

4

3

2

1

D

D

C

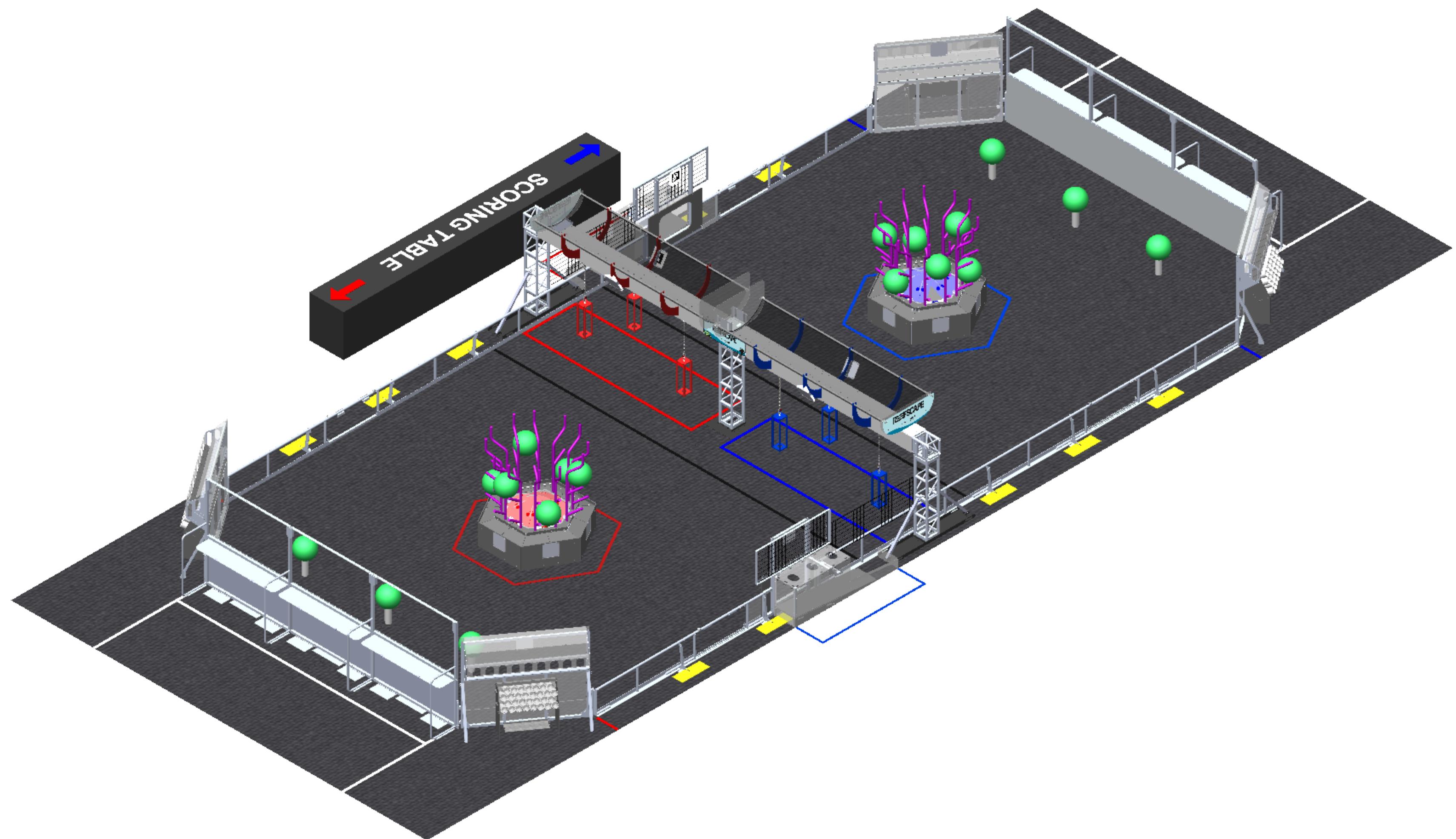
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$	DRAWN	DF	12/20/2024
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**2025 Field Layout
and Marking**

SIZE DWG. NO. REV
C FE-2025

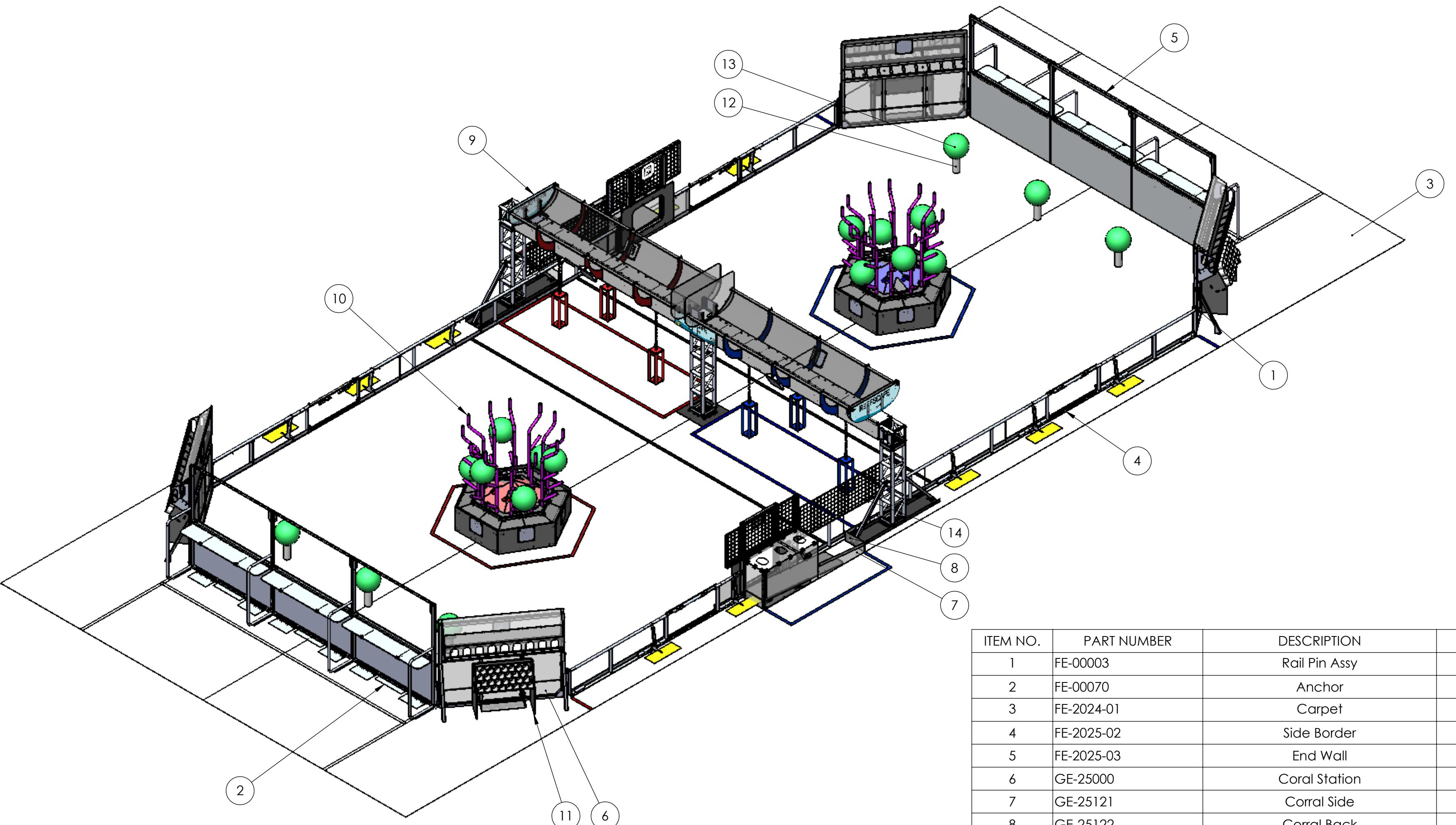
SCALE: 1:50 SHEET 1 OF 5

4

3

2

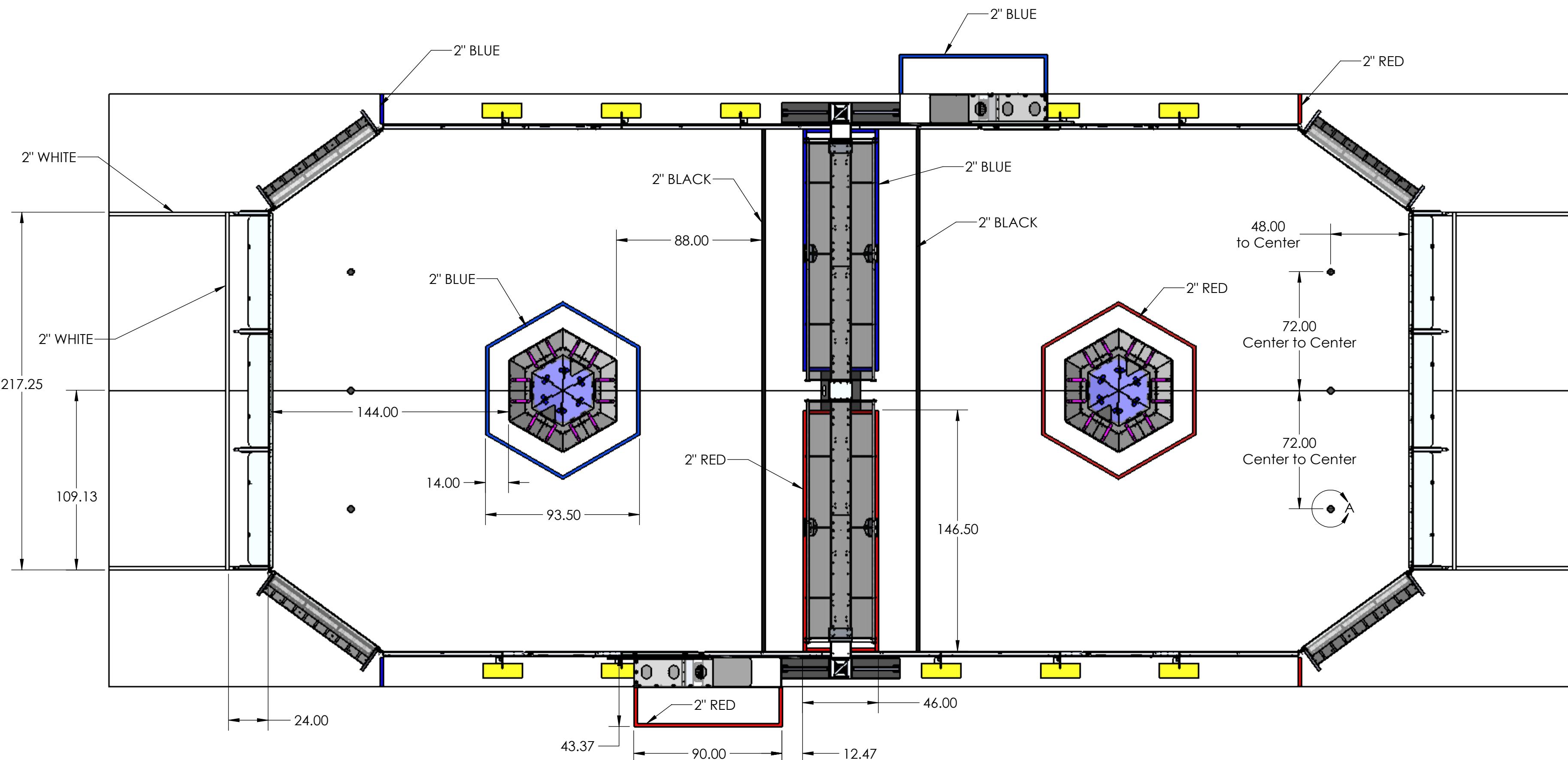
1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00003	Rail Pin Assy	8
2	FE-00070	Anchor	3
3	FE-2024-01	Carpet	2
4	FE-2025-02	Side Border	2
5	FE-2025-03	End Wall	2
6	GE-25000	Coral Station	4
7	GE-25121	Corral Side	2
8	GE-25122	Corral Back	2
9	GE-25200	Barge	1
10	GE-25300	Reef	2
11	GE-25410	Coral Holder	4
12	GE-25500	Coral	126
13	GE-25501	Algae	18
14	fence 2x6	ULINE Grid (Part# - H-4297)	2

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE
		DRAWN	DF	12/20/2024
PROPRIETARY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				
MATERIAL/FINISH:				
DO NOT SCALE DRAWING				
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				

FIRST ROBOTICS COMPETITION Modeling Solutions Partner
 TITLE: 2025 Field Layout and Marking
 SIZE DWG. NO. REV
 C FE-2025
 SCALE: 1:50 SHEET 2 OF 5



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/2$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .50$

FIELD NAME DATE
DRAWN DF 12/20/2024

MATERIAL/FINISH:

DO NOT SCALE DRAWING

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST IS PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

FIRST ROBOTICS COMPETITION
SOLIDWORKS
Modeling Solutions Partner

TITLE: 2025 Field Layout and Marking

SIZE DWG. NO. REV
C FE-2025

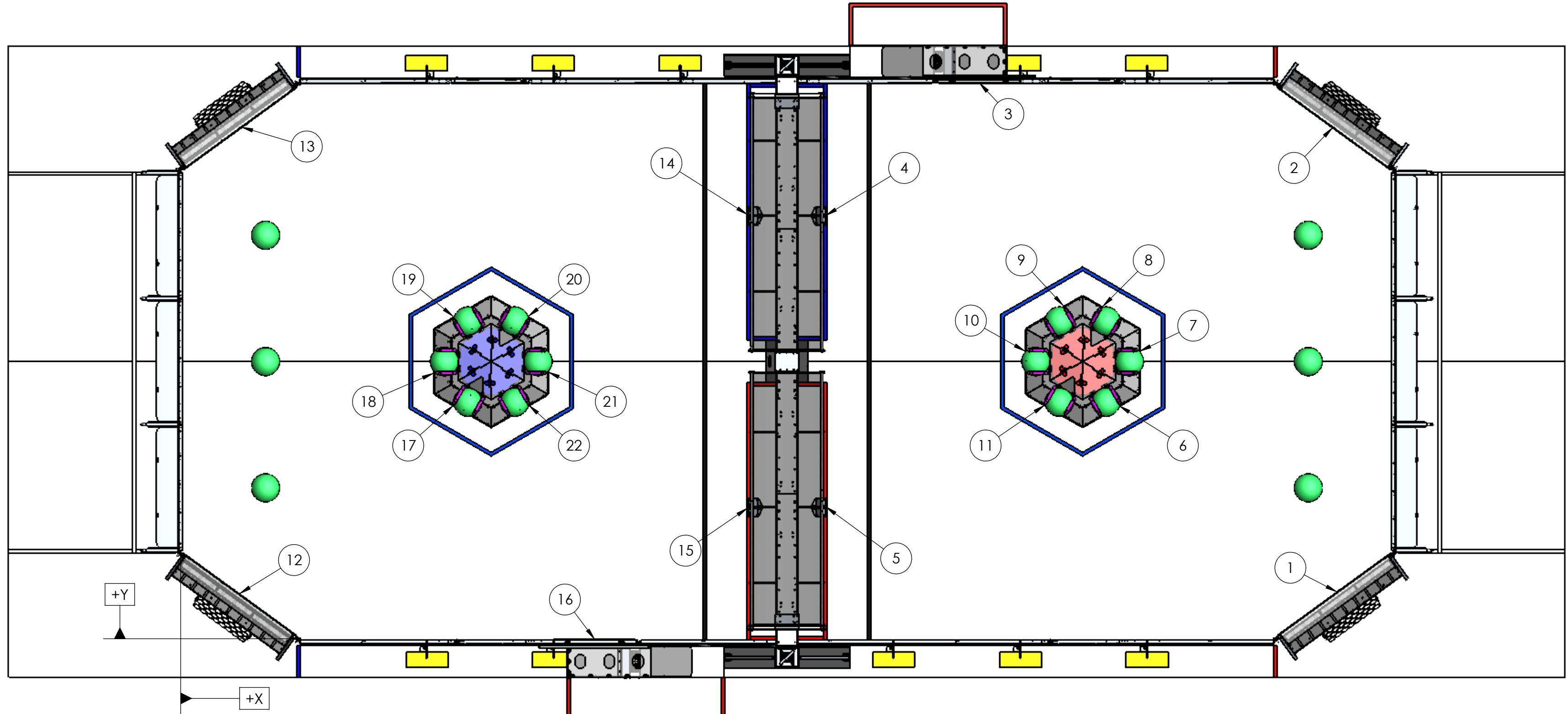
SCALE: 1:50 SHEET 3 OF 5

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2	A	"X-Rotation" changed to "Y-Rotation"	1/6/2025	JO

D

D



B

B

April Tag Coordinates

The XYZ Origin is established in the bottom left corner of the field (as viewed in the image above). An x coordinate of 0 is aligned with the Blue Alliance Station diamond plate. A y coordinate of 0 is aligned with the side border polycarbonate on the Scoring Table side of the field. A z coordinate of 0 is on the carpet.

+Z is up into the air from the carpet, +X is horizontal to the right (in this image above) toward the opposing alliance stations, and +Y runs from the Field Border towards the REEFS. The face-pose of the tags is denoted with 1 degree representation, the Z-rotation, 0° faces the red alliance station, 90° faces the non-scoring table side, and 180° faces the blue alliance station. For the X-Rotation, 0° is perpendicular to the Z plane, and 90 degrees is facing the carpet. Distances are measured to the center of the tag.

ID	X	Y	Z	Z-Rotation	Y-Rotation
1	657.37	25.80	58.50	126°	0°
2	657.37	291.20	58.50	234°	0°
3	455.15	317.15	51.25	270°	0°
4	365.20	241.64	73.54	0°	30°
5	365.20	75.39	73.54	0°	30°
6	530.49	130.17	12.13	300°	0°
7	546.87	158.50	12.13	0°	0°
8	530.49	186.83	12.13	60°	0°
9	497.77	186.83	12.13	120°	0°
10	481.39	158.50	12.13	180°	0°
11	497.77	130.17	12.13	240°	0°
12	33.51	25.80	58.50	54°	0°
13	33.51	291.20	58.50	306°	0°
14	325.68	241.64	73.54	180°	30°
15	325.68	75.39	73.54	180°	30°
16	235.73	-0.15	51.25	90°	0°
17	160.39	130.17	12.13	240°	0°
18	144.00	158.50	12.13	180°	0°
19	160.39	186.83	12.13	120°	0°
20	193.10	186.83	12.13	60°	0°
21	209.49	158.50	12.13	0°	0°
22	193.10	130.17	12.13	300°	0°

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE
		DRAWN	JO	12/20/2024
DIMENSIONS ARE IN INCHES				
TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$				
PROPRIETARY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				
MATERIAL/FINISH:				
DO NOT SCALE DRAWING				
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				
SIZE	DWG. NO.	REV		
C	FE-2025	A		
SCALE: 1:50		SHEET 4 OF 5		

D

D

C

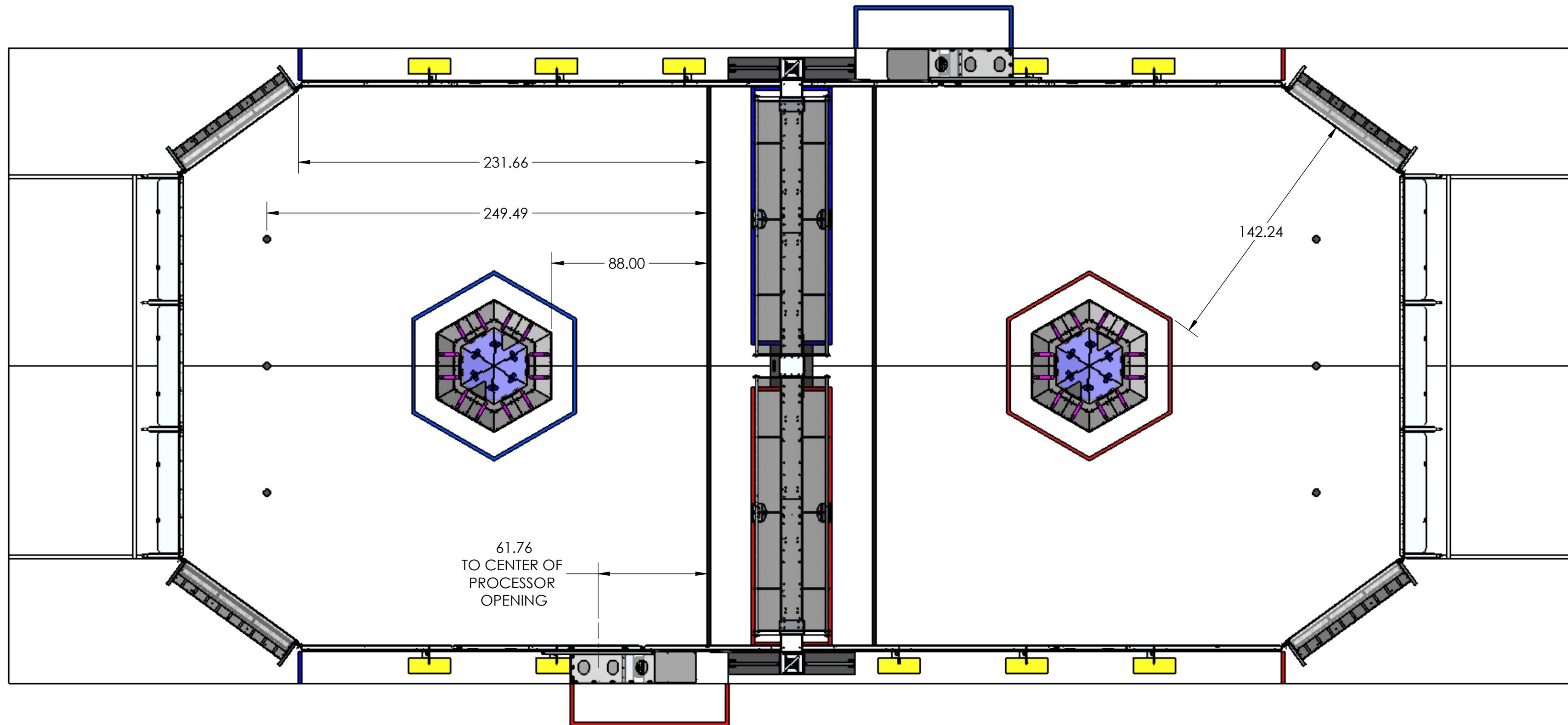
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
DRAWN	DF	12/20/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**2025 Field Layout
and Marking**

SIZE DWG. NO. REV
C FE-2025

SCALE: 1:50 SHEET 5 OF 5

4

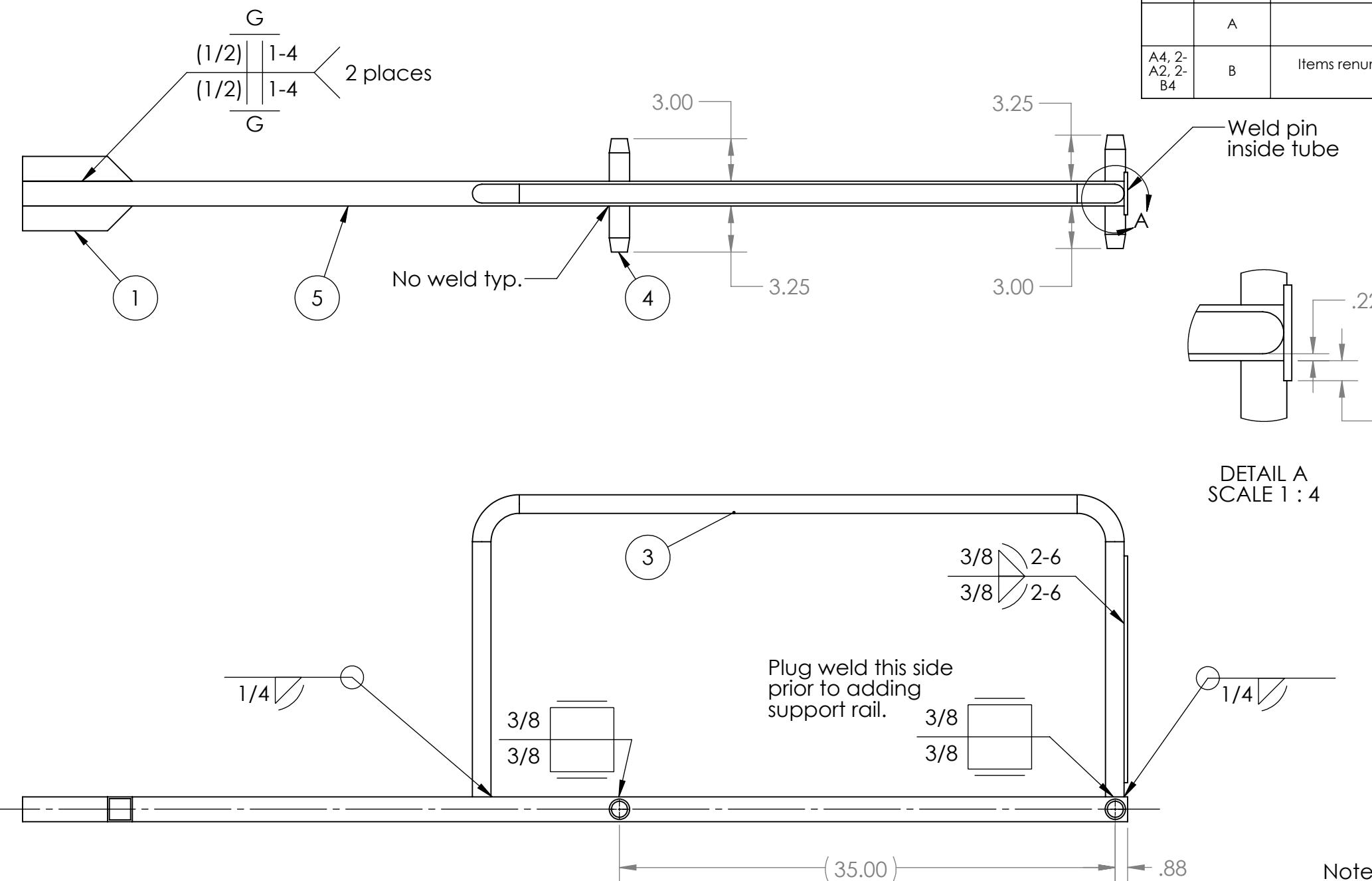
3

2

1

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	Redraw	5/14/2008	narosenberg
A4, 2-A2, 2-B4	B	Items renumbered, solid rod diameter updated, drawing reformatted.	3/19/2020	CPO



Notes:
1. Remove all sharp edges

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00001-01	1 3/4" x 1 3/4" x 1/8" 6061 Aluminum Tubing	2
2	FE-00001-02	1/4" 6061 Aluminum Plate	1
3	FE-00001-03	1" Schedule 40 Aluminum Tube	1
4	FE-00001-04	1 7/16" Dia. 6061 Aluminum Solid Rod	2
5	FE-00001-05	1 3/4" x 1 3/4" x 1/8" 6061 Aluminum Tubing	1

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:	NAME	DATE
DIMENSIONS ARE IN INCHES			DRAWN	
TOLERANCES:			CHECKED	
FRACTIONAL ±1/16			ENG APPR.	
ANGULAR: MACH ±1° BEND ±1°			MFG APPR.	
TWO PLACE DECIMAL ±.01			Q.A.	
THREE PLACE DECIMAL ±.001			COMMENTS:	
INTERPRET GEOMETRIC TOLERANCING PER:				
NEXT ASSY	USED ON	FINISH		
APPLICATION	DO NOT SCALE DRAWING			

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

Drivers Station Support

SIZE	DWG. NO.	REV
B	FE-00001	B
SCALE: 1:9	WEIGHT:	SHEET 1 OF 3

4

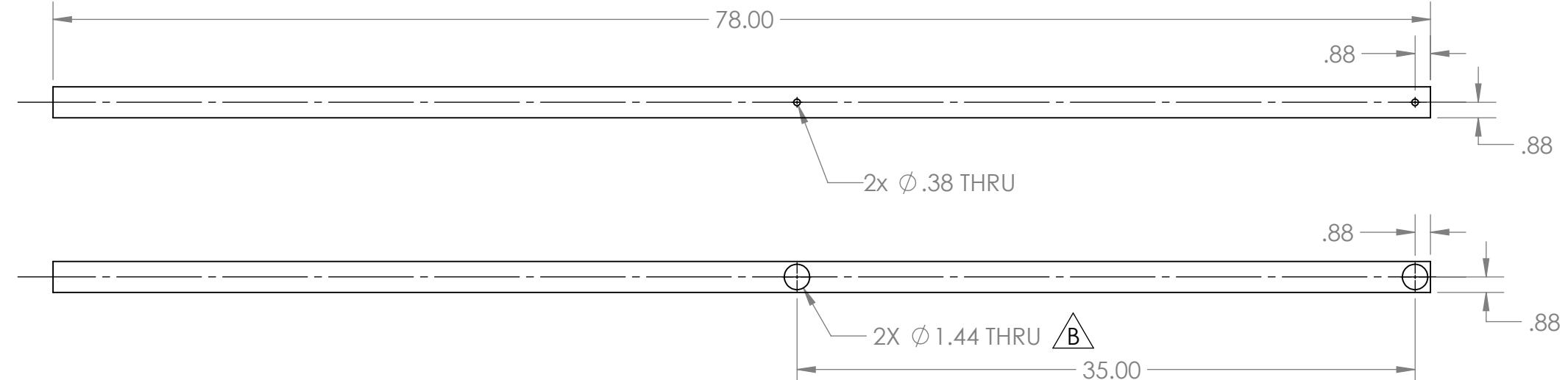
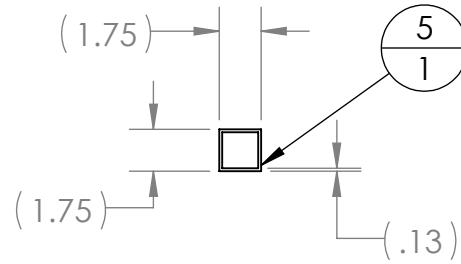
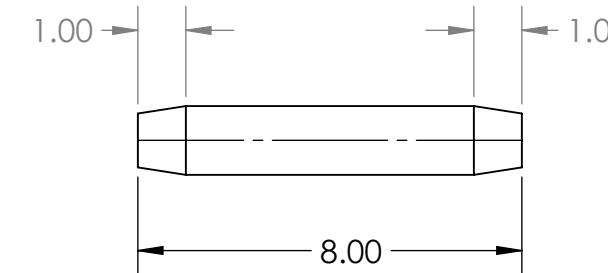
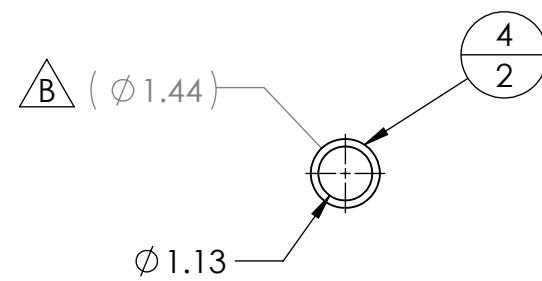
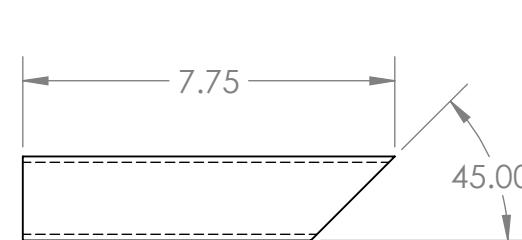
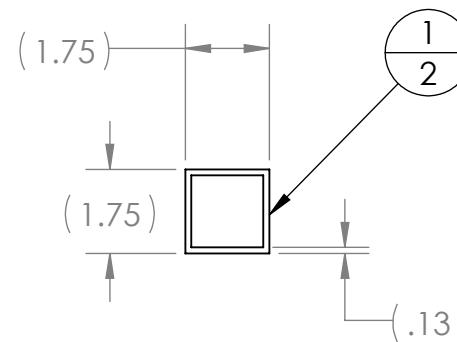
3

2

1

B

B



A

A

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$		NAME	DATE
		DRAWN			
		CHECKED			
		ENG APPR.			
		MFG APPR.			
		Q.A.			
		COMMENTS:			
NEXT ASSY	USED ON	MATERIAL			
APPLICATION		FINISH			
		DO NOT SCALE DRAWING			

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

Drivers Station Support

SIZE DWG. NO. REV
B FE-00001 B

SCALE: 1:2 WEIGHT: SHEET 2 OF 3

4

3

2

1

4

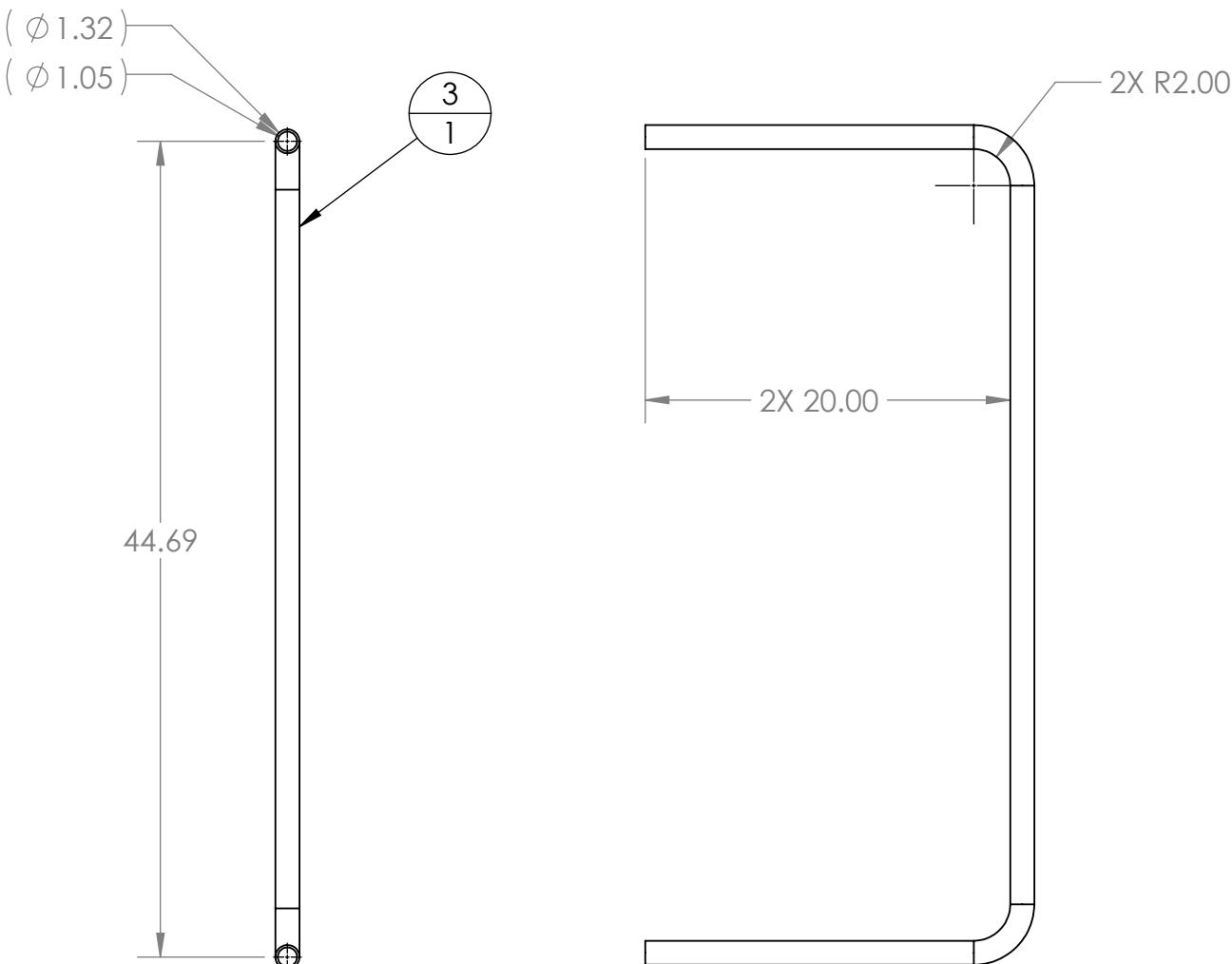
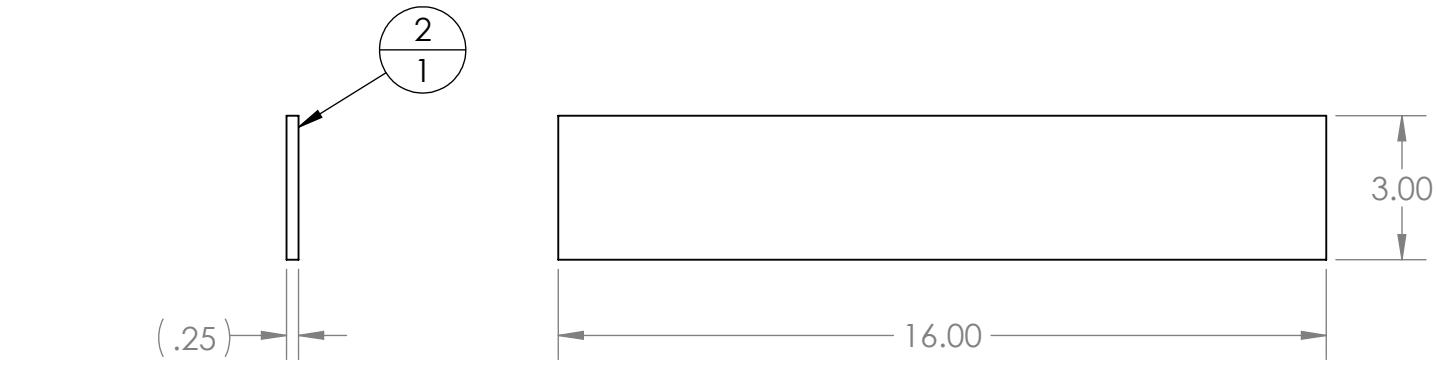
3

2

1

B

B



PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST[®]. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST[®]** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$		NAME	DATE
		DRAWN			
		CHECKED			
		ENG APPR.			
		MFG APPR.			
		Q.A.			
		COMMENTS:			
		MATERIAL			
		NEXT ASSY	USED ON	FINISH	
		APPLICATION		DO NOT SCALE DRAWING	

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

Drivers Station Support

SIZE	DWG. NO.	REV
B	FE-00001	B
	WEIGHT:	SHEET 3 OF 3

4

3

2

1

8

7

6

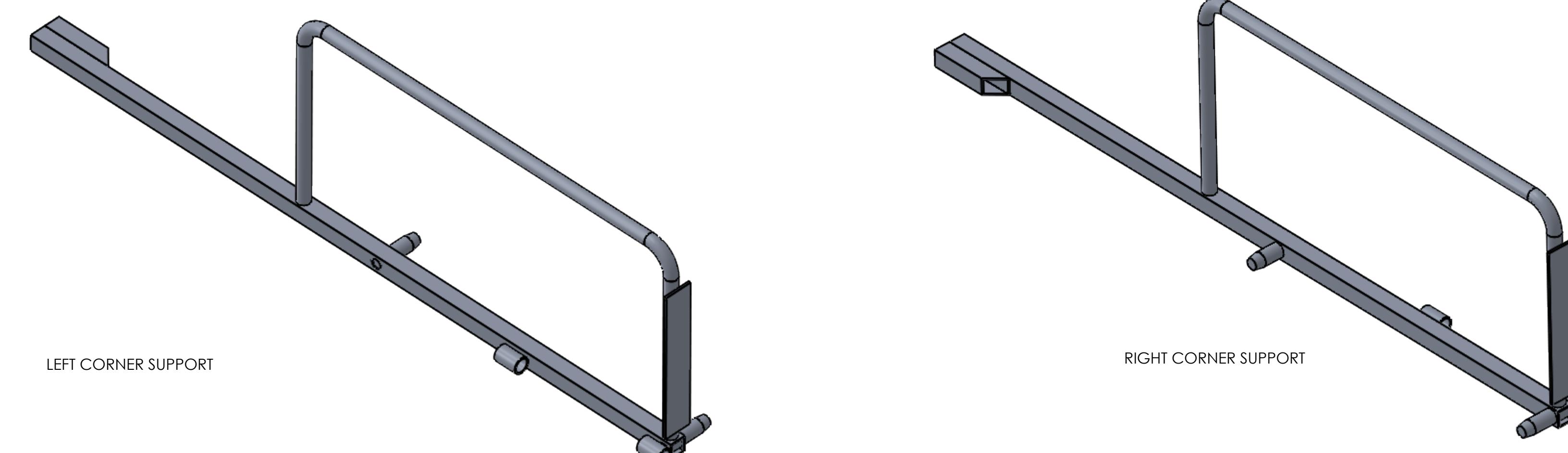
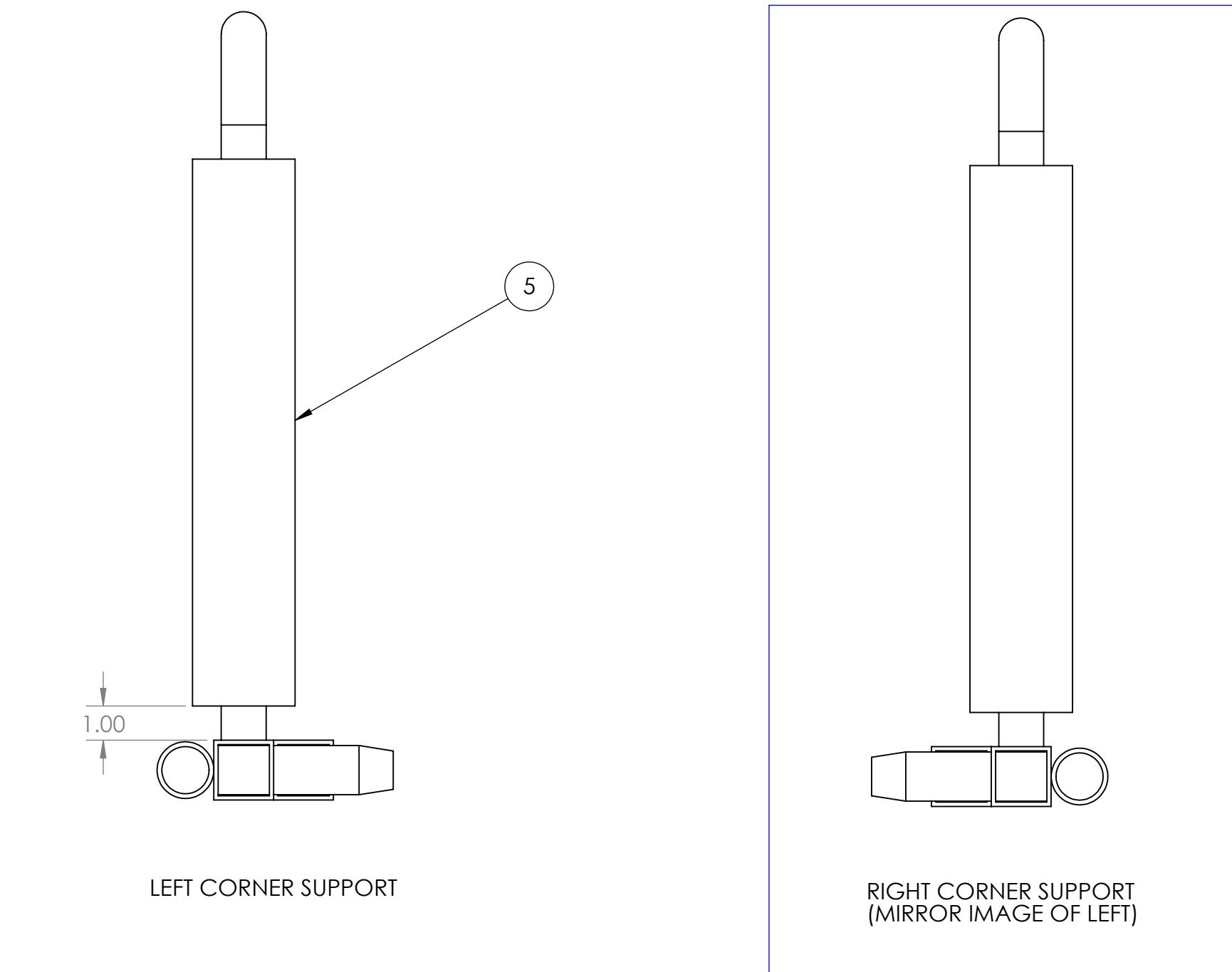
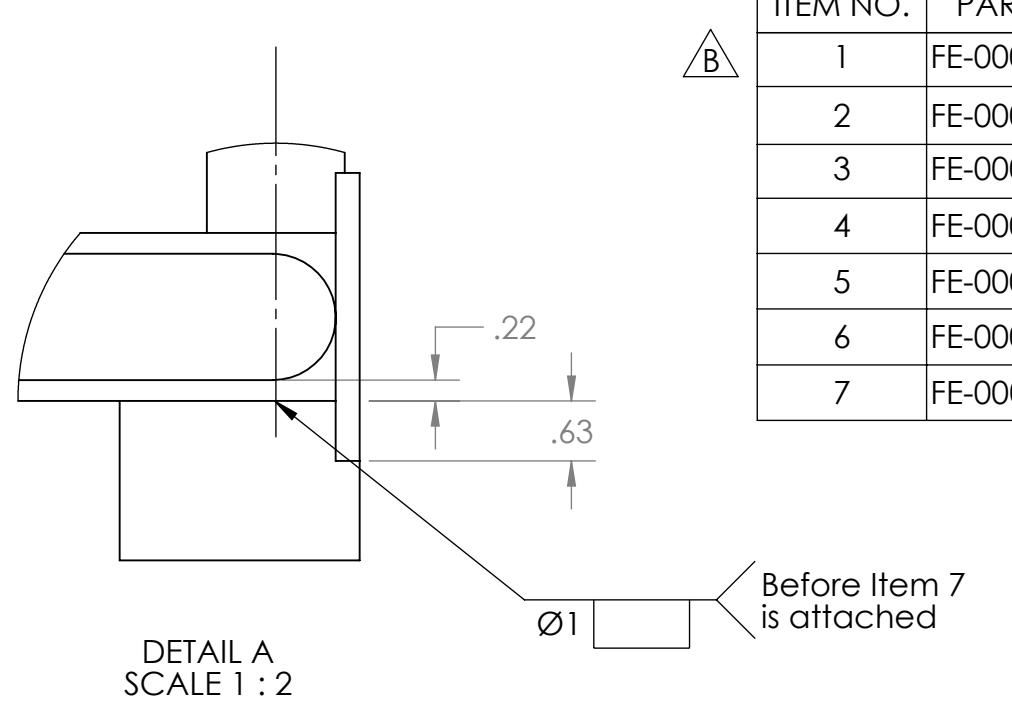
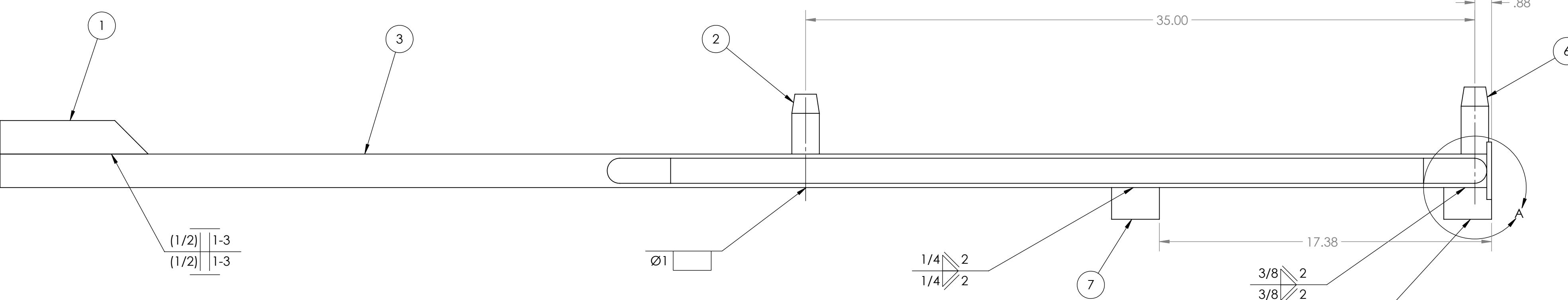
5

4

3

2

1



RIGHT CORNER SUPPORT

LEFT CORNER SUPPORT

- Notes:
1. Left corner support shown, right is same components, mirror image assy
 2. Remove all sharp edges

REVISIONS		DESCRIPTION		DATE	APPROVED
ZONE	REV.				
	1	Redraw		5/19/2008	narosenberg
D2	B	Items renumbered, drawing reformatted		3/19/2020	CPO

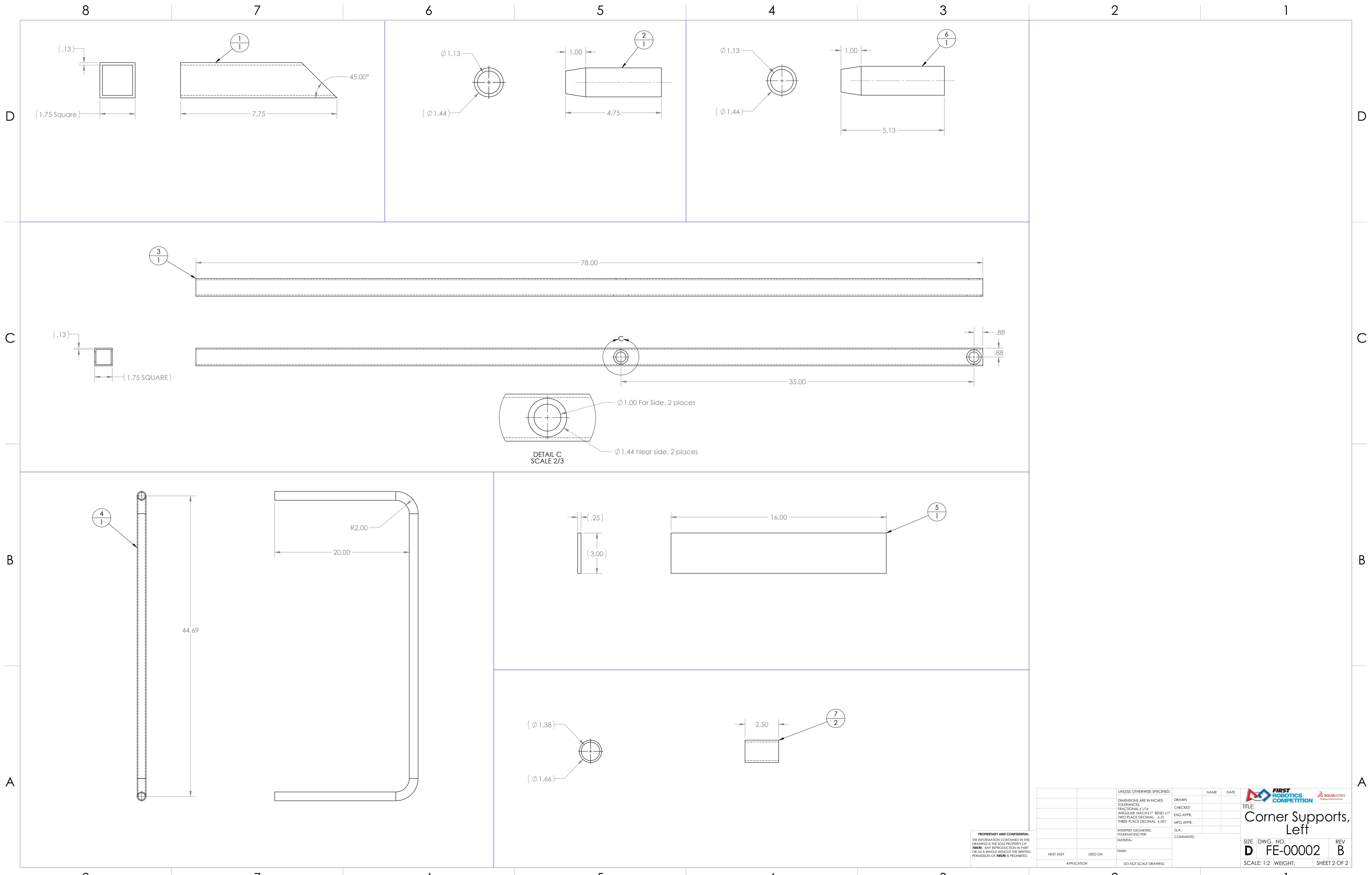
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00002-01	1 3/4" x 1 3/4" x 1/8" 6061 Aluminum Tubing	1
2	FE-00002-02	1 7/16" Dia. 6061 Aluminum Solid Rod	1
3	FE-00002-03	1 3/4" x 1 3/4" x 1/8" 6061 Aluminum Tubing	1
4	FE-00002-04	1" Schedule 40 Aluminum Tube	1
5	FE-00002-05	3" x 1/4" 6061 Aluminum Bar	1
6	FE-00002-06	1 7/16" Dia. 6061 Aluminum Solid Rod	1
7	FE-00002-07	1 1/4" Schedule 40 Aluminum Tube	2

FIRST
ROBOTICS
COMPETITION

TITLE: Corner Supports,
Left

SIZE DWG. NO. D FE-00002 REV. B

SCALE: 1:4 WEIGHT: SHEET 1 OF 2

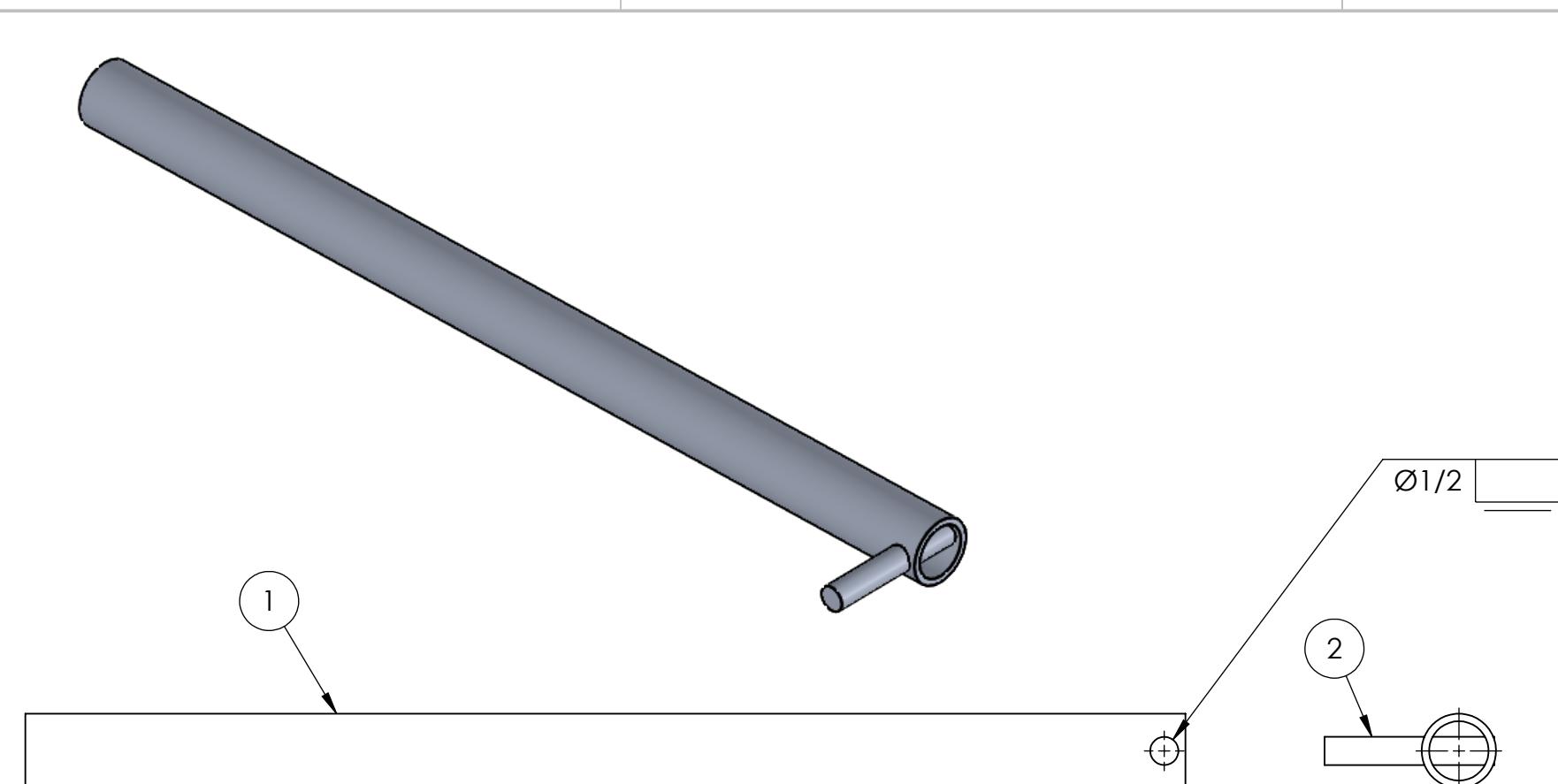


4

3

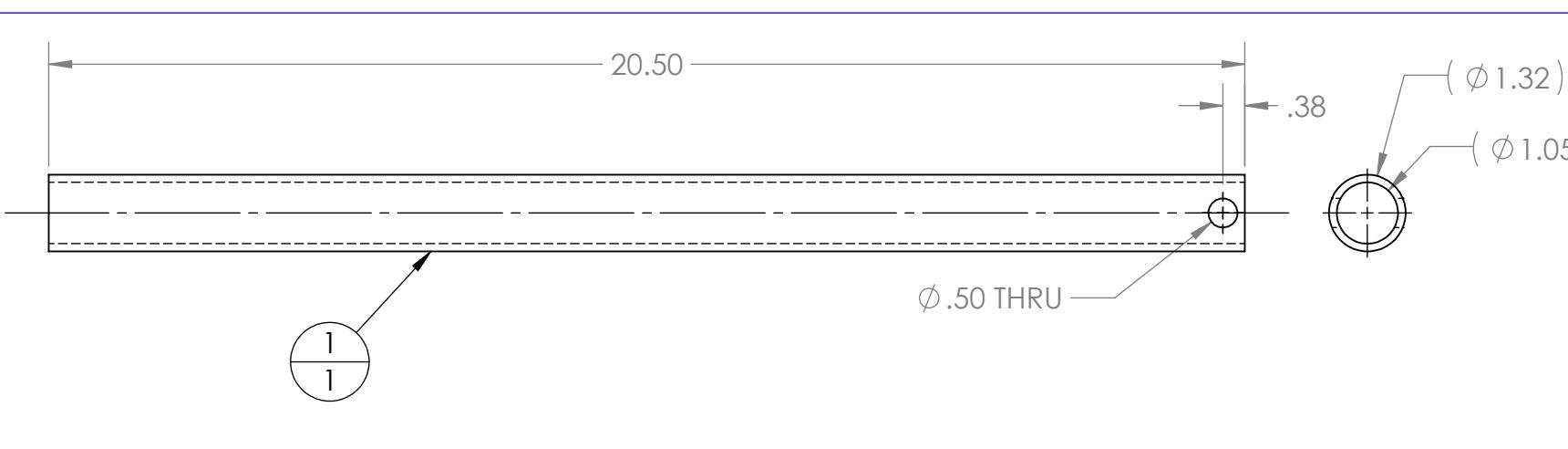
2

1



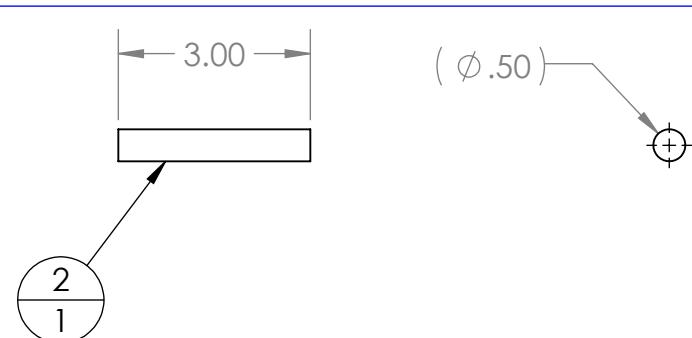
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	Redraw	5/20/2008	narosenberg
	B	Drawing reformatted	3/19/2020	CPO

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00003-01	1" Schedule 40 6061 Aluminum Tube	1
2	FE-00003-02	1/2" 6061 Aluminum Rod	1



Notes:

- ## 1. Remove all sharp edges



PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

8

7

6

5

4

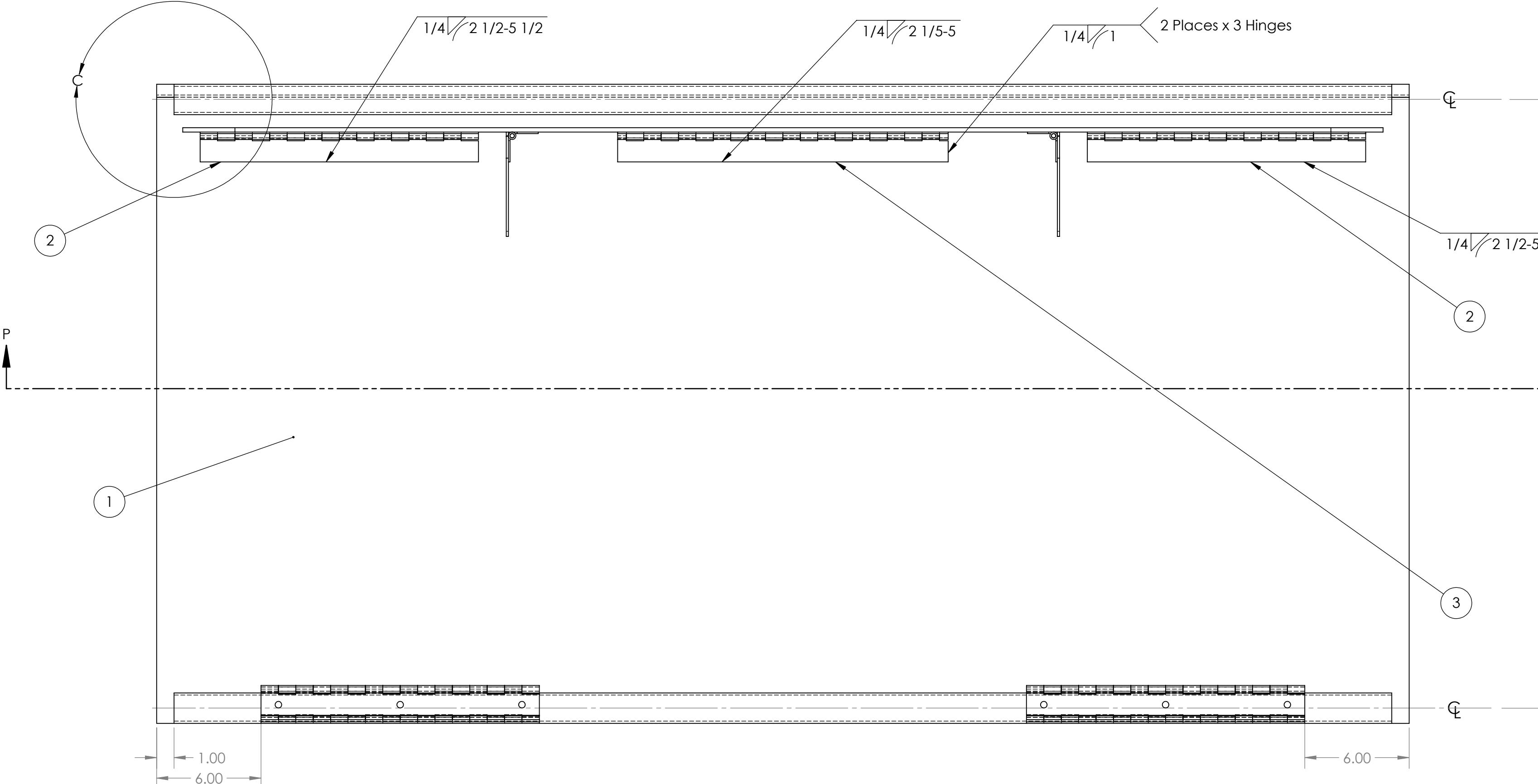
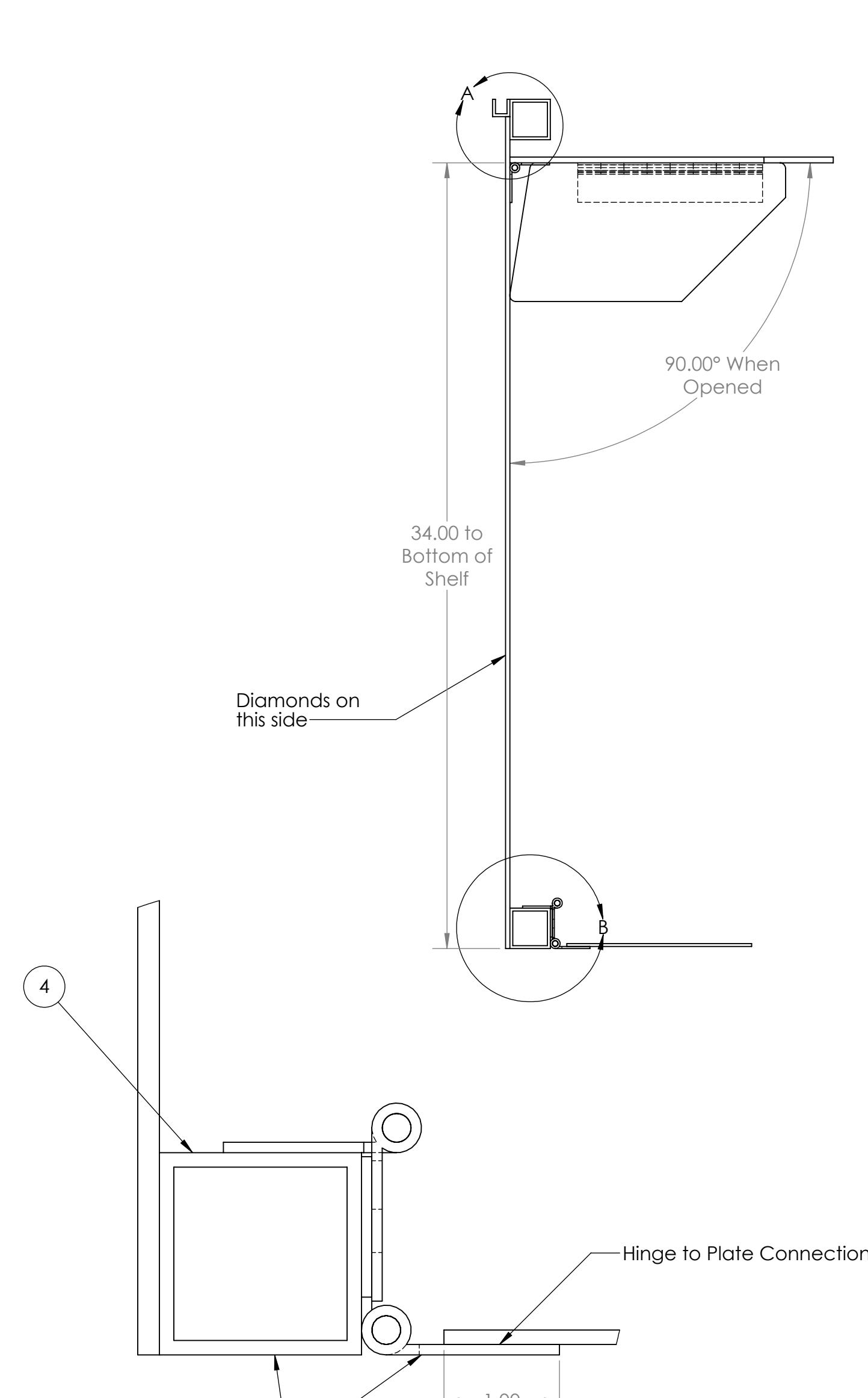
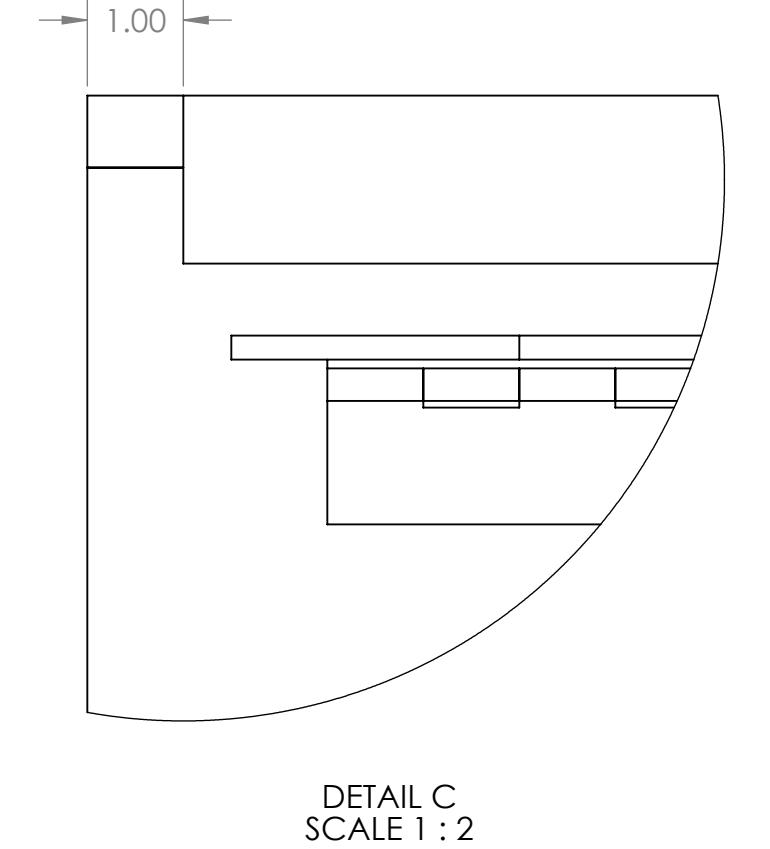
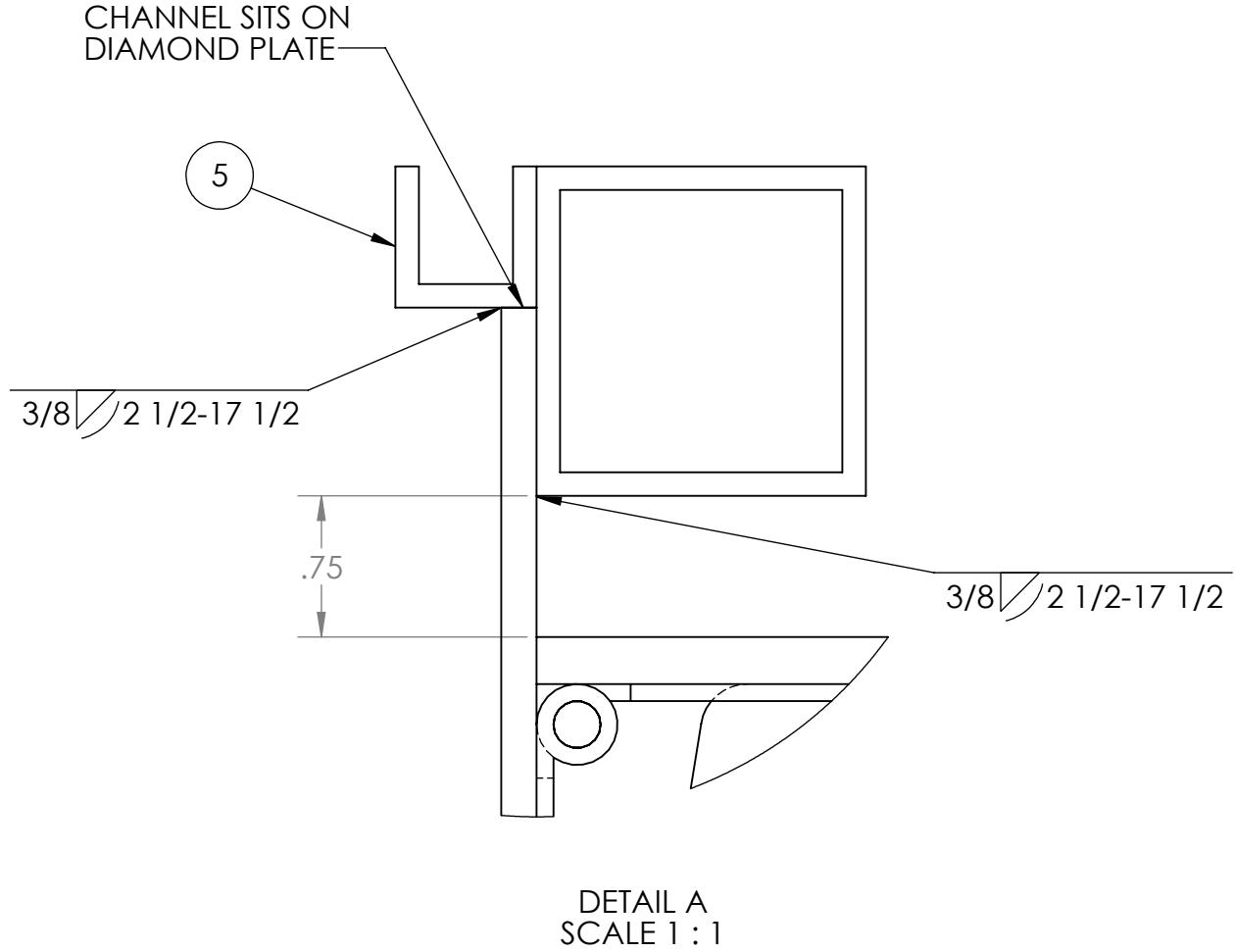
3

2

1

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	1	Redraw	5/20/2008	narosenberg
2-D7	2	Weld size changed for consistency, drawing reformatted.	3/19/2020	CPO



Notes:
1. Remove all sharp edges and burrs

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00004-01	3/16 Aluminum Diamond Plate	1
2	FE-00004-02	Hinge, Aluminum 3" x .09", 1/4" Pin	2
3	FE-00004-03	Hinge, Aluminum 3" x .09", 1/4" Pin	1
4	FE-00004-04	1 3/4" x 1 3/4" x 1/8" Square 6061 Aluminum Tubing	2
5	FE-00004-05	3/4" x 3/4" x 1/8" 6061 Aluminum 'U' Channel	1
6	FE-00004-06	1/4" 6061 Aluminum Plate	1
7	FE-00004-07	Hinge, Aluminum 3" x .09", 1/4" Pin (2 Pieces Welded)	2
8	FE-00004-08	Hinge, Aluminum 3" x .09", 1/4" Pin	2
9	FE-00004-09	1/8" 6061 Aluminum Plate	2
10	FE-00004-10	1/8" 6061 Aluminum Plate	2

UNLESS OTHERWISE SPECIFIED:	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	
TOLERANCES:	CHECKED	
FRACTIONAL: 1/16	ENG APPR.	
ANGULAR: MACH 1° BEND ±1°	MFG APPR.	
TWO PLACE DECIMAL: ±.01	Q.A.	
THREE PLACE DECIMAL: ±.001	COMMENTS:	
PROPRIETARY AND CONFIDENTIAL		
THIS INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST IS PROHIBITED.		
INTERPRET GEOMETRIC		
TOLERANCING PER:		
MATERIAL		
NEXT ASSY	USED ON	
	FINISH	
APPLICATION	DO NOT SCALE DRAWING	

End Panel

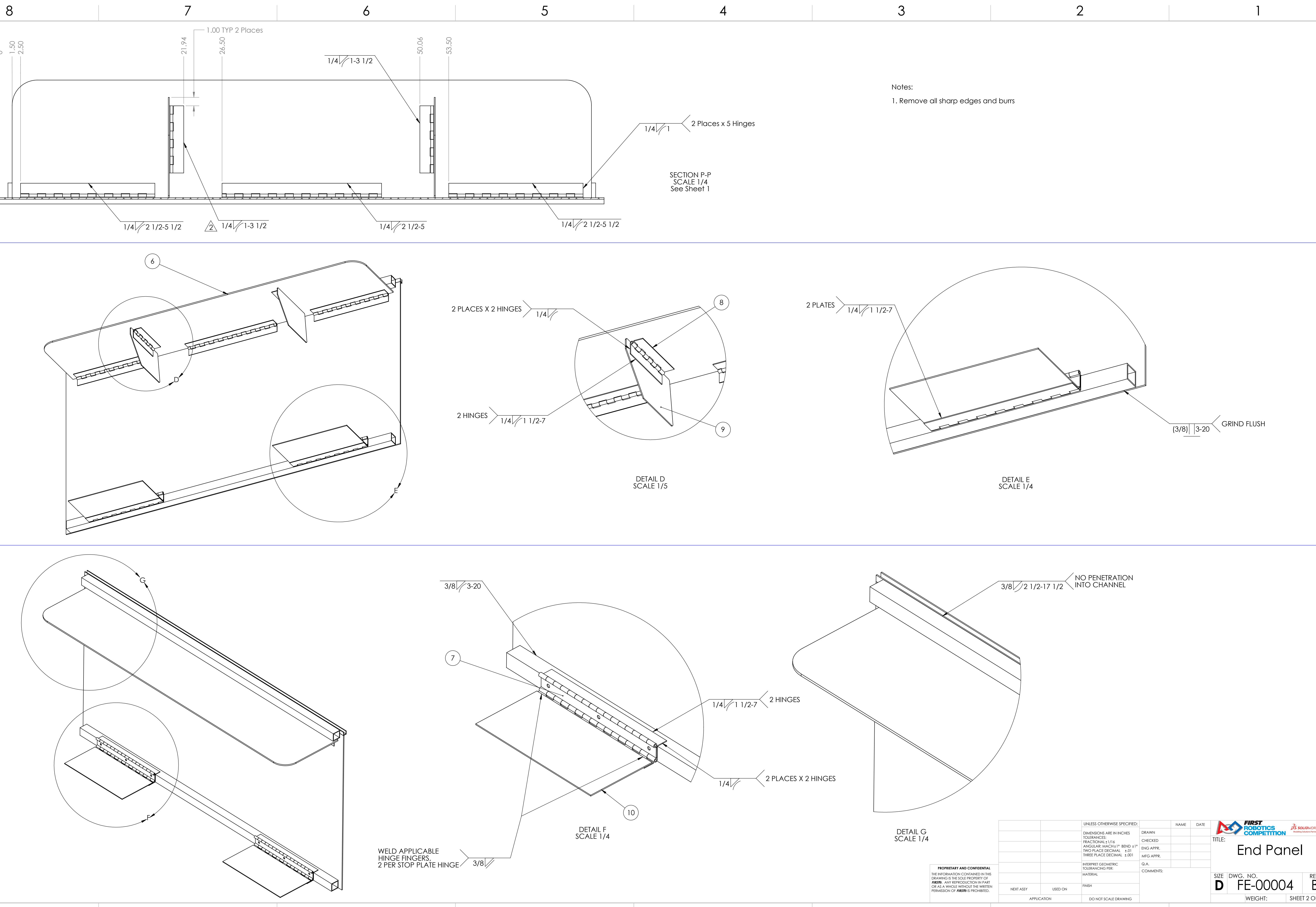
FIRST ROBOTICS COMPETITION

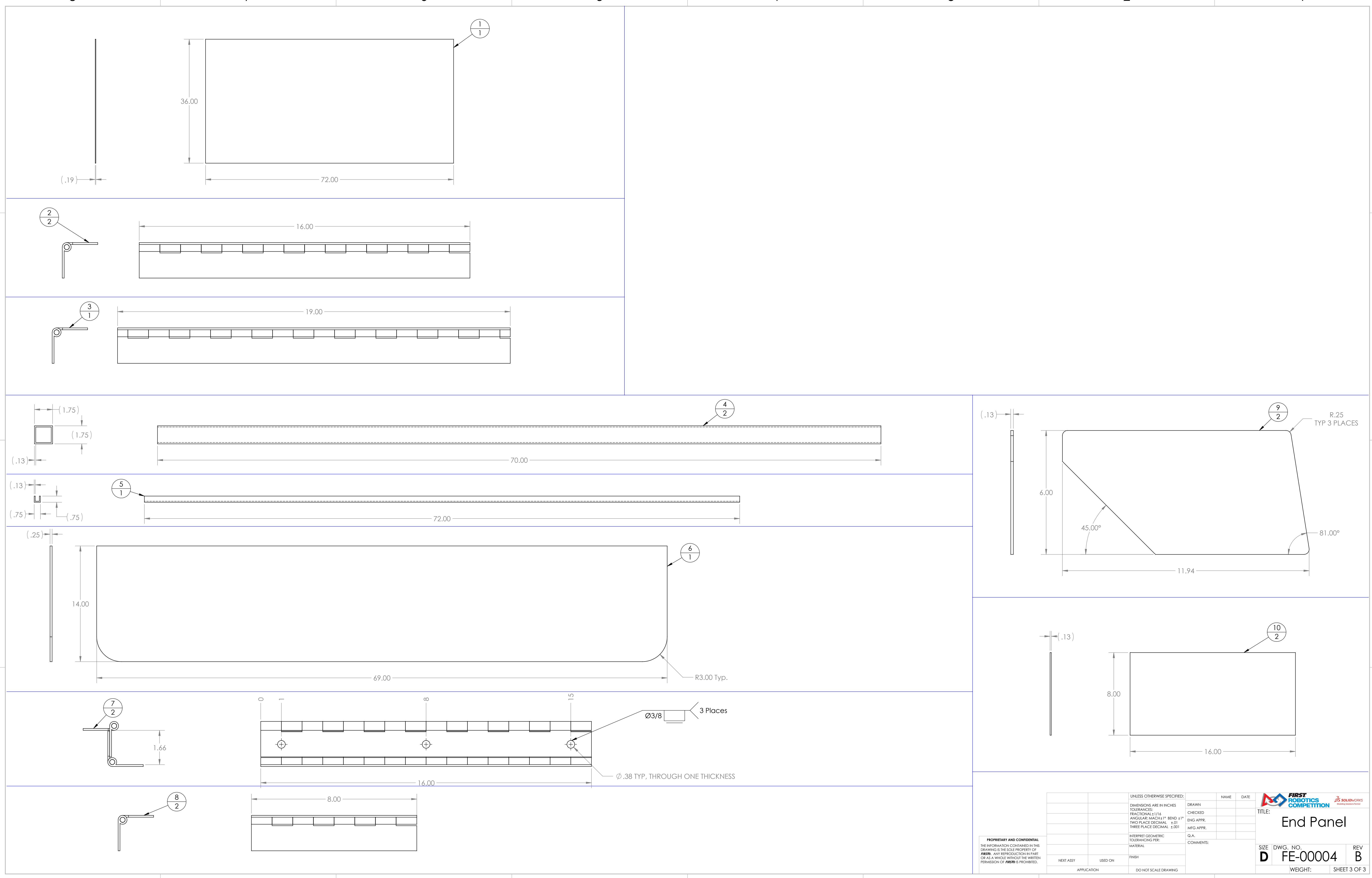
SOLIDWORKS Building solutions faster

SIZE DWG. NO. REV

D FE-00004 B

SCALE: 1:5 WEIGHT: SHEET 1 OF 3





REVISIONS

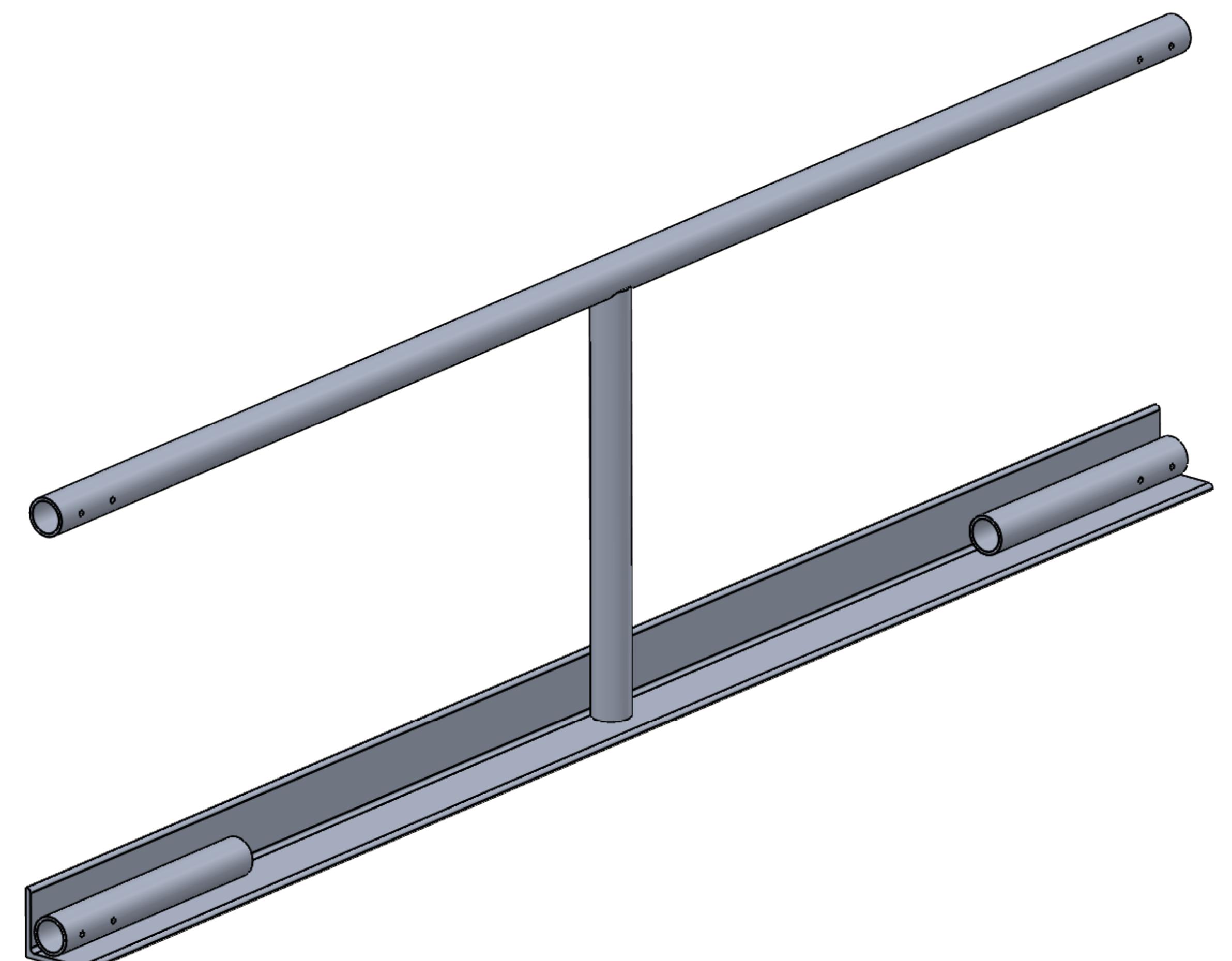
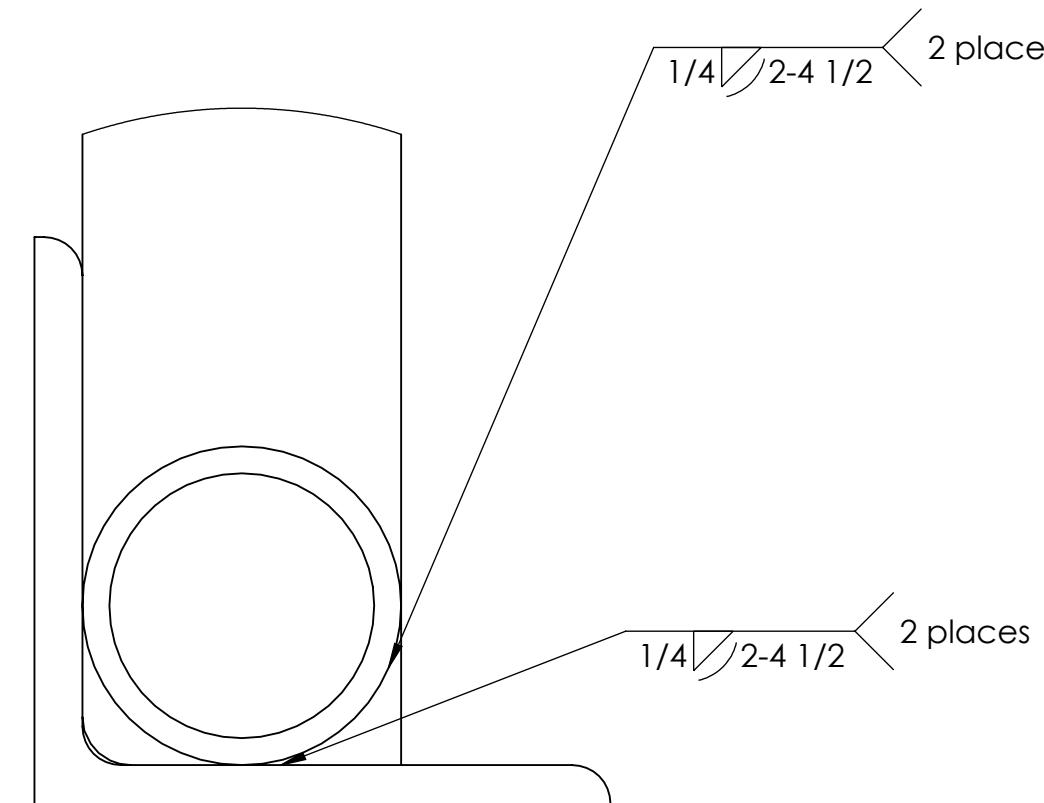
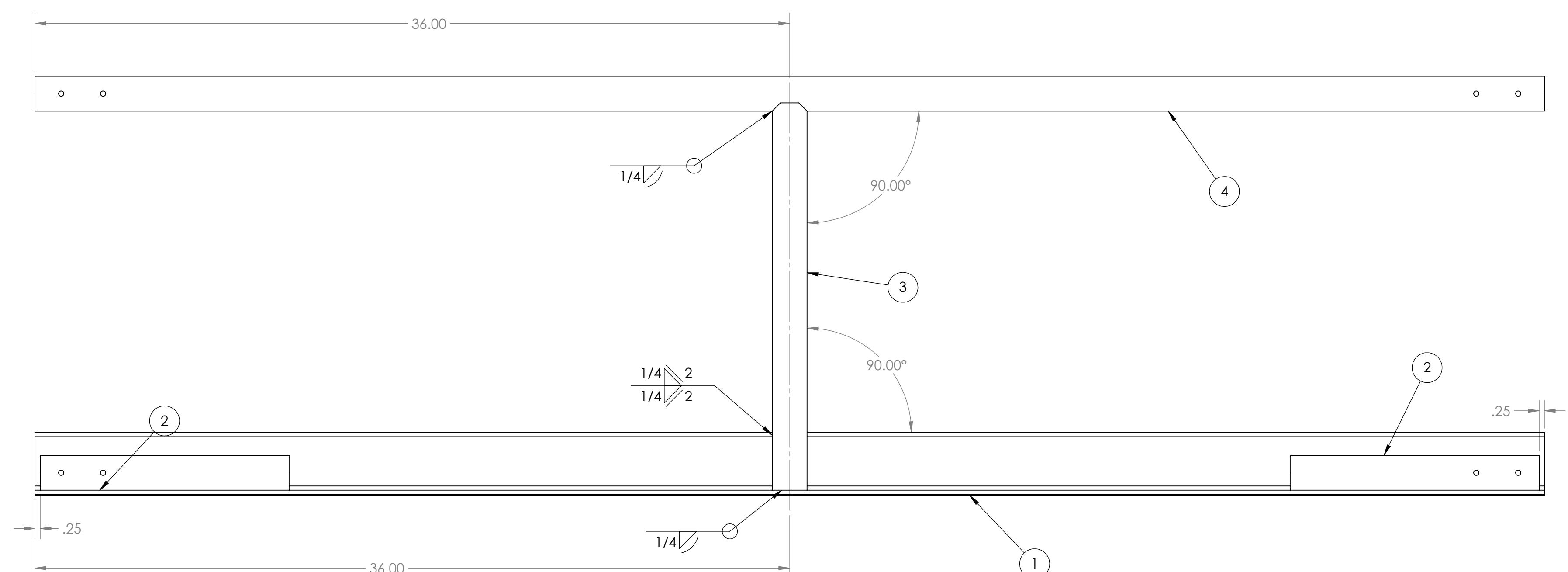
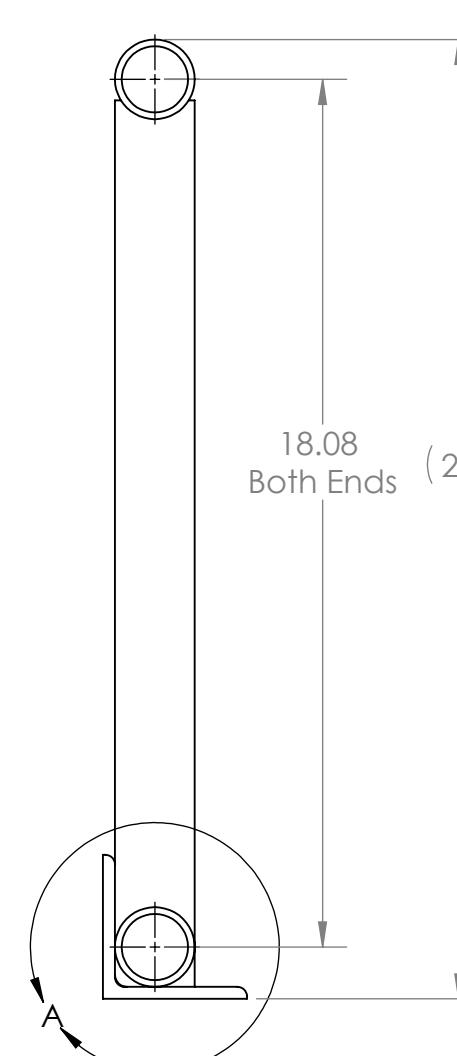
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	Redrawn	5/28/2008	narosenberg
	B	Drawing reformatted	3/19/2020	CPO

D D

C C

B B

A A

DETAIL A
SCALE 1 : 1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00005-01	3" x 3" x 1/4" 6061-T6 Aluminum Angle	1
2	FE-00005-02	1 1/4" Schedule 40 6061-T6 Aluminum Pipe	2
3	FE-00005-03	1 1/4" Schedule 40 6061-T6 Aluminum Pipe	1
4	FE-00005-04	1 1/4" Schedule 40 6061-T6 Aluminum Pipe	1

PROPRIETARY AND CONFIDENTIAL
THIS INFORMATION IS THE SOLE PROPERTY OF
FIRST. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST** IS PROHIBITED.

UNLESS OTHERWISE SPECIFIED:	DRAWN	NAME	DATE
DIMENSIONS ARE IN INCHES	CHECKED		
FRACTIONAL: 1/16	ENG APPR.		
ANGULAR: MACH 1° BEND ±1°	MFG APPR.		
TWO PLACE DECIMAL: ±.01	Q.A.		
THREE PLACE DECIMAL: ±.001	COMMENTS:		
INTERPRET GEOMETRIC TOLERANCING PER: MATERIAL			
NEXT ASSY	USED ON	FINISH	
APPLICATION	DO NOT SCALE DRAWING		

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Building solutions faster

Field Rail

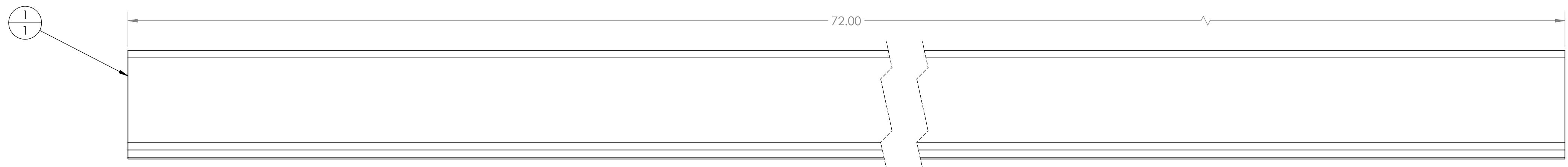
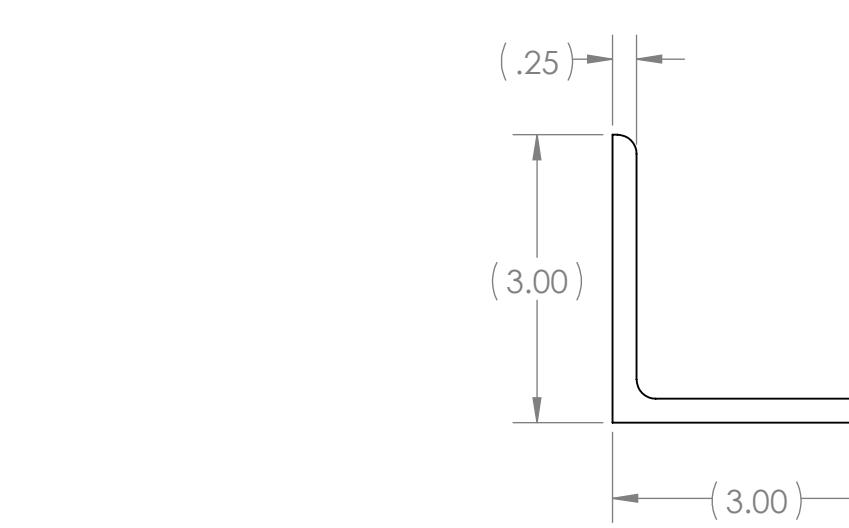
SIZE DWG. NO. REV
D FE-00005 **B**

SCALE: 1:4 WEIGHT: SHEET 1 OF 2

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

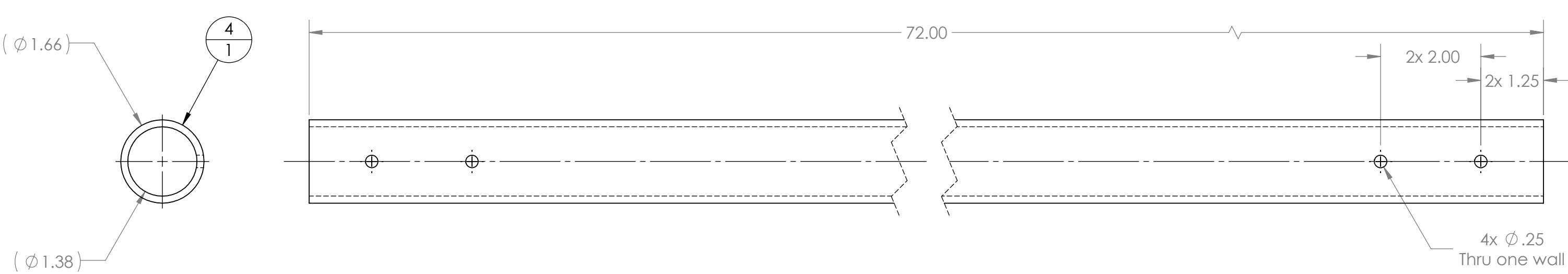
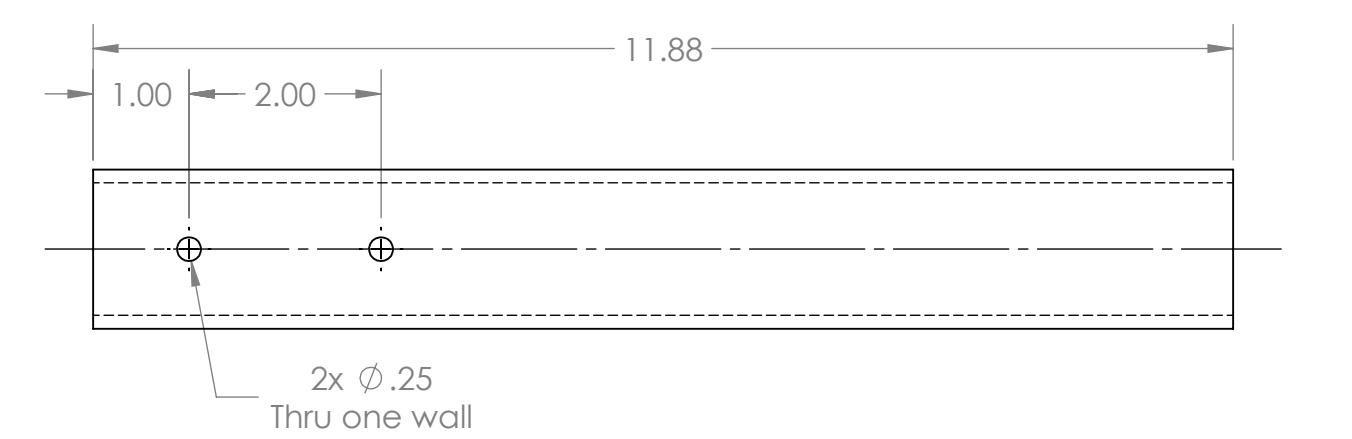
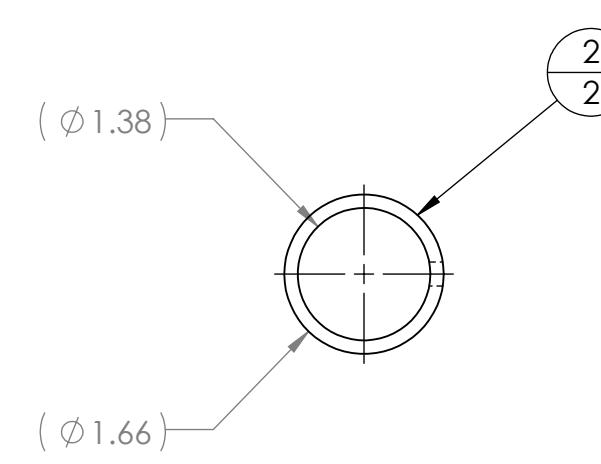
D

D



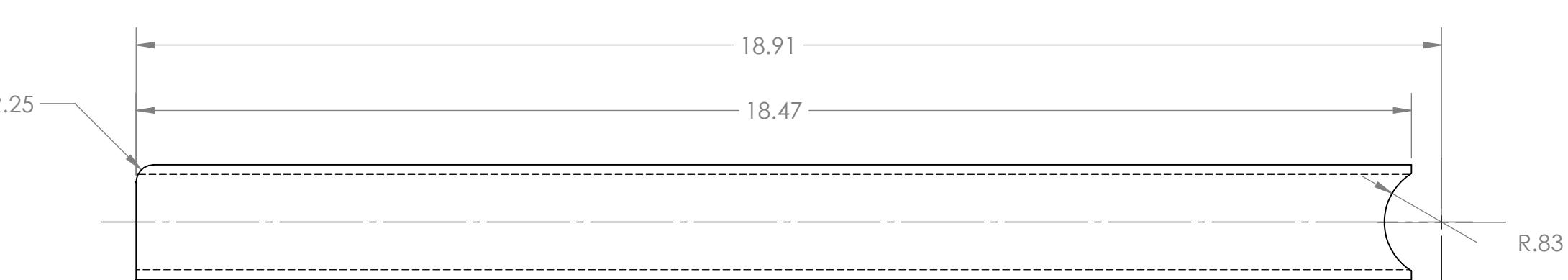
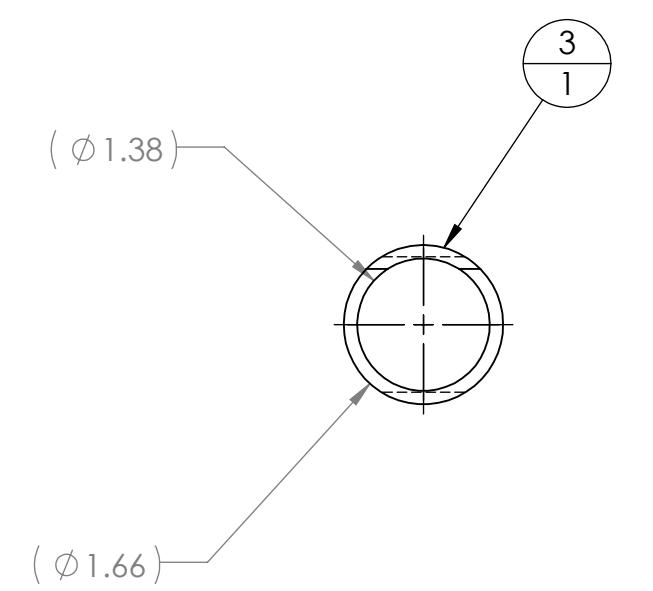
C

C



B

B



A

A

PROPRIETARY AND CONFIDENTIAL
THIS DRAWING IS THE SOLE PROPERTY OF
FIRST[®]. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST[®]** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:	NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN	
		FRACTIONAL: 1/16, 1/32, 1/64, 1/128	CHECKED	
		ANGULAR: MACH 1° BEND ±1°	ENG APPR.	
		TWO PLACE DECIMAL: ±.01	MFG APPR.	
		THREE PLACE DECIMAL: ±.001	Q.A.	
		INTERPRET GEOMETRIC TOLERANCING PER: MATERIAL	COMMENTS:	
NEXT ASSY		FINISH		
APPLICATION		DO NOT SCALE DRAWING		

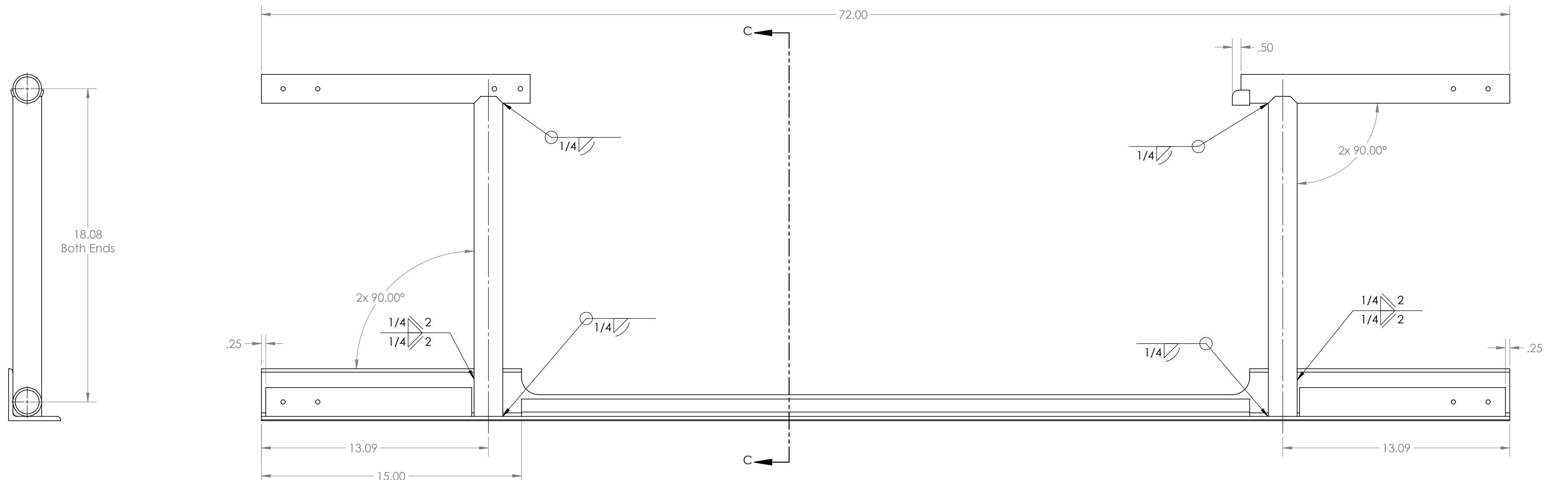
SIZE	DWG. NO.	REV
D	FE-00005	B
SCALE: 1:2	WEIGHT:	SHEET 2 OF 2

FIRST[®] ROBOTICS COMPETITION
SolidWorks
Title: Field Rail

REVISIONS				
E	REV.	DESCRIPTION	DATE	APPROVED
	A	Redrawn	8/7/2008	narosenberg
-	B	Parts renumbered, drawing reformatted, hole diameter updated, hole changed to thru one wall for consistency.	3/20/2020	CPO

D

10



A technical line drawing of a vertical pipe assembly. The main body is a long, straight vertical pipe. At the top, there is a horizontal flange with a circular opening. At the bottom, there is another horizontal flange with a stepped or jagged profile. A dimension line with arrows at the bottom right indicates a width of .25.

SECTION C-C

C

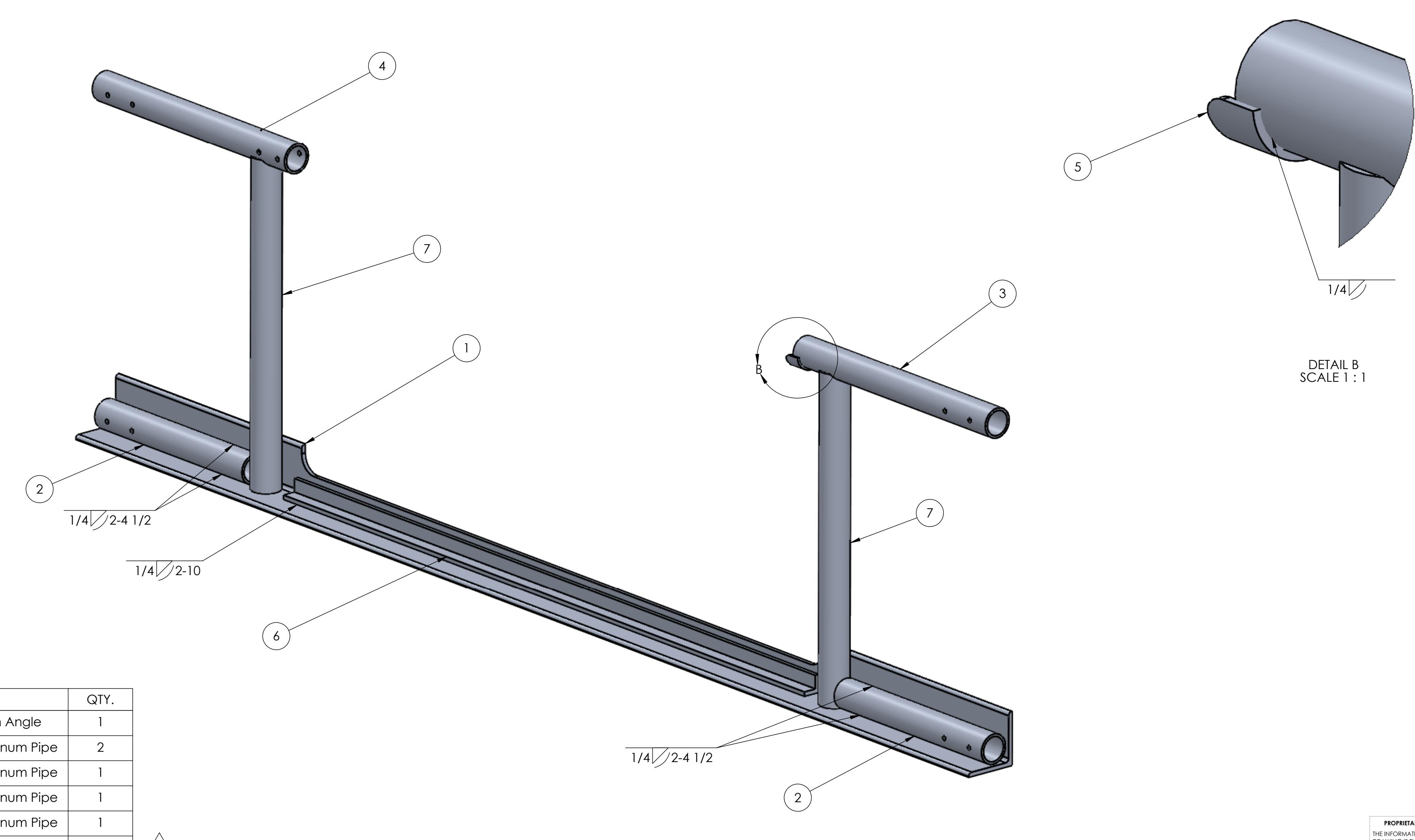
1

104

10

A

10



ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	FE-00006-01	3" x 3" x 1/4" 6061-T6 Aluminum Angle	1
2	FE-00006-02	1-1/4" Schedule 40 6061-T6 Aluminum Pipe	2
3	FE-00006-03	1-1/4" Schedule 40 6061-T6 Aluminum Pipe	1
4	FE-00006-04	1-1/4" Schedule 40 6061-T6 Aluminum Pipe	1
5	FE-00006-05	1-1/2" Schedule 40 6061-T6 Aluminum Pipe	1
6	FE-00006-06	1" x 1" x 1/4" 6061-T6 Aluminum Angle	1
7	FE-00006-07	1-1/4" Schedule 40 6061-T6 Aluminum Pipe	2



14 ✓ 2-4 1/2

3

5

Page 1

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 FIRST ROBOTICS COMPETITION <small>SOLIDWORKS Modeling Solutions Partner</small>
		DIMENSIONS ARE IN INCHES	DRAWN			
		TOLERANCES:	CHECKED			
		FRACTIONAL $\pm 1/16$	ENG APPR.			
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.			
		TWO PLACE DECIMAL $\pm .01$	Q.A.			
		THREE PLACE DECIMAL $\pm .001$	COMMENTS:			
		INTERPRET GEOMETRIC TOLERANCING PER:				
		MATERIAL				
NEXT ASSY	USED ON	FINISH				
APPLICATION		DO NOT SCALE DRAWING				
TITLE: Field Gate, Weldment						
SIZE		DWG. NO.		REV		
						D
SCALE: 1:4		WEIGHT:		SHEET 1 OF 3		

8

7

6

5

4

3

2

1

D

D

C

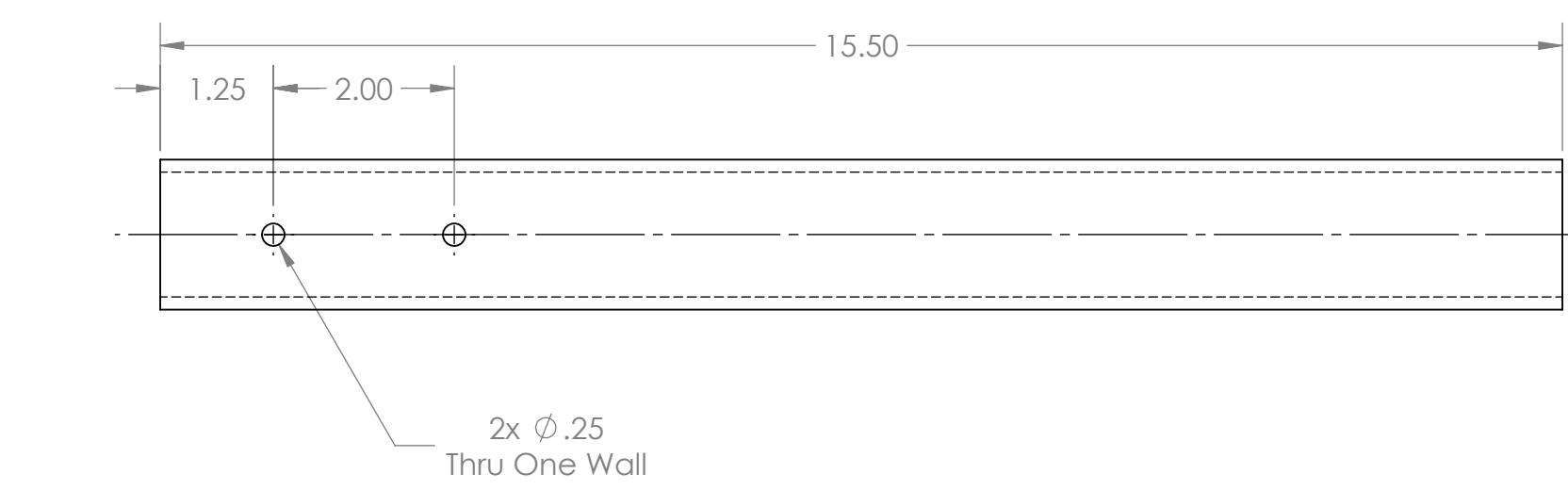
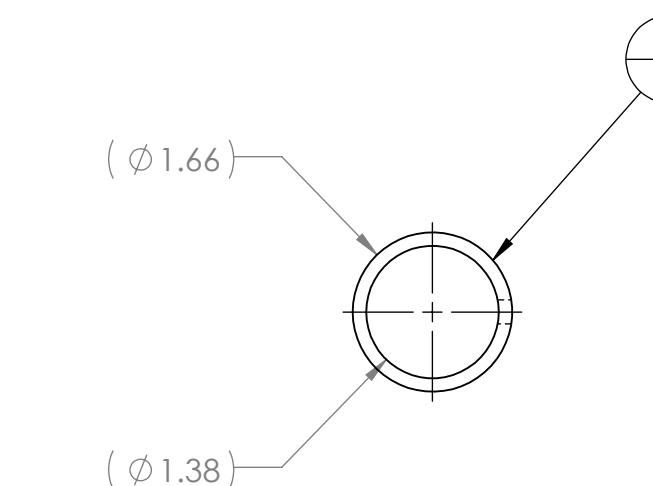
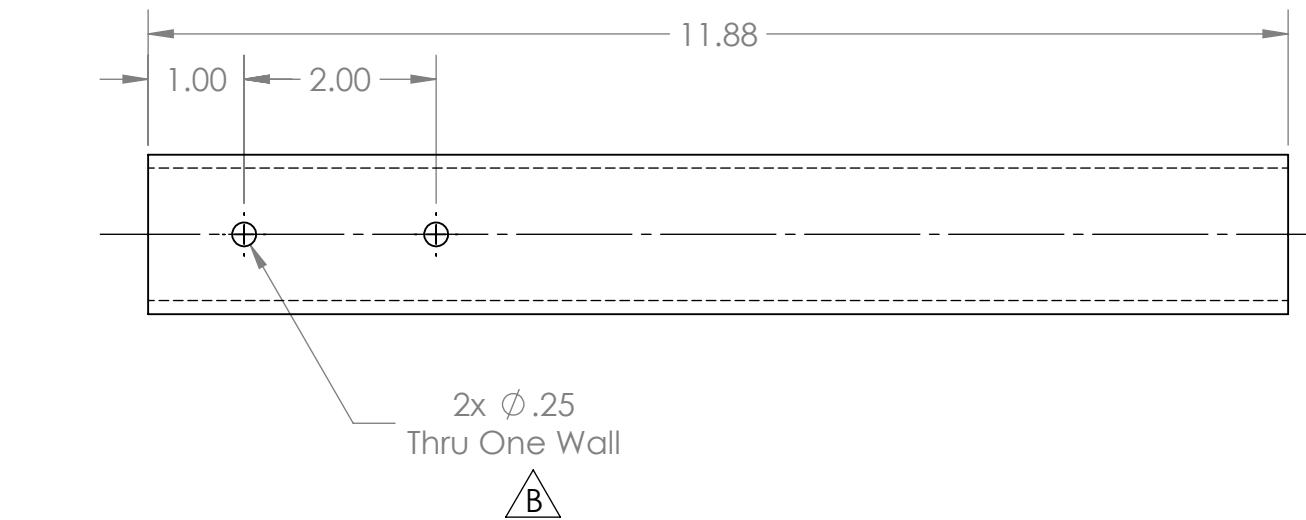
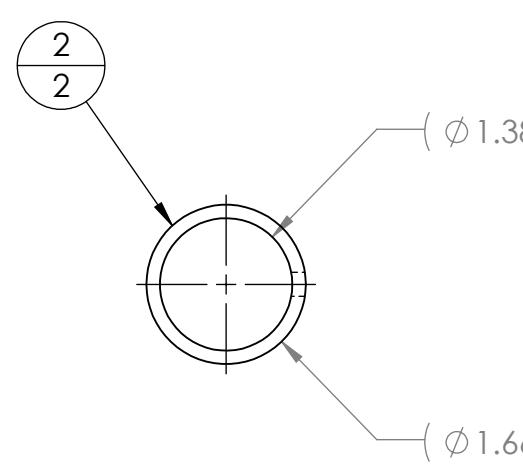
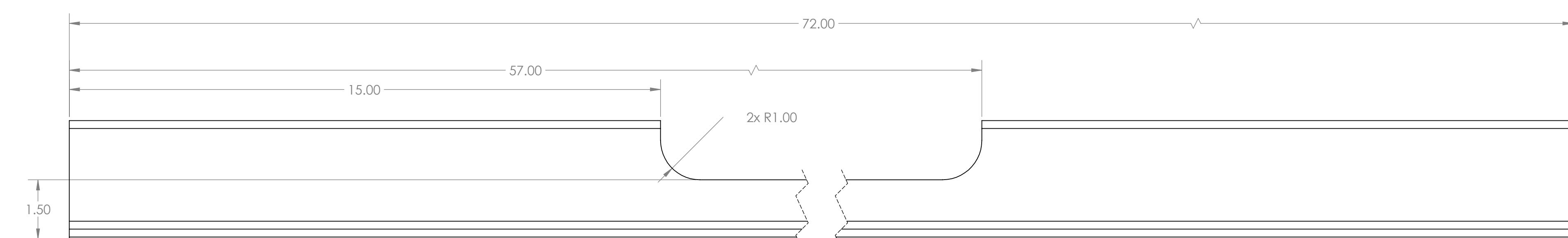
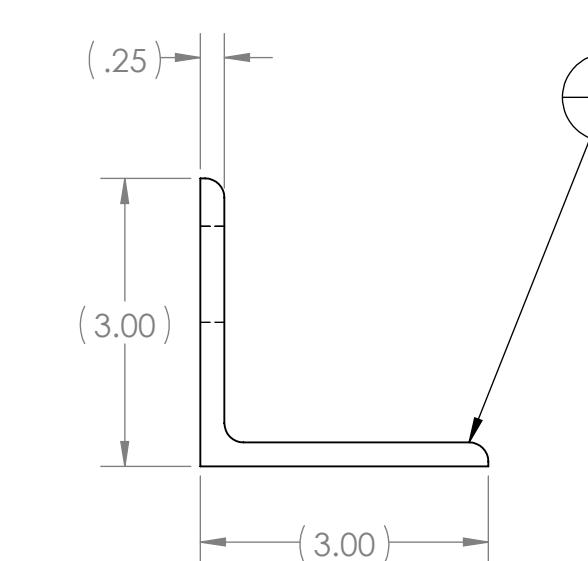
C

B

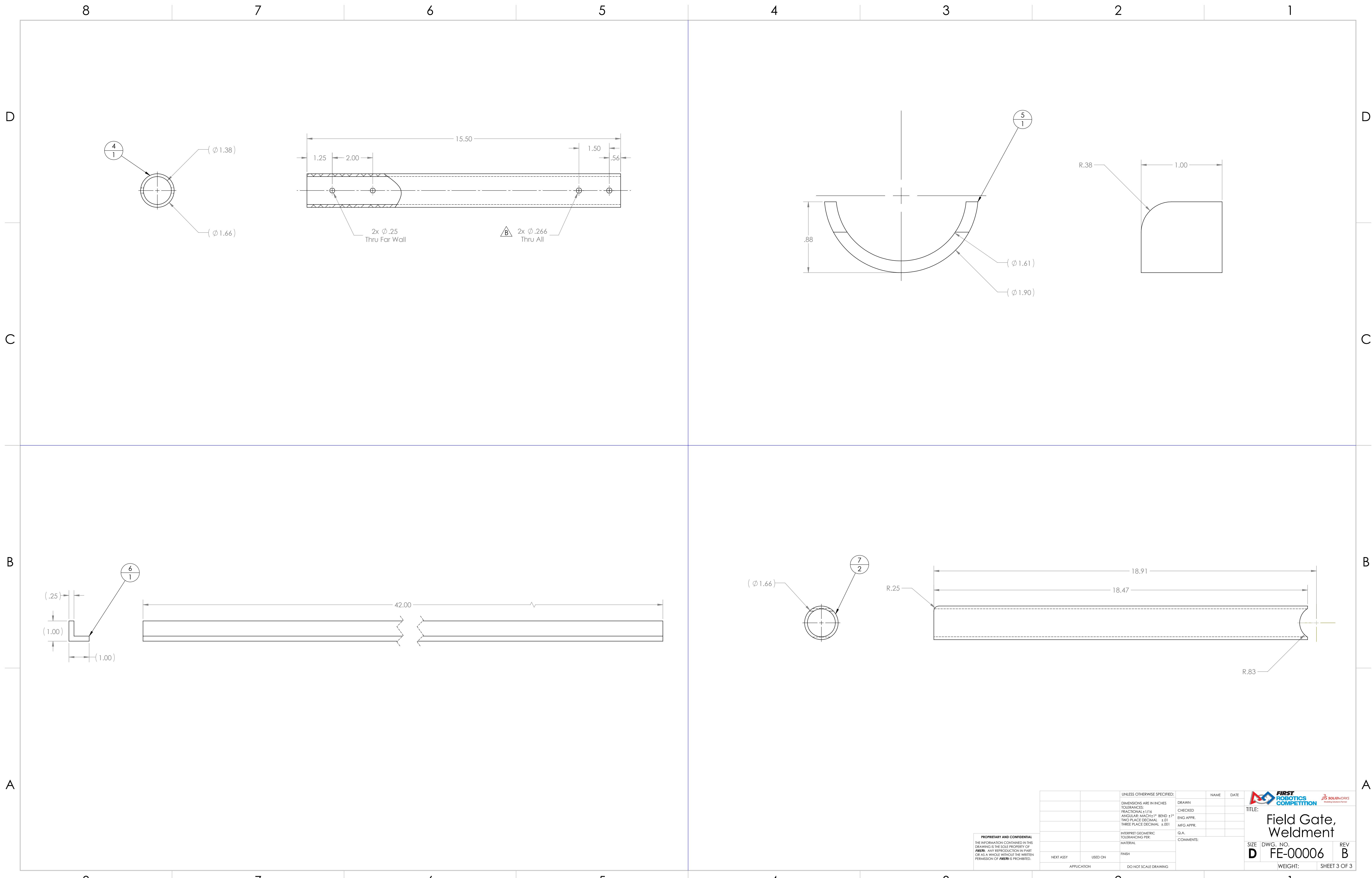
B

A

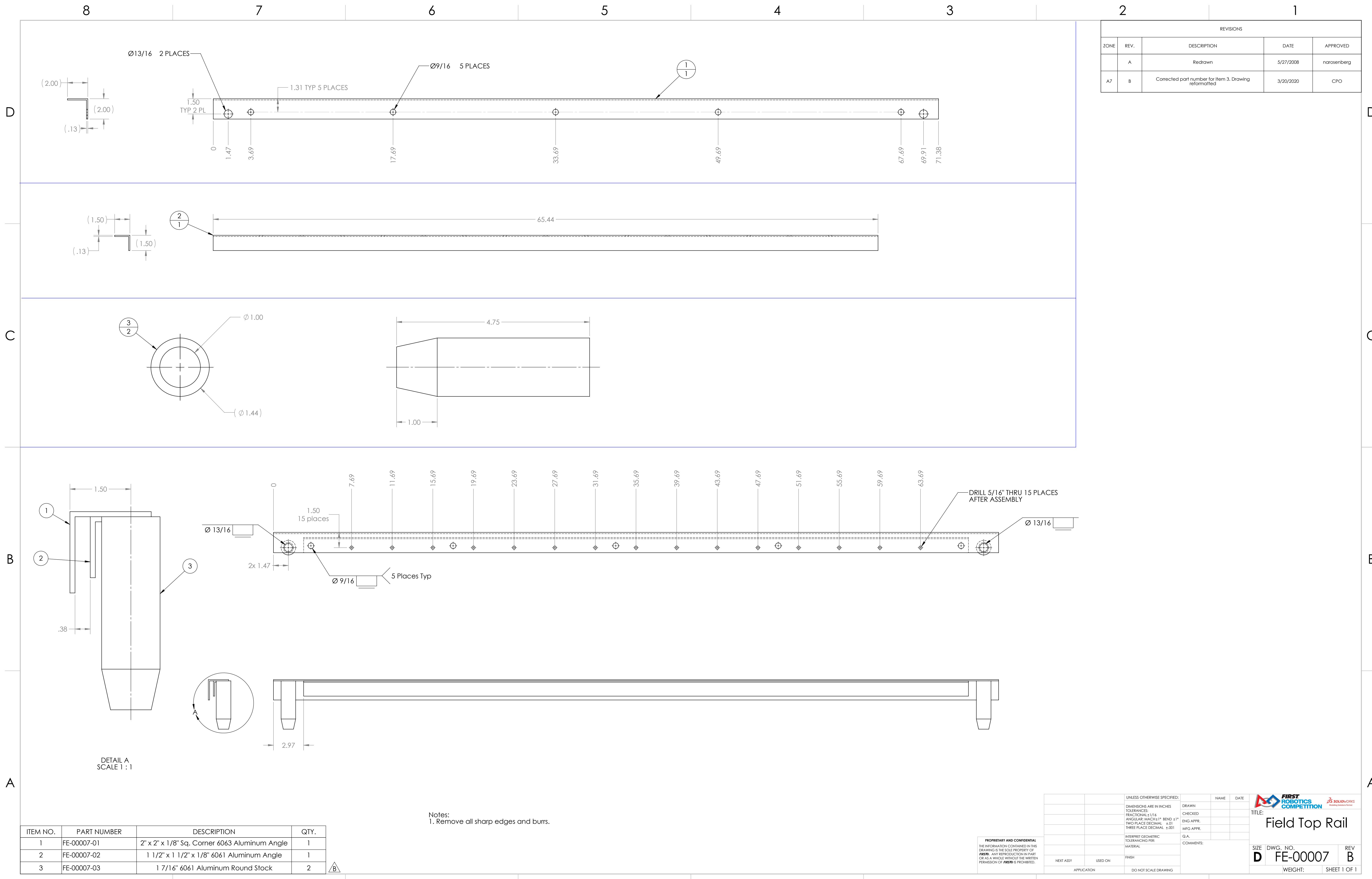
A



		UNLESS OTHERWISE SPECIFIED:		NAME _____ DATE _____
		DIMENSIONS ARE IN INCHES	DRAWN _____	
		TOLERANCES:	CHECKED _____	
		FRACTIONAL: $\frac{1}{16}$ INCH ANGULAR: MACH 1° BEND $\pm 1^\circ$ TWO PLACE DECIMAL: $\pm .01$ THREE PLACE DECIMAL: $\pm .001$	ENG APPR. _____	
			MFG APPR. _____	
			Q.A. _____	
		COMMENTS: _____		
		PROPRIETARY AND CONFIDENTIAL THIS DRAWING IS THE SOLE PROPERTY OF FIRST [®] . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST [®] IS PROHIBITED.		
		INTERPRET GEOMETRIC TOLERANCING PER: MATERIAL _____		
		NEXT ASSY _____ USED ON _____ FINISH _____		
		APPLICATION _____ DO NOT SCALE DRAWING _____		
DWG. NO. D FE-00006		SIZE D	REV B	WEIGHT: 1 SHEET 2 OF 3



8 7 6 5 4 3 2 1



4

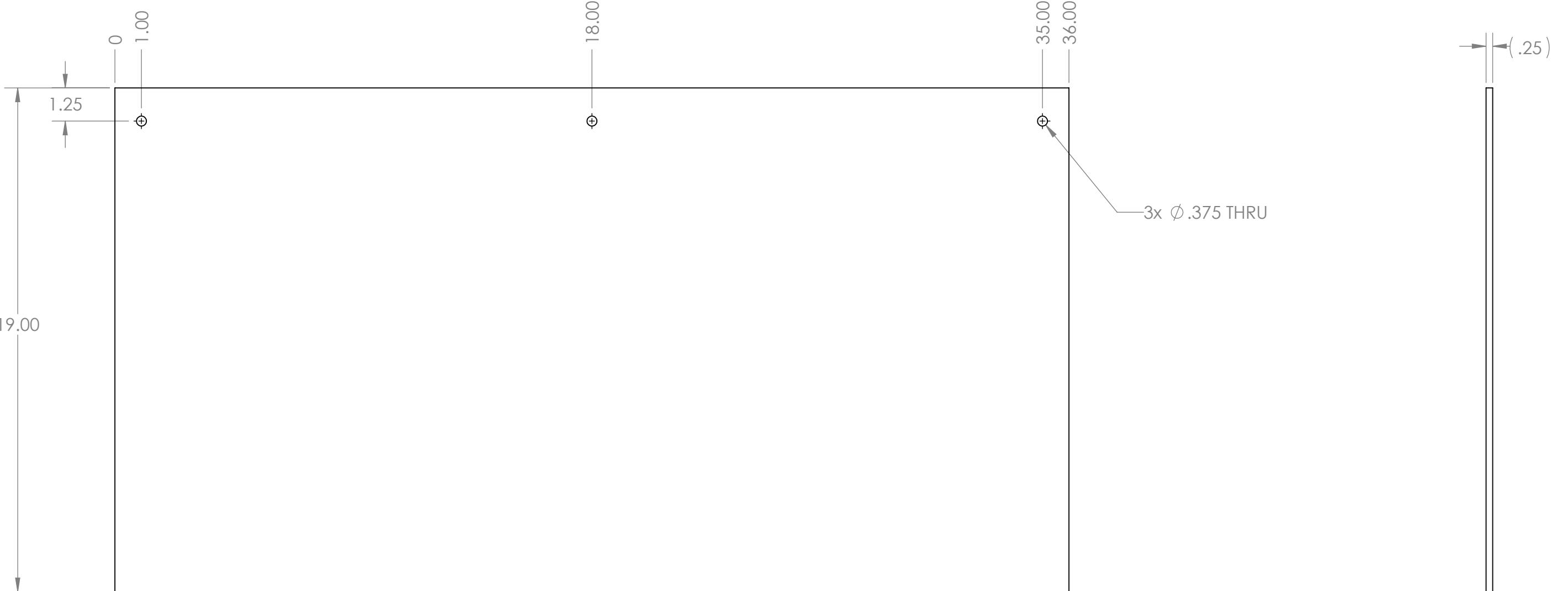
3

2

1

B

B



Notes:

1. Material: 1/4" Thick Clear Polycarbonate.
2. Remove all sharp edges.

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:			NAME _____ DATE _____ DRAWN _____ CHECKED _____ ENG APPR. _____ MFG APPR. _____ Q.A. _____ COMMENTS: _____	
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL: ±.01 THREE PLACE DECIMAL: ±.001				
		INTERPRET GEOMETRIC TOLERANCING PER:				
		MATERIAL				
NEXT ASSY		FINISH				
APPLICATION		DO NOT SCALE DRAWING				
A	A	FIRST ROBOTICS COMPETITION			SOLIDWORKS Modeling Solutions Partner	
TITLE: Field Plastic "A"						
B	FE-00008				SIZE DWG. NO. REV	
SCALE: 1:4		WEIGHT: SHEET 1 OF 1				

4

3

2

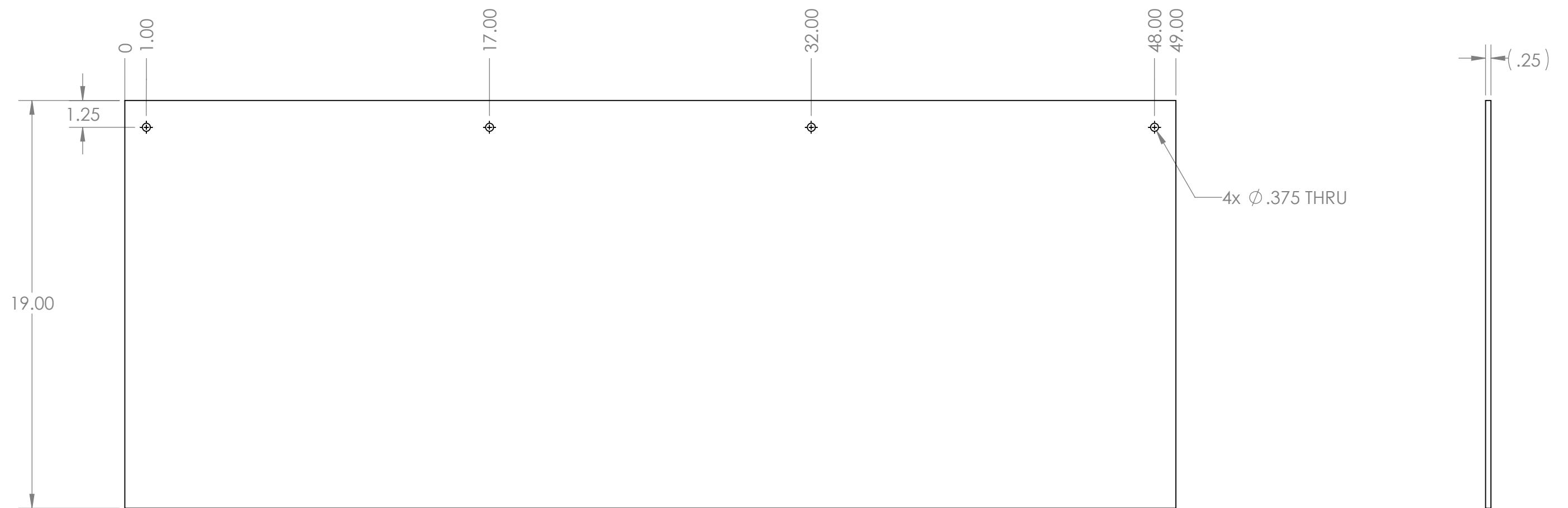
1

4

3

2

1



Notes:

1. Material: 1/4" Thick Clear Polycarbonate.
2. Remove all sharp edges.

4

3

2

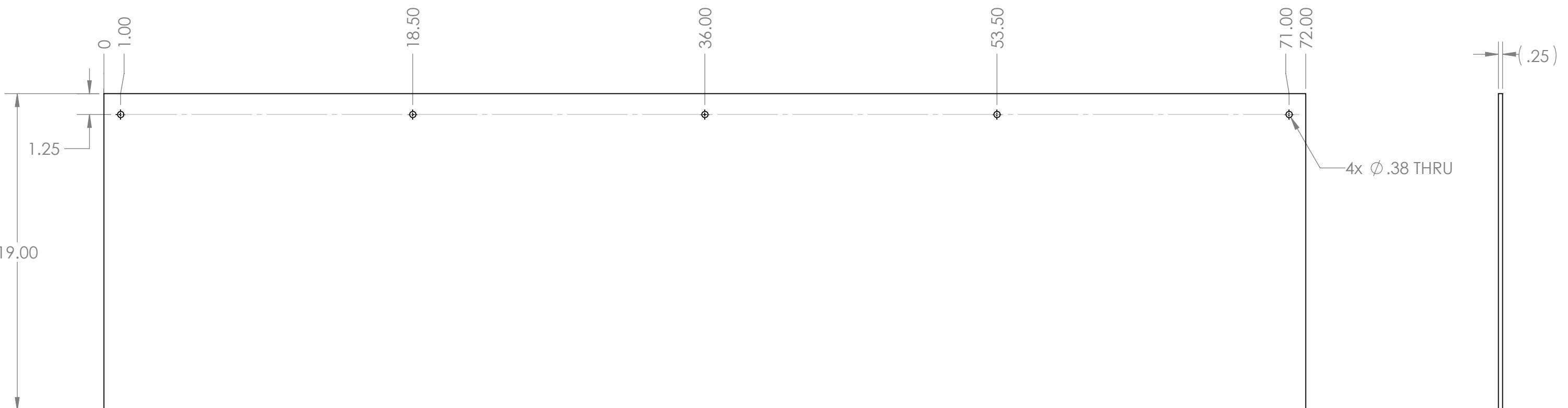
1

PROPRIETARY AND CONFIDENTIAL
 THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$		NAME	DATE
		DRAWN			
		CHECKED			
		ENG APPR.			
		MFG APPR.			
		Q.A.			
		COMMENTS:			
		MATERIAL			
		NEXT ASSY	USED ON	FINISH	
		APPLICATION		DO NOT SCALE DRAWING	
SIZE	DWG. NO.		REV		
B	FE-00009				
SCALE: 1:5	WEIGHT:		SHEET 1 OF 1		

 **FIRST
ROBOTICS
COMPETITION** 
SOLIDWORKS
Modeling Solutions Partner

TITLE:
Field Plastic "B"



Notes:

1. Material: 1/4" Thick Clear Polycarbonate.
 2. Remove all sharp edges.

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

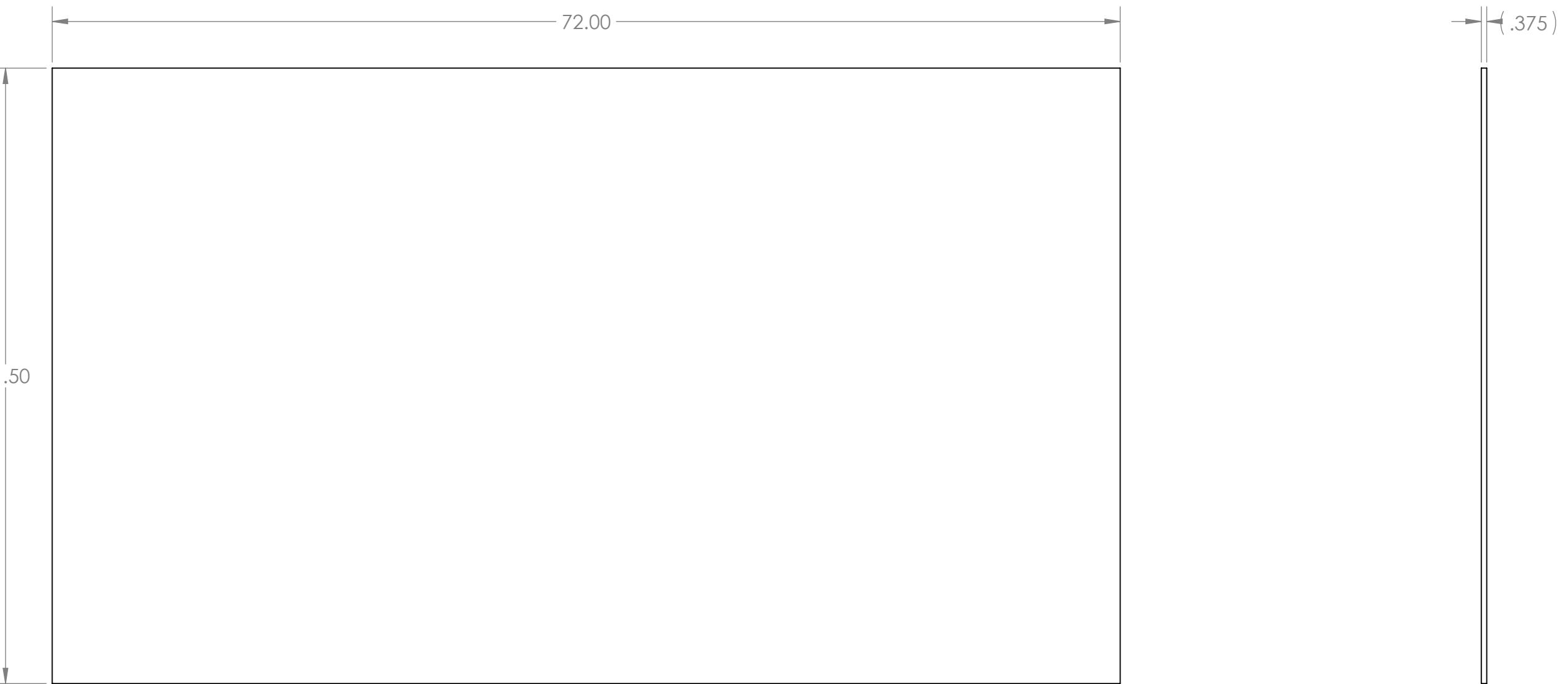
		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 FIRST ROBOTICS COMPETITION  SOLIDWORKS <small>Modeling Solutions Partner</small>
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$	DRAWN			
			CHECKED			
			ENG APPR.			
			MFG APPR.			
			Q.A.			
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:			
		MATERIAL				
NEXT ASSY	USED ON	FINISH				
APPLICATION		DO NOT SCALE DRAWING				
SIZE DWG. NO. REV B FE-00010						
SCALE: 1:6 WEIGHT: SHEET 1 OF 1						

4

3

2

1



B

B

A

A

Notes:

- Material: 3/8" Thick Acrylic Sheet

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE		
		DIMENSIONS ARE IN INCHES					
TOLERANCES:		FRACTIONAL $\pm 1/16$					
ANGULAR: MACH $\pm 1^\circ$		BEND $\pm 1^\circ$					
TWO PLACE DECIMAL $\pm .01$		THREE PLACE DECIMAL $\pm .001$					
INTERPRET GEOMETRIC TOLERANCING PER:		Q.A.		COMMENTS:			
		MATERIAL					
NEXT ASSY		FINISH					
APPLICATION		DO NOT SCALE DRAWING					

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

TITLE: Drivers Station Acrylic

B	FE-00012	REV
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

4

3

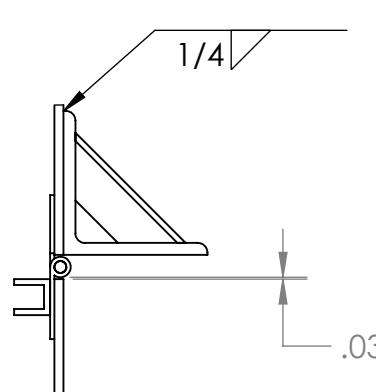
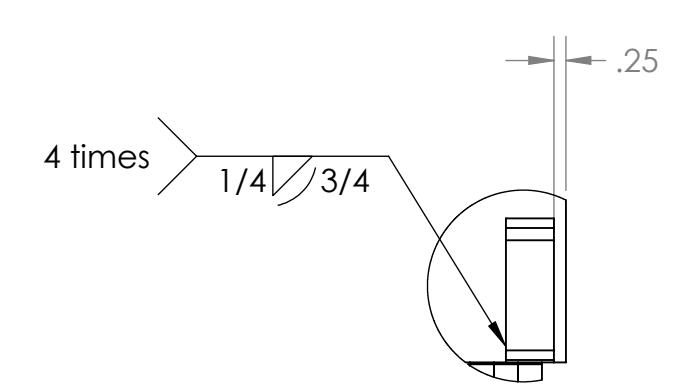
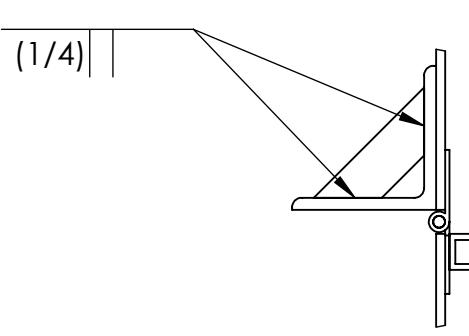
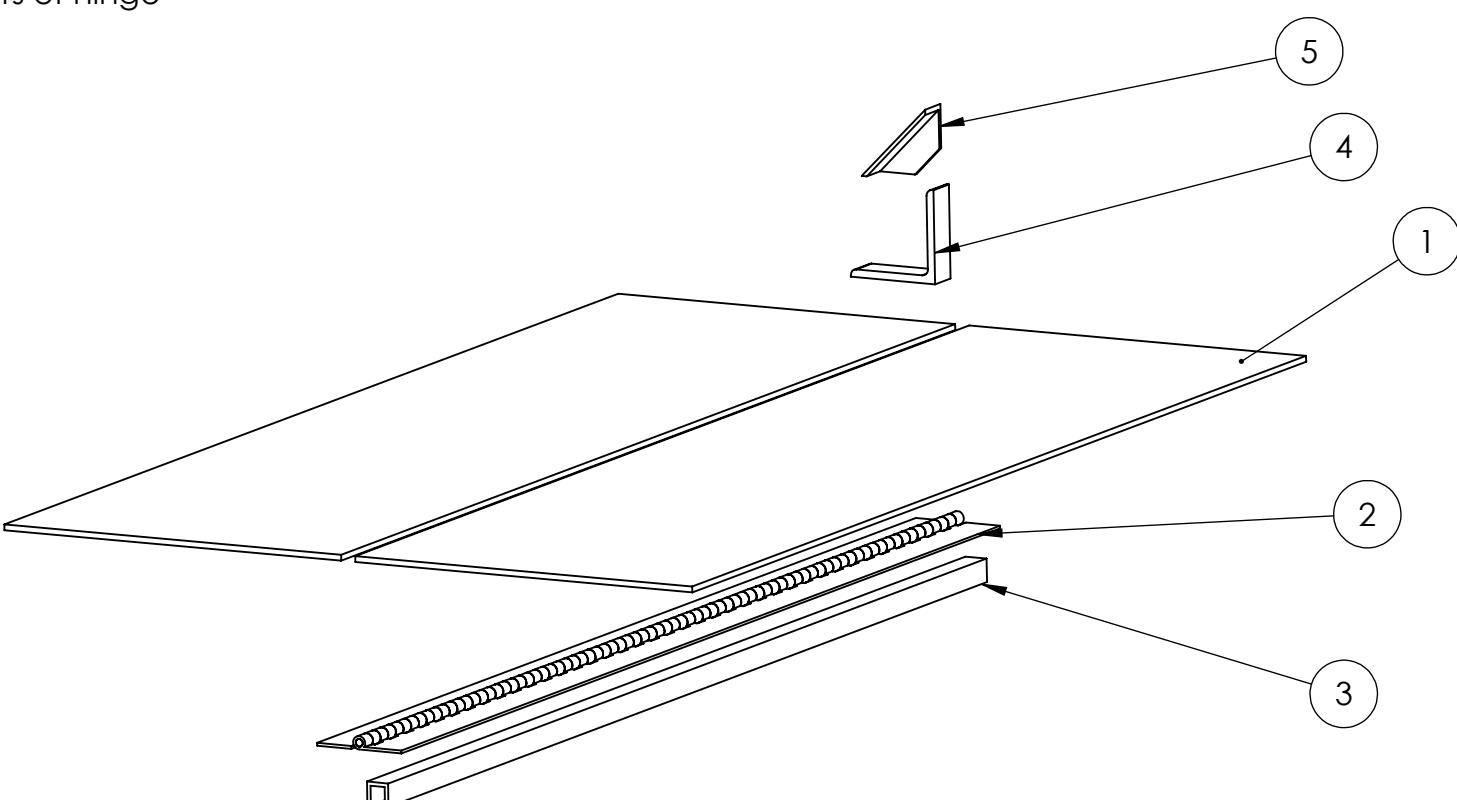
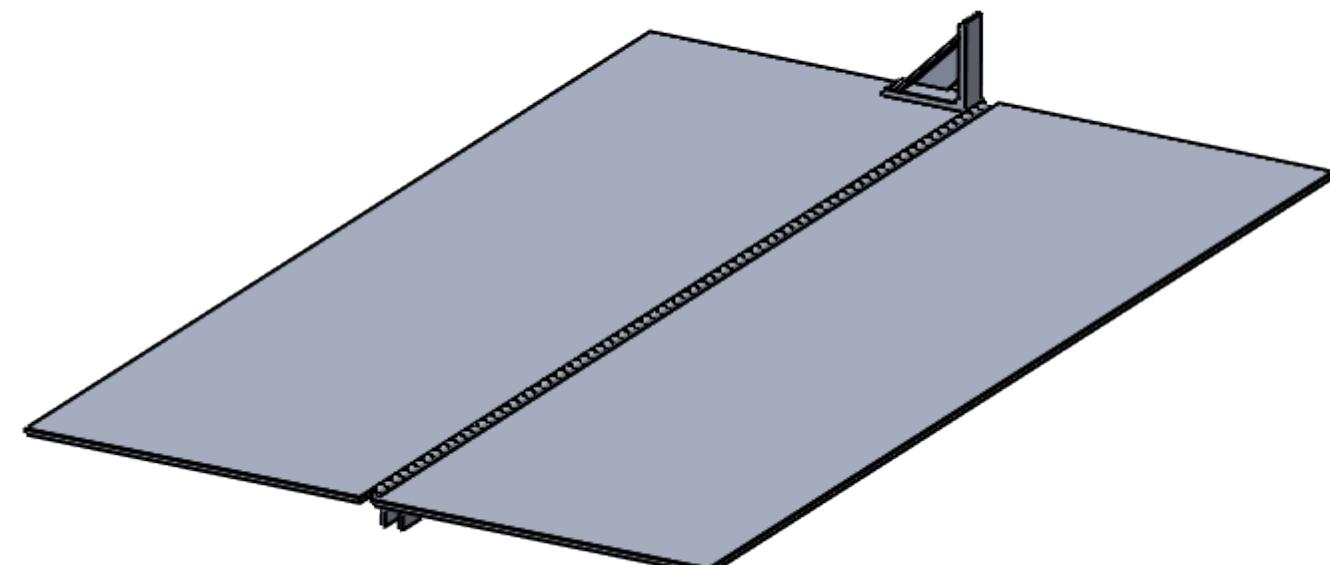
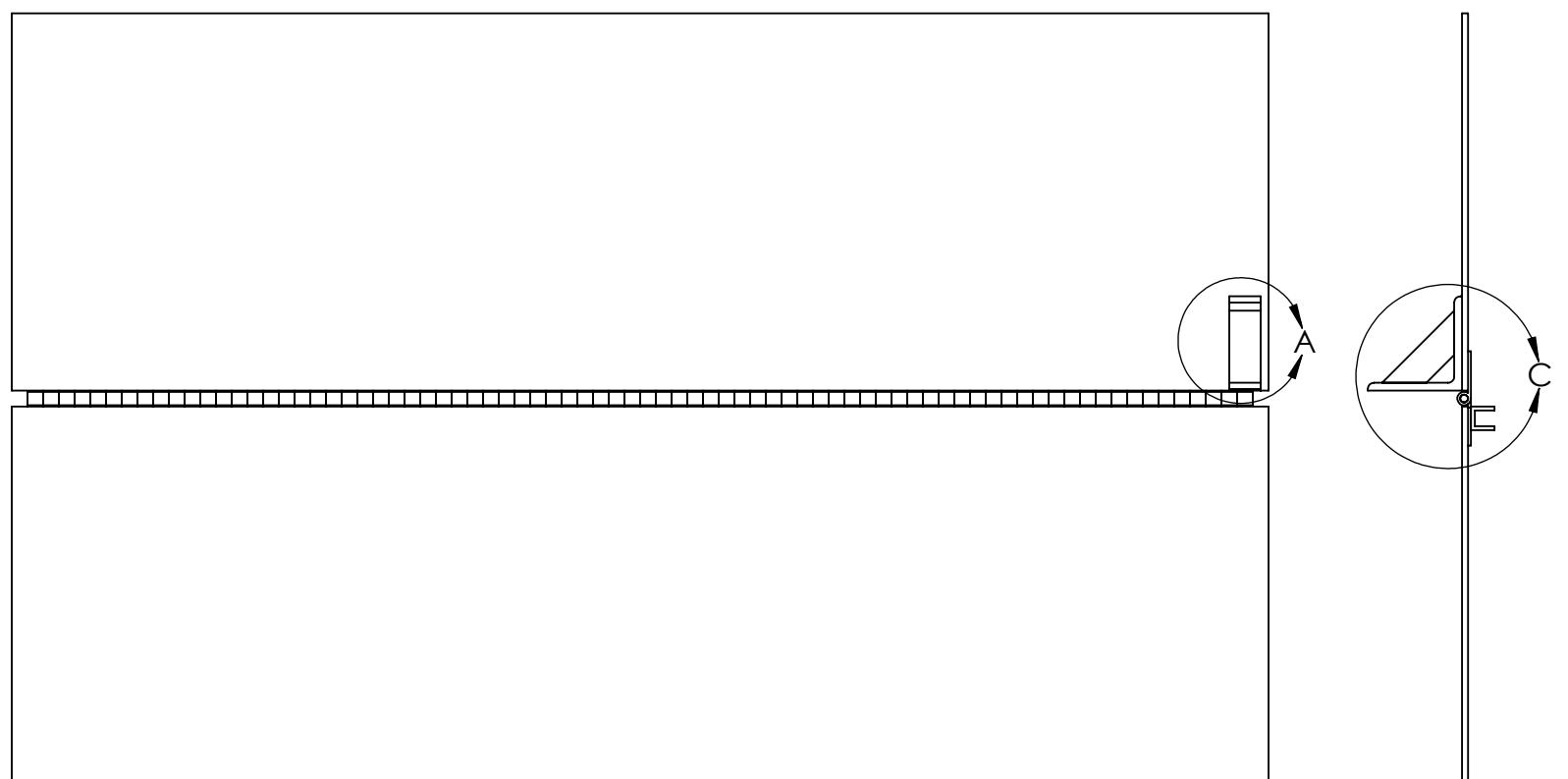
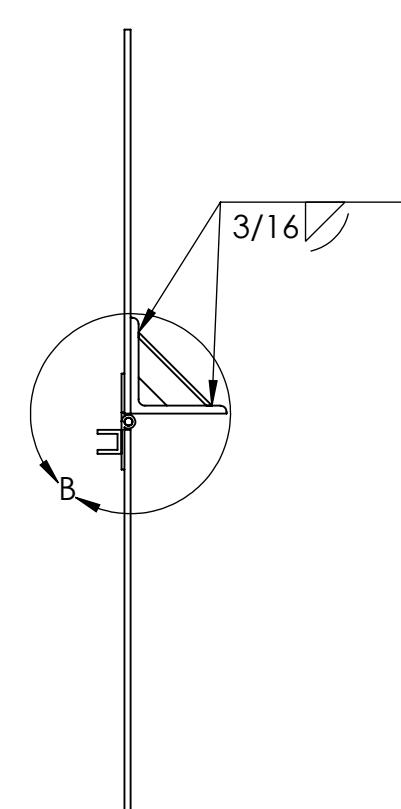
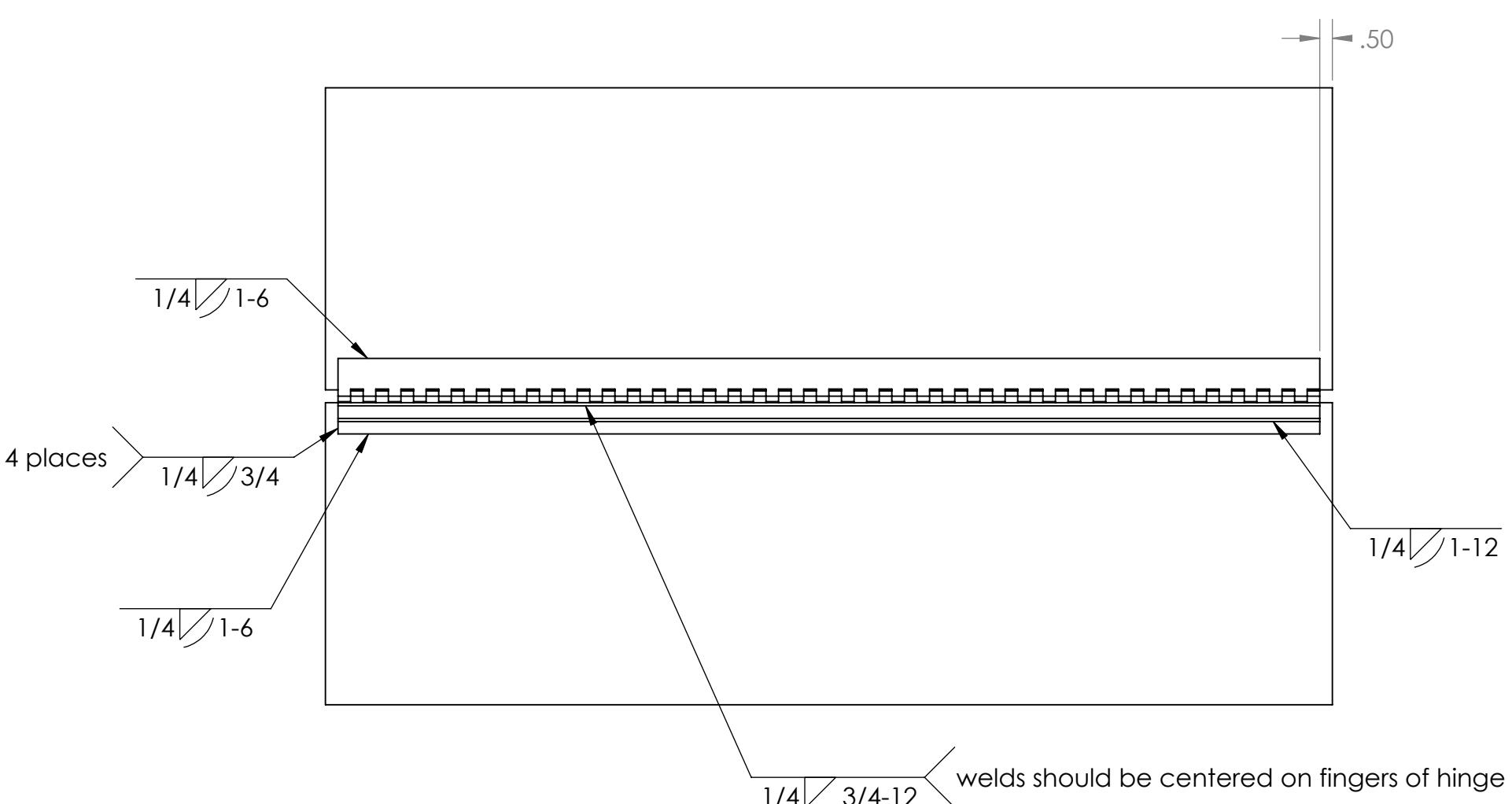
2

1

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	Redrawn	5/27/2008	narosenberg
	B	Drawing Reformatted	3/20/2020	CPO

D

DETAIL B
SCALE 1 : 4DETAIL A
SCALE 1 : 4DETAIL C
SCALE 1 : 4

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00014-01	3/16" 3003 Aluminum Diamond Plate	2
2	FE-00014-02	3" Aluminum Hinge, 1/4" Pin	1
3	FE-00014-03	3/4" x 3/4" x 1/8" 6061-T6 Aluminum 'U' Channel	1
4	FE-00014-04	3" x 3" x 1/4" 6061-T6 Aluminum Angle	1
5	FE-00014-05	1" x 1" x 1/8" 6061-T6 Aluminum Angle	1

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST[®]. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST[®]** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES	CHECKED		
		FRACTIONAL: $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$	ENG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	MFG APPR.		
		MATERIAL	Q.A.		
		COMMENTS:			
NEXT ASSY	USED ON	FINISH			
APPLICATION	DO NOT SCALE DRAWING				

FIRST[®] ROBOTICS COMPETITION **SOLIDWORKS** Modeling Solutions Partner

Field Entry Ramp

SIZE DWG. NO. REV.
C FE-00014 B

SCALE: 1:6 WEIGHT: SHEET 1 OF 2

4

3

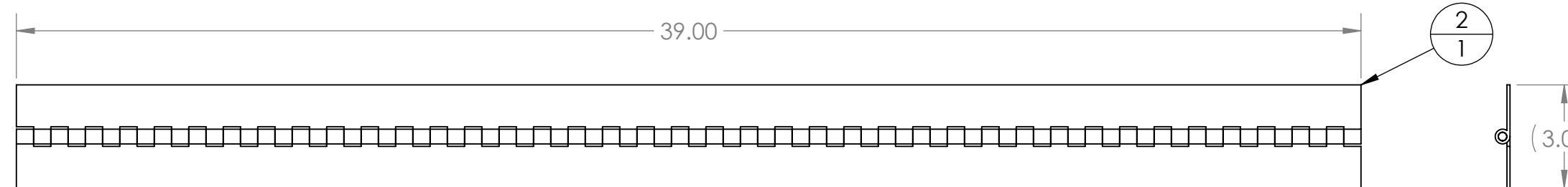
2

1

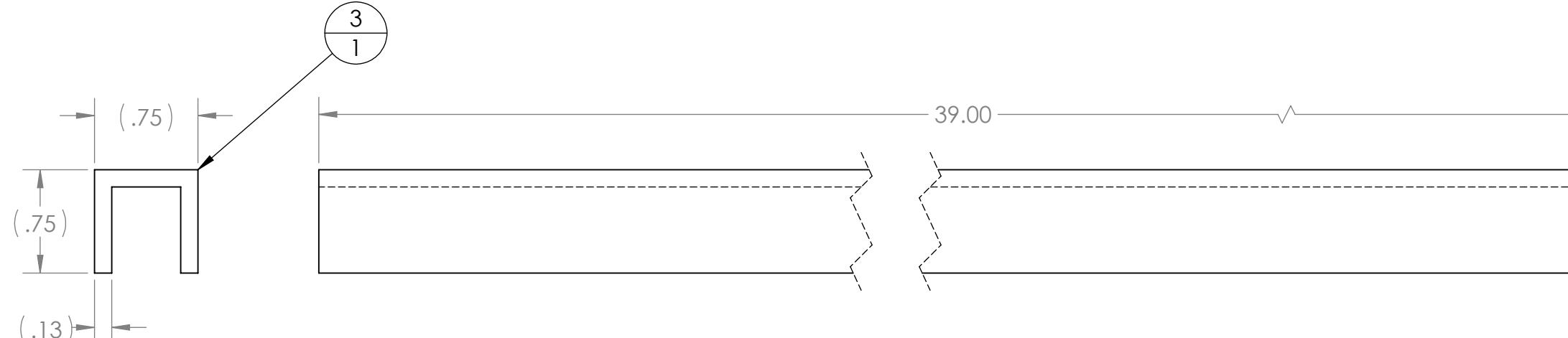
D



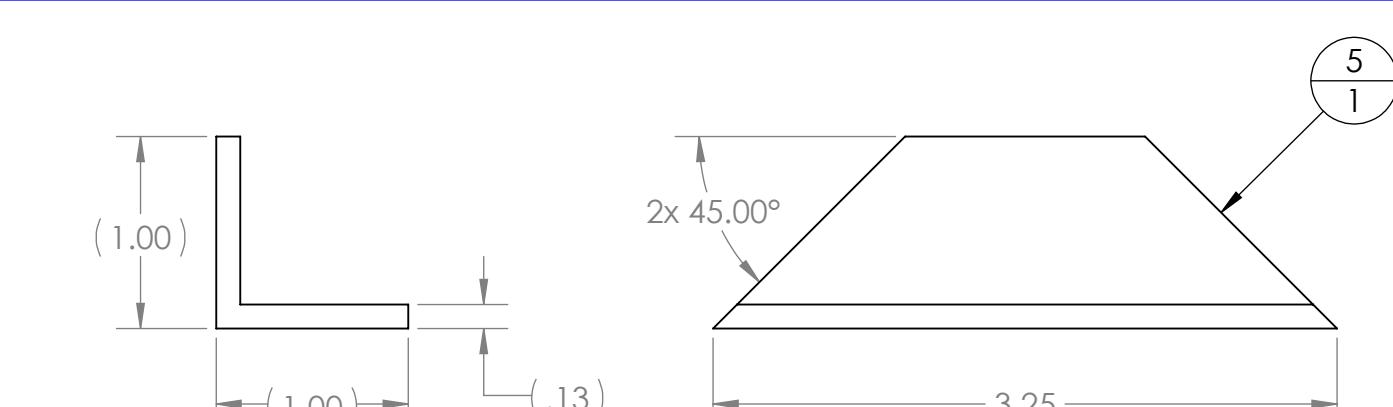
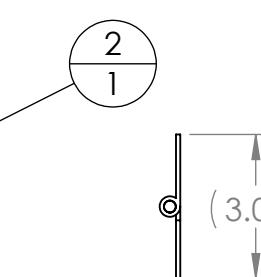
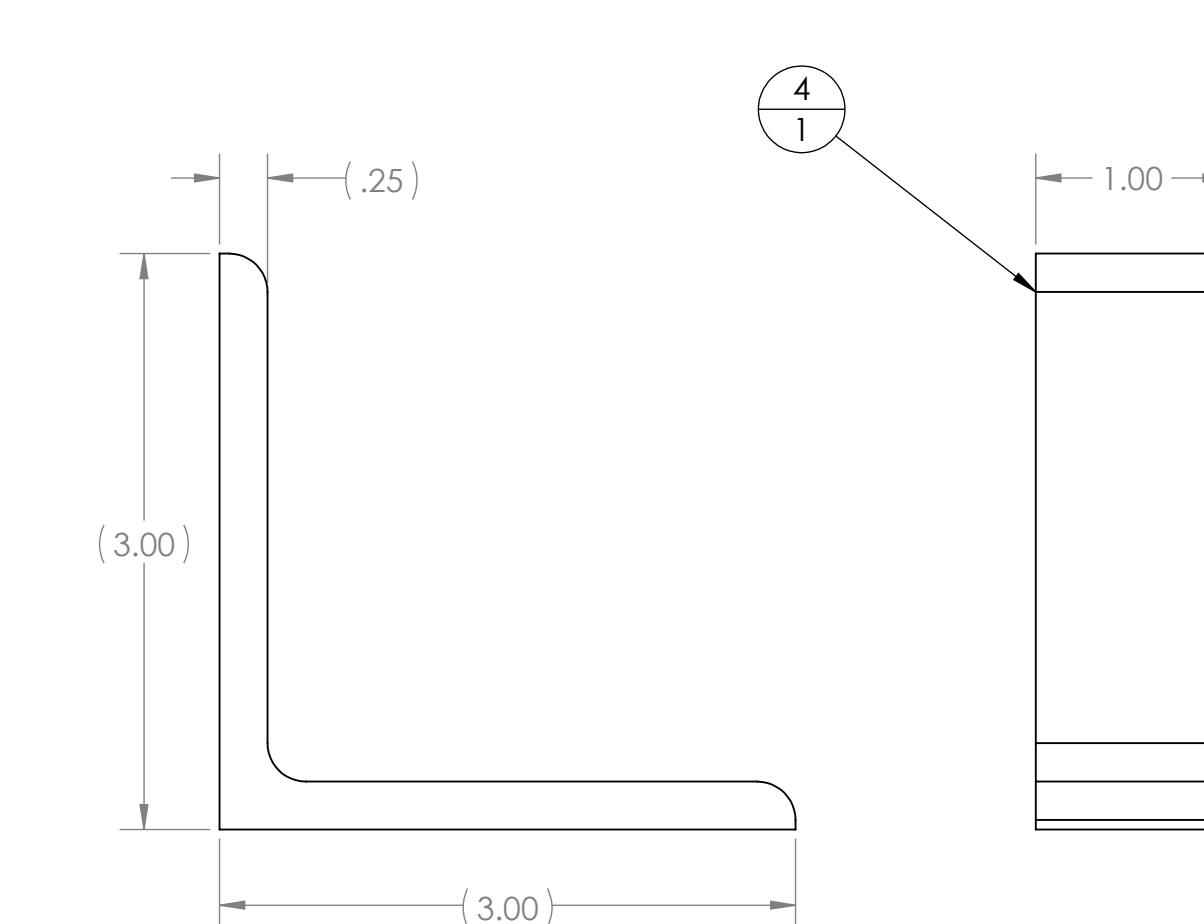
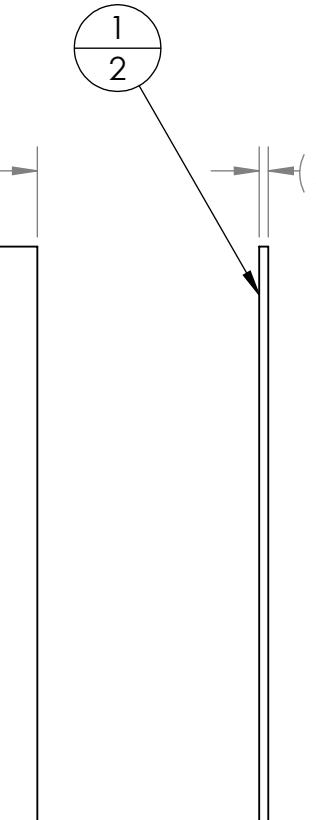
C



B



A



Note: Remove all sharp edges.

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
FIRST[®]. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST[®]** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:		DRAWN	NAME	DATE			
		DIMENSIONS ARE IN INCHES							
		TOLERANCES							
		FRACTIONAL: $\pm 1/16$							
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$							
		TWO PLACE DECIMAL: $\pm .01$							
		THREE PLACE DECIMAL: $\pm .001$							
		INTERPRET GEOMETRIC TOLERANCING PER:							
		MATERIAL							
		NEXT ASSY		FINISH					
		APPLICATION		DO NOT SCALE DRAWING					
C		DWG. NO.		TITLE:		Field Entry Ramp			
		FE-00014		SIZE					
B		REV		WEIGHT:		SHEET 2 OF 2			

FIRST[®] ROBOTICS COMPETITION SOLIDWORKS
Modeling Solutions Partner

4

3

2

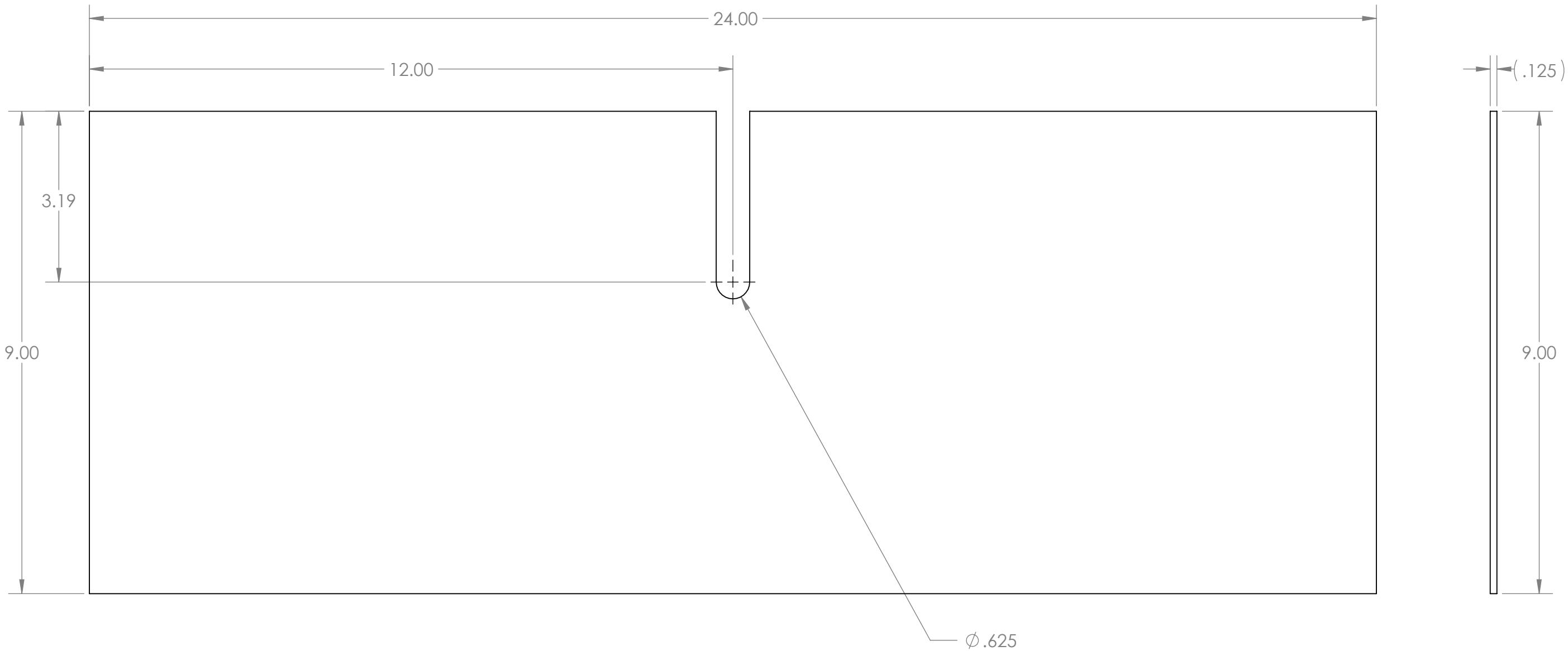
1

4

3

2

1



Notes:

1. Material: 1/8" Thick HDPE, Yellow.
2. Remove all sharp edges.

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:			TITLE: Trip Guard					
		DIMENSIONS ARE IN INCHES								
		TOLERANCES:								
		FRACTIONAL $\pm 1/16$								
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$								
		TWO PLACE DECIMAL $\pm .01$								
		THREE PLACE DECIMAL $\pm .001$								
		INTERPRET GEOMETRIC TOLERANCING PER:			COMMENTS:					
		MATERIAL								
		NEXT ASSY								
		USED ON								
		FINISH								
		APPLICATION			DO NOT SCALE DRAWING		SIZE B DWG. NO. FE-00015		REV	
							SCALE: 1:2		WEIGHT:	SHEET 1 OF 1

4

3

2

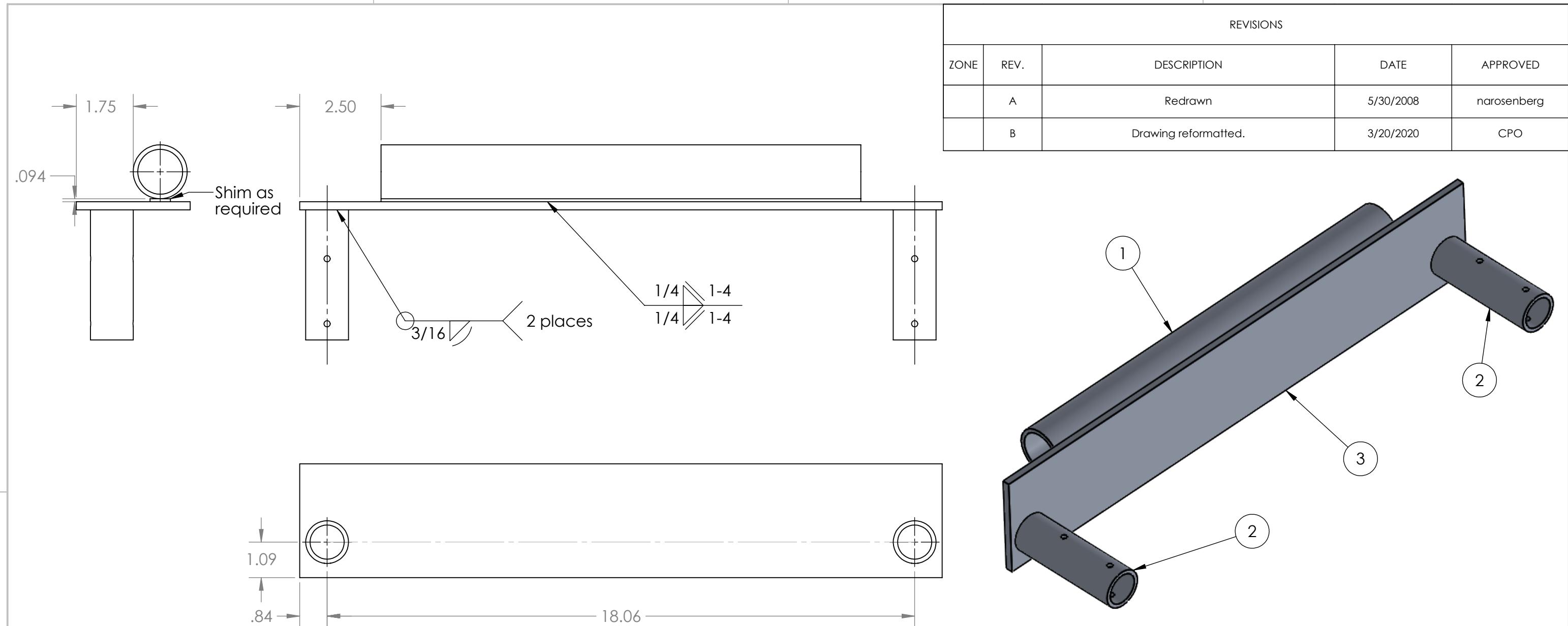
1

4

3

2

1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00018-01	1 1/4" Schedule 40 6061-T6 Aluminum Pipe	1
2	FE-00018-02	1" Schedule 40 6061-T6 Aluminum Pipe	2
3	FE-00018-03	3 1/2" x 1/4" 6061-T6 Aluminum Bar	1

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES		TOLERANCES:			
FRACTIONAL: ±1/16		ANGULAR: MACH ±1° BEND ±1°			
TO TWO PLACE DECIMAL: ±.01		THREE PLACE DECIMAL: ±.001			
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
		FINISH			
NEXT ASSY		USED ON	APPLICATION	DO NOT SCALE DRAWING	

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

TITLE: Corner Connector

SIZE DWG. NO. REV
B FE-00018 **B**

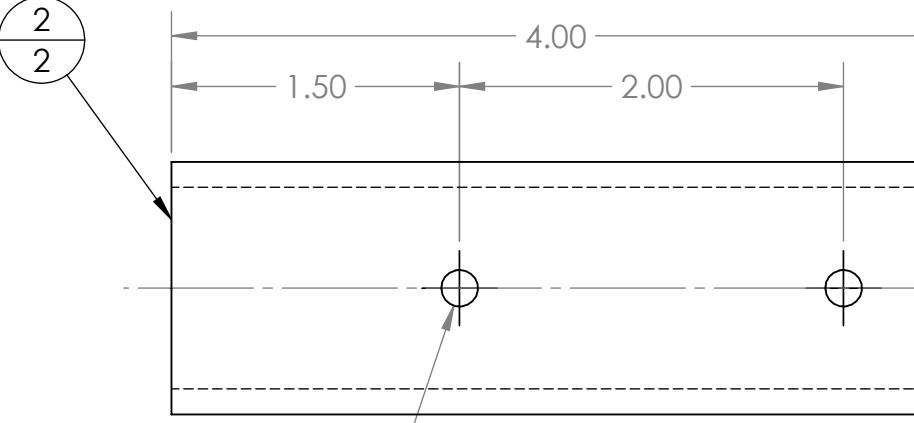
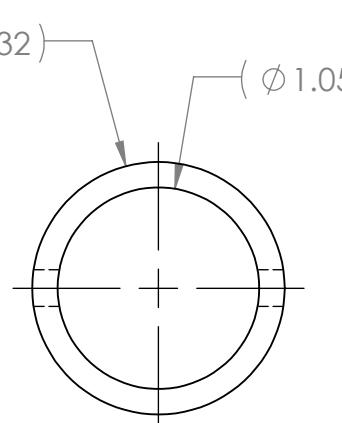
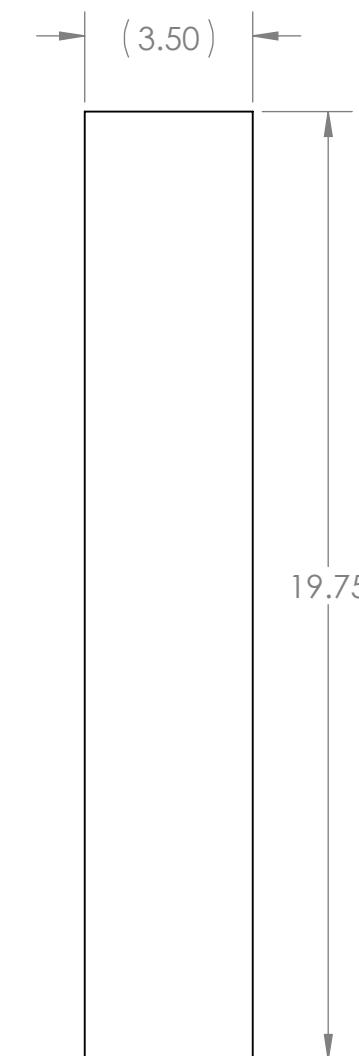
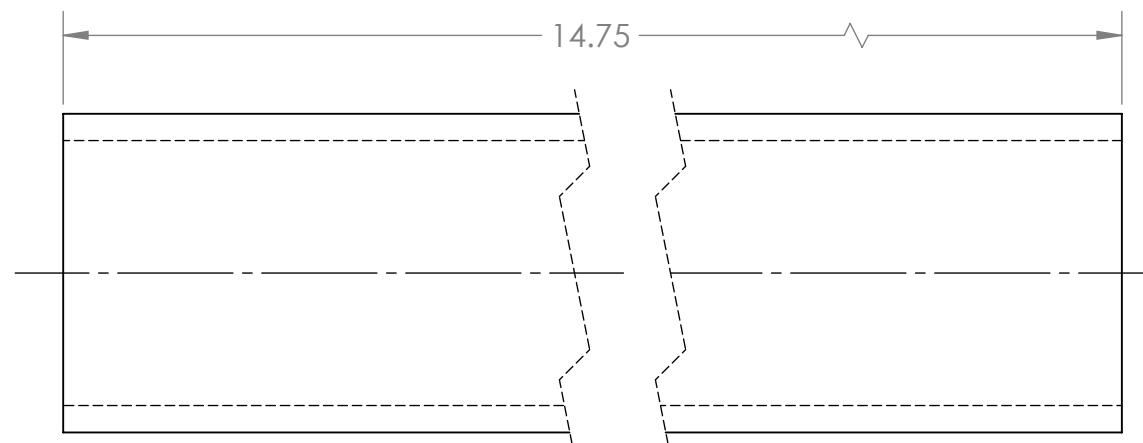
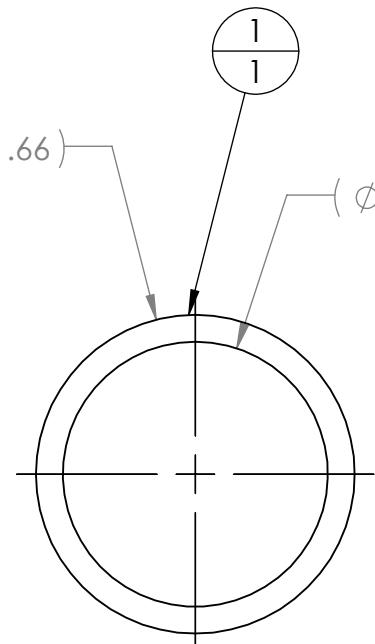
SCALE: 1:3 WEIGHT: SHEET 1 OF 2

4

3

2

1



2x ϕ .191 THRU
#11 Drill

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST[®]. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST[®]** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:			NAME _____ DATE _____ DRAWN _____ CHECKED _____ ENG APPR. _____ MFG APPR. _____ INTERPRET GEOMETRIC TOLERANCING PER: MATERIAL _____ NEXT ASSY _____ USED ON _____ FINISH _____ APPLICATION _____ DO NOT SCALE DRAWING _____		
DIMENSIONS ARE IN INCHES							
TOLERANCES:							
FRACTIONAL: $\pm 1/16$							
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$							
TWO PLACE DECIMAL $\pm .01$							
THREE PLACE DECIMAL $\pm .001$							
TITLE: Corner Connector				FIRST ROBOTICS COMPETITION SOLIDWORKS Modeling Solutions Partner			
SIZE B	DWG. NO. FE-00018	REV B					
WEIGHT:		SHEET 2 OF 2					

4

3

2

1

B

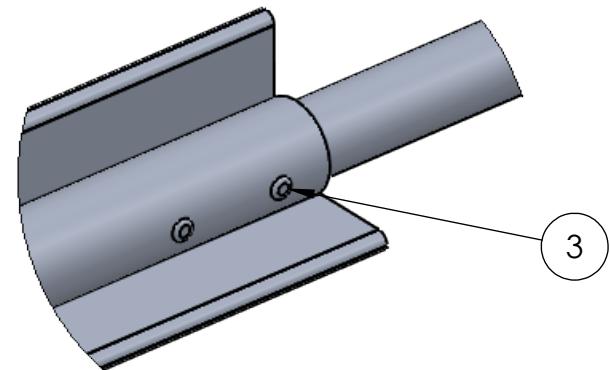
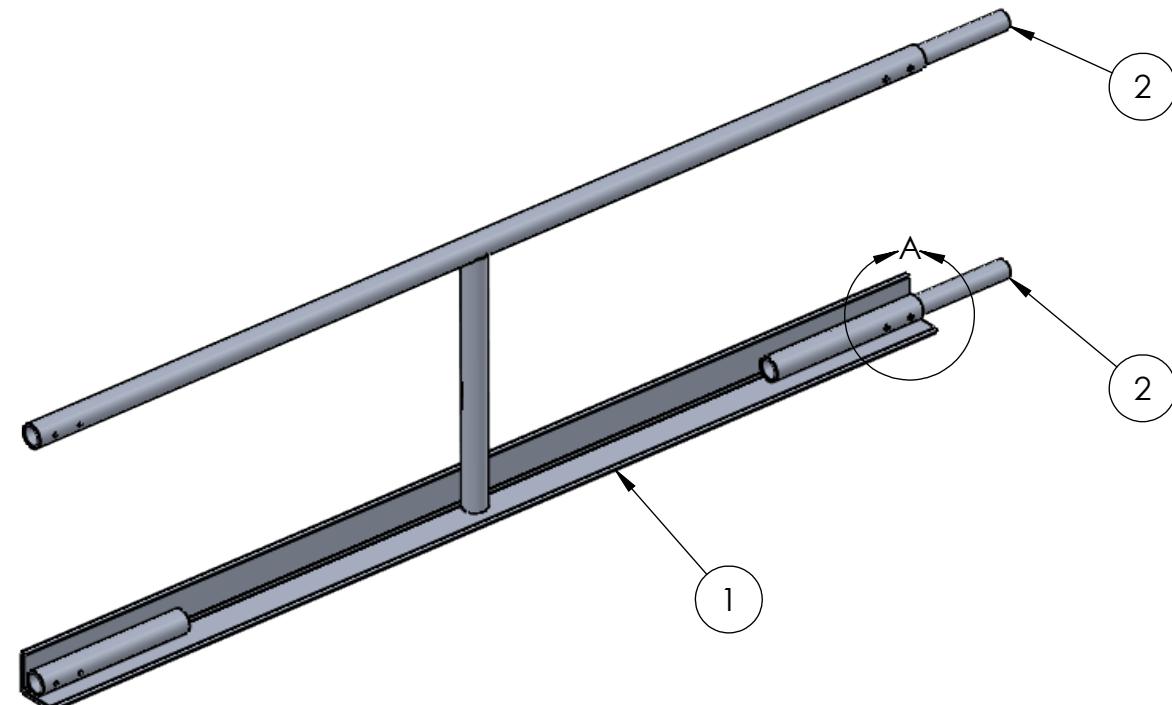
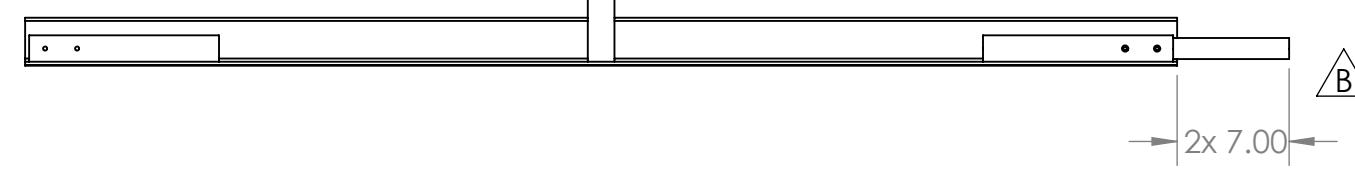
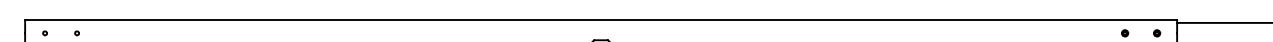
A

4

3

2

1



DETAIL A
SCALE 1 : 3

C

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00005	Field Rail	1
2	FE-00026	Connector Pin	2
3	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	4

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES		TOLERANCES:			
FRACTIONAL: ±1/16		ANGULAR: MACH ±1° BEND ±1°			
THREE PLACE DECIMAL: ±.001		TWO PLACE DECIMAL: ±.01			
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
		FINISH			
		APPLICATION	DO NOT SCALE DRAWING		

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

Field Rail Assy - Mid

B **FE-00022** **C**

SIZE DWG. NO. REV
SCALE: 1:12 WEIGHT: SHEET 1 OF 1

4

3

2

1

4

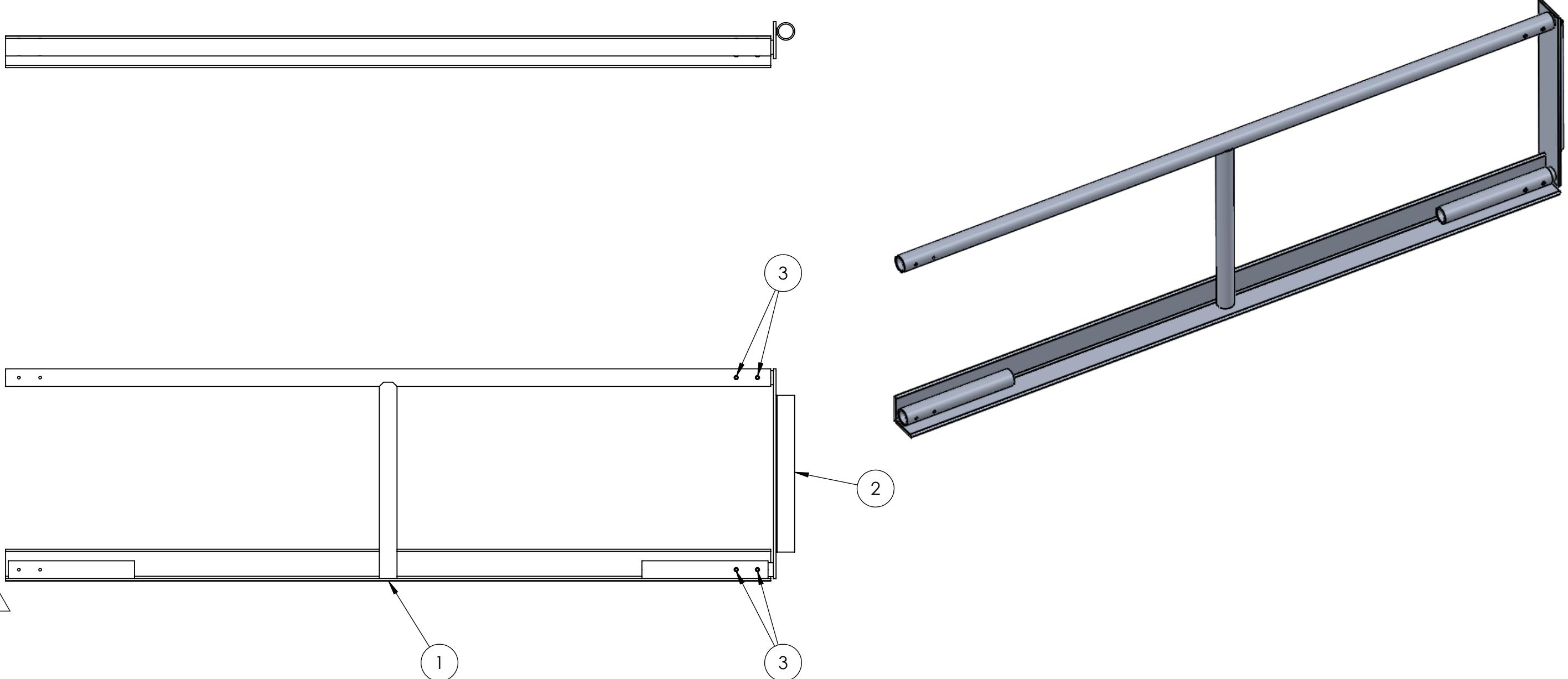
3

2

1

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
A4	B	Removed use of FE-00018 Connector Pin, modified rivet part numer and description.	3/20/2020	CPO



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00005	Field Rail	1
2	FE-00018	Corner Connector	1
3	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	4

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		
		FRACTIONAL: ±1/16	ENG APPR.		
		ANGULAR: MACH ±1° BEND ±1°	MFG APPR.		
		TWO PLACE DECIMAL ±.01	Q.A.		
		THREE PLACE DECIMAL ±.001	COMMENTS:		
			MATERIAL		
			INTERPRET GEOMETRIC TOLERANCING PER:		
			NEXT ASSY	USED ON	FINISH
			APPLICATION		DO NOT SCALE DRAWING

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

Field Rail Assy - Left

SIZE **DWG. NO.** **REV**
B **FE-00023** **B**

SCALE: 1:10 **WEIGHT:** **SHEET 1 OF 1**

4

3

2

1

4

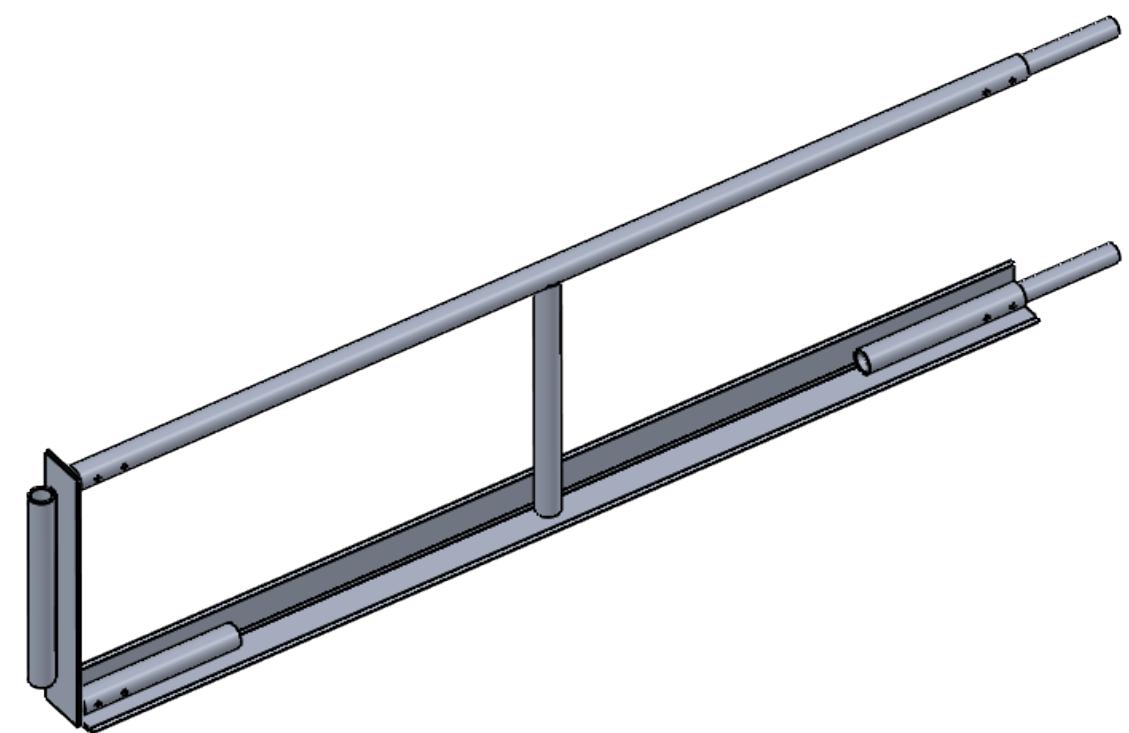
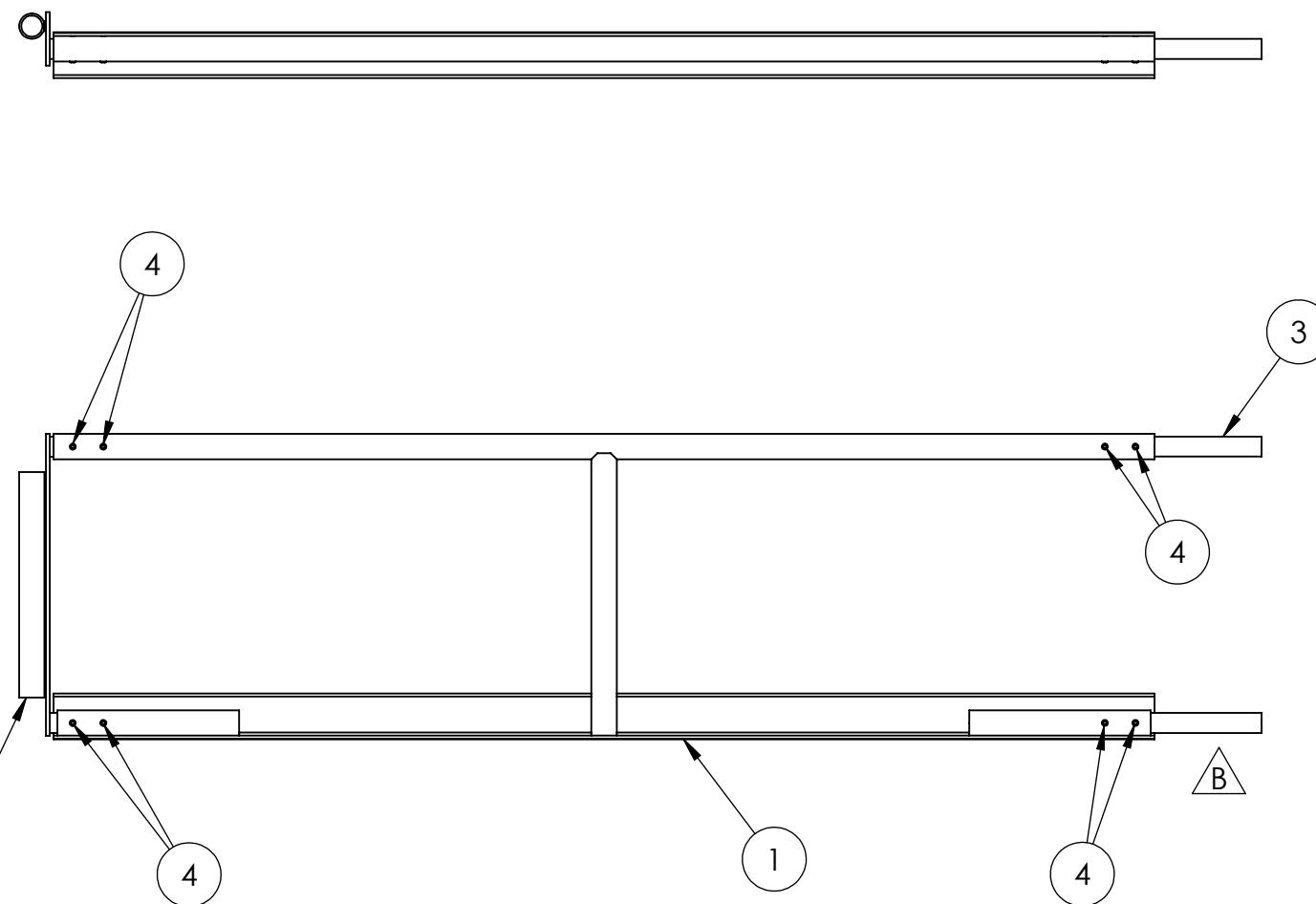
3

2

1

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
A3, A4	B	Additional FE-00026 Connector Pin added to assembly, rivet part number and description modified	3/20/2020	CPO



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00005	Field Rail	1
2	FE-00018	Corner Connector	1
3	FE-00026	Connector Pin	2
4	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	8

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		
		FRACTIONAL $\pm 1/16$	ENG APPR.		
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.		
		TWO PLACE DECIMAL $\pm .01$	Q.A.		
		THREE PLACE DECIMAL $\pm .001$	COMMENTS:		
			MATERIAL		
			FINISH		
			APPLICATION	DO NOT SCALE DRAWING	
SIZE	DWG. NO.	REV			
B	FE-00024	B			
SCALE: 1:12	WEIGHT:	SHEET 1 OF 1			

4

3

2

1

4

3

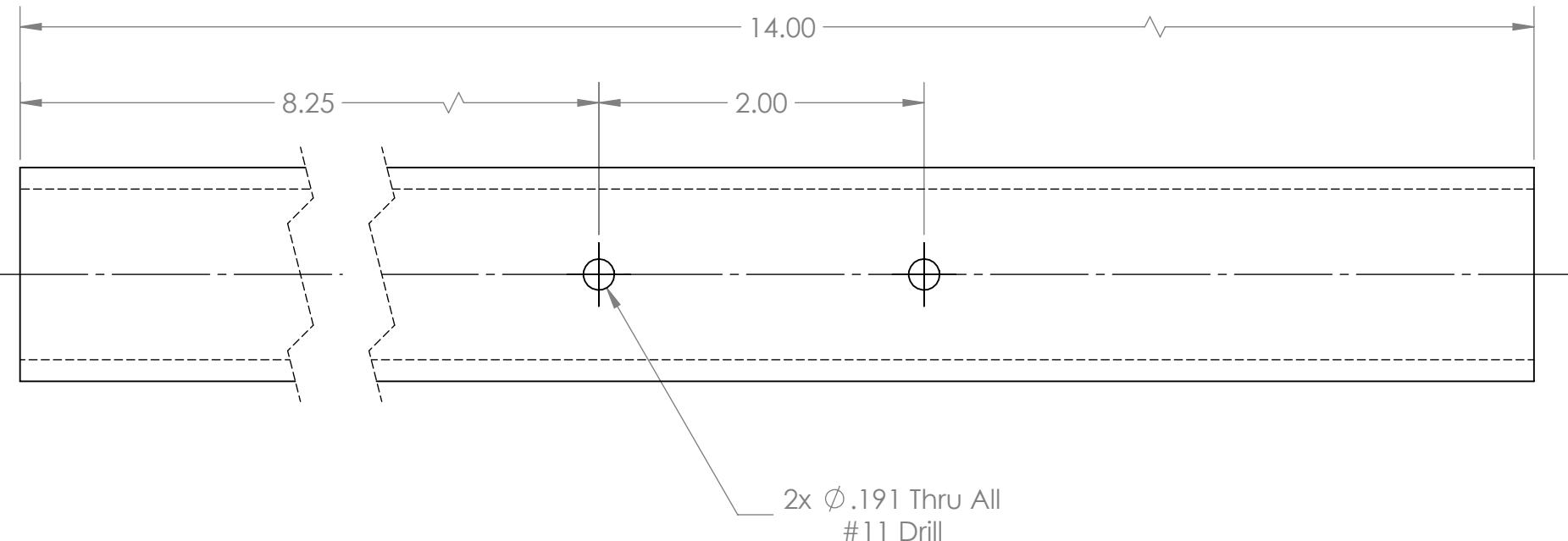
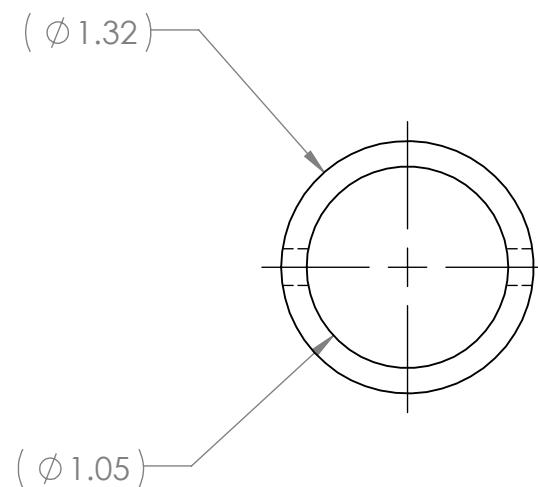
2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	redrawn	6/5/2008	dfoster

B

B



Notes:

1. Material: 1" Schedule 40 Pipe, 6061-T6 Aluminum
 2. Remove all sharp edges

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 FIRST ROBOTICS COMPETITION	TITLE: <h1>Connector Pin</h1>
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$	DRAWN				
			CHECKED				
			ENG APPR.				
			MFG APPR.				
			Q.A.				
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:				
		MATERIAL					
NEXT ASSY	USED ON	FINISH					
APPLICATION		DO NOT SCALE DRAWING					

4

3

2

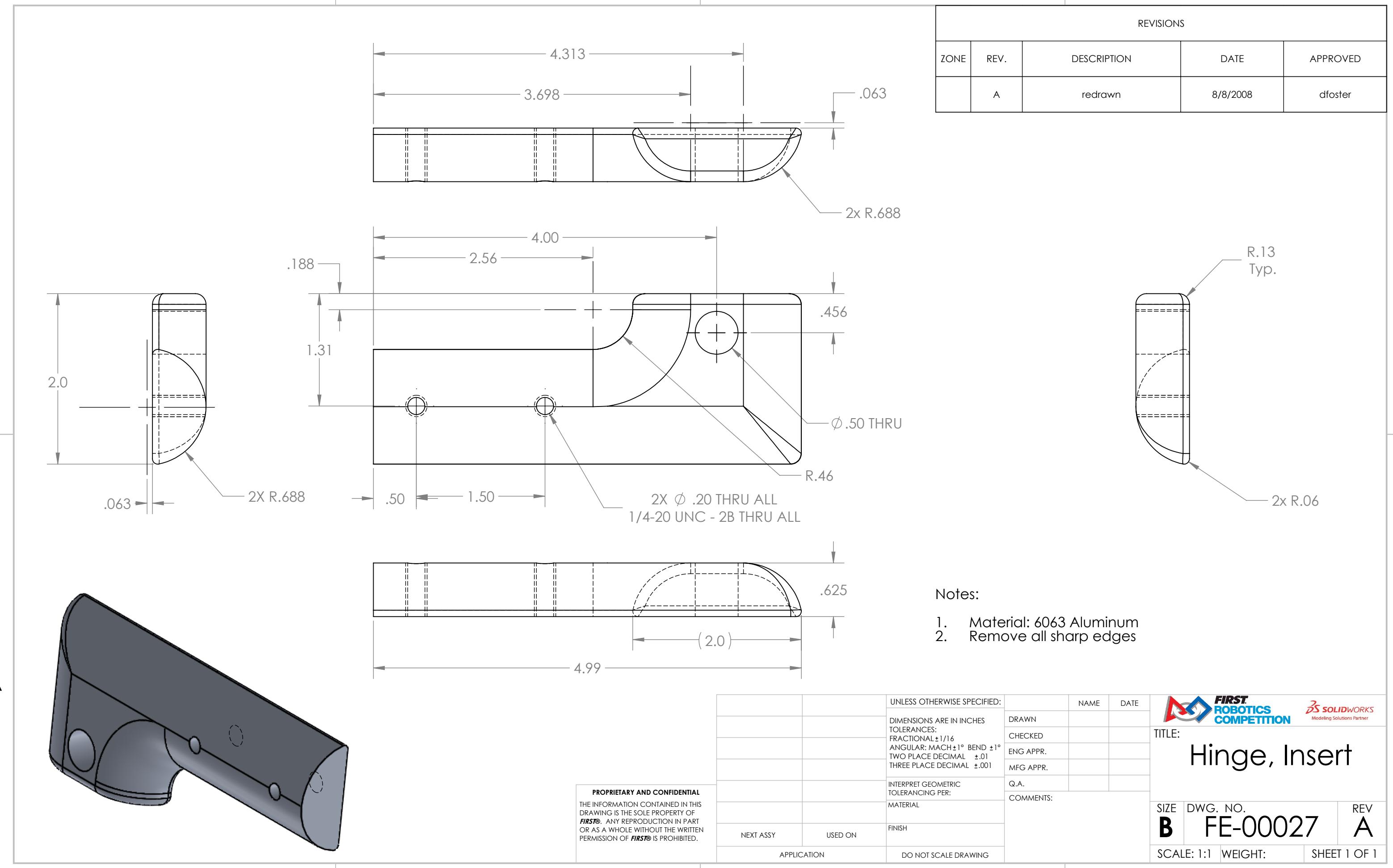
1

4

3

2

1



4

3

2

1

4

3

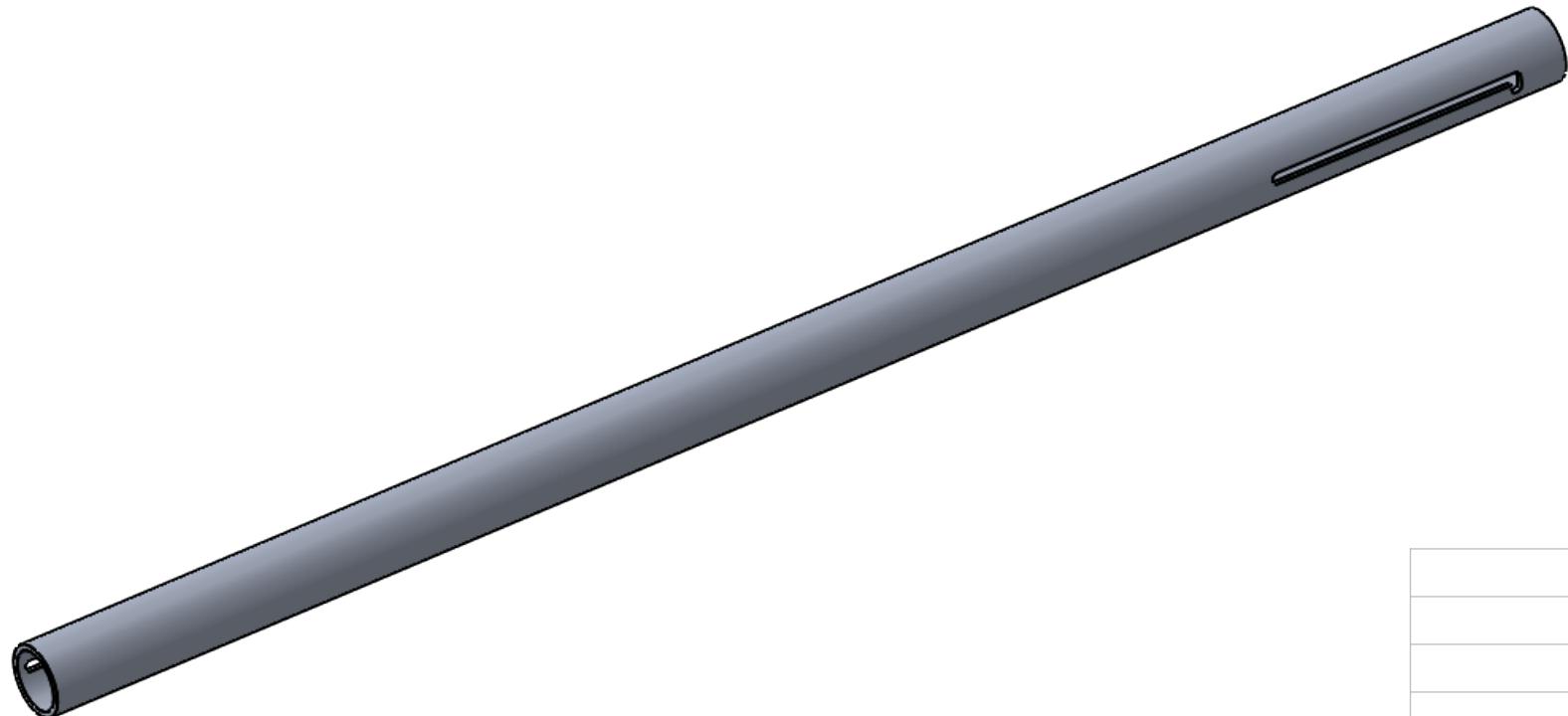
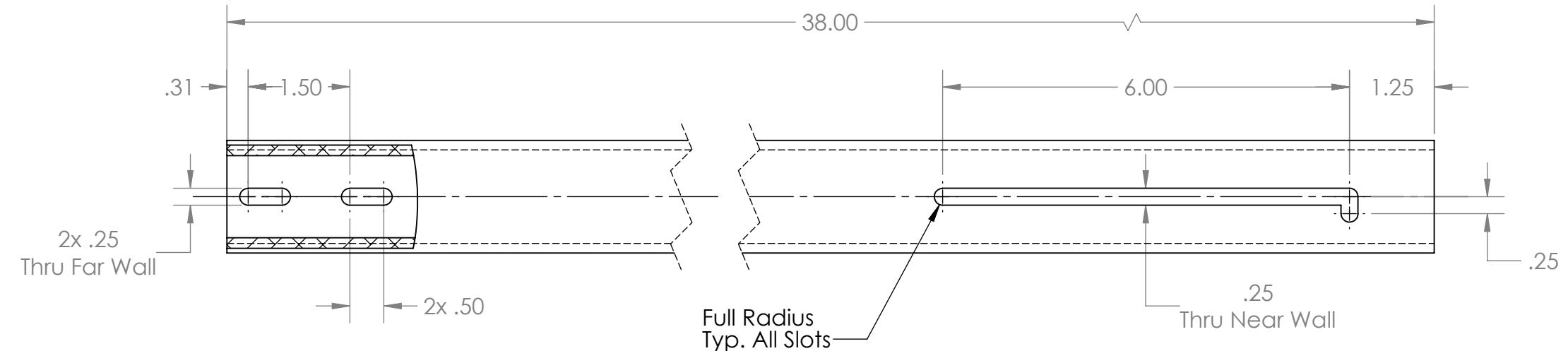
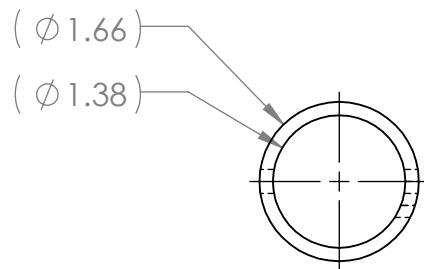
2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	Redrawn	8/6/2008	dfoster

B

B



Notes:

- NOTES:

 1. Material: 1-1/4" Aluminum 6061-T6 Schedule 40 Pipe
 2. Remove all sharp edges.

A

A

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 FIRST ROBOTICS COMPETITION  SOLIDWORKS <small>Modeling Solutions Partner</small>
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$	DRAWN			
			CHECKED			
			ENG APPR.			
			MFG APPR.			
			Q.A.			
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:			
		MATERIAL				
NEXT ASSY	USED ON	FINISH				
APPLICATION		DO NOT SCALE DRAWING				
SIZE DWG. NO. REV B FE-00028 A WEIGHT: SHEET 1 OF 1						

4

3

2

1

8

7

6

5

4

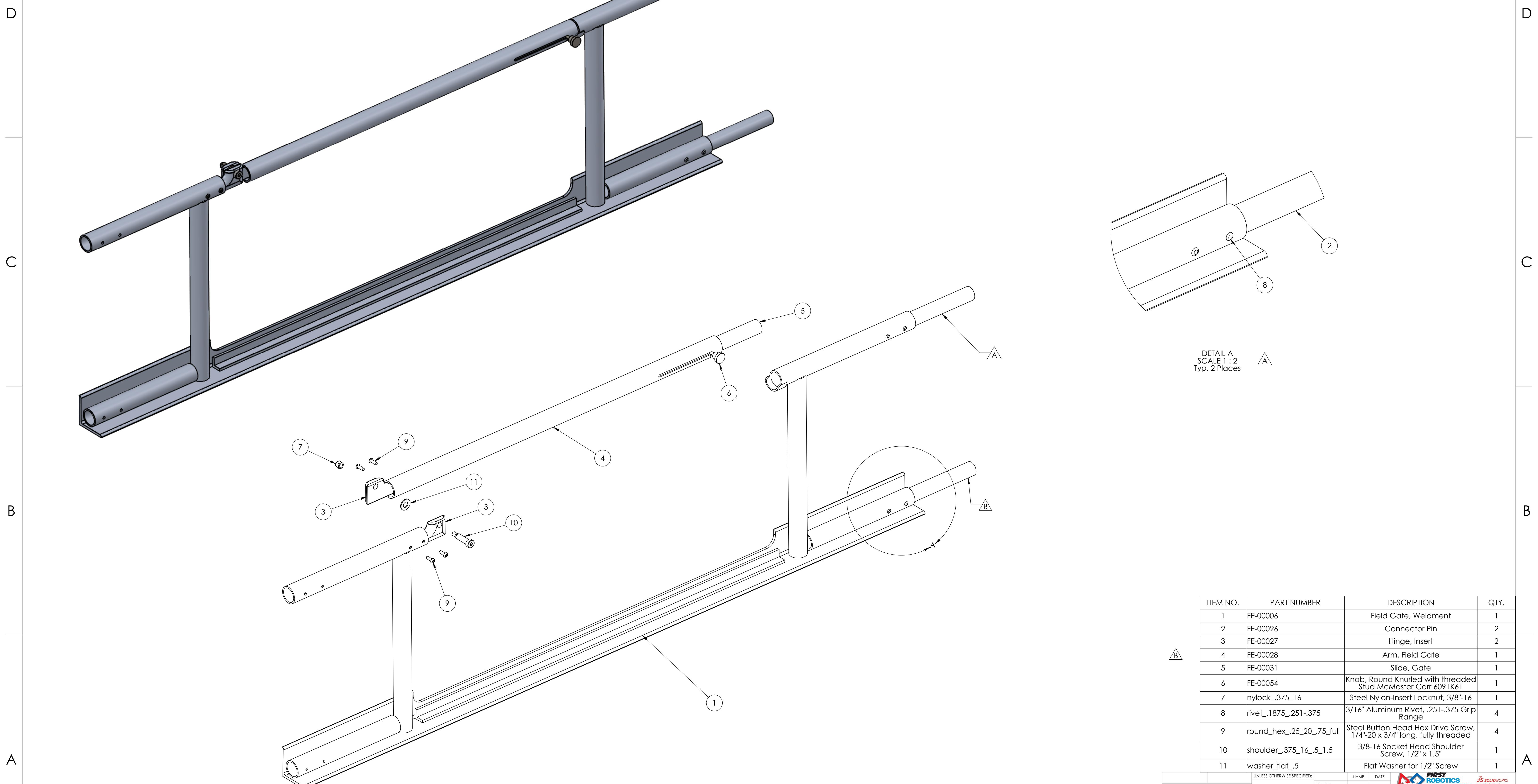
3

2

1

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
A7, C2, C3	A	Relocated Item 3 (x2), Relocated Detail A	1/7/2009	dfoster
A2, B3	B	Relocated Item 2, renumbered items, hardware part number and descriptions modified.	3/23/2020	CPO



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00006	Field Gate, Weldment	1
2	FE-00026	Connector Pin	2
3	FE-00027	Hinge, Insert	2
4	FE-00028	Arm, Field Gate	1
5	FE-00031	Slide, Gate	1
6	FE-00054	Knob, Round Knurled with threaded Stud McMaster Carr 6091K61	1
7	nylock_.375_16	Steel Nylon-Insert Locknut, 3/8"-16	1
8	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	4
9	round_hex_.25_20_.75_full	Steel Button Head Hex Drive Screw, 1/4"-20 x 3/4" long, fully threaded	4
10	shoulder_.375_16_.5_1.5	3/8-16 Socket Head Shoulder Screw, 1/2" x 1.5"	1
11	washer_flat_.5	Flat Washer for 1/2" Screw	1

NAME	DATE	
TITLE: Field Gate, Assembly		
SIZE	DWG. NO.	REV.
D	FE-00029	B
SCALE: 1:4 WEIGHT:		
SHEET 1 OF 1		

PROPRIETARY AND CONFIDENTIAL
THIS INFORMATION IS THE PROPERTY OF FIRST.
IT IS TO BE USED EXCLUSIVELY FOR THE PURPOSE OF
COMPETITION. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF FIRST IS PROHIBITED.

DRAWN
CHECKED
ENG APPR.
MFG APPR.
QA.
COMMENTS:

INTERPRET GEOMETRIC
TOLERANCING PER:
MATERIAL

NEXT ASSY
USED ON
APPLICATION

FINISH
DO NOT SCALE DRAWING

8

7

6

5

4

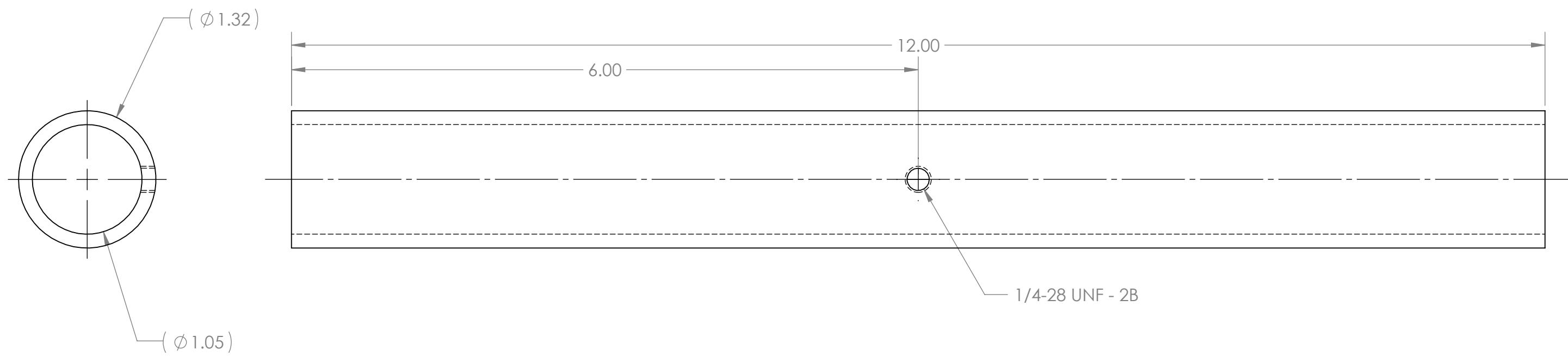
3

2

1

B

B



Notes:

1. Material: 1" Schedule 40 Aluminum 6061-T6.
2. Remove all sharp edges.

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$	NAME	DATE
		DRAWN		
		CHECKED		
		ENG APPR.		
		MFG APPR.		
		Q.A.		
		COMMENTS:		
		MATERIAL		
		FINISH		
NEXT ASSY	USED ON	APPLICATION		
		DO NOT SCALE DRAWING		

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

Slide, Gate

SIZE	DWG. NO.	REV
B	FE-00031	
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

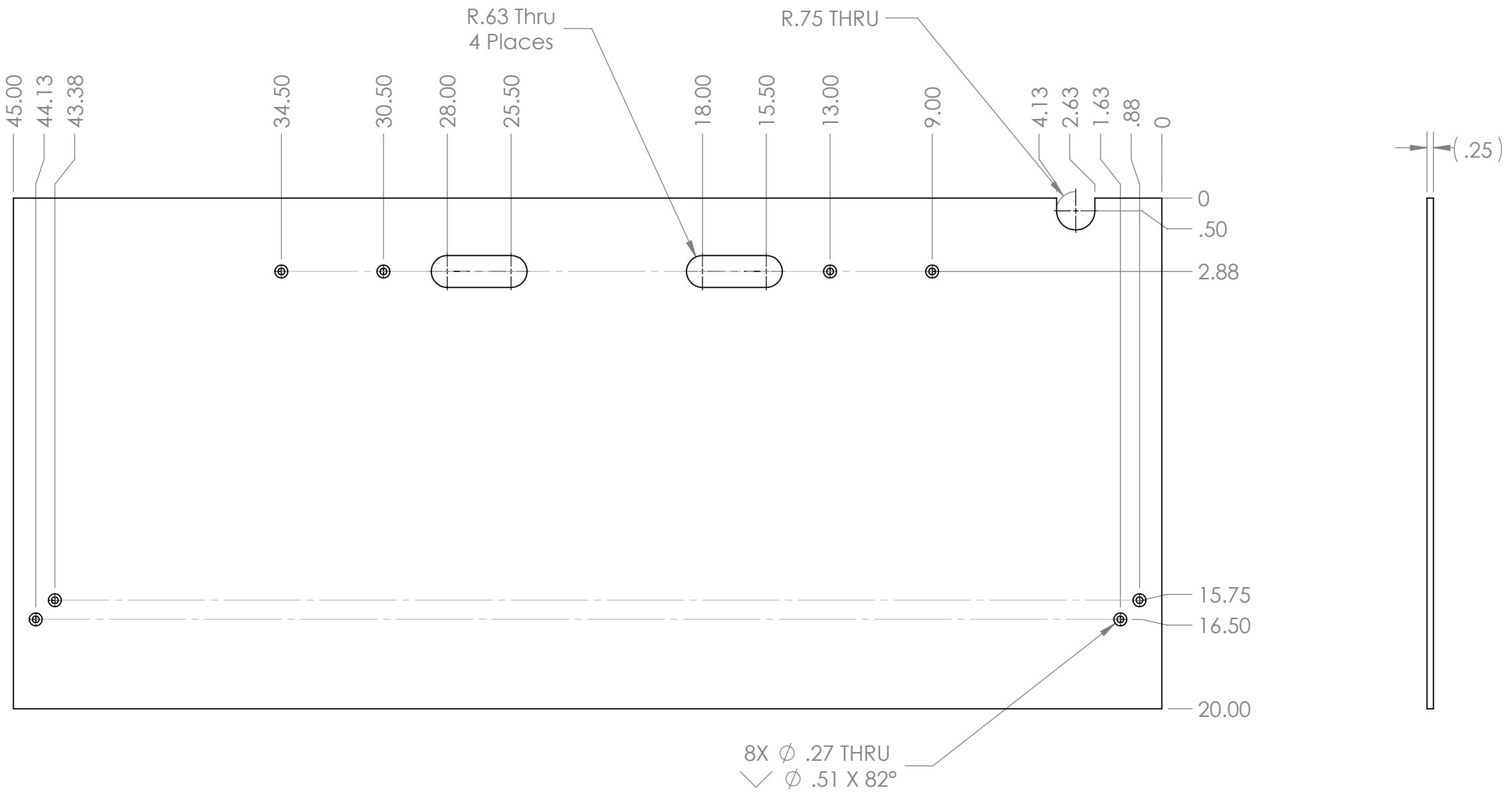
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	Added counter sinks, hand holes and a notch	9/23/14	MLC



Notes:

1. Material: 1/4" Clear Polycarbonate
 2. Remove all burrs and sharp edges.

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 FIRST ROBOTICS COMPETITION	TITLE: <h1>Field Plastic "G"</h1>	
		DIMENSIONS ARE IN INCHES	DRAWN					
		TOLERANCES: FRACTIONAL $\pm 1/16$	CHECKED					
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	ENG APPR.					
		TWO PLACE DECIMAL $\pm .01$	MFG APPR.					
		THREE PLACE DECIMAL $\pm .001$	Q.A.					
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:					
		MATERIAL				SIZE DWG. NO. B FE-00044 REV A		
NEXT ASSY	USED ON	FINISH						
APPLICATION		DO NOT SCALE DRAWING				SCALE: 1:5	WEIGHT:	SHEET 1 OF 1

4

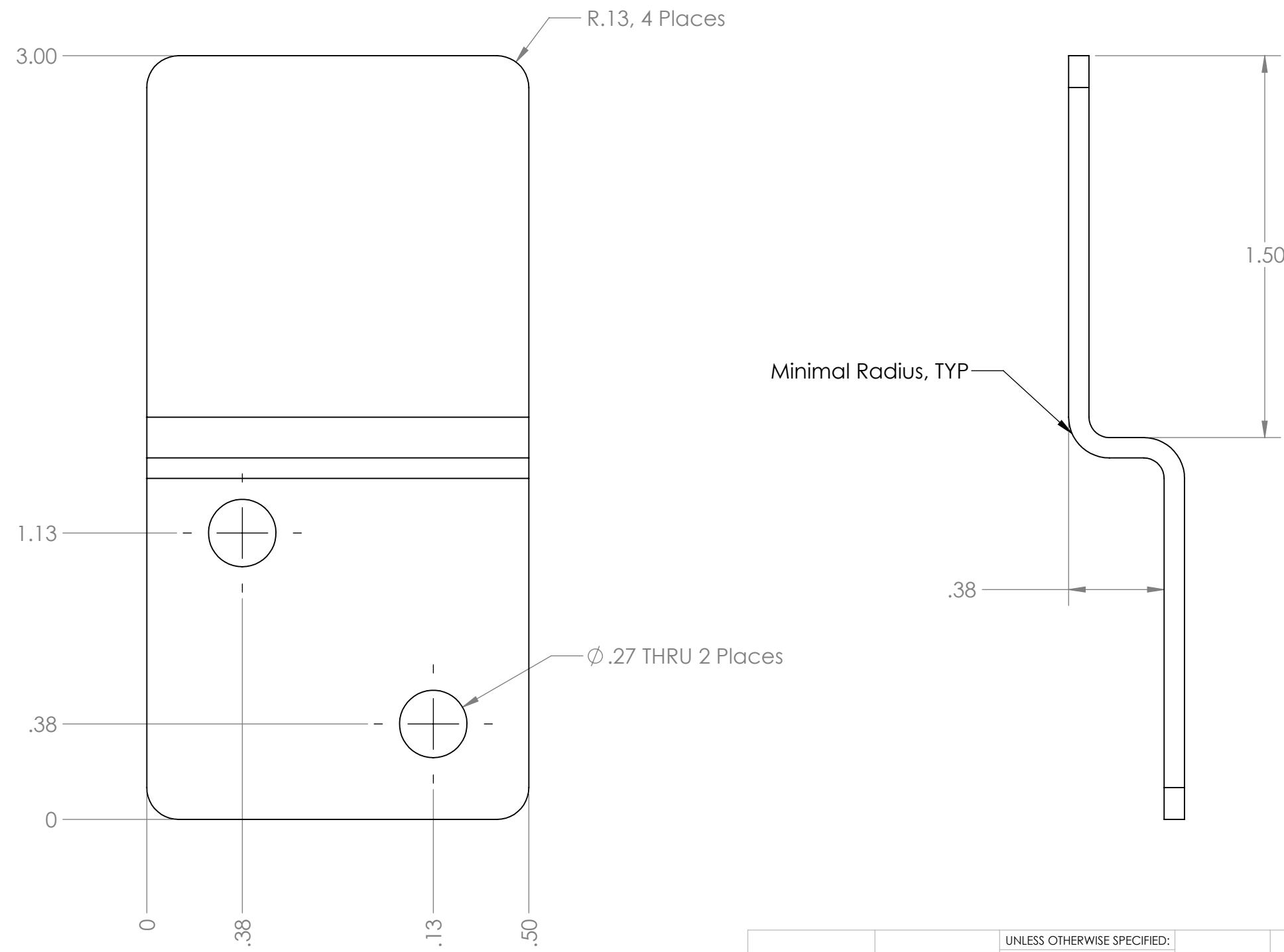
3

2

1

B

B



- Notes:
1. 12 Gauge 5052 Aluminum
 2. Remove all burrs and sharp edges

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES			
		TOLERANCES:			
		FRACTIONAL: ±1/16			
		ANGULAR: MACH ±1° BEND ±1°			
		TWO PLACE DECIMAL: ±.01			
		THREE PLACE DECIMAL: ±.001			
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

**Lower Z-Bracket,
Gate Plastic**

SIZE	DWG. NO.	REV
B	FE-00045	
SCALE: 2:1	WEIGHT:	SHEET 1 OF 1

4

3

2

1

B

B

3.50

.75

0

0

1.00

5.00

6.00

R.13, 4 Places

∅ .27 THRU 2 Places

1.75

1.75

Minimal
Radius
TYP

Notes:

1. 12 Gauge 5052 Aluminum
2. Remove all burrs and sharp edges

PROPRIETARY AND CONFIDENTIAL
 THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$	NAME	DATE
		DRAWN		
		CHECKED		
		ENG APPR.		
		MFG APPR.		
		Q.A.		
		COMMENTS:		
		MATERIAL		
		FINISH		
NEXT ASSY	USED ON	APPLICATION	DO NOT SCALE DRAWING	
		SIZE	DWG. NO.	
B		FE-00046		
		REV		
		SCALE: 1:1	WEIGHT:	
		SHEET 1 OF 1		

4

3

2

1

4

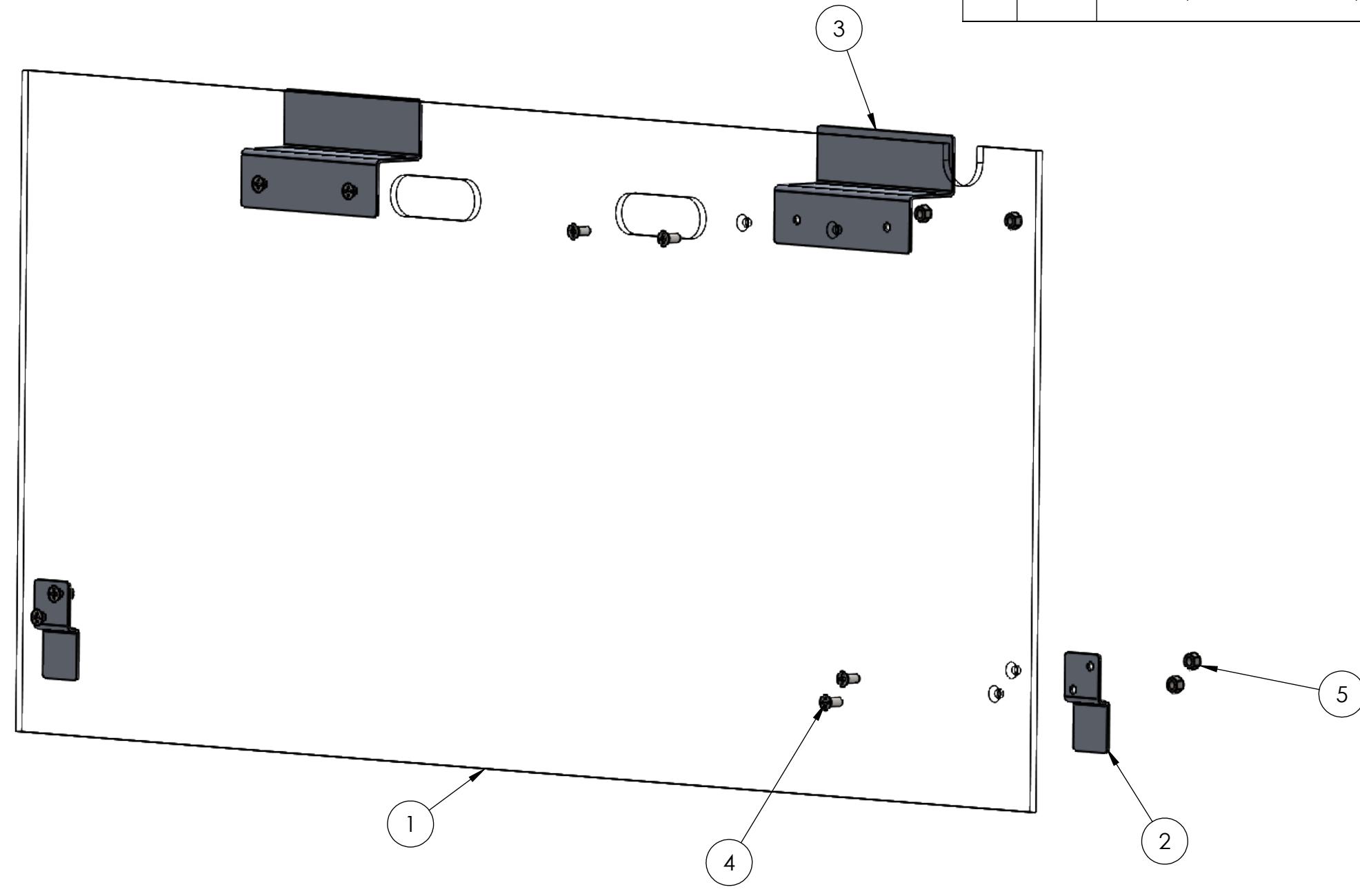
3

2

1

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
A4	A	Fastener part number and descriptions modified.	3/23/2020	CPO



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00044	Field Plastic "G"	1
2	FE-00045	Lower Z-Bracket, Gate Plastic	2
3	FE-00046	Upper Z-Bracket, Gate Plastic	2
4	flat_phil_.25_20_.625	Steel Phillips Flat Head Screw, 1/4"x20 x 5/8" long, fully threaded	8
5	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	8

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL: ±.01 THREE PLACE DECIMAL: ±.001	NAME	DATE
		DRAWN		
		CHECKED		
		ENG APPR.		
		MFG APPR.		
		Q.A.		
		COMMENTS:		
		MATERIAL		
		FINISH		
		APPLICATION	DO NOT SCALE DRAWING	
SIZE	DWG. NO.	REV		
B	FE-00047	A		
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1		

FIRST
ROBOTICS
COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

Title: Gate Plastic Assembly

4

3

2

1

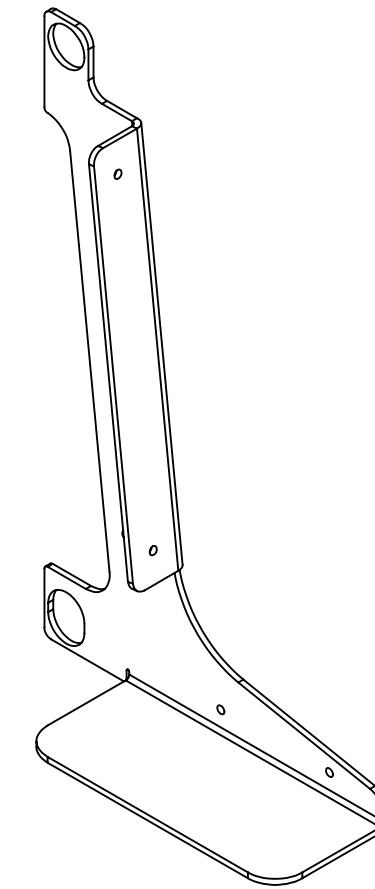
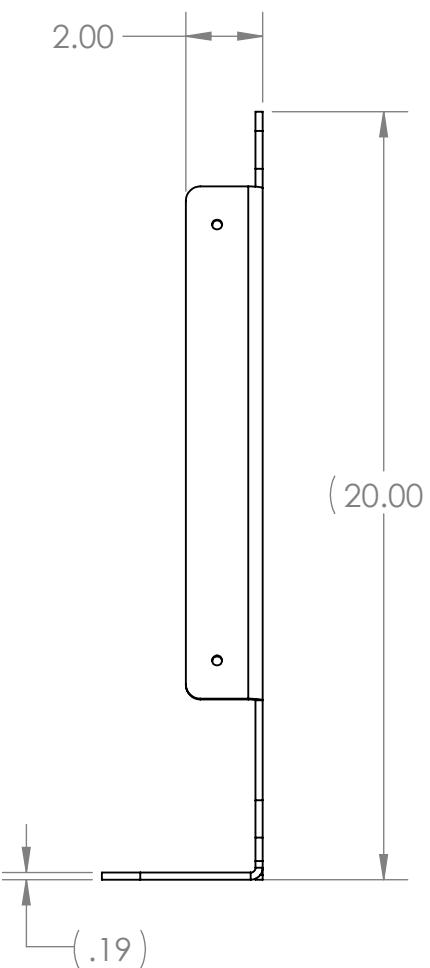
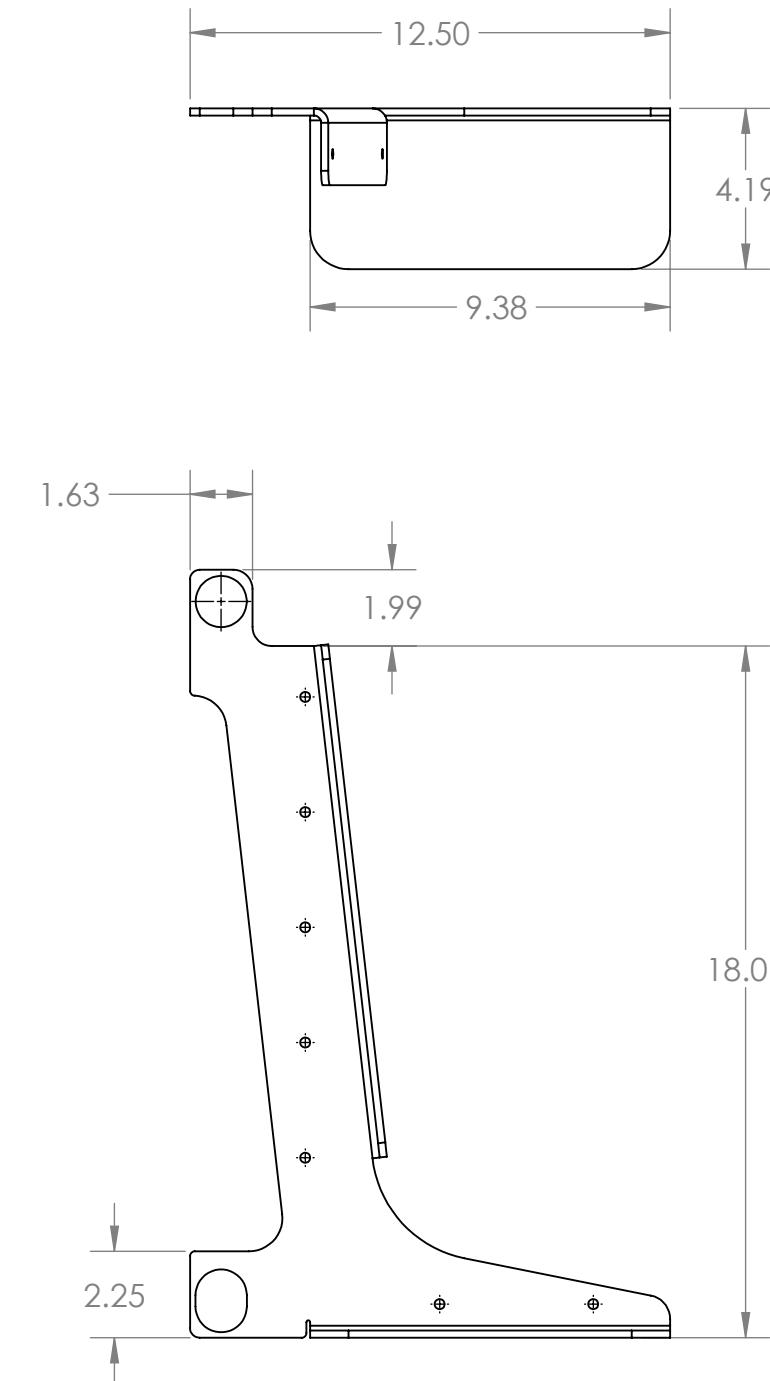
4

3

2

1

B



Note:

Material: 5052 Aluminum Sheet, 3/16" Thick

This drawing represents overall dimensions for AndyMark AM-2810. Please see the AndyMark website for more details regarding part dimensions.

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST[®]. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST[®] IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001		NAME	DATE
		DRAWN			
		CHECKED			
		ENG APPR.			
		MFG APPR.			
		Q.A.			
		COMMENTS:			
SIZE	DWG. NO.				REV
B	FE-00050				
SCALE: 1:5	WEIGHT:				SHEET 1 OF 1

**FIRST
ROBOTICS
COMPETITION** **SOLIDWORKS**
Modeling Solutions Partner

Outrigger

4

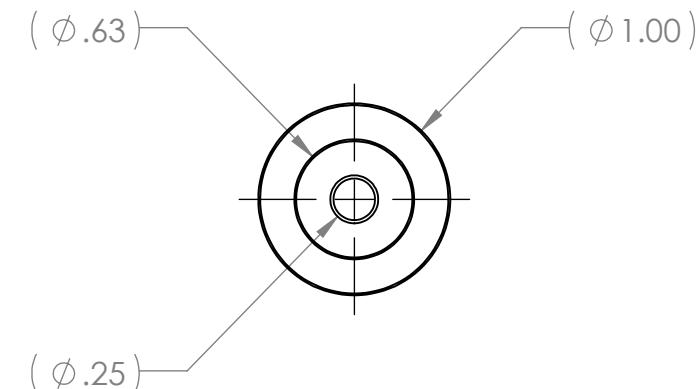
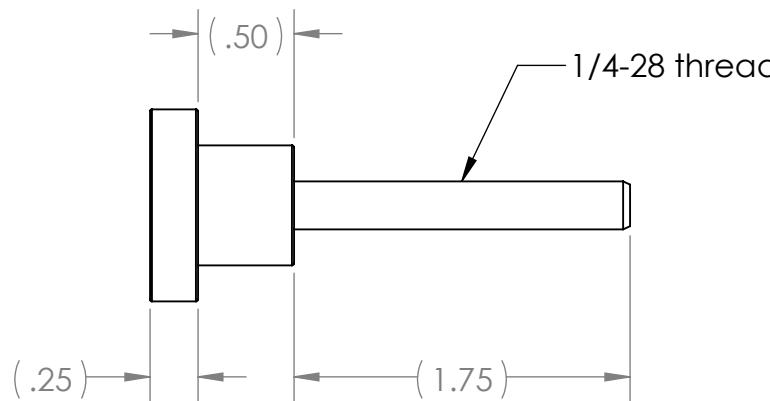
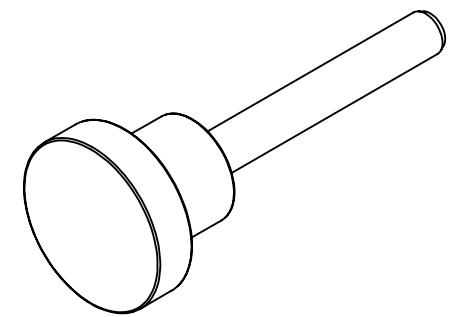
3

2

1

B

B



Notes:

1. Description: 303 Stainless Steel Knurled Knob with 1/4"-28 Thread 1-3/4" Long Stud, 1" Head Diameter
2. Vendor: McMaster-Carr
3. Part Number: 6091K61
4. Equivalent substitutions allowed

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	NAME	DATE
	DRAWN			
	CHECKED			
	ENG APPR.			
	MFG APPR.			
	Q.A.			
	COMMENTS:			
	MATERIAL			
NEXT ASSY	USED ON	FINISH		
	APPLICATION	DO NOT SCALE DRAWING		

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

TITLE: Knob, Round Knurled with threaded Stud McMaster Carr 6091K61

SIZE DWG. NO. **B** FE-00054 **REV**

SCALE: 1:1 WEIGHT: SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

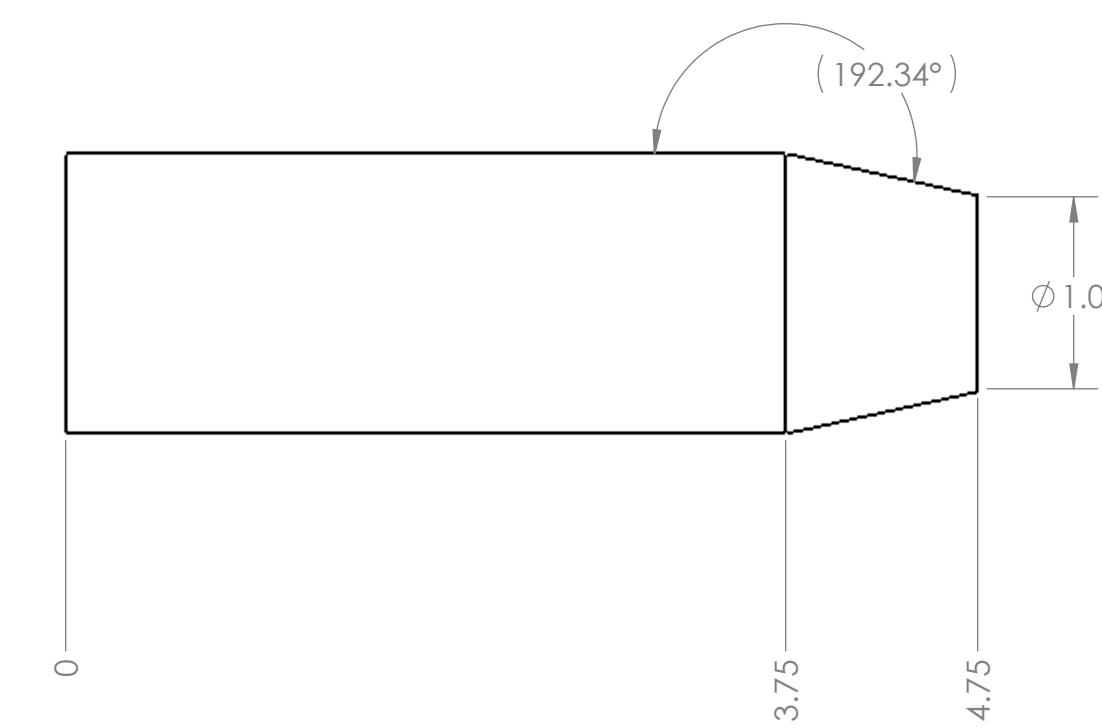
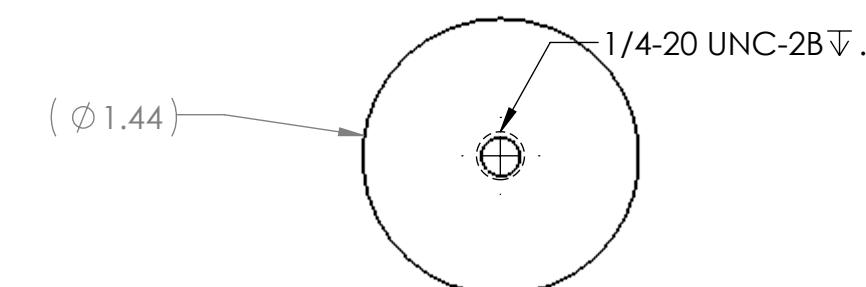
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	NW	8/22/2022	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
1-7/16" round 6061	C	FE-00060	
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING	SCALE: 1:1	SHEET 1 OF 1	

4

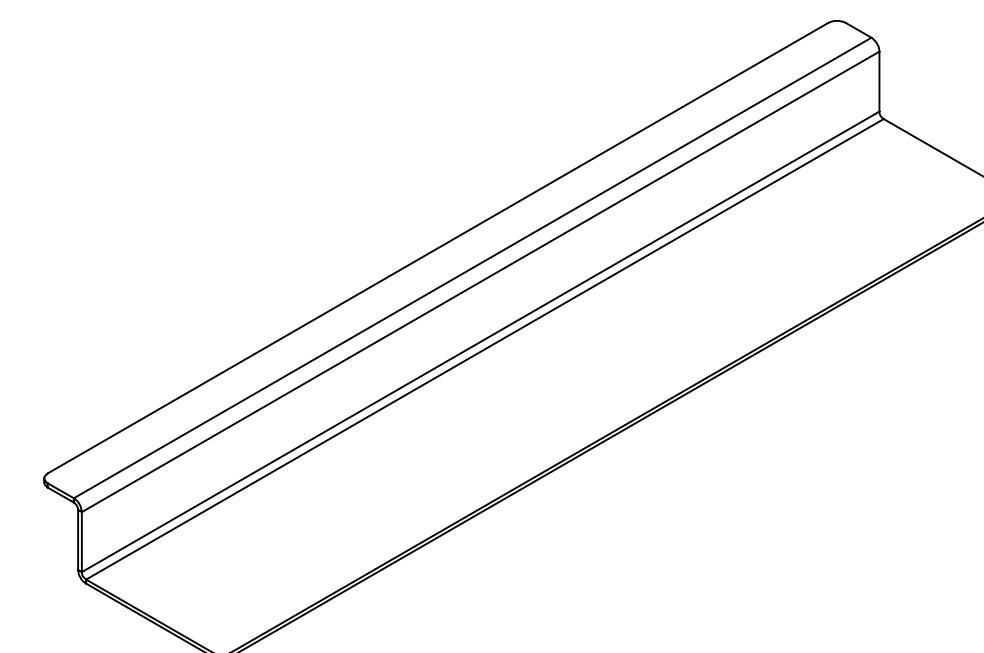
3

2

1

D

(5.38) R.25 4x



C

1.25
2x R.13 (.11)
4.23

2.00 23.50

B

A

UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	NW	8/24/2022	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
12 ga pre-plated steel	C	FE-00070	
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING	SCALE: 1:4	SHEET 1 OF 1	

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

TITLE:
Anchor

4

3

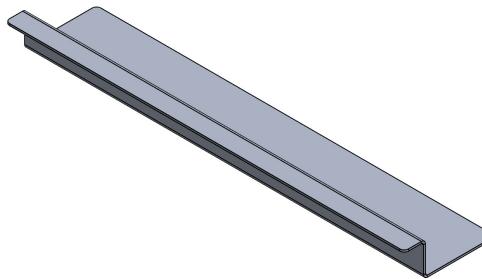
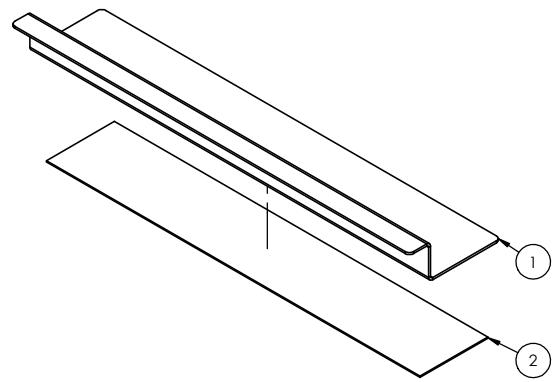
2

1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00070	Anchor	1
2	Hook_4_22	4"x 22" Hook, Adhesive Backed	1

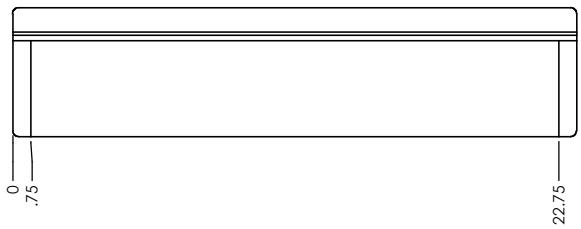
D

D



C

C



B

B

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$	DRAWN	NW	10/3/2022
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST [®] . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST [®] IS PROHIBITED.			
MATERIAL/FINISH:			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST[®]
ROBOTICS
COMPETITION

DS SOLIDWORKS
Modeling Solutions Partner

TITLE: FE-00070 w/
hook

SIZE DWG. NO. REV

C FE-00071

SCALE: 1:4 SHEET 1 OF 1

4

3

2

1

A

A

4

3

2

1

D

D

C

C

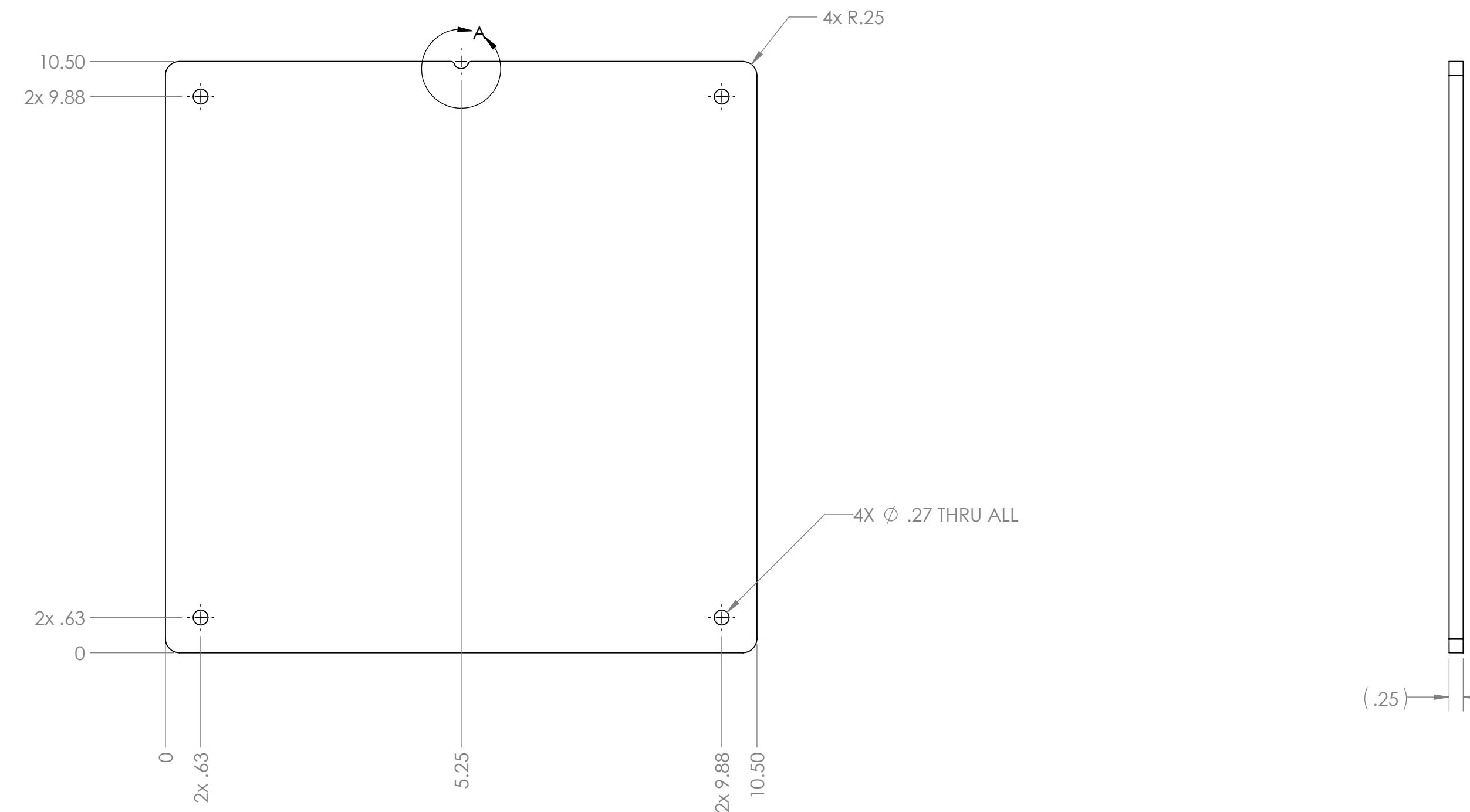
B

B

A

A

Notes:
1. Vinyl to be applied to face.



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	CO	8/29/2023	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 1/4" Polycarbonate, Clear			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			



TITLE: AprilTag Base Poly

SIZE DWG. NO. REV
C FE-00082

SCALE: 1:2 SHEET 1 OF 1

4

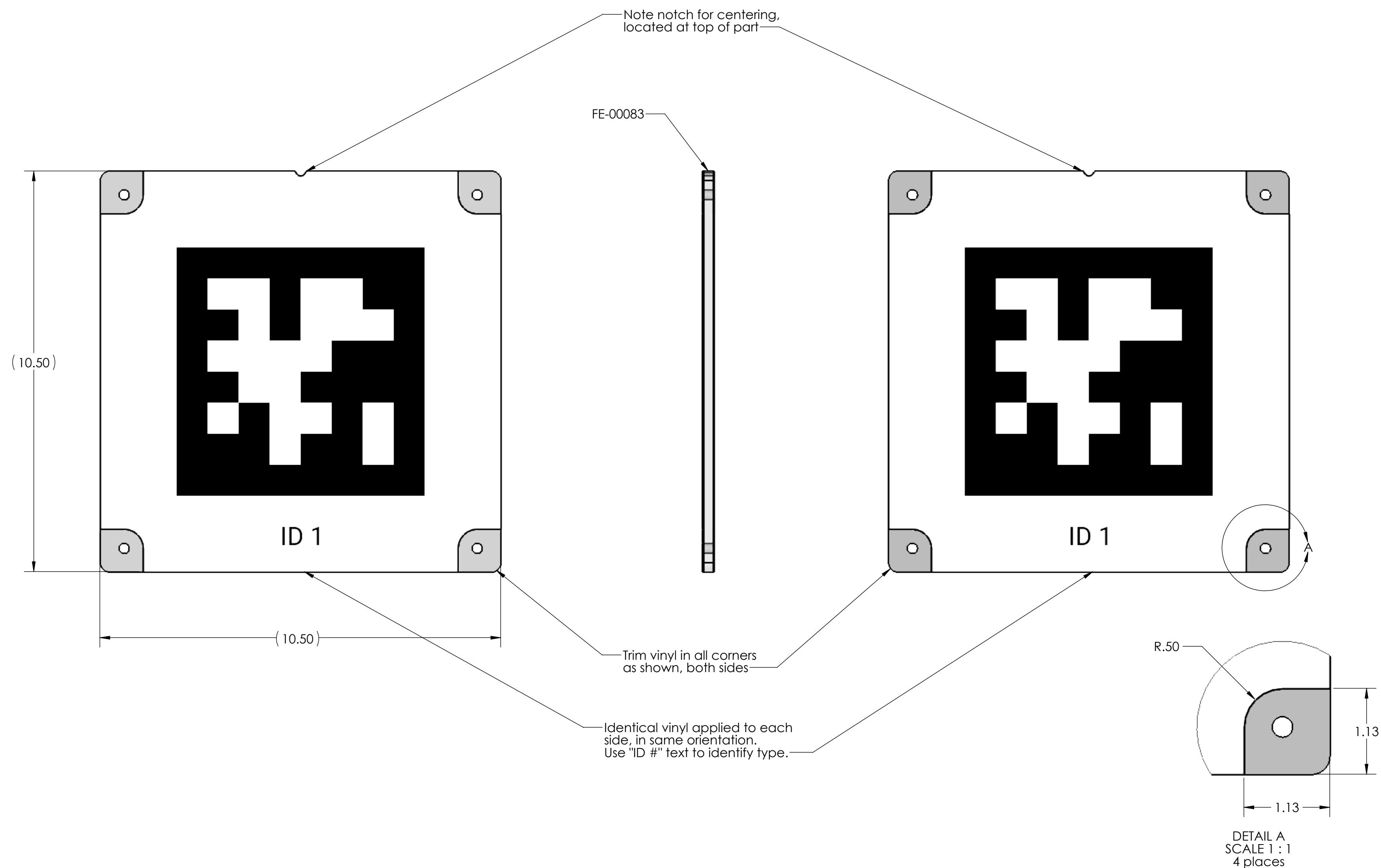
3

2

1

D

D



Notes:
1. Matte vinyl

Tag Variations			
Part Number	Vinyl Image	Vinyl QTY per field	Part QTY per field
FE-00083-ID1	FE-00083-ID1-Vinyl	2	1
FE-00083-ID2	FE-00083-ID2-Vinyl	2	1
FE-00083-ID3	FE-00083-ID3-Vinyl	2	1
FE-00083-ID4	FE-00083-ID4-Vinyl	2	1
FE-00083-ID5	FE-00083-ID5-Vinyl	2	1
FE-00083-ID6	FE-00083-ID6-Vinyl	2	1
FE-00083-ID7	FE-00083-ID7-Vinyl	2	1
FE-00083-ID8	FE-00083-ID8-Vinyl	2	1
FE-00083-ID9	FE-00083-ID9-Vinyl	2	1
FE-00083-ID10	FE-00083-ID10-Vinyl	2	1

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	CO	9/6/2023
TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$	PROPRIETARY AND CONFIDENTIAL		
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	Polycarbonate/Vinyl		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

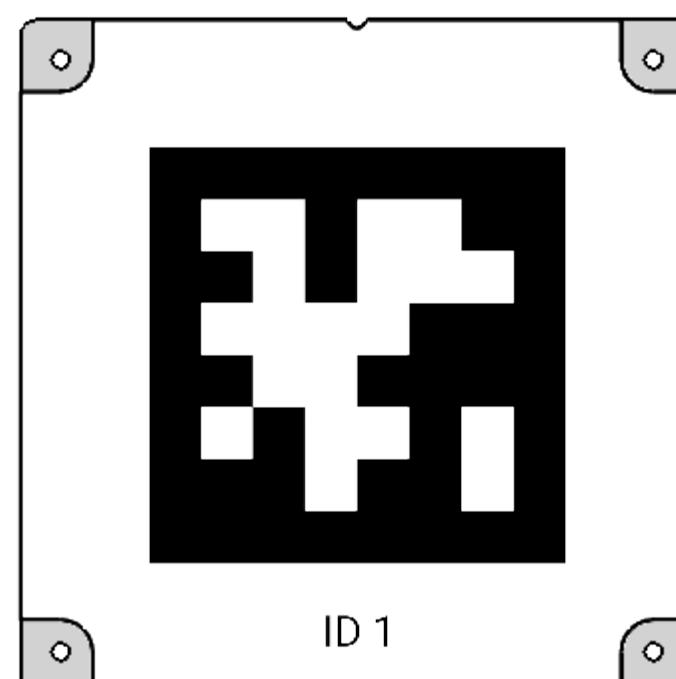
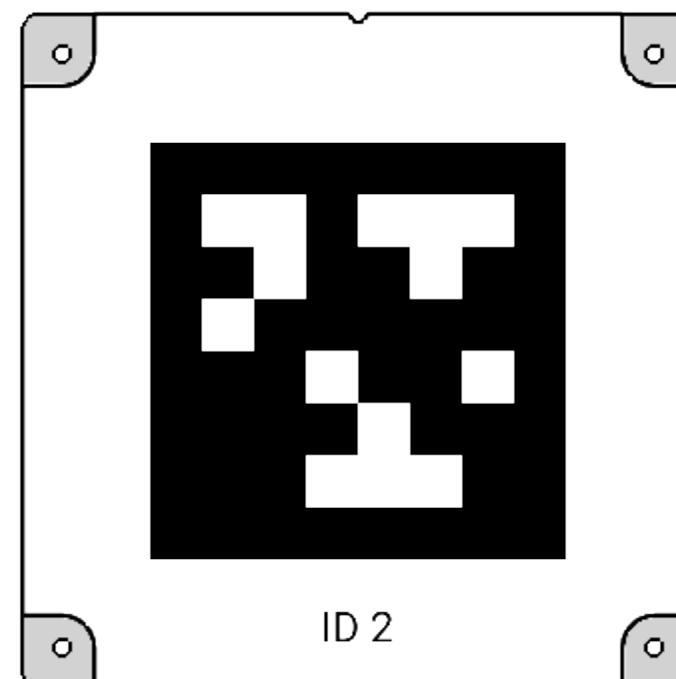
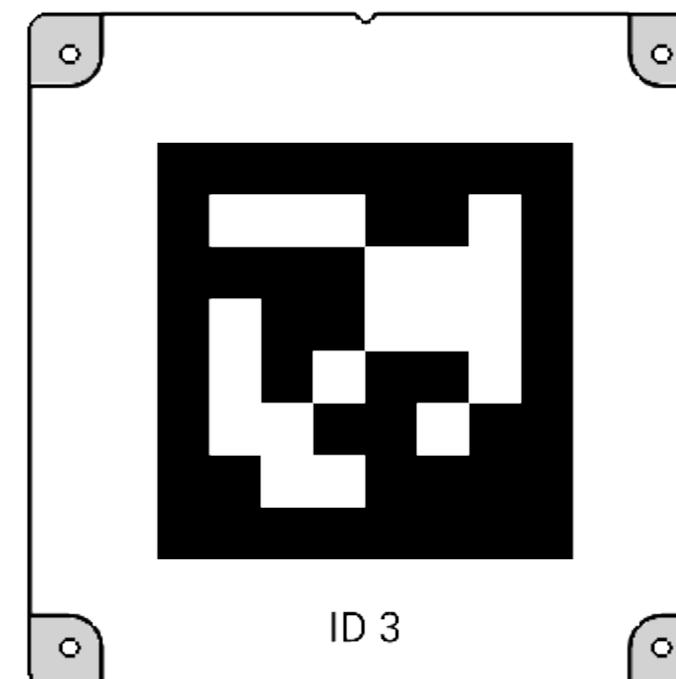
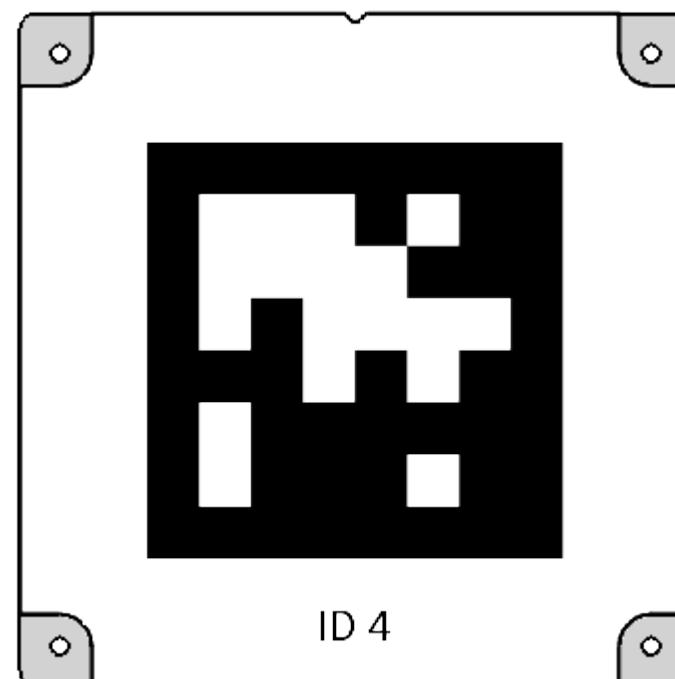
FIRST ROBOTICS COMPETITION SOLIDWORKS Modeling Solutions Partner

AprilTag

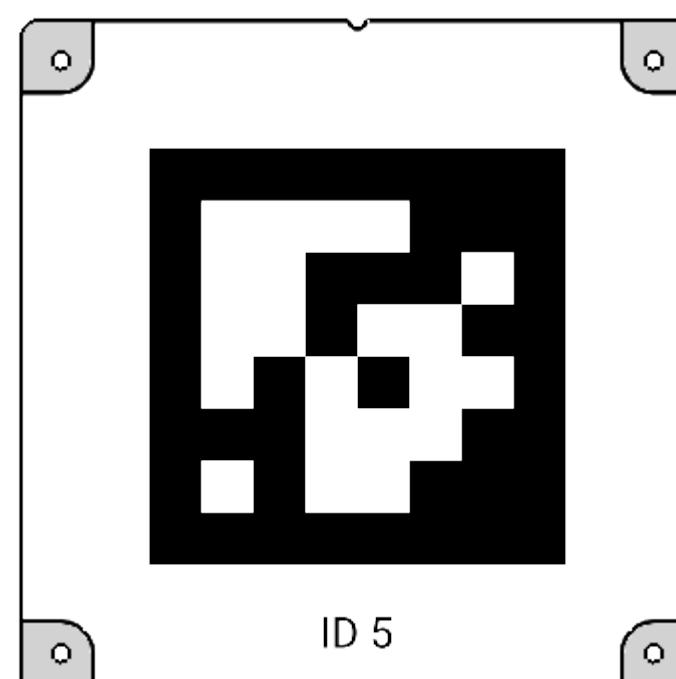
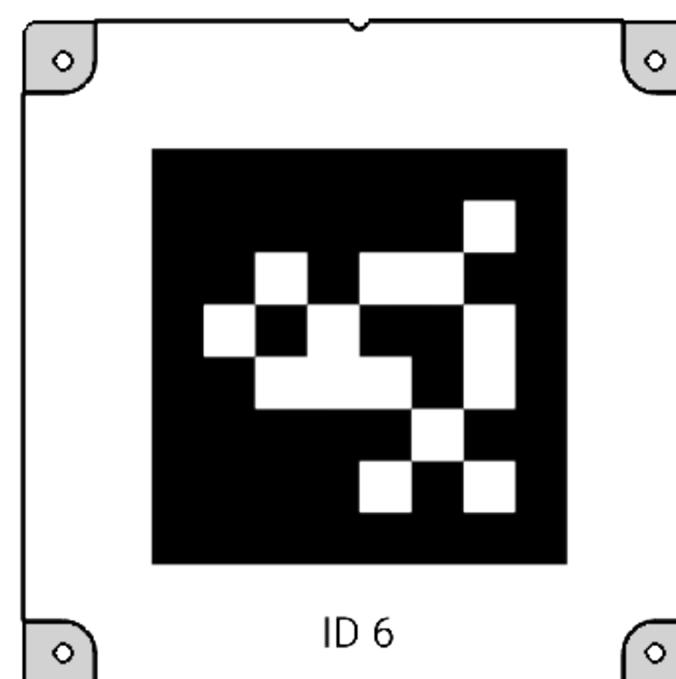
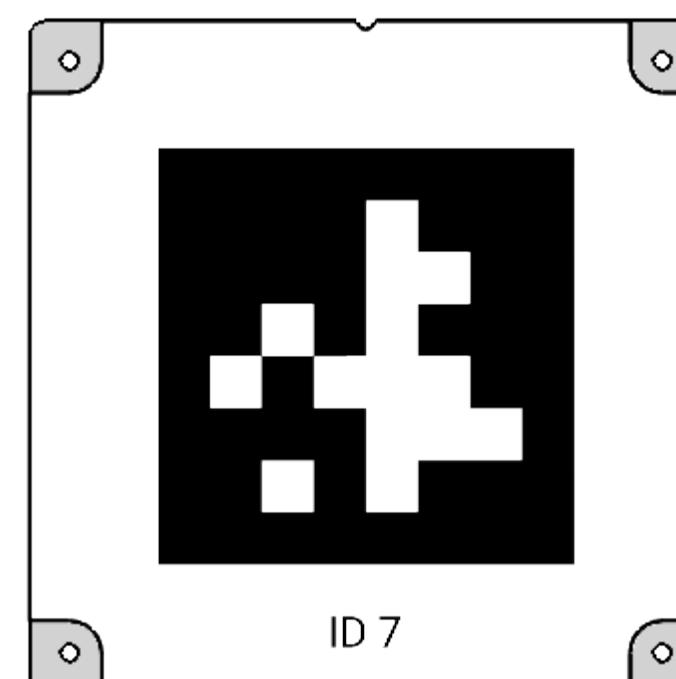
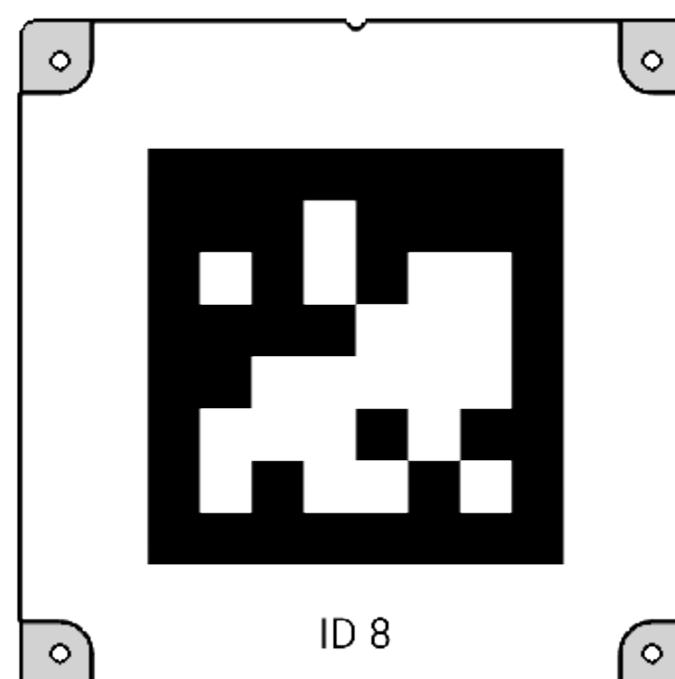
C **FE-00083**

SCALE: 1:2 **SHEET 1 OF 3**

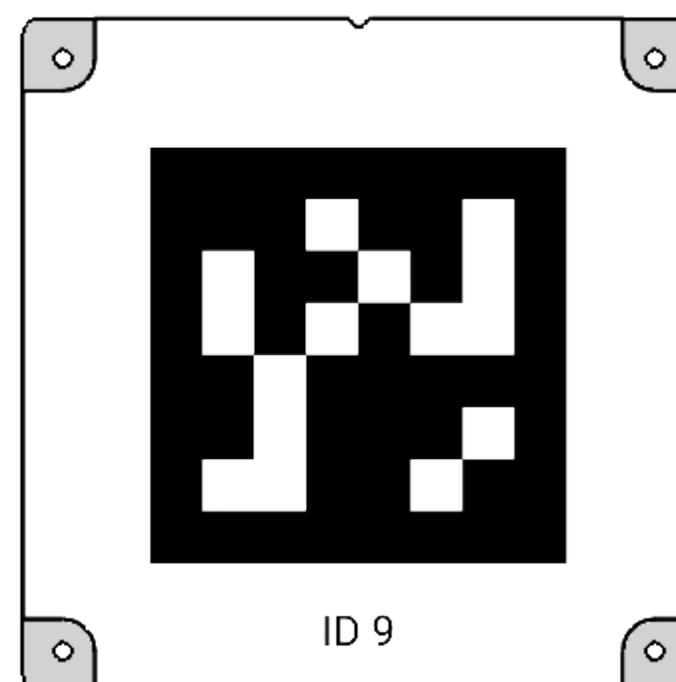
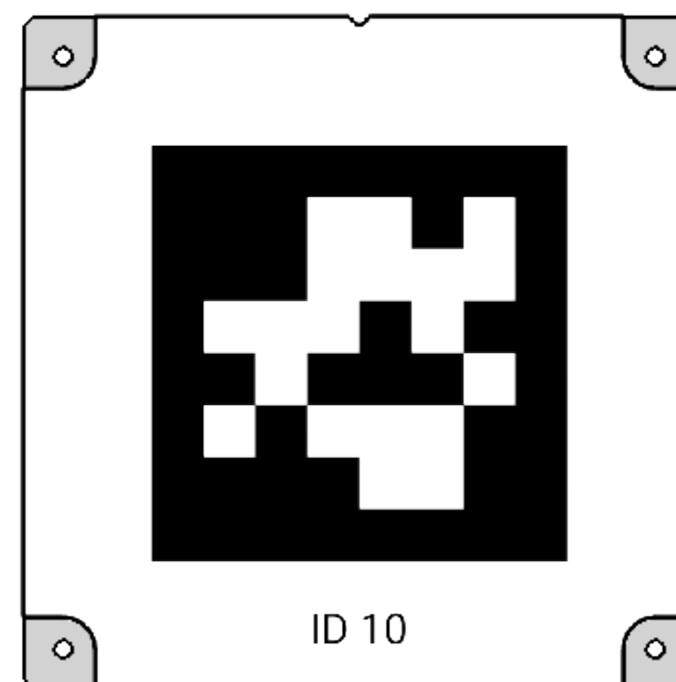
D

ID 1
FE-00083-ID1ID 2
FE-00083-ID2ID 3
FE-00083-ID3ID 4
FE-00083-ID4

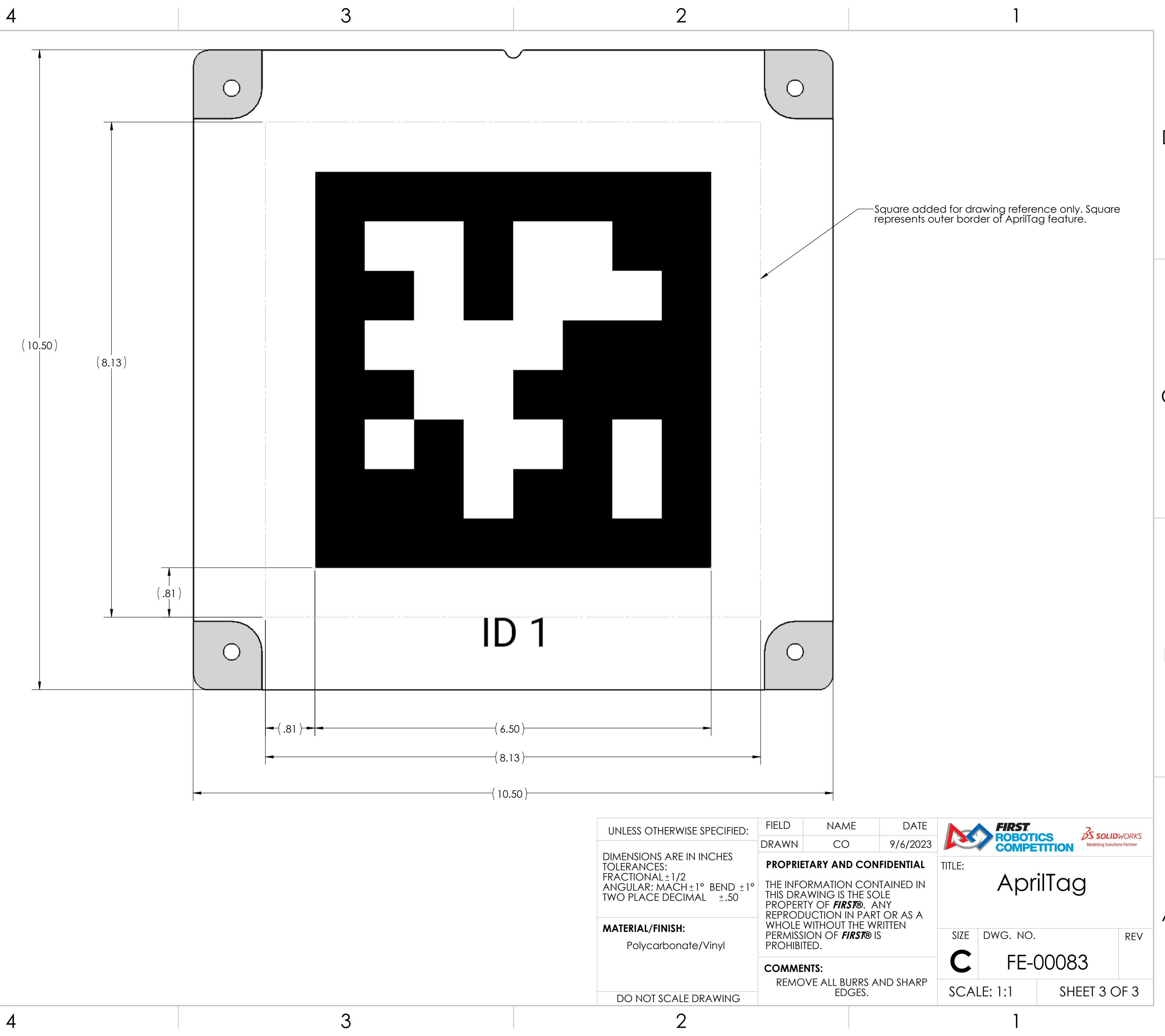
C

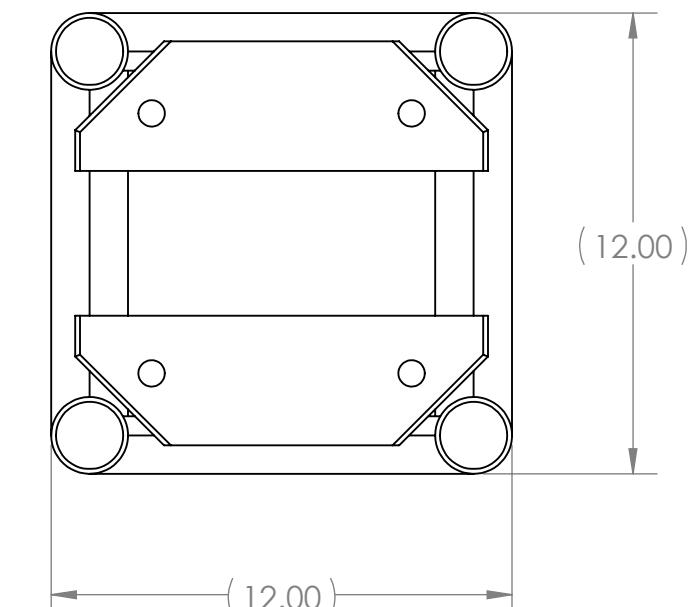
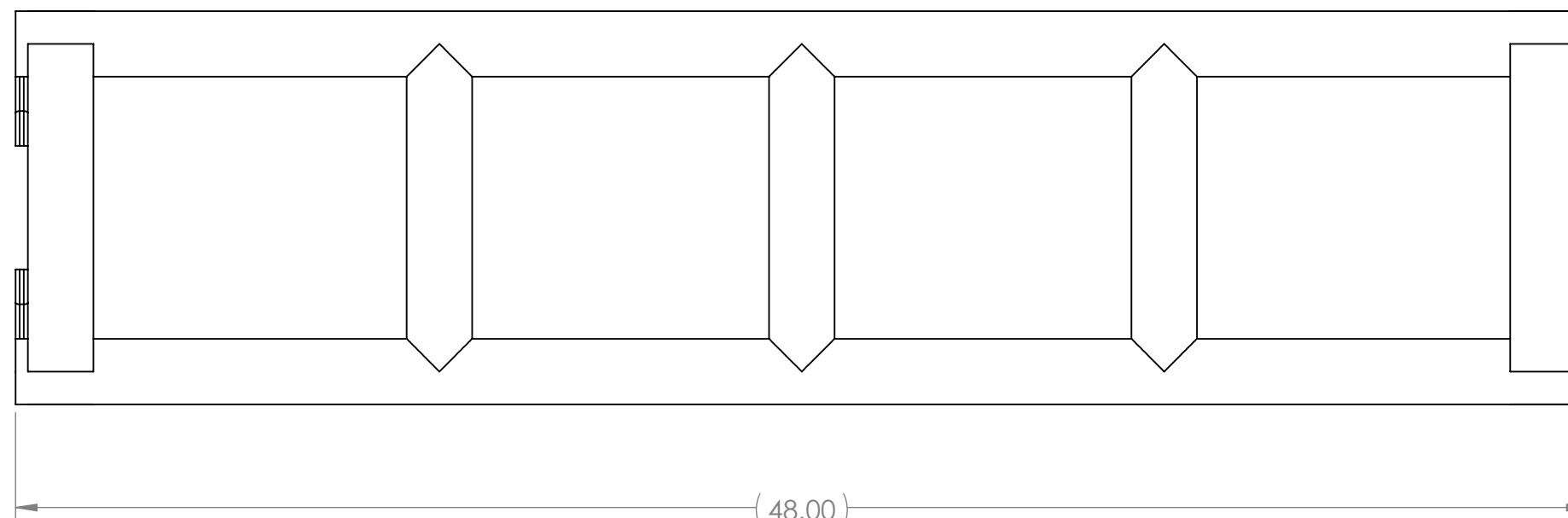
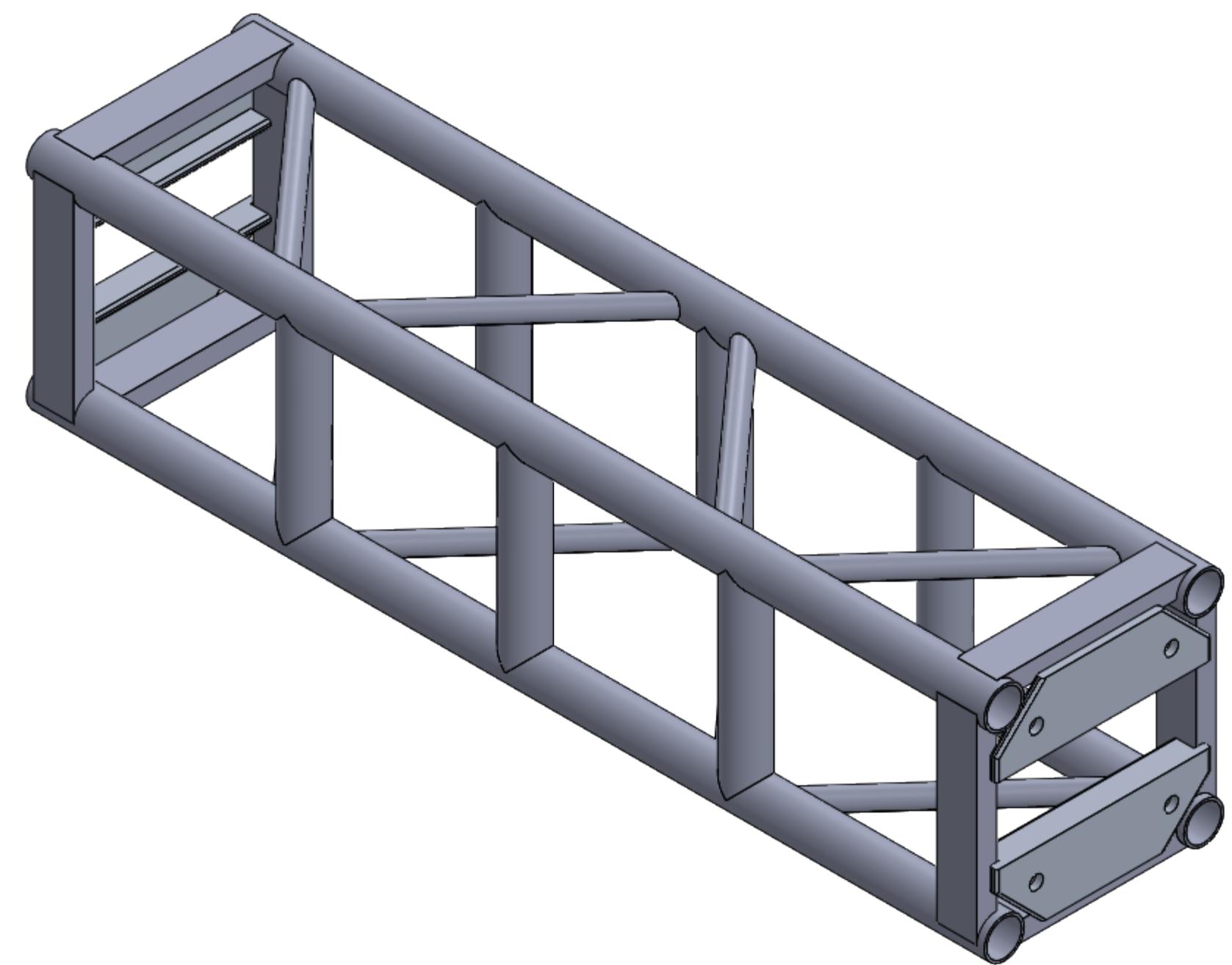
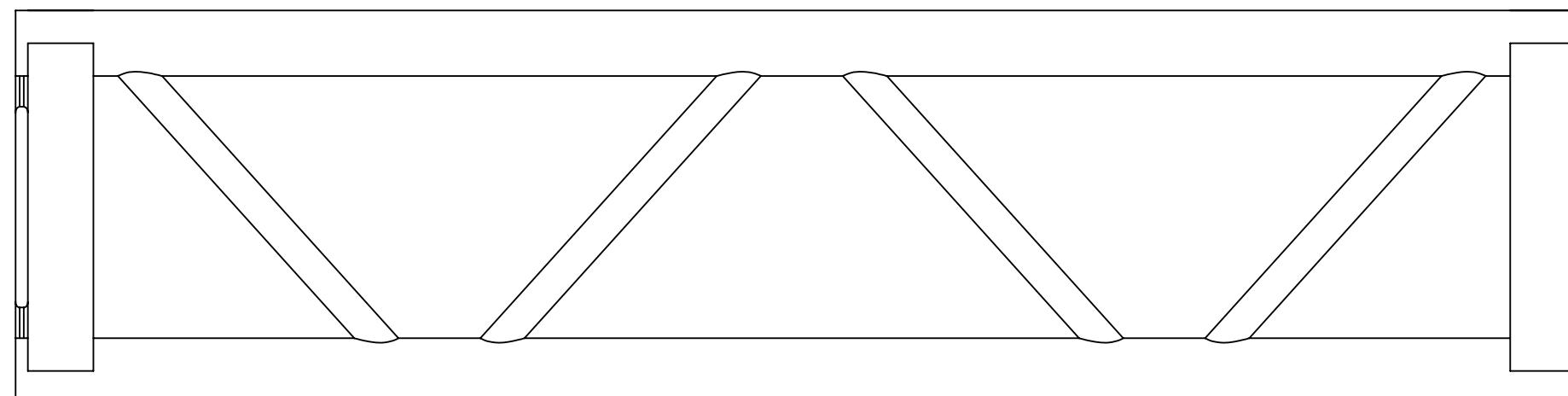
ID 5
FE-00083-ID5ID 6
FE-00083-ID6ID 7
FE-00083-ID7ID 8
FE-00083-ID8

B

ID 9
FE-00083-ID9ID 10
FE-00083-ID10

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	CO	9/6/2023
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: Polycarbonate/Vinyl			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			
FIRST ROBOTICS COMPETITION			
SOLIDWORKS Modeling Solutions Partner			
TITLE: AprilTag			
SIZE DWG. NO. REV			
C FE-00083			
SCALE: 1:3 SHEET 2 OF 3			





DESCRIPTION: 6061-T6 ALUMINUM - LIGHT DUTY TRUSS,
48" X 12" X 12"

VENDOR: TOTAL STRUCTURES

PART NUMBER: TS 1212LD-048P

NOTE: SUBSTITUTIONS NOT ALLOWED

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$

ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$

TWO PLACE DECIMAL $\pm .01$

THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

VEND NAME DATE

DRAWN kcarlson 3/23/2020

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN
THIS DRAWING IS THE SOLE
PROPERTY OF FIRST®. ANY
REPRODUCTION IN PART OR AS A
WHOLE WITHOUT THE WRITTEN
PERMISSION OF FIRST® IS
PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP
EDGES.

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

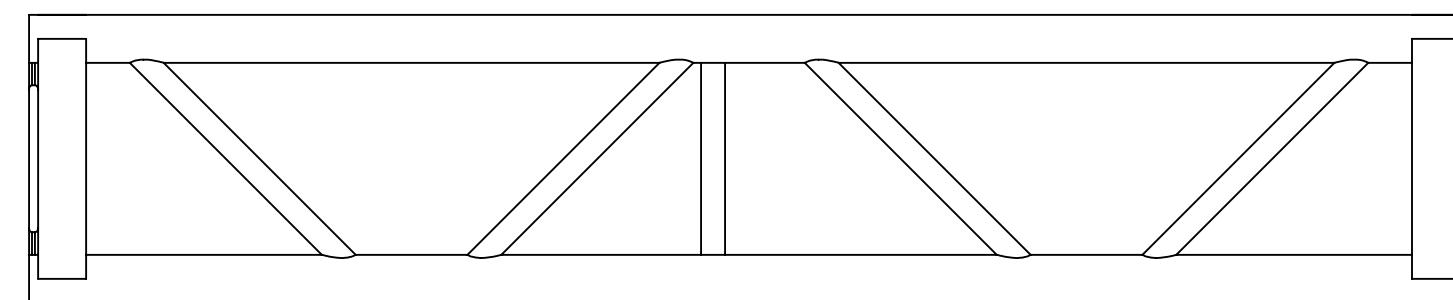
TITLE:
4' x 1' x 1'
Square Truss

SIZE DWG. NO. REV

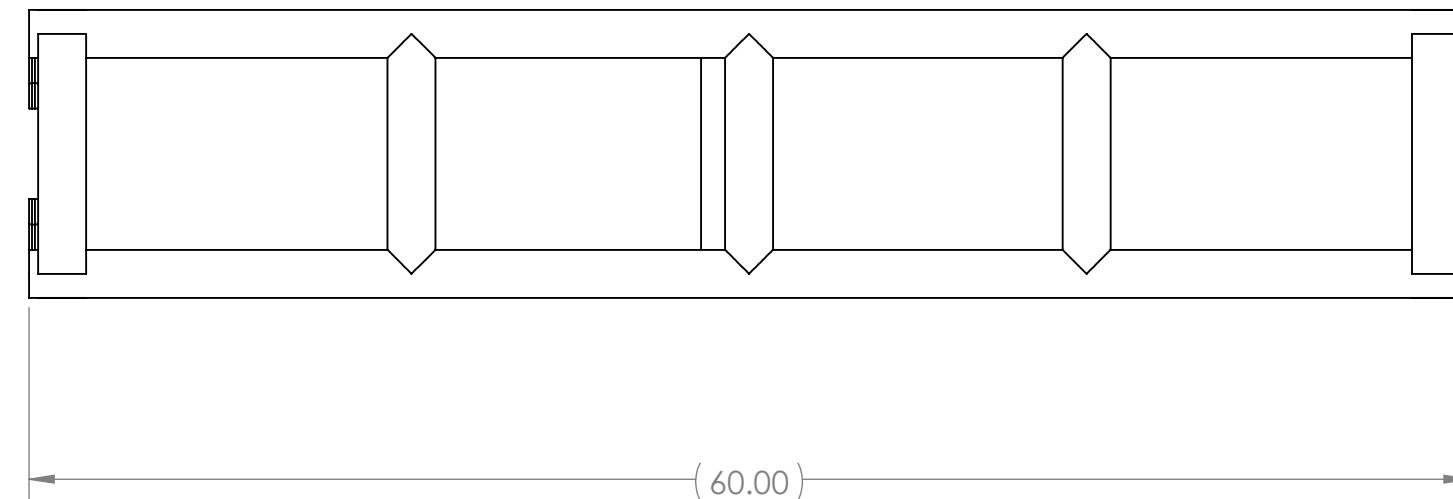
C FE-01002

SCALE: 1:5 SHEET 1 OF 1

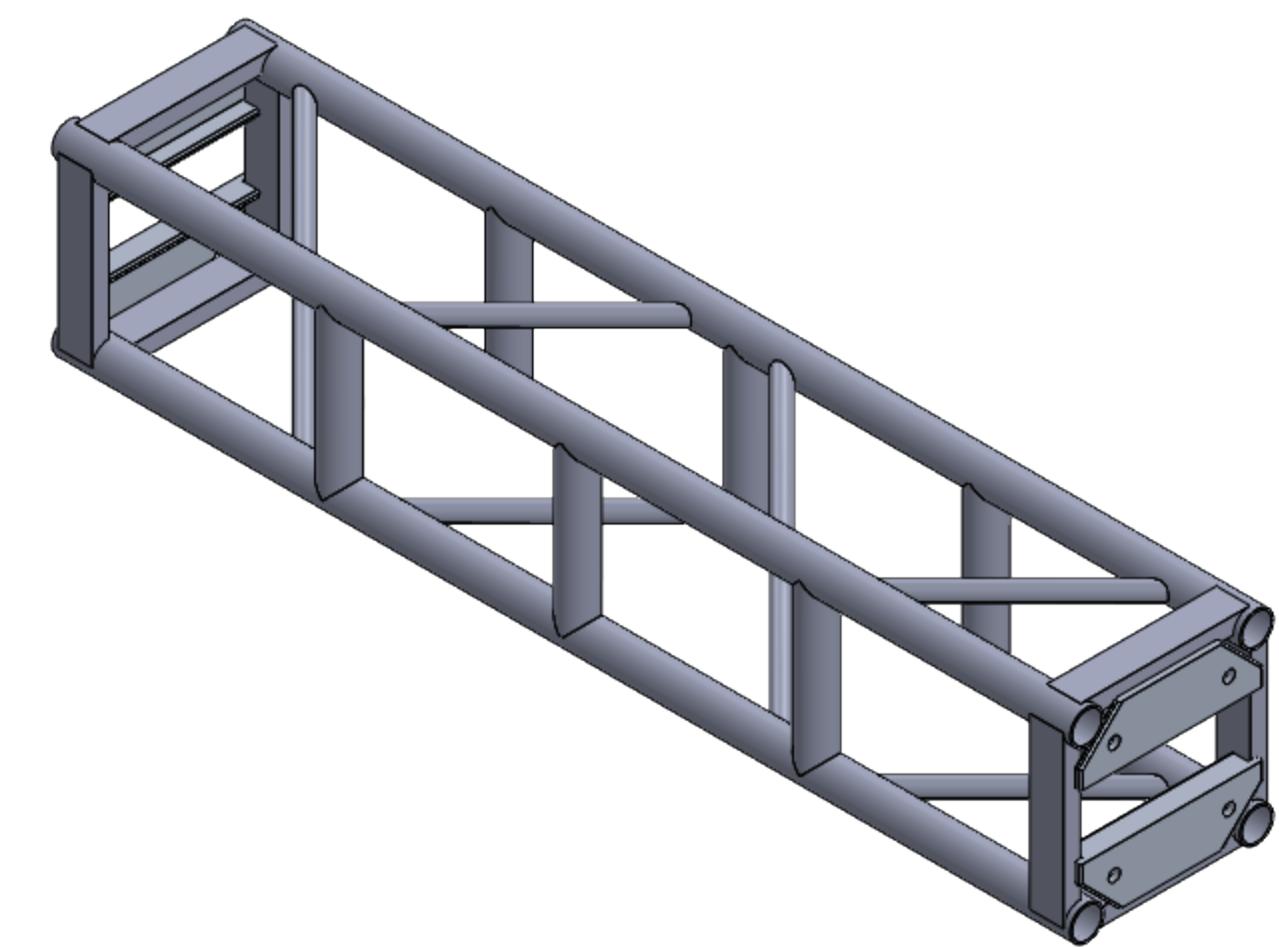
D



C



B



A

DESCRIPTION: 6061-T6 ALUMINUM - LIGHT DUTY TRUSS,
60" X 12" X 12"

VENDOR: TOTAL STRUCTURES

PART NUMBER: TS 1212LD-060P

NOTE: SUBSTITUTIONS NOT ALLOWED

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$	DRAWN	kcarlson	3/23/2020
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			
 FIRST ROBOTICS COMPETITION  TITLE: 5' x 1' x 1' Square Truss			
SIZE DWG. NO. REV			
C FE-01003			
SCALE: 1:8 SHEET 1 OF 1			

D

C

B

A

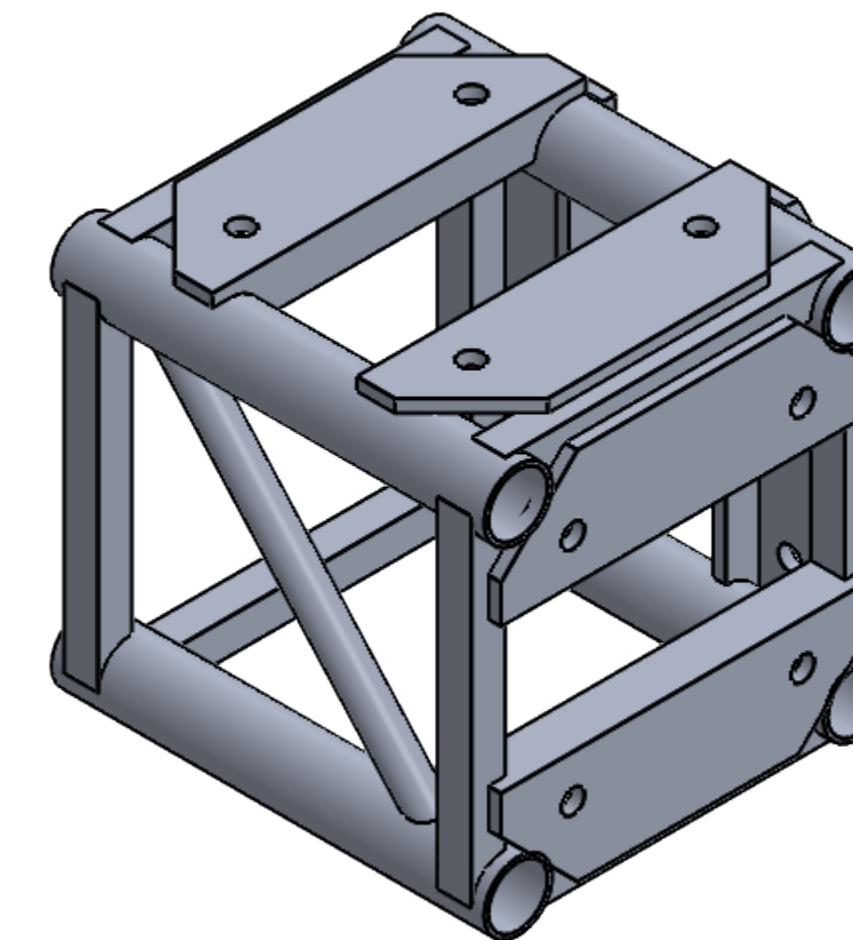
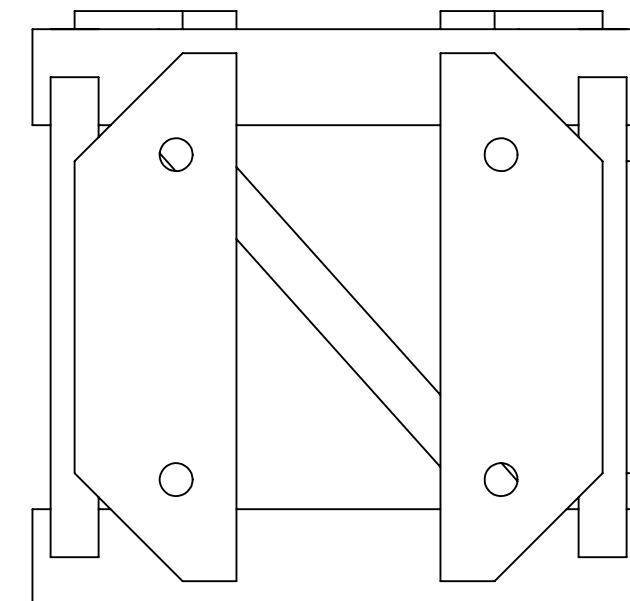
4

3

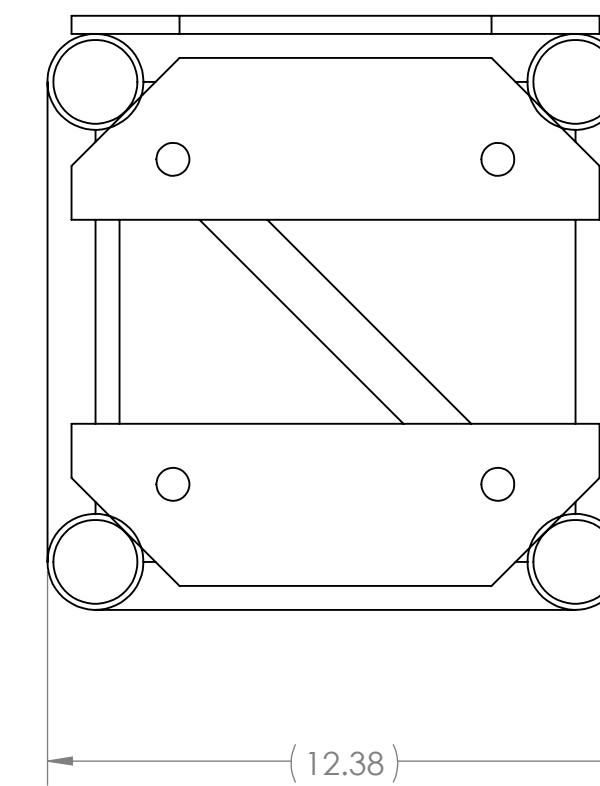
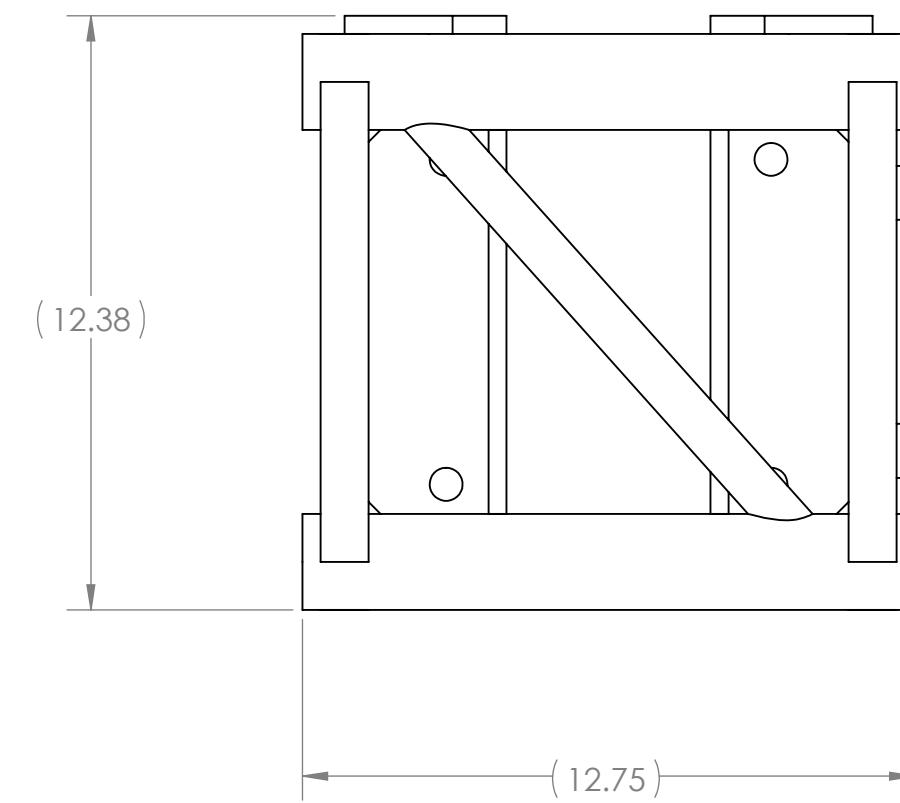
2

1

D



C



B

DESCRIPTION: 6061-T6 ALUMINUM - LIGHT DUTY TRUSS,
3-SIDED CORNER BLOCK

VENDOR: TOTAL STRUCTURES

PART NUMBER: TS 1212LD-C3P

NOTE: SUBSTITUTIONS NOT ALLOWED

UNLESS OTHERWISE SPECIFIED:			VEND	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$					
PROPRIETARY AND CONFIDENTIAL					
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
MATERIAL/FINISH:					
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
3 Way Corner
Block

SIZE DWG. NO. REV

C FE-01012

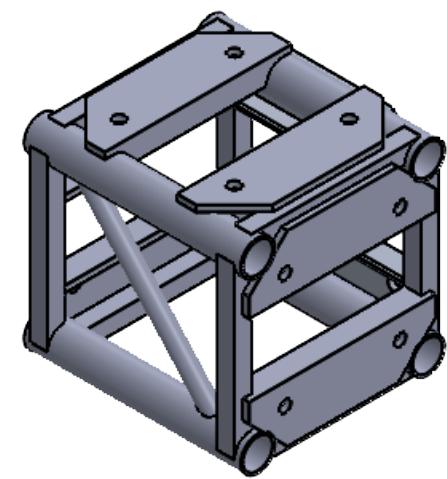
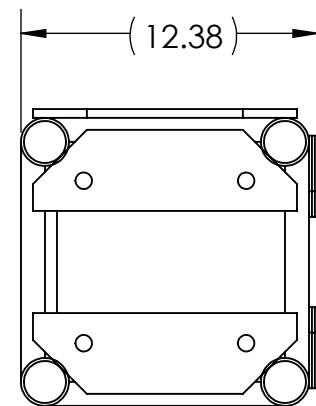
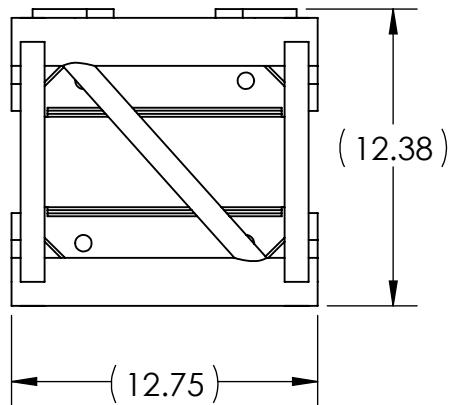
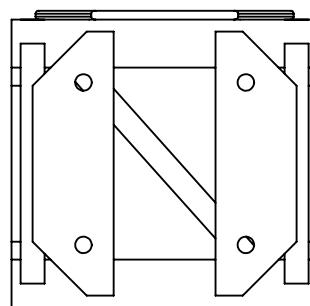
SCALE: 1:4 SHEET 1 OF 1

4

3

2

1



DESCRIPTION: 6061-T6 ALUMINUM - LIGHT DUTY TRUSS,
4-SIDED CORNER BLOCK

VENDOR: TOTAL STRUCTURES

PART NUMBER: TS 1212LD-C4P

NOTE: SUBSTITUTIONS NOT ALLOWED

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. ANY REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A3	A	Added Note	10/28/2019	KAMC

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	NAME DRAWN KAMC DATE 9/23/19
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED
		MATERIAL	ENG APPR. MFG APPR.
		FINISH	Q.A.
NEXT ASSY	USED ON	COMMENTS:	
APPLICATION	DO NOT SCALE DRAWING		

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

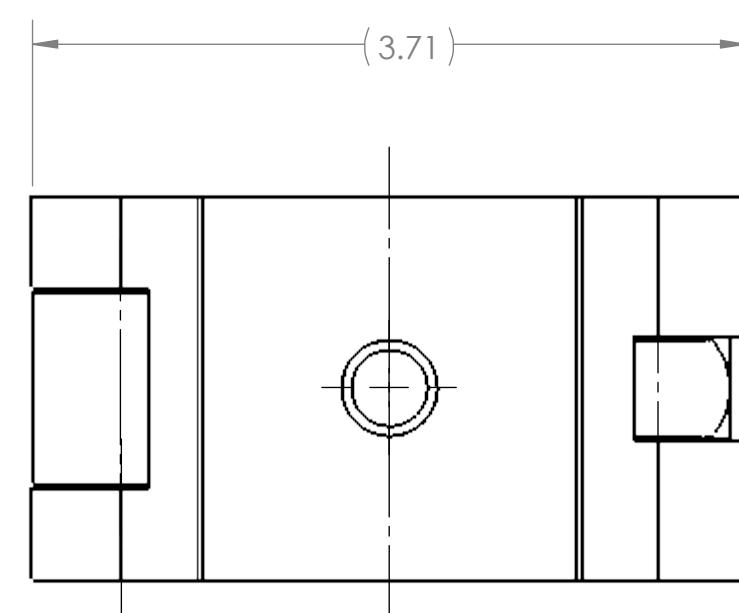
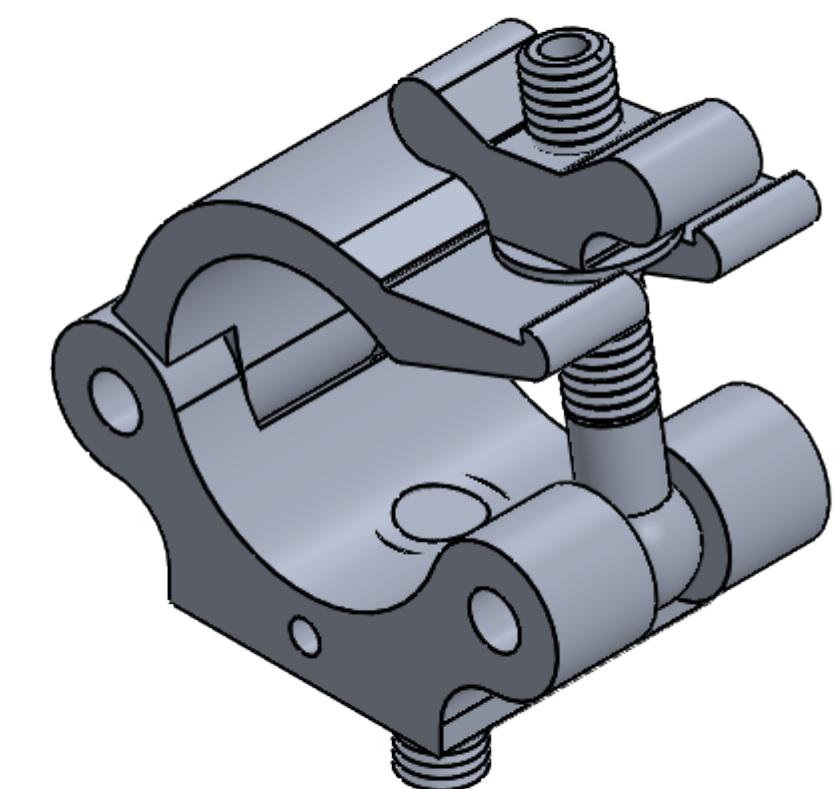
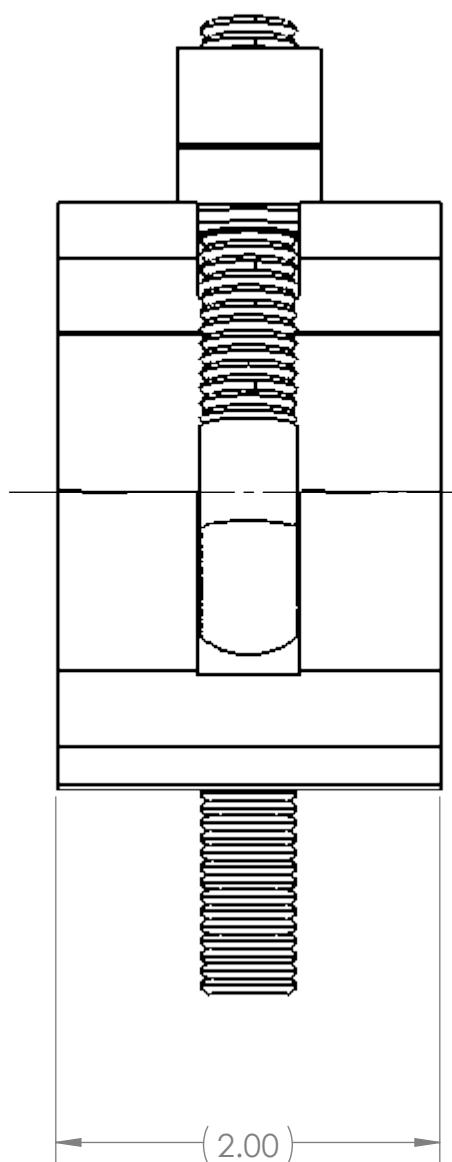
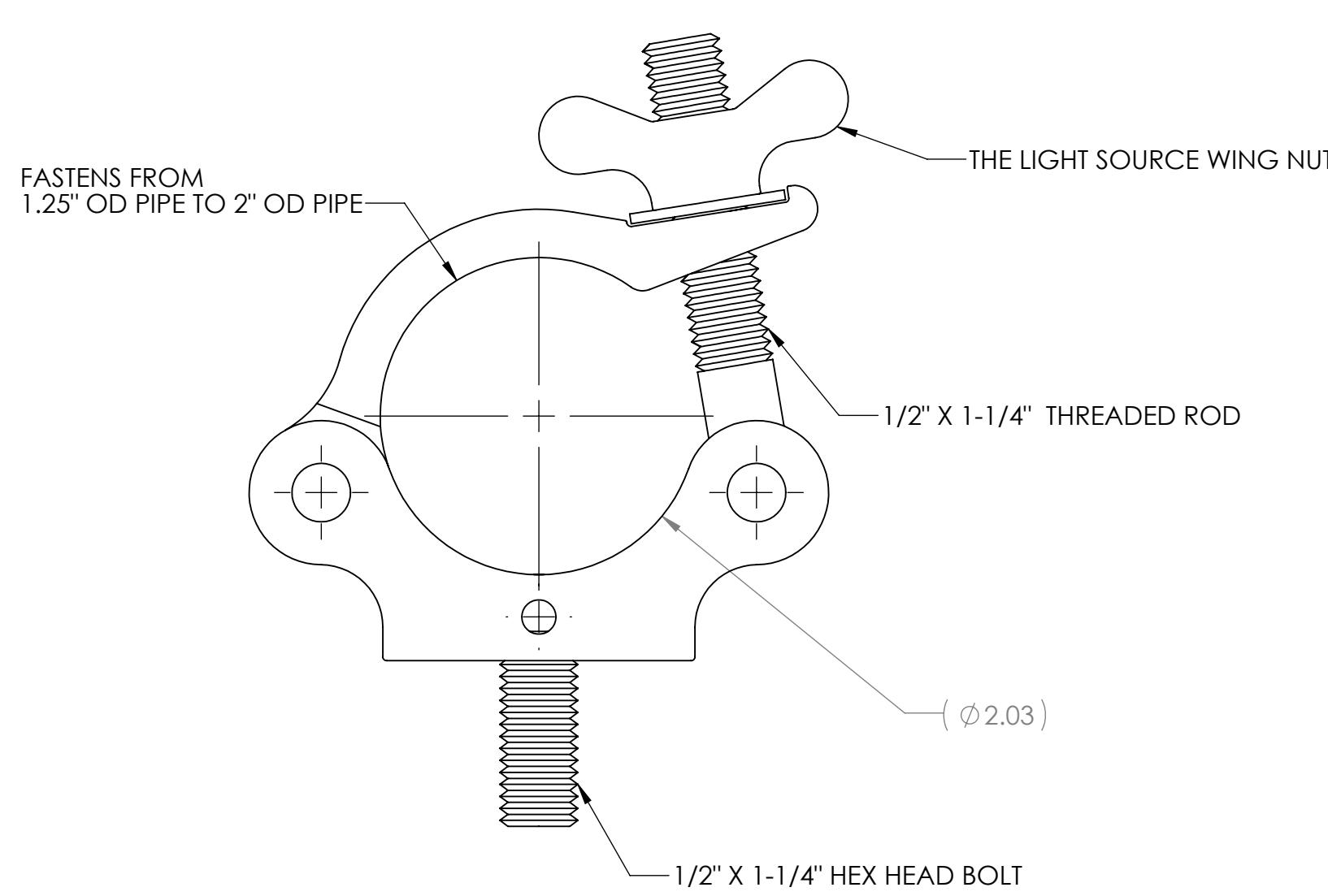
TITLE: TS 1212LD-C4P, 4 Way Corner Block Light Duty Truss, Total Structures

SIZE DWG. NO. **B** FE-01013 **REV**

SCALE: 1:8 WEIGHT: SHEET 1 OF 1

D

D



DESCRIPTION: CHEESE BOROUGH FOR TRUSS - MLM MEGA COUPLER, SILVER

VENDOR: TOTAL STRUCTURES VIA THE LIGHT SOURCE

PART NUMBER: MLM MEGA COUPLER

NOTE: SUBSTITUTIONS NOT ALLOWED

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$

ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$

TWO PLACE DECIMAL $\pm .01$

THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

VEND NAME DATE

DRAWN kcarlson 3/23/2020

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE: Cheeseborough for Truss _ Single

SIZE DWG. NO. REV

C FE-01016

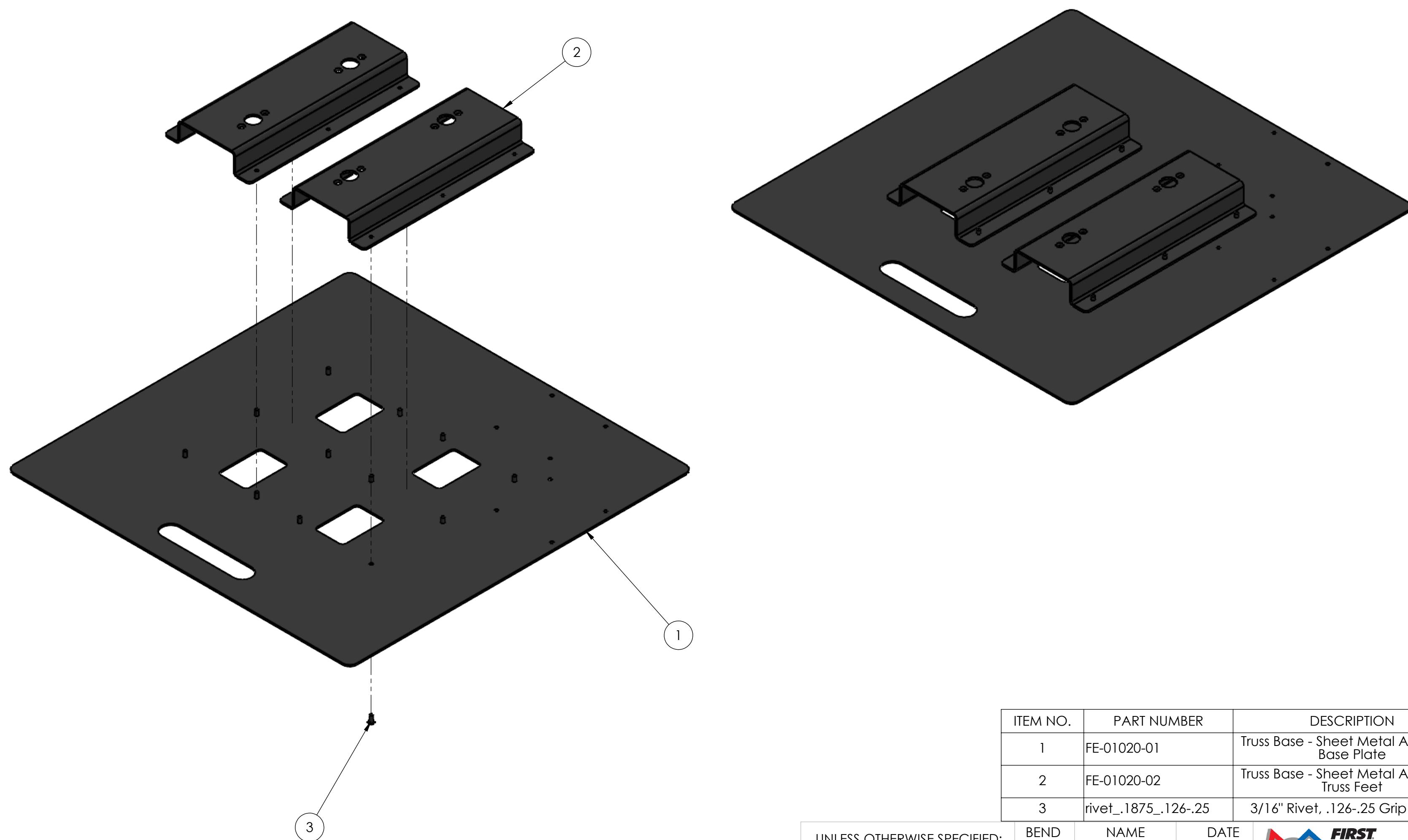
SCALE: 1:1 SHEET 1 OF 1

4

3

2

1

**Notes:**

1. Rivets should be plated or stainless steel
2. Tag or label with part number.
3. Powder Coated Black (Full Assembly).

ITEM NO.	PART NUMBER	DESCRIPTION		QTY.
1	FE-01020-01	Truss Base - Sheet Metal Assembly, Base Plate		1
2	FE-01020-02	Truss Base - Sheet Metal Assembly, Truss Feet		2
3	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range		12
UNLESS OTHERWISE SPECIFIED:		BEND	NAME	DATE
		DRAWN	JO	7/18/2023
PROPRIETARY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				
MATERIAL/FINISH:		Low Carbon Steel, Powder Coat Black		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				
DO NOT SCALE DRAWING				

 **FIRST
ROBOTICS
COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE: Truss Base - Sheet Metal Assembly

SIZE DWG. NO. REV

C FE-01020

SCALE: 1:4 SHEET 1 OF 4

4

3

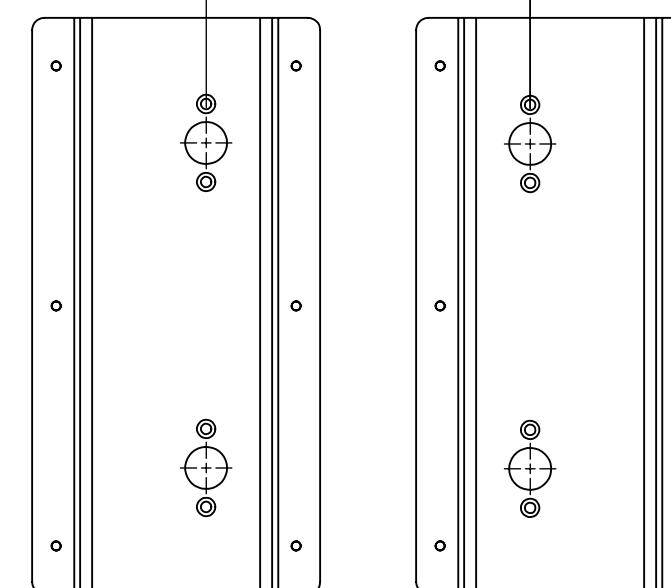
2

1

D

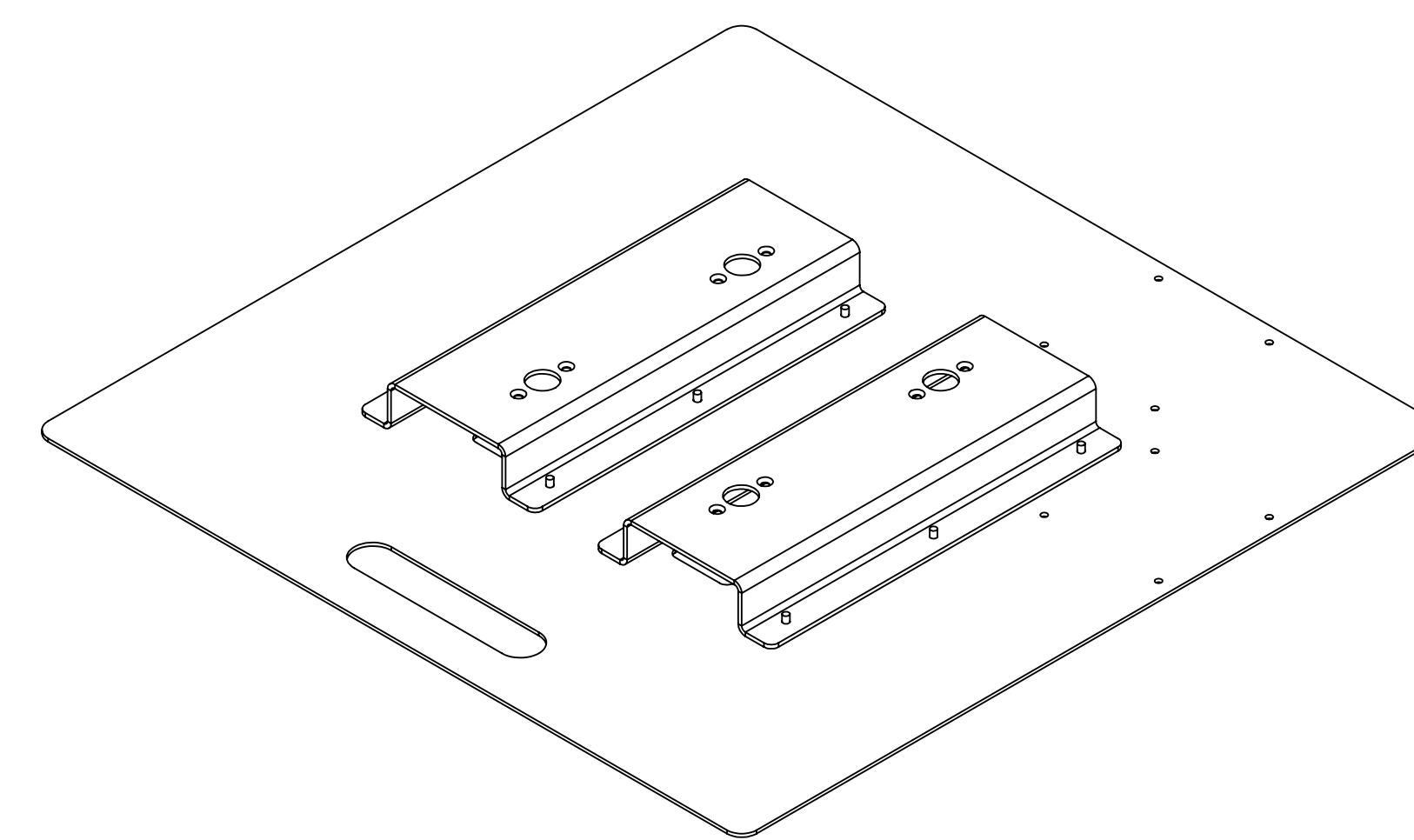
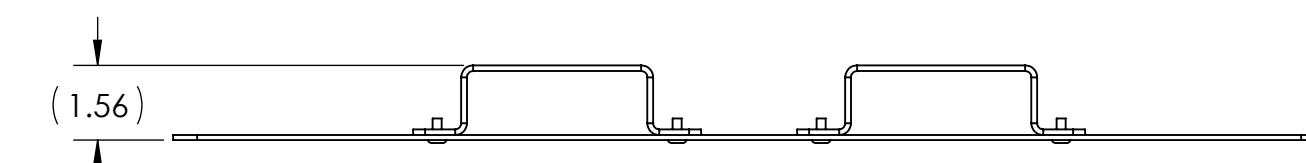
D

(24.00)



(24.00)

(1.56)



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	JO	7/18/2023	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: Low Carbon Steel, Powder Coat Black			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

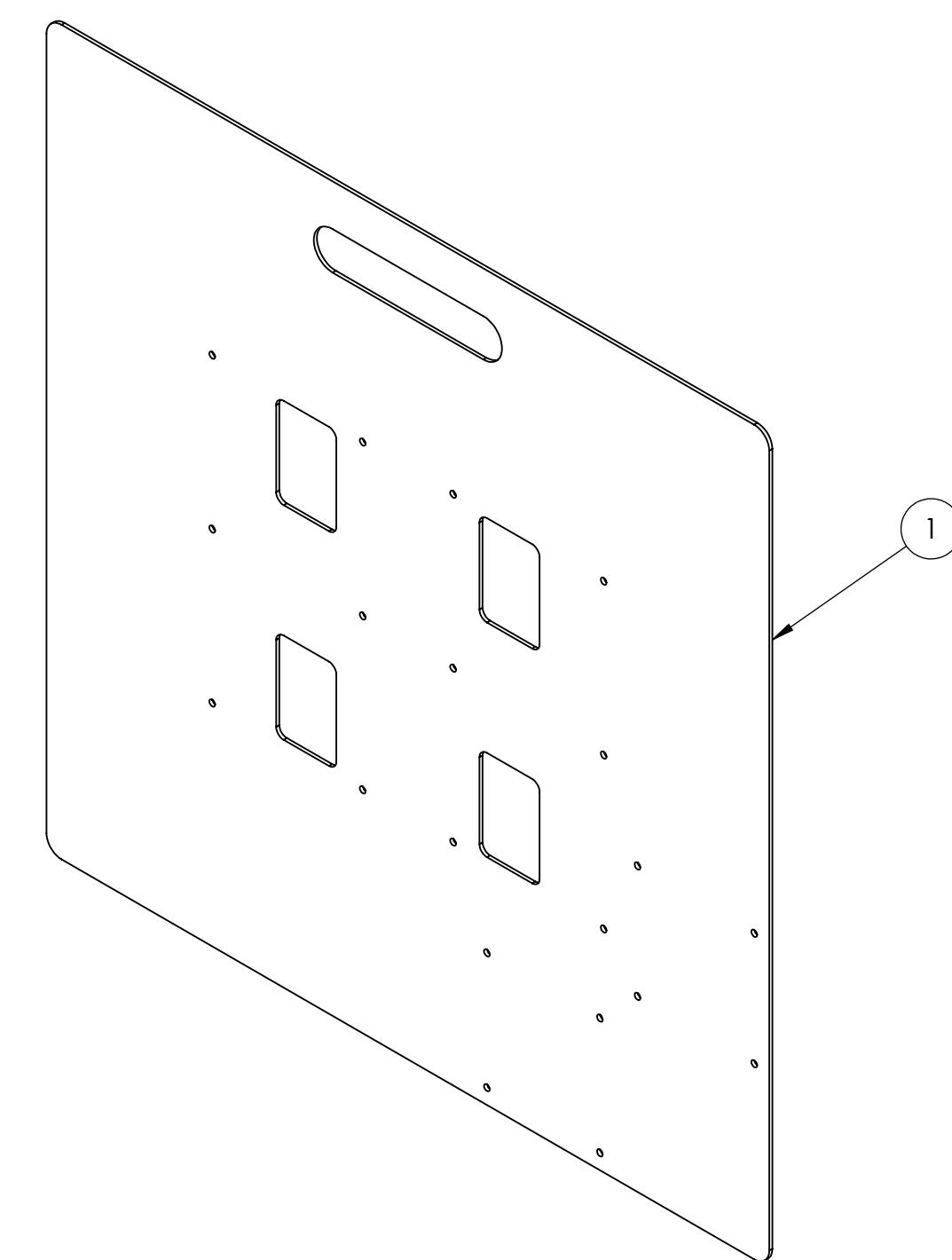
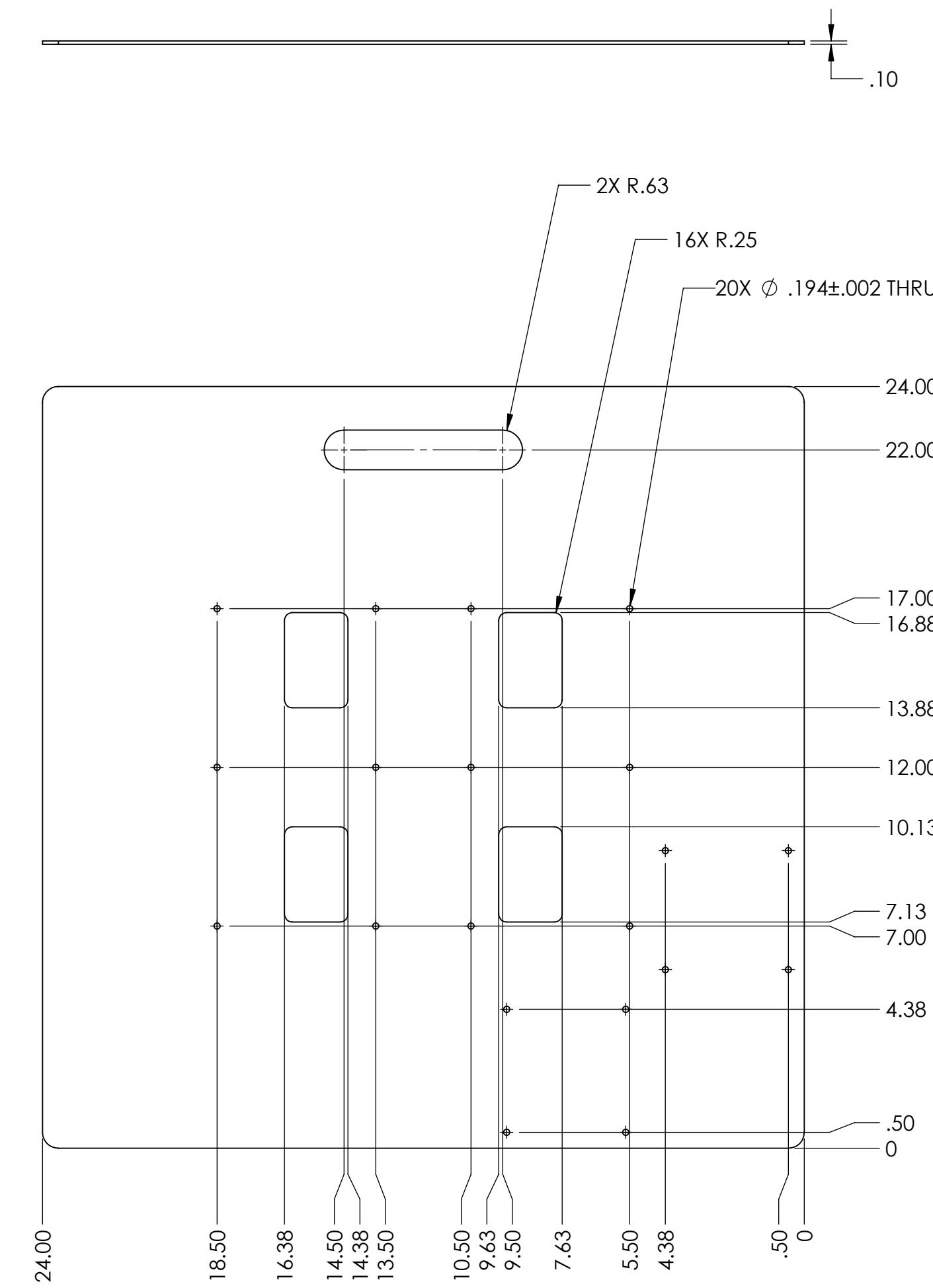
 **FIRST
ROBOTICS
COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE: **Truss Base -
Sheet Metal
Assembly**

SIZE DWG. NO. REV
C FE-01020

SCALE: 1:4 SHEET 2 OF 4

D



B

A

D

C

B

A

UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	JO	7/18/2023	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: Low Carbon Steel, Powder Coat Black			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

 **FIRST
ROBOTICS
COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE: **Truss Base -
Sheet Metal
Assembly**

SIZE DWG. NO. REV
C FE-01020

SCALE: 1:4 SHEET 3 OF 4

4

3

2

1

D

D

C

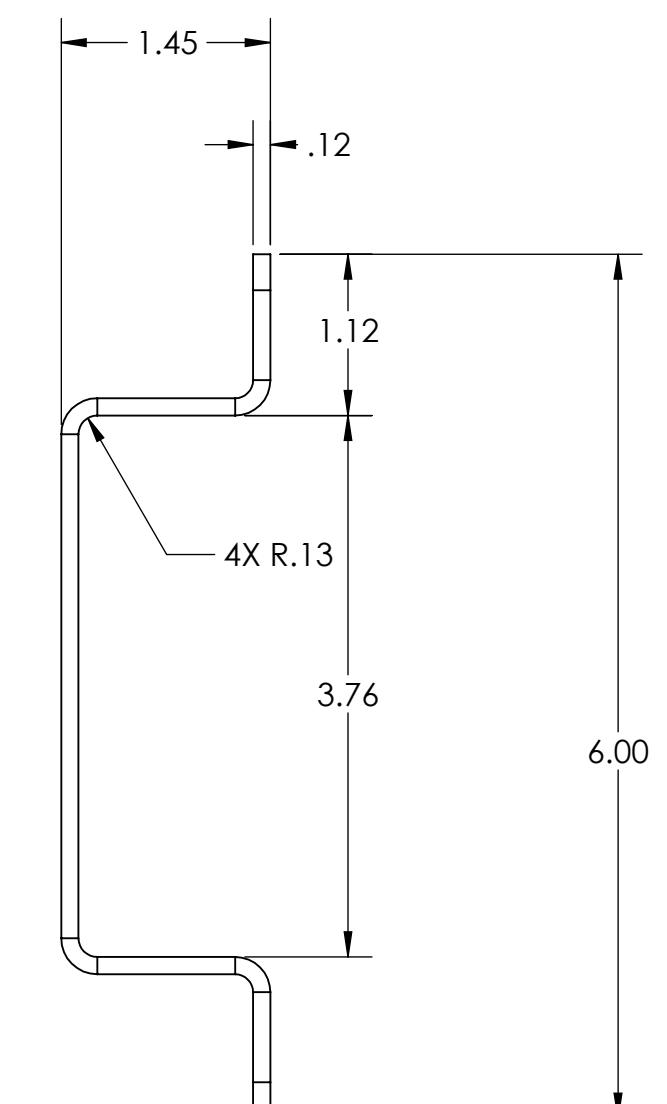
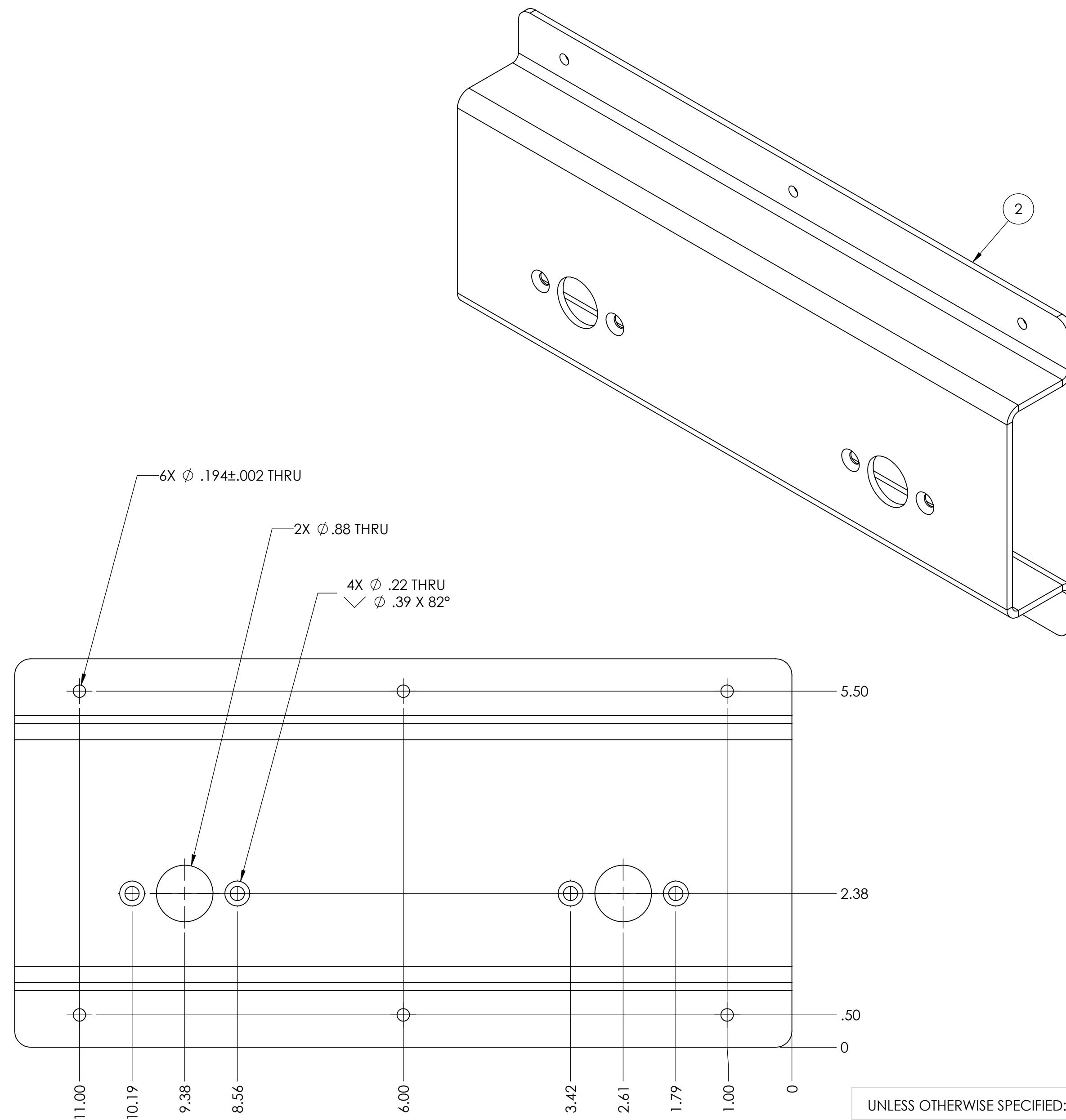
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:

BEND NAME DATE



DRAWN JO 7/18/2023

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .02$
THREE PLACE DECIMAL $\pm .010$

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN
THIS DRAWING IS THE SOLE
PROPERTY OF FIRST[®]. ANY
REPRODUCTION IN PART OR AS A
WHOLE WITHOUT THE WRITTEN
PERMISSION OF FIRST[®] IS
PROHIBITED.

MATERIAL/FINISH:

Low Carbon Steel, Powder
Coat Black

COMMENTS:
REMOVE ALL BURRS AND SHARP
EDGES.

DO NOT SCALE DRAWING

TITLE: Truss Base -
Sheet Metal
AssemblySIZE DWG. NO. REV
C FE-01020

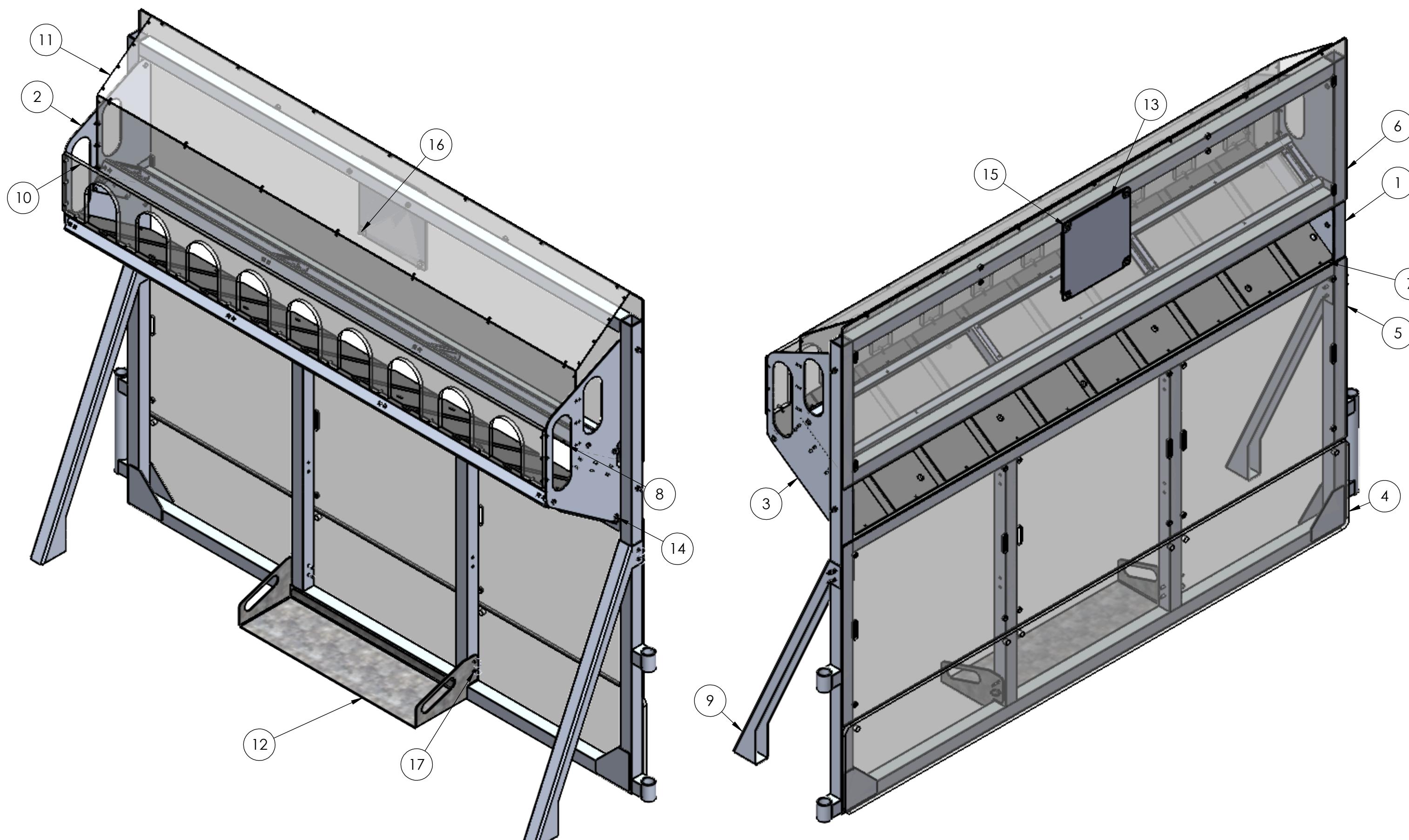
SCALE: 3:4 SHEET 4 OF 4

4

3

2

1



Note: April Tag ID # changes depending on which Coral Station it is on. See the Field Layout and Marking Diagram for more details.

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE
		DRAWN	JO	10/28/2024
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$				
PROPRIETARY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				
MATERIAL/FINISH:				
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				
DO NOT SCALE DRAWING				

FIRST
ROBOTICS
COMPETITION

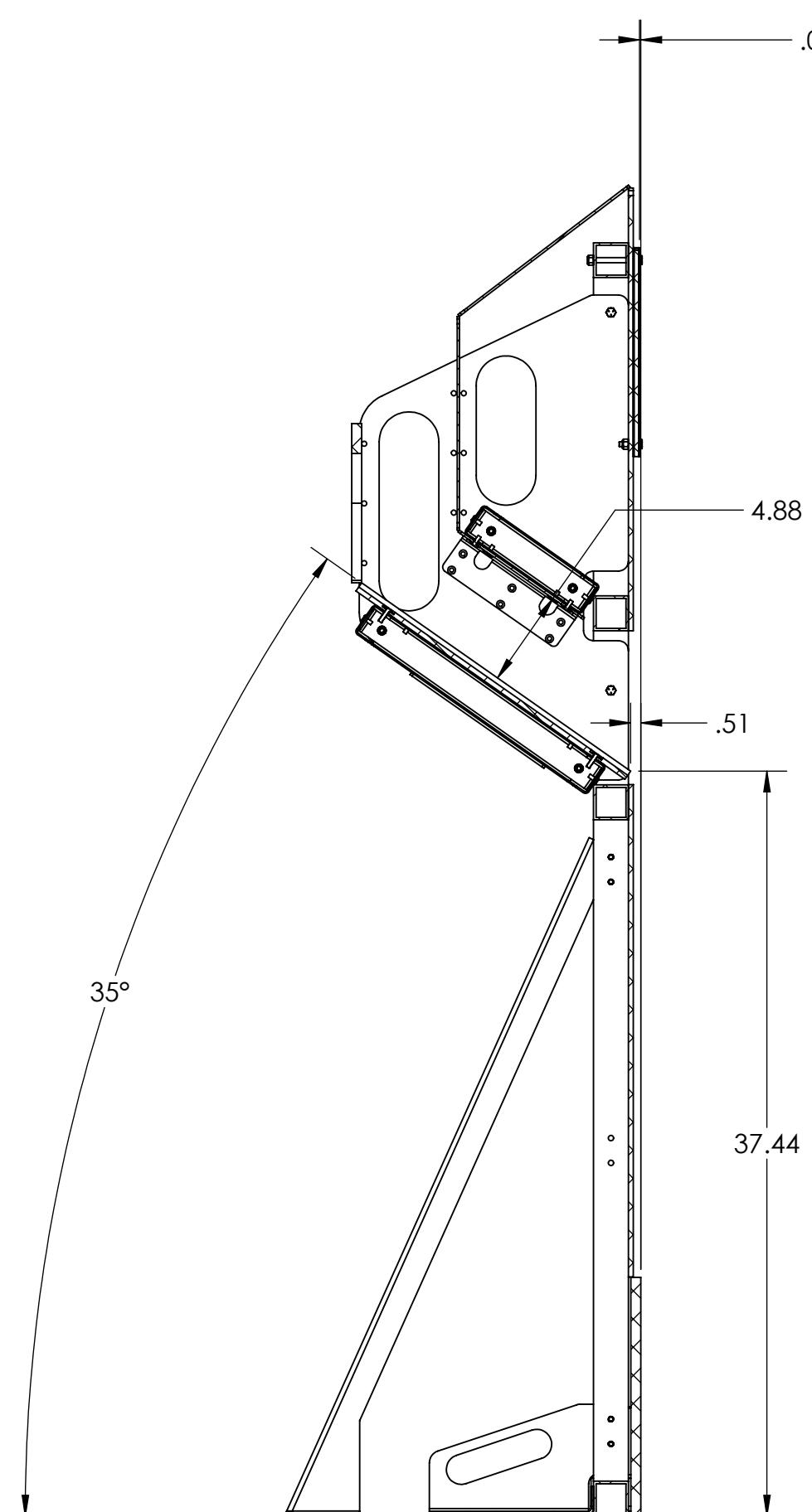
SOLIDWORKS
Modeling Solutions Partner

TITLE:
Coral Station

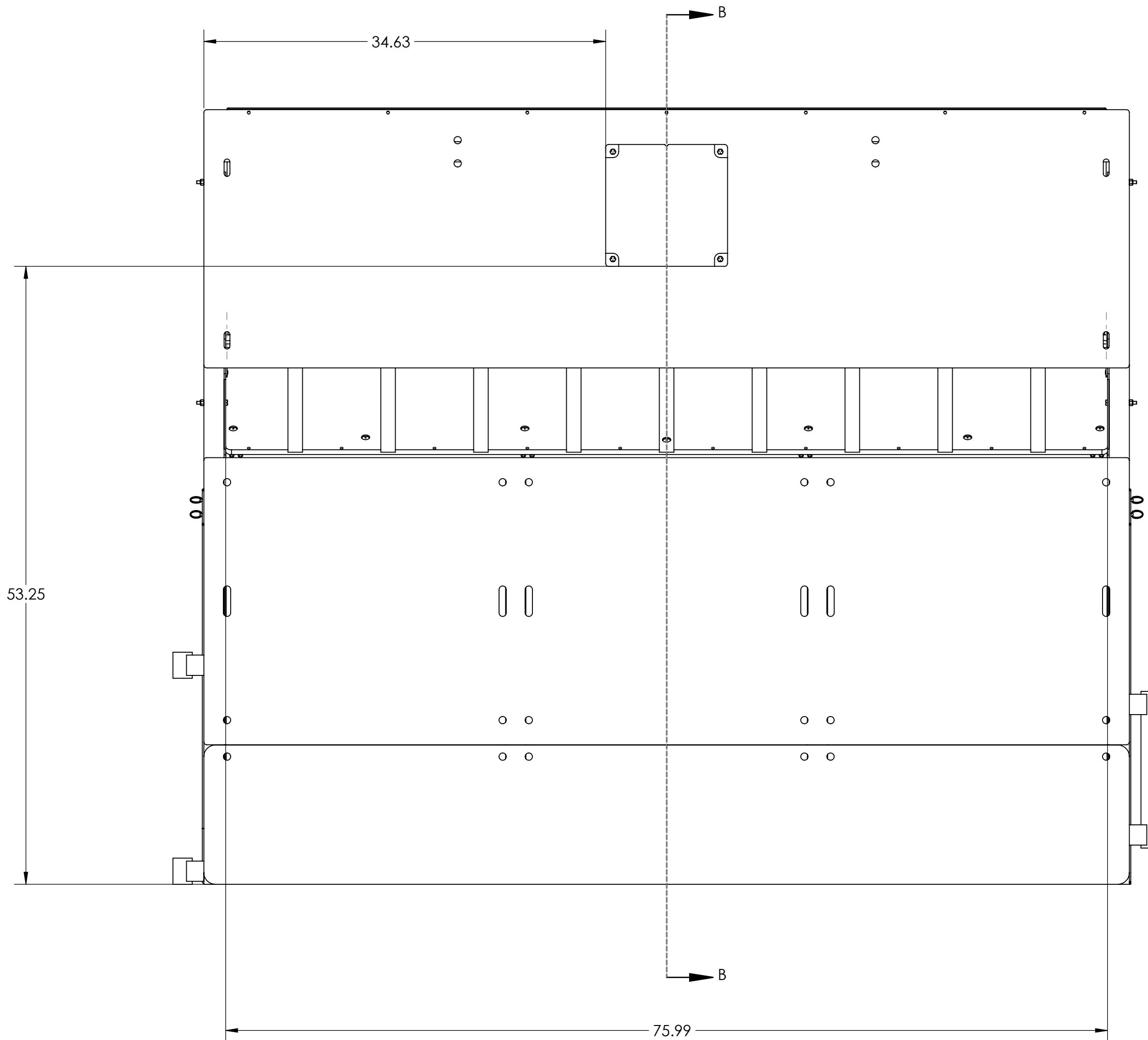
SIZE DWG. NO. REV

C GE-25000

SCALE: 1:10 SHEET 1 OF 2



SECTION B-B



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
DRAWN	JO	10/28/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

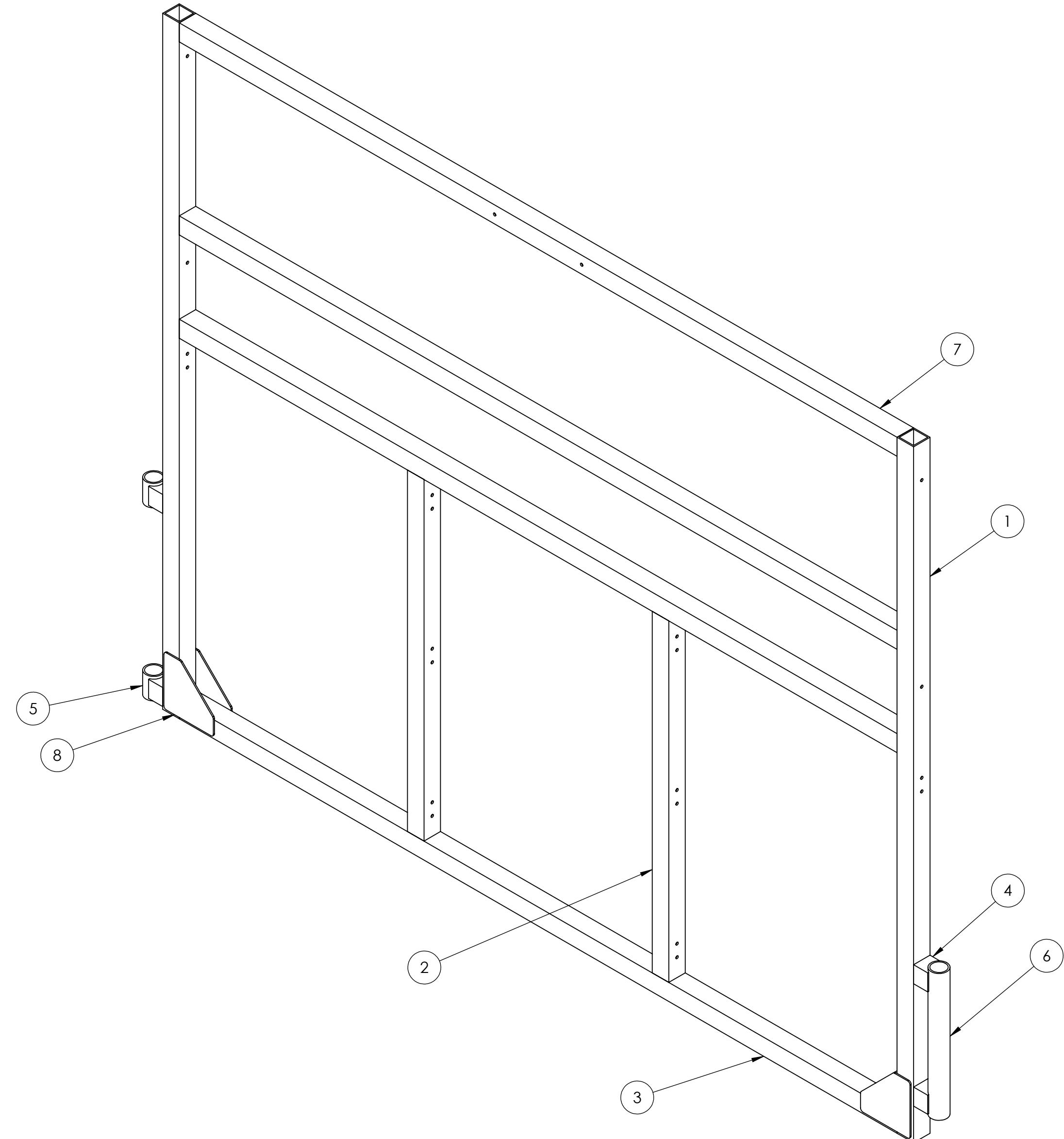
 **FIRST
ROBOTICS
COMPETITION**  SOLIDWORKS
Modeling Solutions Partner

TITLE:
Coral Station

SIZE DWG. NO. REV

C GE-25000

SCALE: 1:8 SHEET 2 OF 2



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
2-A1, 2-A3	A	Gusset moved off edge, Tube tolerance spacing updated	9/30/2024	JO

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25001-01	Field Border Frame Outer Upright	2
2	GE-25001-02	Field Border Frame Inner Upright	2
3	GE-25001-03	Field Border Frame Horizontal	3
4	GE-25001-04	Field Border Frame Pin Shell Connectors	4
5	GE-25001-05	Field Border Frame Short Pin Shell	2
6	GE-25001-06	Field Border Frame Long Pin Shell	1
7	GE-25001-07	Field Border Frame Top Horizontal	1
8	GE-25001-08	Field Border Frame Gusset	4

UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE
	DRAWN	JO	8/12/2024
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 6061 Aluminum - 1.75" x .125" Square Box Tube and 1-1/4" Sch 40 Pipe			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			
TITLE: Field Border Frame			
SIZE DWG. NO. REV			
C GE-25001 A			
SCALE: 1:7 SHEET 1 OF 5			

 FIRST
ROBOTICS
COMPETITION  SOLIDWORKS
Modeling Solutions Partner

4

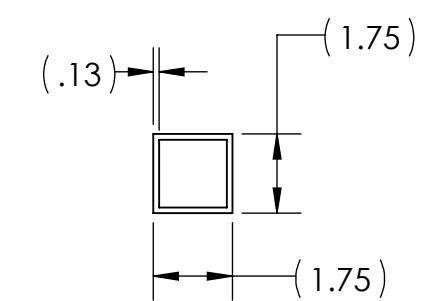
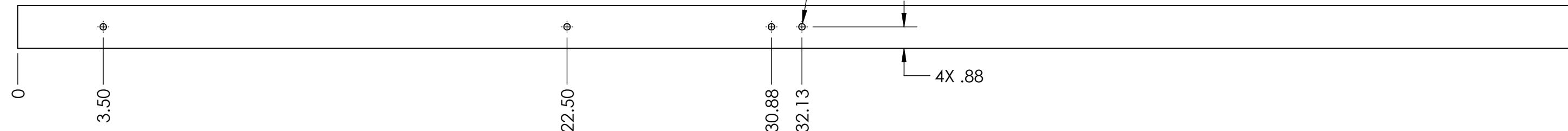
3

2

1

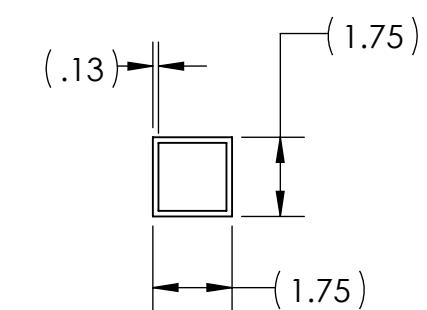
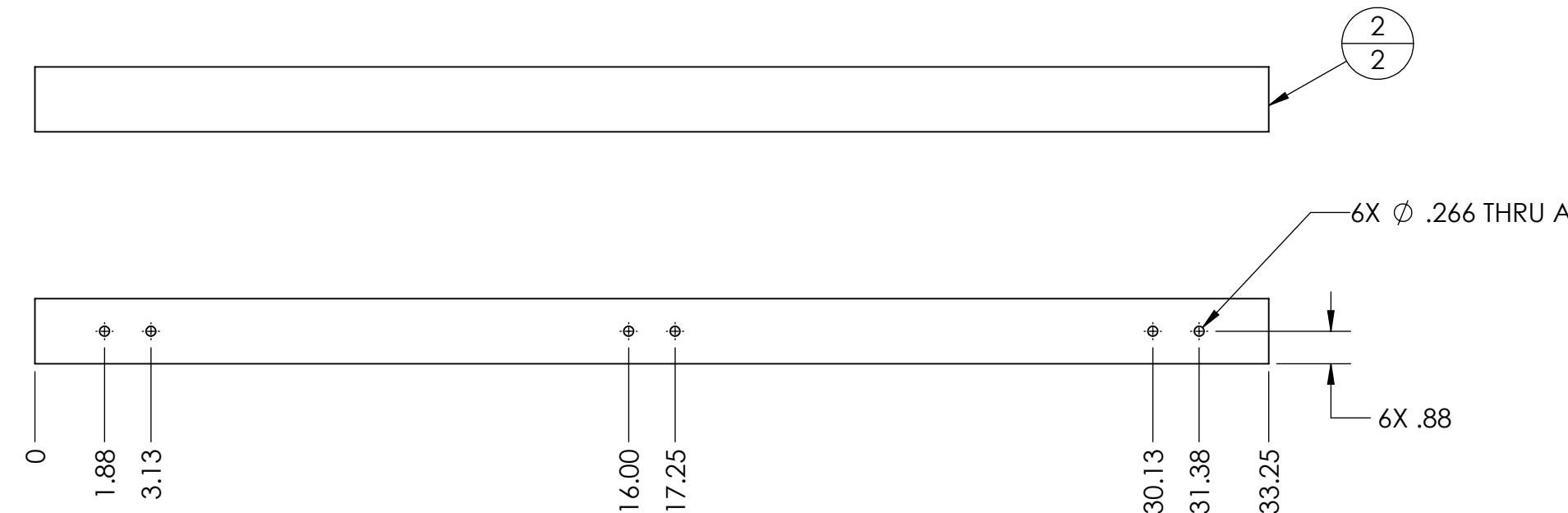
D

D



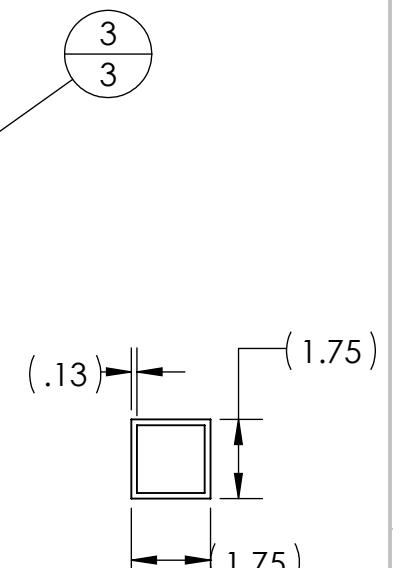
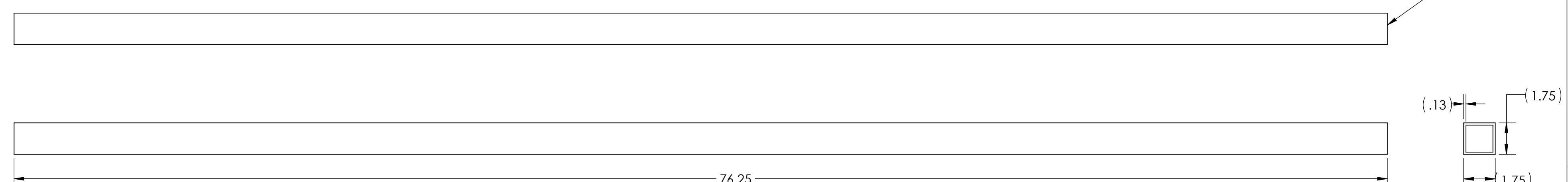
C

C



B

B



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	JO	8/12/2024
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$			
TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$			
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 6061 Aluminum 1.75" x 1.75" x .125" Square Box Tube			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Field Border
Frame**

SIZE DWG. NO. REV
C GE-25001 A

SCALE: 1:4.25 SHEET 3 OF 5

4

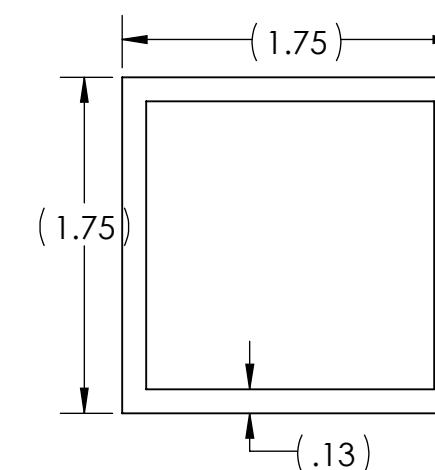
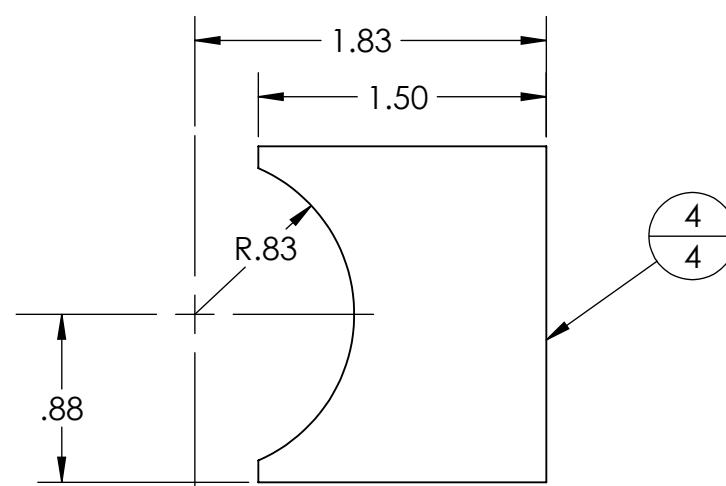
3

2

1

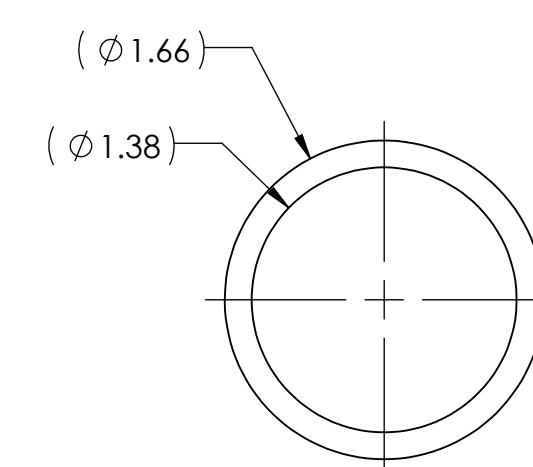
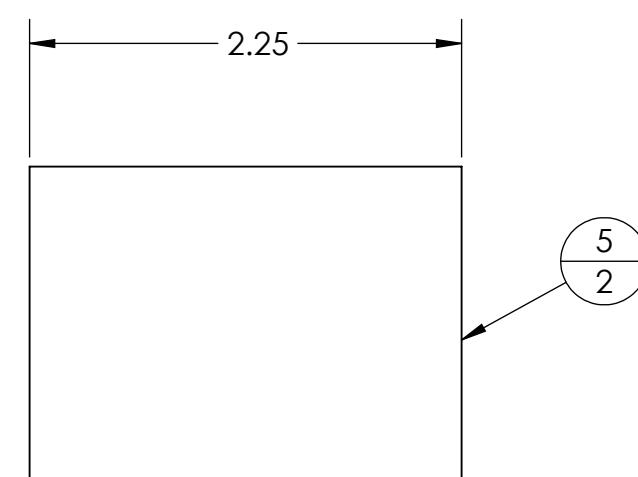
D

D



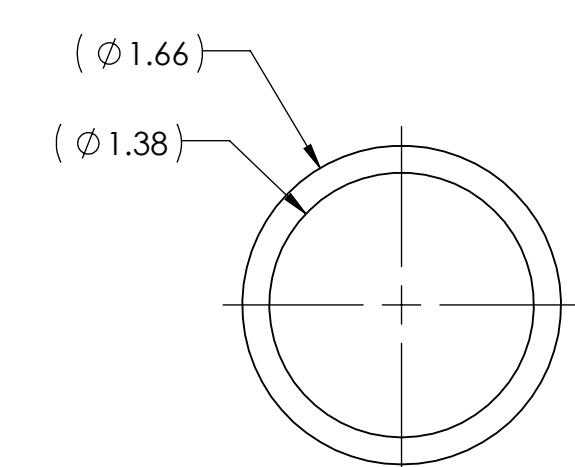
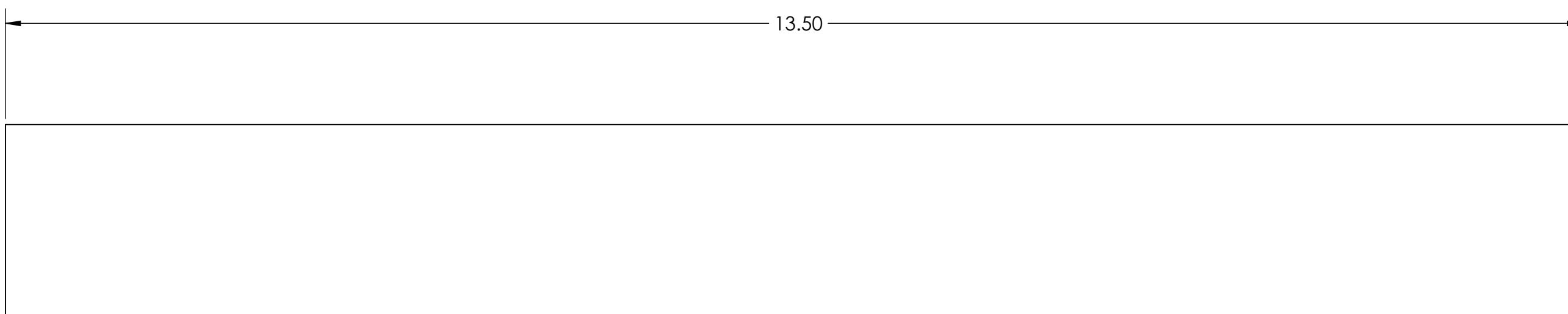
C

C



B

B



A

A

UNLESS OTHERWISE SPECIFIED:

VEND DATE
DRAWN JO 8/12/2024

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN
THIS DRAWING IS THE SOLE
PROPERTY OF FIRST. ANY
REPRODUCTION IN PART OR AS A
WHOLE WITHOUT THE WRITTEN
PERMISSION OF FIRST IS
PROHIBITED.

MATERIAL/FINISH:
6061 Aluminum - 1.75" x
.125" Square Box Tube and
1-1/4" Sch 40 Pipe

COMMENTS:

REMOVE ALL BURRS AND SHARP
EDGES.

DO NOT SCALE DRAWING

TITLE:
Field Border
FrameSIZE DWG. NO. REV
C GE-25001 **A**

SCALE: 1:1 SHEET 4 OF 5

4

3

2

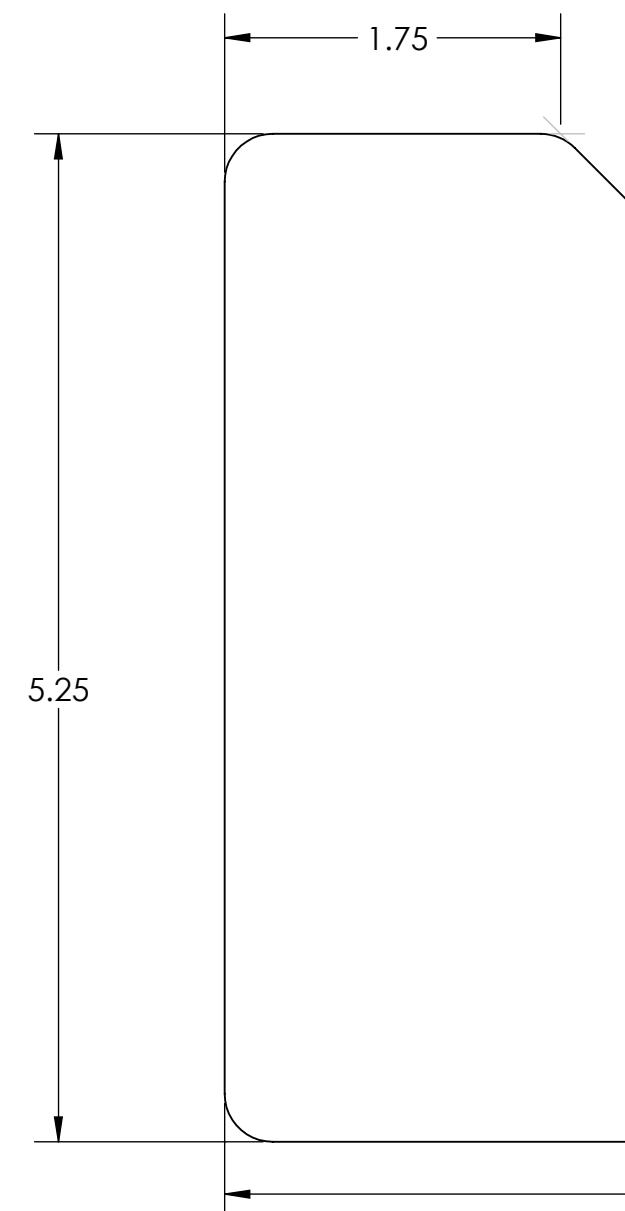
1

D

0

C

5.25



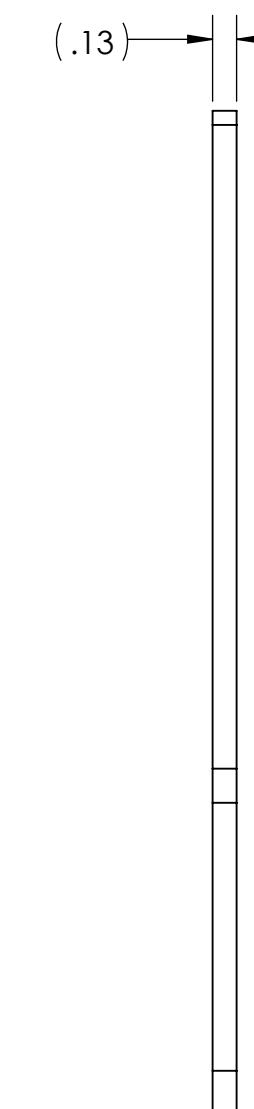
Scale 1:1

2X ϕ .266 THRU ALL
33.50
42.75
2X .88

(8/4)

1.75

5X R.25



76.25

7
1

D

4

3

2

1

UNLESS OTHERWISE SPECIFIED:			VEND	NAME	DATE
DIMENSIONS ARE IN INCHES			DRAWN	JO	8/12/2024
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$					
PROPRIETARY AND CONFIDENTIAL					
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
MATERIAL/FINISH:			COMMENTS:		
1.75" x 1.75" x .125" 6061 Aluminum Square Box Tube and 1/8" 6061 Aluminum Plate			REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING			SIZE	DWG. NO.	REV
			C	GE-25001	A
			SCALE: 1:4	SHEET 5 OF 5	

 **FIRST ROBOTICS COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

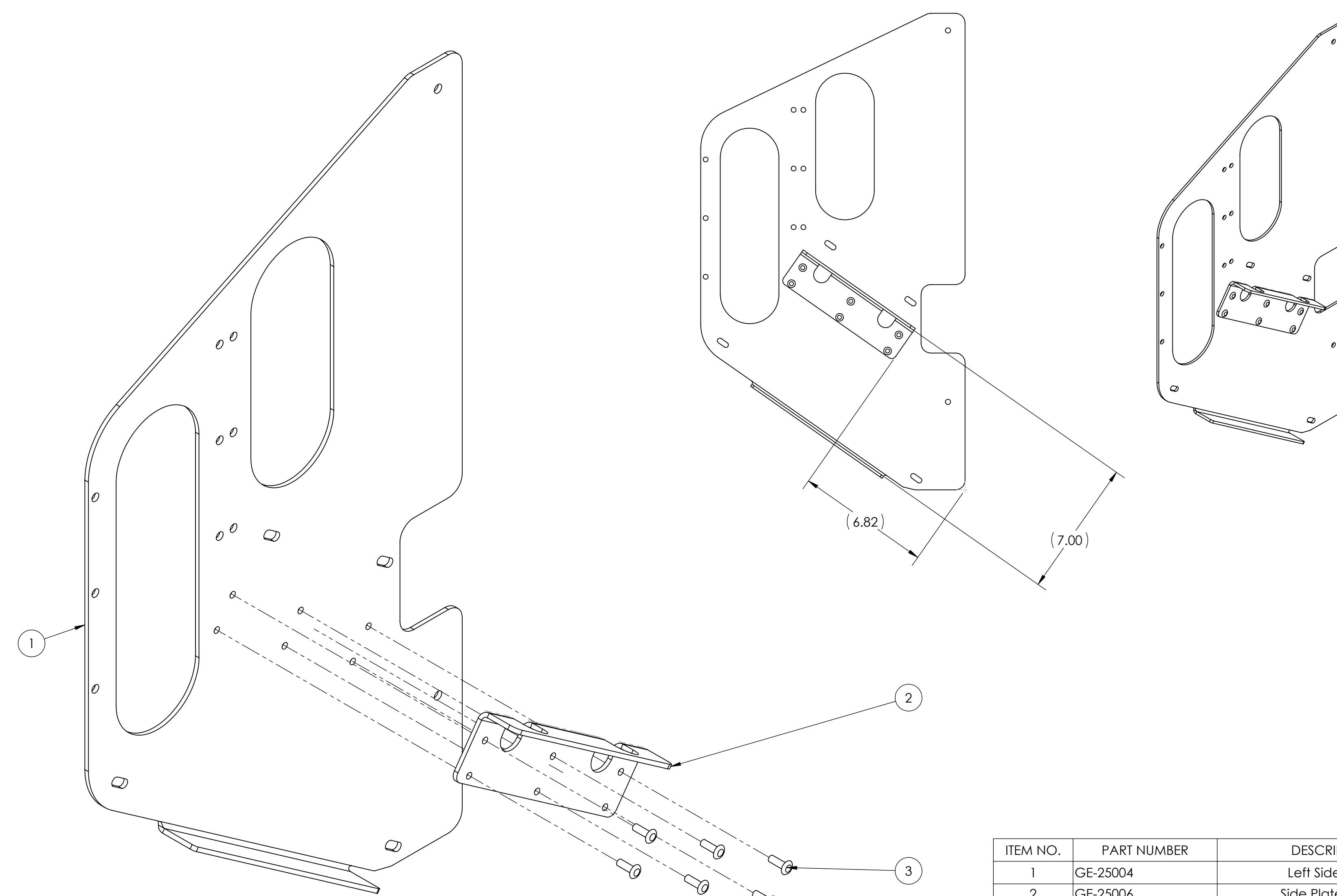
TITLE:
Field Border Frame

4

3

2

1



NOTE: ASSEMBLE AS SHOWN
LABEL WITH PART NUMBER

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25004	Left Side Plate	1
2	GE-25006	Side Plate Angle	1
3	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	6

UNLESS OTHERWISE SPECIFIED:		
VEND	NAME	DATE
DRAWN	BB	8/13/2024
PROPRIETARY AND CONFIDENTIAL		
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING		

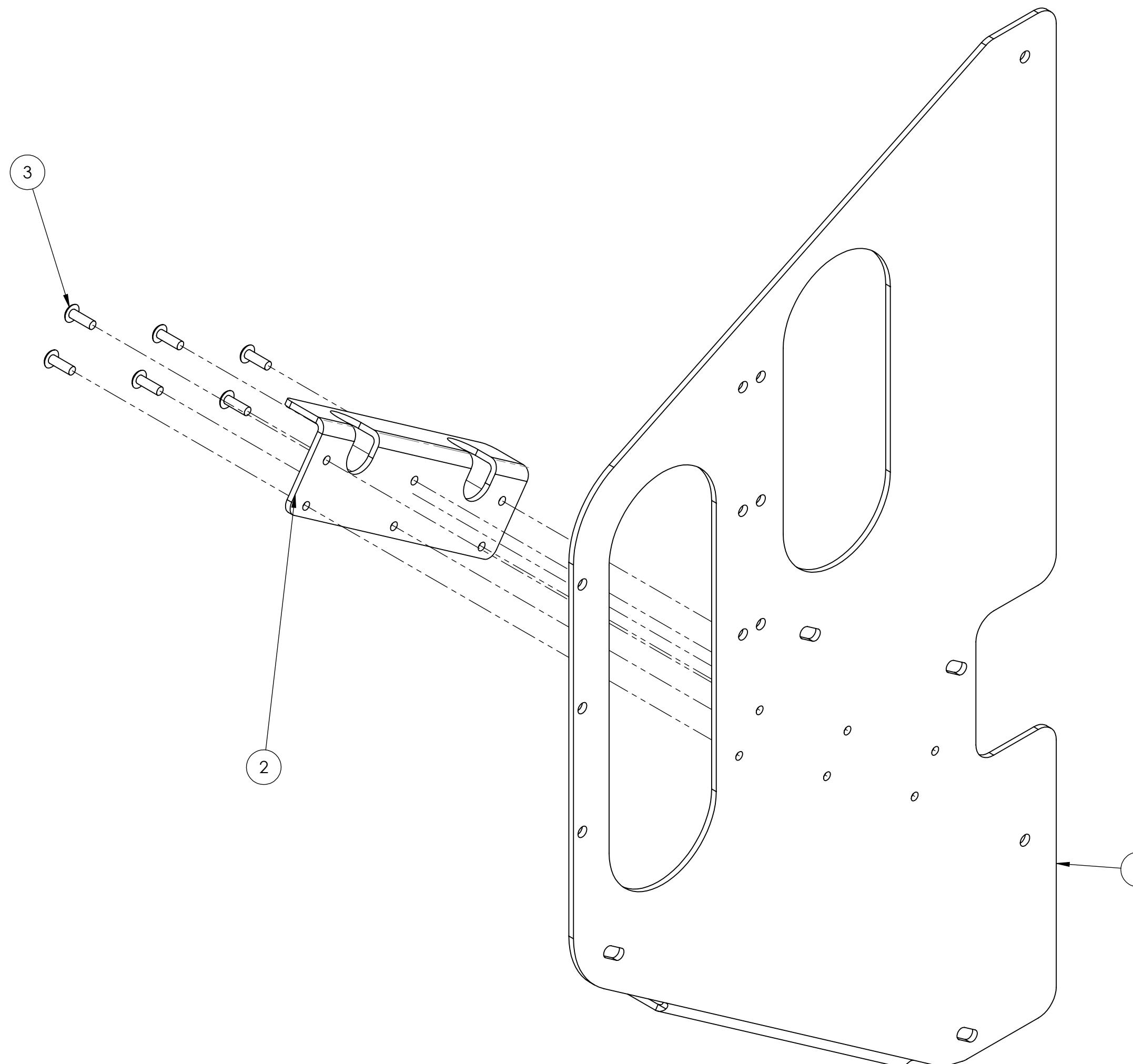
FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

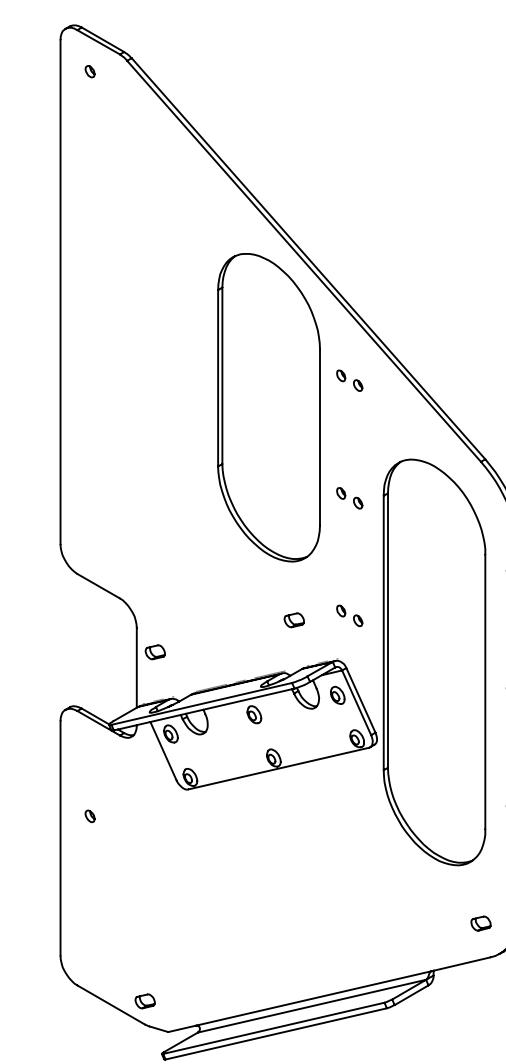
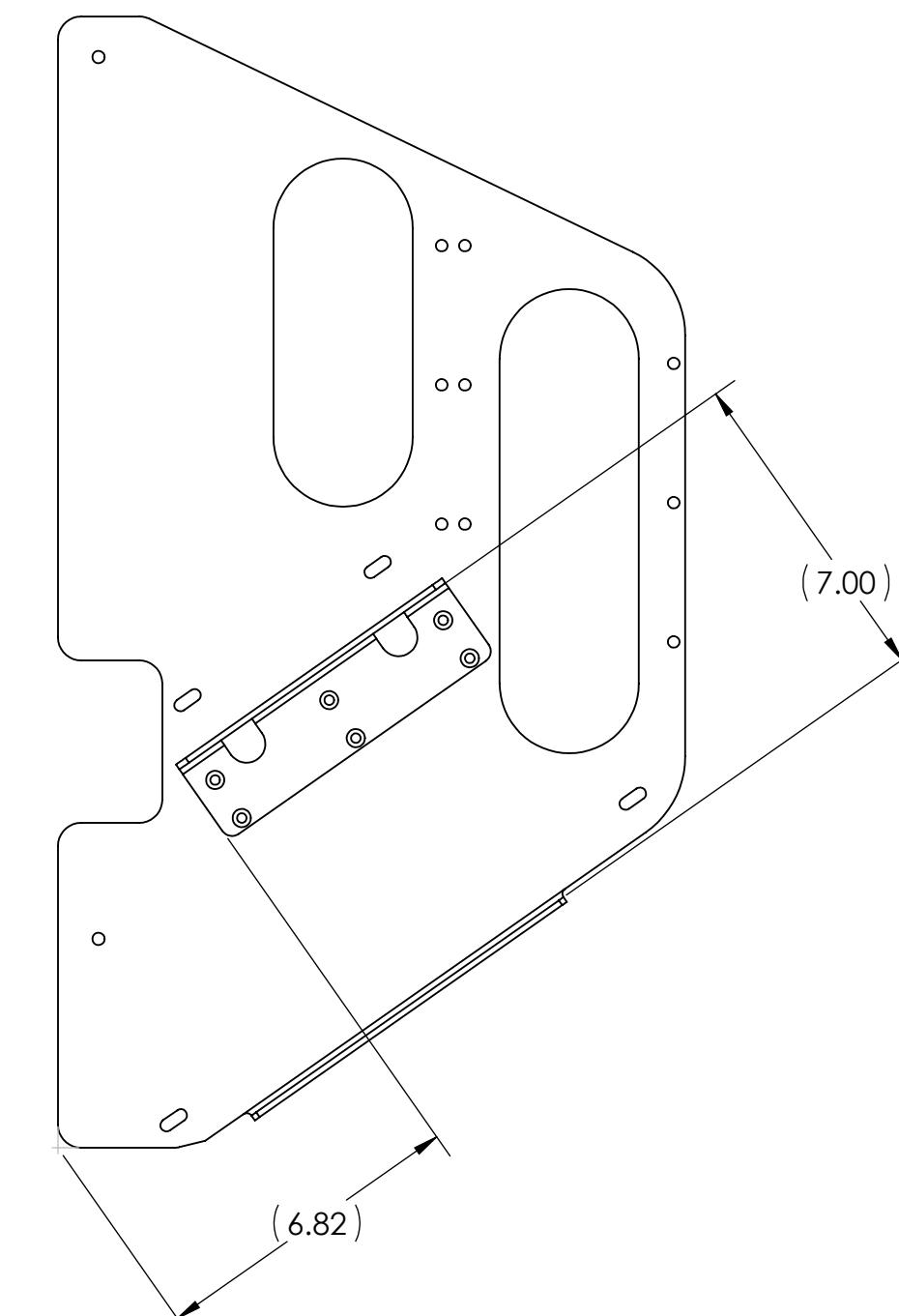
TITLE:
**Left Side Plate
Assembly**

SIZE	DWG. NO.	REV
C	GE-25002	
SCALE: 1:8	SHEET 1 OF 1	

D



NOTE: ASSEMBLE AS SHOWN
LABEL WITH PART NUMBER



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25005	Right Side Plate	1
2	GE-25006	Side Plate Angle	1
3	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	6

UNLESS OTHERWISE SPECIFIED:

VEND NAME DATE

DRAWN BB 8/13/2024

SOLIDWORKS
Modeling Solutions Partner

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN

THIS DRAWING IS THE SOLE

PROPERTY OF FIRST®. ANY

REPRODUCTION IN PART OR AS A

WHOLE WITHOUT THE WRITTEN

PERMISSION OF FIRST® IS

PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP
EDGES.

DO NOT SCALE DRAWING

TITLE:

Right Side Plate Assembly

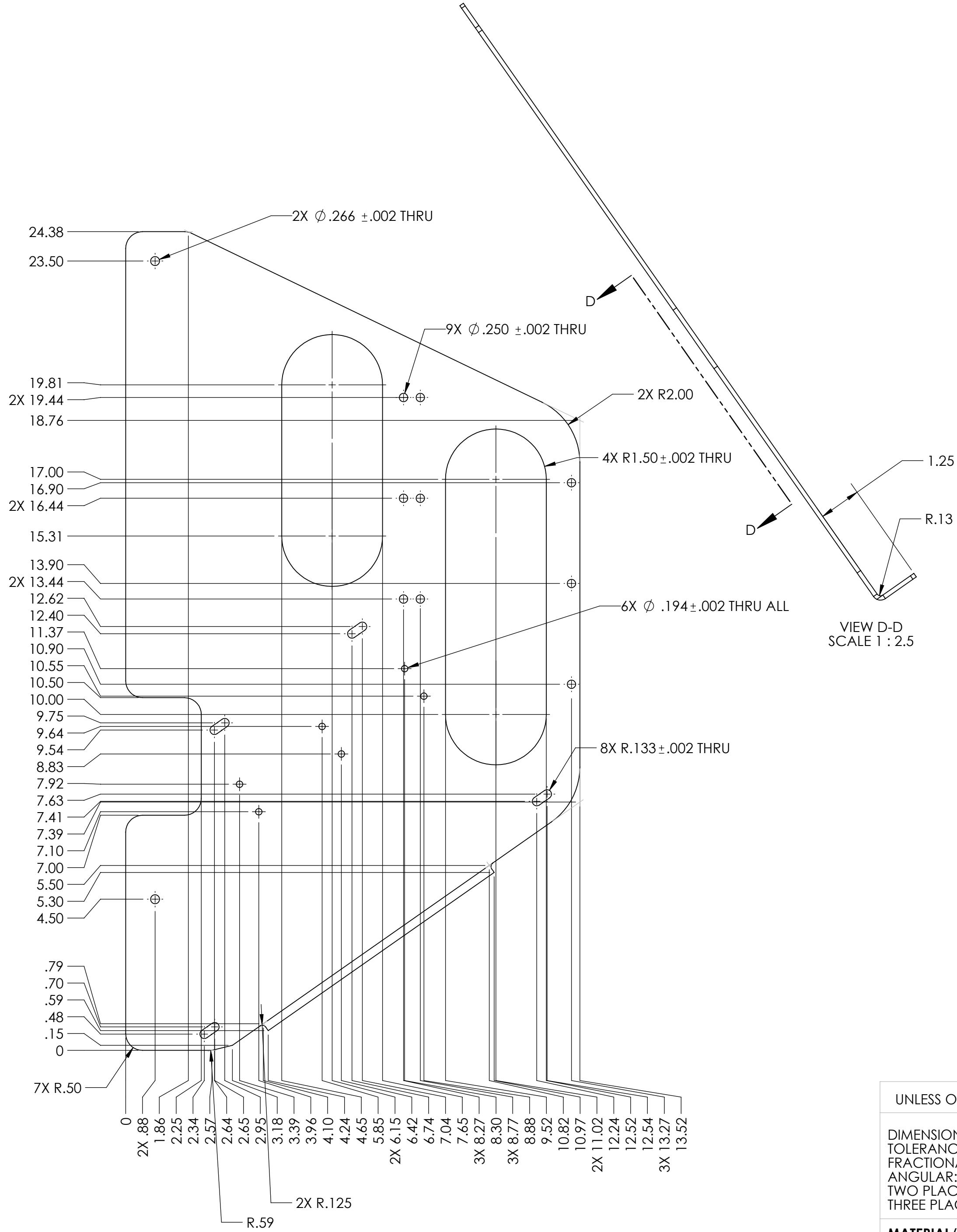
SIZE

DWG. NO.

REV

C GE-25003

SCALE: 1:8 SHEET 1 OF 1



NOTE: FOLLOW DXF FILE FOR CUT

UNLESS OTHERWISE SPECIFIED:		BEND	NAME	DATE
		DRAWN	BB	8/12/2024
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.		
MATERIAL/FINISH: 8 Ga 5052 Aluminum		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING		SIZE		DWG. NO.
		C		GE-25004
		SCALE: 1:8		SHEET 1 OF 1

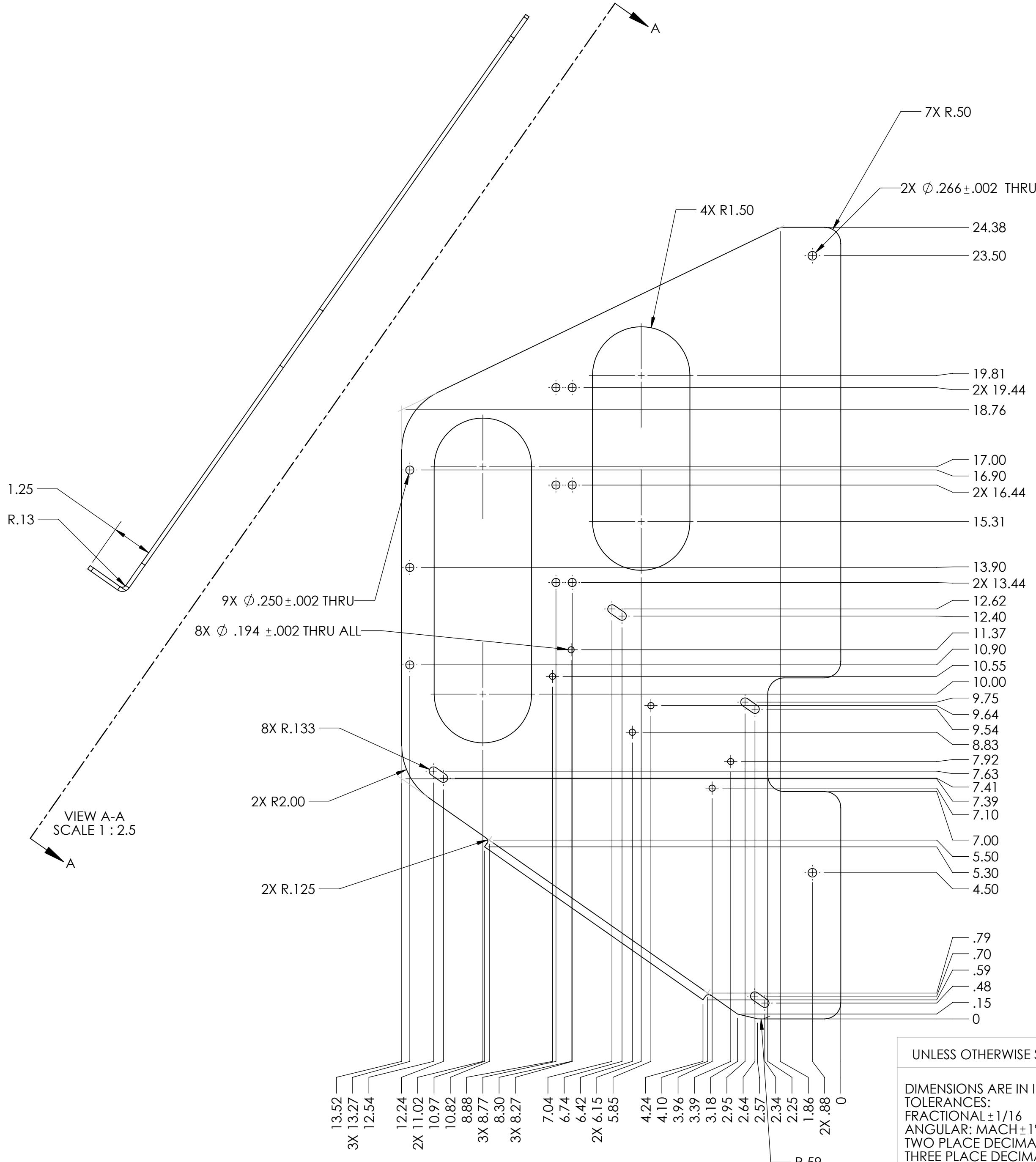
4

3

2

1

D



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:
8 Ga 5052 Aluminum

DO NOT SCALE DRAWING

VEND NAME DATE
DRAWN BB 8/13/2024

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST IS PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

FIRST ROBOTICS COMPETITION
SOLIDWORKS Modeling Solutions Partner

TITLE: Right Side Plate

SIZE DWG. NO. REV
C GE-25005

SCALE: 1:8 SHEET 1 OF 1

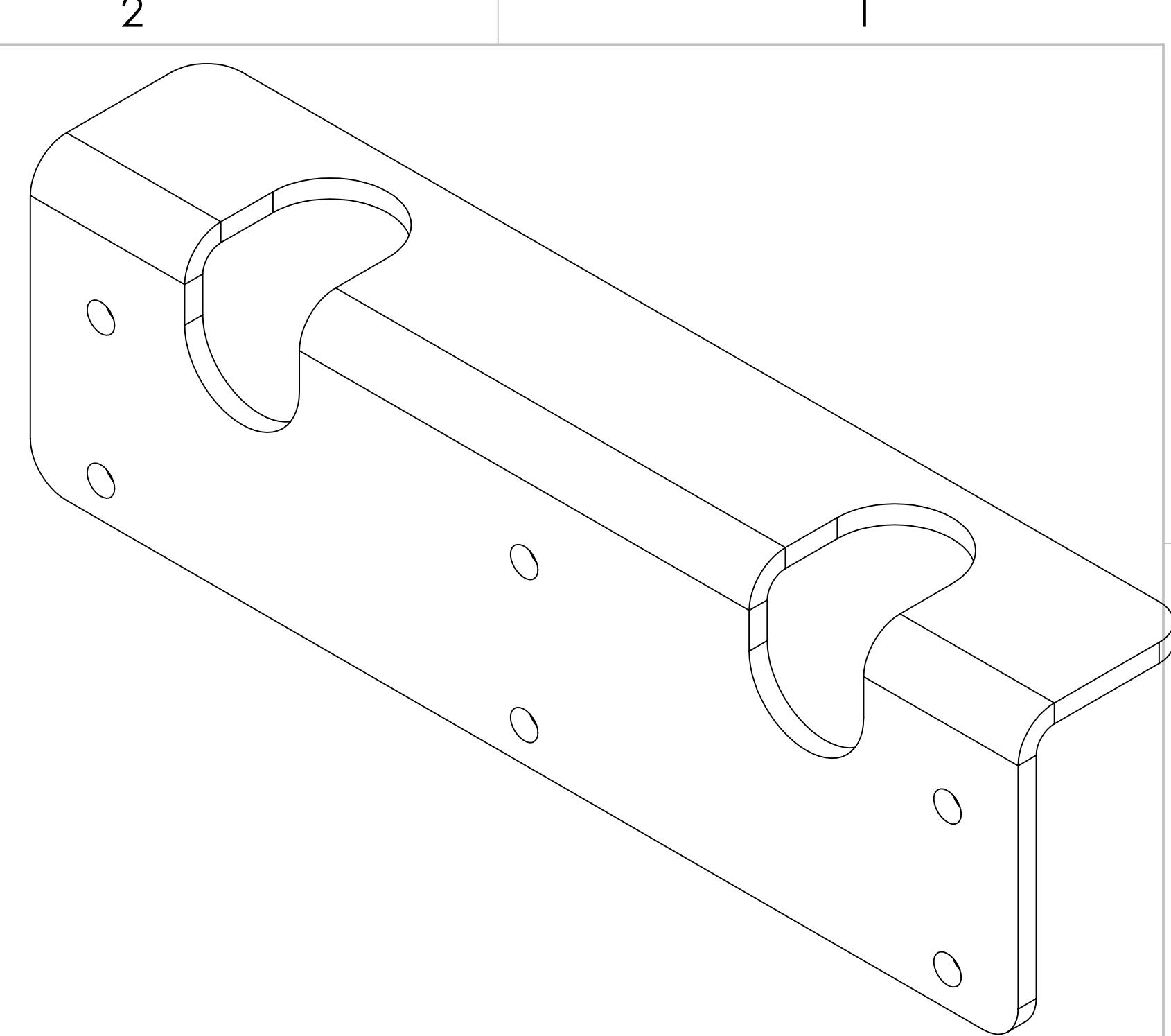
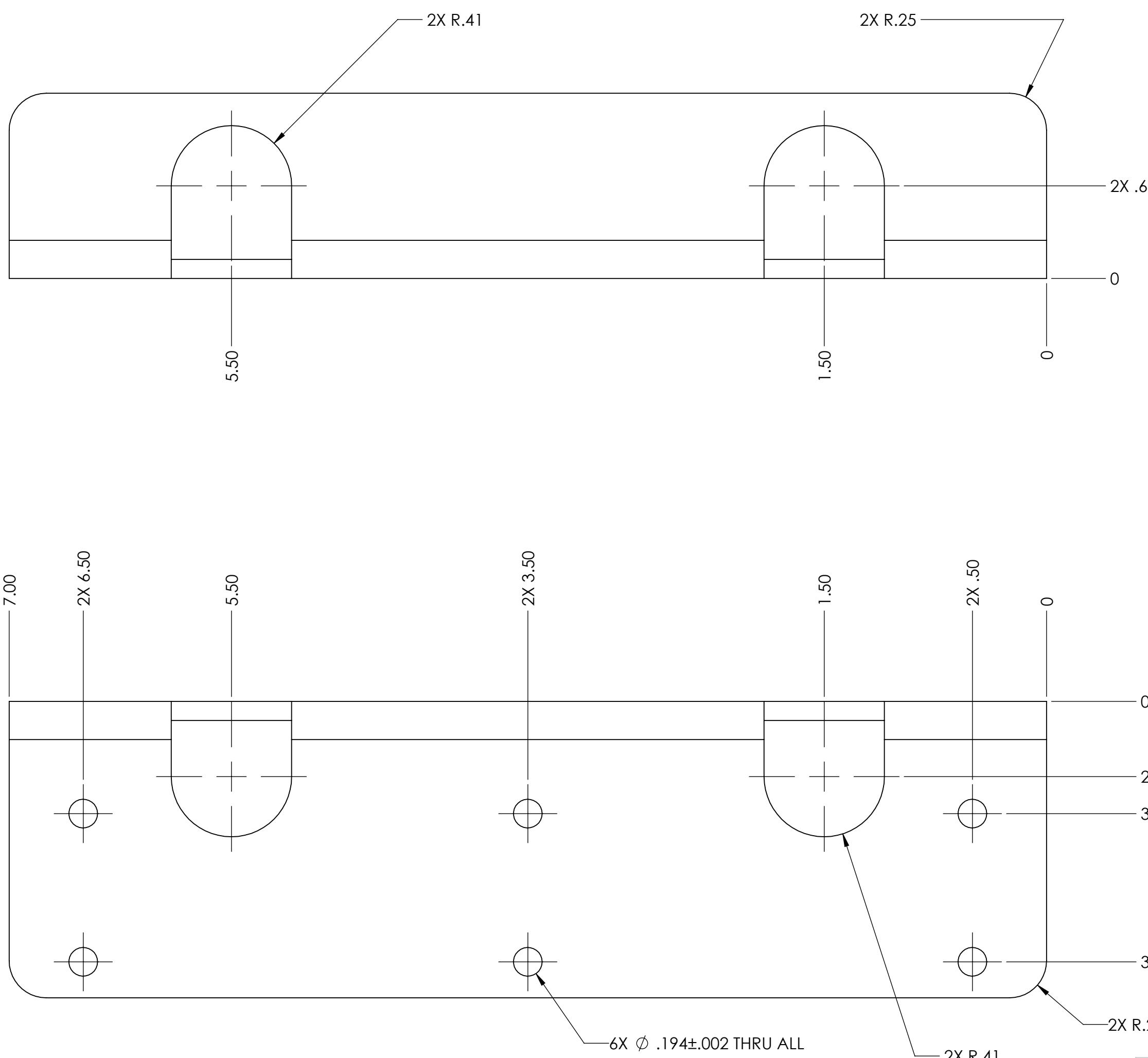
4

3

2

1

D



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	JO	8/12/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 8 Ga 5052 Aluminum			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

 **FIRST
ROBOTICS
COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE: Side Plate Angle

SIZE DWG. NO. REV

C GE-25006

SCALE: 1.5:1 SHEET 1 OF 1

4

3

2

1

A

A

4

3

2

1

D

D

C

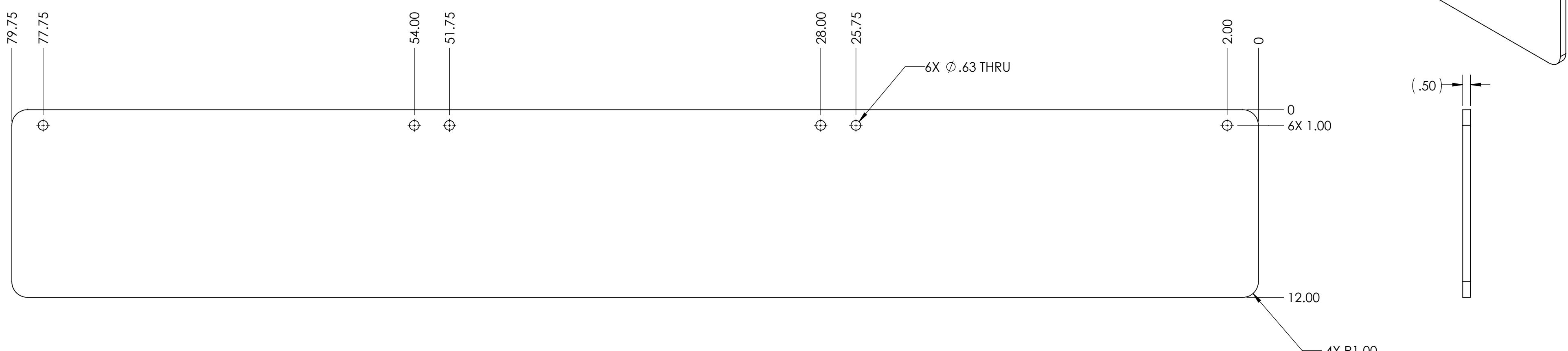
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:
1/2" Polycarbonate

DO NOT SCALE DRAWING

VEND NAME DATE

DRAWN JO 8/12/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Bumper Plastic

SIZE DWG. NO. REV
C GE-25007

SCALE: 1:5 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

C

B

B

A

A

79.75
3X 77.75

3X 54.00
3X 51.75

3X 28.00
3X 25.75

3X 2.00
0
0
6X 2.13

6X 11.38
6X .63 X 2.63
12X Ø .63 THRU
6X 22.63
24.75
4X R.25

NOTE: LABEL WITH PART NUMBER

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$

ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$

TWO PLACE DECIMAL $\pm .01$

THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

1/4" Polycarbonate

DO NOT SCALE DRAWING

VEND NAME DATE

DRAWN JO 8/12/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Lower Front Plastic

SIZE DWG. NO. REV
C GE-25008

SCALE: 1:6 SHEET 1 OF 1

4

3

2

1

79.75
2X 77.75
75.88

63.88
2X 57.88

51.88

2X 44.50

39.88

2X 35.25

4X Ø .266 THRU

2X 21.88

4X Ø .63 THRU

7X Ø .25 THRU

3.88
2X 2.00

0
7X .25
2X 2.63
2X 3.63
2X 4.50
2X 4.63

4X .50 X 1.50

2X 12.88

2X 19.38
22.25

4X R.25

Notes:
Label with Part Number

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$

ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$

TWO PLACE DECIMAL $\pm .01$

THREE PLACE DECIMAL $\pm .005$

VEND NAME DATE

DRAWN JO 8/12/2024



PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN
THIS DRAWING IS THE SOLE
PROPERTY OF FIRST. ANY
REPRODUCTION IN PART OR AS A
WHOLE WITHOUT THE WRITTEN
PERMISSION OF FIRST IS
PROHIBITED.

MATERIAL/FINISH:
1/4" Polycarbonate

COMMENTS:
REMOVE ALL BURRS AND SHARP
EDGES.

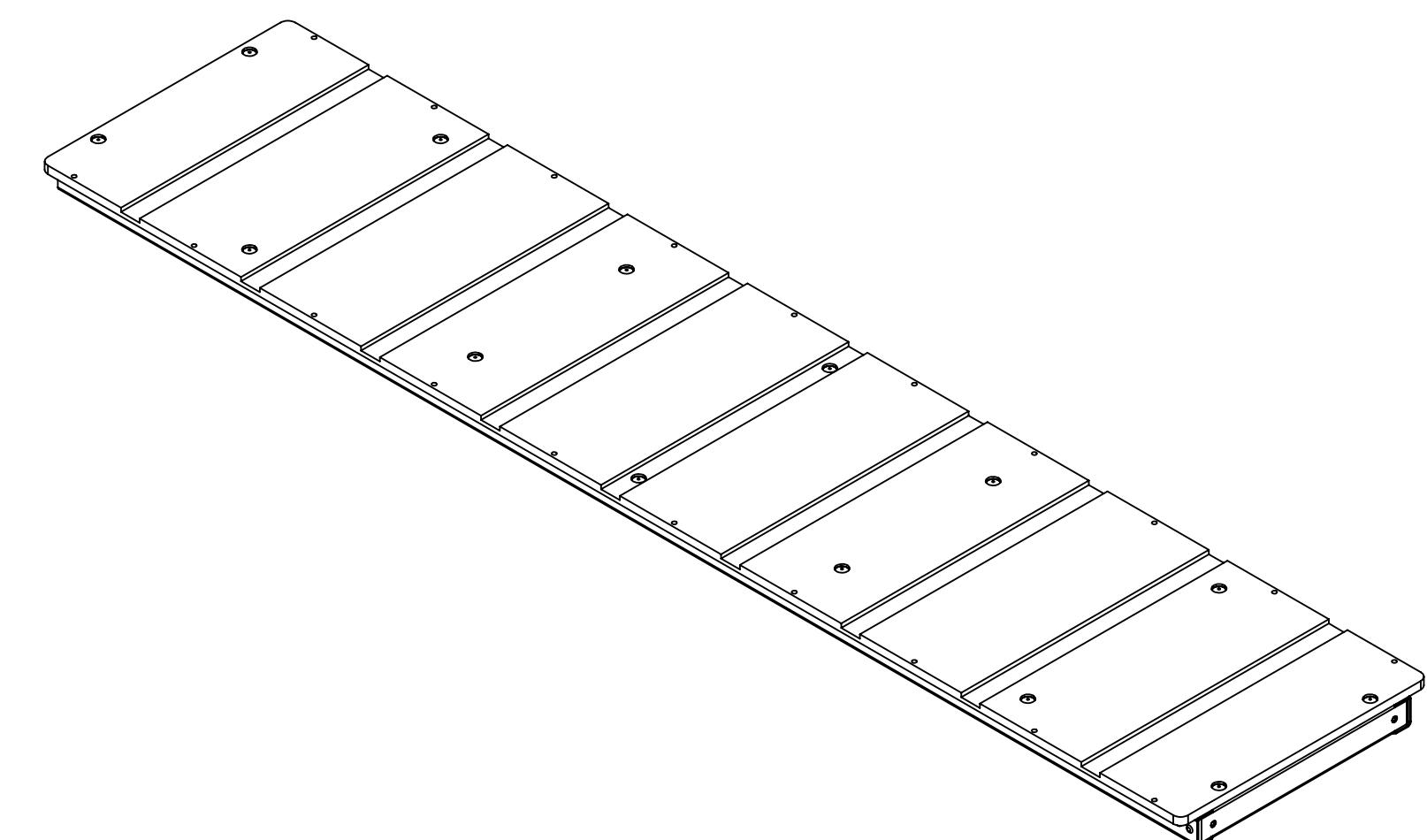
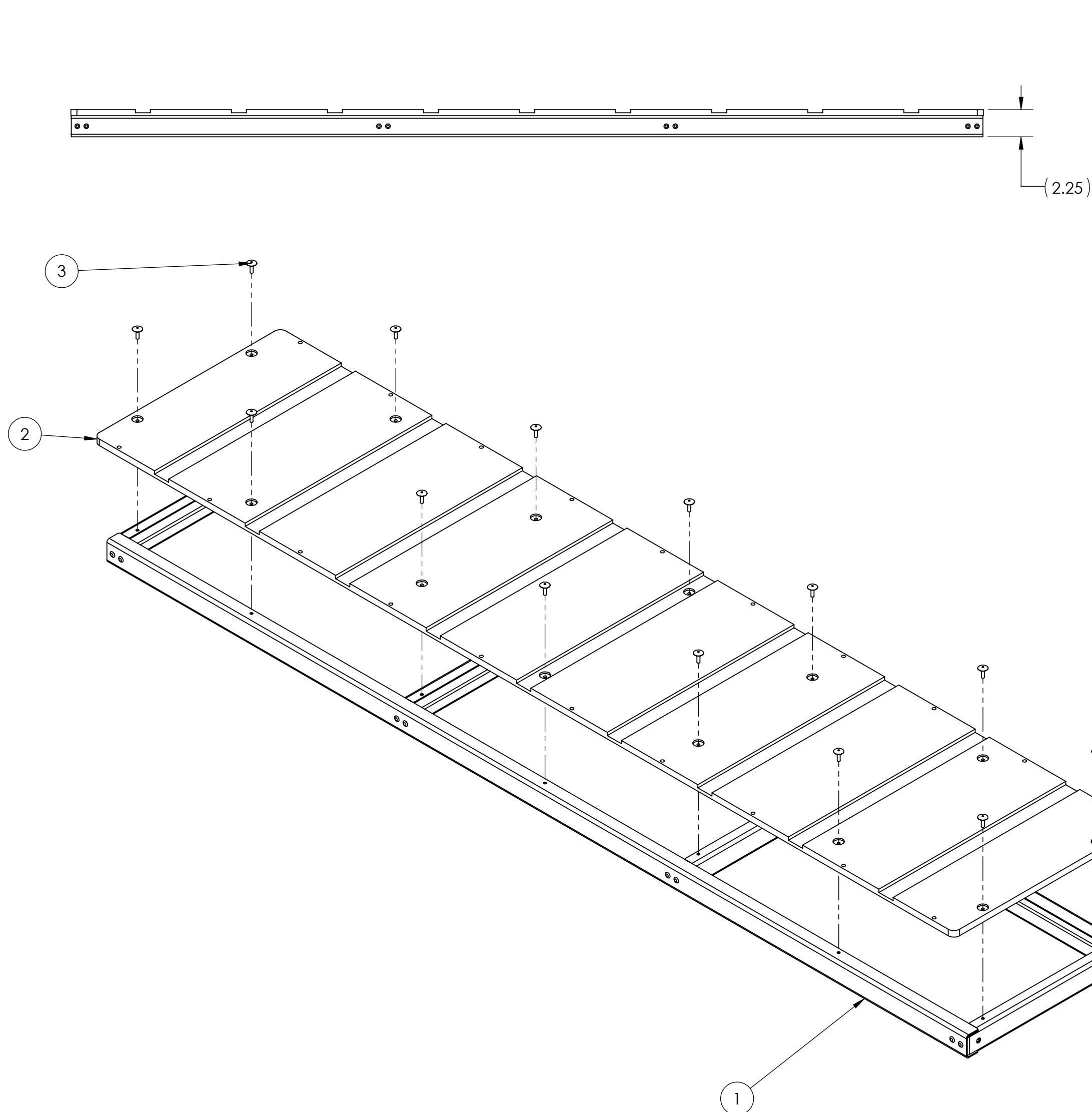
DO NOT SCALE DRAWING

SIZE DWG. NO. REV

C GE-25009

SCALE: 1:6 SHEET 1 OF 1

D



NOTES:
1. ASSEMBLE AS SHOWN
2. LABEL ASSEMBLY WITH PART NUMBER

UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE
DIMENSIONS ARE IN INCHES		DRAWN	BB	8/13/2024
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$				
PROPRIETARY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				
MATERIAL/FINISH:				
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				
DO NOT SCALE DRAWING				

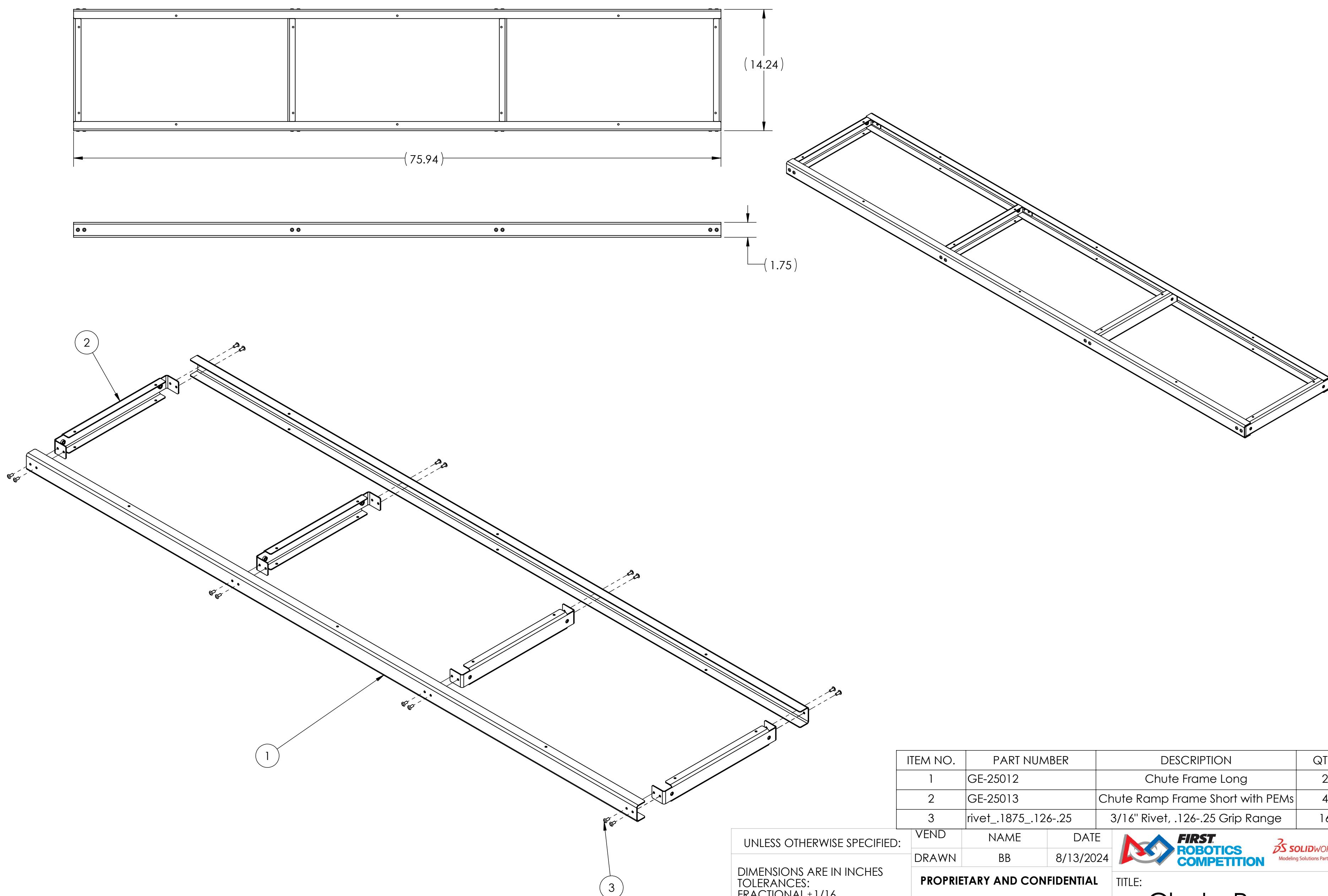
FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Chute Ramp
Assembly**

SIZE DWG. NO. REV
C GE-25010

SCALE: 1:8 SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25012	Chute Frame Long	2
2	GE-25013	Chute Ramp Frame Short with PEMs	4
3	rivet_.1875_.126-.25	.3/16" Rivet, .126-.25 Grip Range	16

VEND	NAME	DATE
DRAWN	BB	8/13/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.


Chute Ramp Frame

 SIZE DWG. NO. REV
C GE-25011

SCALE: 1:12 SHEET 1 OF 1

4

3

2

1

D

D

C

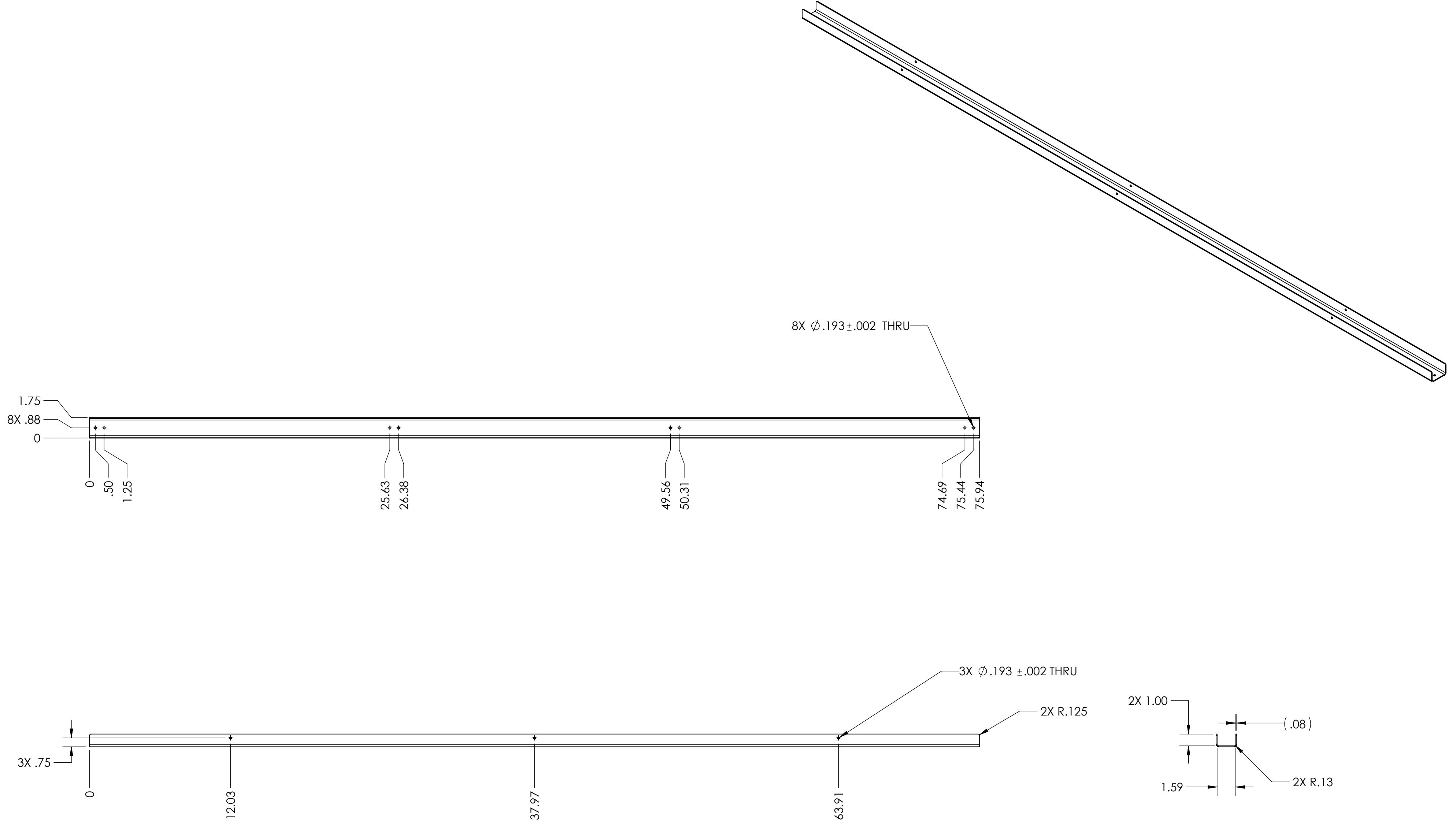
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	BB	8/13/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 12 Gauge (.08") 5052 Aluminum			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
Chute Frame
Long

SIZE DWG. NO. REV

C GE-25012

SCALE: 1:8 SHEET 1 OF 1

4

3

2

1

D

D

C

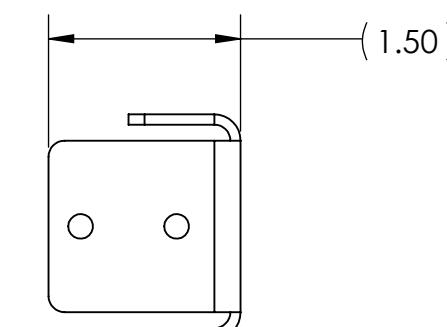
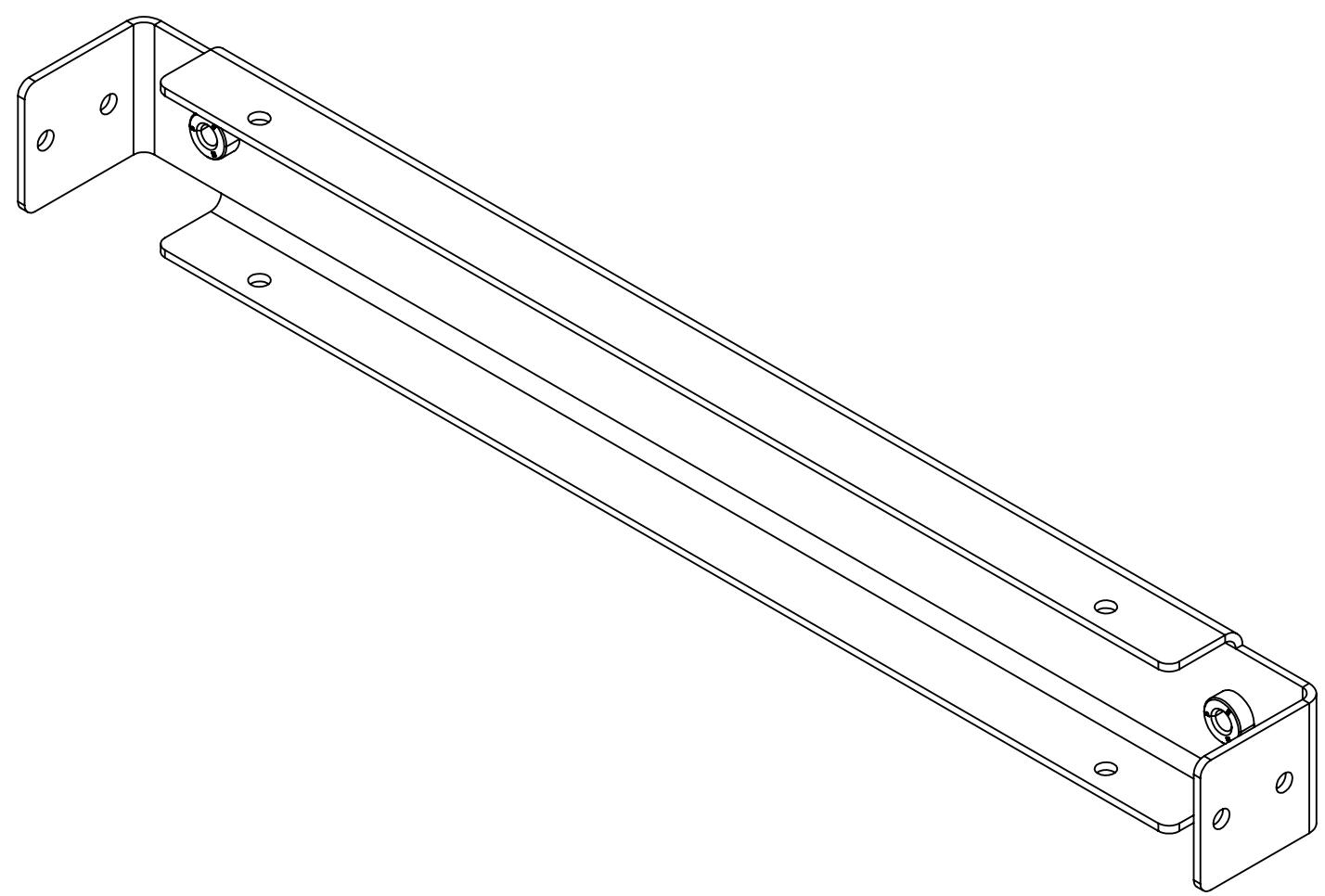
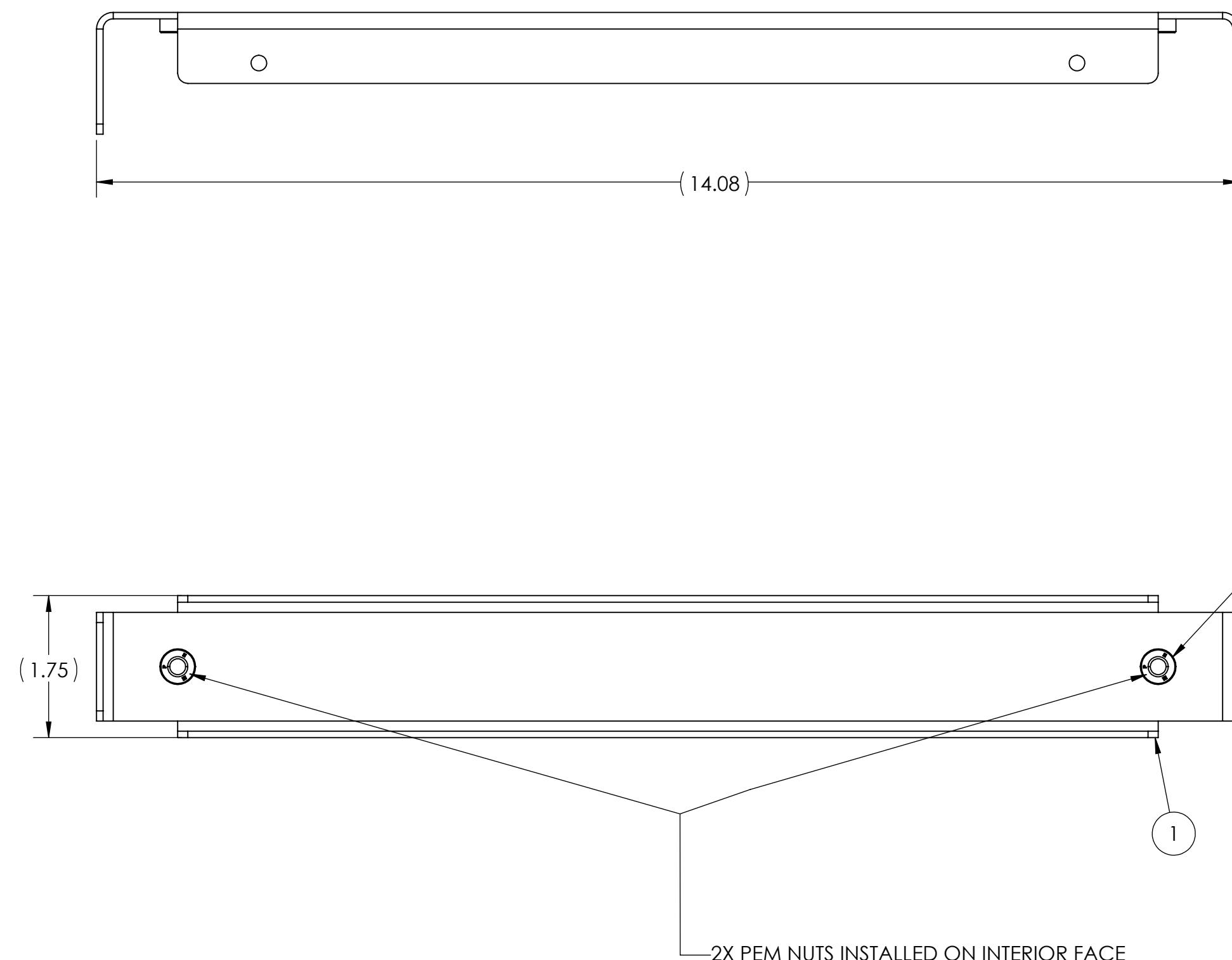
C

B

B

A

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25013-01	Chute Ramp Frame Short	1
2	pem_clinchnut_.25_20 .054	1/4-20 self-clinching nut, .054 shank	2

UNLESS OTHERWISE SPECIFIED:			VEND	NAME	DATE
			DRAWN	BB	8/13/2024
PROPRIETARY AND CONFIDENTIAL					
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
MATERIAL/FINISH:	12 Gauge (0.08") 5052 Aluminum	SIZE	DWG. NO.	REV	
COMMENTS:			C	GE-25013	
REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:2		SHEET 1 OF 1
DO NOT SCALE DRAWING					

NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE: Chute Ramp
Frame Short
with PEMs

SIZE DWG. NO. REV
C GE-25013
SCALE: 1:2 SHEET 1 OF 1

4

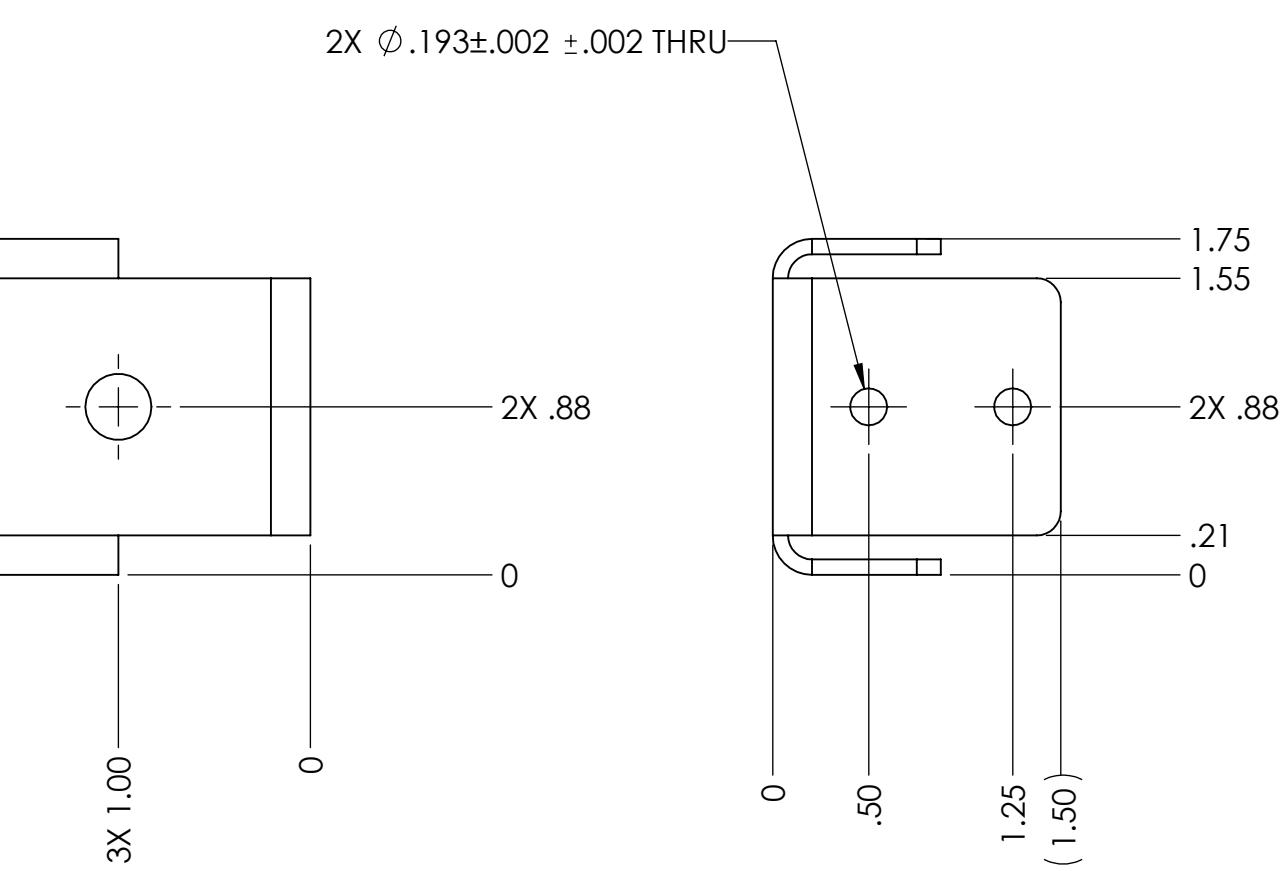
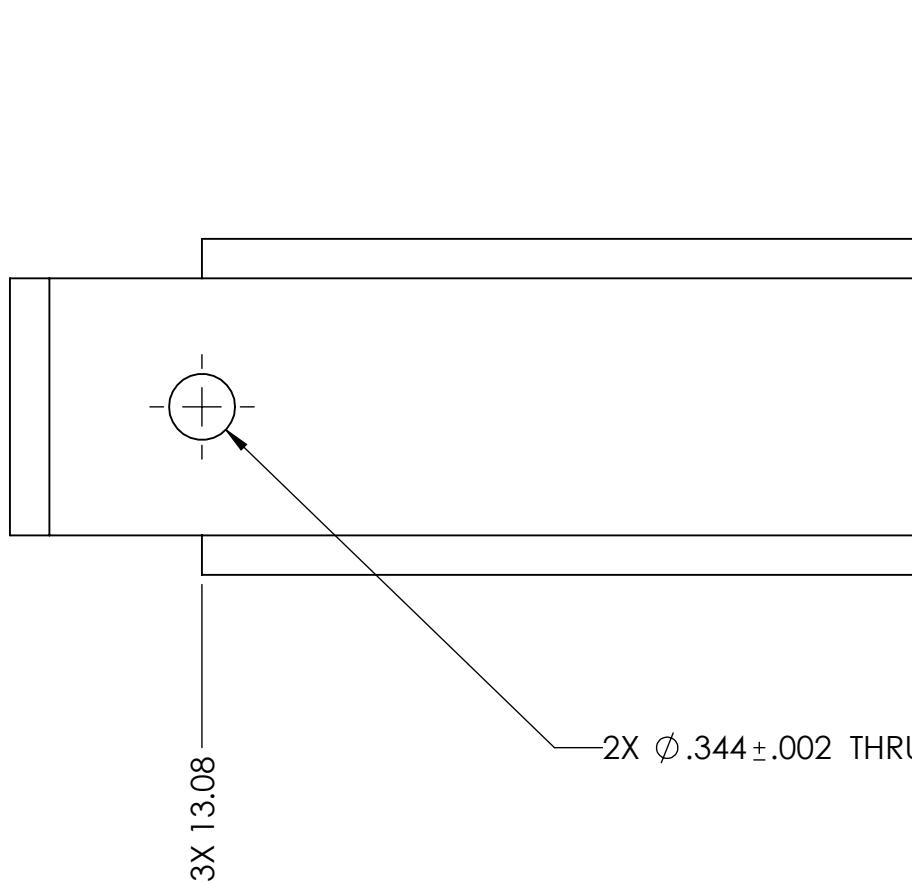
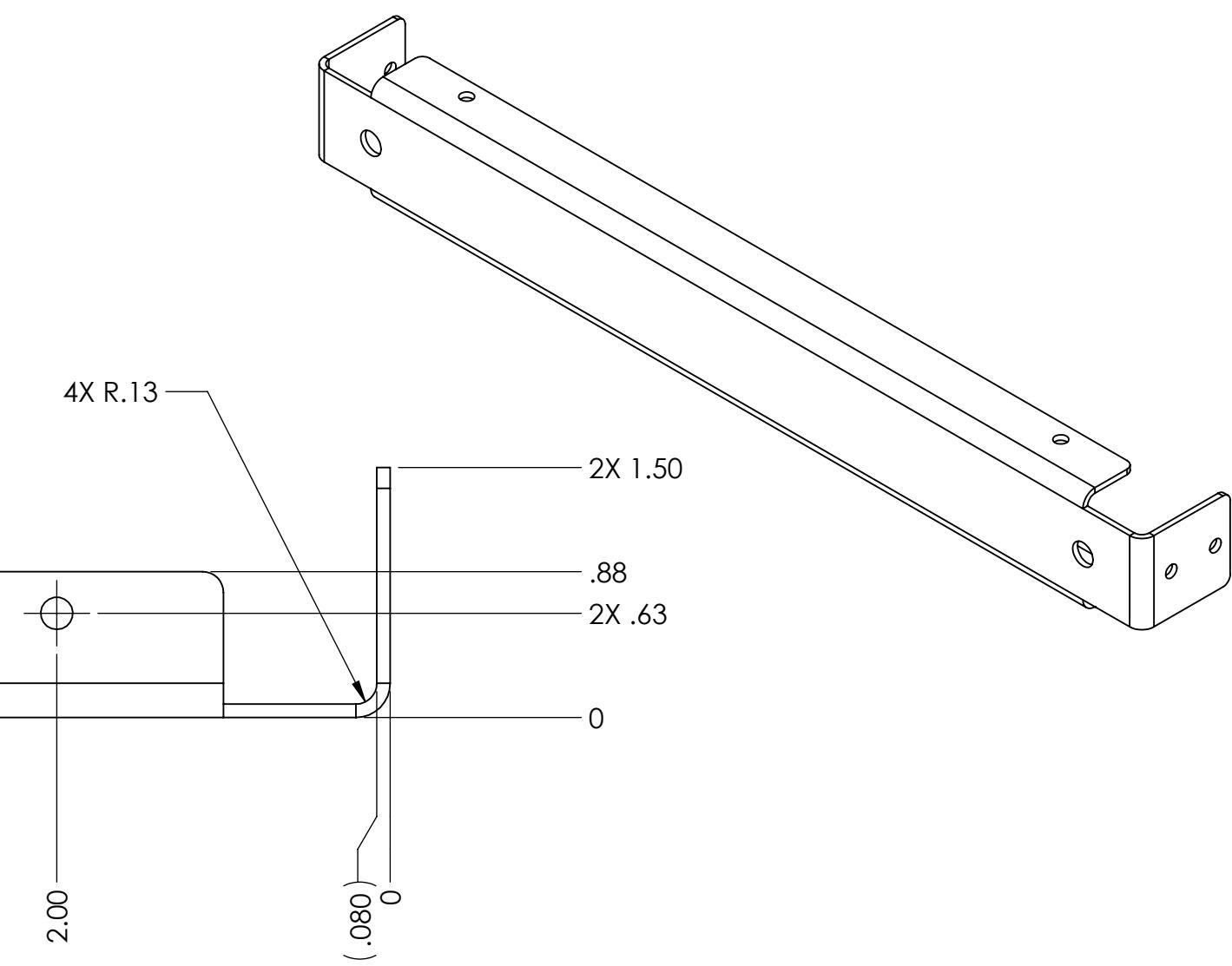
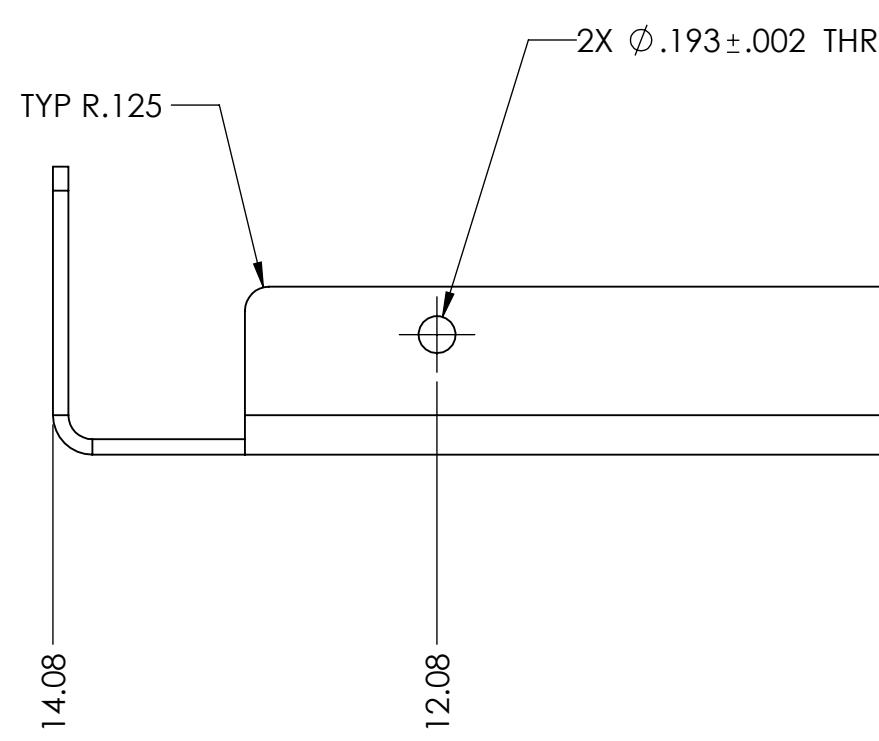
3

2

1

D

D



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	BB	8/13/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:			
12 Gauge (.08") 5052 Aluminum			
COMMENTS:			
REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			
FIRST ROBOTICS COMPETITION			
SOLIDWORKS Modeling Solutions Partner			
TITLE:		Chute Ramp Frame Short	
SIZE	DWG. NO.	REV	
C	GE-25013-01		
SCALE: 1:2		SHEET 1 OF 1	

4

3

2

1

4

3

2

1

D

D

C

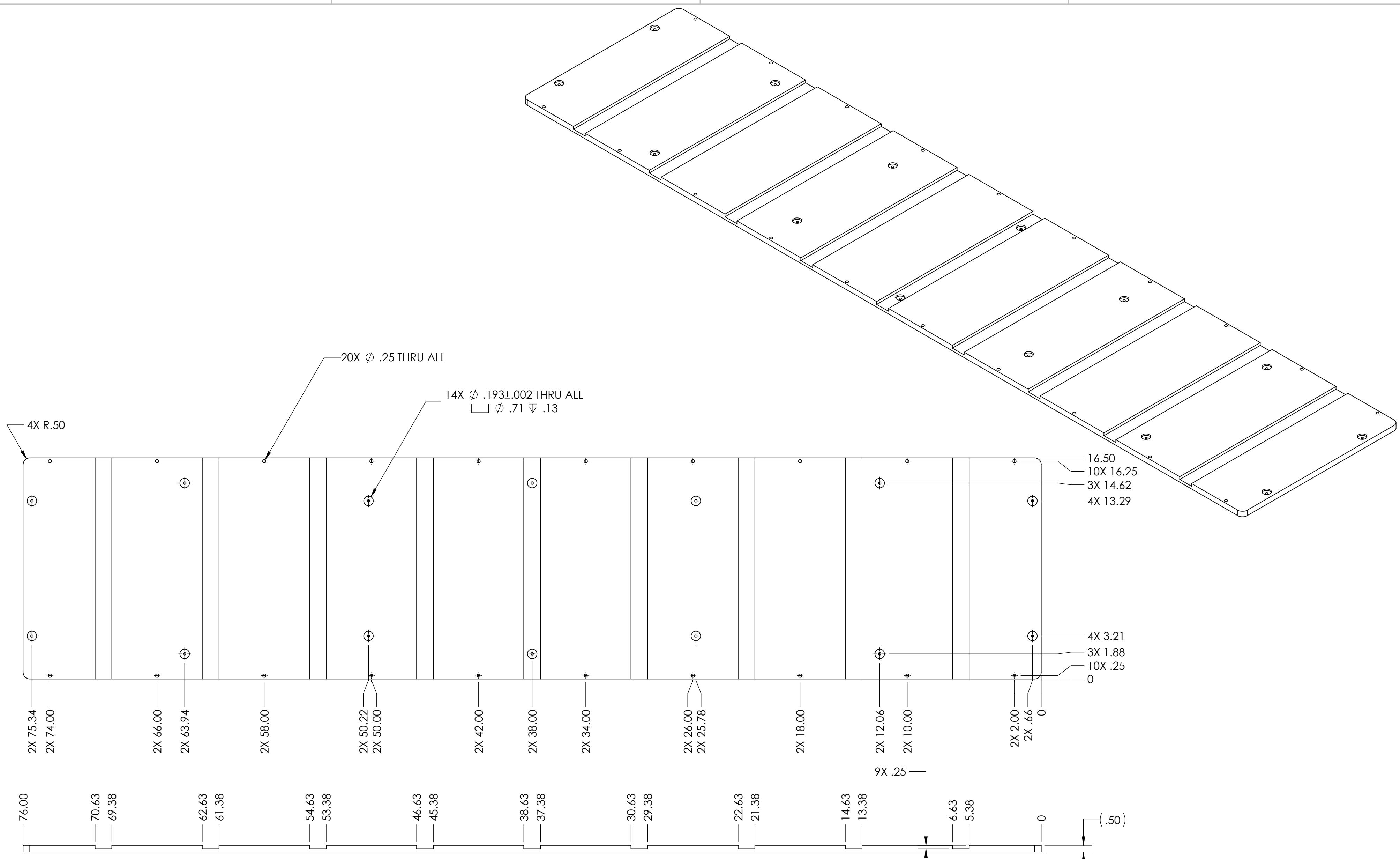
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	JO	8/12/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 1/2" Black HDPE, Orange Peel Texture			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

 **FIRST
ROBOTICS
COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE:
**Chute Ramp
HDPE**

SIZE DWG. NO. REV
C GE-25014

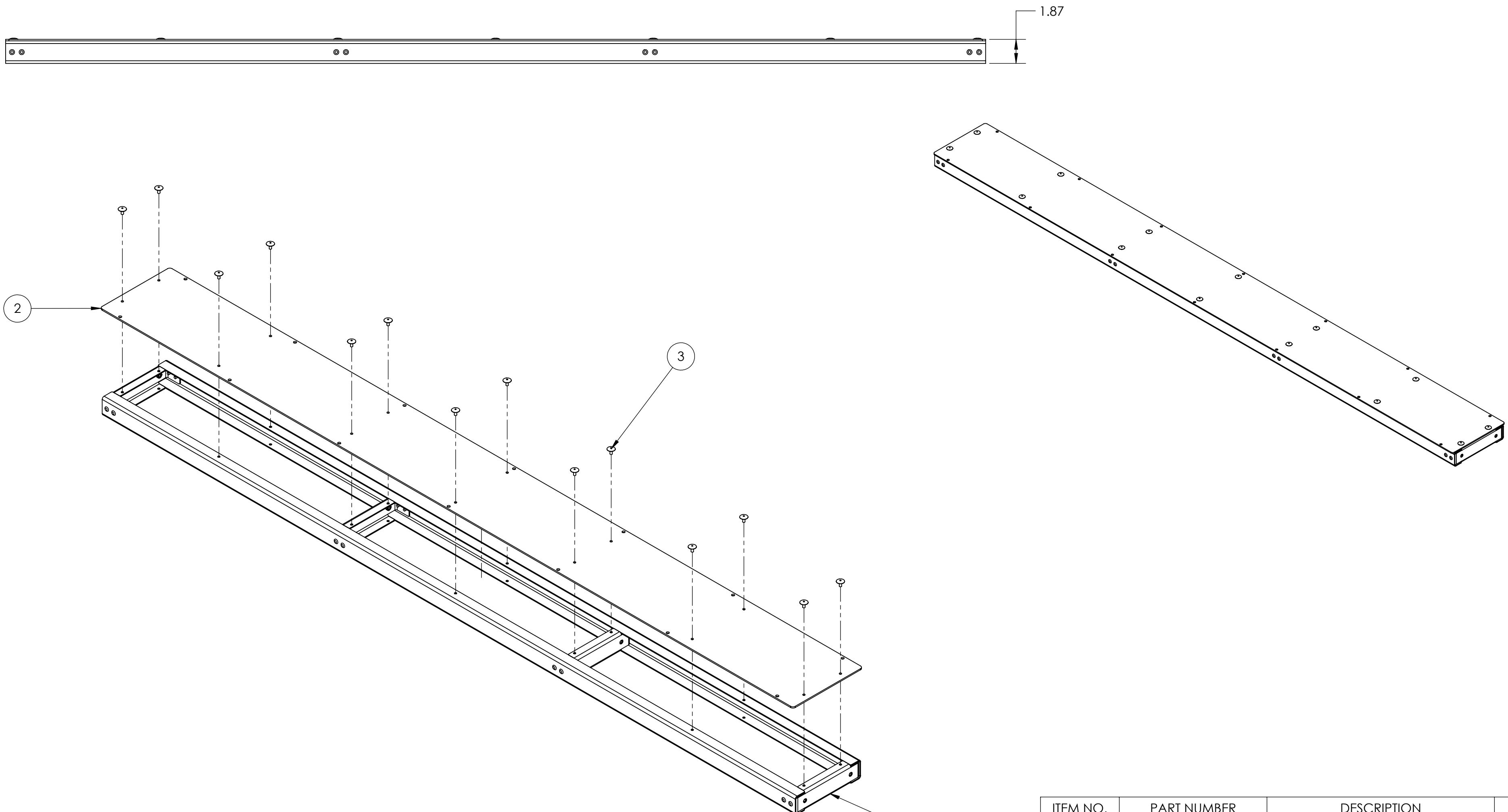
SCALE: 1:5 SHEET 1 OF 1

4

3

2

1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25016	Chute Cover Frame	1
2	GE-25017	Chute Cover Plastic	1
3	rivet_1875_.125-.25_largeHead	3/16" Large Head Aluminum Rivet, .126-.26 Grip Range	14

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN
THIS DRAWING IS THE SOLE
PROPERTY OF FIRST®. ANY
REPRODUCTION IN PART OR AS A
WHOLE WITHOUT THE WRITTEN
PERMISSION OF FIRST® IS
PROHIBITED.
COMMENTS:
REMOVE ALL BURRS AND SHARP
EDGES.

DO NOT SCALE DRAWING



TITLE:
**Chute Cover
Assembly**

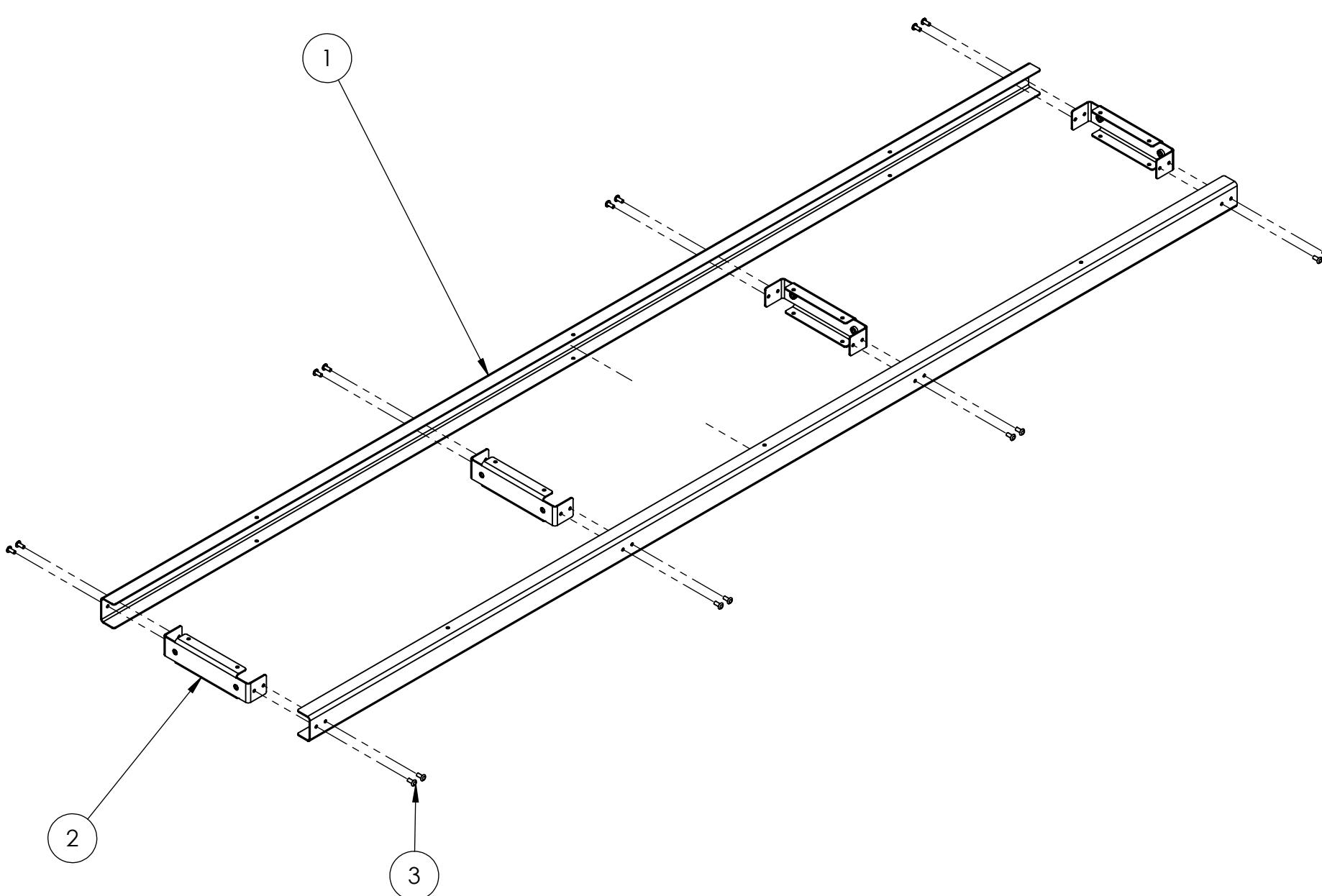
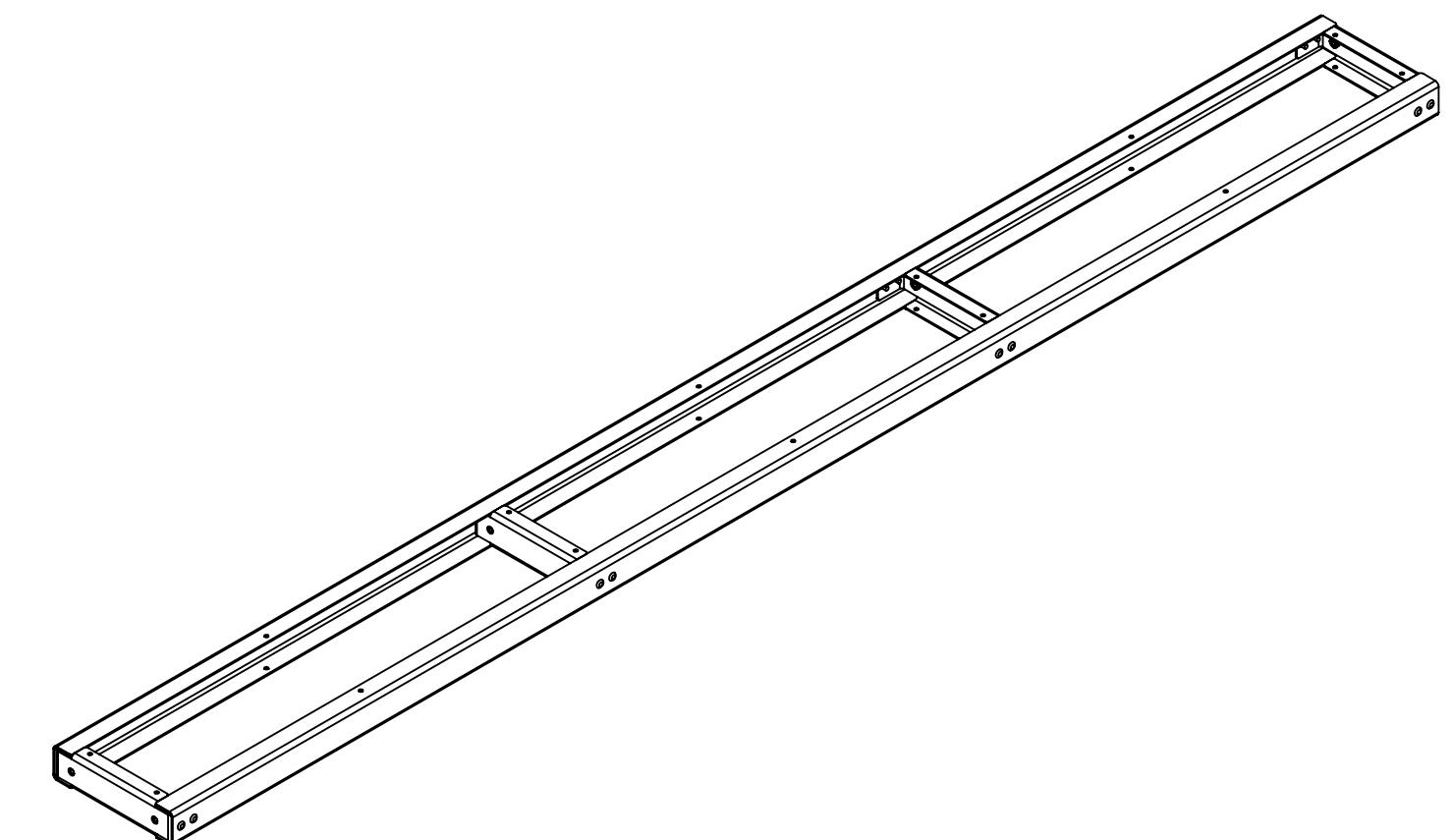
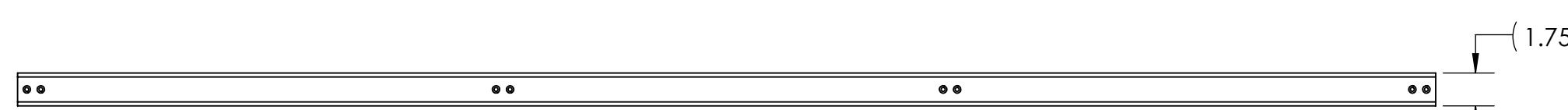
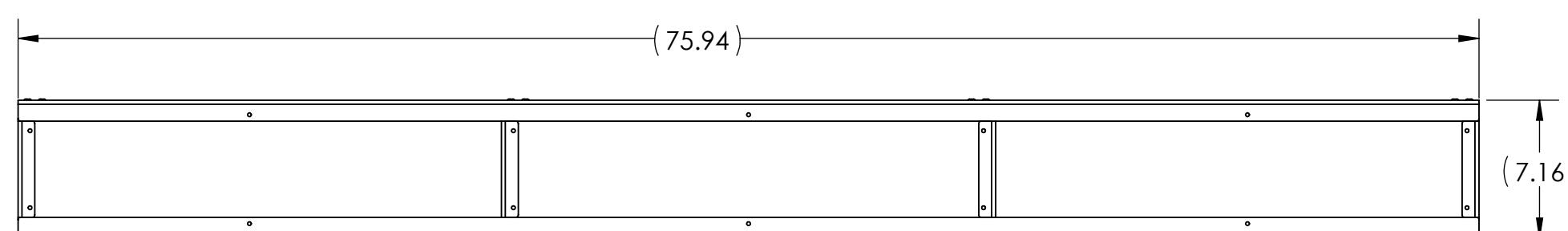
SIZE DWG. NO. REV
C GE-25015

SCALE: 1:8 SHEET 1 OF 1

NOTES:
1. ASSEMBLE AS SHOWN
2. LABEL ASSEMBLY WITH PART NUMBER

D

D



NOTE: ASSEMBLE AS SHOWN

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25012	Chute Frame Long	2
2	GE-25018	Chute Cover Frame Short with PEMs	4
3	rivet_.1875_.126-.25	.3/16" Rivet, .126-.25 Grip Range	16

UNLESS OTHERWISE SPECIFIED:			VEND	NAME	DATE
DIMENSIONS ARE IN INCHES			DRAWN	BB	8/13/2024
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$					
PROPRIETARY AND CONFIDENTIAL					
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Chute Cover
Frame**

SIZE DWG. NO. REV
C GE-25016

SCALE: 1:12 SHEET 1 OF 1

4

3

2

1

D

D

C

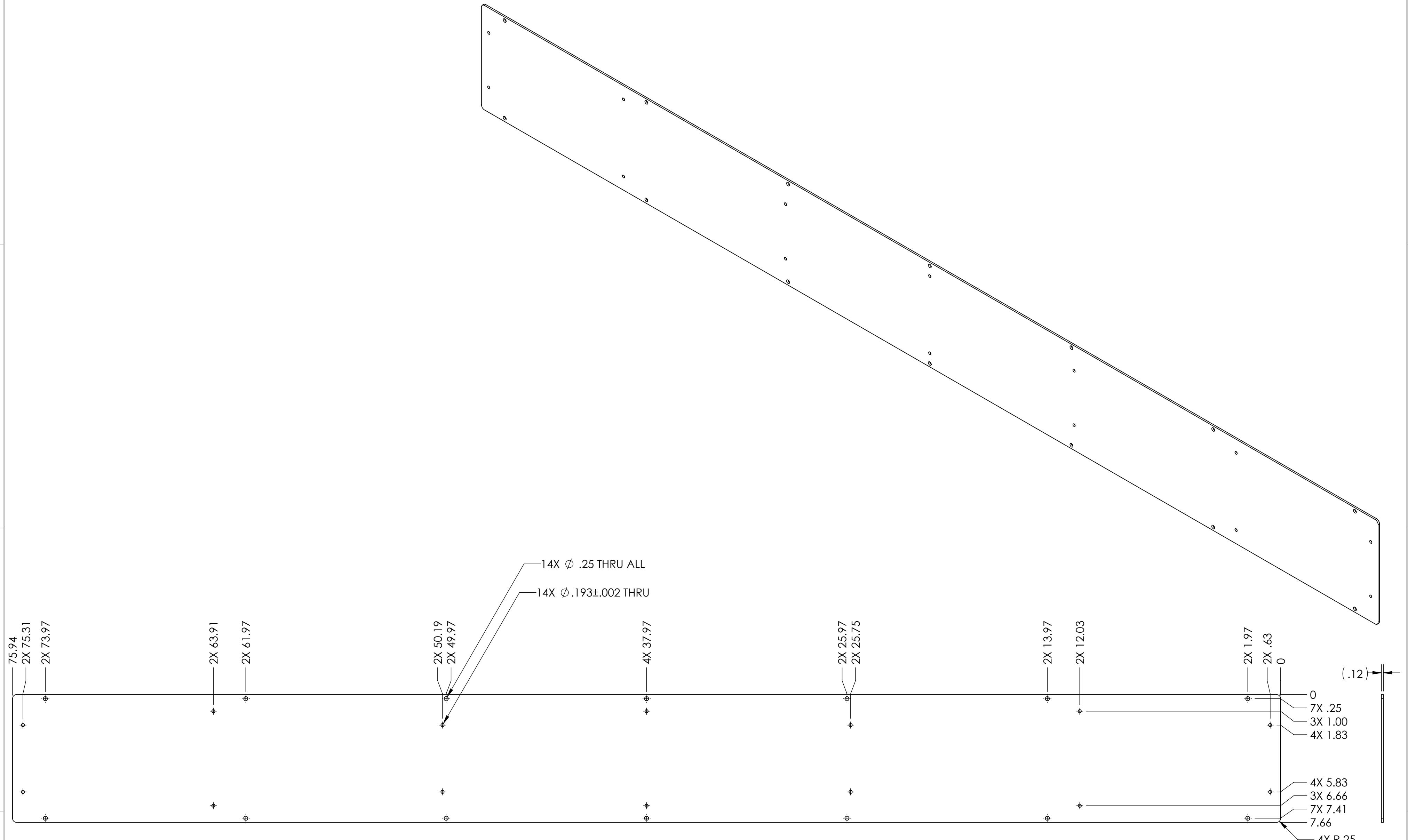
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	JO	8/12/2024
TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005			
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
0.125" Polycarbonate	C	GE-25017	
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING		SCALE: 1:4	SHEET 1 OF 1

 **FIRST
ROBOTICS
COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE:
**Chute Cover
Plastic**

SIZE DWG. NO. REV
C GE-25017

SCALE: 1:4 SHEET 1 OF 1

4

3

2

1

4

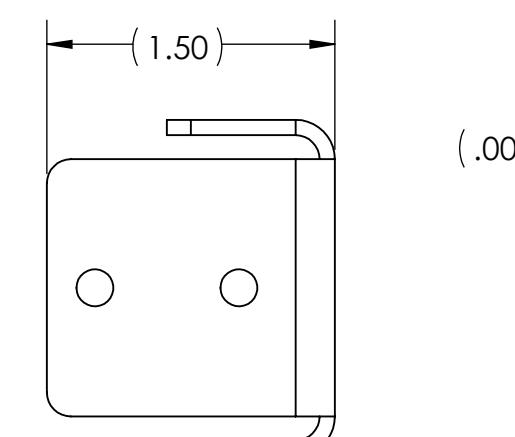
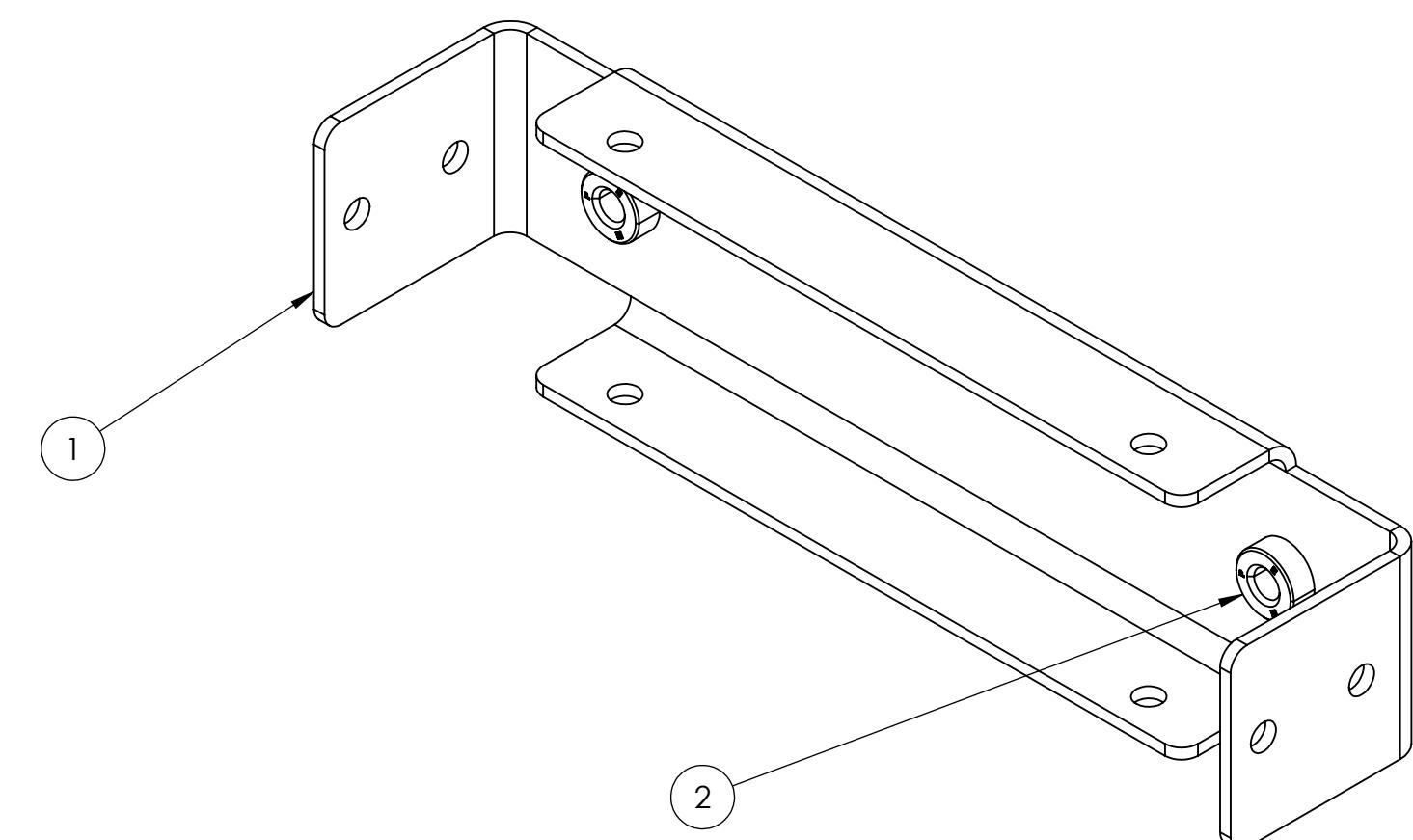
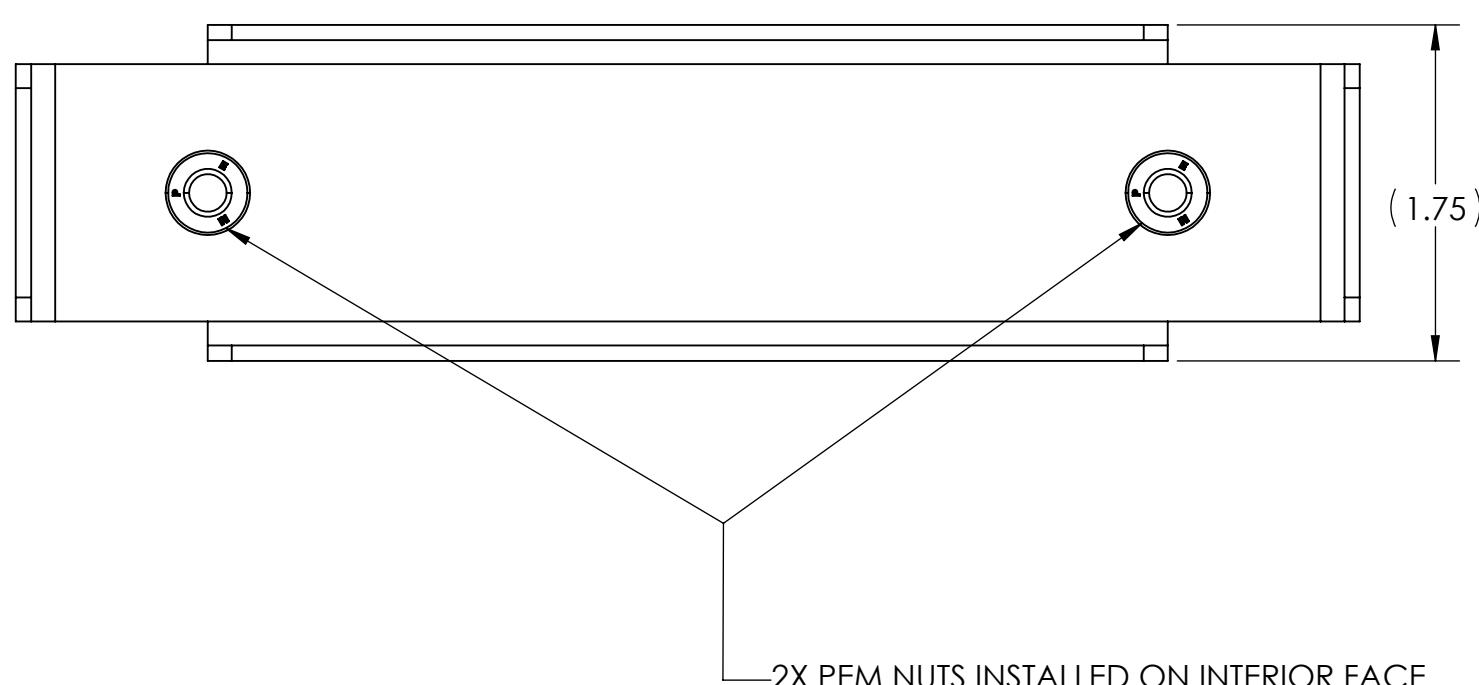
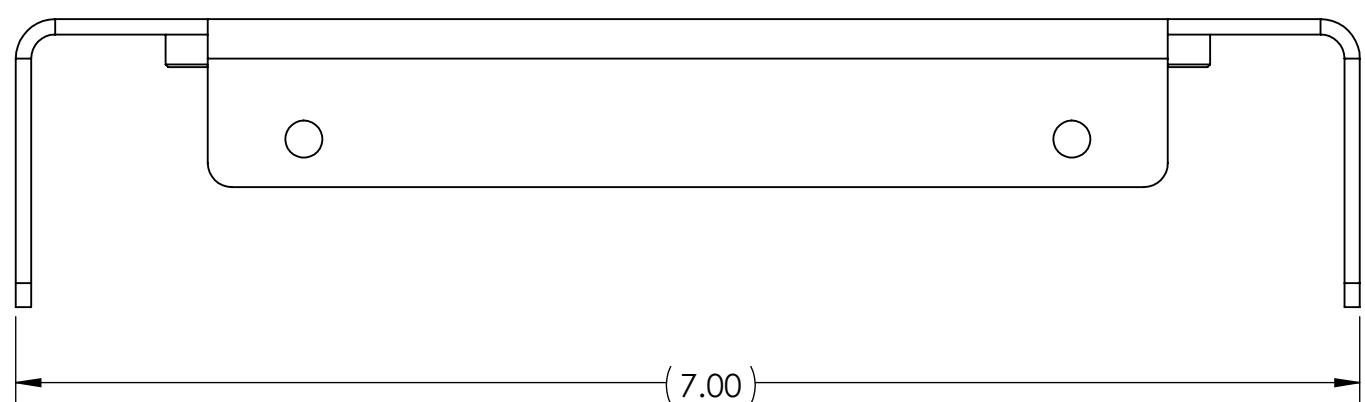
3

2

1

D

D



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25018-01	Chute Cover Frame Short	1
2	pem_clinchnut_.25_20 .054	1/4-20 self-clinching nut, .054 shank	2

UNLESS OTHERWISE SPECIFIED:			VEND	NAME	DATE
			DRAWN	BB	8/13/2024
PROPRIETARY AND CONFIDENTIAL					
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
MATERIAL/FINISH:			SIZE DWG. NO. REV		
12 Gauge (0.08") 5052 Aluminum			C GE-25018		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					

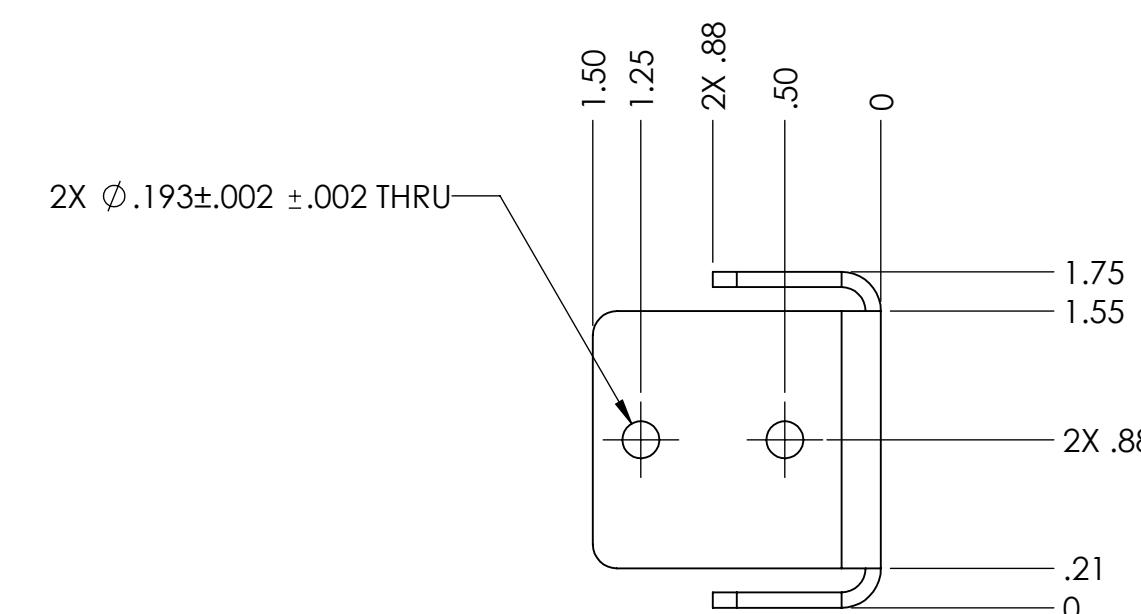
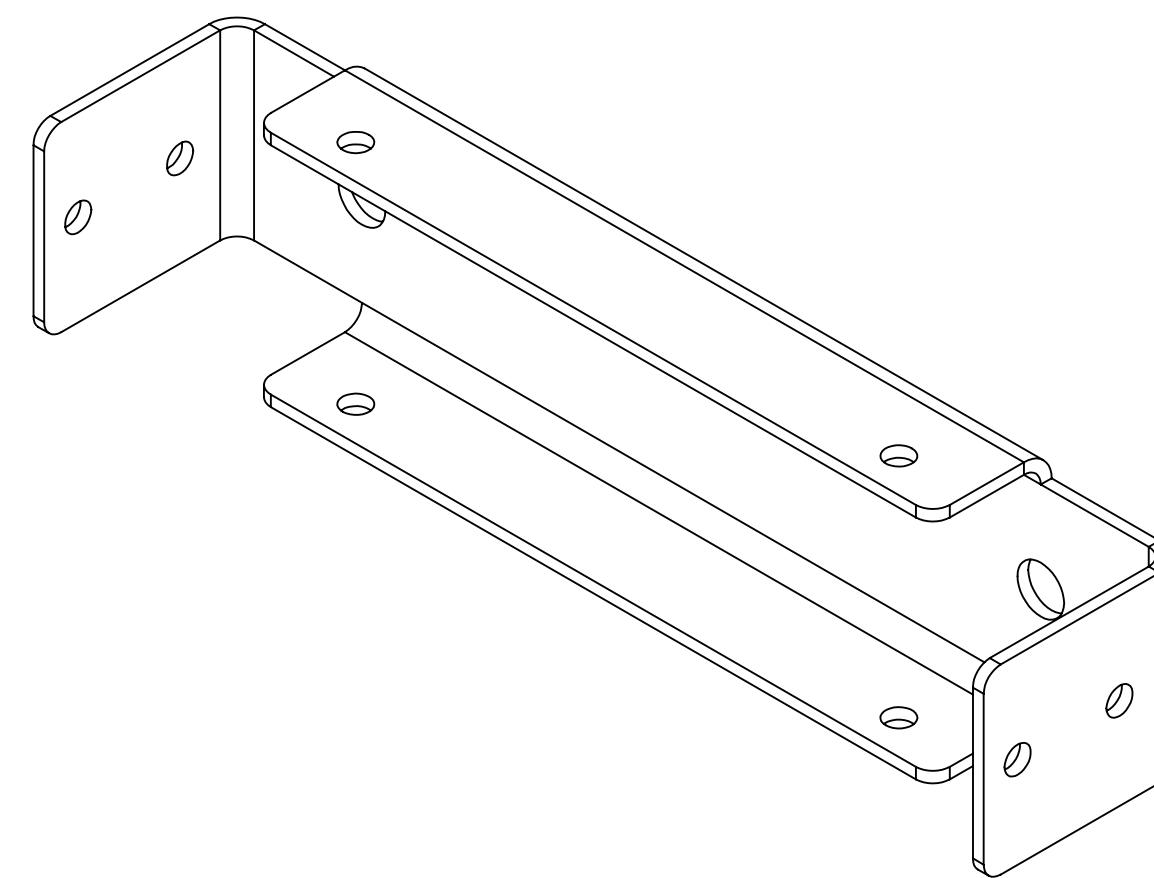
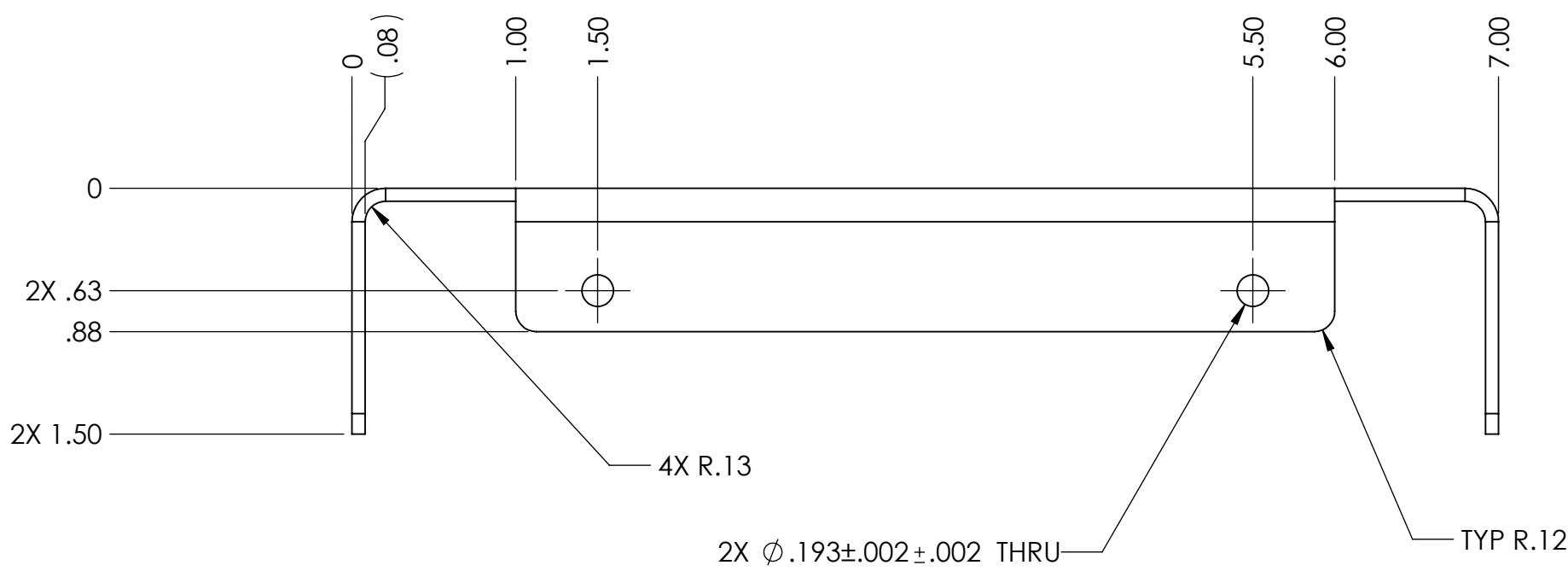
4

3

2

1

D



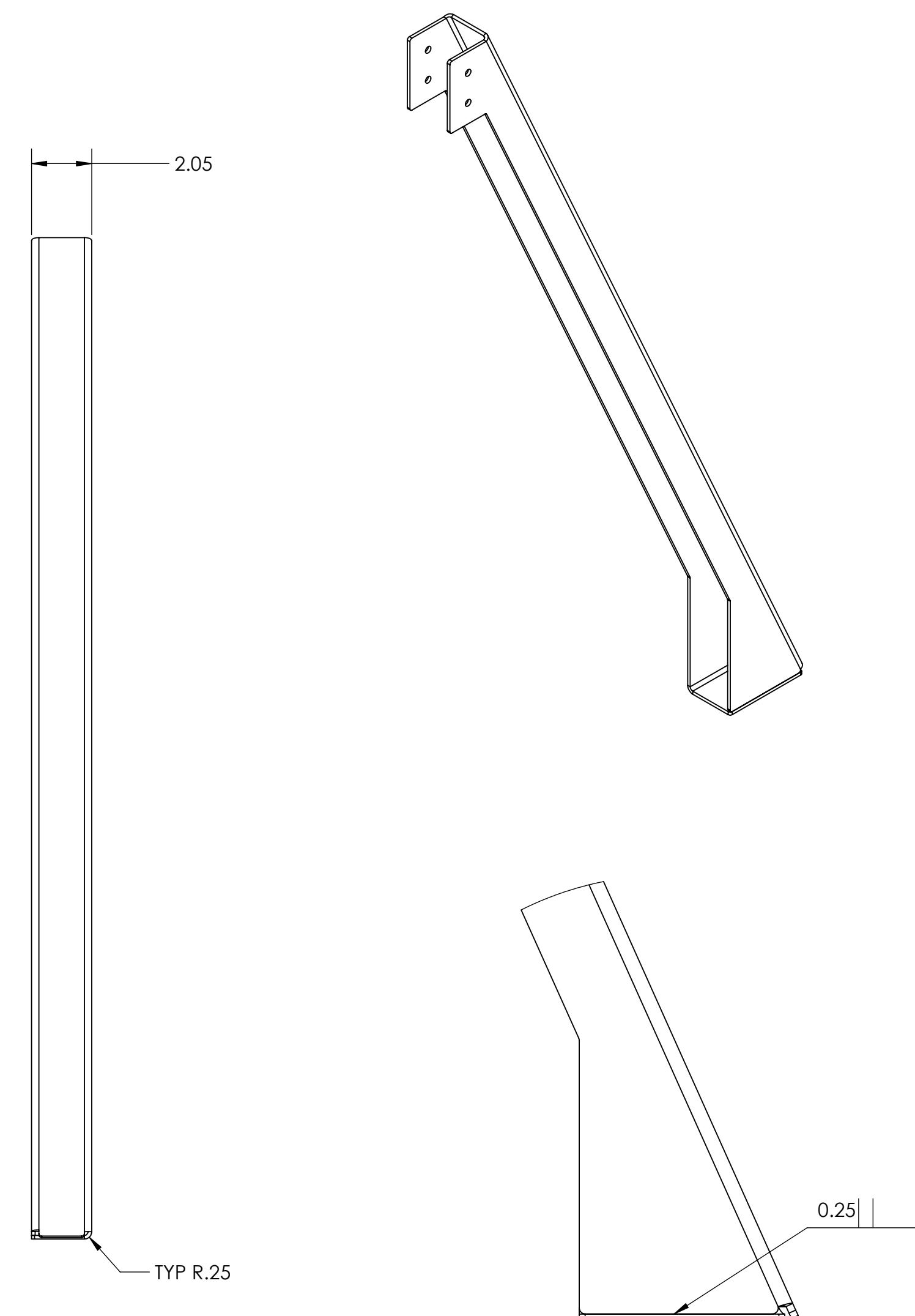
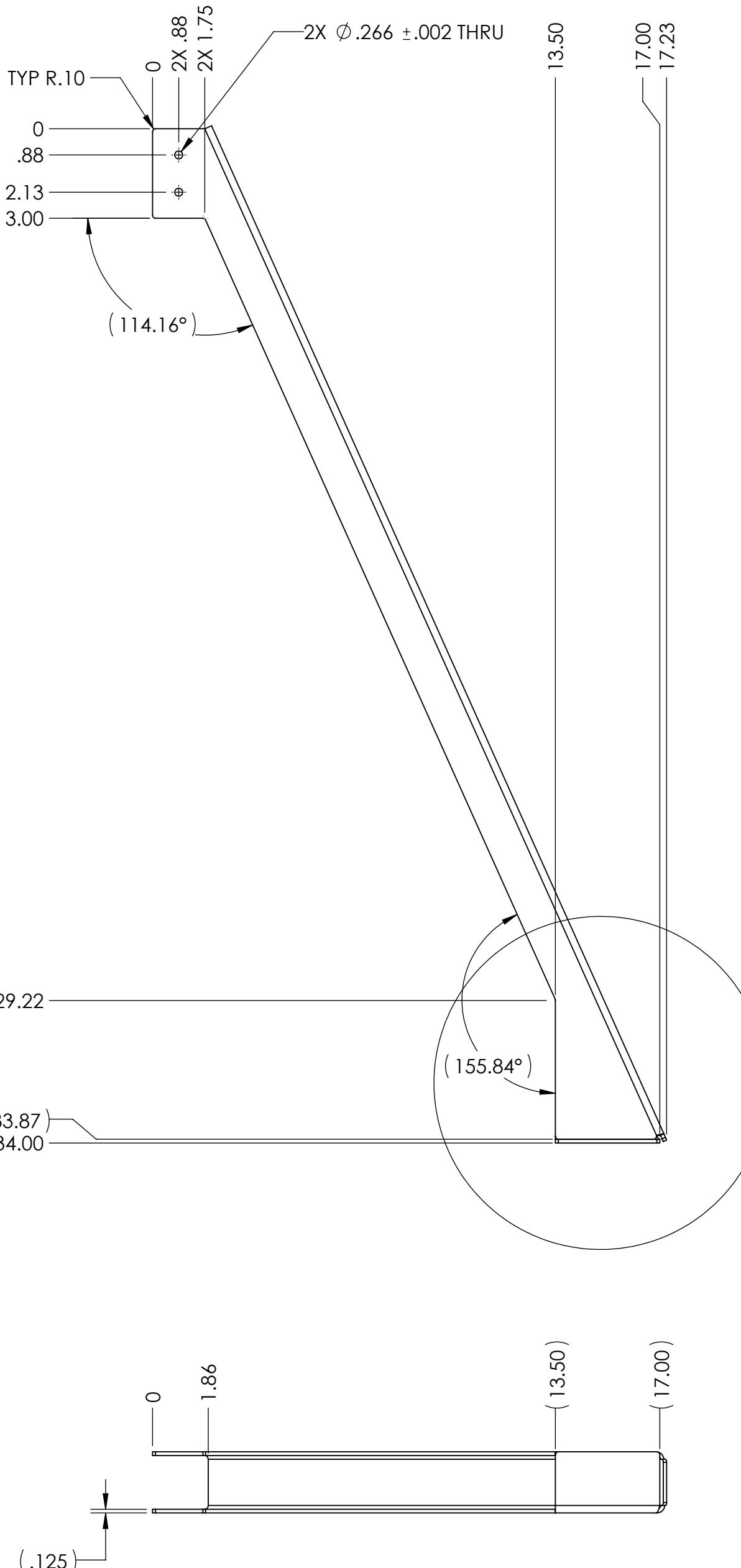
UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	BB	8/13/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	12 Gauge (.08") 5052 Aluminum		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST ROBOTICS COMPETITION Modeling Solutions Partner

Title: Chute Cover Frame Short

Size: DWG. NO. **C** GE-25018-01 **Rev:**

Scale: 1:1 **Sheet:** 1 OF 1



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	BB	8/13/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	0.125" 5052 Aluminum		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

DETAIL B
SCALE 1 : 2

FIRST ROBOTICS COMPETITION SOLIDWORKS Modeling Solutions Partner

TITLE: Frame Support Leg

SIZE	DWG. NO.	REV
C	GE-25019	

SCALE: 1:8 SHEET 1 OF 1

4

3

2

1

D

D

C

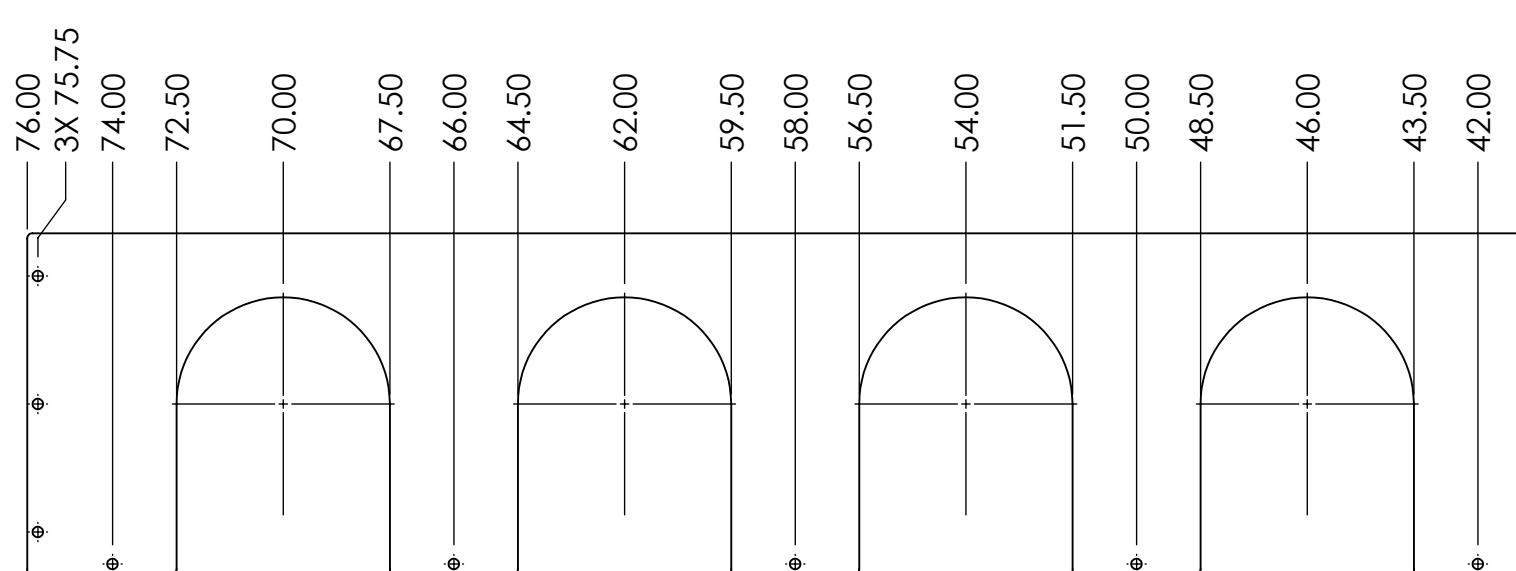
C

B

B

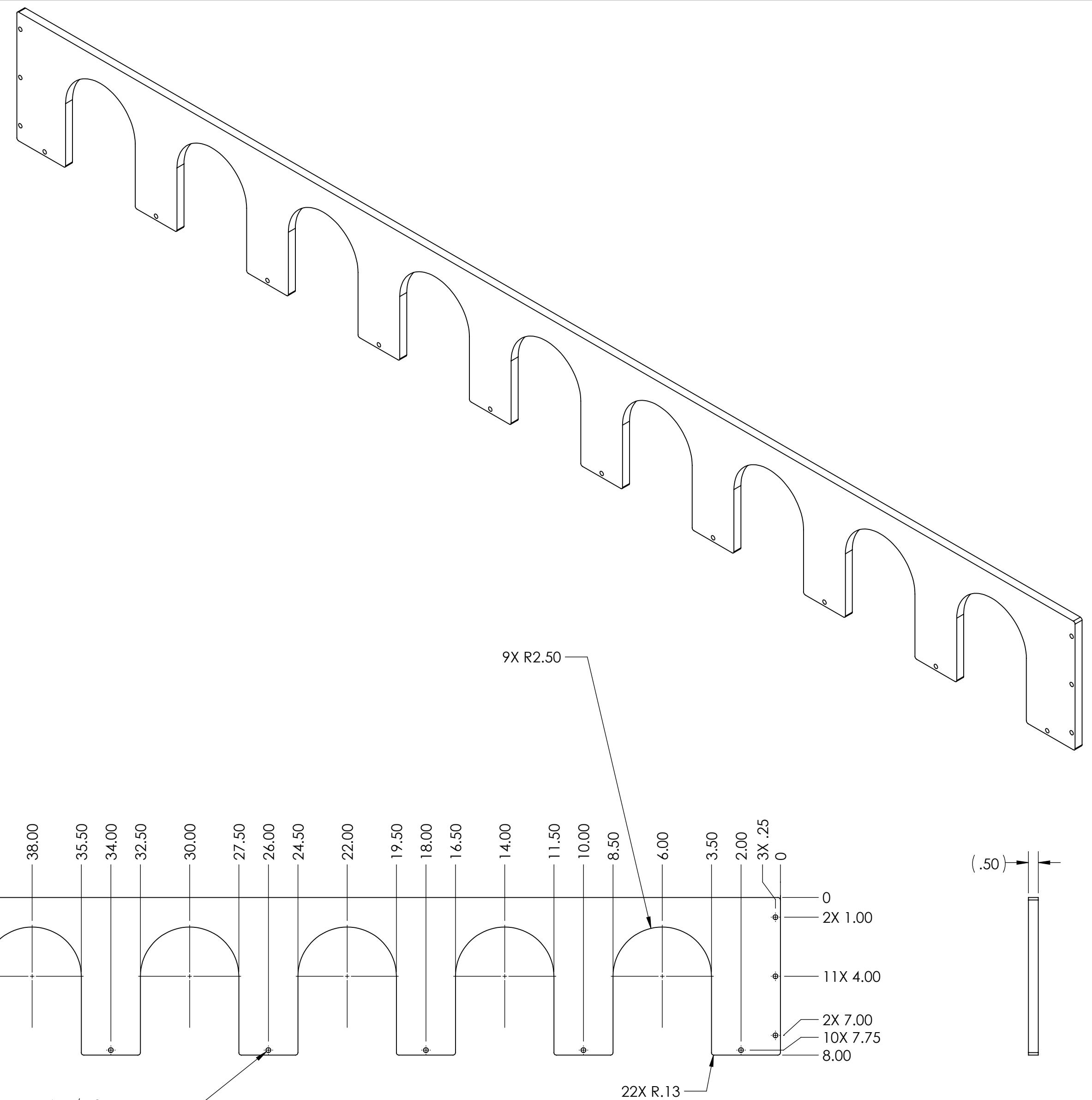
A

A



16X Ø .25 THRU ALL

NOTE: LABEL WITH PART NUMBER



4

3

2

1

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	JO	8/12/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 1/2" Polycarbonate			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Back Divider
Plastic**

SIZE DWG. NO. REV
C GE-25020

SCALE: 1:4.5 SHEET 1 OF 1

4

3

2

1

D

D

C

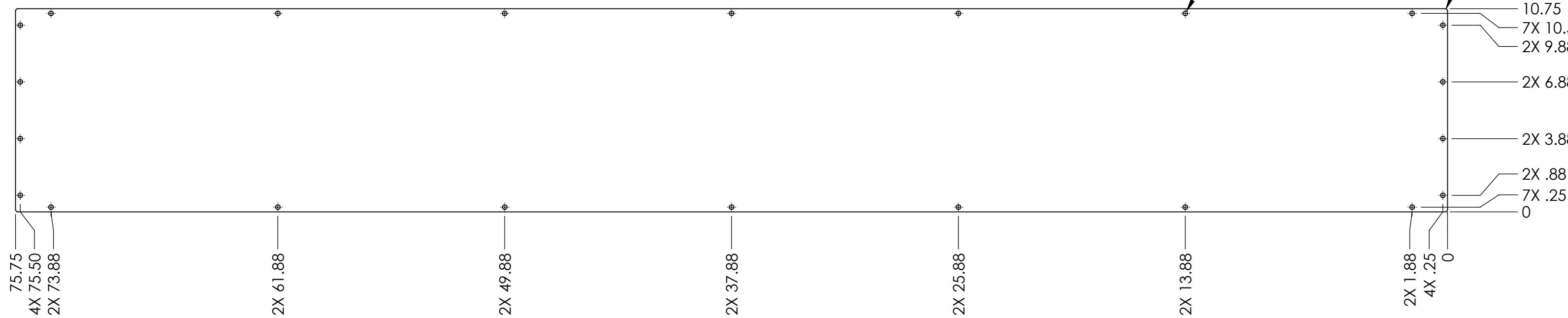
C

B

B

A

A



Notes:
Label with Part Number

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	JO	8/12/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 1/8" Polycarbonate			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			
FIRST ROBOTICS COMPETITION			
SOLIDWORKS Modeling Solutions Partner			
TITLE: Top Cover Plastic			
SIZE DWG. NO. REV			
C GE-25021			
SCALE: 1:5 SHEET 1 OF 1			

4

3

2

1

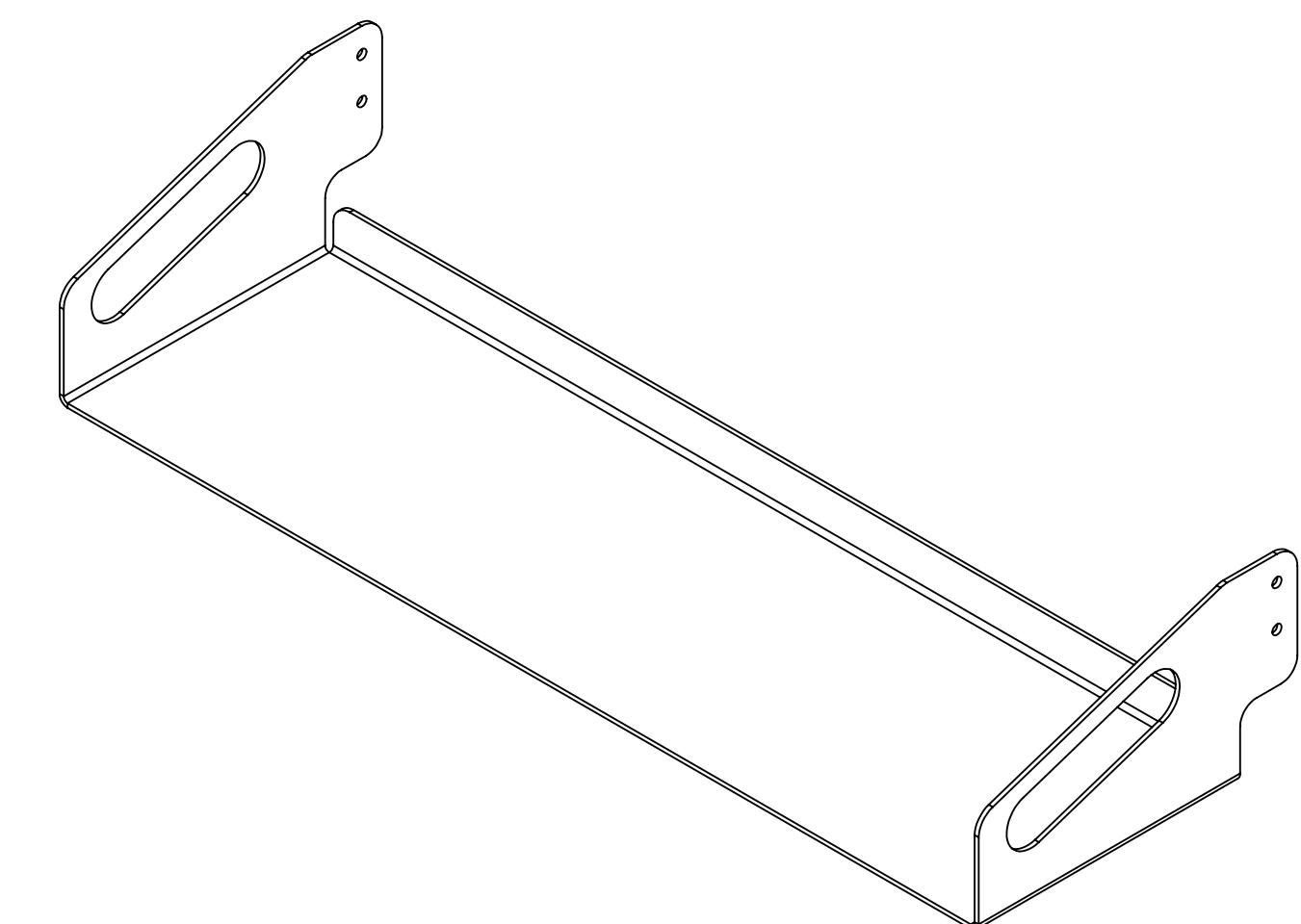
4

3

2

1

D

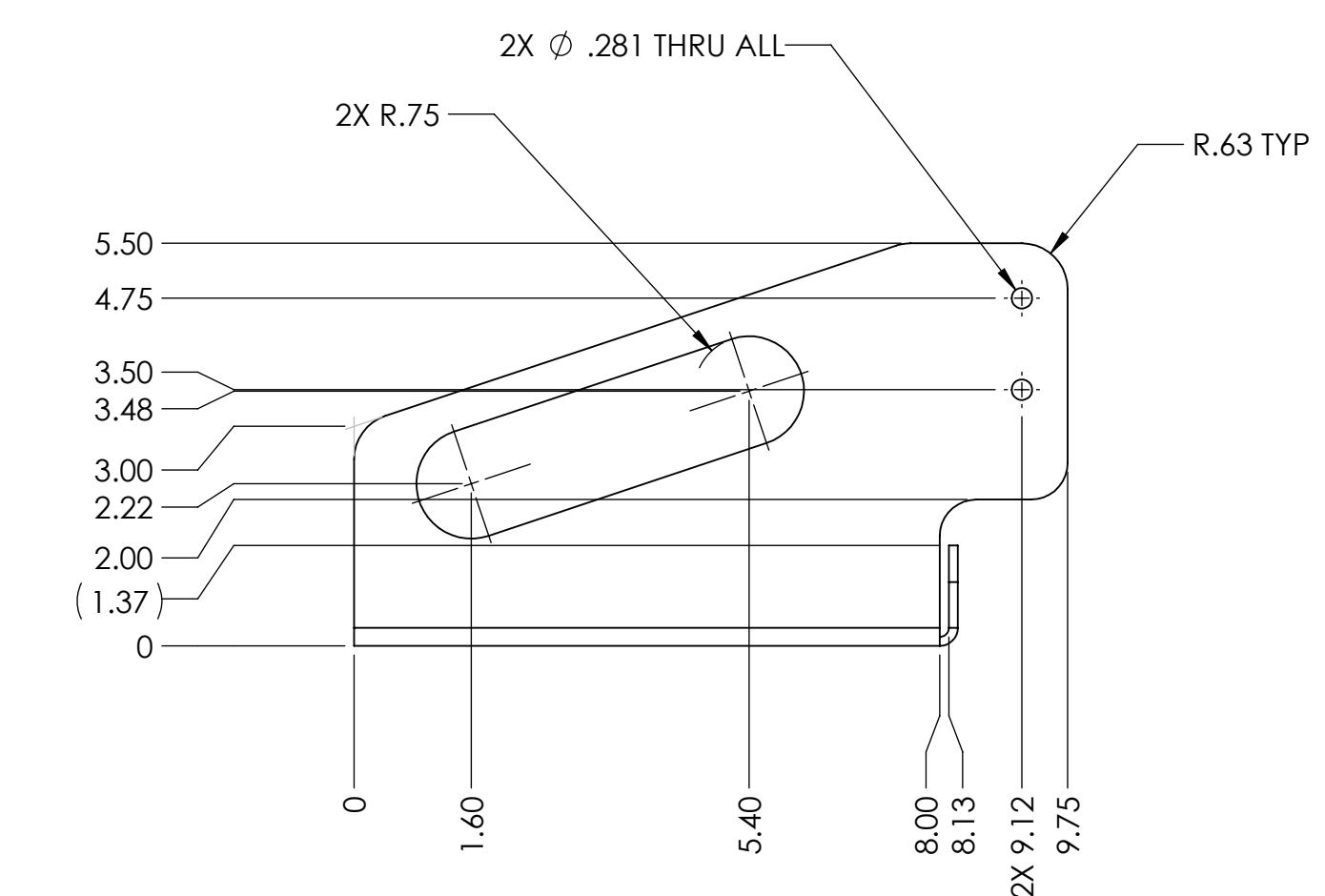


C

B

1.37

0



A

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$

MATERIAL/FINISH:

11 Gauge (.1233")
Galvanized Steel

DO NOT SCALE DRAWING

BEND

NAME

DATE

DRAWN

JO

8/13/2024



TITLE:
Floor Support -
2025 Specific

SIZE DWG. NO. REV

C GE-25022

SCALE: 1:4 SHEET 1 OF 1

4

3

2

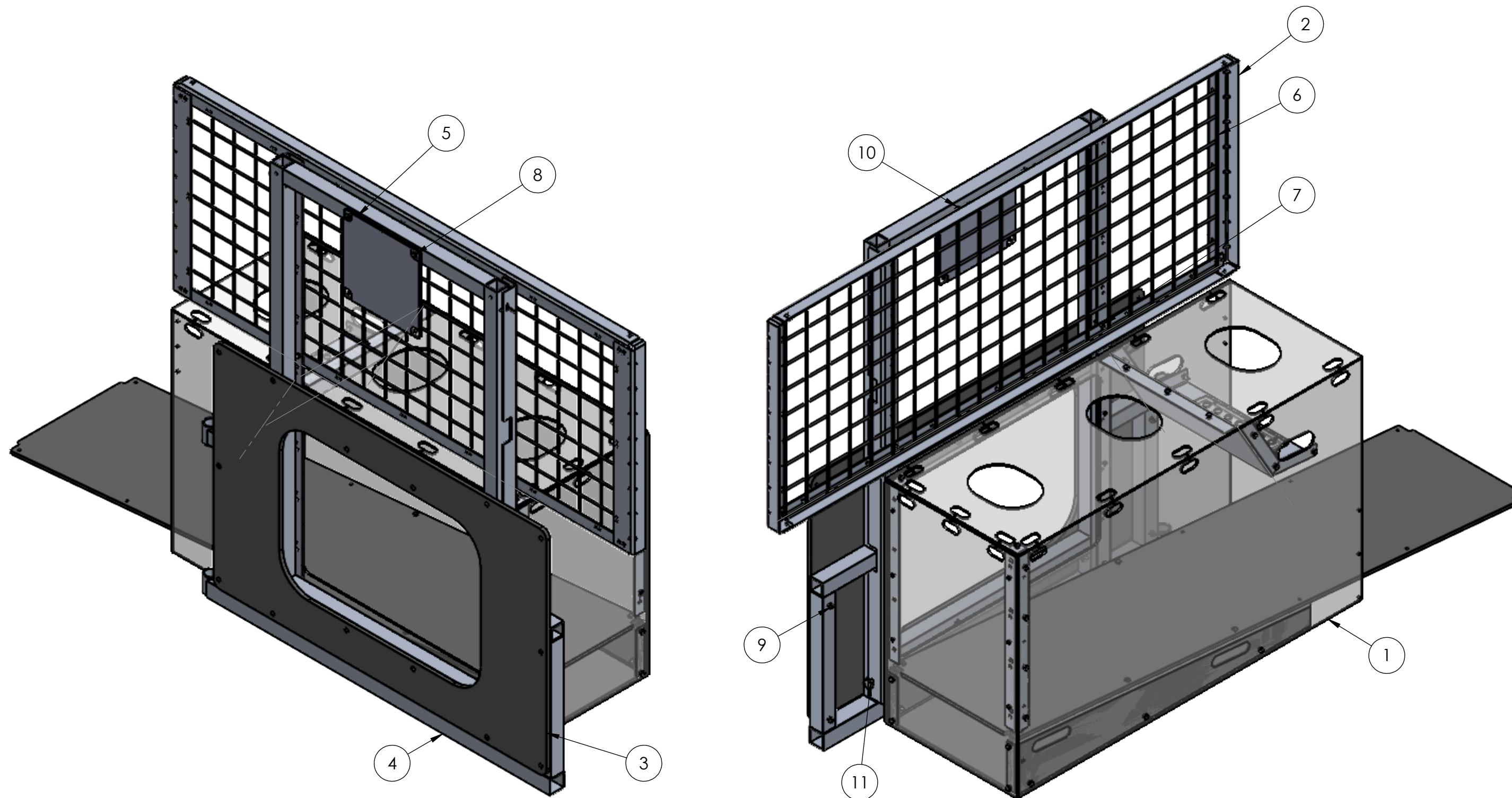
1

D

C

B

A



Note: April Tag ID # changes depending on which Processor it is on. See the Field Layout and Marking Diagram for more details.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25101	Ramp Assembly	1
2	GE-25116	Fence Frame	1
3	GE-25119	Processor Opening	1
4	GE-25120	Processor Weldment	1
5	FE-00083-ID3	AprilTag	1
6	fence	ULINE Grid	1
7	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	4
8	Configurable Bolt	2.5" Long 1/4-20 Hex Head Bolt	2
9	flat_phil_.25_20_2.75	Steel Phillips Flat Head Screw, 1/4"-20 x 2-3/4" long, fully threaded	12
10	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	14
11	pin_quick_ring_.25_2.3	Pin, Ring-Grip Quick-Release with SS Ring, 1/4" Diameter, 2.3125" Usable Length	6

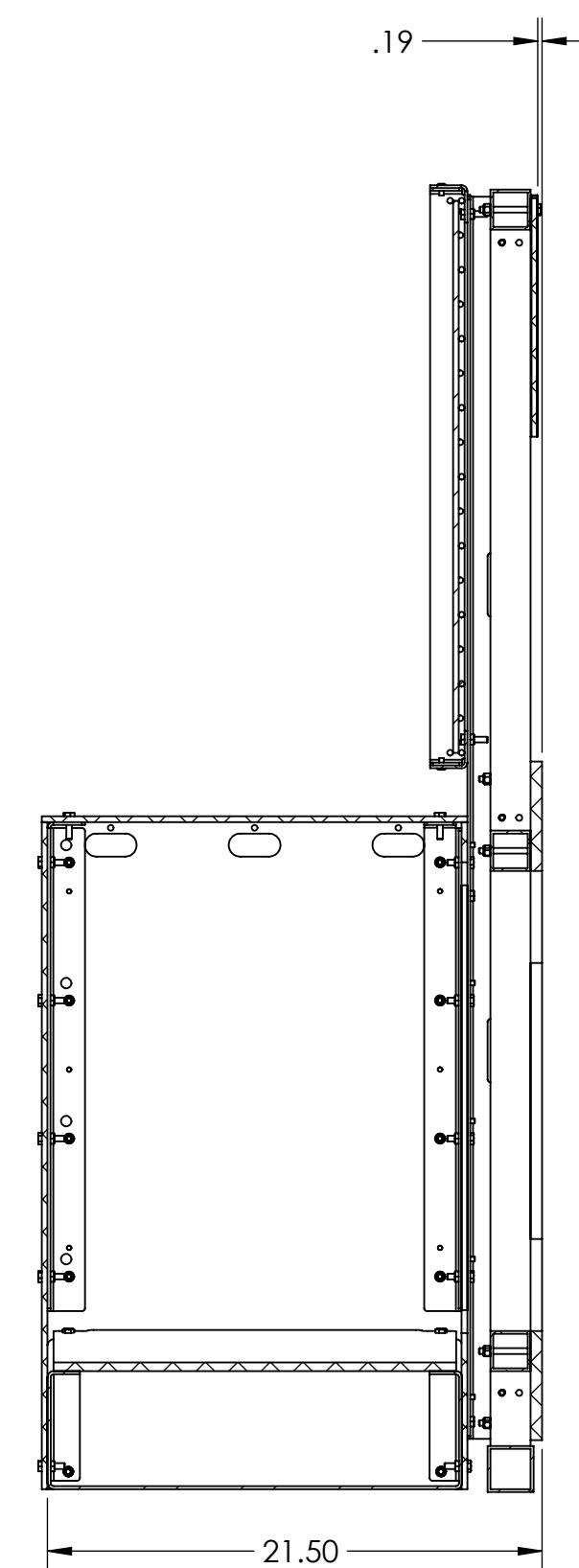
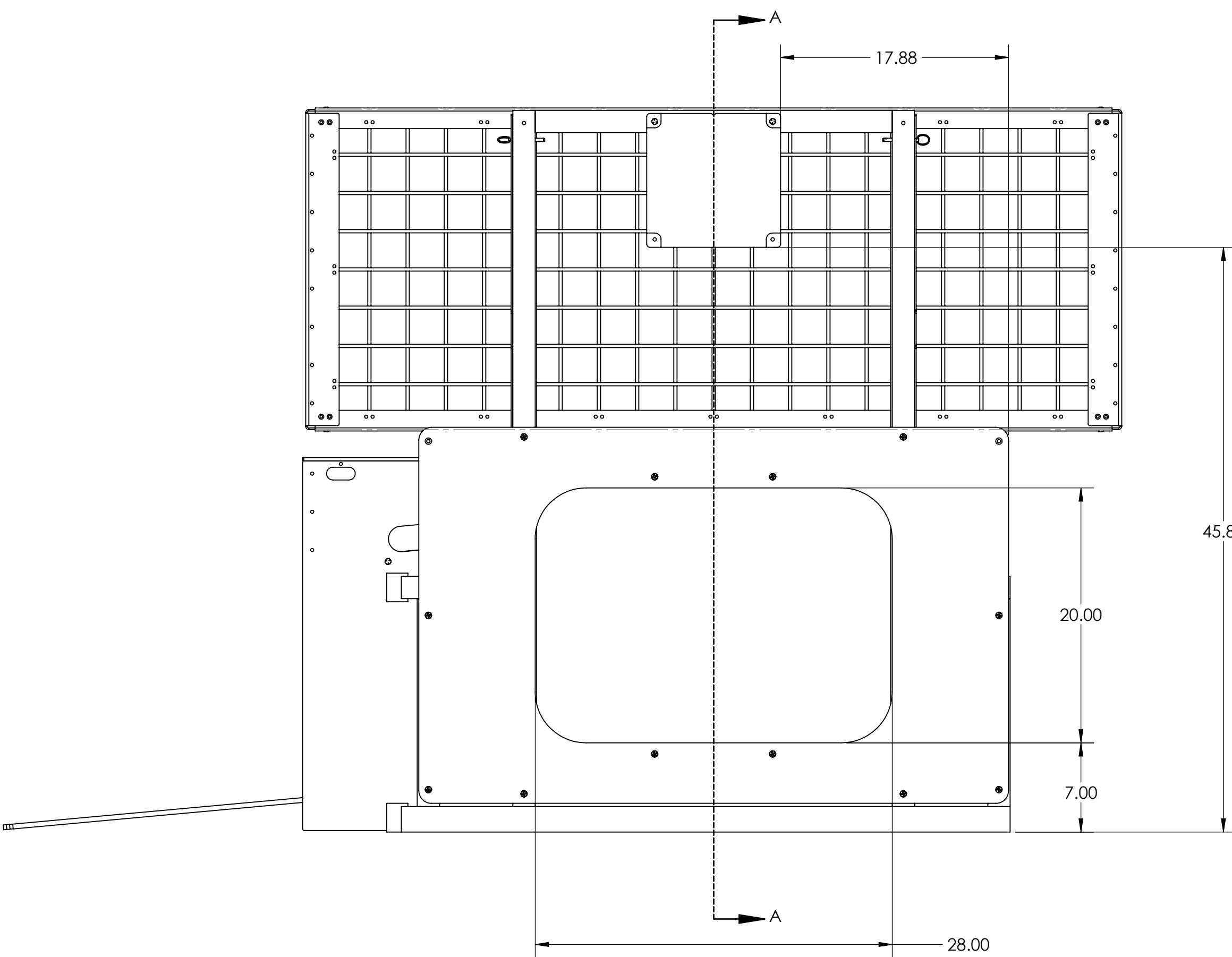
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	JO	10/28/2024
TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$	PROPRIETARY AND CONFIDENTIAL		
MATERIAL/FINISH:	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.		
COMMENTS:	REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING			

FIRST ROBOTICS COMPETITION SOLIDWORKS Modeling Solutions Partner

Processor

SIZE	DWG. NO.	REV
C	GE-25100	
SCALE: 1:10	SHEET 1 OF 2	

D



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
DRAWN	JO	10/28/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

 **FIRST
ROBOTICS
COMPETITION**  SOLIDWORKS
Modeling Solutions Partner

TITLE:
Processor

SIZE DWG. NO. REV

C GE-25100

SCALE: 1:8 SHEET 2 OF 2

4

3

2

1

D

D

C

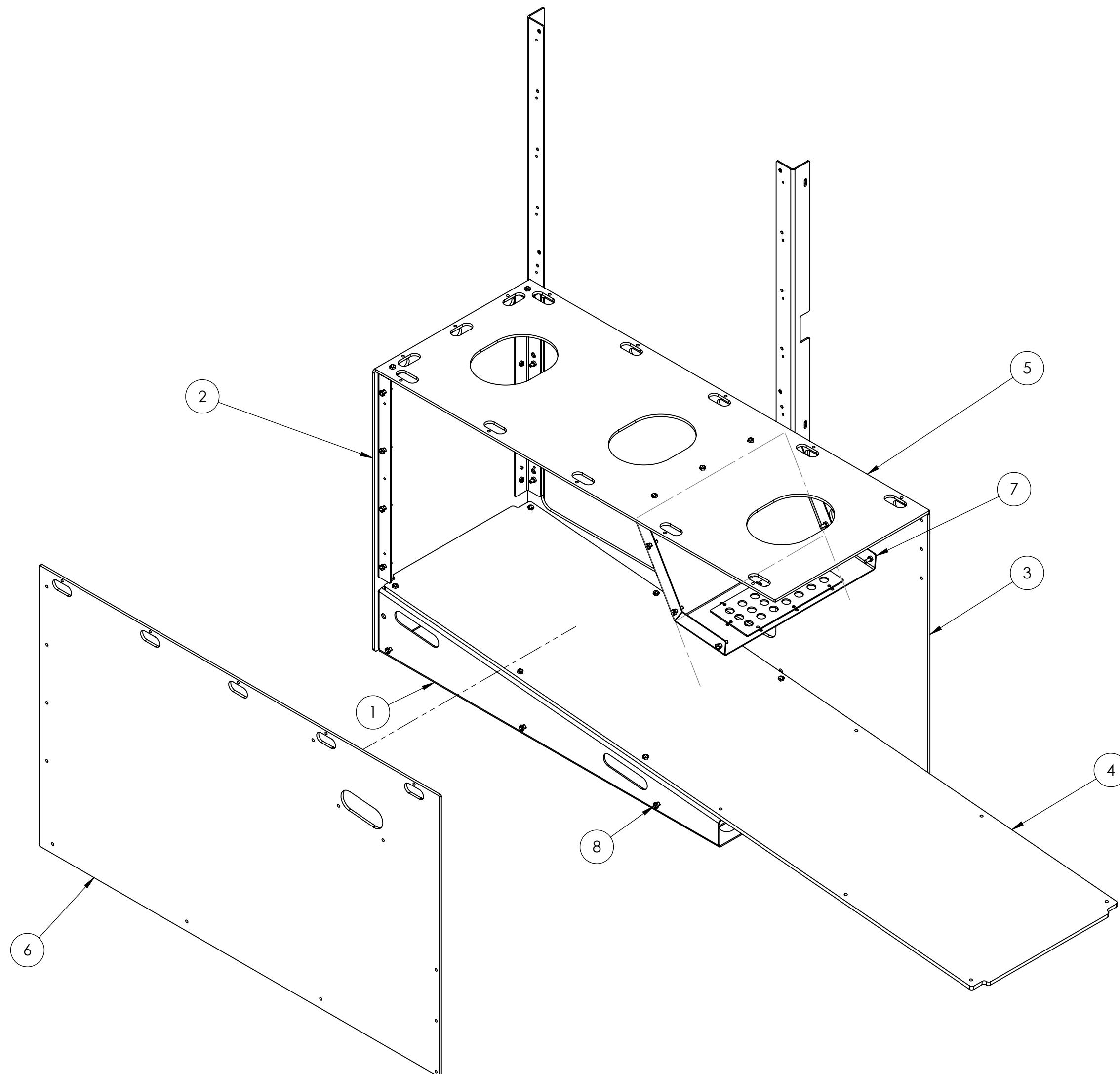
C

B

B

A

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25102	Processor Ramp Sheetmetal with PEMs	1
2	GE-25104	Processor Ramp Back Assembly	1
3	GE-25107	Processor Fieldside Assembly	1
4	GE-25110	Processor Ramp	1
5	GE-25111	Processor Top Panel	1
6	GE-25112	Processor Humanside Panel	1
7	GE-25113	Sensor Assembly	1
8	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	35

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm\frac{1}{2}$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$

MATERIAL/FINISH:

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING



TITLE:
Ramp Assembly

SIZE DWG. NO. REV
C GE-25101

SCALE: 1:8 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

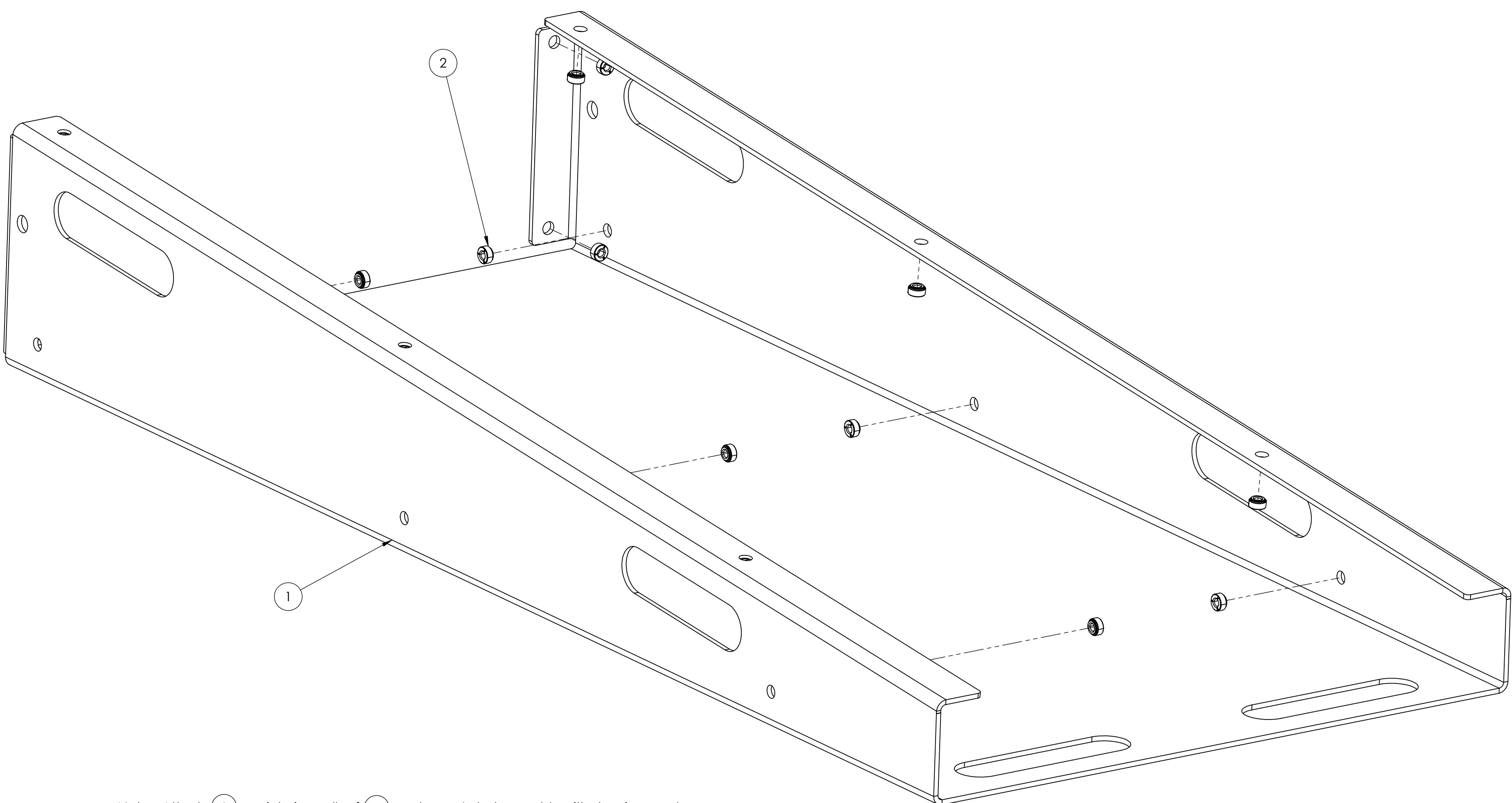
C

B

B

A

A



Notes: Attach (2) on interior walls of (1) as shown. Label assembly with drawing number.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25102-01	Processor Ramp Sheetmetal	1
2	pem_clinchnut_.25_20 .054	1/4-20 self-clinching nut, .054 shank	16

UNLESS OTHERWISE SPECIFIED:			VEND	NAME	DATE
DIMENSIONS ARE IN INCHES			DRAWN	JO	10/2/2024
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$					
TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$					
PROPRIETARY AND CONFIDENTIAL					
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
COMMENTS:					
REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE: Processor Ramp
Sheetmetal with
PEMs

SIZE DWG. NO. REV

C GE-25102

SCALE: 1:2 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

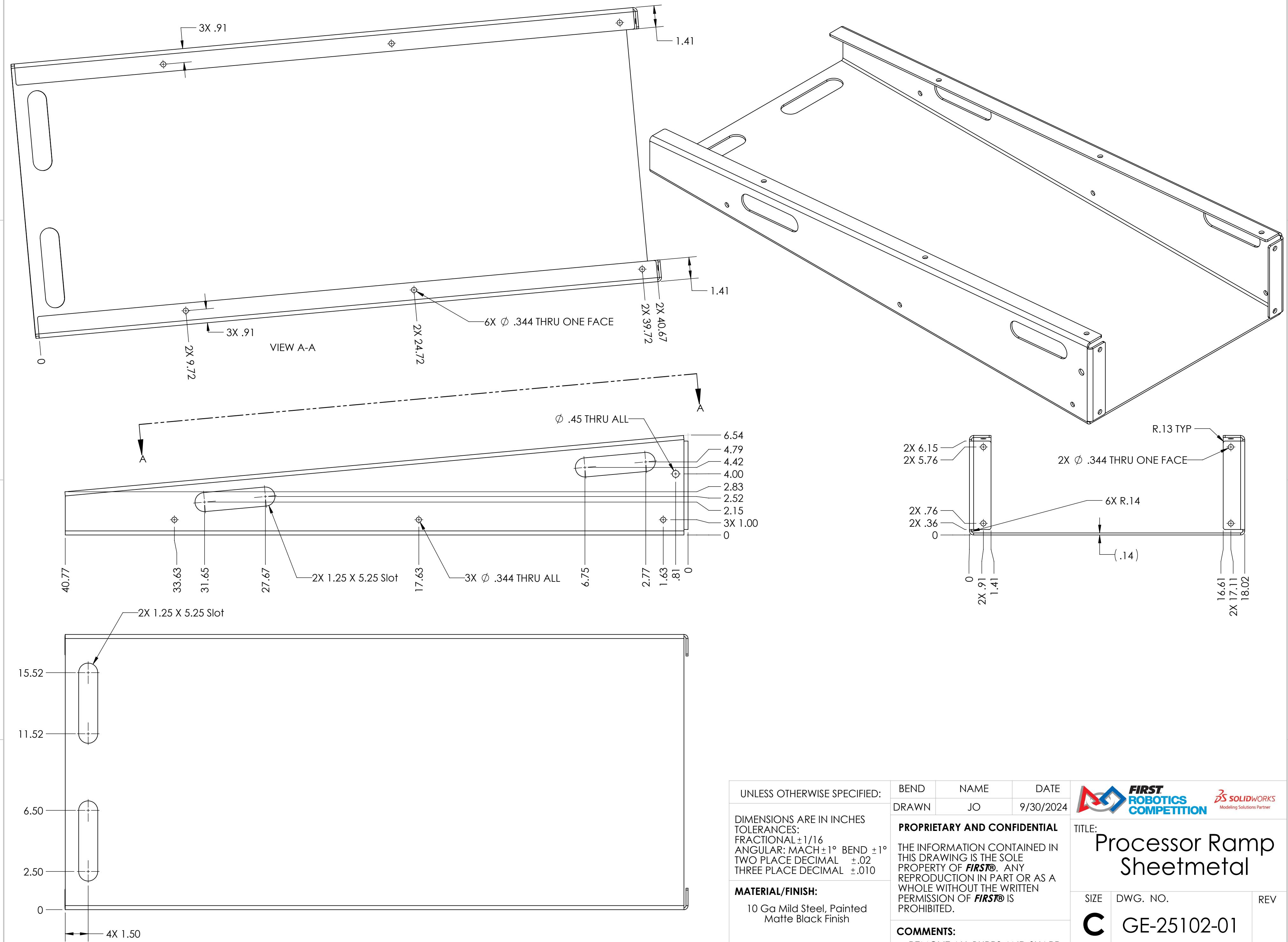
C

B

B

A

A



SIZE	DWG. NO.	REV
C	GE-25102-01	
SCALE: 1:4	SHEET 1 OF 1	

FIRST ROBOTICS COMPETITION Modeling Solutions Partner

TITLE: Processor Ramp Sheetmetal

4

3

2

1

D

D

C

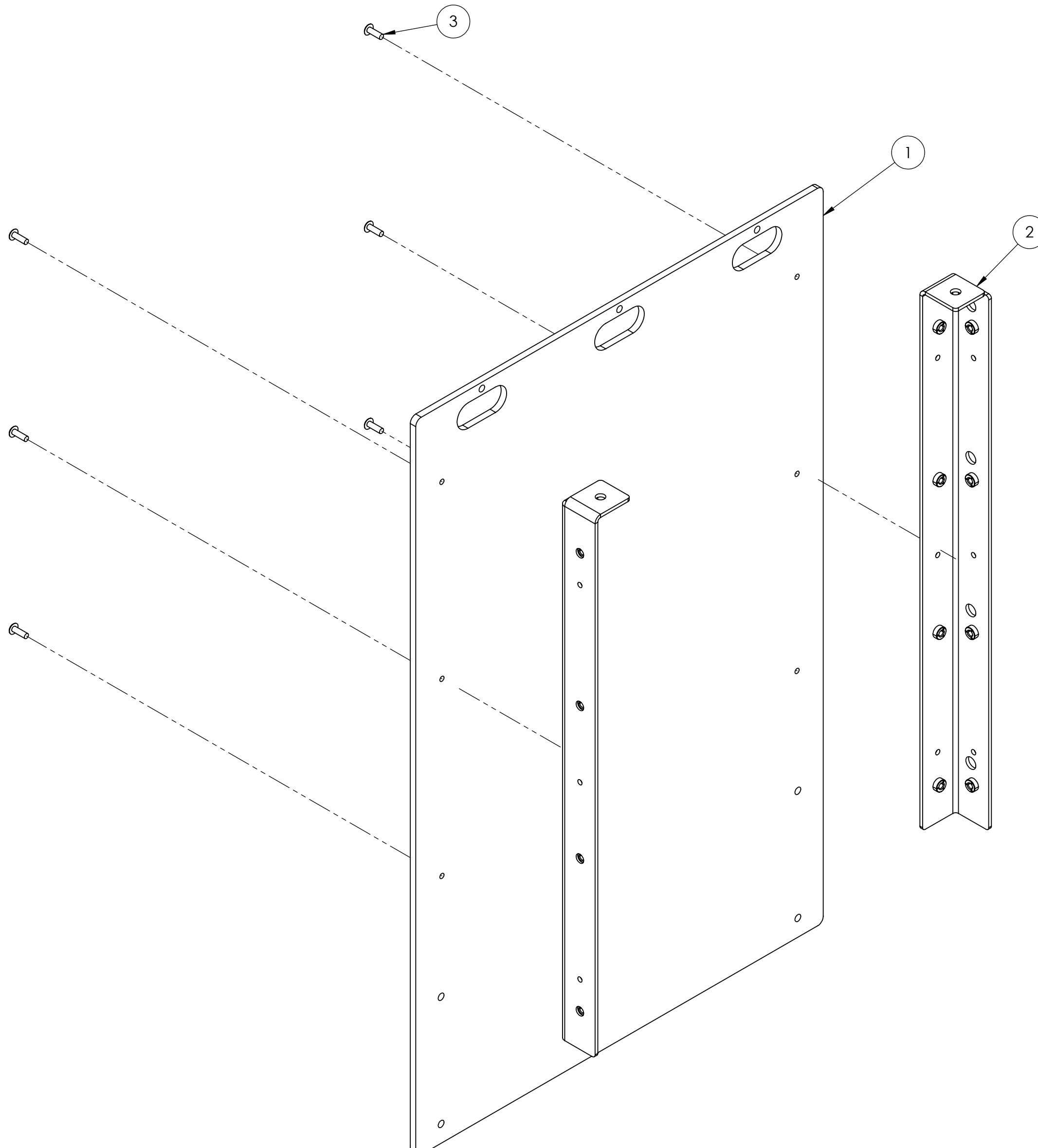
C

B

B

A

A



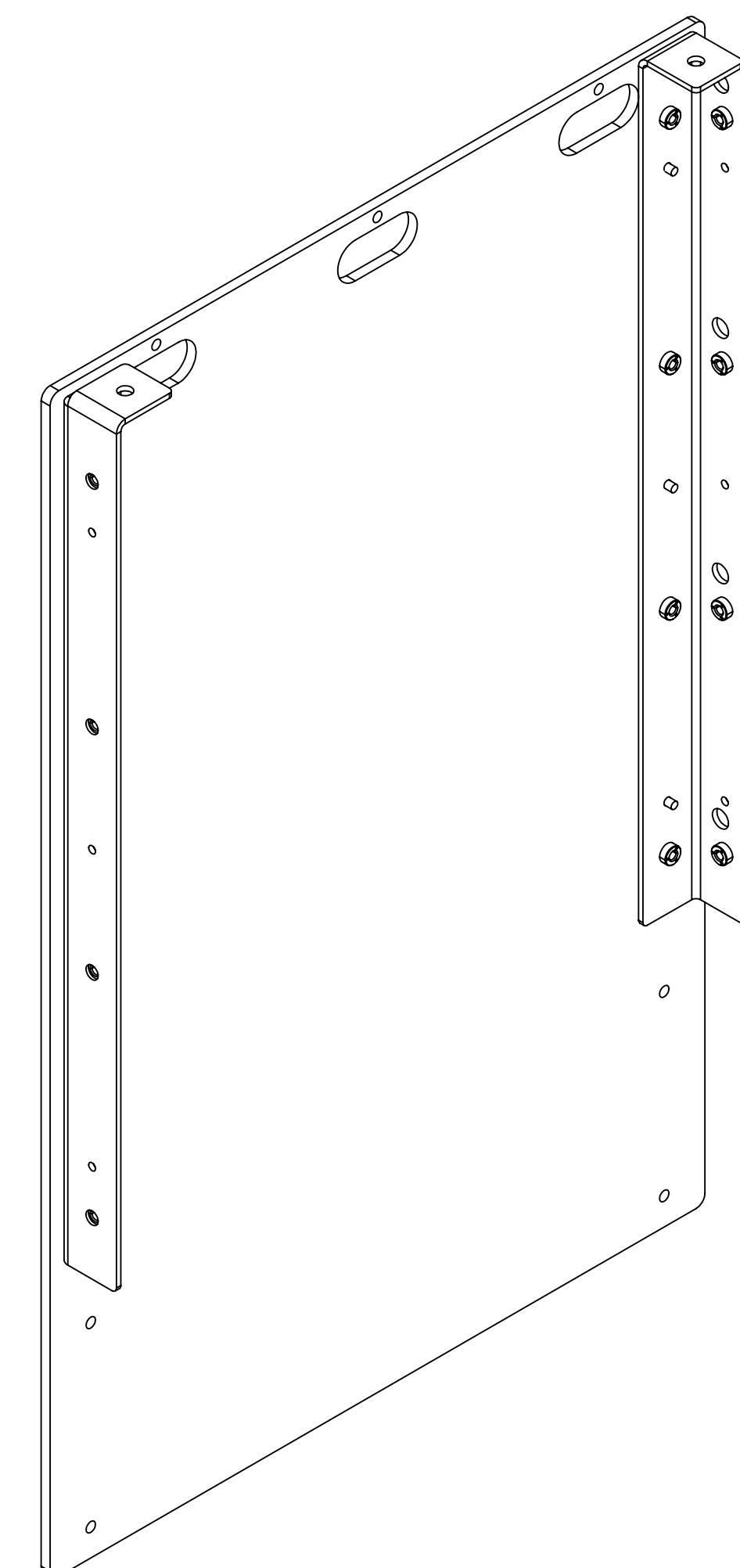
Notes: Attach (1) to (2) using (3) as shown. Label assembly with drawing number.

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

DO NOT SCALE DRAWING



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25105	Processor Ramp Back Panel	1
2	GE-25106	Processor Inner Corner Bracket w/ PEMs	2
3	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	6

VEND	NAME	DATE
DRAWN	JO	10/2/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Processor Ramp Back Assembly

SIZE DWG. NO. REV

C GE-25104

SCALE: 1:3 SHEET 1 OF 1

4

3

2

1

D

D

C

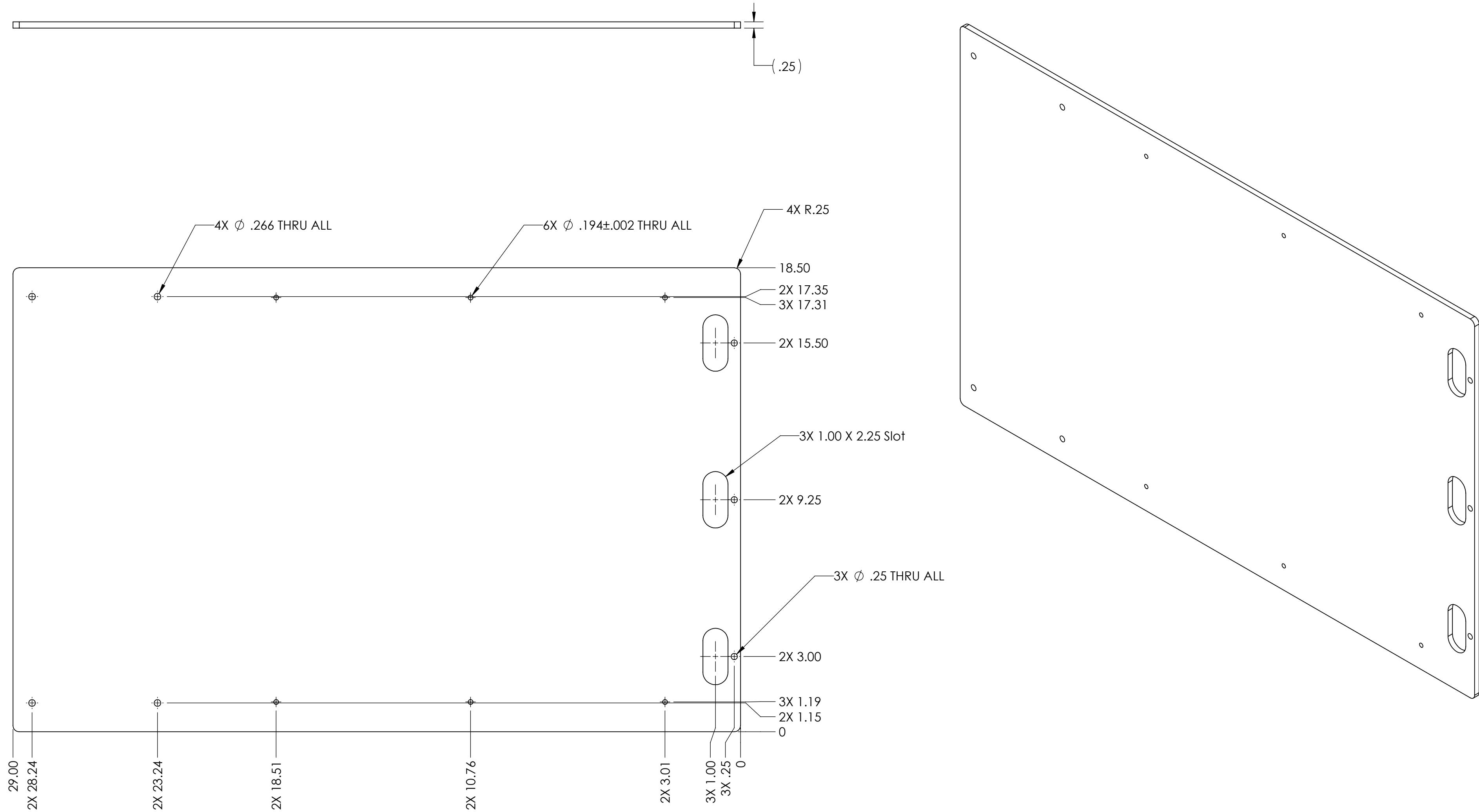
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	JO	10/1/2024
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$			
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 1/4" Polycarbonate, Clear			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Processor Ramp
Back Panel**

SIZE DWG. NO. REV
C GE-25105

SCALE: 1:3 SHEET 1 OF 1

D

D

C

C

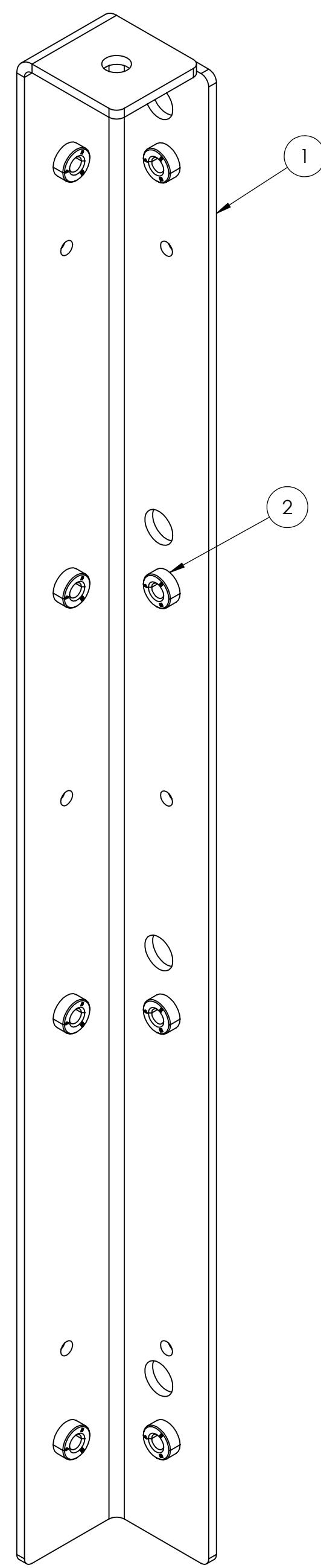
B

B

A

A

Notes: Attach (2) to (1) as shown.



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25106-01	Processor Inner Corner Bracket	1
2	pem_clinchnut_.25_20 .054	1/4-20 self-clinching nut, .054 shank	8

VEND	NAME	DATE
DRAWN	JO	10/2/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



SOLIDWORKS
Modeling Solutions Partner

TITLE: Processor Inner Corner Bracket w/ PEMs

SIZE DWG. NO. REV

C GE-25106

SCALE: 3:4 SHEET 1 OF 1

4

3

2

1

D

D

C

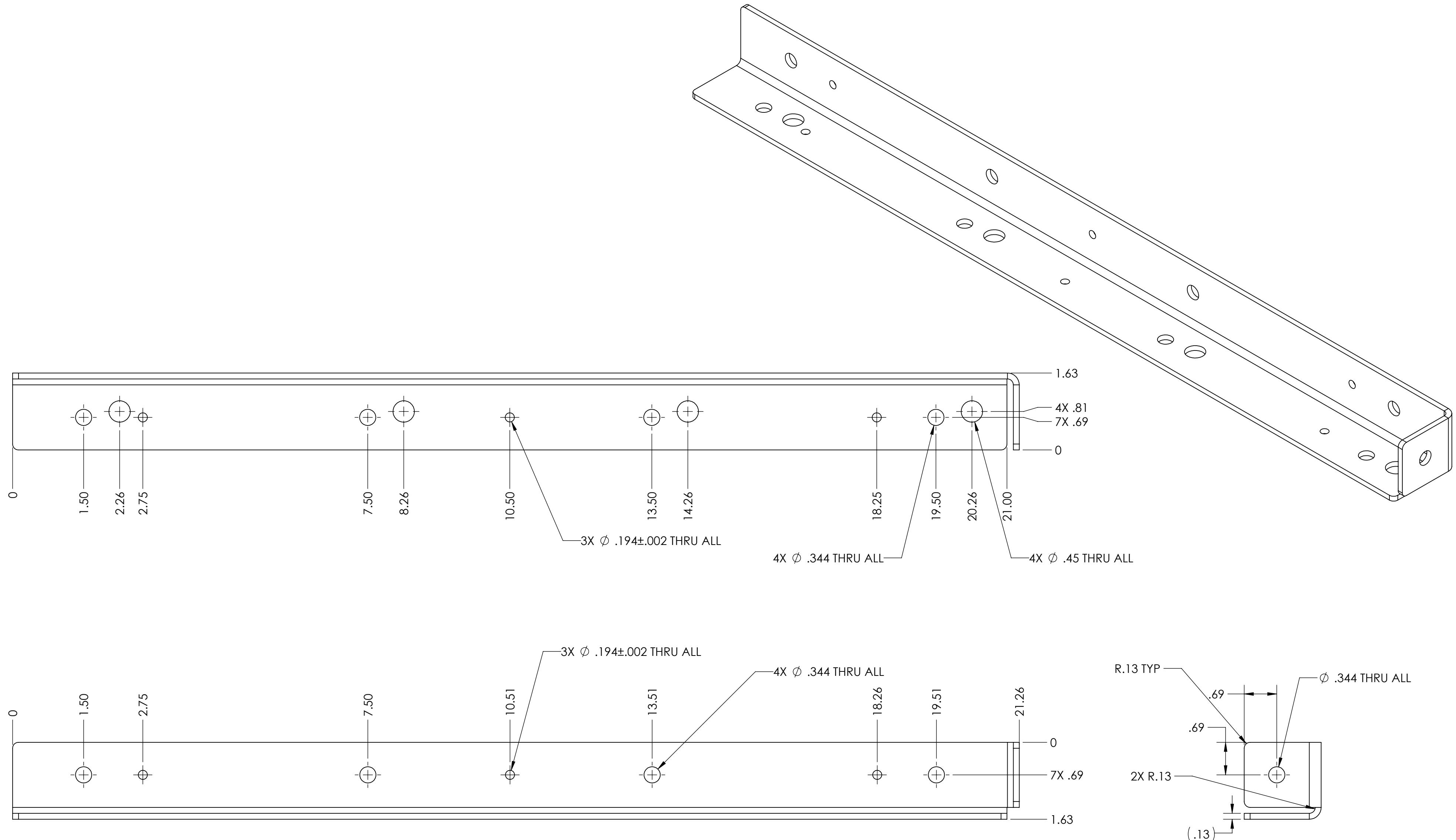
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	JO	10/1/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 8 Ga 5052 Aluminum			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

 **FIRST
ROBOTICS
COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE:
**Processor Inner
Corner Bracket**

SIZE DWG. NO. REV
C GE-25106-01

SCALE: 2:3 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

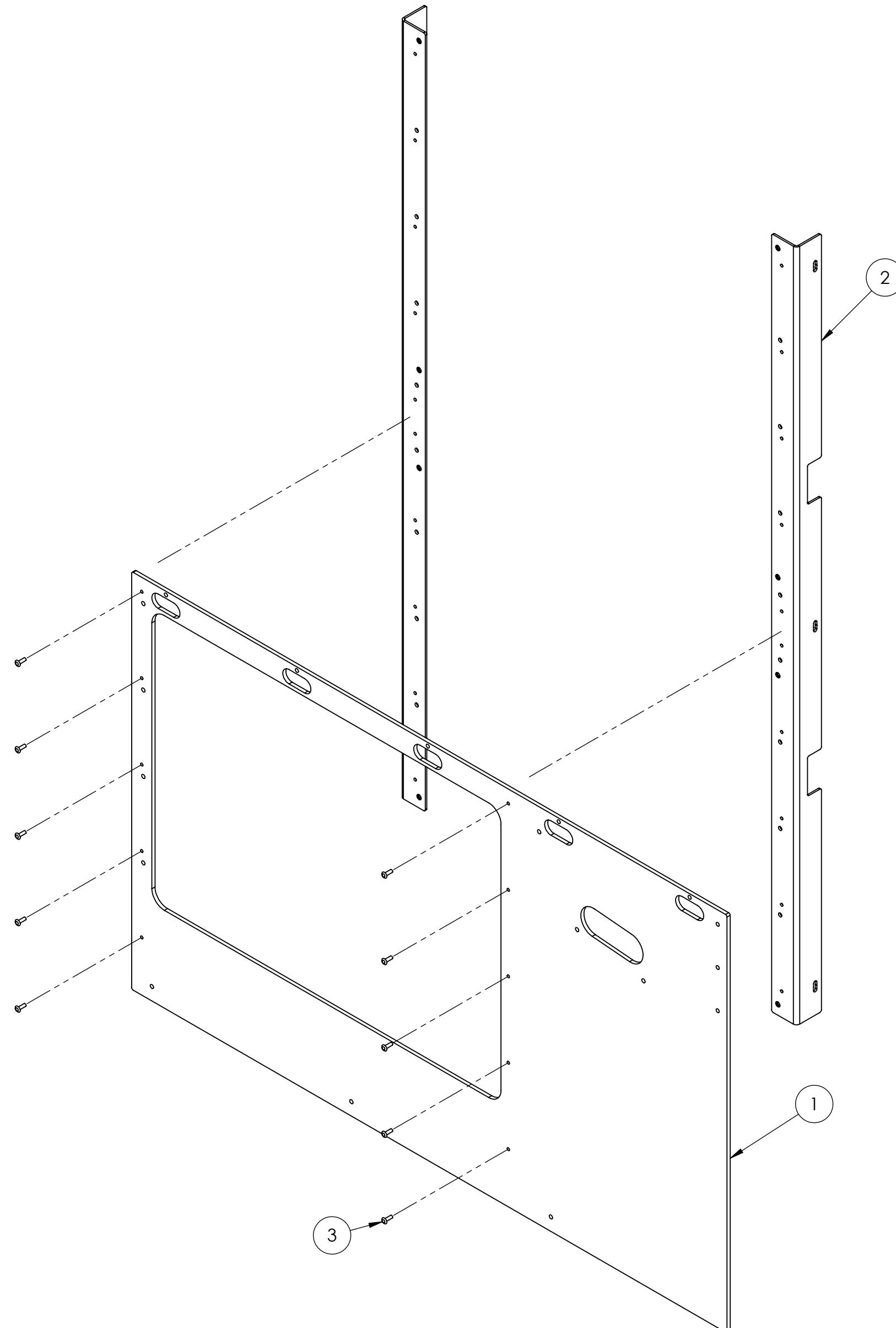
C

B

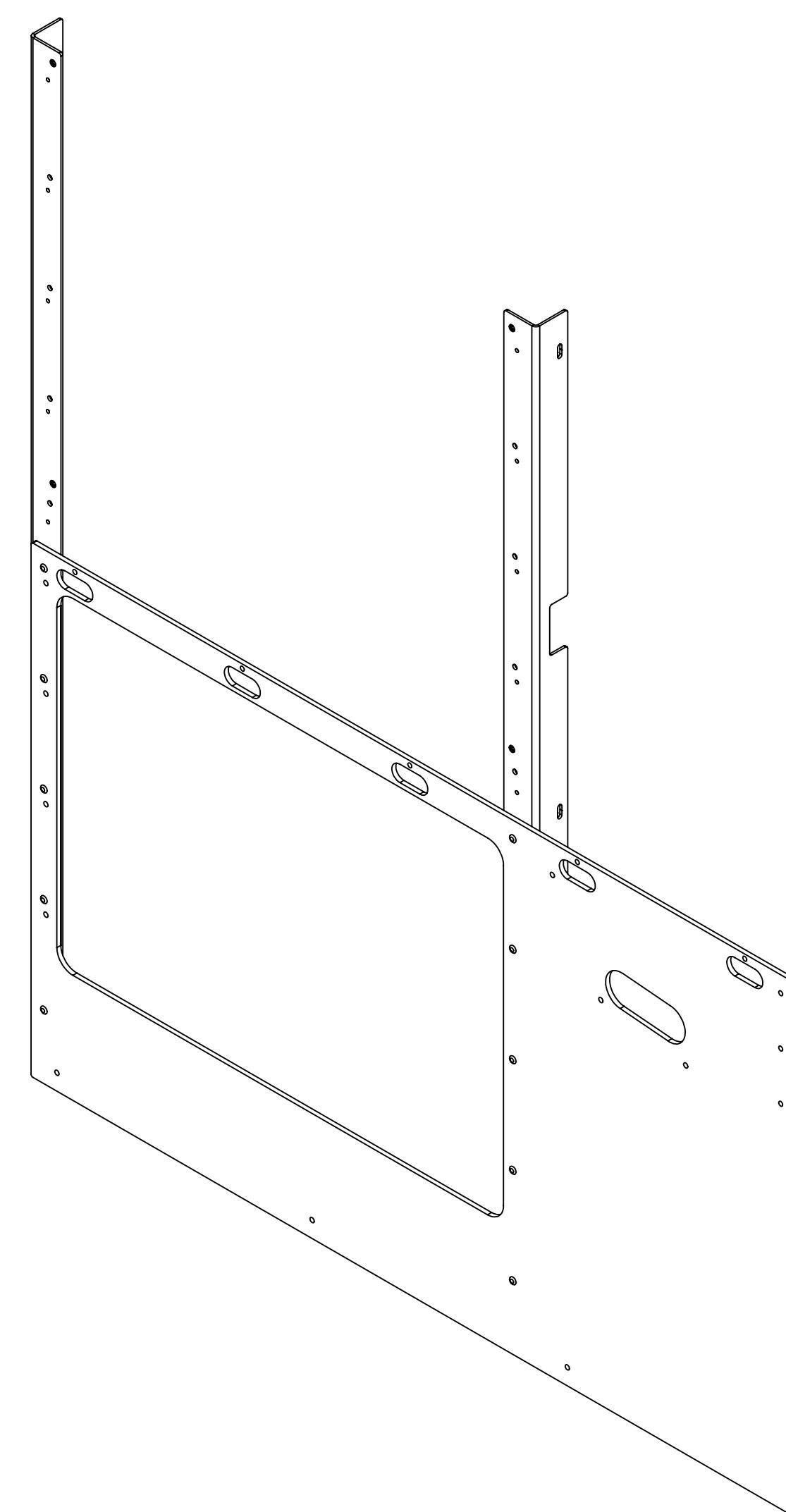
B

A

A



Notes: Attach (2) to (1) with (3). Label Assembly with drawing number.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25108	Processor Fieldside Panel	1
2	GE-25109	Upright Sheetmetal w/ PEMs	2
3	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	10

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$

ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$

TWO PLACE DECIMAL $\pm .01$

THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

VEND NAME DATE
DRAWN JO 10/2/2024



SOLIDWORKS
Modeling Solutions Partner

TITLE: Processor Fieldside Assembly

SIZE DWG. NO. REV

C GE-25107

COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

4

3

2

1

D

C

B

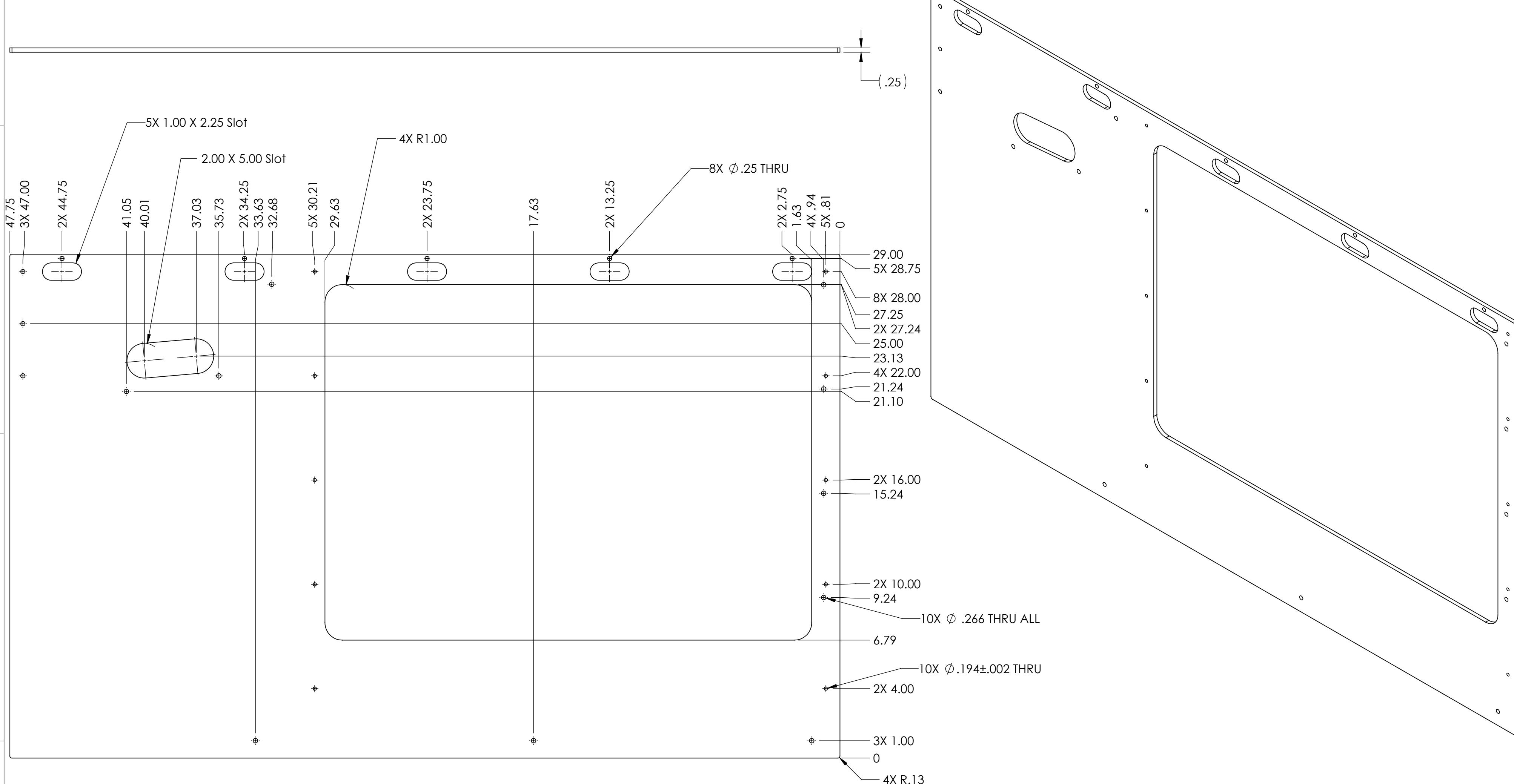
A

D

C

B

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	JO	10/1/2024
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$	PROPRIETARY AND CONFIDENTIAL		
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	1/4" Polycarbonate, Clear		
COMMENTS:	REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING			



TITLE:
**Processor
Fieldside Panel**

SIZE DWG. NO. REV

C GE-25108

SCALE: 12:50 SHEET 1 OF 1

D

D

C

C

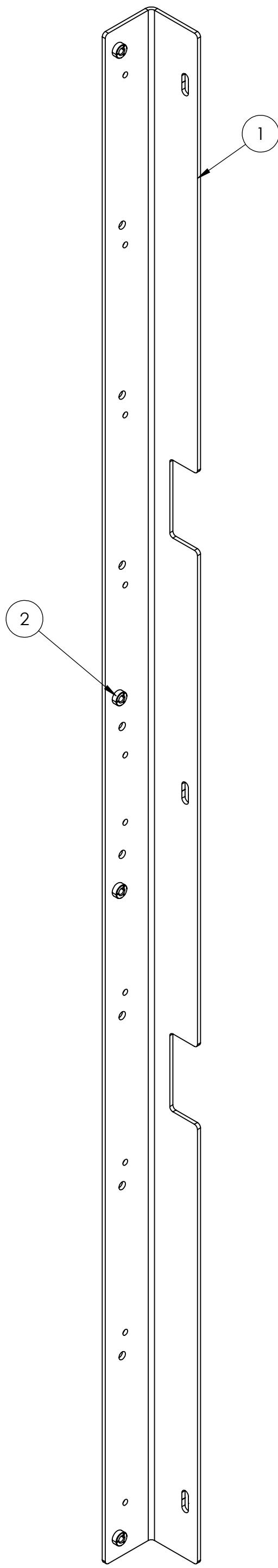
B

B

A

A

Notes: Attach (2) to (1) as shown.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25109-01	Upright Sheetmetal	1
2	pem_clinchnut_.25_20 .054	1/4-20 self-clinching nut, .054 shank	4

UNLESS OTHERWISE SPECIFIED:			VEND	NAME	DATE
			DRAWN	JO	10/2/2024
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$					
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
MATERIAL/FINISH:					
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					

 **FIRST
ROBOTICS
COMPETITION**  **SOLIDWORKS**
 Modeling Solutions Partner

TITLE: Upright Sheetmetal w/
PEMs
SIZE DWG. NO. REV
C GE-25109

SCALE: 1:3 **SHEET 1 OF 1**

4

3

2

1

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	A	Hole Location Changed	10/4/2024	JO

D

D

UNLESS OTHERWISE SPECIFIED:		BEND	NAME	DATE
		DRAWN	JO	9/30/2024
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.		
MATERIAL/FINISH: 8 Ga 5052 Aluminum		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING		SCALE: 3:10		SHEET 1 OF 1
				REV
		C	GE-25109-01	A
		TITLE:		
		 FIRST ROBOTICS COMPETITION		 SOLIDWORKS Modeling Solutions Partner
		Upright Sheetmetal		

4

3

2

1

D

D

C

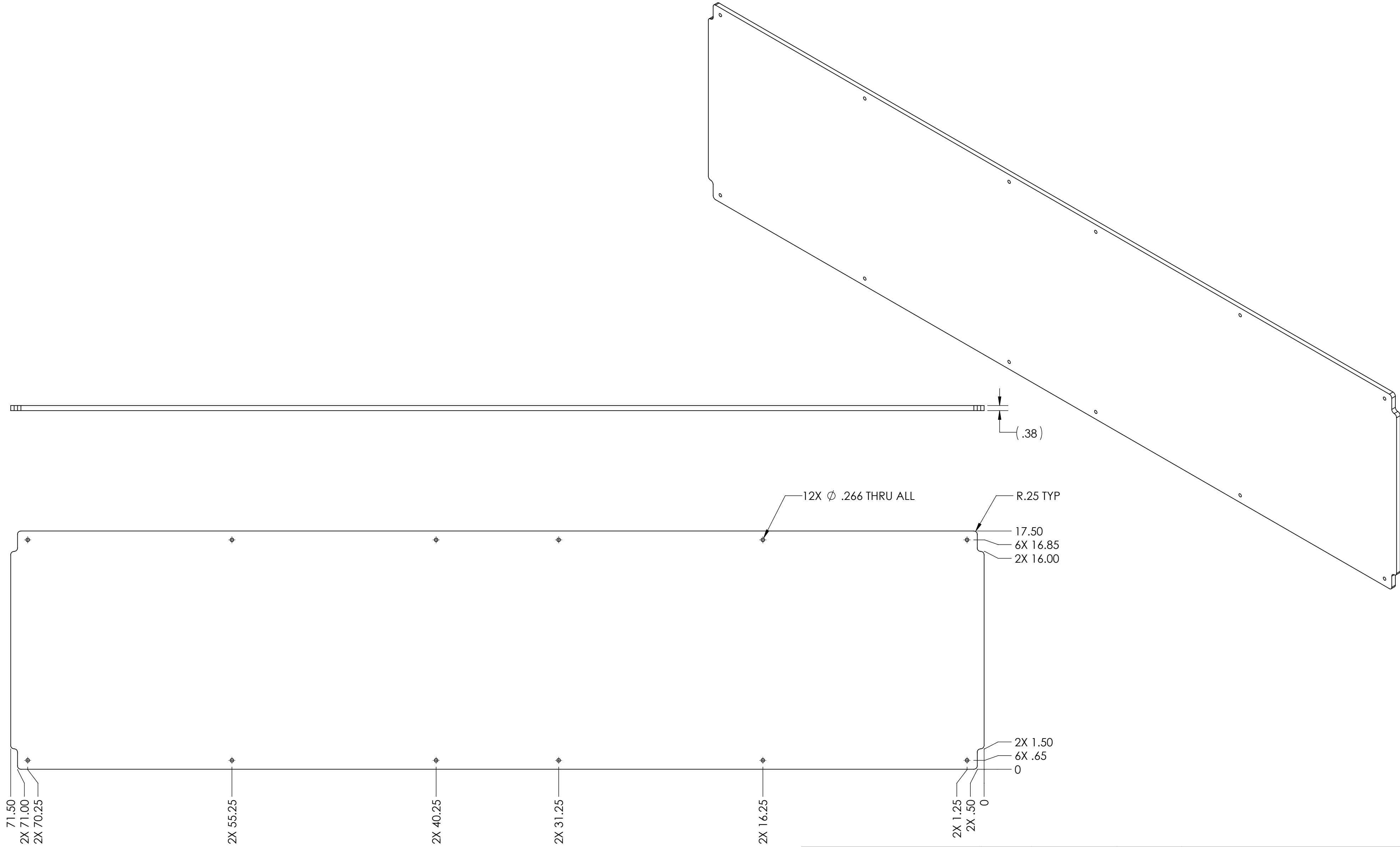
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	JO	9/30/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 3/8" HDPE, Matte Black Finish			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

 **FIRST ROBOTICS COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE:
Processor Ramp

SIZE DWG. NO. REV
C GE-25110

SCALE: 1:5 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

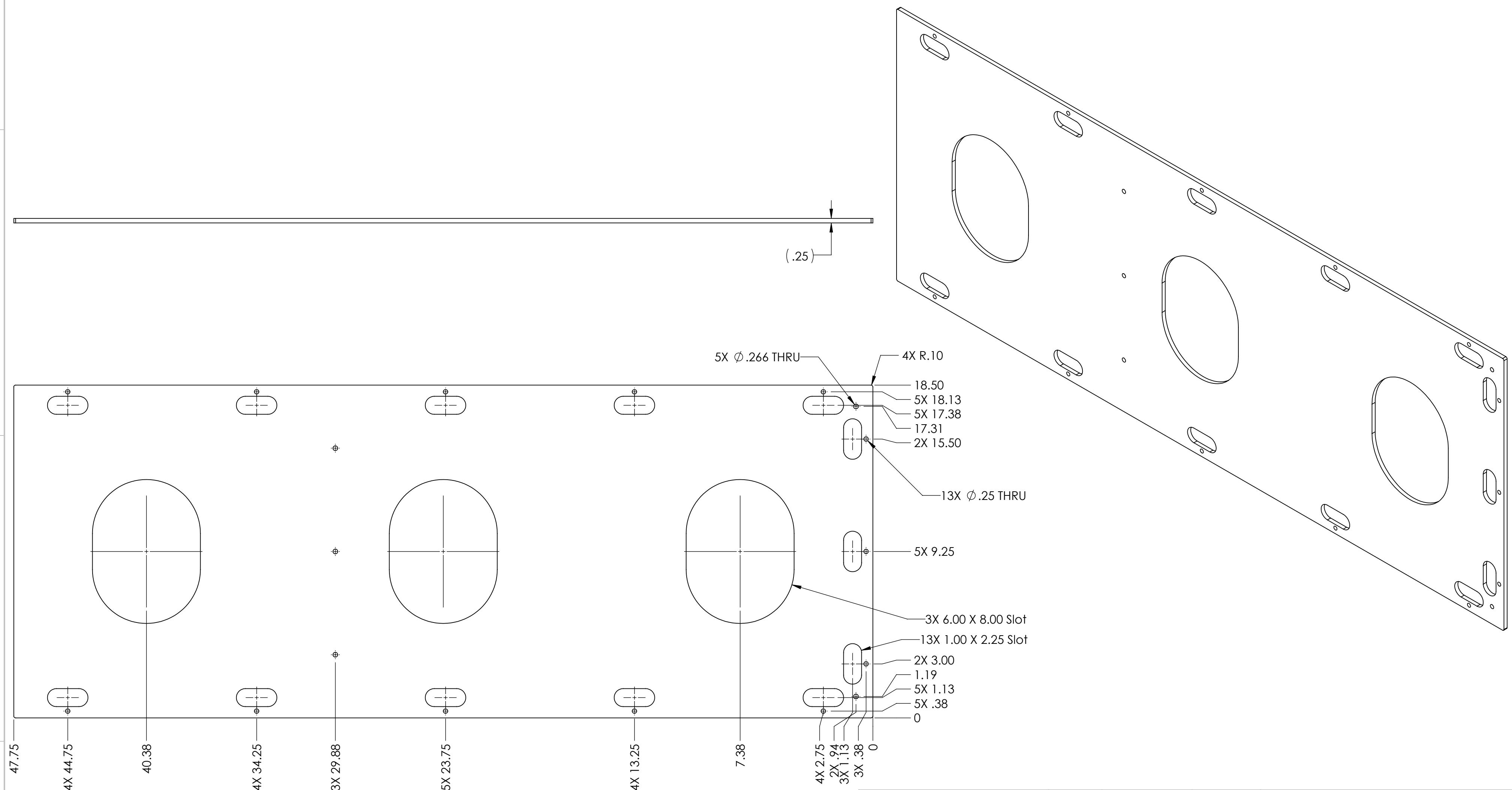
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
	DRAWN	JO	9/30/2024
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 1/4" Polycarbonate, Clear			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Processor Top
Panel**

SIZE DWG. NO. REV

C GE-25111

SCALE: 1:4 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

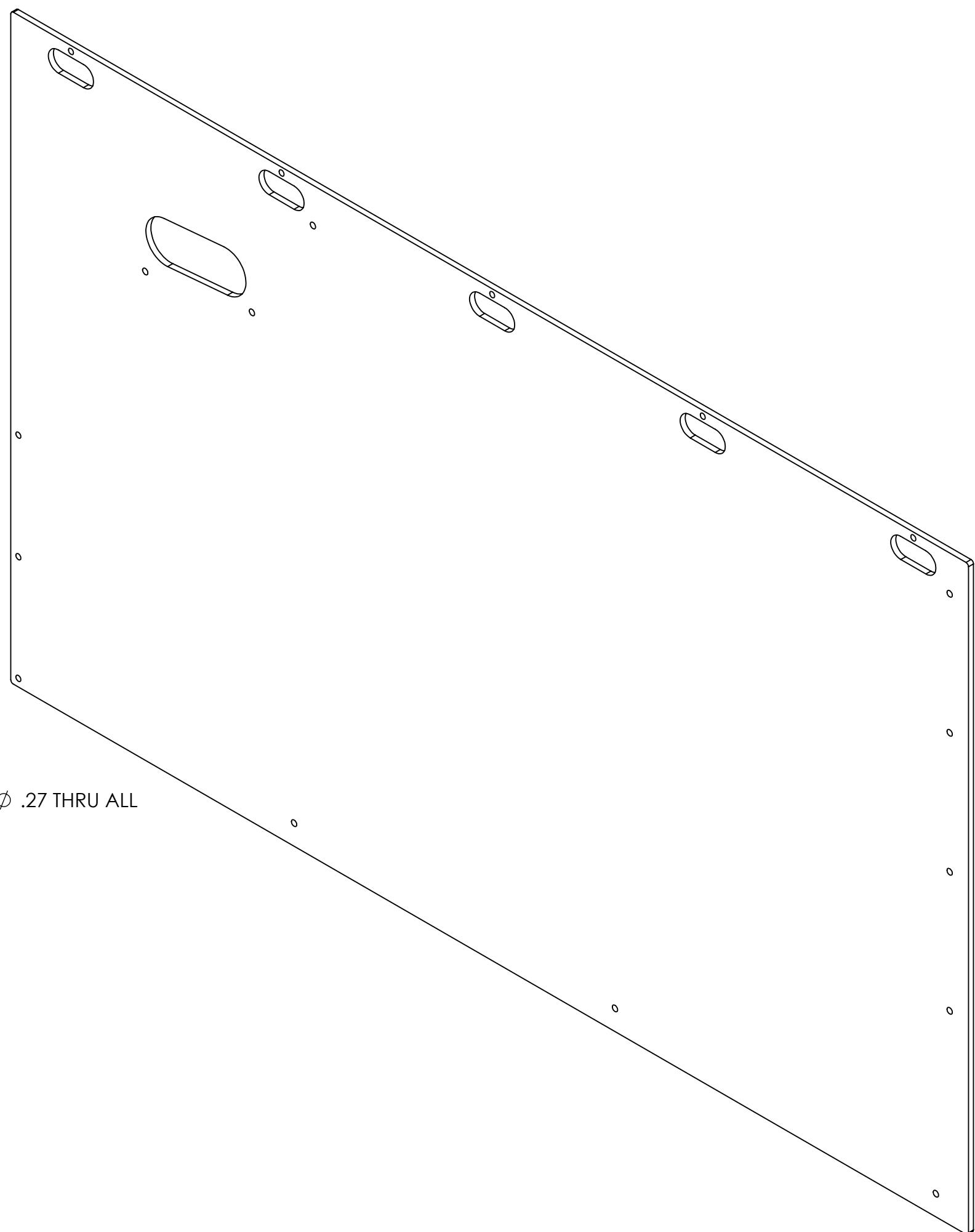
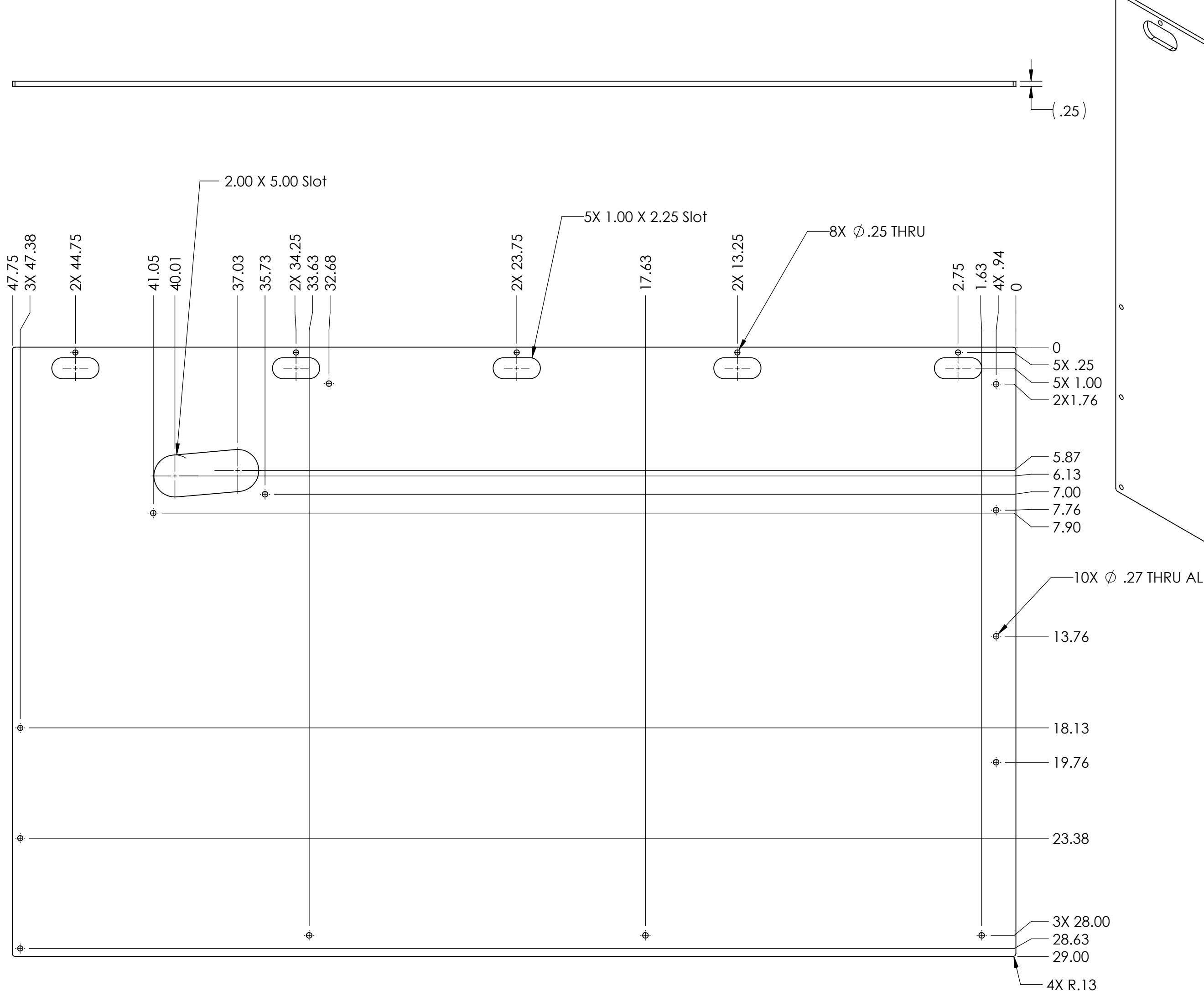
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	JO	10/1/2024
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 1/4" Polycarbonate, Clear			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE: Processor Humanside Panel

SIZE DWG. NO. REV

C GE-25112

SCALE: 6:25 SHEET 1 OF 1

4

3

2

1

D

D

C

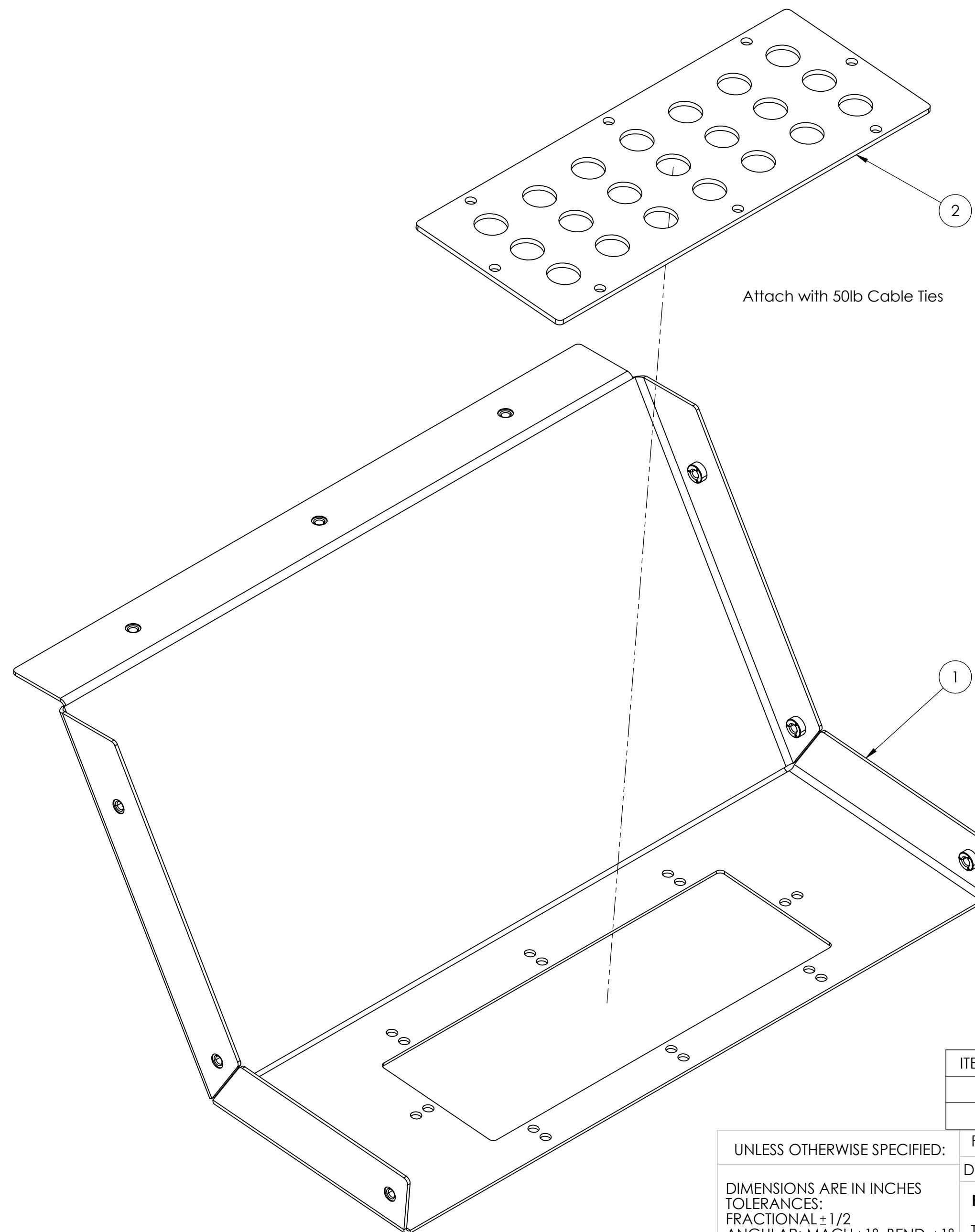
C

B

B

A

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25114	Sensor Mount	1
2	GE-25115	Processor Sensor Plate	1
UNLESS OTHERWISE SPECIFIED:			
FIELD	NAME	DATE	
DRAWN	JO	12/6/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
COMMENTS:			
REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

Sensor Assembly

SIZE DWG. NO. REV
C GE-25113

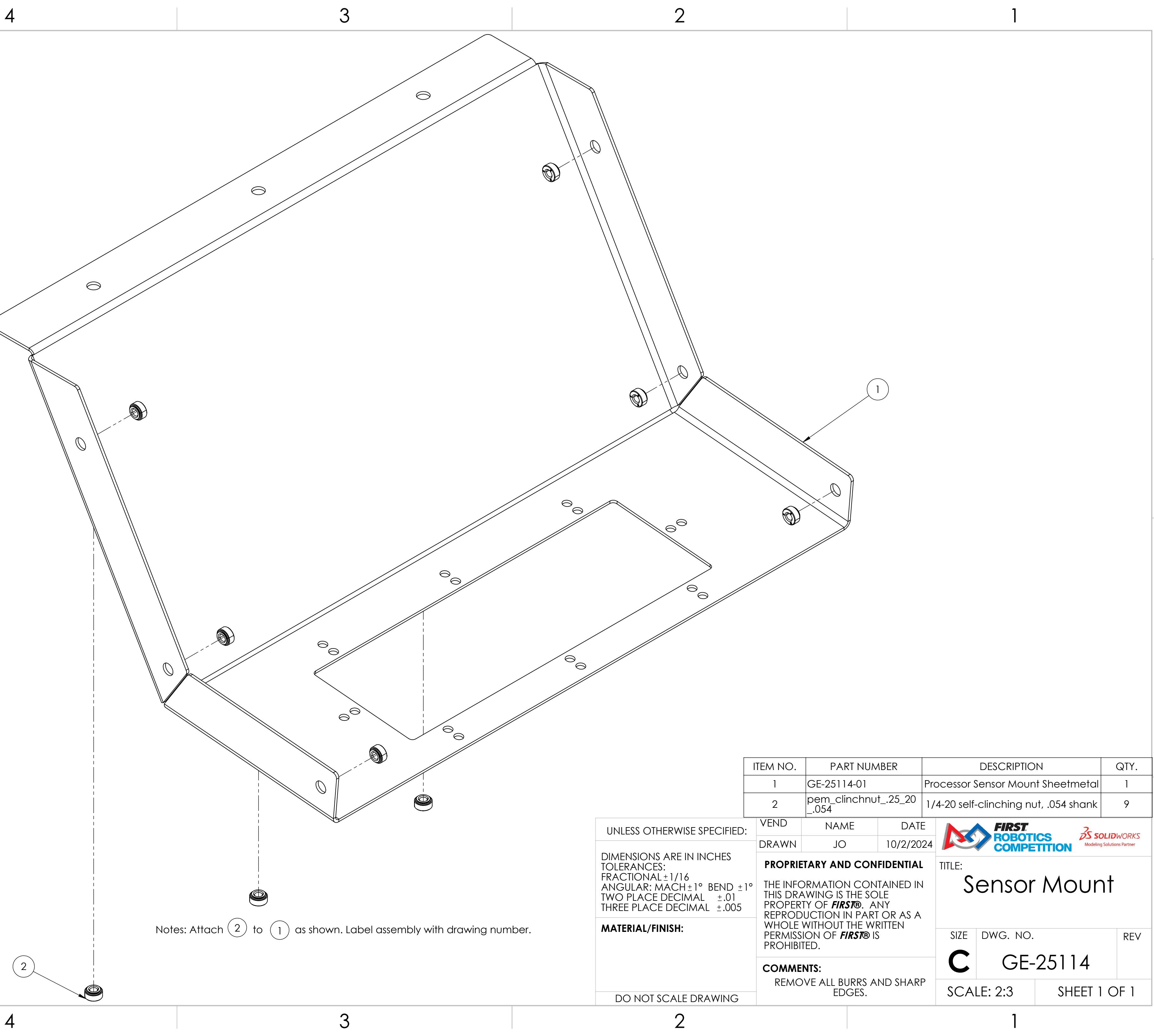
SCALE: 1:2 SHEET 1 OF 1

4

3

2

1



4

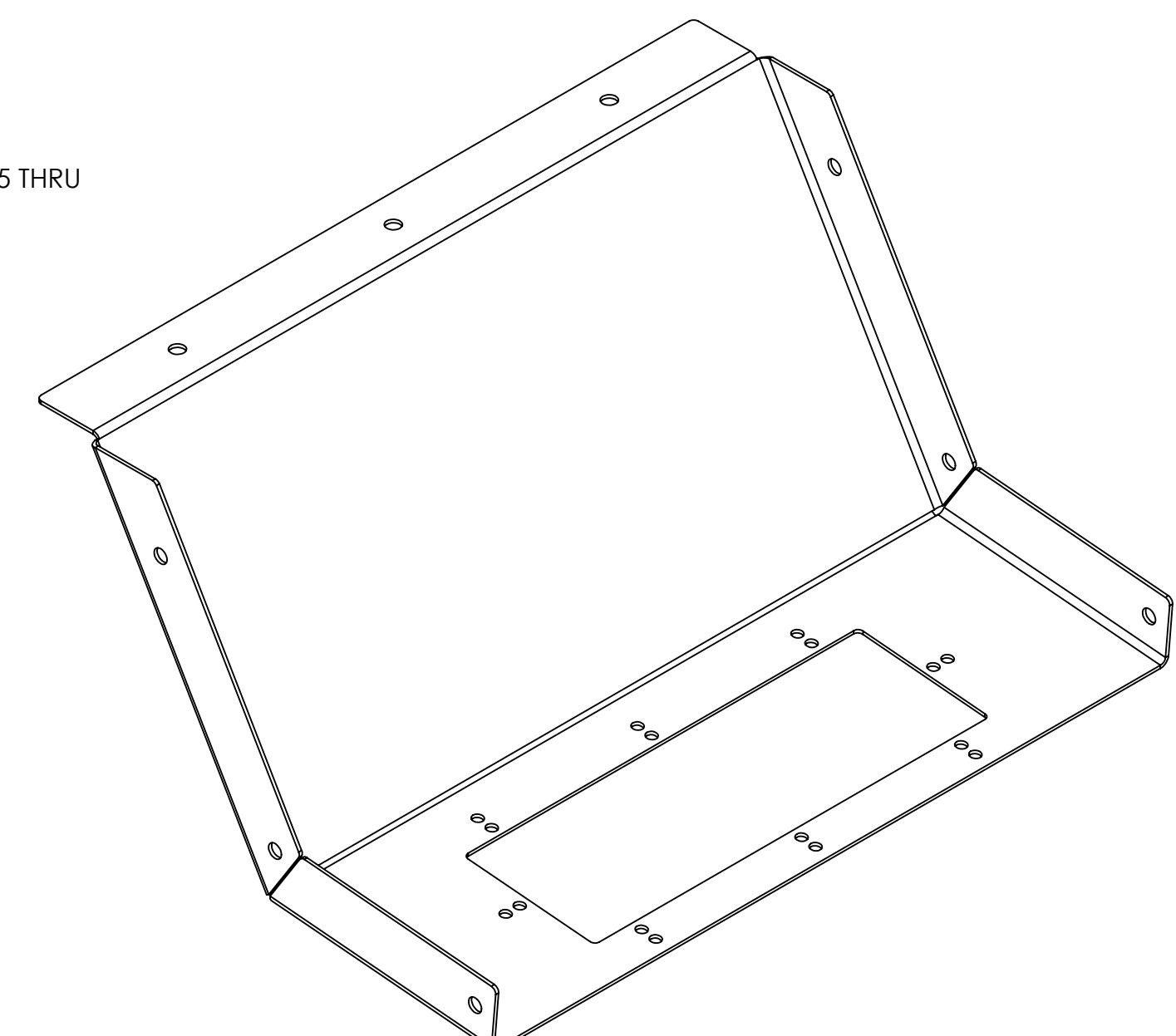
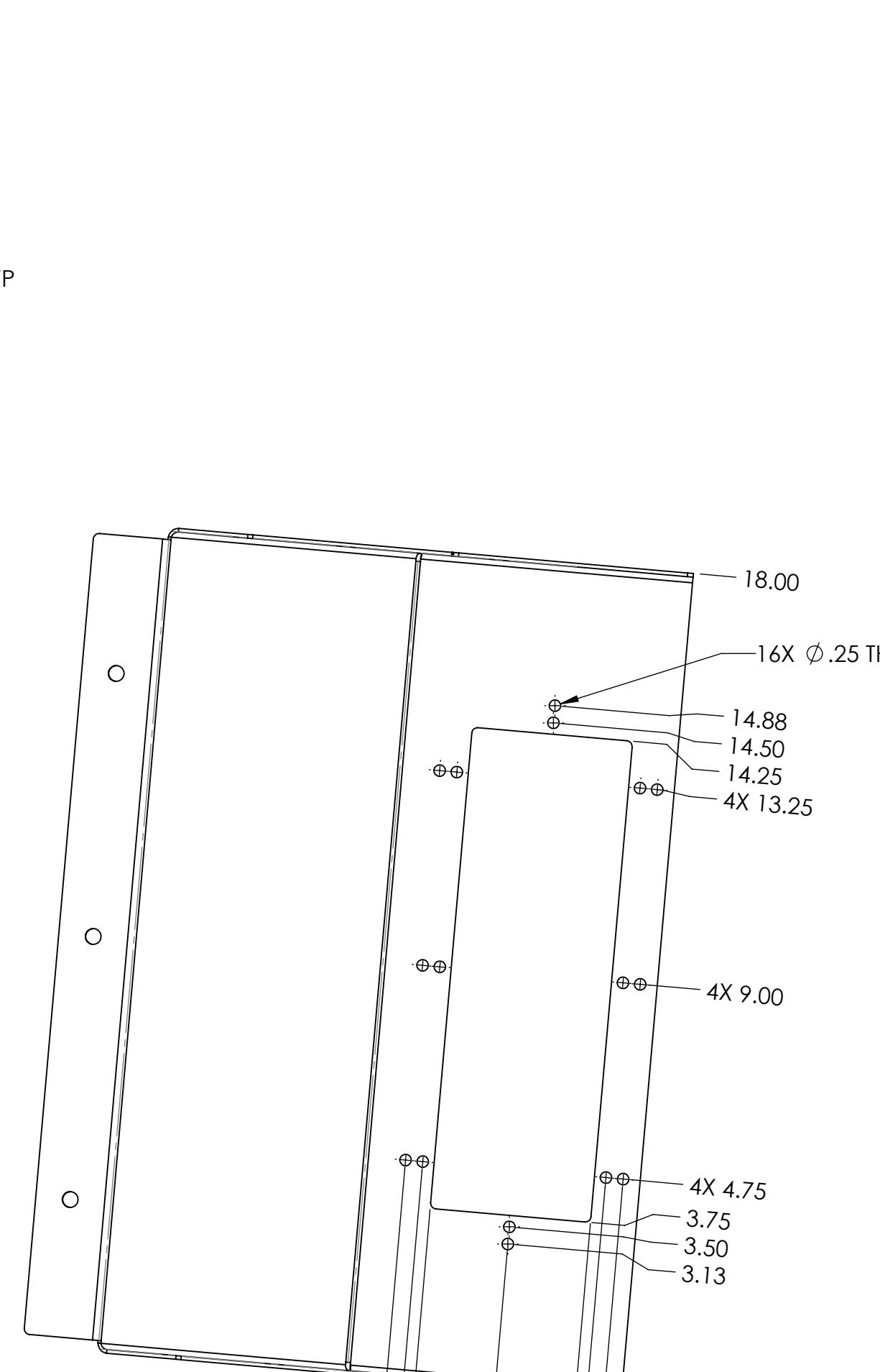
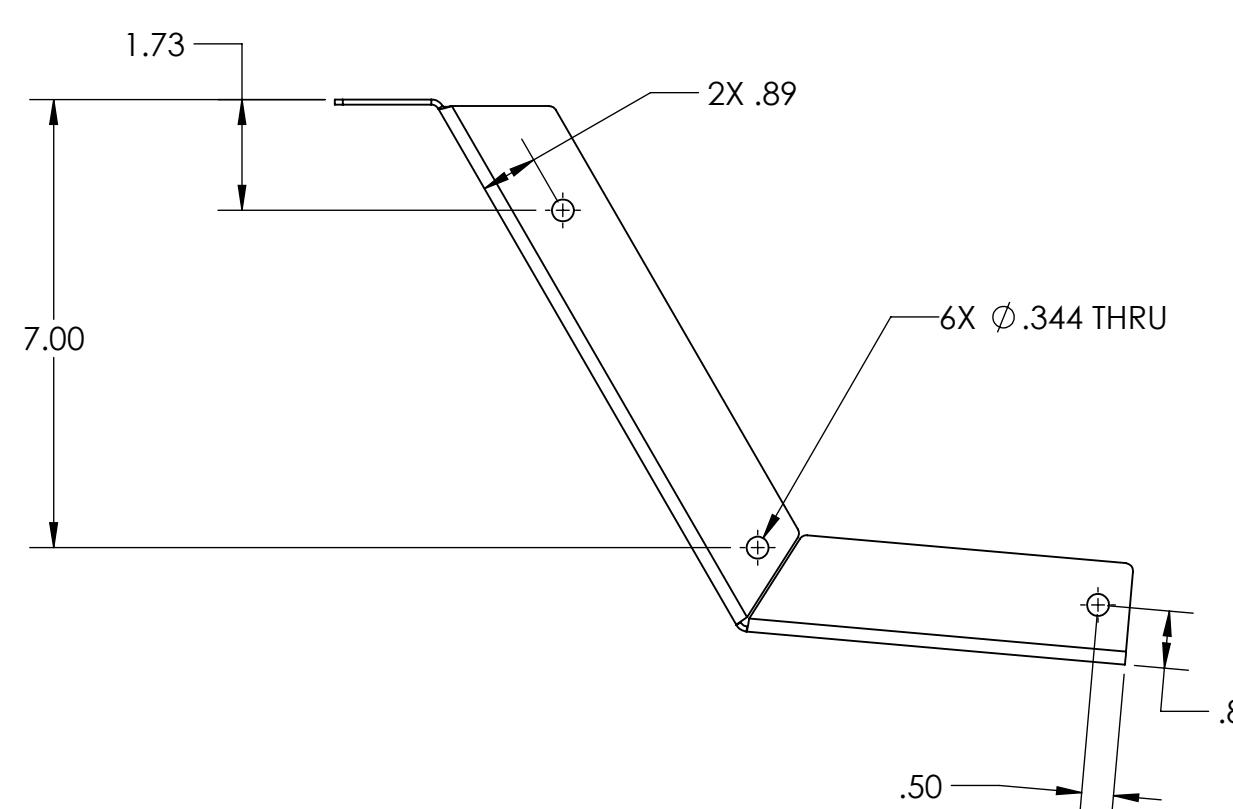
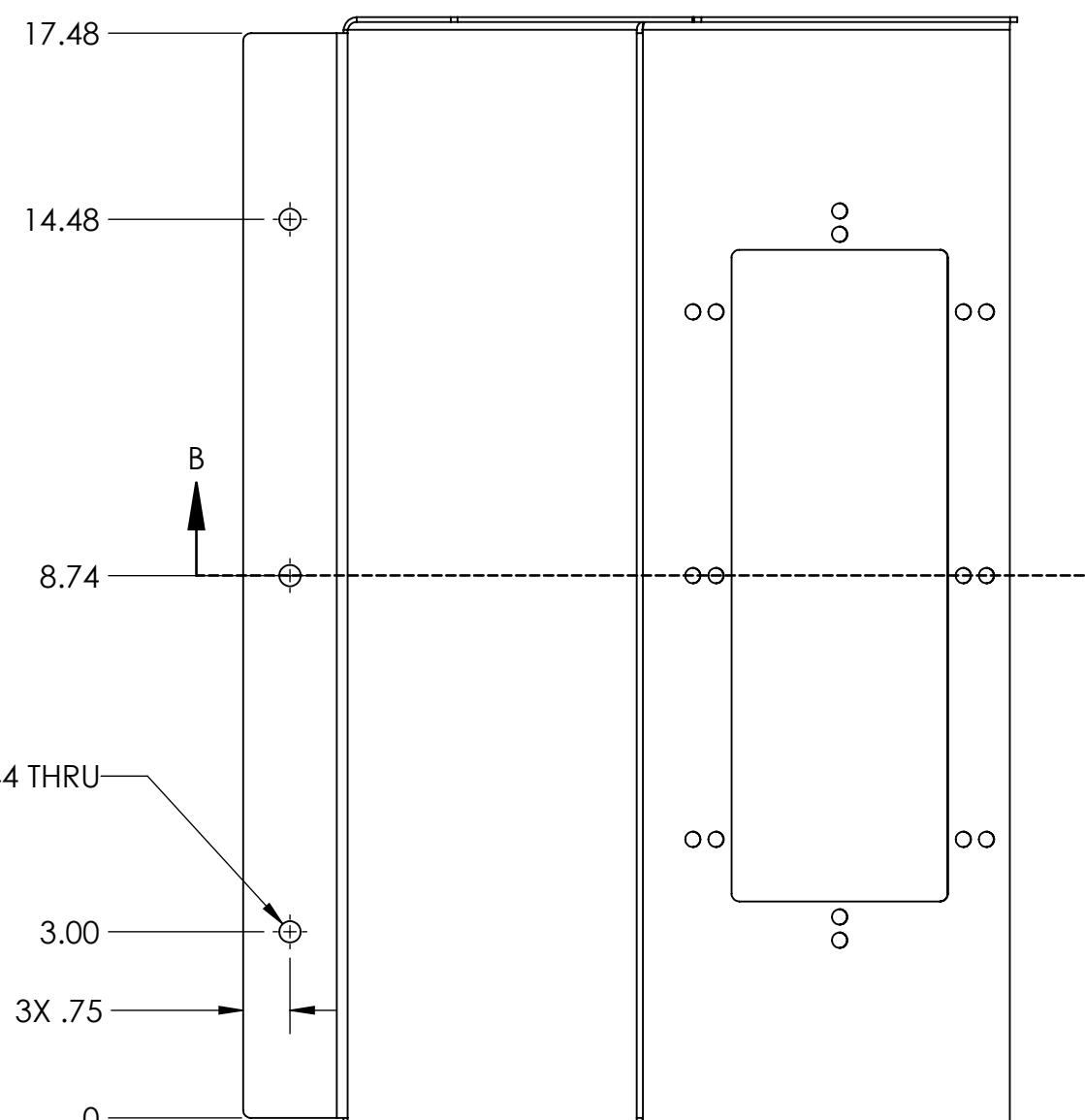
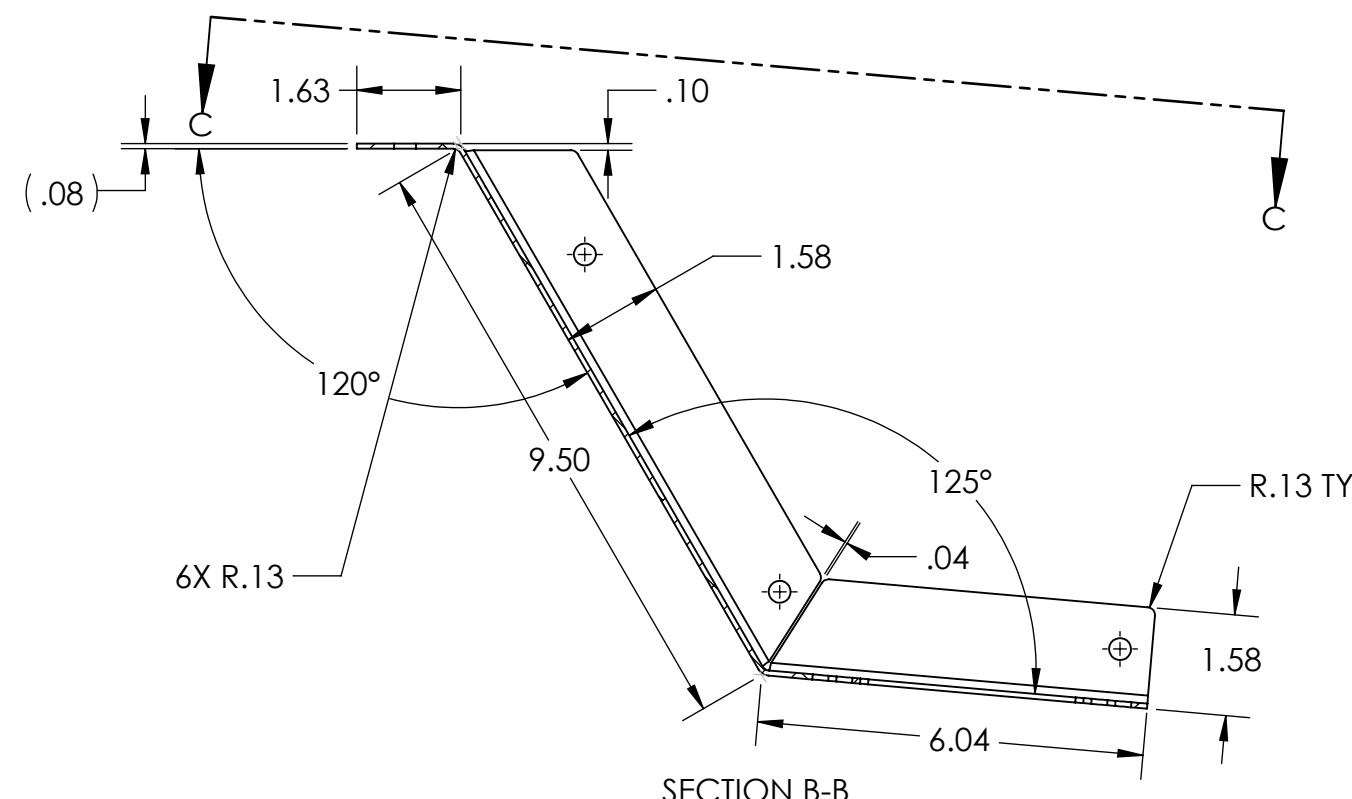
3

2

1

D

D



UNLESS OTHERWISE SPECIFIED:

DRAWN

BEND NAME DATE

JO 9/30/2024

DATE

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$

MATERIAL/FINISH:

12 Ga 5052 Aluminum

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN

THIS DRAWING IS THE SOLE

PROPERTY OF FIRST®. ANY

REPRODUCTION IN PART OR AS A

WHOLE WITHOUT THE WRITTEN

PERMISSION OF FIRST® IS

PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP
EDGES.

DO NOT SCALE DRAWING

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS

Modeling Solutions Partner

TITLE: Processor Sensor
Mount
Sheetmetal
SIZE DWG. NO. REV
C GE-25114-01

SCALE: 1:3 **SHEET** 1 OF 1

4

3

2

1

A

A

4

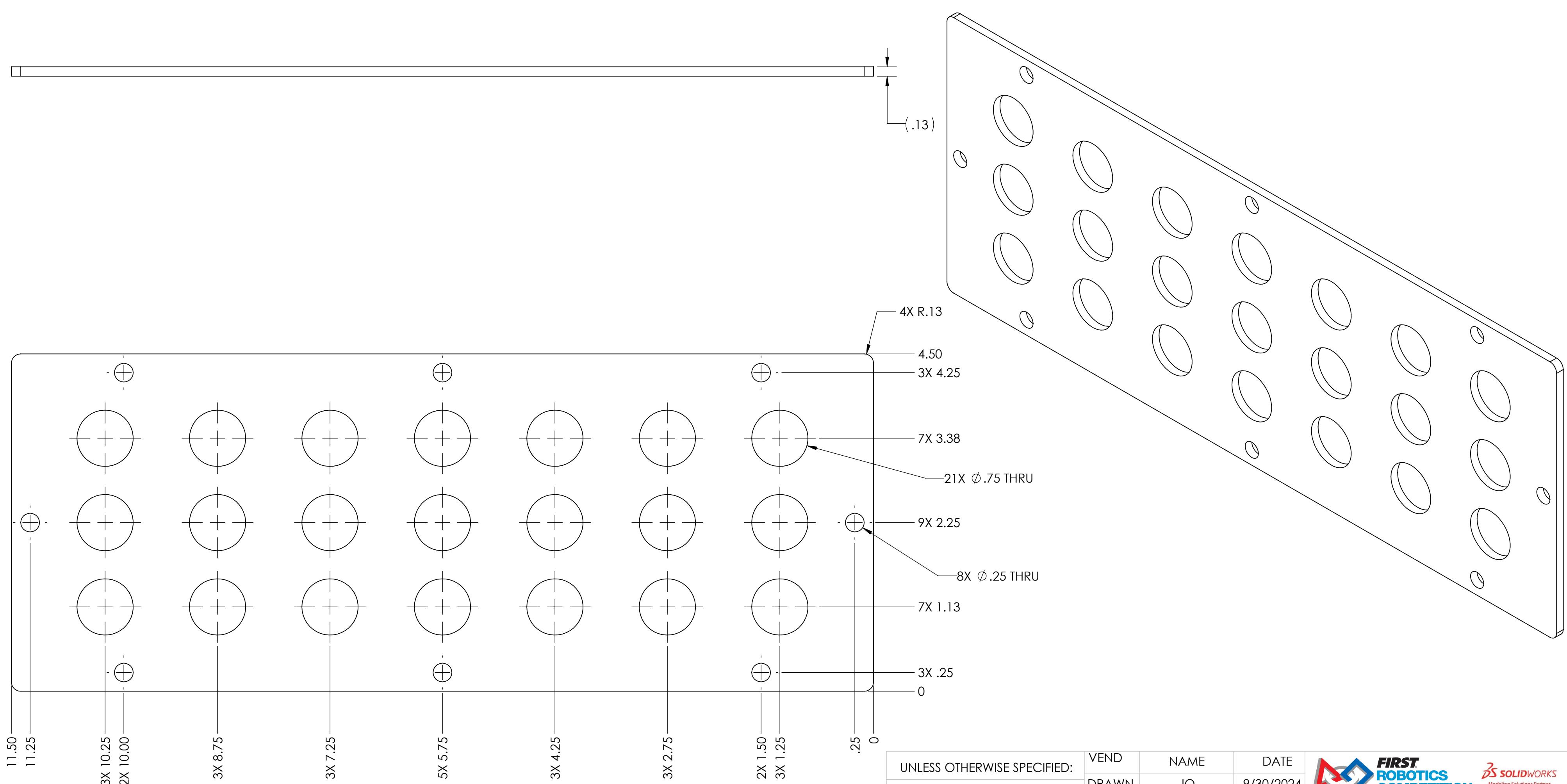
3

2

1

D

D



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
	DRAWN	JO	9/30/2024
DIMENSIONS ARE IN INCHES			
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$			
TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$			
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST [®] . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST [®] IS PROHIBITED.			
MATERIAL/FINISH: 1/8" Polycarbonate, Clear			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			



TITLE:

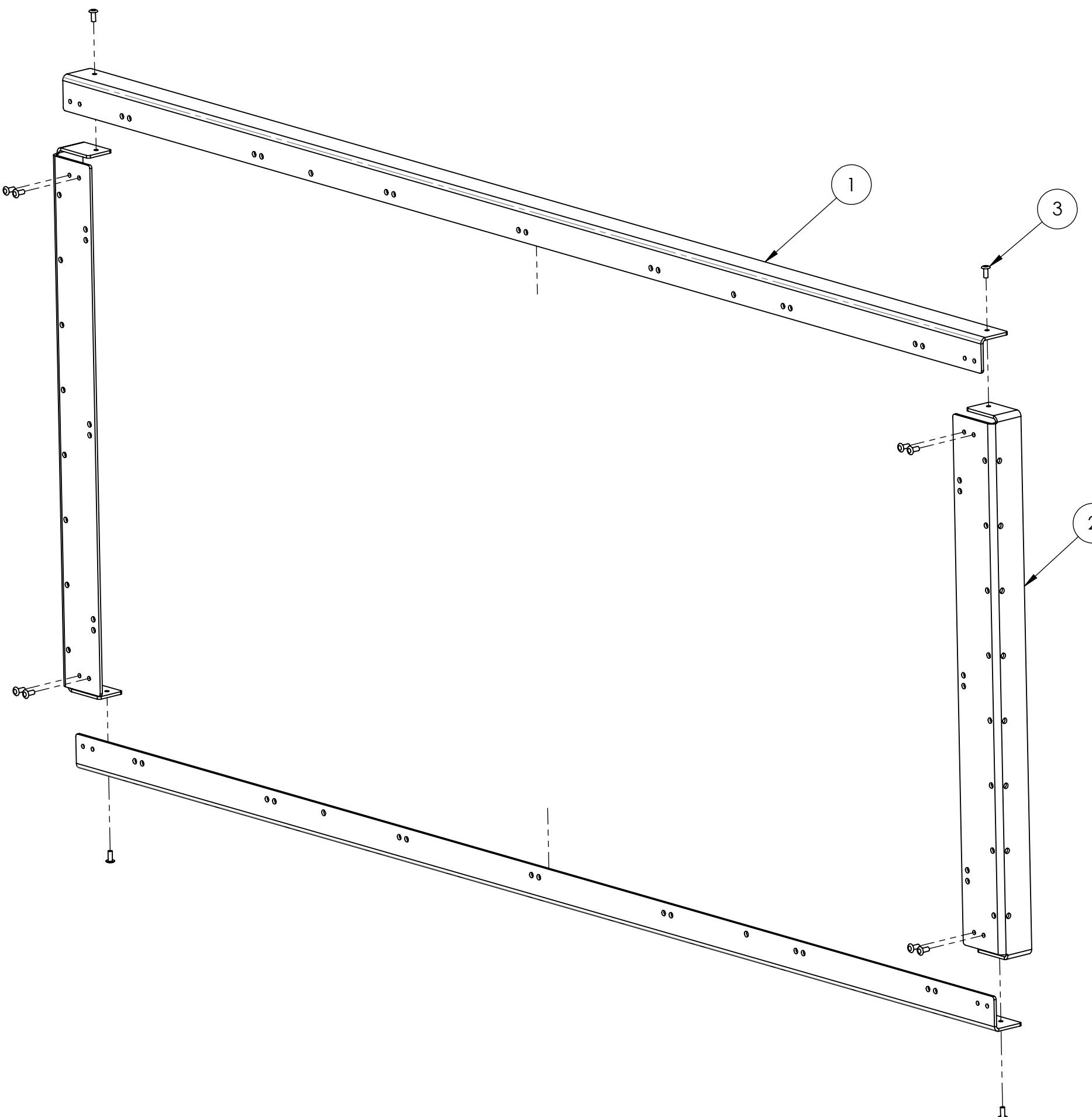
Processor Sensor Plate

SIZE DWG. NO. REV

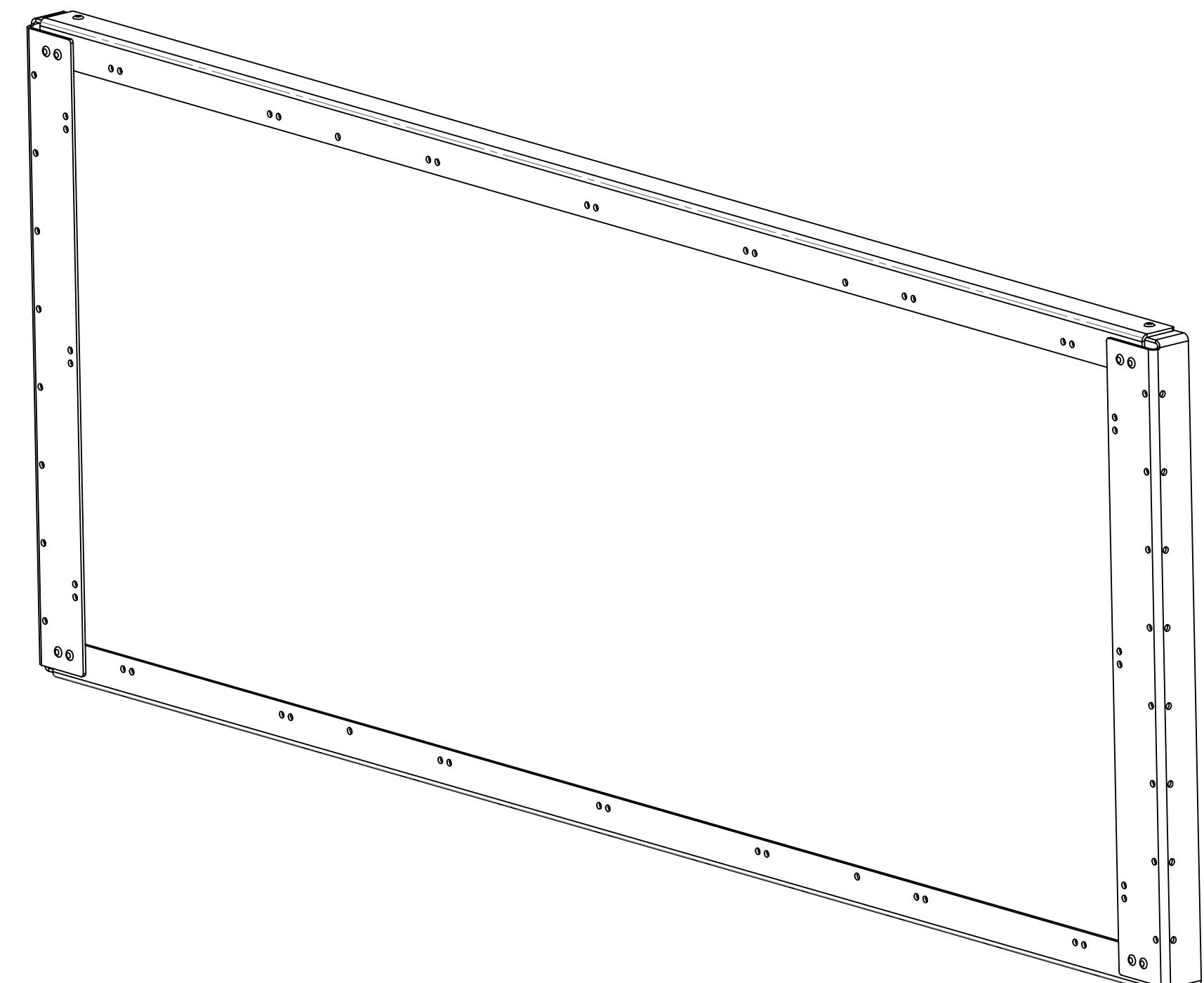
C GE-25115

SCALE: 1:1 SHEET 1 OF 1

D



Notes: Attach (1) to (2) with (3). Label assembly with drawing number.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25117	Fence Long Rail	2
2	GE-25118	Fence Short Rail	2
3	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range	12

UNLESS OTHERWISE SPECIFIED:		
VEND	NAME	DATE
DRAWN	JO	10/2/2024
PROPRIETARY AND CONFIDENTIAL		
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.		
COMMENTS:		
REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING		

FIRST ROBOTICS COMPETITION Modeling Solutions Partner

TITLE: Fence Frame

SIZE DWG. NO. REV

C GE-25116

SCALE: 1:5 SHEET 1 OF 1

4

3

2

1

D

D

C

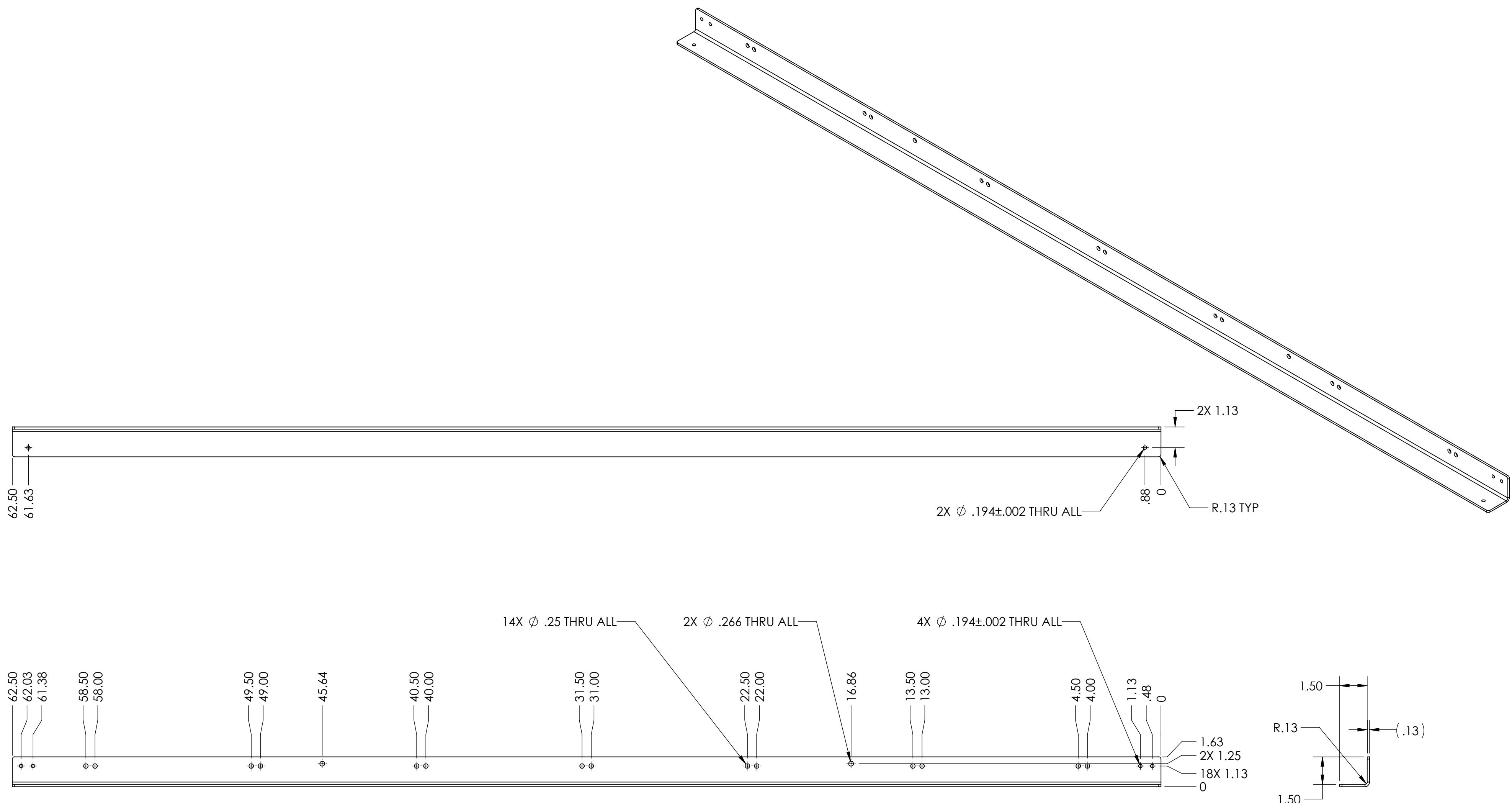
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	JO	9/30/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 8 Ga 5052 Aluminum			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

 **FIRST
ROBOTICS
COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE:
Fence Long Rail

SIZE DWG. NO. REV

C GE-25117

SCALE: 1:4 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

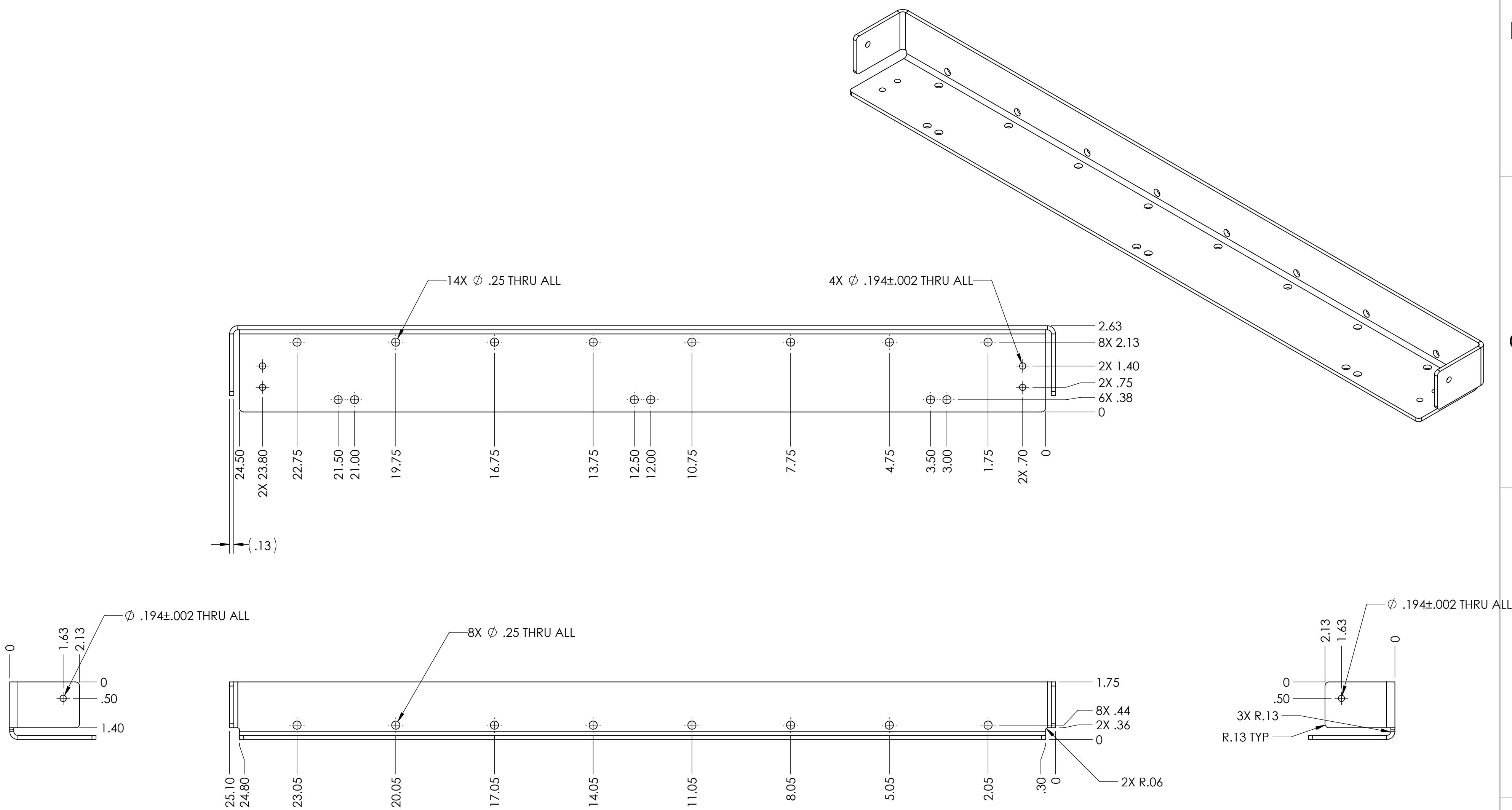
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	JO	9/30/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	8 Ga 5052 Aluminum		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
Fence Short Rail

SIZE DWG. NO. REV
C GE-25118

SCALE: 9:20 SHEET 1 OF 1

4

3

2

1

D

D

C

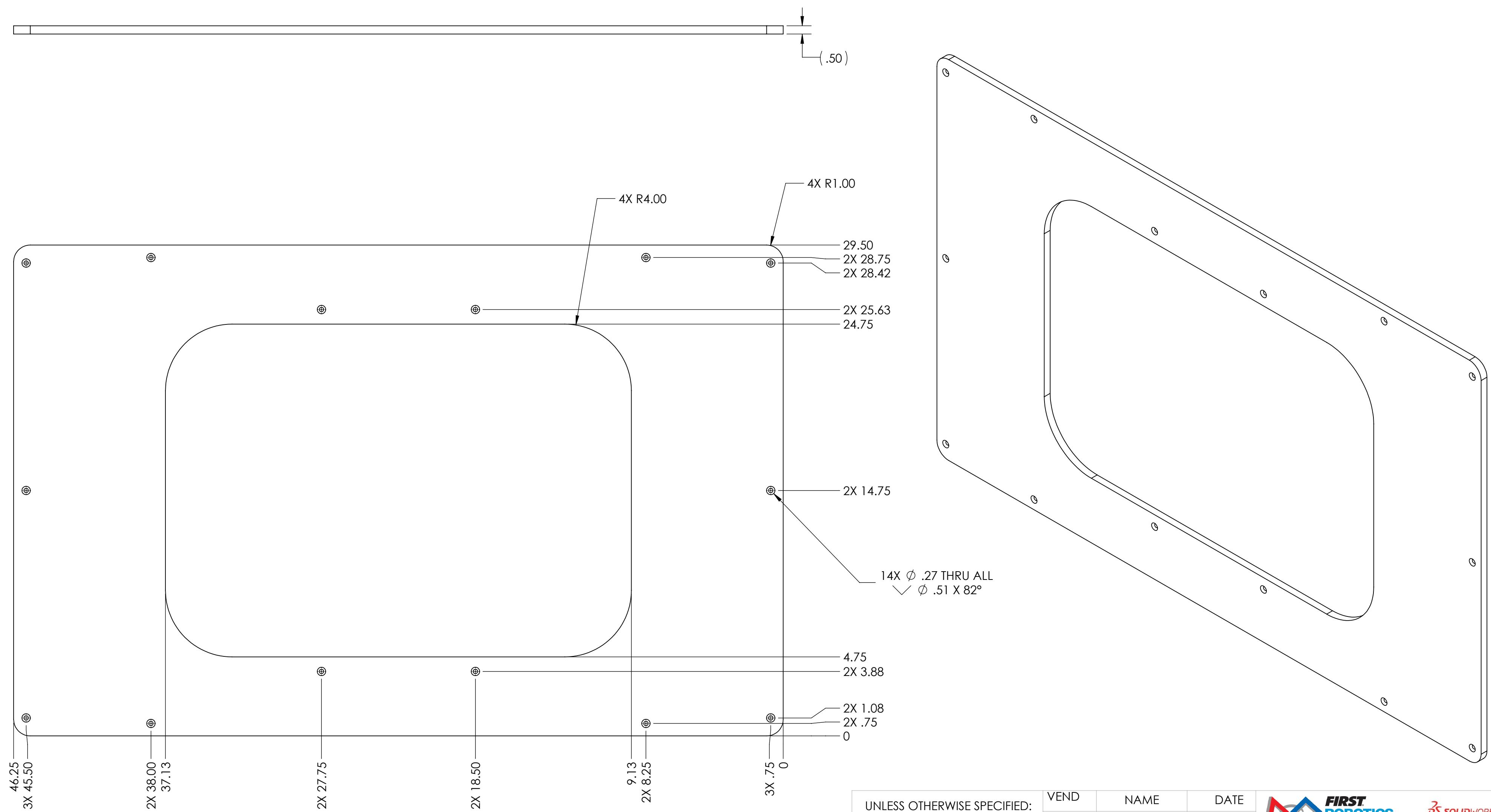
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
	DRAWN	JO	9/30/2024
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 1/2" HDPE, Black Matte Finish			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			



TITLE: Processor Opening

SIZE DWG. NO. REV C GE-25119

SCALE: 23:100 SHEET 1 OF 1

D

D

C

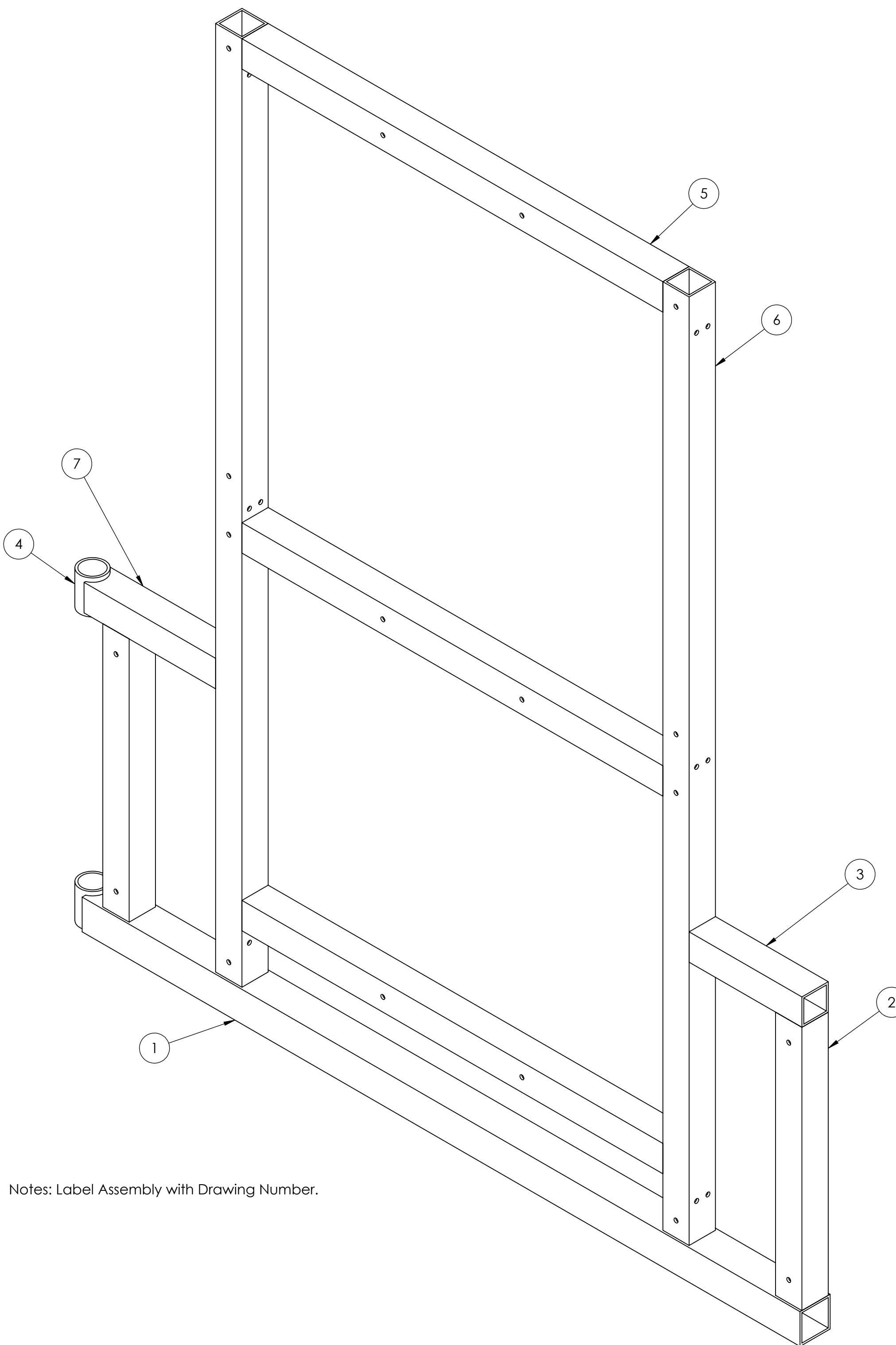
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .015$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25120-01	Floor Beam	1
2	GE-25120-02	Short Height Beam	2
3	GE-25120-03	Female Connector Tube	1
4	GE-25120-04	Pin Connector Tube	2
5	GE-25120-05	Crossbar	3
6	GE-25120-06	Full Height Beam	2
7	GE-25120-07	Pin Connector Horizontal	1

WELD	NAME	DATE
DRAWN	JO	10/1/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



SOLIDWORKS

Modeling Solutions Partner

TITLE:
Processor
Weldment

SIZE DWG. NO. REV
C GE-25120

SCALE: 1:4 SHEET 1 OF 3

4

3

2

1

D

D

C

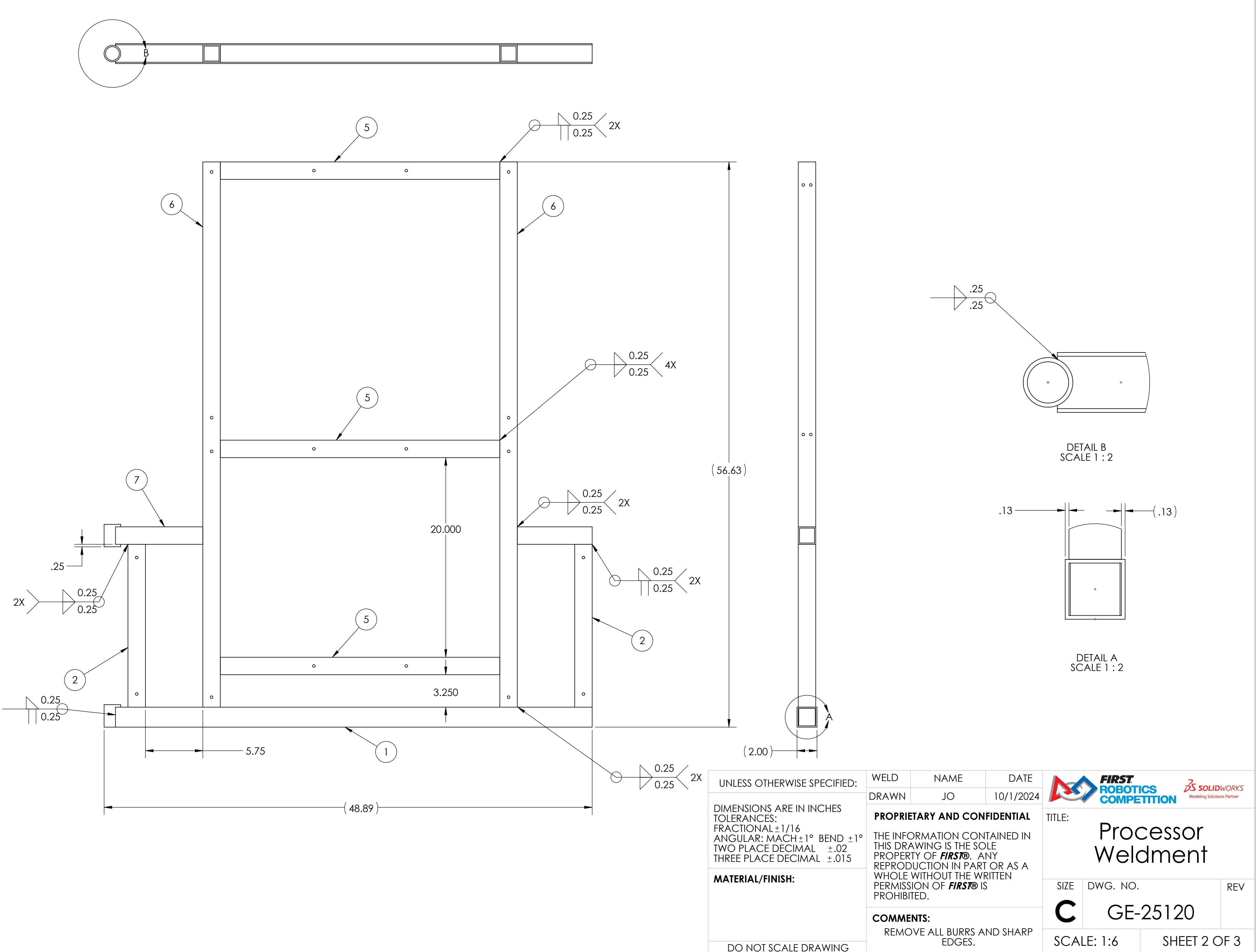
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:

WELD NAME DATE

DRAWN JO 10/1/2024

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .015$

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST[®]. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST[®] IS PROHIBITED.

MATERIAL/FINISH:

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

FIRST
ROBOTICS
COMPETITION
SOLIDWORKS
Modeling Solutions Partner
Processor
Weldment

 SIZE DWG. NO. REV
C GE-25120

SCALE: 1:6 SHEET 2 OF 3

4

3

2

1

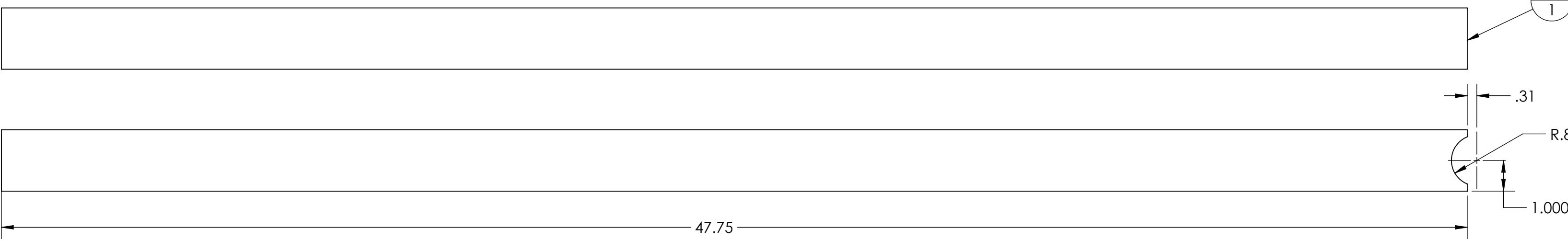
4

3

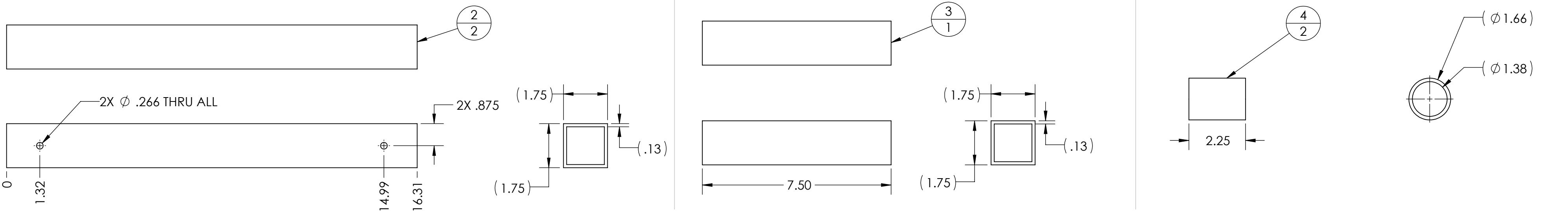
2

1

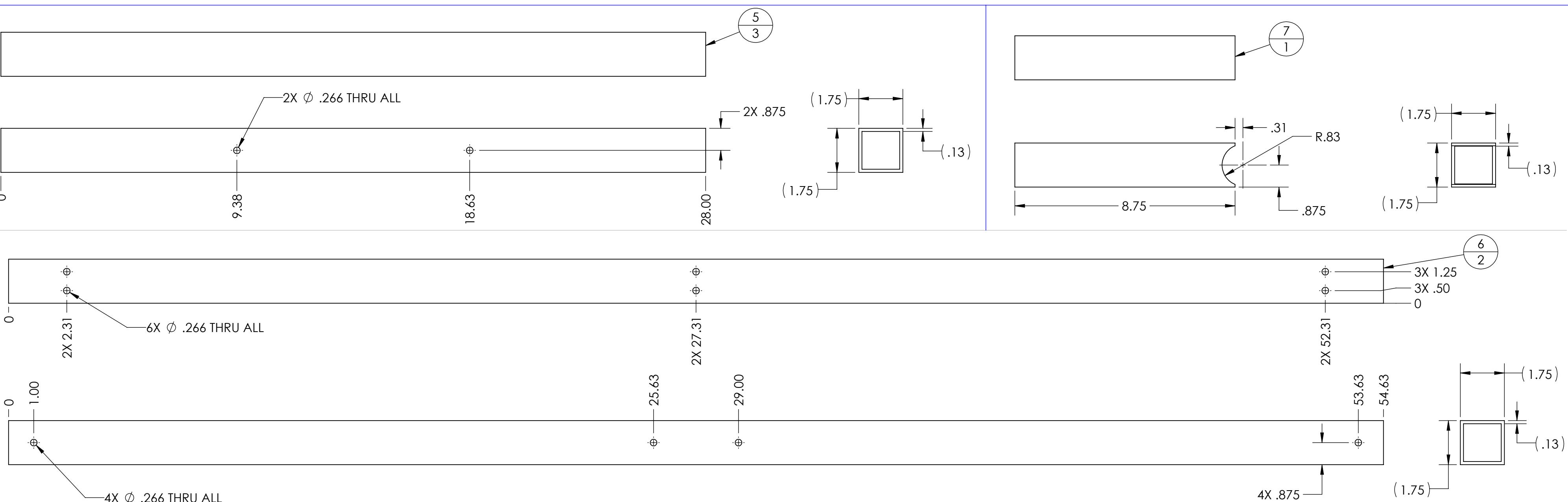
D



C



B



A

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	JO	10/1/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 2" x 1/8" Square Box Tube, 1.75" x 1/8" Square Box Tube and 1.25" Schedule 40 Round Tube - All 6061 Aluminum			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			



TITLE: Processor Weldment

SIZE DWG. NO. REV

C GE-25120

SCALE: 1:3 SHEET 3 OF 3

4

3

2

1

4

3

2

1

D

D

C

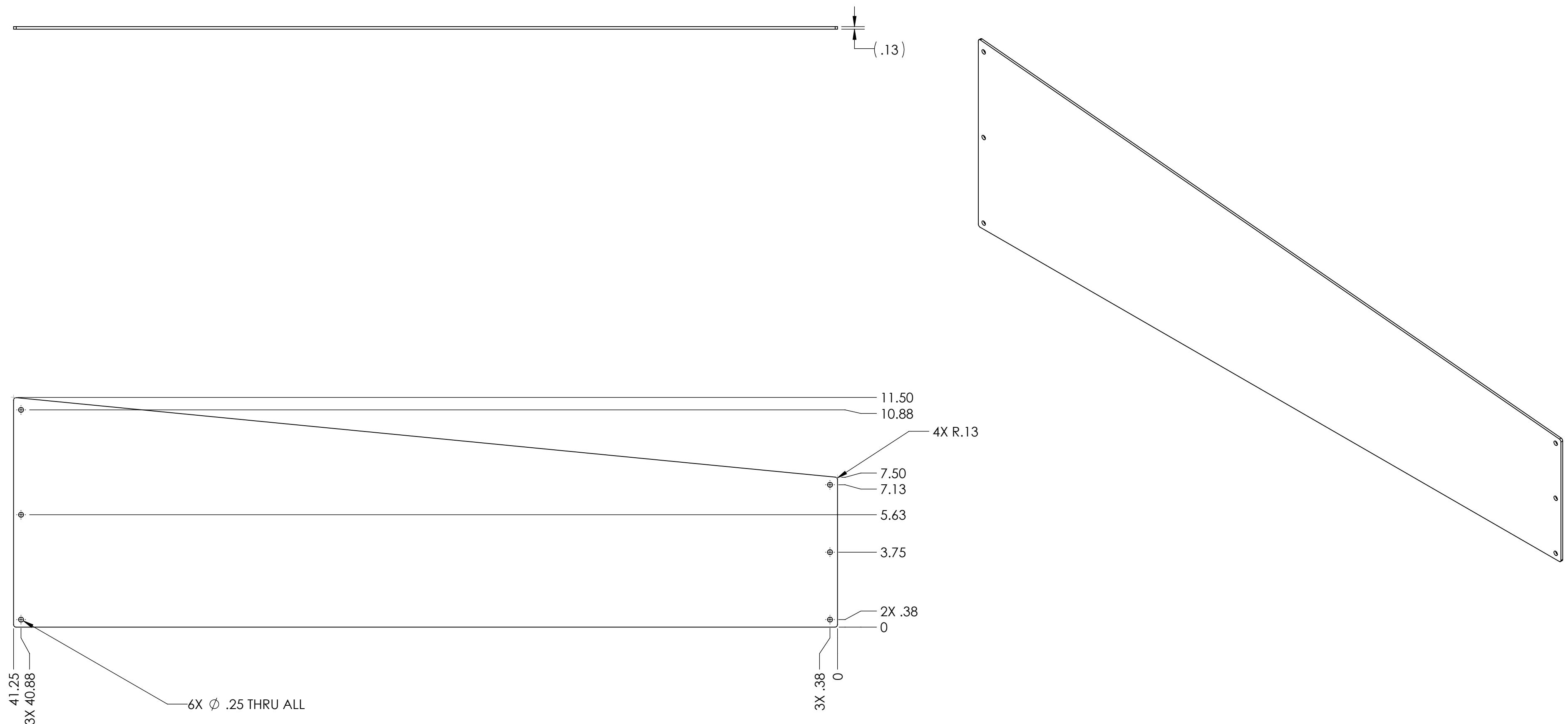
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	JO	9/30/2024
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$	PROPRIETARY AND CONFIDENTIAL		
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
1/8" Polycarbonate, Clear	C	GE-25121	
COMMENTS:	REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING	SCALE: 1:4 SHEET 1 OF 1		

4

3

2

1

4

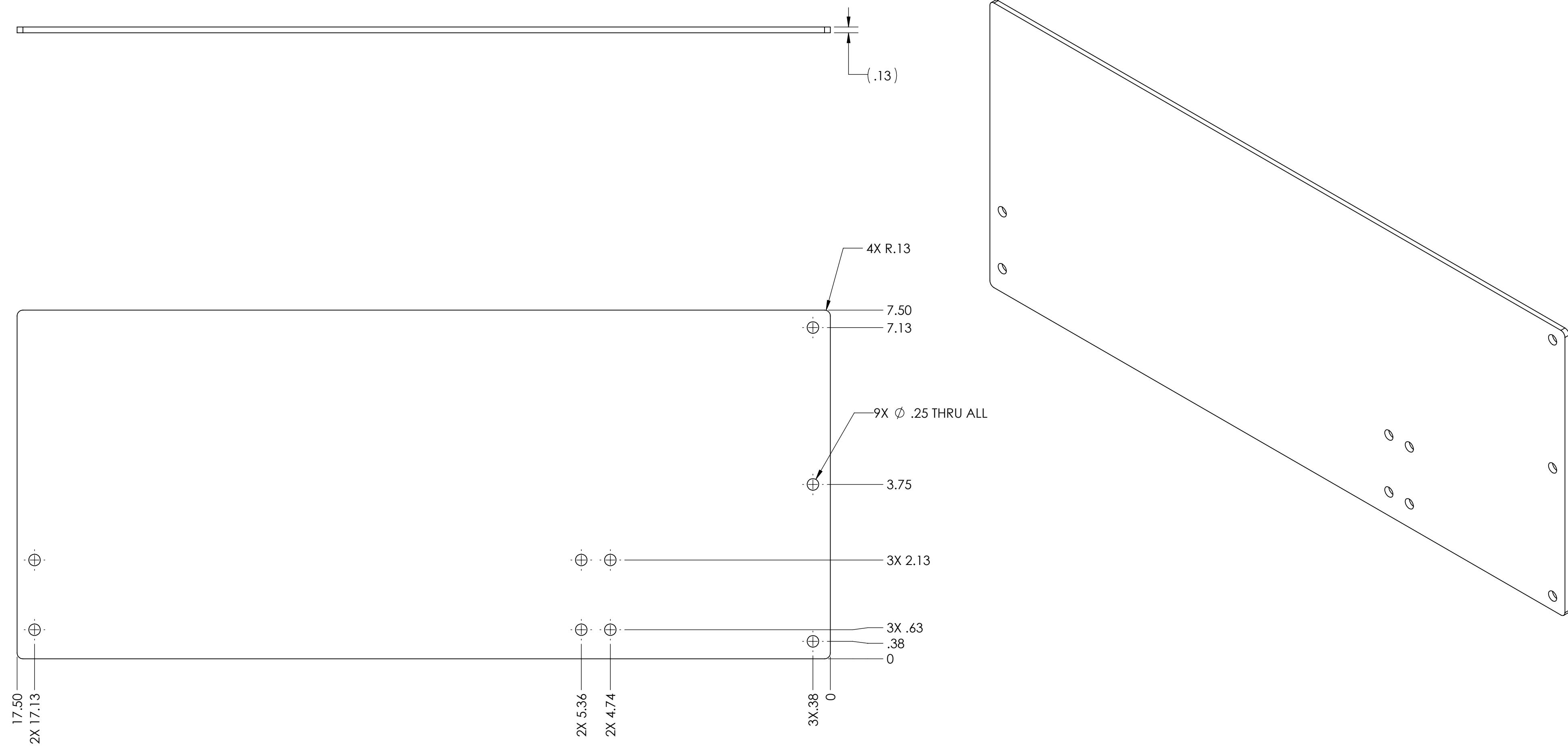
3

2

1

D

D



UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$		DRAWN	JO	9/30/2024	 FIRST ROBOTICS COMPETITION		
MATERIAL/FINISH: 1/8" Polycarbonate, Clear		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE: Corral Back		
		SIZE	DWG. NO.			REV	
		C	GE-25122				
DO NOT SCALE DRAWING		SCALE: 3:5			SHEET 1 OF 1		

4

3

2

1

D

D

C

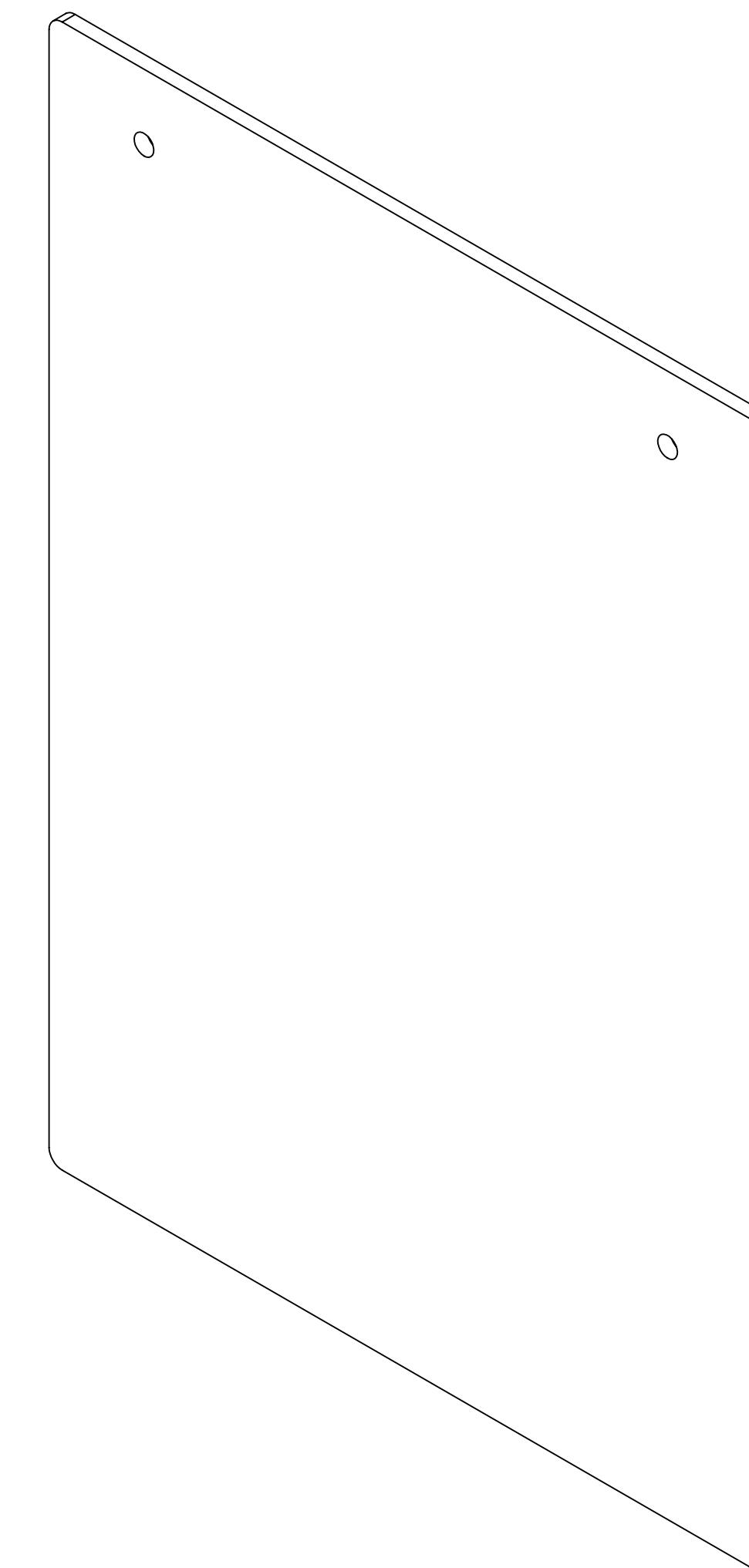
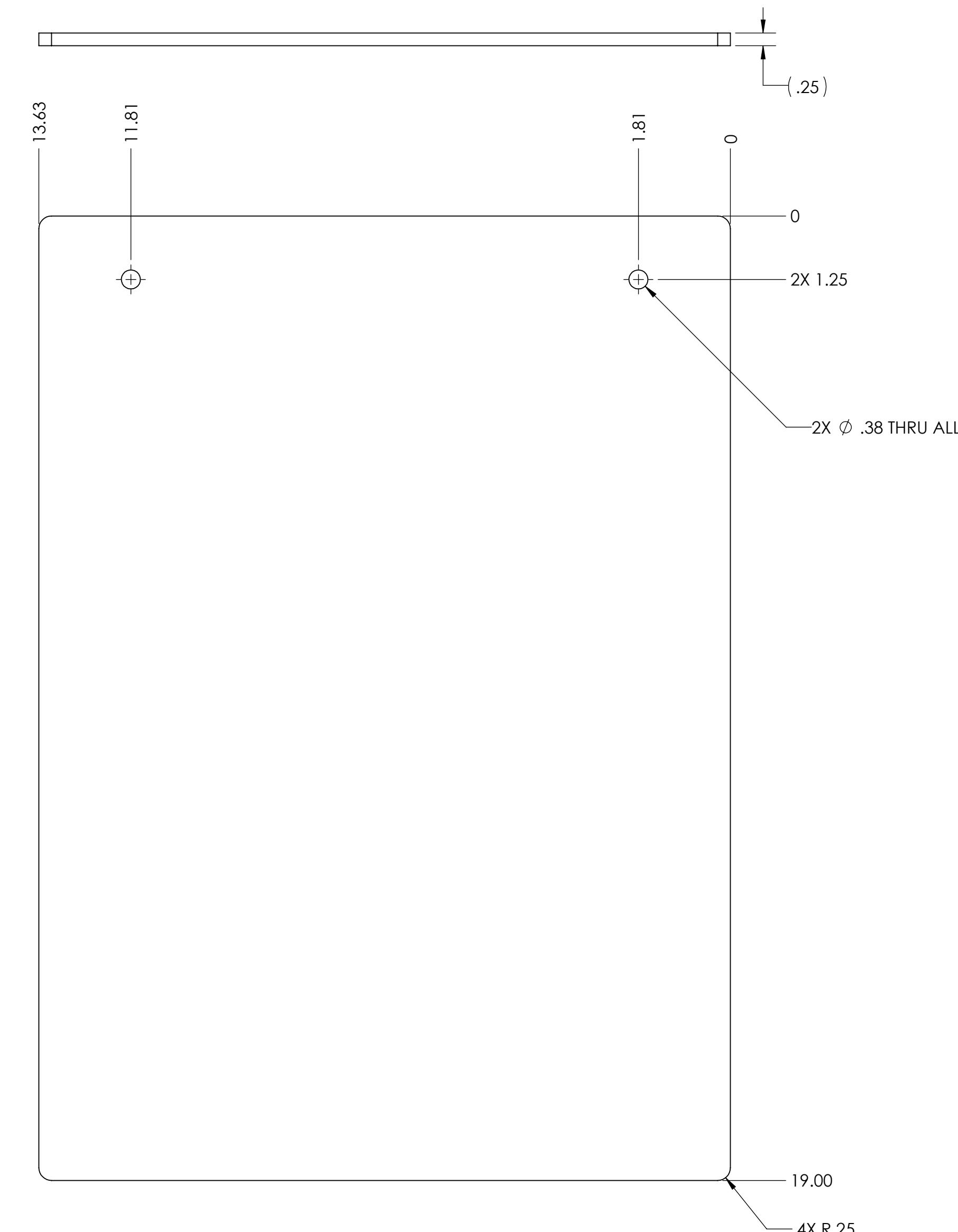
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

1/4" Polycarbonate, Clear

VEND NAME DATE

DRAWN JO 9/30/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST[®]. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST[®] IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING



TITLE:
Extra Wall Panel
Briweld

SIZE DWG. NO. REV

C GE-25123

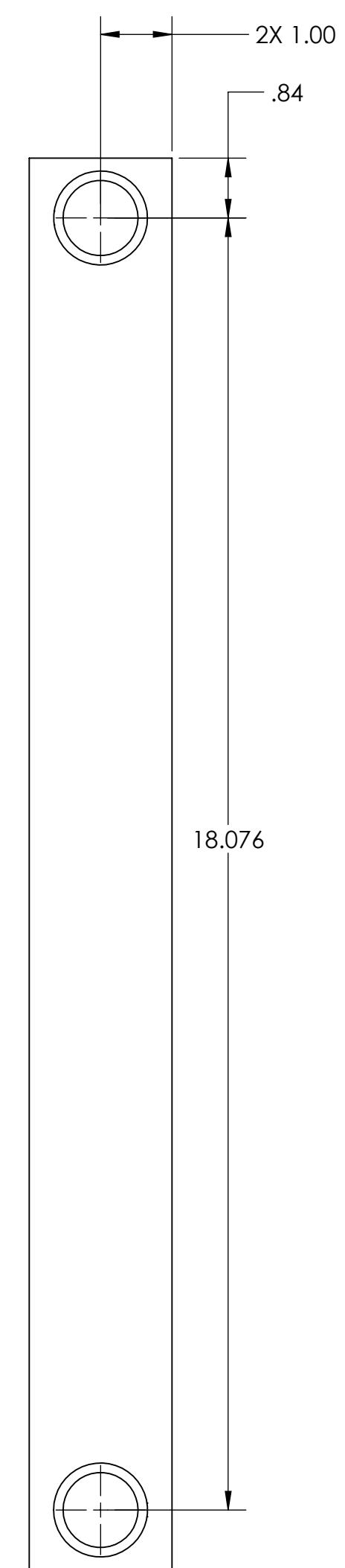
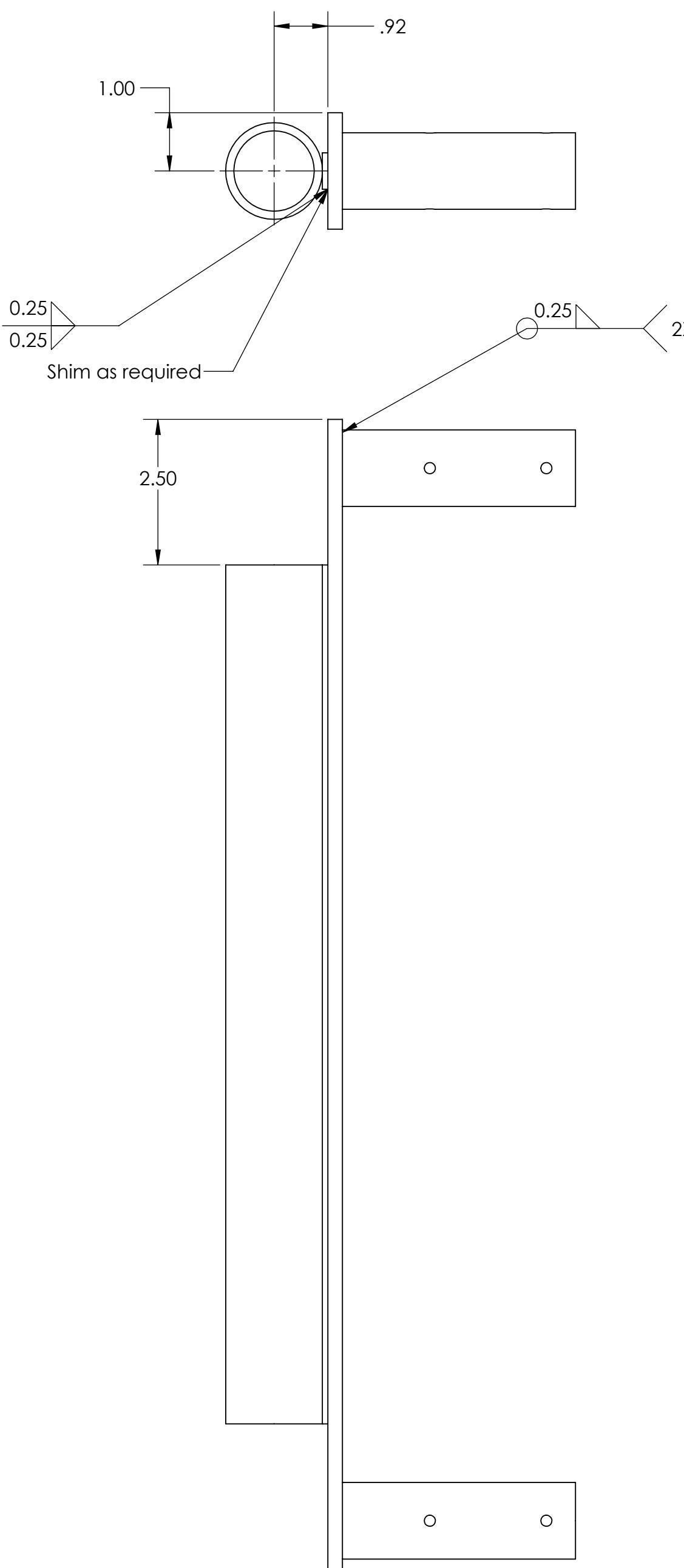
SCALE: 1:2 SHEET 1 OF 1

4

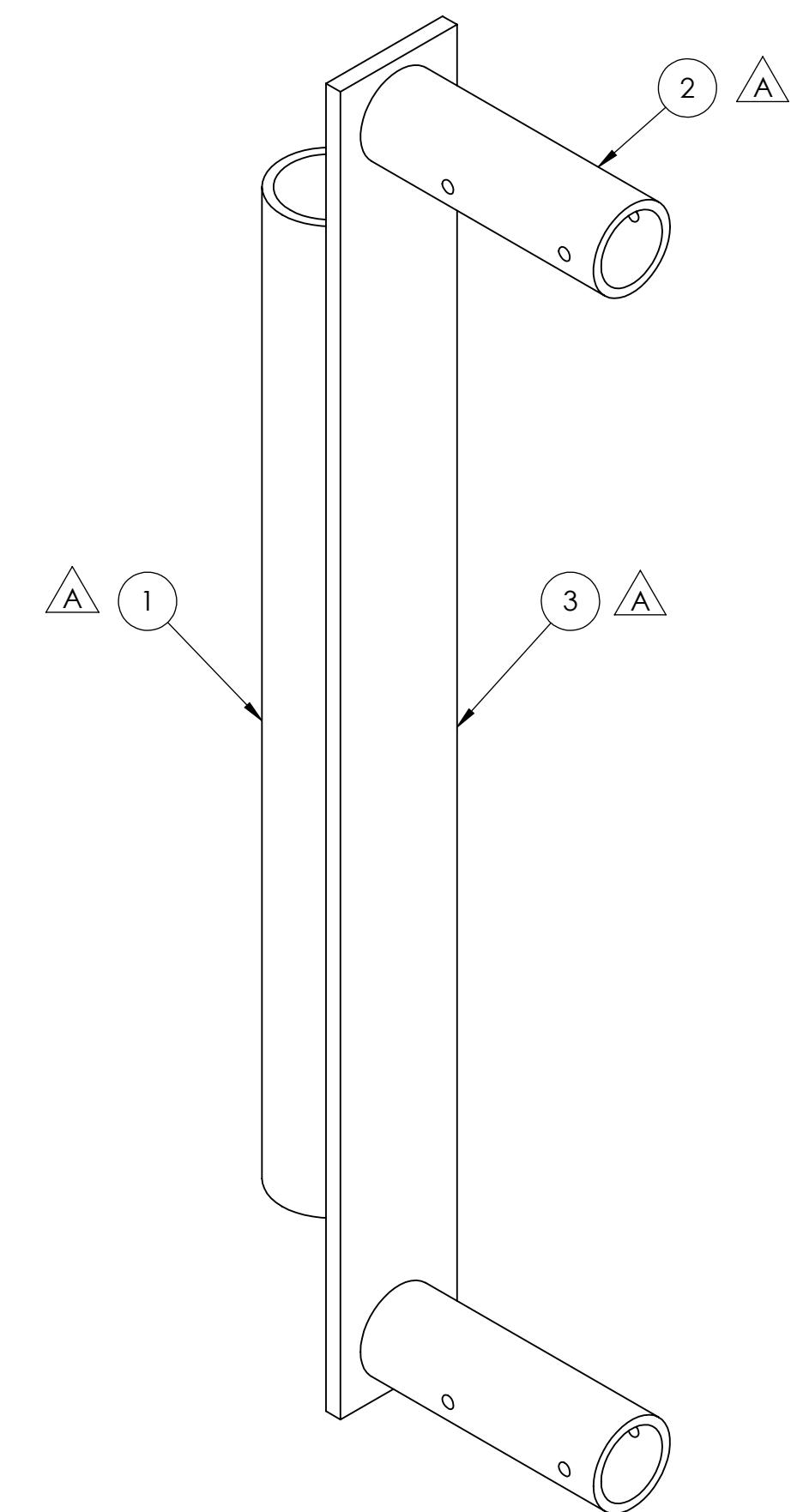
3

2

1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, C1, C2, D1	A	Added missing BOM table and balloons	10/7/2024	JO



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00018-01	1 1/4" Schedule 40 6061-T6 Aluminum Pipe	1
2	FE-00018-02	1" Schedule 40 6061-T6 Aluminum Pipe	2
3	GE-25126	Thinner Connector Plate	1

UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE
	DRAWN	JO	10/3/2024
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
COMMENTS:			
REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING		SIZE	DWG. NO.
		C	GE-25124
			REV A
		SCALE: 1:2	SHEET 1 OF 1

FIRST ROBOTICS COMPETITION

SOLIDWORKS

Modeling Solutions Partner

TITLE: Processor Pin Connector - Briweld Field

SIZE DWG. NO. REV

SCALE: 1:2 SHEET 1 OF 1

4

3

2

1

D

D

C

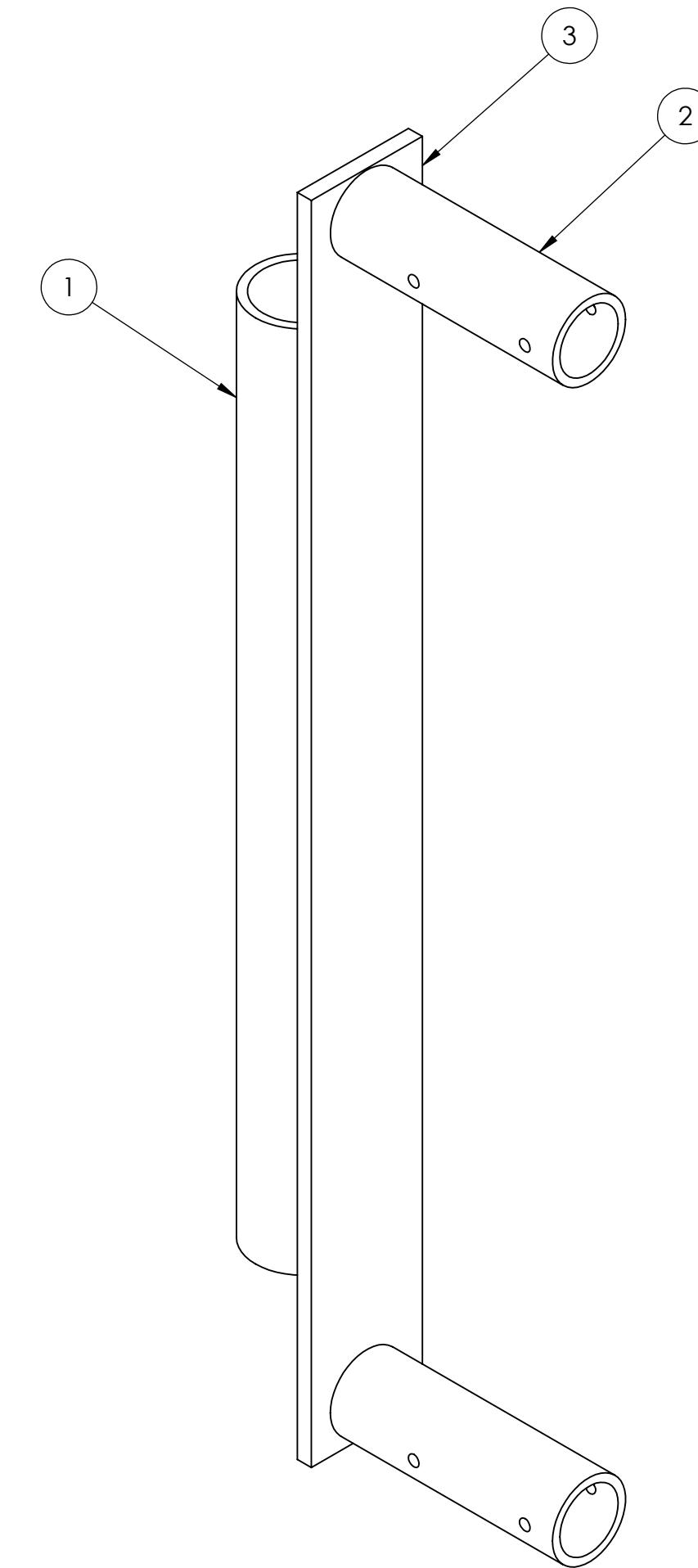
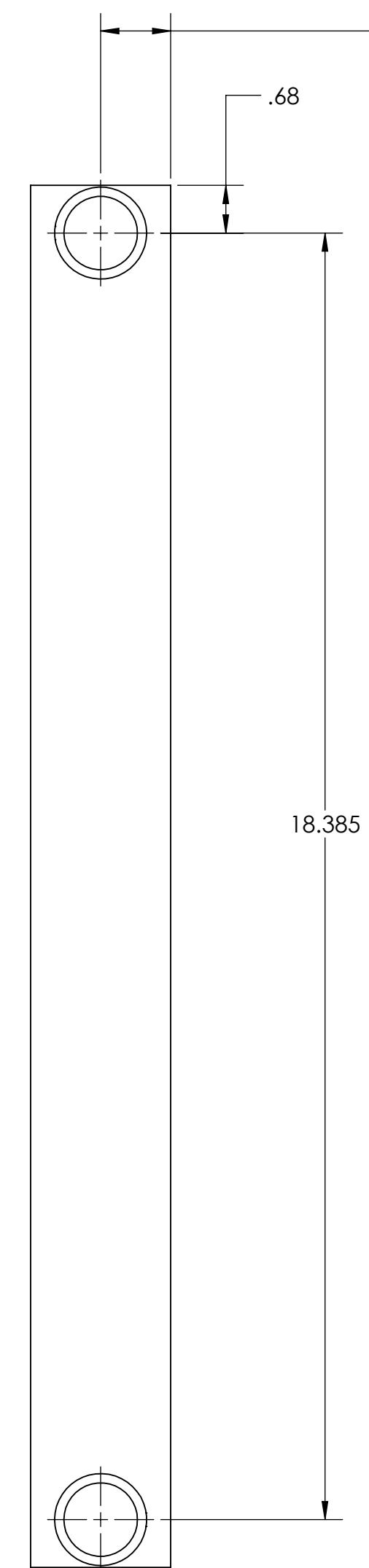
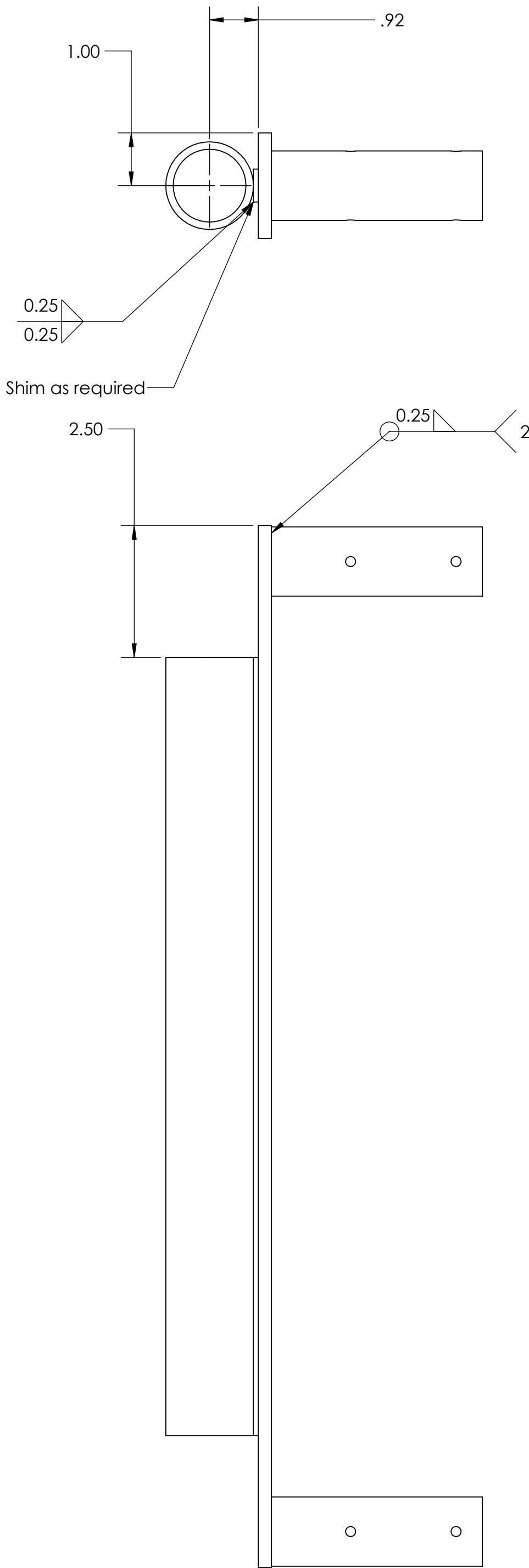
C

B

B

A

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00018-01	1 1/4" Schedule 40 6061-T6 Aluminum Pipe	1
2	FE-00018-02	1" Schedule 40 6061-T6 Aluminum Pipe	2
3	GE-25126	Thinner Connector Plate	1

UNLESS OTHERWISE SPECIFIED:		
WELD	NAME	DATE
DRAWN	JO	10/3/2024
PROPRIETARY AND CONFIDENTIAL		
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.		
MATERIAL/FINISH:		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING		

FIRST ROBOTICS COMPETITION SOLIDWORKS Modeling Solutions Partner

TITLE: Processor Pin Connector - AndyMark Field

SIZE DWG. NO. REV

C GE-25125

SCALE: 1:2 SHEET 1 OF 1

4

3

2

1

D

D

C

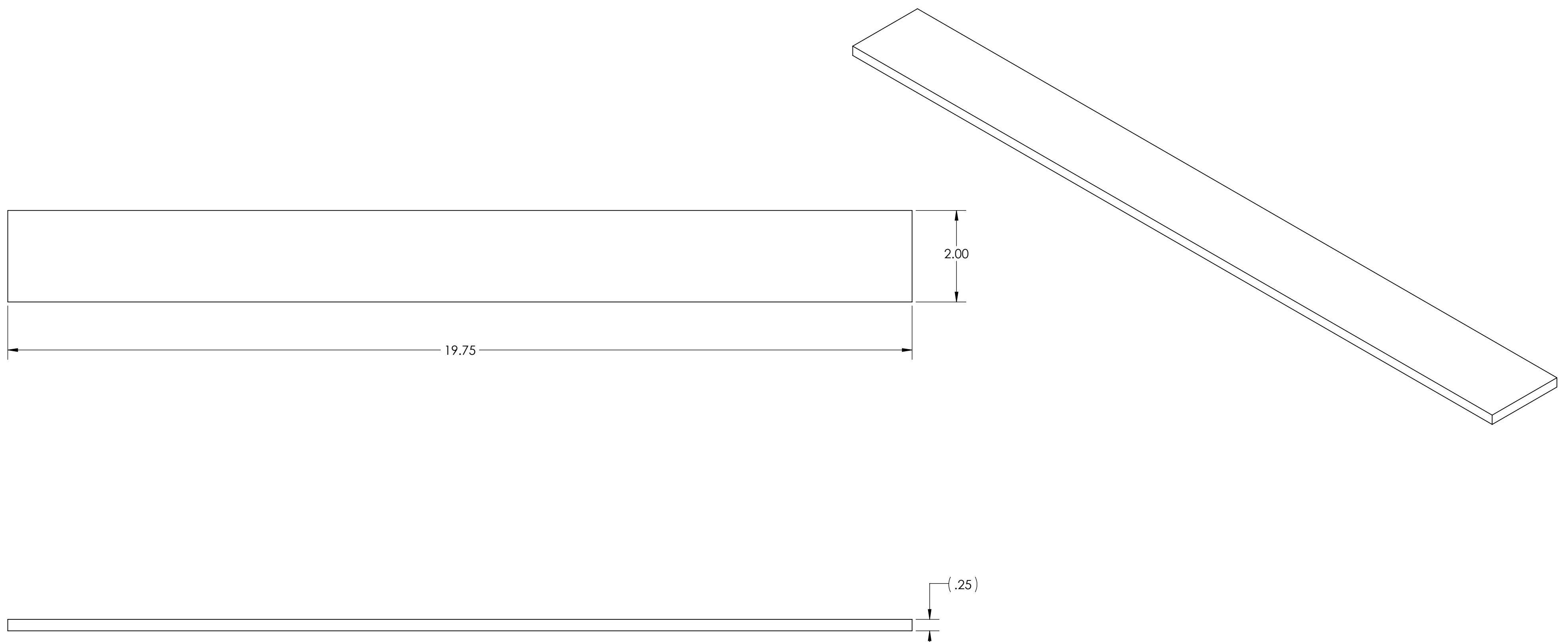
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$	DRAWN	JO	10/3/2024
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 1/4" 6061 Aluminum Plate			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

 FIRST ROBOTICS COMPETITION  SOLIDWORKS Modeling Solutions PartnerTITLE: Thinner Connector Plate
SIZE GE-25126 REV
C

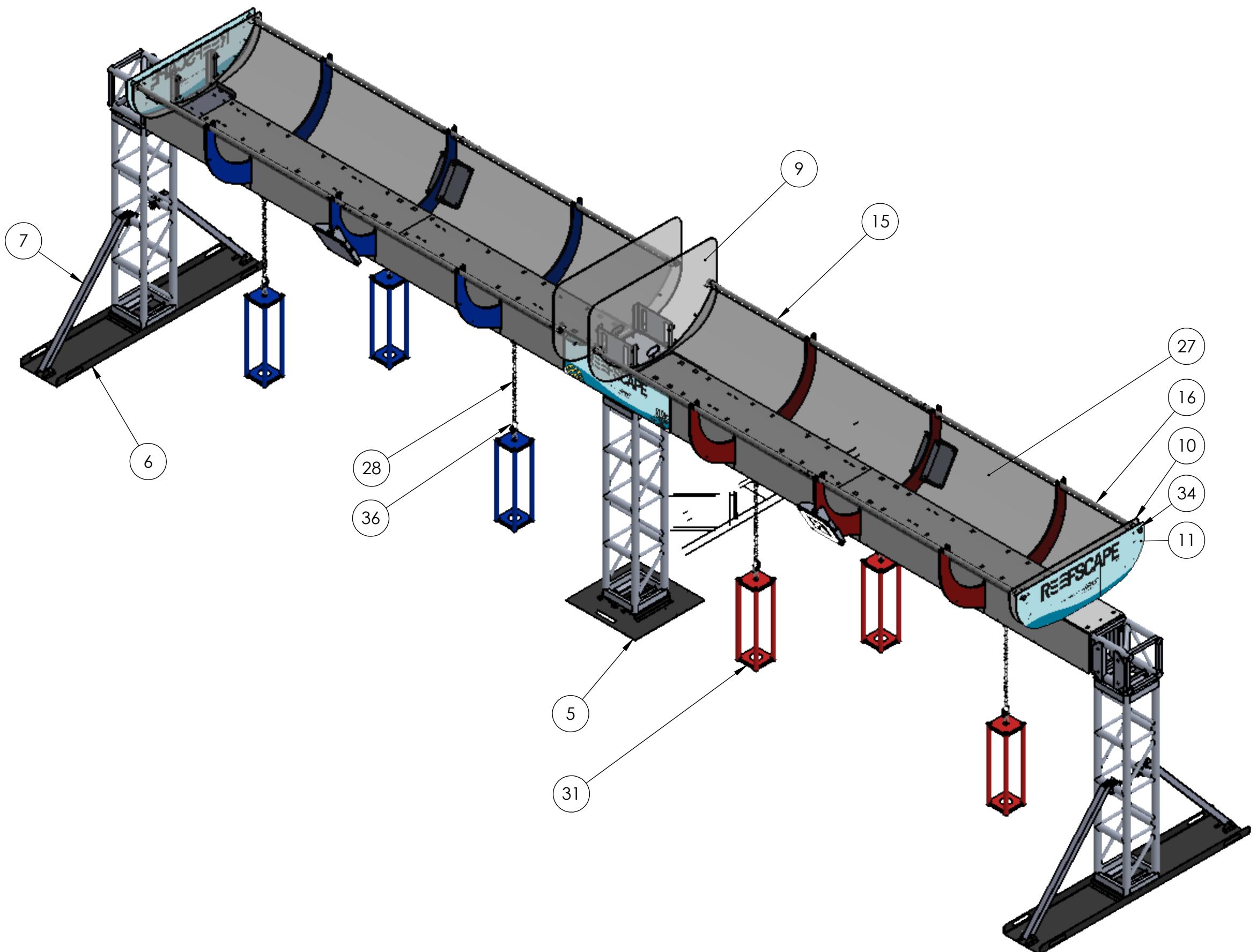
SCALE: 3:5 SHEET 1 OF 1

4

3

2

1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-01002	4' x 1' x 1' Square Truss	4
2	FE-01003	5' x 1' x 1' Square Truss	5
3	FE-01012	3 Way Corner Block	2
4	FE-01013	TS 1212LD-C4P, 4 Way Corner Block Light Duty Truss, Total Structures	1
5	FE-01021		1
6	GE-25203	Truss Base, Long - Sheet Metal Assembly	2
7	GE-25205	Truss Brace Assembly	4
8	GE-25206	Backboard Brace	1
9	GE-25207	Backboard	2
10	GE-25208	Inner Front	2
11	GE-25209	Outer Front w/Vinyl	2
12	GE-25211	Side Panel w/Vinyl	2
13	GE-25213	Rib, Blue	3
14	GE-25214	Rib, Red	3
15	GE-25215	Net Tube Assembly	4
16	GE-25216	Net Tube, Outer	4
17	GE-25218	Brace, Barge End	2
18	GE-25220-ID14	April Tag Assembly, Truss (ID14)	1
19	GE-25220-ID15	April Tag Assembly, Truss (ID15)	1
20	GE-25220-ID4	April Tag Assembly, Truss (ID4)	1
21	GE-25220-ID5	April Tag Assembly, Truss (ID5)	1
22	GE-25221	Top Diffuser	4
23	GE-25222	Side Diffuser 1	4
24	GE-25223	Side Diffuser 2	8
25	GE-25224	Side Diffuser 3	4
26	GE-25227	Diffuser Top, Small	2
27	GE-25228	Net	2
28	GE-25229	Cage Chain	4
29	GE-25230	Eye Nut Assembly	6
30	GE-25231-Blue	Cage Assembly, Blue	3
31	GE-25231-Red	Cage Assembly, Red	3
32	hex_.625_11_2.00	Hex Head Bolt, 5/8"-11 Thread, 2" length	56
33	hexnut_.625_11	5/8"-11 hex nut	52
34	pin_quick_ring_.25_2.3	Pin, Ring-Grip Quick-Release with SS Ring, 17/4" Diameter, 2.3125" Usable Length	24
35	washer_flat_.625	Flat washer for 5/8" screw	108
36	3216T41_Carabiner	Carabiner, Locking Steel, .38 thick	10
37	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	8

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE
		DRAWN	JO	12/16/2024
PROPRIETARY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				
MATERIAL/FINISH:				
COMMENTS:				
REMOVE ALL BURRS AND SHARP EDGES.				
DO NOT SCALE DRAWING				

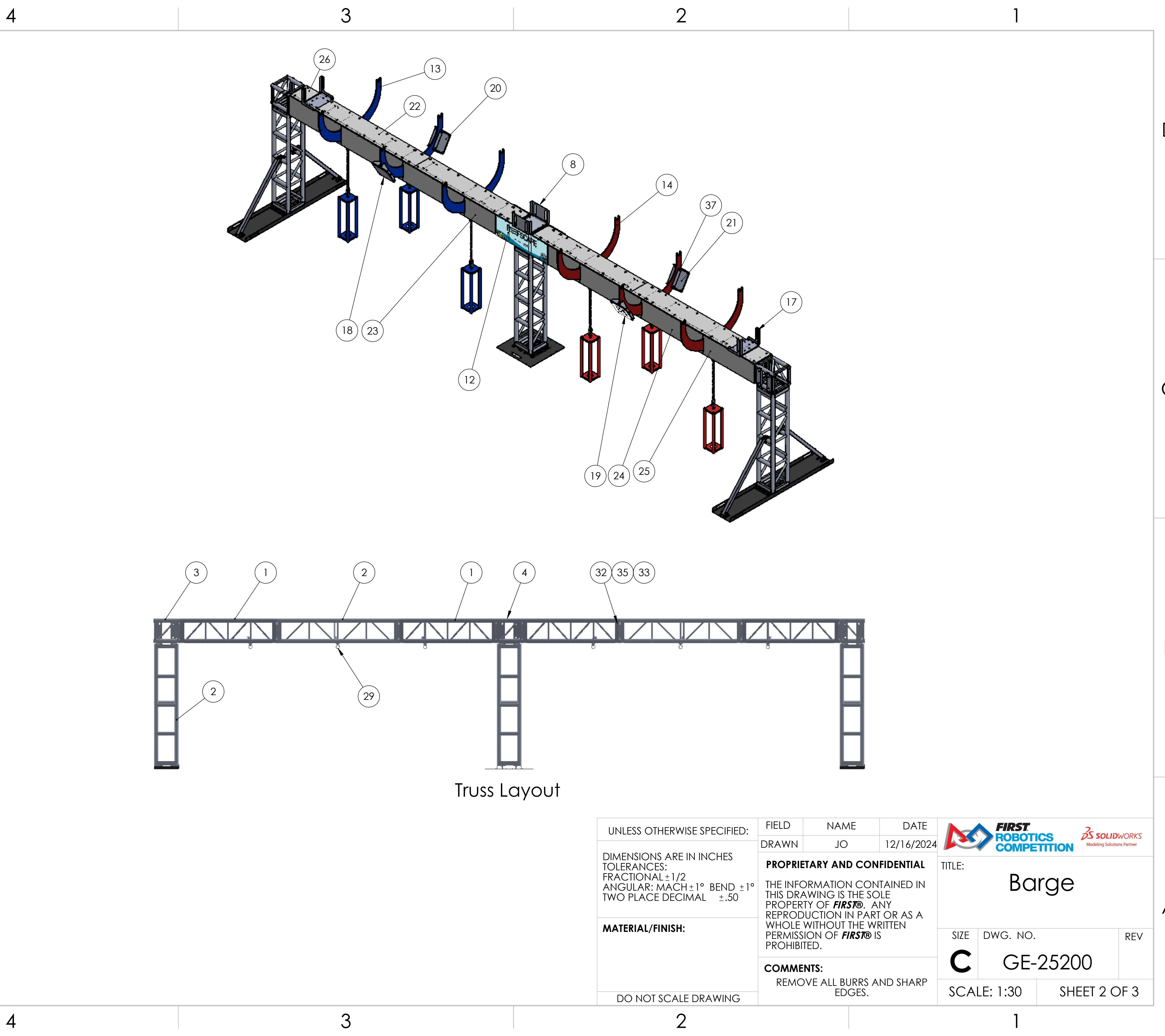
FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

TITLE: Barge

SIZE DWG. NO. REV

C GE-25200

SCALE: 1:25 SHEET 1 OF 3



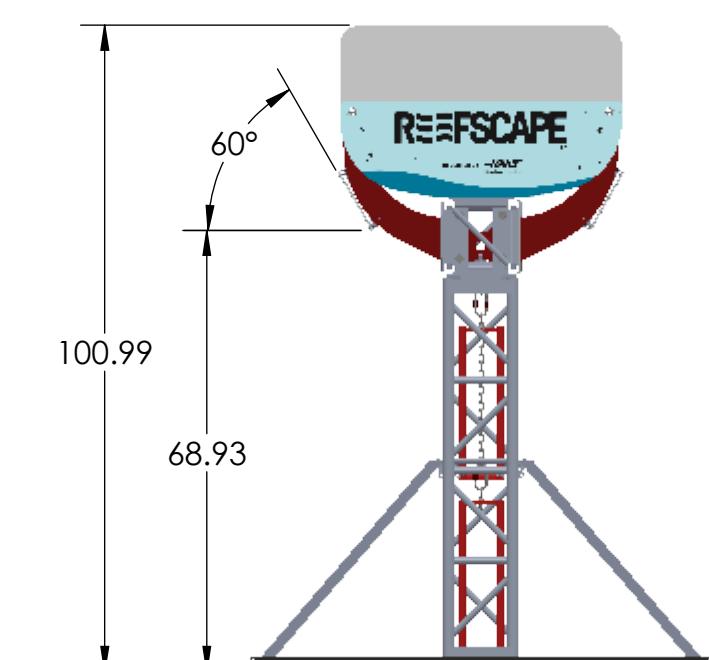
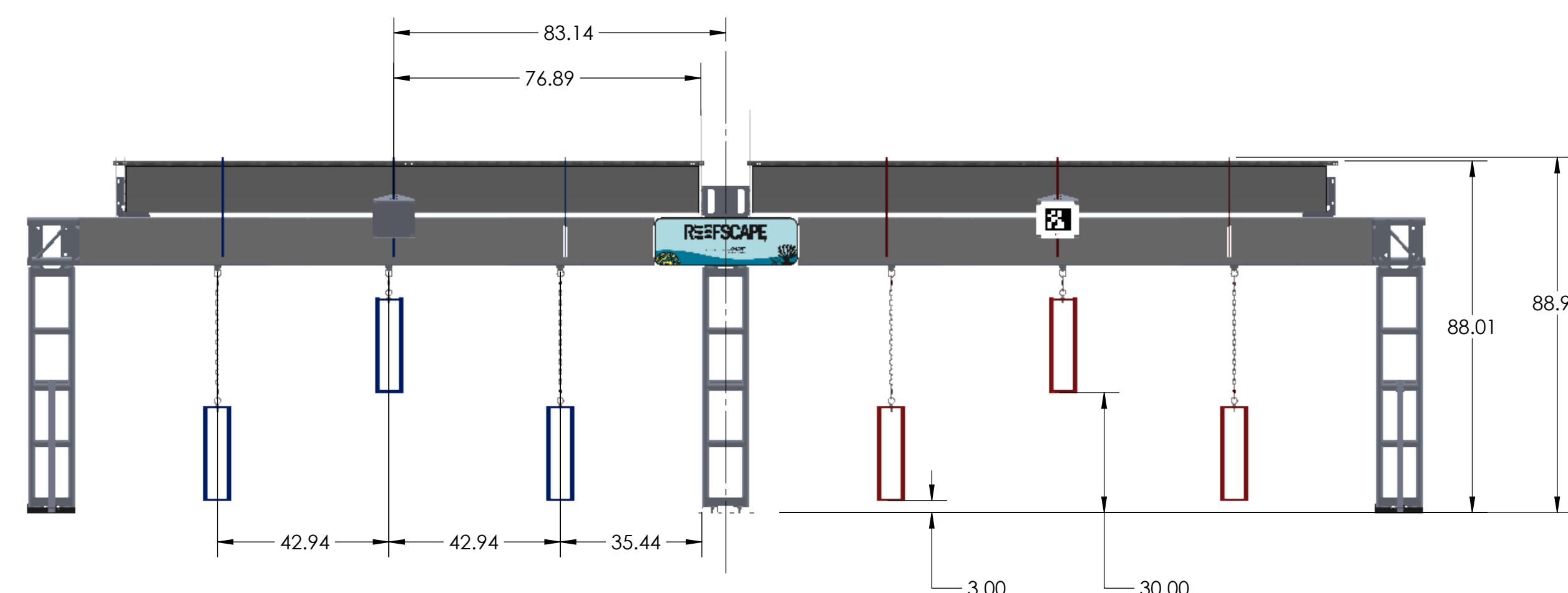
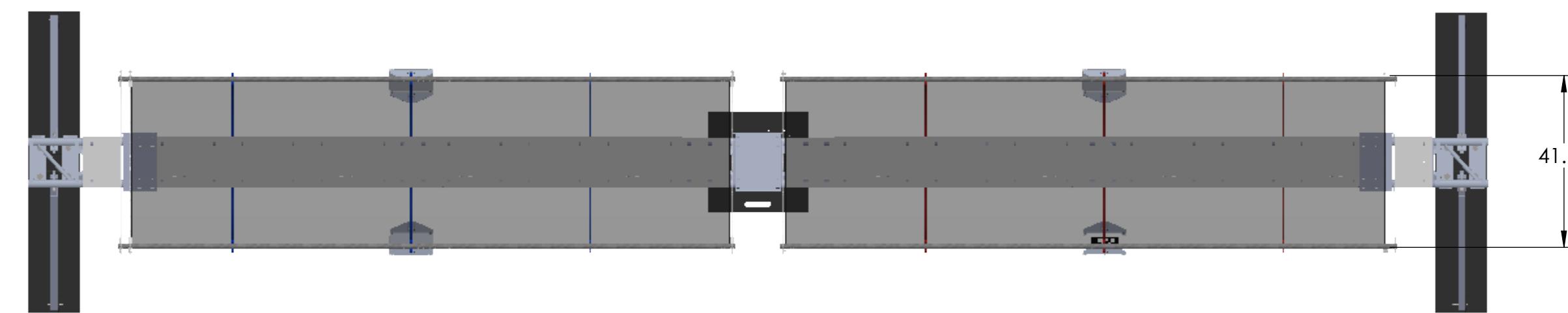
4

3

2

1

D



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
DRAWN	JO	12/16/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
	C	GE-25200	
COMMENTS:	SCALE: 1:30	SHEET 3 OF 3	
REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

4

3

2

1

D

C

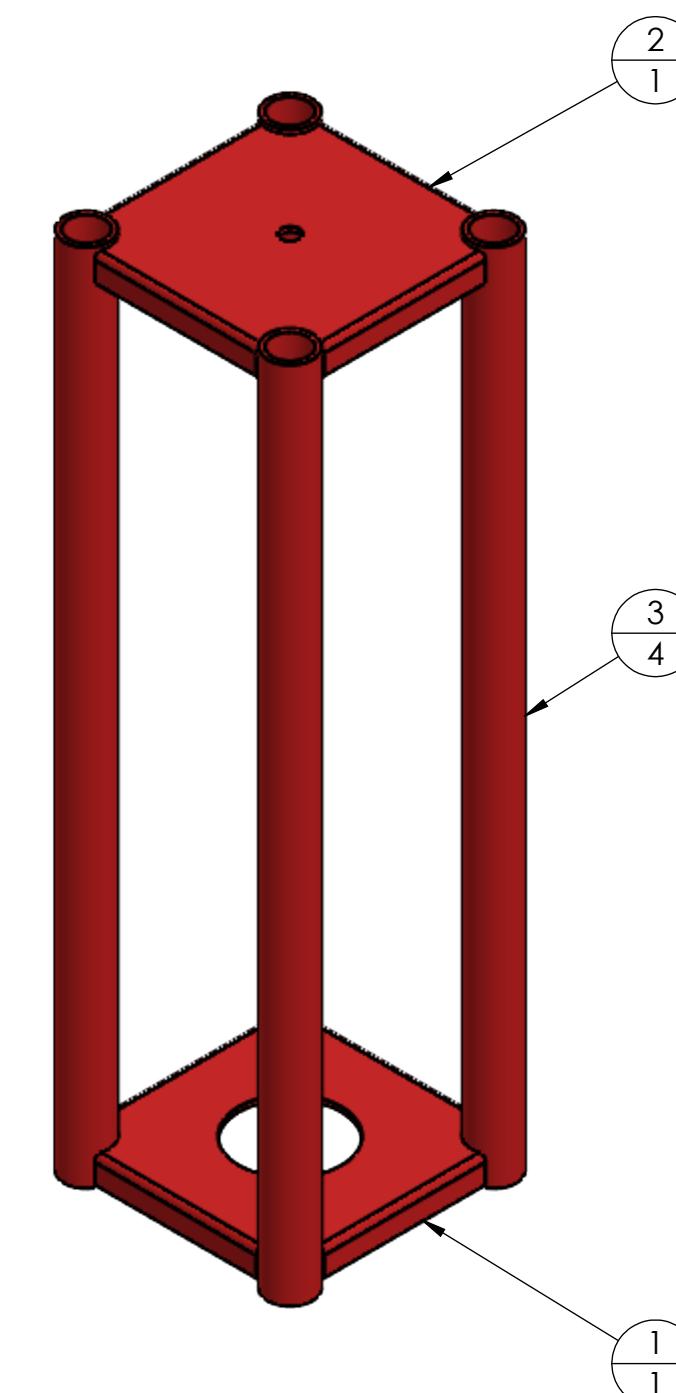
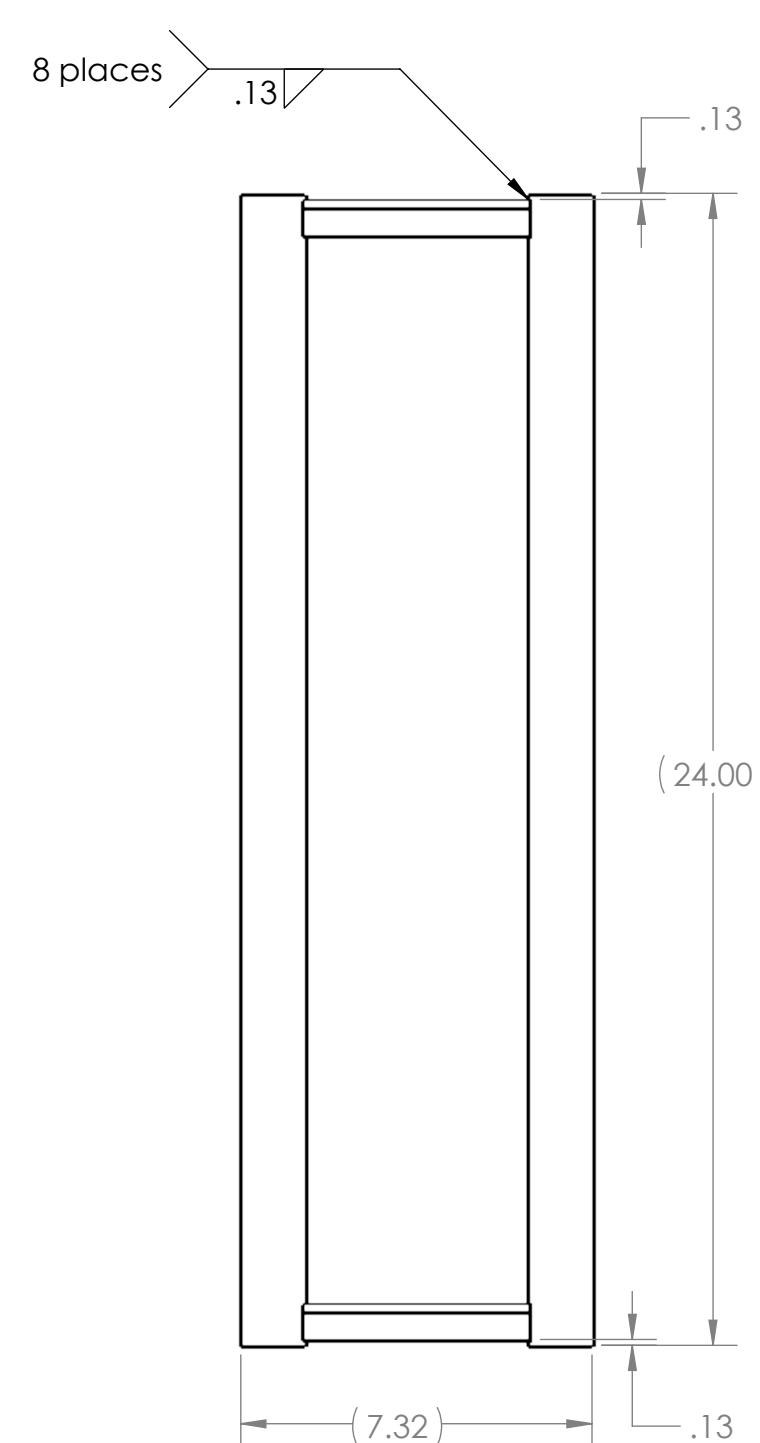
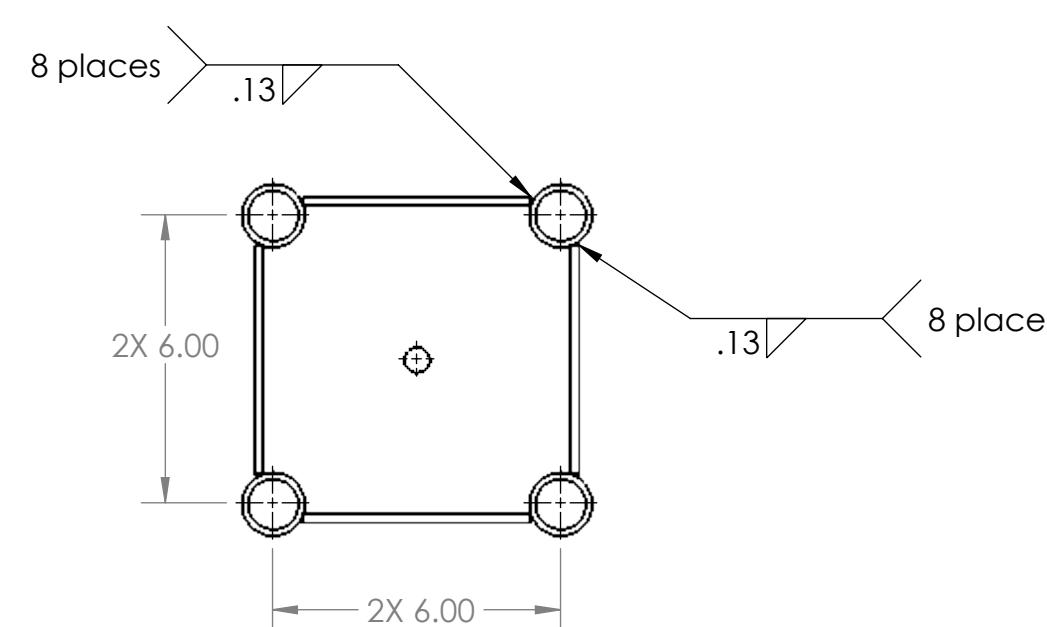
B

A

A

D

D



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25201-01	10 ga. A36/1008 Mild Steel Sheet	1
2	GE-25201-02	10 ga. A36/1008 Mild Steel Sheet	1
3	GE-25201-03	1" Schedule 40 Pipe, A500 Steel	4

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .02$
THREE PLACE DECIMAL $\pm .015$

MATERIAL/FINISH:

Steel, welded and
powder coated RAL#
3020

DO NOT SCALE DRAWING

WELD	NAME	DATE
DRAWN	DF	7/10/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN
THIS DRAWING IS THE SOLE
PROPERTY OF FIRST®. ANY
REPRODUCTION IN PART OR AS A
WHOLE WITHOUT THE WRITTEN
PERMISSION OF FIRST® IS
PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP
EDGES.

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE: Cage Weldment, Red

SIZE DWG. NO. REV

C GE-25201

SCALE: 1:4 SHEET 1 OF 2

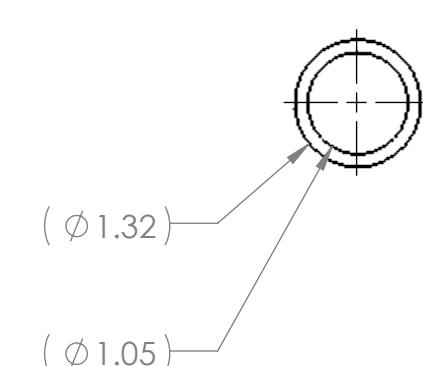
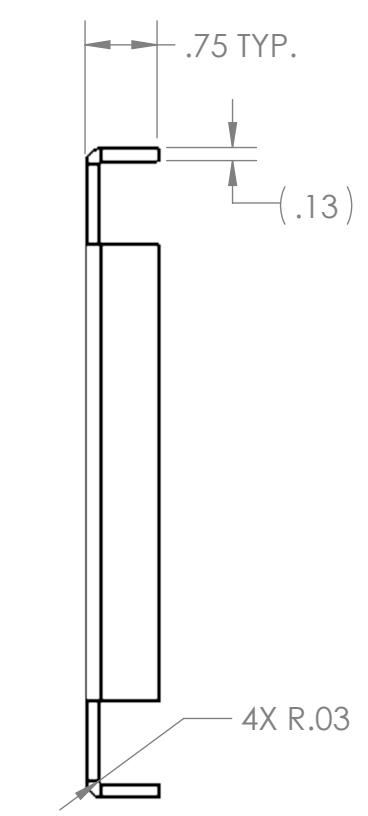
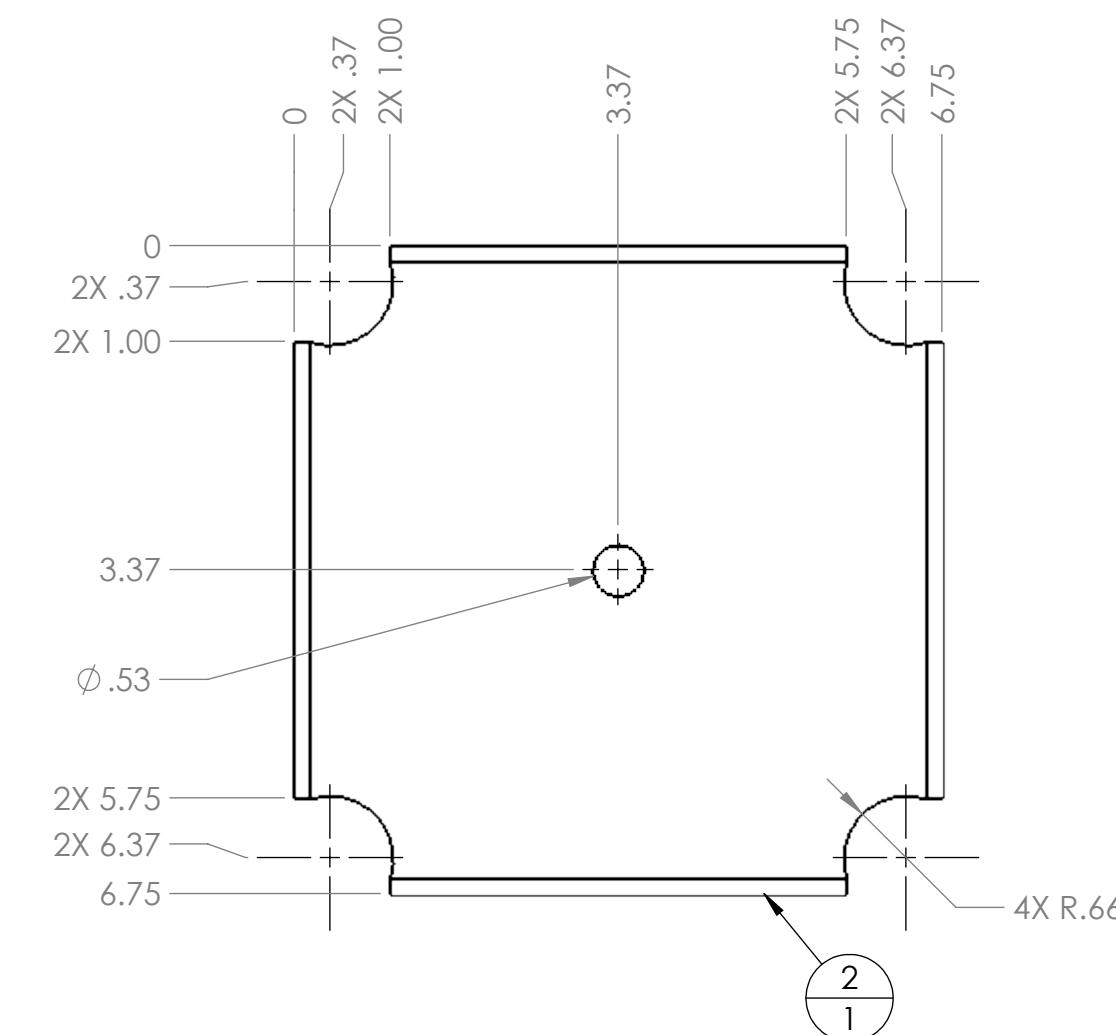
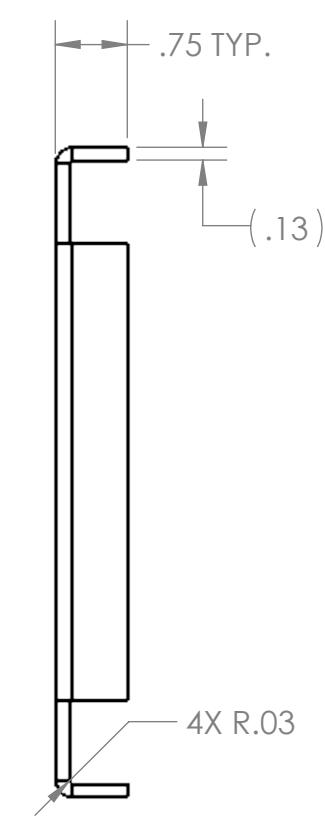
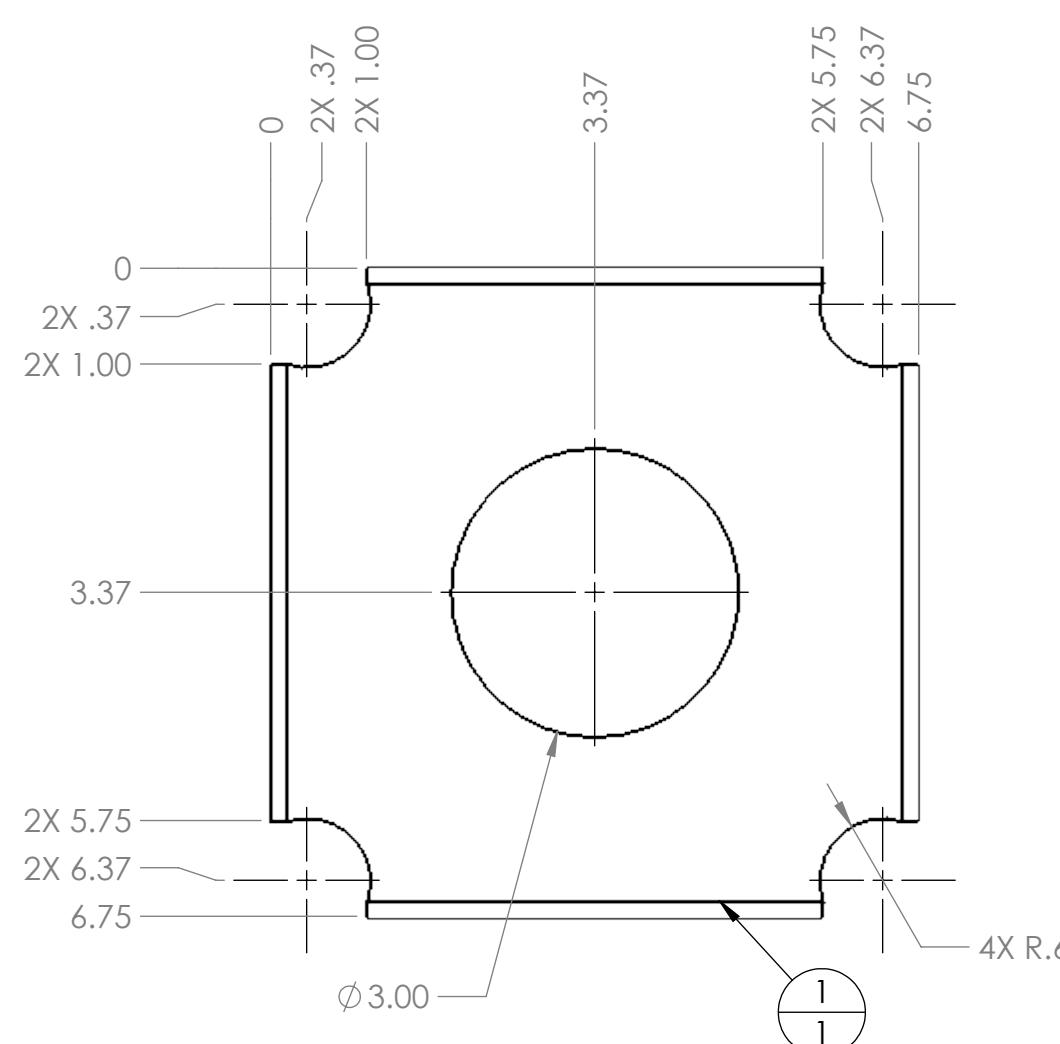
4

3

2

1

D



UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE
DRAWN	DF	7/10/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: Steel, welded and powder coated RAL# 3020			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE: Cage Weldment, Red

SIZE DWG. NO. REV
C GE-25201

SCALE: 1:2 SHEET 2 OF 2

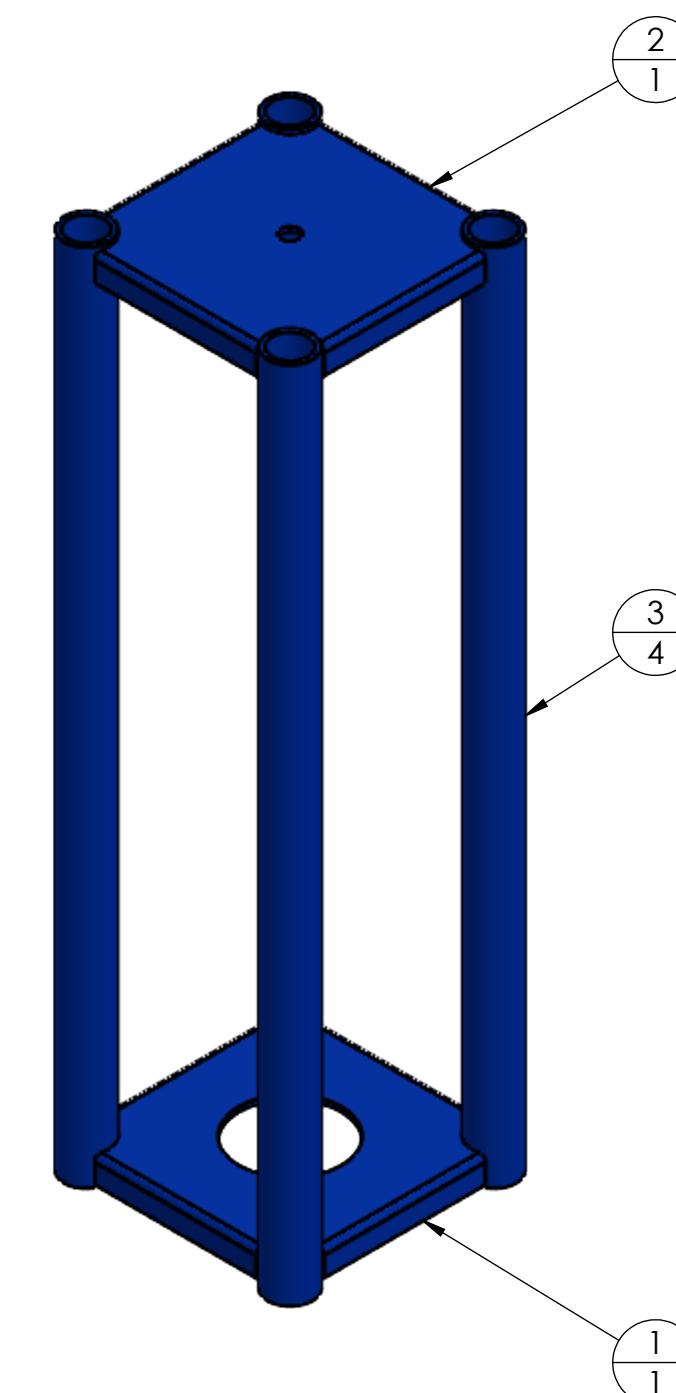
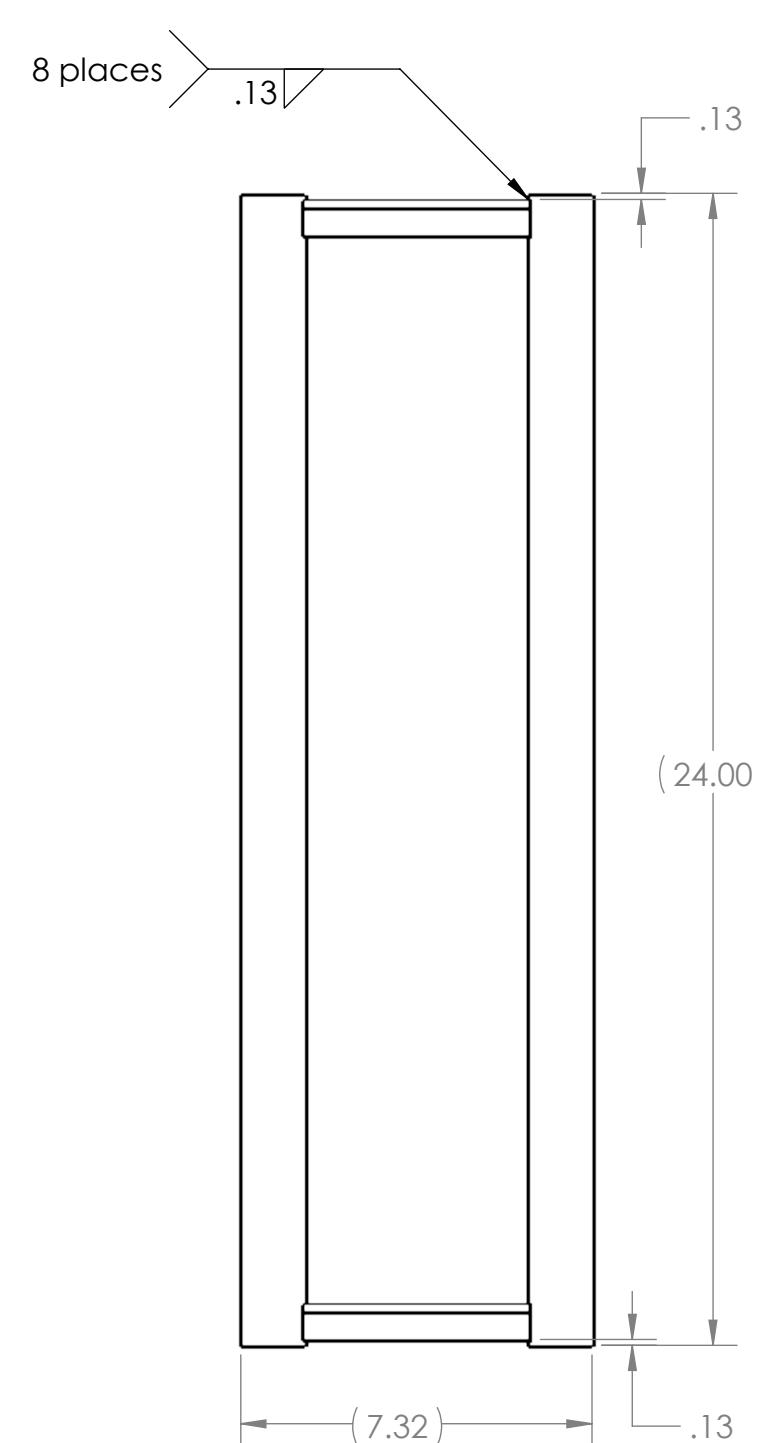
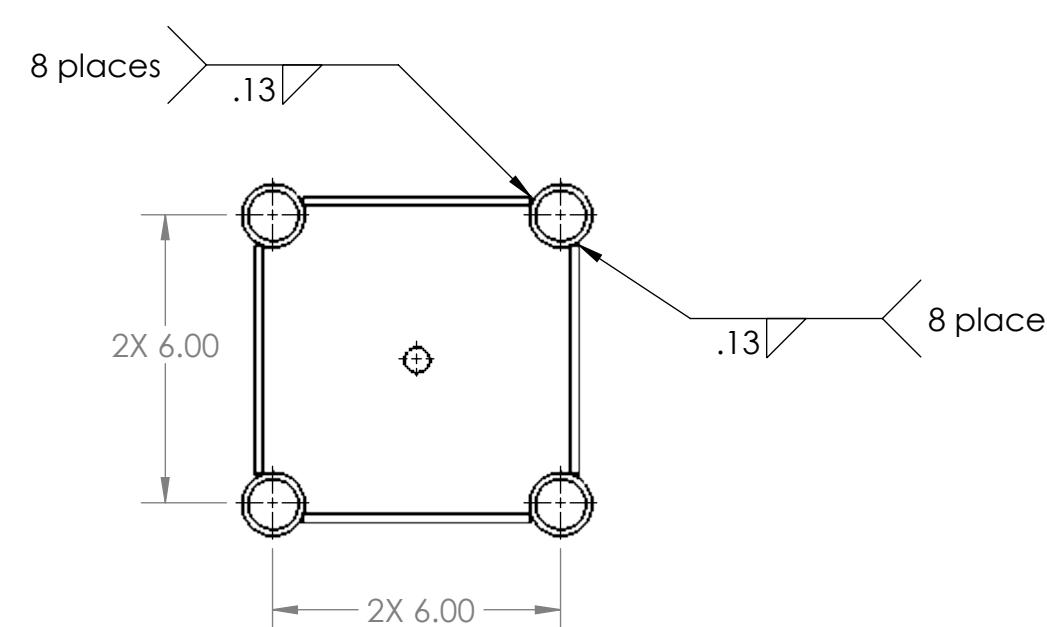
4

3

2

1

D



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25202-01	10 ga. A36/1008 Mild Steel Sheet	1
2	GE-25202-02	10 ga. A36/1008 Mild Steel Sheet	1
3	GE-25202-03	1" Schedule 40 Pipe, A500 Steel	4

UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	DF	7/10/2024
PROPRIETARY AND CONFIDENTIAL			

DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .015$	MATERIAL/FINISH: Steel, welded and powder coated RAL# 5017	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

DO NOT SCALE DRAWING	SIZE	DWG. NO.	REV
	C	GE-25202	
SCALE: 1:4			SHEET 1 OF 2

FIRST
ROBOTICS
COMPETITION
SOLIDWORKS
Modeling Solutions Partner

TITLE: Cage Weldment, Blue

SIZE DWG. NO. REV

C GE-25202

SCALE: 1:4 SHEET 1 OF 2

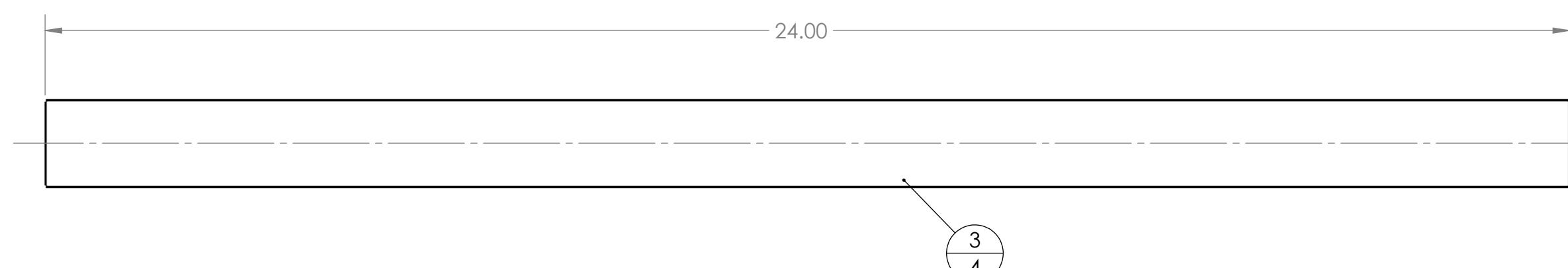
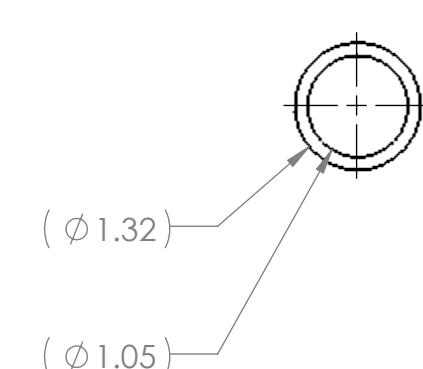
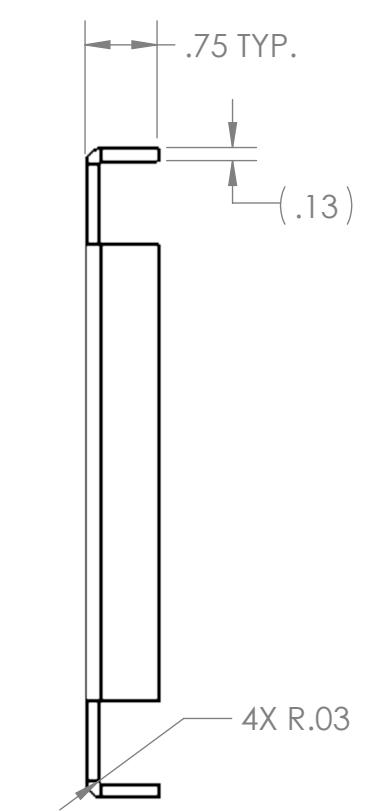
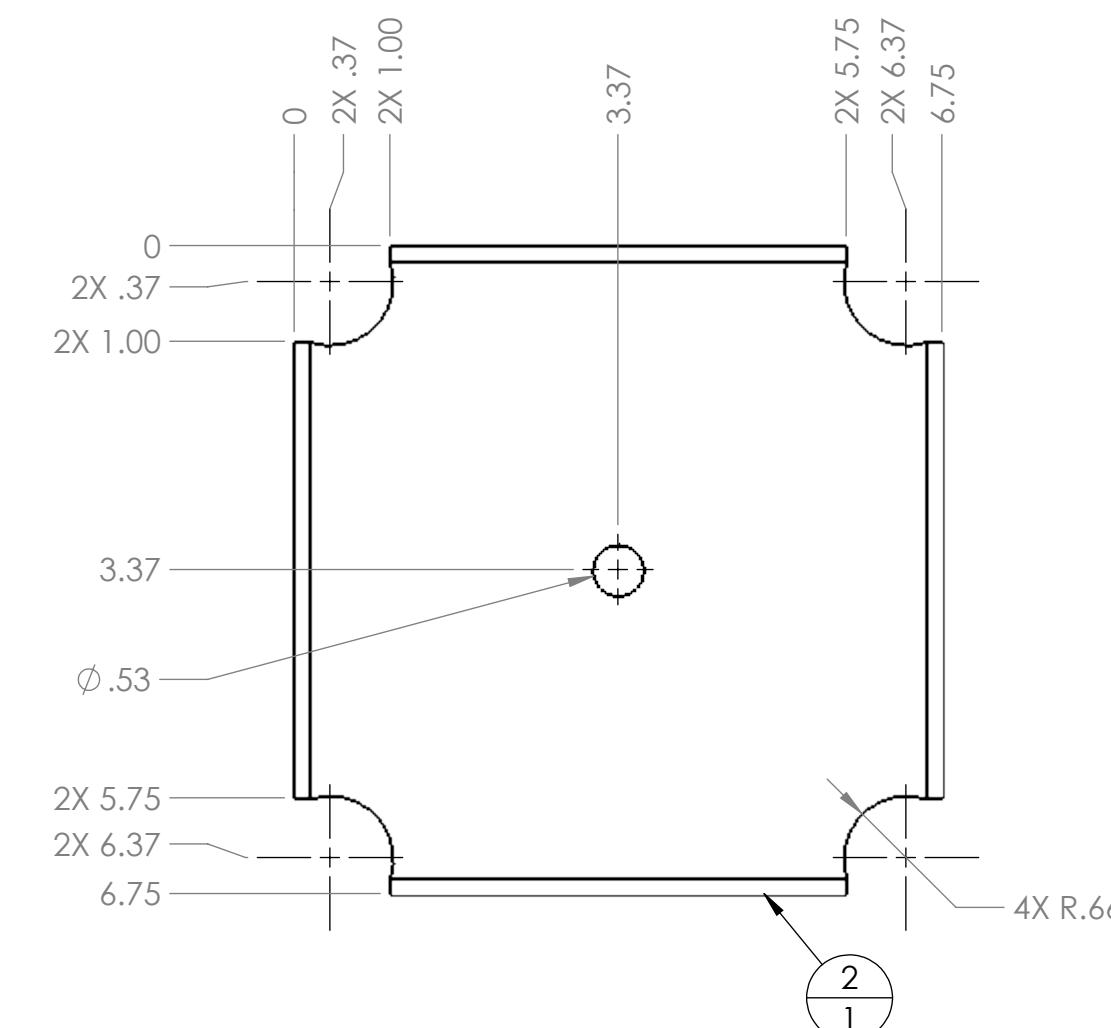
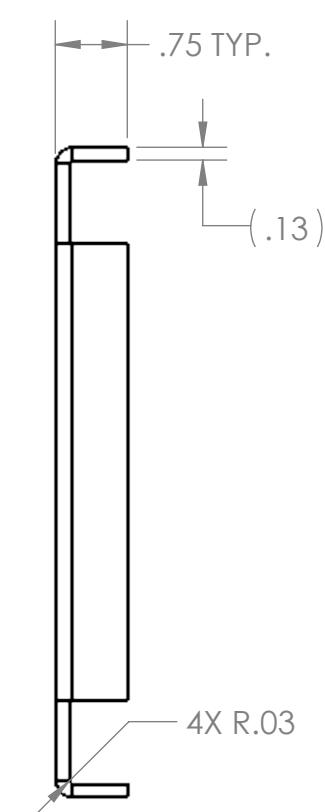
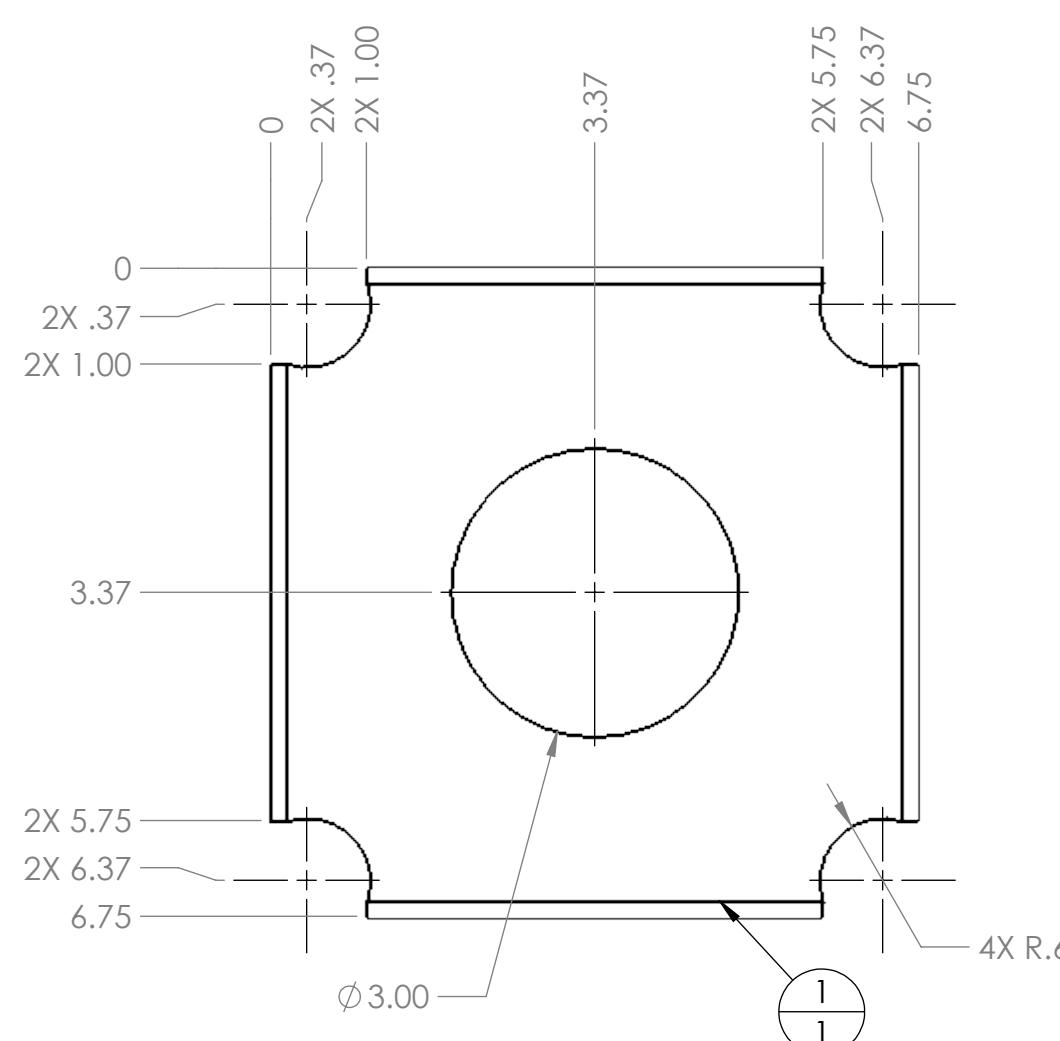
4

3

2

1

D



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .015$ **PROPRIETARY AND CONFIDENTIAL**

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST[®]. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST[®] IS PROHIBITED.

MATERIAL/FINISH:

Steel, welded and powder coated RAL# 5017

DO NOT SCALE DRAWING

WELD

DRAWN

NAME

DF

DATE

7/10/2024



SOLIDWORKS
Modeling Solutions Partner

TITLE: Cage Weldment, Blue

SIZE DWG. NO. REV

C GE-25202

SCALE: 1:2 SHEET 2 OF 2

4

3

2

1

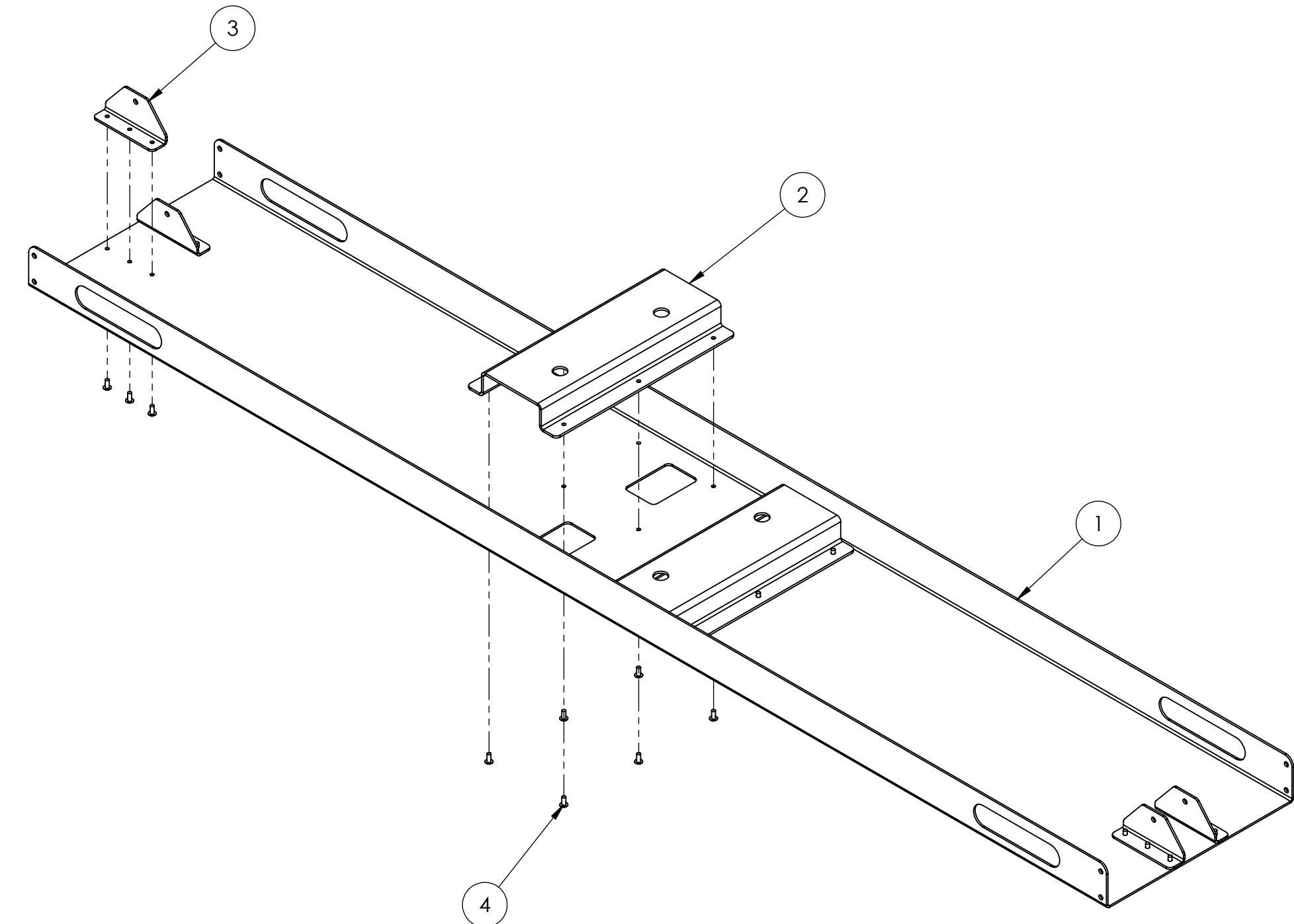
A

D

C

B

A



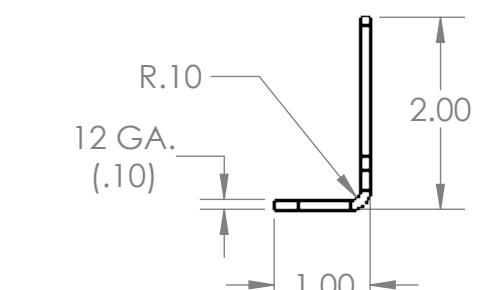
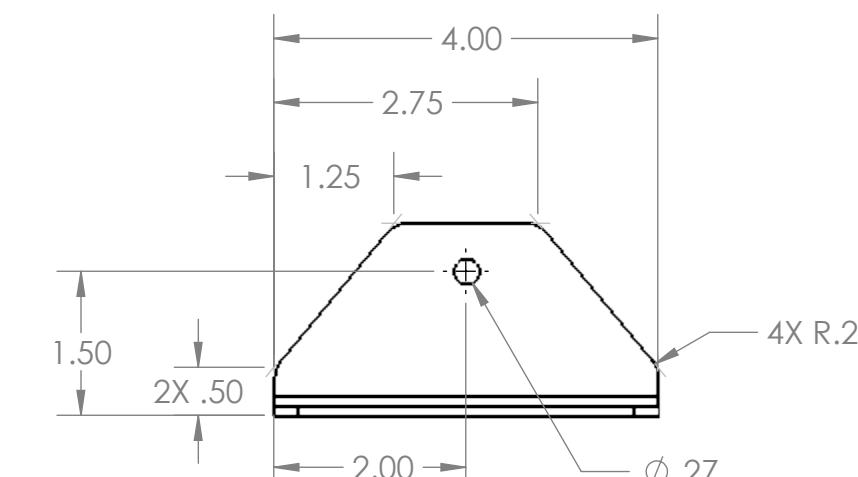
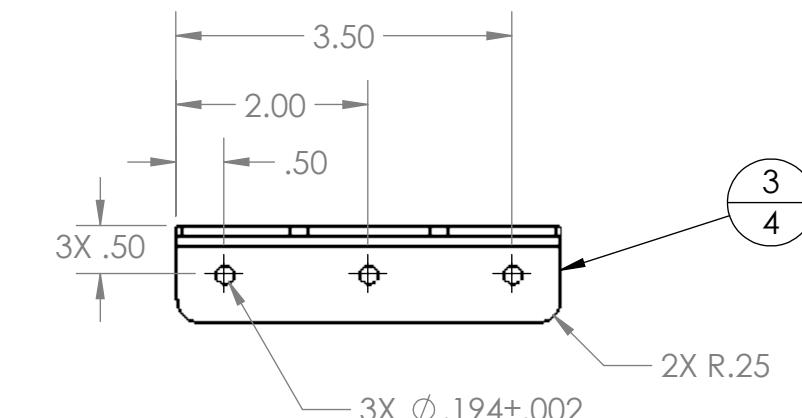
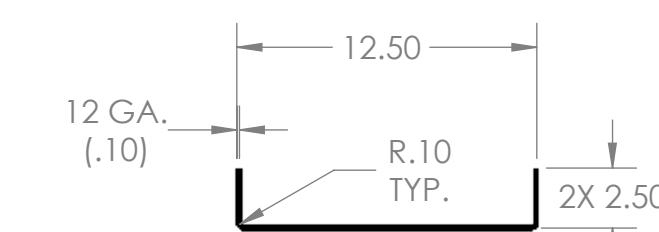
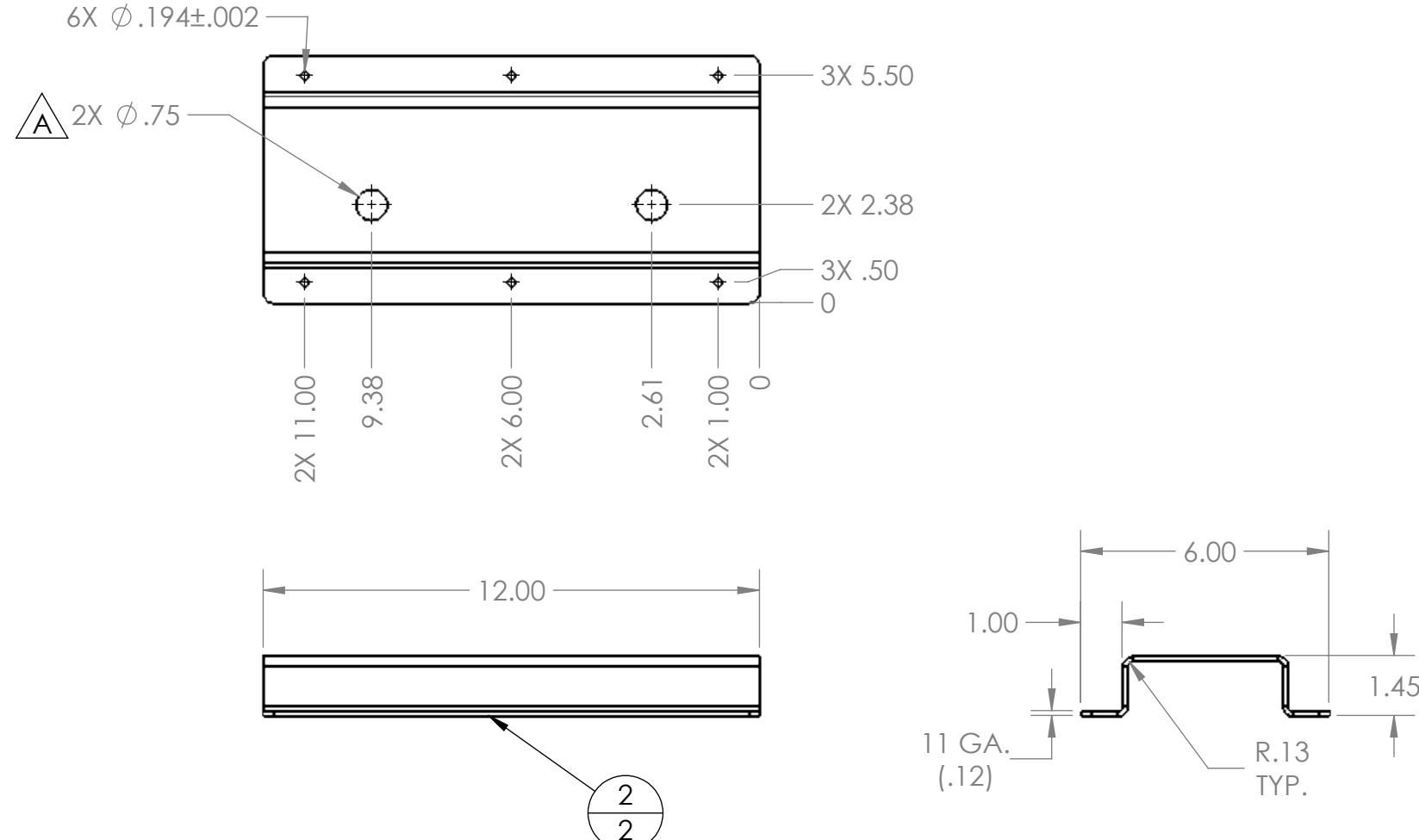
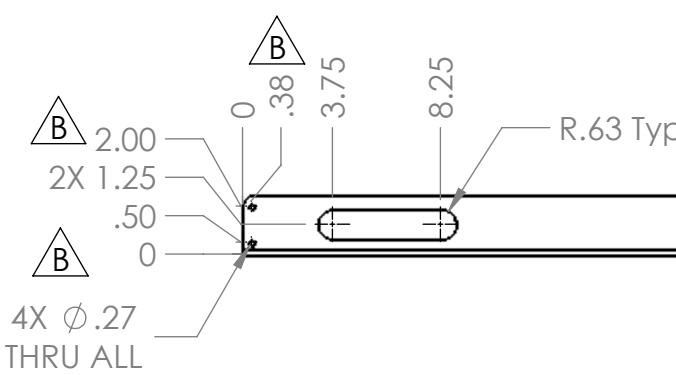
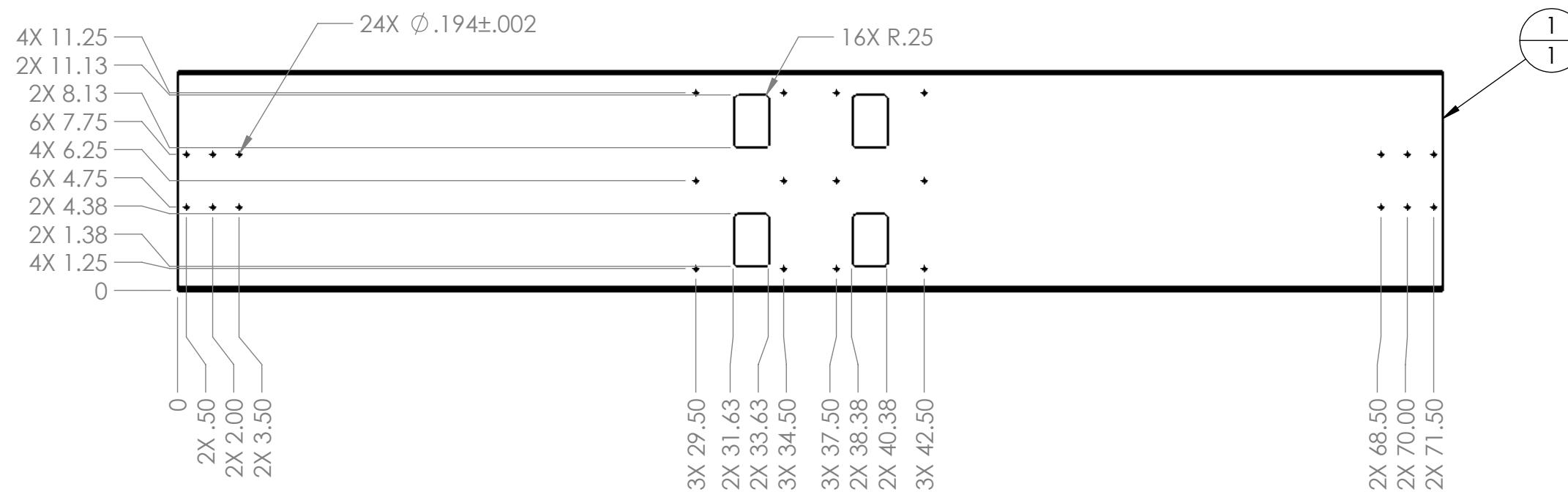
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
2-B4	A	2X Ø .75 was 2X Ø .88	8/28/2024	DAF
2-C2, 2-C4	B	Added 4X Ø .27 THRU ALL holes.	9/10/2024	DAF

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25203-01	Truss Base - Sheet Metal Assembly, Base Plate	1
2	GE-25203-02	Truss Base - Sheet Metal Assembly, Truss Feet	2
3	GE-25203-03	Truss Base - Sheet Metal Assembly, Angle	4
4	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range	24

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$	BEND	NAME	DATE
	DRAWN	DF	8/19/2024
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 11 and 12 Gauge Steel, Paint or Powder Coat Black			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			
 FIRST ROBOTICS COMPETITION 			
TITLE: Truss Base, Long - Sheet Metal Assembly			
SIZE DWG. NO. REV			
C GE-25203 B			
SCALE: 1:6 SHEET 1 OF 2			

D

D



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	DF	8/19/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 11 and 12 Gauge Steel, Paint or Powder Coat Black			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

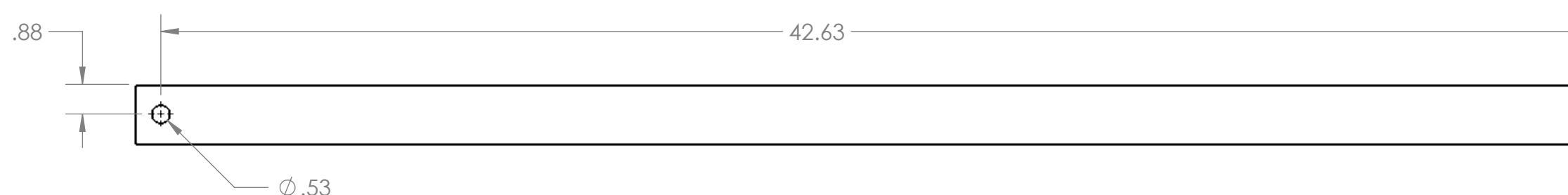
SOLIDWORKS
Modeling Solutions Partner

TITLE: Truss Base, Long - Sheet Metal Assembly

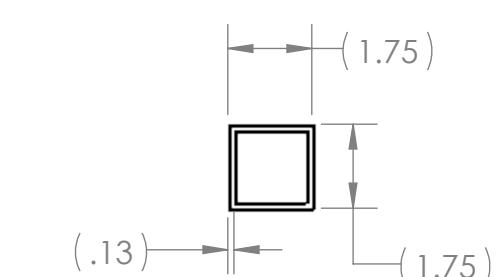
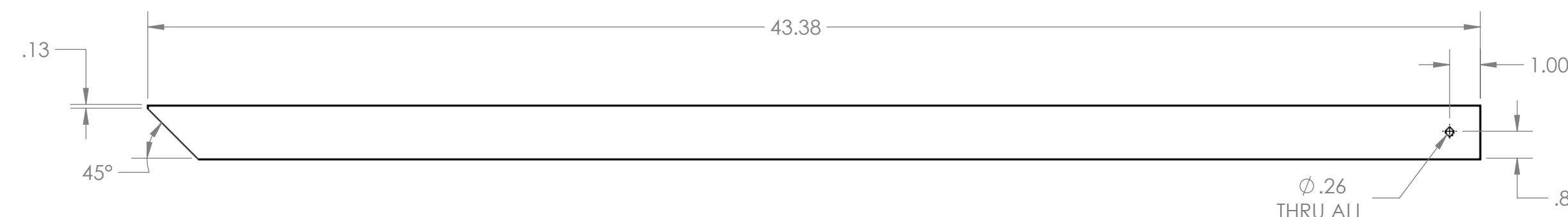
SIZE DWG. NO. REV
C GE-25203 **B**

SCALE: 1:8 SHEET 2 OF 2

D



C



B

Notes:

1. Tag or label with part number.

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	DF	8/23/2024
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
1.75 X .125 Square Tubing, 6061 Aluminum	C	GE-25204	
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING	SCALE: 1:4	SHEET 1 OF 1	

4

3

2

1

D

D

C

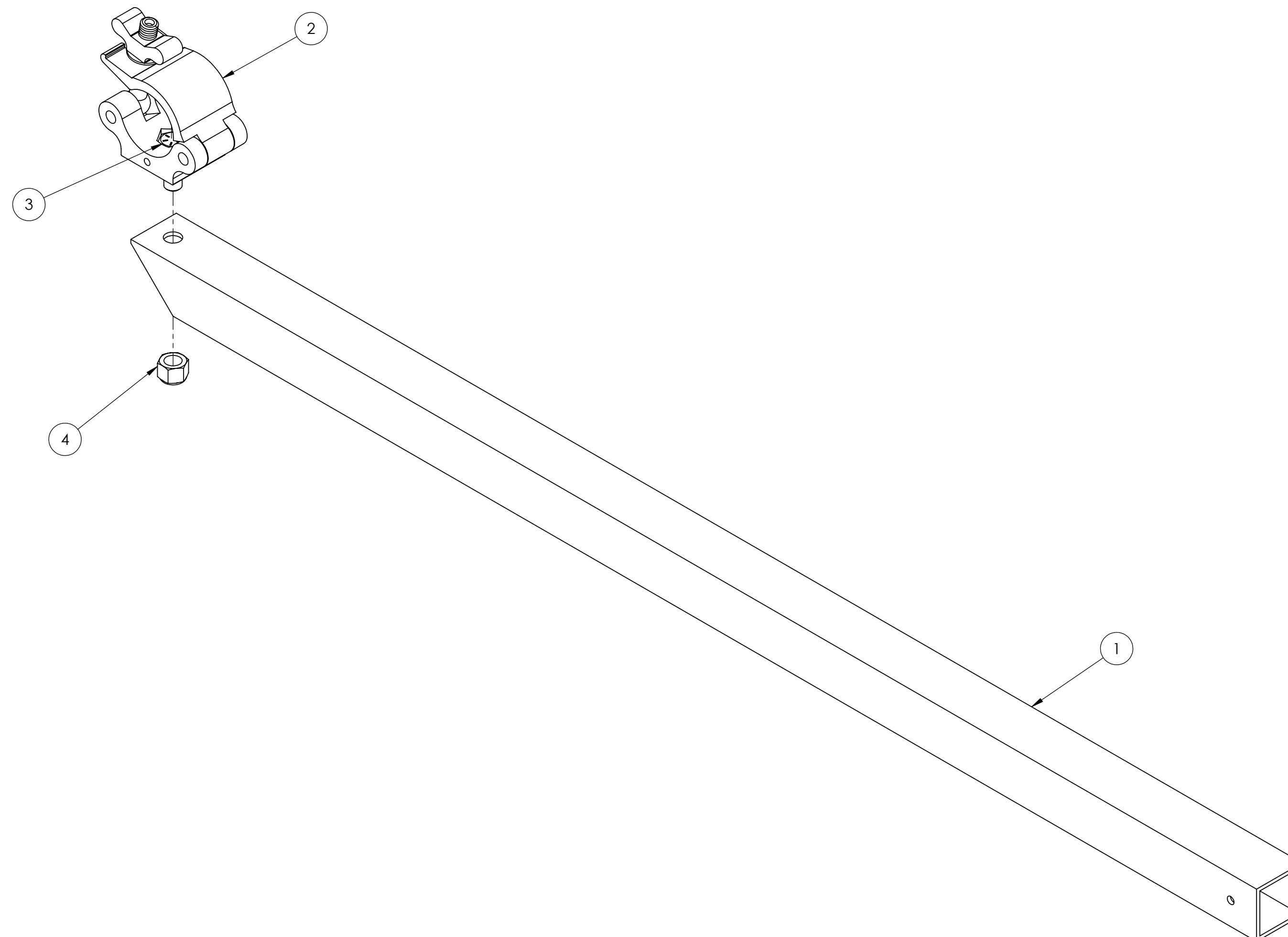
C

B

B

A

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25204	Truss Brace	1
2	FE-01016	Cheeseborough for Truss _ Single	1
3	hex_.5_13_1.25	Steel Hex Head Screw, 1/2"-13 x 1.25" long, fully threaded	1
4	nylock_.5_13	steel nylon-insert locknut, 1/2" - 13	1

UNLESS OTHERWISE SPECIFIED:			FIELD	NAME	DATE
			DRAWN	JO	12/16/2024
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$					
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
MATERIAL/FINISH: COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					

FIRST ROBOTICS COMPETITION Modeling Solutions Partner

Truss Brace Assembly

SIZE	DWG. NO.	REV
C	GE-25205	

SCALE: 1:2.5 SHEET 1 OF 1

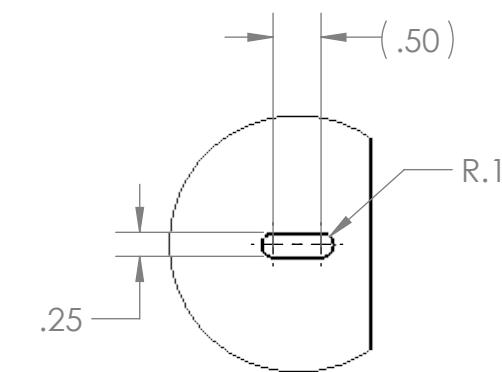
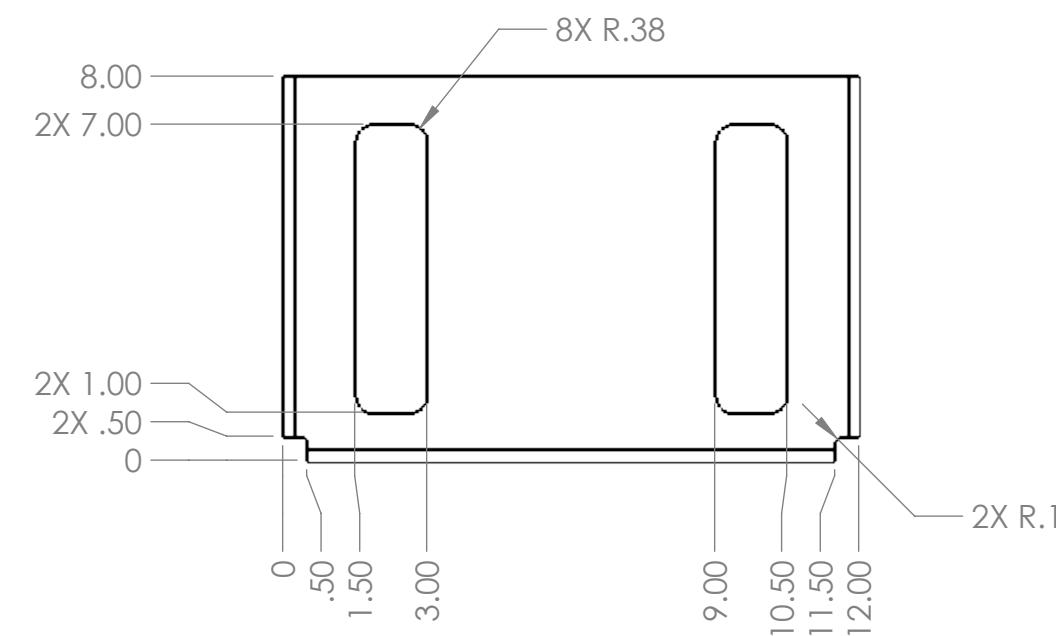
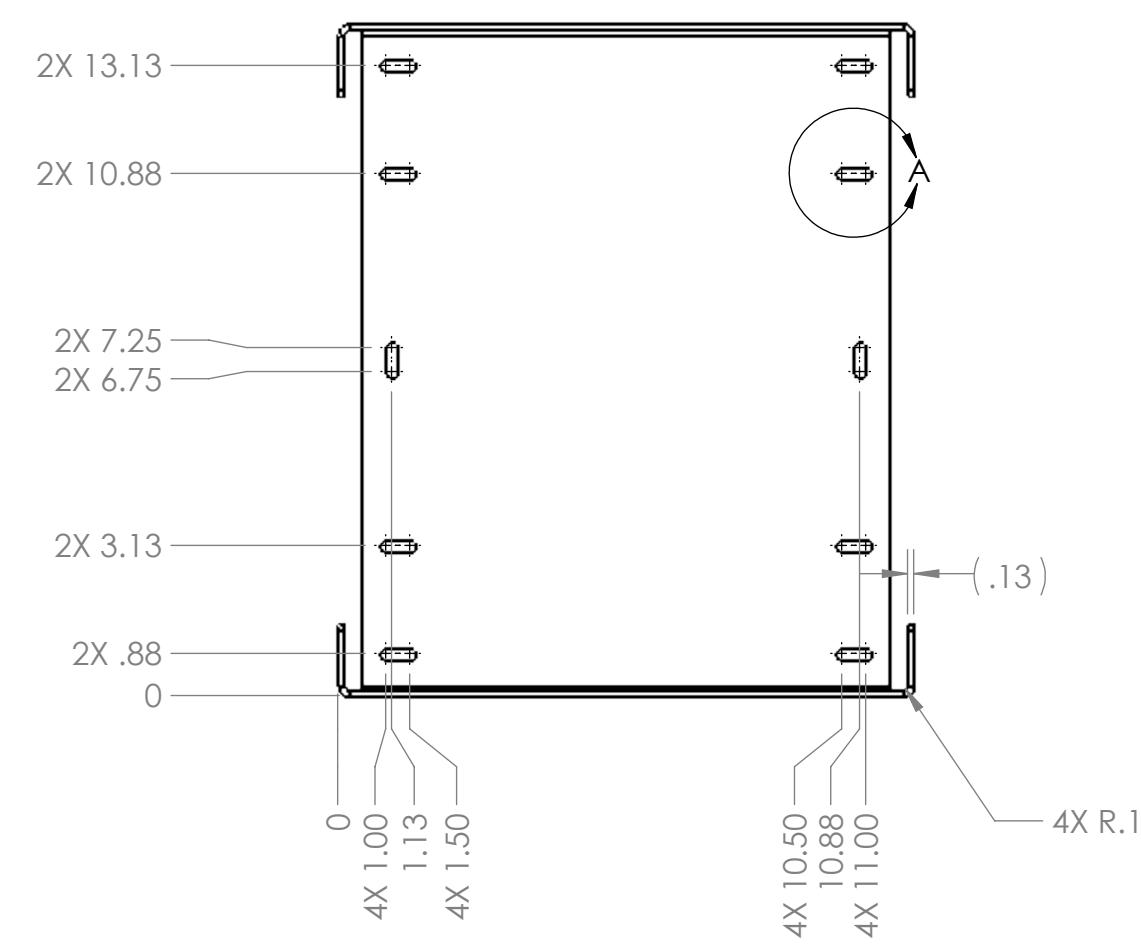
4

3

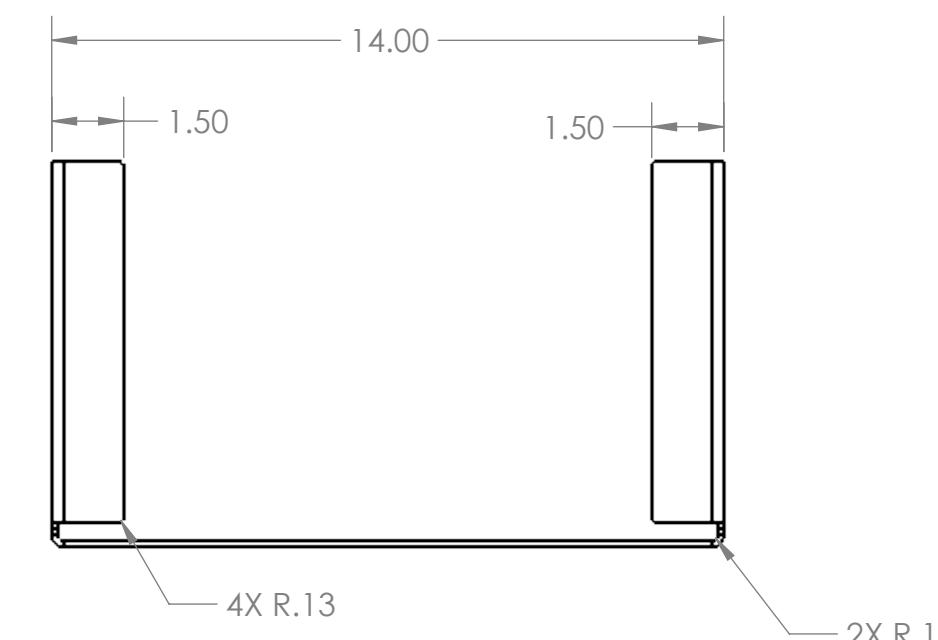
2

1

D



DETAIL A
SCALE 1 : 2
TYP. 10 PLACES



UNLESS OTHERWISE SPECIFIED:

DRAWN

BEND

NAME

DATE

DF

10/3/2024

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$

ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$

TWO PLACE DECIMAL $\pm .02$

THREE PLACE DECIMAL $\pm .010$

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST[®]. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST[®] IS PROHIBITED.

MATERIAL/FINISH:

8 ga. 5052 Aluminum Sheet

DO NOT SCALE DRAWING

 FIRST ROBOTICS COMPETITION  SOLIDWORKS Modeling Solutions Partner

TITLE:
Backboard Brace

SIZE DWG. NO. REV

C GE-25206

SCALE: 1:4 SHEET 1 OF 1

4

3

2

1

D

D

C

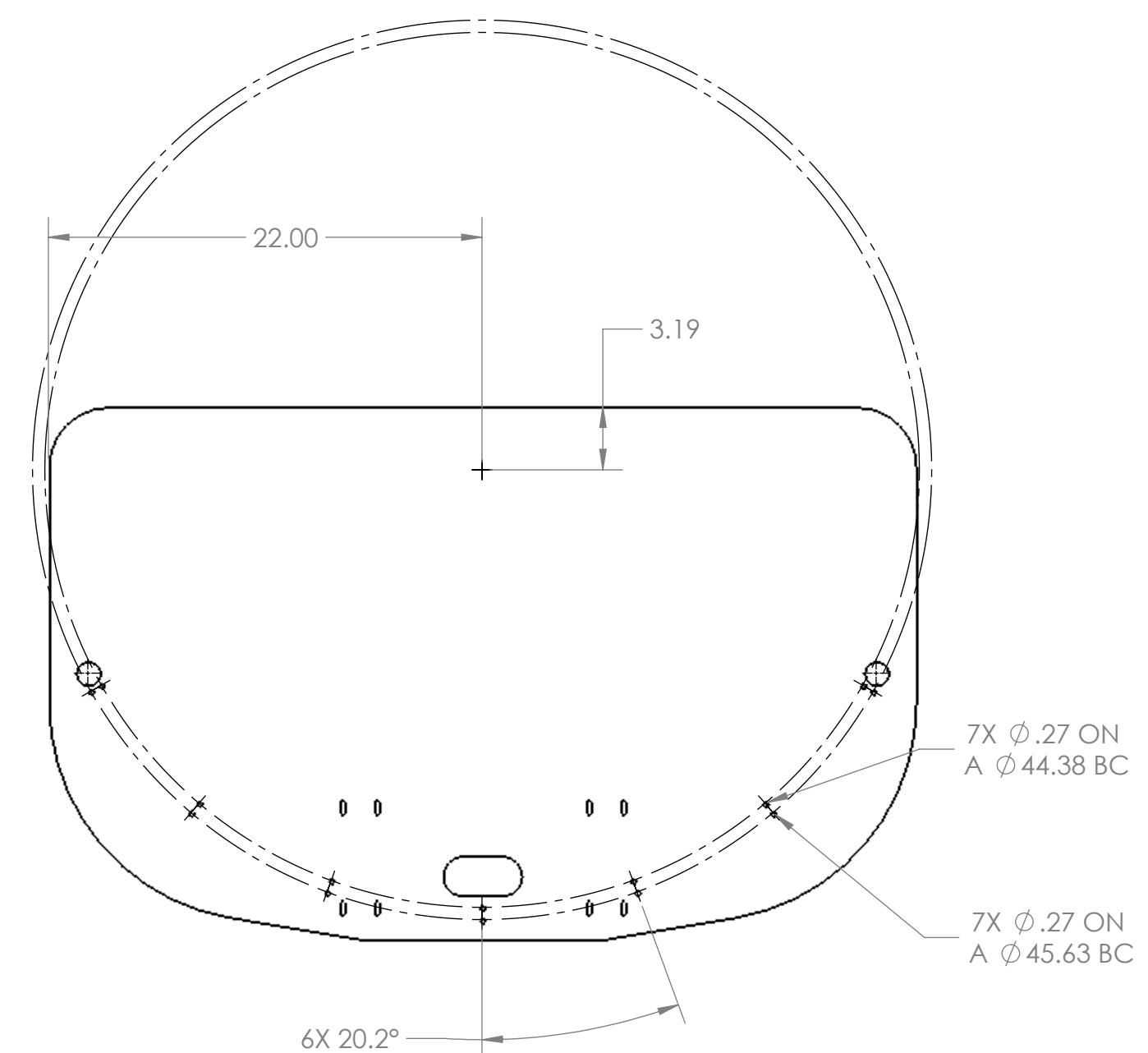
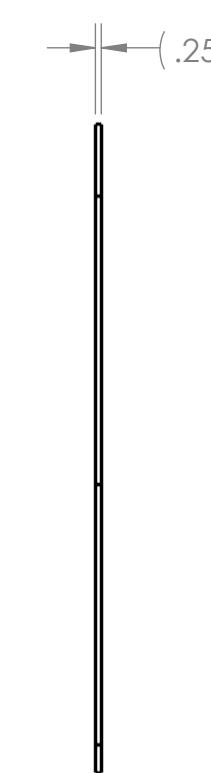
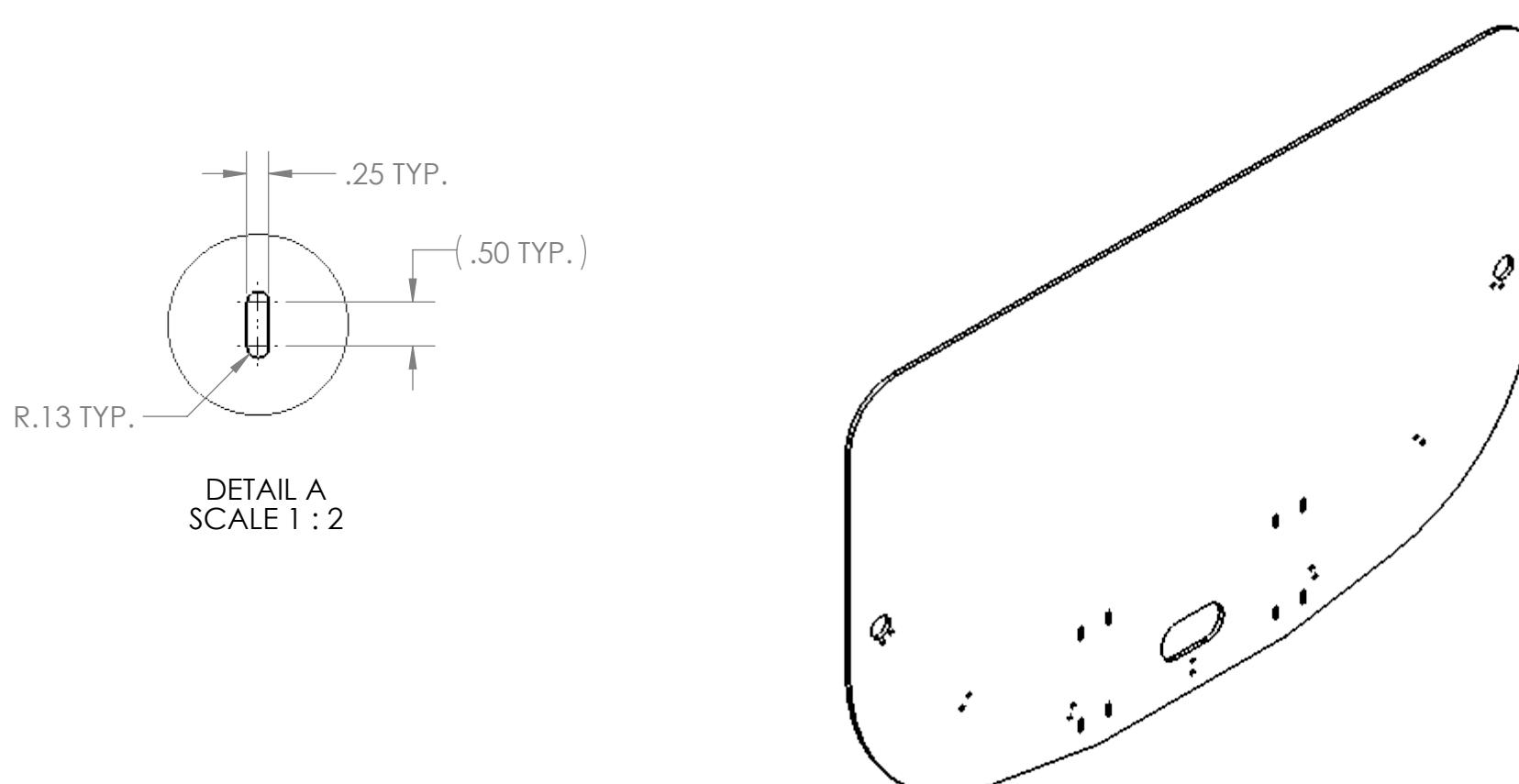
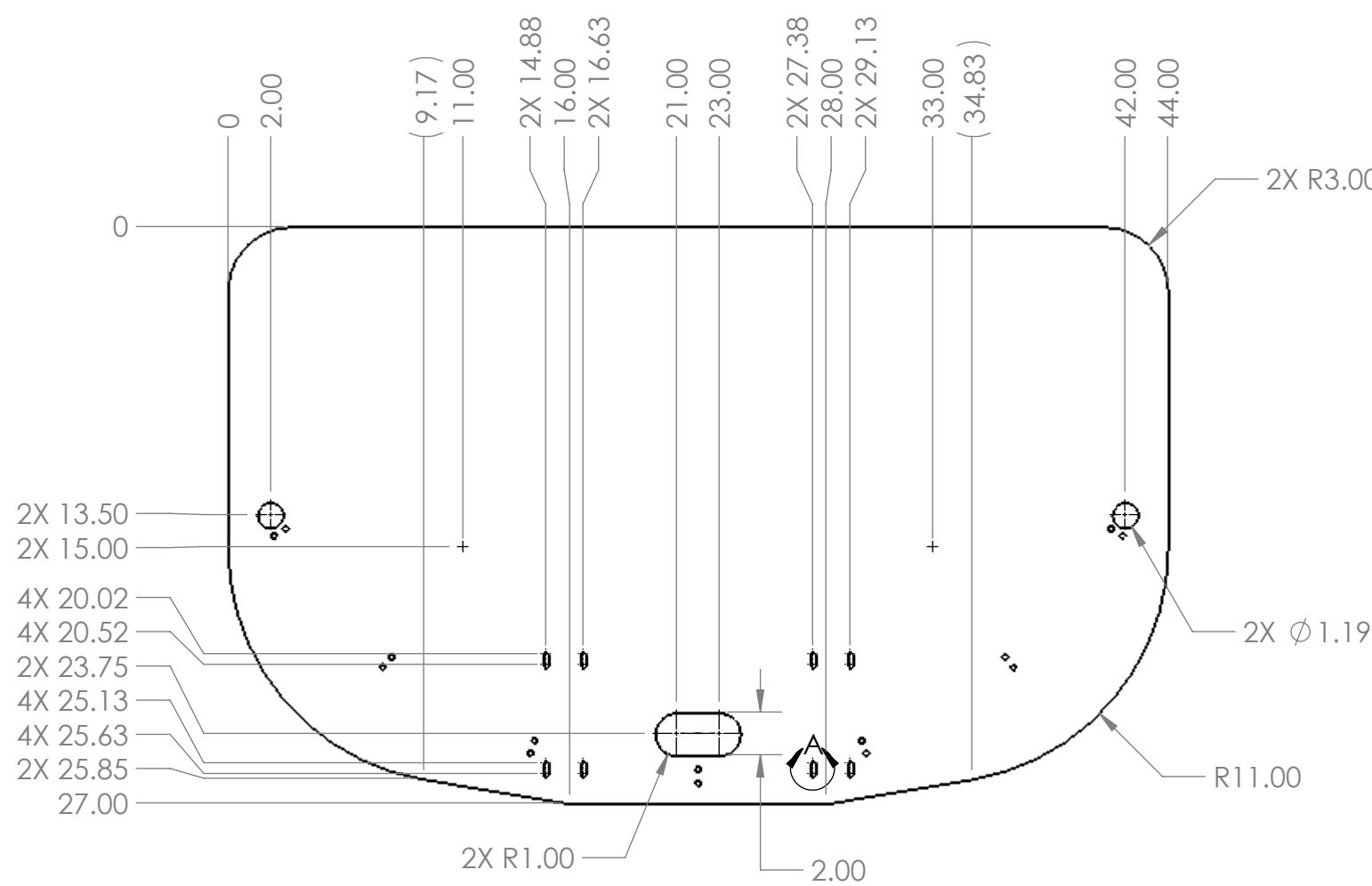
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:			VEND	NAME	DATE
			DRAWN	DF	10/2/2024
DIMENSIONS ARE IN INCHES					
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$					
TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$					
PROPRIETARY AND CONFIDENTIAL					
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
MATERIAL/FINISH: 1/4" Polycarbonate, Clear					
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
Backboard

SIZE DWG. NO. REV
C GE-25207

SCALE: 1:8 SHEET 1 OF 1

4

3

2

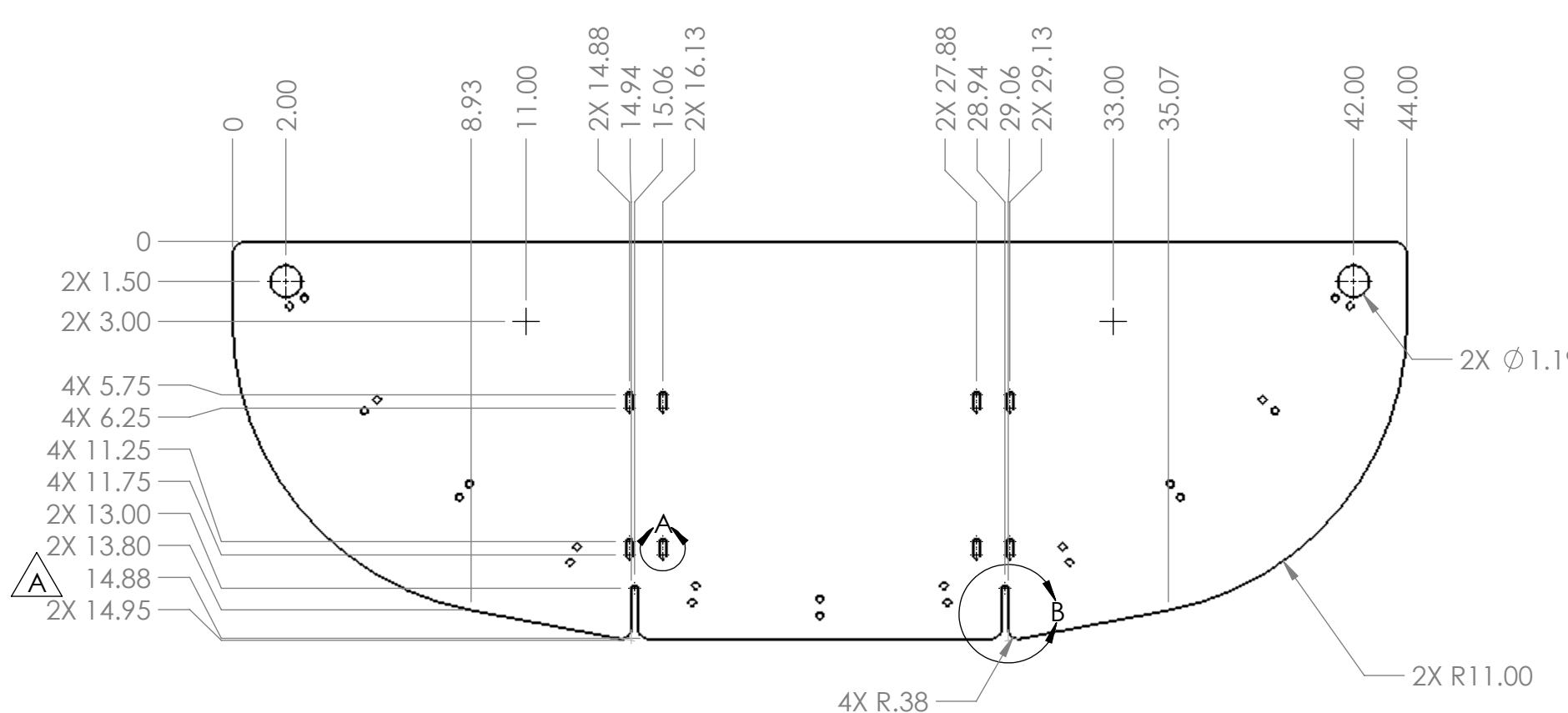
1

D

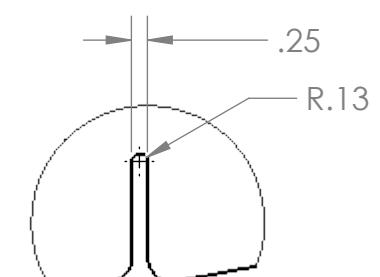
C

B

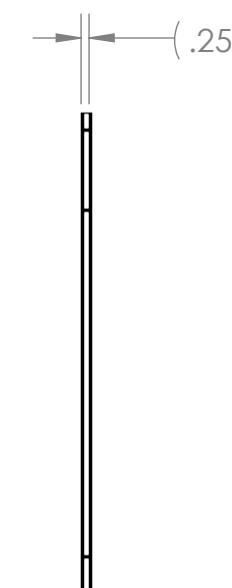
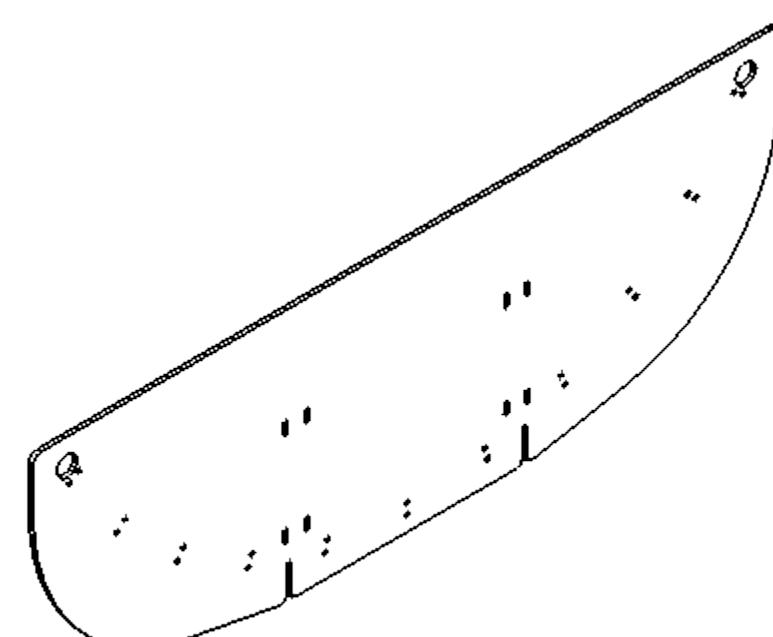
A



DETAIL A
SCALE 1 : 3
TYP. 8 PLACES



DETAIL B
SCALE 1 : 3
TYP. 2 PLACES



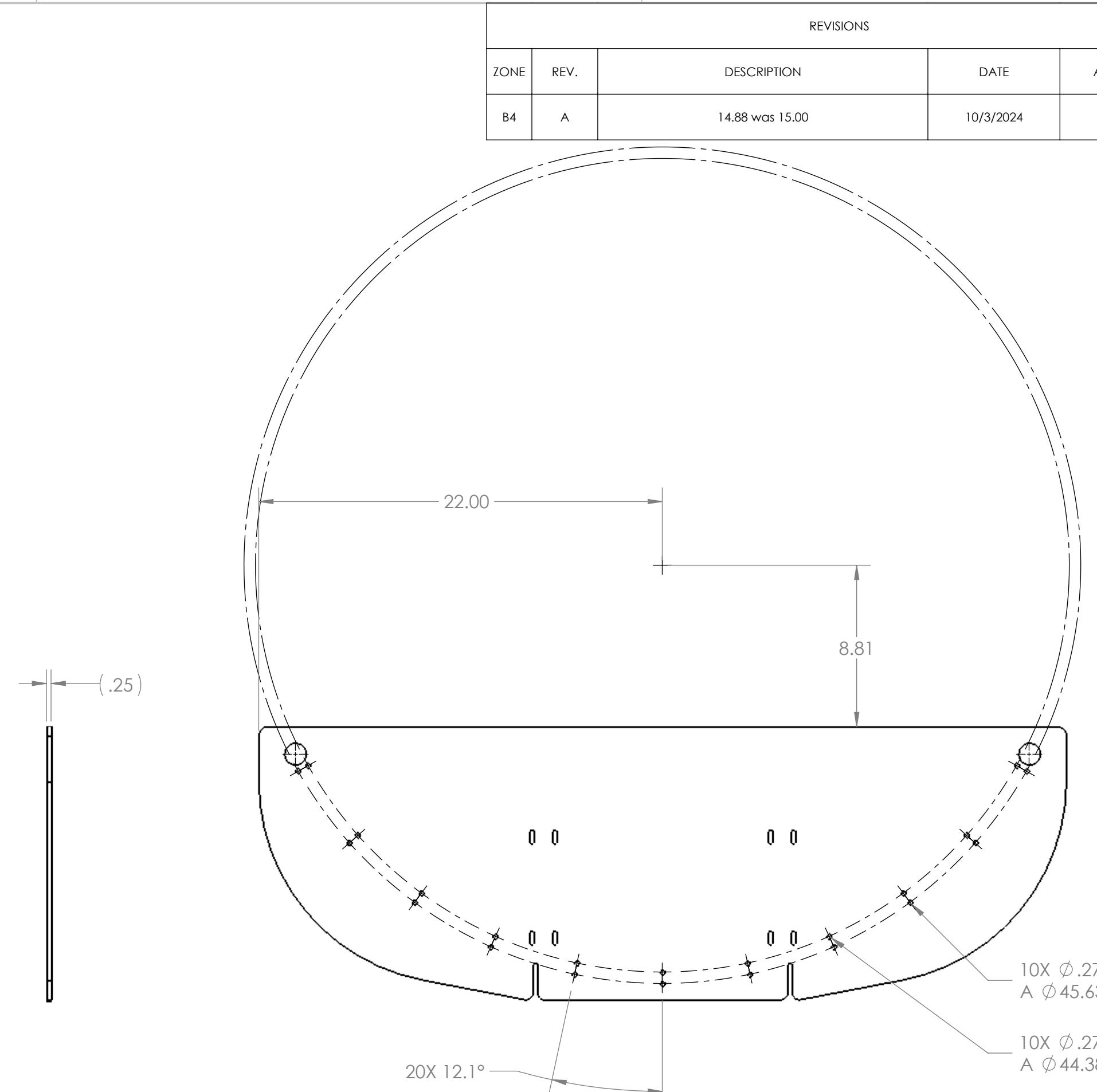
UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:
1/4" Polycarbonate, Clear

COMMENTS:
REMOVE ALL BURRS AND SHARP
EDGES.

DO NOT SCALE DRAWING

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B4	A	14.88 was 15.00	10/3/2024	DF



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
Inner Front

SIZE DWG. NO. REV
C GE-25208 **A**

SCALE: 1:6 SHEET 1 OF 1

4

3

2

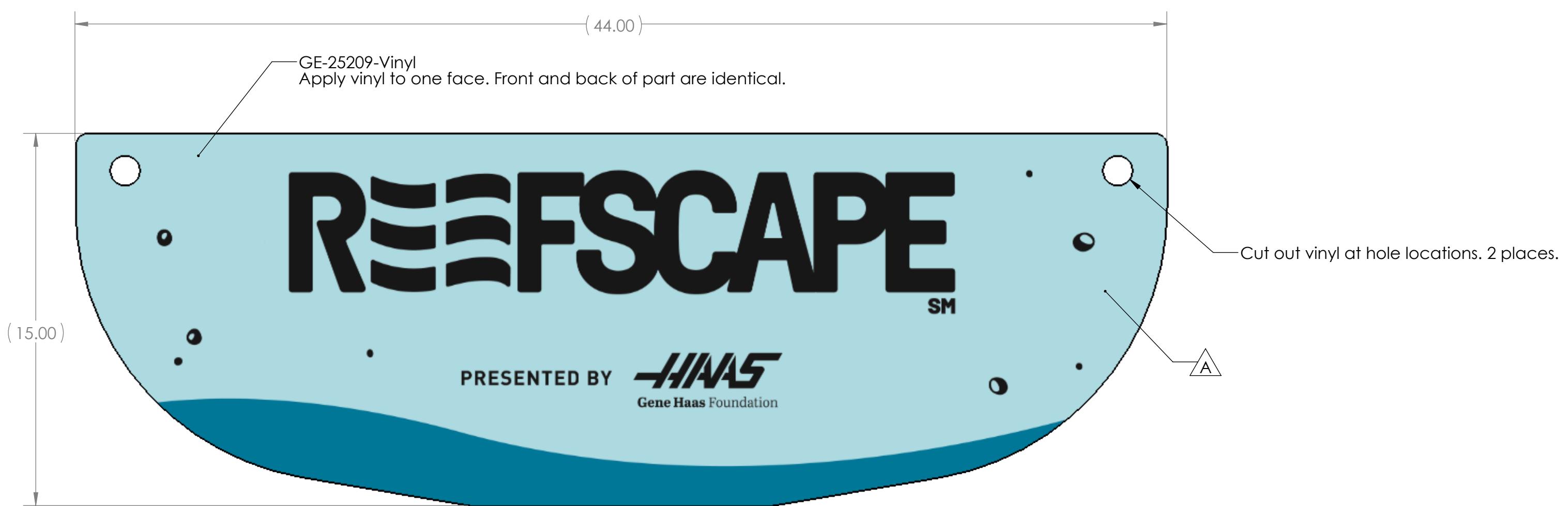
1

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2	A	Updated graphics	10/21/2024	DF

D

D



- Notes:
1. QTY per field: 2
 2. Gloss Vinyl finish.

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	DF	10/7/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

 **FIRST ROBOTICS COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE: **Outer Front w/Vinyl**
SIZE DWG. NO. REV
C GE-25209 A

SCALE: 1:4 SHEET 1 OF 1

4

3

2

1

D

D

C

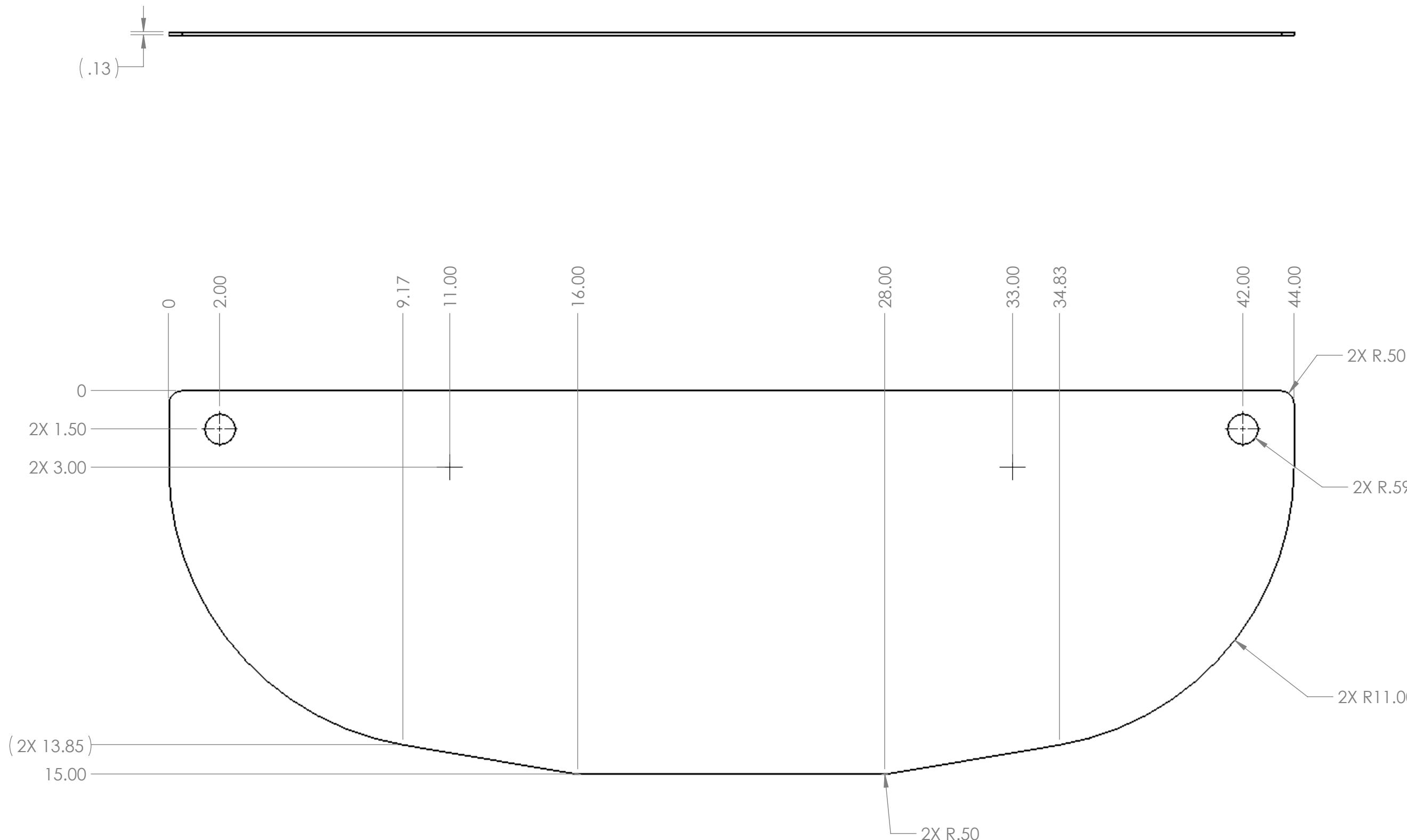
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	DF	10/1/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
1/8" Polycarbonate, Clear	C	GE-25210	
COMMENTS:		SCALE: 1:4	
REMOVE ALL BURRS AND SHARP EDGES.		SHEET 1 OF 1	
DO NOT SCALE DRAWING			

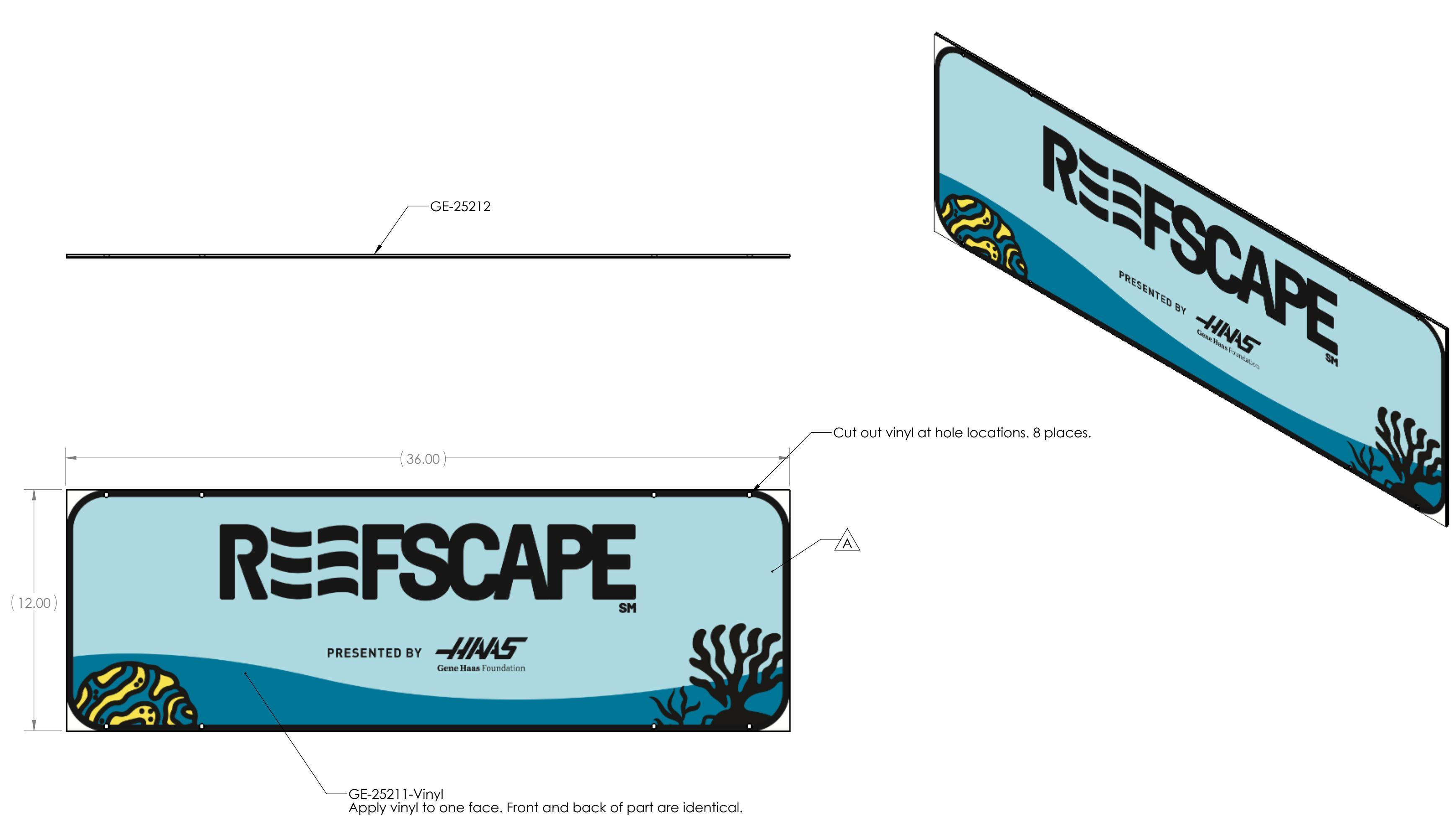


TITLE: Outer Front

SIZE DWG. NO. REV
C GE-25210

SCALE: 1:4 SHEET 1 OF 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2	A	Updatedg graphics	10/21/2024	DF



Notes:
1. QTY per field: 2
2. Gloss Vinyl finish.

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	DF	10/8/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			
C SOLIDWORKS Modeling Solutions Partner			
FIRST ROBOTICS COMPETITION			
TITLE: Side Panel w/Vinyl			
SIZE DWG. NO. REV			
C GE-25211 A			
SCALE: 1:4 SHEET 1 OF 1			

4

3

2

1

D

D

C

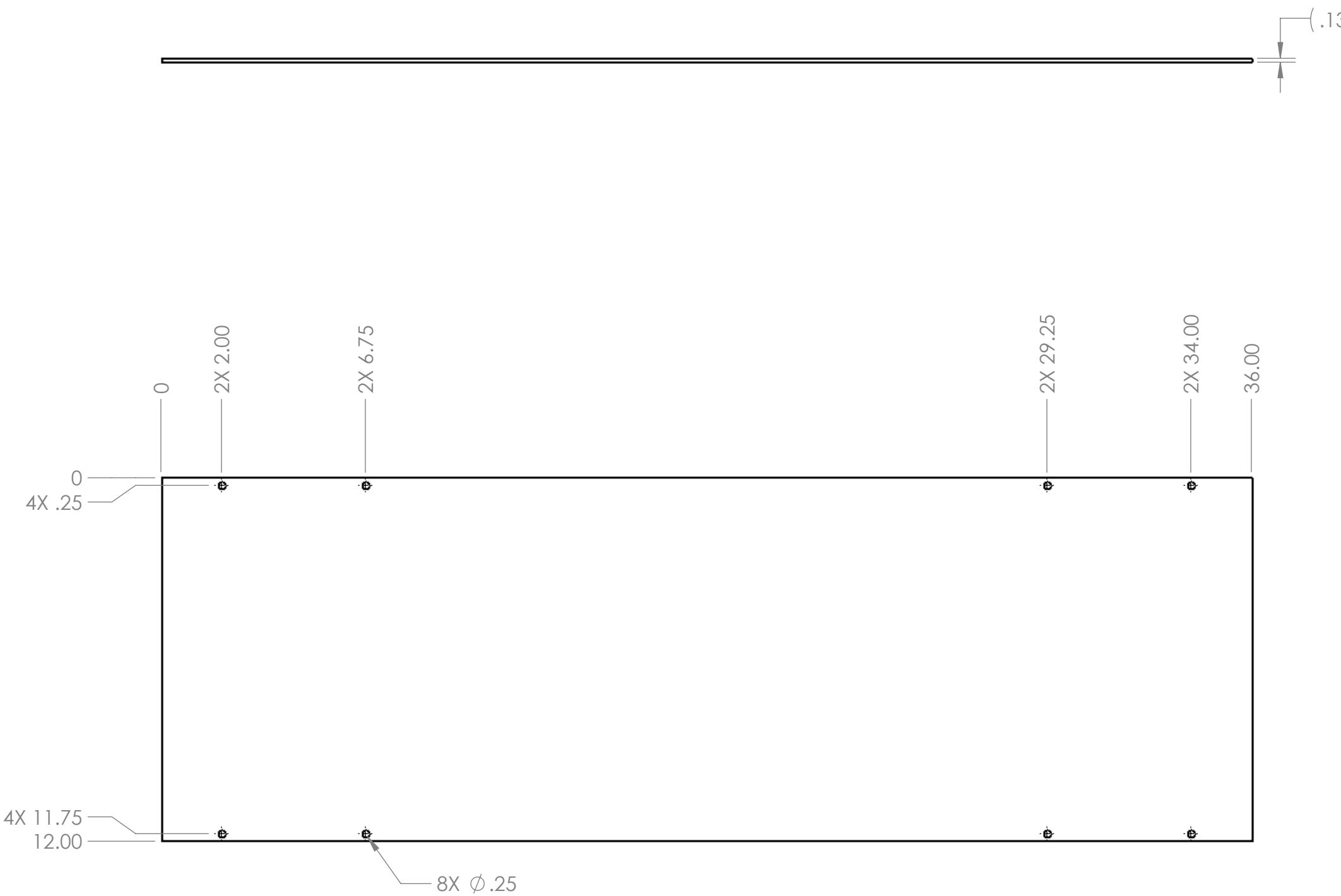
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$ MATERIAL/FINISH:
1/8" Polycarbonate, Clear

DO NOT SCALE DRAWING

VEND NAME DATE
DRAWN DF 10/1/2024**PROPRIETARY AND CONFIDENTIAL**THE INFORMATION CONTAINED IN
THIS DRAWING IS THE SOLE
PROPERTY OF FIRST[®]. ANY
REPRODUCTION IN PART OR AS A
WHOLE WITHOUT THE WRITTEN
PERMISSION OF FIRST[®] IS
PROHIBITED.**COMMENTS:**
REMOVE ALL BURRS AND SHARP
EDGES.FIRST[®]
ROBOTICS COMPETITION
SOLIDWORKS
Modeling Solutions Partner

TITLE: Side Panel

SIZE DWG. NO. REV
C GE-25212 **A**

SCALE: 1:4 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

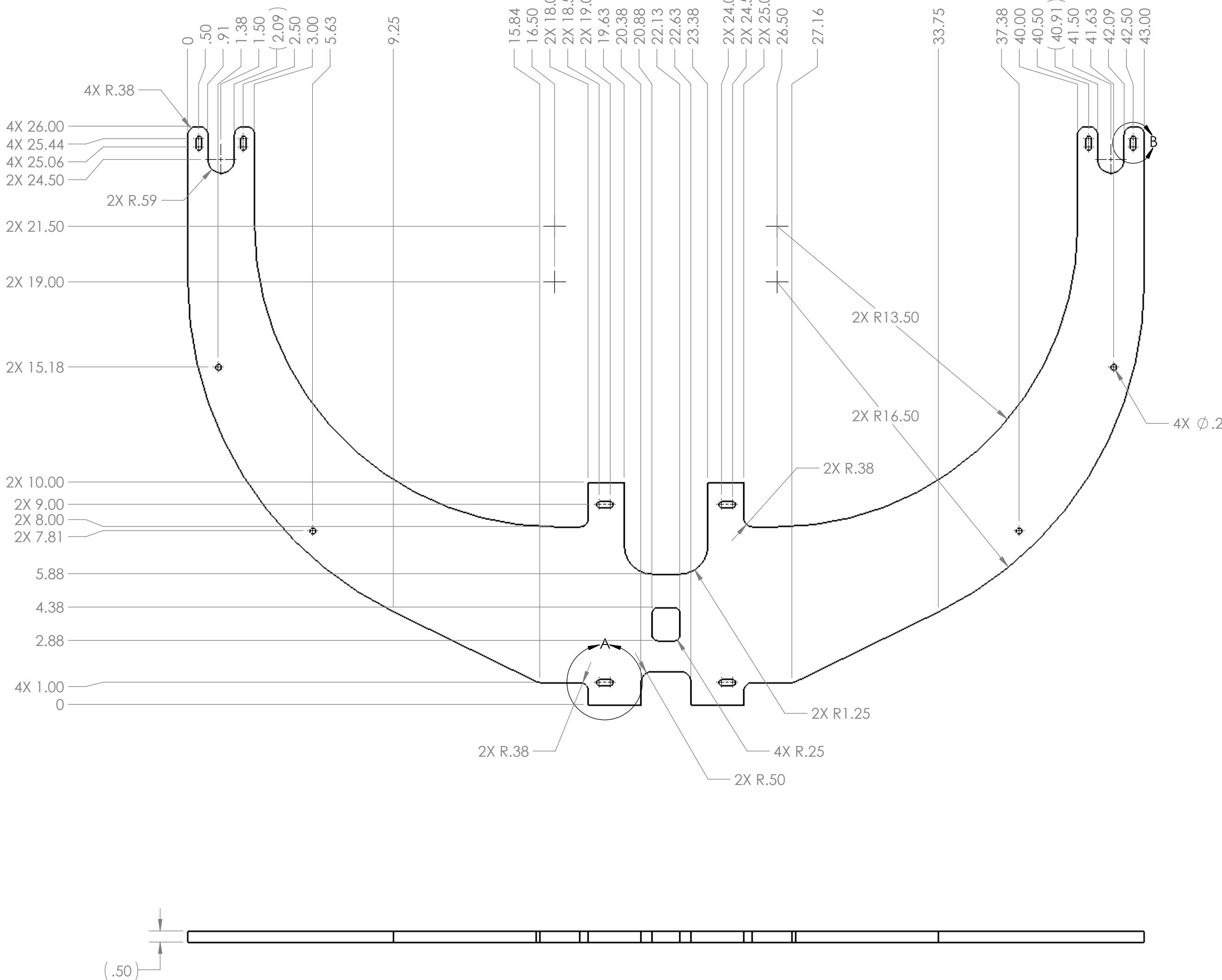
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST[®]. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST[®] IS PROHIBITED.

MATERIAL/FINISH:
1/2" HDPE, blue with matte finish

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

VEND NAME DATE
DRAWN DF 10/2/2024

FIRST[®] ROBOTICS COMPETITION DS SOLIDWORKS Modeling Solutions Partner

TITLE: Rib, Blue

SIZE DWG. NO. REV
C GE-25213

SCALE: 1:4 SHEET 1 OF 1

4

3

2

1

D

D

C

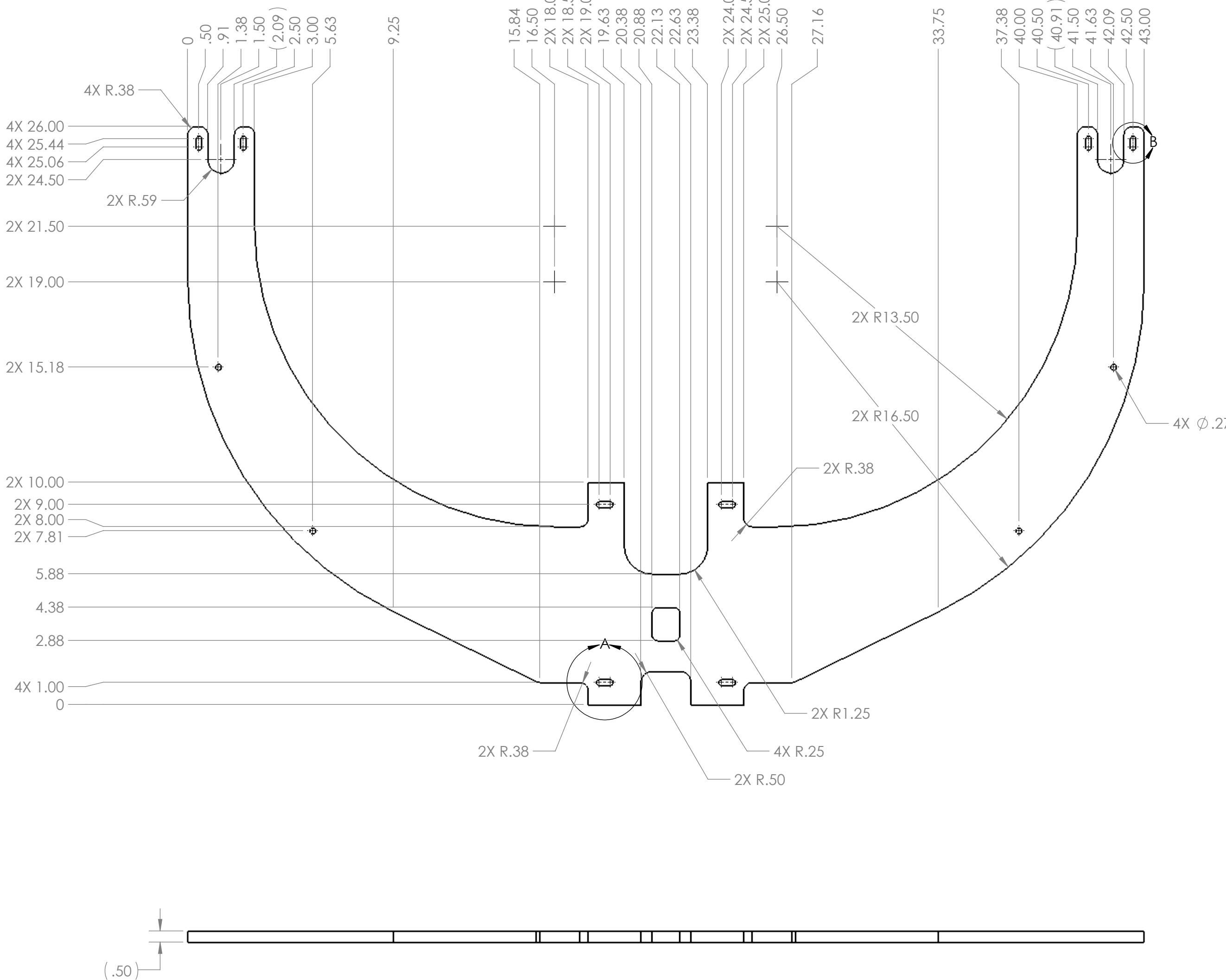
C

B

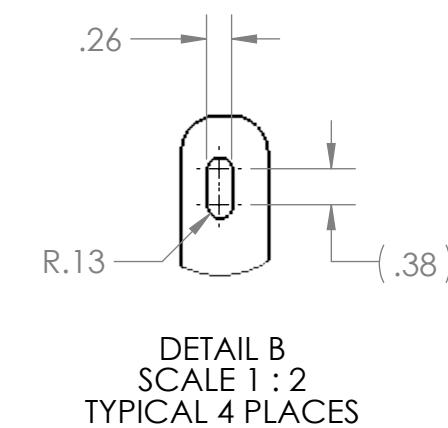
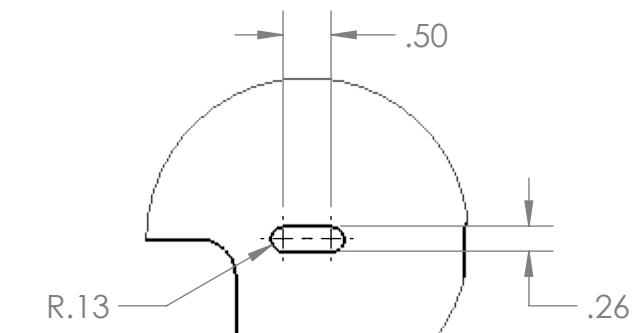
B

A

A



DETAIL A
SCALE 1 : 2
TYPICAL 4 PLACES



DETAIL B
SCALE 1 : 2
TYPICAL 4 PLACES

UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE
DIMENSIONS ARE IN INCHES		DRAWN	DF	10/2/2024
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				
MATERIAL/FINISH:	1/2" HDPE, red with matte finish	SIZE	DWG. NO.	REV
COMMENTS:	REMOVE ALL BURRS AND SHARP EDGES.	C	GE-25214	
DO NOT SCALE DRAWING		SCALE: 1:4	SHEET 1 OF 1	

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Rib, Red

4

3

2

1

4

3

2

1

D

D

C

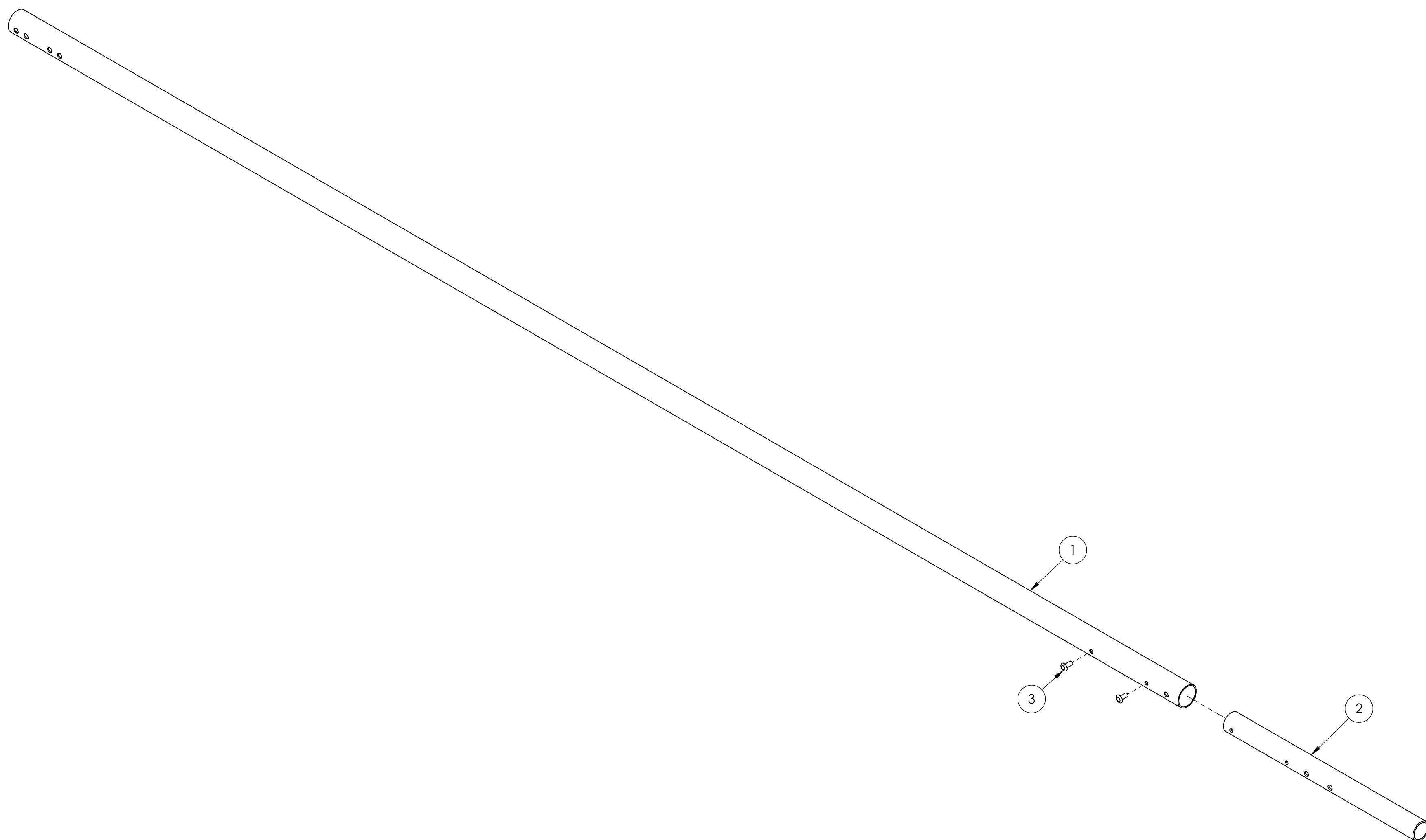
C

B

B

A

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25216	Net Tube, Outer	1
2	GE-25217	Net Tube, Inner	1
3	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range	2

UNLESS OTHERWISE SPECIFIED:			FIELD	NAME	DATE
DRAWN	JO	12/16/2024			

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

**FIRST
ROBOTICS
COMPETITION** SOLIDWORKS
Modeling Solutions Partner

TITLE: **Net Tube Assembly**

SIZE DWG. NO. REV
C GE-25215

SCALE: 1:3.5 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

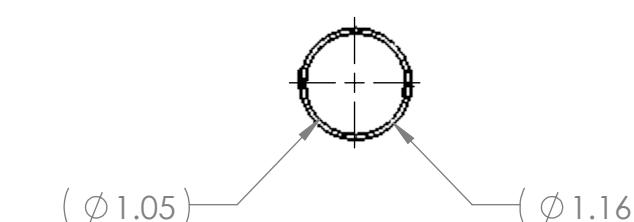
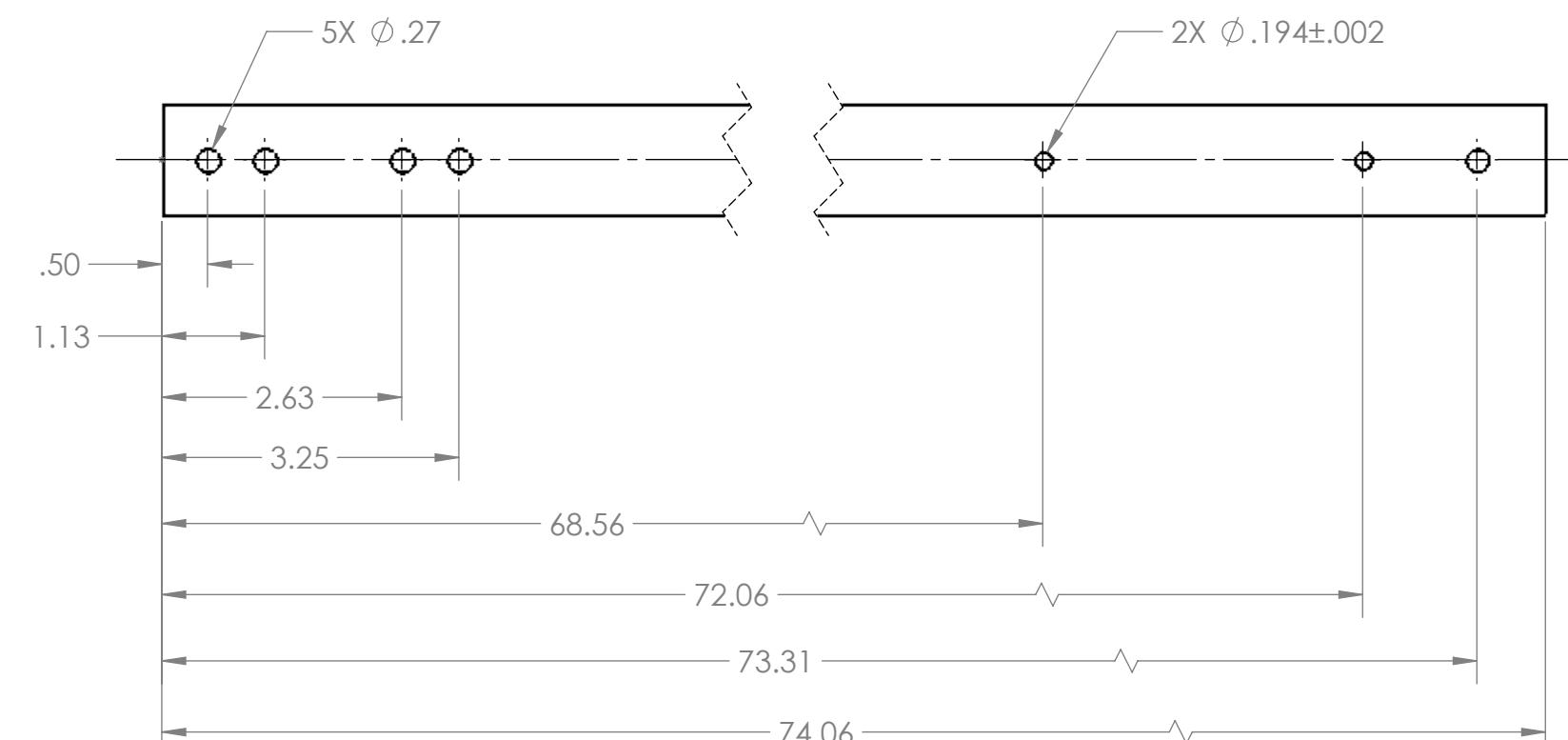
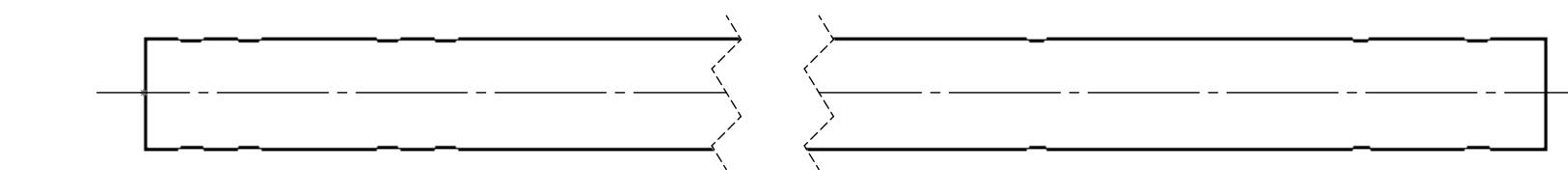
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	DF	10/2/2024
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
1" EMT Conduit, Galvanized	C	GE-25216	
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING	SCALE: 1:2	SHEET 1 OF 1	

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
Net Tube, Outer

4

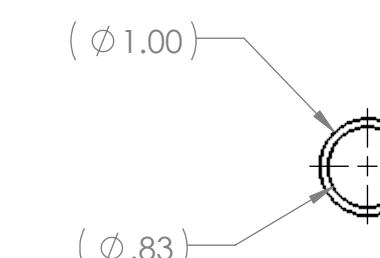
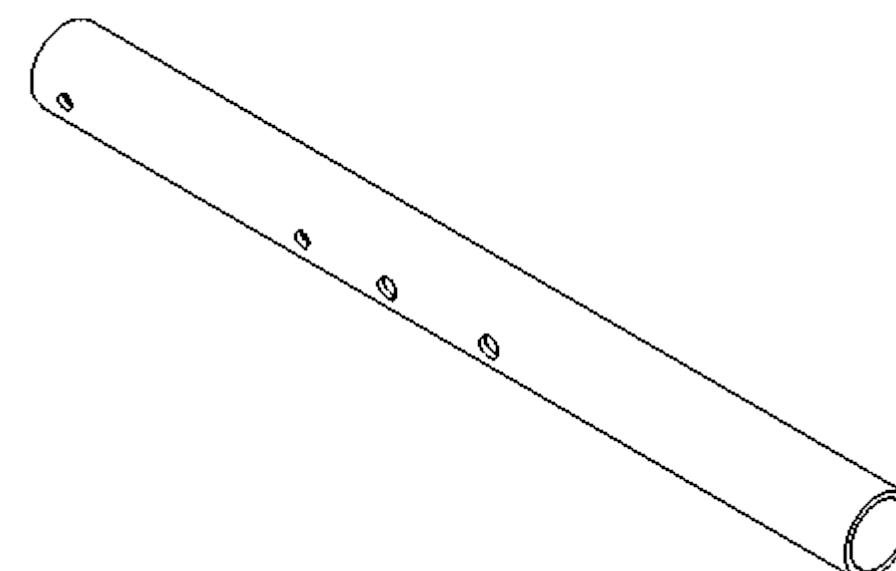
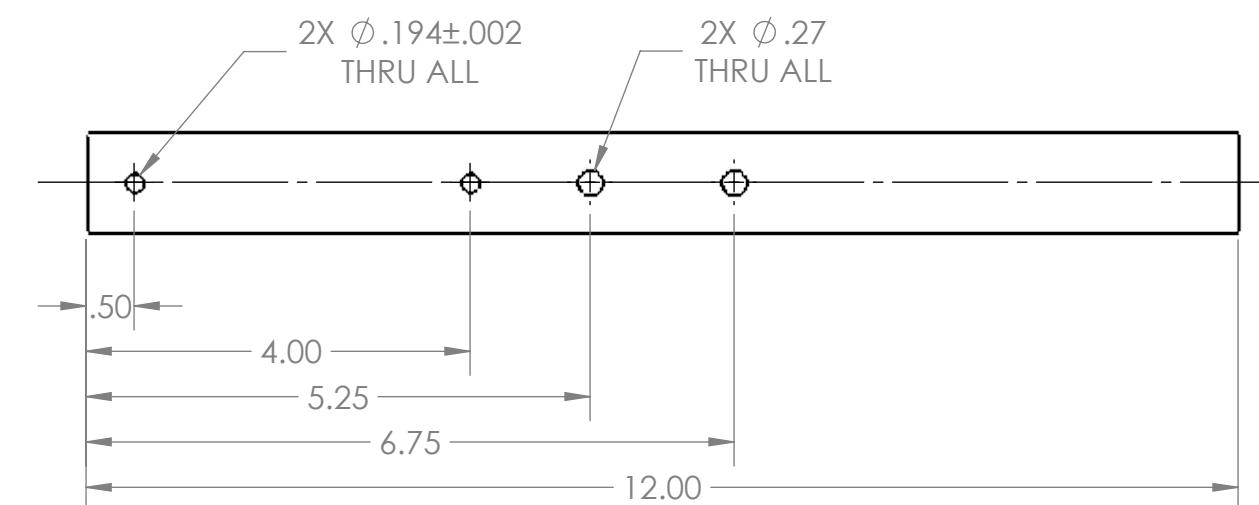
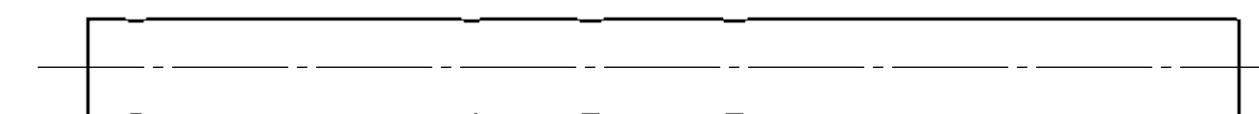
3

2

1

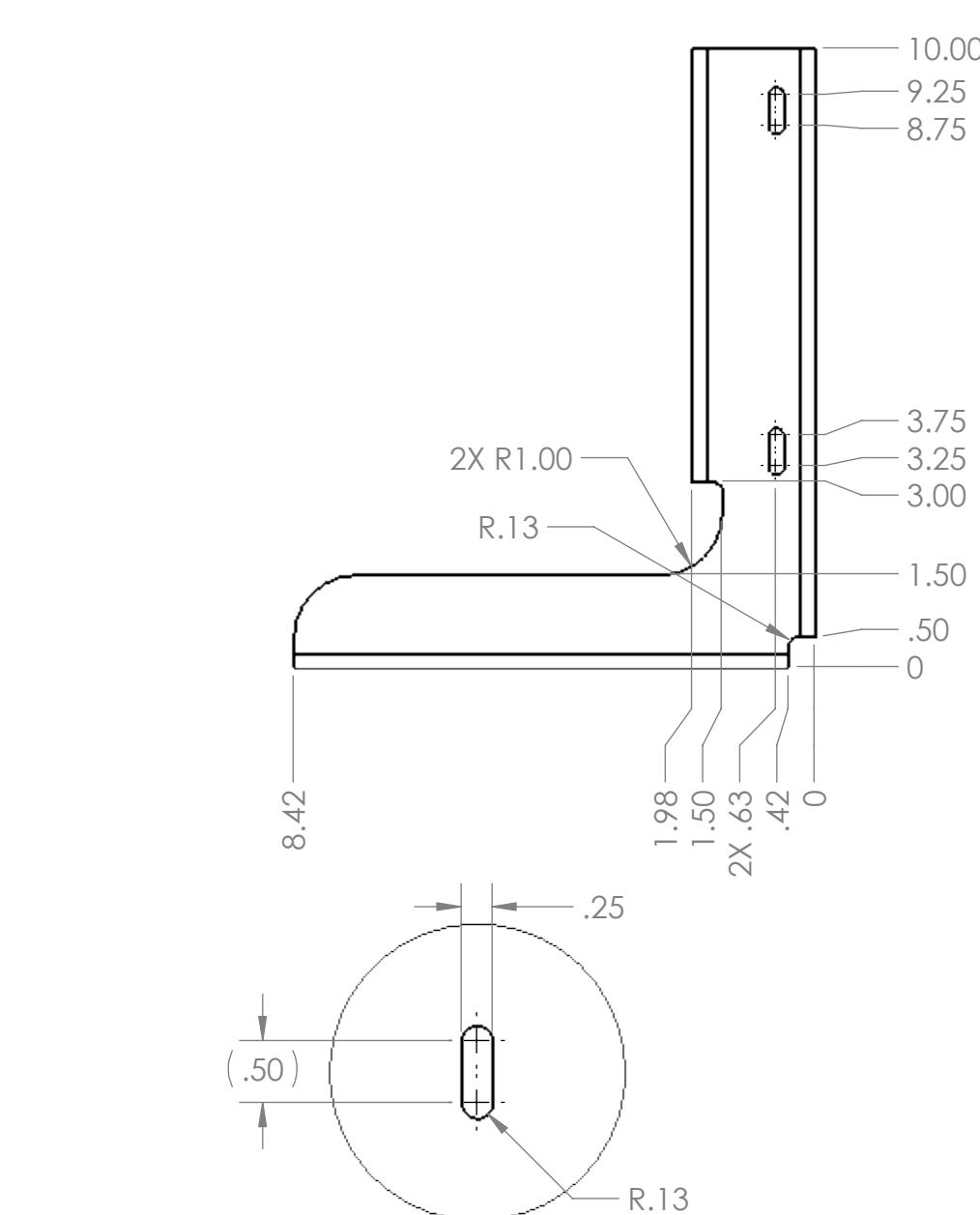
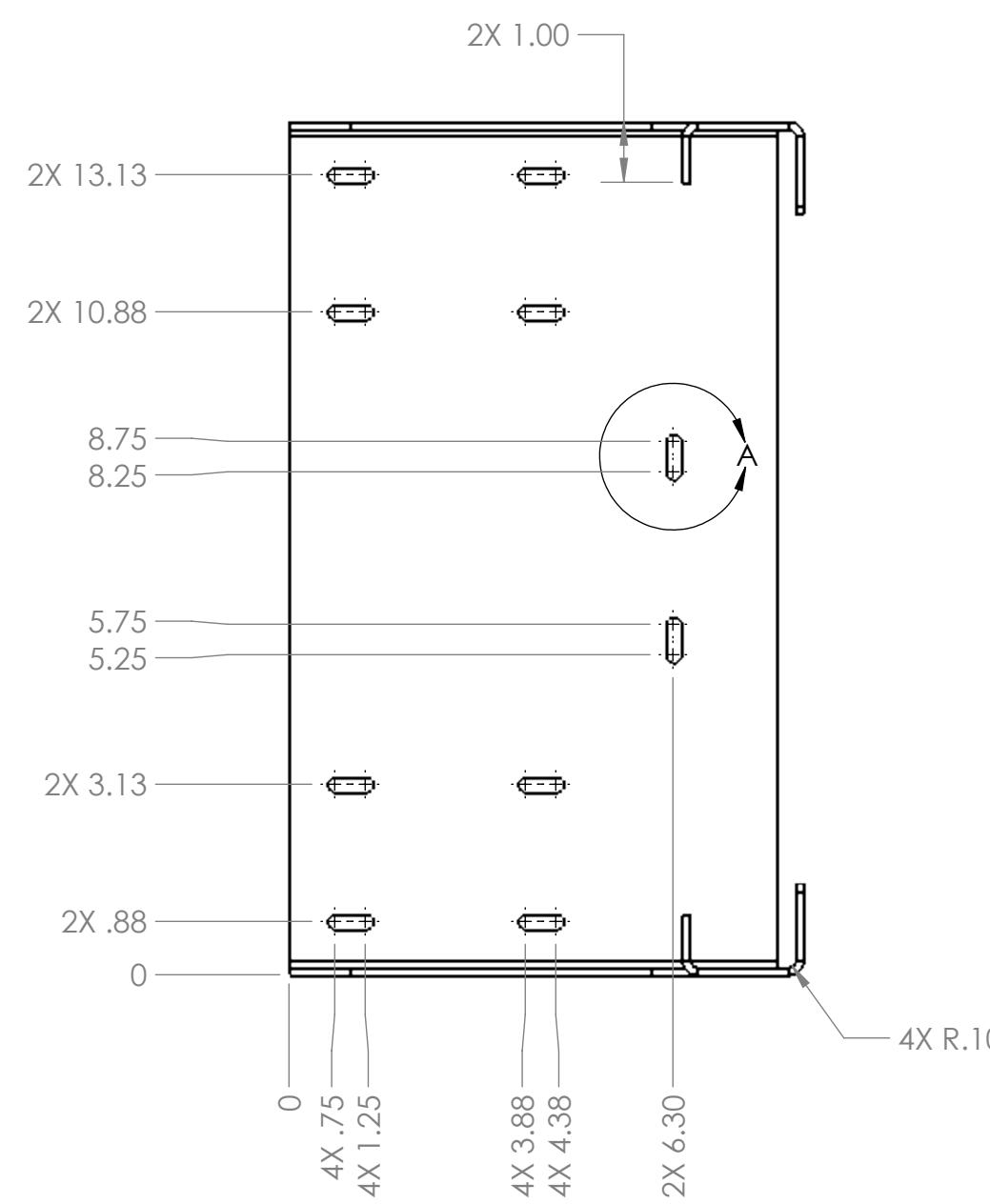
D

D

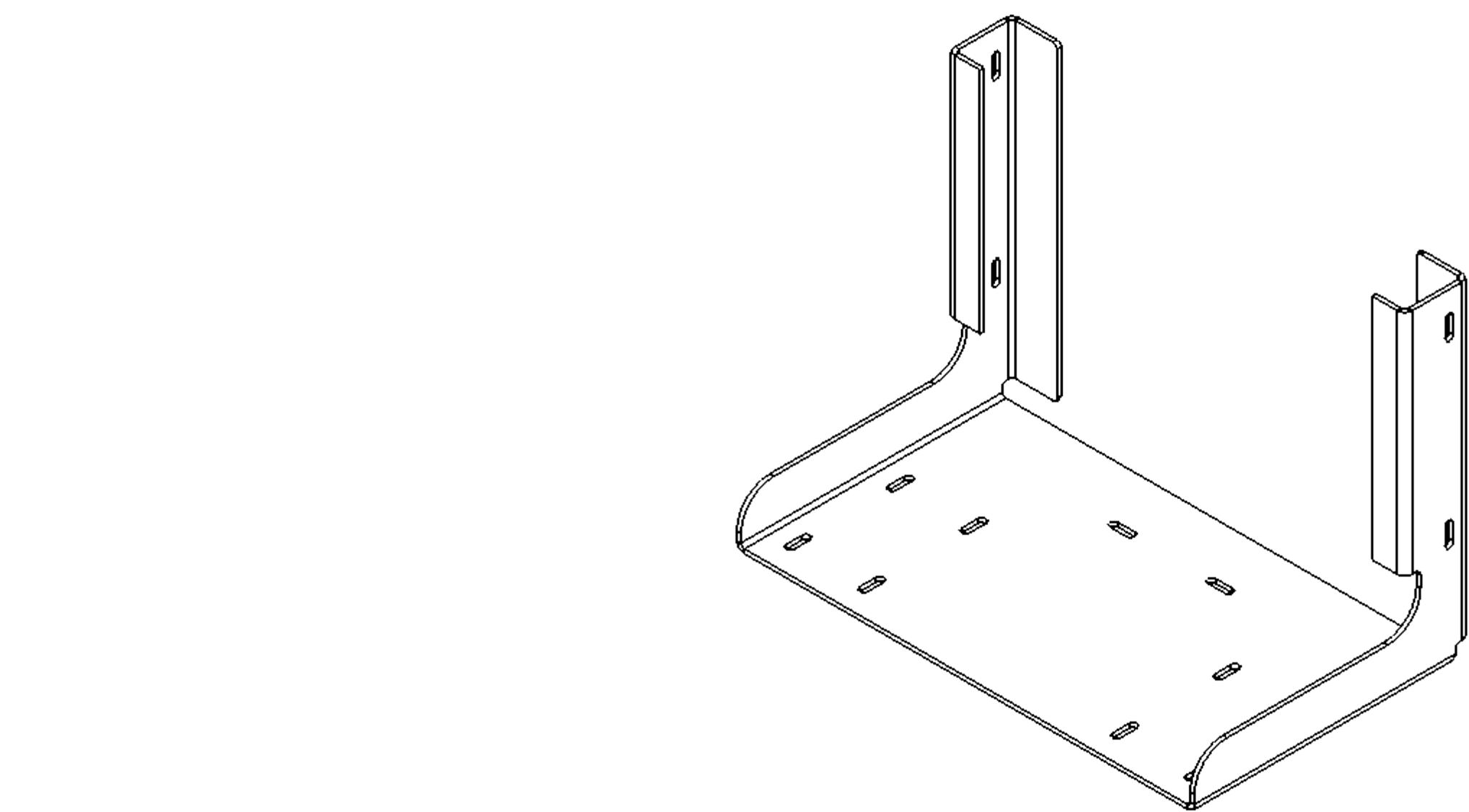
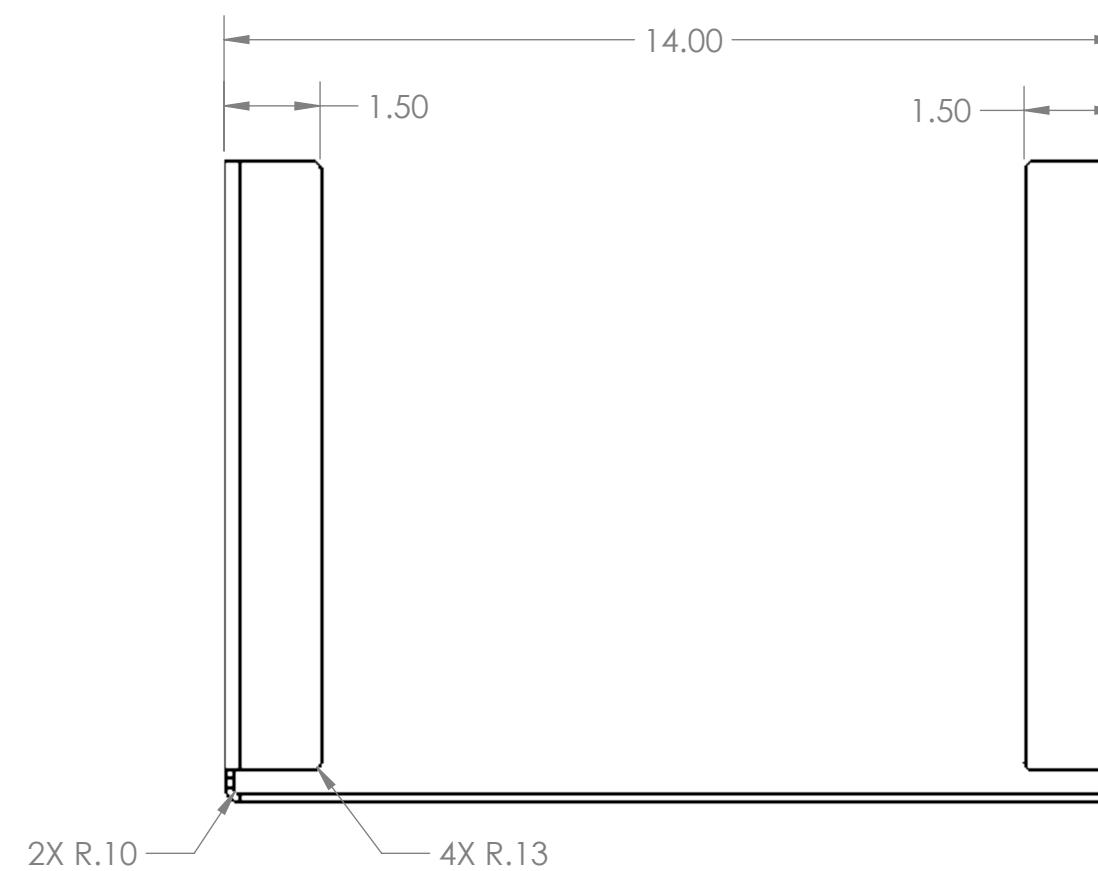


UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	DF	10/2/2024
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
1" OD x 0.083" Wall x 0.834" ID Carbon Steel Round Tube	C	GE-25217	
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING	SCALE: 1:2	SHEET 1 OF 1	

D



DETAIL A
SCALE 2 : 3
TYP. 14 PLACES



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$

ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$

TWO PLACE DECIMAL $\pm .02$

THREE PLACE DECIMAL $\pm .010$

BEND NAME DATE

DRAWN DF 10/3/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST[®]. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST[®] IS PROHIBITED.

MATERIAL/FINISH:

8 ga. 5052 Aluminum Sheet

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

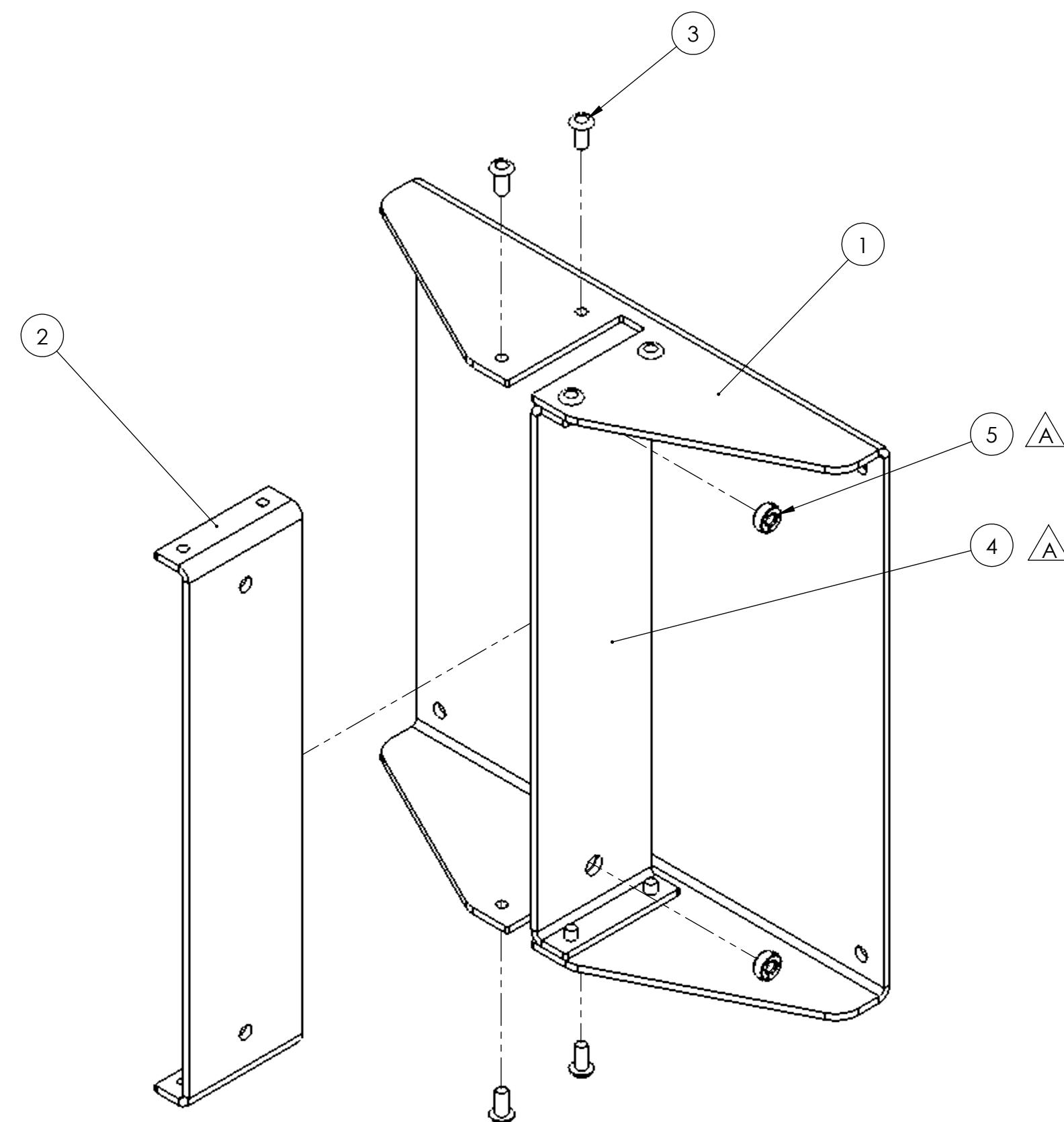
 FIRST ROBOTICS COMPETITION  SOLIDWORKS Modeling Solutions Partner

TITLE: Brace, Barge End

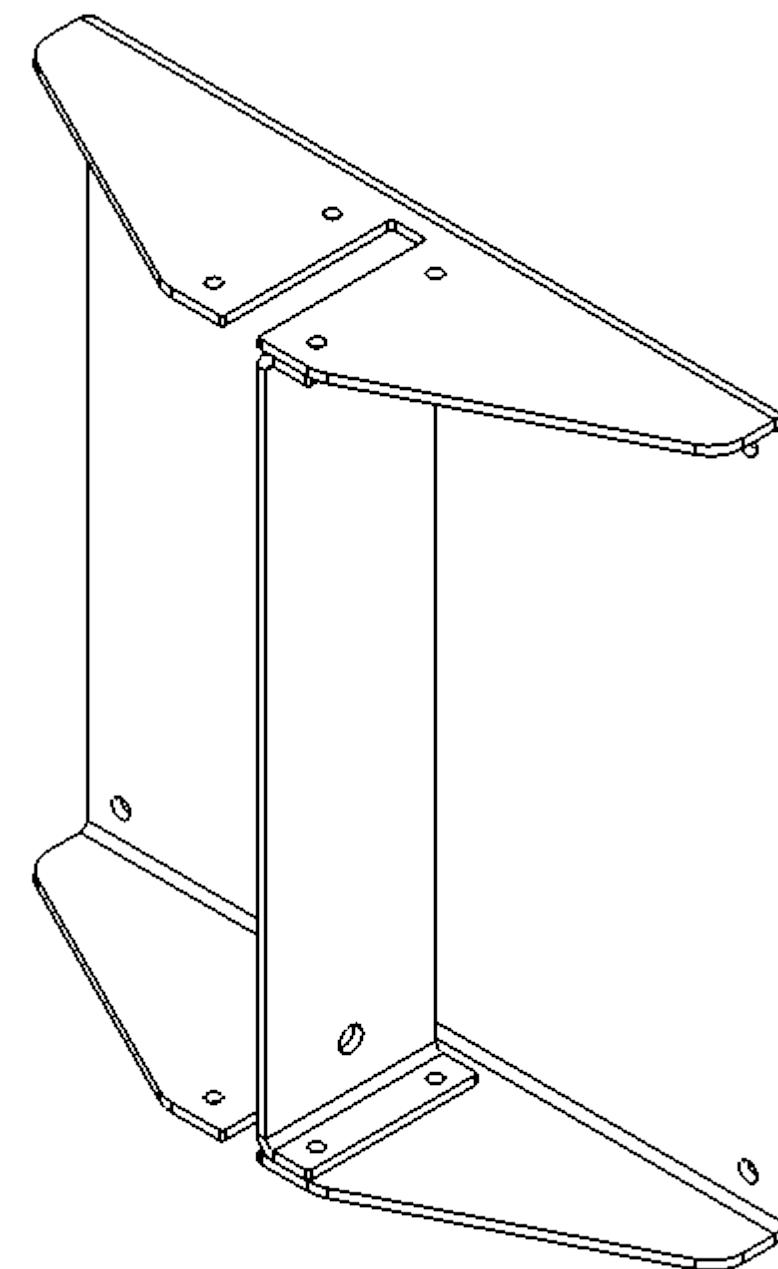
SIZE DWG. NO. REV

C GE-25218

SCALE: 1:3 SHEET 1 OF 1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2, 4-B3	A	Added Items 4 and 5. Added detail views of Item 4 to Sheet 4.	10/10/2024	DAF



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25219-01	Mount Face	1
2	GE-25219-02	Bracket	1
3	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range	8
4	GE-25219-03	Bracket with PEM nuts	1
5	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	2

UNLESS OTHERWISE SPECIFIED:		BEND	NAME	DATE
		DRAWN	DF	10/3/2024
PROPRIETARY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				
MATERIAL/FINISH: 8 ga. 5052 Aluminum Sheet				
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				
DO NOT SCALE DRAWING				

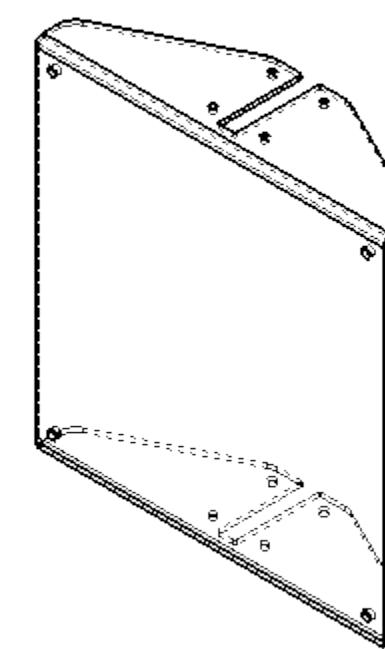
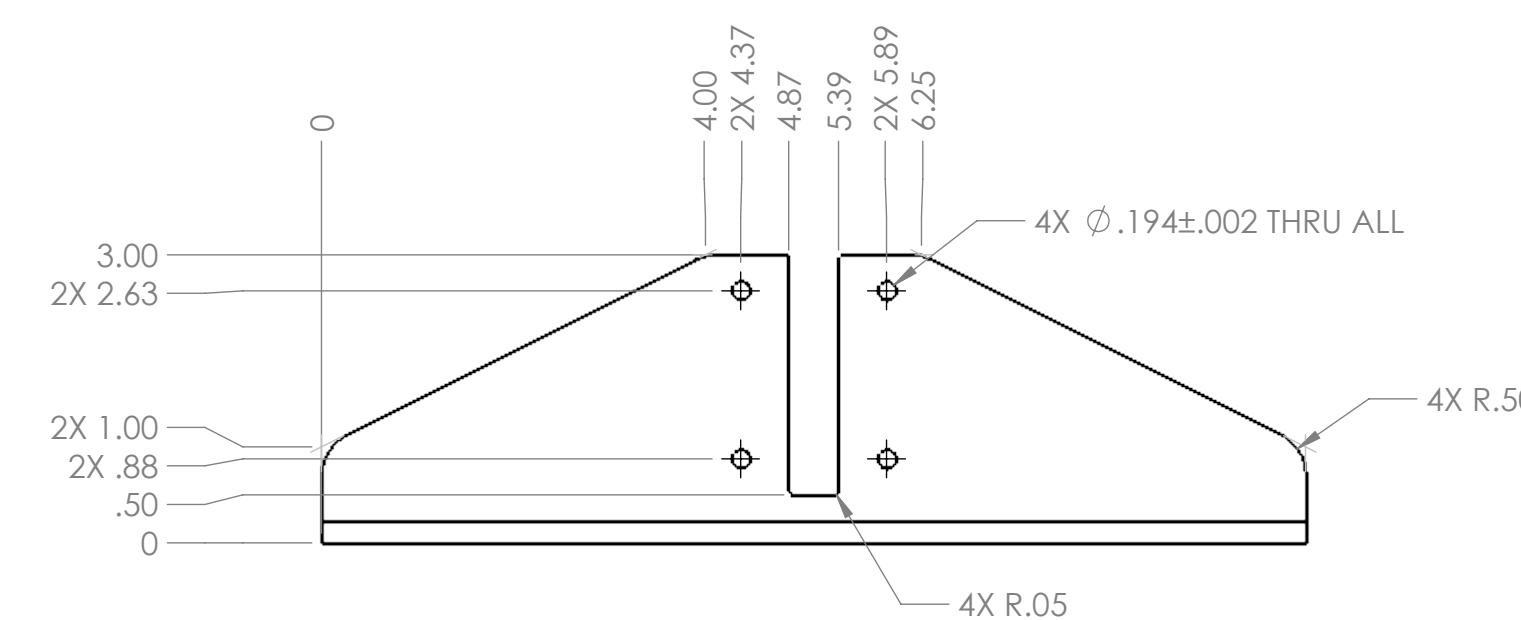
FIRST ROBOTICS COMPETITION Modeling Solutions Partner

TITLE: Holder, April Tag

SIZE	DWG. NO.	REV
C	GE-25219	A
SCALE: 1:2		SHEET 1 OF 4

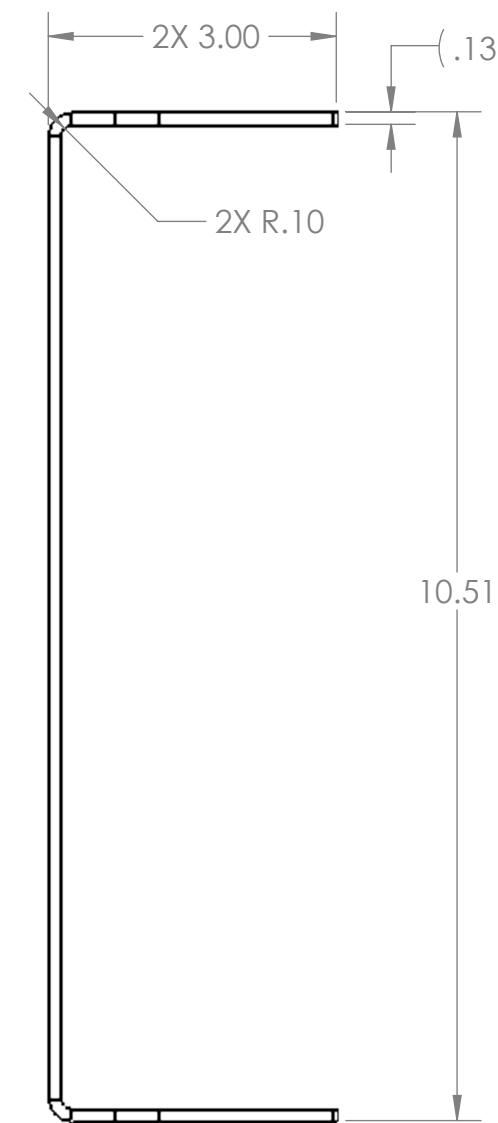
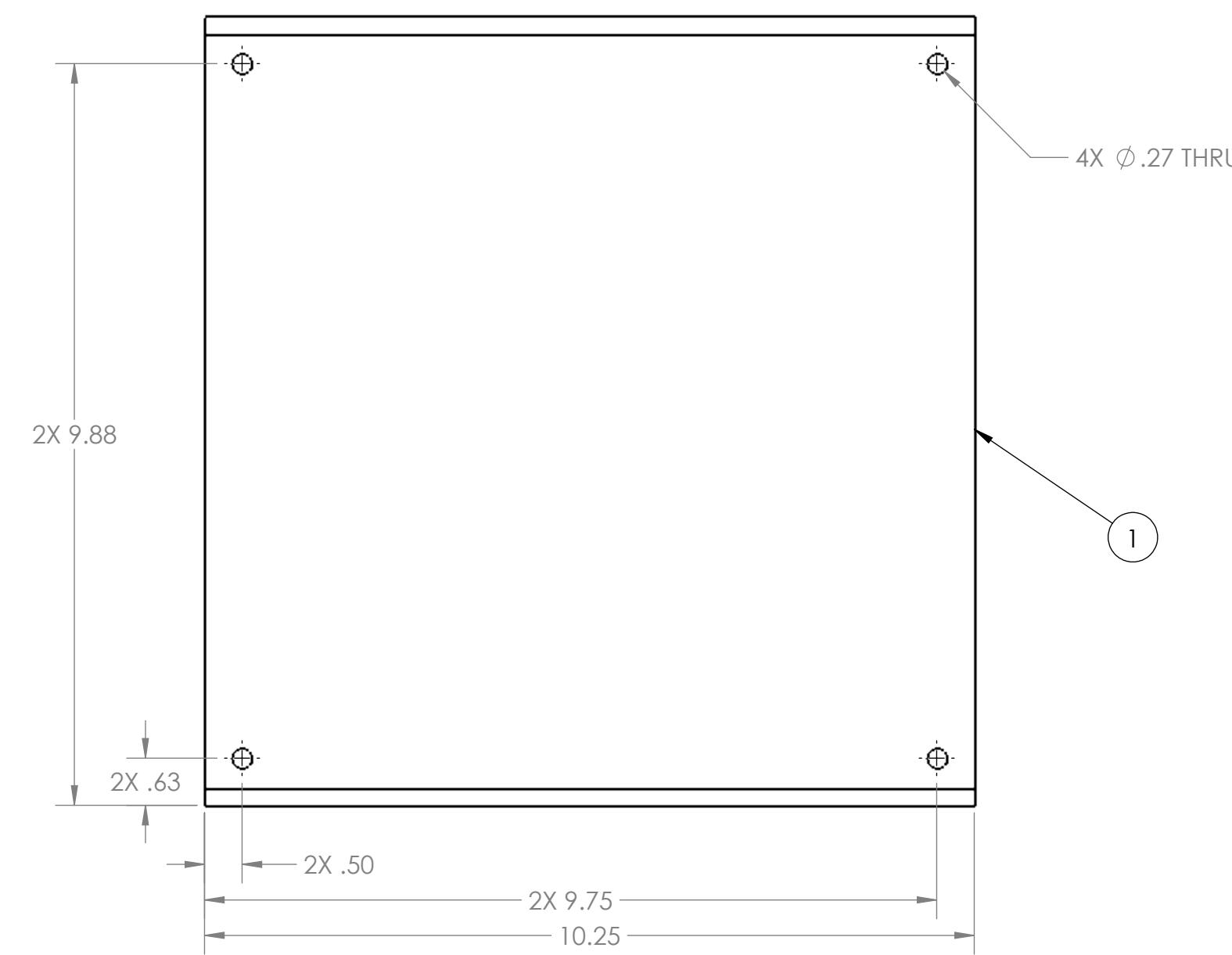
D

D



C

C



B

B

A

A

UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
	DRAWN	DF	10/3/2024

PROPRIETARY AND CONFIDENTIAL
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL $\pm 1/16$
 ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
 TWO PLACE DECIMAL $\pm .02$
 THREE PLACE DECIMAL $\pm .010$

MATERIAL/FINISH:
 8 ga. 5052 Aluminum Sheet

COMMENTS:
 REMOVE ALL BURRS AND SHARP EDGES.

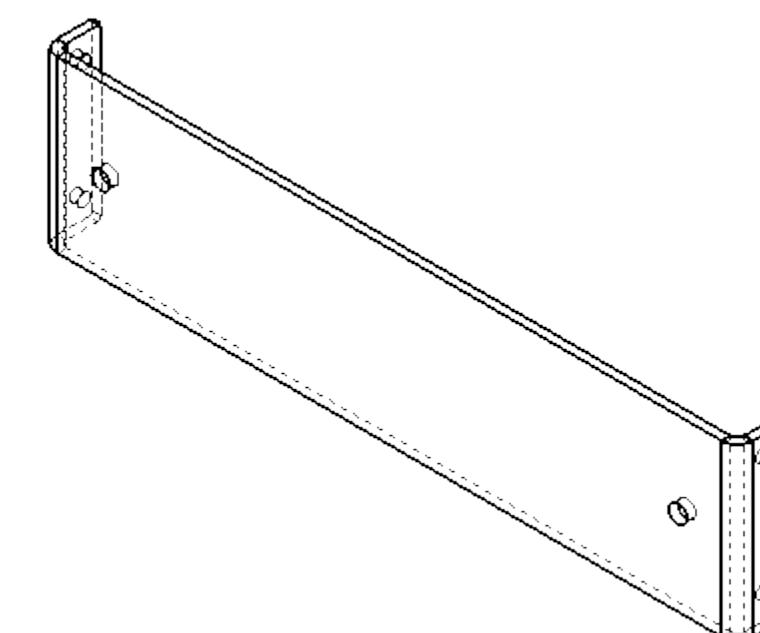
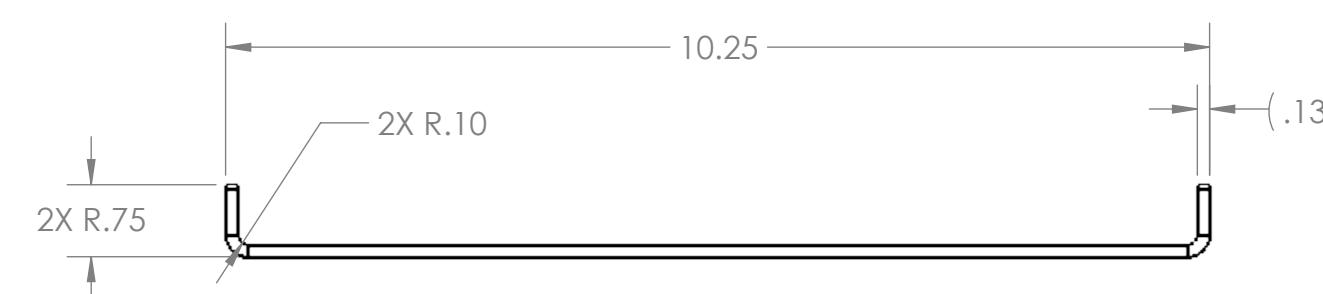
DO NOT SCALE DRAWING

TITLE: Mount Face

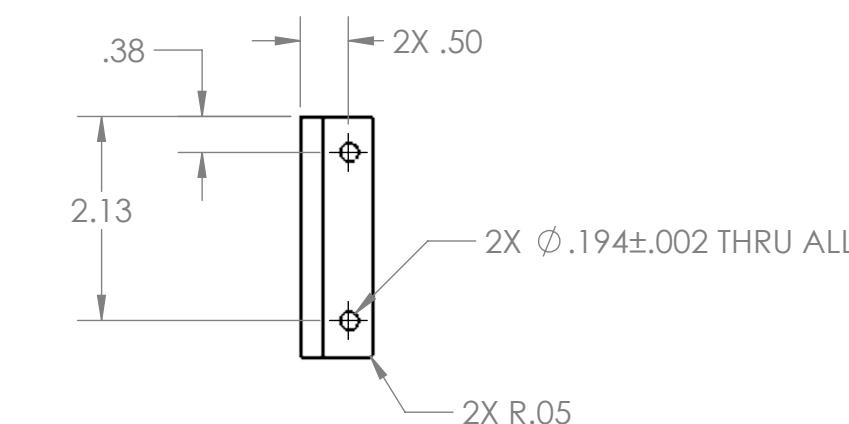
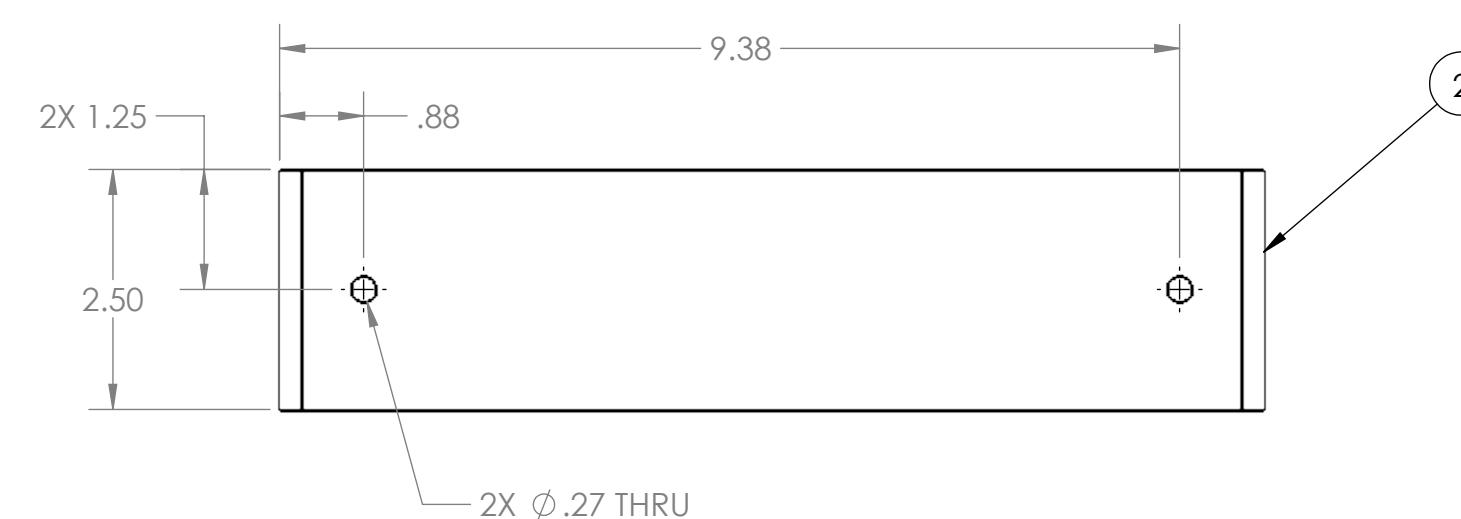
SIZE DWG. NO. REV
C GE-25219-01 **A**

SCALE: 1:2 SHEET 2 OF 4

D



C



B

A

UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	
DRAWN	DF	10/3/2024		
PROPRIETARY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				
MATERIAL/FINISH:	SIZE	DWG. NO.	REV	
8 ga. 5052 Aluminum Sheet	C	GE-25219-02	A	
DO NOT SCALE DRAWING	SCALE: 1:1	SHEET 3 OF 4		

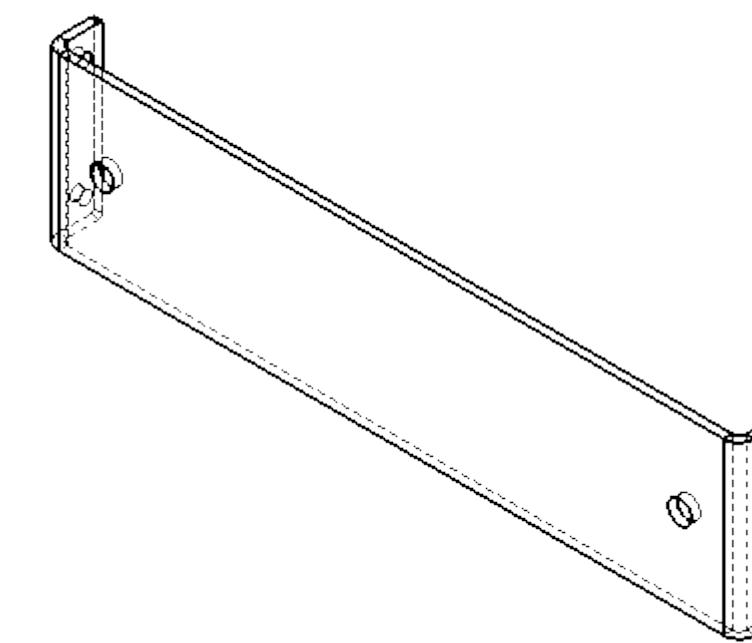
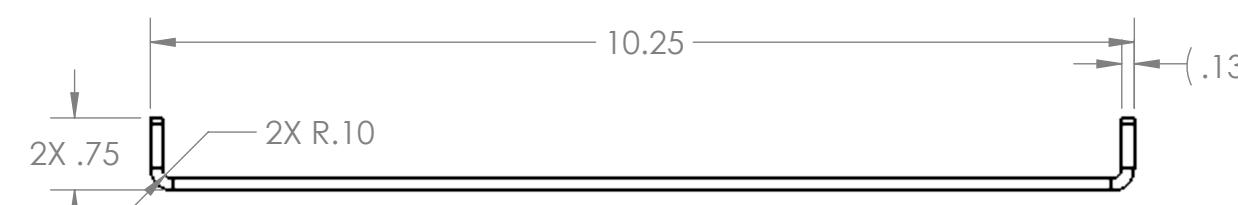
D

C

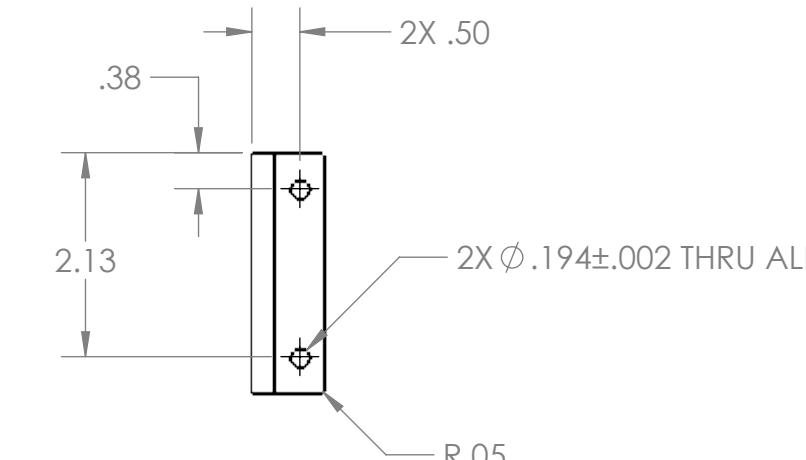
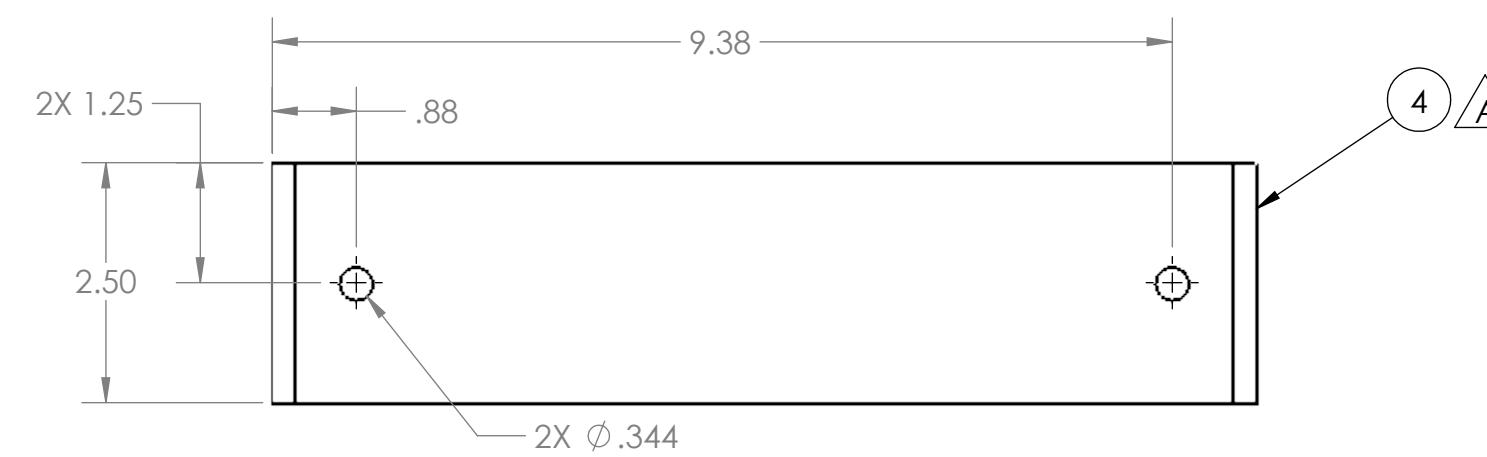
B

A

D



C



B

A

UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	
DRAWN	DF	10/3/2024		
PROPRIETARY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				
MATERIAL/FINISH:	SIZE	DWG. NO.	REV	
8 ga. 5052 Aluminum Sheet	C	GE-25219-03	A	
DO NOT SCALE DRAWING	SCALE: 1:1	SHEET 4 OF 4		

Bracket with
PEM nuts

4

3

2

1

D

D

C

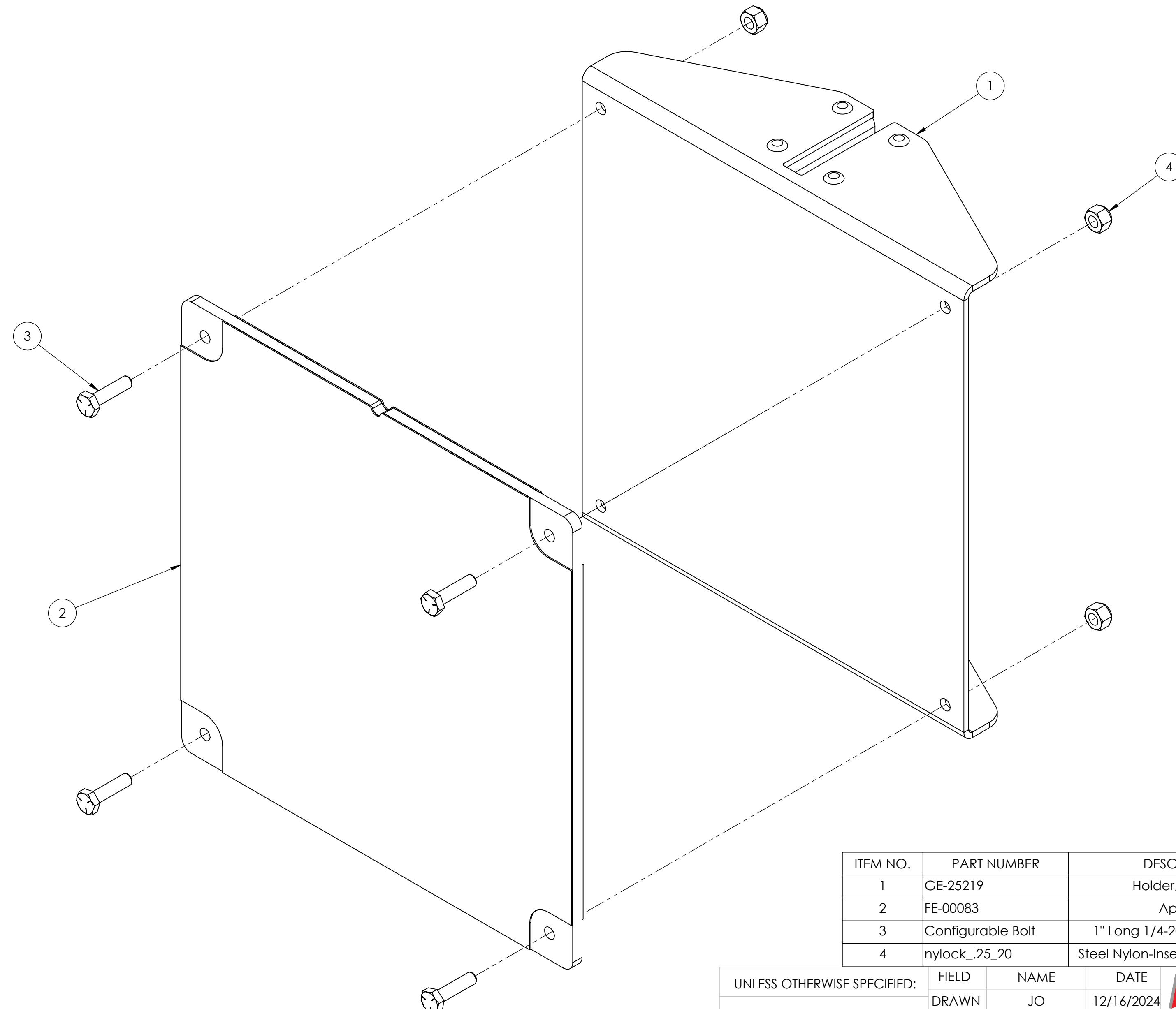
C

B

B

A

A



Notes:

1. AprilTag ID#'s 4, 5, 14, 15 will be used in this assembly.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25219	Holder, April Tag	1
2	FE-00083	AprilTag	1
3	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	4
4	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	4

UNLESS OTHERWISE SPECIFIED:			FIELD	NAME	DATE
			DRAWN	JO	12/16/2024
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm\frac{1}{2}$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$					
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
MATERIAL/FINISH:					
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**April Tag
Assembly, Truss**

SIZE DWG. NO. REV
C GE-25220

SCALE: 2:3 SHEET 1 OF 1

4

3

2

1

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
B4, C3	A	Replaced 16X ϕ .25 THRU holes with rectangular slots. All dimensions updated accordingly.	10/15/2024	DF

D

D

C

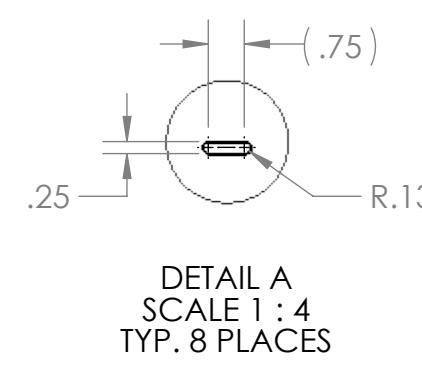
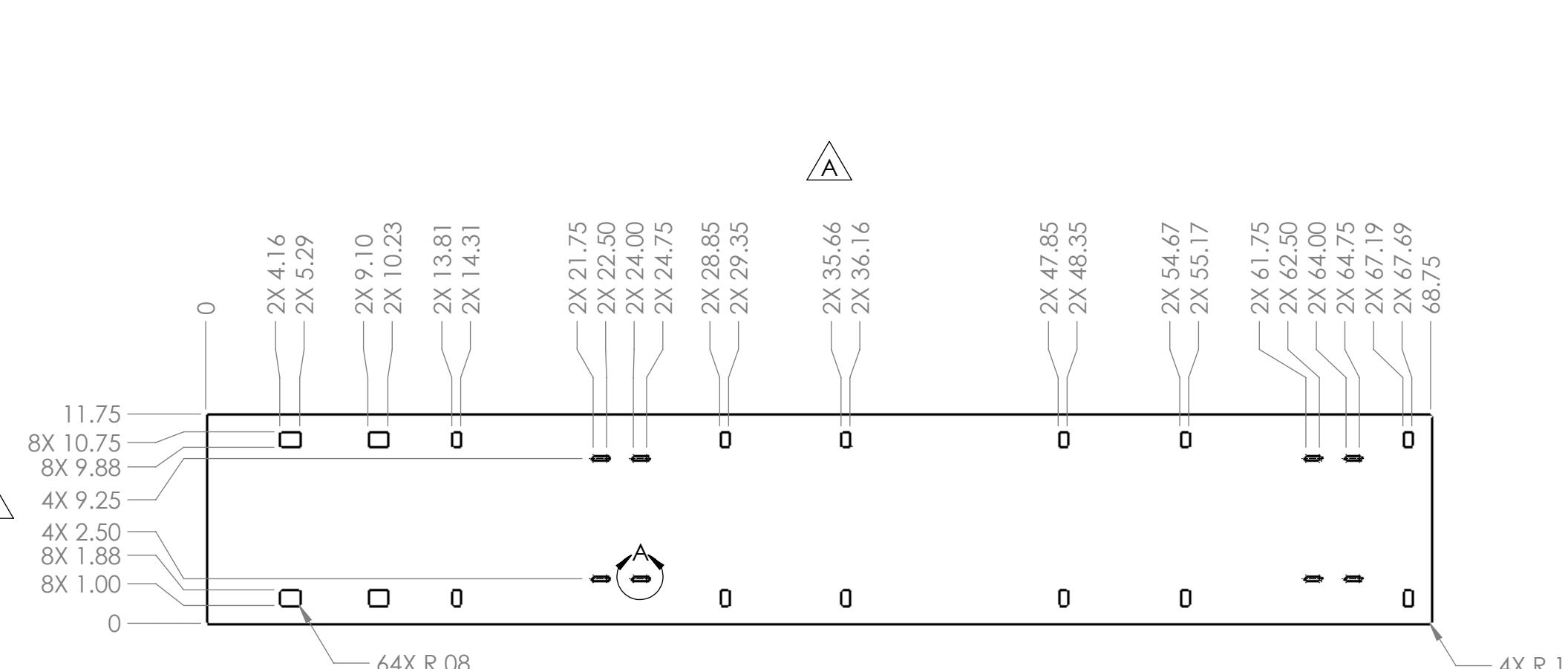
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:
1/8" HDPE, Natural, Smooth

DO NOT SCALE DRAWING

VEND DATE
DRAWN DF 10/4/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

FIRST ROBOTICS COMPETITION
SOLIDWORKS
Modeling Solutions Partner

TITLE: Top Diffuser

SIZE DWG. NO. REV

C GE-25221 A

SCALE: 1:8 SHEET 1 OF 1

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3, C3	A	9.88 was 9.25, 1.88 was 2.5	10/15/2024	DAF

D

D

C

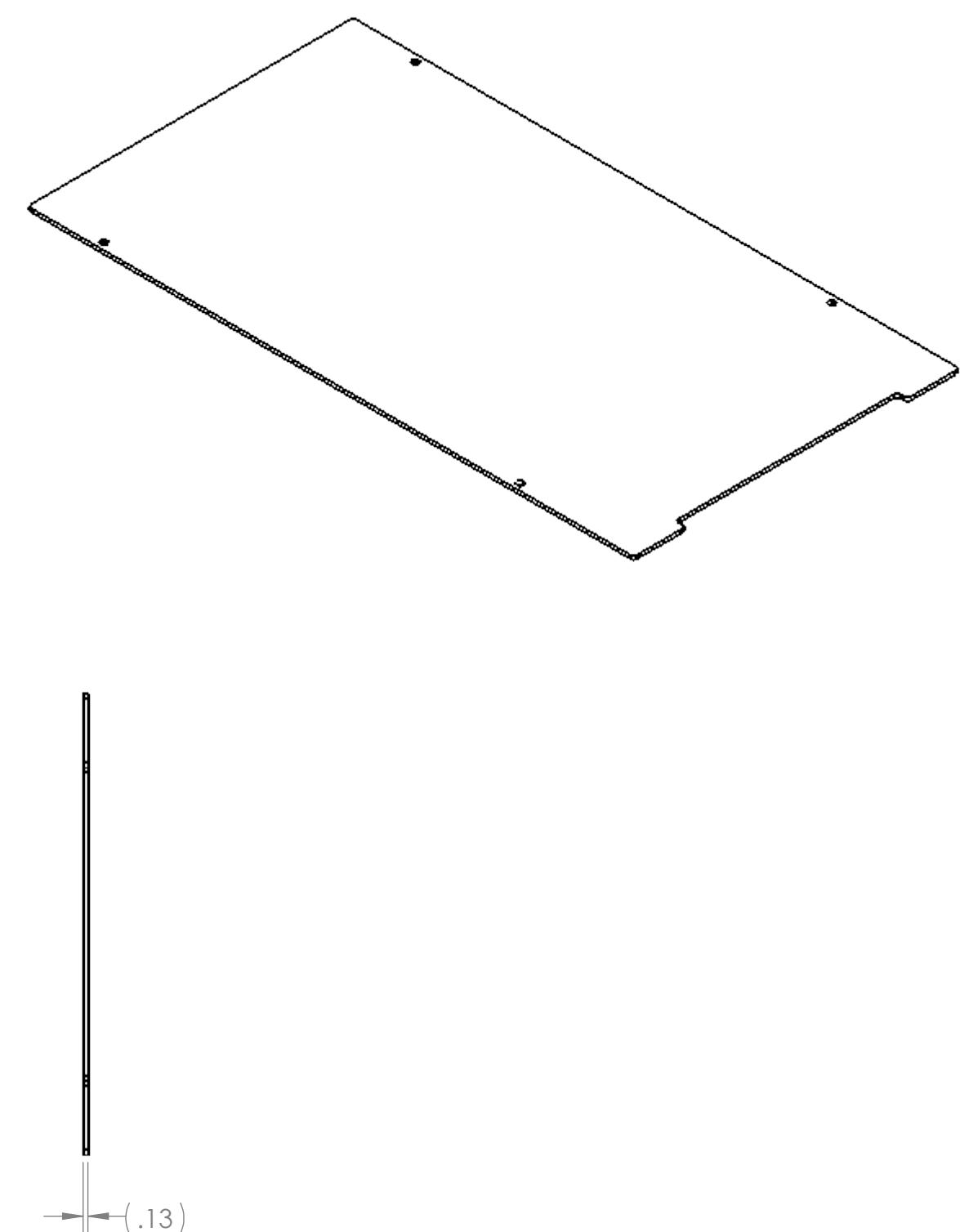
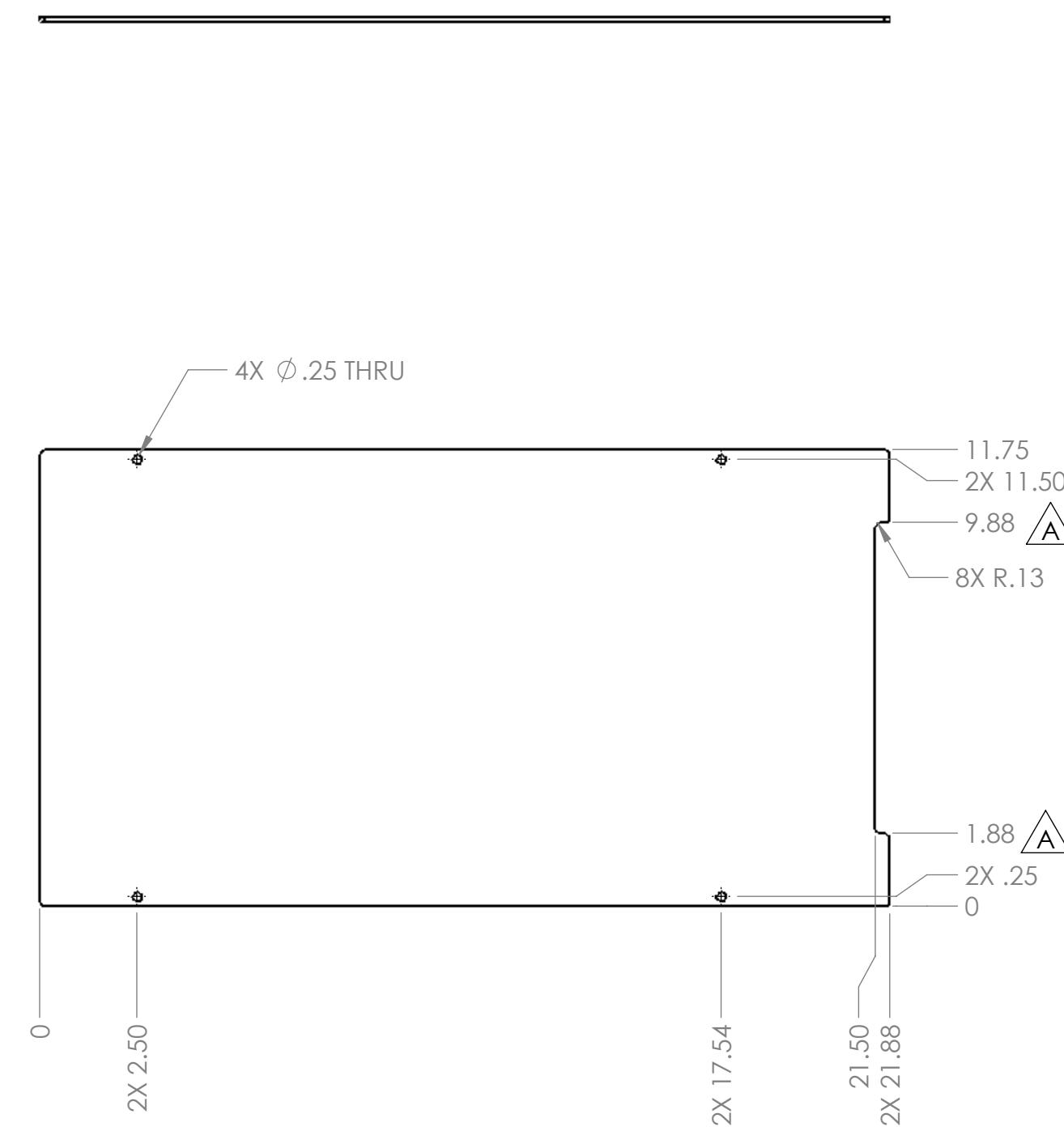
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:

DRAWN

VEND

NAME

DATE

DF

10/4/2024

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$
 ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
 TWO PLACE DECIMAL $\pm .01$
 THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

1/8" HDPE, Natural, Smooth

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

FIRST ROBOTICS COMPETITION SOLIDWORKS Modeling Solutions Partner

TITLE:
Side Diffuser 1

SIZE DWG. NO. REV
C GE-25222 A

SCALE: 1:4 SHEET 1 OF 1

REVISIONS

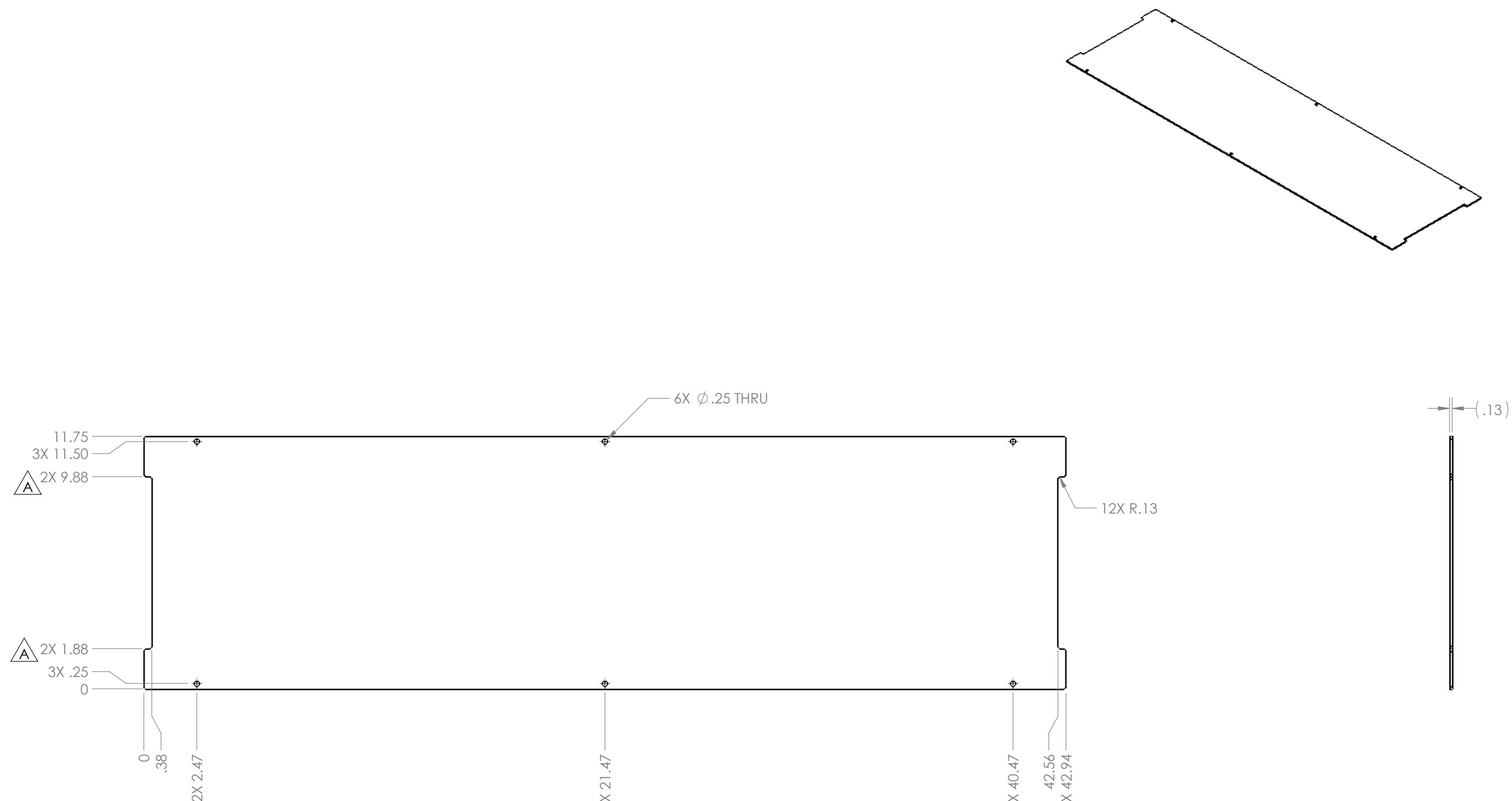
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B4, C4	A	9.88 was 9.25, 1.88 was 2.5	10/15/2024	DF

D D

C C

B B

A A



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:
1/8" HDPE, Natural, Smooth

DO NOT SCALE DRAWING

VEND NAME DATE
DRAWN DF 10/4/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

FIRST ROBOTICS COMPETITION
SOLIDWORKS
Modeling Solutions Partner

TITLE: Side Diffuser 2

SIZE DWG. NO. REV

C GE-25223 A

SCALE: 1:4 SHEET 1 OF 1

4

3

2

1

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2, C2	A	9.88 was 9.25, 1.88 was 2.50	10/15/2024	DF

D

D

C

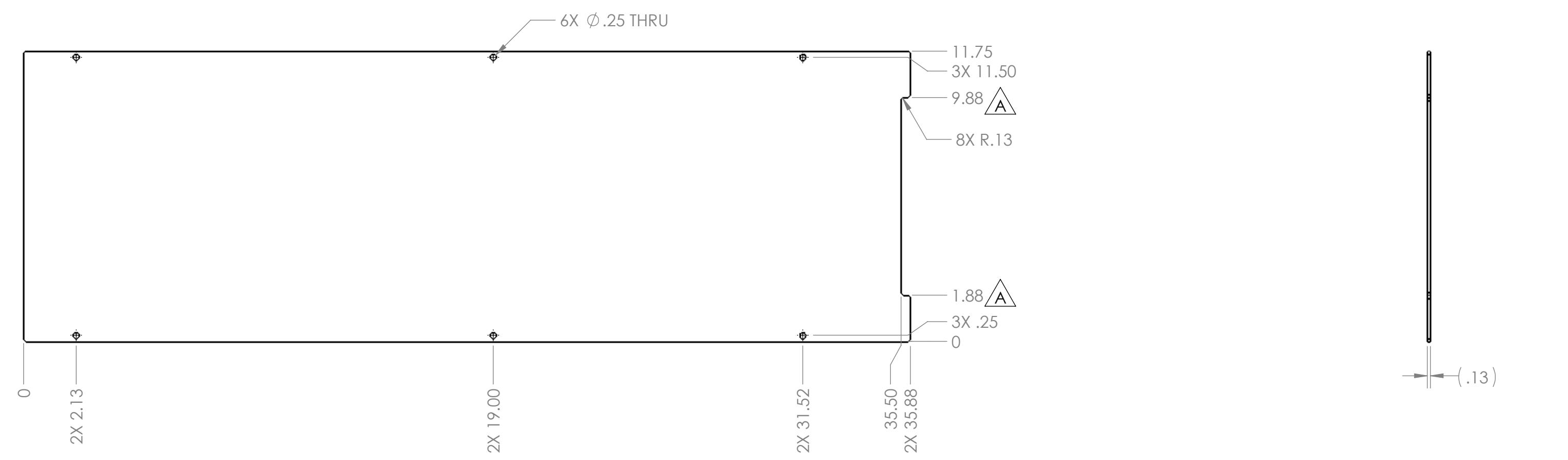
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

1/8" HDPE, Natural, Smooth

DO NOT SCALE DRAWING

VEND DATE
DRAWN DF 10/4/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Side Diffuser 3

SIZE DWG. NO. REV
C GE-25224 A

SCALE: 1:4 SHEET 1 OF 1

4

3

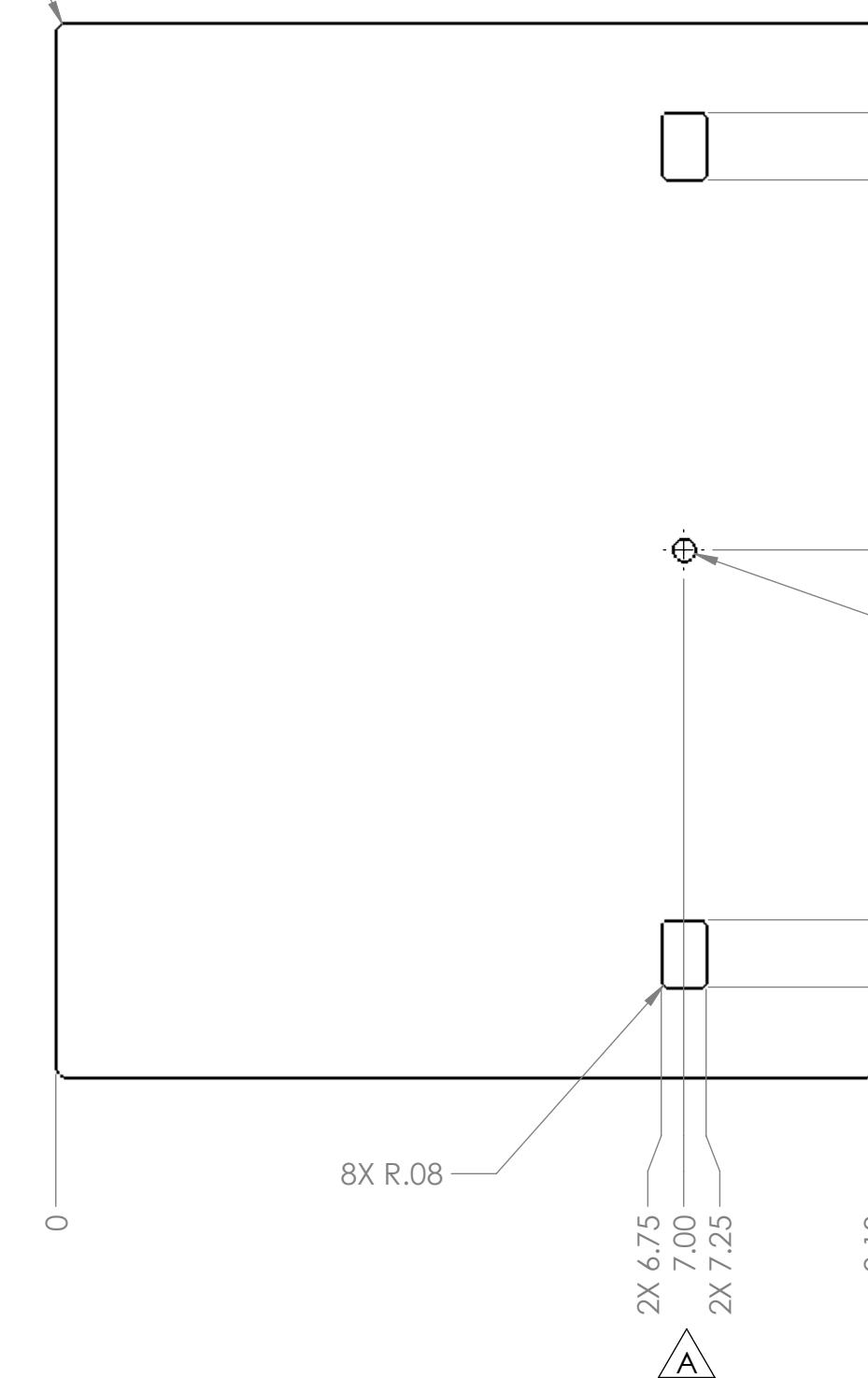
2

1

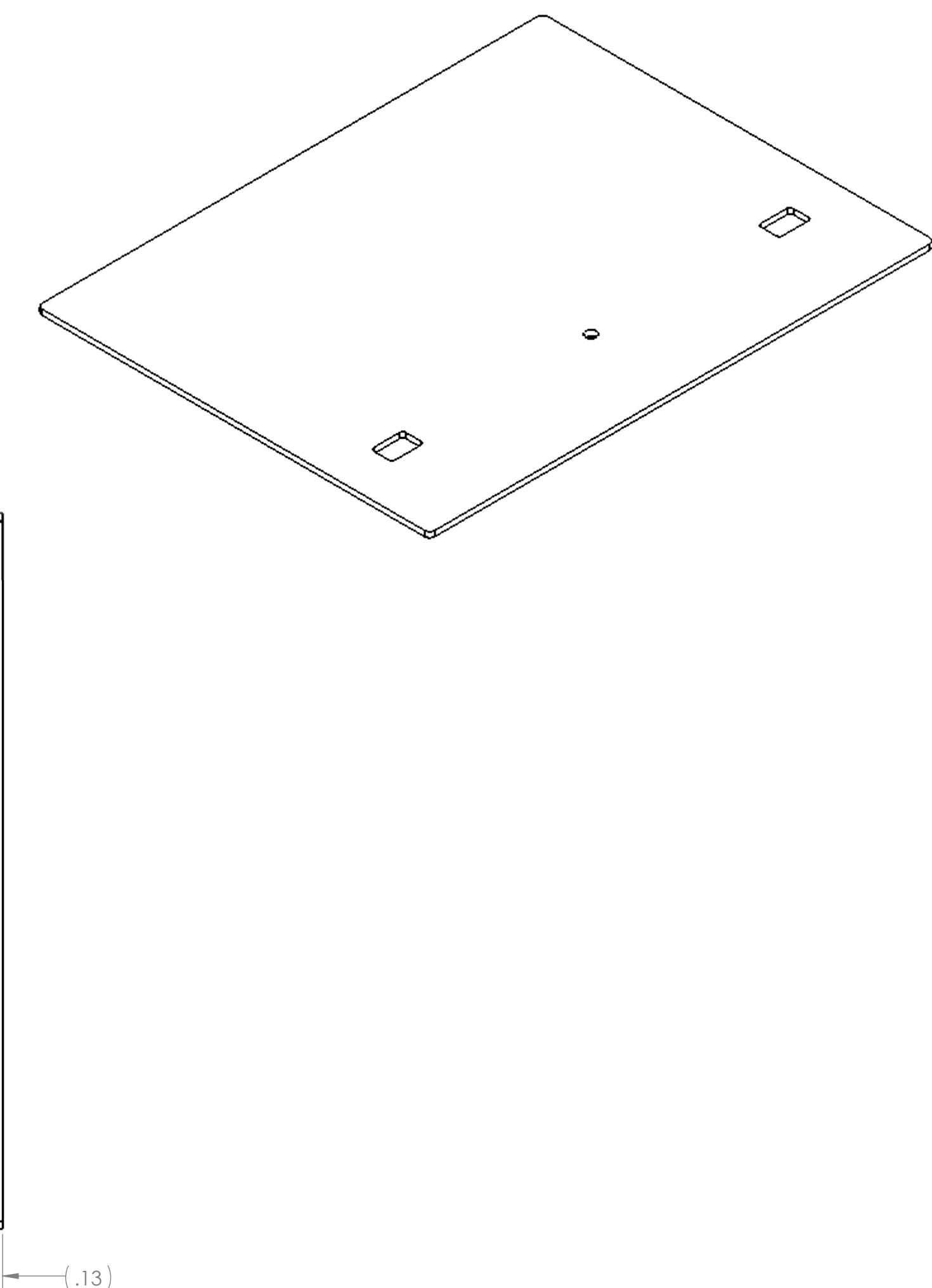
D

D

4X R.13



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A3, B3, C3	A	Removed 2X Ø.25 THRU holes, added two rectangular cut outs.	10/15/2024	DF



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	DF	10/4/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
1/8" HDPE, Natural, Smooth	C	GE-25227	A
COMMENTS:		SCALE: 1:2	
REMOVE ALL BURRS AND SHARP EDGES.		SHEET 1 OF 1	
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Diffuser Top,
Small**

4

3

2

1

D

D

C

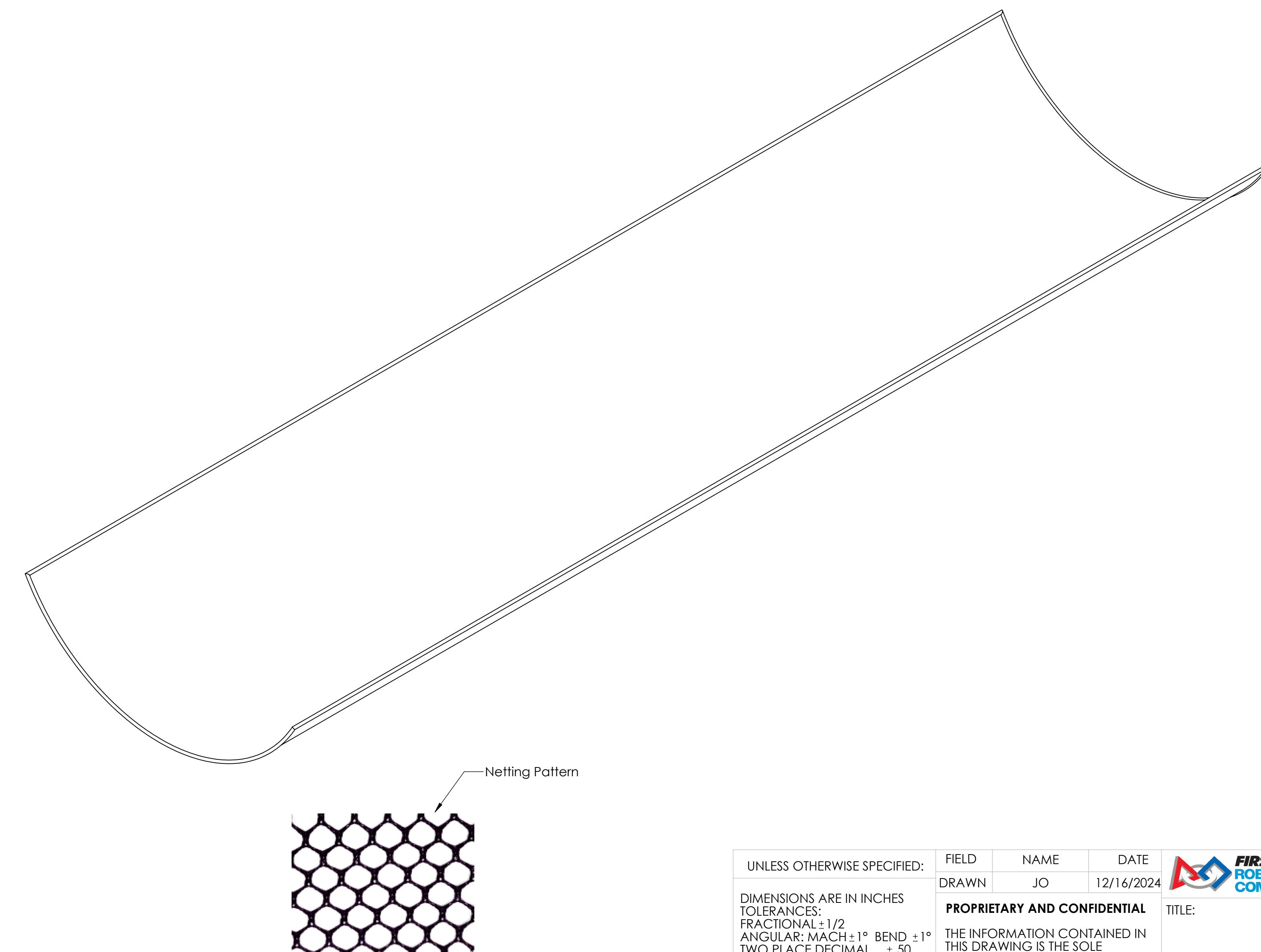
C

B

B

A

A



Vendor: All Sport Netting
 Website: www.allsportnetting.com
 Size: 48" x 144"
 Net Material: Knit Polyester, 1/4" mesh
 Border: 3/8" Sewn Cord

PRODUCT ALSO AVAILABLE AT ANDYMARK.COM (SUPPLIES LIMITED)

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	 FIRST ROBOTICS COMPETITION	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$	DRAWN	JO	12/16/2024		
PROPRIETARY AND CONFIDENTIAL					
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
MATERIAL/FINISH:	SIZE	DWG. NO.	REV		
	C	GE-25228			
DO NOT SCALE DRAWING	SCALE: 1:8	SHEET 1 OF 1			

4

3

2

1

D

D

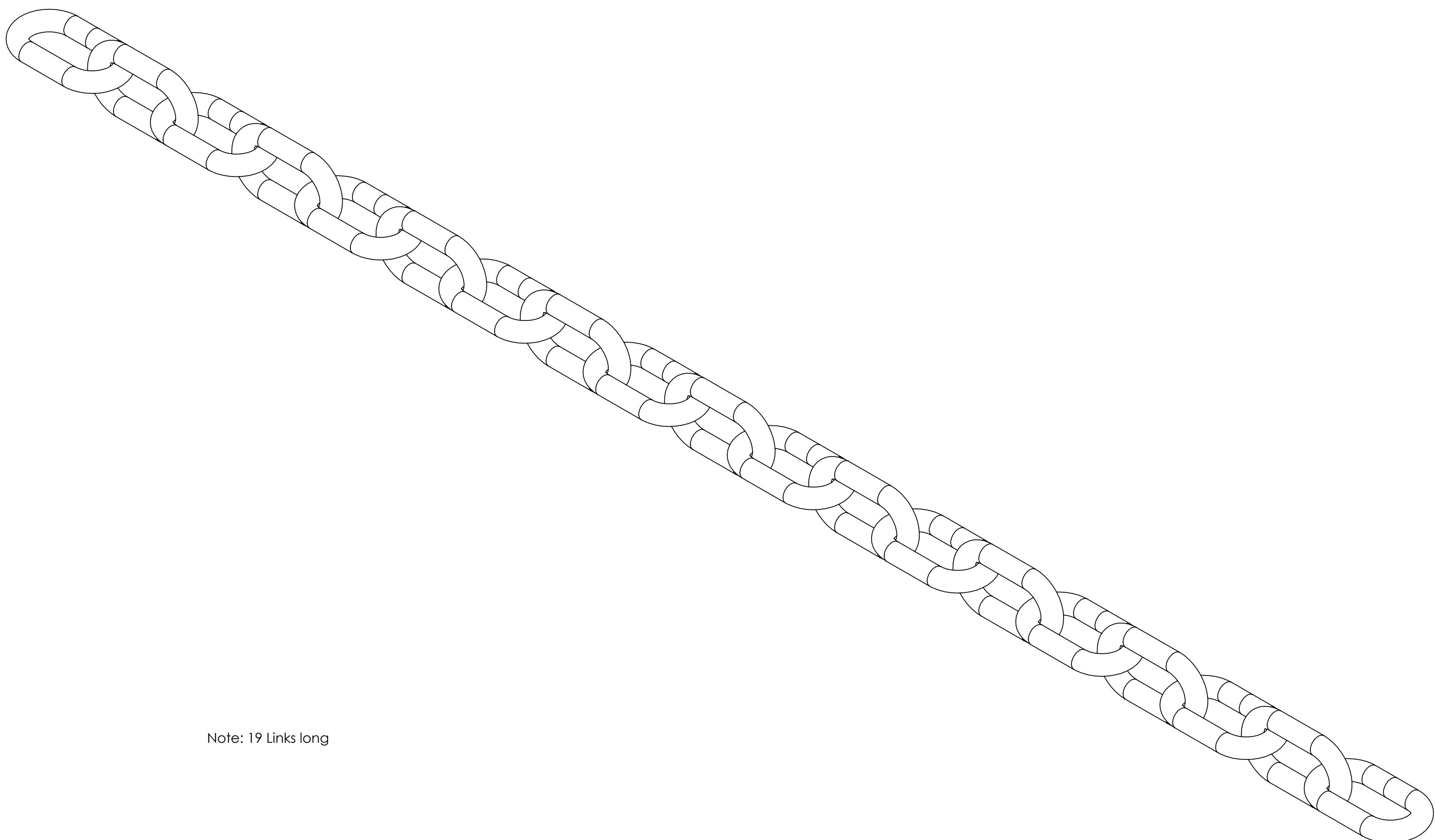
C

C

B

B

Note: 19 Links long



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE
DRAWN	JO	12/16/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
Grade 43 Zinc Plated Chain, 1/4" Trade Size	C	GE-25229	
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING	SCALE: 1:1	SHEET 1 OF 1	

 **FIRST
ROBOTICS
COMPETITION**  SOLIDWORKS
Modeling Solutions PartnerTITLE:
Cage Chain

4

3

2

1

A

4

3

2

1

D

D

C

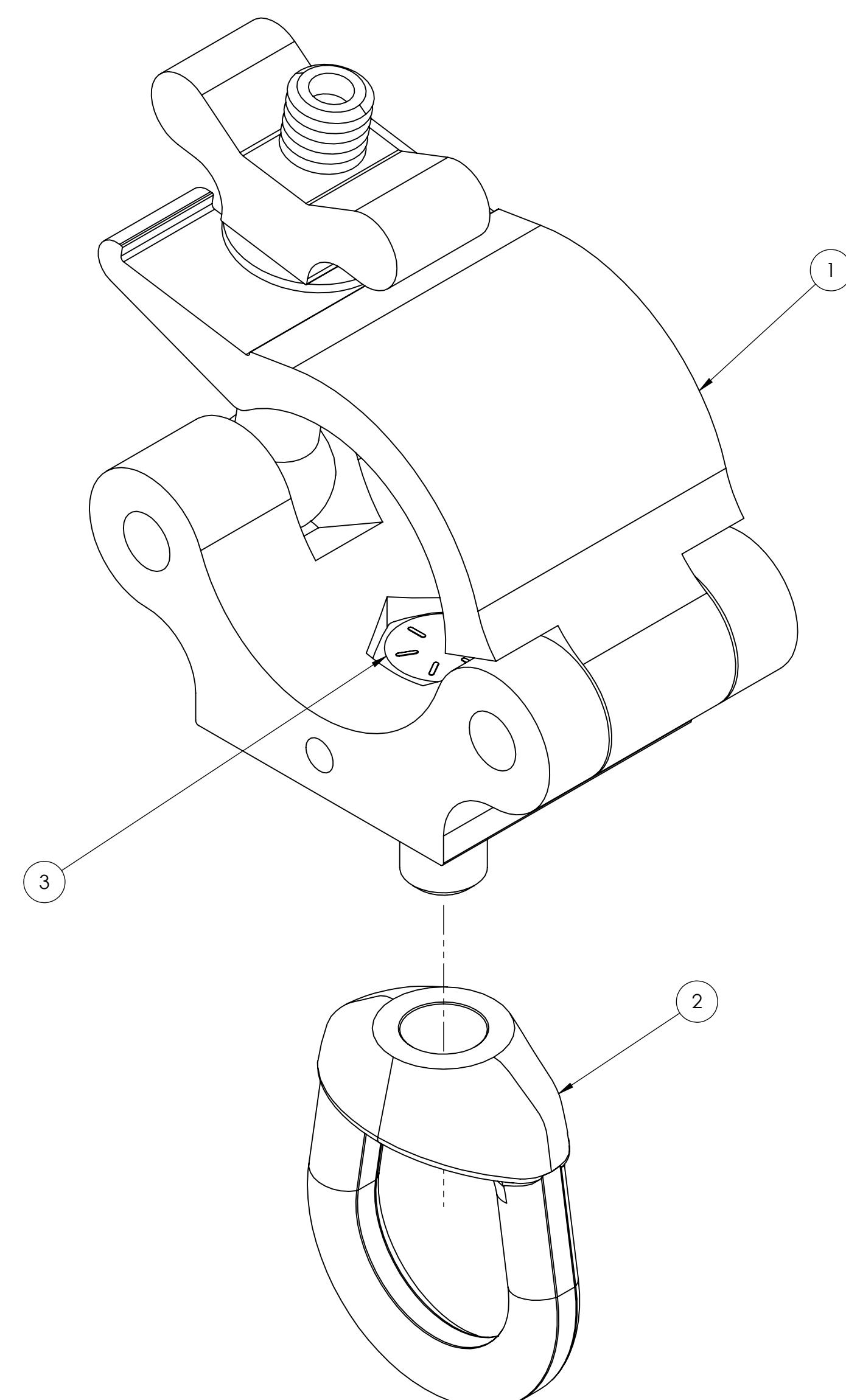
C

B

B

A

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-01016	Cheeseborough for Truss _ Single	1
2	3019T18	1/2-13 Galvanized Steel Eye Nut - for Lifting	1
3	hex_.5_13_1.25	Steel Hex Head Screw, 1/2"-13 x 1.25" long, fully threaded	1

FIELD	NAME	DATE
DRAWN	JO	12/16/2024

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

TITLE: Eye Nut Assembly
SIZE DWG. NO. REV
C GE-25230

SCALE: 3:2 **SHEET** 1 OF 1

DO NOT SCALE DRAWING

4

3

2

1

4

3

2

1

D

D

C

C

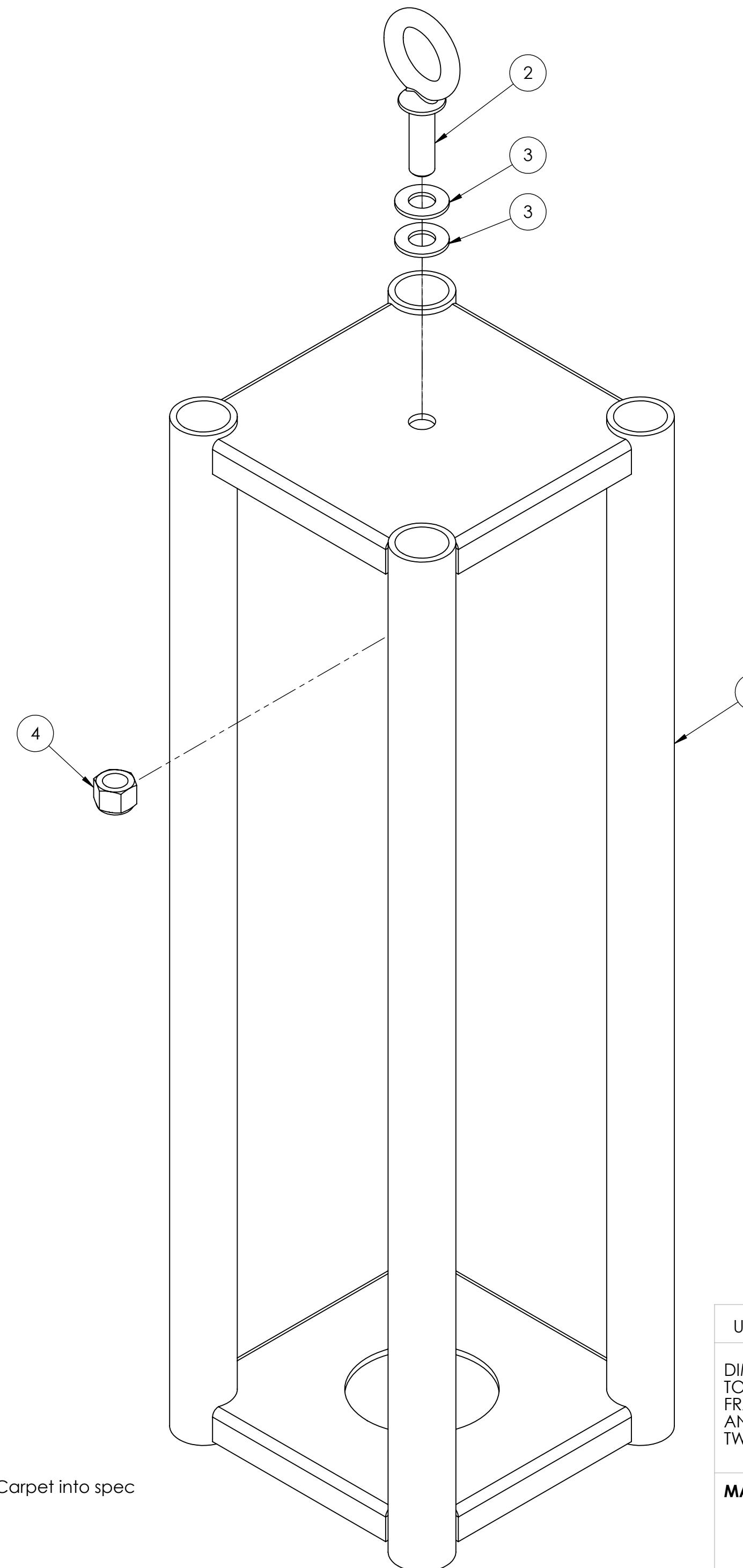
B

B

A

A

Notes:
 - Washers may be removed to get Cage height from Carpet into spec
 - Assembly is the same for all colors of Cages



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25202	Cage Weldment, Blue	1
2	3014T491	Steel Eyebolt with Shoulder, 1/2"-13 x 1.5" long, fully threaded	1
3	washer_flat_.5	Flat Washer for 1/2" Screw	2
4	nylock_.5_13	steel nylon-insert locknut, 1/2" - 13	1

UNLESS OTHERWISE SPECIFIED: FIELD NAME DATE
 DRAWN JO 12/16/2024

DIMENSIONS ARE IN INCHES
 TOLERANCES:
 FRACTIONAL $\pm 1/2$
 ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
 TWO PLACE DECIMAL $\pm .50$

PROPRIETARY AND CONFIDENTIAL
 THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

MATERIAL/FINISH:

COMMENTS:
 REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

FIRST
 ROBOTICS
 COMPETITION

SOLIDWORKS
 Modeling Solutions Partner

TITLE:
Cage Assembly

SIZE DWG. NO. REV

C GE-25231

SCALE: 1:2 SHEET 1 OF 1

4

3

2

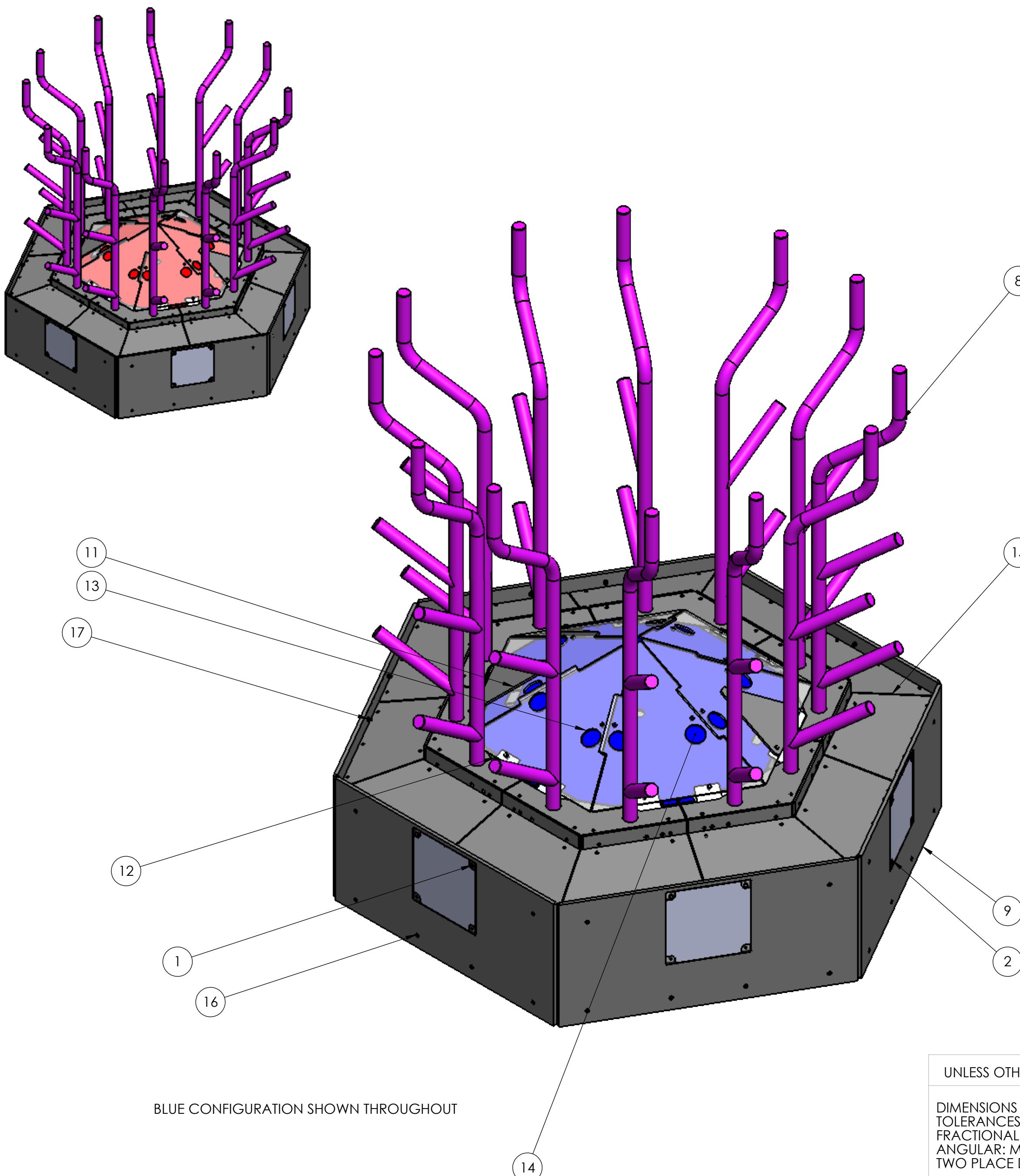
1

4

3

2

1



BLUE CONFIGURATION SHOWN THROUGHOUT

Note: April Tag ID # changes depending on which Reef is being considered. See the Field Layout and Marking Diagram for more details.

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$

TWO PLACE DECIMAL

 $\pm .50$

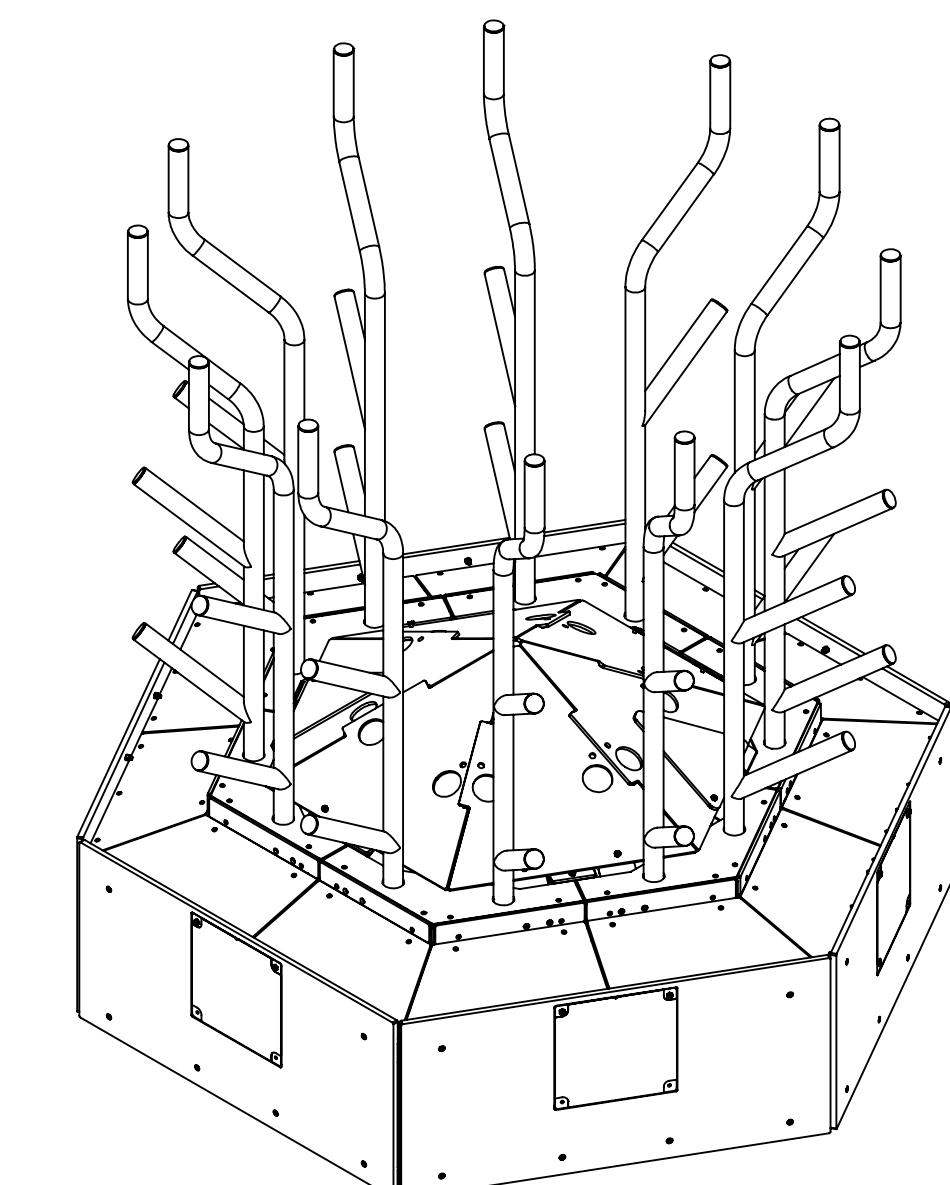
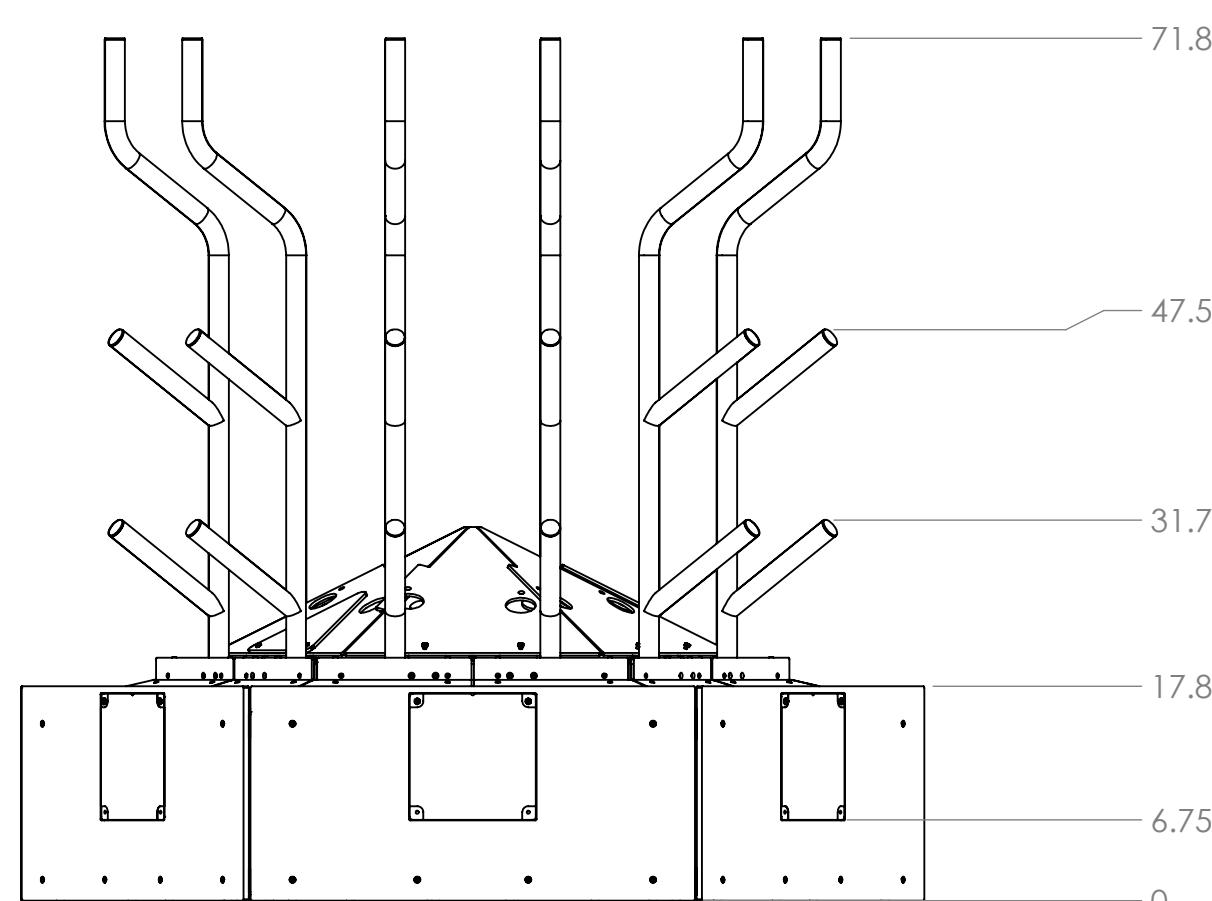
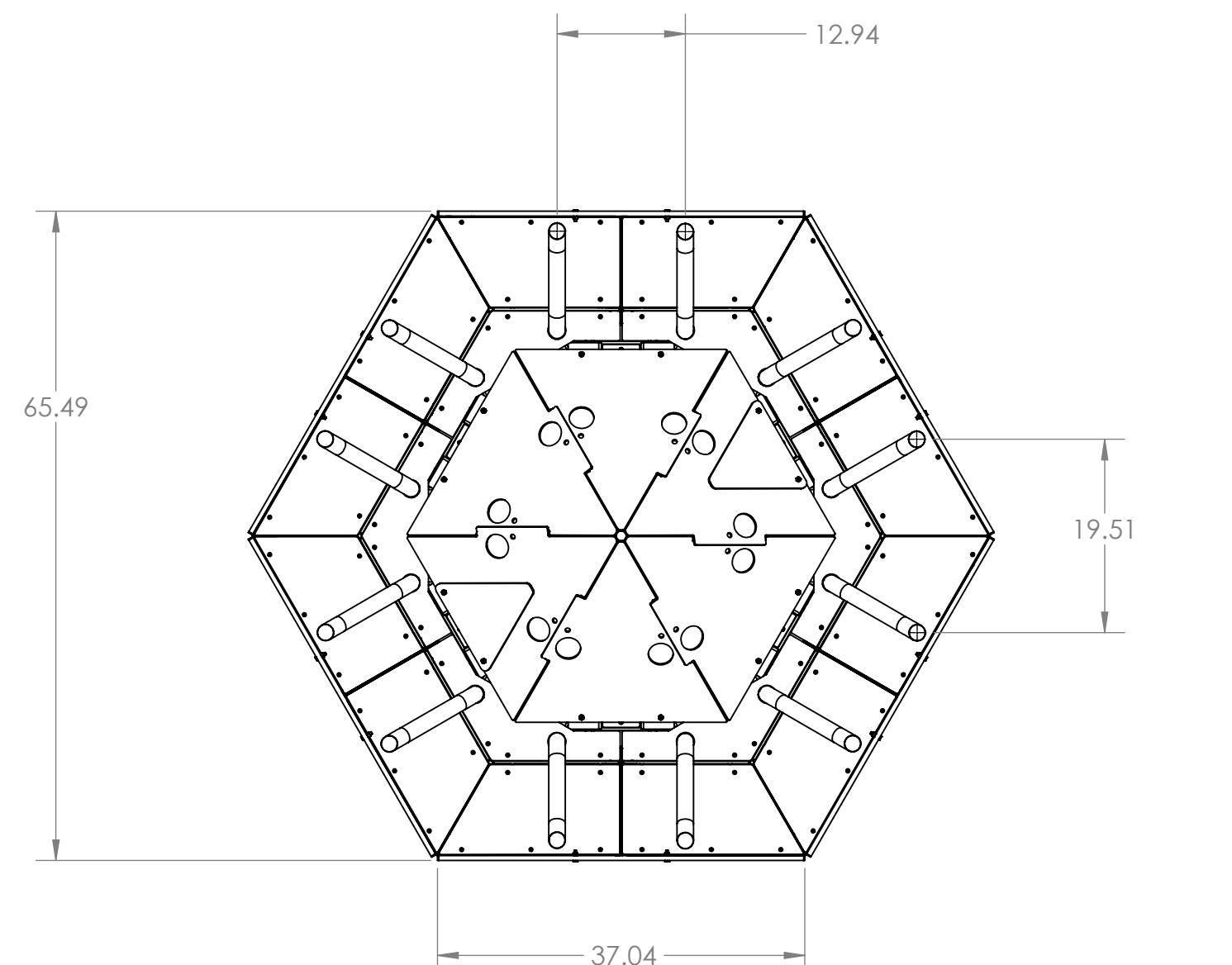
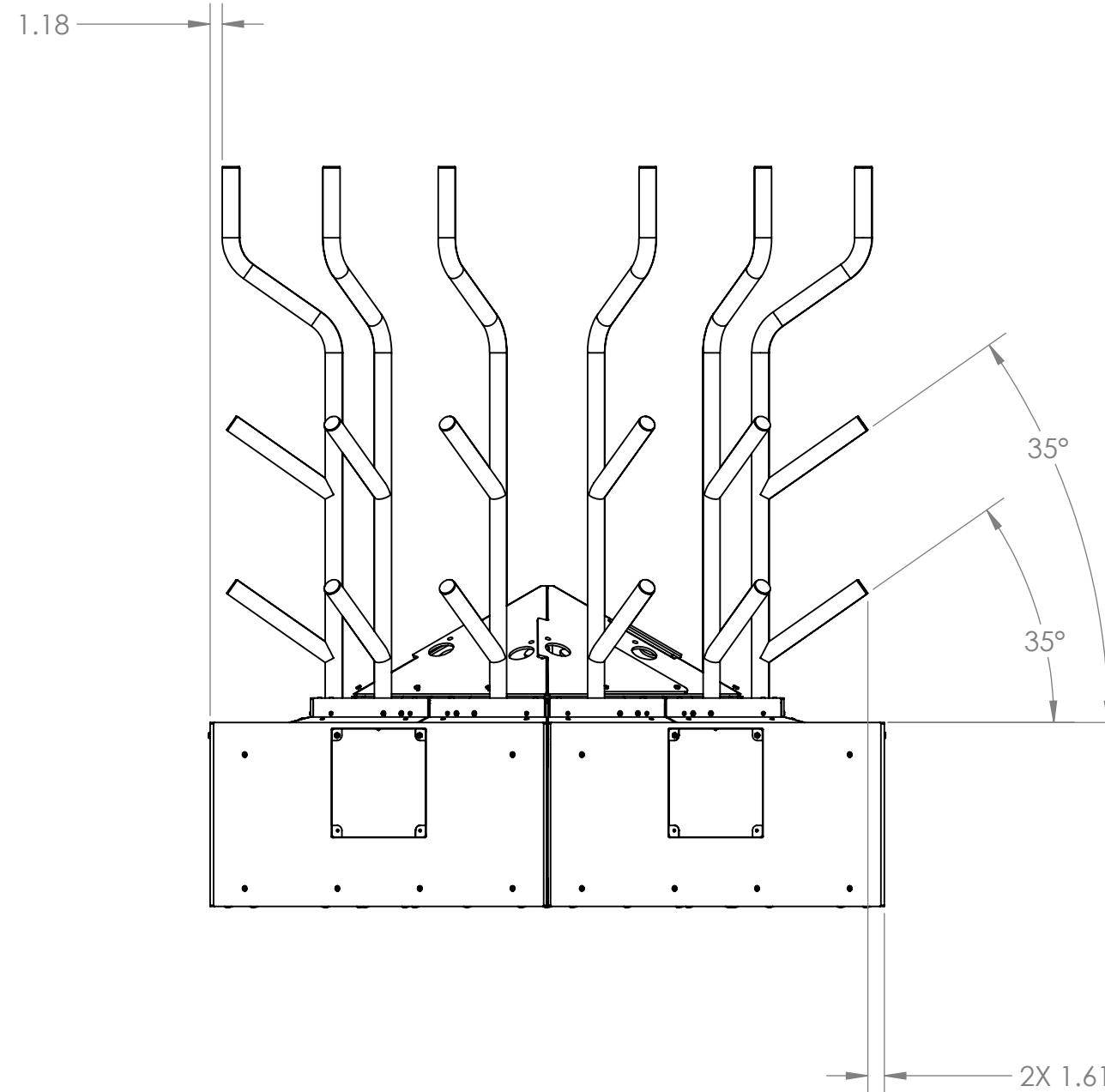
MATERIAL/FINISH:

DO NOT SCALE DRAWING

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	66
2	FE-00083	AprilTag	1
3	FE-00083	AprilTag	1
4	FE-00083	AprilTag	1
5	FE-00083	AprilTag	1
6	FE-00083	AprilTag	1
7	FE-00083	AprilTag	1
8	GE-25301	Scoring Pipe	12
9	GE-25302	Bumper Plastic	6
10	GE-25303	Hexagon Base Plate	1
11	GE-25304	Scorekeeper Triangle	2
12	GE-25305	Coral Catcher Bracket W PEMs	6
13	GE-25306	Coral Catcher Side	6
14	GE-25308	Hexagon Cover - Blue	1
15	GE-25310	Goal Slice Assembly	6
16	flat_phil_.25_20_.75	Steel Phillips Flat Head Screw, 1-4"-20 x 3/4" long, fully threaded	36
17	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	12
18	pin_quick_ring_.25_2.5	Pin, Ring-Grip Quick-Release with SS Ring, 1/4" Diameter, 2.5" Usable Length	24

FIELD	NAME	DATE	FIRST ROBOTICS COMPETITION		
DRAWN	NE	12/6/2024	SOLIDWORKS Modeling Solutions Partner		
TITLE: Reef					
SIZE	DWG. NO.	REV			
C	GE-25300				
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:10 SHEET 1 OF 2		

D



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/2$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .50$

MATERIAL/FINISH:
DO NOT SCALE DRAWING

FIELD NAME DATE
DRAWN NE 12/6/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

FIRST ROBOTICS COMPETITION SOLIDWORKS Modeling Solutions Partner

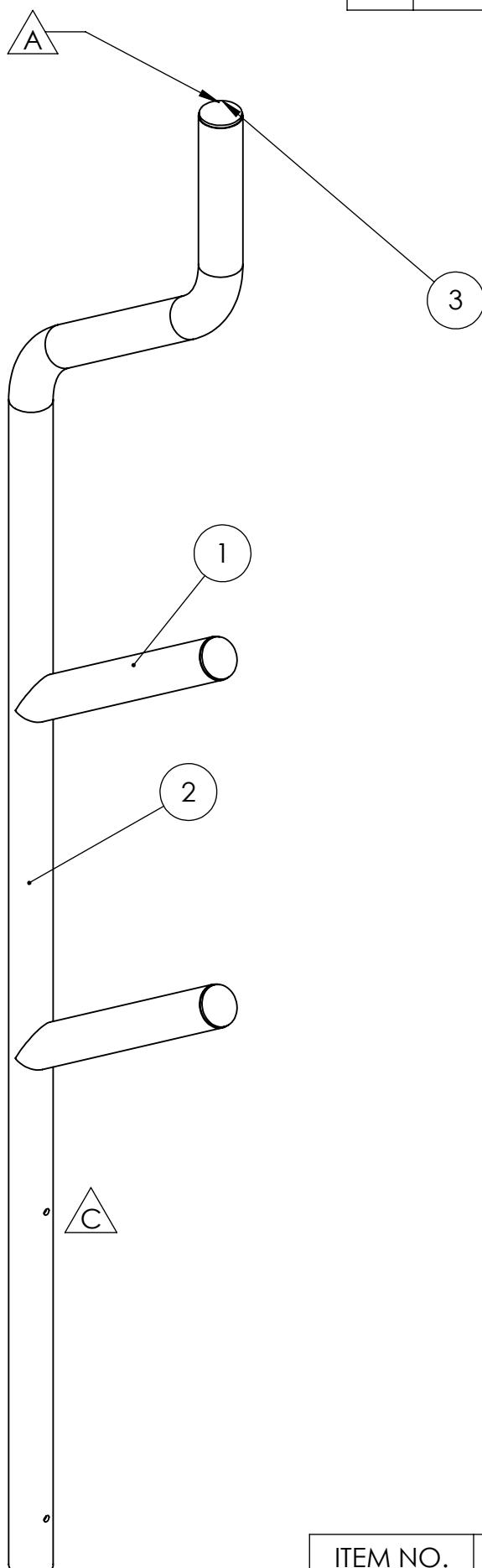
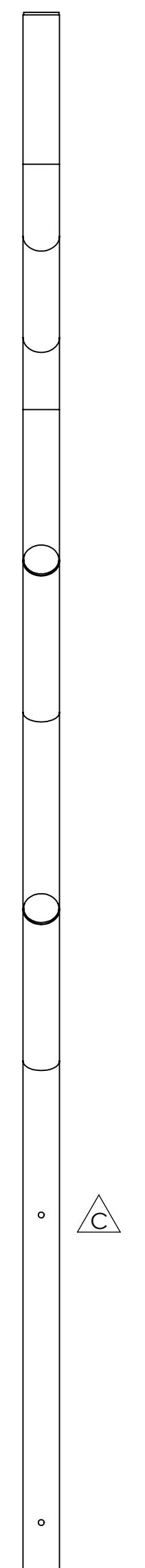
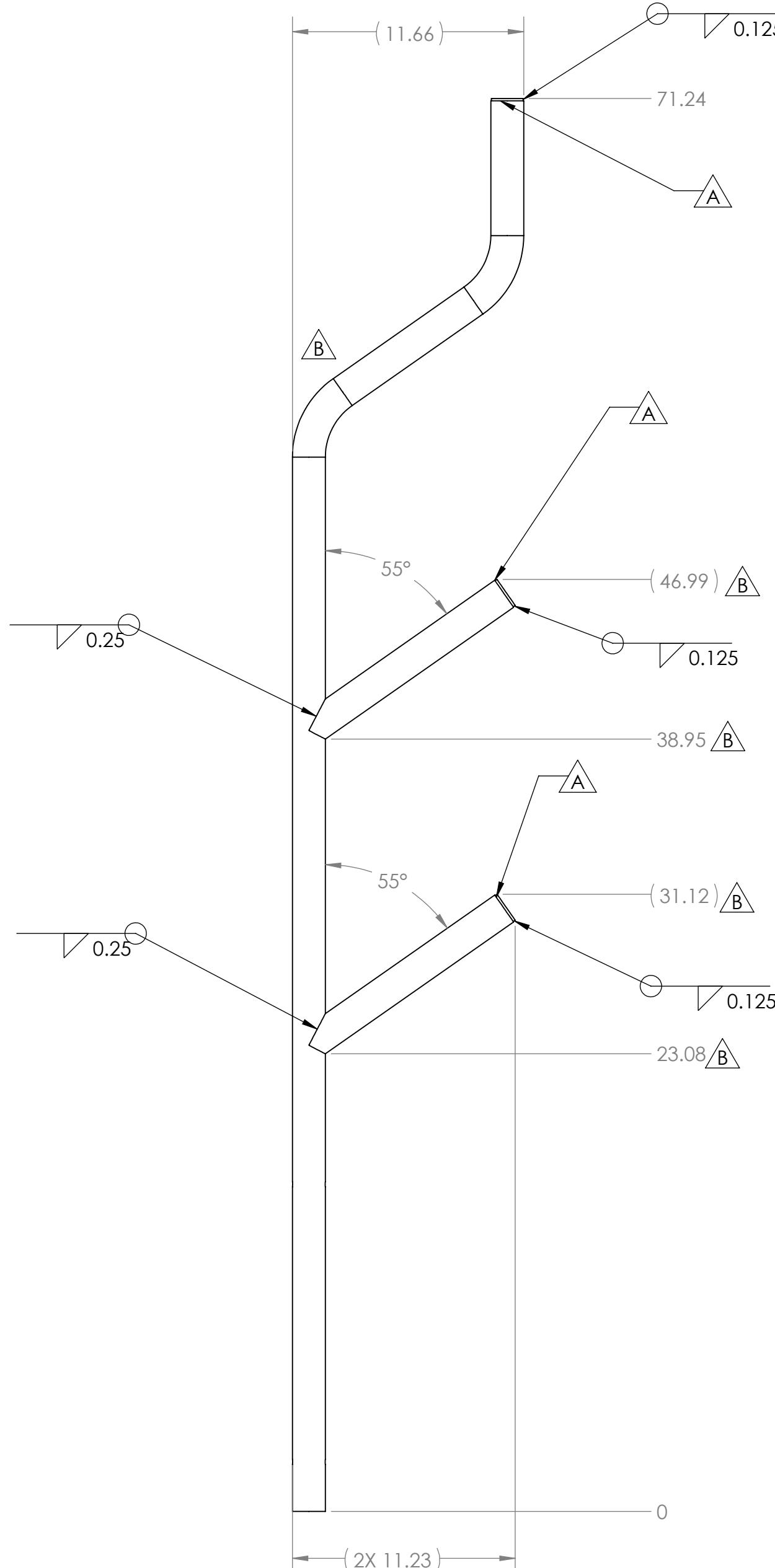
TITLE: Reef

SIZE DWG. NO. REV

C GE-25300

SCALE: 1:16 SHEET 2 OF 2

D



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25301-01	Small Scoring Pipe	2
2	GE-25301-02	Bent Scoring Pipe	1
3	GE-25301-03	GoalPipeCap	3

UNLESS OTHERWISE SPECIFIED:			WELD	NAME	DATE
DIMENSIONS ARE IN INCHES			DRAWN	NE	5/6/2024
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .015$					
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
MATERIAL/FINISH:	1.25" Sch. 40 Steel Tube, Powder Coated				
COMMENTS:	REMOVE ALL BURRS AND SHARP EDGES.				
DO NOT SCALE DRAWING			SIZE	DWG. NO.	REV
			C	GE-25301	C
			SCALE: 1:6	SHEET 1 OF 1	

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE: Scoring Pipe

4

3

2

1

D

D

C

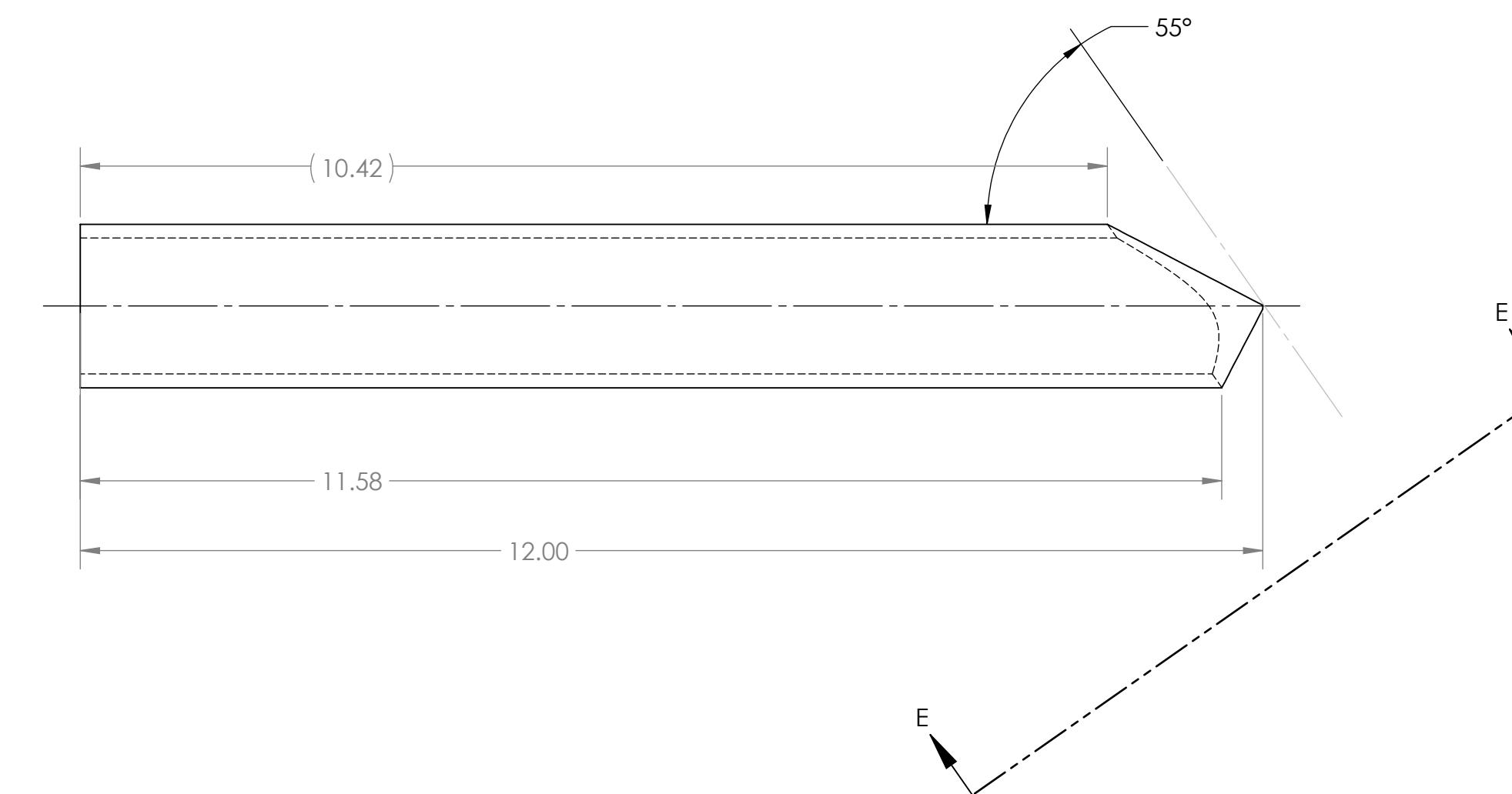
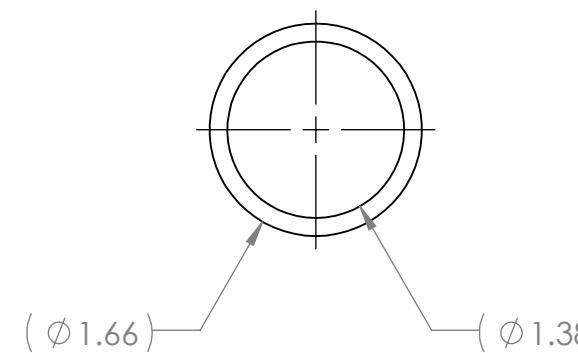
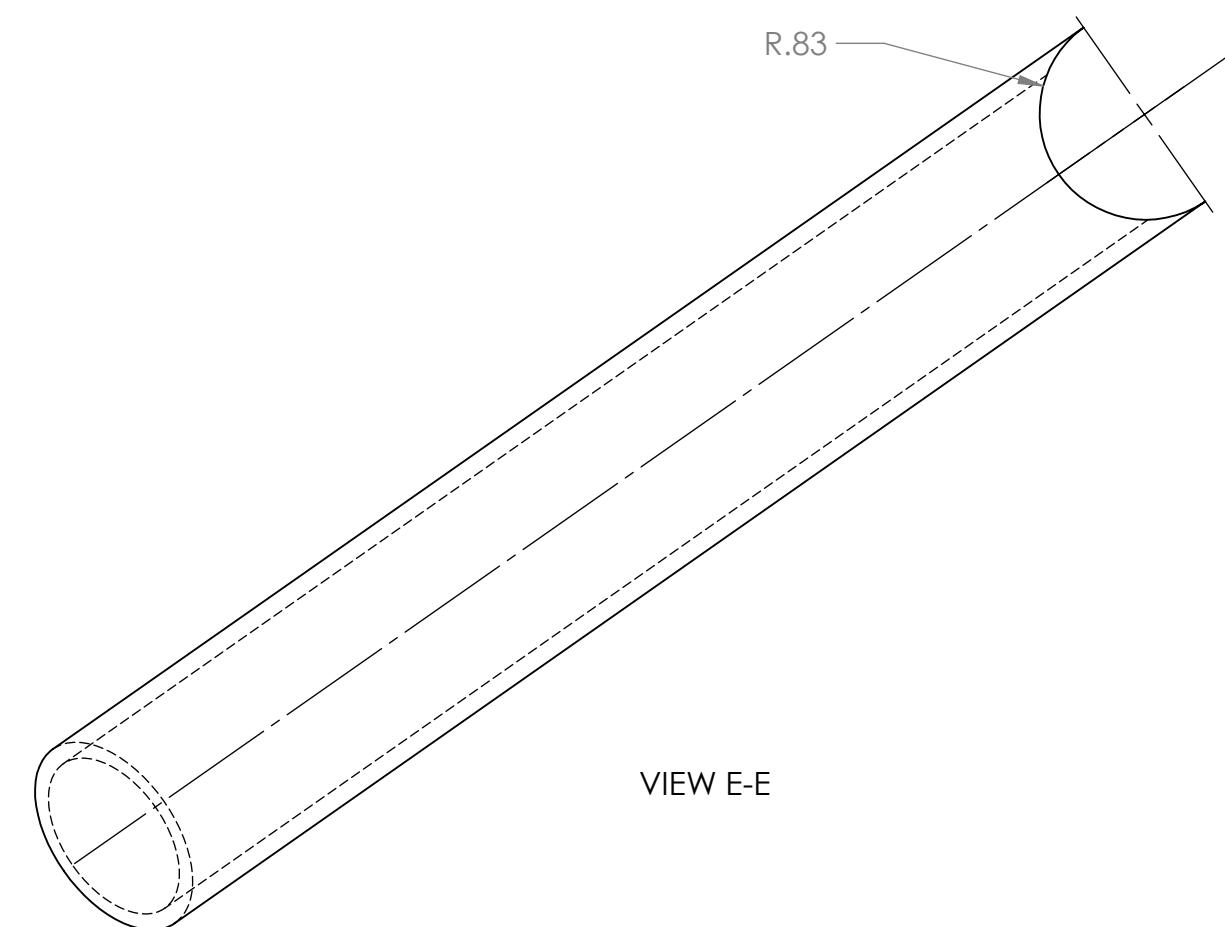
C

B

B

A

A



LOOKING FOR QUOTING ON
THE SELECTION OF
MATERIALS/FINISHES
DISCUSSED 5/3/2024

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:

FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:
1.25" Sch. 40 Steel Tube

DO NOT SCALE DRAWING

VEND NAME DATE
DRAWN NE 5/3/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN
THIS DRAWING IS THE SOLE
PROPERTY OF FIRST®. ANY
REPRODUCTION IN PART OR AS A
WHOLE WITHOUT THE WRITTEN
PERMISSION OF FIRST® IS
PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP
EDGES.

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Small Scoring
Pipe**

SIZE DWG. NO. REV
C GE-25301-01 B

SCALE: 2:3 SHEET 1 OF 1

4

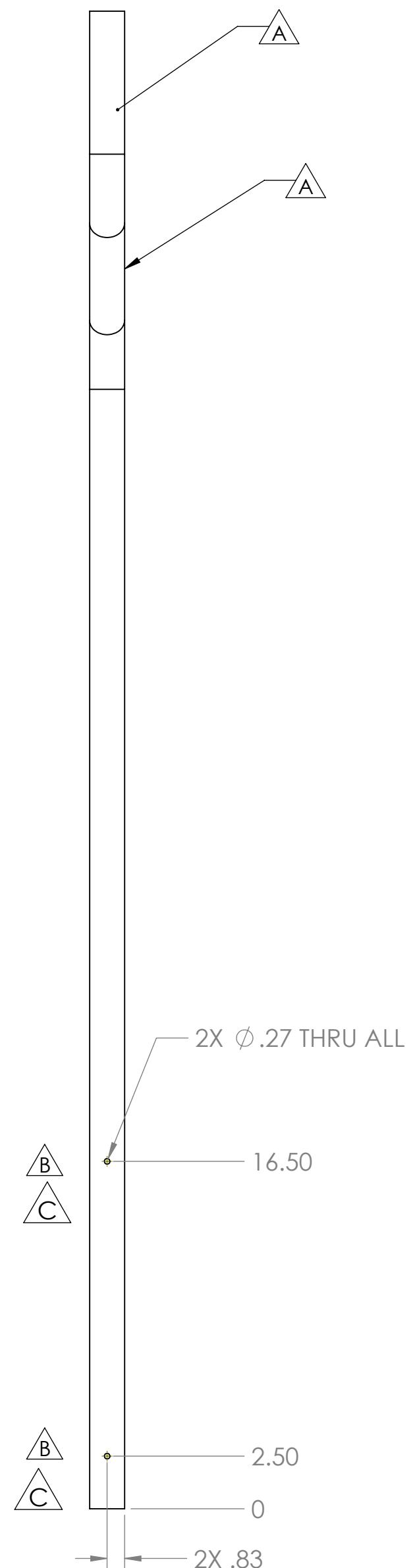
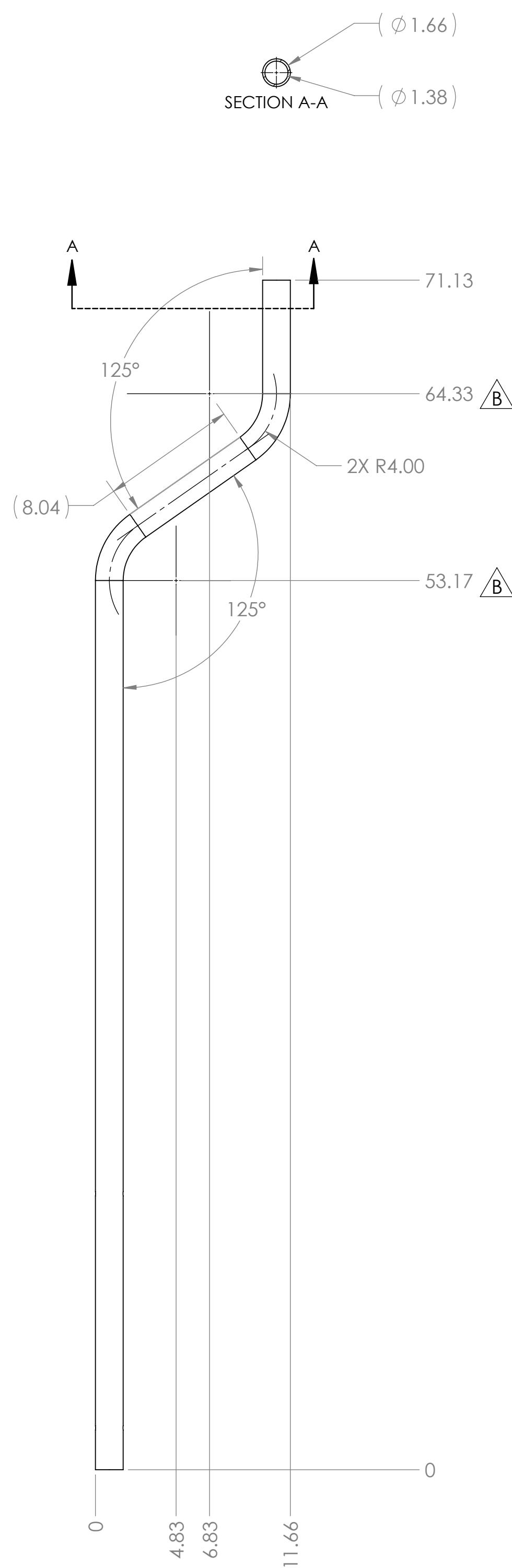
3

2

1

D

D



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	NE	5/3/2024

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

MATERIAL/FINISH:
1.25" Sch. 40 Steel Tube

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

FIRST ROBOTICS COMPETITION SOLIDWORKS Modeling Solutions Partner

TITLE: Bent Scoring Pipe

SIZE	DWG. NO.	REV
C	GE-25301-02	C

SCALE: 1:6 **SHEET** 1 OF 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C3, D3	A	REMOVED SEVERAL HOLES AND RELOCATED REMAINING THRU HOLES	8/1/2024	NE
A3, B3, C3	B	ALTERED BEND LOCATIONS AND CHANGED HOLES TO SLOTS	8/15/2024	NE
A3	C	REVERTED SLOTS BACK TO HOLES AND REMOVED DETAIL VIEW	9/19/2024	NE

4

3

2

1

D

D

C

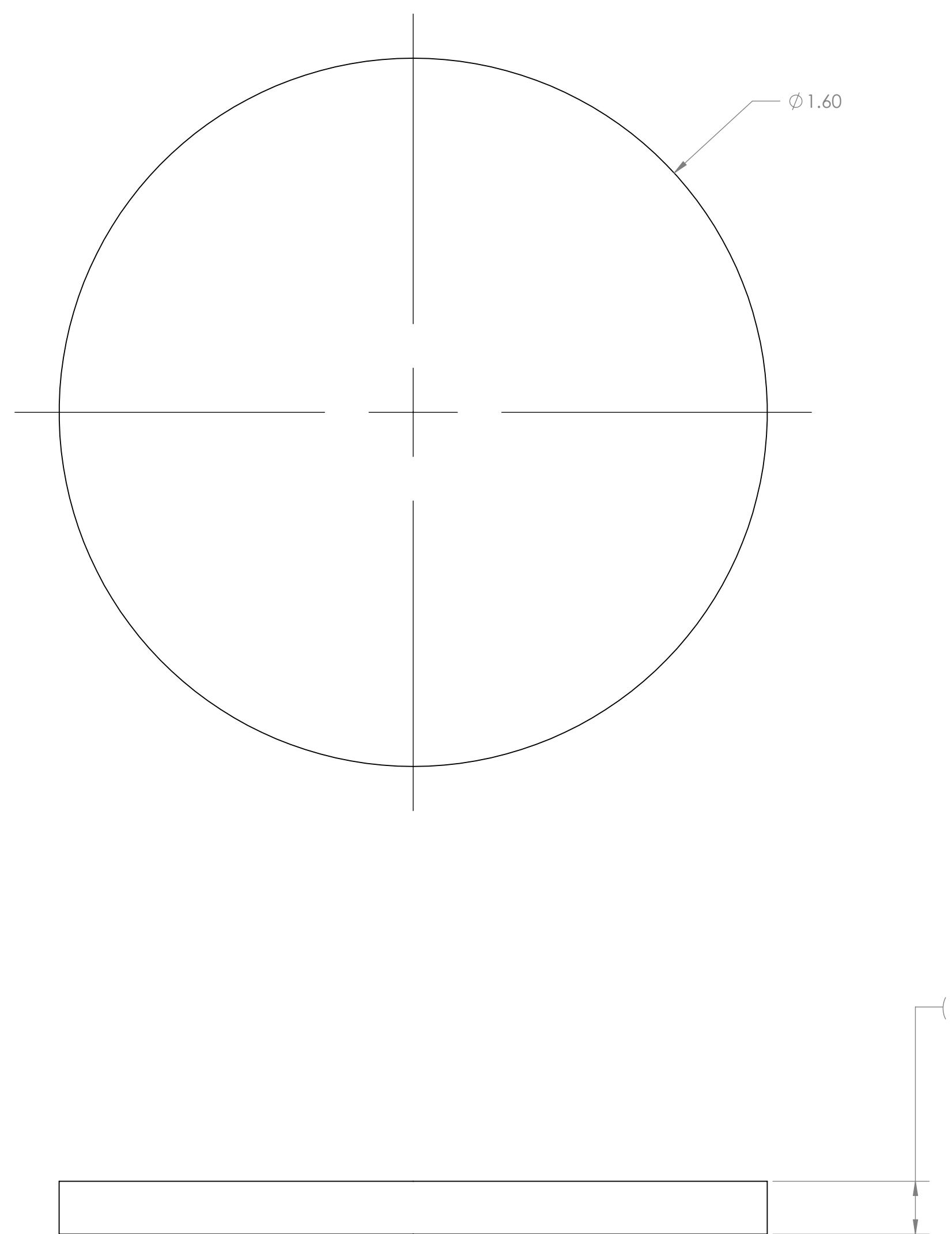
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	NE	8/1/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:			
11 GA STEEL			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

 **FIRST
ROBOTICS
COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE:
GoalPipeCap

SIZE DWG. NO. REV
C GE-25301-03 A

SCALE: 4:1 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

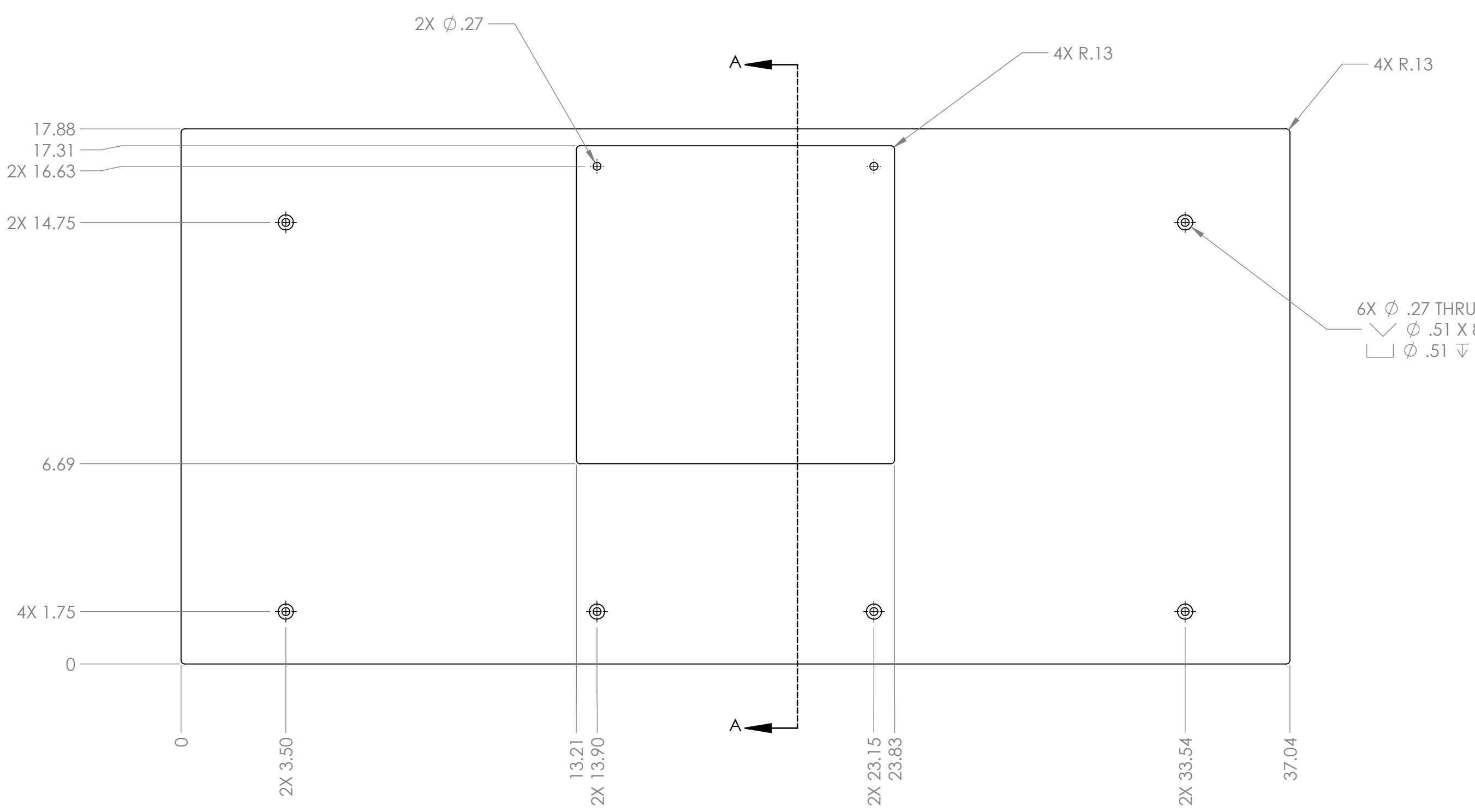
C

B

B

A

A



TITLE: Bumper Plastic		
SIZE	DWG. NO.	REV
C	GE-25302	
SCALE: 2:7	SHEET 1 OF 1	

FIRST ROBOTICS COMPETITION Modeling Solutions Partner

4

3

2

1

4

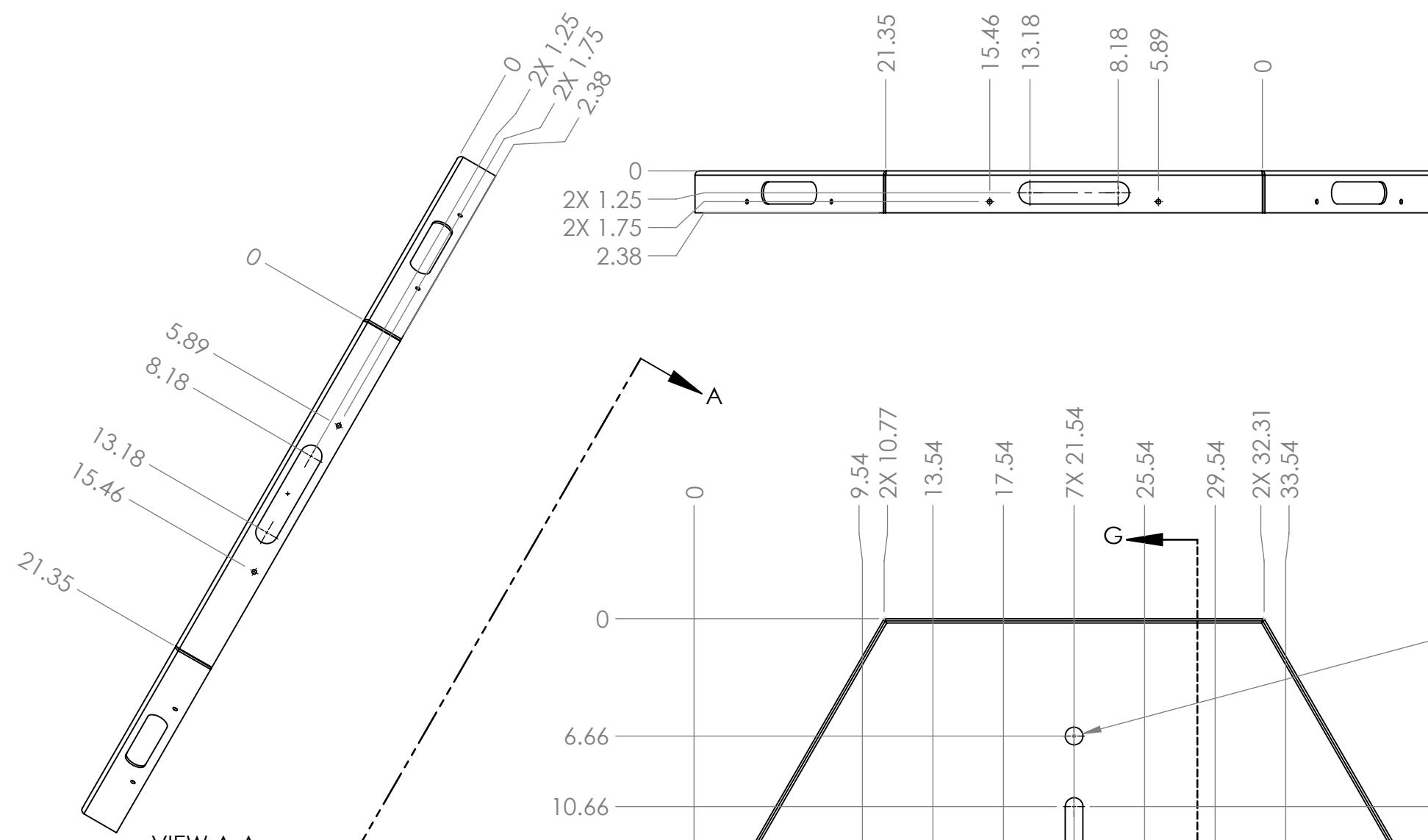
3

2

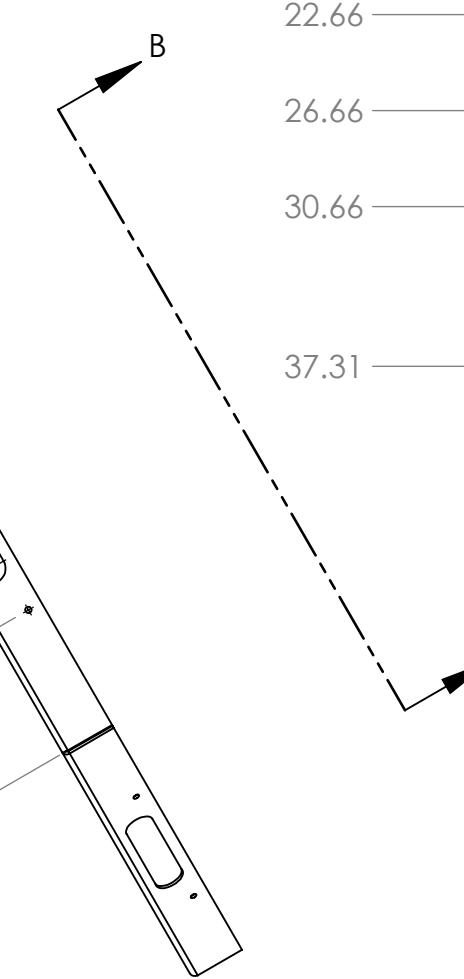
1

D

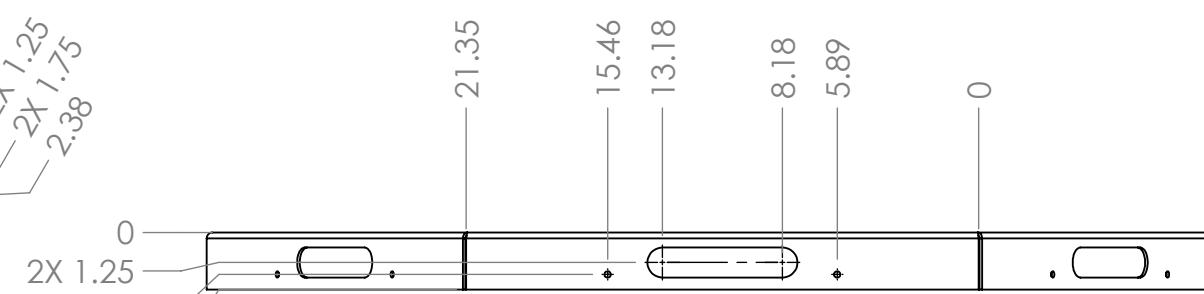
D



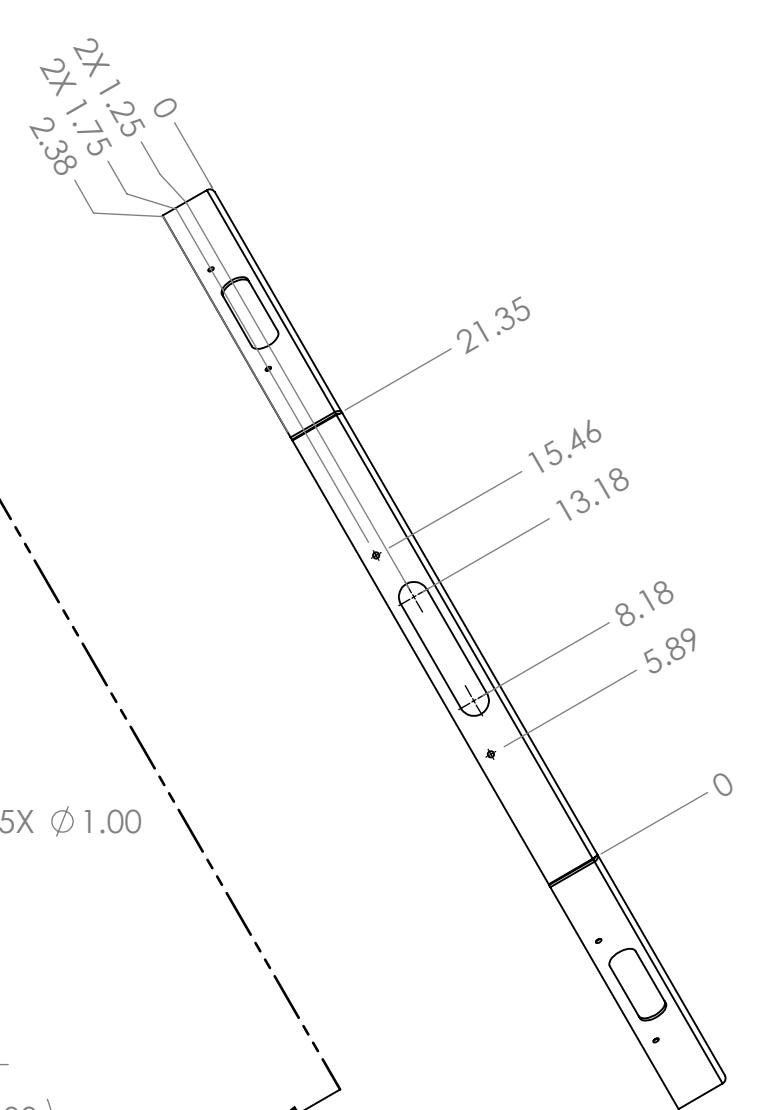
VIEW A-A



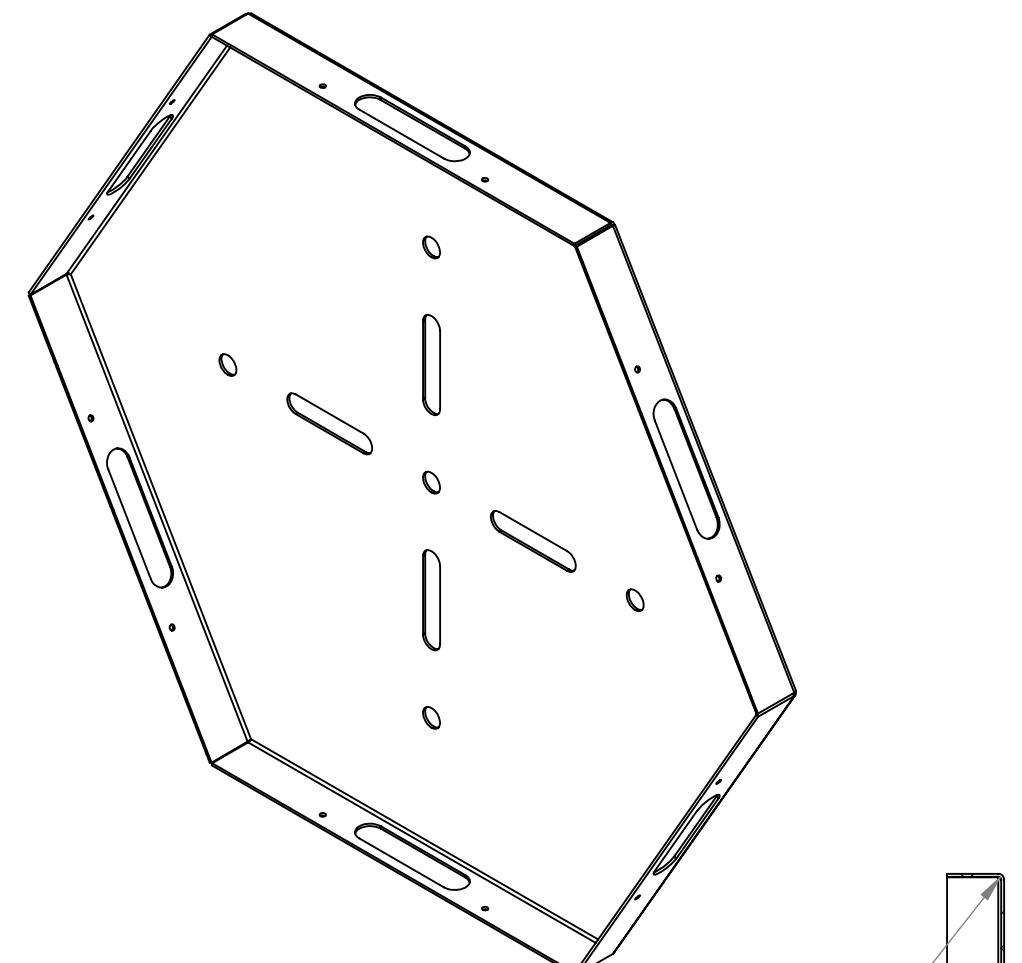
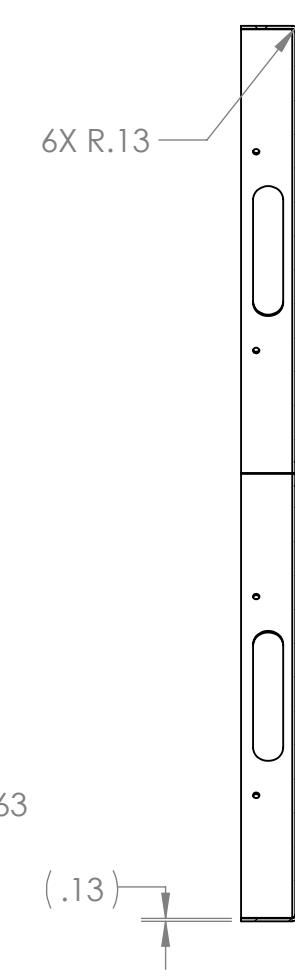
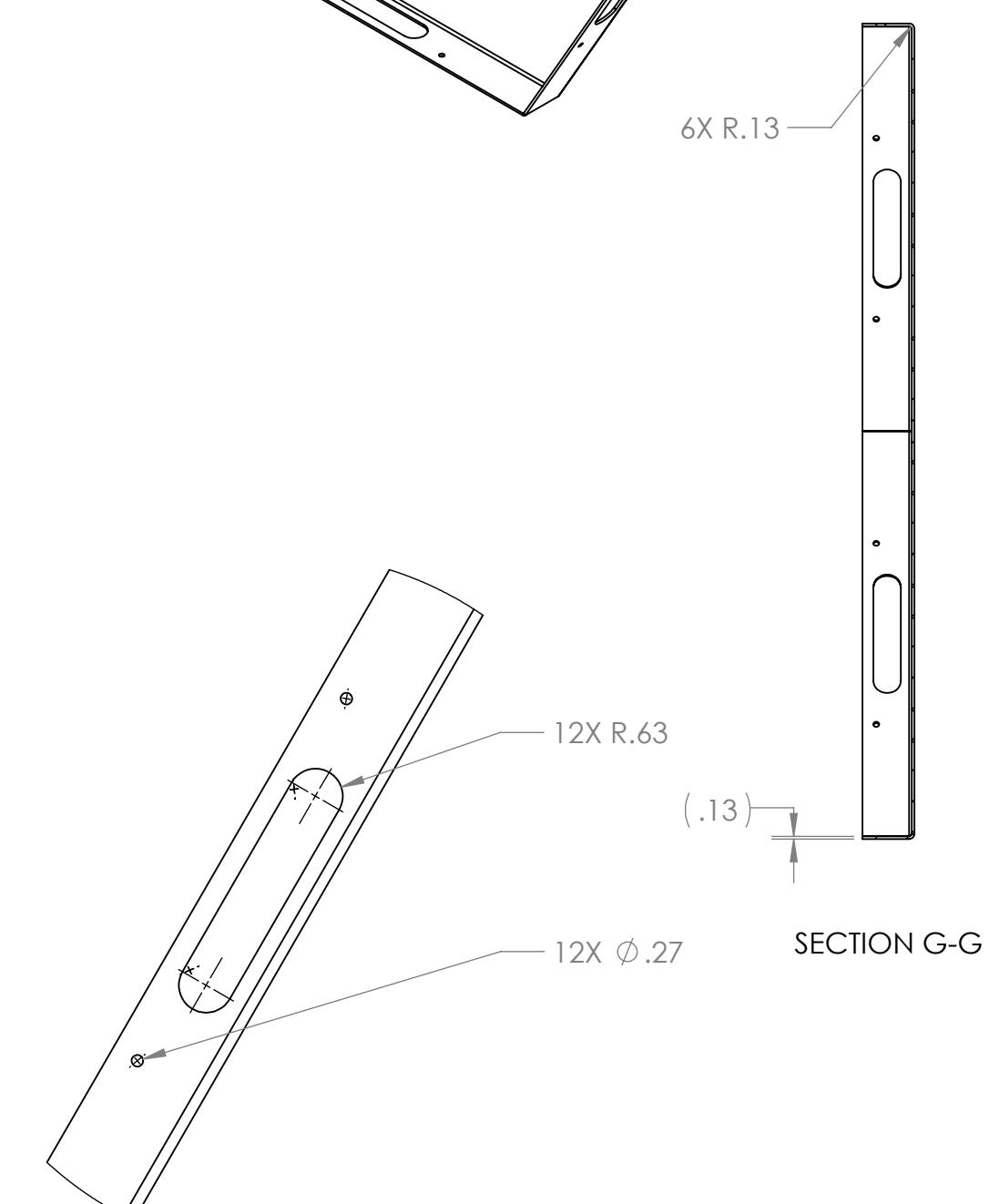
VIEW B-B



VIEW C-C



VIEW D-D

DETAIL E
SCALE 1:4

SECTION G-G

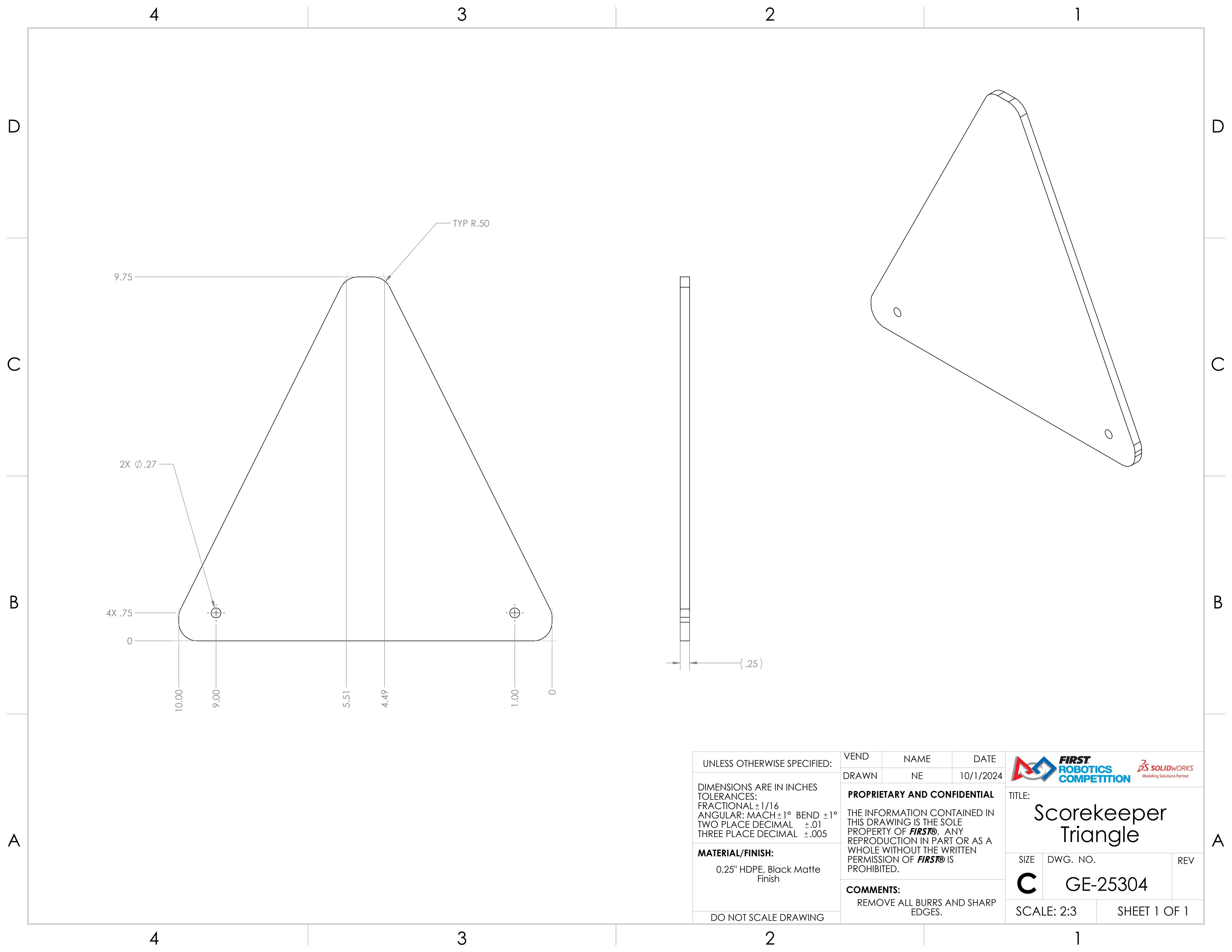
UNLESS OTHERWISE SPECIFIED:			BEND	NAME	DATE
DIMENSIONS ARE IN INCHES					
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$					
TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$					
PROPRIETARY AND CONFIDENTIAL					
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST IS PROHIBITED.					
MATERIAL/FINISH: 8GA 5052 Aluminum					
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE: Hexagon Base Plate

SIZE	DWG. NO.	REV
C	GE-25303	
SCALE: 1:8	SHEET 1 OF 1	



4

3

2

1

D

D

C

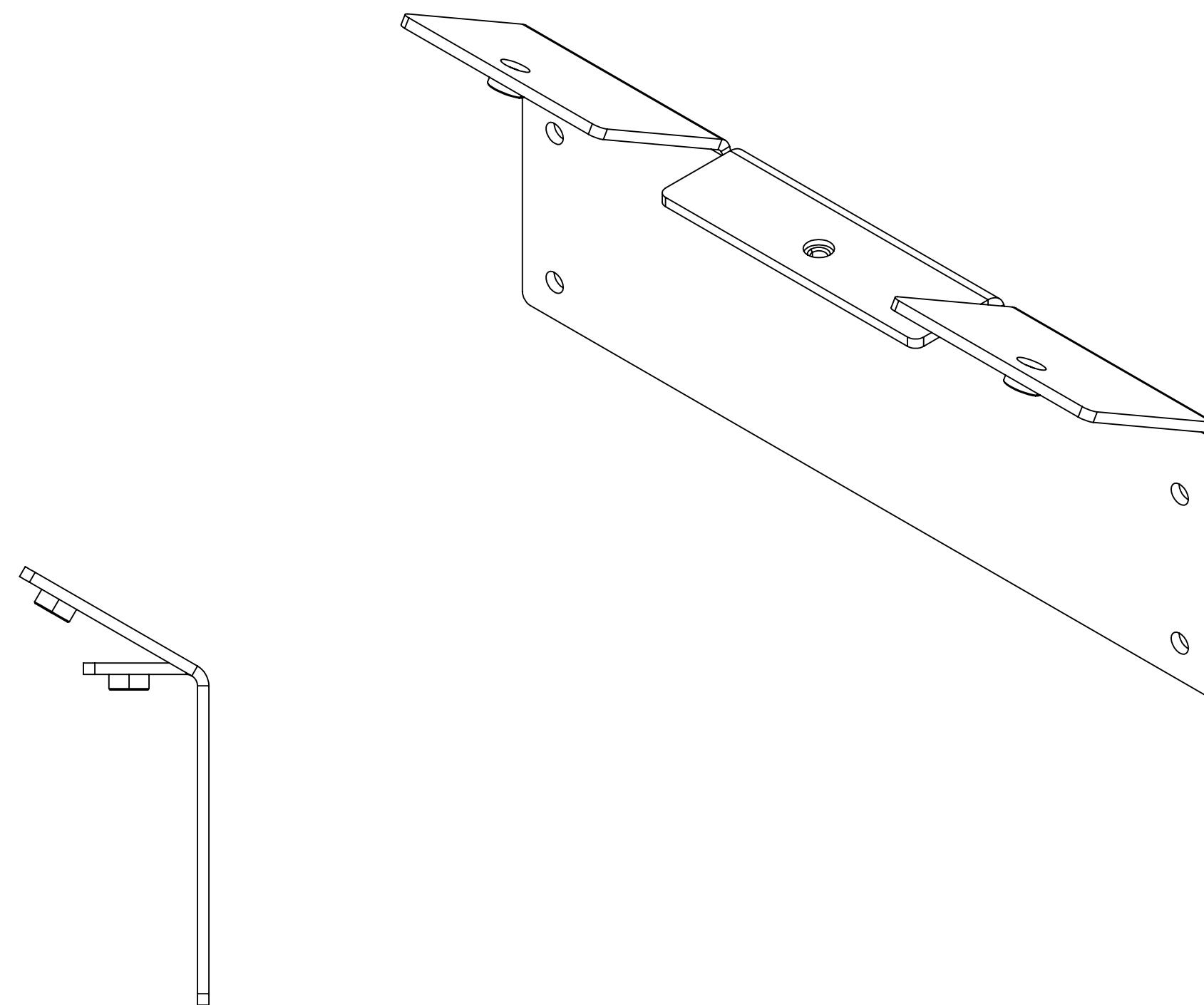
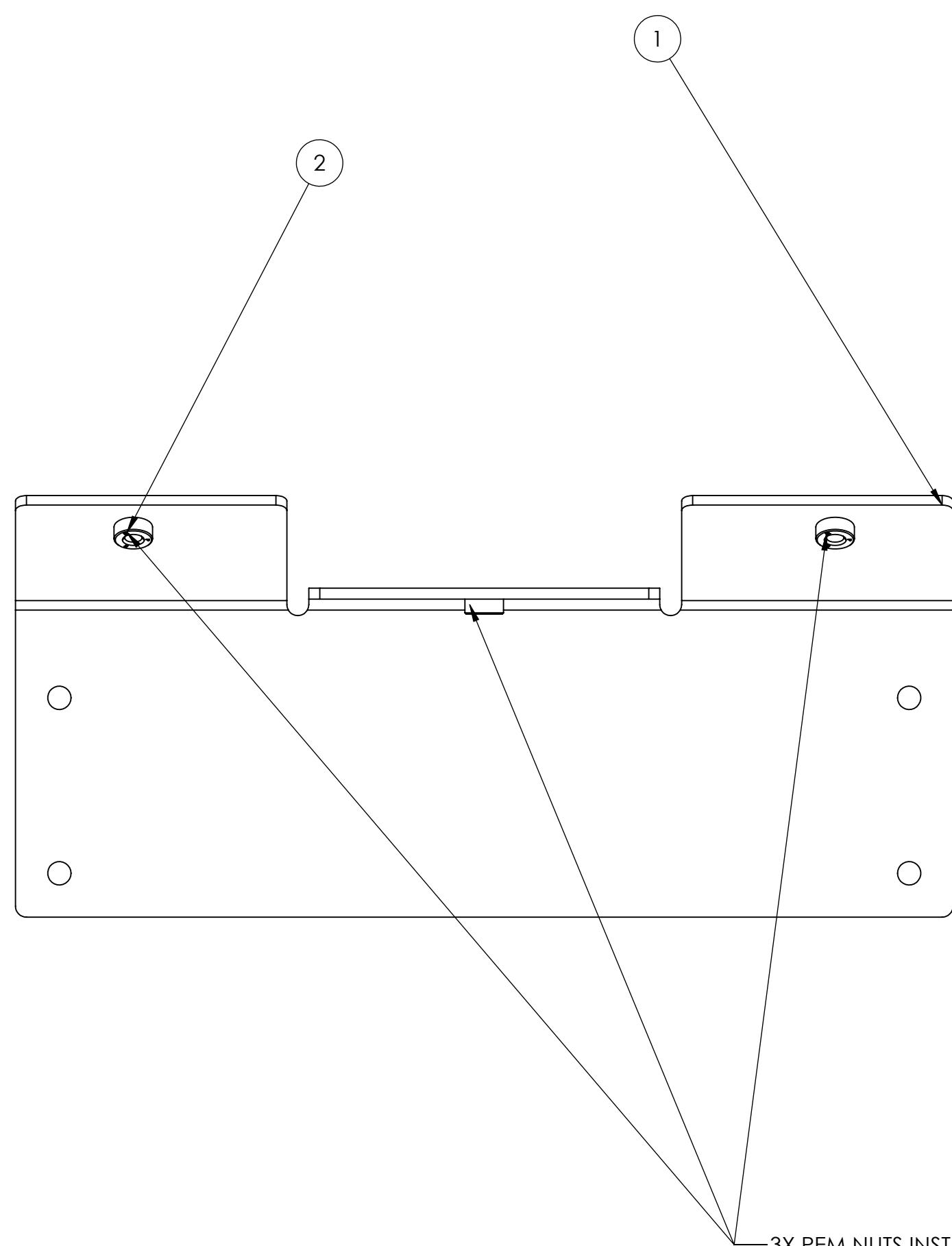
C

B

B

A

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25305-01	Coral Catcher Bracket	1
2	pem_clinchnut_.25_20 .054	1/4-20 self-clinching nut, .054 shank	3

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

DRAWN NAME DATE

NE 10/1/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN

THIS DRAWING IS THE SOLE

PROPERTY OF FIRST®. ANY

REPRODUCTION IN PART OR AS A

WHOLE WITHOUT THE WRITTEN

PERMISSION OF FIRST® IS

PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP

EDGES.

DO NOT SCALE DRAWING



SOLIDWORKS

Modeling Solutions Partner

TITLE:

Coral Catcher
Bracket W PEMs

SIZE DWG. NO. REV

C GE-25305

SCALE: 2:3 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

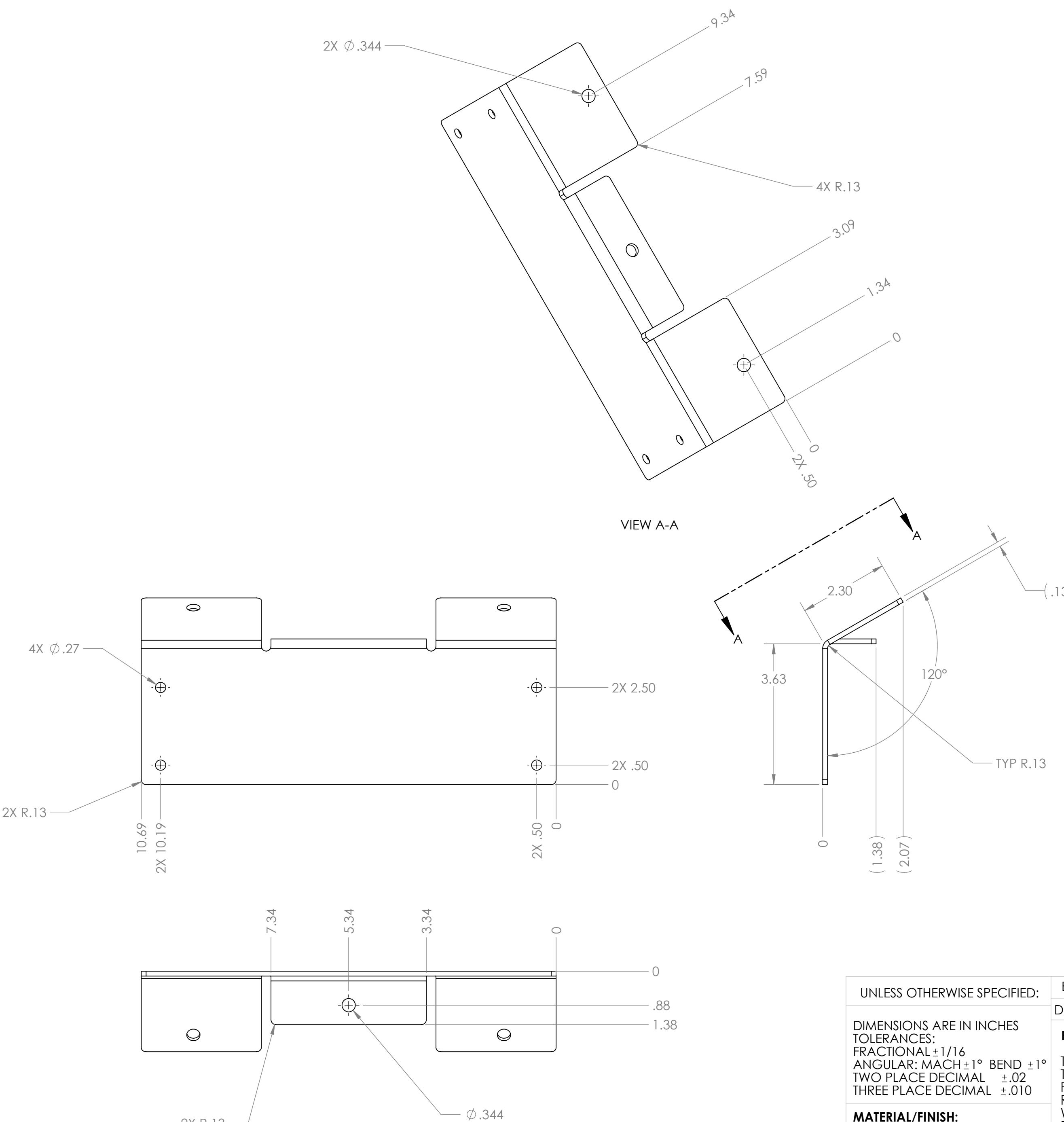
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:		
BEND	NAME	DATE
DRAWN	NE	10/1/2024
PROPRIETARY AND CONFIDENTIAL		
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.		
MATERIAL/FINISH: 8GA 5052 Aluminum		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

DO NOT SCALE DRAWING

TITLE:	Coral Catcher Bracket	
SIZE	DWG. NO.	REV
C	GE-25305-01	
SCALE: 1:2		SHEET 1 OF 1

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

4

3

2

1

D

D

21.00

14.77
14.43
14.32
14.2110.74
10.078.62
7.95
7.61
7.167.05
6.822X .75
0

0

3.51

3.96

6.70

6.75

6.76

7.19

7.64

10.47

11.03

14.36

14.75

15.26

16.09

16.15

17.93

18.83

21.50

2X Ø .50

2X Ø 2.50

2X Ø .27

TYP R.13

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$

VEND NAME DATE

DRAWN NE 10/1/2024



SOLIDWORKS Modeling Solutions Partner

TITLE: Coral Catcher Side

SIZE DWG. NO. REV

C GE-25306

SCALE: 1:3 SHEET 1 OF 1

MATERIAL/FINISH:

0.25" Polycarbonate

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

4

3

2

1

D

D

C

C

B

B

A

A

4

3

2

1

D

D

C

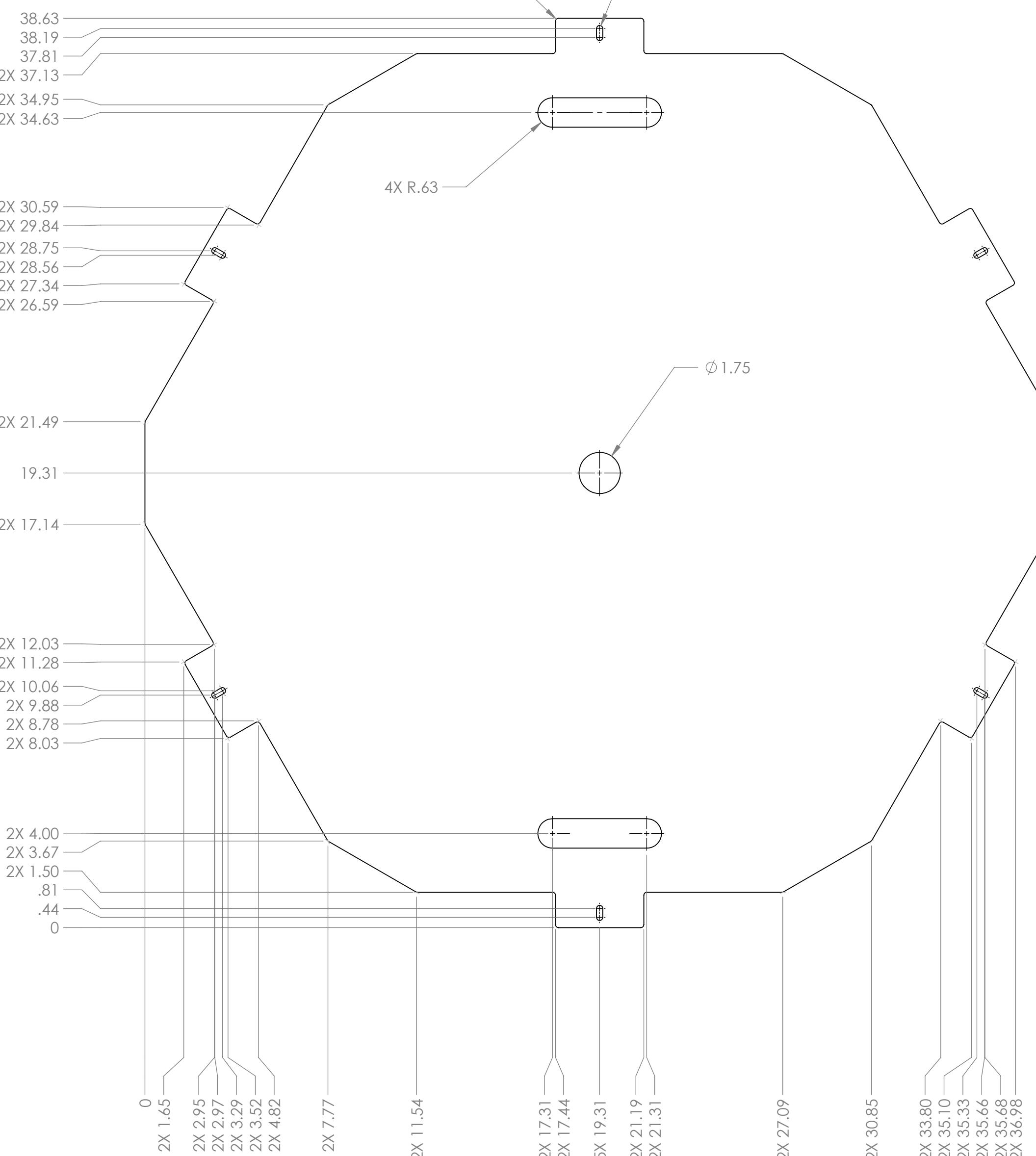
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:

VEND

NAME

DATE

DRAWN

NE

10/1/2024

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN
THIS DRAWING IS THE SOLE
PROPERTY OF FIRST[®]. ANY
REPRODUCTION IN PART OR AS A
WHOLE WITHOUT THE WRITTEN
PERMISSION OF FIRST[®] IS
PROHIBITED.

MATERIAL/FINISH:

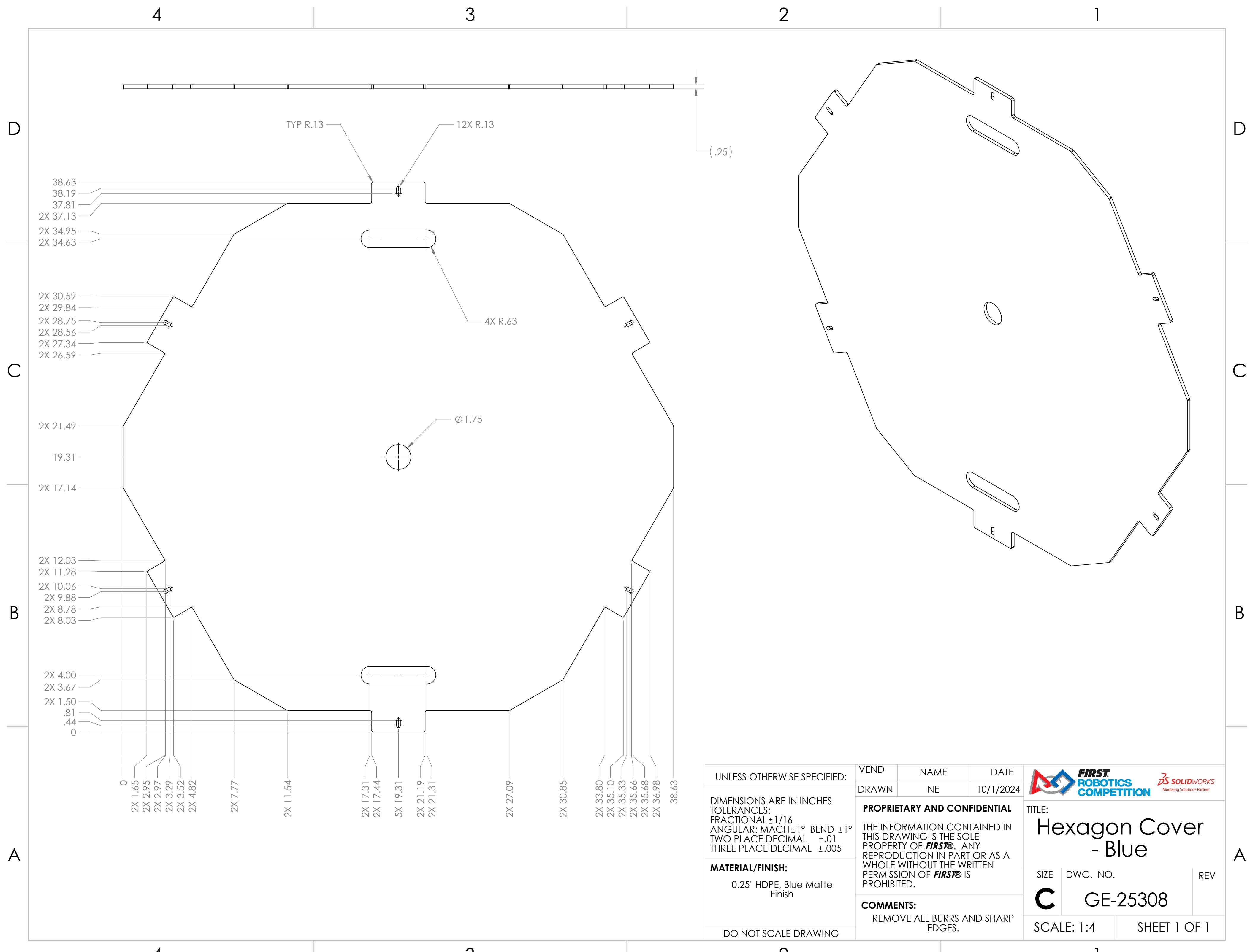
0.25" HDPE, Red Matte
Finish

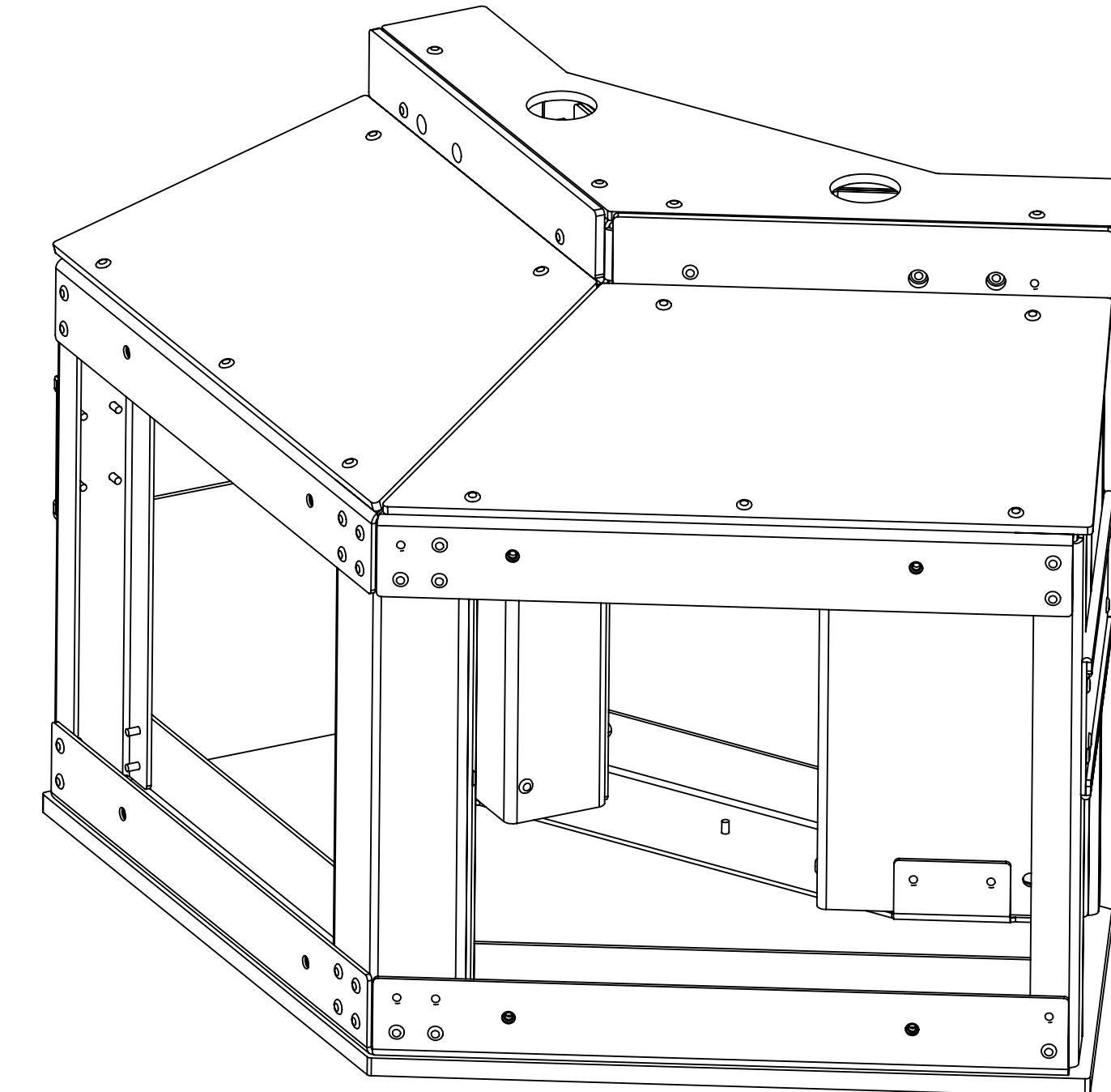
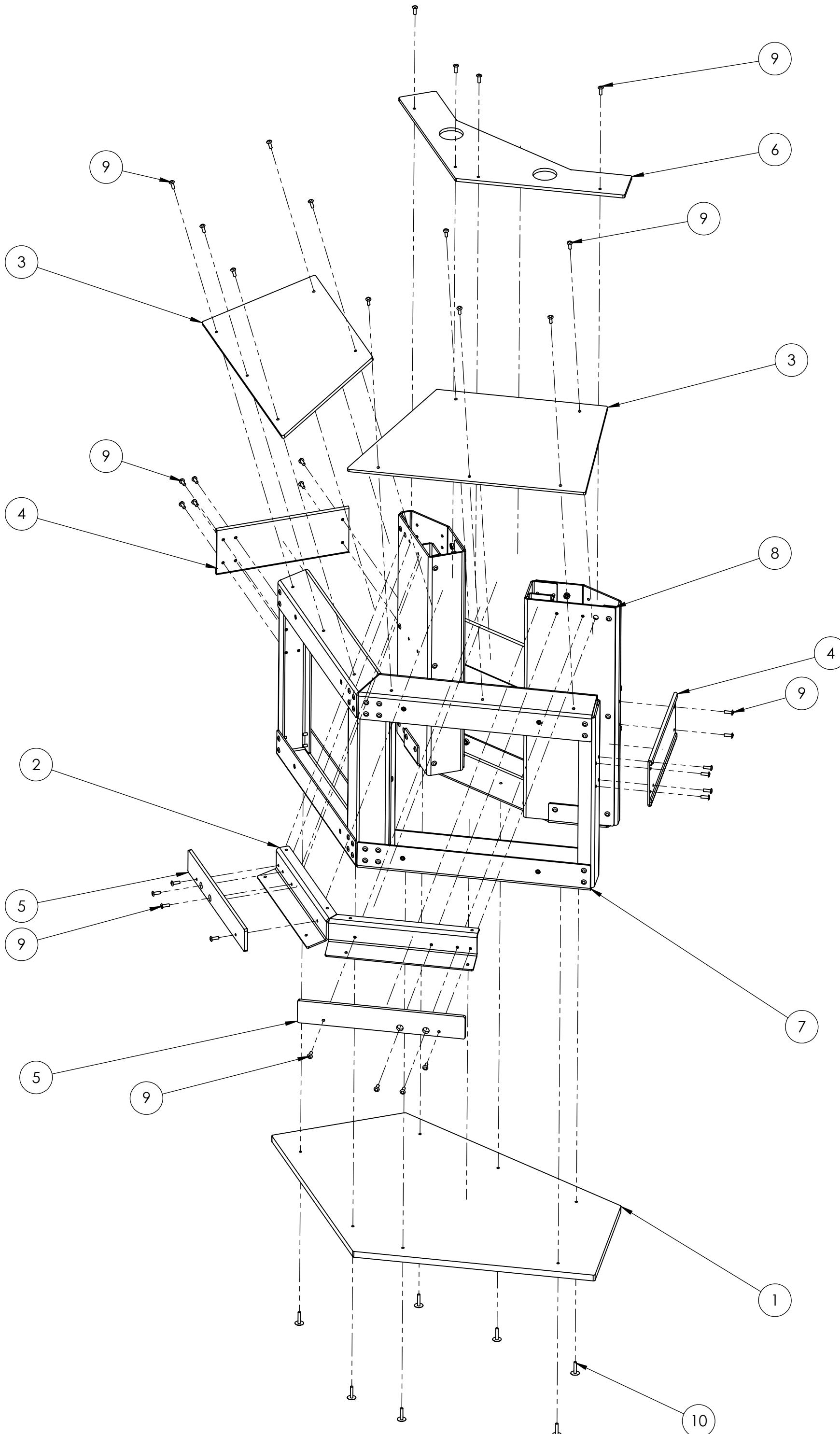
COMMENTS:

REMOVE ALL BURRS AND SHARP
EDGES.

DO NOT SCALE DRAWING

SOLIDWORKS
Modeling Solutions Partner





NOTES:
1. ASSEMBLE COMPONENTS IN DISPLAYED ORIENTATION

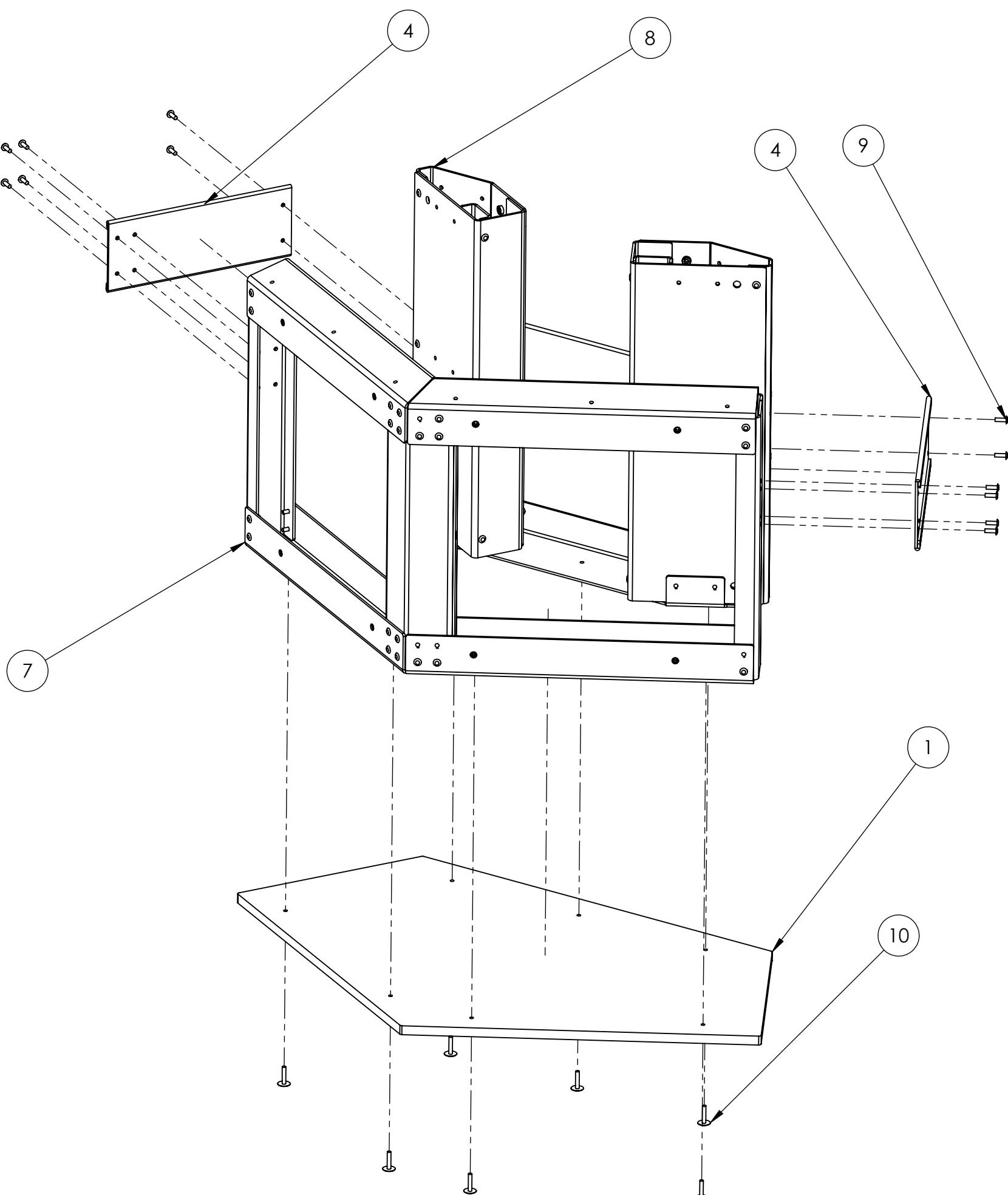
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25311	Slice Base	1
2	GE-25312	Trough Floor Bracket	1
3	GE-25313	Trough Floor	2
4	GE-25314	Slice Outside Depth Support	2
5	GE-25315	Trough Back	2
6	GE-25316	Slice Top Cover	1
7	GE-25320	Outer Slice Assembly	1
8	GE-25330	Inner Slice Assembly	1
9	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	34
10	rivet_.1875_.625-.075_largeHead	rivet_.1875_.625-0.75_largeHead	7

UNLESS OTHERWISE SPECIFIED:		
VEND	NAME	DATE
DRAWN	NE	10/1/2024
PROPRIETARY AND CONFIDENTIAL		
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.		
COMMENTS:		
REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING		

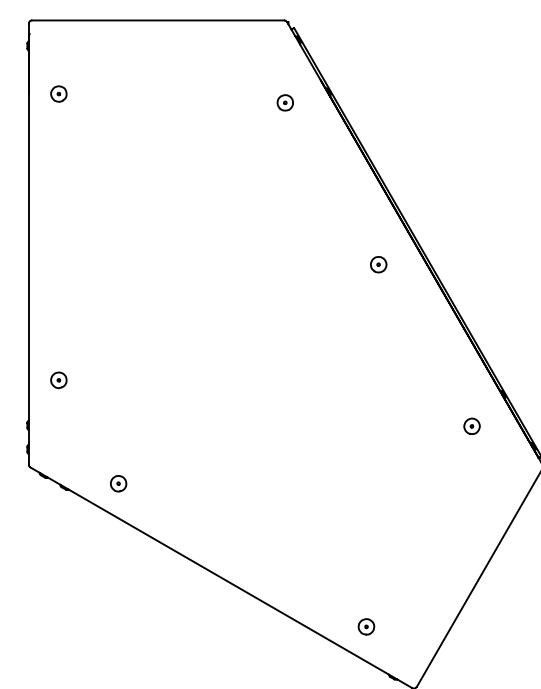
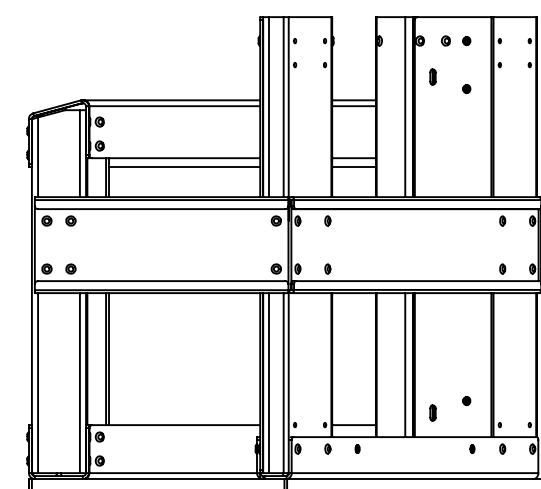
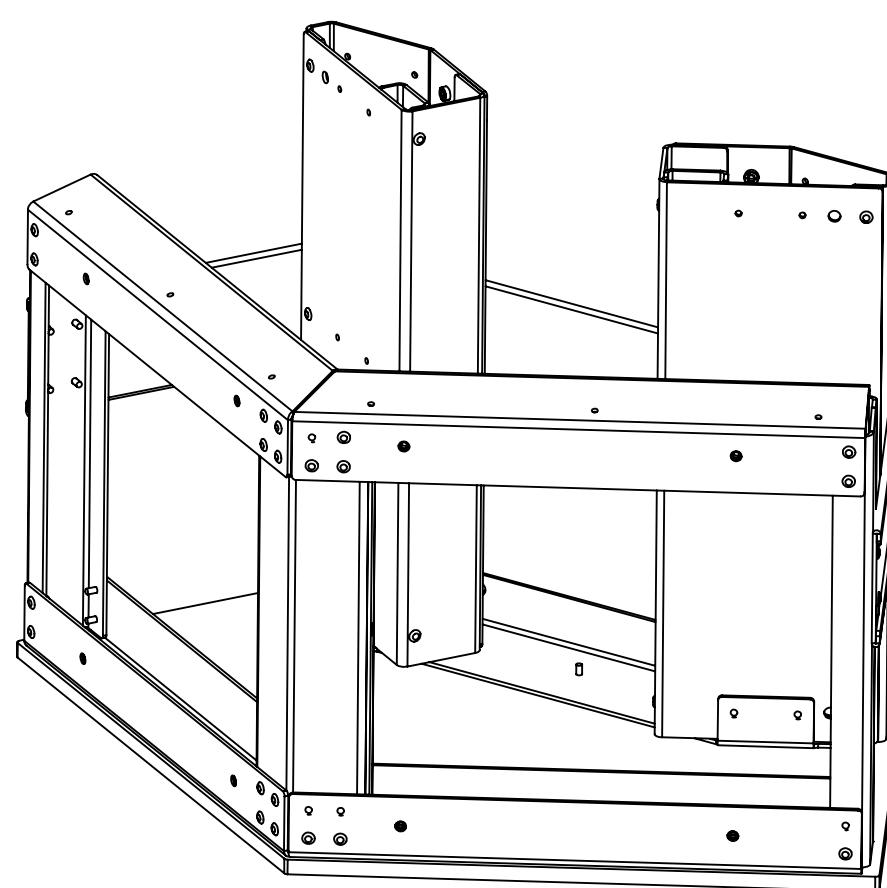
TITLE: **Goal Slice Assembly**

SIZE	DWG. NO.	REV
C	GE-25310	
SCALE: 1:6		SHEET 1 OF 5

D



STARTING WITH (1), FASTEN (8) AND (7) TO (1) THROUGH THE
BOTTOM WITH 7X (10). ON THE SIDES OF THE STRUCTURE ADD 2X (4) TO
(8) AND (7) WITH 6X (9) ON EACH SIDE.



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	
DRAWN	NE	10/1/2024		
PROPRIETARY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				
MATERIAL/FINISH:	SIZE	DWG. NO.	REV	
	C	GE-25310		
COMMENTS:	SCALE: 1:6	SHEET 2 OF 5		
DO NOT SCALE DRAWING				

4

3

2

1

D

D

C

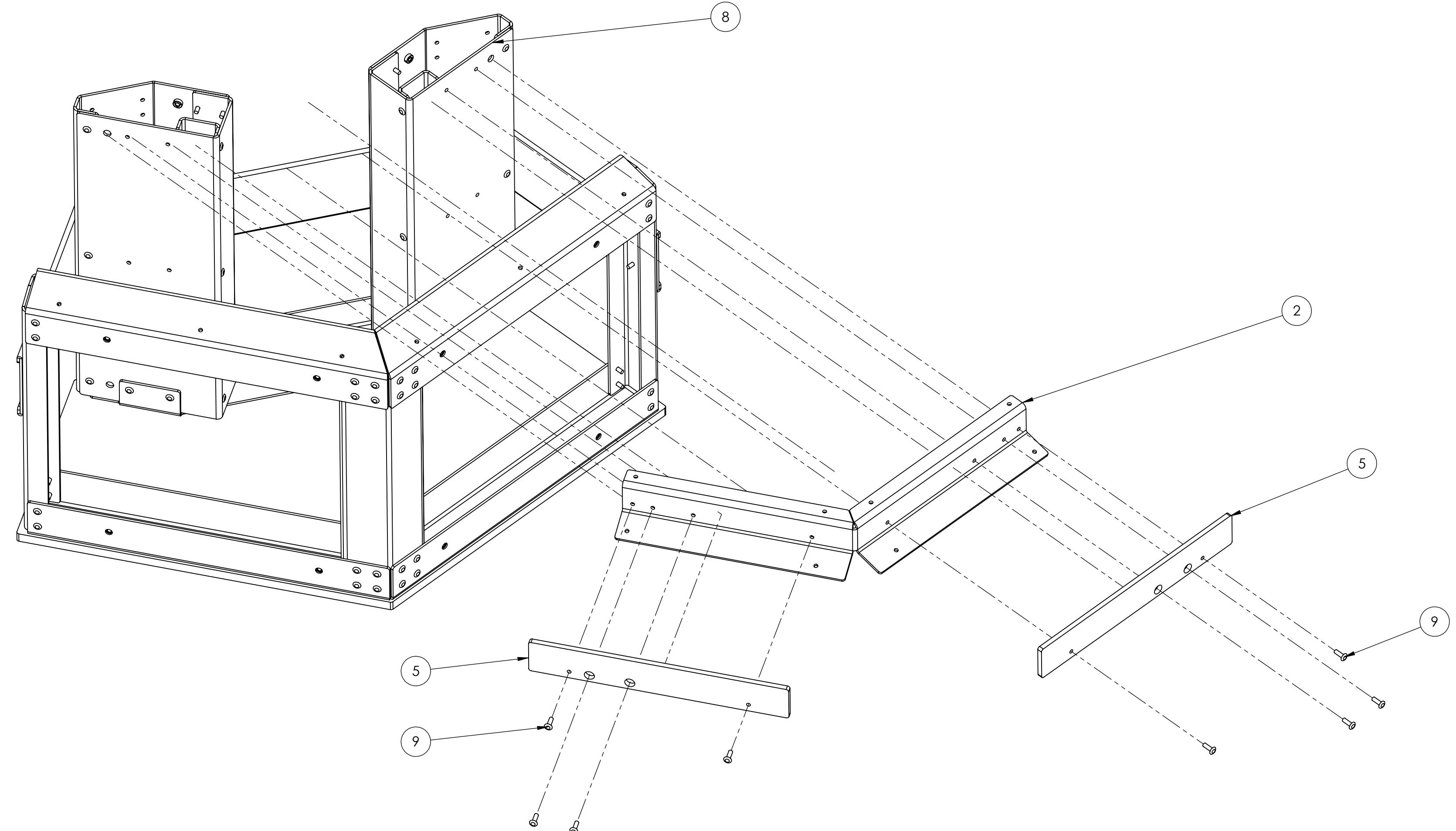
C

B

B

A

A



ATTACH 2X (5) TO (2) WITH 2X (9) EACH. THEN, ATTACH (2) TO (8) WITH 4X MORE (9).

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:

FRACTIONAL $\pm 1/16$

ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$

TWO PLACE DECIMAL $\pm .01$

THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	NE	10/1/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

TITLE: Goal Slice Assembly

SIZE DWG. NO. REV

C GE-25310

SCALE: 1:12 SHEET 3 OF 5

4

3

2

1

4

3

2

1

D

D

C

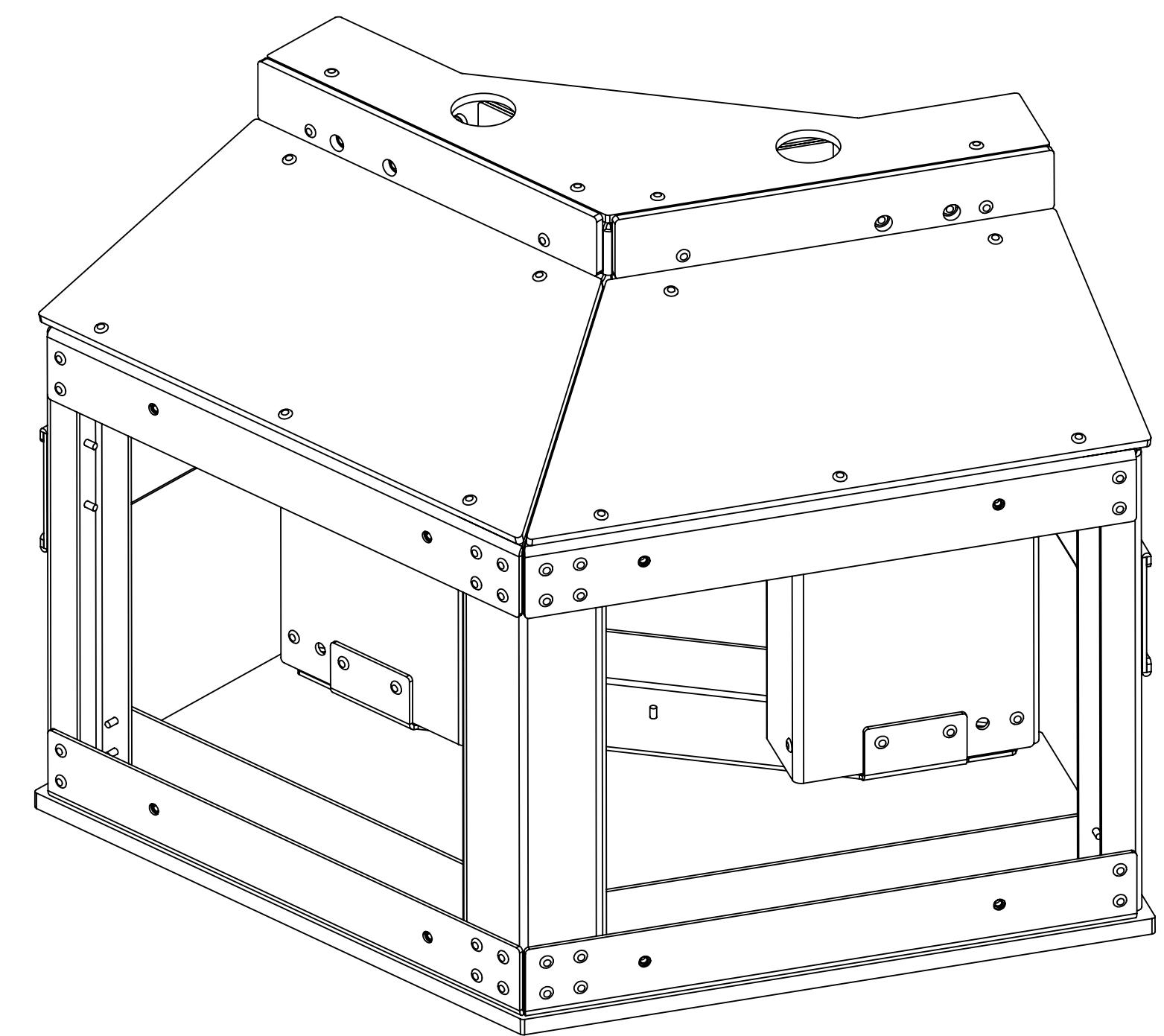
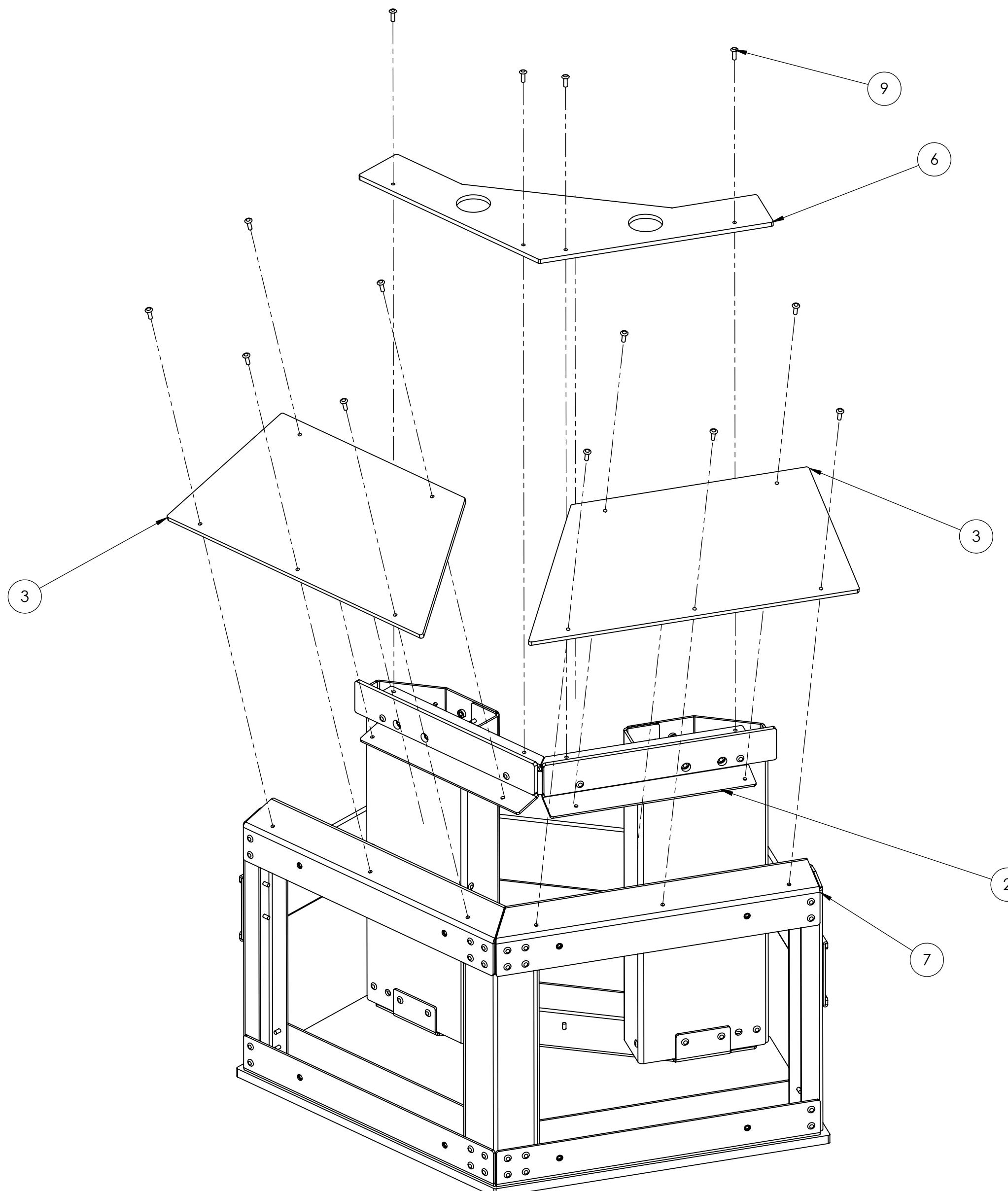
C

B

B

A

A



FASTEN 2X (3) TO (2) AND (7) WITH 5X (9)
EACH. FINALLY, ATTACH (6) TO (2) WITH 4X (9)

UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	TITLE:					
DRAWN	NE	10/1/2024								
PROPRIETARY AND CONFIDENTIAL										
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.										
MATERIAL/FINISH:										
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.										
DO NOT SCALE DRAWING										

4

3

2

1

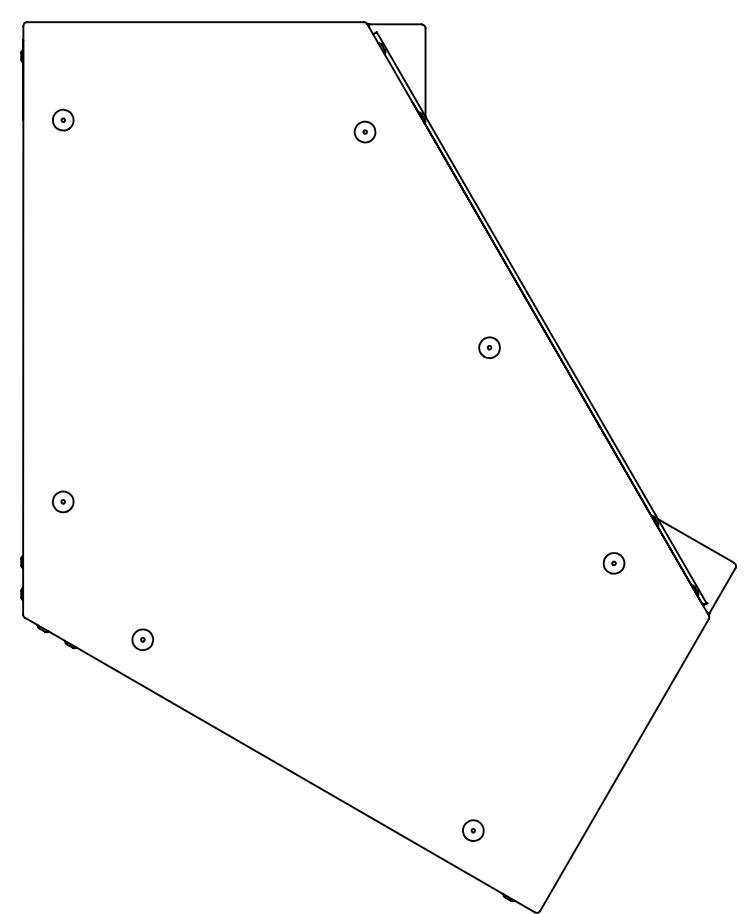
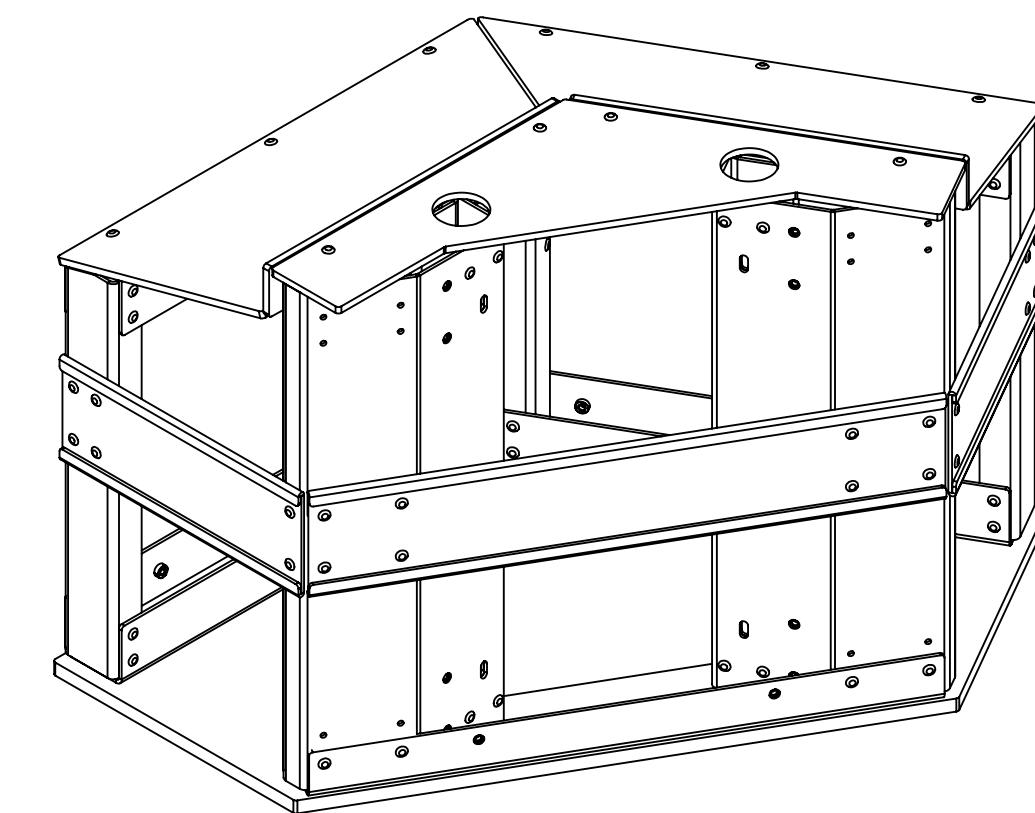
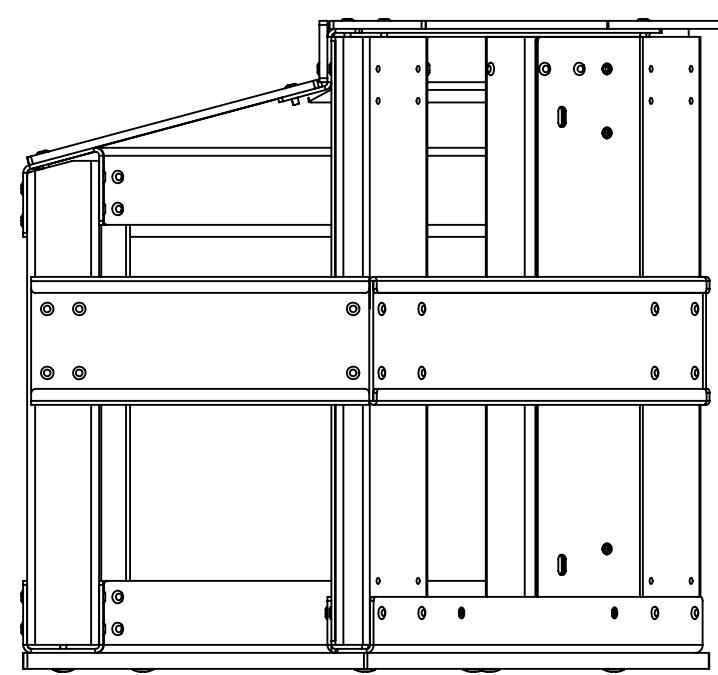
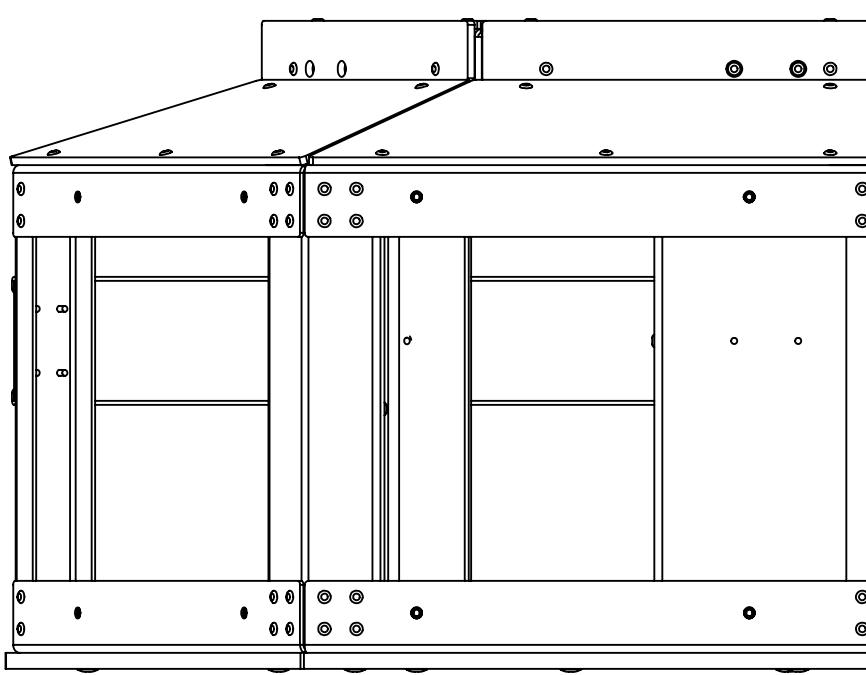
4

3

2

1

D



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

VEND

DRAWN

NAME

NE

DATE

10/1/2024



TITLE:

Goal Slice Assembly

SIZE

C

DWG. NO.

GE-25310

REV

SCALE: 1:6

SHEET 5 OF 5

4

3

2

1

D

C

B

A

4

3

2

1

D

D

C

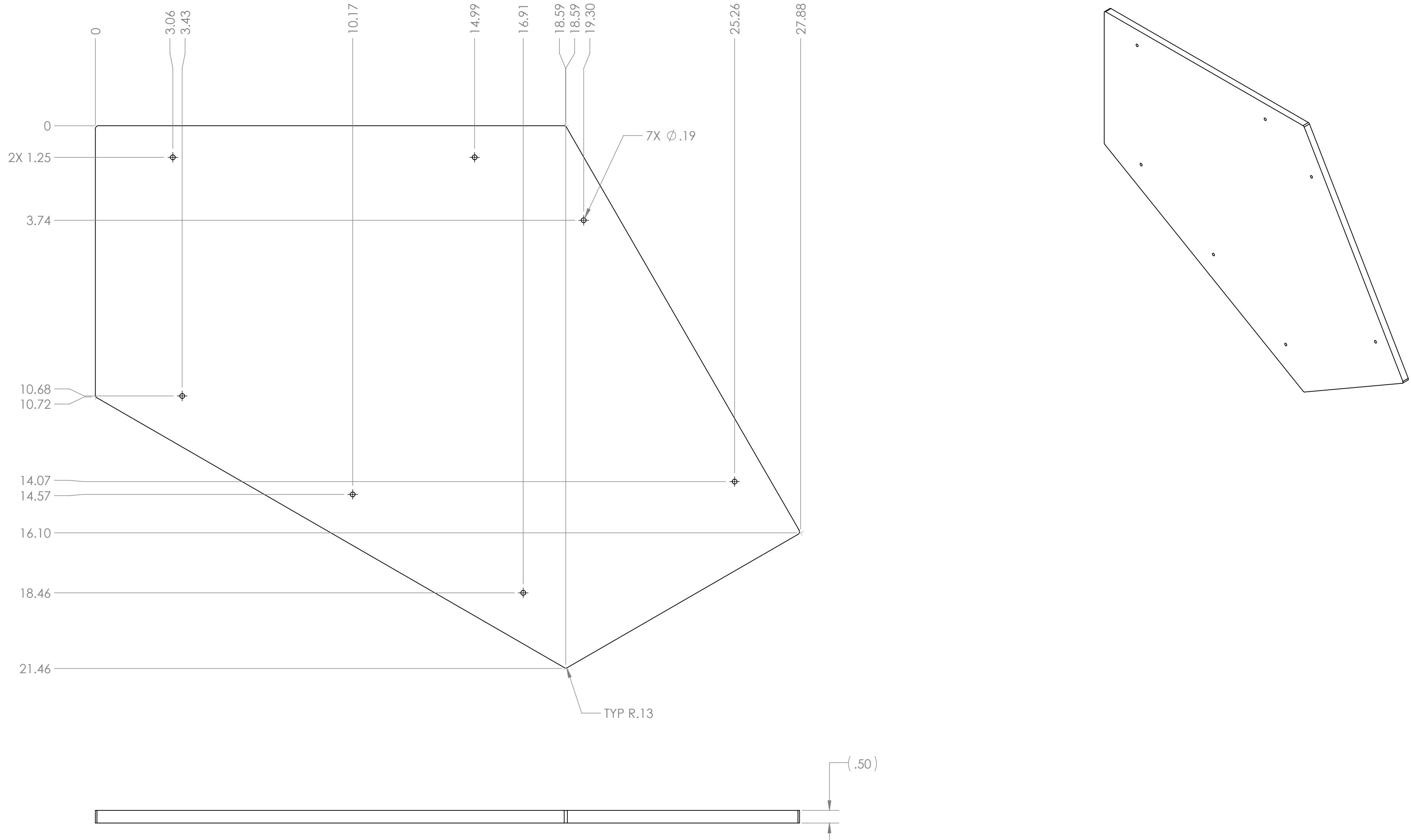
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

DO NOT SCALE DRAWING

VEND NAME DATE
DRAWN NE 10/1/2024

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST IS PROHIBITED.

MATERIAL/FINISH:
0.5" HDPE, Black Matte Finish

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

FIRST ROBOTICS COMPETITION DS SOLIDWORKS Modeling Solutions Partner

TITLE: Slice Base

SIZE DWG. NO. REV
C GE-25311

SCALE: 1:3 SHEET 1 OF 1

4

3

2

1

D

D

NOTE: ALL FEATURES ARE MIRRORED ACROSS DRAWN LINE

2X $\phi .194 \pm 0.002$

11.36
10.93
9.85

60°

TYP R.13

.50
0

0
2X .38
1.00

(1.00) → 105° → TYP R.13

.13

1.65

A → A

2X .50
0
.50

2X $\phi .194 \pm 0.002$

9.85
11.39

TYP R.13

VIEW A-A

A technical drawing of a mechanical part, likely a bracket or frame. The part is shown in three views: front, top, and side. Key dimensions include:

- Front view: Total height is 11.50. A slot at the bottom has a width of 4X 1.94 ± 0.002. The distance from the bottom edge to the top of the slot is 4X 1.25.
- Top view: The total width is 11.50. There are four holes, each with a diameter of 4X 0.194 ± 0.002. The distance between the centers of the holes in a row is 1.66, and the distance between the two rows is 2.29.
- Side view: The total height is 9.38. The distance from the top surface to the top of a slot is .50. The distance from the bottom surface to the bottom of the slot is 3.50.

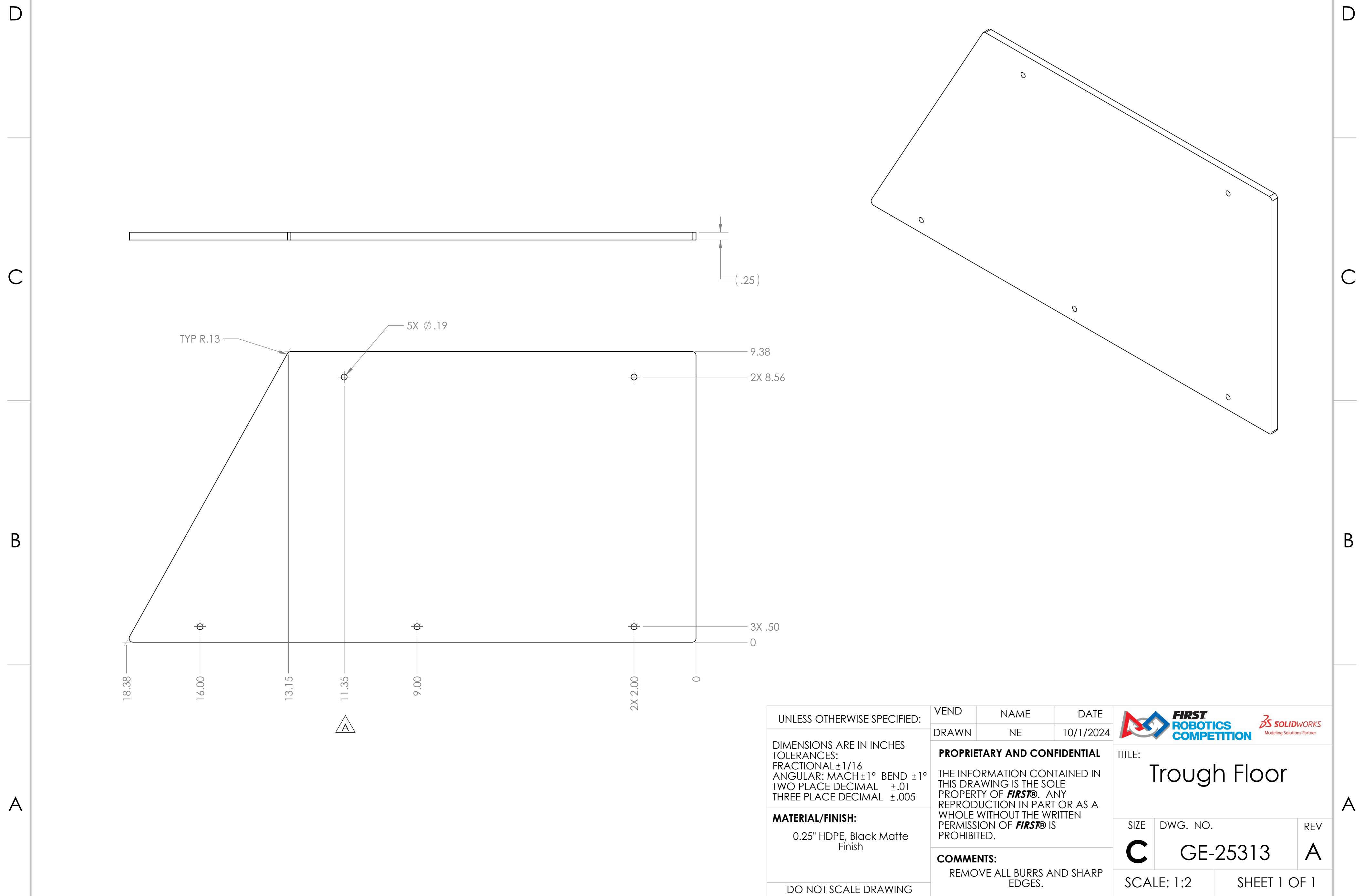
A technical line drawing of a structural bracket assembly. The main component is a large L-shaped bracket. The vertical leg features two horizontal slots near its top edge. The horizontal arm has two circular holes near its outer end. A smaller rectangular plate is attached to the top of the vertical leg, oriented diagonally. This plate has two circular holes. The entire assembly is shown in perspective, highlighting its three-dimensional form.

VIEW A-A

UNLESS OTHERWISE SPECIFIED:		BEND	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$		DRAWN	NE	10/1/2024
MATERIAL/FINISH: 8GA 5052 Aluminum		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.		
DO NOT SCALE DRAWING		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
TITLE: Trough Floor Bracket				
		SIZE	DWG. NO.	REV
		C	GE-25312	
		SCALE: 2:7		SHEET 1 OF 1

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
A3	A	GEOMETRY CHANGE FOR HOLE LOCATION	11/8/2024	NWE



4

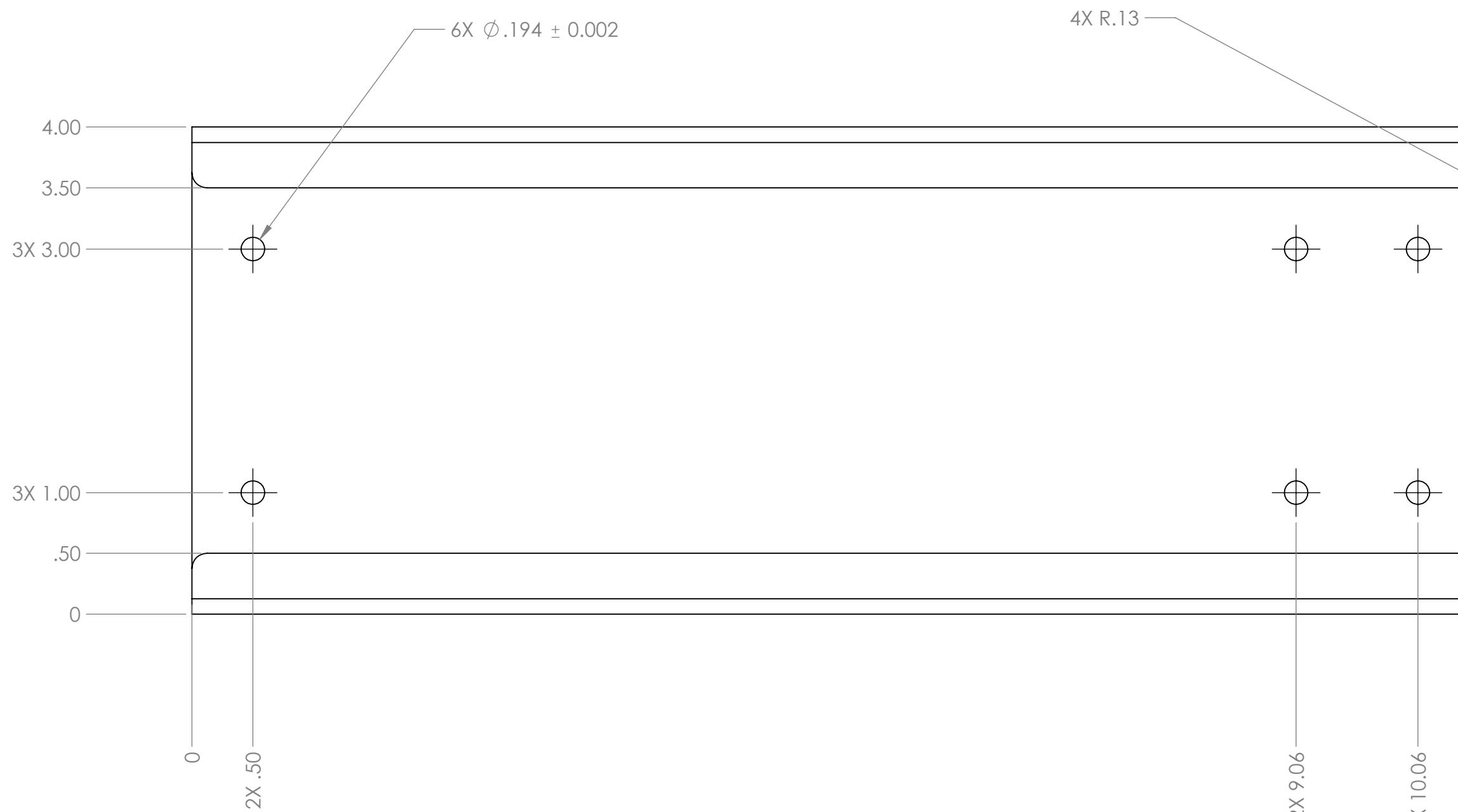
3

2

1

D

D



C

C

B

B

A

A

UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	NE	10/1/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
8GA 5052 Aluminum	C	GE-25314	
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING		SCALE: 1:1	SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

C

4X R.13
12.88

10.88

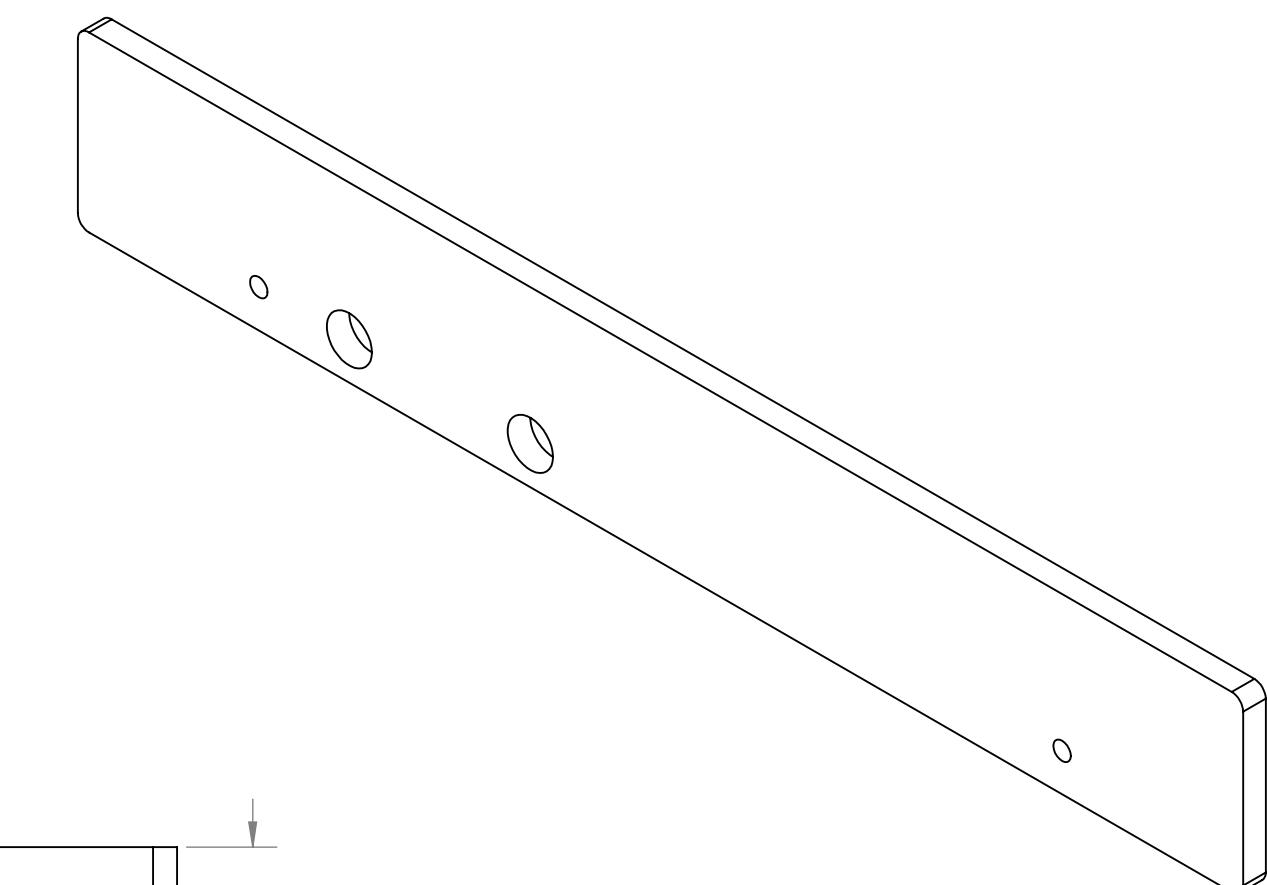
9.88

2X $\phi .194 \pm 0.002$
7.88

2X $\phi .50$

1.91

4X .41
0
0



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	NE	10/1/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
0.25" HDPE, Black Matte Finish	C	GE-25315	
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING	SCALE: 1:1	SHEET 1 OF 1	

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
Trough Back

4

3

2

1

4

3

2

1

D

D

C

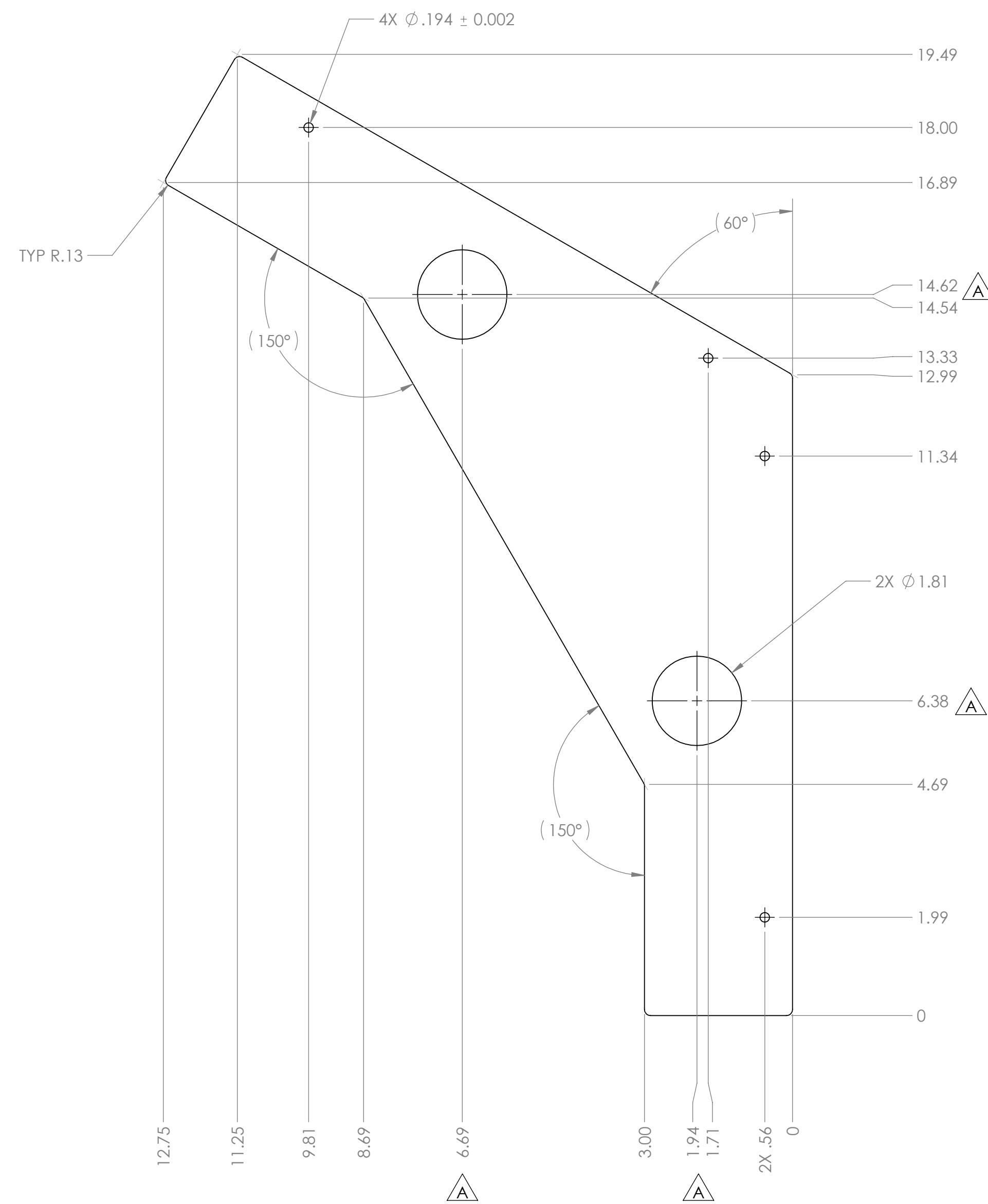
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

0.25" HDPE, Black Matte Finish

DO NOT SCALE DRAWING

VEND NAME DATE

DRAWN NE 10/1/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST[®]. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST[®] IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
A3, B3, C3	A	ALTERED CLEARANCE HOLE LOCATION	11/4/2024	NWE

FIRST[®] ROBOTICS COMPETITION DS SOLIDWORKS Modeling Solutions Partner

TITLE: Slice Top Cover

SIZE DWG. NO. REV

C GE-25316 A

SCALE: 1:2 SHEET 1 OF 1

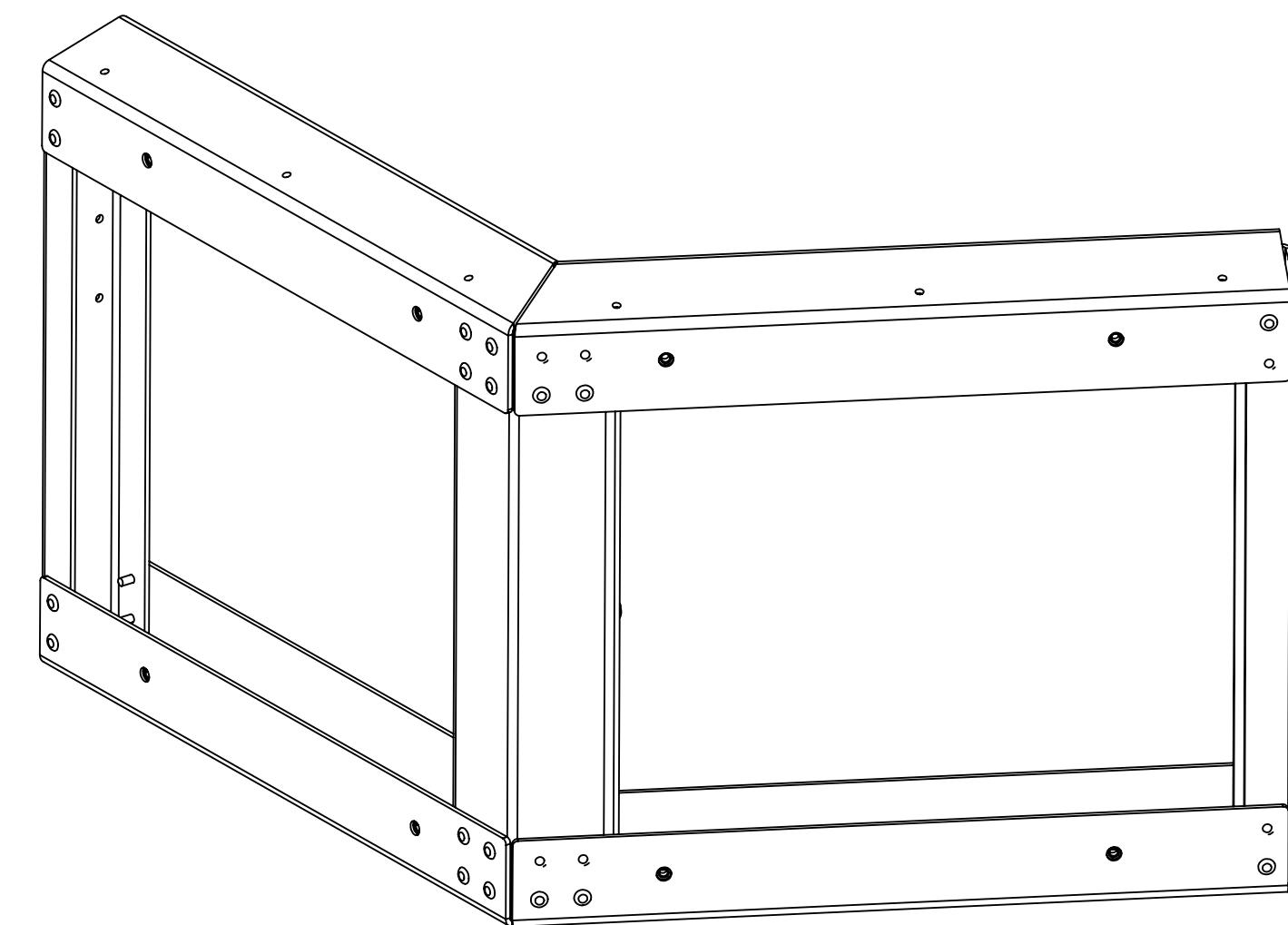
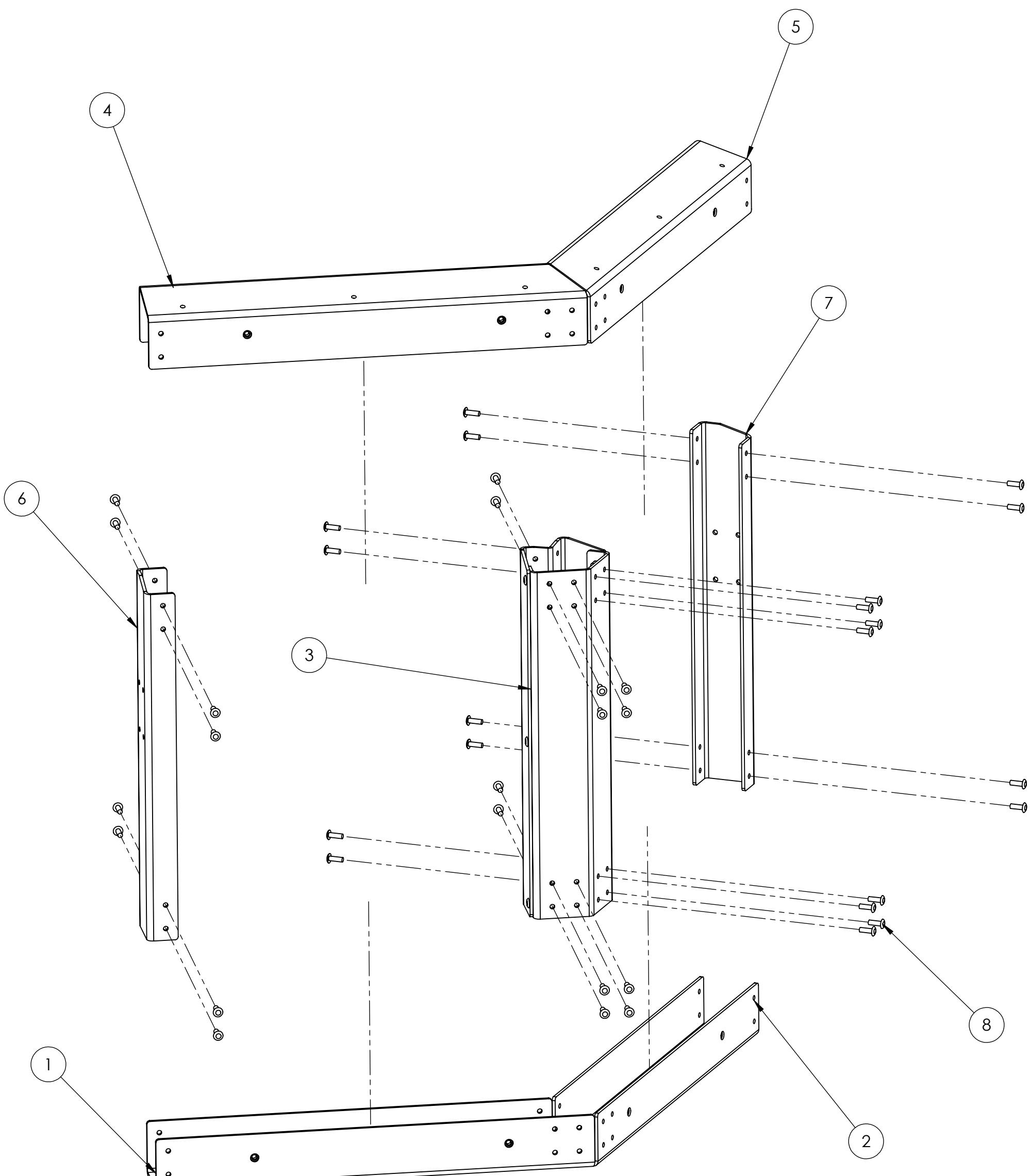
4

3

2

1

D



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

MATERIAL/FINISH:

DO NOT SCALE DRAWING

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25321	Outer Slice Left Bottom Channel W PEMs	1
2	GE-25322	Outer Slice Right Bottom Channel W PEMs	1
3	GE-25323	Outer Slice Center Vertical	1
4	GE-25326	Outer Slice Left Top Channel W PEMs	1
5	GE-25327	Outer Slice Right Top Channel W PEMs	1
6	GE-25328	Outer Slice End Vertical Left	1
7	GE-25329	Outer Slice End Vertical Right	1
8	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	40

VEND	NAME	DATE
DRAWN	NE	10/1/2024

FIRST ROBOTICS COMPETITION Modeling Solutions Partner

TITLE:

Outer Slice Assembly

SIZE DWG. NO.

C GE-25320

REV

SCALE: 1:4 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

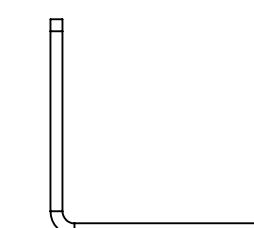
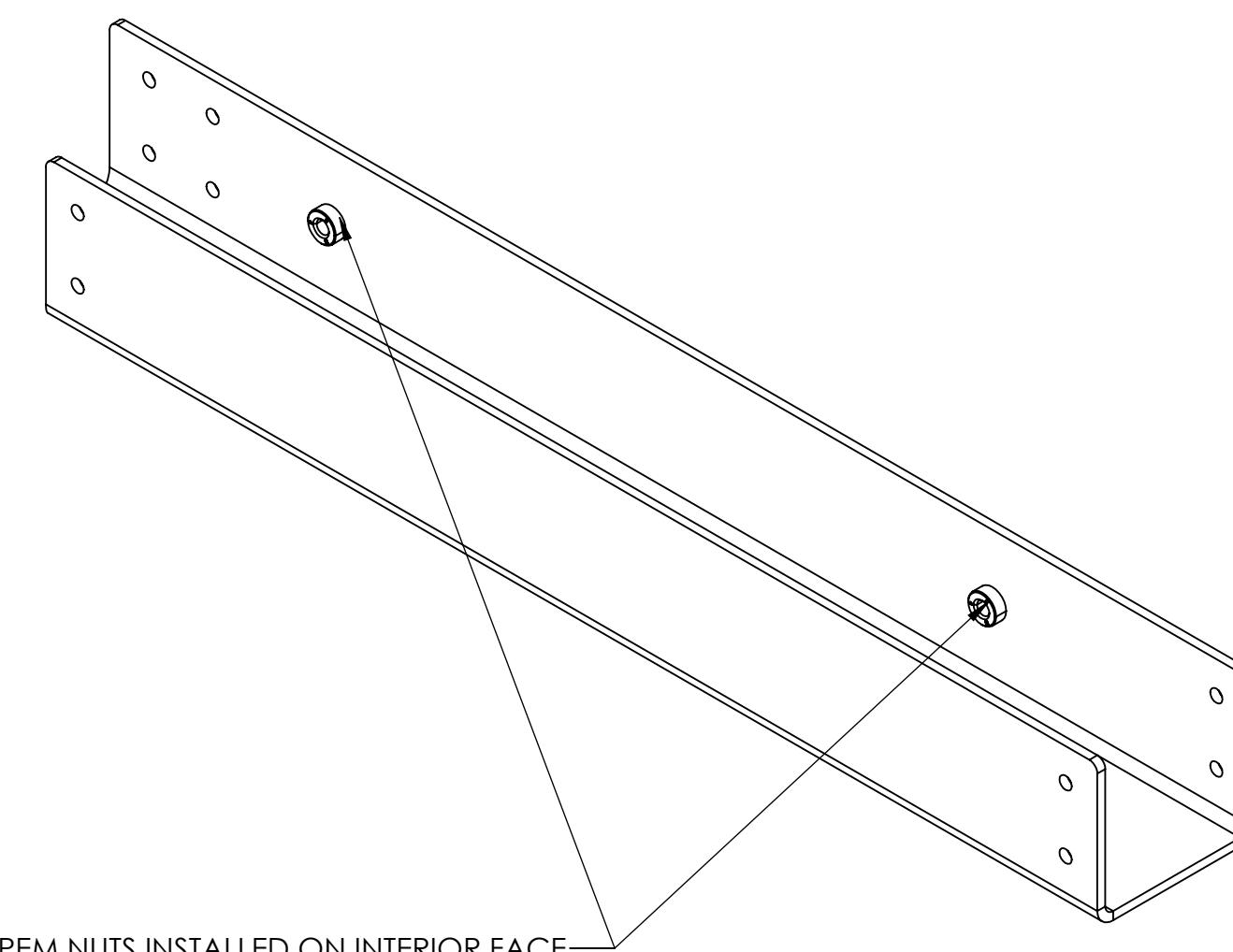
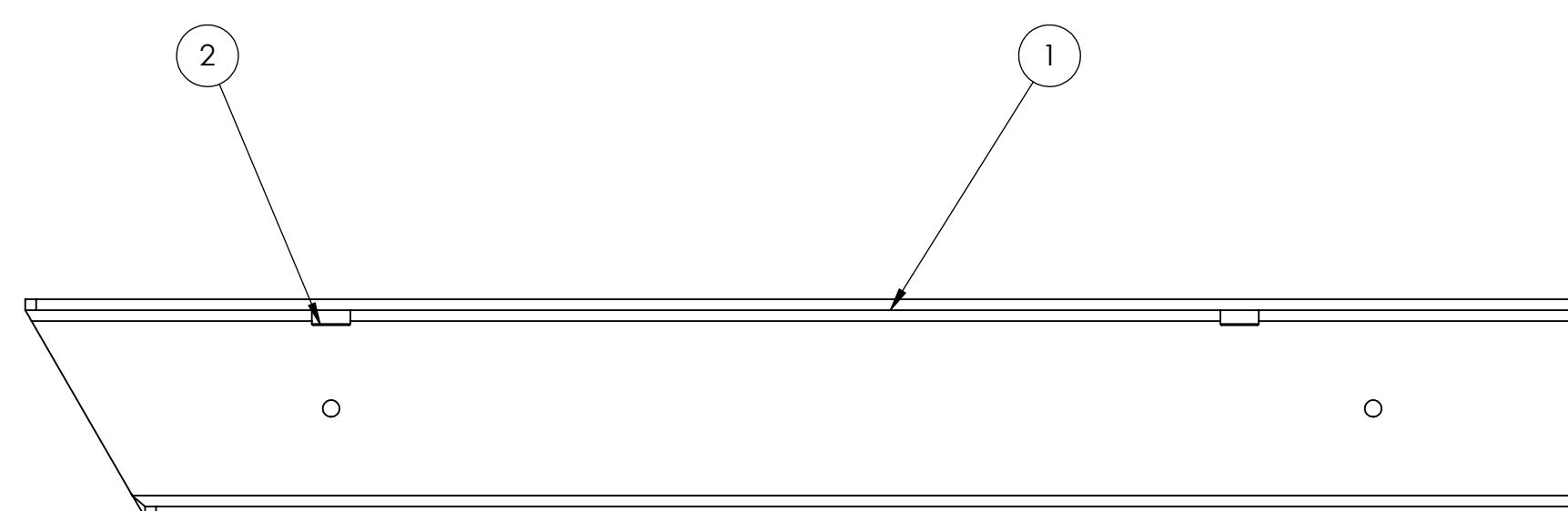
C

B

B

A

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25321-01	Outer Slice Left Bottom Channel	1
2	pem_clinchnut_.25_20 .054	1/4-20 self-clinching nut, .054 shank	2

UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE
DIMENSIONS ARE IN INCHES		DRAWN	NE	9/30/2024
PROPRIETARY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				

MATERIAL/FINISH:	SIZE	DWG. NO.	REV
	C	GE-25321	

COMMENTS:	SCALE: 1:2	SHEET 1 OF 1
REMOVE ALL BURRS AND SHARP EDGES.		

DO NOT SCALE DRAWING



TITLE:

Outer Slice Left Bottom Channel W PEMs

SIZE DWG. NO. REV

C GE-25321

SCALE: 1:2 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

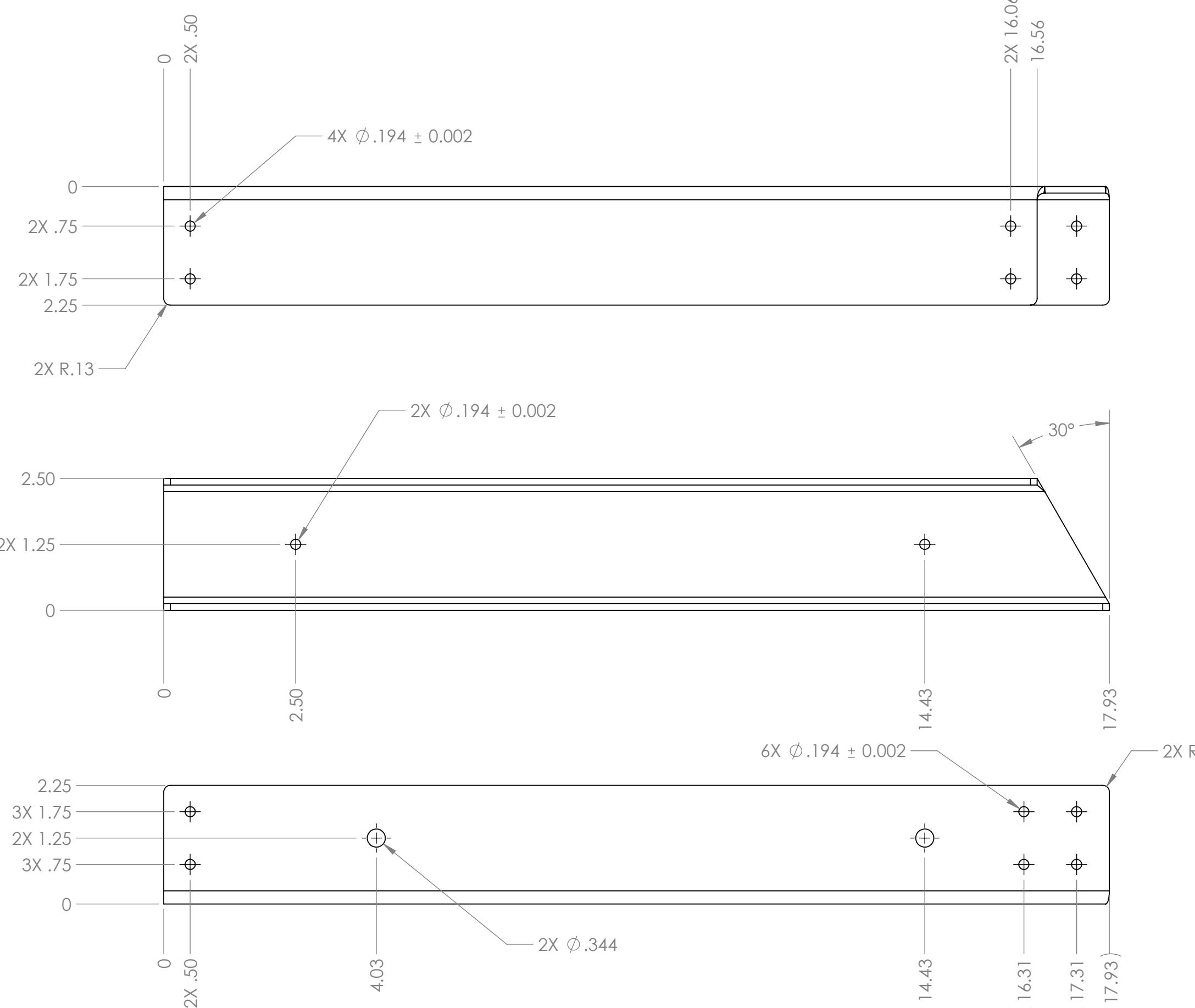
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	NE	9/30/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:			
8GA 5052 Aluminum			
COMMENTS:			
REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Outer Slice Left
Bottom Channel**

SIZE DWG. NO. REV
C GE-25321-01

SCALE: 1:2 SHEET 1 OF 1

4

3

2

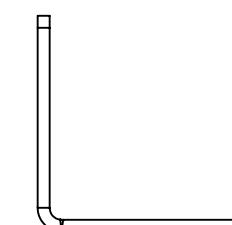
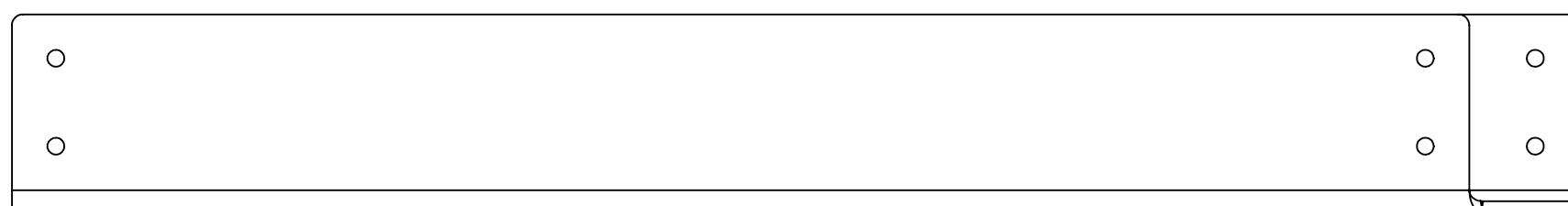
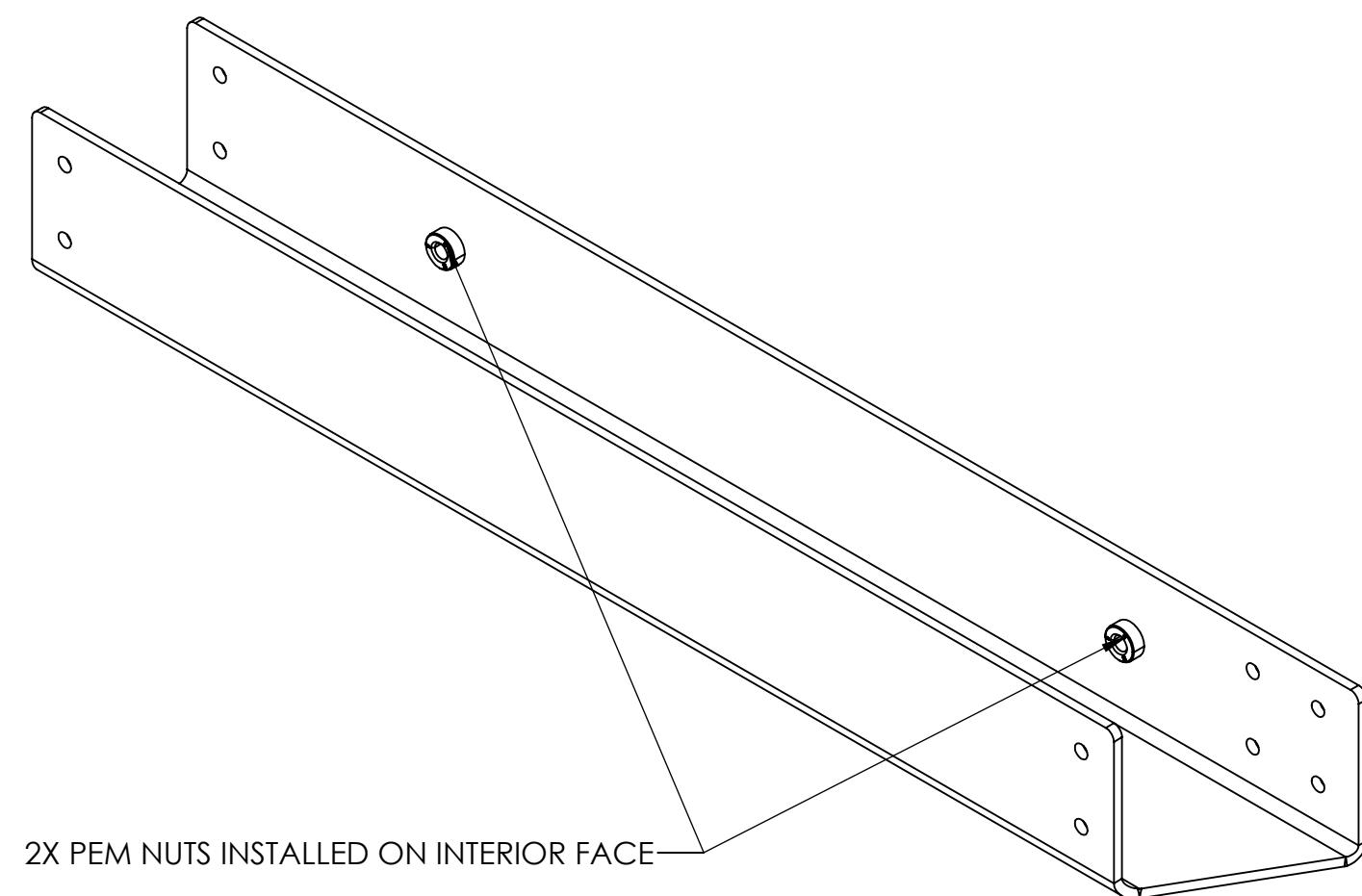
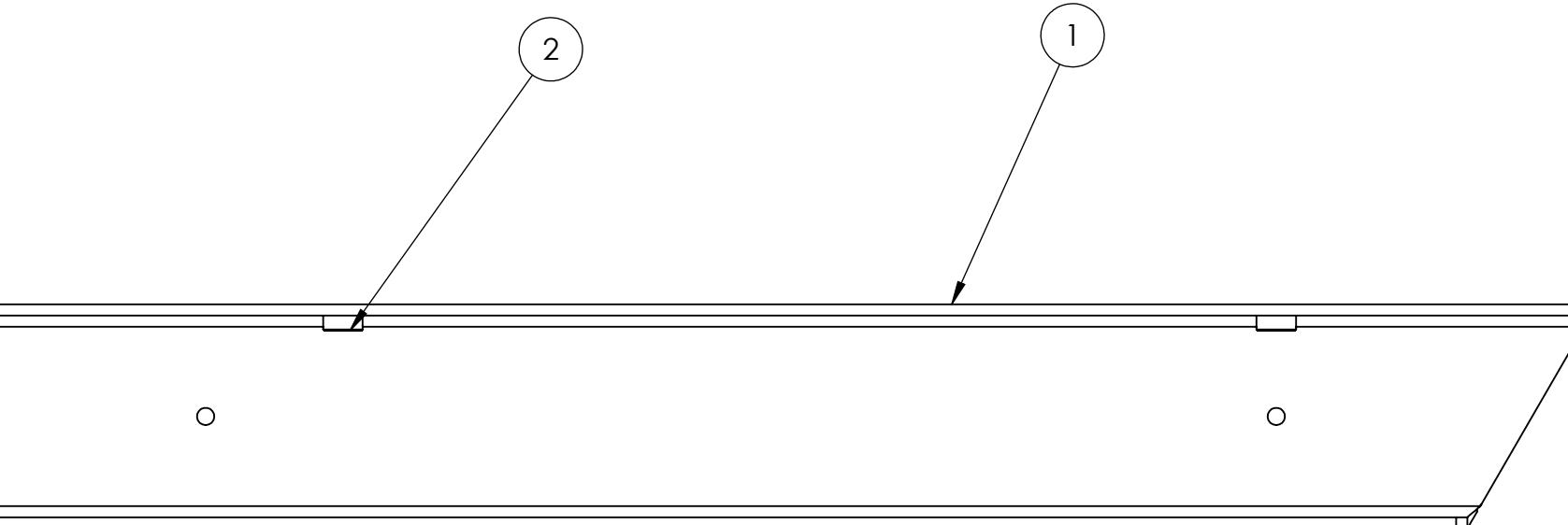
1

4

3

2

1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25322-01	Outer Slice Right Bottom Channel	1
2	pem_clinchnut_.25_20 .054	1/4-20 self-clinching nut, .054 shank	2

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
	DRAWN	NE	9/30/2024
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			
 FIRST ROBOTICS COMPETITION  SOLIDWORKS Modeling Solutions Partner			
TITLE: Outer Slice Right Bottom Channel W PEMs			
SIZE DWG. NO. REV			
C GE-25322			
SCALE: 1:2 SHEET 1 OF 1			

4

3

2

1

4

3

2

1

D

D

C

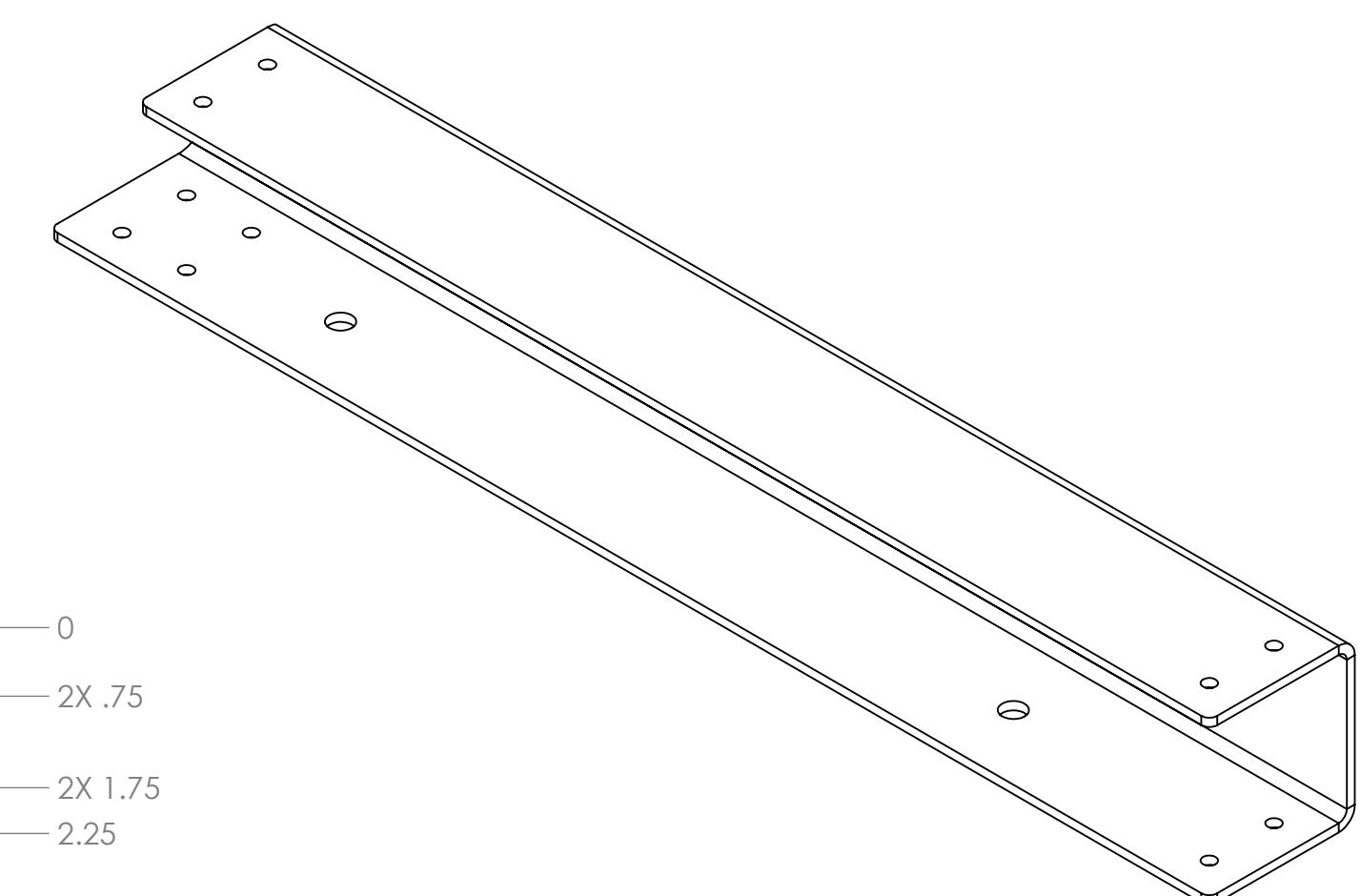
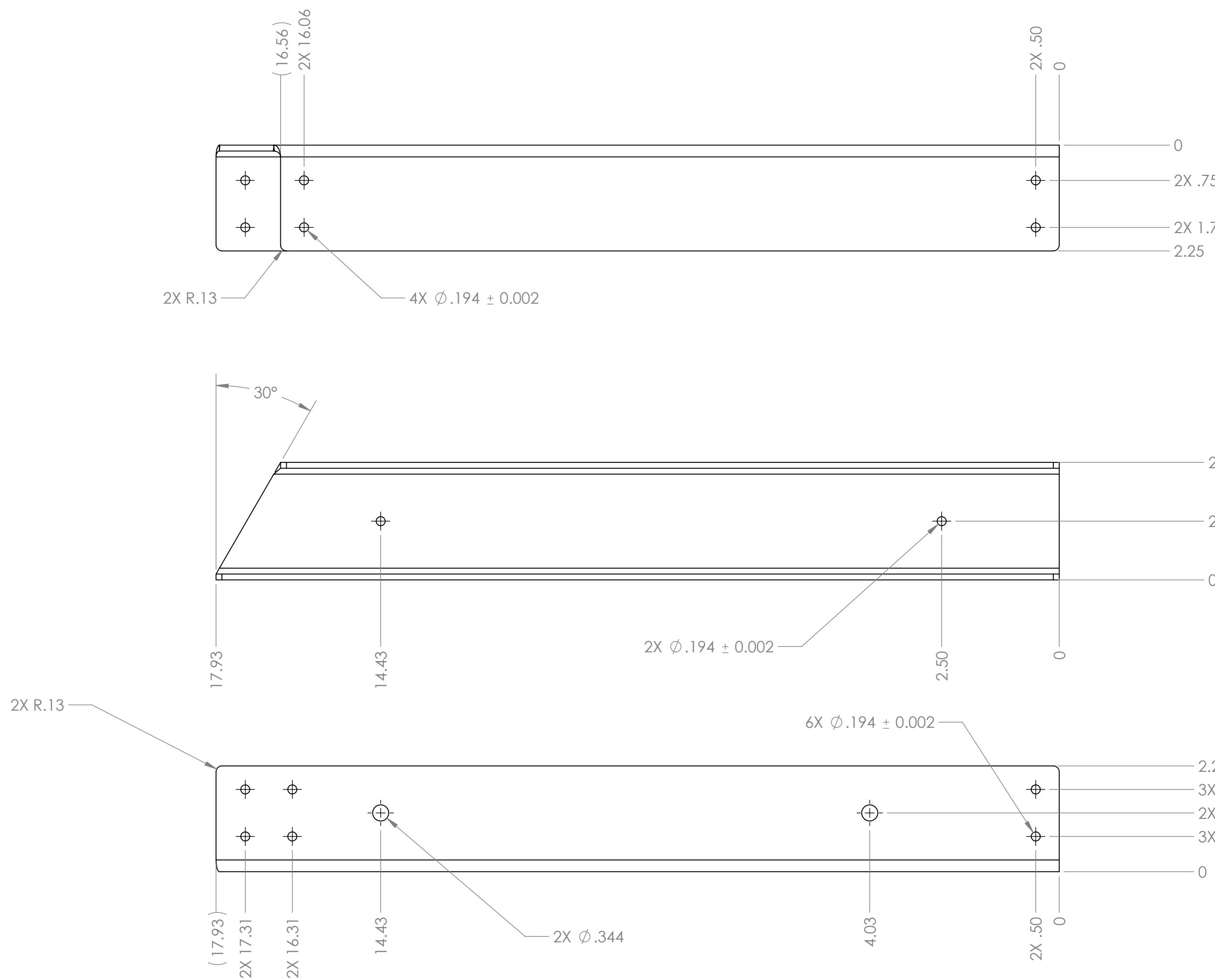
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	NE	9/30/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 8GA 5052 Aluminum			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Outer Slice Right
Bottom Channel**

SIZE DWG. NO. REV
C GE-25322-01

SCALE: 1:2 SHEET 1 OF 1

4

3

2

1

D

D

C

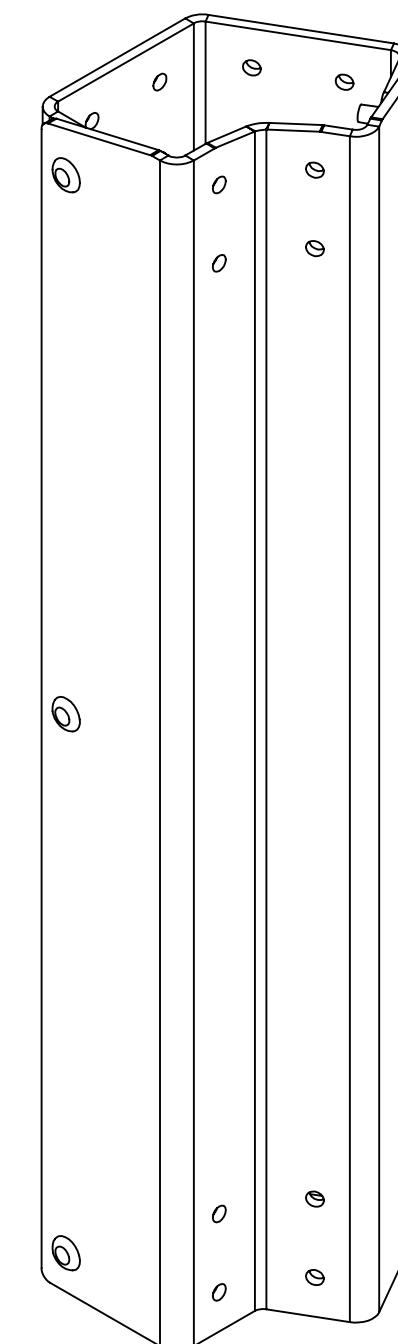
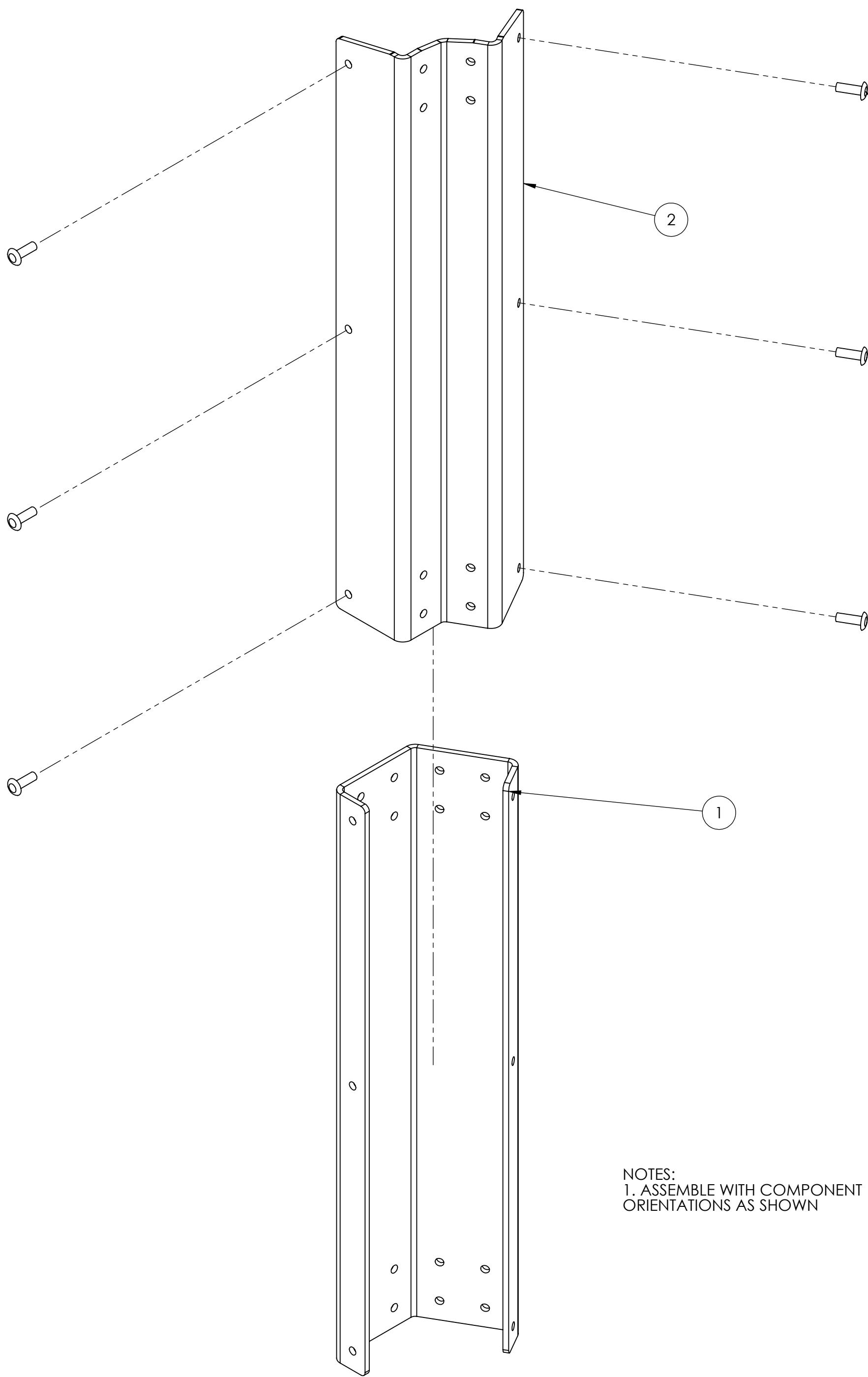
C

B

B

A

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25324	Outer Slice Center Vertical Outer	1
2	GE-25325	Outer Slice Center Vertical Inner	1
3	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	6

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	NE	9/30/2024
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.		
MATERIAL/FINISH:			
COMMENTS:	REMOVE ALL BURRS AND SHARP EDGES.		

DO NOT SCALE DRAWING

FIRST ROBOTICS COMPETITION
SOLIDWORKS

TITLE: Outer Slice Center Vertical
SIZE DWG. NO. REV

C GE-25323
SCALE: 1:2 SHEET 1 OF 1

4

3

2

1

D

D

C

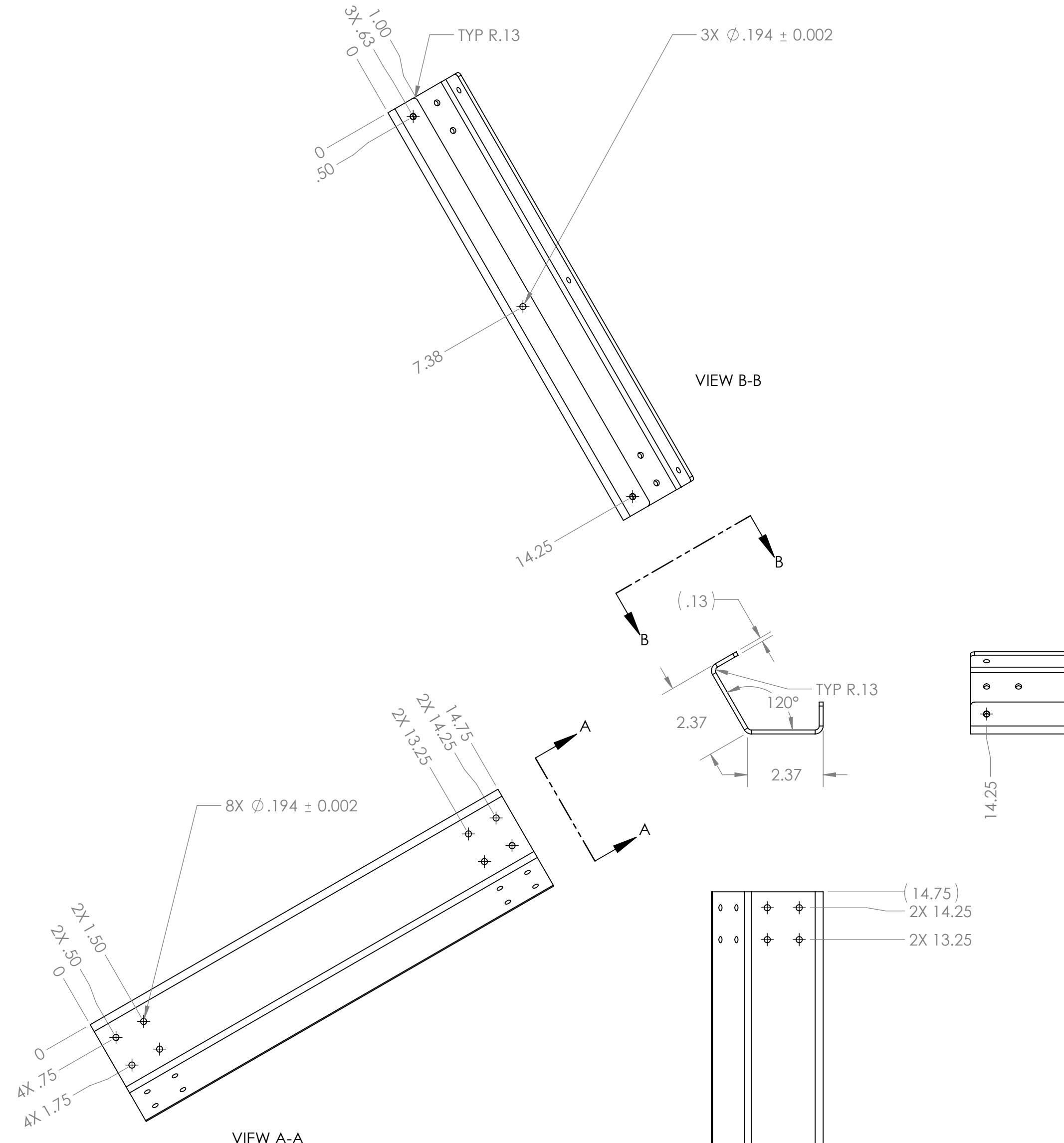
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	NE	9/30/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 8GA 5052 Aluminum			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

 **FIRST
ROBOTICS
COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE:
**Outer Slice Center
Vertical Outer**

SIZE DWG. NO. REV

C GE-25324

SCALE: 1:3 SHEET 1 OF 1

4

3

2

1

4

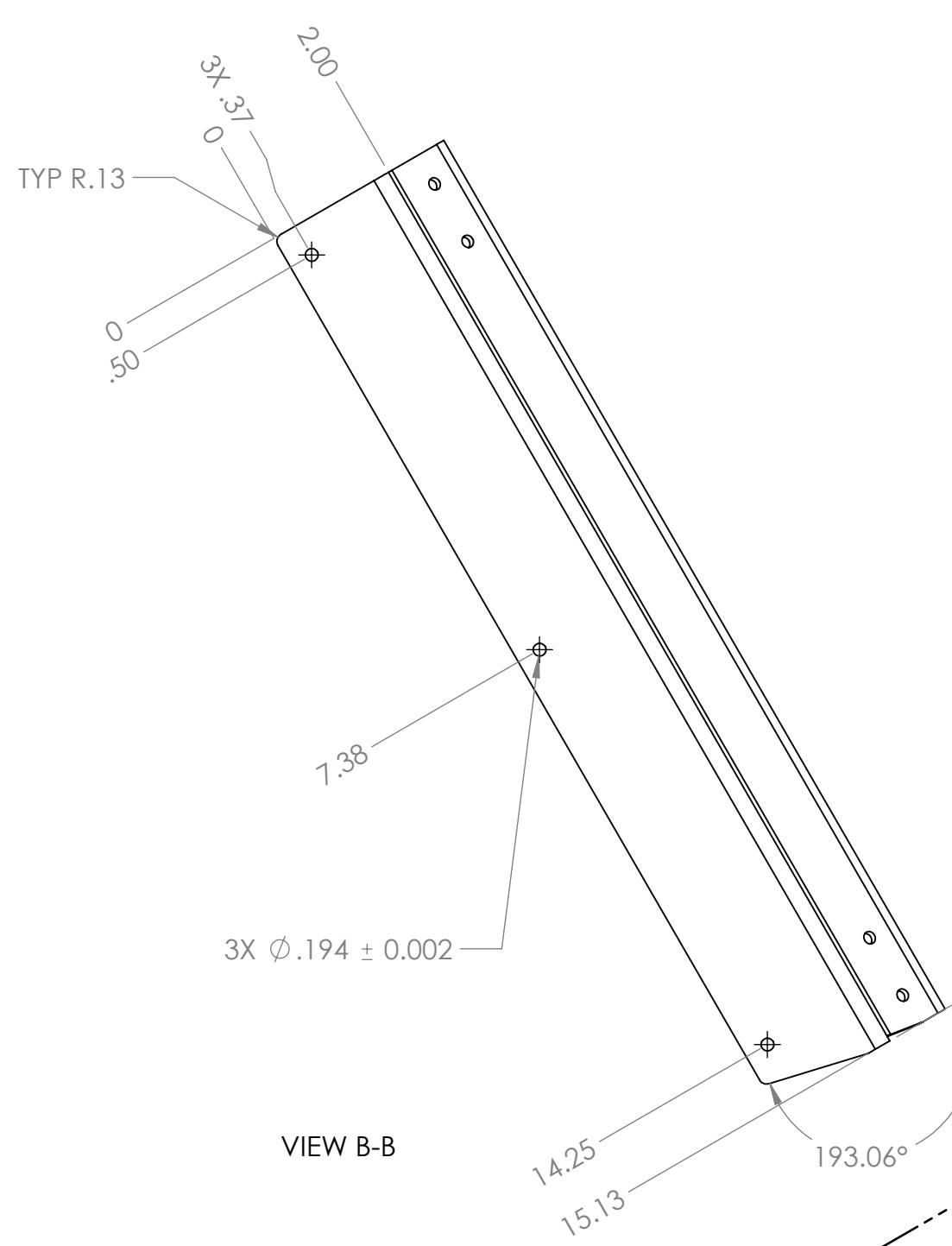
3

2

1

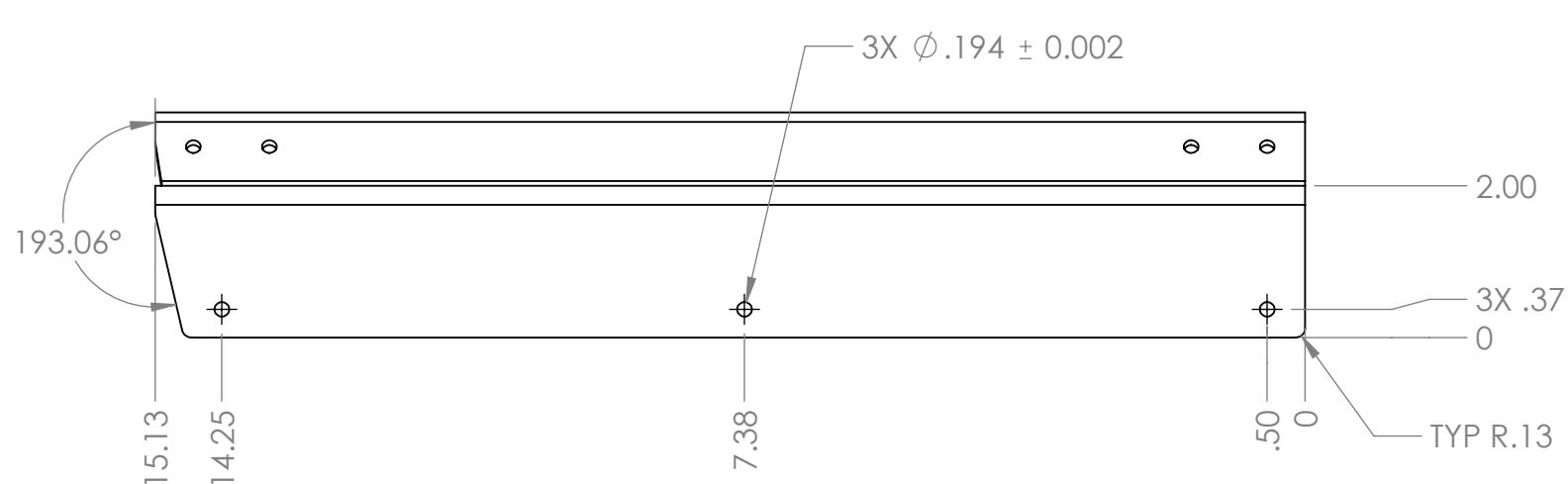
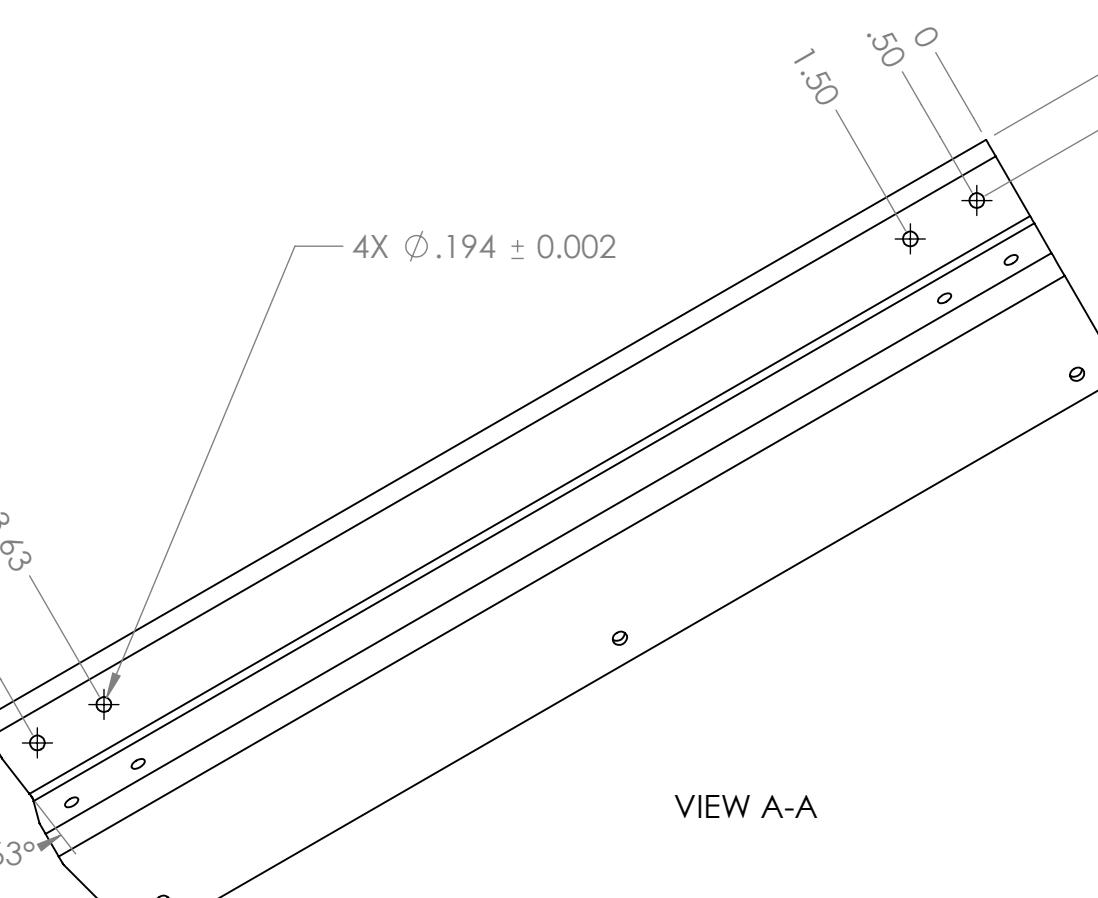
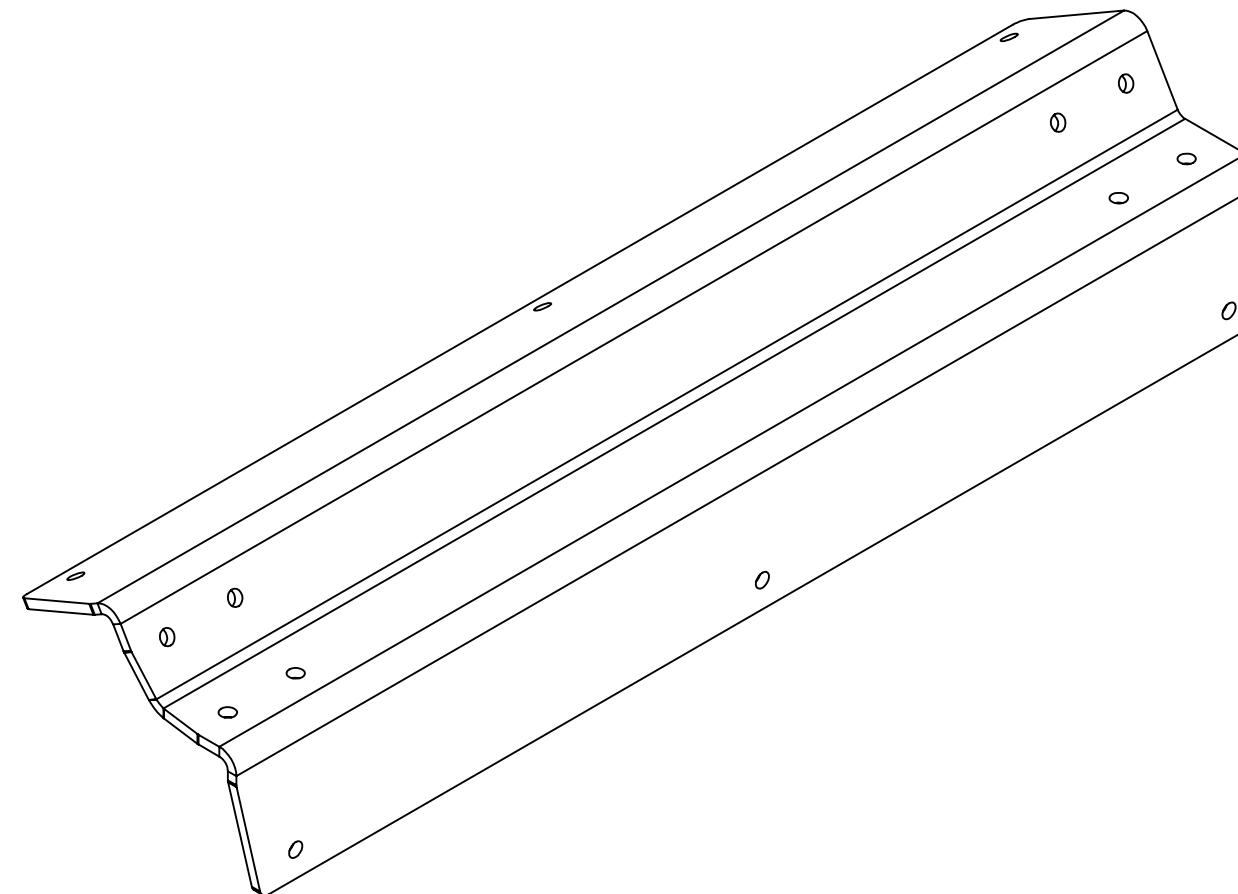
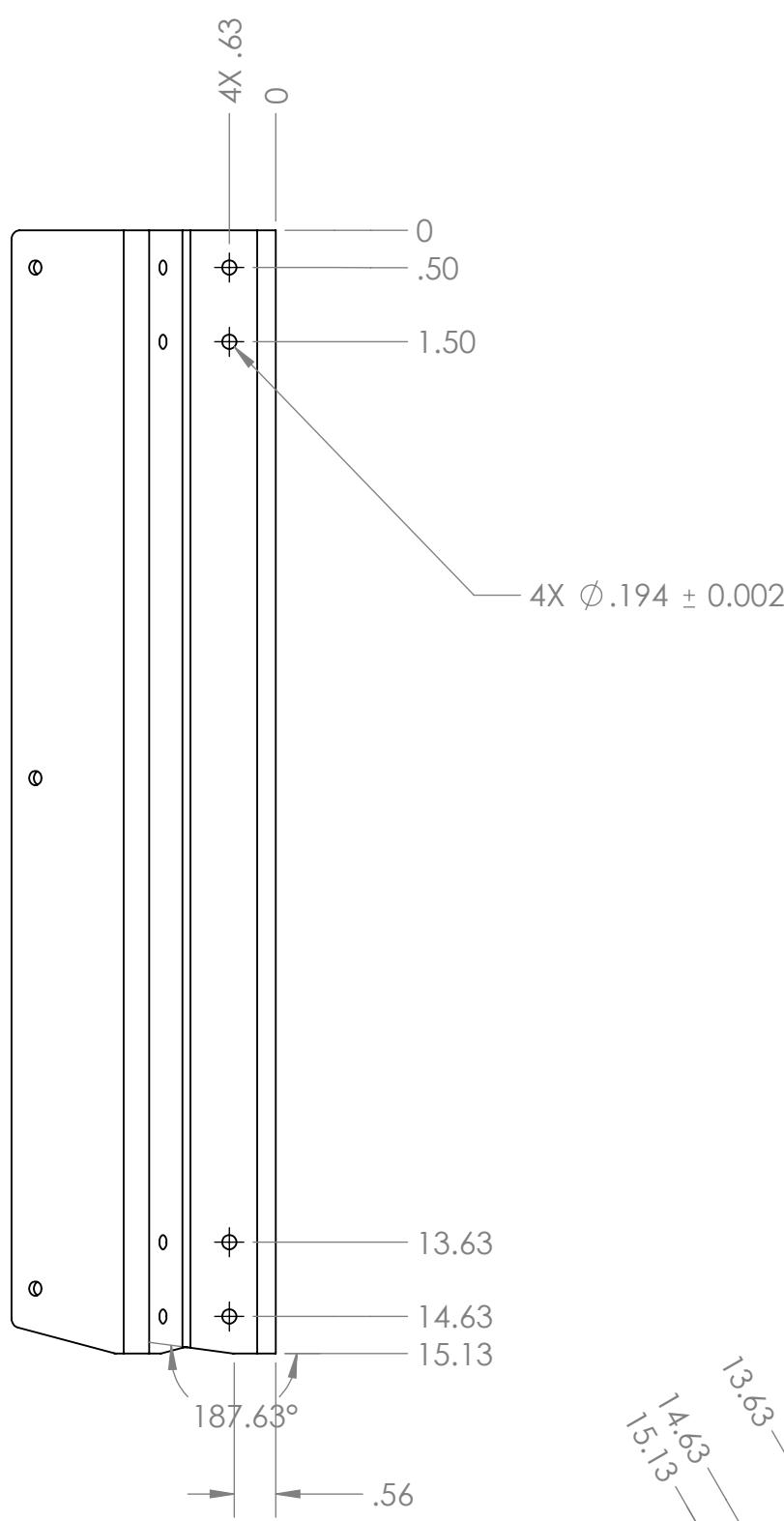
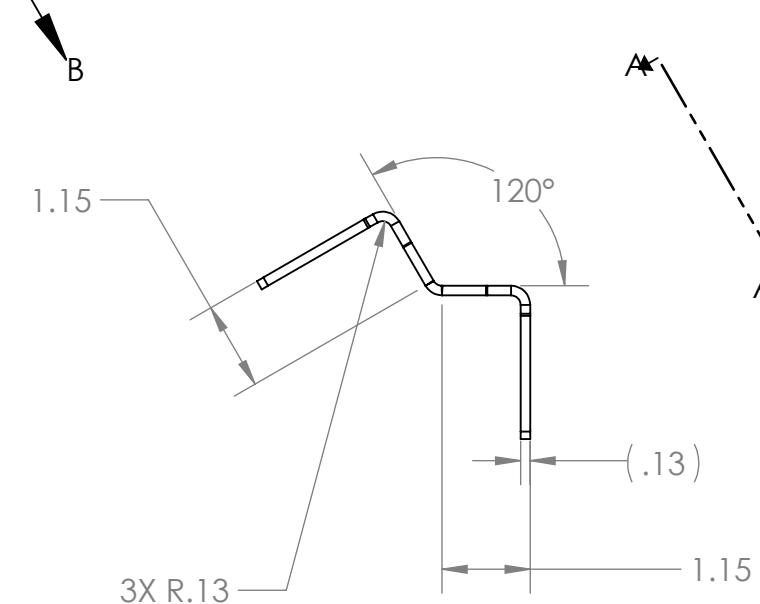
D

D



VIEW B-B

14.25
 15.13
 193.06°



UNLESS OTHERWISE SPECIFIED:			BEND	NAME	DATE
DRAWN NE 9/30/2024					
PROPRIETARY AND CONFIDENTIAL					
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
MATERIAL/FINISH: 8GA 5052 Aluminum					
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
Outer Slice Center
Vertical Inner

SIZE DWG. NO. REV

C GE-25325

SCALE: 2:5 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

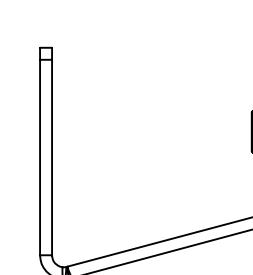
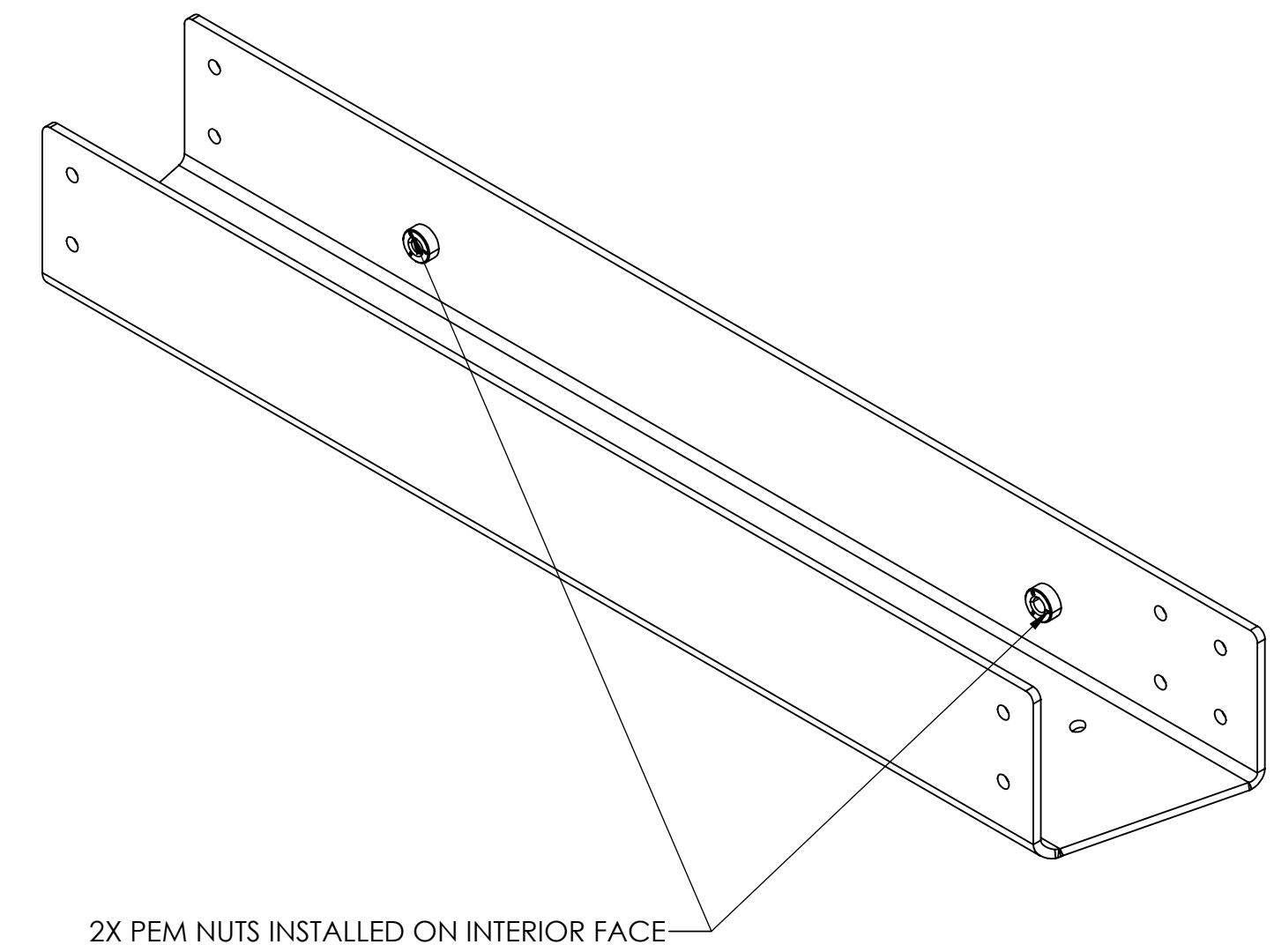
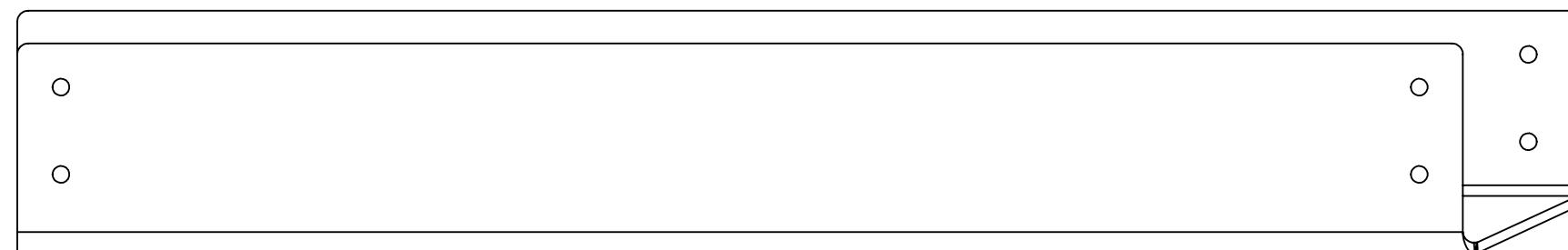
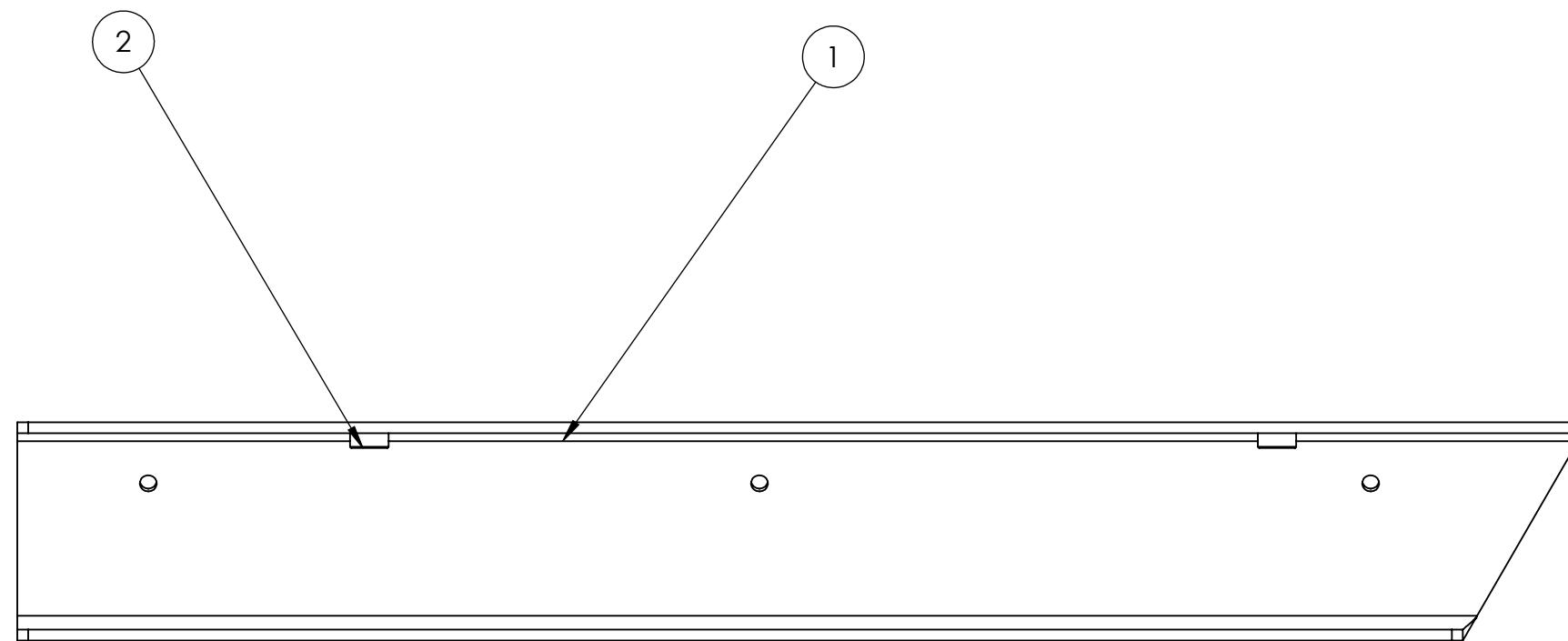
C

B

B

A

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25326-01	Outer Slice Left Top Channel	1
2	pem_clinchnut_.25_20 .054	1/4-20 self-clinching nut, .054 shank	2

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	NE	9/30/2024	

DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$	PROPRIETARY AND CONFIDENTIAL	TITLE:
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.	Outer Slice Left Top Channel W PEMs

MATERIAL/FINISH:	COMMENTS:
	REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING	SCALE: 1:2	SHEET 1 OF 1
----------------------	------------	--------------



TITLE:
Outer Slice Left Top
Channel W PEMs

SIZE DWG. NO. REV
C GE-25326

SCALE: 1:2 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

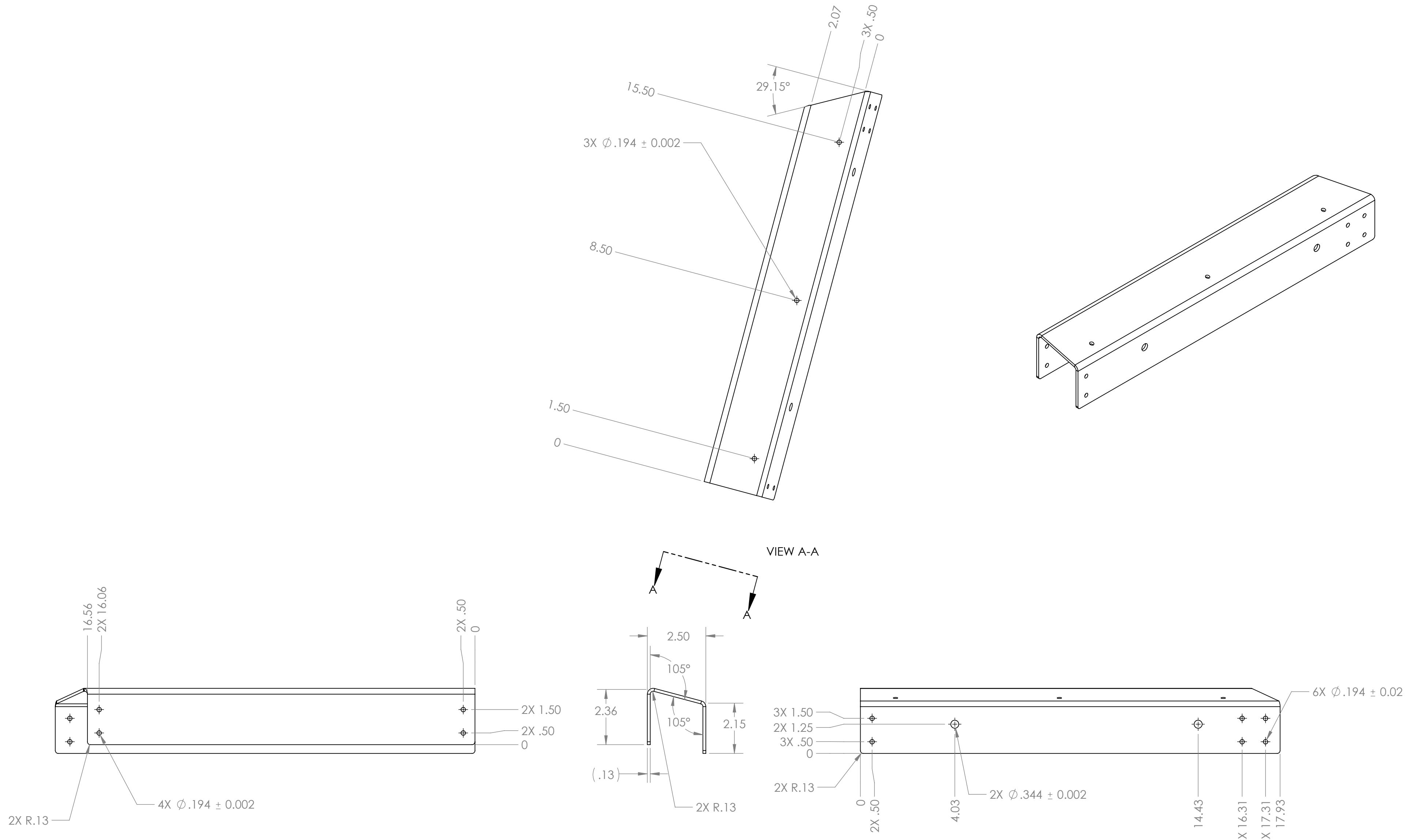
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$

MATERIAL/FINISH:

8GA 5052 Aluminum

DO NOT SCALE DRAWING

BEND NAME DATE
DRAWN NE 9/30/2024**PROPRIETARY AND CONFIDENTIAL**

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST[®]. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST[®] IS PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

FIRST[®] ROBOTICS COMPETITION DS SOLIDWORKS Modeling Solutions Partner

TITLE: Outer Slice Left Top Channel

SIZE DWG. NO. REV
C GE-25326-01

SCALE: 1:3 SHEET 1 OF 1

4

3

2

1

D

D

C

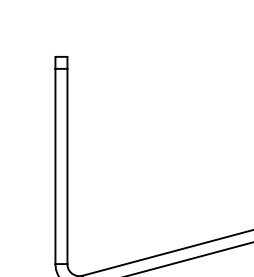
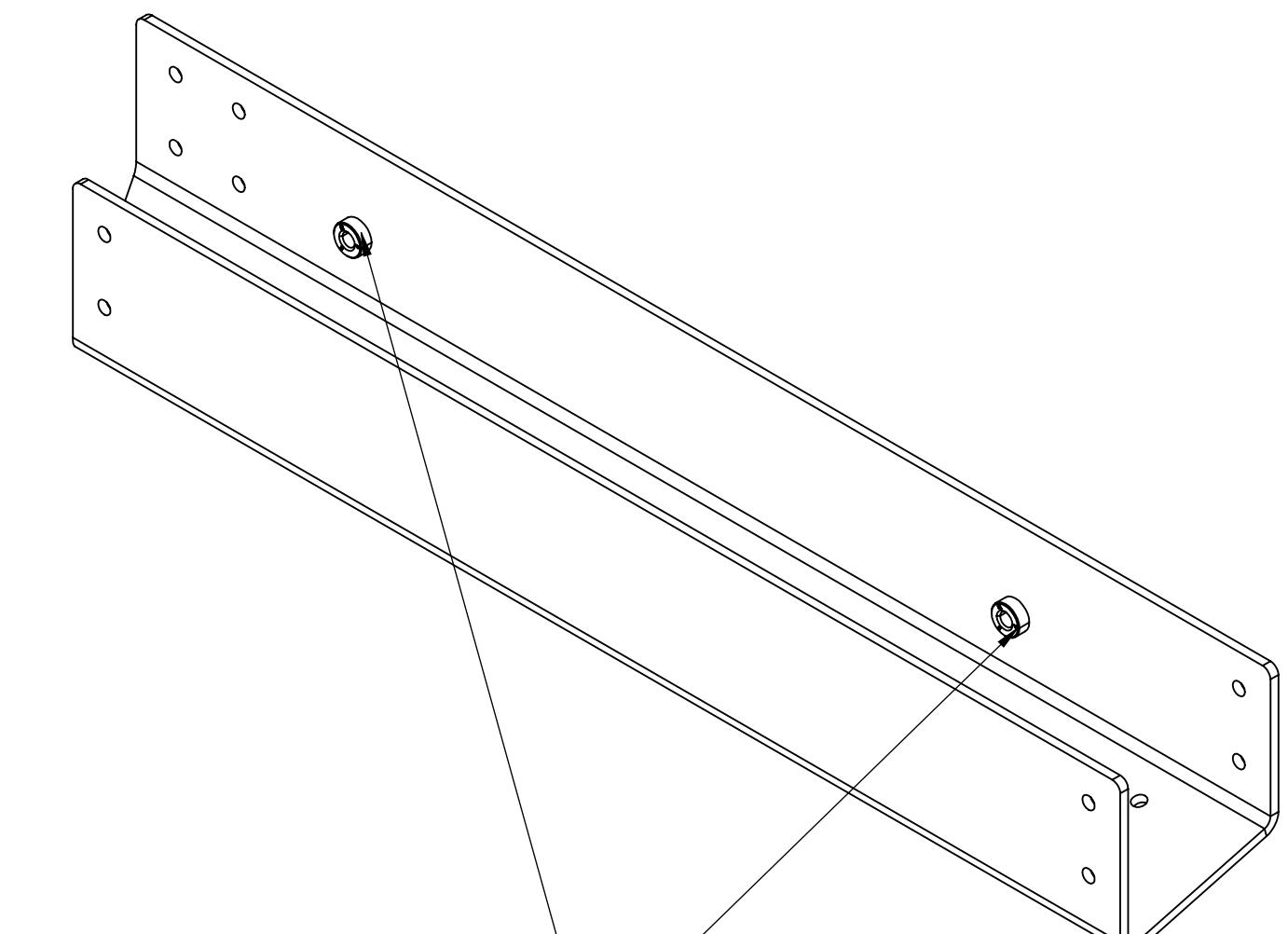
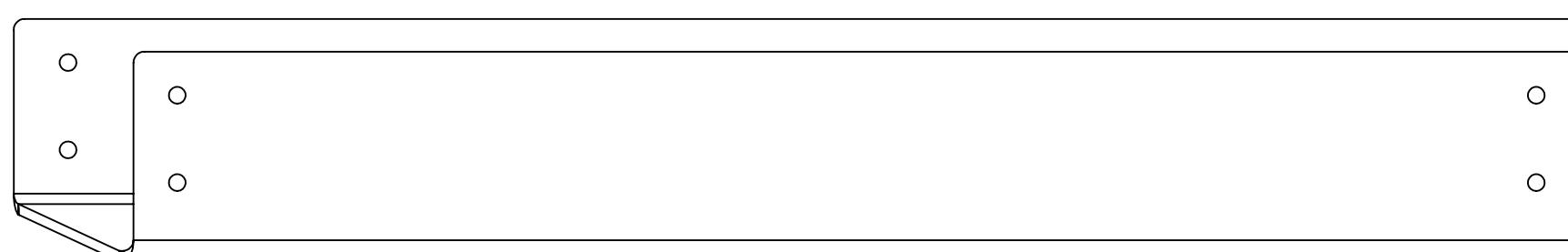
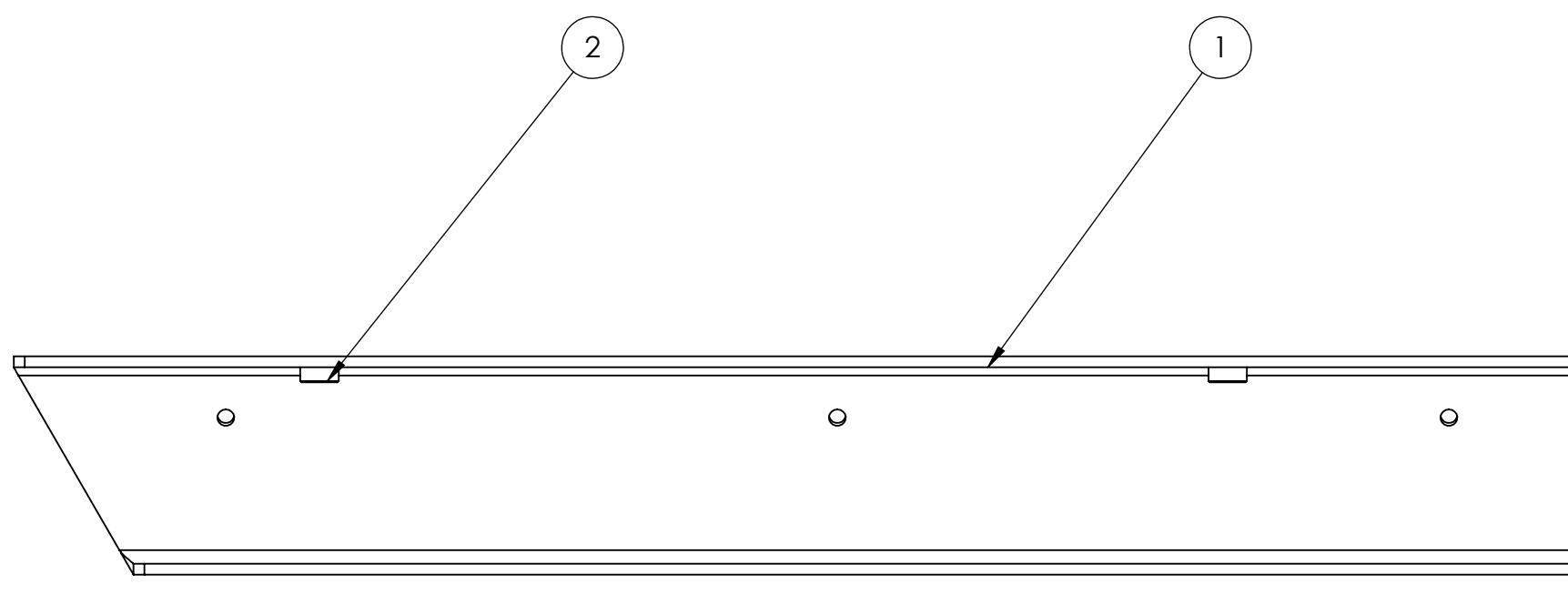
C

B

B

A

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25327-01	Outer Slice Right Top Channel	1
2	pem_clinchnut_.25_20 .054	1/4-20 self-clinching nut, .054 shank	2

UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE
DIMENSIONS ARE IN INCHES		DRAWN	NE	9/30/2024
PROPRIETARY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				

MATERIAL/FINISH:	COMMENTS:
	REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

SOLIDWORKS
Modeling Solutions Partner

4

3

2

1

D

D

C

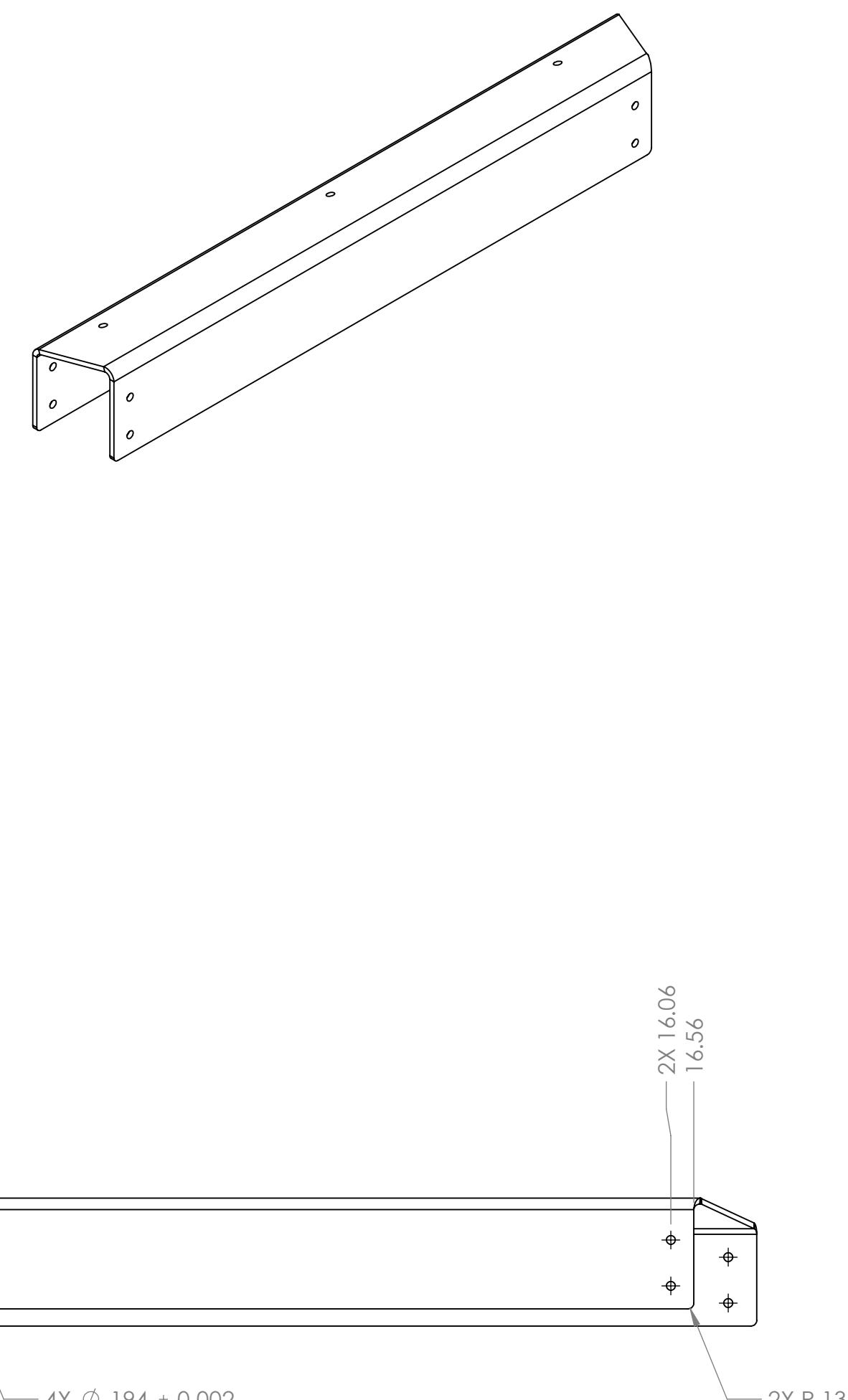
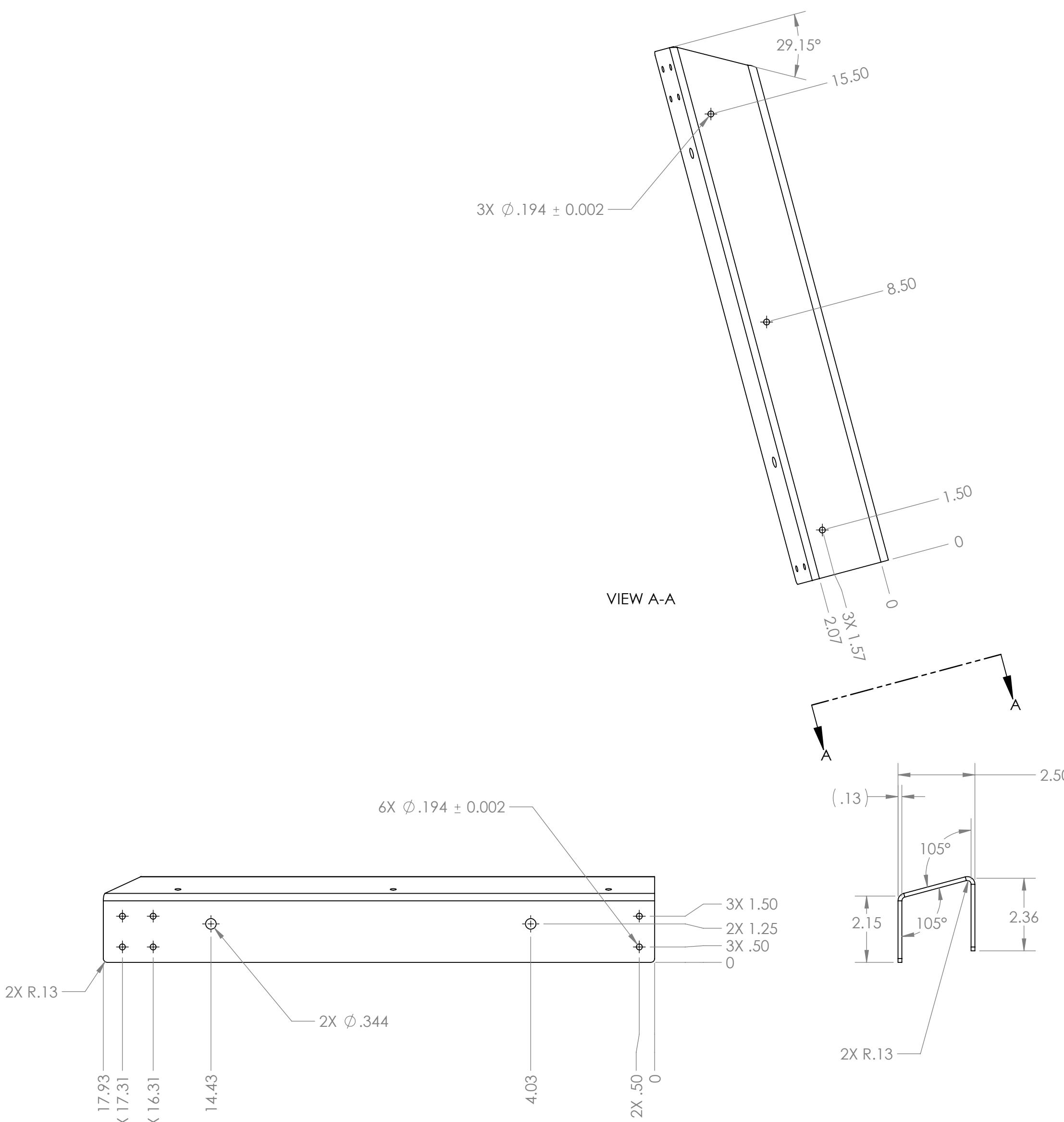
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	NE	9/30/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 8GA 5052 Aluminum			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Outer Slice Right
Top Channel**

SIZE DWG. NO. REV
C GE-25327-01

SCALE: 1:3 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

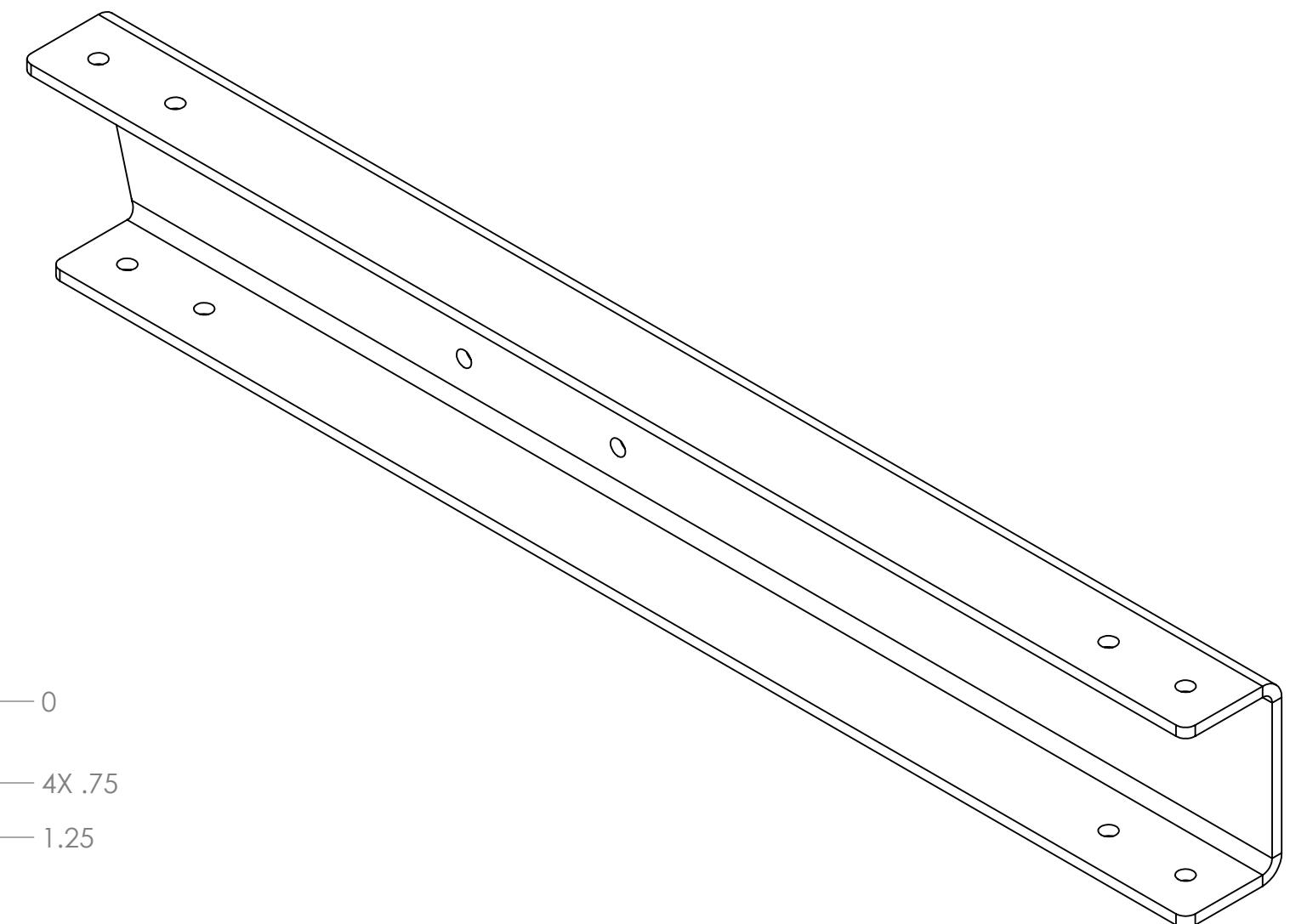
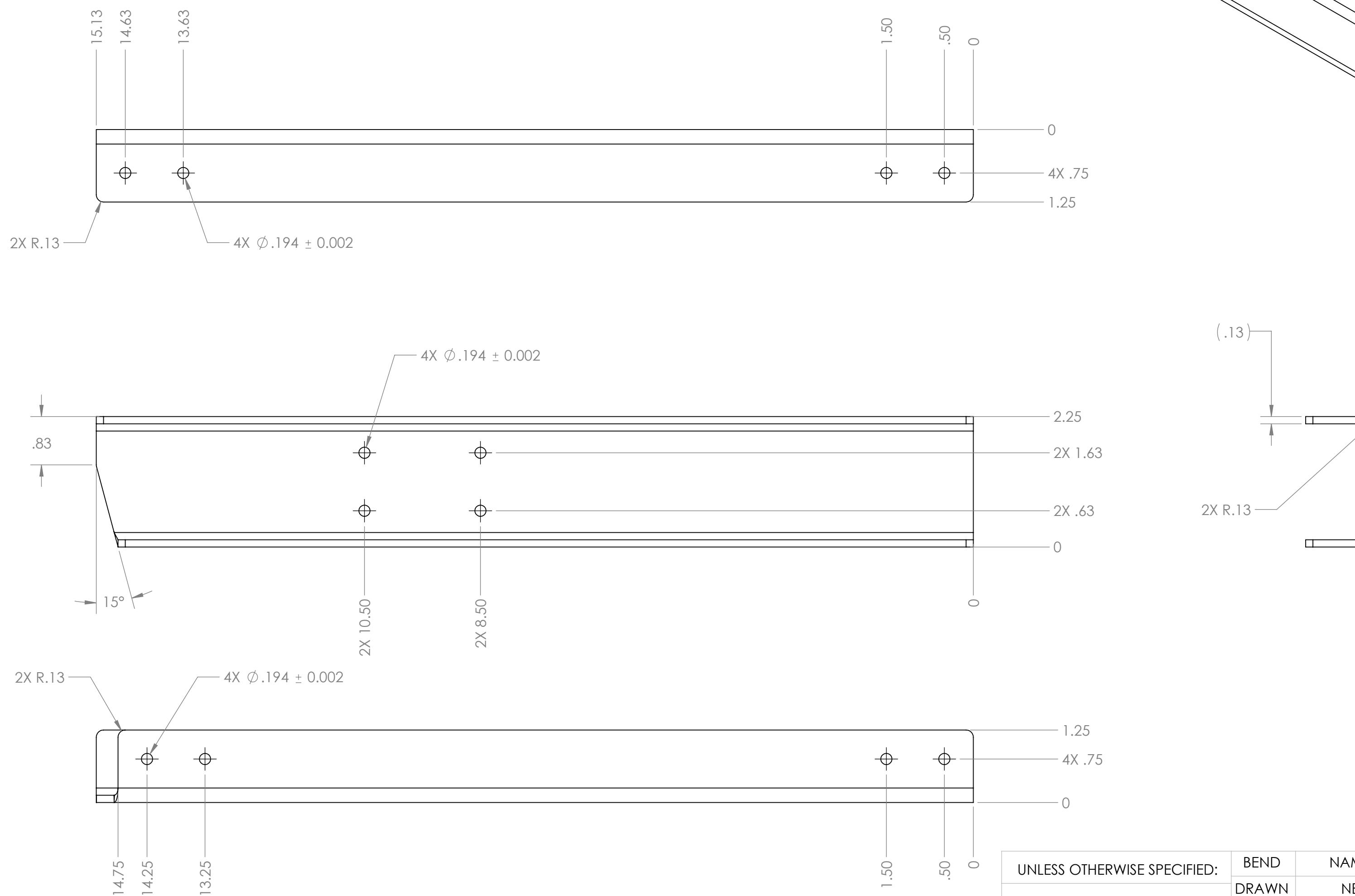
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	NE	9/30/2024	

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$ **MATERIAL/FINISH:**

8GA 5052 Aluminum

SIZE	DWG. NO.	REV
------	----------	-----

C	GE-25328	
----------	----------	--

SCALE: 2:3	SHEET 1 OF 1
------------	--------------

DO NOT SCALE DRAWING

FIRST	ROBOTICS	COMPETITION
--------------	-----------------	--------------------

SOLIDWORKS

Modeling Solutions Partner

TITLE: Outer Slice End

Vertical Left

SIZE DWG. NO. REV

C GE-25328

SCALE: 2:3 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

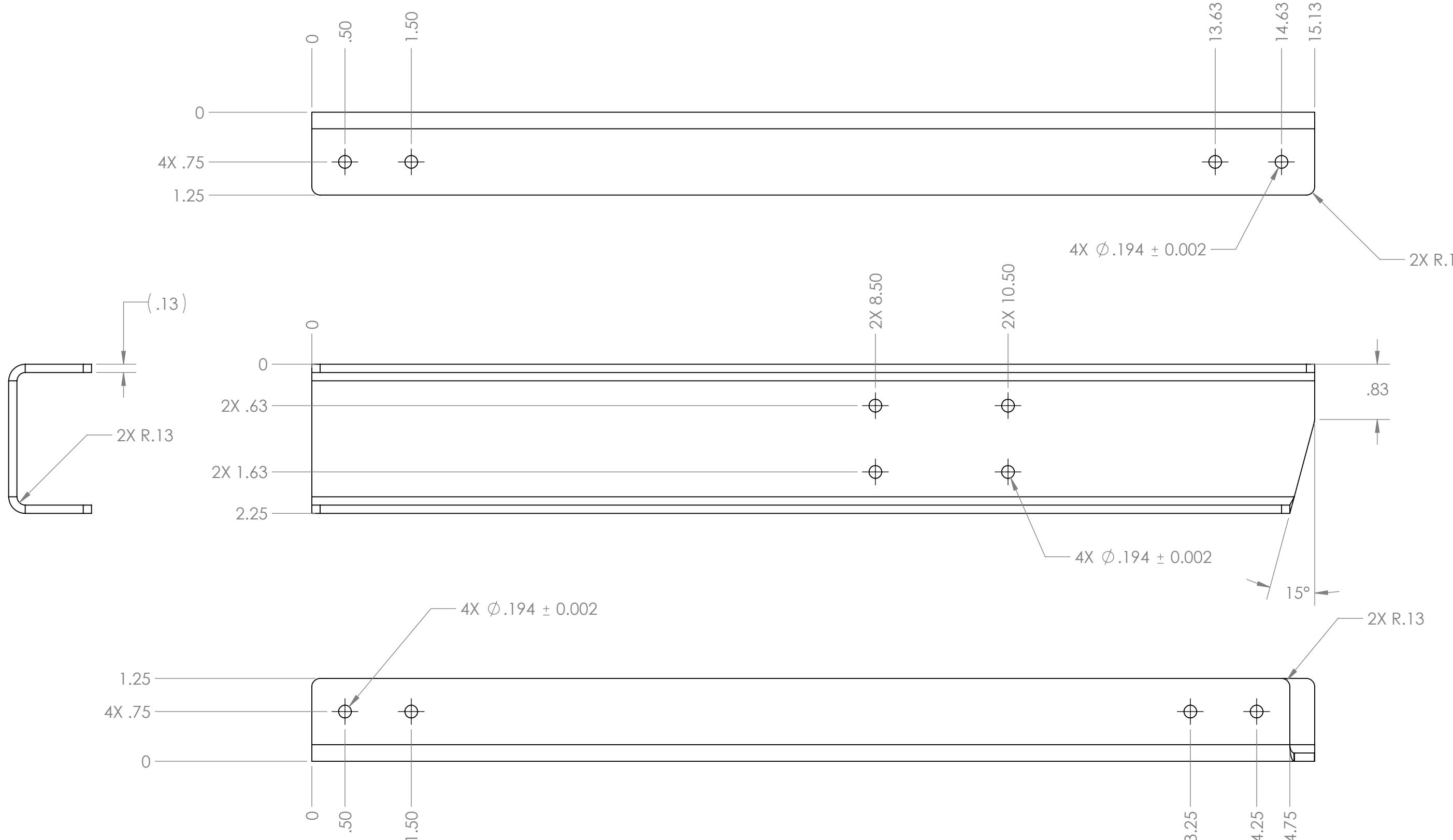
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	NE	9/30/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:			
8GA 5052 Aluminum			
COMMENTS:			
REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Outer Slice End
Vertical Right**

SIZE DWG. NO. REV
C GE-25329

SCALE: 2:3 SHEET 1 OF 1

4

3

2

1

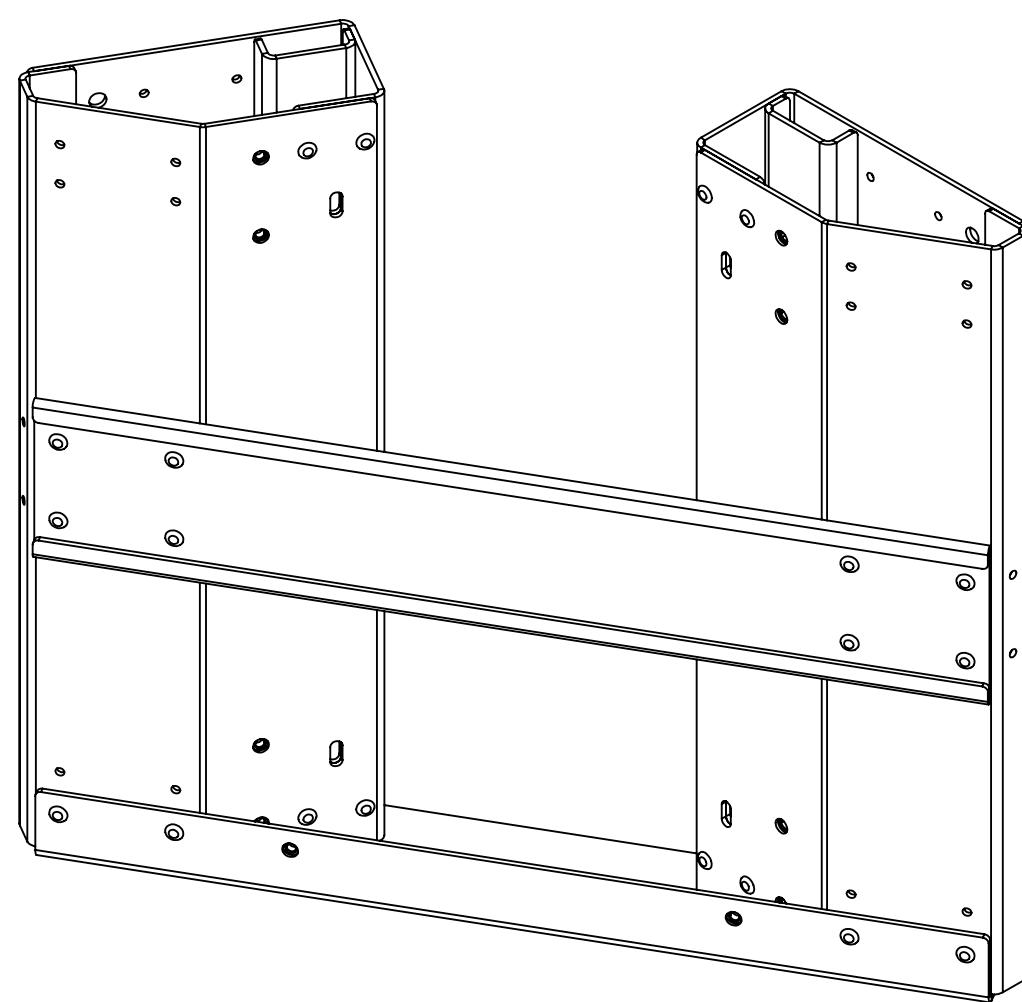
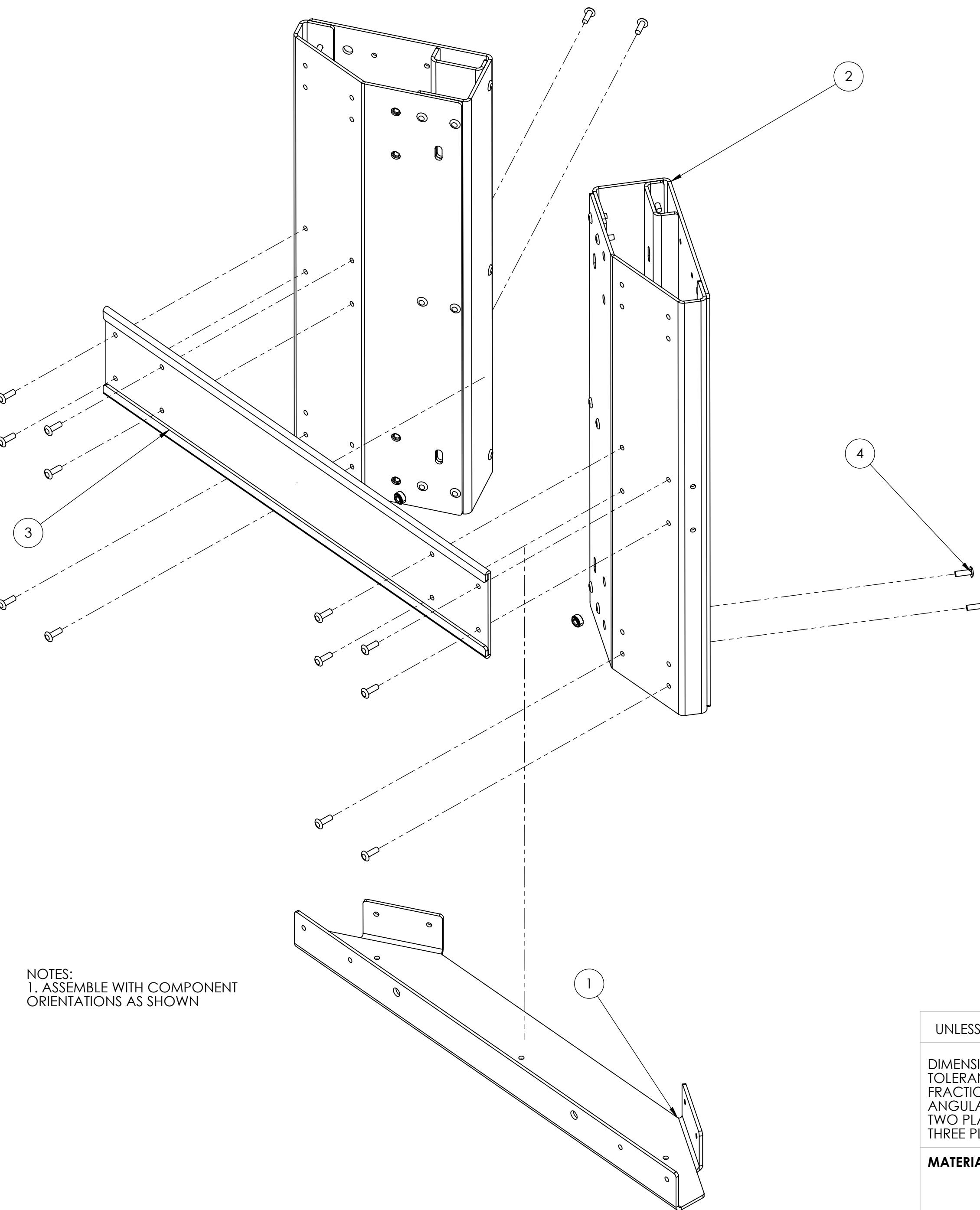
4

3

2

1

D



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25331	Inner Slice Base Channel W PEMs	1
2	GE-25332	Inner Slice Pipe Vertical	2
3	GE-25336	Inner Slice Back Support	1
4	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	16

UNLESS OTHERWISE SPECIFIED:

VEND NAME DATE

DRAWN NE 9/30/2024



TITLE:

Inner Slice Assembly

SIZE DWG. NO.

C GE-25330

REV

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

4

3

2

1

D

C

B

A

4

3

2

1

D

D

C

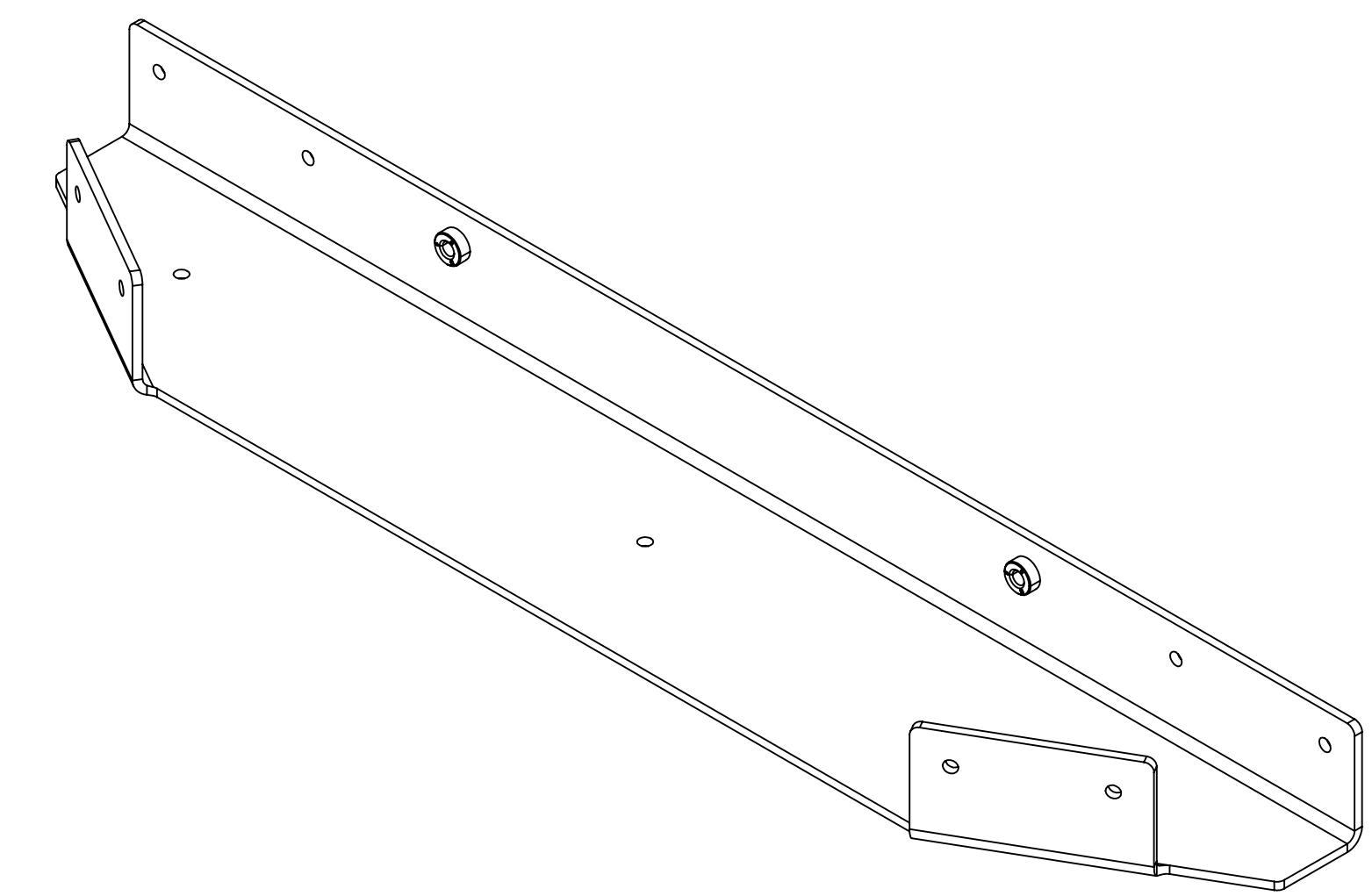
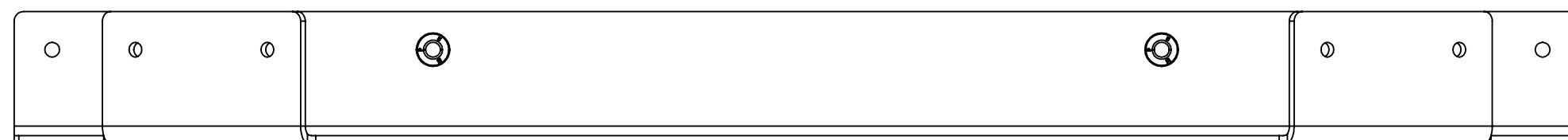
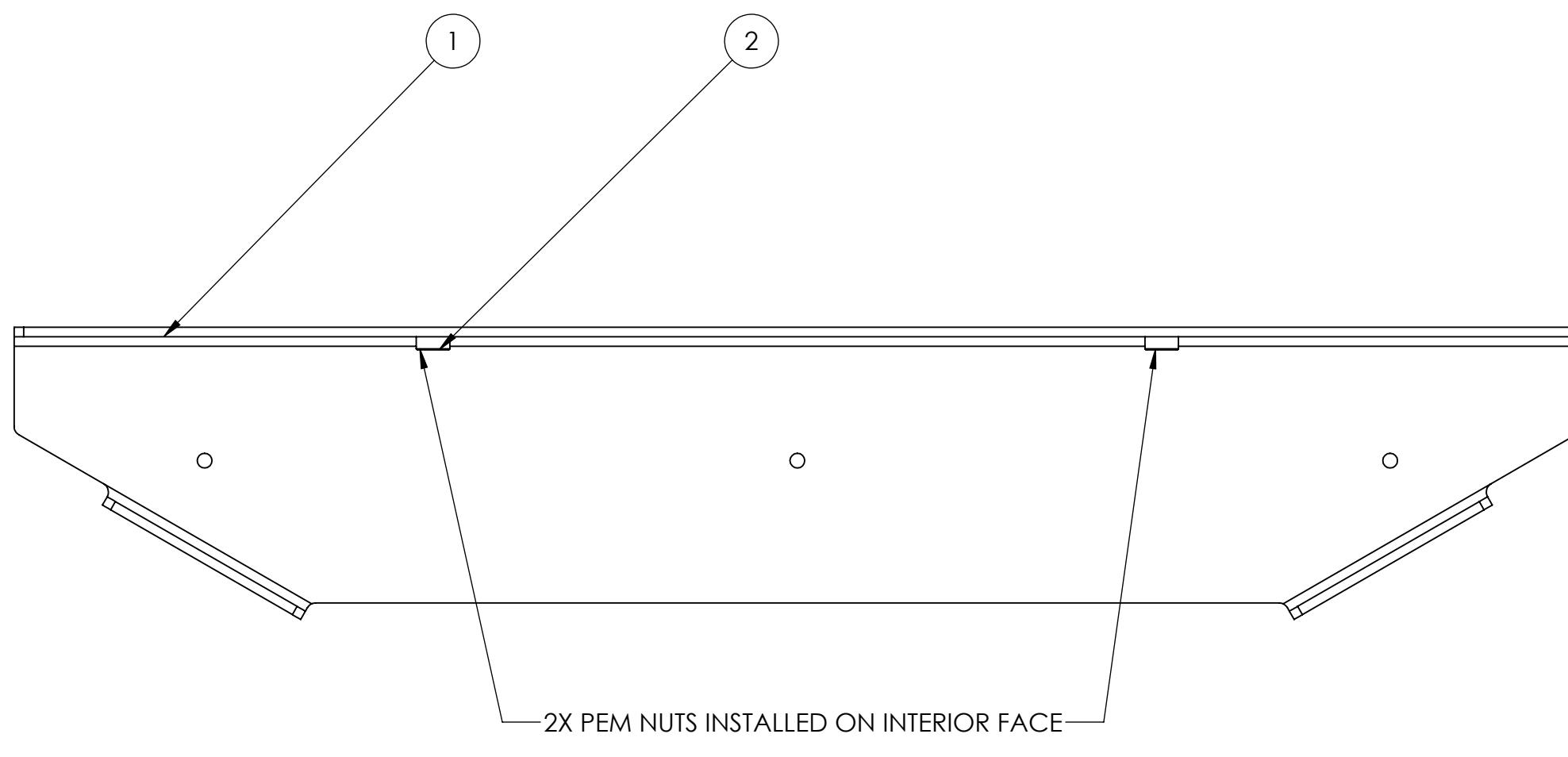
C

B

B

A

A



NOTES:
1. REMOVE ALL BUTTS AND SHARP EDGES

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25331-01	Inner Slice Base Channel	1
2	pem_clinchnut_.25_20 .054	1/4-20 self-clinching nut, .054 shank	2
UNLESS OTHERWISE SPECIFIED:			
VEND	NAME	DATE	
DRAWN	NE	9/30/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
Inner Slice Base
Channel W PEMs

SIZE DWG. NO. REV

C GE-25331

SCALE: 1:2 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

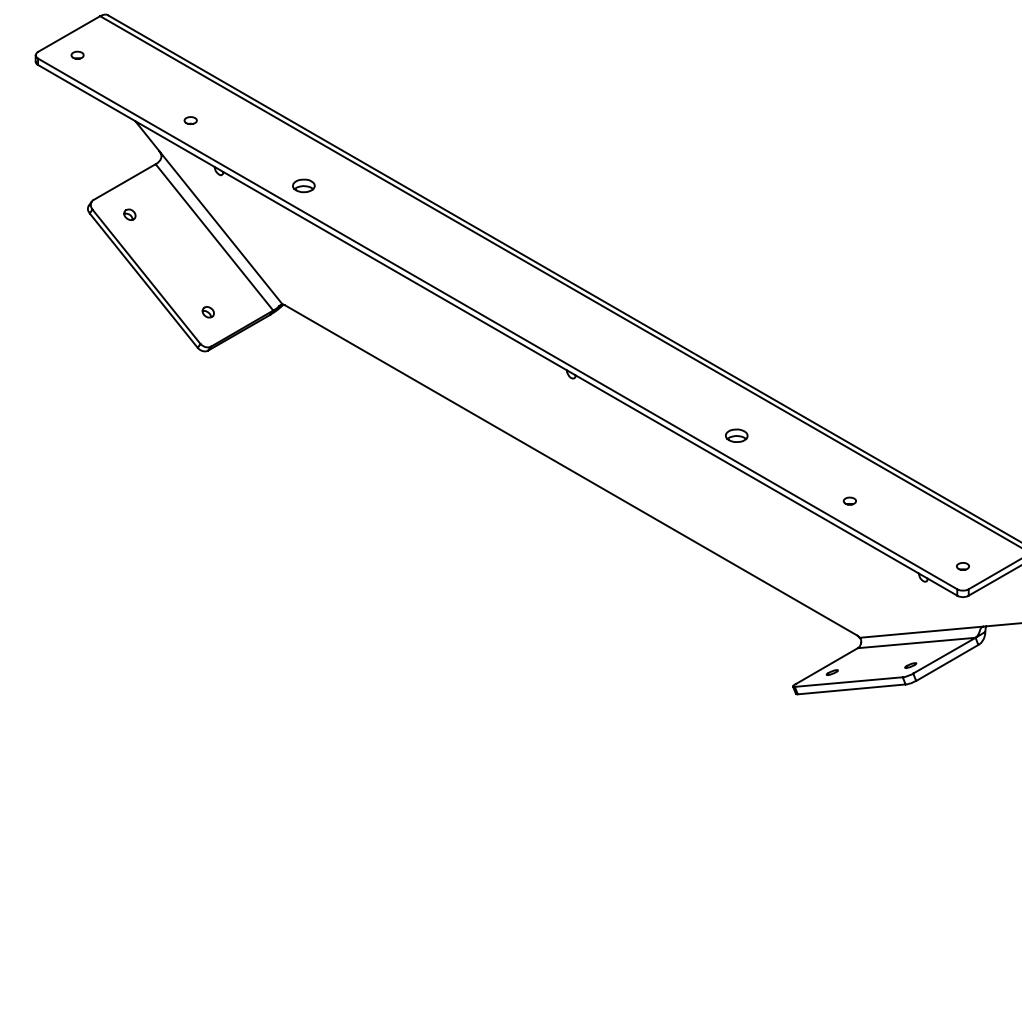
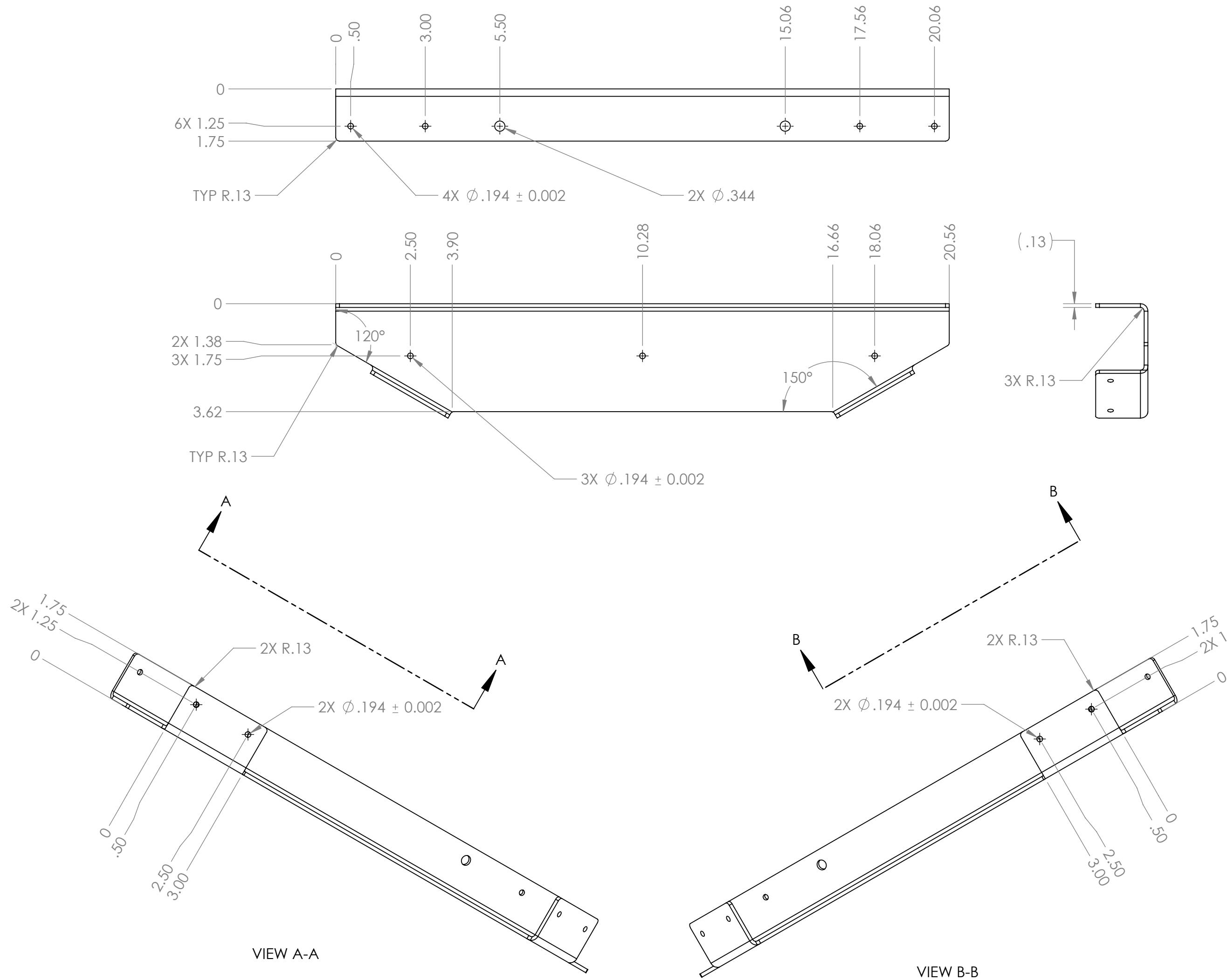
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:		BEND	NAME	DATE
DIMENSIONS ARE IN INCHES		DRAWN	NE	9/30/2024
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$				
TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$				
PROPRIETARY AND CONFIDENTIAL				
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				
MATERIAL/FINISH: 8GA 5052 Aluminum				
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				
DO NOT SCALE DRAWING				

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Inner Slice Base
Channel**

SIZE DWG. NO. REV
C GE-25331-01

SCALE: 1:3 SHEET 1 OF 1

4

3

2

1

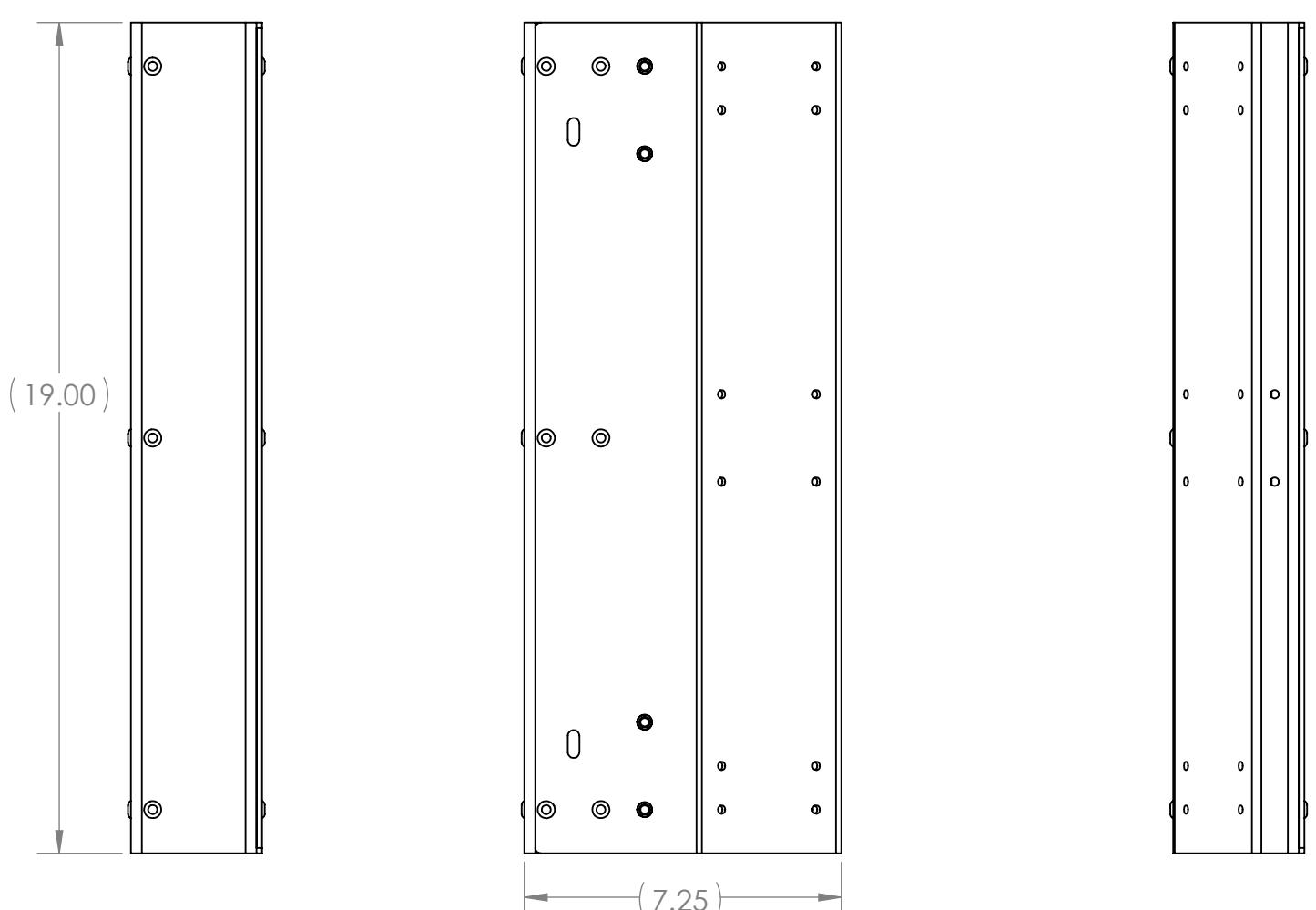
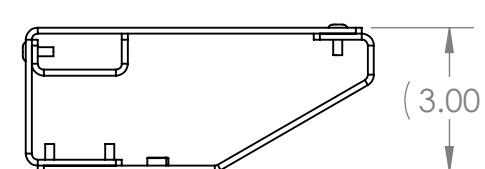
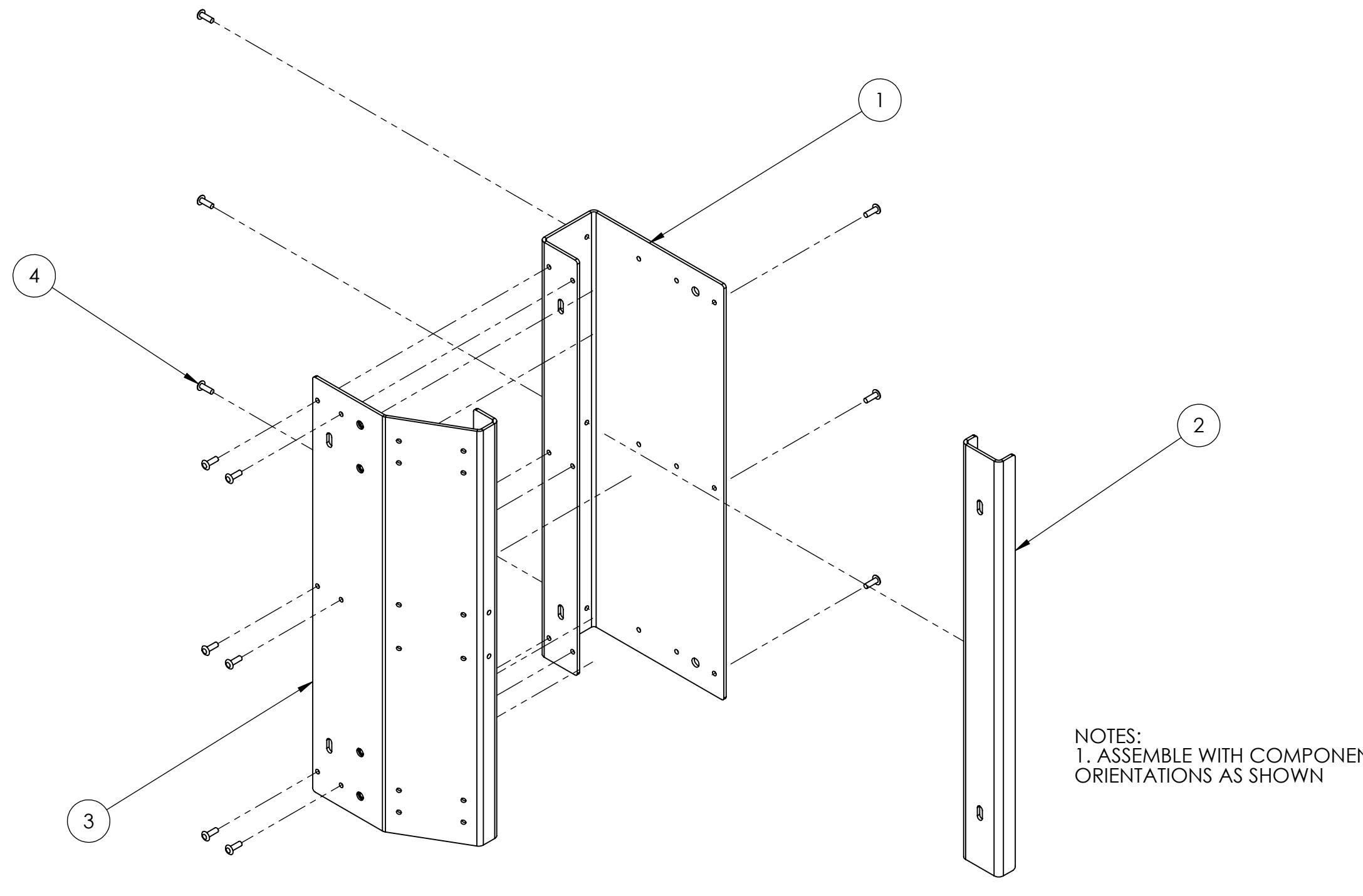
4

3

2

1

D



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25335	Inner Slice Pipe Vertical Inner Shell	1
2	GE-25333	Inner Slice Pipe Backing	1
3	GE-25334	Inner Slice Pipe Vertical Outer Shell W PEMs	1
4	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	12

VEND	NAME	DATE
DRAWN	NE	9/27/2024

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

TITLE:
Inner Slice Pipe Vertical

SIZE DWG. NO. REV

C GE-25332

SCALE: 1:4 SHEET 1 OF 1

4

3

2

1

4

3

2

1

D

D

C

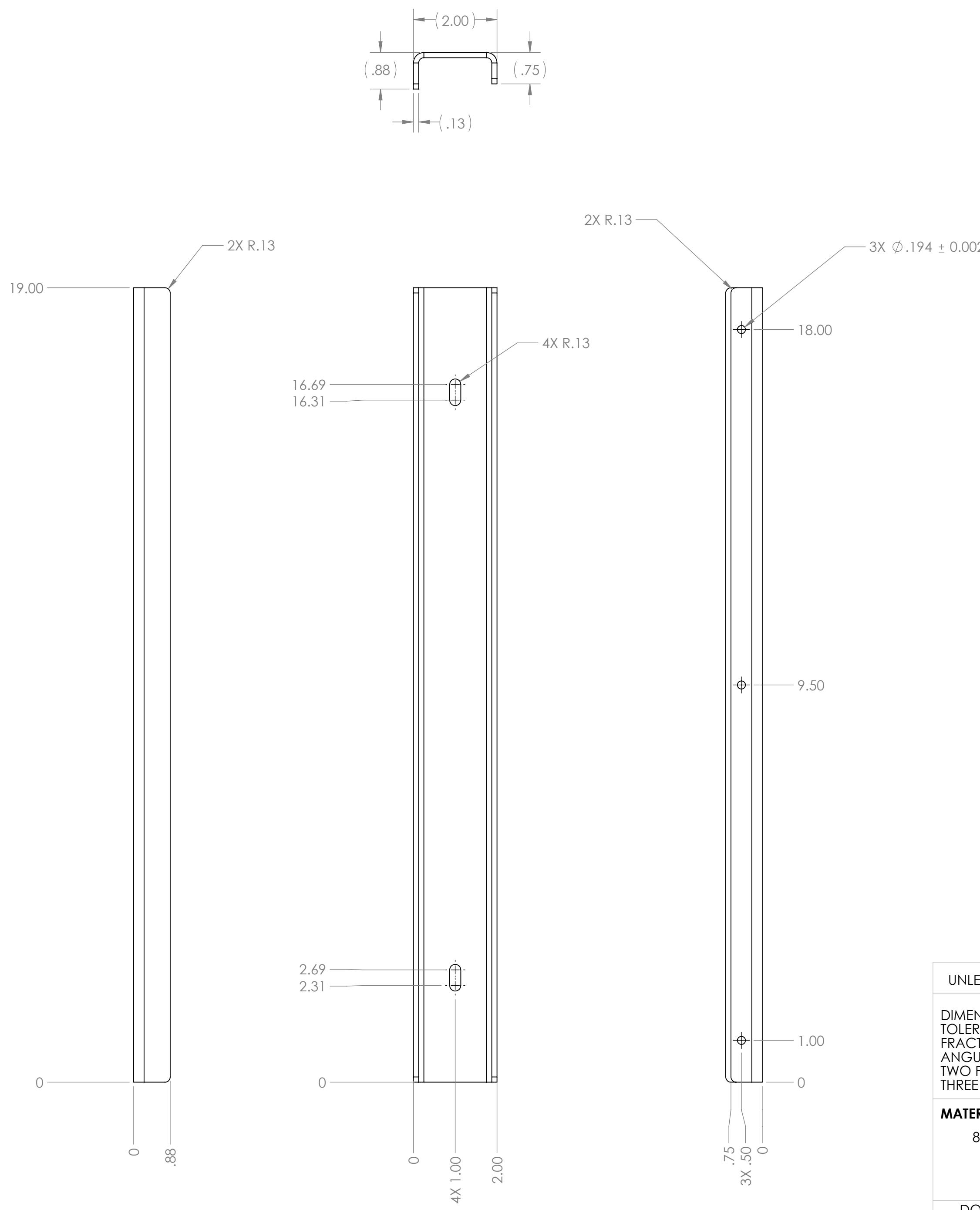
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	NE	9/27/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 8GA 5052 Aluminum			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
**Inner Slice Pipe
Backing**

SIZE DWG. NO. REV
C GE-25333

SCALE: 1:2 SHEET 1 OF 1

4

3

2

1

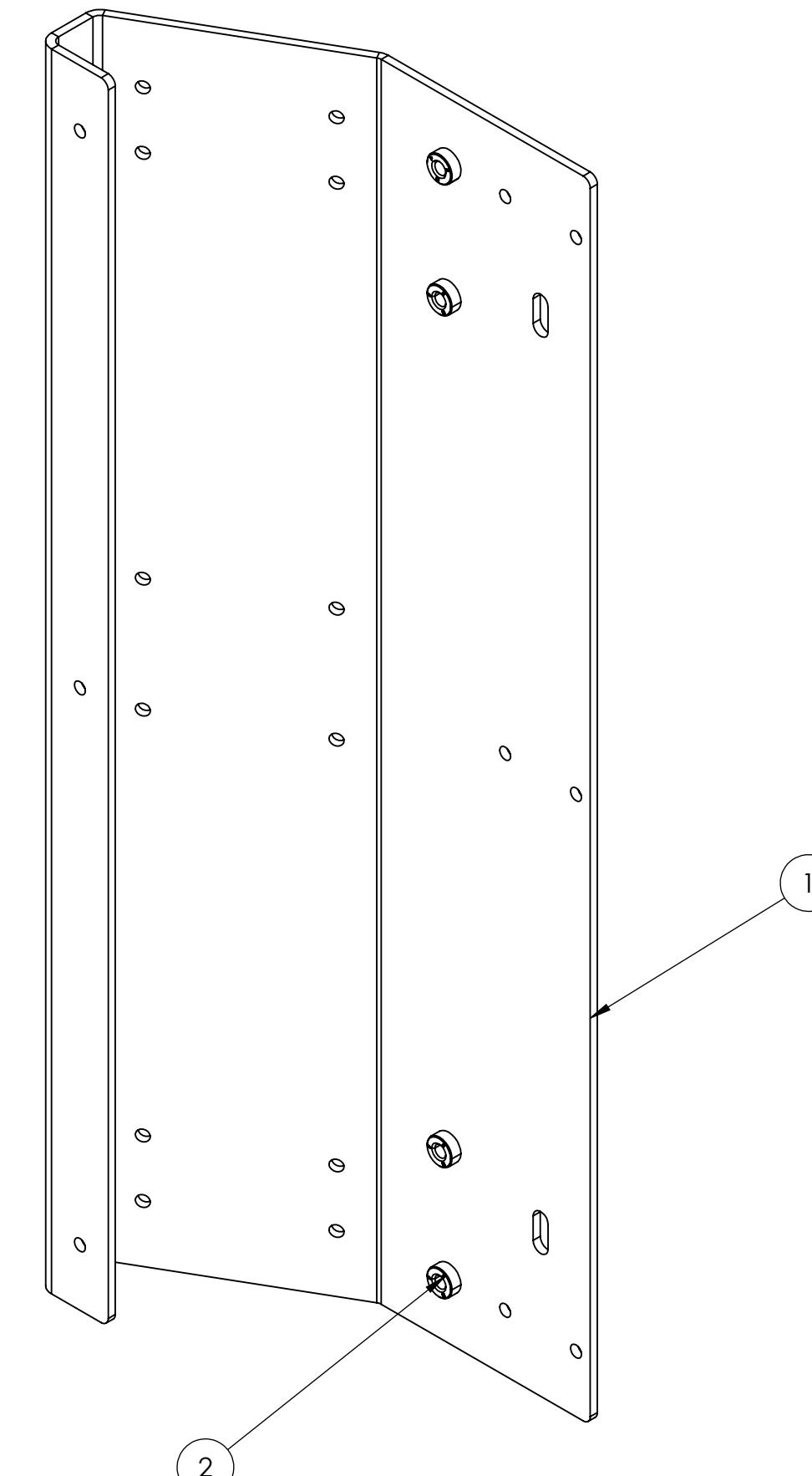
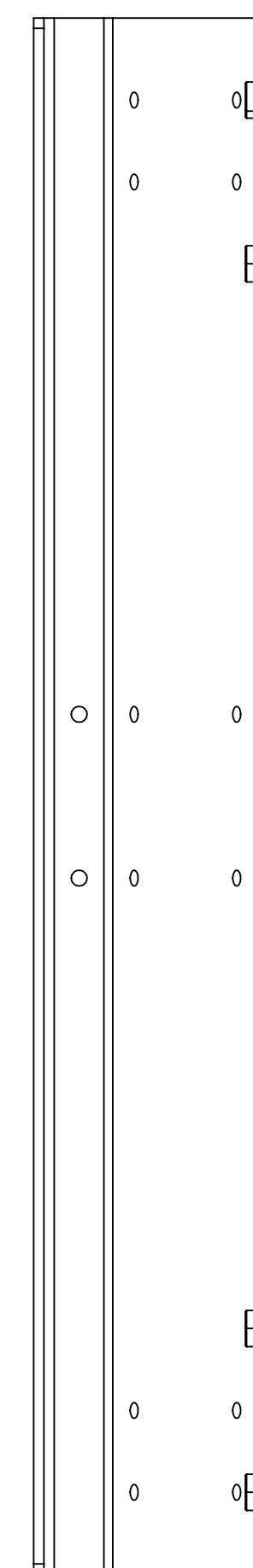
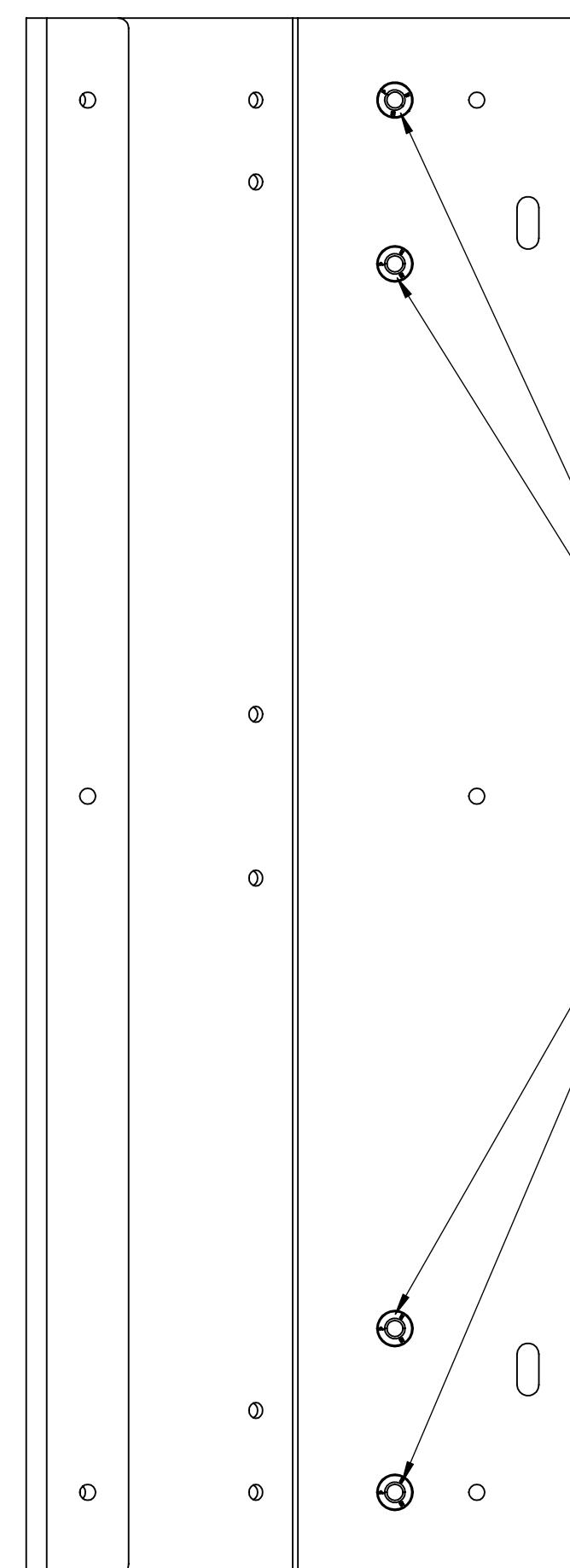
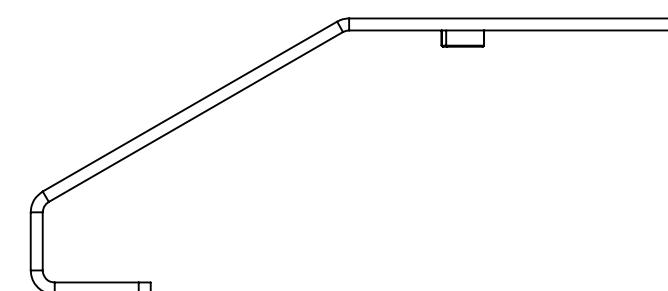
4

3

2

1

D



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.		
1	GE-25334-01	Inner Slice Pipe Vertical Outer Shell	1		
2	pem_clinchnut_.25_20 .054	1/4-20 self-clinching nut, .054 shank	4		
UNLESS OTHERWISE SPECIFIED:		VEND	NAME		
		DRAWN	NE		
		DATE			
		9/27/2024			
PROPRIETARY AND CONFIDENTIAL					
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING		SIZE	DWG. NO.		
		C	GE-25334		
		REV			
SCALE: 1:2		SHEET 1 OF 1			

 FIRST
ROBOTICS
COMPETITION  SOLIDWORKS
Modeling Solutions Partner

TITLE:
Inner Slice Pipe Vertical
Outer Shell W PEMs

4

3

2

1

4

3

2

1

D

D

C

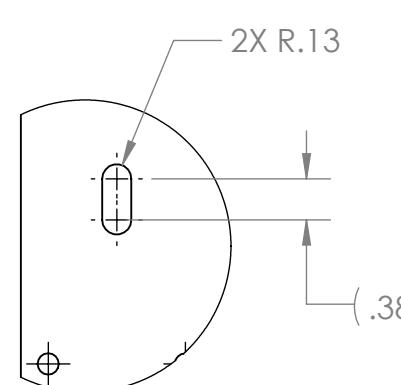
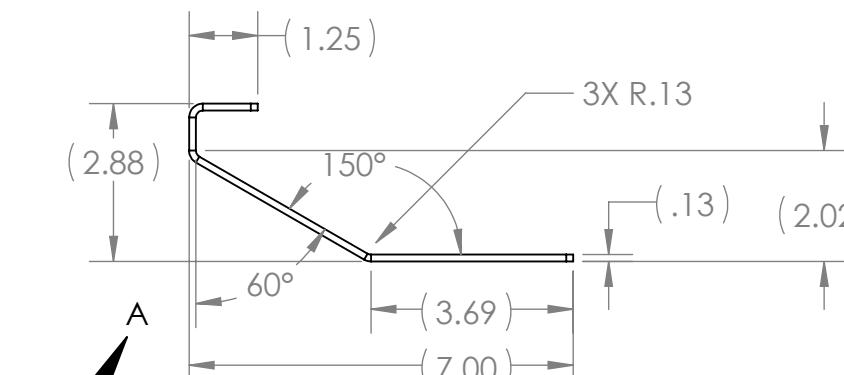
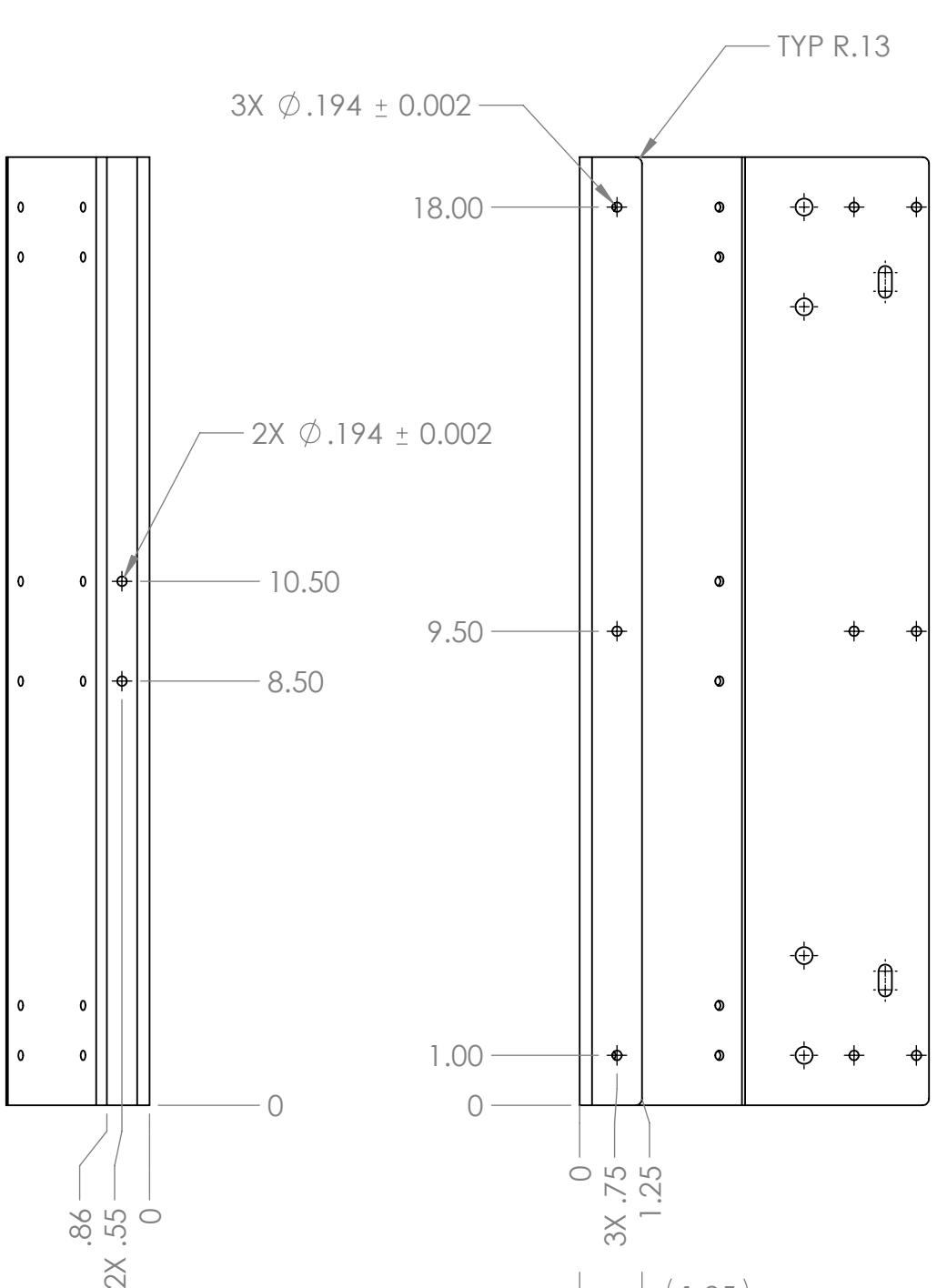
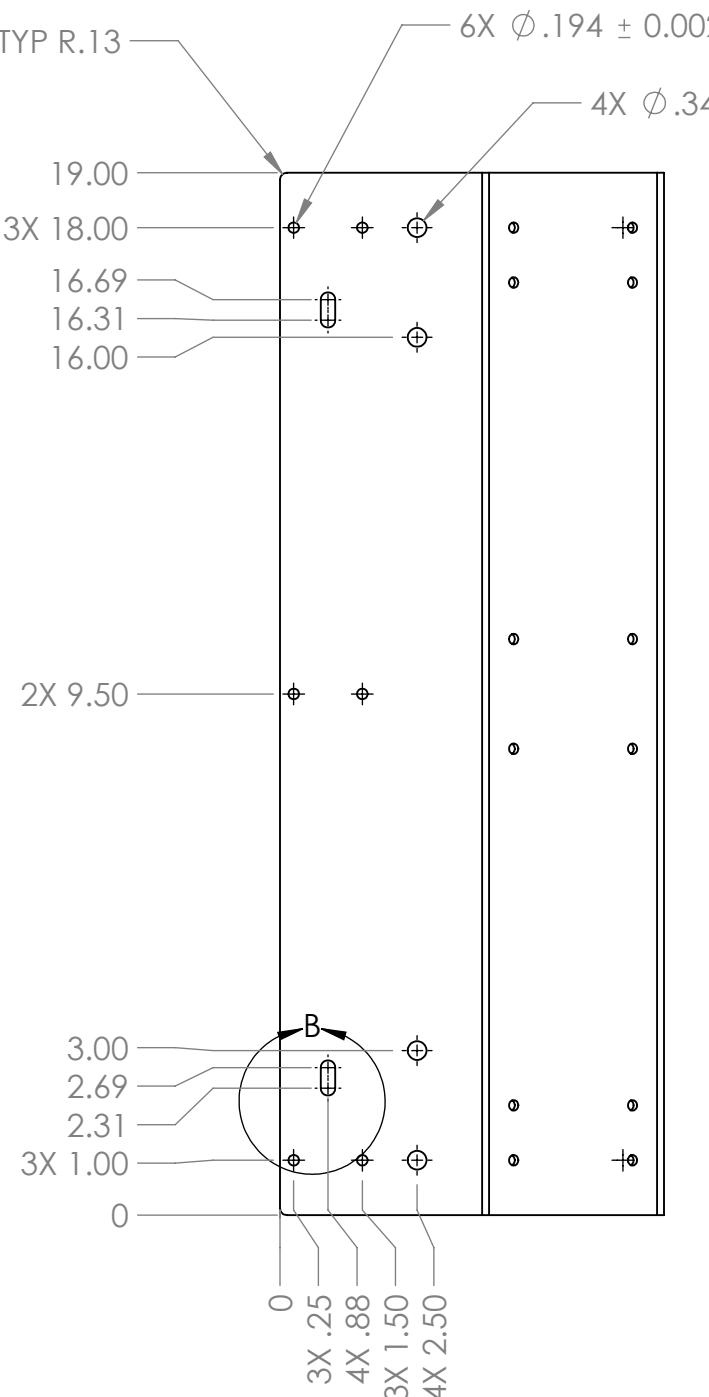
C

B

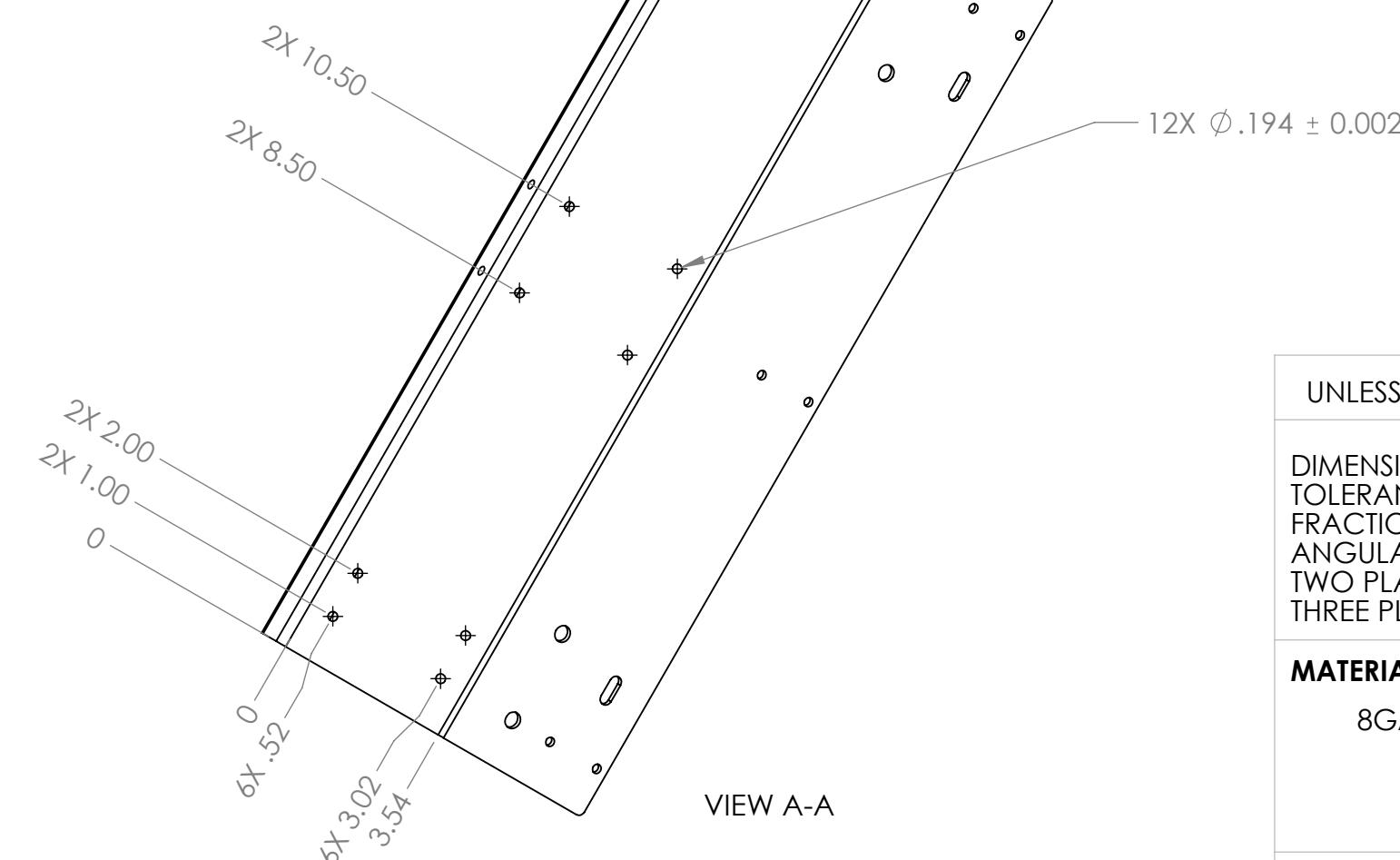
B

A

A



DETAIL B
SCALE 4 : 7



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .02$
THREE PLACE DECIMAL $\pm .010$

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

MATERIAL/FINISH:
8GA 5052 Aluminum

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

BEND NAME DATE
DRAWN NE 9/27/2024

FIRST ROBOTICS COMPETITION DS SOLIDWORKS Modeling Solutions Partner

TITLE: Inner Slice Pipe Vertical Outer Shell

SIZE	DWG. NO.	REV
C	GE-25334-01	
SCALE: 2:7	SHEET 1 OF 1	

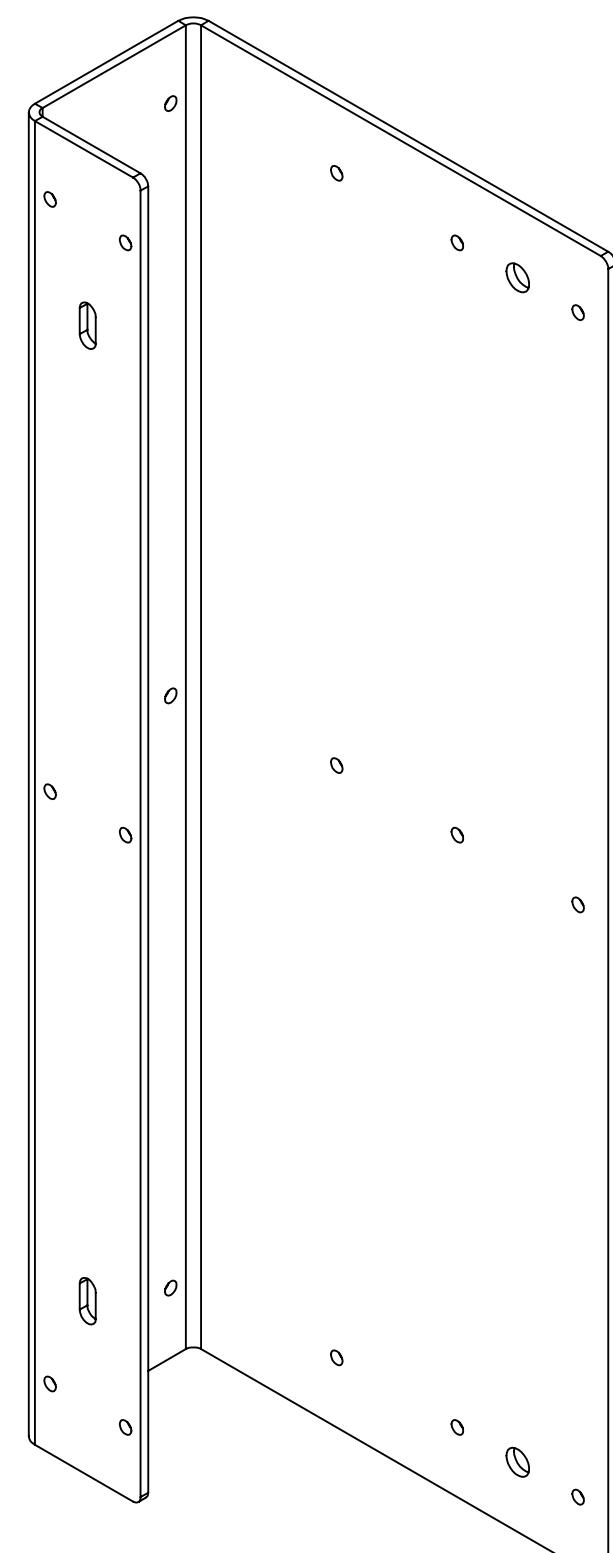
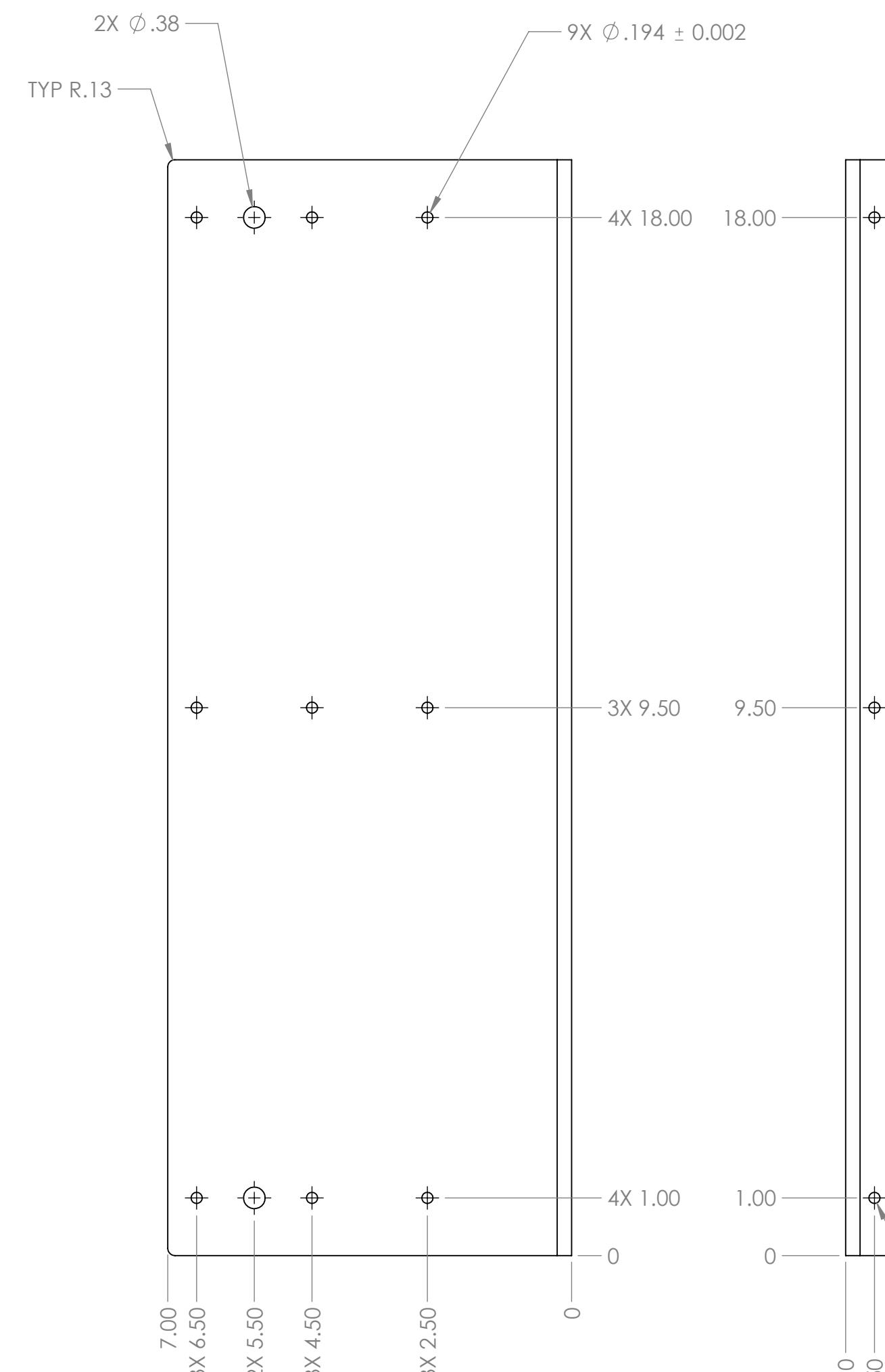
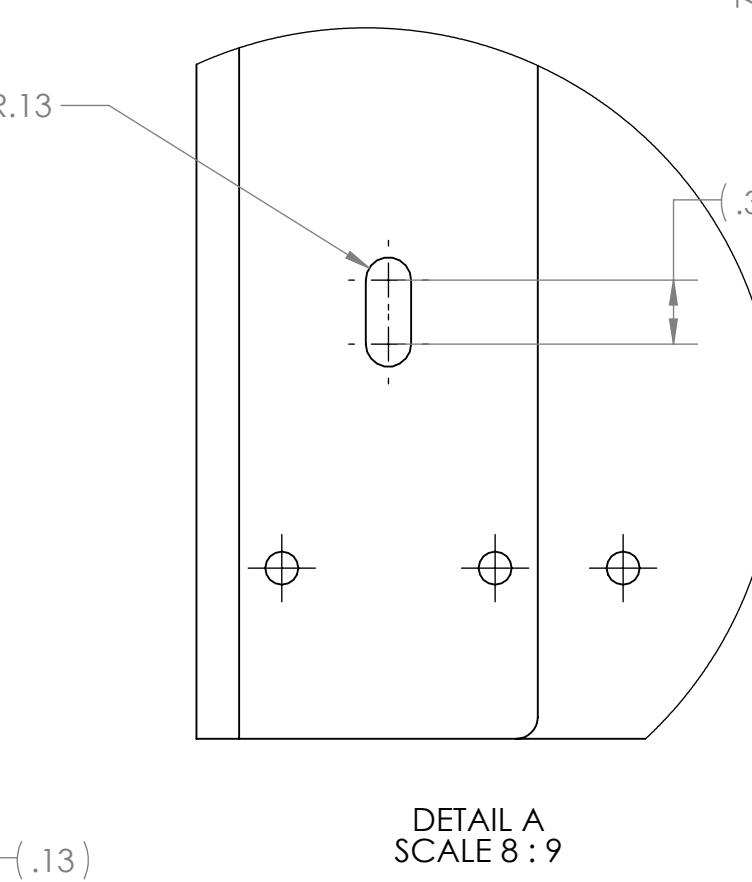
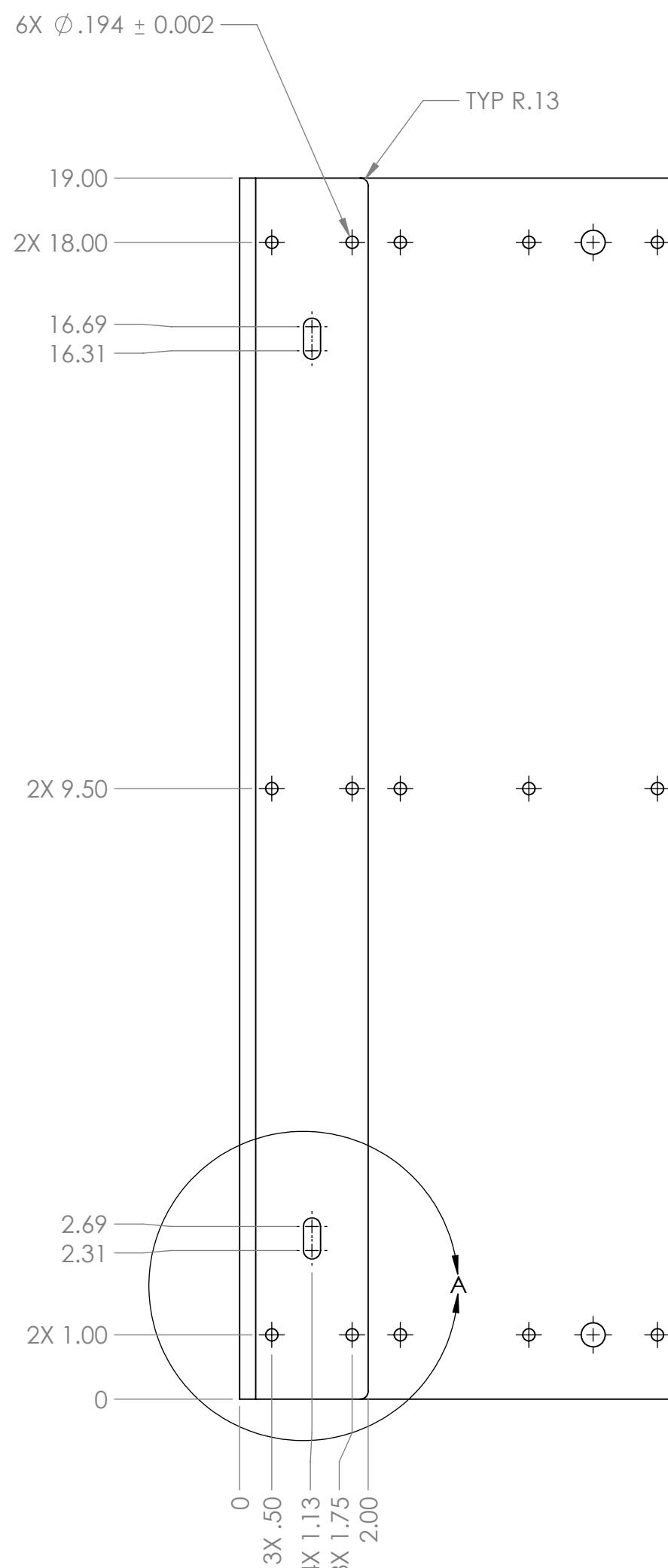
4

3

2

1

D



UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .02$
THREE PLACE DECIMAL $\pm .010$

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST IS PROHIBITED.

MATERIAL/FINISH:
8GA 5052 Aluminum

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

FIRST ROBOTICS COMPETITION
SOLIDWORKS
Modeling Solutions Partner

TITLE: Inner Slice Pipe Vertical Inner Shell

SIZE	DWG. NO.	REV
C	GE-25335	
SCALE: 4:9	SHEET 1 OF 1	

4

3

2

1

D

D

C

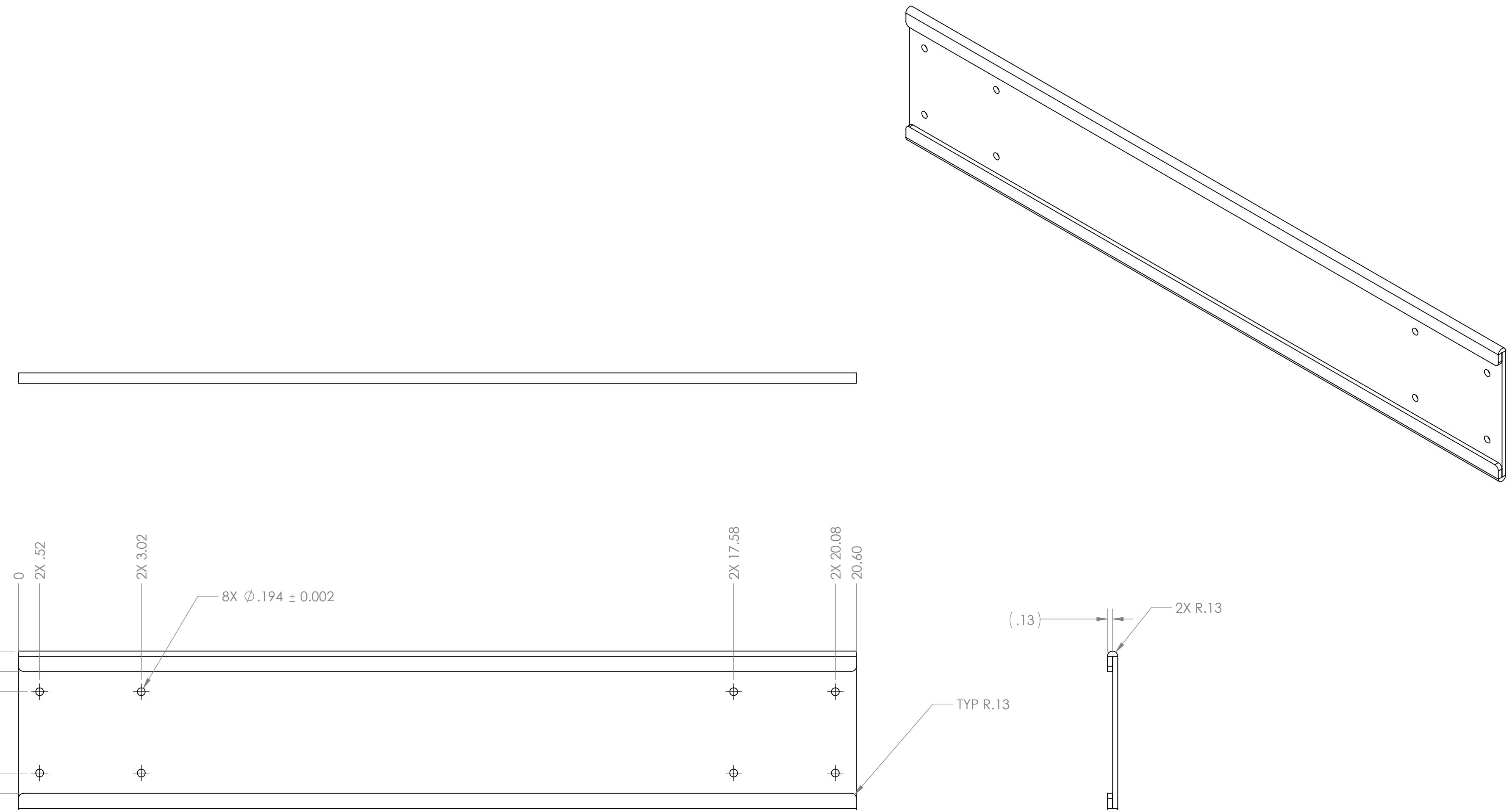
C

B

B

A

A



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE
DRAWN	NE	9/30/2024	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH: 8GA 5052 Aluminum			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

 **FIRST
ROBOTICS
COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE:
Inner Slice Back Support

SIZE DWG. NO. REV
C GE-25336

SCALE: 1:2 SHEET 1 OF 1

4

3

2

1

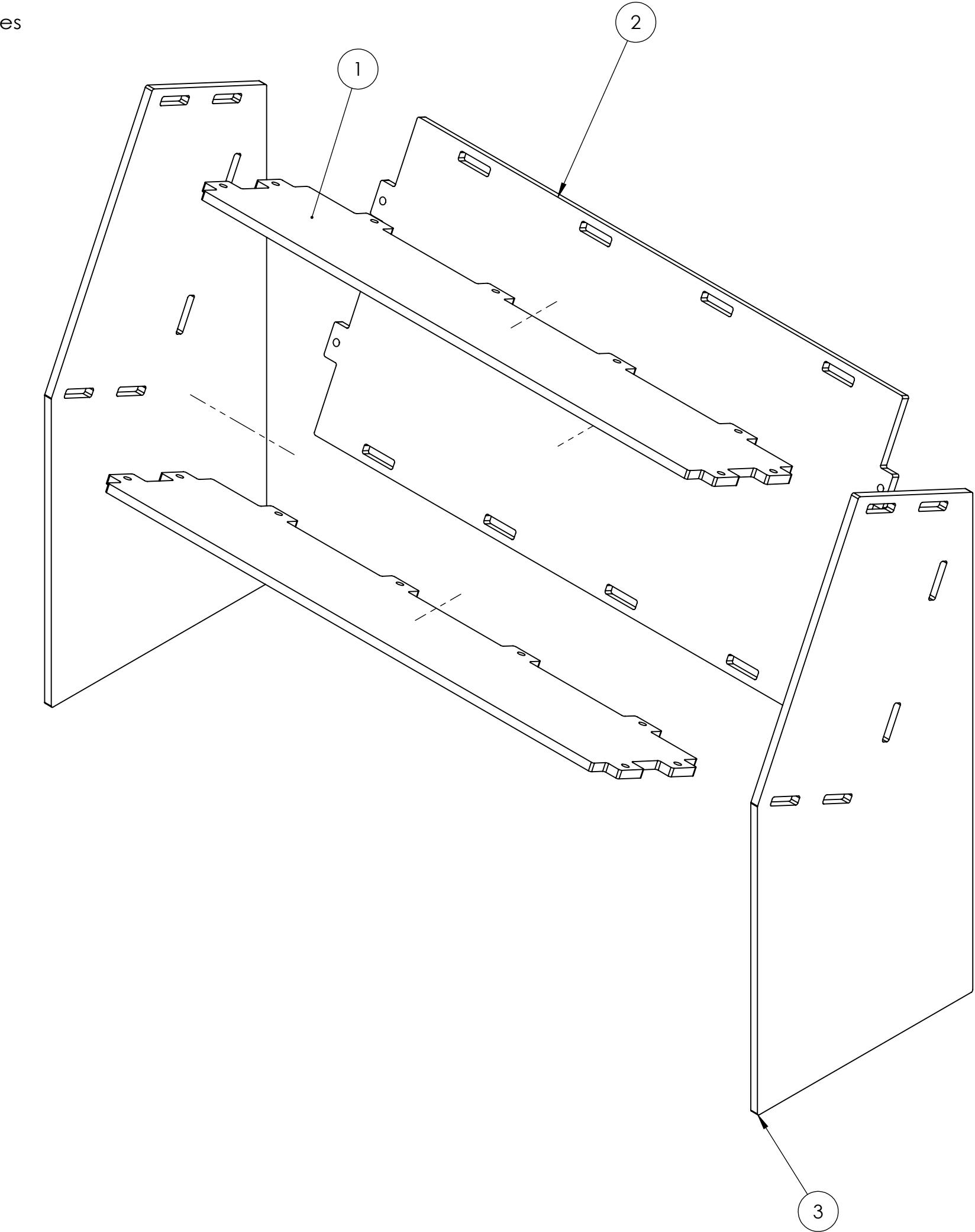
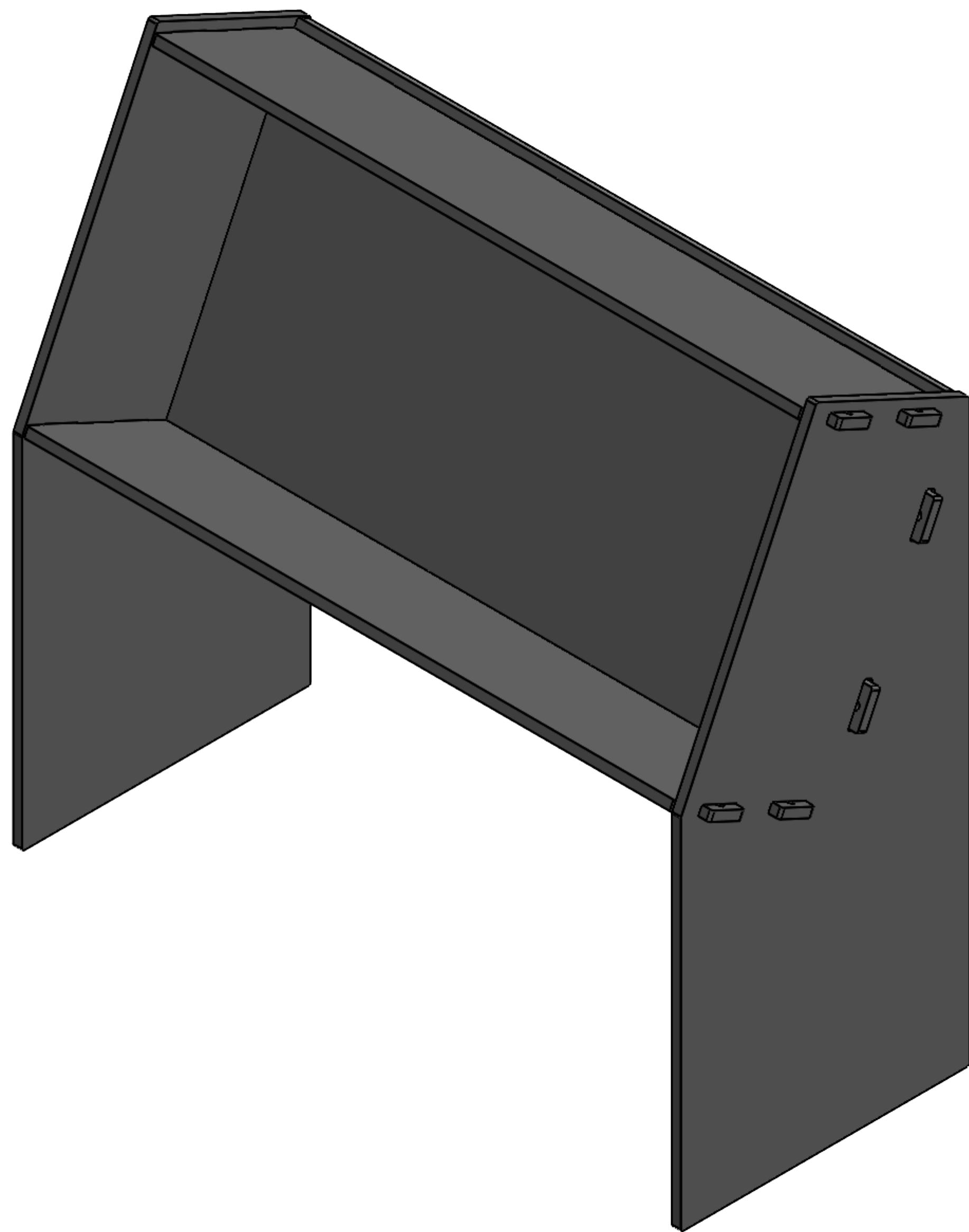
4

3

2

1

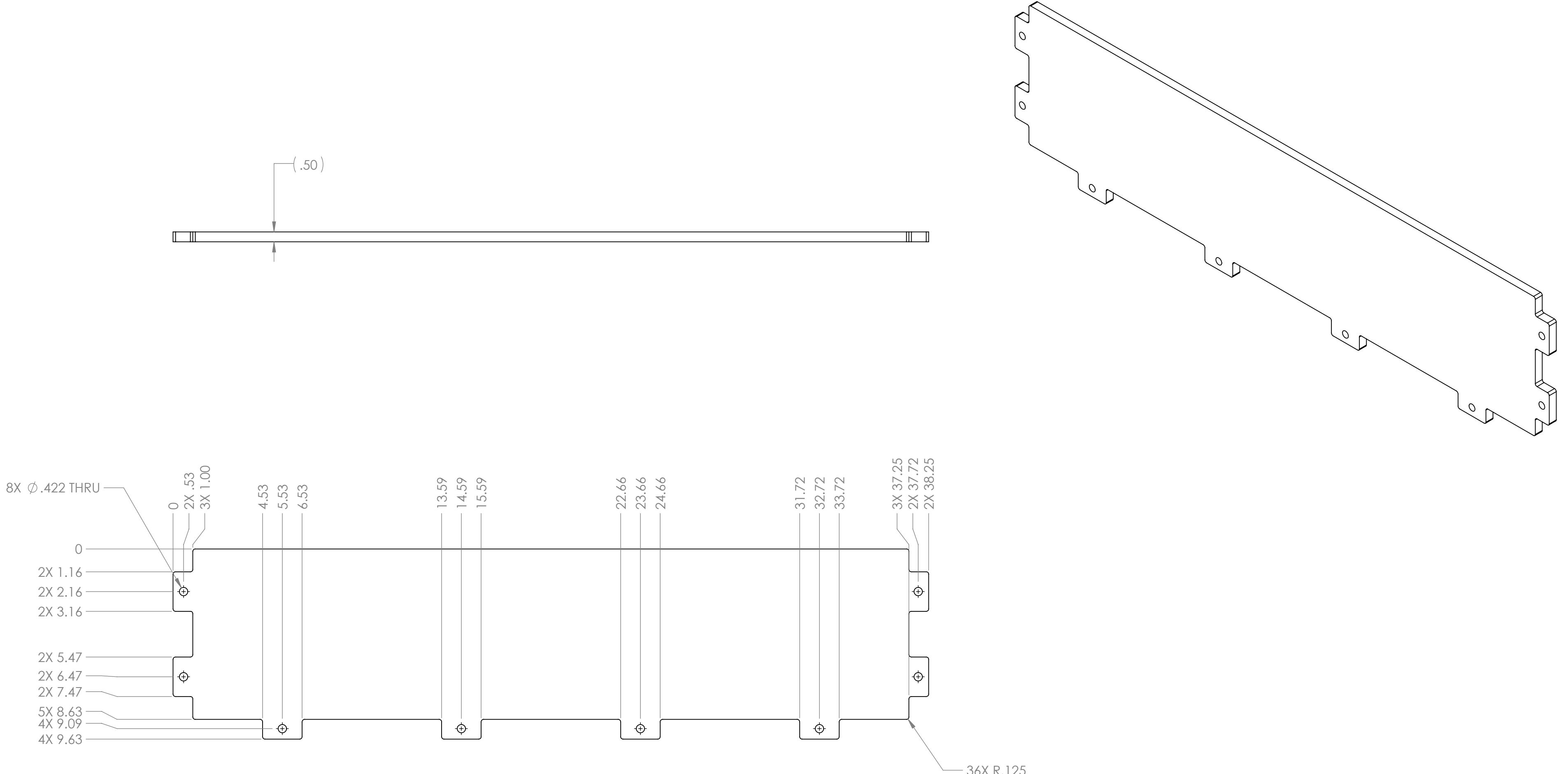
Assemble with 120 lb. cable ties



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25411	Coral Holder Top & Bottom Panel	2
2	GE-25412	Coral Holder Back Panel	1
3	GE-25413	Coral Holder Side Panel	2

UNLESS OTHERWISE SPECIFIED:			VEND	NAME	DATE
			DRAWN	BB	7/23/2024
PROPRIETARY AND CONFIDENTIAL					
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
COMMENTS:					
REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					

FIRST ROBOTICS COMPETITION Modeling Solutions Partner
Coral Holder
 SIZE DWG. NO. REV
C GE-25410
 SCALE: 1:12 SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$		DRAWN	BB	7/22/2024
MATERIAL/FINISH: 1/2" Black HDPE, Orange Peel Texture		<p>PROPRIETARY AND CONFIDENTIAL</p> <p>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.</p> <p>COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.</p>		
DO NOT SCALE DRAWING				

4

3

2

1

D

D

C

C

B

B

A

A

0
2X .53
3X 1.00
2X 4.41
2X 6.66

2X 13.47
2X 15.72

2X 22.53
2X 24.78

2X 31.59
2X 33.84

3X 37.25
2X 37.72
2X 38.25

4X Ø .422 THRU

52X R.13

(.50)

18.40
4X 17.95
4X 17.40

2X 14.30
2X 13.30
2X 12.30

2X 6.10
2X 5.10
2X 4.10

4X 1.00
4X .45
0

UNLESS OTHERWISE SPECIFIED:

VEND NAME DATE

DRAWN BB 7/22/2024

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST[®]. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST[®] IS PROHIBITED.

MATERIAL/FINISH:

1/2" Black HDPE, Orange Peel Texture

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING



TITLE:
Coral Holder Back Panel

SIZE DWG. NO. REV
C GE-25412

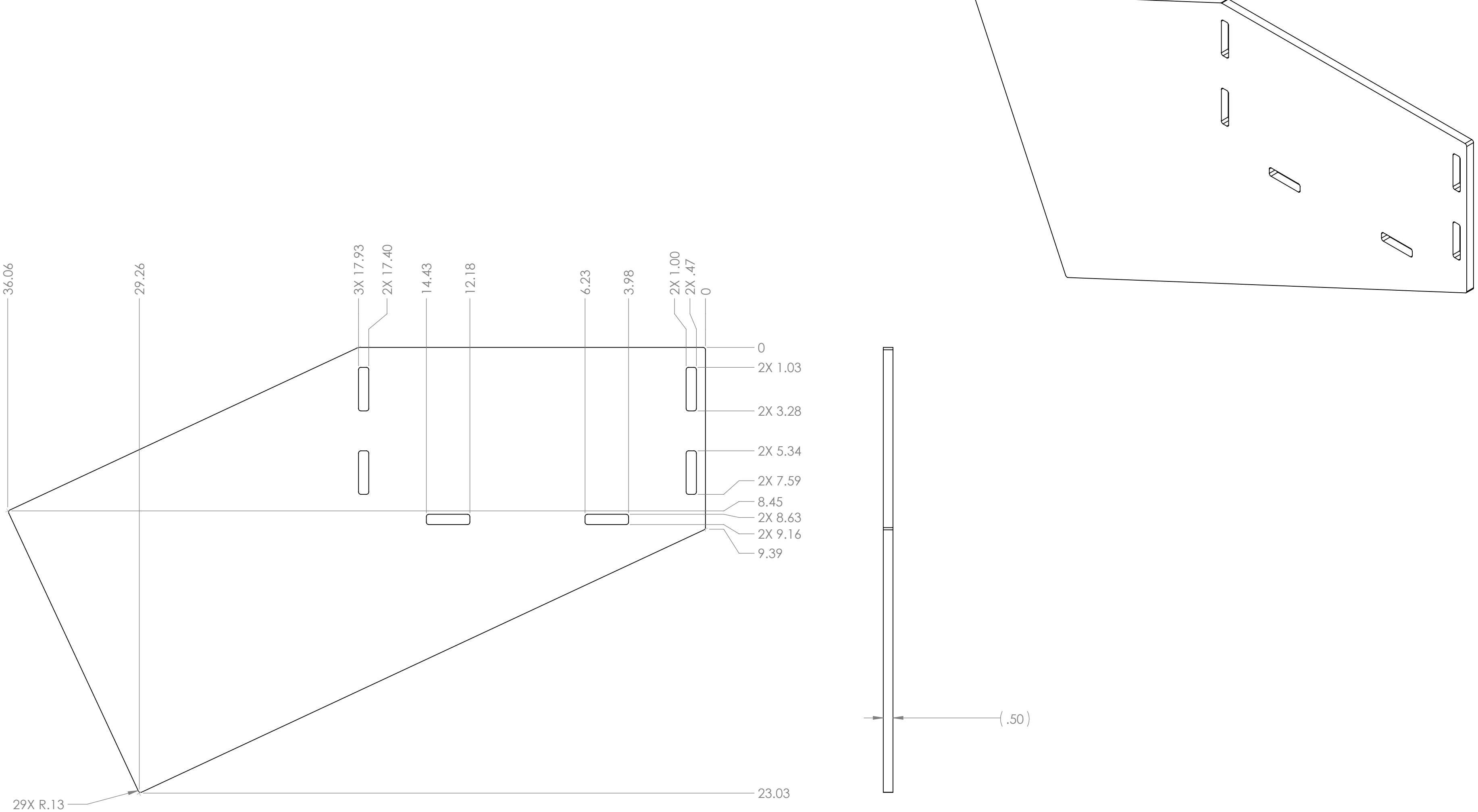
SCALE: 1:4 SHEET 1 OF 1

4

3

2

1



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	BB	7/22/2024
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$			
TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$			
MATERIAL/FINISH:			
1/2" Black HDPE, Orange Peel Texture			
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST [®] . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST [®] IS PROHIBITED.			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
Coral Holder
Side Panel

SIZE DWG. NO. REV
C GE-25413

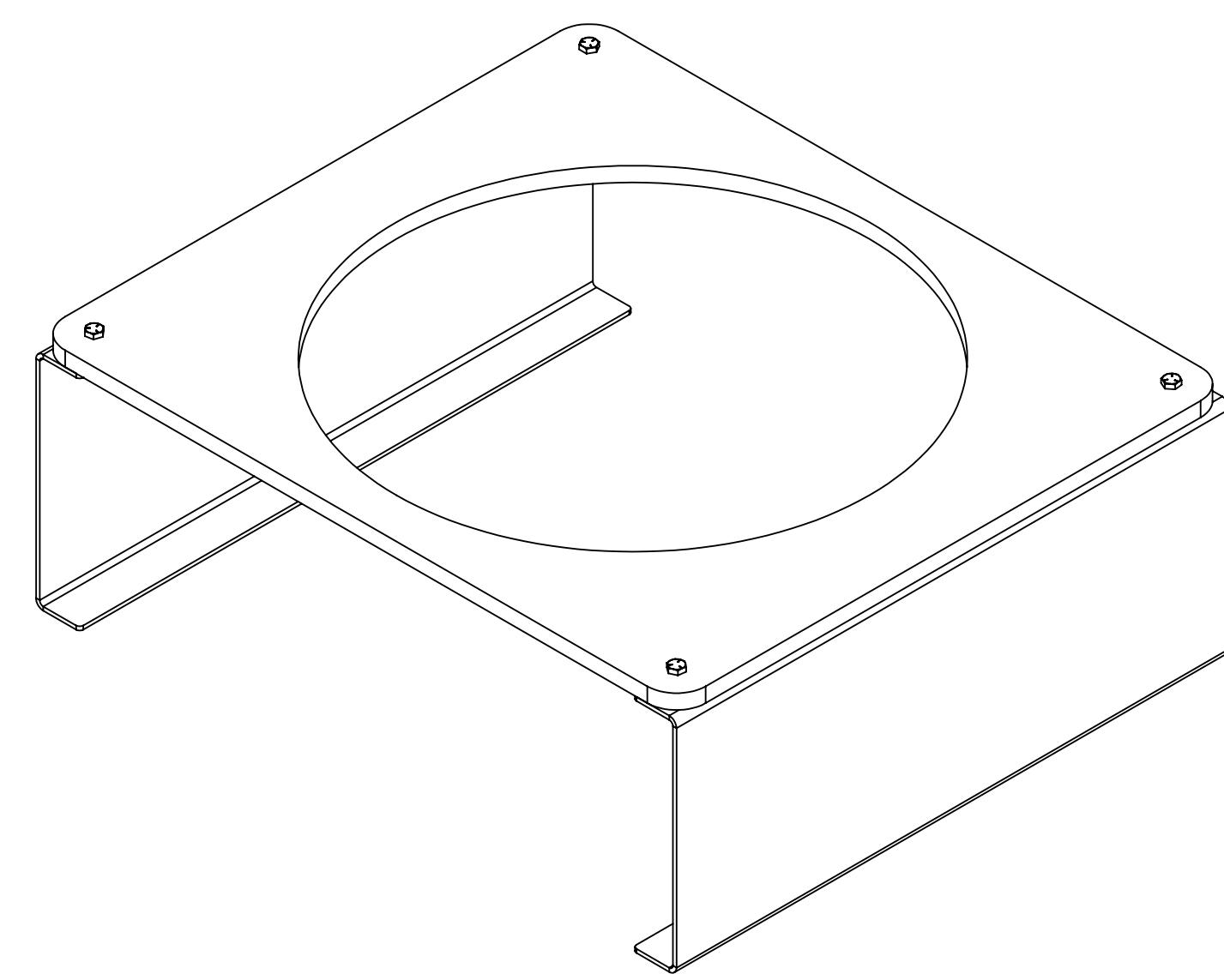
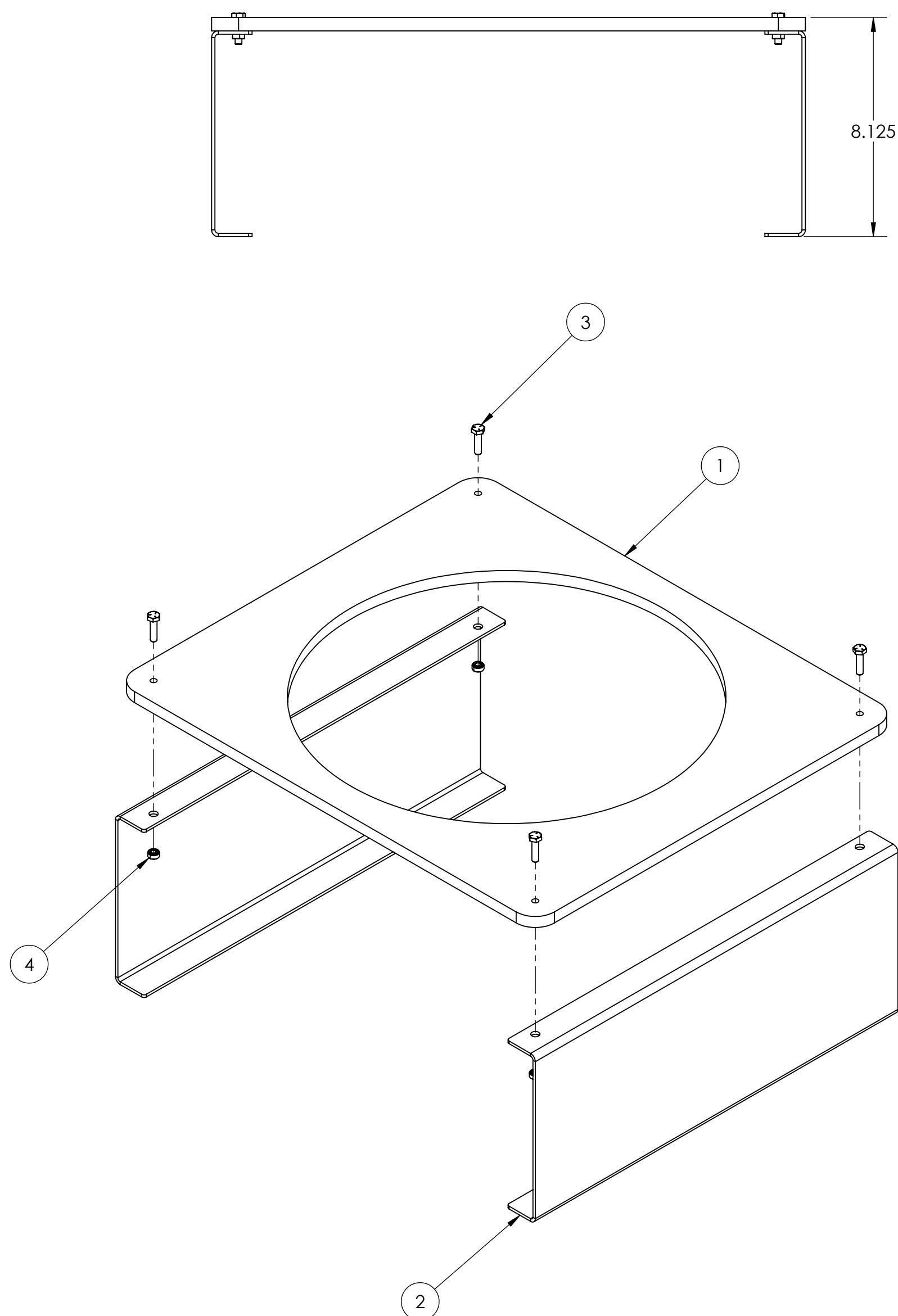
SCALE: 1:8 SHEET 1 OF 1

4

3

2

1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-25421	Algae Inflation Jig Panel	1
2	GE-25422	Algae Inflation Jig Foot	2
3	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	4
4	pem_clinchnut_.25_20 .054	1/4-20 self-clinching nut, .054 shank	4

UNLESS OTHERWISE SPECIFIED:			VEND	NAME	DATE
			DRAWN	JO	1/9/2025
PROPRIETARY AND CONFIDENTIAL					
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
COMMENTS:					
REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE: Algae Inflation Jig

SIZE DWG. NO. REV

C GE-25420

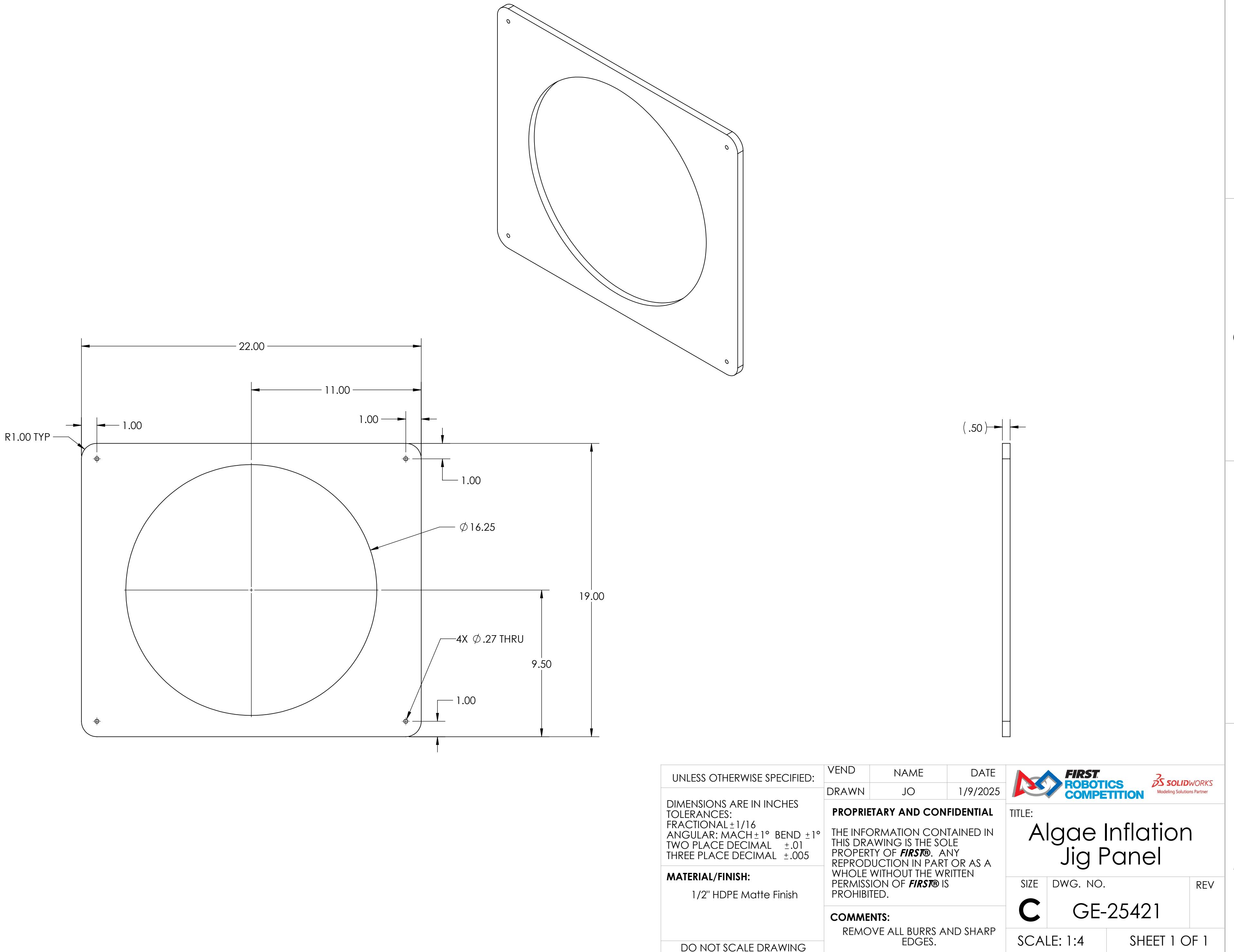
SCALE: 1:4 SHEET 1 OF 1

4

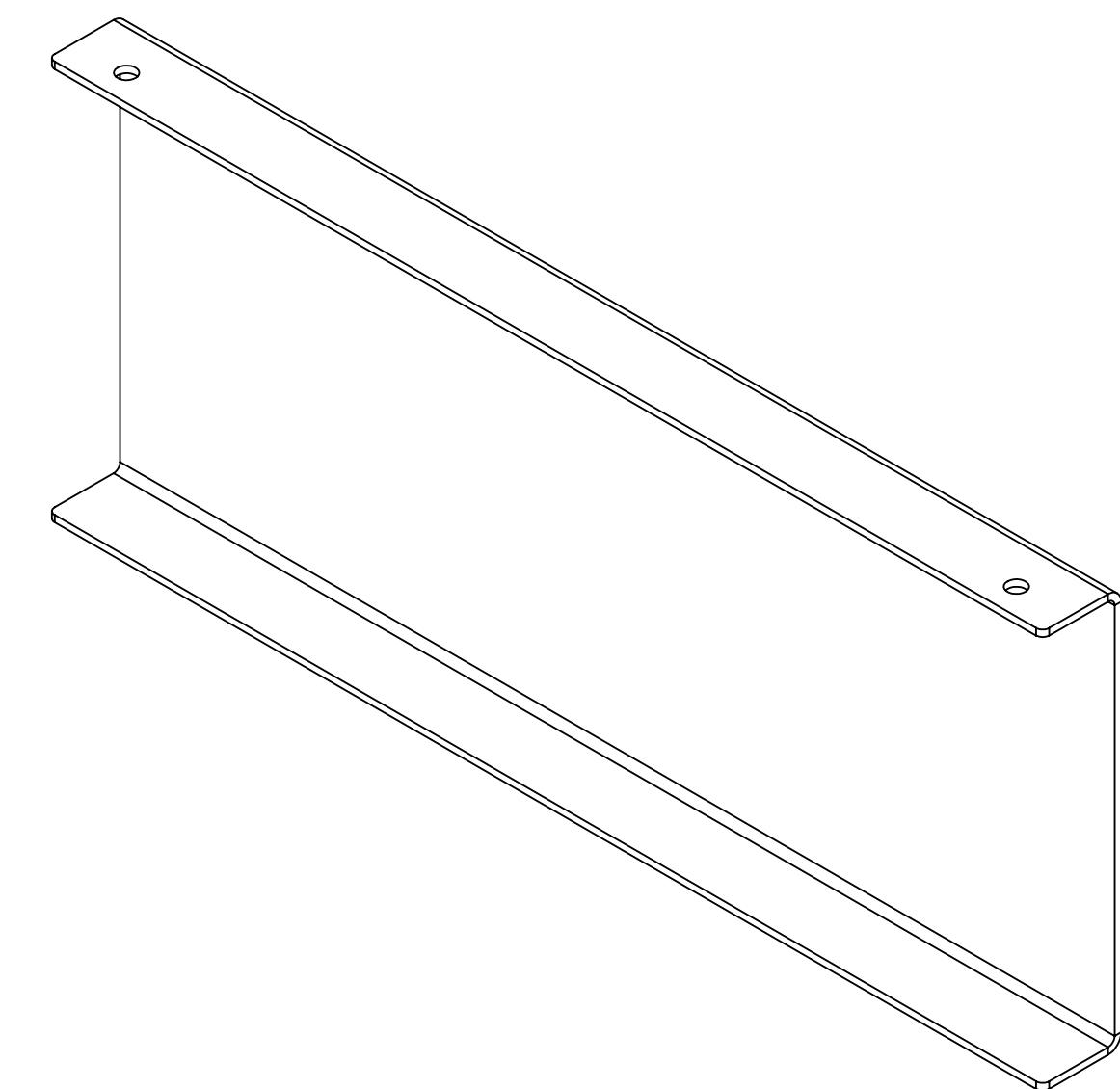
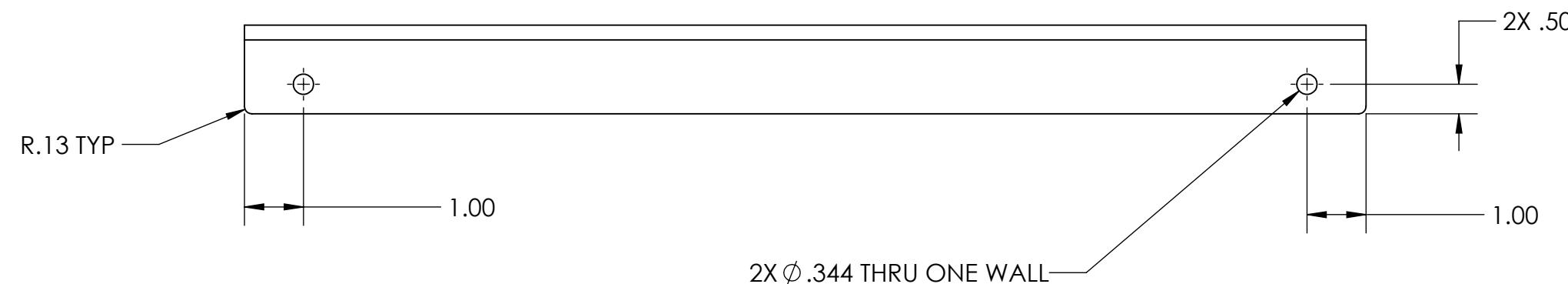
3

2

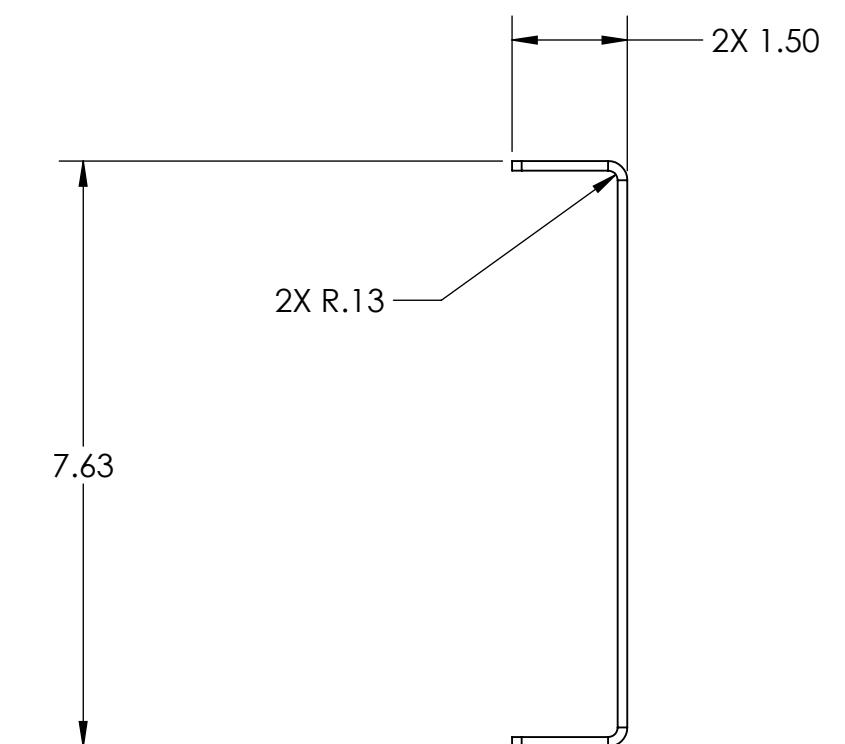
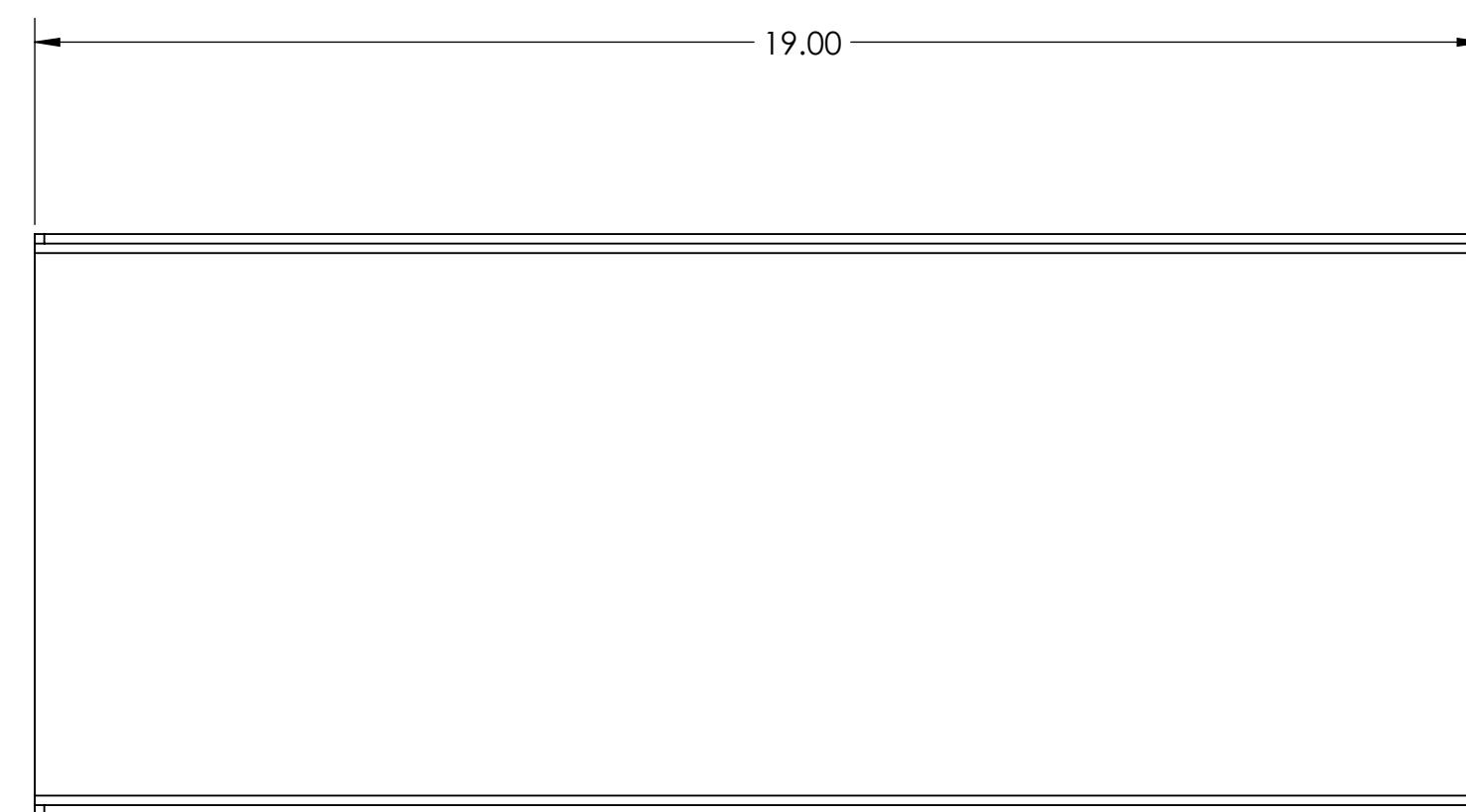
1



D



C



B

A

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE
DRAWN	JO	1/9/2025	
PROPRIETARY AND CONFIDENTIAL			
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
MATERIAL/FINISH:	SIZE	DWG. NO.	REV
1/8" 5052 Aluminum	C	GE-25422	
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING		SCALE: 2:5	SHEET 1 OF 1