

ZABER LINEAR ACTUATOR
0.55 kg

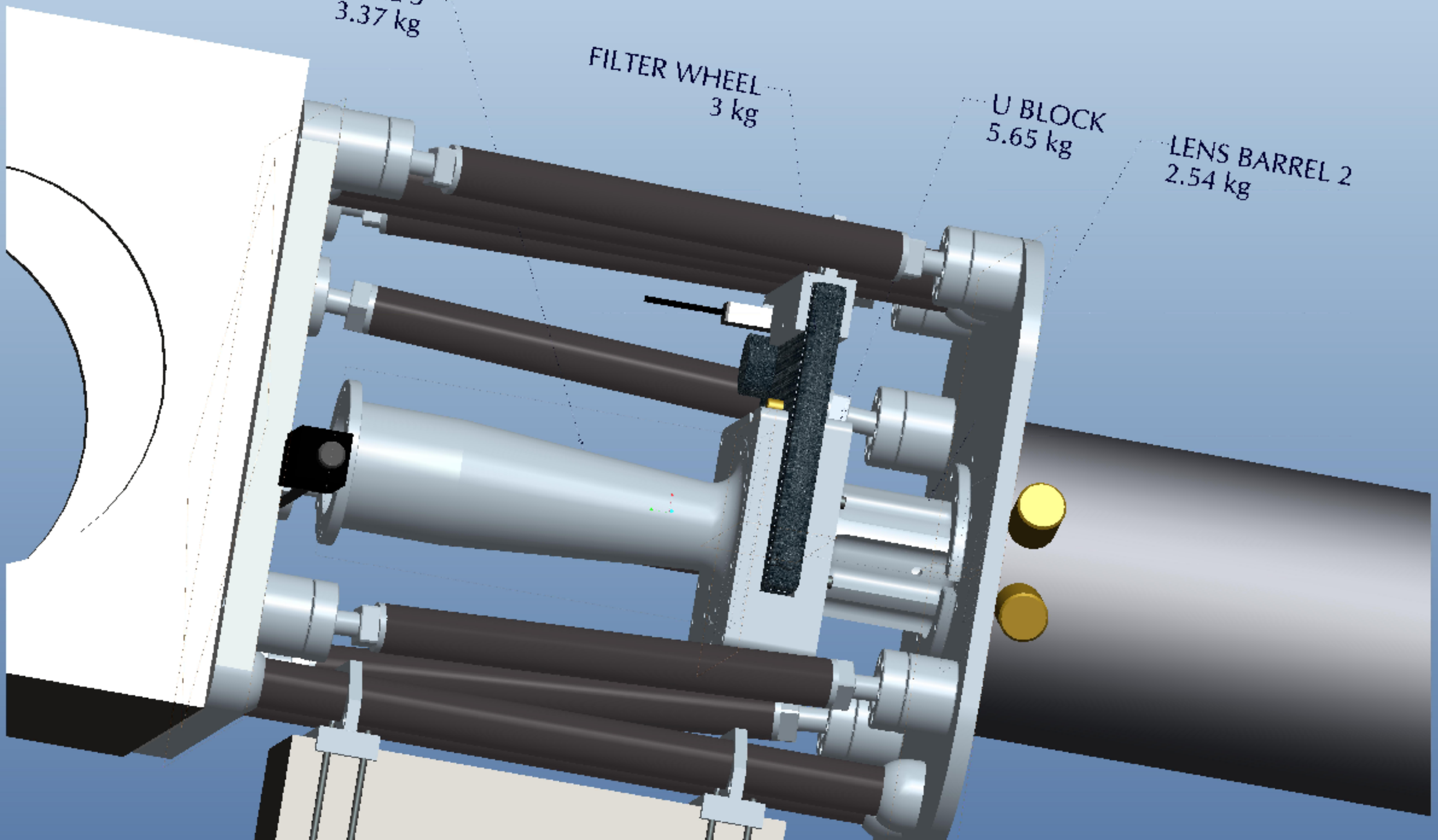
CCD CONTROLLER
7 kg

LENS BARREL 3
3.37 kg

FILTER WHEEL
3 kg

U BLOCK
5.65 kg

LENS BARREL 2
2.54 kg



ULTRA-SPEC

Component weights and Reference Drawing No's

Structure

ULT-SPEC-006	Lens Barrel 1 Assembly	00.19	kg	1 off
ULT-SPEC-007	Lens Barrel 2 Assembly	02.54	Kg	1 off
ULT-SPEC-008	Lens Barrel 3 Assembly	03.37	Kg	1 off
ULT-SPEC-012	U/Block Halve Cam Side	02.94	kg	1 off
ULT-SPEC-013	U/Block Halve Tele Side	02.71	kg	1 off
ULT-SPEC-015	Cube Mounting Plate	13.95	Kg	1 off
ULT-SPEC-016	Cube Mounting Plate			
ULT-SPEC-017	Cryostat Mounting Plate	08.22	kg	1 off
ULT-SPEC-018 A	Cube Isolator Flange	00.65	kg	1 off
ULT-SPEC-018 B	Cryostat Back Flange	01.06	kg	1 off
ULT-SPEC-018 C	Lens Support Flange	00.40	kg	2 off
ULT-SPEC-018 D	Cryostat Back Flange Clamp	00.05	kg	8 off
ULT-SPEC-019 A	CCD Top Clamp	00.16	kg	2 off
ULT-SPEC-019 B	CCD Bottom Clamp	00.18	kg	2 off
ULT-SPEC-019 C	CCD Clamp Support	00.13	kg	2 off
	Filter Wheel Base	00.18	kg	1 off
	Filter Wheel Side Plate	00.14	kg	1 off
	Filter Wheel Side Plate Relief	00.14	kg	1 off
	Filter Wheel Stop	00.02	kg	1 off
	Filter Wheel Strut	00.16	kg	1 off
	Brace Foot	00.17	kg	8 off
	Brace Socket	00.31	kg	12 off
	Brace Ball	00.45	kg	12 off
	Ball/Socket Lock Ring	00.11	kg	12 off
	Ball/Socket Lock Nut	00.04	kg	12 off
	Brace M20 Insert	00.04	kg	12 off
	Brace M10 Insert	00.07	kg	8 off
	Carbon Brace 527	00.42	kg	4 off
	Carbon Brace 375	00.31	kg	2 off
	Carbon Brace 370	00.30	kg	3 off
	Carbon Brace 368	00.29	kg	1 off
	Zaber Slide Mount	00.08	kg	1 off
	Isolator Bush	00.01	kg	10 off
	M8 x 50 Lg SS HexHd Bolt	00.02	kg	10 off
	M6 x 35 Lg SS SckHd Bolt	00.01	kg	40 off
	M10 x 40 Lg SS SckHd Bolt	00.04	kg	8 off

M6 x 25 Lg SS SckHd Bolt	00.008	kg	84 off
M6 x 65 Lg SS SckHd Bolt	00.017	kg	10 off
M6 x 20 Lg SS SckHd Bolt	00.007	kg	66 off
M8 x 20 Lg SS HexHd Bolt	00.01	kg	16 off
M4 x 20 Lg SS HexHd Bolt	00.003	kg	8 off
M6 x 195 Lg SS SckHd Bolt	00.04	kg	4 off
M6 x 10 Lg SS SckHd Bolt	00.005	kg	7 off
M6 x 10 Lg Grub Screw	00.003	kg	6 off
M5 x 15 Lg SckHd Bolt	00.003	kg	8 off
M3 x 10 Lg SckHd Bolt	00.001	kg	2 off

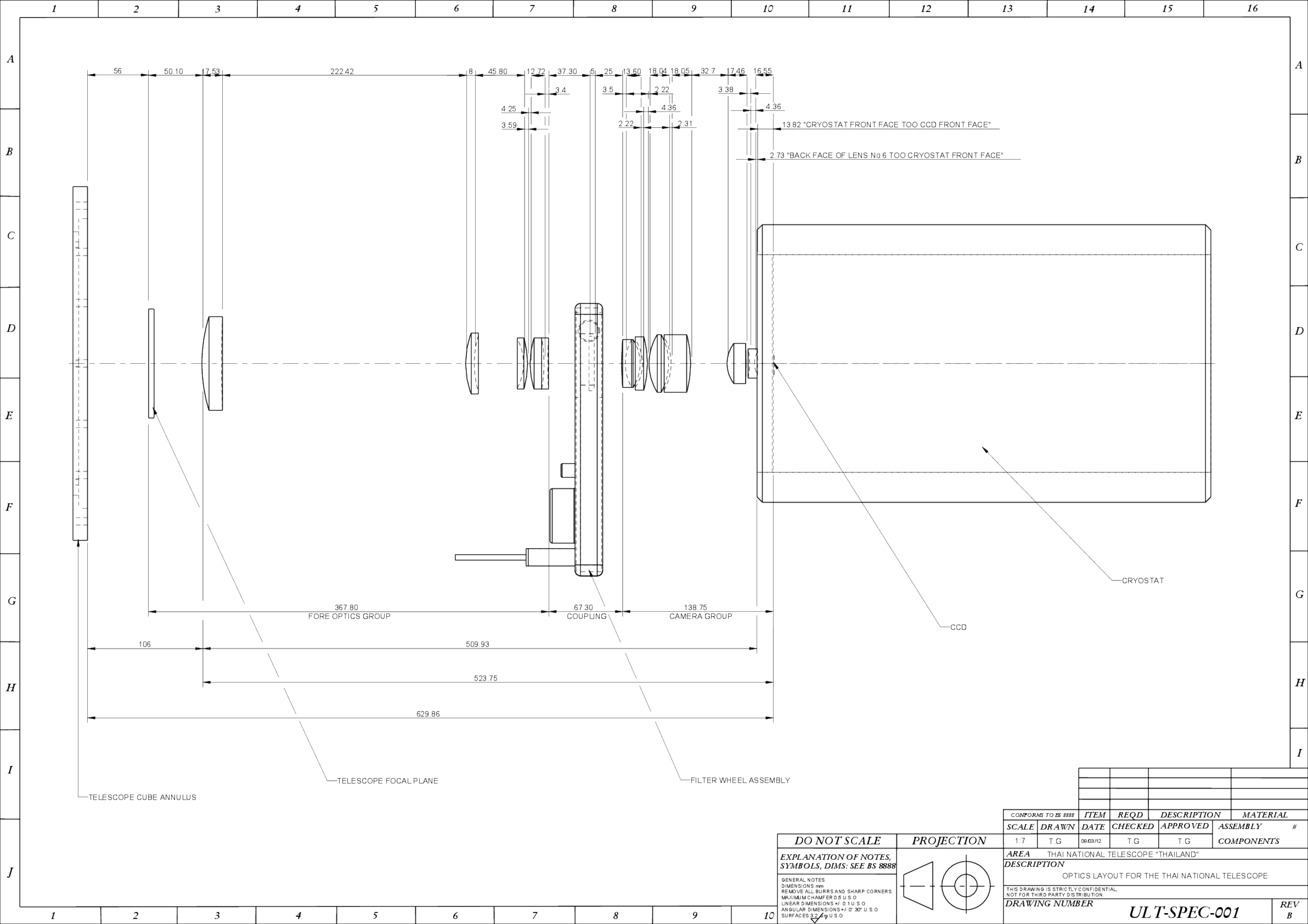
Sub Total 53.847 kg

Research Equipment

Cryostat	17.00	kg	1 off
CCD Controller	07.00	kg	1 off
Filter Wheel (Loaded)	03.00	kg	1 off
Zaber Linear Actuator	00.55	kg	1 off

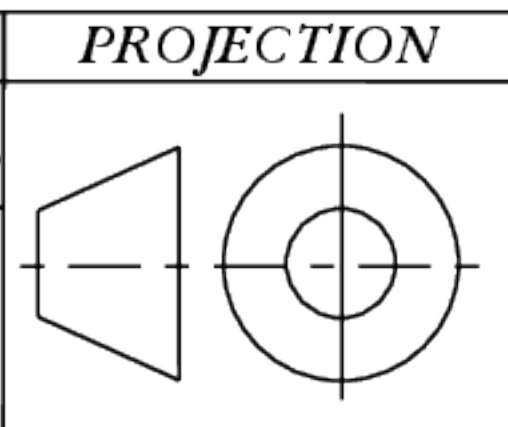
Sub Total 27.55 kg

Total 81.397 kg

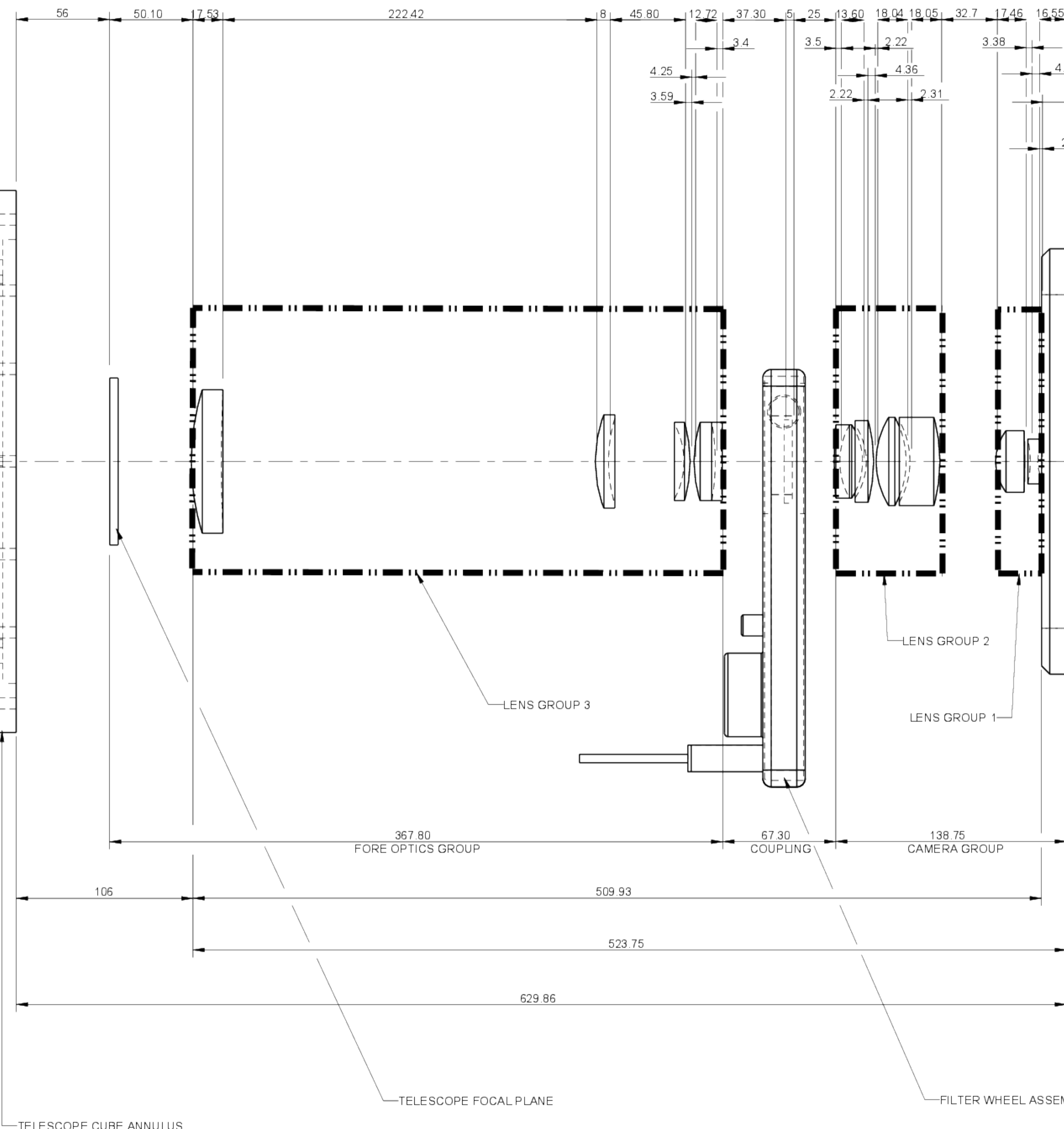
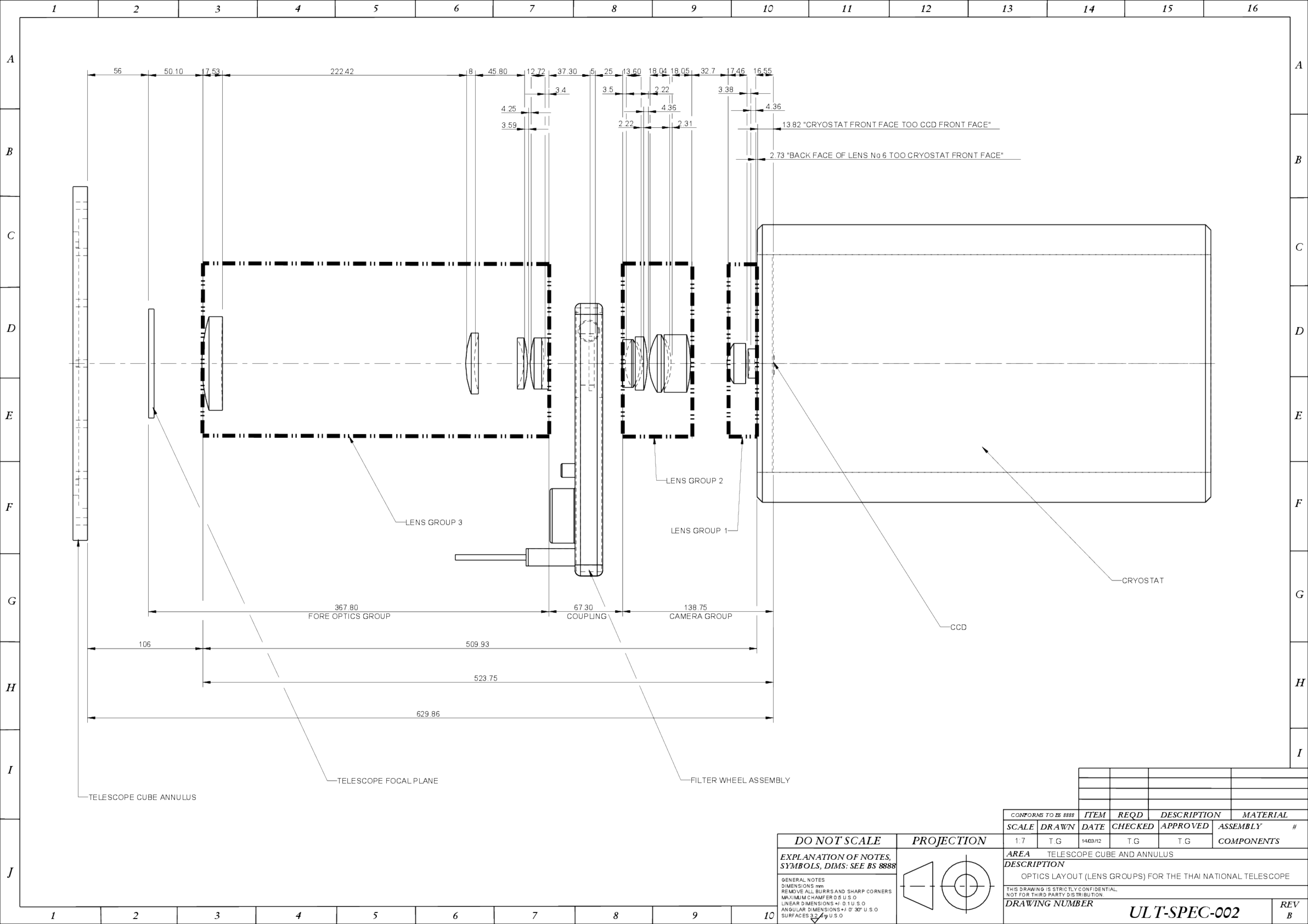


DO NOT SCALE
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888

GENERAL NOTES
 DIMENSIONS mm
 REMOVE ALL BURRS AND SHARP CORNERS
 MAXIMUM CHAMFER 0.5 U.S.O
 LINEAR DIMENSIONS +/- 0.1 U.S.O
 ANGULAR DIMENSIONS +/- 0.30' U.S.O
 SURFACES 3.2 μm U.S.O



CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY #
1:7	T.G	08/03/12	T.G	T.G	COMPONENTS
AREA THAI NATIONAL TELESCOPE "THAILAND" DESCRIPTION OPTICS LAYOUT FOR THE THAI NATIONAL TELESCOPE THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION. DRAWING NUMBER ULT-SPEC-001					
					REV B



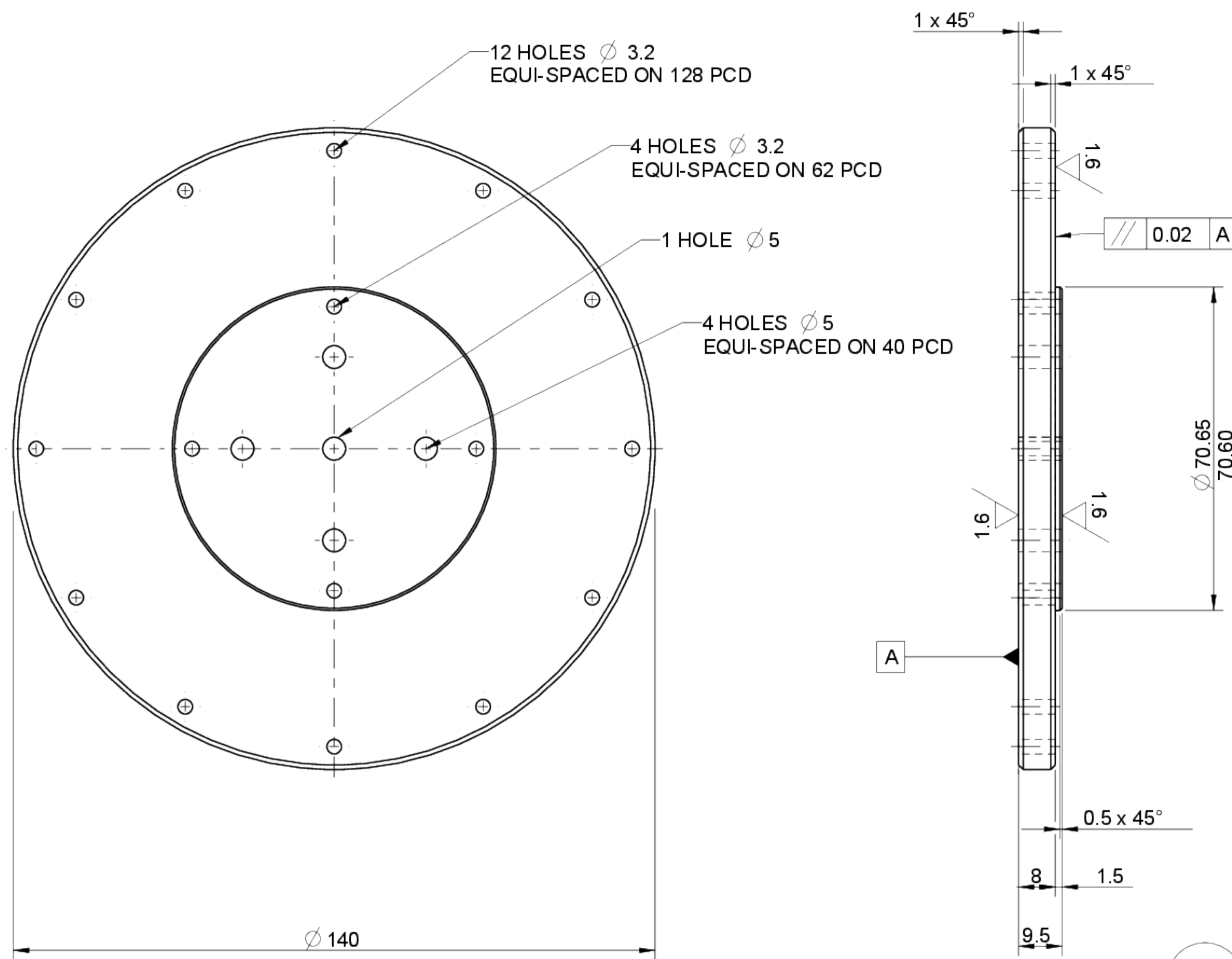
DO NOT SCALE

PROJECTION

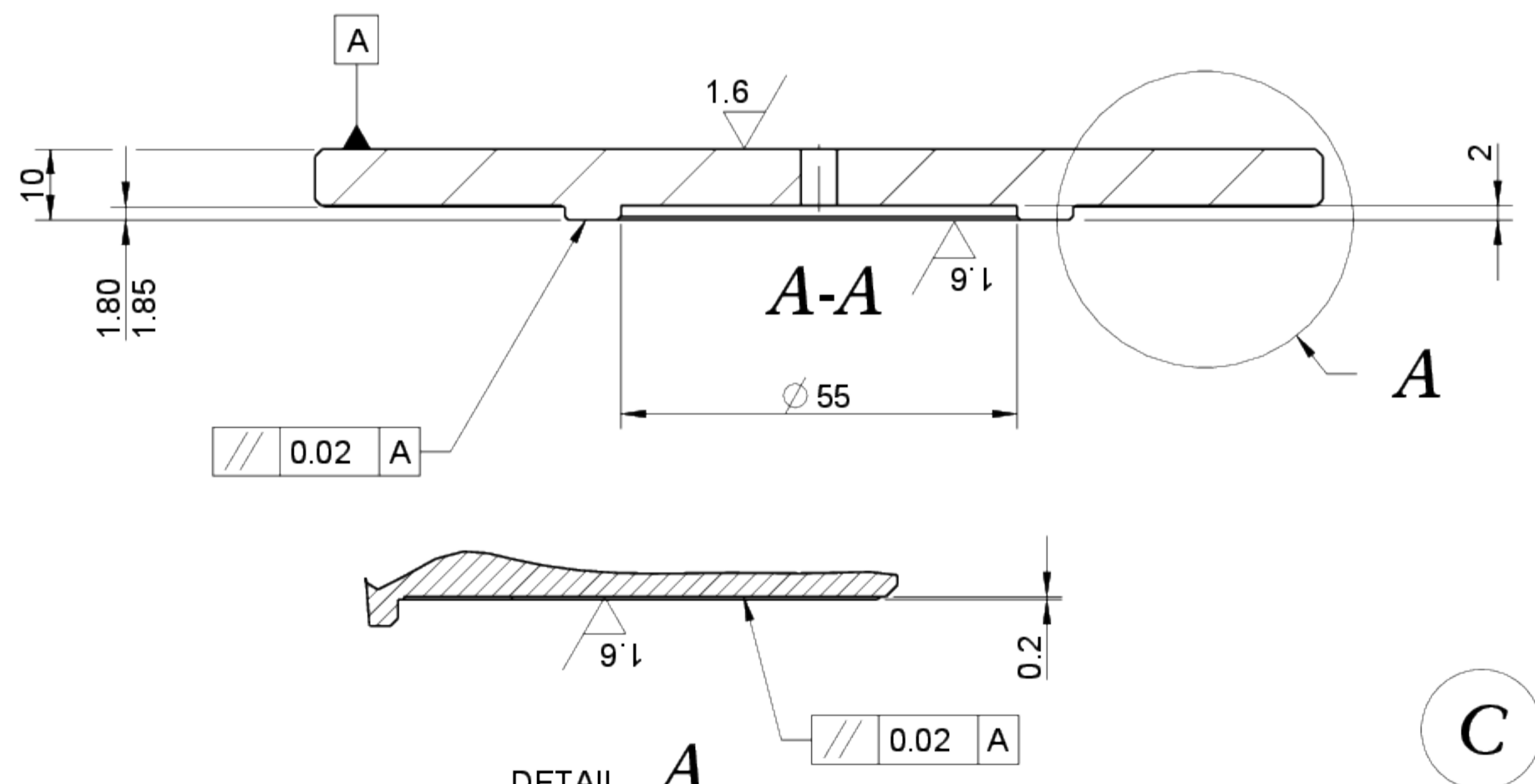
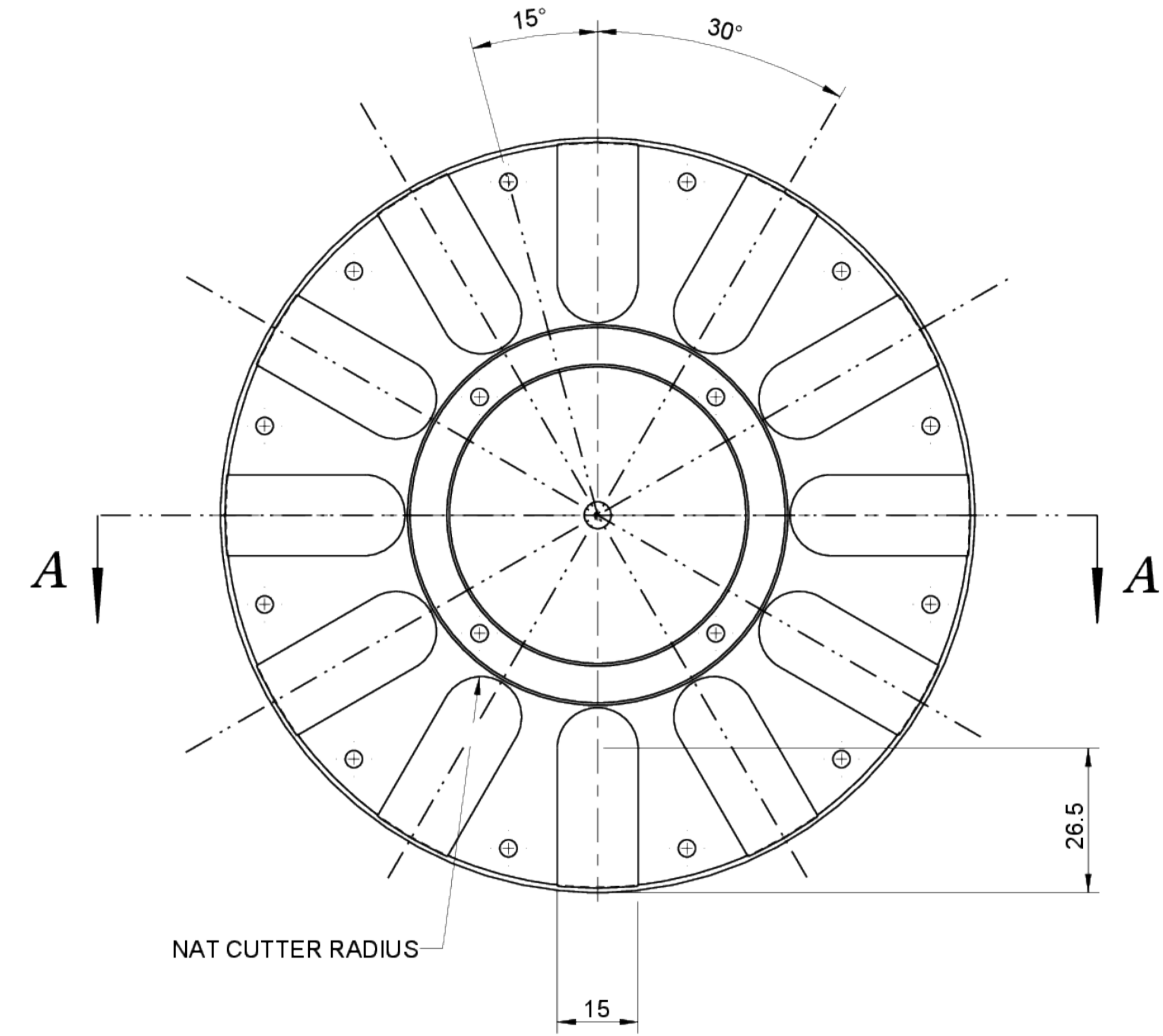
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888

GENERAL NOTES
 DIMENSIONS mm
 REMOVE ALL BURRS AND SHARP CORNERS
 MAXIMUM CHAMFER 0.5 U.S.O
 LINEAR DIMENSIONS +/- 0.1 U.S.O
 ANGULAR DIMENSIONS +/- 0.30' U.S.O
 SURFACES 3.2 μm U.S.O

CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY #
1:7	T.G	14/03/12	T.G	T.G	COMPONENTS
AREA TELESCOPE CUBE AND ANNULUS					
DESCRIPTION OPTICS LAYOUT (LENS GROUPS) FOR THE THAI NATIONAL TELESCOPE					
THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION					
DRAWING NUMBER ULT-SPEC-002					REV B

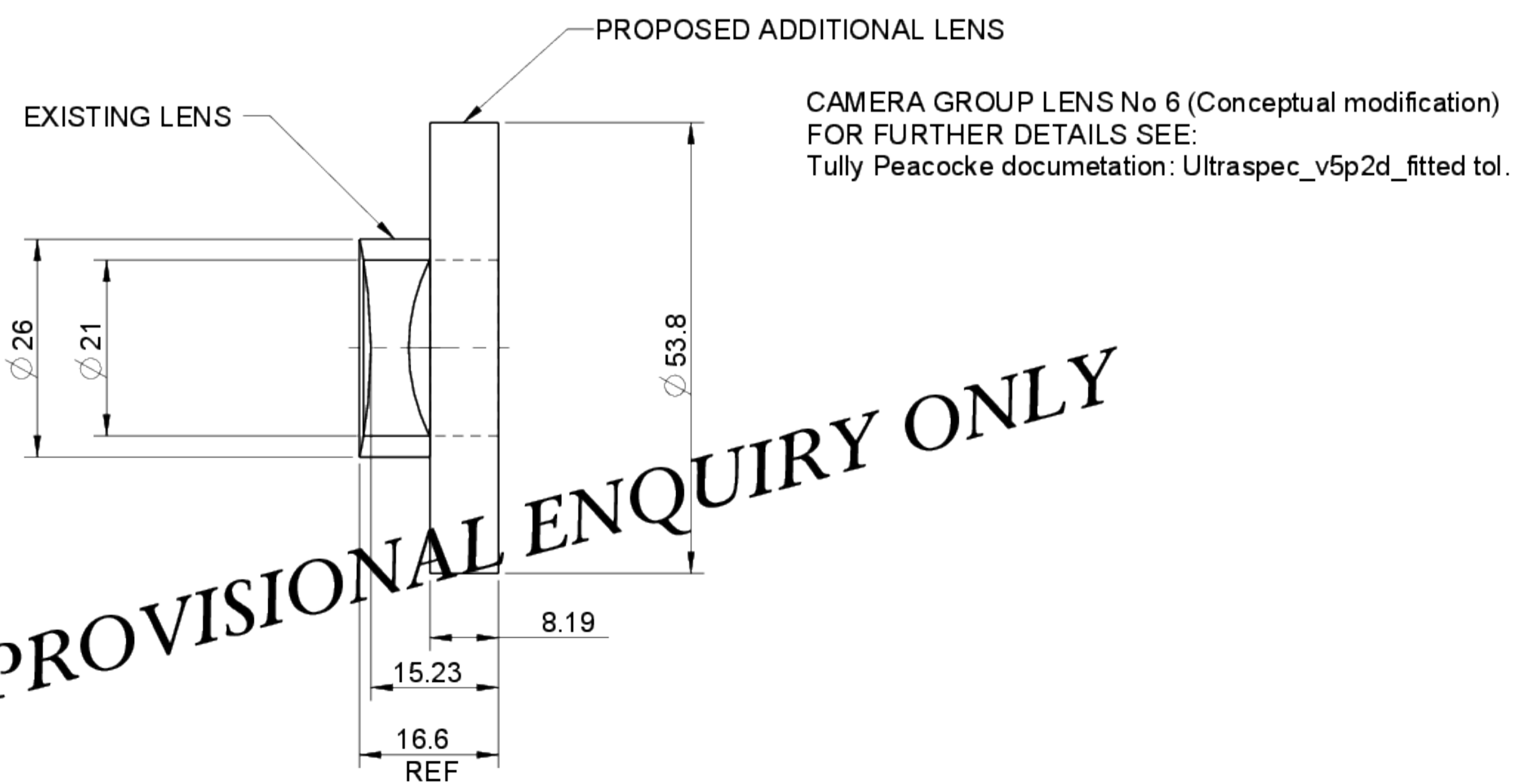


A



DETAIL A
SCALE 3:1

C



B

PROVISIONAL ENQUIRY ONLY

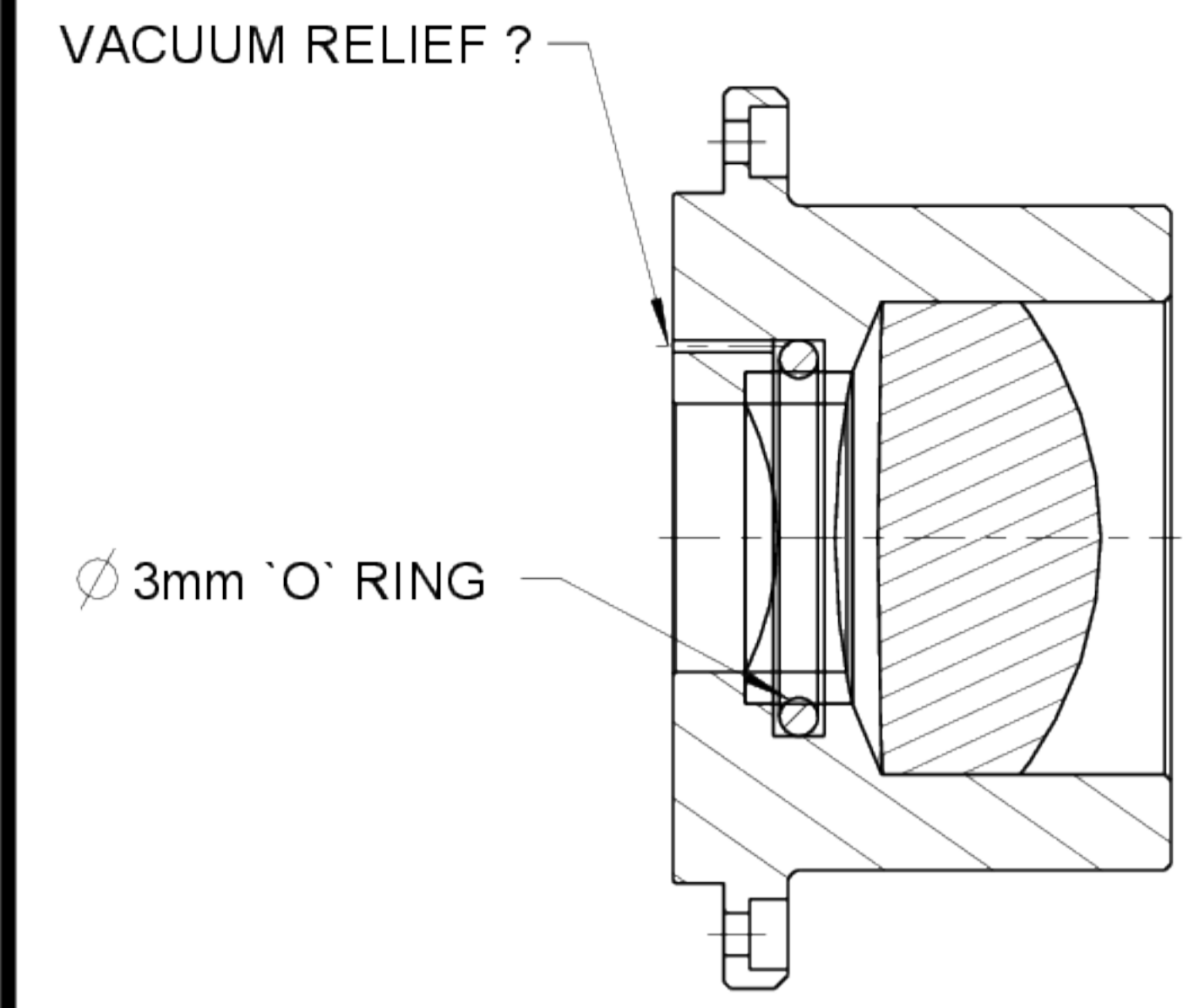
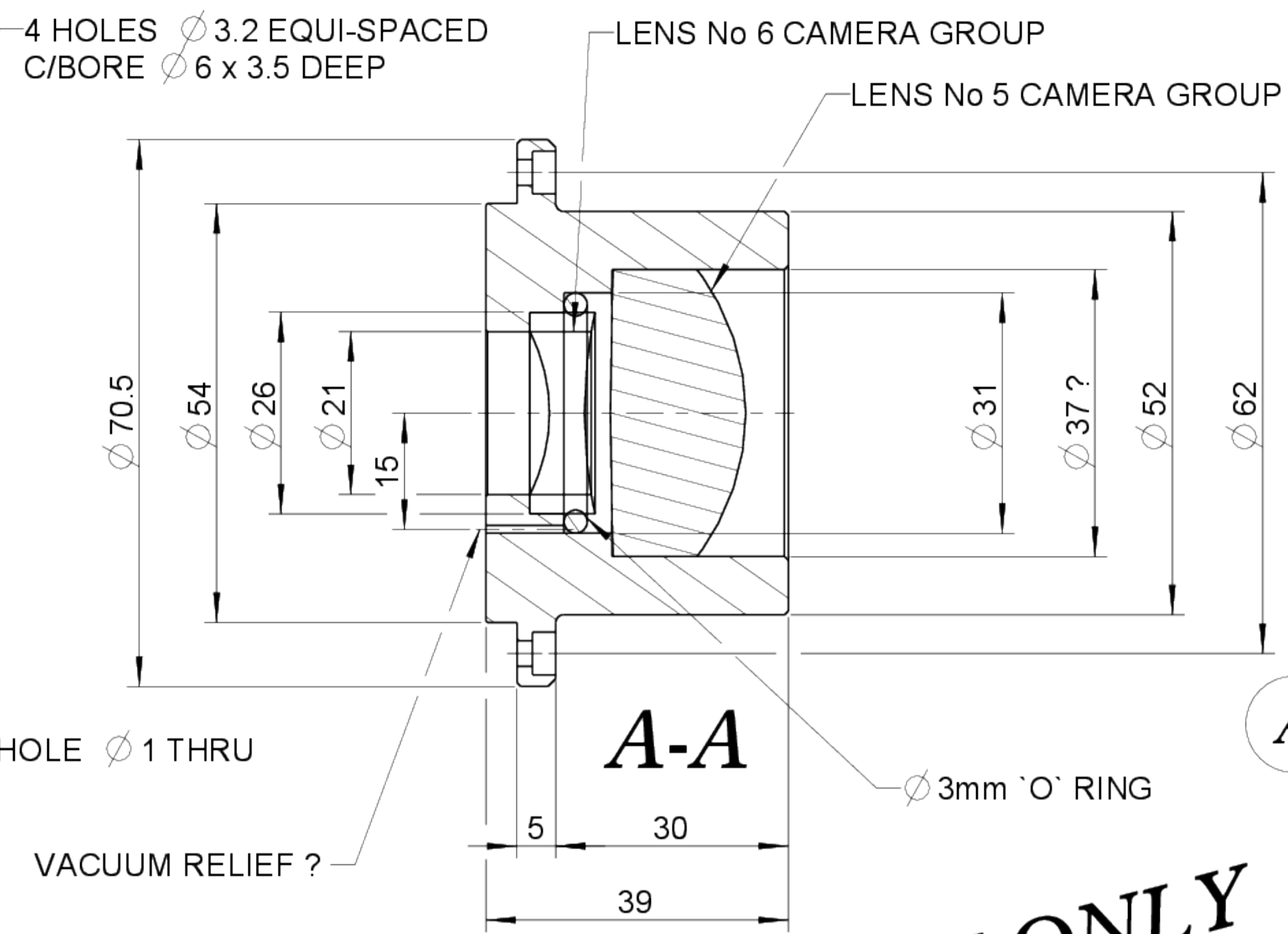
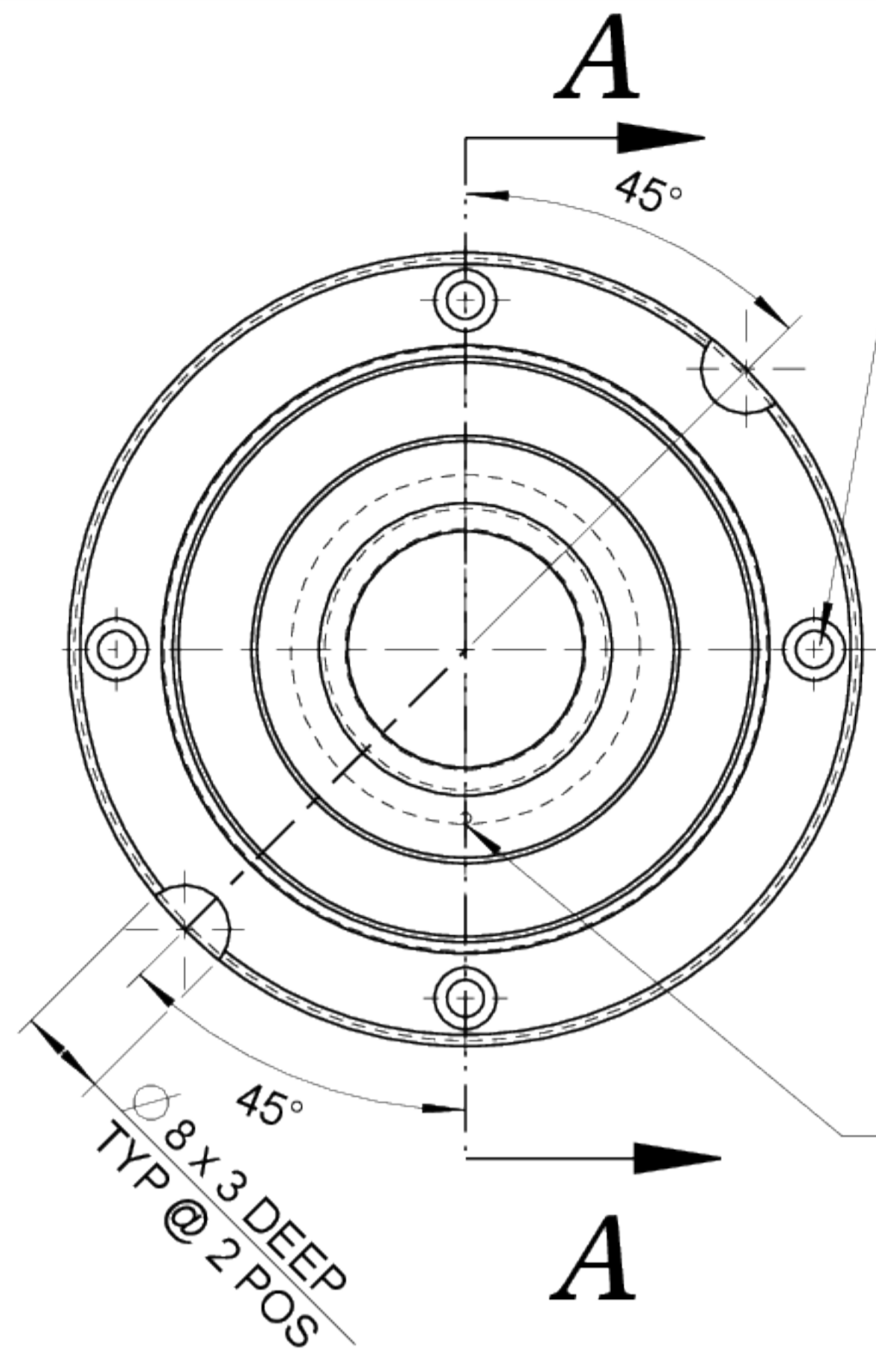
NOTE!
FOR OMITTED DIMENSIONS
SEE ITEM A ON DRG ULT-SPEC-003

ITEM	REQD	DESCRIPTION	MATERIAL
C	1	CRYOSTAT PARALLELISM TEST ANULUS	ALUMINIUM Gr: 0001
B	1	LENS No 6 (PROPOSED MODIFICATION)	
A	1	CRYOSTAT TEST BOSS	ALUMINIUM Gr: 0001

SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY COMPONENTS #
1:1.5	T.G	20/03/12			

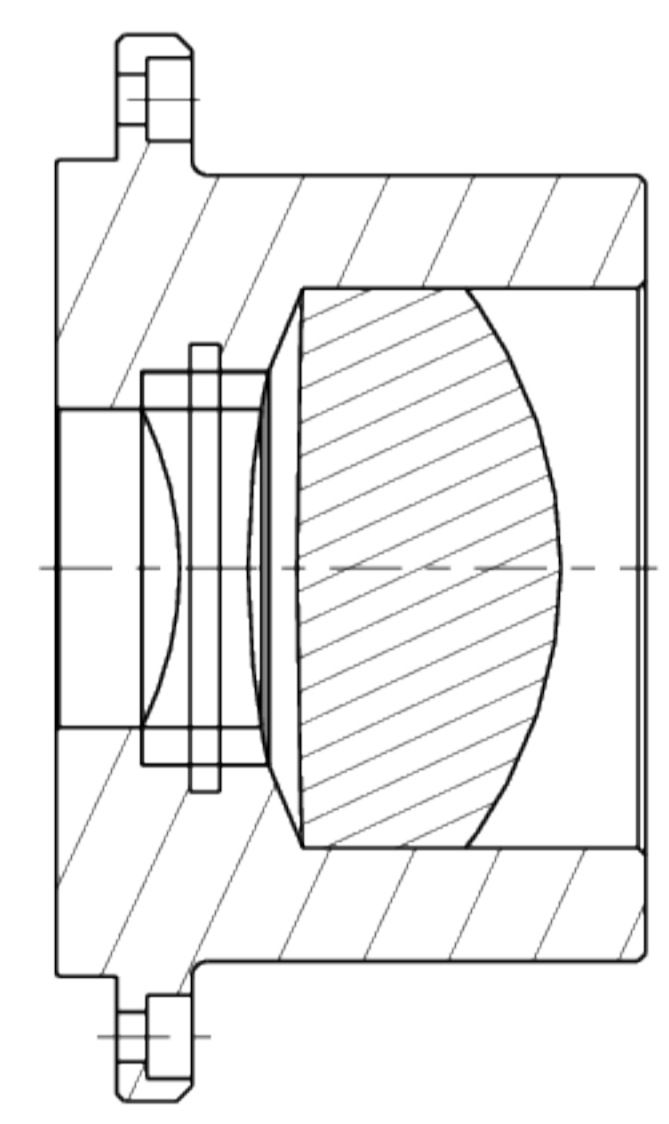
DO NOT SCALE	PROJECTION
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888	
GENERAL NOTES DIMENSIONS mm REMOVE ALL BURRS AND SHARP CORNERS MAXIMUM CHAMFER 0.5 U.S.O LINEAR DIMENSIONS +/- 0.1 U.S.O ANGULAR DIMENSIONS +/- 0.30 U.S.O SURFACES 3.2 4µ U.S.O	

AREA DESCRIPTION	REVISION	DATE
SHEFFIELD UNIVERSITY CRYOSTAT TEST BOSS & LENS No 6 (CAMERA GROUP) PROVISIONAL ENQUIRY		
DRAWING NUMBER	ULT-SPEC-003	REV A

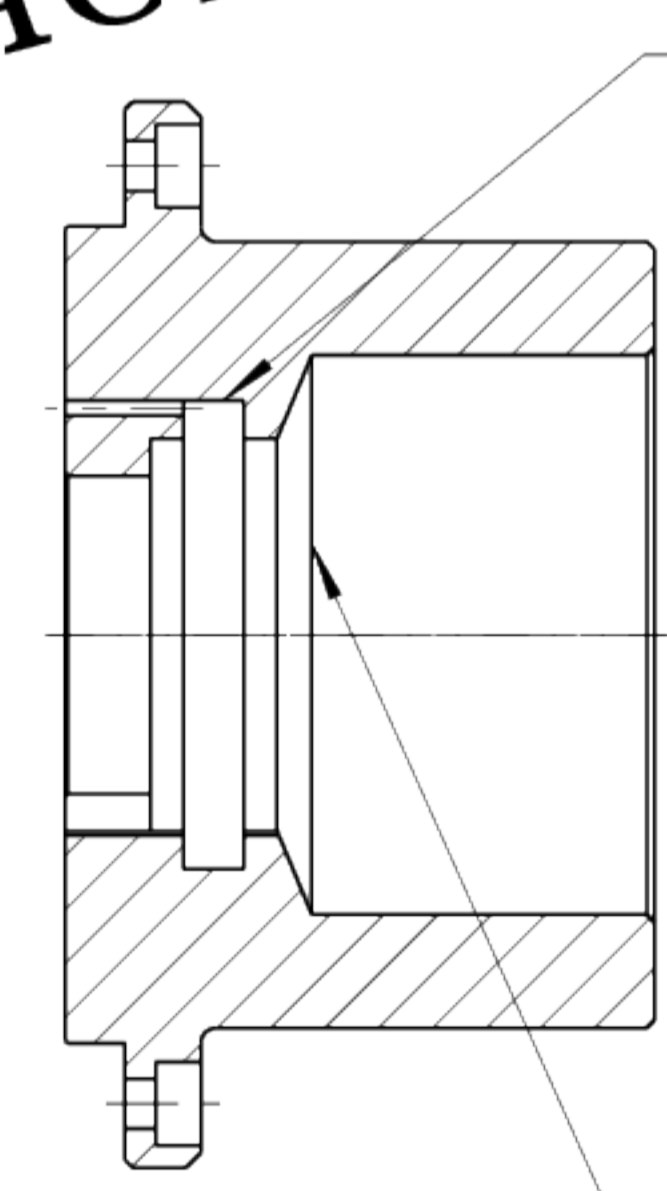


NOTE!
FOR BASIC DIMENSIONS SEE ITEM 'A'

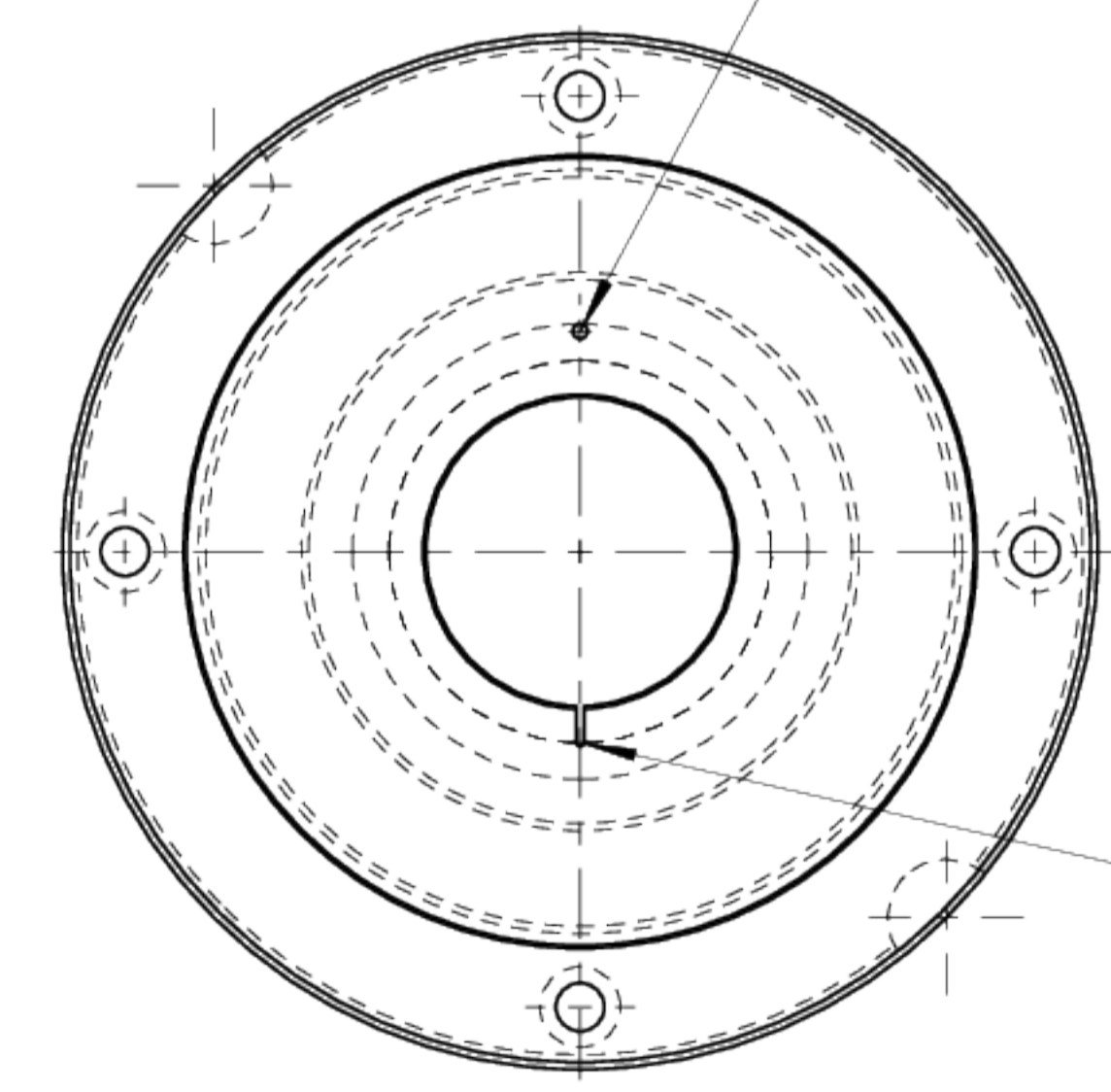
**PROVISIONAL ENQUIRY ONLY
NOT FOR MANUFACTURE**



NOTE!
FOR BASIC DIMENSIONS SEE ITEM 'A'



NOTE!
FOR BASIC DIMENSIONS SEE ITEM 'A'



D

D	1	LENS BARREL 1 CAMERA GROUP (CONCEPT D)	ALUMINIUM Grade 0001 ?
C	1	LENS BARREL 1 CAMERA GROUP (CONCEPT C)	ALUMINIUM Grade 0001 ?
B	1	LENS BARREL 1 CAMERA GROUP (CONCEPT B)	ALUMINIUM Grade 0001 ?
A	1	LENS BARREL 1 CAMERA GROUP (CONCEPT A)	ALUMINIUM Grade 0001 ?

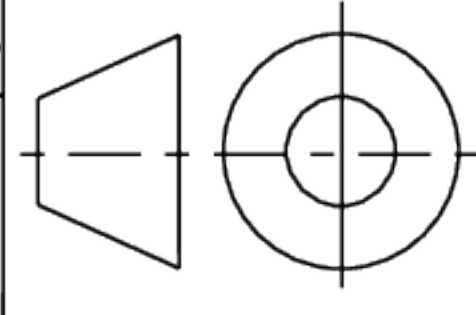
CONFORMS TO BS 8888	ITEM	REQD	DESCRIPTION	MATERIAL	
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY #
2:1	T.G	20/04/12			COMPONENTS

DO NOT SCALE

PROJECTION

EXPLANATION OF NOTES,
SYMBOLS, DIMS: SEE BS 8888

GENERAL NOTES
DIMENSIONS mm
REMOVE ALL BURRS AND SHARP CORNERS
MAXIMUM CHAMFER 0.5 U.S.O
LINEAR DIMENSIONS +/- 0.1 U.S.O
ANGULAR DIMENSIONS +/- 0.30° U.S.O
SURFACES 3.2 μ m U.S.O



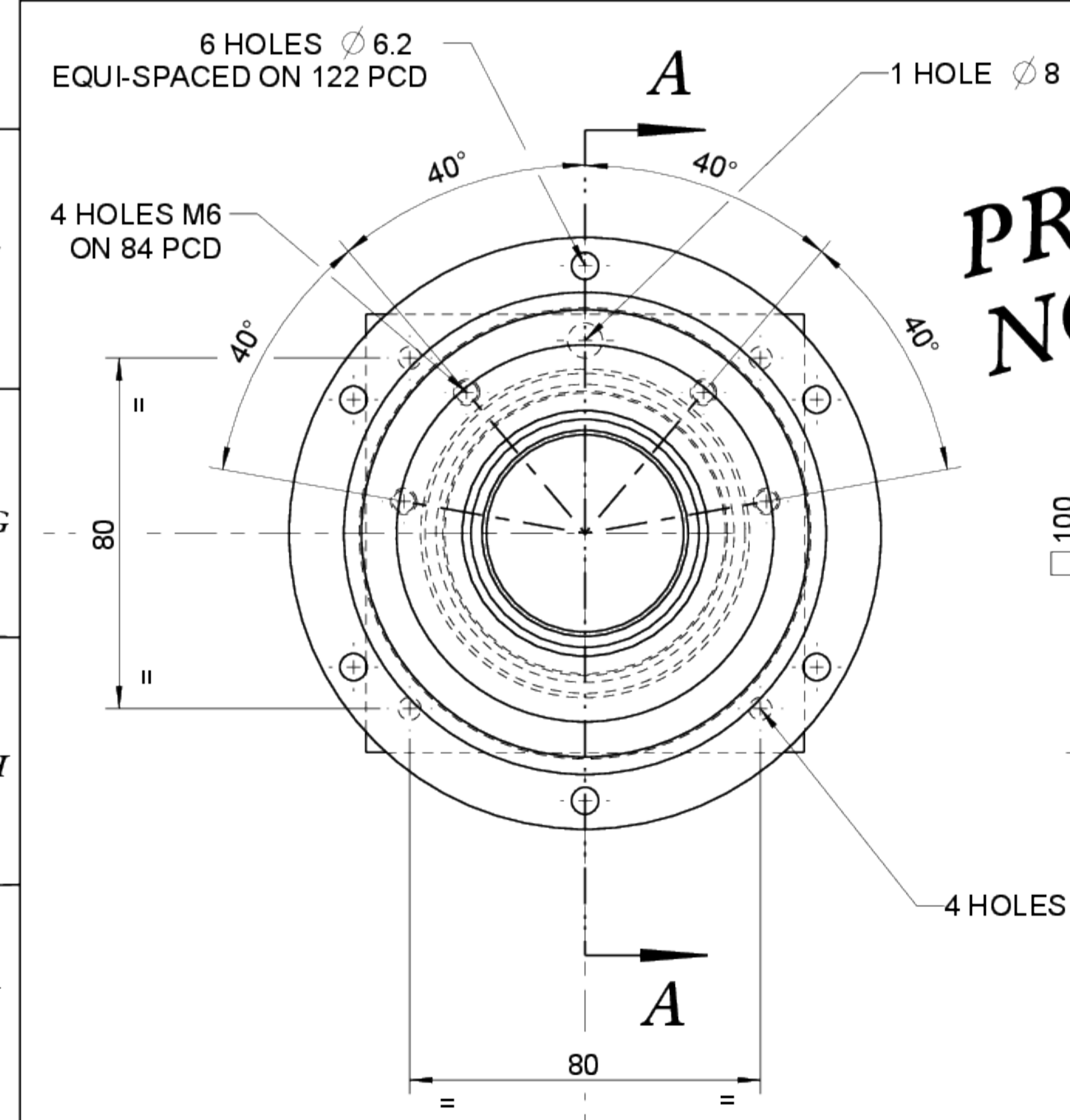
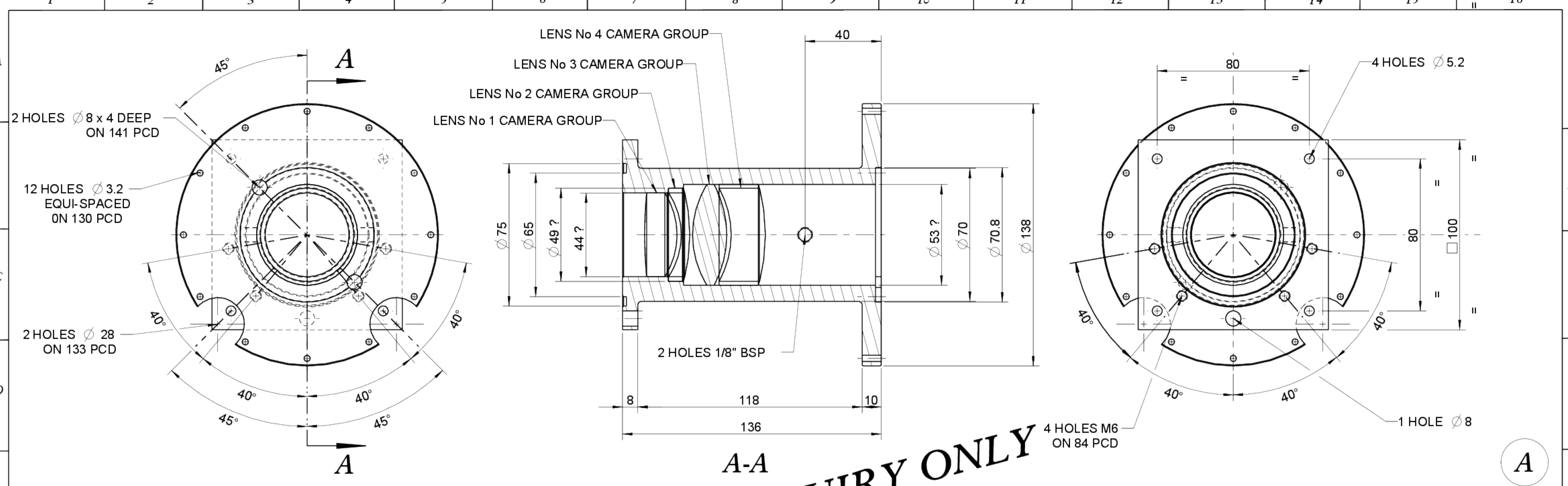
AREA THAI NATIONAL TELESCOPE

DESCRIPTION DETAILS OF LENS BARREL 1 CAMERA GROUP (4 CONCEPTS)

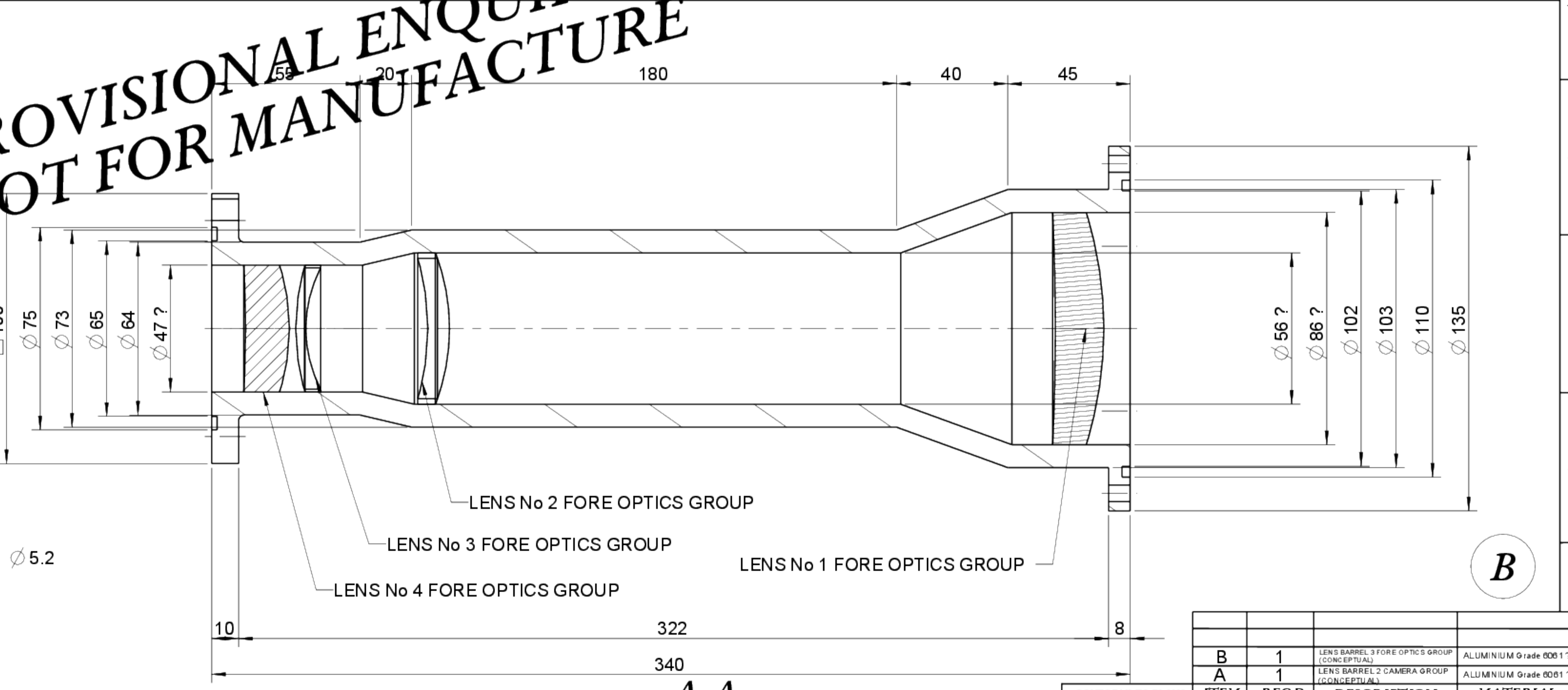
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DRAWING NUMBER **ULT-SPEC-004**

REV A



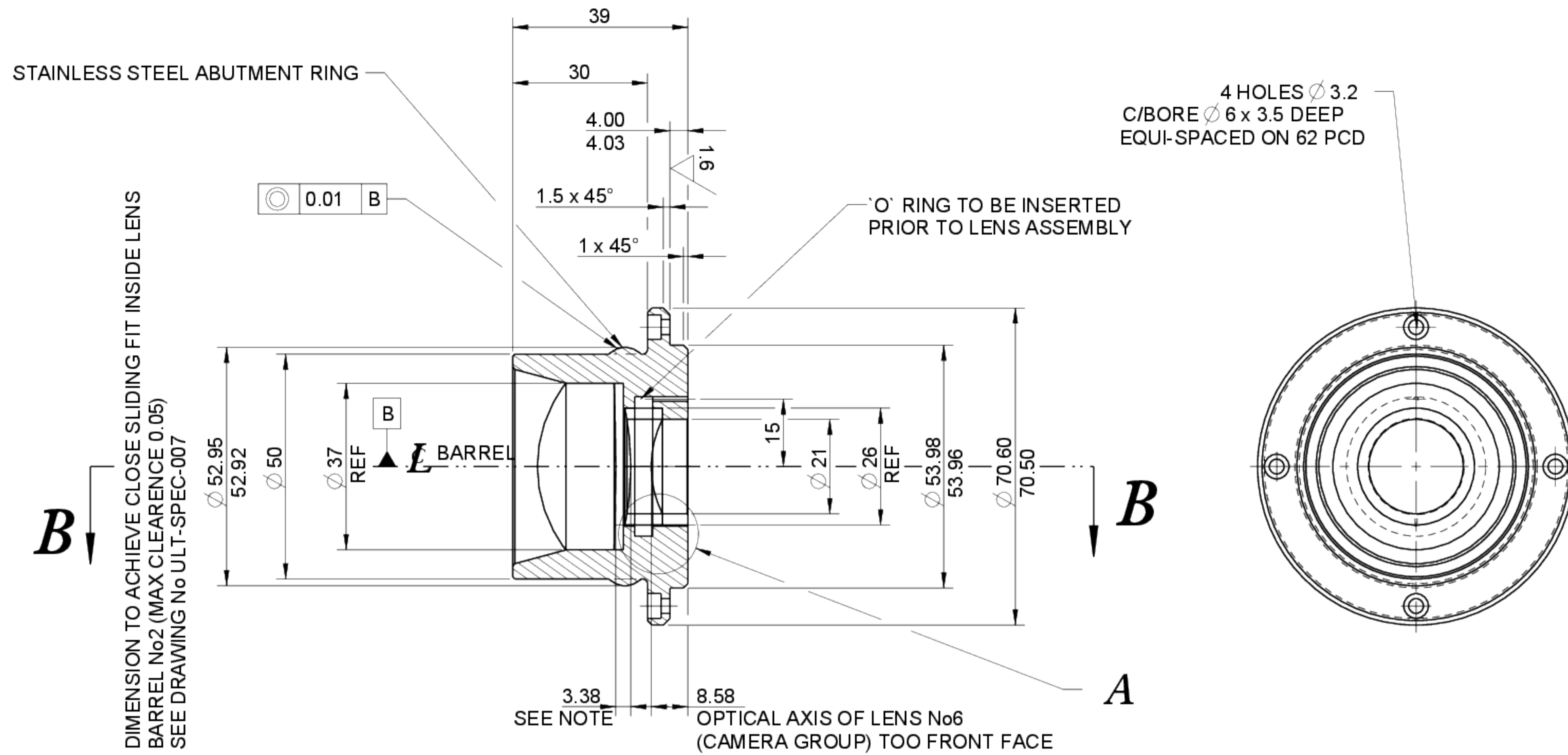
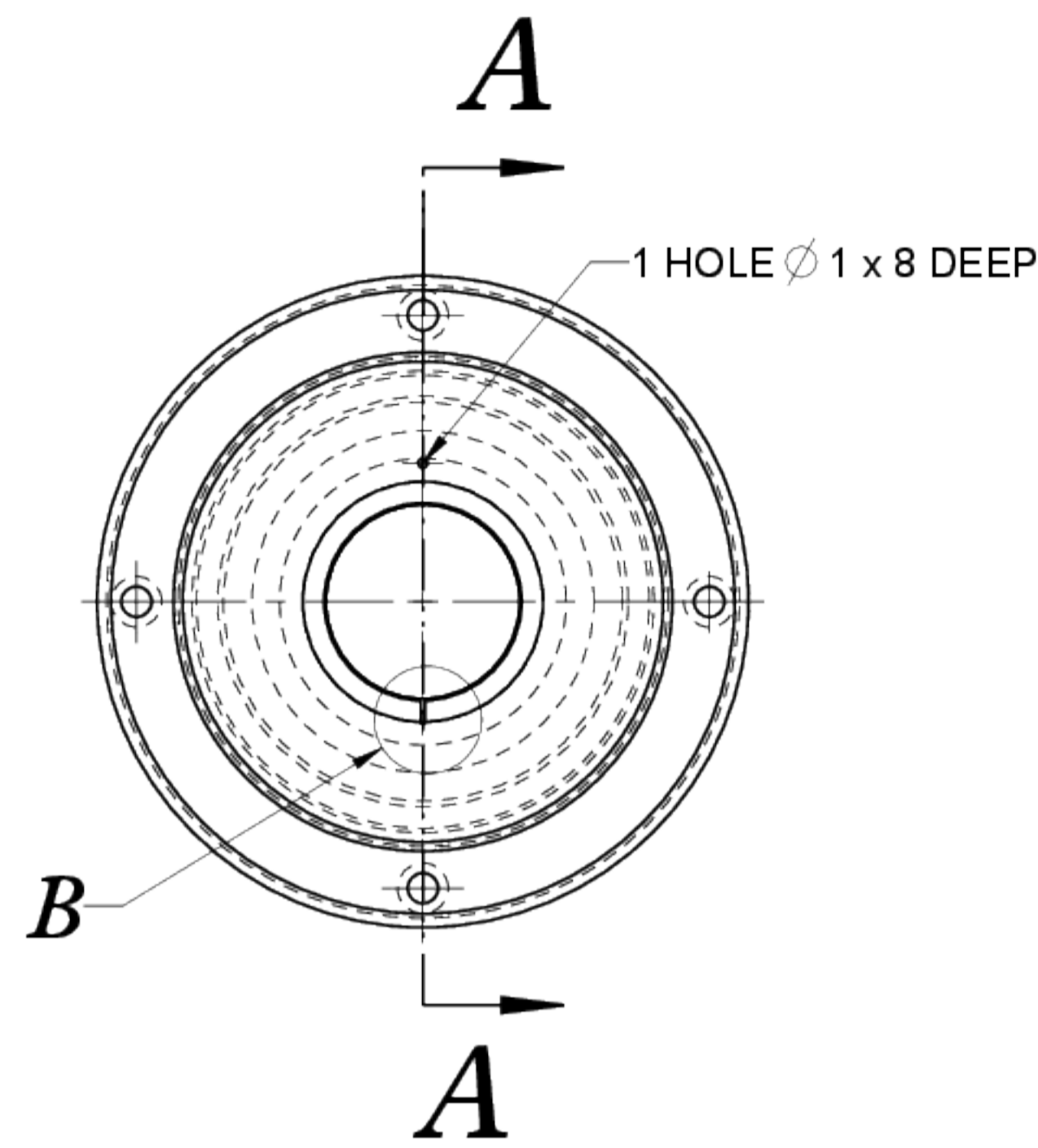
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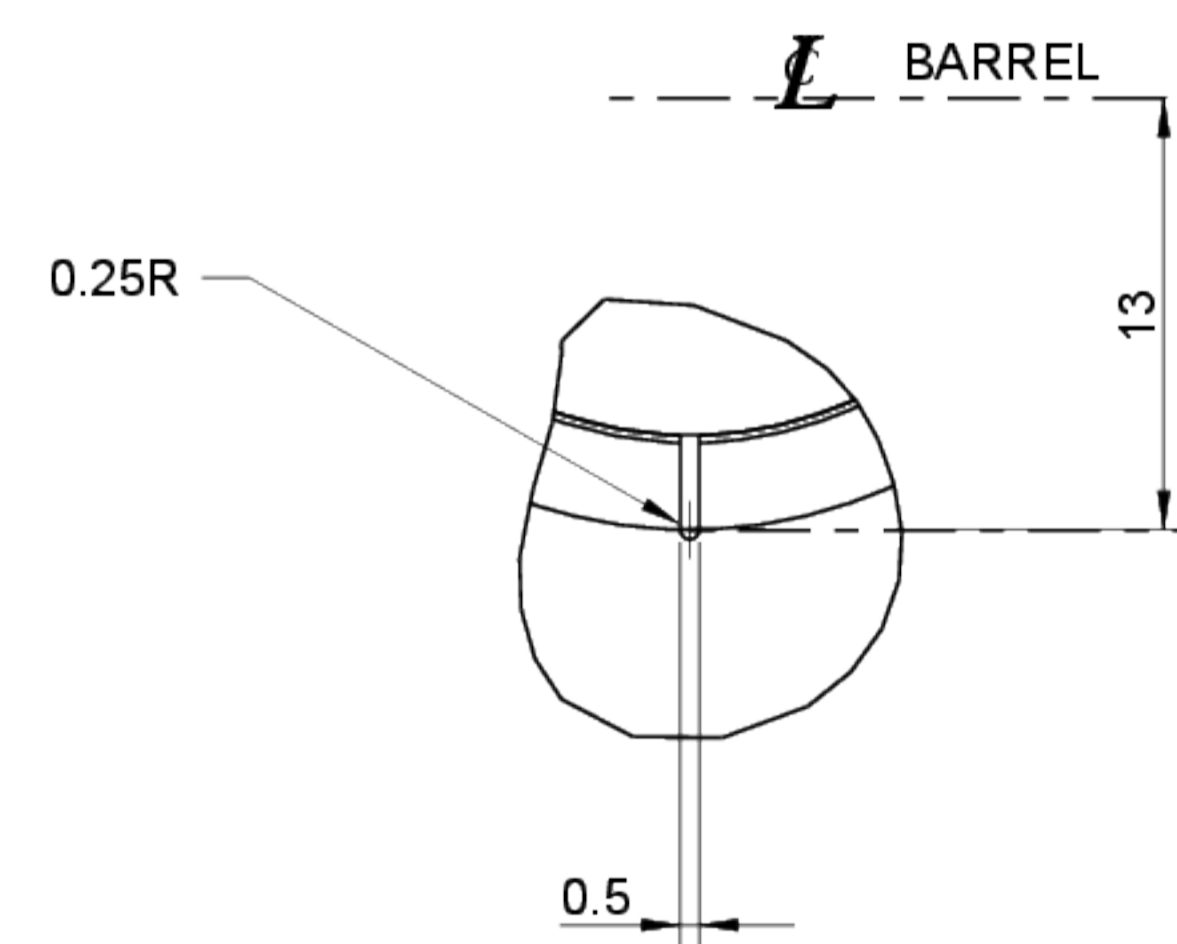
A-A

DO NOT SCALE	PROJECTION
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888	
GENERAL NOTES DIMENSIONS mm REMOVE ALL BURRS AND SHARP CORNERS MAXIMUM CHAMFER 0.5 U.S.O LINEAR DIMENSIONS ±0.1 U.S.O ANGULAR DIMENSIONS ±0.30° U.S.O SURFACES 3.2 μm U.S.O	

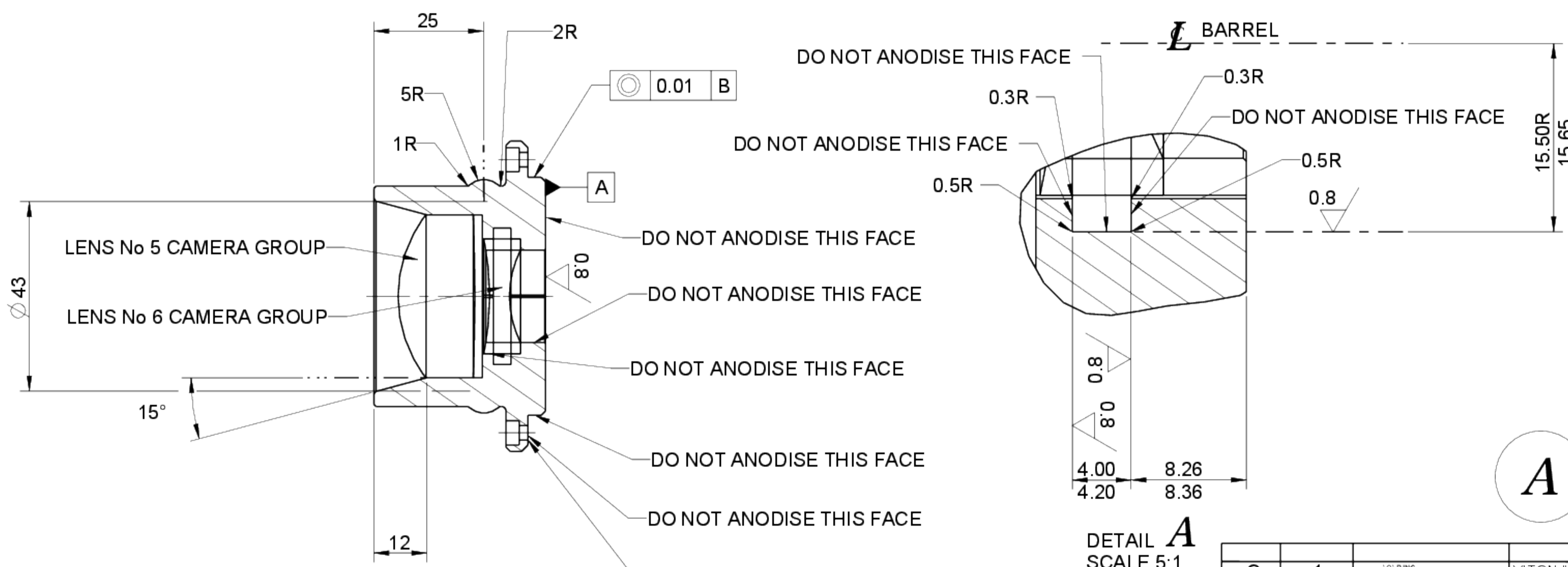
CONFORMS TO BS 8888	ITEM	REQD	DESCRIPTION	MATERIAL
SCALE	DRAWN	DATE	CHECKED	APPROVED
1:1	T.G	23/04/12		
AREA: THAI NATIONAL TELESCOPE				
DESCRIPTION: DETAILS OF LENS BARREL 2 CAMERA GROUP (CONCEPT) & LENS BARREL 3 FORE OPTICS GROUP (CONCEPT)				
THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION.				
DRAWING NUMBER				REV
ULT-SPEC-005				A



4 HOLES Ø 3.2
C/BORE Ø 6 x 3.5 DEEP
EQUI-SPACED ON 62 PCD



DETAIL B
SCALE 5:1

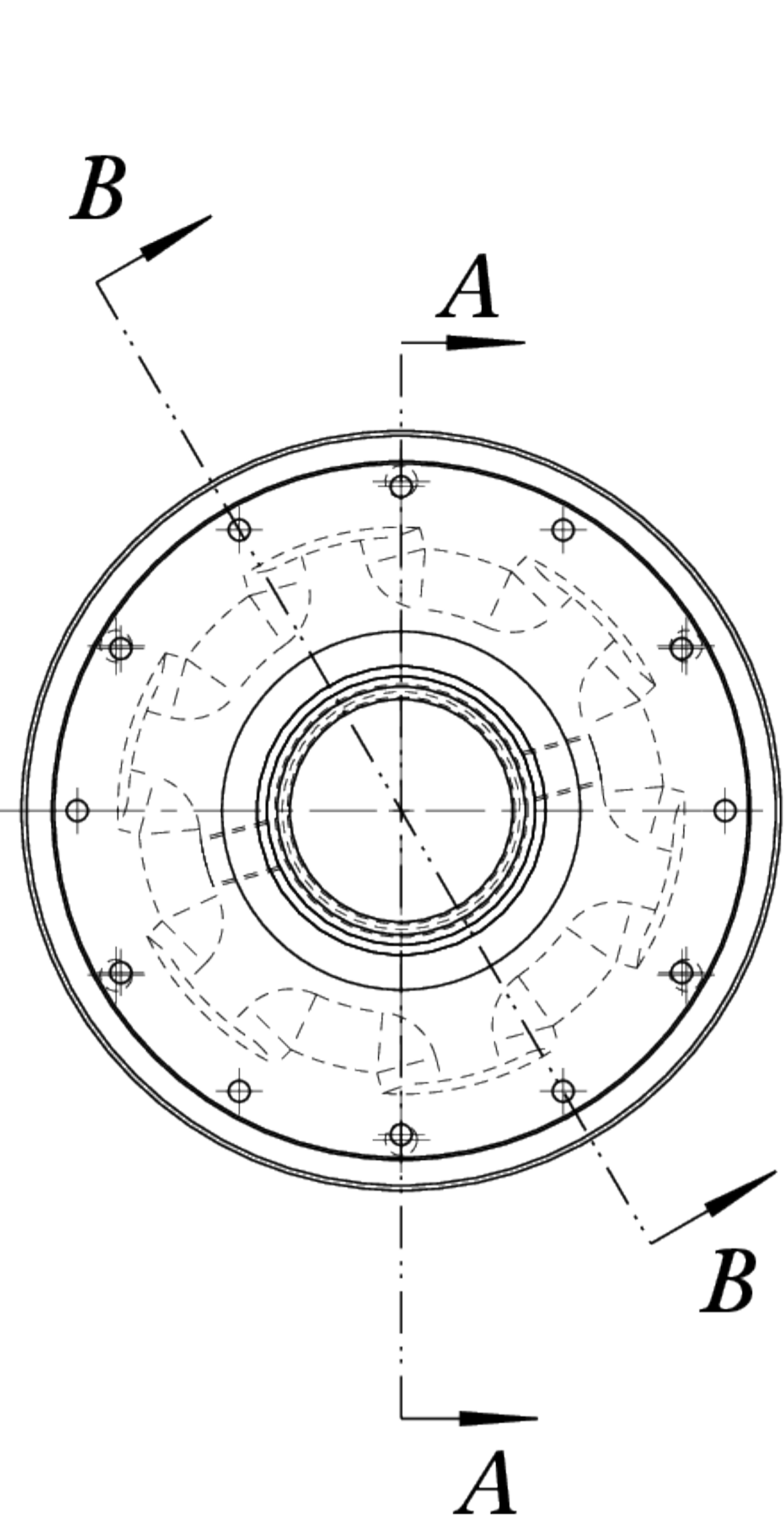


DETAIL A
SCALE 5:1

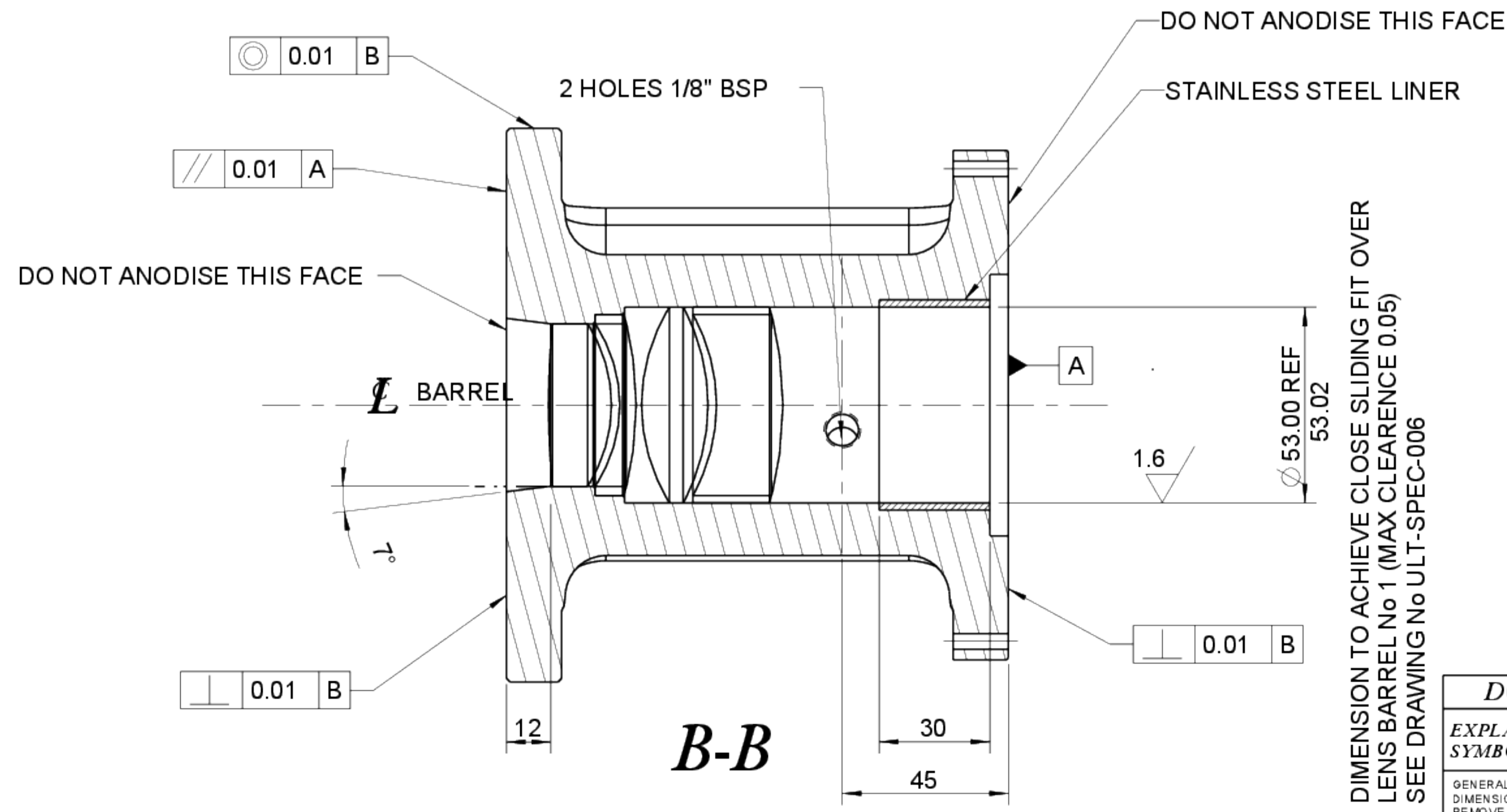
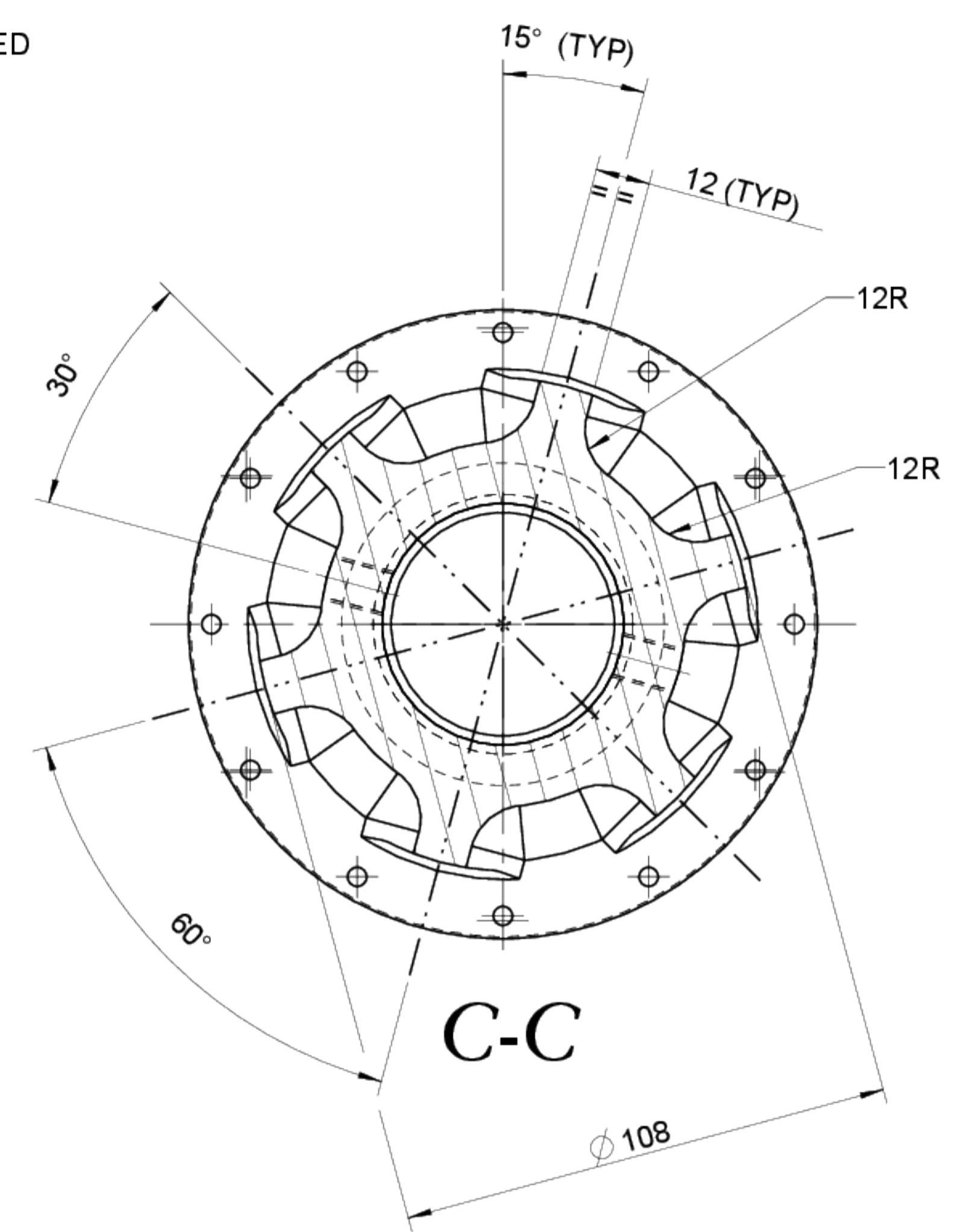
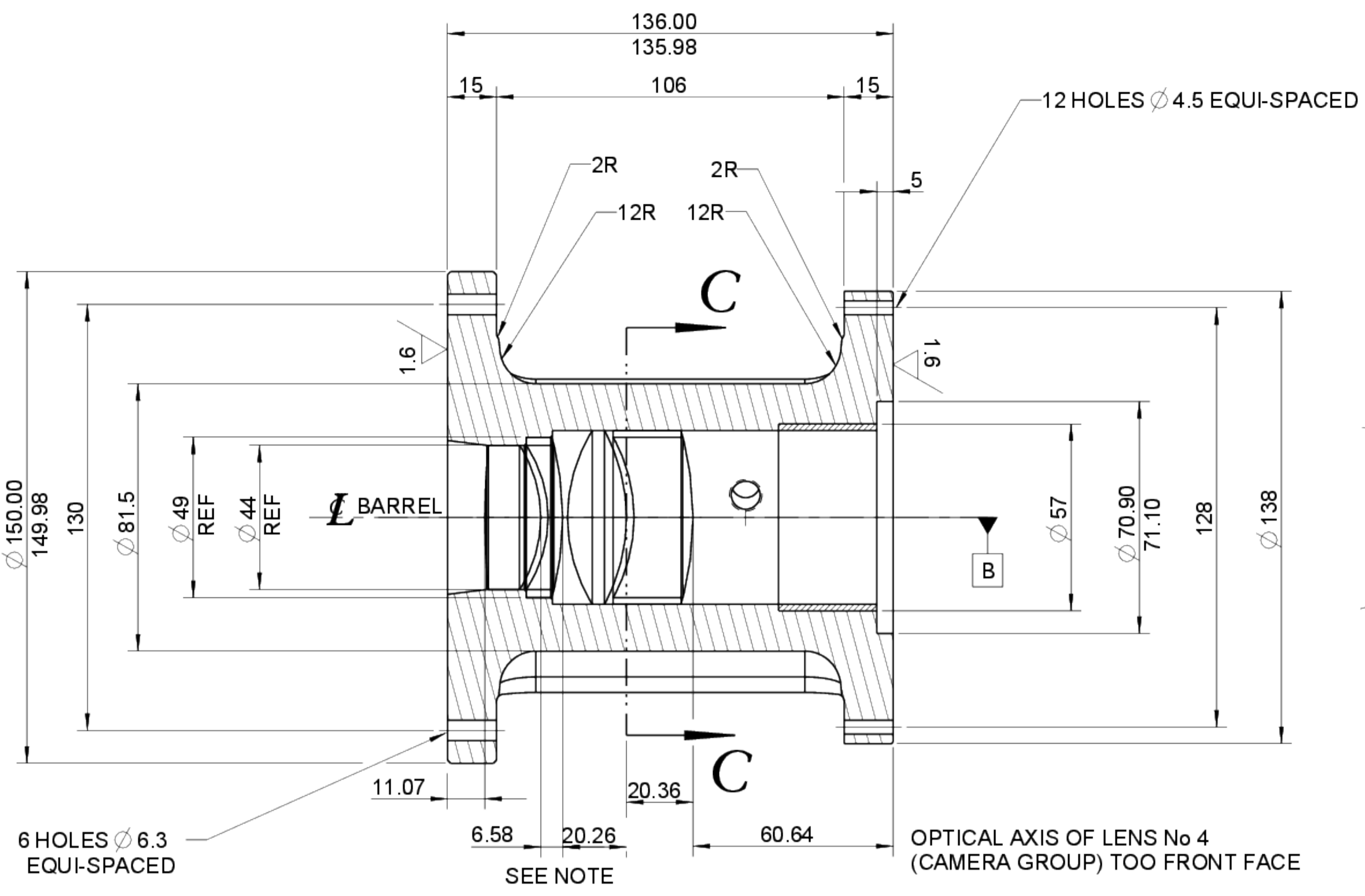
NOTE!
DIMENSIONS FOR LENS SEPERATIONS ARE FROM THEIR CORRESPONDING OPTICAL AXES.
SEE TULLY PEACOCK DOCUMENT:
DATED (22/01/13) OPTIMISED THICKNESSES

ITEM	REQD	DESCRIPTION	MATERIAL
C	1	O RING O.D. 31mm x 3mm C/S	VITON "80 SHORE"
B	1	ANODISE MATT BLACK	AS REQUIRED
A	1	LENS BARREL 1	ALUMINIUM GRADE 0061

DO NOT SCALE		PROJECTION		CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888				SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY
GENERAL NOTES DIMENSIONS mm REMOVE ALL BURRS AND SHARP CORNERS MAXIMUM CHAMFER 0.5 U.S.O LINEAR DIMENSIONS ±0.10 U.S.O ANGULAR DIMENSIONS ±0.30° U.S.O SURFACES 3.2 µm U.S.O				2:1/5:1	T.G	02/05/12			COMPONENTS #
				AREA		THAI NATIONAL TELESCOPE "THAILAND"			
				DESCRIPTION		DETAILS OF LENS BARREL 1 "CAMERA GROUP"			
				DRAWING NUMBER		ULT-SPEC-006			
				REV		C			



DIMENSION TO ACHIEVE CLOSE SLIDING FIT INSIDE ALIGNMENT BLOCK RECESS (MAX CLEARANCE 0.05) SEE DRAWING No ULT-SPEC-009

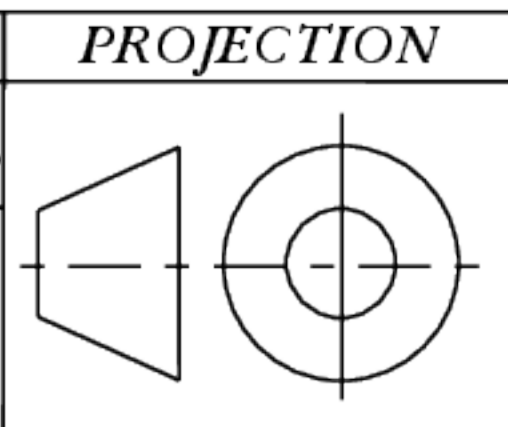


DIMENSION TO ACHIEVE CLOSE SLIDING FIT OVER LENS BARREL No 1 (MAX CLEARANCE 0.05) SEE DRAWING No ULT-SPEC-006

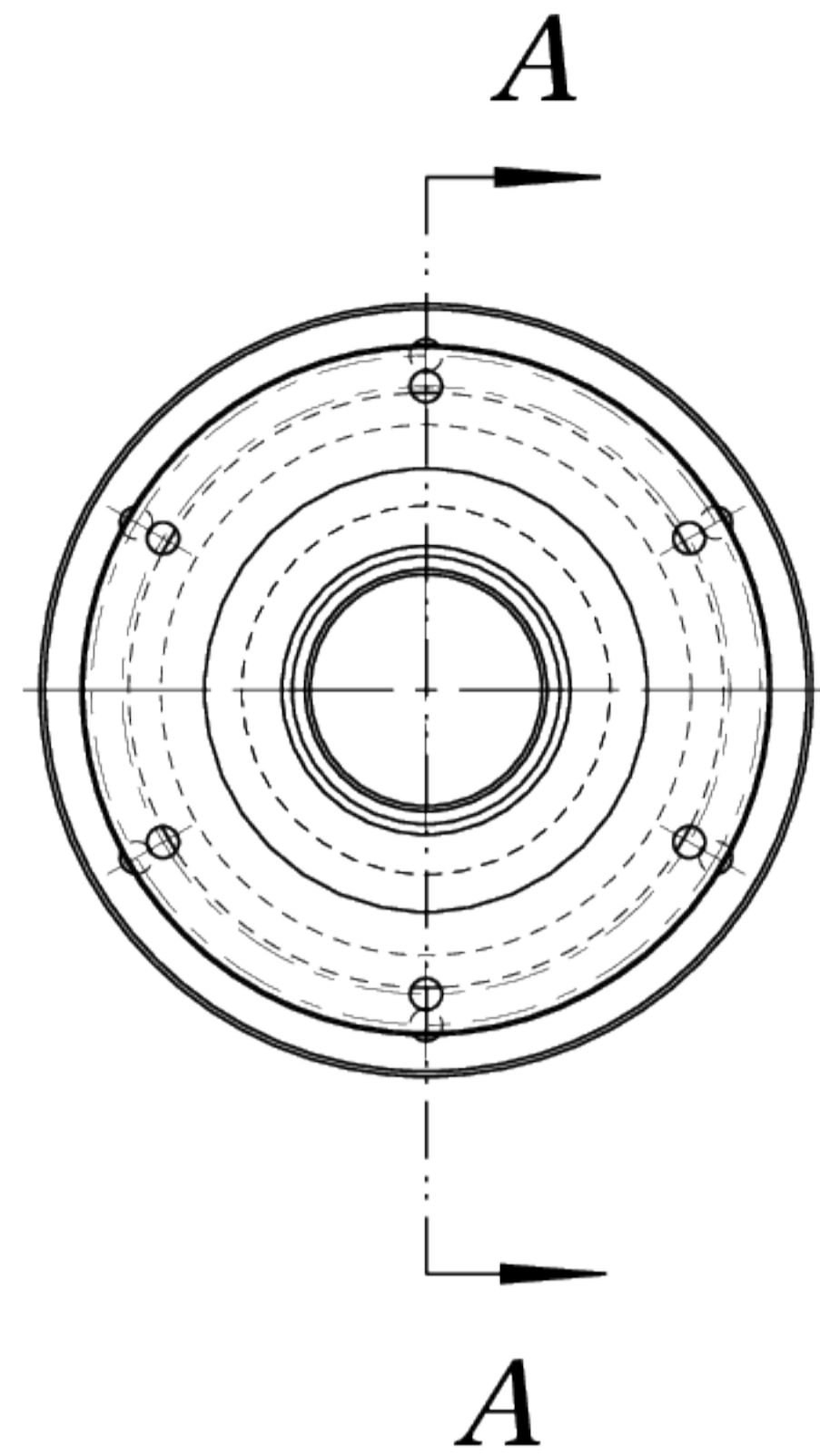
NOTE!
DIMENSIONS FOR LENS SEPERATIONS ARE FROM THEIR CORRESPONDING OPTICAL AXES. SEE TULLY PEACOCK DOCUMENT DATED (22/01/13) OPTIMISED THICKNESSES

A

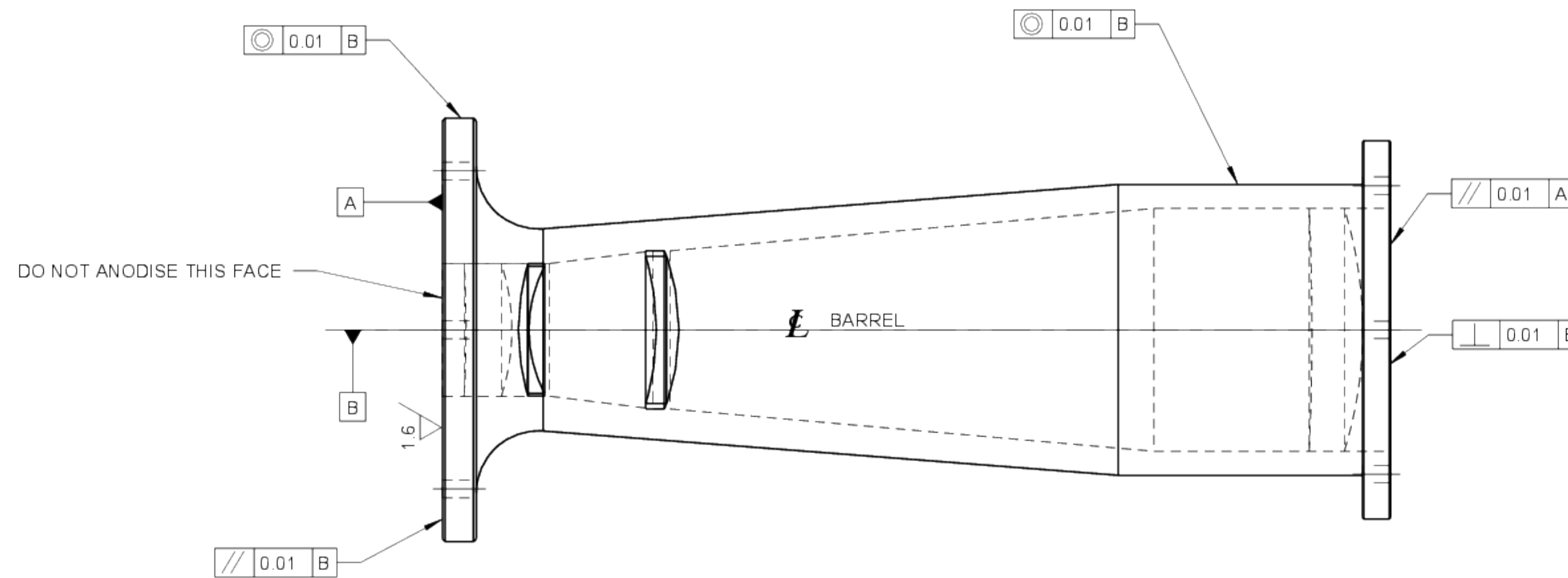
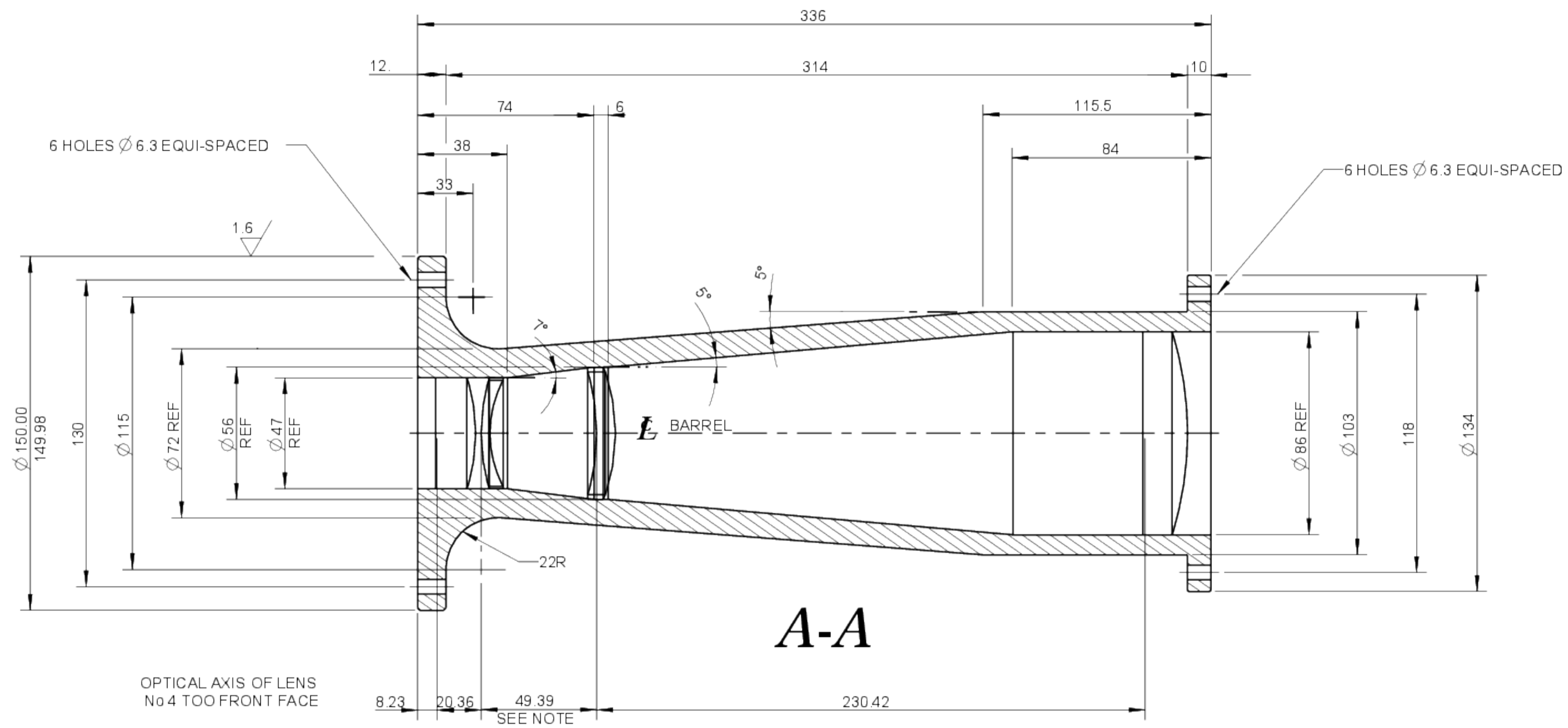
DO NOT SCALE
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888
GENERAL NOTES
DIMENSIONS mm
REMOVE ALL BURRS AND SHARP CORNERS
MAXIMUM CHAMFER 0.5 U.S.O
LINEAR DIMENSIONS ±0.1 U.S.O
ANGULAR DIMENSIONS ±1° 30' U.S.O
SURFACES 3.2 μm U.S.O



CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
B	1			ANODISE MATT BLACK	AS REQUIRED
A	1			LENS BARREL No 2	ALUMINIUM GRADE 8081
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY
1:1/3:1	T.G	03/05/12			COMPONENTS #
AREA DESCRIPTION					
THAI NATIONAL TELESCOPE "THAILAND"					
DETAILS OF LENS BARREL No 2 "CAMERA GROUP"					
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DRAWING NUMBER		ULT-SPEC-007			REV D



DIMENSION TO ACHIEVE CLOSE SLIDING FIT INSIDE ALIGNMENT BLOCK RECESS (MAX CLEARANCE 0.05) SEE DRAWING No ULT-SPEC-009



NOTE

DIMENSIONS FOR LENS SEPERATIONS ARE FROM THEIR CORRESPONDING OPTICAL AXES. SEE TULLY PEACOCK DOCUMENT DATED (22/01/13) OPTIMISED THICKNESSES

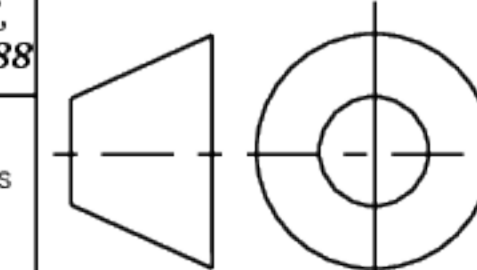
A

CONFORMS TO BS 8888	ITEM	REQD	DESCRIPTION	MATERIAL
	B	1	ANODISE MATT BLACK	AS REQUIRED
	A	1	LENS BARREL No 3	ALUMINIUM GRADE 0001

SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY
1:1/3:1	T.G	10/06/12			COMPONENTS #

DO NOT SCALE
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888

PROJECTION



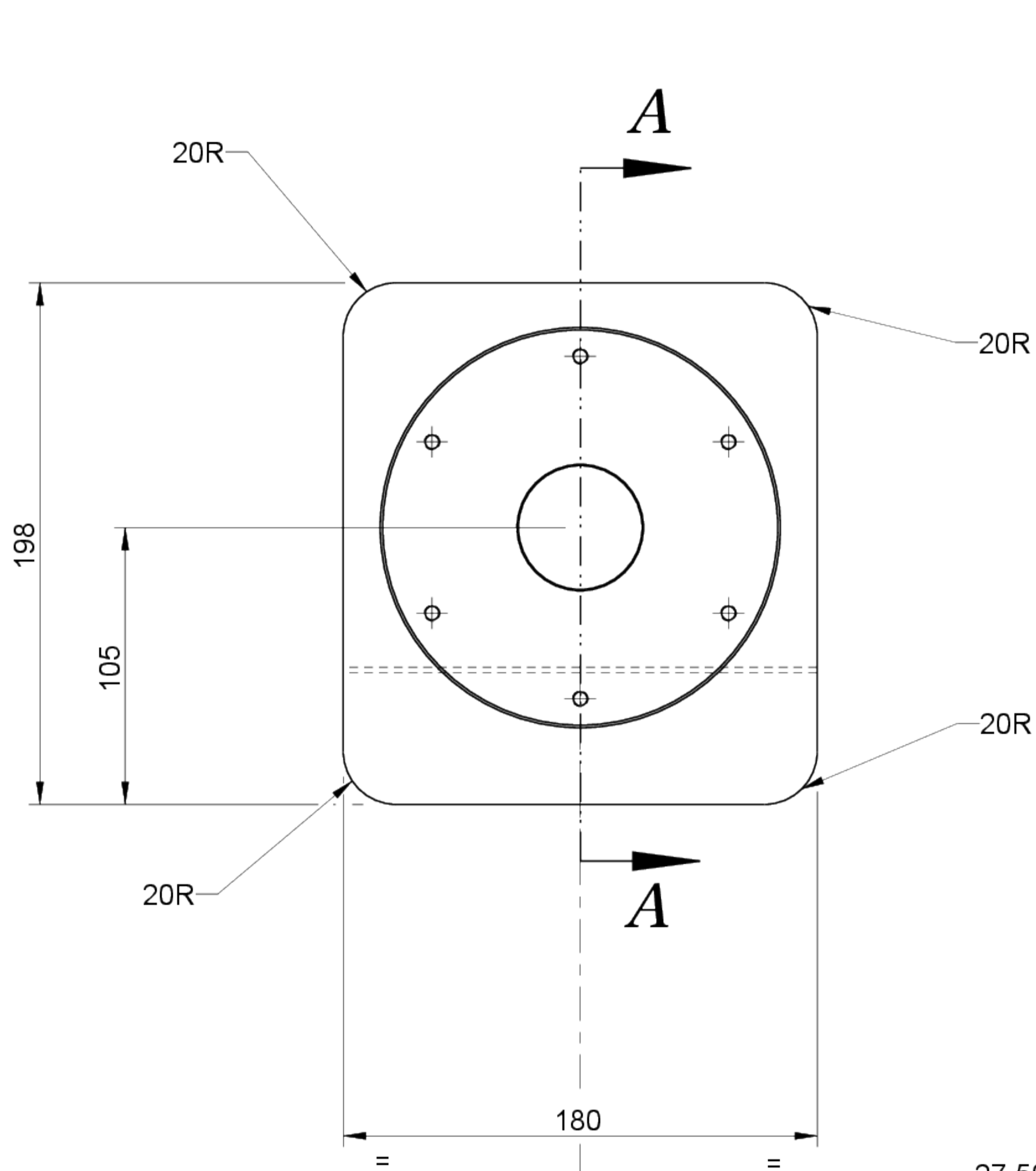
GENERAL NOTES
DIMENSIONS mm
REMOVE ALL BURRS AND SHARP CORNERS
MAXIMUM CHAMFER 0.5 U.S.O
LINEAR DIMENSIONS ± 0.10 U.S.O
ANGULAR DIMENSIONS $\pm 0.30^\circ$ U.S.O
SURFACES 3.2 μ m U.S.O

AREA THAI NATIONAL TELESCOPE "THAILAND"

DESCRIPTION DETAILS OF LENS BARREL No 3 "FORE OPTICS GROUP"

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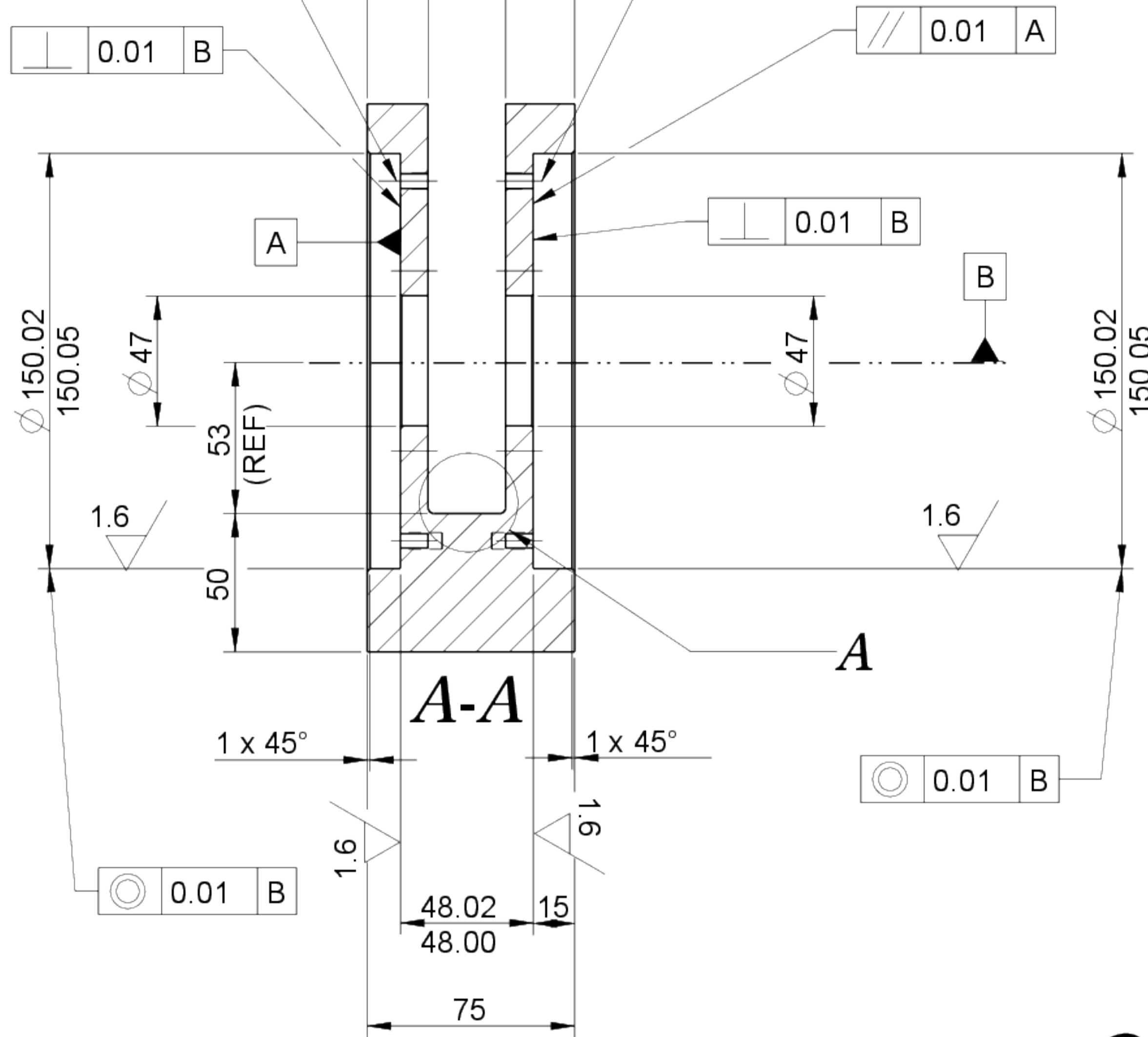
DRAWING NUMBER **ULT-SPEC-008** REV C



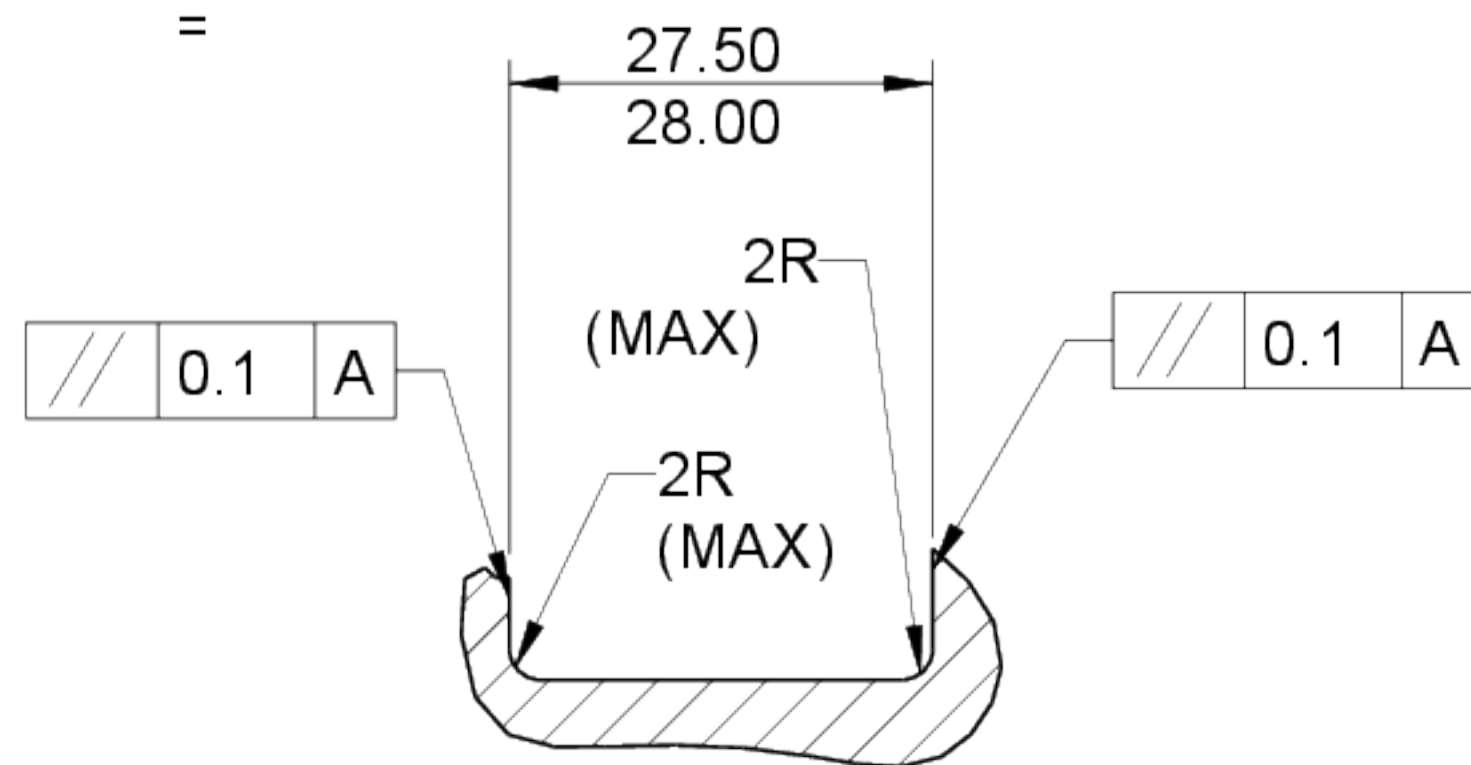
6 HOLES M6 x 15 DEEP
EQUI-SPACED ON 130 PCD

6 HOLES M6 x 15 DEEP
EQUI-SPACED ON 130 PCD

DIMENSION TO ACHIEVE CLOSE SLIDING FIT OVER
LENS BARREL 3 FLANGE (MAX CLEARANCE 0.05)
SEE DRAWING No ULT-SPEC-008



DIMENSION TO ACHIEVE CLOSE SLIDING FIT OVER
LENS BARREL 2 FLANGE (MAX CLEARANCE 0.05)
SEE DRAWING No ULT-SPEC-007



DETAIL A
SCALE 2:1

**PROVISIONAL ENQUIRY ONLY
NOT FOR MANUFACTURE**

A

CONFORMS TO BS 8888	ITEM	REQD	DESCRIPTION	MATERIAL
	1	A	ALIGNMENT BLOCK	ALUMINIUM GRADE 0001
SCALE	DRAWN	DATE	CHECKED	APPROVED
1:0.75 / 2:1	T.G	21/06/12		
AREA THAI NATIONAL TELESCOPE "THAILAND"				
DESCRIPTION DETAILS OF ALIGNMENT BLOCK				
THIS DRAWING IS STRICTLY CONFIDENTIAL NOT FOR THIRD PARTY DISTRIBUTION				
DRAWING NUMBER				REV
ULT-SPEC-009				B

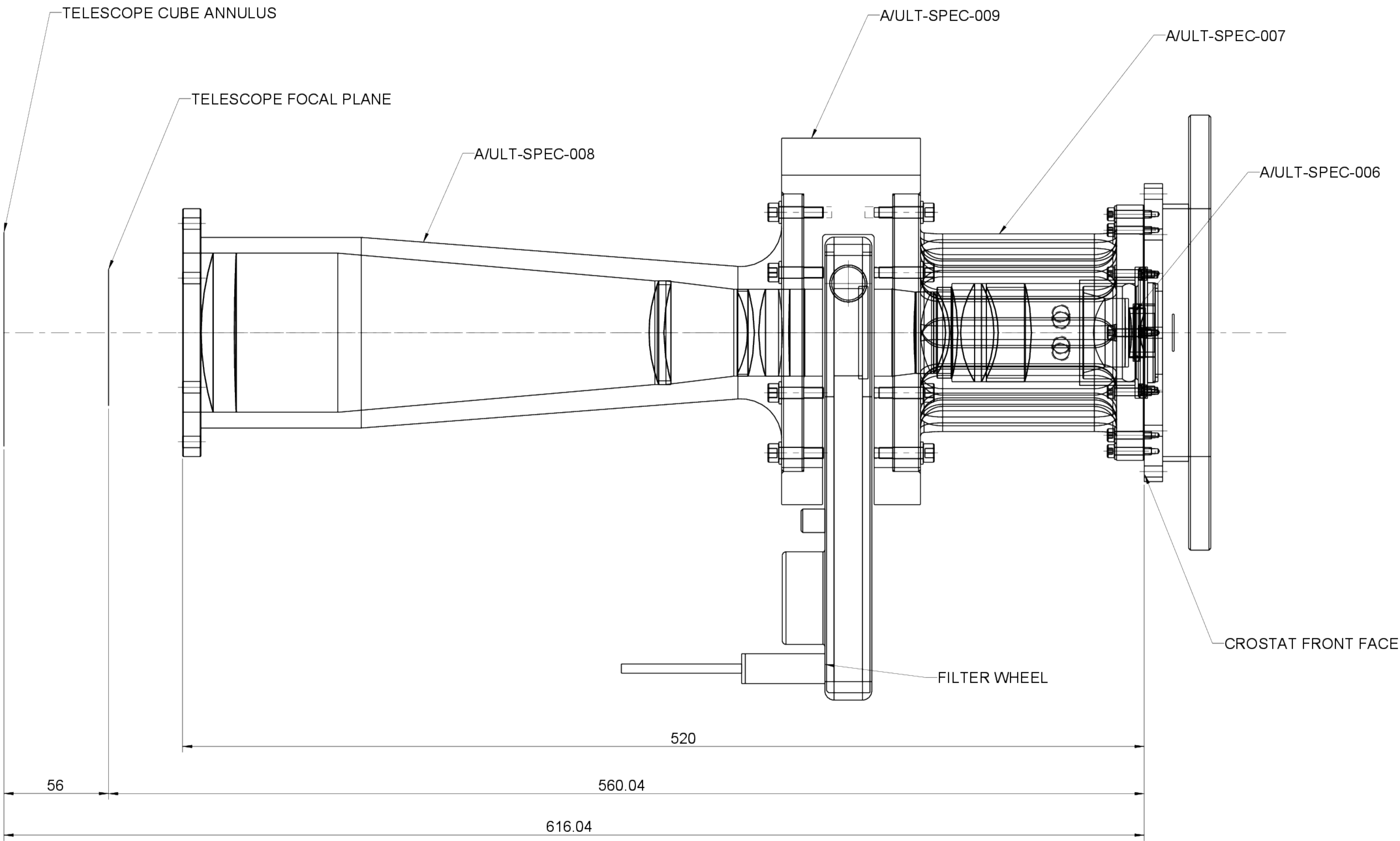
DO NOT SCALE PROJECTION

EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888

GENERAL NOTES
DIMENSIONS mm
REMOVE ALL BURRS AND SHARP CORNERS
MAXIMUM CHAMFER 0.5 U.S.O
LINEAR DIMENSIONS +/- 0.1 U.S.O
ANGULAR DIMENSIONS +/- 0.30 U.S.O
SURFACES 3.2 / 1.6 U.S.O

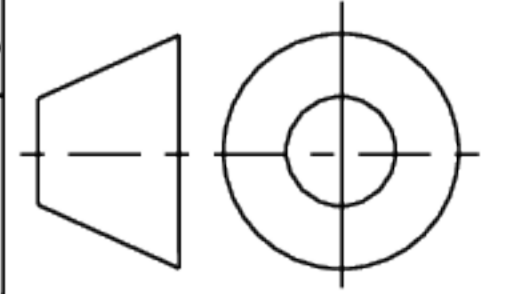
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

A
B
C
D
E
F
G
H
I
J

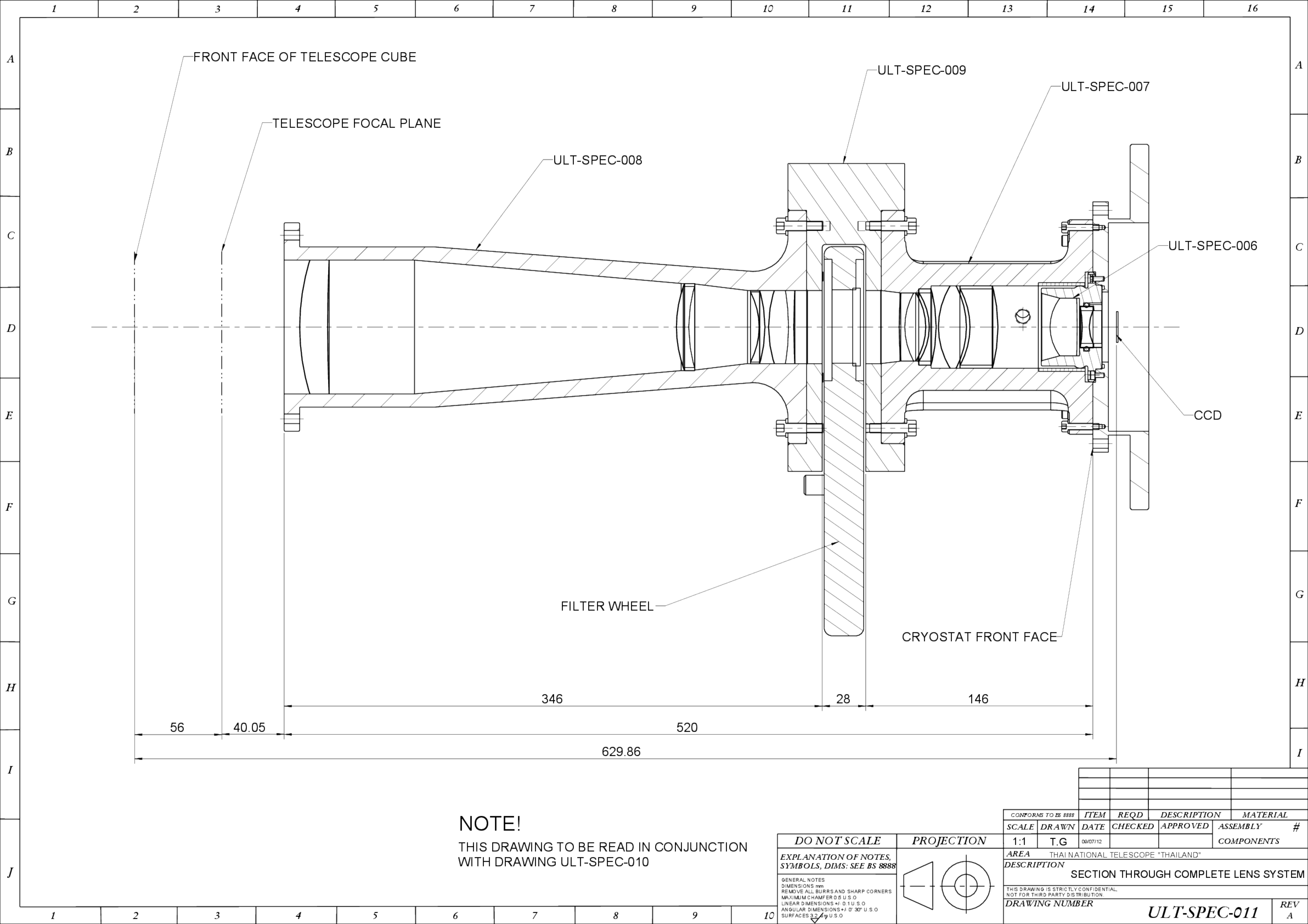


NOTE!
THIS DRAWING TO BE READ IN CONJUNCTION
WITH DRAWING NUMBER ULT-SPEC-011

DO NOT SCALE
PROJECTION
EXPLANATION OF NOTES,
SYMBOLS, DIMS: SEE BS 8888
GENERAL NOTES
DIMENSIONS mm
REMOVE ALL BURRS AND SHARP CORNERS
MAXIMUM CHAMFER 0.5 U.S.O
LINEAR DIMENSIONS +/- 0.1 U.S.O
ANGULAR DIMENSIONS +/- 0.30' U.S.O
SURFACES 3.2 / 16 U.S.O

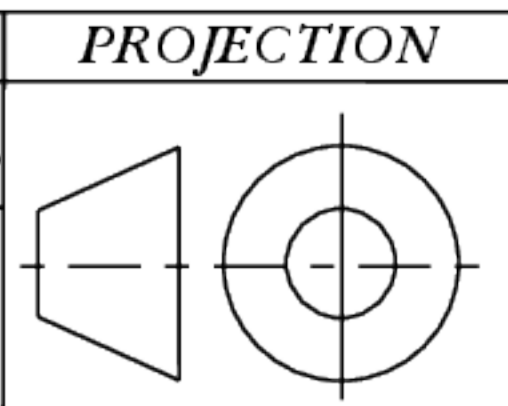


CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY #
1:1	T.G	20/08/12			COMPONENTS
AREA		THAI NATIONAL TELESCOPE "THAILAND"			
DESCRIPTION		GENERAL ARRANGEMENT OF THE COMPLETE OPTICS			
THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION					
DRAWING NUMBER		ULT-SPEC-010			REV A



NOTE!
 THIS DRAWING TO BE READ IN CONJUNCTION
 WITH DRAWING ULT-SPEC-010

DO NOT SCALE
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888
 GENERAL NOTES
 DIMENSIONS mm
 REMOVE ALL BURRS AND SHARP CORNERS
 MAXIMUM CHAMFER 0.5 U.S.O
 LINEAR DIMENSIONS +/- 0.1 U.S.O
 ANGULAR DIMENSIONS +/- 0.30' U.S.O
 SURFACES 3.2 /₁₀ U.S.O

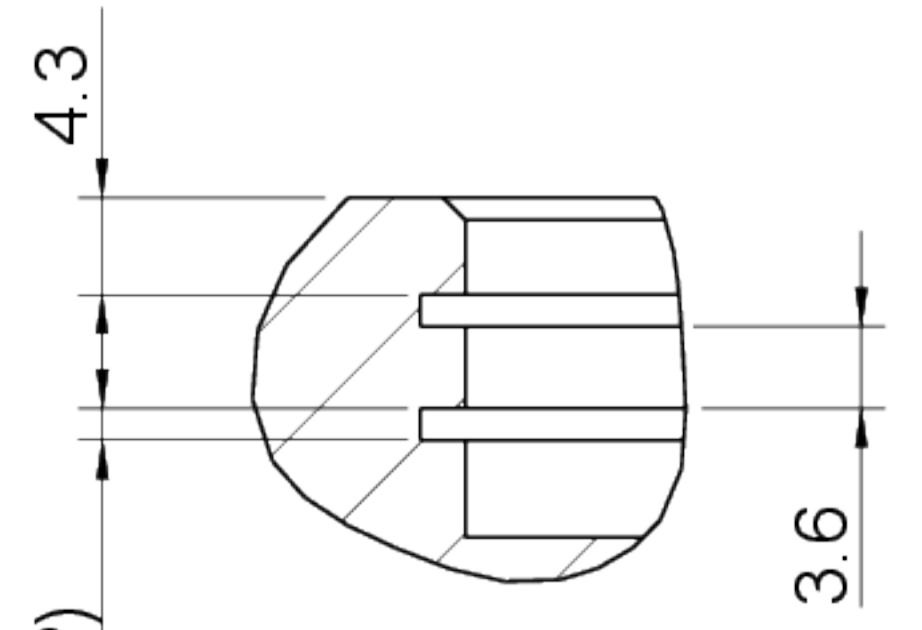
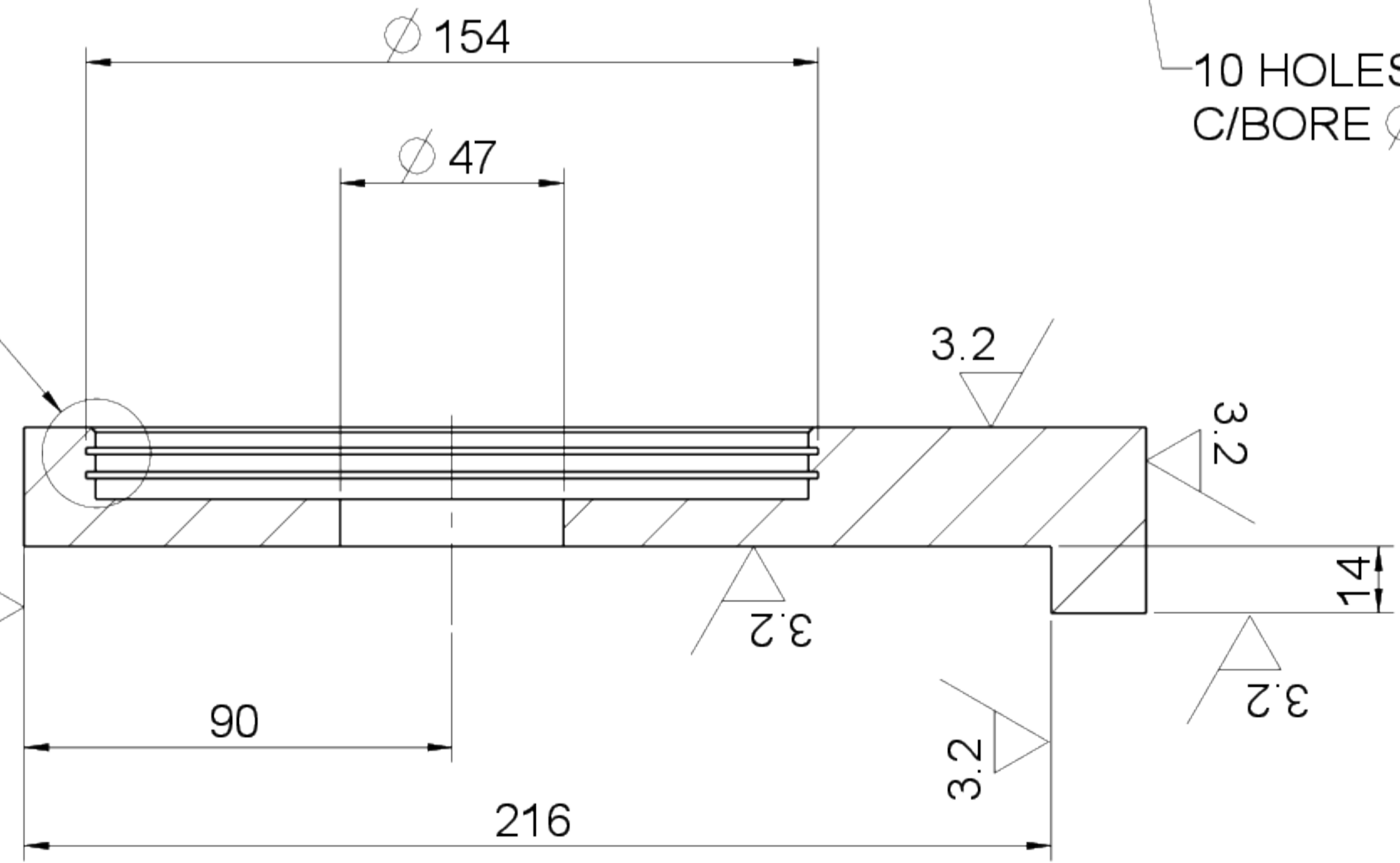
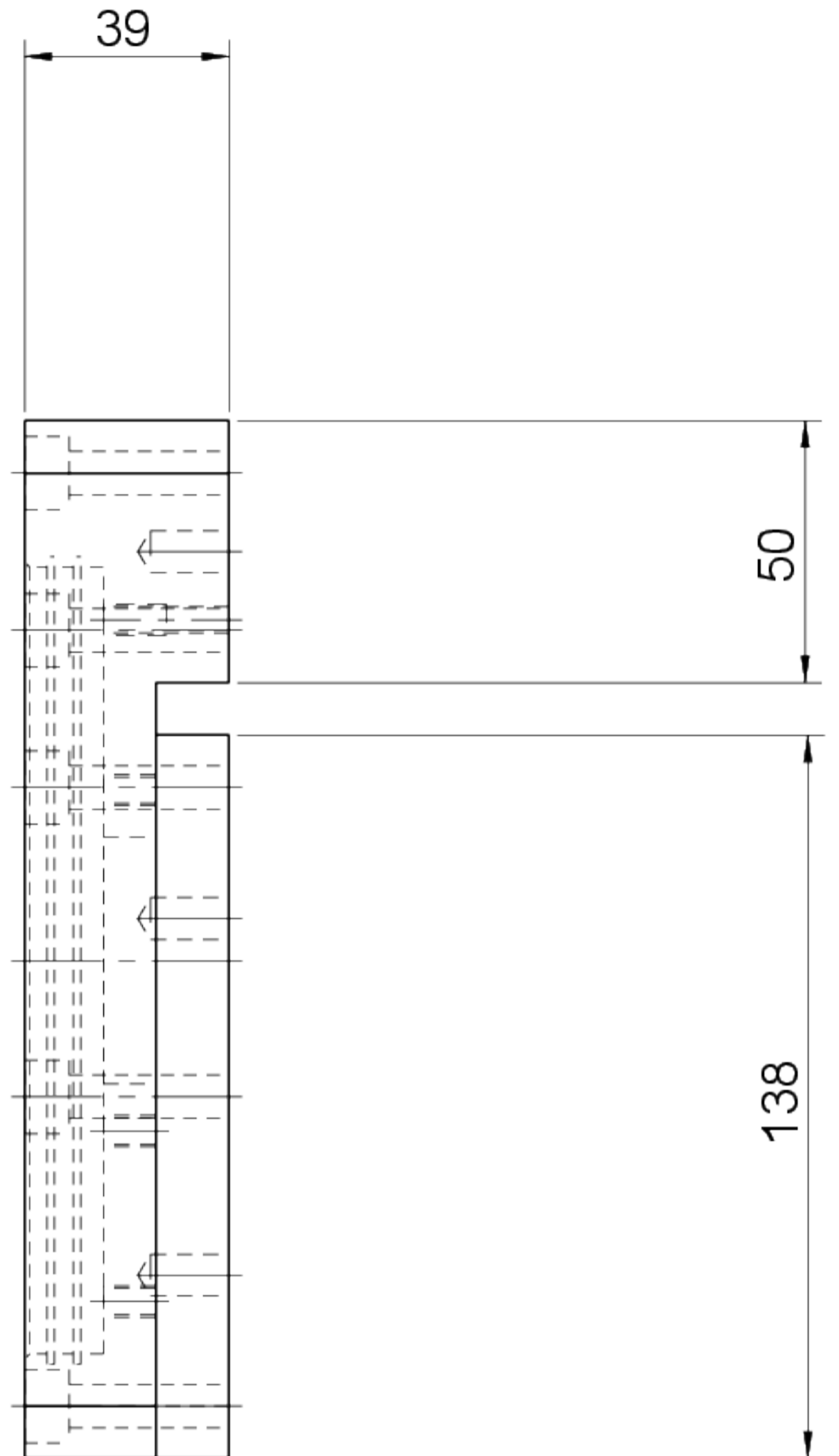
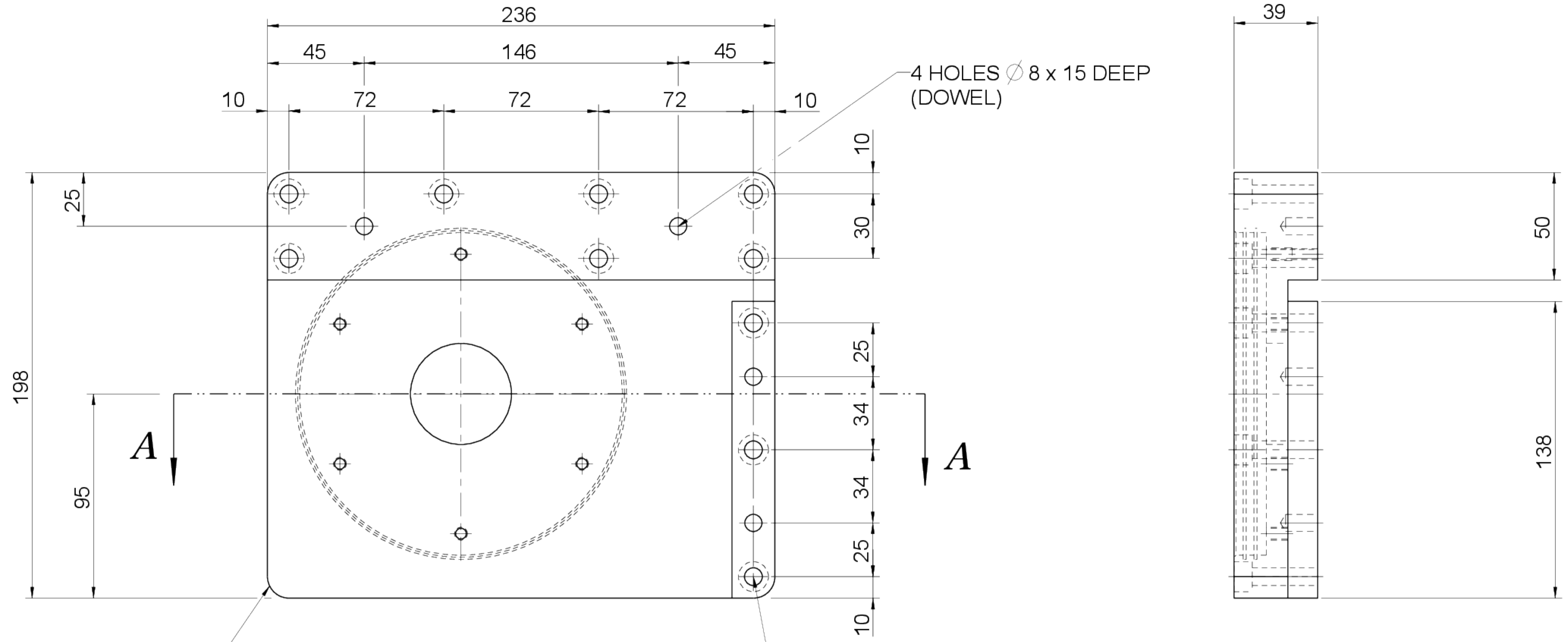


CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY #
1:1	T.G	08/07/12			COMPONENTS
AREA THAI NATIONAL TELESCOPE "THAILAND"					
DESCRIPTION SECTION THROUGH COMPLETE LENS SYSTEM					
THIS DRAWING IS STRICTLY CONFIDENTIAL NOT FOR THIRD PARTY DISTRIBUTION					
DRAWING NUMBER					REV A
ULT-SPEC-011					

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

A
B
C
D
E
F
G
H
I
J

A
B
C
D
E
F
G
H
I



4 HOLES \varnothing 8 x 15 DEEP (DOWEL)

10 HOLES \varnothing 8.3 C/BORE \varnothing 14 x 8.5 DEEP (FAR SIDE)

NOTE!
THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWINGS
ULT-SPEC-013 (U-BLOCK: TELESCOPE SIDE)
ULT-SPEC-014 (U-BLOCK ASSEMBLY)

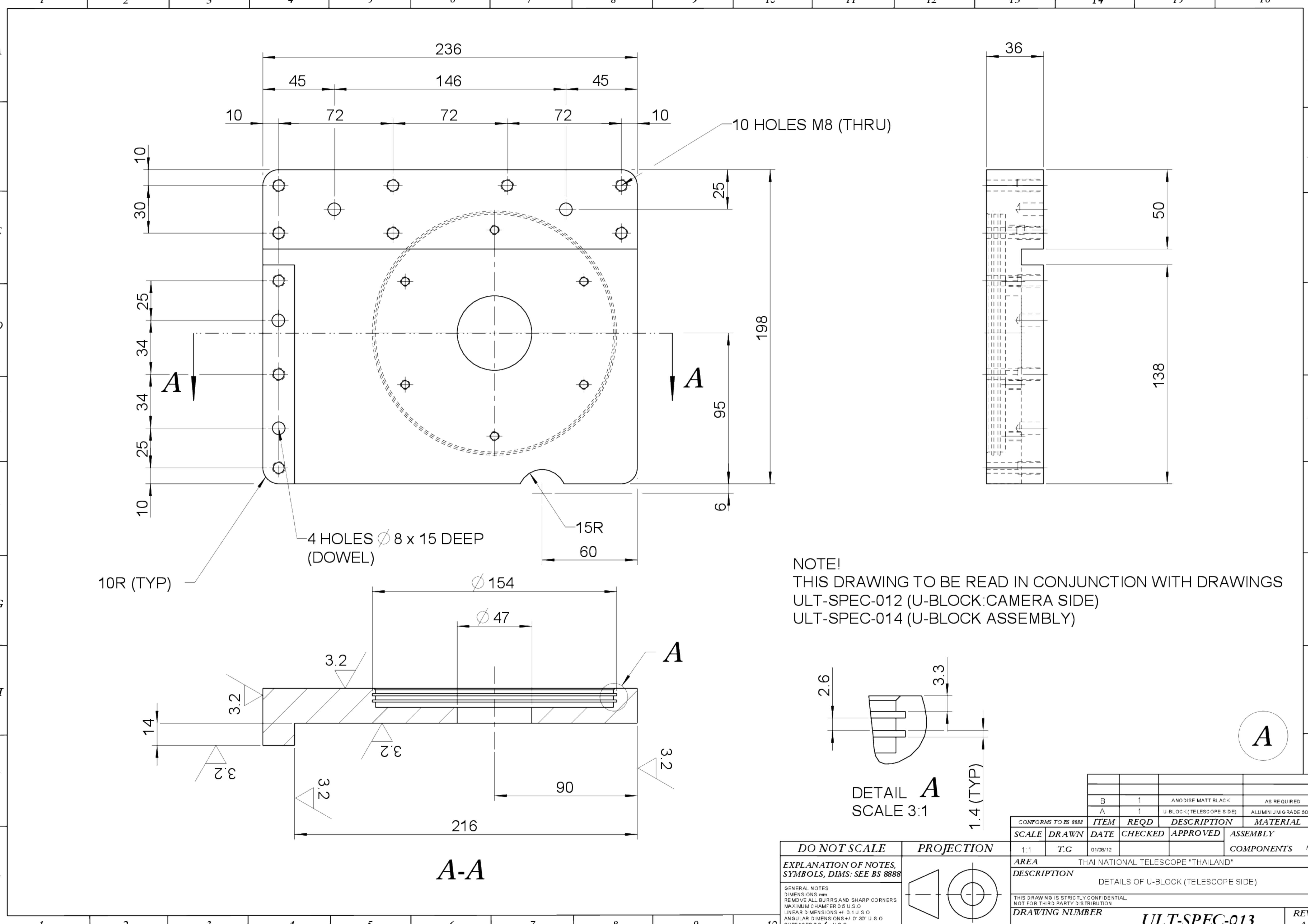
A

DETAIL A
SCALE 3:1

A-A

DO NOT SCALE	PROJECTION
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888	
GENERAL NOTES DIMENSIONS mm REMOVE ALL BURRS AND SHARP CORNERS MAXIMUM CHAMFER 0.5 U.S.O LINEAR DIMENSIONS +/- 0.1 U.S.O ANGULAR DIMENSIONS +/- 0.30' U.S.O SURFACES 3.2 μ m U.S.O	

CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
B	1			ANODISE MATT BLACK	AS REQUIRED
A	1			U-BLOCK (CAMERA SIDE)	ALUMINIUM GRADE 6061
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY
1:1	T.G	01/08/12			COMPONENTS #
AREA THAI NATIONAL TELESCOPE "THAILAND"					
DESCRIPTION DETAILS OF U-BLOCK (CAMERA SIDE)					
THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION					
DRAWING NUMBER				REV	
ULT-SPEC-012				A	

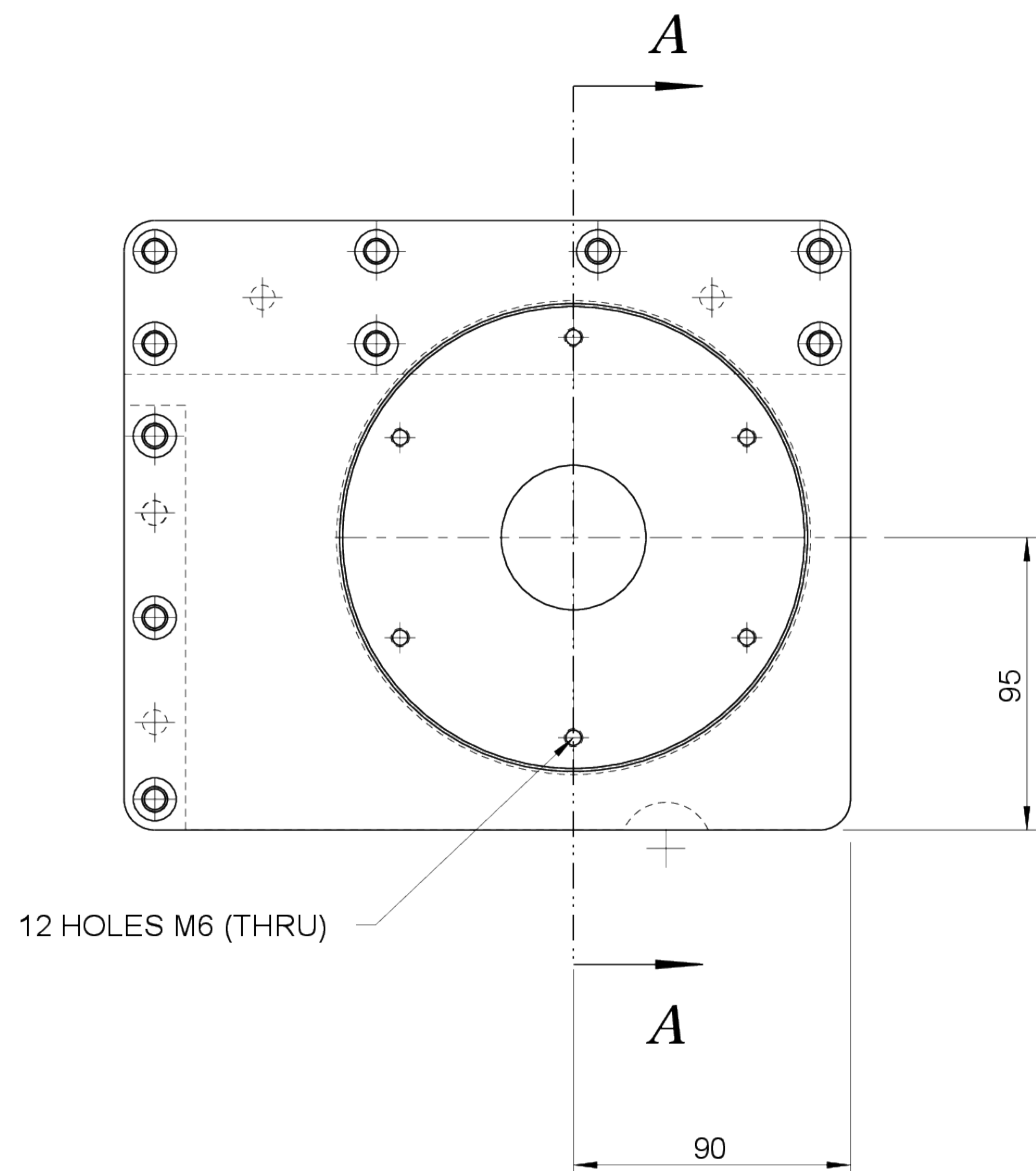


NOTE!
 THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWINGS
 ULT-SPEC-012 (U-BLOCK:CAMERA SIDE)
 ULT-SPEC-014 (U-BLOCK ASSEMBLY)

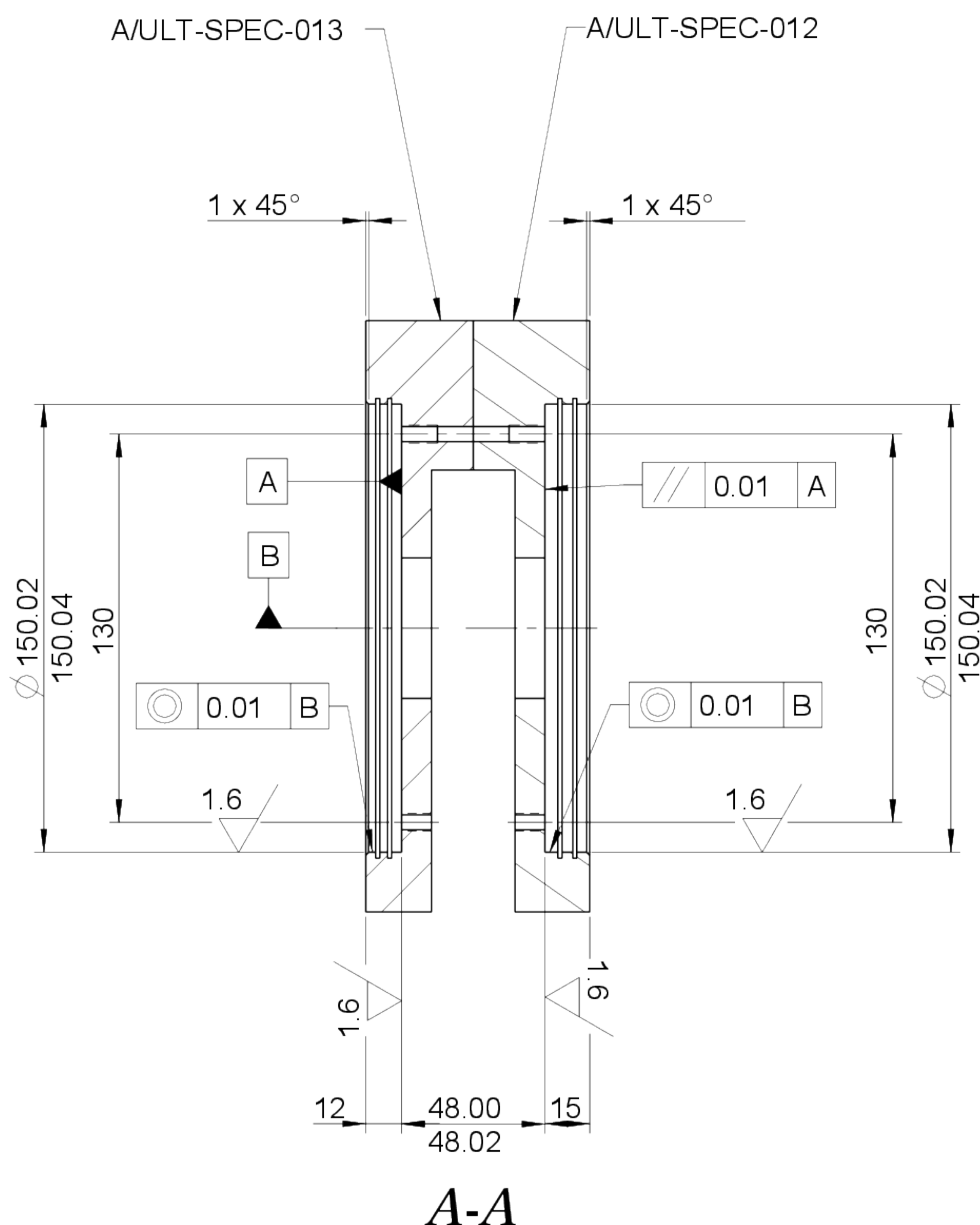
A

DO NOT SCALE	PROJECTION
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888	
GENERAL NOTES DIMENSIONS mm REMOVE ALL BURRS AND SHARP CORNERS MAXIMUM CHAMFER 0.5 U.S.O LINEAR DIMENSIONS +/- 0.1 U.S.O ANGULAR DIMENSIONS +/- 0.30' U.S.O SURFACES 3.2 μ m U.S.O	

CONFORMS TO BS 8888	ITEM	REQD	DESCRIPTION	MATERIAL
	B	1	ANO DISE MATT BLACK	AS REQUIRED
	A	1	U-BLOCK (TELESCOPE SIDE)	ALUMINIUM GRADE 6061
SCALE	DRAWN	DATE	CHECKED	APPROVED
1:1	T.G	01/08/12		
AREA				
THAI NATIONAL TELESCOPE "THAILAND"				
DESCRIPTION				
DETAILS OF U-BLOCK (TELESCOPE SIDE)				
THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION				
DRAWING NUMBER				REV
ULT-SPEC-013				A



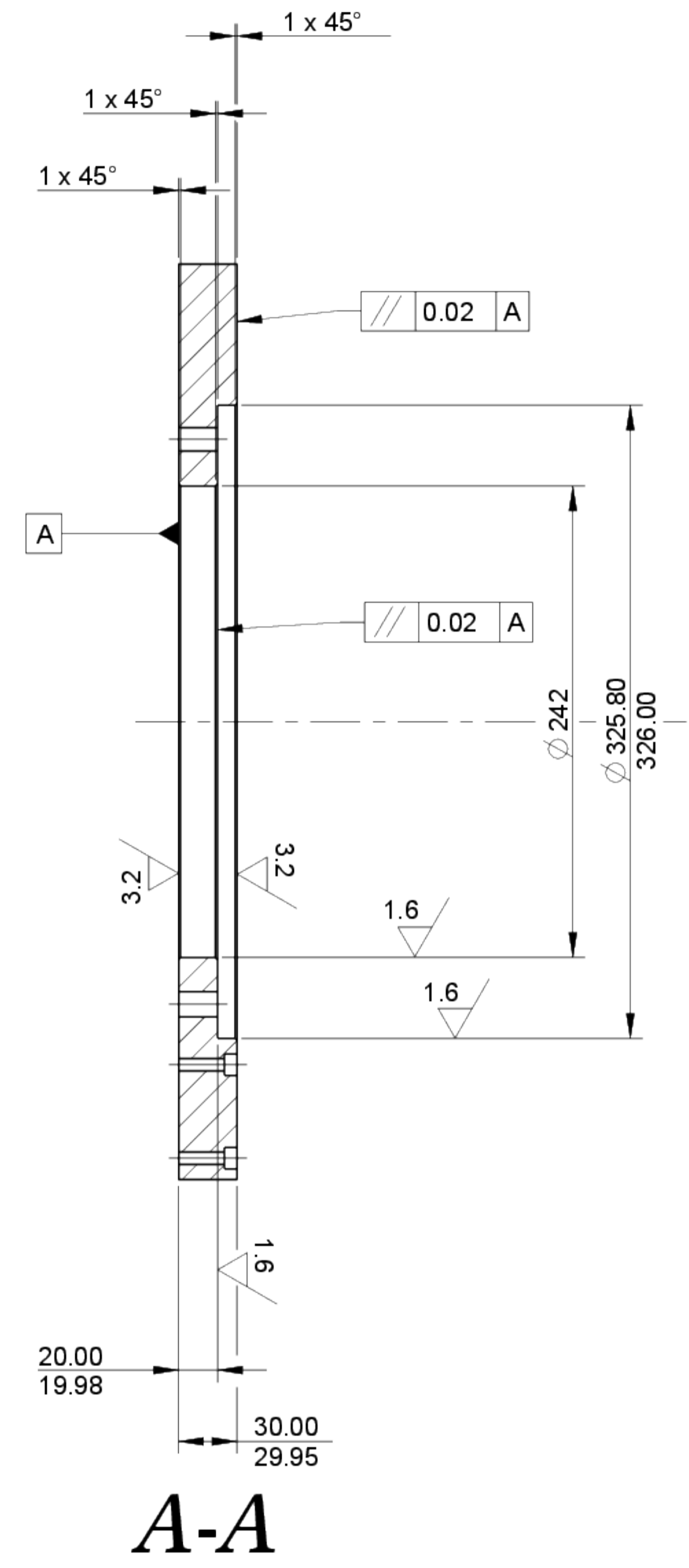
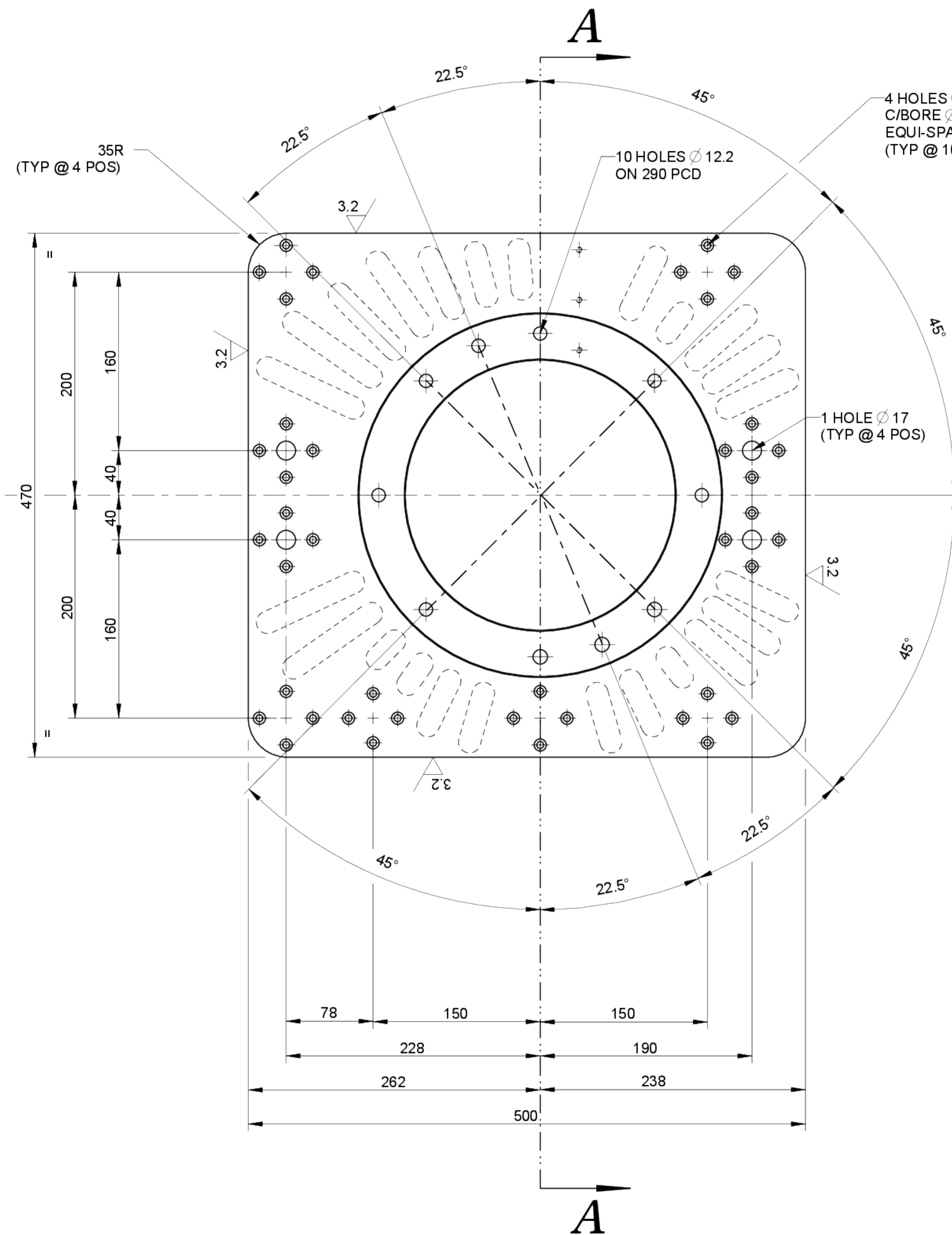
DIMENSION TO ACHIEVE CLOSE SLIDING FIT OVER LENS
 BARREL 3's NOMINAL ϕ 150 FLANGE (MAX CLEARANCE 0.05)
 SEE DRAWING No ULT-SPEC-008



DIMENSION TO ACHIEVE CLOSE SLIDING FIT OVER LENS
 BARREL 2's NOMINAL ϕ 150 FLANGE (MAX CLEARANCE 0.05)
 SEE DRAWING No ULT-SPEC-007

NOTE!
 ACHIEVE DIMENSIONS AFTER ASSEMBLY.
 THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWINGS
 ULT-SPEC-012 (U-BLOCK:CAMERA SIDE)
 ULT-SPEC-013 (U-BLOCK:TELESCOPE SIDE)

CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY #
1:1	T.G	0208/12			COMPONENTS
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888		AREA			
GENERAL NOTES DIMENSIONS mm REMOVE ALL BURRS AND SHARP CORNERS MAXIMUM CHAMFER 0.5 U.S.O LINEAR DIMENSIONS +/- 0.1 U.S.O ANGULAR DIMENSIONS +/- 0.30 U.S.O SURFACES 3.2 μ m U.S.O		DESCRIPTION			
		THAI NATIONAL TELESCOPE "THAILAND"			
		ASSEMBLY MACHINING DETAILS FOR THE U-BLOCK (CAMERA SIDE AND TELESCOPE SIDE)			
		THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION.			
		DRAWING NUMBER			
		ULT-SPEC-014			
		REV A			



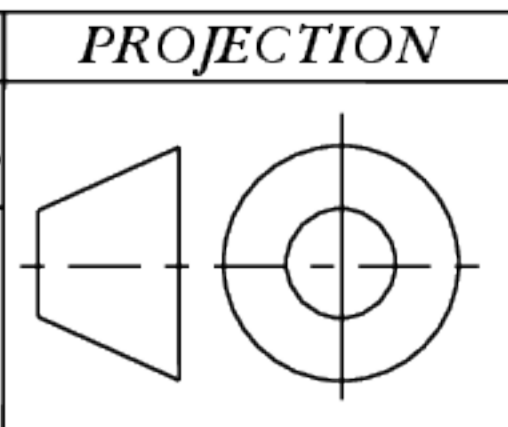
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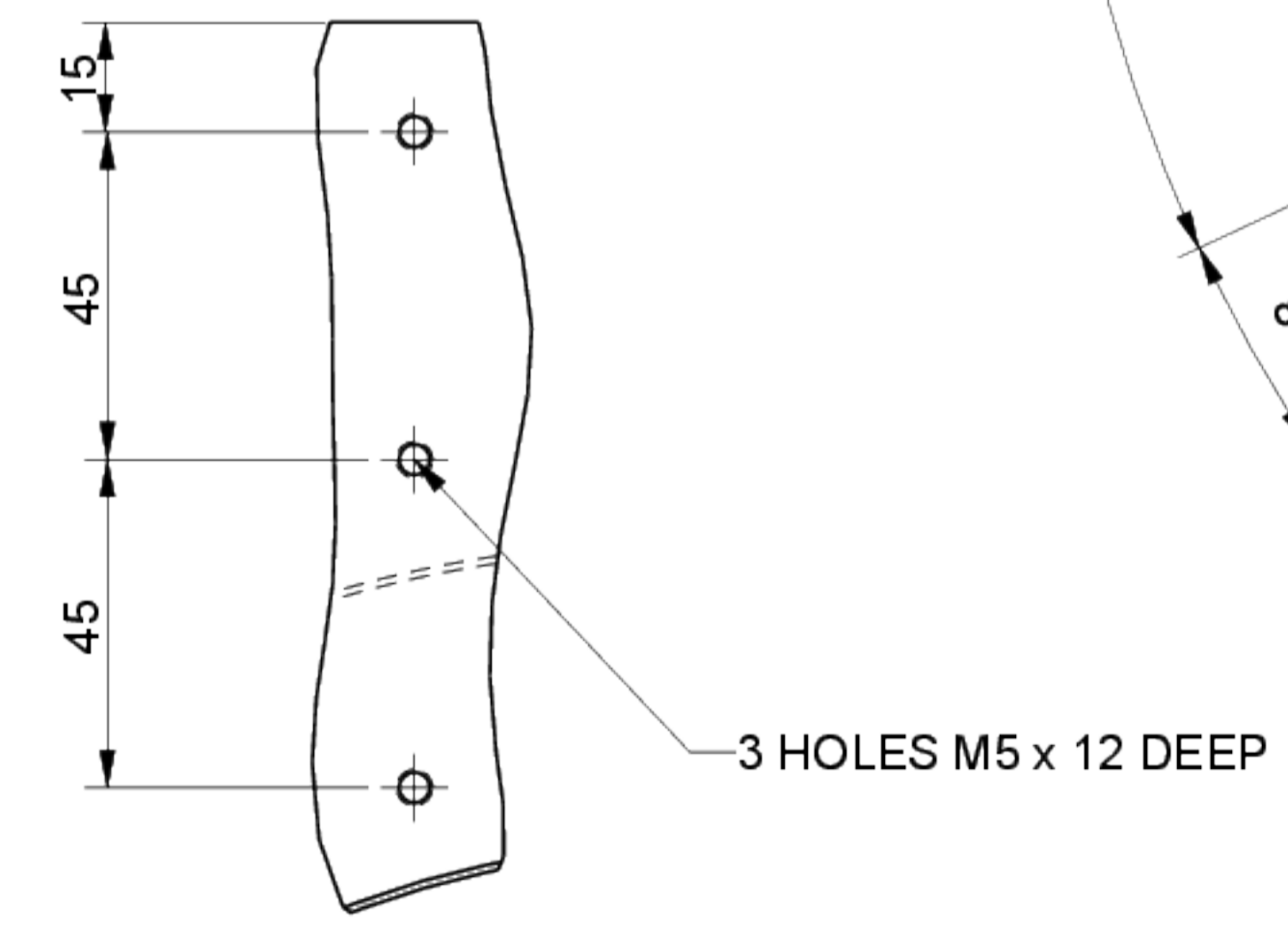
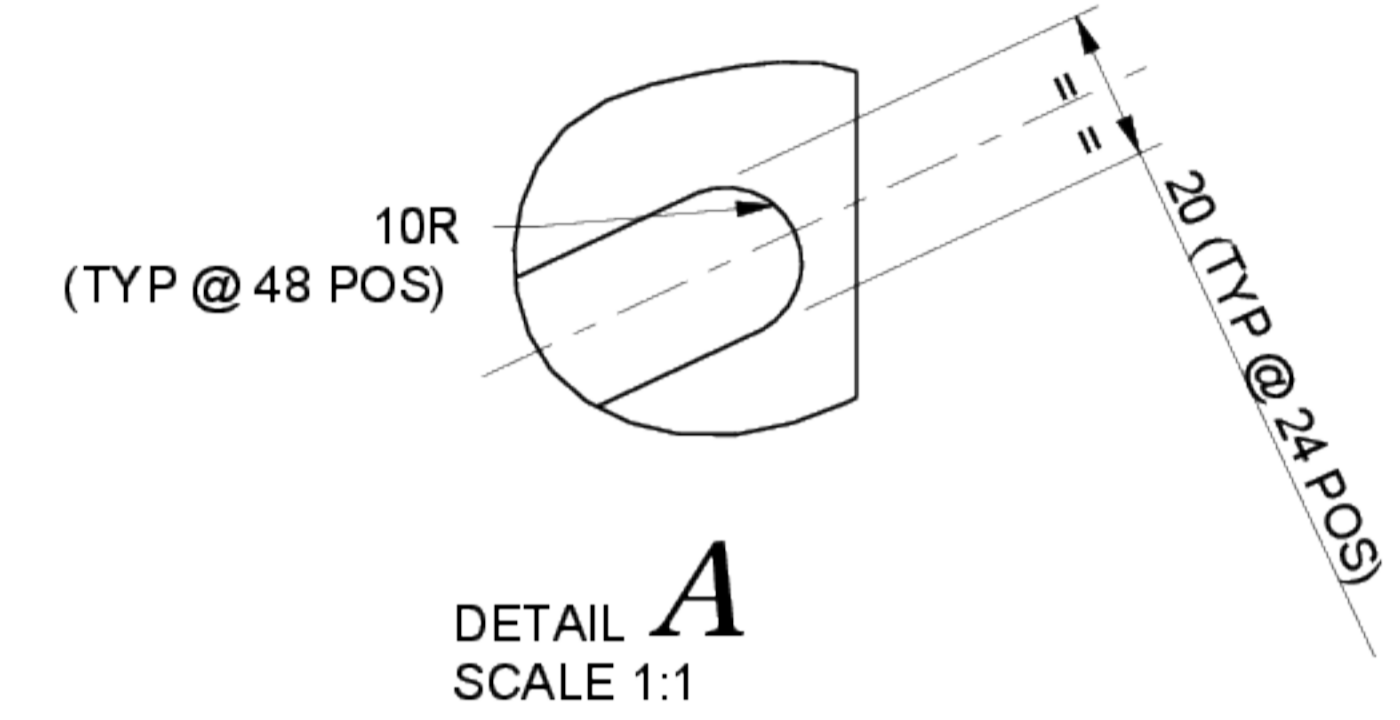
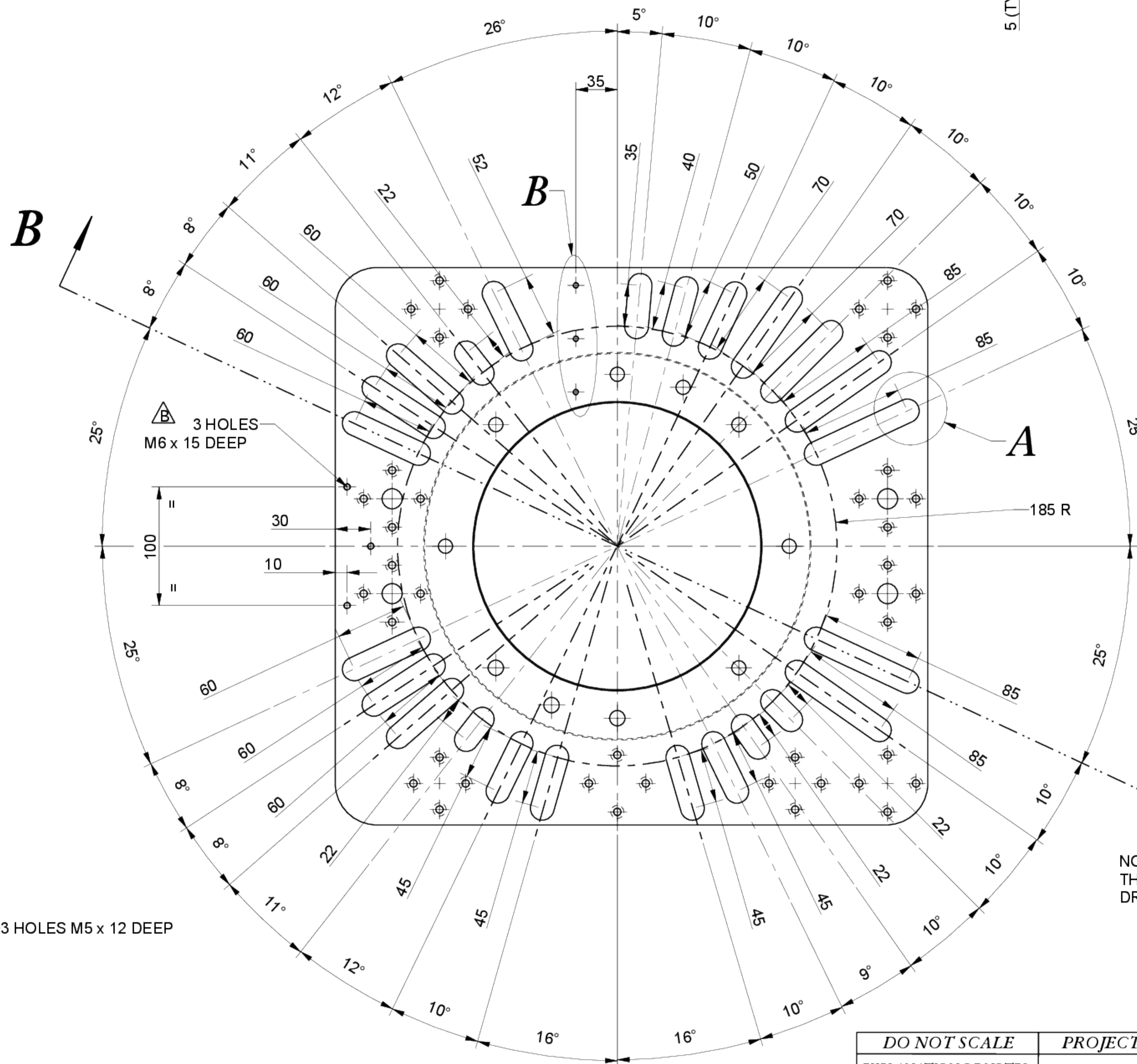
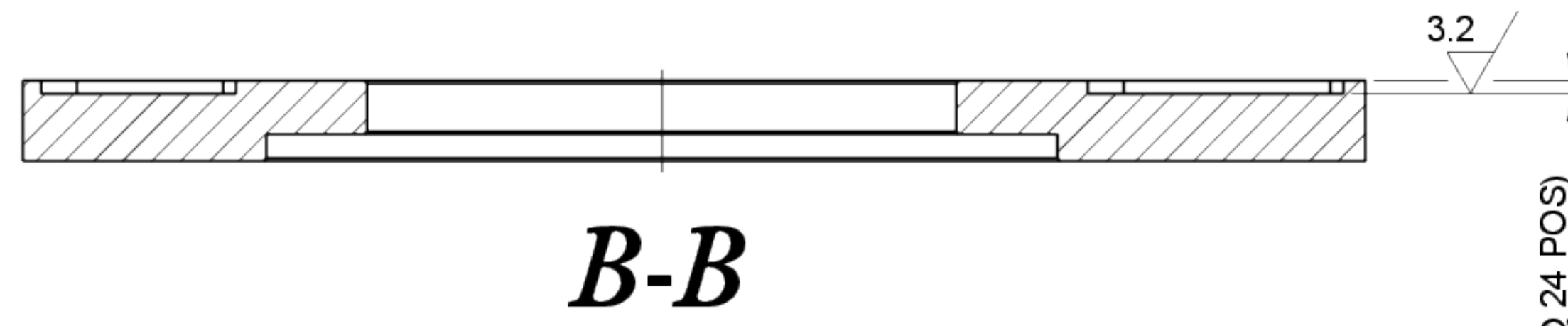
NOTE!
THIS DRAWING TO BE READ IN CONJUNCTION WITH
DRG No ULT-SPEC-016 (SHEET 2 OF 2)

CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY
1:1.5	T.G	29/08/12			COMPONENTS #
AREA THAI NATIONAL TELESCOPE "THAILAND" DESCRIPTION DETAILS OF TELESCOPE CUBE BASE PLATE (SHEET 1 OF 2) <small>THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION.</small> DRAWING NUMBER ULT-SPEC-015					
					REV A

DO NOT SCALE
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888

GENERAL NOTES
DIMENSIONS mm
REMOVE ALL BURRS AND SHARP CORNERS
MAXIMUM CHAMFER 0.5 U.S.O
LINEAR DIMENSIONS +/- 0.10 U.S.O
ANGULAR DIMENSIONS +/- 0.30° U.S.O
SURFACES 3.2 μ m U.S.O





NOTE!
THIS DRAWING TO BE READ IN CONJUNCTION WITH
DRAWING No ULT-SPEC-015 (SHEET 1 OF 2)

A

CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY
1:5 / 1:1	T.G	3008/12			COMPONENTS #
AREA		THAI NATIONAL TELESCOPE "THAILAND"			
DESCRIPTION		DETAILS OF TELESCOPE CUBE BASE PLATE (SHEET 2 OF 2)			
THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION.					
DRAWING NUMBER		ULT-SPEC-016			REV B

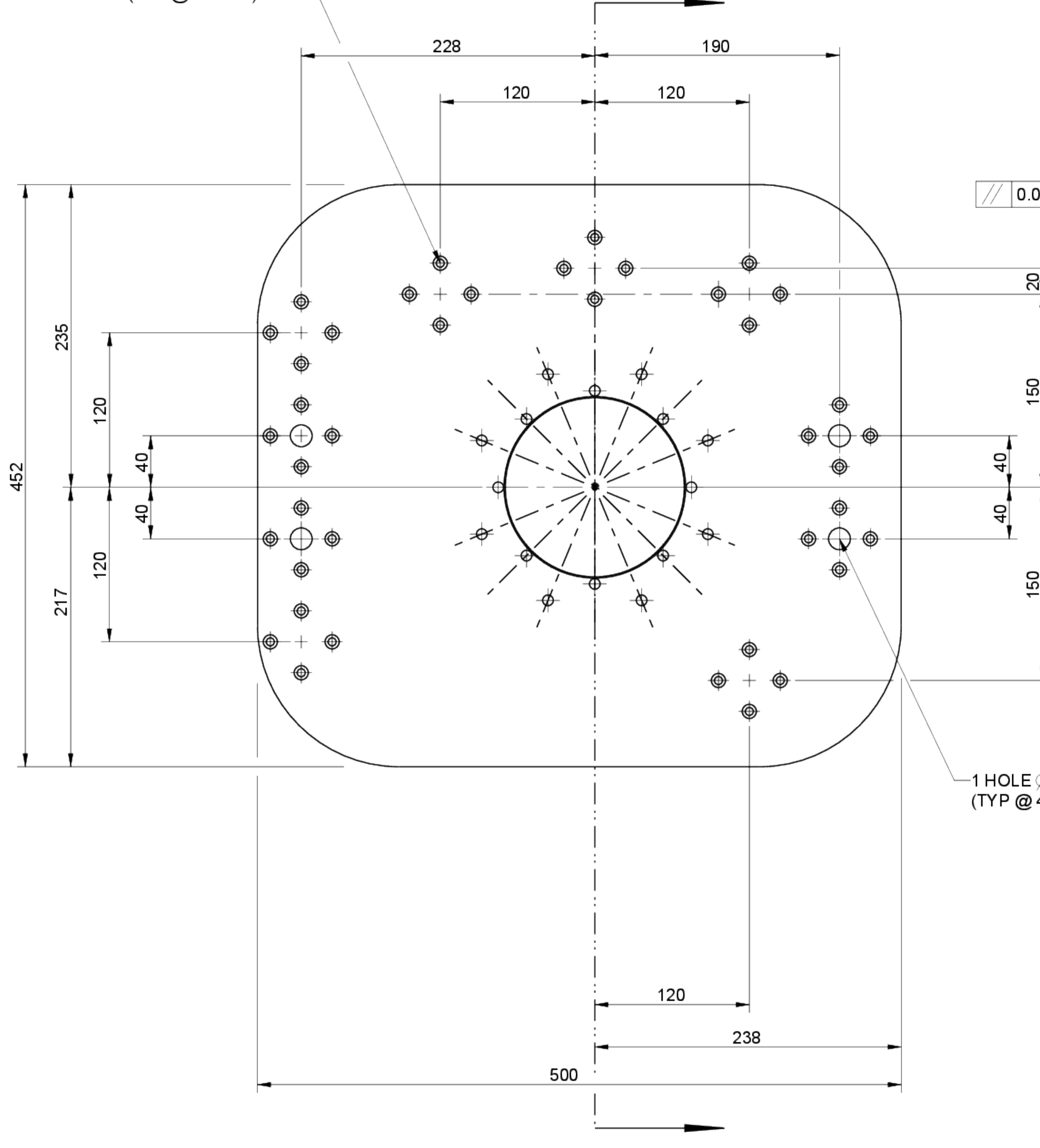
DO NOT SCALE

PROJECTION

EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888

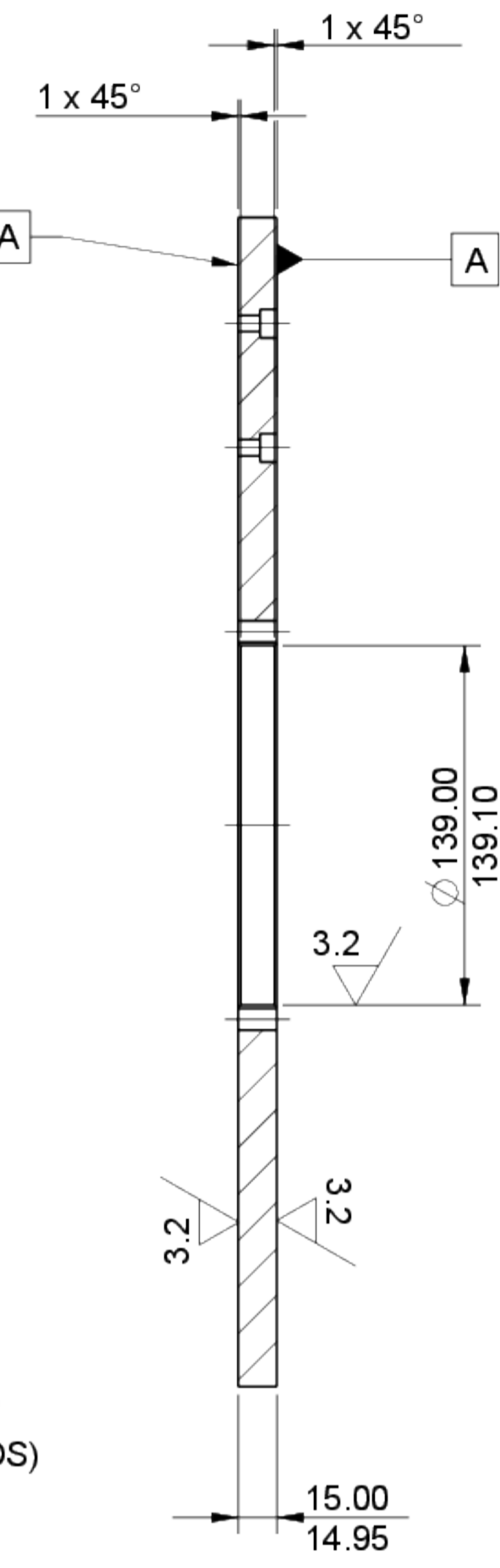
GENERAL NOTES
DIMENSIONS mm
REMOVE ALL BURRS AND SHARP CORNERS
MAXIMUM CHAMFER 0.5 U.S.O
LINEAR DIMENSIONS +/- 0.1 U.S.O
ANGULAR DIMENSIONS +/- 0.30' U.S.O
SURFACES 3.2 μ m U.S.O

4 HOLES $\phi 6.3$
C/BORE $\phi 11$ x 6.5 DEEP
EQUI-SPACED ON 48 PCD
(TYP @ 10 POS)



0.02 A

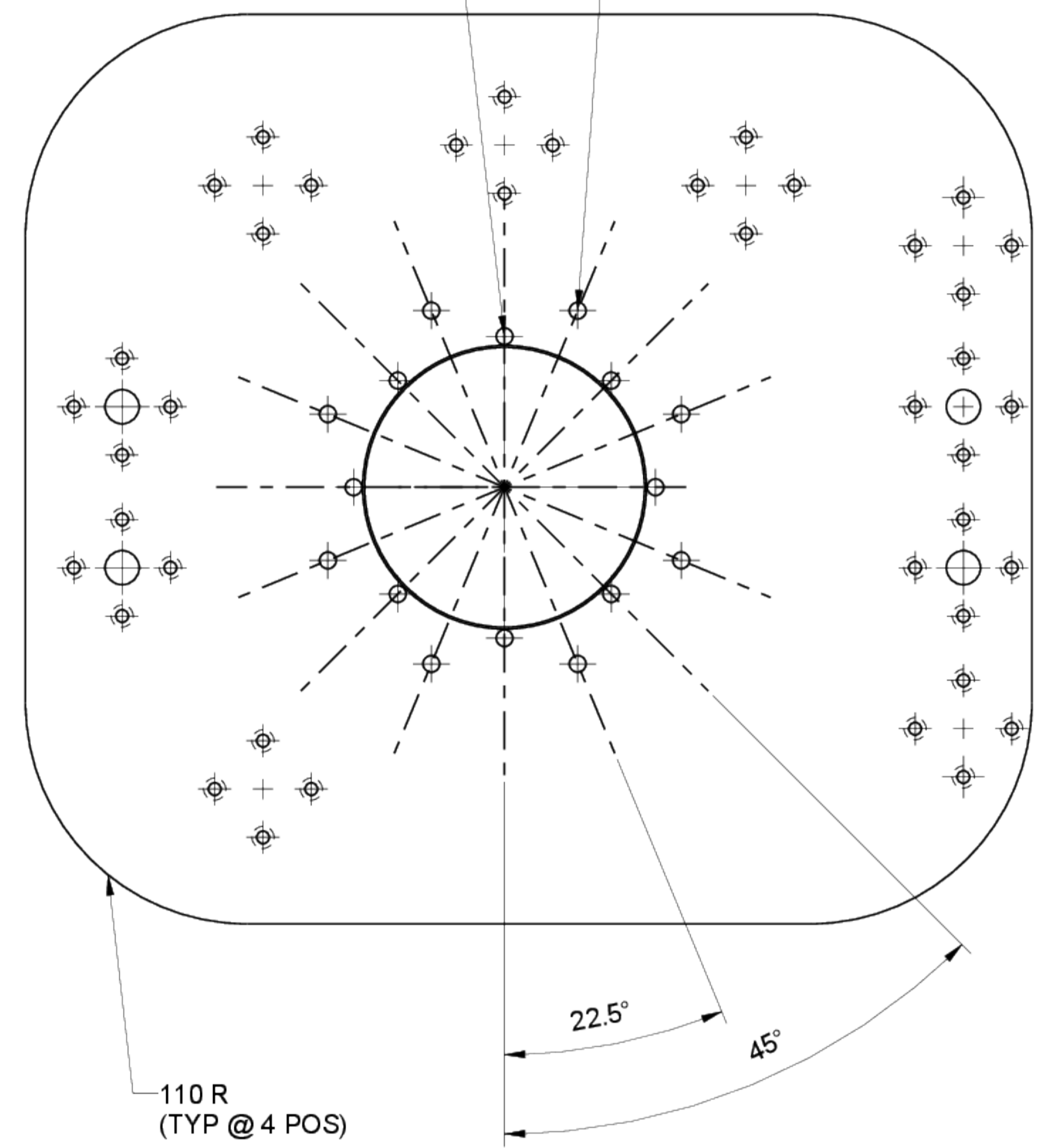
1 HOLE $\phi 17$
(TYP @ 4 POS)



A-A

8 HOLES $\phi 8.3$
EQUI-SPACED ON 150 PCD

8 HOLES $\phi 8.3$
EQUI-SPACED ON 190 PCD

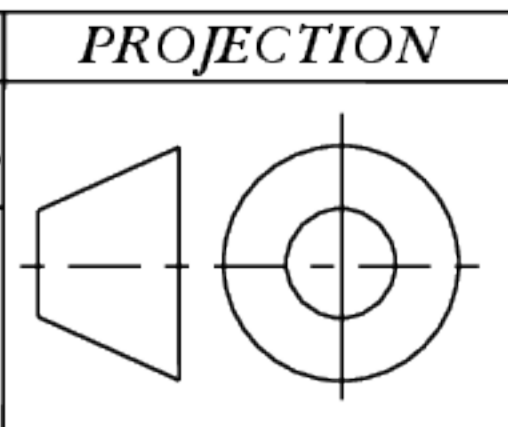


A

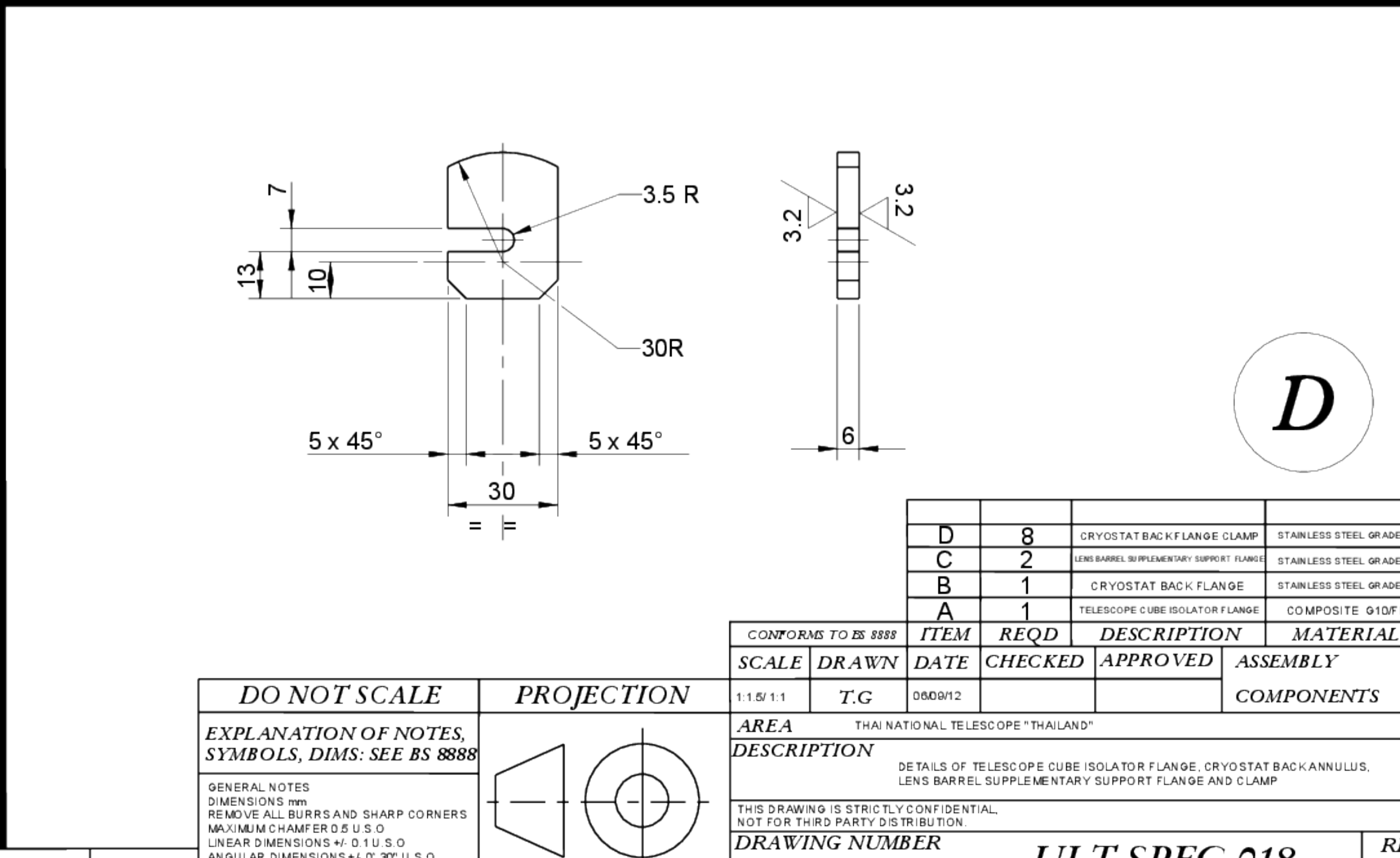
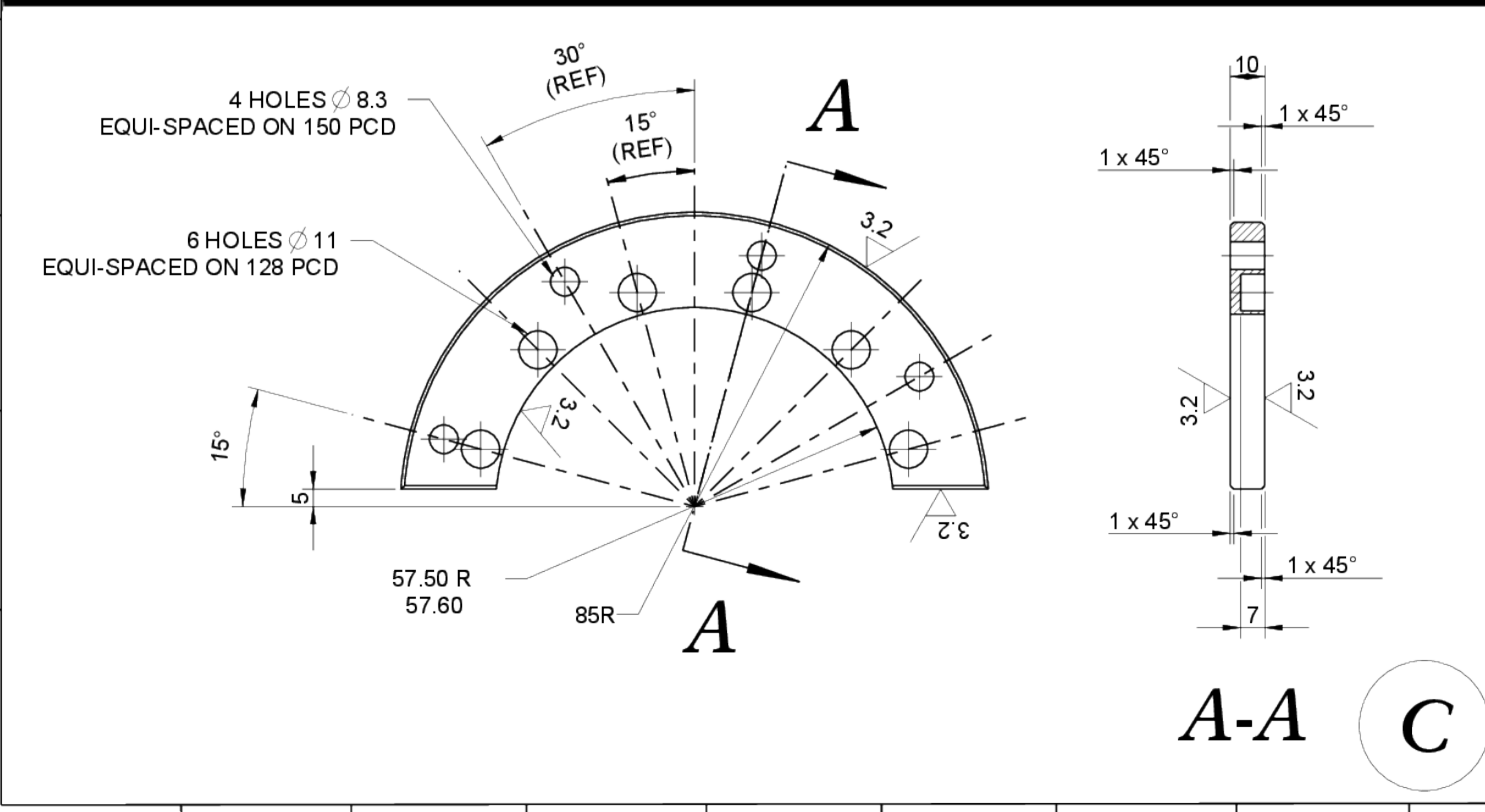
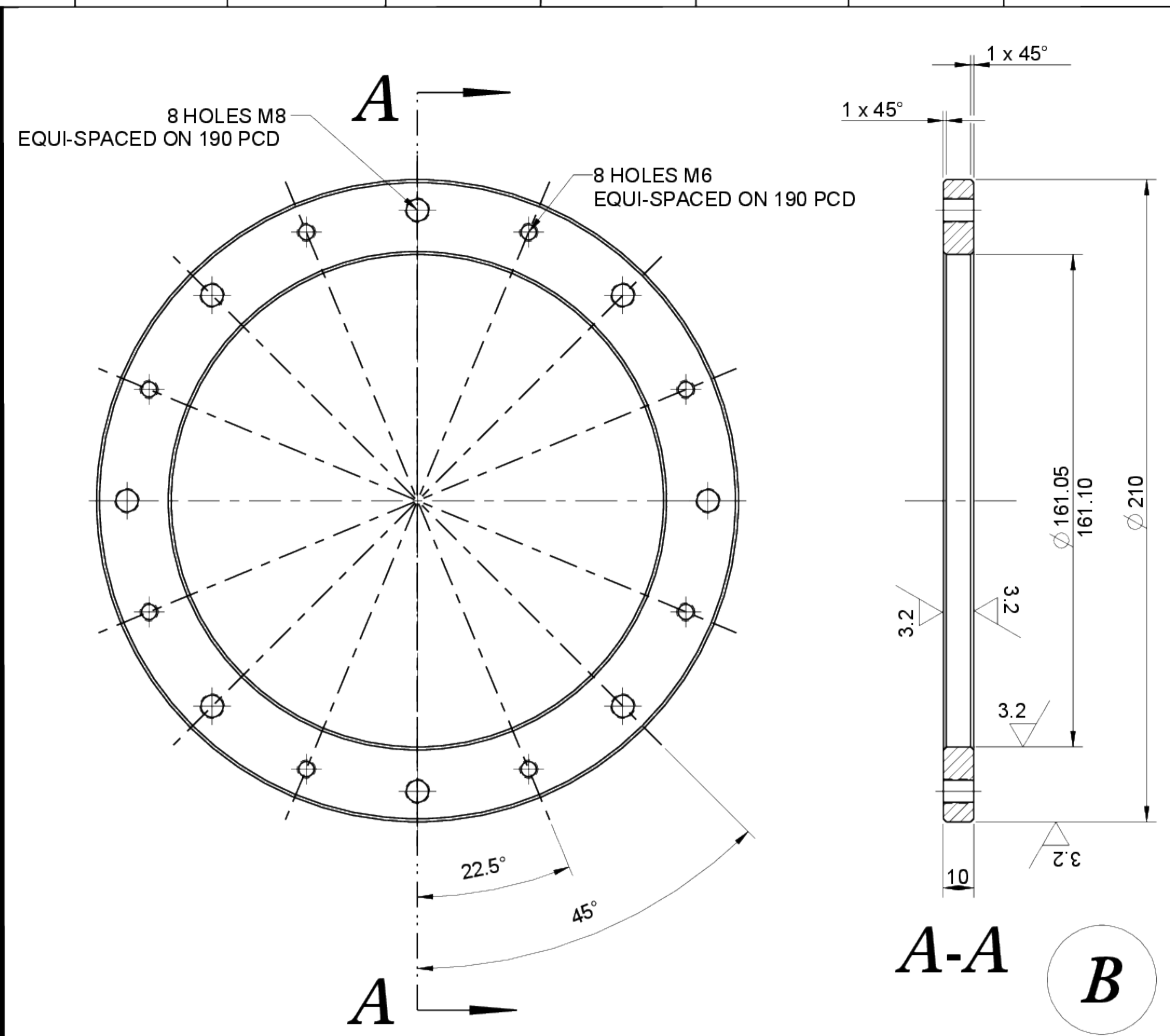
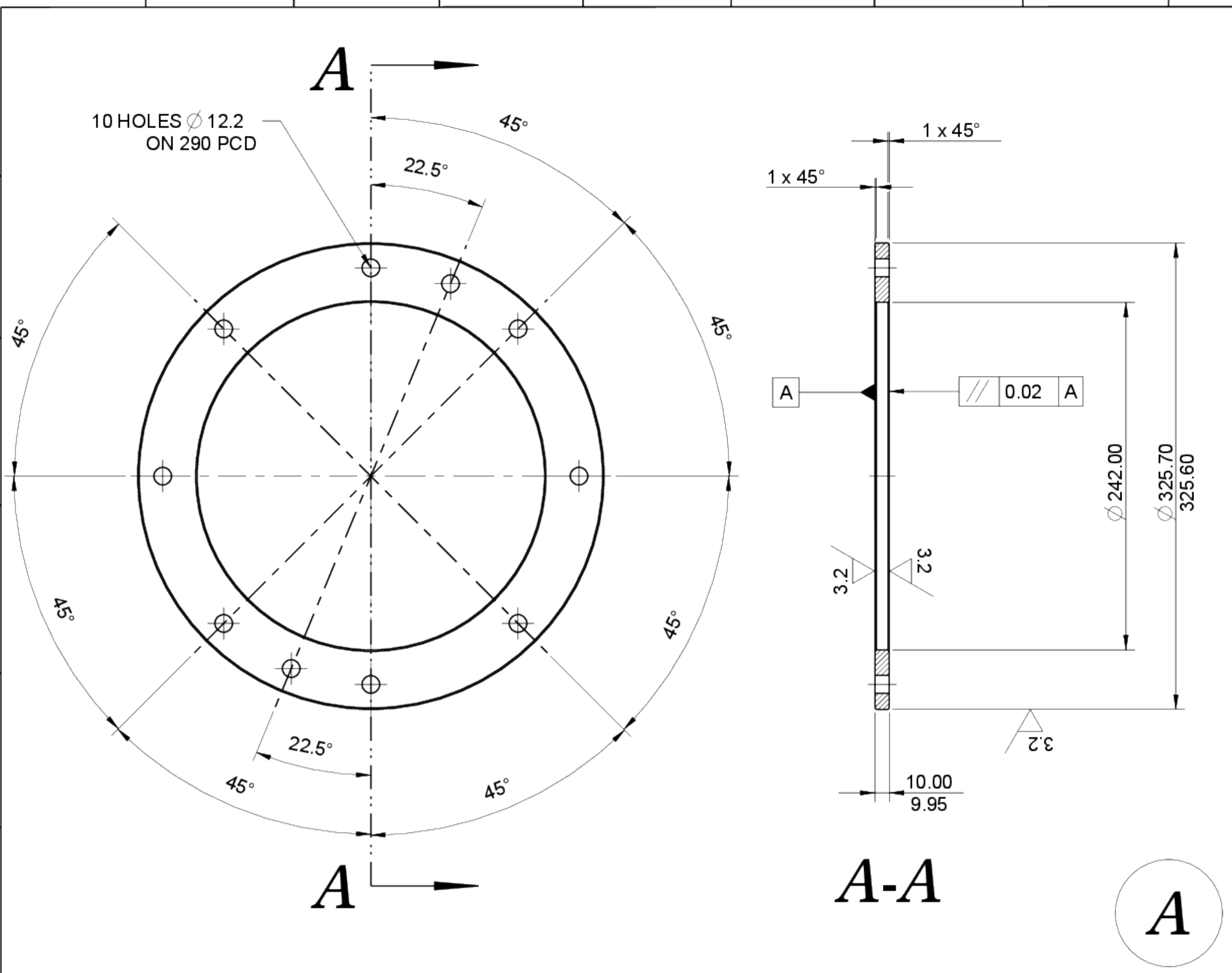
CONFORMS TO BS 8888	ITEM	REQD	DESCRIPTION	MATERIAL
	A	1	CRYOSTAT BASE PLATE	ALUMINIUM GRADE 6061
SCALE	DRAWN	DATE	CHECKED	APPROVED
1:0.5	T.G	31/08/12		
ASSEMBLY COMPONENTS #				
AREA DESCRIPTION				
THAI NATIONAL TELESCOPE "THAILAND"				
DETAILS OF CRYOSTAT BASE PLATE				
THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION.				
DRAWING NUMBER				REV
ULT-SPEC-017				A

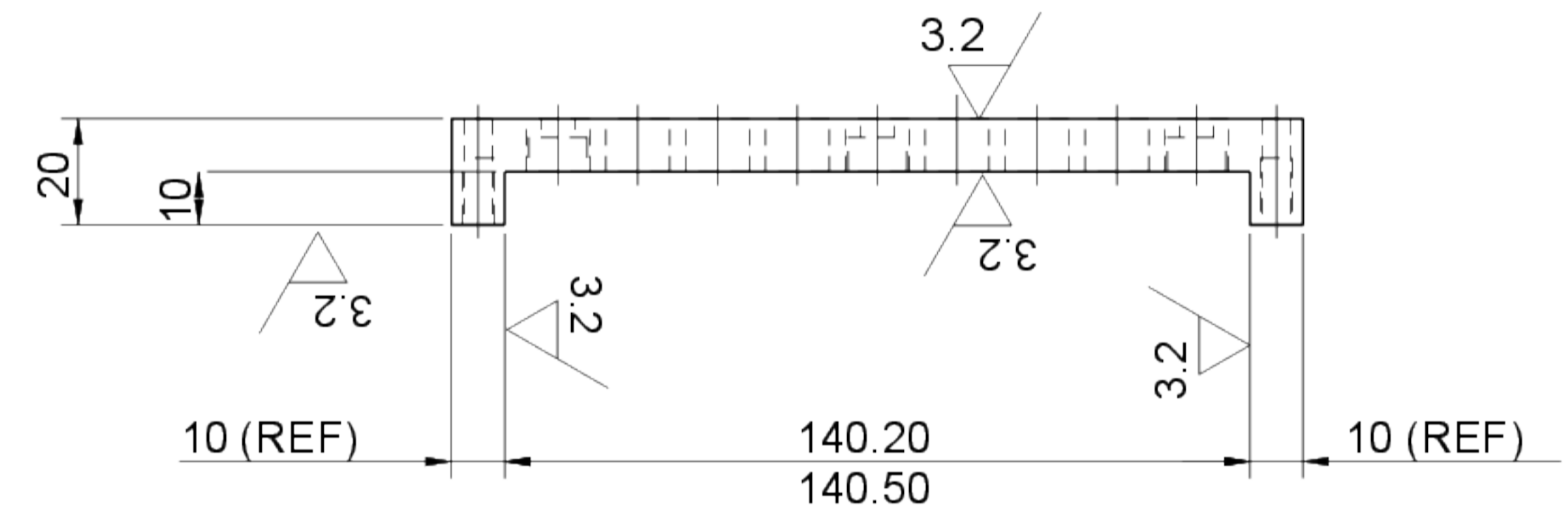
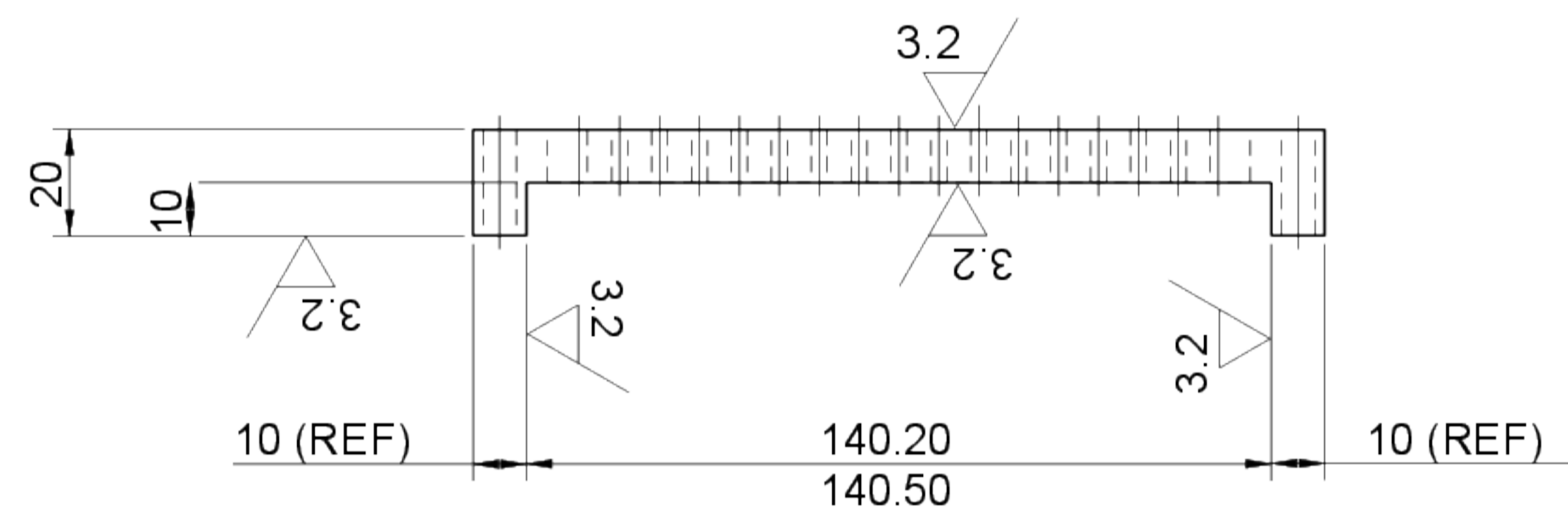
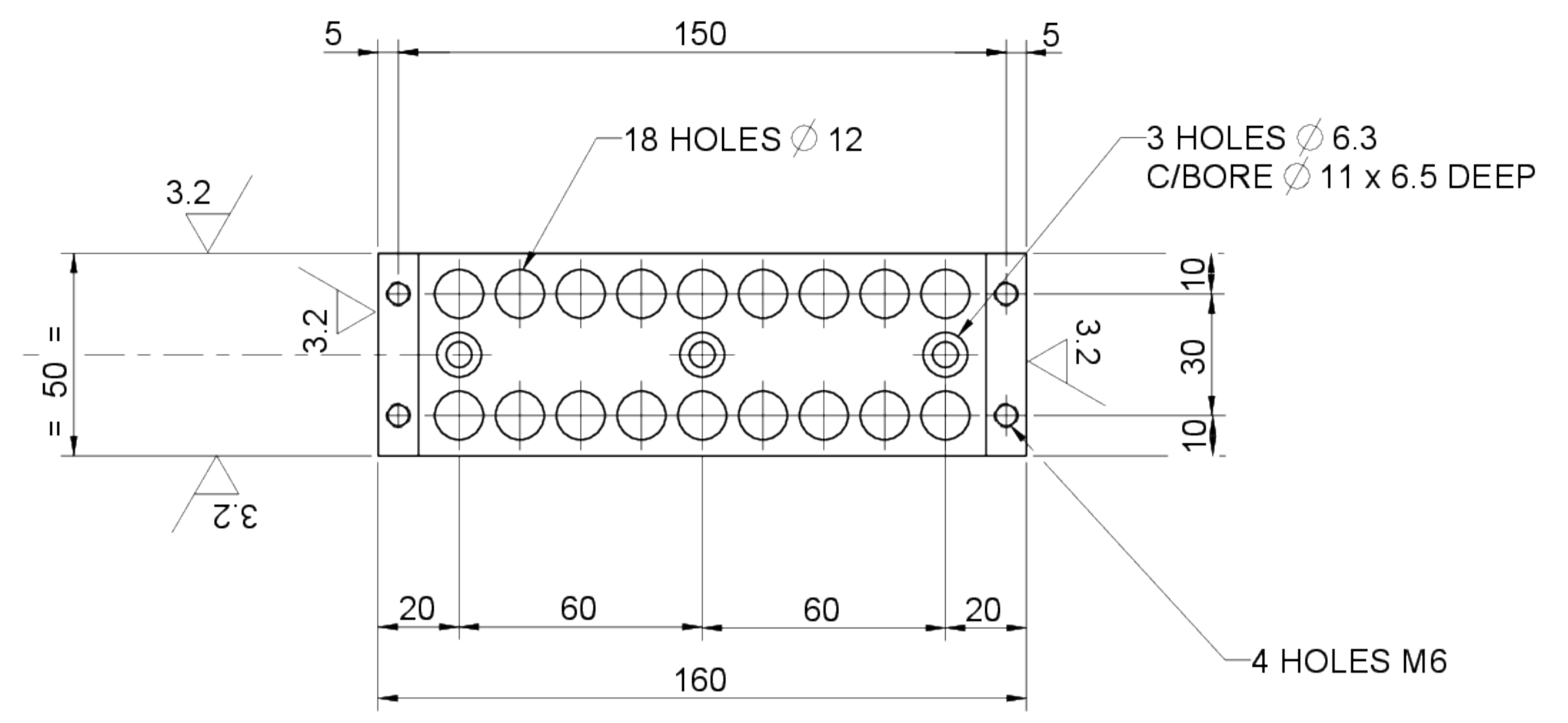
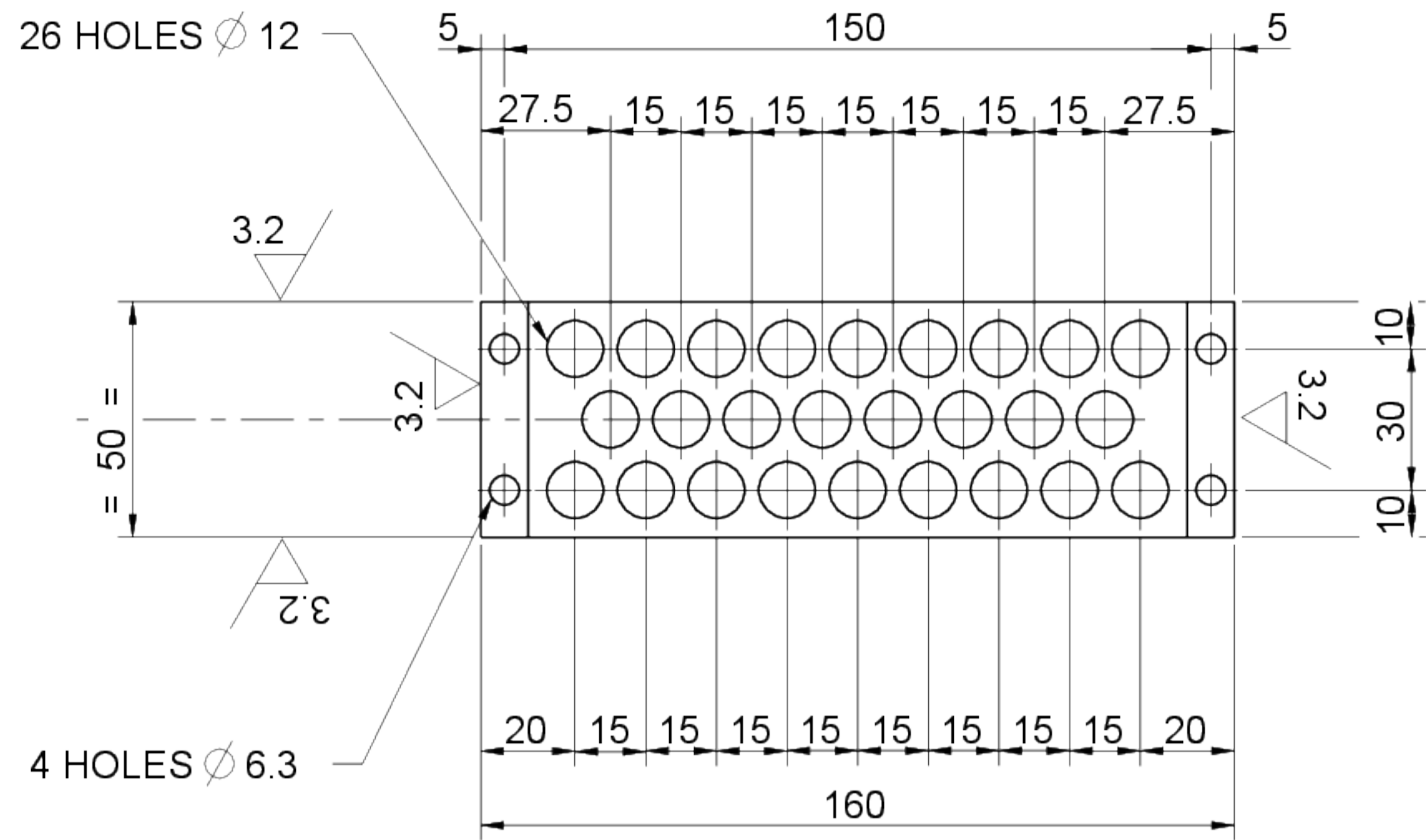
DO NOT SCALE
EXPLANATION OF NOTES,
SYMBOLS, DIMS: SEE BS 8888

GENERAL NOTES
DIMENSIONS mm
REMOVE ALL BURRS AND SHARP CORNERS
MAXIMUM CHAMFER 0.5 U.S.O
LINEAR DIMENSIONS ± 0.1 U.S.O
ANGULAR DIMENSIONS $\pm 0.30'$ U.S.O
SURFACES 3.2 μ m U.S.O



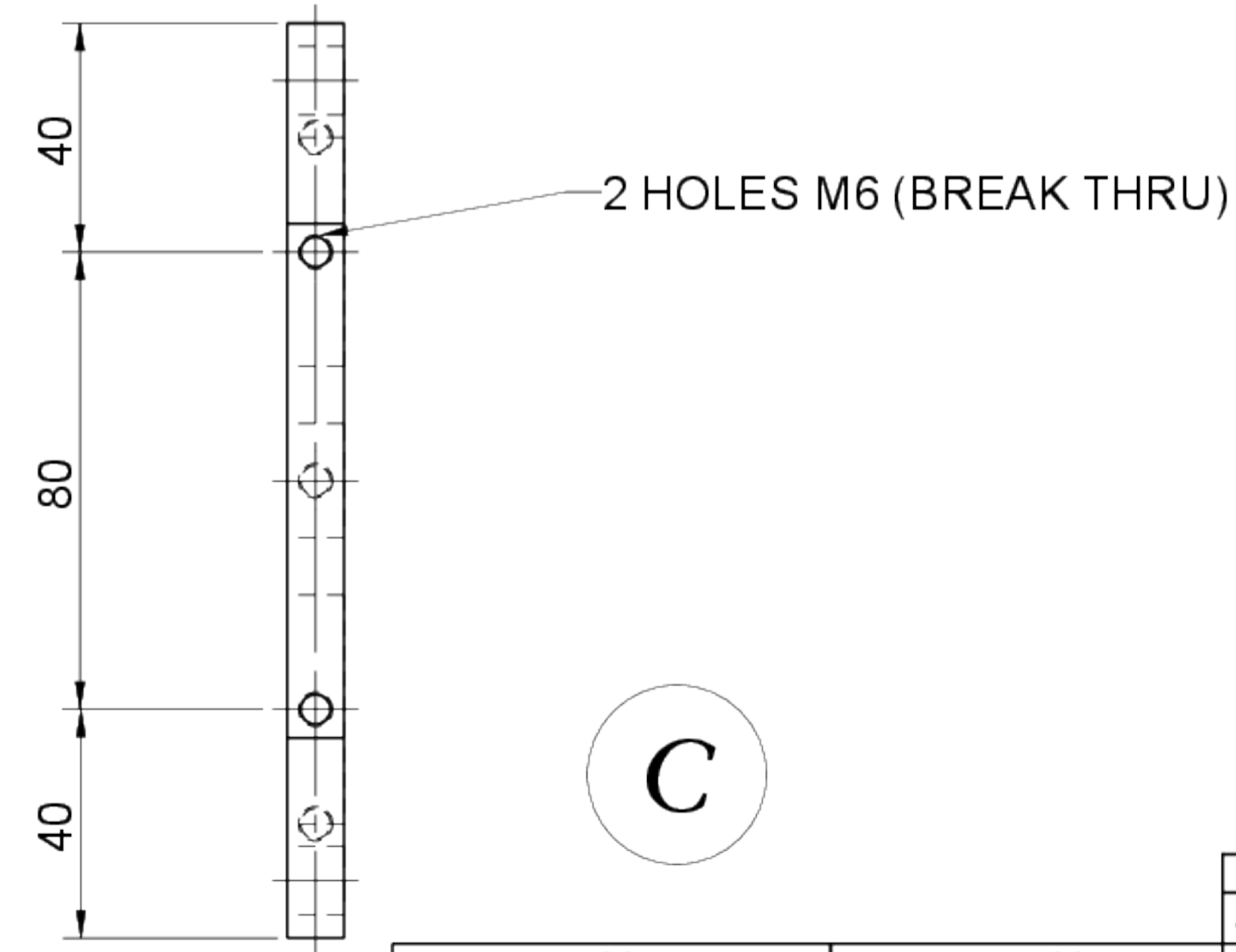
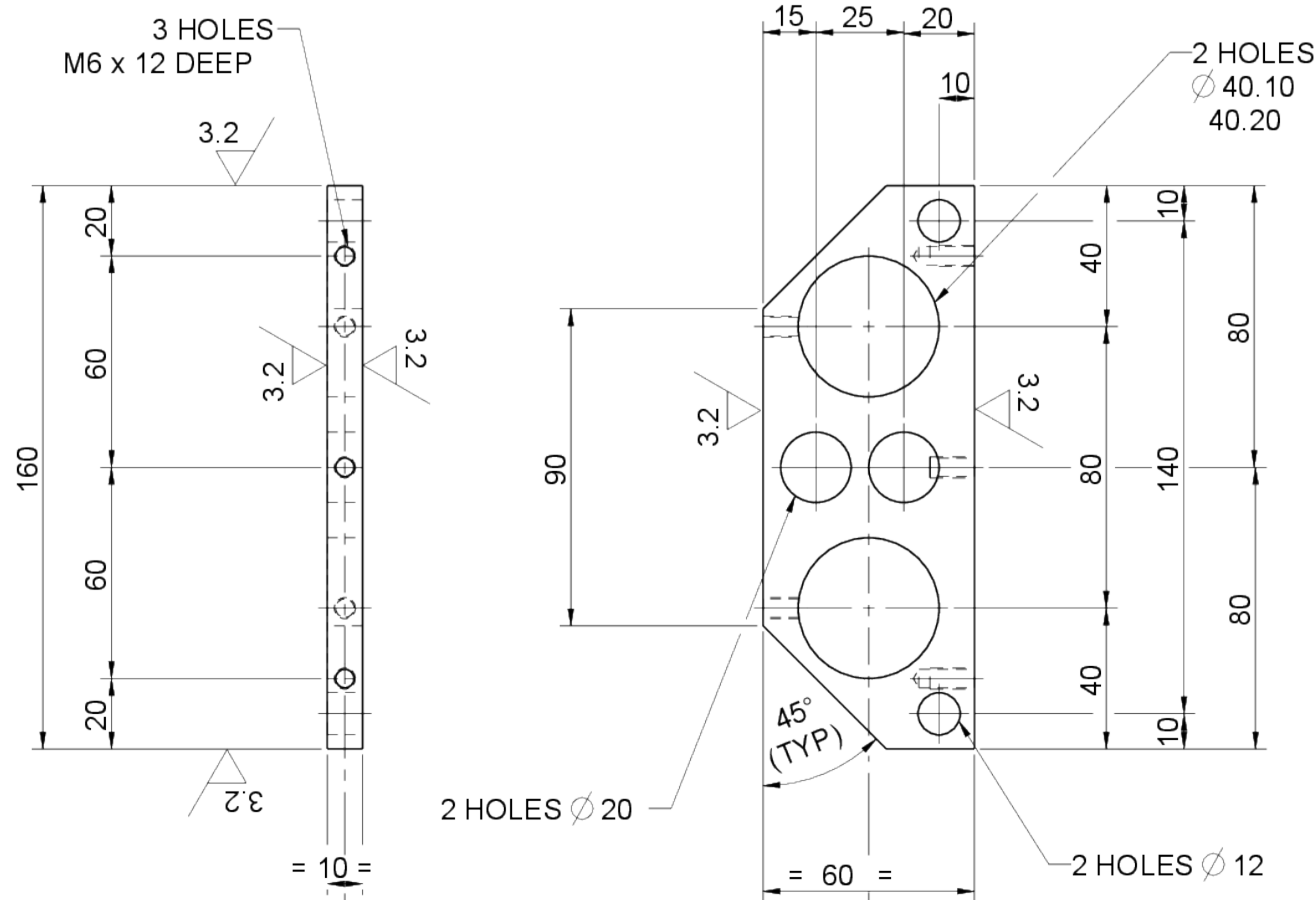
A





A

B

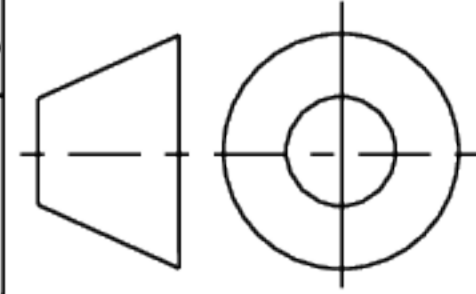


C

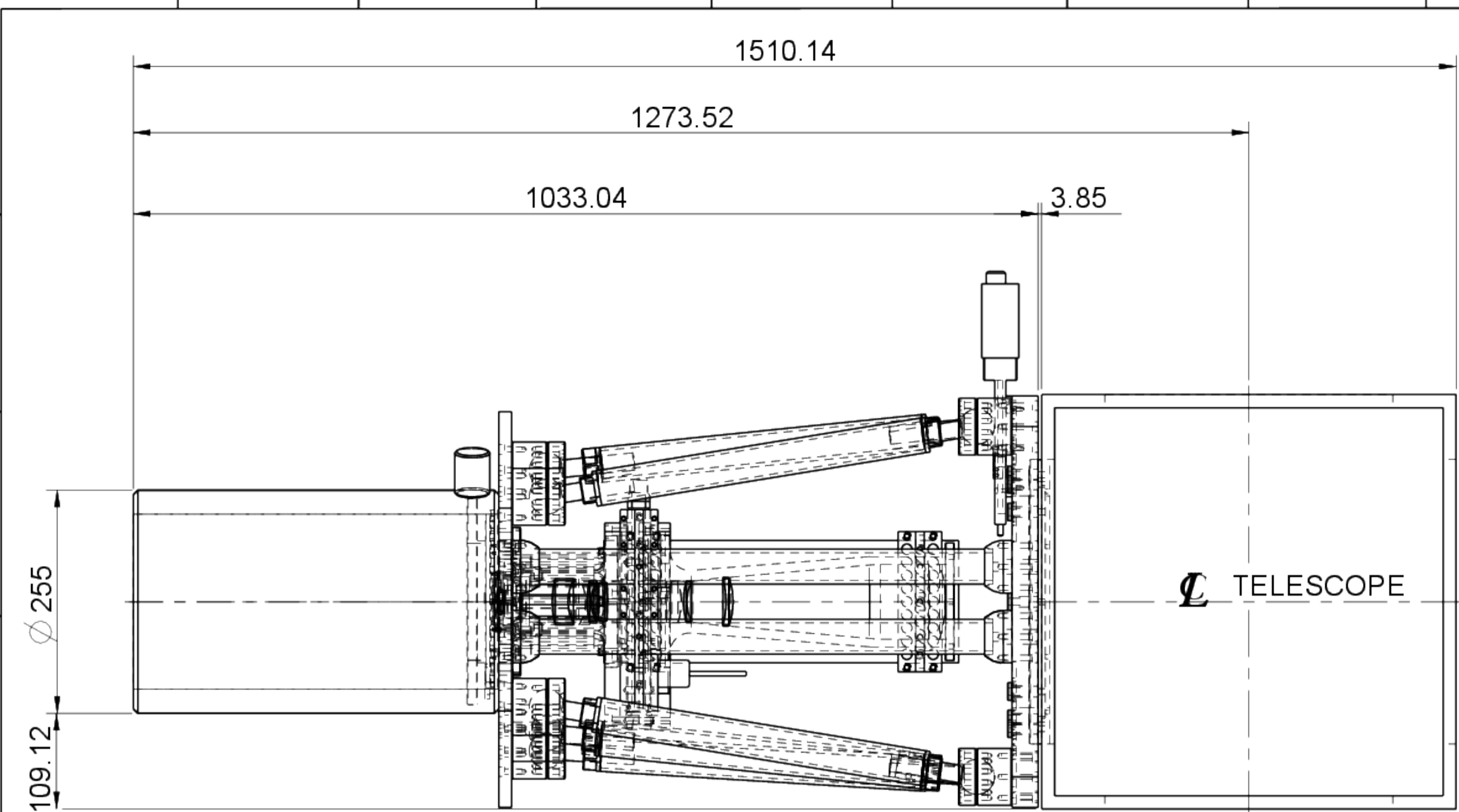
ITEM	REQD	DESCRIPTION	MATERIAL
C	2	CCD CLAMP HOLDER	ALUMINIUM GRADE 6061
B	2	CCD BOTTOM CLAMP	ALUMINIUM GRADE 6061
A	2	CCD TOP CLAMP	ALUMINIUM GRADE 6061

SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY COMPONENTS #
1:1	T.G	12/08/12			

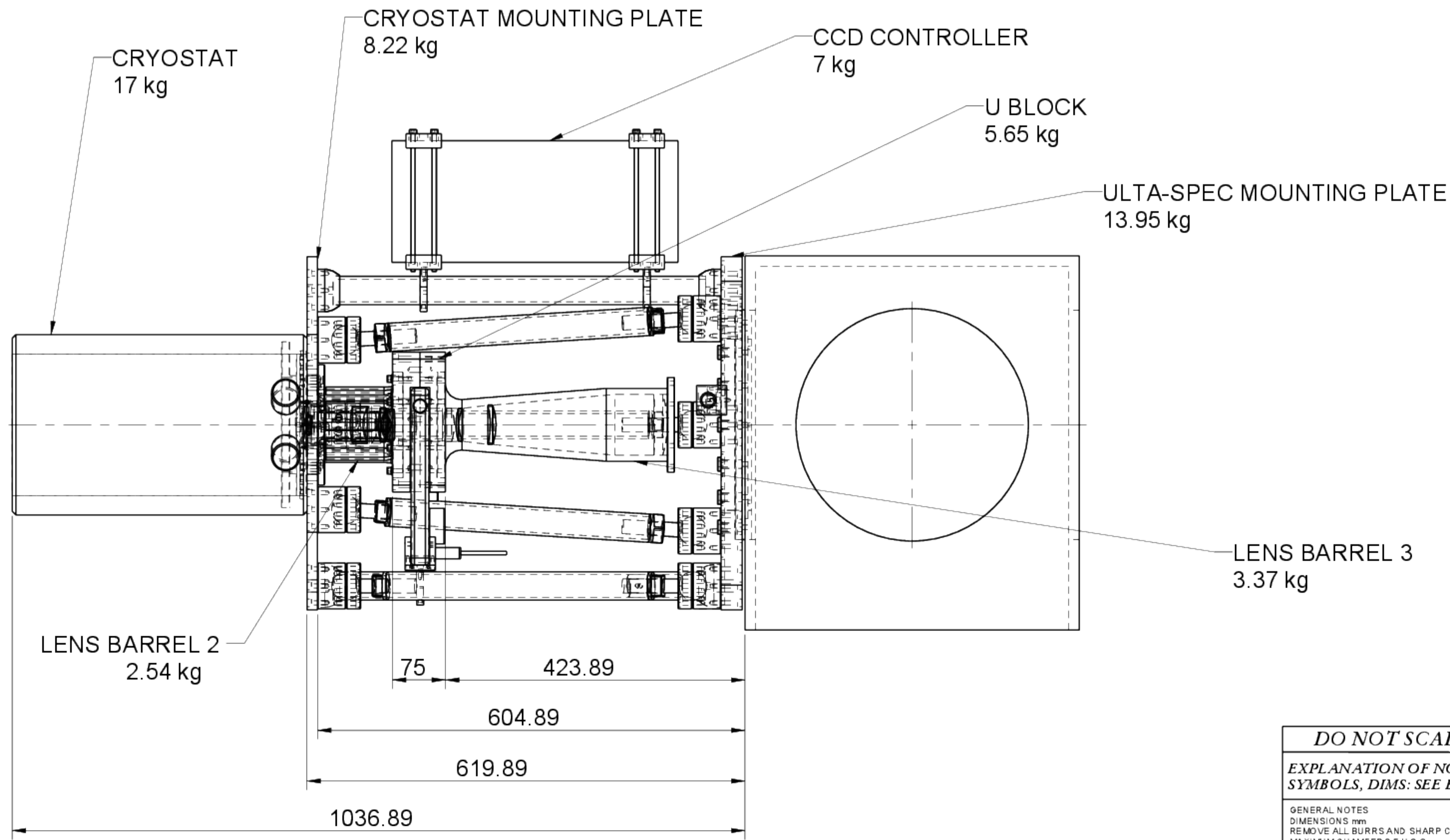
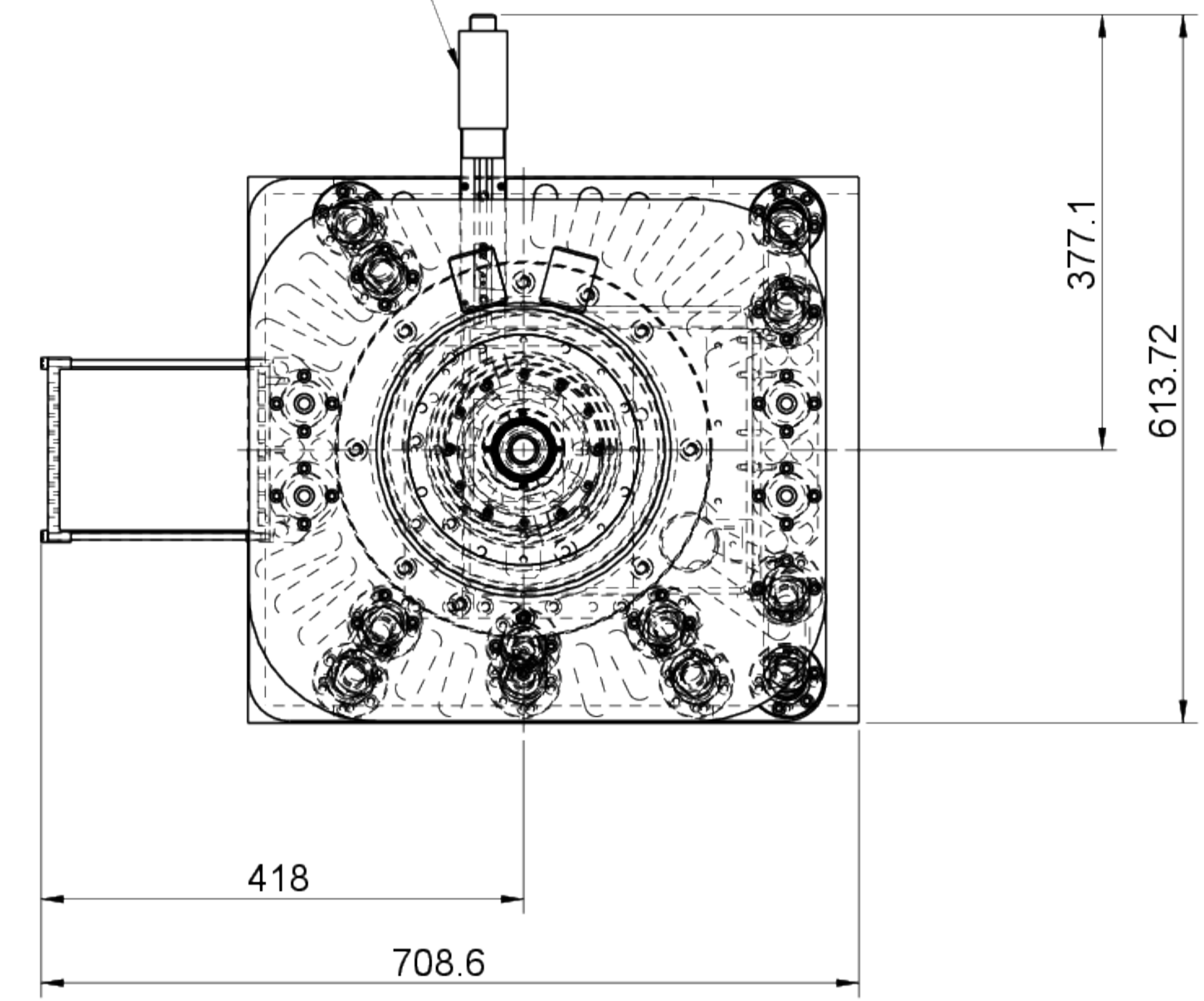
DO NOT SCALE
PROJECTION
 EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888
 GENERAL NOTES
 DIMENSIONS mm
 REMOVE ALL BURRS AND SHARP CORNERS
 MAXIMUM CHAMFER 0.5 U.S.O
 LINEAR DIMENSIONS +/- 0.10 U.S.O
 ANGULAR DIMENSIONS +/- 0.30 U.S.O
 SURFACES 3.2 μm U.S.O



AREA	DESCRIPTION	REV
THAI NATIONAL TELESCOPE "THAILAND"	DETAILS OF CCD CONTROLLER TOP AND BOTTOM CLAMP, ALSO CLAMP HOLDER	
DRAWING NUMBER		REV A
ULT-SPEC-019		



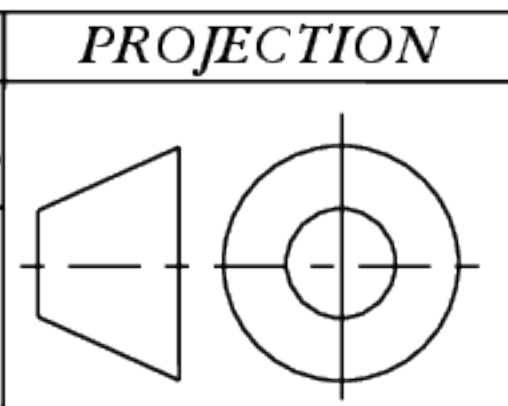
ZABER LINEAR ACTUATOR
0.55 kg



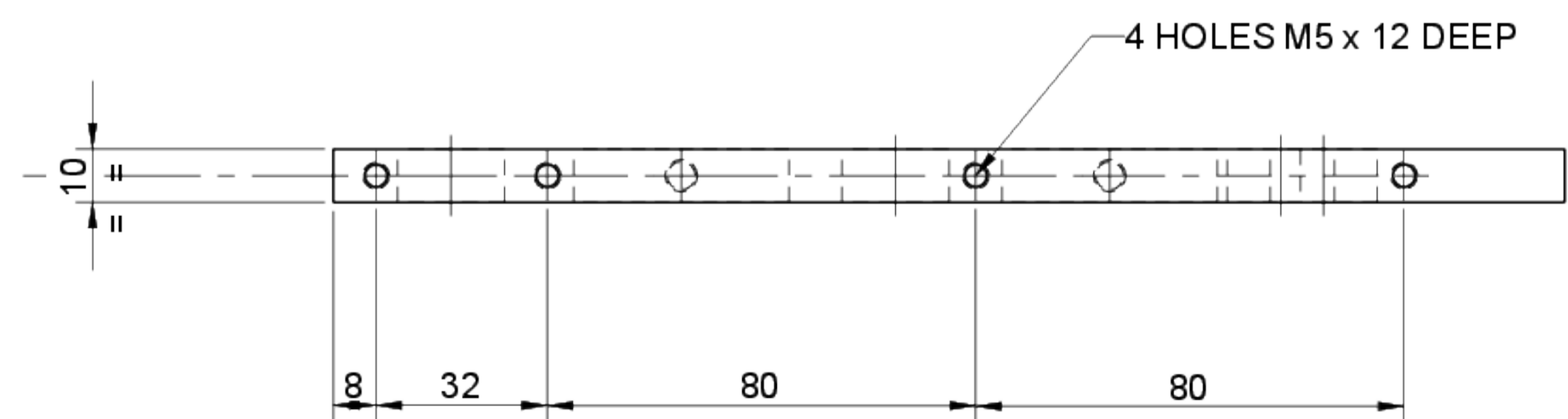
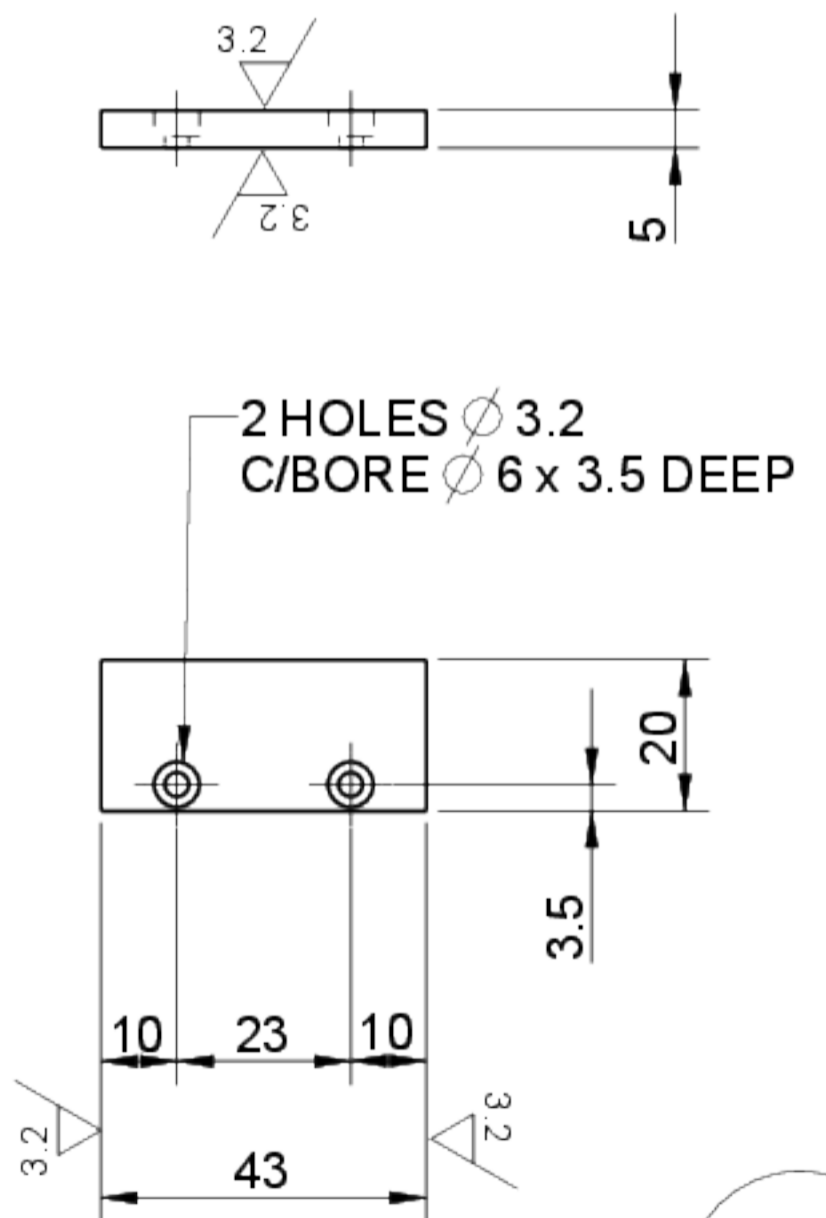
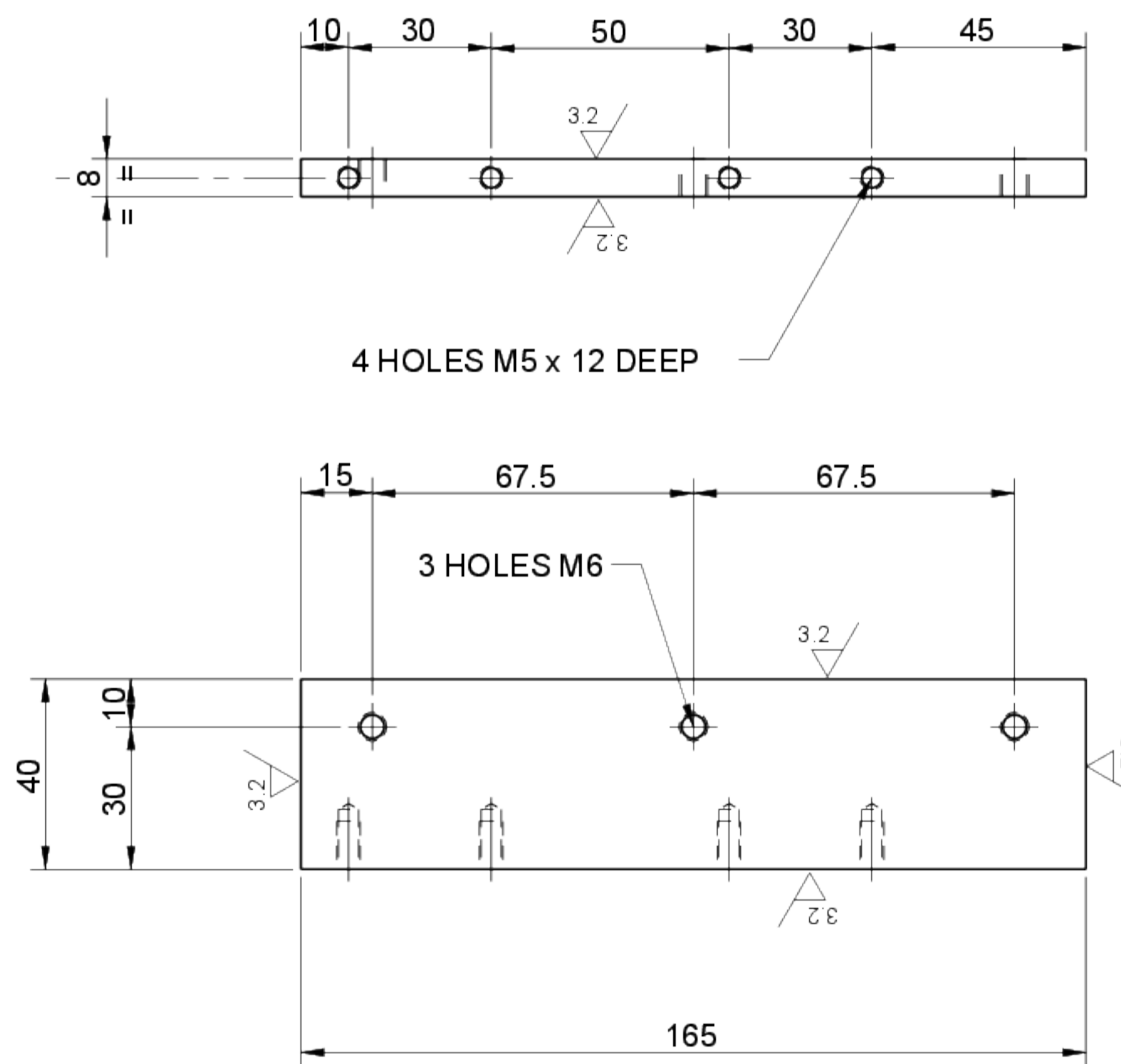
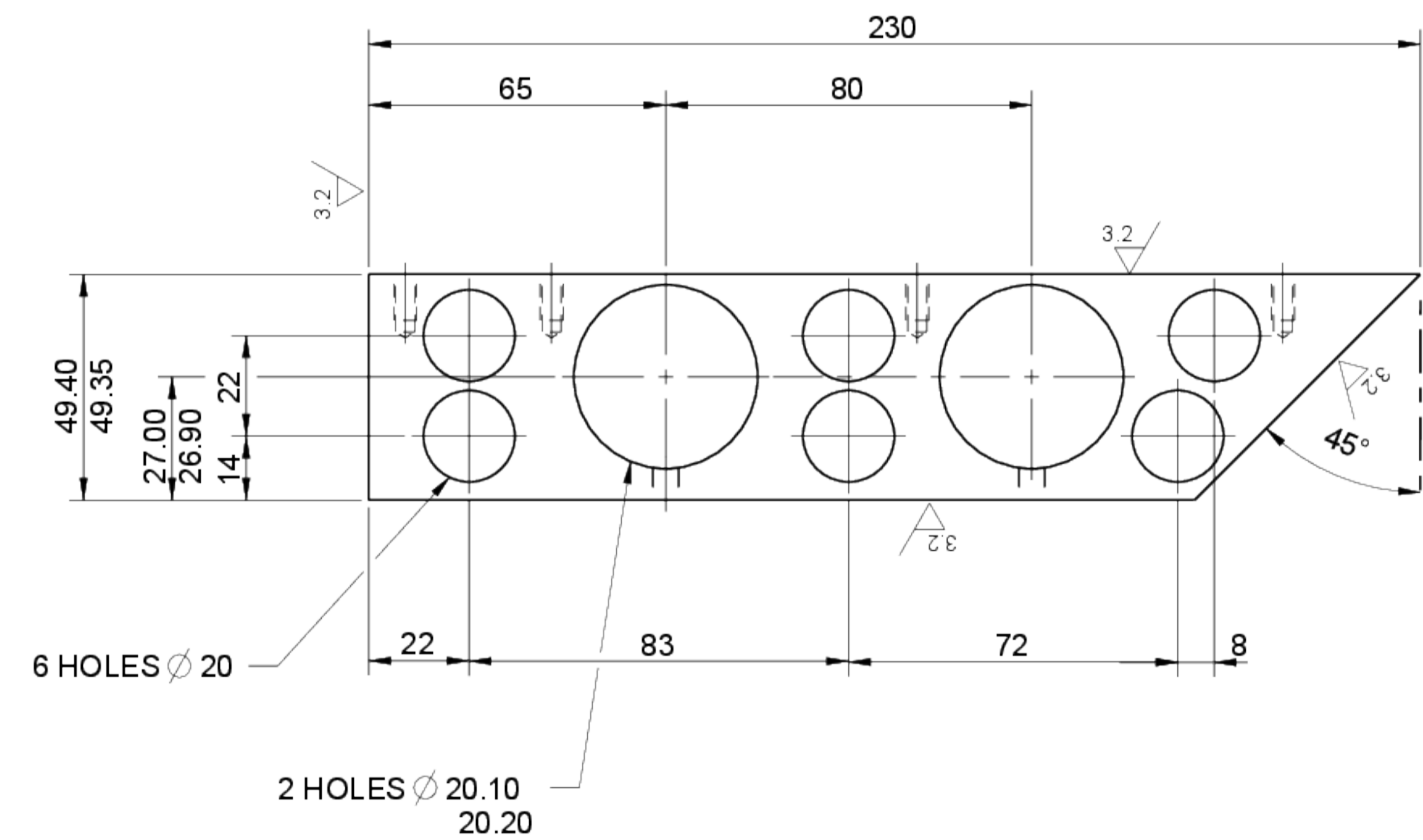
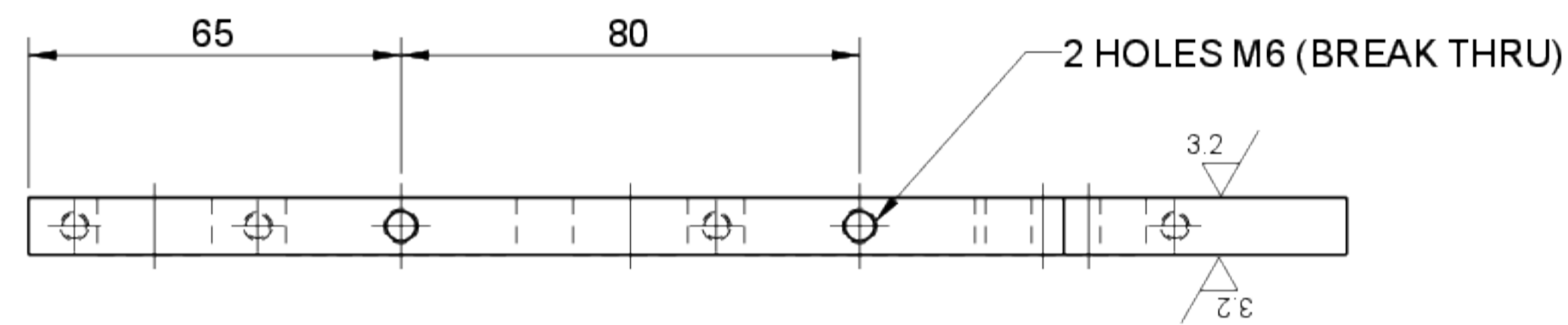
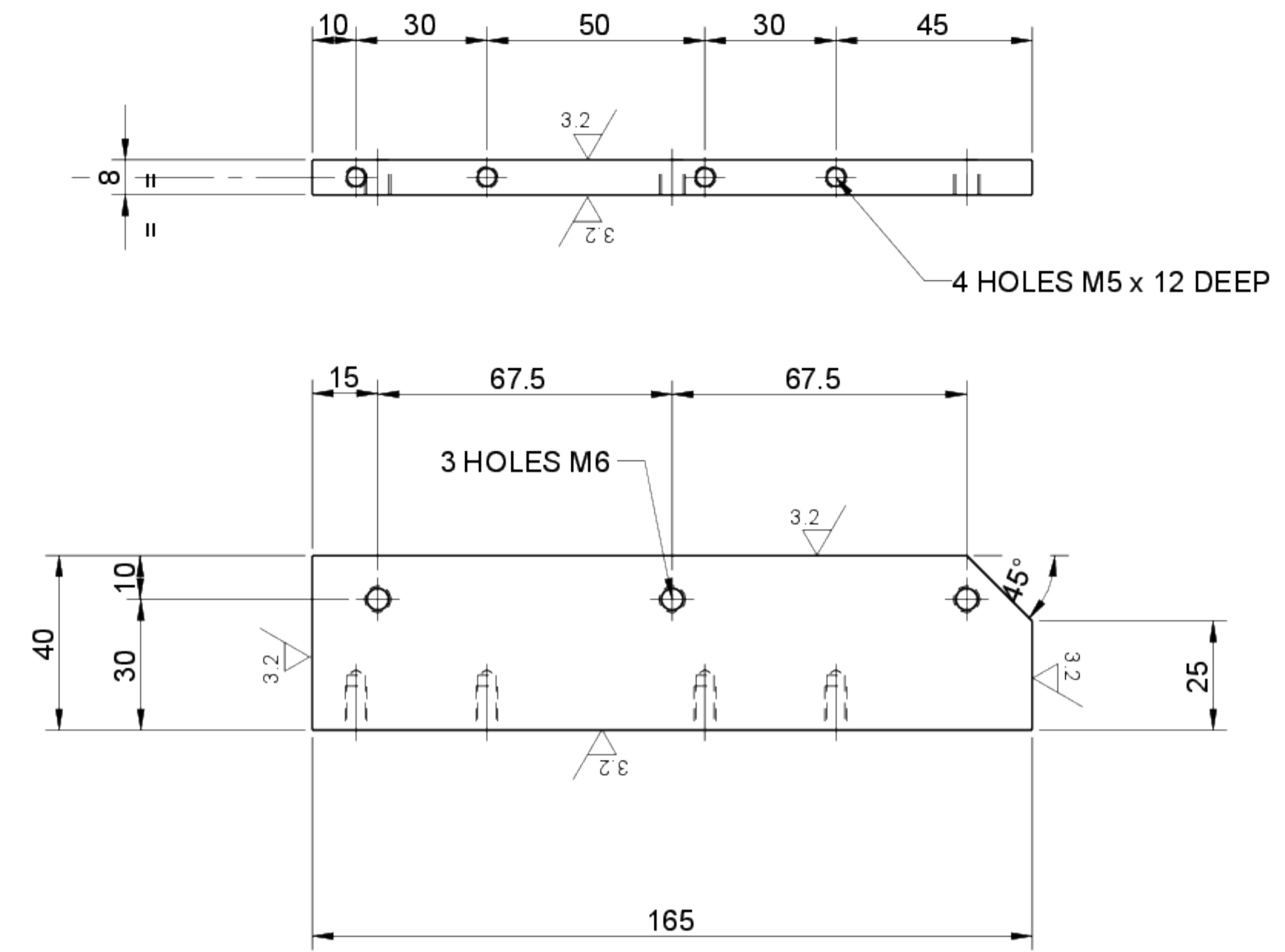
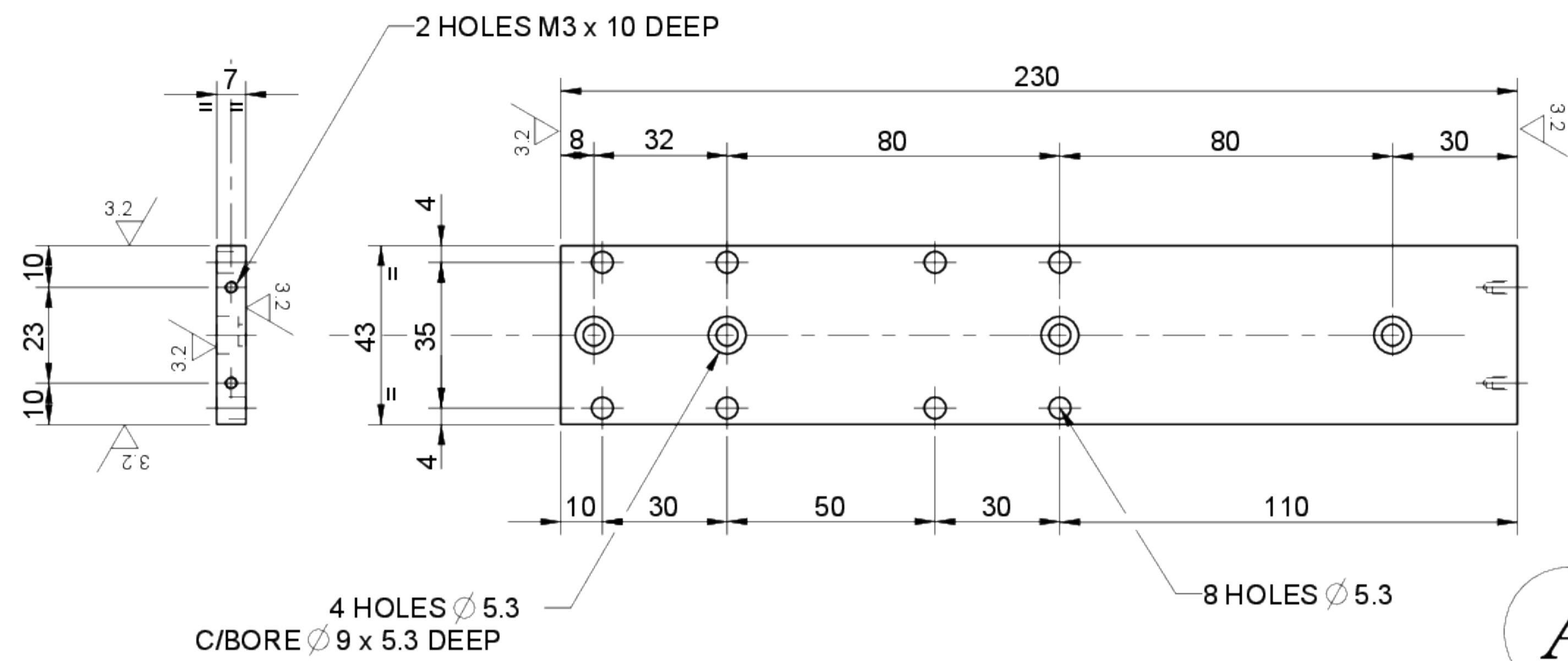
DO NOT SCALE
PROJECTION

EXPLANATION OF NOTES,
SYMBOLS, DIMS: SEE BS 8888

GENERAL NOTES
DIMENSIONS mm
REMOVE ALL BURRS AND SHARP CORNERS
MAXIMUM CHAMFER 0.5 U.S.O
LINEAR DIMENSIONS ±0.1 U.S.O
ANGULAR DIMENSIONS ±1° 30' U.S.O
SURFACES 3.2 μm U.S.O



CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY #
1:1.25	T.G	180812			COMPONENTS
AREA					
DESCRIPTION					
THAI NATIONAL TELESCOPE "THAILAND"					
ARRANGEMENT OF ULTRA-SPEC STRUCTURE					
DEPICTING COMPONENT POSITIONS & ASSOCIATED WEIGHTS					
THIS DRAWING IS STRICTLY CONFIDENTIAL.					
NOT FOR THIRD PARTY DISTRIBUTION					
DRAWING NUMBER					REV
ULT-SPEC-020					A

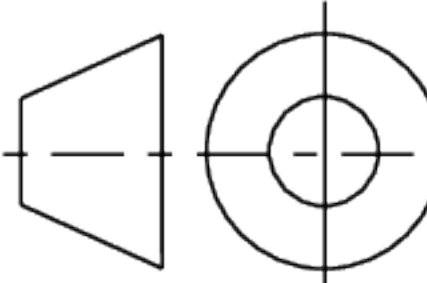


DO NOT SCALE

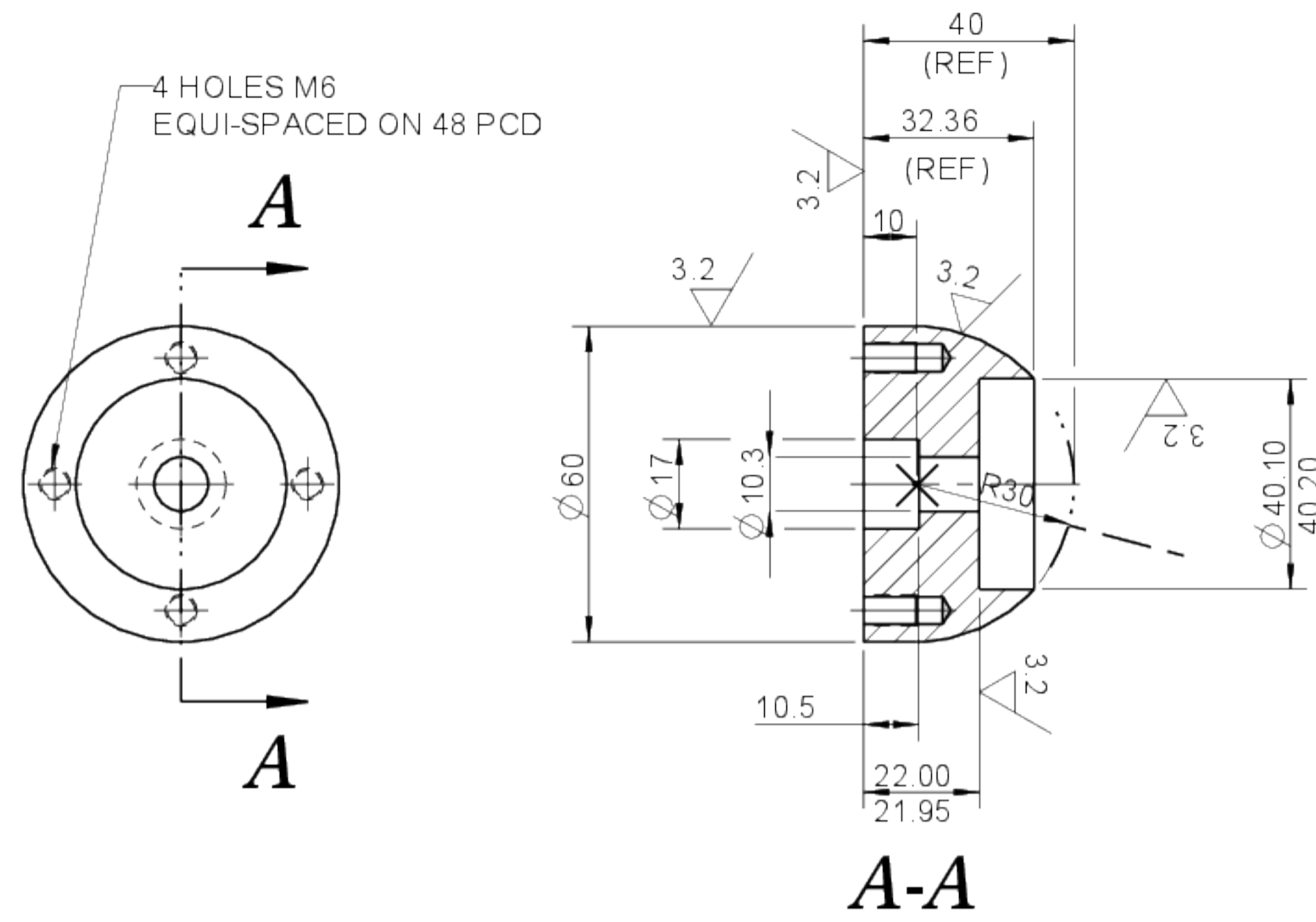
PROJECTION

EXPLANATION OF NOTES,
SYMBOLS, DIMS: SEE BS 8888

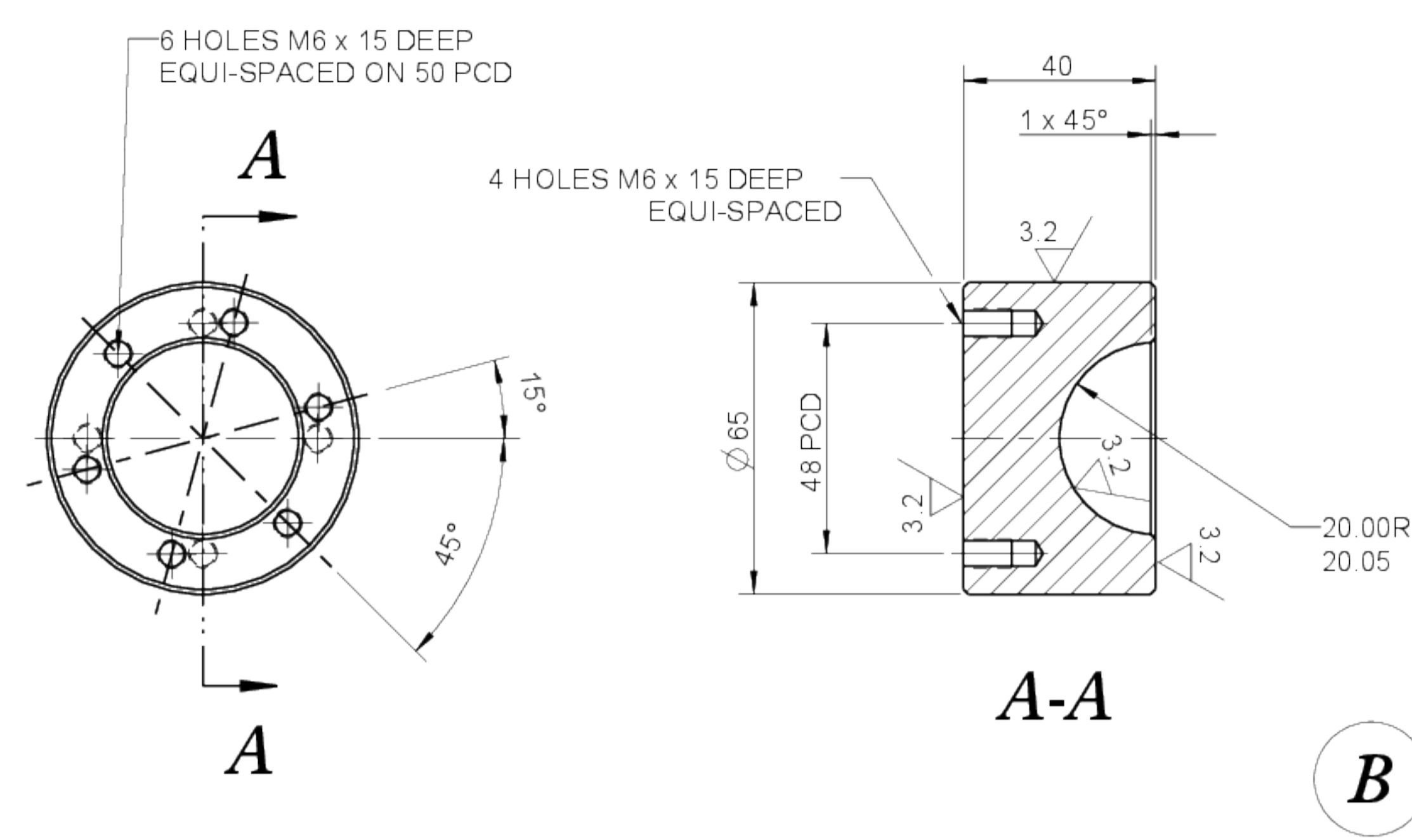
GENERAL NOTES
DIMENSIONS mm
REMOVE ALL BURRS AND SHARP CORNERS
MAXIMUM CHAMFER 0.5 U.S.O
LINEAR DIMENSIONS \pm 0.1 U.S.O
ANGULAR DIMENSIONS \pm 0.3° U.S.O
SURFACES 3.2 μ U.S.O



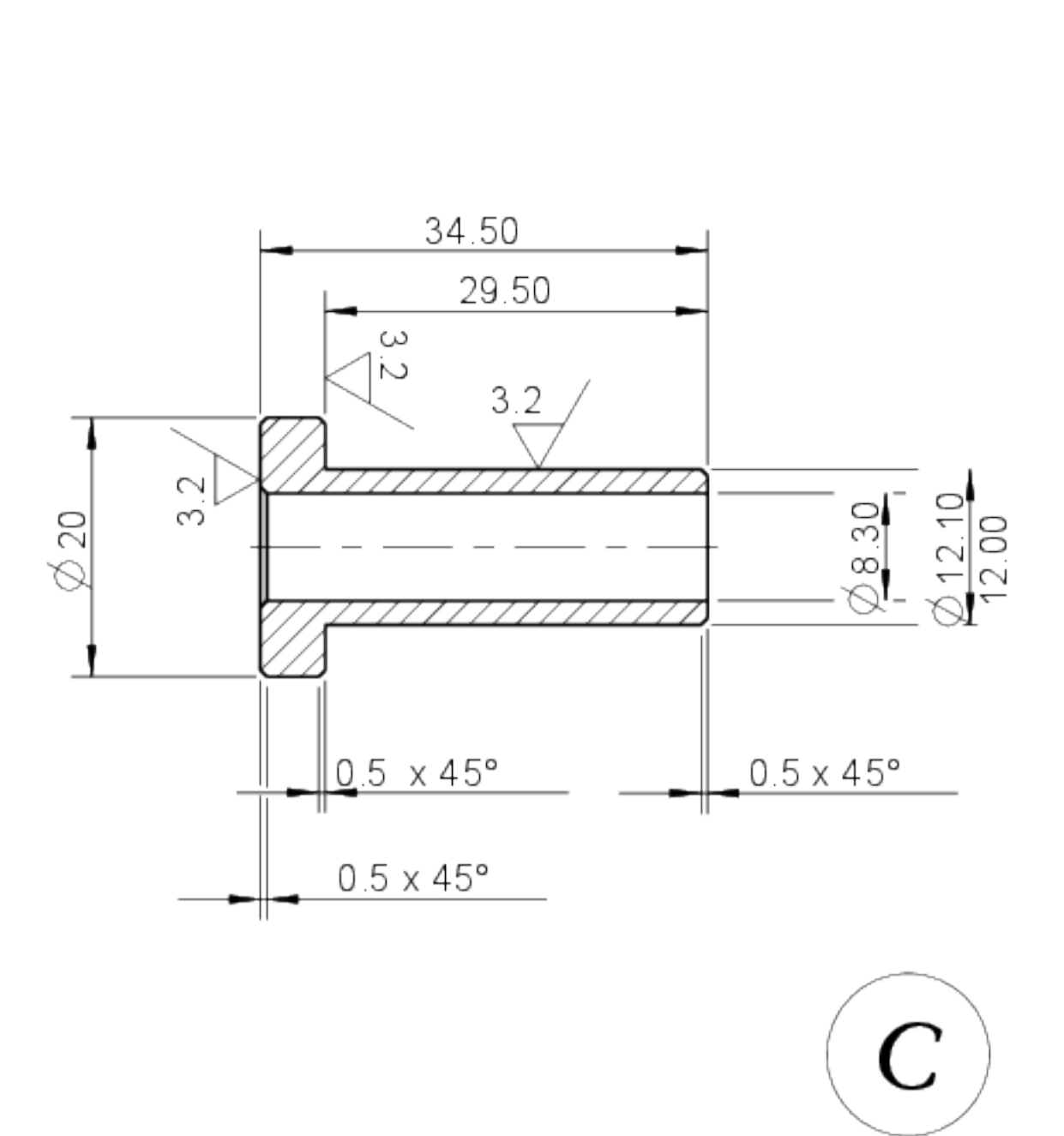
CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY
1:1	T.G	10/09/12			COMPONENTS #
AREA THAI NATIONAL TELESCOPE "THAILAND"					
DESCRIPTION DETAILS OF FILTER WHEEL BASE PLATE, SIDE PLATES, STRUT AND END STOP					
THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION.					
DRAWING NUMBER					REV
ULT-SPEC-021					A



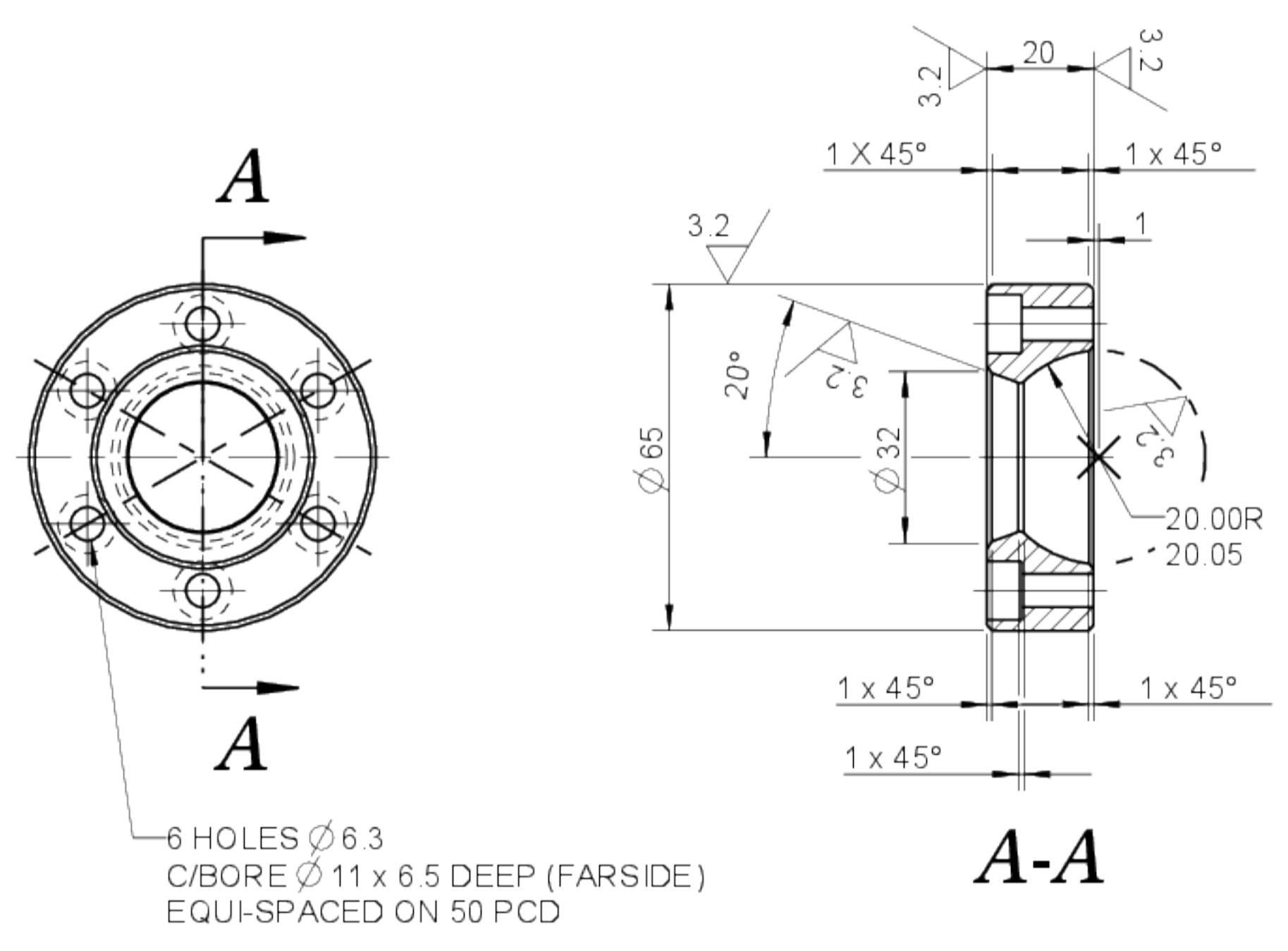
A



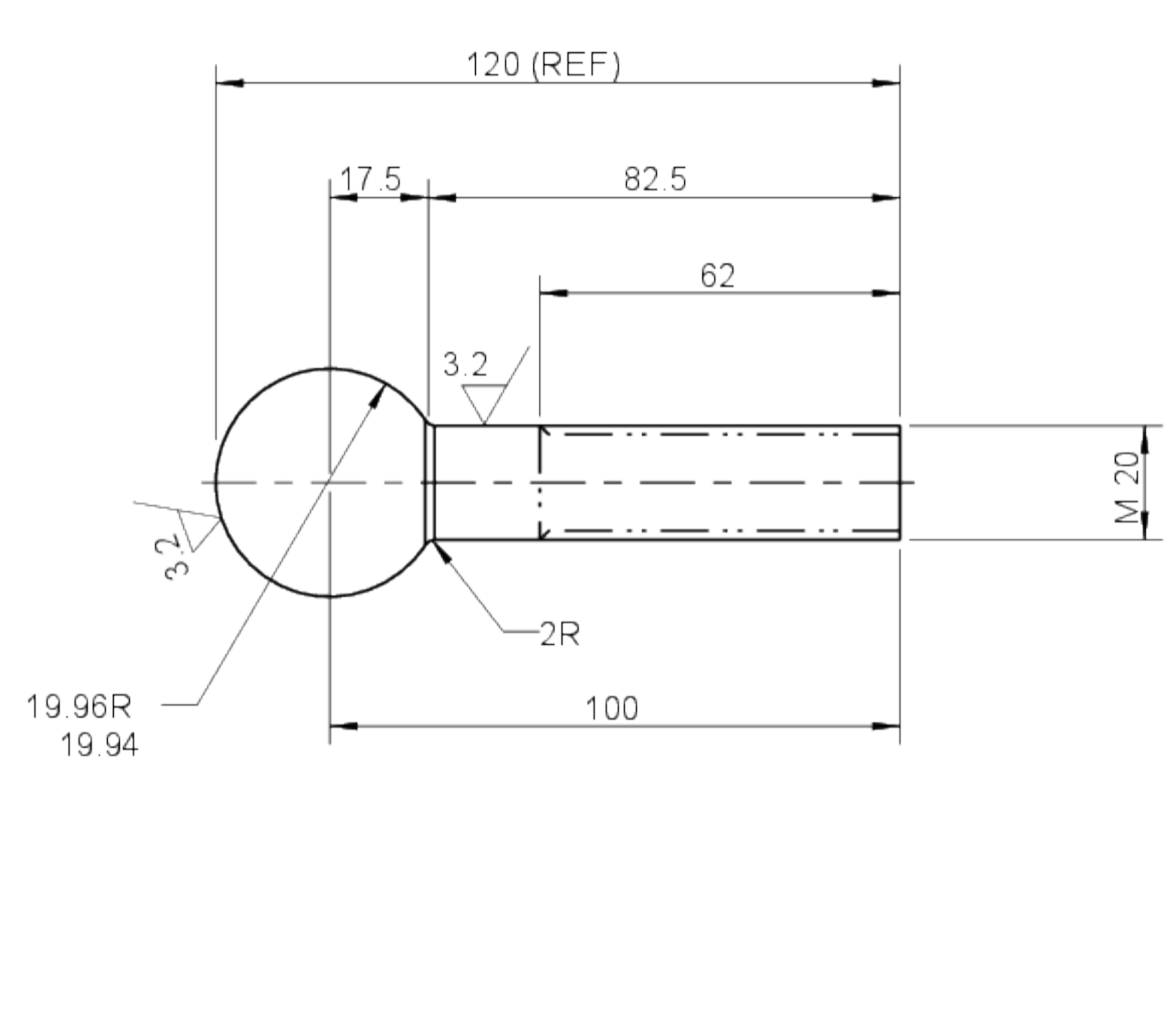
B



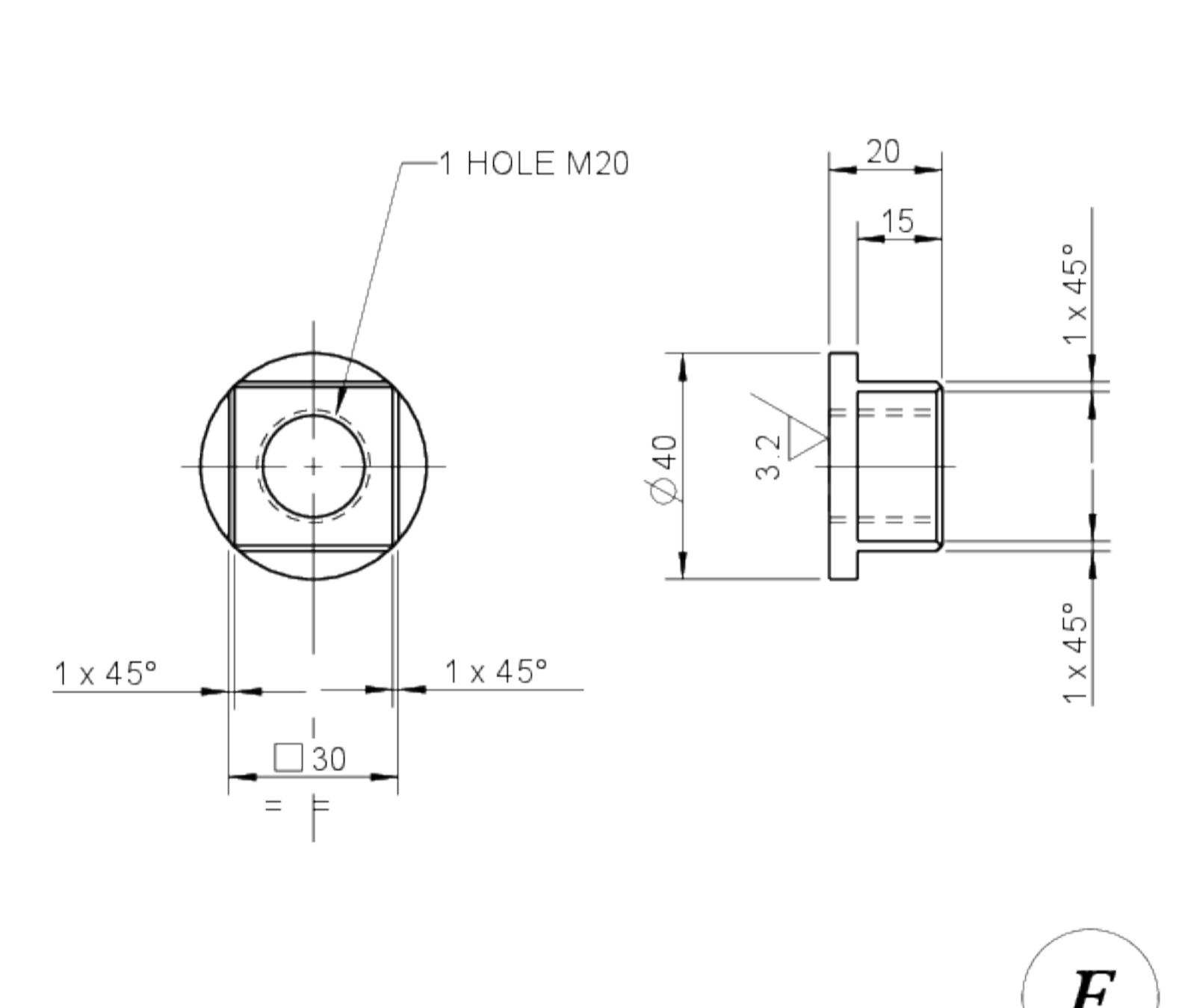
C



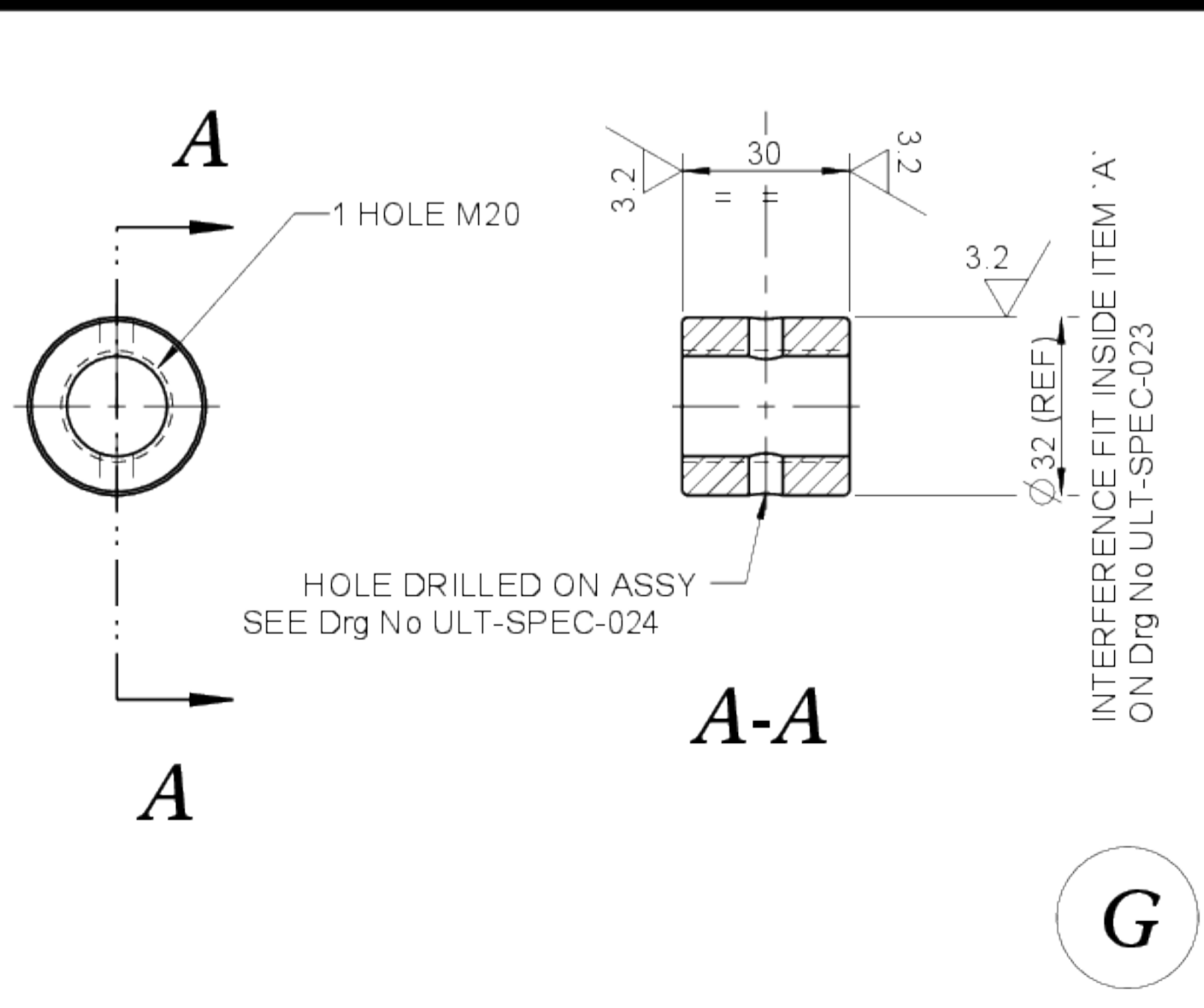
D



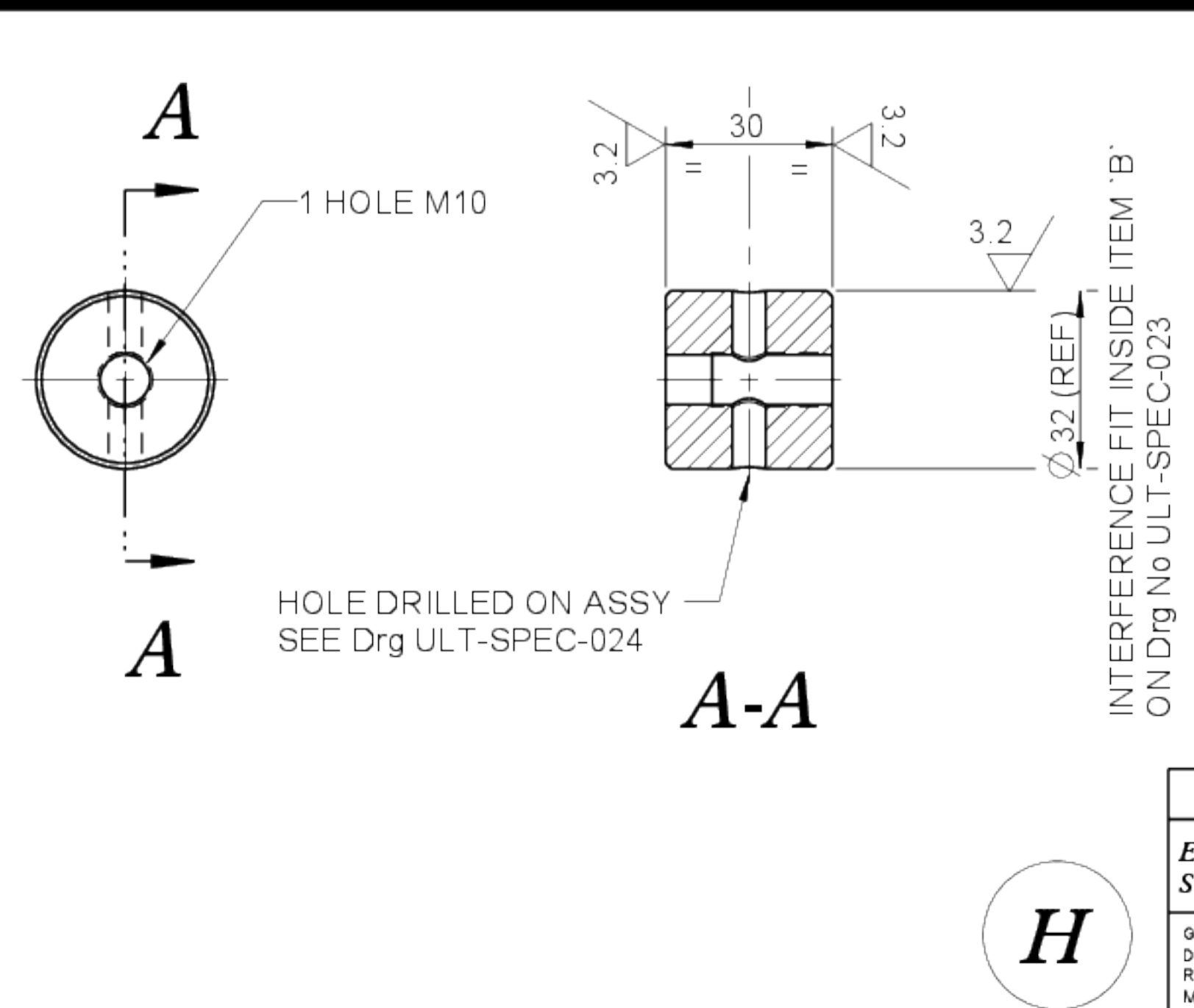
E



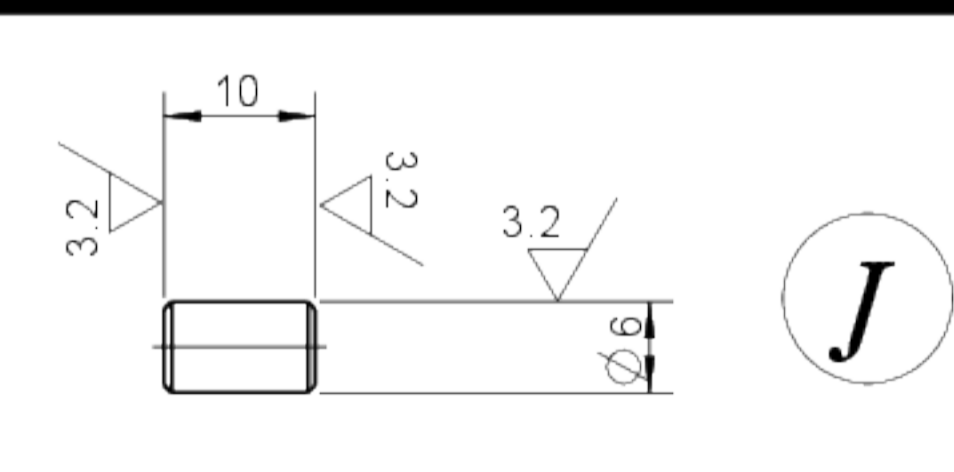
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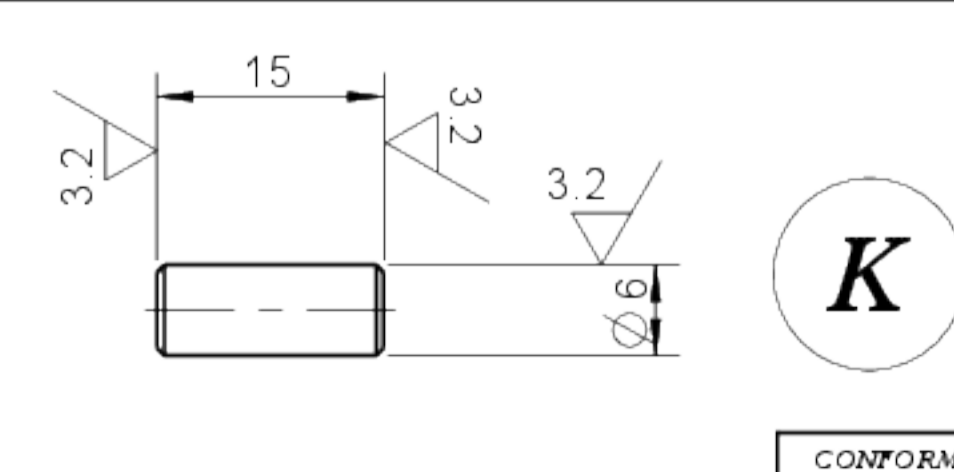
G



H



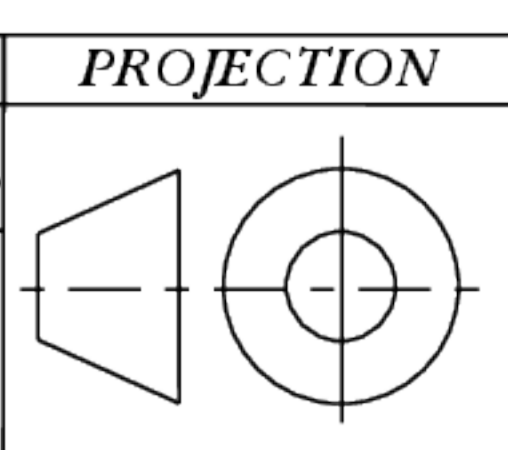
J



K

ITEM	REQD	DESCRIPTION	MATERIAL
k	24	FIXED CARBON STRUT PIN	STAINLESS STEEL GRADE 316
J	16	FLEXIBLE CARBON STRUT PIN	STAINLESS STEEL GRADE 316
H	8	CARBON STRUT INSERT M10	ALUMINIUM GRADE 6061
G	12	CARBON STRUT INSERT M20	ALUMINIUM GRADE 6061
F	12	M20 LOCK NUT	ALUMINIUM GRADE 6061
E	12	STRUT ADJUSTABLE LEG	STAINLESS STEEL GRADE 316
D	12	CARBON STRUT LOCK RING	ALUMINIUM GRADE 6061
C	10	BOLT ISOLATION BUSH	COMPOSITE G10/FR4
B	12	CARBON STRUT SOCKET	ALUMINIUM GRADE 6061
A	8	CARBON STRUT FOOT	ALUMINIUM GRADE 6061

DO NOT SCALE
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888
 GENERAL NOTES
 DIMENSIONS mm
 REMOVE ALL BURRS AND SHARP CORNERS
 MAXIMUM CHAMFER 0.5 U.S.O
 LINEAR DIMENSIONS ±0.1 U.S.O
 ANGULAR DIMENSIONS ±1° 30' U.S.O
 SURFACES 3.2 μm U.S.O



SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY
1:1/2:1	T.G	02/10/12			COMPONENTS #

CONFORMS TO BS 8888

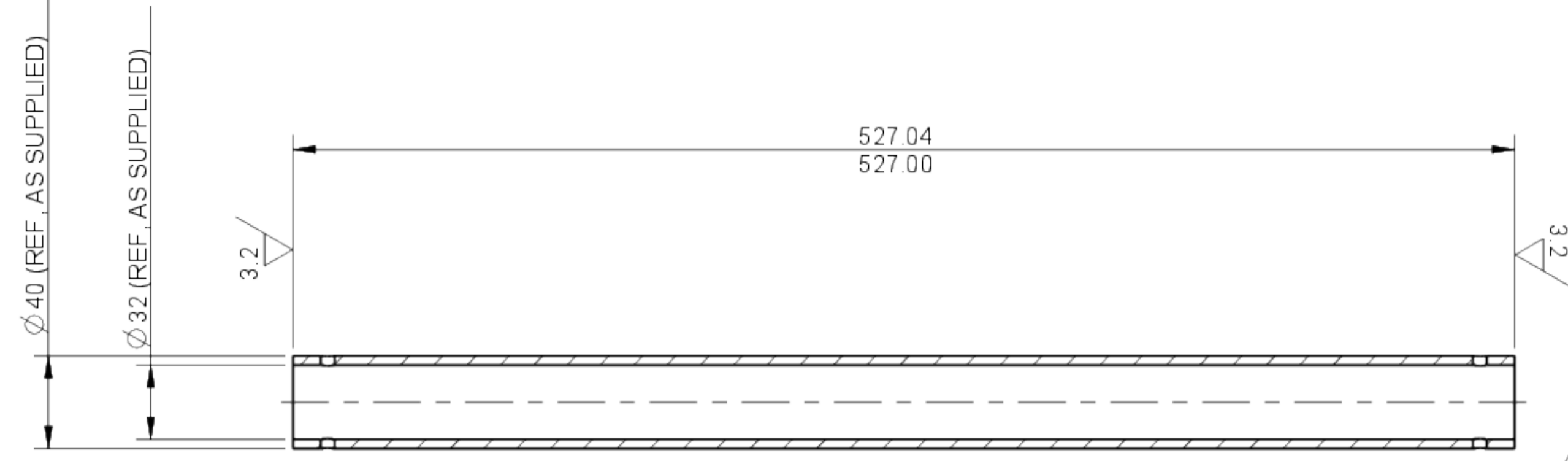
AREA: THAI NATIONAL TELESCOPE "THAILAND"

DESCRIPTION: DETAILS OF CARBON STRUT FOOT, SOCKET, ISOLATION BUSH, LOCKING COLLAR, ADJUSTABLE LEG, LOCK NUT, INSERTS AND PIN

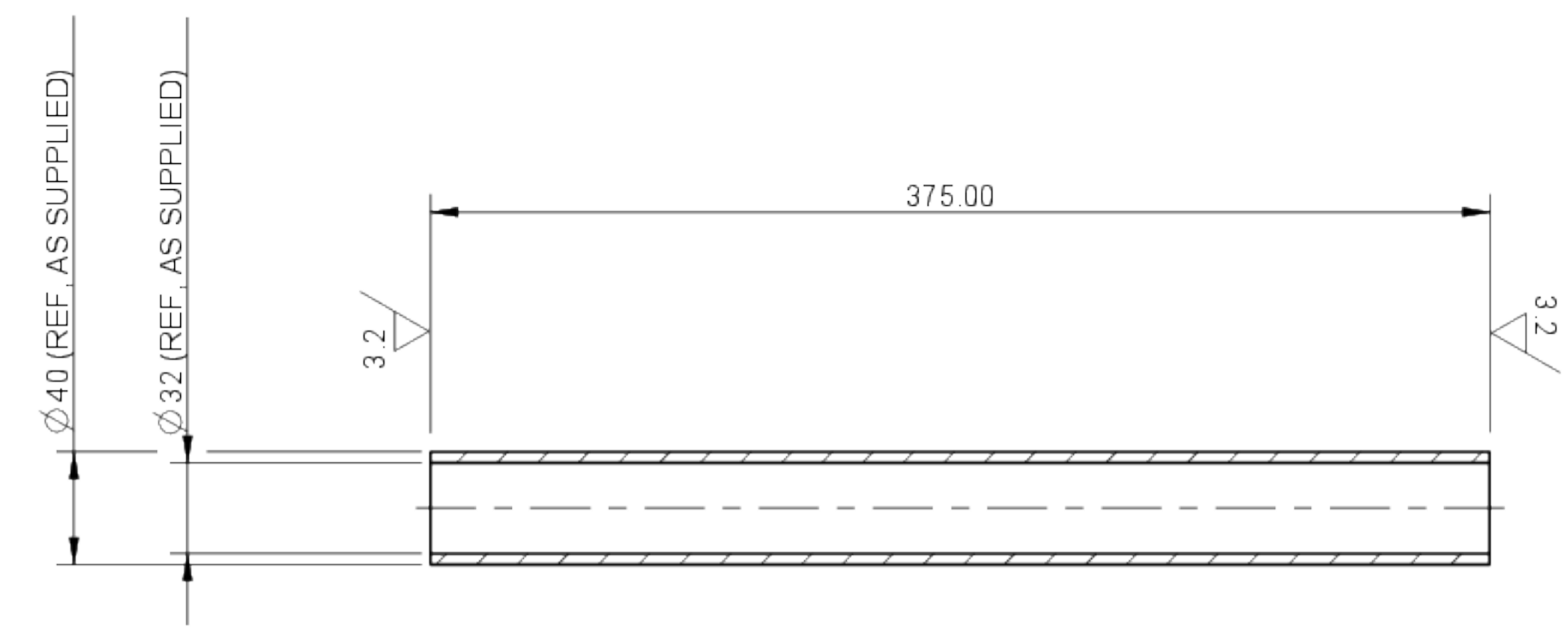
THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION.

DRAWING NUMBER: **ULT-SPEC-022**

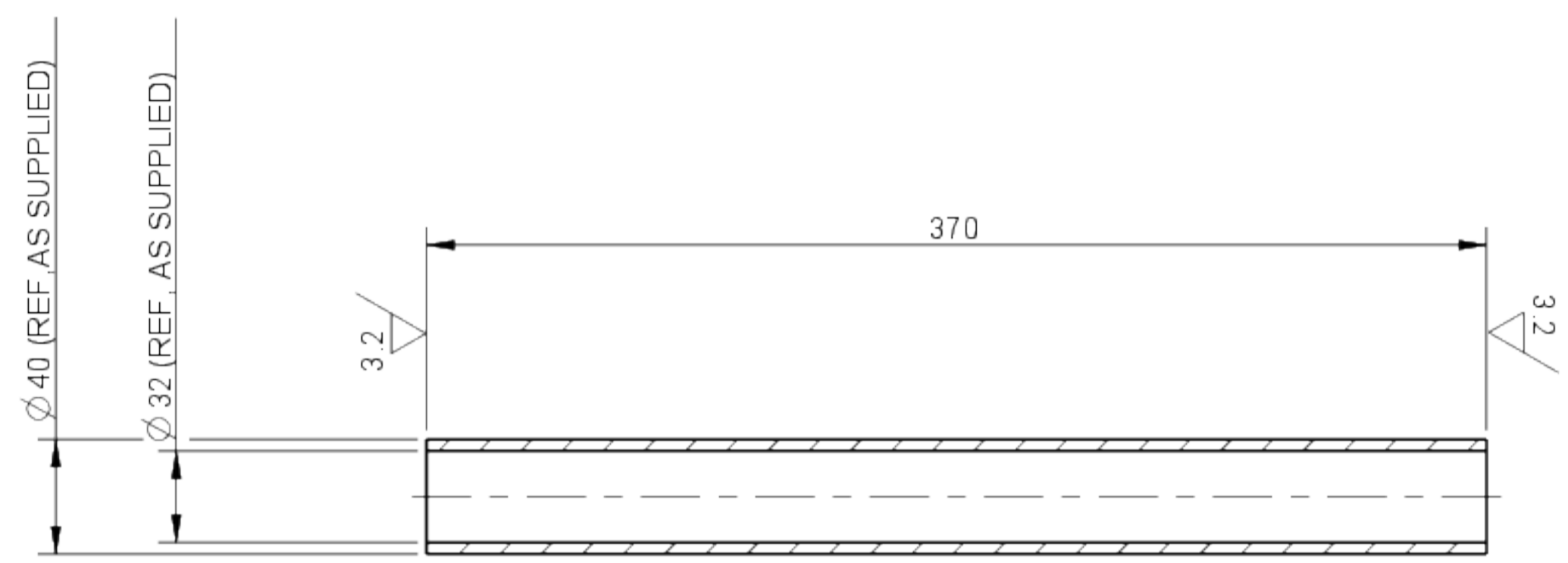
REV: A



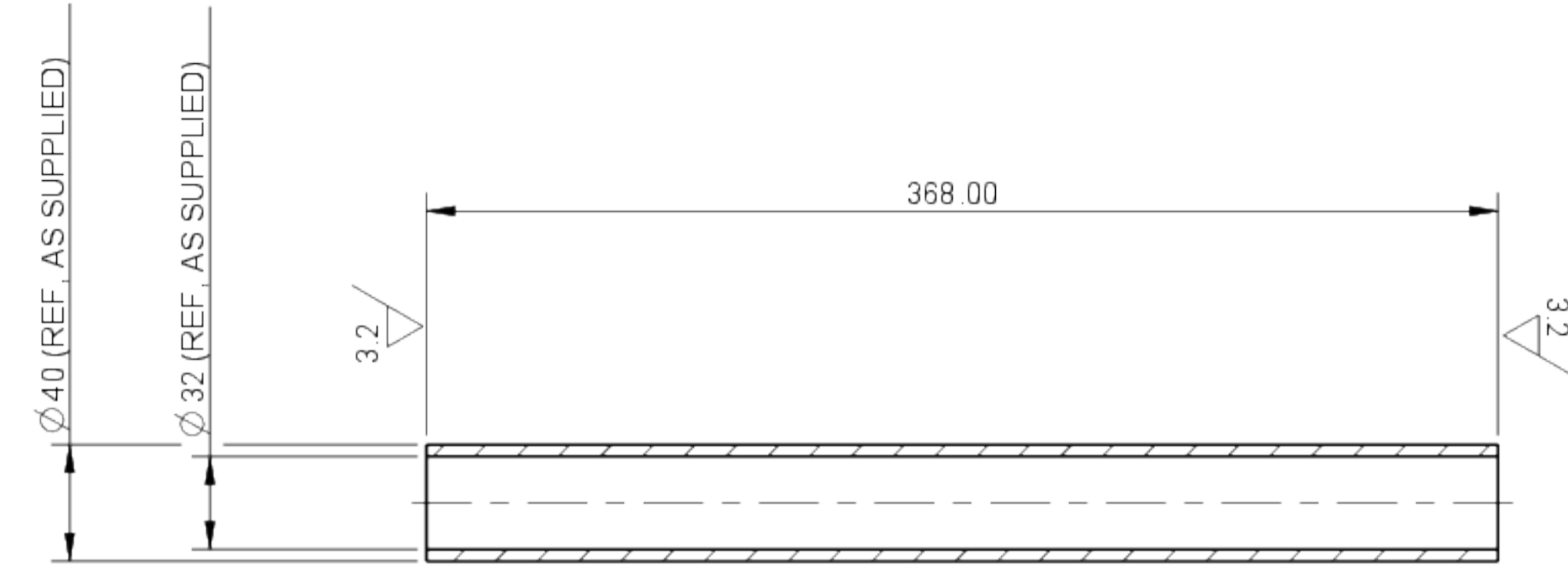
A



B



C



D

ITEM	REQD	DESCRIPTION	MATERIAL
D	1	CARBON FIBRE STRUT (CENTRAL)	AS SUPPLIED
C	3	CARBON FIBRE STRUT (SIDE)	AS SUPPLIED
B	2	CARBON FIBRE STRUT (BASE)	AS SUPPLIED
A	4	CARBON FIBRE STRUT (FIXED)	AS SUPPLIED

SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY
1:1.5	T.G	18/10/12			COMPONENTS #

DO NOT SCALE

PROJECTION

EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888



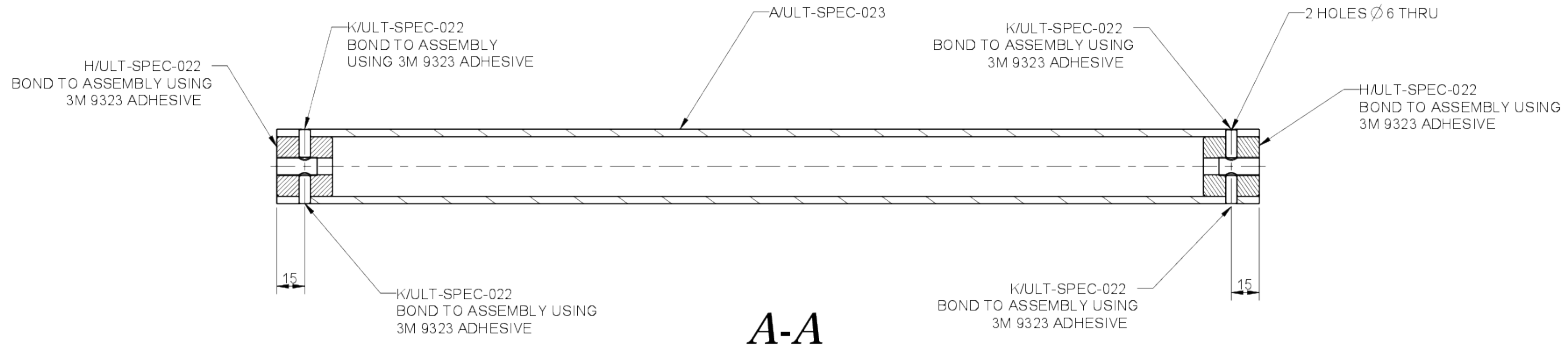
GENERAL NOTES
 DIMENSIONS mm
 REMOVE ALL BURRS AND SHARP CORNERS
 MAXIMUM CHAMFER 0.5 U.S.O
 LINEAR DIMENSIONS +/- 0.1 U.S.O
 ANGULAR DIMENSIONS +/- 0.30° U.S.O
 SURFACES 3.2 μm U.S.O

CONFORMS TO BS 8888
 AREA THAI NATIONAL TELESCOPE "THAILAND"

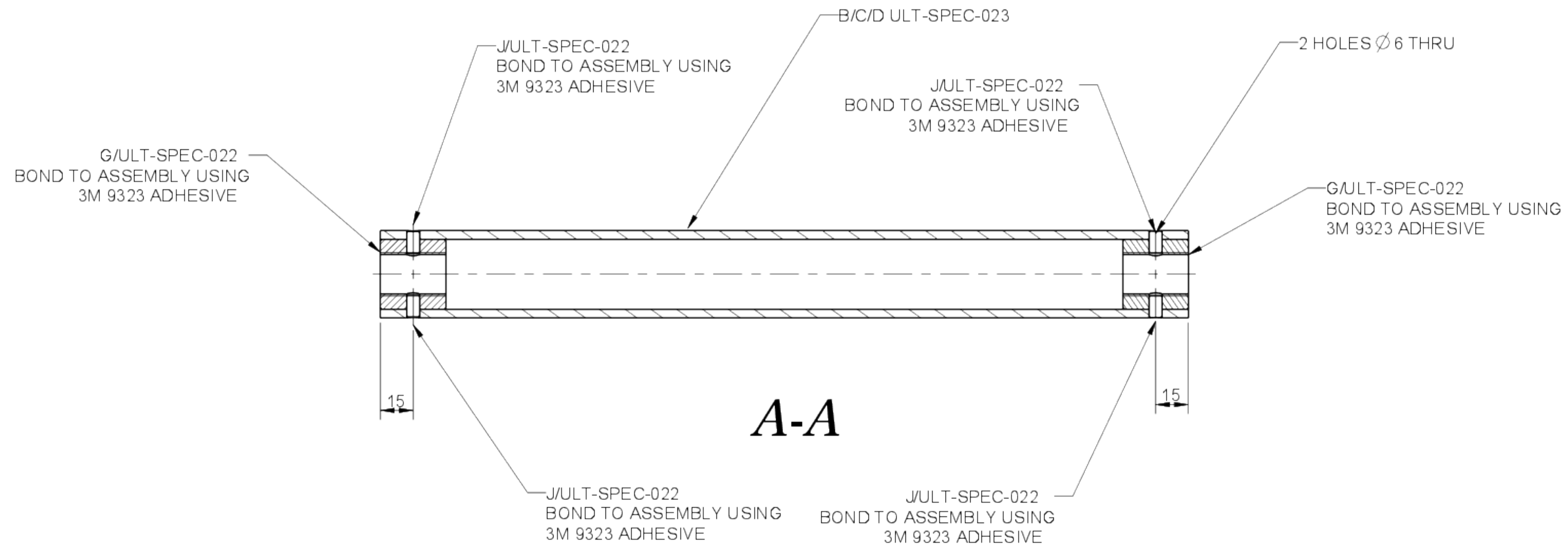
DESCRIPTION
 DETAILS OF CARBON FIBRE STRUTS

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 NOT FOR THIRD PARTY DISTRIBUTION

DRAWING NUMBER **ULT-SPEC-023** REV A



A



B

CONFORMS TO BS 8888	ITEM	REQD	DESCRIPTION	MATERIAL
	B	6	ASSEMBLY OF VARIABLE CARBON FIBRE STRUTS	VARIOUS
	A	4	ASSEMBLY OF FIXED CARBON FIBRE STRUTS	VARIOUS

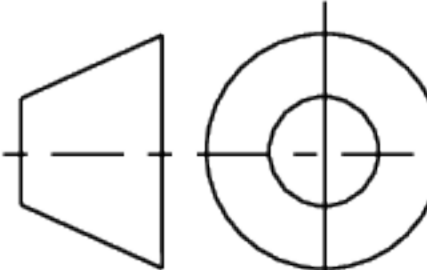
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY #
1:1.5	T.G	13/11/12			

DO NOT SCALE

PROJECTION

EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888

GENERAL NOTES
 DIMENSIONS mm
 REMOVE ALL BURRS AND SHARP CORNERS
 MAXIMUM CHAMFER 0.5 U.S.O
 LINEAR DIMENSIONS +/- 0.1 U.S.O
 ANGULAR DIMENSIONS +/- 0.30° U.S.O
 SURFACES 3.2 μm U.S.O



AREA THAI NATIONAL TELESCOPE "THAILAND"

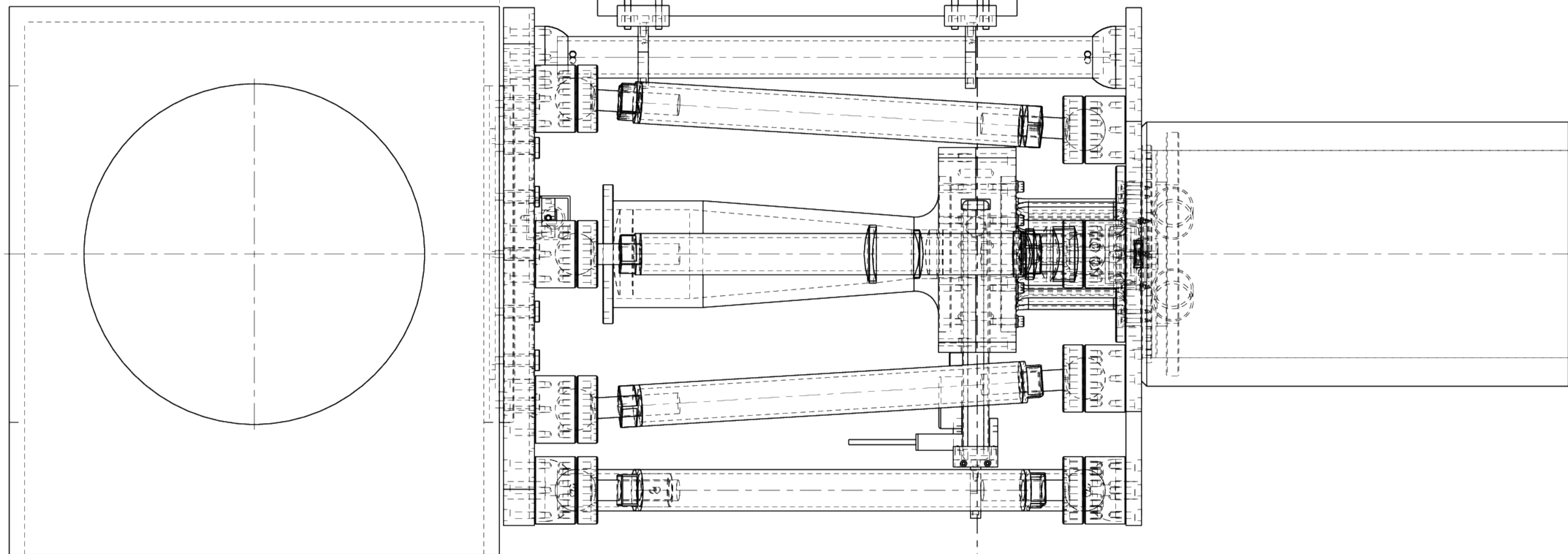
DESCRIPTION ASSEMBLY DETAILS OF CARBON STRUTS, INSERTS AND PINS

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DRAWING NUMBER **ULT-SPEC-024** REV A

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

A
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461.8

CoF G
81.397 Kg

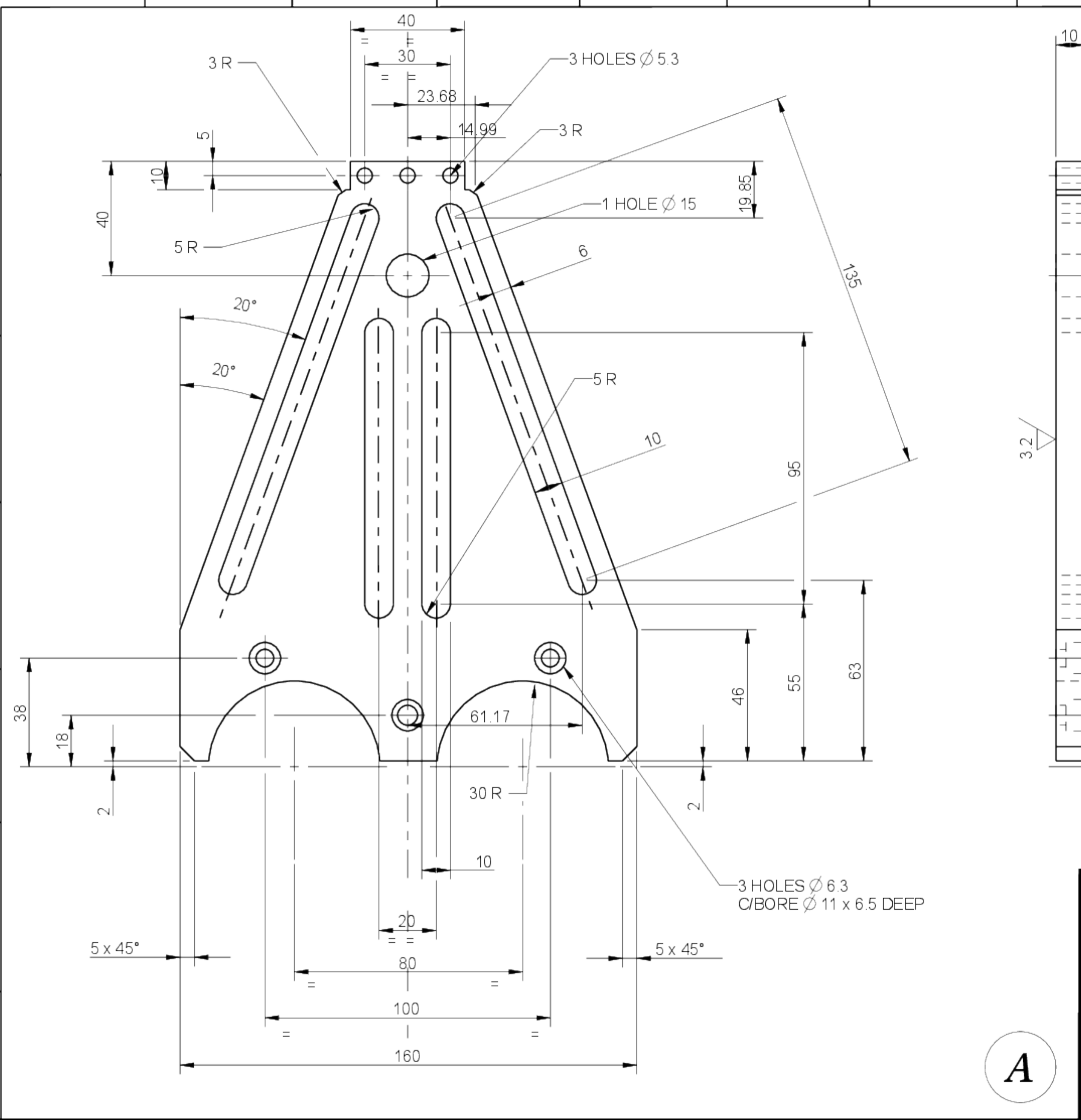
CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY #
1:1.5	T.G	31/10/12			COMPONENTS
AREA THAI NATIONAL TELESCOPE "THAILAND"					
DESCRIPTION COMPLETE ASSEMBLY DEPICITING "CENTRE OF GRAVITY"					
THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION					
DRAWING NUMBER					REV
ULT-SPEC-025					A

DO NOT SCALE

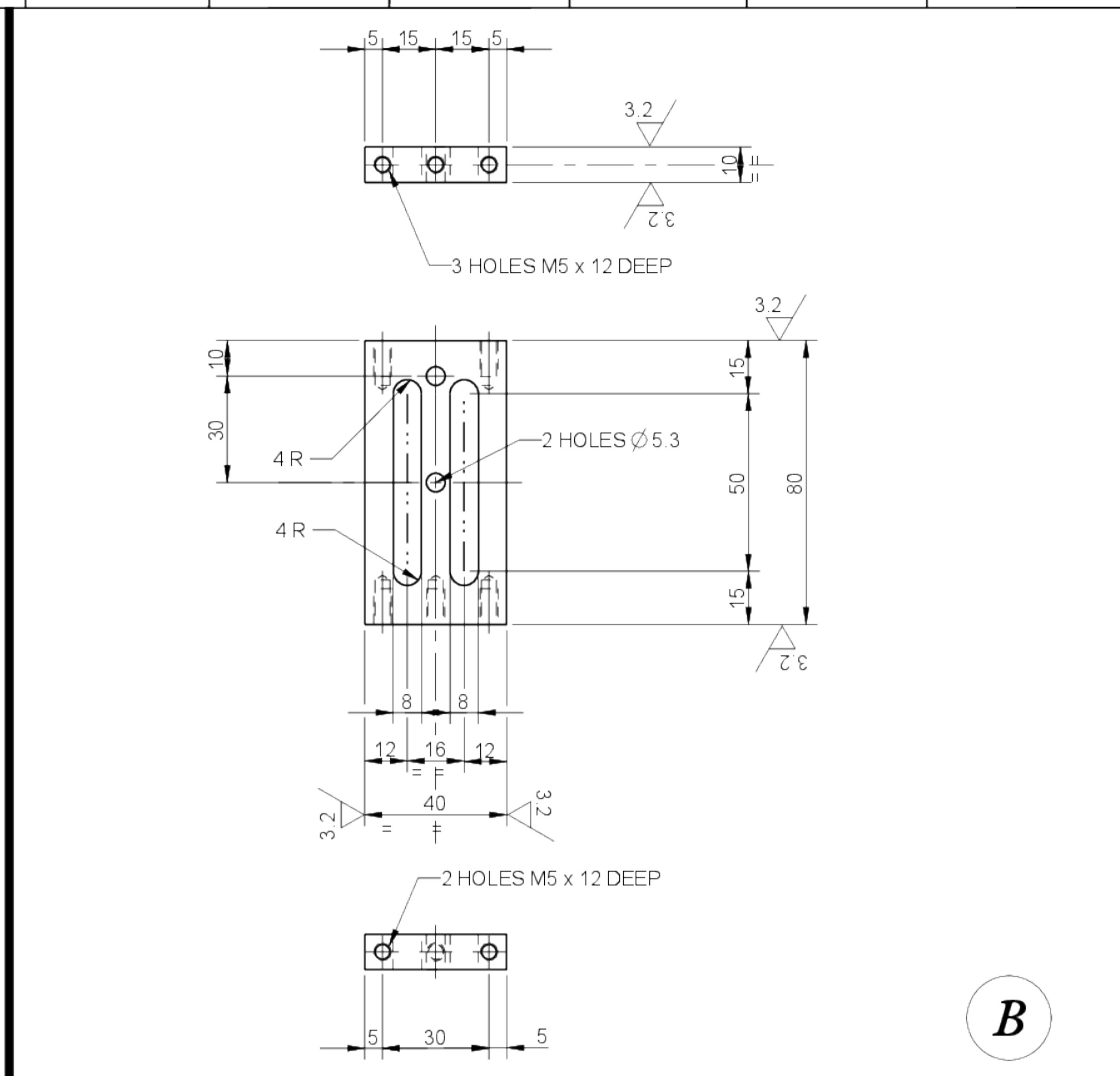
PROJECTION

EXPLANATION OF NOTES,
SYMBOLS, DIMS: SEE BS 8888

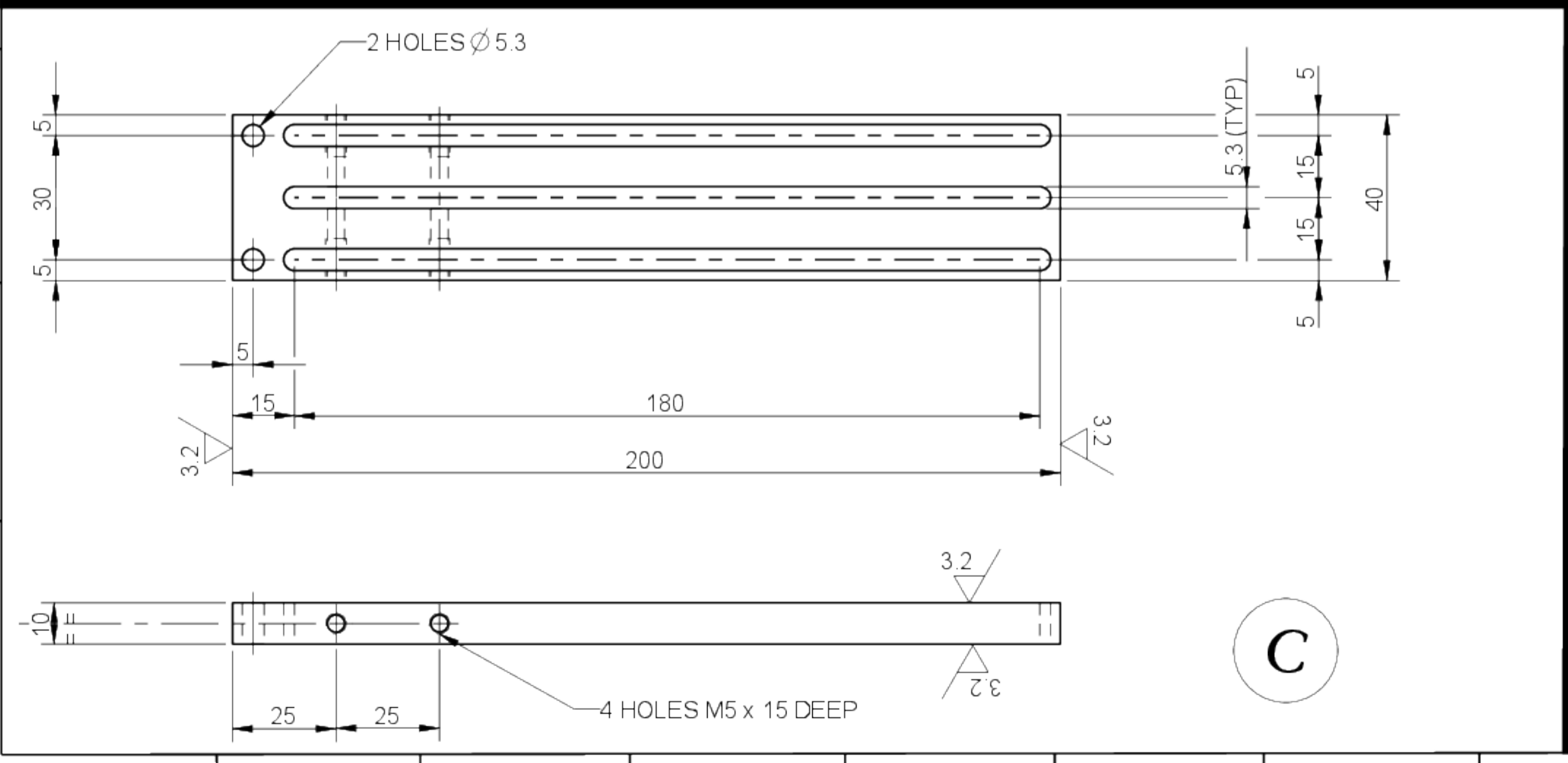
GENERAL NOTES
DIMENSIONS mm
REMOVE ALL BURRS AND SHARP CORNERS
MAXIMUM CHAMFER 0.5 U.S.O
LINEAR DIMENSIONS +/- 0.10 U.S.O
ANGULAR DIMENSIONS +/- 0.30° U.S.O
SURFACES 3.2 μm U.S.O



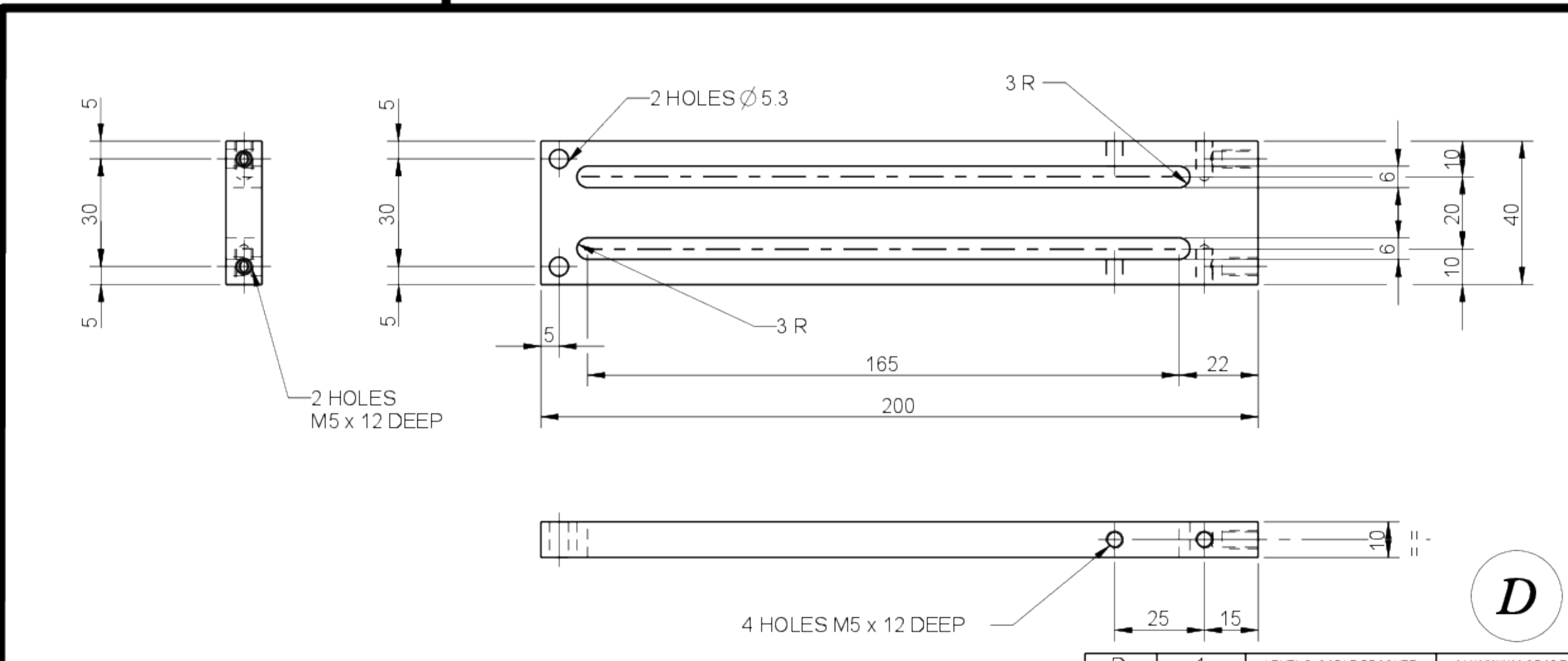
A



B



C



D

ITEM	REQD	DESCRIPTION	MATERIAL
D	1	LEVEL 2 CABLE BRACKET	ALUMINIUM GRADE 6001
C	1	CABLE SLIDING BRACKET	ALUMINIUM GRADE 6001
B	1	LEVEL 1 CABLE BRACKET	ALUMINIUM GRADE 6001
A	1	CABLE UPSTAND BRACKET	ALUMINIUM GRADE 6001

DO NOT SCALE

PROJECTION

EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888

GENERAL NOTES
 DIMENSIONS mm
 REMOVE ALL BURRS AND SHARP CORNERS
 MAXIMUM CHAMFER 0.5 U.S.O
 LINEAR DIMENSIONS +/- 0.1 U.S.O
 ANGULAR DIMENSIONS +/- 0.30' U.S.O
 SURFACES 3.2 / 4 / 10 U.S.O

SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY
1:1	T.G	04/12/12			COMPONENTS #

CONFORMS TO BS 8888

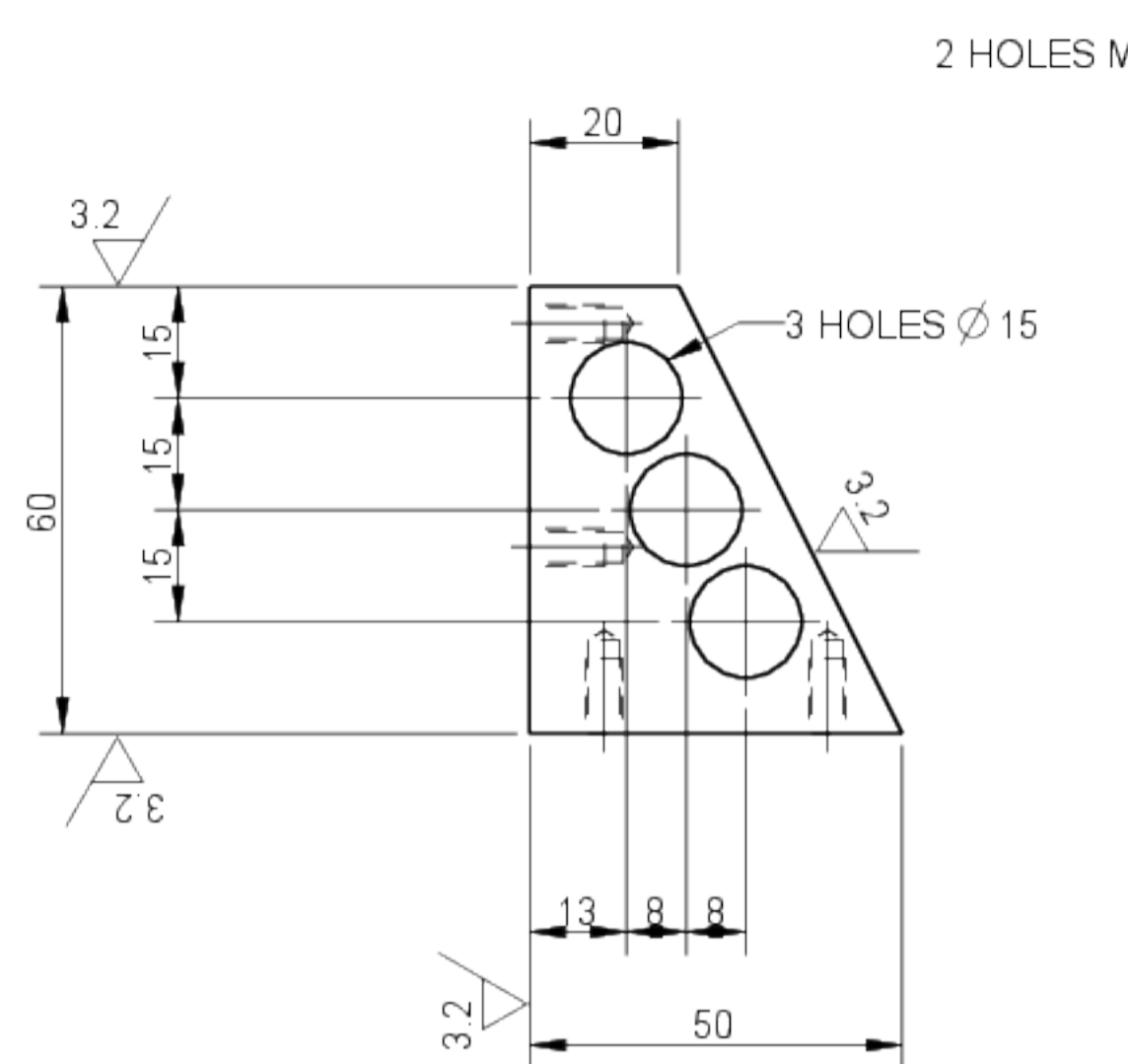
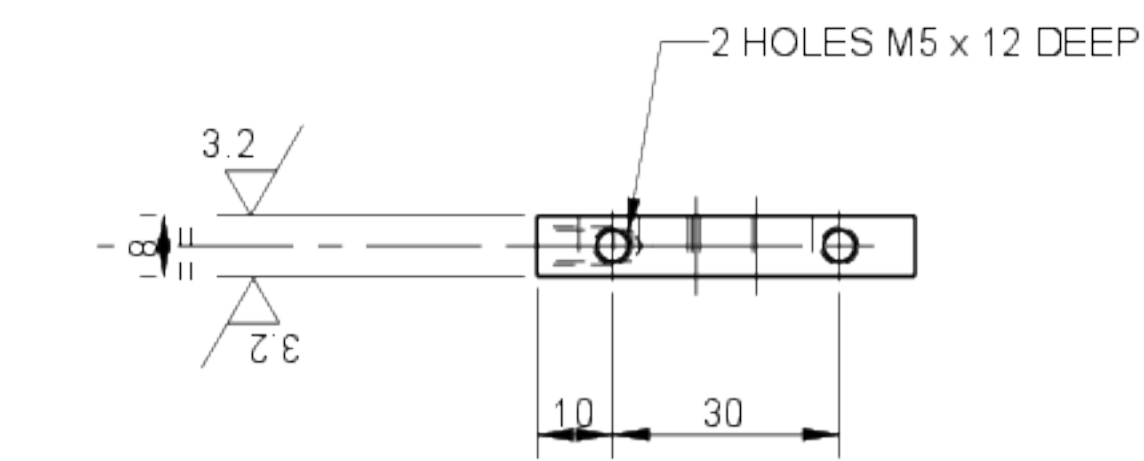
AREA: THAI NATIONAL TELESCOPE "THAILAND"

DESCRIPTION: DETAILS OF CABLE UPSTAND BRACKET, CABLE LEVEL 1 BRACKET, SLIDING BRACKET, AND CABLE LEVEL 2 BRACKET.

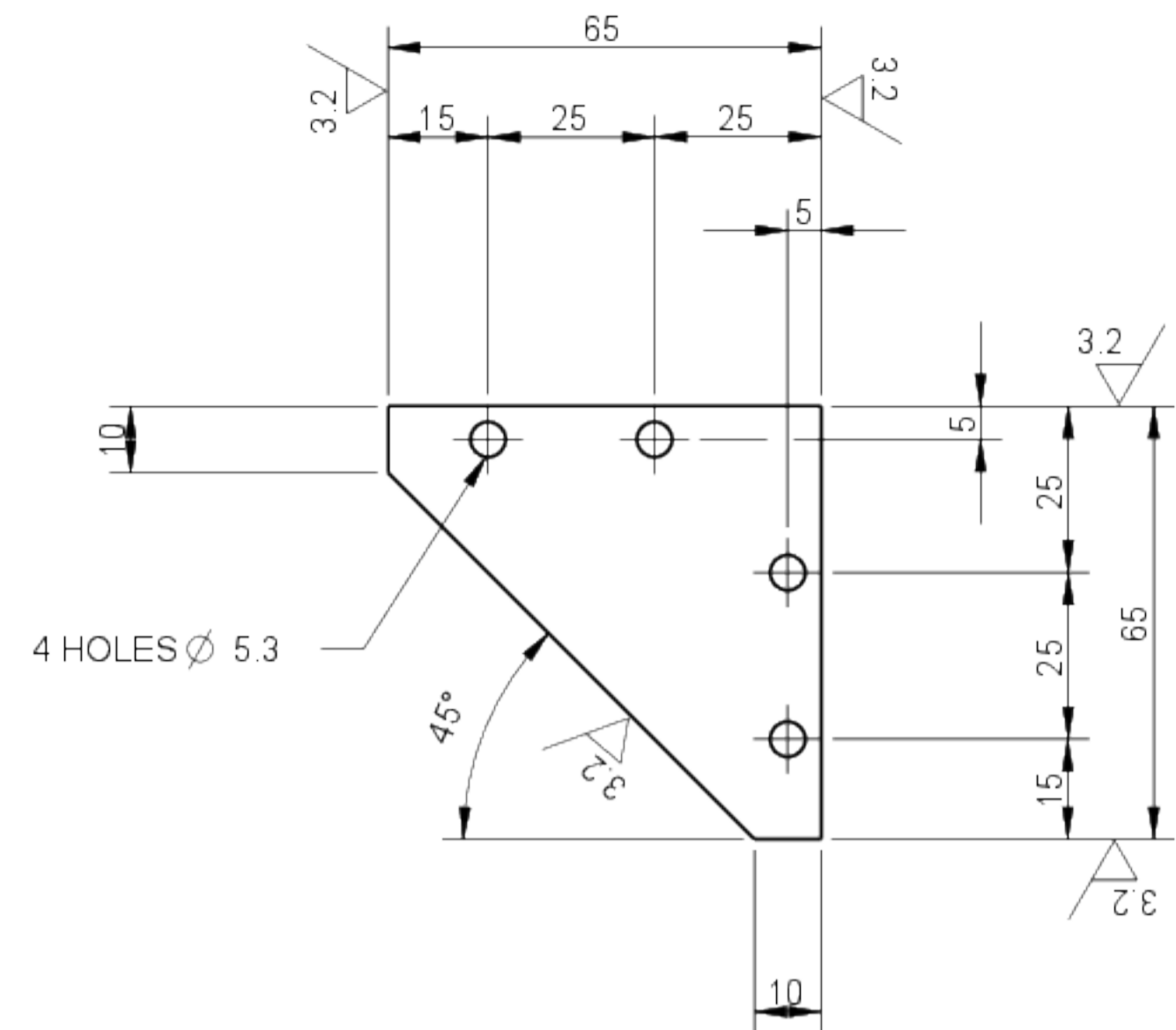
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DRAWING NUMBER: **ULT-SPEC-026**

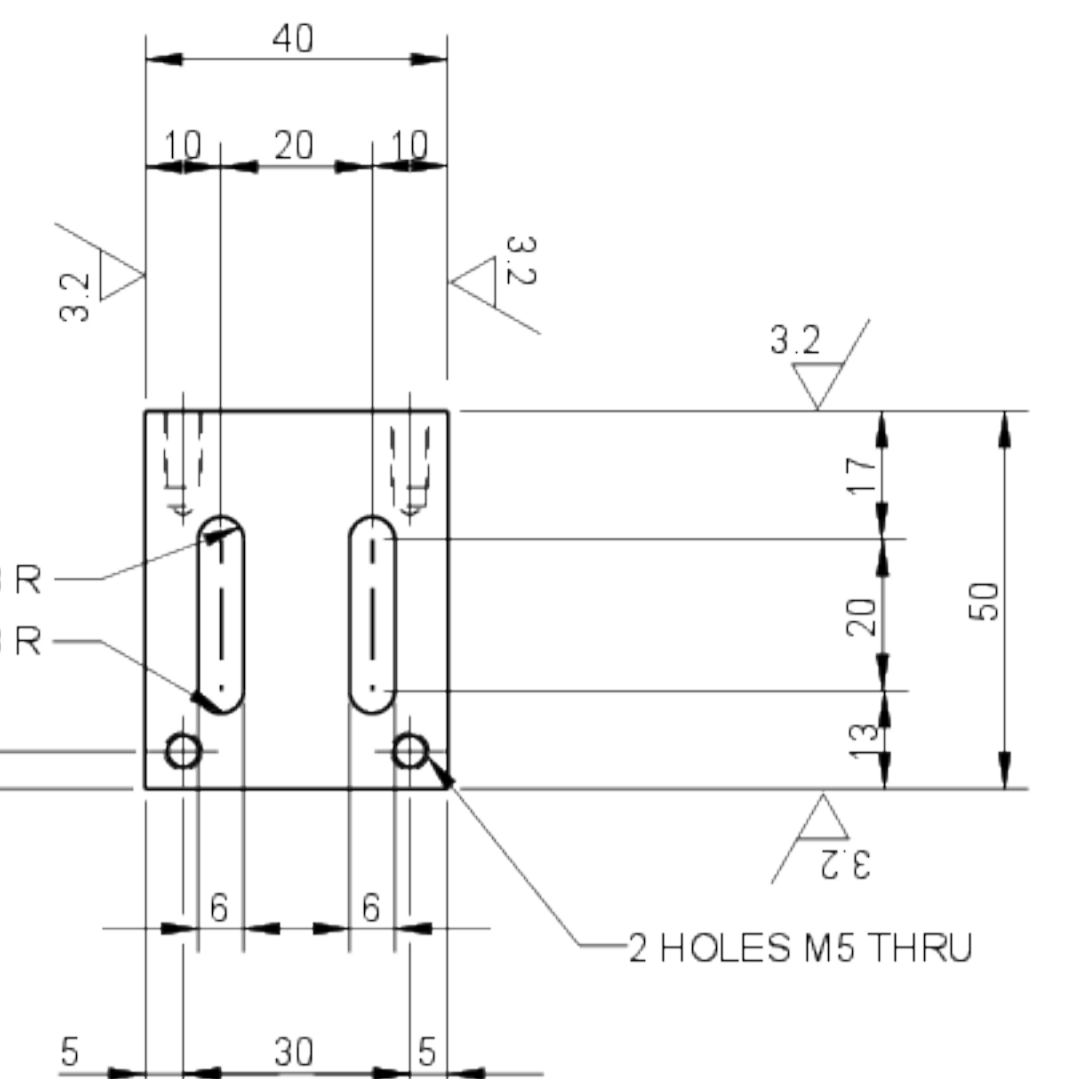
REV: **A**



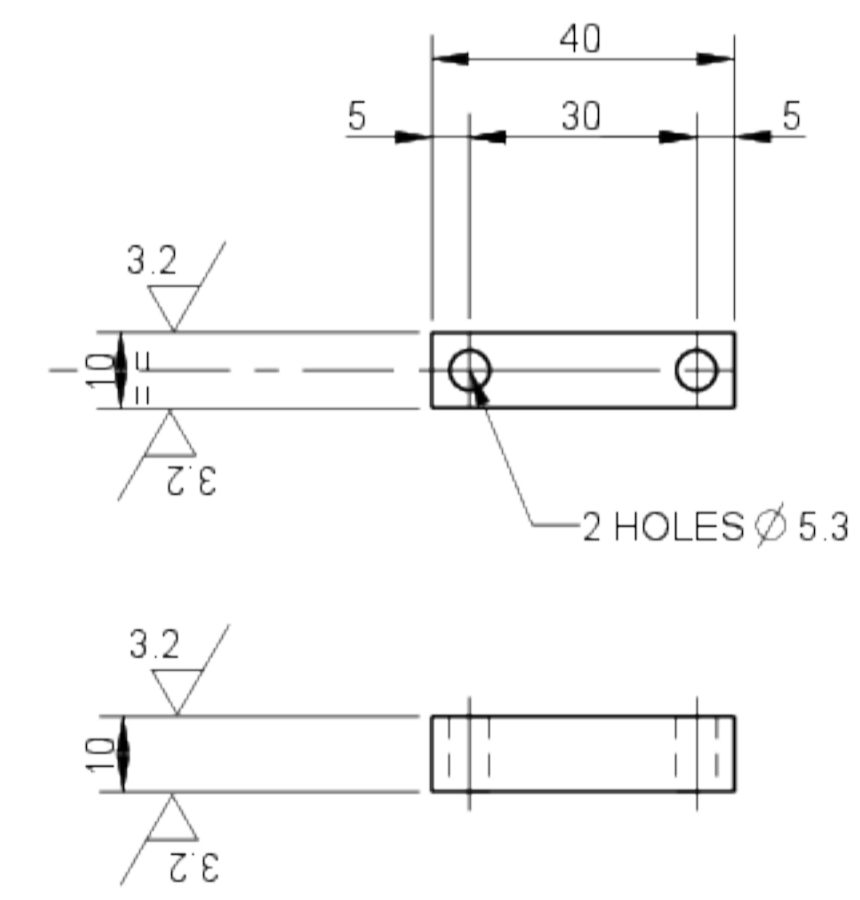
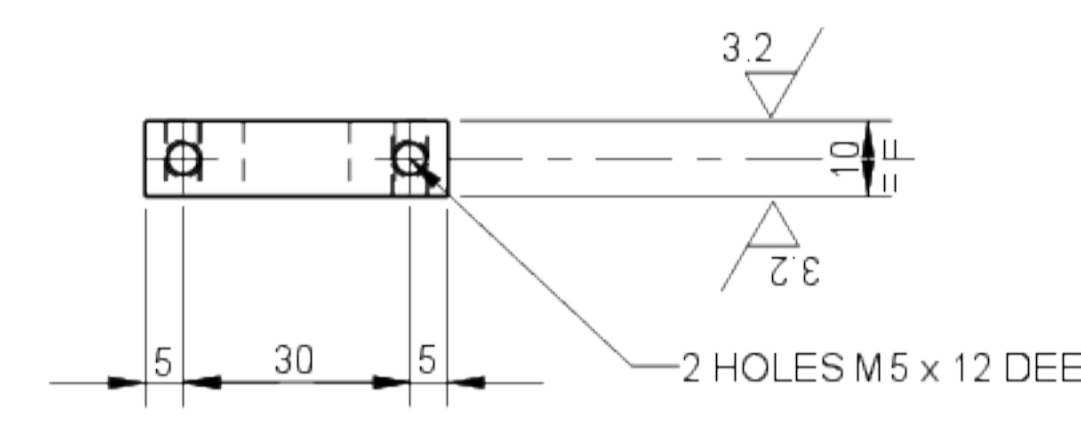
A



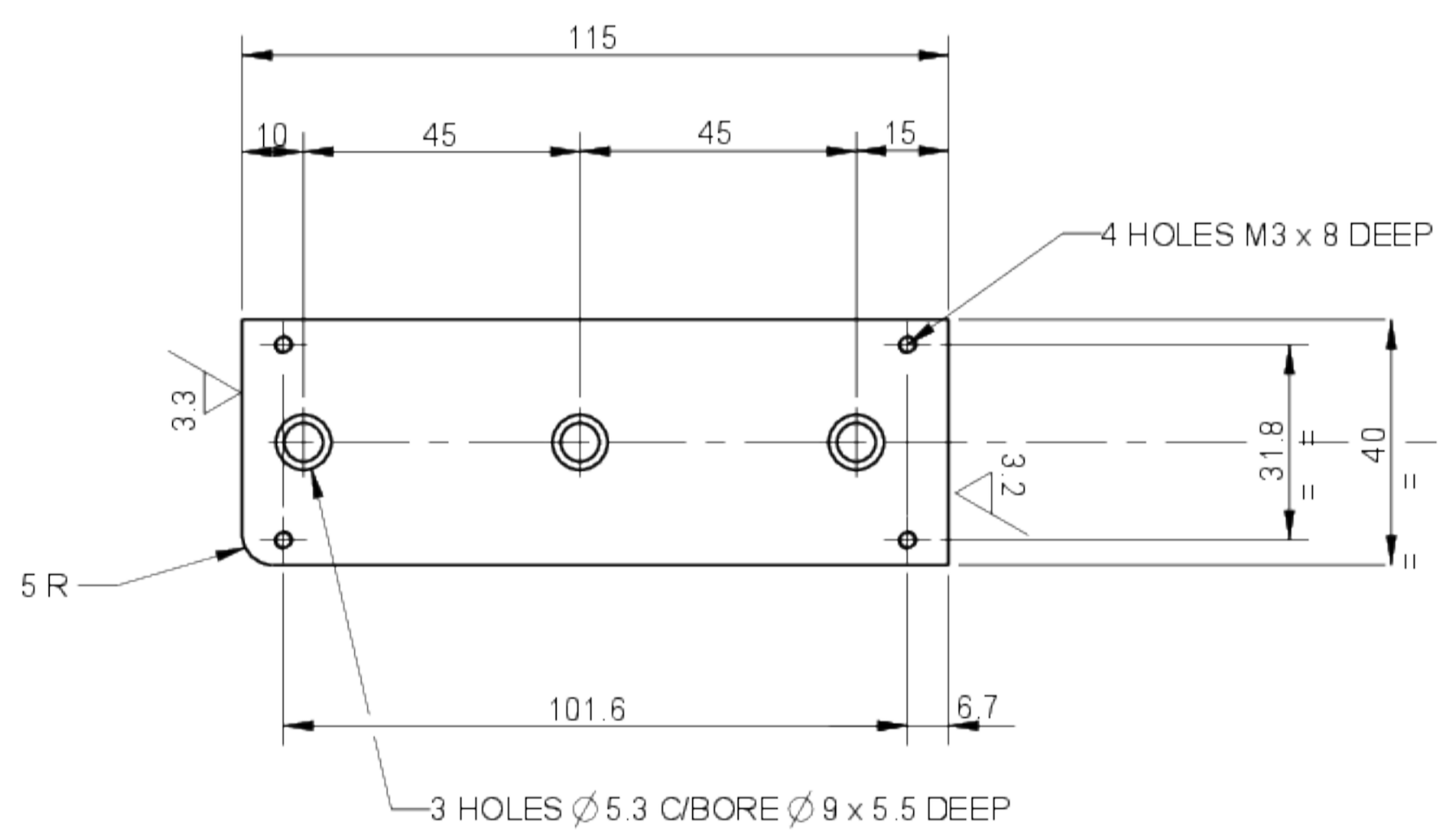
B



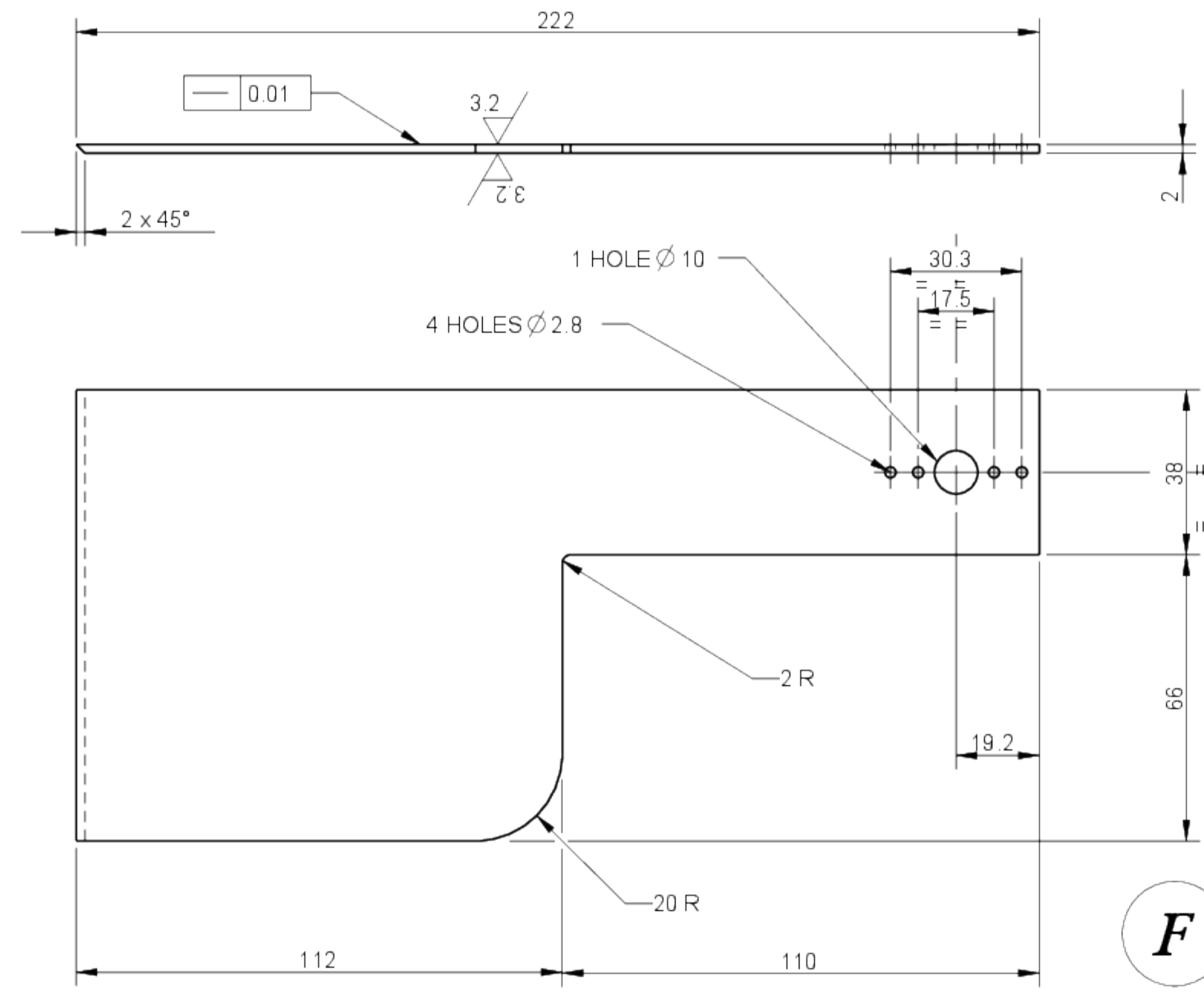
C



D



E



F

ITEM	REQD	DESCRIPTION	MATERIAL
F	1	ZABER LINEAR ACTUATOR BLADE	ALUMINIUM GRADE 6061
E	1	ZABER LINEAR ACTUATOR MOUNT	ALUMINIUM GRADE 6061
D	1	CABLE BRACKET CLAMP	ALUMINIUM GRADE 6061
C	1	CABLE BRACKET BASE	ALUMINIUM GRADE 6061
B	2	CABLE BRACKET CORNER BRACE	ALUMINIUM GRADE 6061
A	1	CABLE BRACKET RIB	ALUMINIUM GRADE 6061

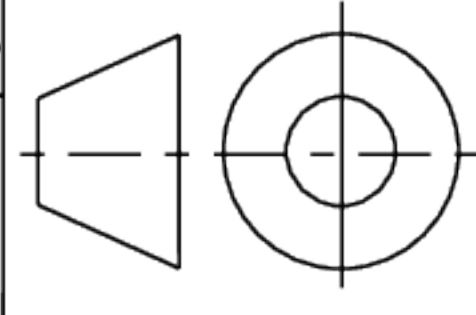
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY COMPONENTS #
1:1	T.G	07/12/12			

DO NOT SCALE

PROJECTION

EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888

GENERAL NOTES
 DIMENSIONS mm
 REMOVE ALL BURRS AND SHARP CORNERS
 MAXIMUM CHAMFER 0.5 U.S.O
 LINEAR DIMENSIONS +/- 0.1 U.S.O
 ANGULAR DIMENSIONS +/- 0.30° U.S.O
 SURFACES 3.2 μm U.S.O



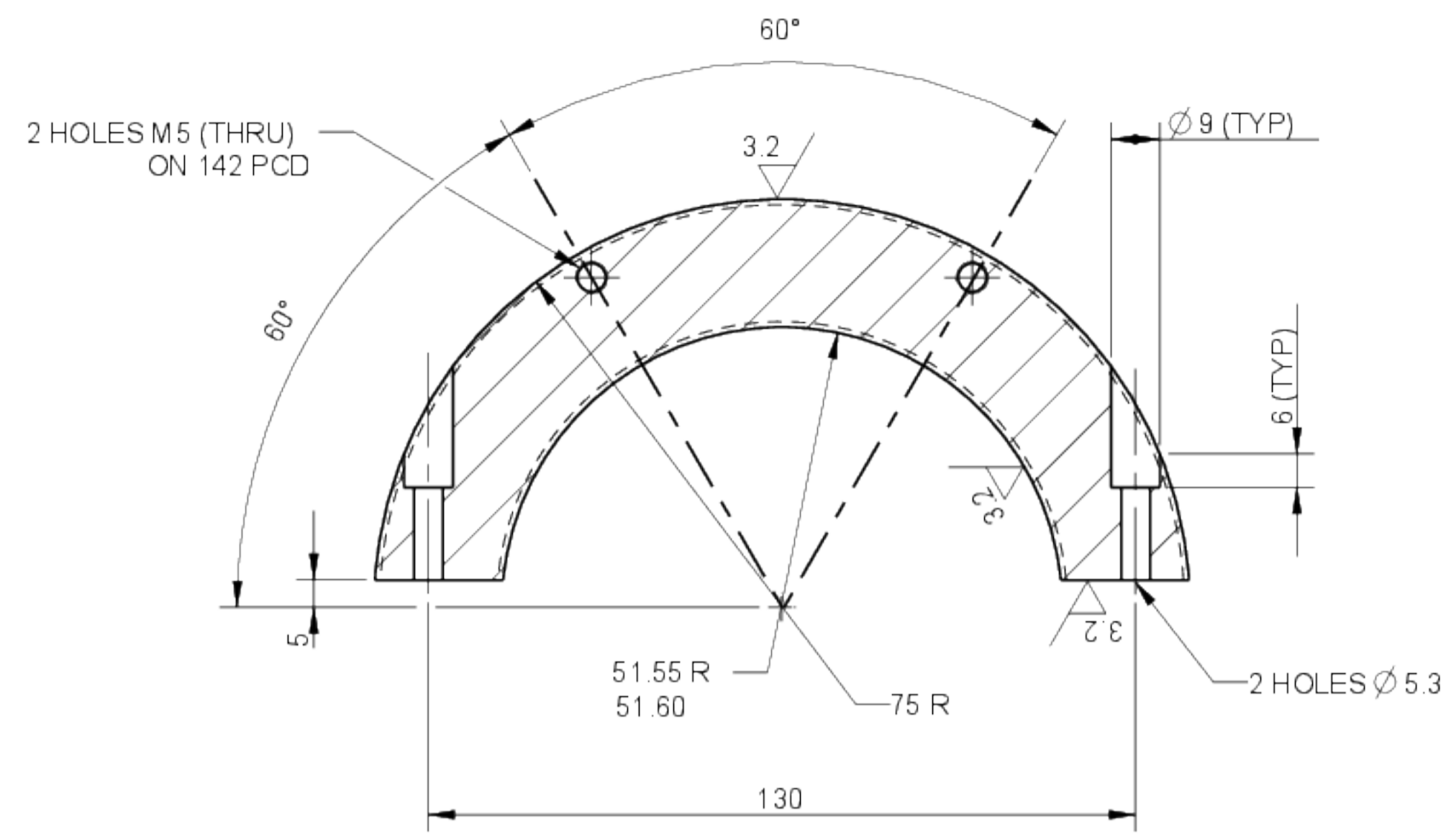
CONFORMS TO BS 8888

AREA THAI NATIONAL TELESCOPE "THAILAND"

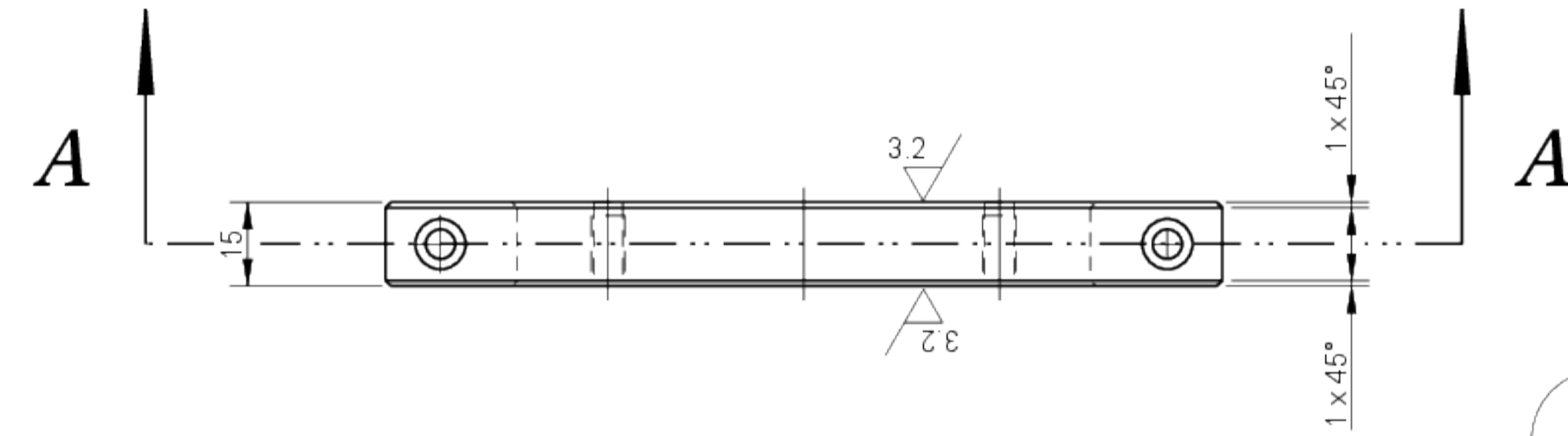
DESCRIPTION
 DETAILS OF CABLE BRACKET RIB/ CORNER BRACES/ CLAMP BASE/
 CLAMP/ ZABER LINEAR ACTUATOR MOUNT & BLADE

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 NOT FOR THIRD PARTY DISTRIBUTION

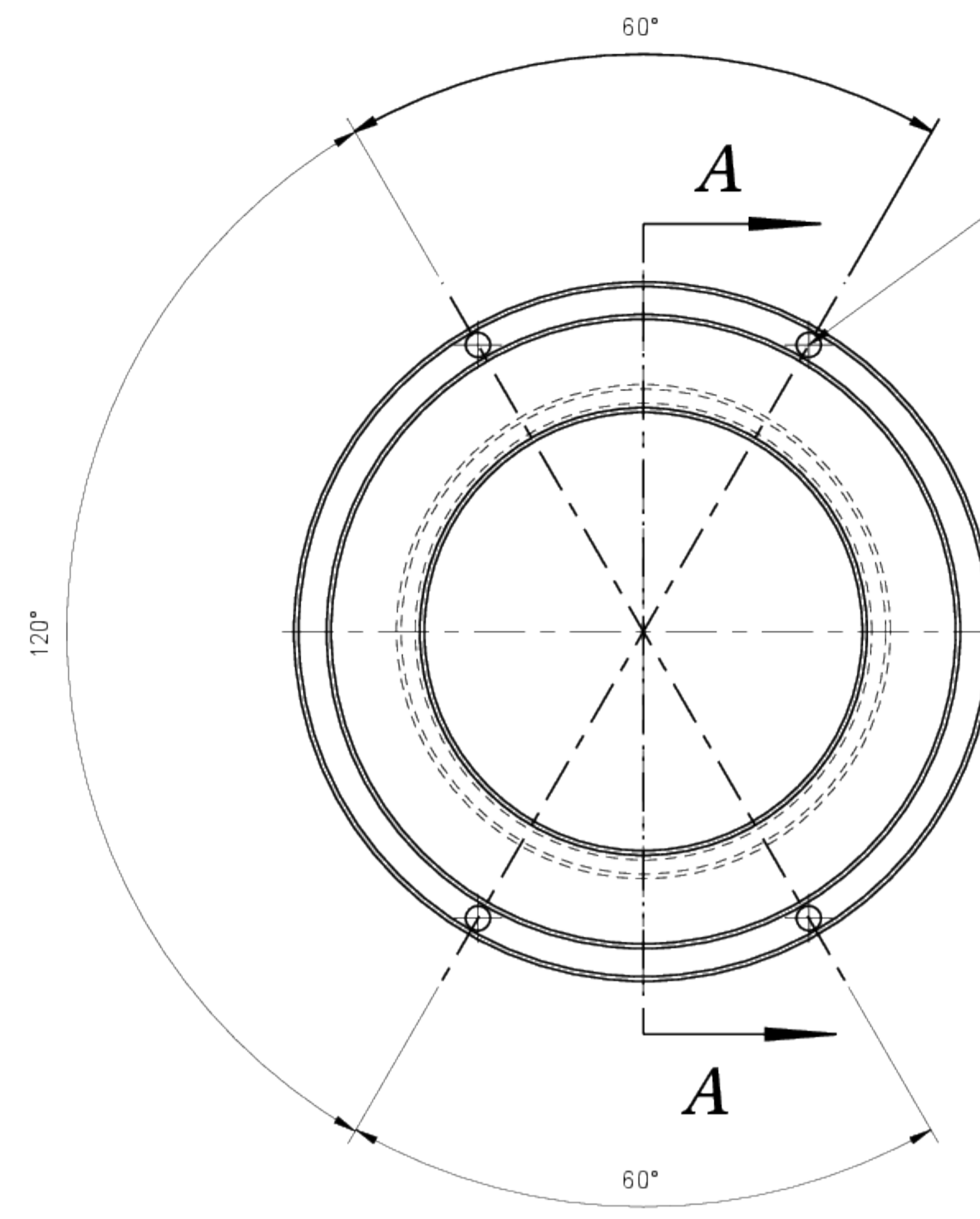
DRAWING NUMBER **ULT-SPEC-027** REV A



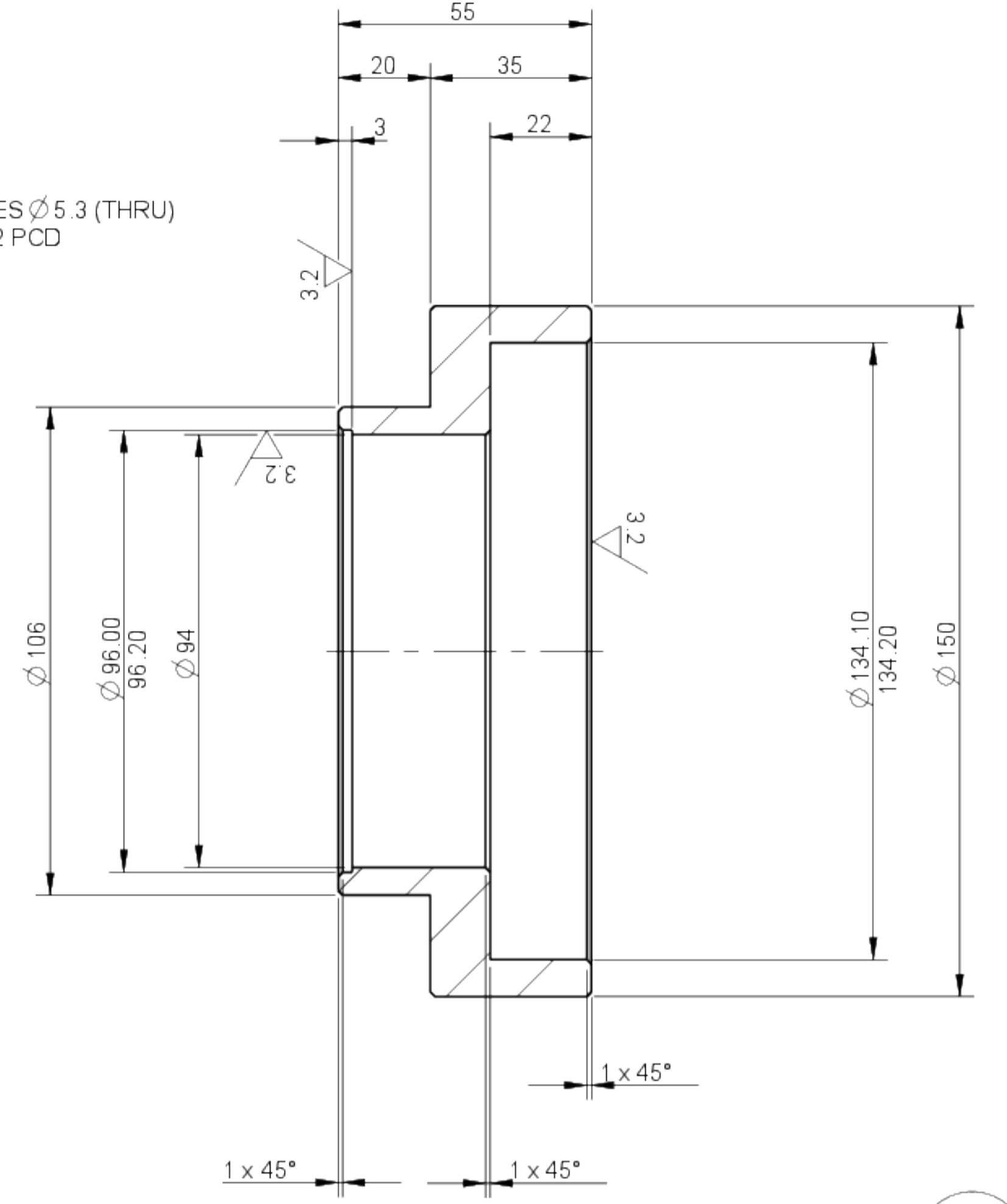
A-A



A

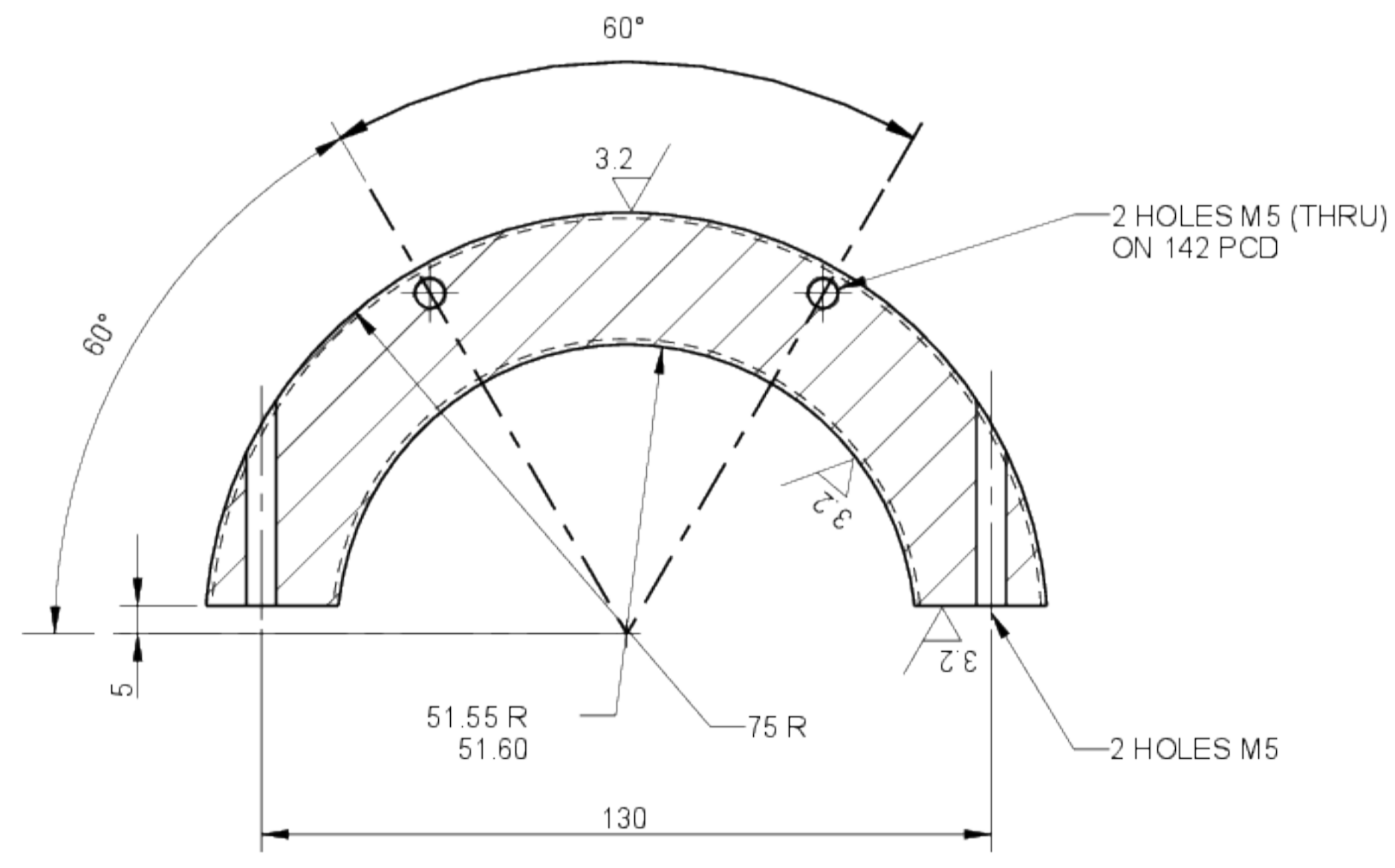


4 HOLES $\varnothing 5.3$ (THRU) ON 142 PCD

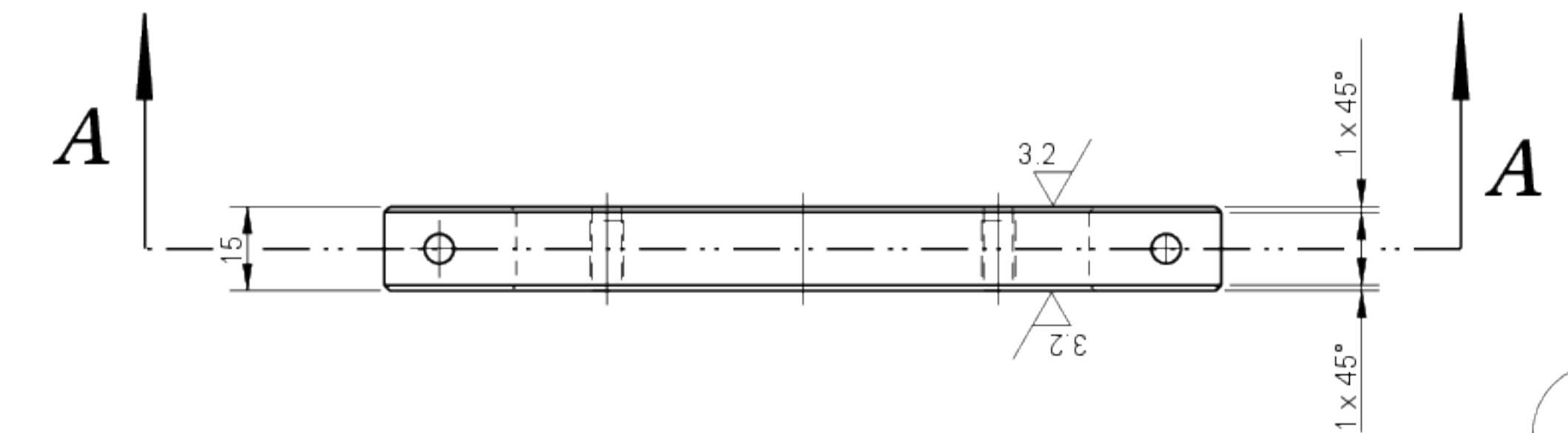


A-A

B



A-A

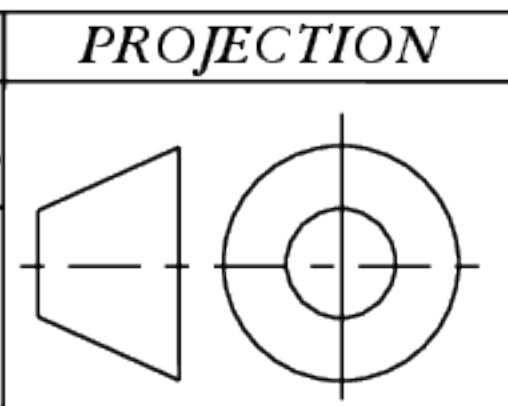


C

CONFORMS TO BS 8888	ITEM	REQD	DESCRIPTION	MATERIAL
	C	1	LENS BARREL 3 ABUTMENT RING (BOTTOM)	ALUMINIUM GRADE 6061
	B	1	LENS BARREL 3 OPTICS CALIBRATION DISC	ALUMINIUM GRADE 6061
	A	1	LENS BARREL 3 ABUTMENT RING (TOP)	ALUMINIUM GRADE 6061

SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY
1:1	T.G	18/12/12			COMPONENTS #

DO NOT SCALE
PROJECTION
 EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888
 GENERAL NOTES
 DIMENSIONS mm
 REMOVE ALL BURRS AND SHARP CORNERS
 MAXIMUM CHAMFER 0.5 U.S.O
 LINEAR DIMENSIONS +/- 0.1 U.S.O
 ANGULAR DIMENSIONS +/- 0.30' U.S.O
 SURFACES 3.2 μ m U.S.O

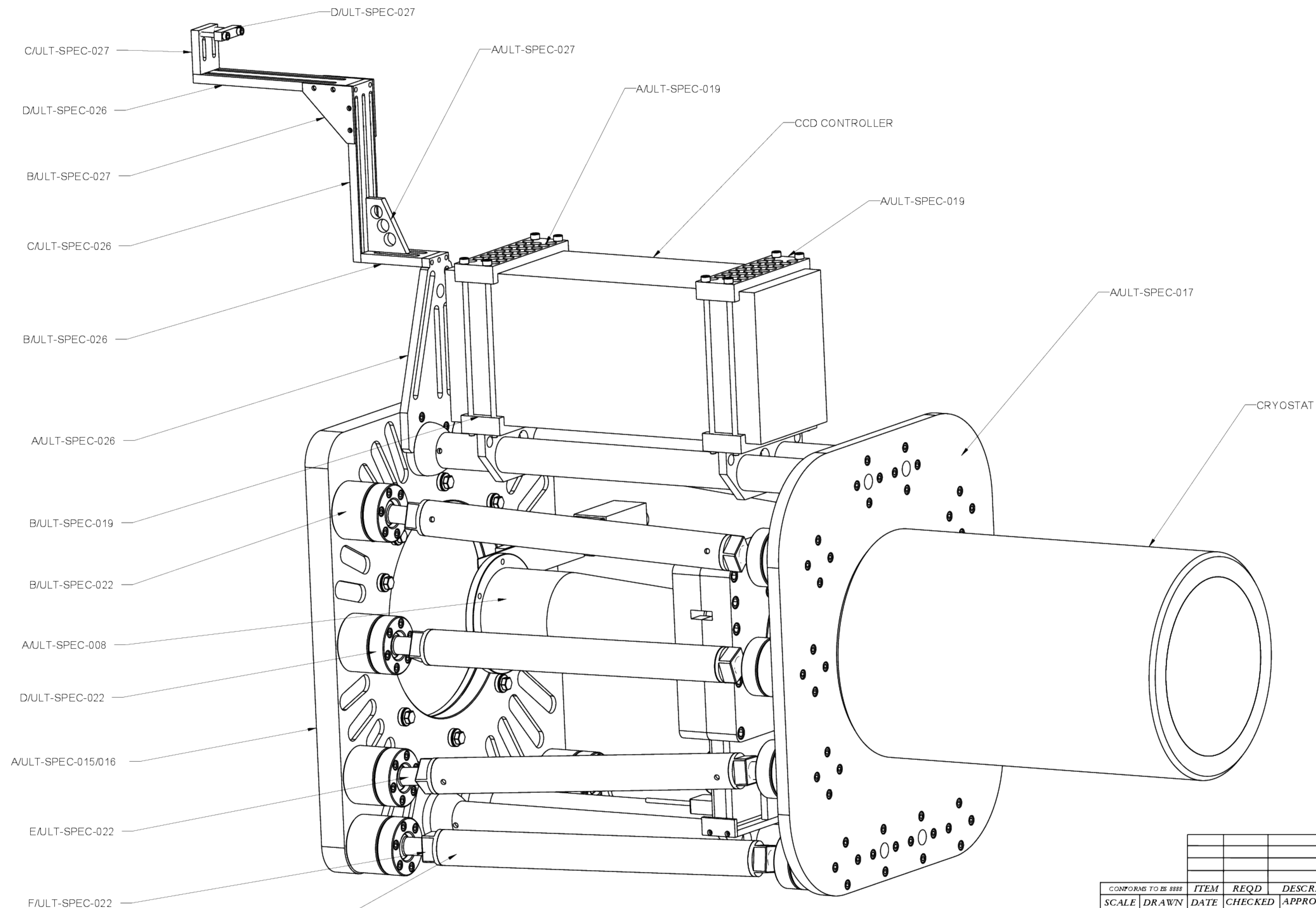


AREA THAI NATIONAL TELESCOPE "THAILAND"
 DESCRIPTION DETAILS OF LENS BARREL 3 ABUTMENT RINGS (TOP & BOTTOM), OPTICS CALIBRATION DISC
 THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION.
 DRAWING NUMBER **ULT-SPEC-028**
 REV A

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

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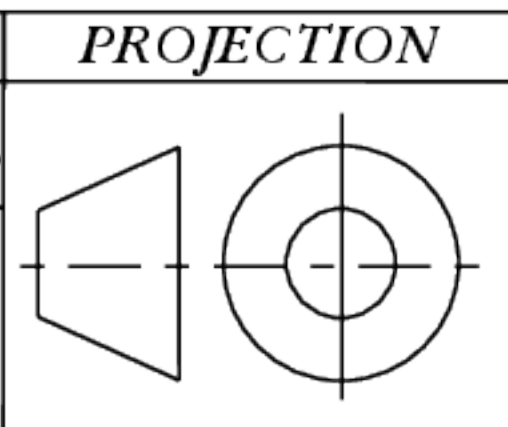


NOTE!
THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING No'S
ULT-SPEC-030 "GENERAL ARRANGEMENT, NON ACCESS SIDE"
ULT-SPEC-031 "SECTION THROUGH GENERAL ARRANGEMENT"

DO NOT SCALE
PROJECTION

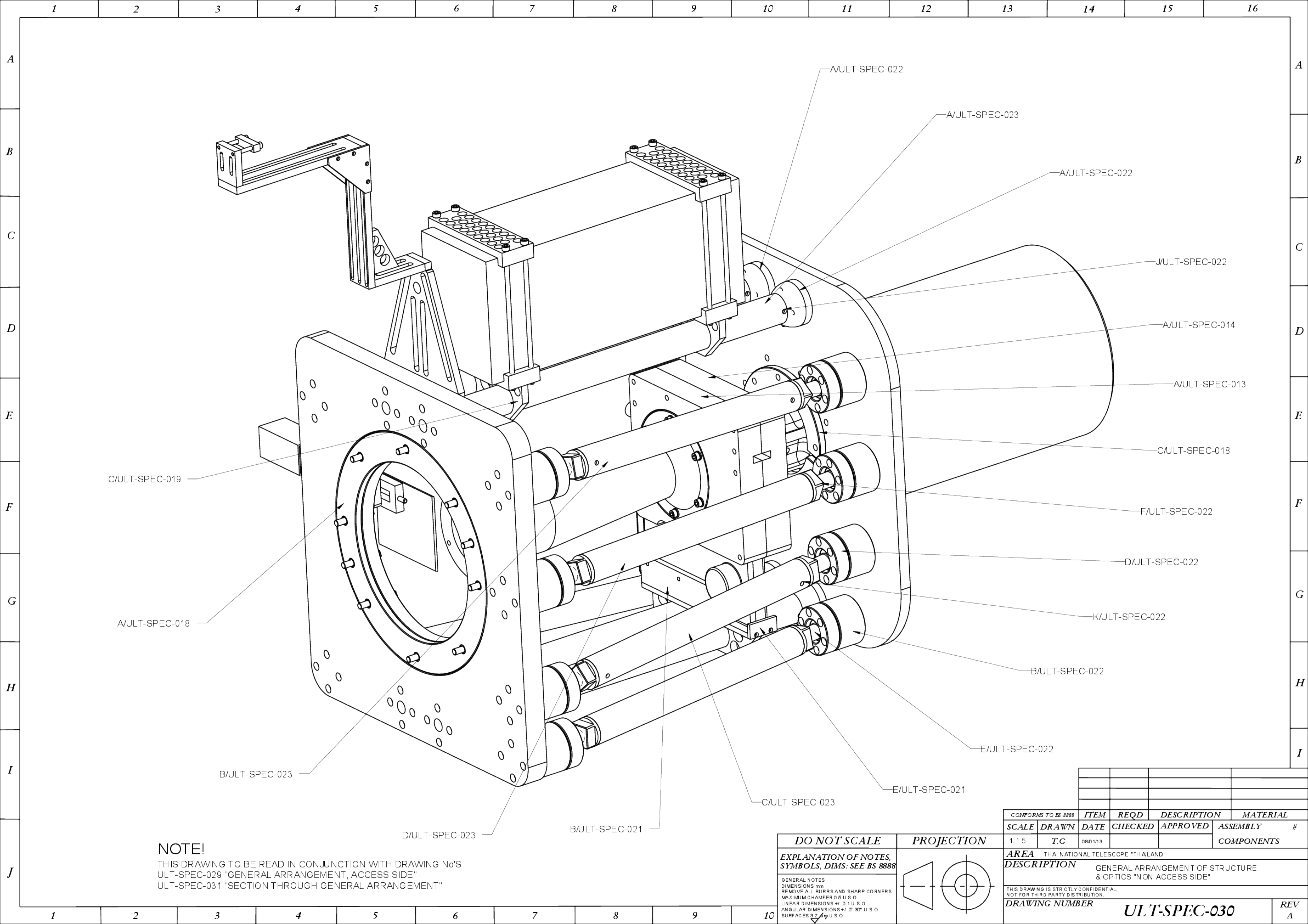
EXPLANATION OF NOTES, SYMBOLS, DIMS: SEE BS 8888

GENERAL NOTES
DIMENSIONS mm
REMOVE ALL BURRS AND SHARP CORNERS
MAXIMUM CHAMFER 0.5 U.S.O
LINEAR DIMENSIONS +/- 0.1 U.S.O
ANGULAR DIMENSIONS +/- 0.30° U.S.O
SURFACES 3.2 μm U.S.O



CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY #
1:1.5	T.G	08/01/13			COMPONENTS
AREA THAI NATIONAL TELESCOPE "THAILAND"					
DESCRIPTION GENERAL ARRANGEMENT OF STRUCTURE AND OPTICS "ACCESS SIDE"					
THIS DRAWING IS STRICTLY CONFIDENTIAL. NOT FOR THIRD PARTY DISTRIBUTION					
DRAWING NUMBER					REV
ULT-SPEC-029					A

1 2 3 4 5 6 7 8 9 10



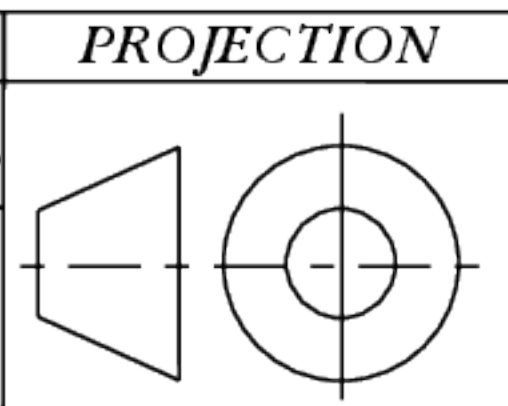
NOTE!

THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING No'S
 ULT-SPEC-029 "GENERAL ARRANGEMENT, ACCESS SIDE"
 ULT-SPEC-031 "SECTION THROUGH GENERAL ARRANGEMENT"

DO NOT SCALE
PROJECTION

*EXPLANATION OF NOTES,
 SYMBOLS, DIMS: SEE BS 8888*

GENERAL NOTES
 DIMENSIONS mm
 REMOVE ALL BURRS AND SHARP CORNERS
 MAXIMUM CHAMFER 0.5 U.S.O
 LINEAR DIMENSIONS +/- 0.1 U.S.O
 ANGULAR DIMENSIONS +/- 0.30 U.S.O
 SURFACES 3.2 / 1p U.S.O



CONFORMS TO BS 8888		ITEM	REQD	DESCRIPTION	MATERIAL
SCALE	DRAWN	DATE	CHECKED	APPROVED	ASSEMBLY #
1:1.5	T.G	08/01/13			COMPONENTS
AREA THAI NATIONAL TELESCOPE "THAILAND"					
DESCRIPTION GENERAL ARRANGEMENT OF STRUCTURE & OPTICS "NON ACCESS SIDE"					
THIS DRAWING IS STRICTLY CONFIDENTIAL NOT FOR THIRD PARTY DISTRIBUTION					
DRAWING NUMBER					REV
ULT-SPEC-030					A

