

Assembly Notes:

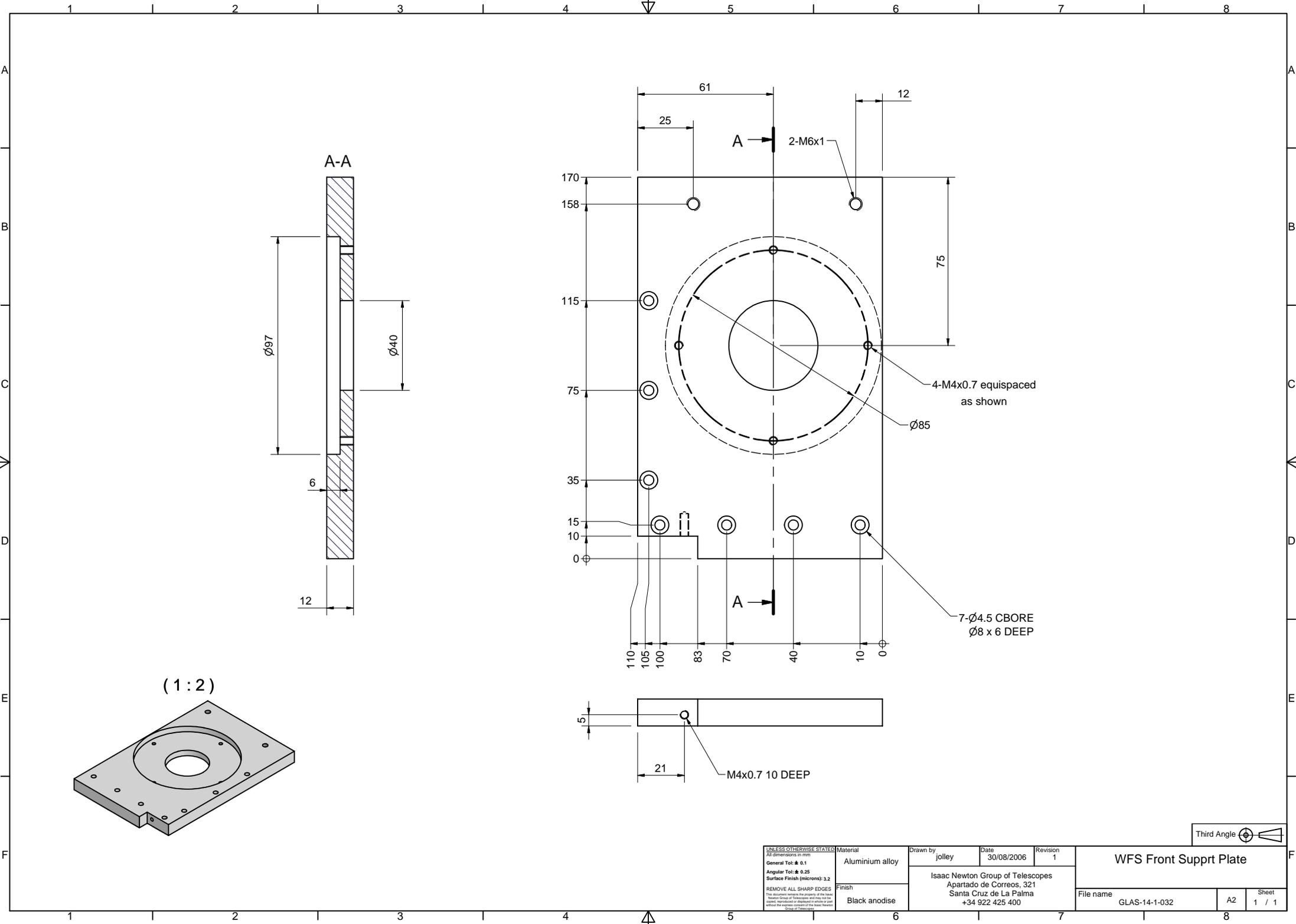
1. Items 6 & 13 to be replaced by item 8 if no tip/tilt alignment is required.

Parts List

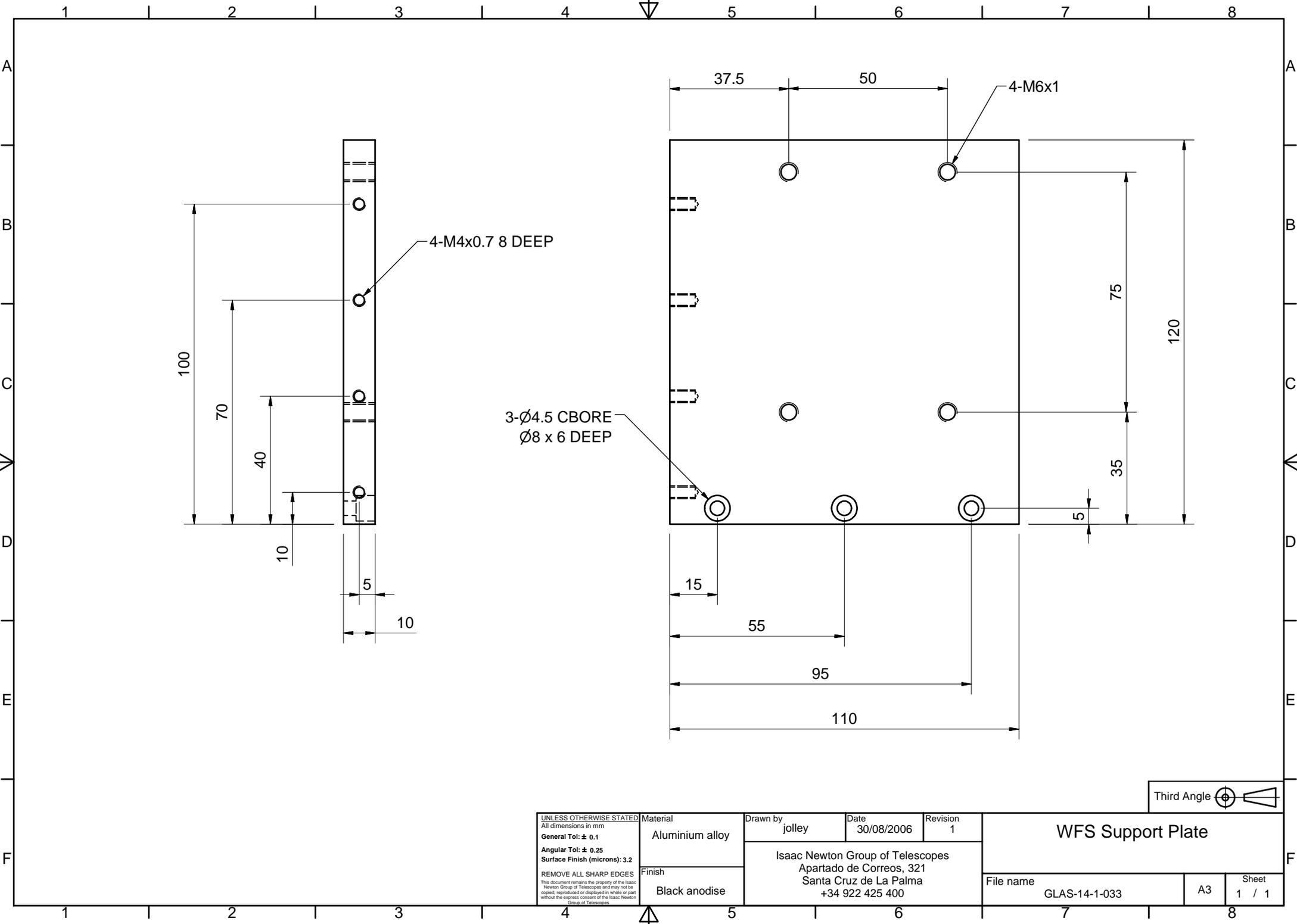
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	GLAS-14-1-032	WFS front support plate
2	1	GLAS-14-1-033	WFS support plate
3	1	GLAS-14-1-034	WFS support web
4	1	GLAS-14-1-035	L7-L8 tube clamp
5	1	GLAS-14-1-036	L7-L8 support tube
6	1	GLAS-14-1-037	WFS main base plate
7	1	GLAS-14-1-038	WFS bellow support
8	1	GLAS-14-1-039	WFS support block
9	1	GLAS-14-1-040	Thorlabs LT102M bracket (mod.)
10	2	LT1-M	25mm translation stage
11	1	LGS WFS	
12	2	Thorlabs XT66P2	XT66 metric rail carriage
13	1	Newport-M-36	Tip tilt stage
14	1	astron tube L7-L8	
15	1	ISO 4762 - M4 x 6	Hexagon Socket Head Cap Screw
16	15	BS 4464 - M4 Form A	Spring Washer
17	10	ISO 4762 - M4 x 12	Hexagon Socket Head Cap Screw
18	5	ISO 4762 - M4 x 16	Hexagon Socket Head Cap Screw
19	15	ISO 4762 - M6 x 12	Hexagon Socket Head Cap Screw
20	8	ISO 4762 - M6 x 16	Hexagon Socket Head Cap Screw



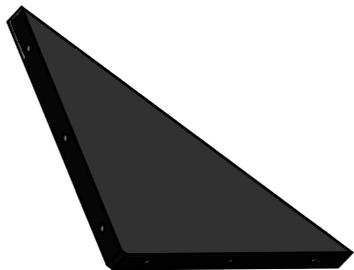
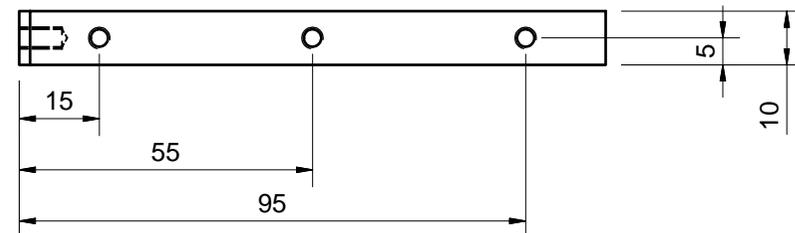
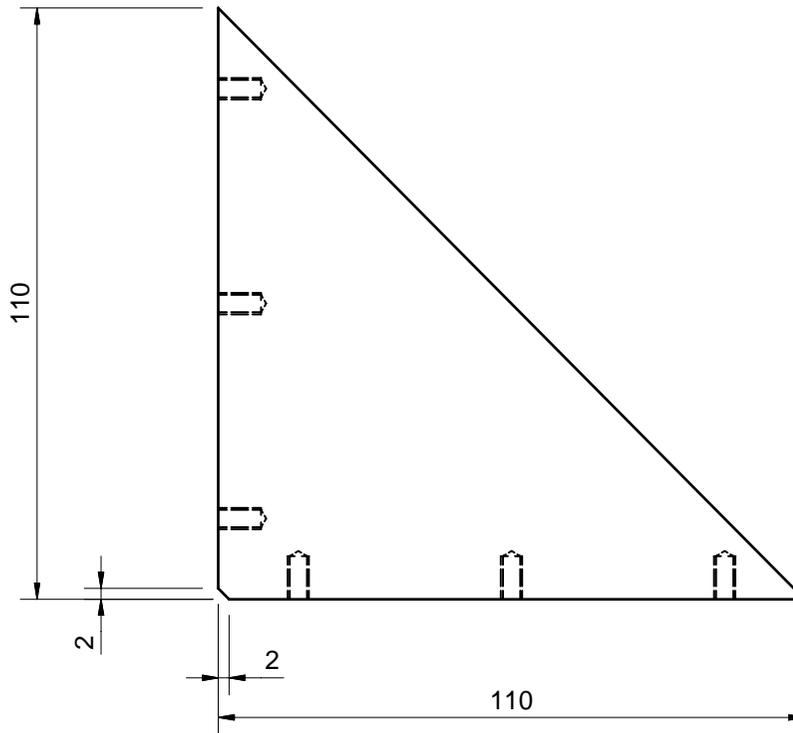
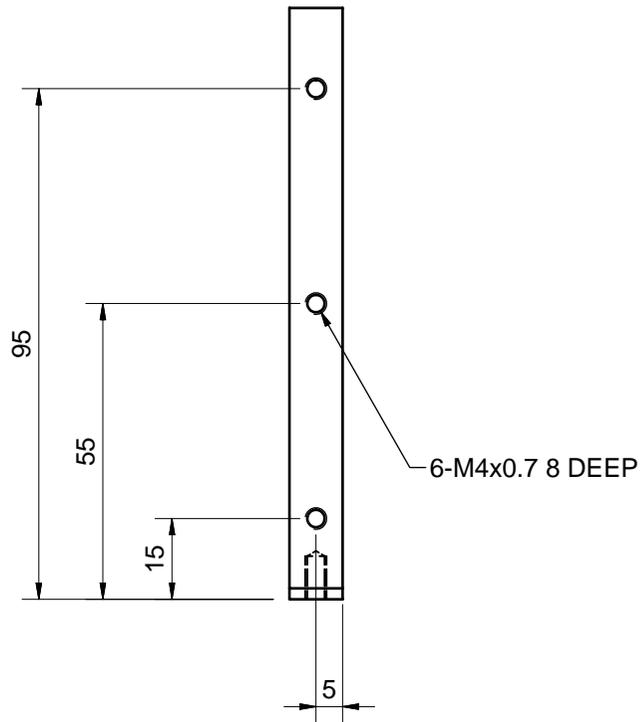
<small>UNLESS OTHERWISE STATED: All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2</small>	Material	Drawn by jolley	Date 29/08/2006	Revision 1	LGS WFS Support
	Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			
					Sheet 1 / 1



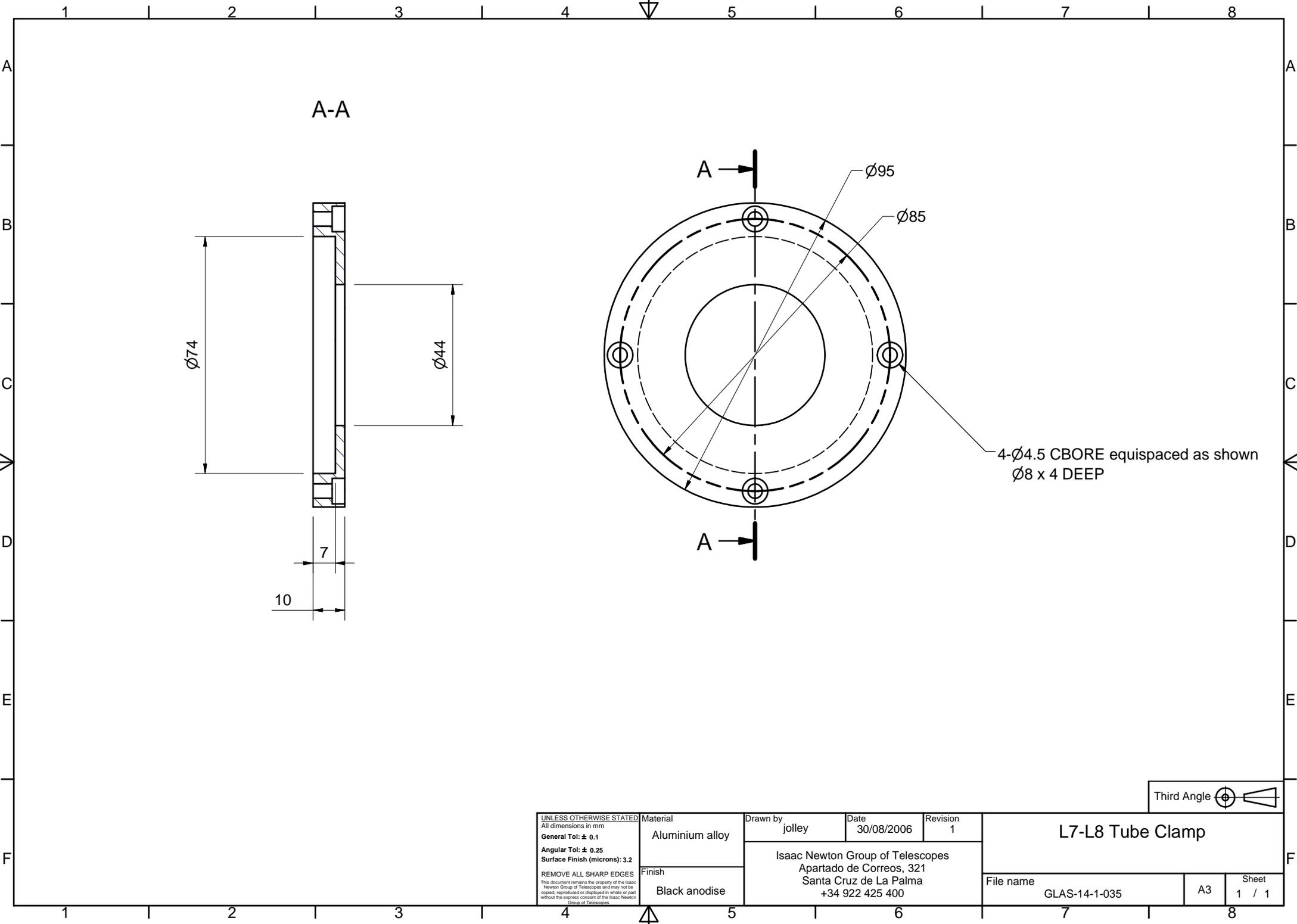
<small>UNLESS OTHERWISE STATED: All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document contains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or distributed in any form without the express written consent of the Isaac Newton Group of Telescopes.</small> </small>	Material	Aluminium alloy	Drawn by	jolley	Date	30/08/2006	Revision	1	WFS Front Supprt Plate
	Finish	Black anodise	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			File name	GLAS-14-1-032	Sheet	



<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes</small>	Material	Drawn by	Date	Revision	WFS Support Plate		
	Aluminium alloy	jolley	30/08/2006	1			
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400				File name	Sheet	
Black anodise					GLAS-14-1-033	A3 1 / 1	



UNLESS OTHERWISE STATED All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes</small>	Material	Drawn by	Date	Revision	WFS Support Web		
	Aluminium alloy	jolley	30/08/2006	1			
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400				File name	Sheet	
Black anodise					GLAS-14-1-034	A3	1 / 1



A-A

Ø74

Ø44

10

7

A

A

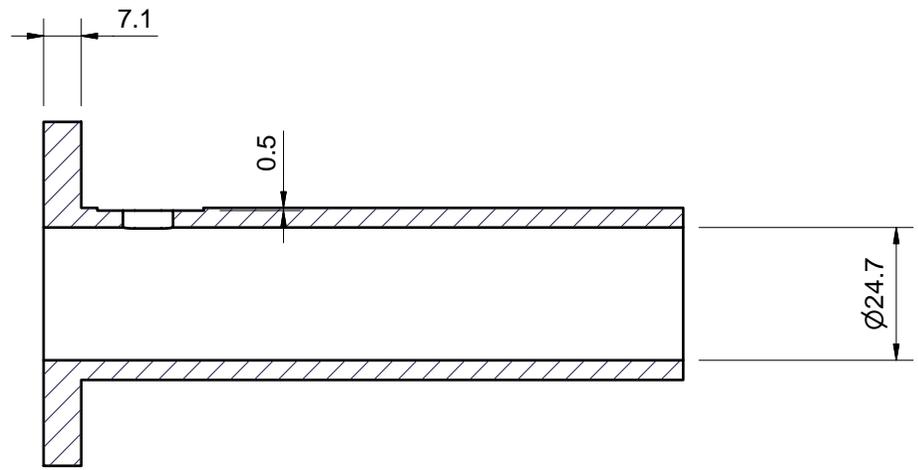
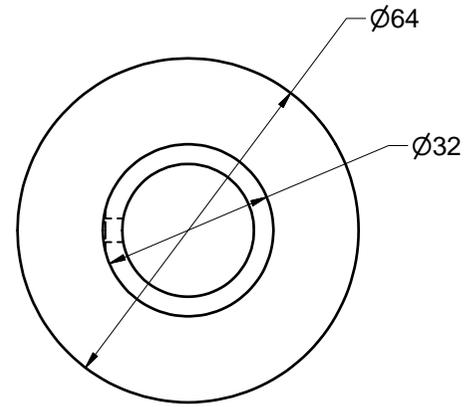
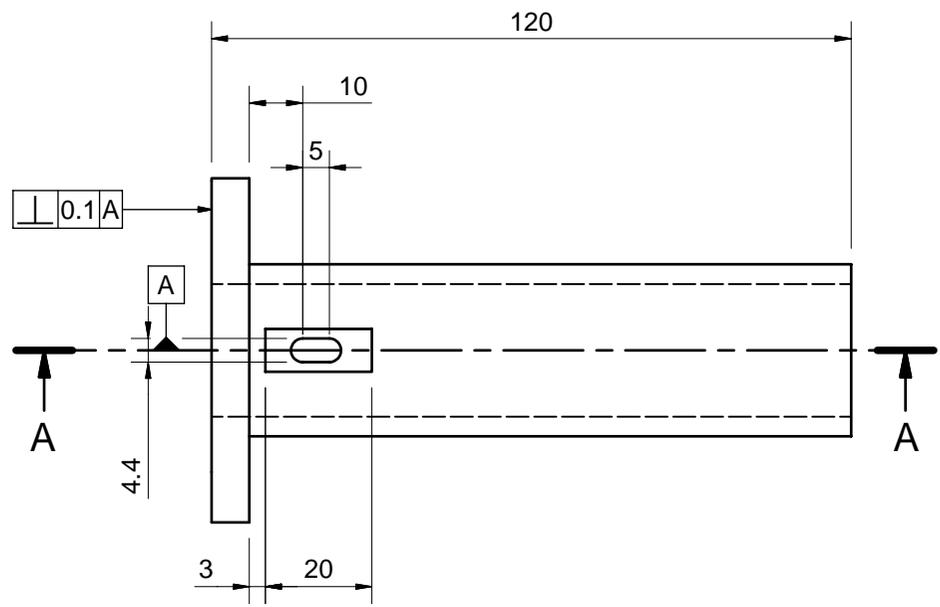
Ø95

Ø85

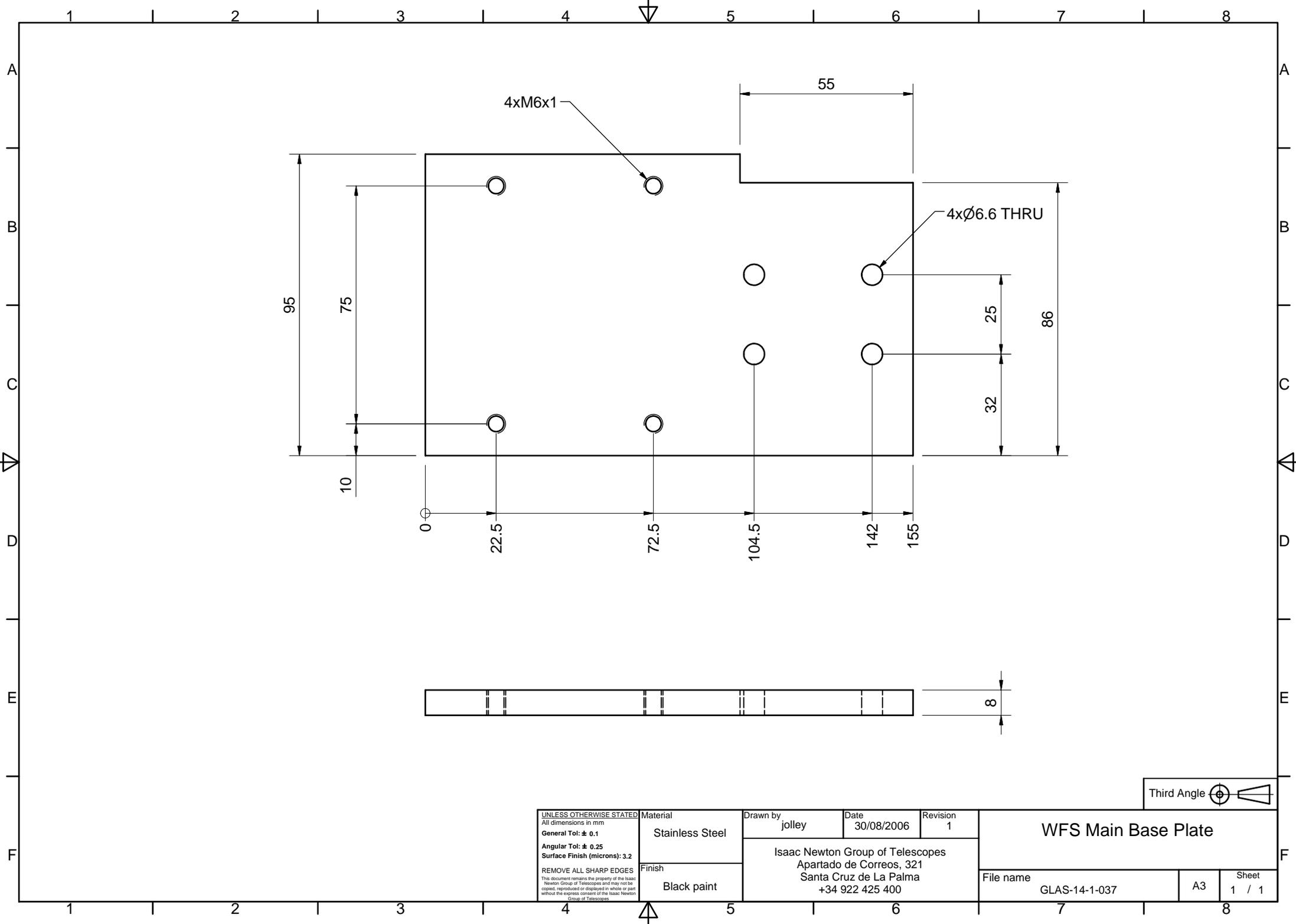
4-Ø4.5 CBORE equispaced as shown
Ø8 x 4 DEEP



<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes</small>	Material	Drawn by	Date	Revision	<h3>L7-L8 Tube Clamp</h3>		
	Aluminium alloy	jolley	30/08/2006	1			
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400				File name	Sheet	
Black anodise					GLAS-14-1-035	A3	1 / 1



<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes</small>	Material	Drawn by	Date	Revision	L7-L8 Support Tube		
	Aluminium alloy	jolley	30/08/2006	1			
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400				File name	Sheet	
Black anodise					GLAS-14-1-036	A3	1 / 1

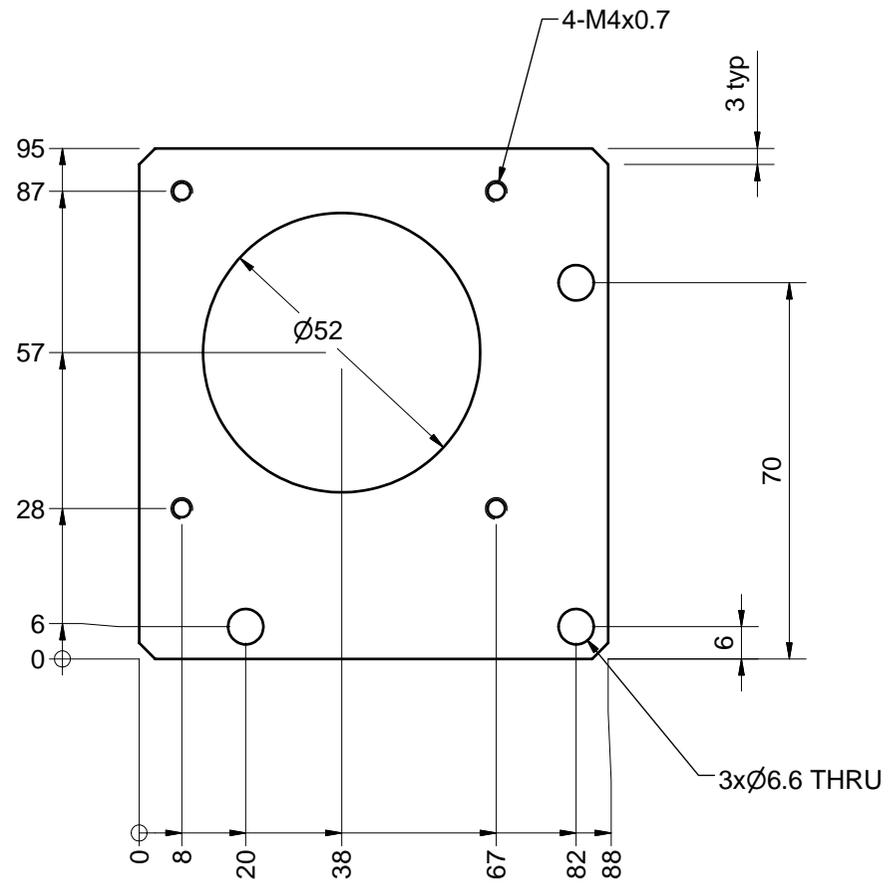
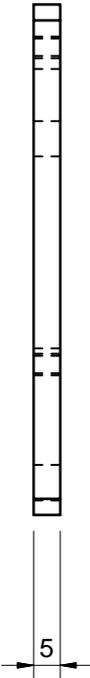
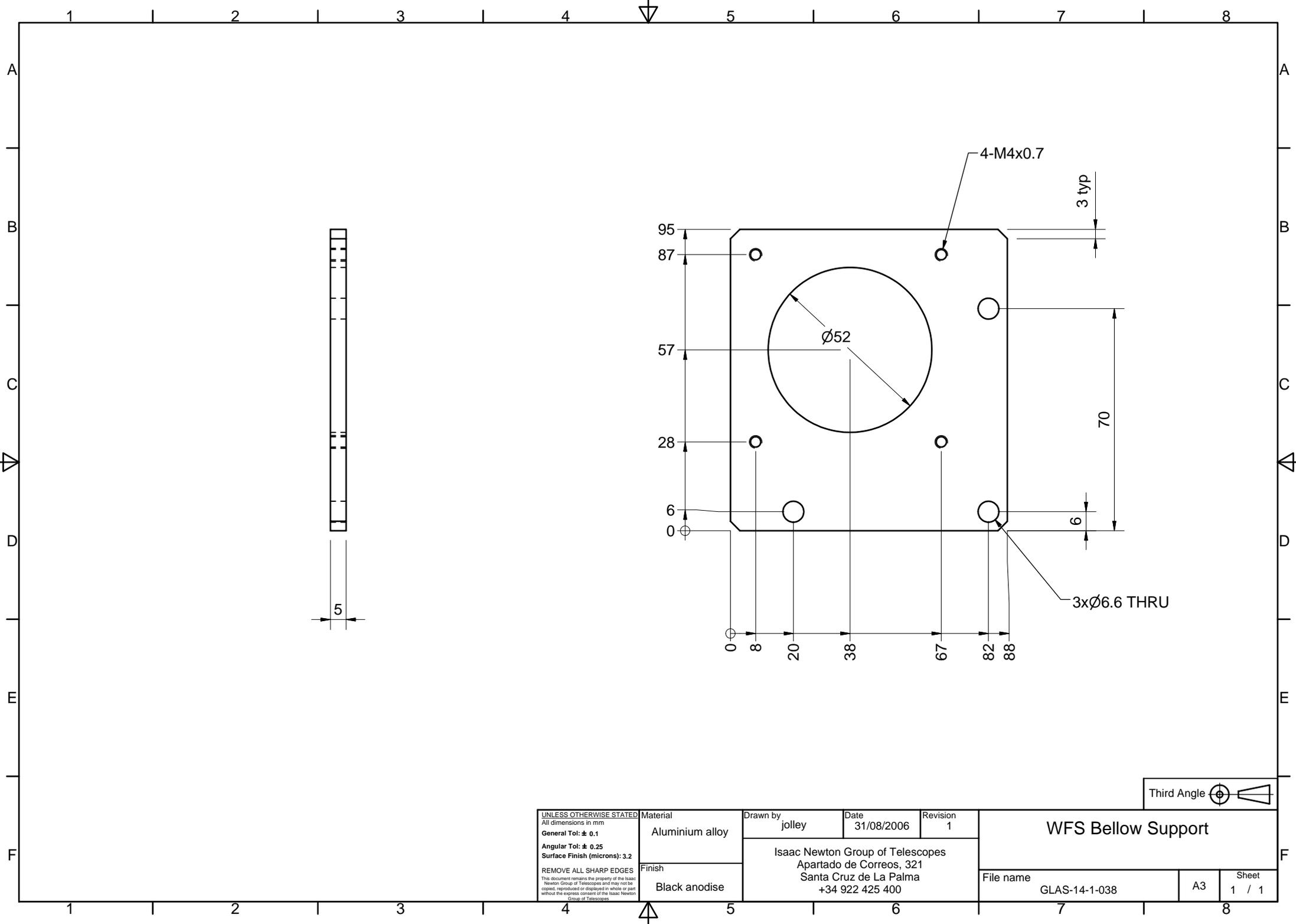


UNLESS OTHERWISE STATED
 All dimensions in mm
 General Tol: ± 0.1
 Angular Tol: ± 0.25
 Surface Finish (microns): 3.2
 REMOVE ALL SHARP EDGES
 This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes

Material
 Stainless Steel
 Finish
 Black paint

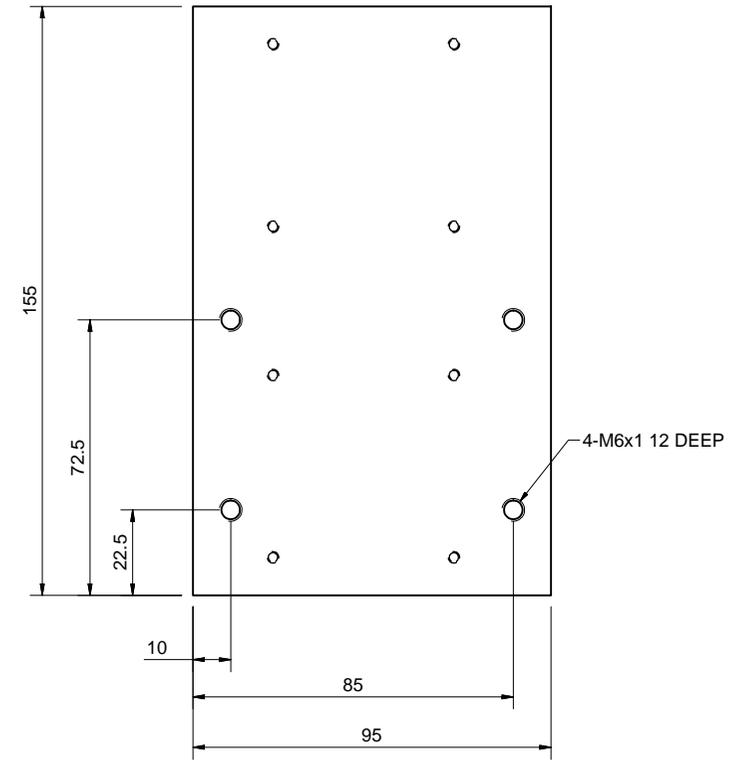
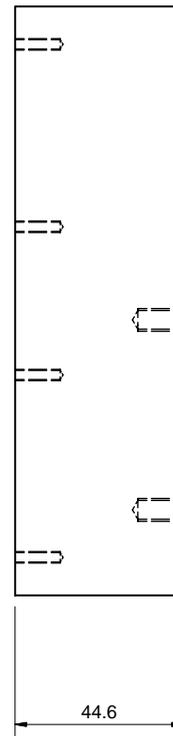
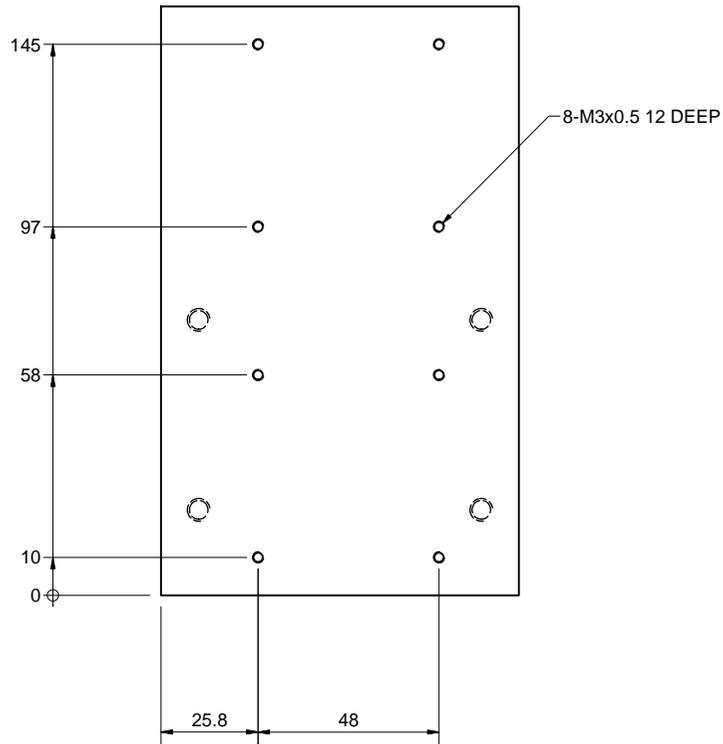
Drawn by
 jolley
 Date
 30/08/2006
 Revision
 1
 Isaac Newton Group of Telescopes
 Apartado de Correos, 321
 Santa Cruz de La Palma
 +34 922 425 400

WFS Main Base Plate
 File name
 GLAS-14-1-037
 A3
 Sheet
 1 / 1

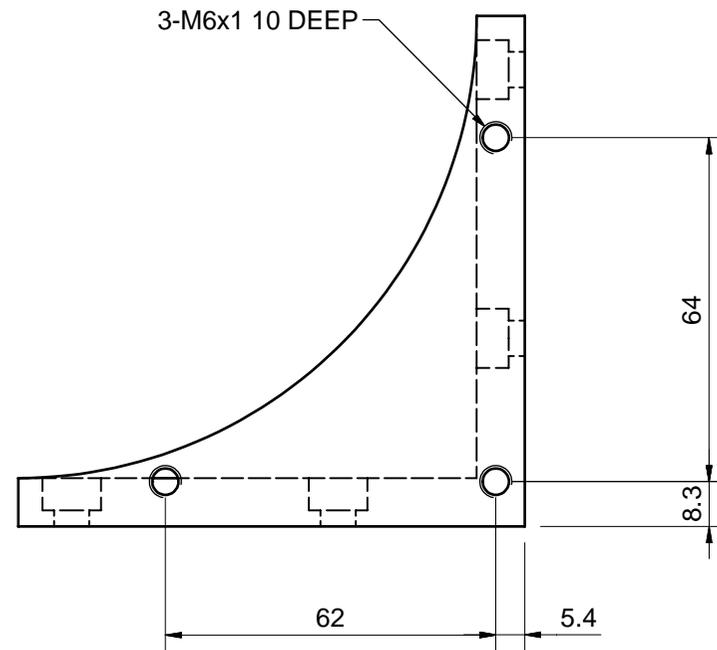
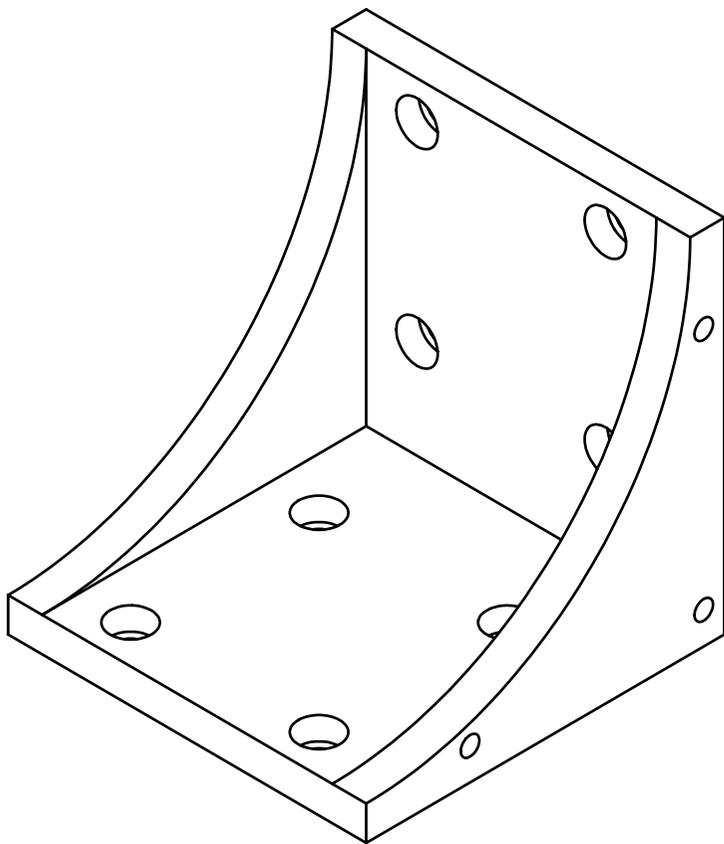


Third Angle

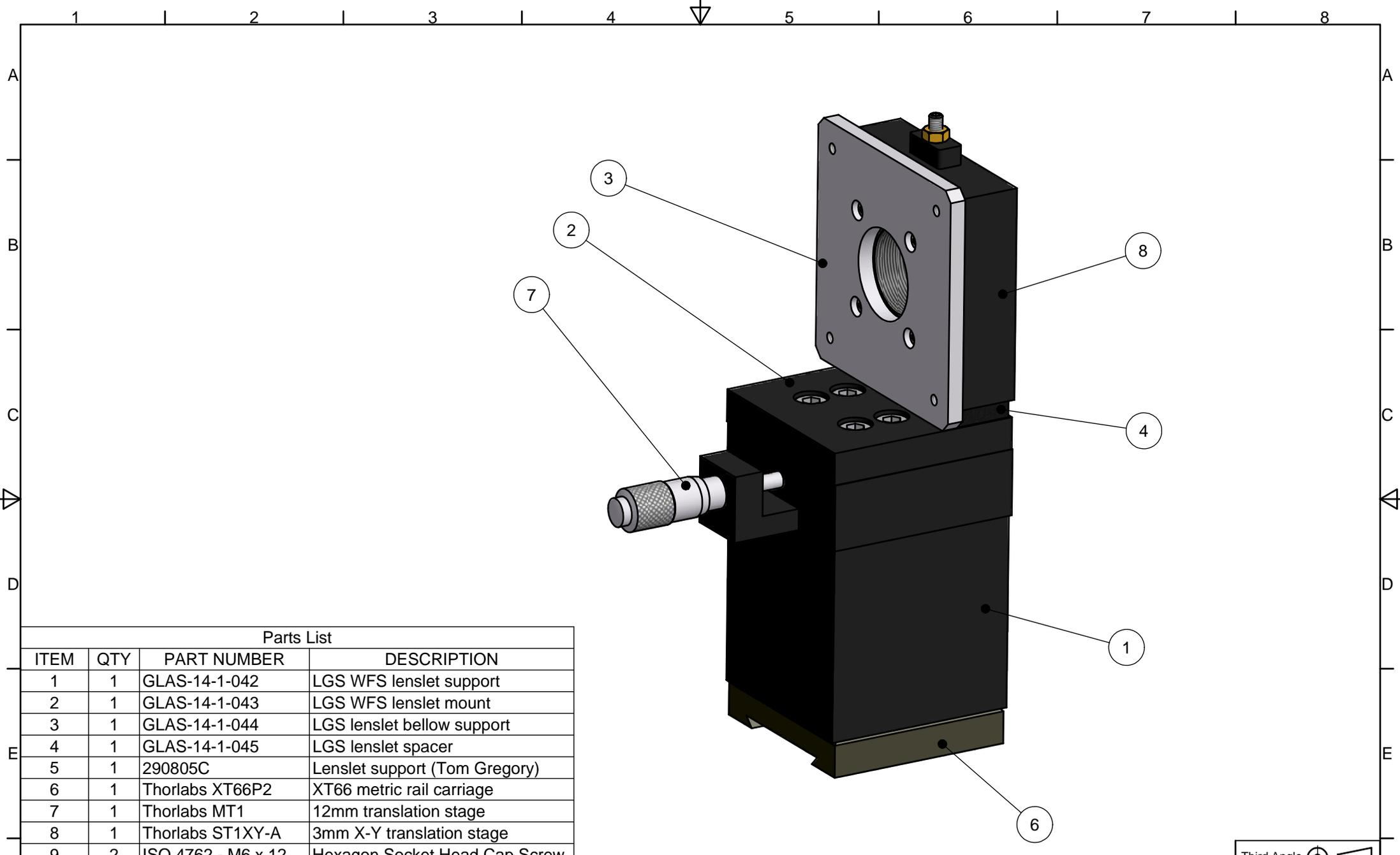
<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes</small>	Material	Drawn by	Date	Revision	WFS Bellow Support		
	Aluminium alloy	jolley	31/08/2006	1			
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400				File name	Sheet	
Black anodise					GLAS-14-1-038	A3 1 / 1	



<small>UNLESS OTHERWISE STATED: All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or distributed in any form without the written consent of the Isaac Newton Group of Telescopes.</small> </small>	Material	Aluminium alloy	Drawn by	jolley	Date	31/08/2006	Revision	1	WFS Support Block		
	Finish	Black anodise	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			File name	GLAS-14-1-039	A2			



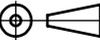
<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes</small>	Material	Drawn by jolley	Date 31/08/2006	Revision 1	Modified Thorlabs LT102M Bracket		
	Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400					

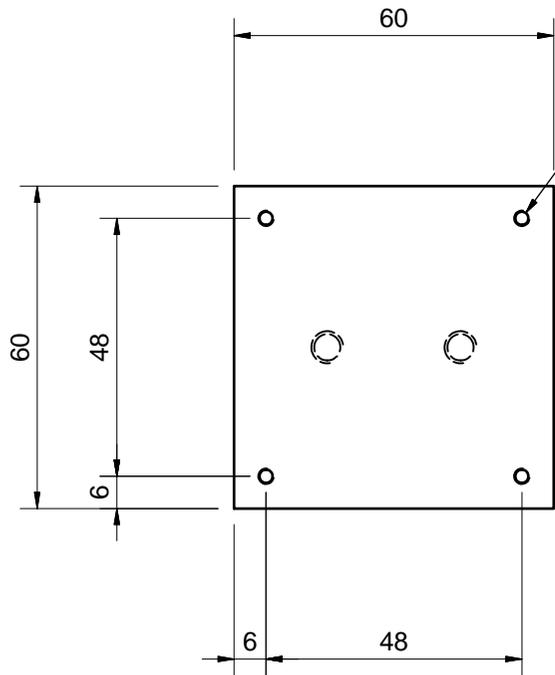


Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	GLAS-14-1-042	LGS WFS lenslet support
2	1	GLAS-14-1-043	LGS WFS lenslet mount
3	1	GLAS-14-1-044	LGS lenslet bellow support
4	1	GLAS-14-1-045	LGS lenslet spacer
5	1	290805C	Lenslet support (Tom Gregory)
6	1	Thorlabs XT66P2	XT66 metric rail carriage
7	1	Thorlabs MT1	12mm translation stage
8	1	Thorlabs ST1XY-A	3mm X-Y translation stage
9	2	ISO 4762 - M6 x 12	Hexagon Socket Head Cap Screw
10	4	ISO 4762 - M6 x 10	Hexagon Socket Head Cap Screw
11	2	ISO 4762 - M4 x 16	Hexagon Socket Head Cap Screw
12	4	ANSI B18.3 - No. 4-48 - 1/4	Hexagon Socket Button Head Cap Screw
13	4	ISO 4762 - M3 x 16	Hexagon Socket Head Cap Screw

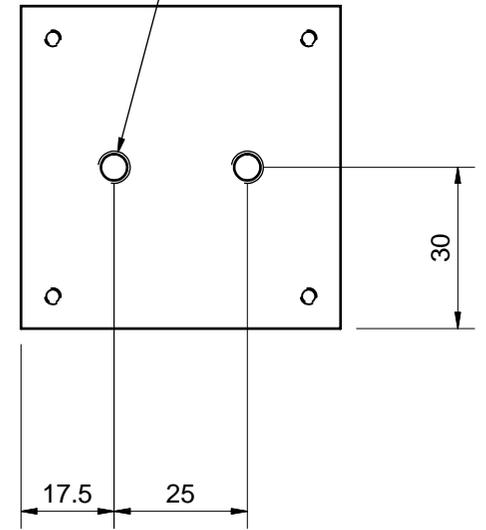
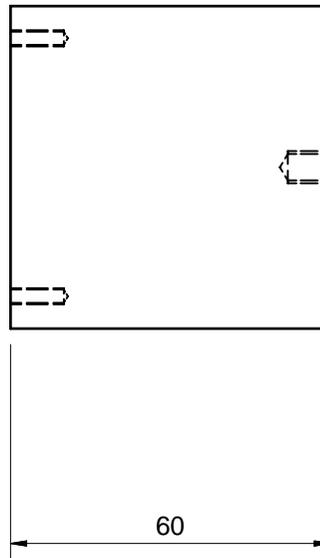
UNLESS OTHERWISE STATED
 All dimensions in mm
 General Tol: ± 0.1
 Angular Tol: ± 0.25
 Surface Finish (microns): 3.2
 REMOVE ALL SHARP EDGES
 This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes

Material
 Drawn by jolley
 Date 31/08/2006
 Revision 1
 Isaac Newton Group of Telescopes
 Apartado de Correos, 321
 Santa Cruz de La Palma
 +34 922 425 400

Third Angle 
LGS WFS Lenslet Holder Assembly
 File name GLAS-14-1-041
 A3
 Sheet 1 / 1



4-M3x0.5 10 DEEP



2-M6x1 8 DEEP

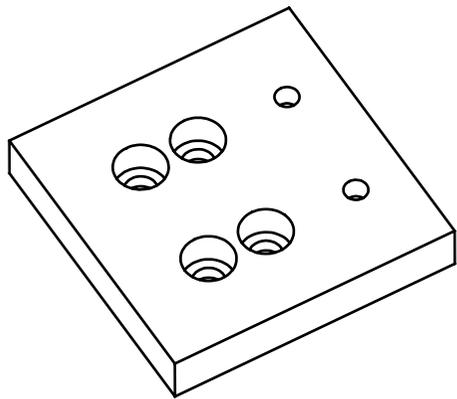
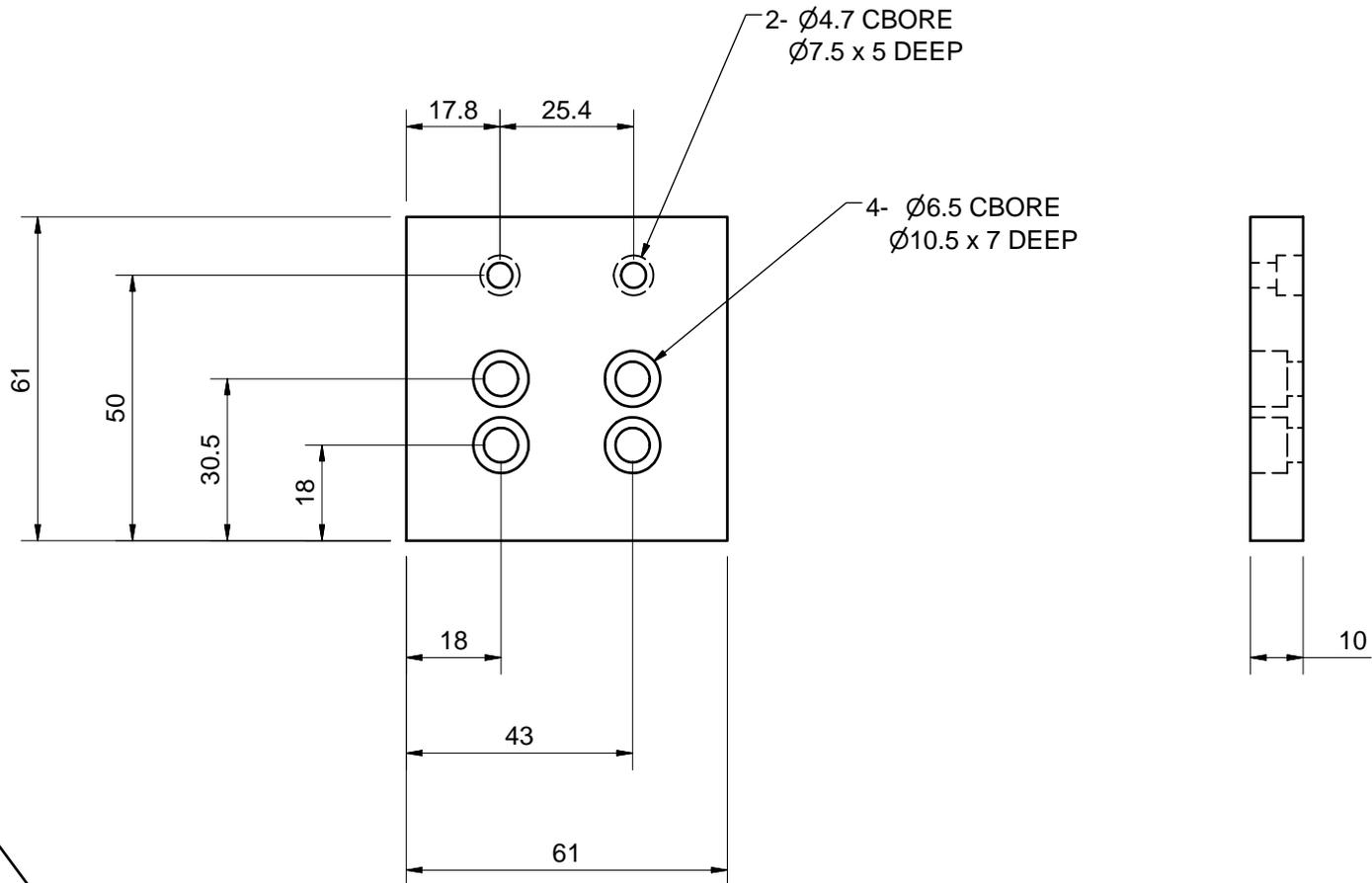


UNLESS OTHERWISE STATED
 All dimensions in mm
 General Tol: ± 0.1
 Angular Tol: ± 0.25
 Surface Finish (microns): 3.2
 REMOVE ALL SHARP EDGES
 This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes

Material
 Aluminium alloy
 Finish
 Black anodise

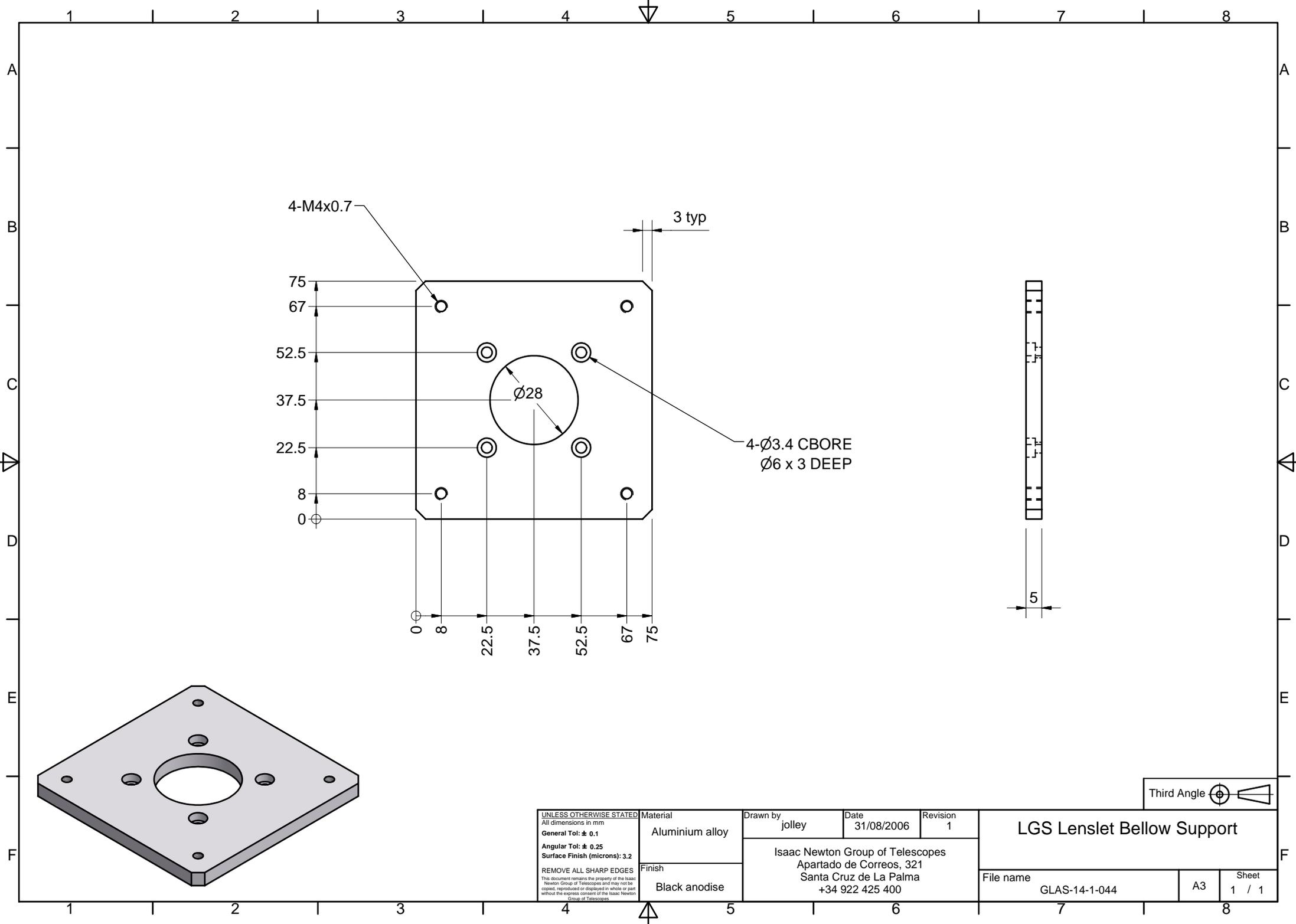
Drawn by
 jolley
 Date
 31/08/2006
 Revision
 1
 Isaac Newton Group of Telescopes
 Apartado de Correos, 321
 Santa Cruz de La Palma
 +34 922 425 400

LGS WFS Lenslet Support
 File name
 GLAS-14-1-042
 A3
 Sheet
 1 / 1



Third Angle

<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes</small>	Material	Drawn by	Date	Revision	LGS WFS Lenslet Mount		
	Aluminium alloy	jolley	31/08/2006	1			
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400				File name	Sheet	
Black anodise					GLAS-14-1-043	A3 1 / 1	



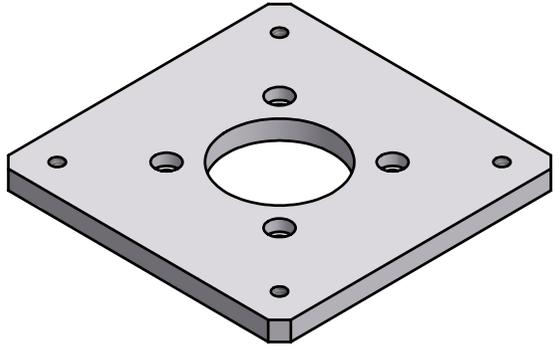
4-M4x0.7

3 typ

Ø28

4-Ø3.4 CBORE
Ø6 x 3 DEEP

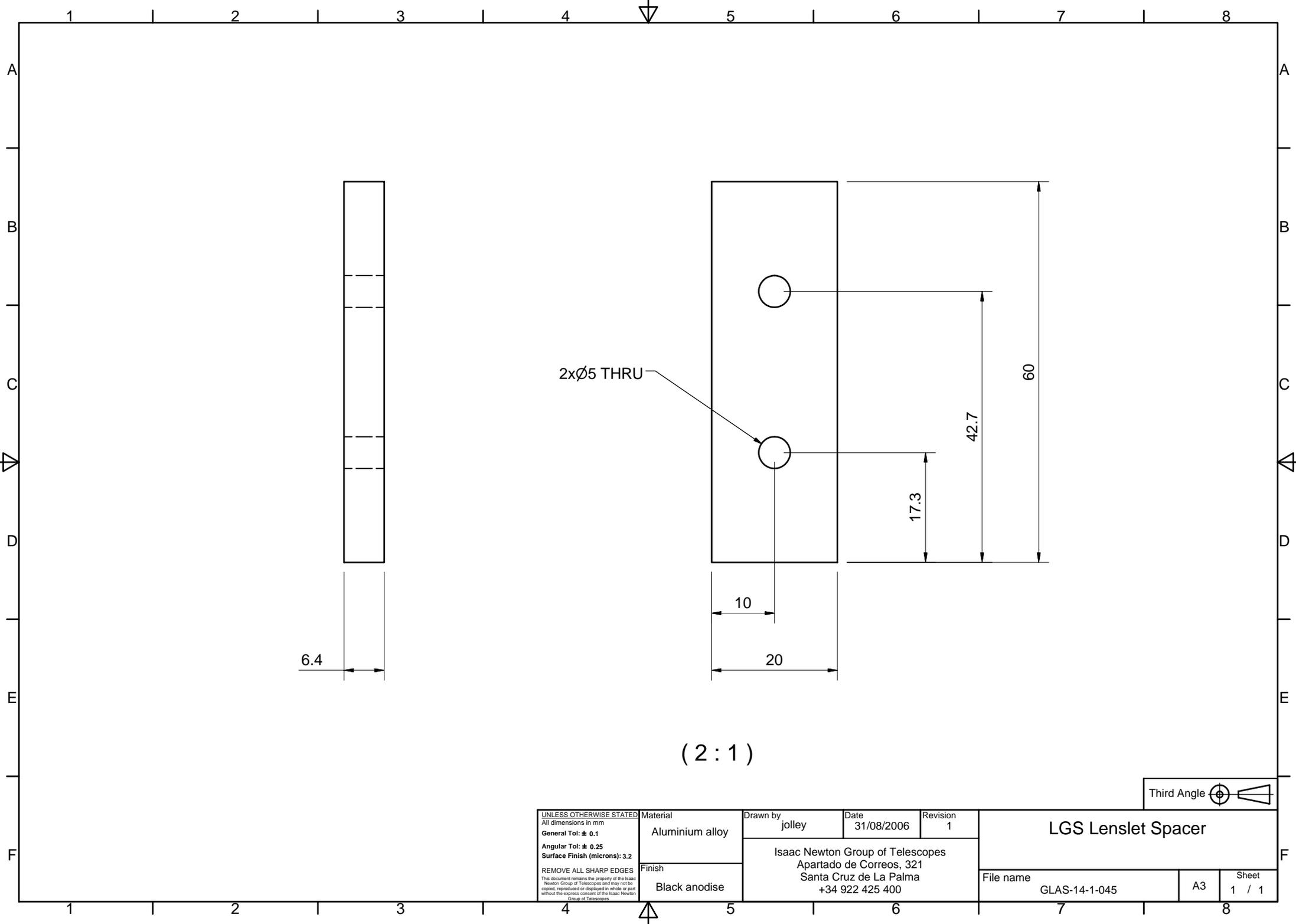
5



UNLESS OTHERWISE STATED All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes</small>	Material	Drawn by	Date	Revision
	Aluminium alloy	jolley	31/08/2006	1
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			
Black anodise				

LGS Lenslet Bellow Support

File name	Sheet
GLAS-14-1-044	A3 1 / 1



2xØ5 THRU

6.4

10

20

17.3

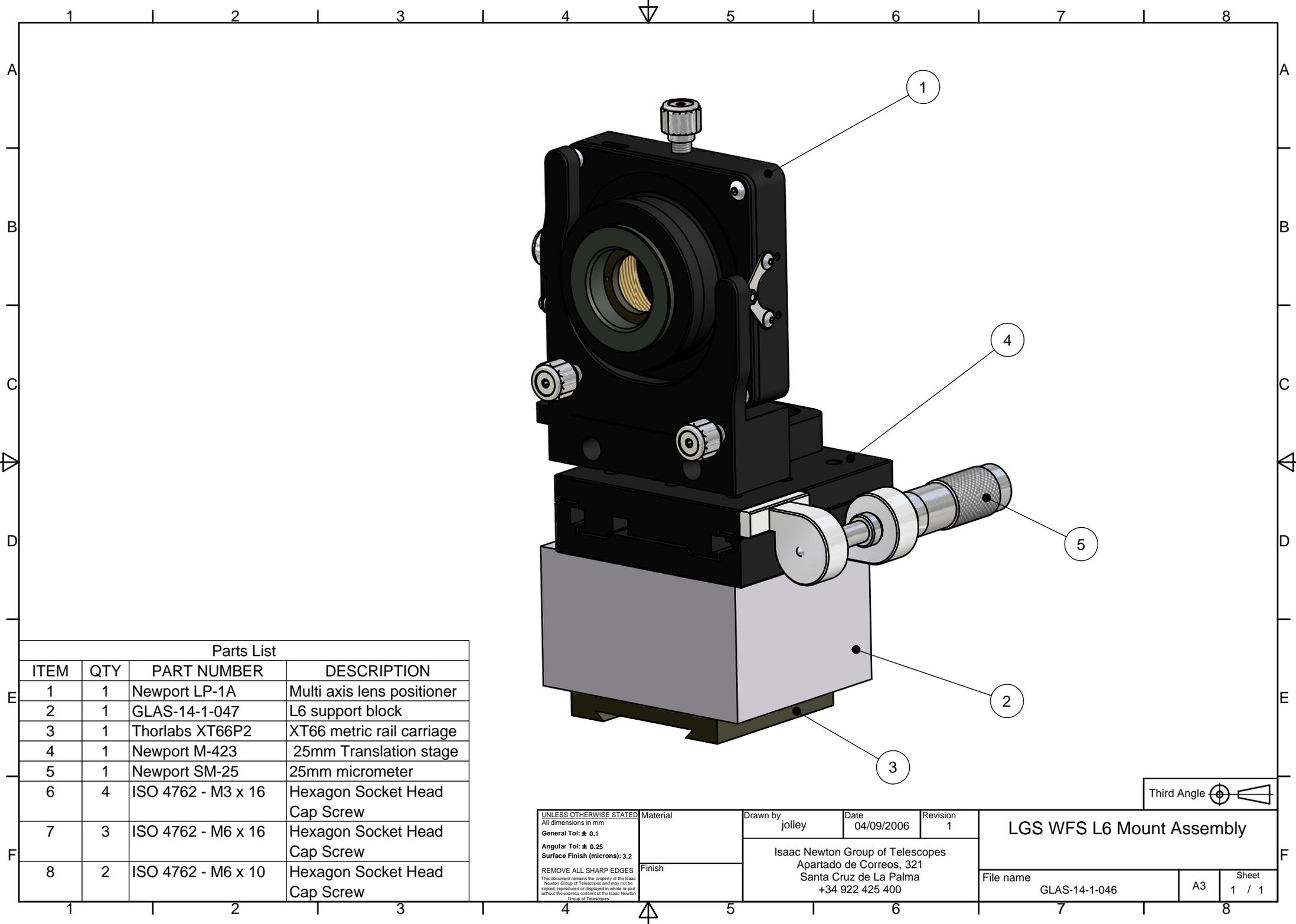
42.7

60

(2:1)



<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes</small>	Material	Drawn by	Date	Revision	LGS Lenslet Spacer		
	Aluminium alloy	jolley	31/08/2006	1			
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400				File name	Sheet	
Black anodise					GLAS-14-1-045	A3 1 / 1	

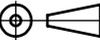


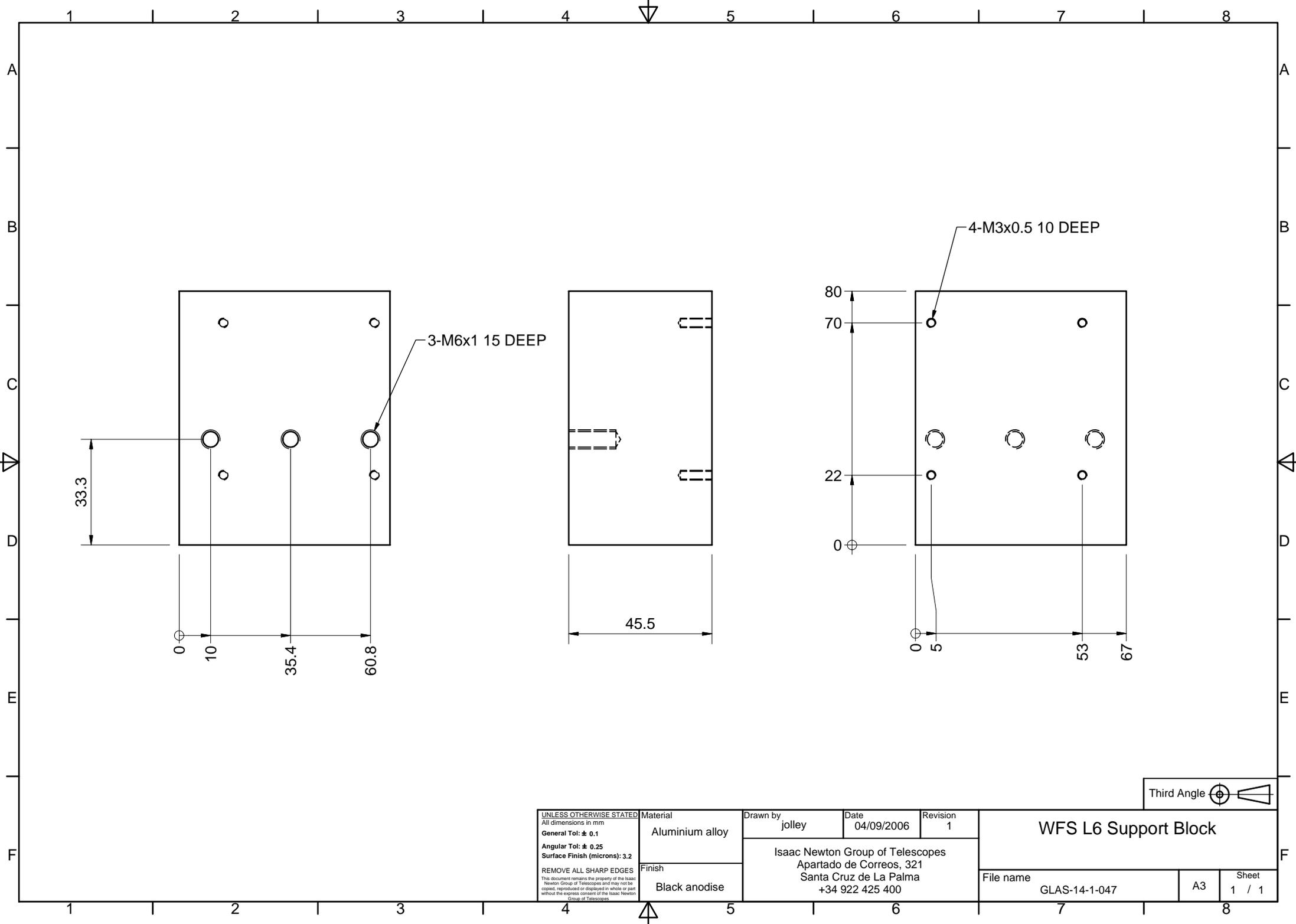
Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	Newport LP-1A	Multi axis lens positioner
2	1	GLAS-14-1-047	L6 support block
3	1	Thorlabs XT66P2	XT66 metric rail carriage
4	1	Newport M-423	25mm Translation stage
5	1	Newport SM-25	25mm micrometer
6	4	ISO 4762 - M3 x 16	Hexagon Socket Head Cap Screw
7	3	ISO 4762 - M6 x 16	Hexagon Socket Head Cap Screw
8	2	ISO 4762 - M6 x 10	Hexagon Socket Head Cap Screw

UNLESS OTHERWISE STATED
 All dimensions in mm
 General Tol: ± 0.1
 Angular Tol: ± 0.25
 Surface Finish (microns): 3.2
 REMOVE ALL SHARP EDGES
 This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes

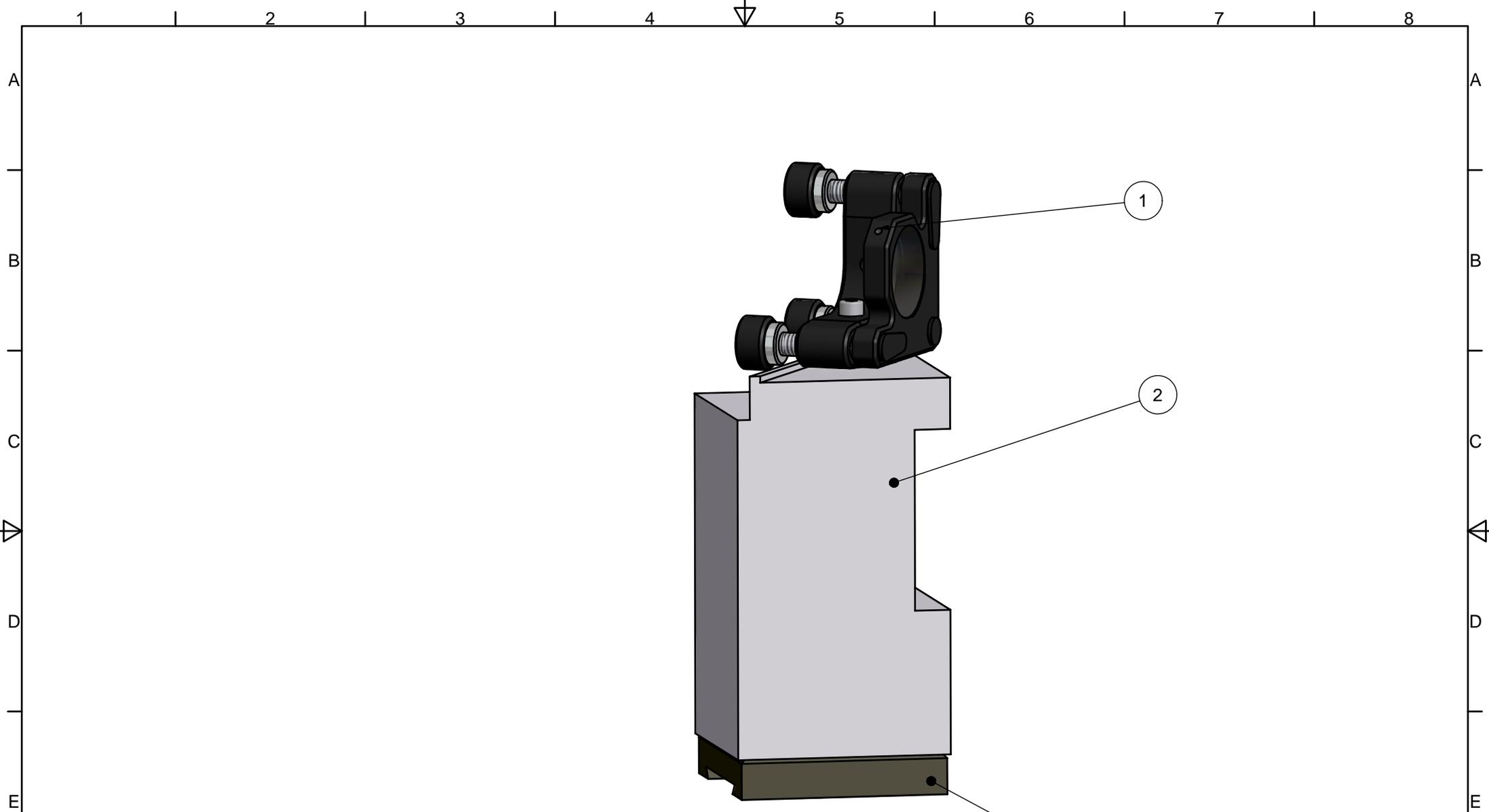
Material
 Drawn by jolley
 Date 04/09/2006
 Revision 1
 Isaac Newton Group of Telescopes
 Apartado de Correos, 321
 Santa Cruz de La Palma
 +34 922 425 400

Third Angle 
LGS WFS L6 Mount Assembly
 File name GLAS-14-1-046
 A3
 Sheet 1 / 1



Third Angle

UNLESS OTHERWISE STATED All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes</small>	Material	Drawn by	Date	Revision	WFS L6 Support Block		
	Aluminium alloy	jolley	04/09/2006	1			
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400				File name	Sheet	
Black anodise					GLAS-14-1-047	A3	1 / 1



Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	Thorlabs KS1D	1" mirror mount
2	1	GLAS-14-1-049	WFS mirror support block
3	1	Thorlabs XT66P2	XT66 metric rail carriage
4	4	ISO 4762 - M3 x 10	Hexagon Socket Head Cap Screw
5	1	ISO 4762 - M4 x 25	Hexagon Socket Head Cap Screw

UNLESS OTHERWISE STATED
 All dimensions in mm
 General Tol: ± 0.1
 Angular Tol: ± 0.25
 Surface Finish (microns): 3.2
 REMOVE ALL SHARP EDGES
 This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes

Material

Finish

Drawn by
 jolley

Date
 04/09/2006

Revision
 1

Isaac Newton Group of Telescopes
 Apartado de Correos, 321
 Santa Cruz de La Palma
 +34 922 425 400

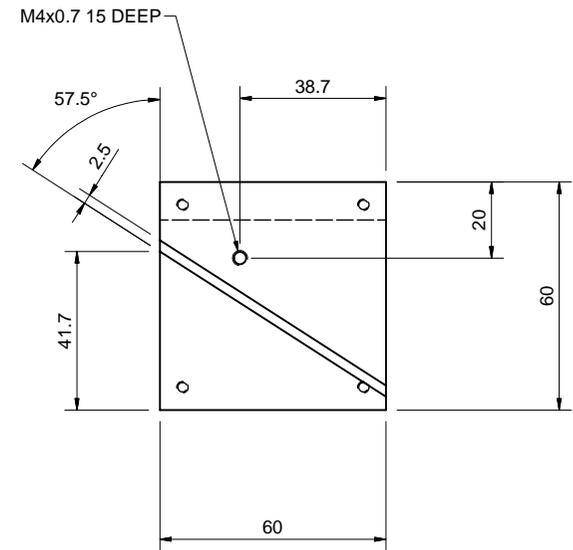
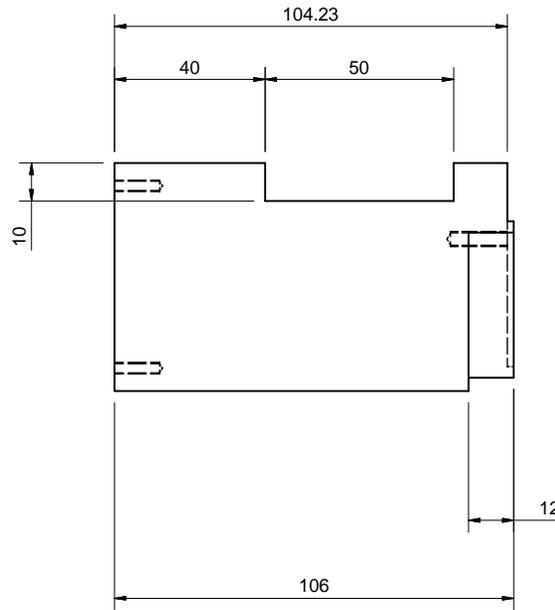
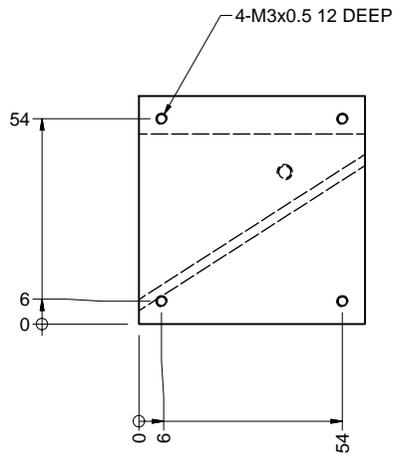
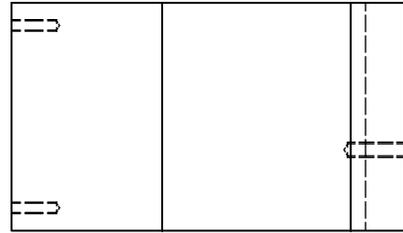
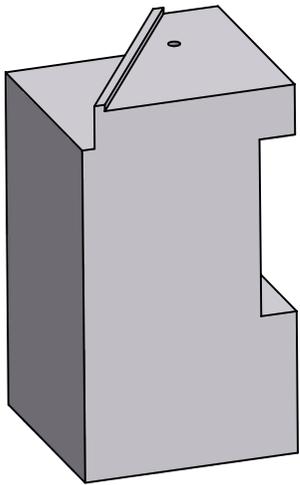
WFS 1" Mirror Rail Mount

File name
 GLAS-14-1-048

A3

Sheet
 1 / 1





<small>UNLESS OTHERWISE STATED: All dimensions in mm General Tol: ± 0.1 Angular Tol: ± 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or distributed in any form without the written consent of the Isaac Newton Group of Telescopes.</small> </small>	Material	Aluminium alloy	Drawn by	jolley	Date	04/09/2006	Revision	1	WFS Mirror Support Block	
	Finish	Black anodise	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			File name	GLAS-14-1-049	A2		