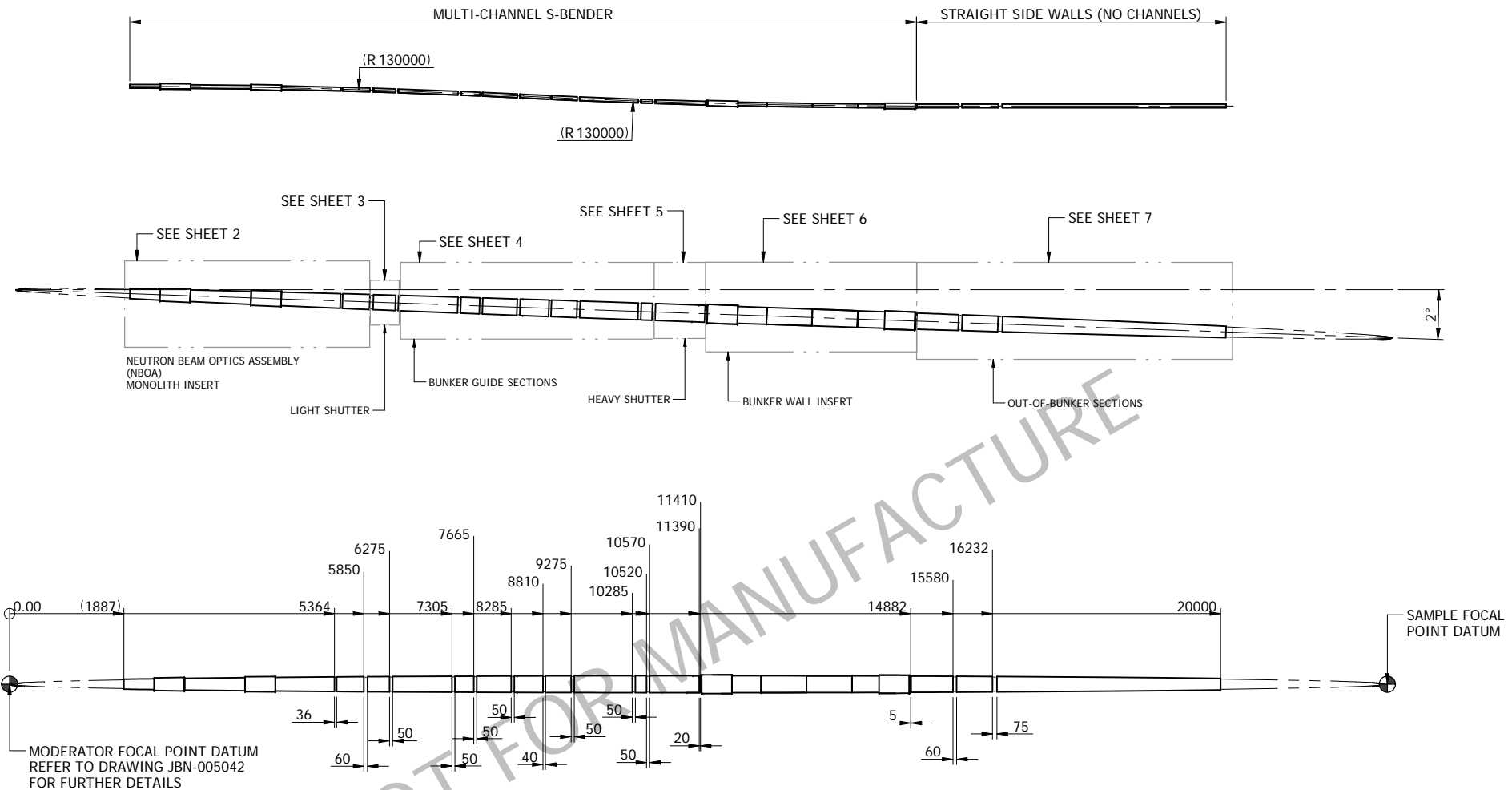


DO NOT SCALE



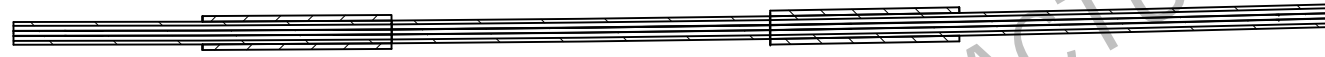
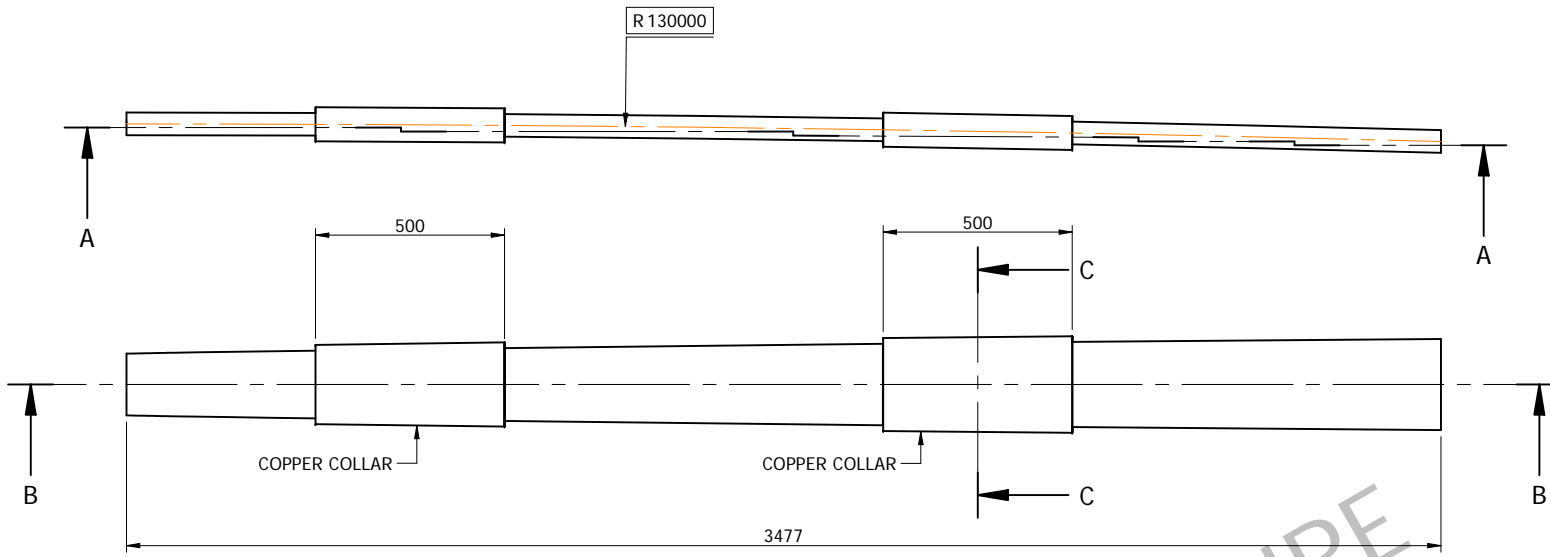
NOT FOR MANUFACTURE

- NOTES:
- 1) THIS IS A GUIDE CONCEPT DRAWING - **NOT FOR MANUFACTURE**
 - 2) GUIDE IS ELLIPTICAL IN HORIZONTAL GEOMETRY - REFER TO DRAWING JBN-005042
 - 3) GUIDE TO BE PRODUCED FROM METAL SUBSTRATE
 - 4) SUBSTRATE AND VANE THICKNESSES TO BE ADVISED BY GUIDE MANUFACTURER
 - 5) GUIDE SECTIONS TO BE SUITABLE FOR OPERATION IN VACUUM

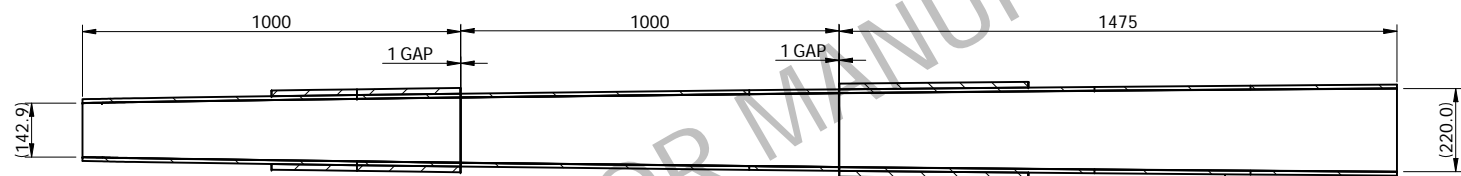
Distance from moderator focal point (mm)		Supermirror Coating (m value)			
From	To	Top surface	Bottom Surface	Side Walls	Vanes
0	1885	No guide			
1885	3000	6	6	3	3
3000	4500	5	5	3	3
4500	10000	4	4	3	3
10000	14500	3	3	3	3
14500	19000	4	4	-	-
19000	20000	5	5	-	-

A	15.12.2017	?	JBN			MANUFACTURE ONLY WHEN STATUS IS ISSUED	IN WORK	
ISSUE	DATE	MOD. No.	DRAWN BY	CHKD BY	APPD BY	ISSUED	STATUS	
TOLERANCES UNLESS STATED			MATERIAL & SPEC.			SURFACE TEXTURE UNLESS STATED		
X ± 0.5		ANGLE ± 0.2°		SEE ITEMS LIST			√ Ra N/A	
X.X ± 0.3							FINISH	
X.XX ± 0.1							CLEAN REMOVE ALL BURRS	
© STFC 2017 PROJECTION			DIMENSIONS IN mm UNLESS STATED		DRAWING CONFORMS TO BS 8888 TOLERANCING ISO 8015		USED ON	
			ISIS DESIGN DIVISION RUTHERFORD APPLETON LABORATORY HARWELL CAMPUS, DIDCOT, OXFORDSHIRE, OX11 0QX				----	
TITLE		GUIDE ASSY V5						?
FREIA								
A2	SHEET	1 OF 7		JBN-005043		A		

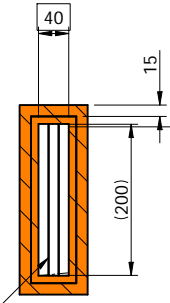
DO NOT SCALE



SECTION B-B



SECTION A-A

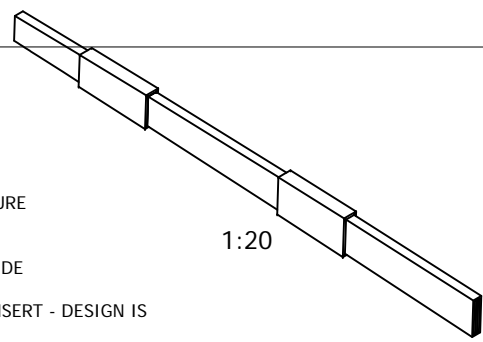


2 x VANE
EQUISPACED

SECTION C-C
1:5

NOTES:

- 1) THIS IS A GUIDE CONCEPT DRAWING - NOT FOR MANUFACTURE
- 2) GUIDE IS ELLIPTICAL IN HORIZONTAL GEOMETRY
- 3) GUIDE TO BE PRODUCED FROM COPPER ALLOY SUBSTRATE
- 4) SUBSTRATE AND VANE THICKNESSES TO BE ADVISED BY GUIDE MANUFACTURER - SEE SECTION C-C
- 5) GUIDE SECTIONS TO BE ASSEMBLED INTO ESS MONOLITH INSERT - DESIGN IS CURRENTLY NOT AVAILABLE



1:20

NOT FOR MANUFACTURE

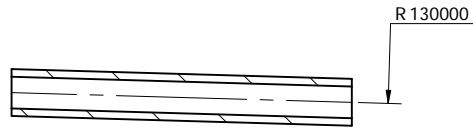
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ISSUE	DATE	MOD. No.	DRAWN BY	CHKD BY	APPD BY	WHEN STATUS IS ISSUED	STATUS
TOLERANCES UNLESS STATED			MATERIAL & SPEC.		SURFACE TEXTURE UNLESS STATED		
X ± 0.5	ANGLE ± 0.2°	SEE ITEMS LIST		√ Ra N/A			
X.X ± 0.3				FINISH			
X.XX ± 0.1				CLEAN REMOVE ALL BURRS			
PROJECTION	DIMENSIONS IN mm UNLESS STATED	DRAWING CONFORMS TO BS 8888 TOLERANCING ISO 8015		USED ON			
ISIS DESIGN DIVISION	RUTHERFORD APPLETON LABORATORY		HARWELL CAMPUS, DIDCOT, OXFORDSHIRE, OX11 0QX				
TITLE	GUIDE ASSY V5						
FREIA	?						
A2	SHEET	2 OF 7	JBN-005043		A		

A2 JBN-005043

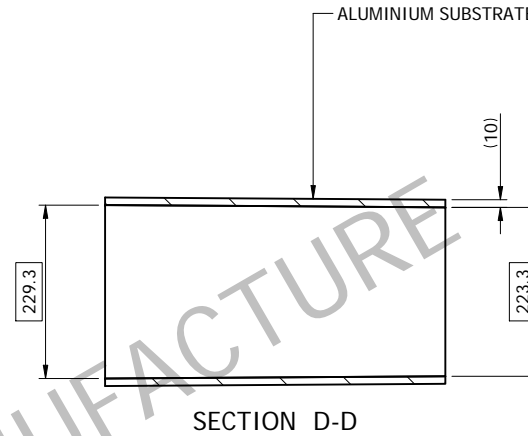
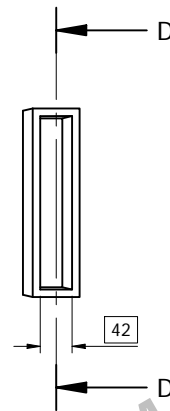
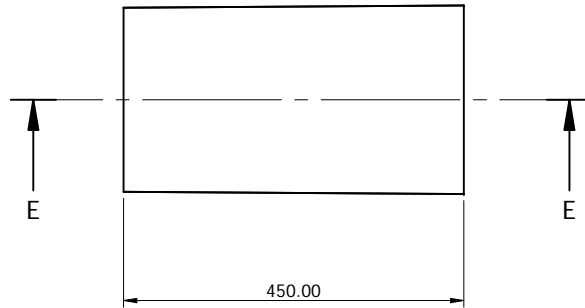
A

DO NOT SCALE

LIGHT SHUTTER GUIDE SECTION



SECTION E-E



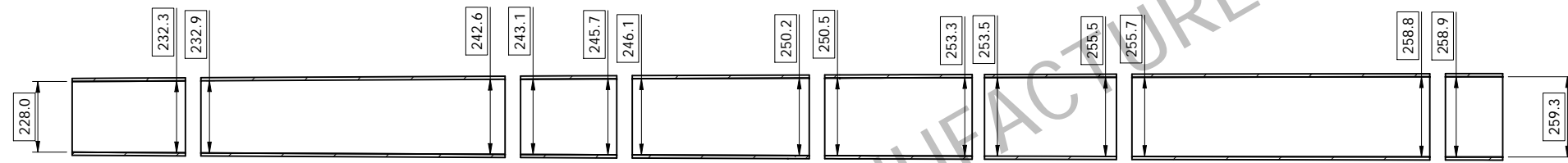
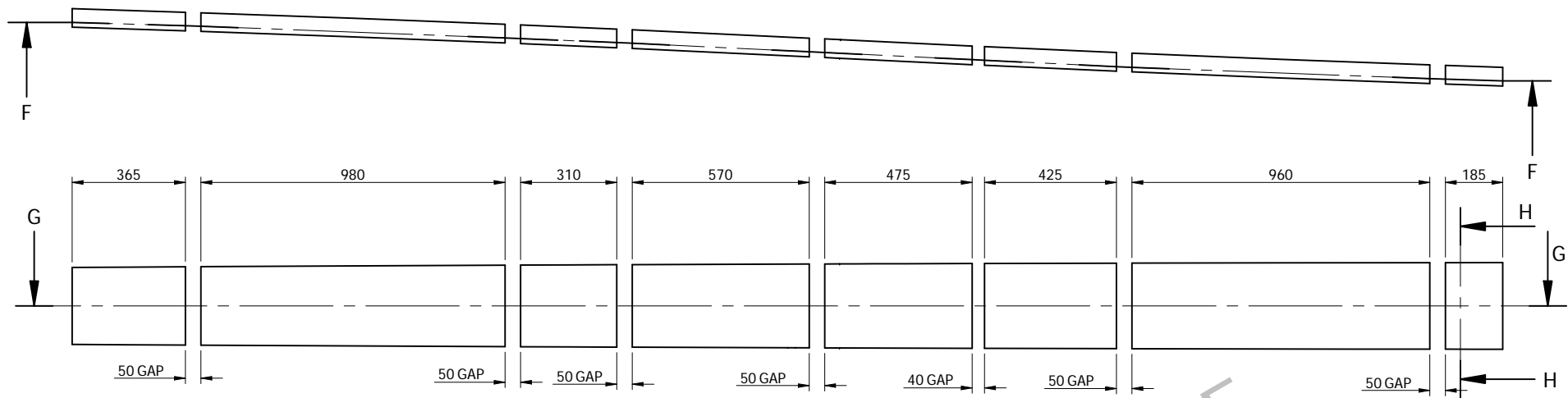
SECTION D-D

NOT FOR MANUFACTURE

NOTES:

- 1) THIS IS A GUIDE CONCEPT DRAWING - NOT FOR MANUFACTURE
- 2) GUIDE IS ELLIPTICAL IN HORIZONTAL GEOMETRY
- 3) GUIDE TO BE PRODUCED FROM ALUMINIUM ALLOY SUBSTRATE
- 4) SUBSTRATE THICKNESSES TO BE ADVISED BY GUIDE MANUFACTURER
- 5) GUIDE SECTION IS DESIGNED TO BE INSERTED INTO ESS LIGHT SHUTTER - DESIGN IS CURRENTLY NOT AVAILABLE
- 6) THE GUIDE IS SLIGHTLY OVER SIZED (2MM) TO ALLOW FOR MISALIGNMENT OF LIGHT SHUTTER MECHANISM
- 7) THERE ARE NO VANES IN THIS SECTION

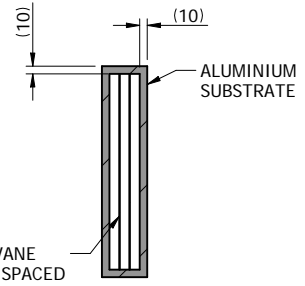
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ISSUE	DATE	MOD. No.	DRAWN BY	CHKD BY	APPD BY		STATUS
TOLERANCES UNLESS STATED			MATERIAL & SPEC.		SURFACE TEXTURE UNLESS STATED		
X ± 0.5	ANGLE ± 0.2°	SEE ITEMS LIST		√ Ra N/A			
X.X ± 0.3				FINISH			
X.XX ± 0.1				CLEAN			
				REMOVE ALL BURRS			
PROJECTION		DIMENSIONS IN mm UNLESS STATED	DRAWING CONFORMS TO BS 8888 TOLERANCING ISO 8015		USED ON		
© STFC 2017		ISIS DESIGN DIVISION		RUTHERFORD APPLETON LABORATORY			
		HARWELL CAMPUS, DIDCOT, OXFORDSHIRE, OX11 0QX		?			
TITLE							
GUIDE ASSY V5							
FREIA							
A2	SHEET	3 OF 7		JBN-005043		?	



SECTION F-F



SECTION G-G



SECTION H-H
1:5

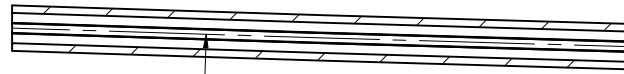
BUNKER GUIDE SECTIONS

NOTES:

- 1) THIS IS A GUIDE CONCEPT DRAWING - NOT FOR MANUFACTURE
- 2) GUIDE IS ELLIPTICAL IN HORIZONTAL GEOMETRY
- 3) GUIDE TO BE PRODUCED FROM ALUMINIUM ALLOY SUBSTRATE
- 4) SUBSTRATE AND VANE THICKNESSES TO BE ADVISED BY GUIDE MANUFACTURER - SEE SECTION H-H
- 5) GUIDE SECTIONS MUST BE SUITABLE FOR VACUUM
- 6) GUIDE SECTIONS TO BE INSTALLED INTO VACUUM FLIGHT TUBES - STFC DESIGN
- 7) GUIDE ASSEMBLY IN CLOSE PROXIMITY TO NEUTRON CHOPPERS - MOVEMENT TO BE CONSTRAINED IN ALL DIRECTIONS - INCLUDING HORIZONTAL

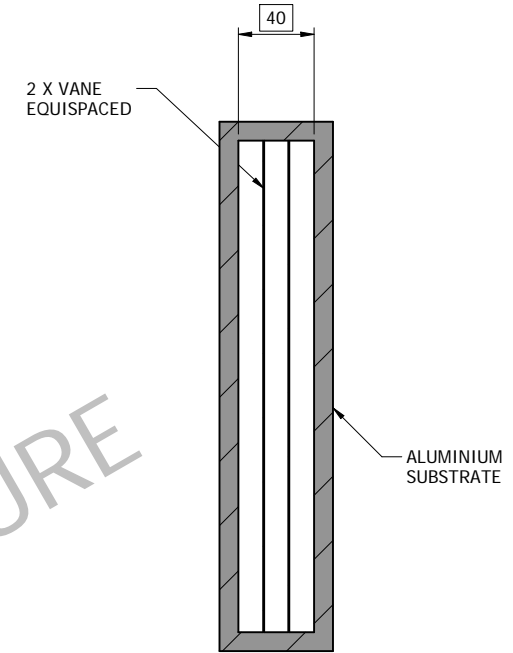
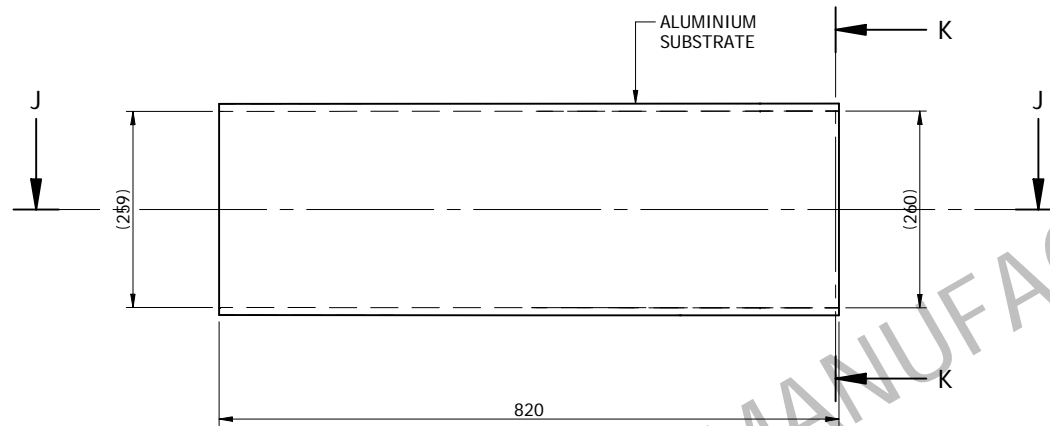
A2 JBN-005043 A

A	15.12.2017	?	JBN			MANUFACTURE ONLY WHEN STATUS IS ISSUED	IN WORK
ISSUE	DATE	MOD. No.	DRAWN BY	CHKD BY	APPD BY		STATUS
TOLERANCES UNLESS STATED			MATERIAL & SPEC.			SURFACE TEXTURE UNLESS STATED	
X	± 0.5	ANGLE	SEE ITEMS LIST			√ Ra N/A	
X.X	± 0.3	± 0.2°					
X.XX	± 0.1					FINISH	
DIMENSIONS IN mm UNLESS STATED			DRAWING CONFORMS TO BS 8888 TOLERANCING ISO 8015			CLEAN REMOVE ALL BURRS	
						USED ON	
ISIS DESIGN DIVISION RUTHERFORD APPLETON LABORATORY HARWELL CAMPUS, DIDCOT, OXFORDSHIRE, OX11 0QX						---- ? ?	
TITLE GUIDE ASSY V5							
FREIA							
A2	SHEET	4 OF 7		JBN-005043		?	



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SECTION J-J



SECTION K-K
1:2

NOT FOR MANUFACTURE

NOTES:

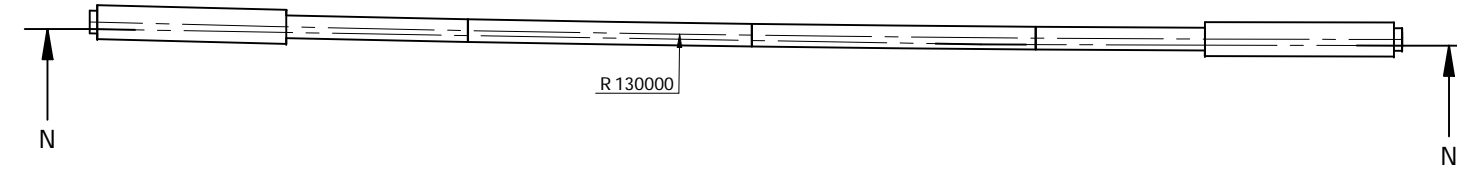
- 1) THIS IS A GUIDE CONCEPT DRAWING - NOT FOR MANUFACTURE
- 2) GUIDE IS ELLIPTICAL IN HORIZONTAL GEOMETRY
- 3) GUIDE TO BE PRODUCED FROM ALUMINIUM ALLOY SUBSTRATE
- 4) SUBSTRATE AND VANE THICKNESSES TO BE ADVISED BY GUIDE MANUFACTURER - SEE SECTION K-K
- 5) GUIDE SECTIONS MUST BE SUITABLE FOR VACUUM
- 6) GUIDE SECTIONS TO BE INSTALLED INTO VACUUM FLIGHT TUBES - STFC DESIGN
- 7) GUIDE ASSEMBLY IN CLOSE PROXIMITY TO NEUTRON CHOPPERS - MOVEMENT TO BE CONSTRAINED IN ALL DIRECTIONS - INCLUDING HORIZONTAL

A	15.12.2017	?	JBN				MANUFACTURE ONLY	IN WORK
ISSUE	DATE	MOD. No.	DRAWN BY	CHKD BY	APPD BY		WHEN STATUS IS	STATUS
TOLERANCES UNLESS STATED			MATERIAL & SPEC.			SURFACE TEXTURE UNLESS STATED		
X	± 0.5	ANGLE	SEE ITEMS LIST			√ Ra N/A		
X.X	± 0.3	± 0.2°						
X.XX	± 0.1							
FINISH			DIMENSIONS IN mm UNLESS STATED			DRAWING CONFORMS TO BS 8888 TOLERANCING ISO 8015		
CLEAN						REMOVE ALL BURRS		
						USED ON ---- ---- ----		
RUTHERFORD APPLETON LABORATORY HARWELL CAMPUS, DIDCOT, OXFORDSHIRE, OX11 0QX						? ?		
TITLE GUIDE ASSY V5								
FREIA								
A2		SHEET		5 OF 7		JBN-005043		A

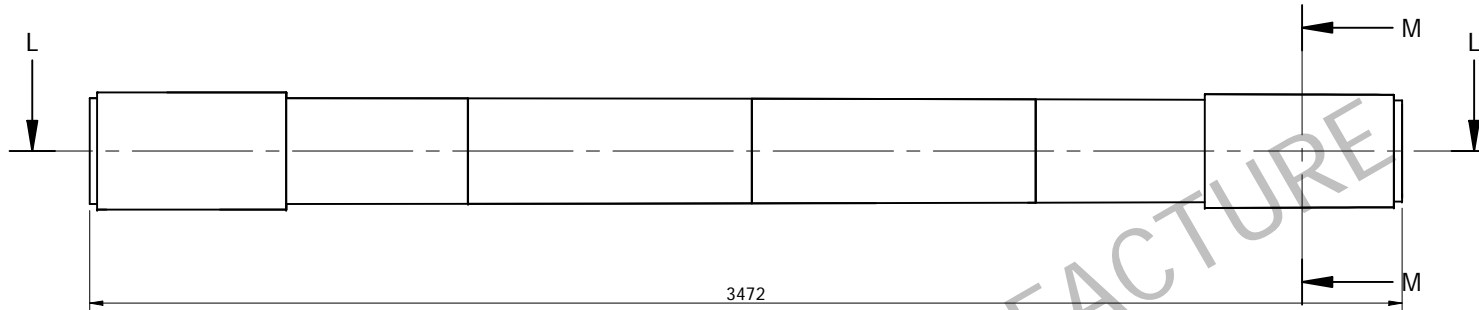
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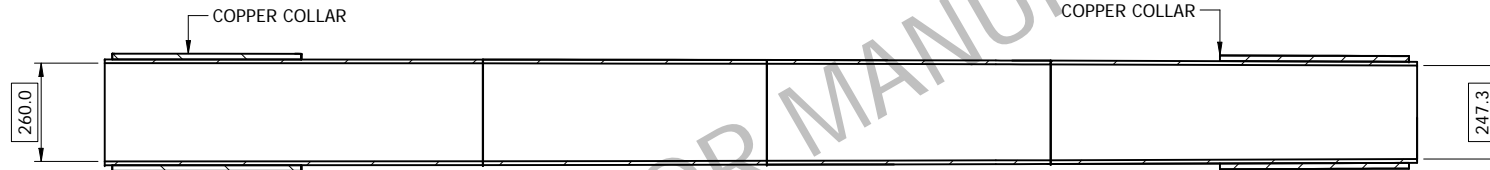
SECTION L-L



R 130000



3472



COPPER COLLAR

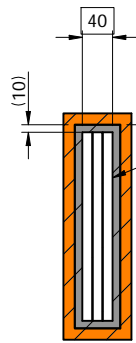
COPPER COLLAR

260.0

247.3

SECTION N-N

BUNKER WALL INSERT

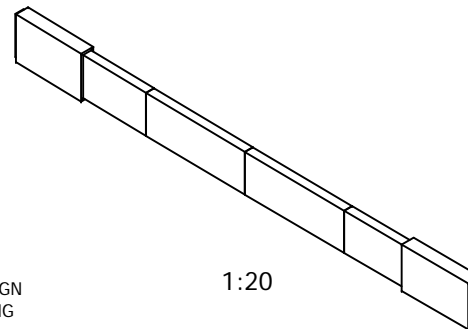


ALUMINIUM SUBSTRATE

NOTES:

- 1) THIS IS A GUIDE CONCEPT DRAWING - NOT FOR MANUFACTURE
- 2) GUIDE IS ELLIPTICAL IN HORIZONTAL GEOMETRY
- 3) GUIDE TO BE PRODUCED FROM ALUMINIUM ALLOY SUBSTRATE
- 4) SUBSTRATE AND VANE THICKNESSES TO BE ADVISED BY GUIDE MANUFACTURER
- 5) GUIDE SECTIONS MUST BE SUITABLE FOR VACUUM
- 6) GUIDE SECTIONS TO BE INSTALLED INTO HEAVY SHUTTER - STFC DESIGN
- 7) GUIDE ASSEMBLY TO BE CONSTRAINED IN ALL DIRECTIONS - INCLUDING HORIZONTAL
- 8) GUIDE MANUFACTURER TO SUGGEST OPTIMAL GUIDE SECTION LENGTHS AND GAPS

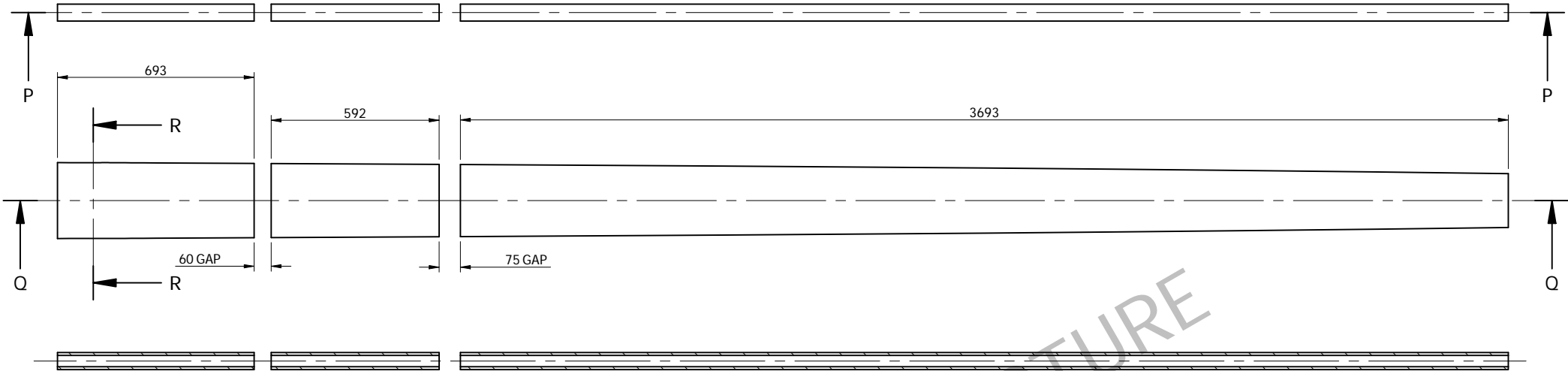
SECTION M-M
1:5



1:20

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A	15.12.2017	?	JBN			MANUFACTURE ONLY WHEN STATUS IS ISSUED	IN WORK
ISSUE	DATE	MOD. No.	DRAWN BY	CHKD BY	APPD BY		STATUS
TOLERANCES UNLESS STATED			MATERIAL & SPEC.		SURFACE TEXTURE UNLESS STATED		
X	± 0.5	ANGLE	SEE ITEMS LIST		√ Ra N/A		
X.X	± 0.3	± 0.2°			FINISH		
X.XX	± 0.1		DRAWING CONFORMS TO BS 8888 TOLERANCING ISO 8015		CLEAN REMOVE ALL BURRS		
PRODUCTION	ISIS DESIGN DIVISION		RUTHERFORD APPLETON LABORATORY		USED ON		
© STFC 2017	HARWELL CAMPUS, DIDCOT, OXFORDSHIRE, OX11 0QX				----		
TITLE		GUIDE ASSY V5					
FREIA		?					
A2	SHEET	6 OF 7		JBN-005043		A	



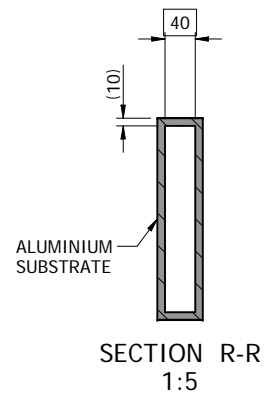
SECTION Q-Q

SECTION P-P

OUT OF BUNKER SECTIONS

NOTES:

- 1) THIS IS A GUIDE CONCEPT DRAWING - NOT FOR MANUFACTURE
- 2) GUIDE IS ELLIPTICAL IN HORIZONTAL GEOMETRY
- 3) GUIDE TO BE PRODUCED FROM ALUMINIUM ALLOY SUBSTRATE
- 4) SUBSTRATE THICKNESSES TO BE ADVISED BY GUIDE MANUFACTURER
- 5) GUIDE SECTIONS MUST BE SUITABLE FOR VACUUM
- 6) GUIDE SECTIONS TO BE INSTALLED INTO VACUUM FLIGHT TUBES - STFC DESIGN
- 7) GUIDE ASSEMBLY IN CLOSE PROXIMITY TO NEUTRON CHOPPERS - MOVEMENT TO BE CONSTRAINED IN ALL DIRECTIONS - INCLUDING HORIZONTAL
- 8) GUIDE MANUFACTURER TO ADVISE GUIDE SECTION LENGTHS AND GAPS
- 9) NO VANES IN THESE SECTIONS



NOT FOR MANUFACTURE

A	15.12.2017	?	JBN			MANUFACTURE ONLY WHEN STATUS IS ISSUED	IN WORK
ISSUE	DATE	MOD. No.	DRAWN BY	CHKD BY	APPD BY	ISSUED	STATUS
TOLERANCES UNLESS STATED			MATERIAL & SPEC.			SURFACE TEXTURE UNLESS STATED	
X	± 0.5	ANGLE	SEE ITEMS LIST			√ Ra N/A	
X.X	± 0.3	± 0.2°					
X.XX	± 0.1						
FINISH			DIMENSIONS IN mm UNLESS STATED			DRAWING CONFORMS TO BS 8888 TOLERANCING ISO 8015	
PROJECTION						CLEAN REMOVE ALL BURRS	
© STFC 2017			ISIS DESIGN DIVISION RUTHERFORD APPLETON LABORATORY HARWELL CAMPUS, DIDCOT, OXFORDSHIRE, OX11 0QX			USED ON	

						?	
						?	
TITLE			GUIDE ASSY V5				
FREIA							
A2			SHEET 7 OF 7		JBN-005043		?