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SEE DETAIL A

DETAIL A
SCALE 1:5

---	INCONEL 718 (N07718) ASTM B637	SEGMENT ATTACHMENT SCREW - CONCEPT 02	0000063182	I	5
---	SS 316 (S31600)	SEPARABLE WASHER	0000067458	I	4
MCMaster-CARR WWW.MCMaster.COM	SS 18-8 DIN 912, ISO 4762	SHCS M4x0.7 X 20	91292A121	8	3
---	---	CROWN/SEGMENT WATER INTERFACE	0000084338	I	2
---	---	TARGET SEGMENT WELDMENT, TVP COATING	0000064918	I	1
VENDOR I	MATERIAL SPECIFICATION	DESCRIPTION	PART NUMBER	QTY	FIND NO.

NEXT USED ASSEMBLY
0000004343

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REVISION BLOCK		
REV	DESCRIPTION OF CHANGE	DATE
0	---	

NOTES:

I VENDORS AND VENDOR SPECIFIC ITEMS MAY NOT BE SUBSTITUTED WITHOUT PRIOR ENGINEERING APPROVAL.

WIP-NOT APPROVED FOR CONSTRUCTION

GRADE		UNITS: MILLIMETERS		HIGH FLUX ISOTOPE REACTOR SPALLATION NEUTRON SOURCE			
1-SERIOUS		DEFAULT TOLERANCES					
FACILITY		0-6 ±0.1 					

NEXT USED ASSEMBLY

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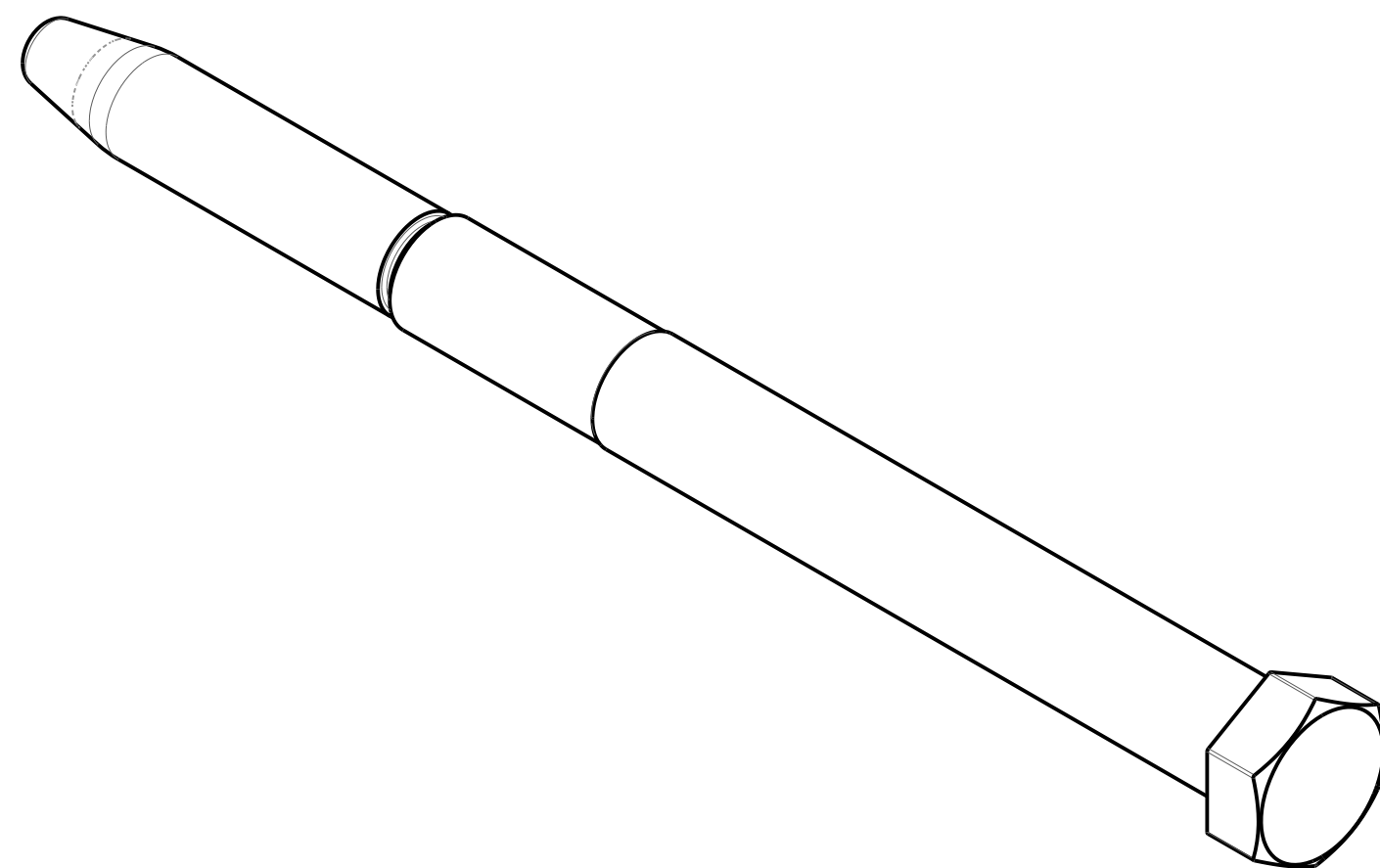
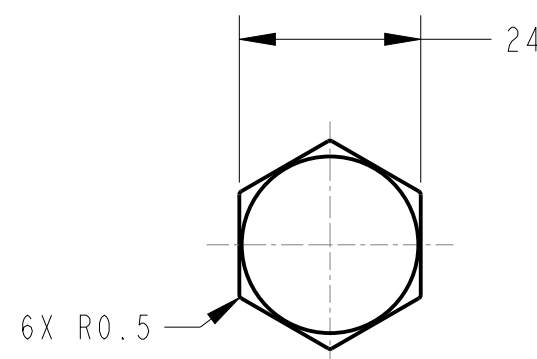
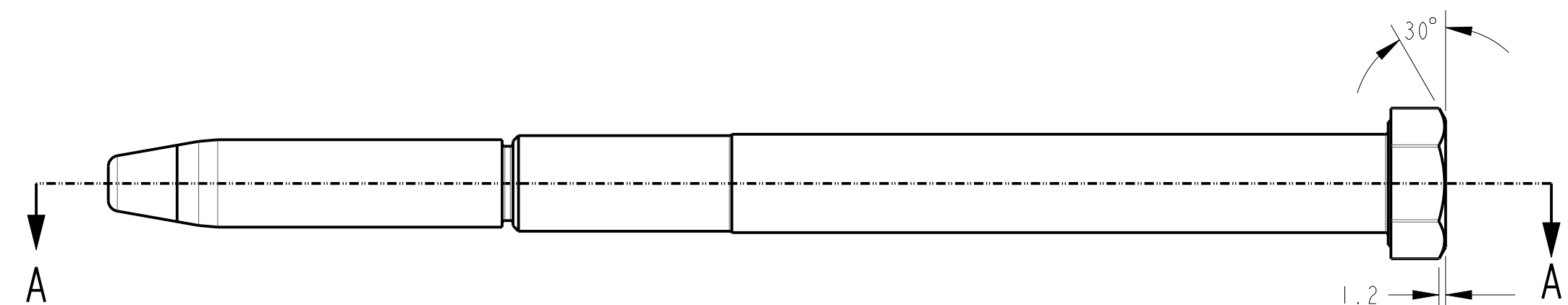
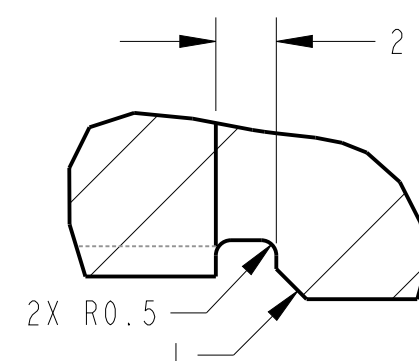
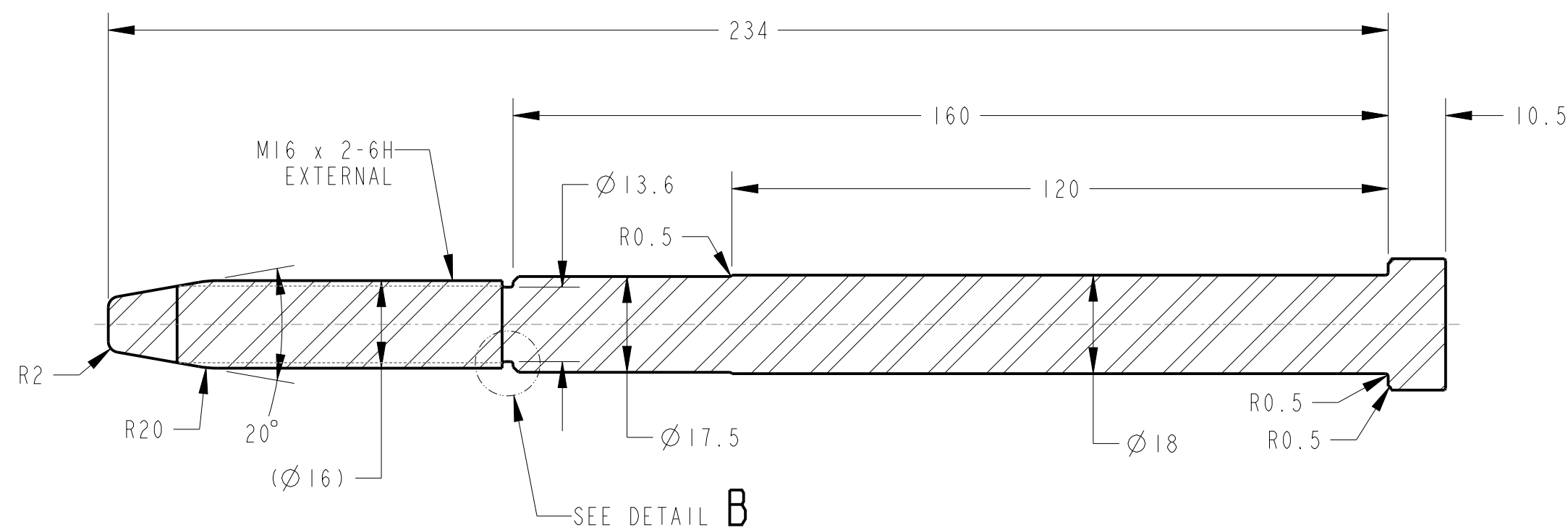
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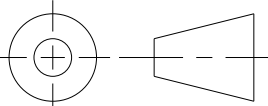
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REVISION BLOCK		
REV	DESCRIPTION OF CHANGE	DATE
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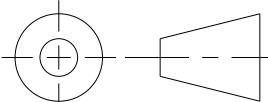
NOTES:

11.



		WIP-NOT APPROVED FOR CONSTRUCTION			
		INCONEL 718 (N07718)		ASTM B637	
		MATERIAL		SPECIFICATION	
GRADE		UNITS: MILLIMETERS DEFAULT TOLERANCES 0-6 ±0.1 >6-120 ±0.2 >120 ±0.5 ANGULAR ±0.5°		 OAK RIDGE National Laboratory HIGH FLUX ISOTOPE REACTOR SPALLATION NEUTRON SOURCE	
1-SERIOUS					
FACILITY					
STS					
BUILDING					
8800-ST5 TARGET BUILDING II		BREAK ALL SHARP EDGES EXCEPT AS NOTED: 15 MAX		---	
MAJOR SYSTEM				---	
TARGET SYSTEMS		SURFACE ROUGHNESS: 3.2 Ra U.N.O.		SEGMENT ATTACHMENT SCREW	
SYSTEM					
TARGET ASSEMBLIES		DRAFTING STD: ASME Y14.100 GDT: ASME Y14.5 WELD SYMBOLS: AWS A2.4		DRAWING NUMBER	
SUBSYSTEM				0000063182	
TARGET SEGMENT				REV	
SUB-SUBSYSTEM				0	
XXX		THIRD ANGLE PROJECTION 		SIZE	SCALE
				D	1:1
				WEIGHT	
				0.5 KG	
				SHEET	
				1 of 1	

GRADE	1-SERIOUS
FACILITY	
BUILDING	STS
MAJOR SYSTEM	8800-STS TARGET BUILDING II
SYSTEM	TARGET SYSTEMS
SUBSYSTEM	TARGET ASSEMBLIES
SUB-SUBSYSTEM	TARGET SEGMENT
	XXX

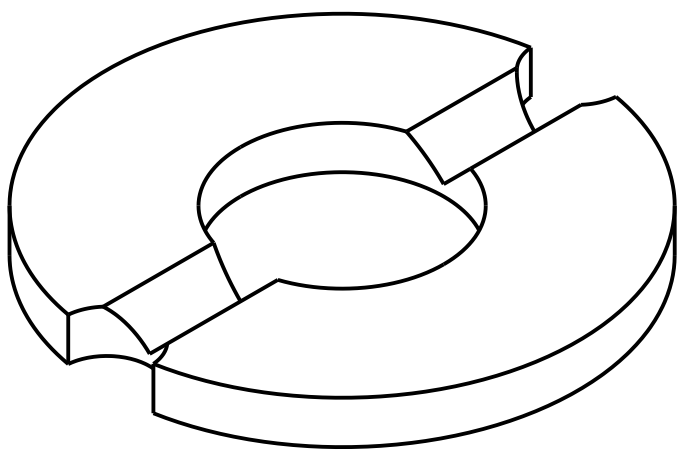
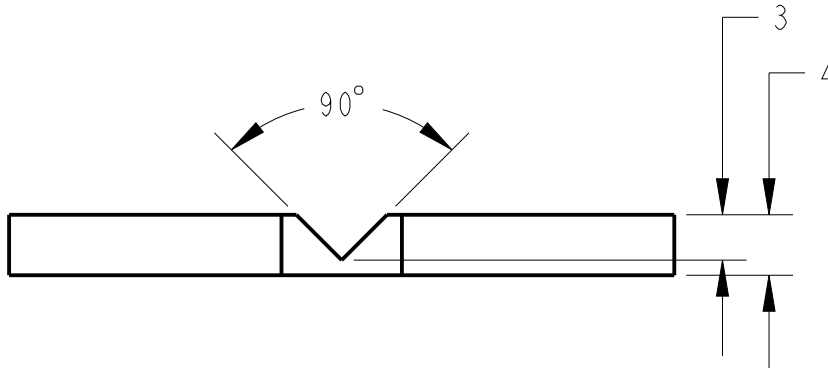
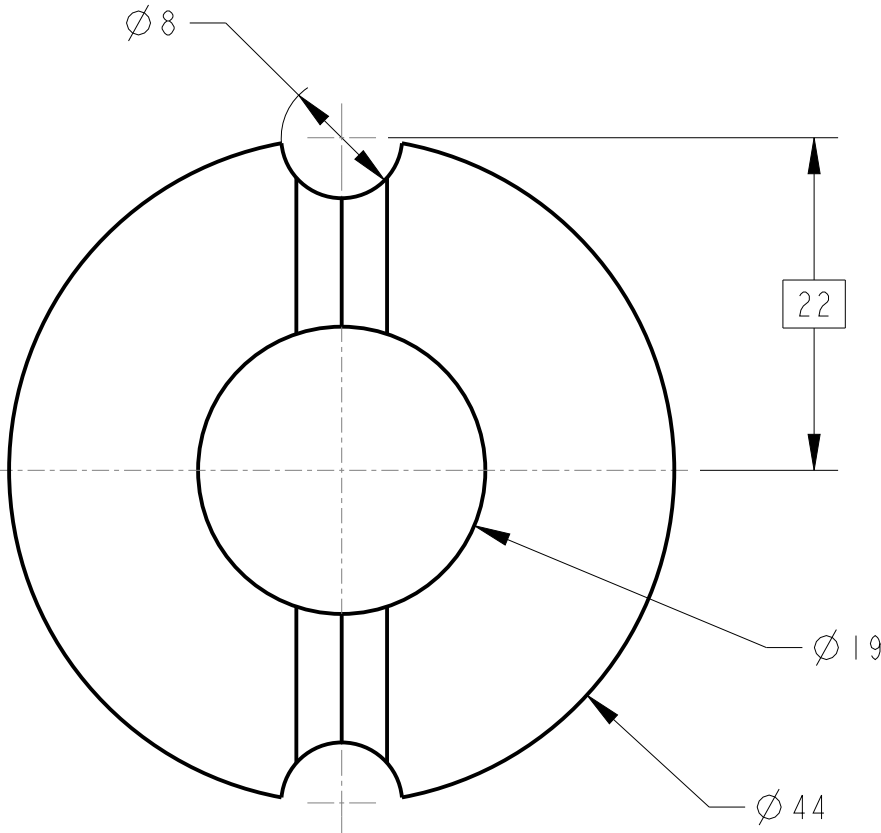
UNITS: MILLIMETERS DEFAULT TOLERANCES O-6 ±0.1 >6-120 ±0.2 >120 ±0.5 ANGULAR ±0.5°	
BREAK ALL SHARP EDGES EXCEPT AS NOTED: 1.5 MAX	
SURFACE ROUGHNESS: 3.2 Ra U.N.O.	
DRAFTING STD: ASME Y14.100 GDT: ASME Y14.5 WELD SYMBOLS: AWS A2.4	
THIRD ANGLE PROJECTION	

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NEXT USED ASSEMBLY

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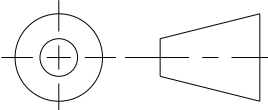
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REVISION BLOCK		
REV	DESCRIPTION OF CHANGE	DATE
0	---	

NOTES:
1.

WIP-NOT APPROVED FOR CONSTRUCTION			
SS 316 (S31600)		---	
MATERIAL		SPECIFICATION	
UNITS: MILLIMETERS DEFAULT TOLERANCES 0-6 ±0.1 ≥6-120 ±0.2 ≥120 ±0.5 ANGULAR ±0.5°	OAK RIDGE National Laboratory HIGH FLUX ISOTOPE REACTOR SPALLATION NEUTRON SOURCE		
	--- ---		
	SEPARABLE WASHER		

BREAK ALL SHARP EDGES EXCEPT AS NOTED: 15 MAX			
SURFACE ROUGHNESS: 3.2 Ra U.N.O.			
DRAFTING STD: ASME Y14.100 GDT: ASME Y14.5 WELD SYMBOLS: AWS A2.4		DRAWING NUMBER	
		0000067458	
		REV	
		0	
THIRD ANGLE PROJECTION		SIZE SCALE	WEIGHT
		D 2:1	0.04 KG
		SHEET	
		1 of 1	

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NEXT USED ASSEMBLY
0000063878

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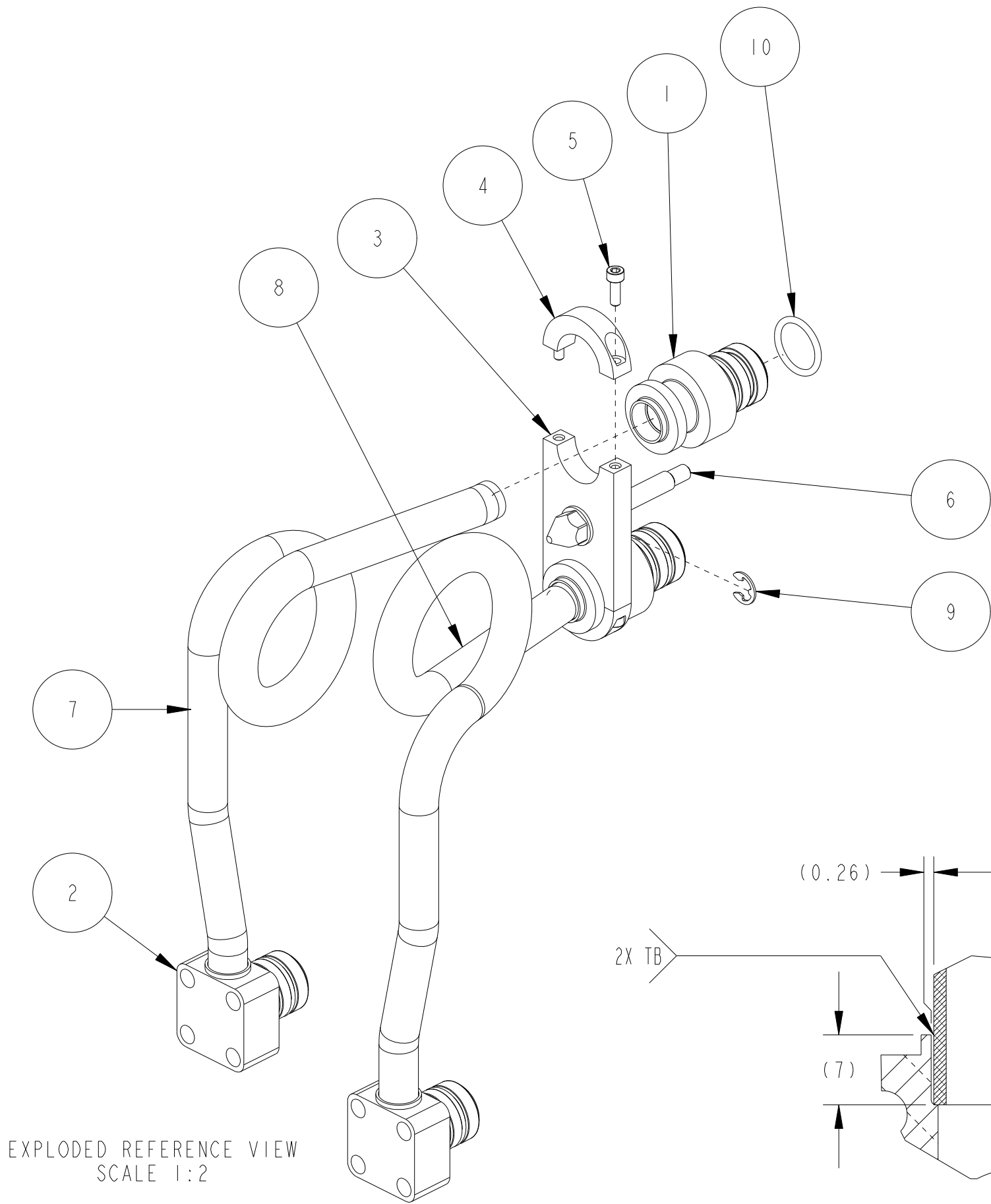
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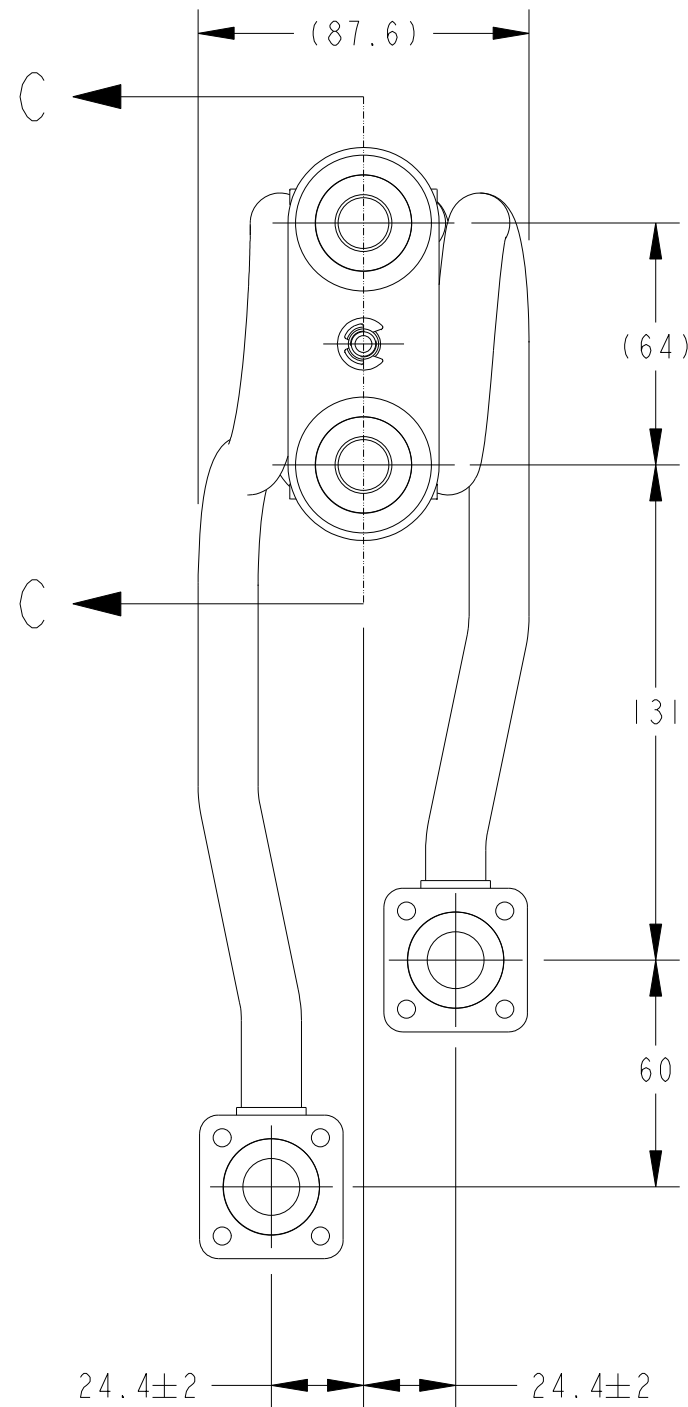
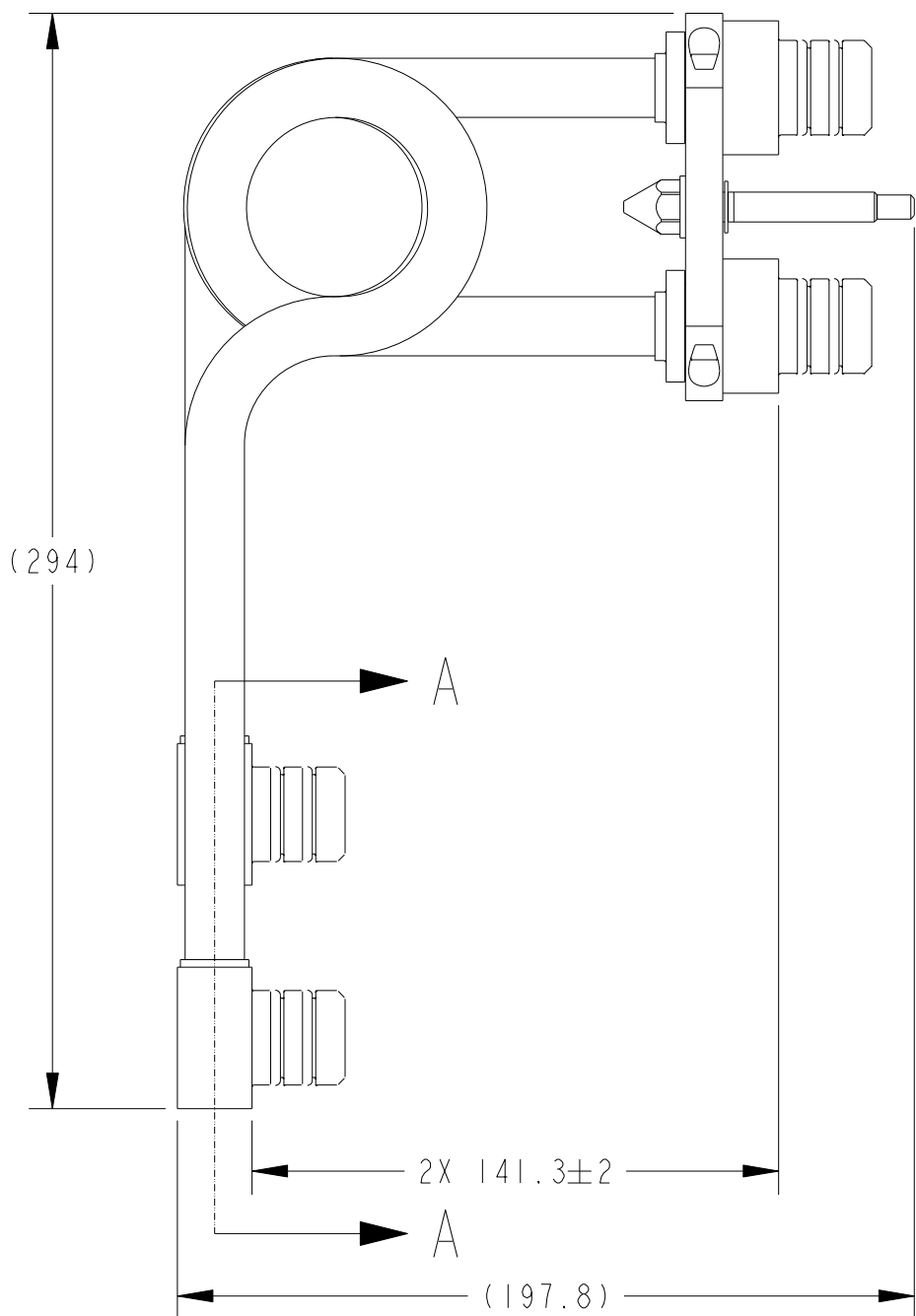
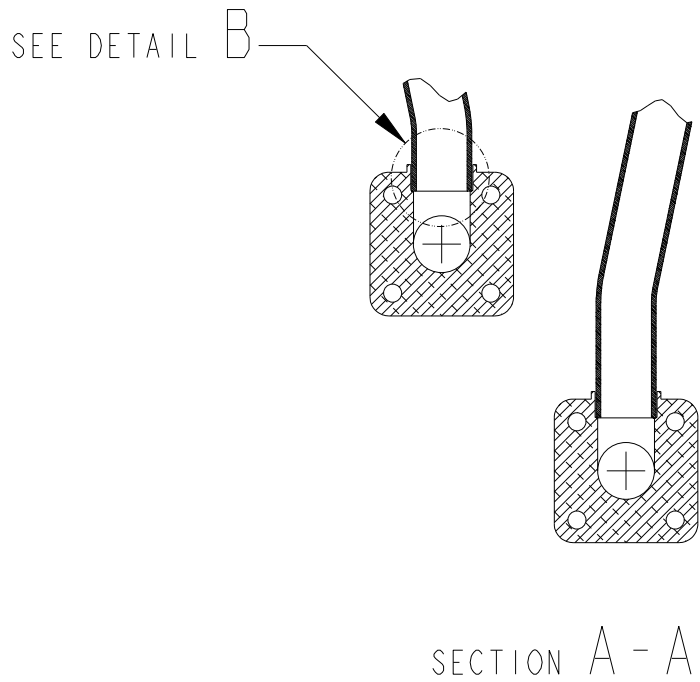
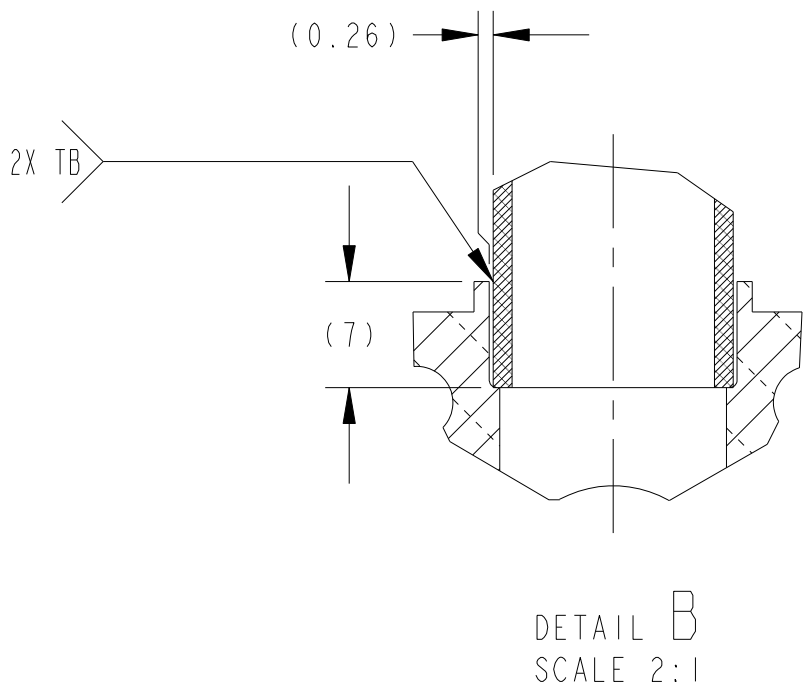
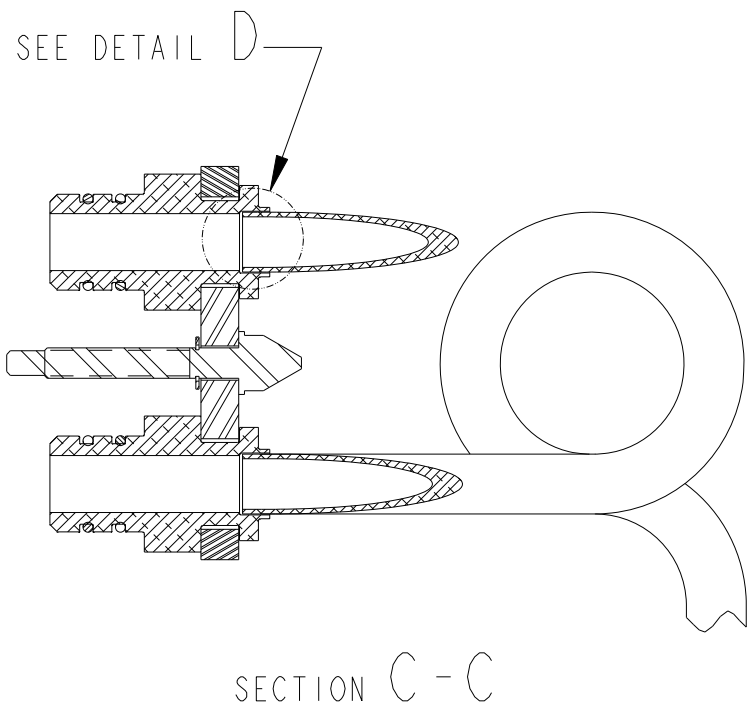
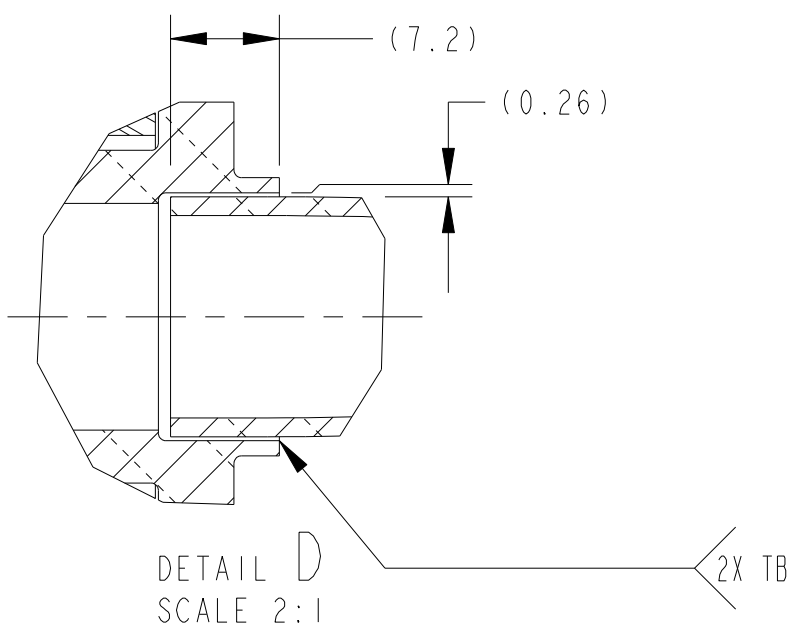
REVISION BLOCK		
REV	DESCRIPTION OF CHANGE	DATE
0	---	

NOTES:

- 1
- VENDORS AND VENDOR SPECIFIC ITEMS MAY NOT BE SUBSTITUTED WITHOUT PRIOR ENGINEERING APPROVAL.
2. THE SELLER SHALL SUBMIT TO THE COMPANY MATERIAL CERTIFICATIONS FOR ALL MATERIALS USED IN THIS FABRICATION. CERTIFICATIONS MUST BE APPROVED BY THE COMPANY PRIOR TO SHIPPING.
3. GENERAL REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017670.
4. MACHINING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017673.
5. BRAZING REQUIREMENTS: add something appropriate here.
6. LEAK TEST REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017680. TEST PRESSURE: 150 PSI
7. PACKAGING AND SHIPPING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENTS 0000017727 AND 0000017729.

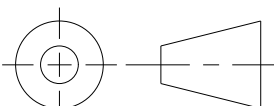


EXPLODED REFERENCE VIEW
SCALE 1:2



---	ETHYLENE PROPYLENE (EPDM)	2-117 RADIATION-HARDENED O-RING	0000084505	8	10
---	---	---	---	---	---
MCMaster-CARR WWW.MCMaster.COM	ALLOY STEEL DIN 6799	STS-98543A115	98543A115	1	9
---	AL 3003 (A93003) ASTM B210	WATER RETURN TUBE	0000084342	1	8
---	AL 3003 (A93003) ASTM B210	WATER FEED TUBE	0000084343	1	7
---	NITRONIC 60 (S21800) ASTM A276, SAE AMS5848	CLAMP SCREW	0000084508	1	6
MCMaster-CARR WWW.MCMaster.COM	SS 18-8 DIN 912, ISO 4762	SHCS M4x0.7 X 12	91292A117	4	5
---	SS 316 (S31600) ASTM A276	CROWN PLUG CLAMP B	0000084506	2	4
---	SS 316 (S31600) ASTM A276	CROWN PLUG CLAMP A	0000084507	1	3
---	AL 6061-T6 (A96061) ASTM B209	SEGMENT SEAL PLUG	0000084339	2	2
---	AL 6061-T6 (A96061) ASTM B221	CROWN SEAL PLUG	0000084503	2	1
VENDOR 1	MATERIAL SPECIFICATION	DESCRIPTION	PART NUMBER	QTY	FIND NO.

GRADE
1-SERIOUS
FACILITY
STS
BUILDING
8800-ST5 TARGET BUILDING II
MAJOR SYSTEM
TARGET SYSTEMS
SYSTEM
TARGET ASSEMBLIES
SUBSYSTEM
TARGET SEGMENT
SUB-SUBSYSTEM
XXX

WIP-NOT APPROVED FOR CONSTRUCTION				
UNITS: MILLIMETERS DEFAULT TOLERANCES 0-6 ±0.1 ‣6-120 ±0.2 ‣120 ±0.5 ANGULAR ±0.5°	 OAK RIDGE National Laboratory		HIGH FLUX ISOTOPE REACTOR	SPALLATION NEUTRON SOURCE
	BREAK ALL SHARP EDGES EXCEPT AS NOTED: 15 MAX		---	
SURFACE ROUGHNESS: 3.2 Ra U.N.O.	CROWN/SEGMENT WATER INTERFACE		---	
	DRAFTING STD: ASME Y14.100 GDT: ASME Y14.5 WELD SYMBOLS: AWS A2.4		DRAWING NUMBER	
THIRD ANGLE PROJECTION	0000084338		REV	
	0		0	
	SIZE	SCALE	WEIGHT	SHEET
	D	1:2	0.7 KG	1 of 1

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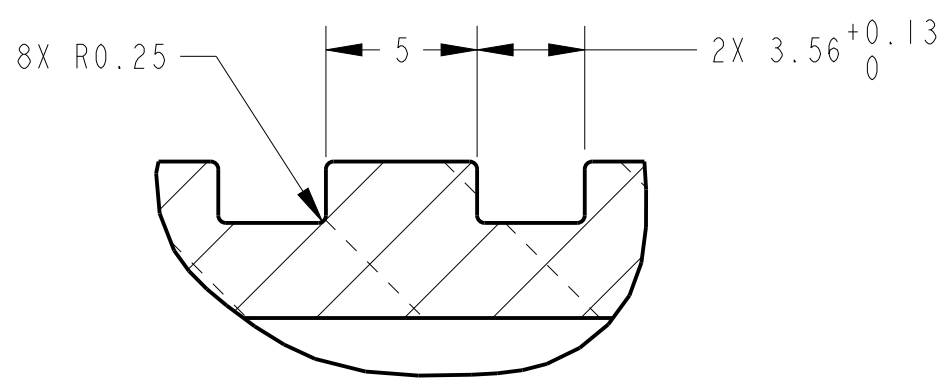
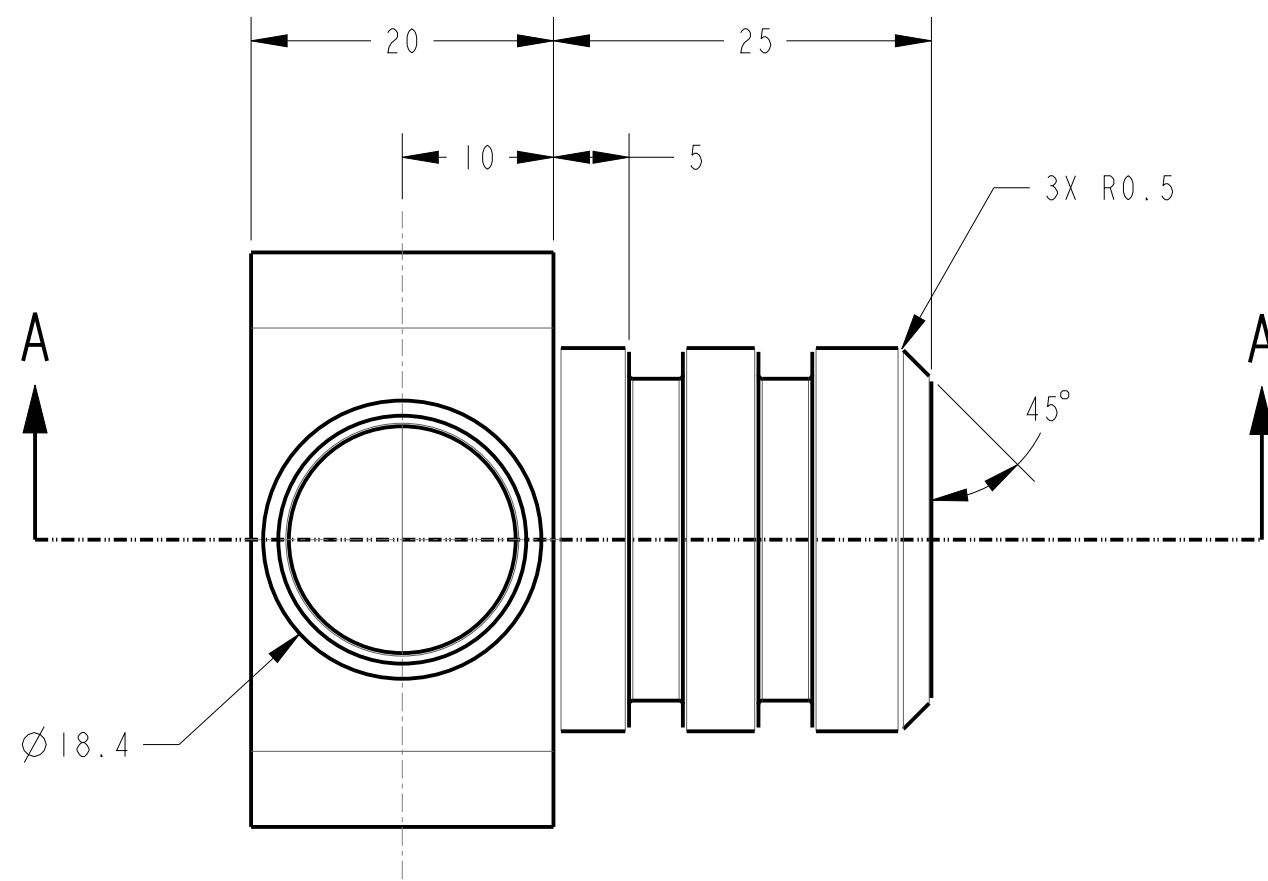
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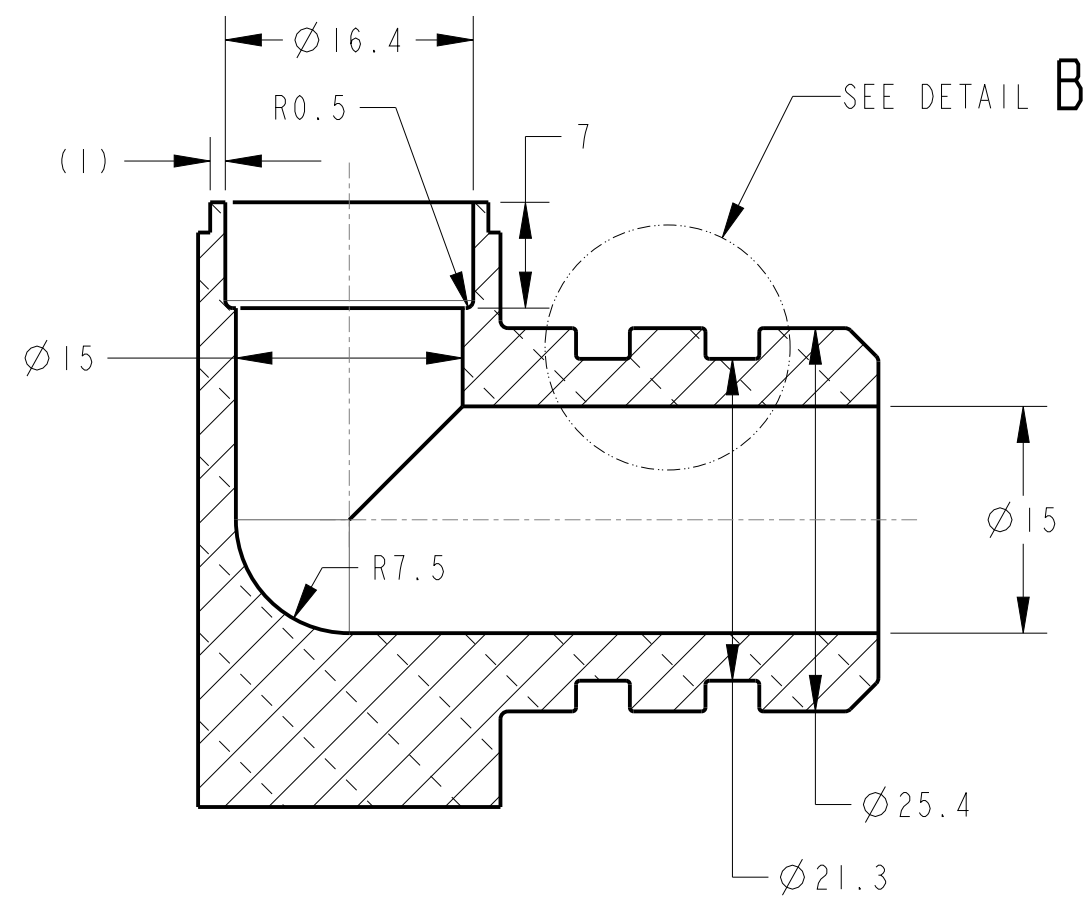
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B

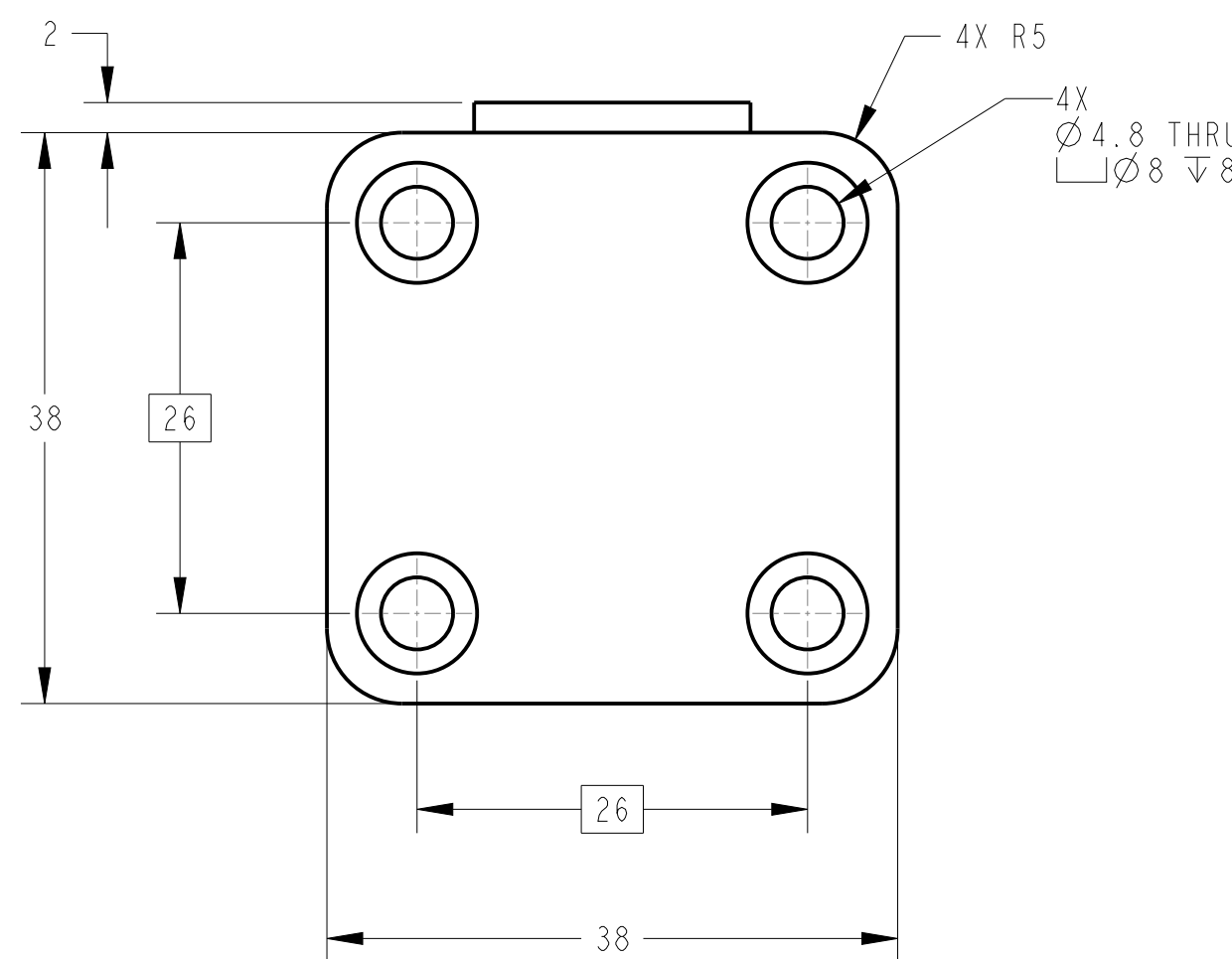
A



DETAIL B
SCALE 4:1



SECTION A-A
SCALE 2:1

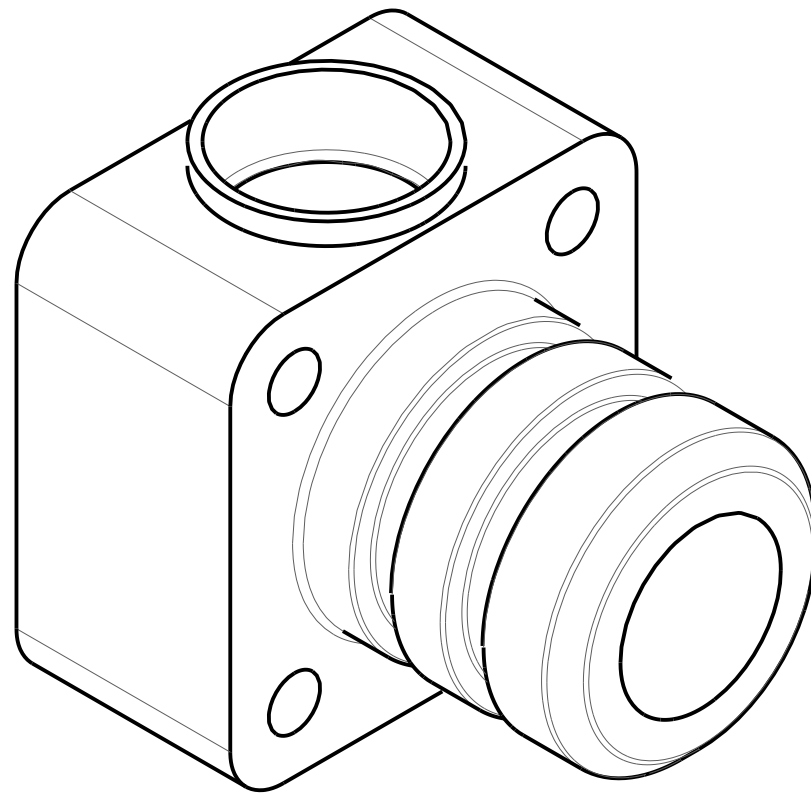


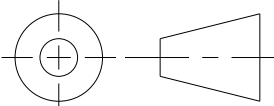
NEXT USED ASSEMBLY
00000084338

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REVISION BLOCK		
REV	DESCRIPTION OF CHANGE	DATE
0	---	

NOTES:
1.



WIP-NOT APPROVED FOR CONSTRUCTION			
AL 6061-T6 (A96061)		ASTM B209	
MATERIAL		SPECIFICATION	
UNITS: MILLIMETERS DEFAULT TOLERANCES 0-6 ±0.1 ≥6-120 ±0.2 ≥120 ±0.5 ANGULAR ±0.5°		 OAK RIDGE National Laboratory HIGH FLUX ISOTOPE REACTOR SPALLATION NEUTRON SOURCE	
BREAK ALL SHARP EDGES EXCEPT AS NOTED: 15 MAX			
SURFACE ROUGHNESS: 3.2 Ra U.N.O.			
DRAFTING STD: ASME Y14.100 GDT: ASME Y14.5 WELD SYMBOLS: AWS A2.4		SEGMENT SEAL PLUG	
		DRAWING NUMBER	
		0000084339	
THIRD ANGLE PROJECTION 		SIZE SCALE	WEIGHT
		D 43:1600	0.08 KG
		SHEET	
		1 of 1	

GRADE	1-SERIOUS
FACILITY	STS
BUILDING	8800-STG TARGET BUILDING II
MAJOR SYSTEM	TARGET SYSTEMS
SYSTEM	TARGET ASSEMBLIES
SUBSYSTEM	TARGET SEGMENT
SUB-SUBSYSTEM	XXX

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NEXT USED ASSEMBLY
0000084338

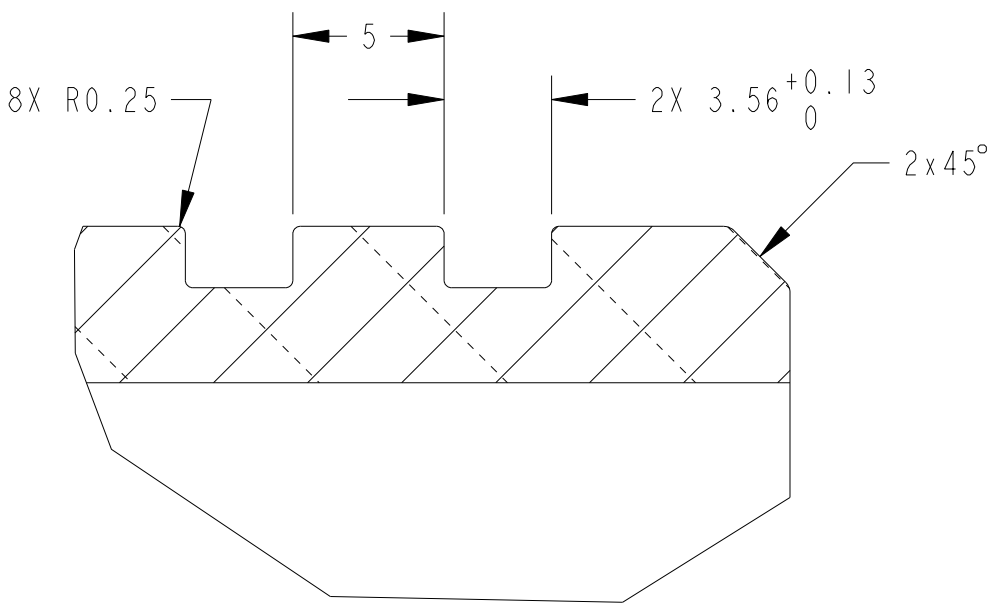
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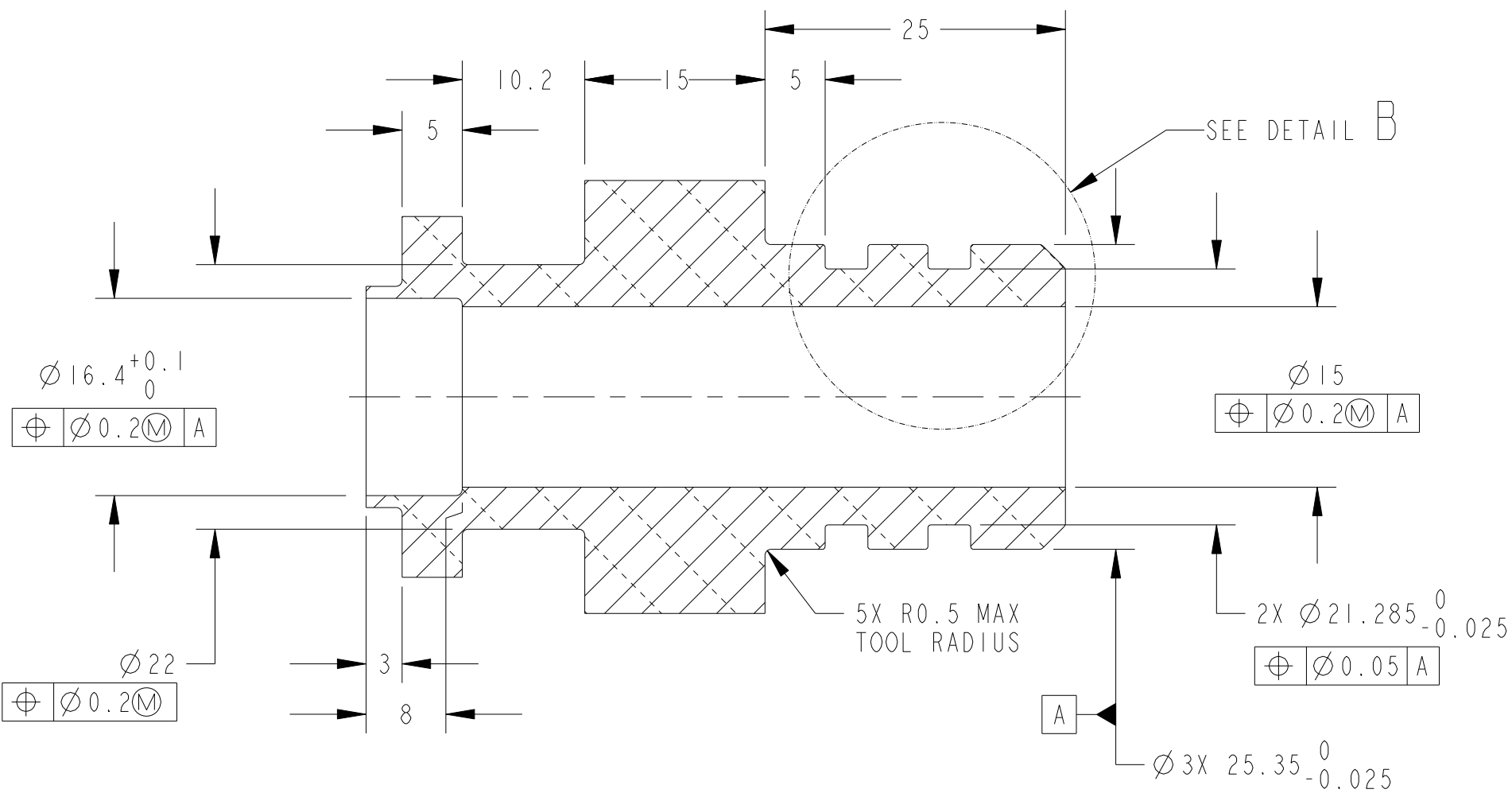
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REVISION BLOCK		
REV	DESCRIPTION OF CHANGE	DATE
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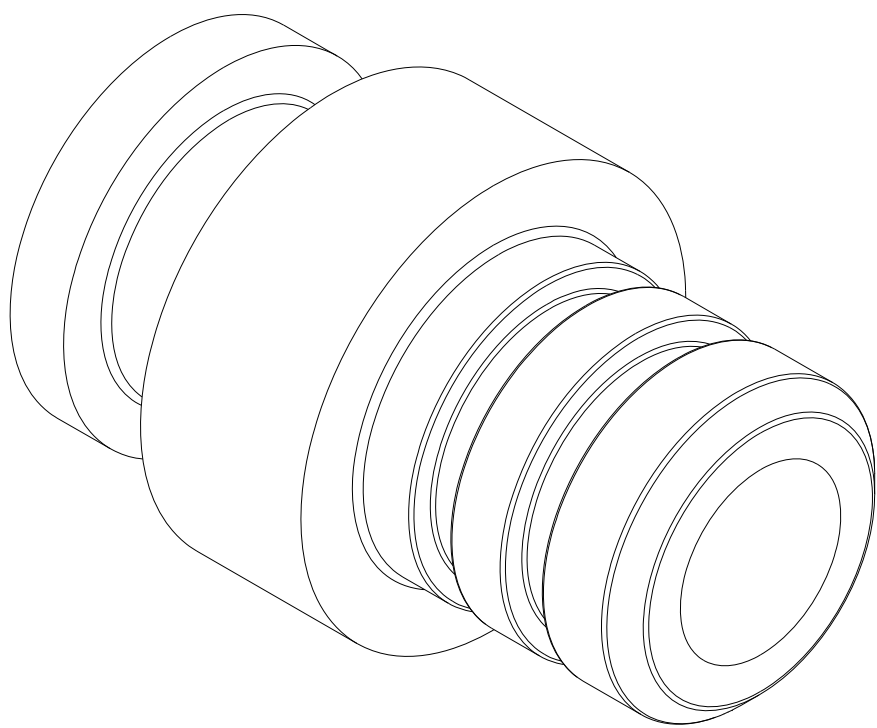
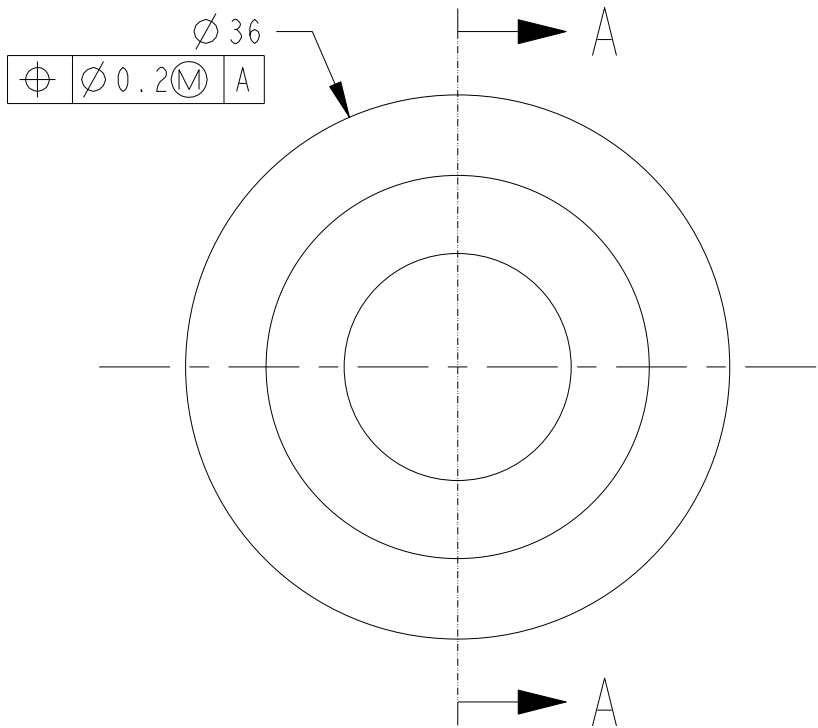
NOTES:
1.



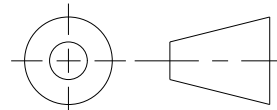
DETAIL B
SCALE 4:1

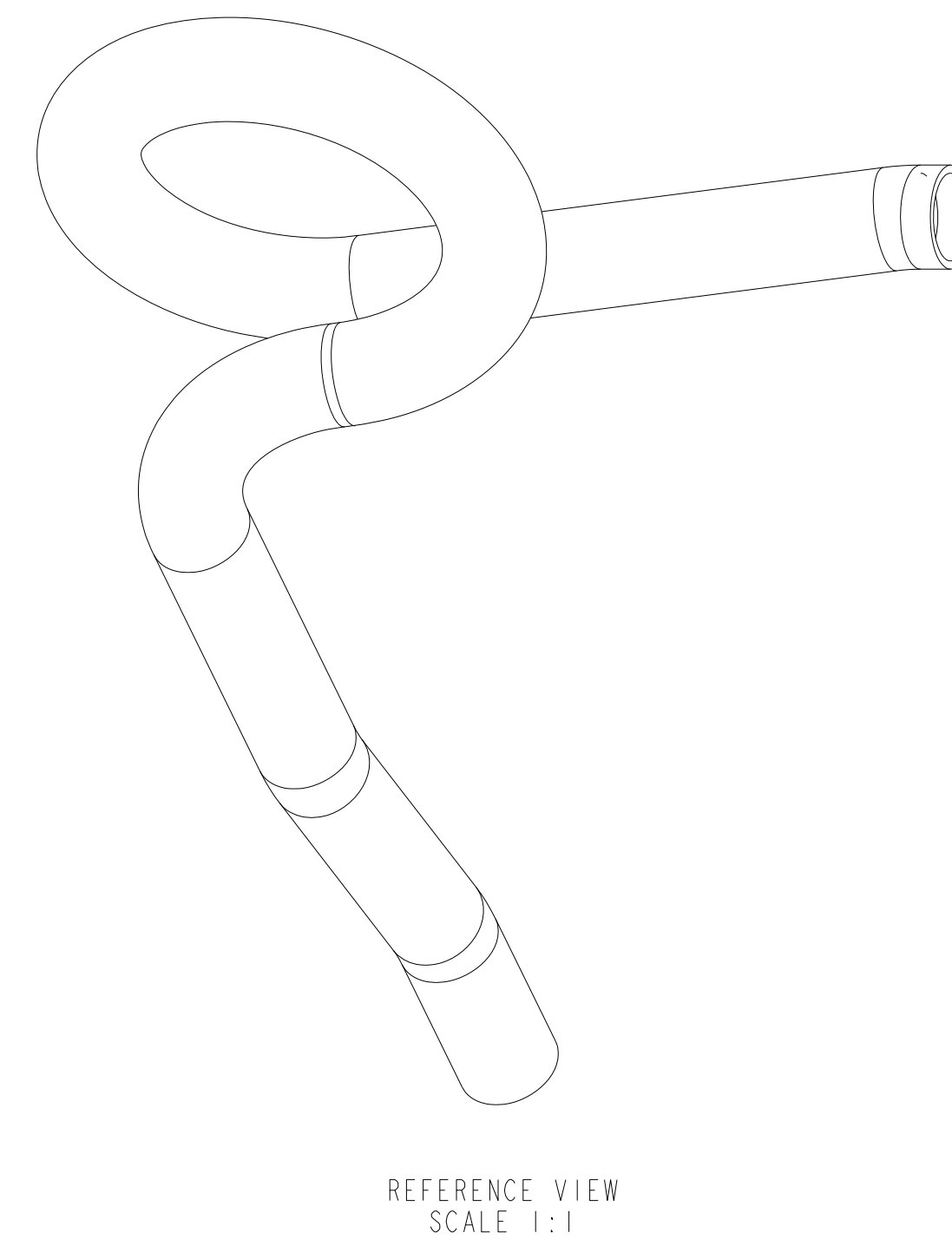
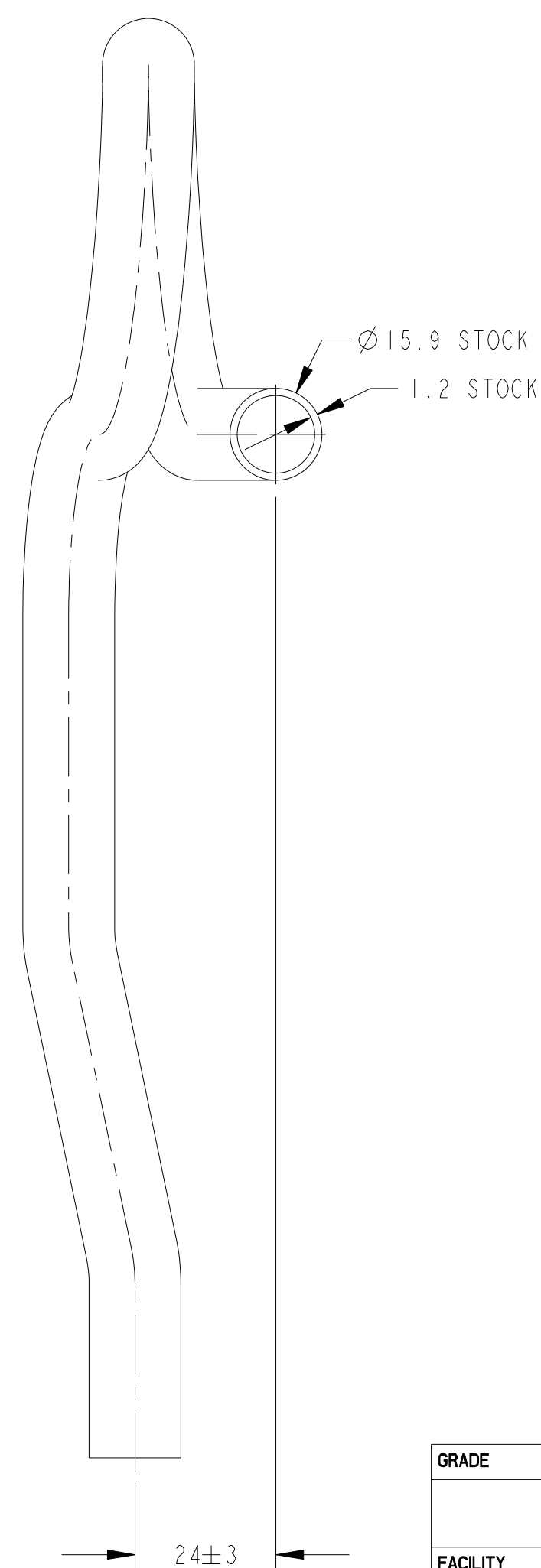
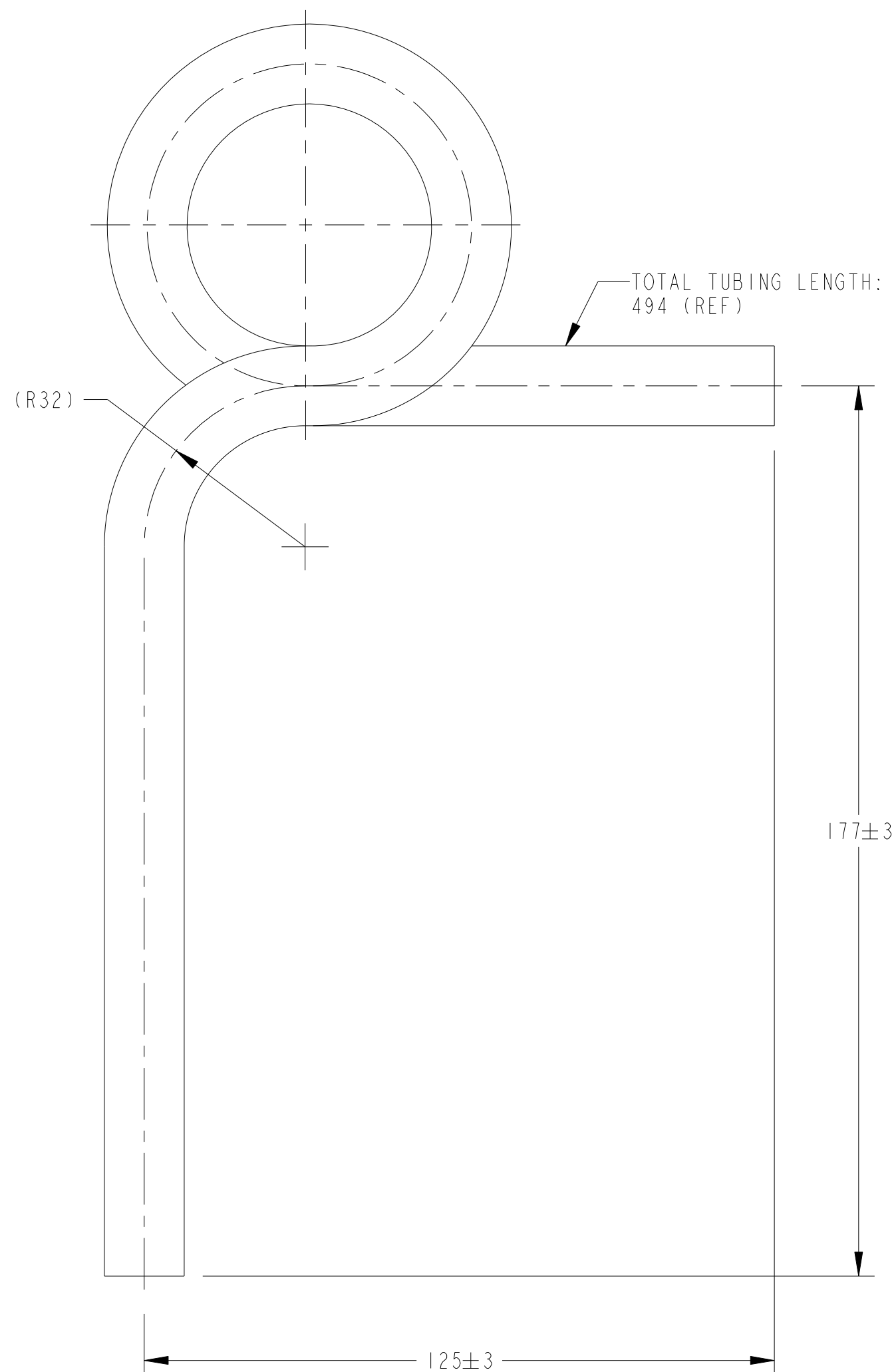
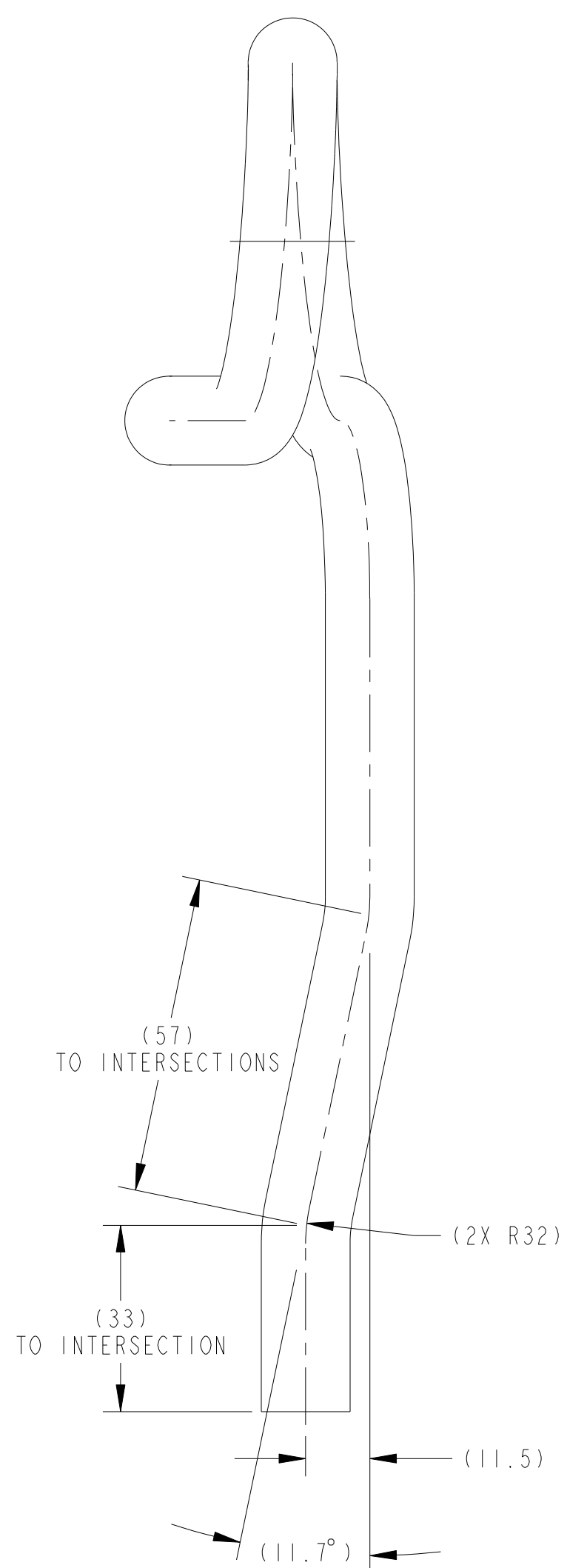
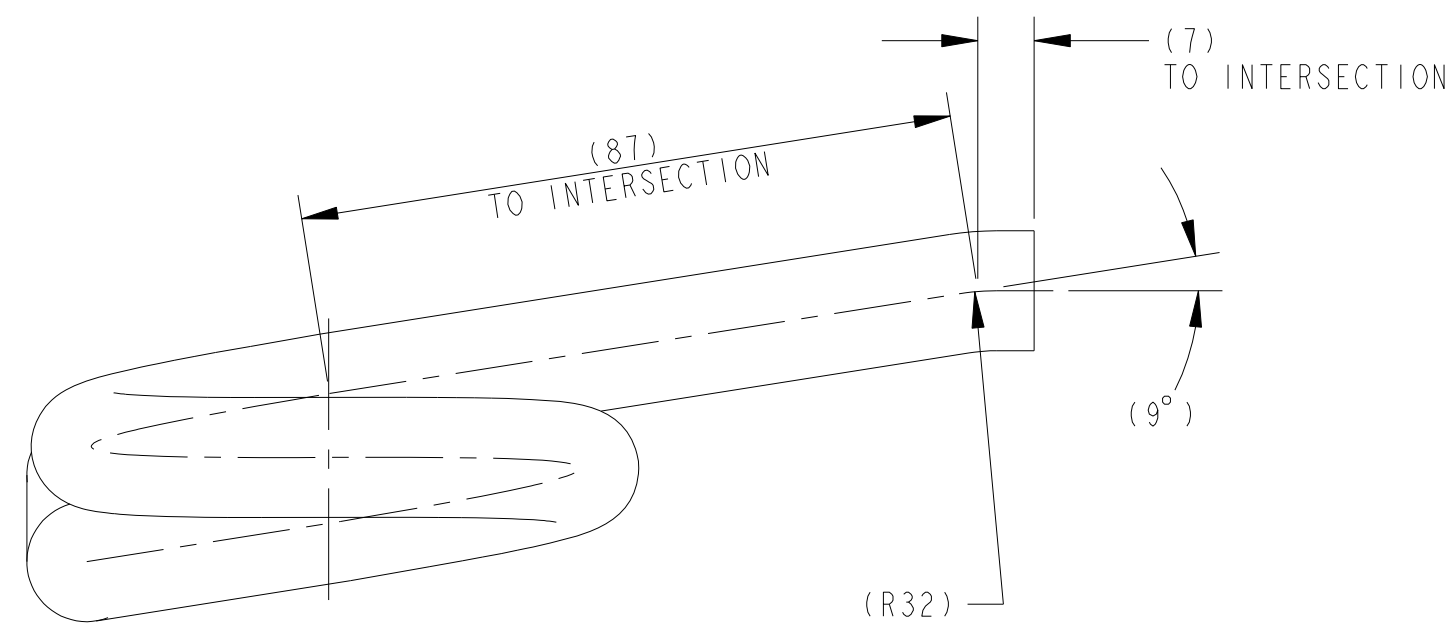


SECTION A - A



SCALE 2:1

WIP-NOT APPROVED FOR CONSTRUCTION									
AL 6061-T6 (A96061)			ASTM B221						
MATERIAL			SPECIFICATION						
GRADE		UNITS: MILLIMETERS		OAK RIDGE National Laboratory HIGH FLUX ISOTOPE REACTOR SPALLATION NEUTRON SOURCE					
1-SERIOUS		DEFAULT TOLERANCES							
FACILITY		0-6 ±0.1		--- --- CROWN SEAL PLUG					
STS		.06-120 ±0.2							
BUILDING		.120 ±0.5							
8800-STG TARGET BUILDING II		ANGULAR ±0.5°							
MAJOR SYSTEM		BREAK ALL SHARP EDGES EXCEPT AS NOTED: 15 MAX		DRAWING NUMBER 0000084503 REV 0					
TARGET SYSTEMS		SURFACE ROUGHNESS: 3.2 Ra U.N.O.							
SYSTEM		DRAFTING STD: ASME Y14.100							
TARGET ASSEMBLIES		GDT: ASME Y14.5							
SUBSYSTEM		WELD SYMBOLS: AWS A2.4		SIZE SCALE WEIGHT SHEET					
TARGET SEGMENT		THIRD ANGLE PROJECTION							
SUB-SUBSYSTEM		XXX							
				D 2:1		0.07 KG		1 of 1	



NEXT USED ASSEMBLY
0000084338

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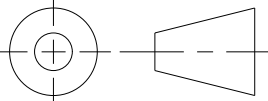
THIS DRAWING IS THE PROPERTY OF OAK RIDGE NATIONAL LABORATORY.

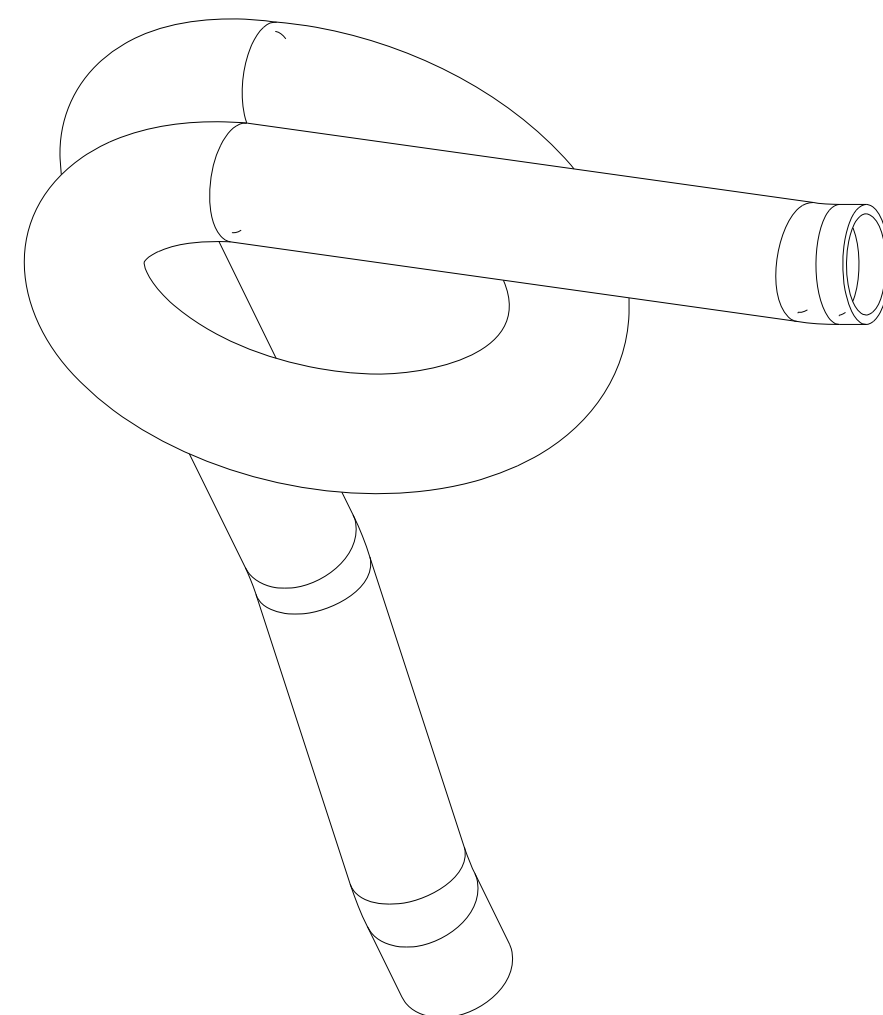
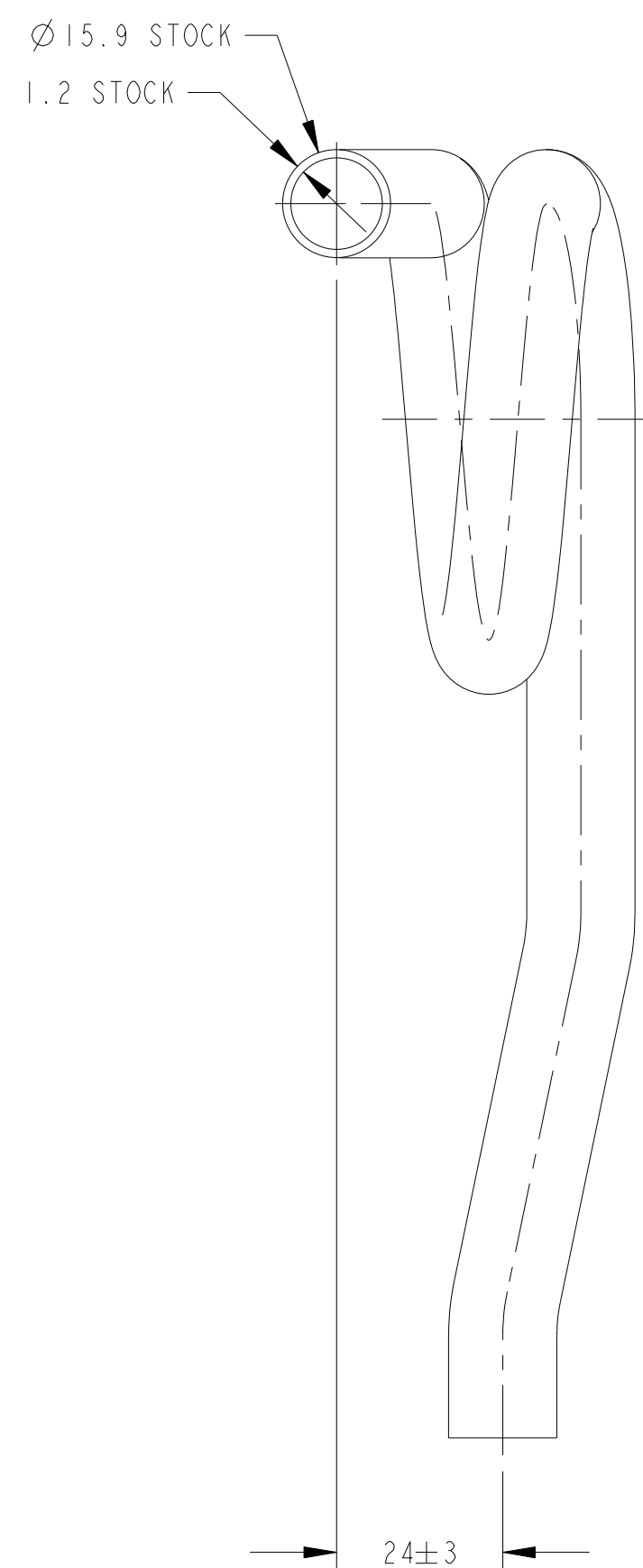
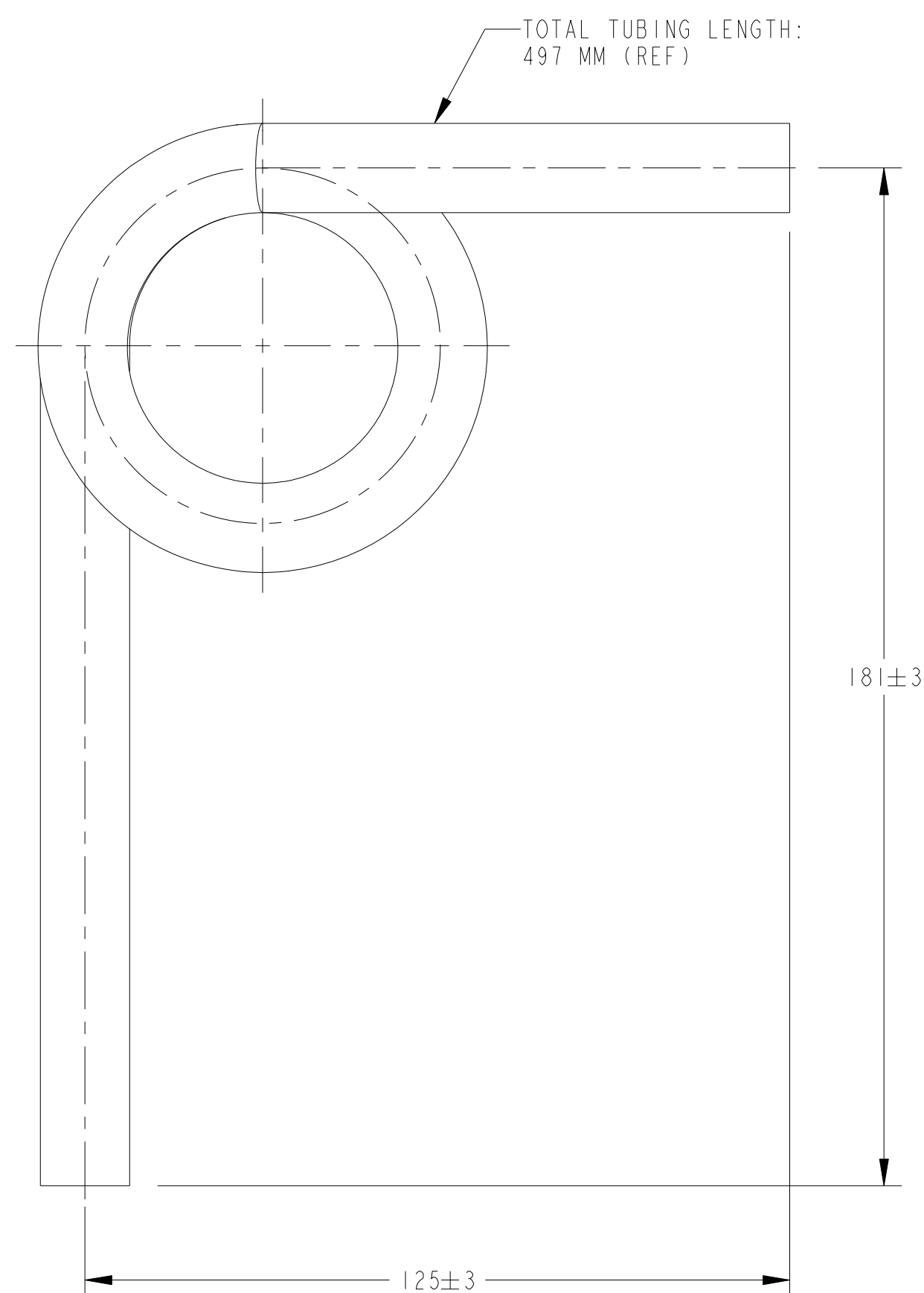
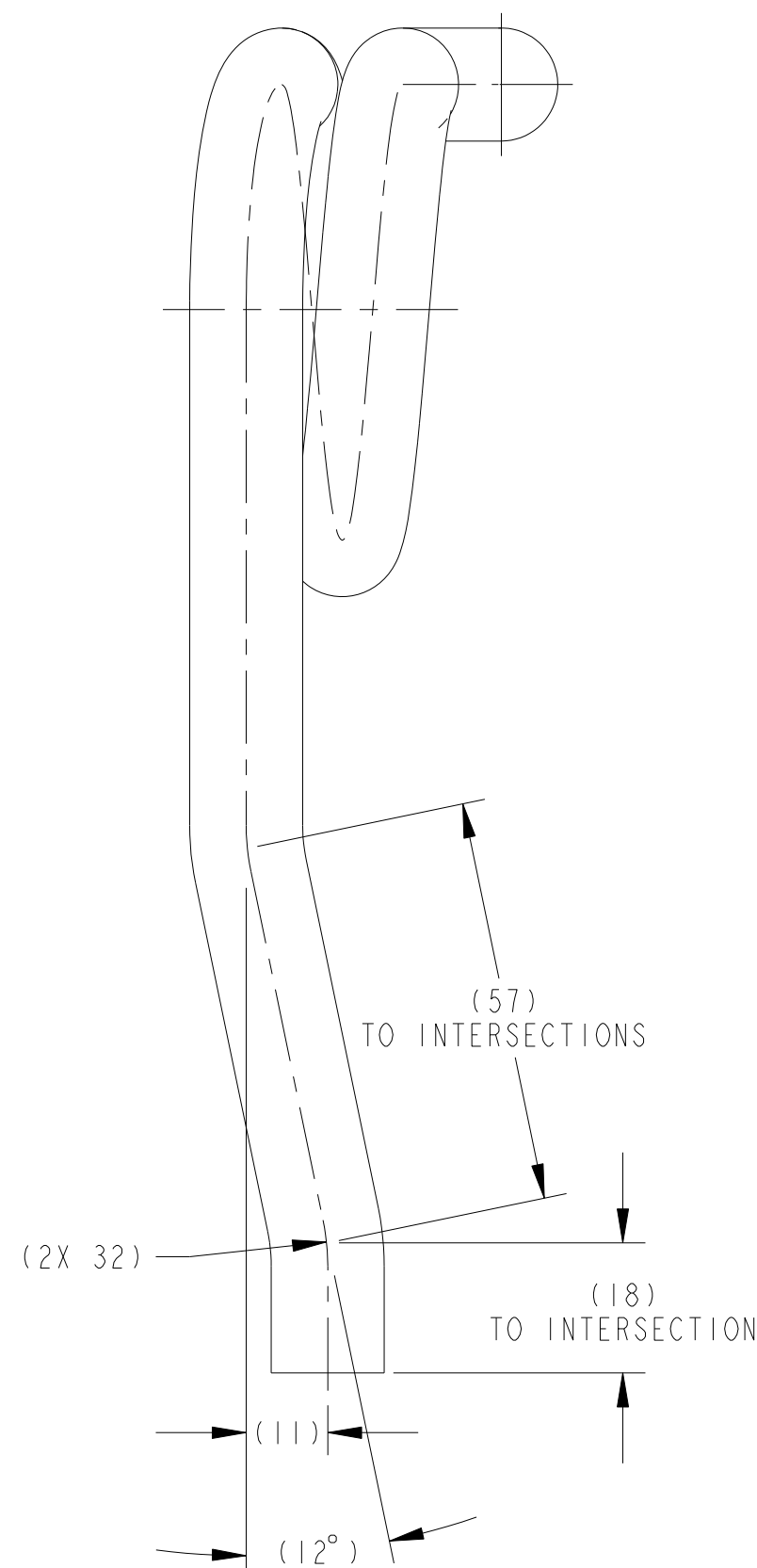
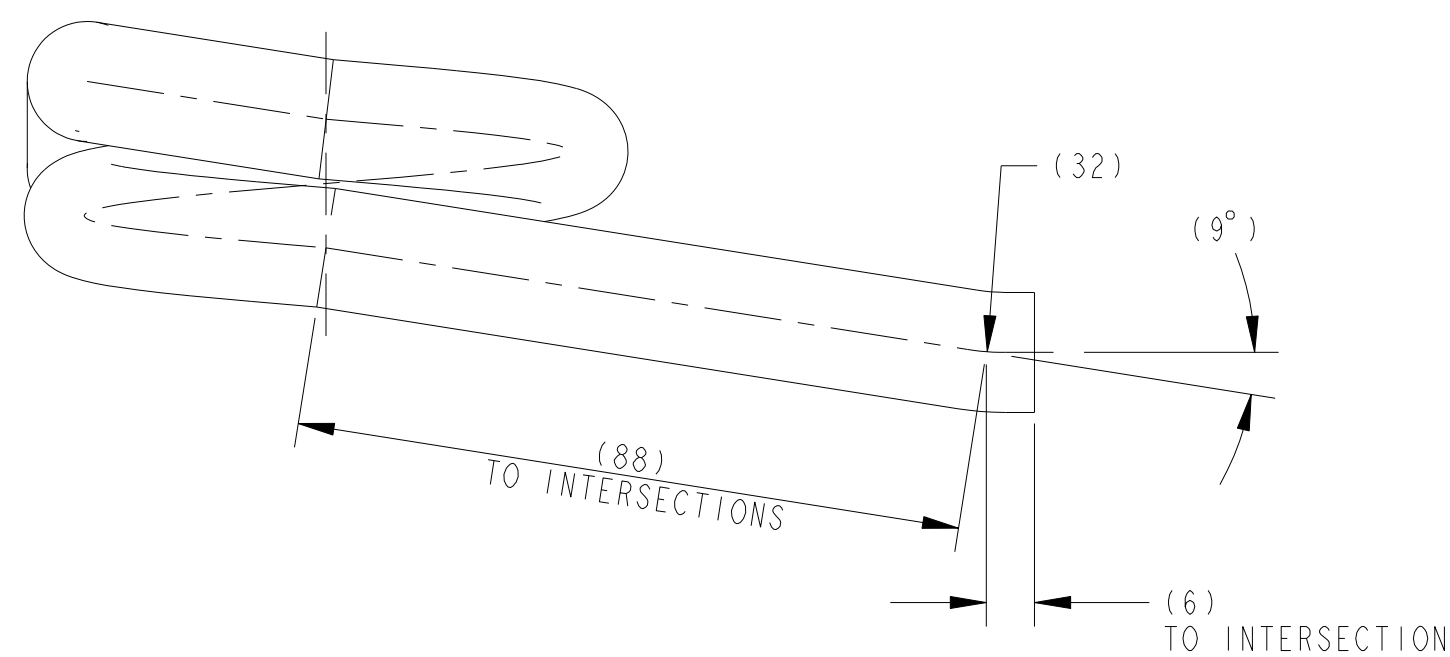
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REV	DESCRIPTION OF CHANGE	DATE
0	- - -	

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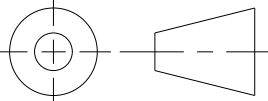
- I. THE SELLER SHALL SUBMIT TO THE COMPANY MATERIAL CERTIFICATIONS FOR ALL MATERIALS USED IN THIS FABRICATION. CERTIFICATIONS MUST BE APPROVED BY THE COMPANY PRIOR TO SHIPPING.

2. x

		WIP-NOT APPROVED FOR CONSTRUCTION			
		AL 3003 (A93003)		ASTM B210	
		MATERIAL		SPECIFICATION	
GRADE		UNITS: MILLIMETERS DEFAULT TOLERANCES 0-6 ±0.1 >6-120 ±0.2 >120 ±0.5 ANGULAR ±0.5°		 HIGH FLUX ISOTOPE REACTOR SPALLATION NEUTRON SOURCE	
1-SERIOUS					
FACILITY					
STS					
BUILDING					
8800-ST5 TARGET BUILDING II		--- --- WATER RETURN TUBE		DRAFTING NUMBER 0000084342	
MAJOR SYSTEM					
TARGET SYSTEMS					
SYSTEM					
TARGET ASSEMBLIES					
SUBSYSTEM		BREAK ALL SHARP EDGES EXCEPT AS NOTED: 15 MAX		SURFACE ROUGHNESS: 3.2 Ra U.N.O.	
TARGET SEGMENT					
SUB-SUBSYSTEM					
XXX					
		THIRD ANGLE PROJECTION			
		SIZE		SCALE	
		D		1:1	
		WEIGHT		0.1 KG	
		SHEET		1 of 1	



REFERENCE VIEW
SCALE 1:1

GRADE		UNITS: MILLIMETERS		 HIGH FLUX ISOTOPE REACTOR SPALLATION NEUTRON SOURCE	
1-SERIOUS		DEFAULT TOLERANCES			
FACILITY		0-6 ±0.1 >6-120 ±0.2 120 ±0.5 ANGULAR ±0.5°		--- --- WATER FEED TUBE	
STS					
BUILDING					
8800-ST5 TARGET BUILDING II		BREAK ALL SHARP EDGES EXCEPT AS NOTED: 1.5 MAX			
MAJOR SYSTEM					
TARGET SYSTEMS		SURFACE ROUGHNESS: 3.2 Ra UN.O.		DRAWING NUMBER 0000084343	
SYSTEM					
TARGET ASSEMBLIES		DRAFTING STD: ASME Y14.100 GDT: ASME Y14.5 WELD SYMBOLS: AWS A2.4			
SUBSYSTEM					
TARGET SEGMENT					
SUB-SUBSYSTEM		THIRD ANGLE PROJECTION		SIZE SCALE WEIGHT SHEET	
XXX				D 1:1 0.1 KG 1 of 1	

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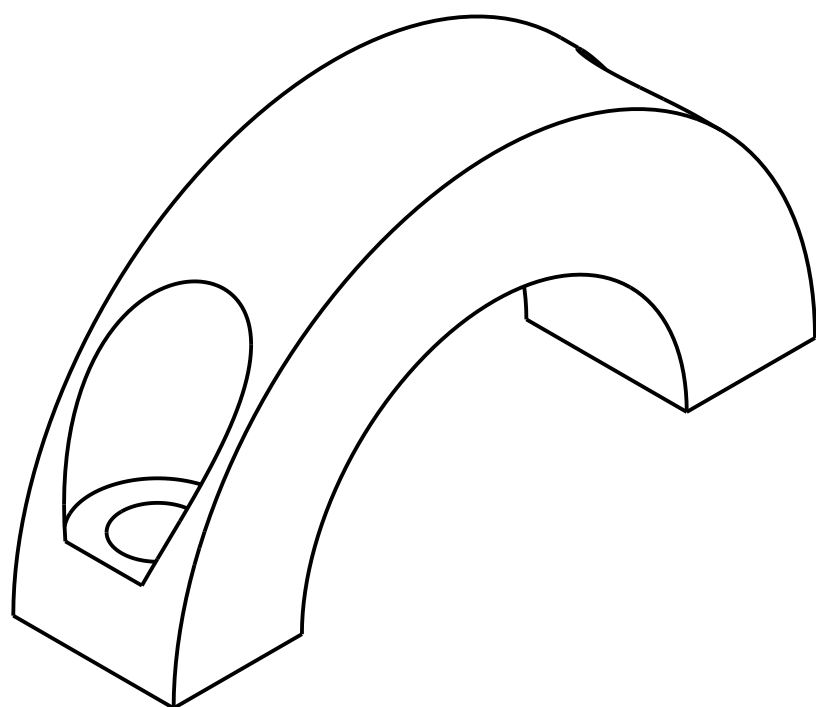
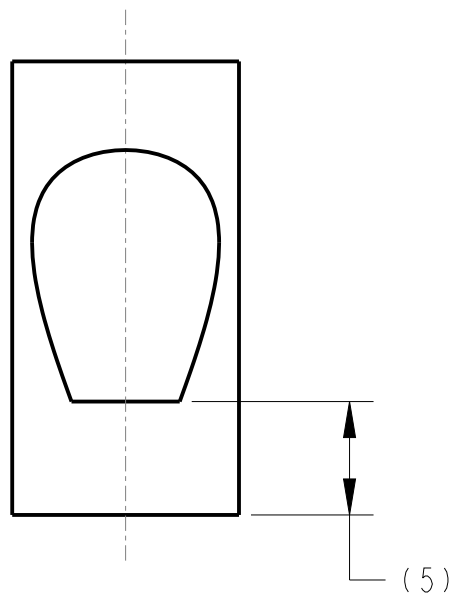
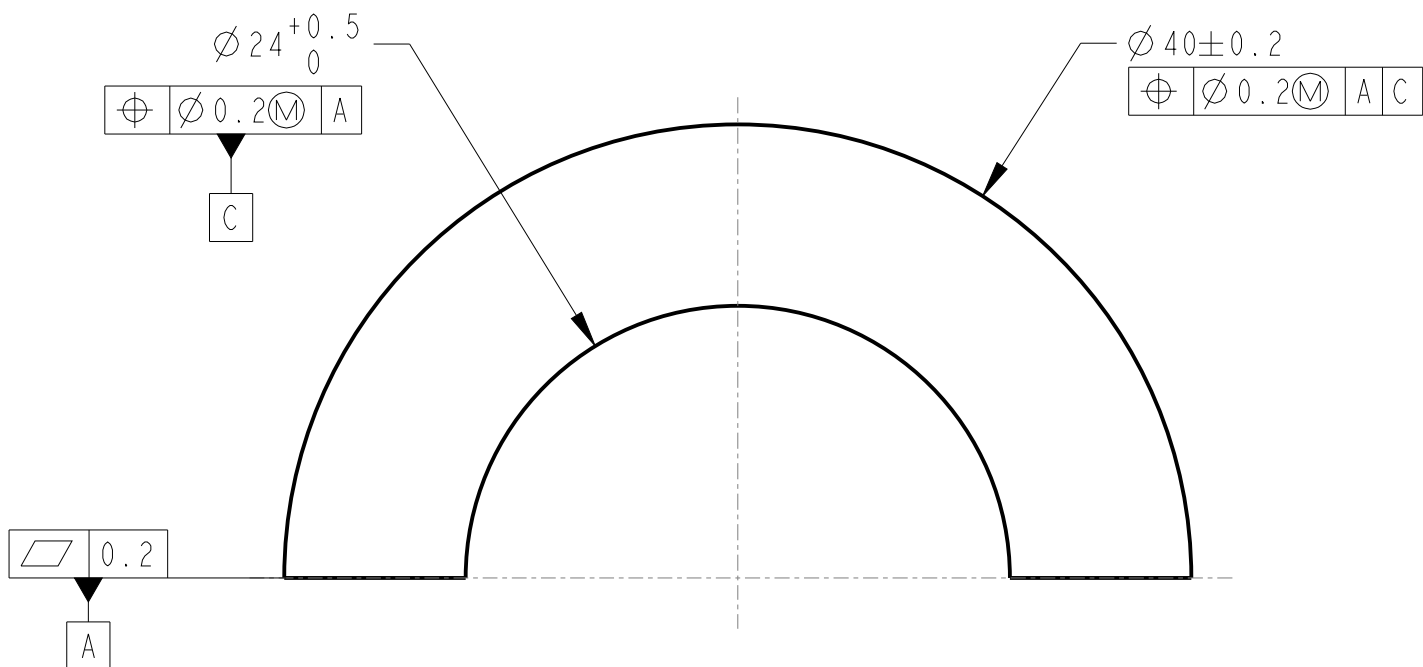
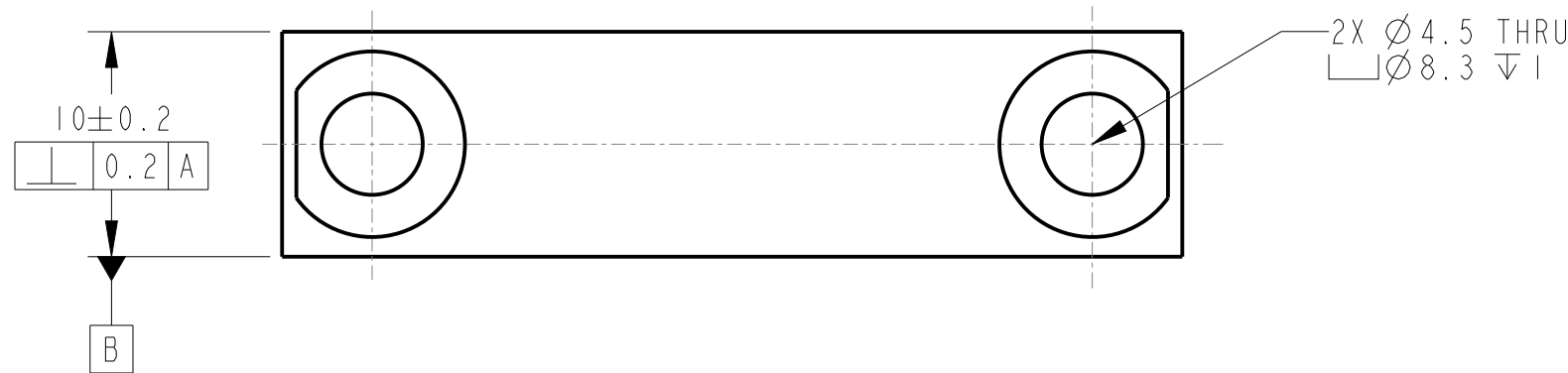
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REVISION BLOCK

REV	DESCRIPTION OF CHANGE	DATE
0		

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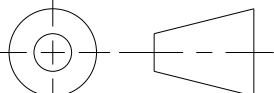
1. CLEAN DIRT, GREASE AND OILS.
2. USE SULFUR FREE CUTTING OIL.
3. BREAK SHARP EDGES TO 0.5 MAX.



SCALE 3:1

WIP-NOT APPROVED FOR CONSTRUCTION

SS 316 (S31600)	ASTM A276
MATERIAL	SPECIFICATION

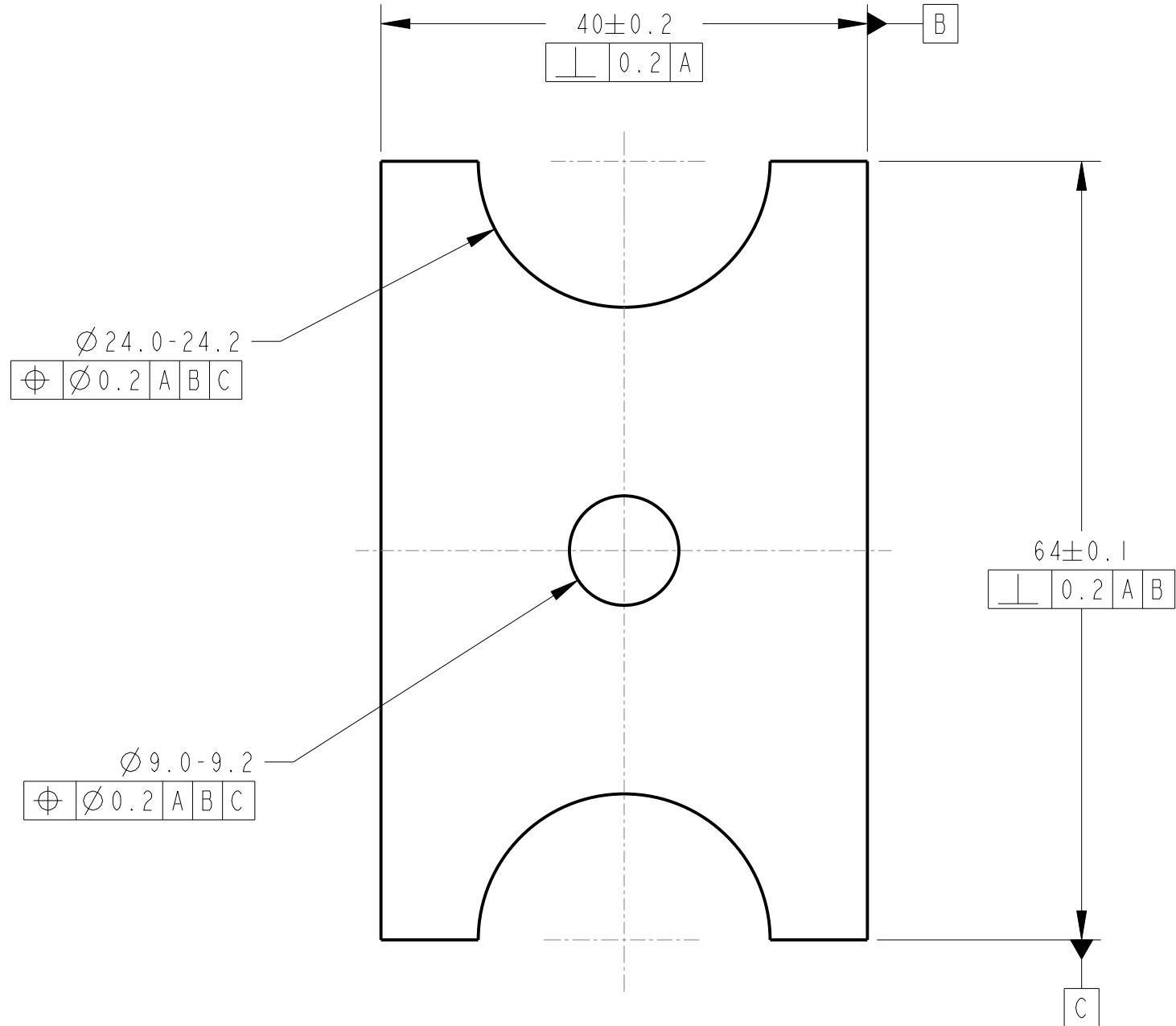
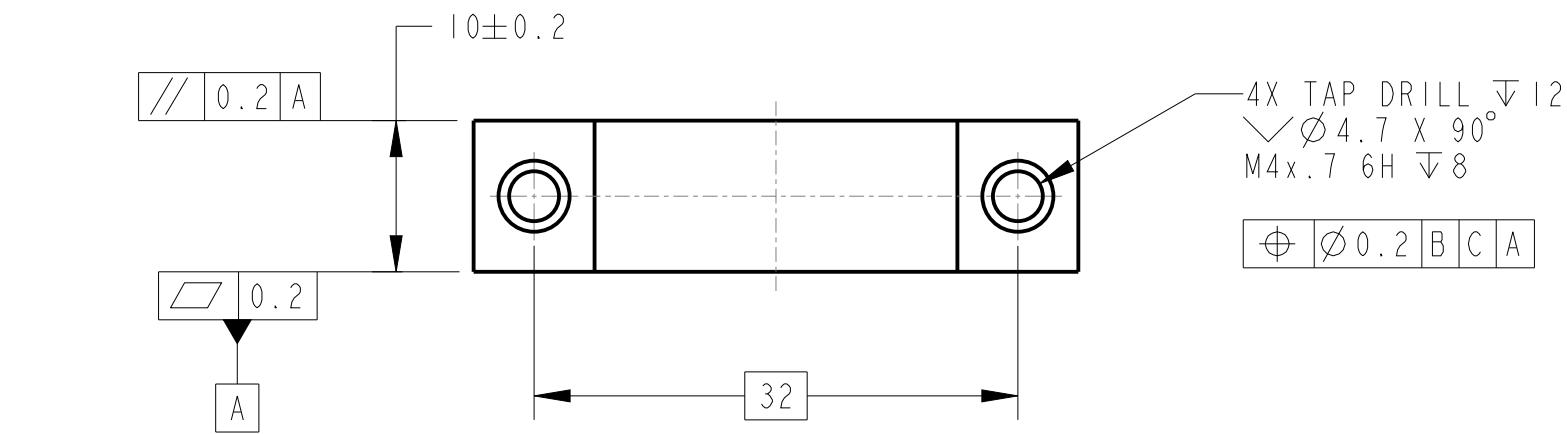
GRADE		1-SERIOUS		UNITS: MILLIMETERS		 HIGH FLUX ISOTOPE REACTOR SPALLATION NEUTRON SOURCE	
FACILITY		STS		DEFAULT TOLERANCES 0-6 ±0.1 >6-120 ±0.2 >120 ±0.5 ANGULAR ±0.5°		--- --- CROWN PLUG CLAMP B	
BUILDING		88000-STG TARGET BUILDING II		BREAK ALL SHARP EDGES EXCEPT AS NOTED: 15 MAX			
MAJOR SYSTEM		TARGET SYSTEMS		SURFACE ROUGHNESS: 3.2 Ra UNO.			
SYSTEM		TARGET ASSEMBLIES		DRAFTING STD: ASME Y14.100 GDT: ASME Y14.5 WELD SYMBOLS: AWS A2.4			
SUBSYSTEM		TARGET SEGMENT		THIRD ANGLE PROJECTION			
SUB-SUBSYSTEM		XXX		SIZE D		SCALE 3:1	
				WEIGHT 0.03 KG		SHEET 1 of 1	
				DRAWING NUMBER		REV	
				0000084506		0	

D

C

B

A



NEXT USED ASSEMBLY
0000084338

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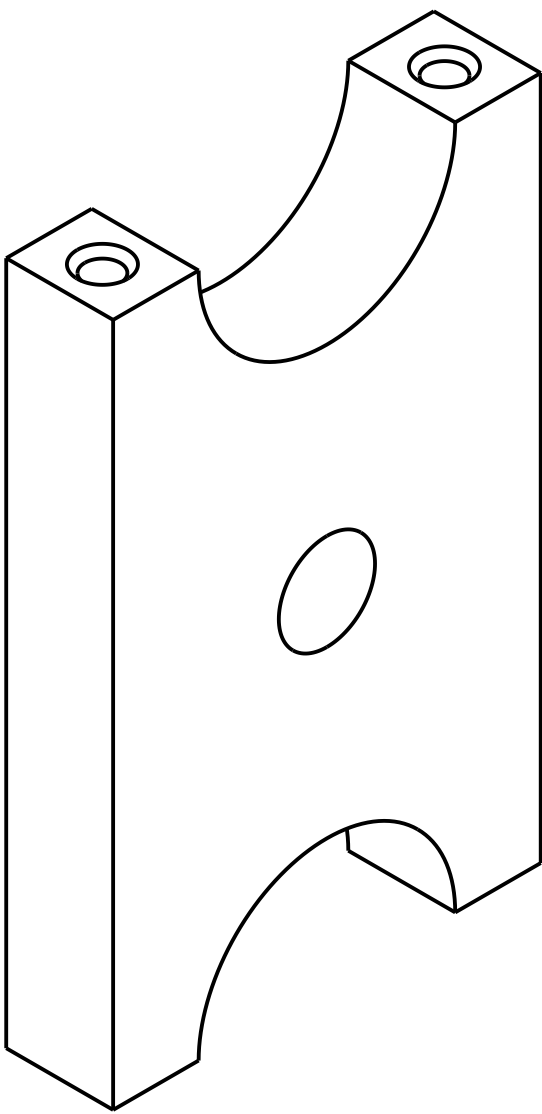
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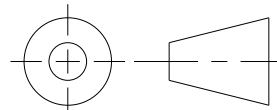
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REVISION BLOCK		
REV	DESCRIPTION OF CHANGE	DATE
0	---	

NOTES:

1.



WIP-NOT APPROVED FOR CONSTRUCTION				
SS 316 (S31600)			ASTM A276	
MATERIAL			SPECIFICATION	
GRADE	1-SERIOUS	UNITS: MILLIMETERS DEFAULT TOLERANCES 0-6 ±0.1 ≥6-120 ±0.2 ≥120 ±0.5 ANGULAR ±0.5°	HIGH FLUX ISOTOPE REACTOR SPALLATION NEUTRON SOURCE	
FACILITY	STS			
BUILDING	8800-STS TARGET BUILDING II	BREAK ALL SHARP EDGES EXCEPT AS NOTED: 15 MAX	--- --- CROWN PLUG CLAMP A	
MAJOR SYSTEM	TARGET SYSTEMS	SURFACE ROUGHNESS: 3.2 Ra U.N.O.		
SYSTEM	TARGET ASSEMBLIES	DRAFTING STD: ASME Y14.100 GDT: ASME Y14.5 WELD SYMBOLS: AWS A2.4	DRAWING NUMBER	REV
SUBSYSTEM	TARGET SEGMENT		0000084507	0
SUB-SUBSYSTEM	XXX	THIRD ANGLE PROJECTION 	SIZE D	SCALE 2:1
			WEIGHT 0.2 KG	SHEET 1 of 1

[illegible]

NEXT USED ASSEMBLY
0000064918

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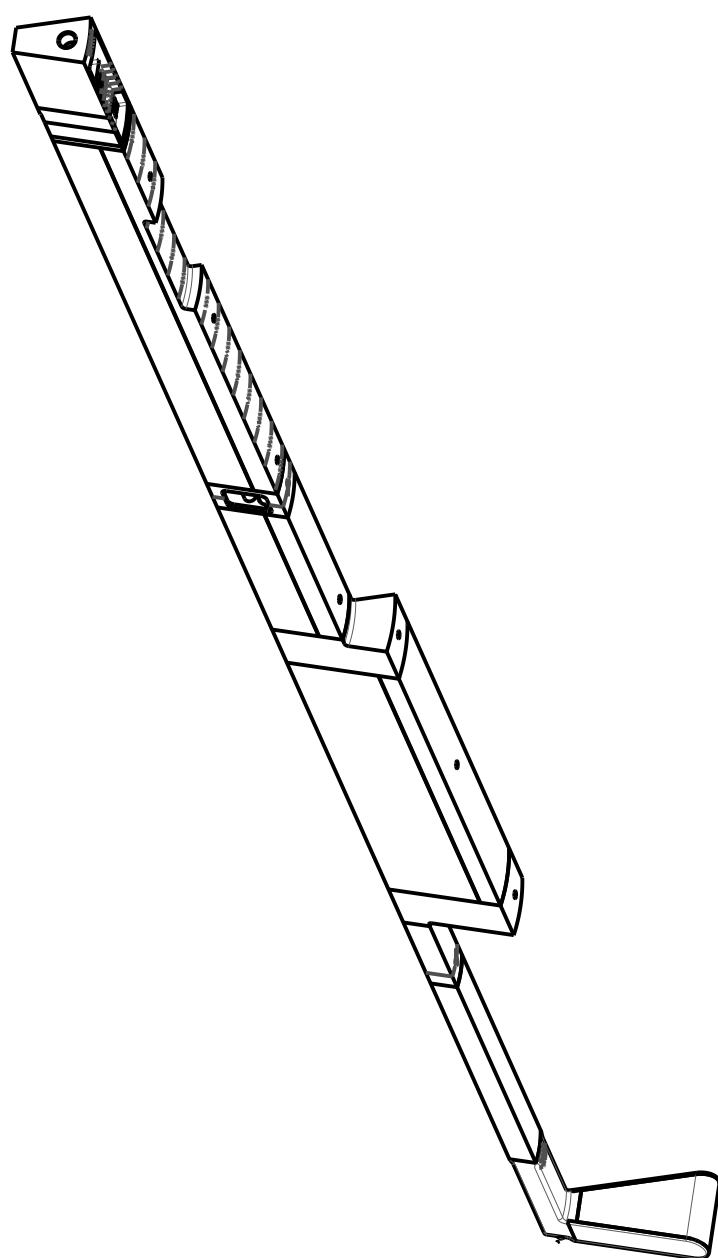
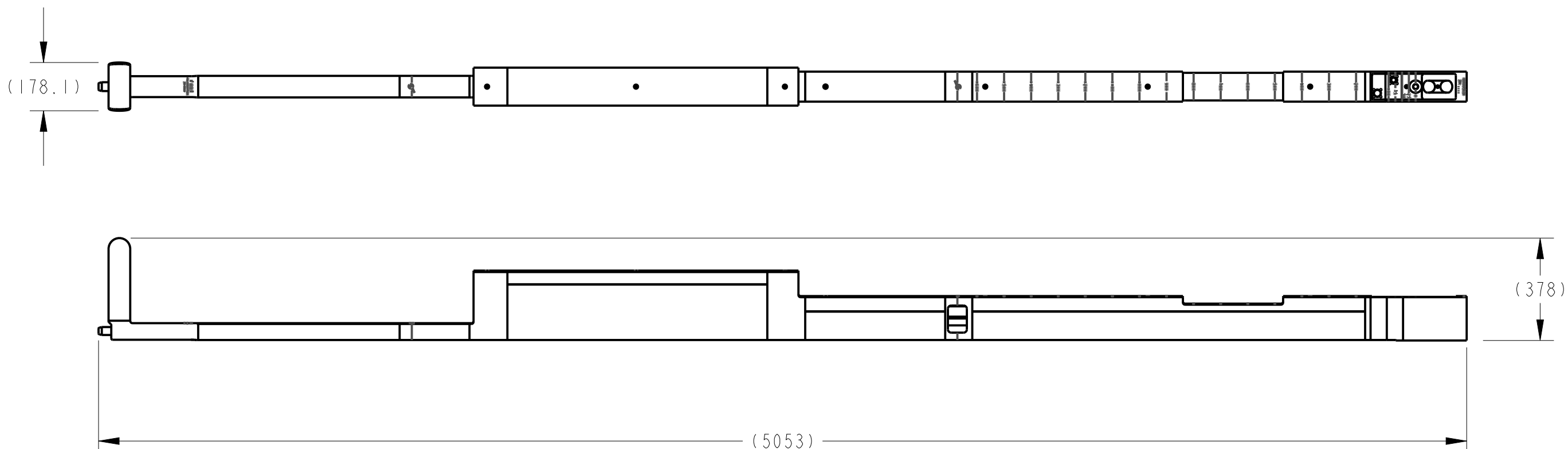
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REVISION BLOCK		
REV	DESCRIPTION OF CHANGE	DATE
2		

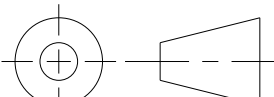
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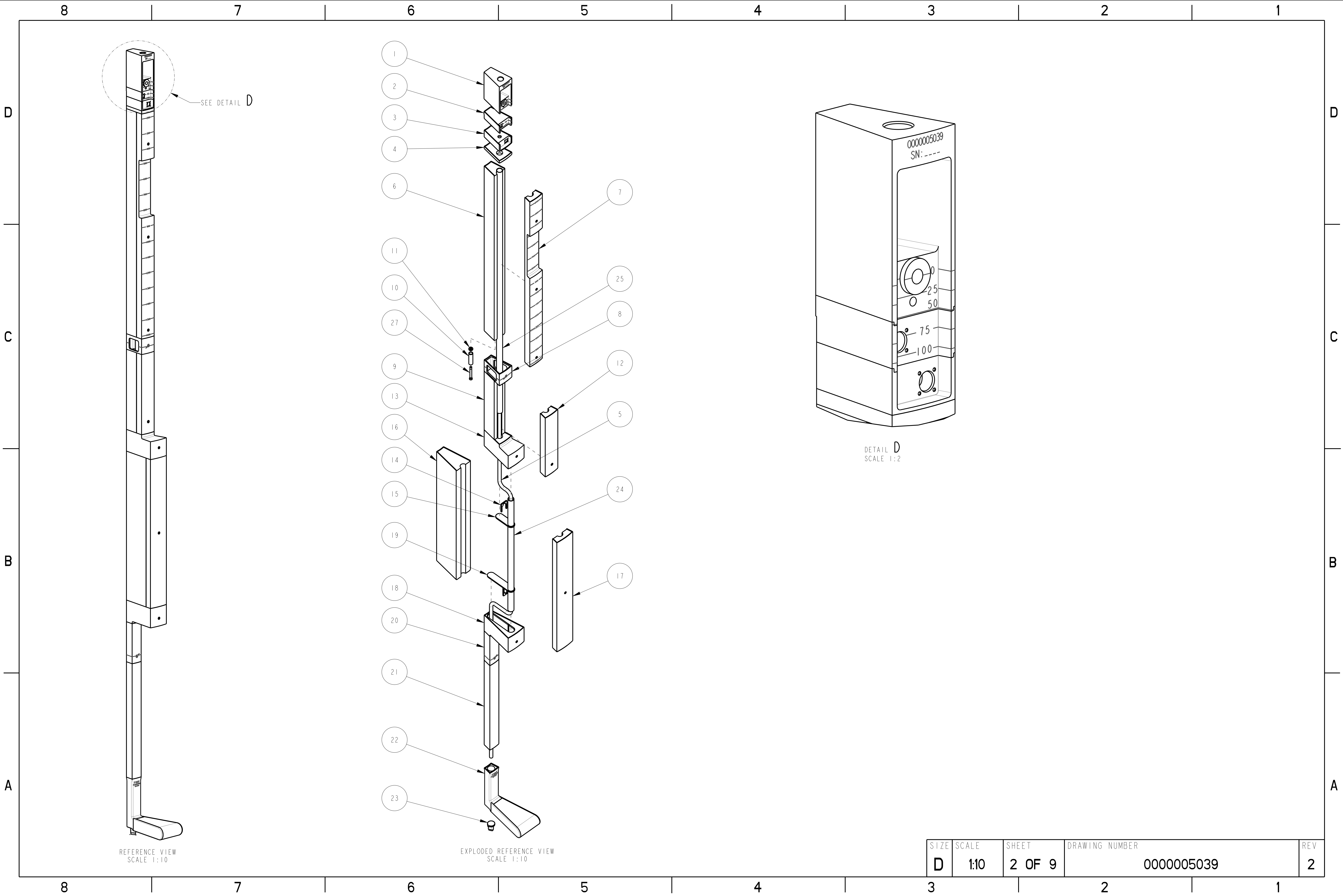
1. VENDORS AND VENDOR SPECIFIC ITEMS MAY NOT BE SUBSTITUTED WITHOUT PRIOR ENGINEERING APPROVAL.
2. DELETED
3. DELETED
4. DELETED
5. DELETED
6. USE SULFUR-FREE CUTTING OIL ONLY.
7. DELETED
8. REMOVE ALL OIL, GREASE, DIRT AND LOOSE PARTICLES TO A CLEAN FINISH.
9. FABRICATE USING PROCEDURES, WELDERS, AND INSPECTORS QUALIFIED PER AWS D1.6, STRUCTURAL WELDING CODE - STAINLESS STEEL. ALL WELDING PERSONNEL SHALL BE QUALIFIED IN ACCORDANCE WITH AWS D1.6 OR ASME SECTION IX. INTERPRET WELDING AND NONDESTRUCTIVE EXAMINATION SYMBOLS PER ANSI/AWS A2.4.
10. DELETED
11. PARTS TO BE PACKAGED AND THE PART NUMBER MARKED ON THE PACKAGE OR ON A TAG ATTACHED TO THE PART OR PACKAGE. MARKING METHOD IS TO BE METHOD 37 PER ASE AS478 OR EQUIVALENT.
12. DIMENSIONS AND DIMENSIONAL LIMITS APPLY AFTER FINAL WELDING OPERATIONS.
13. TORQUE LIMIT FOR THREADED FASTENERS SHALL BE IN ACCORDANCE WITH PROJECT APPROVED SPECIFICATION NUMBER AND ASSOCIATED ENGINEERING ANALYSIS.
14. HYDROSTATIC LEAK TEST PER ASTM E1003-13: TEST AT 6 BAR FOR A MINIMUM OF TEN MINUTES. VISUAL LEAK CHECK FOR LEAKS WHILE AT TEST PRESSURE. NO LEAKS ARE ACCEPTABLE.
15. ALL WELDS ARE TO BE TESTED WITH NO DETECTABLE LEAKS TO 1×10^{-9} (ATM-CC)/SEC He GAS, AS MEASURED WITH A He LEAK DETECTOR HAVING DEMONSTRATED A SENSITIVITY OF 1×10^{-9} (ATM-CC)/SEC.
16. DELETED
17. MARK BAND WRAPPING AROUND BODY, BAND IS TO BE 12MM WIDE. BANDS ARE TO BE CENTERED APPROXIMATELY ON VIEW PLANES X, X, & X. MARKING METHOD TO BE LASER ENGRAVING.
18. THE SELLER SHALL SUBMIT TO THE COMPANY CERTIFIED MILL TEST REPORTS FOR ALL MATERIALS USED IN THIS FABRICATION. CERTIFICATIONS MUST BE APPROVED BY THE COMPANY PRIOR TO SHIPPING.
19. GOVERNMENT FURNISHED EQUIPMENT
20. MANUFACTURER TO PROVIDE MANUFACTURING PLAN, INCLUDING ALIGNMENT SCHEME, FOR APPROVAL BEFORE BEGINNING MANUFACTURING.
21. NUMBERS AND LINES SHALL BE MARKED AS SHOWN PER SAE AS478 METHOD 15B2 (LASER, ENGRAVE, INTERMEDIATE). THE CHARACTERS SHALL BE 10MM HIGH AND THE LINES 3 MM THICK.
22. LINES AND SYMBOL SHALL BE MARKED APPROXIMATELY AS SHOWN PER SAE AS478 METHOD 15B2 (LASER, ENGRAVE, INTERMEDIATE). THE LINES SHALL BE 5MM THICK, THE SYMBOL LINES SHALL BE 1MM THICK.

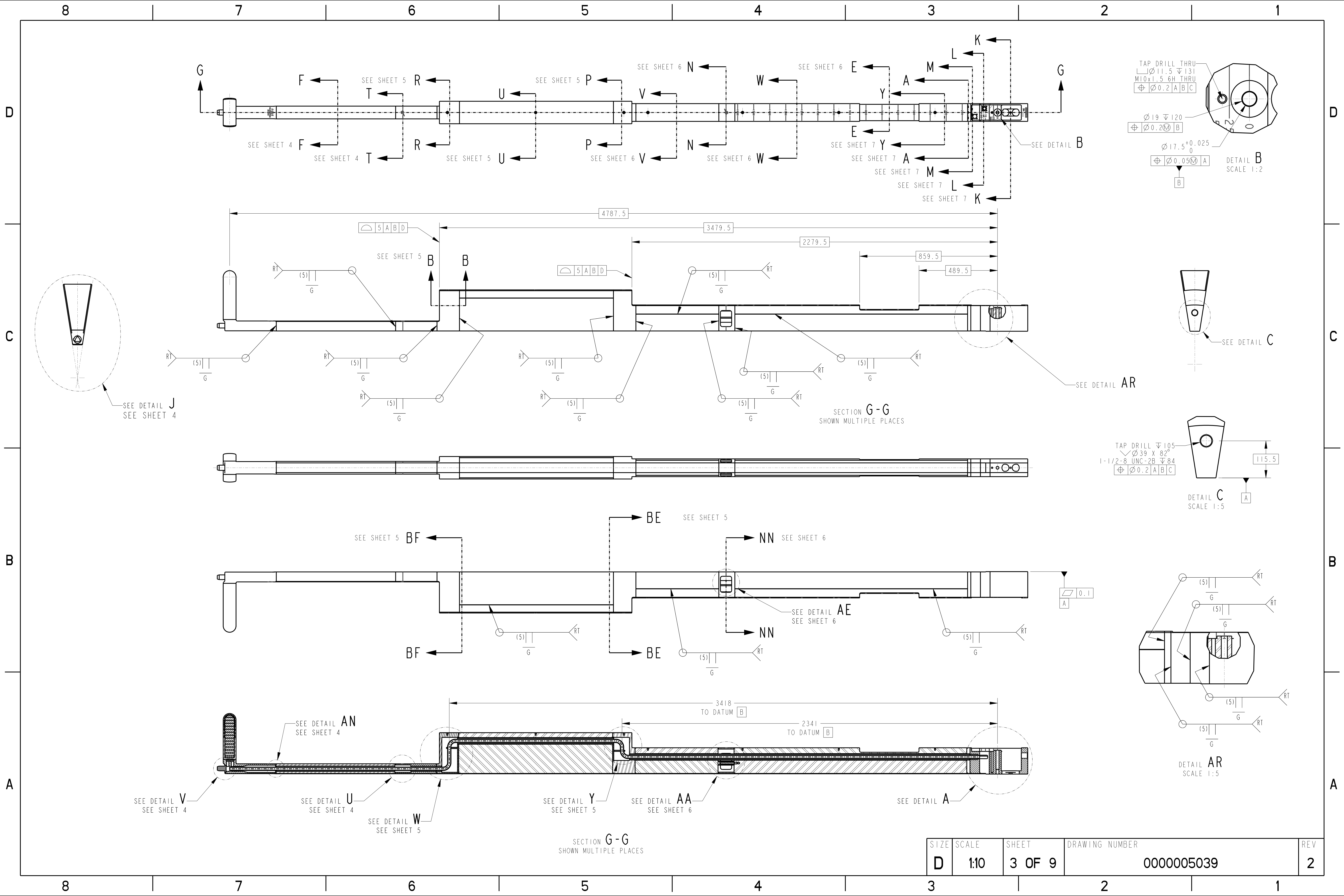


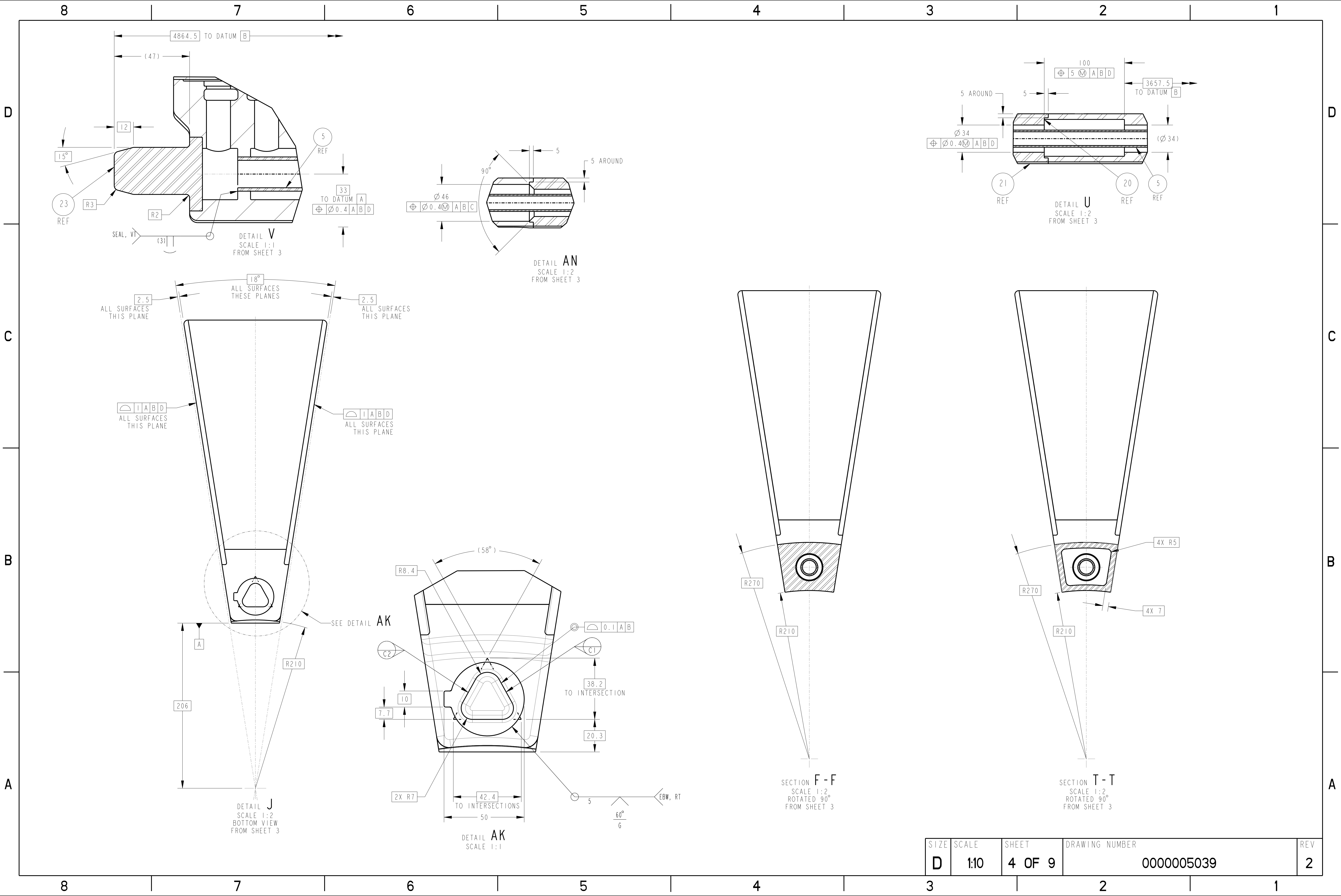
REFERENCE VIEW

B	MCMaster or EQ WWW.MCMaster.COM	SS 18-8 ---	SHOULDER SCREW, Ø12 X 80, M12x1.75 X 18	91273A477	I	27	
	---	SS 316L (S31603) ASTM A269	UPPER SHEATH, 1.5" OD X .08" WALL TUBE, SEAMLESS	0000005039-25	I	25	
	---	SS 316L (S31603) ASTM A269	LOWER SHEATH, 1.5" OD X .08" WALL TUBE, SEAMLESS	0000005039-24	I	24	
	---	SS 316L (S31603) ASTM A276	TARGET ALIGNMENT PIN	0000005039-22	I	23	
	---	---	SEGMENT FOOT	0000077806	I	22	
	---	SS 316L (S31603) ASTM A276	TARGET EXTENSION	0000005039-21	I	21	
	---	SS 316L (S31603) ASTM A276	LOWER CUT SECTION	0000005039-20	I	20	
	---	SS 316L (S31603) ASTM A276	LOWER STEP BLOCK COVER	0000005039-19	I	19	
	---	SS 316L (S31603) ASTM A276	LOWER STEP BLOCK	0000005039-18	I	18	
	---	SS 316L (S31603) ASTM A276	LOWER SHROUD, OUTER	0000005039-17	I	17	
	---	SS 316L (S31603) ASTM A276	LOWER SHROUD, INNER	0000005039-16	I	16	
	---	SS 316L (S31603) ASTM A276	UPPER STEP BLOCK COVER	0000005039-15	I	15	
	---	SS 316L (S31603) ASTM A276	WATER TRANSPORT PIPE BRACKET	0000005039-14	2	14	
	---	SS 316L (S31603) ASTM A276	UPPER STEP BLOCK	0000005039-13	I	13	
	---	SS 316L (S31603) ASTM A276	MIDDLE SHROUD, OUTER	0000005039-12	I	12	
	---	SS 316L (S31603) ASTM A276	DROP RETAINER CAP	0000005039-11	I	11	
	---	SS 316L (S31603) ASTM A276	DROP RETAINER, 1" OD X .109" WALL TUBE, SEAMLESS	0000005039-10	I	10	
	---	SS 316L (S31603) ASTM A276	MIDDLE SHROUD, INNER	0000005039-09	I	9	
	A	---	SS 316L (S31603) ASTM A276	UPPER CUT SECTION	0000005039-08	I	8
		---	SS 316L (S31603) ASTM A276	UPPER SHROUD, OUTER	0000005039-07	I	7
---		SS 316L (S31603) ASTM A276	UPPER SHROUD, INNER	0000005039-06	I	6	
---		SS 316L (S31603) ASTM A312	WATER TRANSPORT, 1/2" SCHEDULE 10 PIPE, SEAMLESS	0000005039-05	I	5	
---		SS 316L (S31603) ASTM A276	LOWER WATER ATTACHMENT PLENUM SEAL PLATE	0000005039-28	I	4	
---		SS 316L (S31603) ASTM A276	LOWER WATER ATTACHMENT PLENUM	0000005039-03	I	3	
---		SS 316L (S31603) ASTM A276	UPPER WATER ATTACHMENT PLENUM	0000005039-27	I	2	
---		SS 316L (S31603) ASTM A276	CROWN ATTACHMENT BLOCK I	0000005039-02	I	1	
VENDOR ☐		MATERIAL SPECIFICATION	DESCRIPTION	PART NUMBER	QTY	FIND NO.	

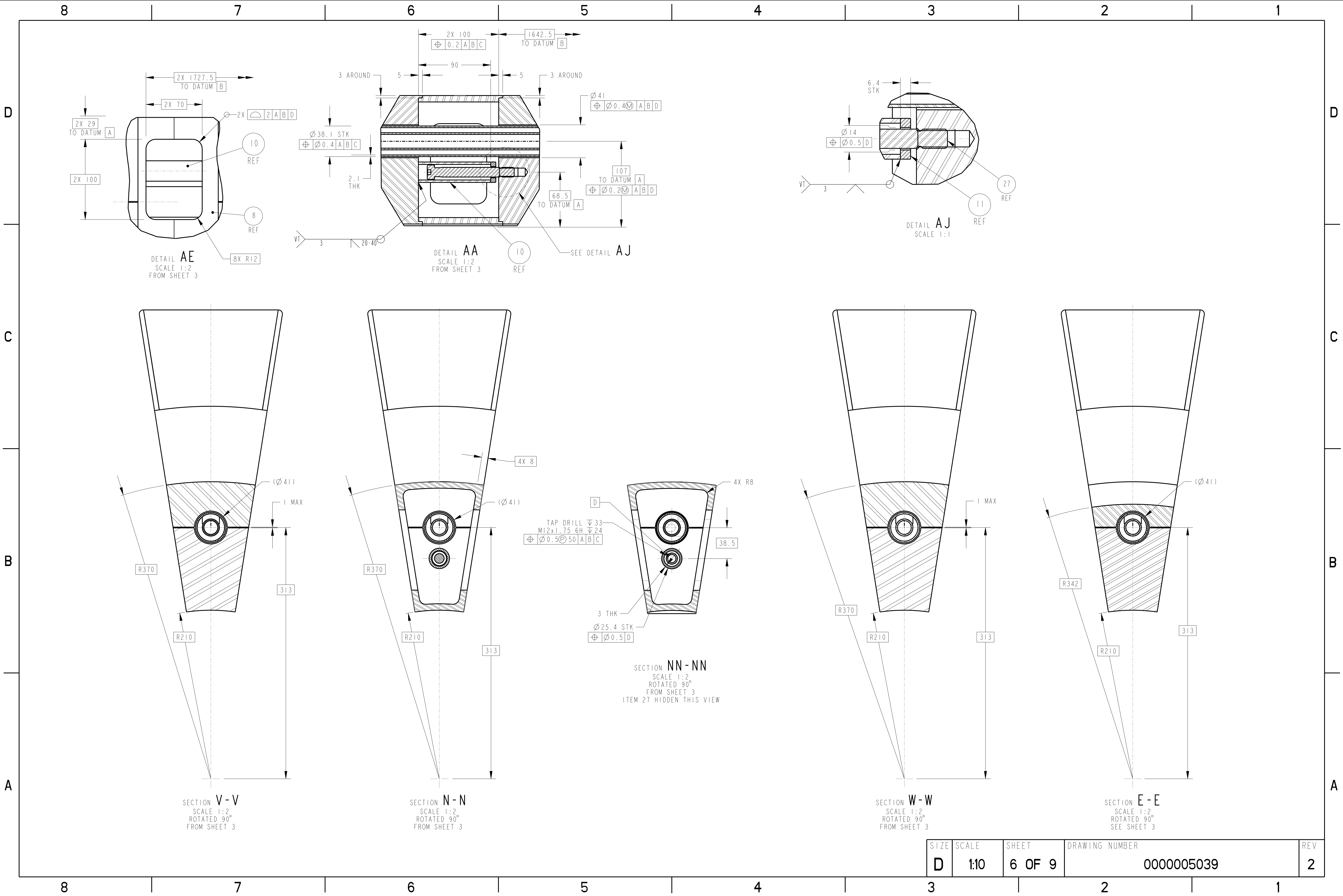
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GRADE	UNITS: MILLIMETERS	 HIGH FLUX ISOTOPE REACTOR SPALLATION NEUTRON SOURCE			
1-SERIOUS	DEFAULT TOLERANCES				
FACILITY	0-6 ±0.1	--- --- TARGET SEGMENT WELDMENT			
	>6-120 ±0.2				
STS	>120 ±0.5				
BUILDING	ANGULAR ±0.5°				
8800-ST5 TARGET BUILDING II	BREAK ALL SHARP EDGES EXCEPT AS NOTED: 15 MAX				
MAJOR SYSTEM	SURFACE ROUGHNESS: 3.2 Ra UNO.	DRAWING NUMBER 0000005039	REV 2		
TARGET SYSTEMS	DRAFTING STD: ASME Y14.100 GDT: ASME Y14.5 WELD SYMBOLS: AWS A2.4				
SYSTEM	THIRD ANGLE PROJECTION	SIZE D	SCALE 1:16	WEIGHT 576 KG	SHEET 1 of 9
TARGET ASSEMBLIES					
SUBSYSTEM					
TARGET SEGMENT					
SUB-SUBSYSTEM					
XXX					







SIZE	SCALE	SHEET	DRAWING NUMBER	REV
D	1:10	4 OF 9	0000005039	2



D

C

B

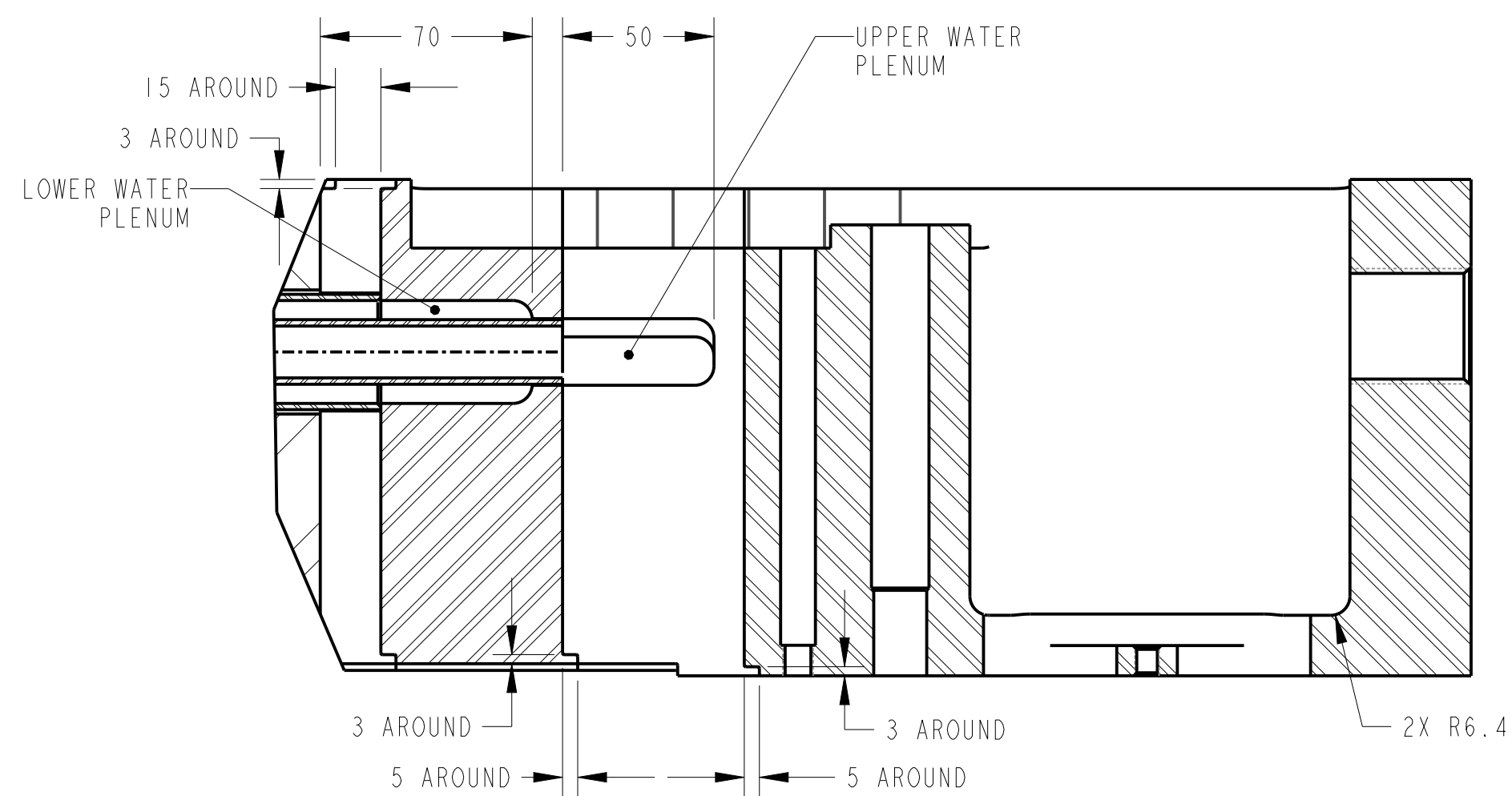
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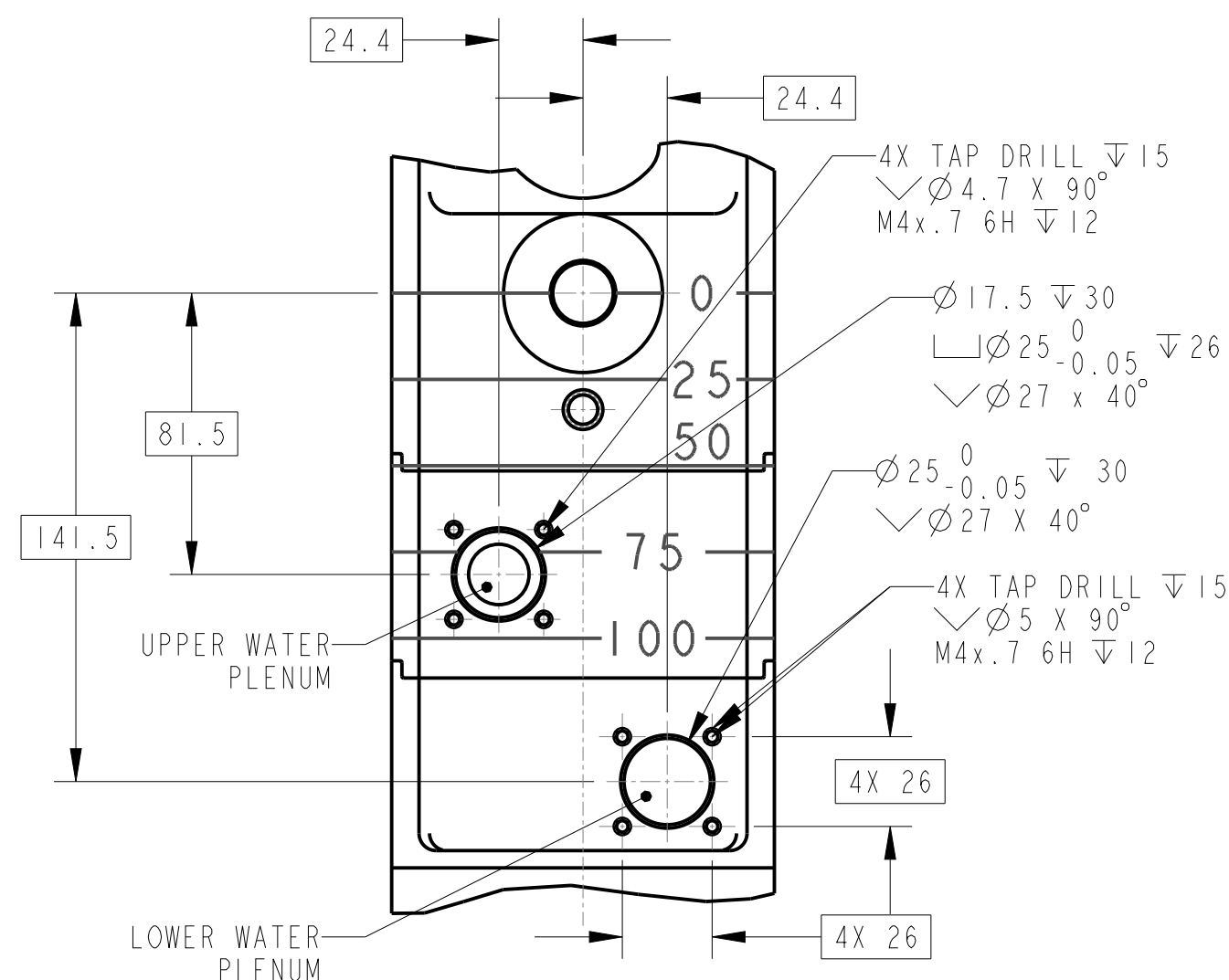
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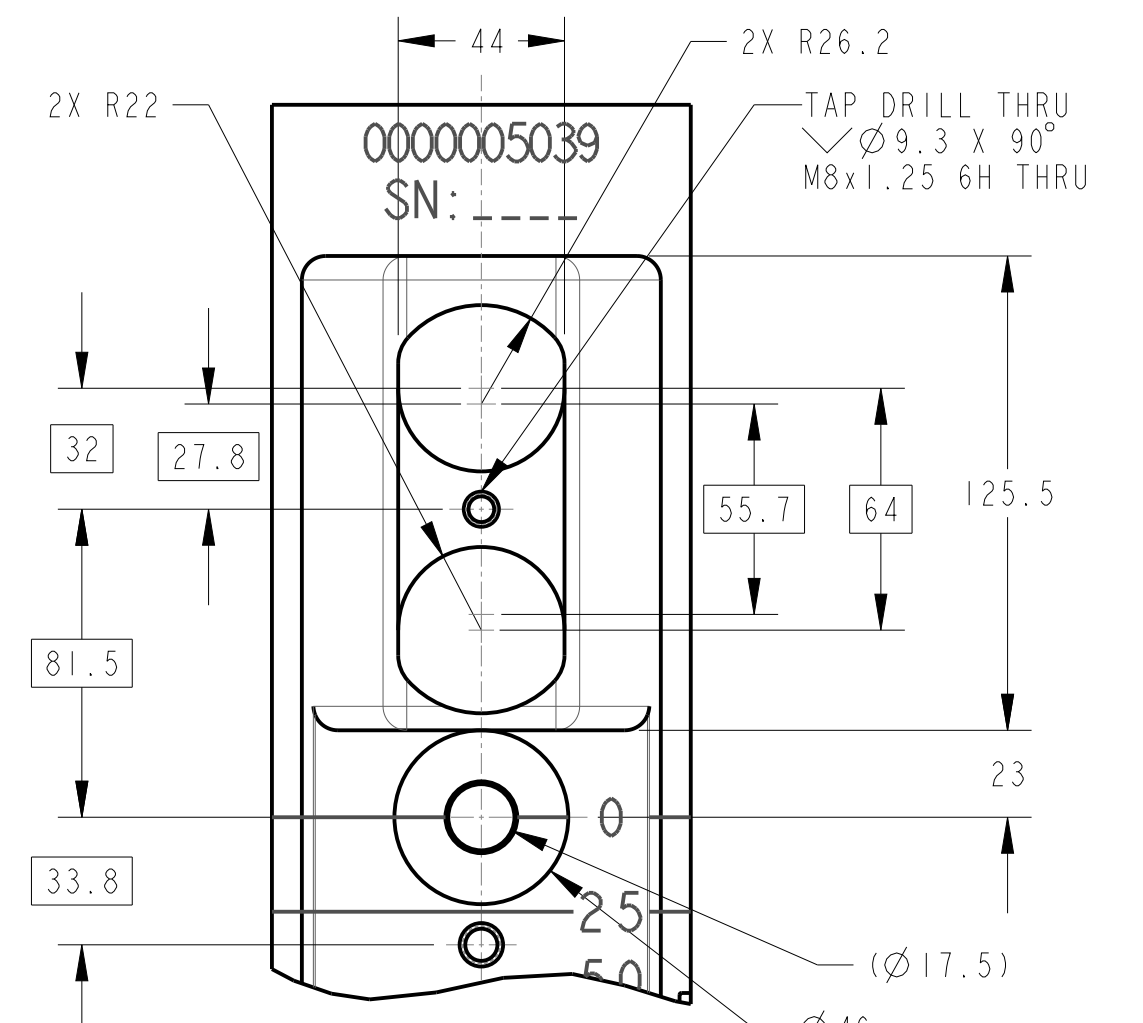
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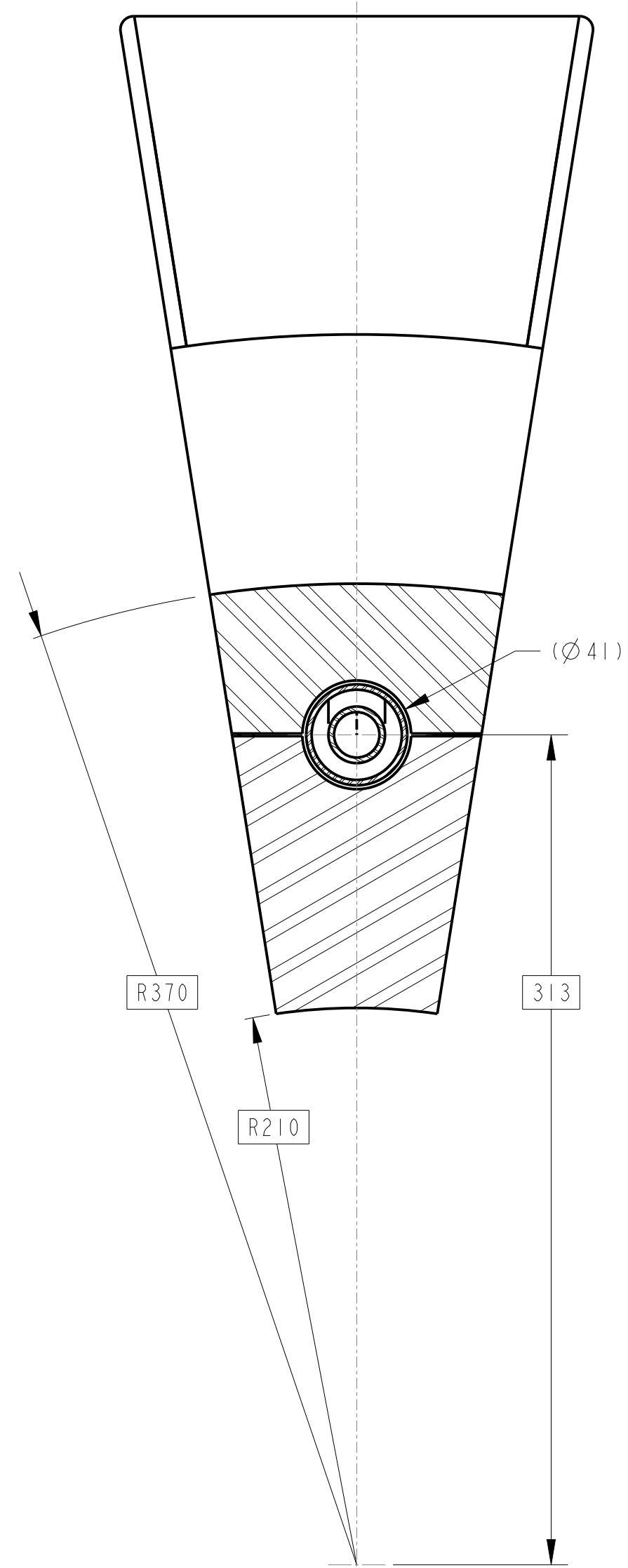
DETAIL A
SCALE 1:2



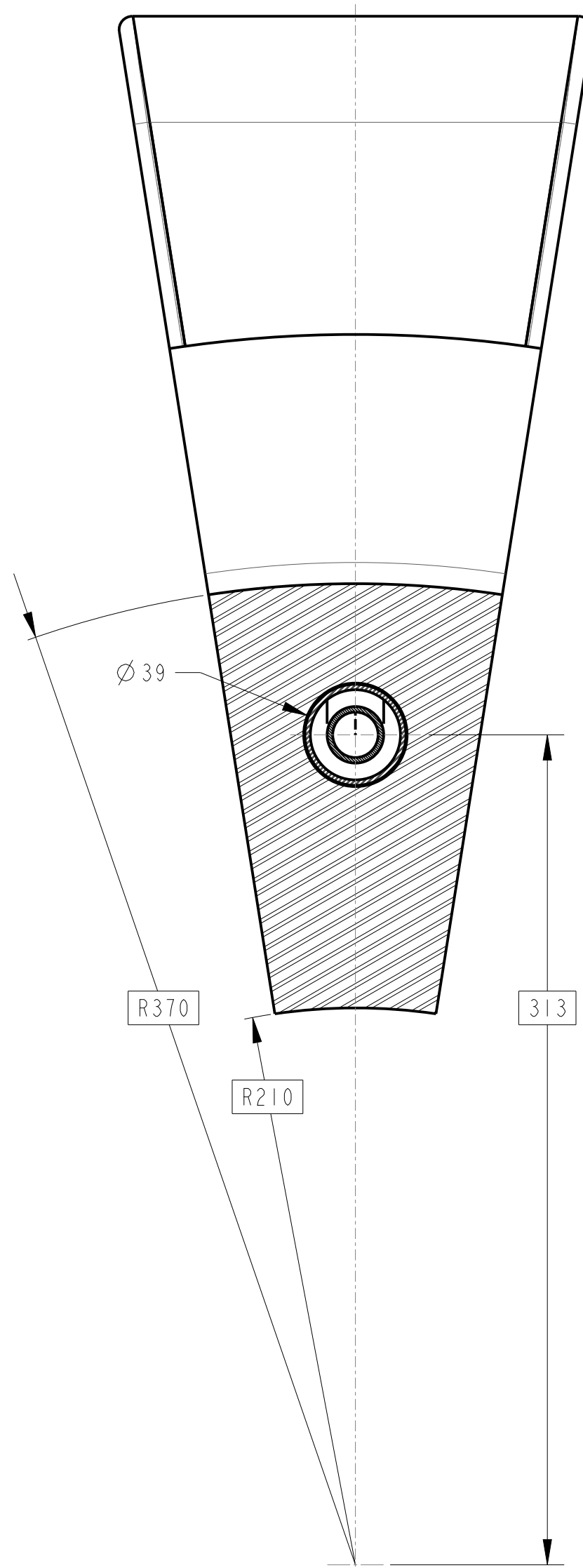
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PARTIAL FRONT VIEW
ROTATED 90°
TANGENT LINES HIDDEN



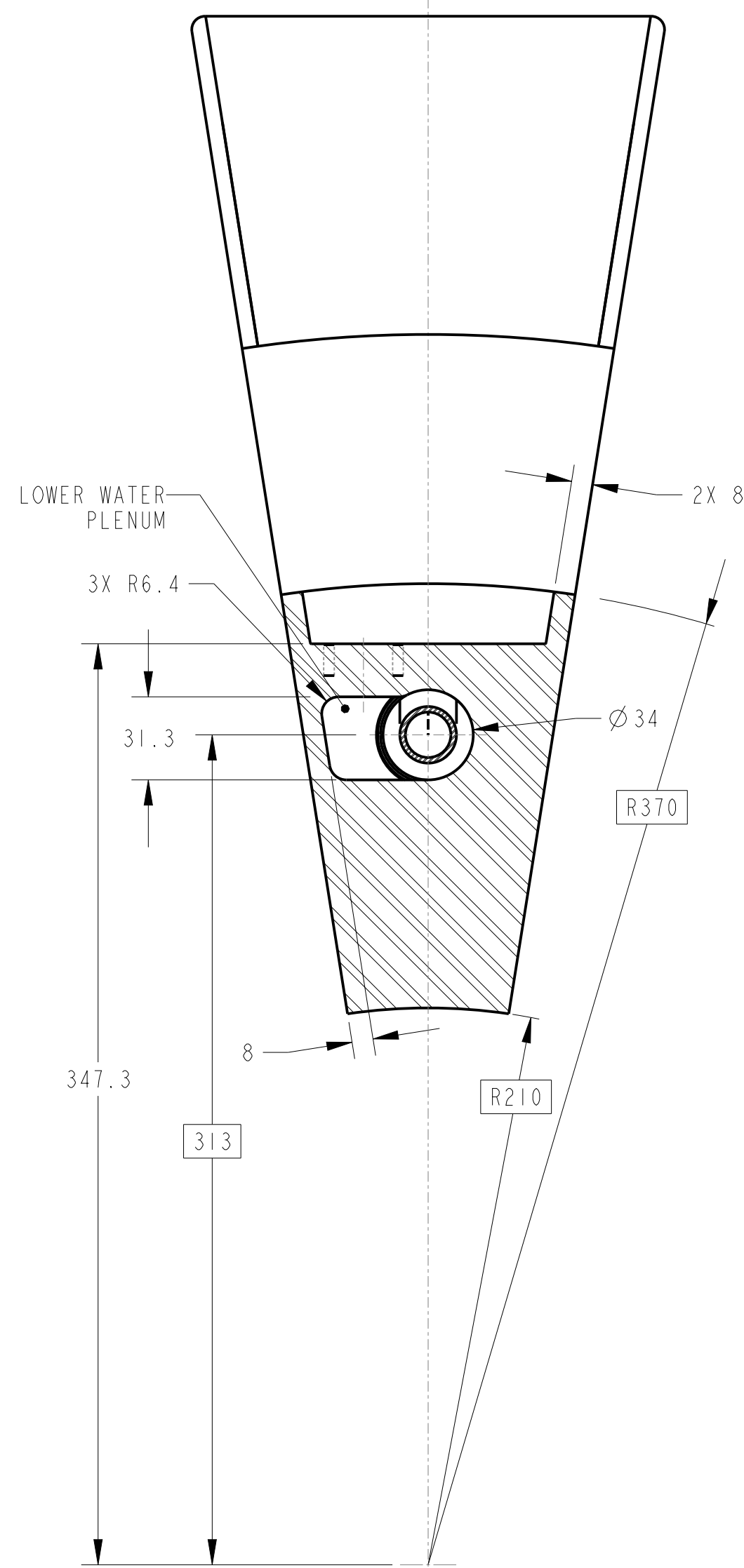
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PARTIAL FRONT VIEW
ROTATED 90°



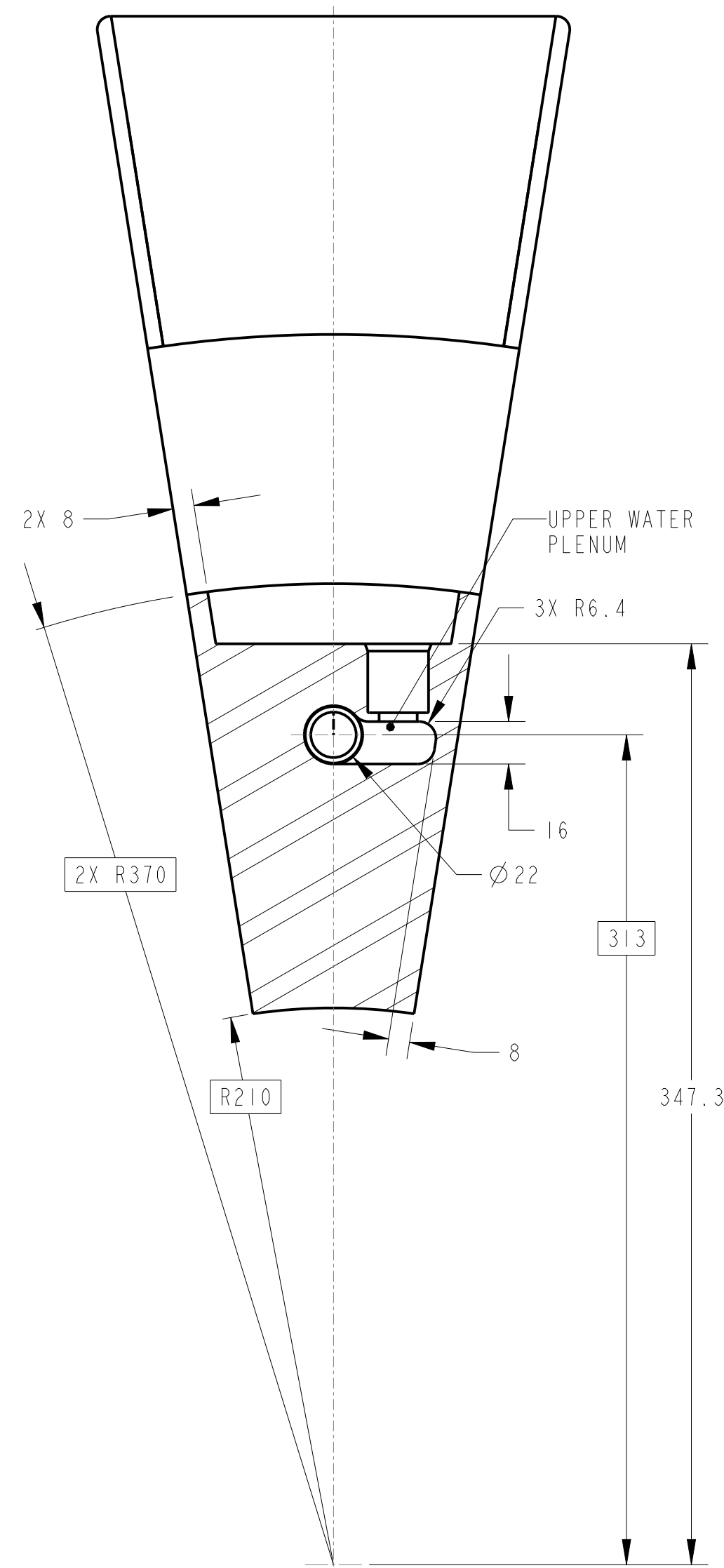
SECTION Y-Y
SCALE 1:2
ROTATED 90°
SEE SHEET 3



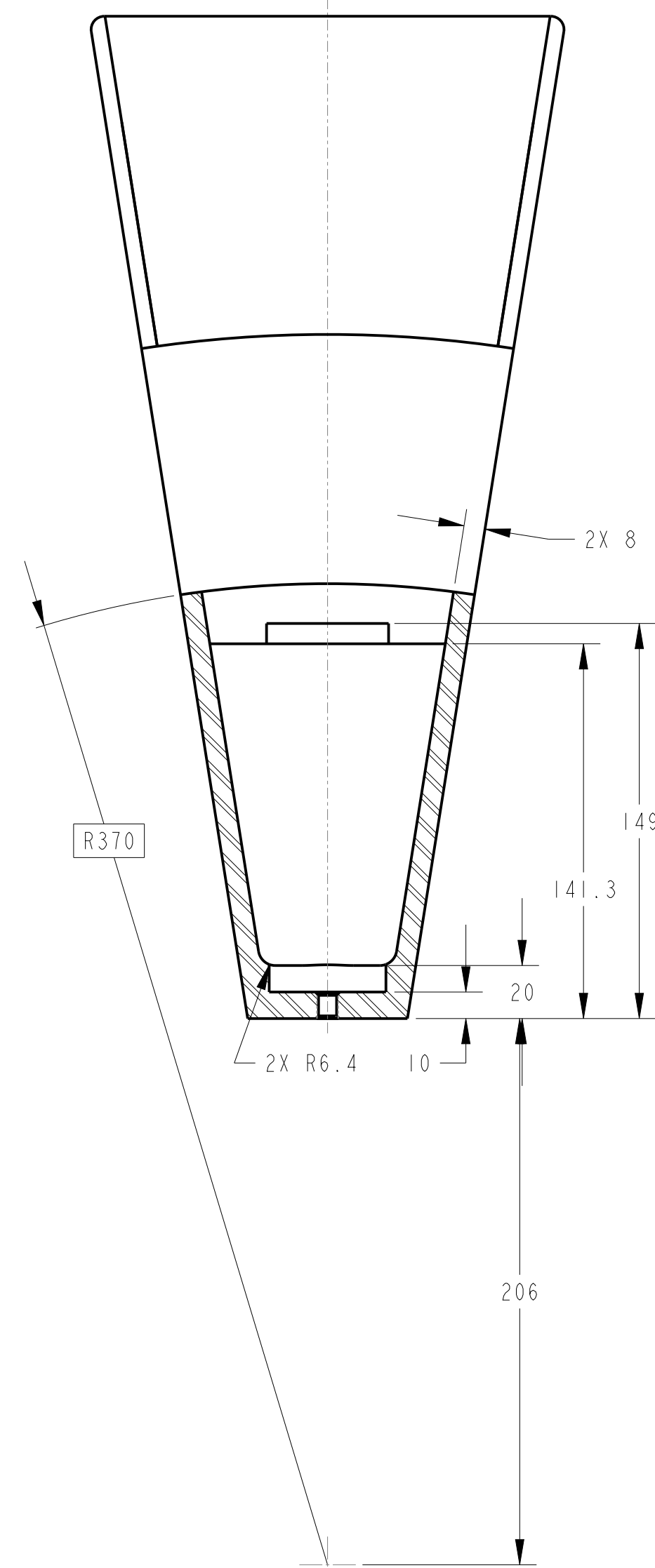
SECTION A-A
SCALE 1:2



SECTION M-M
SCALE 1:2
ROTATED 90°
SEE SHEET 3

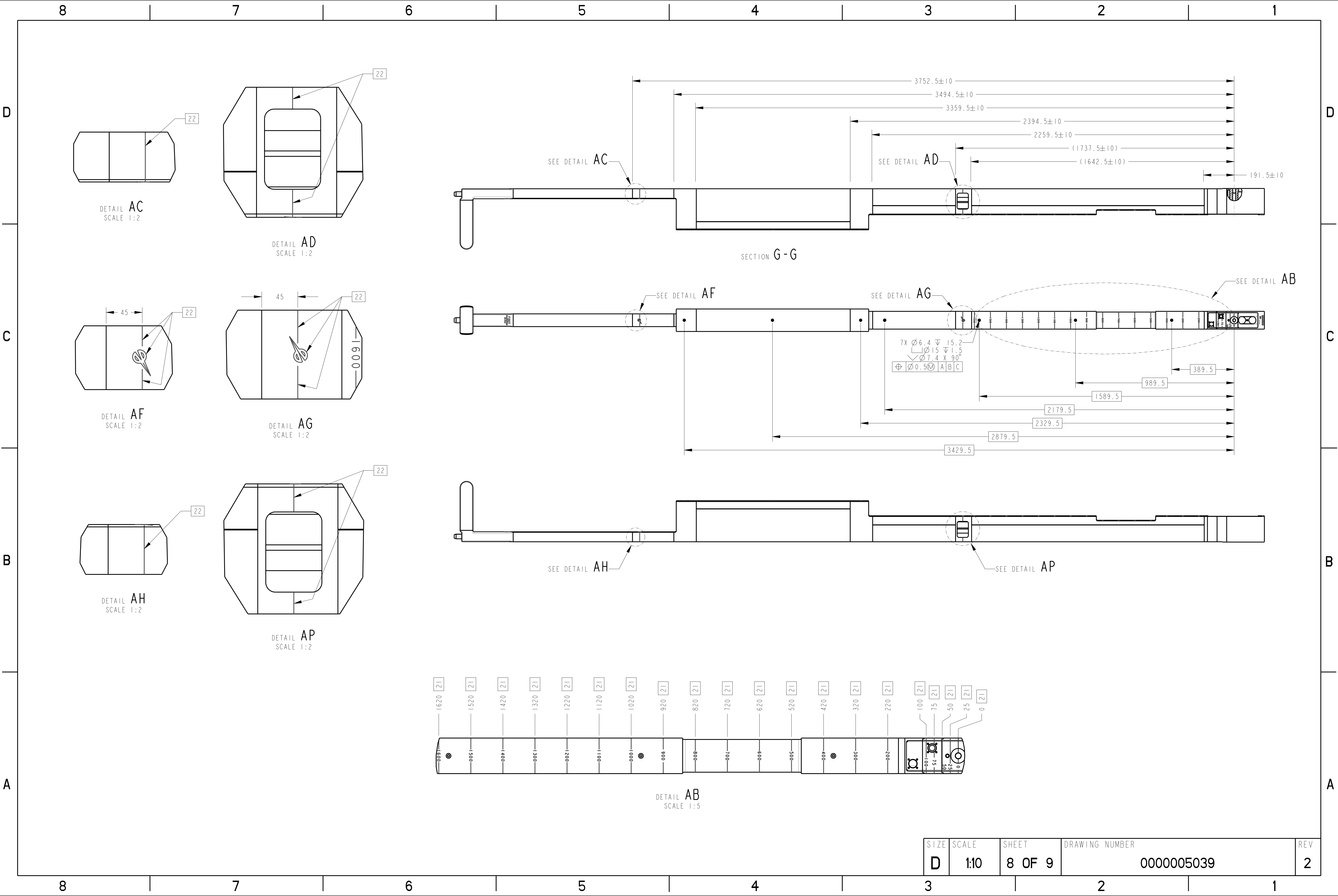


SECTION L-L
SCALE 1:2
ROTATED 90°
SEE SHEET 3



SECTION K-K
SCALE 1:2

SIZE	SCALE	SHEET	DRAWING NUMBER	REV
D	1:10	7 OF 9	0000005039	2



8

7

6

5

4

3

2

1

NOTES:

1

VENDORS AND VENDOR SPECIFIC ITEMS MAY NOT BE SUBSTITUTED WITHOUT PRIOR ENGINEERING APPROVAL.

2.

THE SELLER SHALL SUBMIT TO THE COMPANY CERTIFIED MILL TEST REPORTS FOR ALL MATERIALS USED IN THIS FABRICATION. CERTIFICATIONS MUST BE APPROVED BY THE COMPANY PRIOR TO SHIPPING.

3.

GENERAL REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017670.

4.

MACHINING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017673.

5.

VHP REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000020001.

6.

HIP CLEANING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000001356. ---- currently *NOT* referenced in the HIP spec.

7.

HIP REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000020002.

8.

TUNGSTEN MATERIAL REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000001253.

9.

INCONEL MATERIAL REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000020000.

10.

WELDING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017743. ----- this document does not provide any testing specifications other than VT

11.

LEAK TEST REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017680.

12.

PACKAGING AND SHIPPING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENTS 0000017727 AND 0000017729.

13.

THE FOLLOWING SUPPLEMENTAL DRAWINGS DEFINE THE INTERMEDIATE PROCESS REQUIREMENTS AND MANUFACTURING HOLDS BUT DO NOT SUPERCEDE FINAL REQUIREMENTS AS DEFINED IN THIS DRAWING:
0000077032 - FOOT INCONEL POST-HIP
0000083639 - FOOT INCONEL PRE-HIP
0000083613 - FOOT Ta CLADDING POST-HIP
0000083592 - FOOT Ta CLADDING PRE-HIP
0000011614 - FOOT VHP

14.

DUE TO ACCESSIBILITY, SOME FEATURES MUST BE INSPECTED MID-PROCESS. INDICATED DIMENSIONS SHALL BE INSPECTED AT THE INDICATED MANUFACTURING STAGE:

14.1	0000077032 - FOOT INCONEL POST-HIP
14.2	0000083639 - FOOT INCONEL PRE-HIP
14.3	0000083613 - FOOT Ta CLADDING POST-HIP
14.4	0000083592 - FOOT Ta CLADDING PRE-HIP
14.5	0000011614 - FOOT VHP

15

THE PART NUMBER BE MARKED AT THE APPROXIMATE LOCATION(S) INDICATED PER SAE AS478 METHOD 15B3(LASER ENGRAVE, DEEP). CHARACHER HEIGHT AS INDICATED.

Rigging or handling information?
Center of Gravity?

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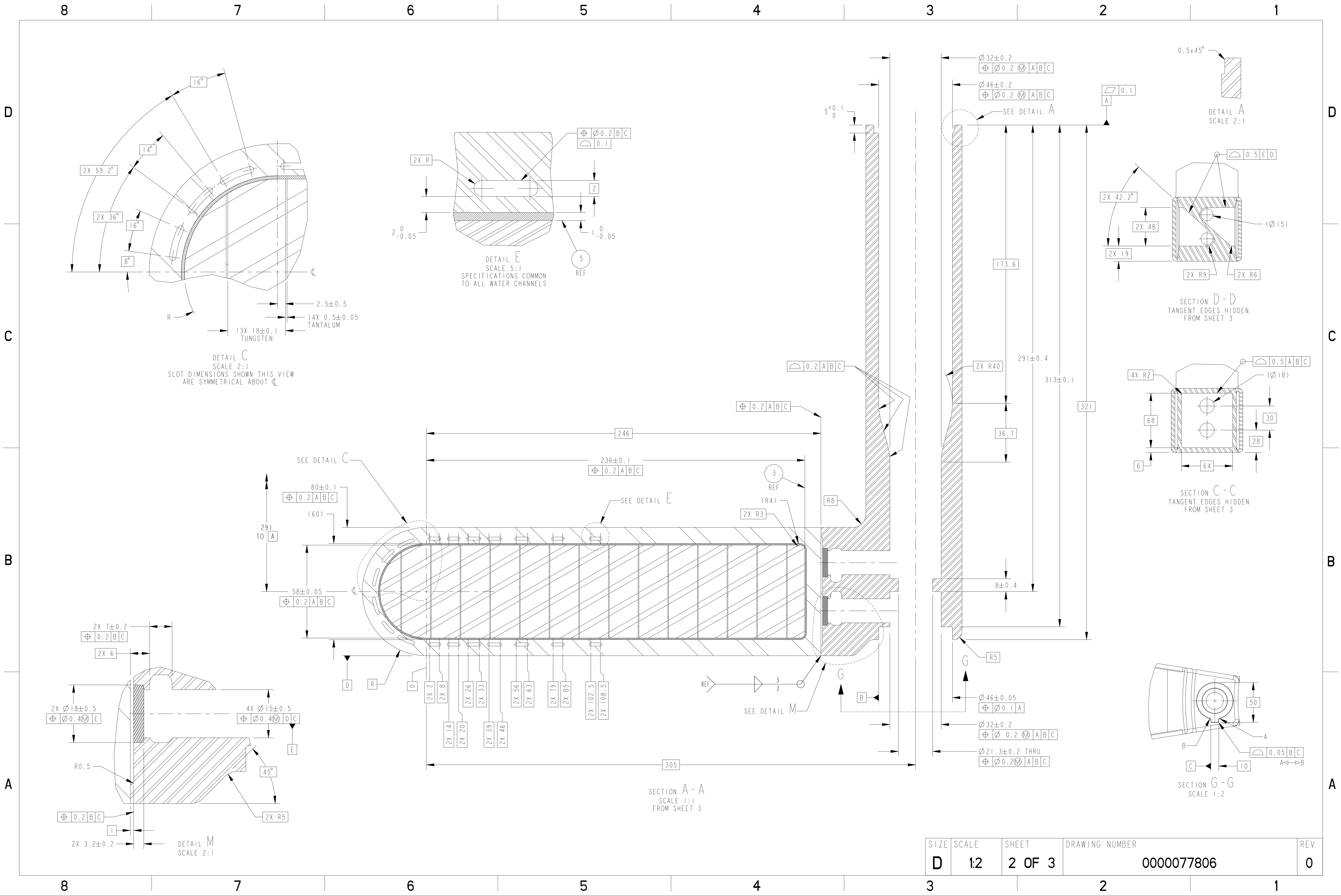
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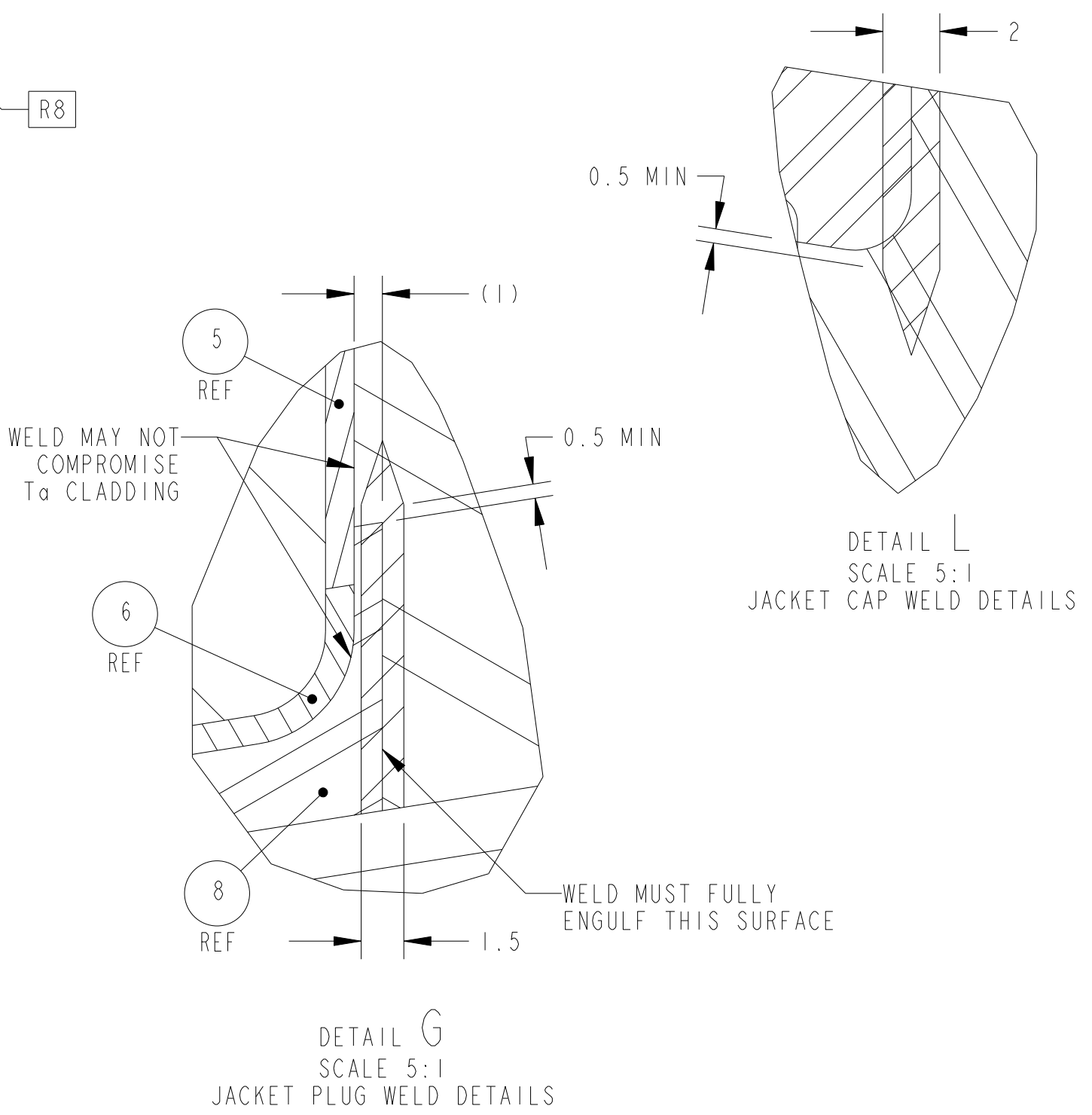
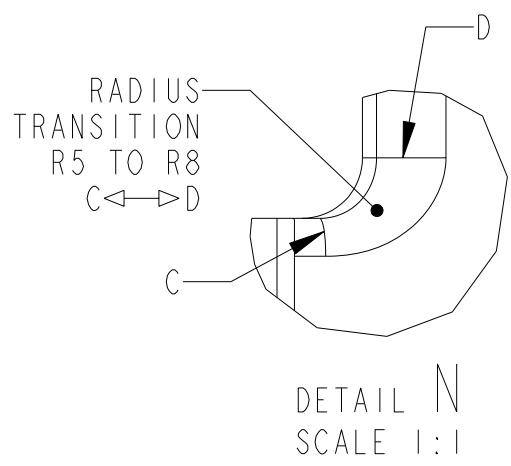
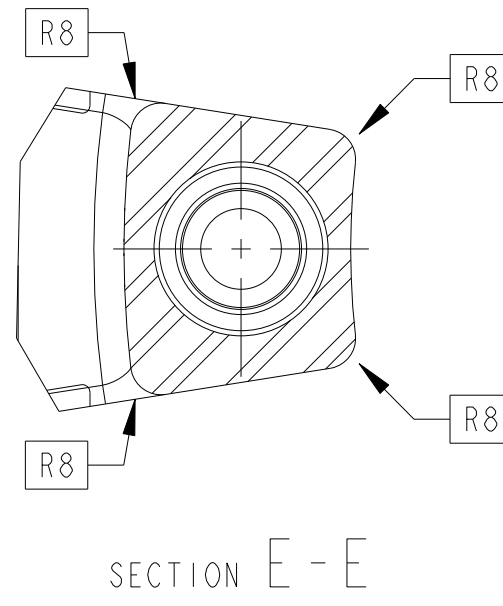
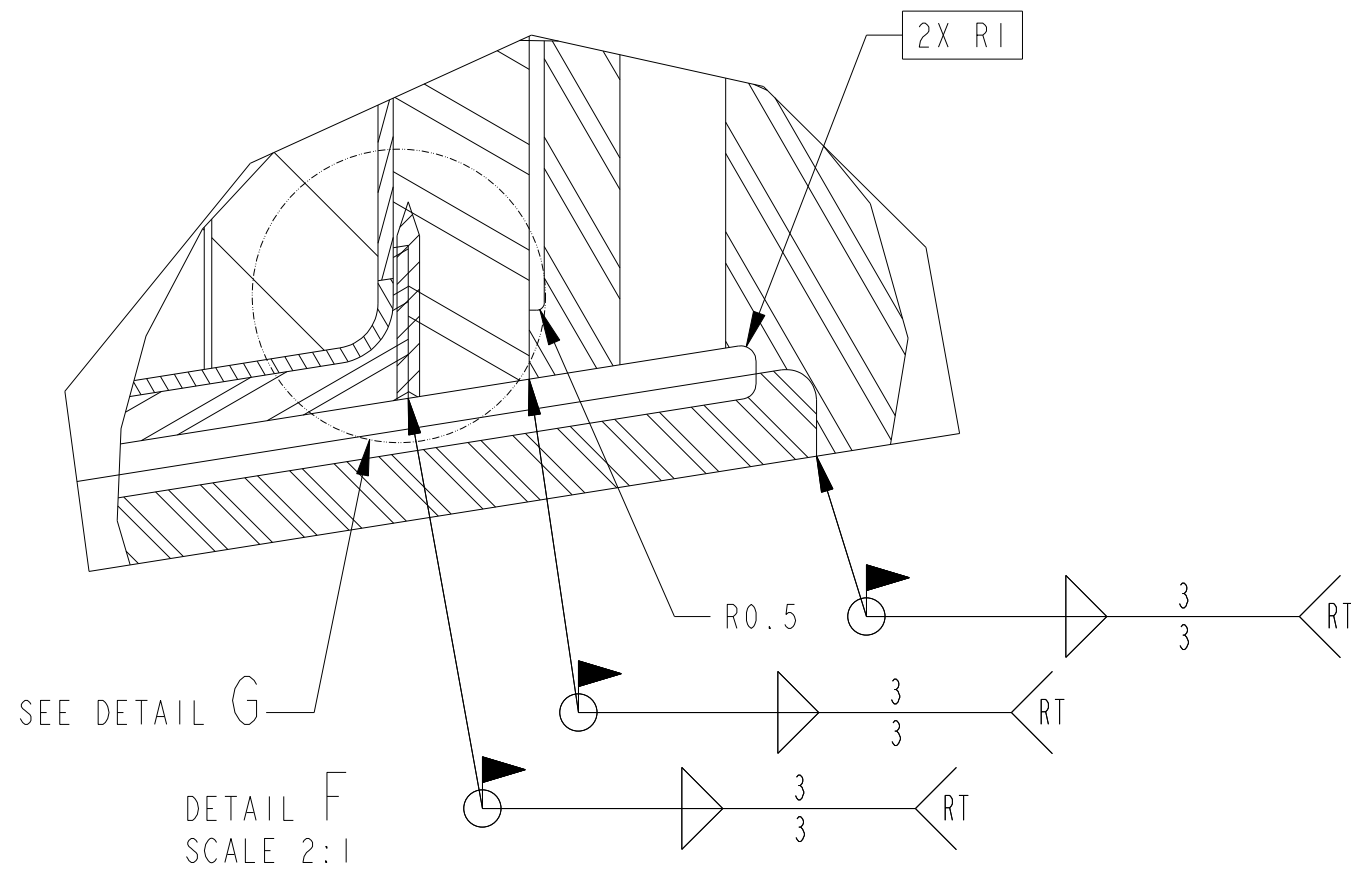
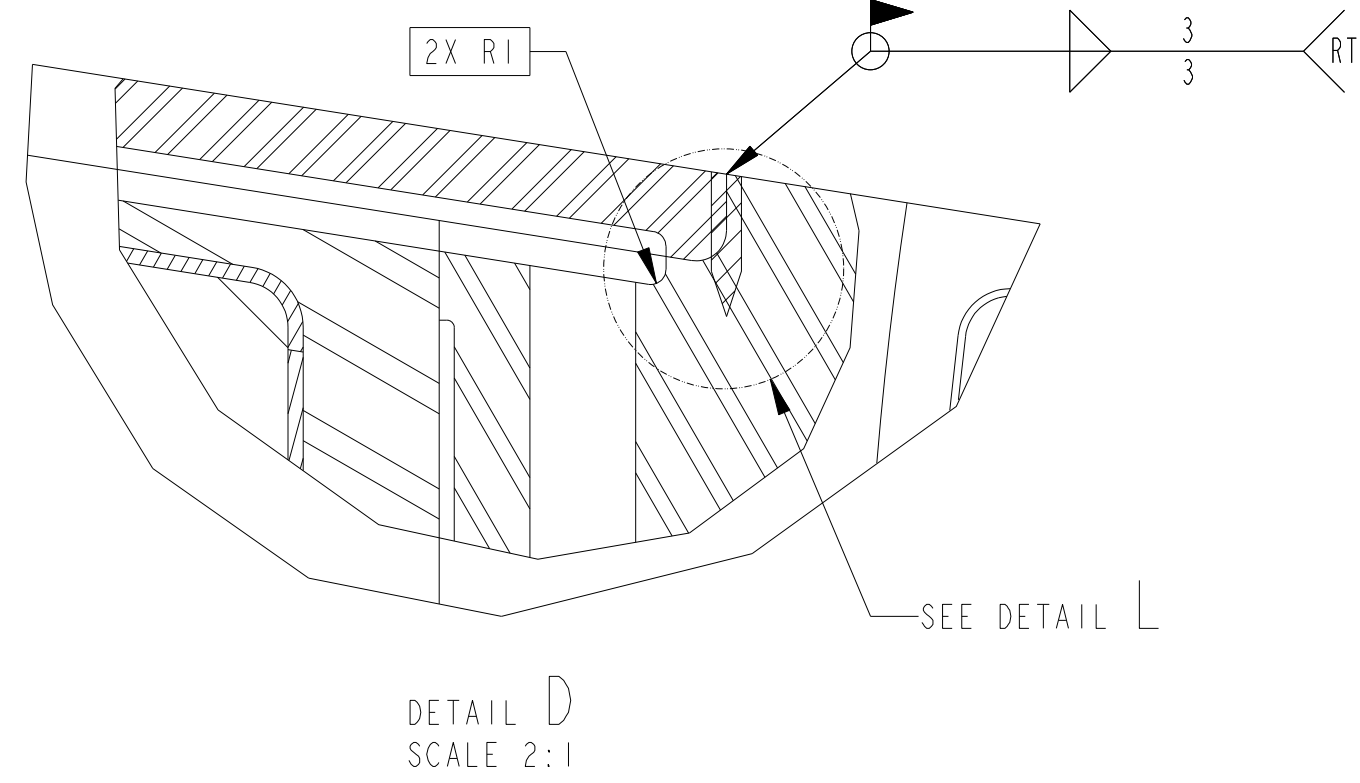
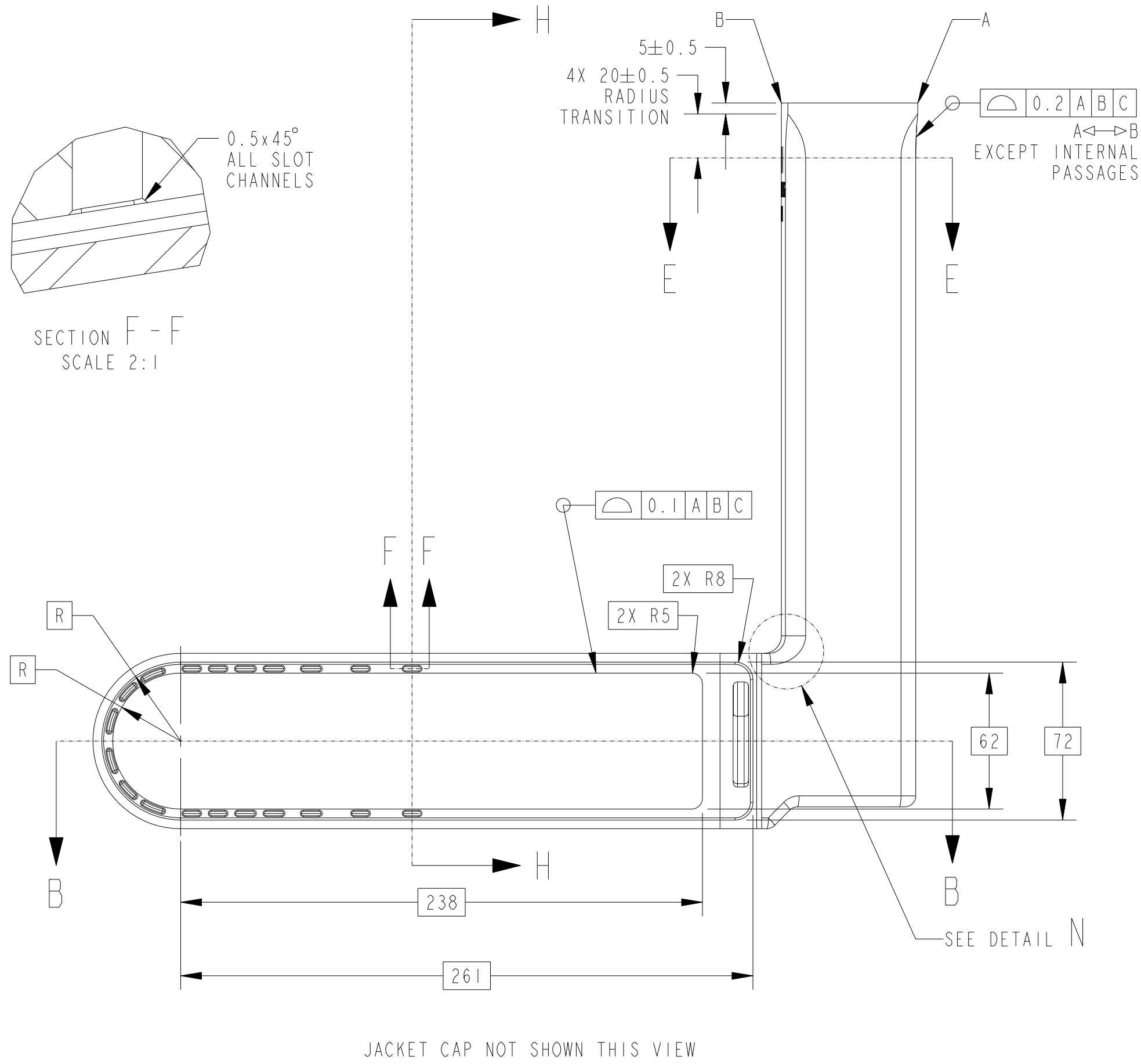
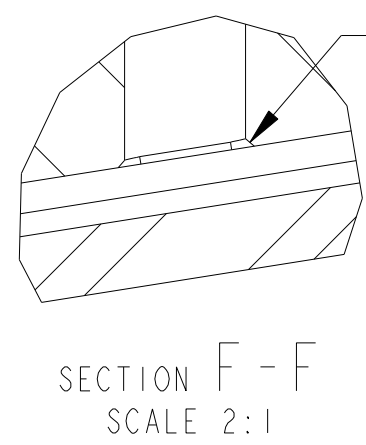
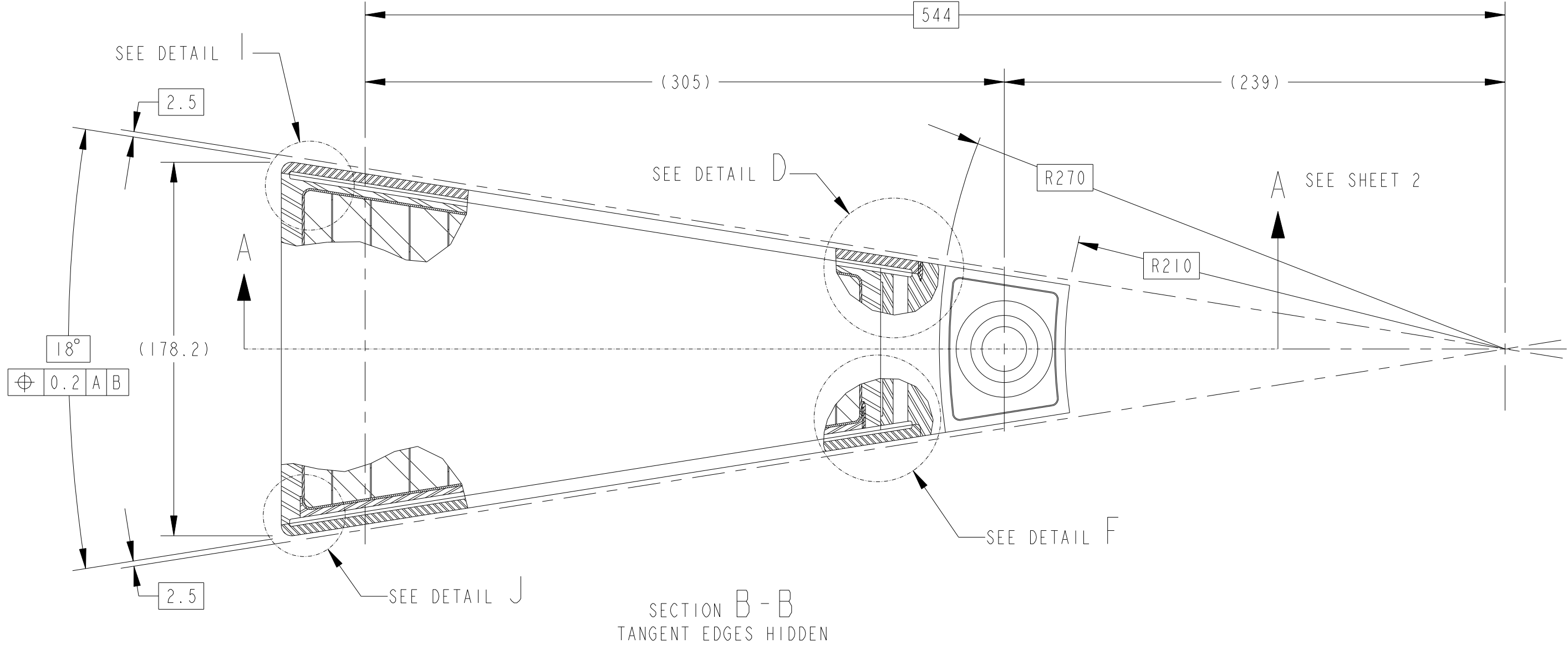
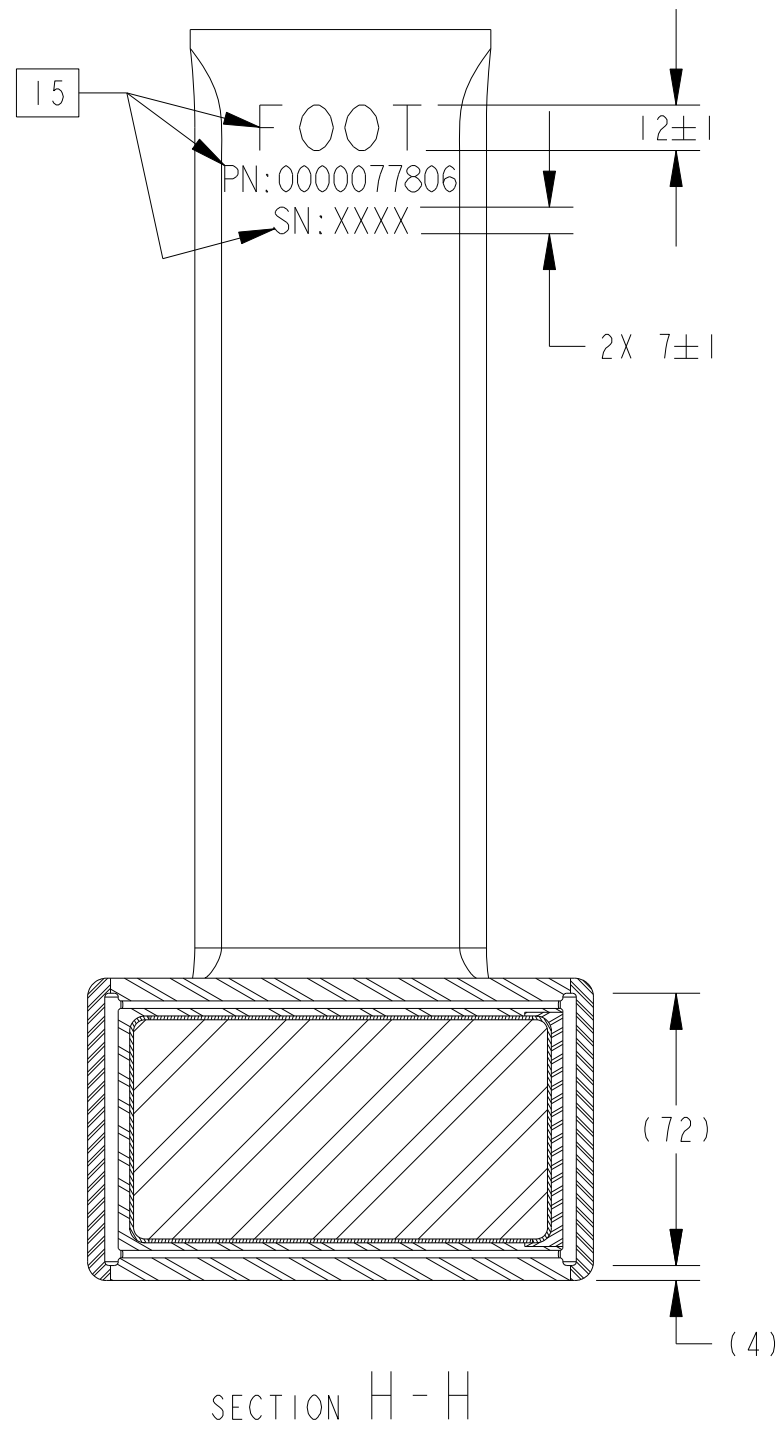
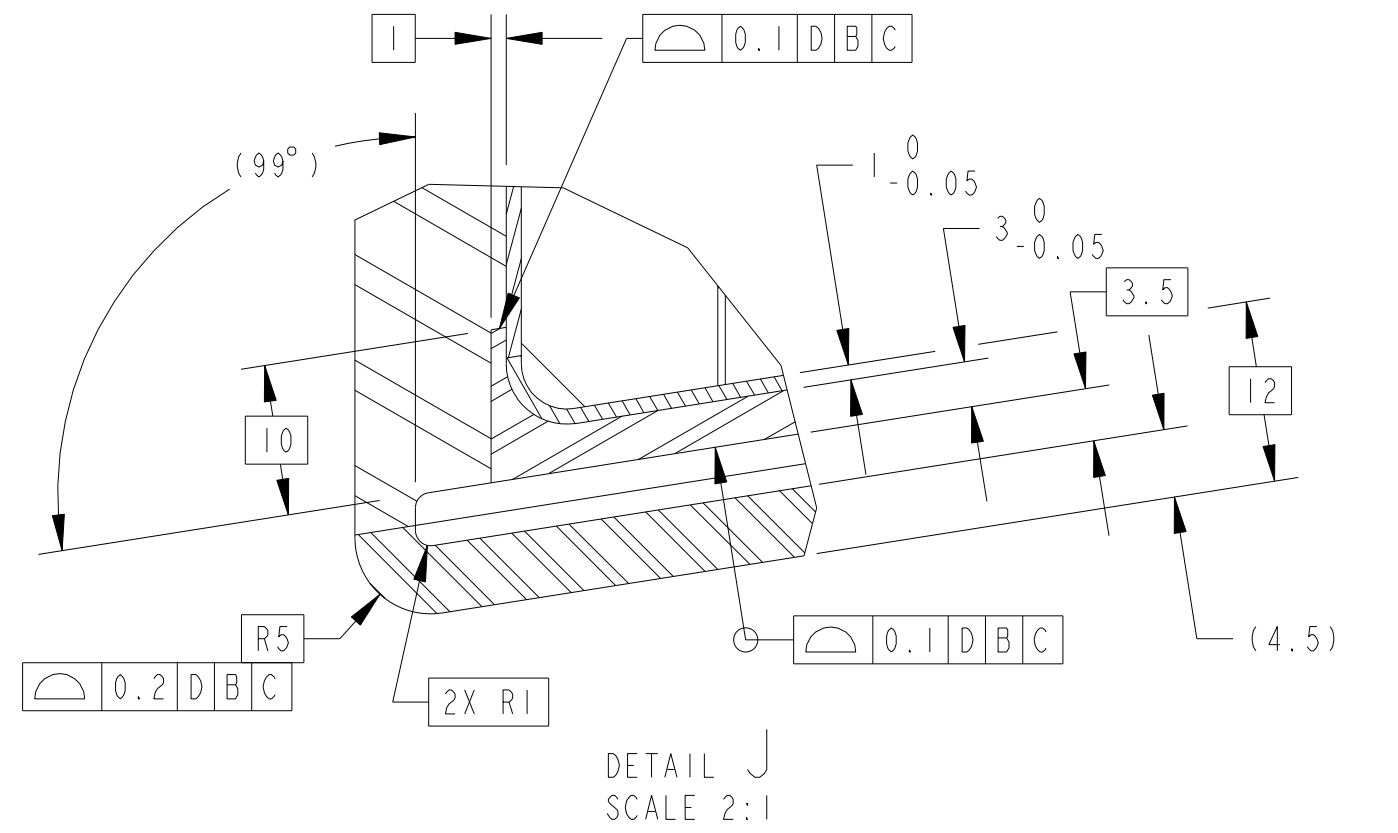
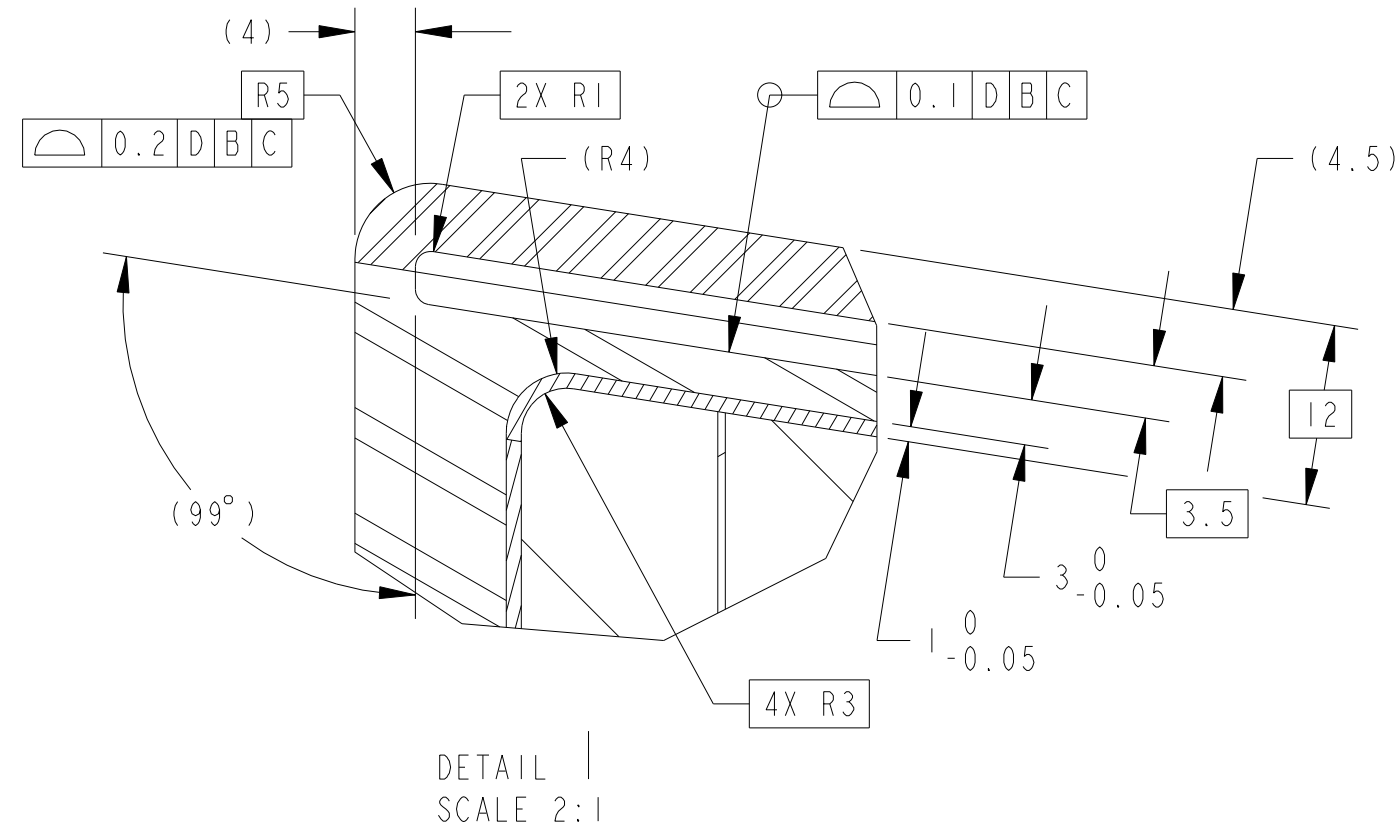
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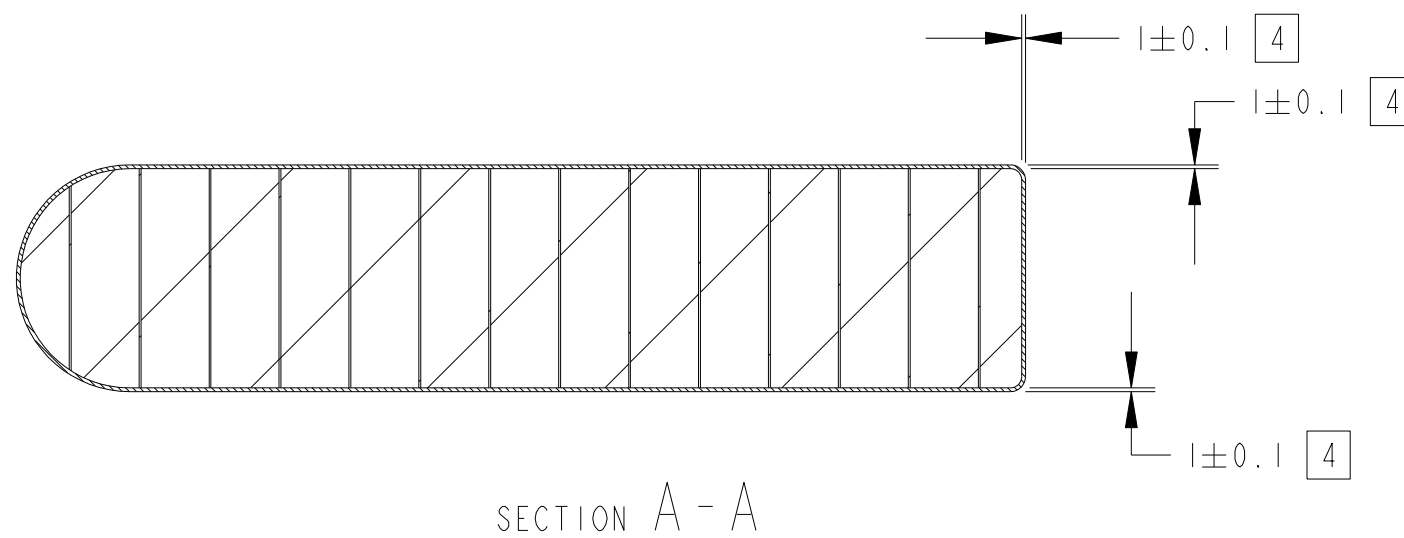
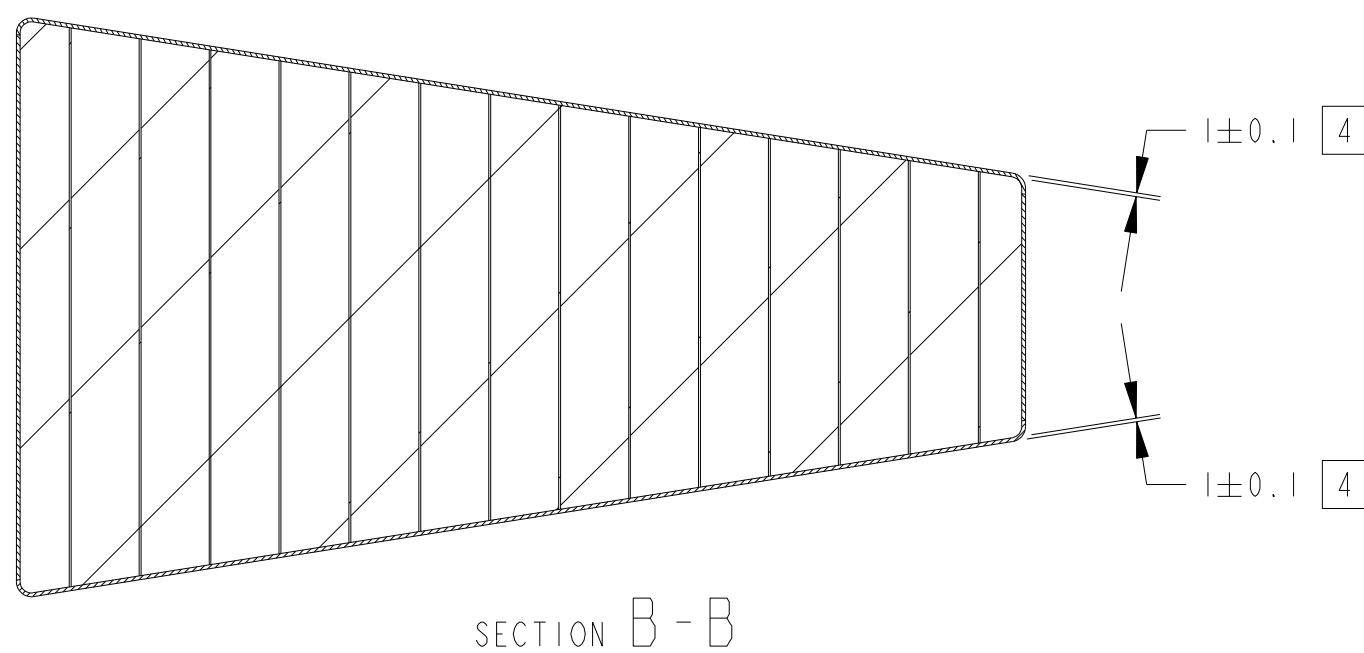
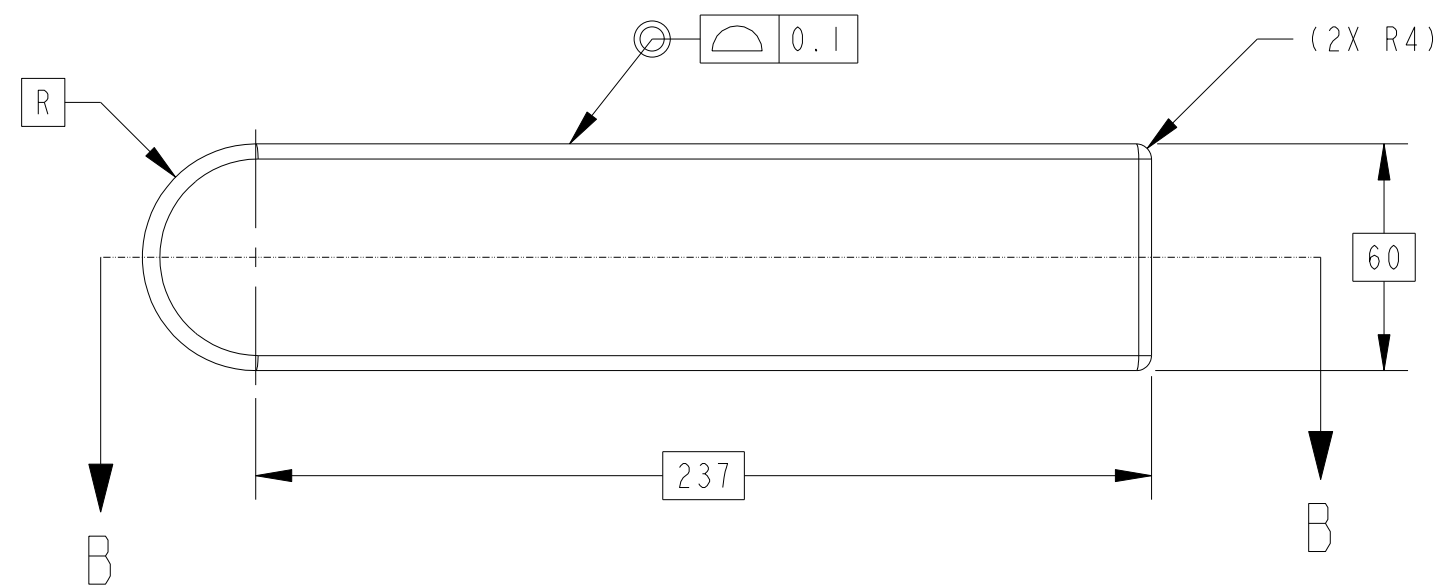
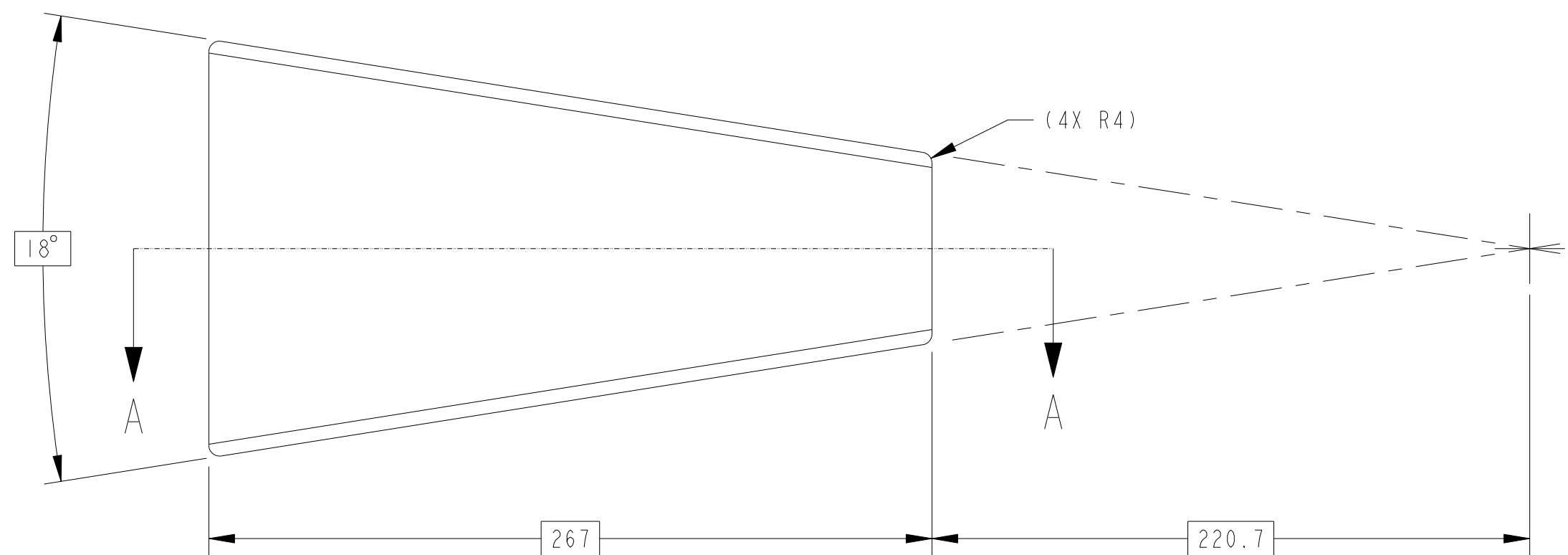
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NEXT USED ASSEMBLY
0000083639

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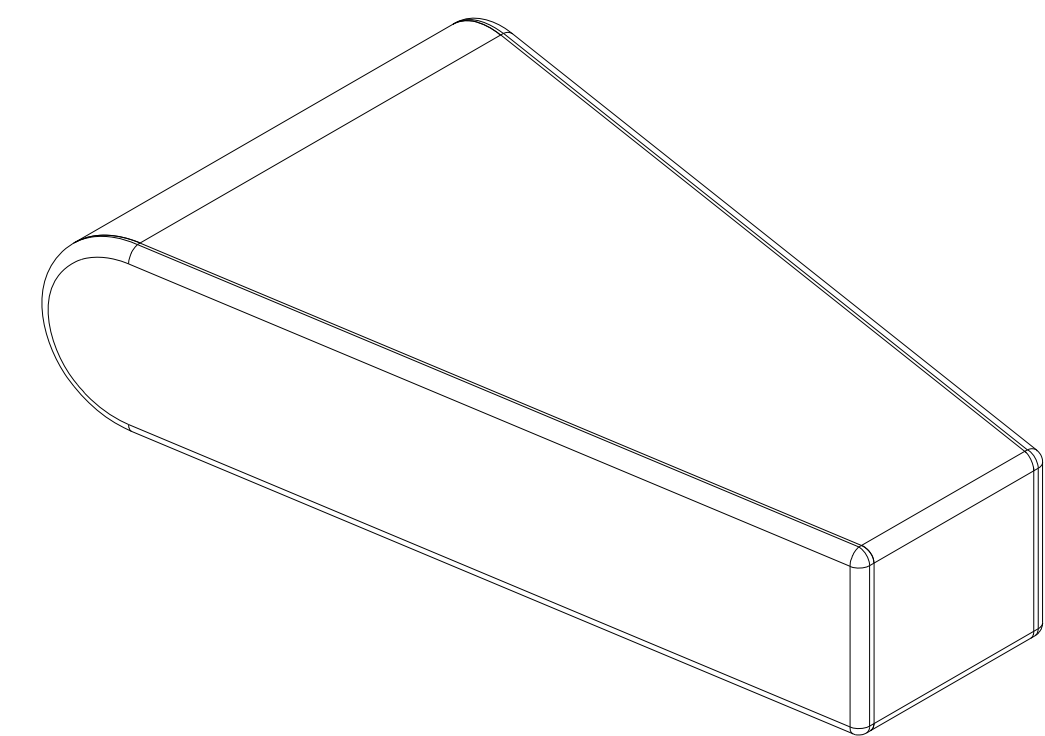
THE ONLY OFFICIAL COPY OF THIS DRAWING IS THE ON-LINE ELECTRONIC VERSION IN WINDCHILL. BEFORE USING A PRINTED COPY, VERIFY THAT IT IS THE MOST CURRENT VERSION. SEE WINDCHILL FOR NAMES OF APPROVERS AND DATES OF APPROVALS.

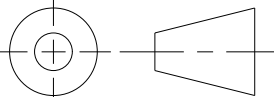
THIS DRAWING IS THE PROPERTY OF OAK RIDGE NATIONAL LABORATORY.

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NOTES:

1. THE SELLER SHALL SUBMIT TO THE COMPANY CERTIFIED MILL TEST REPORTS FOR ALL MATERIALS USED IN THIS FABRICATION. CERTIFICATIONS MUST BE APPROVED BY THE COMPANY PRIOR TO SHIPPING.
2. GENERAL REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017670.
3. MACHINING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017673.
4. VERIFY DIMENSIONAL TOLERANCES AGAINST 0000011614 BY ULTRASONIC TESTING.
5. PERFORM A HIP BOMB LEAK TEST AFTER MACHINING IS COMPLETED.
HIP BOMB LEAK TEST REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017680.
6. PACKAGING AND SHIPPING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENTS 0000017727 AND 0000017729.
7. THE DIMENSIONS AND SPECIFICATIONS FOUND IN THIS DRAWING ARE SUPPLEMENTAL TO AND DO NOT SUPERCEDE THOSE FOUND IN DRAWING 0000077806. DRAWING 0000077806 SHALL TAKE PRECEDENCE WHERE CONFLICTS, IF ANY, ARE FOUND. USE 0000077806 FOR ANY/ALL CAD MODEL REFERENCES.



		WIP-NOT APPROVED FOR CONSTRUCTION	
GRADE	1-SERIOUS	UNITS: MILLIMETERS DEFAULT TOLERANCES 0-6 ±0.1 >6-120 ±0.2 >120 ±0.5 ANGULAR ±0.5°	 HIGH FLUX ISOTOPE REACTOR SPALLATION NEUTRON SOURCE
FACILITY	STS	BREAK ALL SHARP EDGES EXCEPT AS NOTED: 15 MAX	SPALLATION PACKAGE POST-HIP & MACHINING HOLD POINT C
BUILDING	8800-STS.TARGET BUILDING II		
MAJOR SYSTEM	TARGET SYSTEMS	SURFACE ROUGHNESS: 0.8 Ra U.N.O.	DRAWING NUMBER 0000083613
SYSTEM	TARGET ASSEMBLIES	DRAFTING STD: ASME Y14.100 GDT: ASME Y14.5 WELD SYMBOLS: AWS A2.4	
SUBSYSTEM	TARGET BLOCK	THIRD ANGLE PROJECTION 	REV 0
SUB-SUBSYSTEM	XXX		SIZE D SCALE 1:2 WEIGHT 32 KG SHEET 1 of 1

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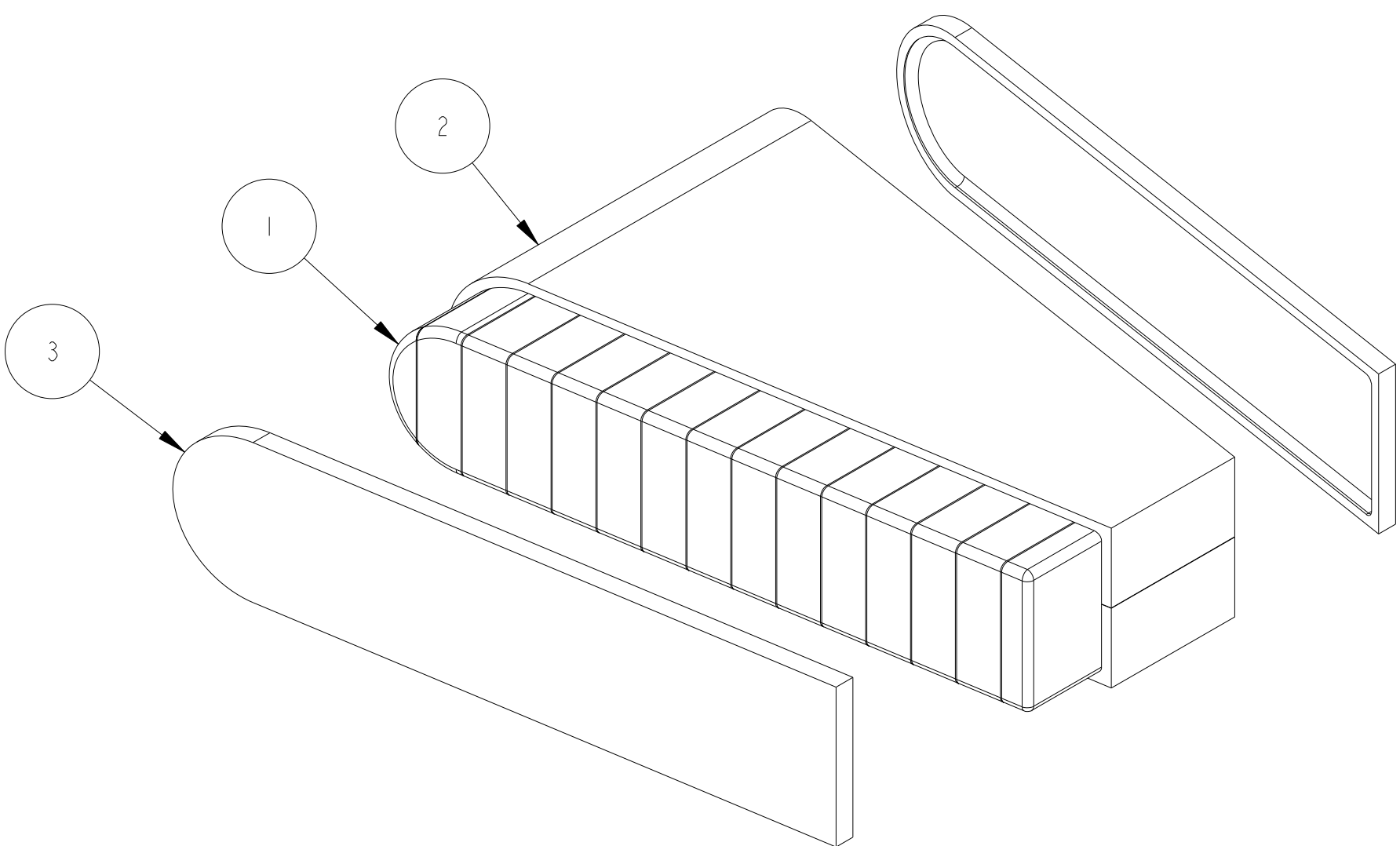
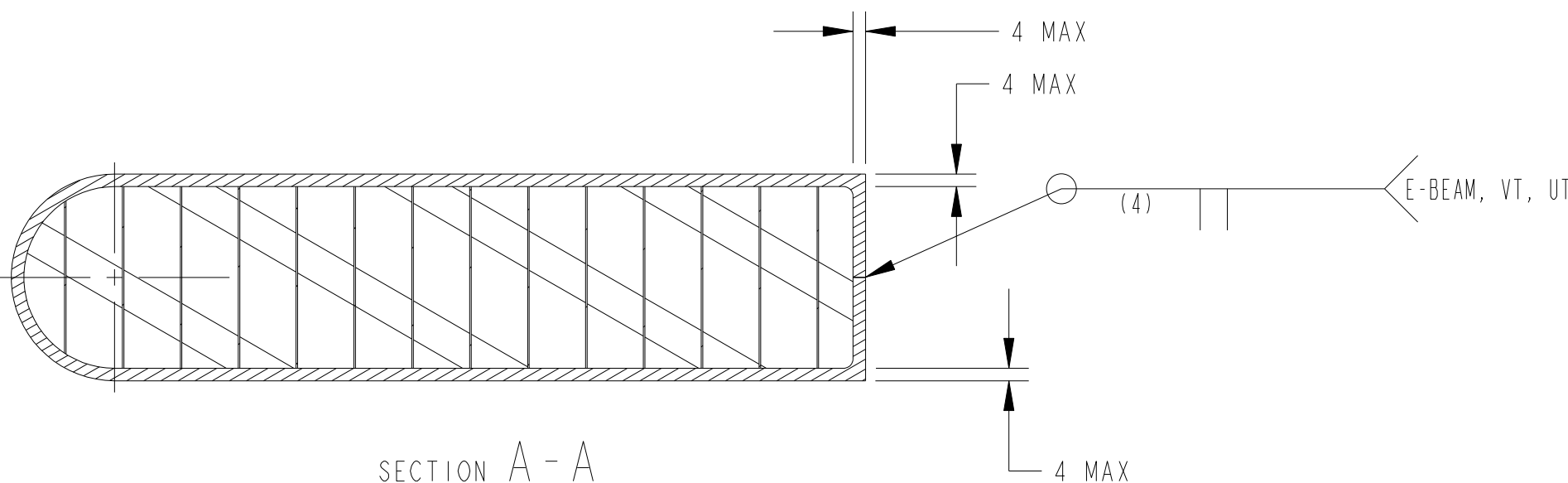
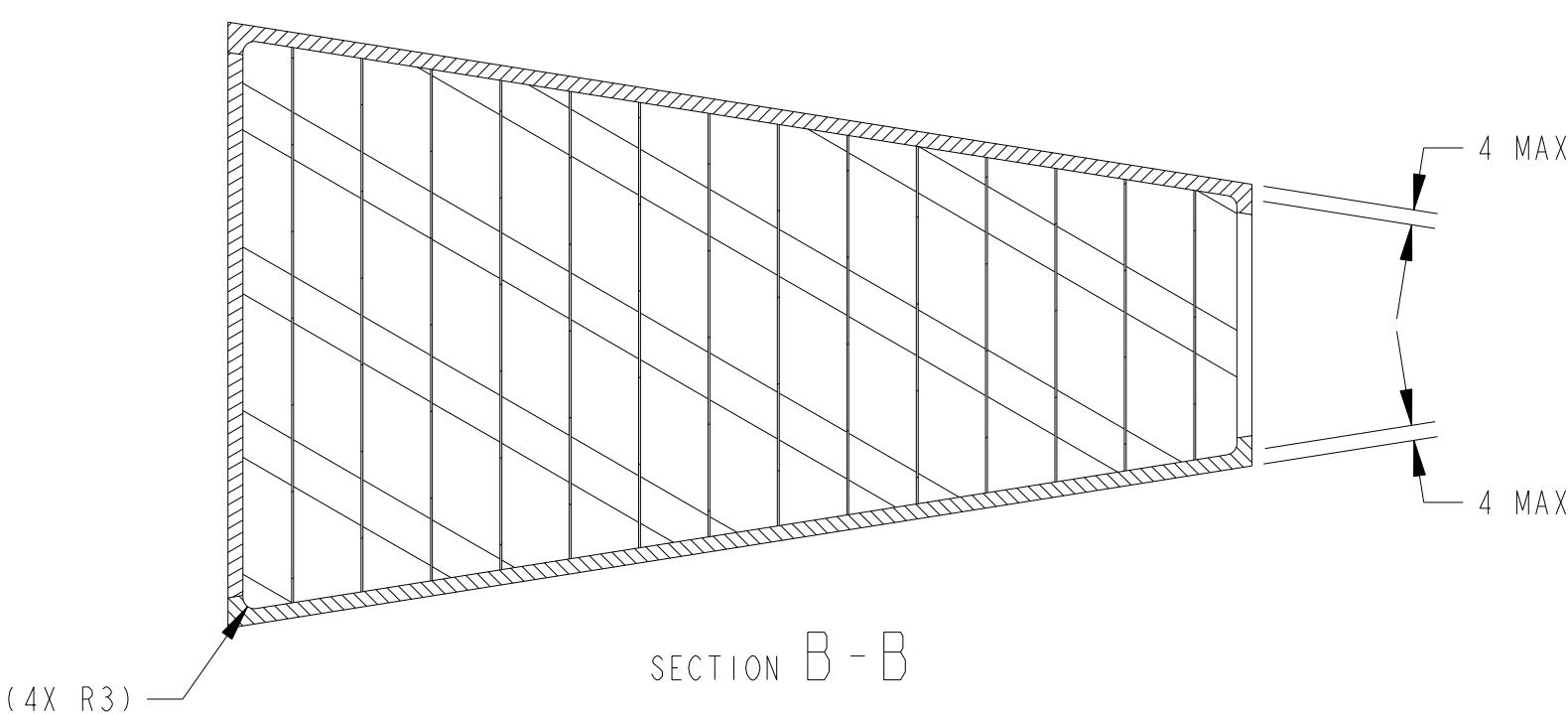
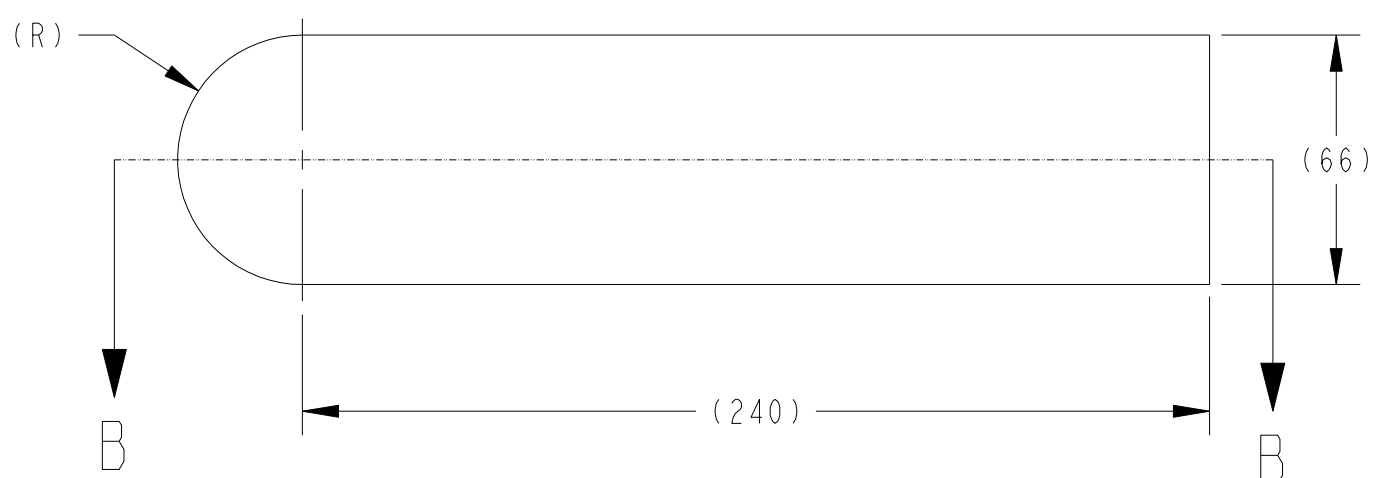
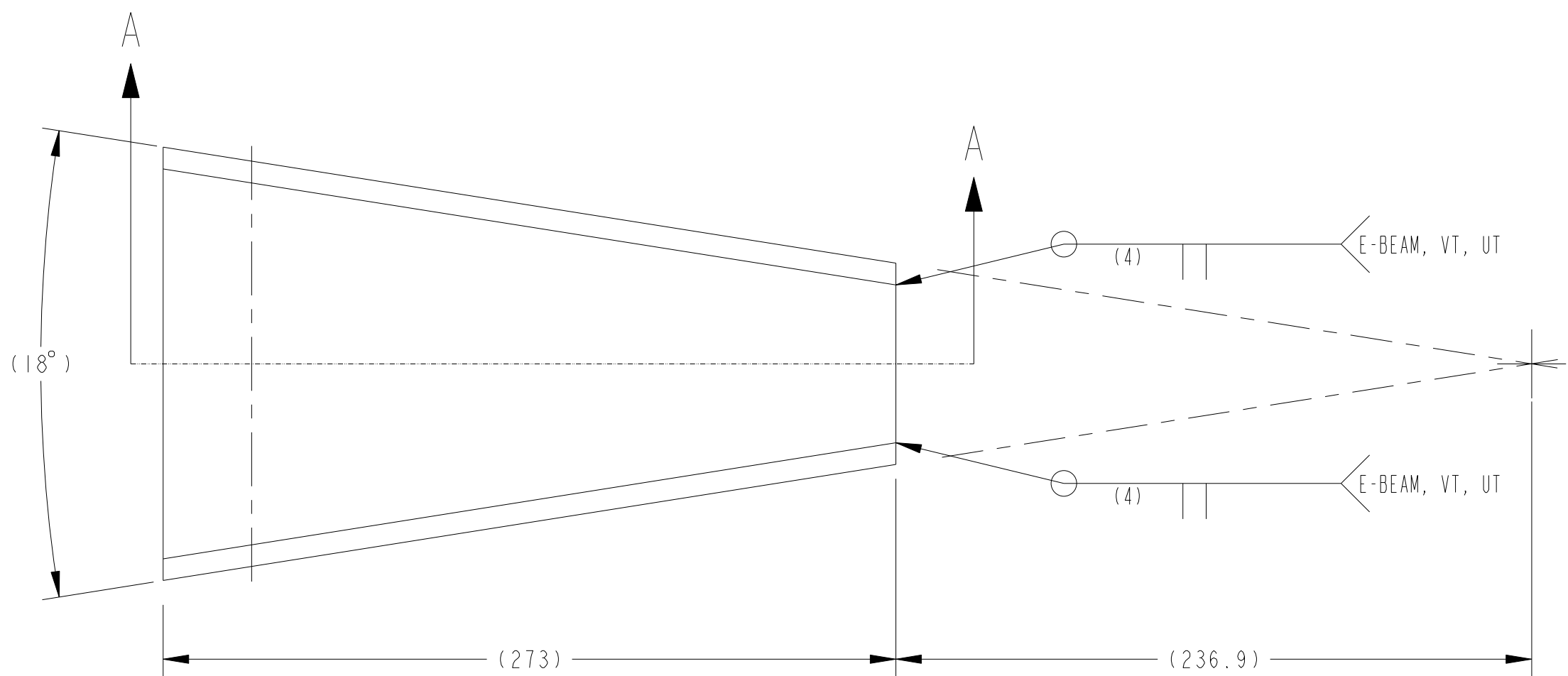
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REVISION BLOCK

REV	DESCRIPTION OF CHANGE	DATE
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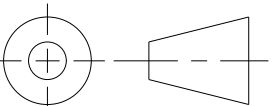
NOTES:

1. VENDORS AND VENDOR SPECIFIC ITEMS MAY NOT BE SUBSTITUTED WITHOUT PRIOR ENGINEERING APPROVAL.
2. THE SELLER SHALL SUBMIT TO THE COMPANY CERTIFIED MILL TEST REPORTS FOR ALL MATERIALS USED IN THIS FABRICATION. CERTIFICATIONS MUST BE APPROVED BY THE COMPANY PRIOR TO SHIPPING.
3. GENERAL REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017670.
4. MACHINING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017673.
5. WELDING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017745 REGARDING E-BEAM WELDING.
6. THE GAP BETWEEN THE TANTALUM AND THE SPALLATION PACKAGE SHALL NOT EXCEED 0.1 MILLIMETERS. VERIFY BY THE INSPECTION REPORT OF THE SPALLATION PACKAGE AND PRE-WELD COMPONENTS.
7. HIP CLEANING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000001356. ---- currently *NOT* referenced in the HIP spec.
8. HIP REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000020002.
9. PERFORM A HIP BOMB LEAK TEST AFTER WELD INSPECTION IS COMPLETE.
HIP BOMB LEAK TEST REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017680.
10. PACKAGING AND SHIPPING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENTS 0000017727 AND 0000017729.
11. THE DIMENSIONS AND SPECIFICATIONS FOUND IN THIS DRAWING ARE SUPPLEMENTAL TO AND DO NOT SUPERCEDE THOSE FOUND IN DRAWING 0000077806. DRAWING 0000077806 SHALL TAKE PRECEDENCE WHERE CONFLICTS, IF ANY, ARE FOUND. USE 0000077806 FOR ANY/ALL CAD MODEL REFERENCES.



EXPLODED REFERENCE VIEW
SCALE 1:2

GRADE	SCALE 1:2
1-SERIOUS	
FACILITY	ST
BUILDING	
8800-ST5 TARGET BUILDING I	
MAJOR SYSTEM	TARGET SYSTEMS
SYSTEM	TARGET ASSEMBLIES
SUBSYSTEM	TARGET BLOCK
SUB-SUBSYSTEM	XXX

UNITS: MILLIMETERS DEFAULT TOLERANCES 0-6 ±0.1 6-120 ±0.2 120 ±0.5 ANGULAR ±0.5°		 OAK RIDGE National Laboratory		HIGH FLUX ISOTOPE REACTOR	SPALLATION NEUTRON SOURCE
BREAK ALL SHARP EDGES EXCEPT AS NOTED: 15 MAX		SPALLATION PACKAGE PRE-HIP HOLD POINT B			
SURFACE ROUGHNESS: 0.8 Ra UNO.					
DRAFTING STD: ASME Y14.100 GDT: ASME Y14.5 WELD SYMBOLS: AWS A2.4		DRAWING NUMBER 0000083592			REV 0
THIRD ANGLE PROJECTION		SIZE D	SCALE 1:2	WEIGHT 38 KG	SHEET 1 of 1

---	TANTALUM (R05200) ASTM B708	Ta CLADDING CAP, PRE-HIP	0000083592-02	2	3
---	TANTALUM (R05200) ASTM B708	Ta CLADDING WRAP, PRE-HIP	0000083592-01	1	2
---	---	HOLD POINT A	0000011614	1	1
VENDOR ☐	MATERIAL SPECIFICATION	DESCRIPTION	PART NUMBER	QTY	FIND NO.

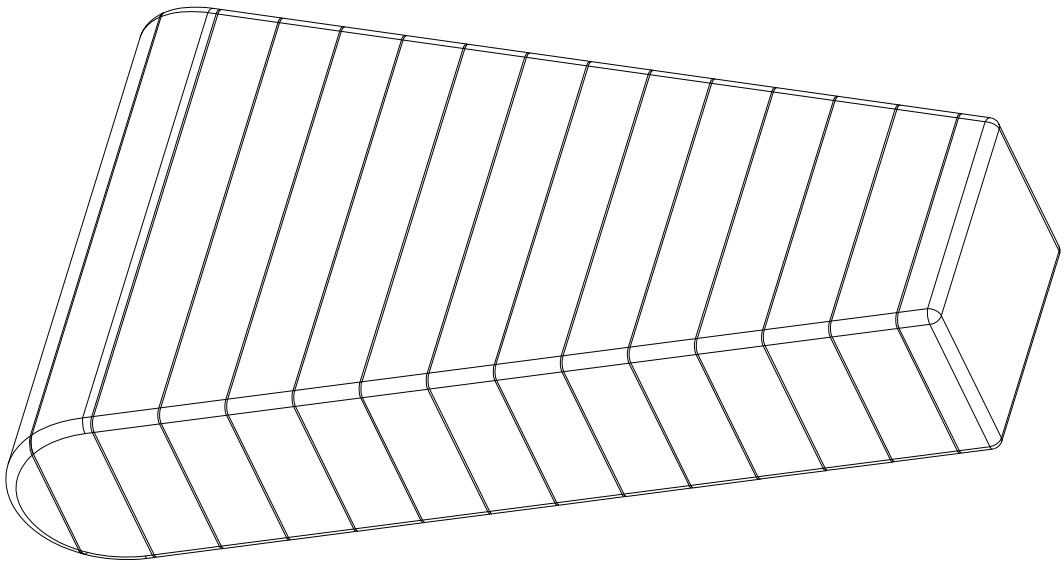
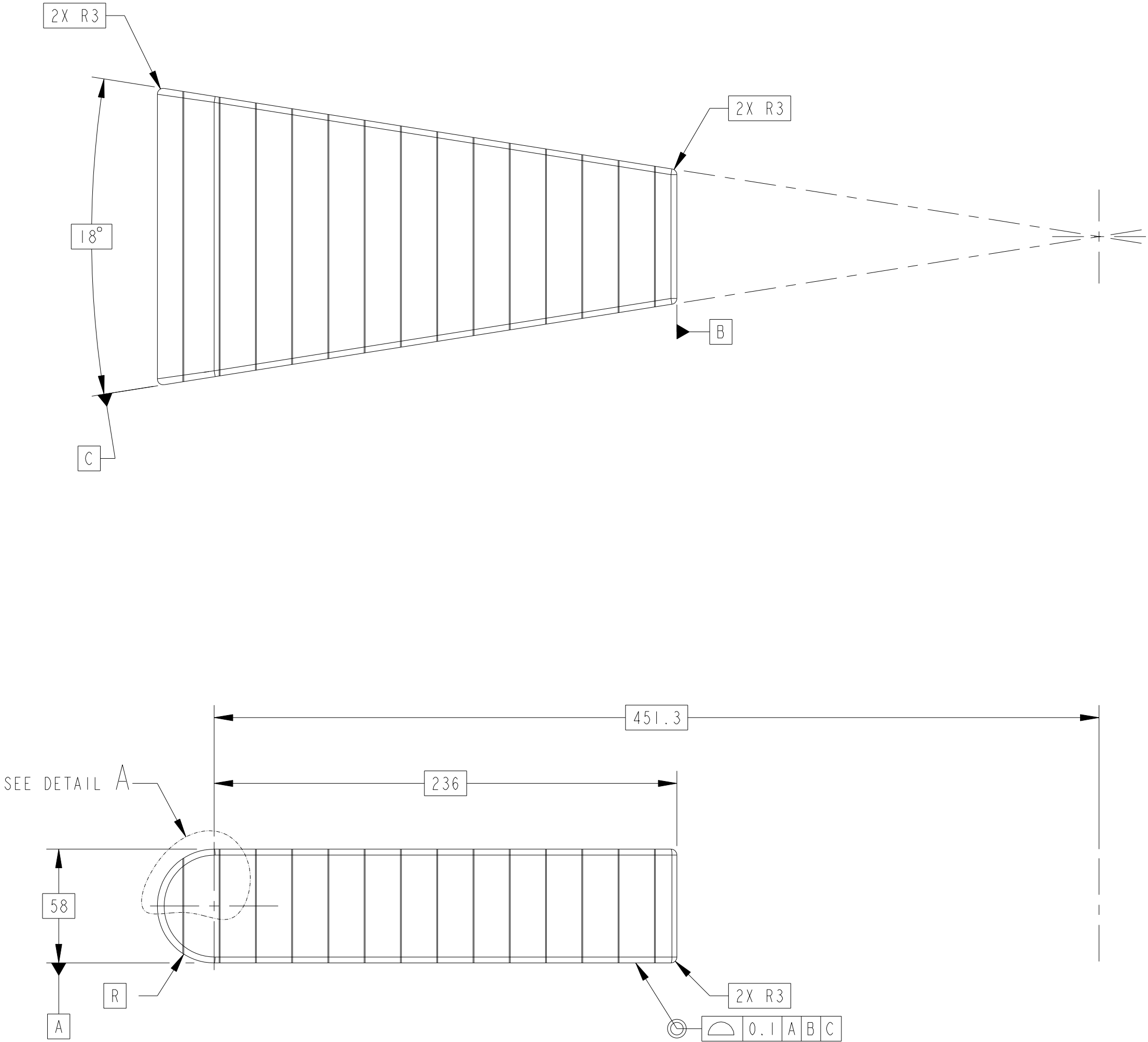
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A

---	TANTALUM (R05200) ASIM B708	VHP TANTALUM SHEETS	0000077806-02	I	2
---	TUNGSTEN (R07006) SEE NOTES	VHP TUNGSTEN PLATES	0000077806-01	I	I
VENDOR	MATERIAL SPECIFICATION	DESCRIPTION	PART NUMBER	QTY	FIND NO.



REFERENCE VIEW
SCALE 1:2

NEXT USED ASSEMBLY
0000083592

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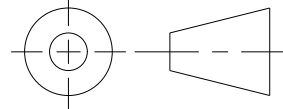
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REVISION BLOCK		
REV	DESCRIPTION OF CHANGE	DATE
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NOTES:

1. FINAL AS-MACHINED CONFIGURATION SHOWN; VHP AND INSPECTION OF BONDS SHALL OCCUR PRIOR TO MACHINING. VHP PROCESS SHALL OCCUR ON PLATES OF EQUAL RECTANGULAR SIZE USING THICKNESSES AS INDICATED. MACHINING ALLOWANCES ARE THE RESPONSIBILITY OF THE VENDOR.
2. THE SELLER SHALL SUBMIT TO THE COMPANY CERTIFIED MILL TEST REPORTS FOR ALL MATERIALS USED IN THIS FABRICATION. CERTIFICATIONS MUST BE APPROVED BY THE COMPANY PRIOR TO SHIPPING.
3. TUNGSTEN MATERIAL REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000001253.
4. GENERAL REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017670.
5. MACHINING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000017673.
6. VHP REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENT 0000020001.
7. PACKAGING AND SHIPPING REQUIREMENTS: ADHERE TO SPECIFICATIONS AND PROCEDURES OUTLINED IN ORNL DOCUMENTS 0000017727 AND 0000017729.
8. THE DIMENSIONS AND SPECIFICATIONS FOUND IN THIS DRAWING ARE SUPPLEMENTAL TO AND DO NOT SUPERCEDE THOSE FOUND IN DRAWING 0000077806. DRAWING 0000077806 SHALL TAKE PRECEDENCE WHERE CONFLICTS, IF ANY, ARE FOUND. USE 0000077806 FOR ANY/ALL CAD MODEL REFERENCES.

WIP-NOT APPROVED FOR CONSTRUCTION				
GRADE	1-SERIOUS	UNITS: MILLIMETERS	 HIGH FLUX ISOTOPE REACTOR SPALLATION NEUTRON SOURCE	
		DEFAULT TOLERANCES		
FACILITY	STS	0-6 ±0.1 6-120 ±0.2 120 ±0.5 ANGULAR ±0.5°	--- TUNGSTEN & TANTALUM PACKAGE HOLD POINT A	
BUILDING	8800-STS TARGET BUILDING II	BREAK ALL SHARP EDGES EXCEPT AS NOTED: 15 MAX		
MAJOR SYSTEM	TARGET SYSTEMS	SURFACE ROUGHNESS: 3.2 Ra U.N.O.		
SYSTEM	TARGET ASSEMBLIES	DRAFTING STD: ASME Y14.100 GDT: ASME Y14.5 WELD SYMBOLS: AWS A2.4	DRAWING NUMBER	
SUBSYSTEM	TARGET SEGMENT		0000011614	
SUB-SUBSYSTEM	XXX		SIZE	REV
		SCALE	WEIGHT	SHEET
		D	31 KG	1 of 1
		1:2		