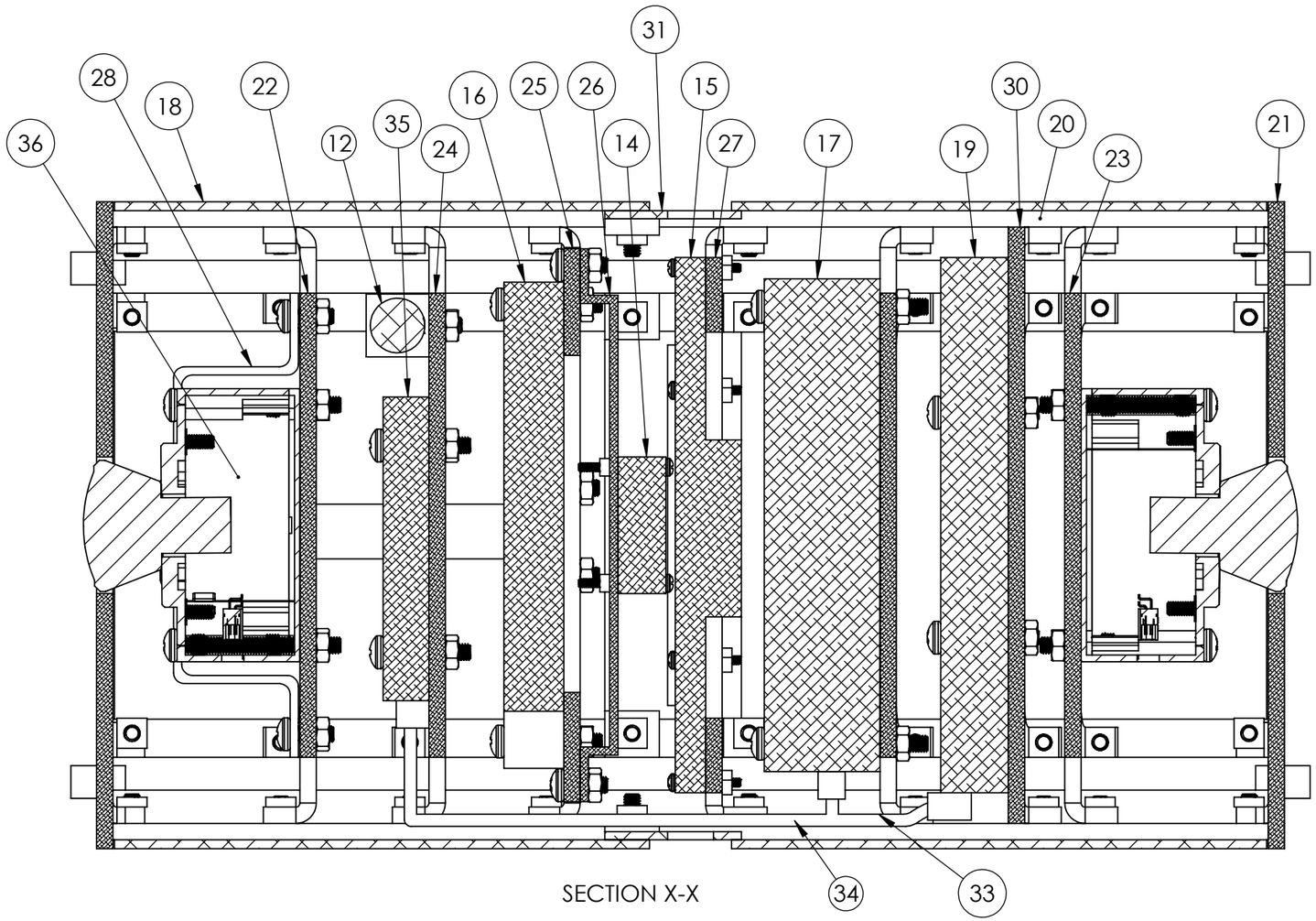
Third Angle Projection



SECTION X-X

ITEM NO.	PART NUMBER	DESCRIPTION	Default/QTY.
1	90591A250	M3 STEEL HEX NUT	38
2	92000A007	M1.6-12mm BHPS	8
3	92000A041	M1.6-16mm BHPS	4
4	92000A118	M3-8mm BHPS	16
5	92000A126	M3-16mm BHPS	4
6	92000A127	M3-18mm BHPS	8
7	92000A132	M3-30mm BHPS	12
8	92010A118	M3-8mm FHPS	48
9	92010A120	M3-10mm FHPS	32
10	M1.6 Hex Nut	M1.6 STEEL HEX NUT	12
11	M3 Square Nut	M3 STEEL SQUARE NUT	80
12	OPP-ADCS-001	XY MAGNETORQUER	2
13	OPP-ADCS-002	SOLAR PANEL	1
14	OPP-ADCS-003	GYROSCOPE BLOCK	1
15	OPP-COMM-001	ANTENNA BLOCK	1
16	OPP-COMM-002	TRANSCEIVER BLOCK	1
17	OPP-EPS-001	BATTERY BLOCK	1
18	OPP-EPS-002	SOLAR PANEL	8
19	OPP-OBDH-001	OBDH BLOCK	1
20	OPP-STRU-001	RAIL	4
21	OPP-STRU-002	COVER PLATE	2
22	OPP-STRU-003A	TOP CAMERA PLATE	1
23	OPP-STRU-003B	BOTTOM CAMERA PLATE	1
24	OPP-STRU-004	XY MAGNETORQUER PLATE	1
25	OPP-STRU-005	TRANSCEIVER PLATE	1
26	OPP-STRU-006	GYROSCOPE BRACKET	1
27	OPP-STRU-007	ANTENNA PLATE	1
28	OPP-STRU-008	Z MAGNETORQUER BRACKET	1
29	OPP-STRU-009	BATTERY PLATE	1
30	OPP-STRU-010	OBDH PLATE	1
31	OPP-STRU-011	ANTENNA SLOT BRACKET	4
33	OPP-STRU-012A	THERMAL STRAP A	1
34	OPP-STRU-012B	THERMAL STRAP B	1
35	OPP-STRU-013	HEAT SINK	1
36	OPP-STRU-014	PAYLOAD [CAMERA]	2

Sheet Scale: 1:1

Drawn by: JOEY ADRIAN PANIQUE

Dimensions are in milimetres unless specified
Standard Tolerances:
X.X= ±1.5875"
X.XX=±0.127"
X.XXX=±0.0254"
Angles=±0.25°

Part Name: Opportunity Assembly -COMPONENTS

Part Configuration: Default

Team Name: 46 - CUBESAT PROJECT TEAM B

Date: Friday, November 30, 2018 4:39:27 PM

Material: VARIOUS

Quantity: 1

Required Finish: PLAIN

Date Printed: Monday, December 3, 2018

File/Path: C:\Users\adria\Desktop\Final Assembly with fasteners\

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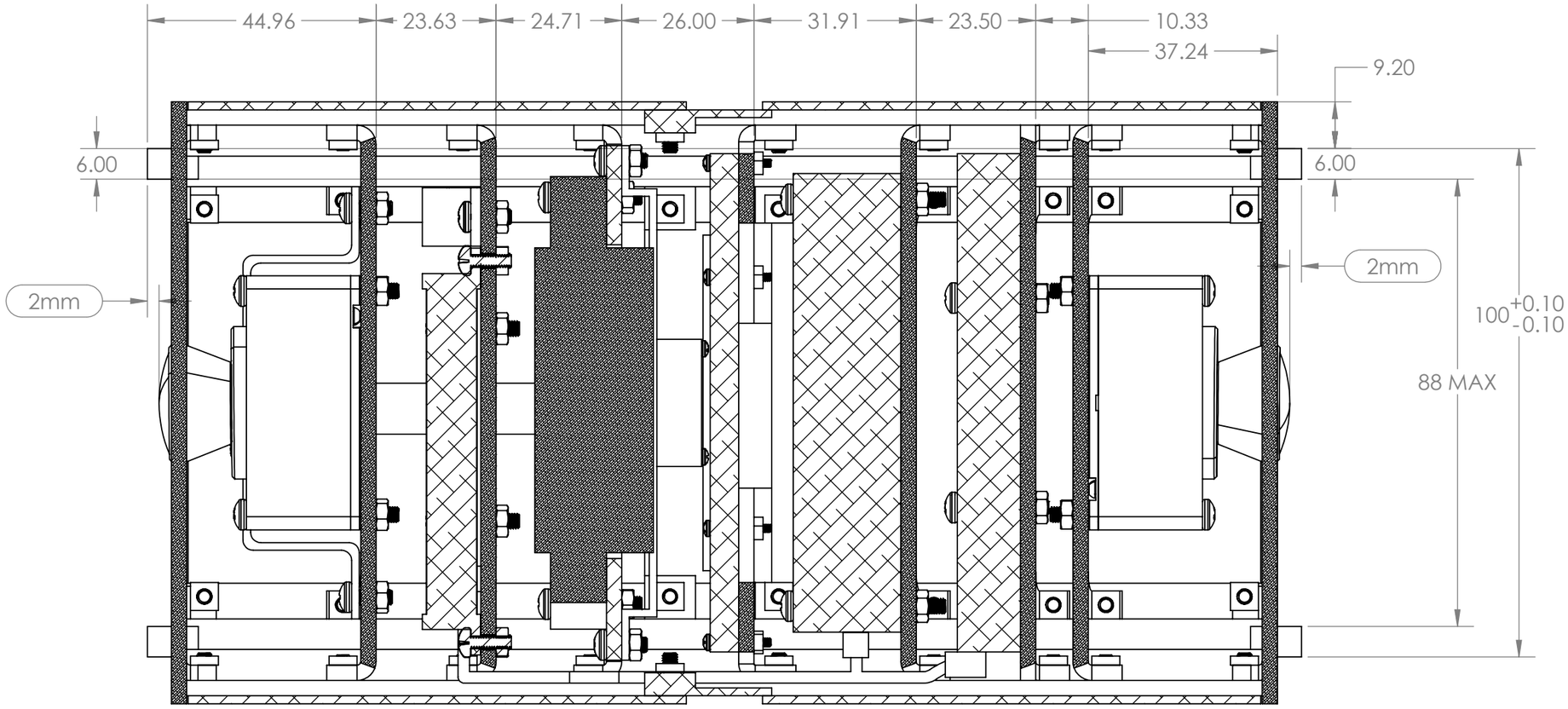
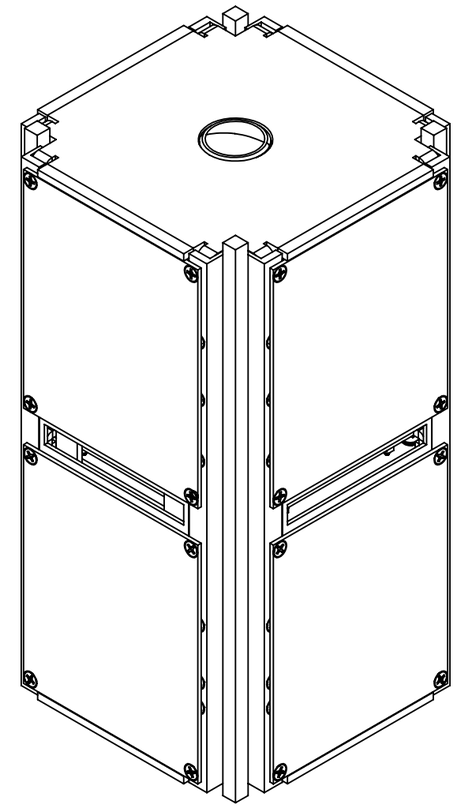
Third Angle Projection



SECTION X-X



ISO VIEW
SCALE 1:2

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified** **Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B; It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.	**Part Name:** Opportunity Assembly - PLATE SPACING
Drawn by: JOEY ADRIAN PANIQUE			**Part Configuration:** Default / **Team Name:** 46 - CUBESAT PROJECT TEAM B
Date: Friday, November 30, 2018 4:39:27 PM	**Material:** VARIOUS	**Quantity:** 1	**Required Finish:** PLAIN
Date Printed: Monday, December 3, 2018	**File/Path:** C:\Users\adria\Desktop\Final Assembly with fasteners\		

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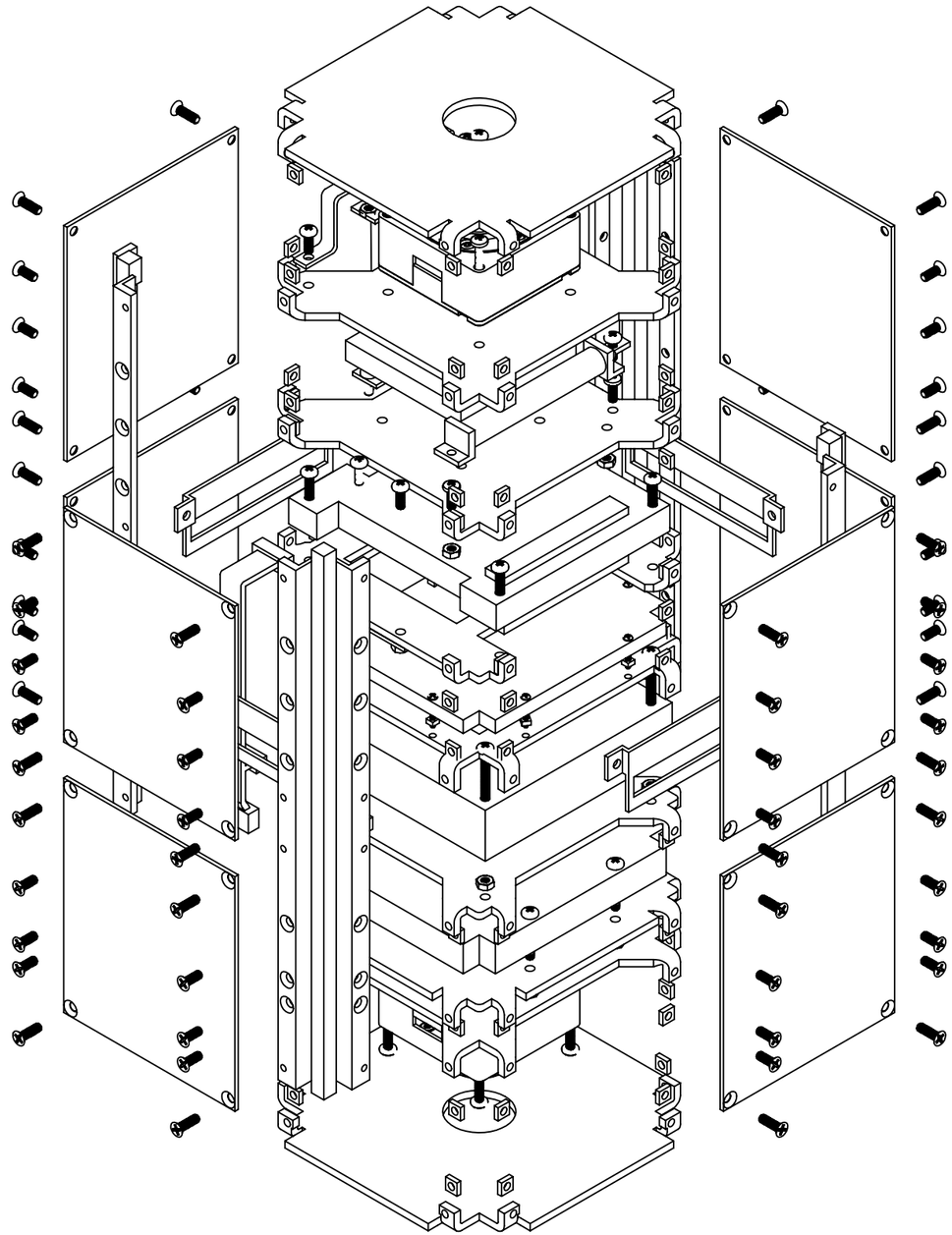
Third Angle Projection



NOTES:
1) PLATES ARE PRIMARILY FASTENED BY M3 COUNTERSINK SCREWS AND SQUARE BOLTS SECURED INSIDE THE PLATES USING EPOXY.
2) SEE CUBESAT REPORT III FOR ASSEMBLY DETAILS

Sheet Scale: 1:2	**Dimensions are in millimetres unless specified** Standard Tolerances: X.X= ±1.5875" X.XX= ±0.127" X.XXX= ±0.0254" Angles= ±0.25°		**Part Name:** Opportunity Assembly - Exploded View
Drawn by: JOEY ADRIAN PANIQUE			**Part Configuration:** Default / **Team Name:** 46 - CUBESAT PROJECT TEAM B
Date: Friday, November 30, 2018 4:39:27 PM	**Material:** VARIOUS / **Quantity:** 1		**Required Finish:** PLAIN
Date Printed: Monday, December 3, 2018	**File/Path:** C:\Users\adria\Desktop\Final Assembly with fasteners\		

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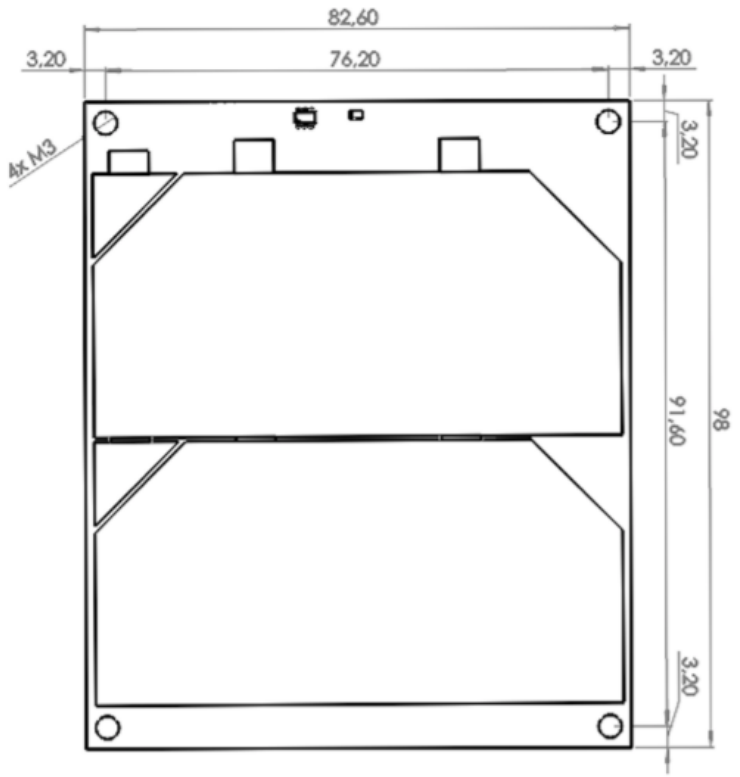


Figure 10: 1U Solar Panel X/Y - Top Side

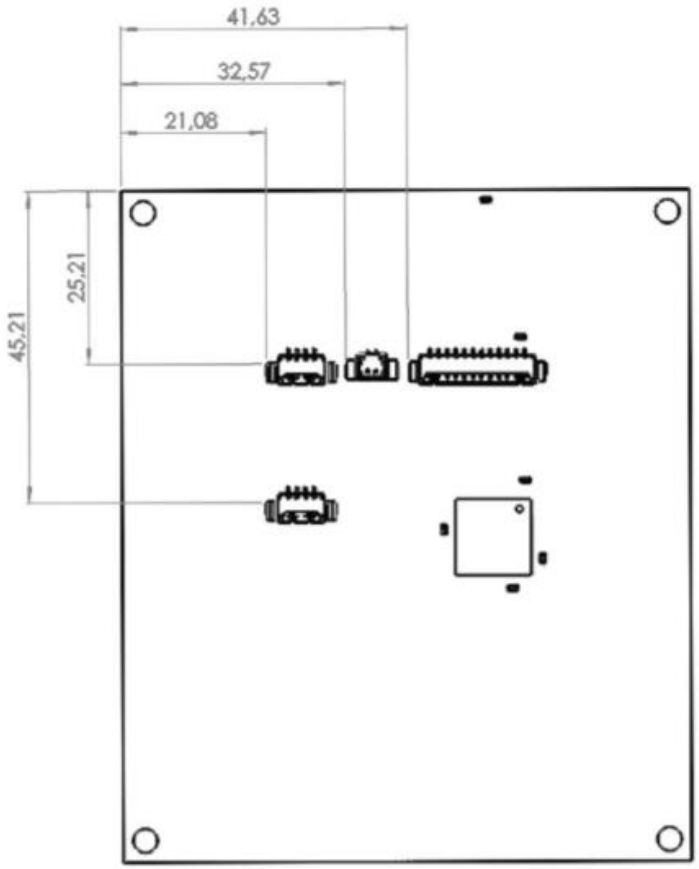


Figure 11: Solar Panel X/Y - Bottom Side (connector location)

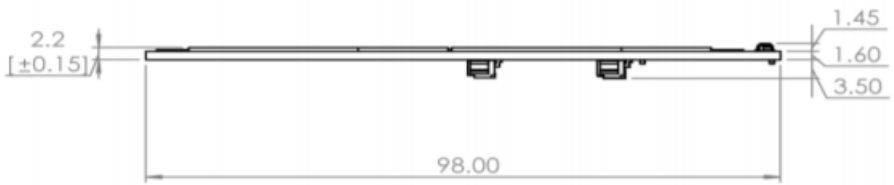
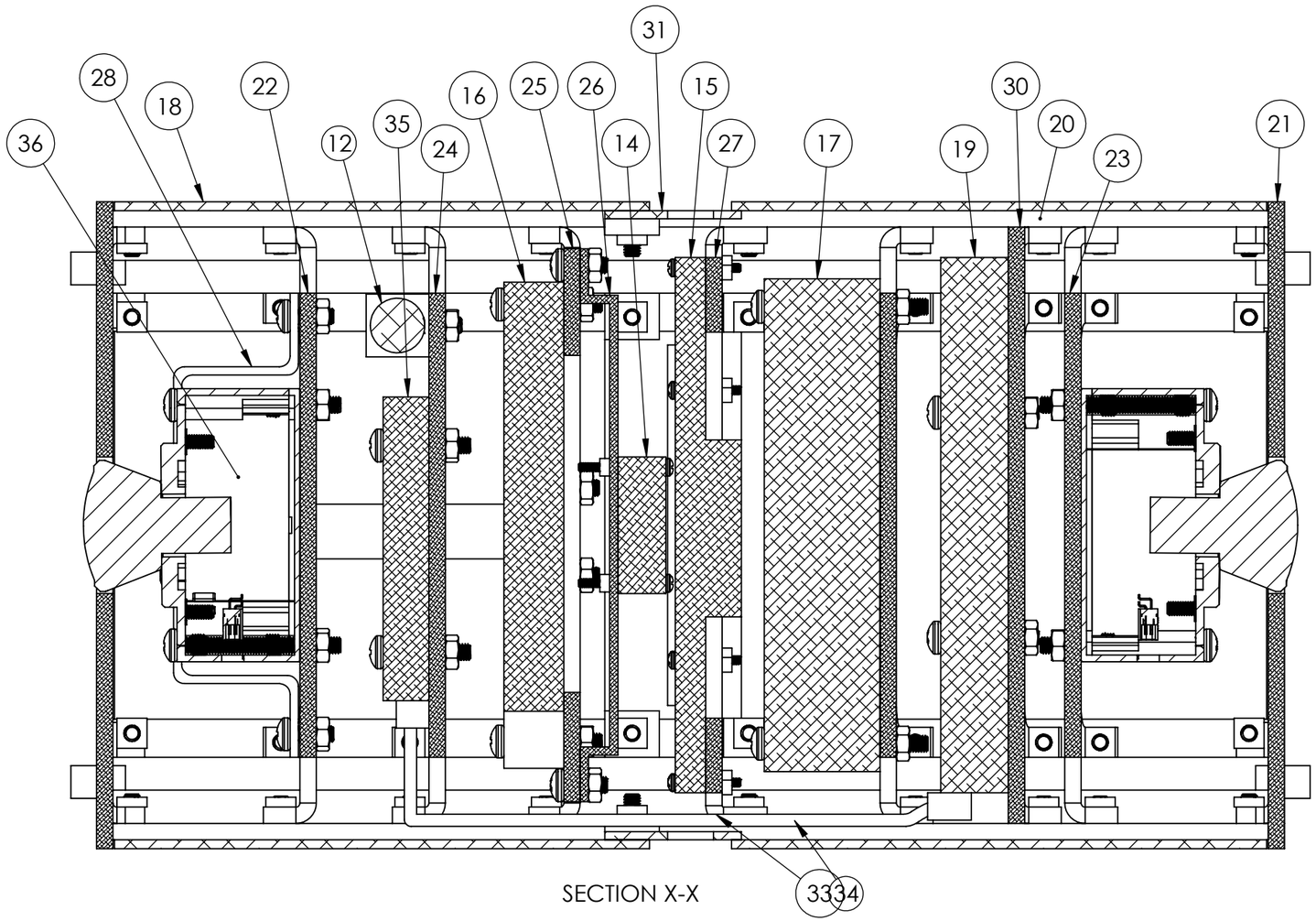


Figure 12: Solar Panel X/Y - Side View

ENDUROSAT

Third Angle Projection



ITEM NO.	PART NUMBER	DESCRIPTION	Default/QTY.
1	90591A250	M3 STEEL HEX NUT	38
2	92000A007	M1.6-12mm BHPS	8
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6	92000A127	M3-18mm BHPS	8
7	92000A132	M3-30mm BHPS	12
8	92010A118	M3-8mm FHPS	48
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11	M3 Square Nut	M3 STEEL SQUARE NUT	80
12	OPP-ADCS-001	XY MAGNETORQUER	2
13	OPP-ADCS-002	SOLAR PANEL	1
14	OPP-ADCS-003	GYROSCOPE BLOCK	1
15	OPP-COMM-001	ANTENNA BLOCK	1
16	OPP-COMM-002	TRANSCEIVER BLOCK	1
17	OPP-EPS-001	BATTERY BLOCK	1
18	OPP-EPS-002	SOLAR PANEL	8
19	OPP-OBDH-001	OBDH BLOCK	1
20	OPP-STRU-001	RAIL	4
21	OPP-STRU-002	COVER PLATE	2
22	OPP-STRU-003A	TOP CAMERA PLATE	1
23	OPP-STRU-003B	BOTTOM CAMERA PLATE	1
24	OPP-STRU-004	XY MAGNETORQUER PLATE	1
25	OPP-STRU-005	TRANSCEIVER PLATE	1
26	OPP-STRU-006	GYROSCOPE BRACKET	1
27	OPP-STRU-007	ANTENNA PLATE	1
28	OPP-STRU-008	Z MAGNETORQUER BRACKET	1
29	OPP-STRU-009	BATTERY PLATE	1
30	OPP-STRU-010	OBDH PLATE	1
31	OPP-STRU-011	ANTENNA SLOT BRACKET	4
33	OPP-STRU-012A	THERMAL STRAP A	1
34	OPP-STRU-012B	THERMAL STRAP B	1
35	OPP-STRU-013	HEAT SINK	1
36	OPP-STRU-014	PAYLOAD [CAMERA]	2

Sheet Scale: 1:1

Drawn by: JOEY ADRIAN PANIQUE

Dimensions are in milimetres unless specified

Standard Tolerances:
X.X= ±1.5875"
X.XX=±0.127"
X.XXX=±0.0254"
Angles=±0.25°

Part Name: Opportunity Assembly -COMPONENTS

Part Configuration: Default

Team Name: 46 - CUBESAT PROJECT TEAM B

Date: Friday, November 30, 2018 5:39:27 PM

Material: VARIOUS

Quantity: 1

Required Finish: PLAIN

Date Printed: Tuesday, April 2, 2019

File/Path: C:\Users\adria\Desktop\CAD Final\

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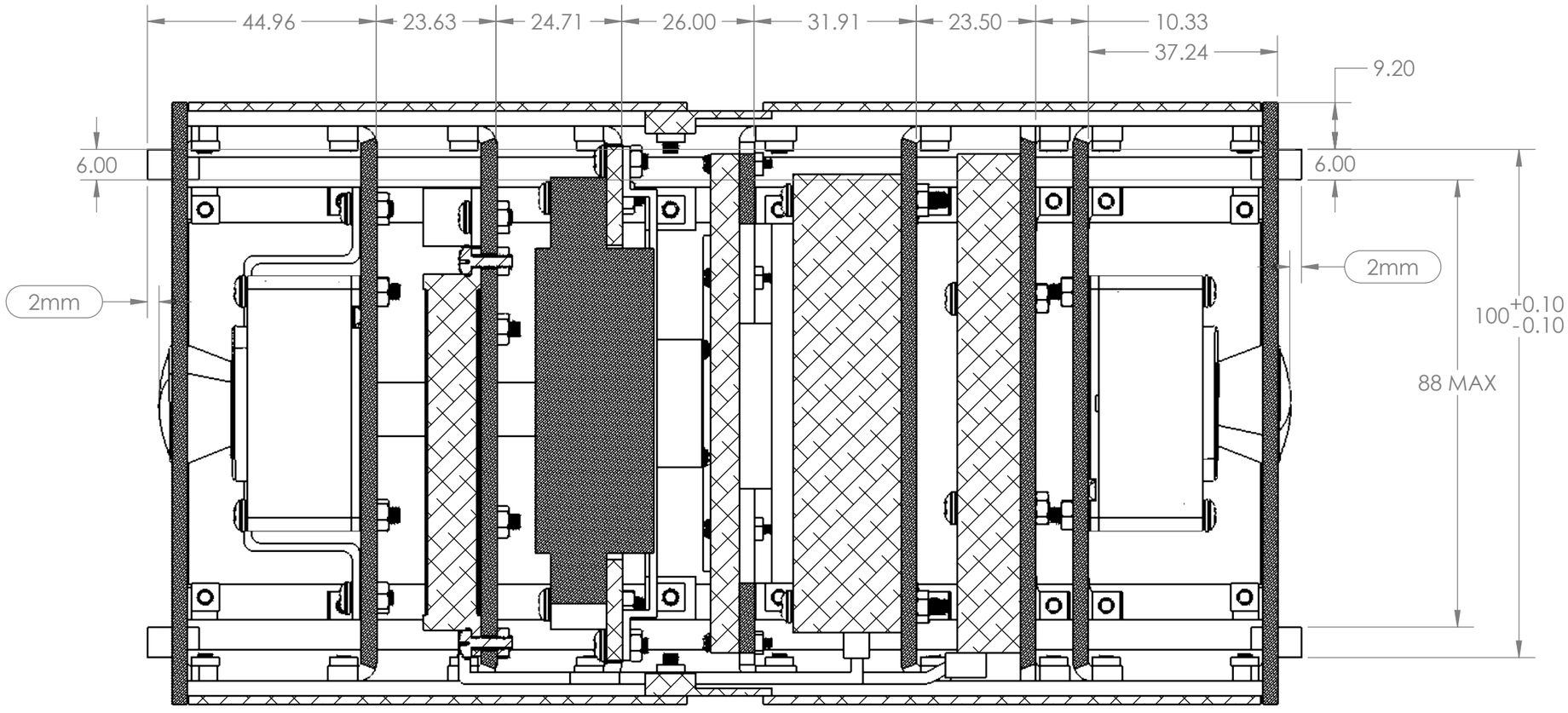
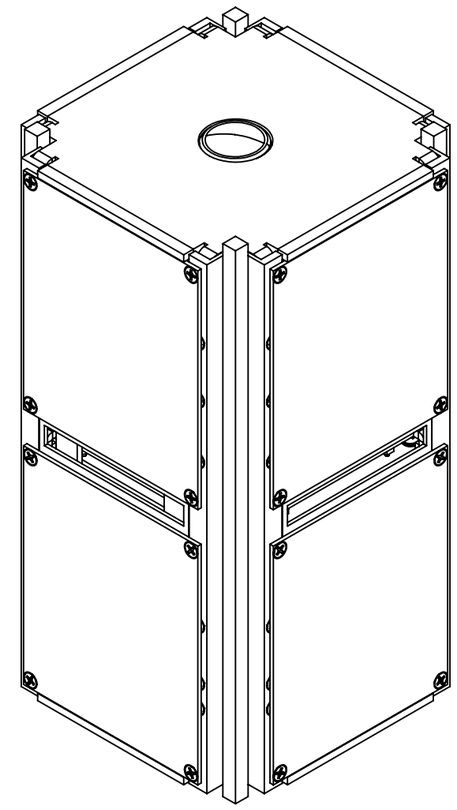
Third Angle Projection



SECTION X-X



ISO VIEW
SCALE 1:2

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified** **Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B; It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.	**Part Name:** Opportunity Assembly - PLATE SPACING
Drawn by: JOEY ADRIAN PANIQUE			**Part Configuration:** Default / **Team Name:** 46 - CUBESAT PROJECT TEAM B
Date: Friday, November 30, 2018 5:39:27 PM	**Material:** VARIOUS	**Quantity:** 1	**Required Finish:** PLAIN
Date Printed: Tuesday, April 2, 2019	**File/Path:** C:\Users\adria\Desktop\CAD Final\		

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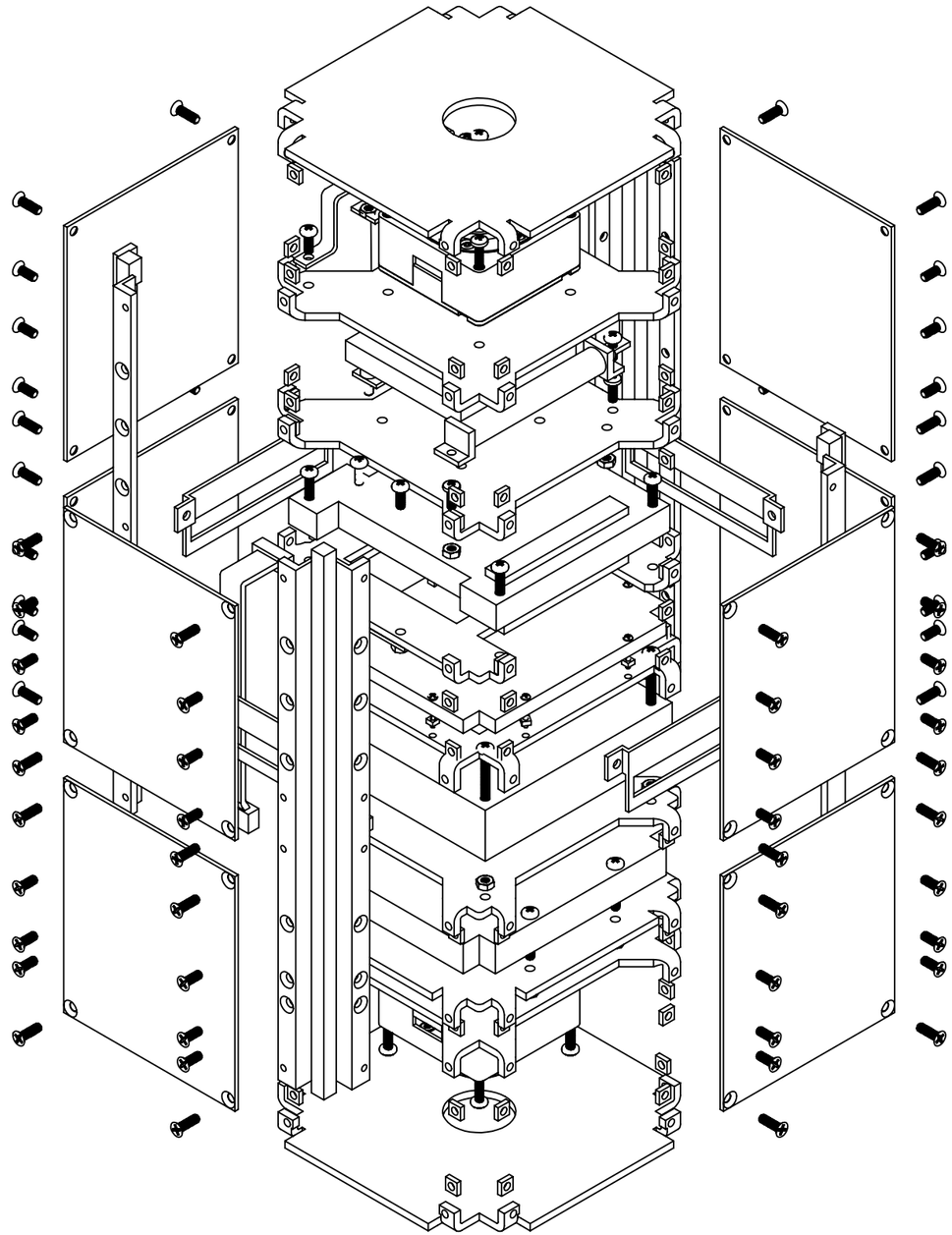
Third Angle Projection



NOTES:
1) PLATES ARE PRIMARILY FASTENED BY M3 COUNTERSINK SCREWS AND SQUARE BOLTS SECURED INSIDE THE PLATES USING EPOXY.
2) SEE CUBESAT REPORT III FOR ASSEMBLY DETAILS

Sheet Scale: 1:2	**Dimensions are in millimetres unless specified** Standard Tolerances: X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°		**Part Name:** Opportunity Assembly - Exploded View
Drawn by: JOEY ADRIAN PANIQUE			**Part Configuration:** Default / **Team Name:** 46 - CUBESAT PROJECT TEAM B
Date: Friday, November 30, 2018 5:39:27 PM	**Material:** VARIOUS	**Quantity:** 1	**Required Finish:** PLAIN
Date Printed: Tuesday, April 2, 2019	**File/Path:** C:\Users\adria\Desktop\CAD Final\		

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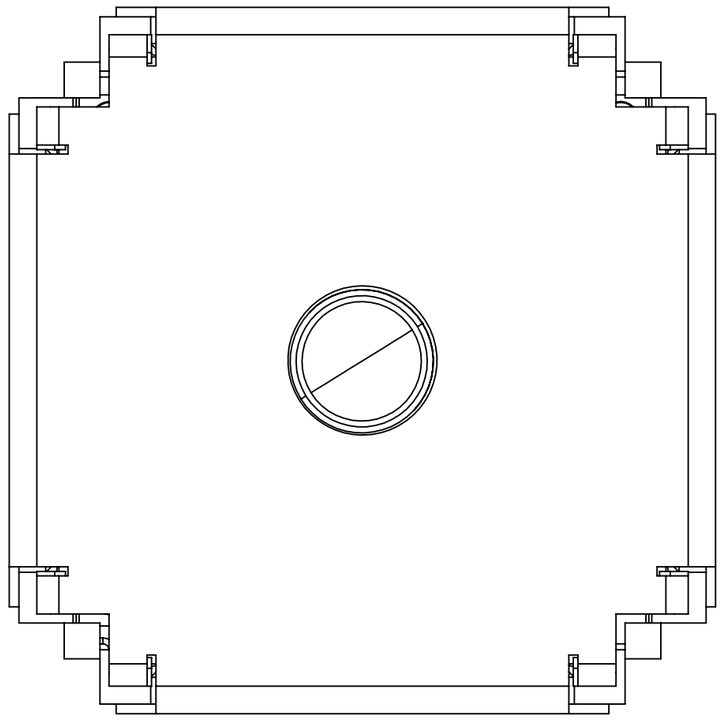
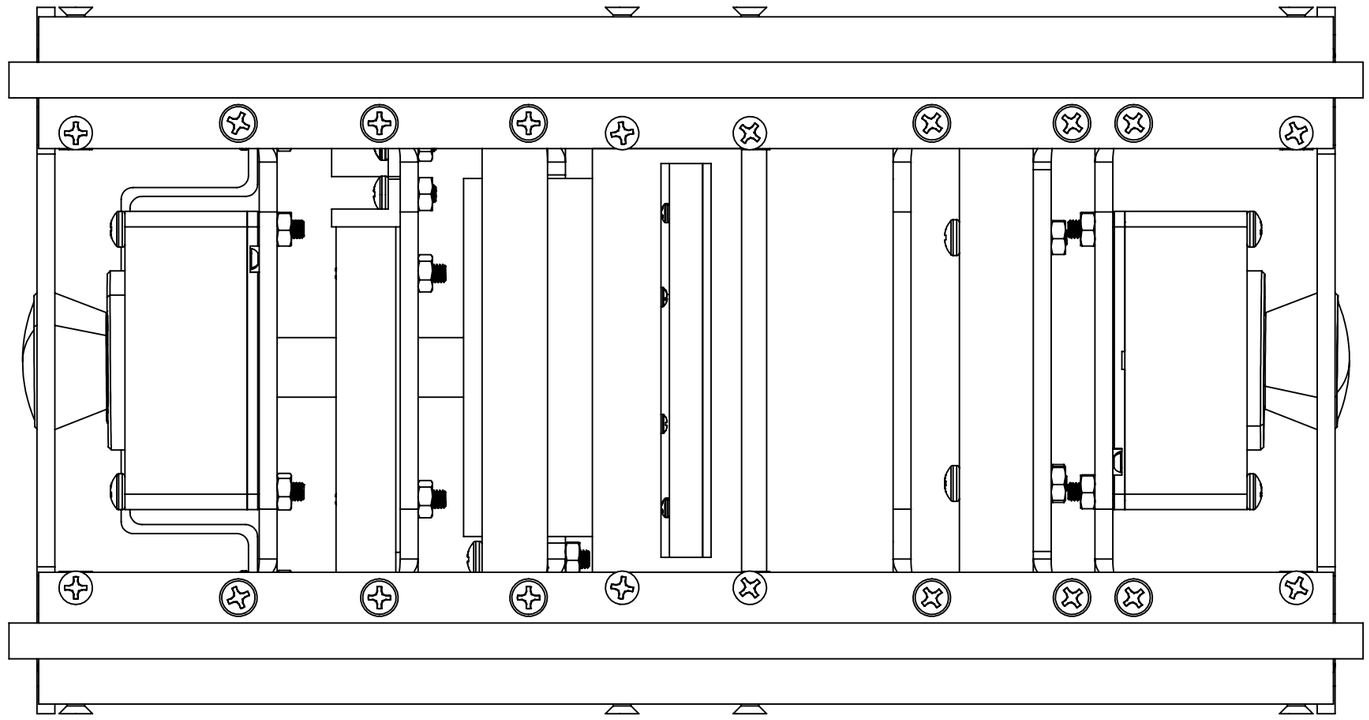
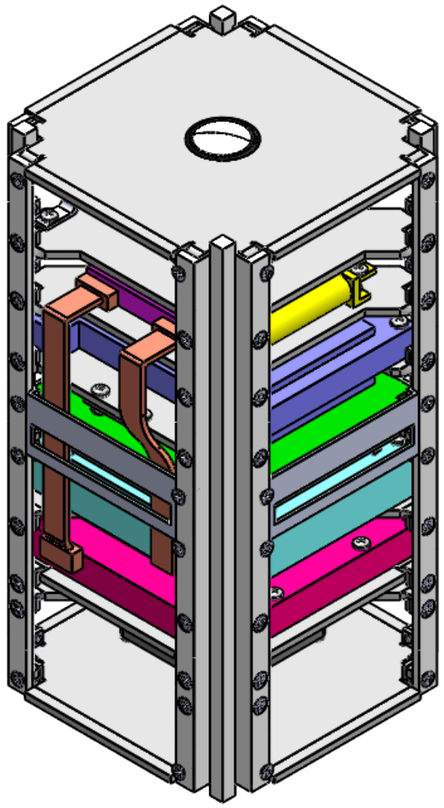
Third Angle Projection



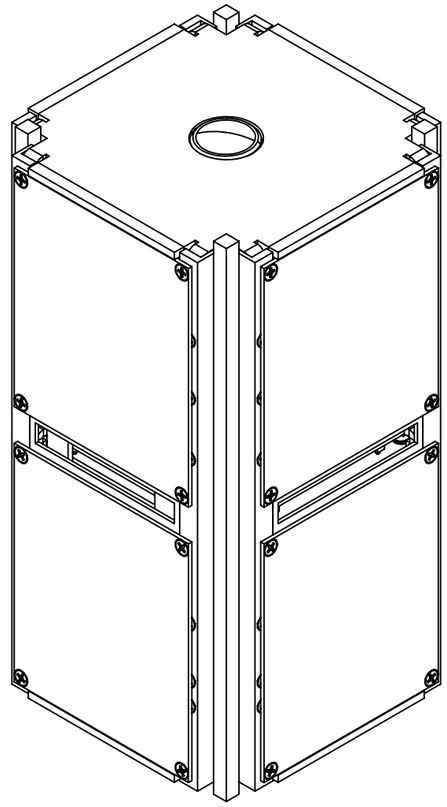


Sheet Scale:	**Dimensions are in millimetres unless specified**	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to INSERT YOUR NAME HERE. It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of INSERT YOUR NAME HERE.	**Part Name:** Opportunity Assembly	***MME 4499 - Kamran Siddiqui***
Drawn by:	**Standard Tolerances:** X.X= ±1.5875" X.XX= ±0.127" X.XXX= ±0.0254" Angles= ±0.25°		**Part Configuration:** Default / **Team Name:** 46 - CUBESAT PROJECT TEAM B	Faculty of Engineering University of Western Ontario
Date: Friday, November 30, 2018 5:39:27 PM	**Material:** XXXXXXXXXX	**Quantity:** XXX	**Required Finish:** PLAIN	
Date Printed: Tuesday, April 2, 2019	**File/Path:** C:\Users\adria\Desktop\CAD Final\			

Third Angle Projection



ISO VIEW
SCALE 1:2



ISO VIEW
SCALE 1:2

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified** **Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B. It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.	**Part Name:** Opportunity Assembly - PLATE SPACING
Drawn by: JOEY ADRIAN PANIQUE			**Part Configuration:** Default / **Team Name:** 46 - CUBESAT PROJECT TEAM B
Date: Friday, November 30, 2018 5:39:27 PM	**Material:** VARIOUS	**Quantity:** 1	**Required Finish:** PLAIN
Date Printed: Tuesday, April 2, 2019	**File/Path:** C:\Users\adria\Desktop\CAD Final\		

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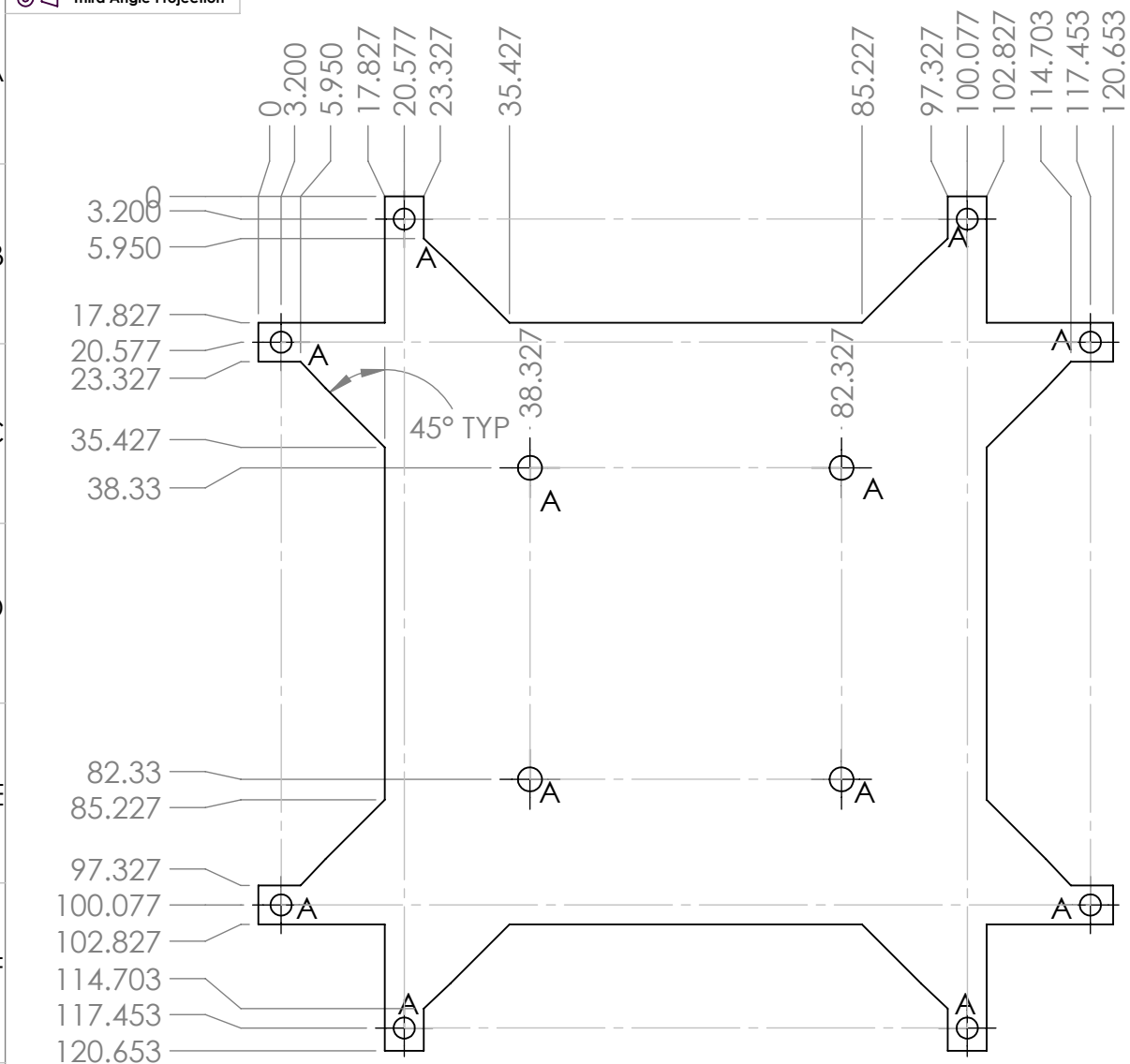
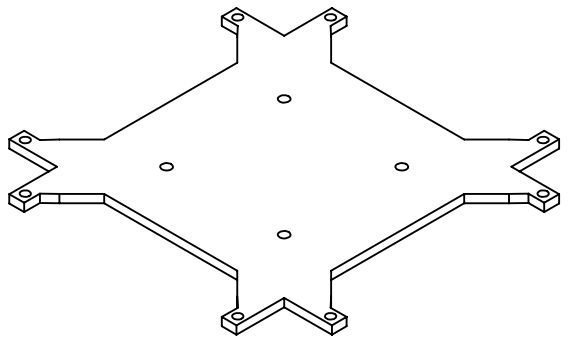
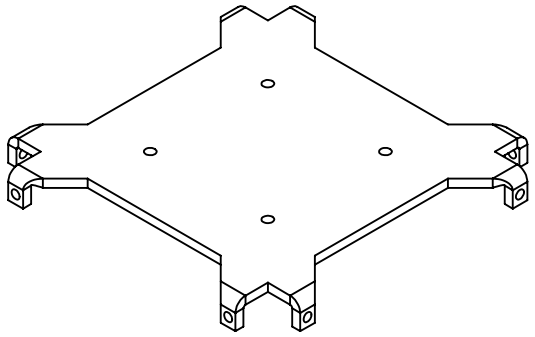
University of Western Ontario

Third Angle Projection





ISO VIEW (FLAT)
SCALE 1:2



ISO VIEW
SCALE 1:2

HOLES:
A - 12 HOLES DRILL M3 THRU

NOTES:
1) WATER JET FLAT DIMENSIONS
2) NO BURRS OR SHARP EDGES
3) 0.6µm ALL SURFACES UNLESS OTHERWISE SPECIFIED

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified**	**Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B. It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.
Part Name: OPP-STRU-003B - BOTTOM CAMERA PLATE			
Drawn by: JOEY ADRIAN PANIQUE	**Part Configuration:** DEFAULT	**Team Name:** 46 - CUBESAT PROJECT TEAM B	
Date: Wednesday, November 28, 2018 4:54:04 PM	**Material:** 125 x125 X 3.00 Al 6061-T6 PLATE	**Quantity:** 1	**Required Finish:** PLAIN
Date Printed: Monday, December 3, 2018	**File/Path:** C:\Users\adria\Desktop\Final Assembly with fasteners\		

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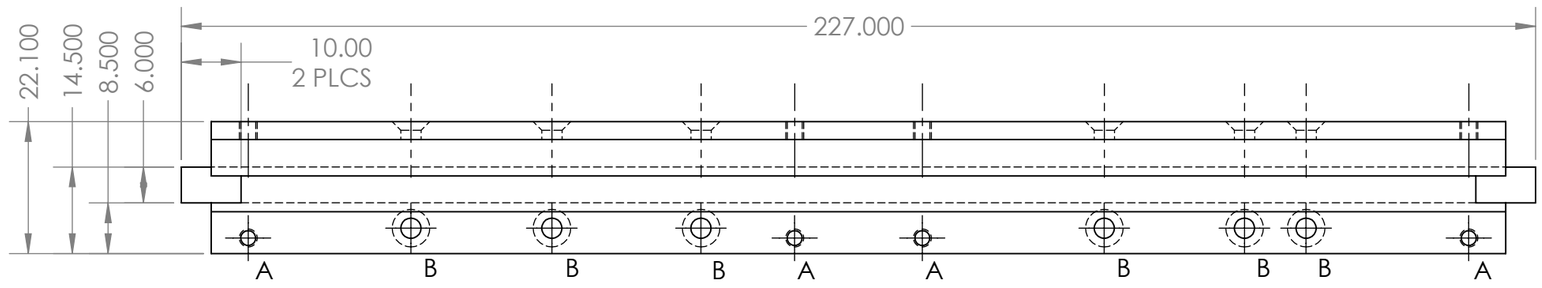
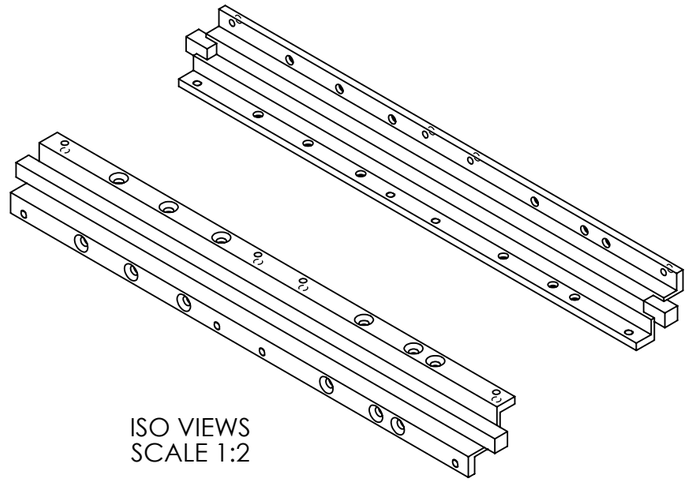
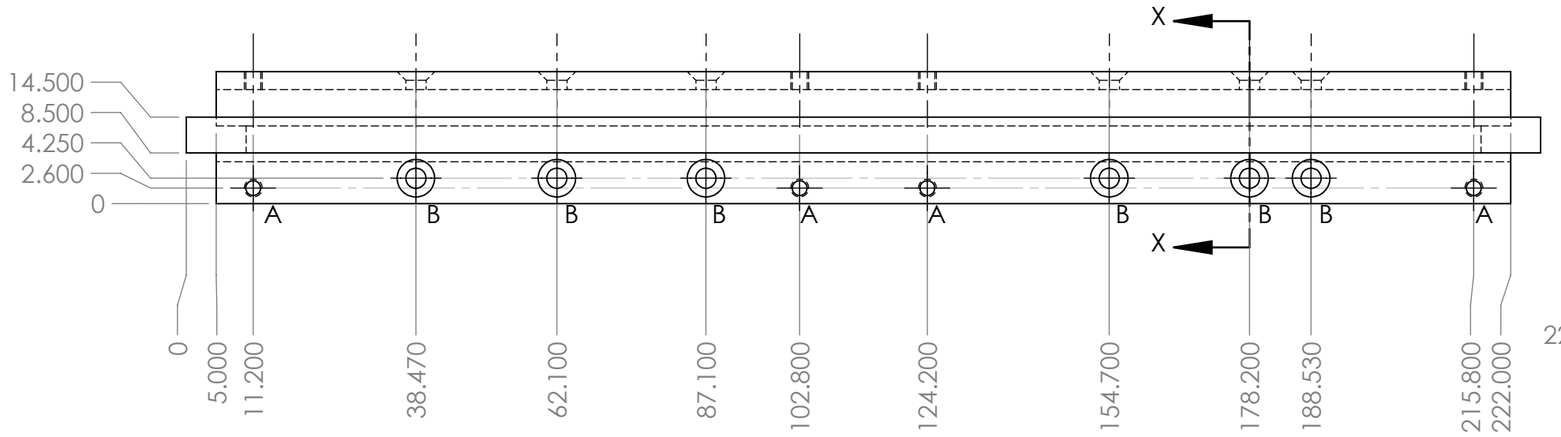
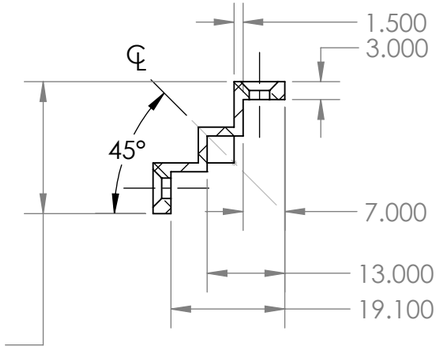
Third Angle Projection





ISO VIEWS
SCALE 1:2





SECTION X-X

HOLES:
A- 8 HOLES DRILL M3 THRU (4 ON EACH SIDE)
B- 12 HOLES C'SINK M3 THRU (6 ON EACH SIDE)

NOTES:
1) DRILL HOLES BEFORE MILLING
2) NO BURRS OR SHARP EDGES
3) 0.6 µm ALL SURFACES UNLESS OTHERWISE SPECIFIED
4) HARD ANODIZE TO 65-70 HRc

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified** **Standard Tolerances:** X.X= ±1.5875" X.XX= ±0.127" X.XXX=±0.0254" Angles=±0.25°		**Part Name:** OPP-STRU-001 - RAILS
Drawn by: JOEY ADRIAN PANIQUE			**Part Configuration:** Default / **Team Name:** 46 - CUBESAT PROJECT TEAM B
Date: Wednesday, November 28, 2018 3:29:48 PM		**Material:** 1.00" BAR ALUMINUM 6061-T6 / **Quantity:** 4	**Required Finish:** PLAIN
Date Printed: Monday, December 3, 2018		**File/Path:** C:\Users\adria\Desktop\Final Assembly with fasteners\	

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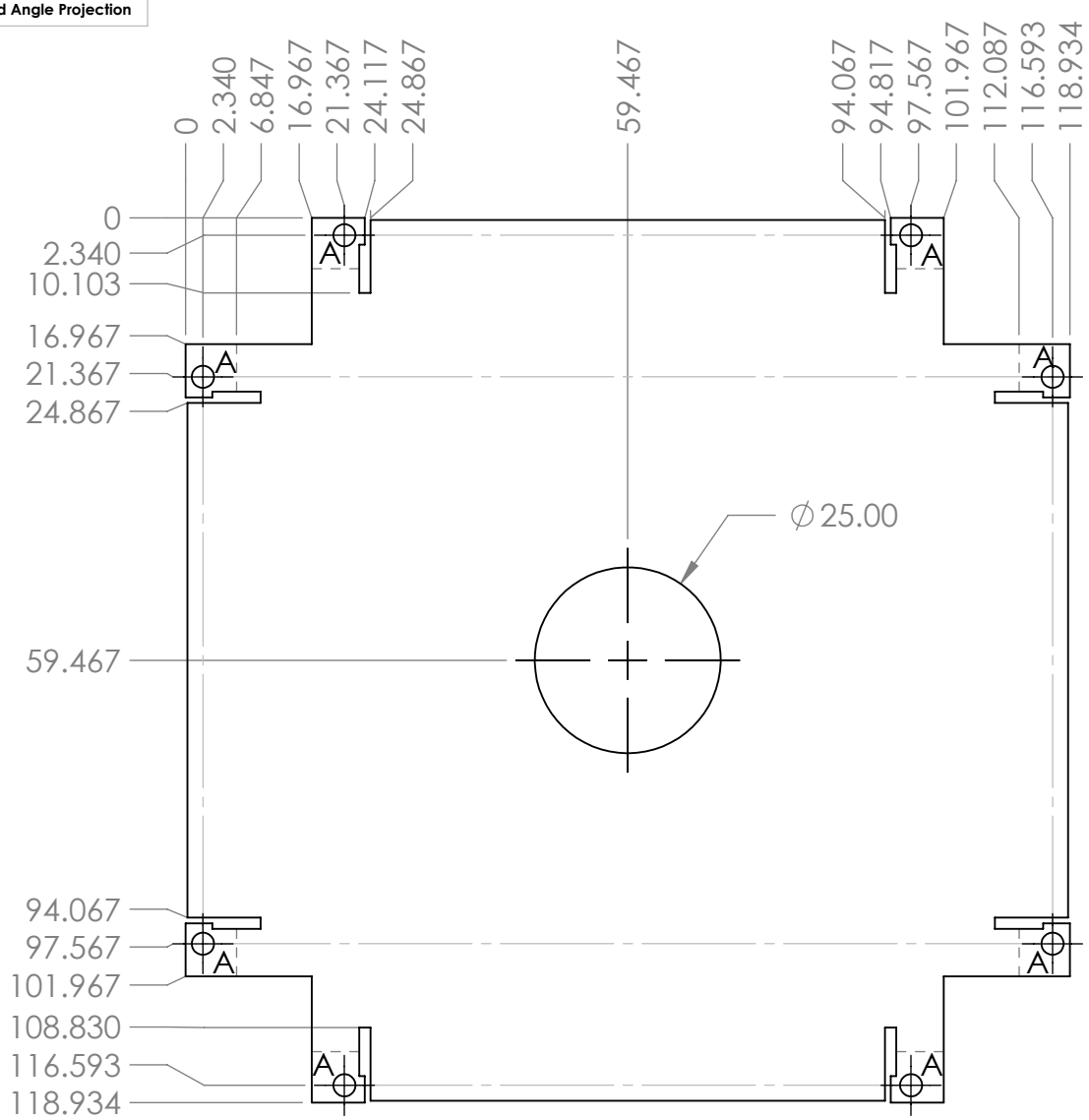
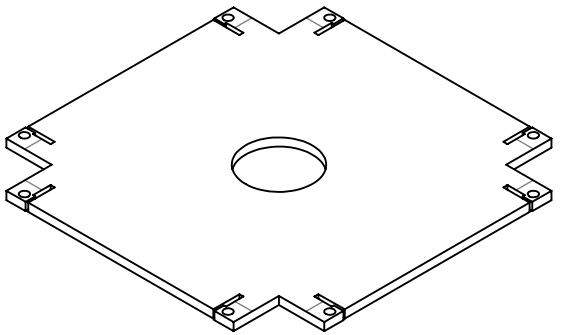
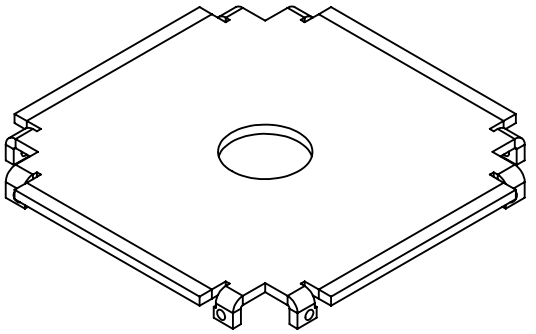
Third Angle Projection





ISO VIEW (FLAT)
SCALE 1:2

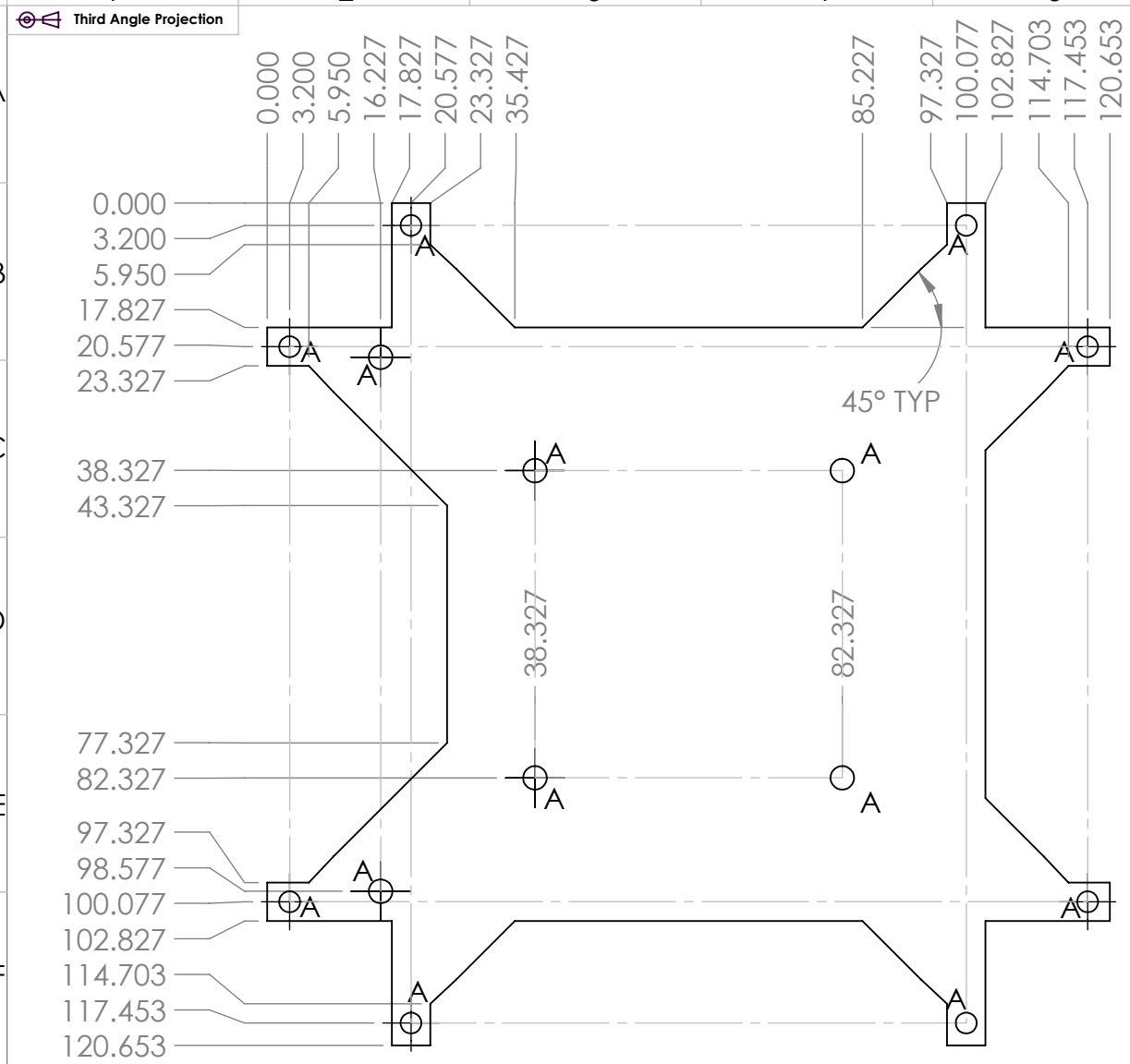


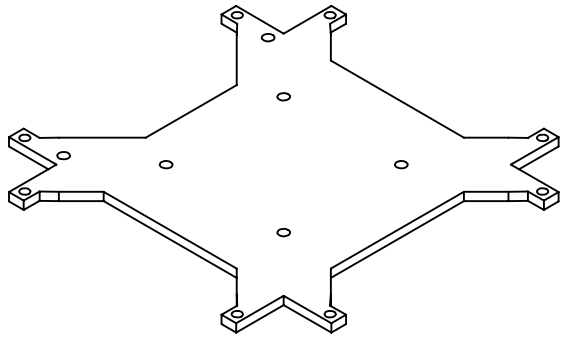
ISO VIEW
SCALE 1:2

HOLES:
A - 8 HOLES DRILL M3 THRU
NOTES:
1) WATER JET FLAT DIMENSIONS
2) NO BURRS OR SHARP EDGES
3) 0.6µm ALL SURFACES UNLESS OTHERWISE SPECIFIED

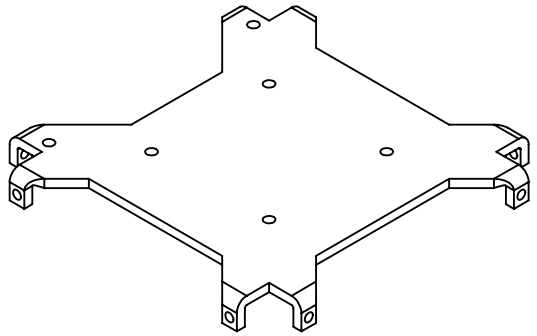
Sheet Scale: 1:1	**Dimensions are in millimetres unless specified**	**Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	**Part Name:** OPP-STRU-002 - COVER PLATE	***MME 4499 - Kamran Siddiqui***
Drawn by: JOEY ADRIAN PANIQUE			**Part Configuration:** Cover PlateSM-FLAT-PATTERN	**Team Name:** 46 - CUBESAT PROJECT TEAM B
Date: Wednesday, November 28, 2018 4:54:04 PM	**Material:** 125 x125 X 3.00 Al 6061-T6 PLATE	**Quantity:** 2	**Required Finish:** PLAIN	Faculty of Engineering University of Western Ontario
Date Printed: Monday, December 3, 2018	**File/Path:** C:\Users\adria\Desktop\Final Assembly with fasteners\			

Third Angle Projection





ISO VIEW (FLAT)
SCALE 1:2



ISO VIEW
SCALE 1:2

HOLES:
A - 14 HOLES DRILL M3 THRU
NOTES:
1) WATER JET FLAT DIMENSIONS
2) NO BURRS OR SHARP EDGES
3) 0.6µm ALL SURFACES UNLESS OTHERWISE SPECIFIED

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified**	**Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B. It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.
Drawn by: JOEY ADRIAN PANIQUE			**Part Name:** OPP-STRU-003A -TOP CAMERA PLATE
Date: Wednesday, November 28, 2018 4:54:04 PM	**Material:** 125 x125 X 3.00 Al 6061-T6 PLATE	**Quantity:** 1	**Part Configuration:** DEFAULT
Date Printed: Tuesday, January 15, 2019	**File/Path:** C:\Users\adria\Desktop\CAD Final\		**Team Name:** 46 - CUBESAT PROJECT TEAM B
			Required Finish: PLAIN

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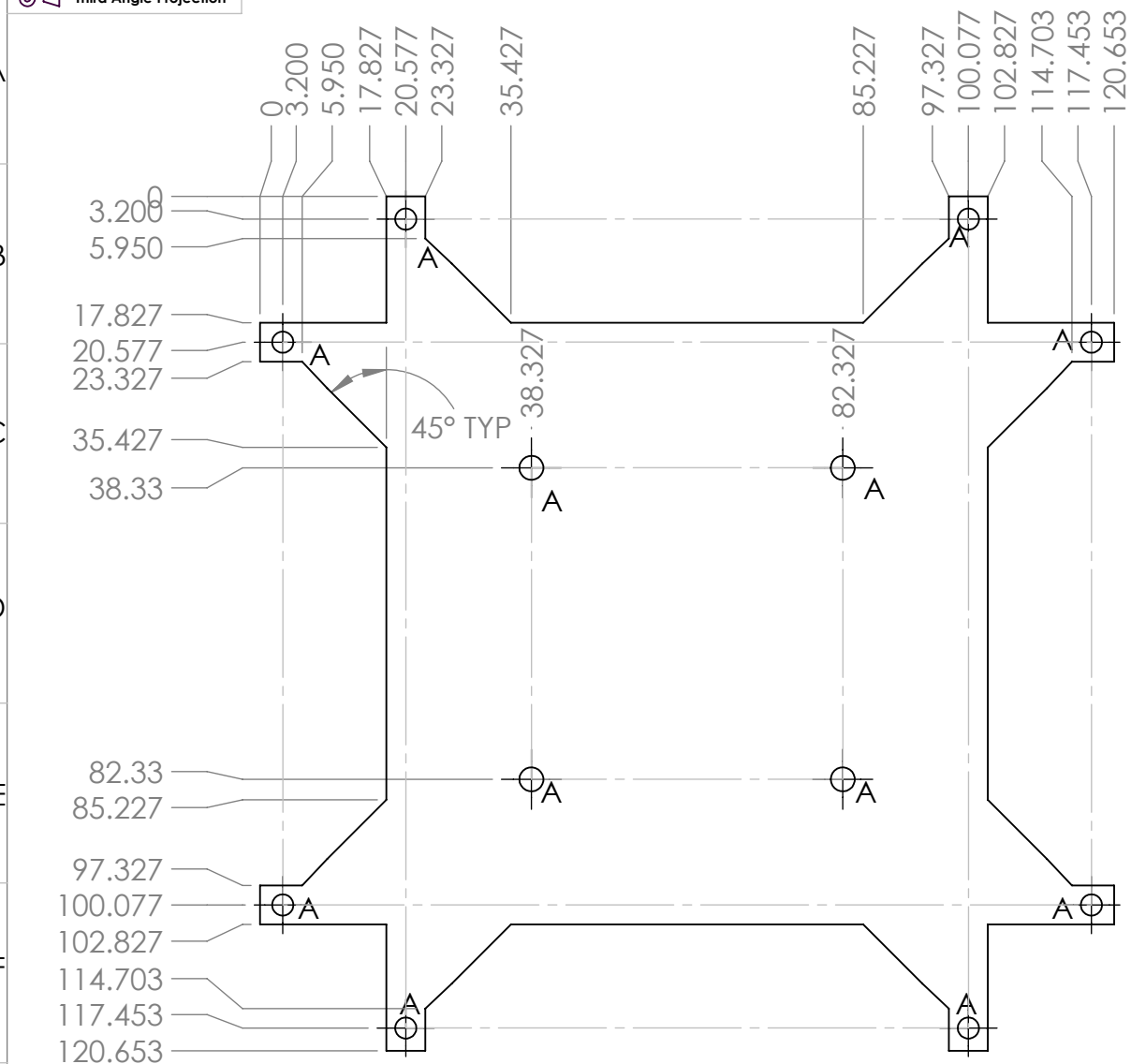
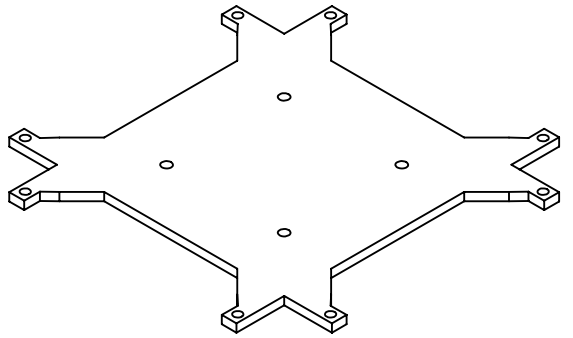
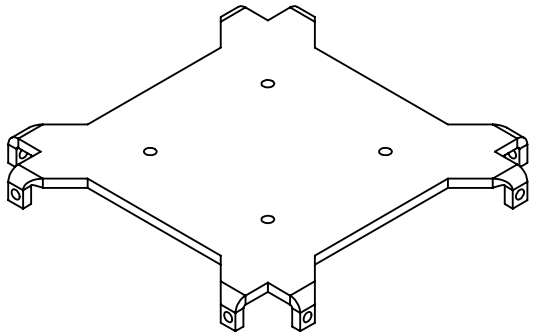
Third Angle Projection





ISO VIEW (FLAT)
SCALE 1:2



ISO VIEW
SCALE 1:2

HOLES:
A - 12 HOLES DRILL M3 THRU

NOTES:
1) WATER JET FLAT DIMENSIONS
2) NO BURRS OR SHARP EDGES
3) 0.6µm ALL SURFACES UNLESS OTHERWISE SPECIFIED

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified**	**Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B. It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.
Part Name: OPP-STRU-003B - BOTTOM CAMERA PLATE			
Drawn by: JOEY ADRIAN PANIQUE	**Part Configuration:** DEFAULT	**Team Name:** 46 - CUBESAT PROJECT TEAM B	
Date: Wednesday, November 28, 2018 4:54:04 PM	**Material:** 125 x125 X 3.00 Al 6061-T6 PLATE	**Quantity:** 1	**Required Finish:** PLAIN
Date Printed: Tuesday, January 15, 2019	**File/Path:** C:\Users\adria\Desktop\CAD Final\		

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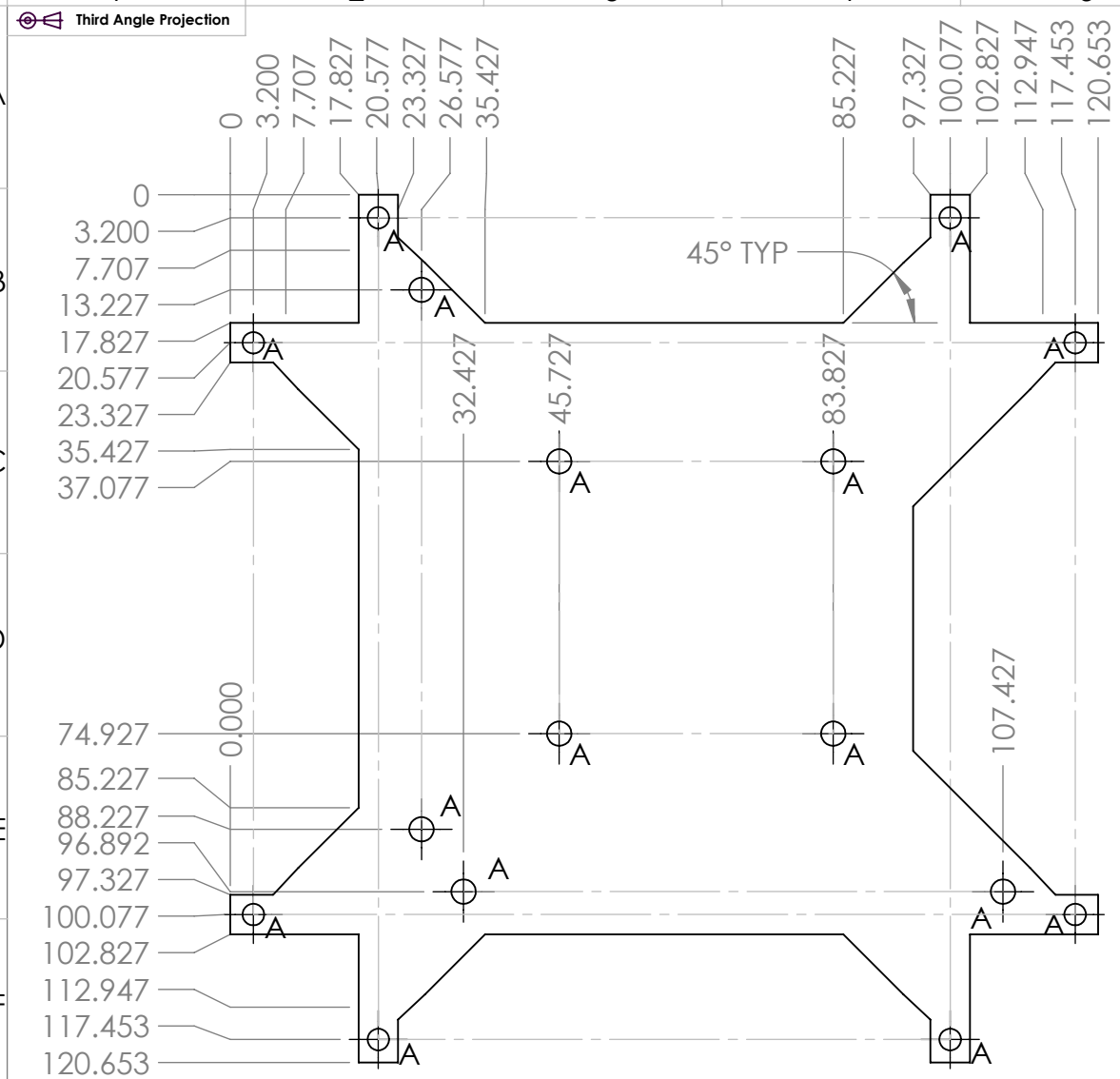
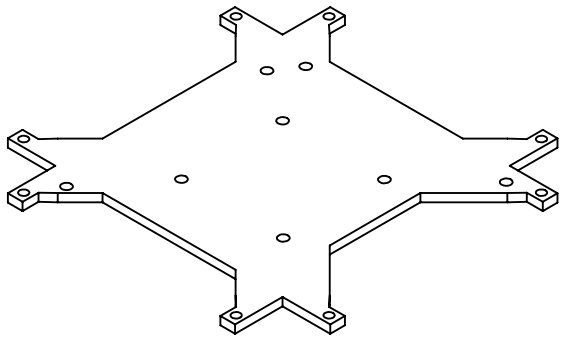
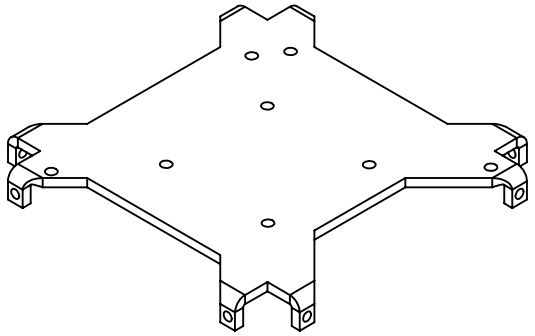
Third Angle Projection





ISO VIEW (FLAT)
SCALE 1:2



ISO VIEW
SCALE 1:2

HOLES:
A - 16 HOLES DRILL M3 THRU
NOTES:
1) WATER JET FLAT DIMENSIONS
2) NO BURRS OR SHARP EDGES
3) 0.6µm ALL SURFACES UNLESS OTHERWISE SPECIFIED

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified**	**Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B: It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.	**Part Name:** OPP-STRU-004 - XY-MAGNETORQUER PLATE
Drawn by: JOEY ADRIAN PANIQUE				**Part Configuration:** FLATSM-FLAT-PATTERN; **Team Name:** 46 - CUBESAT PROJECT TEAM B
Date: Wednesday, November 28, 2018 4:54:04 PM			**Material:** 120 x120 X 3.00 Al 6061-T6 PLATE; **Quantity:** 1	**Required Finish:** PLAIN
Date Printed: Monday, December 3, 2018			**File/Path:** C:\Users\adria\Desktop\CAD Final\	

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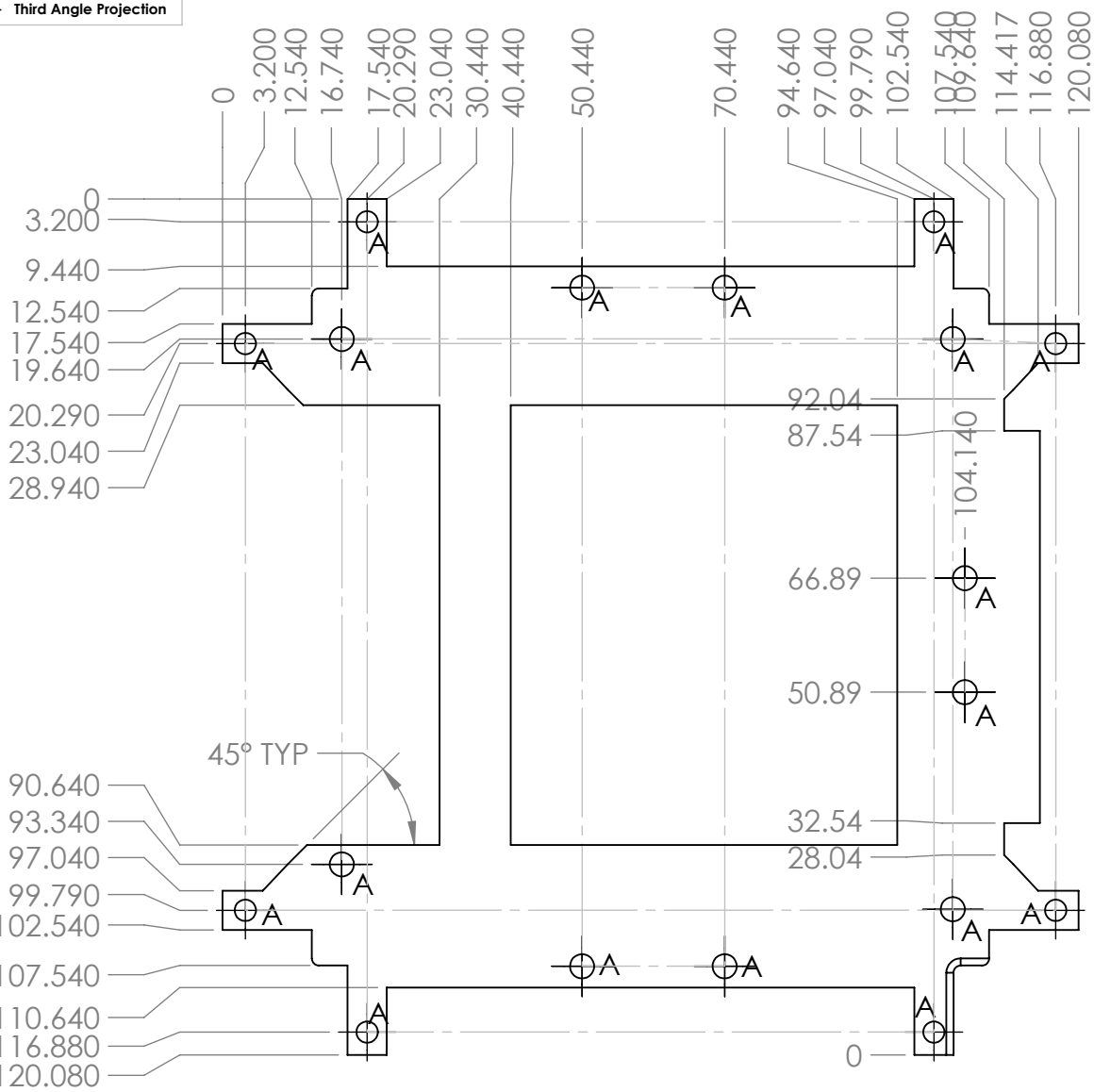
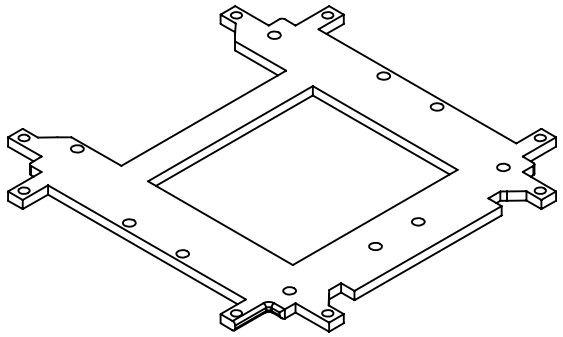
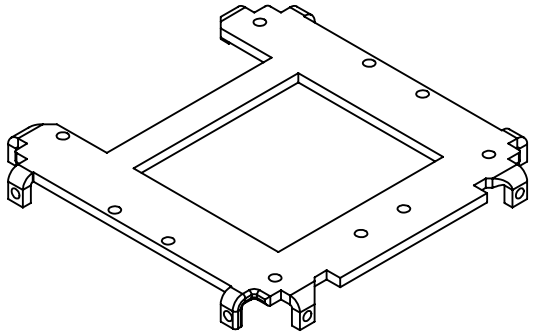
Third Angle Projection





ISO VIEW (FLAT)
SCALE 1:2



ISO VIEW
SCALE 1:2

HOLES:
A - 18 HOLES DRILL M3 THRU

NOTES:
1) WATER JET FLAT DIMENSIONS
2) NO BURRS OR SHARP EDGES
3) 0.6µm ALL SURFACES UNLESS OTHERWISE SPECIFIED

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified**	**Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B. It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.
Part Name: OPP-STRU-005 - TRANSCEIVER PLATE			
Drawn by: JOEY ADRIAN PANIQUE	**Part Configuration:** flat	**Team Name:** 46 - CUBESAT PROJECT TEAM B	
Date: Wednesday, November 28, 2018 4:54:04 PM	**Material:** 125 x125 X 3.00 Al 6061-T6 PLATE	**Quantity:** 1	**Required Finish:** PLAIN
Date Printed: Monday, December 3, 2018	**File/Path:** C:\Users\adria\Desktop\CAD Final\		

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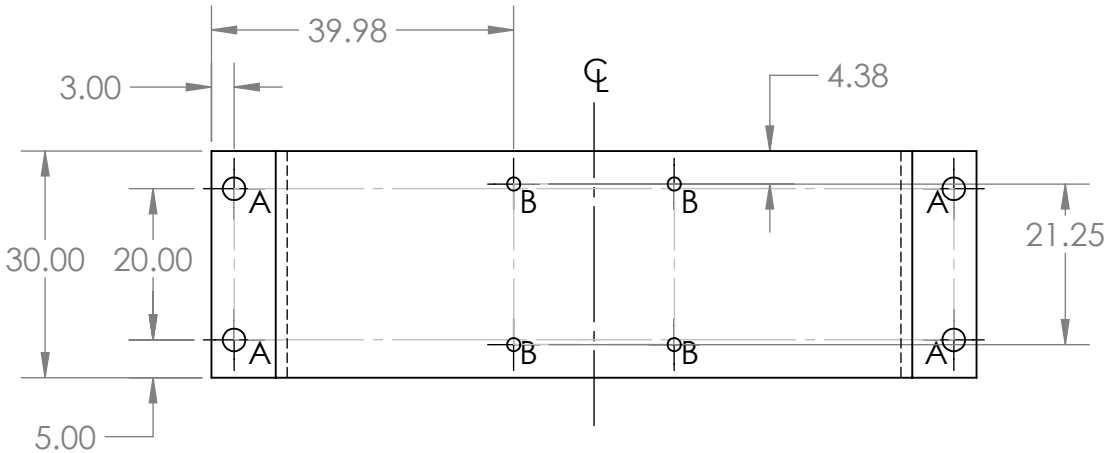
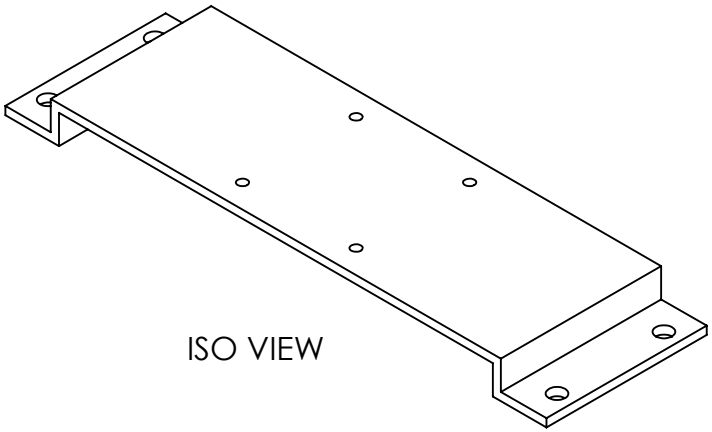
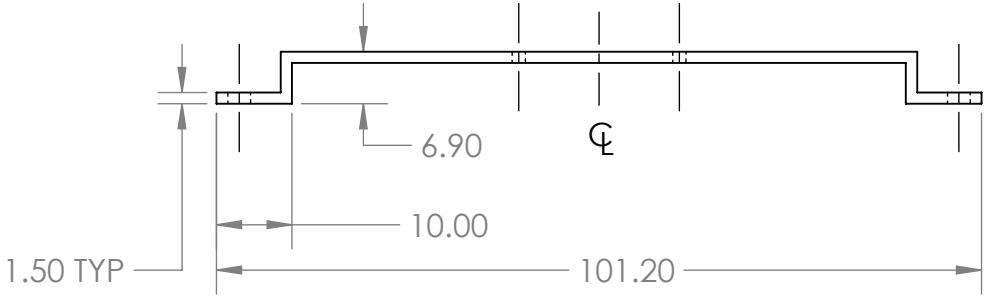
Third Angle Projection





ISO VIEW



HOLES:
A - 4 HOLES DRILL M3 THRU
B - 4 HOLES DRILL M1.6 THRU
NOTES:
1)NO BURRS OR SHARP EDGES
2) 0.6µm ALL SURFACES UNLESS OTHERWISE SPECIFIED

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified**	**Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B. It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.
Drawn by: JOEY ADRIAN PANIQUE			**Part Name:** OPP-STRU-006 - GYROSCOPE BRACKET
Date: Wednesday, November 28, 2018 11:19:57 PM	**Material:** 110.00 X 35.00 X 10.00 Al 6061-T6 PLATE	**Quantity:** 1	**Part Configuration:** Default
Date Printed: Monday, December 3, 2018	**File/Path:** C:\Users\adria\Desktop\Final Assembly with fasteners\		**Team Name:** 46 - CUBESAT PROJECT TEAM B
			Required Finish: PLAIN

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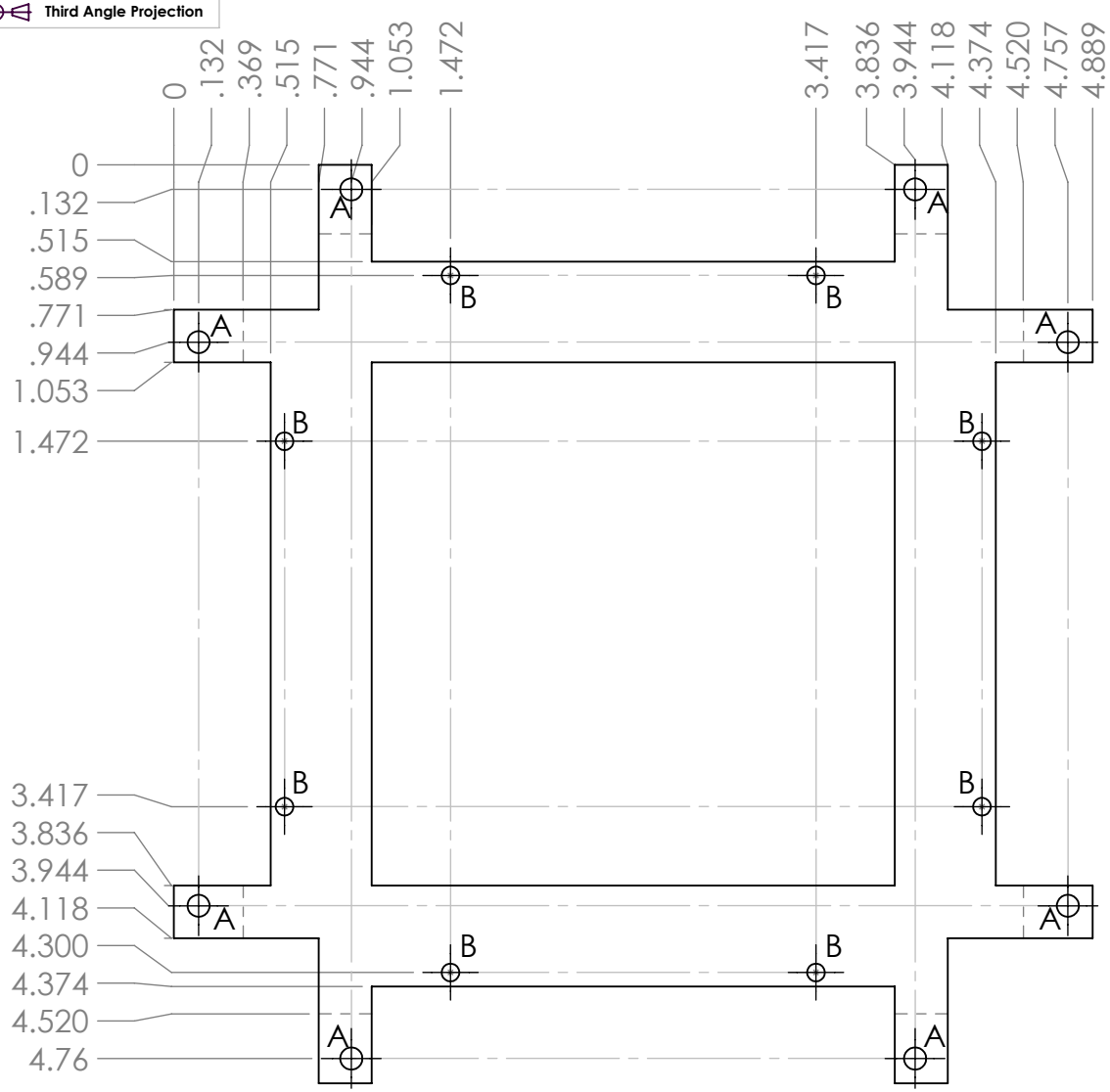
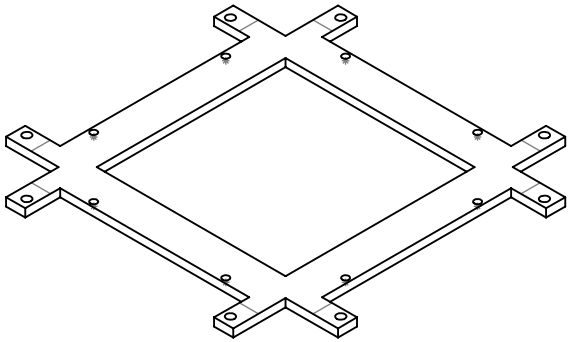
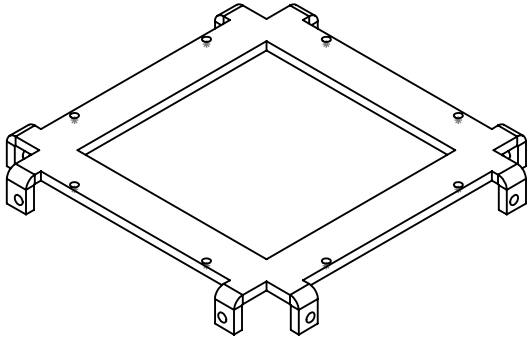
Third Angle Projection





ISO VIEW (FLAT)
SCALE 1:2



ISO VIEW
SCALE 1:2

HOLES:
A - 4 HOLES DRILL M3 THRU
B - 8 HOES DRILL M2 THRU
NOTES:
1) WATER JET FLAT DIMENSIONS
2) NO BURRS OR SHARP EDGES
3) 0.6µm ALL SURFACES UNLESS OTHERWISE SPECIFIED

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified**	**Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B: It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.
Drawn by: JOEY ADRIAN PANIQUE			**Part Name:** OPP-STRU-007 - ANTENNA PLATE
Part Configuration: FLAT	**Team Name:** 46 - CUBESAT PROJECT TEAM B		
Date: Wednesday, November 28, 2018 4:54:04 PM	**Material:** 120 x120 X 3.00 Al 6061-T6 PLATE	**Quantity:** 1	**Required Finish:** PLAIN
Date Printed: Monday, December 3, 2018	**File/Path:** C:\Users\adria\Desktop\Final Assembly with fasteners\		

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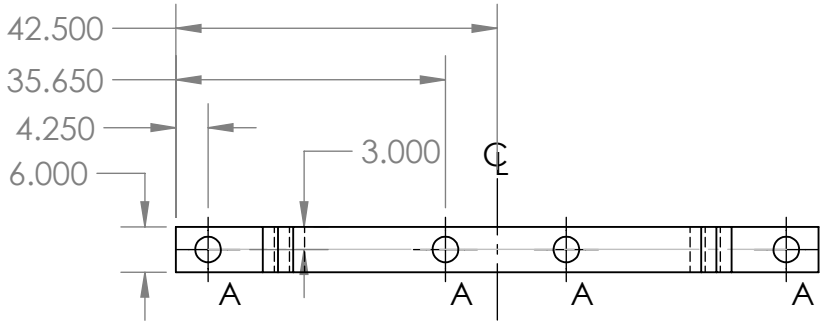
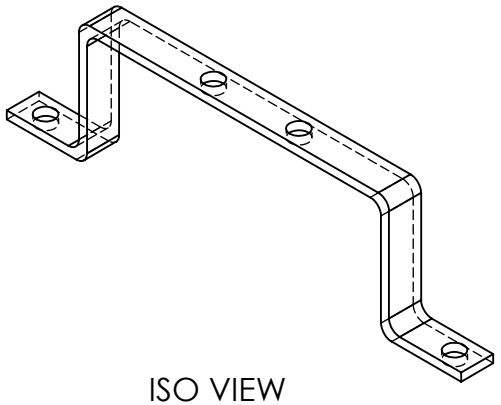
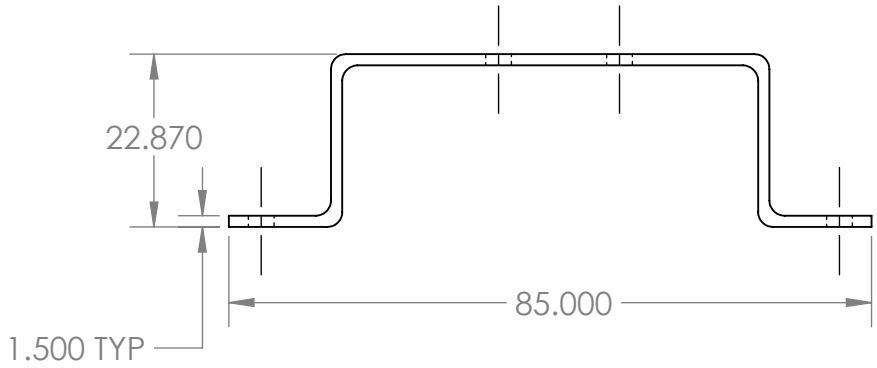
Third Angle Projection





ISO VIEW

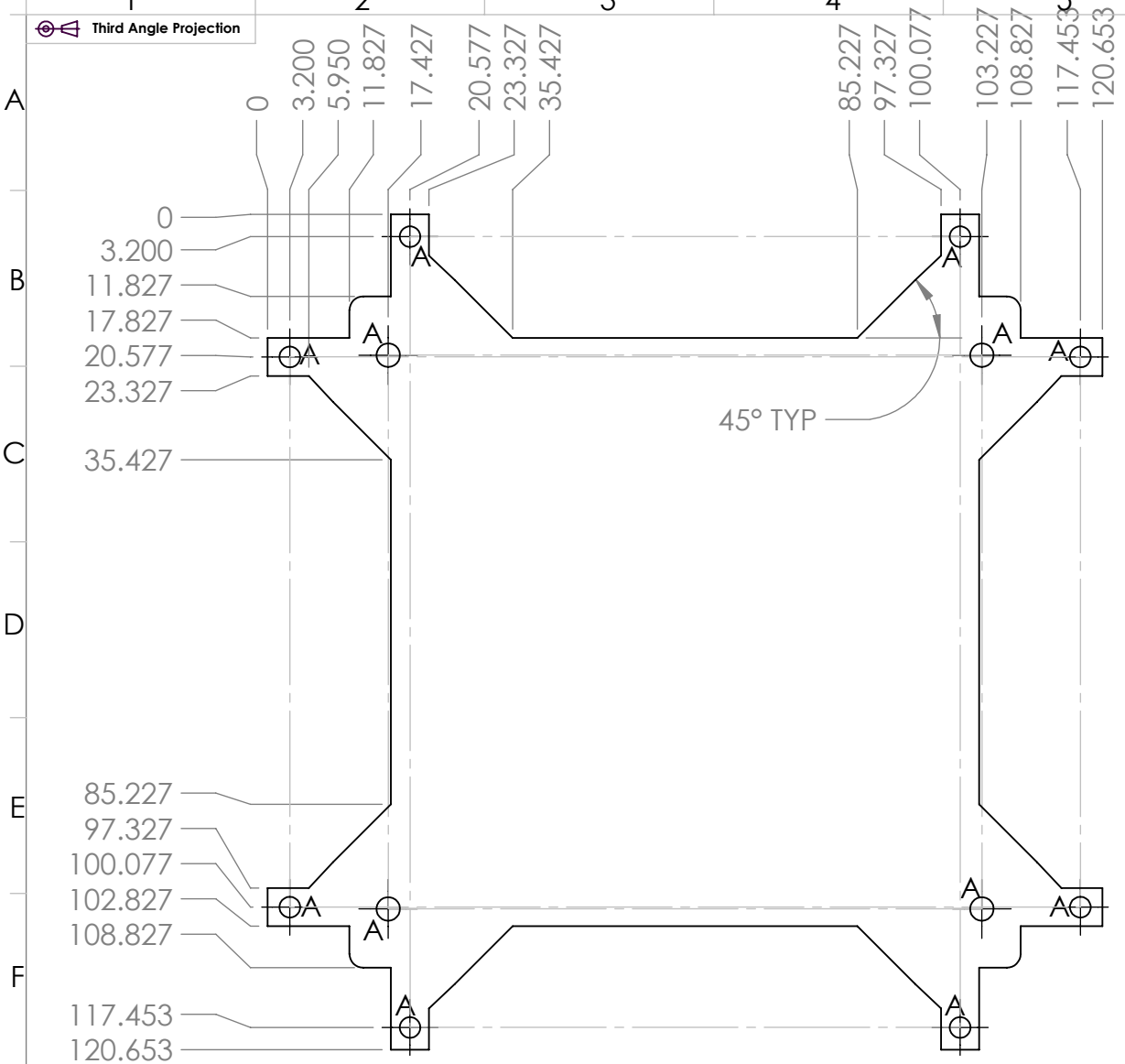


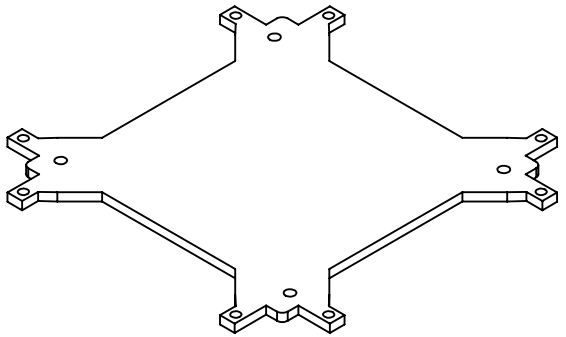
HOLES:
A - 4 HOLES DRILL M3 THRU
NOTES:
1) NO BURRS OR SHARP EDGES
2) 0.6µm ALL SURFACES UNLESS OTHERWISE SPECIFIED

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified**	**Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B. It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.
Drawn by: JOEY ADRIAN PANIQUE			
Date: Friday, November 30, 2018 7:07:06 PM	**Material:** 1.5mm ALUMINUM SHEET METAL	**Quantity:** 2	
Date Printed: Monday, December 3, 2018	**File/Path:** C:\Users\adria\Desktop\Final Assembly with fasteners\		

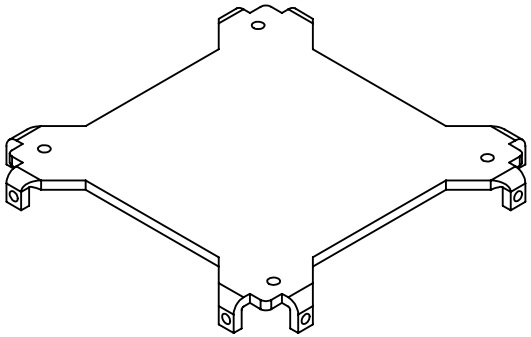
Part Name: OPP-STRU-008 - Z-MAGNETORQUER BRACKET	***MME 4499 - Kamran Siddiqui***
Part Configuration: Default	**Team Name:** 46 - CUBESAT PROJECT TEAM B
Required Finish: PLAIN	Faculty of Engineering University of Western Ontario

Third Angle Projection





ISO VIEW (FLAT)
SCALE 1:2



ISO VIEW
SCALE 1:2

HOLES:
A - 12 HOLES DRILL M3 THRU

NOTES:
1) WATER JET FLAT DIMENSIONS
2) NO BURRS OR SHARP EDGES
3) 0.6µm ALL SURFACES UNLESS OTHERWISE SPECIFIED

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified**	**Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°		**Part Name:** OPP-STRU-009 - BATTERY PLATE	
Drawn by: JOEY ADRIAN PANIQUE				**Part Configuration:** DEFAULT	**Team Name:** 46 - CUBESAT PROJECT TEAM B
Date: Wednesday, November 28, 2018 4:54:04 PM			**Material:** 125 x125 X 3.00 Al 6061-T6 PLATE	**Quantity:** 1	**Required Finish:** PLAIN
Date Printed: Monday, December 3, 2018			**File/Path:** C:\Users\adria\Desktop\Final Assembly with fasteners\		

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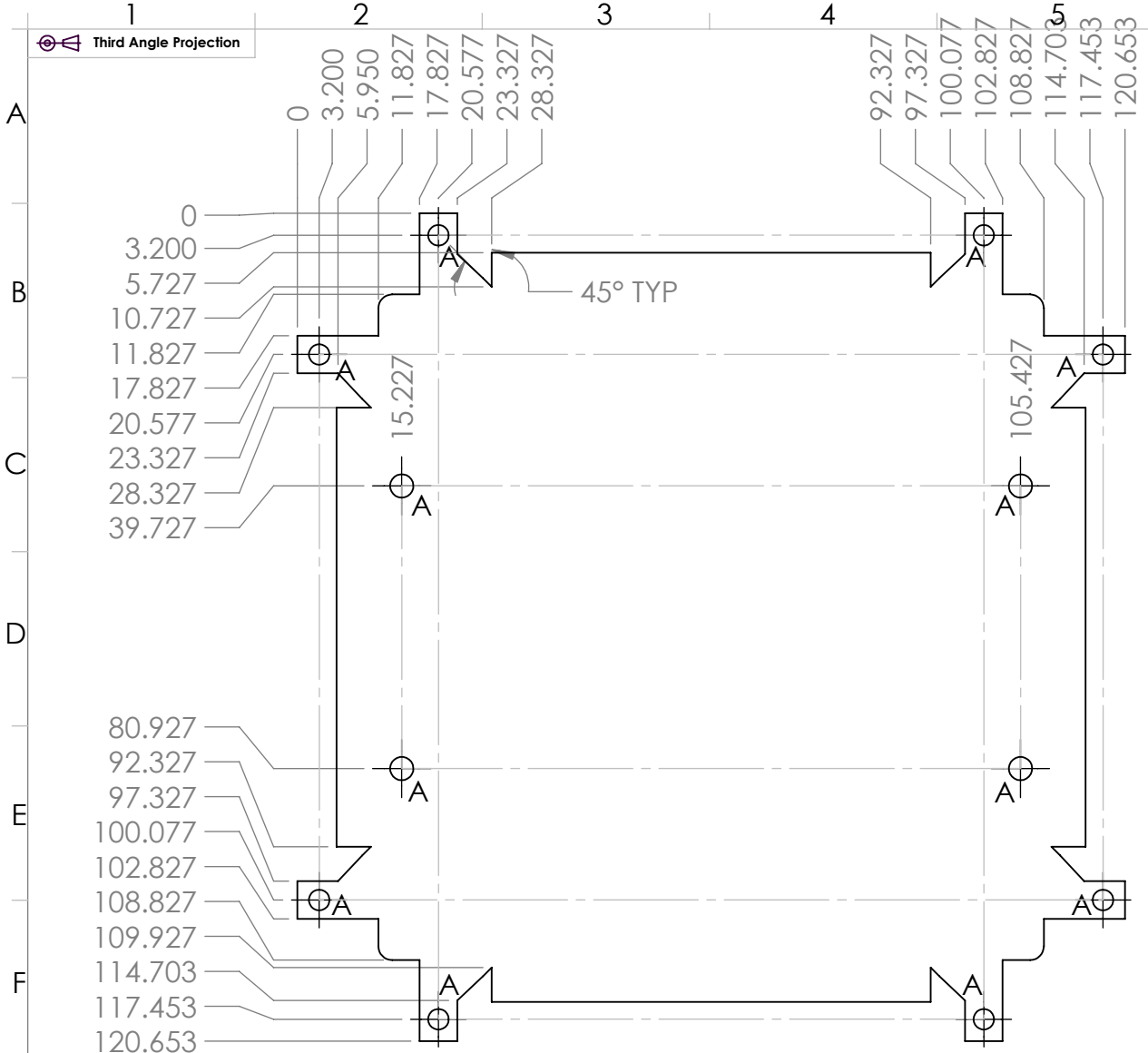
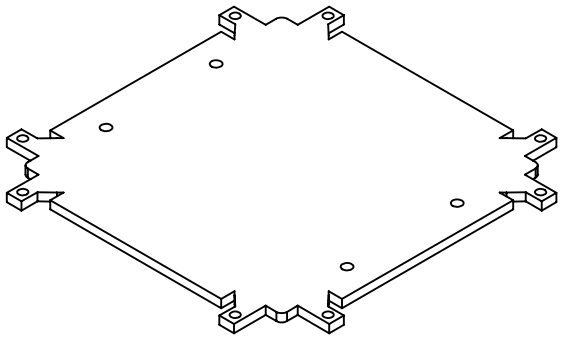
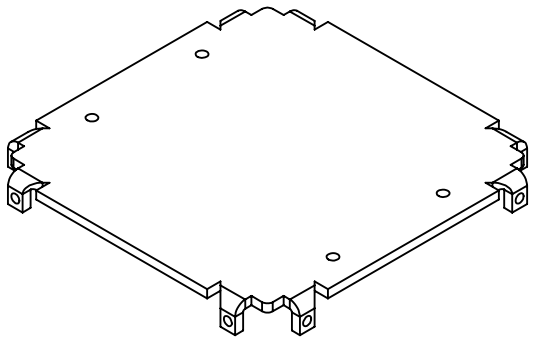
Third Angle Projection





ISO VIEW (FLAT)
SCALE 1:2



ISO VIEW
SCALE 1:2

HOLES:
A - 4 HOLES DRILL M3 THRU
NOTES:
1) WATER JET FLAT DIMENSIONS
2) NO BURRS OR SHARP EDGES
3) 0.6µm ALL SURFACES UNLESS OTHERWISE SPECIFIED

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified**	**Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B. It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.
Drawn by: JOEY ADRIAN PANIQUE			**Part Name:** OPP-STRU-010 - ONBOARD DATA HANDLING PLATE
Date: Wednesday, November 28, 2018 4:54:04 PM	**Material:** 125 x125 X 3.00 Al 6061-T6 PLATE	**Quantity:** 2	**Part Configuration:** DEFAULT
Date Printed: Monday, December 3, 2018	**File/Path:** C:\Users\adria\Desktop\CAD Final\		**Team Name:** 46 - CUBESAT PROJECT TEAM B
			Required Finish: PLAIN

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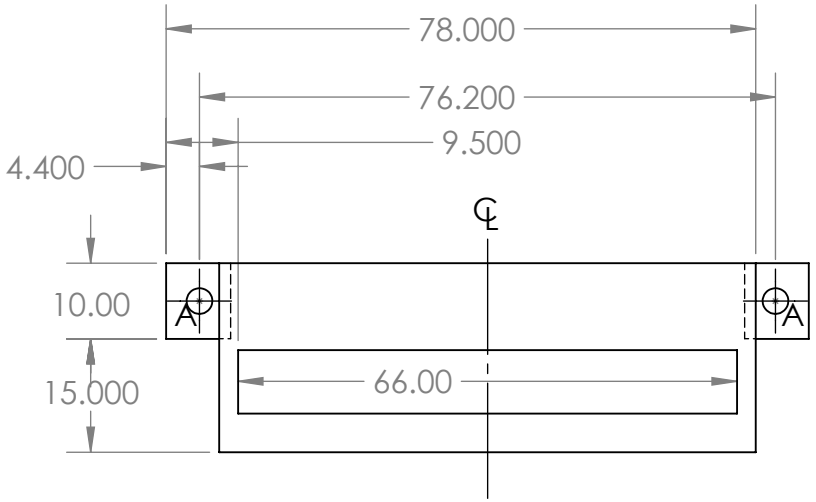
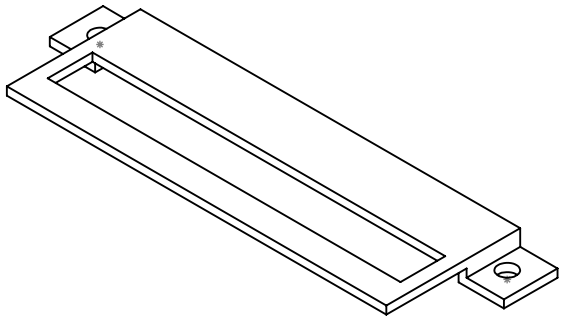
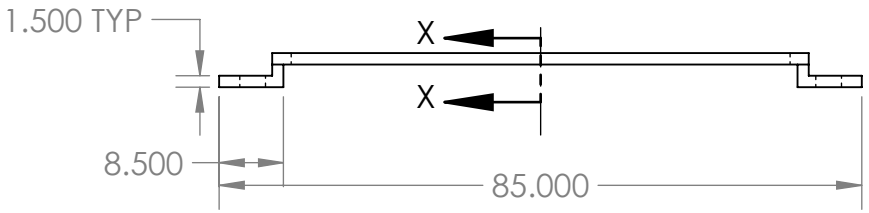
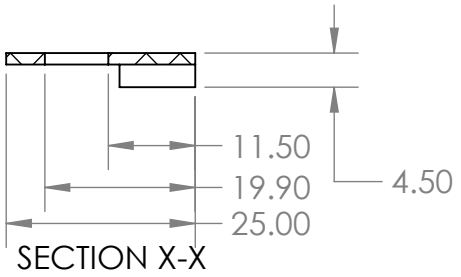
Third Angle Projection





ISO VIEW





SECTION X-X

HOLES:
A - 2 HOLES DRILL M3 THRU
NOTES:
1) NO BURRS OR SHARP EDGES
2) 0.6µm ALL SURFACES UNLESS OTHERWISE SPECIFIED

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified**	**Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B. It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.	**Part Name:** OPP-STRU-011 - ANTENNA BLOCK BRACKET
Drawn by: JOEY ADRIAN PANIQUE				**Part Configuration:** DEFAULT / **Team Name:** 46 - CUBESAT PROJECT TEAM B
Date: Friday, November 30, 2018 8:34:07 PM			**Material:** 5.00 X 25.00 ALUMINUM FLAT BAR	**Quantity:** 4 / **Required Finish:** PLAIN
Date Printed: Monday, December 3, 2018			**File/Path:** C:\Users\adria\Desktop\Final Assembly with fasteners\	

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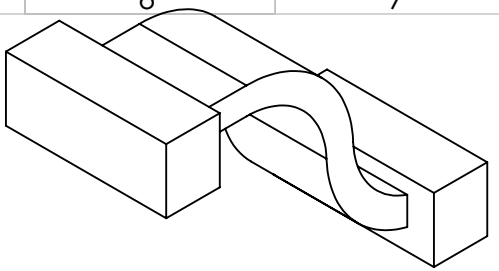
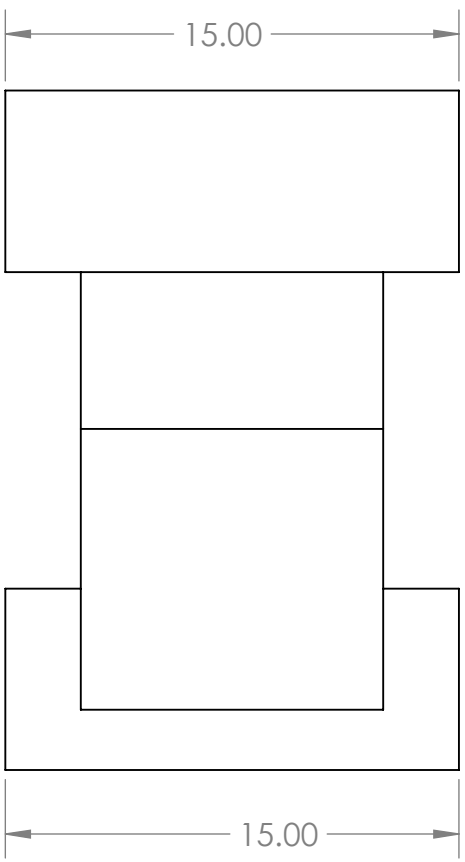
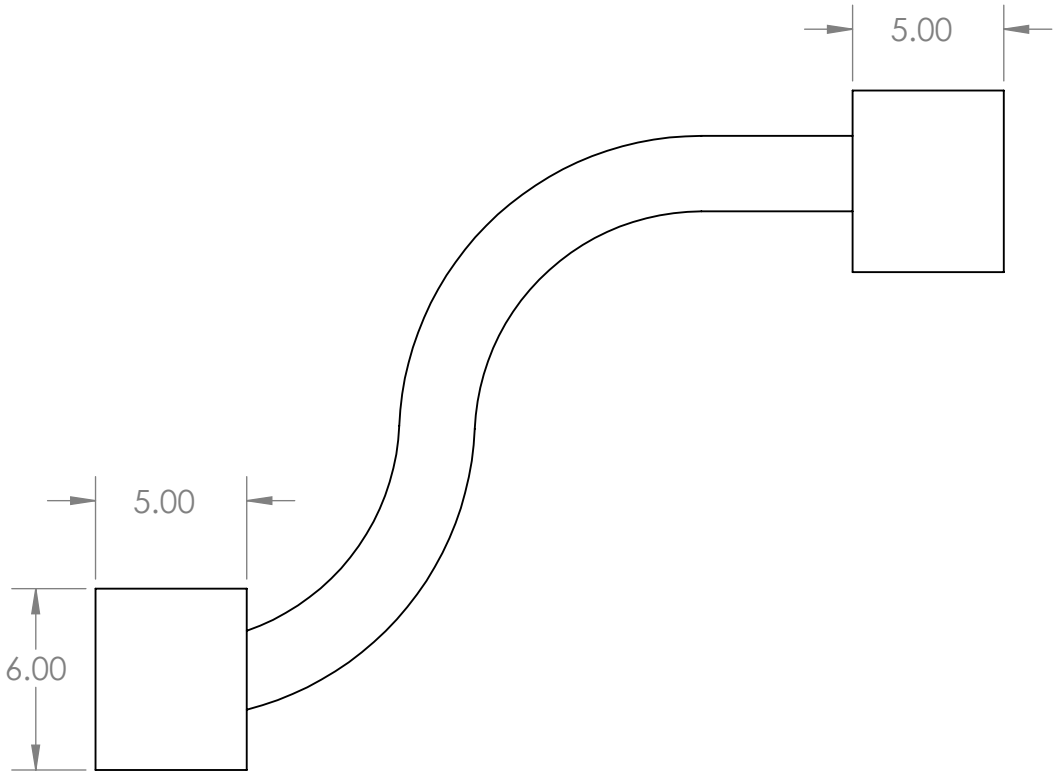
Third Angle Projection



ISO VIEW
SCALE 2:1





NOTES:
1) USES M3 SCREWS FOR FOR FASTENING
2) VARIOUS LENGTHS AND THICKNESS USED
3) NO BURRS OR SHARP EDGES

Sheet Scale: 1:1	**Dimensions are in millimetres unless specified**	**Standard Tolerances:** X.X= ±1.5875" X.XX=±0.127" X.XXX=±0.0254" Angles=±0.25°	COMMERCIALLY CONFIDENTIAL. This Drawing contains ideas and information which are proprietary to CUBESAT PROJECT TEAM B: It is given to you in confidence. You are authorized to open and view any electronic copy we send you of this document within your organization and to print a single copy. Otherwise the material may not in whole or in part be copied, stored electronically or communicated to third parties without the prior written consent of CUBESAT PROJECT TEAM B.	**Part Name:** OPP-STRU-012 - THERMAL STRAPS
Drawn by: JOEY ADRIAN PANIQUE				**Part Configuration:** Default / **Team Name:** 46 - CUBESAT PROJECT TEAM B
Date: Sunday, December 2, 2018 11:26:30 PM			**Material:** COPPER	**Quantity:** 2 / **Required Finish:** PLAIN
Date Printed: Monday, December 3, 2018			**File/Path:** C:\Users\adria\Desktop\Final Assembly with fasteners\	

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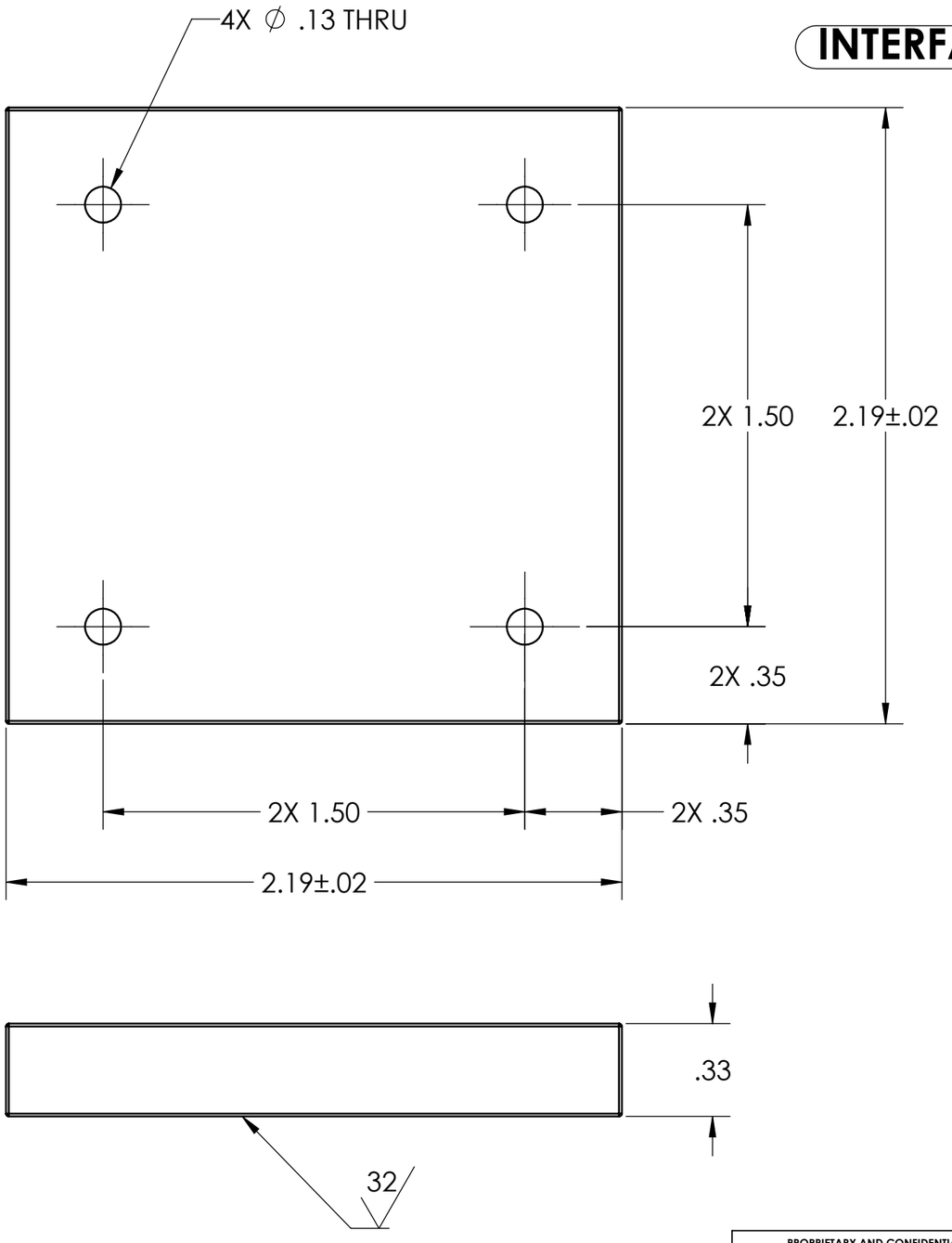
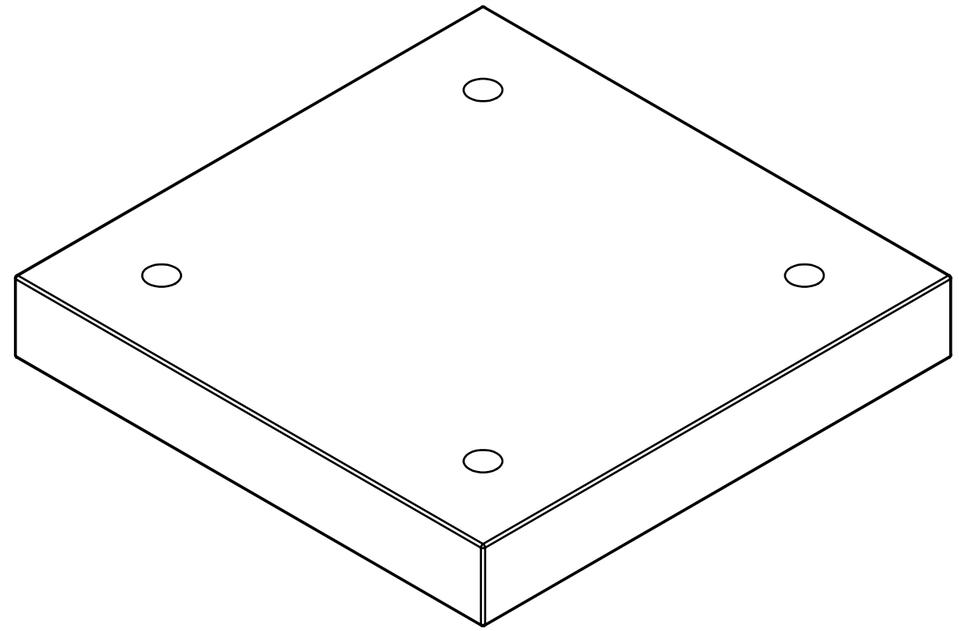


INTERFACE



NOTES:

1. MATERIAL: ALUMINUM ALLOY
2. BURRS REMOVED & SHARP EDGES BROKEN AT 0.01-IN MAX UNLESS OTHERWISE SPECIFIED.
3. SURFACE ROUGHNESS IS $\sqrt{256}$ UNLESS OTHERWISE SPECIFIED.
4. MASS: 45 GM (0.10 LB) TYPICAL; VARIES WITH PCM.
5. THERMAL
   - PHASE CHANGE TEMPERATURE: VARIABLE (±1.0°C).
   - ENERGY STORAGE: 2100 J TYPICAL; VARIES WITH PCM.

NEXT ASSY	USED ON	
APPLICATION		

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTION: ± 1/16
ANGULAR: ± 0.05 DEG
TWO PLACE DECIMAL: ±0.01
THREE PLACE DECIMAL: ±0.005

INTERPRET GEOMETRIC TOLERANCING PER ASME Y14.5M-2009

MATERIAL
SEE NOTES

FINISH

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	B. L.	10/19/16
CHECKED	S.S.	DRAFT
ENG APPR.	S.S.	DRAFT
MFG APPR.		
Q.A.		

COMMENTS:

THERMAL MANAGEMENT TECHNOLOGIES

TITLE:
THERMAL STORAGE UNIT, AL-2x2-2D

SIZE	DWG. NO.	REV
B	TMT011-101	-

SCALE: 1:2 | SHEET 3 OF 3