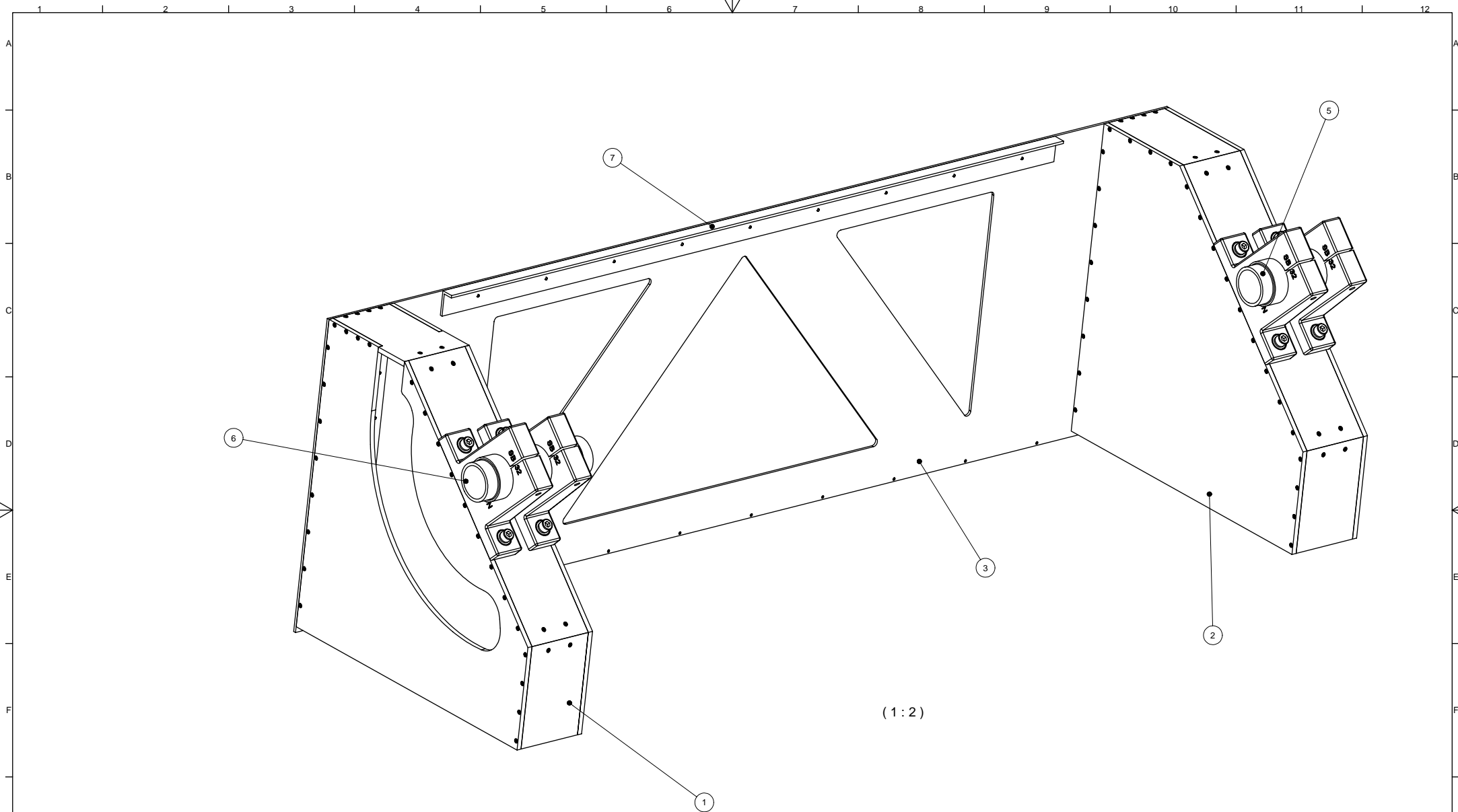


7	32	BS 4464 - M3 Form A	Spring Washer
6	32	BS 4168 - M3 x 16	Hexagon Socket Head Cap Screw
5	12	ISO 10642 - M3 x 12 or BS equivalent	Hexagon Socket Countersunk Head Screw
4	3	GLAS-4-1-005 r1	Temporary base support
3	1	GLAS-4-3-000 r1	Umbilical swing arm assy
2	1	GLAS-4-2-000 r2	Laser cradle
1	1	GLAS-4-1-000 r1	Laser gimbal assy
ITEM	QTY	PART NUMBER	DESCRIPTION

<small>           ALL DIMENSIONS IN MILLIMETERS            UNLESS OTHERWISE SPECIFIED            GENERAL TOL: ± 0.1            ANGULAR TOL: ± 0.05            SURFACE FINISH (PERFORMANCE): 3.2            FINISH:         </small>	<small>           Drawn by: jolley            Date: 08/08/2005            Revision: 2            Isaac Newton Group of Telescopes            Apartado de Correos, 321            Santa Cruz de La Palma            +34 922 425 400         </small>	<b>GLAS Laser Cradle Assembly</b> Part Number: GLAS-4-000 r2 A1 / 1 / 1
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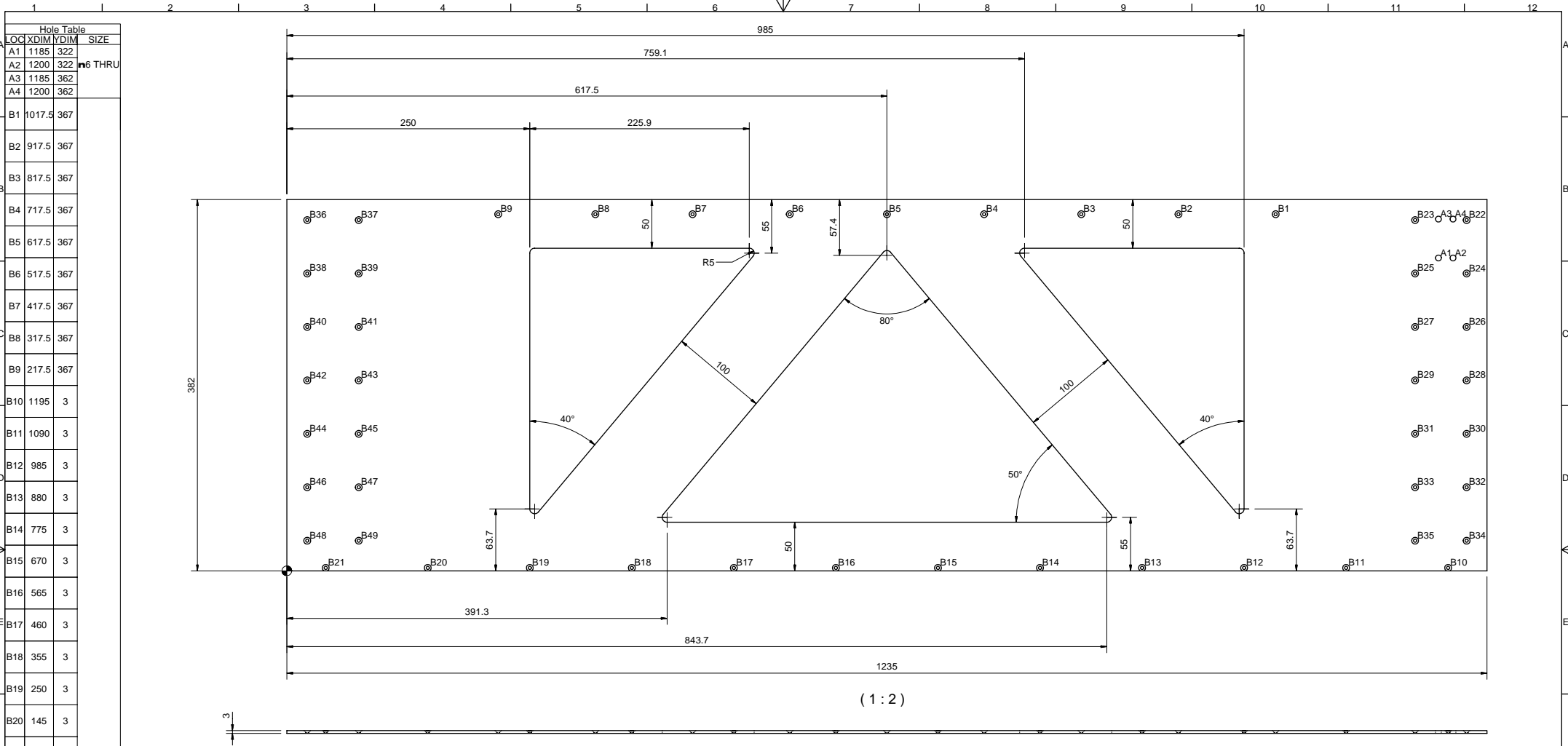


(1 : 2)

12	9	ISO 10642 - M3 x 8	Hexagon Socket Countersunk Head Screw
11	8	BS 4320 - M8 (Form A)	Bright Washer
10	8	BS 4464 - M8 Form A	Spring Washer
9	8	BS 4168 - M8 x 25	Hexagon Socket Head Cap Screw
8	28	BS 4168 - M3 x 16	Hexagon Socket Countersunk Head Screw
7	1	GLAS-4-1-004 r1	Back plate stiffener
6	1	GLAS-4-1-003 r1	Axle - long
5	1	GLAS-4-1-002 r1	Axle - short
4	4		Axle stand
3	1	GLAS-4-1-001 r1	Back plate
2	1	GLAS-4-4-000 r1	End support
1	1	GLAS-4-5-000 r1	End support - umbilical
ITEM	QTY	PART NUMBER	DESCRIPTION

<small>           ALL DIMENSIONS IN MILLIMETERS            UNLESS OTHERWISE SPECIFIED            GENERAL TOL: 0.1            ANGULAR TOL: 0.05            SURFACE FINISH (PERFORMANCE): 3.2            FINISH            UNLESS OTHERWISE SPECIFIED            ALL DIMENSIONS ARE TO BE TAKEN TO THE CENTER OF THE PART UNLESS OTHERWISE SPECIFIED            DIMENSIONS TO BE TAKEN TO THE CENTER OF THE PART UNLESS OTHERWISE SPECIFIED         </small>	<small>           Material            Finish         </small>	<small>           Drawn by            jolley         </small>	<small>           Date            01/07/2005         </small>	<small>           Revision            1         </small>	<b>Laser Gimbal Assembly</b> <b>Laser Cradle Support</b>
<small>           Isaac Newton Group of Telescopes            Apartado de Correos, 321            Santa Cruz de La Palma            +34 922 425 400         </small>					<small>           Part Number            GLAS-4-1-000 r1         </small>
					<small>           Sheet            1 / 1         </small>





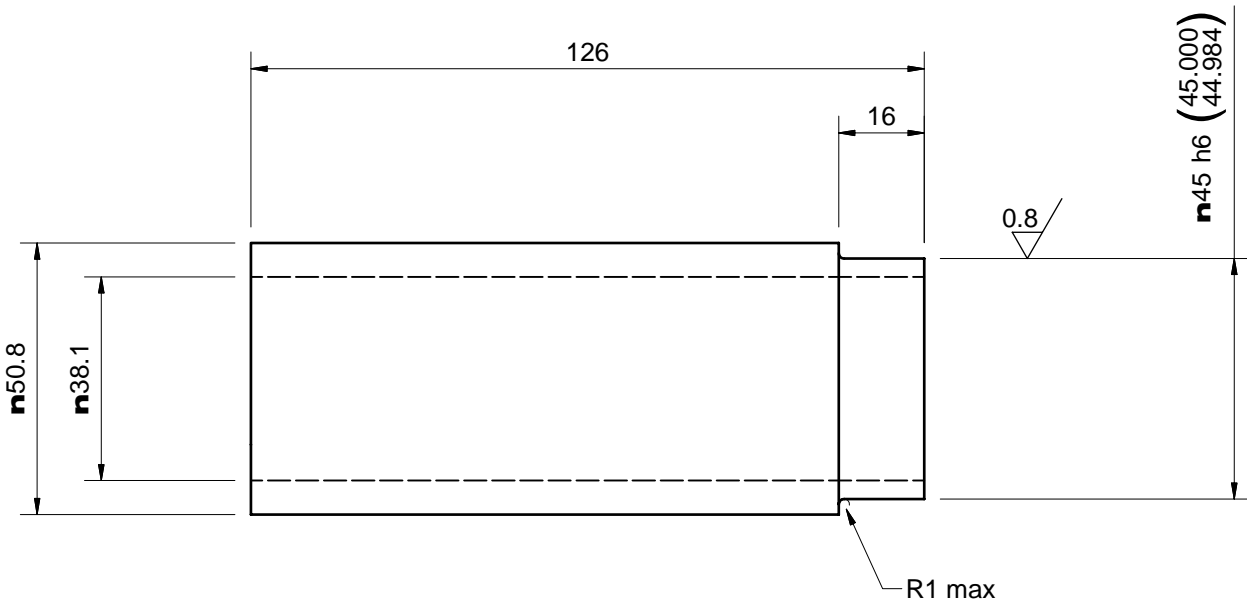
Hole Table			
LOC	XDIM	YDIM	SIZE
A1	1185	322	M6 THRU
A2	1200	322	
A3	1185	362	
A4	1200	362	

B1	1017.5	367
B2	917.5	367
B3	817.5	367
B4	717.5	367
B5	617.5	367
B6	517.5	367
B7	417.5	367
B8	317.5	367
B9	217.5	367
B10	1195	3
B11	1090	3
B12	985	3
B13	880	3
B14	775	3
B15	670	3
B16	565	3
B17	460	3
B18	355	3
B19	250	3
B20	145	3
B21	40	3
B22	1214	361
B23	1161	361
B24	1214	306
B25	1161	306
B26	1214	251
B27	1161	251
B28	1214	196
B29	1161	196
B30	1214	141
B31	1161	141

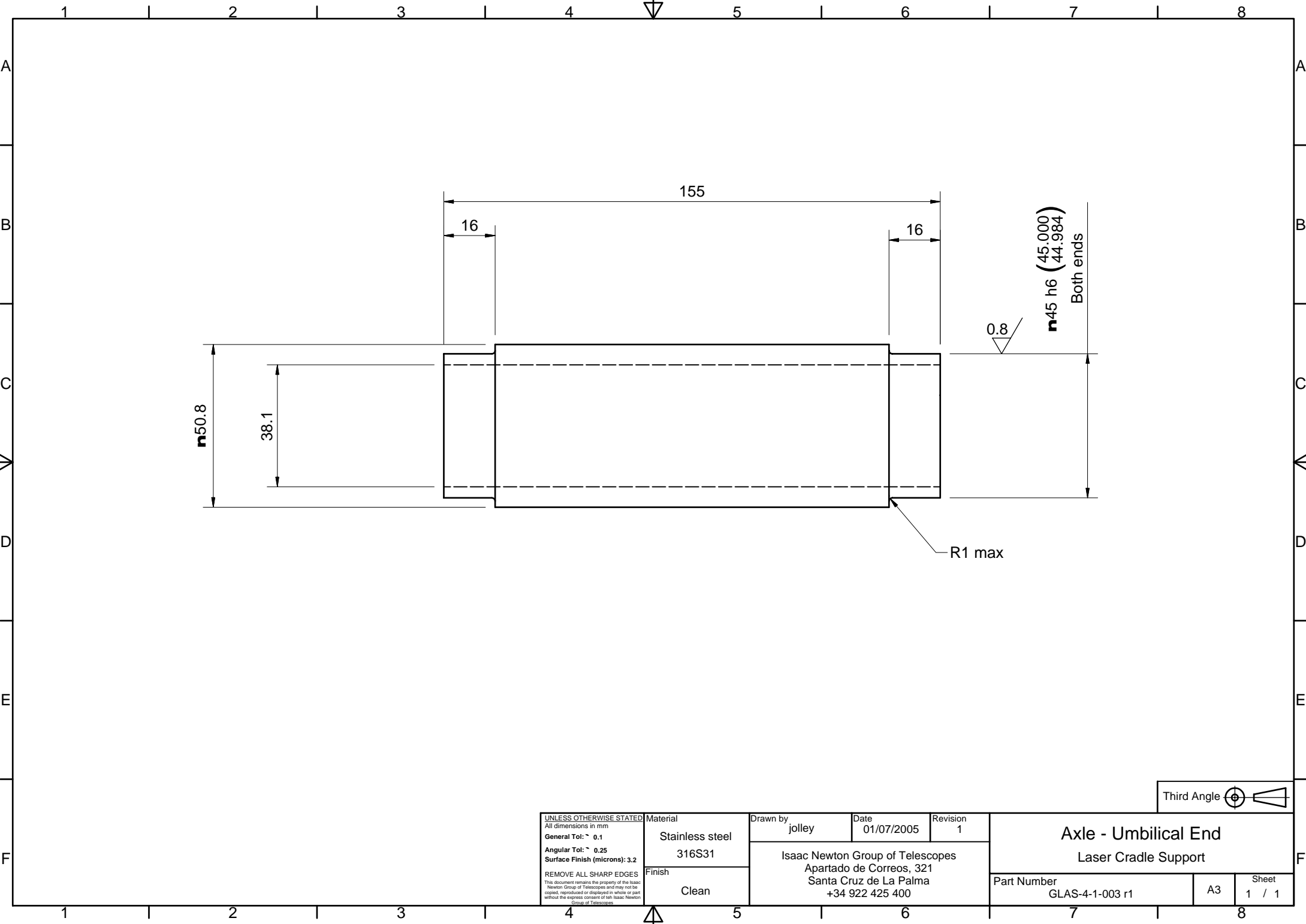
Hole Table			
LOC	XDIM	YDIM	SIZE
B32	1214	86	M3.2 CSK M7 X 90°
B33	1161	86	
B34	1214	31	
B35	1161	31	
B36	21	361	M3.2 CSK M7 X 90°
B37	74	361	
B38	21	306	
B39	74	306	
B40	21	251	M3.2 CSK M7 X 90°
B41	74	251	
B42	21	196	
B43	74	196	
B44	21	141	M3.2 CSK M7 X 90°
B45	74	141	
B46	21	86	
B47	74	86	
B48	21	31	M3.2 CSK M7 X 90°
B49	74	31	

Hole Table			
LOC	XDIM	YDIM	SIZE
B41	74	251	M3.2 CSK M7 X 90°
B42	21	196	
B43	74	196	
B44	21	141	
B45	74	141	M3.2 CSK M7 X 90°
B46	21	86	
B47	74	86	
B48	21	31	
B49	74	31	M3.2 CSK M7 X 90°

ALL DIMENSIONS IN MILLIMETERS GENERAL TOL: ±0.1 ANGULAR TOL: ±0.05 SURFACE FINISH: (SEE NOTE) 3.2 FINISH: Matt black paint	Material: 070M20	Drawn by: jolley Date: 01/07/2005 Revision: 1	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400	Part Number: GLAS-4-1-001 r1	Sheet: 1 / 1
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<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: $\sim 0.1$ Angular Tol: $\sim 0.25$ 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	<b>Axle</b> <b>Laser Cradle Support</b>		
	Stainless Steel	jolley	01/07/2005	1			
	316S31	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	A3	Sheet 1 / 1
Finish	Clean				GLAS-4-1-002 r1		

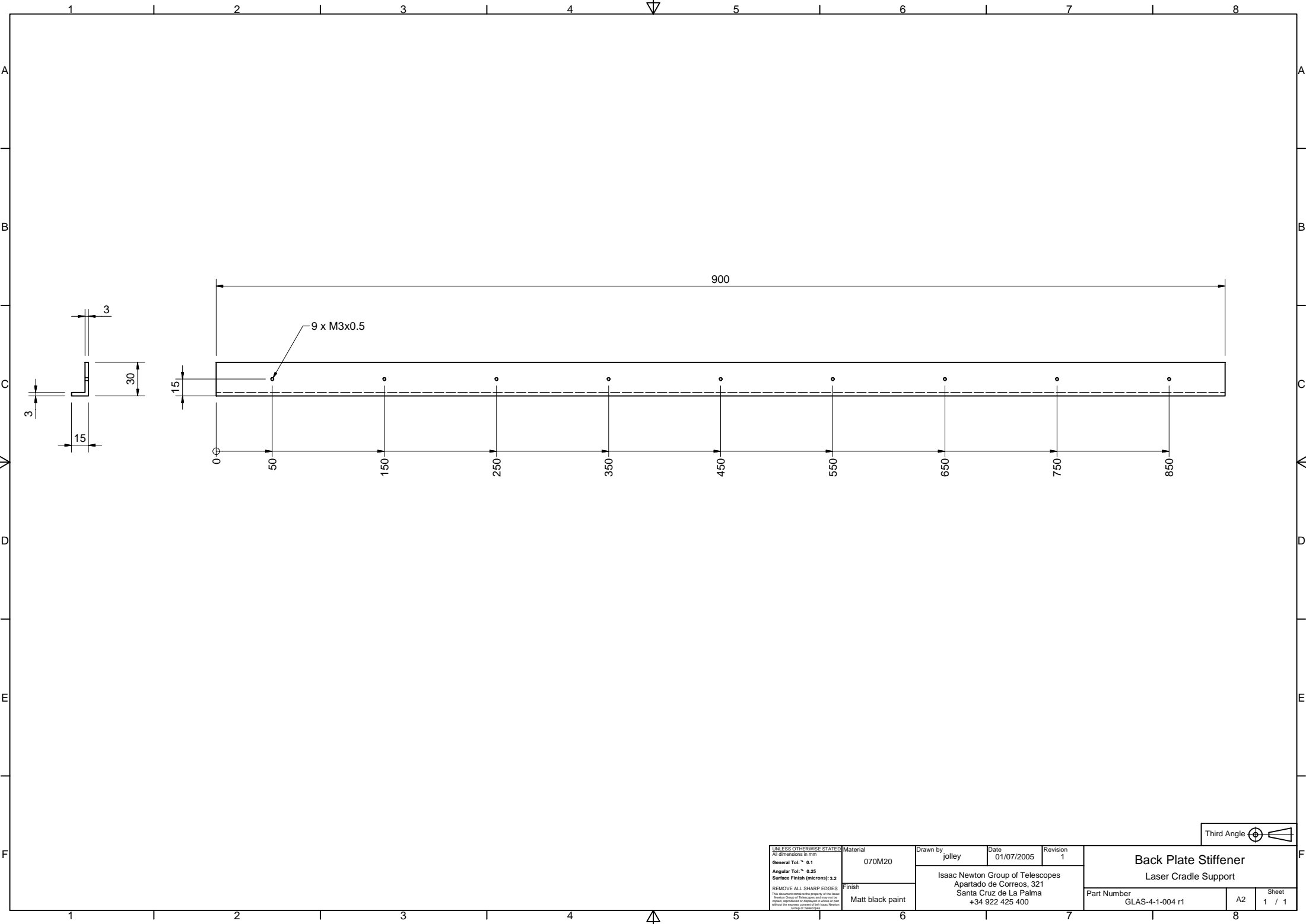


0.8  
**n45 h6 (45.000 / 44.984)**  
 Both ends

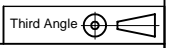
R1 max



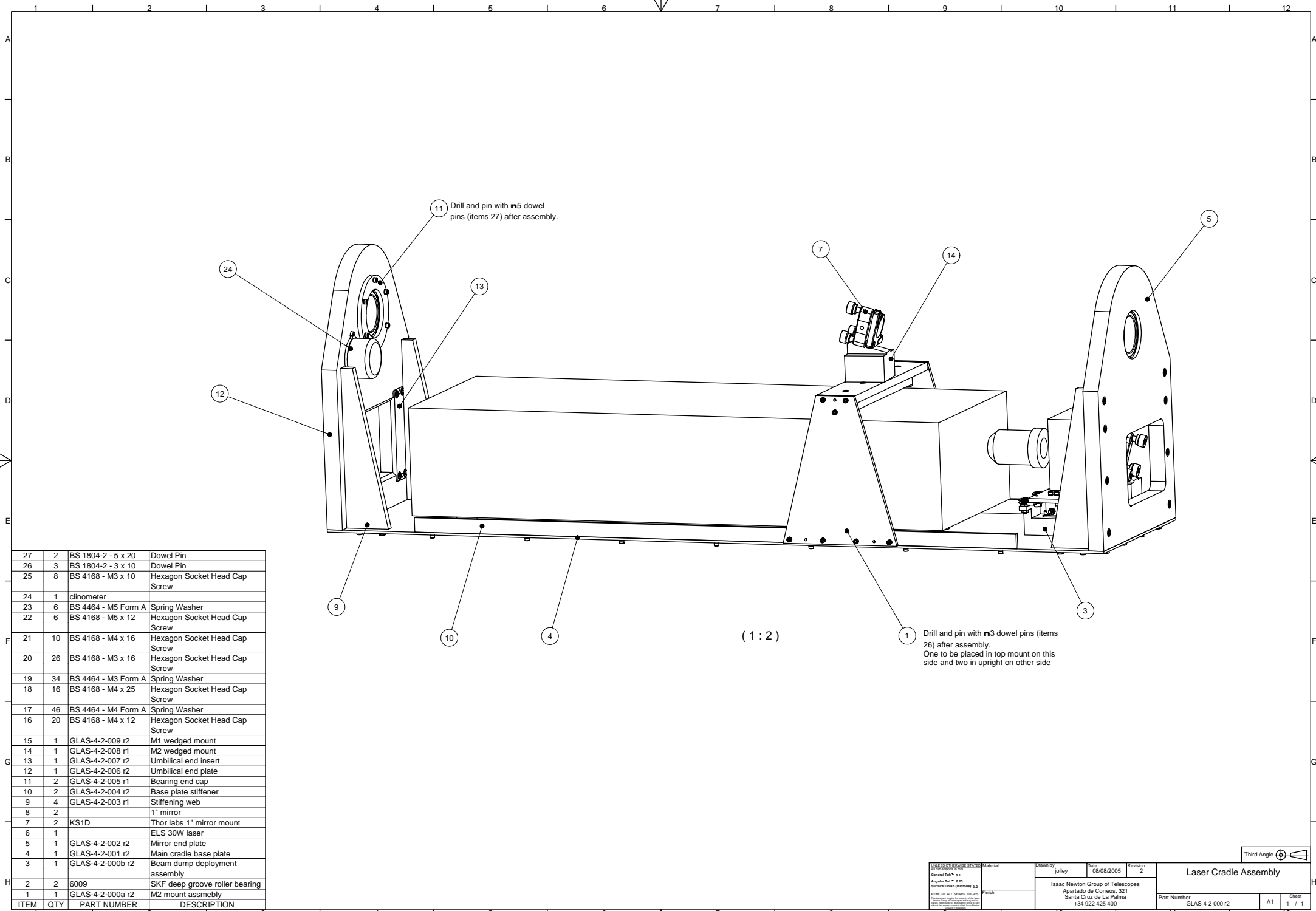
<small>UNLESS OTHERWISE STATED</small> All dimensions in mm <b>General Tol:</b> ~ 0.1 <b>Angular Tol:</b> ~ 0.25 <b>Surface Finish (microns):</b> 3.2 <b>REMOVE ALL SHARP EDGES</b> <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes</small>	Material	Drawn by	Date	Revision	<b>Axle - Umbilical End</b> <b>Laser Cradle Support</b>		
	Stainless steel	jolley	01/07/2005	1			
	316S31	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet	
Finish	Clean				GLAS-4-1-003 r1	A3	1 / 1



<small>UNLESS OTHERWISE STATED:          All dimensions in mm          General Tol: <math>\pm</math> 0.1          Angular Tol: <math>\sim</math> 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 whole or in part without the written consent of the Isaac Newton Group of Telescopes.</small> </small>	Material	Drawn by	Date	Revision	<b>Back Plate Stiffener</b> Laser Cradle Support	
	070M20	jolley	01/07/2005	1		
	Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet
Matt black paint				GLAS-4-1-004 r1	A2	1 / 1







11 Drill and pin with **m5** dowel pins (items 27) after assembly.

1 Drill and pin with **m3** dowel pins (items 26) after assembly. One to be placed in top mount on this side and two in upright on other side

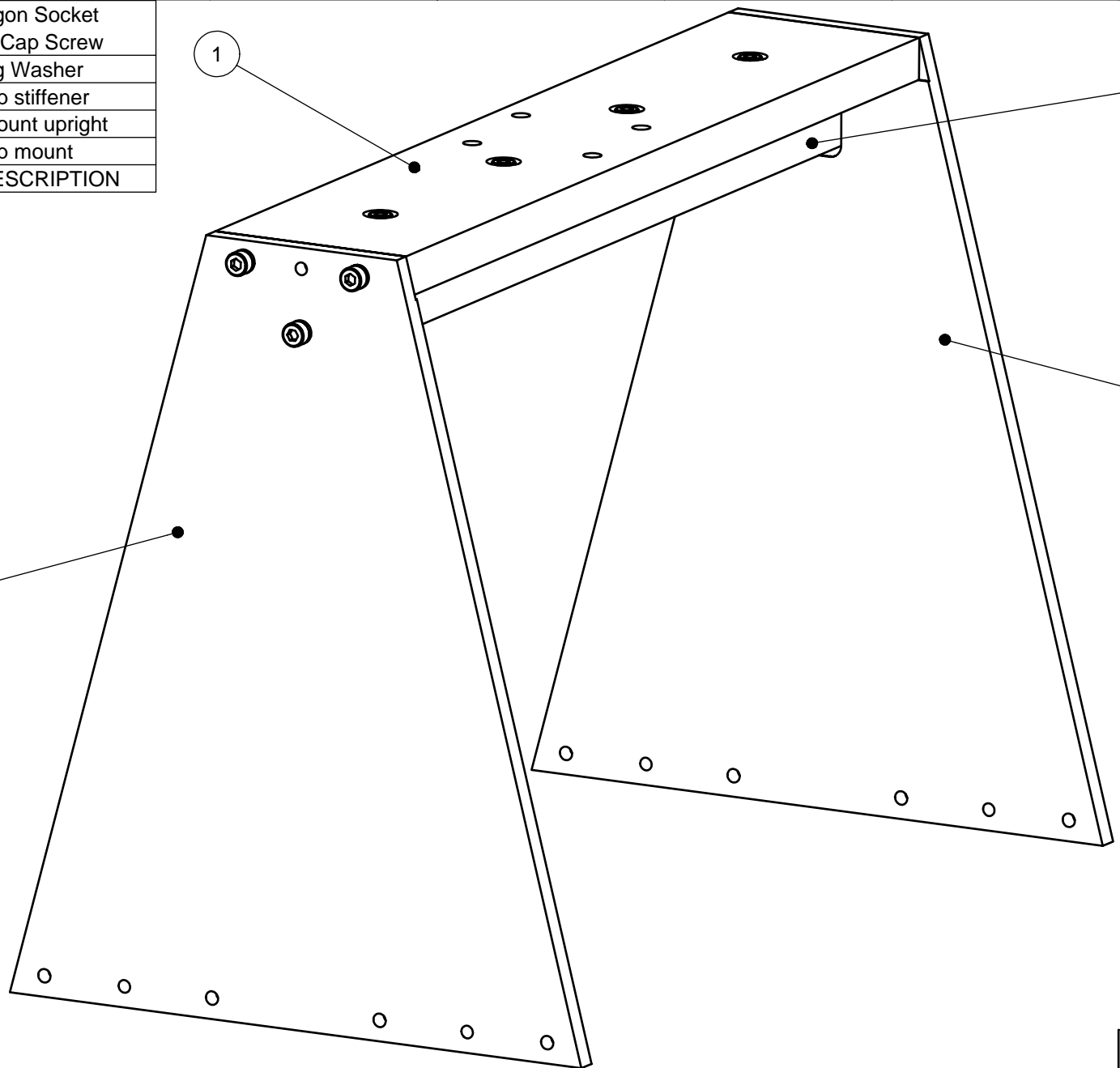
( 1 : 2 )

27	2	BS 1804-2 - 5 x 20	Dowel Pin
26	3	BS 1804-2 - 3 x 10	Dowel Pin
25	8	BS 4168 - M3 x 10	Hexagon Socket Head Cap Screw
24	1	clinometer	
23	6	BS 4464 - M5 Form A	Spring Washer
22	6	BS 4168 - M5 x 12	Hexagon Socket Head Cap Screw
21	10	BS 4168 - M4 x 16	Hexagon Socket Head Cap Screw
20	26	BS 4168 - M3 x 16	Hexagon Socket Head Cap Screw
19	34	BS 4464 - M3 Form A	Spring Washer
18	16	BS 4168 - M4 x 25	Hexagon Socket Head Cap Screw
17	46	BS 4464 - M4 Form A	Spring Washer
16	20	BS 4168 - M4 x 12	Hexagon Socket Head Cap Screw
15	1	GLAS-4-2-009 r2	M1 wedged mount
14	1	GLAS-4-2-008 r1	M2 wedged mount
13	1	GLAS-4-2-007 r2	Umbilical end insert
12	1	GLAS-4-2-006 r2	Umbilical end plate
11	2	GLAS-4-2-005 r1	Bearing end cap
10	2	GLAS-4-2-004 r2	Base plate stiffener
9	4	GLAS-4-2-003 r1	Stiffening web
8	2		1" mirror
7	2	KS1D	Thor labs 1" mirror mount
6	1		ELS 30W laser
5	1	GLAS-4-2-002 r2	Mirror end plate
4	1	GLAS-4-2-001 r2	Main cradle base plate
3	1	GLAS-4-2-000b r2	Beam dump deployment assembly
2	2	6009	SKF deep groove roller bearing
1	1	GLAS-4-2-000a r2	M2 mount assmblly
ITEM	QTY	PART NUMBER	DESCRIPTION

<small>ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED</small> General Tol: ± 0.1 Angular Tol: ± 0.05 Surface Finish: (see spec) 3.2 <small>RESERVE ALL DIMENSION SPACES</small>	Material Finish	Drawn by jolley	Date 08/08/2005	Revision 2	<b>Laser Cradle Assembly</b>	
Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400						
Part Number GLAS-4-2-000 r2					A1	Sheet 1 / 1



ITEM	QTY	PART NUMBER	DESCRIPTION
5	10	BS 4168 - M3 x 16	Hexagon Socket Head Cap Screw
4	10	BS 4464 - M3 Form A	Spring Washer
3	1	GLAS-4-2-013 r2	M2 top stiffener
2	2	GLAS-4-2-012 r2	M2 mount upright
1	1	GLAS-4-2-011 r2	M2 top mount

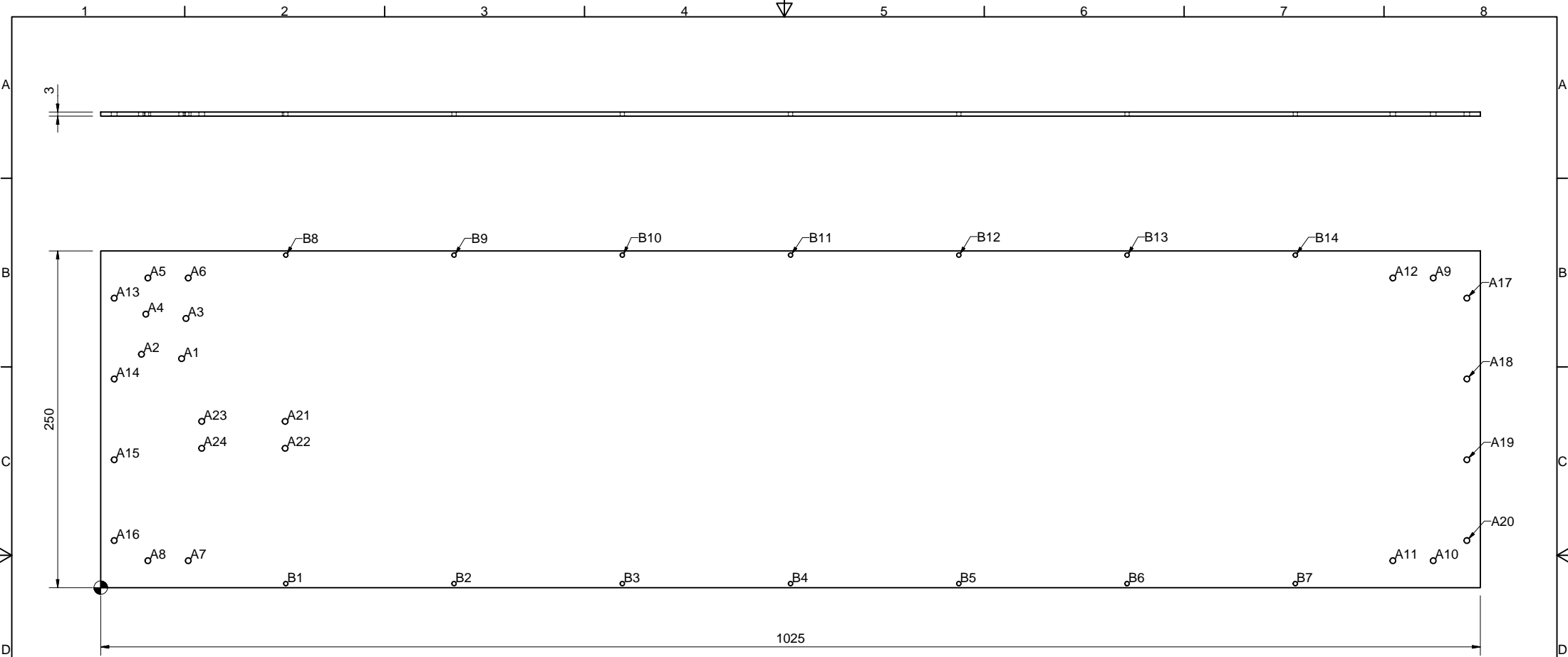


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 General Tol: ~ 0.1  
 Angular Tol: ~ 0.25  
 Surface Finish (microns): 3.2  
 REMOVE ALL SHARP EDGES  
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Material  
 Drawn by jolley  
 Date 08/08/2005  
 Revision 2  
 Isaac Newton Group of Telescopes  
 Apartado de Correos, 321  
 Santa Cruz de La Palma  
 +34 922 425 400

M2 Mount Assembly  
 Part Number GLAS-4-2-000a r2  
 A3  
 Sheet 1 / 1

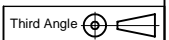


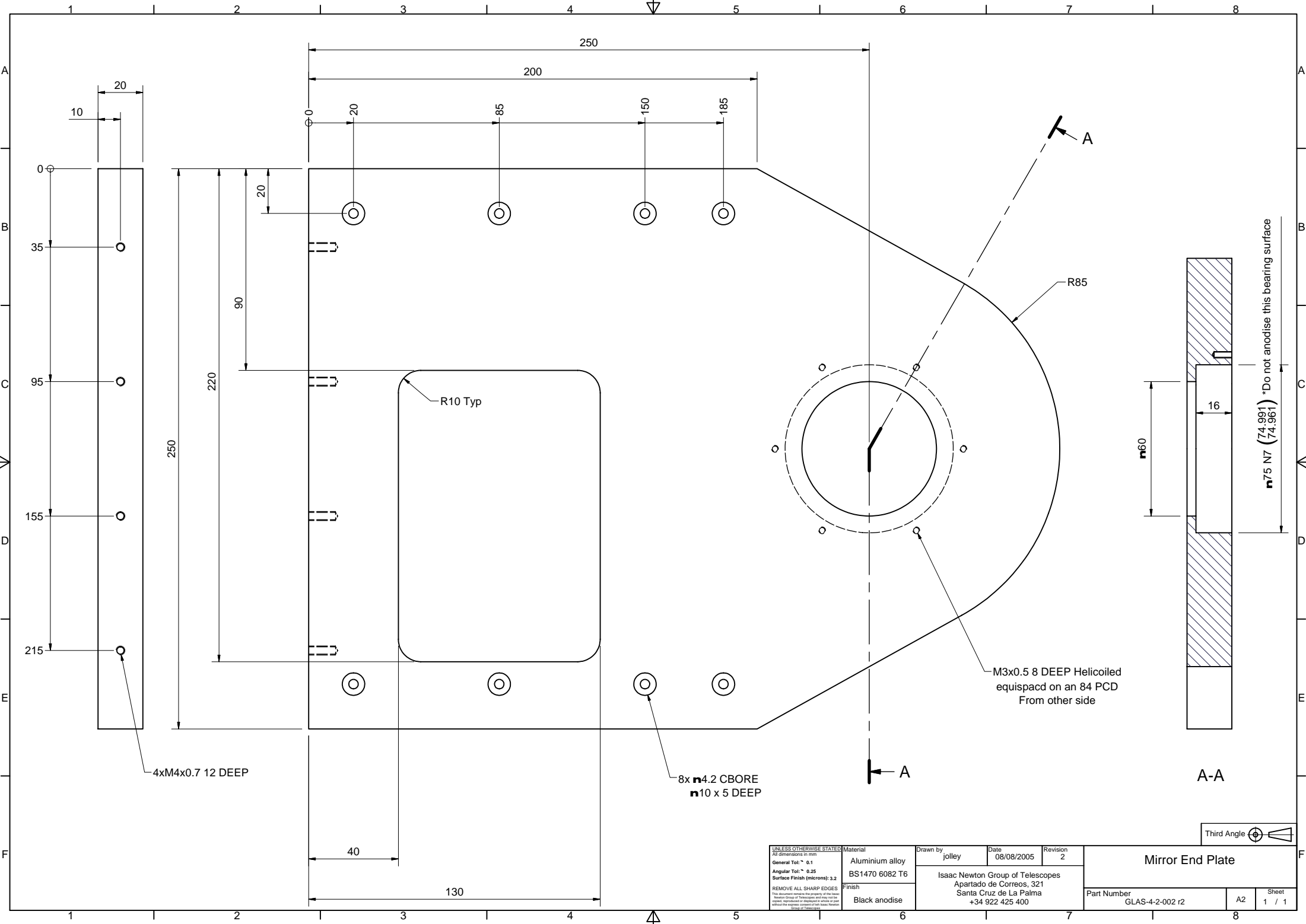


Hole Table			
LOC	XDIM	YDIM	SIZE
A1	60.08	170.1	n4.2 THRU
A2	30.26	173.34	
A3	63.32	199.93	
A4	33.5	203.17	
A5	35	230	
A6	65	230	
A7	65	20	n3.2 THRU
A8	35	20	
A9	990	230	
A10	990	20	
A11	960	20	
A12	960	230	
A13	10	215	
A14	10	155	
A15	10	95	
A16	10	35	
A17	1015	215	
A18	1015	155	
A19	1015	95	
A20	1015	35	

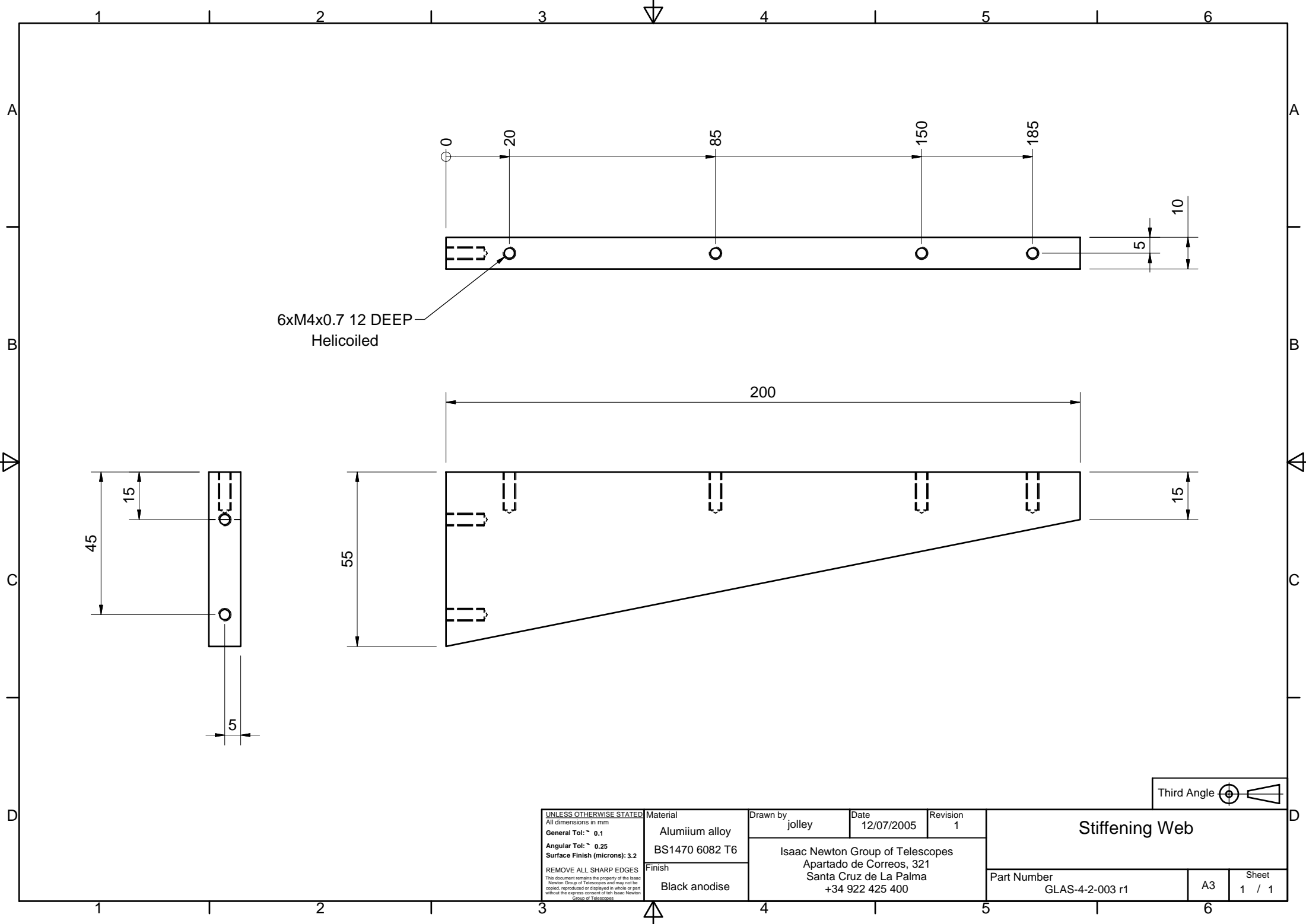
Hole Table			
LOC	XDIM	YDIM	SIZE
A21	137	123.5	n4.2 THRU
A22	137	103.5	
A23	75	123.5	
A24	75	103.5	
B1	137.5	3	n3.2 THRU
B2	262.5	3	
B3	387.5	3	
B4	512.5	3	
B5	637.5	3	
B6	762.5	3	
B7	887.5	3	
B8	137.5	247	
B9	262.5	247	
B10	387.5	247	
B11	512.5	247	
B12	637.5	247	
B13	762.5	247	
B14	887.5	247	

<small>UNLESS OTHERWISE STATED:          All dimensions in mm          General Tol: <math>\pm</math> 0.1          Angular Tol: <math>\sim</math> 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 disclosed in whole or in part without the written consent of the Isaac Newton Group of Telescopes.</small> </small>	Material	070M20 ( EN3B )	Drawn by	jolley	Date	08/08/2005	Revision	2	<b>Main Laser Cradle Base Plate</b>
	Finish	Matt black paint	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	GLAS-4-2-001 r2	A2	





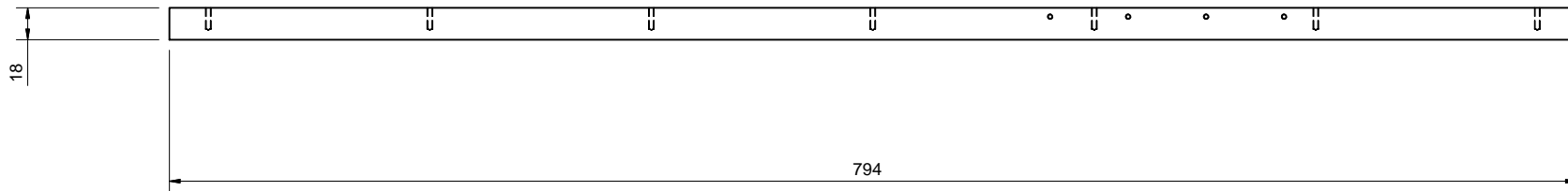
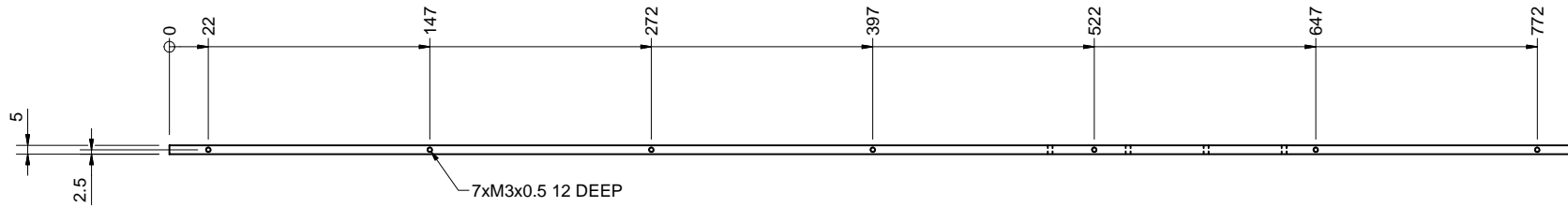
<small>UNLESS OTHERWISE STATED: All dimensions in mm General Tol: ~ 0.1 Angular Tol: ~ 0.25 Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or distributed in whole or in part without the written consent of the Isaac Newton Group of Telescopes.</small></small>	Material	Aluminium alloy	Drawn by	jolley	Date	08/08/2005	Revision	2	<b>Mirror End Plate</b>
	Finish	Black anodise	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	GLAS-4-2-002 r2	Sheet	



6xM4x0.7 12 DEEP  
Helicoiled



<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	<b>Stiffening Web</b>		
	Aluminium alloy BS1470 6082 T6	jolley	12/07/2005	1			
	Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet	
	Black anodise				GLAS-4-2-003 r1	A3	1 / 1

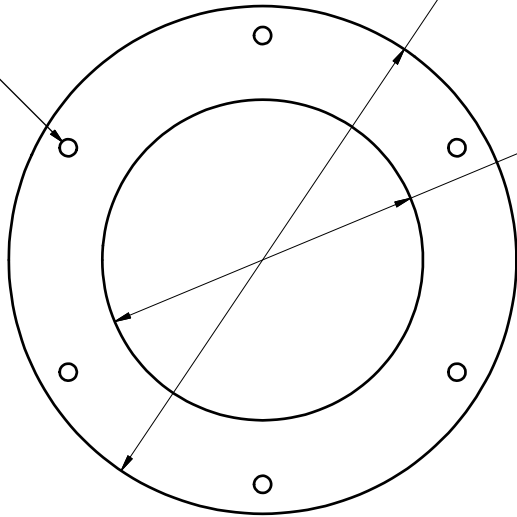


( 1 : 2 )



<small>UNLESS OTHERWISE STATED: All dimensions in mm General Tol: <math>\pm</math> 0.1 Angular Tol: <math>\pm</math> 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 whole or in part without the written consent of the Isaac Newton Group of Telescopes</small> </small>	Material	Drawn by	Date	Revision	<b>Base Plate Stiffener</b>
	070M20 ( EN3B )	jolley	08/08/2005	2	
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet
Matt black paint				GLAS-4-2-004 r2	A2 1 / 1

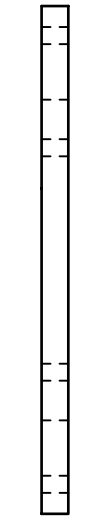
6x $\phi$ 3.2 THRU equi-spaced on an 84 PCD



n95

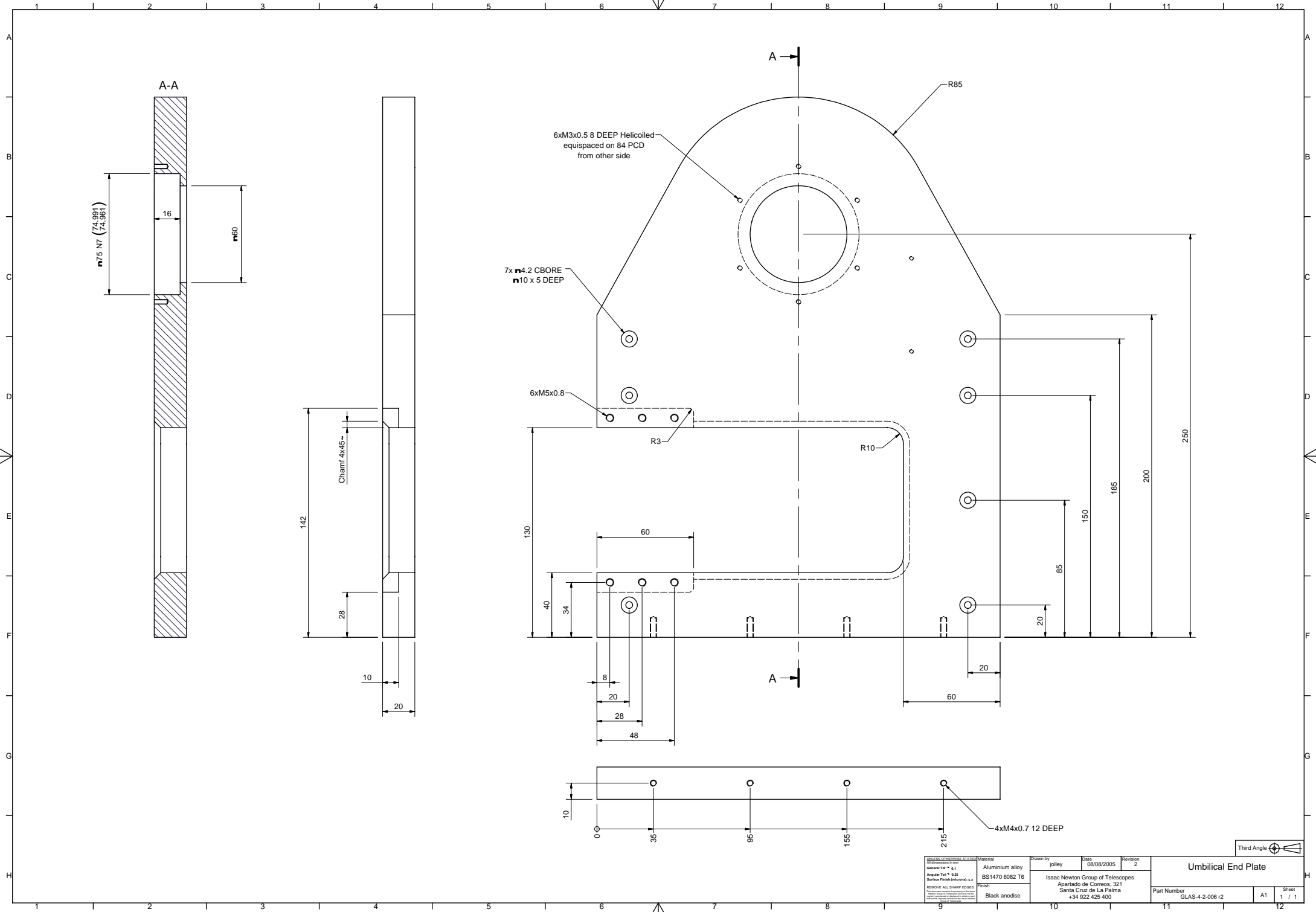
n60

5



Third Angle

<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: $\sim$ 0.1 Angular Tol: $\sim$ 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>Bearing End Cap</h3>		
	Aluminium alloy BS1470 6082 T6	jolley	12/07/2005	1			
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number		A3	Sheet
Black anodise				GLAS-4-2-005 r1			1 / 1



6xM3x0.8 DEEP Helicoiled  
equispaced on 84 PCD  
from other side

7x M4.2 CBORE  
M10 x 5 DEEP

6xM5x0.8

R85

R3

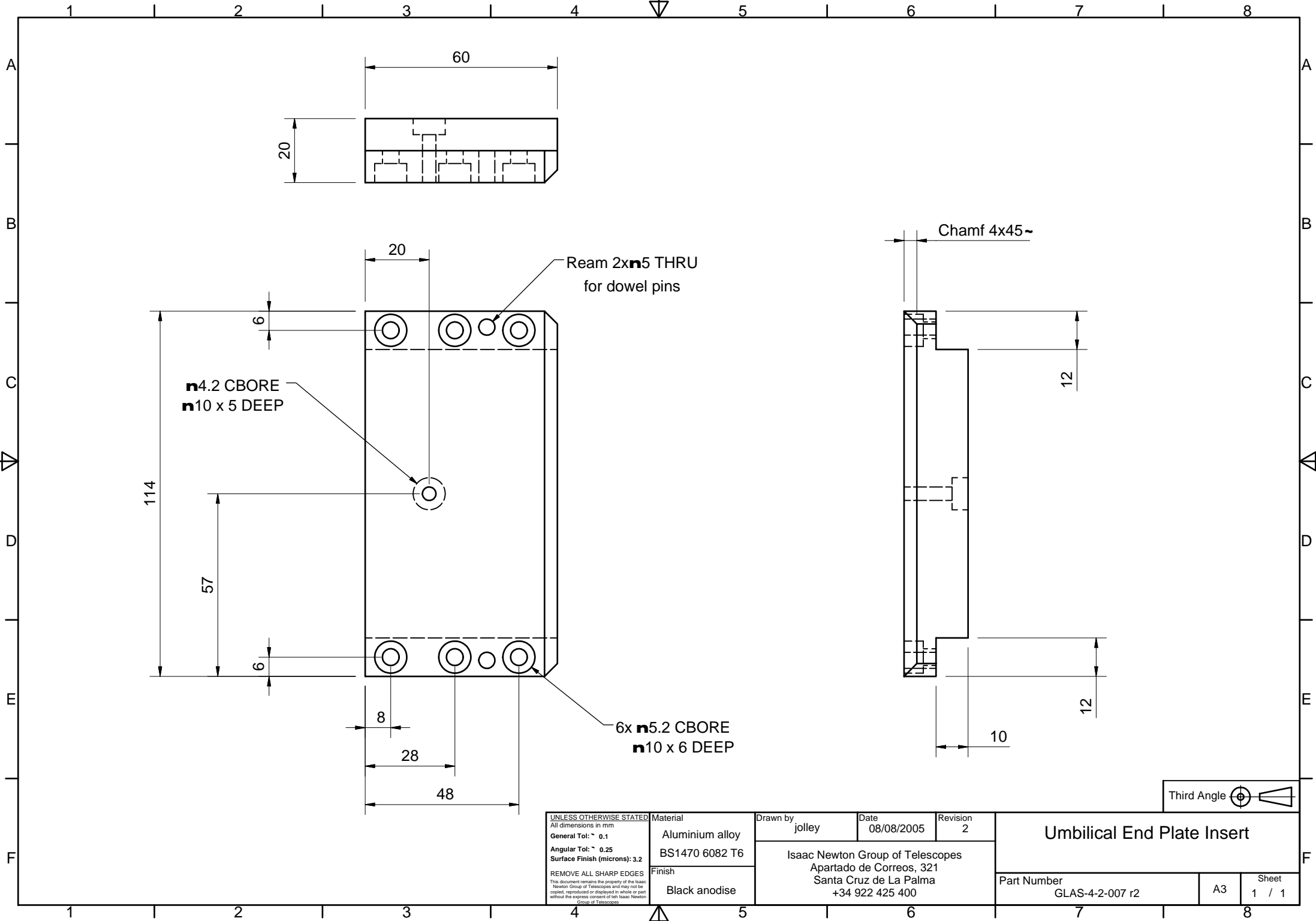
R10

Chamf. 4x45°

4xM4x0.7 12 DEEP

<b>ISIRI</b> All dimensions in mm General Tol. ± 0.1 Angular Tol. ± 0.05 Surface Finish (micrometers) 3.2 FINISH PRESERVE ALL DIMENSIONS		Material <b>Aluminium alloy</b> <b>BS1470 6082 T6</b>	Drawn by jolley	Date 08/08/2005	Revision 2	<b>Umbilical End Plate</b>
Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400		Black anodise	Part Number <b>GLAS-4-2-006 r2</b>			
						Sheet 1 / 1

Third Angle



UNLESS OTHERWISE STATED  
 All dimensions in mm  
 General Tol:  $\pm$  0.1  
 Angular Tol:  $\pm$  0.25  
 Surface Finish (microns): 3.2  
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Material  
 Aluminium alloy  
 BS1470 6082 T6  
 Finish  
 Black anodise

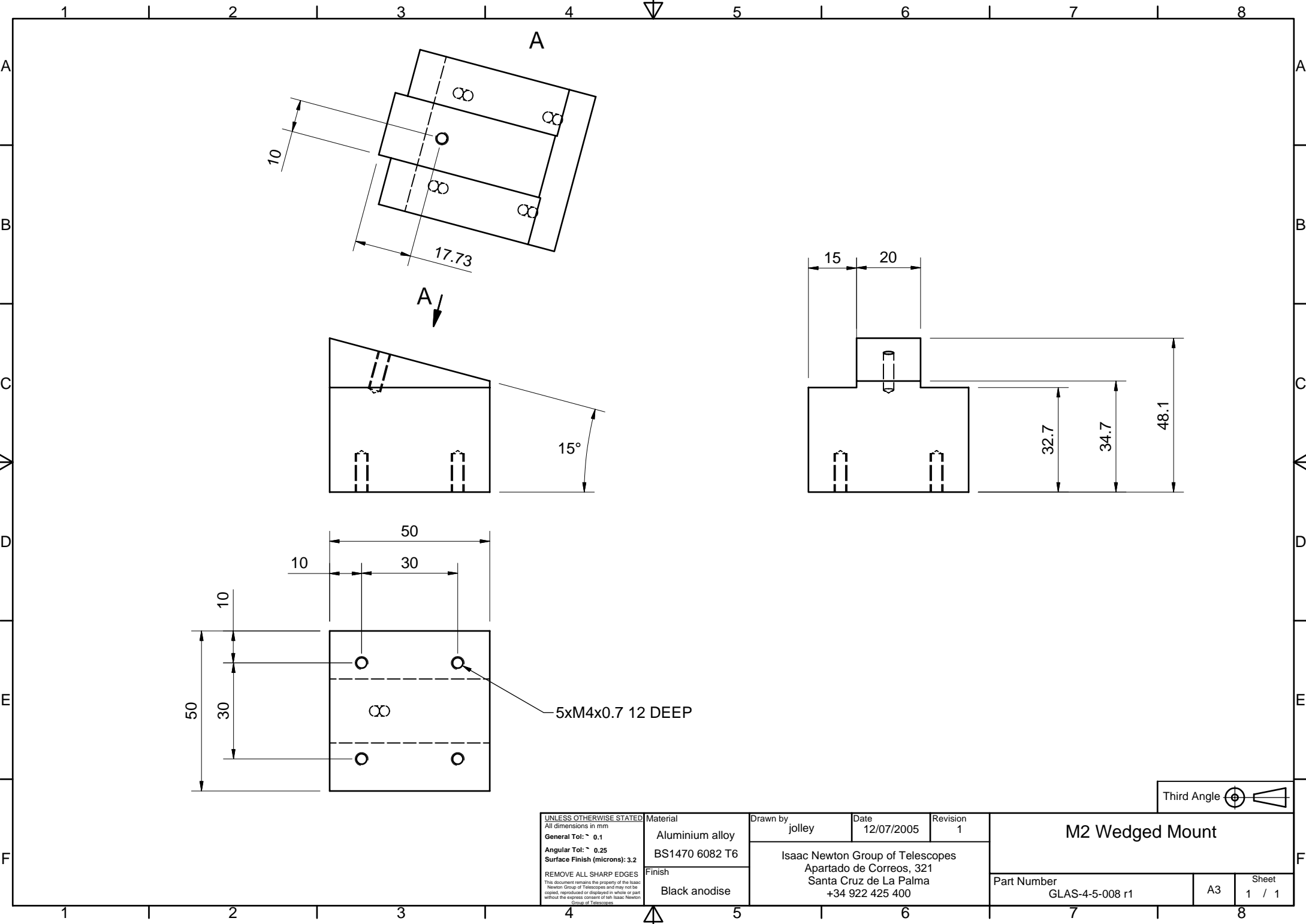
Drawn by  
 jolley  
 Date  
 08/08/2005  
 Revision  
 2  
 Isaac Newton Group of Telescopes  
 Apartado de Correos, 321  
 Santa Cruz de La Palma  
 +34 922 425 400

**Umbilical End Plate Insert**

Part Number  
 GLAS-4-2-007 r2

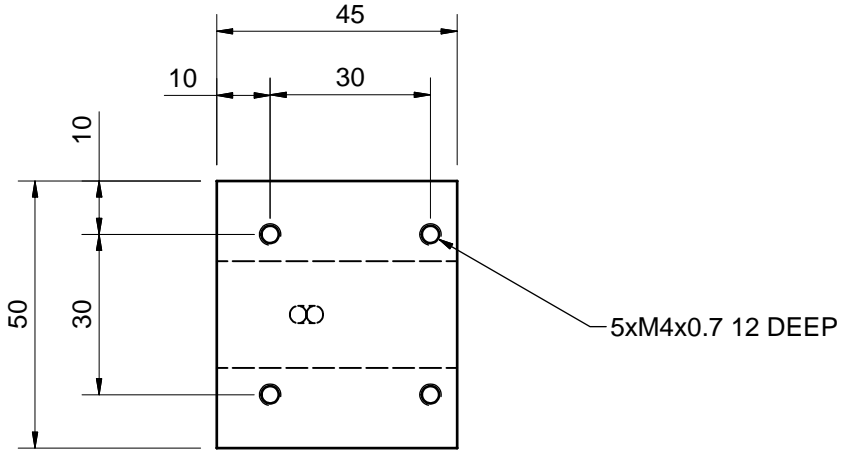
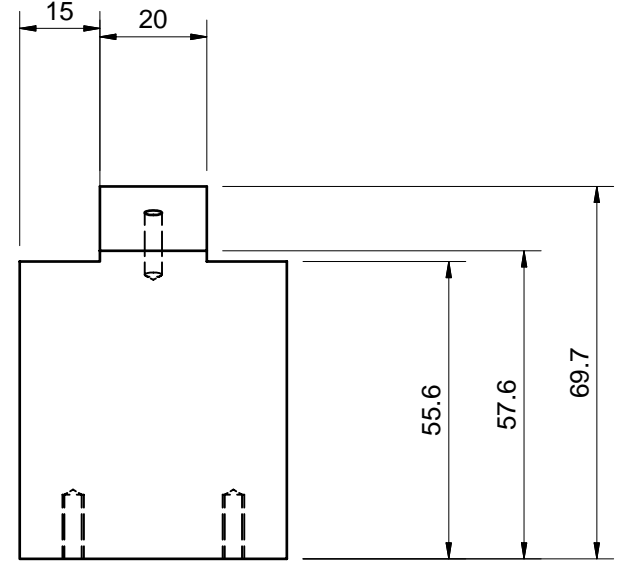
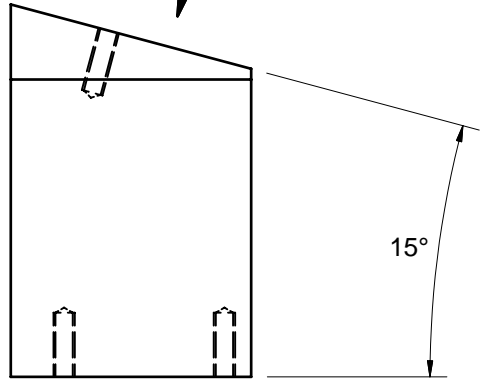
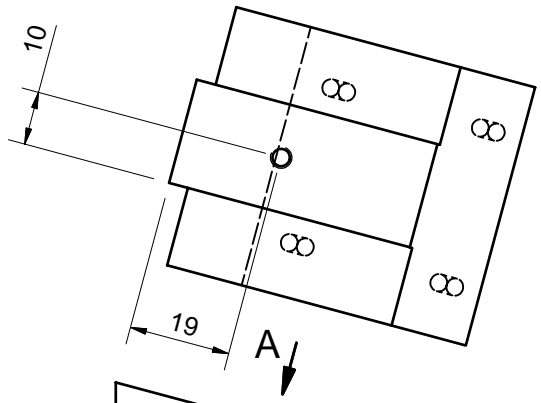
A3

Sheet  
 1 / 1

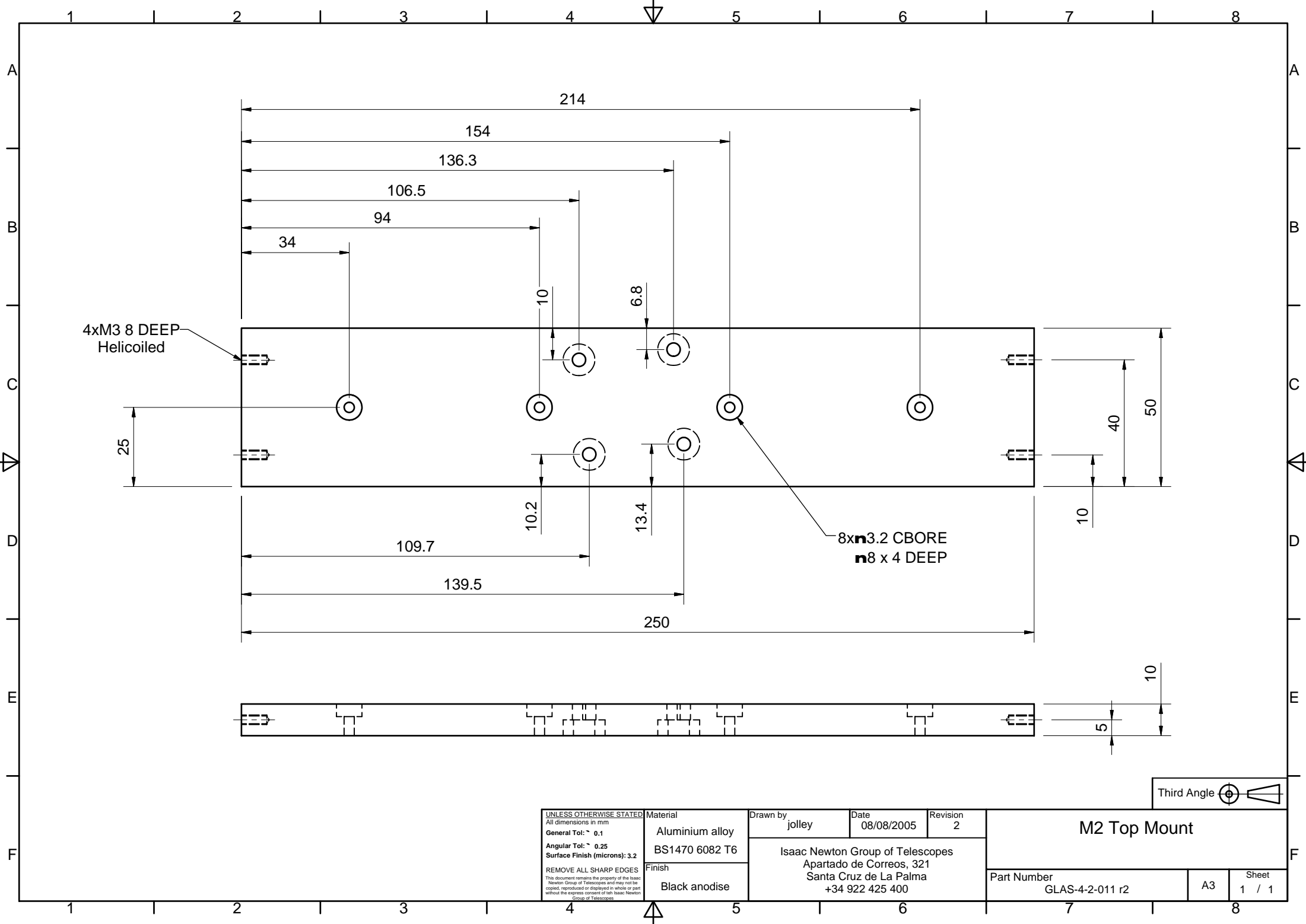


Third Angle

<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	<h3>M2 Wedged Mount</h3>		
	Aluminium alloy	jolley	12/07/2005	1			
	BS1470 6082 T6	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet	
Finish	Black anodise				GLAS-4-5-008 r1	A3	1 / 1



<b>UNLESS OTHERWISE STATED</b> All dimensions in mm General Tol: $\sim 0.1$ Angular Tol: $\sim 0.25$ 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	<b>M1 Wedged Mount</b>		
	Aluminium alloy BS1470 6082 T6	jolley	08/08/2005	2			
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number		Sheet	
Black anodise				GLAS-4-2-009 r2		1 / 1	



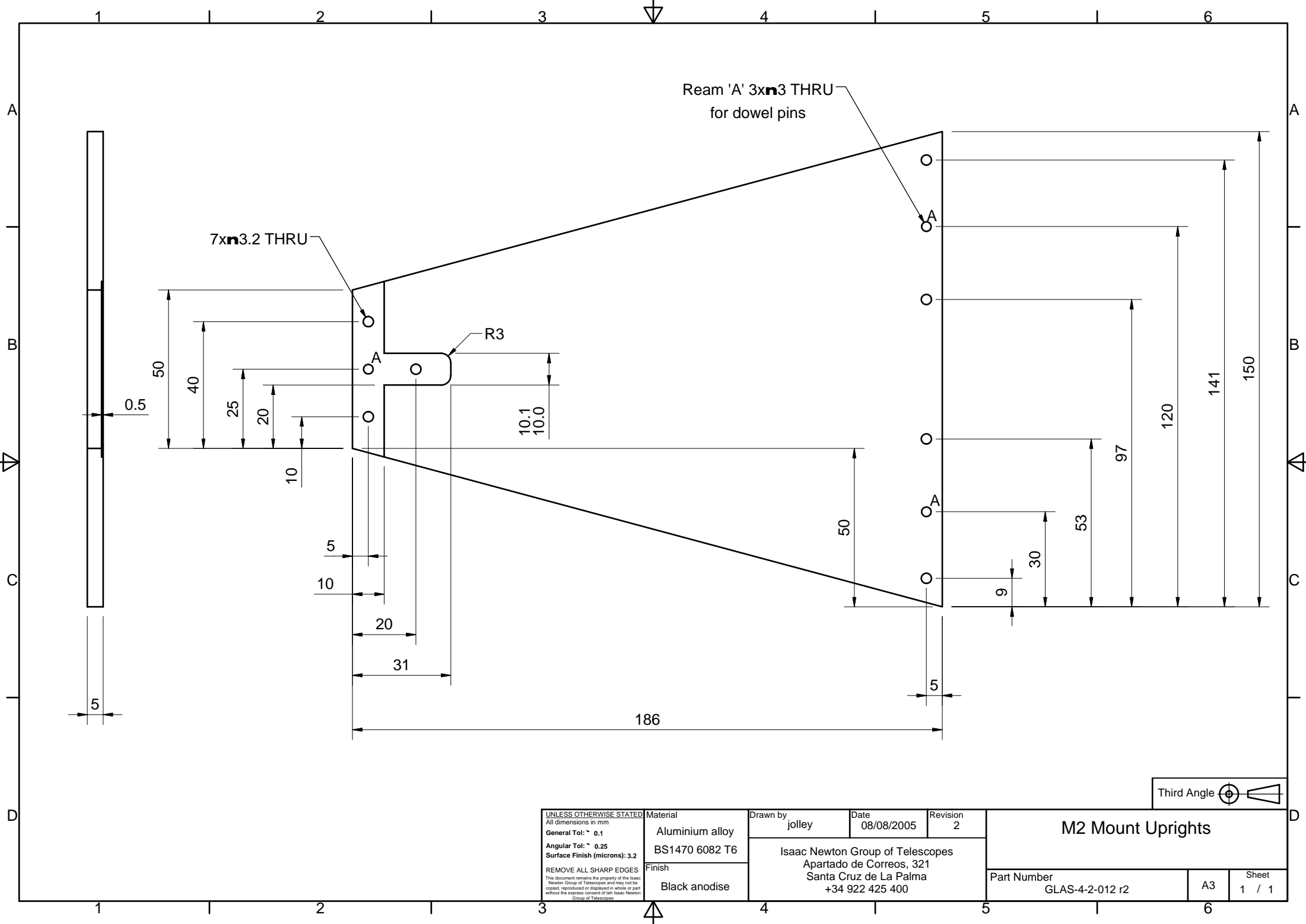
4xM3 8 DEEP  
Helicoiled

8x $\phi$ 3.2 CBORE  
 $\phi$ 8 x 4 DEEP



<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: $\sim$ 0.1 Angular Tol: $\sim$ 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 BS1470 6082 T6	jolley	08/08/2005	2
	Finish Black anodise	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400		

<b>M2 Top Mount</b>		
Part Number	Sheet	
GLAS-4-2-011 r2	A3	1 / 1



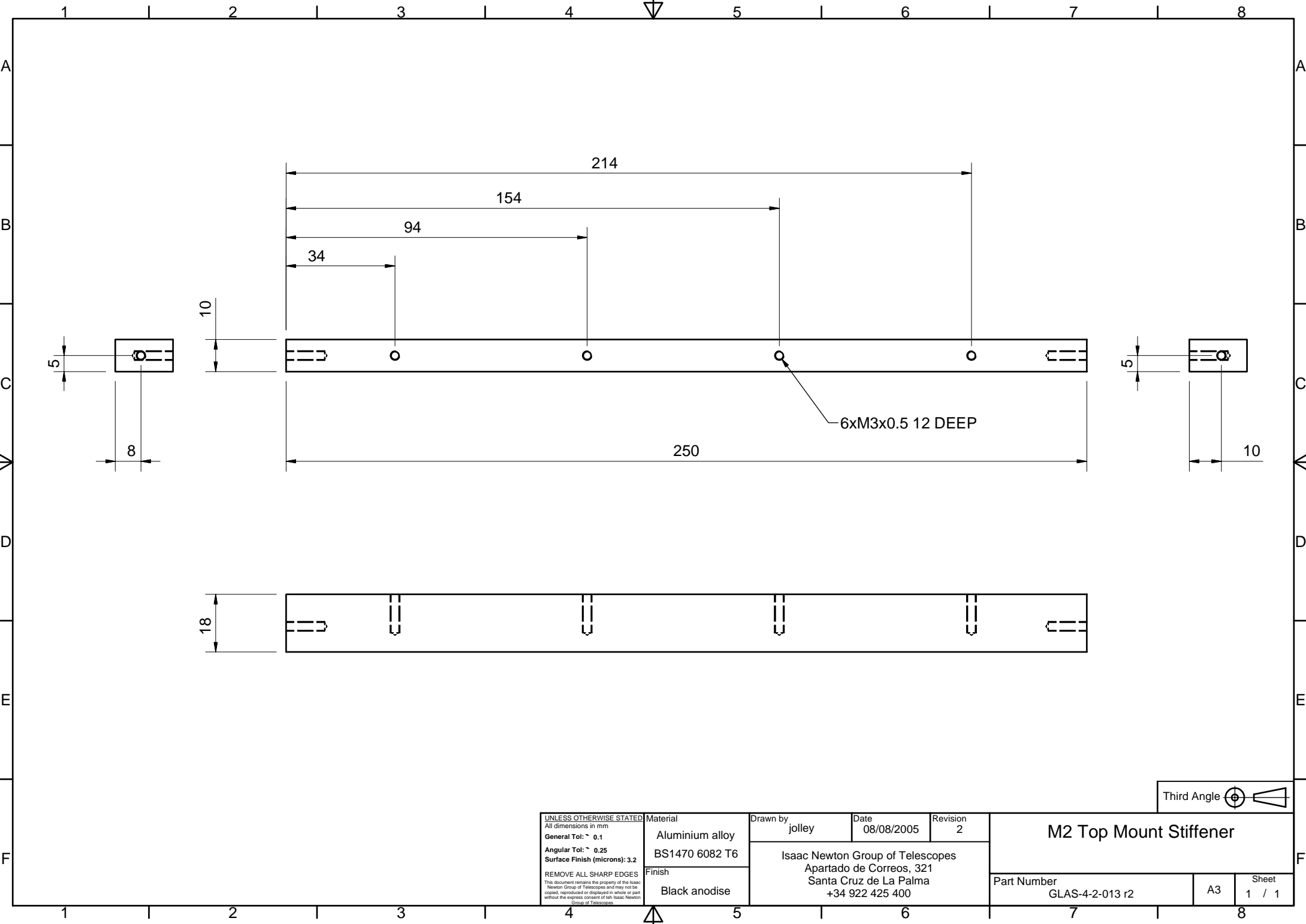
Ream 'A' 3x3 THRU  
for dowel pins

7x3.2 THRU

R3

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	M2 Mount Uprights		
	Aluminium alloy	jolley	08/08/2005	2			
	BS1470 6082 T6	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	GLAS-4-2-012 r2	A3
Finish	Black anodise						



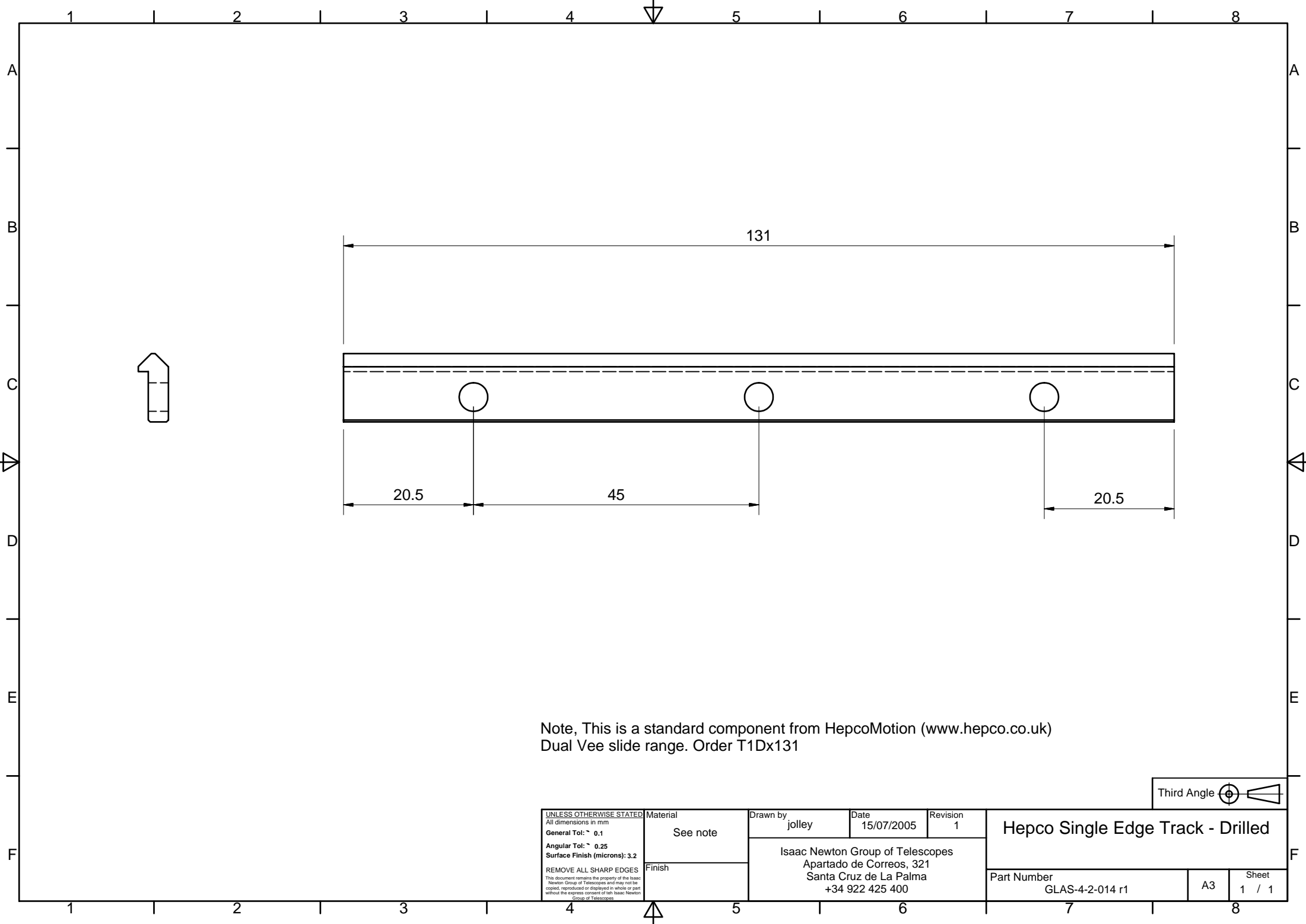
UNLESS OTHERWISE STATED  
 All dimensions in mm  
 General Tol:  $\sim 0.1$   
 Angular Tol:  $\sim 0.25$   
 Surface Finish (microns): 3.2  
 REMOVE ALL SHARP EDGES  
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Material  
 Aluminium alloy  
 BS1470 6082 T6  
 Finish  
 Black anodise

Drawn by  
 jolley  
 Date  
 08/08/2005  
 Revision  
 2  
 Isaac Newton Group of Telescopes  
 Apartado de Correos, 321  
 Santa Cruz de La Palma  
 +34 922 425 400

**M2 Top Mount Stiffener**  
 Part Number  
 GLAS-4-2-013 r2  
 A3  
 Sheet  
 1 / 1

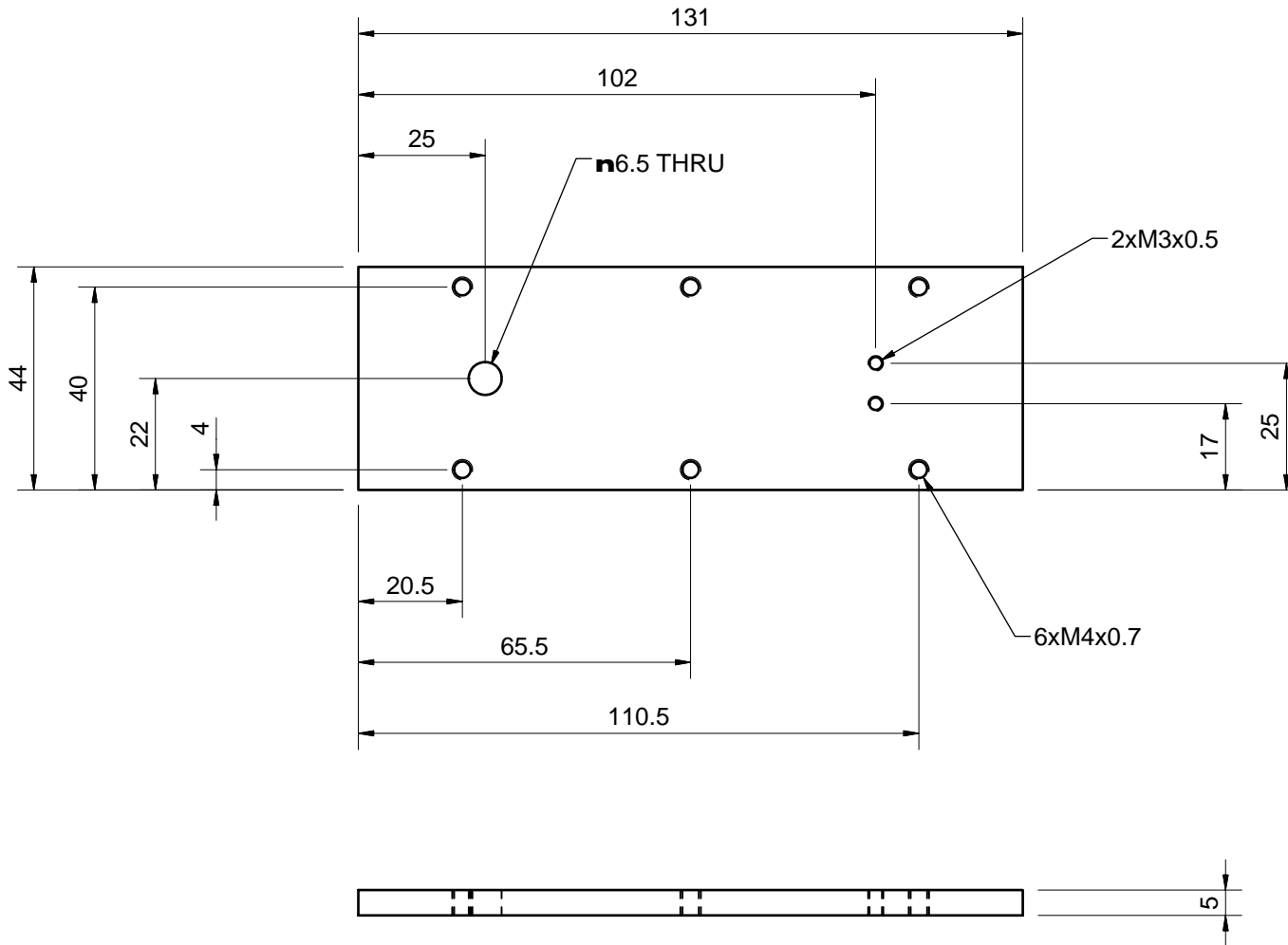




Note, This is a standard component from HepcoMotion ([www.hepco.co.uk](http://www.hepco.co.uk))  
 Dual Vee slide range. Order T1Dx131



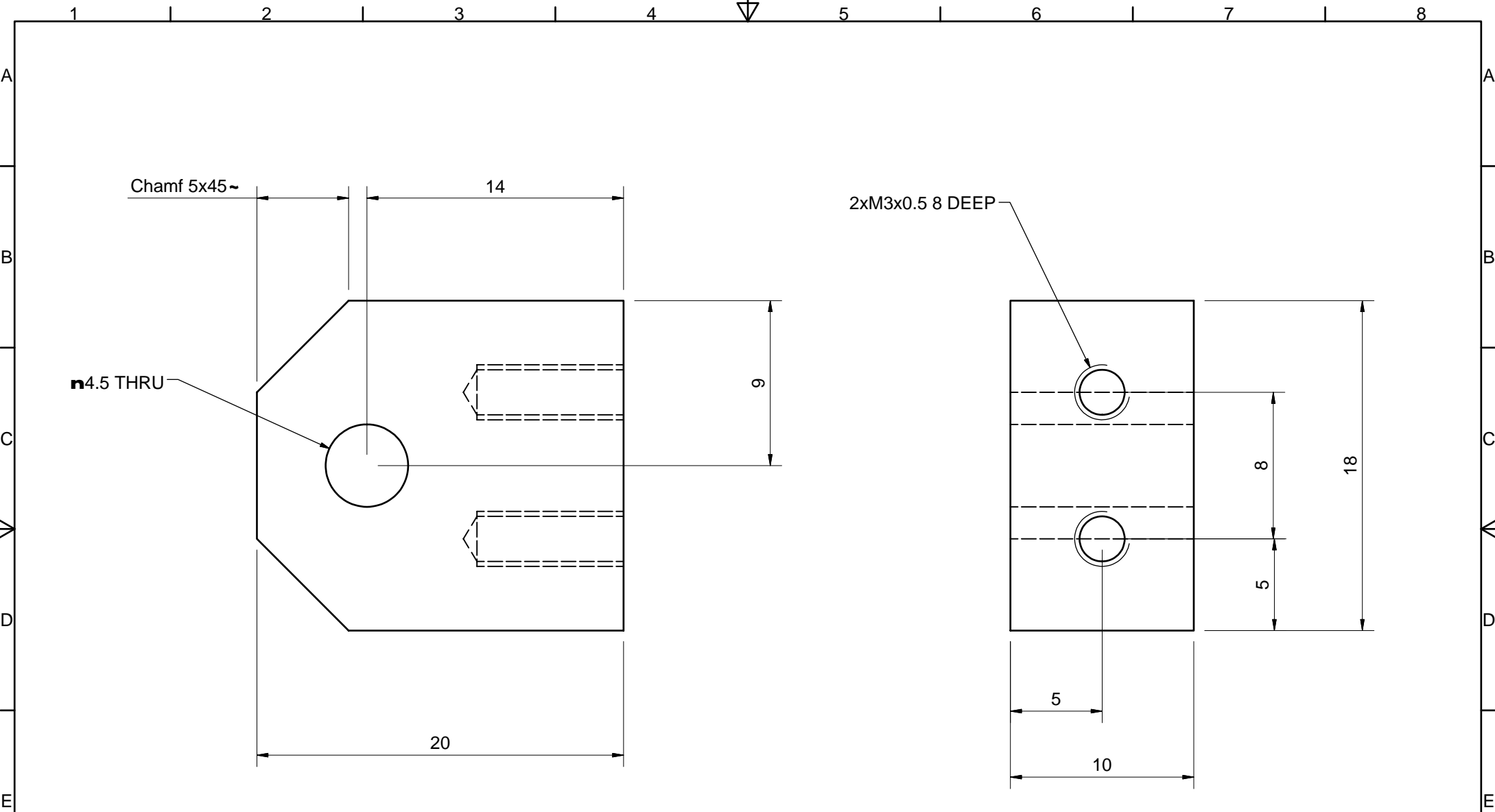
<small>UNLESS OTHERWISE STATED</small> All dimensions in mm <b>General Tol:</b> ~ 0.1 <b>Angular Tol:</b> ~ 0.25 <b>Surface Finish (microns):</b> 3.2 <b>REMOVE ALL SHARP EDGES</b> <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or displayed in whole or part without the express consent of the Isaac Newton Group of Telescopes</small>	Material	Drawn by	Date	Revision	<b>Hepco Single Edge Track - Drilled</b>		
	See note	jolley	15/07/2005	1			
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number		Sheet	
					GLAS-4-2-014 r1	A3	1 / 1



Third Angle

<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: $\sim 0.1$ Angular Tol: $\sim 0.25$ 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	<b>Beam Dump Base Plate</b>		
	Aluminium alloy BS1470 6082 T6	jolley	08/08/2005	2			
	Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet	
Black anodise				GLAS-4-2-015 r2	A3	1 / 1	



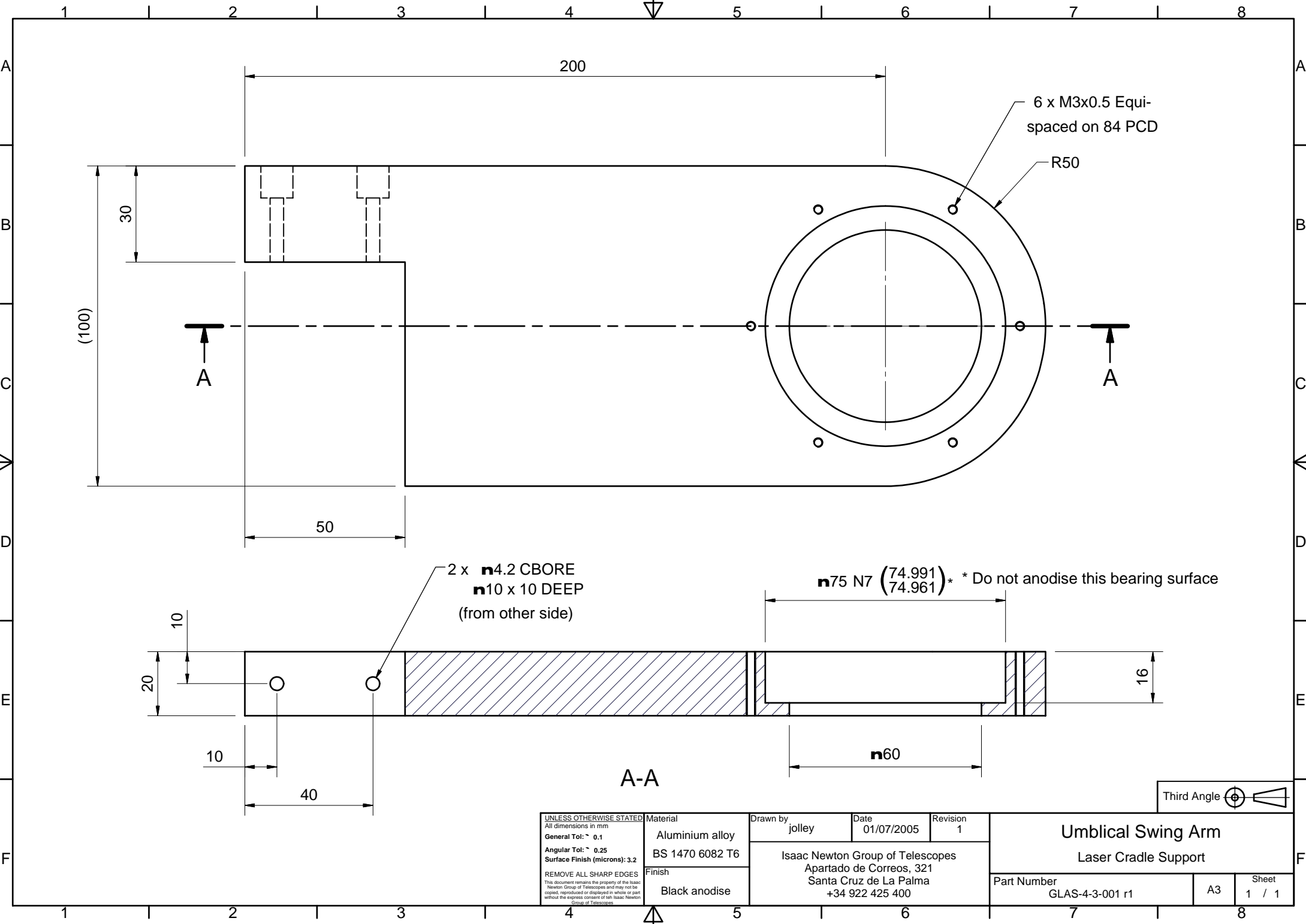


(5:1)



<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	<b>Beam Dump Cylinder Pick-up</b>		
	ALuminium alloy BS1470 6082 T6	jolley	15/07/2005	1			
	Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet	
Black anodise				GLAS-4-2-017 r1	A3	1 / 1	





6 x M3x0.5 Equi-spaced on 84 PCD

R50

(100)

A

A

50

2 x **n4.2 CBORE**  
**n10 x 10 DEEP**  
(from other side)

**n75 N7** (74.991 / 74.961) \* Do not anodise this bearing surface

20

10

16

10

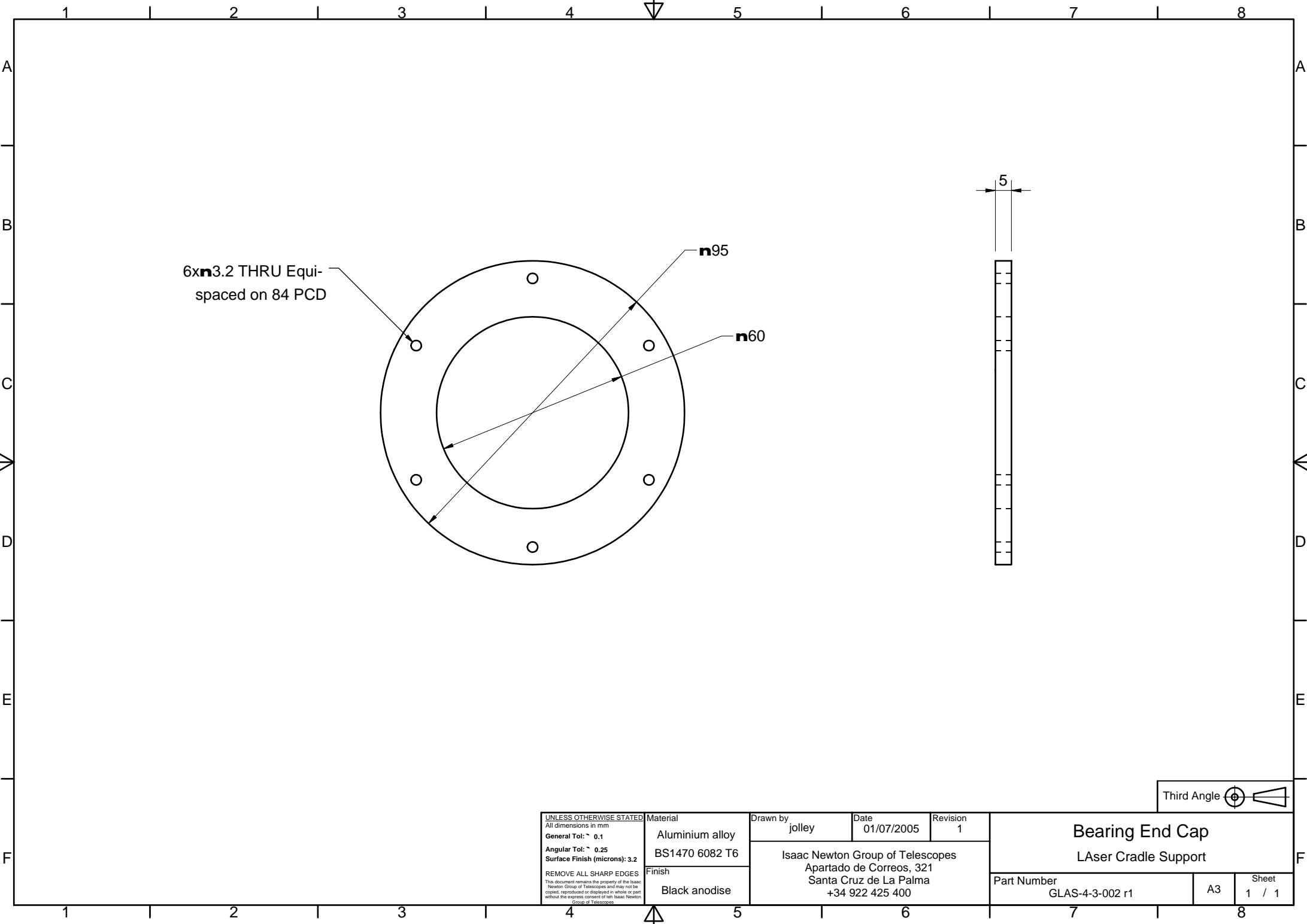
40

**n60**

A-A



<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	<b>Umbilical Swing Arm</b> <b>Laser Cradle Support</b>		
	Aluminium alloy BS 1470 6082 T6	jolley	01/07/2005	1			
	Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet	
	Black anodise				GLAS-4-3-001 r1	A3	1 / 1



6xn3.2 THRU Equi-spaced on 84 PCD

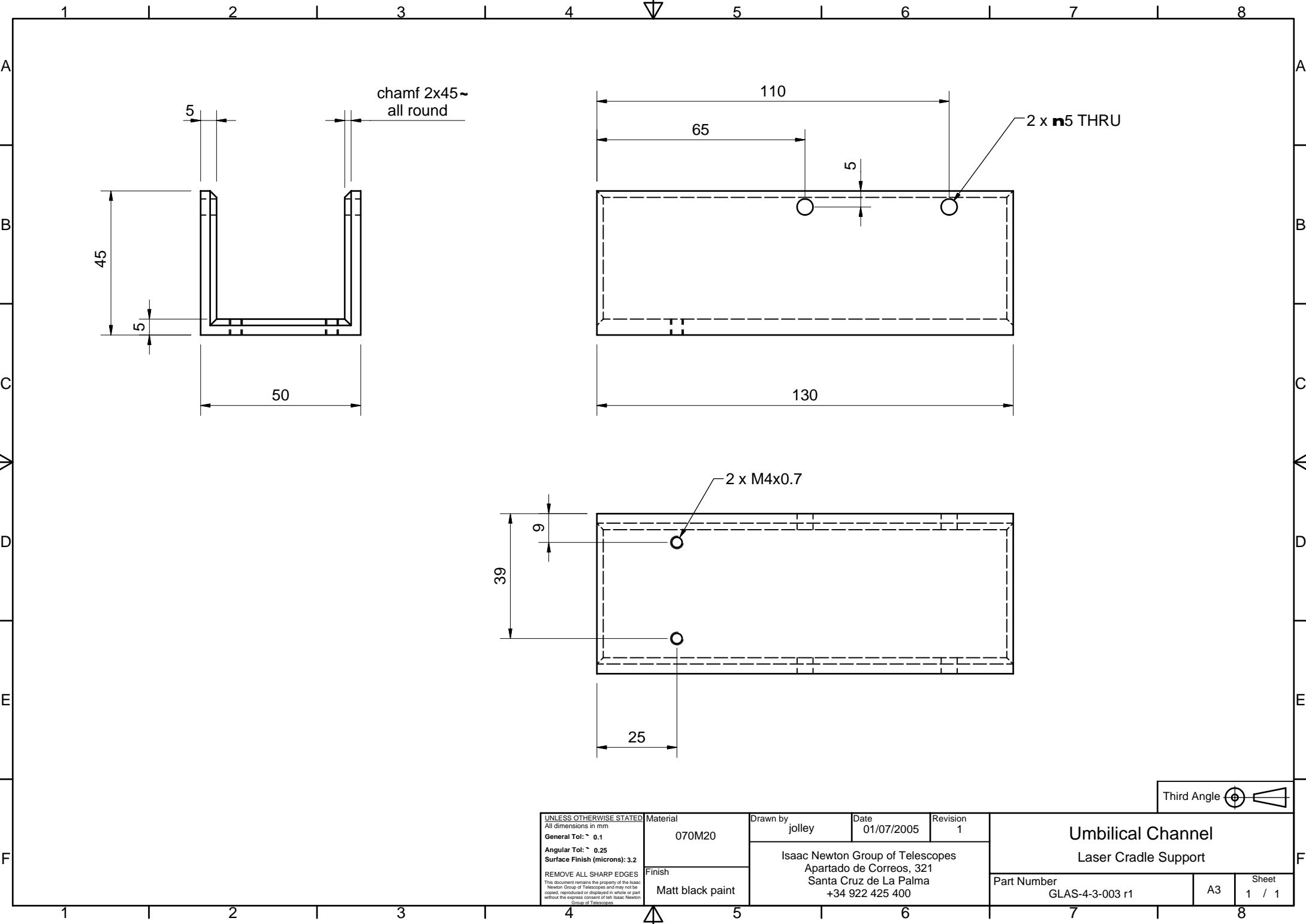
n95

n60

5



<small>UNLESS OTHERWISE STATED</small> All dimensions in mm <b>General Tol:</b> ~ 0.1 <b>Angular Tol:</b> ~ 0.25 <b>Surface Finish (microns):</b> 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	<b>Bearing End Cap</b> <b>LAser Cradle Support</b>		
	Aluminium alloy	jolley	01/07/2005	1			
	BS1470 6082 T6	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet	
Finish	Black anodise				GLAS-4-3-002 r1	A3	1 / 1



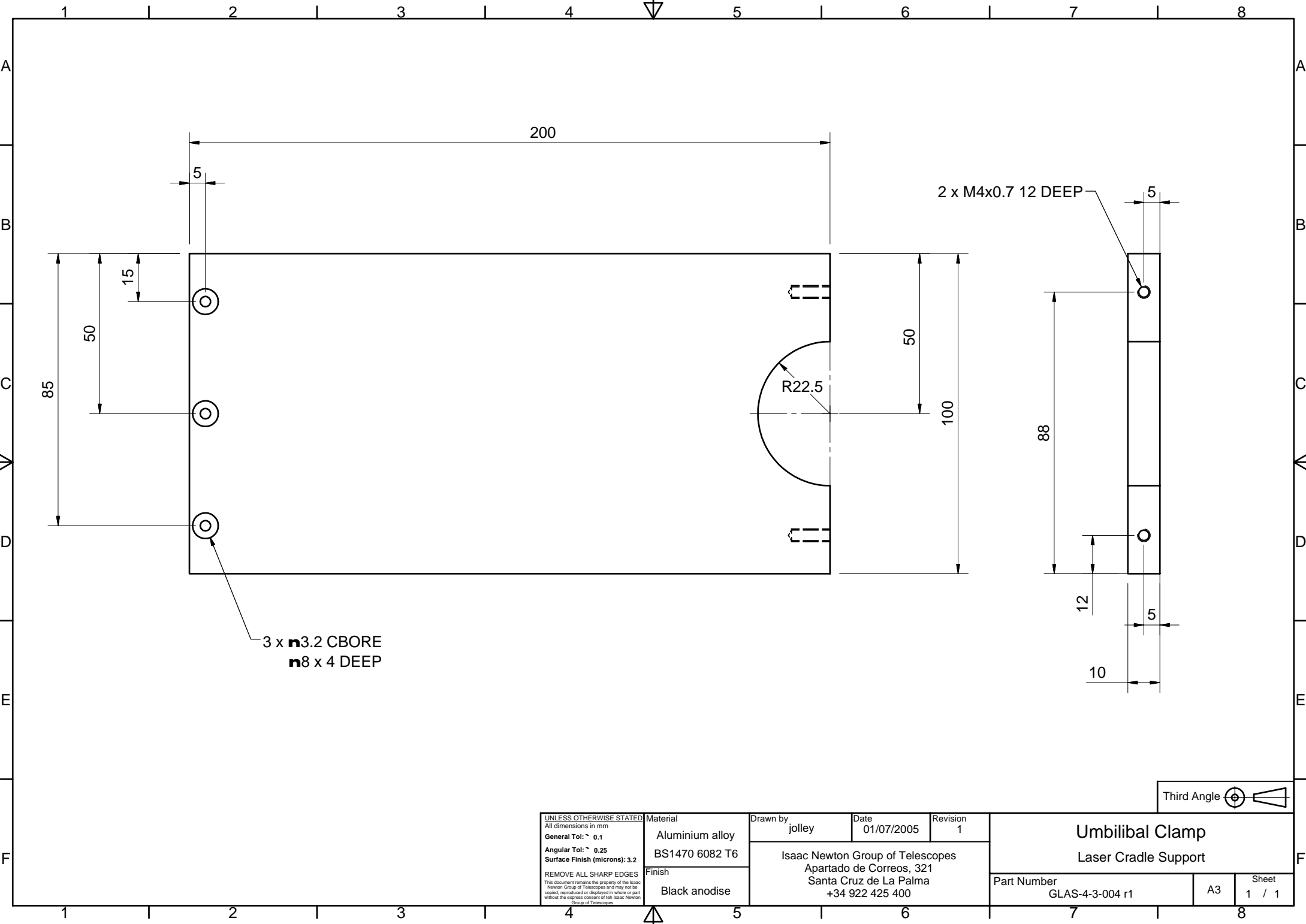
chamf 2x45~  
all round

2 x  $\phi$ 5 THRU

2 x M4x0.7



<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: $\sim$ 0.1 Angular Tol: $\sim$ 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	<b>Umbilical Channel</b> Laser Cradle Support		
	070M20	jolley	01/07/2005	1			
Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet		
Matt black paint				GLAS-4-3-003 r1	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  
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Material  
 Aluminium alloy  
 BS1470 6082 T6  
 Finish  
 Black anodise

Drawn by  
 jolley

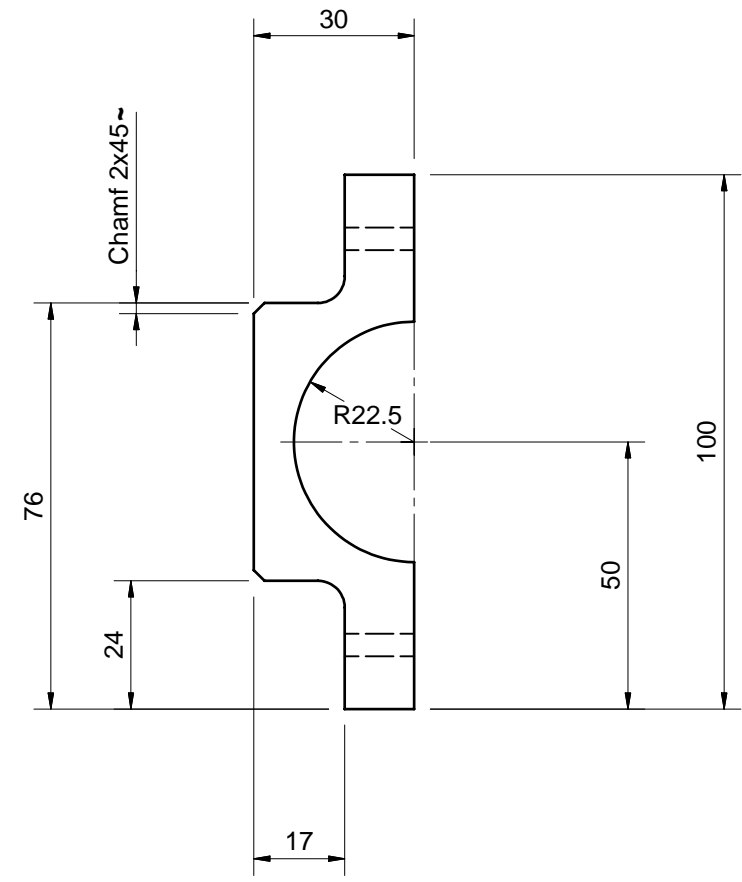
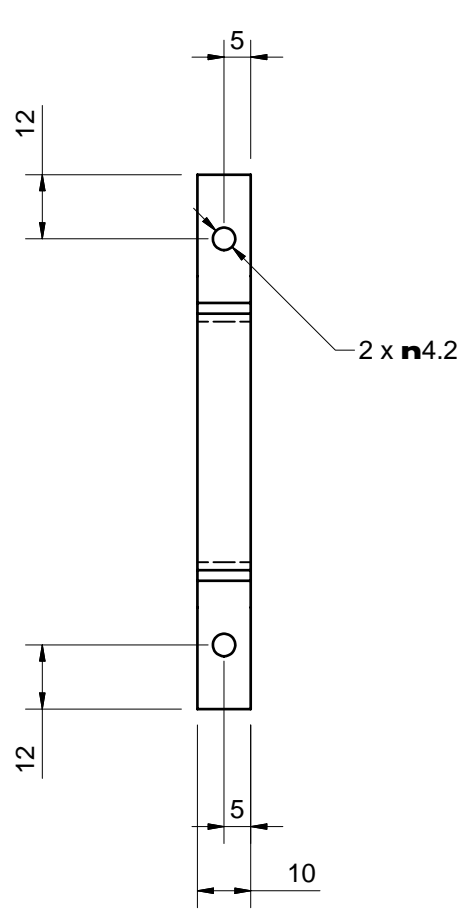
Date  
 01/07/2005

Revision  
 1

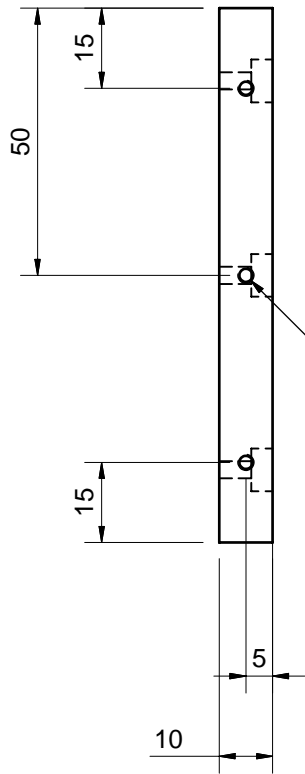
Third Angle

**Umbilical Clamp**  
 Laser Cradle Support

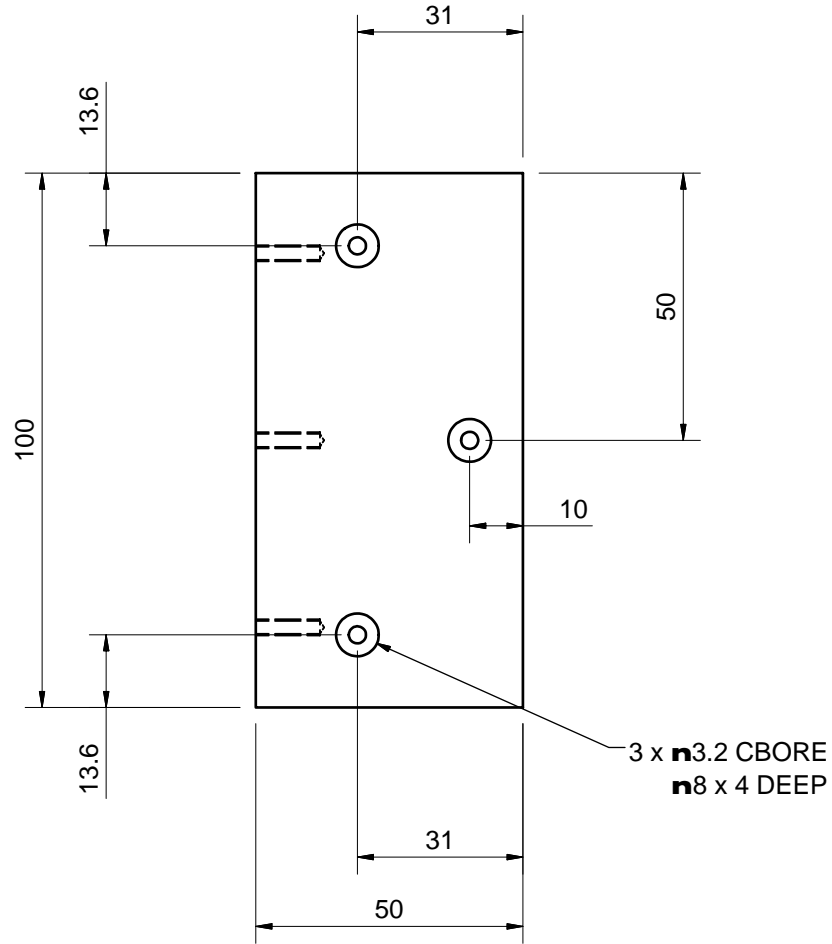
Part Number	GLAS-4-3-004 r1	A3	Sheet 1 / 1
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<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: $\sim 0.1$ Angular Tol: $\sim 0.25$ Surface Finish (microns): 3.2 REMOVE ALL SHARP EDGES <small>This document remains the property of 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	<b>Umbilical Clamp Plate</b> Laser Cradle Support		
	Aluminium alloy BS1470 6082 T6	jolley	01/07/2005	1			
	Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet	
	Black anodise				GLAS-4-3-005 r1	A3	1 / 1



3 x M3x0.5 12 DEEP

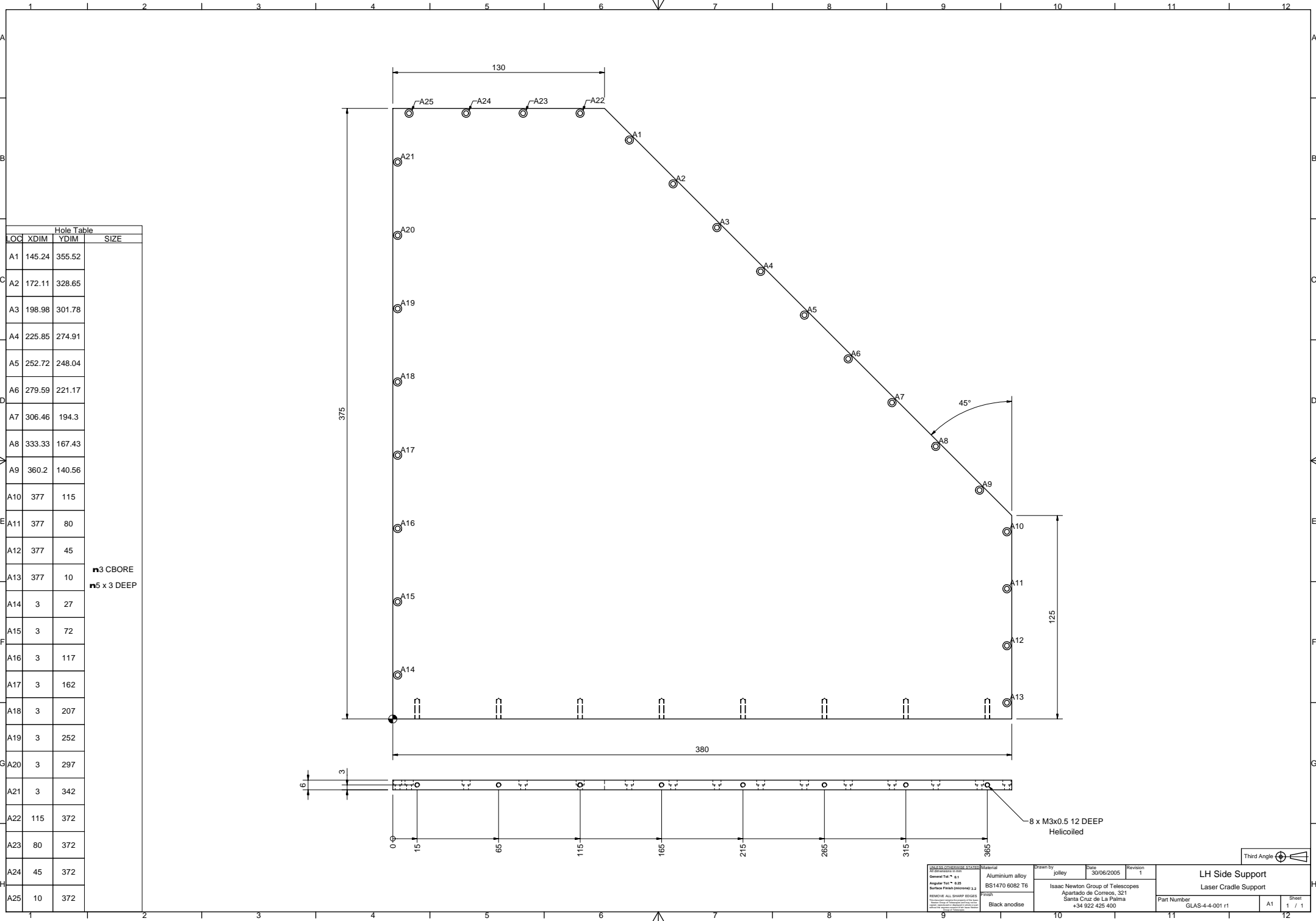


3 x  $\varnothing$ 3.2 CBORE  
 $\varnothing$ 8 x 4 DEEP



<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: $\sim$ 0.1 Angular Tol: $\sim$ 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	<b>Umbilical Clamp Bracket</b> Laser Cradle Support		
	Aluminium alloy BS1470 6082 T6	jolley	01/07/2005	1			
	Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet	
	Black anodise				GLAS-4-3-006 r1	A3	1 / 1

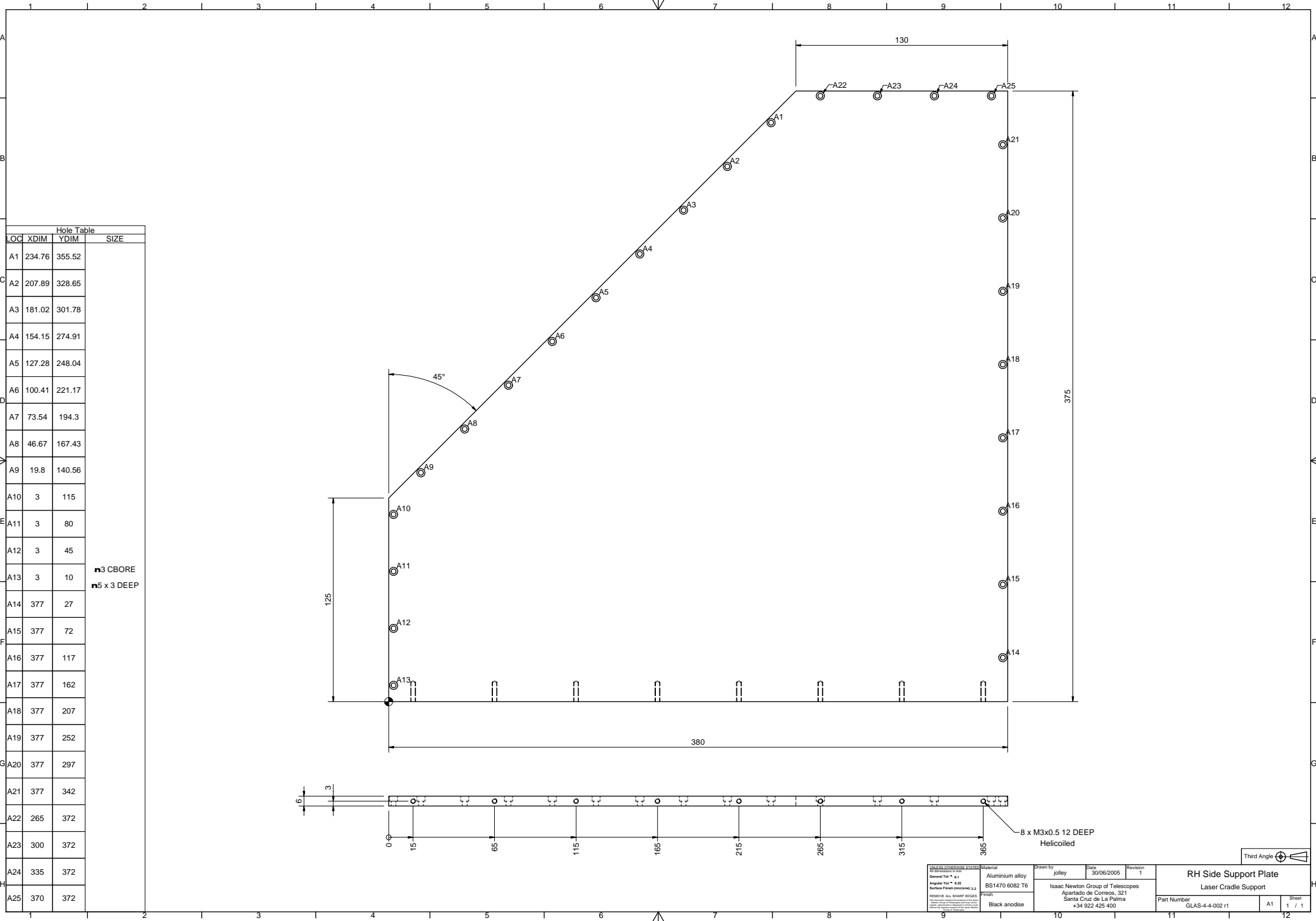




Hole Table			
LOC	XDIM	YDIM	SIZE
A1	145.24	355.52	
A2	172.11	328.65	
A3	198.98	301.78	
A4	225.85	274.91	
A5	252.72	248.04	
A6	279.59	221.17	
A7	306.46	194.3	
A8	333.33	167.43	
A9	360.2	140.56	
A10	377	115	
A11	377	80	
A12	377	45	
A13	377	10	n3 CBORE
A14	3	27	n5 x 3 DEEP
A15	3	72	
A16	3	117	
A17	3	162	
A18	3	207	
A19	3	252	
A20	3	297	
A21	3	342	
A22	115	372	
A23	80	372	
A24	45	372	
A25	10	372	

Material Aluminum alloy BS1470 6082 T6 Surface Finish (per ISO 1305) R0.25 Finish Black anodise	Drawn by jolley Date 30/06/2005 Revision 1	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400	<b>LH Side Support</b> <b>Laser Cradle Support</b> Part Number GLAS-4-4-001 r1	Sheet 1 / 1
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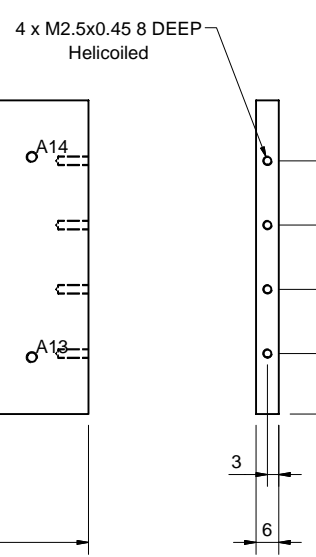
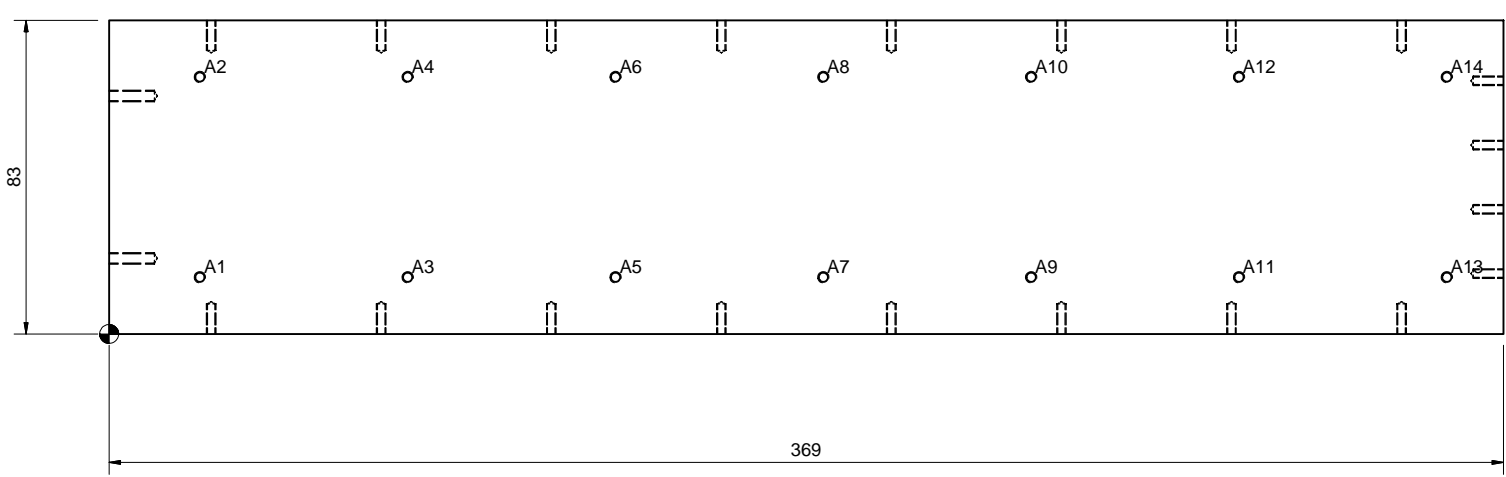
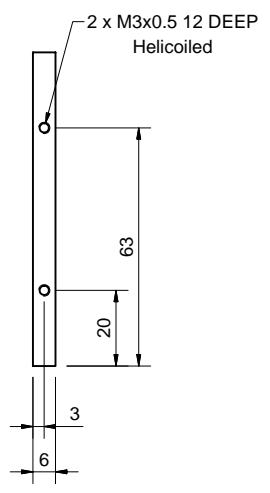
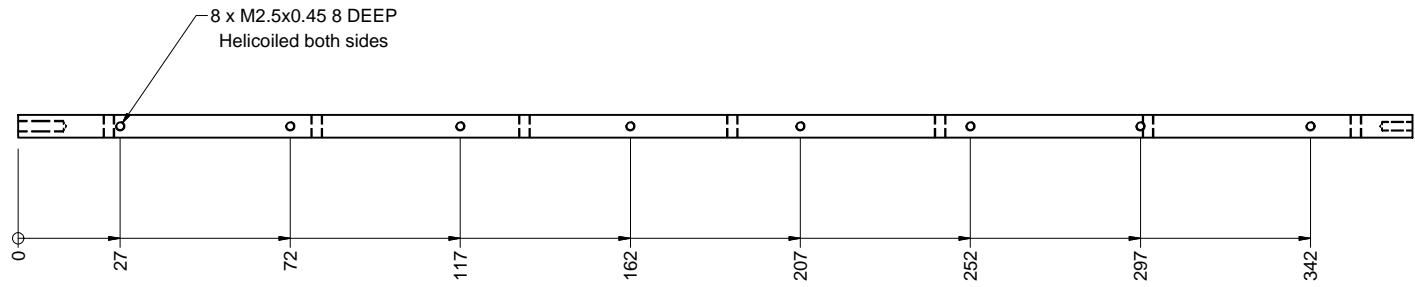
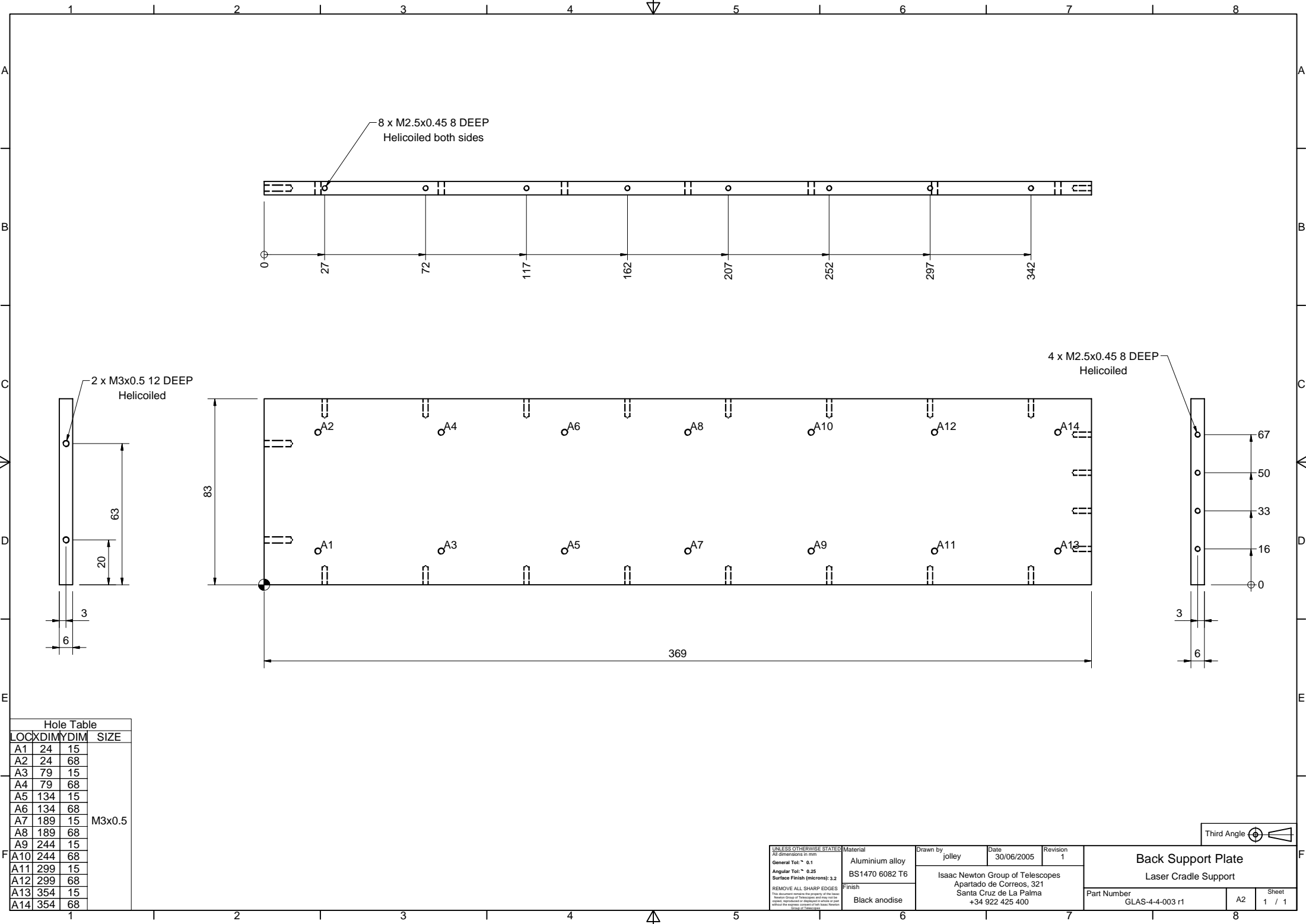
Hole Table			
LOC	XDIM	YDIM	SIZE
A1	234.76	355.52	
A2	207.89	328.65	
A3	181.02	301.78	
A4	154.15	274.91	
A5	127.28	248.04	
A6	100.41	221.17	
A7	73.54	194.3	
A8	46.67	167.43	
A9	19.8	140.56	
A10	3	115	
A11	3	80	
A12	3	45	
A13	3	10	
A14	377	27	
A15	377	72	
A16	377	117	
A17	377	162	
A18	377	207	
A19	377	252	
A20	377	297	
A21	377	342	
A22	265	372	
A23	300	372	
A24	335	372	
A25	370	372	

n3 CBORE  
n5 x 3 DEEP

ALL DIMENSIONS IN MILLIMETERS General Tol: ± 0.1 Angular Tol: ± 0.05 Surface Finish: (see spec) 3.2 FINISH EXCEPT ALL DIMENSIONS UNLESS SPECIFIED OTHERWISE THIS DRAWING IS THE PROPERTY OF ISAAC NEWTON GROUP OF TELESCOPES IT IS TO BE USED ONLY FOR THE PROJECT AND NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF ISAAC NEWTON GROUP OF TELESCOPES	<b>Material</b> Aluminum alloy BS1470 6082 T6 Finish Black anodise	<b>Drawn by</b> jolley	<b>Date</b> 30/06/2005	<b>Revision</b> 1	<b>Part Number</b> GLAS-4-4-002 r1	<b>Sheet</b> 1 / 1
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**RH Side Support Plate**  
Laser Cradle Support

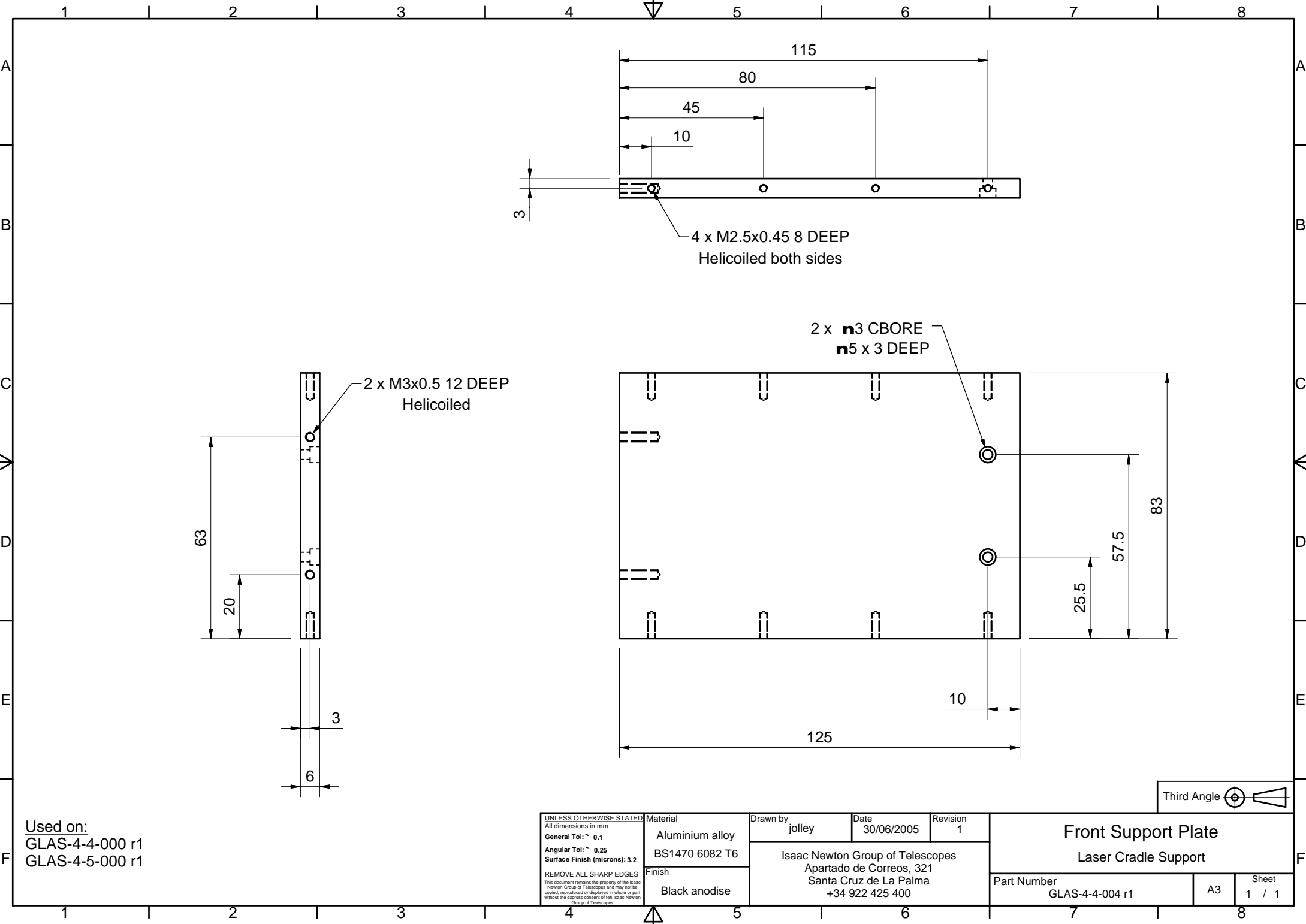




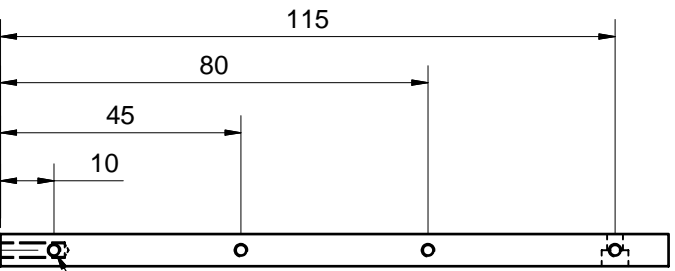
Hole Table			
LOC	DIM	YDIM	SIZE
A1	24	15	M3x0.5
A2	24	68	
A3	79	15	
A4	79	68	
A5	134	15	
A6	134	68	
A7	189	15	
A8	189	68	
A9	244	15	
A10	244	68	
A11	299	15	
A12	299	68	
A13	354	15	
A14	354	68	

<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 whole or in part without the written consent of the Isaac Newton Group of Telescopes.</small></small>	Material	Aluminium alloy BS1470 6082 T6	Drawn by	jolley	Date	30/06/2005	Revision	1	<b>Back Support Plate</b> <b>Laser Cradle Support</b>
	Finish	Black anodise	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400				Part Number	GLAS-4-4-003 r1	
									Sheet





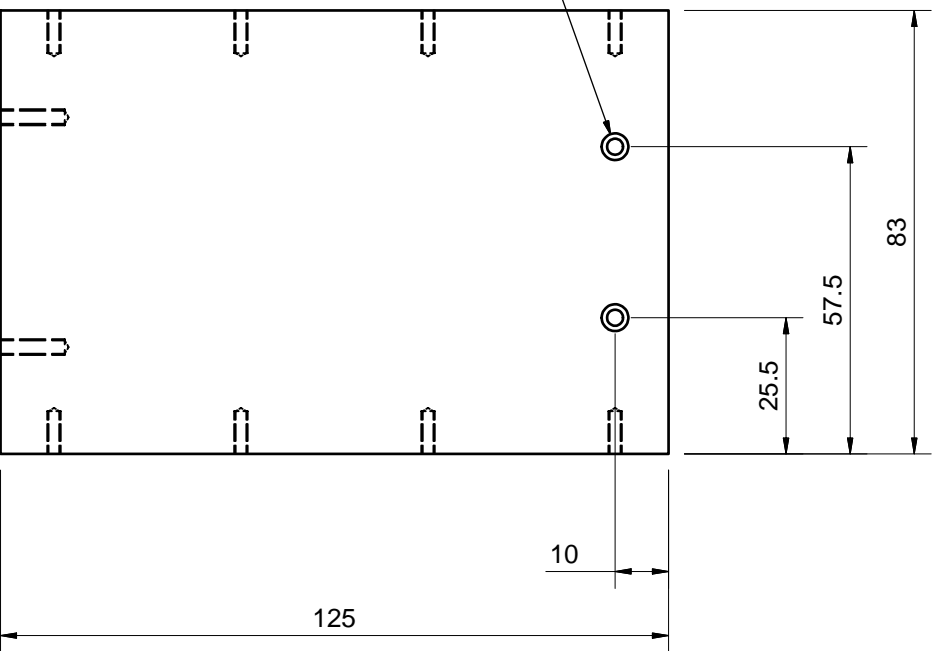
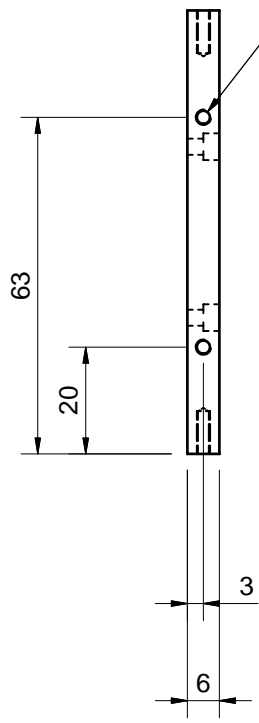
3



4 x M2.5x0.45 8 DEEP  
Helicoiled both sides

2 x n3 CBORE  
n5 x 3 DEEP

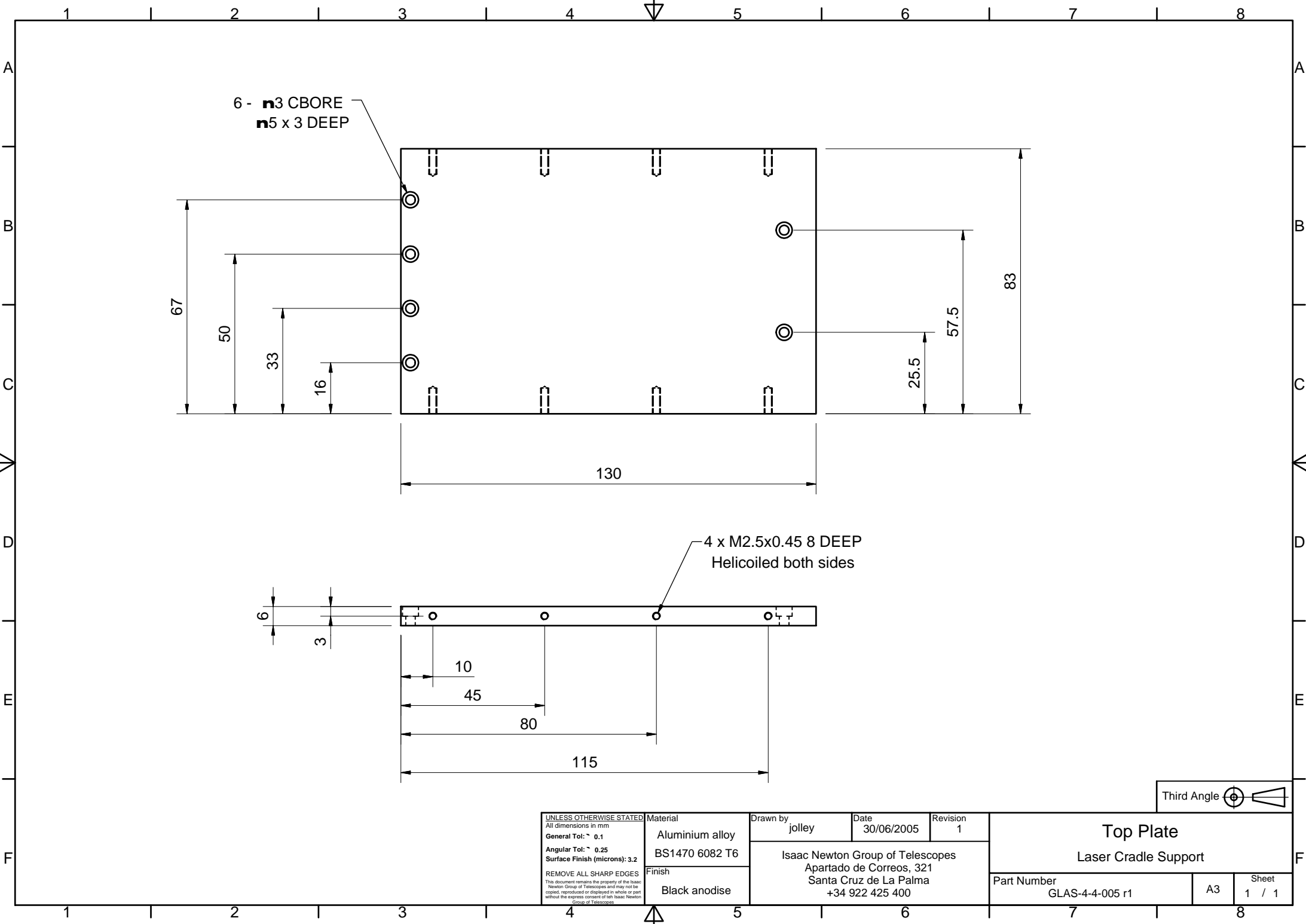
2 x M3x0.5 12 DEEP  
Helicoiled



Third Angle

Used on:  
GLAS-4-4-000 r1  
GLAS-4-5-000 r1

<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	<b>Front Support Plate</b> Laser Cradle Support		
	Aluminium alloy BS1470 6082 T6	jolley	30/06/2005	1			
	Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet	
Black anodise				GLAS-4-4-004 r1	A3	1 / 1	

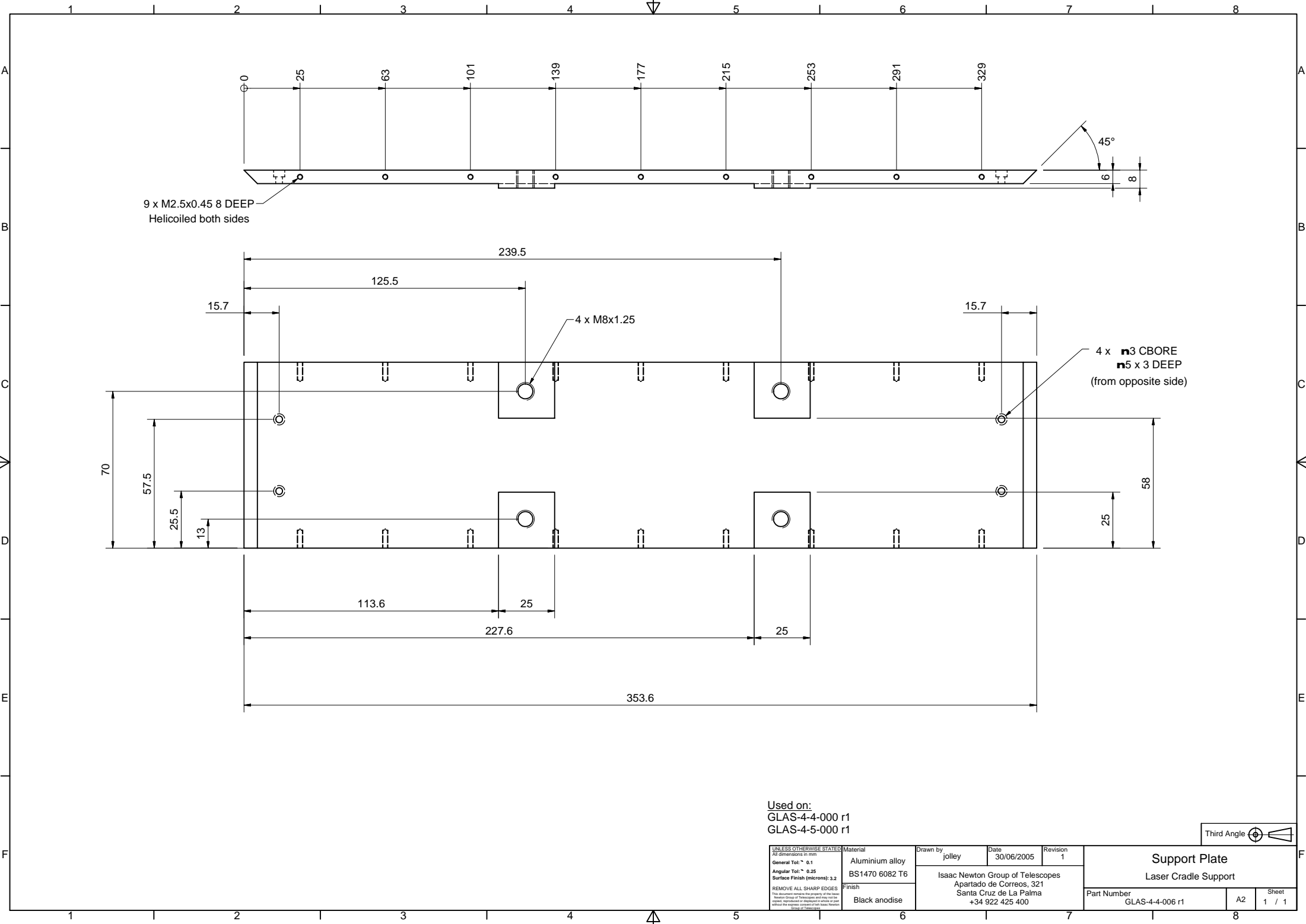


6 -  $\text{n}3$  CBORE  
 $\text{n}5 \times 3$  DEEP

4 x M2.5x0.45 8 DEEP  
 Helicoiled both sides

Third Angle

<small>UNLESS OTHERWISE STATED</small> All dimensions in mm General Tol: $\sim 0.1$ Angular Tol: $\sim 0.25$ 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	<b>Top Plate</b> Laser Cradle Support		
	Aluminium alloy BS1470 6082 T6	jolley	30/06/2005	1			
	Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet	
	Black anodise				GLAS-4-4-005 r1	A3	1 / 1



9 x M2.5x0.45 8 DEEP  
Helicoiled both sides

4 x M8x1.25

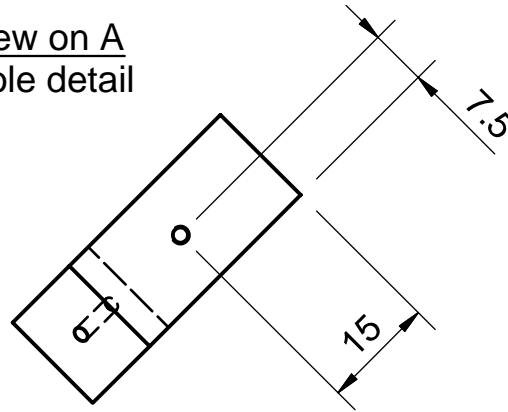
4 x  $\varnothing$ 3 CBORE  
 $\varnothing$ 5 x 3 DEEP  
(from opposite side)

Used on:  
GLAS-4-4-000 r1  
GLAS-4-5-000 r1

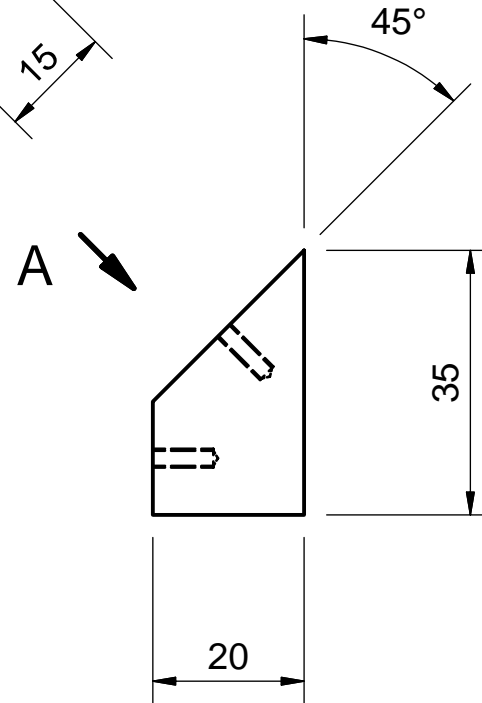
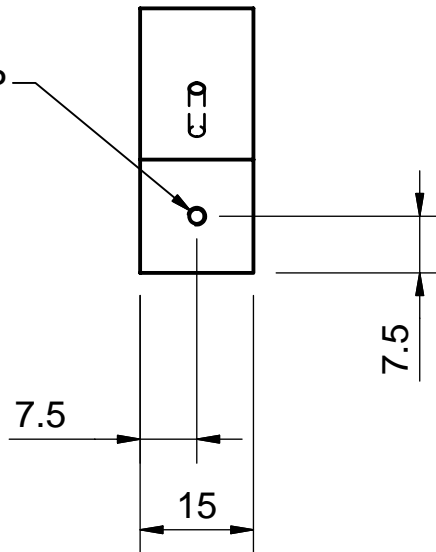


<small>UNLESS OTHERWISE STATED: All dimensions in mm General Tol: <math>\pm</math> 0.1 Angular Tol: <math>\pm</math> 0.25 Surface Finish (microns): 3.2  REMOVE ALL SHARP EDGES <small>This document remains the property of the Isaac Newton Group of Telescopes and may not be copied, reproduced or distributed in whole or in part without the written consent of the Isaac Newton Group of Telescopes.</small> </small>	Material	Aluminium alloy BS1470 6082 T6	Drawn by	jolley	Date	30/06/2005	Revision	1	<b>Support Plate</b> Laser Cradle Support
	Finish	Black anodise	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	GLAS-4-4-006 r1	Sheet	
	A2								

Auxiliary view on A  
Showing hole detail



2 x M2.5x0.45 8 DEEP  
Helicoiled



Third Angle

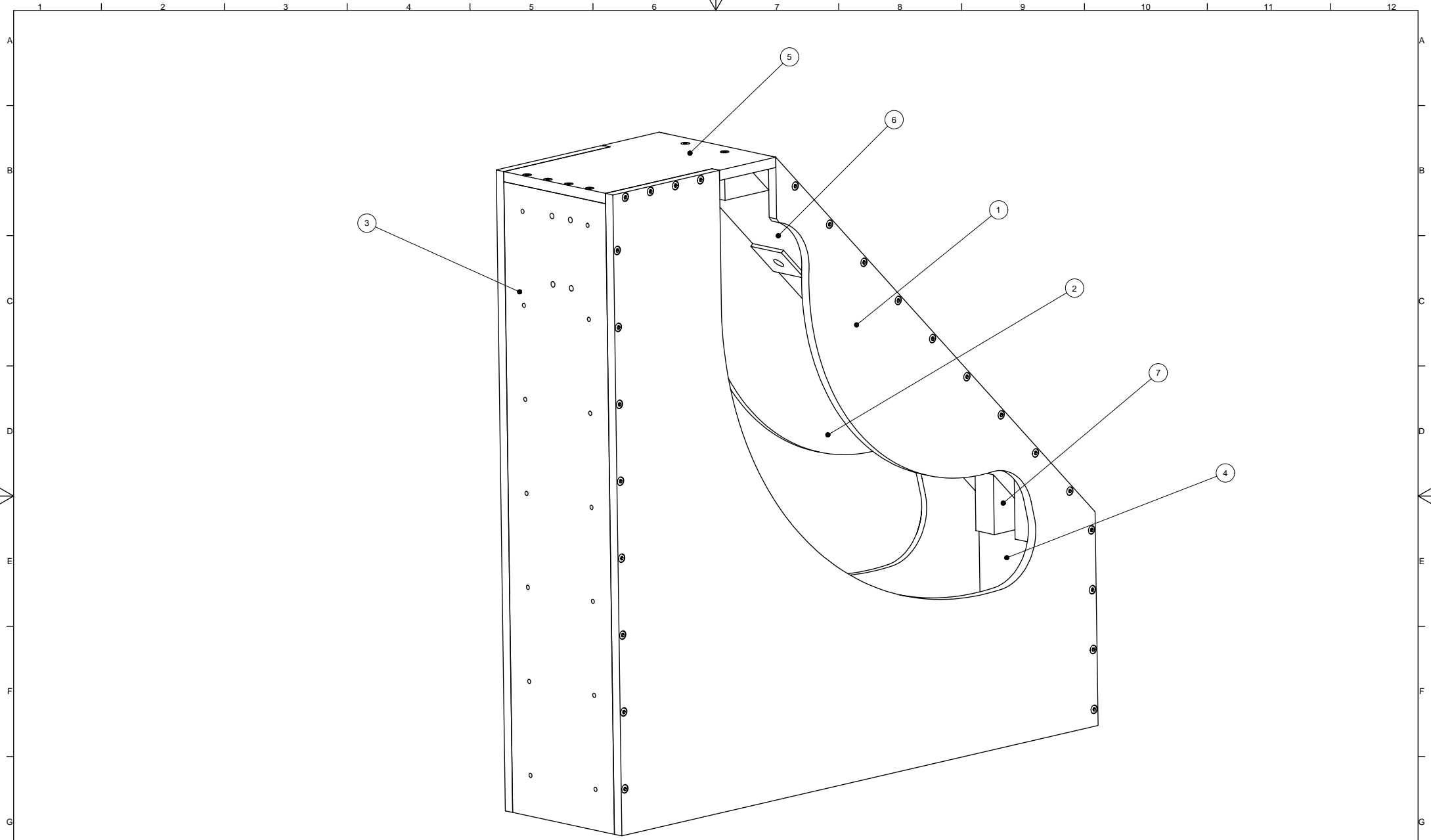
Used on:  
GLAS-4-4-000 r1  
GLAS-4-5-000 r1

UNLESS OTHERWISE STATED  
All dimensions in mm  
General Tol:  $\sim$  0.1  
Angular Tol:  $\sim$  0.25  
Surface Finish (microns): 3.2  
REMOVE ALL SHARP EDGES  
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Material  
Aluminium alloy  
BS1470 6082 T6  
Finish  
Black anodise

Drawn by  
jolley  
Date  
30/06/2005  
Revision  
1  
Isaac Newton Group of Telescopes  
Apartado de Correos, 321  
Santa Cruz de La Palma  
+34 922 425 400

**Joint Block**  
Laser Cradle Support  
Part Number  
GLAS-4-4-007 r1  
Sheet  
A4  
1 / 1

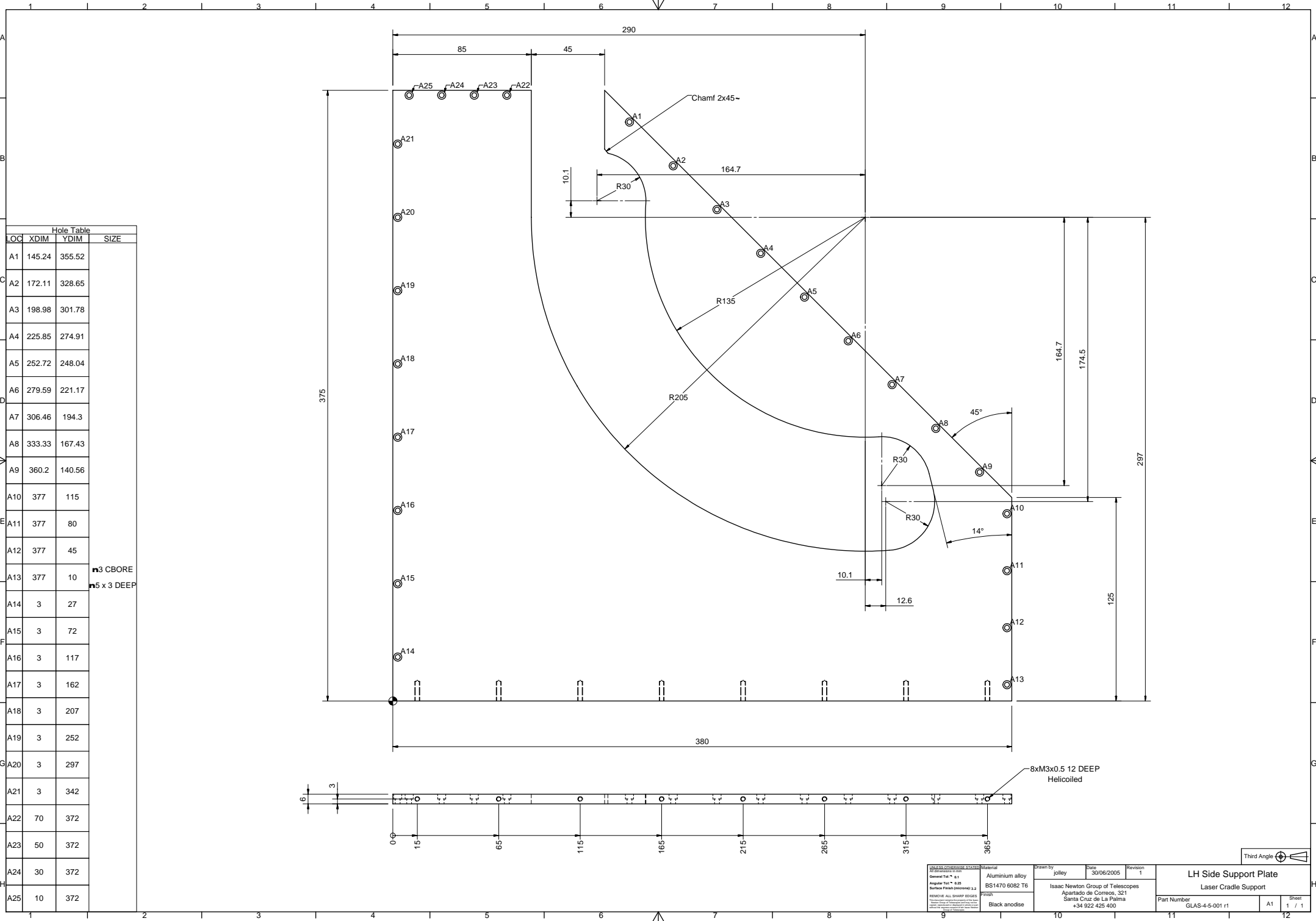


9	62	BS 4464 - M2.5 Form B	Spring Washer
8	62	BS 4168 - M2.5 x 10	Hexagon Socket Head Cap Screw
7	4	GLAS-4-4-007 r1	Joint block
6	1	GLAS-4-4-006 r1	Support plate
5	1	GLAS-4-5-005 r1	Top plate
4	1	GLAS-4-4-004 r1	Front support plate
3	1	GLAS-4-5-003 r1	Back support plate
2	1	GLAS-4-5-002 r1	RH side support plate
1	1	GLAS-4-5-001 r1	LH side support plate
ITEM	QTY	PART NUMBER	DESCRIPTION

<small>           ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED            UNLESS NOTED OTHERWISE            GENERAL TOL: ± 0.1            ANGULAR TOL: ± 0.05            SURFACE FINISH (PERFORMANCE): 3.2            FINISH:         </small>	<small>           MATERIAL:         </small>	<small>           DRAWN BY: jolley            DATE: 30/06/2005            REVISION: 1         </small>	<small>           ISAAC: Newton Group of Telescopes            Apartado de Correos, 321            Santa Cruz de La Palma            +34 922 425 400         </small>	<small>           PART NUMBER: GLAS-4-5-000 r1         </small>	<small>           A1            SHEET: 1 / 1         </small>
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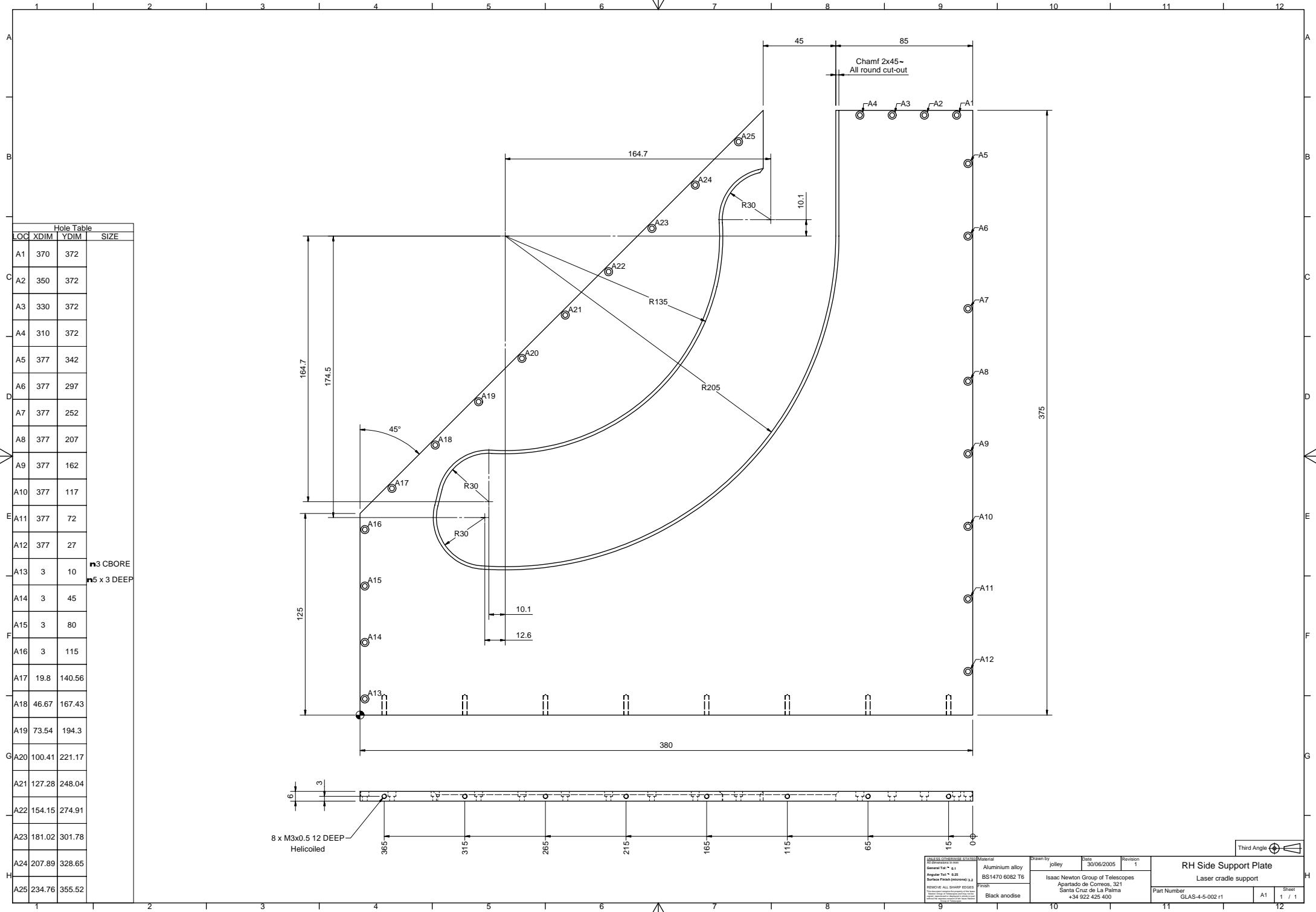
Laser Cradle Umbilical End Support



Hole Table			
LOC	XDIM	YDIM	SIZE
A1	145.24	355.52	
A2	172.11	328.65	
A3	198.98	301.78	
A4	225.85	274.91	
A5	252.72	248.04	
A6	279.59	221.17	
A7	306.46	194.3	
A8	333.33	167.43	
A9	360.2	140.56	
A10	377	115	
A11	377	80	
A12	377	45	
A13	377	10	n3 CBORE
A14	3	27	n5 x 3 DEEP
A15	3	72	
A16	3	117	
A17	3	162	
A18	3	207	
A19	3	252	
A20	3	297	
A21	3	342	
A22	70	372	
A23	50	372	
A24	30	372	
A25	10	372	

Material Aluminum alloy BS1470 6082 T6 Finish Black anodise	Drawn by jolley Date 30/06/2005 Revision 1	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400	<b>LH Side Support Plate</b> Laser Cradle Support Part Number GLAS-4-5-001 r1	Sheet 1 / 1
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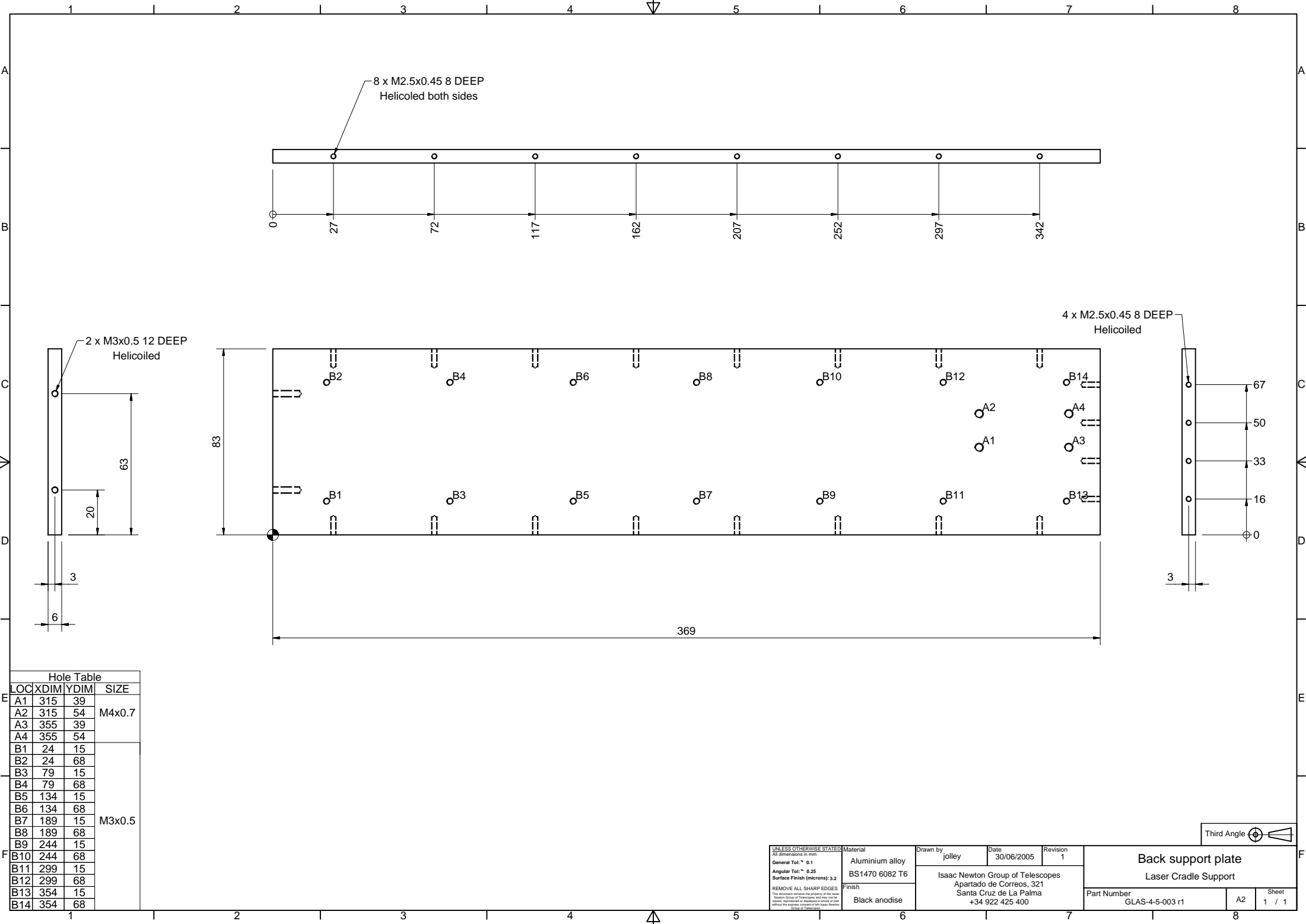




Hole Table			
LOC	XDIM	YDIM	SIZE
A1	370	372	
A2	350	372	
A3	330	372	
A4	310	372	
A5	377	342	
A6	377	297	
A7	377	252	
A8	377	207	
A9	377	162	
A10	377	117	
A11	377	72	
A12	377	27	
A13	3	10	M3 CBORE
A14	3	45	M5 x 3 DEEP
A15	3	80	
A16	3	115	
A17	19.8	140.56	
A18	46.67	167.43	
A19	73.54	194.3	
A20	100.41	221.17	
A21	127.28	248.04	
A22	154.15	274.91	
A23	181.02	301.78	
A24	207.89	328.65	
A25	234.76	355.52	

Material Aluminum alloy BS1470 6082 T6 Surface Finish (per ISO 1305) R12.5 Finish Black anodise	Drawn by jolley Date 30/06/2005 Revision 1	<b>RH Side Support Plate</b> Laser cradle support Part Number GLAS-4-5-002 r1	Sheet 1 / 1
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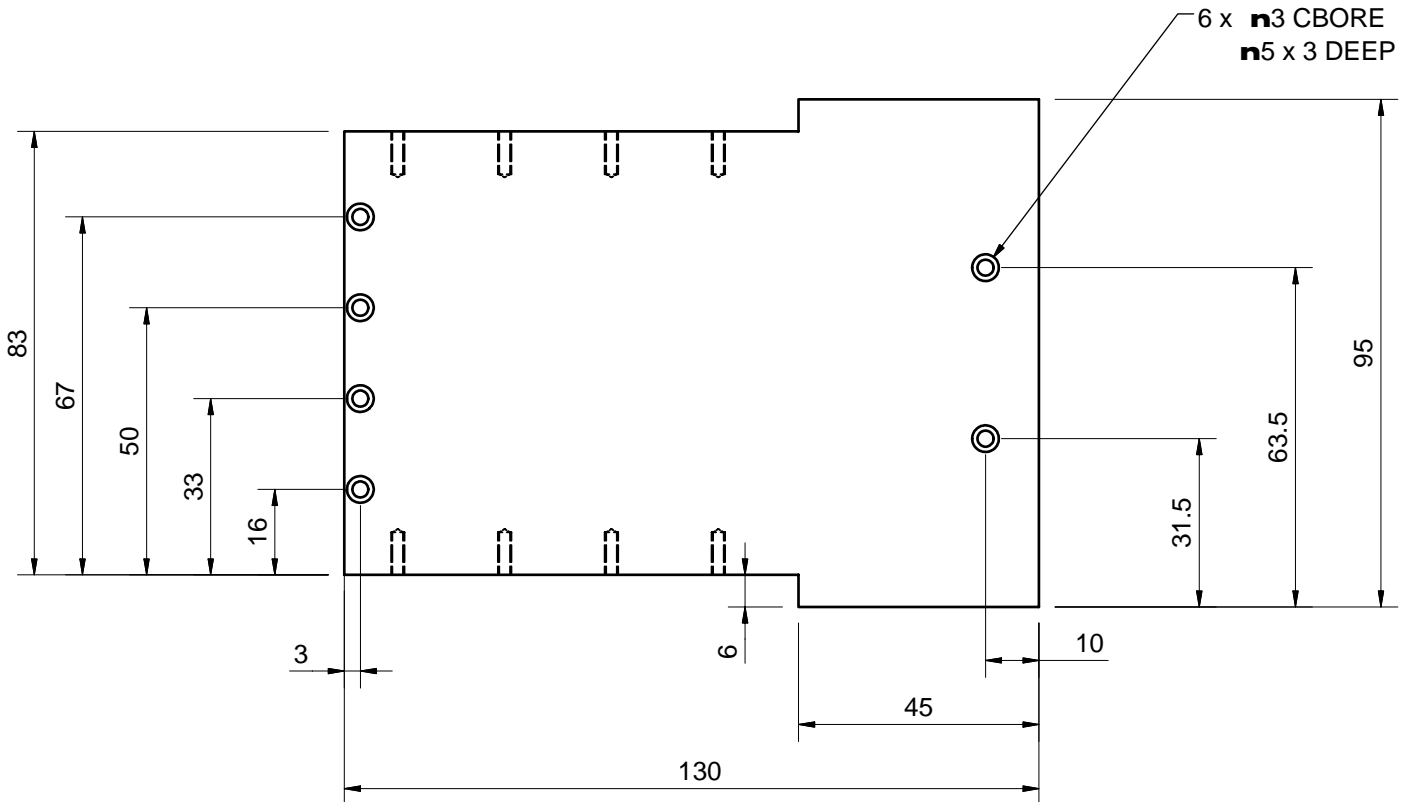
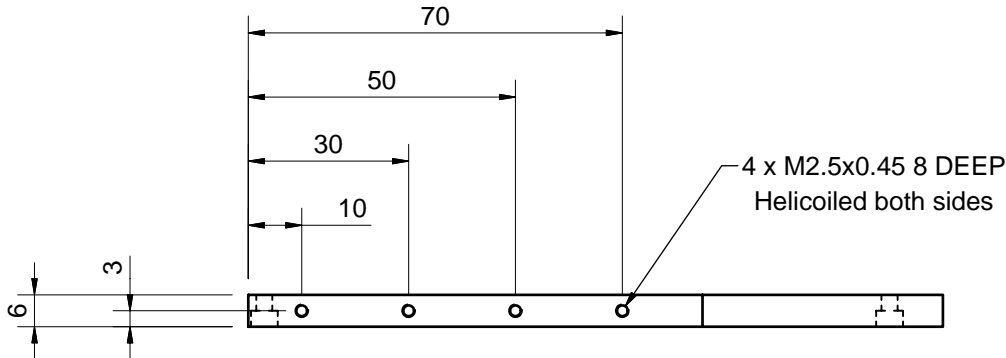
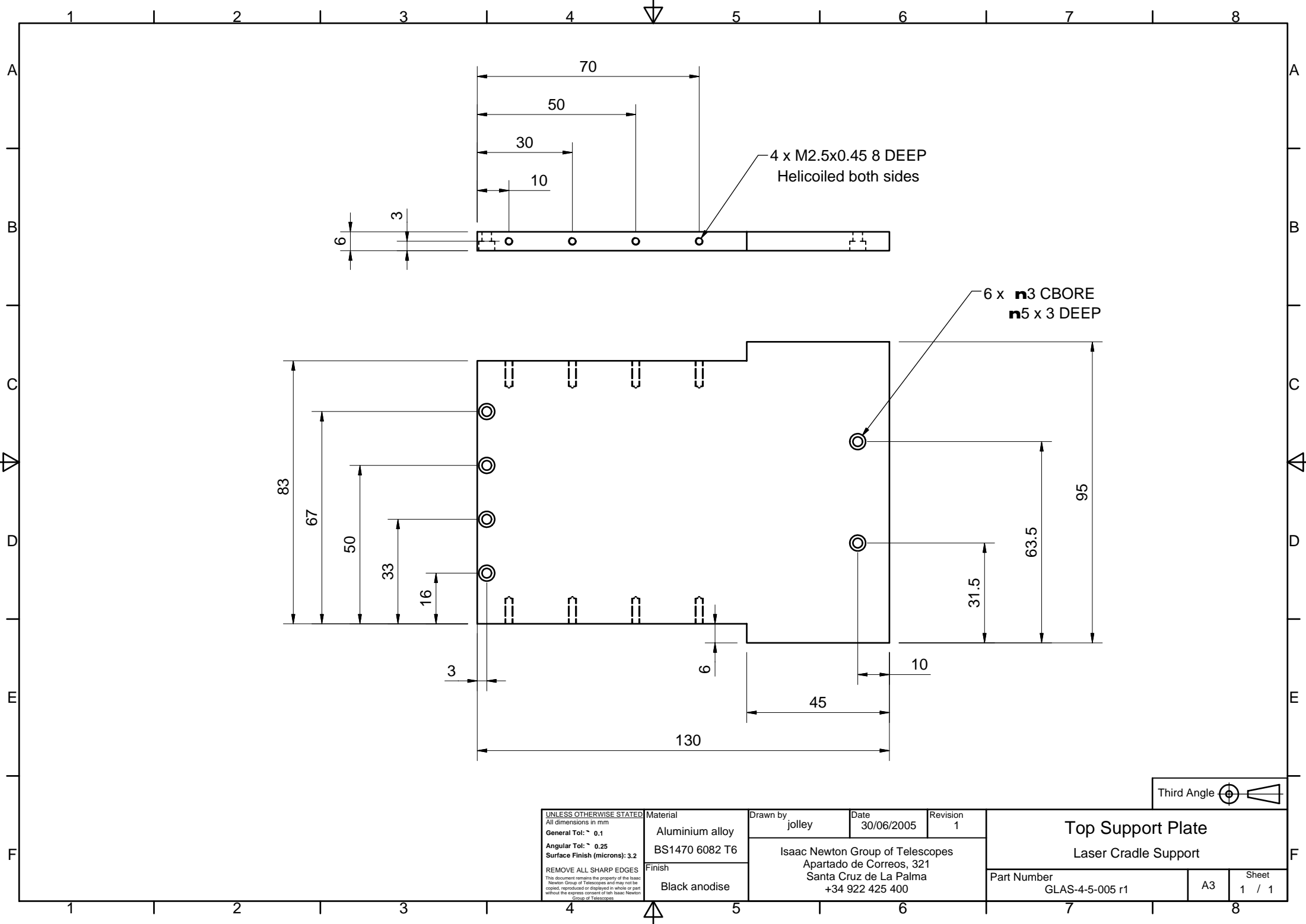
8 x M2.5x0.45 8 DEEP  
Helicoiled both sides

2 x M3x0.5 12 DEEP  
Helicoiled

4 x M2.5x0.45 8 DEEP  
Helicoiled

Hole Table			
LOC	XDIM	YDIM	SIZE
A1	315	39	M4x0.7
A2	315	54	
A3	355	39	
A4	355	54	
B1	24	15	M3x0.5
B2	24	68	
B3	79	15	
B4	79	68	
B5	134	15	
B6	134	68	
B7	189	15	
B8	189	68	
B9	244	15	
B10	244	68	
B11	299	15	
B12	299	68	
B13	354	15	
B14	354	68	

<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 BS1470 6082 T6	Drawn by	jolley	Date	30/06/2005	Revision	1	<b>Back support plate</b> <b>Laser Cradle Support</b>	
	Finish	Black anodise	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400				Part Number	GLAS-4-5-003 r1		Sheet
	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	<b>Top Support Plate</b> <b>Laser Cradle Support</b>		
	Aluminium alloy BS1470 6082 T6	jolley	30/06/2005	1			
	Finish	Isaac Newton Group of Telescopes Apartado de Correos, 321 Santa Cruz de La Palma +34 922 425 400			Part Number	Sheet	
Black anodise				GLAS-4-5-005 r1	A3	1 / 1	