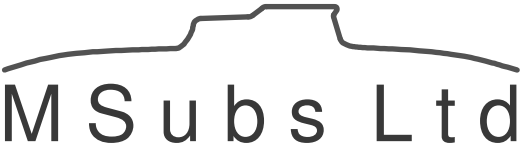
The thread depth is not sufficient to carry major loads. It is assumed that the threads will only be used for installation of small parts.

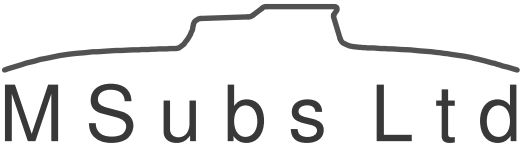
Remarks in the letter and entries in RED to be observed

GL  **Approved**

jostr

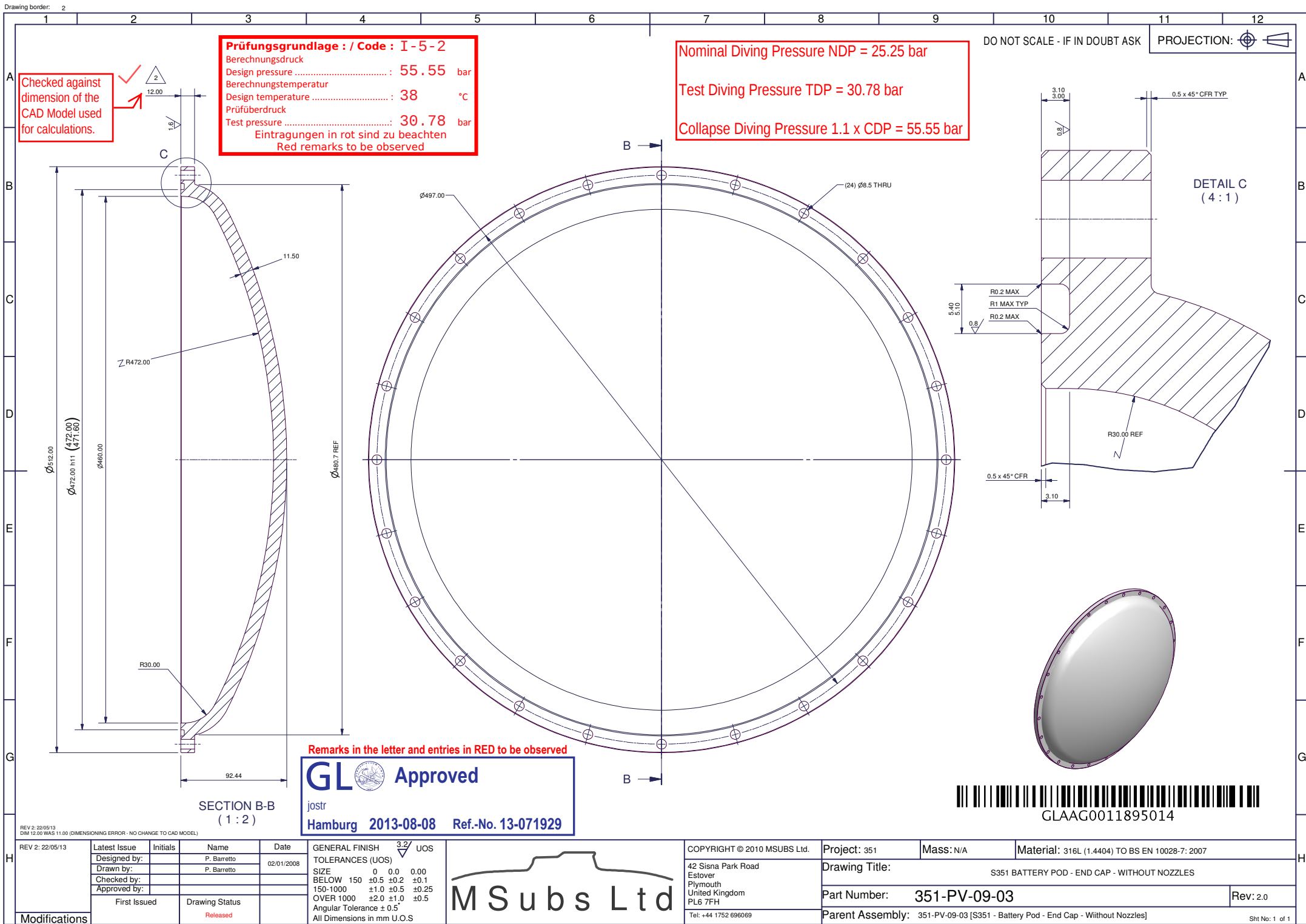
Hamburg 2013-08-14 Ref.-No. 13-066523

Modifications	Latest Issue	Initials	Name	Date	GENERAL FINISH $\frac{3.2}{\sqrt{A}}$ UOS TOLERANCES (UOS) SIZE 0 0.0 0.00 BELOW 150 ± 0.5 ± 0.2 ± 0.1 150-1000 ± 1.0 ± 0.5 ± 0.25 OVER 1000 ± 2.0 ± 1.0 ± 0.5 Angular Tolerance $\pm 0.5^\circ$ All Dimensions in mm U.O.S
	Designed by:		P. Barretto	08/01/2013	
	Drawn by:		P. Barretto		
	Checked by:				
	Approved by:				
First Issued		Drawing Status			
		Released			



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Estover
Plymouth
United Kingdom
PL6 7FH
Tel: +44 1752 696069

Project: 351	Mass: 22.107 kg	Material: 316L (1.4404) TO BS EN 10028-7: 2007	
Drawing Title:		S351 BATTERY POD - END CAP - WITH NOZZLES	
Part Number:		351-PV-09-02	Rev: 2.0
Parent Assembly:		351-PV-09-02 [S351 - Battery Pod - End Cap - With Nozzles]	
		Sht No: 2 of 2	



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"SN XXXX"
"MFR-XXXXX"

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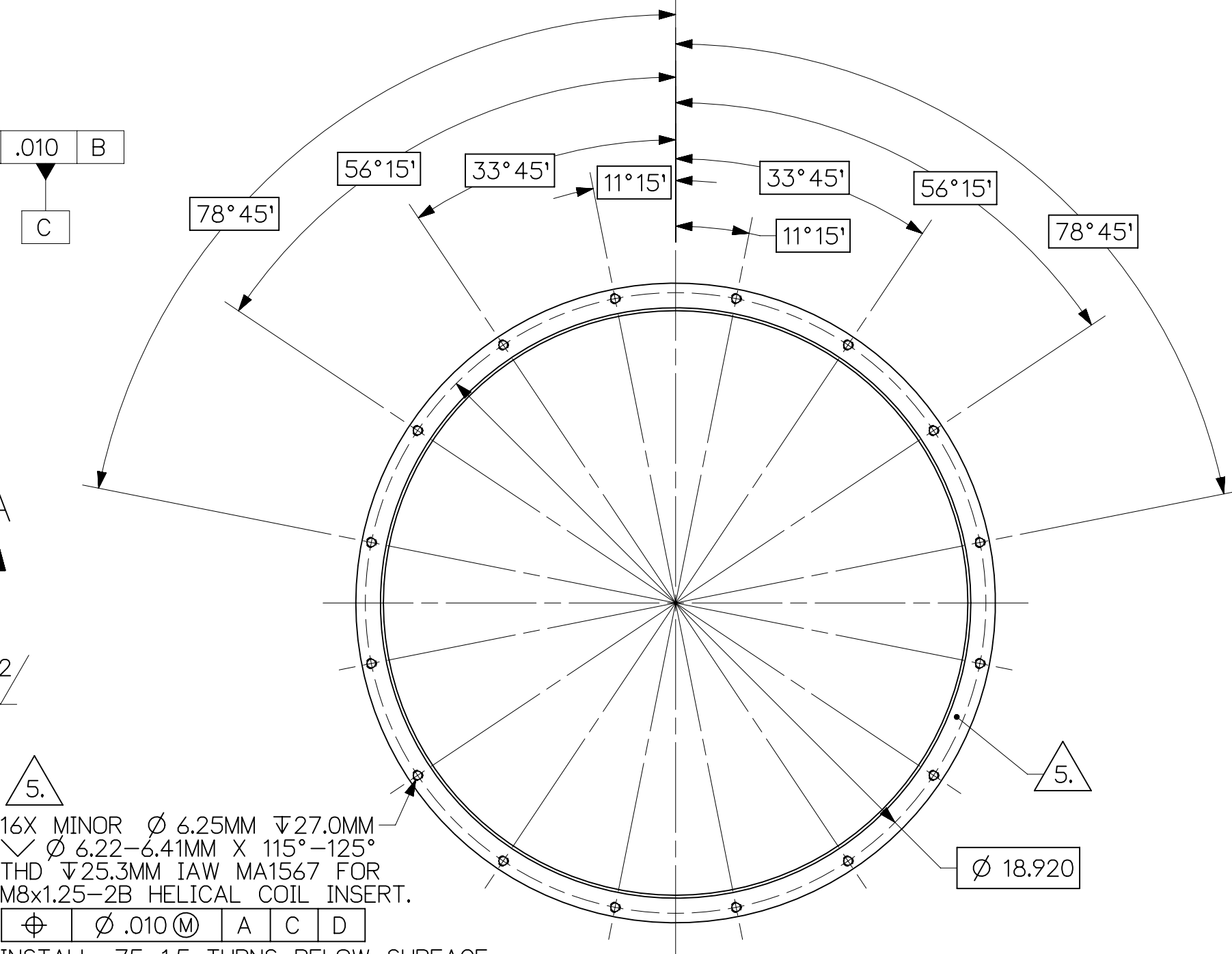
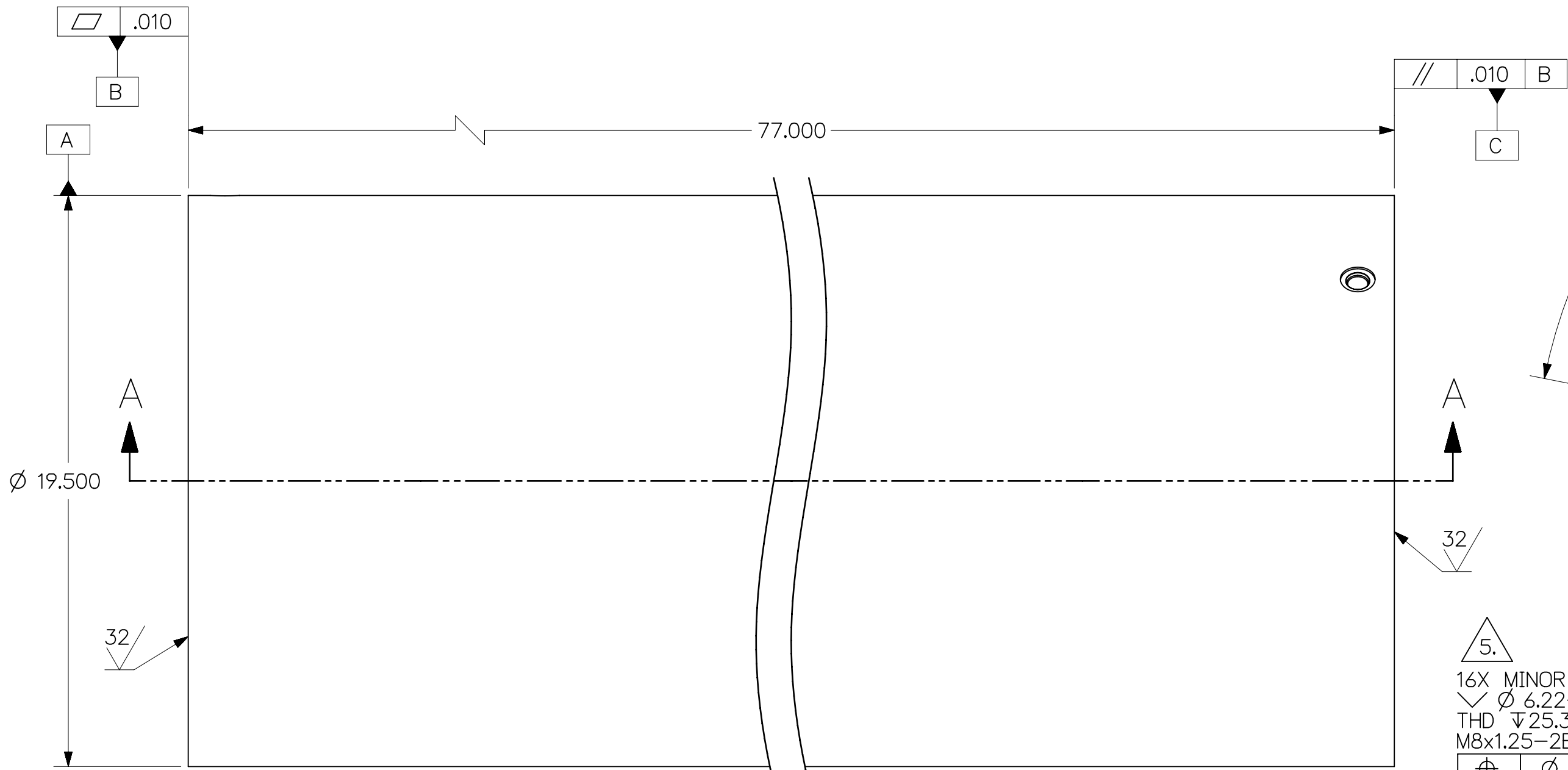
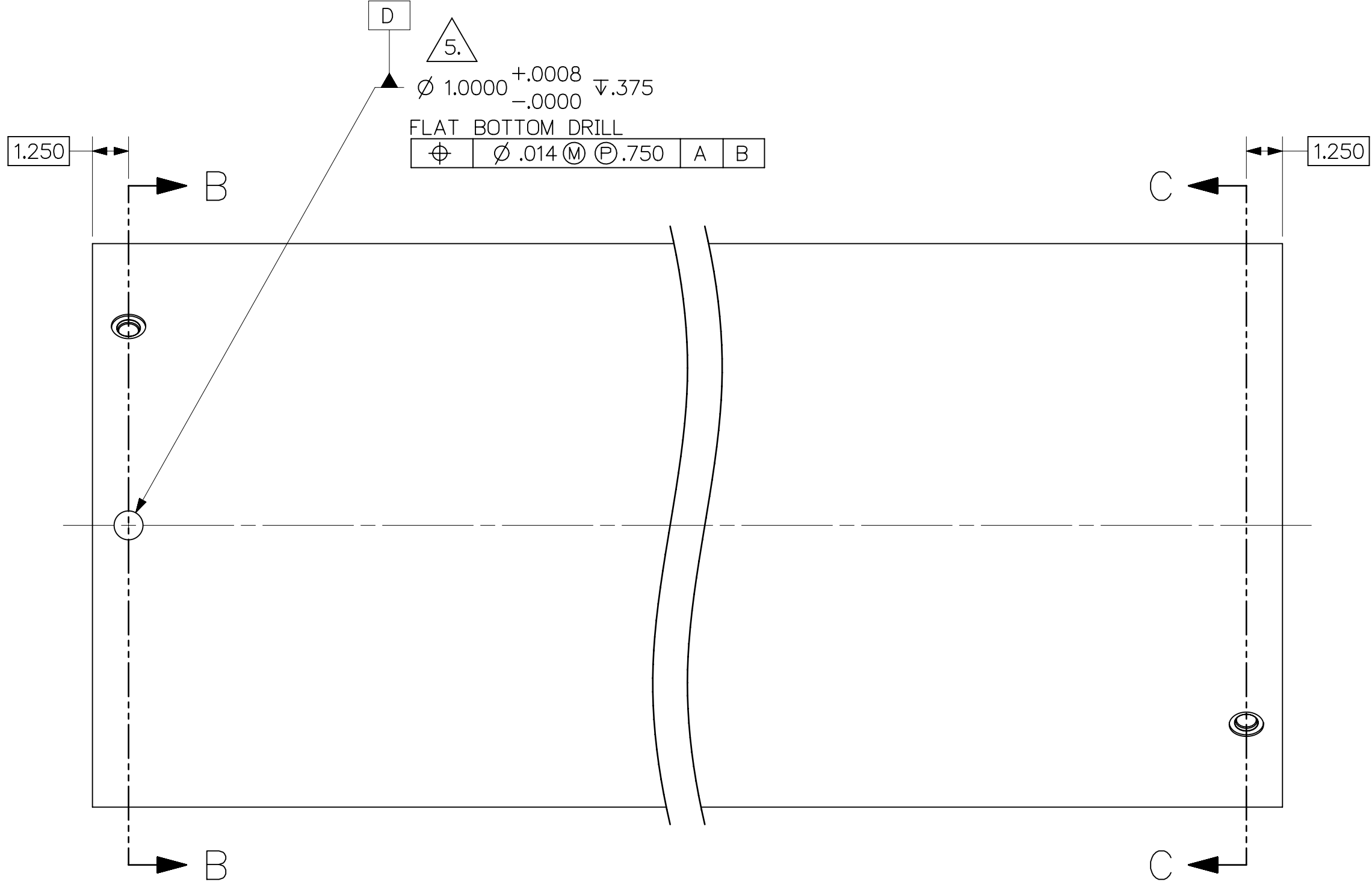
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PRELIMINARY DRAWING
2026-06-05
DO NOT MACHINE

REVISION HISTORY			
REV	DESCRIPTION	DATE	APPROVED
-			



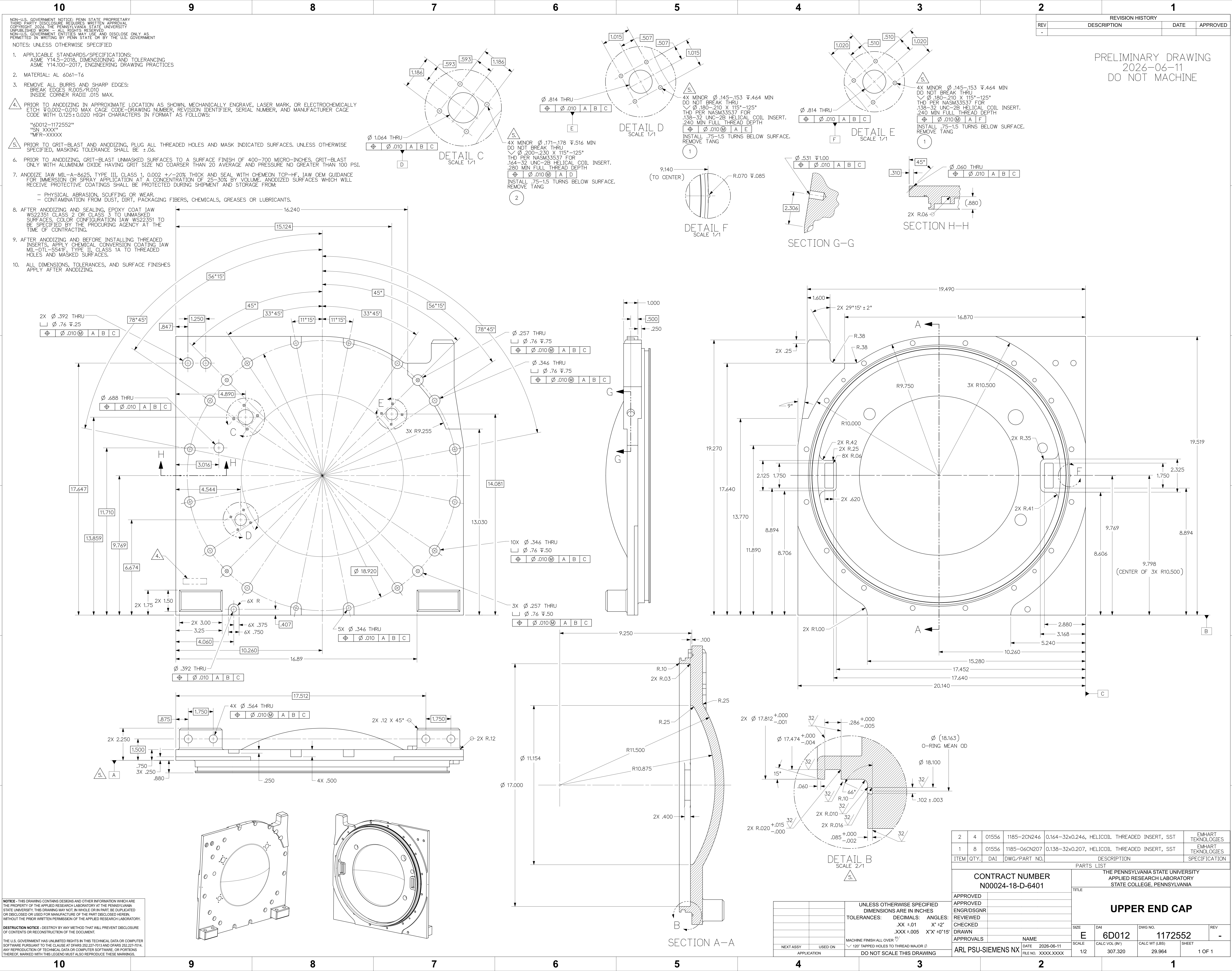
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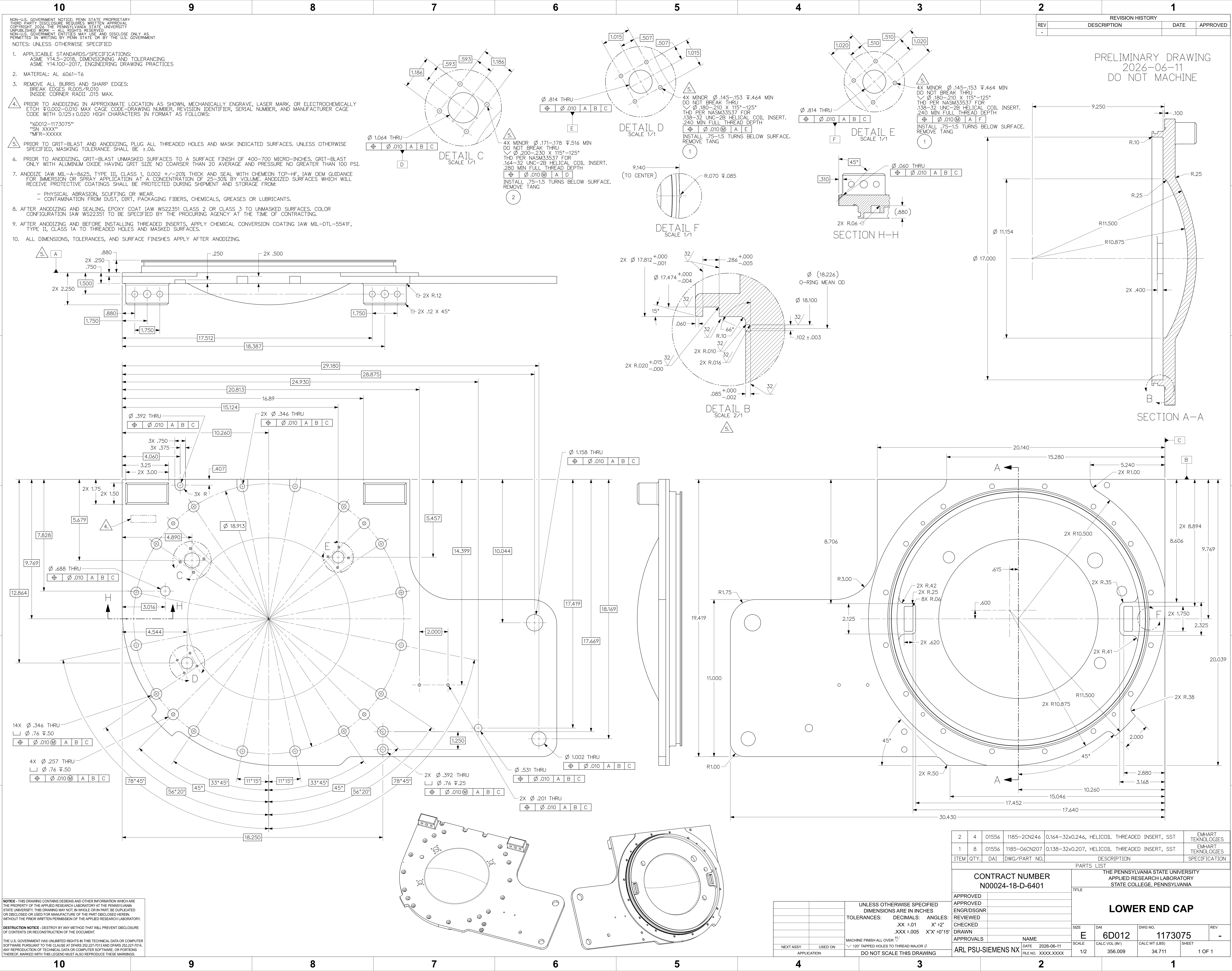
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		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
TOLERANCES:		DECIMALS:	ANGLES:
		.XX $\pm$.01	X° $\pm$ 2°
		.XXX $\pm$.005	X°X' $\pm$ 0°15'
		MACHINE FINISH ALL OVER ∇ 32	
NEXT ASSY		USED ON	
APPLICATION		DO NOT SCALE THIS DRAWING	

1	32	01556	1084--8CN24.0	M8x1.25x24.0 mm, HELICOIL THREADED INSERT, SST	EMHART TEKNOLOGIES
ITEM	QTY.	DAI	DWG/PART NO.	DESCRIPTION	SPECIFICATION
PARTS LIST					
CONTRACT NUMBER N00024-18-D-6401				THE PENNSYLVANIA STATE UNIVERSITY APPLIED RESEARCH LABORATORY STATE COLLEGE, PENNSYLVANIA	
APPROVED				TITLE	
APPROVED				BATTERY VESSEL	
ENGR/DSG NR				SIZE	
REVIEWED				DAI	
CHECKED				DWG NO.	
DRAWN				REV	
APPROVALS				NAME	
ARL PSU-SIEMENS NX				DATE 2026-04-15	
				FILE NO. XXXX.XXXX	
SCALE		CALC VOL (IN ³)		CALC WT (LBS)	
1/4		2746.388		277.385	
				SHEET	
				1 OF 2	





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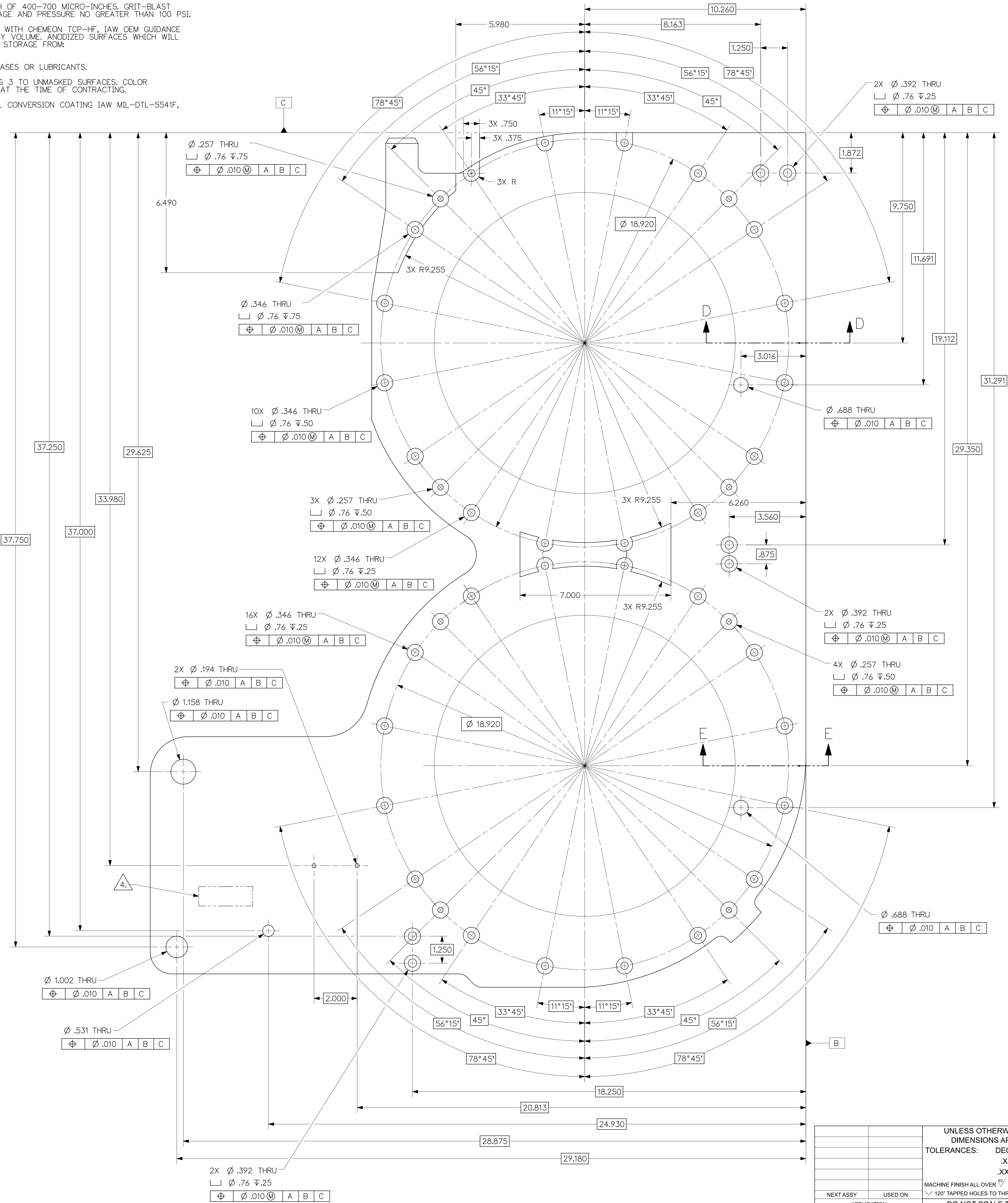
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2	4	01556	1185-20N246	0.164-32x0.246, HELICOIL THREADED INSERT, SST	EMHART TECHNOLOGIES
1	8	01556	1185-06CN207	0.138-32x0.207, HELICOIL THREADED INSERT, SST	EMHART TECHNOLOGIES
ITEM	QTY.	DAI	DWG./PART NO.	DESCRIPTION	SPECIFICATION
PARTS LIST					
CONTRACT NUMBER N00024-18-D-6401			THE PENNSYLVANIA STATE UNIVERSITY APPLIED RESEARCH LABORATORY STATE COLLEGE, PENNSYLVANIA		
APPROVED			TITLE		
APPROVED			ENGR/DSGMR		
REVIEWED			CHECKED		
DRAWN			APPROVALS		
ARL PSU-SIEMENS NX			NAME		
DATE			2026-06-11		
FILE NO.			XXXX-XXXX		
SIZE			DAI		
E			6D012		
SCALE			1/2		
CALC VOL (IN ³)			356.009		
CALC WGT (LBS)			34.711		
SHEET			1 OF 1		

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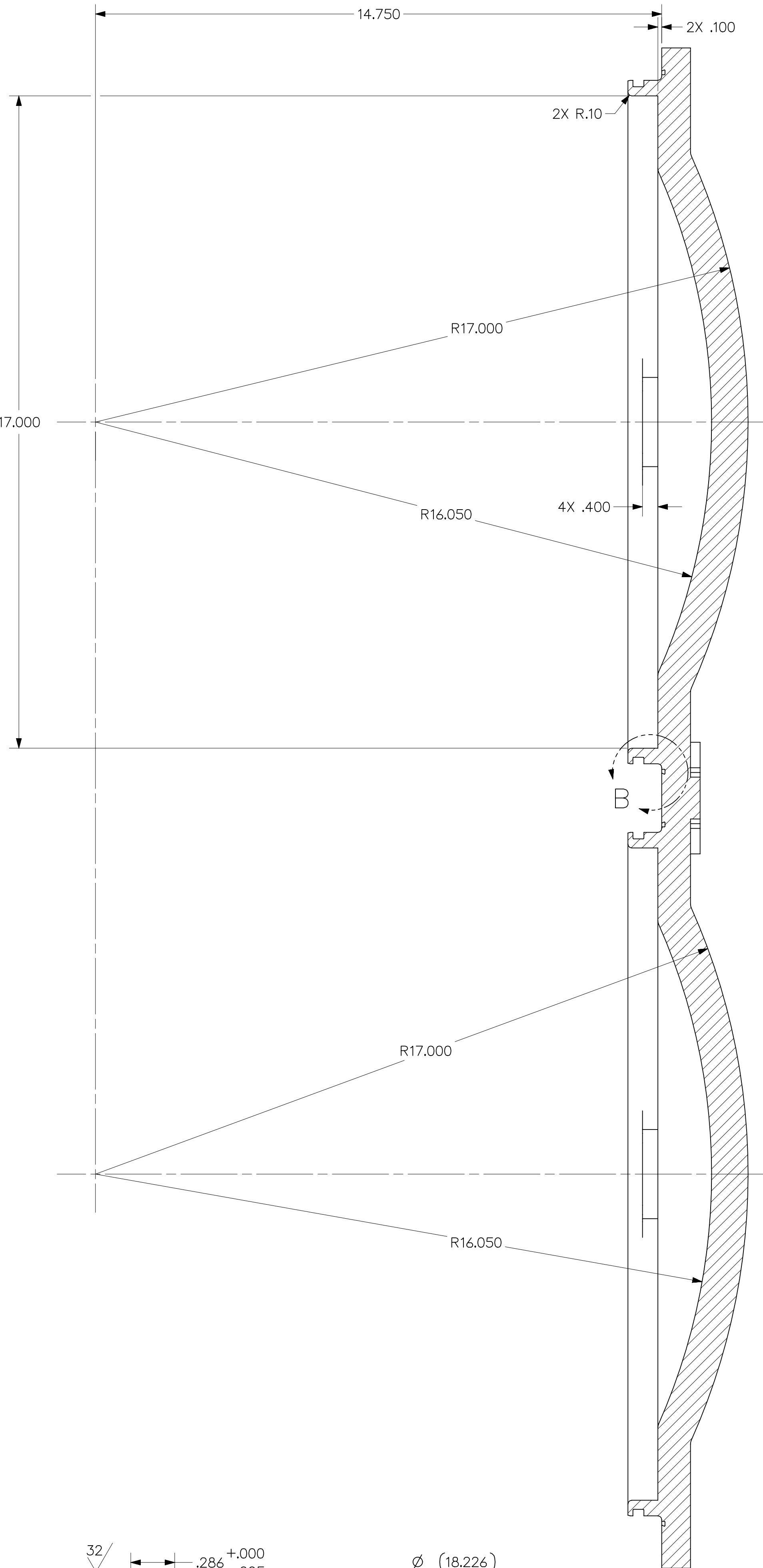
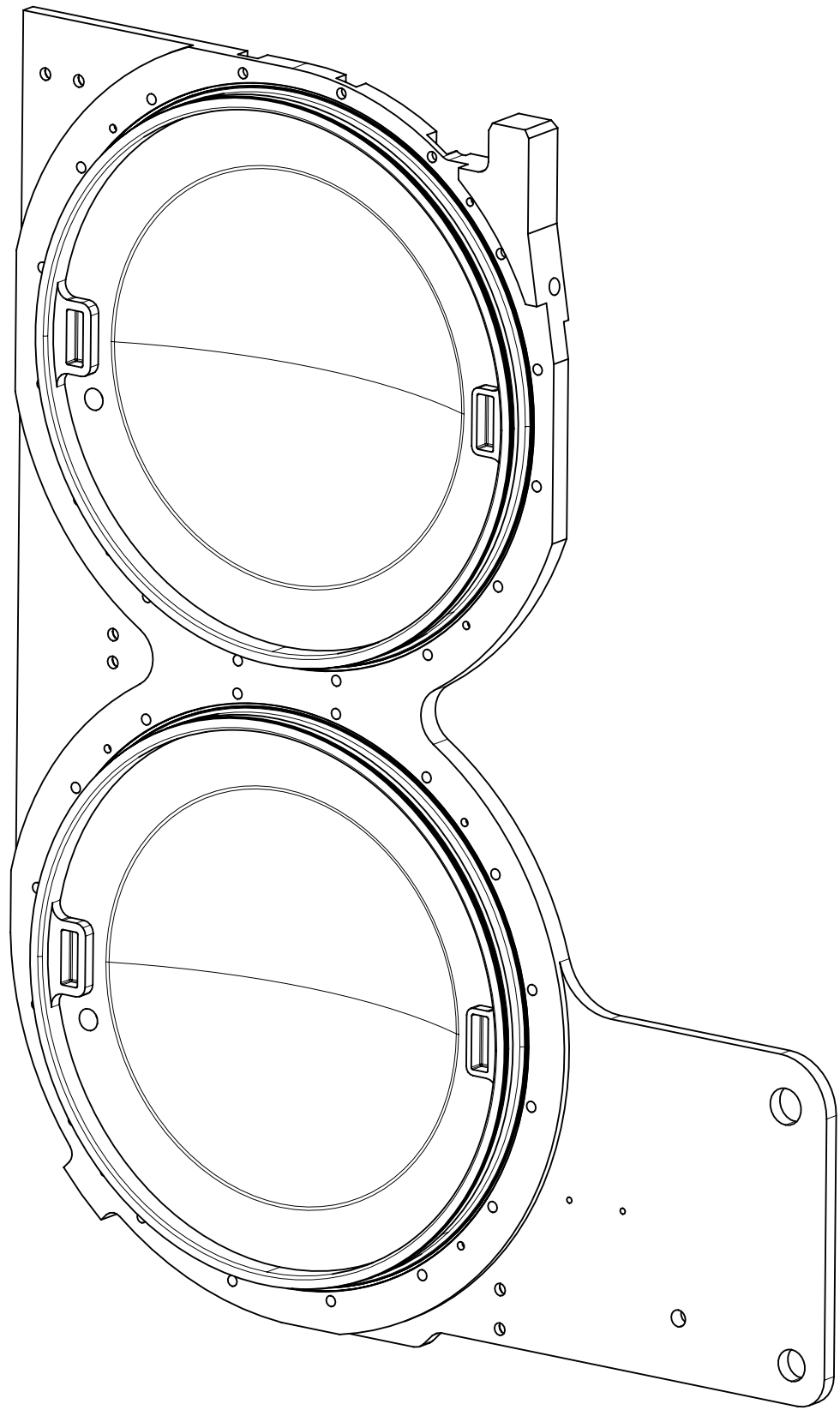
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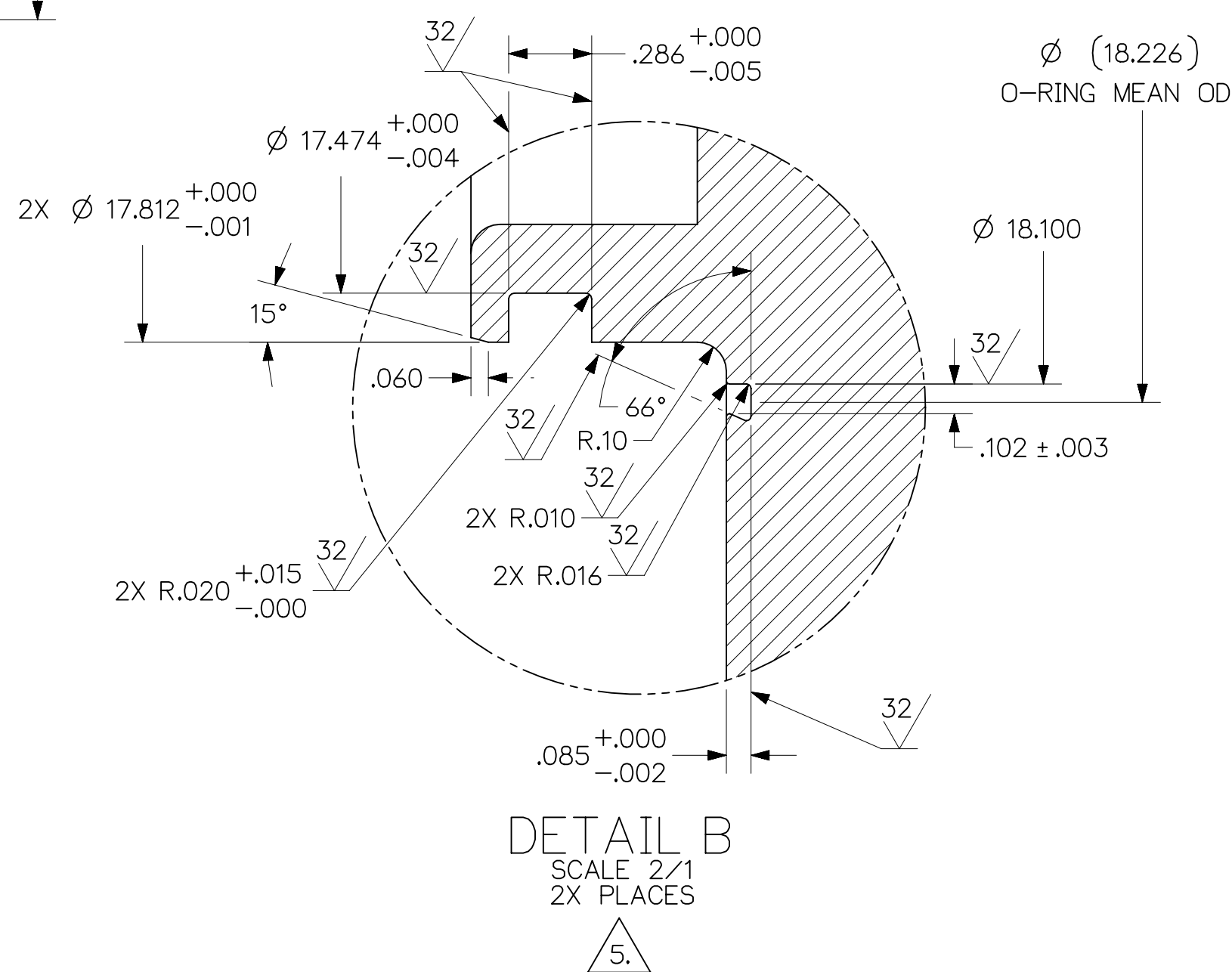
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES: DECIMALS: ANG
		.XX ±.01 X°
		.XXX ±.005 X'X'
		MACHINE FINISH ALL OVER ^{ES}
NEXT ASSY	USED ON	✓ 120° TAPPED HOLES TO THREAD MAJOR Ø
APPLICATION		DO NOT SCALE THIS DRAWING

CONTRACT NUMBER N00024-18-D-6401		THE PENNSYLVANIA STATE UNIVERSITY APPLIED RESEARCH LABORATORY STATE COLLEGE, PENNSYLVANIA			
APPROVED APPROVED ENGR/DSGR REVIEWED CHECKED DRAWN APPROVALS		TITLE DOUBLE END CAP			
NAME ARL PSU-SIEMENS NX		SIZE E	DAI 6D012	DWG NO. 1173085	REV -
DATE 2026-06-11	FILE NO XXXX-XXXX	SCALE 1/2	CALC VOL (IN³) 713.744	CALC WT (LBS) 69.590	SHEET 1 OF 2

PRELIMINARY DRAWING
2026-06-11
DO NOT MACHINE



SECTION A-A



DETAIL F
SCALE 1/1
2X PLACES

DETAIL B
SCALE 2/1
2X PLACES
5.

SIZE	DAI	DWG NO.	REV
E	6D012	1173085	-
SCALE			SHEET
1/1			2 OF 2