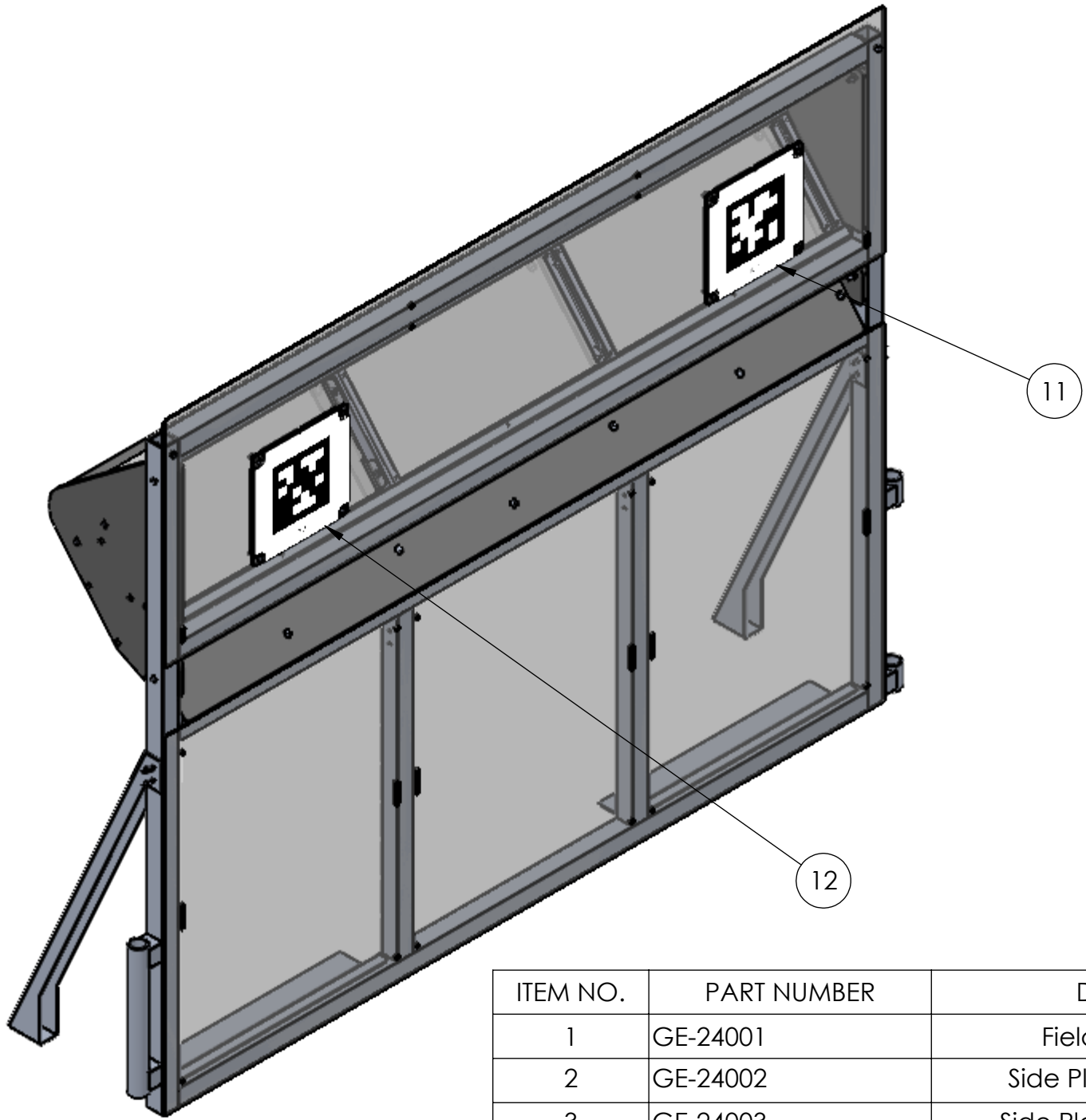


REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
2-B1, 2-B2	A	Sheet 2 added	12/19/2023	JO



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24001	Field Border Frame	1
2	GE-24002	Side Plate Assembly Left	1
3	GE-24003	Side Plate Assembly Right	1
4	GE-24006	Lower Front Plastic	1
5	GE-24007	Upper Front Plastic	1
6	GE-24008	Chute Ramp Assembly	1
7	GE-24013	Chute Cover Assembly	1
8	GE-24017	Frame Support Leg	2
9	GE-24018	Chute Divider	2
10	FE-00070	Anchor	2
11	FE-00083-ID1	AprilTag	1
12	FE-00083-ID2	AprilTag	1
13	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	20
14	Configurable Bolt	2.5" Long 1/4-20 Hex Head Bolt	2
15	Configurable Bolt	3" Long 1/4-20 Hex Head Bolt	4
16	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	14
17	98320A143	Zinc-Plated Steel Ring-Grip Quick-Release Pin	4

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	JO	12/18/2023

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.

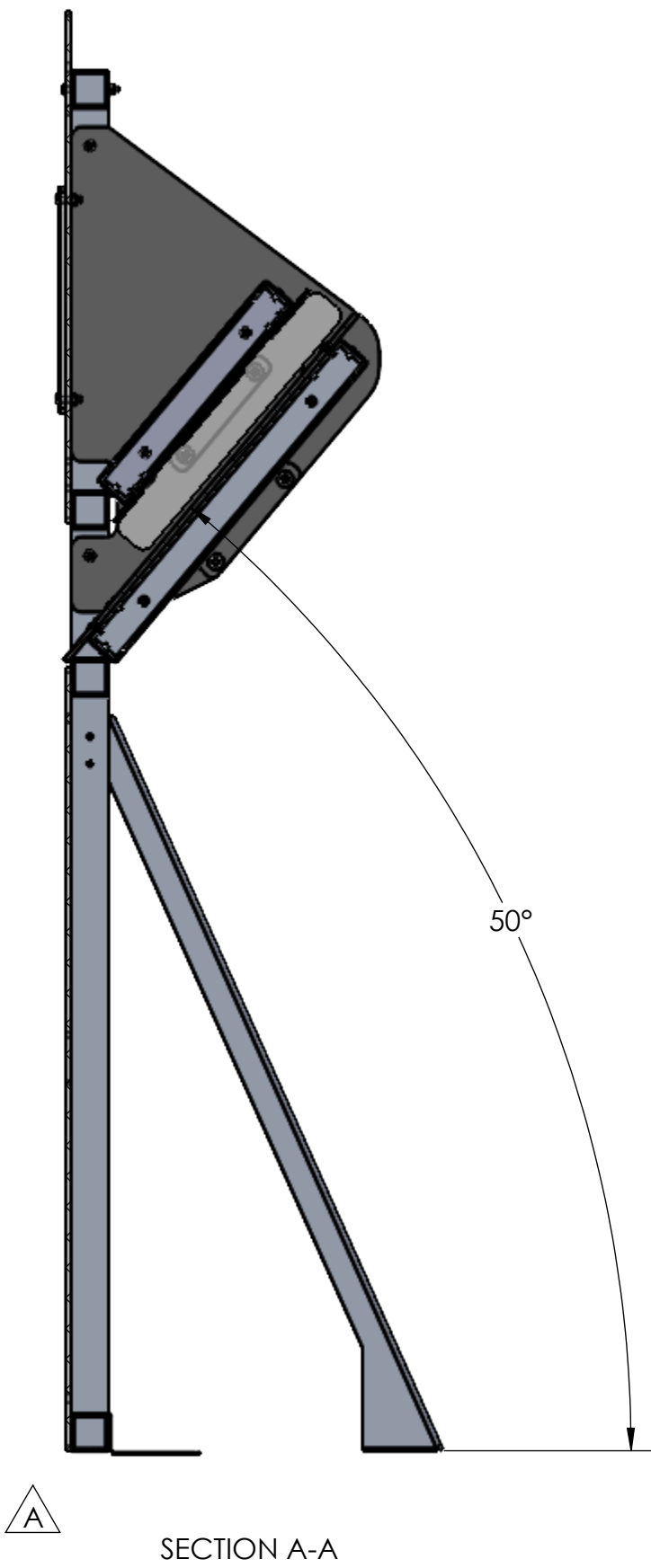
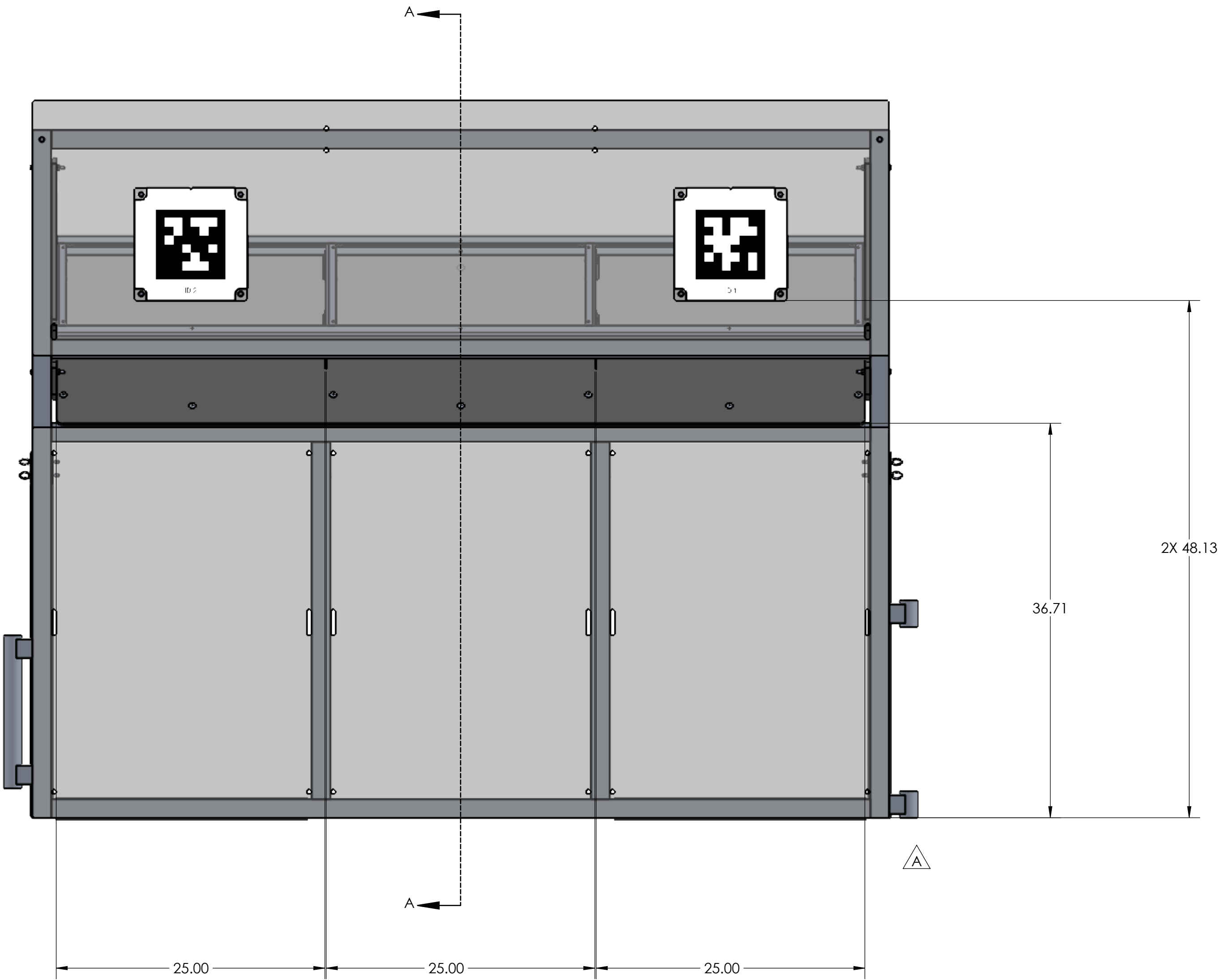
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

TITLE: Source		
SIZE C	DWG. NO. GE-24000	REV A
SCALE: 1:8		SHEET 1 OF 7

Notes:

Blue Source shown above, Red Source has 1 flipped and different ID numbers on April Tags

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
-	-	See Sheet1	-	-



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	JO	12/18/2023

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.

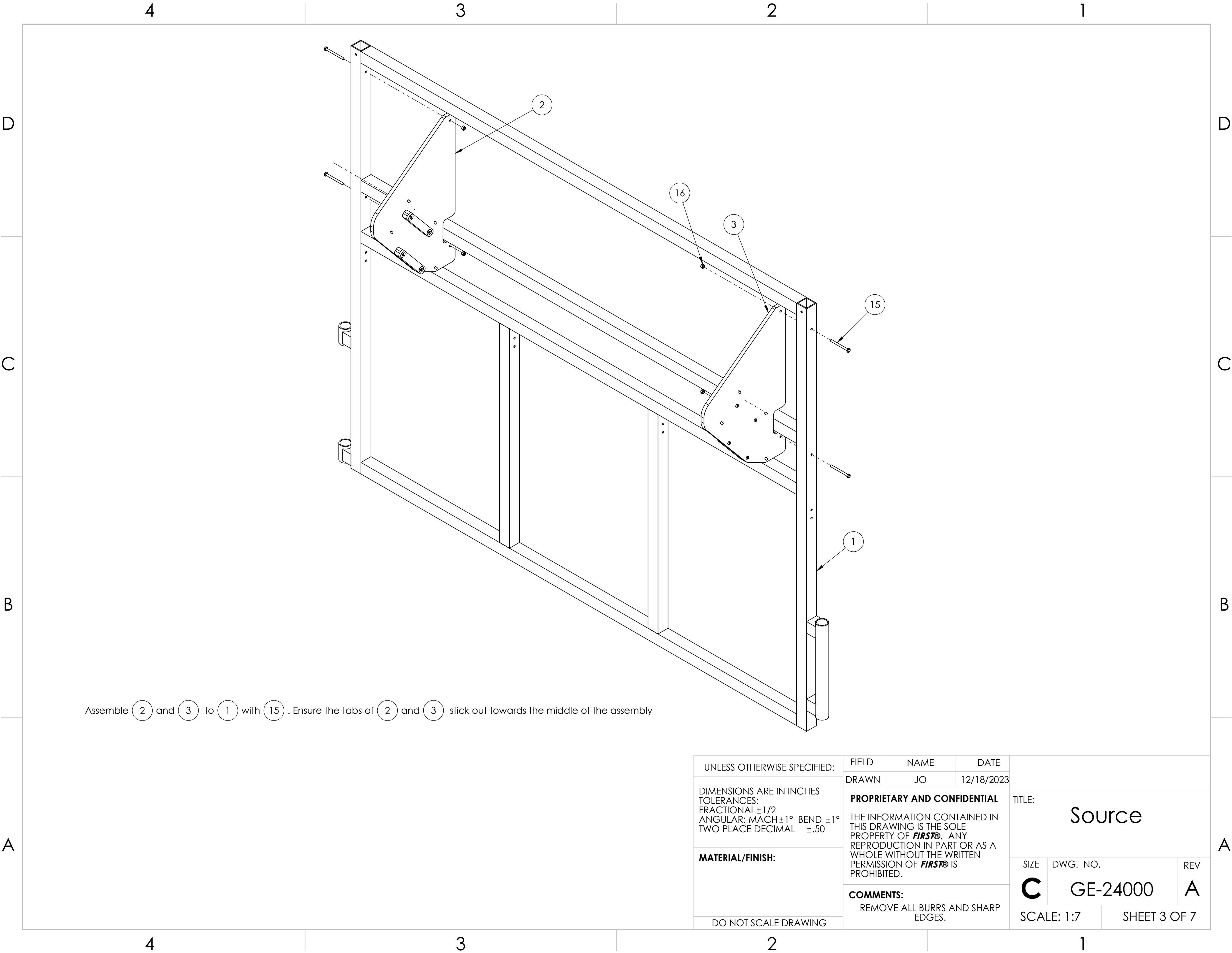
COMMENTS:
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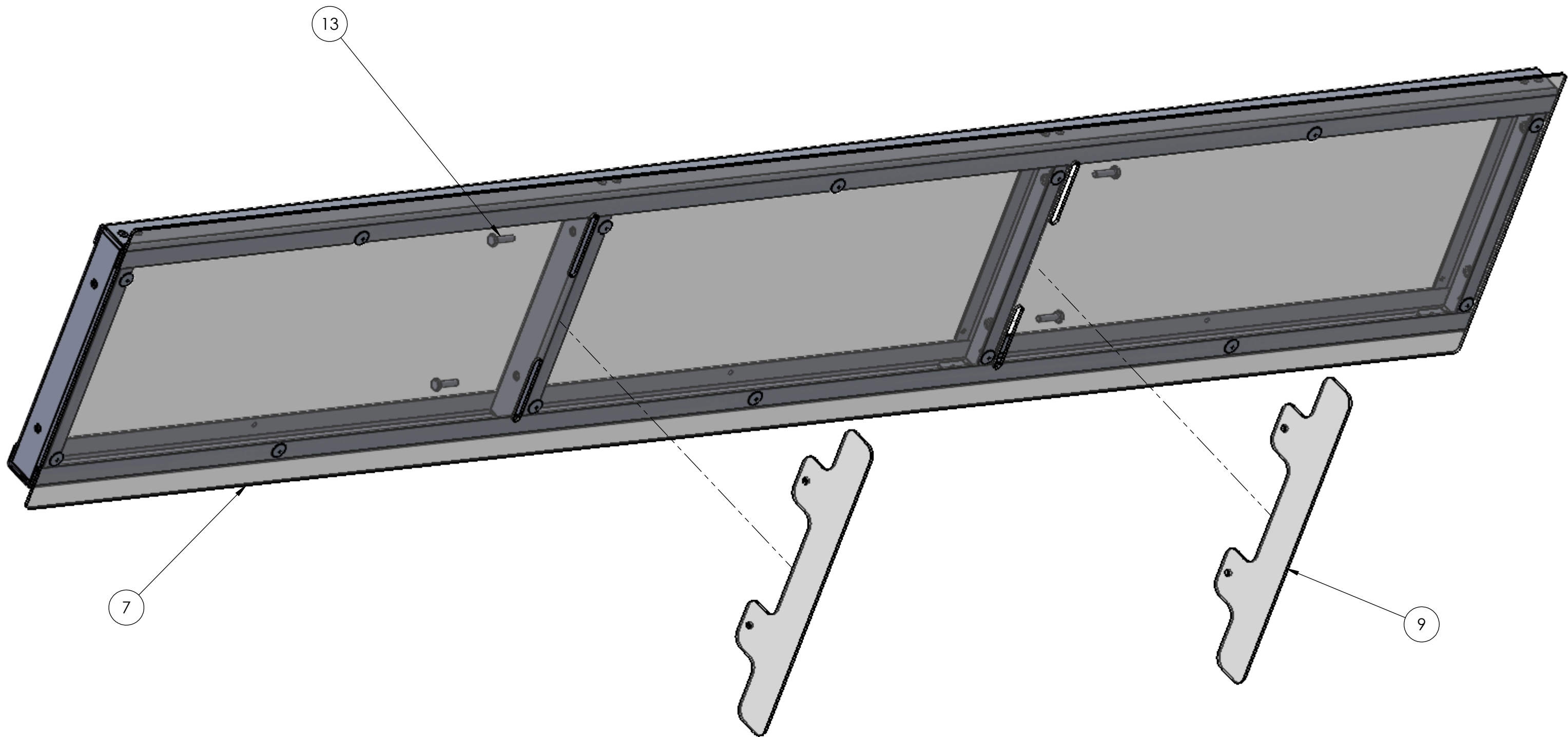
TITLE: Source

SIZE	DWG. NO.	REV
C	GE-24000	A

SCALE: 1:8 SHEET 2 OF 7



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	TITLE: Source				
	DRAWN	JO	12/18/2023					
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL			SIZE C				
	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.						DWG. NO. GE-24000	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.						REV A	
MATERIAL/FINISH:				SCALE: 1:7		SHEET 3 OF 7		
DO NOT SCALE DRAWING								



Slide (9) through the slots in (7) and attach with (13).

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:

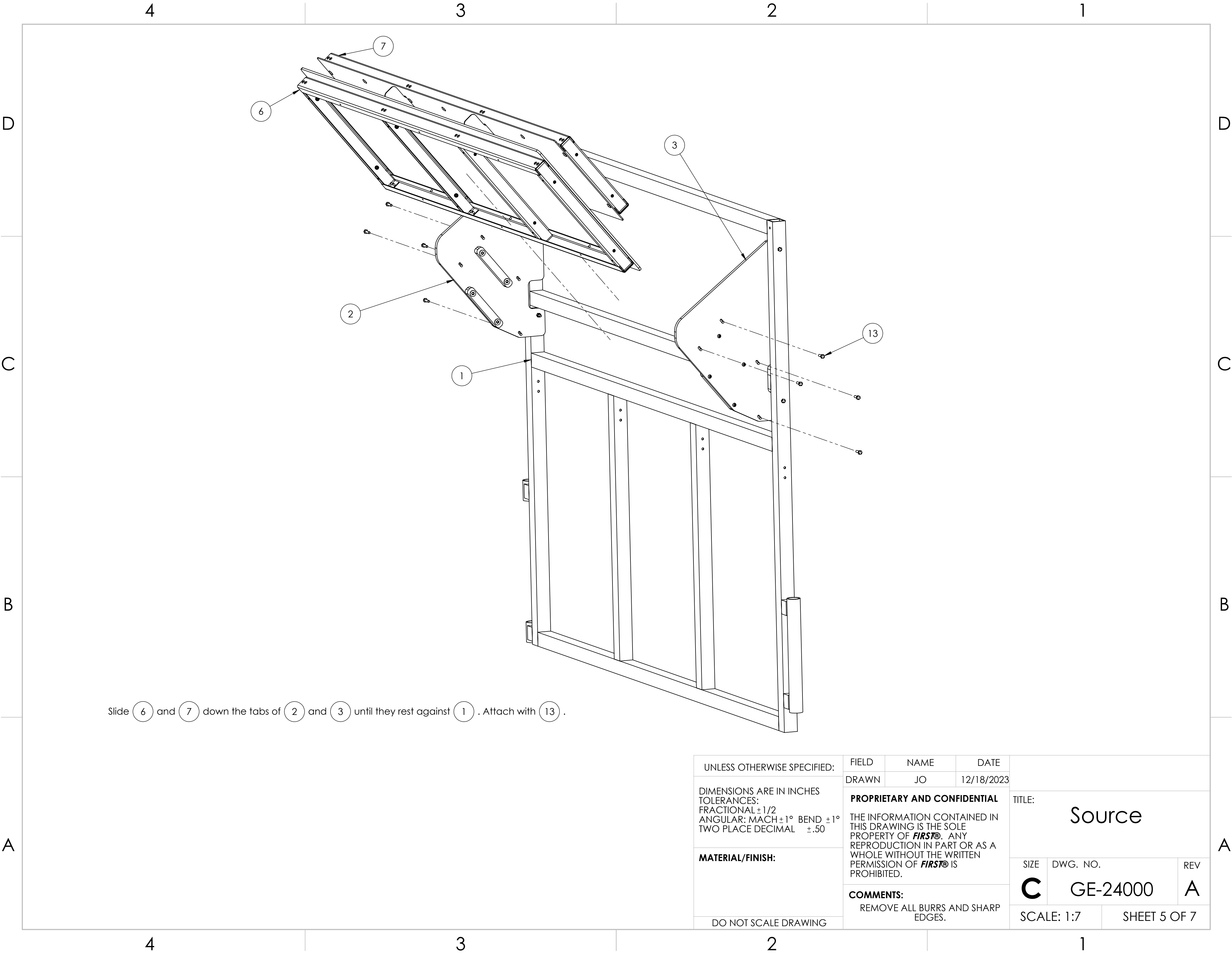
DO NOT SCALE DRAWING

FIELD	NAME	DATE
DRAWN	JO	12/18/2023

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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

TITLE: Source		
SIZE C	DWG. NO. GE-24000	REV A
SCALE: 1:4		SHEET 4 OF 7



Slide 6 and 7 down the tabs of 2 and 3 until they rest against 1 . Attach with 13 .

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	TITLE:		
		DRAWN	JO	12/18/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.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.			Source		
MATERIAL/FINISH:							
DO NOT SCALE DRAWING		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
					C	GE-24000	A
					SCALE: 1:7		SHEET 5 OF 7

4

3

2

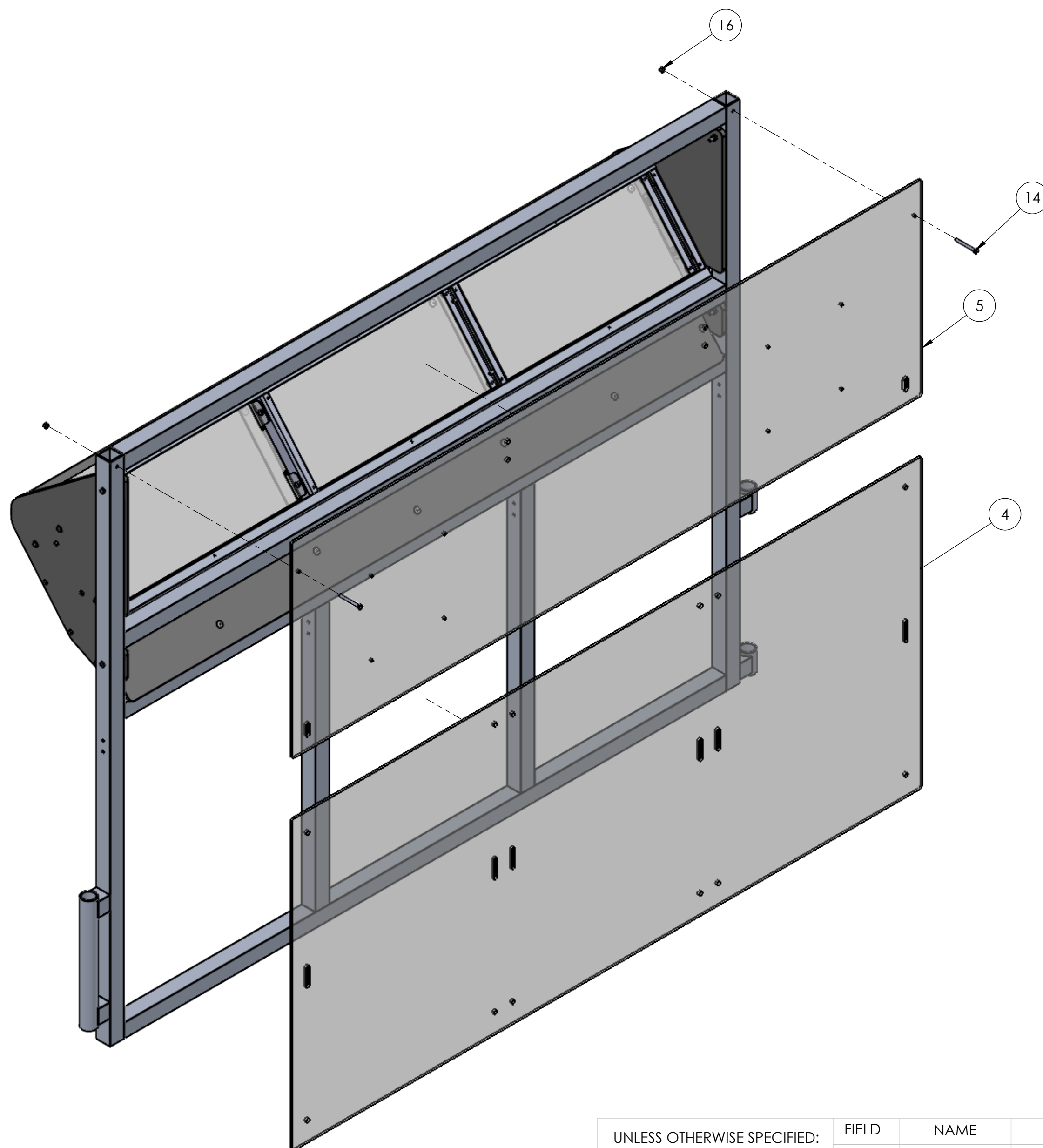
1

D

C

B

A



Attach (5) to the assembly using (14) and (16), then attach with 4x 120lb Cable Ties.

Attach (4) to the assembly with 12x 120 lb Cable Ties

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	TITLE:		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50		DRAWN	JO	12/18/2023			
MATERIAL/FINISH:		PROPRIETARY AND CONFIDENTIAL			Source		
		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:			SIZE	DWG. NO.	REV
		REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24000	A
					SCALE: 1:8		SHEET 6 OF 7

4

3

2

1

D

D

C

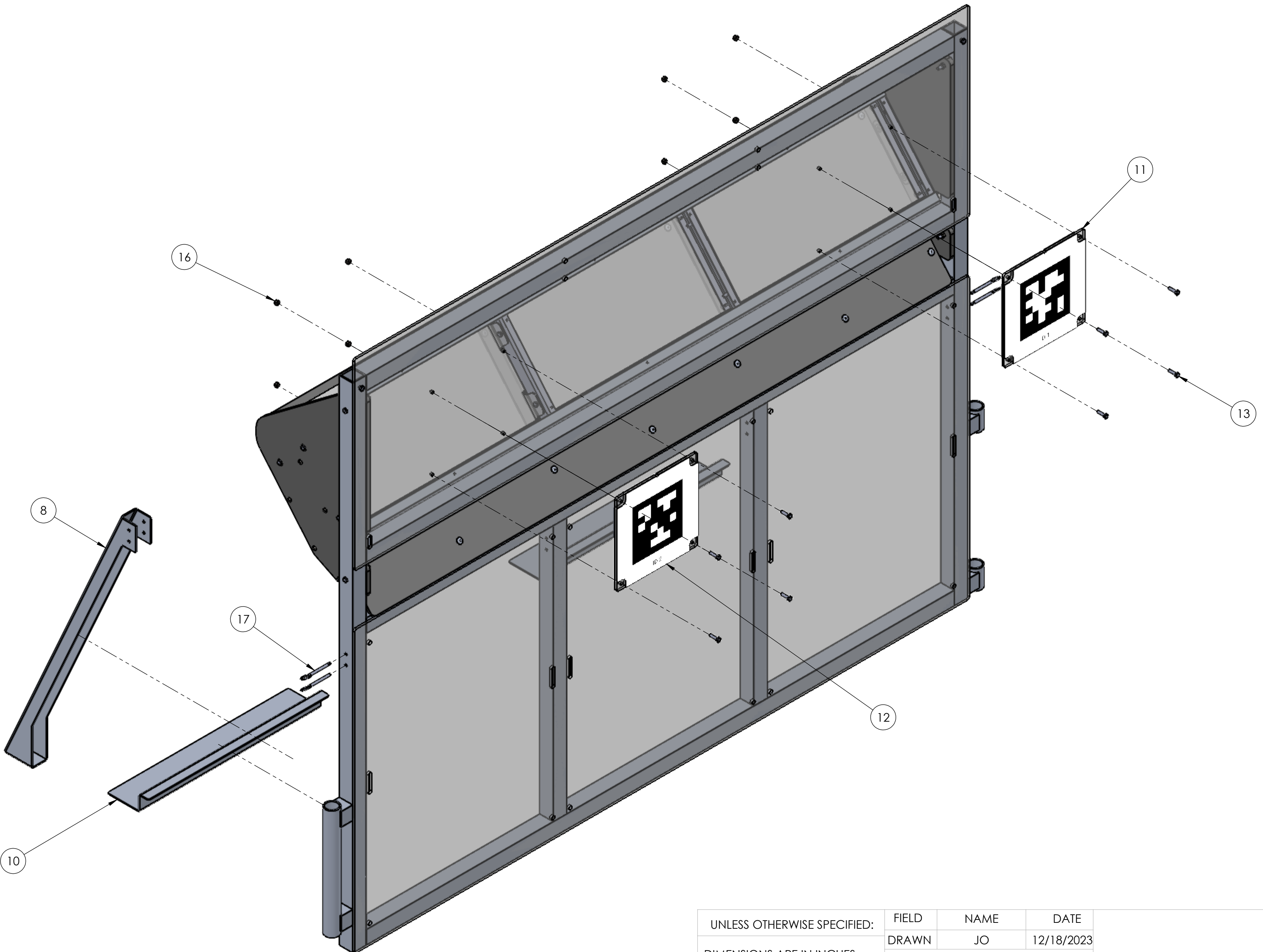
C

B

B

A

A

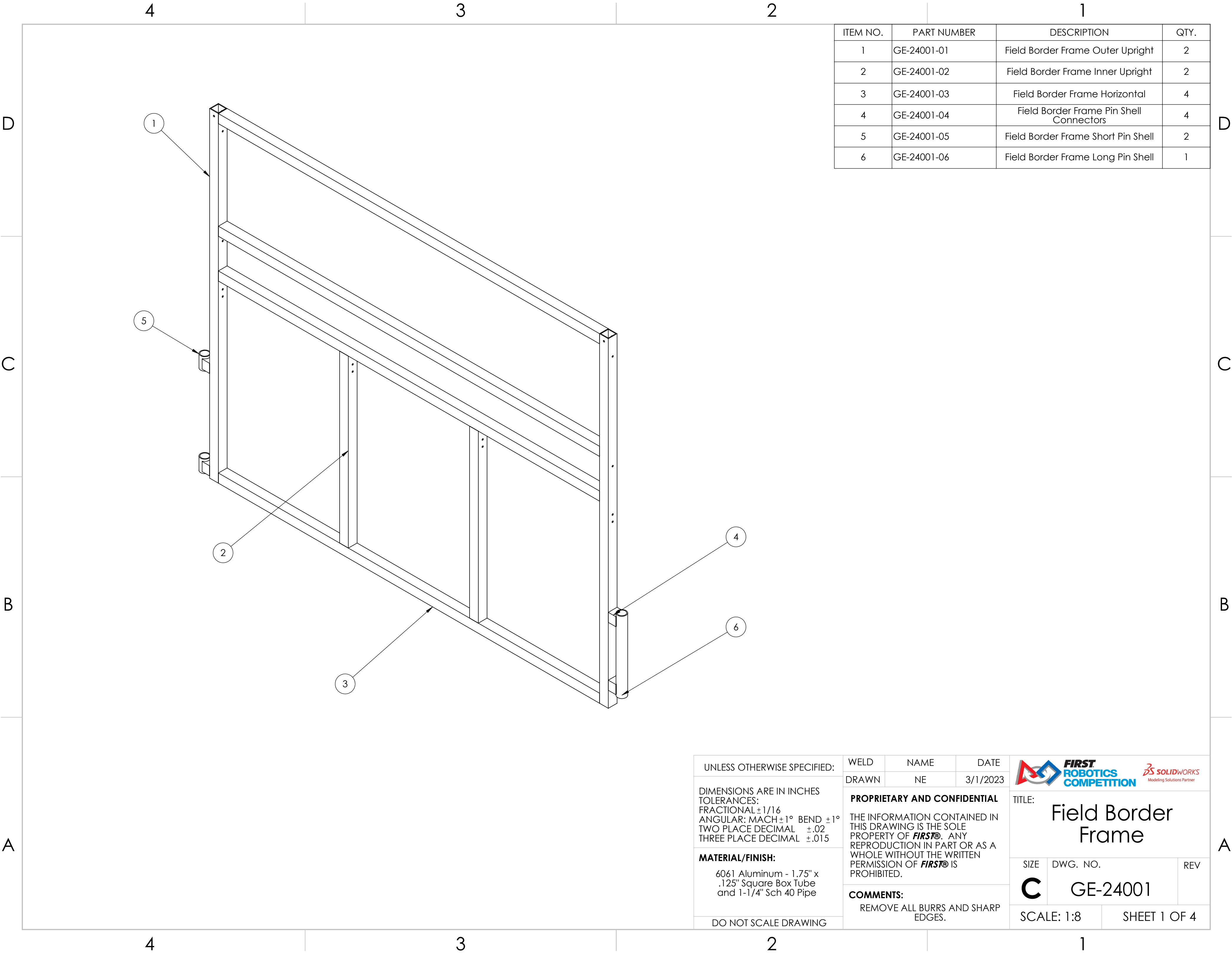


Attach (8) to the assembly with (17).



Slide (10) into place along floor and over the assembly.

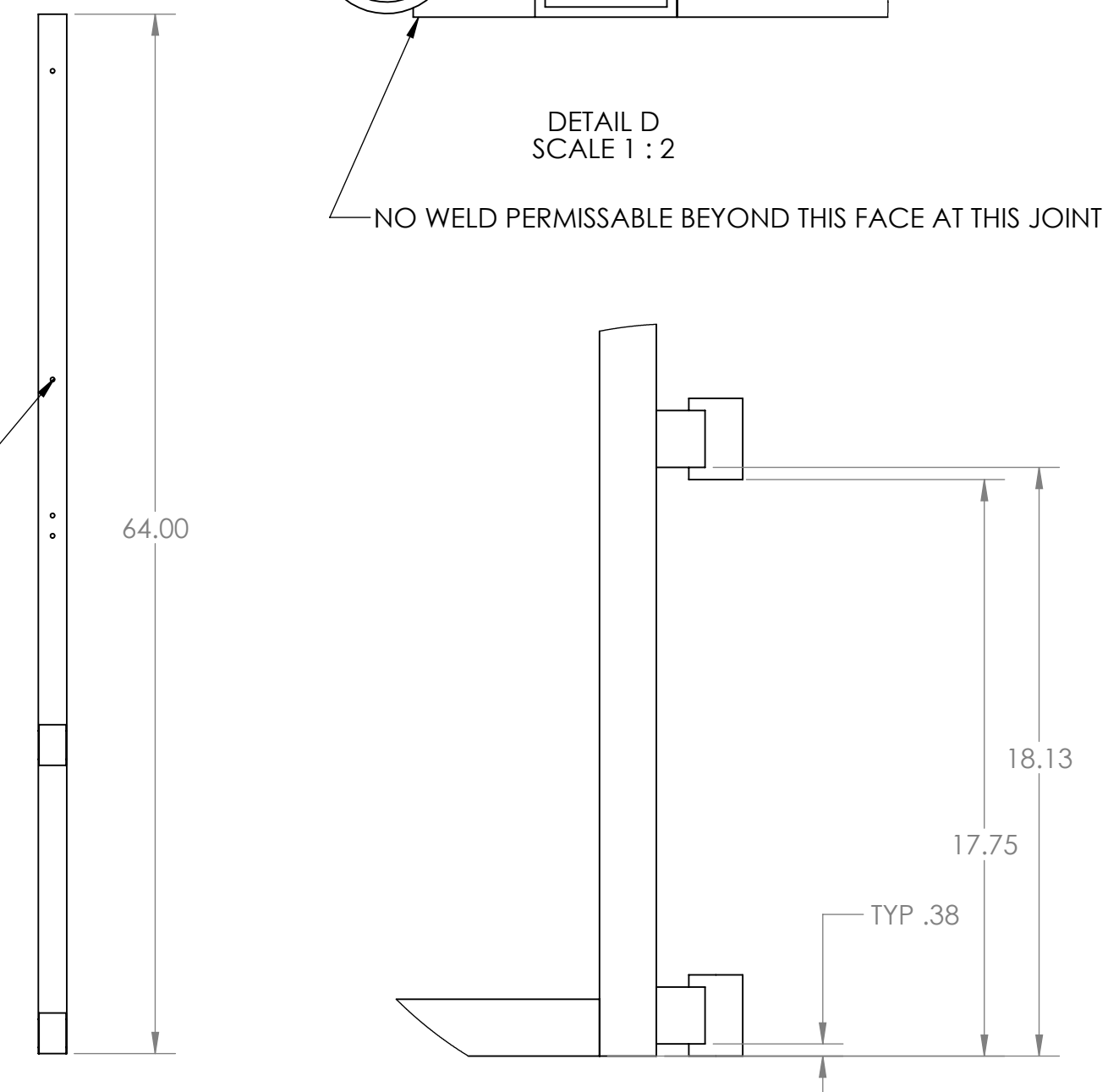
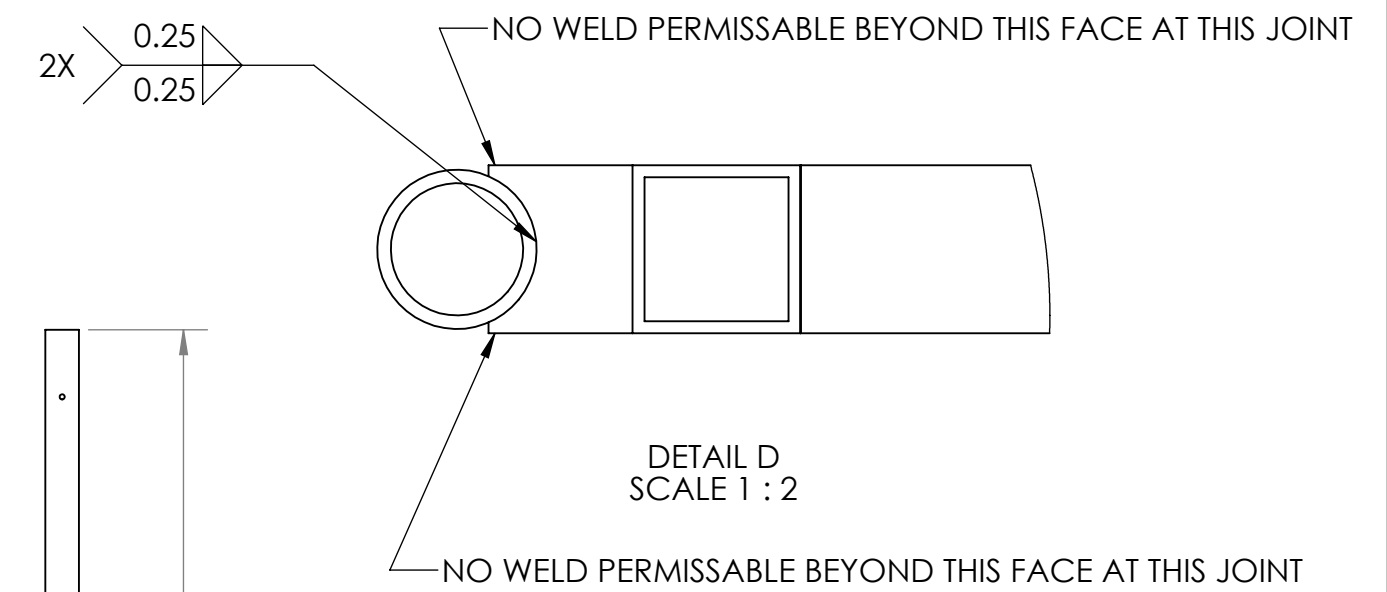
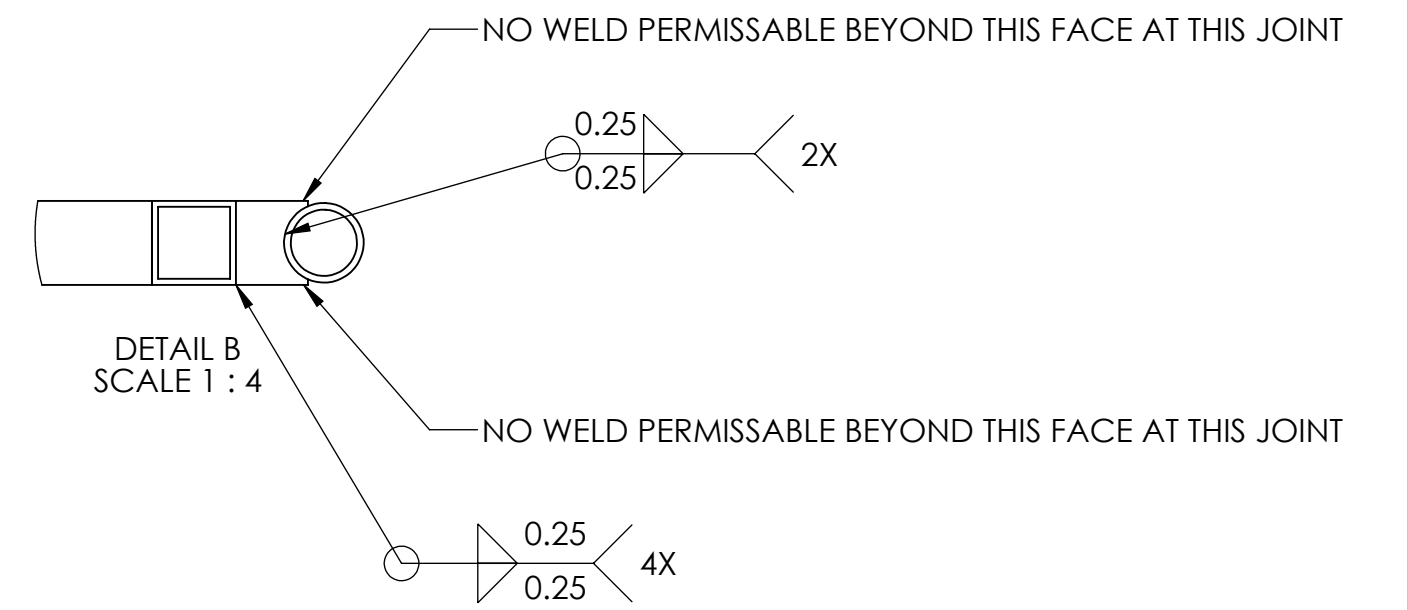
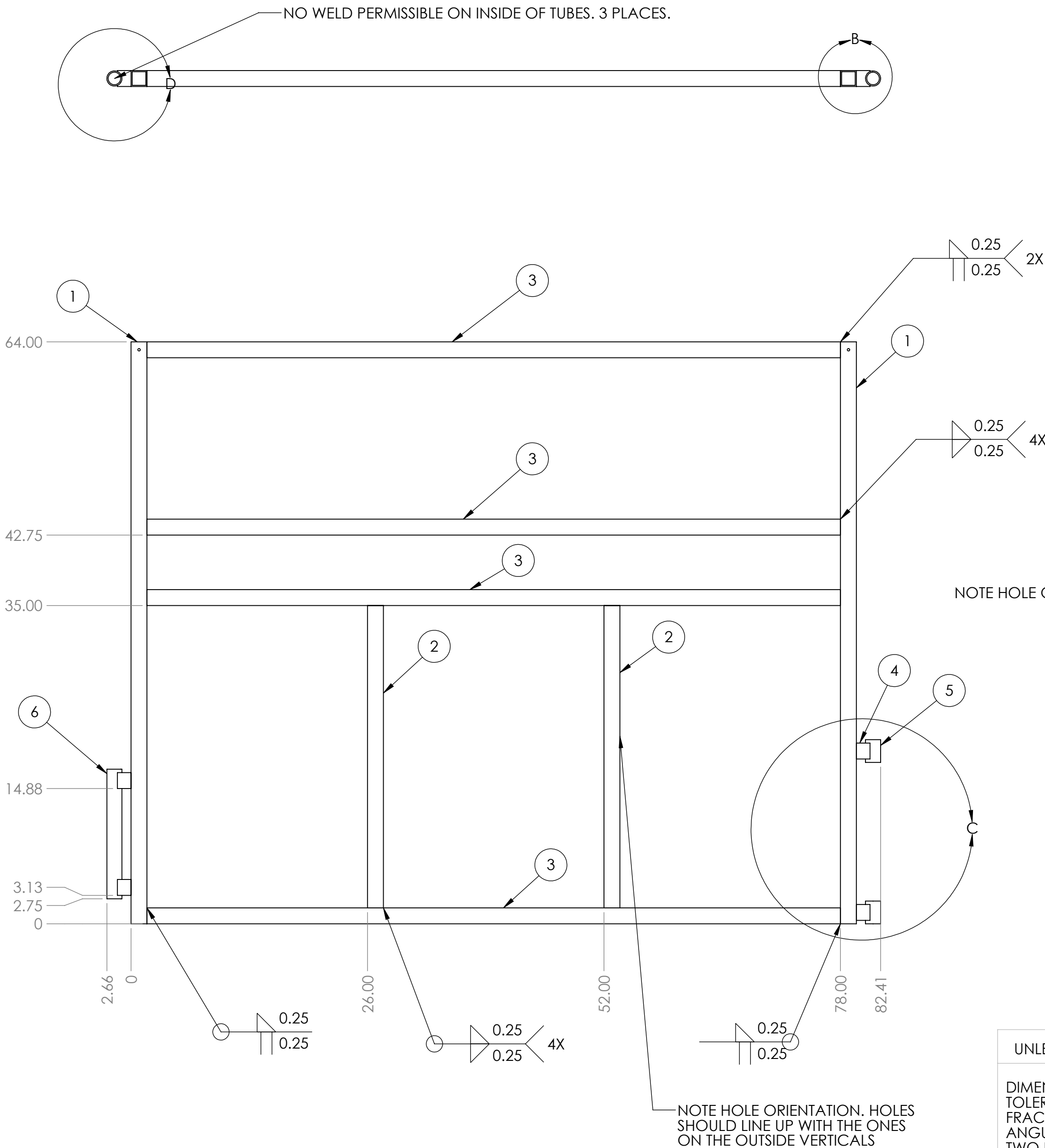
Attach the correct (11) and (12) with (13) and (16).

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	TITLE: Source		
	DRAWN	JO	12/18/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.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.			SIZE C GE-24000 A		
MATERIAL/FINISH:	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING				SCALE: 1:6.5		SHEET 7 OF 7





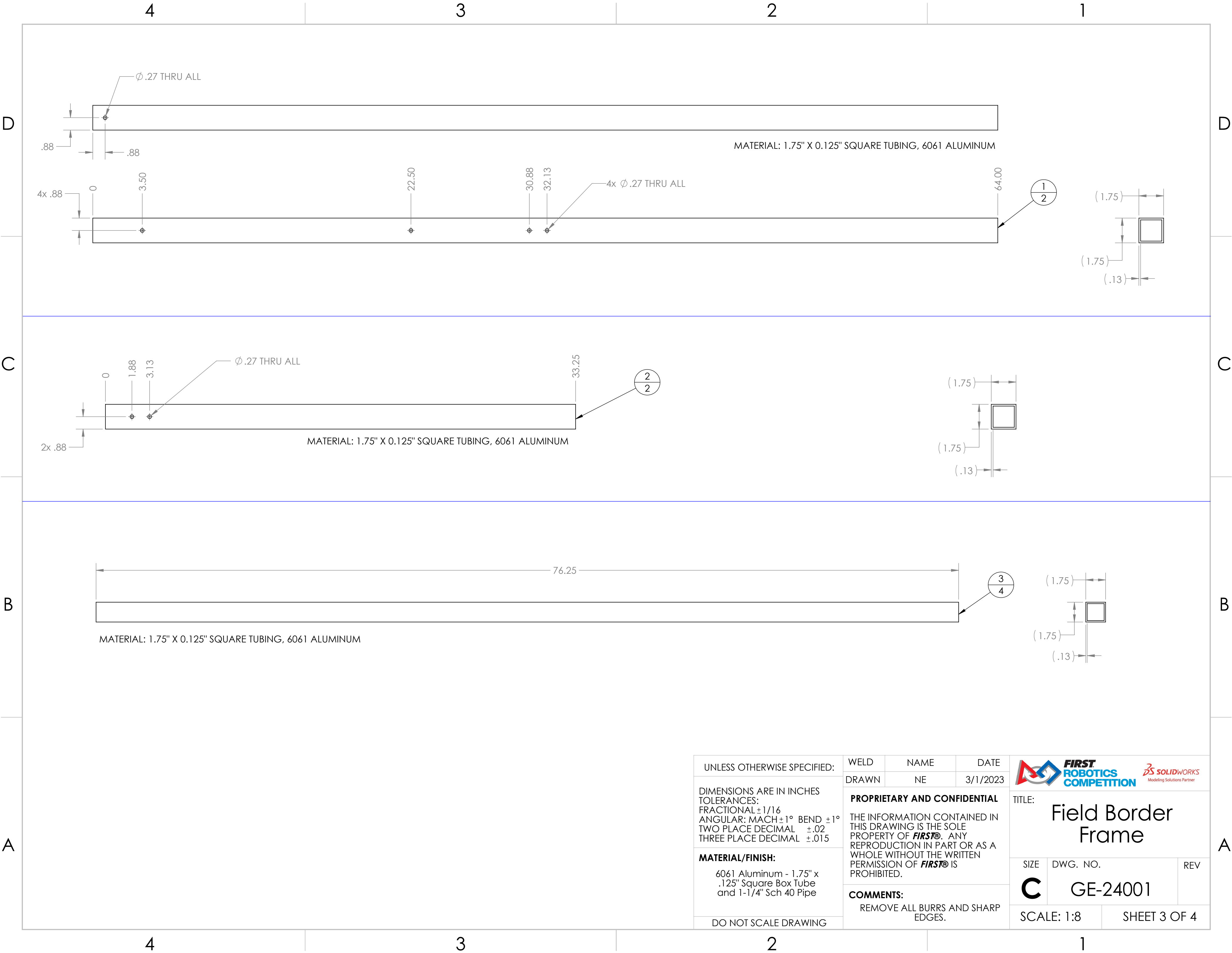
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24001-01	Field Border Frame Outer Upright	2
2	GE-24001-02	Field Border Frame Inner Upright	2
3	GE-24001-03	Field Border Frame Horizontal	4
4	GE-24001-04	Field Border Frame Pin Shell Connectors	4
5	GE-24001-05	Field Border Frame Short Pin Shell	2
6	GE-24001-06	Field Border Frame Long Pin Shell	1

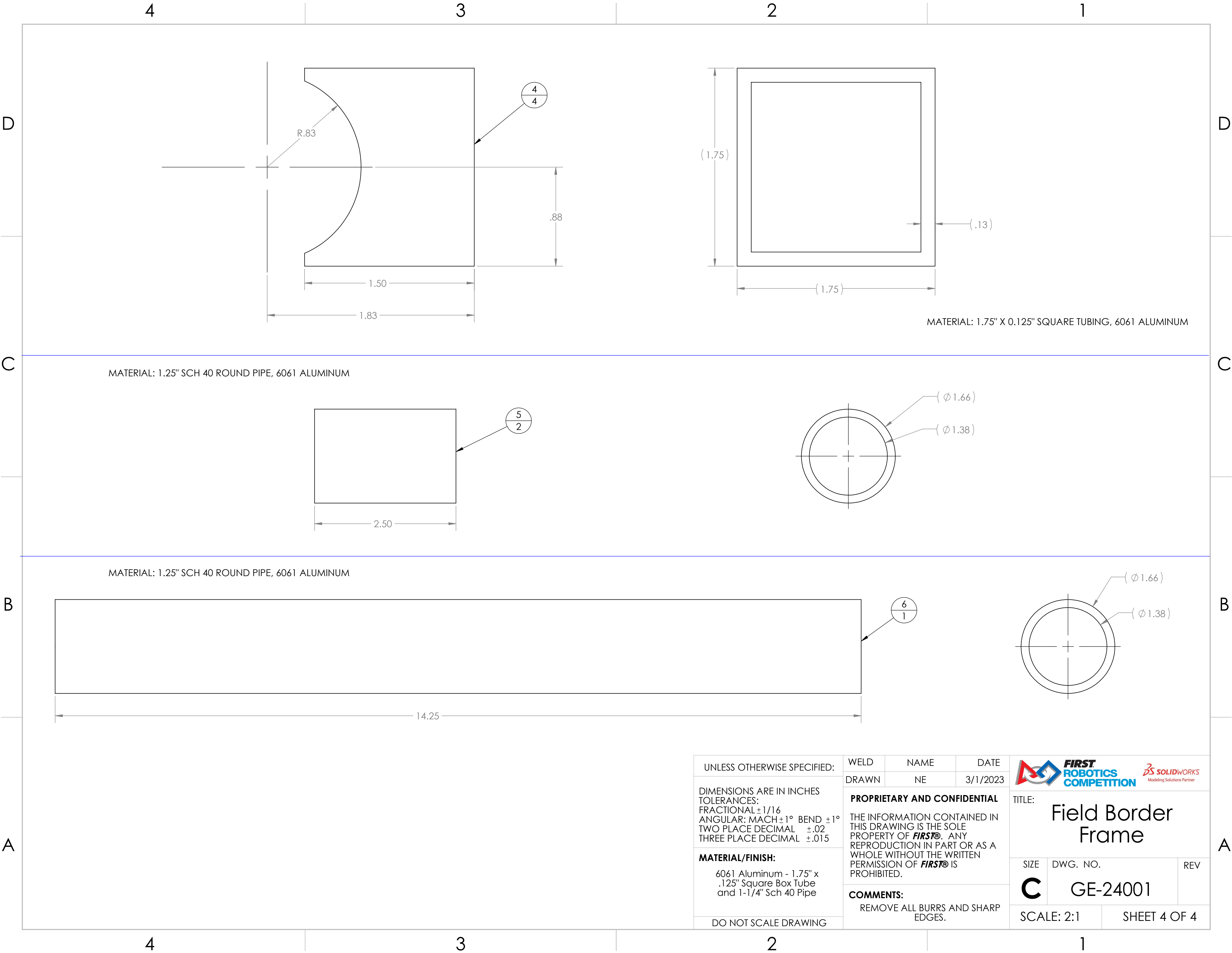
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .015$ MATERIAL/FINISH: 6061 Aluminum - 1.75" x .125" Square Box Tube and 1-1/4" Sch 40 Pipe DO NOT SCALE DRAWING	WELD	NAME	DATE	 		
	DRAWN	NE	3/1/2023			
	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.			TITLE: Field Border Frame		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24001	REV
				SCALE: 1:8		SHEET 1 OF 4

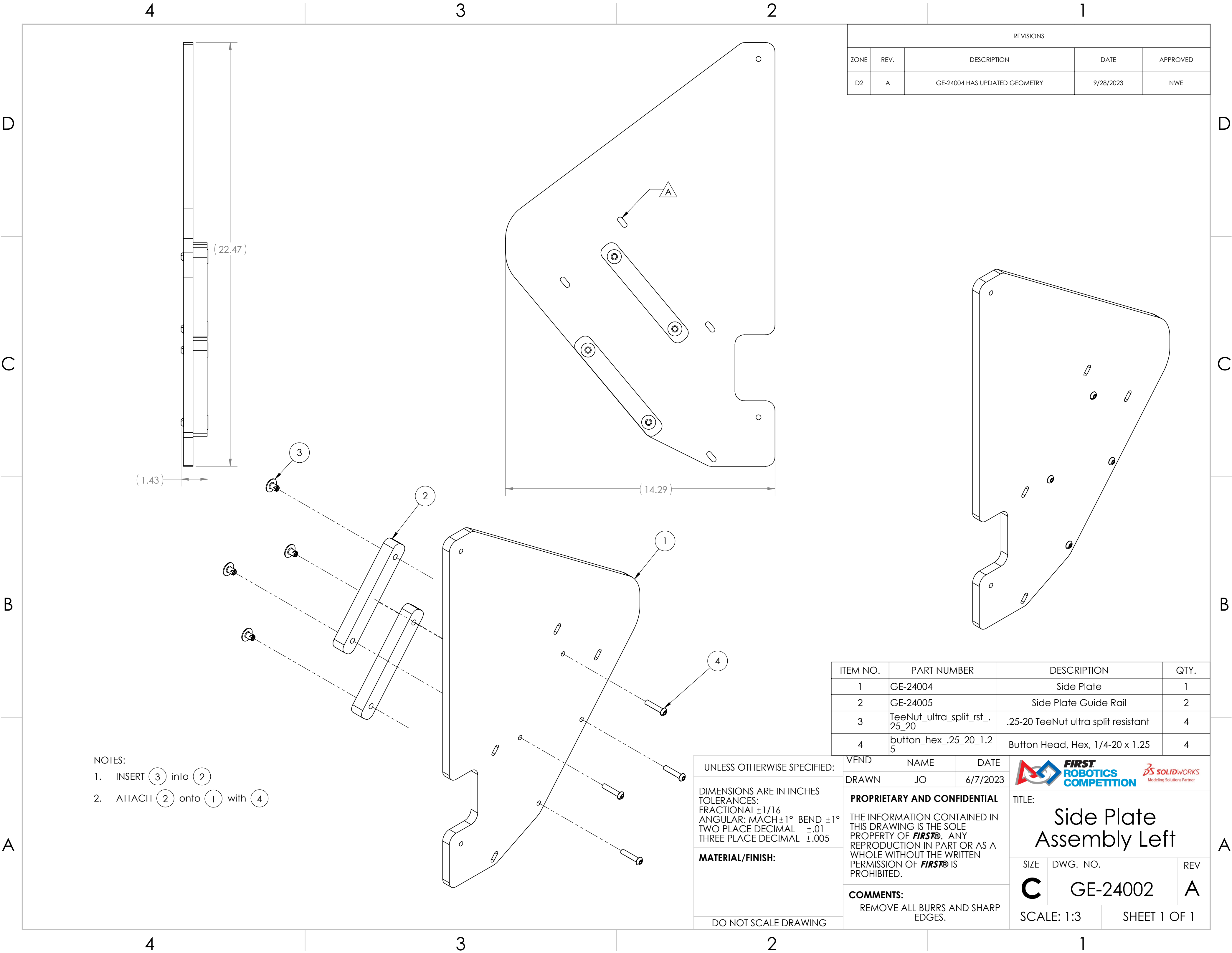


DETAIL C
SCALE 1 : 5

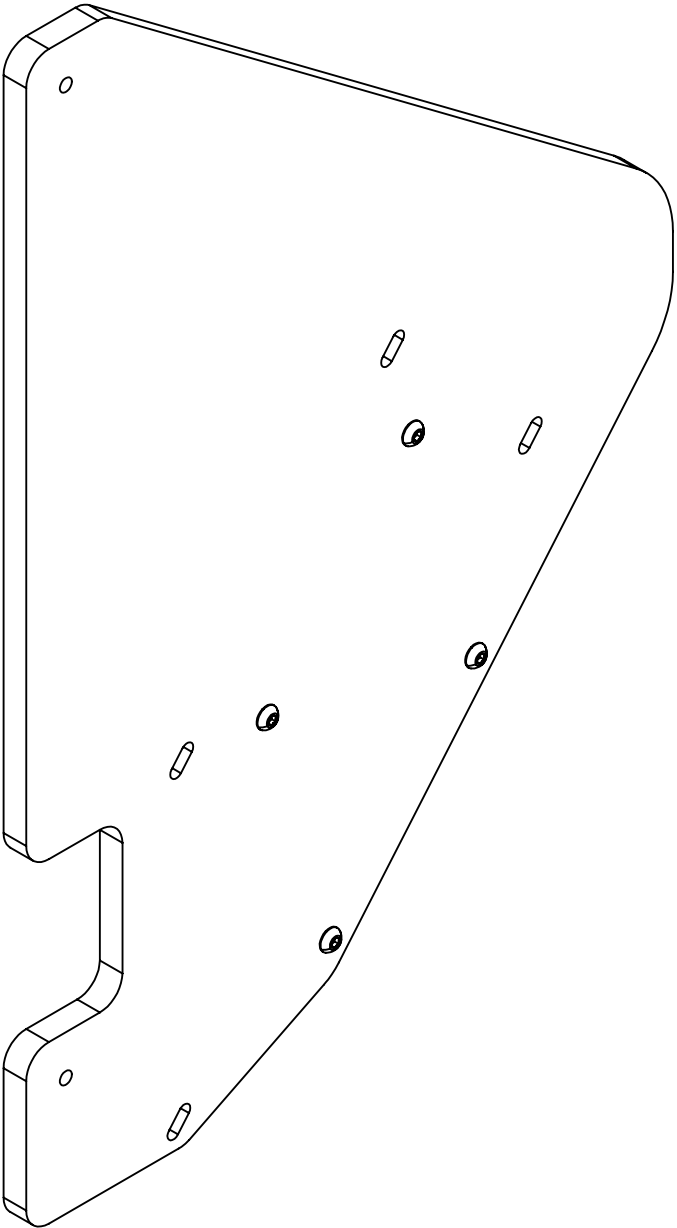
UNLESS OTHERWISE SPECIFIED:		WELD	NAME	DATE	 		
		DRAWN	NE	3/1/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .015$		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE: Field Border Frame		
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					SIZE	DWG. NO.	REV
					C	GE-24001	
					SCALE: 1:10		SHEET 2 OF 4







REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
D2	A	GE-24004 HAS UPDATED GEOMETRY	9/28/2023	NWE



NOTES:

- 1. INSERT 3 into 2
- 2. ATTACH 2 onto 1 with 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 $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

VEND

NAME

DATE

DRAWN

JO



6/7/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



TITLE:

Side Plate Assembly Left

SIZE

DWG. NO.

REV

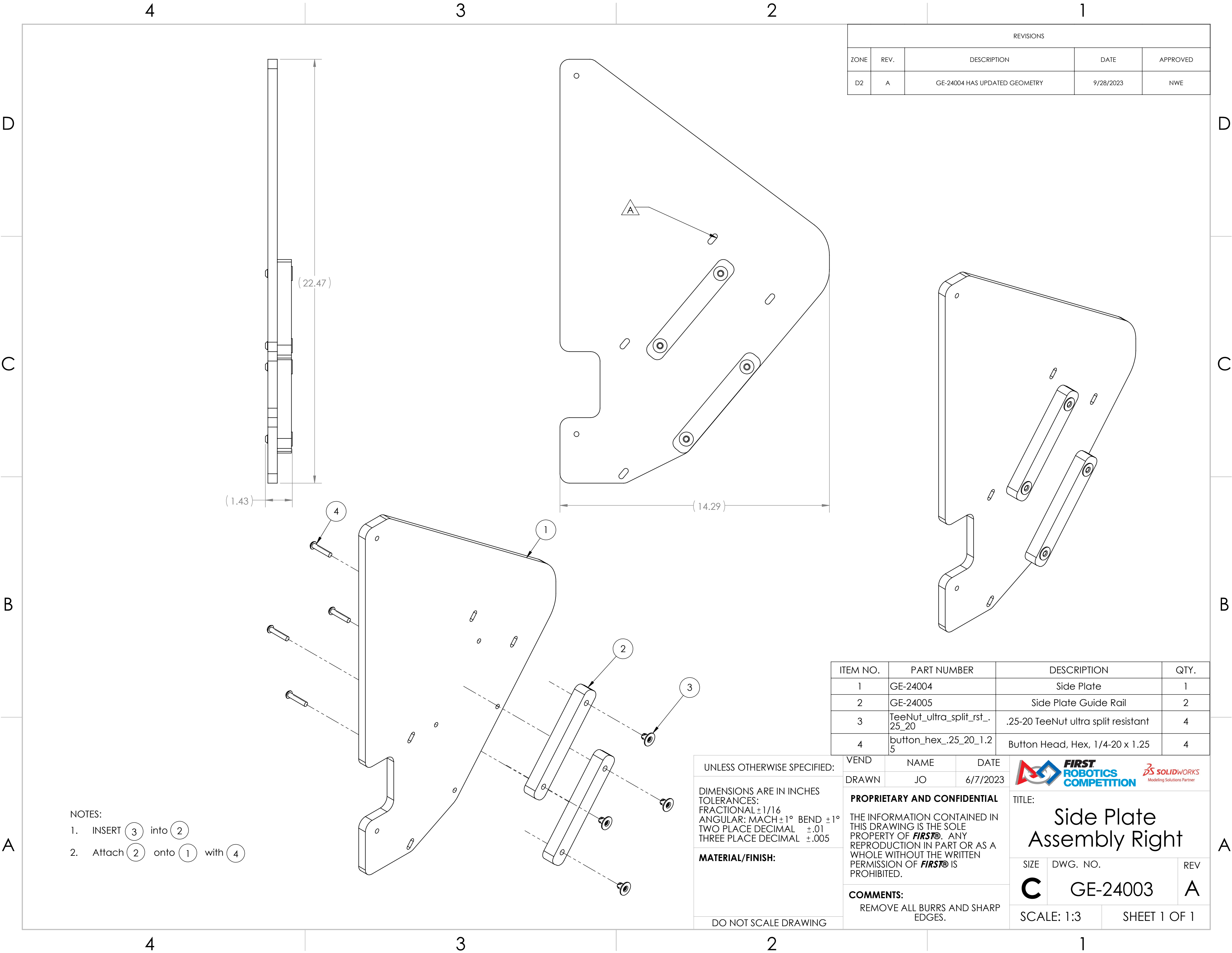
C

GE-24002

A

SCALE: 1:3

SHEET 1 OF 1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
D2	A	GE-24004 HAS UPDATED GEOMETRY	9/28/2023	NWE

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24004	Side Plate	1
2	GE-24005	Side Plate Guide Rail	2
3	TeeNut_ultra_split_rst_.25_20	.25-20 TeeNut ultra split resistant	4
4	button_hex_.25_20_1.25	Button Head, Hex, 1/4-20 x 1.25	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 $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

VEND

NAME

DATE

DRAWN

JO

6/7/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION



SOLIDWORKS
Modeling Solutions Partner

TITLE:

Side Plate
Assembly Right

SIZE

C

DWG. NO.

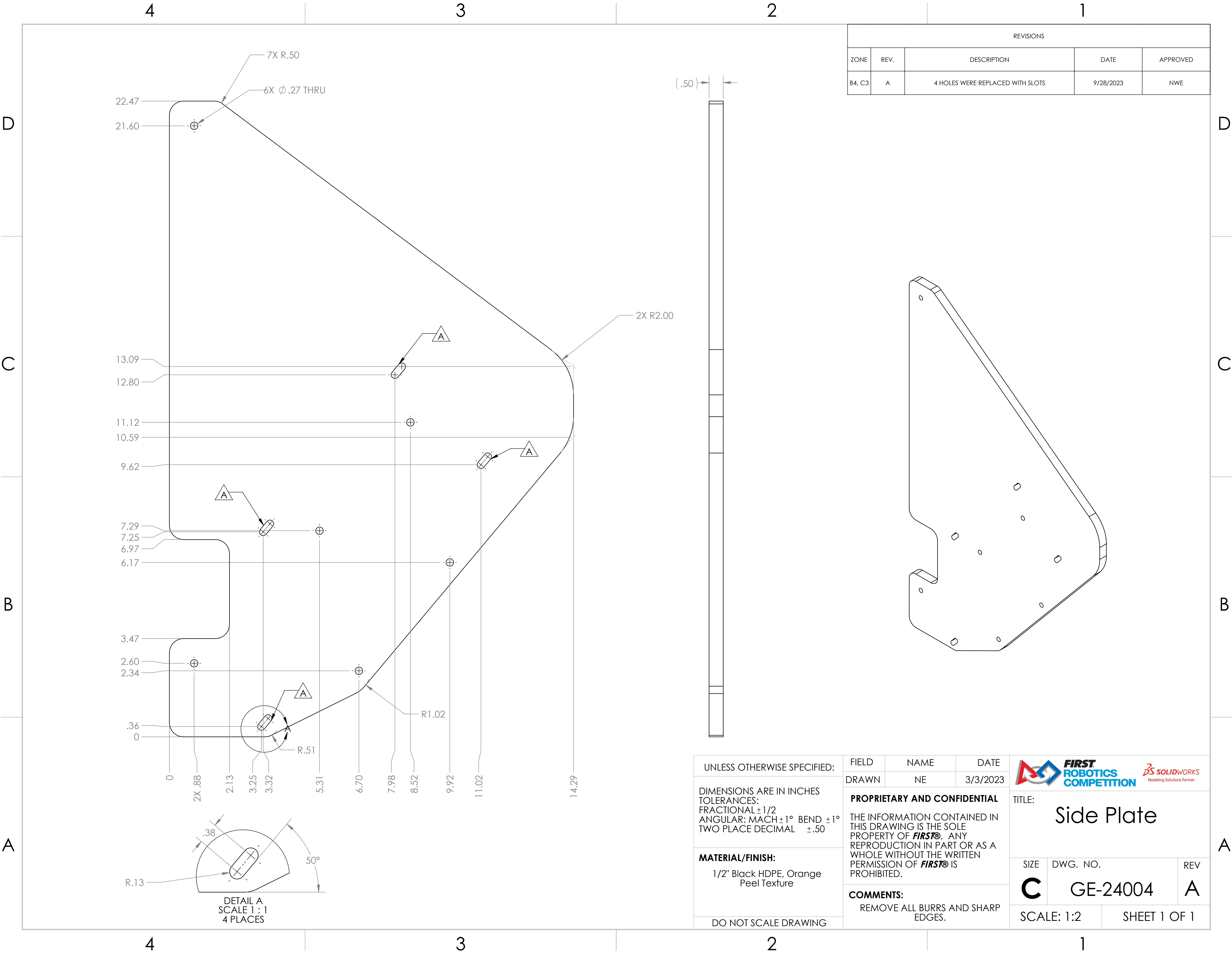
GE-24003

REV

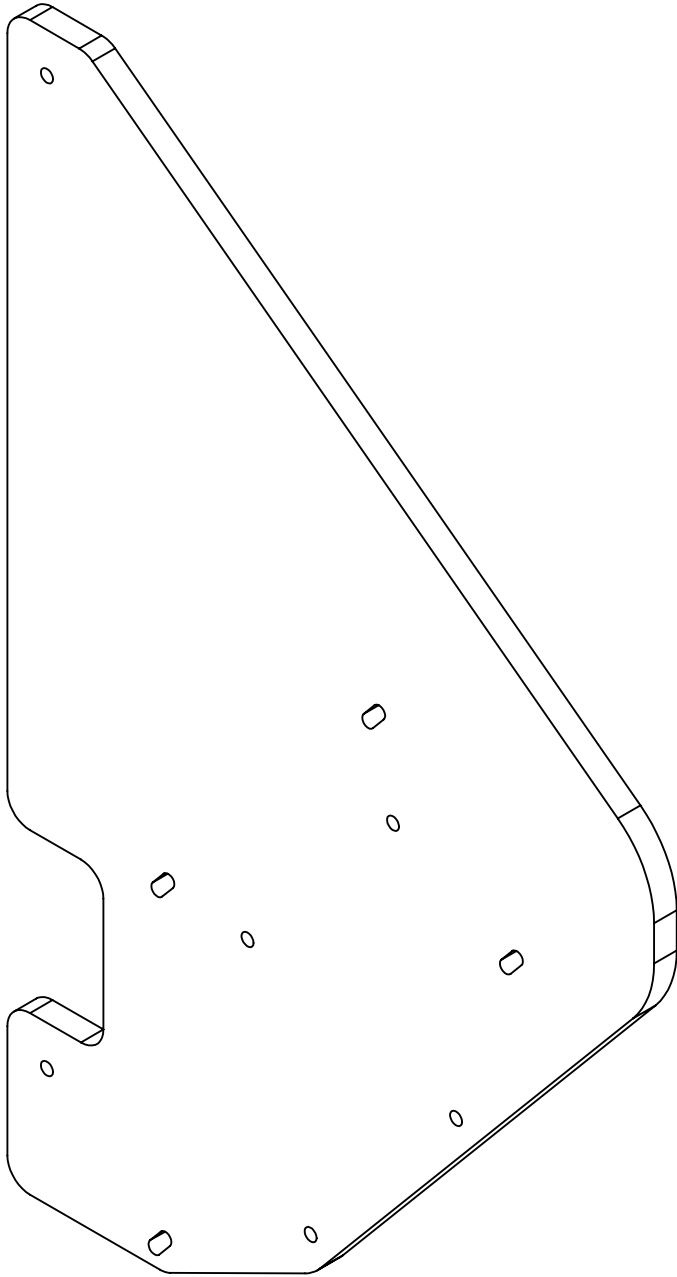
A



SCALE: 1:3

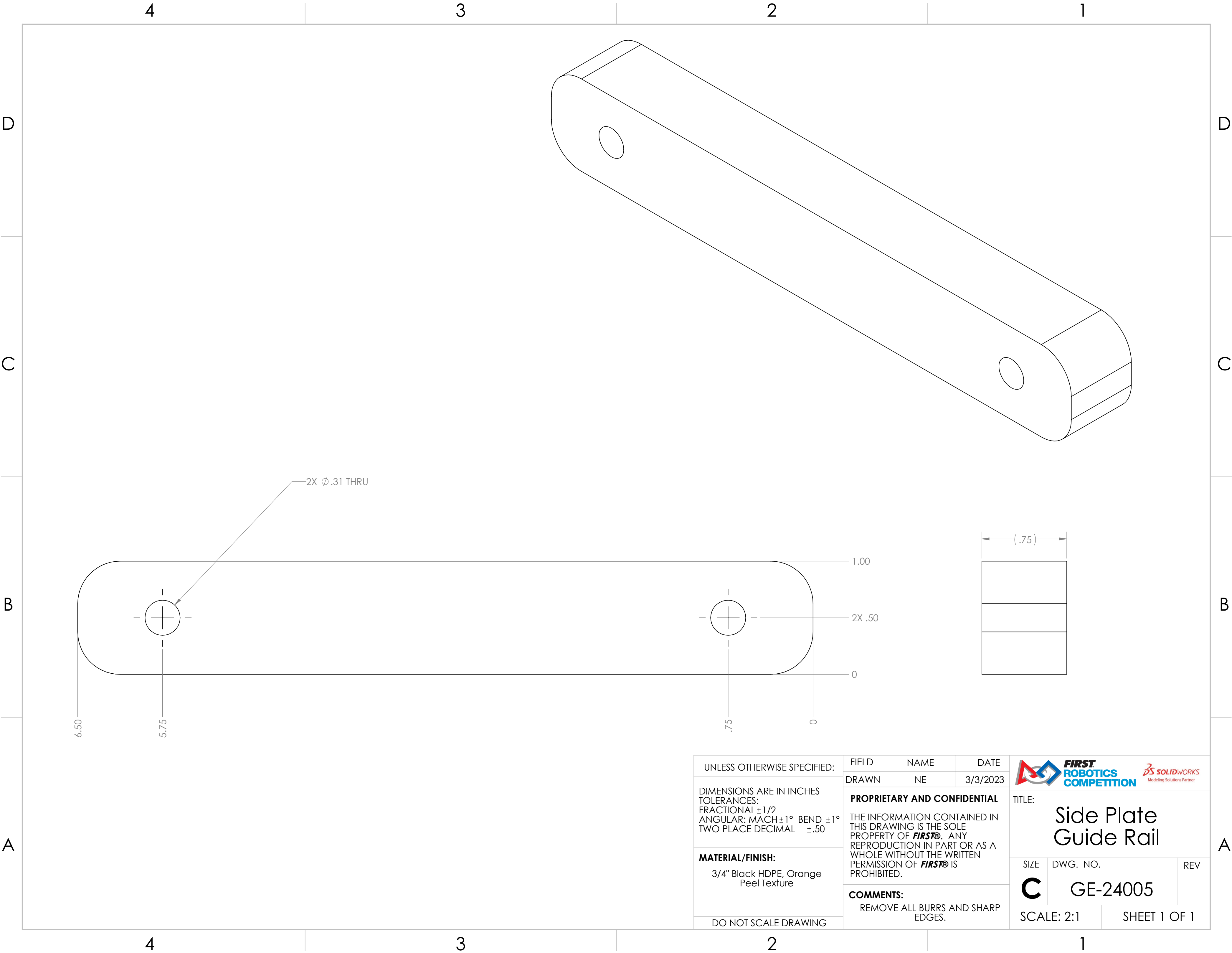
SHEET 1 OF 1





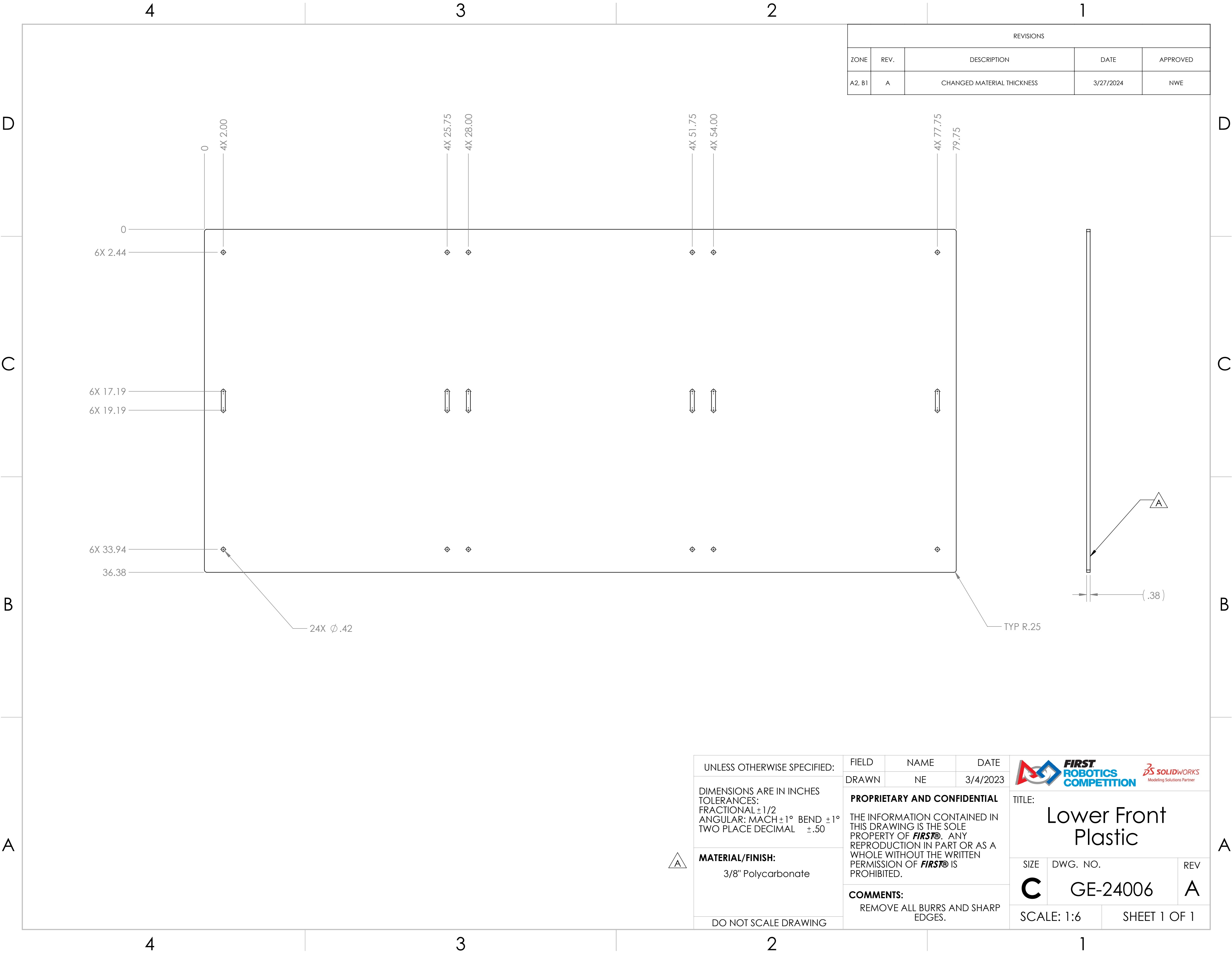
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B4, C3	A	4 HOLES WERE REPLACED WITH SLOTS	9/28/2023	NWE





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: 1/2" Black HDPE, Orange Peel Texture DO NOT SCALE DRAWING	FIELD	NAME	DATE	  TITLE: <h1>Side Plate</h1>		
	DRAWN	NE	3/3/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24004	A
			SCALE: 1:2		SHEET 1 OF 1	

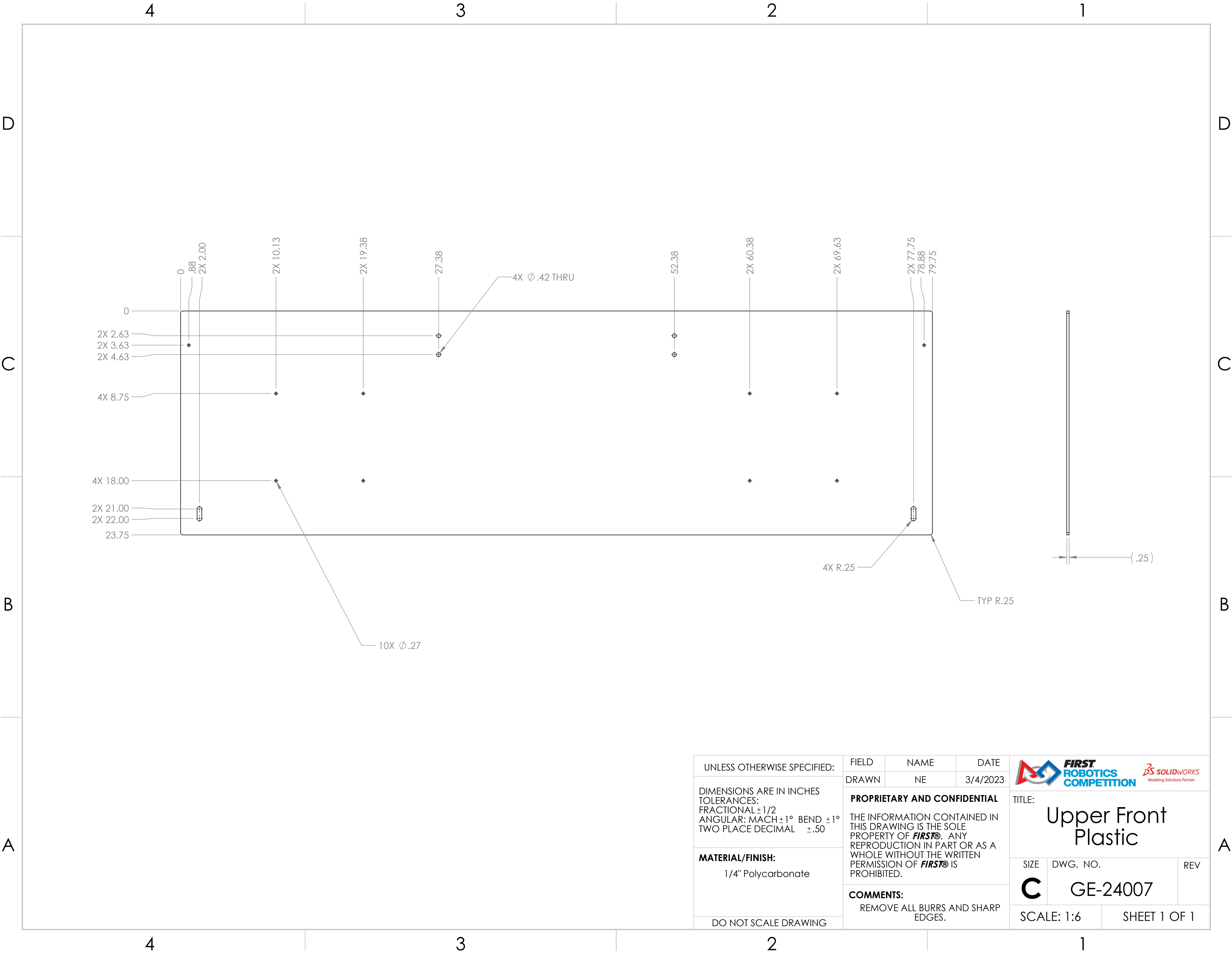




UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$ MATERIAL/FINISH: 3/4" Black HDPE, Orange Peel Texture DO NOT SCALE DRAWING	FIELD	NAME	DATE	<div></div> <div>TITLE: <h1>Side Plate Guide Rail</h1></div>		
	DRAWN	NE	3/3/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24005	
SCALE: 2:1		SHEET 1 OF 1				



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, B1	A	CHANGED MATERIAL THICKNESS	3/27/2024	NWE

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	NE	3/4/2023	TITLE: Lower Front Plastic		
MATERIAL/FINISH: 3/8" Polycarbonate	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.			SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING				C	GE-24006	A
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:6		SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	NE	3/4/2023	TITLE: Upper Front Plastic		
MATERIAL/FINISH: 1/4" Polycarbonate	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.			SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING				C	GE-24007	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:6		SHEET 1 OF 1

D

C

B

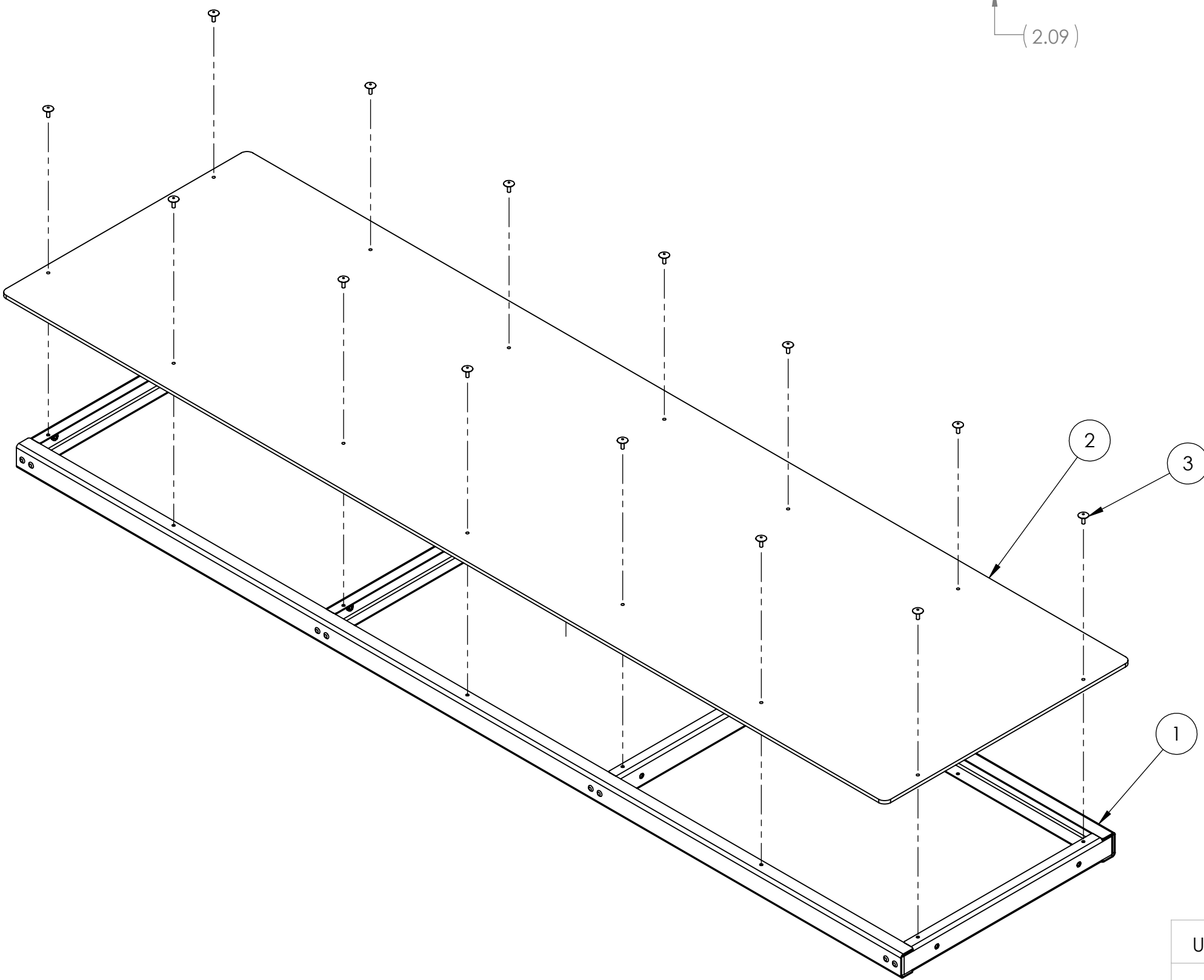
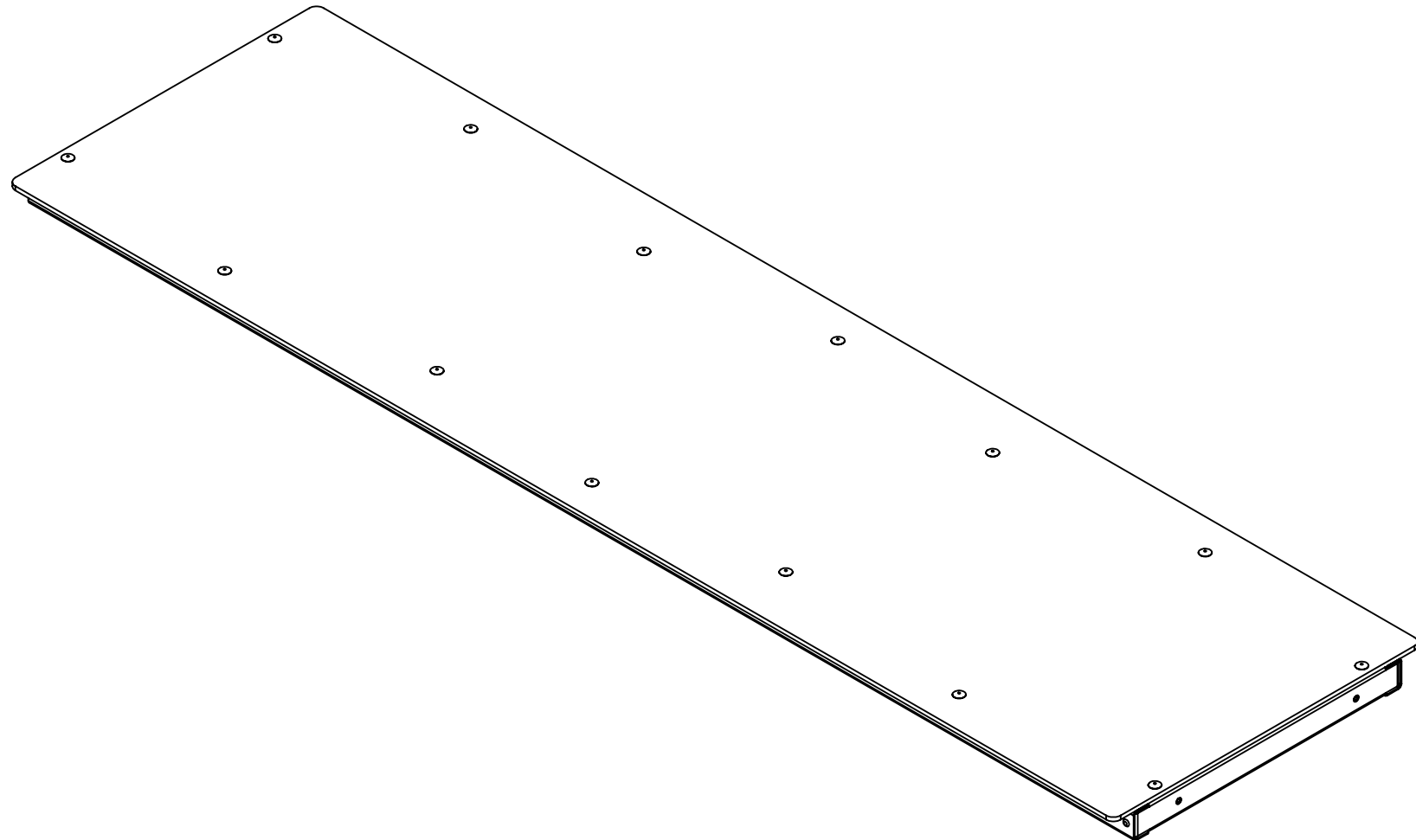
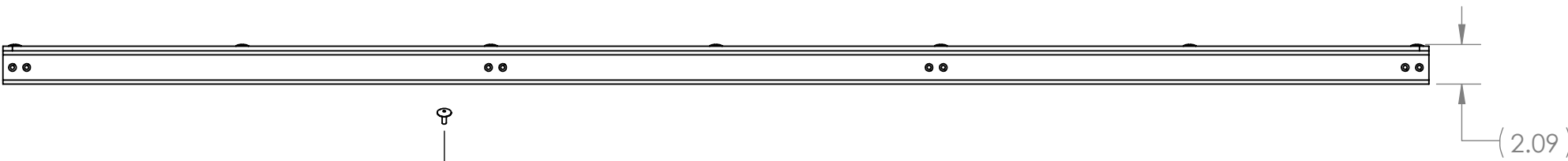
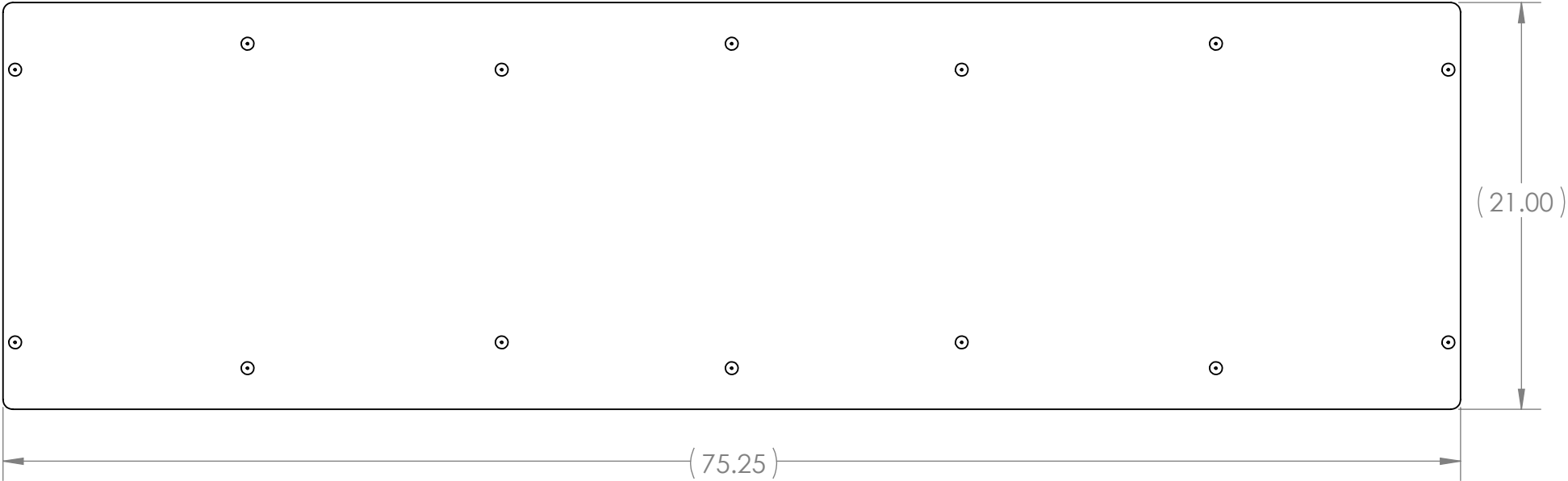
A

D

C

B

A



NOTES:
1. ASSEMBLE AS SHOWN
2. LABEL ASSEMBLY 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 $\pm .005$

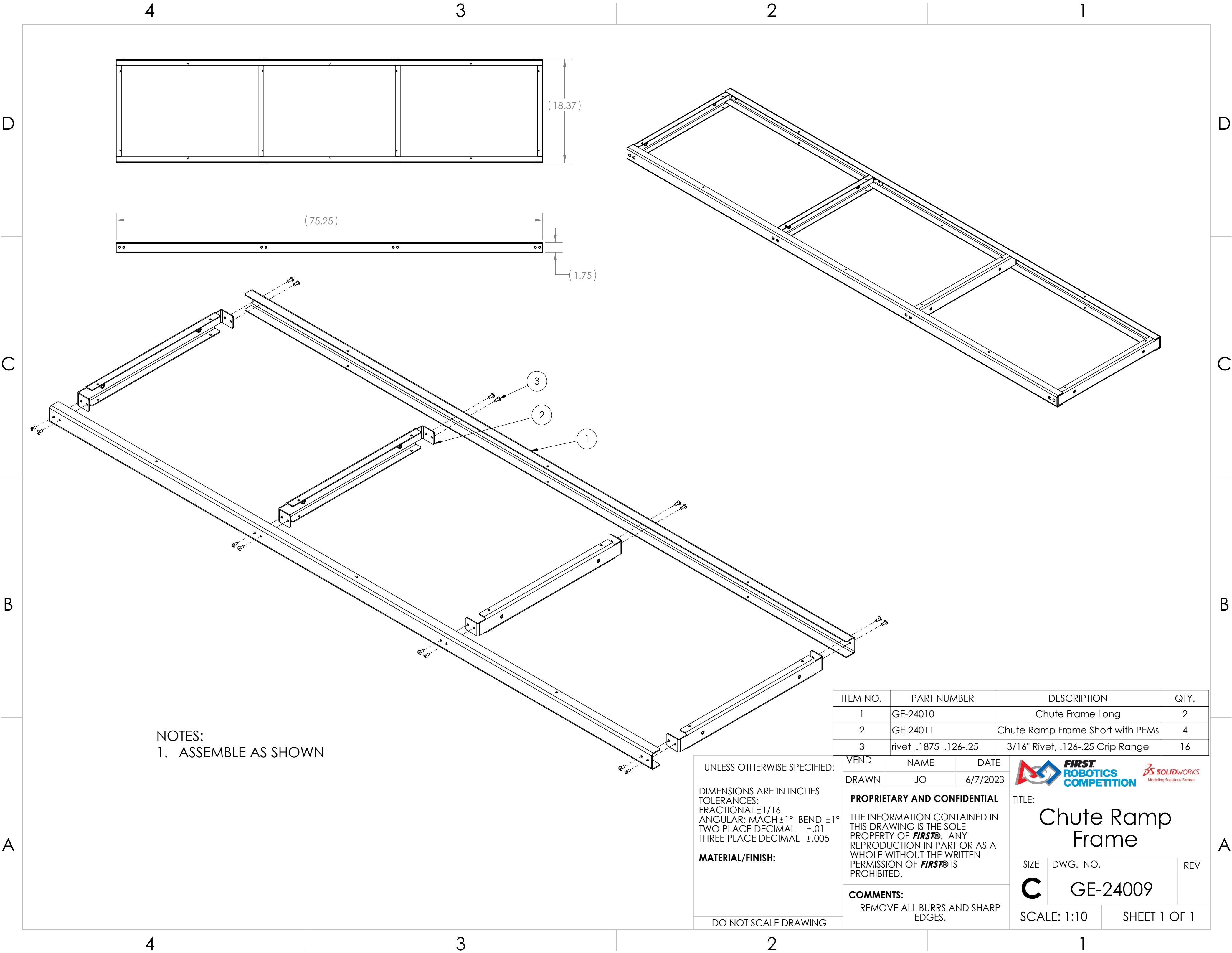
MATERIAL/FINISH:

DO NOT SCALE DRAWING

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24009	Chute Ramp Frame	1
2	GE-24012	Chute Ramp HDPE	1
3	rivet_.1875_.251-.375_largeHead	3/16" Large Head Aluminum Rivet, .251-.375 Grip Range	14



VEND	NAME	DATE
DRAWN	JO	6/7/2023
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.		
COMMENTS:		
REMOVE ALL BURRS AND SHARP EDGES.		
TITLE:		
Chute Ramp Assembly		
SIZE	DWG. NO.	REV
C	GE-24008	
SCALE: 1:8		SHEET 1 OF 1



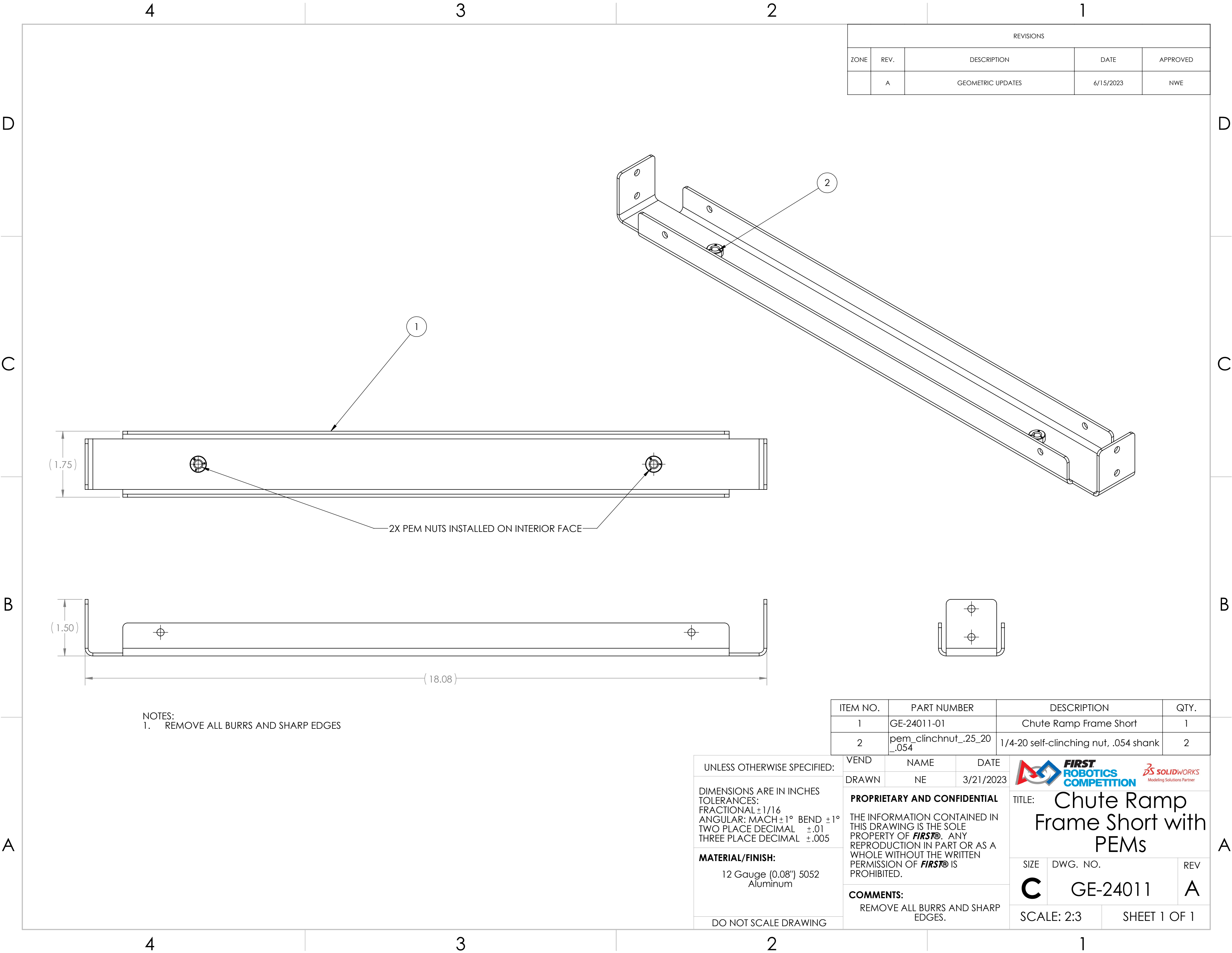


NOTES:
1. ASSEMBLE AS SHOWN

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24010	Chute Frame Long	2
2	GE-24011	Chute Ramp Frame Short with PEMs	4
3	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range	16

UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	 FIRST ROBOTICS COMPETITION		 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 $\pm .005$		DRAWN	JO	6/7/2023	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:		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.						
DO NOT SCALE DRAWING					TITLE:		Chute Ramp Frame	
		SIZE		DWG. NO.		REV		
		C		GE-24009				
		SCALE: 1:10			SHEET 1 OF 1			







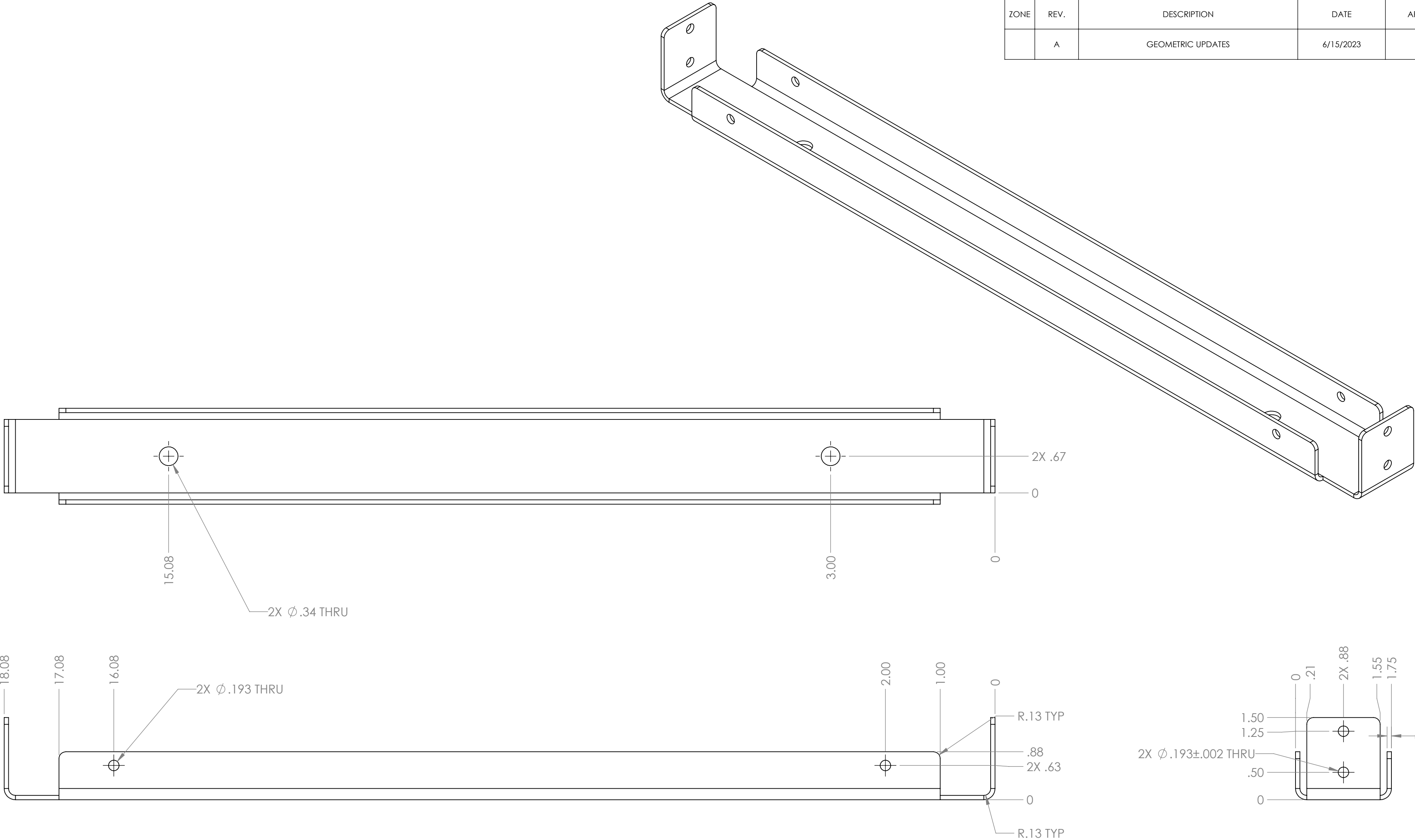
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATES	6/15/2023	NWE

NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24011-01	Chute Ramp Frame Short	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	2

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: 12 Gauge (0.08") 5052 Aluminum DO NOT SCALE DRAWING		VEND	NAME	DATE	 	
		DRAWN	NE	3/21/2023		
		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.			TITLE: Chute Ramp Frame Short with PEMs	
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24011
					REV A	
					SCALE: 2:3	
					SHEET 1 OF 1	

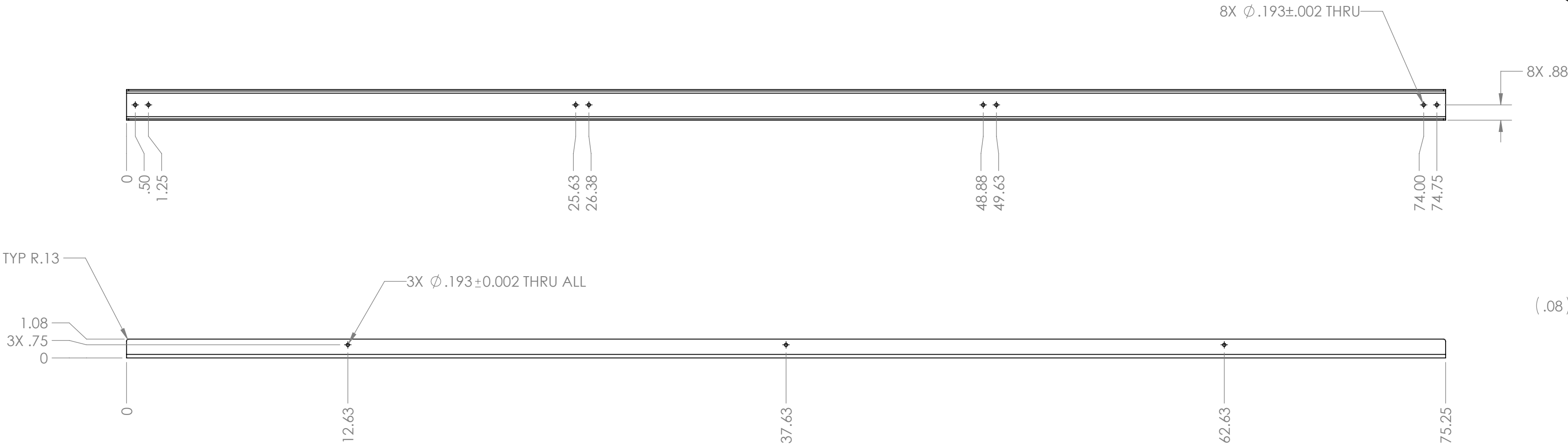
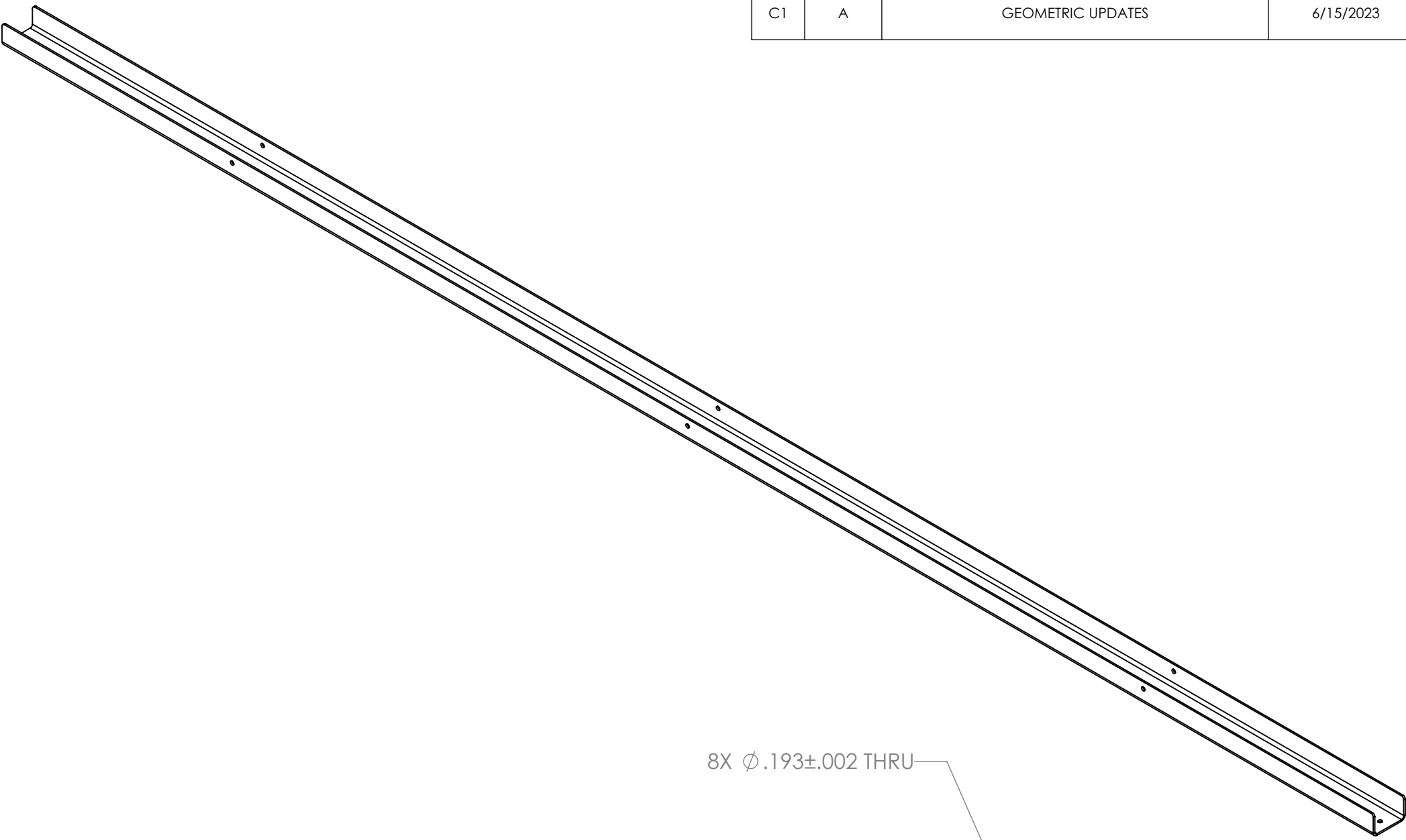
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATES	6/15/2023	NWE



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: 12 Gauge (0.08") 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE
	DRAWN	JO	6/6/2023
	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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

 		
TITLE: Chute Ramp Frame Short		
SIZE C	DWG. NO. GE-24011-01	REV A
SCALE: 3:4		SHEET 1 OF 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C1	A	GEOMETRIC UPDATES	6/15/2023	NWE

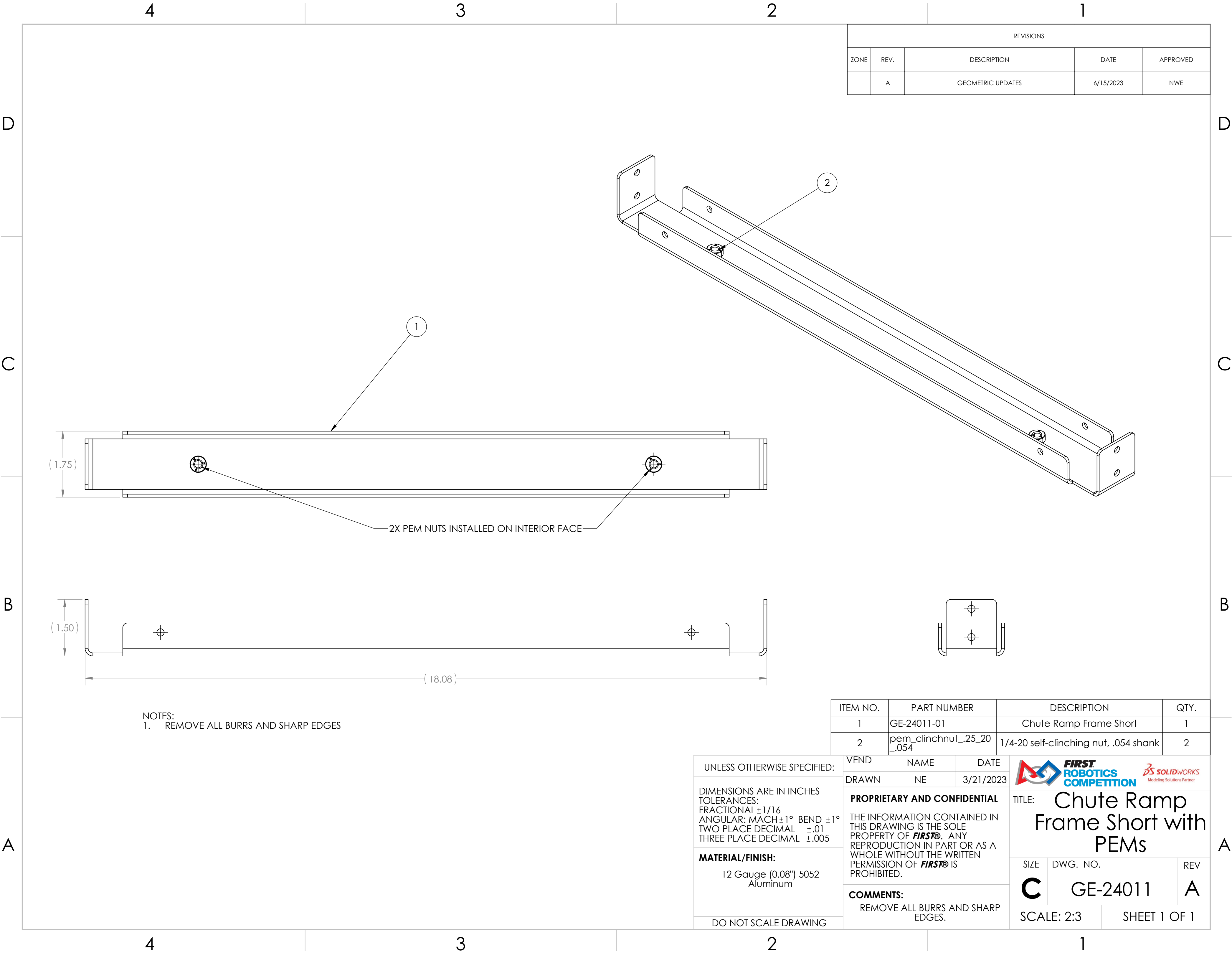


NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES

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: 12 Gauge (0.08") 5052 Aluminum DO NOT SCALE DRAWING	BEND DRAWN	NAME NE	DATE 3/21/2023
	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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		





TITLE: Chute Frame Long		
SIZE C	DWG. NO. GE-24010	REV A
SCALE: 1:5		SHEET 1 OF 1



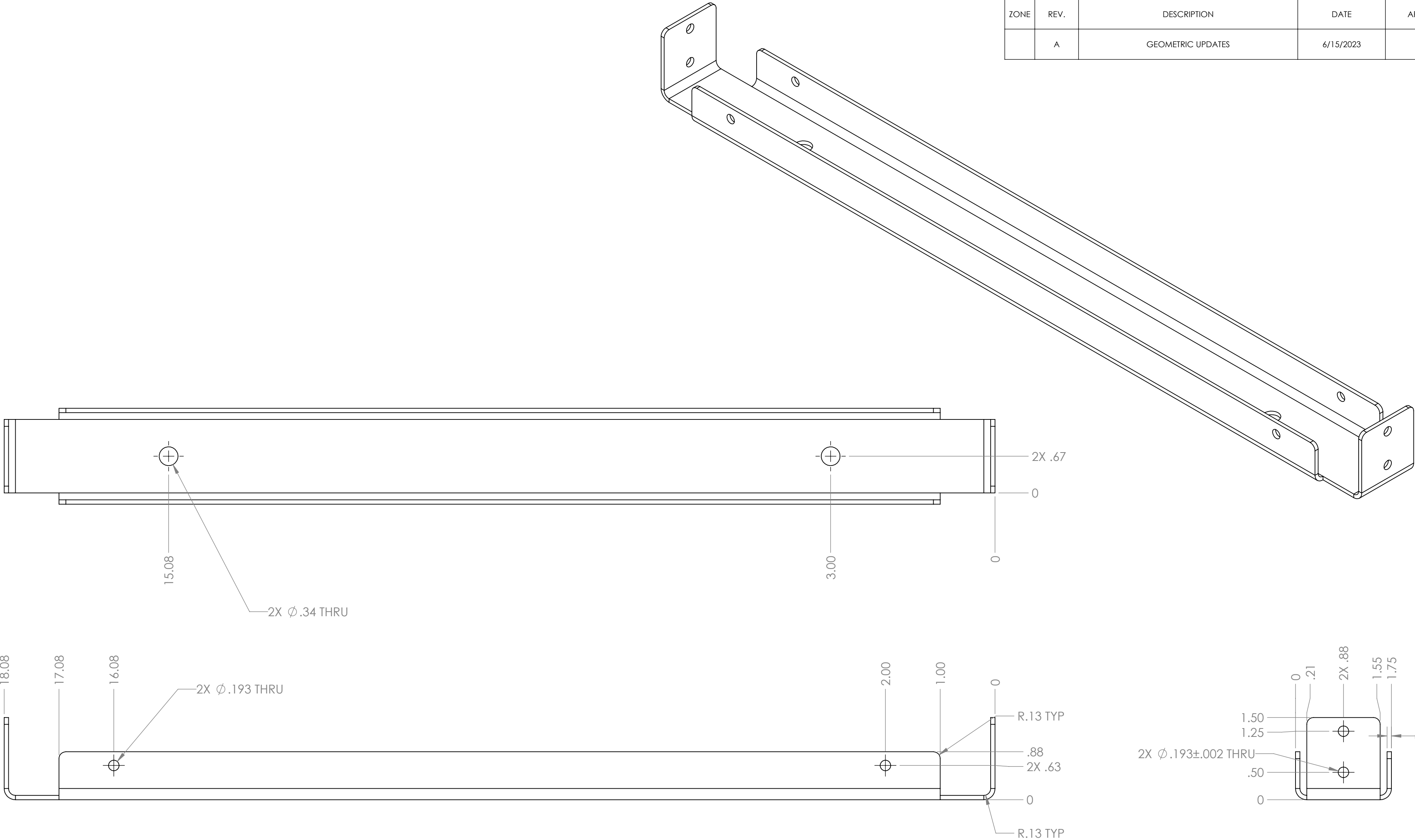
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATES	6/15/2023	NWE

NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24011-01	Chute Ramp Frame Short	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	2

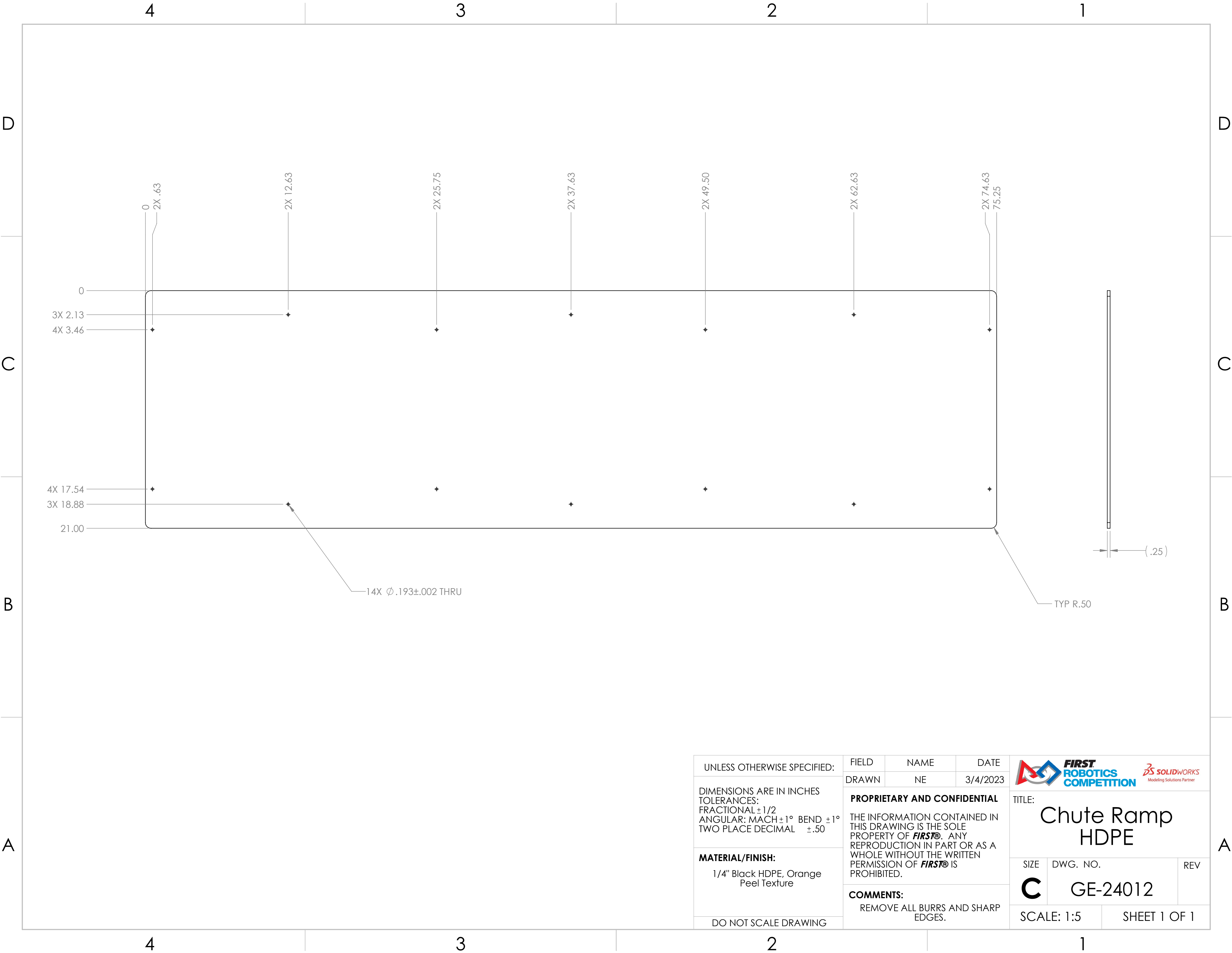
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		DRAWN	NE	3/21/2023		
		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE: Chute Ramp Frame Short with PEMs	
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24011
					REV A	
					SCALE: 2:3	
					SHEET 1 OF 1	



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATES	6/15/2023	NWE

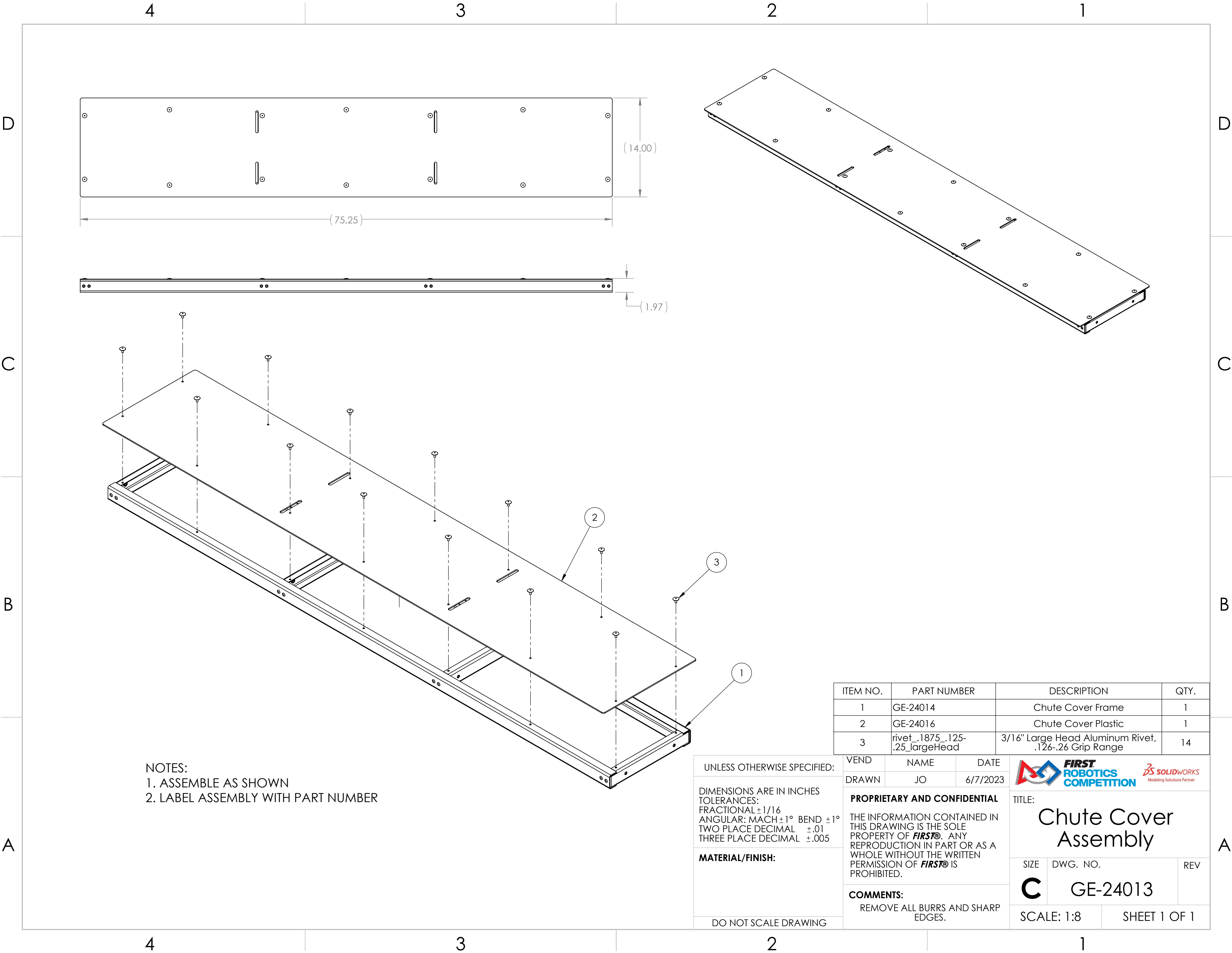


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$ MATERIAL/FINISH: 12 Gauge (0.08") 5052 Aluminum DO NOT SCALE DRAWING	BEND DRAWN	NAME JO	DATE 6/6/2023
	PROPRIETARY 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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

 		
TITLE: Chute Ramp Frame Short		
SIZE C	DWG. NO. GE-24011-01	REV A
SCALE: 3:4		SHEET 1 OF 1





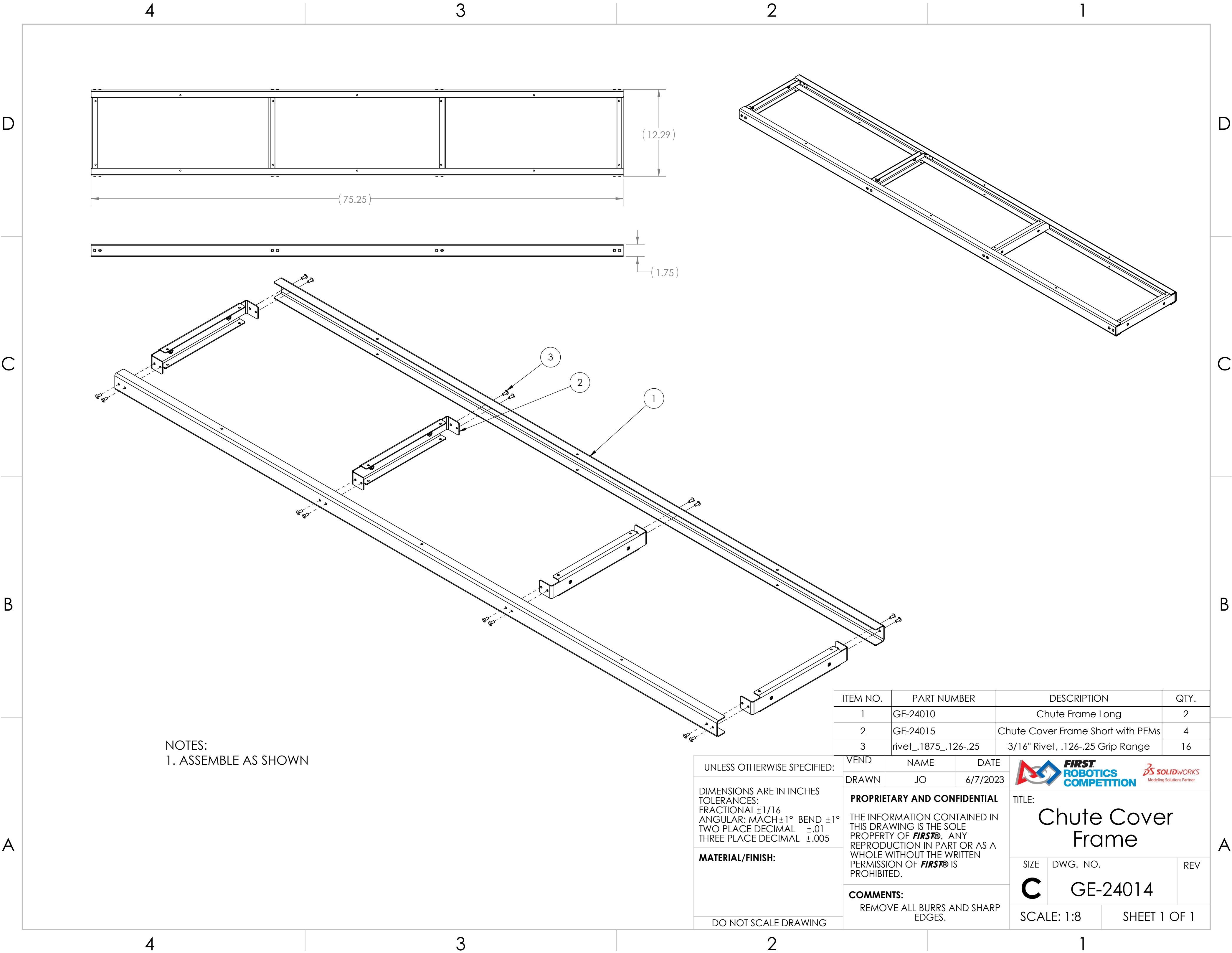
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	NE	3/4/2023	TITLE: Chute Ramp HDPE		
MATERIAL/FINISH: 1/4" Black HDPE, Orange Peel Texture	PROPRIETARY AND CONFIDENTIAL THE INFORMATION 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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24012	
DO NOT SCALE DRAWING				SCALE: 1:5		SHEET 1 OF 1



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

		ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
		1	GE-24014	Chute Cover Frame	1
		2	GE-24016	Chute Cover Plastic	1
		3	rivet_.1875_.125-.25_largeHead	3/16" Large Head Aluminum Rivet, .126-.26 Grip Range	14

UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	<div></div>										
<p>DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005</p> <p>MATERIAL/FINISH:</p>		DRAWN	JO	6/7/2023	<p>TITLE:</p> <h1>Chute Cover Assembly</h1> <table><tr><td>SIZE</td><td>DWG. NO.</td><td>REV</td></tr><tr><td>C</td><td>GE-24013</td><td></td></tr><tr><td colspan="2">SCALE: 1:8</td><td>SHEET 1 OF 1</td></tr></table>		SIZE	DWG. NO.	REV	C	GE-24013		SCALE: 1:8		SHEET 1 OF 1
		SIZE	DWG. NO.	REV											
		C	GE-24013												
		SCALE: 1:8		SHEET 1 OF 1											
<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:</p> <p>REMOVE ALL BURRS AND SHARP EDGES.</p>															
DO NOT SCALE DRAWING															



NOTES:
1. ASSEMBLE AS SHOWN

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24010	Chute Frame Long	2
2	GE-24015	Chute Cover Frame Short with PEMs	4
3	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range	16

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

DRAWN

NAME

JO

DATE

6/7/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

TITLE:

Chute Cover Frame

SIZE

C

DWG. NO.

GE-24014

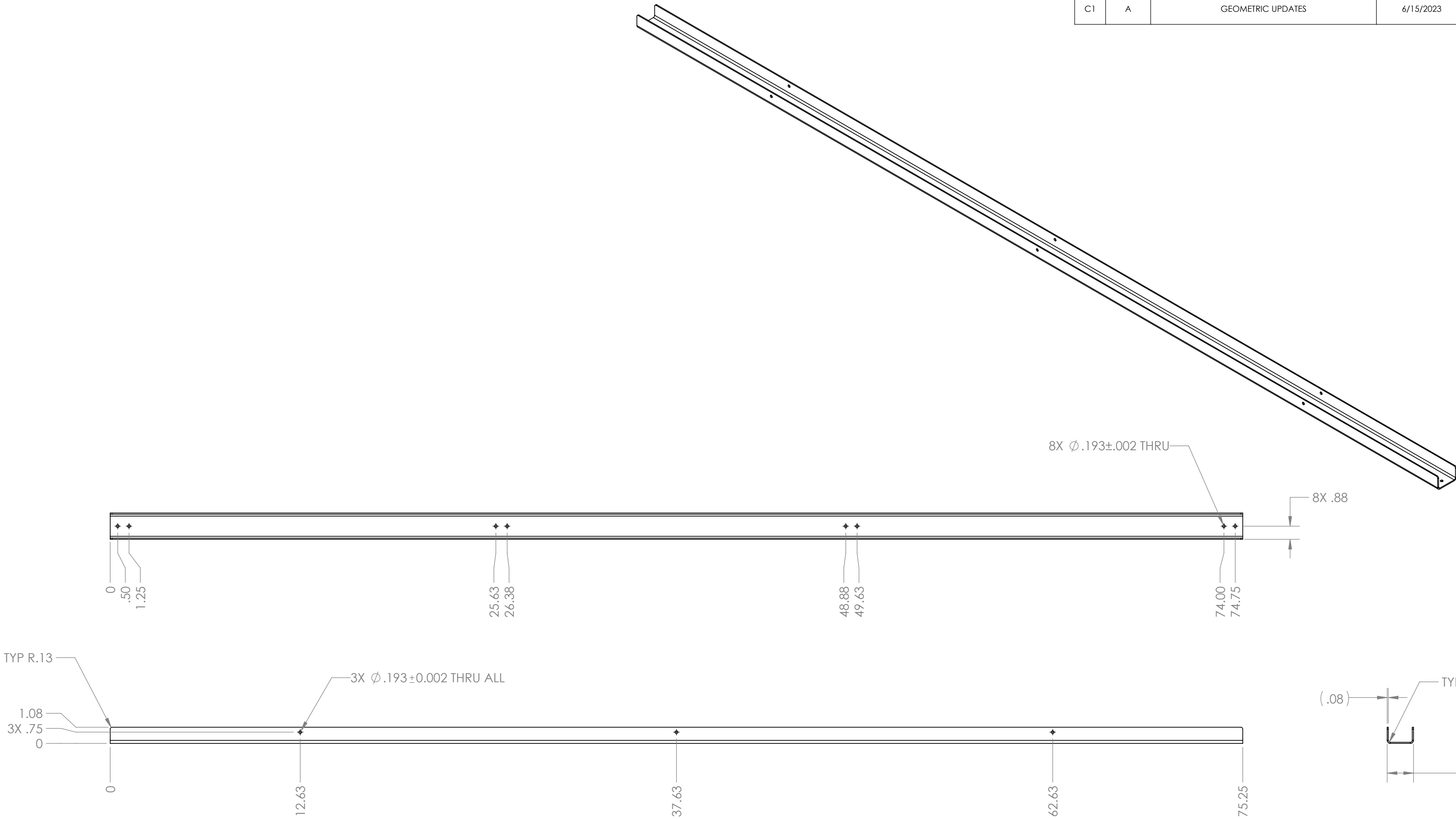
REV

SCALE: 1:8



SHEET 1 OF 1

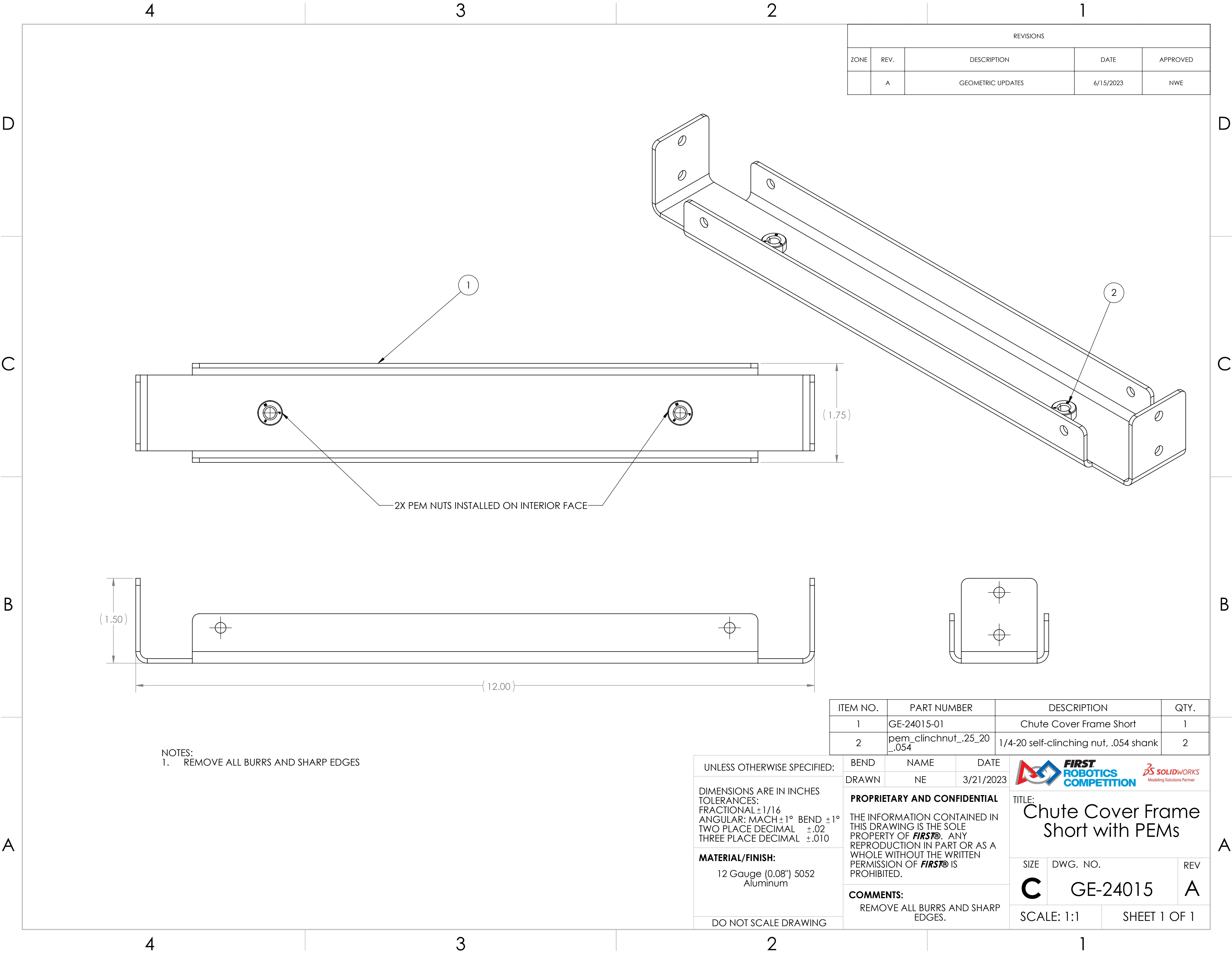


REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C1	A	GEOMETRIC UPDATES	6/15/2023	NWE



NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 12 Gauge (0.08") 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: <h1>Chute Frame Long</h1></div>		
	DRAWN	NE	3/21/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				SIZE C	DWG. NO. GE-24010
SCALE: 1:5		SHEET 1 OF 1				

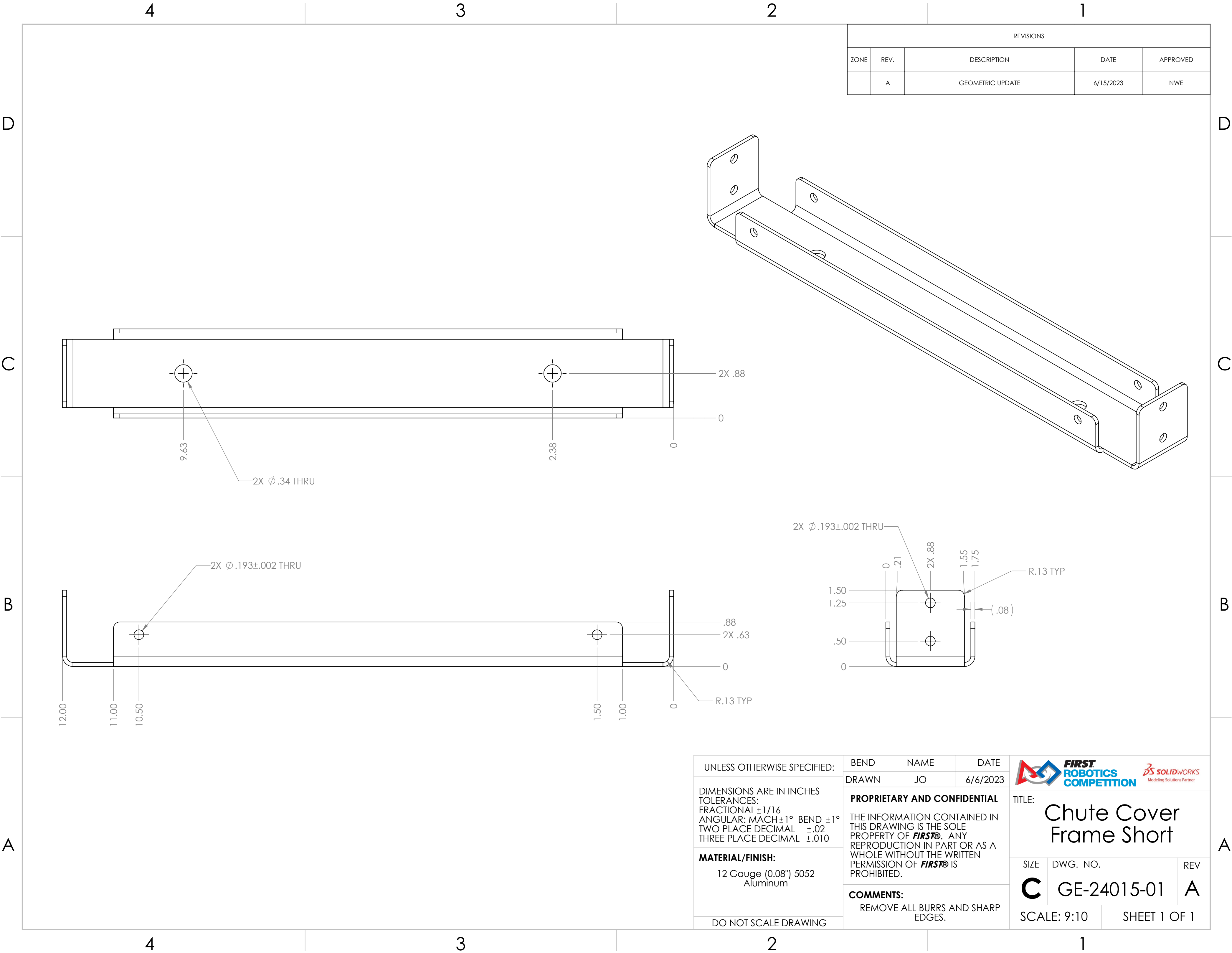


REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATES	6/15/2023	NWE

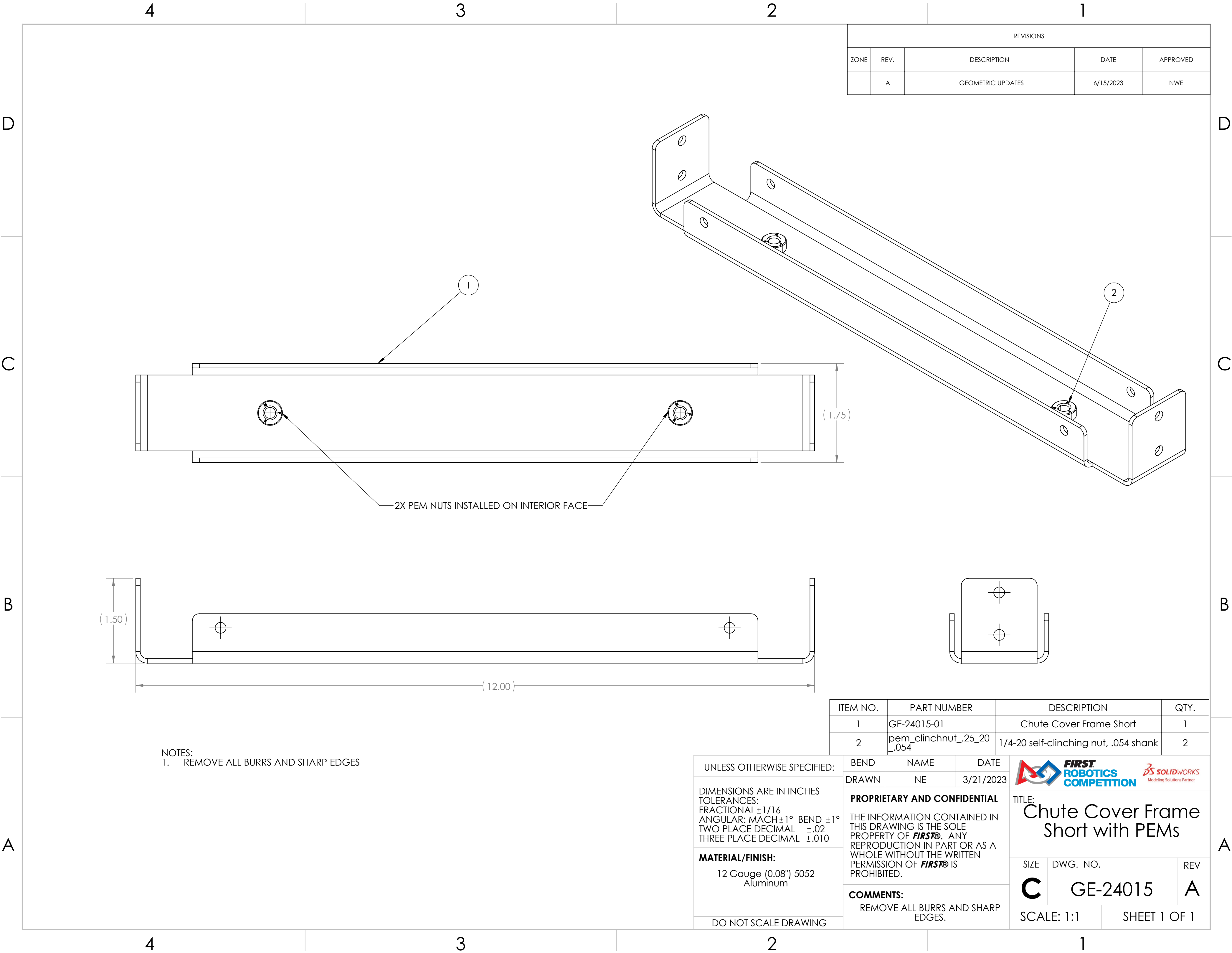
NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24015-01	Chute Cover Frame Short	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	2

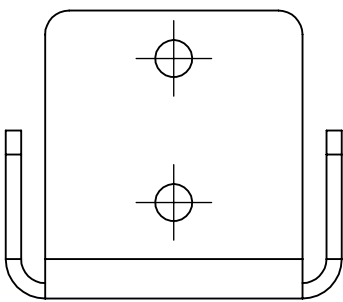
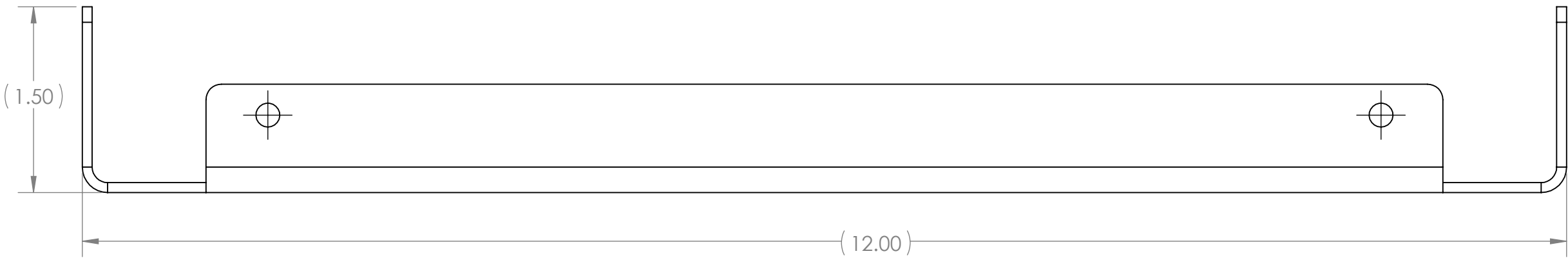
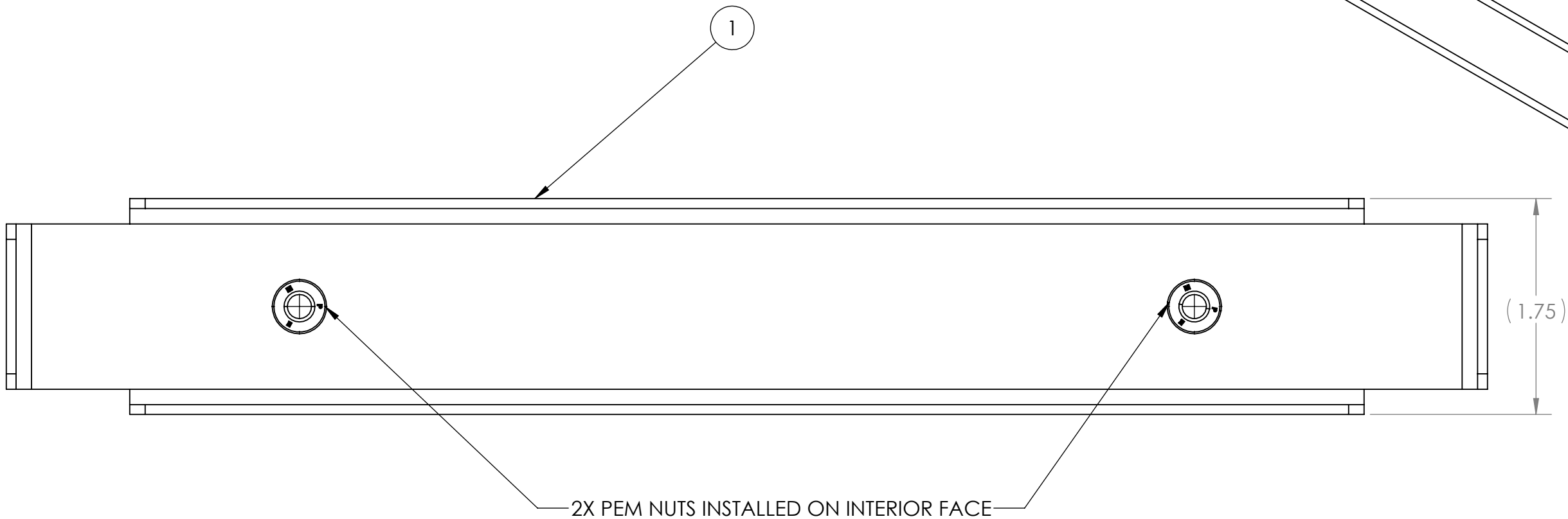
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 12 Gauge (0.08") 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	 		
	DRAWN	NE	3/21/2023			
	PROPRIETARY AND CONFIDENTIAL THE 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.				TITLE: Chute Cover Frame Short with PEMs	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
				SIZE	DWG. NO.	REV
				C	GE-24015	A
				SCALE: 1:1		SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div><div><div><div></div><div>FIRST</div></div><div>ROBOTICS</div><div>COMPETITION</div></div><div>3D SOLIDWORKS Modeling Solutions Partner</div></div> <div>TITLE: Chute Cover Frame Short</div>		
	DRAWN	JO	6/6/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.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: 12 Gauge (0.08") 5052 Aluminum	COMMENTS:			SIZE	DWG. NO.	REV
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24015-01	A
DO NOT SCALE DRAWING				SCALE: 9:10		SHEET 1 OF 1





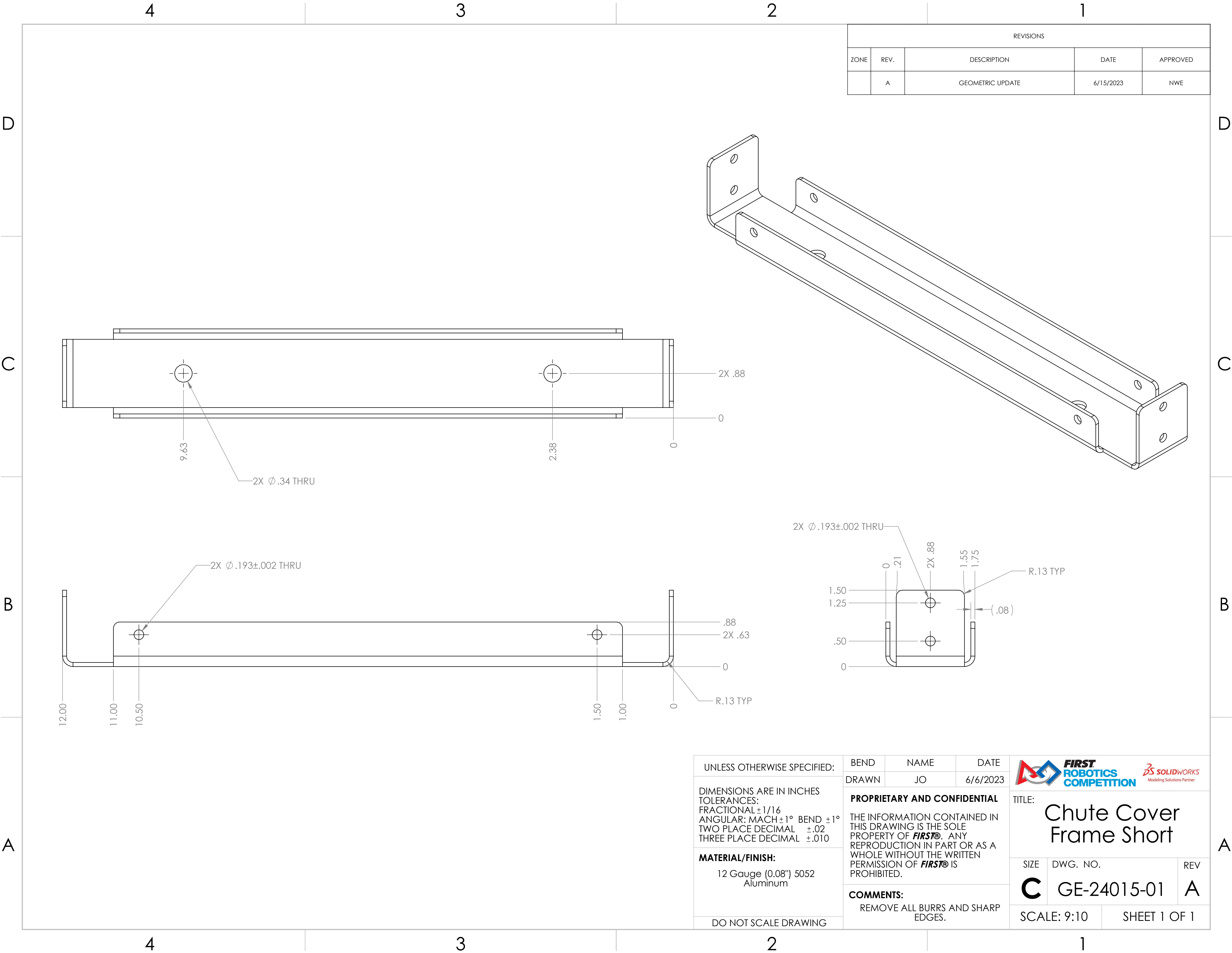
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATES	6/15/2023	NWE



NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24015-01	Chute Cover Frame Short	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	2

UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div></div> <div>TITLE: Chute Cover Frame Short with PEMs</div>	
	DRAWN	NE	3/21/2023		
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			SIZE C	
	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	COMMENTS:			DWG. NO.	
	REMOVE ALL BURRS AND SHARP EDGES.			GE-24015	
DO NOT SCALE DRAWING				SCALE: 1:1	REV A
			SHEET 1 OF 1		



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATE	6/15/2023	NWE

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: 12 Gauge (0.08") 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE
	DRAWN	JO	6/6/2023
	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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

 		
TITLE: Chute Cover Frame Short		
SIZE C	DWG. NO. GE-24015-01	REV A
SCALE: 9:10		SHEET 1 OF 1

4

3

2

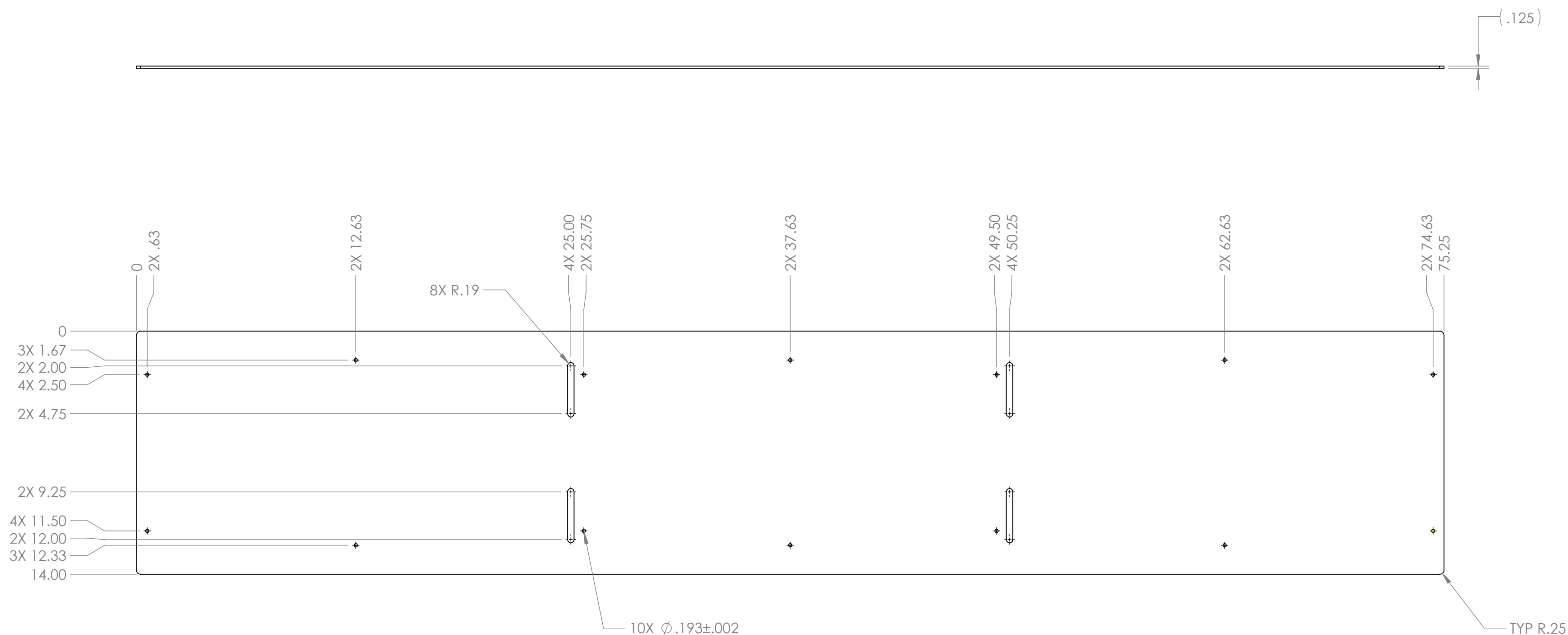
1



D

C

B

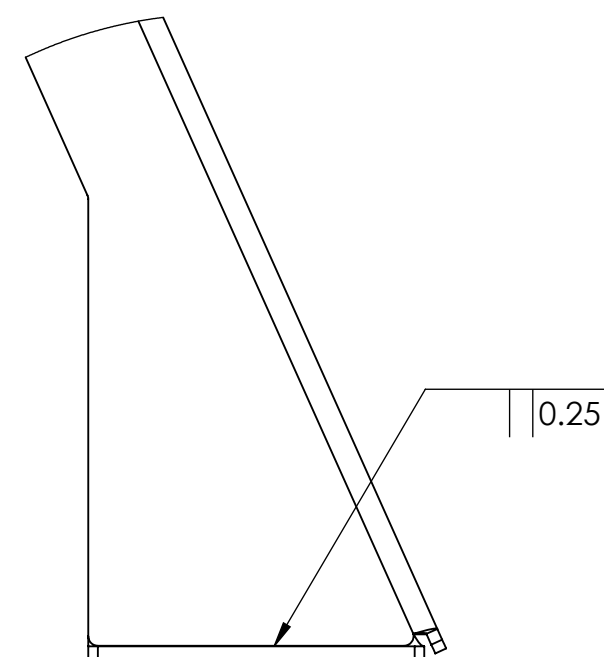
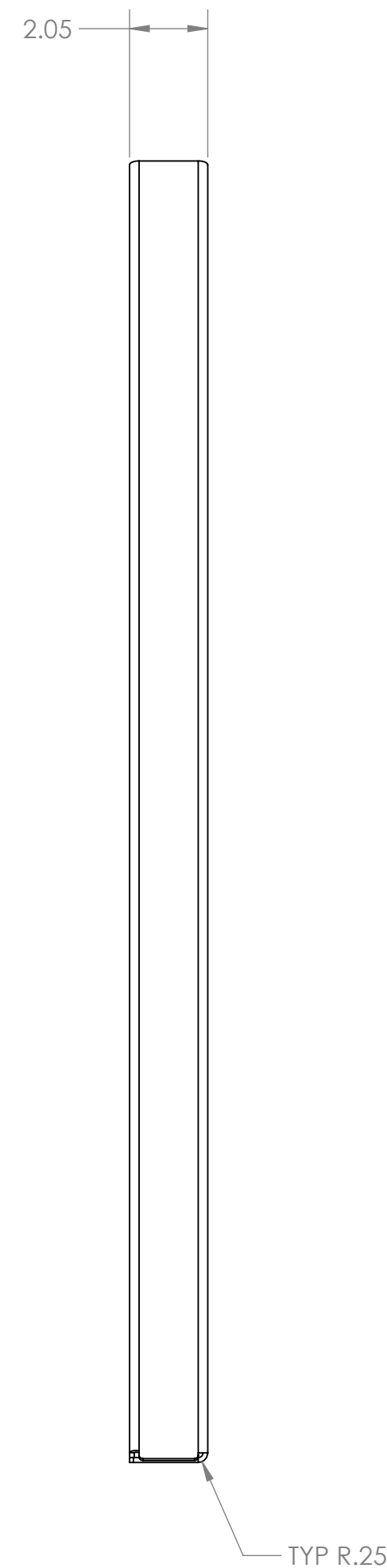
A



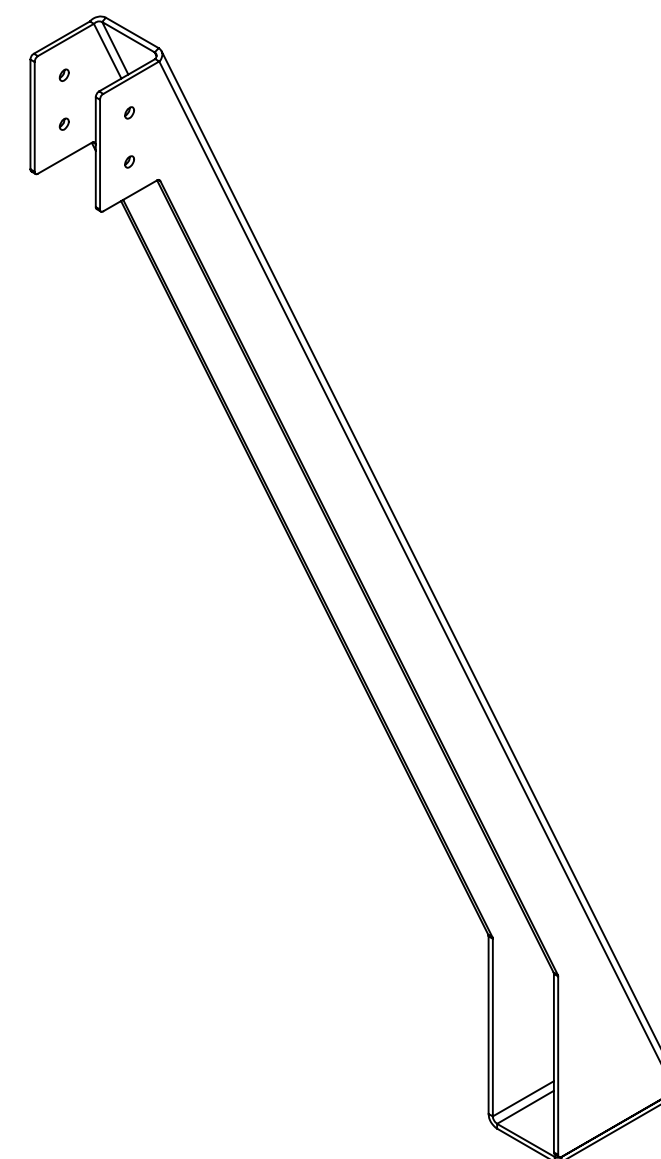
UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	 		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$		DRAWN	NE	3/4/2023	TITLE: Chute Cover Plastic		
MATERIAL/FINISH: 0.125" Polycarbonate		PROPRIETARY AND CONFIDENTIAL					
		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.			SIZE	DWG. NO.	REV
					C	GE-24016	
					SCALE: 1:5		SHEET 1 OF 1

1

D





DETAIL B
SCALE 1 : 2

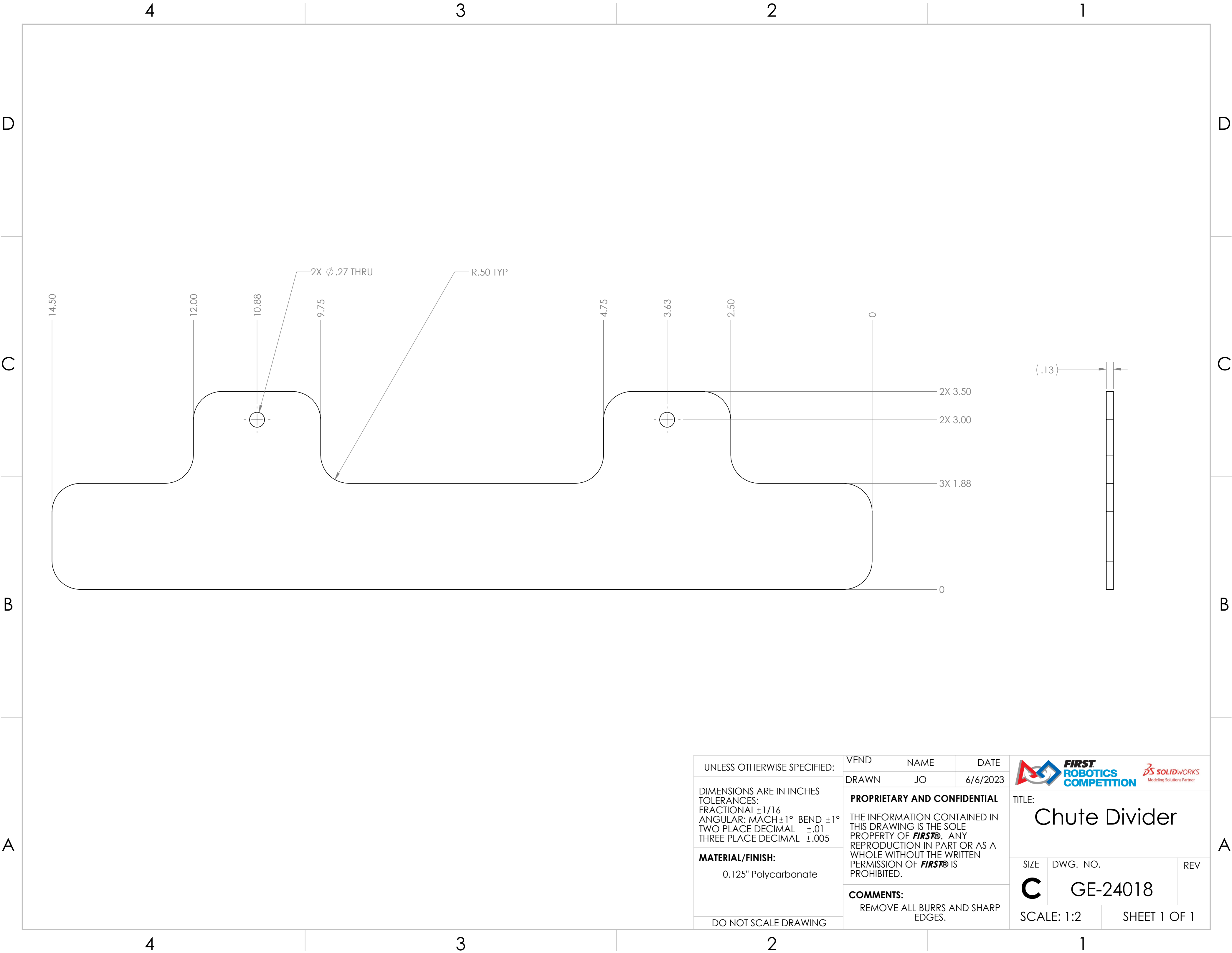




B

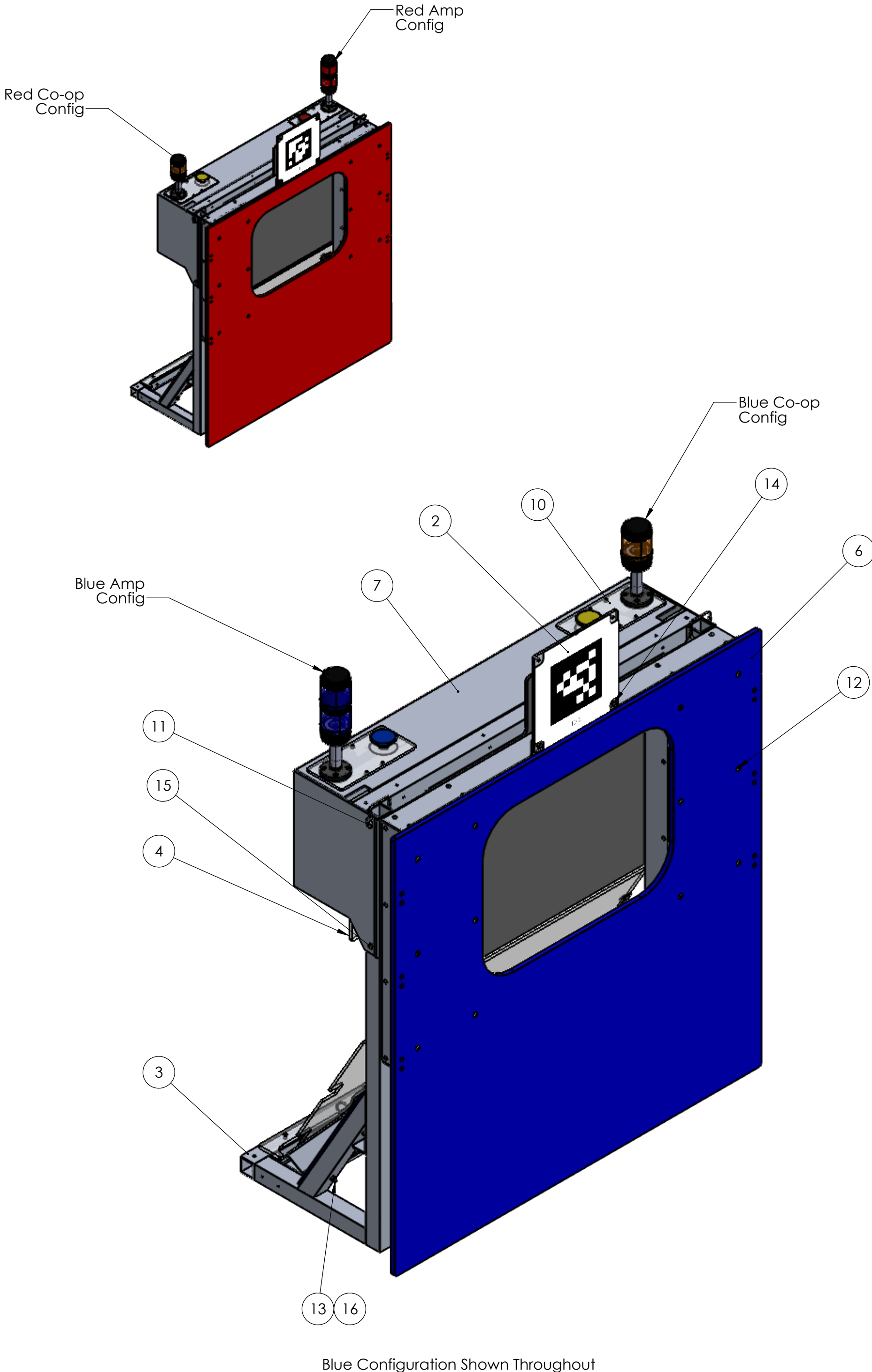


A

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	6/22/2023
MATERIAL/FINISH: 0.125" 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		 		
TITLE: <h1>Frame Support Leg</h1>				
SIZE C		DWG. NO. GE-24017		REV
SCALE: 1:4			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: 0.125" Polycarbonate DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Chute Divider</div>		
	DRAWN	JO	6/6/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24018	REV
SCALE: 1:2		SHEET 1 OF 1				



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
2-B2	A	Added Sheet 2	12/20/2023	DAF

ITEM NO.	PART NUMBER	DESCRIPTION	BLUE CONFIG QTY.	RED CONFIG QTY.
1	FE-00083-ID5	AprilTag	-	1
2	FE-00083-ID6	AprilTag	1	-
3	GE-24101	Amp Permanent Assembly	1	1
4	GE-24113	Truss Capture Large	1	1
5	GE-24114	Front Red	1	-
6	GE-24115	Front Blue	-	1
7	GE-24116	Stacklight and Button Box	1	1
8	GE-24118	Ring Counter Red	1	-
9	GE-24119	Ring Counter Blue	-	1
10	GE-24128	Stacklight and Button Plate Assembly	2	2
11	98416A013	pin_clevis_.25_2.1875	2	2
12	flat_phil_.25_20_1	Steel Phillips Flat Head Screw, 1/4"x20 x 1" long, fully threaded	12	12
13	flat_phil_.25_20_2.5	Steel Phillips Flat Head Screw, 1/4"-20 x 2-1/2" long, fully threaded	4	4
14	hex_.25_20_0.75	Steel Hex Head Screw, 1/4"-20 x 0.75" long, fully threaded	2	2
15	hex_.25_20_2.5_partial	Steel Hex Head Screw, 1/4"-20 x 2-1/2" long, partially threaded	2	2
16	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	6	6

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	DF	12/18/2023

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.

COMMENTS:

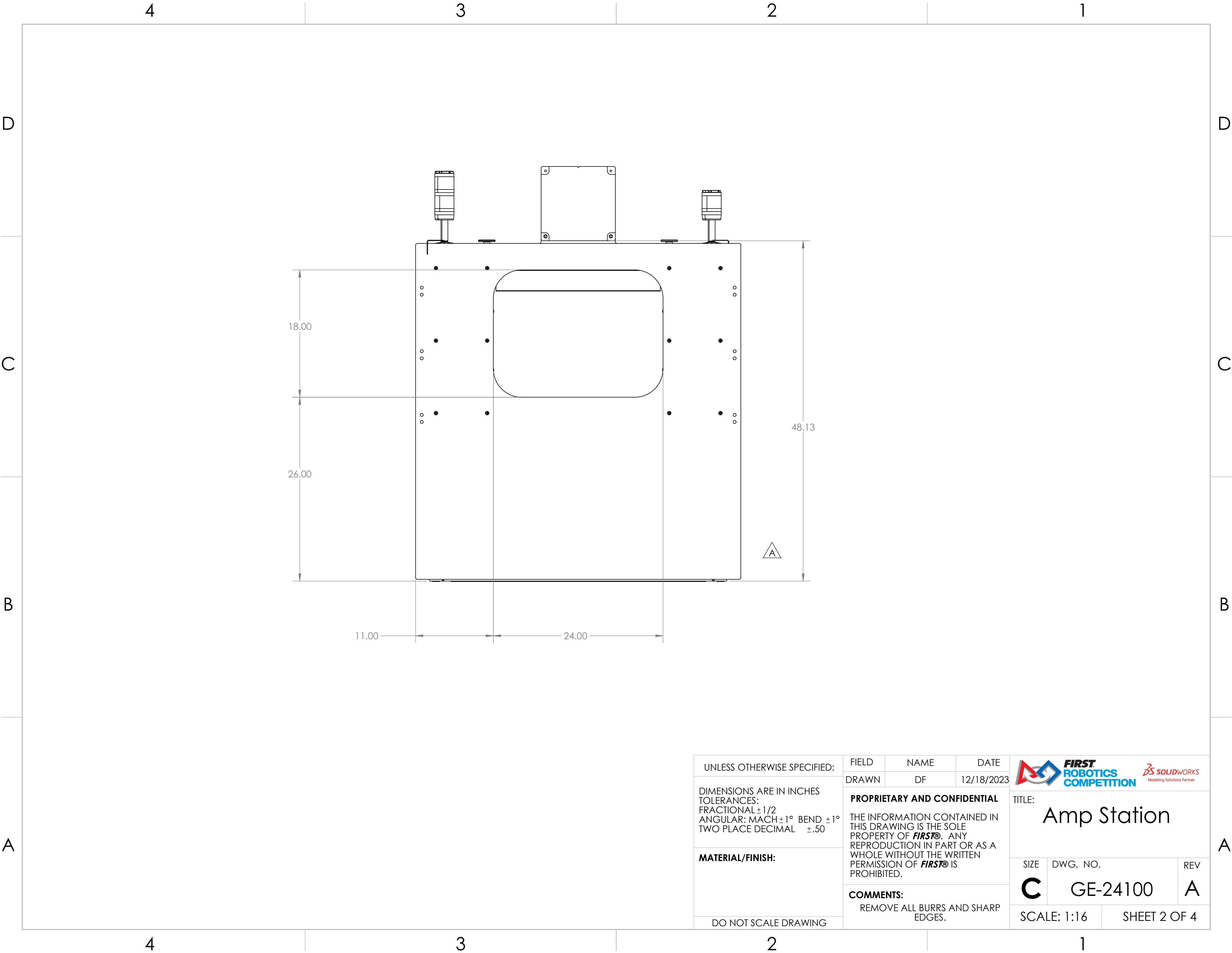
REMOVE ALL BURRS AND SHARP EDGES.





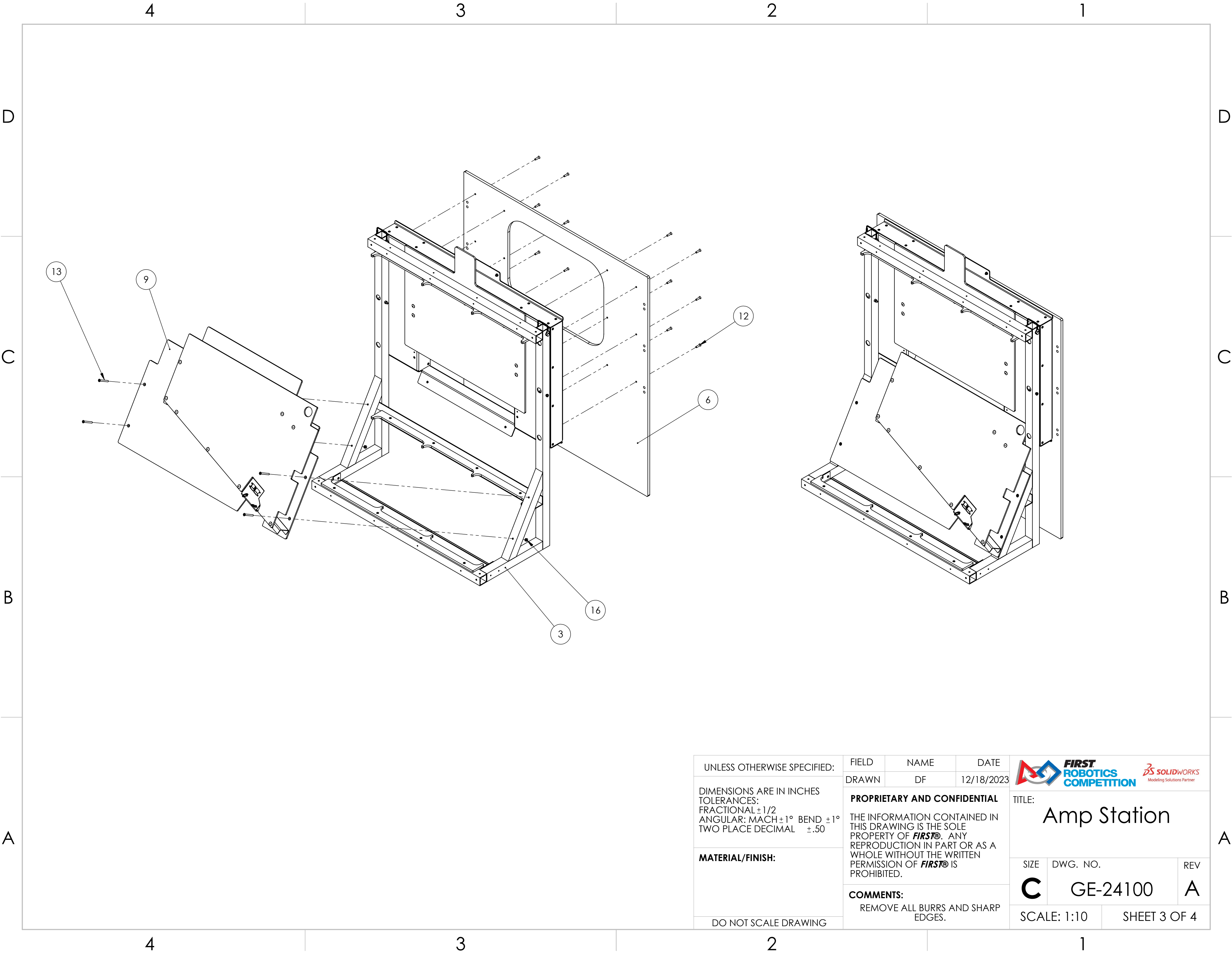
TITLE:
Amp Station



SIZE	DWG. NO.	REV
C	GE-24100	A

SCALE: 1:8 SHEET 1 OF 4



UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	 FIRST ROBOTICS COMPETTITION		 SOLIDWORKS Modeling Solutions Partner	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50		DRAWN	DF	12/18/2023	TITLE: Amp Station			
		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.			SIZE	DWG. NO.	REV	
		DO NOT SCALE DRAWING					C	GE-24100
					SCALE: 1:16		SHEET 2 OF 4	



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>		
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	12/18/2023	TITLE: Amp Station		
	PROPRIETARY AND CONFIDENTIAL			SIZE C		
	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:			DWG. NO.		REV
DO NOT SCALE DRAWING	REMOVE ALL BURRS AND SHARP EDGES.			GE-24100		A
				SCALE: 1:10		SHEET 3 OF 4

D

C

B

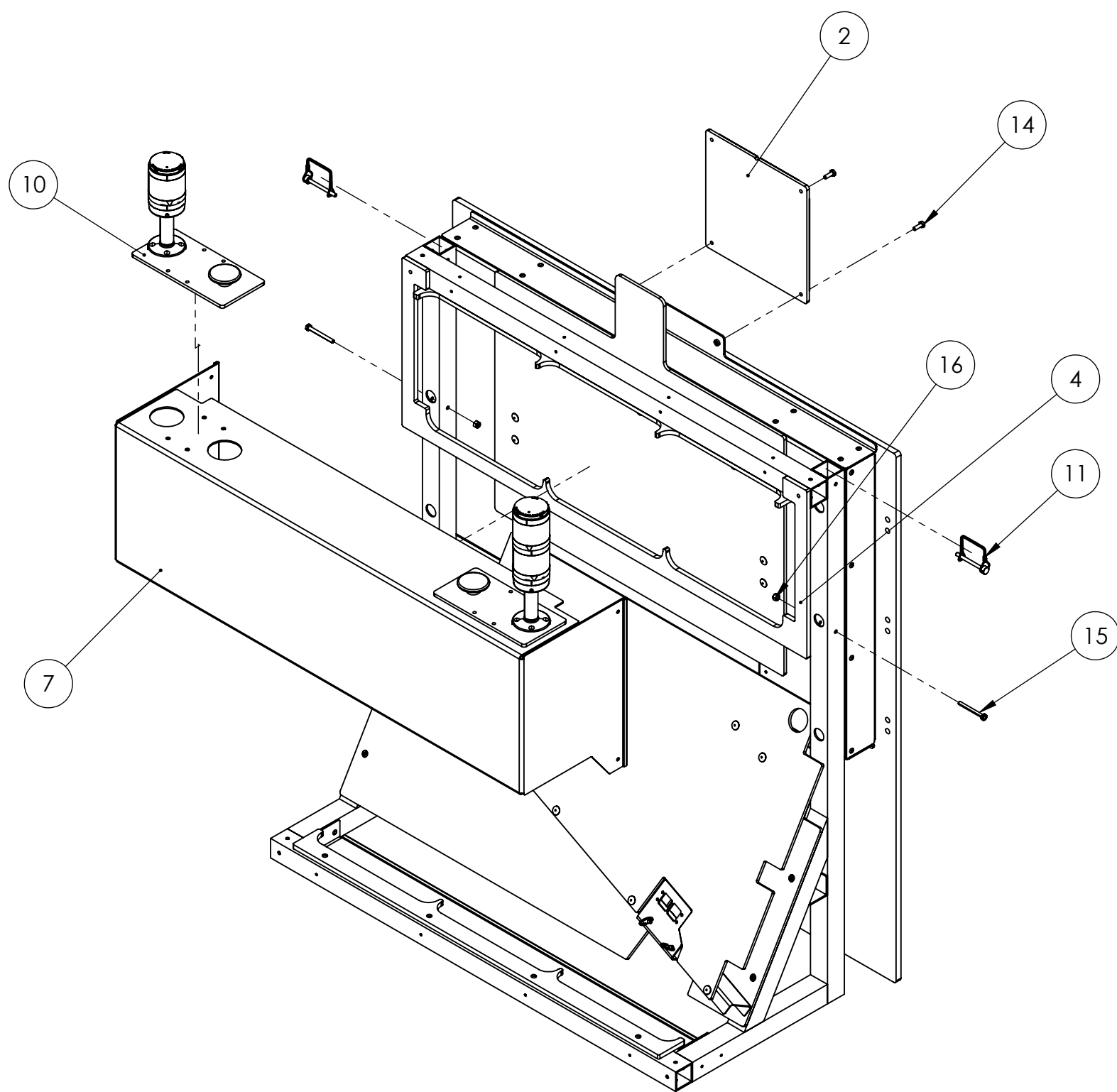
A

D

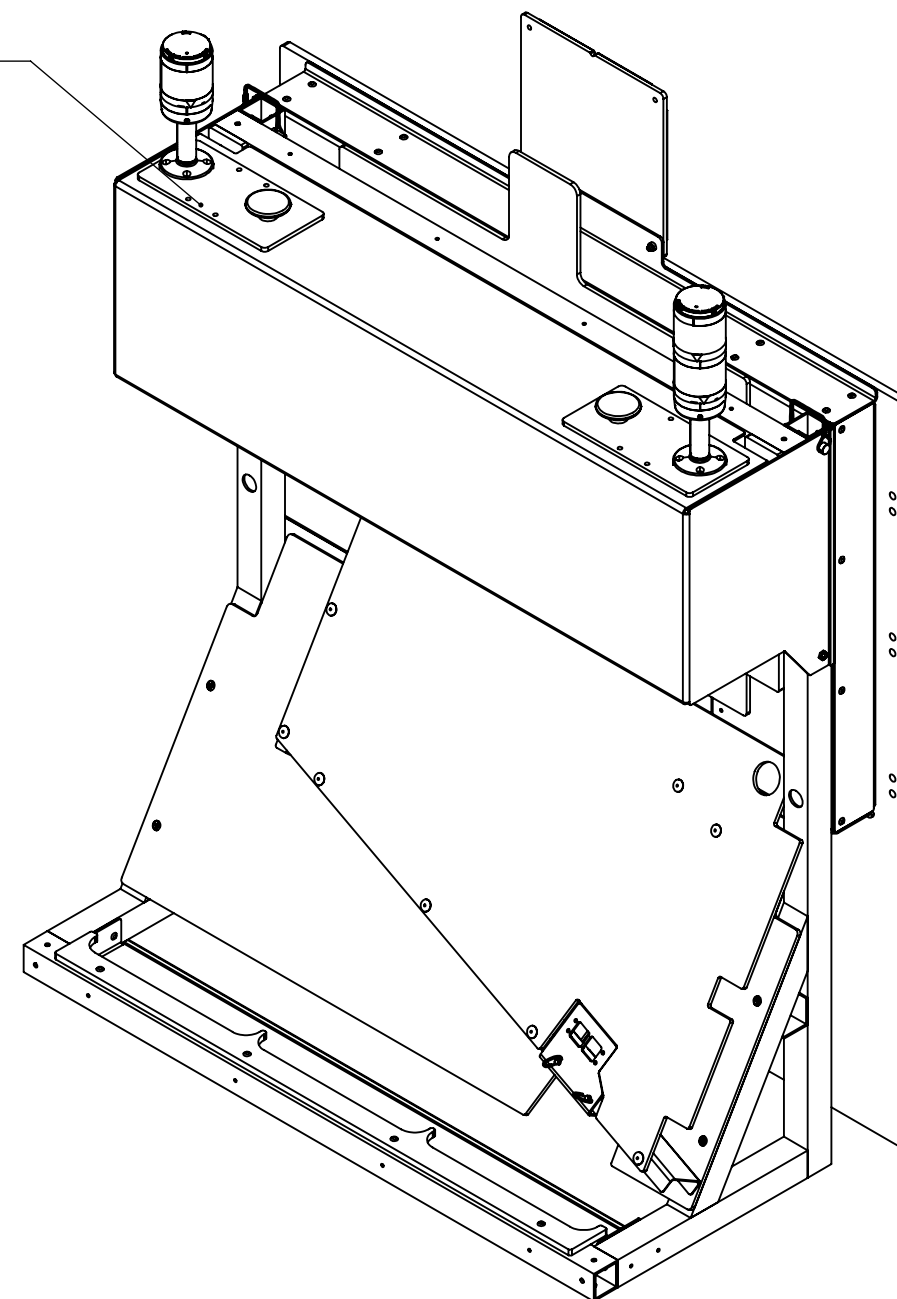
C



B

A



Attach with cable ties. 4 places



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>		
	DRAWN	DF	12/18/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL			TITLE: Amp Station		
	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:			SIZE	DWG. NO.	REV
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24100	A
DO NOT SCALE DRAWING				SCALE: 1:10		SHEET 4 OF 4

4

3

2

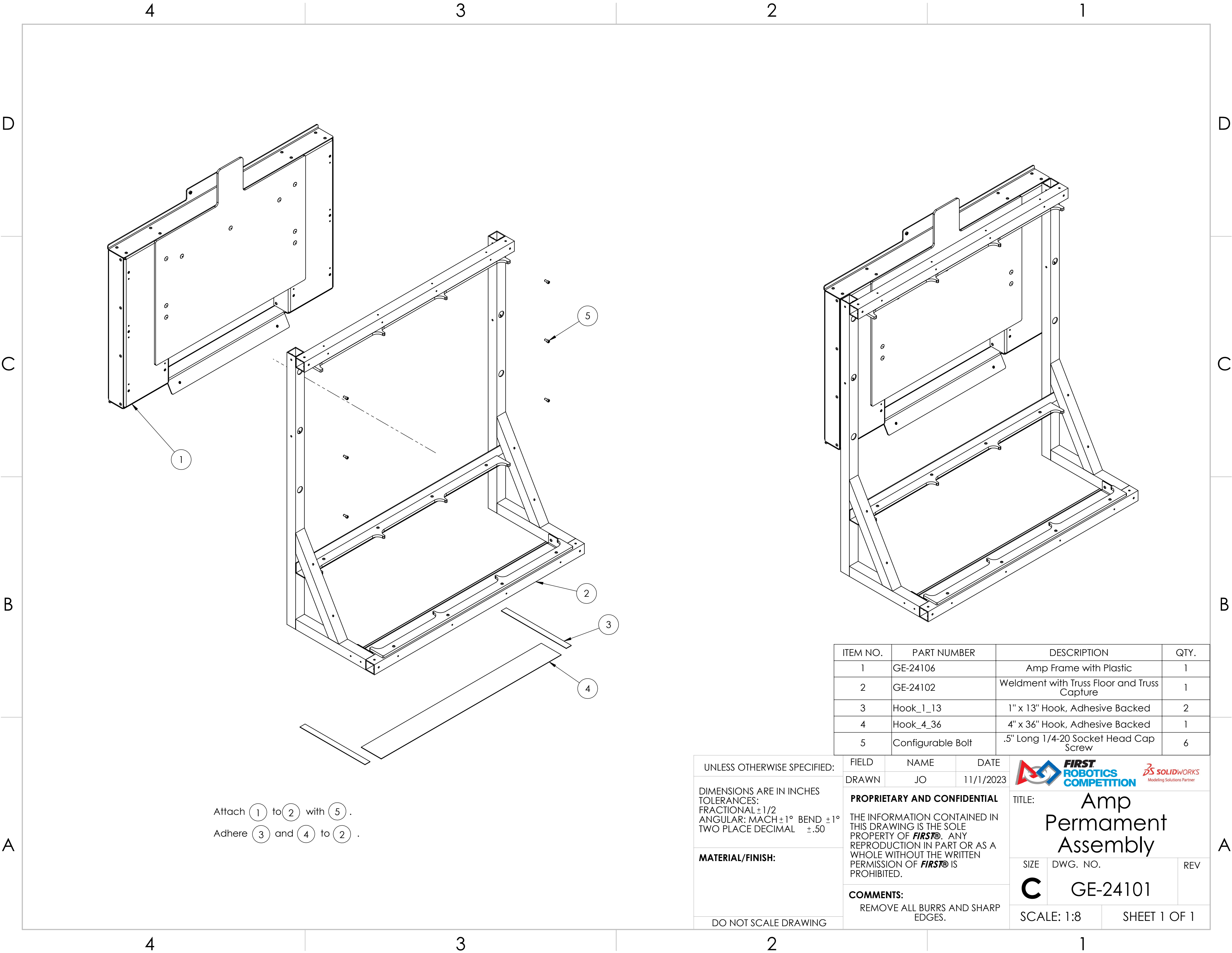
1

4



3

2

1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24106	Amp Frame with Plastic	1
2	GE-24102	Weldment with Truss Floor and Truss Capture	1
3	Hook_1_13	1" x 13" Hook, Adhesive Backed	2
4	Hook_4_36	4" x 36" Hook, Adhesive Backed	1
5	Configurable Bolt	.5" Long 1/4-20 Socket Head Cap Screw	6

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>		
	DRAWN	JO	11/1/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL			TITLE: Amp Permanent Assembly		
	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:			SIZE	DWG. NO.	REV
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24101	
DO NOT SCALE DRAWING				SCALE: 1:8		SHEET 1 OF 1

4

3

2

1

D

D

C

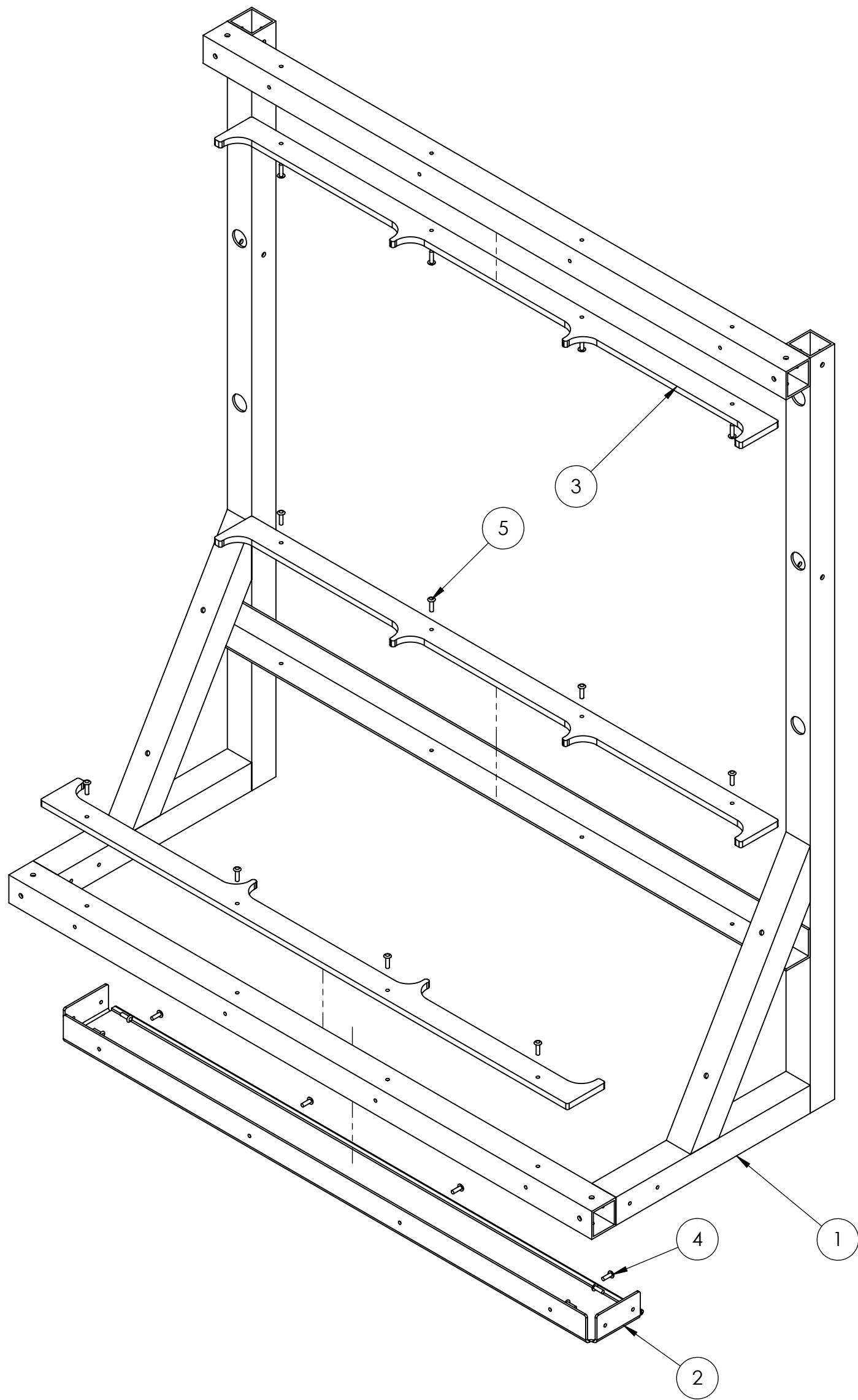
C

B

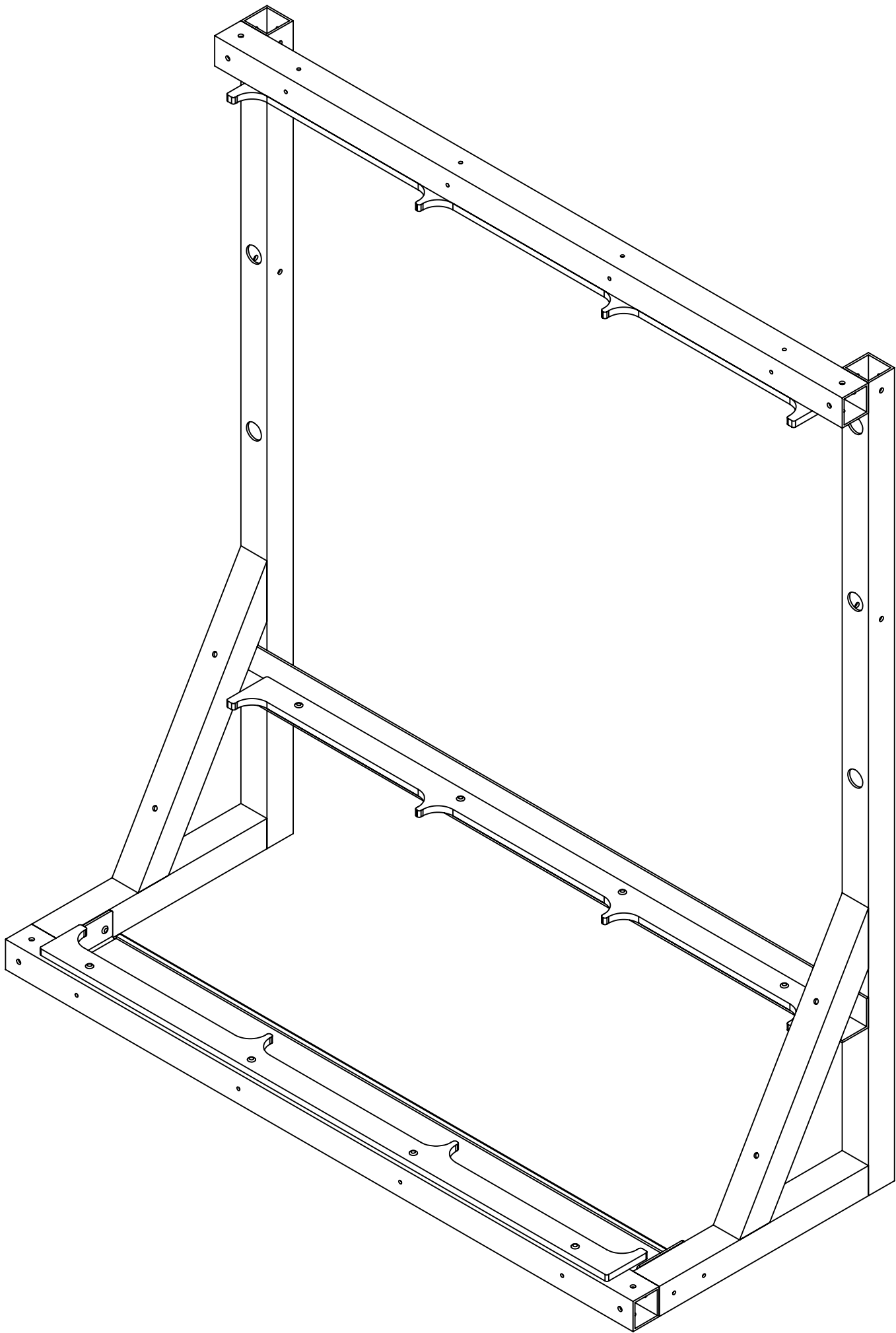
B

A



A

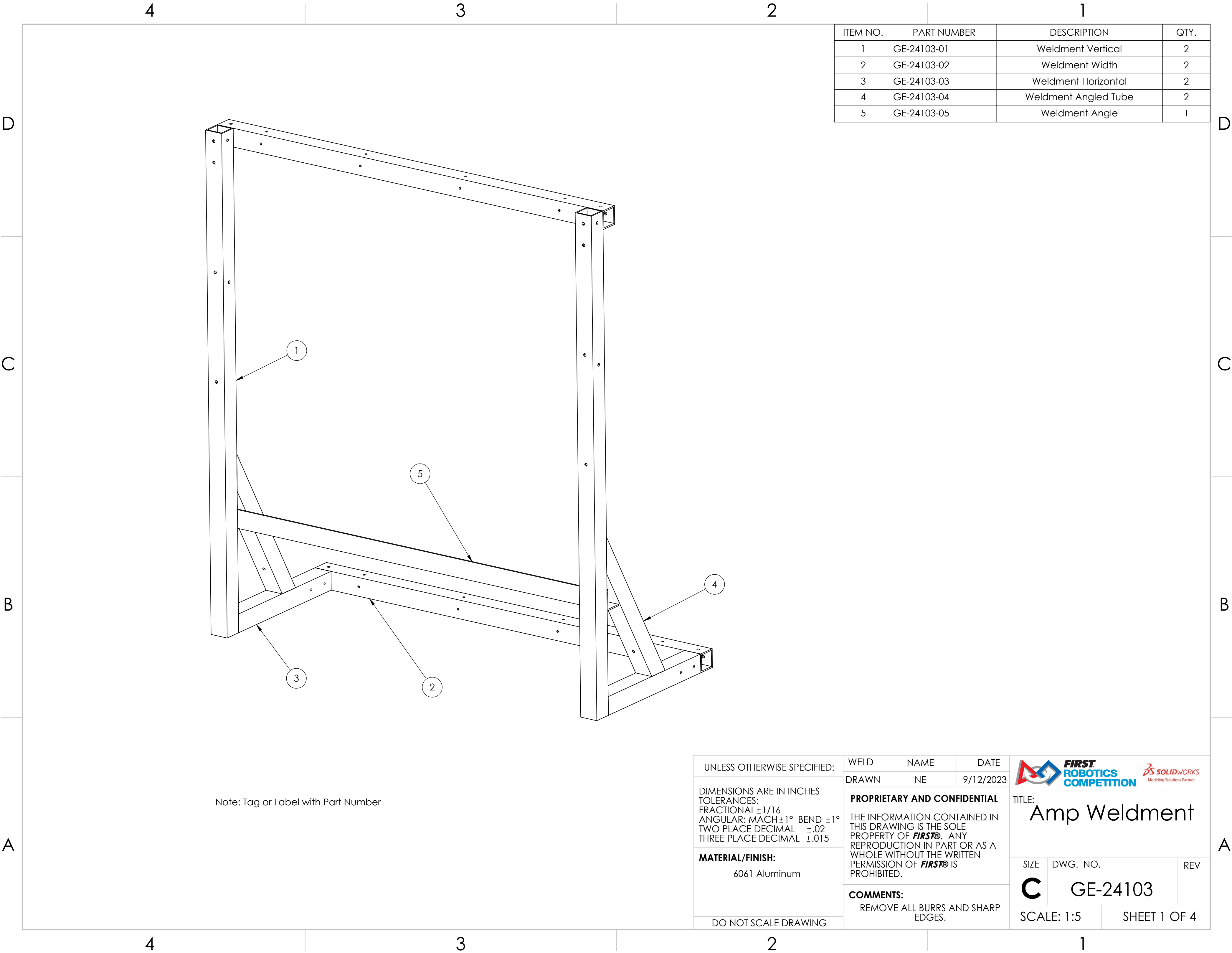


Attach (3) to (1) with (5) in 3 places.
Attach (2) to (1) with (4)



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24103	Amp Weldment	1
2	GE-24104	Truss Floor	1
3	GE-24105	Truss Capture Small	3
4	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	8
5	rivet_.1875_.376-.5	3/16" Aluminum Rivet, .376-.5 Grip Range	12



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50 MATERIAL/FINISH: DO NOT SCALE DRAWING	FIELD	NAME	DATE	<div></div> <div>TITLE: Weldment with Truss Floor and Truss Capture</div> <div><div>SIZE</div><div>DWG. NO.</div><div>REV</div></div> <div><div>C</div><div>GE-24102</div></div> <div><div>SCALE: 1:6</div><div>SHEET 1 OF 1</div></div>
	DRAWN	JO	11/1/2023	
	<div>PROPRIETARY AND CONFIDENTIAL</div> <div>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.</div> <div>COMMENTS:</div> <div>REMOVE ALL BURRS AND SHARP EDGES.</div>			



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24103-01	Weldment Vertical	2
2	GE-24103-02	Weldment Width	2
3	GE-24103-03	Weldment Horizontal	2
4	GE-24103-04	Weldment Angled Tube	2
5	GE-24103-05	Weldment Angle	1

Note: Tag or Label with Part Number

UNLESS OTHERWISE SPECIFIED:		WELD	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 $\pm .015$		DRAWN	NE	9/12/2023
MATERIAL/FINISH: 6061 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:
Amp Weldment

SIZE	DWG. NO.	REV
C	GE-24103	

SCALE: 1:5	SHEET 1 OF 4
------------	--------------

1

D





-NO WELD PERMISSIBLE ON OUTSIDE FACE FOR THIS WELD

-NOTE HOLE ORIENTATION

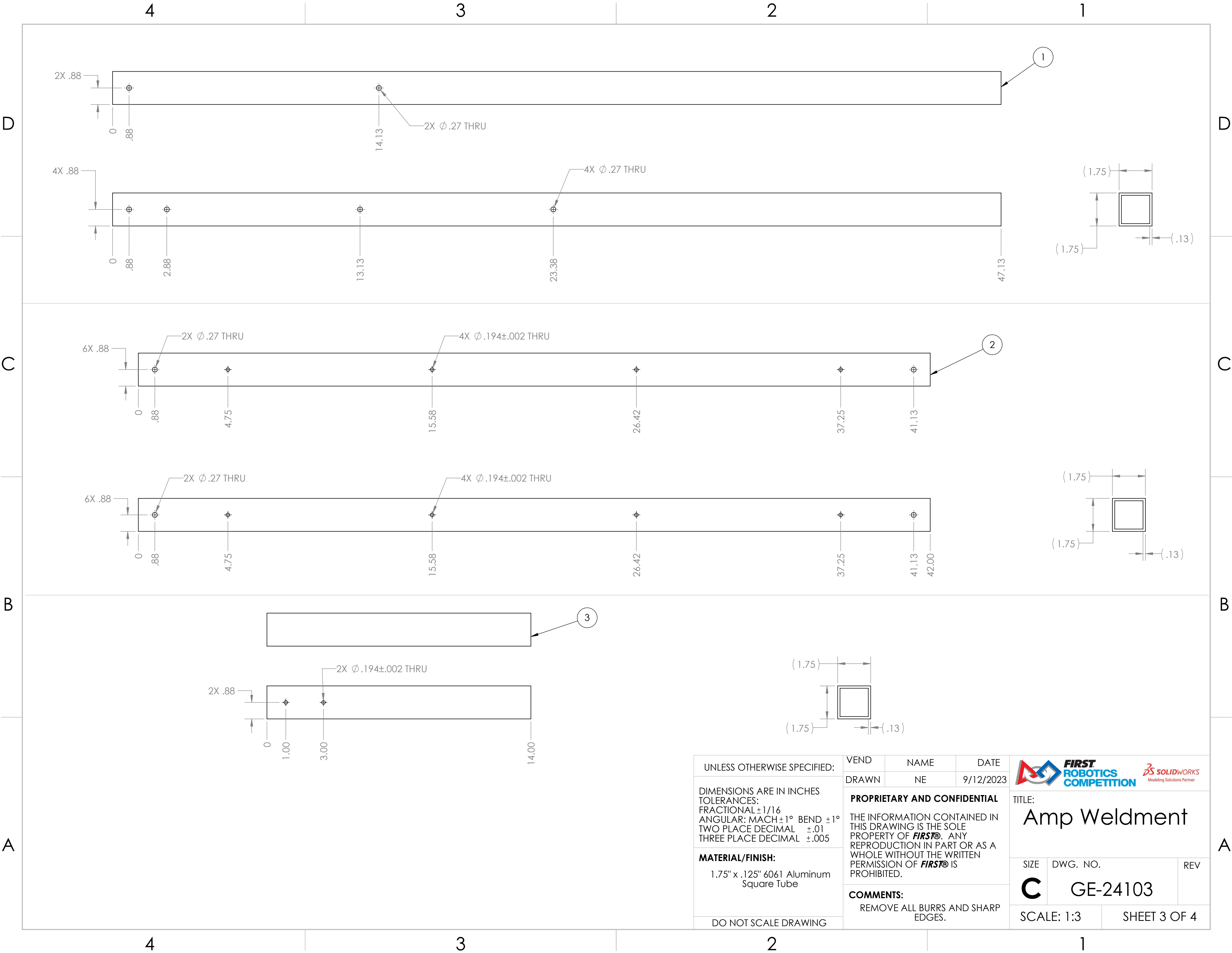


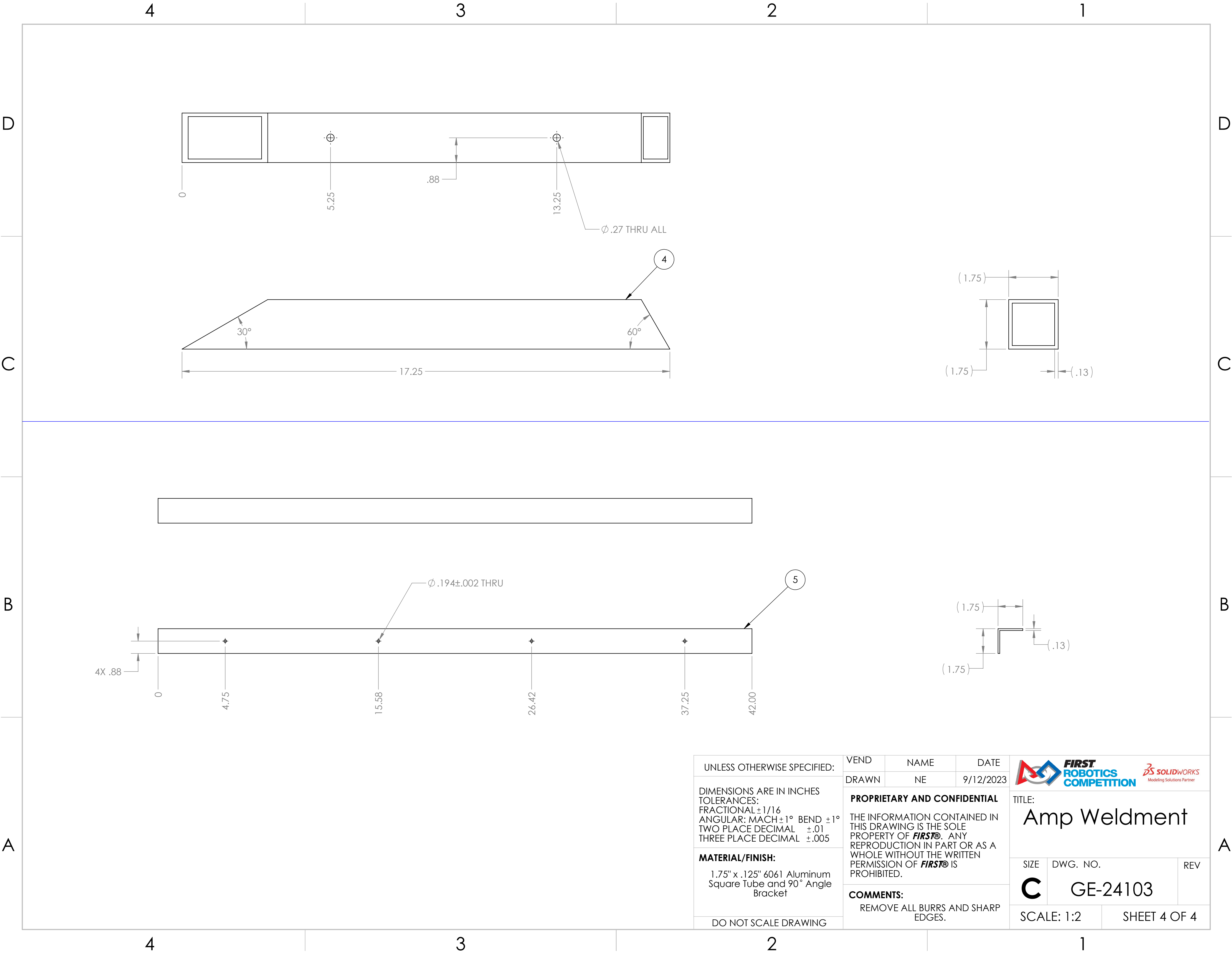
-NO WELD PERMISSIBLE ON
BOTTOM OF THIS JOINT

UNLESS OTHERWISE SPECIFIED:		WELD	NAME	DATE	 FIRST ROBOTICS COMPETITION		 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 $\pm .02$ THREE PLACE DECIMAL $\pm .015$		DRAWN	NE	9/12/2023	TITLE: <h1>Amp Weldment</h1>			
MATERIAL/FINISH: 6061 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.			SIZE	DWG. NO.		REV
					C	GE-24103		
DO NOT SCALE DRAWING		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:8		SHEET 2 OF 4	

A

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:
1.75" x .125" 6061 Aluminum
Square Tube and 90° Angle
Bracket

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	NE	9/12/2023

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.

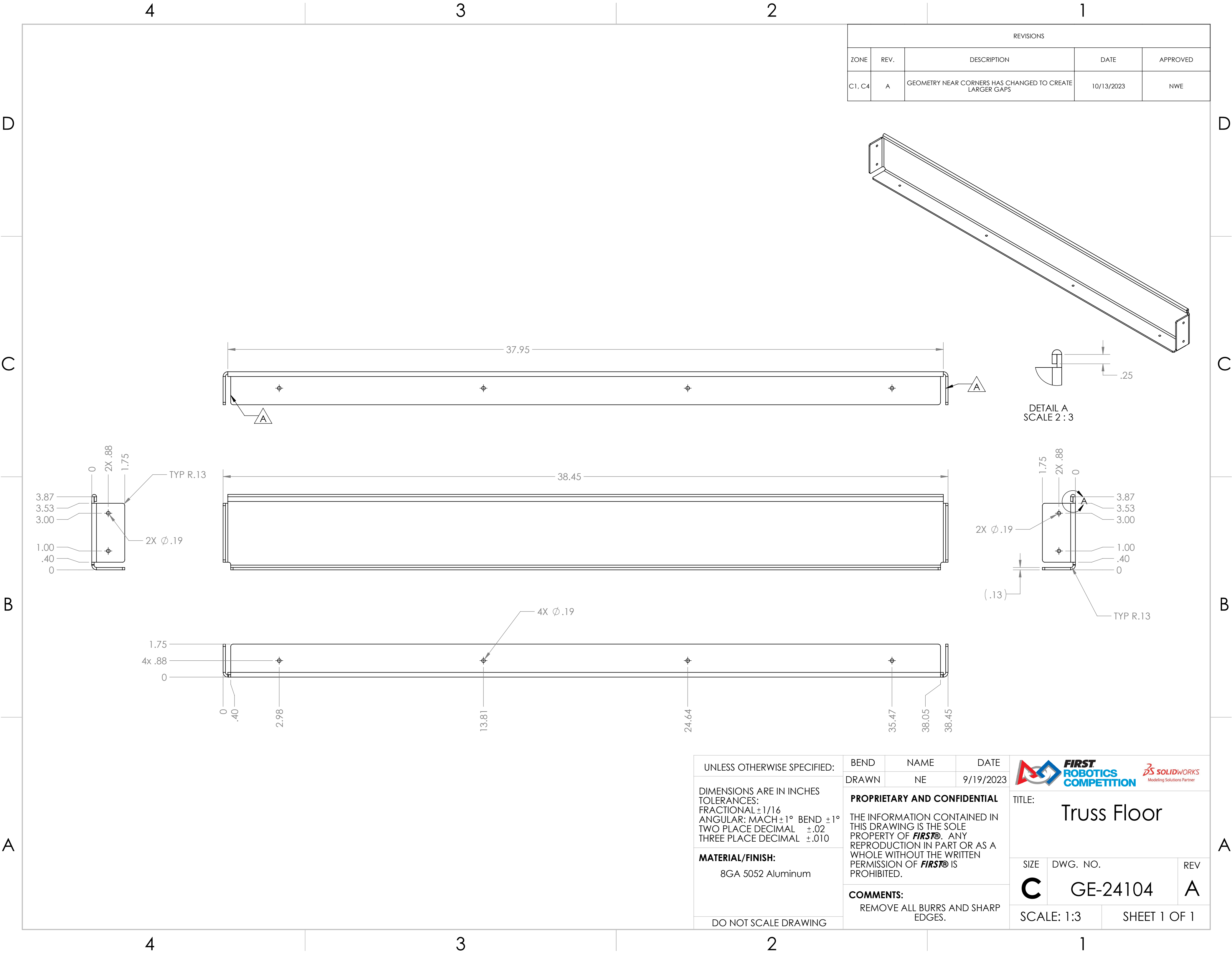
COMMENTS:
REMOVE ALL BURRS AND SHARP
EDGES.





TITLE:
Amp Weldment

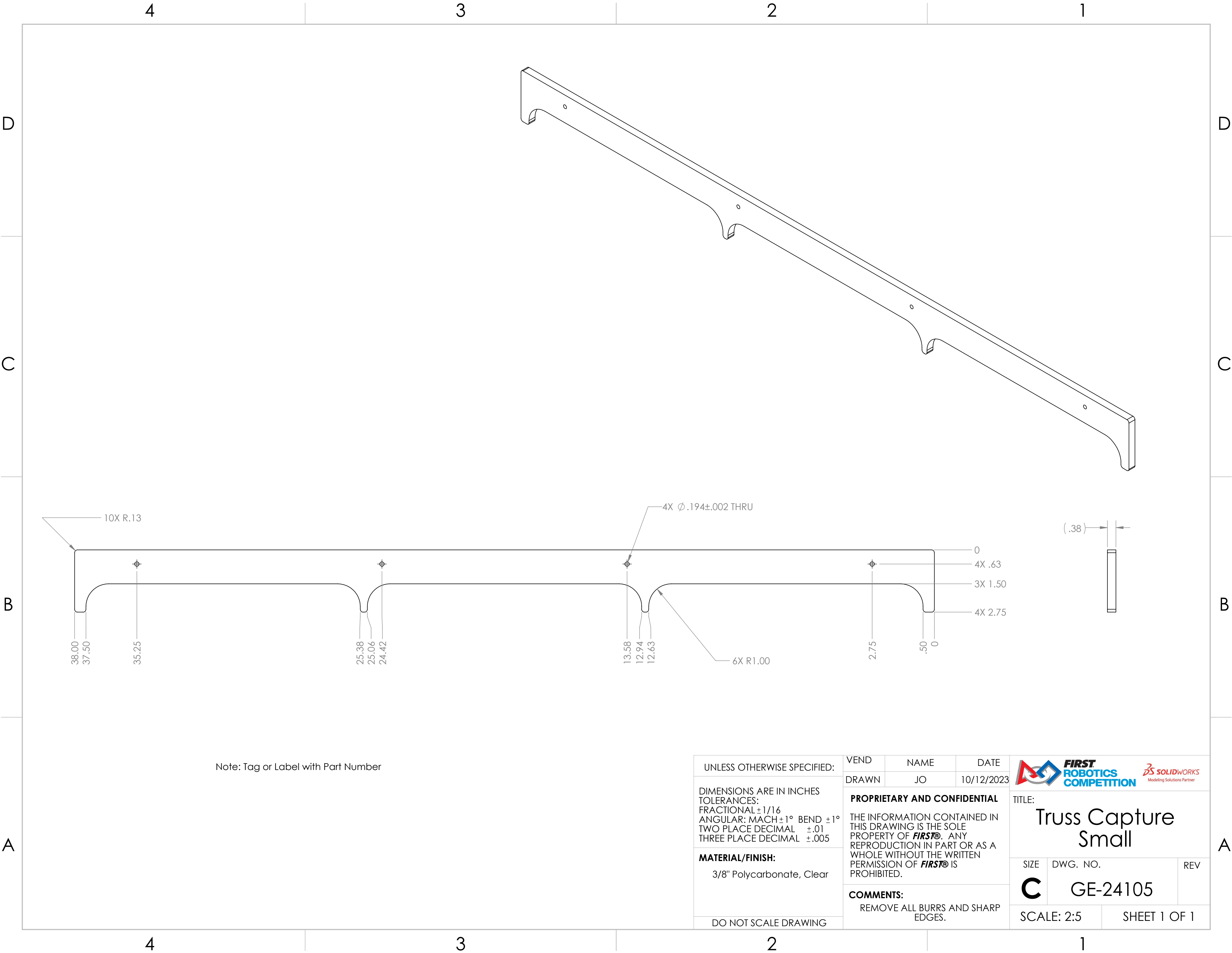
SIZE	DWG. NO.	REV
C	GE-24103	

SCALE: 1:2 SHEET 4 OF 4



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C1, C4	A	GEOMETRY NEAR CORNERS HAS CHANGED TO CREATE LARGER GAPS	10/13/2023	NWE

UNLESS OTHERWISE SPECIFIED:		BEND	NAME	DATE	<div><div>FIRST ROBOTICS COMPETTITION</div></div> <div></div>	
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	9/19/2023	TITLE: Truss Floor	
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.			SIZE DWG. NO. REV C GE-24104 A	
DO NOT SCALE DRAWING		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:3 SHEET 1 OF 1	



Note: Tag or 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:
3/8" Polycarbonate, Clear

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	10/12/2023

PROPRIETARY AND CONFIDENTIAL
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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

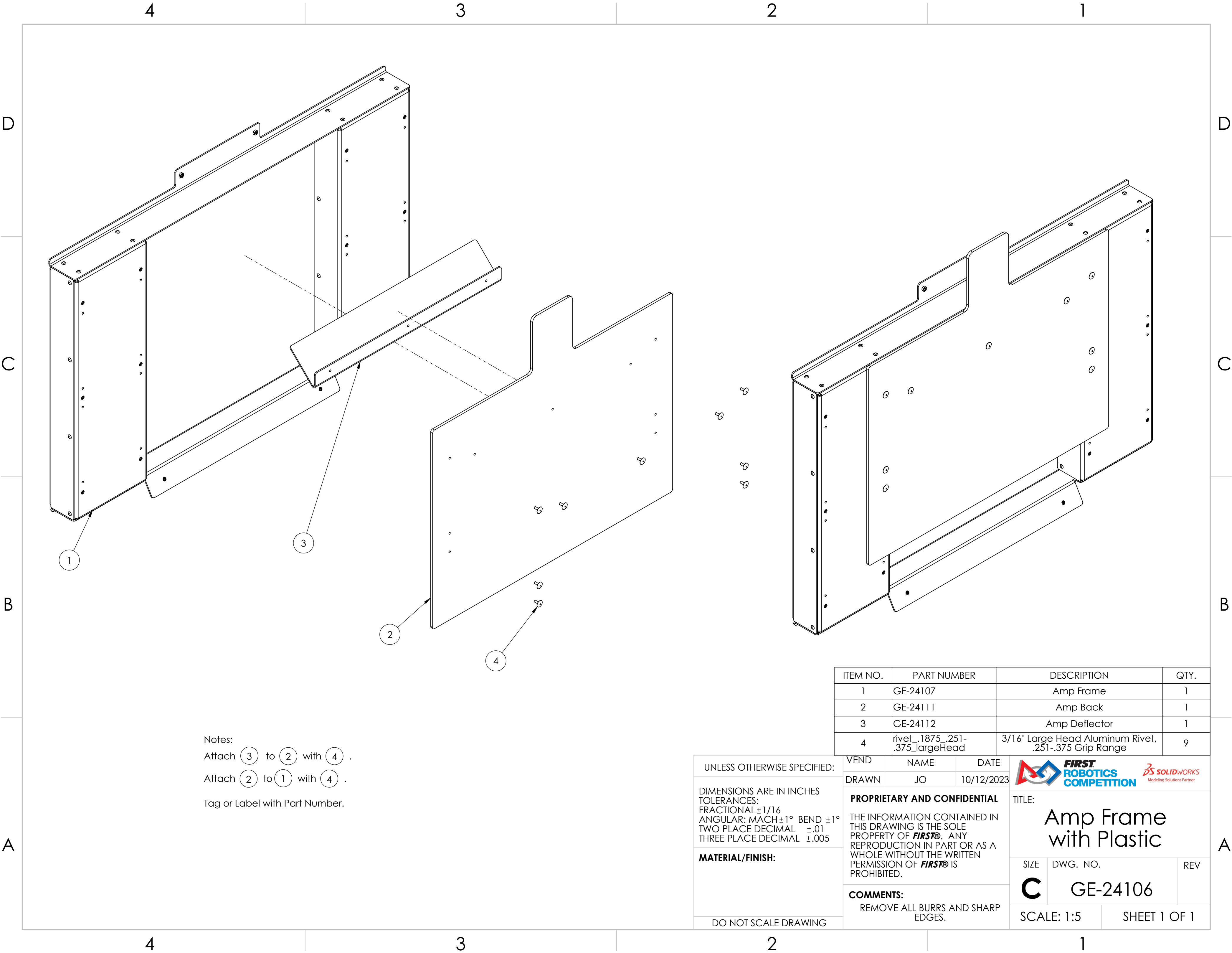


TITLE:

Truss Capture Small

SIZE	DWG. NO.	REV
C	GE-24105	

SCALE: 2:5	SHEET 1 OF 1
------------	--------------



Notes:
Attach 3 to 2 with 4 .
Attach 2 to 1 with 4 .
Tag or Label with Part Number.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24107	Amp Frame	1
2	GE-24111	Amp Back	1
3	GE-24112	Amp Deflector	1
4	rivet .1875_.251-.375_largeHead	3/16" Large Head Aluminum Rivet, .251-.375 Grip Range	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
DRAWN


NAME
JO


DATE
10/12/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.





TITLE:
Amp Frame with Plastic

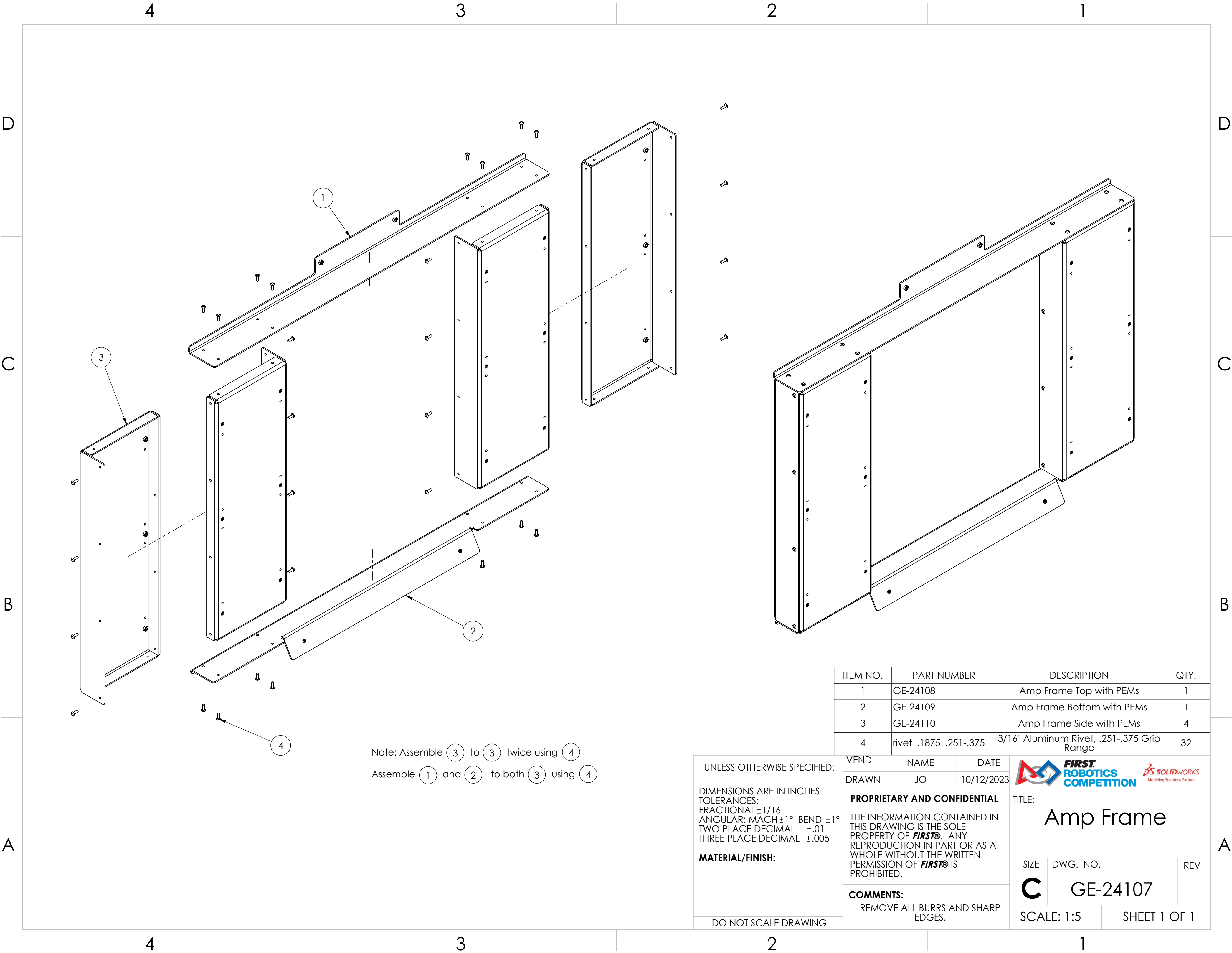
SIZE
C

DWG. NO.
GE-24106

REV

SCALE: 1:5

SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24108	Amp Frame Top with PEMs	1
2	GE-24109	Amp Frame Bottom with PEMs	1
3	GE-24110	Amp Frame Side with PEMs	4
4	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	32

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

JO

10/12/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION



TITLE:

Amp Frame

SIZE

C

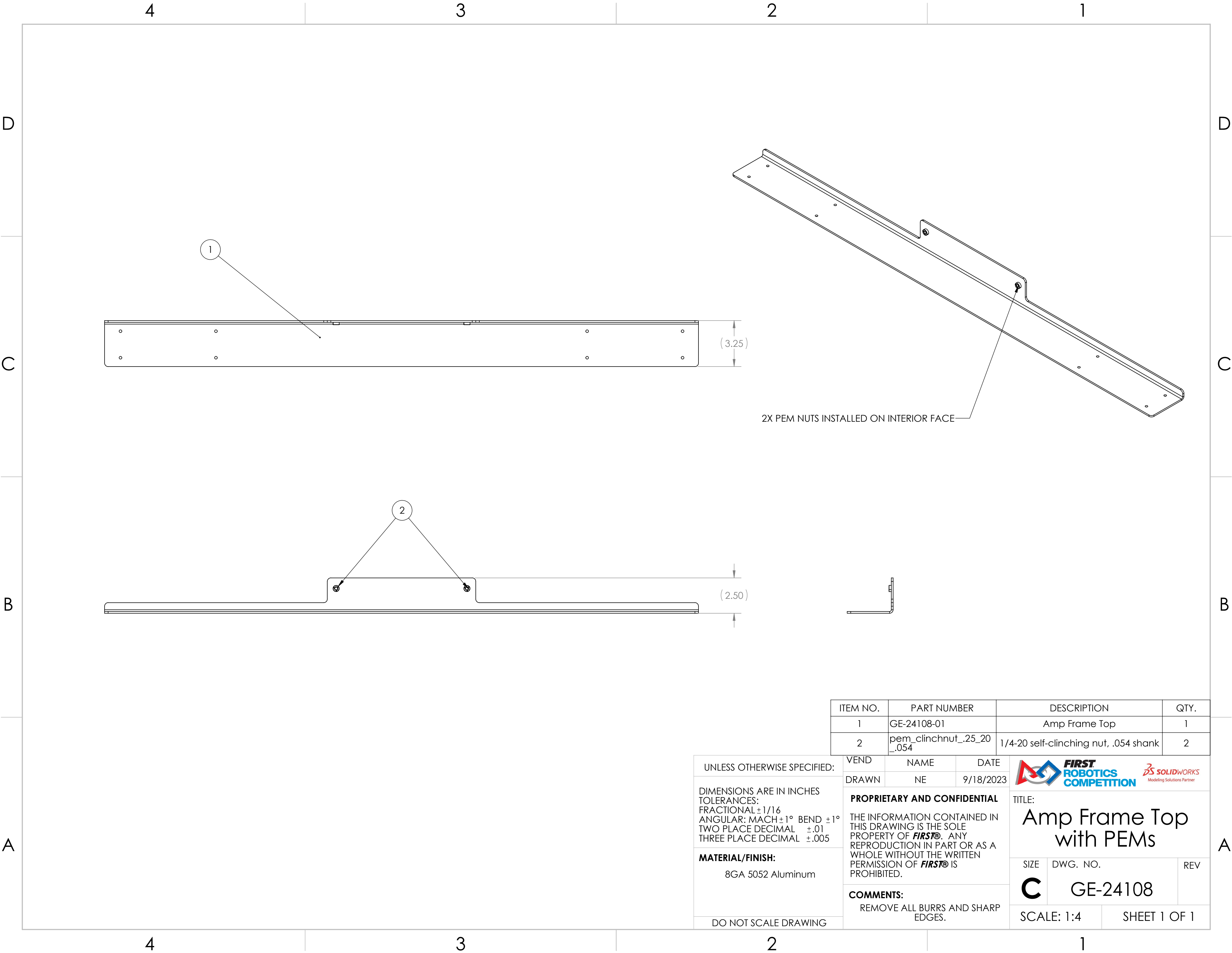
DWG. NO.

GE-24107



REV

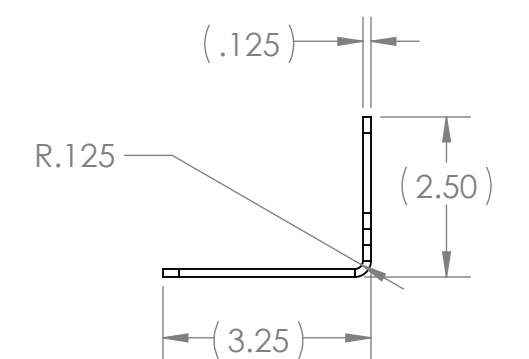
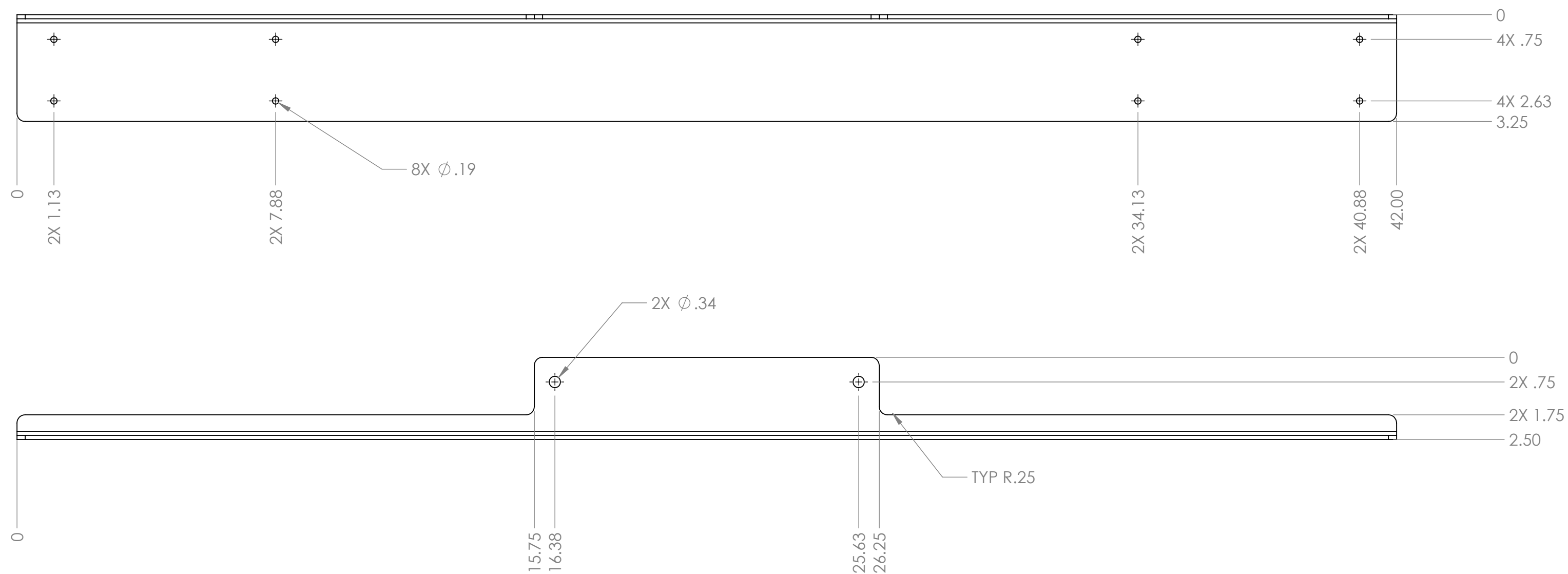
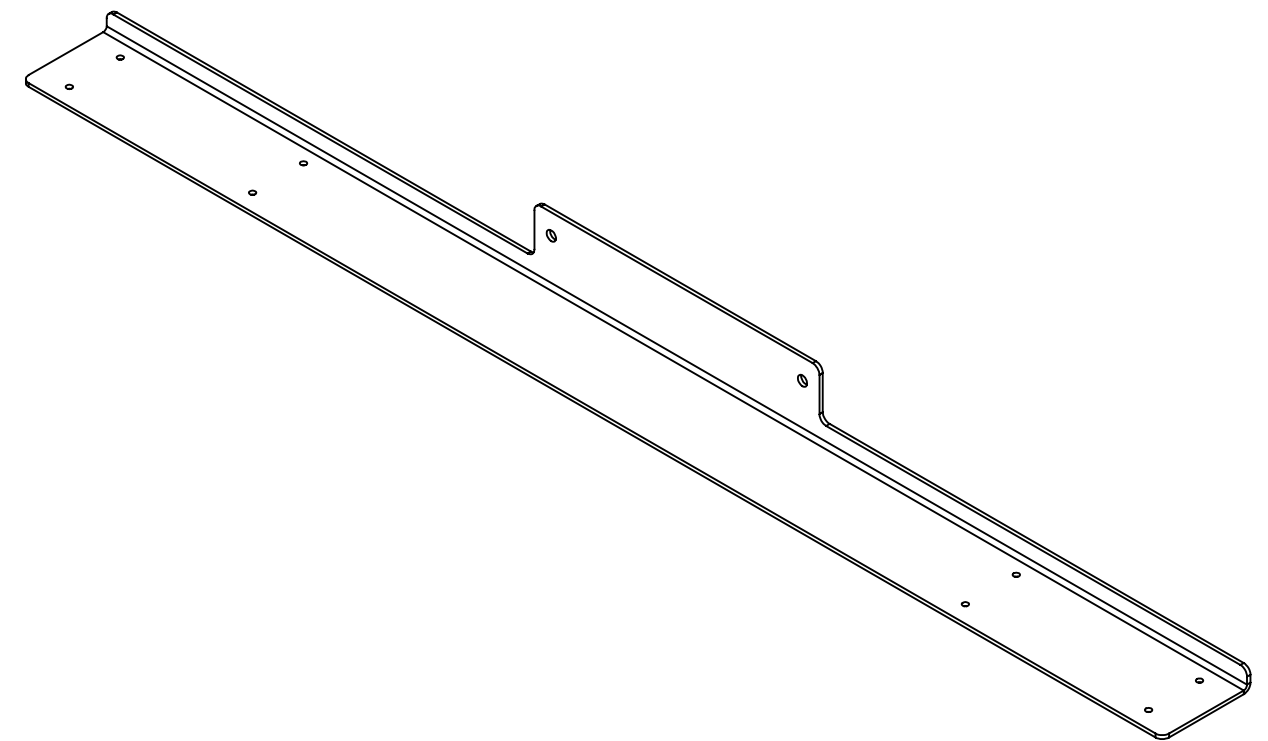
SCALE: 1:5



SHEET 1 OF 1

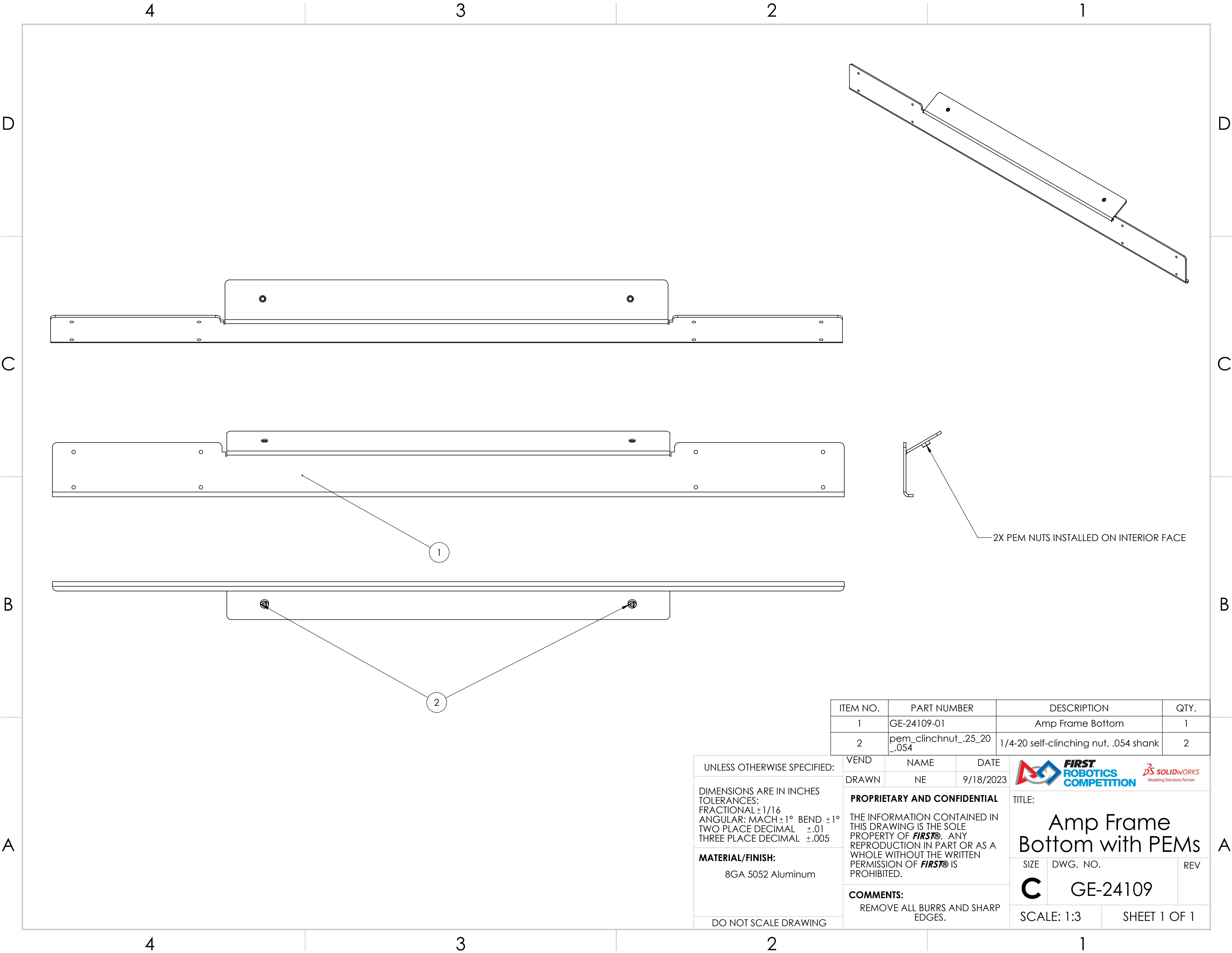


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24108-01	Amp Frame Top	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	2

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 8GA 5052 Aluminum DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Amp Frame Top with PEMs</div> <div>SIZE: C DWG. NO. GE-24108 REV</div> <div>SCALE: 1:4 SHEET 1 OF 1</div>		
	DRAWN	NE	9/18/2023			
	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.					
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					



UNLESS OTHERWISE SPECIFIED:		BEND	NAME	DATE	 	
		DRAWN	NE	9/18/2023		
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			TITLE: <h1>Amp Frame Top</h1>	
MATERIAL/FINISH: 8GA 5052 Aluminum		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.			SIZE DWG. NO. REV <h1>C</h1> GE-24108-01	
					SCALE: 1:3 SHEET 1 OF 1	



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24109-01	Amp Frame Bottom	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	2

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:
8GA 5052 Aluminum

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	NE	9/18/2023

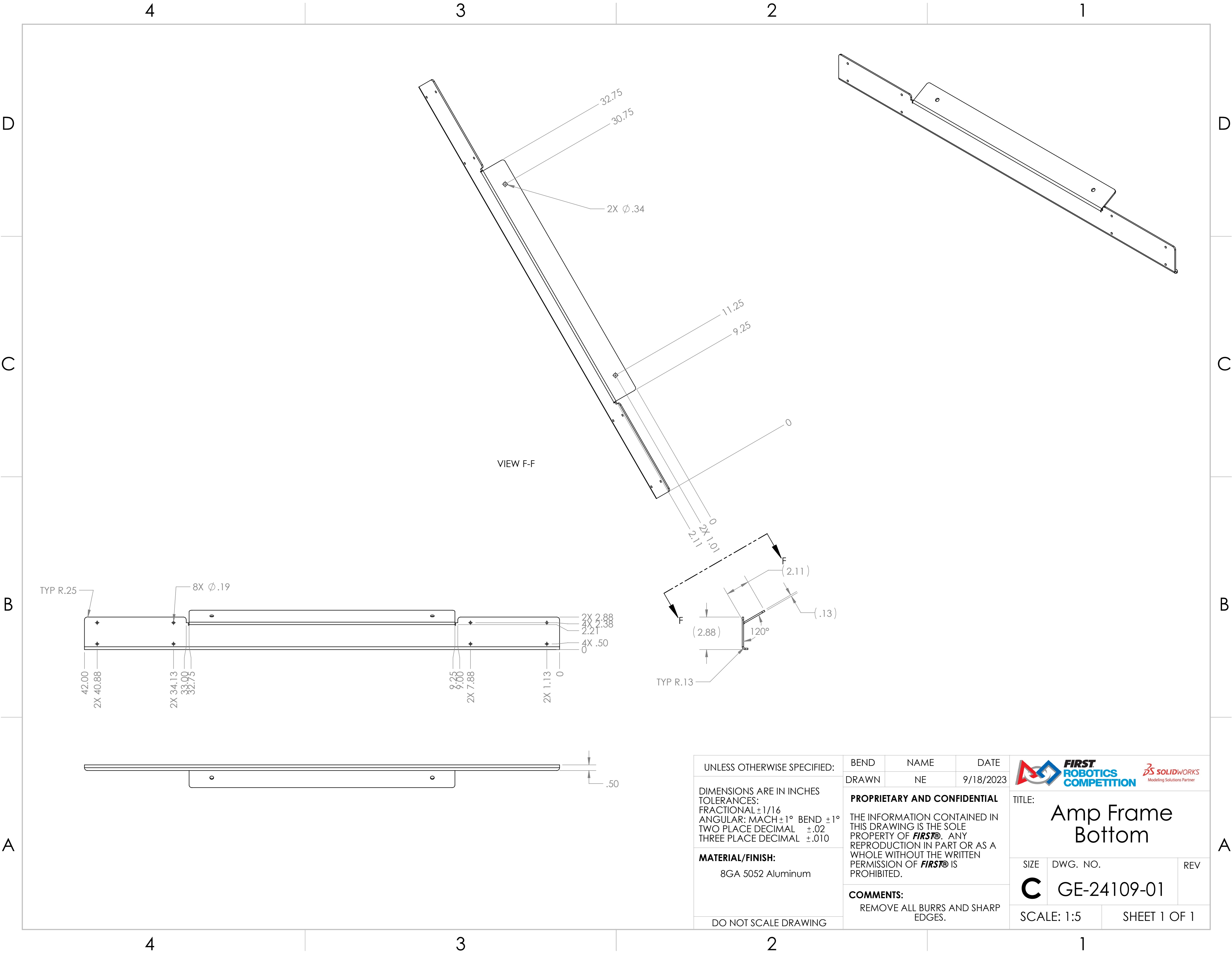
PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF **FIRST®**. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF **FIRST®** IS PROHIBITED.

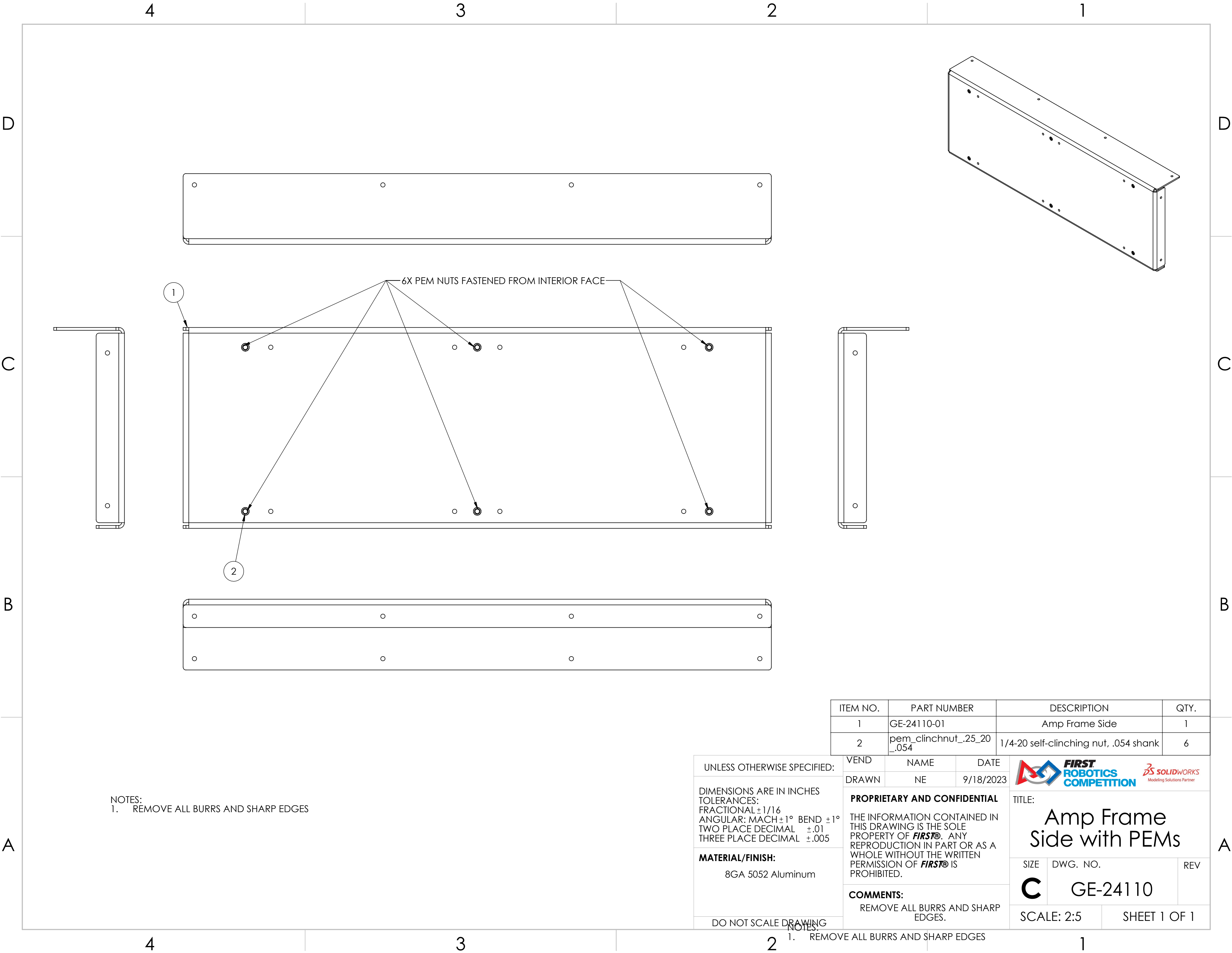
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

	
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TITLE: Amp Frame Bottom with PEMs		
SIZE C	DWG. NO. GE-24109	REV

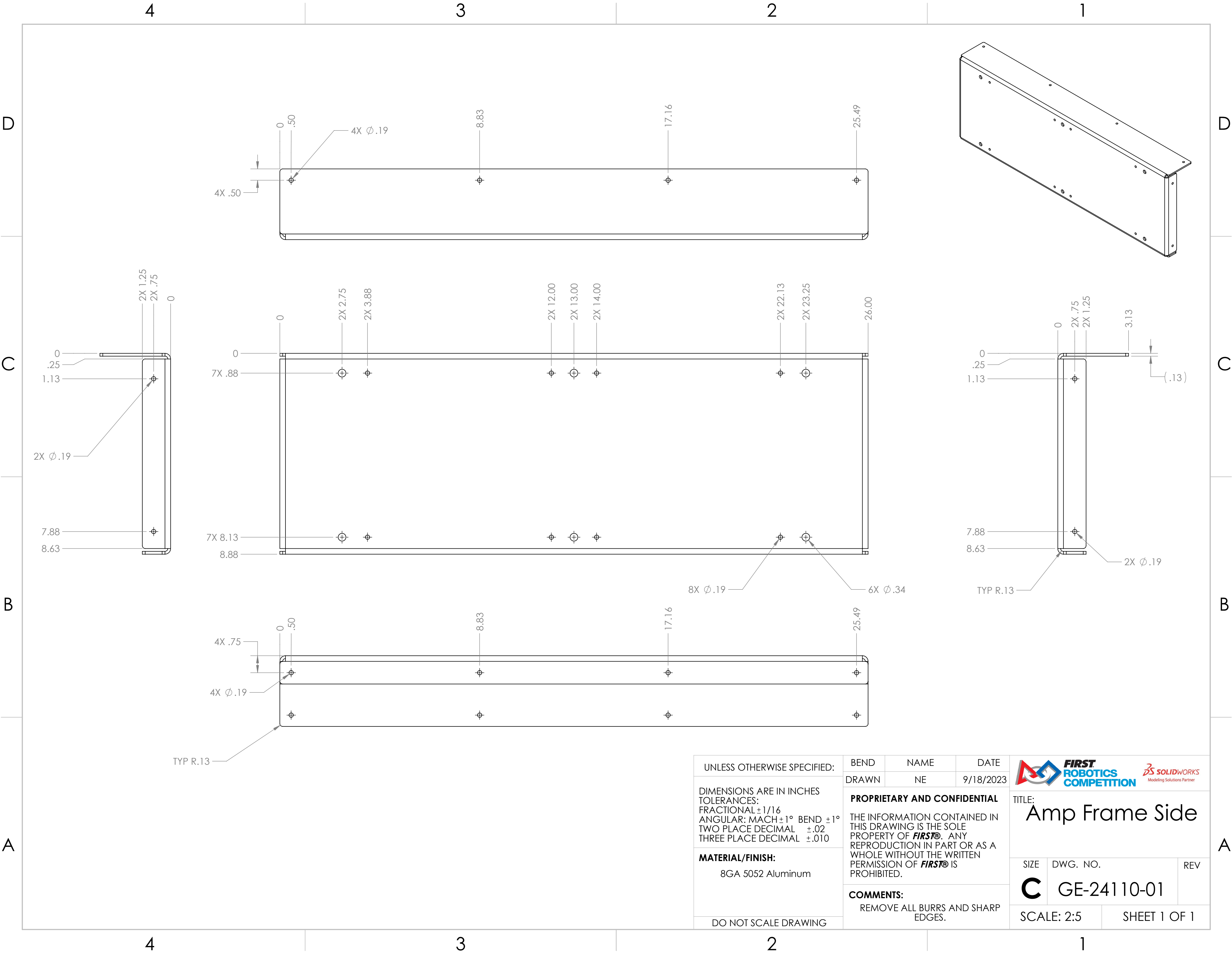
SCALE: 1:3	SHEET 1 OF 1
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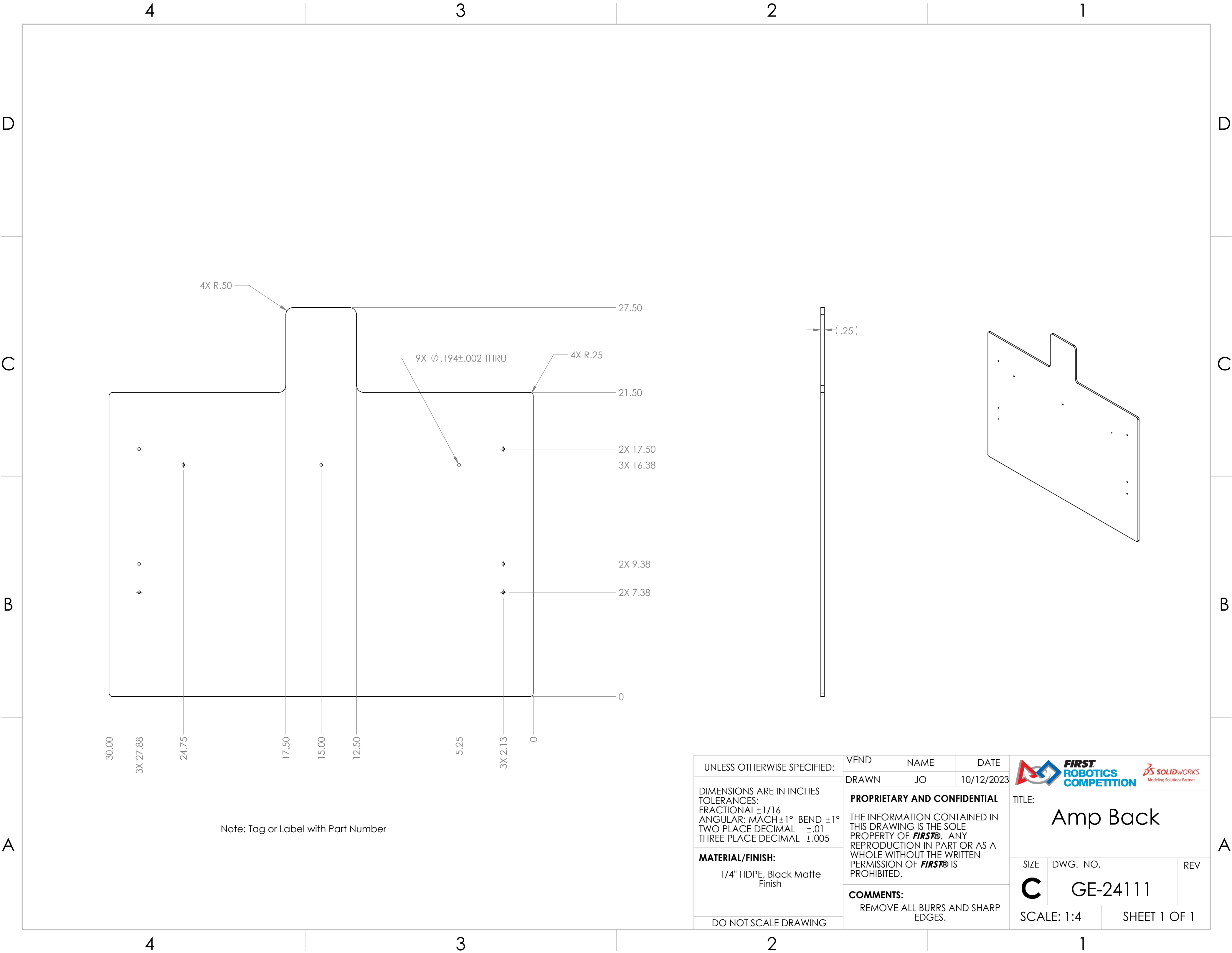




NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES

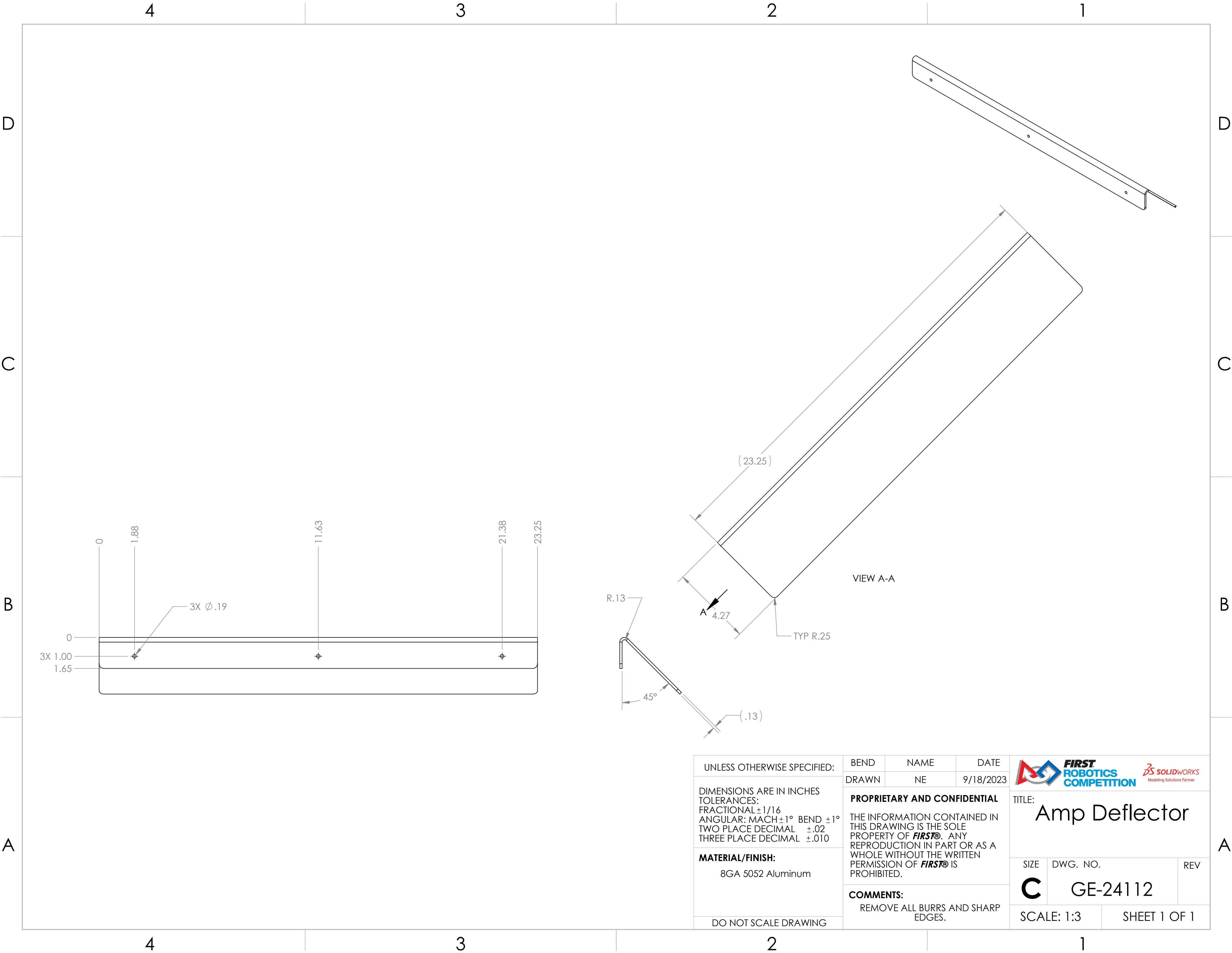
		ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
		1	GE-24110-01	Amp Frame Side	1
		2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	6
UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	<div></div>
		DRAWN	NE	9/18/2023	
<p>DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$</p> <p>MATERIAL/FINISH: 8GA 5052 Aluminum</p> <p>DO NOT SCALE DRAWING</p>		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: Amp Frame Side with PEMs
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
				SCALE: 2:5	



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 8GA 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Amp Frame Side</div>		
	DRAWN	NE	9/18/2023			
	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.					
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	GE-24110-01	
				SCALE: 2:5		SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/4" HDPE, Black Matte Finish DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: <h1>Amp Back</h1></div>		
	DRAWN	JO	10/12/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
SIZE		DWG. NO.		REV		
C		GE-24111				
SCALE: 1:4			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 $\pm .02$
THREE PLACE DECIMAL $\pm .010$

MATERIAL/FINISH:
8GA 5052 Aluminum

DO NOT SCALE DRAWING

BEND

DRAWN

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

NAME

NE

DATE

9/18/2023



FIRST
ROBOTICS
COMPETITION



Modeling Solutions Partner

TITLE:

Amp Deflector

SIZE

C

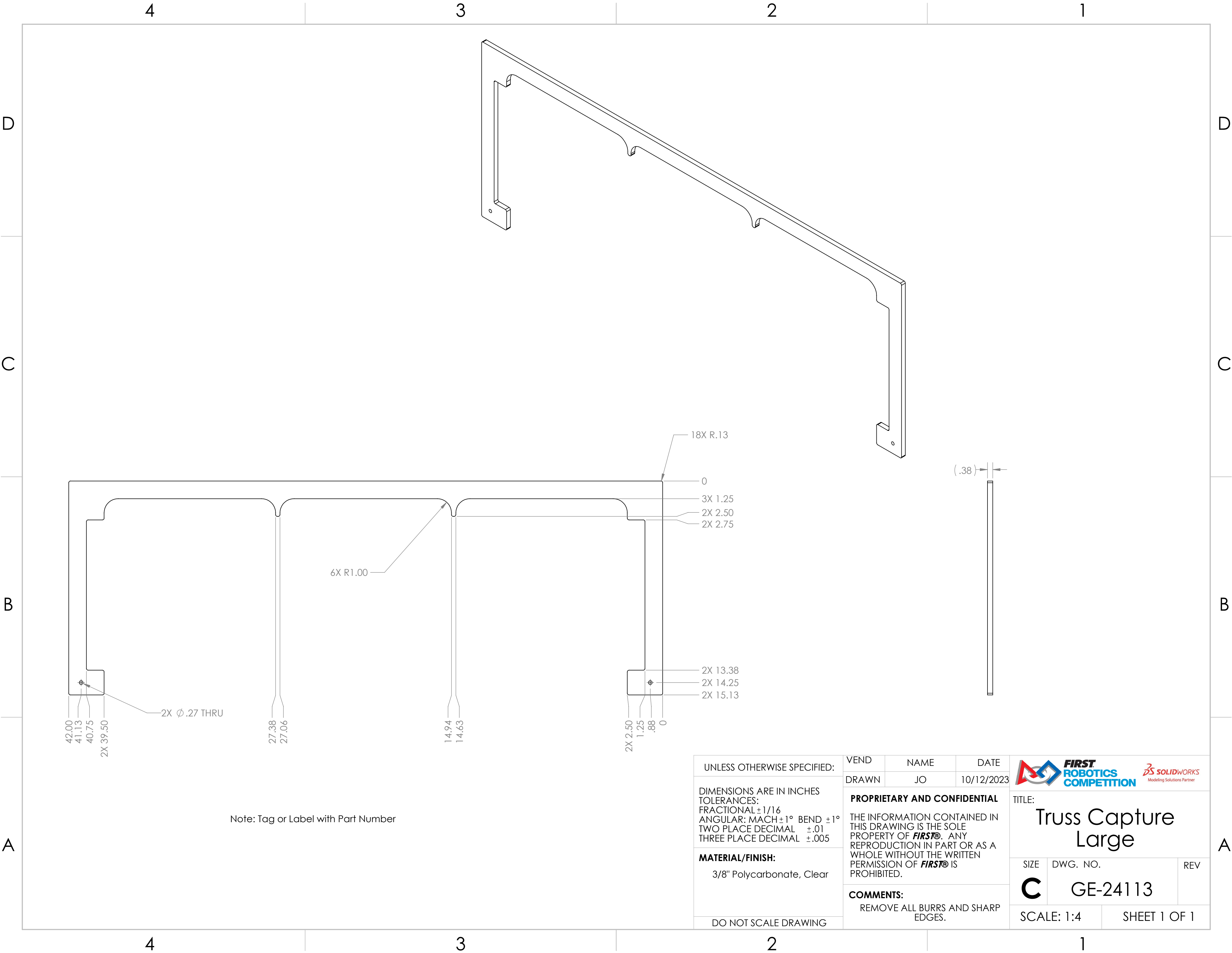
DWG. NO.

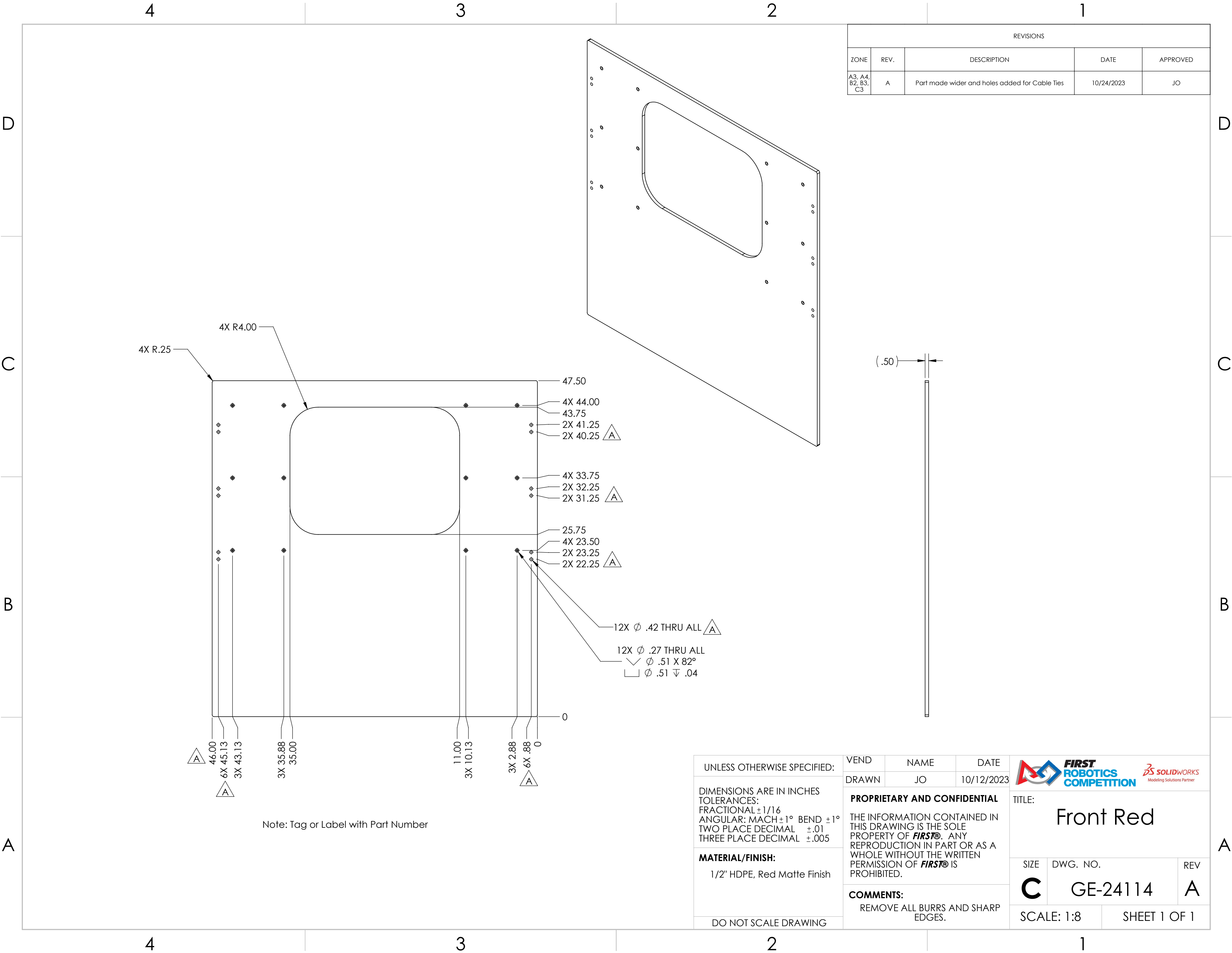
GE-24112

REV



SCALE: 1:3

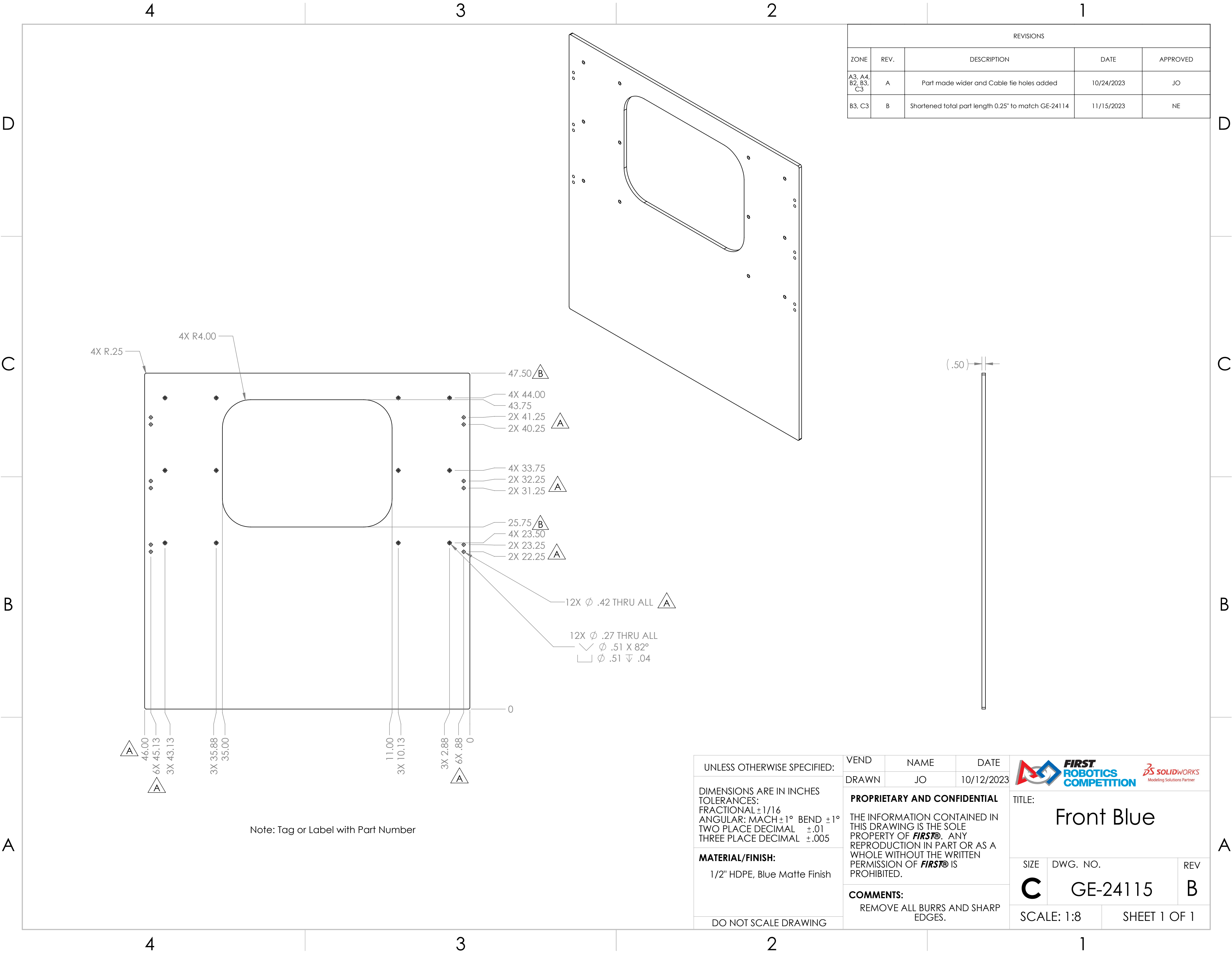
SHEET 1 OF 1







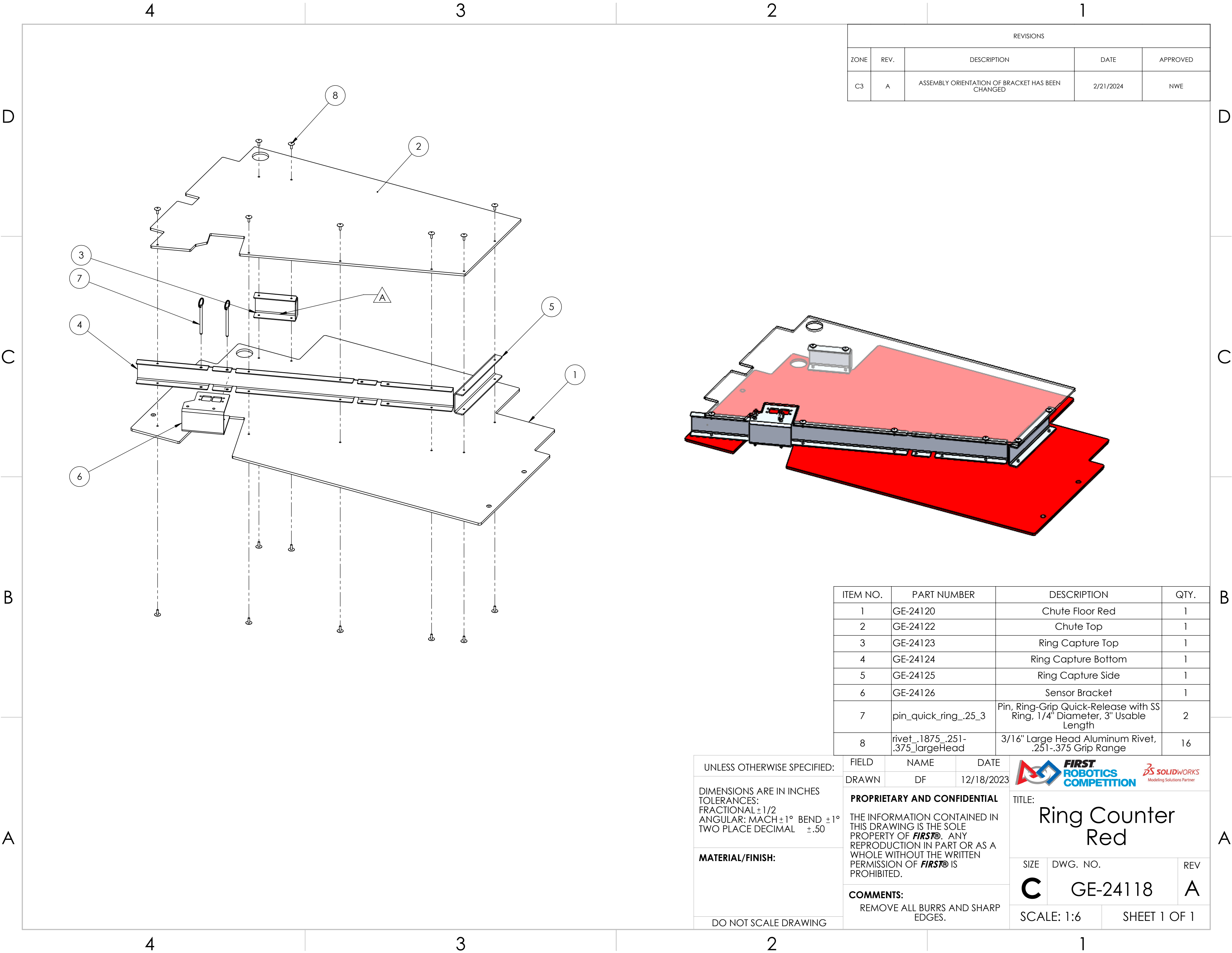
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A3, A4, B2, B3, C3	A	Part made wider and holes added for Cable Ties	10/24/2023	JO

UNLESS OTHERWISE SPECIFIED:	VEND		NAME		DATE		<div></div>		
	DRAWN		JO		10/12/2023				
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.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.						Front Red		
MATERIAL/FINISH: 1/2" HDPE, Red Matte Finish	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.						SIZE	DWG. NO.	REV
							C	GE-24114	A
DO NOT SCALE DRAWING							SCALE: 1:8		SHEET 1 OF 1





REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A3, A4, B2, B3, C3	A	Part made wider and Cable tie holes added	10/24/2023	JO
B3, C3	B	Shortened total part length 0.25" to match GE-24114	11/15/2023	NE

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>	
	DRAWN	JO	10/12/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Front Blue	
	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 Matte Finish	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C
DO NOT SCALE DRAWING				DWG. NO.	REV
				GE-24115	B
				SCALE: 1:8	SHEET 1 OF 1

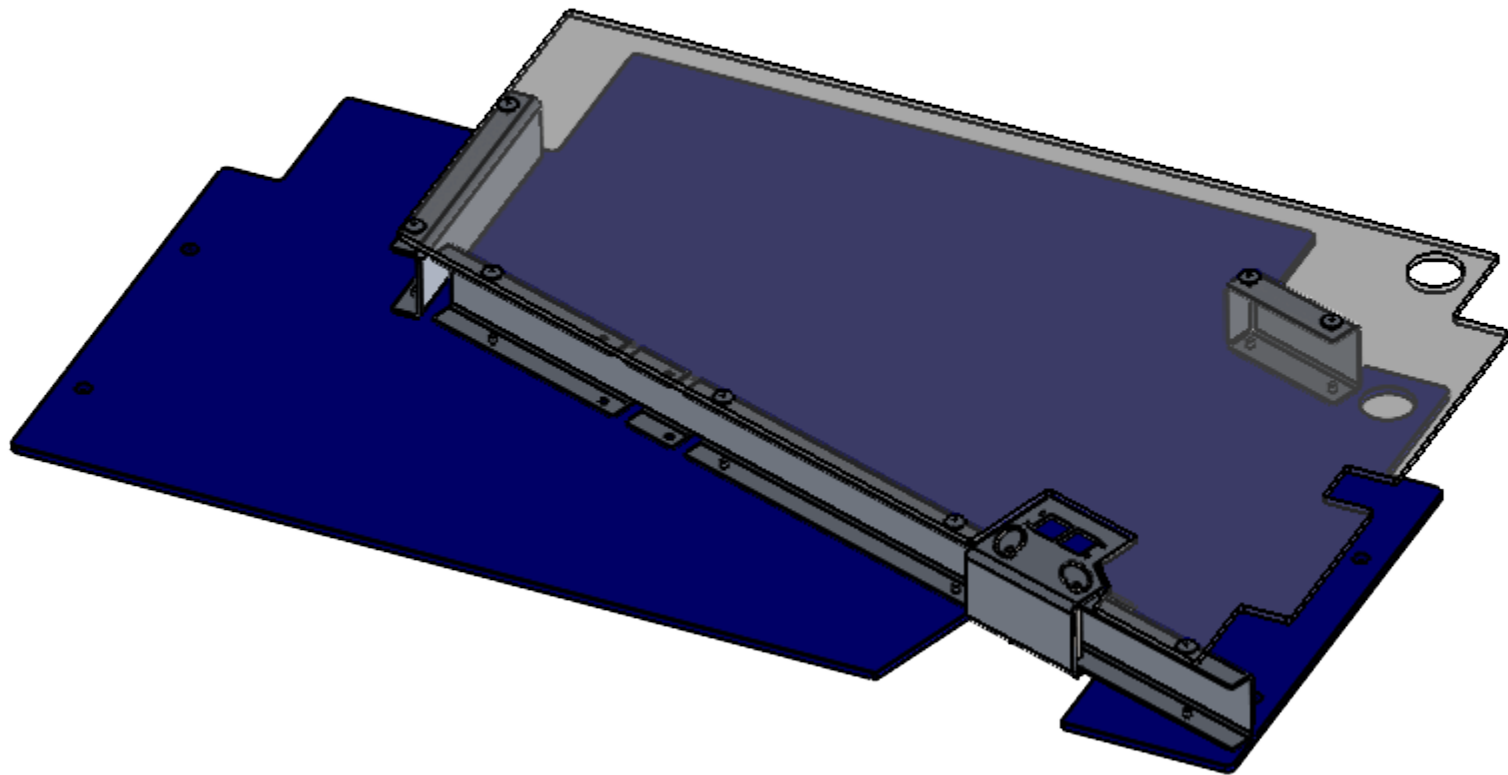
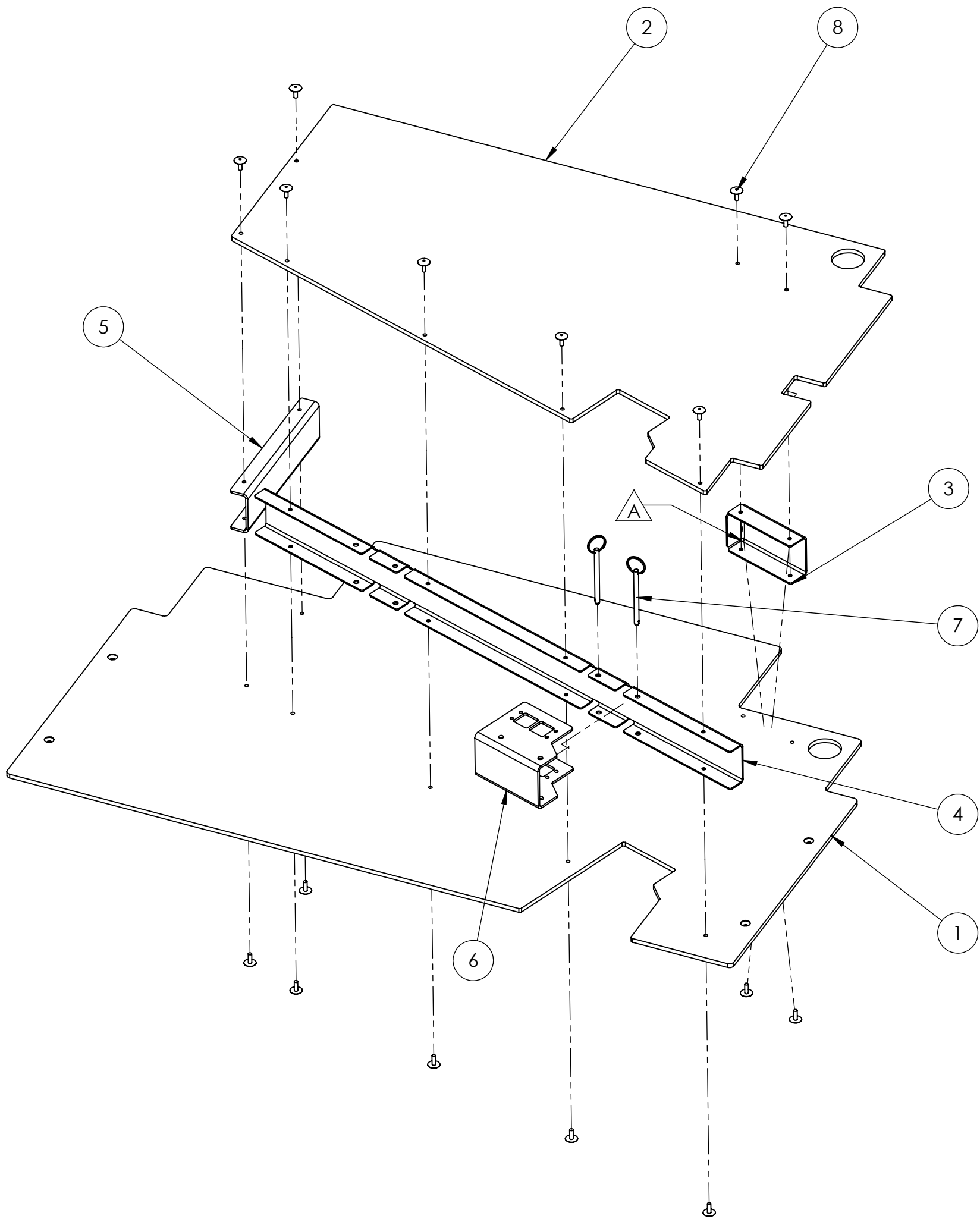


REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C3	A	ASSEMBLY ORIENTATION OF BRACKET HAS BEEN CHANGED	2/21/2024	NWE

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24120	Chute Floor Red	1
2	GE-24122	Chute Top	1
3	GE-24123	Ring Capture Top	1
4	GE-24124	Ring Capture Bottom	1
5	GE-24125	Ring Capture Side	1
6	GE-24126	Sensor Bracket	1
7	pin_quick_ring_.25_3	Pin, Ring-Grip Quick-Release with SS Ring, 1/4" Diameter, 3" Usable Length	2
8	rivet_.1875_.251-.375_largeHead	3/16" Large Head Aluminum Rivet, .251-.375 Grip Range	16

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	 		
	DRAWN	DF	12/18/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.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.			TITLE: Ring Counter Red		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
C				GE-24118	A	
DO NOT SCALE DRAWING				SCALE: 1:6		SHEET 1 OF 1

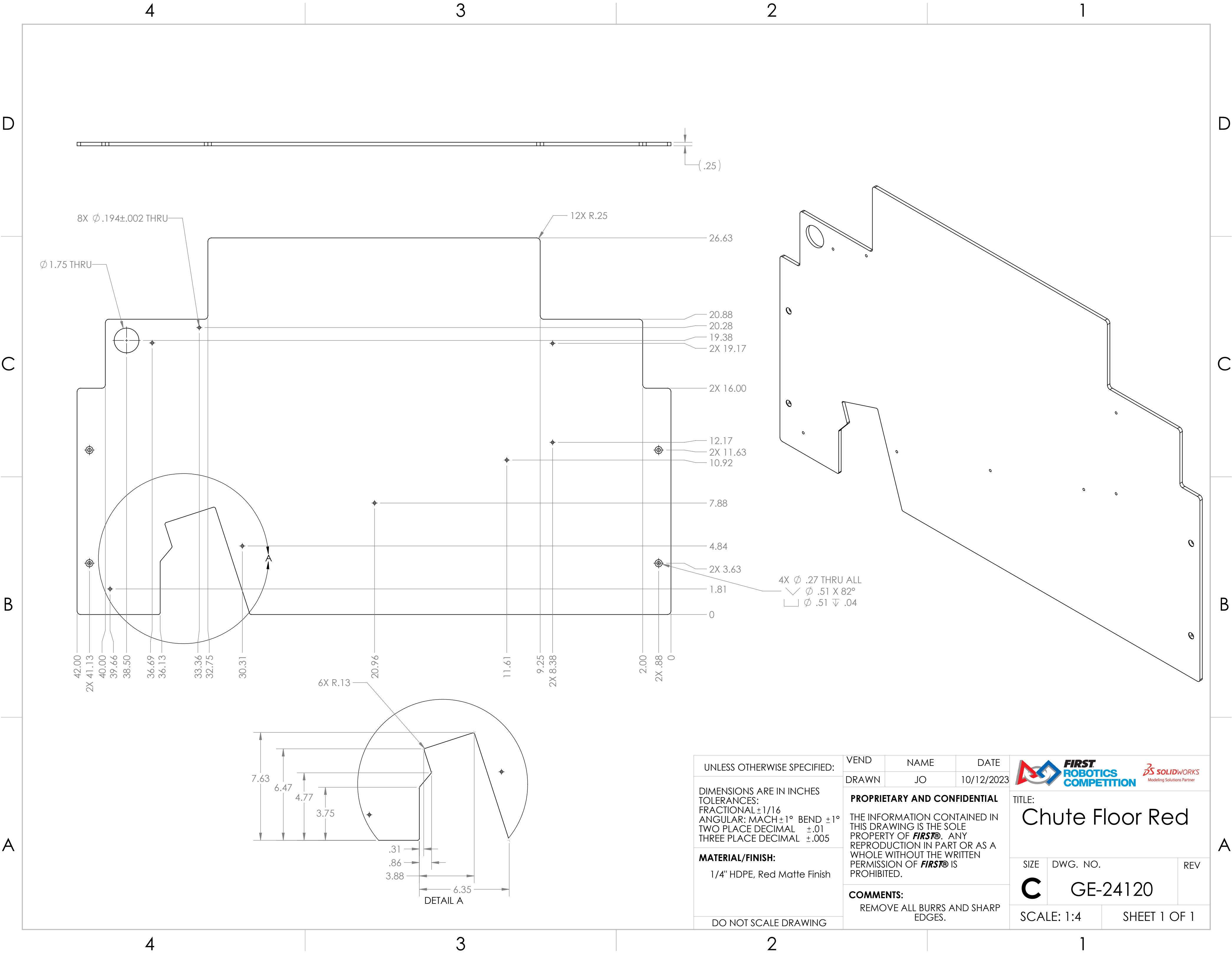
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C3	A	ASSEMBLY ORIENTATION OF BRACKET HAS CHANGED	2/21/2024	NWE



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24121	Chute Floor Blue	1
2	GE-24122	Chute Top	1
3	GE-24123	Ring Capture Top	1
4	GE-24124	Ring Capture Bottom	1
5	GE-24125	Ring Capture Side	1
6	GE-24126	Sensor Bracket	1
7	pin_quick_ring_.25_3	Pin, Ring-Grip Quick-Release with SS Ring, 1/4" Diameter, 3" Usable Length	2
8	rivet_.1875_.251-.375_largeHead	3/16" Large Head Aluminum Rivet, .251-.375 Grip Range	16

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	12/18/2023
MATERIAL/FINISH:		PROPRIETARY AND CONFIDENTIAL		
DO NOT SCALE DRAWING		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: Ring Counter Blue		
		SIZE	DWG. NO.	REV
		C	GE-24119	A
		SCALE: 1:6		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:
1/4" HDPE, Red Matte Finish

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	10/12/2023

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.

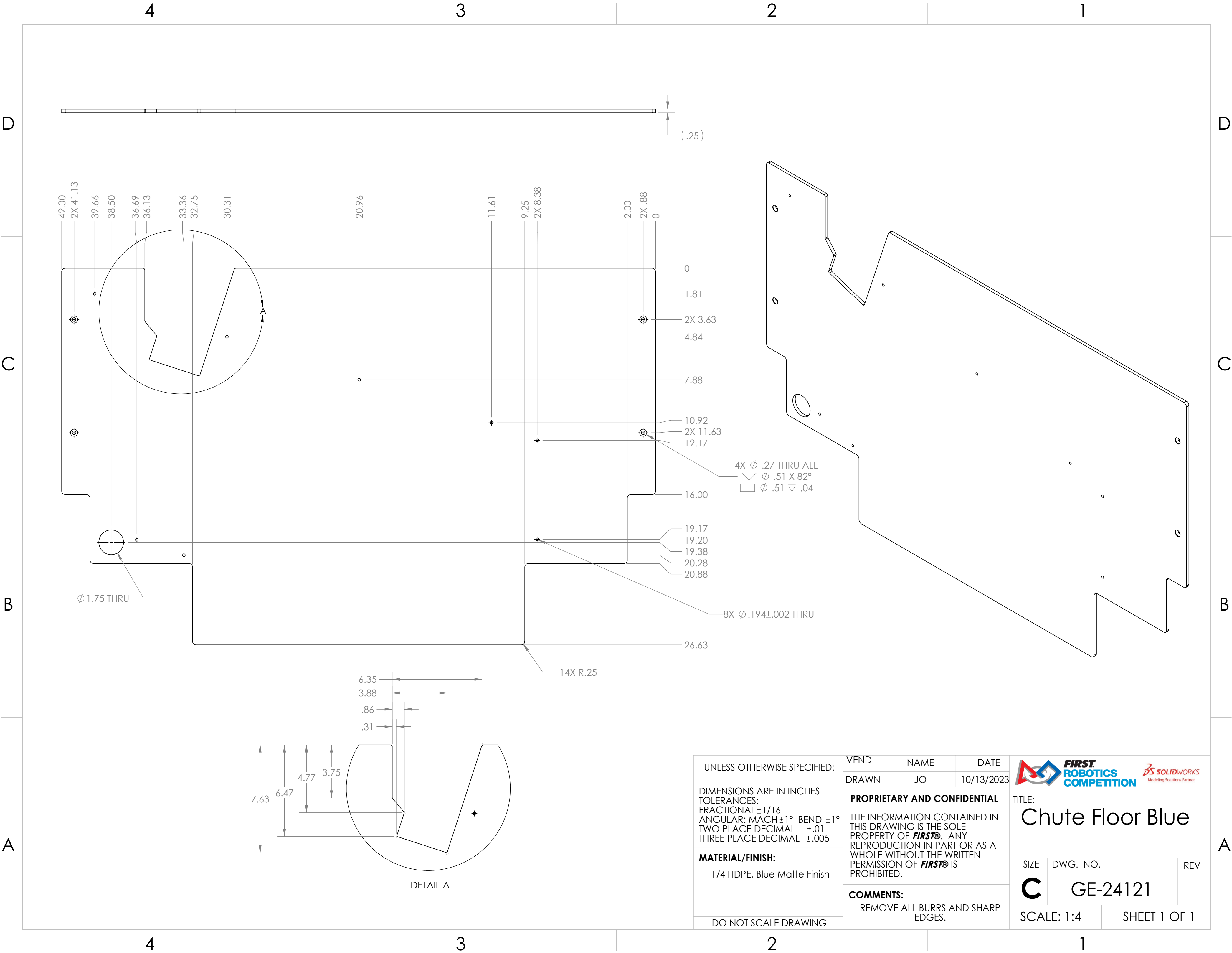
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Chute Floor Red

SIZE	DWG. NO.	REV
C	GE-24120	

SCALE: 1:4 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:
1/4 HDPE, Blue Matte Finish

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	10/13/2023

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.

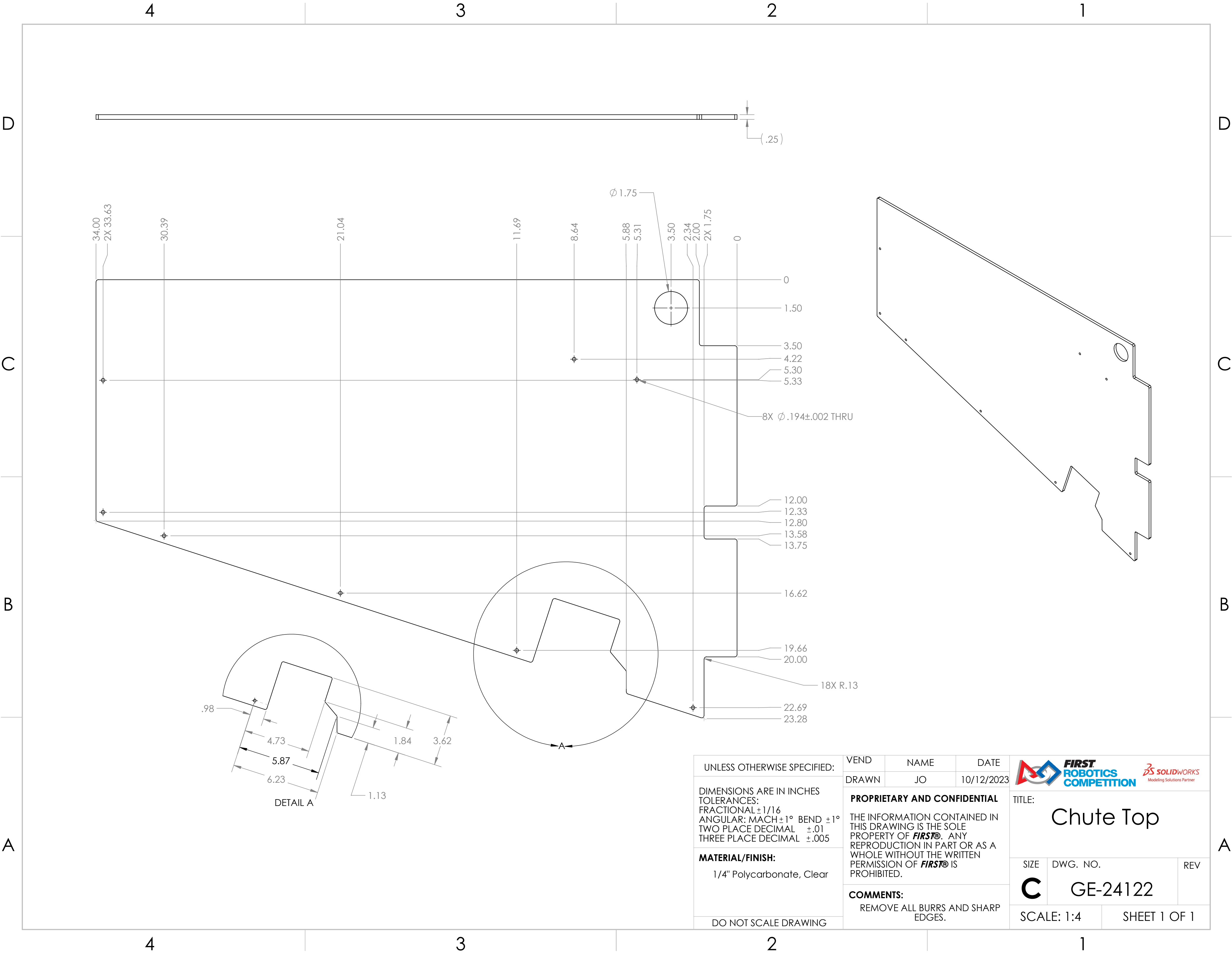
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Chute Floor Blue

SIZE	DWG. NO.	REV
C	GE-24121	

SCALE: 1:4 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:
1/4" Polycarbonate, Clear

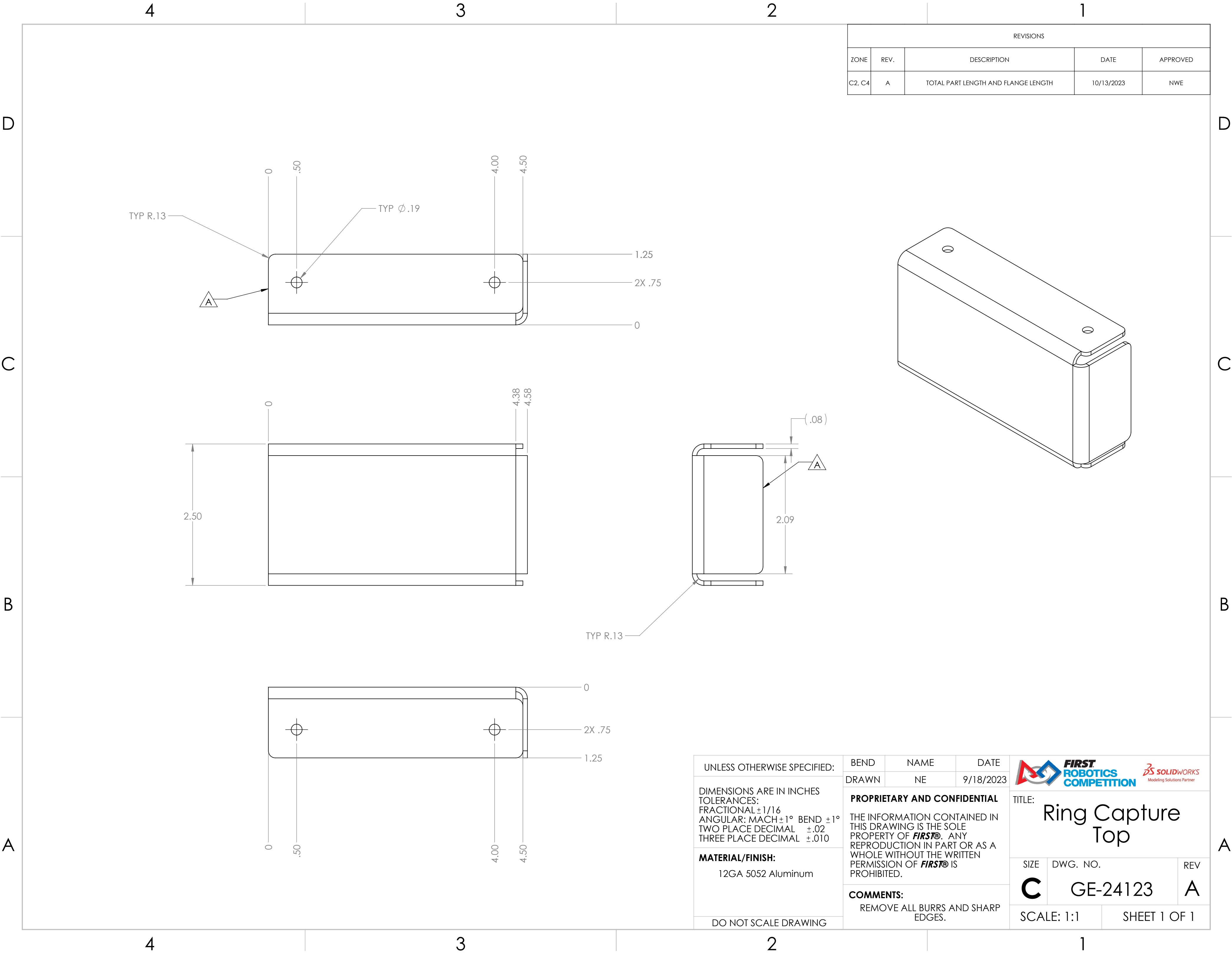
DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	10/12/2023



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.

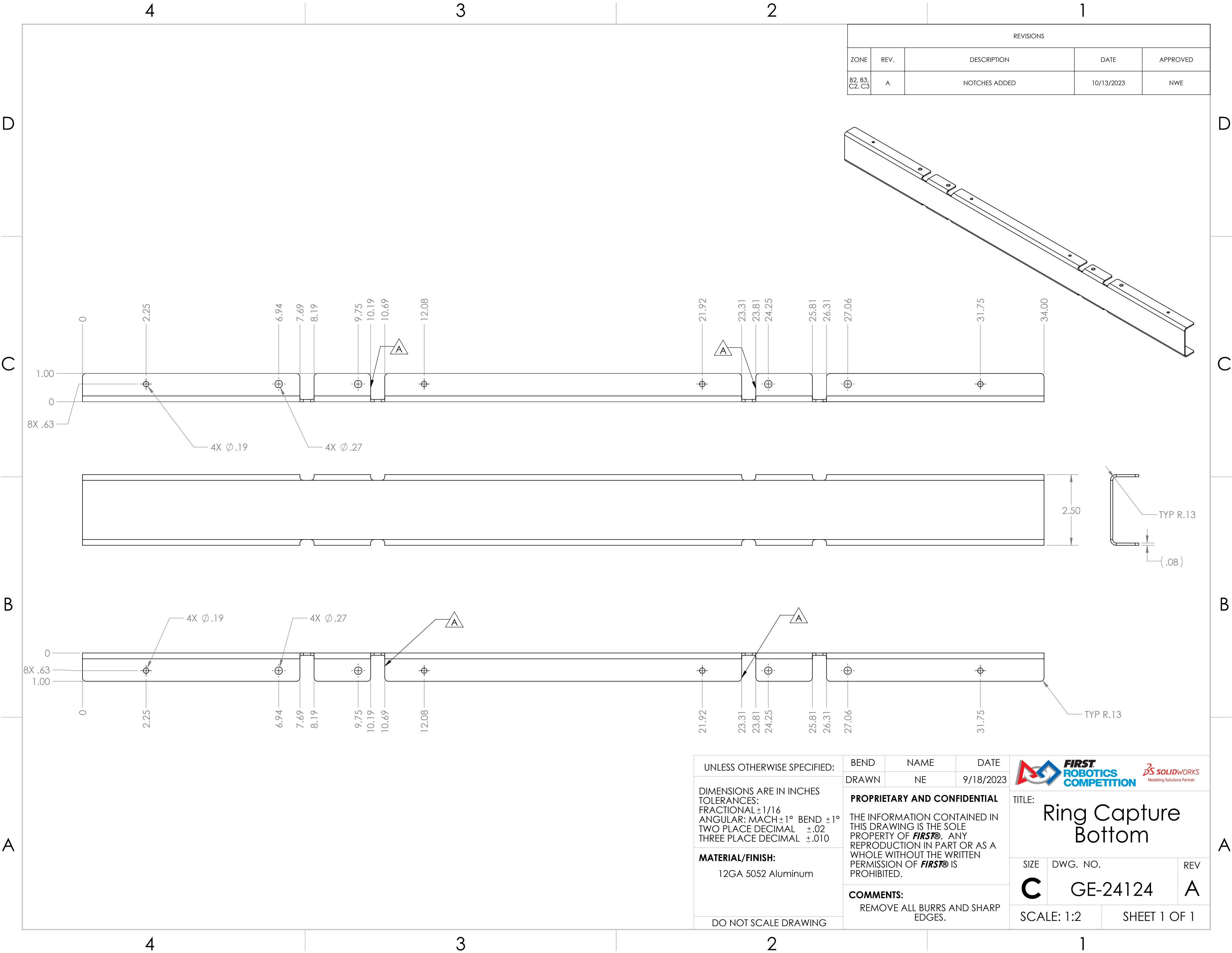
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

 		
TITLE: Chute Top		
SIZE C	DWG. NO. GE-24122	REV
SCALE: 1:4		SHEET 1 OF 1





REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2, C4	A	TOTAL PART LENGTH AND FLANGE LENGTH	10/13/2023	NWE

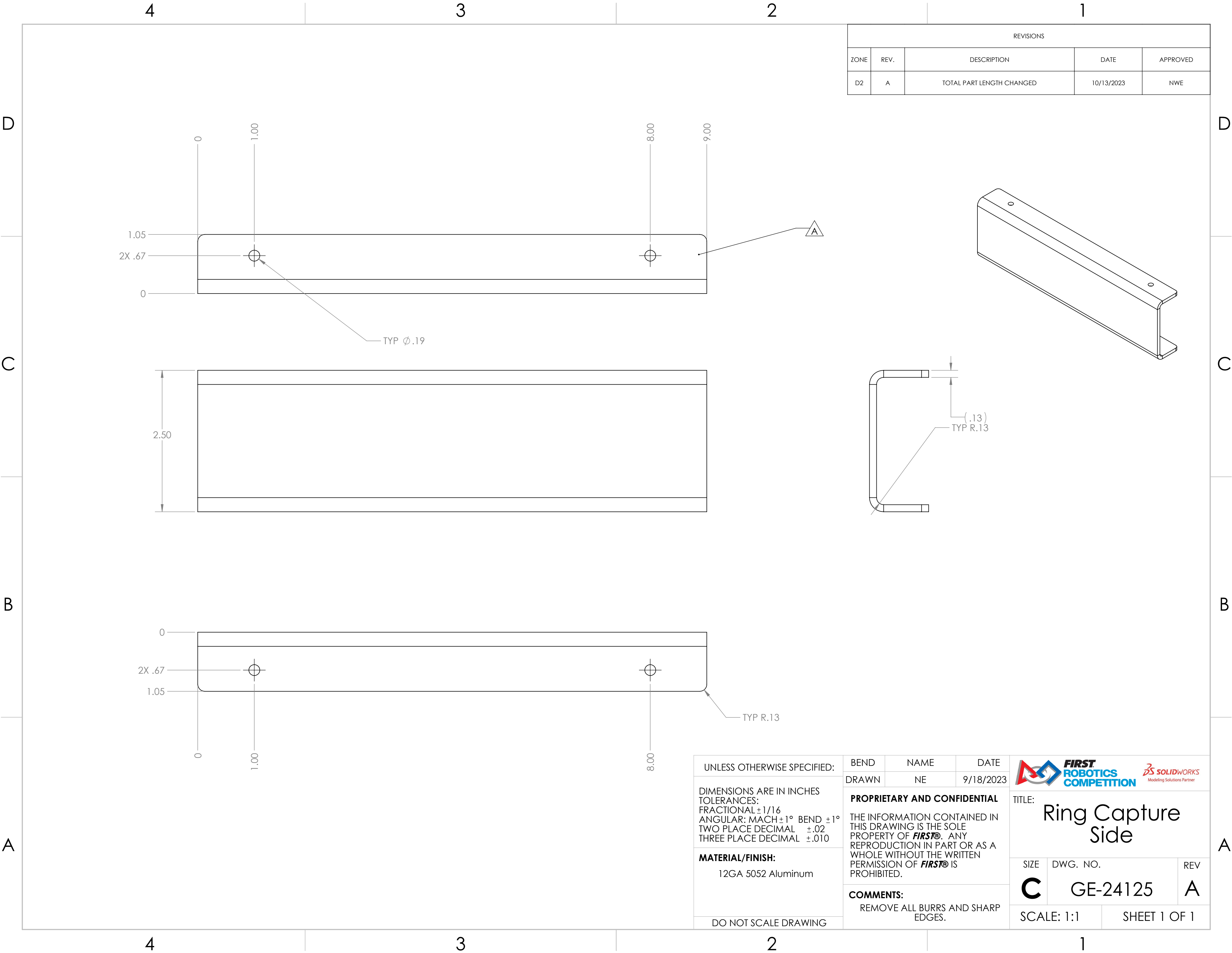
UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div></div>		
	DRAWN	NE	9/18/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE: Ring Capture Top		
	MATERIAL/FINISH: 12GA 5052 Aluminum			SIZE C	DWG. NO. GE-24123	REV A
DO NOT SCALE DRAWING	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:1		SHEET 1 OF 1



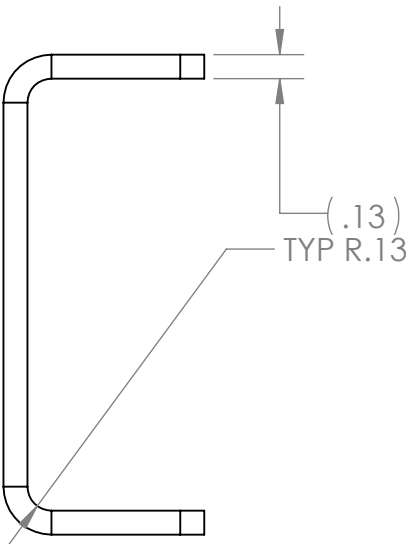
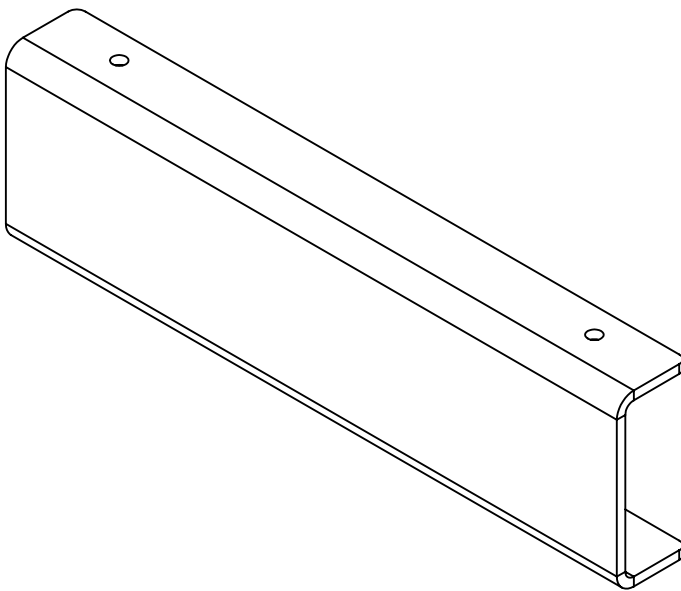
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2, B3, C2, C3	A	NOTCHES ADDED	10/13/2023	NWE



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: 12GA 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE
	DRAWN	NE	9/18/2023
	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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

 		
TITLE: Ring Capture Bottom		
SIZE C	DWG. NO. GE-24124	REV A
SCALE: 1:2		SHEET 1 OF 1

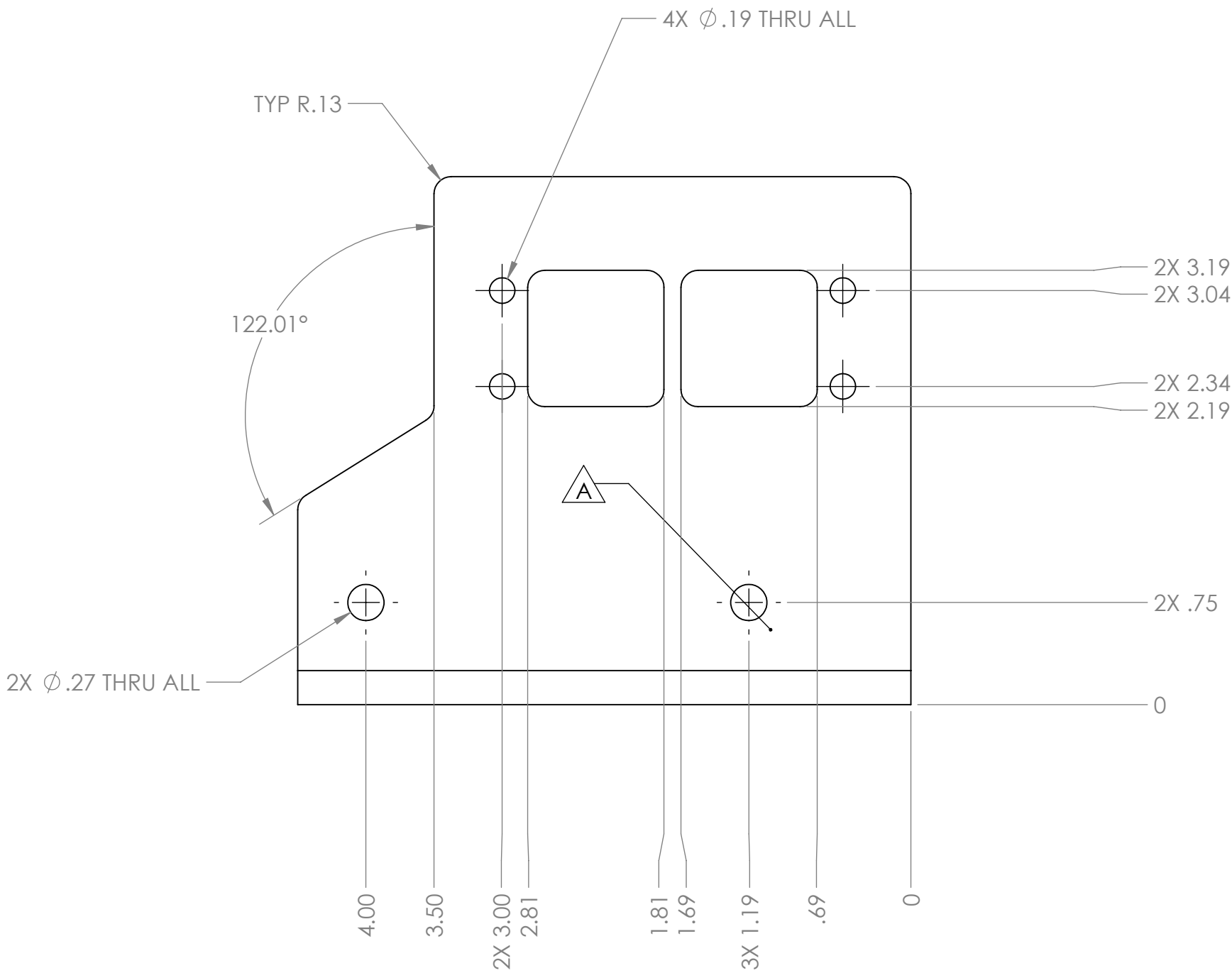
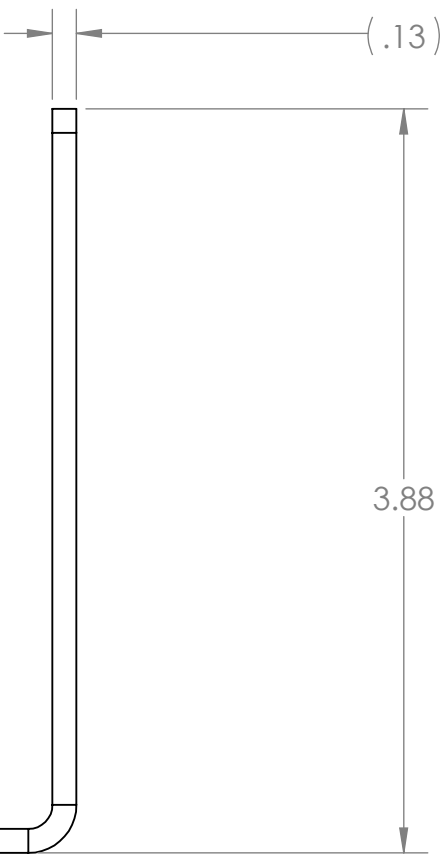
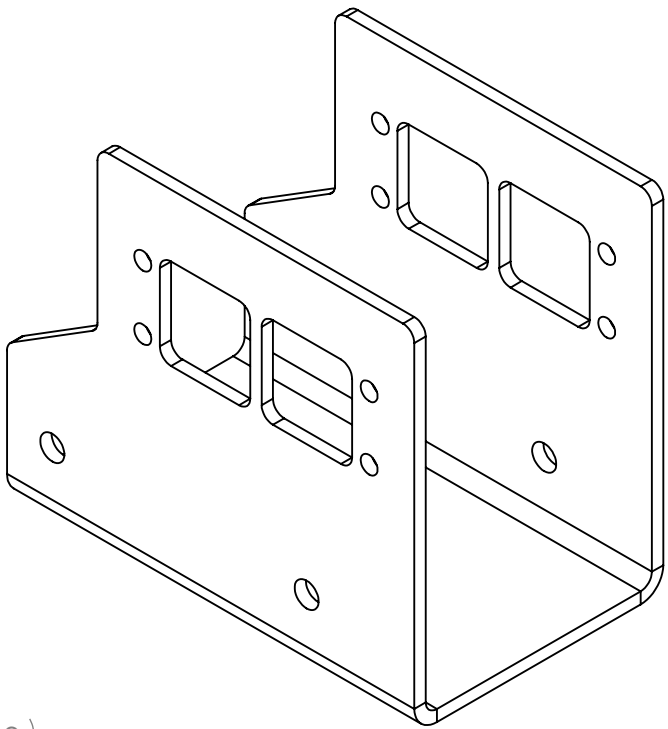




REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
D2	A	TOTAL PART LENGTH CHANGED	10/13/2023	NWE

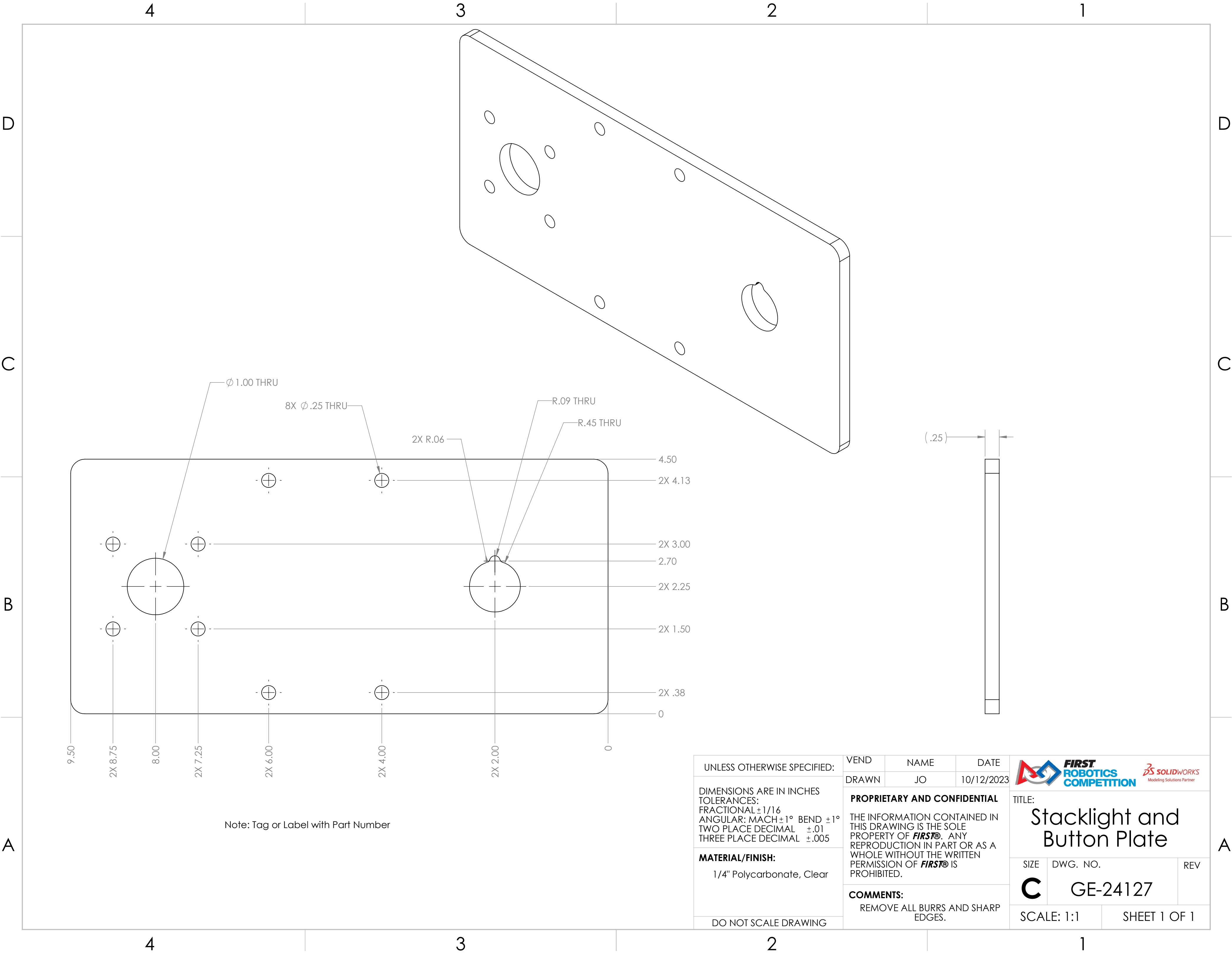


UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div></div>		
	DRAWN	NE	9/18/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	PROPRIETARY AND CONFIDENTIAL			TITLE: <div>Ring Capture Side</div>		
	THE INFORMATION CONTAINED 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.			SIZE	DWG. NO.	REV
12GA 5052 Aluminum				C	GE-24125	A
DO NOT SCALE DRAWING	SCALE: 1:1		SHEET 1 OF 1			



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	A	HOLE LOCATION MOVED	10/13/2023	NWE



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	<div></div> <div>TITLE: Sensor Bracket</div>		
	DRAWN	NE	9/18/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24126	A
			SCALE: 1:1		SHEET 1 OF 1	



Note: Tag or Label with Part Number

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>		
	DRAWN	JO	10/12/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Stacklight and Button Plate		
	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.					
MATERIAL/FINISH:	1/4" Polycarbonate, Clear			SIZE	DWG. NO.	REV
				C	GE-24127	
DO NOT SCALE DRAWING				SCALE: 1:1		SHEET 1 OF 1

D

D

C

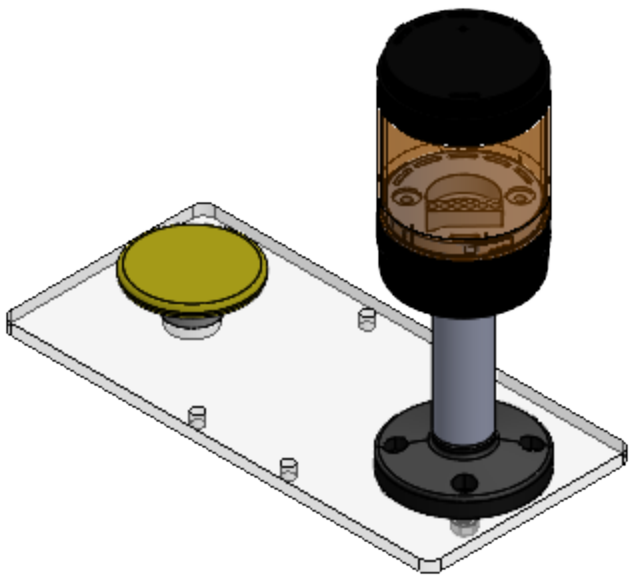
C

B

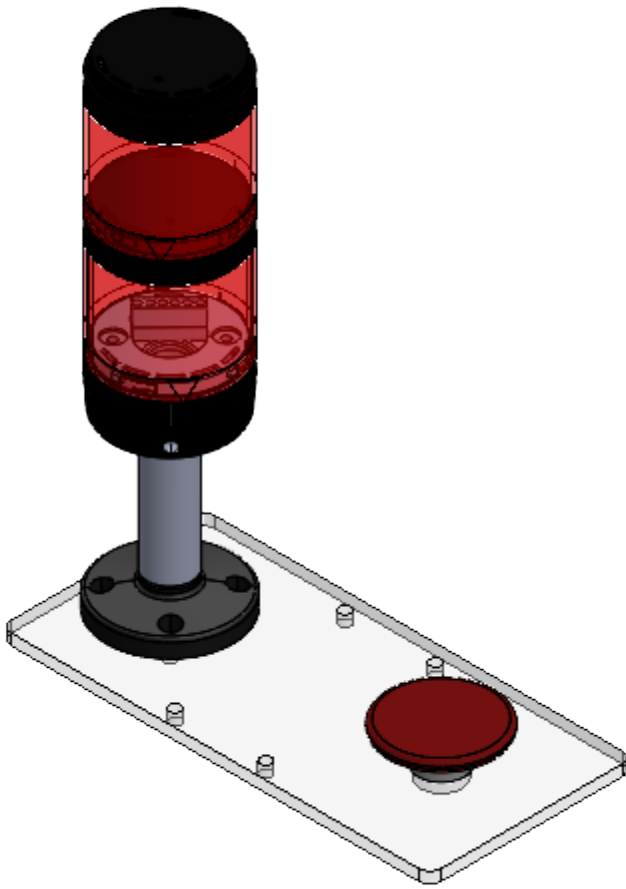
B

A

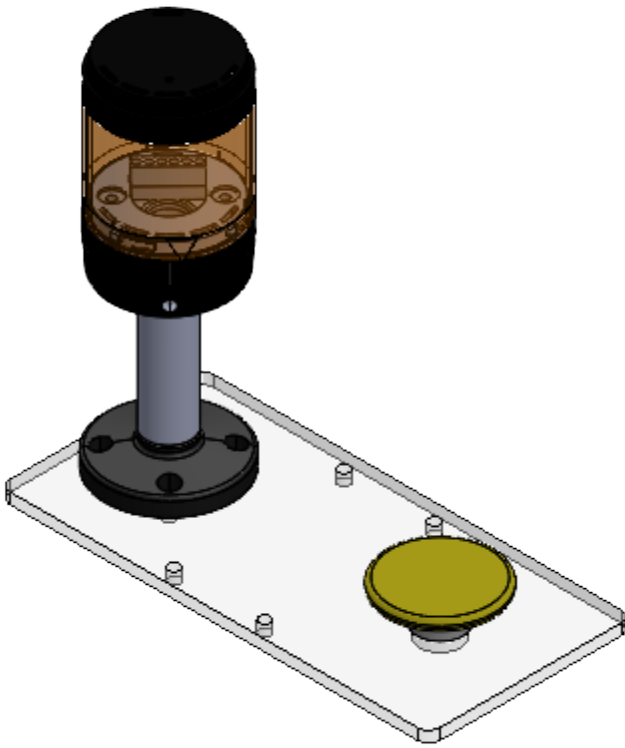
A



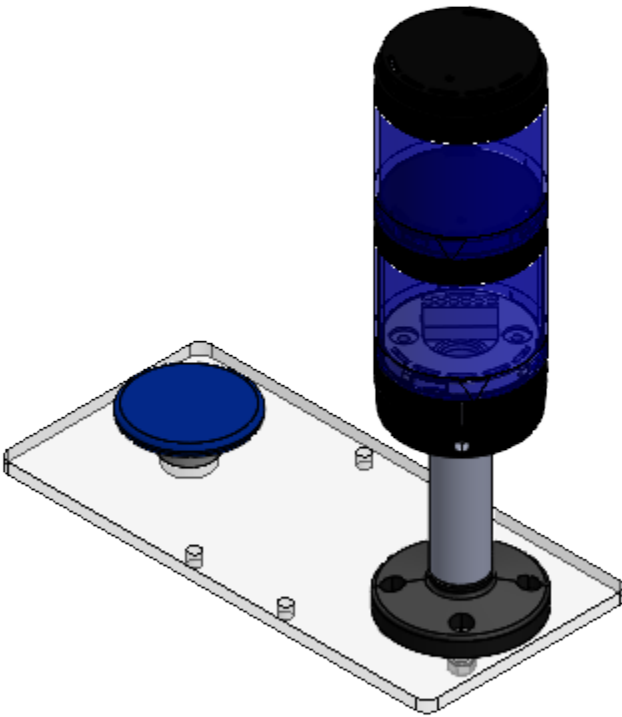
Red Co-op



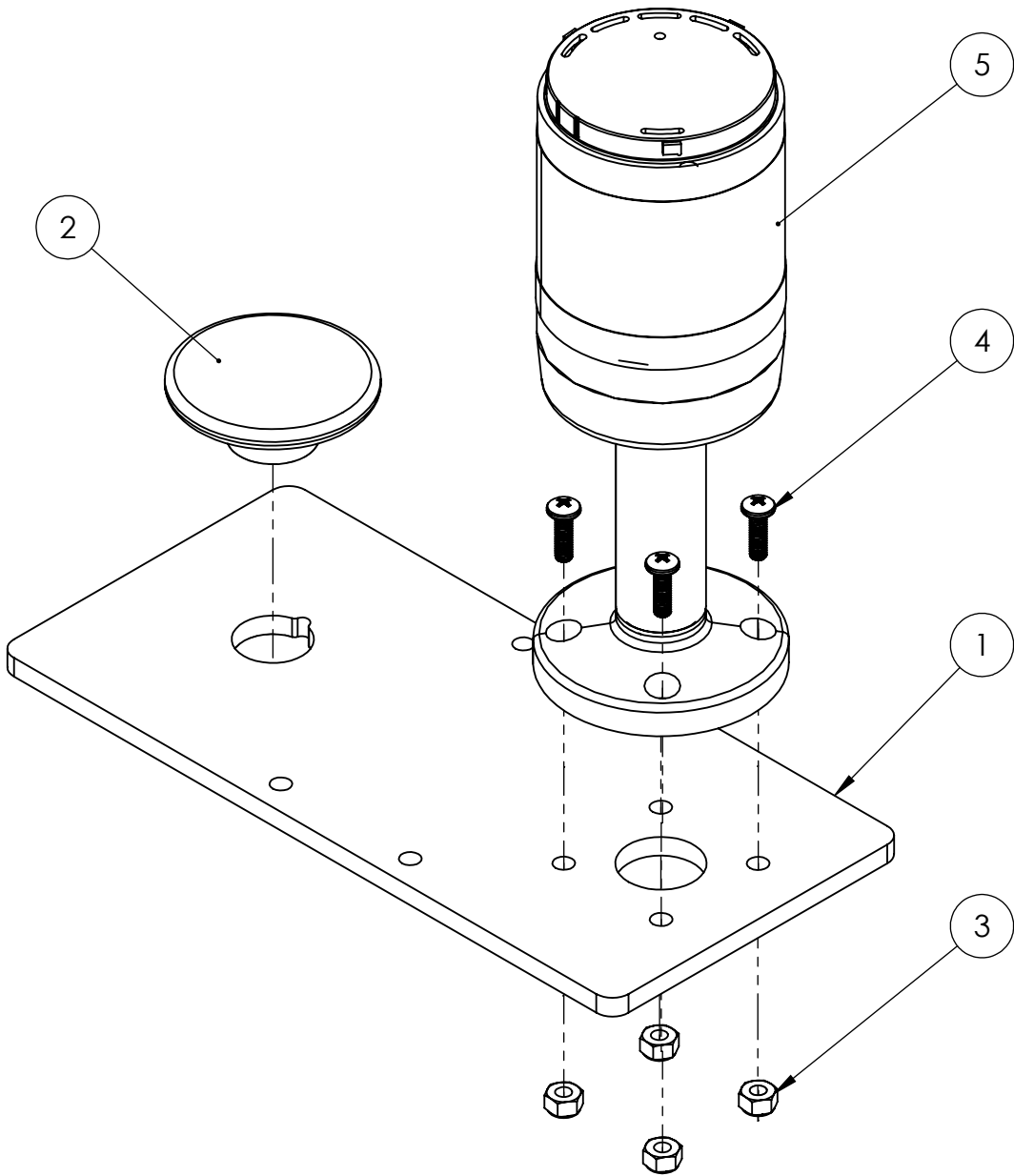
Red Amp



Blue Co-op



Blue Amp



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24127	Stacklight and Button Plate	1
2	Amp_Button_Yellow	Button, Push, Yellow	1
3	nylock_10_32	Low-Strength Steel Nylon-Insert Locknut, Zinc-Plated, 10-32 Thread Size	4
4	Pan_phil_10-32_.625	Pan head Phil 10-32 x 5/8	4
5	StackLight_Assembly	Stack Light Assembly	1

Note:

1. 2 comes in the following configurations:
1.

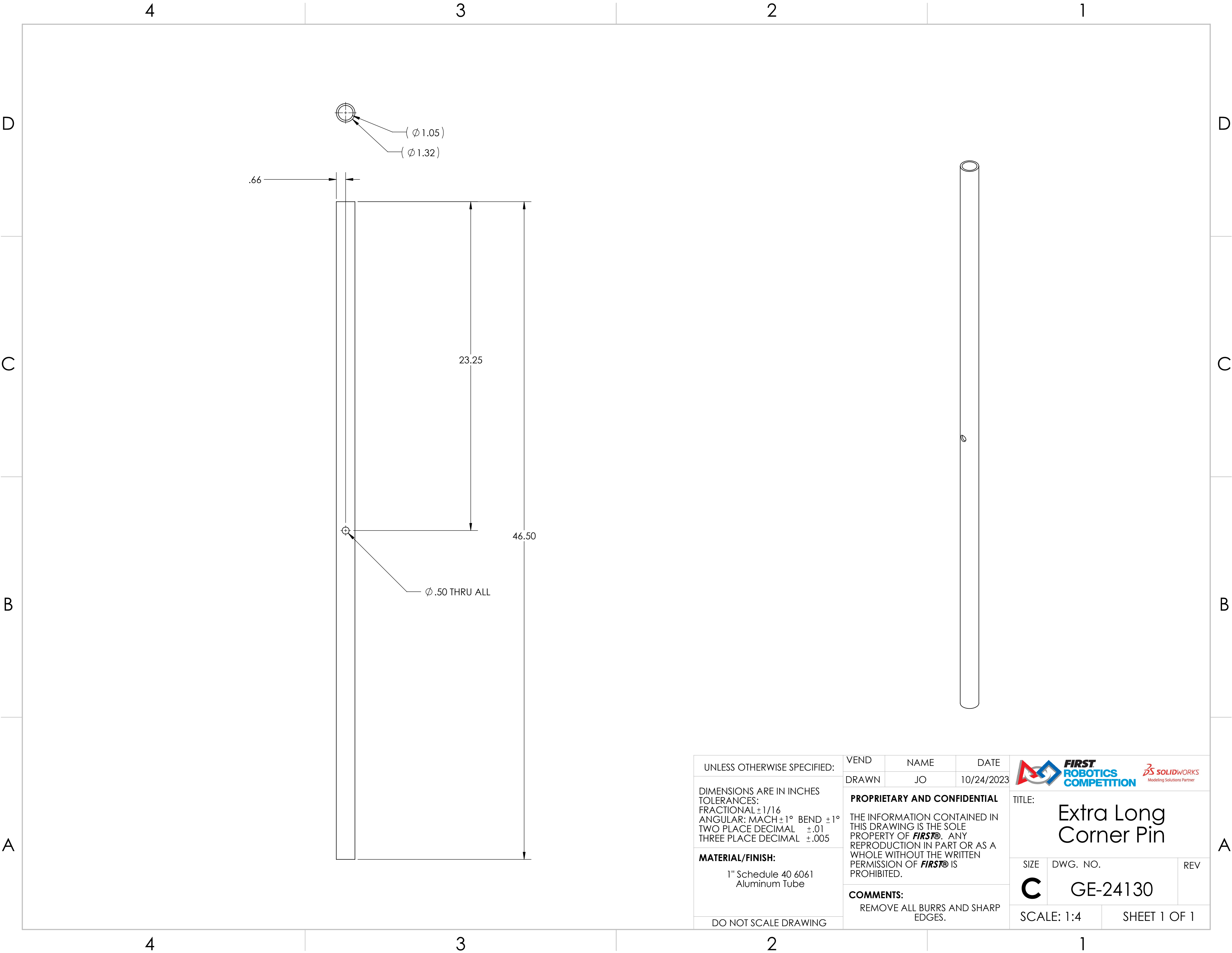
Red Co-op
2.



Red Boost
3.

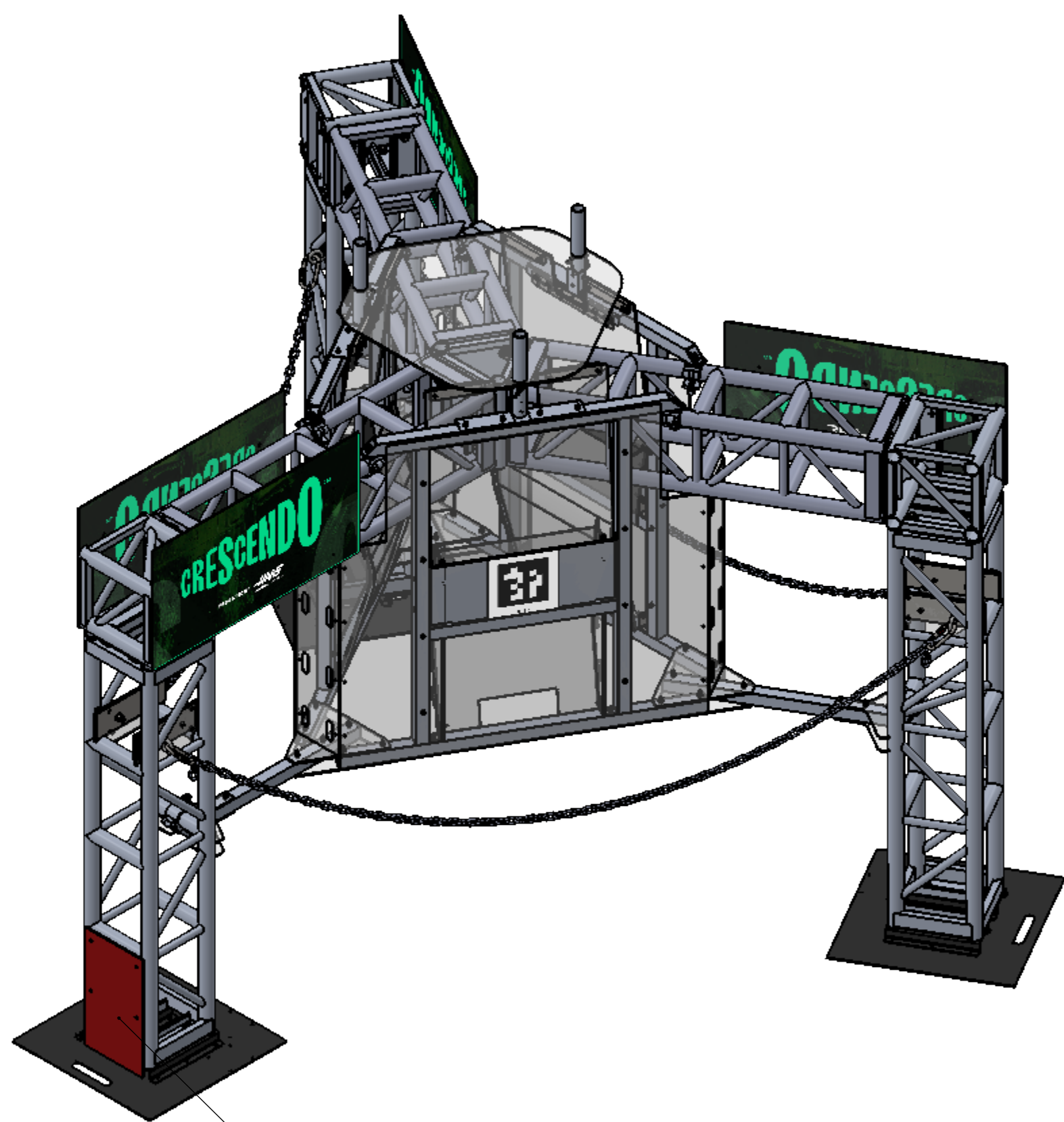
Blue Co-op
4.

Blue Boost

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	12/18/2023
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.		
DO NOT SCALE DRAWING		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
		TITLE: Stacklight and Button Plate Assembly		
		SIZE: C	DWG. NO.: GE-24128	REV:
		SCALE: 1:2		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: 1" Schedule 40 6061 Aluminum Tube DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Extra Long Corner Pin</div>		
	DRAWN	JO	10/24/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24130	REV
SCALE: 1:4		SHEET 1 OF 1				



There is a blue configuration for this plastic

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24201	Stage Top	1
2	GE-24202	Stage Vinyl Logo	4
3	GE-24204	Stage Face Filler Poly	3
4	GE-24205	Stage Chain	3
5	GE-24207-RED	Podium - Red	1
6	GE-24208	Chain Plate with Fasteners	6
7	GE-24210	Base Truss Assembly	1
8	GE-24220	Wall Assembly	3
9	GE-24250	Stage Lateral Support	3
10	3216T41_Carabiner	Carabiner, Locking Steel, .38 thick	6
11	hex_.25_20_3-partial	Steel Hex Head Screw, 1/4"-20 x 3" long, partially threaded	12
12	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	12
13	pin_wire_lock_.25_2.18 75	1/4" Steel Wire Lock Pin, 3 1/16" Long, 2 3/16" Usable Length	3

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

DF



12/19/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



TITLE:

Stage Assembly

SIZE

DWG. NO.

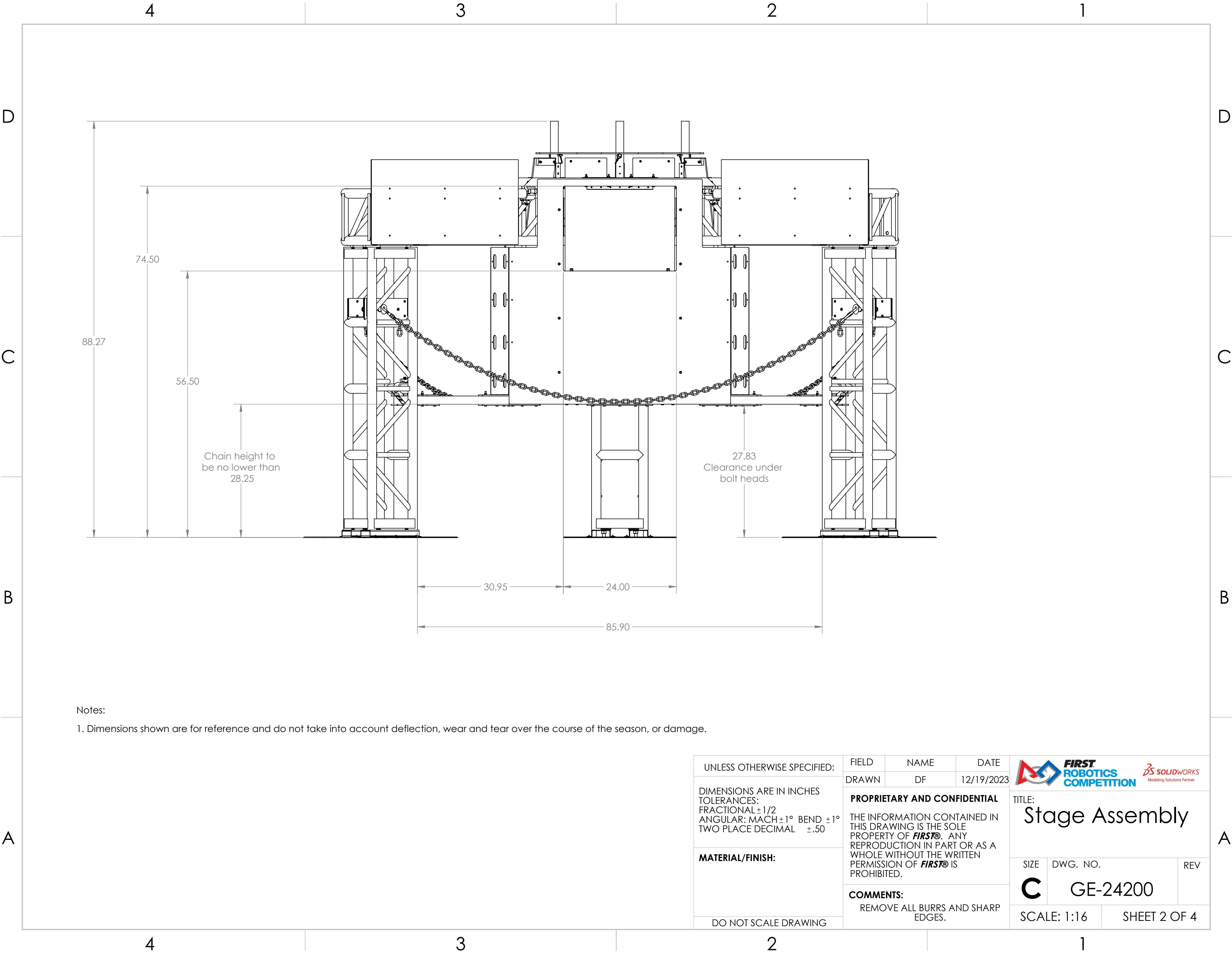
REV

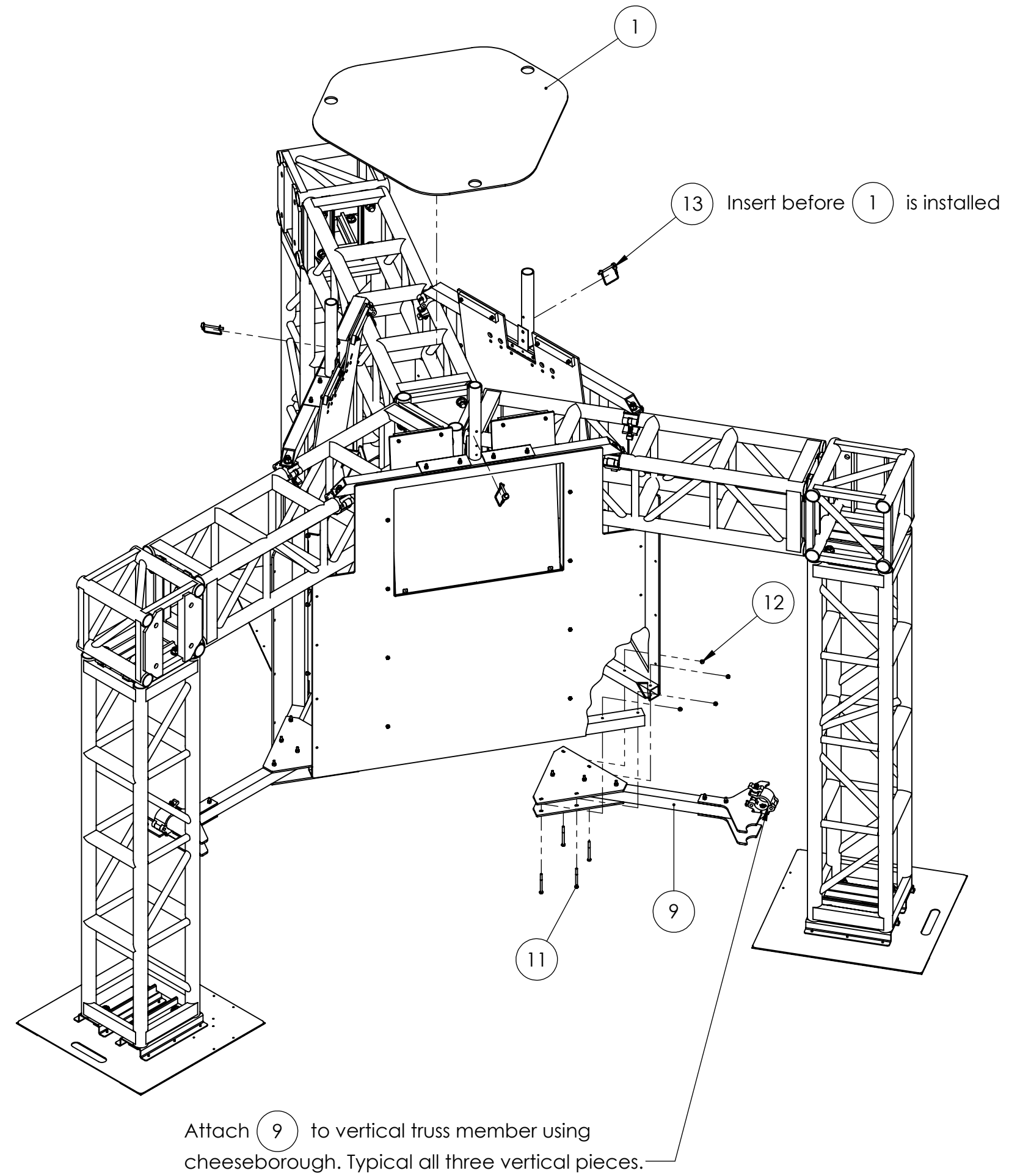
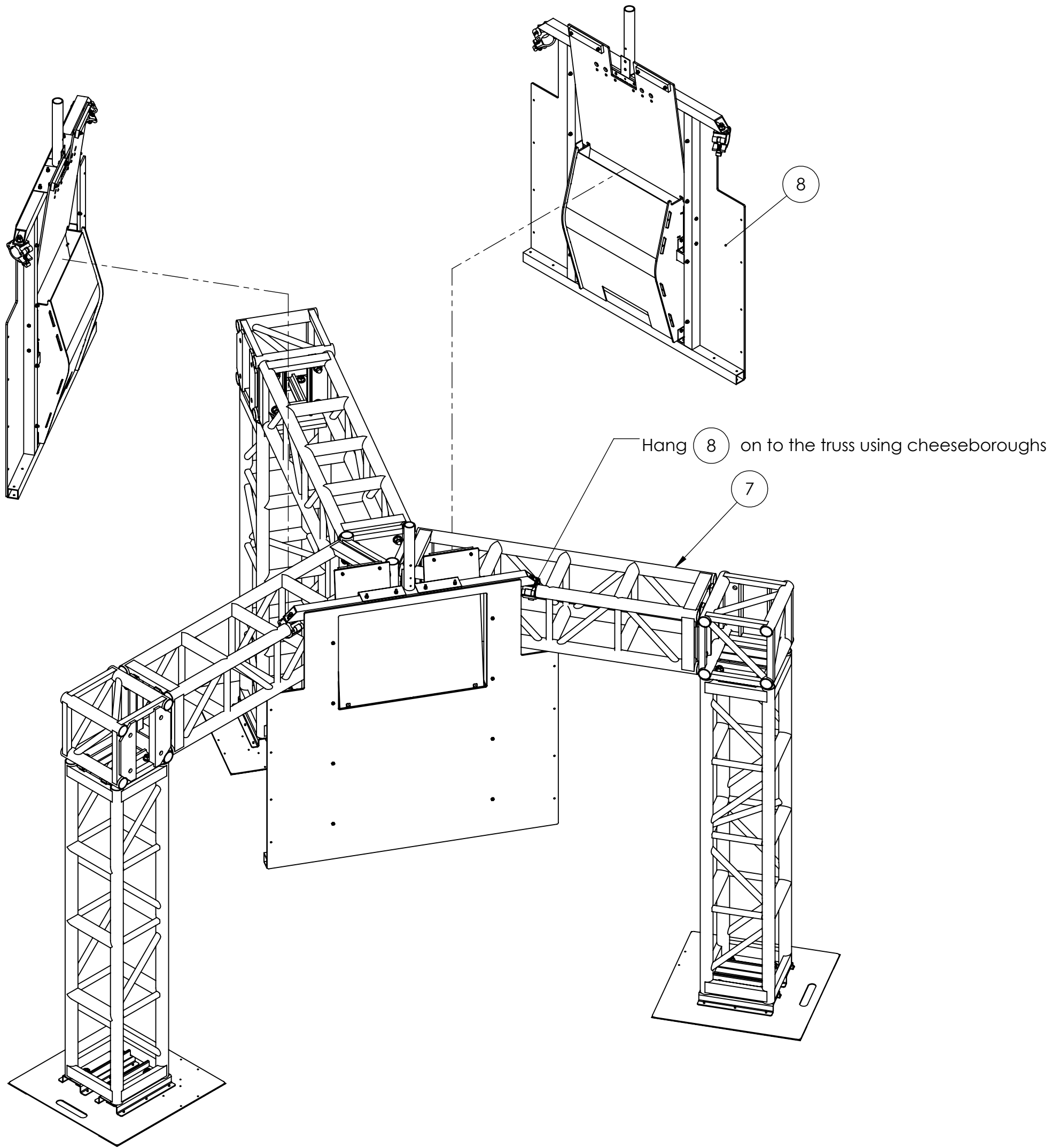
C



GE-24200

SCALE: 1:16

SHEET 1 OF 4





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	  TITLE: Stage Assembly	
	DRAWN	DF	12/19/2023		
	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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24200
SCALE: 1:16		SHEET 3 OF 4			

4

3

2

1

D

D

C

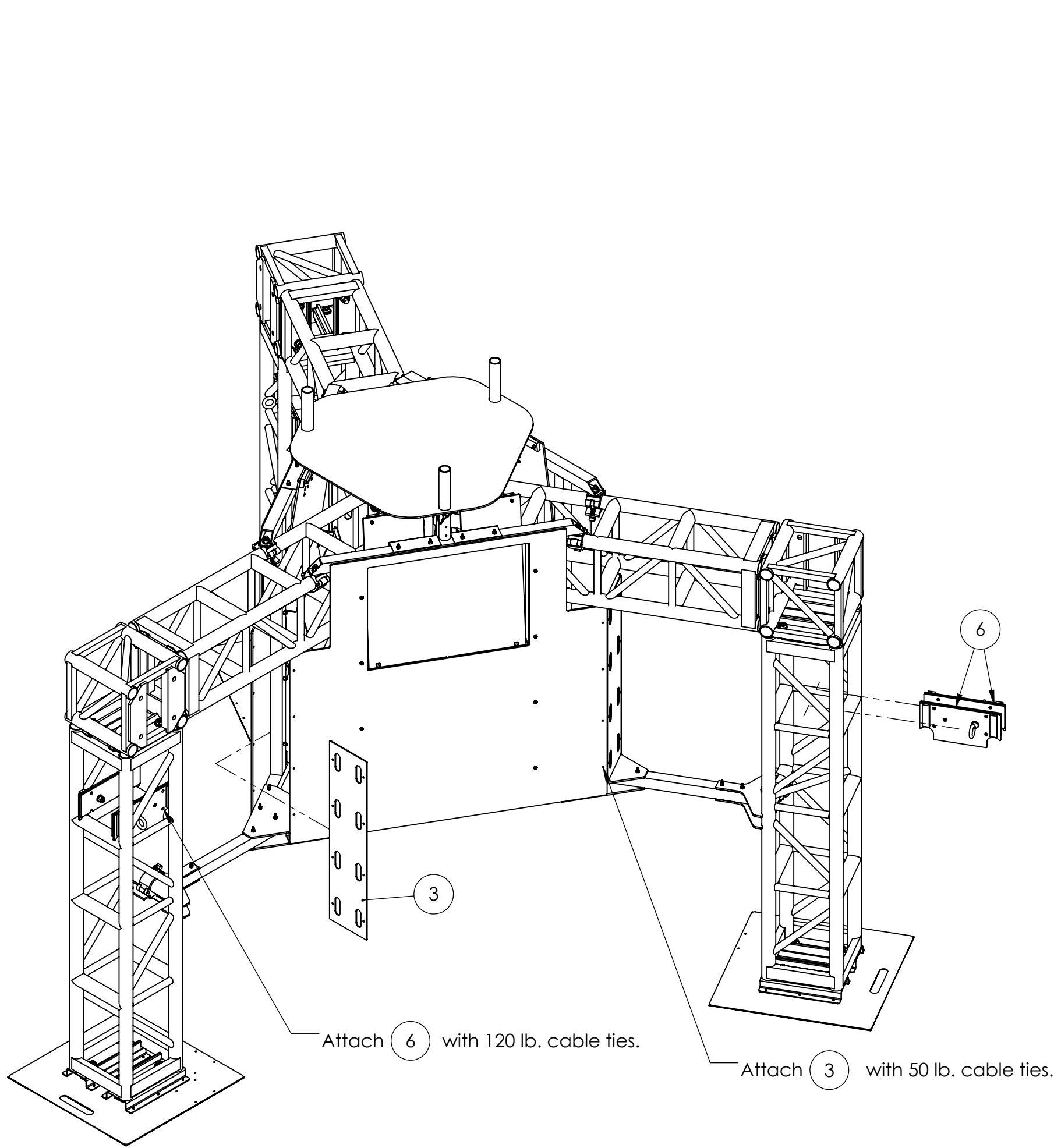
C

B

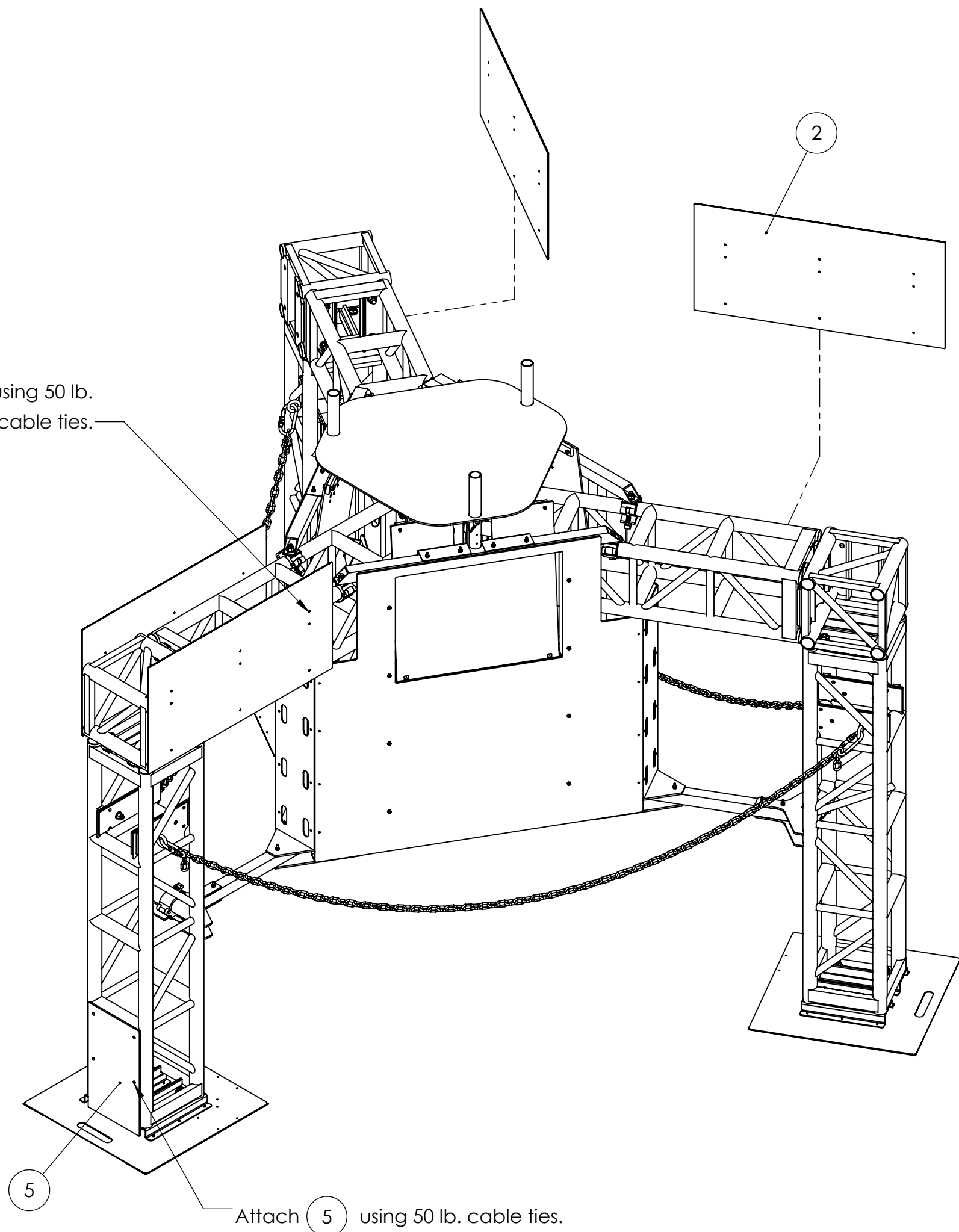
B



A

A



Attach 2 using 50 lb. black cable ties.



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	 
	DRAWN	DF	12/19/2023	
	TITLE:			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL			Stage Assembly
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:			SIZE DWG. NO. REV
	REMOVE ALL BURRS AND SHARP EDGES.			C GE-24200
DO NOT SCALE DRAWING				SCALE: 1:16 SHEET 4 OF 4

4

3

2

1

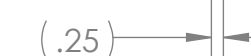
1

D

C



B

A



Notes:

1. Tag or label with part number.

UNLESS OTHERWISE SPECIFIED:		VEN	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	CO	8/22/2023	TITLE:	
MATERIAL/FINISH: 1/4" 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.			Stage Top	
DO NOT SCALE DRAWING		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24201
					SCALE: 1:4	SHEET 1 OF 1

4

3

2

1

D

D

C

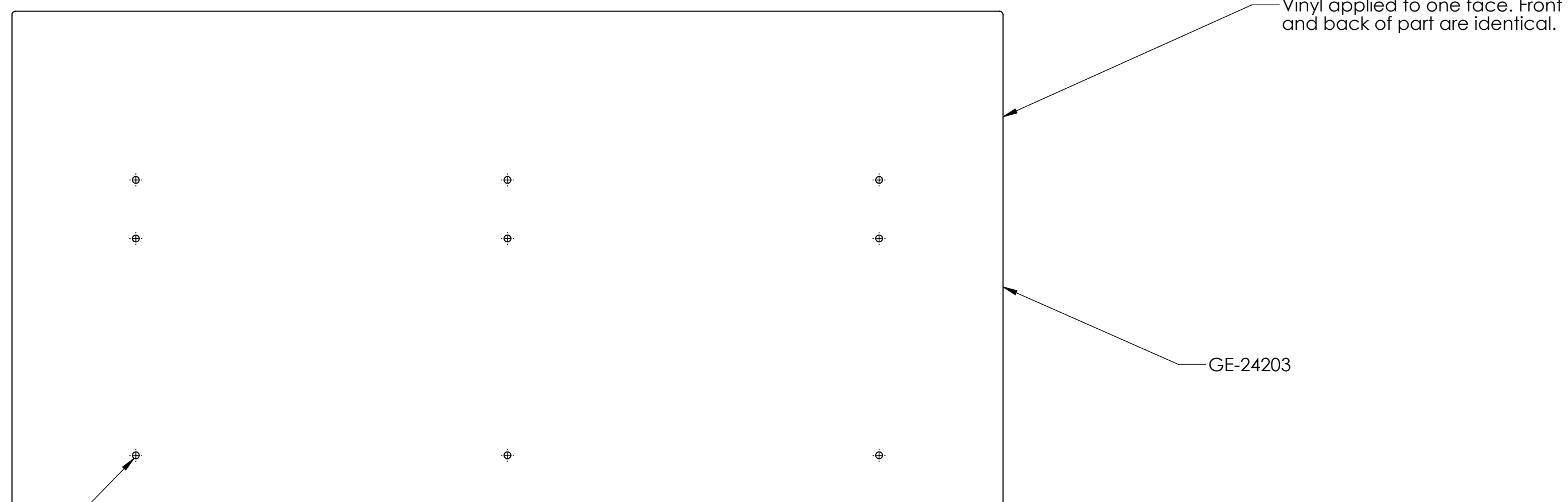
C

B

B

A



A



Single row of holes close to the edge of the part indicate the bottom. _____

Notes:

1. QTY per field: 8
2. Gloss vinyl finish

UNLESS OTHERWISE SPECIFIED:		VEN	NAME	DATE	 							
<p>DIMENSIONS ARE IN INCHES</p> <p>TOLERANCES:</p> <p>FRACTIONAL $\pm 1/16$</p> <p>ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$</p> <p>TWO PLACE DECIMAL $\pm .01$</p> <p>THREE PLACE DECIMAL $\pm .005$</p> <p>MATERIAL/FINISH:</p> <p>Polycarbonate/Vinyl</p>		DRAWN	CO	9/6/2023	<p>TITLE:</p> <p>Stage Vinyl Logo</p> <table><tr><td>SIZE</td><td>DWG. NO.</td><td>REV</td></tr><tr><td>C</td><td>GE-24202</td><td></td></tr></table> <p>SCALE: 1:4</p> <p>SHEET 1 OF 1</p>		SIZE	DWG. NO.	REV	C	GE-24202	
		SIZE	DWG. NO.	REV								
		C	GE-24202									
<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:</p> <p>REMOVE ALL BURRS AND SHARP EDGES.</p>												
DO NOT SCALE DRAWING												

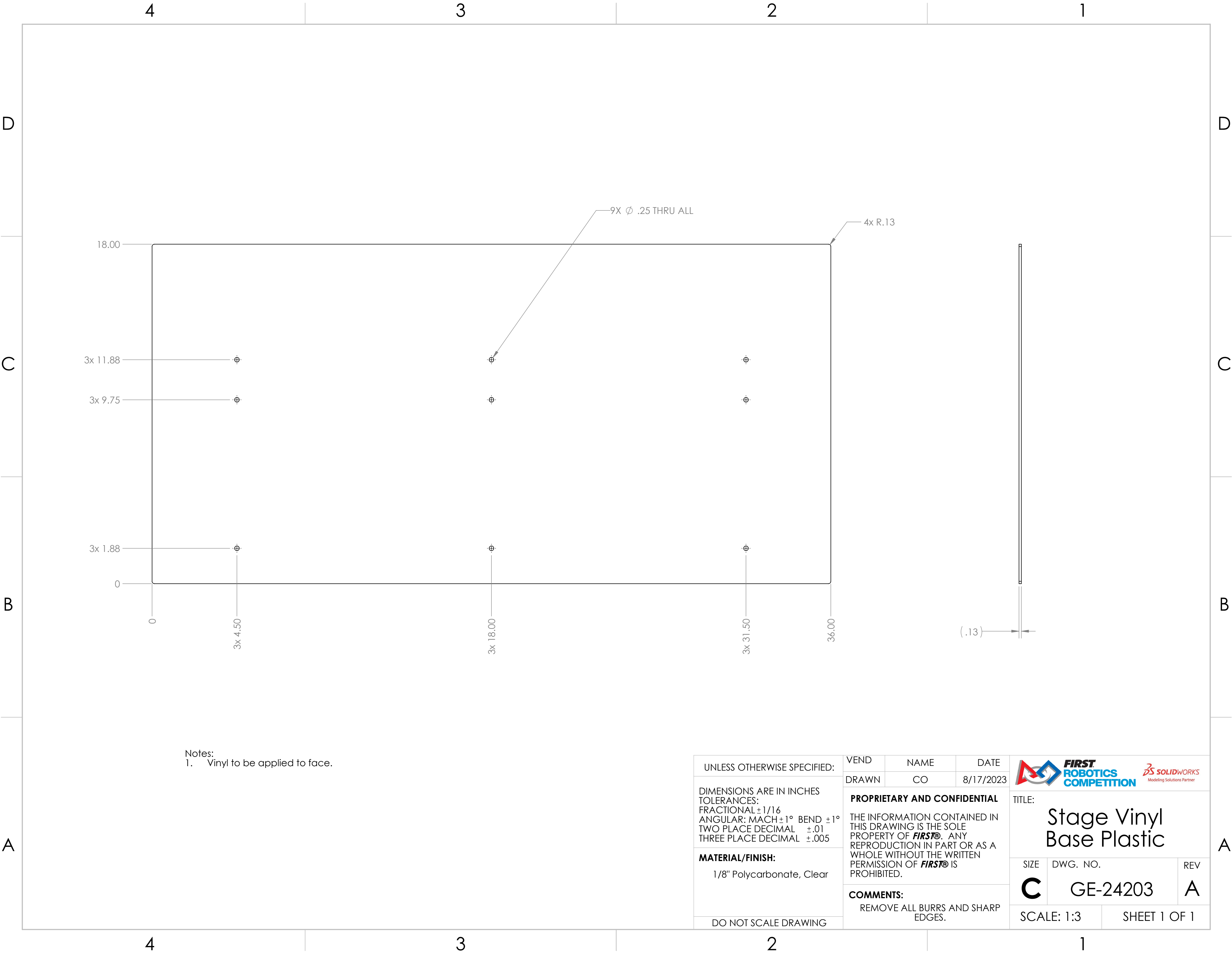
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3



2

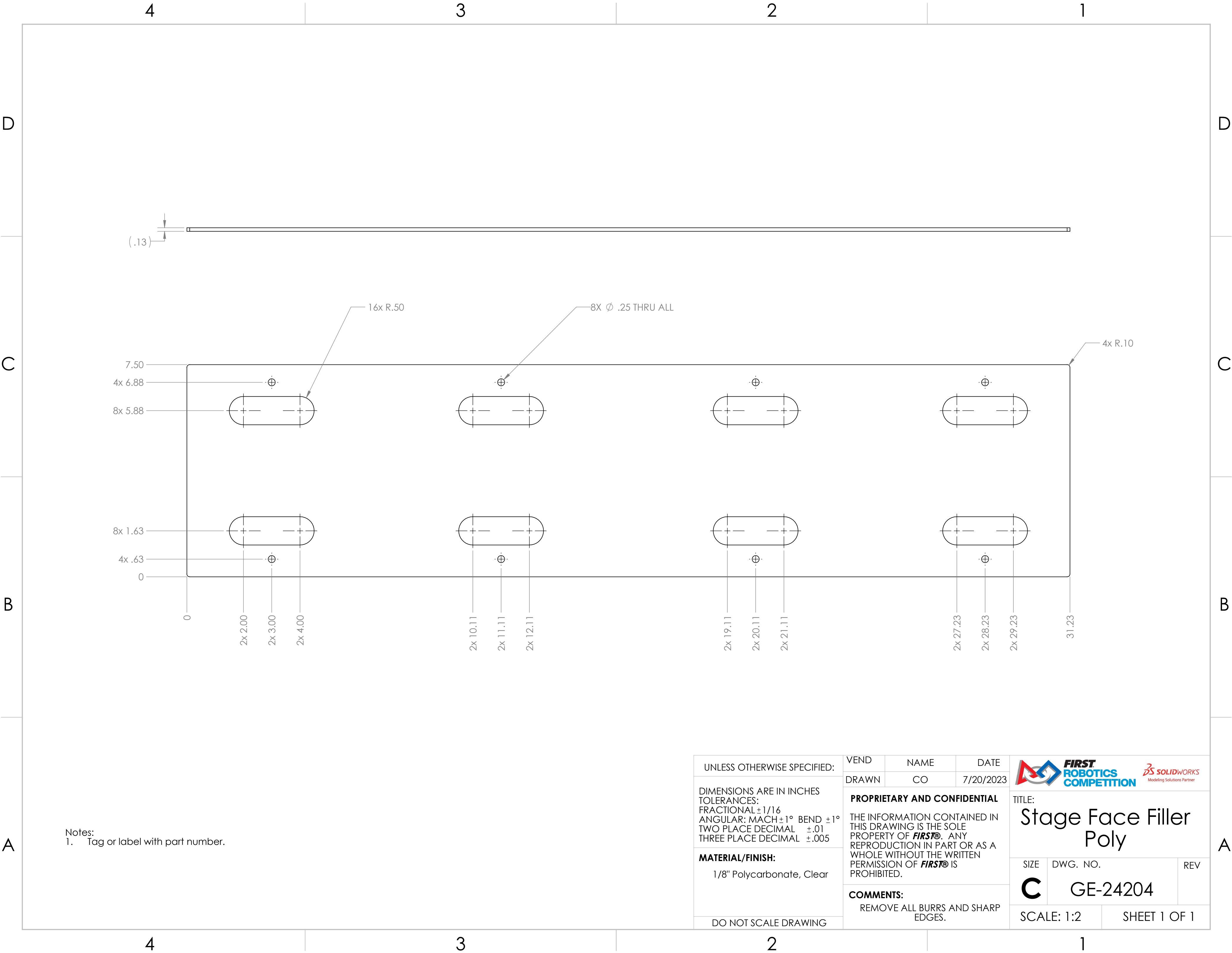
1

A





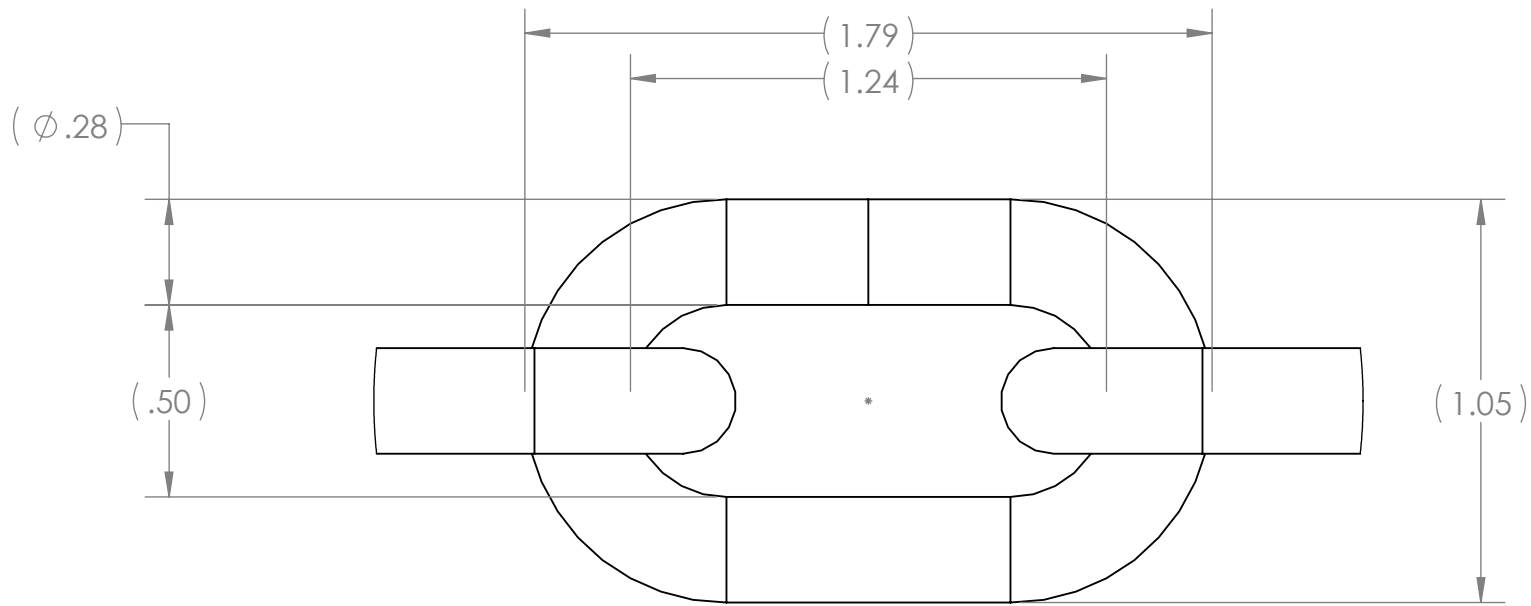
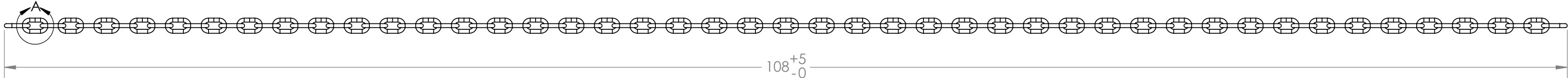
Notes:
1. Vinyl to be applied to face.

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	<div></div> <div>TITLE: <h1>Stage Vinyl Base Plastic</h1></div>		
	DRAWN	CO	8/17/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24203	REV A
SCALE: 1:3		SHEET 1 OF 1				





Notes:
1. Tag or label with part number.

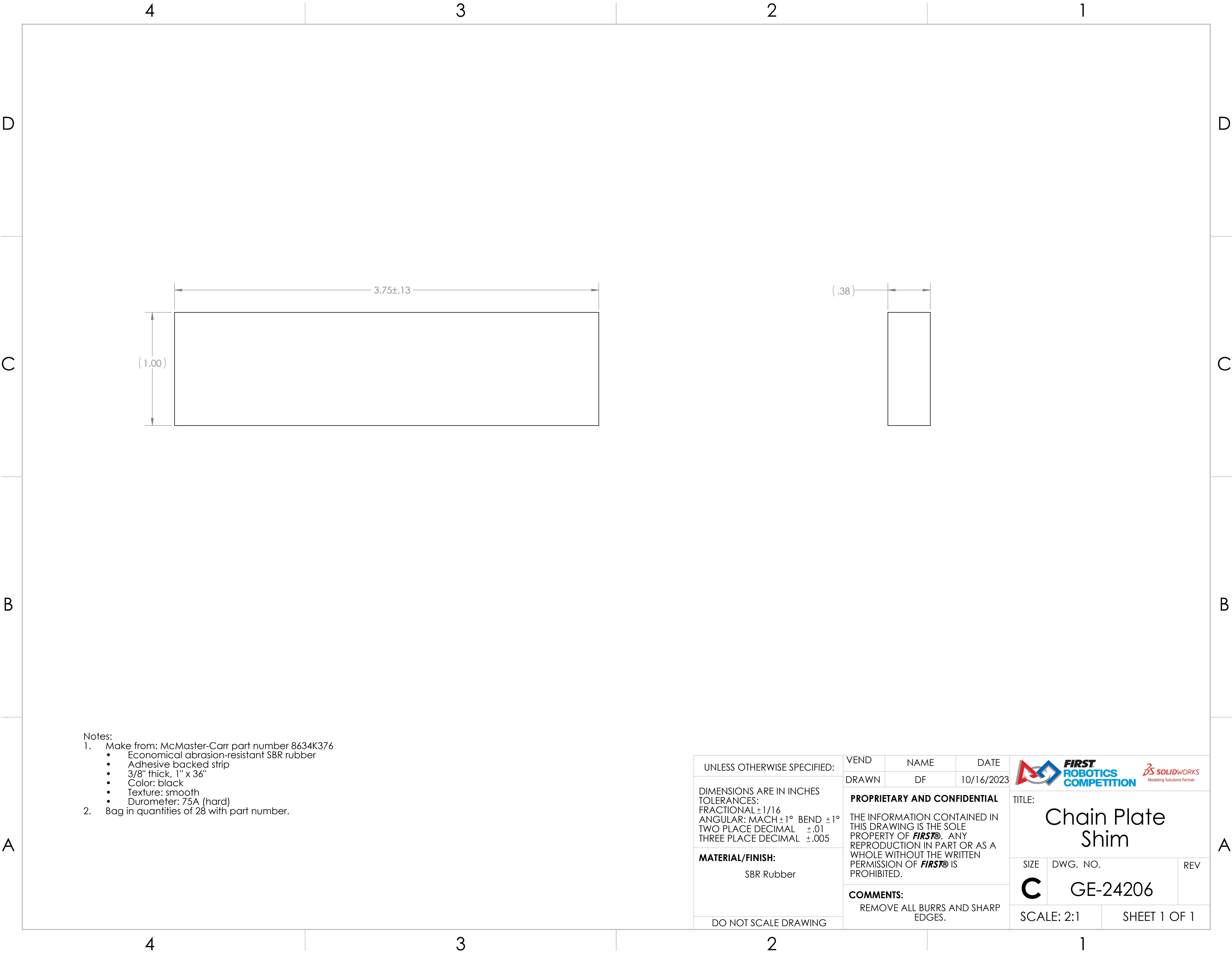
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$ MATERIAL/FINISH: 1/8" Polycarbonate, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	  TITLE: Stage Face Filler Poly	
	DRAWN	CO	7/20/2023		
	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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24204
SCALE: 1:2		SHEET 1 OF 1			





DETAIL A
SCALE 2 : 1

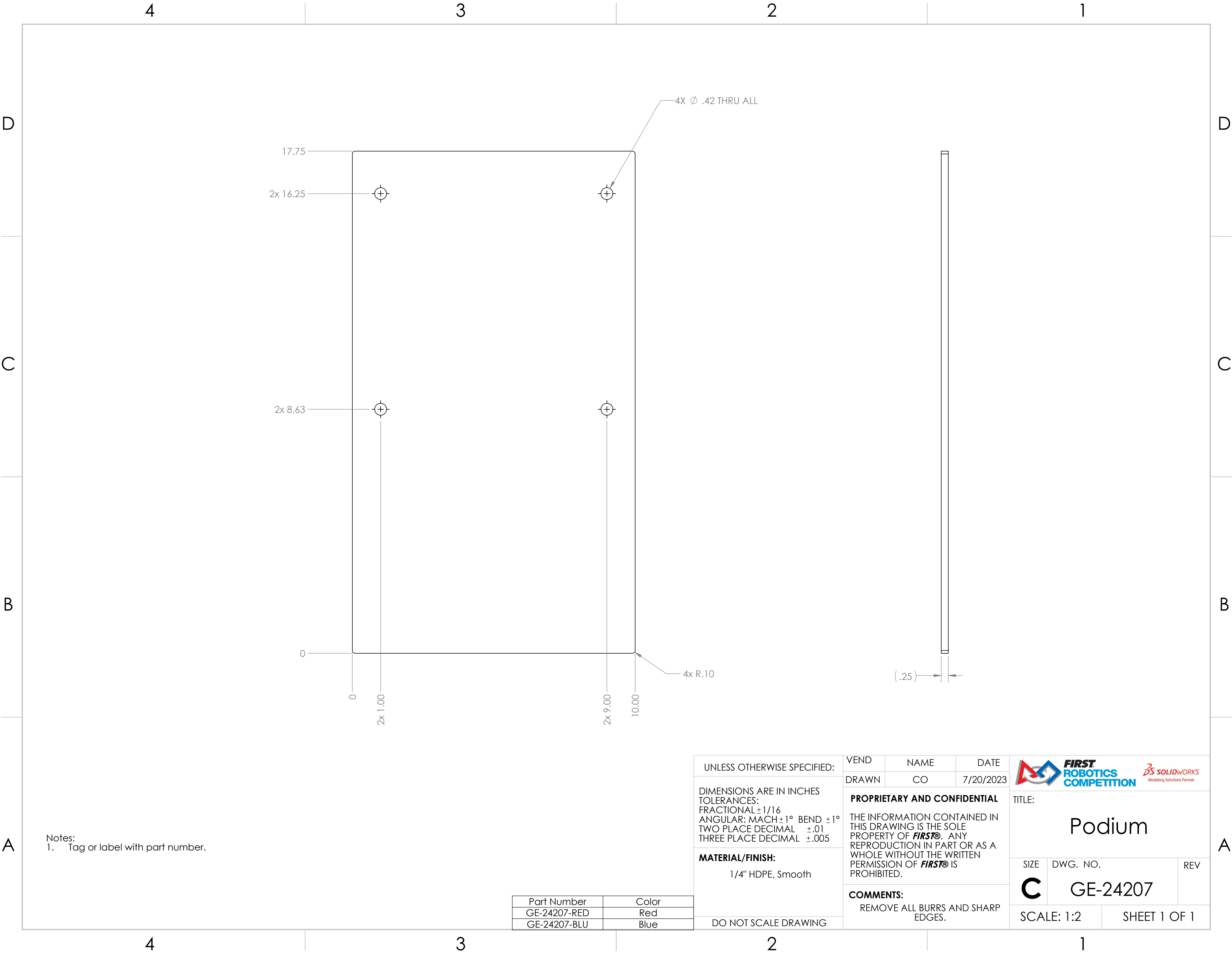
- Notes:
- 1. Supplier: Perfection Chain Products
 - 2. Packaged in groups of 9
 - 3. Individual link dimensions provided as reference for teams based on a measured sample. Sizes of chain of a given grade and trade size vary.

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: Grade 43 Zinc Plated Chain, 1/4" Trade Size DO NOT SCALE DRAWING	VEND	NAME	DATE	<div><div></div><div>TITLE: <h1>Stage Chain</h1></div></div>		
	DRAWN	CO	9/25/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
C		GE-24205-straight		SCALE: 1:6		
				SHEET 1 OF 1		





- Notes:
1. Make from: McMaster-Carr part number 8634K376
 - Economical abrasion-resistant SBR rubber
 - Adhesive backed strip
 - 3/8" thick, 1" x 36"
 - Color: black
 - Texture: smooth
 - Durometer: 75A (hard)
 2. Bag in quantities of 28 with part number.

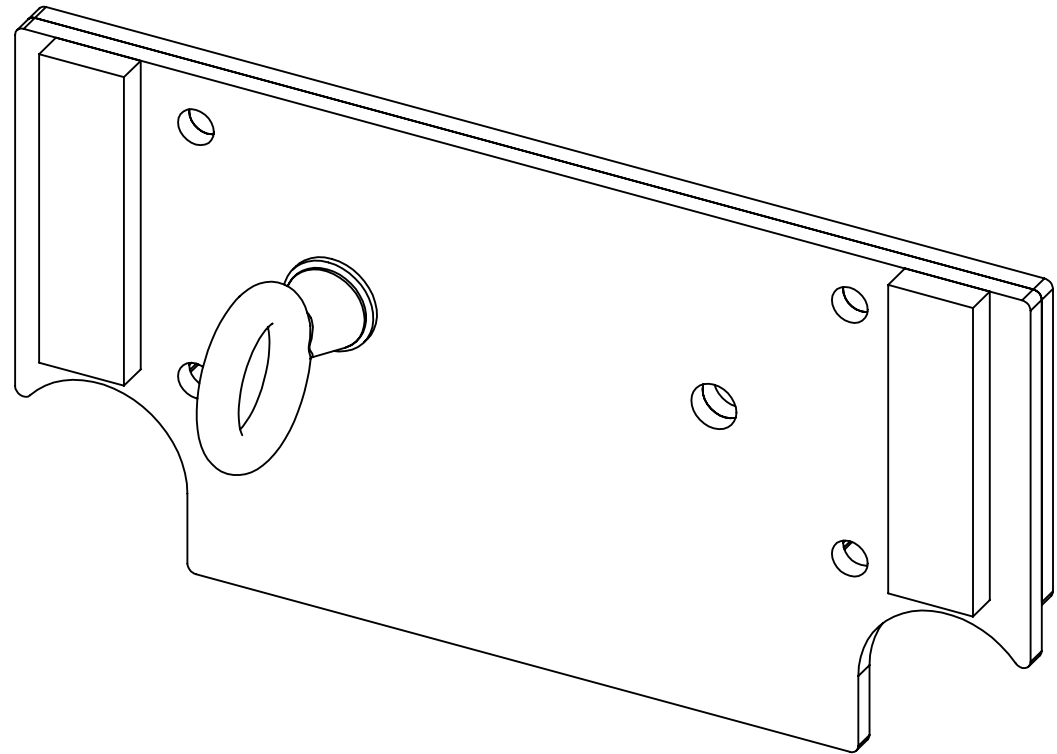
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>		
	DRAWN	DF	10/16/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE:		
				Chain Plate Shim		
	MATERIAL/FINISH: SBR Rubber	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.
	C				GE-24206	
DO NOT SCALE DRAWING				SCALE: 2:1		SHEET 1 OF 1



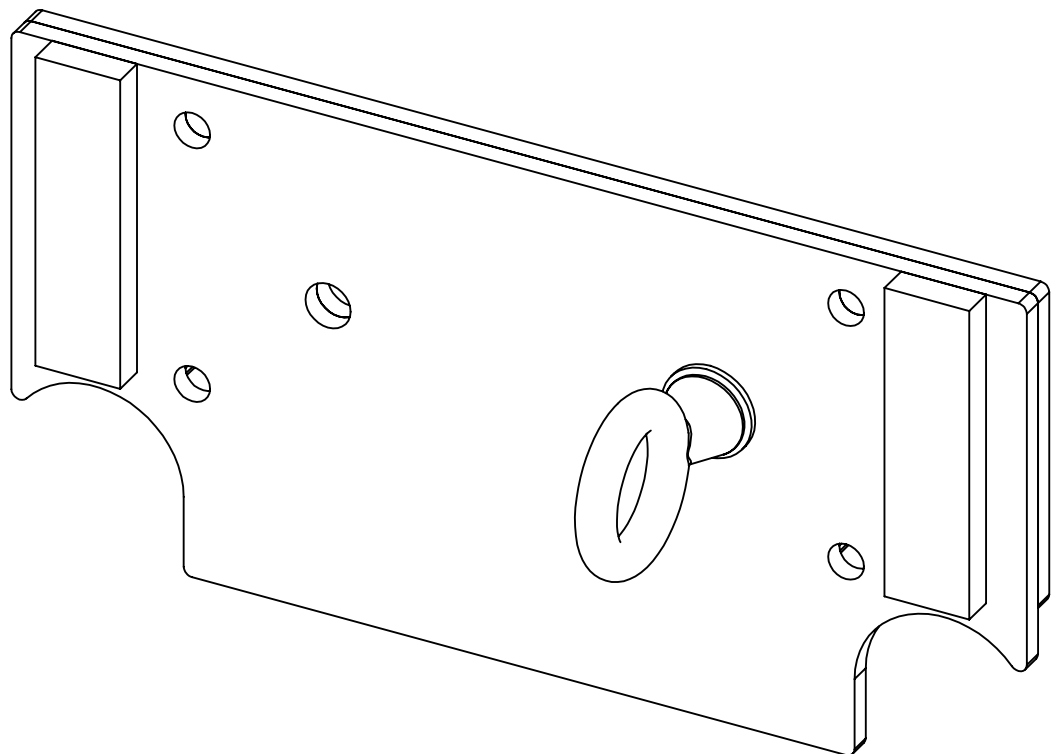
Notes:
1. Tag or label with part number.

Part Number	Color
GE-24207-RED	Red
GE-24207-BLU	Blue

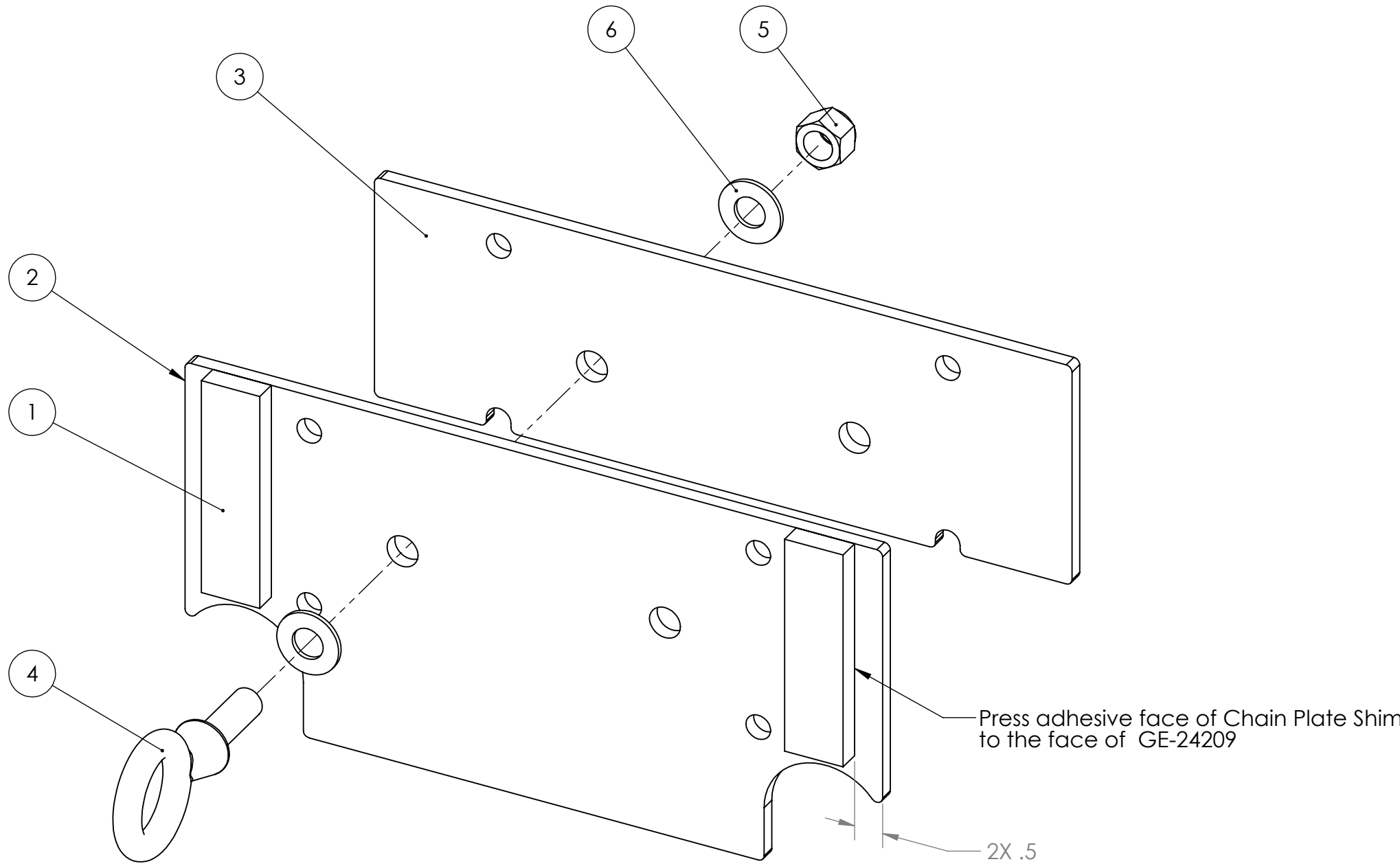
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/4" HDPE, Smooth DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> TITLE: Podium		
	DRAWN	CO	7/20/2023			
	PROPRIETARY AND CONFIDENTIAL 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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				SIZE	DWG. NO.
				C	GE-24207	
				SCALE: 1:2		SHEET 1 OF 1




Left Version

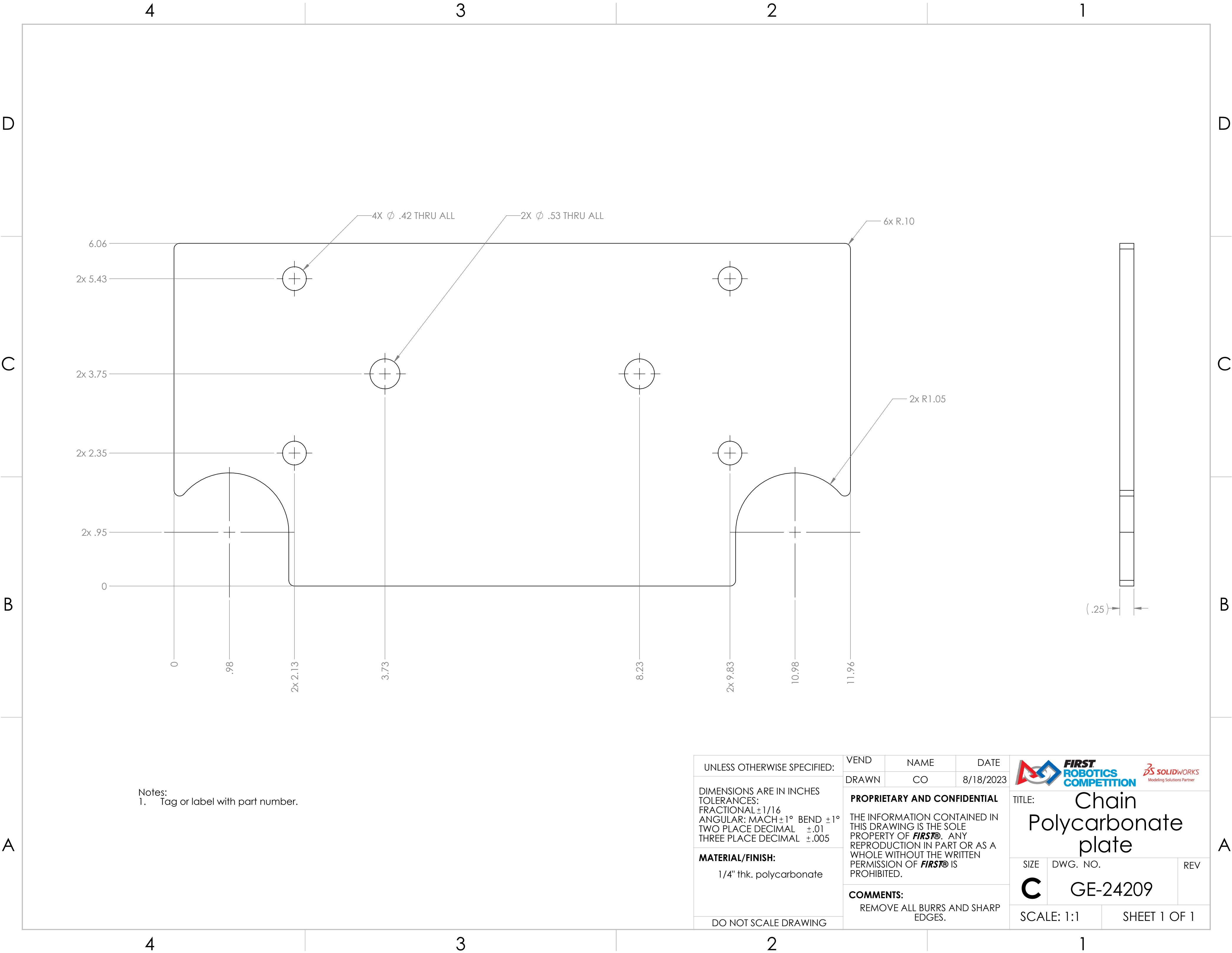


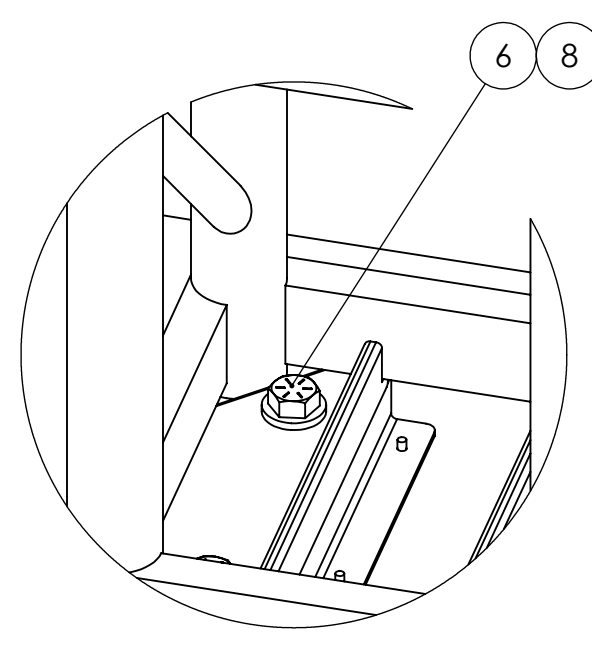
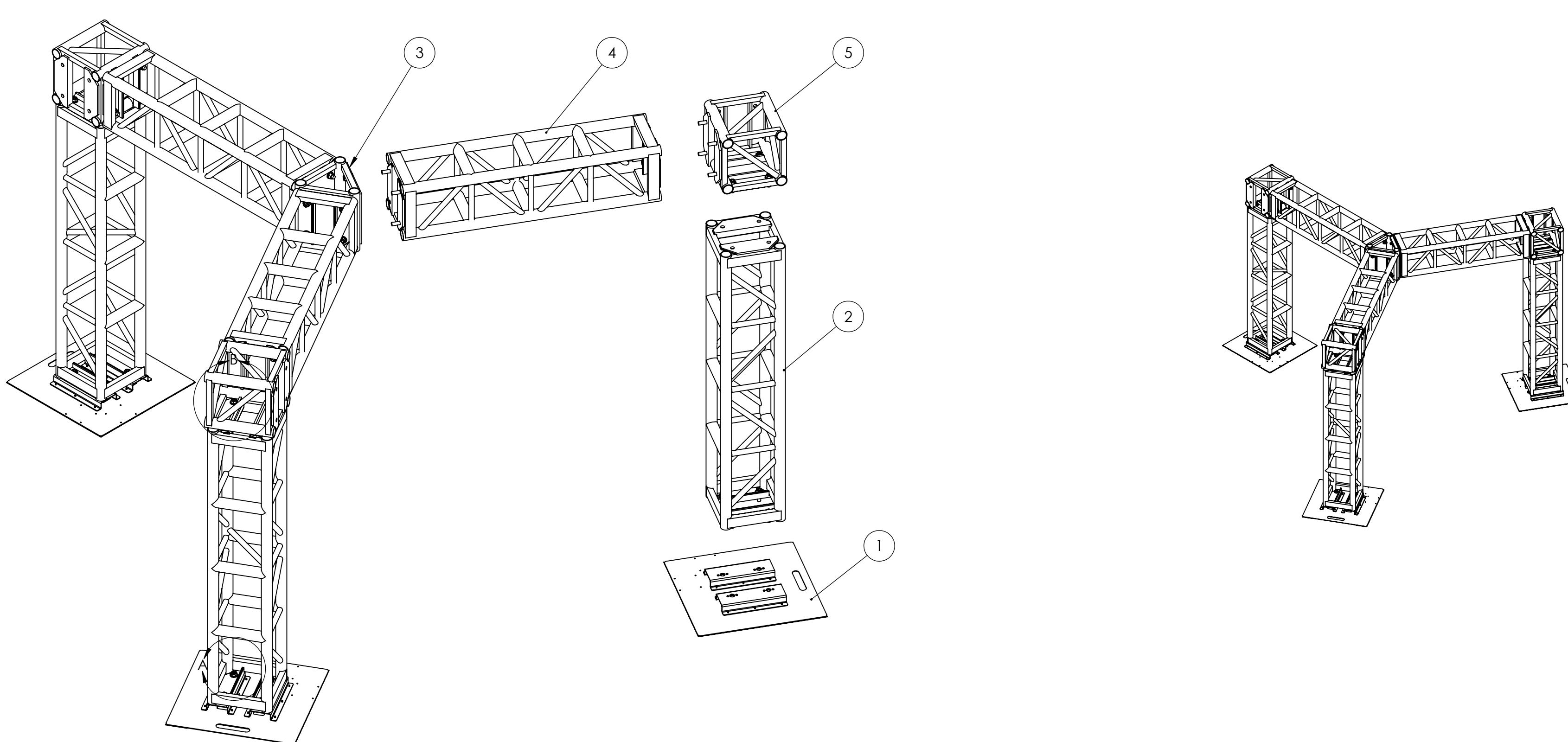
Right Version



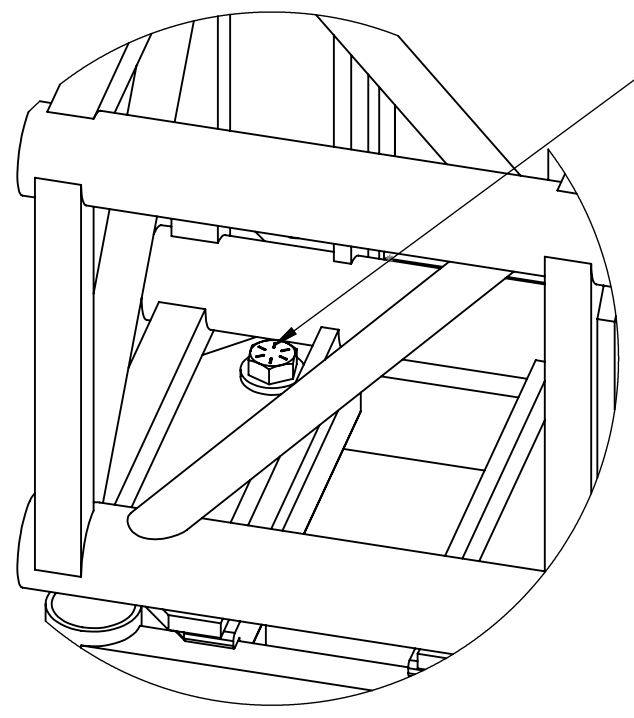
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24206	Chain Plate Shim	2
2	GE-24209	Chain Polycarbonate plate	1
3	GE-24213	Chain Metal plate	1
4	eyebolt_shoulder_.5_13_1.5	Steel Eyebolt with Shoulder, 1/2"-13 x 1.5" long, fully threaded	1
5	nylock_.5_13	Steel nylon-insert locknut, 1/2" - 13	1
6	washer_flat_.5	Flat Washer for 1/2" Screw	2

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	11/27/2023		
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.			TITLE: Chain Plate with Fasteners	
DO NOT SCALE DRAWING		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24208
					REV	
					SCALE: 1:2	
					SHEET 1 OF 1	





DETAIL A
SCALE 1 : 4





DETAIL B
SCALE 1 : 4

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-01021	Truss Base	3
2	FE-01003	5' x 1' x 1' Square Truss	3
3	GE-24211	Triangular Truss Block	1
4	FE-01002	4' x 1' x 1' Square Truss	3
5	FE-01012	3 Way Corner Block	3
6	hex_.625_11_2.00	Hex Head Bolt, 5/8"-11 Thread, 2" length	48
7	hexnut_.625_11	5/8"-11 hex nut	36
8	washer_flat_.625	Flat washer for 5/8" screw	84

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

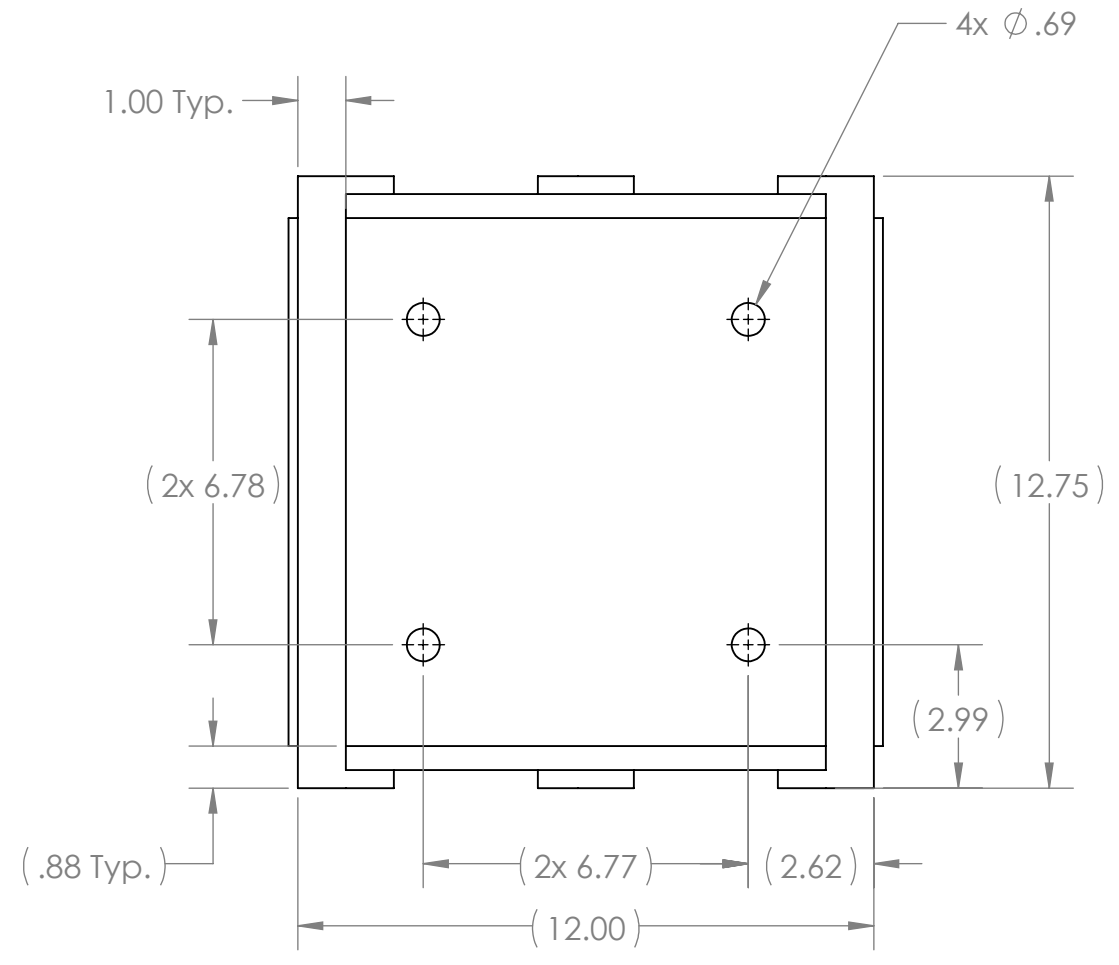
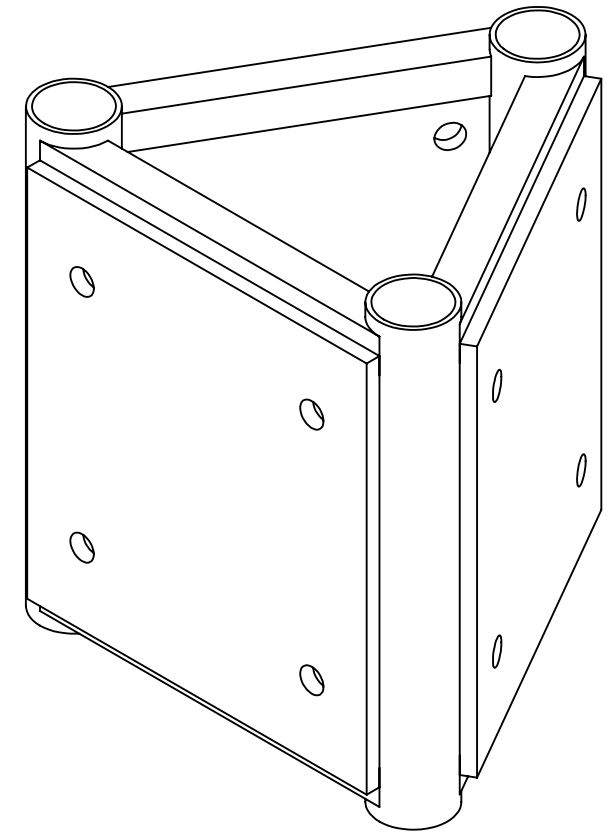
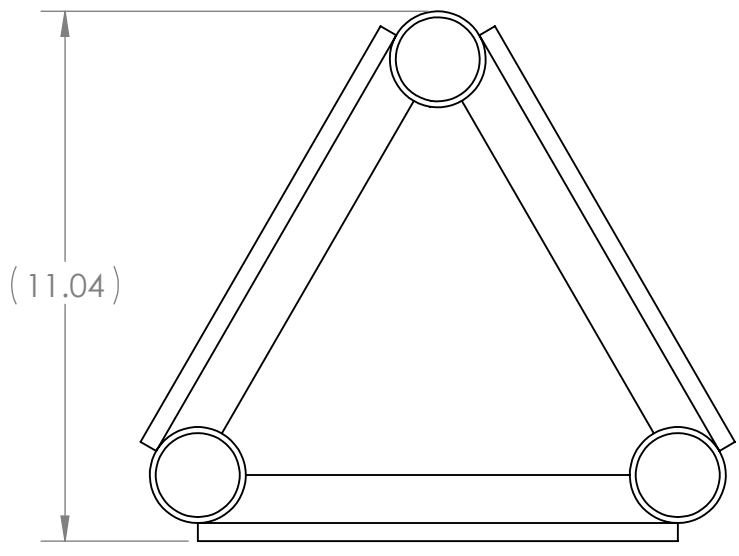
FIELD	NAME	DATE
DRAWN	DF	12/7/2023
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		





TITLE:
Base Truss Assembly

SIZE	DWG. NO.	REV
C	GE-24210	

SCALE: 1:16	SHEET 1 OF 1
-------------	--------------



- Notes:
- 1. Description: 6061-T6 Aluminum - Light Duty 3 Way Spoke Corner Block
 - 2. Vendor: Total Structures
 - 3. Part Number: 1212LD 3WAY SPOKE
 - 4. Note: Substitutions not allowed

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ± .01 THREE PLACE DECIMAL ± .005 MATERIAL/FINISH: DO NOT SCALE DRAWING	VEND	NAME	DATE	<div><div></div><div>TITLE: Triangular Truss Block</div></div>		
	DRAWN	CO	7/20/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				SIZE	DWG. NO.
				C	GE-24211	
				SCALE: 1:4		SHEET 1 OF 1

4

3

2

1

D

D

C

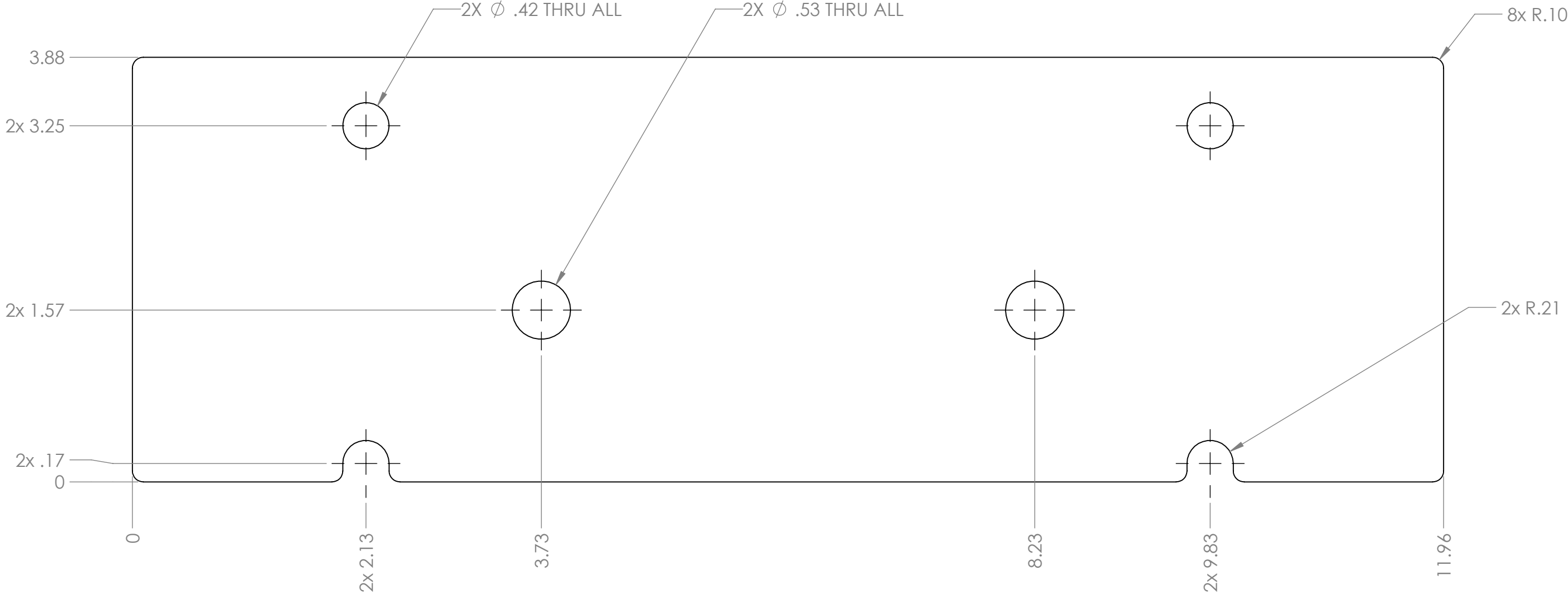
C

B



B

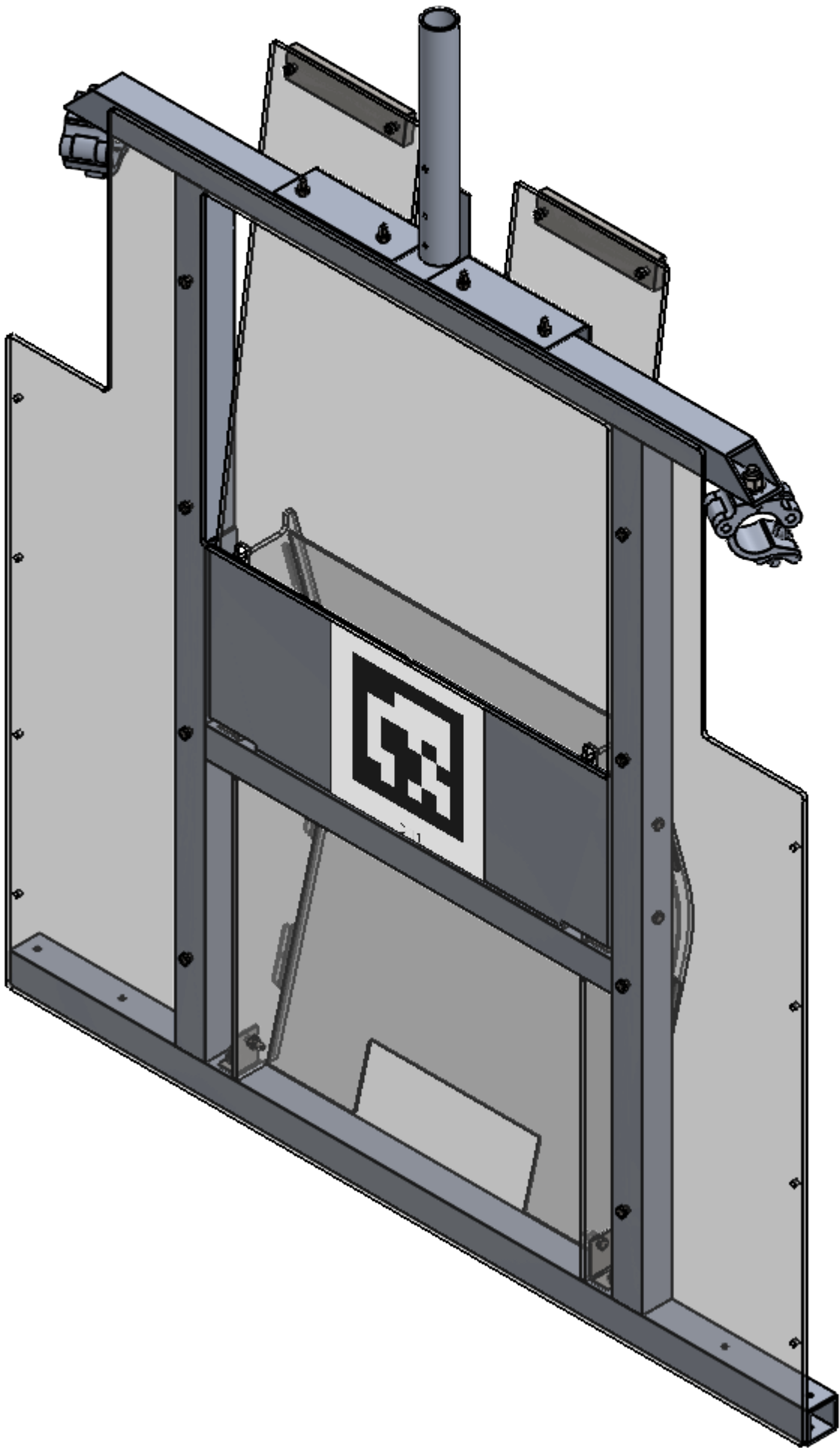
A

A





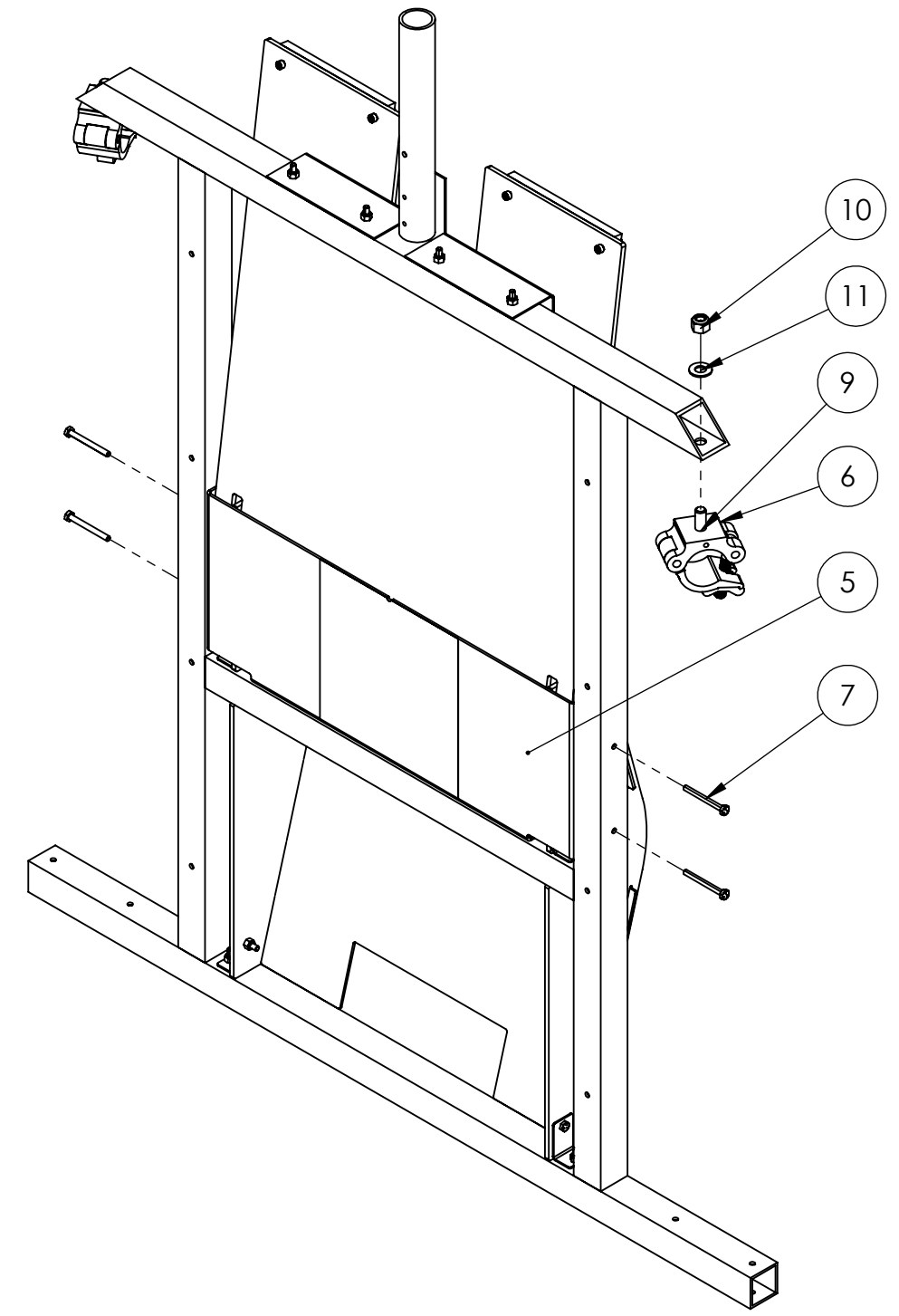
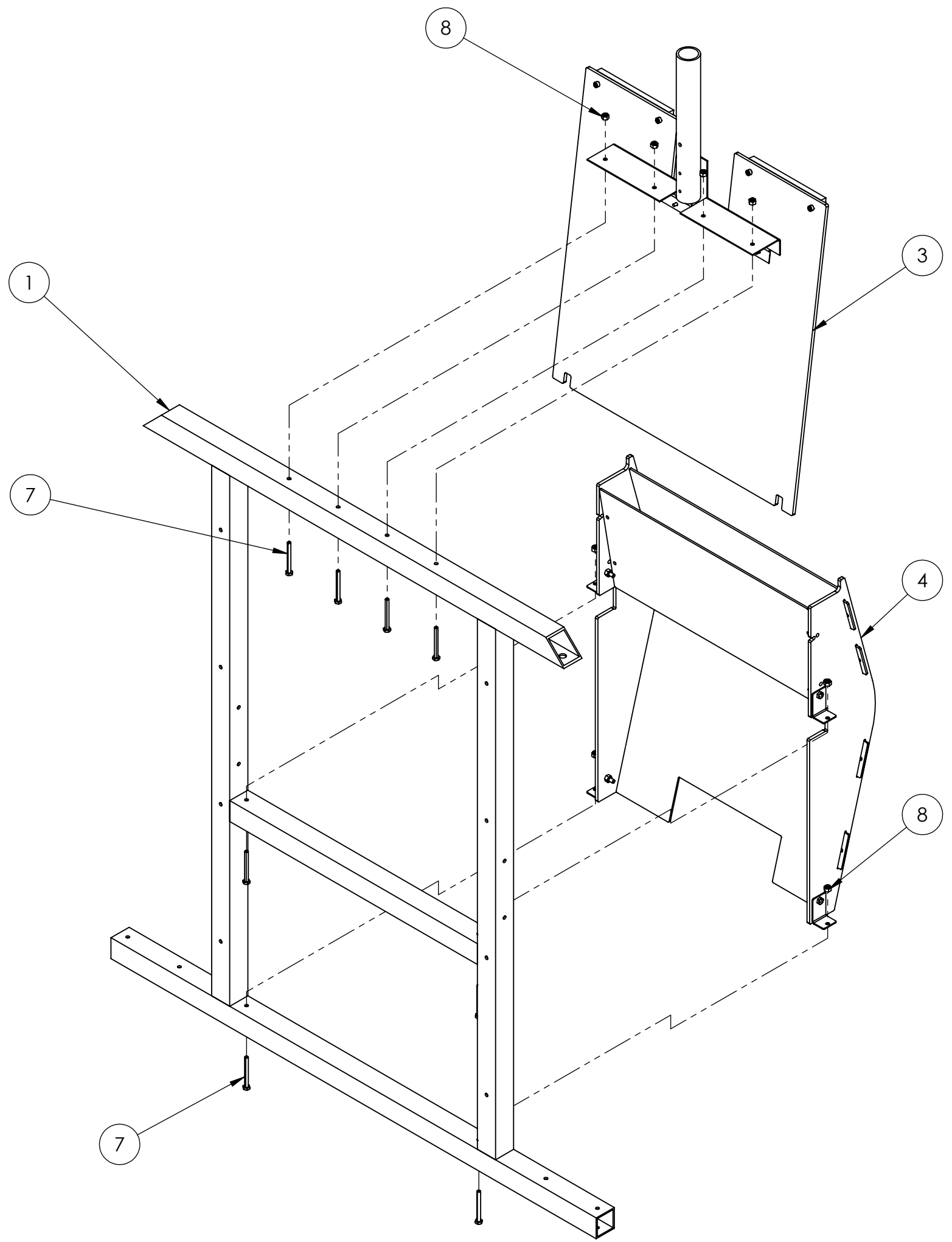
Notes:
1. Tag or label with part number.
2. Finish: Zinc plated.



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/4" thk. A36 Steel DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Chain Metal plate</div>	
	DRAWN	CO	9/14/2023		
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.
			C	GE-24213	
			SCALE: 1:1		SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24221	Endgame Weldment	1
2	GE-24222	Wall poly	1
3	GE-24230	Flap/Pole Assembly	1
4	GE-24240	Chute	1
5	GE-24224	Stage AprilTag	1
6	FE-01016	Cheeseborough for Truss _ Single	2
7	hex_.25_20_2.5_partial	Steel Hex Head Screw, 1/4"-20 x 2-1/2" long, partially threaded	20
8	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	16
9	hex_.5_13_1.25	Steel Hex Head Screw, 1/2"-13 x 1.25" long, fully threaded	2
10	nylock_.5_13	steel nylon-insert locknut, 1/2" - 13	2
11	washer_flat_.5	Flat Washer for 1/2" Screw	2

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	 	
		DRAWN	DF	12/4/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.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.			TITLE: <div>Wall Assembly</div>	
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE <div>C</div> DWG. NO. <div>GE-24220</div> REV	
DO NOT SCALE DRAWING					SCALE: 1:8 SHEET 1 OF 3	



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ± .50	DRAWN	DF	12/4/2023	TITLE: <div>Wall Assembly</div>	
	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:			SIZE	DWG. NO.
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24220
DO NOT SCALE DRAWING				SCALE: 1:8	SHEET 2 OF 3

4

3

2

1

D

D

C

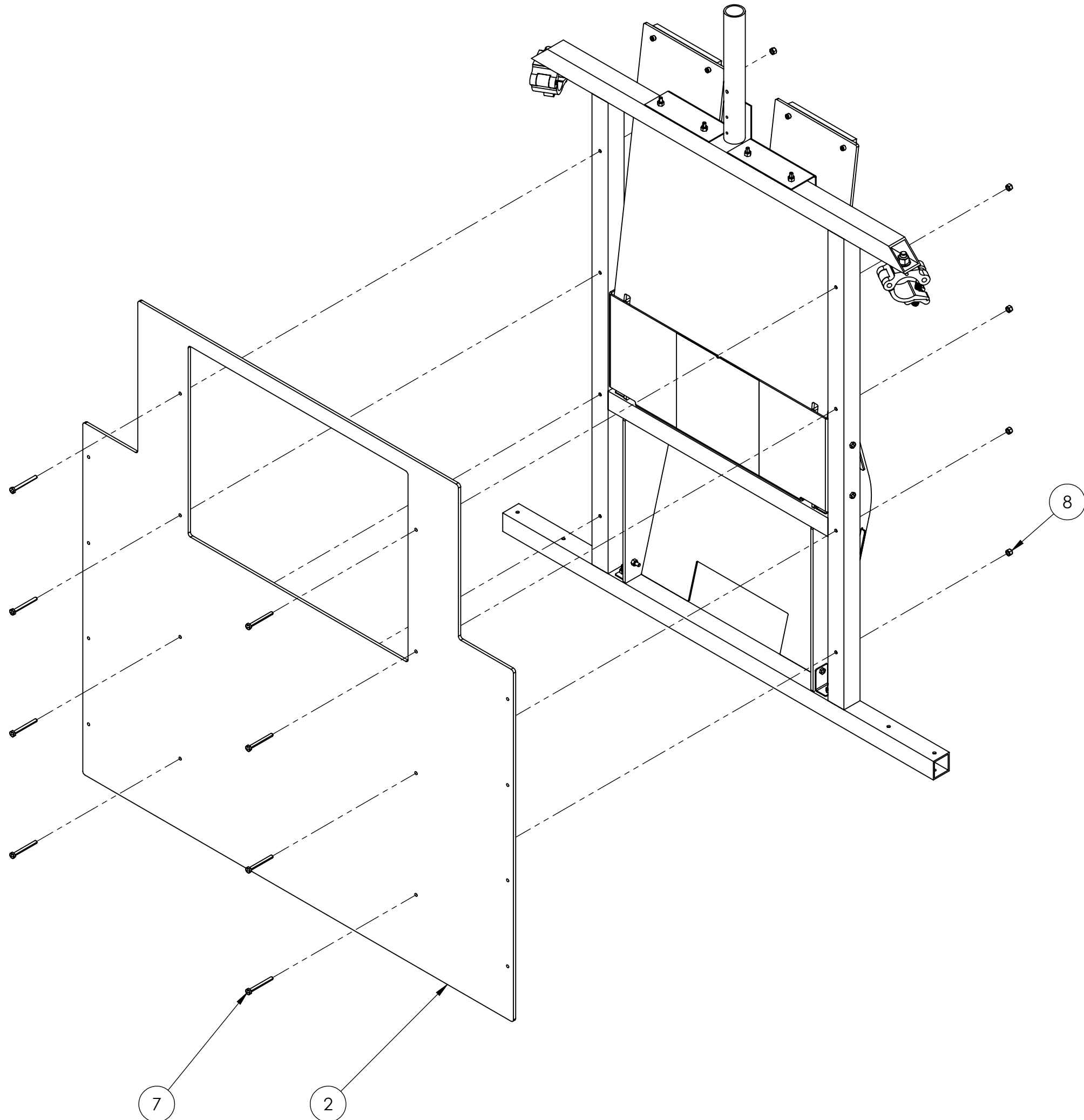
C



B

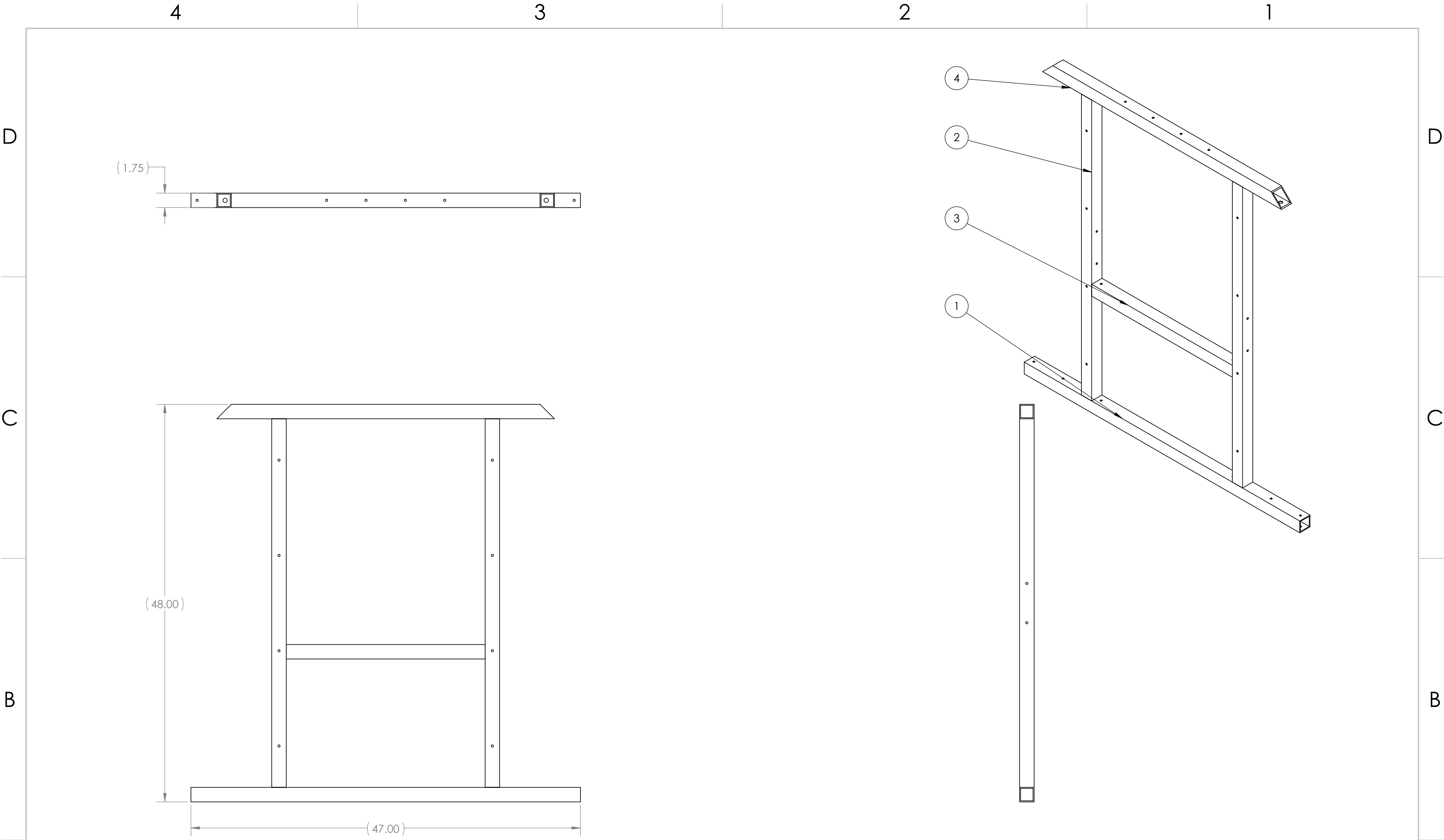
B

A

A





UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	 		
	DRAWN	DF	12/4/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.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.			TITLE: Wall Assembly		
MATERIAL/FINISH:	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	GE-24220	
				SCALE: 1:8		SHEET 3 OF 3
DO NOT SCALE DRAWING						



Notes:
1. Tag or label with part number.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24221-01	1.75" x .125" thk. Square Tubing, 6061	1
2	GE-24221-02	1.75" x .125" thk. Square Tubing, 6061	2
3	GE-24221-03	1.75" x .125" thk. Square Tubing, 6061	1
4	GE-24221-04	1.75" x .125" thk. Square Tubing, 6061	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 $\pm .02$ THREE PLACE DECIMAL $\pm .015$ MATERIAL/FINISH: 1.75" x .125" thk. Square Tubing, 6061 Aluminum	WELD	NAME	DATE
	DRAWN	CO	7/24/2023
	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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
	DO NOT SCALE DRAWING		



TITLE:
Endgame Weldment

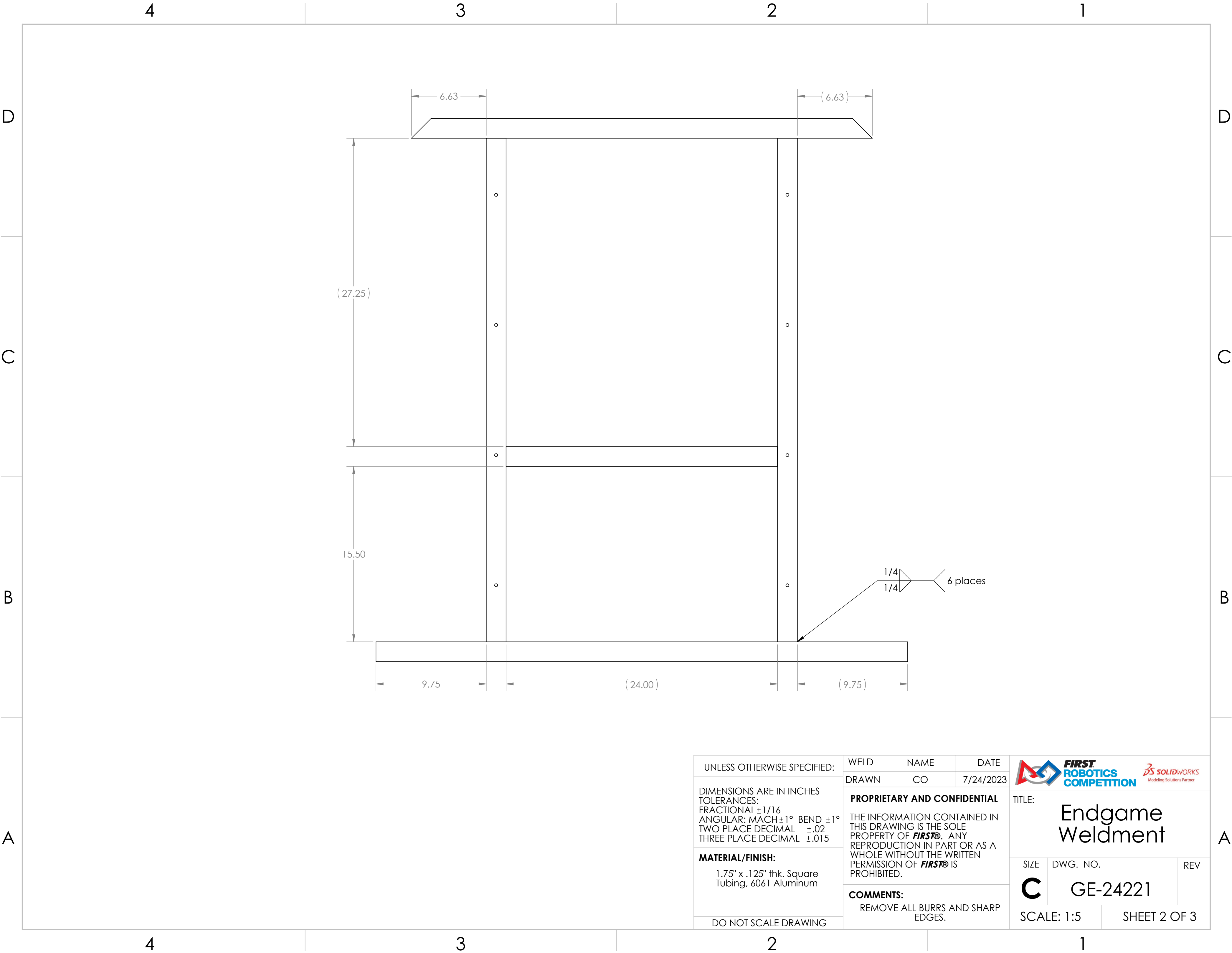
SIZE
C

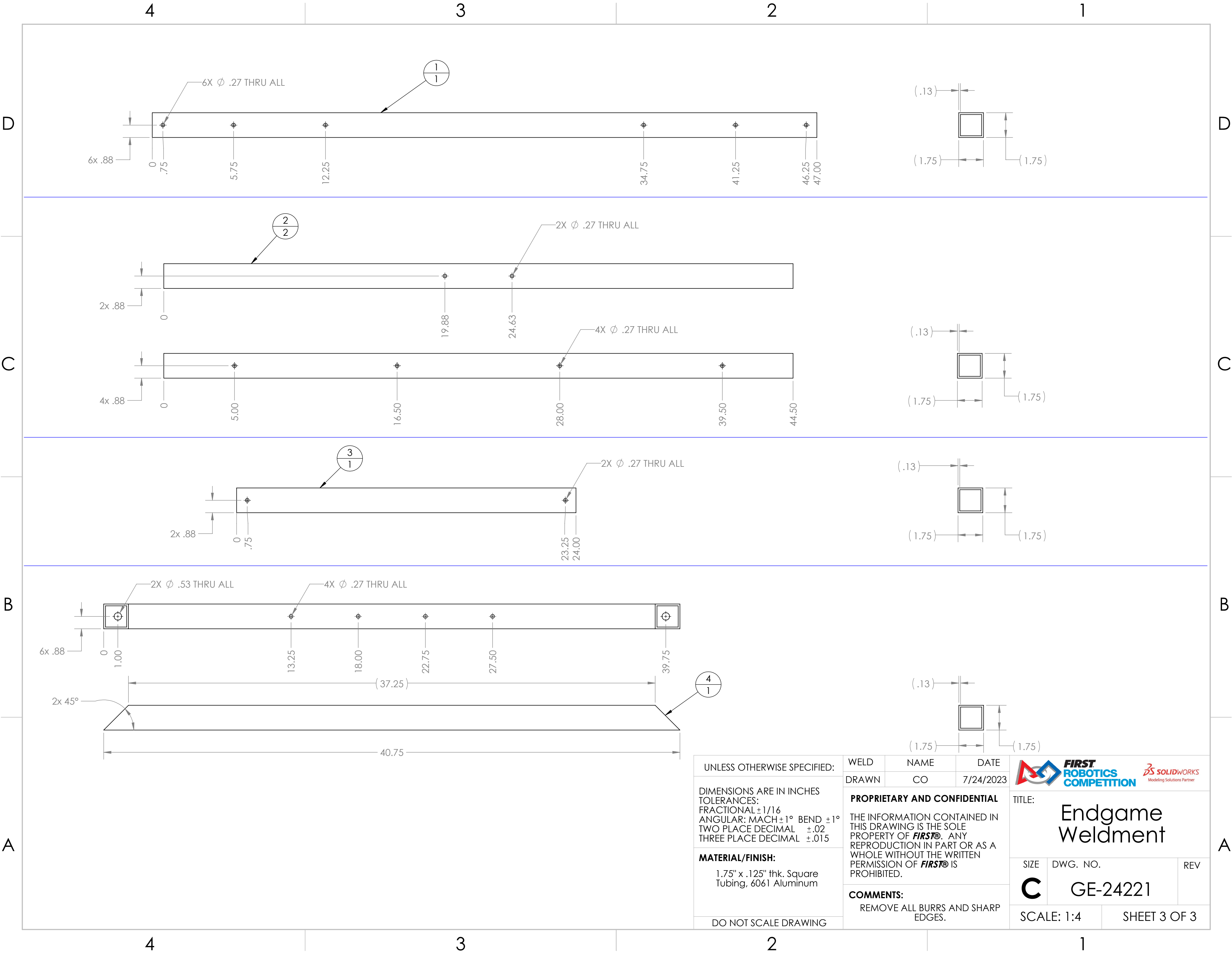
DWG. NO.
GE-24221

REV

SCALE: 1:8

SHEET 1 OF 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 $\pm .02$
THREE PLACE DECIMAL $\pm .015$


MATERIAL/FINISH:
1.75" x .125" thk. Square
Tubing, 6061 Aluminum

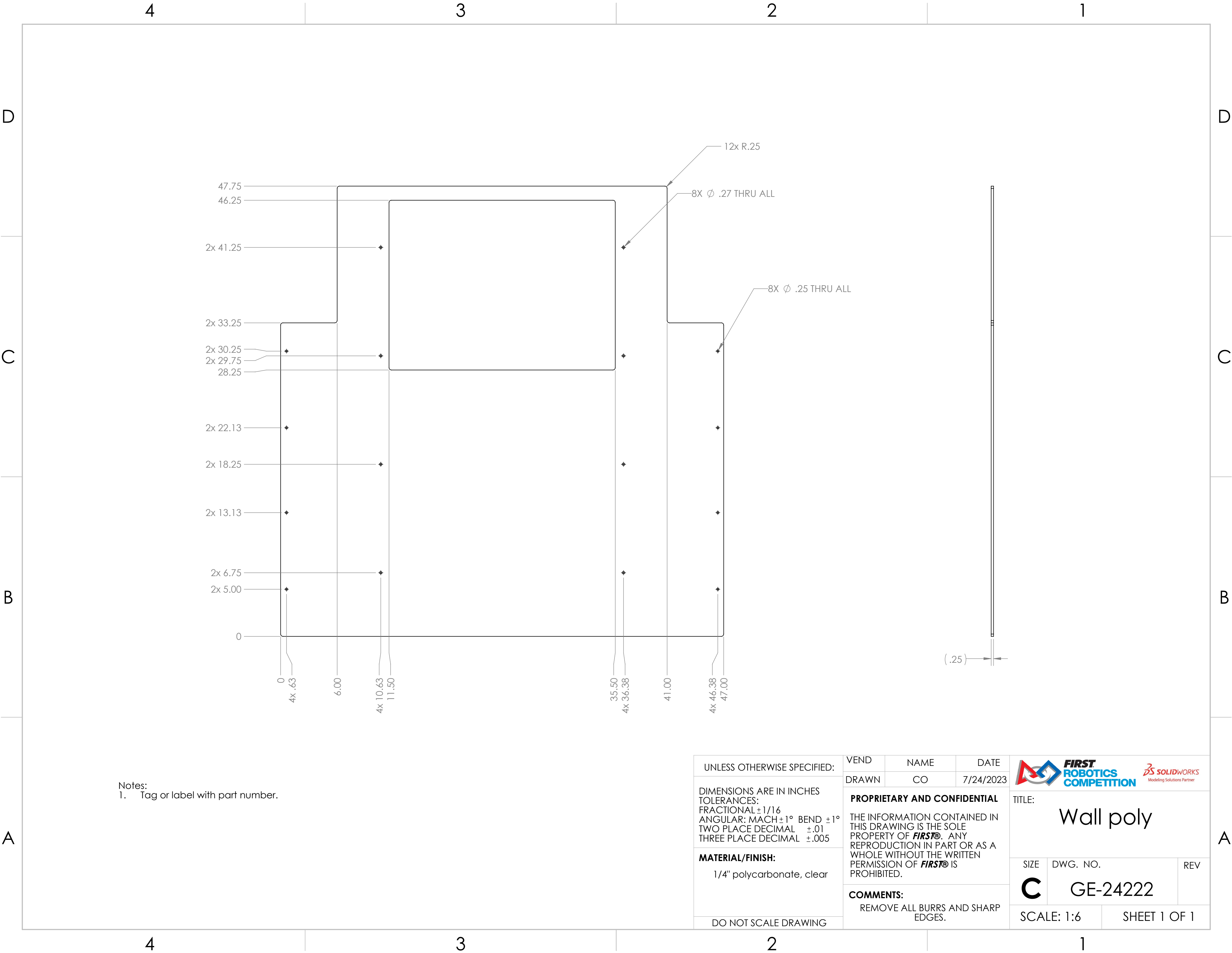
DO NOT SCALE DRAWING

WELD	NAME	DATE
DRAWN	CO	7/24/2023



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.

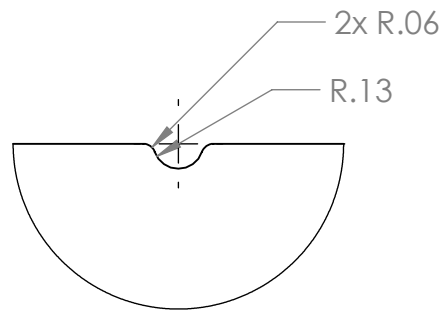
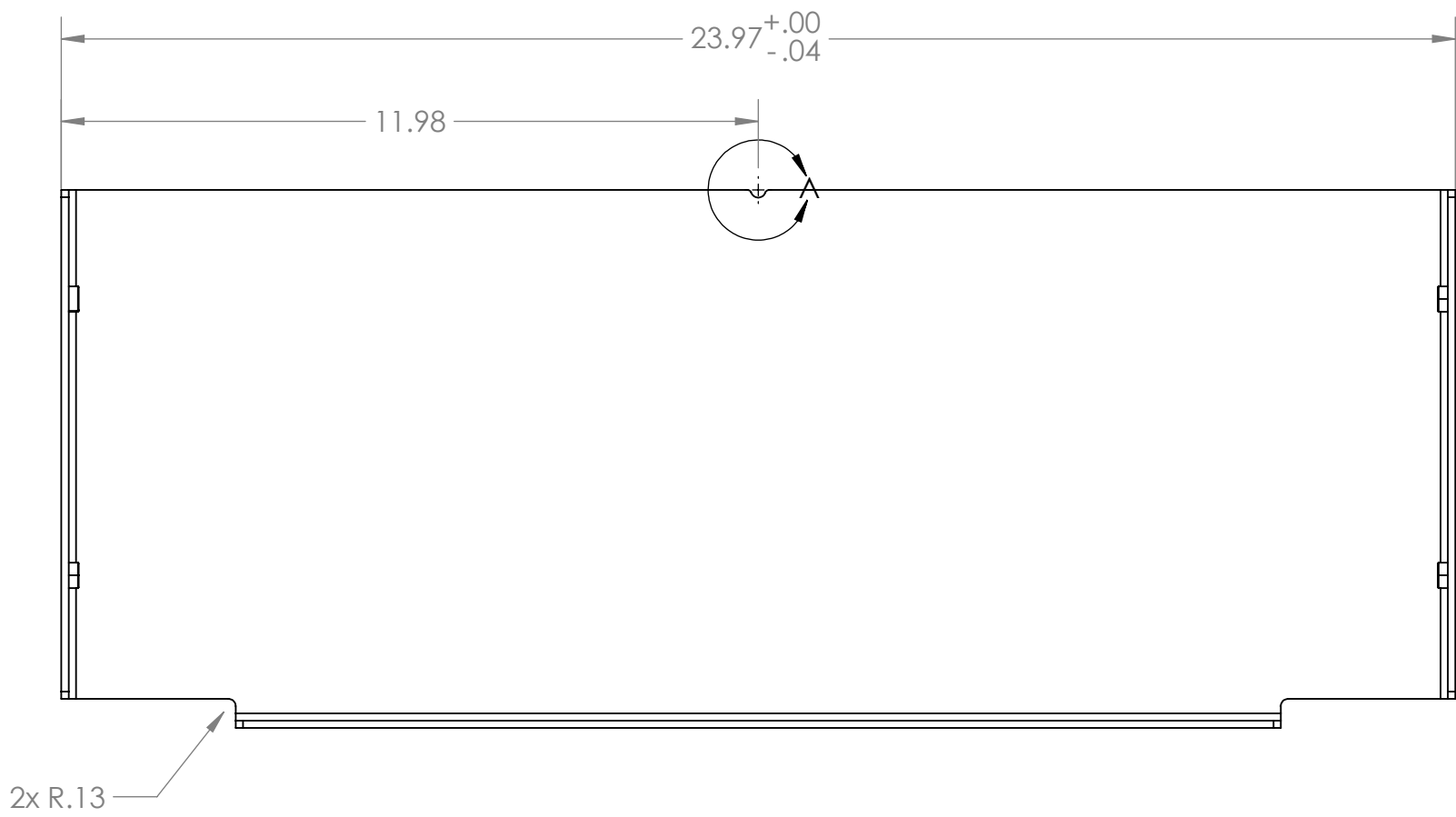
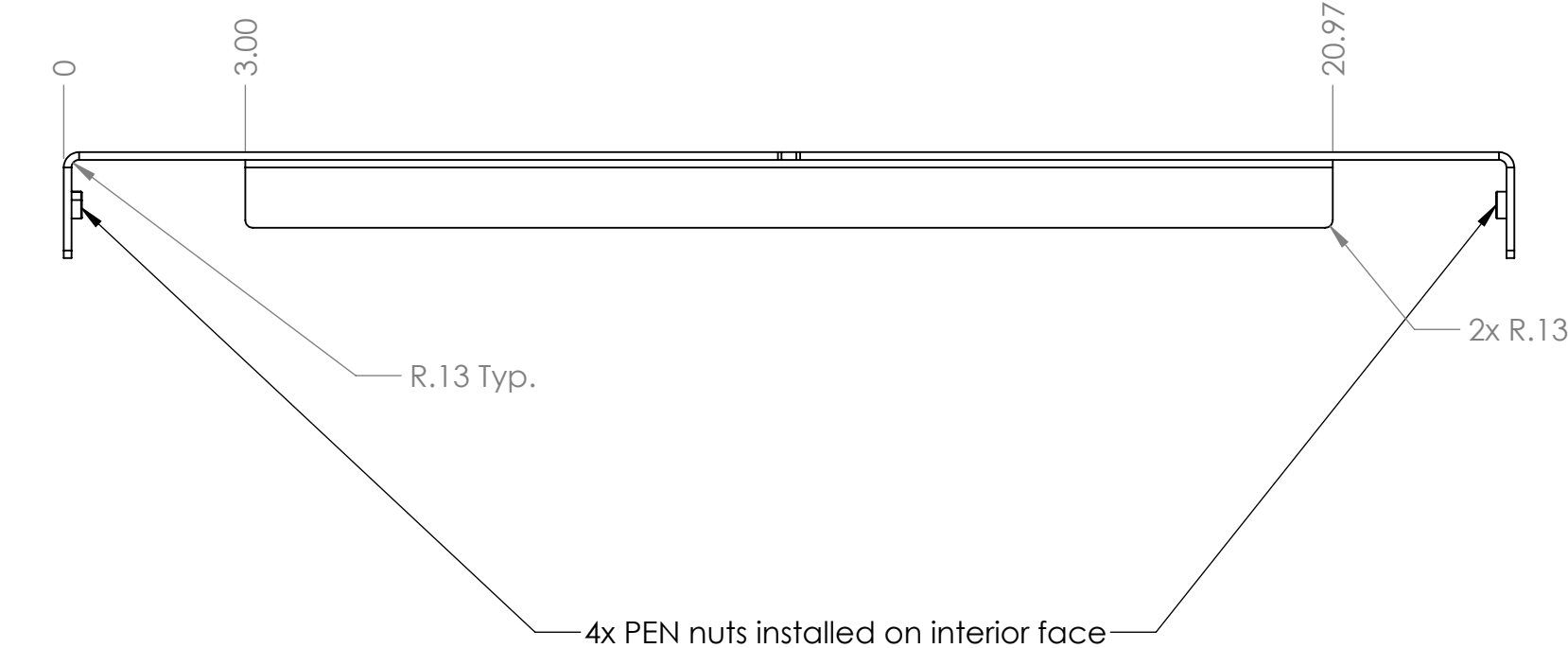
COMMENTS:
REMOVE ALL BURRS AND SHARP
EDGES.

		
TITLE: Endgame Weldment		
SIZE C	DWG. NO. GE-24221	REV
SCALE: 1:4		SHEET 3 OF 3



Notes:
1. Tag or label with part number.

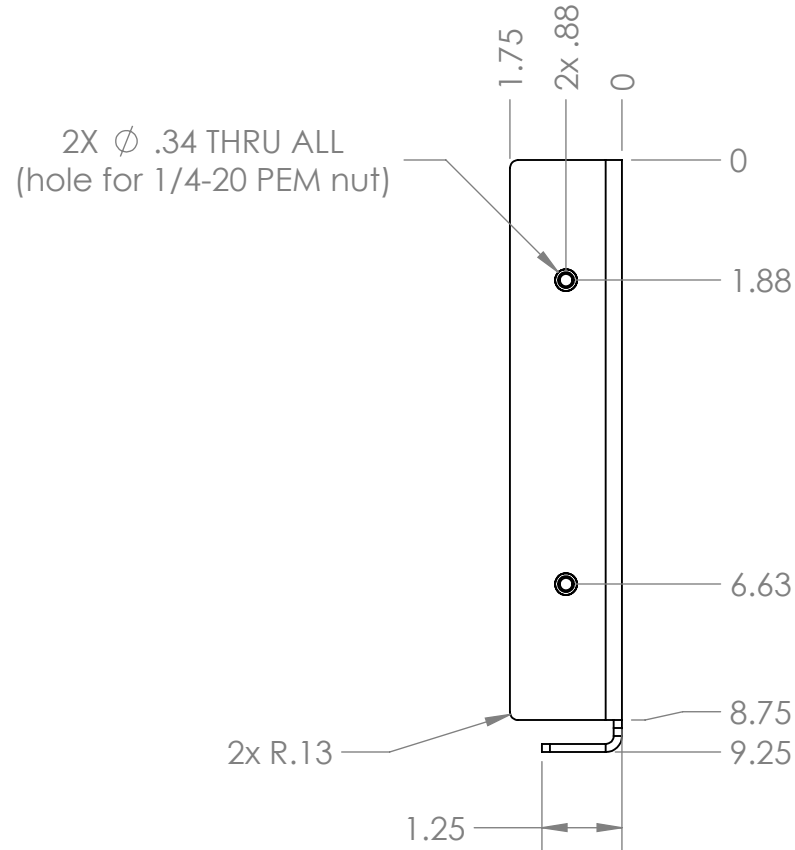
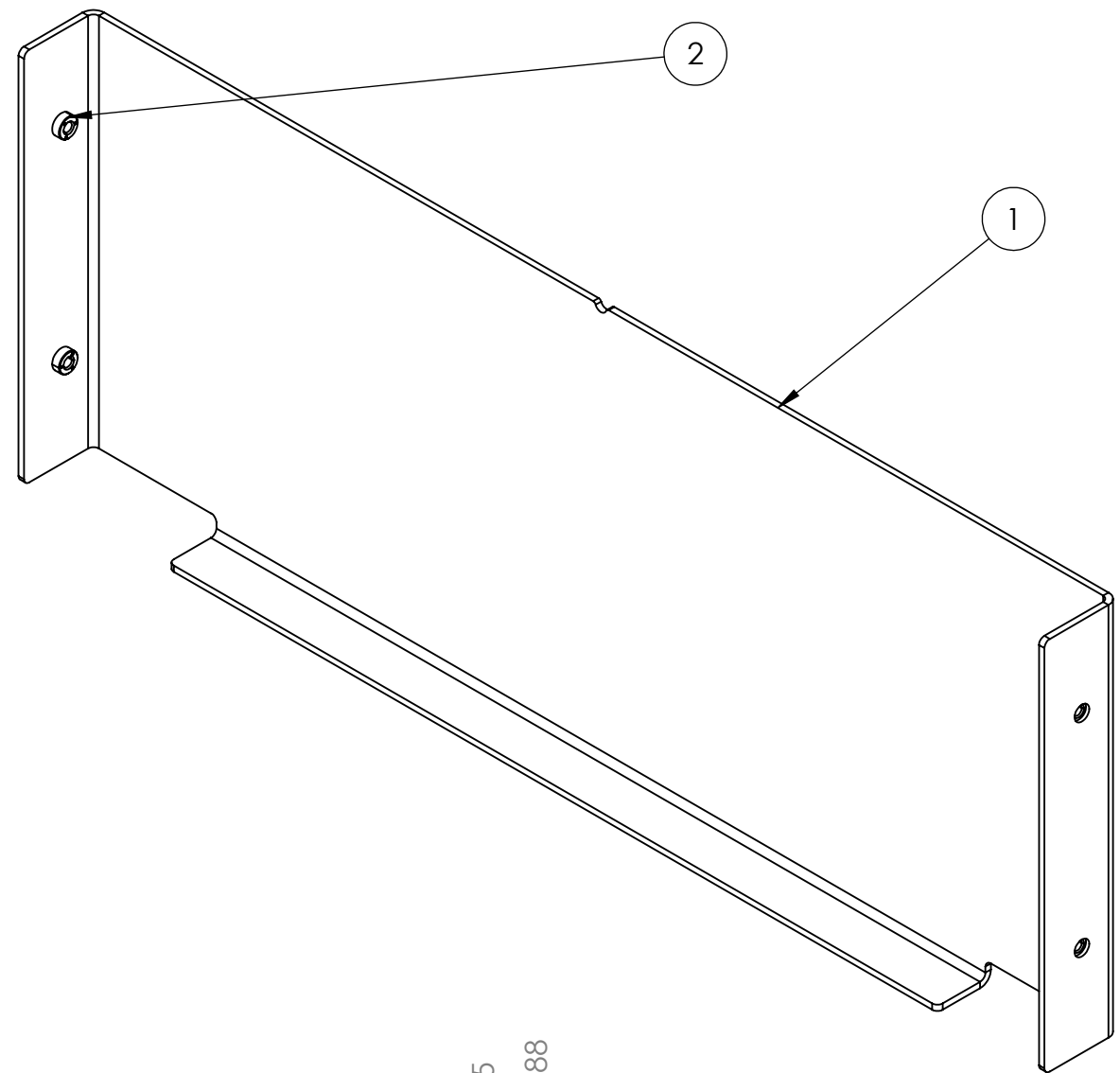
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div> <div>TITLE: <h1>Wall poly</h1></div>		
	DRAWN	CO	7/24/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED 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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24222	
				SCALE: 1:6		SHEET 1 OF 1
MATERIAL/FINISH: 1/4" polycarbonate, clear						
DO NOT SCALE DRAWING						





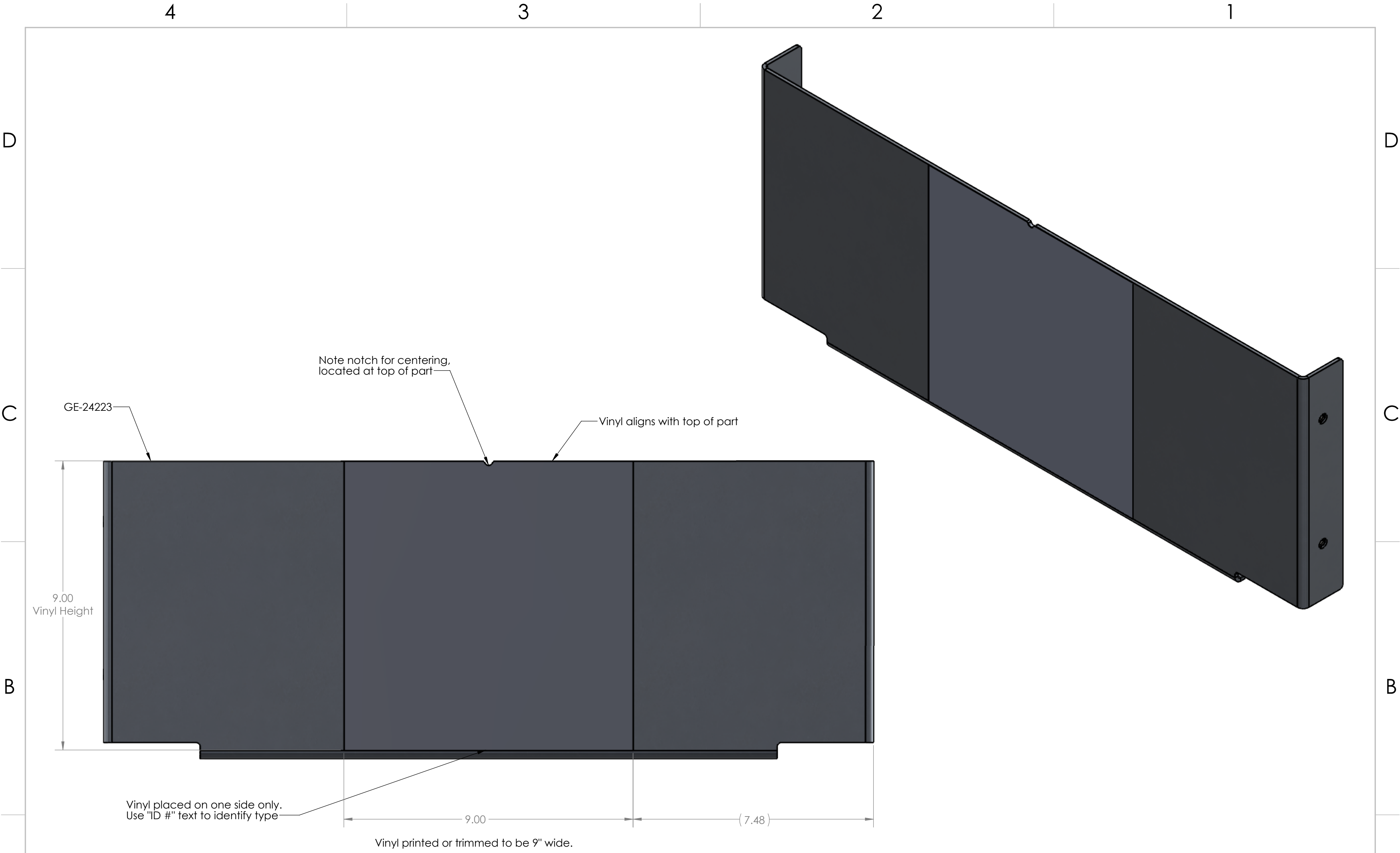
DETAIL A
SCALE 1 : 1

Notes:
1. Vinyl to be applied to face.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24223-01	8 Ga. Aluminum 5052	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	4





UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div><div>FIRST ROBOTICS COMPETITION</div><div><div>SOLIDWORKS Modeling Solutions Partner</div></div></div>		
	DRAWN	CO	7/24/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	PROPRIETARY AND CONFIDENTIAL			TITLE: <div>Endgame April Base</div>		
	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. Aluminum 5052	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24223
DO NOT SCALE DRAWING				SCALE: 1:3		SHEET 1 OF 1

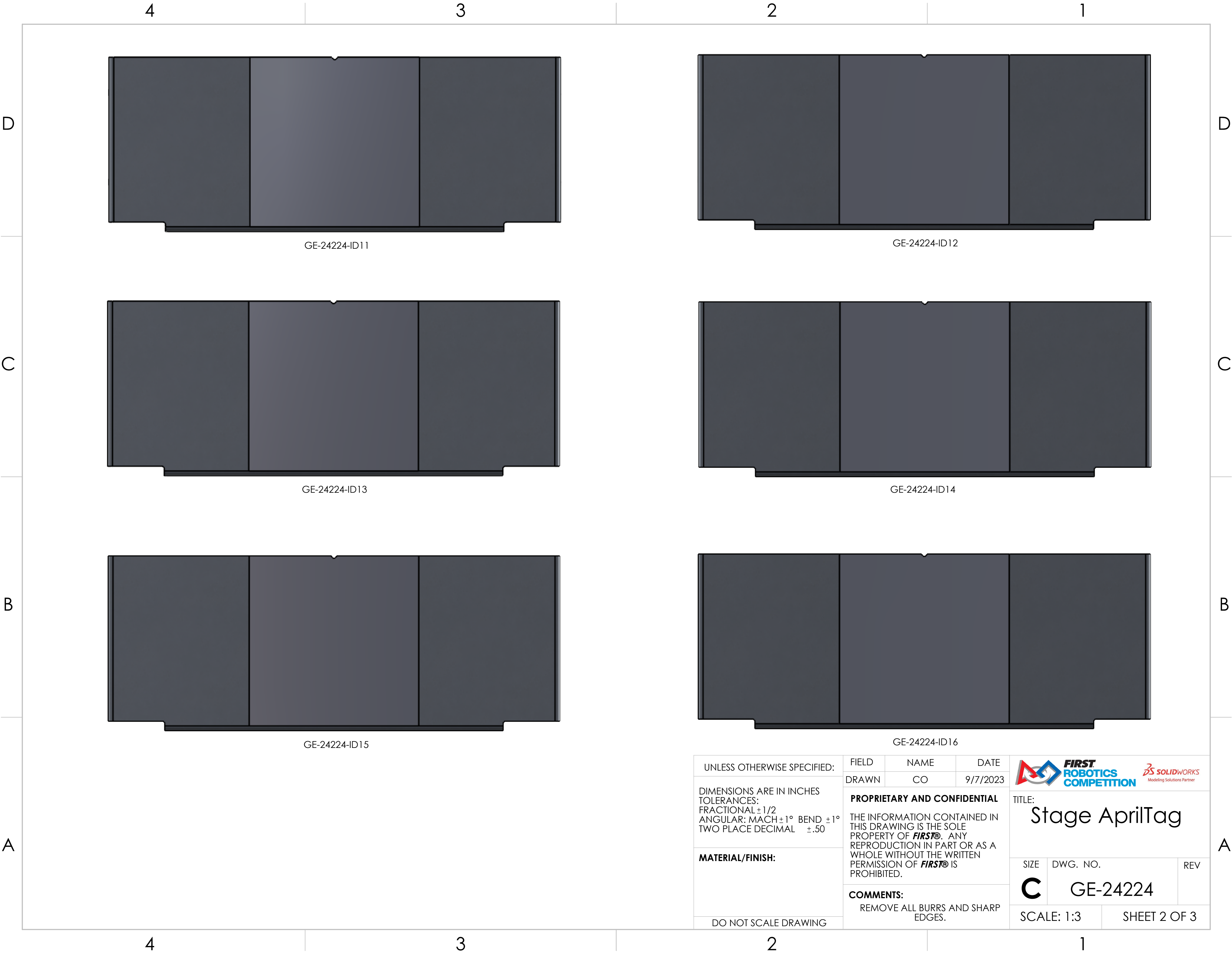




Notes:
1. Matte vinyl

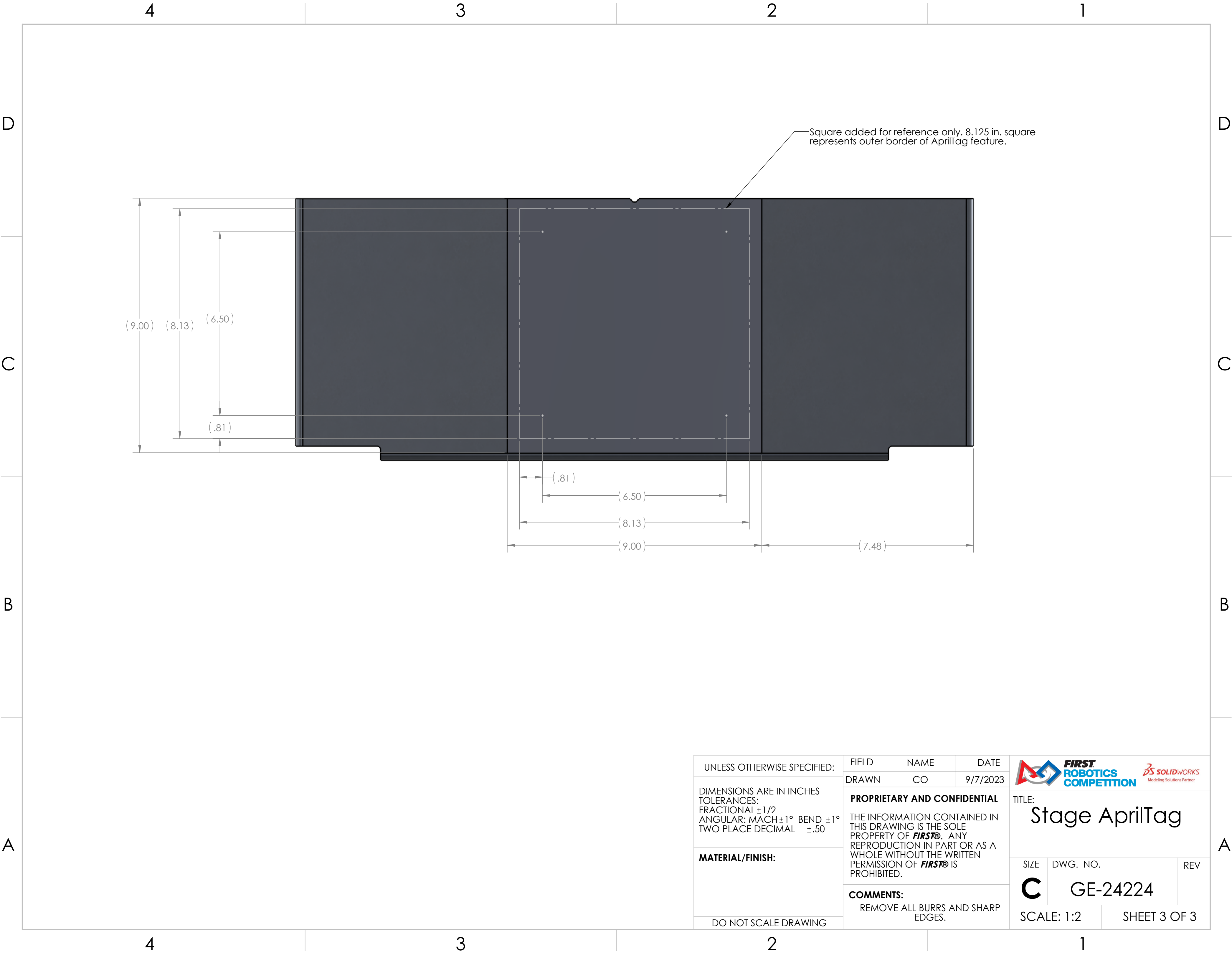
Tag Variations			
Part Number	Vinyl Image	Vinyl QTY per field	Part QTY per field
GE-24224-ID11	GE-24224-ID11-Vinyl	1	1
GE-24224-ID12	GE-24224-ID12-Vinyl	1	1
GE-24224-ID13	GE-24224-ID13-Vinyl	1	1
GE-24224-ID14	GE-24224-ID14-Vinyl	1	1
GE-24224-ID15	GE-24224-ID15-Vinyl	1	1
GE-24224-ID16	GE-24224-ID16-Vinyl	1	1



UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	 	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50		DRAWN	CO	9/7/2023	TITLE: Stage AprilTag	
		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:			SIZE	
DO NOT SCALE DRAWING		REMOVE ALL BURRS AND SHARP EDGES.			DWG. NO.	
					REV	
					C	GE-24224
					SCALE: 1:2	
					SHEET 1 OF 3	

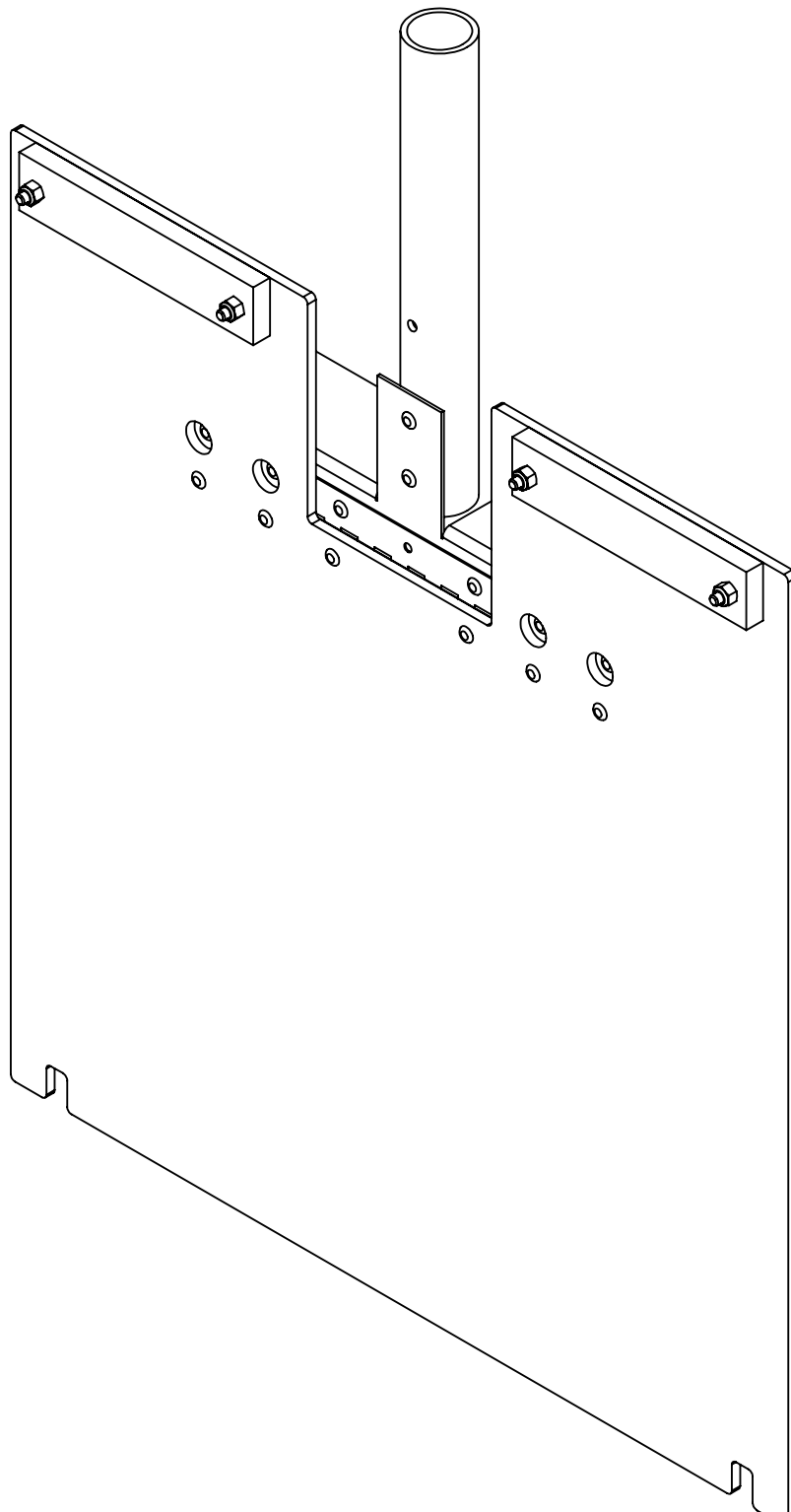
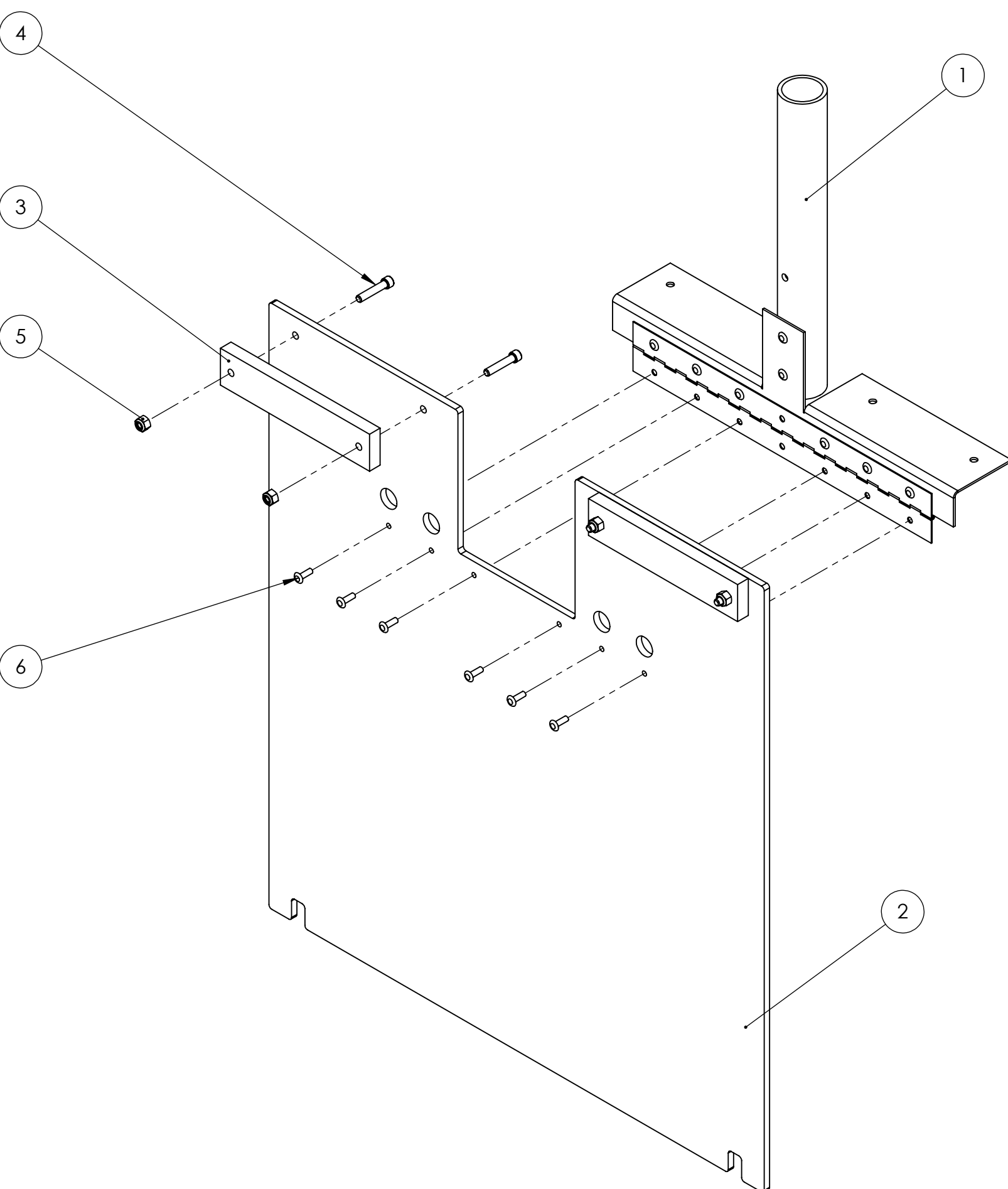




UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div> <div>TITLE: Stage AprilTag</div>		
	DRAWN	CO	9/7/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$	PROPRIETARY AND CONFIDENTIAL			SIZE C		
	THE INFORMATION 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:			DWG. NO.		REV
DO NOT SCALE DRAWING	REMOVE ALL BURRS AND SHARP EDGES.			GE-24224		
				SCALE: 1:3		SHEET 2 OF 3



UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	<div><div></div><div>TITLE: Stage AprilTag</div></div>		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50		DRAWN	CO	9/7/2023			
MATERIAL/FINISH:		PROPRIETARY AND CONFIDENTIAL			SIZE C		
		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:			DWG. NO.		REV
		REMOVE ALL BURRS AND SHARP EDGES.			GE-24224		
					SCALE: 1:2		SHEET 3 OF 3



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24231	Flap Hinge Microphone Subassembly	1
2	GE-24232	Flap	1
3	GE-24233	Flap Weight	2
4	socket_hex_.25_20_1.25	Socket Head Screw, 1/4-20 x 1.25" long, fully threaded	4
5	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	4
6	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	6

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

DF


11/27/2023


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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

 **FIRST**
ROBOTICS
COMPETITION

 **SOLIDWORKS**
Modeling Solutions Partner

TITLE:

Flap/Pole Assembly

SIZE

DWG. NO.

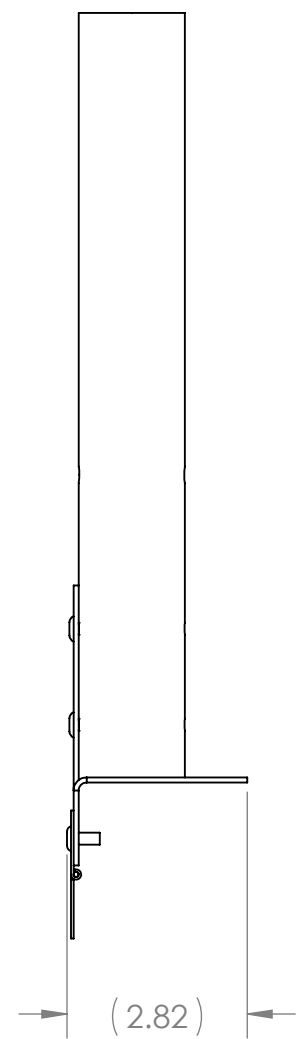
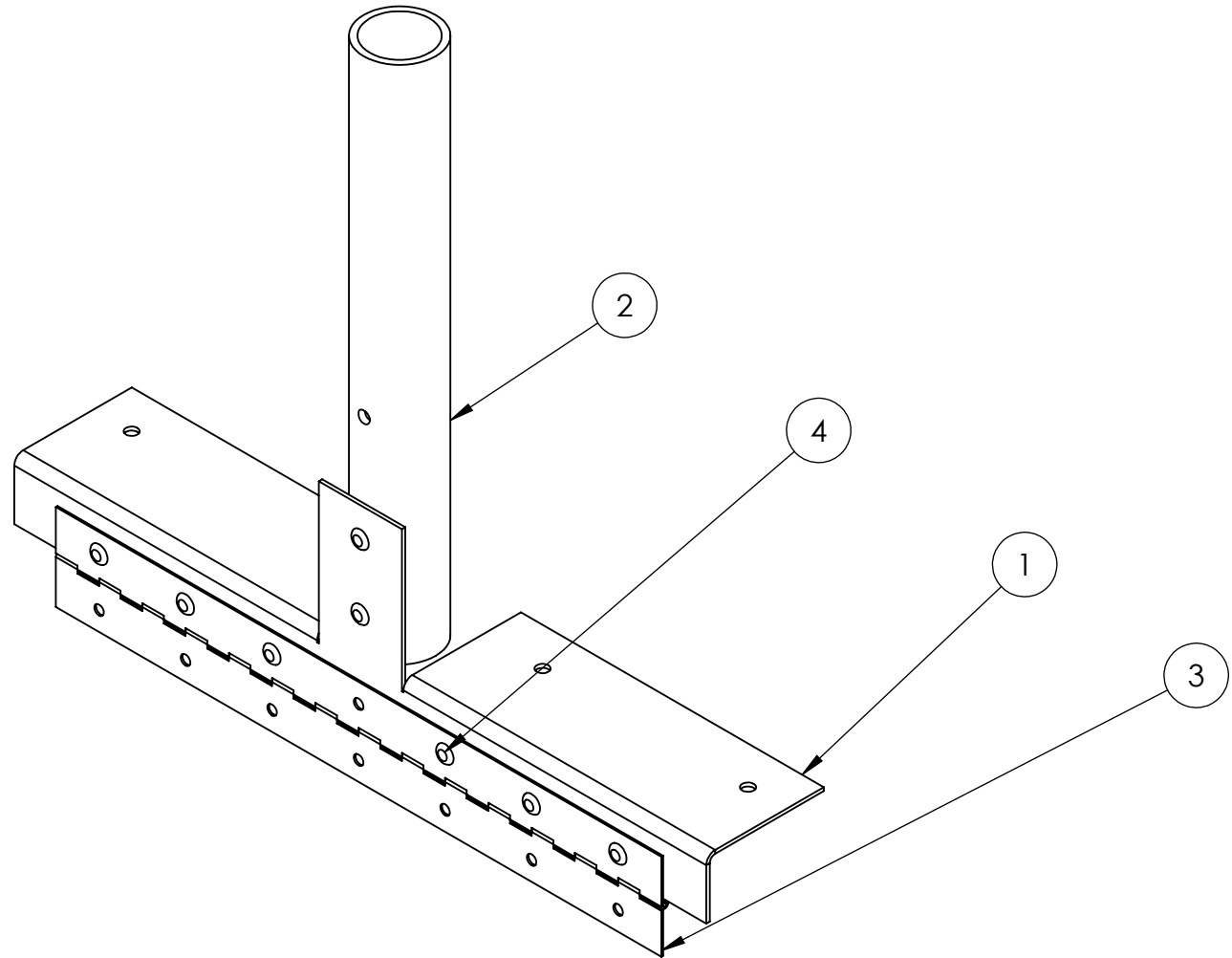
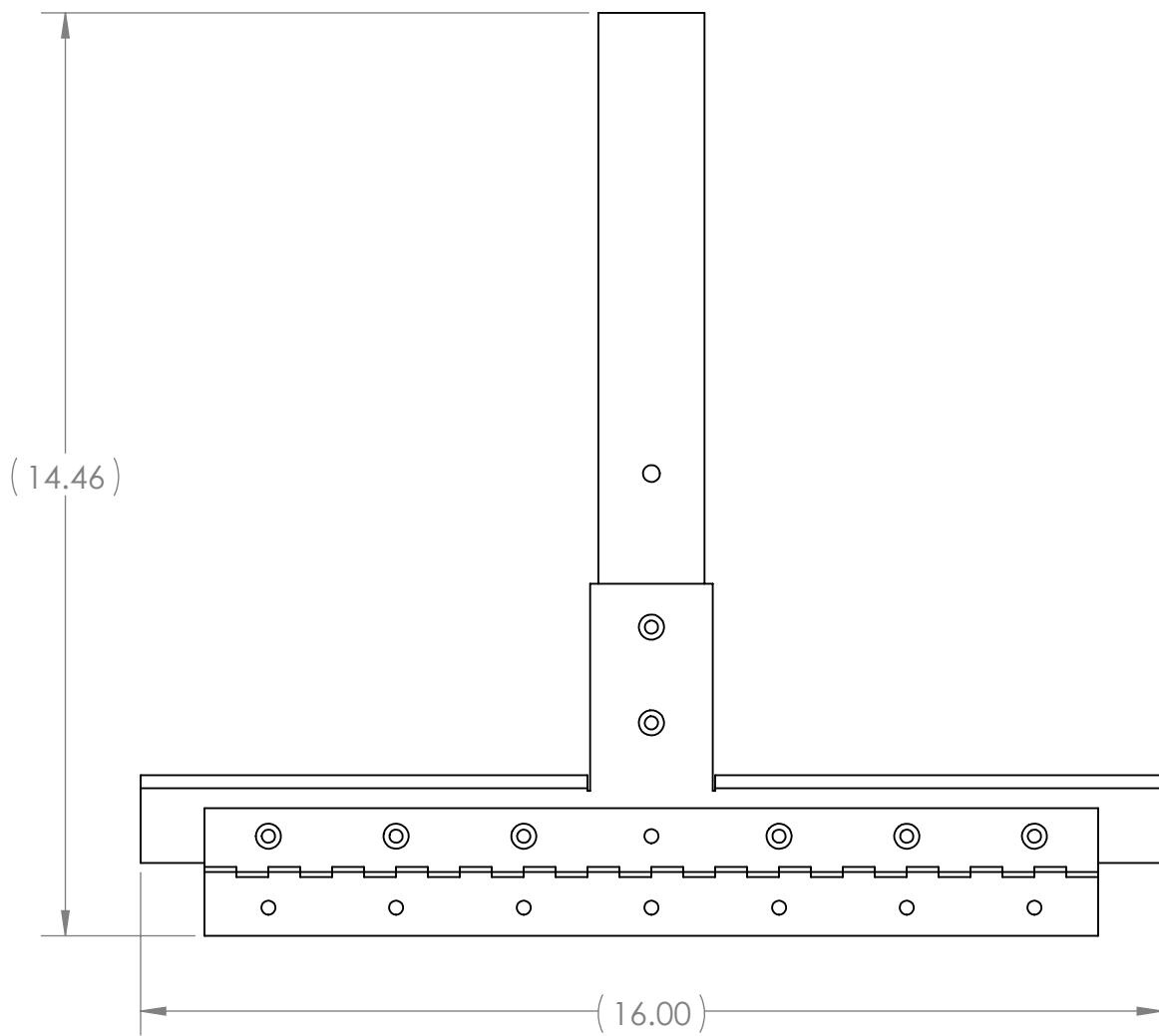
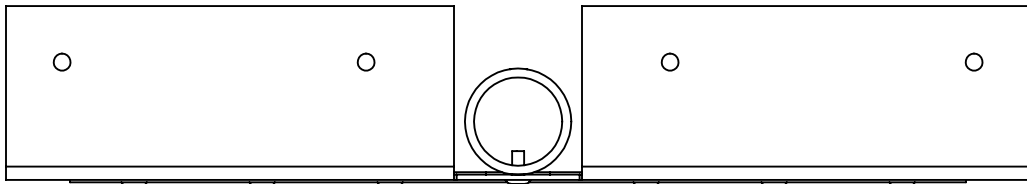
REV

C

GE-24230

SCALE: 1:4

SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24231-01	12 ga. Aluminum 5052	1
2	GE-24231-02	1.25" Schedule 40 Pipe, 6061 Aluminum	1
3	GE-24231-03	0.04" x 2.0" x 14 Steel Hinge with Nickel Plate & Mounting Holes	1
4	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range	8

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:

DO NOT SCALE DRAWING

BEND

NAME

DATE

DRAWN

CO



8/22/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

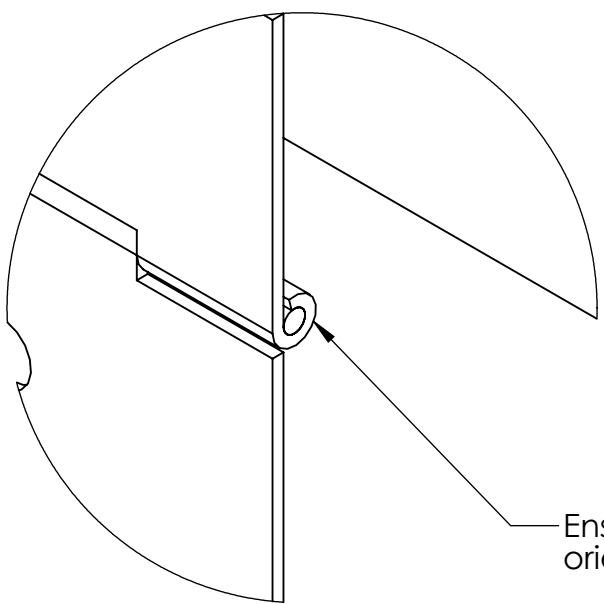
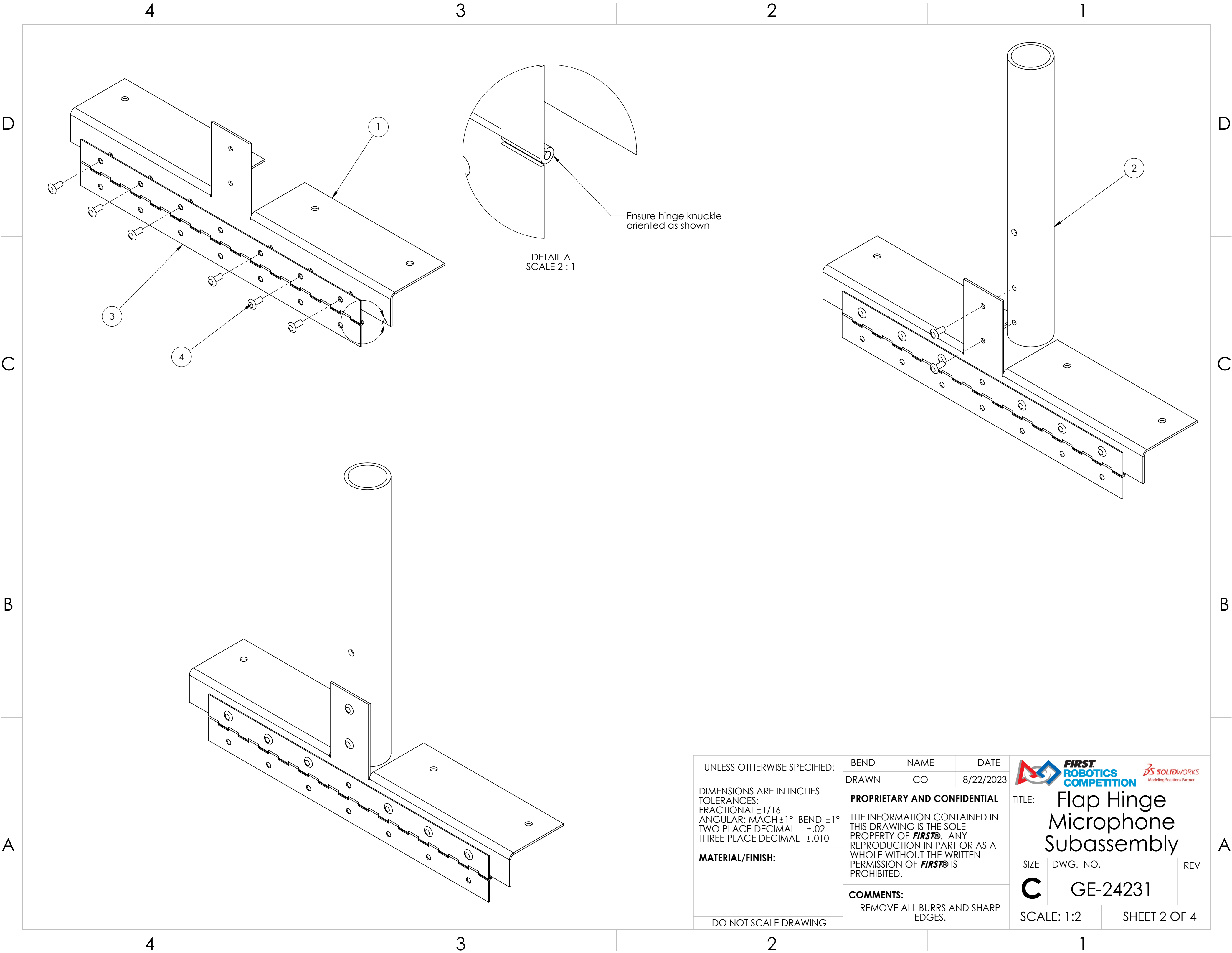
REMOVE ALL BURRS AND SHARP EDGES.

TITLE: Flap Hinge Microphone Subassembly

SIZE C DWG. NO. GE-24231 REV

SCALE: 1:3 SHEET 1 OF 4



DETAIL A
SCALE 2 : 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 $\pm .02$
THREE PLACE DECIMAL $\pm .010$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

BEND

DRAWN

NAME

CO

DATE

8/22/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION



Modeling Solutions Partner

TITLE:

Flap Hinge
Microphone
Subassembly

SIZE

C

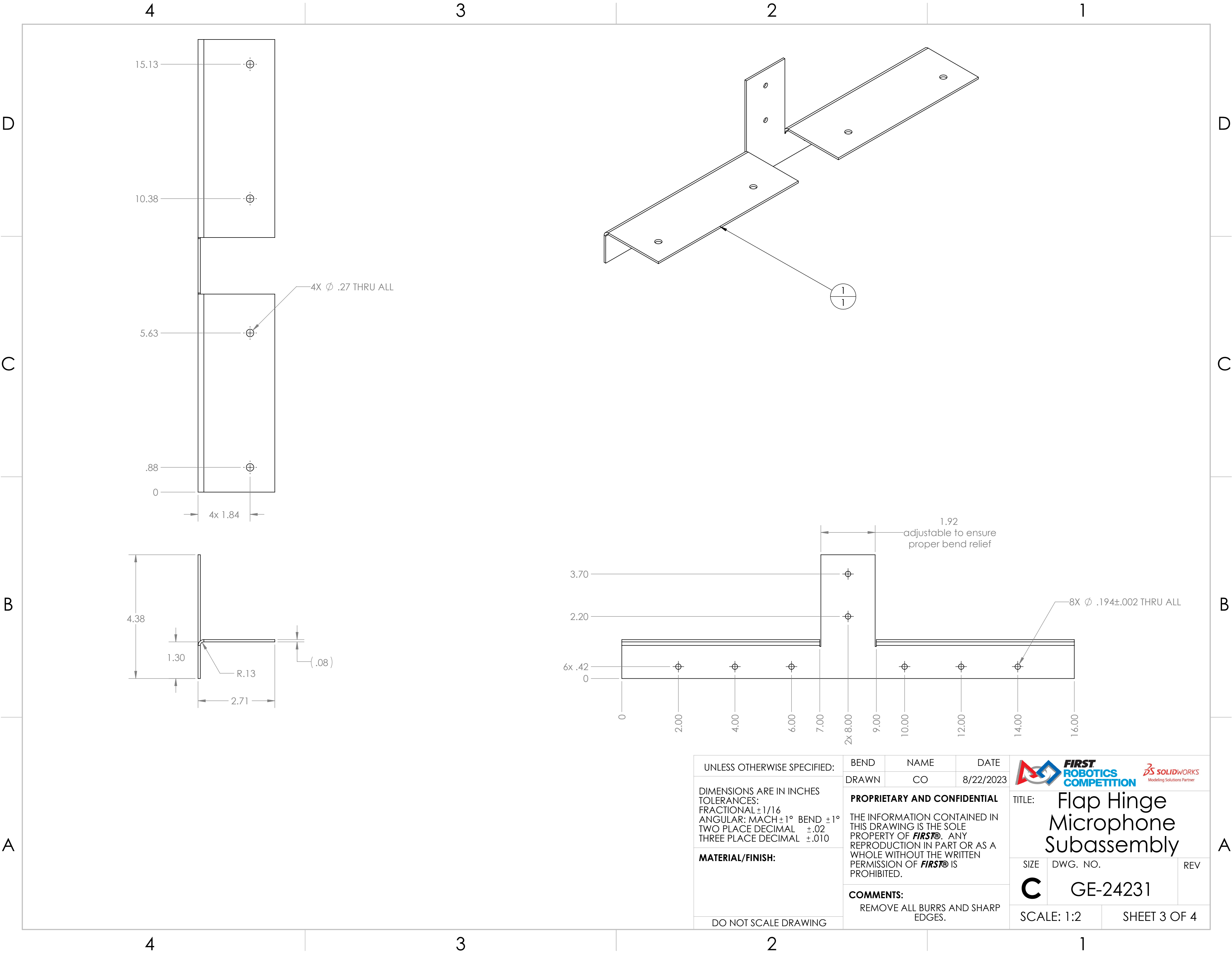
DWG. NO.



GE-24231

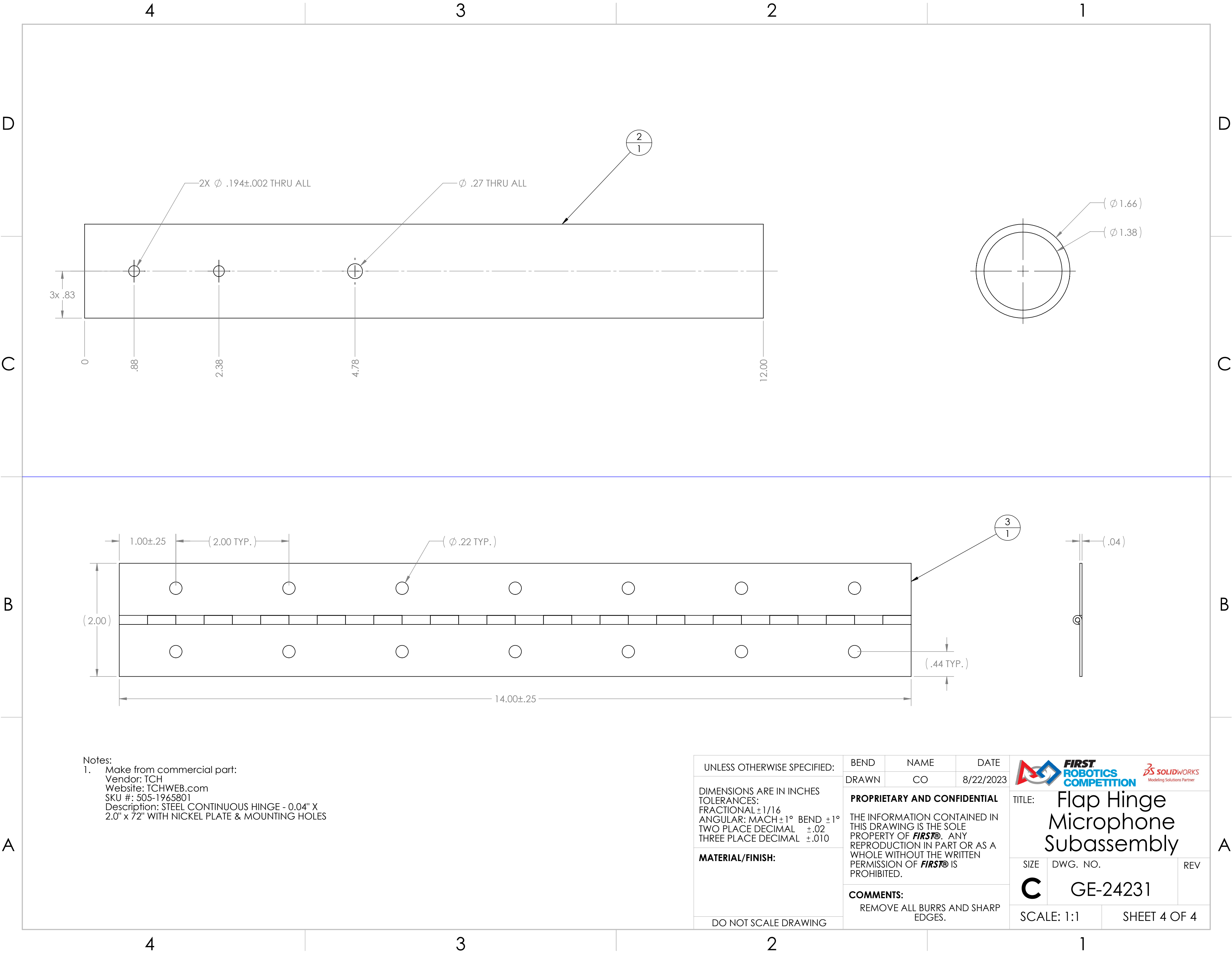
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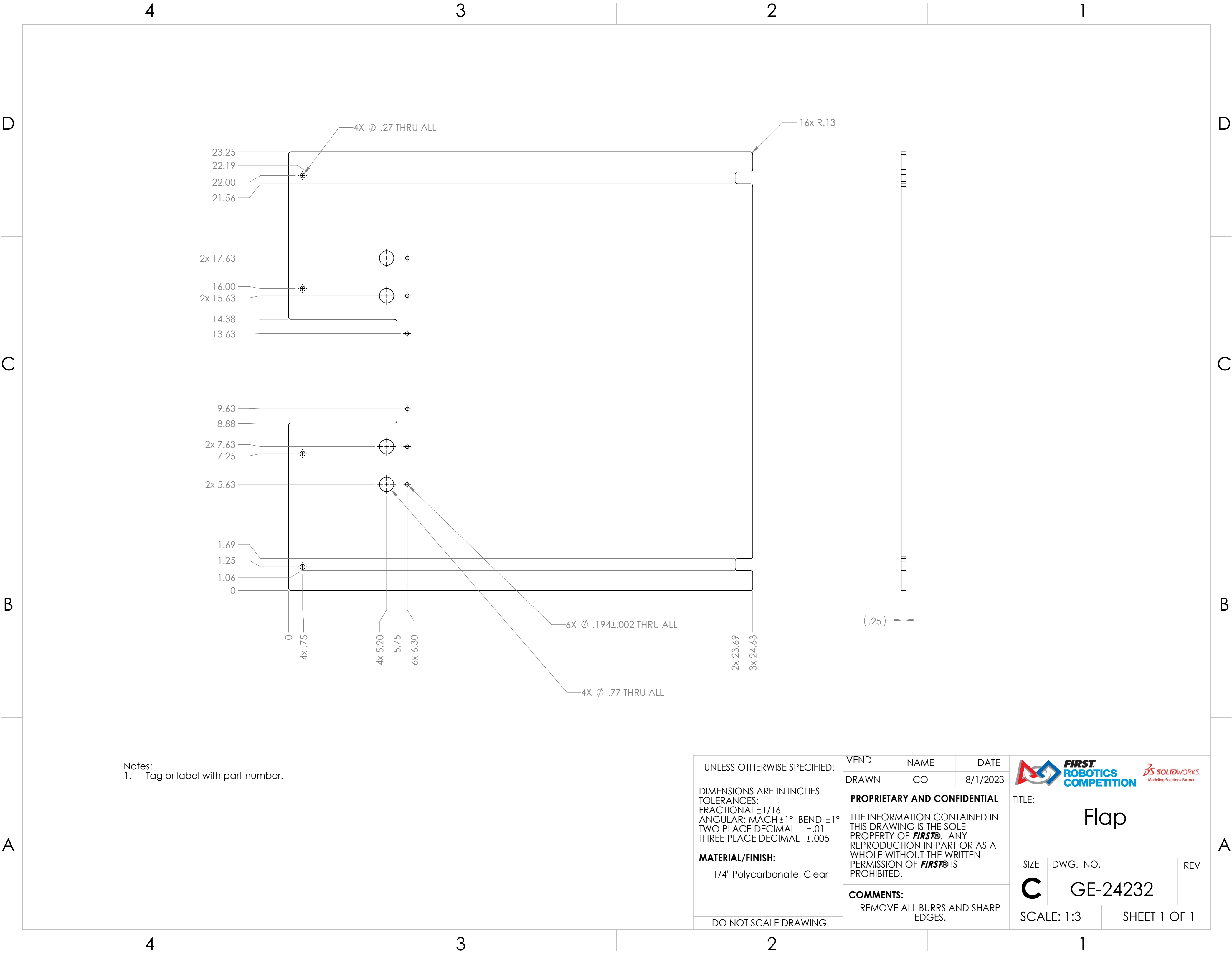
SCALE: 1:2

SHEET 2 OF 4





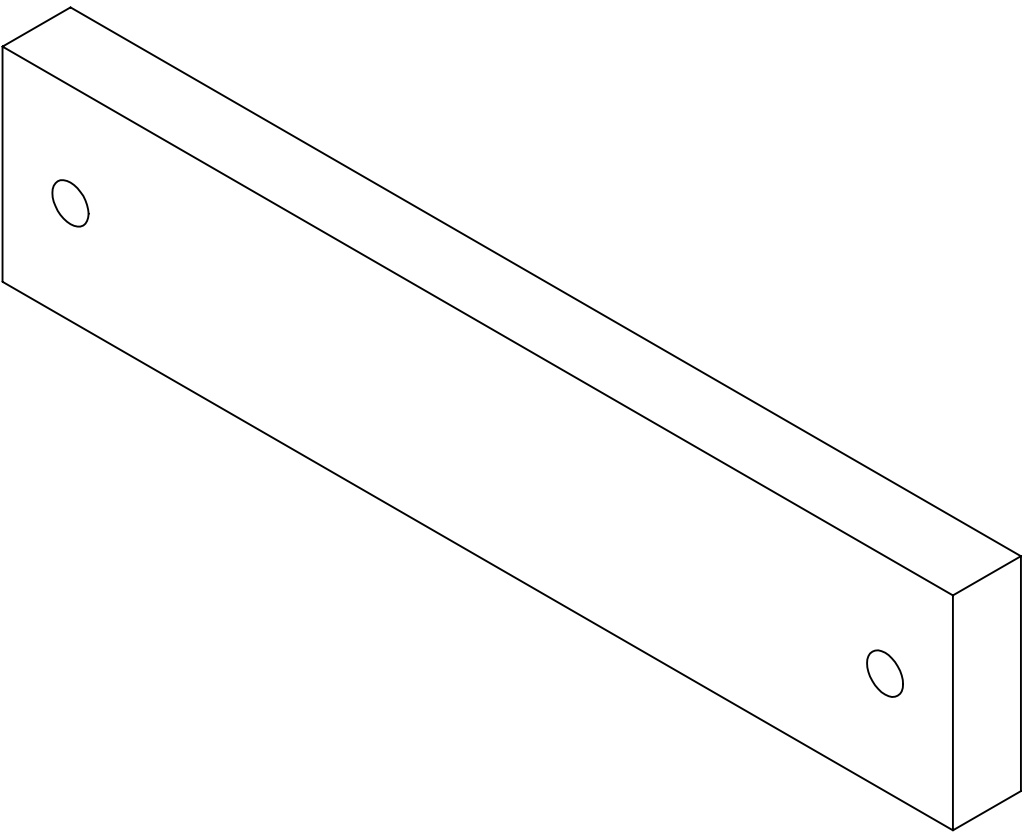
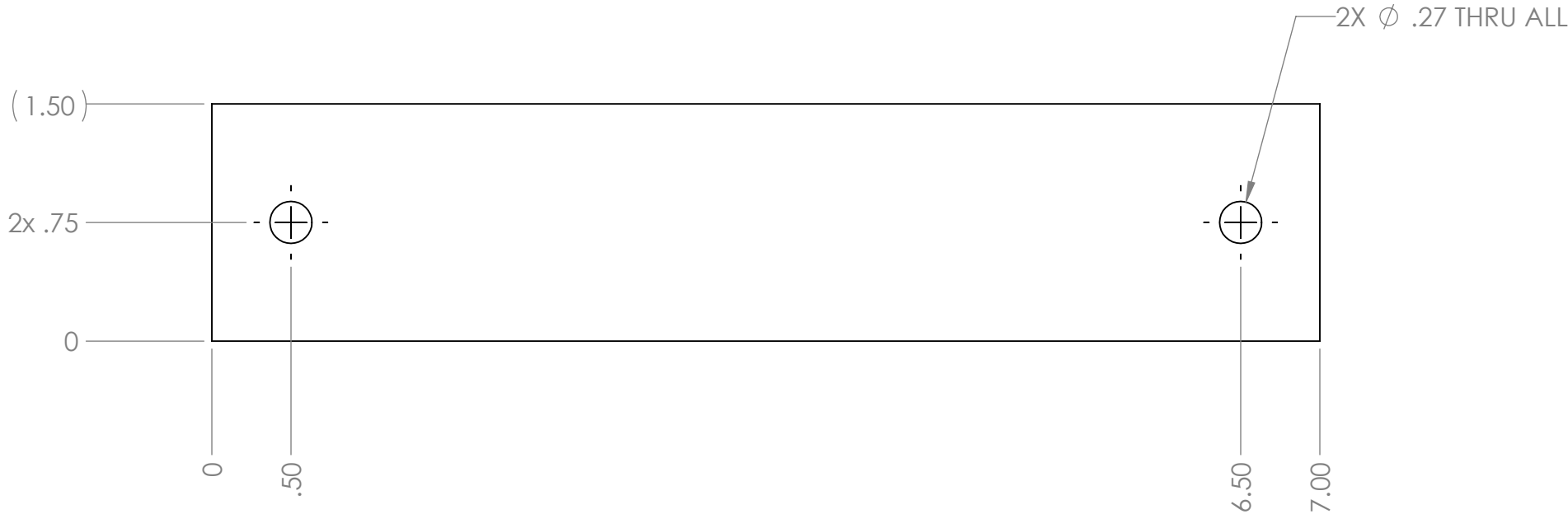
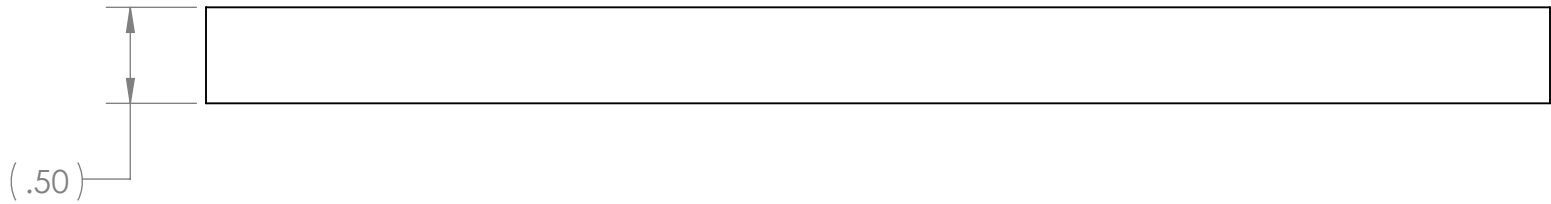
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$ MATERIAL/FINISH: DO NOT SCALE DRAWING	BEND	NAME	DATE	 	
	DRAWN	CO	8/22/2023		
	PROPRIETARY AND CONFIDENTIAL			TITLE: Flap Hinge Microphone Subassembly	
	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.			SIZE: C	DWG. NO.: GE-24231
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		SCALE: 1:2		SHEET 3 OF 4	







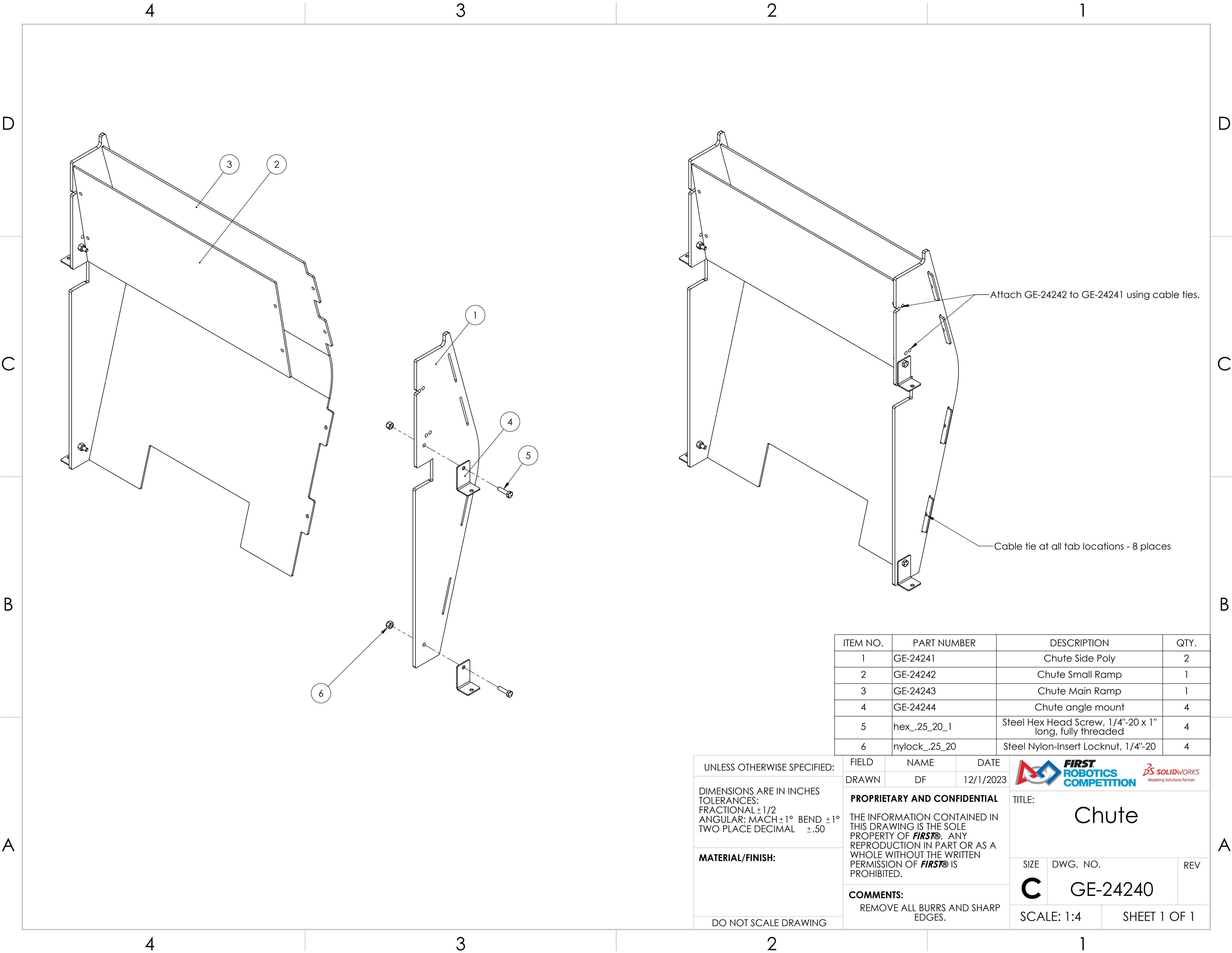
Notes:
1. Tag or label with part number.

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, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Flap</div>		
	DRAWN	CO	8/1/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24232	
SCALE: 1:3		SHEET 1 OF 1				





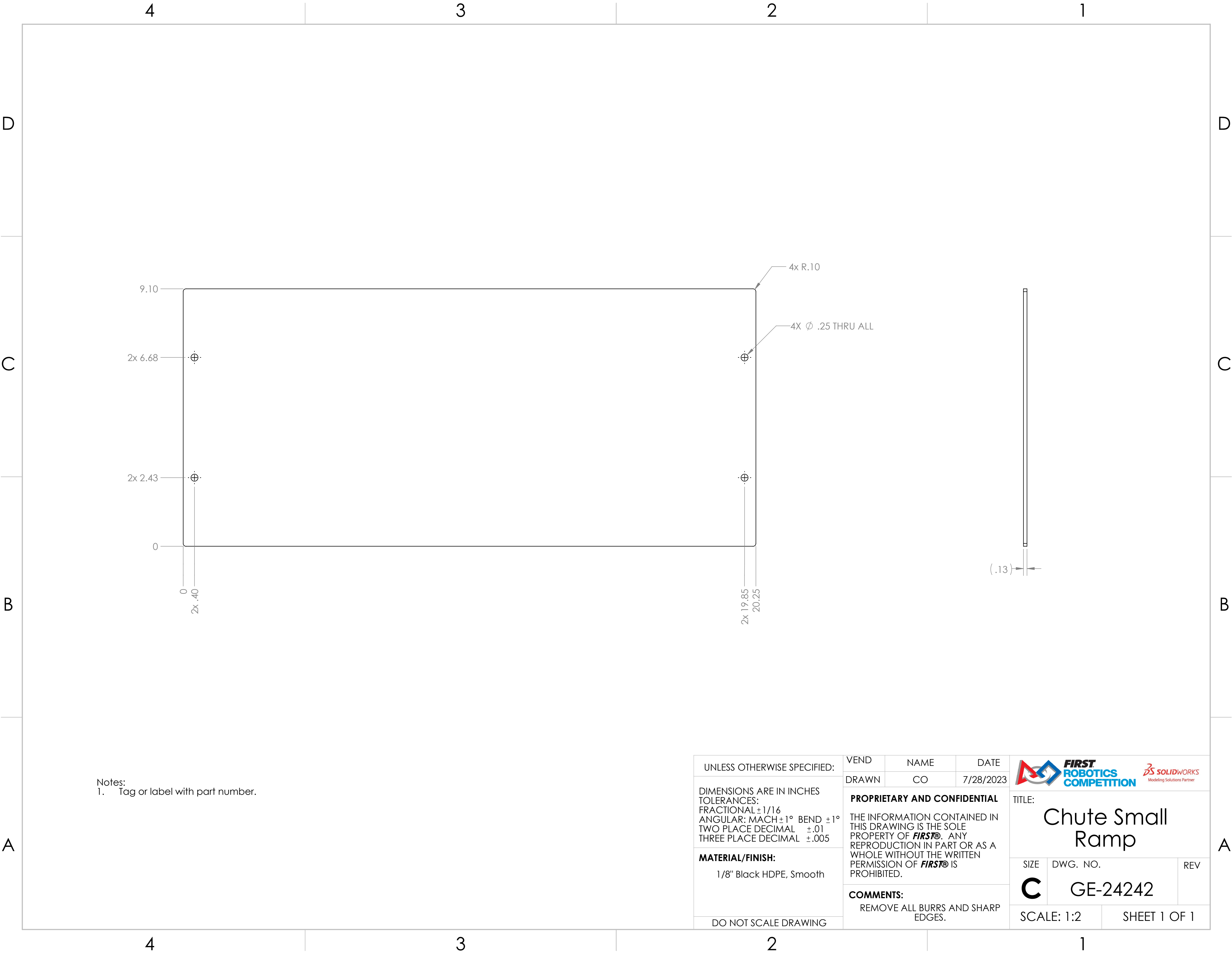
Notes:
1. Tag or label with part number.

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div><div></div><div>TITLE: Flap Weight</div></div>		
	DRAWN	CO	7/31/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			SIZE C		
	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: 1.5" x 0.5" Cold Rolled Steel Bar	COMMENTS:			DWG. NO.		REV
	REMOVE ALL BURRS AND SHARP EDGES.			GE-24233		
DO NOT SCALE DRAWING				SCALE: 1:1		SHEET 1 OF 1





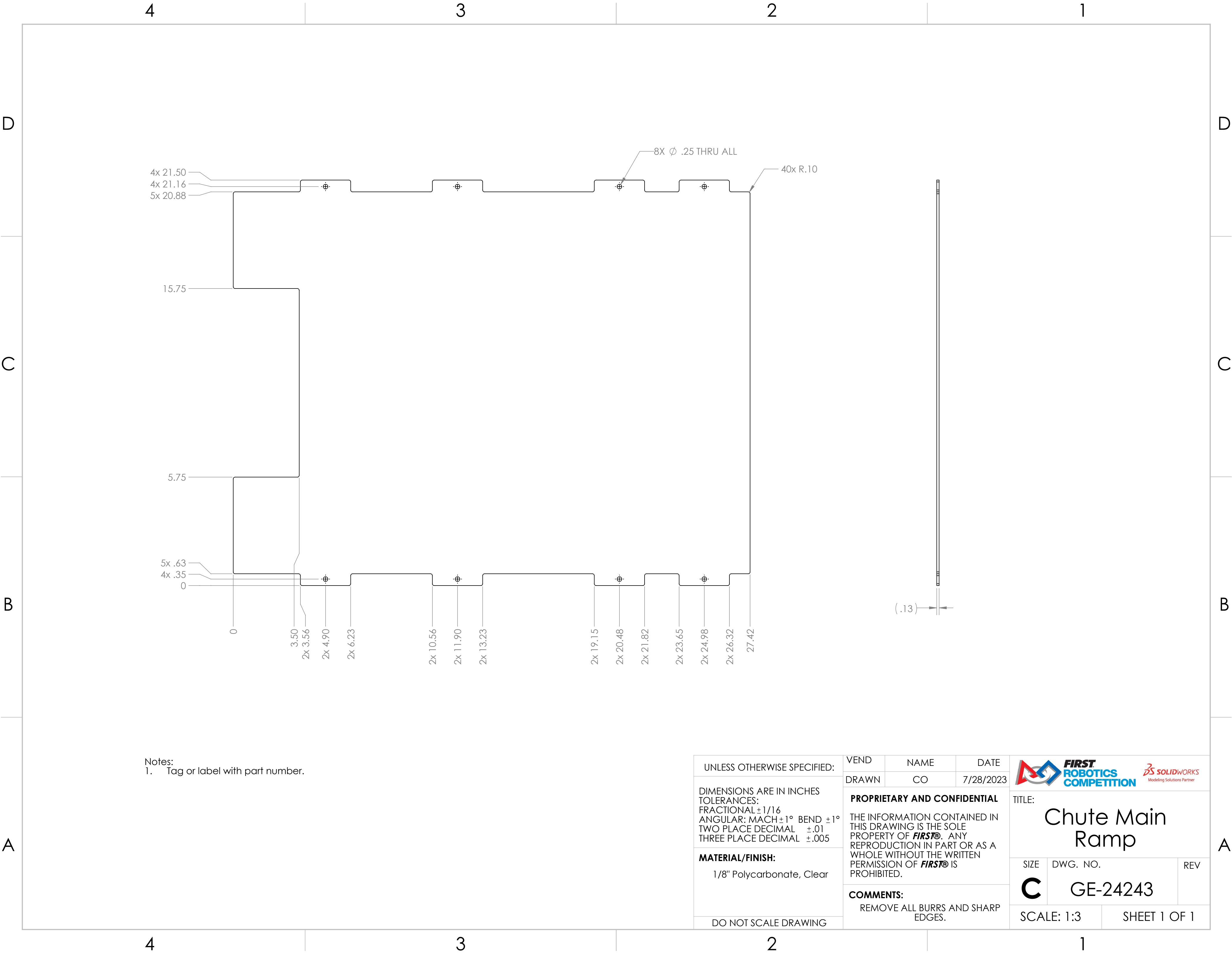
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24241	Chute Side Poly	2
2	GE-24242	Chute Small Ramp	1
3	GE-24243	Chute Main Ramp	1
4	GE-24244	Chute angle mount	4
5	hex_.25_20_1	Steel Hex Head Screw, 1/4"-20 x 1" long, fully threaded	4
6	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	4

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>		
	DRAWN	DF	12/1/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL			TITLE: Chute		
	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:			SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24240	
				SCALE: 1:4		SHEET 1 OF 1





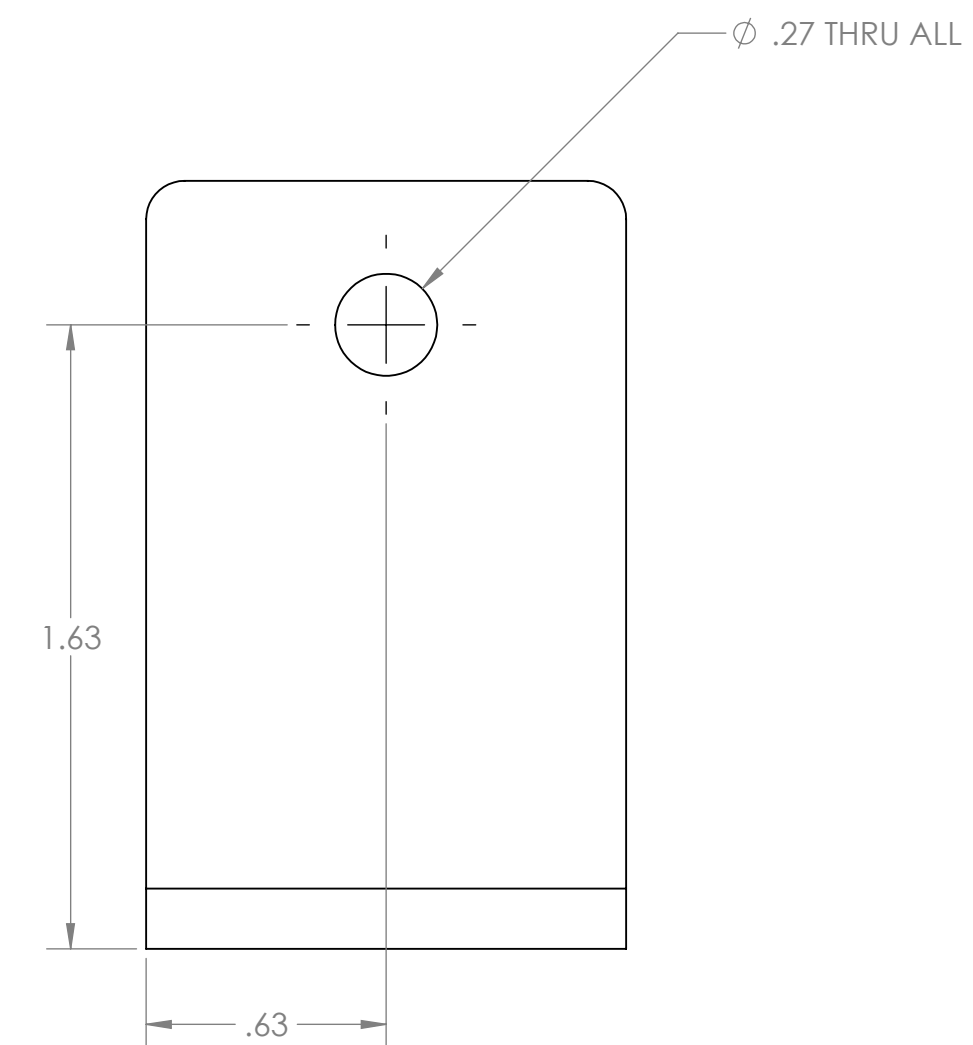
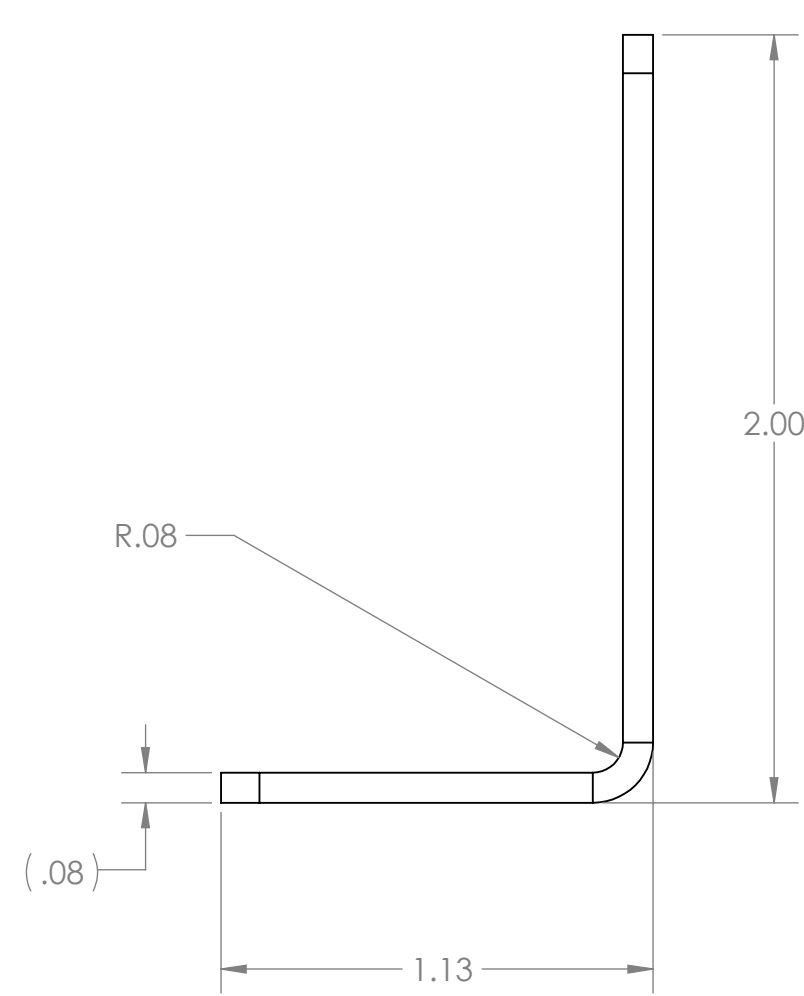
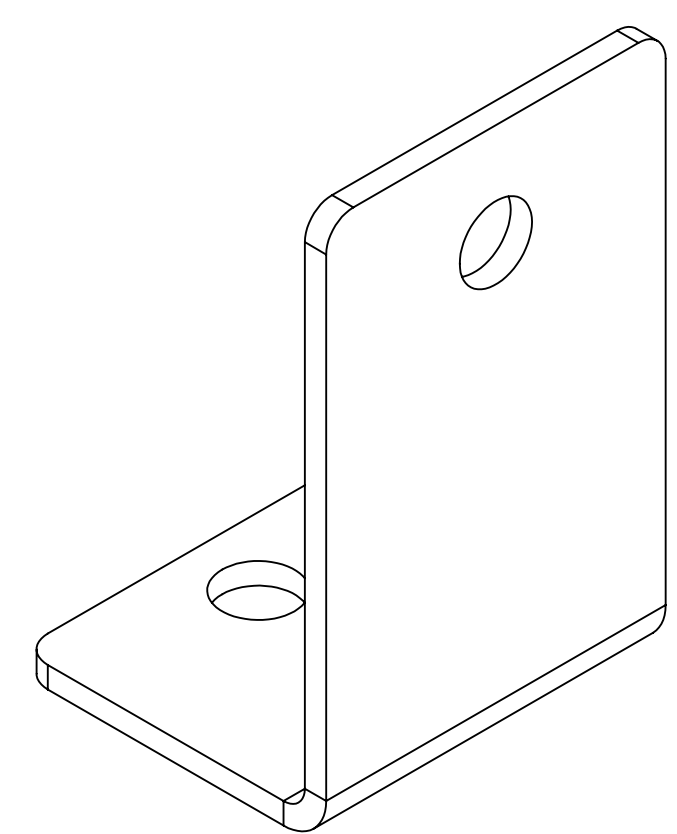
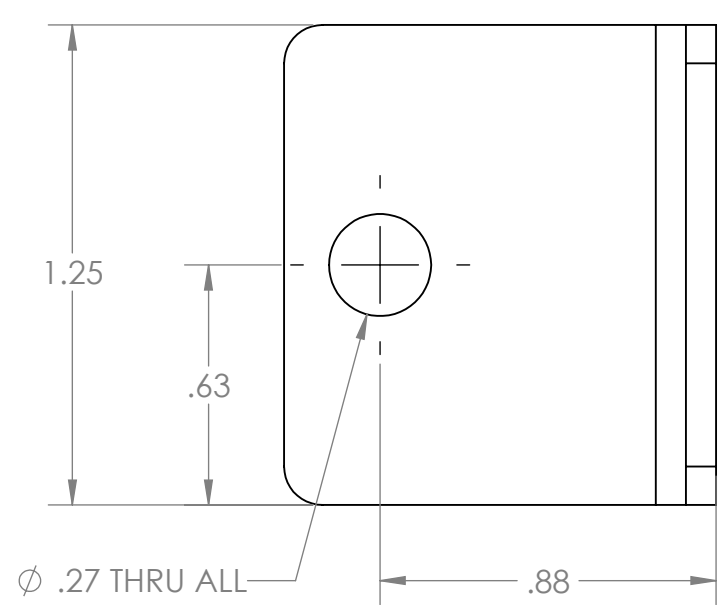
Notes:
1. Tag or label with part number.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/8" Black HDPE, Smooth DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: <h1>Chute Small Ramp</h1></div>	
	DRAWN	CO	7/28/2023		
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				
SIZE		DWG. NO.		REV	
C		GE-24242			
SCALE: 1:2		SHEET 1 OF 1			





Notes:
1. Tag or label with part number.

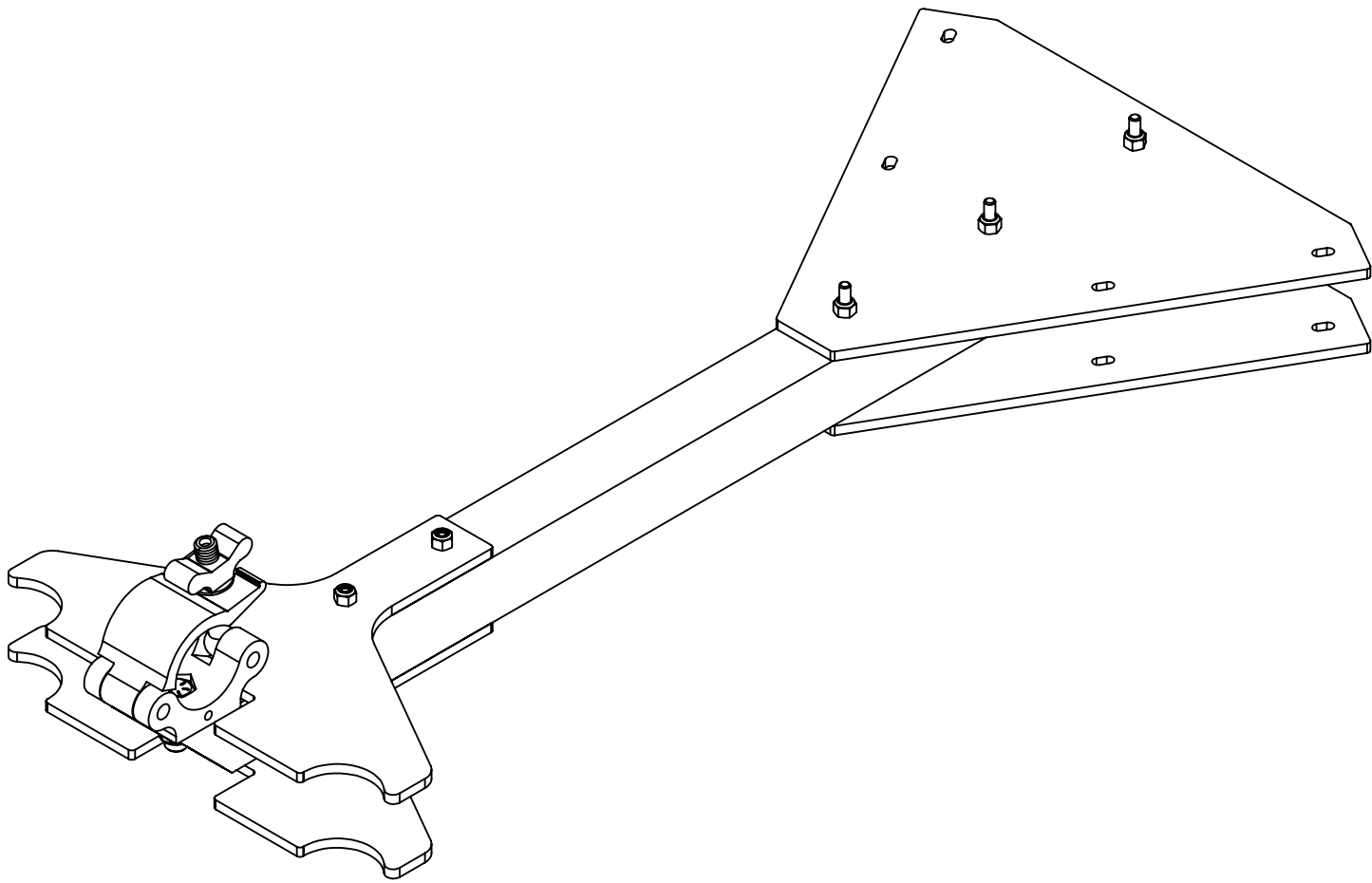
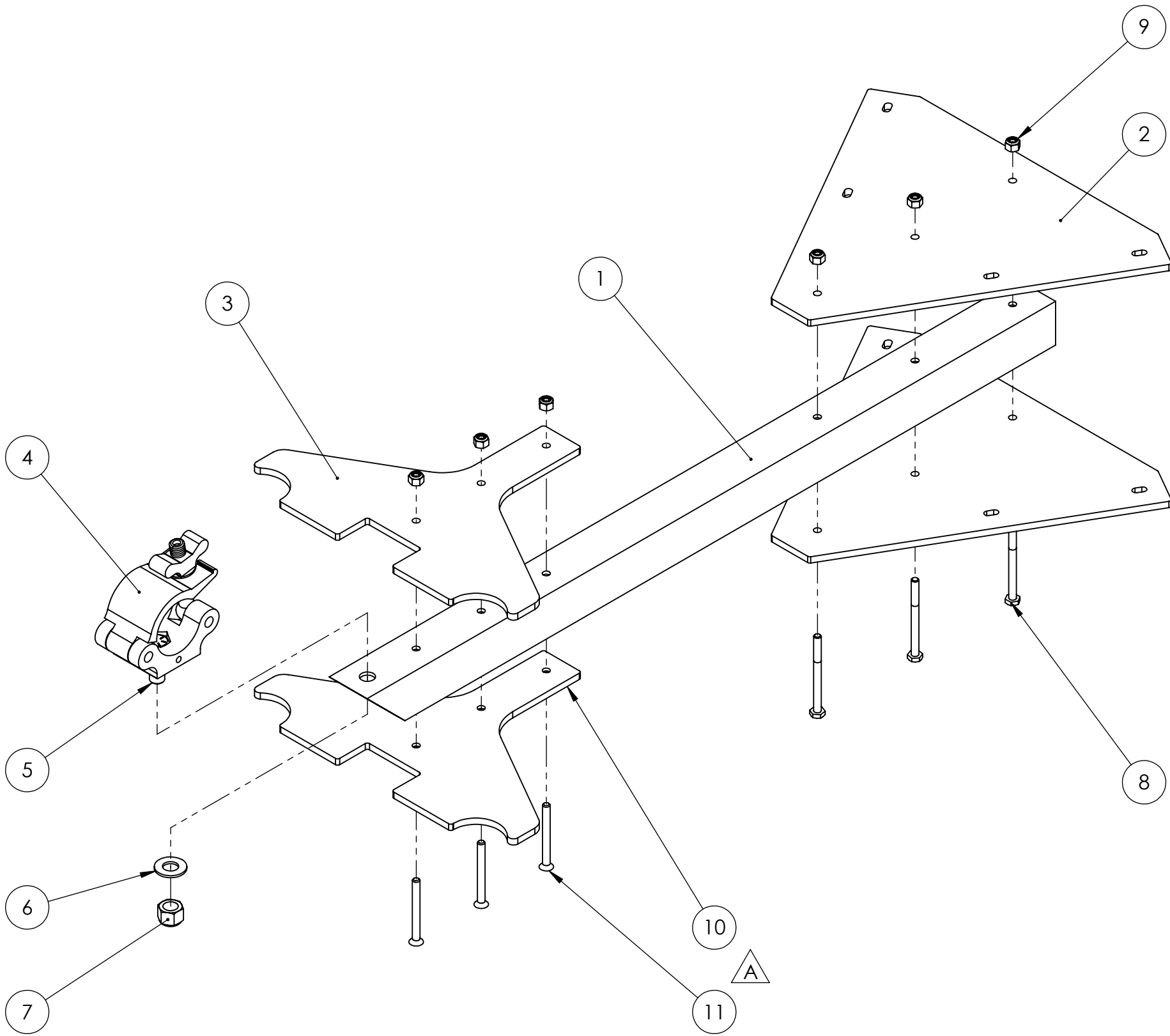
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$ MATERIAL/FINISH: 1/8" Polycarbonate, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: <h1>Chute Main Ramp</h1></div>		
	DRAWN	CO	7/28/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24243	
SCALE: 1:3		SHEET 1 OF 1				





- Notes:
- 1. Tag or label with part number.
 - 2. Package in groups of 12 or 24.

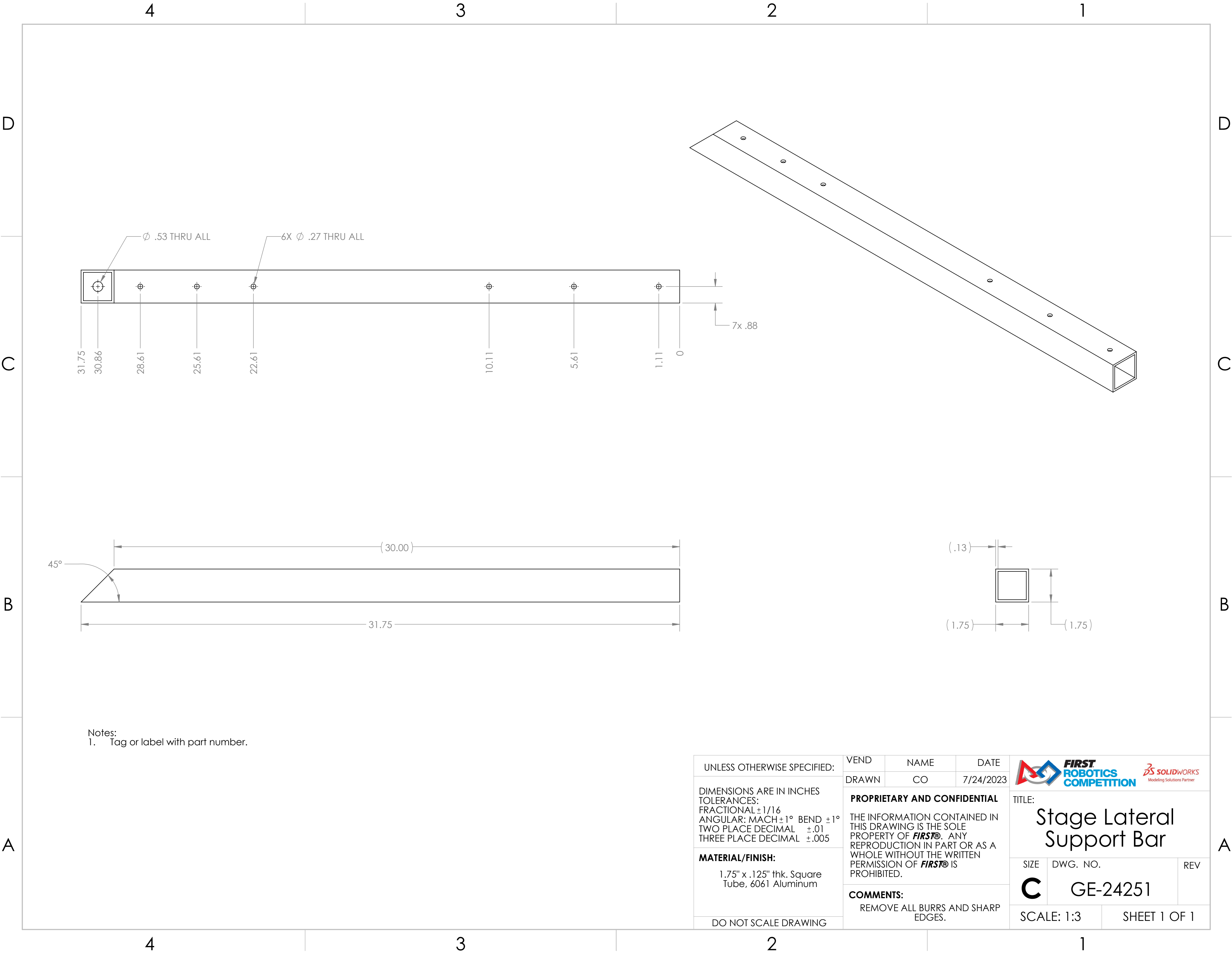
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	DRAWN	CO	7/31/2023			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24244	
SCALE: 2:1		SHEET 1 OF 1				

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, B3	A	Added Items 10 and 11	2/20/2024	DAF





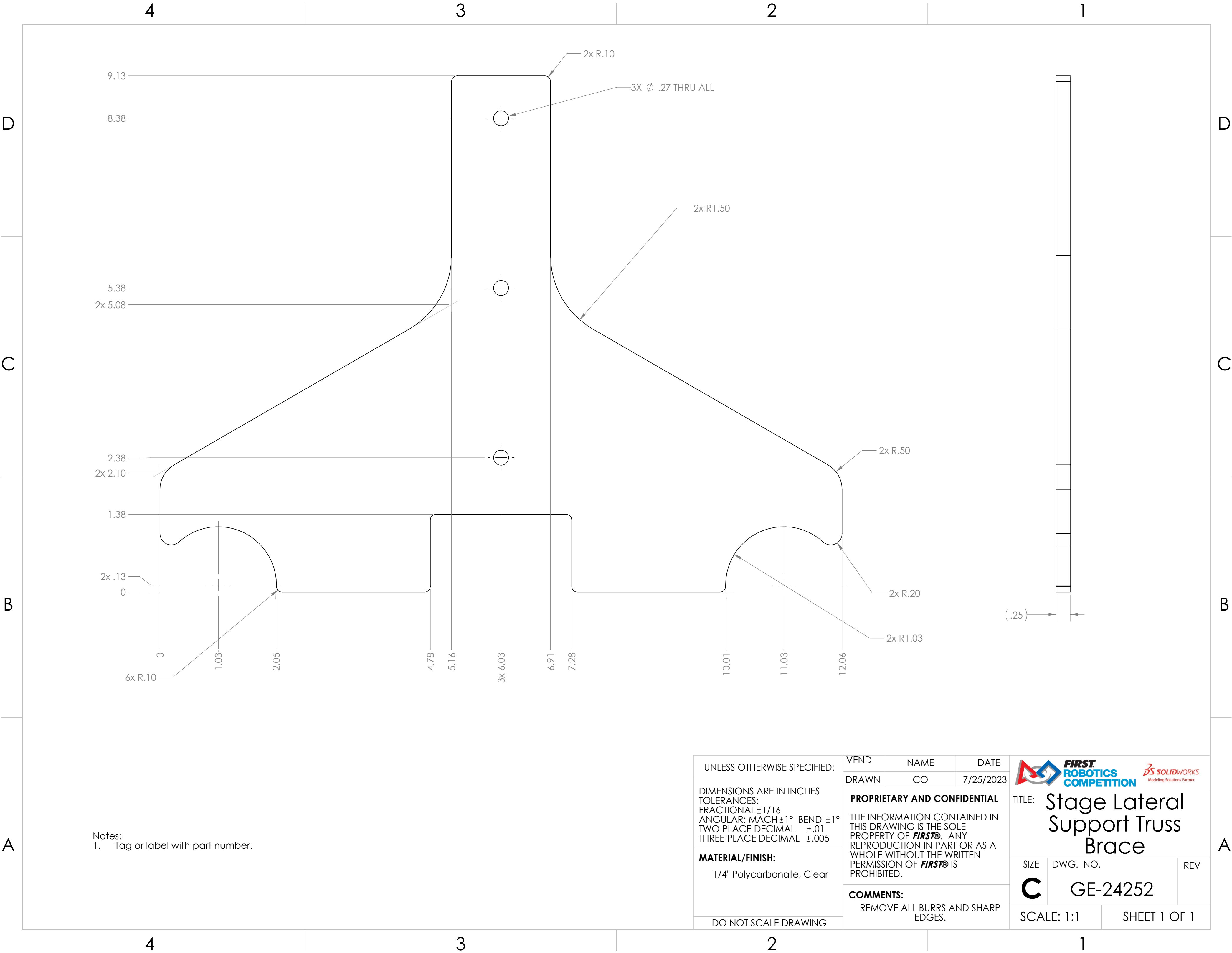
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24251	Stage Lateral Support Bar	1
2	GE-24253	Stage Lateral Support Center Brace	2
3	GE-24252	Stage Lateral Support Truss Brace	1
4	FE-01016	Cheeseborough for Truss _ Single	1
5	hex_.5_13_1.25	Steel Hex Head Screw, 1/2"-13 x 1.25" long, fully threaded	1
6	washer_flat_.5	Flat Washer for 1/2" Screw	1
7	nylock_.5_13	Steel Nylon-Insert Locknut, 1/2" - 13	1
8	hex_.25_20_3_partial	Steel Hex Head Screw, 1/4"-20 x 3" long, partially threaded	3
9	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	6
10	GE-24254	Stage Lateral Support Truss Brace	1
11	flat_phil_.25_20_2.5	Steel Phillips Flat Head Screw, 1/4"-20 x 2-1/2" long, fully threaded	3

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 DRAWN	NAME DF	DATE 11/27/2023	 	
	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.			TITLE: Stage Lateral Support	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24250
				REV A	
SCALE: 1:4		SHEET 1 OF 1			





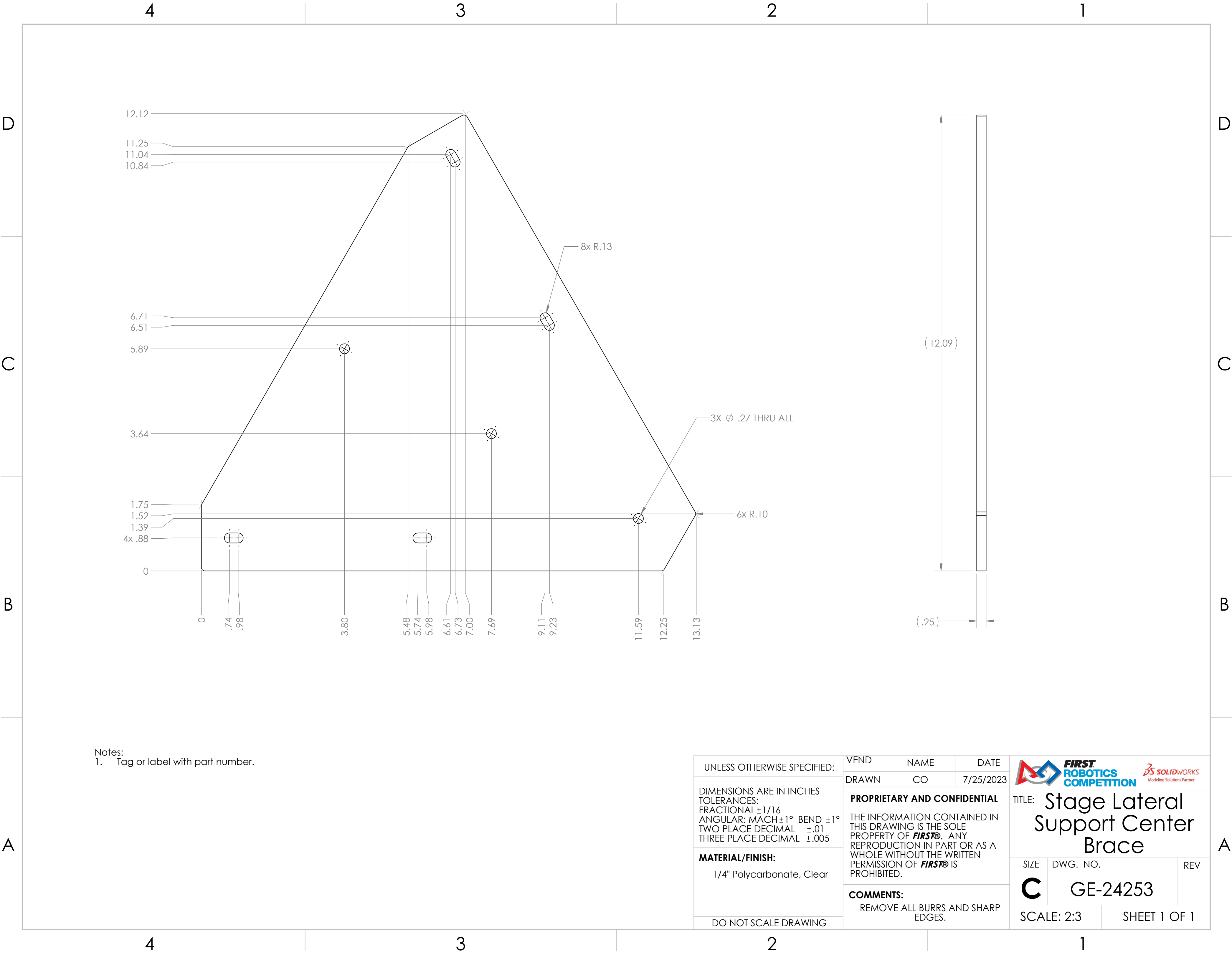
Notes:
1. Tag or label with part number.

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: 1.75" x .125" thk. Square Tube, 6061 Aluminum DO NOT SCALE DRAWING	VEND	NAME	DATE	 	
	DRAWN	CO	7/24/2023		
	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.				TITLE: Stage Lateral Support Bar
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				SIZE C SCALE: 1:3
				DWG. NO. GE-24251	REV
				SHEET 1 OF 1	



Notes:
1. Tag or label with part number.

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div> <div>TITLE: Stage Lateral Support Truss Brace</div>		
	DRAWN	CO	7/25/2023			
DIMENSIONS ARE IN INCHES 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.			TITLE: Stage Lateral Support Truss Brace		
	MATERIAL/FINISH: 1/4" Polycarbonate, Clear	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.
	C				GE-24252	
DO NOT SCALE DRAWING				SCALE: 1:1		SHEET 1 OF 1



Notes:
1. Tag or 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, Clear

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	CO	7/25/2023

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.

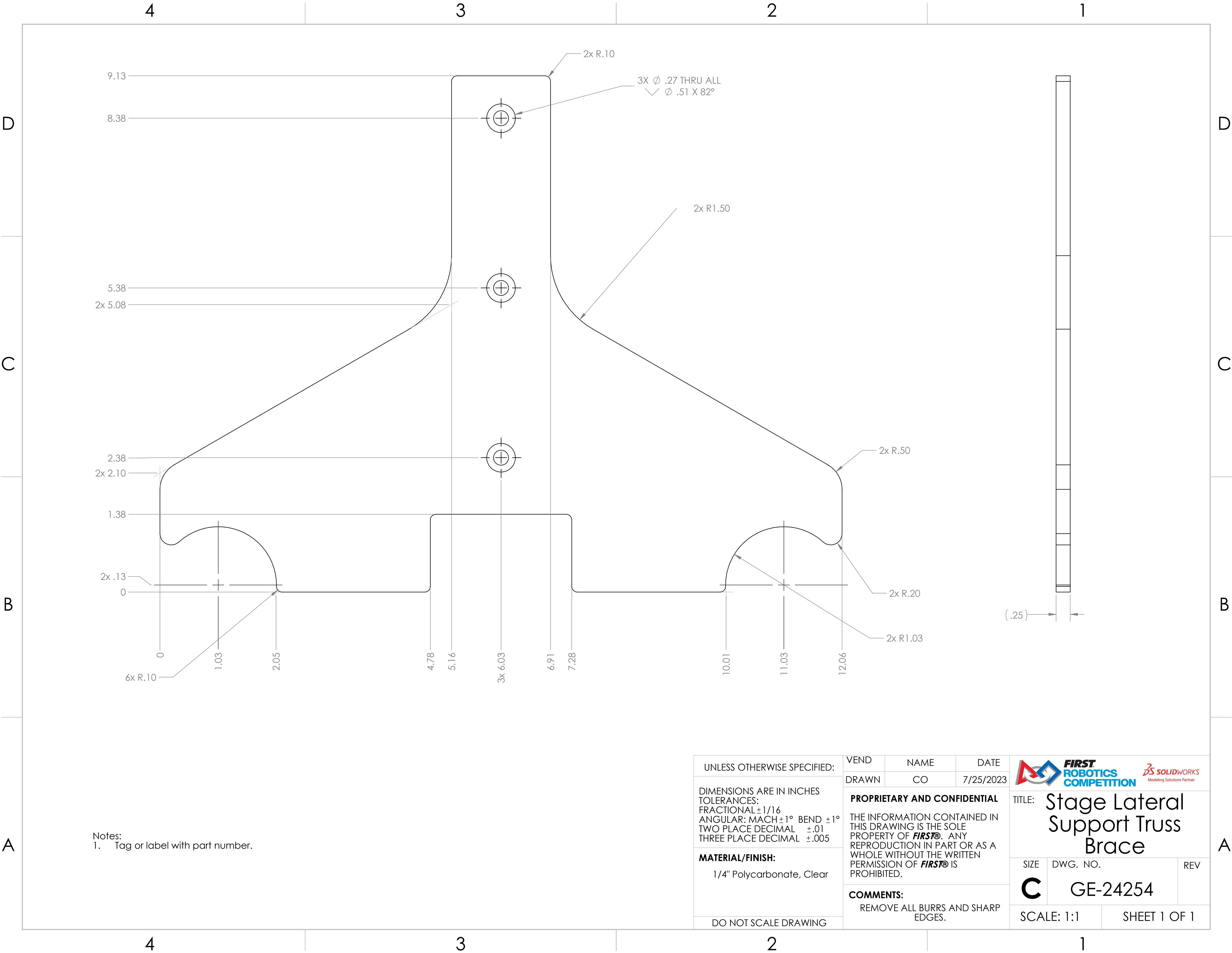
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.





TITLE: Stage Lateral Support Center Brace

SIZE	DWG. NO.	REV
C	GE-24253	

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



Notes:
1. Tag or label with part number.

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div><div>FIRST ROBOTICS COMPETITION</div><div>SOLIDWORKS Modeling Solutions Partner</div></div>	
	DRAWN	CO	7/25/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Stage Lateral Support Truss Brace	
	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.			SIZE C
DO NOT SCALE DRAWING				SCALE: 1:1	SHEET 1 OF 1

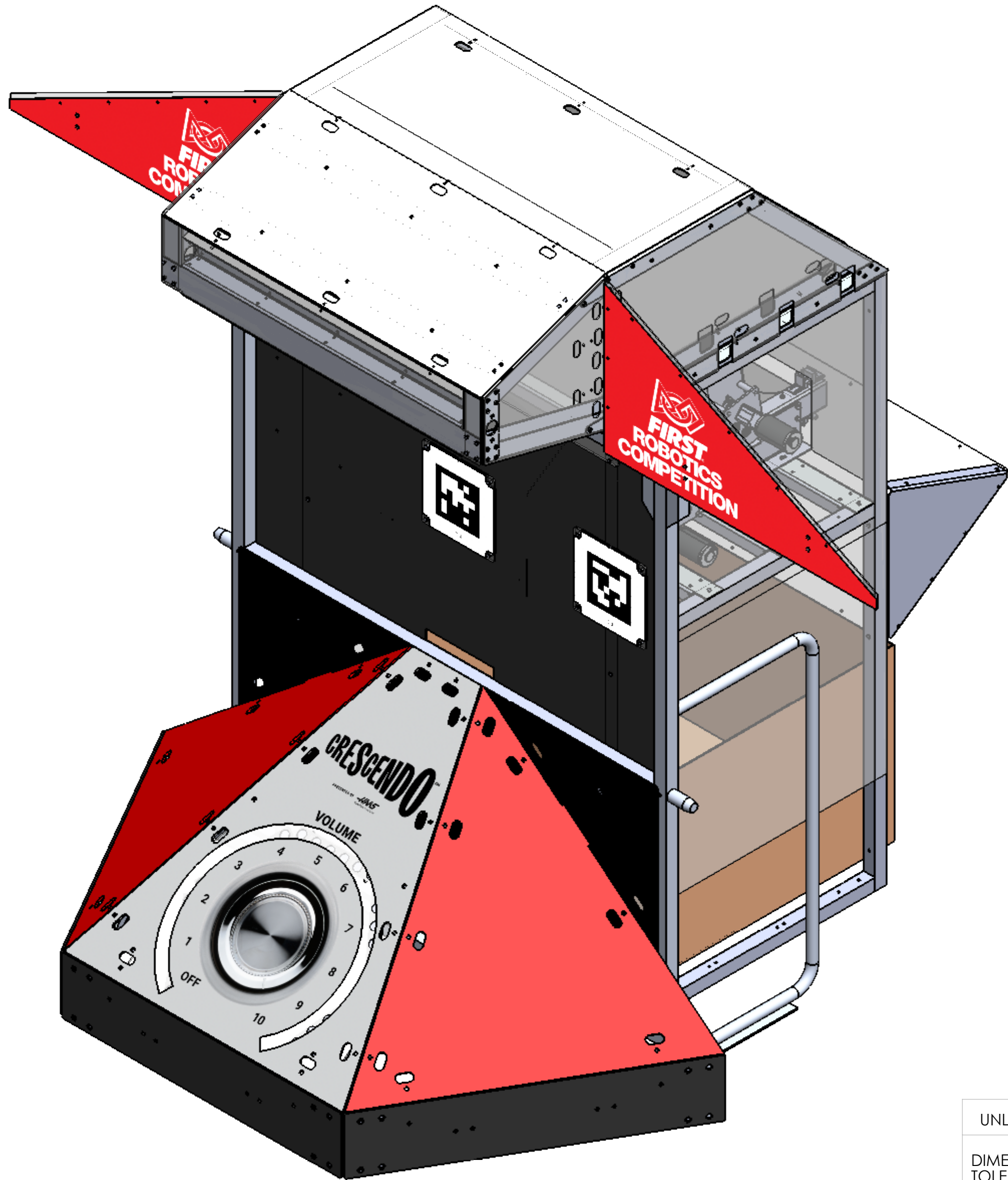
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, 4-C3	A	GE-24394 added to assembly	2/21/2024	JO



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00001	Drivers Station Support	2
2	GE-24301	Speaker Side Frame	2
3	GE-24302	Speaker Crossbeams with PEMs	4
4	GE-24303	Side Guard Walls	4
5	GE-24306	Speaker Back Cover	1
6	GE-24307	Speaker Inner Side Ramp	2
7	GE-24308	Speaker Inner Back Ramp	1
8	GE-24309	Speaker Inner Side Wall	2
9	GE-24310	Speaker Top Frame	1
10	GE-24321	Backboard Bracket	4
11	GE-24322	Speaker Alliance Wall Plastic	1
12	GE-24325	Briweld Field Crossbeam Assembly	1
13	GE-24330	Subwoofer	1
14	GE-24331	Wall Goal Frame Weldment	1
15	GE-24350	Ring Counter	1
16	GE-24391	Collection Ramp w/ PEMs	2
17	GE-24392	Collection Ramp	1
18	GE-24328-LeftRed	Speaker Wing Plastic with Vinyl	1
19	barLight-36		3
20	GE-24328-RightRed	Speaker Wing Plastic with Vinyl	1
21	S-4478	Cardboard Box	1
22	FE-00083-ID3	AprilTag	1
23	FE-00083-ID4	AprilTag	1
24	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	28
25	Configurable Bolt	2.5" Long 1/4-20 Hex Head Bolt	24
26	Configurable Bolt	1/4-20 Hex Head Bolt 4" Long	4
27	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	32
28	GE-24394	Speaker Front Wall Addition	1



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	JO	12/19/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION



TITLE:

Speaker

SIZE

C

DWG. NO.

GE-24300

REV

A

SCALE: 1:10

SHEET 1 OF 6

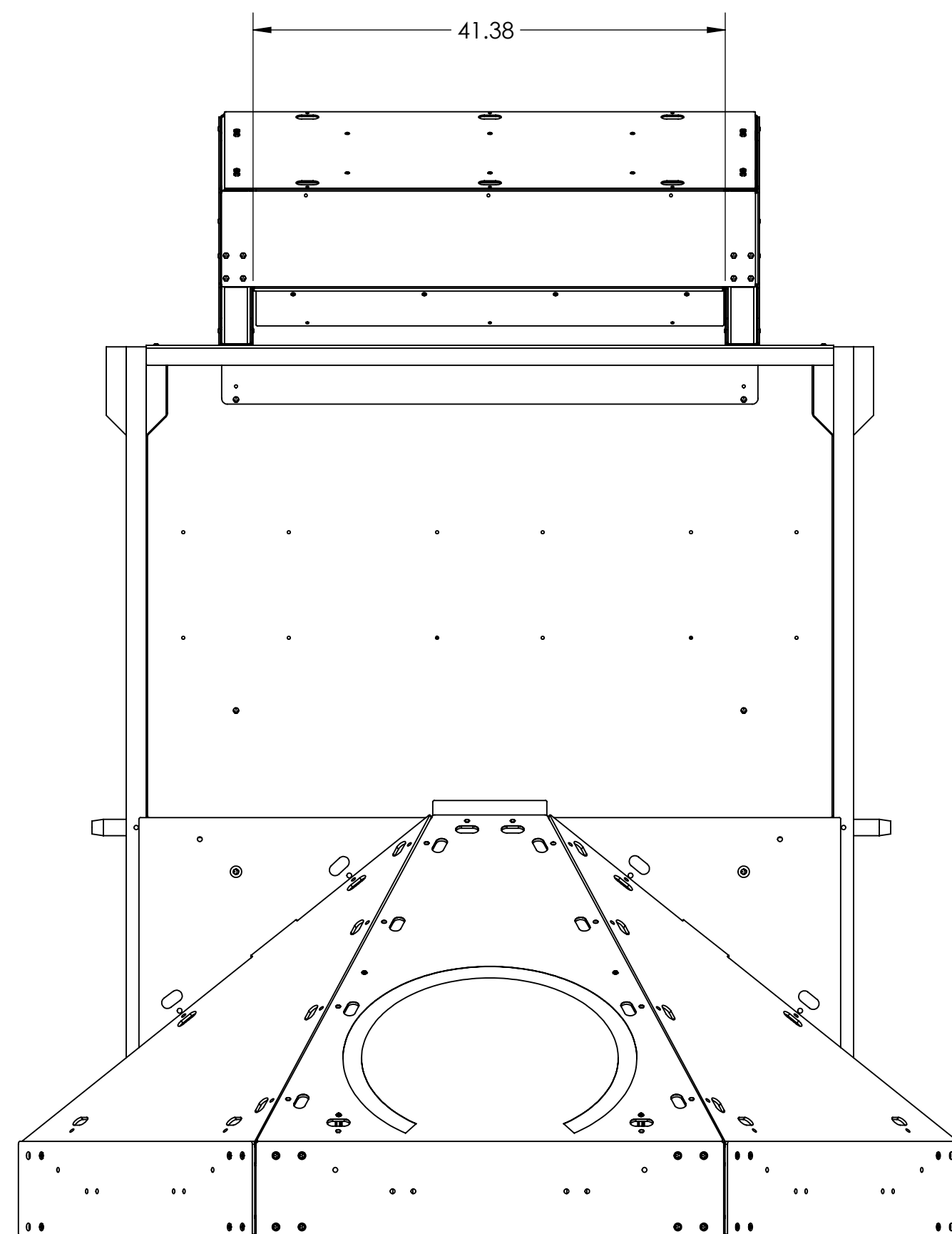
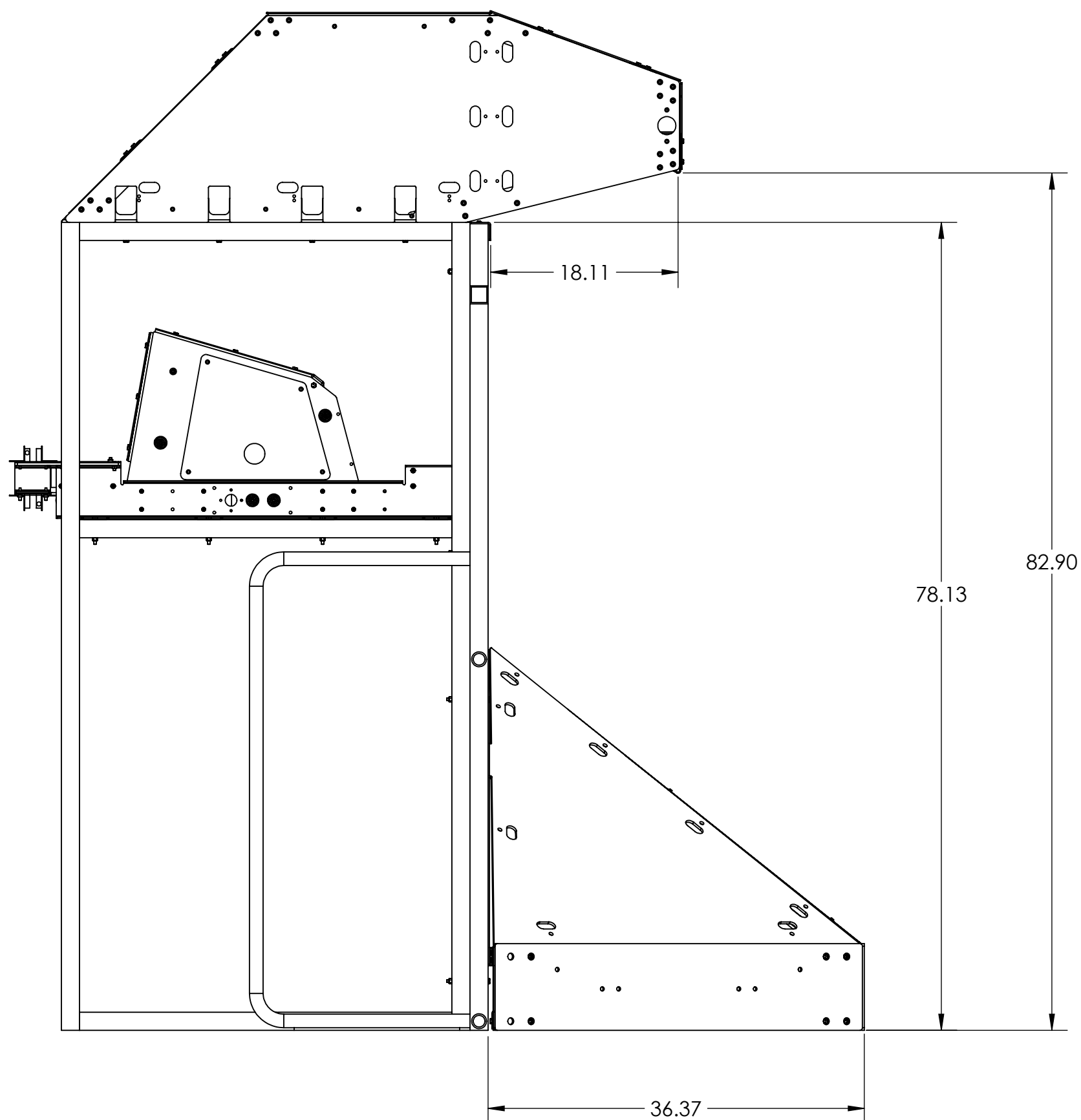
4

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2

1

D



C

B

A

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE			
		DRAWN	JO	12/19/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.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.			TITLE: <div>Speaker</div>		
MATERIAL/FINISH:		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					SIZE	DWG. NO.	REV
					C	GE-24300	A
					SCALE: 1:12		SHEET 2 OF 6

4

3

2

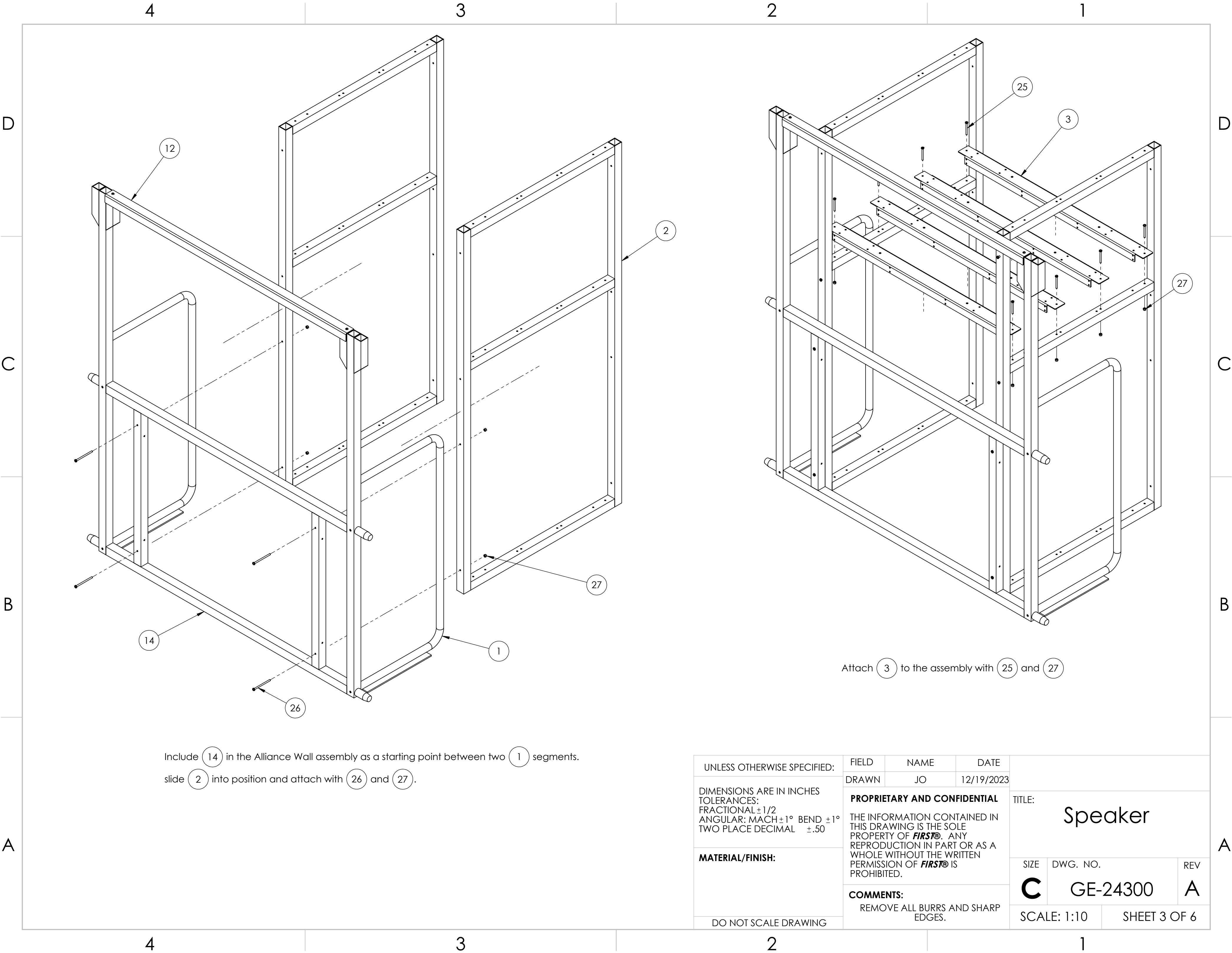
1

D

C

B

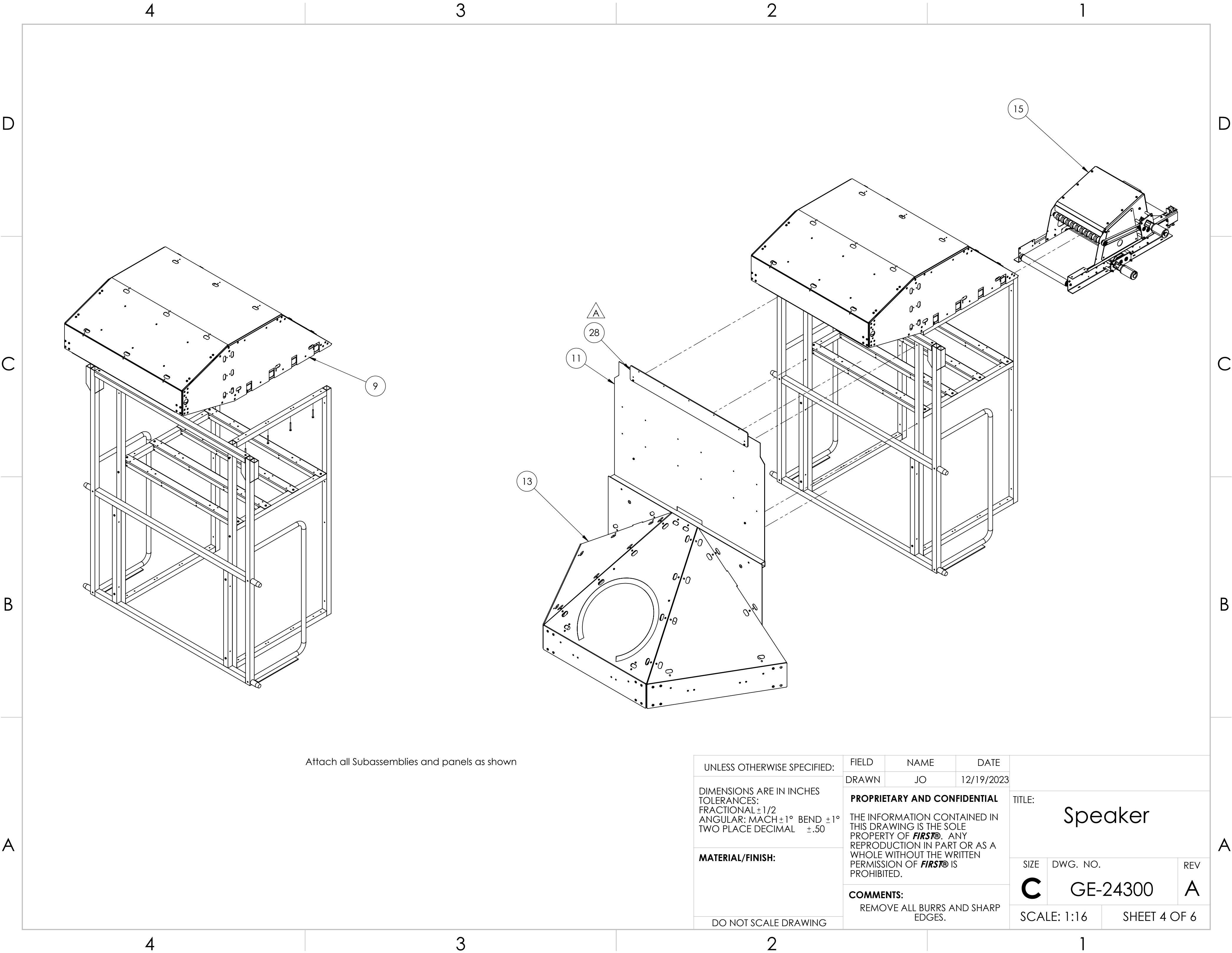
A



Include (14) in the Alliance Wall assembly as a starting point between two (1) segments.
slide (2) into position and attach with (26) and (27).

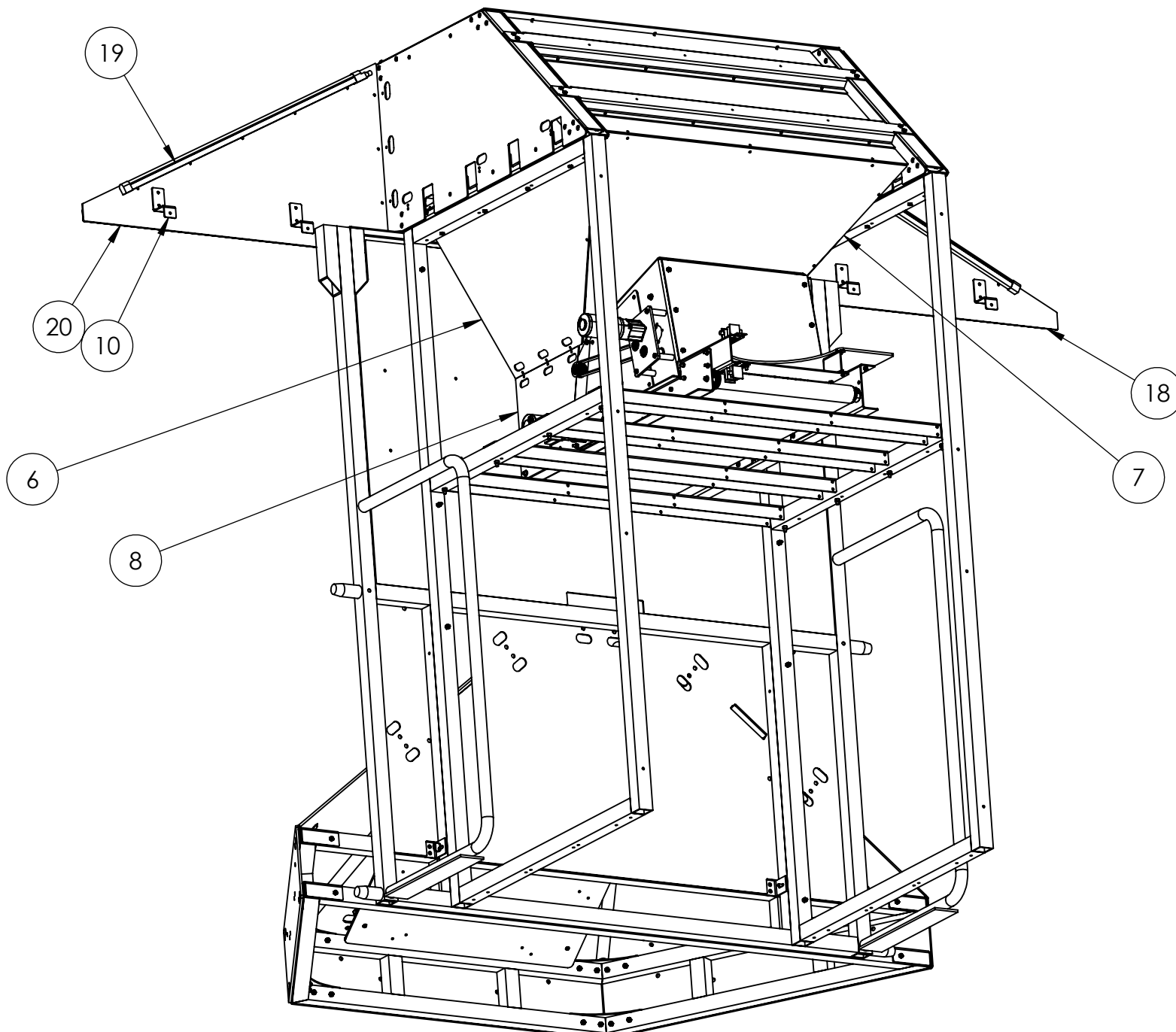
Attach (3) to the assembly with (25) and (27)

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	TITLE: Speaker		
	DRAWN	JO	12/19/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.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.			SIZE C		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
	MATERIAL/FINISH:				REV A	
DO NOT SCALE DRAWING				SCALE: 1:10		SHEET 3 OF 6

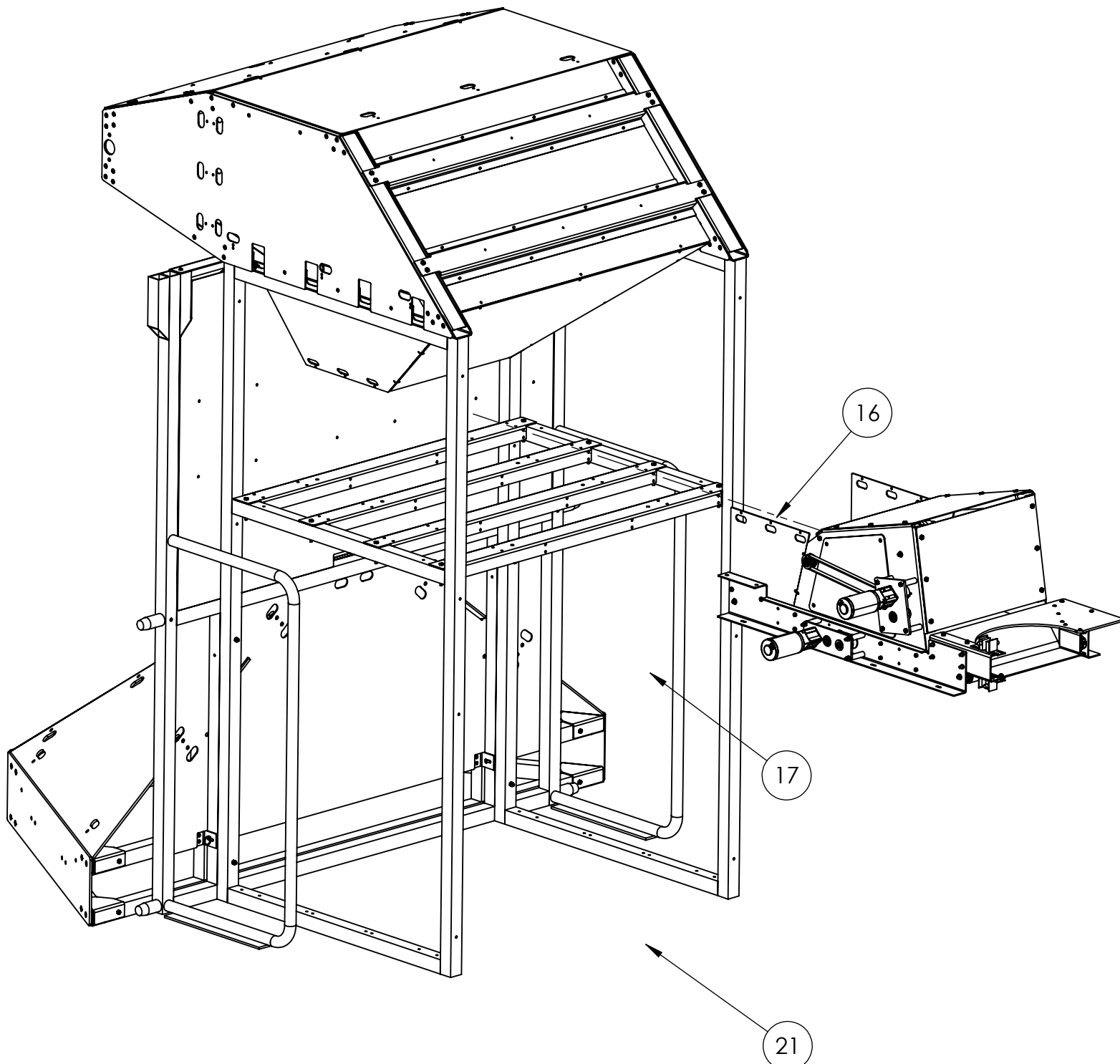


Attach all Subassemblies and panels as shown

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	TITLE: Speaker						
	DRAWN	JO	12/19/2023							
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.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.			SIZE C			DWG. NO. GE-24300		REV A	
MATERIAL/FINISH:	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:16			SHEET 4 OF 6			
DO NOT SCALE DRAWING										

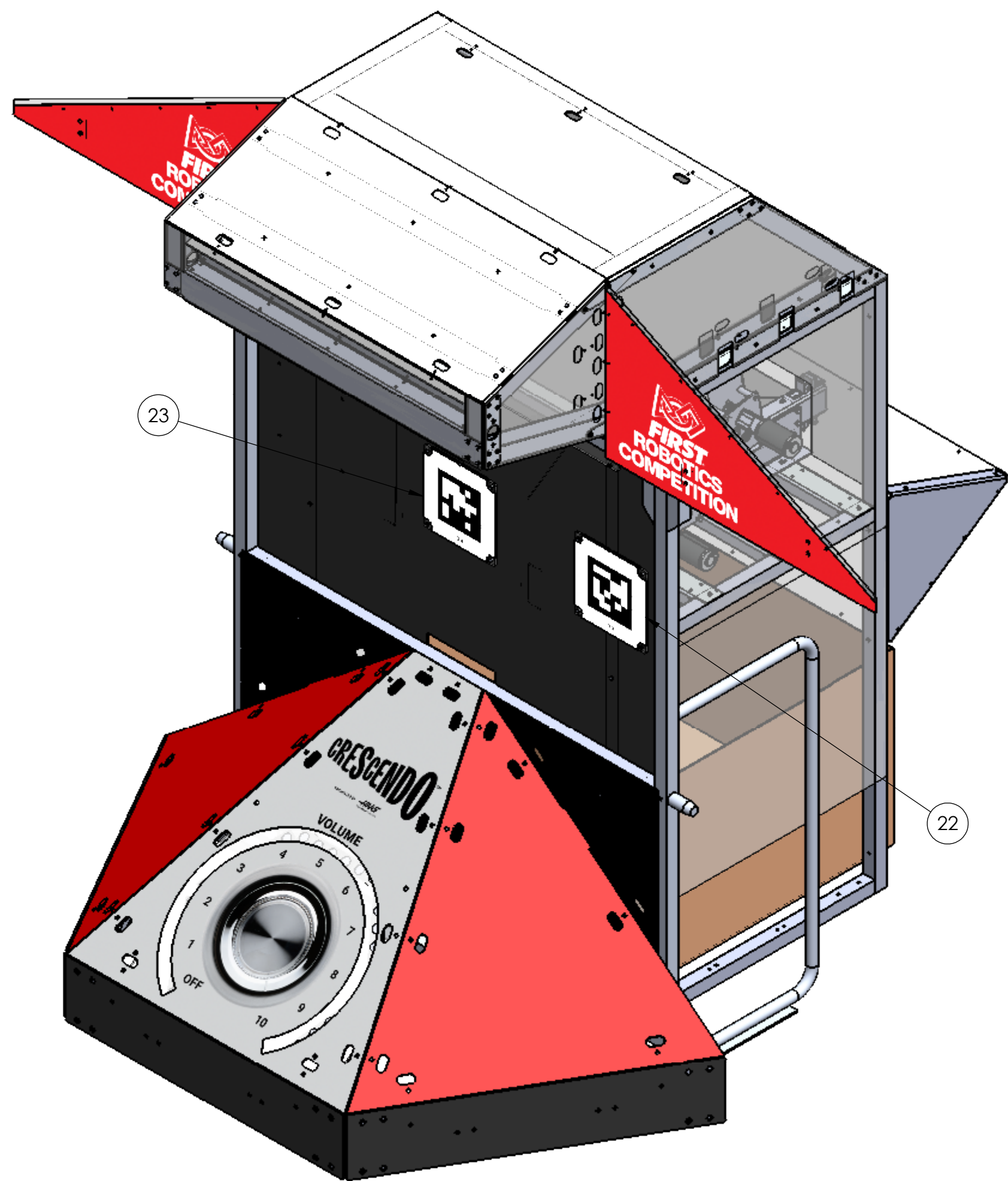


Attach Ramps, Wings and Lights with 50lb Cable Ties

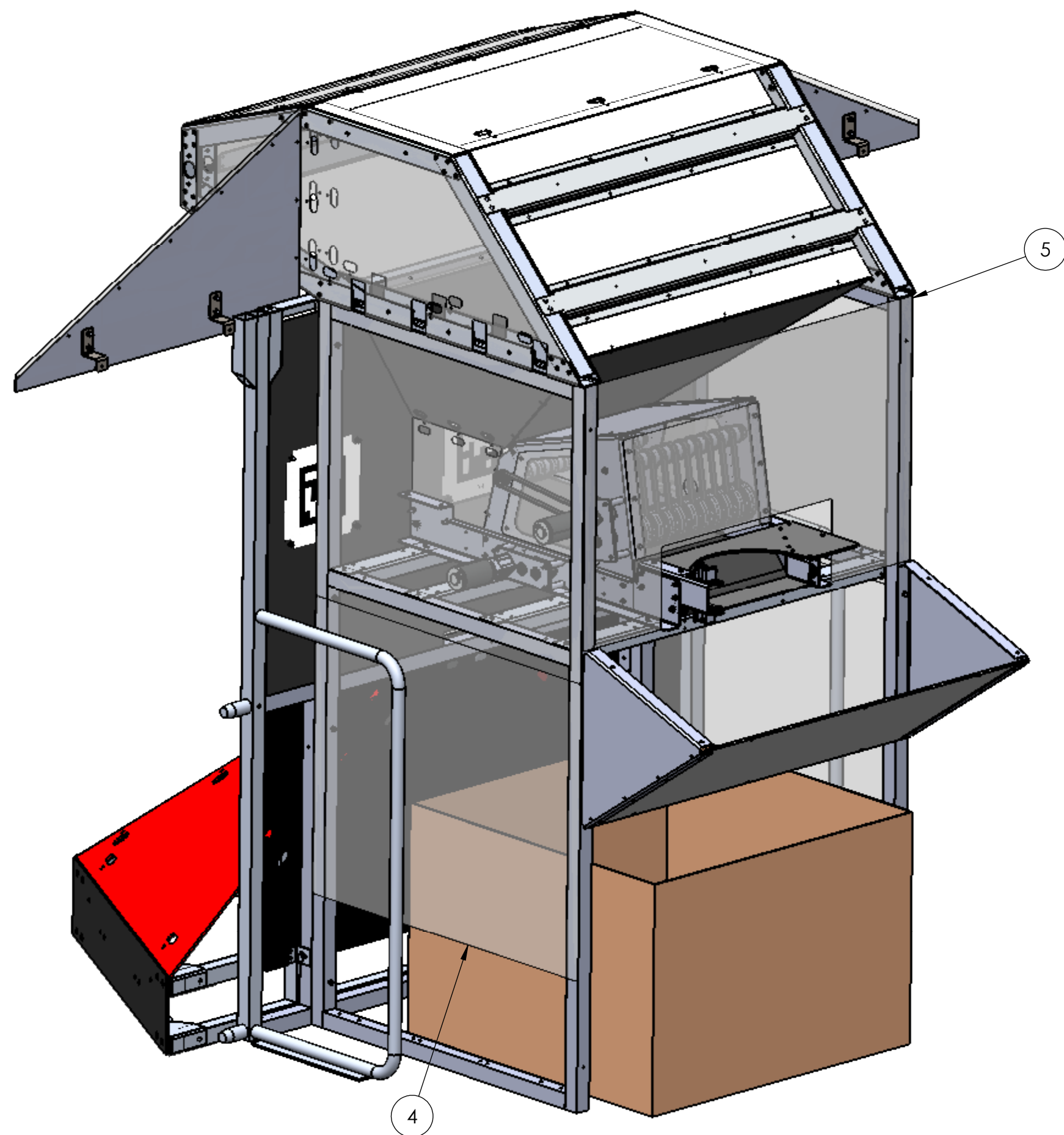


Attach 16 to assembly with 1" bolts, then attach 17 with 50lb cable ties
Slide 21 into place under ring counter

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	TITLE: Speaker		
	DRAWN	JO	12/19/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL			SIZE C GE-24300 SCALE: 1:16		
	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.					
MATERIAL/FINISH:						
DO NOT SCALE DRAWING						

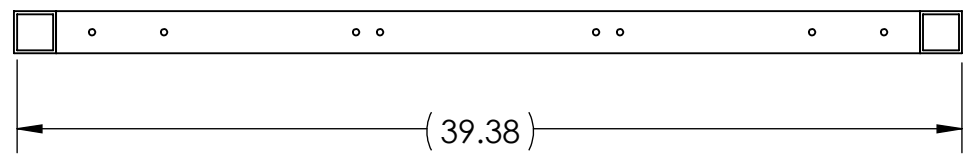


Attach 22 and 23 with 1" bolts and locknuts

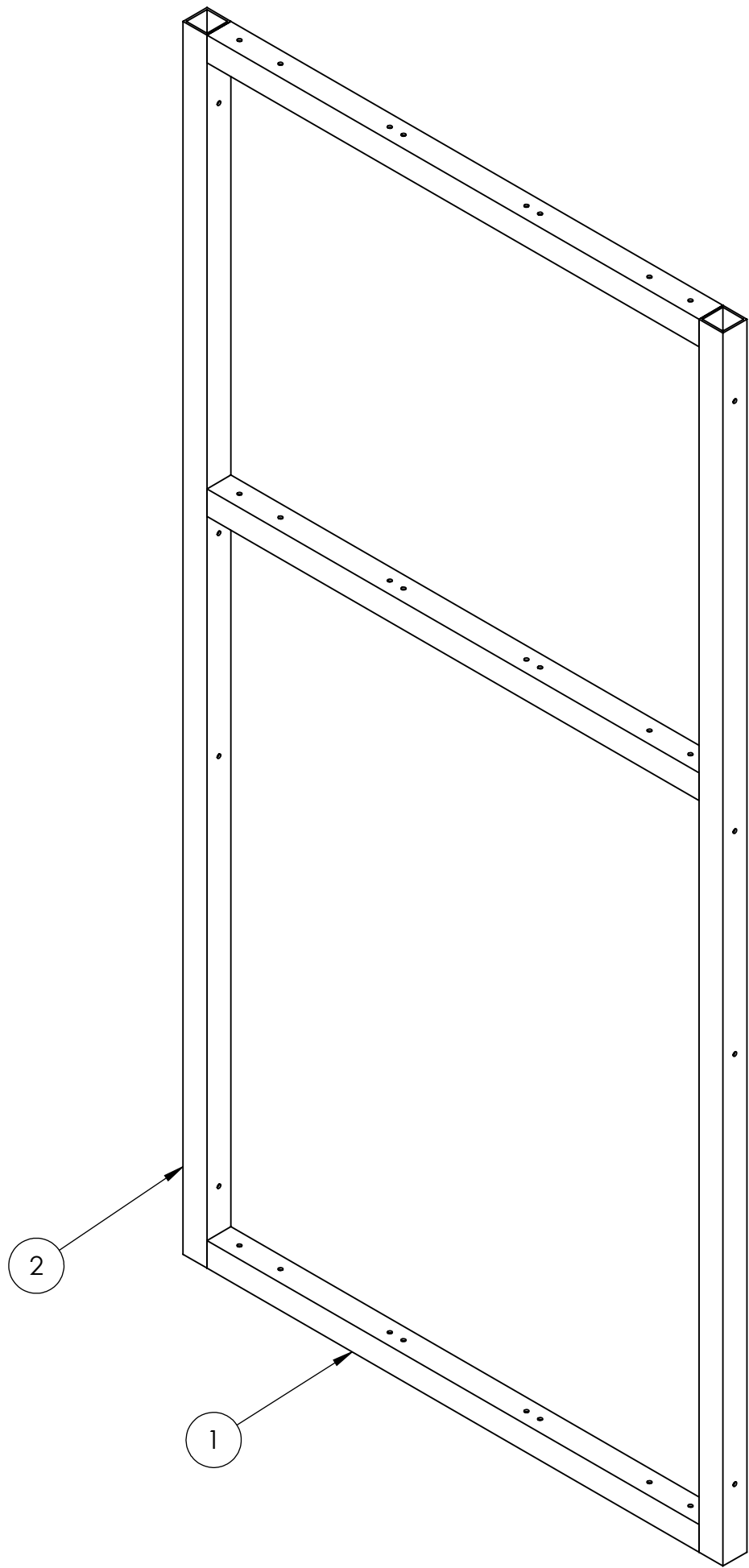
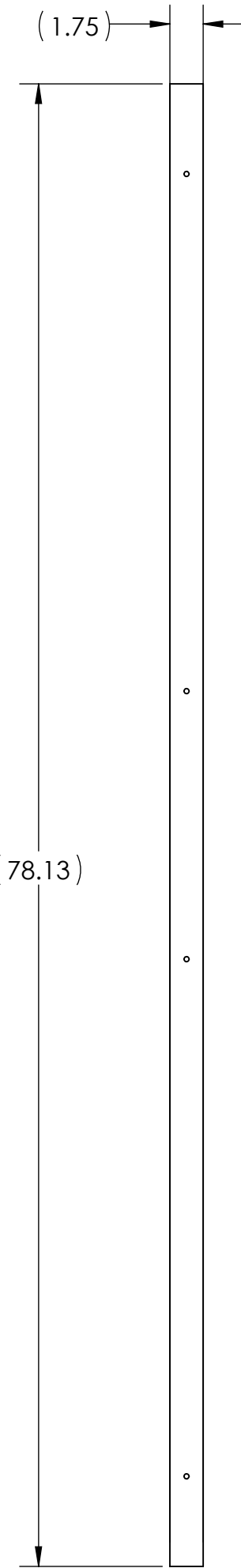
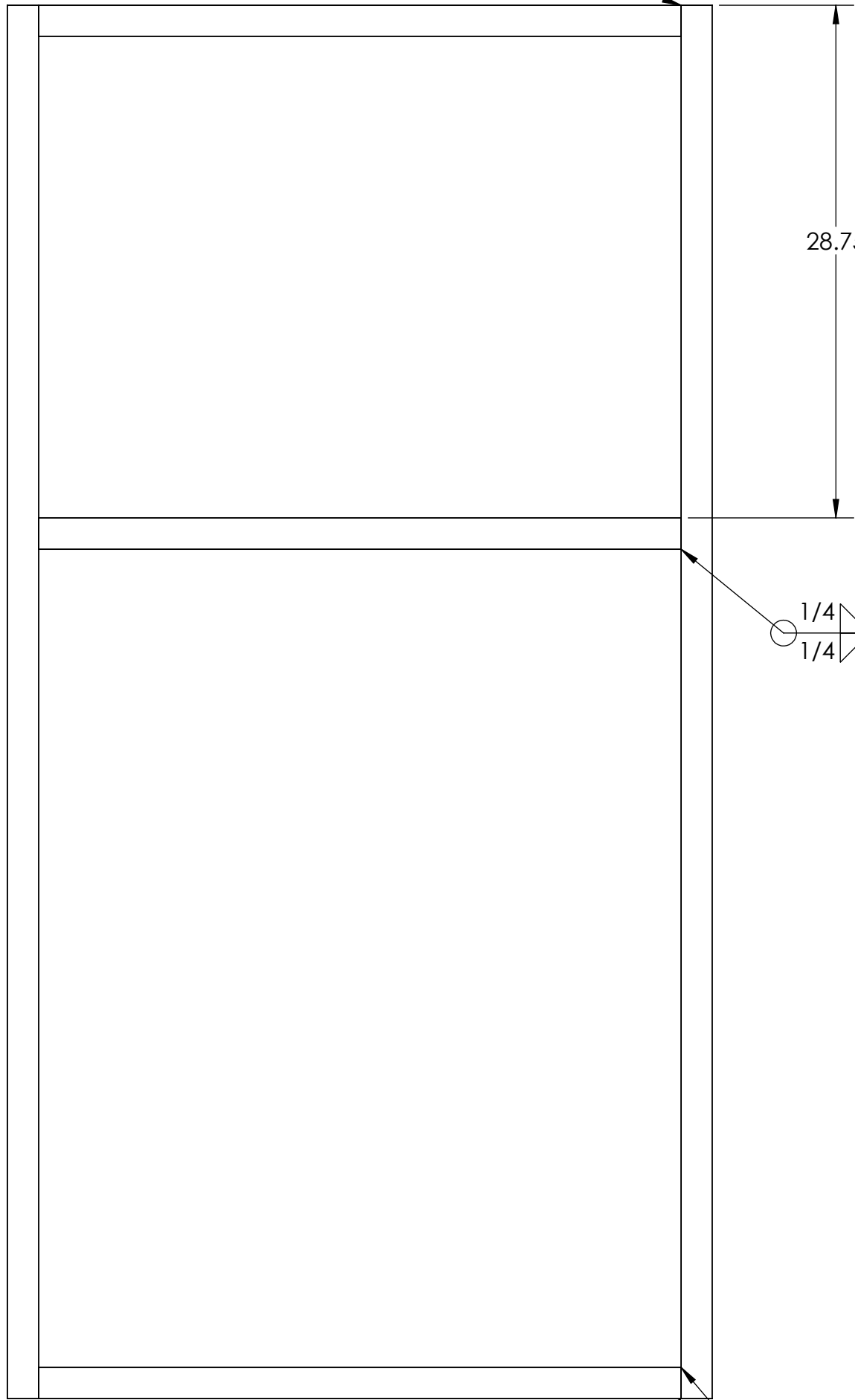


Attach 4 and 5 with hook and loop adhesive

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	TITLE: Speaker			
	DRAWN	JO	12/19/2023				
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.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.			SIZE C			
MATERIAL/FINISH:	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.						DWG. NO. GE-24300
DO NOT SCALE DRAWING				REV A			
				SCALE: 1:12		SHEET 6 OF 6	

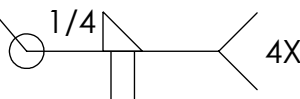


Grind Welds to flat on this edge





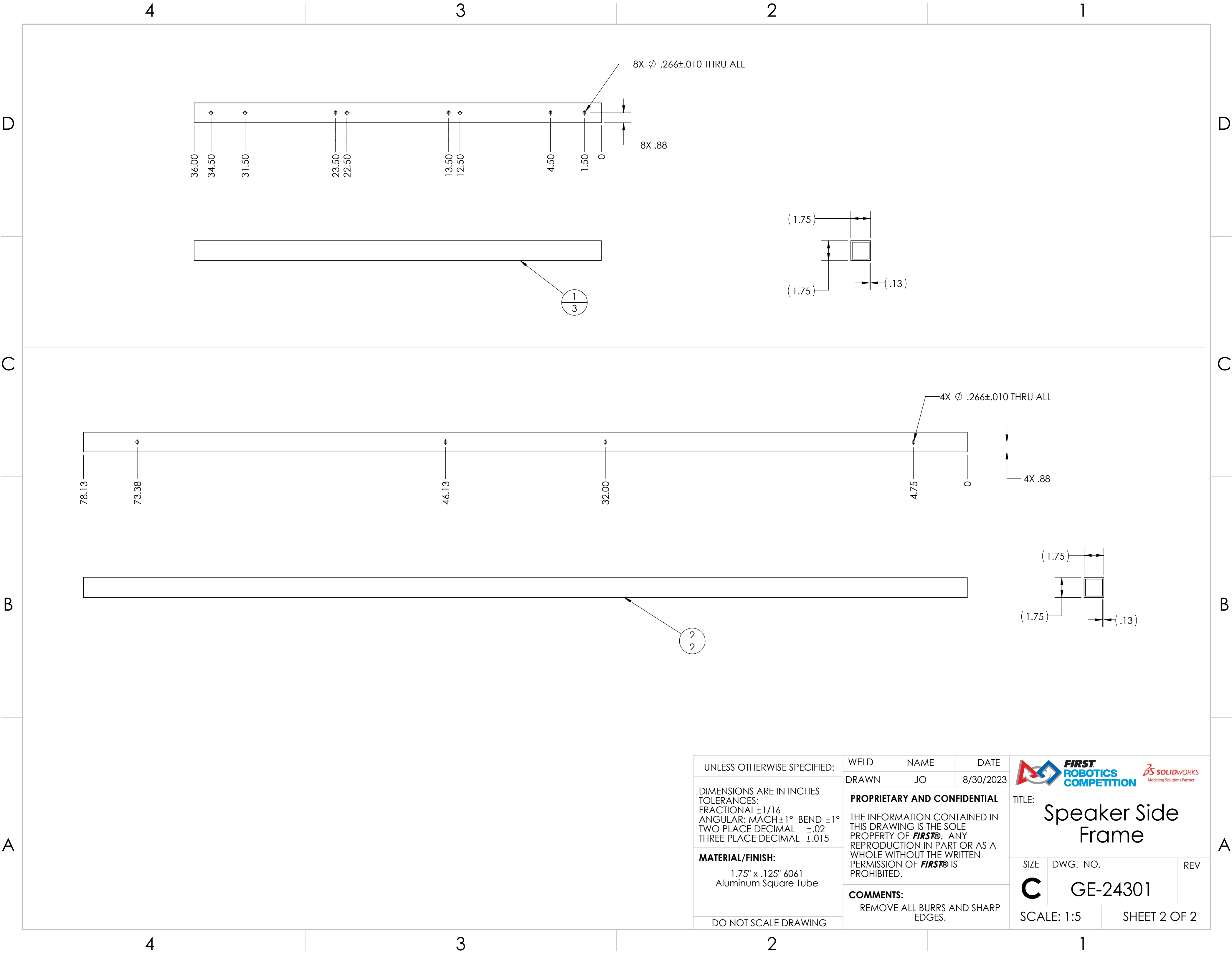
Grind Welds to flat on this edge



Notes:
Note hole orientation before welding
Tag or Label with Part Number

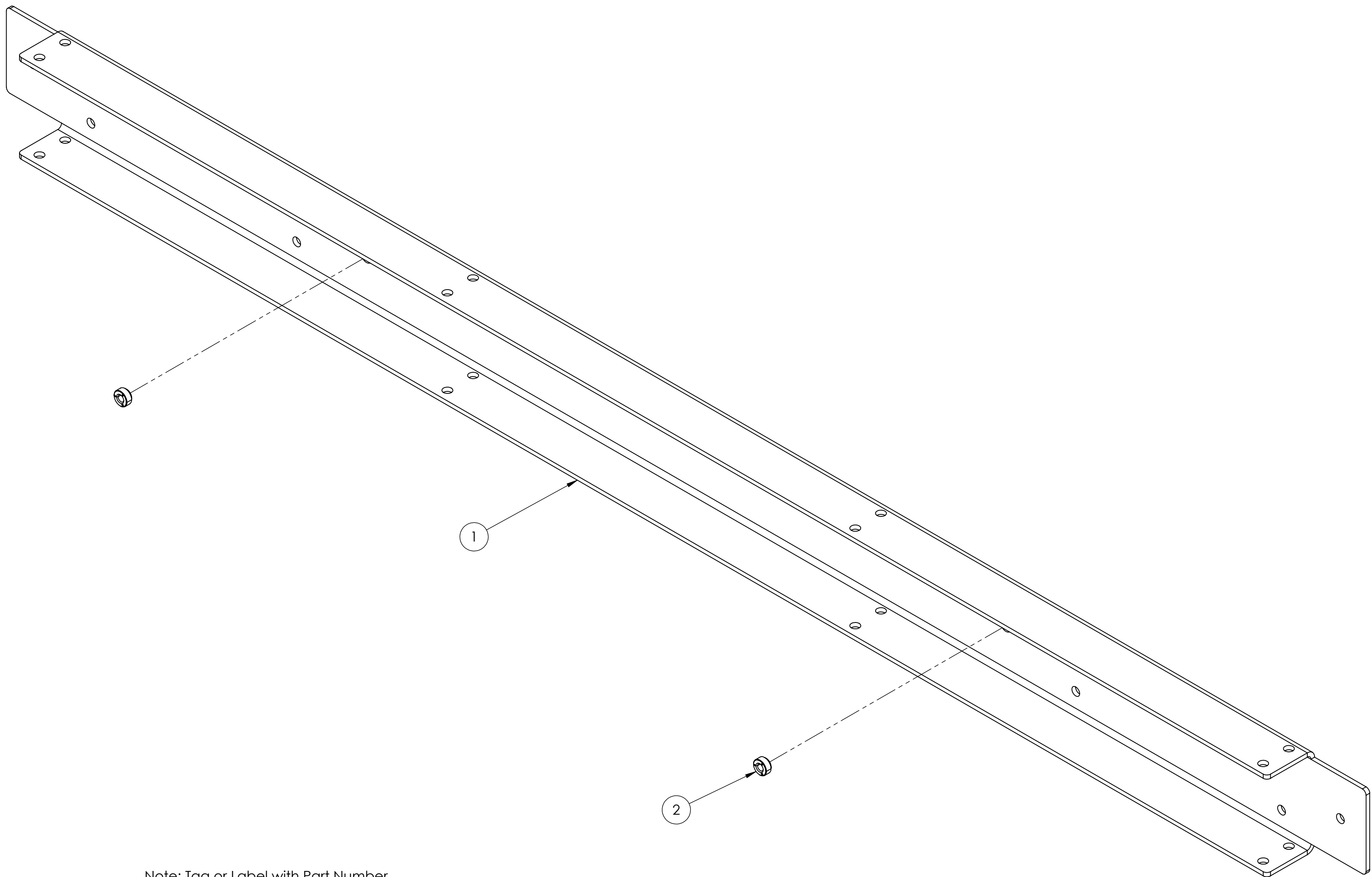


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24301-01	Speaker Depth Tube	3
2	GE-24301-02	Speaker Frame Height Tube	2

UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE	 		
	DRAWN	JO	8/30/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.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.			TITLE: Speaker Side Frame		
	MATERIAL/FINISH: 1.75" x .125" 6061 Aluminum Square Tube			SIZE C	DWG. NO. GE-24301	REV
DO NOT SCALE DRAWING	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:8		SHEET 1 OF 2





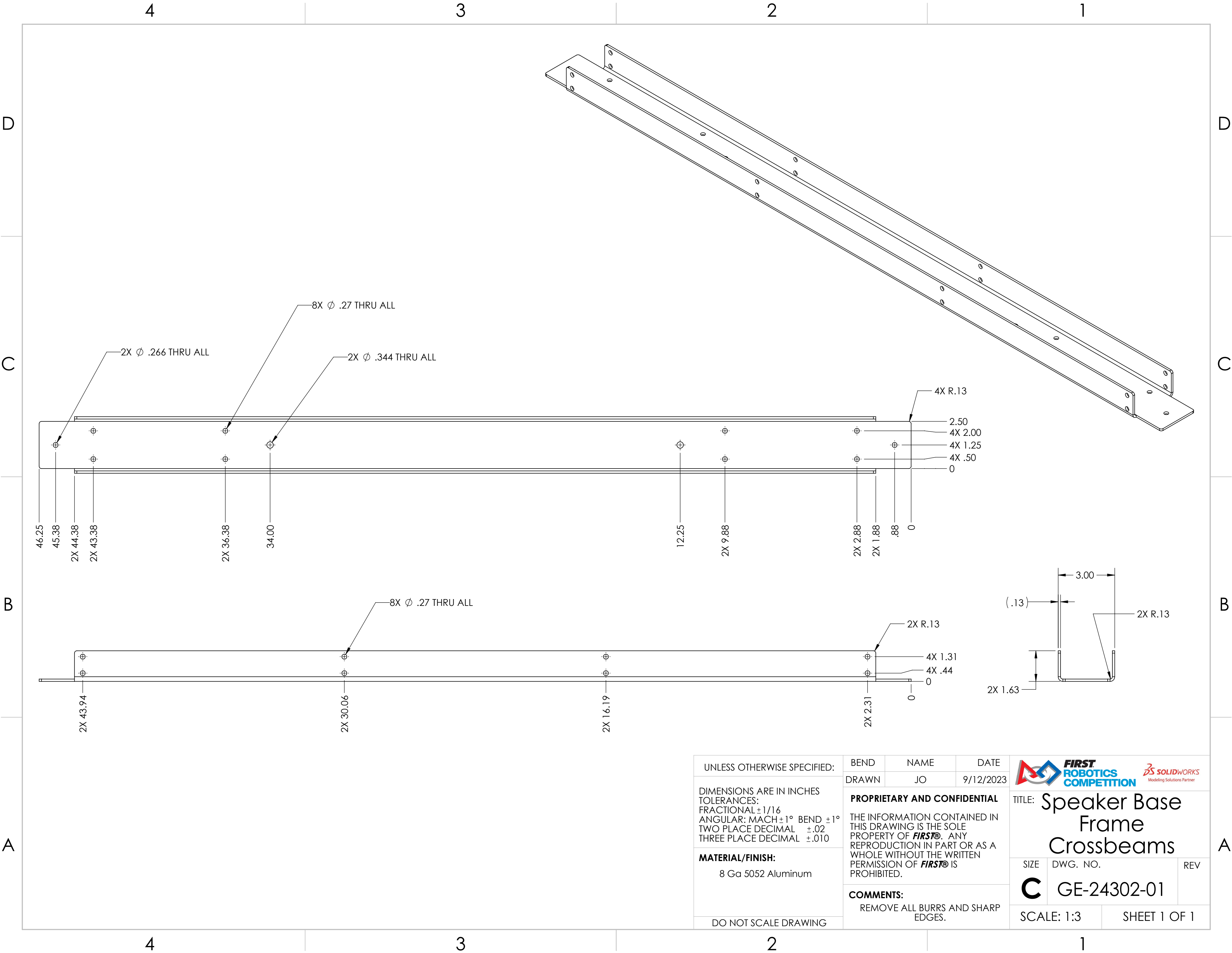
UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE	<div></div>		
	DRAWN	JO	8/30/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.015	PROPRIETARY AND CONFIDENTIAL			TITLE: Speaker Side Frame		
	THE INFORMATION CONTAINED IN THIS 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: 1.75" x .125" 6061 Aluminum Square Tube	COMMENTS:			SIZE	DWG. NO.	REV
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24301	
DO NOT SCALE DRAWING				SCALE: 1:5		SHEET 2 OF 2





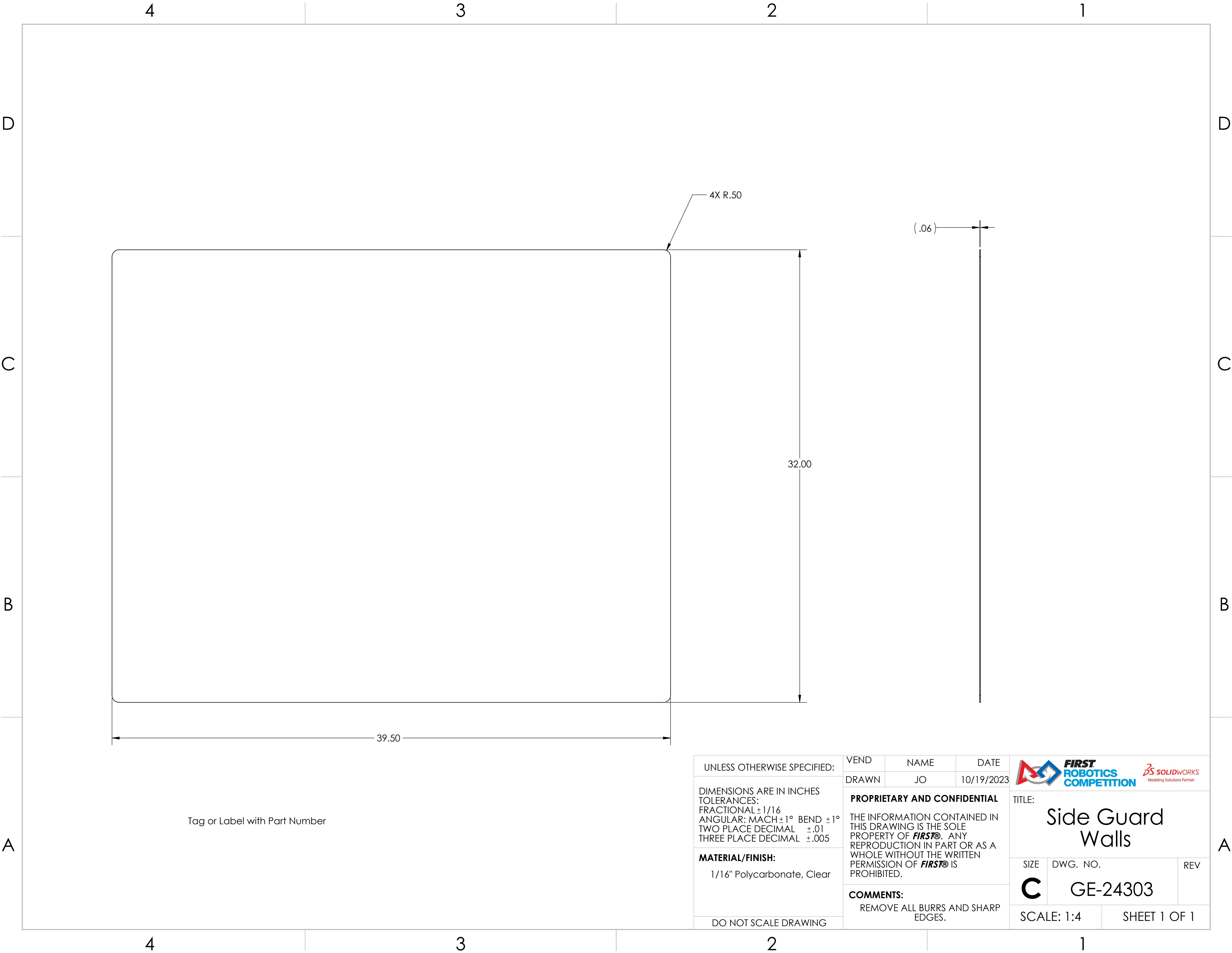
Note: Tag or Label with Part Number



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24302-01	Speaker Base Frame Crossbeams	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	2

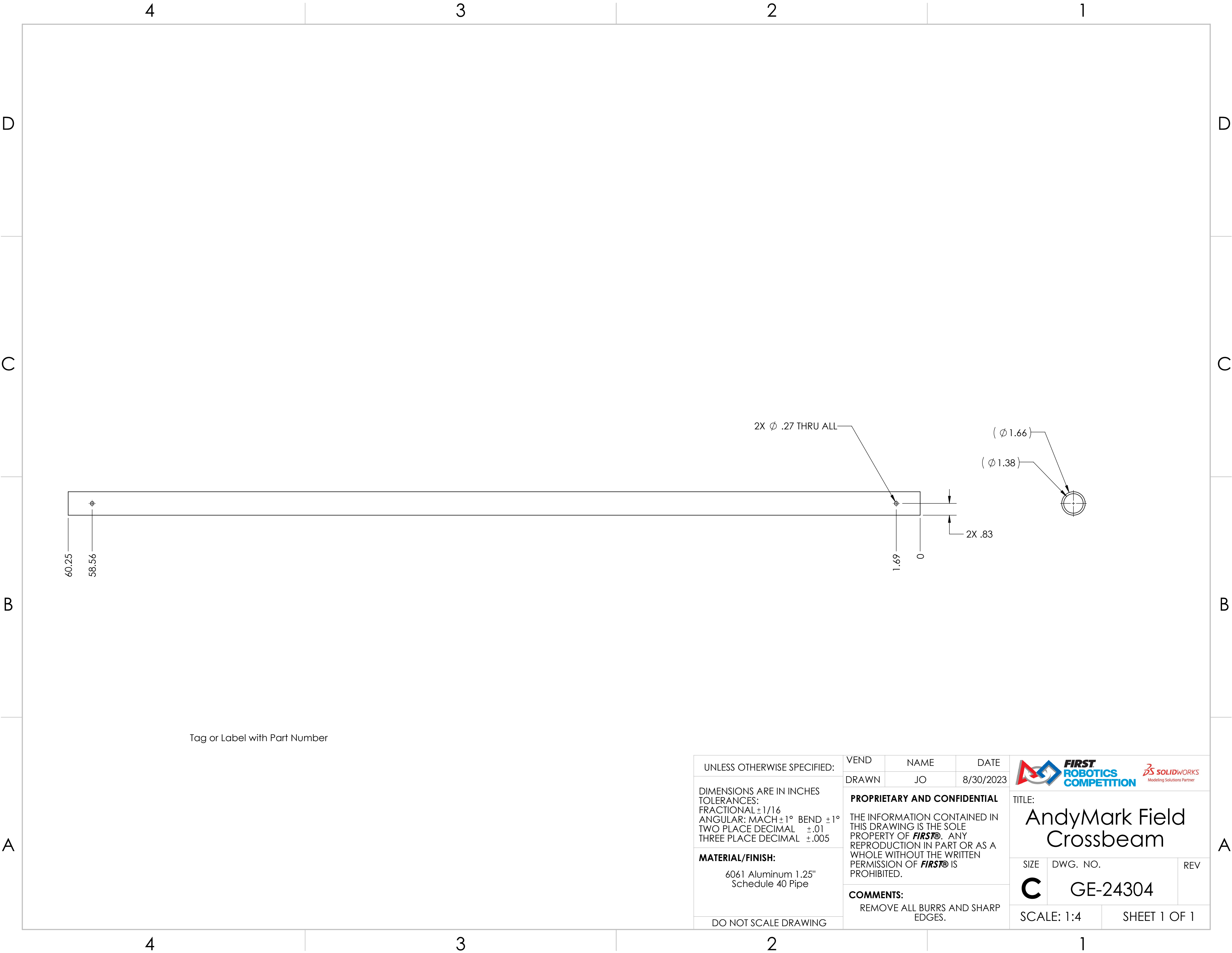
UNLESS OTHERWISE SPECIFIED:		VEND		NAME		DATE	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$		DRAWN		JO		10/6/2023	
		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.					
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
MATERIAL/FINISH:		 					
DO NOT SCALE DRAWING							
		TITLE:		Speaker Crossbeams with PEMs			
		SIZE		DWG. NO.		REV	
		C		GE-24302			
		SCALE: 1:2		SHEET 1 OF 1			





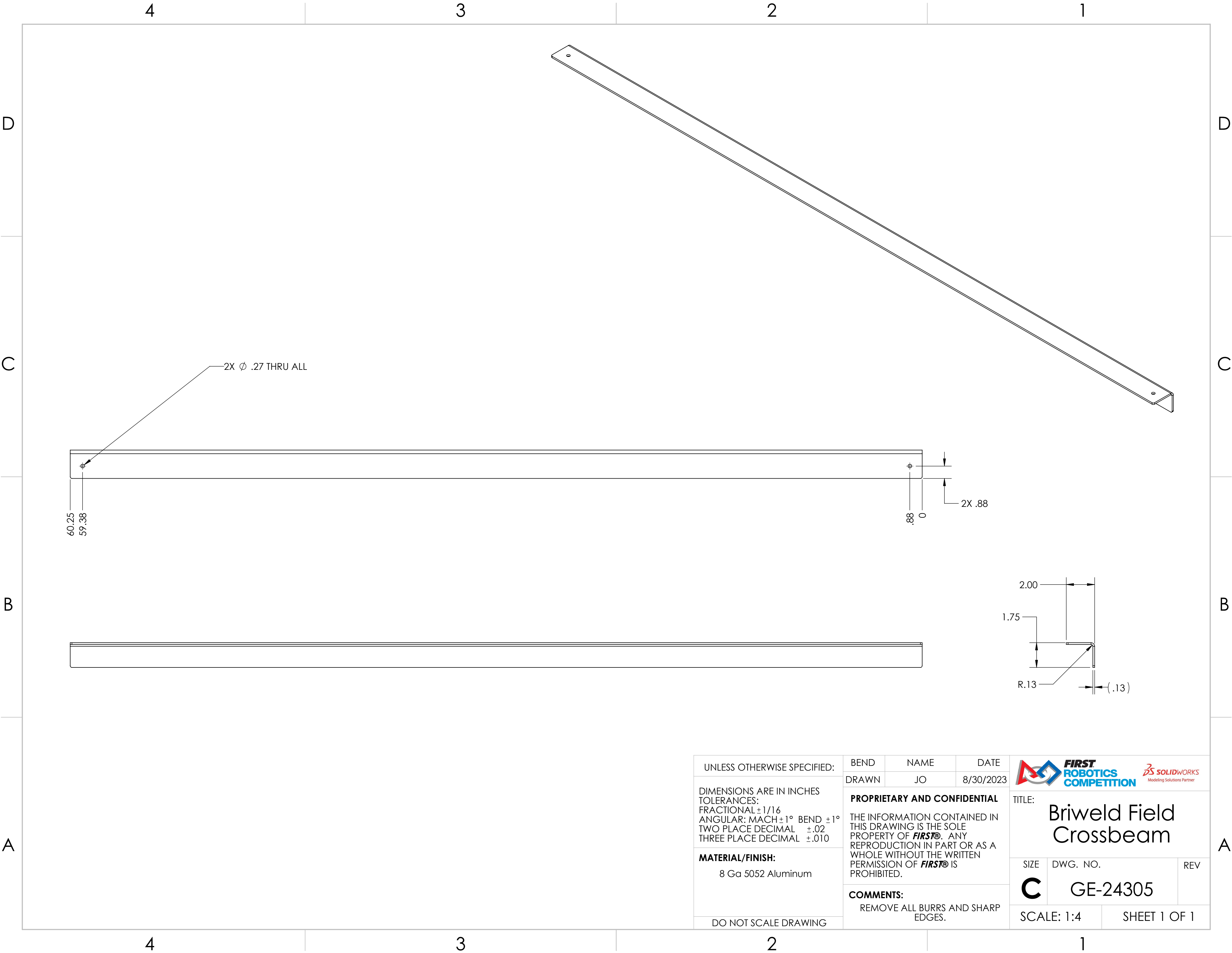
UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div></div>
	DRAWN	JO	9/12/2023	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	PROPRIETARY AND CONFIDENTIAL			TITLE: Speaker Base Frame Crossbeams
	THE INFORMATION CONTAINED 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:		
8 Ga 5052 Aluminum	REMOVE ALL BURRS AND SHARP EDGES.			DWG. NO.
DO NOT SCALE DRAWING				C
				GE-24302-01
			SCALE: 1:3	SHEET 1 OF 1





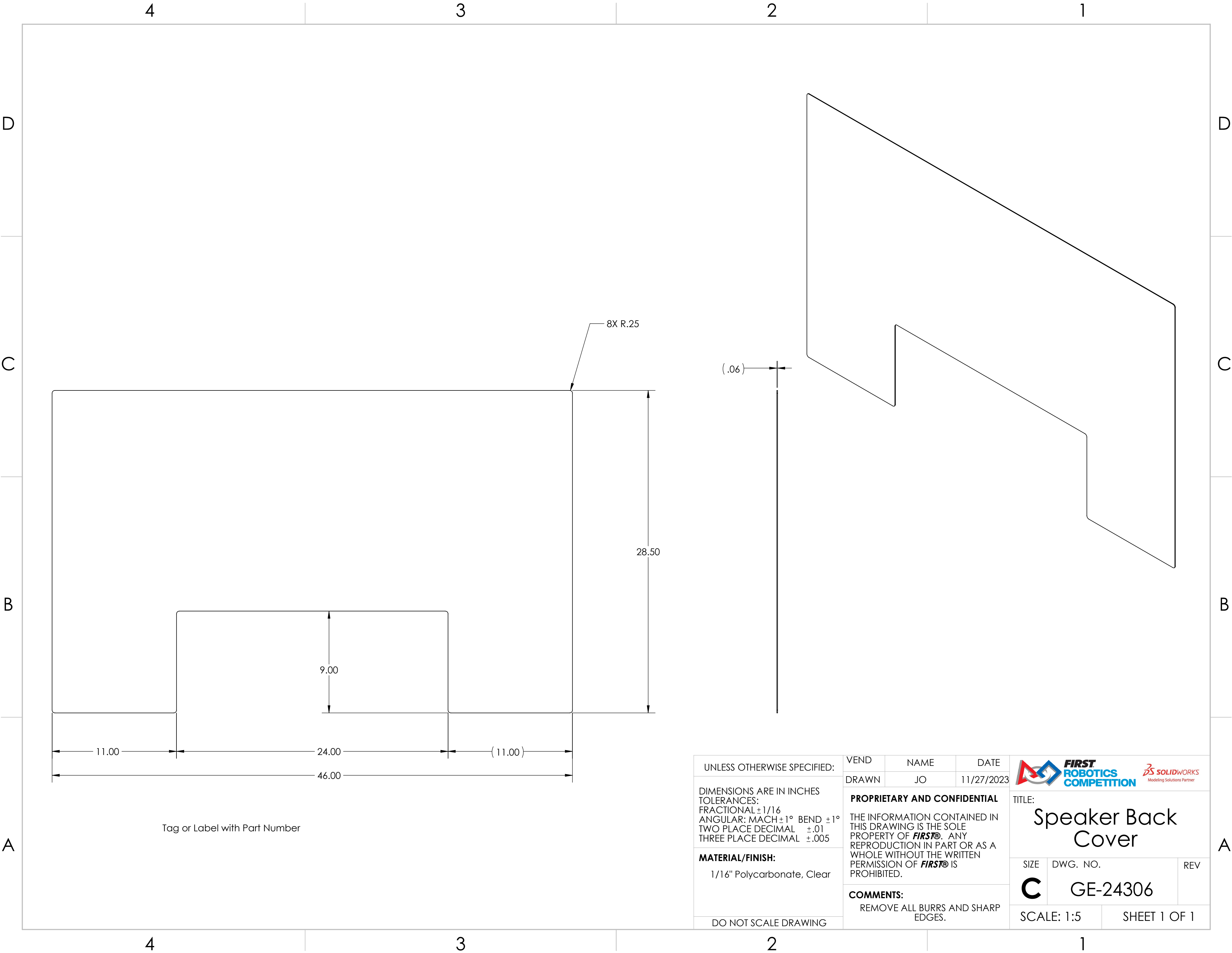
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>		
	DRAWN	JO	10/19/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Side Guard Walls		
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			SIZE C		
MATERIAL/FINISH: 1/16" Polycarbonate, Clear	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			DWG. NO.		REV
DO NOT SCALE DRAWING				GE-24303		
				SCALE: 1:4		SHEET 1 OF 1

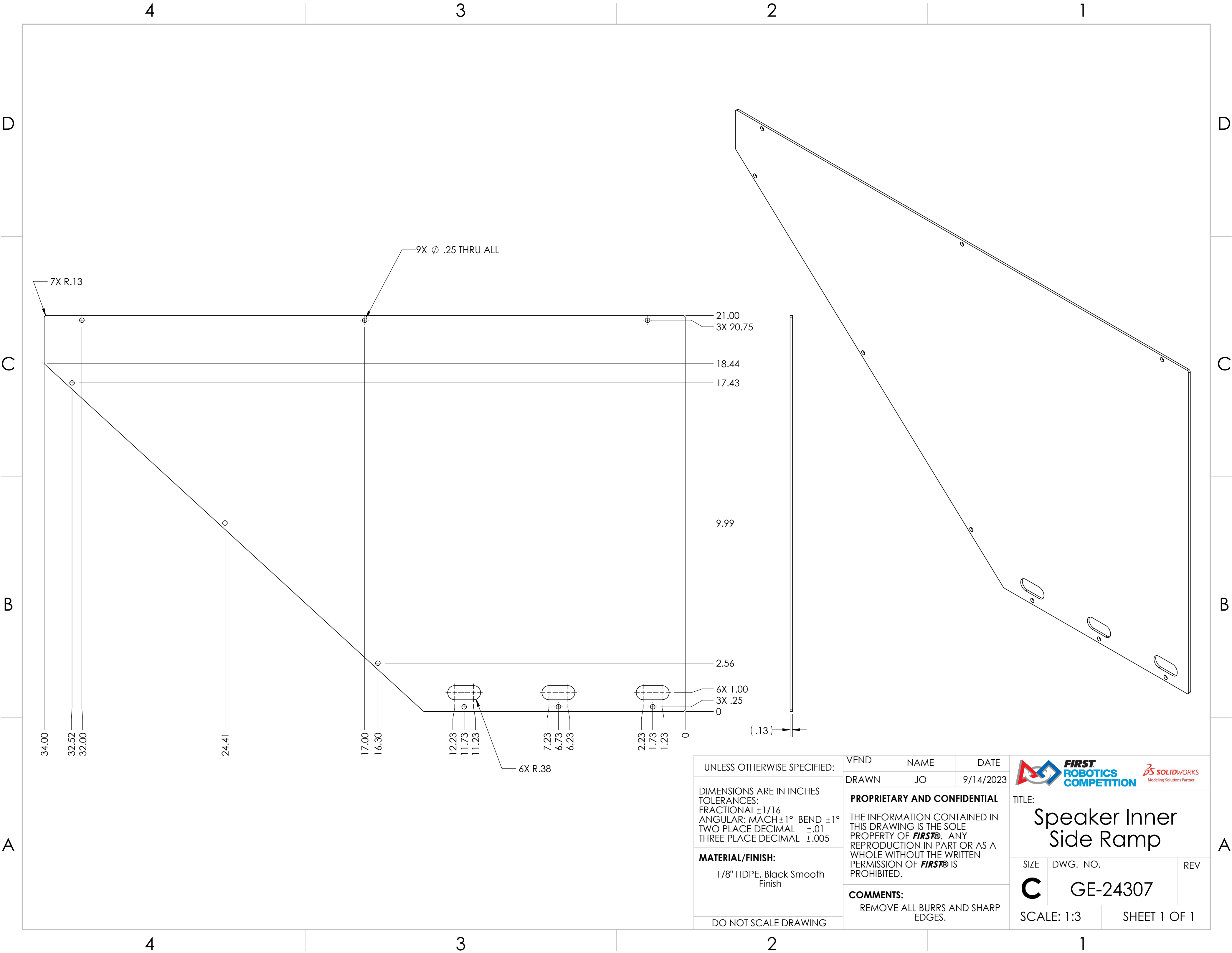


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 6061 Aluminum 1.25" Schedule 40 Pipe DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: AndyMark Field Crossbeam</div> <div><div>SIZE</div><div>C</div><div>SCALE: 1:4</div></div> <div><div>DWG. NO.</div><div>GE-24304</div><div>SHEET 1 OF 1</div></div> <div><div>REV</div><div></div></div>		
	DRAWN	JO	8/30/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					



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: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Briweld Field Crossbeam</div>		
	DRAWN	JO	8/30/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24305	
SCALE: 1:4		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:
1/8" HDPE, Black Smooth Finish

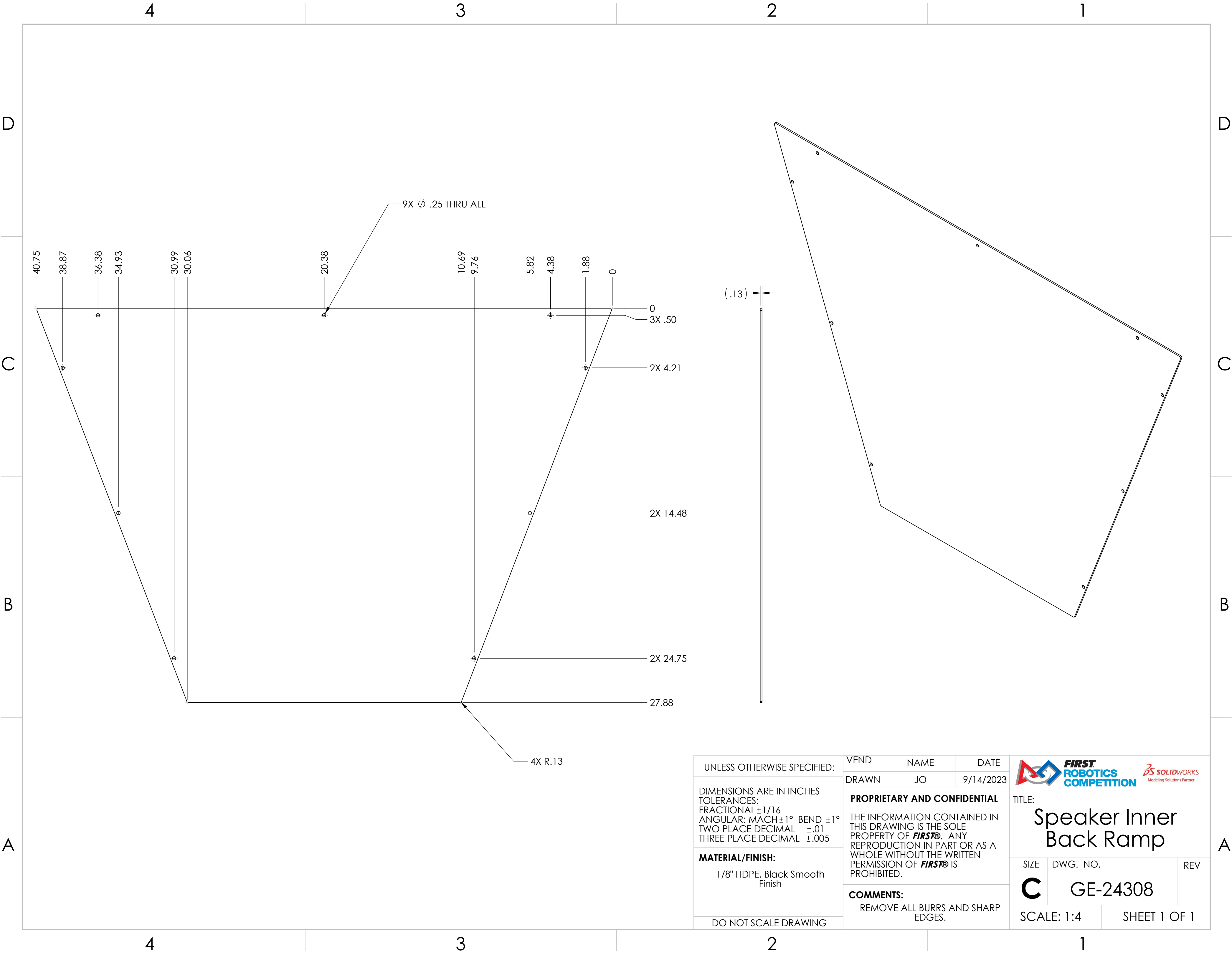
DO NOT SCALE DRAWING



VEND	NAME	DATE
DRAWN	JO	9/14/2023

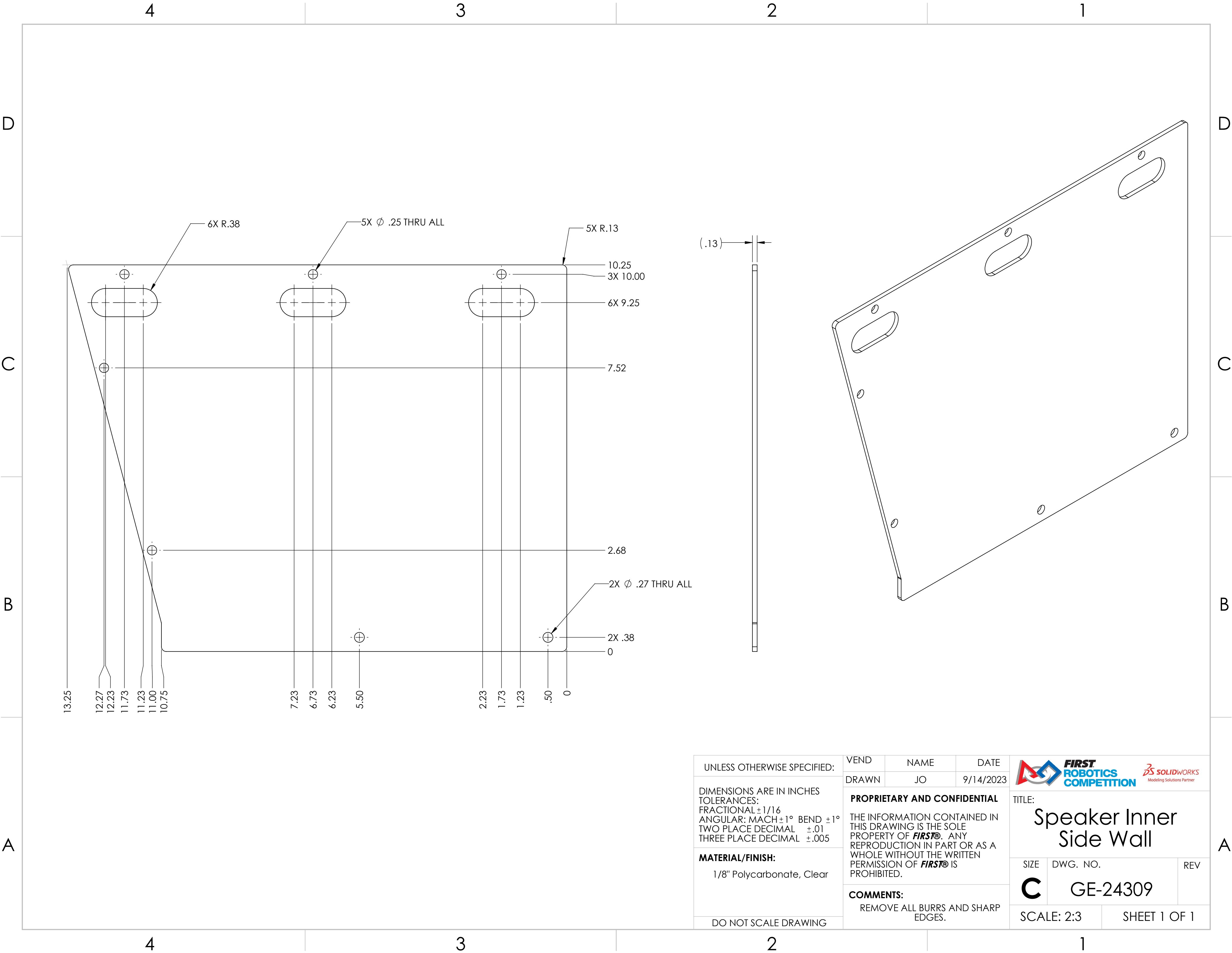
PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF **FIRST®**. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF **FIRST®** IS PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

 		
TITLE: Speaker Inner Side Ramp		
SIZE C	DWG. NO. GE-24307	REV
SCALE: 1:3		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: 1/8" HDPE, Black Smooth Finish DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Speaker Inner Back Ramp</div>		
	DRAWN	JO	9/14/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24308	
SCALE: 1:4		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:
1/8" Polycarbonate, Clear



DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	9/14/2023

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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Speaker Inner Side Wall

SIZE C	DWG. NO. GE-24309	REV
SCALE: 2:3		SHEET 1 OF 1

4

3

2

1

D

C

B

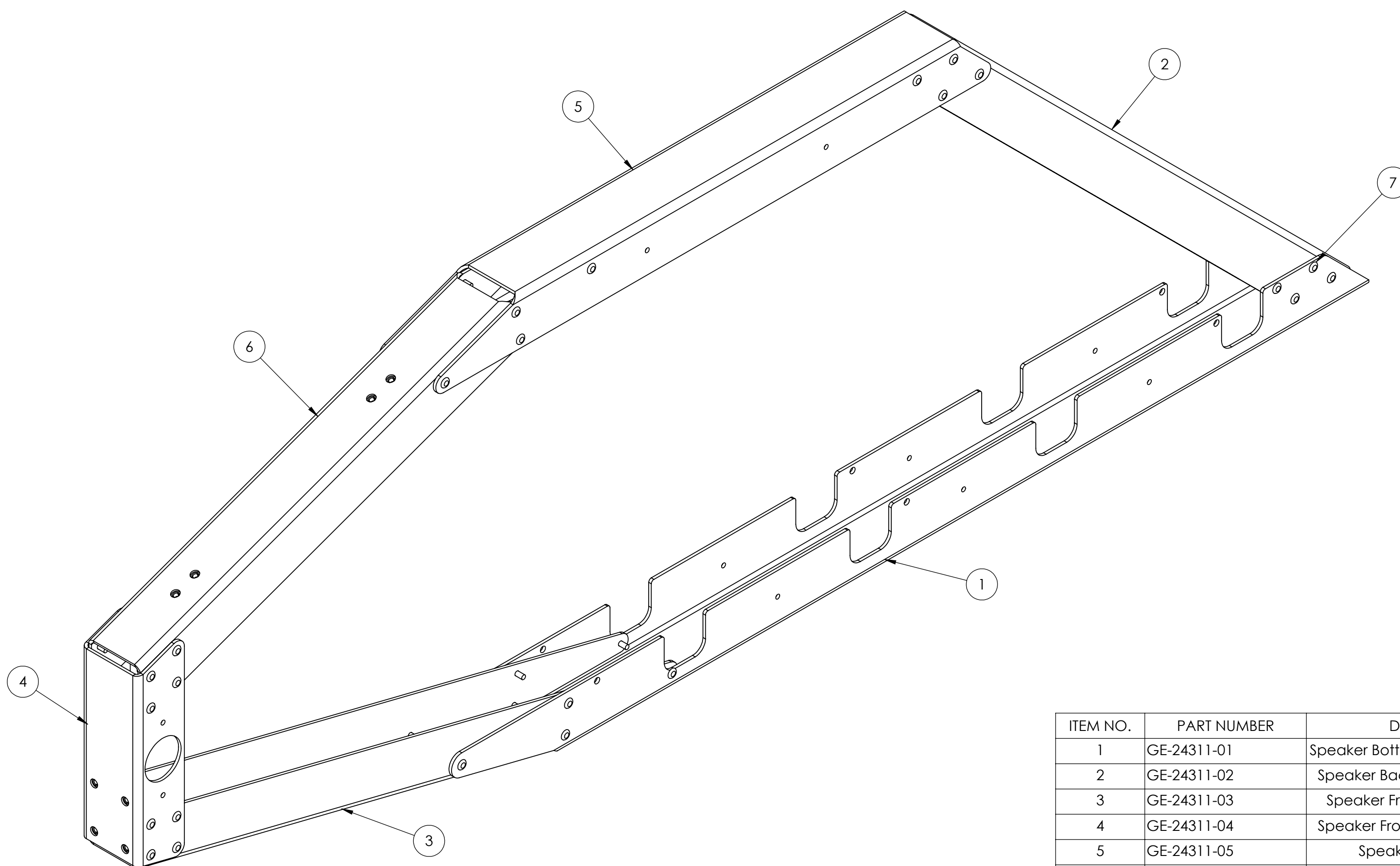
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3

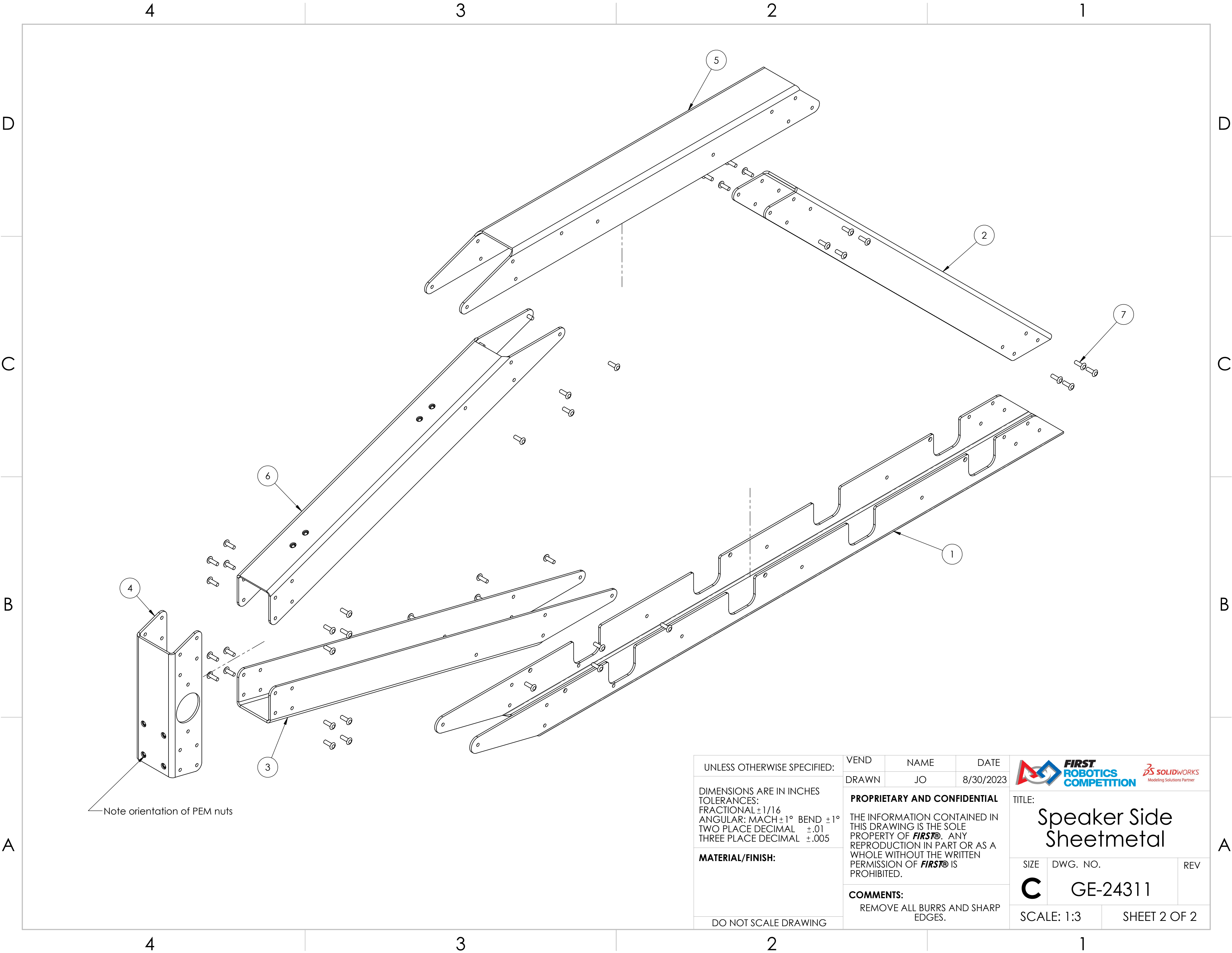
2

1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24311-01	Speaker Bottom Channel with PEMs	1
2	GE-24311-02	Speaker Back Channel with PEMs	1
3	GE-24311-03	Speaker Front Bottom Channel	1
4	GE-24311-04	Speaker Front Channel with PEMs	1
5	GE-24311-05	Speaker Top Channel	1
6	GE-24311-06	Speaker Front Top Channel with PEMs	1
7	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	48

UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	TITLE: Speaker Side Sheetmetal	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005		DRAWN	JO	8/30/2023		
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.			SIZE C	
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				
DO NOT SCALE DRAWING					DWG. NO. GE-24311	REV
				SCALE: 1:3		SHEET 1 OF 2



Note orientation of PEM nuts

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

DRAWN

NAME

JO

DATE

8/30/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION



TITLE:

Speaker Side
Sheetmetal

SIZE

C

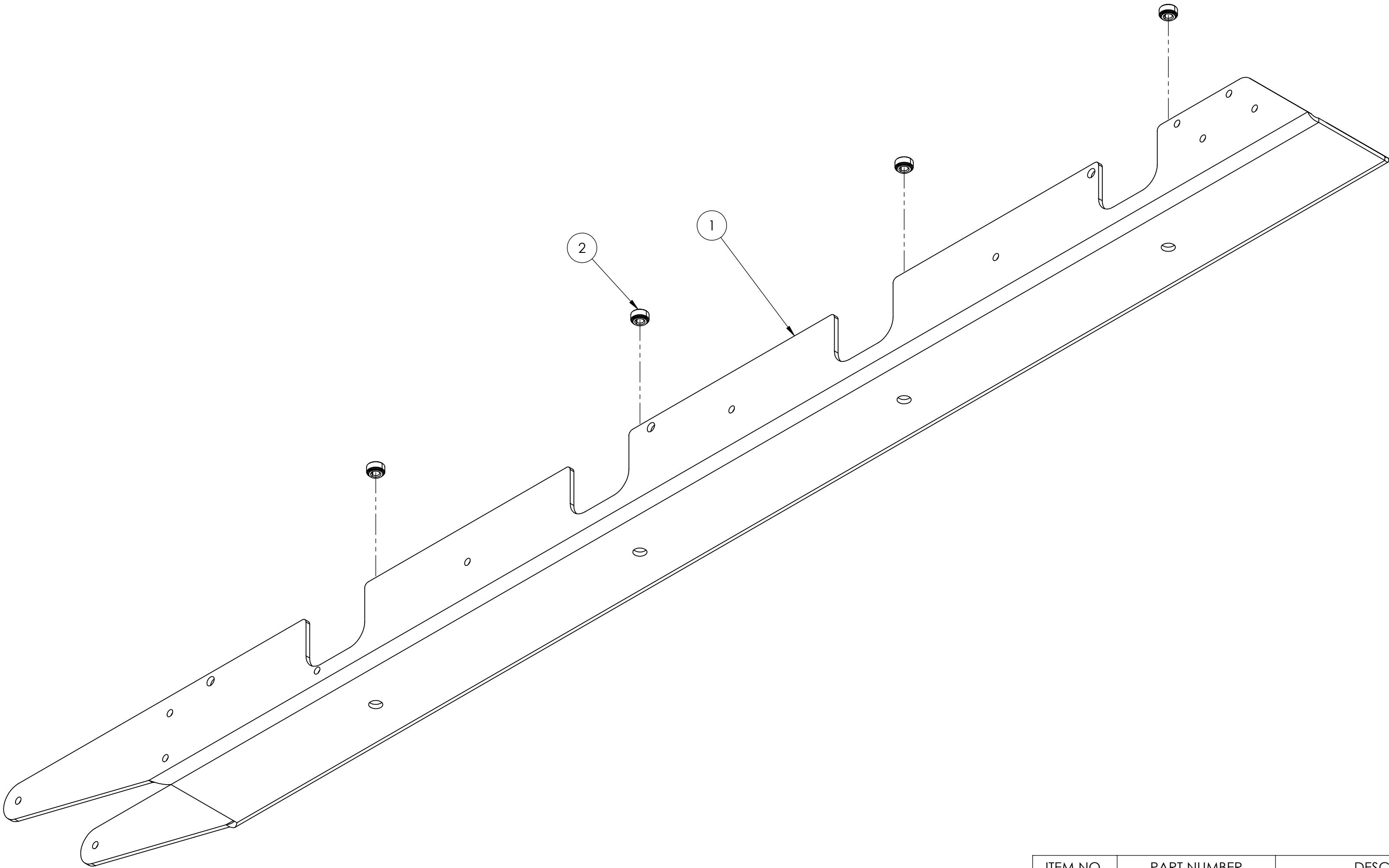
DWG. NO.

GE-24311

REV

SCALE: 1:3

SHEET 2 OF 2



Notes:
Insert PEM hardware as shown

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24311-07	Speaker Bottom Channel	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	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 $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	8/30/2023

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.

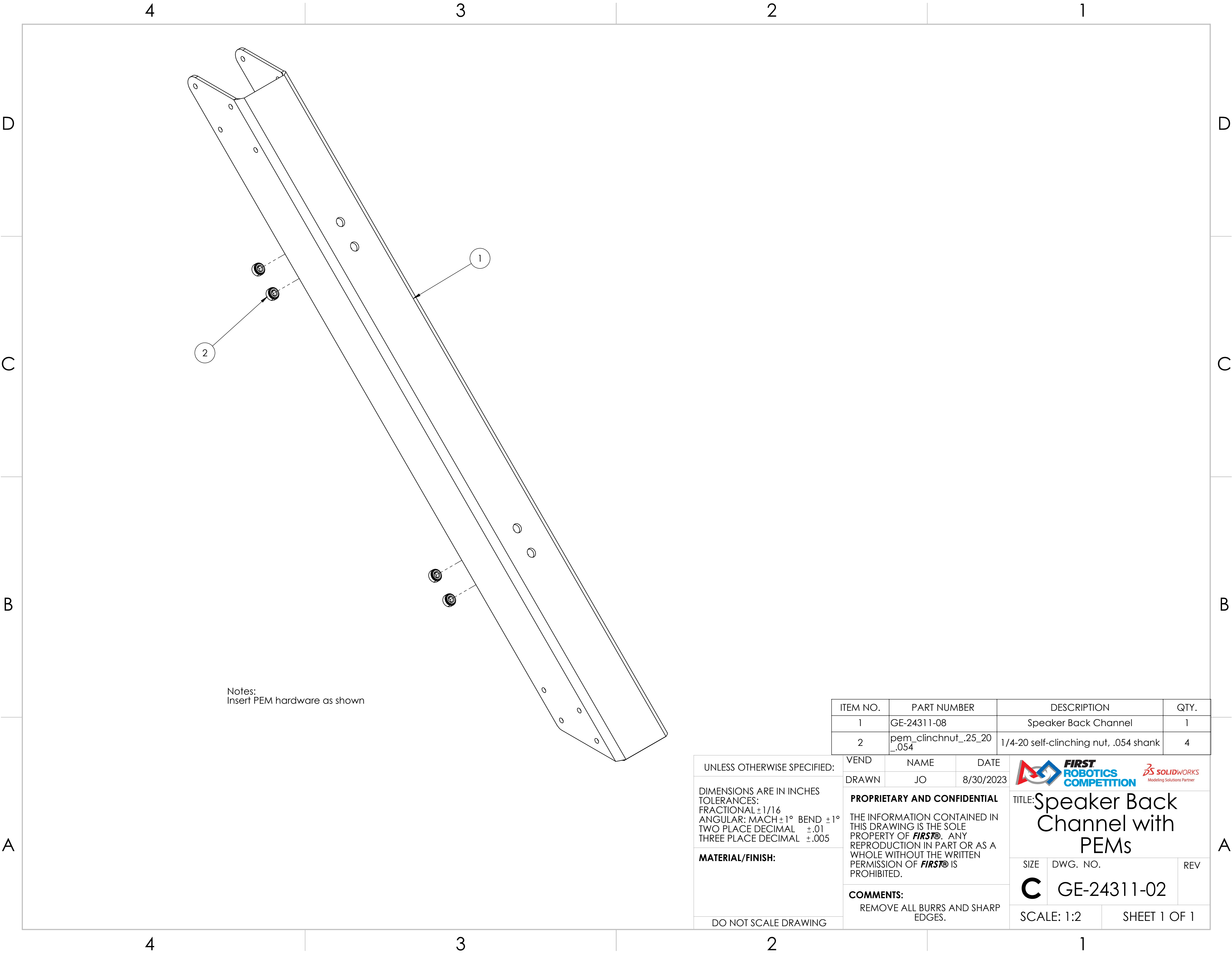
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE: **Speaker Bottom Channel with PEMs**



SIZE	DWG. NO.	REV
C	GE-24311-01	

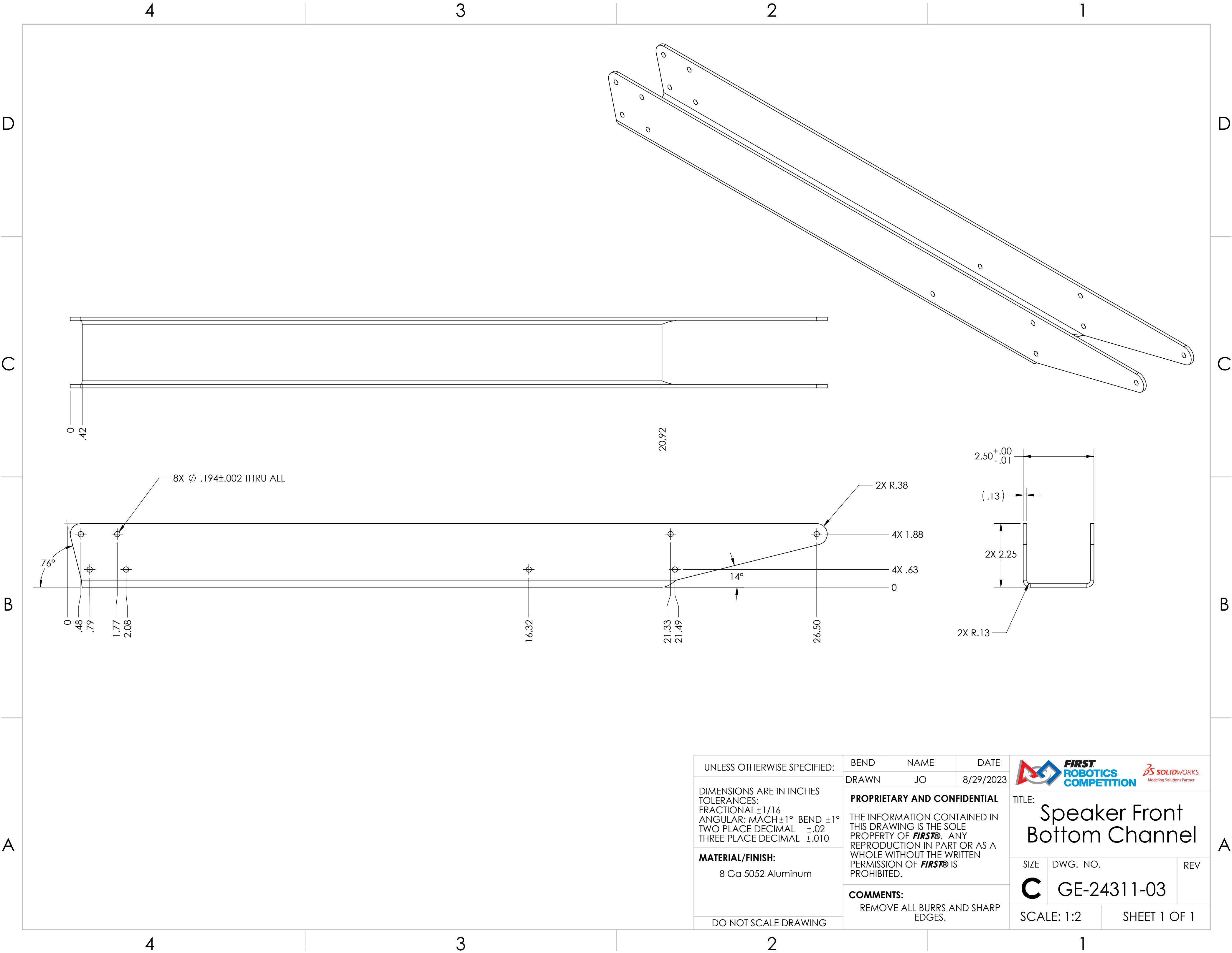
SCALE: 1:2 SHEET 1 OF 1



Notes:
Insert PEM hardware as shown

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24311-08	Speaker Back Channel	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	4

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: DO NOT SCALE DRAWING	VEND	NAME	DATE	<div><div></div><div>TITLE: Speaker Back Channel with PEMs</div><div><div>SIZE</div><div>DWG. NO.</div><div>REV</div></div><div><div>SCALE: 1:2</div><div>SHEET 1 OF 1</div></div></div>					
	DRAWN	JO	8/30/2023						
	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.								
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.								



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:
8 Ga 5052 Aluminum

DO NOT SCALE DRAWING

BEND	NAME	DATE
DRAWN	JO	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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

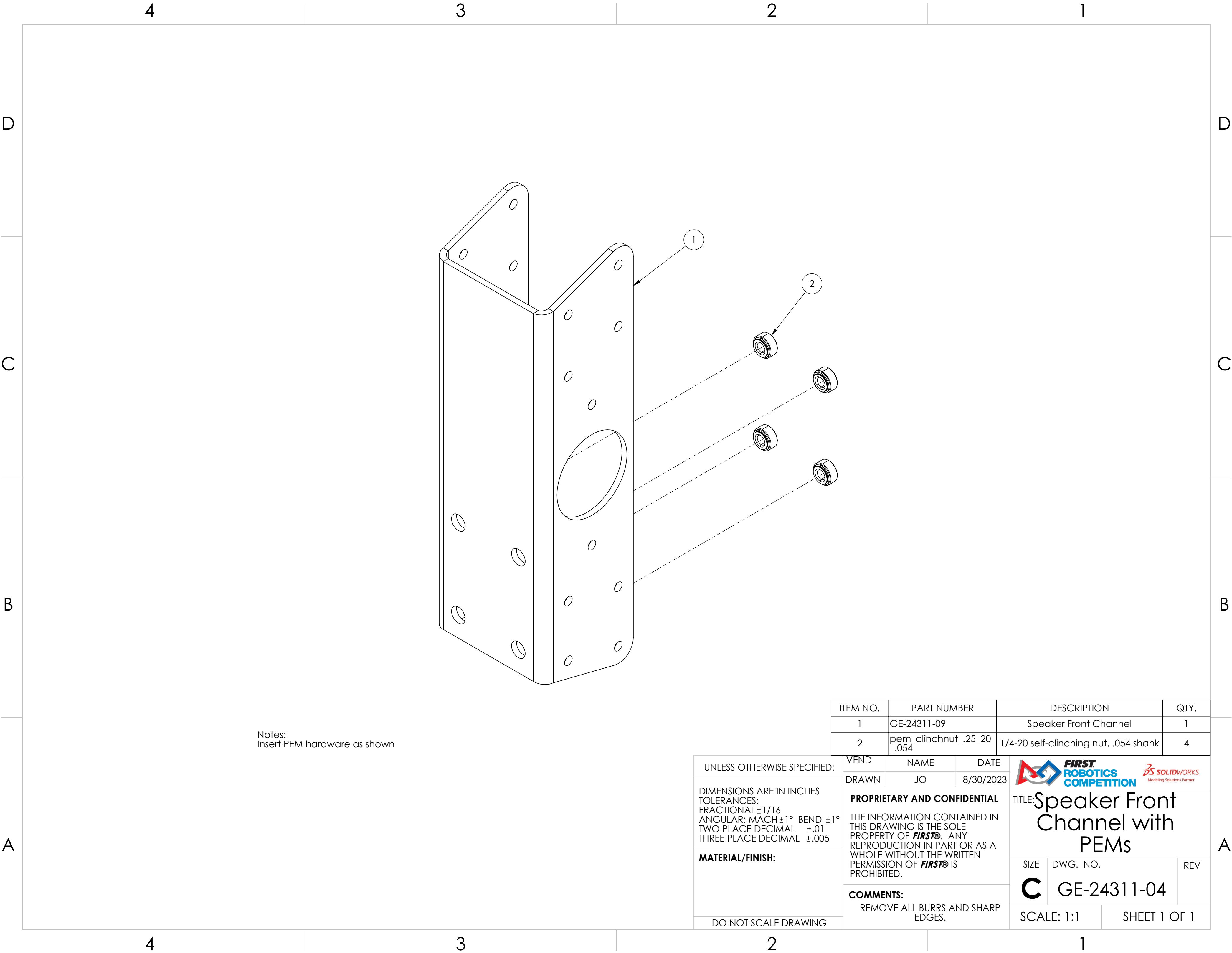


TITLE:
Speaker Front Bottom Channel

SIZE	DWG. NO.	REV
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C	GE-24311-03
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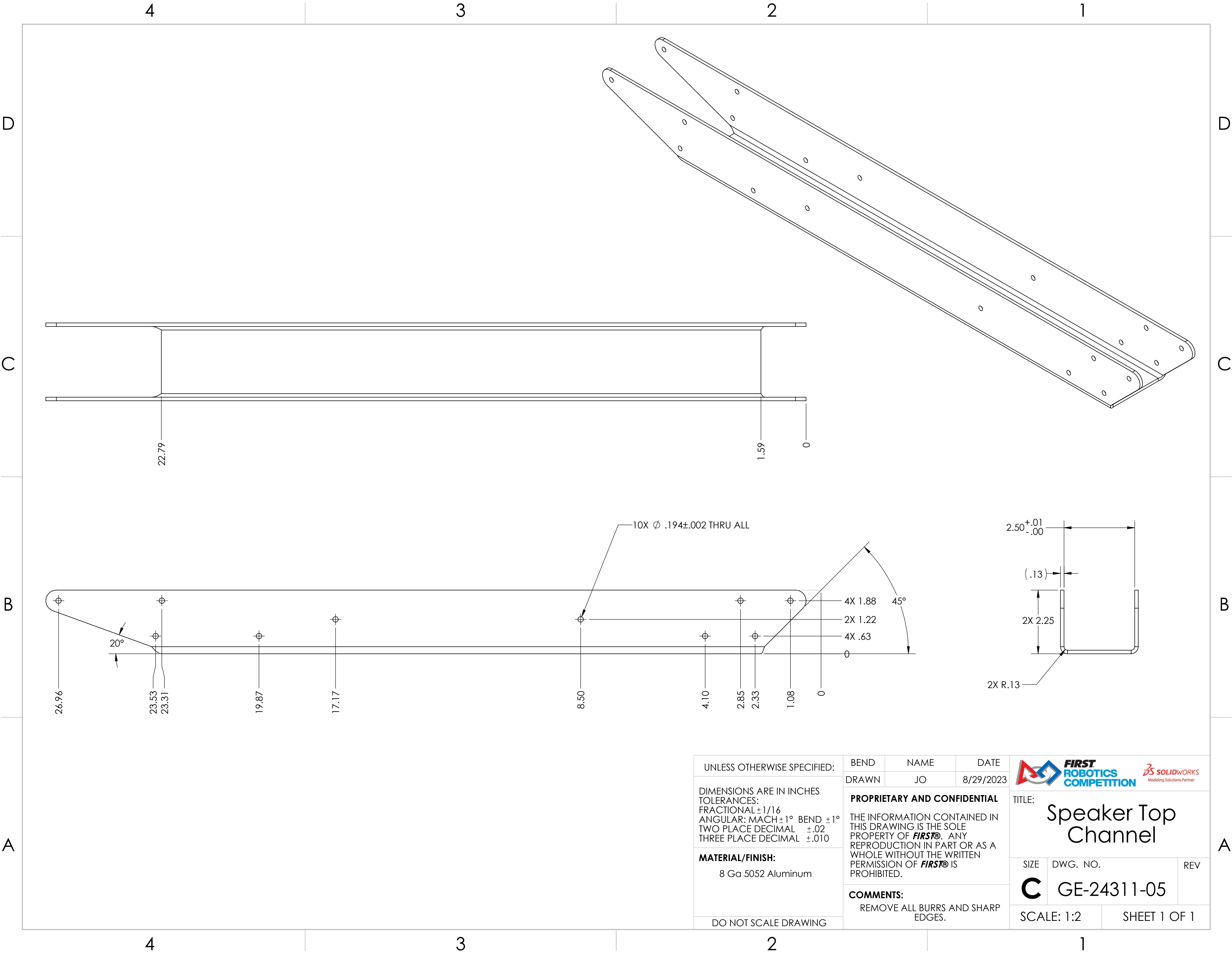
SCALE: 1:2	SHEET 1 OF 1
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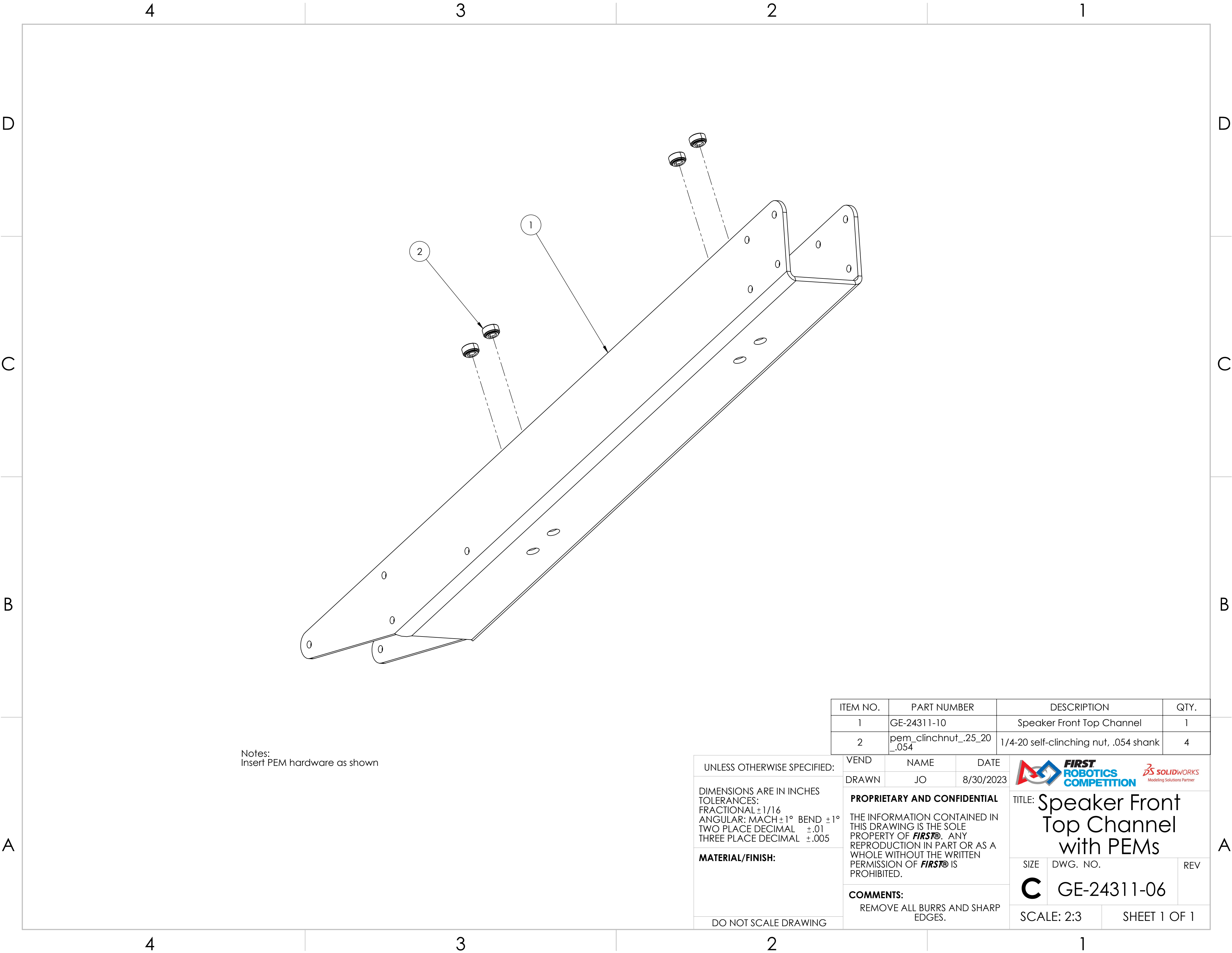
Notes:
Insert PEM hardware as shown

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24311-09	Speaker Front Channel	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	4

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>		
	DRAWN	JO	8/30/2023			
DIMENSIONS ARE IN INCHES 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.			TITLE: Speaker Front Channel with PEMs		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	GE-24311-04	
DO NOT SCALE DRAWING				SCALE: 1:1	SHEET 1 OF 1	





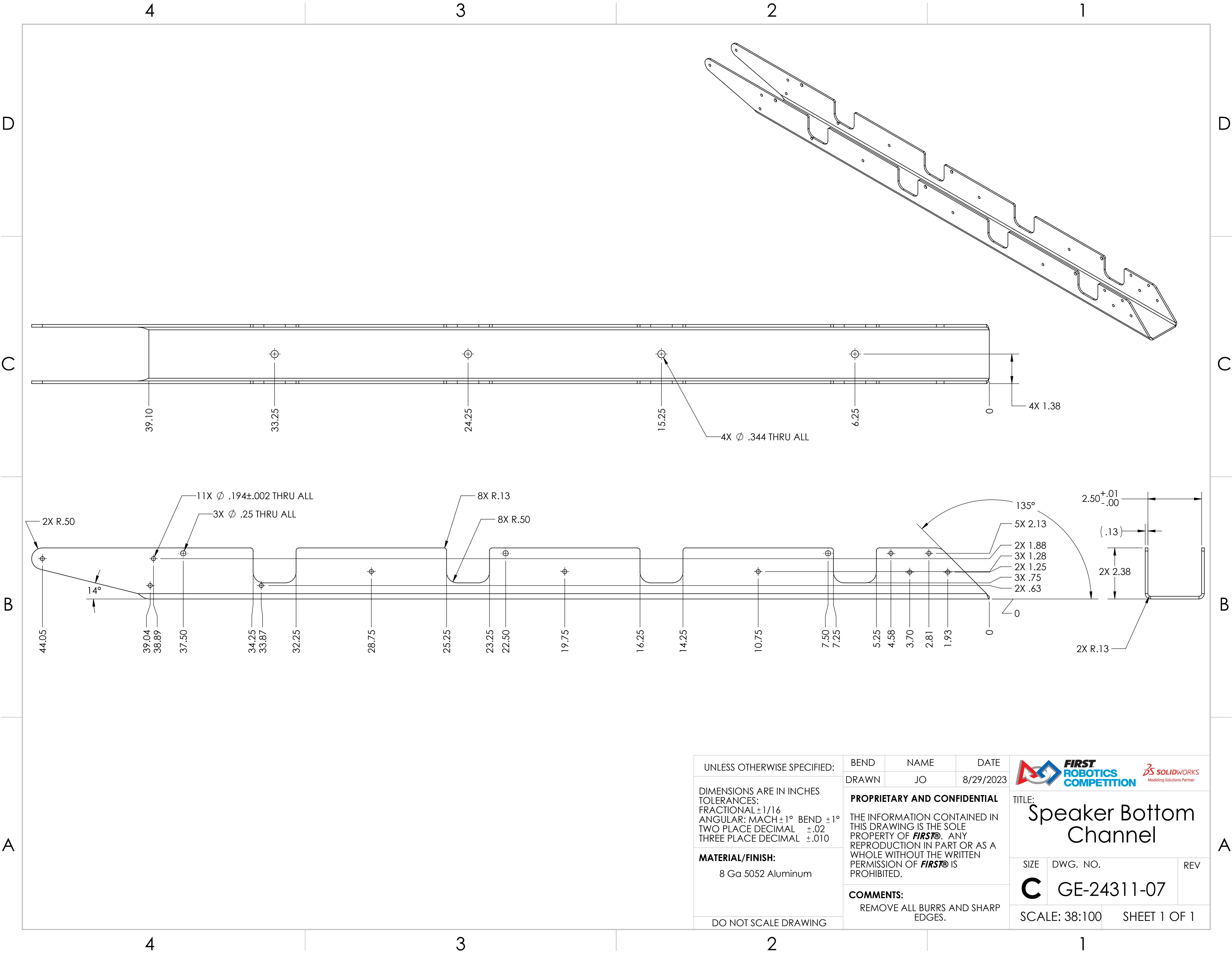
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Speaker Top Channel</div>			
	DRAWN	JO	8/29/2023				
	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.				SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				C	GE-24311-05	
				SCALE: 1:2		SHEET 1 OF 1	





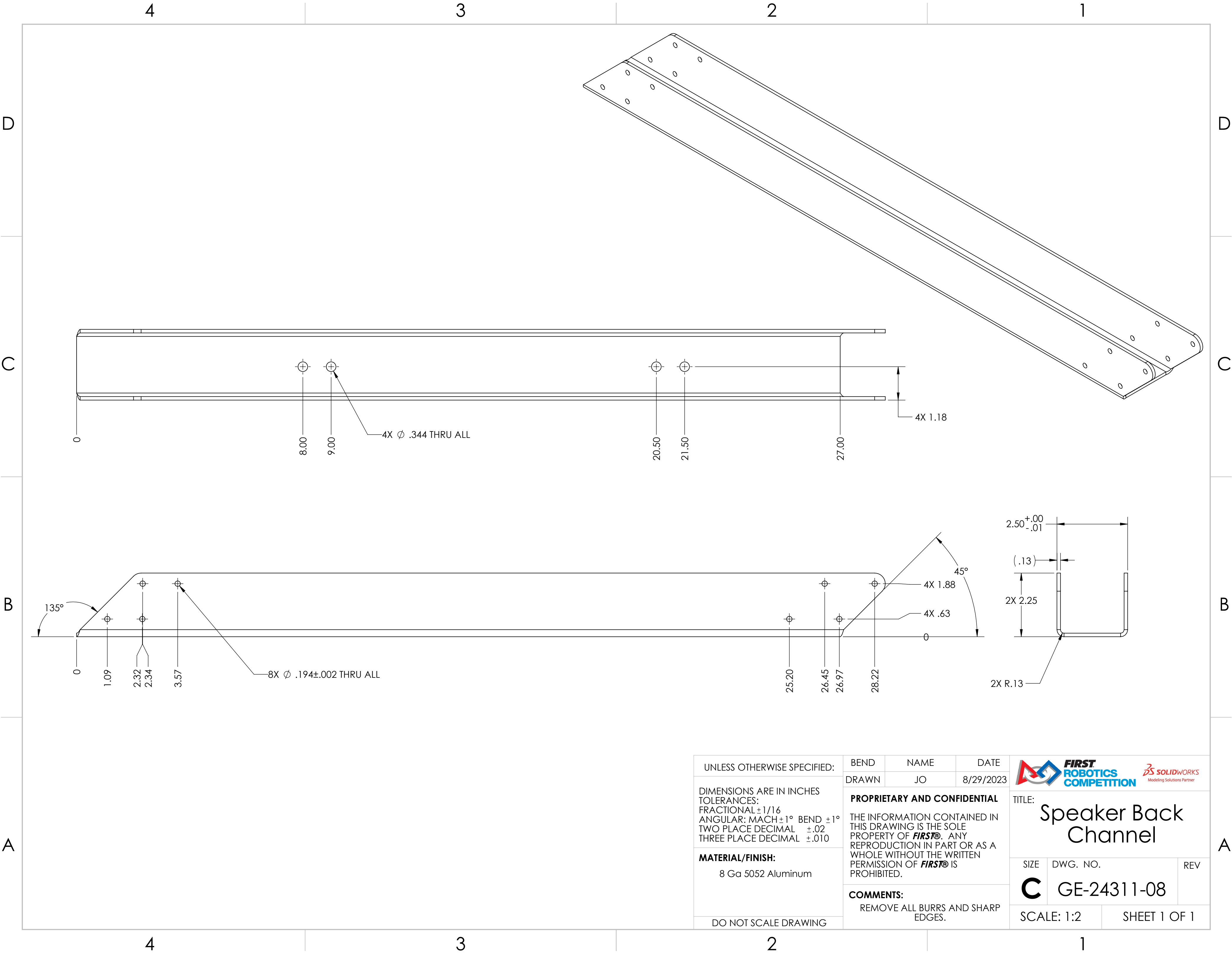
Notes:
Insert PEM hardware as shown



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24311-10	Speaker Front Top Channel	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	4

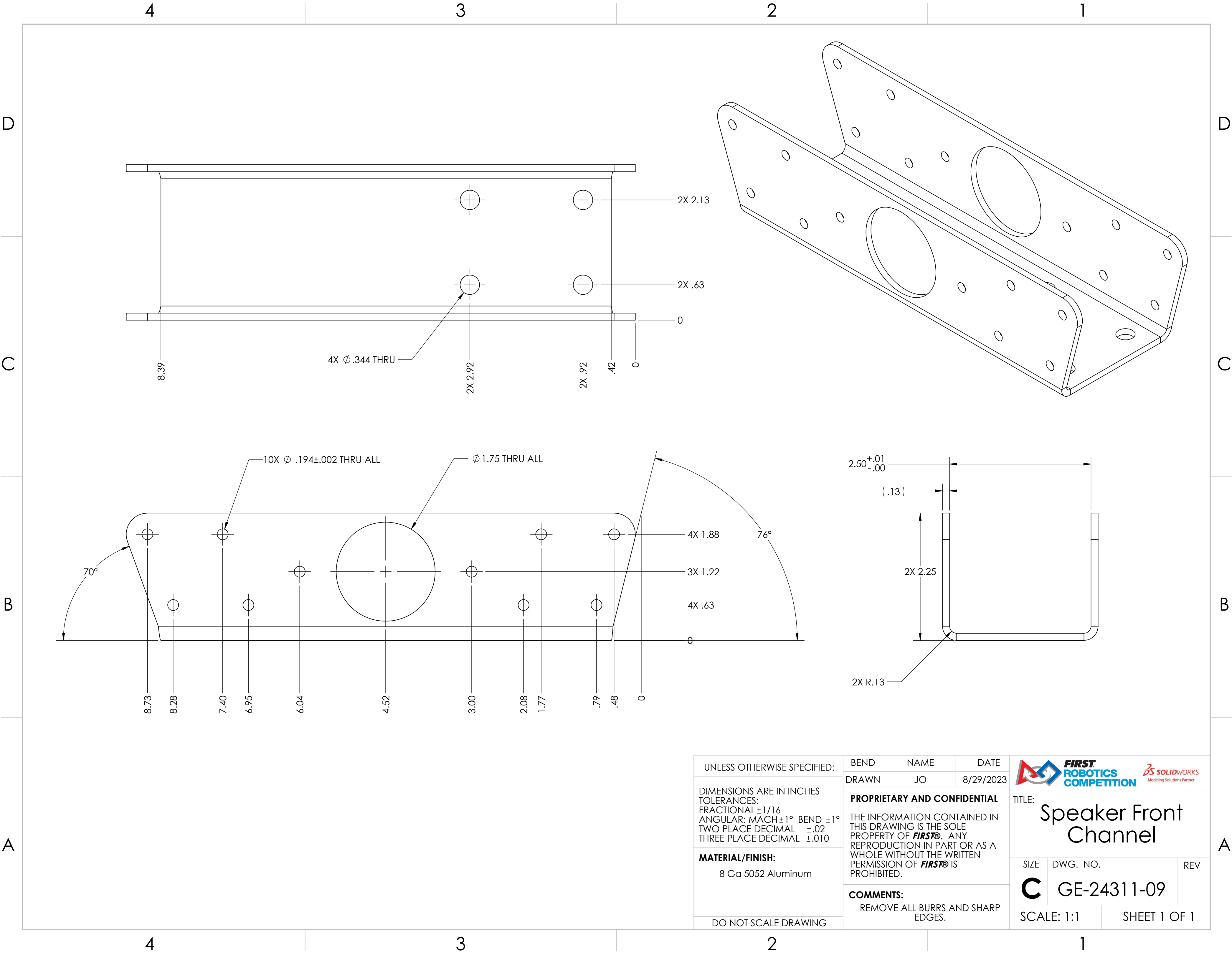
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div><div></div><div>TITLE: Speaker Front Top Channel with PEMs</div></div>		
	DRAWN	JO	8/30/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			SIZE DWG. NO. REV <div>C</div> GE-24311-06		
	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:			SCALE: 2:3 SHEET 1 OF 1		
	REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING						





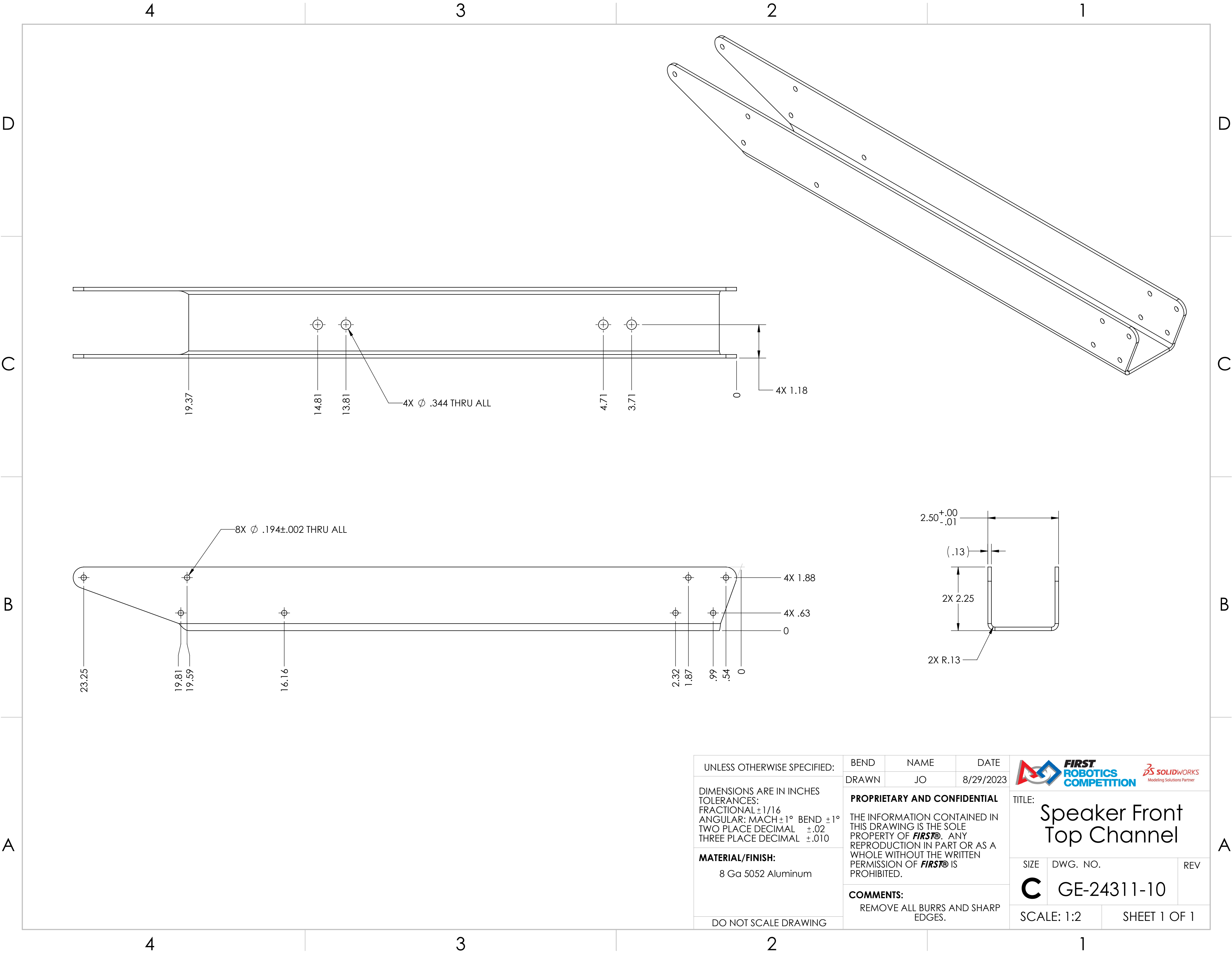
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Speaker Bottom Channel</div> <div>SIZE: C DWG. NO. GE-24311-07 REV</div> <div>SCALE: 38:100 SHEET 1 OF 1</div>	
	DRAWN	JO	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.				
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				

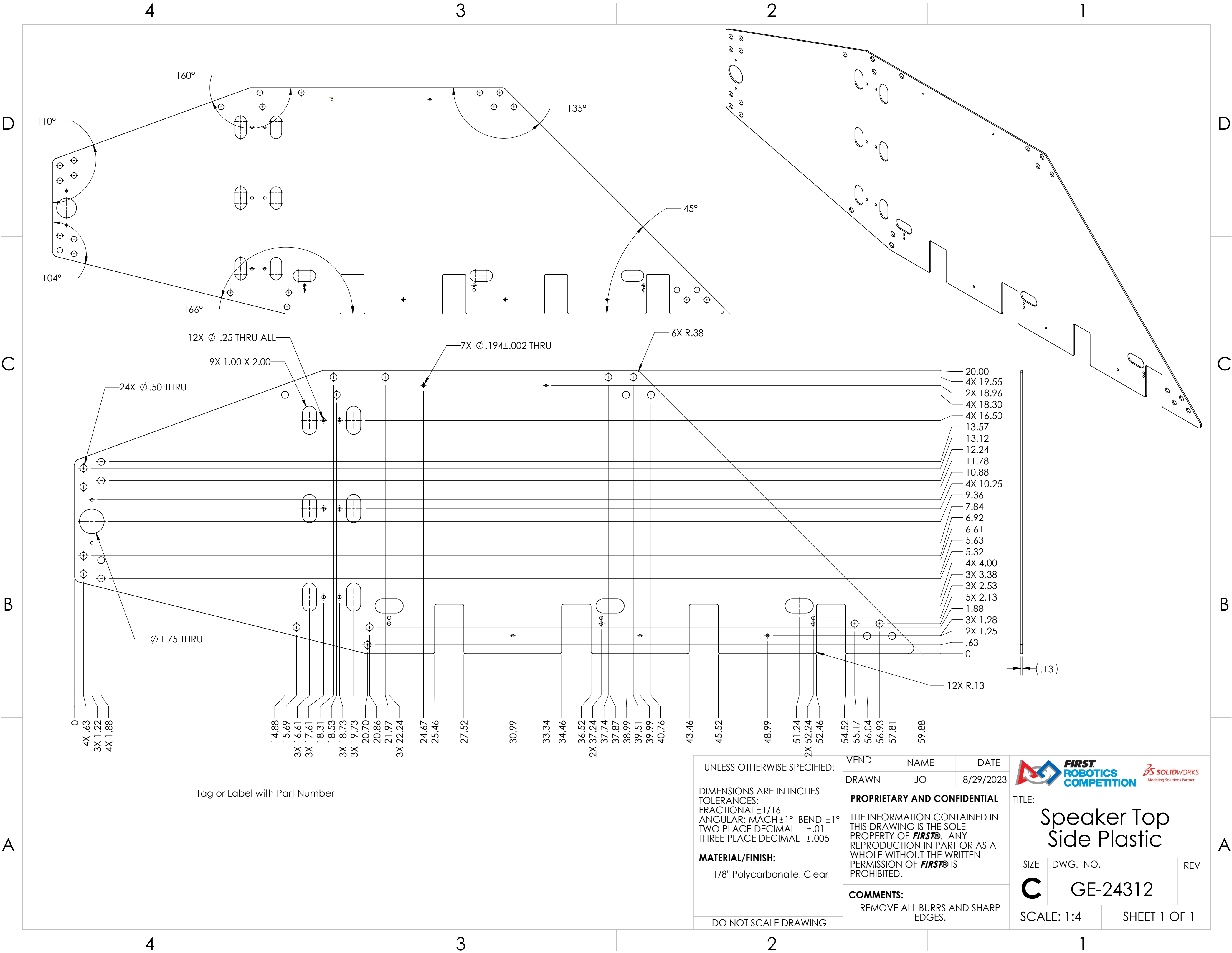


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Speaker Back Channel</div>			
	DRAWN	JO	8/29/2023				
	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.				SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				C	GE-24311-08	
				SCALE: 1:2		SHEET 1 OF 1	



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL \pm 1/16 ANGULAR: MACH \pm 1° BEND \pm 1° TWO PLACE DECIMAL \pm .02 THREE PLACE DECIMAL \pm .010 MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	 	
	DRAWN	JO	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.				TITLE: Speaker Front Channel
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				SIZE C DWG. NO. GE-24311-09 REV
SCALE: 1:1		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:
1/8" Polycarbonate, Clear

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	8/29/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:

Speaker Top Side Plastic

SIZE	DWG. NO.	REV
C	GE-24312	

SCALE: 1:4	SHEET 1 OF 1
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4

3

2

1

D

C

B

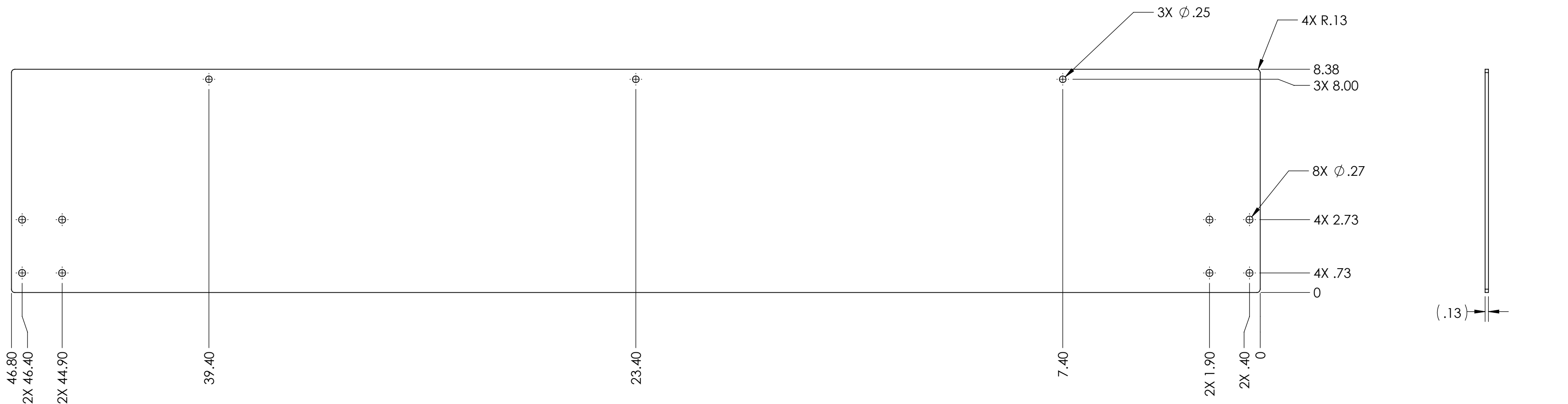
A

D

C



B

A

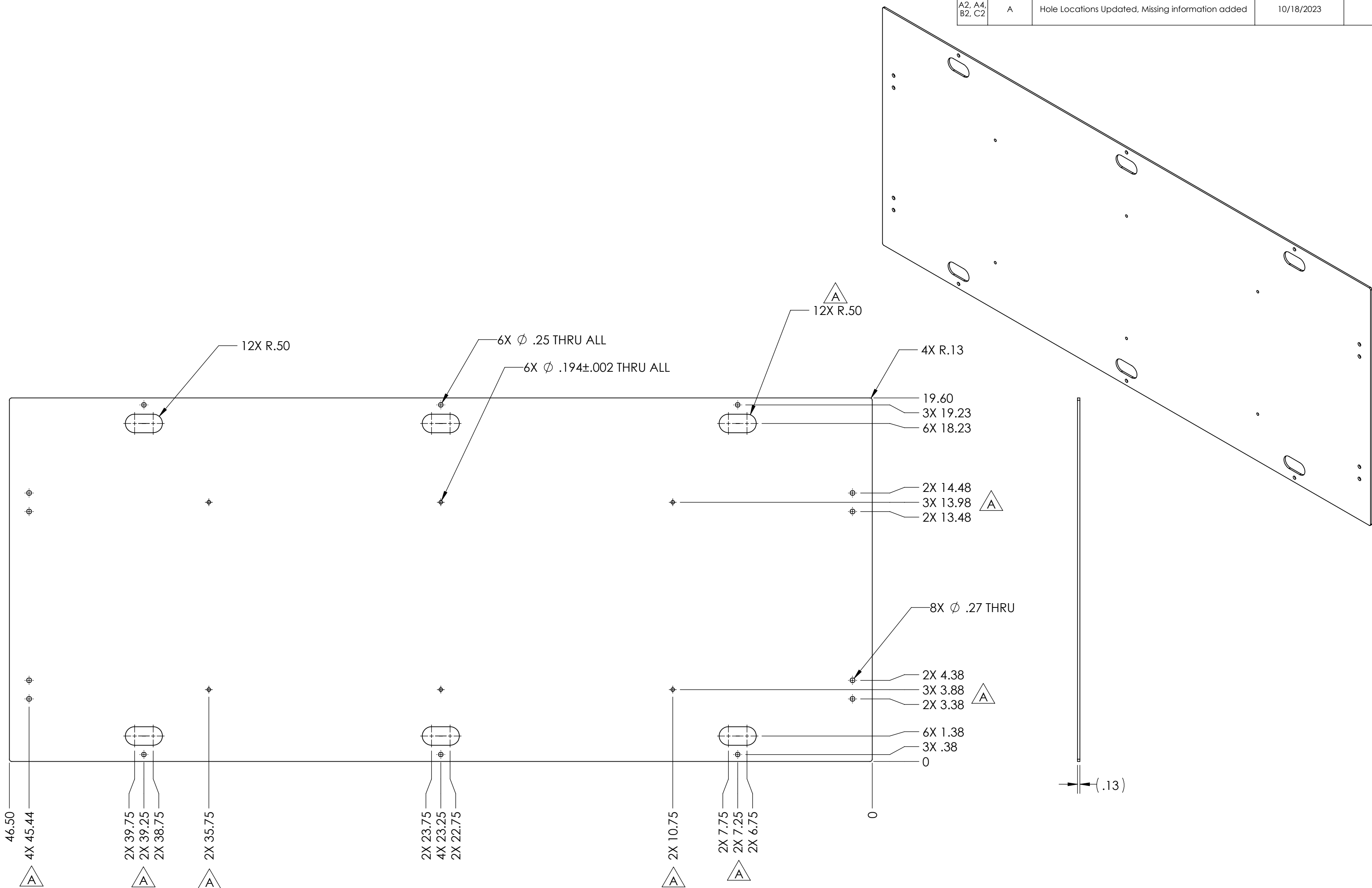


Tag or Label with Part Number

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		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:		COMMENTS:					
1/8" Polycarbonate, Clear		REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING							

 			
TITLE:			
Speaker Front Plastic			
SIZE	DWG. NO.		REV
C	GE-24313		
SCALE: 1:3		SHEET 1 OF 1	

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, A4, B2, C2	A	Hole Locations Updated, Missing information added	10/18/2023	JO



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, White, Smooth Finish

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	8/29/2023

PROPRIETARY AND CONFIDENTIAL

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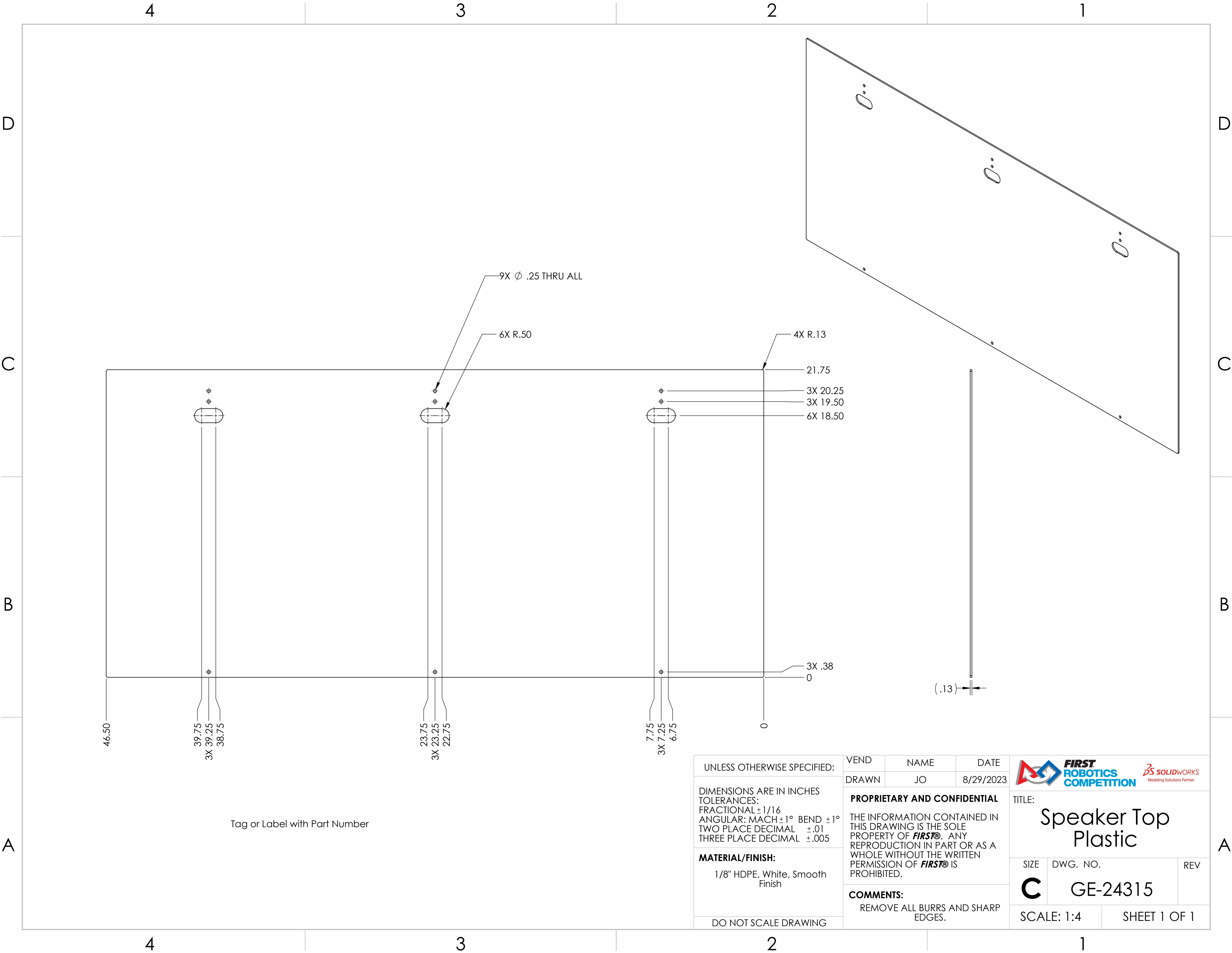
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Speaker Front Top Plastic

SIZE	DWG. NO.	REV
C	GE-24314	A

SCALE: 1:4 SHEET 1 OF 1



Tag or 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:
1/8" HDPE. White, Smooth Finish

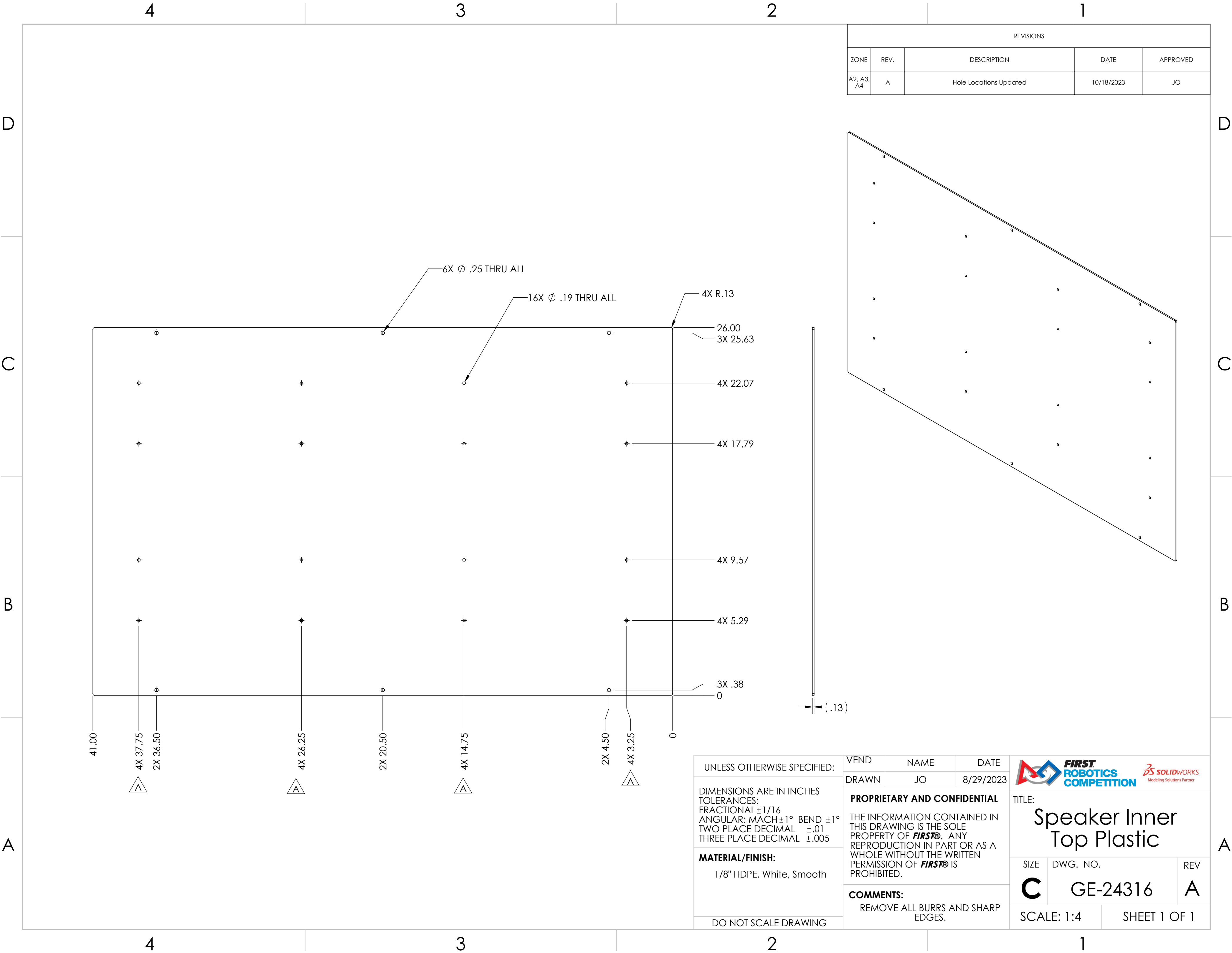
DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

 		
TITLE: <div>Speaker Top Plastic</div>		
SIZE <div>C</div>	DWG. NO. <div>GE-24315</div>	REV
SCALE: 1:4		SHEET 1 OF 1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, A3, A4	A	Hole Locations Updated	10/18/2023	JO

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, White, Smooth

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	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.

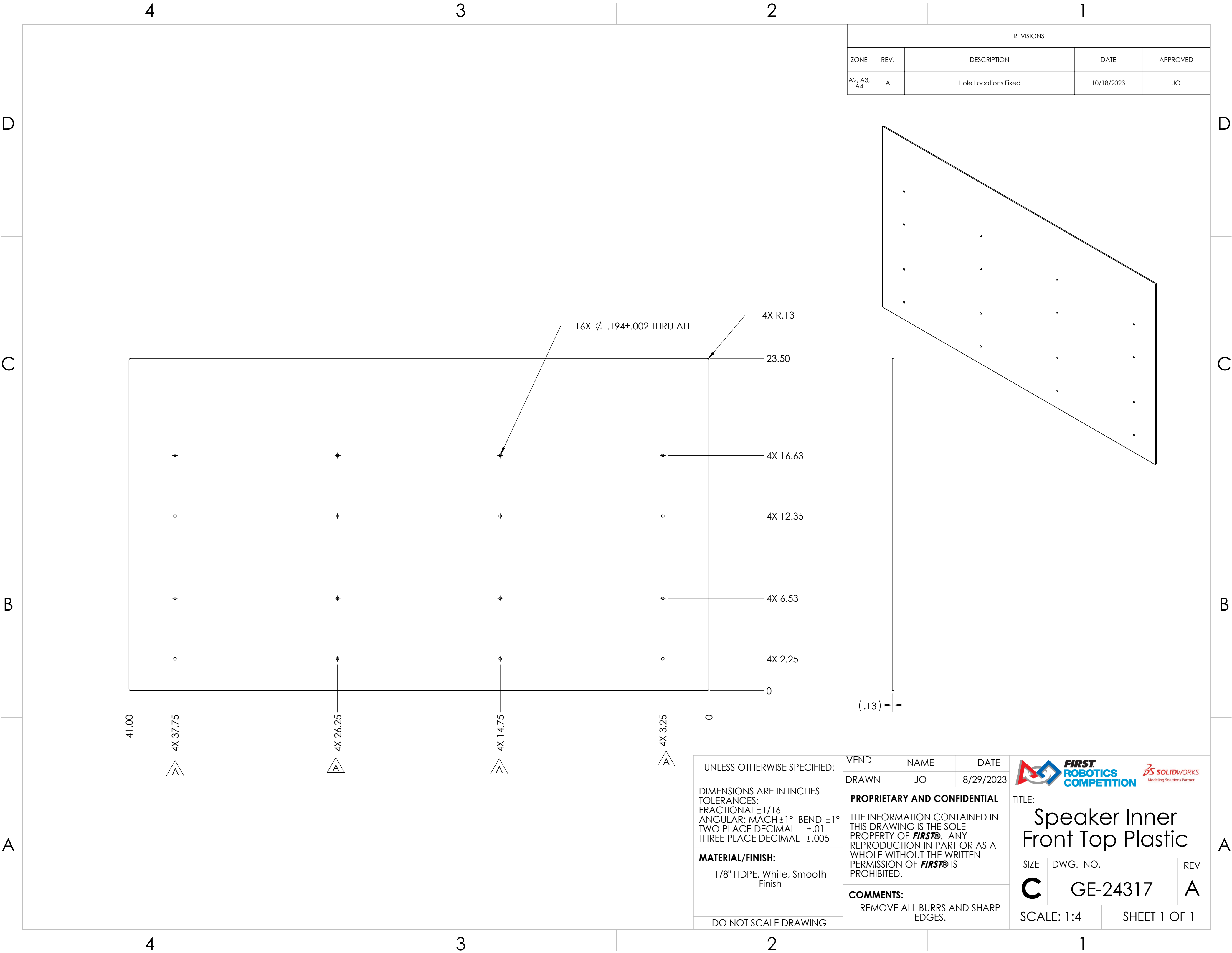
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.





TITLE:
Speaker Inner Top Plastic

SIZE	DWG. NO.	REV
C	GE-24316	A

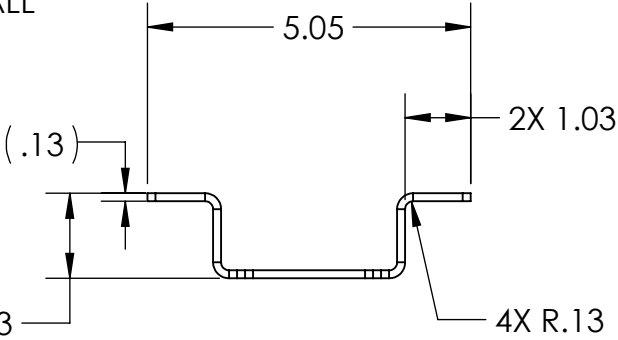
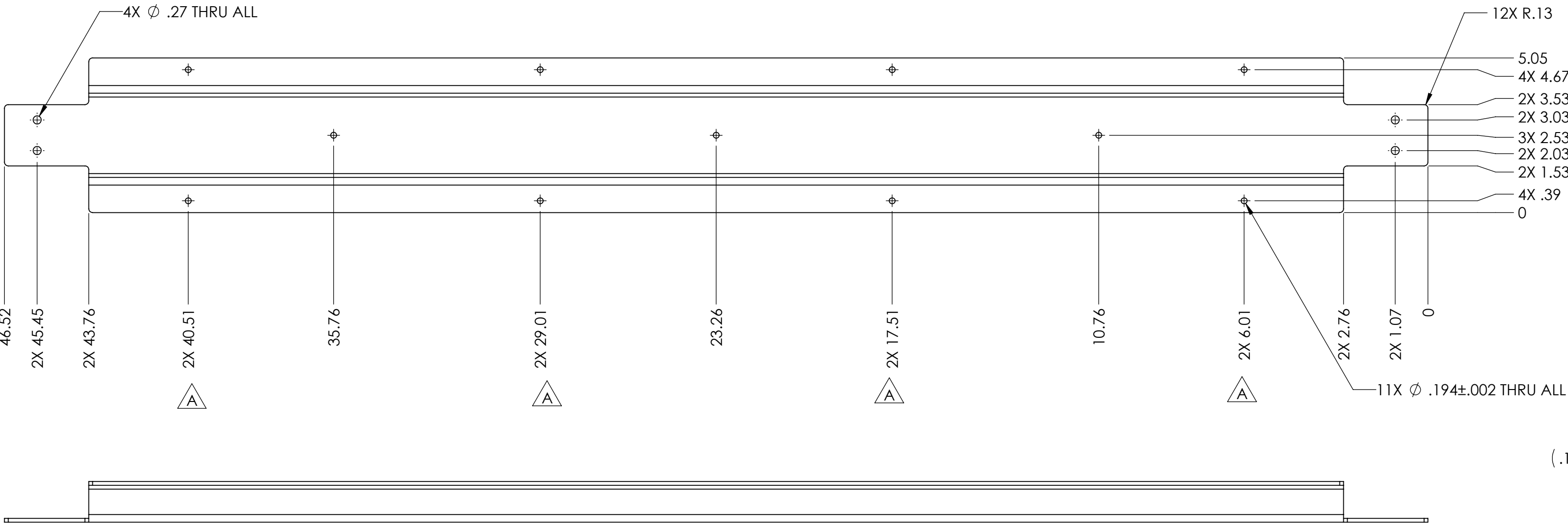
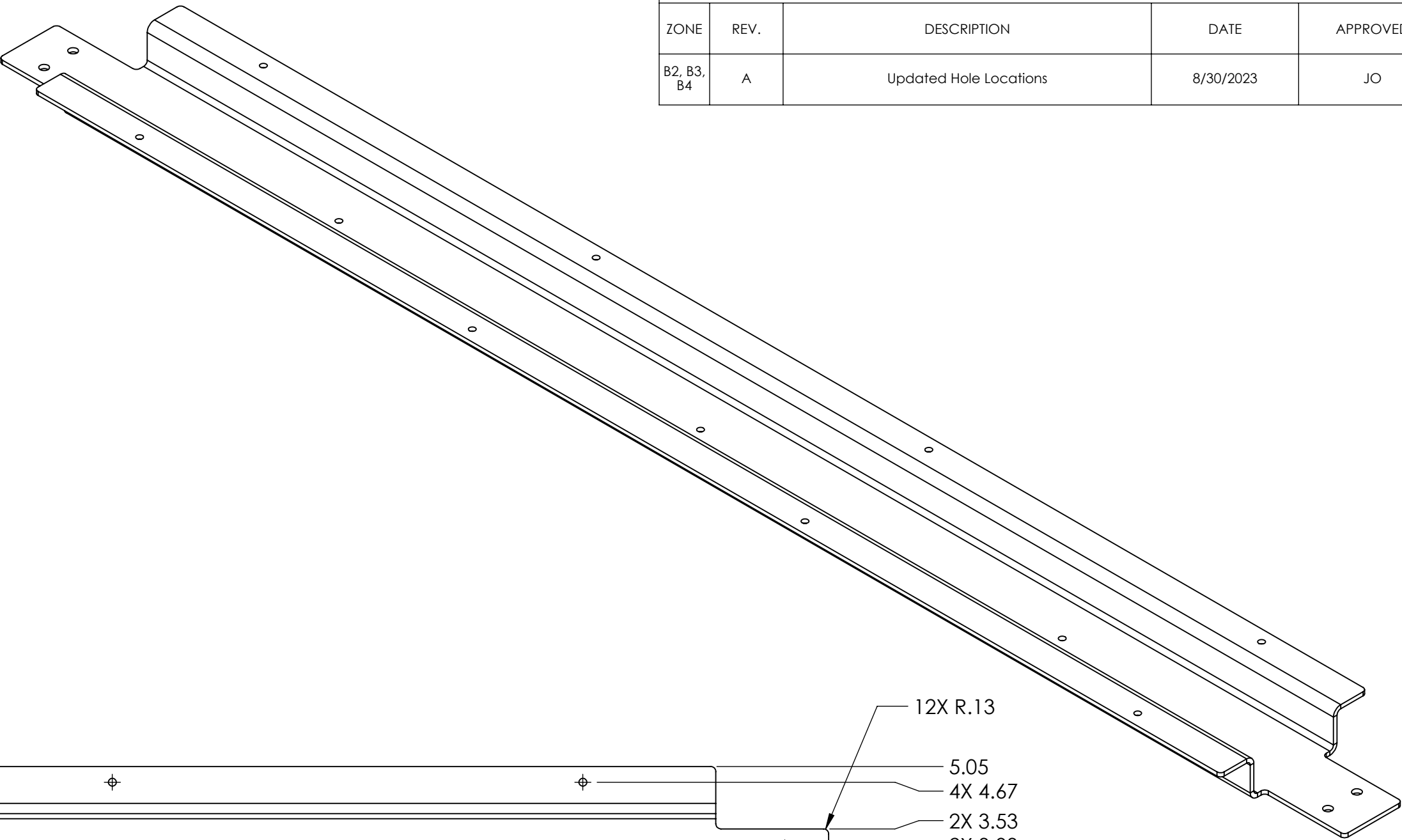
SCALE: 1:4 SHEET 1 OF 1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, A3, A4	A	Hole Locations Fixed	10/18/2023	JO

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>		
	DRAWN	JO	8/29/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Speaker Inner Front Top Plastic		
	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" HDPE, White, Smooth Finish	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24317	REV A
DO NOT SCALE DRAWING				SCALE: 1:4		SHEET 1 OF 1

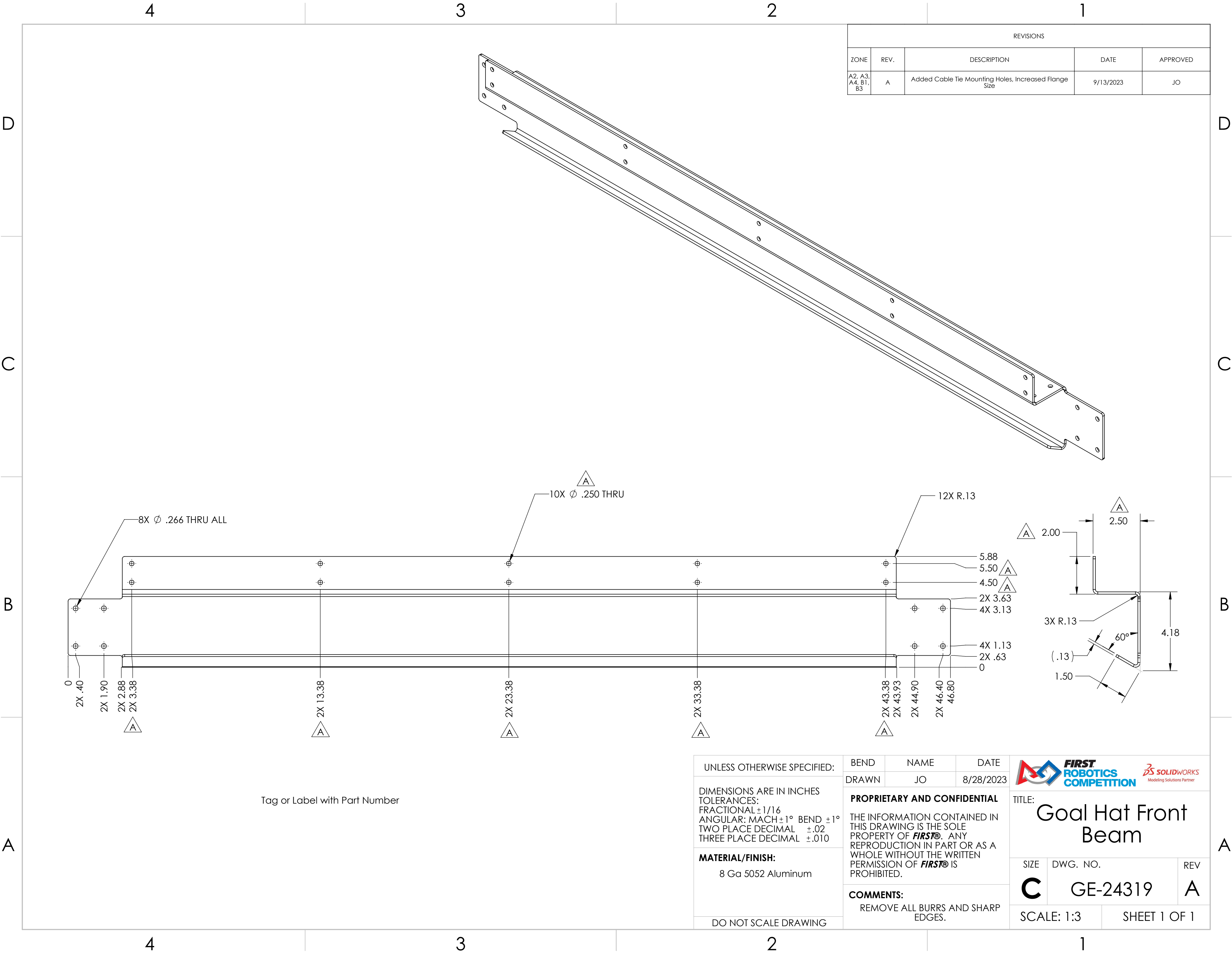
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2, B3, B4	A	Updated Hole Locations	8/30/2023	JO



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: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE
	DRAWN	JO	8/28/2023
	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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		





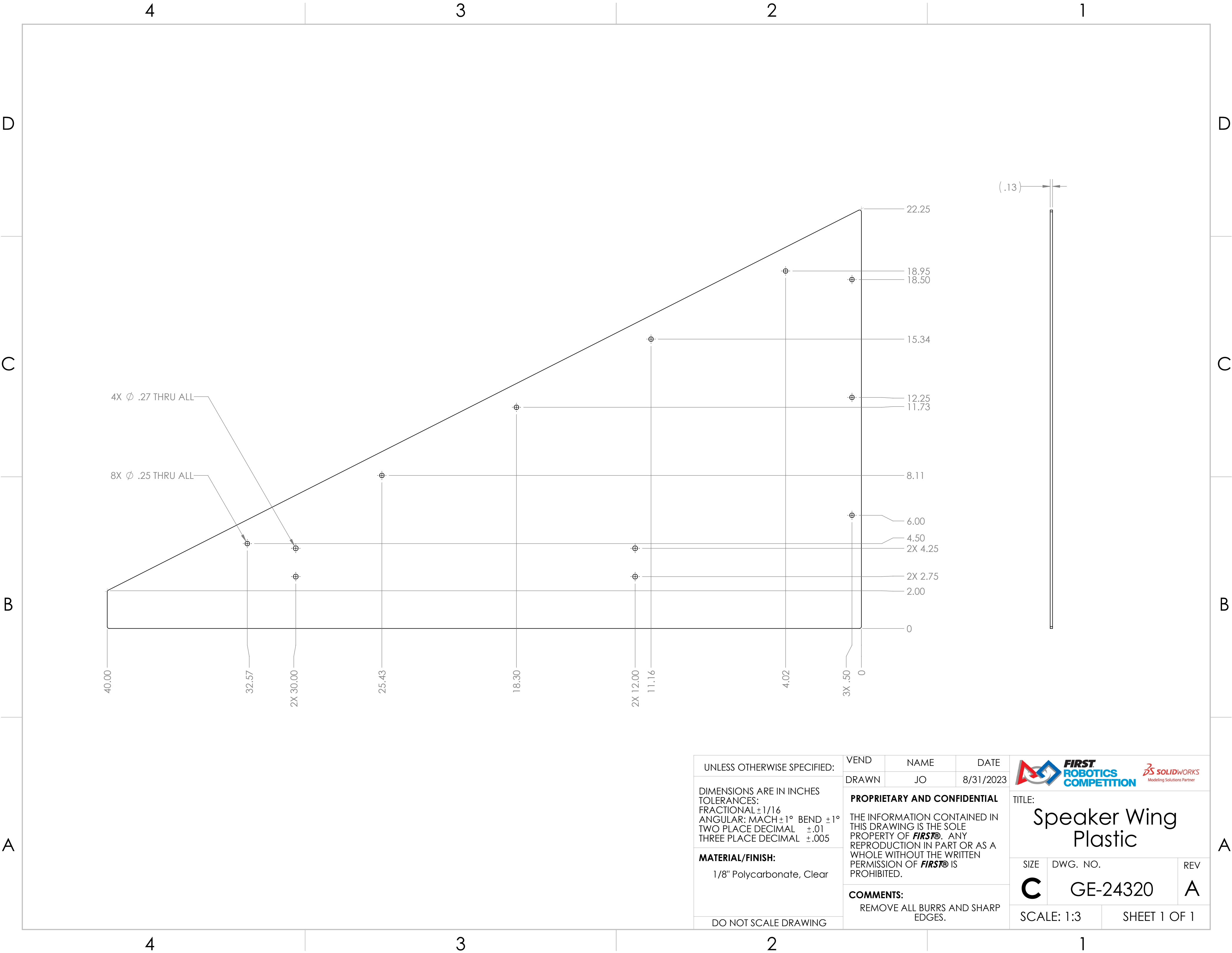
TITLE: <h1>Goal Hat Crossbeam</h1>		
SIZE C	DWG. NO. GE-24318	REV B
SCALE: 1:3		SHEET 1 OF 1





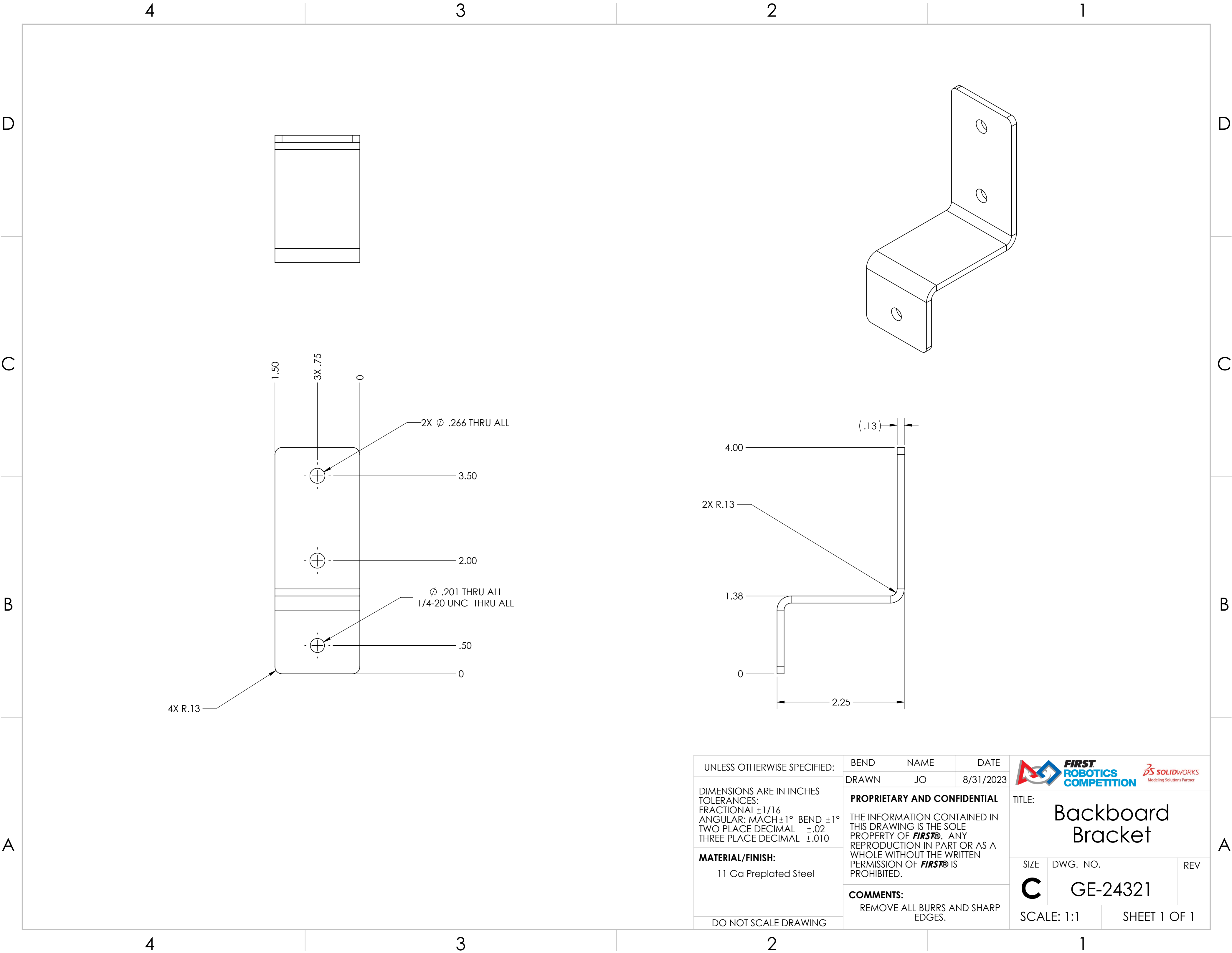
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, A3, A4, B1, B3	A	Added Cable Tie Mounting Holes, Increased Flange Size	9/13/2023	JO



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: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE
	DRAWN	JO	8/28/2023
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

 		TITLE: Goal Hat Front Beam	
SIZE C	DWG. NO. GE-24319		REV A
SCALE: 1:3		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: 1/8" Polycarbonate, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Speaker Wing Plastic</div>		
	DRAWN	JO	8/31/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24320	A
SCALE: 1:3		SHEET 1 OF 1				



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div></div>		
	DRAWN	JO	8/31/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	PROPRIETARY AND CONFIDENTIAL			TITLE: Backboard Bracket		
	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.			SIZE	DWG. NO.	REV
MATERIAL/FINISH: 11 Ga Preplated Steel				C	GE-24321	
DO NOT SCALE DRAWING				SCALE: 1:1		SHEET 1 OF 1

4

3

2

1

		REVISIONS		
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A3, A4, B2	A	Hole Locations Updated	10/24/2023	JO

D

D

C

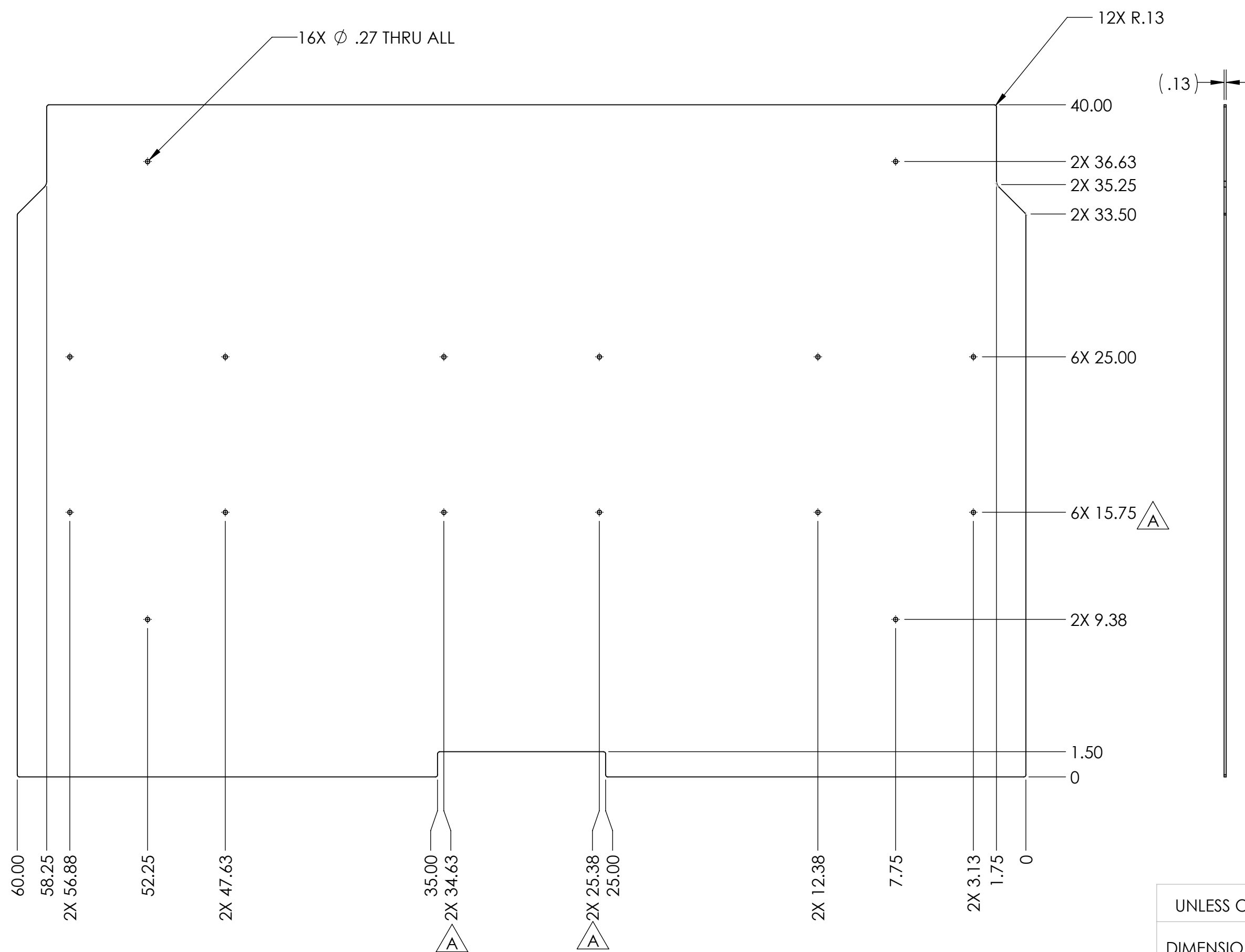
C

B

B



A

A



Tag or Label with Part Number

UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE
		DRAWN	JO	8/31/2023
<p>DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005</p>		<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>MATERIAL/FINISH:</p> <p>1/8" HDPE Black, Smooth Finish</p>		<p>COMMENTS:</p> <p>REMOVE ALL BURRS AND SHARP EDGES.</p>		
DO NOT SCALE DRAWING				

 		
TITLE: Speaker Alliance Wall Plastic		
SIZE	DWG. NO.	REV
C	GE-24322	A
SCALE: 1:6		SHEET 1 OF 1

4

3

2

1

D

D

C

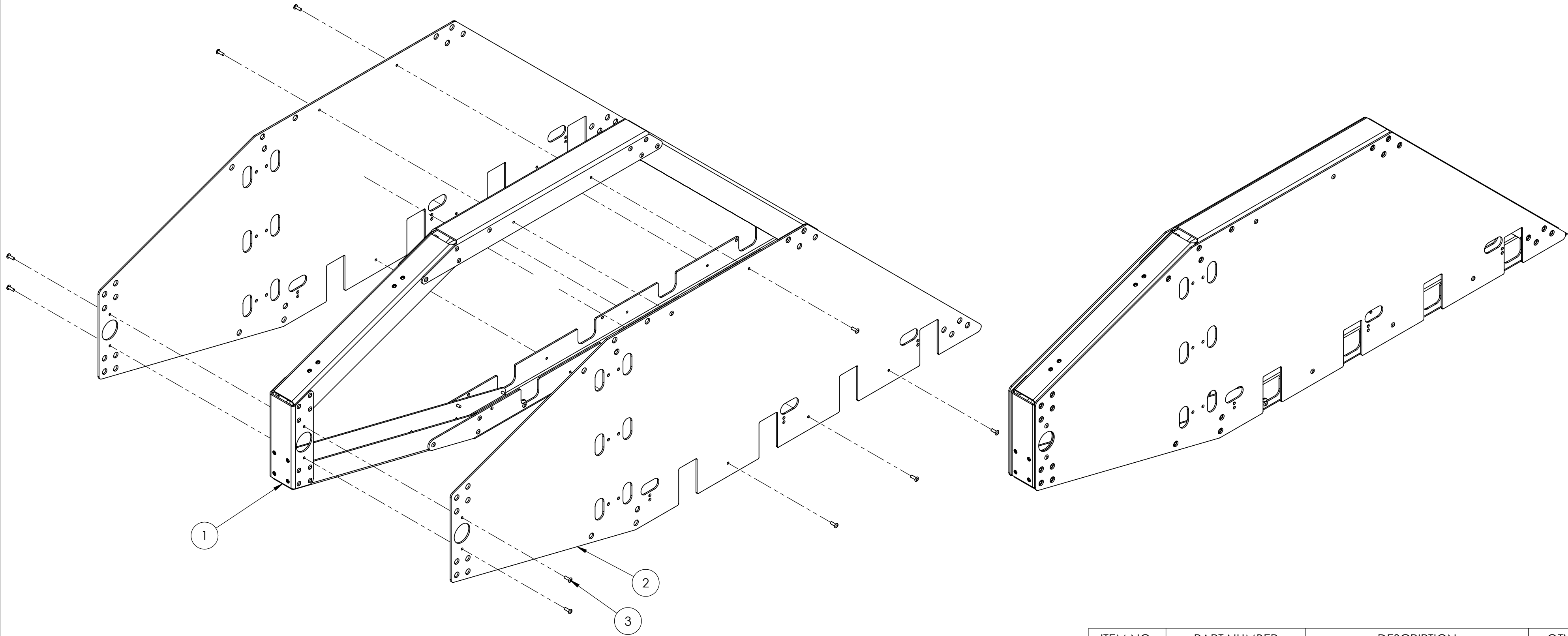
C

B

B



A

A

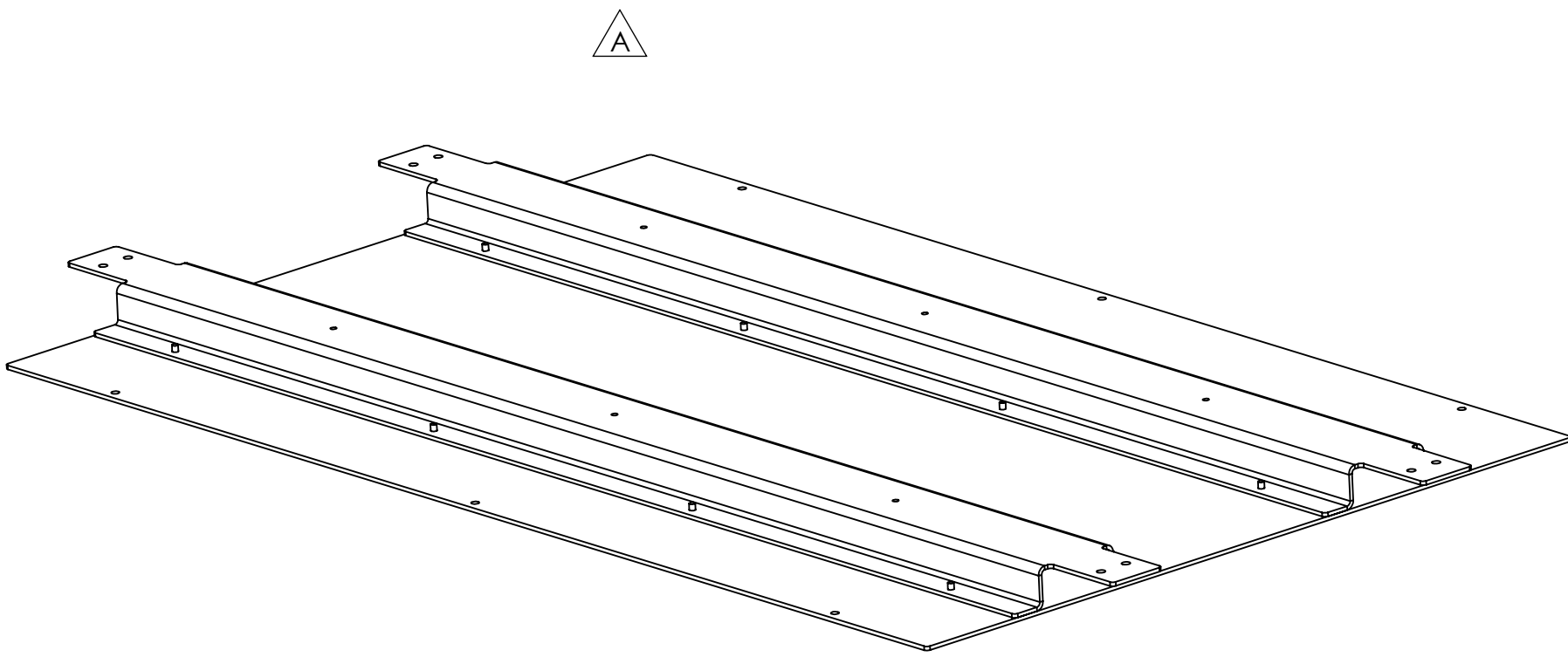
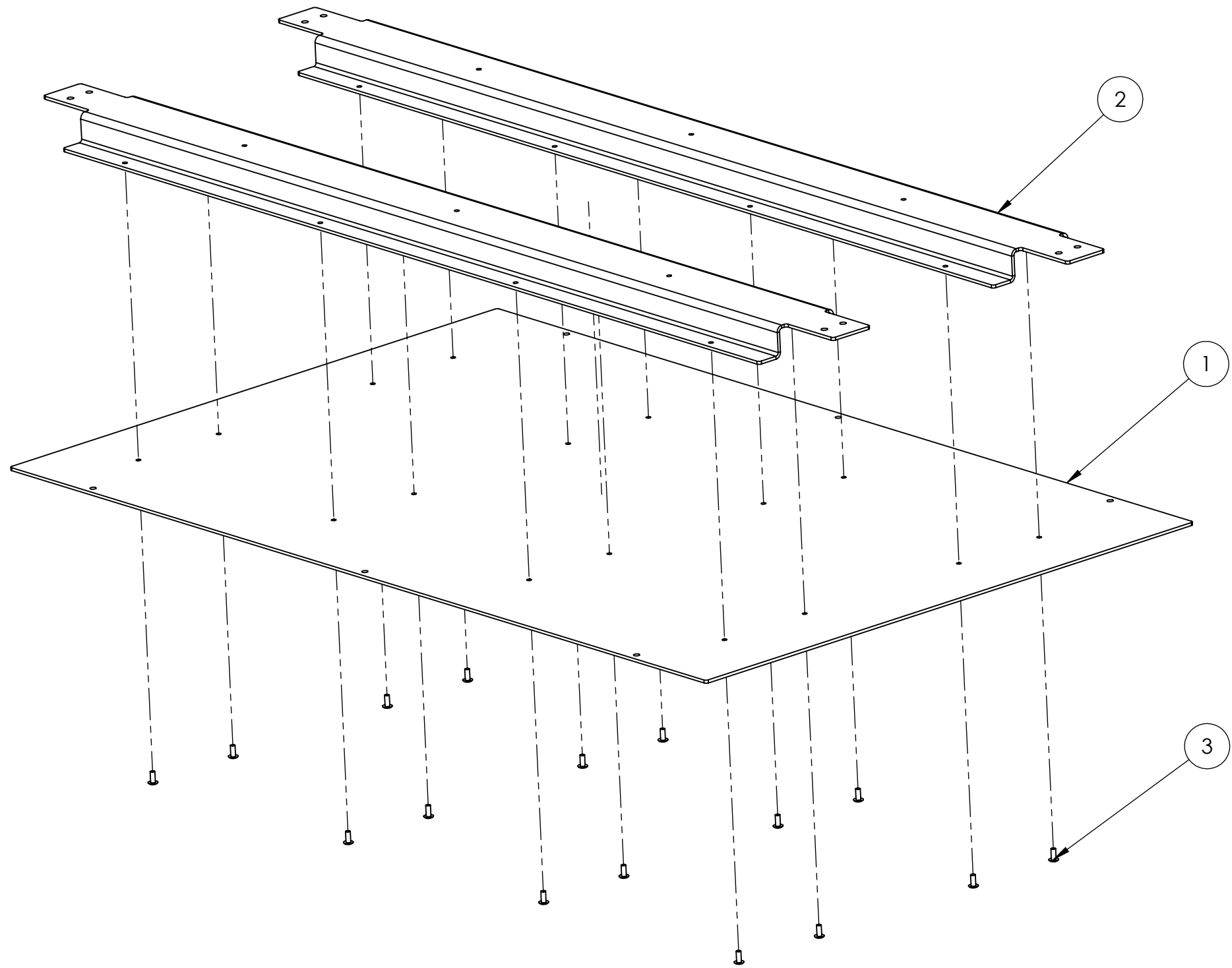


Notes:
Assemble 2 to 1 using 3
Tag or Label with Part Number

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24311	Speaker Side Sheetmetal	1
2	GE-24312	Speaker Top Side Plastic	2
3	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	14



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: DO NOT SCALE DRAWING	VEND	NAME	DATE	 	
	DRAWN	JO	8/30/2023		
	PROPRIETARY AND CONFIDENTIAL			TITLE: Speaker Side Assembly	
	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.			SIZE	DWG. NO.	REV
			C	GE-24323	
			SCALE: 1:6		SHEET 1 OF 1

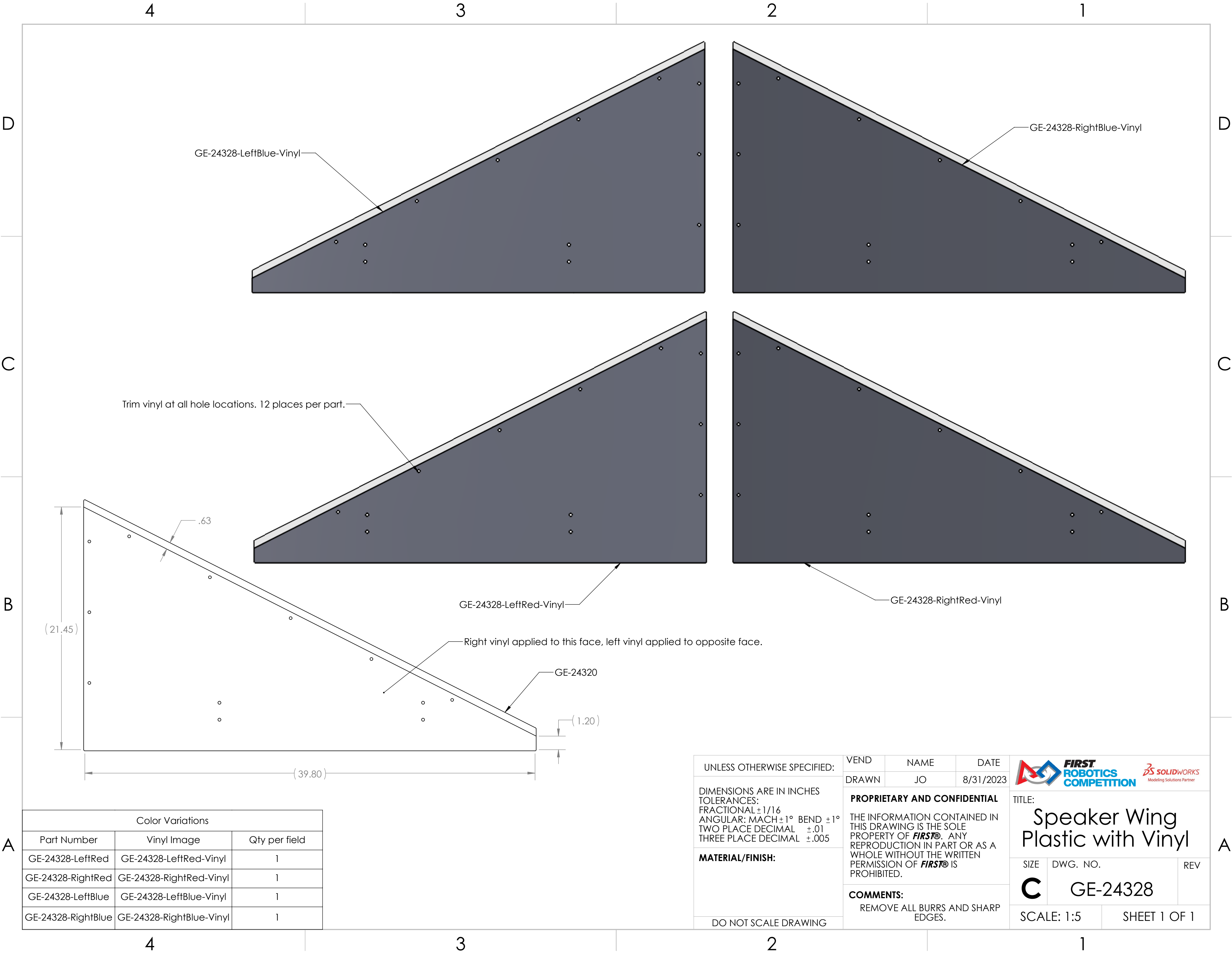
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2	A	All Parts updated to fix symmetry issues	10/18/2023	JO

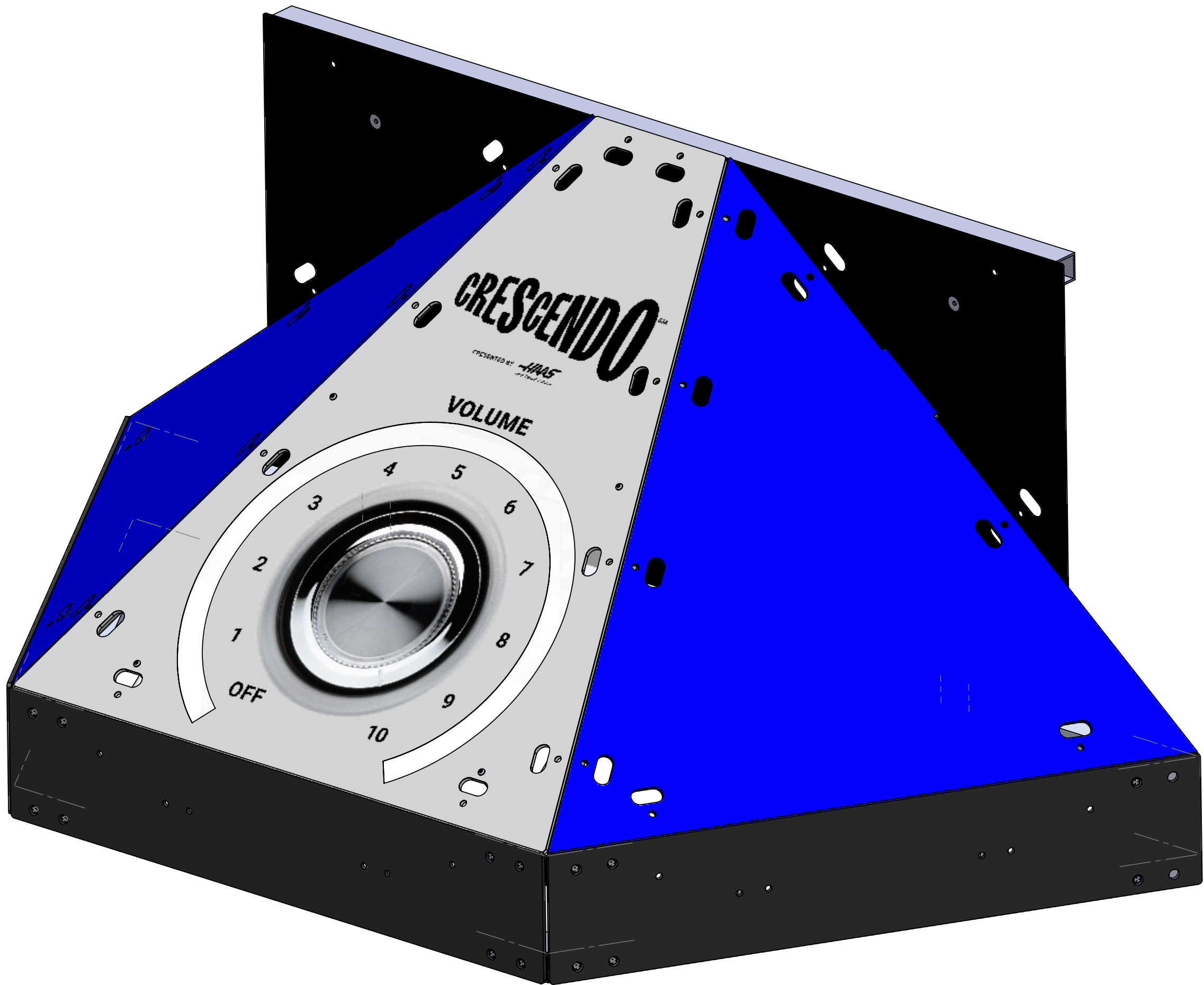


Notes:
Assemble (2) to (1) using (3)
Tag or Label with Part Number



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24316	Speaker Inner Top Plastic	1
2	GE-24318	Goal Hat Crossbeam	2
3	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range	16

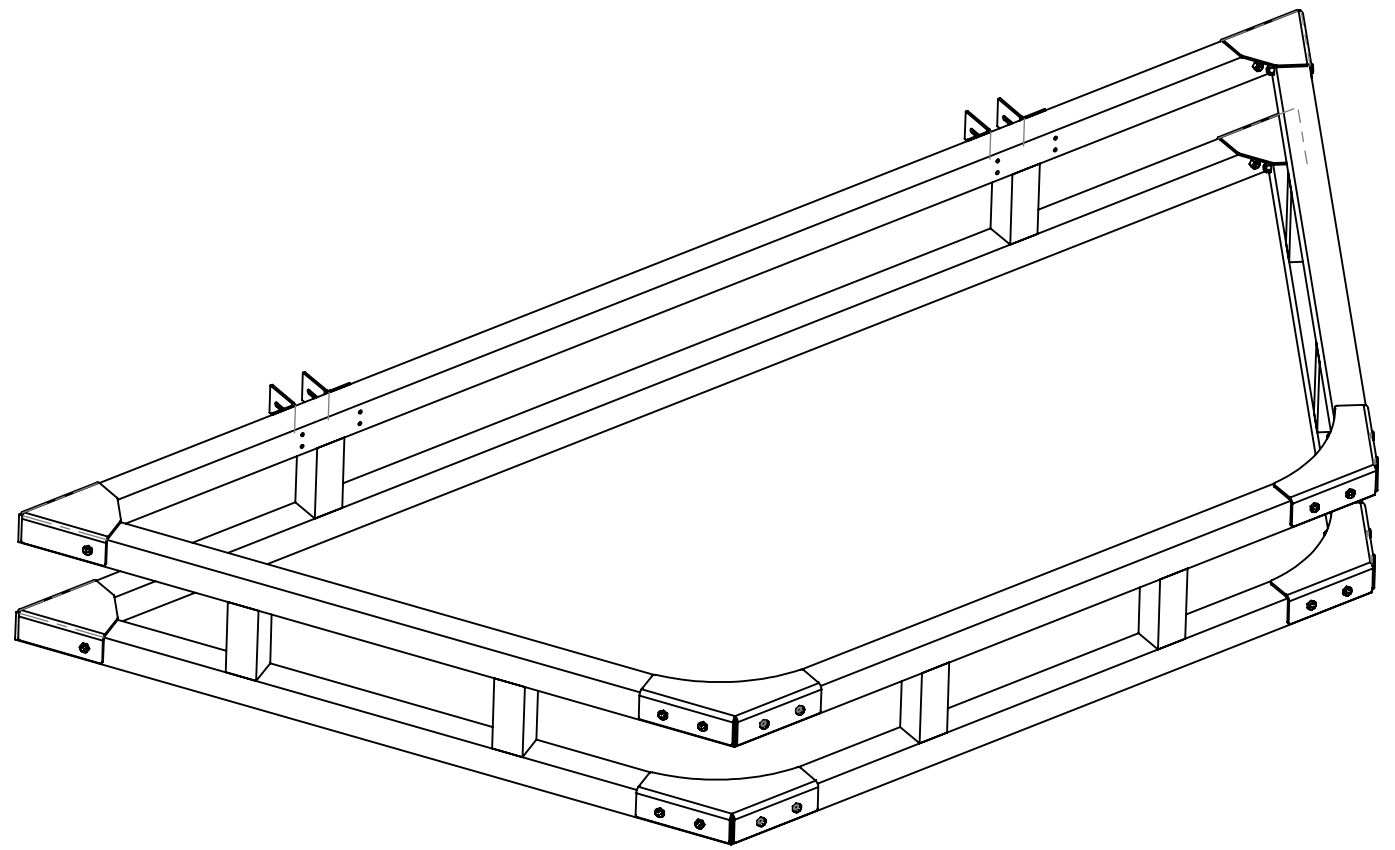
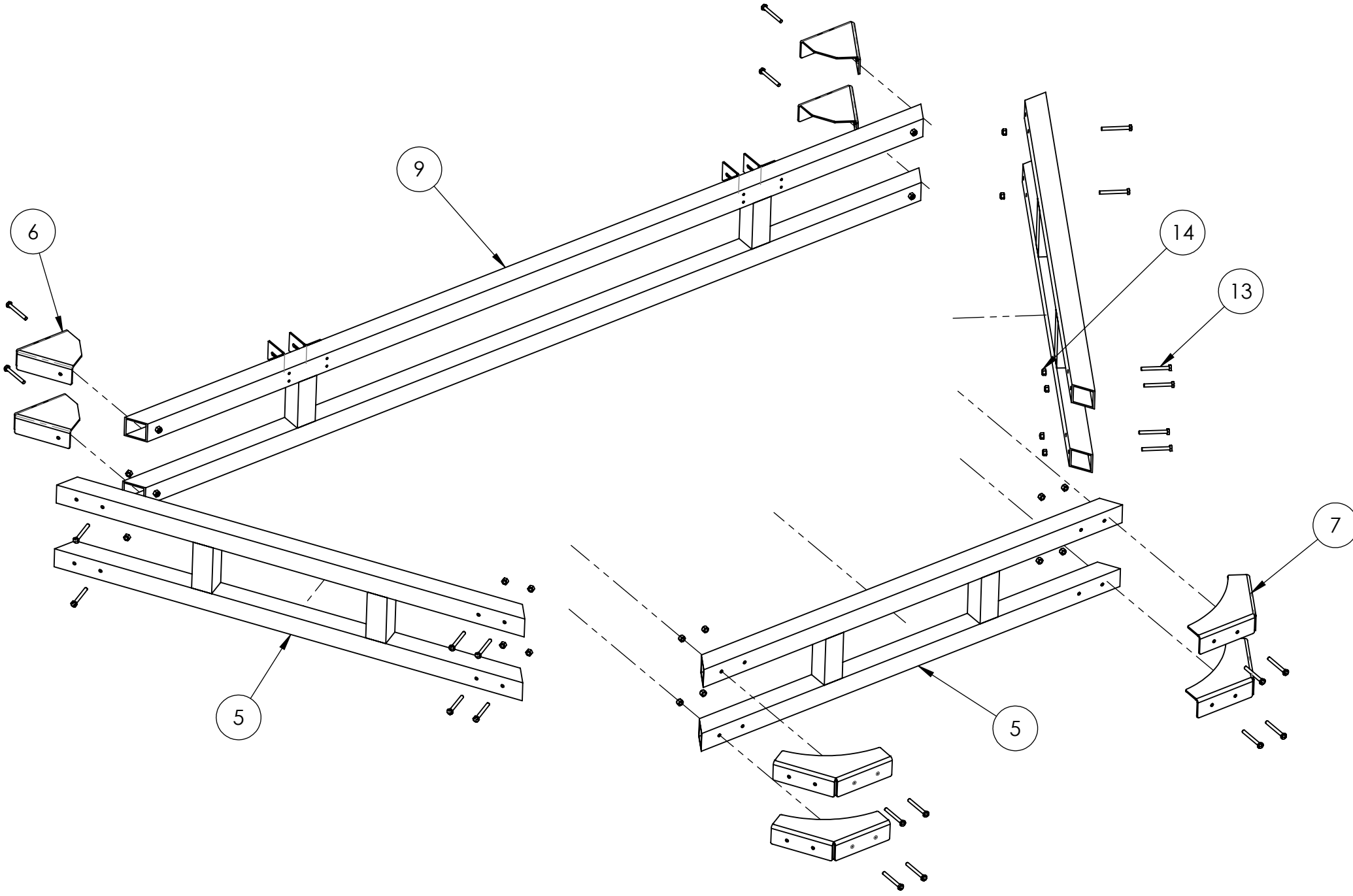
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$ MATERIAL/FINISH: DO NOT SCALE DRAWING		VEND	NAME	DATE	 	
		DRAWN	JO	8/30/2023		
		PROPRIETARY AND CONFIDENTIAL 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.			TITLE: Speaker Back Assembly	
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24324
					REV A	
		SCALE: 1:5		SHEET 1 OF 1		







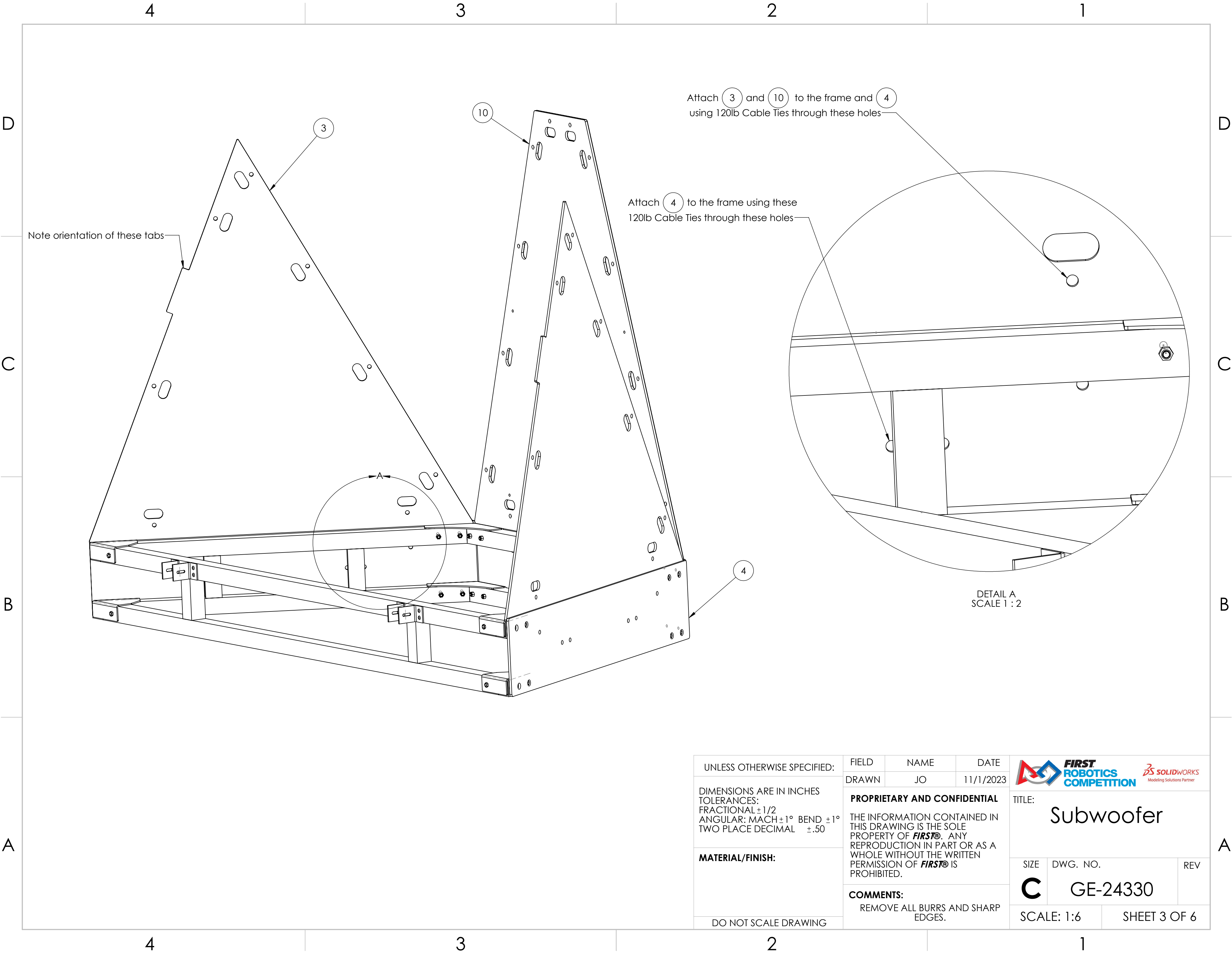
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24331	Wall Goal Frame Weldment	1
2	GE-24332	Subwoofer Backboard	1
3	GE-24333	Subwoofer Side Panel	2
4	GE-24335	Subwoofer Bumper	3
5	GE-24336	Subwoofer Small Frame	3
6	GE-24338	Subwoofer Back Bracket	4
7	GE-24339	Front Subwoofer Bracket	4
8	GE-24341	Subwoofer Support Pipe	2
9	GE-24342	Subwoofer Back Frame with Brackets	1
10	GE-24343	Subwoofer Middle Panel with Vinyl	1
11	GE-24345	Subwoofer Light Panel Assembly	1
12	Configurable Bolt	.75" Long 1/4-20 Button Head Cap Screw	8
13	Configurable Bolt	2.25" Long 1/4-20 Hex Head Bolt	24
14	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	24
15	91780A363_Female Threaded Hex Standoff	Female Threaded Hex Standoff, 1/4-20 x 1" Long	4
16	98320A143	Zinc-Plated Steel Ring-Grip Quick-Release Pin	2

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	<div><div></div><div></div></div> TITLE:		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50		DRAWN	JO	11/1/2023			
		PROPRIETARY AND CONFIDENTIAL			Subwoofer		
		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:			SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING		REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24330	
		SCALE: 1:6		SHEET 1 OF 6			



Assemble as shown, do not over-tighten bolts

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div><div></div><div>TITLE: <h1>Subwoofer</h1></div></div>	
	DRAWN	JO	11/1/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24330
SCALE: 1:10				SHEET 2 OF 6	
MATERIAL/FINISH:				REV	
DO NOT SCALE DRAWING					



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

DRAWN

NAME

JO

DATE

11/1/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP
EDGES.



**FIRST
ROBOTICS
COMPETITION**



TITLE:

Subwoofer

SIZE

C

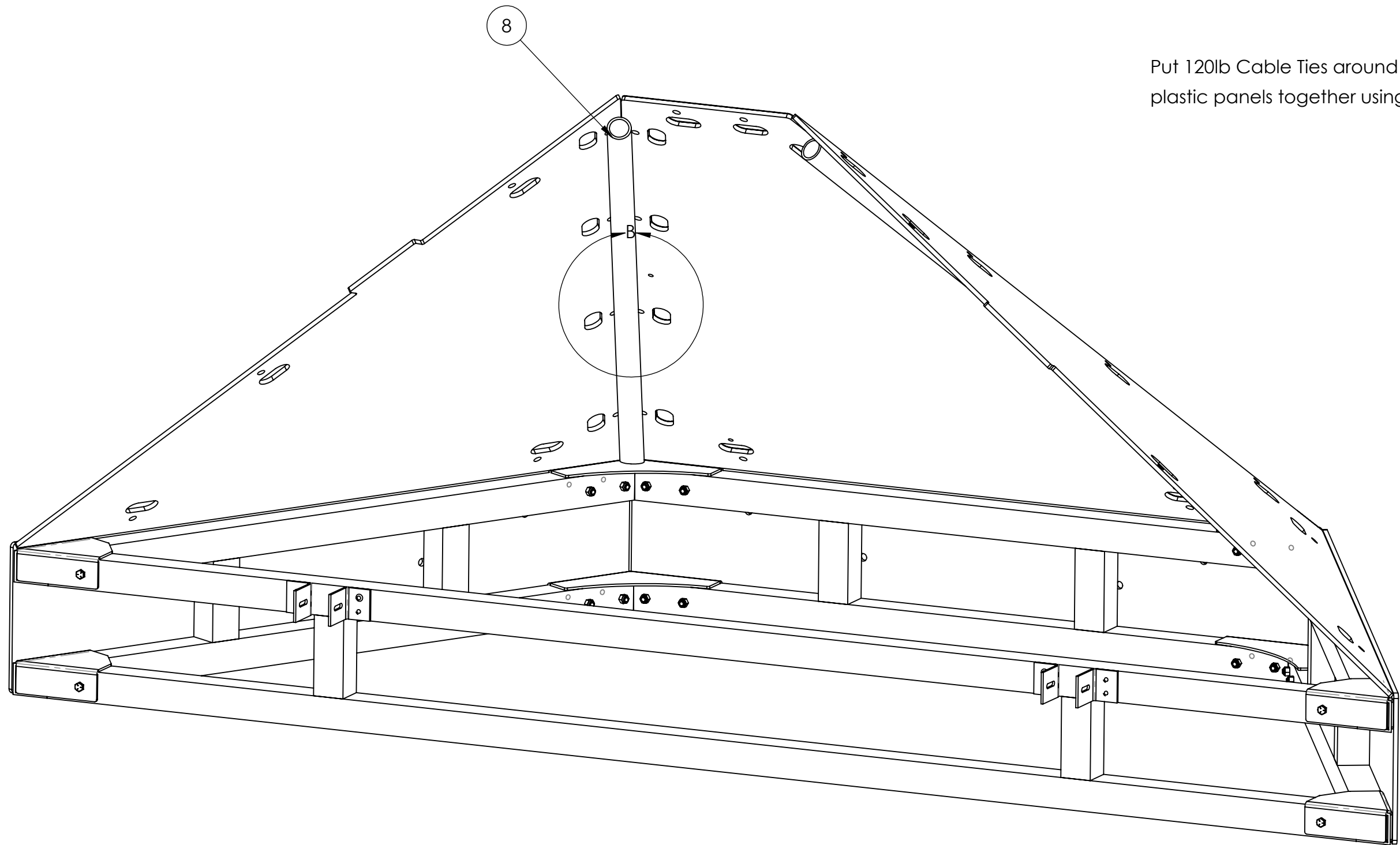
DWG. NO.

GE-24330

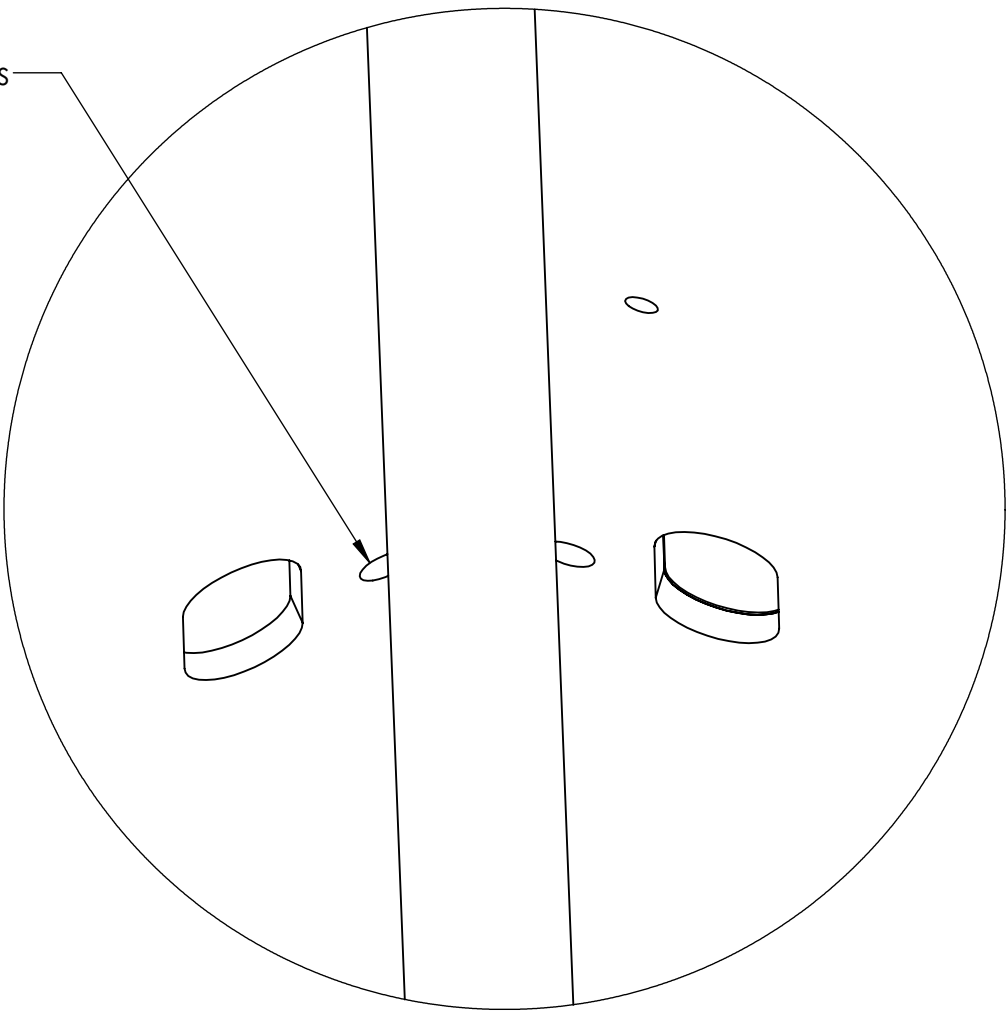
REV

SCALE: 1:6



SHEET 3 OF 6



Put 120lb Cable Ties around (8) to tie plastic panels together using these holes



DETAIL B
SCALE 2 : 3

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div><div></div><div>TITLE: Subwoofer</div></div>							
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	JO	11/1/2023								
MATERIAL/FINISH:	PROPRIETARY AND CONFIDENTIAL			SIZE		DWG. NO.		REV			
	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:			C		GE-24330		SCALE: 1:6		SHEET 4 OF 6	
	REMOVE ALL BURRS AND SHARP EDGES.										

4

3

2

1

D

D

C

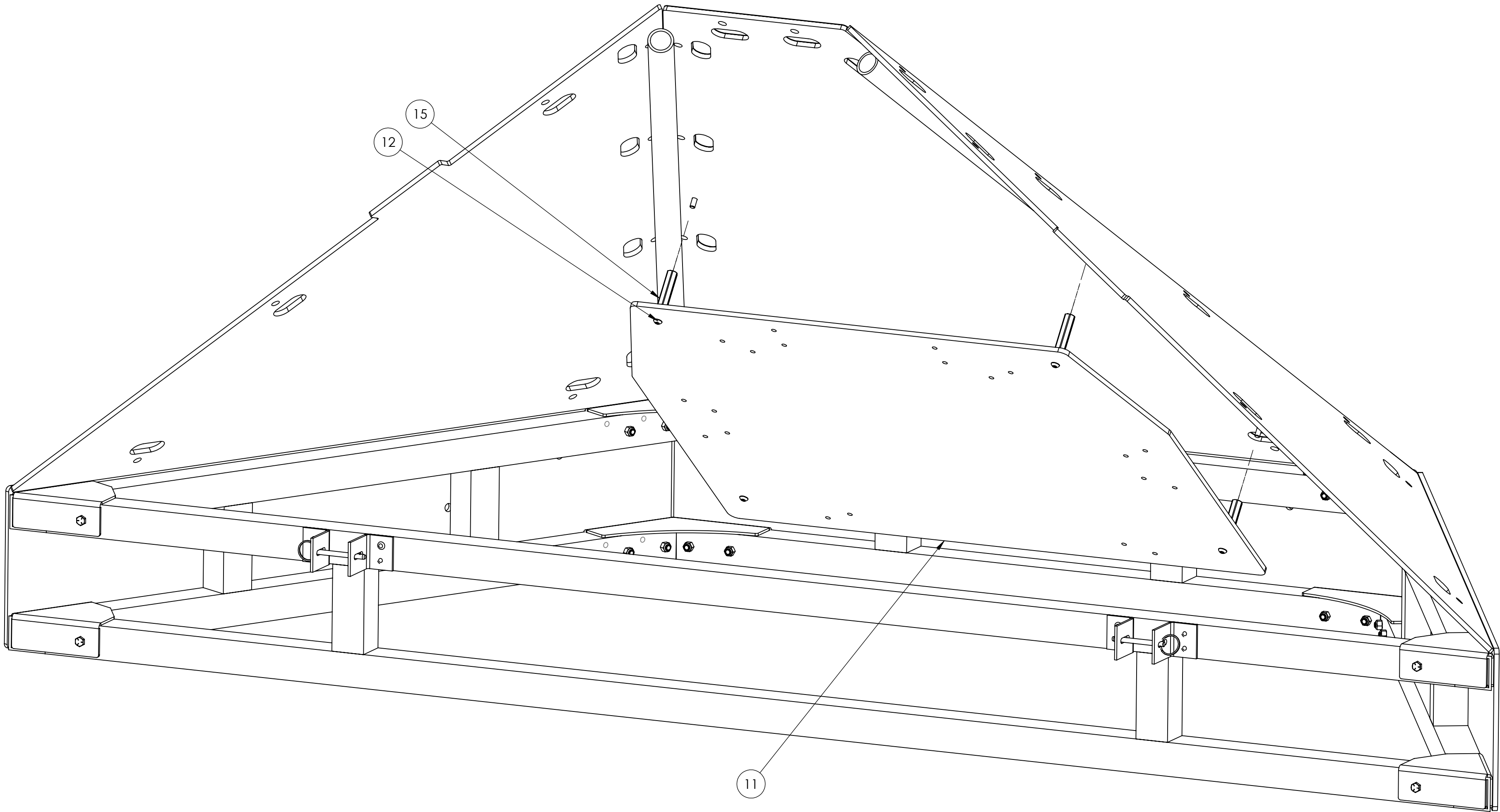
C

B



B

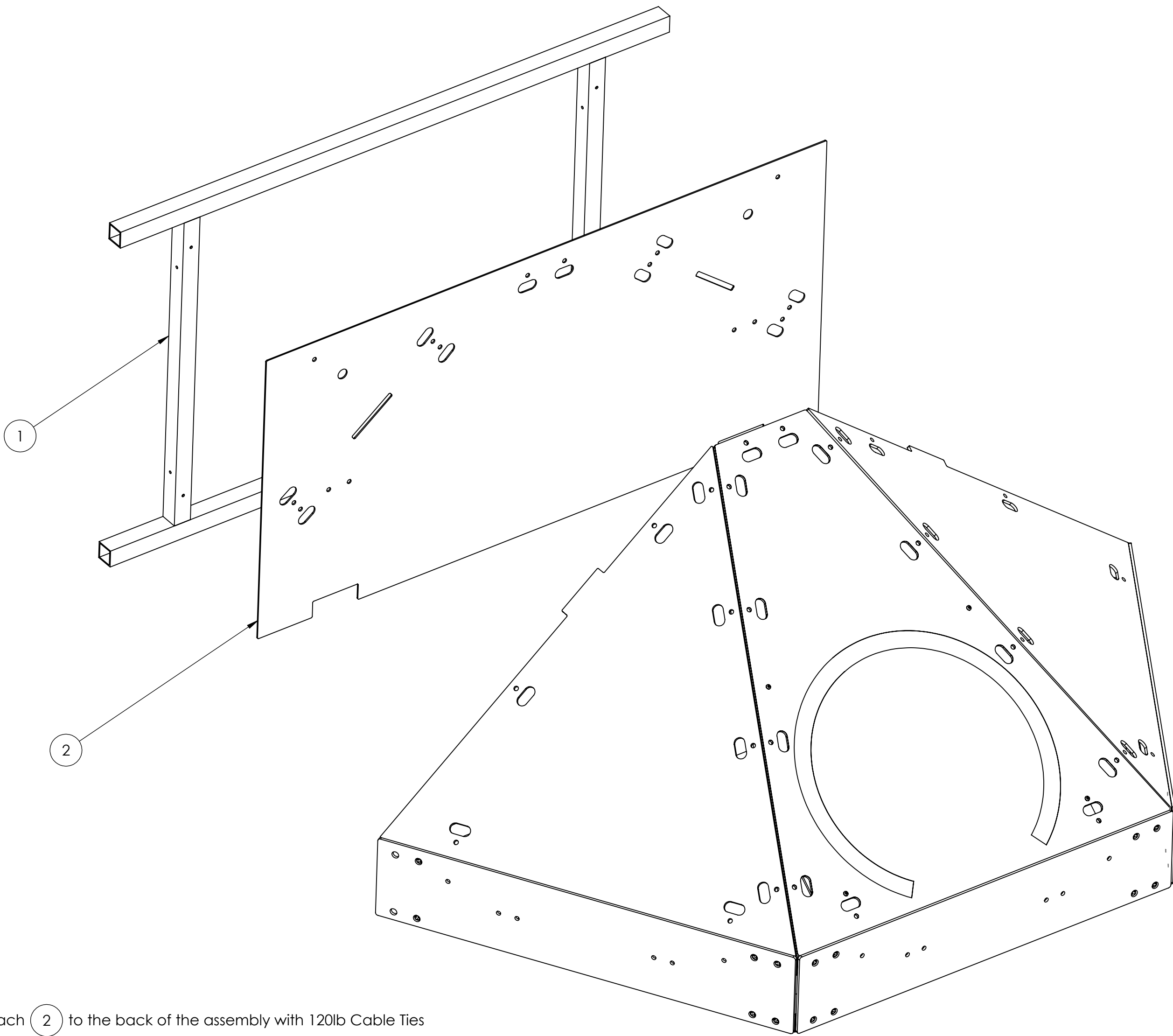
A

A



Attach (11) to the underside of the assembly with (15) and (12).

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	 	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	JO	11/1/2023	TITLE: Subwoofer	
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.			SIZE	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			DWG. NO.	
DO NOT SCALE DRAWING				C	GE-24330
				SCALE: 1:4	REV
				SHEET 5 OF 6	



Attach ② to the back of the assembly with 120lb Cable Ties
Slide assembly up to ① and attach with pins

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

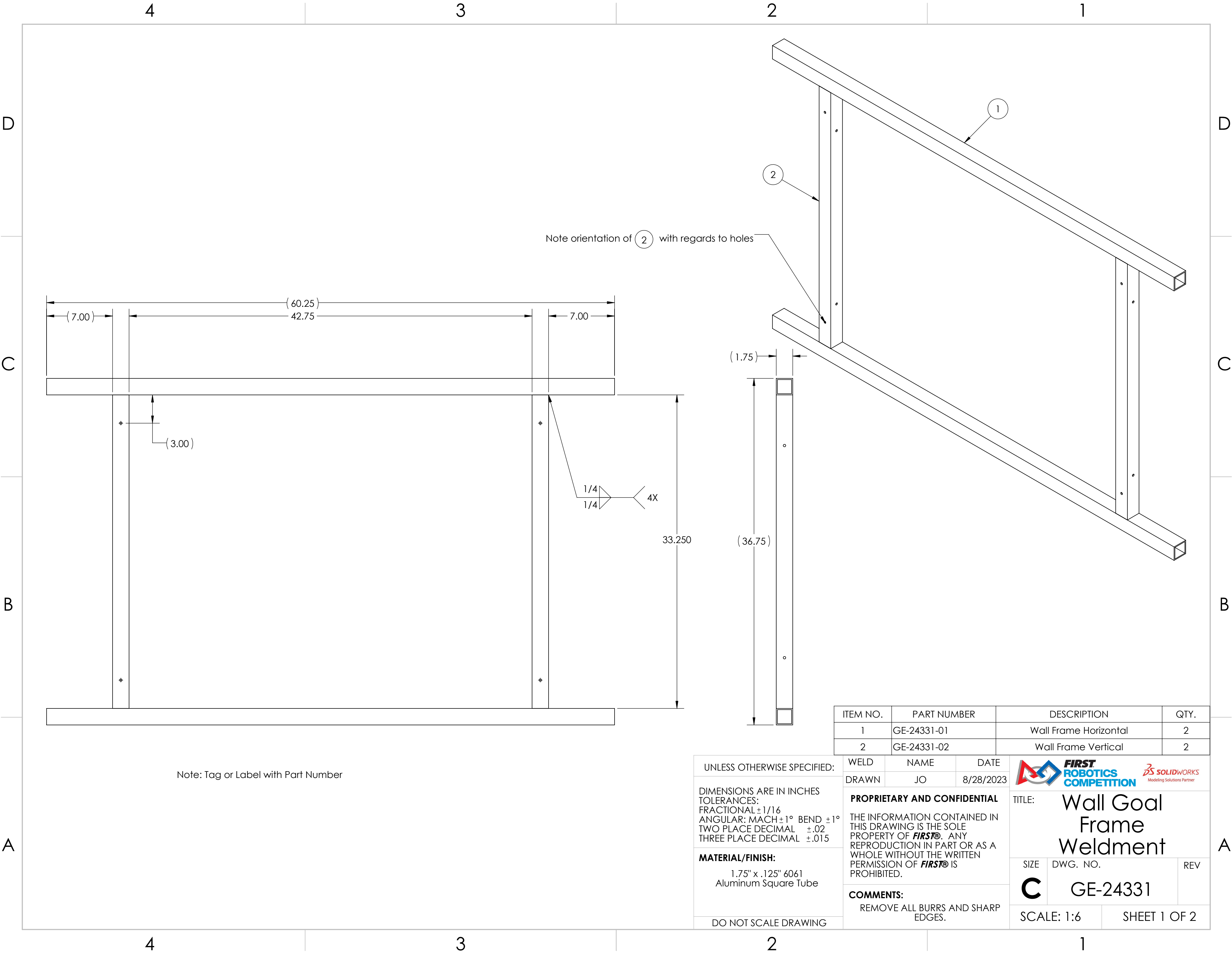
FIELD	NAME	DATE
DRAWN	JO	11/1/2023

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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.






TITLE: Subwoofer		
SIZE C	DWG. NO. GE-24330	REV
SCALE: 1:8		SHEET 6 OF 6



Note orientation of 2 with regards to holes

Note: Tag or Label with Part Number

	ITEM NO.	PART NUMBER	DESCRIPTION		QTY.
	1	GE-24331-01	Wall Frame Horizontal		2
	2	GE-24331-02	Wall Frame Vertical		2
UNLESS OTHERWISE SPECIFIED:		WELD	NAME	DATE	<div></div> <div>TITLE: Wall Goal Frame Weldment</div> <div><div>SIZE</div><div>DWG. NO.</div><div>REV</div></div> <div><div>C</div><div>GE-24331</div></div> <div><div>SCALE: 1:6</div><div>SHEET 1 OF 2</div></div>
<div>DIMENSIONS ARE IN INCHES</div> <div>TOLERANCES:</div> <div>FRACTIONAL $\pm 1/16$</div> <div>ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$</div> <div>TWO PLACE DECIMAL $\pm .02$</div> <div>THREE PLACE DECIMAL $\pm .015$</div> <div>MATERIAL/FINISH:</div> <div>1.75" x .125" 6061 Aluminum Square Tube</div> <div>DO NOT SCALE DRAWING</div>		DRAWN	JO	8/28/2023	
		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.			
		COMMENTS:			
		REMOVE ALL BURRS AND SHARP EDGES.			

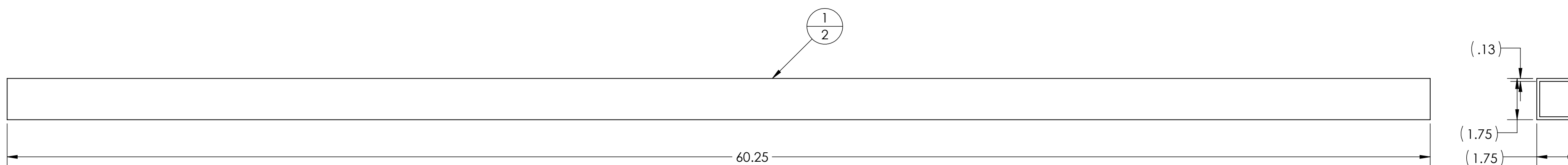
4

3

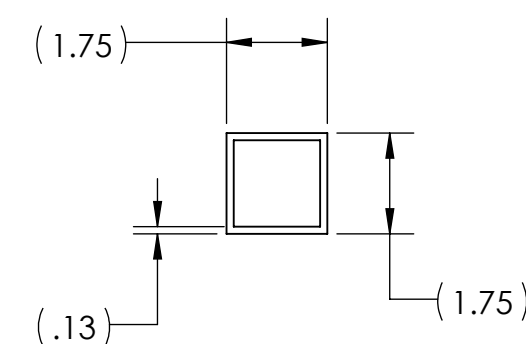
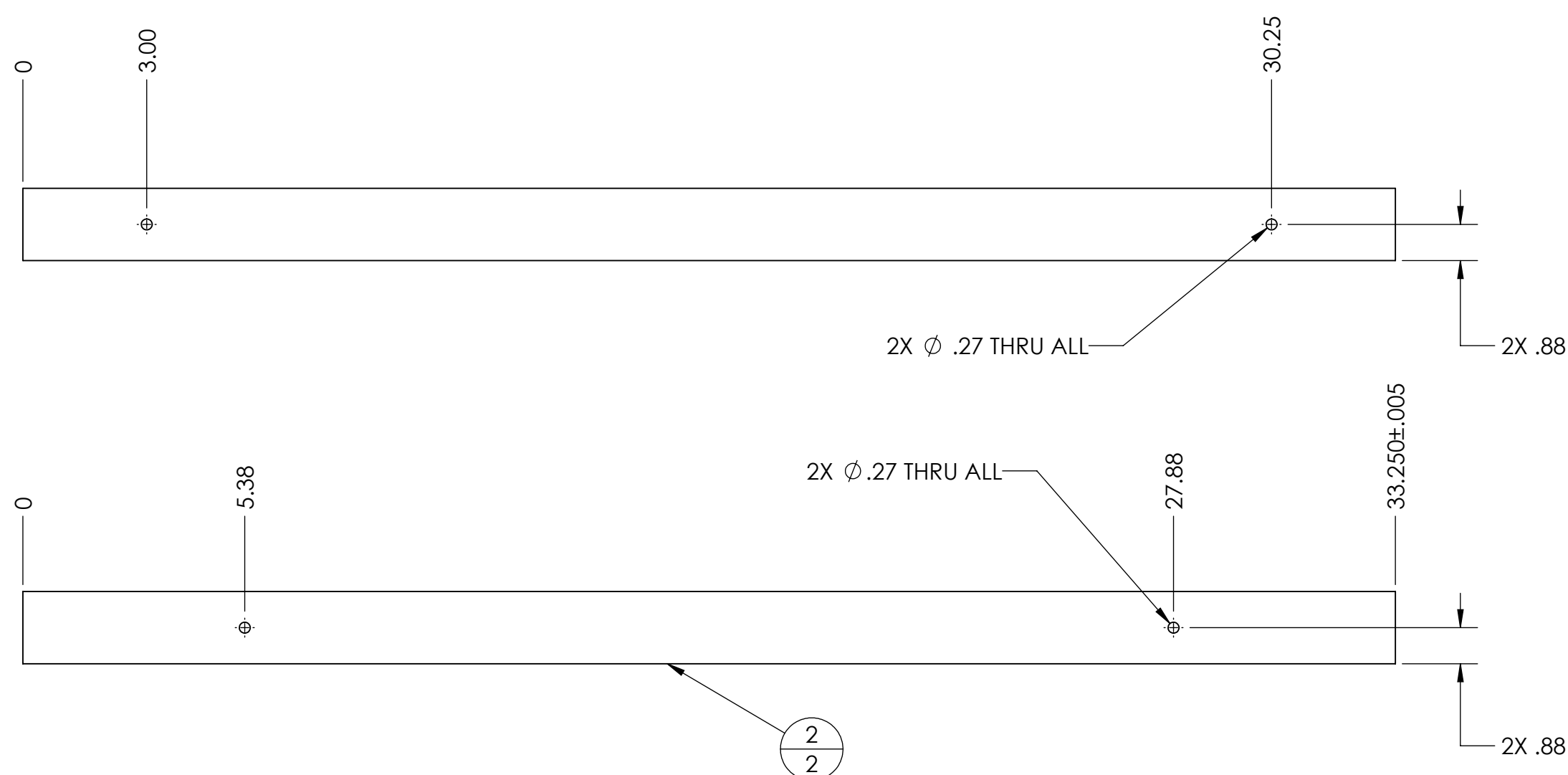
2

1

D



C



B

A

UNLESS OTHERWISE SPECIFIED:

WELD

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 $\pm .015$

MATERIAL/FINISH:
1.75" x .125" 6061
Aluminum Square Tube

DO NOT SCALE DRAWING

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



TITLE: Wall Goal
Frame
Weldment

SIZE

DWG. NO.	
----------	--

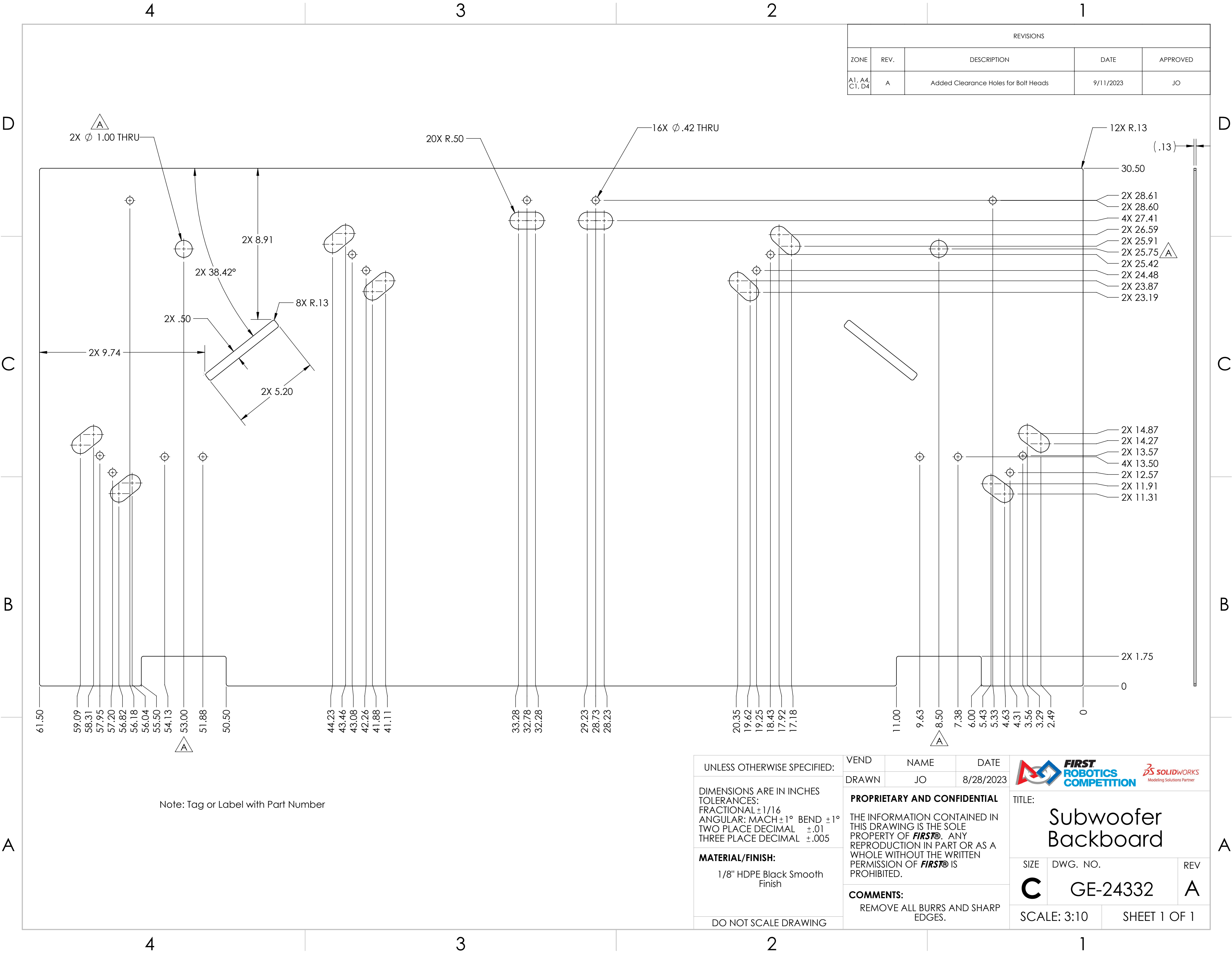
RFV

C

GE-24331



SCALE: 3:10

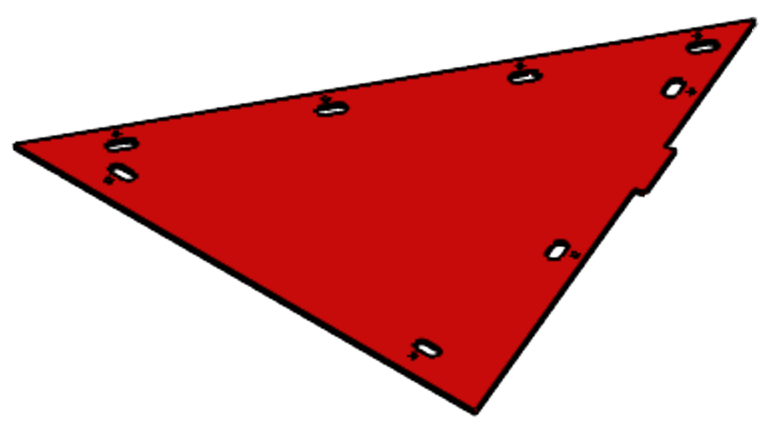
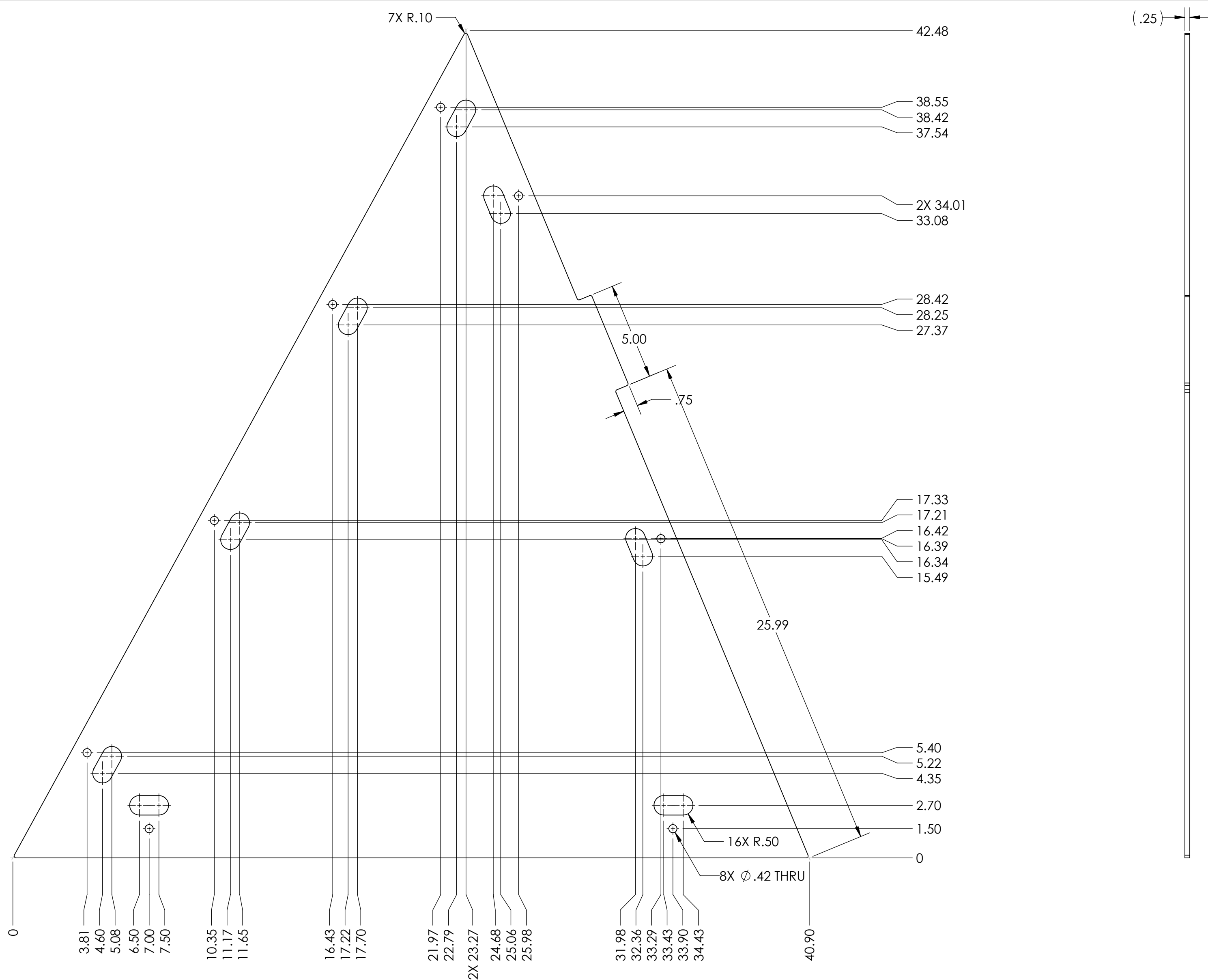
SHEET 2 OF 2



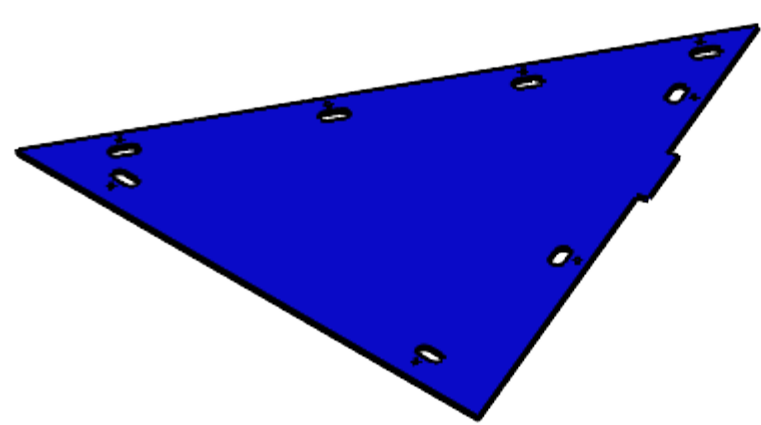
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A1, A4, C1, D4	A	Added Clearance Holes for Bolt Heads	9/11/2023	JO

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/8" HDPE Black Smooth Finish DO NOT SCALE DRAWING	VEND	NAME	DATE
	DRAWN	JO	8/28/2023
	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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		


 			TITLE: Subwoofer Backboard		
SIZE C	DWG. NO. GE-24332		REV A		
SCALE: 3:10		SHEET 1 OF 1			

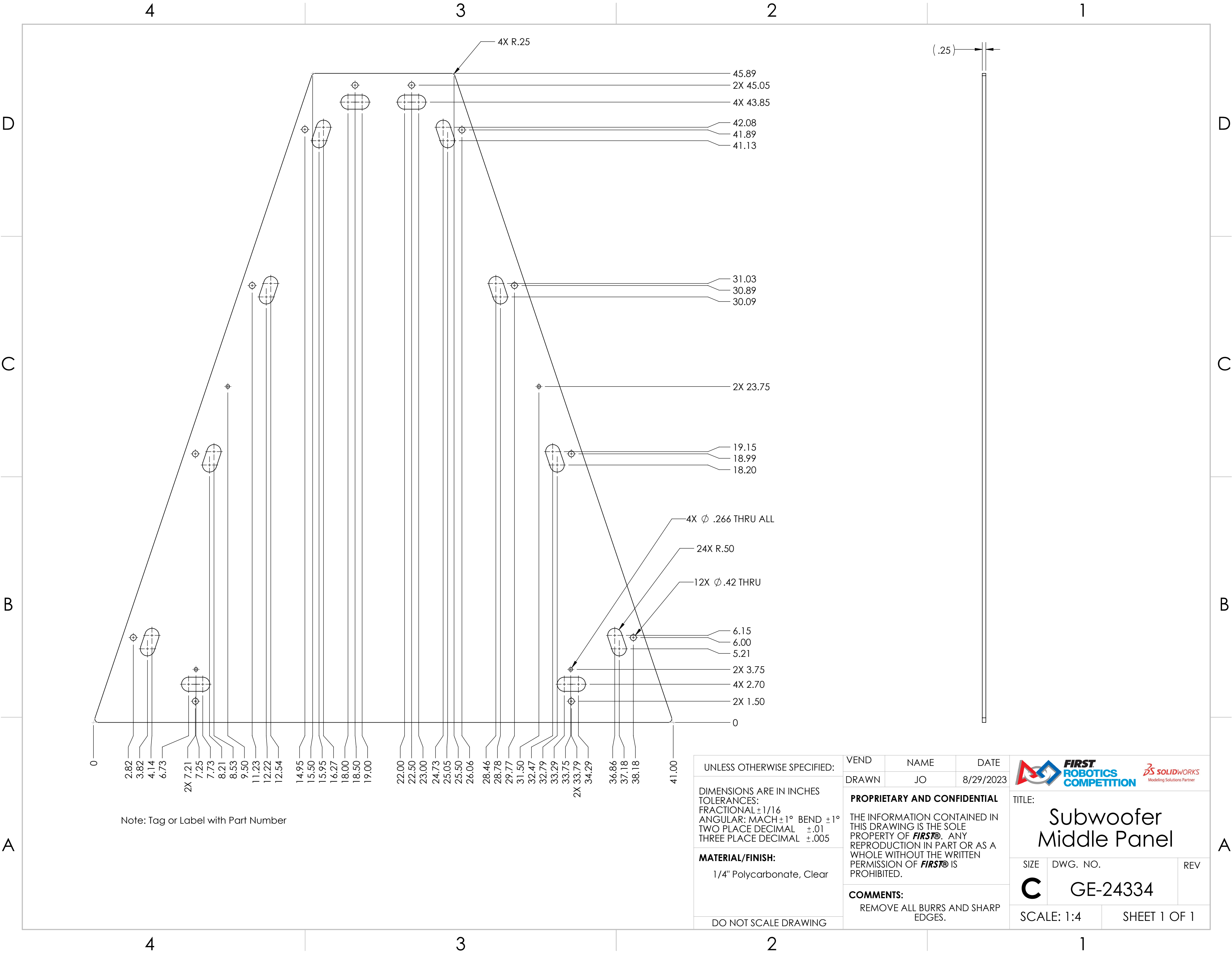


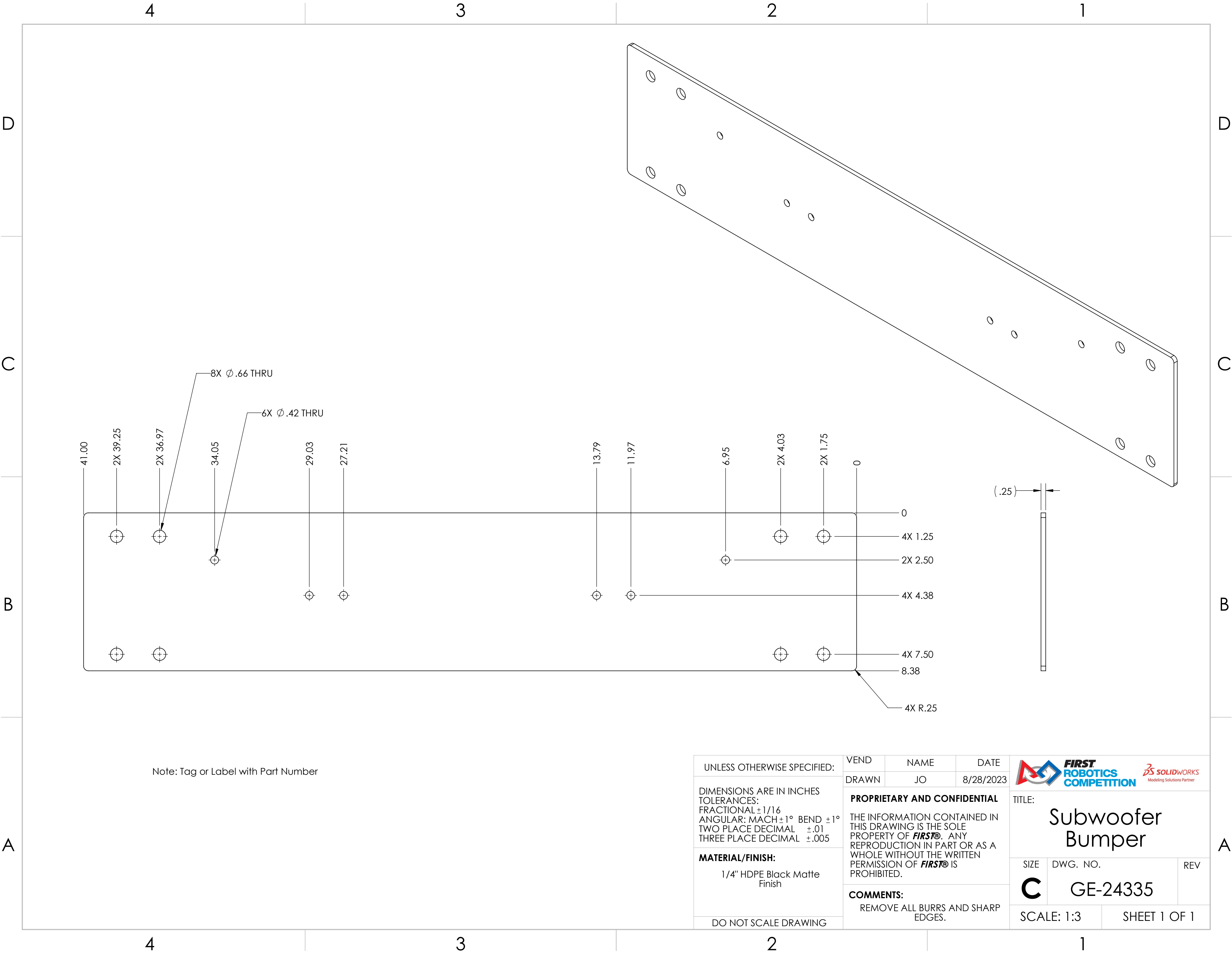
GE-24333-RED





GE-24333-BLUE

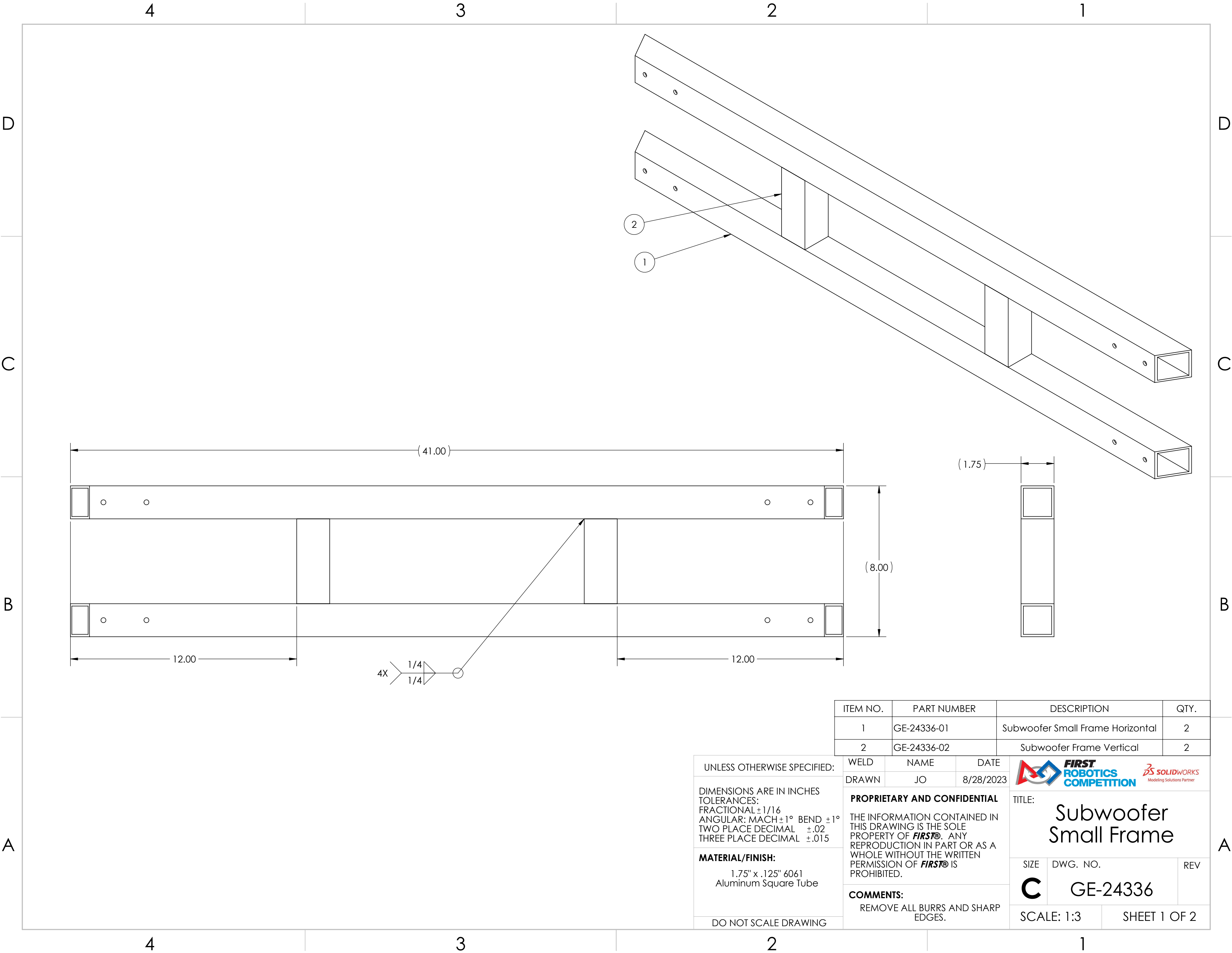
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$ MATERIAL/FINISH: 1/4" HDPE, Matte Finish, See Part Number For Color DO NOT SCALE DRAWING	VEND	NAME	DATE	 TITLE: Subwoofer Side Panel	
	DRAWN	JO	8/28/2023		
	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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24333
SCALE: 1:4		SHEET 1 OF 1			







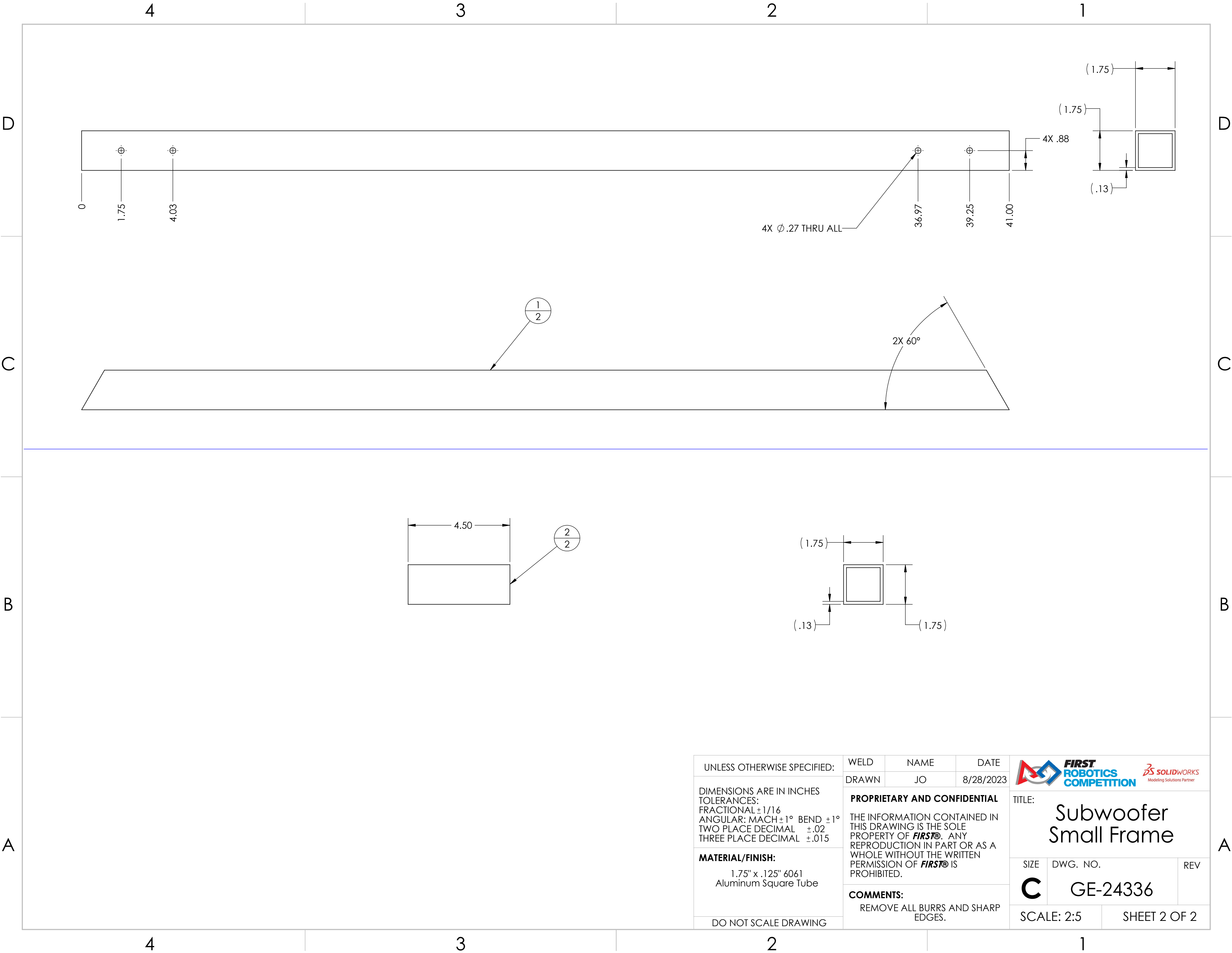
Note: Tag or Label with Part Number



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div><div>FIRST ROBOTICS COMPETITION</div><div><div>SOLIDWORKS Modeling Solutions Partner</div></div></div>		
	DRAWN	JO	8/28/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Subwoofer Bumper		
	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" HDPE Black Matte Finish	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	GE-24335	
DO NOT SCALE DRAWING				SCALE: 1:3		SHEET 1 OF 1

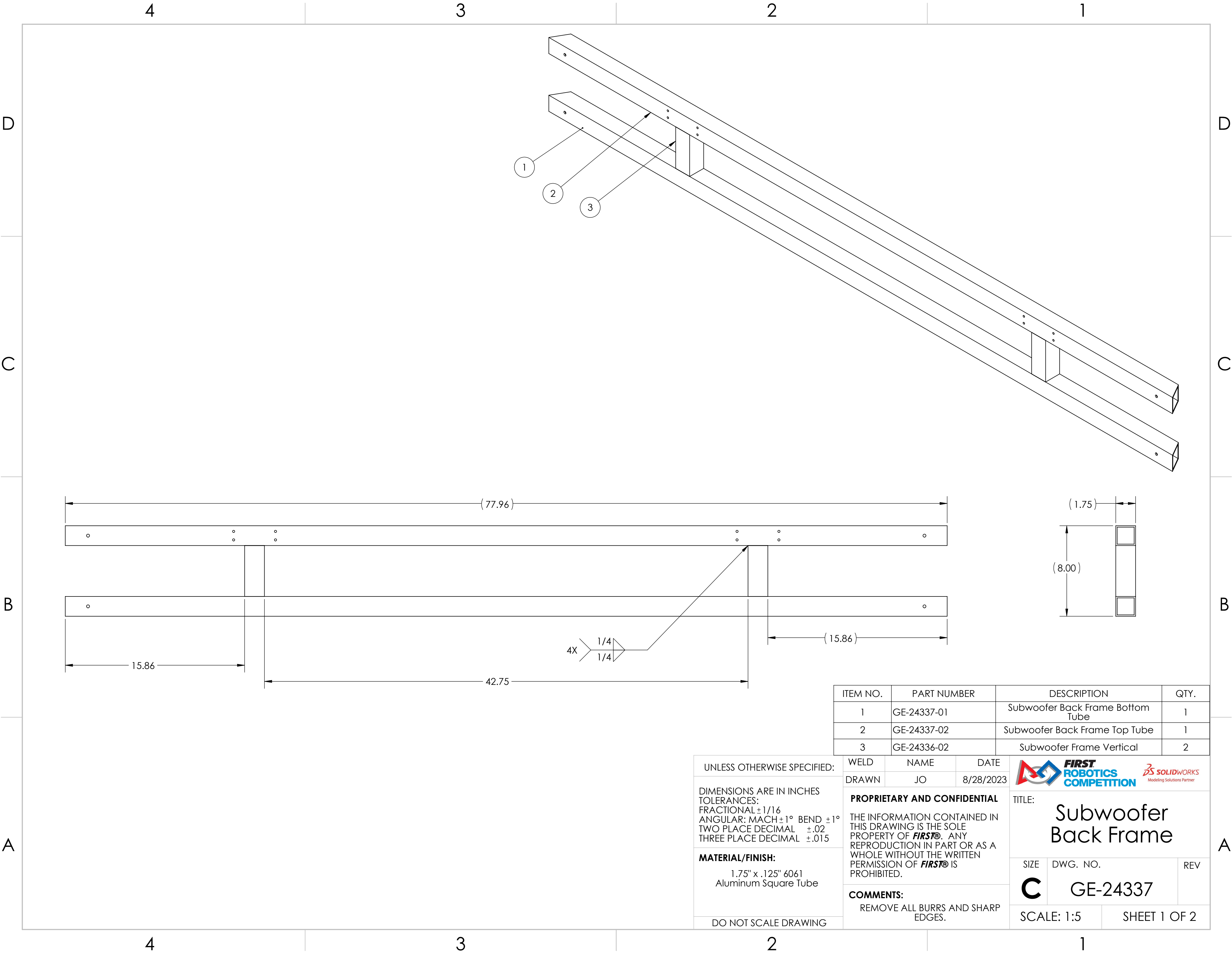


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24336-01	Subwoofer Small Frame Horizontal	2
2	GE-24336-02	Subwoofer Frame Vertical	2



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.015 MATERIAL/FINISH: 1.75" x .125" 6061 Aluminum Square Tube DO NOT SCALE DRAWING	WELD	NAME	DATE	<div></div> <div>TITLE: <h1>Subwoofer Small Frame</h1></div> <div>SIZE C</div> <div>SCALE: 1:3</div>	
	DRAWN	JO	8/28/2023		<div>DWG. NO. GE-24336</div> <div>SHEET 1 OF 2</div>
	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.				

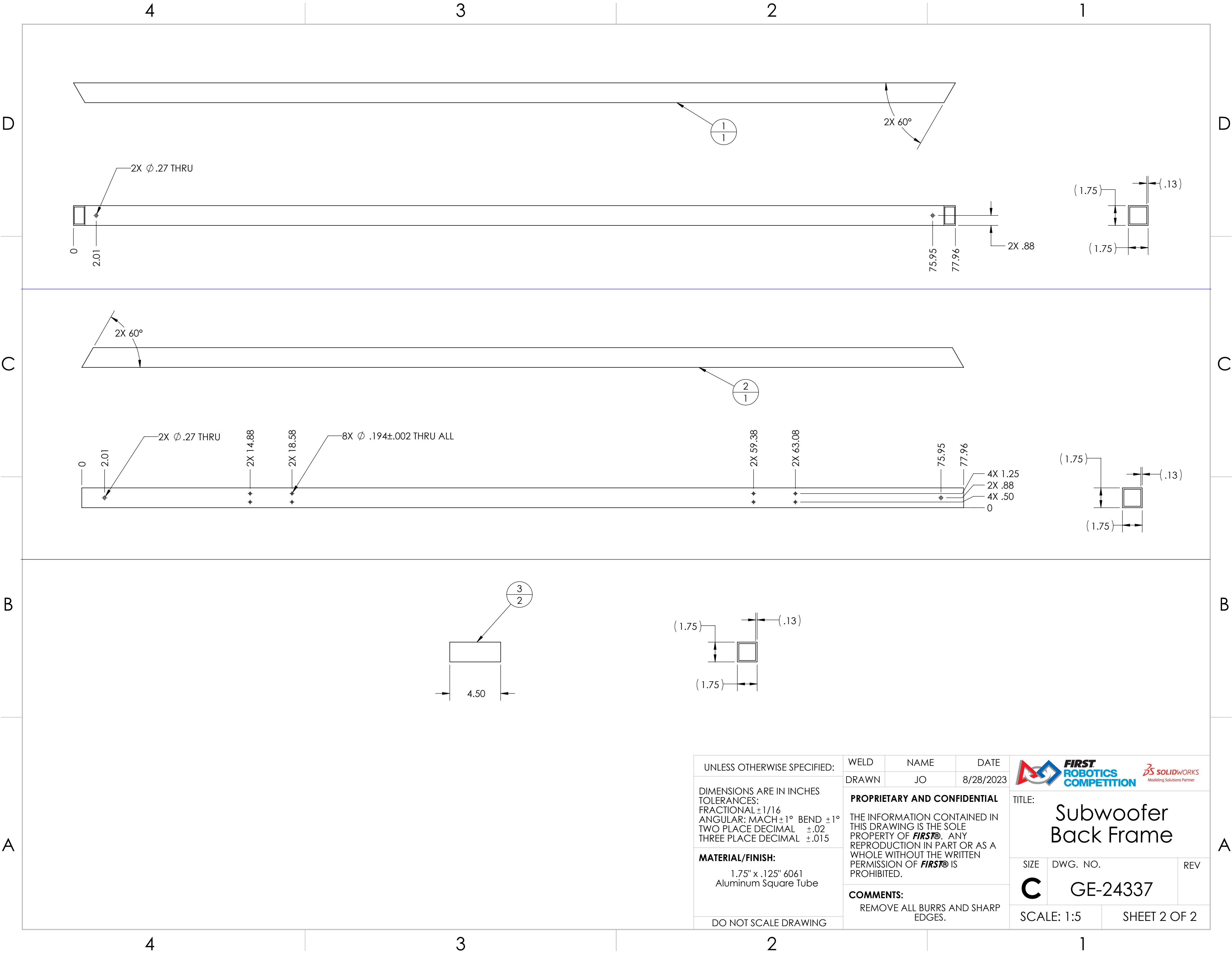


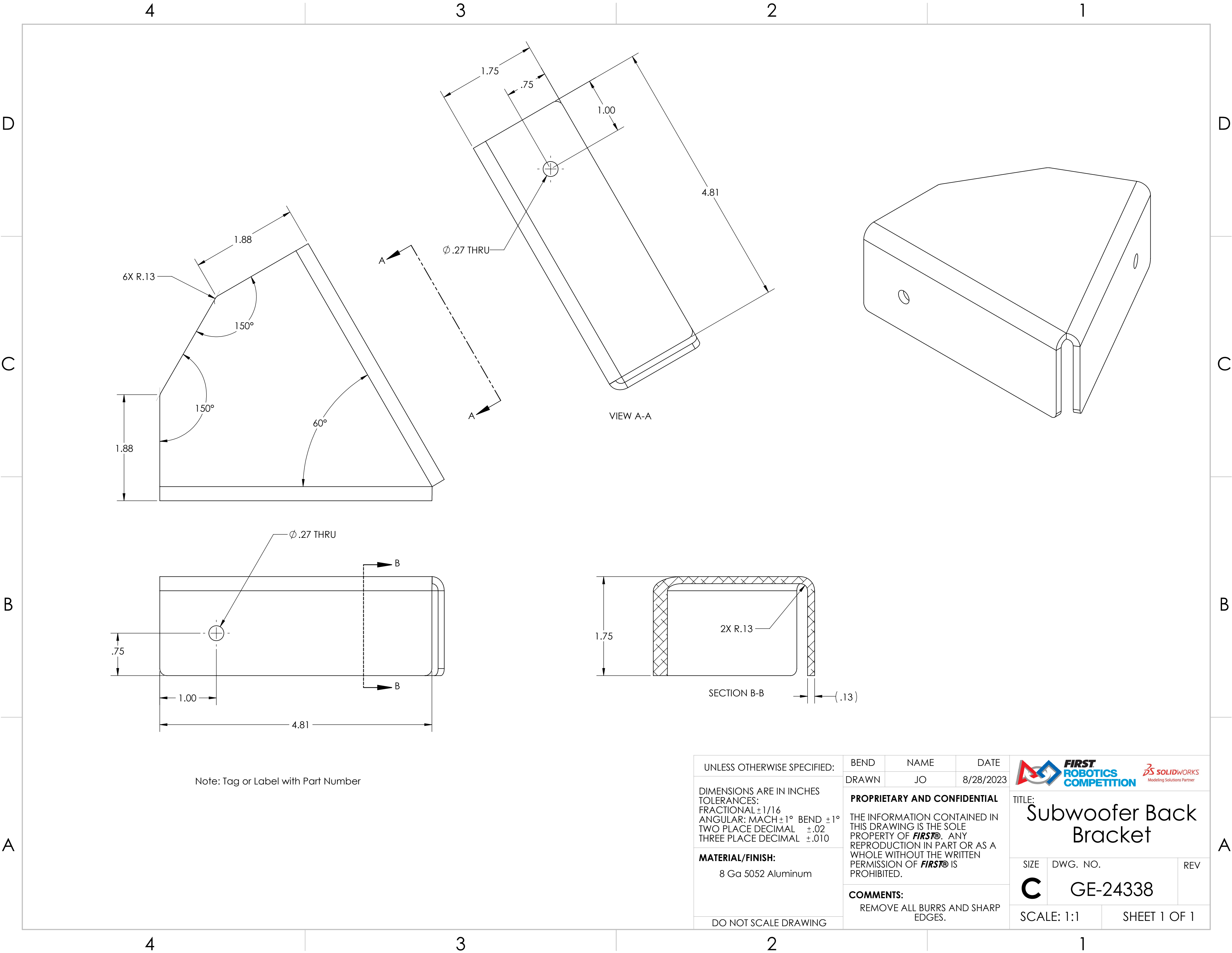
UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE	<div></div> <div>TITLE: <h1>Subwoofer Small Frame</h1></div>		
	DRAWN	JO	8/28/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.015	PROPRIETARY AND CONFIDENTIAL THE INFORMATION 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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24336	
MATERIAL/FINISH: 1.75" x .125" 6061 Aluminum Square Tube				SCALE: 2:5		SHEET 2 OF 2
DO NOT SCALE DRAWING						





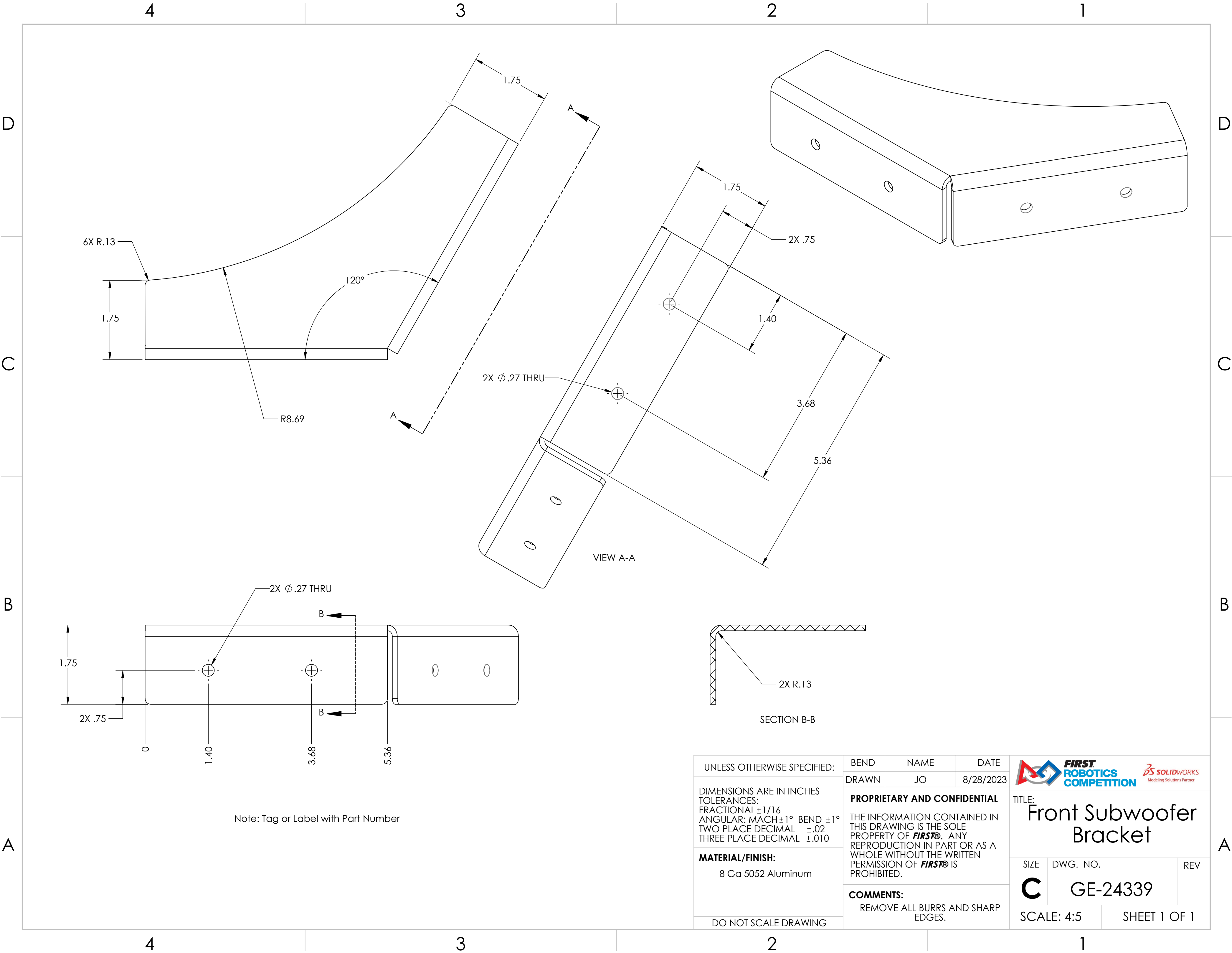
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24337-01	Subwoofer Back Frame Bottom Tube	1
2	GE-24337-02	Subwoofer Back Frame Top Tube	1
3	GE-24336-02	Subwoofer Frame Vertical	2

UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE	<div></div>		
	DRAWN	JO	8/28/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.015	PROPRIETARY AND CONFIDENTIAL			TITLE: Subwoofer Back Frame		
	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: 1.75" x .125" 6061 Aluminum Square Tube	COMMENTS:			SIZE	DWG. NO.	REV
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24337	
DO NOT SCALE DRAWING				SCALE: 1:5		SHEET 1 OF 2





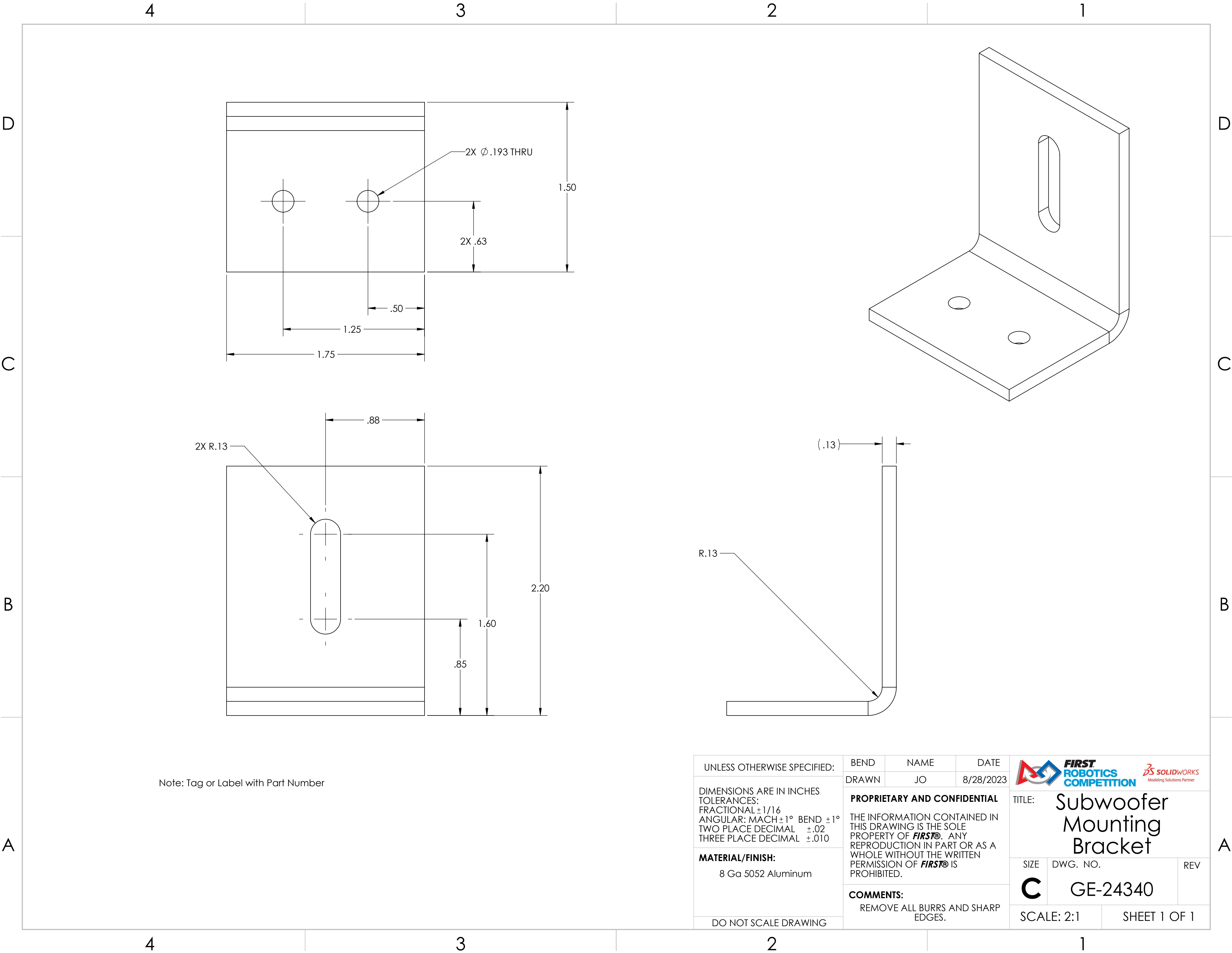


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$ MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Subwoofer Back Bracket</div>	
	DRAWN	JO	8/28/2023		
	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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24338
SCALE: 1:1		SHEET 1 OF 1			

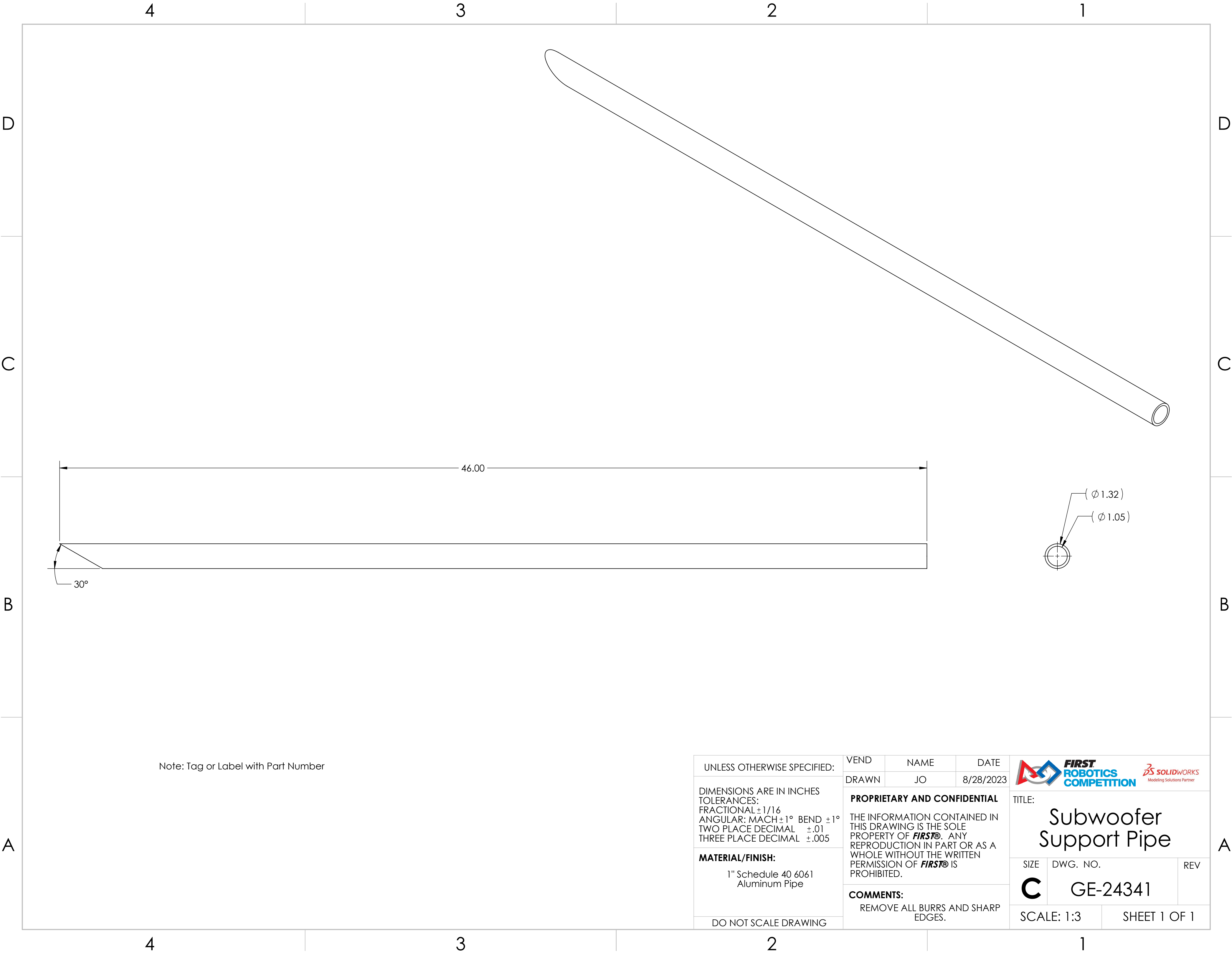


Note: Tag or Label with Part Number



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$ MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Front Subwoofer Bracket</div>	
	DRAWN	JO	8/28/2023		
	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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24339
SCALE: 4:5		SHEET 1 OF 1			

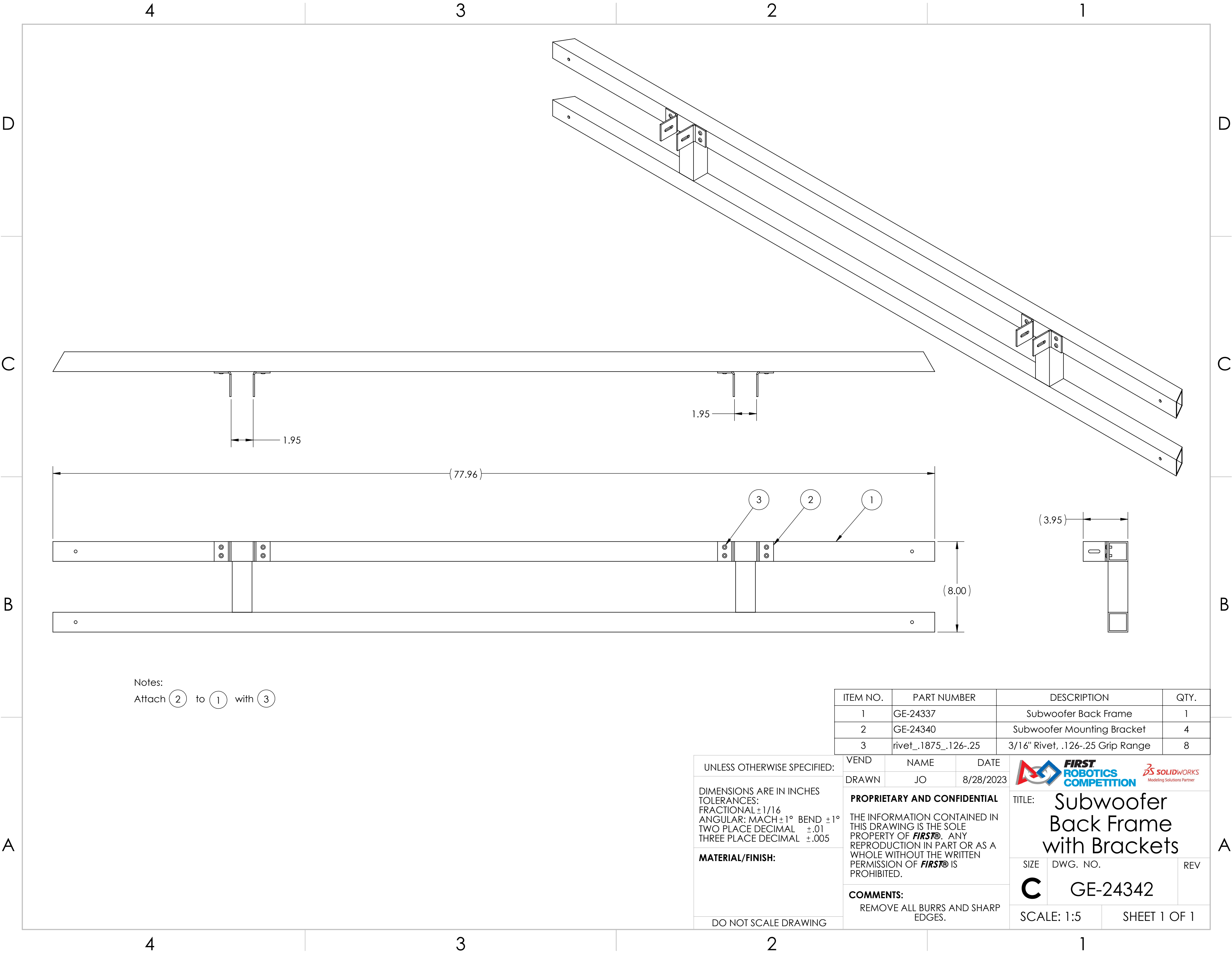


Note: Tag or Label with Part Number





Note: Tag or 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" Schedule 40 6061 Aluminum Pipe DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: <h1>Subwoofer Support Pipe</h1></div>		
	DRAWN	JO	8/28/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24341	
		SCALE: 1:3		SHEET 1 OF 1		



Notes:
Attach (2) to (1) with (3)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24337	Subwoofer Back Frame	1
2	GE-24340	Subwoofer Mounting Bracket	4
3	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range	8

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div>	
	DRAWN	JO	8/28/2023		
	PROPRIETARY AND CONFIDENTIAL			TITLE: Subwoofer Back Frame with Brackets	
	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:			SIZE	DWG. NO.	REV
REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24342	
			SCALE: 1:5		SHEET 1 OF 1

TITLE: Subwoofer Back Frame with Brackets

SIZE

DWG. NO.

REV

C

GE-24342

4

3

2

1

D

D

C

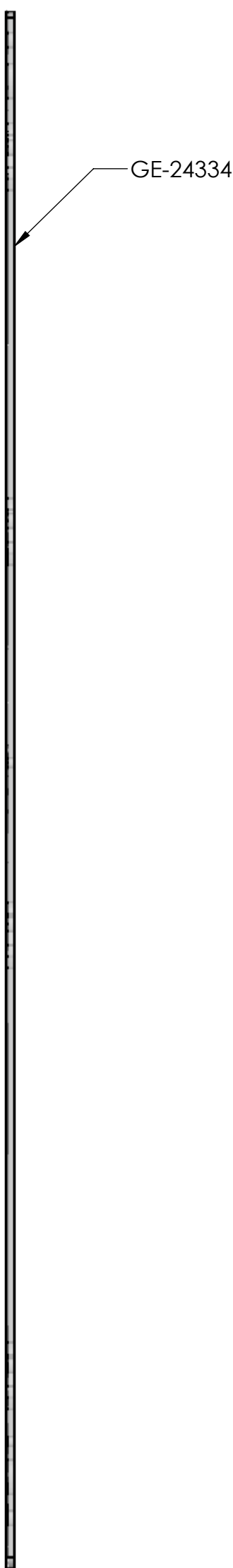
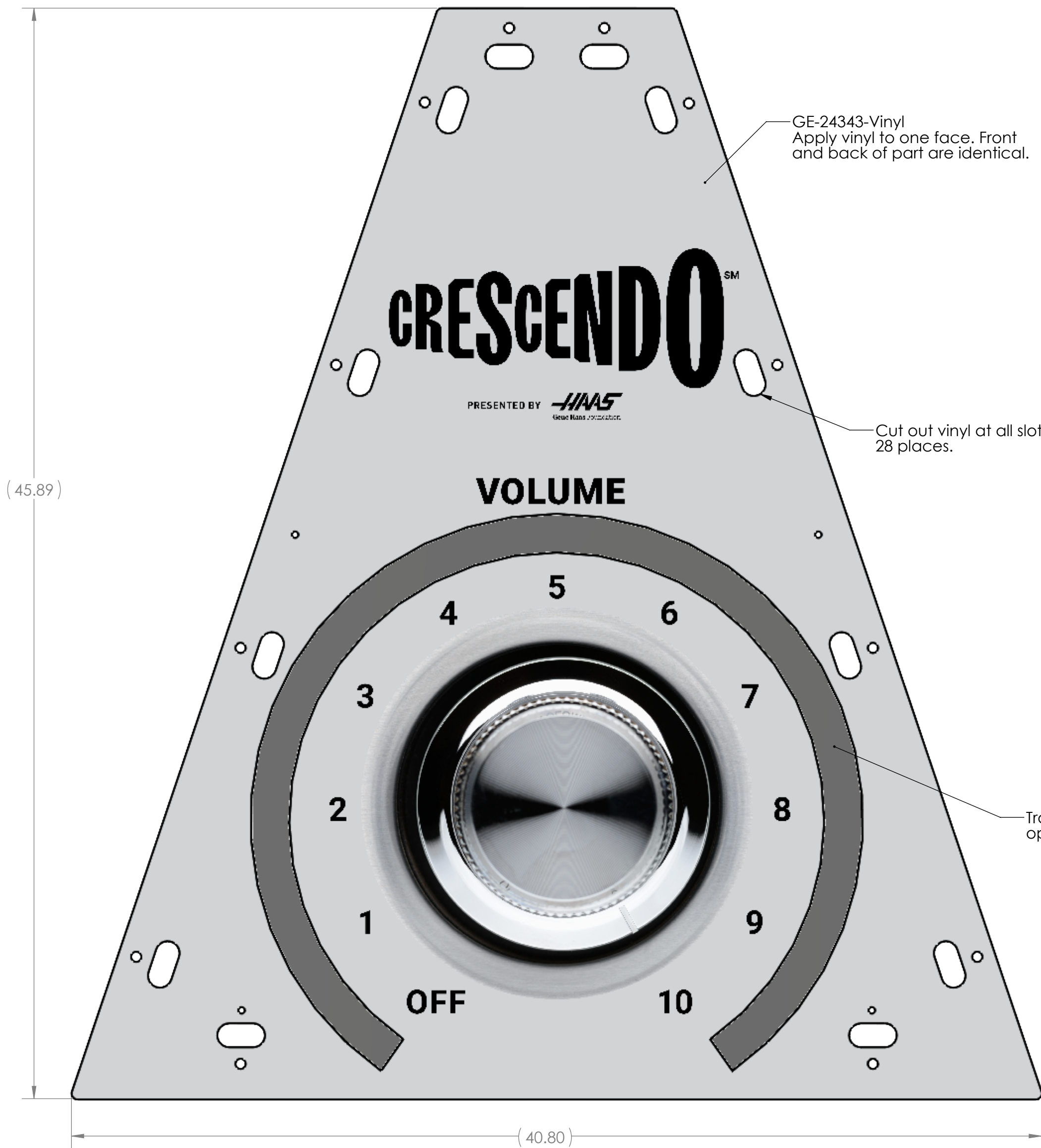
C

B

B

A

A



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

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

DF

10/18/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



**FIRST
ROBOTICS
COMPETITION**



Modeling Solutions Partner

TITLE: Subwoofer
Middle Panel
with Vinyl

SIZE

DWG. NO.

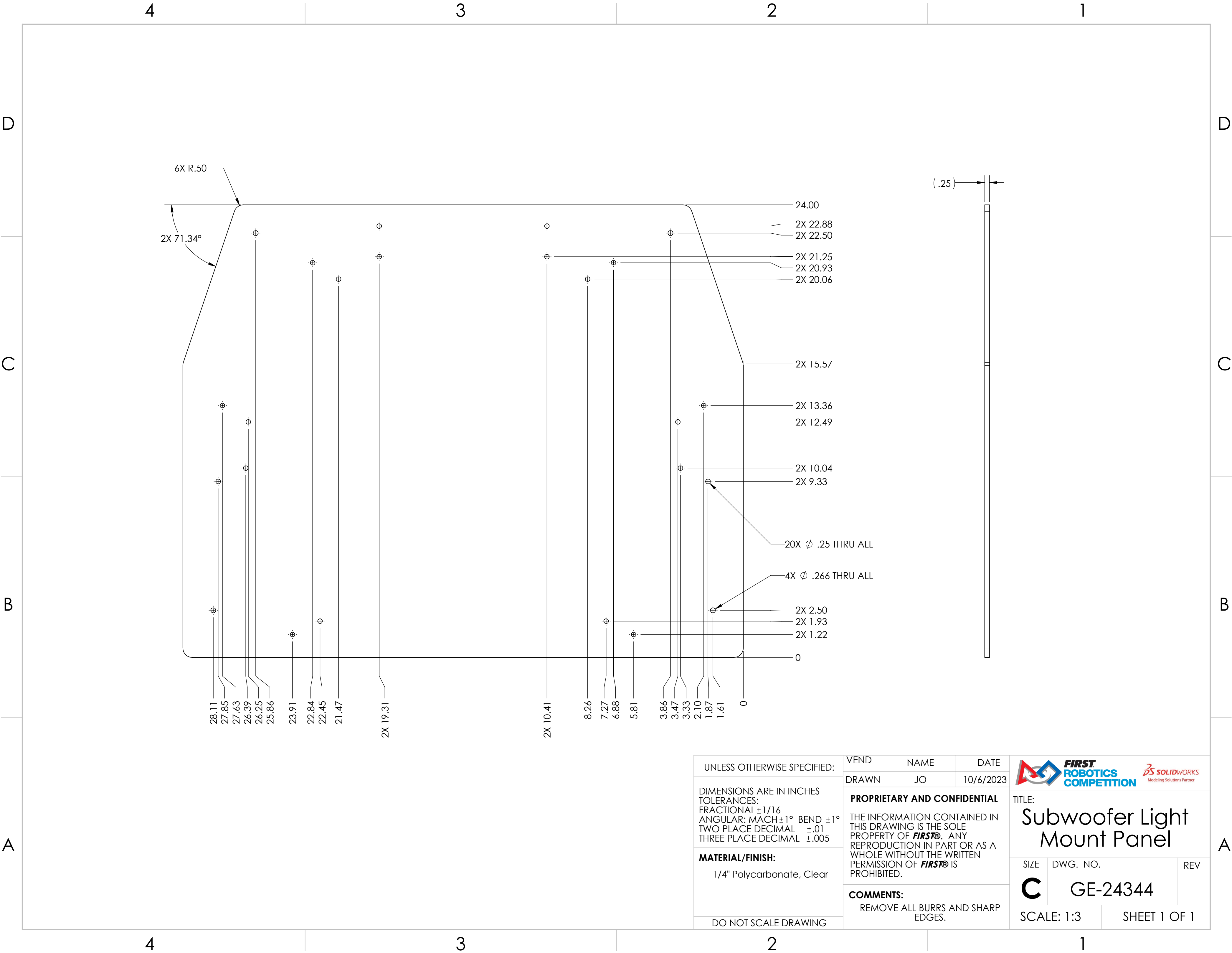
REV



C

GE-24343

SCALE: 1:4

SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div> <div>TITLE: Subwoofer Light Mount Panel</div>		
	DRAWN	JO	10/6/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			<div>SIZE</div> <div>C</div> <div>DWG. NO.</div> <div>GE-24344</div> <div>REV</div>		
	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.					
MATERIAL/FINISH: 1/4" Polycarbonate, Clear						
DO NOT SCALE DRAWING				SCALE: 1:3		
				SHEET 1 OF 1		

4

3

2

1

D

D

C

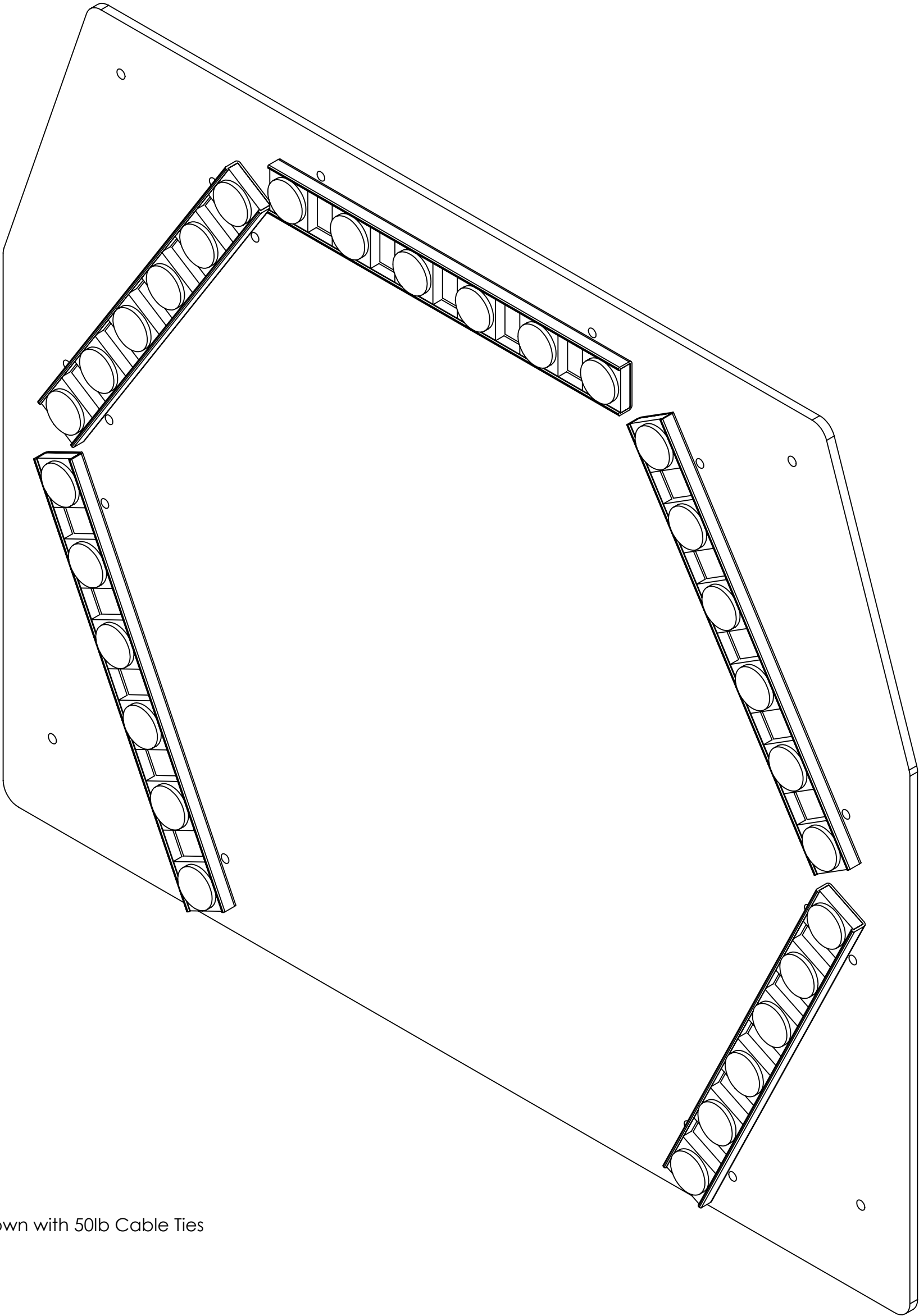
C

B

B



A

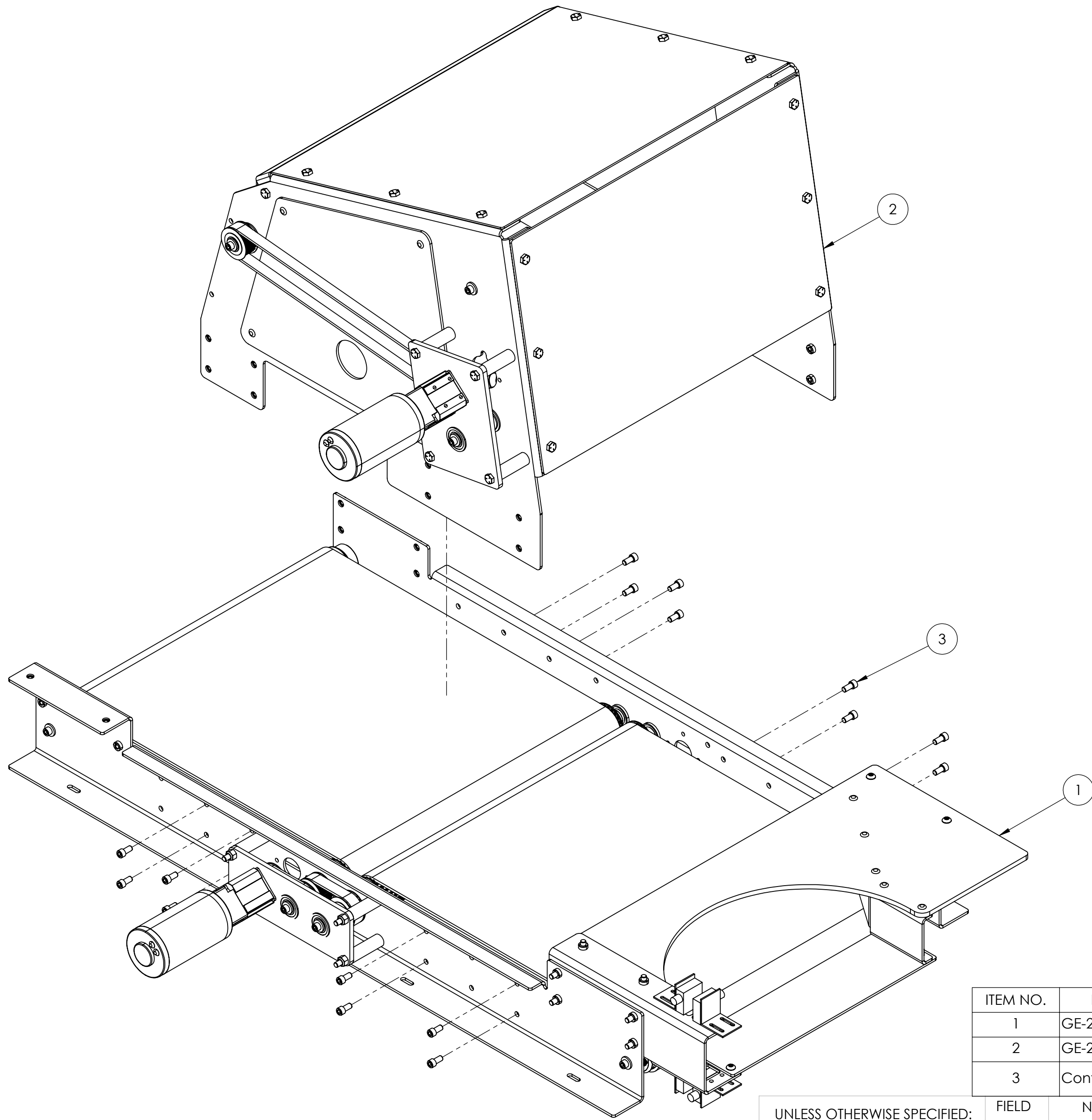
A



Attach Ligths as shown with 50lb Cable Ties

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24344	Subwoofer Light Mount Panel	1
2	lightTrackWithLights_duckbill		5

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	<div> FIRST ROBOTICS COMPETITION</div> <div> SOLIDWORKS Modeling Solutions Partner</div>		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50		DRAWN	JO	12/19/2023			
MATERIAL/FINISH:		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.			Subwoofer Light Panel Assembly		
		COMMENTS:			SIZE	DWG. NO.	REV
		REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24345	
DO NOT SCALE DRAWING					SCALE: 1:2.5		SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24351	Ring Counter Bottom Assembly	1
2	GE-24370	Ring Counter Top Assembly	1
3	Configurable Bolt	.5" Long 1/4-20 Socket Head Cap Screw	16

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	JO	12/19/2023

PROPRIETARY AND CONFIDENTIAL

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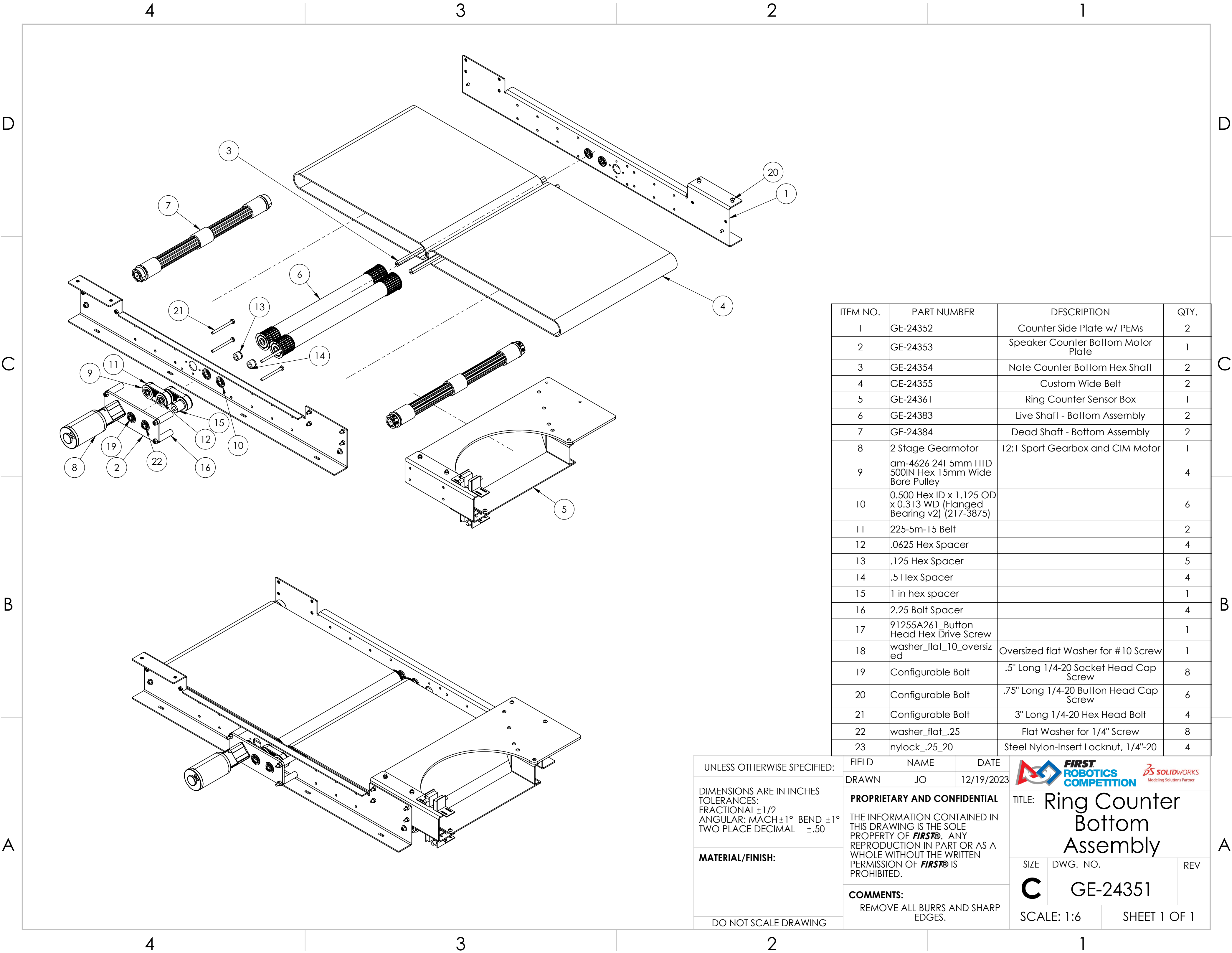
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Ring Counter

SIZE	DWG. NO.	REV
C	GE-24350	

SCALE: 1:4 SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24352	Counter Side Plate w/ PEMs	2
2	GE-24353	Speaker Counter Bottom Motor Plate	1
3	GE-24354	Note Counter Bottom Hex Shaft	2
4	GE-24355	Custom Wide Belt	2
5	GE-24361	Ring Counter Sensor Box	1
6	GE-24383	Live Shaft - Bottom Assembly	2
7	GE-24384	Dead Shaft - Bottom Assembly	2
8	2 Stage Gearmotor	12:1 Sport Gearbox and CIM Motor	1
9	am-4626 24T 5mm HTD 500IN Hex 15mm Wide Bore Pulley		4
10	0.500 Hex ID x 1.125 OD x 0.313 WD (Flanged Bearing v2) (217-3875)		6
11	225-5m-15 Belt		2
12	.0625 Hex Spacer		4
13	.125 Hex Spacer		5
14	.5 Hex Spacer		4
15	1 in hex spacer		1
16	2.25 Bolt Spacer		4
17	91255A261 Button Head Hex Drive Screw		1
18	washer_flat_10_oversized	Oversized flat Washer for #10 Screw	1
19	Configurable Bolt	.5" Long 1/4-20 Socket Head Cap Screw	8
20	Configurable Bolt	.75" Long 1/4-20 Button Head Cap Screw	6
21	Configurable Bolt	3" Long 1/4-20 Hex Head Bolt	4
22	washer_flat_.25	Flat Washer for 1/4" Screw	8
23	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	4

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
DRAWN



NAME
JO

DATE
12/19/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE: Ring Counter Bottom Assembly

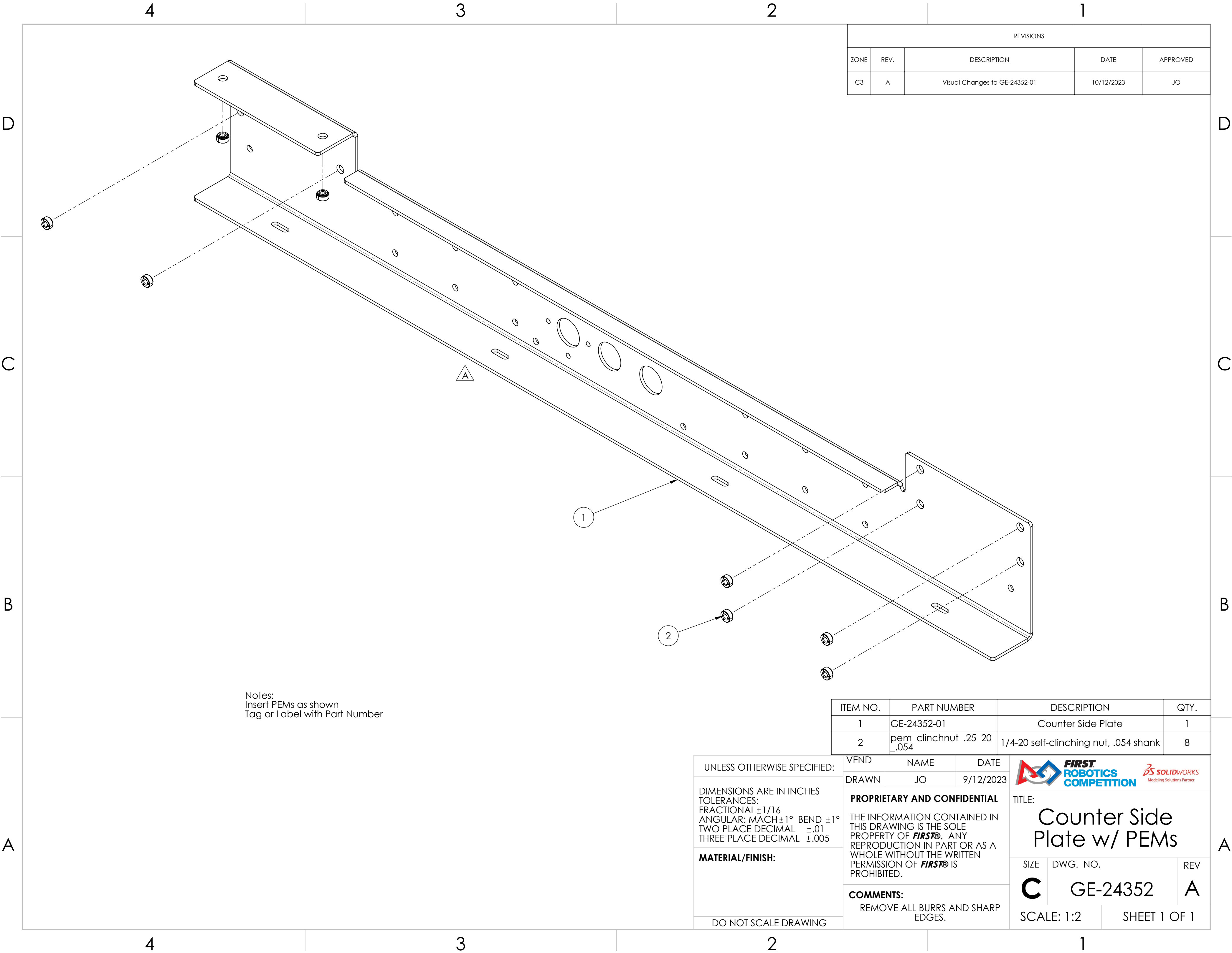
SIZE
C

DWG. NO.
GE-24351

REV

SCALE: 1:6



SHEET 1 OF 1



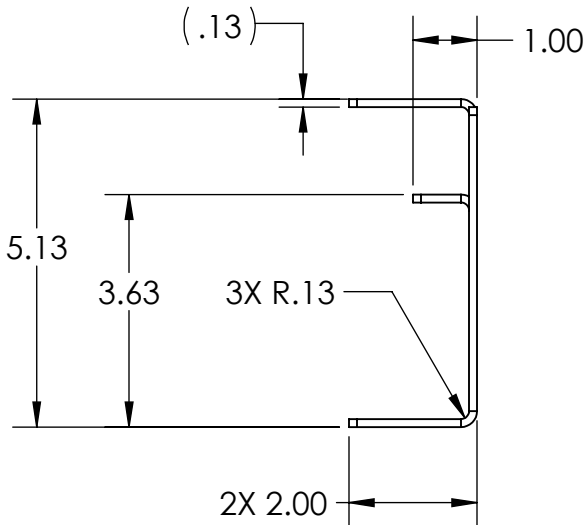
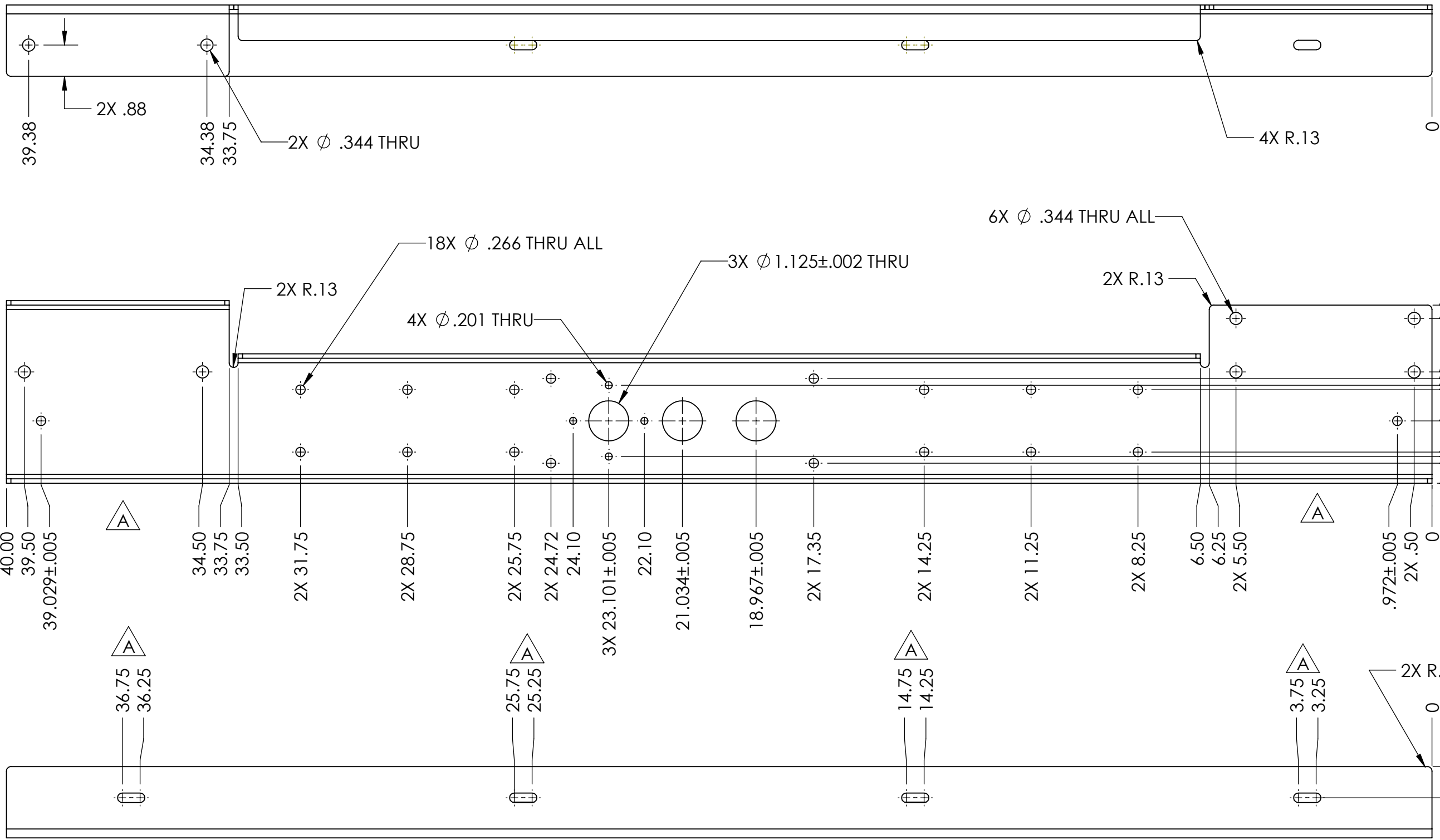
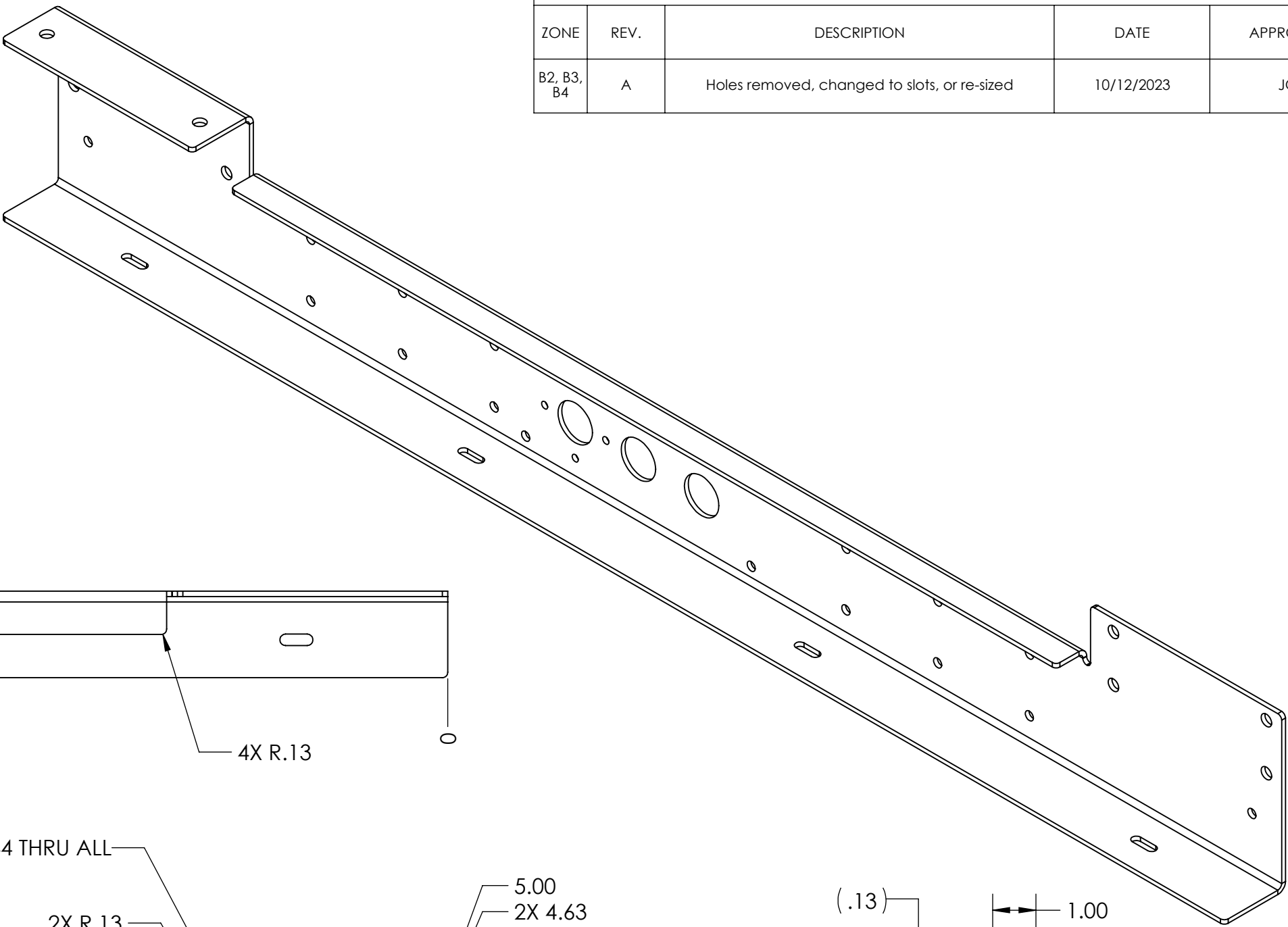
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C3	A	Visual Changes to GE-24352-01	10/12/2023	JO

Notes:
Insert PEMs as shown
Tag or Label with Part Number

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24352-01	Counter Side Plate	1
2	pem_clinchnut_.25_20 _.054	1/4-20 self-clinching nut, .054 shank	8

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: DO NOT SCALE DRAWING	VEND	NAME	DATE	 	
	DRAWN	JO	9/12/2023		
	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.			TITLE: Counter Side Plate w/ PEMs	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24352
			SCALE: 1:2		SHEET 1 OF 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2, B3, B4	A	Holes removed, changed to slots, or re-sized	10/12/2023	JO



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:
8 Ga 5052 Aluminum

DO NOT SCALE DRAWING

BEND	NAME	DATE
DRAWN	JO	9/12/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

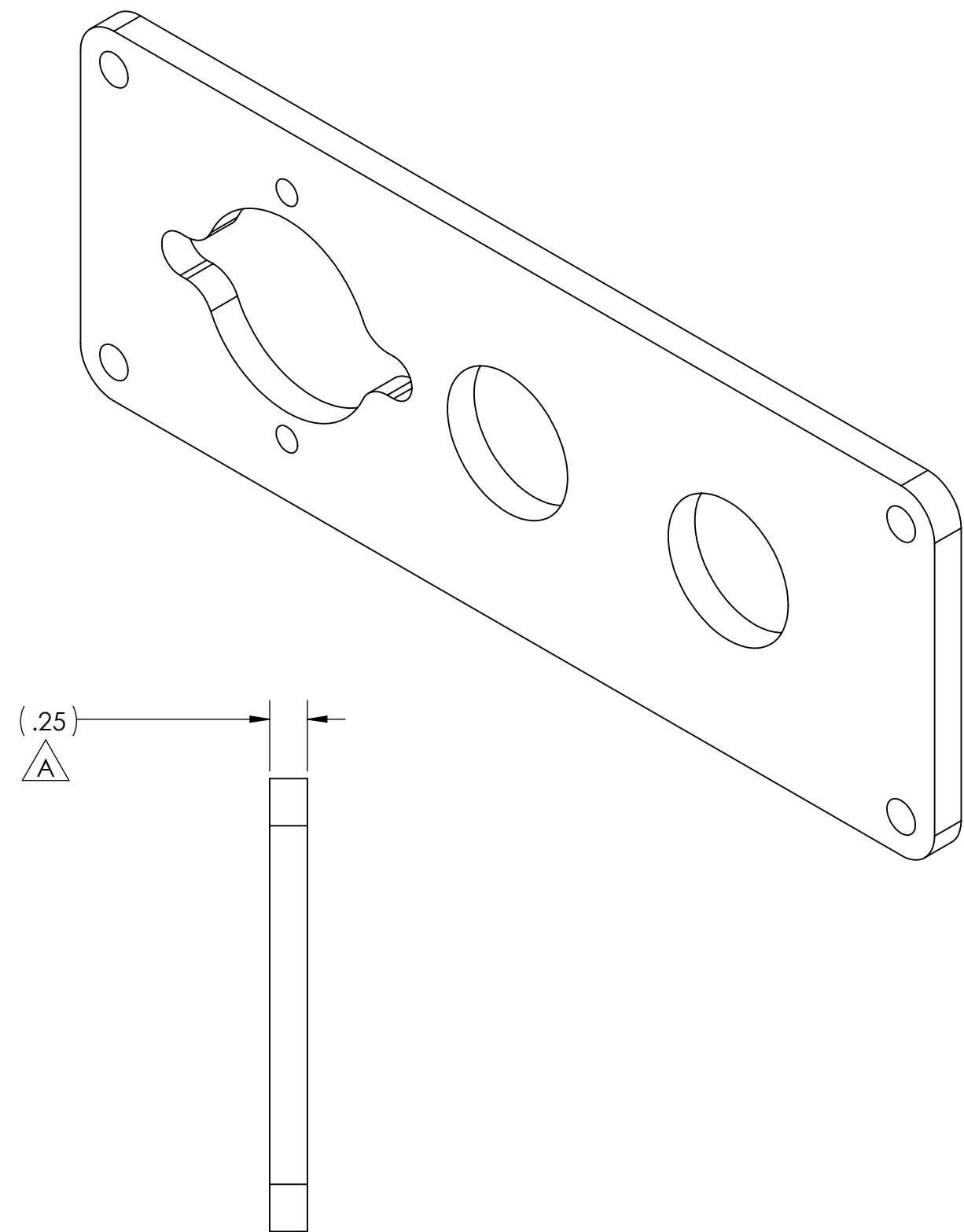
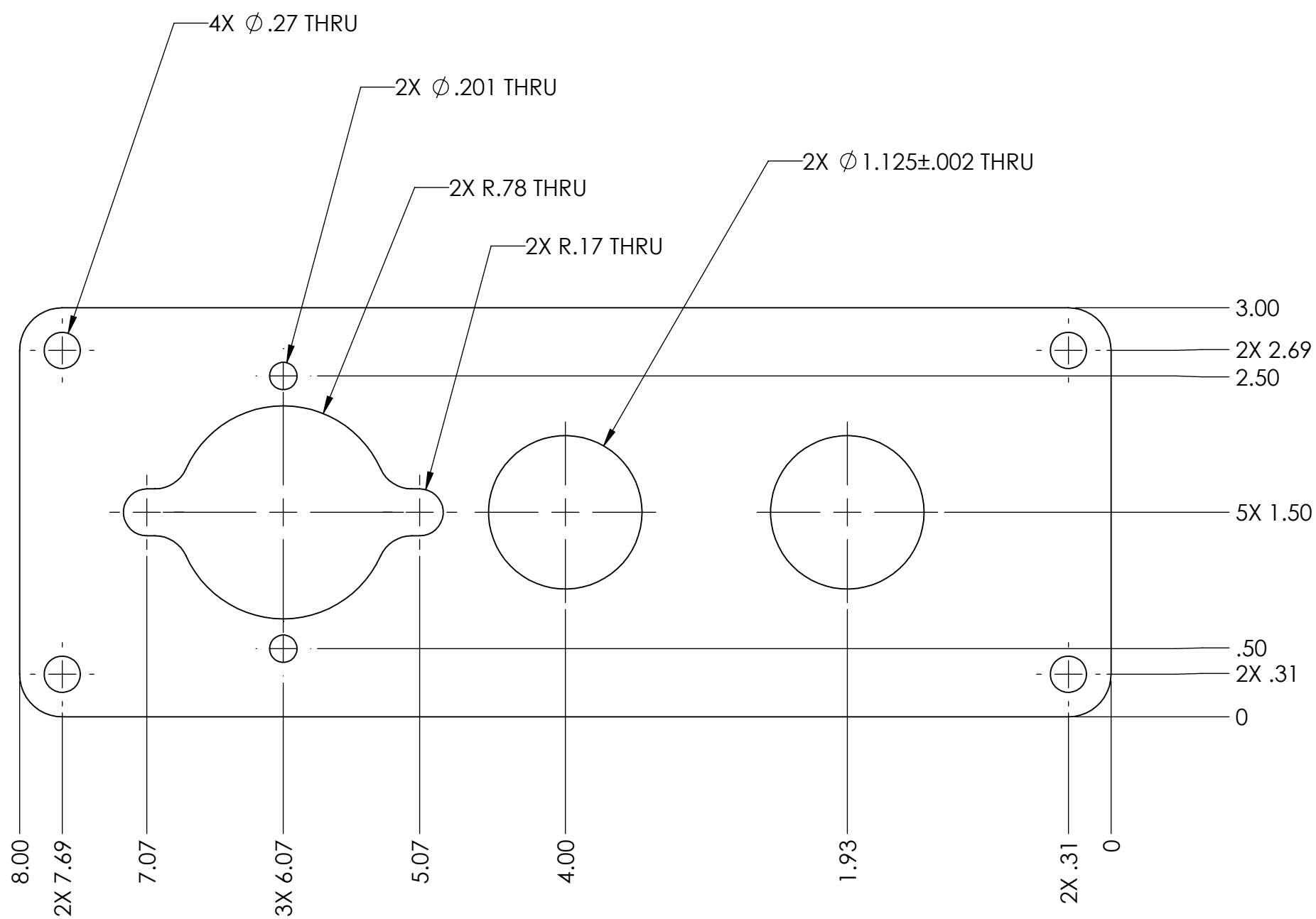




TITLE:
Counter Side Plate

SIZE	DWG. NO.	REV
C	GE-24352-01	A

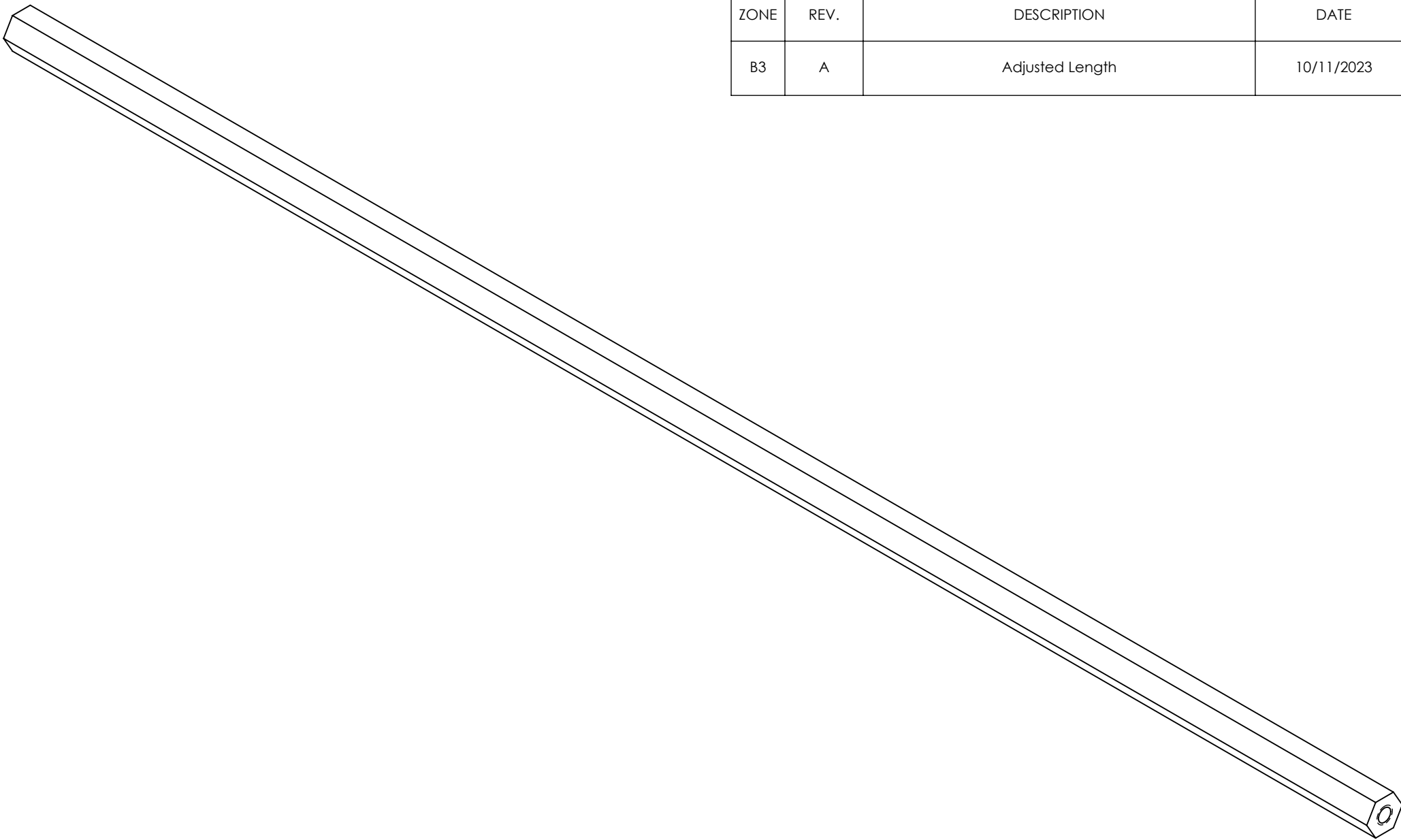
SCALE: 1:3 SHEET 1 OF 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, C2	A	Thickness Increased	10/11/2023	JO



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/4" 6061 Aluminum DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Speaker Counter Bottom Motor Plate</div> <table><tr><td>SIZE</td><td>DWG. NO.</td><td>REV</td></tr><tr><td>C</td><td>GE-24353</td><td>A</td></tr><tr><td colspan="2">SCALE: 1:1</td><td>SHEET 1 OF 1</td></tr></table>	SIZE	DWG. NO.	REV	C	GE-24353	A	SCALE: 1:1		SHEET 1 OF 1
	SIZE	DWG. NO.	REV										
	C	GE-24353	A										
SCALE: 1:1		SHEET 1 OF 1											
DRAWN	JO	9/14/2023											
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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.													

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	A	Adjusted Length	10/11/2023	JO





Ø .20 ∇ .65
1/4-20 UNC ∇ .50

Ø .20 ∇ .65
1/4-20 UNC ∇ .50



.500^{+.000}_{-.002} HEX

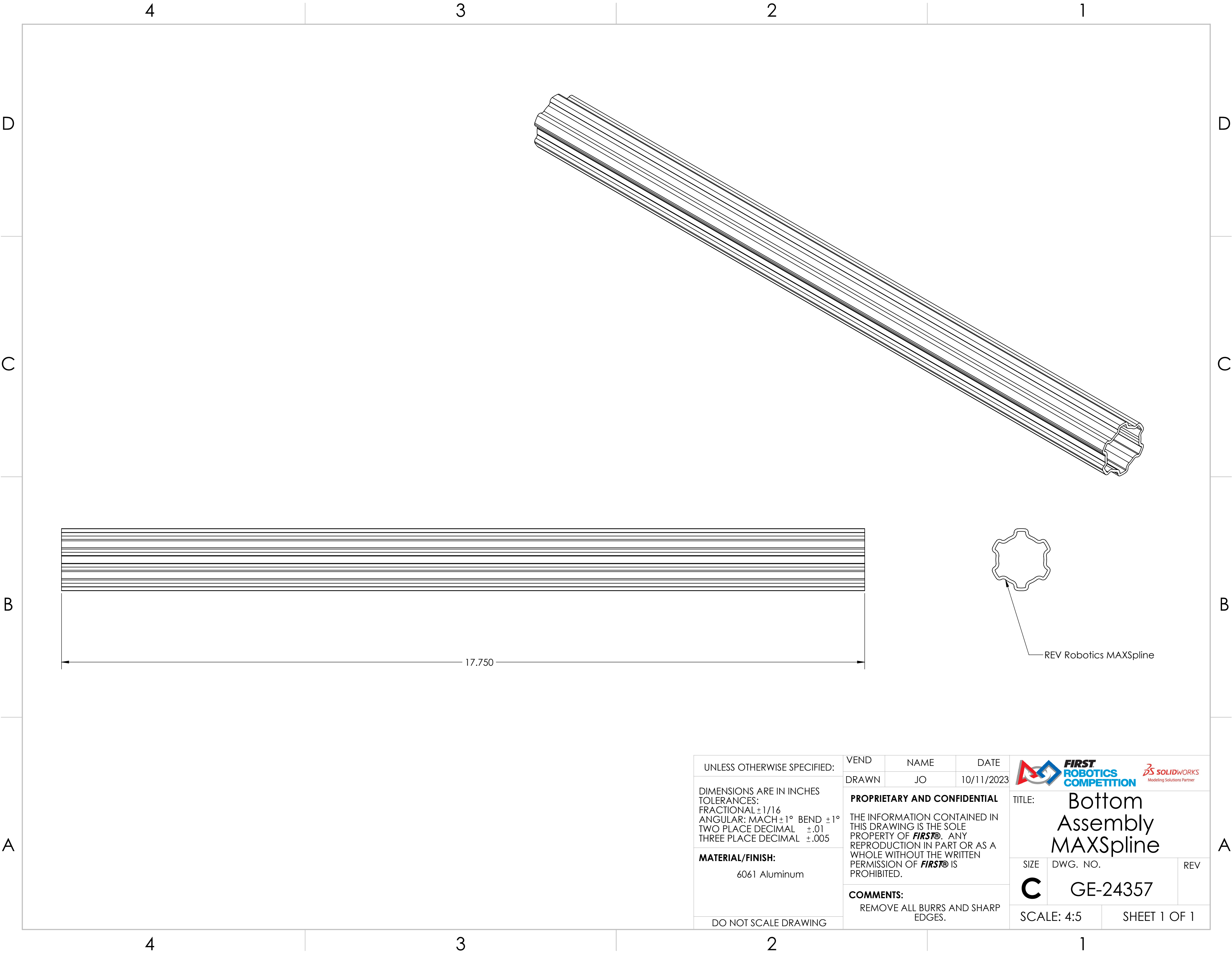
22.13

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: 1018 Steel 1/2" Hex Shaft DO NOT SCALE DRAWING	VEND	NAME	DATE	  TITLE: Note Counter Bottom Hex Shaft		
	DRAWN	JO	9/12/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24354	A
SCALE: 2:3		SHEET 1 OF 1				

Specs:
168 Tooth, RT-25 Profile
Length: 17.50" Long

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: REV Robotics RT-25 Belt DO NOT SCALE DRAWING	VEND	NAME	DATE	<div><div></div><div>TITLE: Custom Wide Belt</div></div>			
	DRAWN	JO	10/11/2023				
	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.				SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				C	GE-24355	
		SCALE: 1:4		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:

6061 Aluminum

DO NOT SCALE DRAWING

VEND

NAME

DATE

DRAWN

JO

10/11/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



**FIRST
ROBOTICS
COMPETITION**



TITLE:

Bottom
Assembly
MAXSpline

SIZE

C

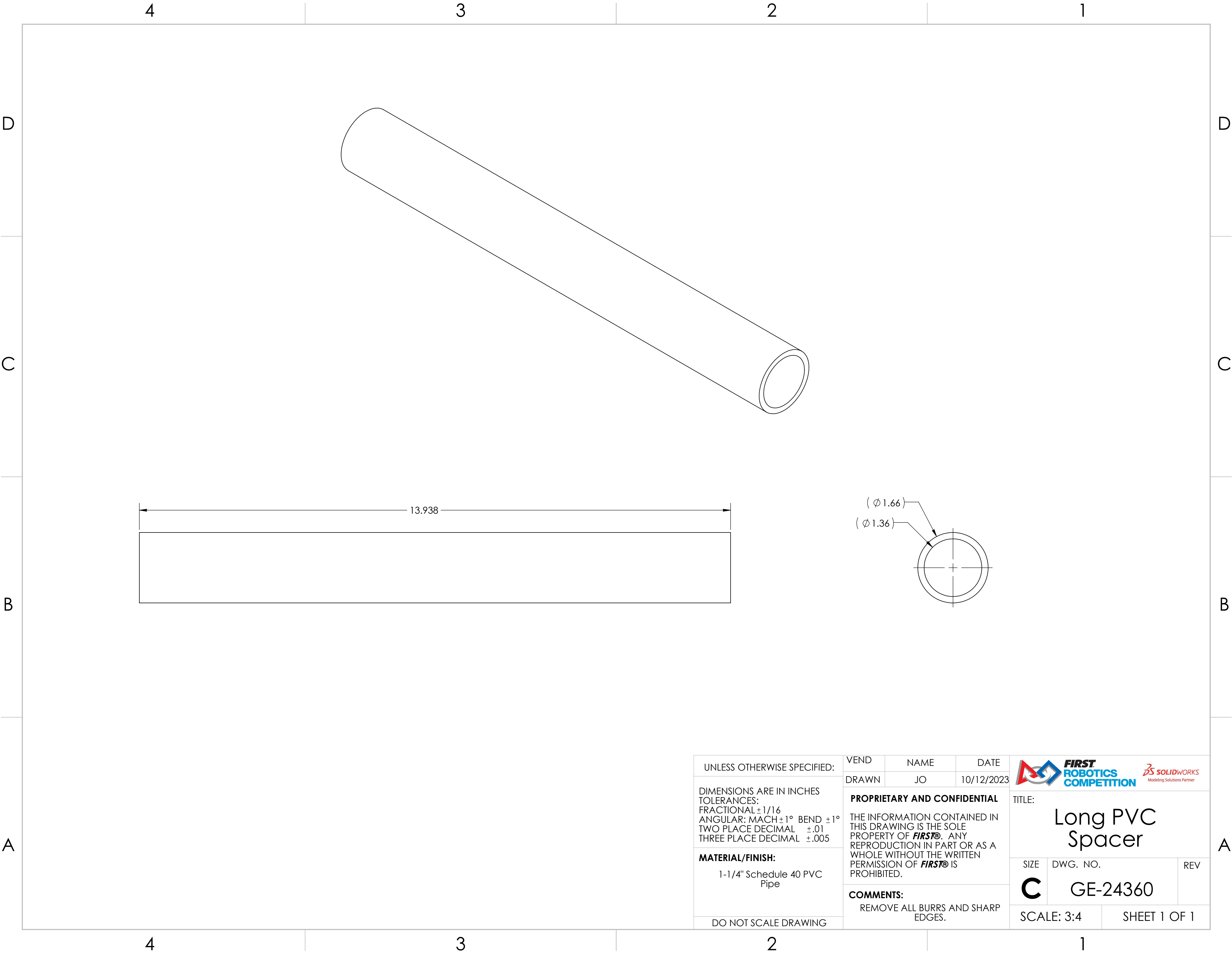
DWG. NO.

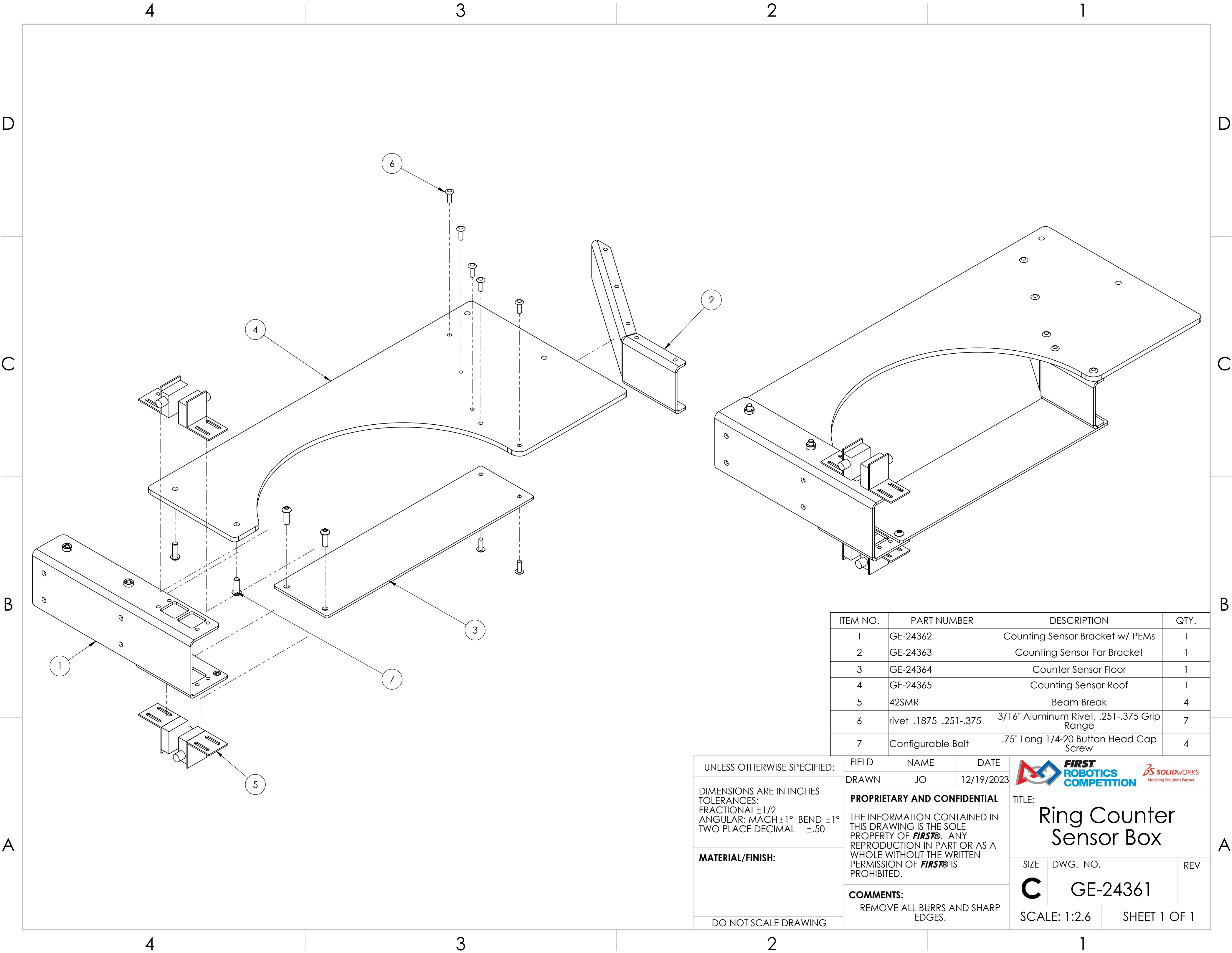
GE-24357

REV



SCALE: 4:5

SHEET 1 OF 1





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24362	Counting Sensor Bracket w/ PEMs	1
2	GE-24363	Counting Sensor Far Bracket	1
3	GE-24364	Counter Sensor Floor	1
4	GE-24365	Counting Sensor Roof	1
5	42SMR	Beam Break	4
6	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	7
7	Configurable Bolt	.75" Long 1/4-20 Button Head Cap Screw	4

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	 	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	JO	12/19/2023	TITLE: Ring Counter Sensor Box	
MATERIAL/FINISH:	PROPRIETARY AND CONFIDENTIAL			SIZE	
	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.			DWG. NO.	
DO NOT SCALE DRAWING	COMMENTS:			REV	
	REMOVE ALL BURRS AND SHARP EDGES.			C	
			GE-24361		
			SCALE: 1:2.6		SHEET 1 OF 1

4

3

2

1

D

D

C

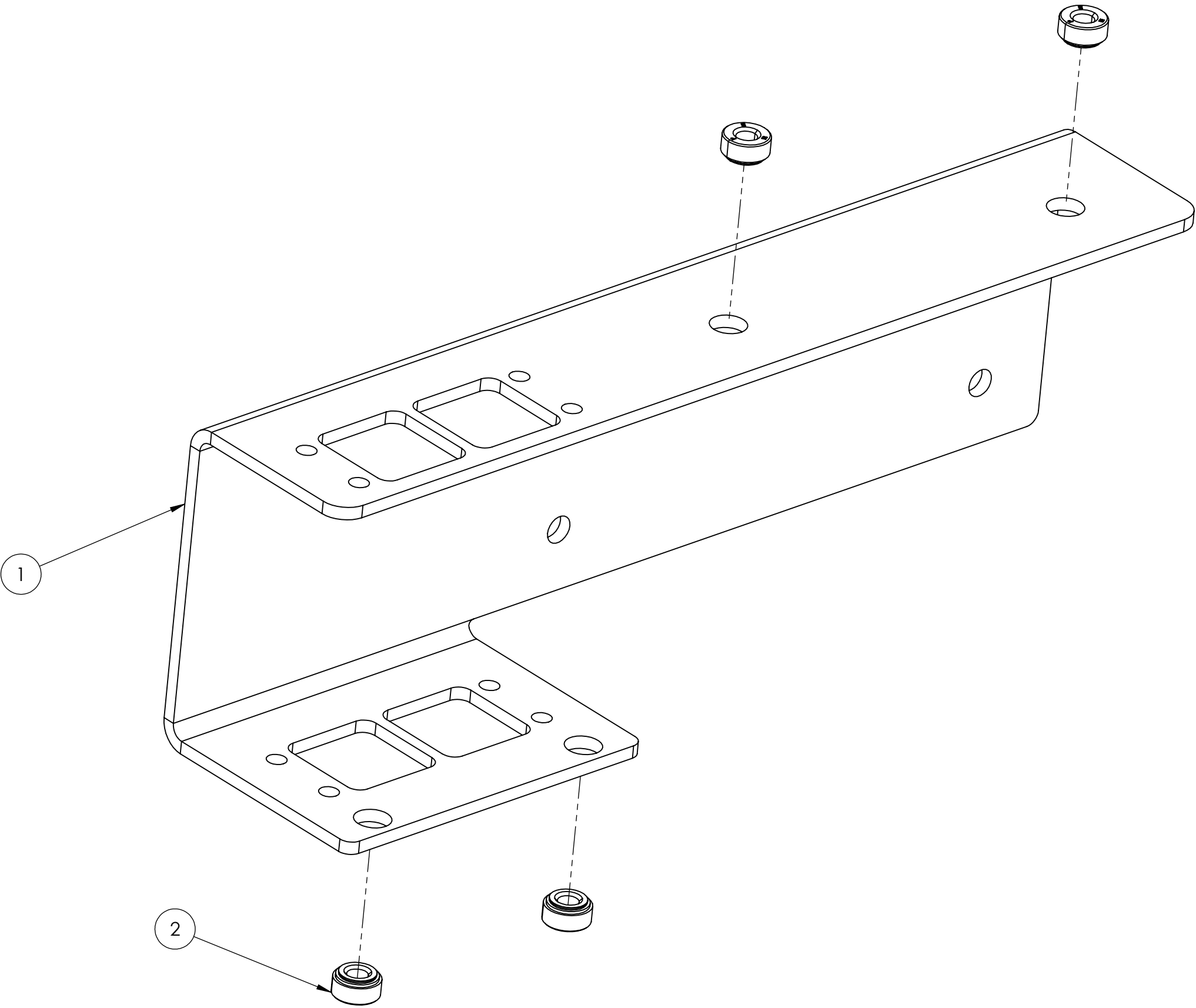
C

B

B



A

A



Tag or Label with Part Number

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24362-01	Counting Sensor Bracket	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	4

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div>		
	DRAWN	JO	10/19/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				TITLE: Counting Sensor Bracket w/ PEMs	
				SIZE	DWG. NO.	REV
				C	GE-24362	
				SCALE: 1:1		SHEET 1 OF 1

4

3

2

1

D

D

C

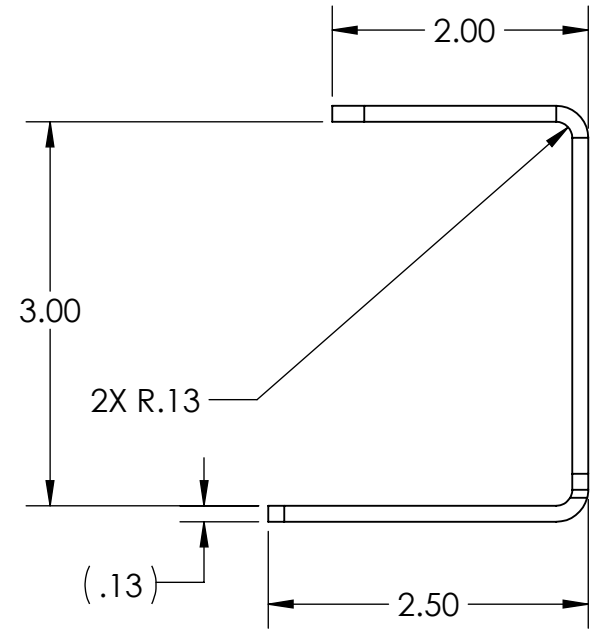
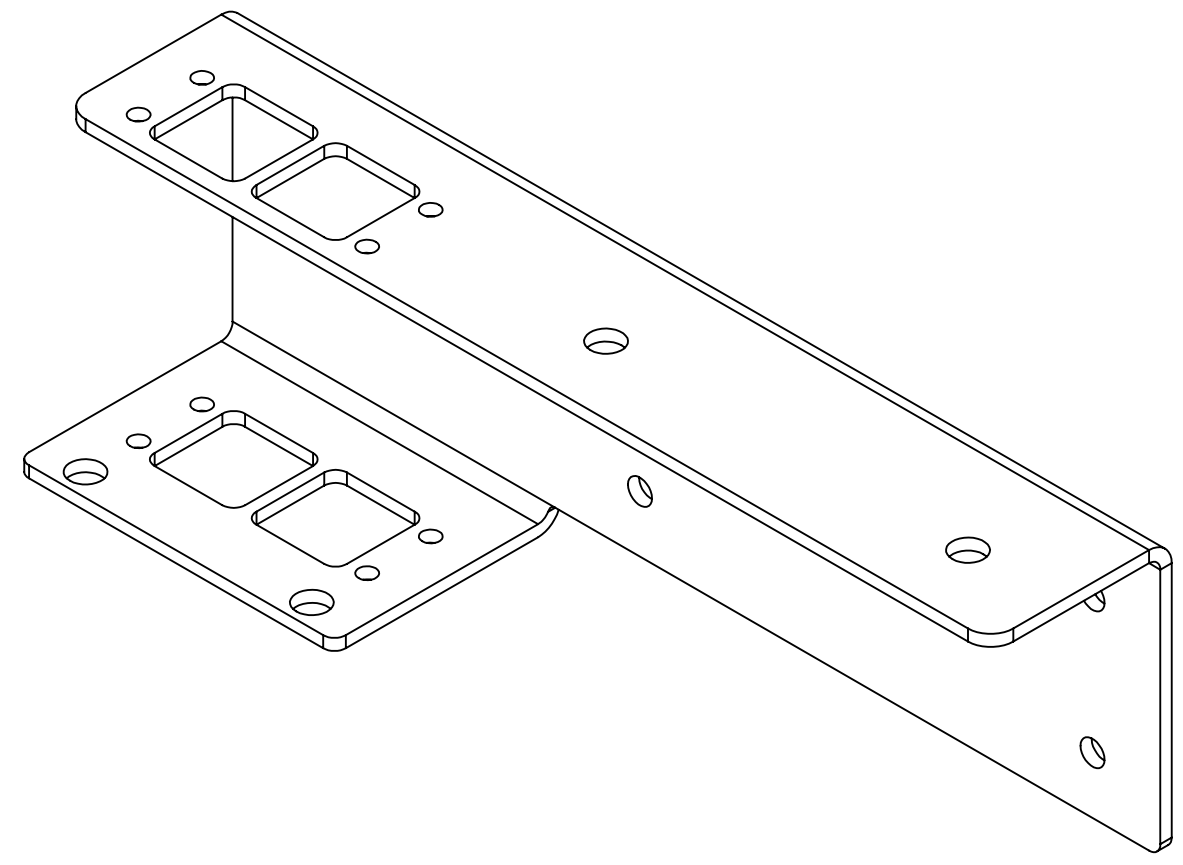
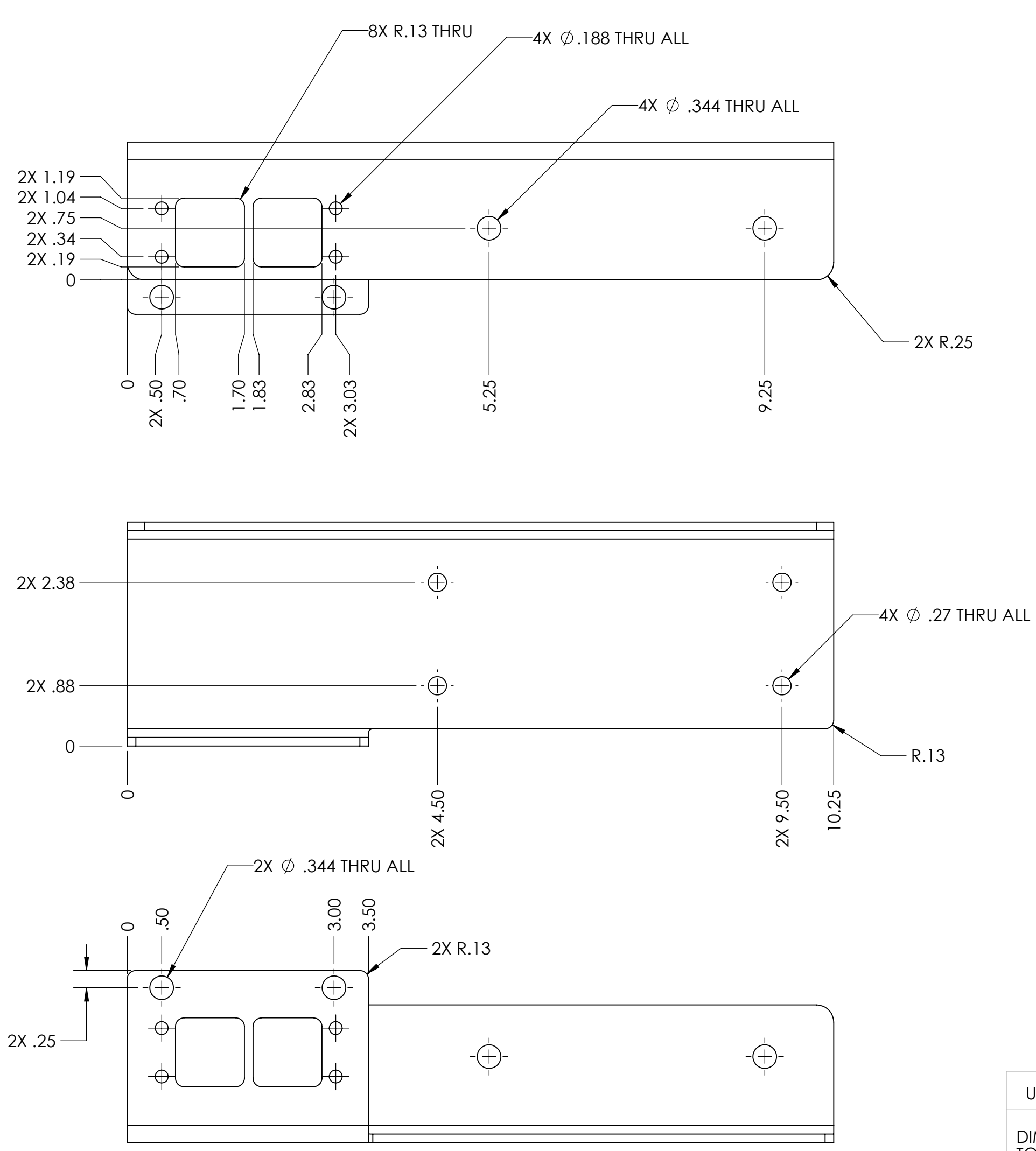
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B



B

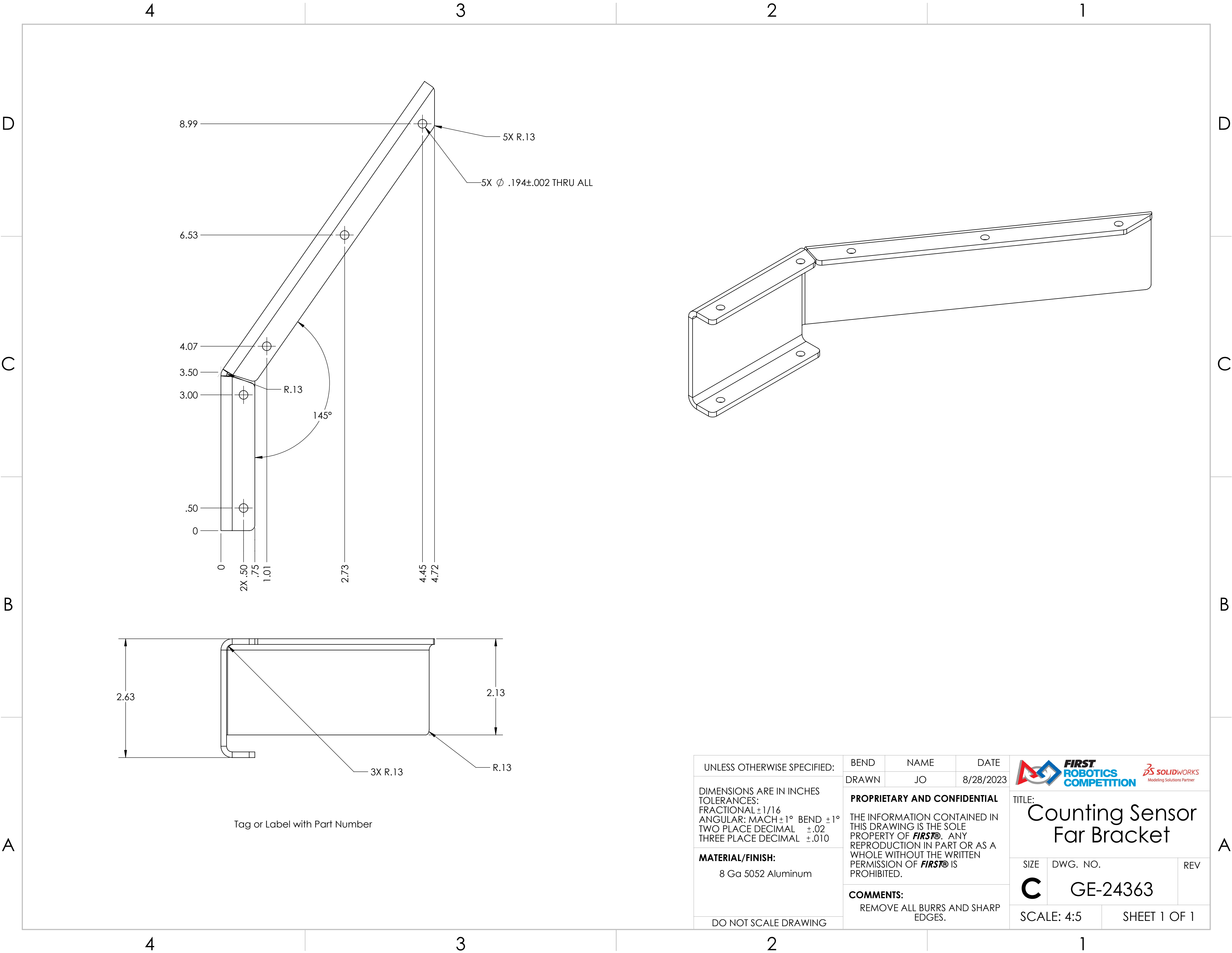
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A

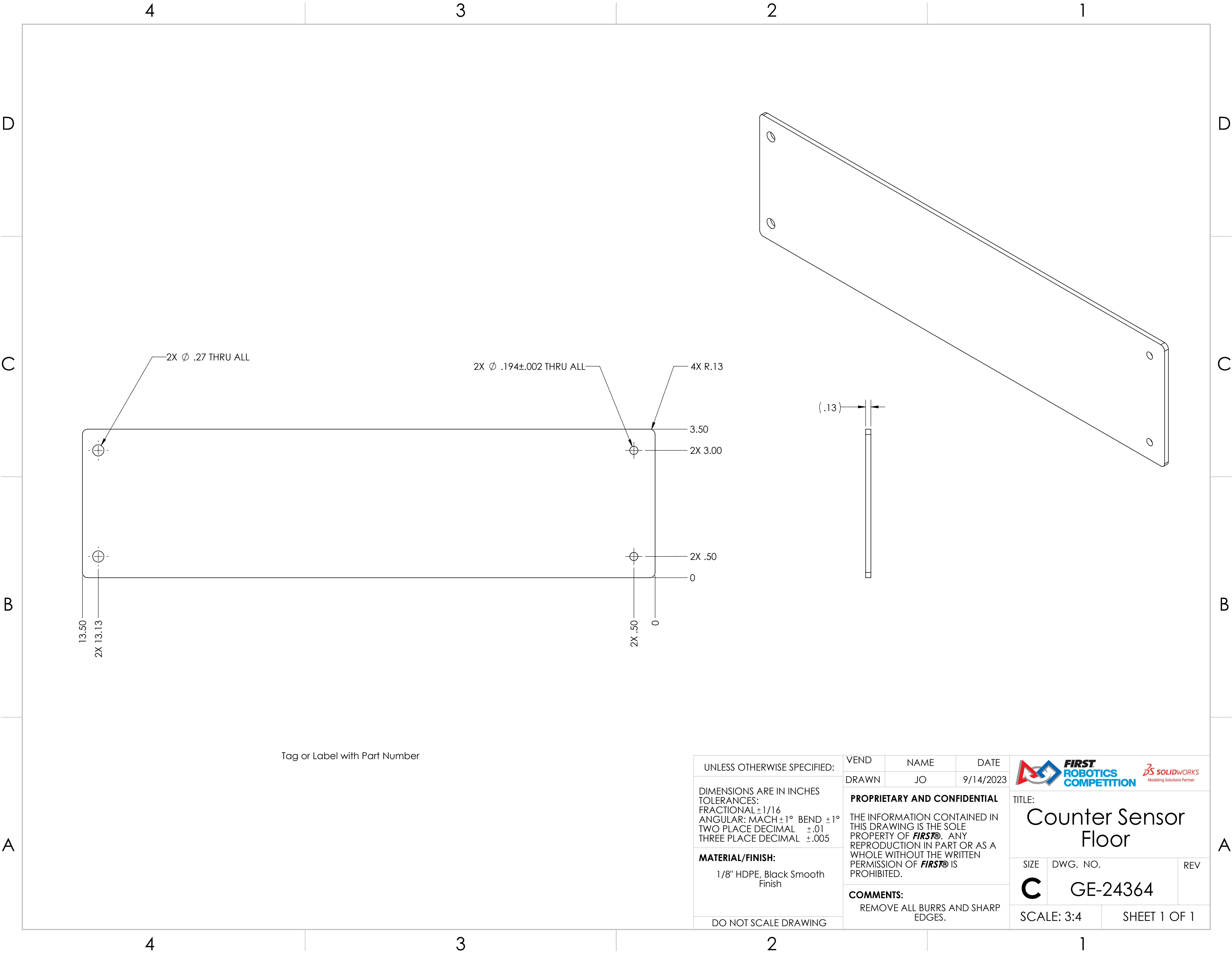


Tag or Label with Part Number

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div>	
	DRAWN	JO	8/28/2023		
	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.			TITLE: <div>Counting Sensor Bracket</div>	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.
			C	GE-24362-01	
			SCALE: 2:3		SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Counting Sensor Far Bracket</div>		
	DRAWN	JO	8/28/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
SIZE		DWG. NO.		REV		
C		GE-24363				
SCALE: 4:5			SHEET 1 OF 1			



Tag or 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:
1/8" HDPE, Black Smooth
Finish

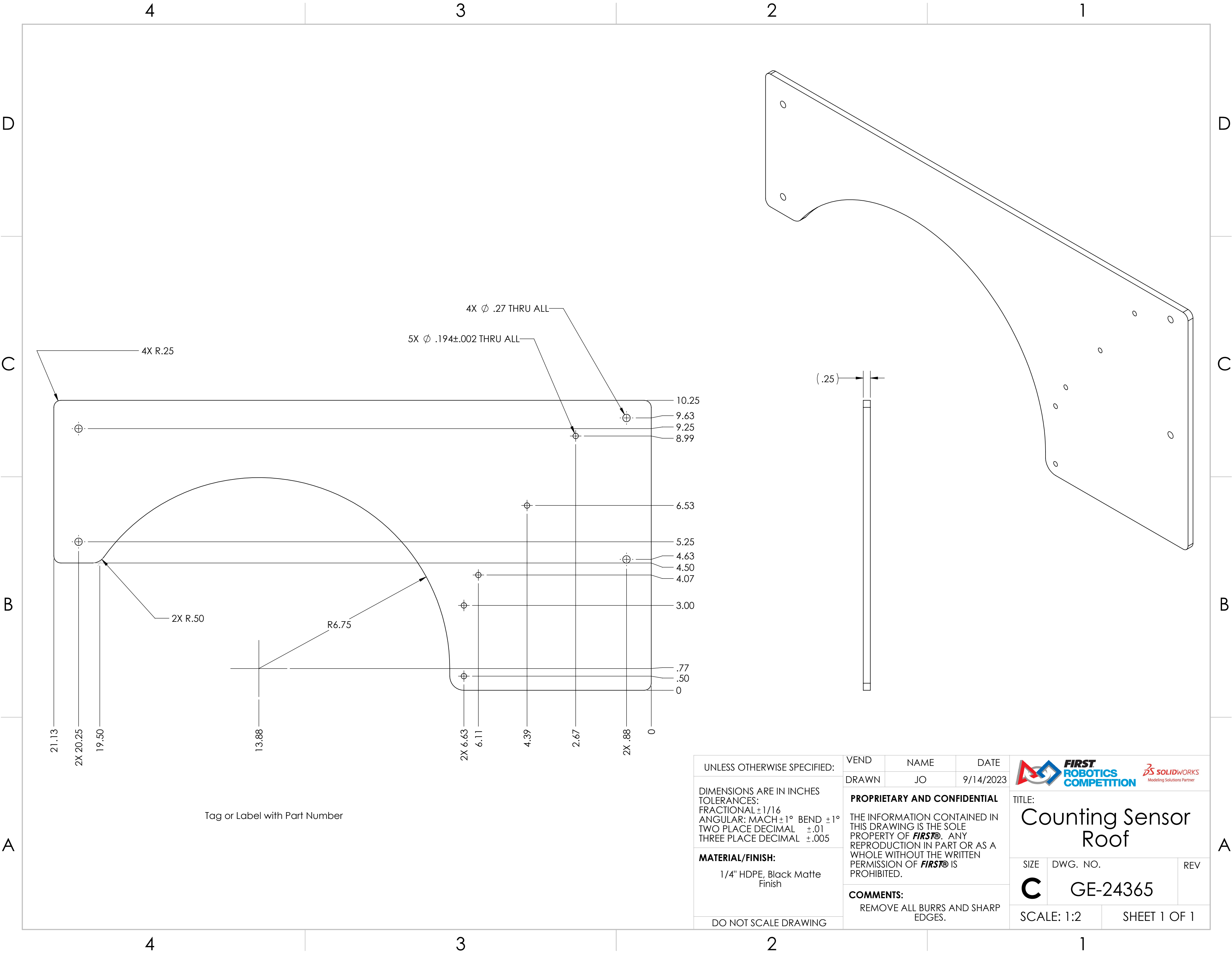
DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	9/14/2023

PROPRIETARY AND CONFIDENTIAL
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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: <div>Counter Sensor Floor</div>		
SIZE <div>C</div>	DWG. NO. <div>GE-24364</div>	REV
SCALE: 3:4		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:
1/4" HDPE, Black Matte Finish

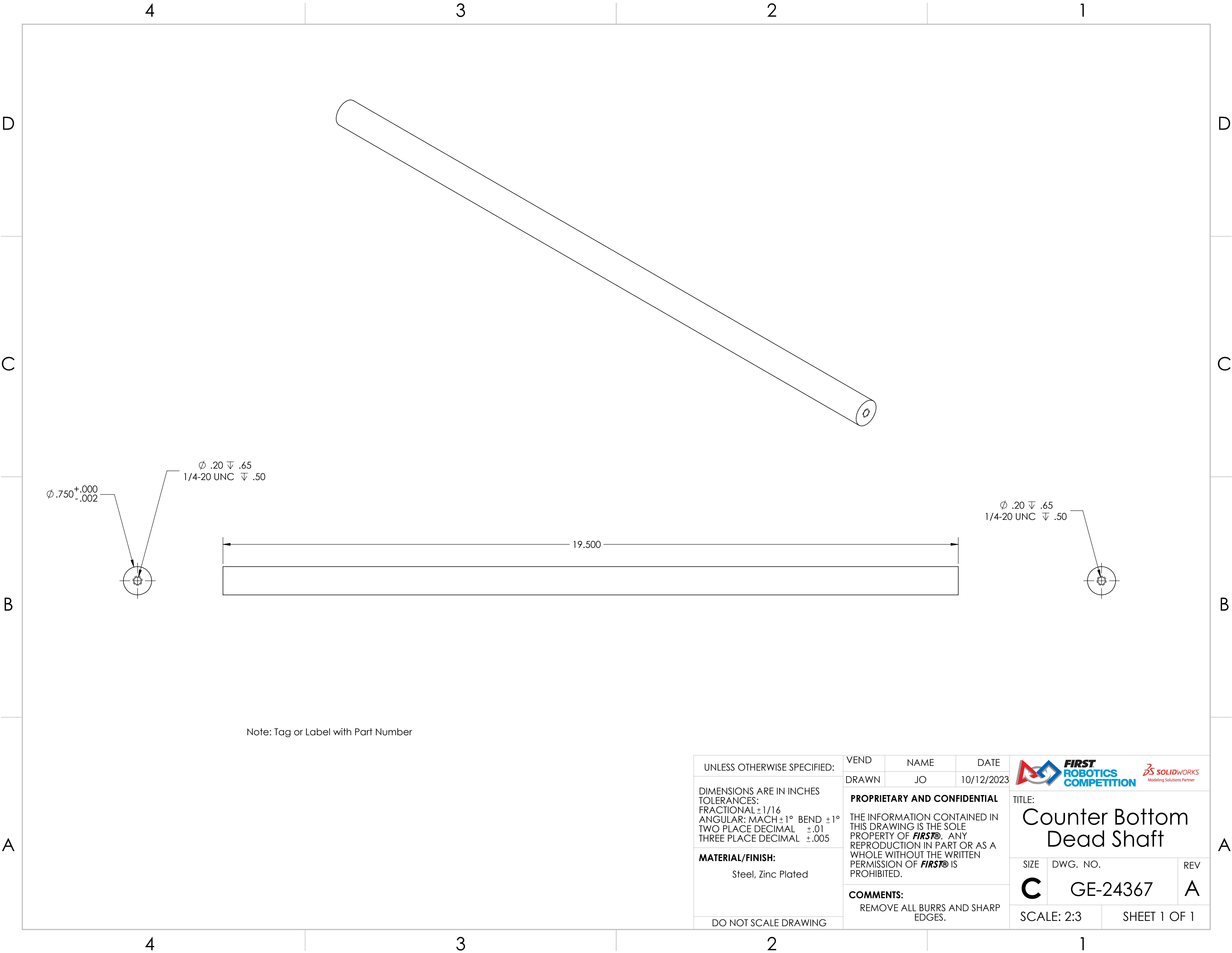
DO NOT SCALE DRAWING



VEND	NAME	DATE
DRAWN	JO	9/14/2023

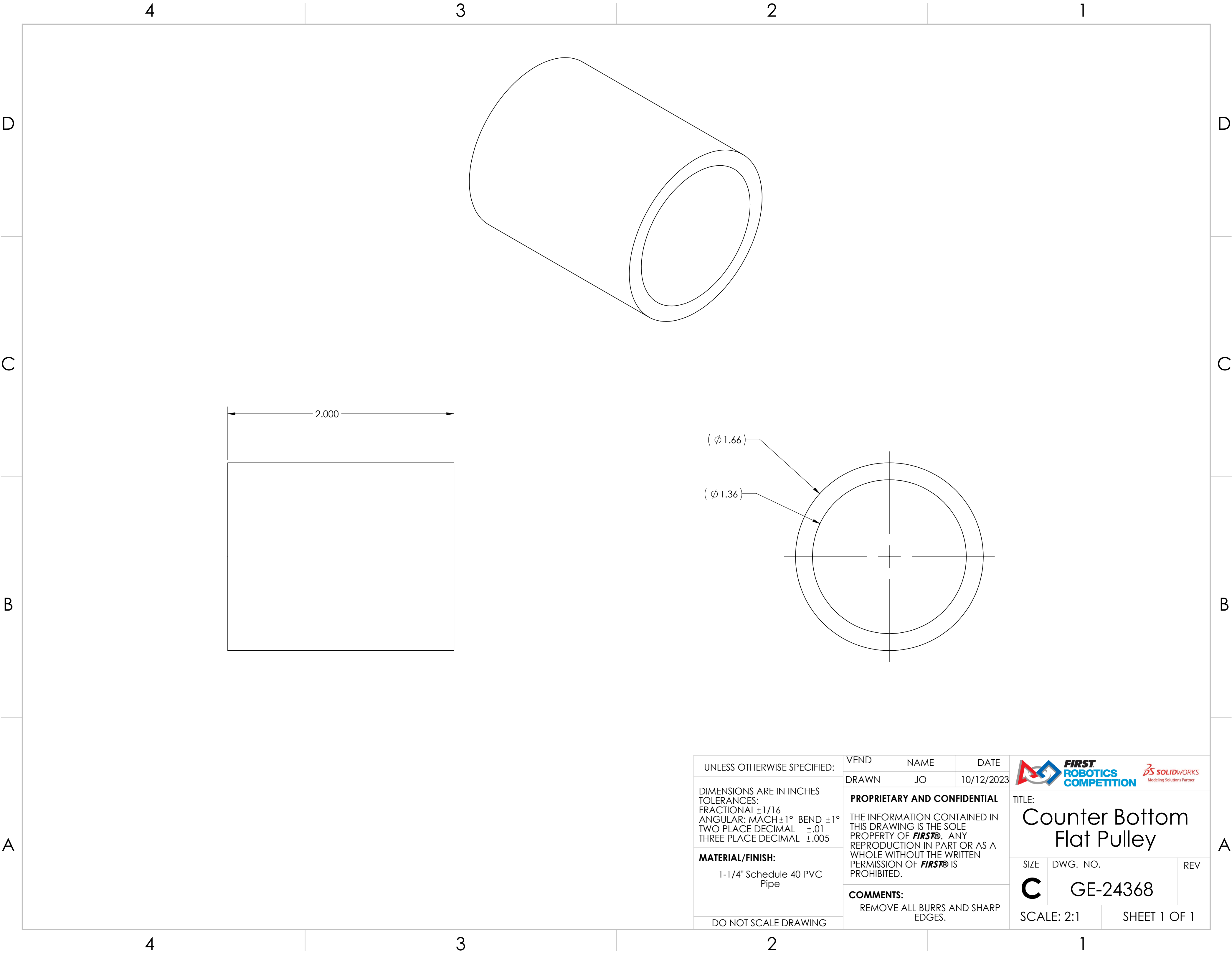
PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF **FIRST**. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF **FIRST** IS PROHIBITED.



COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

 		
TITLE: Counting Sensor Roof		
SIZE	DWG. NO.	REV
C	GE-24365	
SCALE: 1:2		SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: Steel, Zinc Plated DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Counter Bottom Dead Shaft</div> <div><div>SIZE C</div><div>DWG. NO. GE-24367</div><div>SCALE: 2:3</div></div> <div><div>REV A</div><div>SHEET 1 OF 1</div></div>		
	DRAWN	JO	10/12/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1-1/4" Schedule 40 PVC Pipe DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Counter Bottom Flat Pulley</div>		
	DRAWN	JO	10/12/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24368	
SCALE: 2:1		SHEET 1 OF 1				

D

C

B

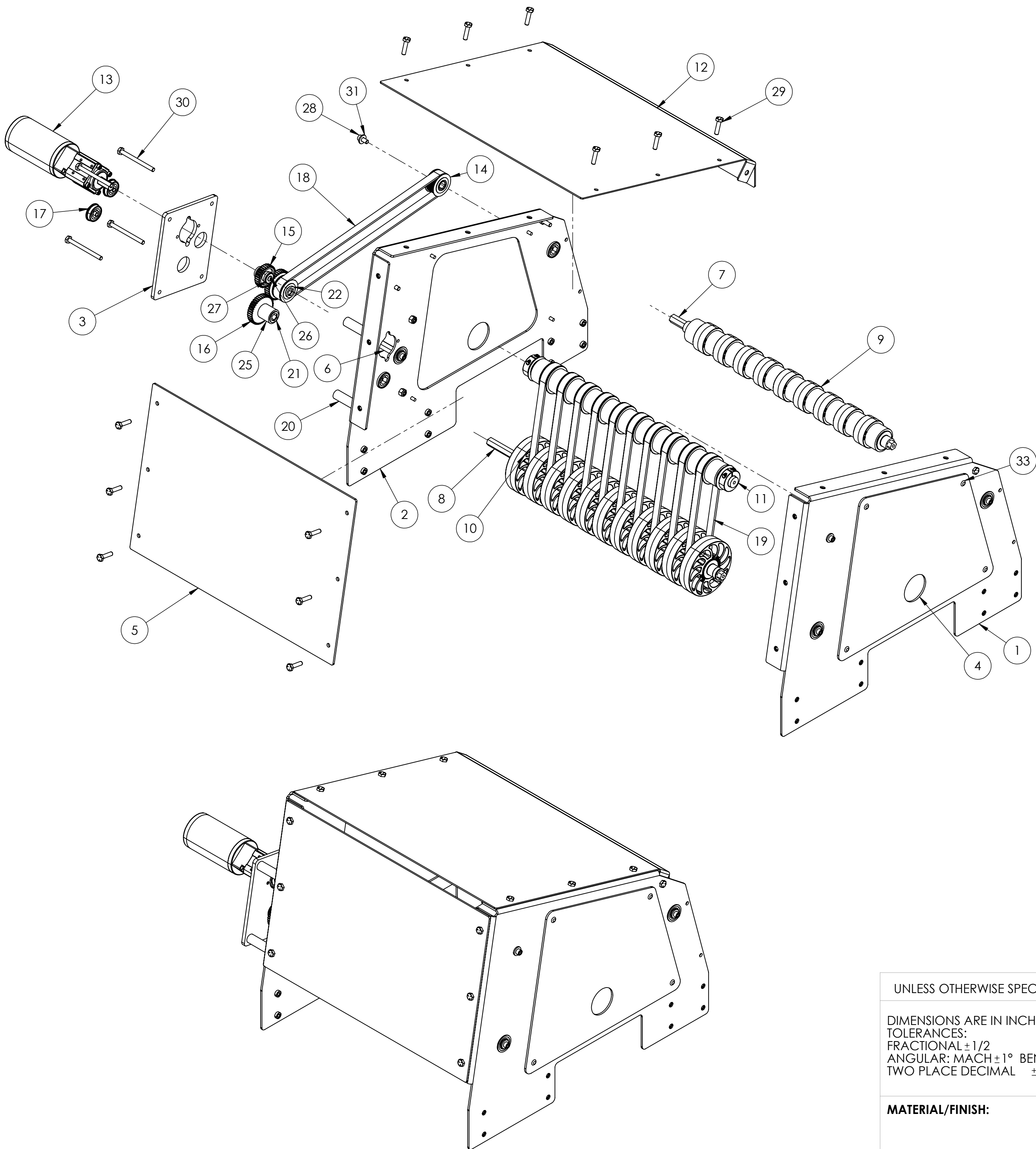
A

D



C

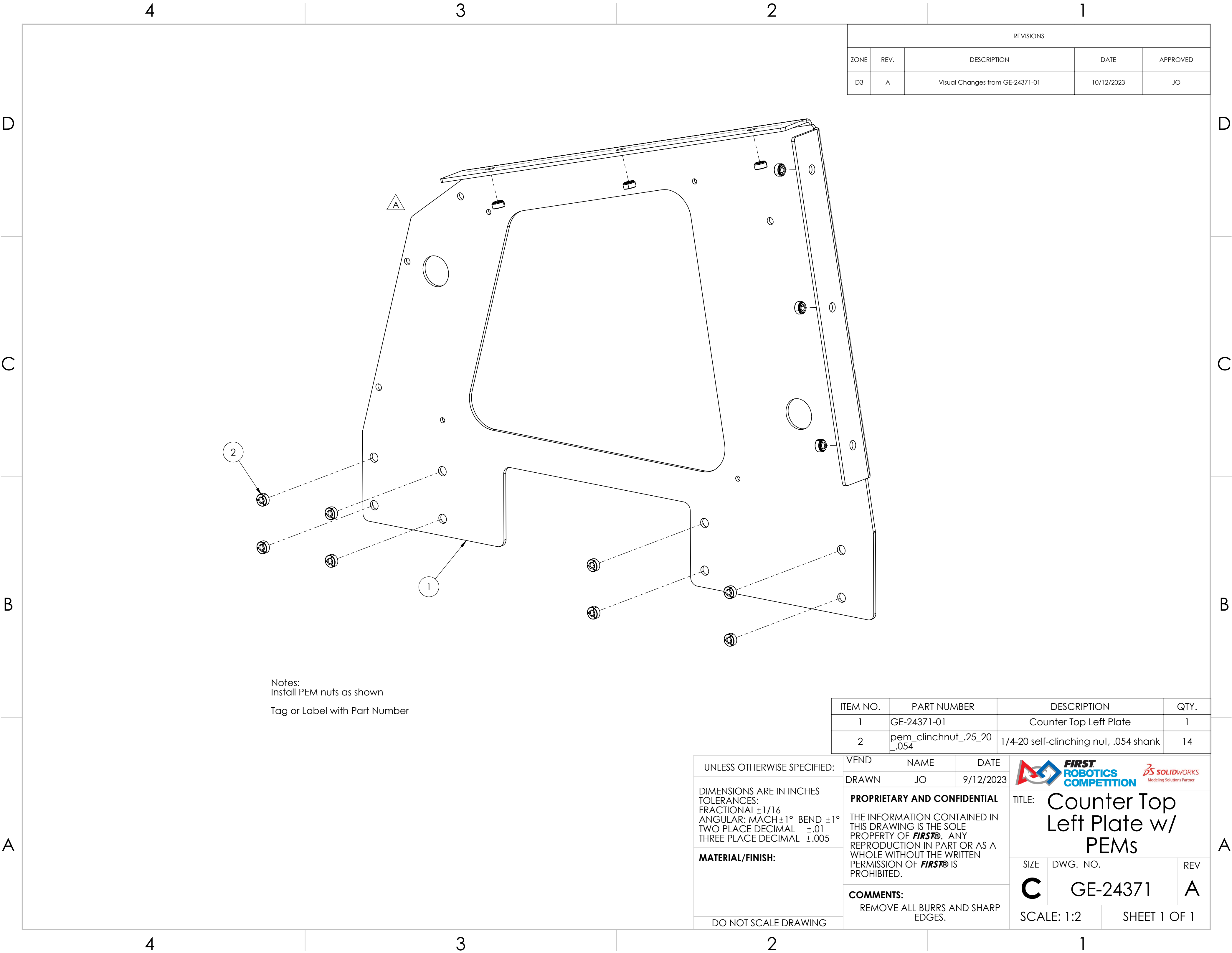
B

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24371	Counter Top Left Plate w/ PEMs	1
2	GE-24372	Counter Top Right Plate w/ PEMs	1
3	GE-24373	Counter Upper Motor Plate	1
4	GE-24374	Speaker Counter Side Shield	2
5	GE-24375	Speaker Counter Back Cover	1
6	GE-24377	Counter Top Short Hex Shaft	1
7	GE-24378	Counter Top Medium Hex Shaft	1
8	GE-24379	Counter Top Long Hex Shaft	1
9	GE-24385	Roller Shaft - Top Assembly	1
10	GE-24386	Live Shaft - Top Assembly	1
11	GE-24387	Dead Shaft - Top Assembly	1
12	GE-24390	Counter Roof w/ PEMs	1
13	2 Stage Gearmotor	12:1 Sport Gearbox and CIM Motor	1
14	am-4626 24T 5mm HTD 500IN Hex 15mm Wide Bore Pulley		2
15	am-4215 30T 20DP 500hex 375 FW		1
16	am-4710 40T 20DP 500hex 375 FW		2
17	0.500 Hex ID x 1.125 OD x 0.313 WD (Flanged Bearing v2) (217-3875)		7
18	850-5m-15 Belt		1
19	80 tooth RT-25 Belt		10
20	2.25 Bolt Spacer		4
21	.0625 Hex Spacer		4
22	.125 Hex Spacer		6
23	.25 Hex Spacer		5
24	.5 Hex Spacer		4
25	1 in hex spacer		1
26	91255A261 Button Head Hex Drive Screw		1
27	washer_flat_10_oversized	Oversized flat Washer for #10 Screw	1
28	Configurable Bolt	.5" Long 1/4-20 Socket Head Cap Screw	8
29	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	14
30	Configurable Bolt	3" Long 1/4-20 Hex Head Bolt	4
31	washer_flat_.25	Flat Washer for 1/4" Screw	8
32	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	4
33	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	8



UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	 			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ± .50		DRAWN	JO	12/19/2023	TITLE: Ring Counter Top Assembly			
		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.			SIZE		DWG. NO.	REV
MATERIAL/FINISH:		COMMENTS:			C		GE-24370	
DO NOT SCALE DRAWING		REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:5		SHEET 1 OF 1	



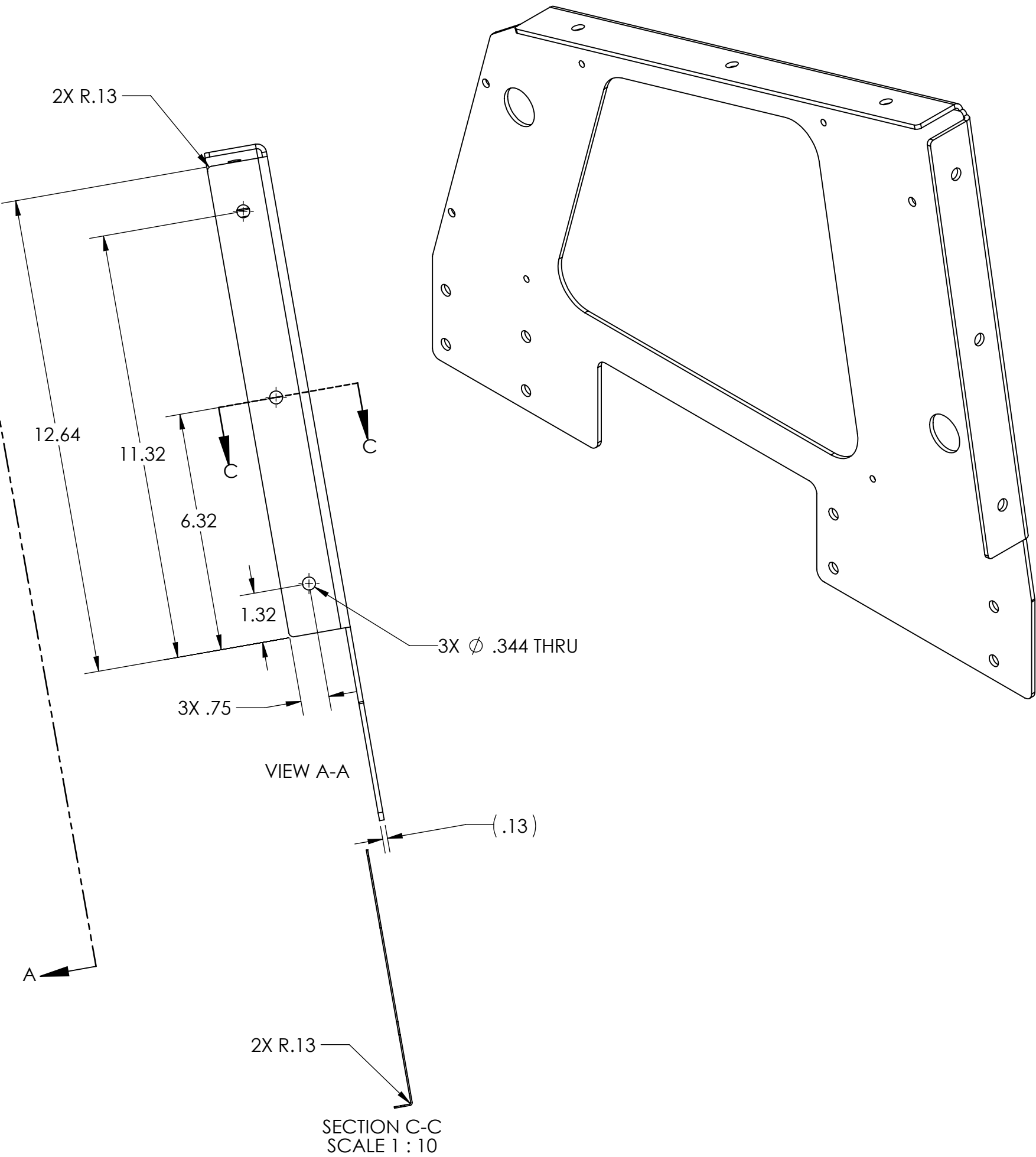
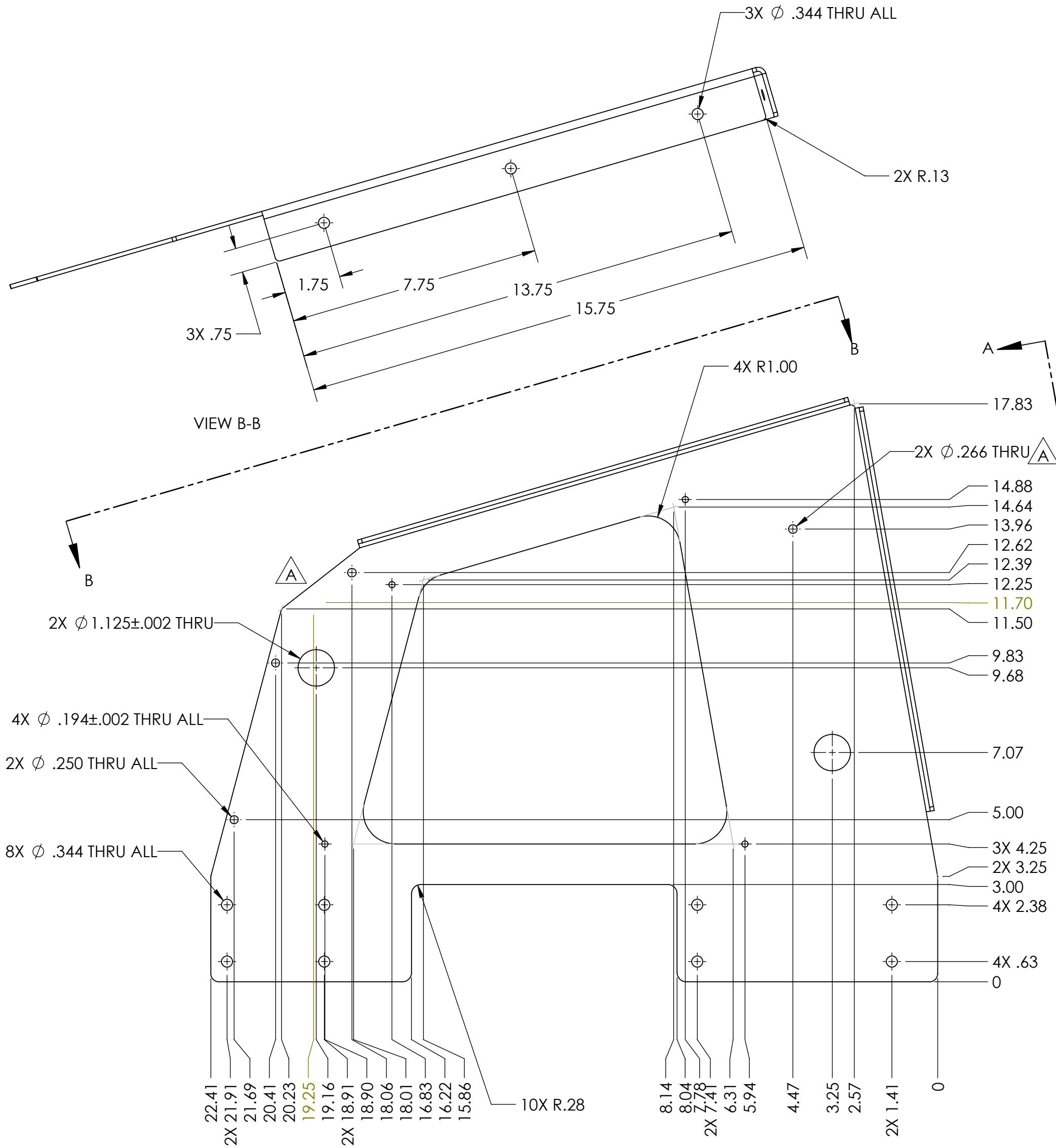
Notes:
Install PEM nuts as shown
Tag or Label with Part Number

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
D3	A	Visual Changes from GE-24371-01	10/12/2023	JO

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24371-01	Counter Top Left Plate	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	14

UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	<div></div>	
		DRAWN	JO	9/12/2023		
<div>DIMENSIONS ARE IN INCHES</div> <div>TOLERANCES:</div> <div>FRACTIONAL ±1/16</div> <div>ANGULAR: MACH ±1° BEND ±1°</div> <div>TWO PLACE DECIMAL ±.01</div> <div>THREE PLACE DECIMAL ±.005</div> <div>MATERIAL/FINISH:</div> <div>DO NOT SCALE DRAWING</div>		<div>PROPRIETARY AND CONFIDENTIAL</div> <div>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.</div> <div>COMMENTS:</div> <div>REMOVE ALL BURRS AND SHARP EDGES.</div>			TITLE: Counter Top Left Plate w/ PEMs	
		SIZE		DWG. NO.		REV
		C		GE-24371		A
		SCALE: 1:2		SHEET 1 OF 1		

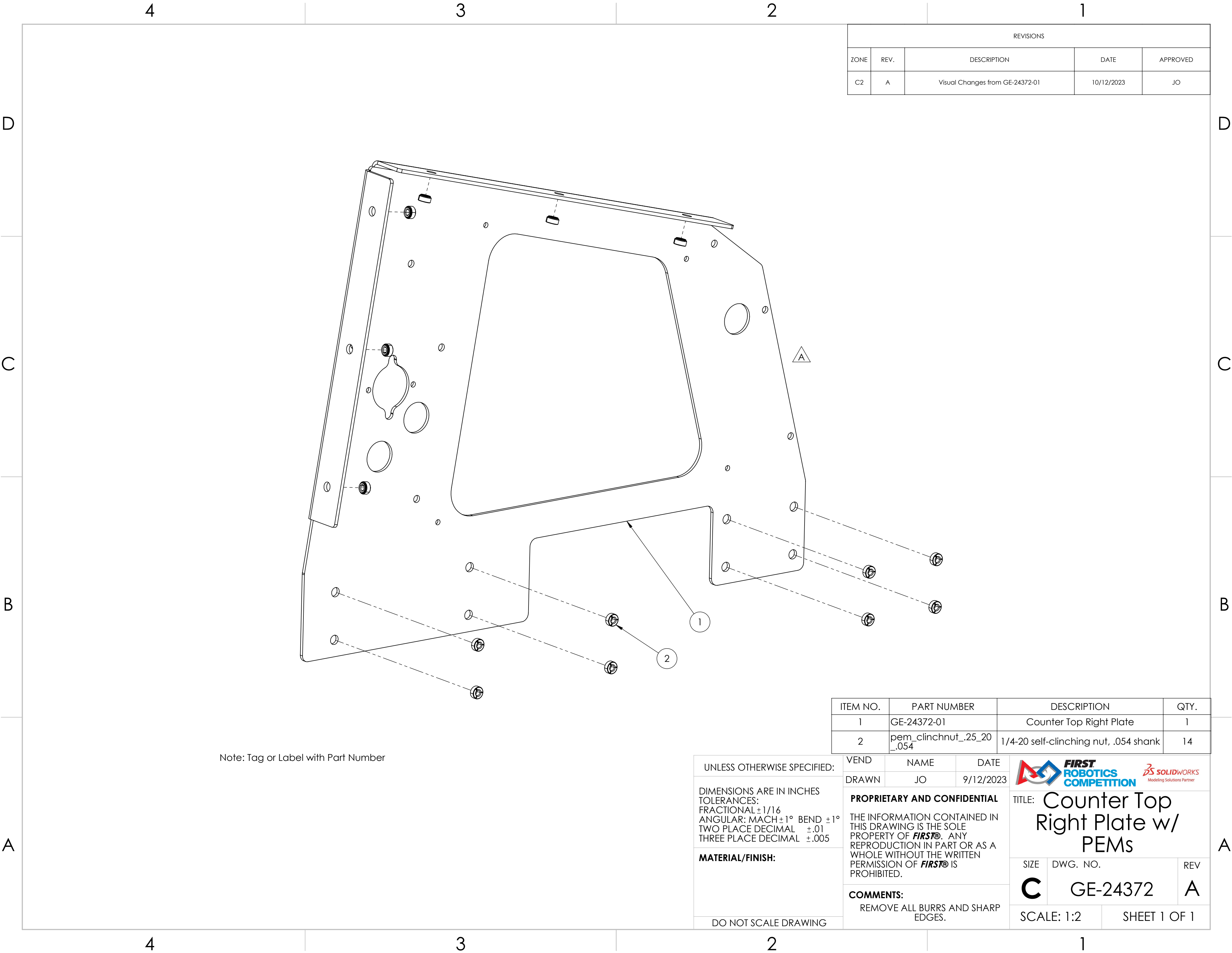
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2, C4	A	One hole removed, one re-sized	10/12/2023	JO



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL \pm 1/16 ANGULAR: MACH \pm 1° BEND \pm 1° TWO PLACE DECIMAL \pm .02 THREE PLACE DECIMAL \pm .010 MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE
	DRAWN	JO	9/12/2023
	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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		





TITLE: Counter Top Left Plate		
SIZE C	DWG. NO. GE-24371-01	REV A
SCALE: 1:3		SHEET 1 OF 1

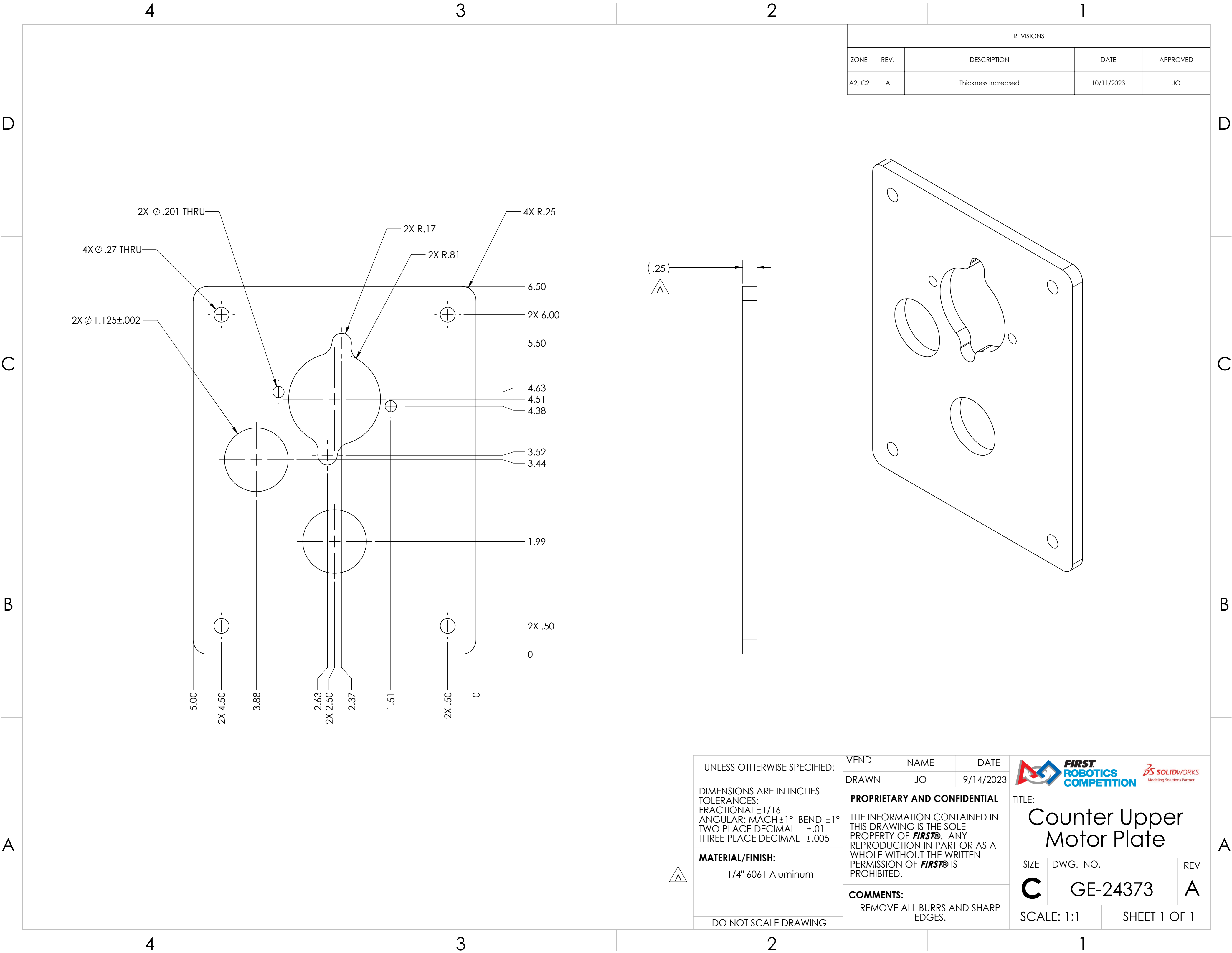


REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2	A	Visual Changes from GE-24372-01	10/12/2023	JO



Note: Tag or Label with Part Number

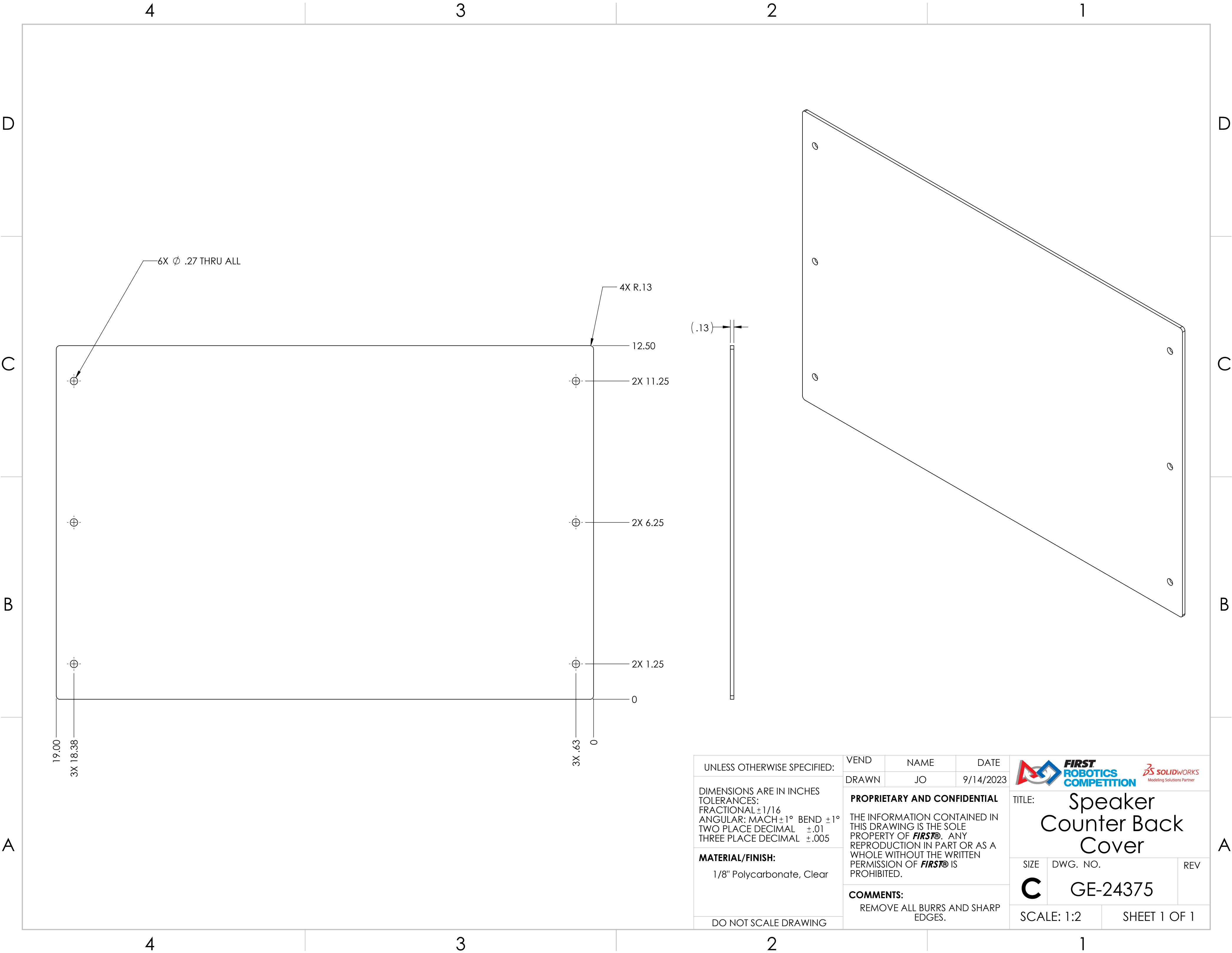
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24372-01	Counter Top Right Plate	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	14



UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	<div></div>		
<div>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 $\pm .005$</div> <div>MATERIAL/FINISH:</div> <div>DO NOT SCALE DRAWING</div>		DRAWN	JO	9/12/2023	<div>TITLE: Counter Top Right Plate w/ PEMs</div> <div><div>SIZE</div><div>DWG. NO.</div><div>REV</div><div>C</div><div>GE-24372</div><div>A</div></div> <div><div>SCALE: 1:2</div><div>SHEET 1 OF 1</div></div>		
		<div>PROPRIETARY AND CONFIDENTIAL</div> <div>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.</div>					
		<div>COMMENTS:</div> <div>REMOVE ALL BURRS AND SHARP EDGES.</div>					

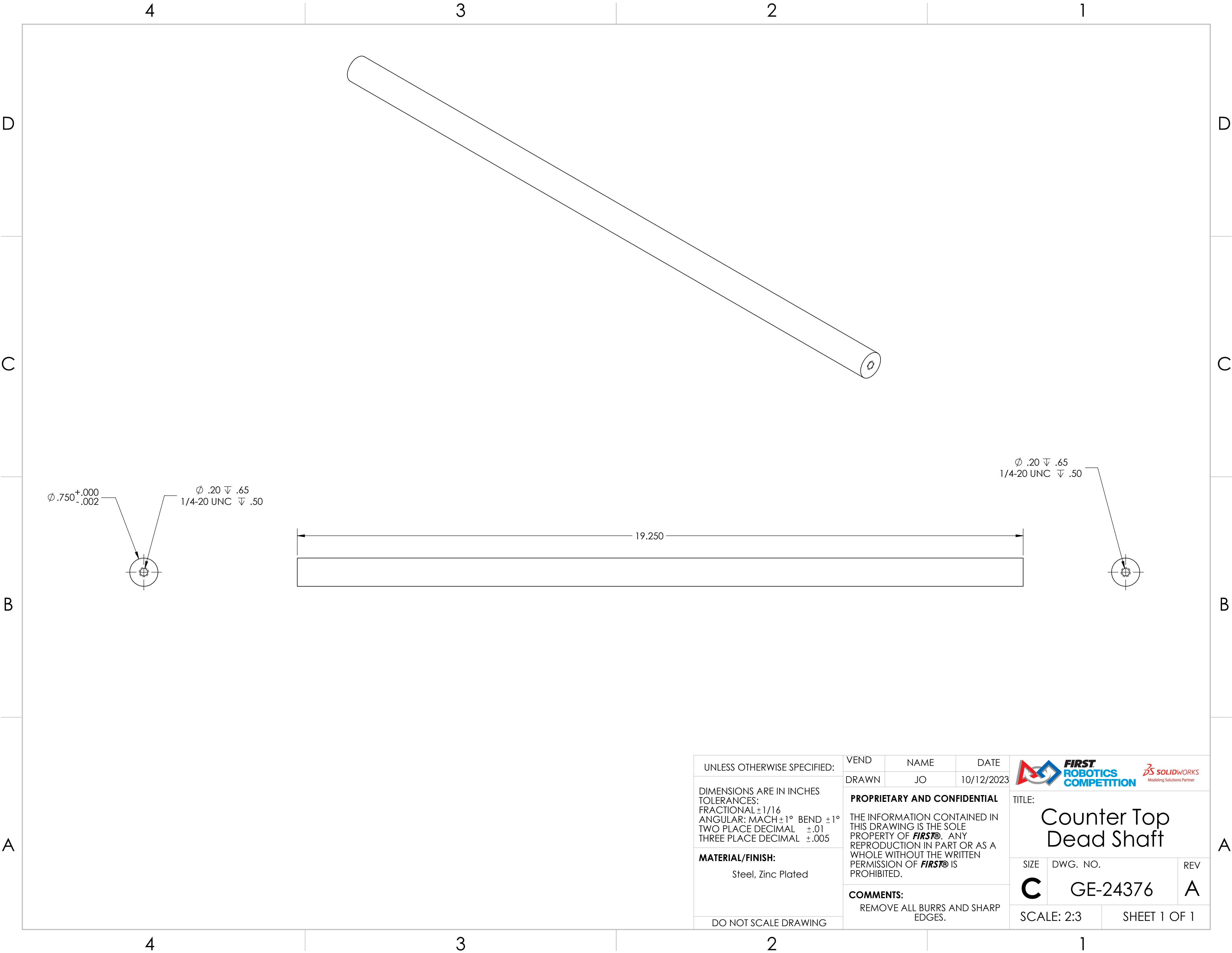


REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, C2	A	Thickness Increased	10/11/2023	JO

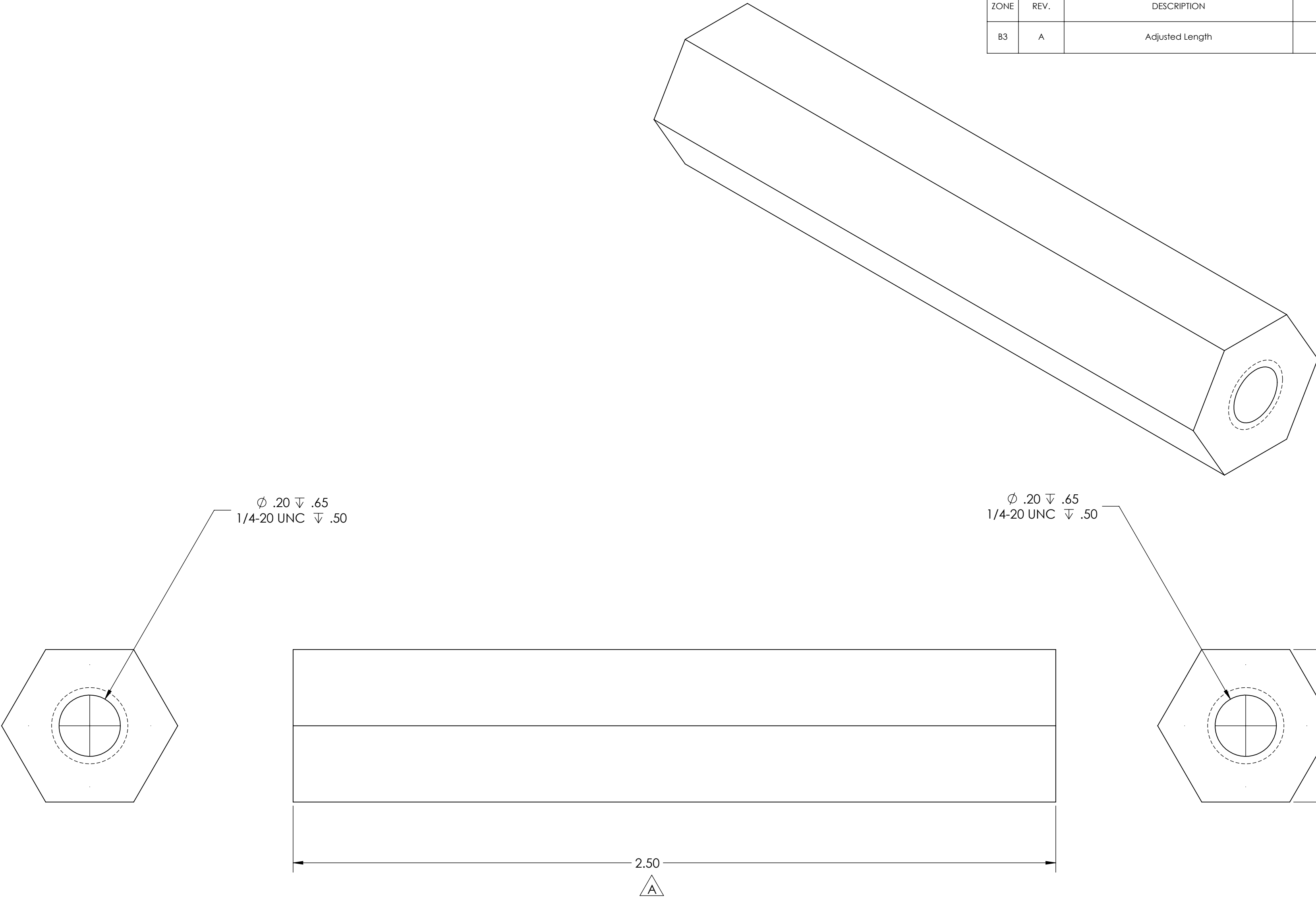
UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	<div></div>	
		DRAWN	JO	9/14/2023		
<div>DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$</div> <div>MATERIAL/FINISH: 1/4" 6061 Aluminum</div> <div>DO NOT SCALE DRAWING</div>		<div>PROPRIETARY AND CONFIDENTIAL</div> <div>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.</div> <div>COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.</div>			TITLE: Counter Upper Motor Plate	
		SIZE	DWG. NO.		REV	
		C	GE-24373		A	
SCALE: 1:1		SHEET 1 OF 1				





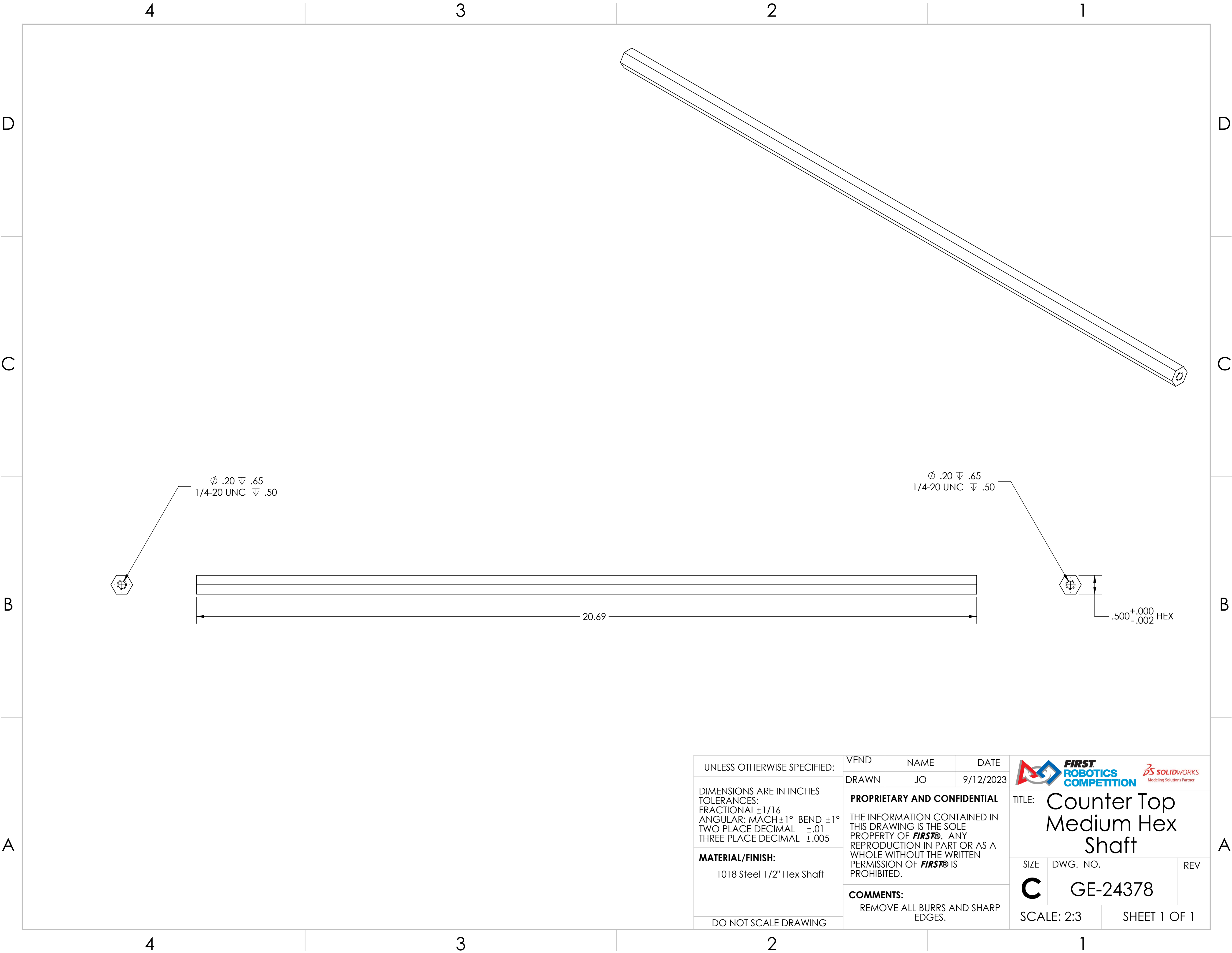
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ± .01 THREE PLACE DECIMAL ± .005 MATERIAL/FINISH: 1/8" Polycarbonate, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Speaker Counter Back Cover</div>		
	DRAWN	JO	9/14/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24375	
SCALE: 1:2		SHEET 1 OF 1				





REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	A	Adjusted Length	10/11/2023	JO

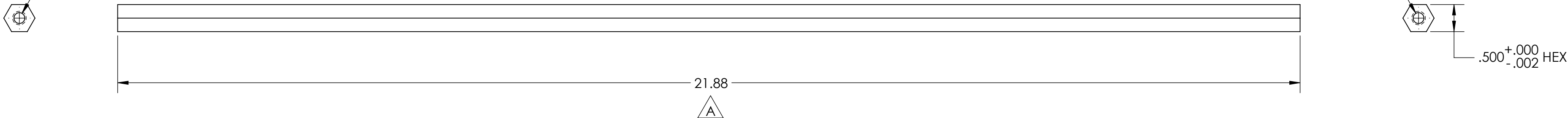


UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div><div>FIRST ROBOTICS COMPETITION</div><div><div>SOLIDWORKS Modeling Solutions Partner</div></div></div>		
	DRAWN	JO	9/12/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Counter Top Short Hex Shaft		
	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:			SIZE	DWG. NO.	REV
1018 Steel 1/2" Hex Shaft	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24377	A
DO NOT SCALE DRAWING				SCALE: 4:1		SHEET 1 OF 1

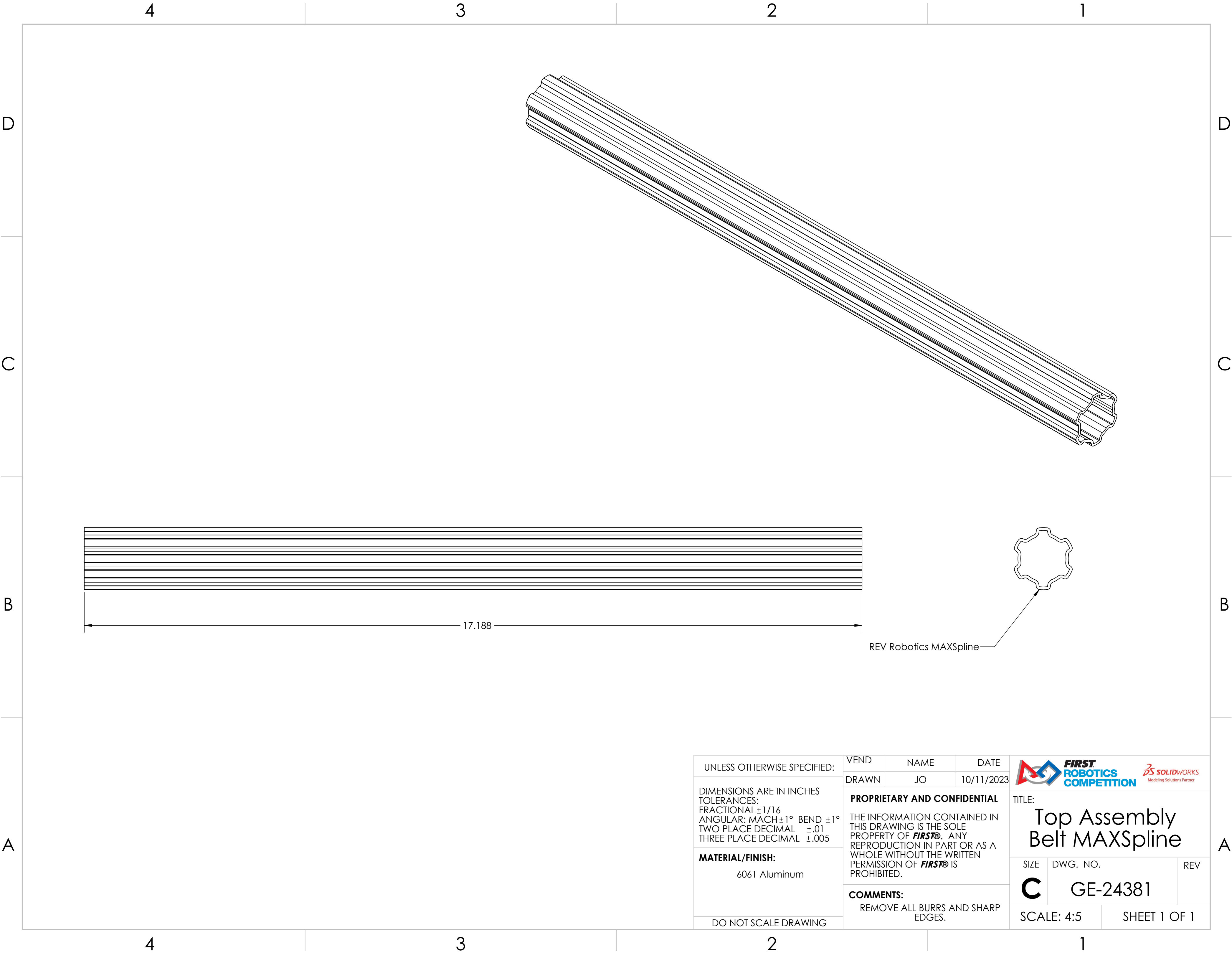


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1018 Steel 1/2" Hex Shaft DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Counter Top Medium Hex Shaft</div>		
	DRAWN	JO	9/12/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24378	
SCALE: 2:3		SHEET 1 OF 1				

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	A	Adjusted Length	10/11/2023	JO



UNLESS OTHERWISE SPECIFIED:		VEND		NAME		DATE	
		DRAWN		JO		9/12/2023	
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: Counter Top Long Hex Shaft	
		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.					
MATERIAL/FINISH: 1018 Steel 1/2" Hex Shaft						SIZE C	
						DWG. NO. GE-24379	
						REV A	
DO NOT SCALE DRAWING						SCALE: 2:3	
						SHEET 1 OF 1	



REV Robotics MAXSpline

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:
6061 Aluminum

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	10/11/2023

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.

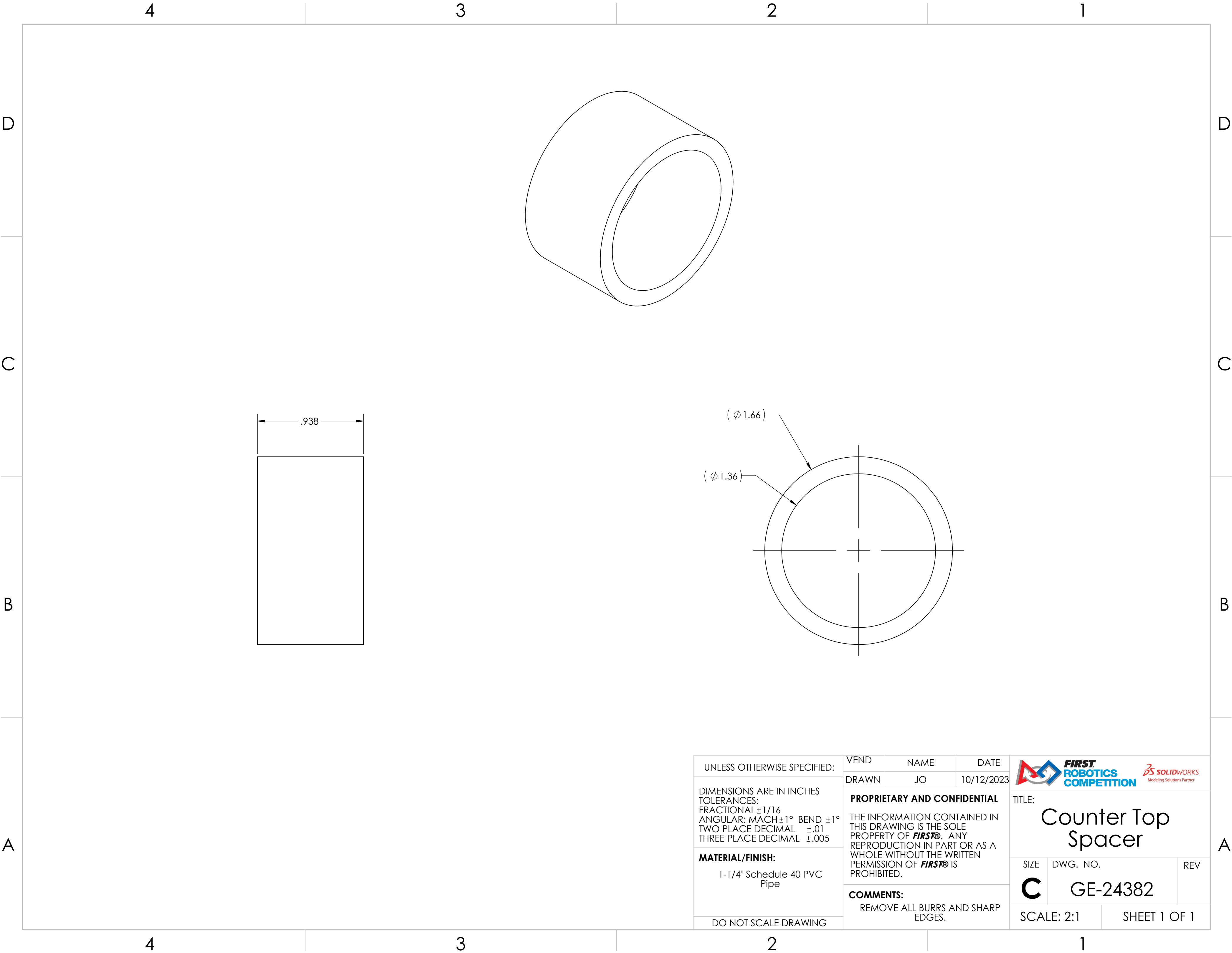
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.





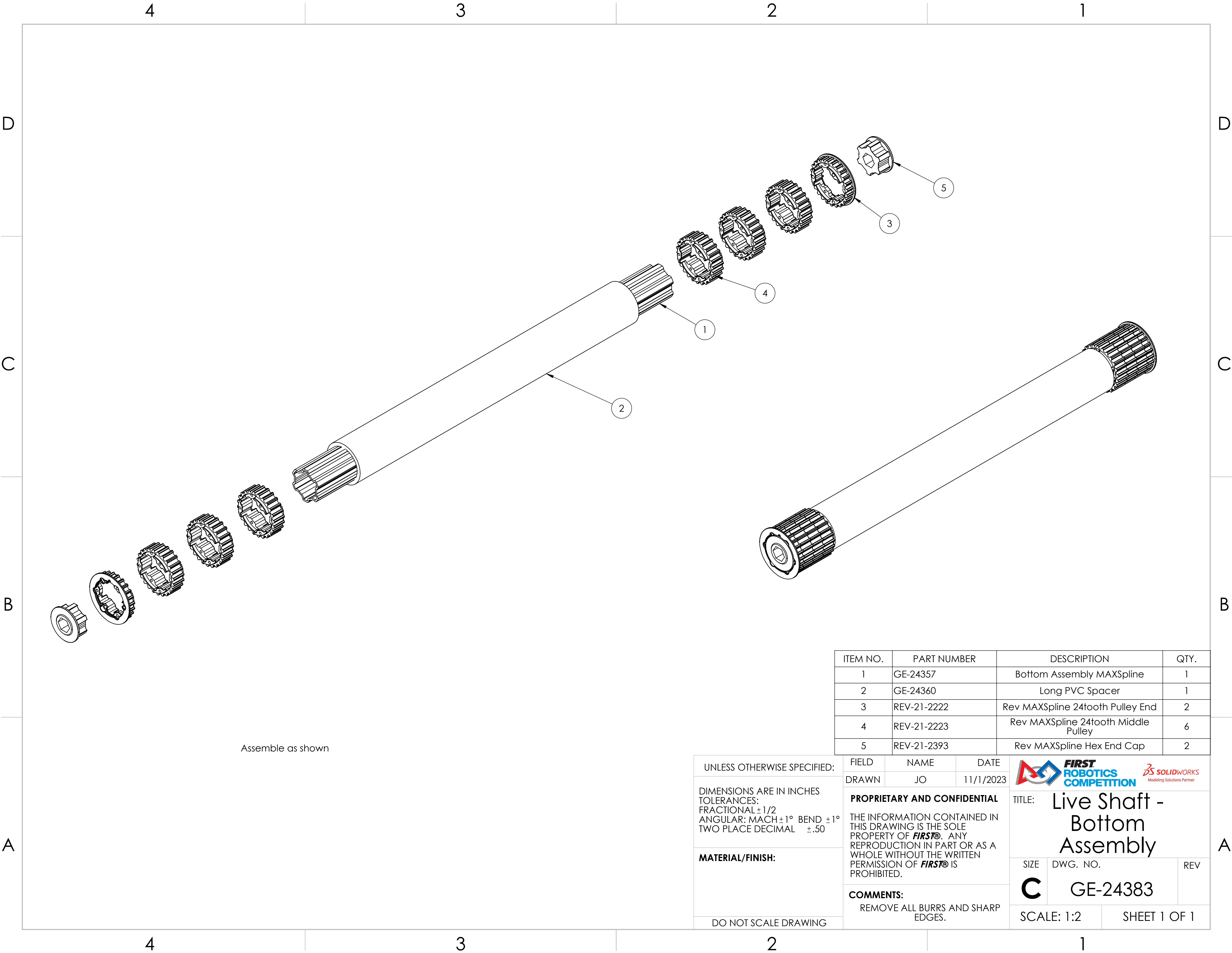
TITLE:
**Top Assembly
Belt MAXSpline**

SIZE	DWG. NO.	REV
C	GE-24381	

SCALE: 4:5	SHEET 1 OF 1
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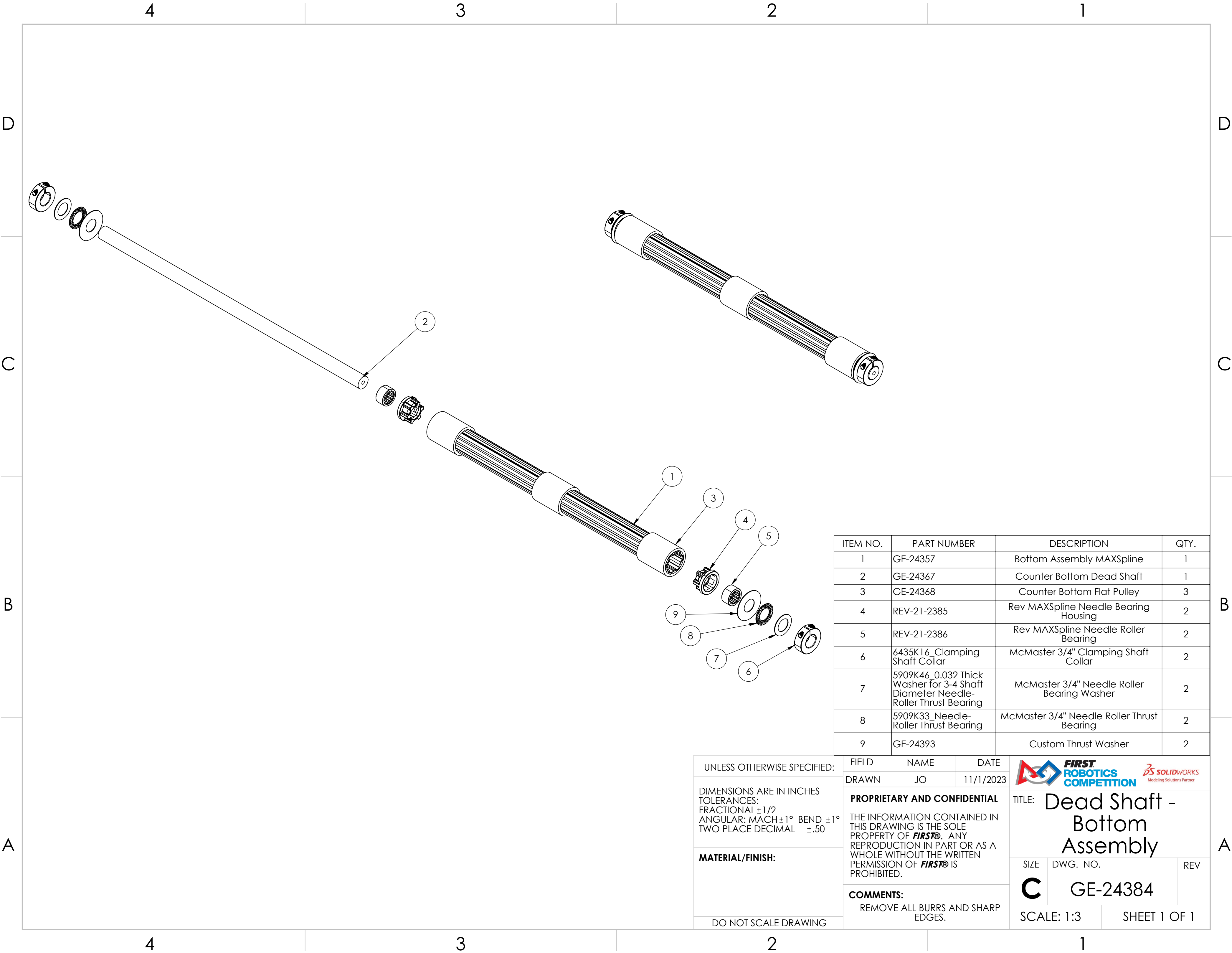
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ± .01 THREE PLACE DECIMAL ± .005 MATERIAL/FINISH: 1-1/4" Schedule 40 PVC Pipe DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Counter Top Spacer</div>		
	DRAWN	JO	10/12/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24382	
		SCALE: 2:1		SHEET 1 OF 1		



Assemble as shown

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24357	Bottom Assembly MAXSpline	1
2	GE-24360	Long PVC Spacer	1
3	REV-21-2222	Rev MAXSpline 24tooth Pulley End	2
4	REV-21-2223	Rev MAXSpline 24tooth Middle Pulley	6
5	REV-21-2393	Rev MAXSpline Hex End Cap	2

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	<div></div>		
		DRAWN	JO	11/1/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.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.			TITLE: Live Shaft - Bottom Assembly		
MATERIAL/FINISH:		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
					C	GE-24383	
DO NOT SCALE DRAWING					SCALE: 1:2		SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24357	Bottom Assembly MAXSpline	1
2	GE-24367	Counter Bottom Dead Shaft	1
3	GE-24368	Counter Bottom Flat Pulley	3
4	REV-21-2385	Rev MAXSpline Needle Bearing Housing	2
5	REV-21-2386	Rev MAXSpline Needle Roller Bearing	2
6	6435K16_Clamping Shaft Collar	McMaster 3/4" Clamping Shaft Collar	2
7	5909K46_0.032 Thick Washer for 3-4 Shaft Diameter Needle-Roller Thrust Bearing	McMaster 3/4" Needle Roller Bearing Washer	2
8	5909K33_Needle-Roller Thrust Bearing	McMaster 3/4" Needle Roller Thrust Bearing	2
9	GE-24393	Custom Thrust Washer	2

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

DRAWN

NAME

JO

DATE



11/1/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



TITLE: Dead Shaft - Bottom Assembly

SIZE

DWG. NO.

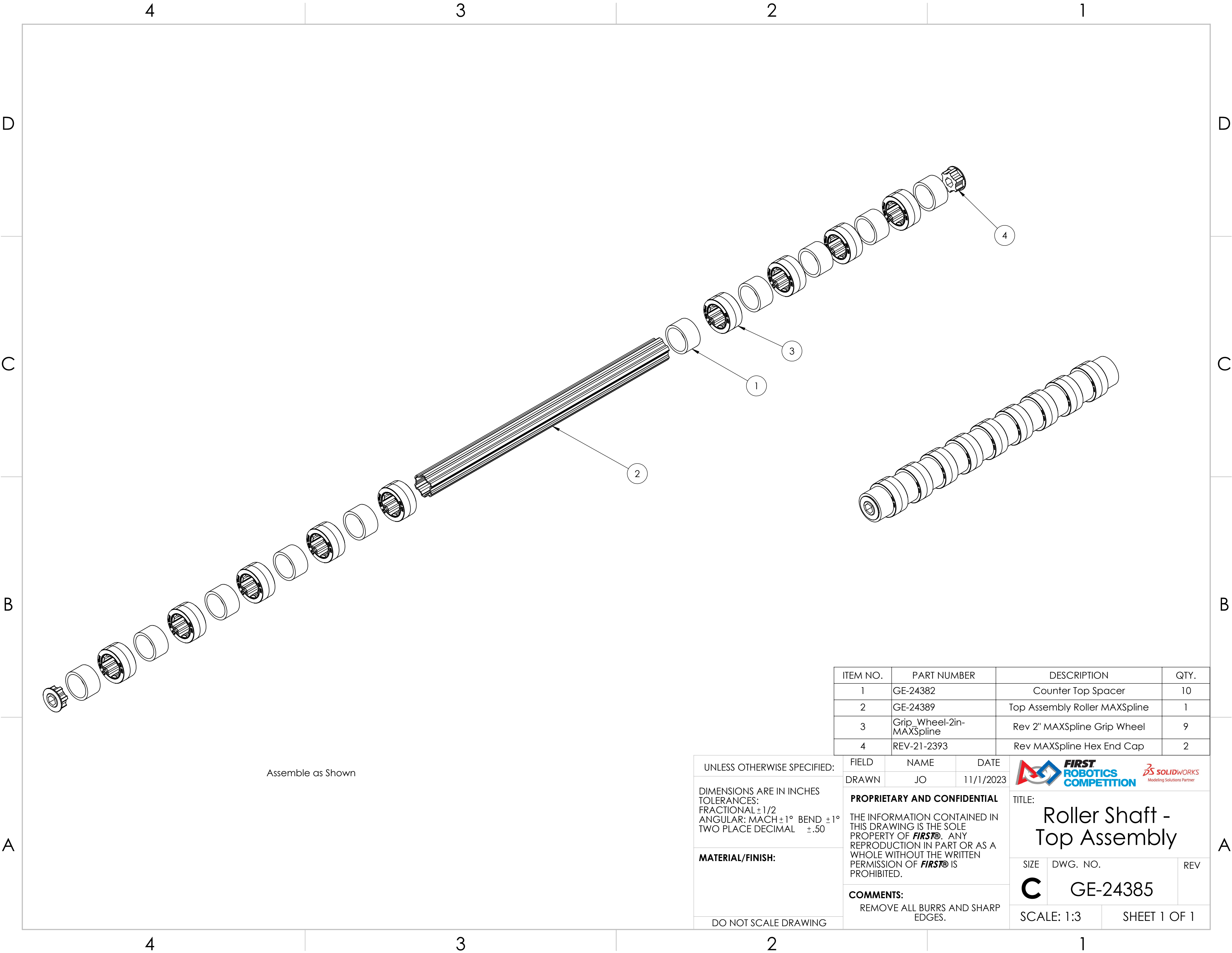
REV

C

GE-24384



SCALE: 1:3

SHEET 1 OF 1



Assemble as Shown

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24382	Counter Top Spacer	10
2	GE-24389	Top Assembly Roller MAXSpline	1
3	Grip_Wheel-2in-MAXSpline	Rev 2" MAXSpline Grip Wheel	9
4	REV-21-2393	Rev MAXSpline Hex End Cap	2

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	JO	11/1/2023	TITLE: Roller Shaft - Top Assembly	
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.			SIZE DWG. NO. REV	
DO NOT SCALE DRAWING	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C GE-24385	
				SCALE: 1:3 SHEET 1 OF 1	

4

3

2

1

D

D

C

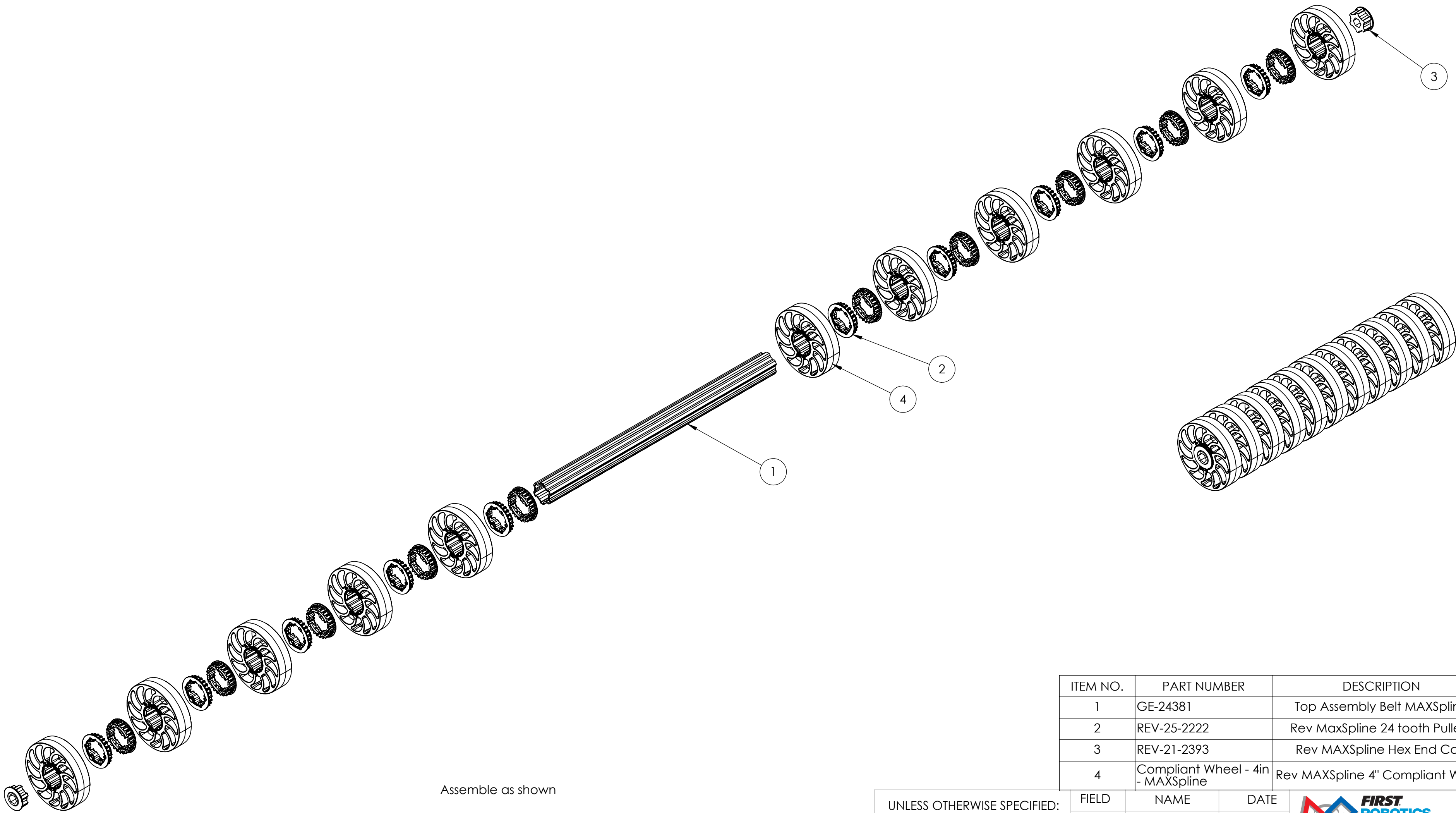
C

B



B

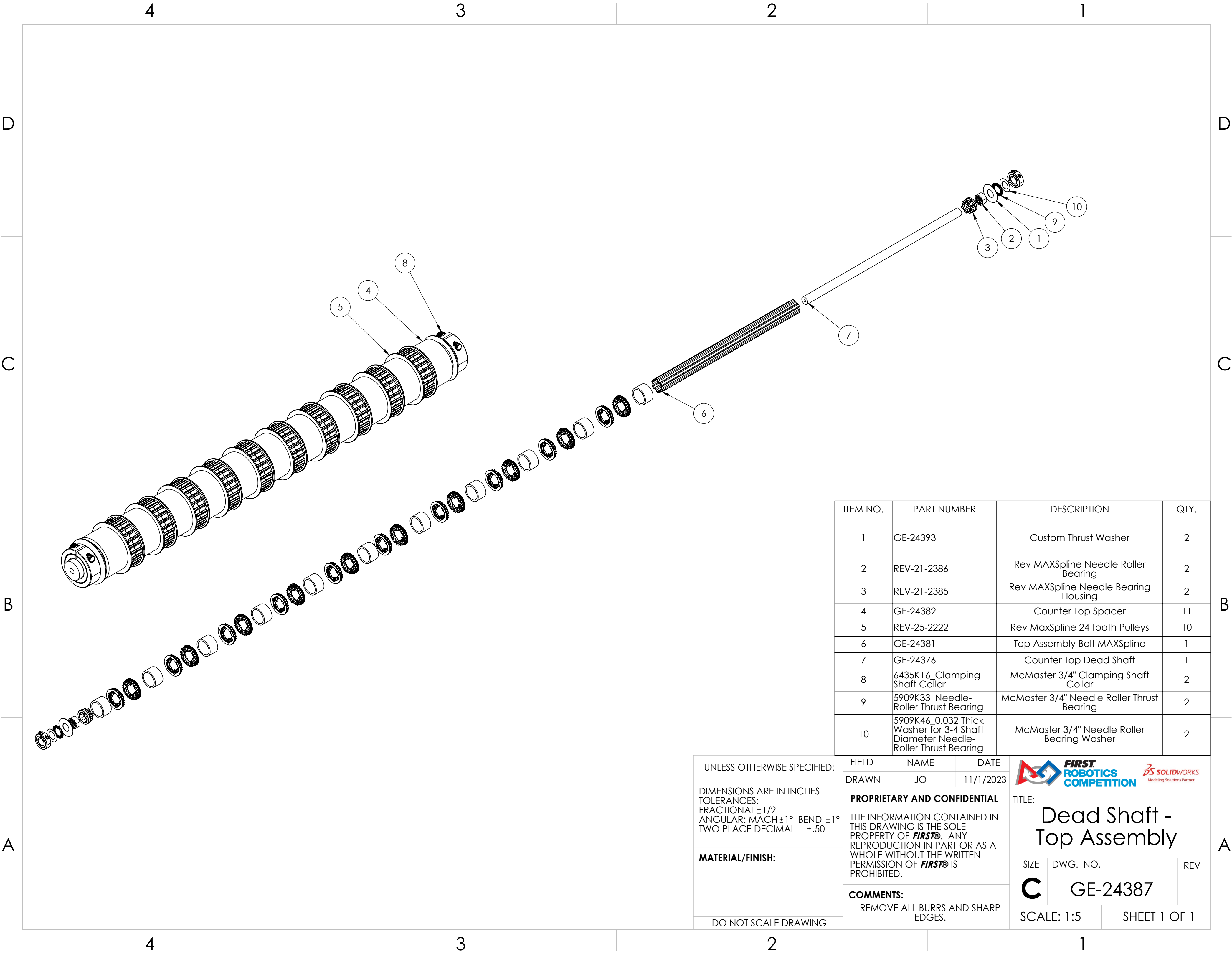
A

A





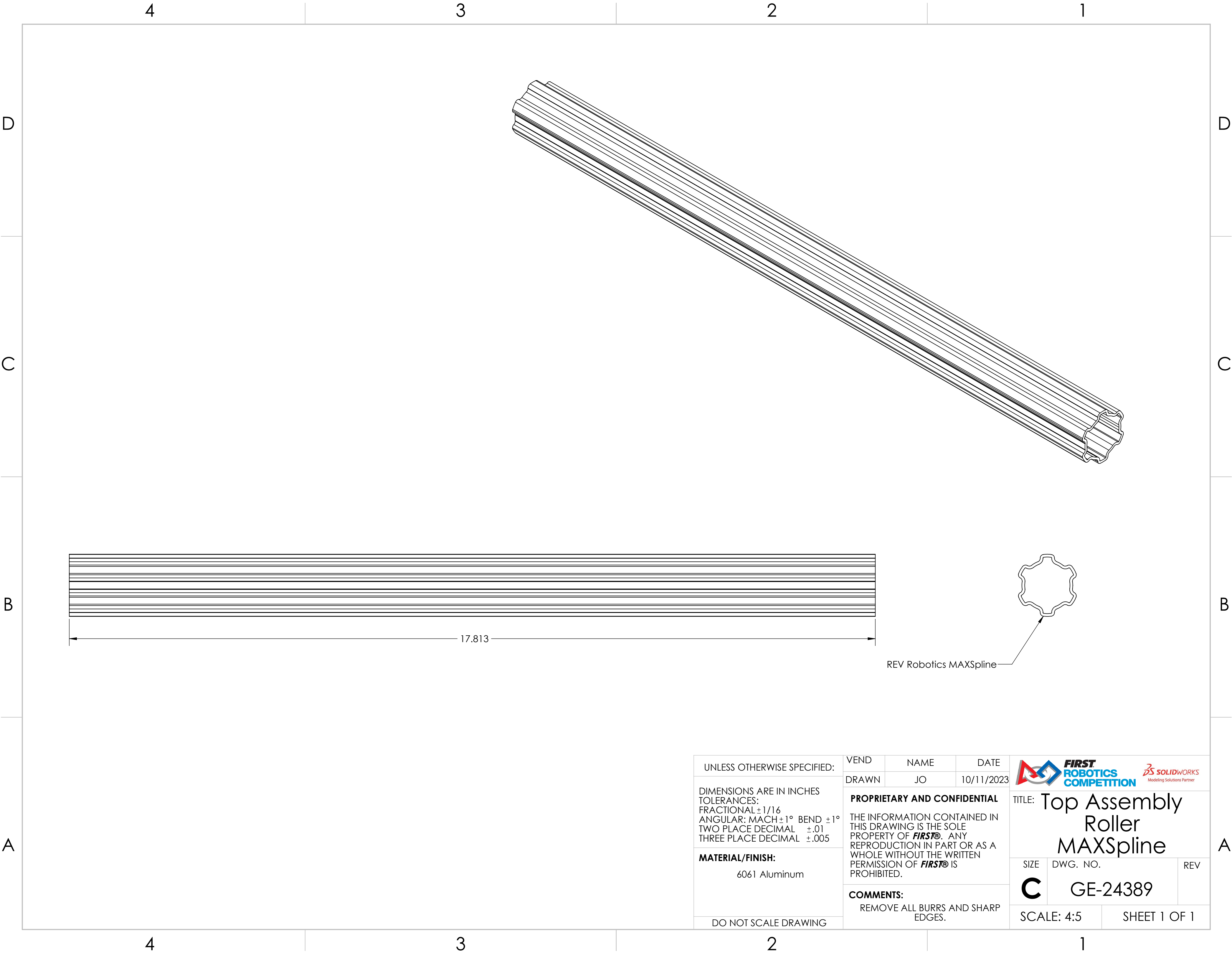
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24381	Top Assembly Belt MAXSpline	1
2	REV-25-2222	Rev MaxSpline 24 tooth Pulleys	10
3	REV-21-2393	Rev MAXSpline Hex End Cap	2
4	Compliant Wheel - 4in - MAXSpline	Rev MAXSpline 4" Compliant Wheel	11



UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	<div></div>		
		DRAWN	JO	11/1/2023			
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			TITLE: <div>Live Shaft - Top Assembly</div>		
		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:			SIZE	DWG. NO.	REV
					C	GE-24386	
DO NOT SCALE DRAWING					SCALE: 1:4		SHEET 1 OF 1

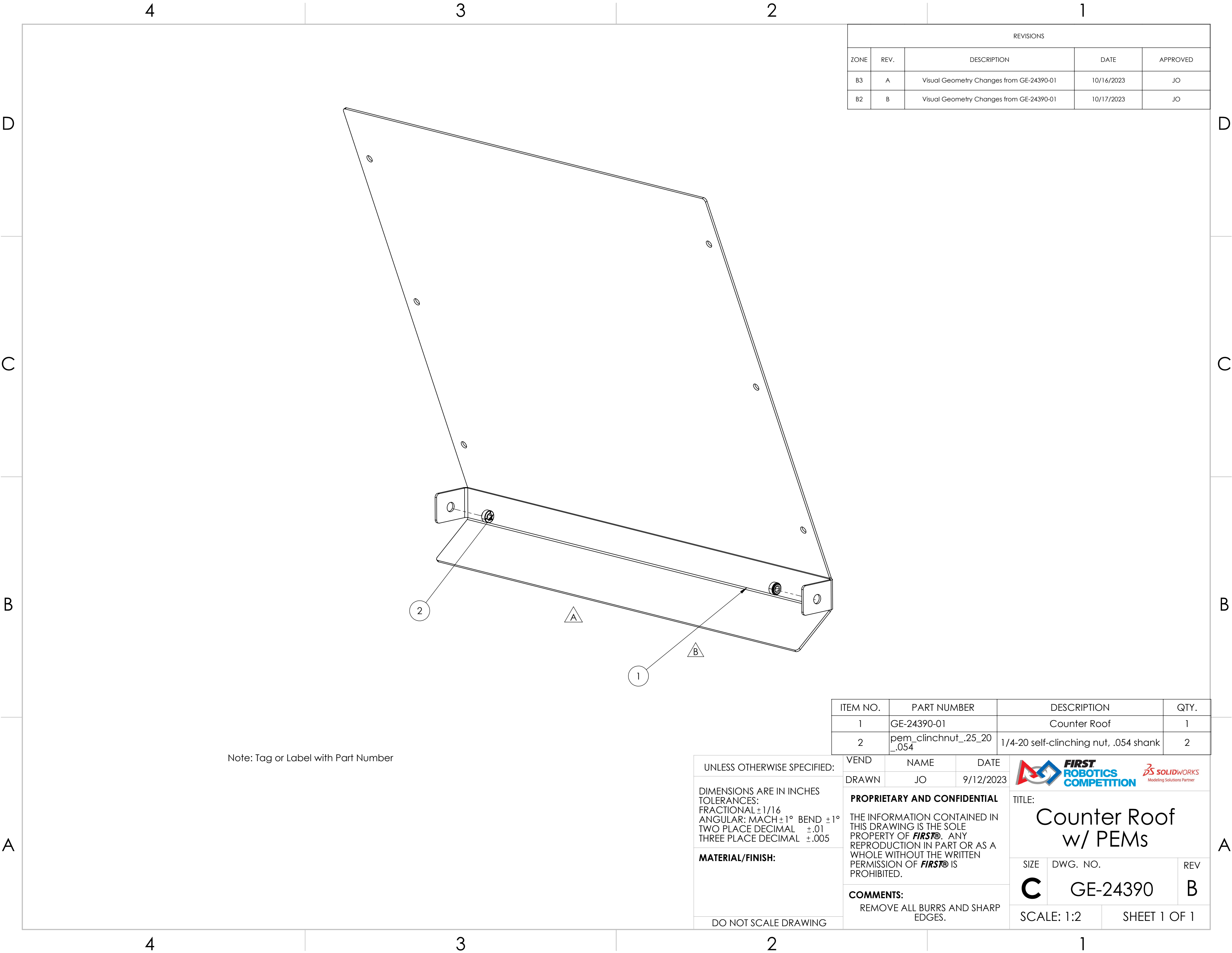


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24393	Custom Thrust Washer	2
2	REV-21-2386	Rev MAXspline Needle Roller Bearing	2
3	REV-21-2385	Rev MAXspline Needle Bearing Housing	2
4	GE-24382	Counter Top Spacer	11
5	REV-25-2222	Rev MaxSpline 24 tooth Pulleys	10
6	GE-24381	Top Assembly Belt MAXspline	1
7	GE-24376	Counter Top Dead Shaft	1
8	6435K16_Clamping Shaft Collar	McMaster 3/4" Clamping Shaft Collar	2
9	5909K33_Needle-Roller Thrust Bearing	McMaster 3/4" Needle Roller Thrust Bearing	2
10	5909K46_0.032 Thick Washer for 3-4 Shaft Diameter Needle-Roller Thrust Bearing	McMaster 3/4" Needle Roller Bearing Washer	2

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div><div></div><div>TITLE: Dead Shaft - Top Assembly</div></div>	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	JO	11/1/2023		
MATERIAL/FINISH:	PROPRIETARY AND CONFIDENTIAL			SIZE	
	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:			DWG. NO.	
	REMOVE ALL BURRS AND SHARP EDGES.			REV	
				C	GE-24387
				SCALE: 1:5	
				SHEET 1 OF 1	



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>	
	DRAWN	JO	10/11/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Top Assembly Roller MAXSpline	
	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.			SIZE DWG. NO. REV	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C GE-24389	
MATERIAL/FINISH: 6061 Aluminum	DO NOT SCALE DRAWING			SCALE: 4:5	
				SHEET 1 OF 1	



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	A	Visual Geometry Changes from GE-24390-01	10/16/2023	JO
B2	B	Visual Geometry Changes from GE-24390-01	10/17/2023	JO

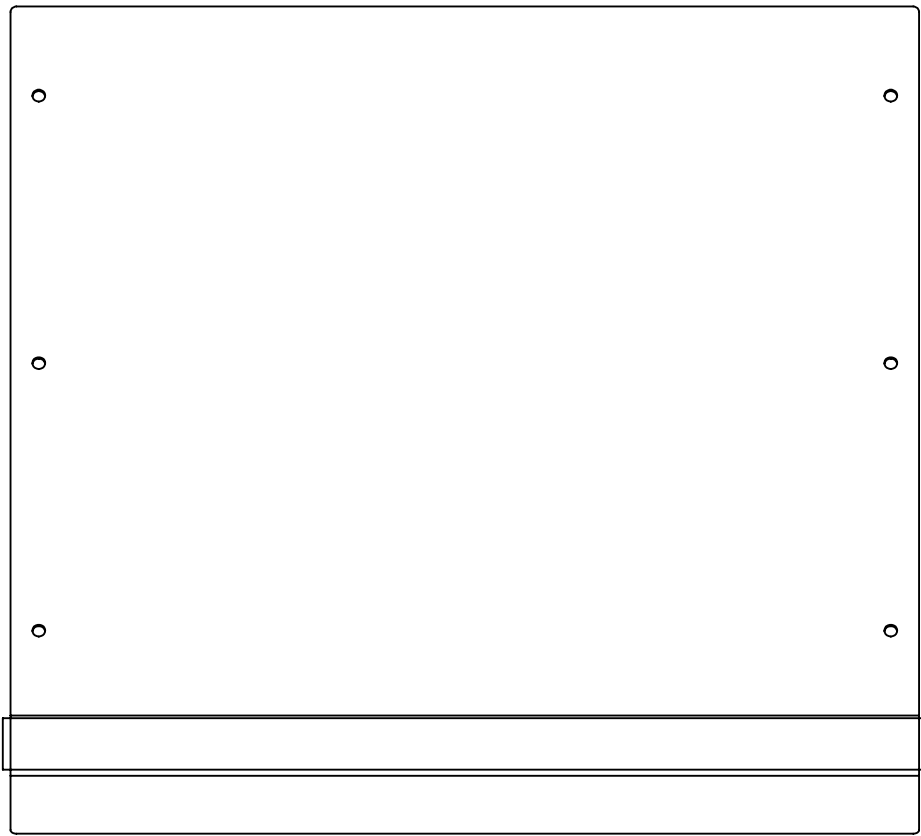
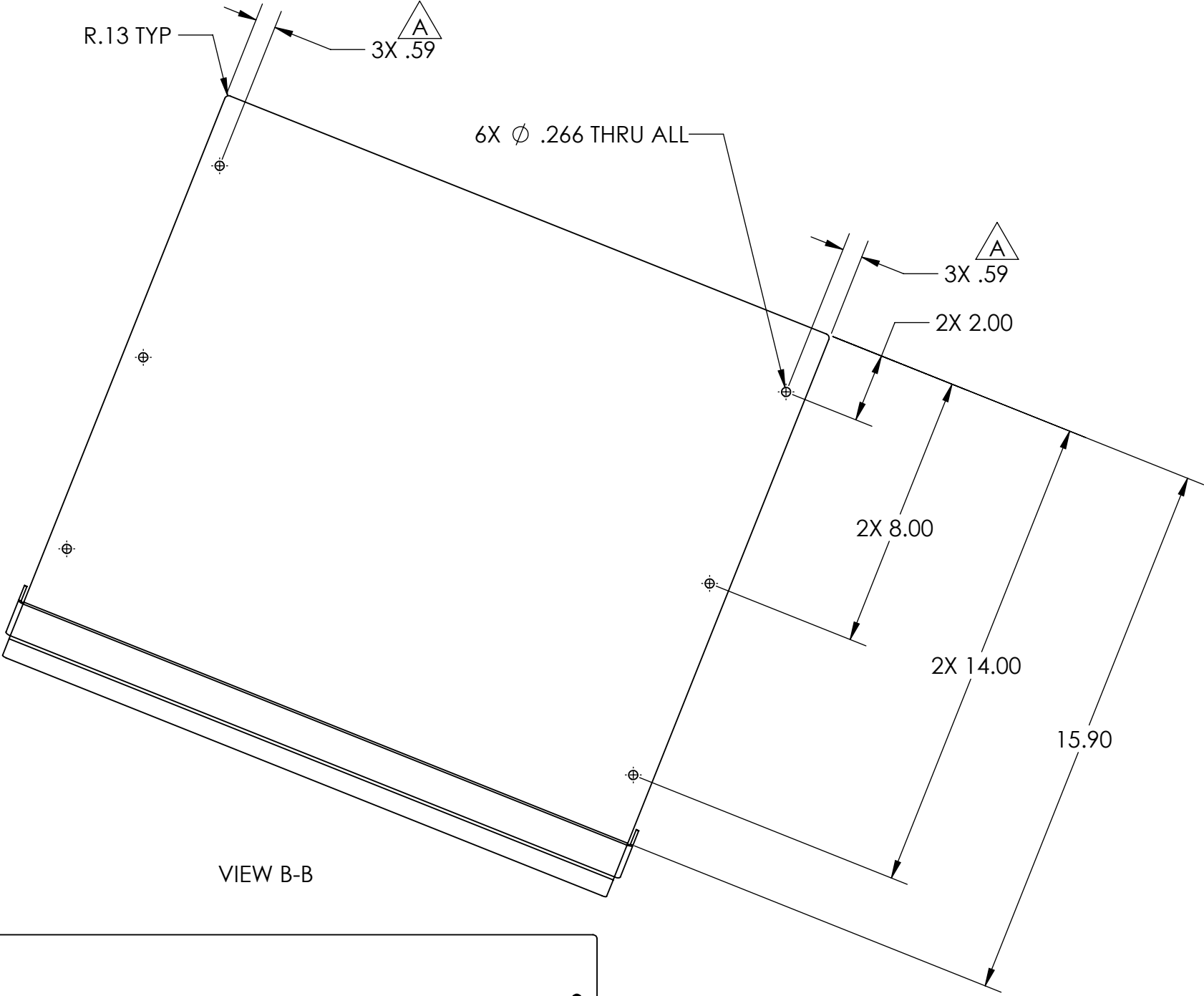
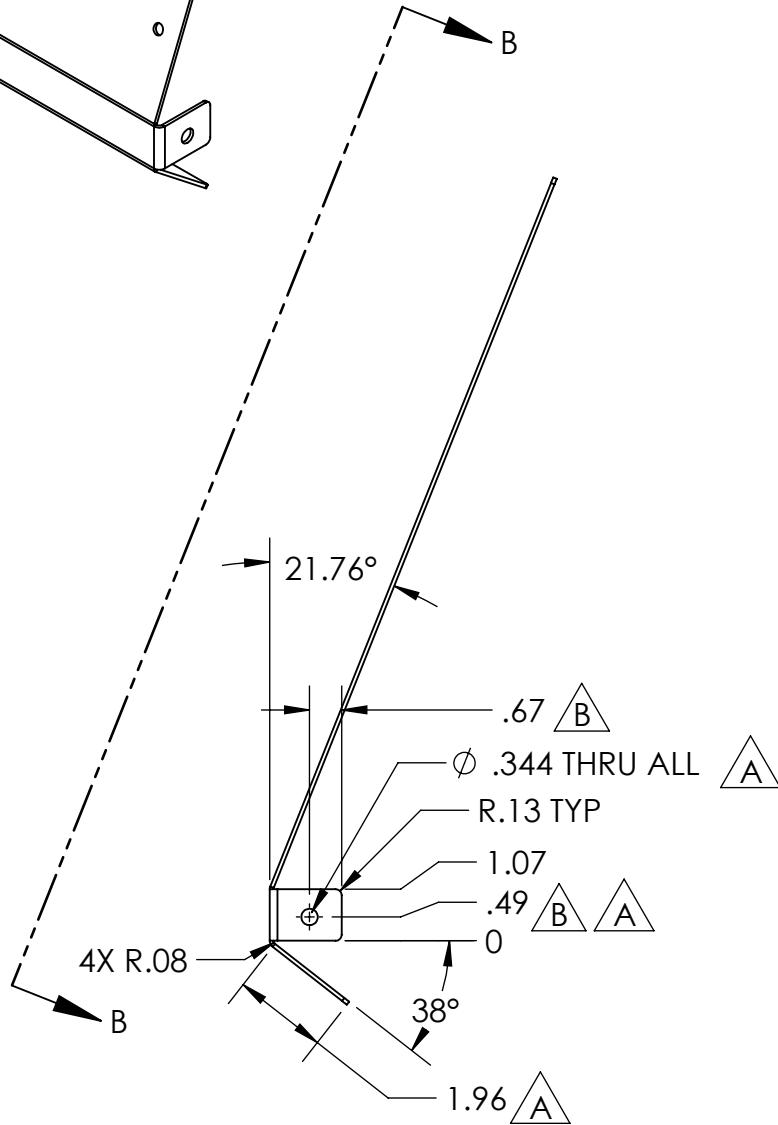
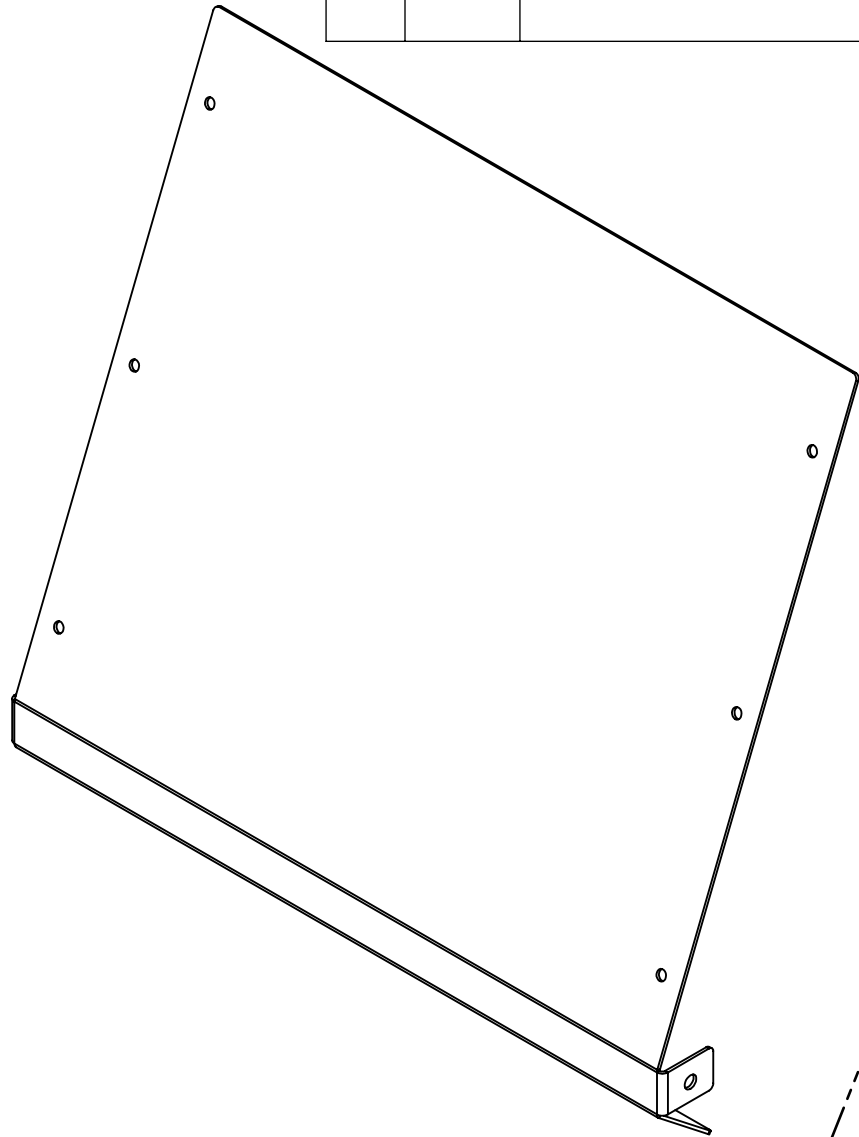
Note: Tag or Label with Part Number

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24390-01	Counter Roof	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 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	9/12/2023
MATERIAL/FINISH:		PROPRIETARY AND CONFIDENTIAL		
DO NOT SCALE DRAWING		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: Counter Roof w/ PEMs		
		SIZE C	DWG. NO. GE-24390	REV B
		SCALE: 1:2		SHEET 1 OF 1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A1, B1, D3, D4	A	Changes to Side and Bottom Flanges, and hole locations	10/16/2023	JO
B1	B		10/17/2023	



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:
12 Ga 5052 Aluminum

DO NOT SCALE DRAWING

BEND	NAME	DATE
DRAWN	JO	9/12/2023

PROPRIETARY AND CONFIDENTIAL

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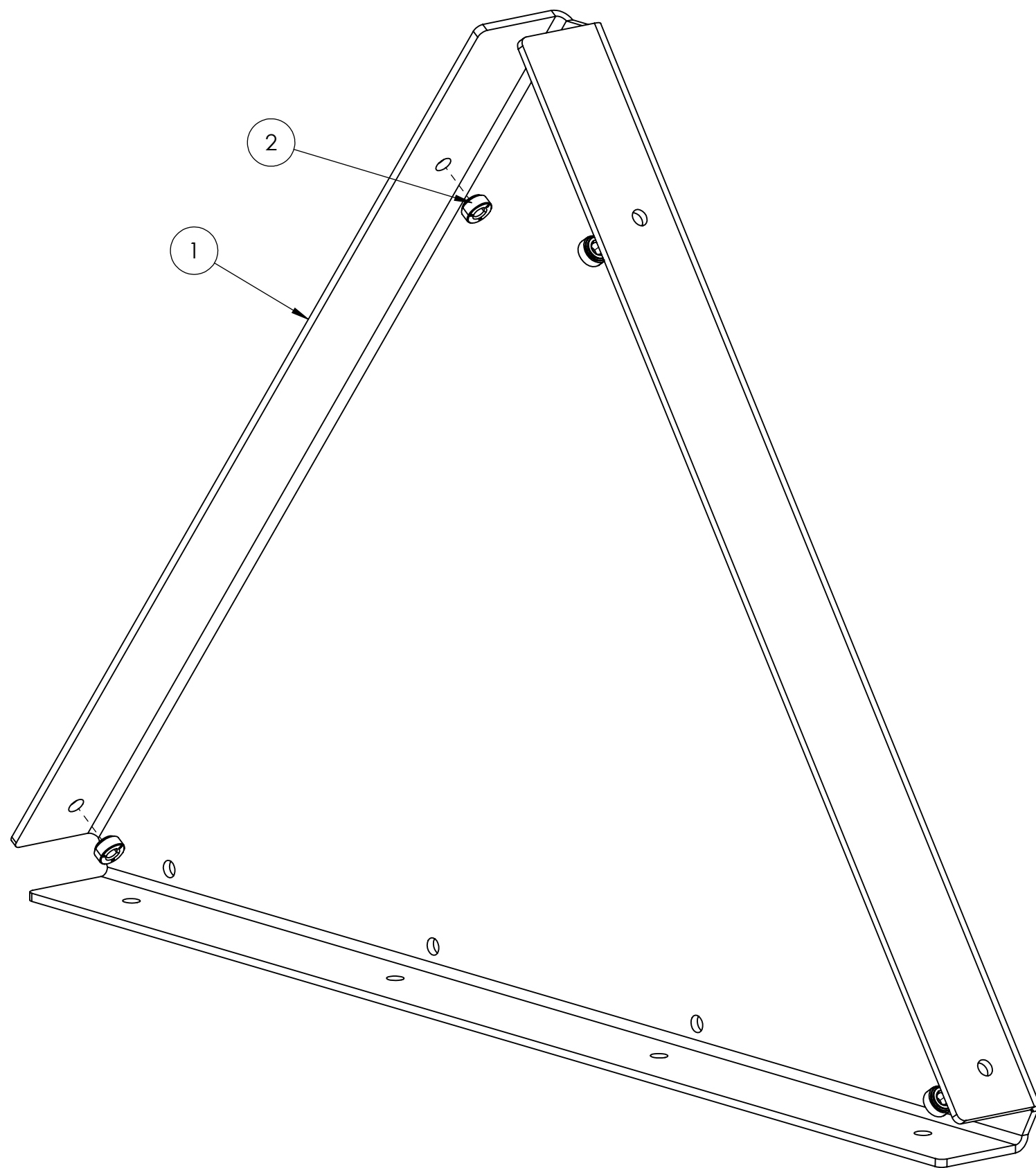
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Counter Roof



SIZE	DWG. NO.	REV
C	GE-24390-01	B

SCALE: 1:4 SHEET 1 OF 1



Notes:
Assemble as shown
Tag or Label with Part Number

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24391-01	Collection Side Ramp	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	4

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		10/19/2023	
		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.					
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
MATERIAL/FINISH:		 FIRST ROBOTICS COMPETITION 					
DO NOT SCALE DRAWING							
		TITLE: <h1>Collection Ramp w/ PEMs</h1>					
		SIZE		DWG. NO.			REV
		C		GE-24391			
		SCALE: 1:2			SHEET 1 OF 1		

D

D

C

C

B

B

A

A

4

3

2

1

4

3

2

1

2X .88

2X \varnothing .27 THRU

VIEW A-A

A

A

3X .57 X 45° CHAMFER

70°

4X \varnothing .27 THRU ALL

11.12

7.68

4.23

.79

0

4X .88

19.40

20.80

13.40

7.40

1.40

4X \varnothing .27 THRU

VIEW B-B

B

R.13 TYP

3.13

17.25

18.00

3X R.13

2X .88

2X \varnothing .27 THRU

3X 1.75

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:

8 Ga 5052 Aluminum

DO NOT SCALE DRAWING

BEND

NAME

DATE

DRAWN

JO

10/19/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION



TITLE:

Collection Side
Ramp

SIZE

DWG. NO.

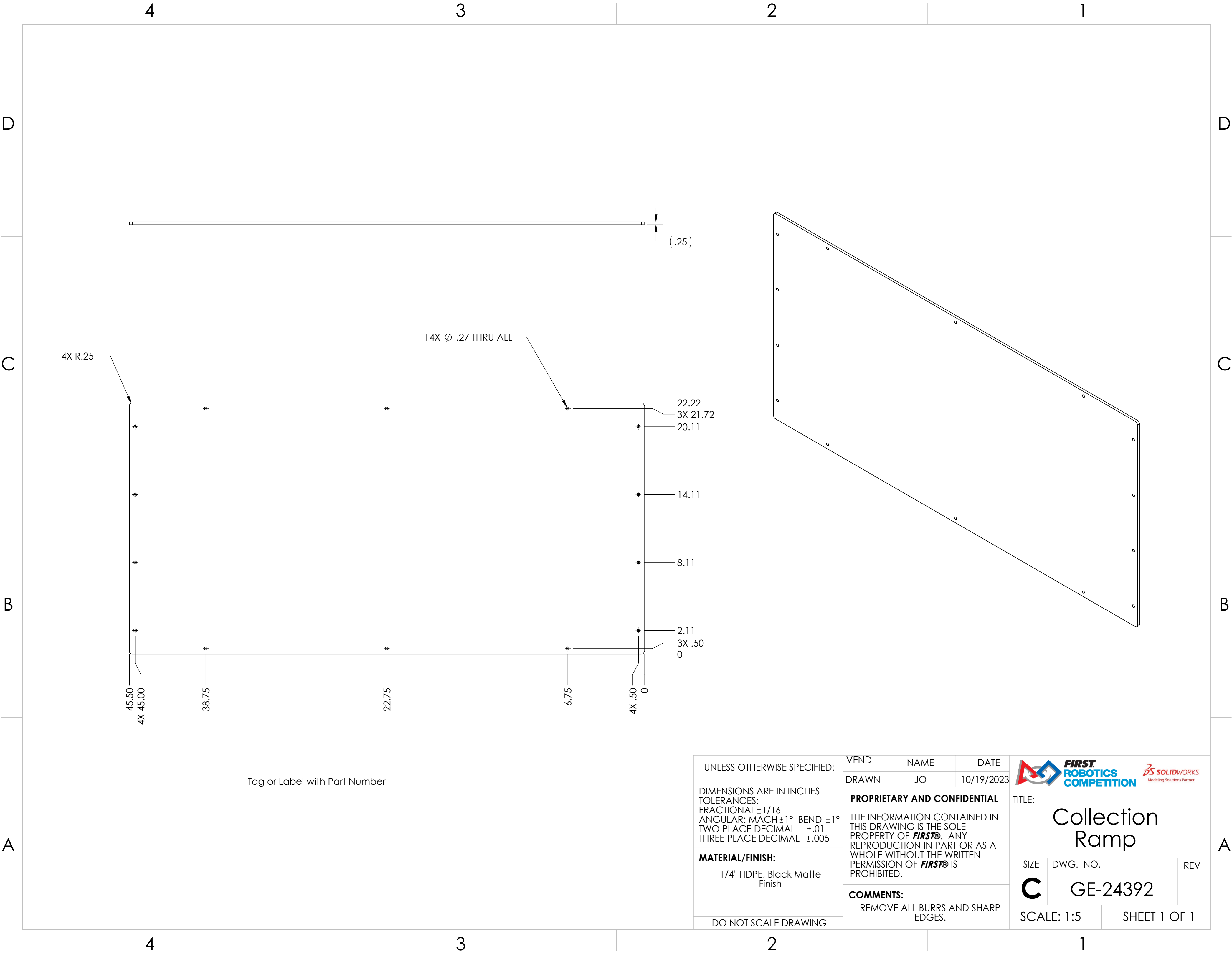
REV

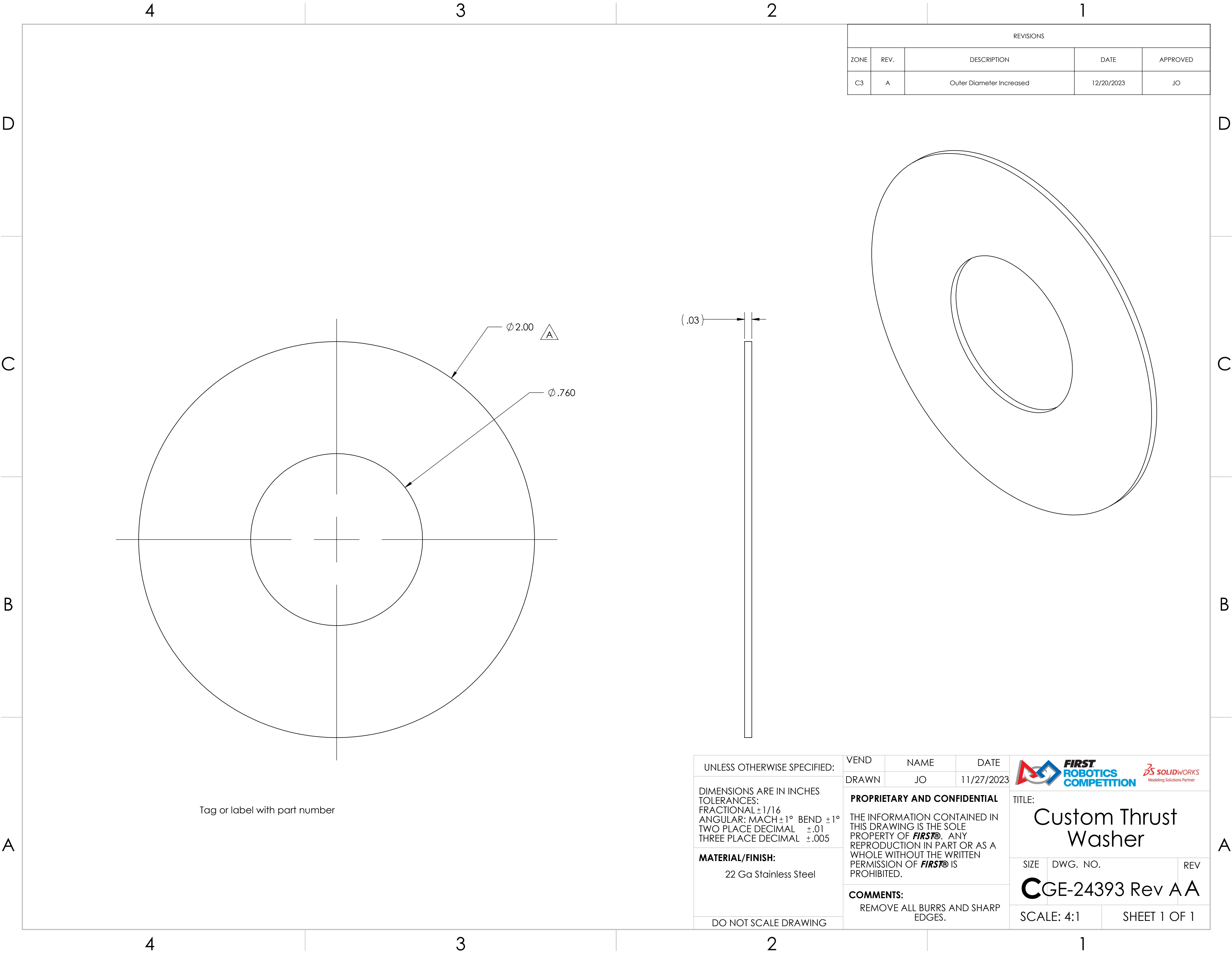
C

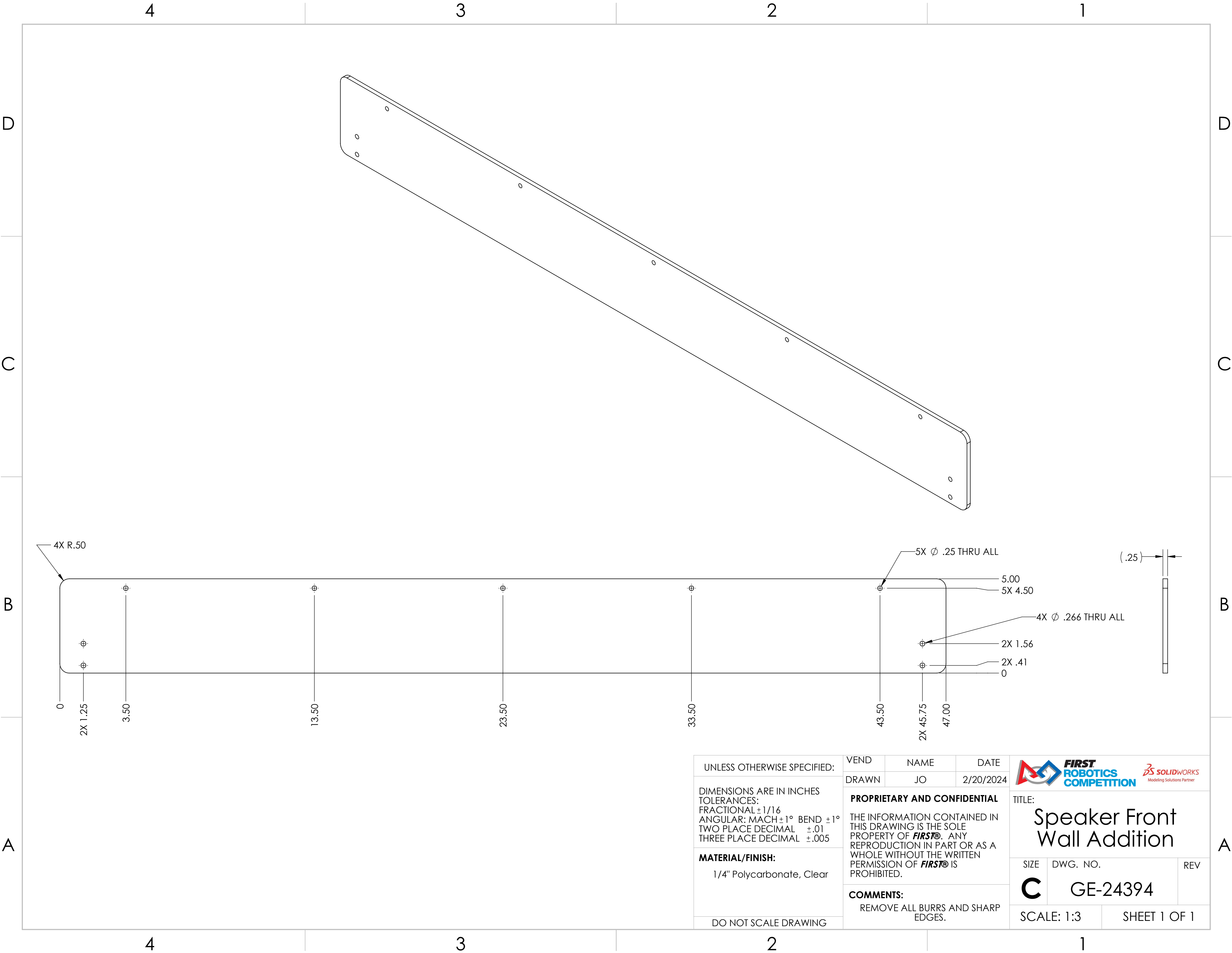
GE-24391-01

SCALE: 1:4

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:
1/4" Polycarbonate, Clear

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	2/20/2024

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE: Speaker Front Wall Addition		
SIZE C	DWG. NO. GE-24394	REV
SCALE: 1:3		SHEET 1 OF 1

4

3

2

1

D

D

C

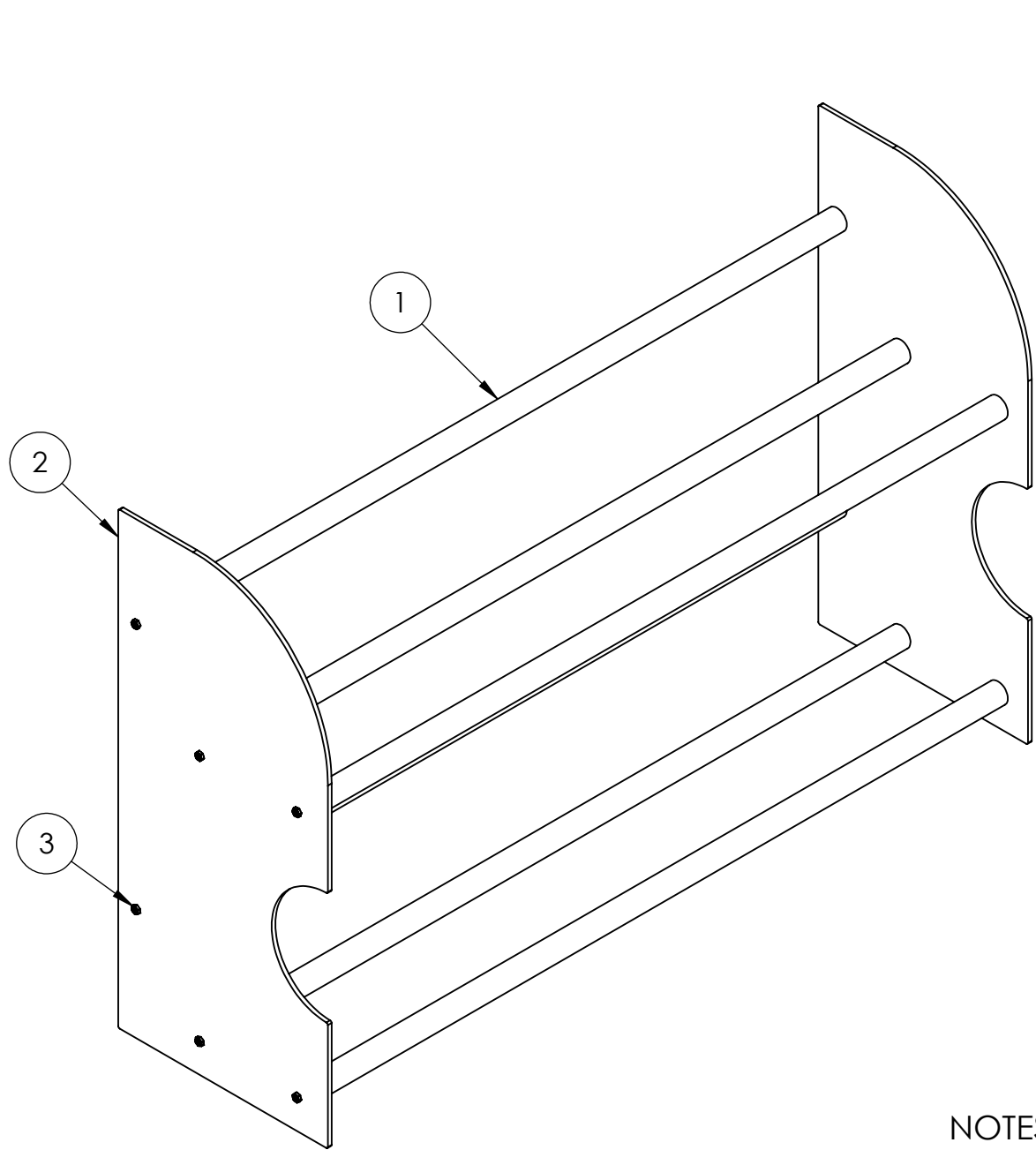
C

B

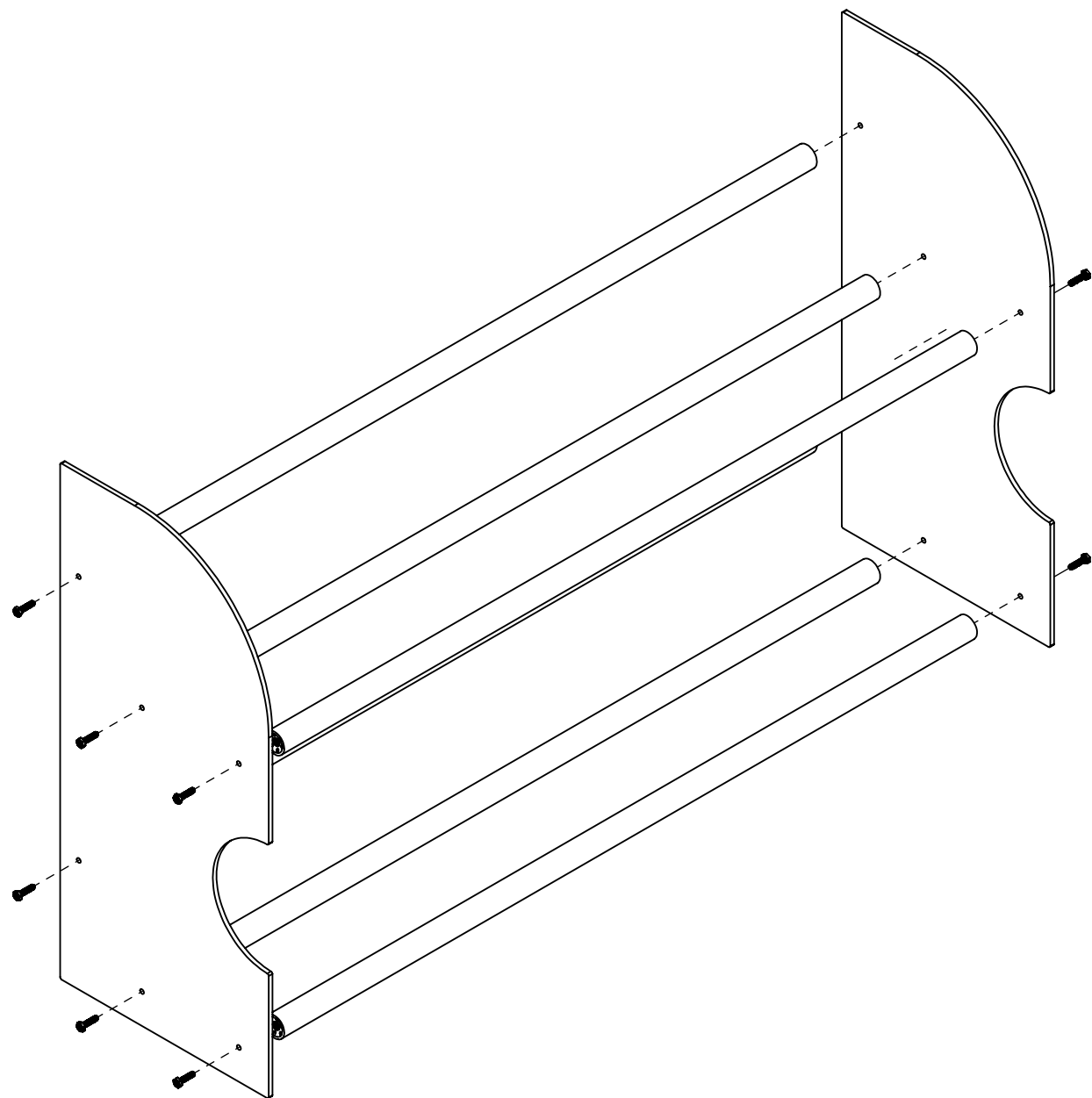
B

A



A

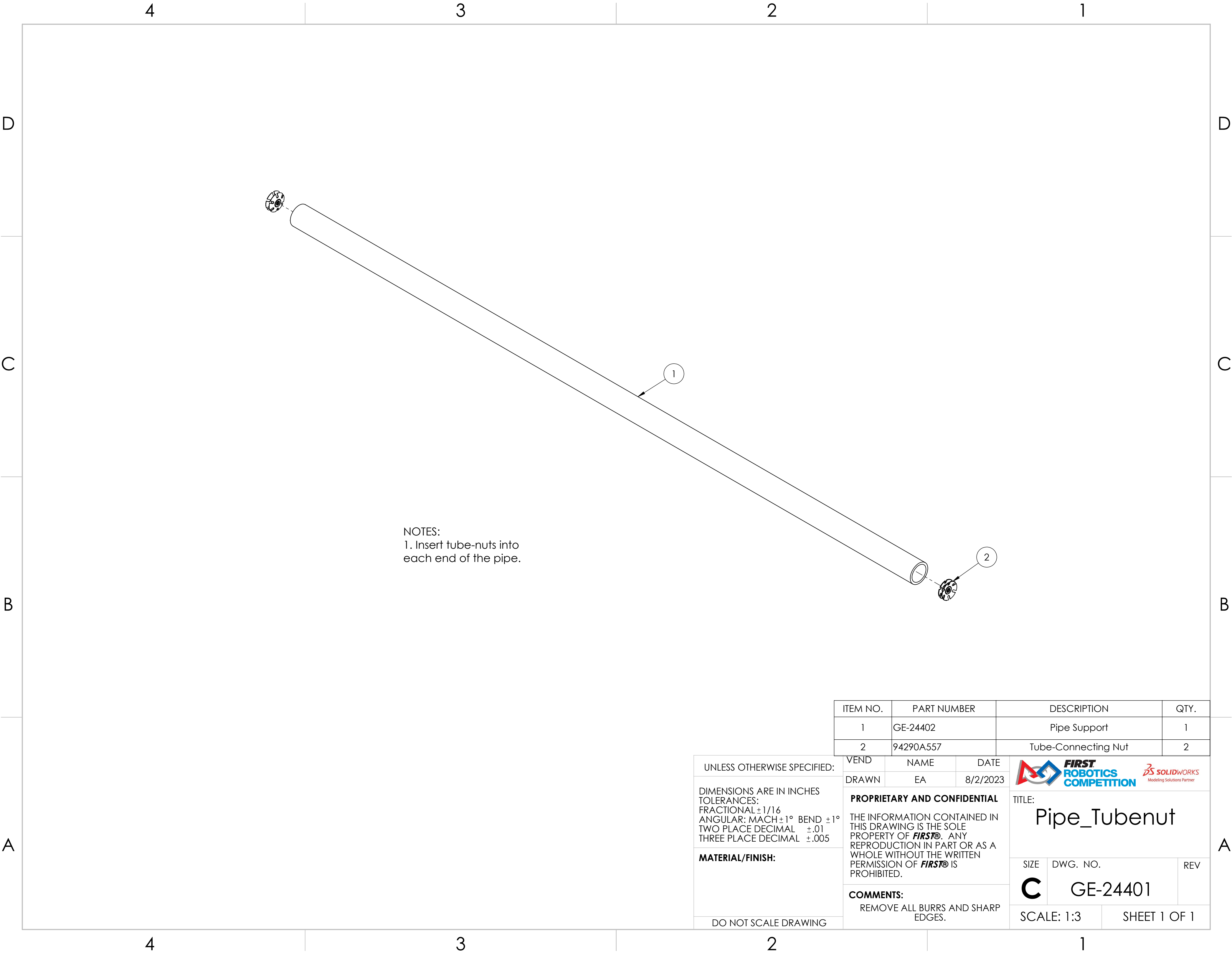


NOTES:
1. Bolt the tubes to the side panels



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24401	Pipe_Tubenut	6
2	GE-24403	Plastic Side Panel	2
3	91286A109	High-Strength Grade 8 Steel Hex Head Screw	12

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>	
	DRAWN	EA	8/2/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Note Holder	
	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:			SIZE C	
	REMOVE ALL BURRS AND SHARP EDGES.				
MATERIAL/FINISH:				DWG. NO. GE-24400	
DO NOT SCALE DRAWING				REV	
			SCALE: 1:8		SHEET 1 OF 1



NOTES:
1. Insert tube-nuts into
each end of the pipe.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24402	Pipe Support	1
2	94290A557	Tube-Connecting Nut	2

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
DRAWN



NAME
EA

DATE
8/2/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Pipe_Tubenut

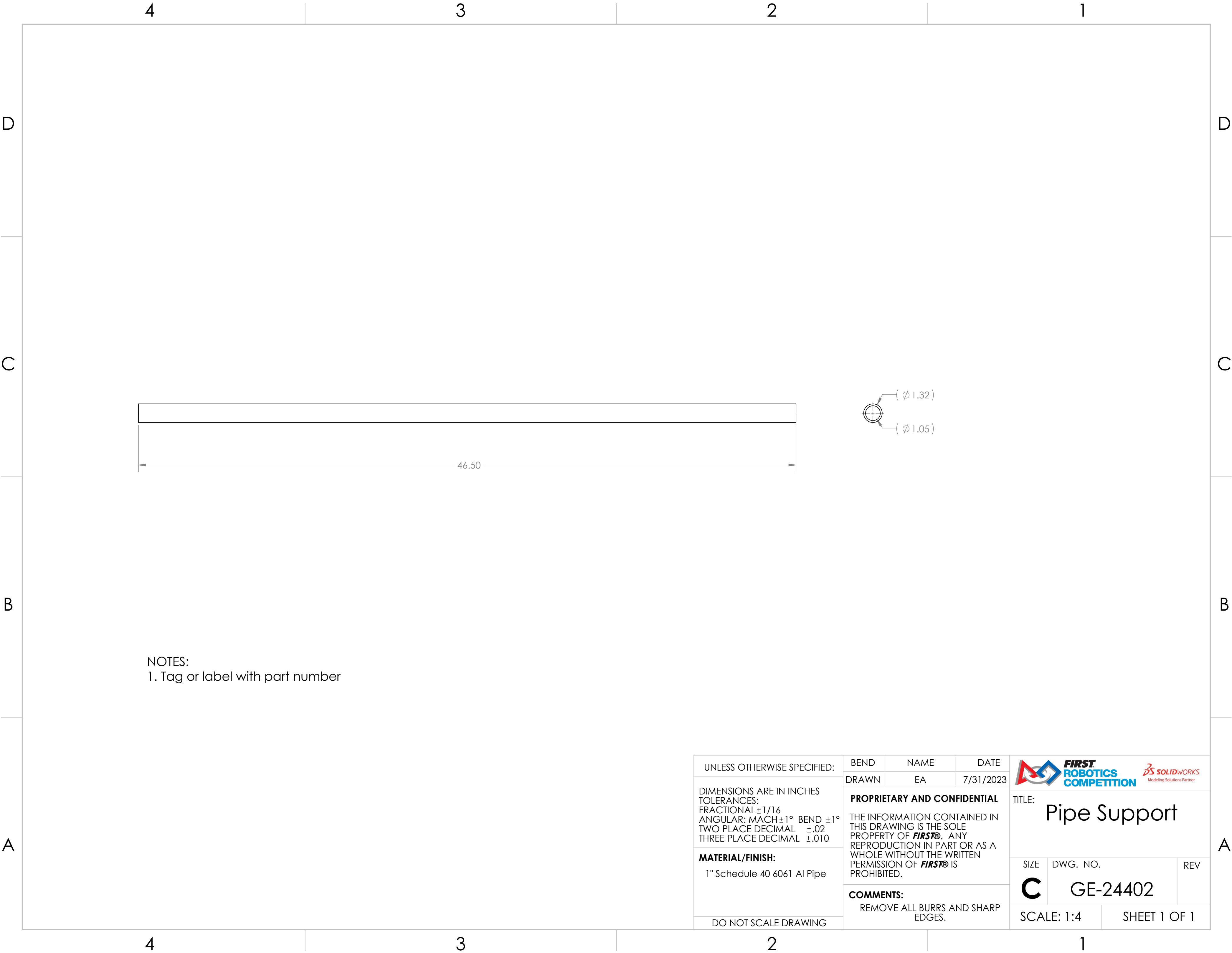
SIZE
C

DWG. NO.
GE-24401



REV

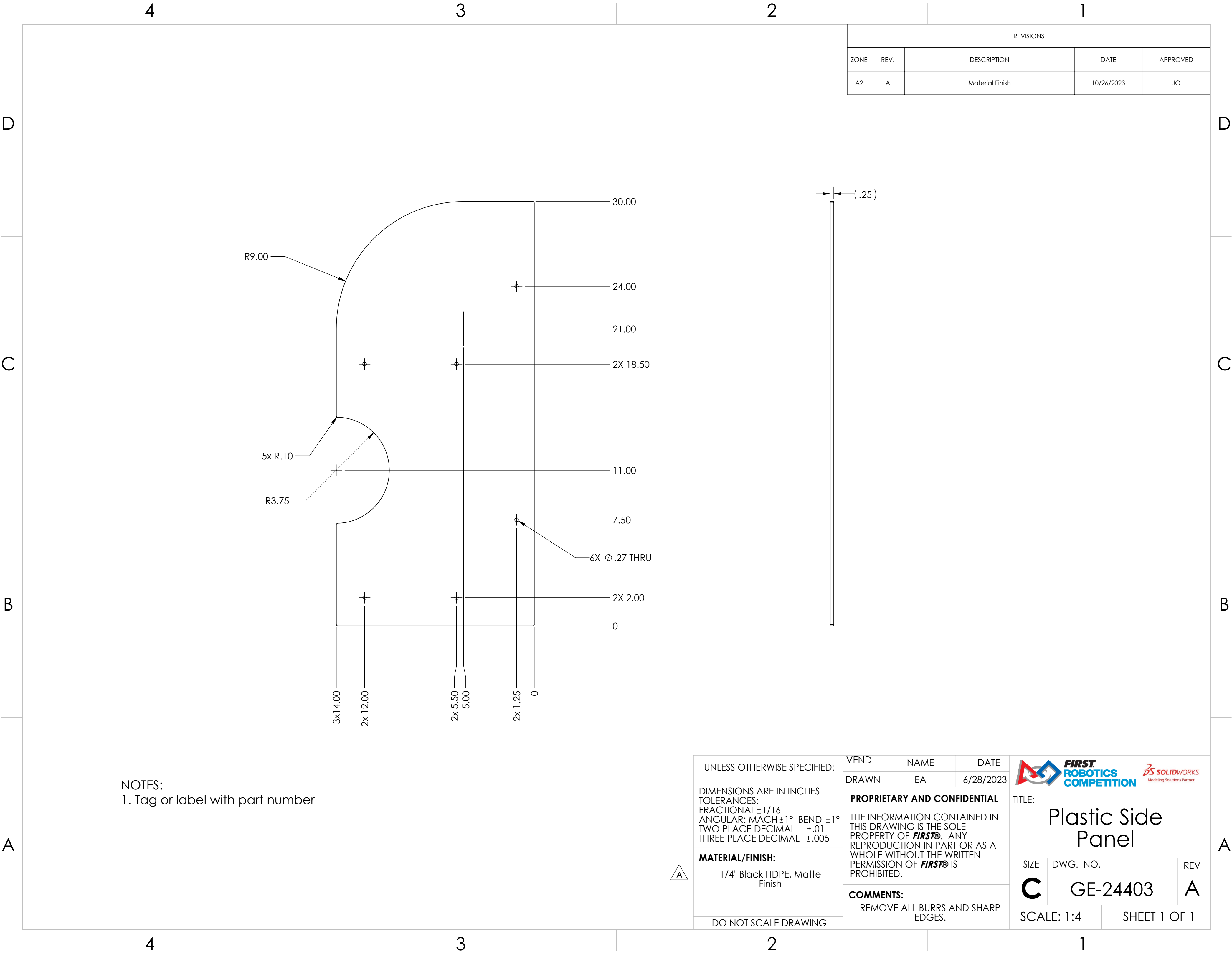
SCALE: 1:3

SHEET 1 OF 1



NOTES:
1. Tag or 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 $\pm .02$ THREE PLACE DECIMAL $\pm .010$ MATERIAL/FINISH: 1" Schedule 40 6061 Al Pipe DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: <h1>Pipe Support</h1></div>		
	DRAWN	EA	7/31/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24402	REV
SCALE: 1:4		SHEET 1 OF 1				



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2	A	Material Finish	10/26/2023	JO

NOTES:
1. Tag or label with part number

<div>UNLESS OTHERWISE SPECIFIED:</div> <div>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 $\pm .005$</div> <div><div><div>A</div></div><div>MATERIAL/FINISH:</div><div>1/4" Black HDPE, Matte Finish</div></div> <div>DO NOT SCALE DRAWING</div>	VEND	NAME	DATE	<div><div><div><div></div></div><div>FIRST ROBOTICS COMPETITION</div></div><div><div><div></div></div><div>SOLIDWORKS</div><div>Modeling Solutions Partner</div></div></div> <div>TITLE:</div> <div>Plastic Side Panel</div>			
	DRAWN	EA	6/28/2023				
	PROPRIETARY AND CONFIDENTIAL						
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COMMENTS:				SIZE	DWG. NO.	REV	
REMOVE ALL BURRS AND SHARP EDGES.				C	GE-24403	A	
				SCALE: 1:4		SHEET 1 OF 1	

4

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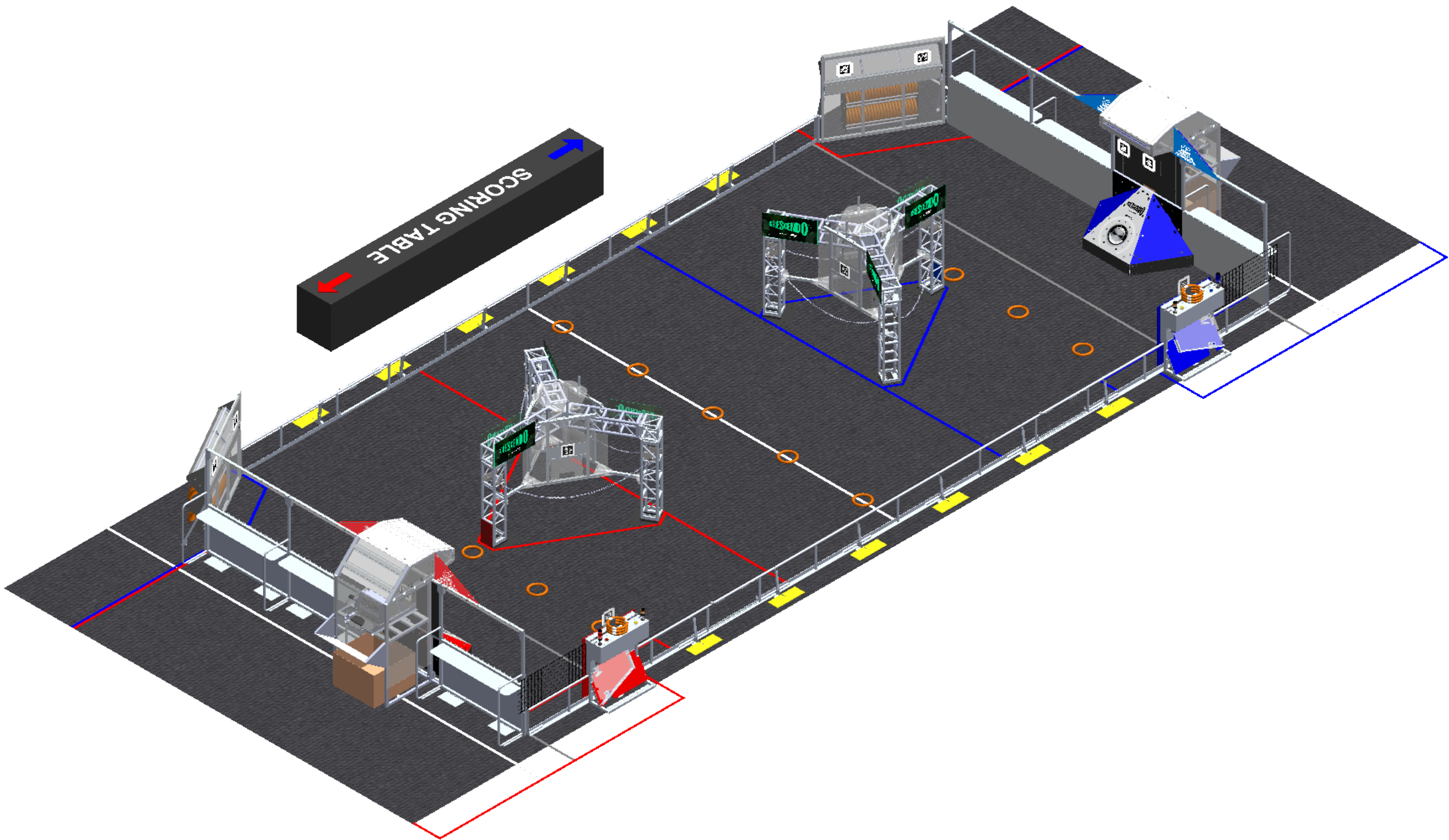
C

B

B

A

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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	DF	12/20/2023

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COMMENTS:
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TITLE: **2024 Field Layout and Marking**

SIZE	DWG. NO.	REV
C	FE-2024	

SCALE: 1:50 SHEET 1 OF 6

4

3

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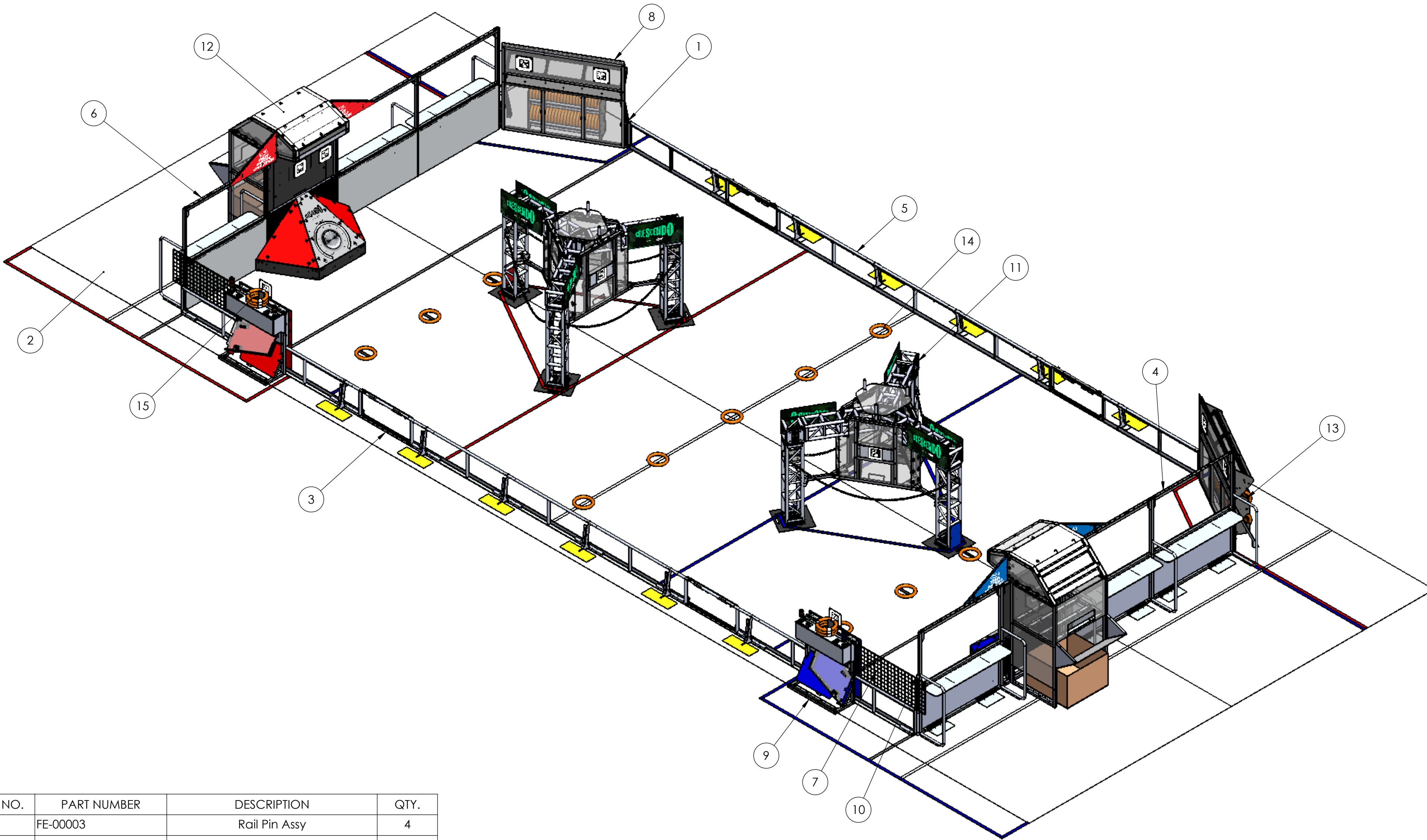
A

D

C

B

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00003	Rail Pin Assy	4
2	FE-2024-01	Carpet	2
3	FE-2024-02	Side Border	1
4	FE-2024-03	End Wall	1
5	FE-2024-04	Side Border	1
6	FE-2024-05	End Wall	1
7	GE-23266	ULINE Grid	2
8	GE-24000	Source	2
9	GE-24100	Amp Station	2
10	GE-24130	Extra Long Corner Pin	2
11	GE-24200	Stage Assembly	2
12	GE-24300	Speaker	2
13	GE-24400	Note Holder	2
14	GE-24500	Note	105
15	GE-24501	High Note	6

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

DRAWN

NAME

DF

DATE

12/21/2023

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COMMENTS:

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EDGES.



FIRST
ROBOTICS
COMPETITION



Modeling Solutions Partner

TITLE:

2024 Field
Layout and
Marking

SIZE

C

DWG. NO.

FE-2024

REV

SCALE: 1:45

SHEET 2 OF 6

D

C

B

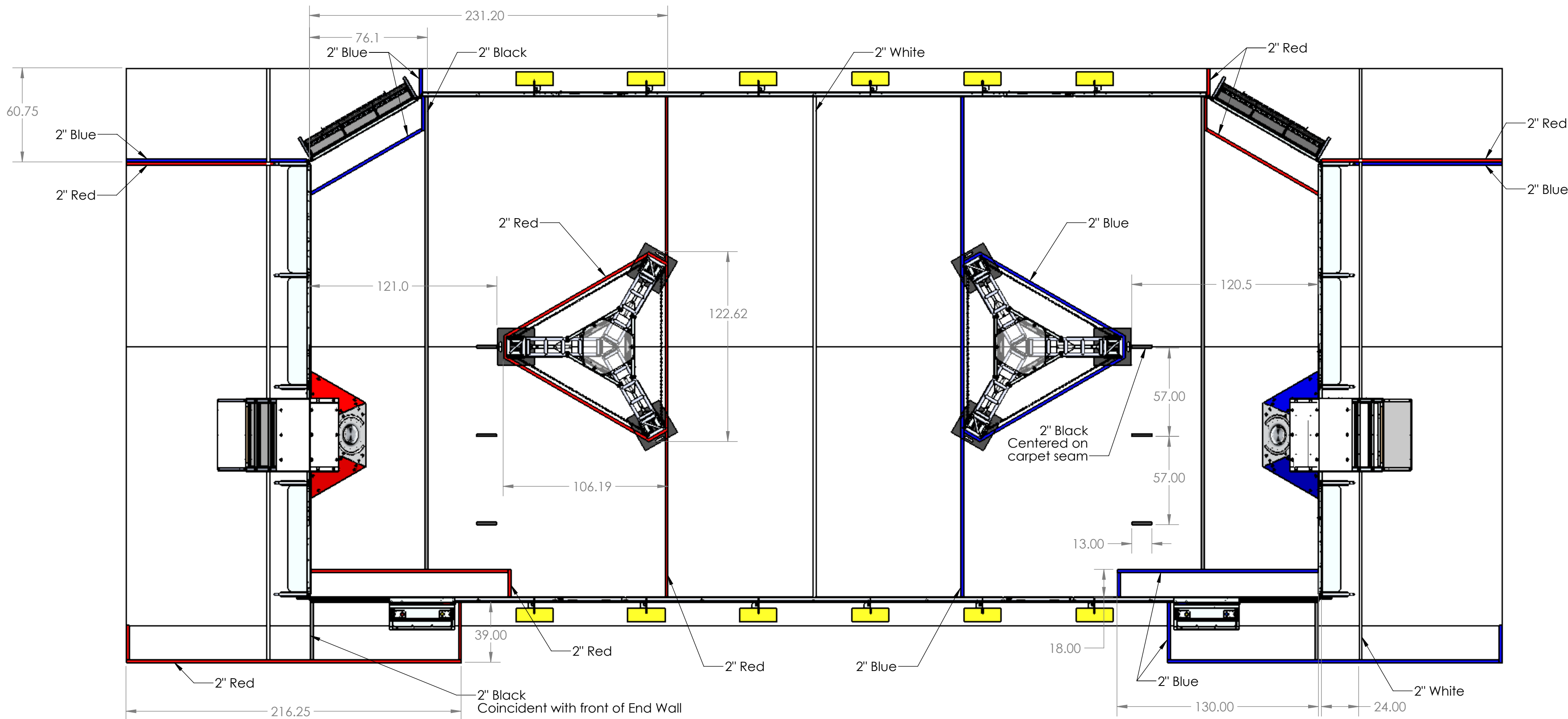
A

D

C

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A



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

DRAWN

NAME

DF

DATE

12/21/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

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EDGES.



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

2024 Field
Layout and
Marking

SIZE

C

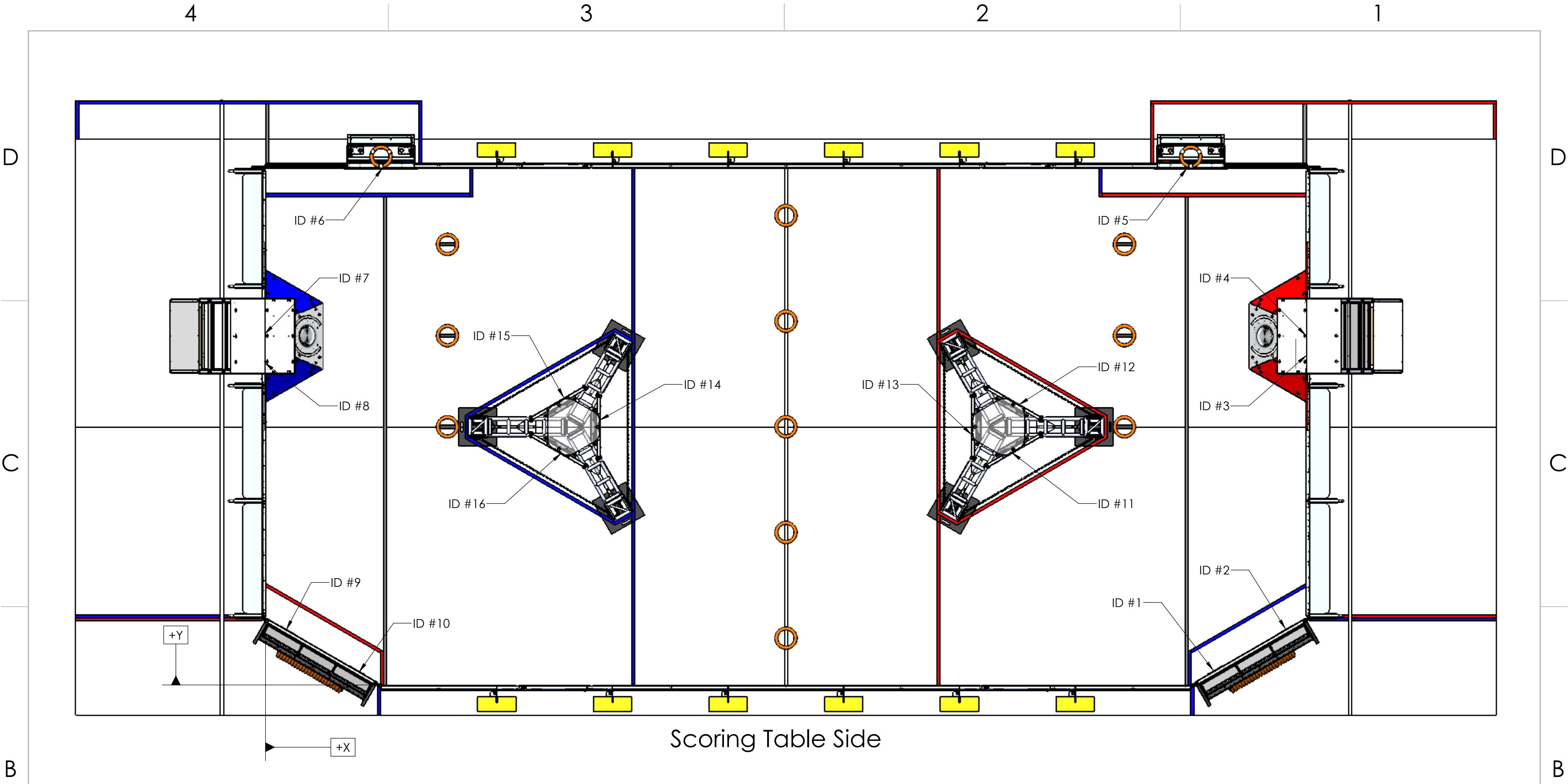
DWG. NO.

FE-2024

REV

SCALE: 1:50

SHEET 3 OF 6



AprilTag 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 SPEAKERS. 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. Distances are measured to the center of the tag.

ID	X	Y	Z	Rotation
1	593.68	9.68	53.38	120°
2	637.21	34.79	53.38	120°
3	652.73	196.17	57.13	180°
4	652.73	218.42	57.13	180°
5	578.77	323.00	53.38	270°
6	72.5	323.00	53.38	270°
7	-1.50	218.42	57.13	0°
8	-1.50	196.17	57.13	0°
9	14.02	34.79	53.38	60°
10	57.54	9.68	53.38	60°
11	468.69	146.19	52.00	300°
12	468.69	177.10	52.00	60°
13	441.74	161.62	52.00	180°
14	209.48	161.62	52.00	0°
15	182.73	177.10	52.00	120°
16	182.73	146.19	52.00	240°

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	JO	12/21/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION



TITLE: **2024 Field Layout and Marking**

SIZE DWG. NO. REV

C FE-2024

SCALE: 1:45 SHEET 4 OF 6

4

3

2

1

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D

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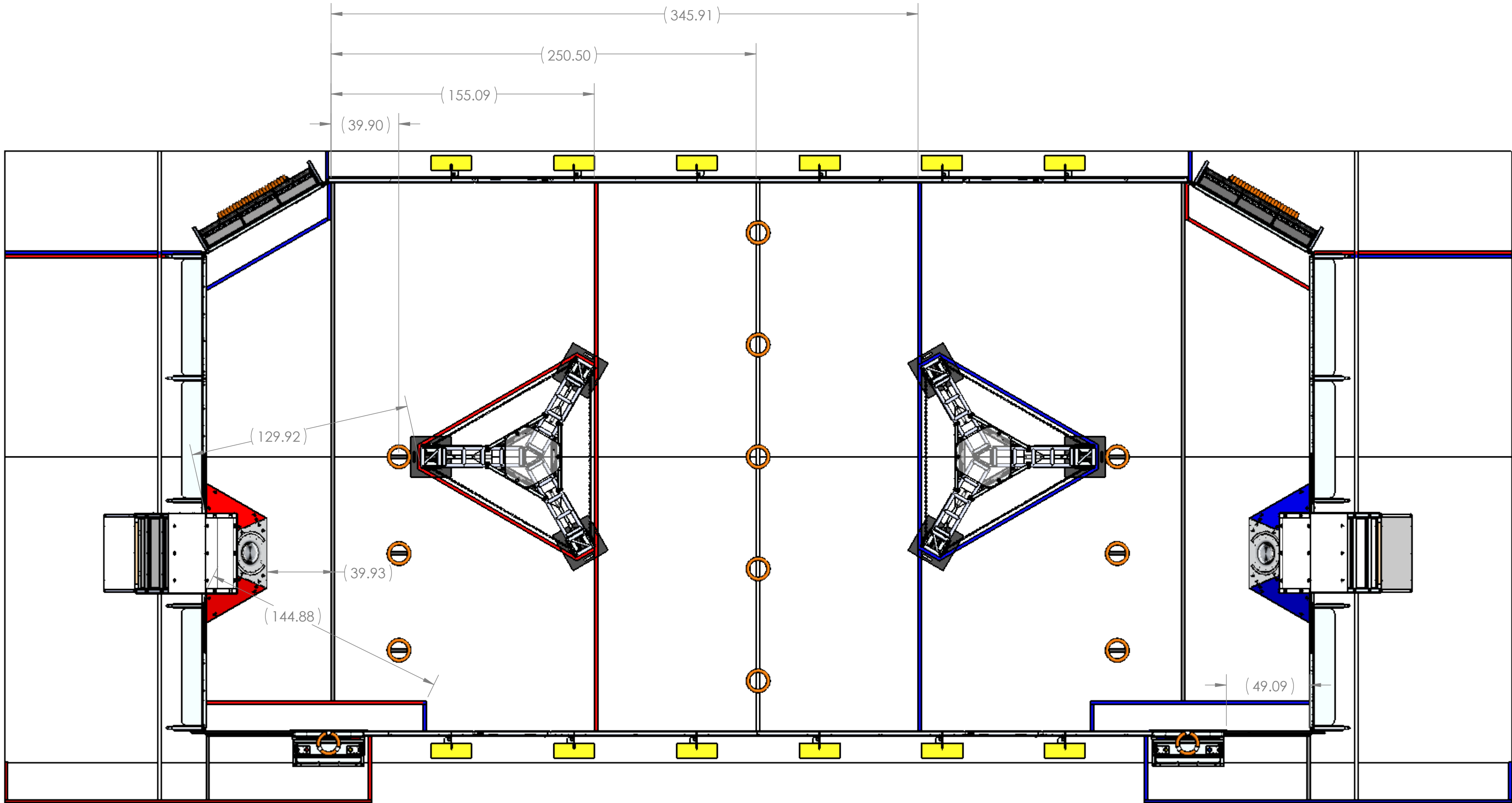
C

B

B

A

A



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

DRAWN

NAME

DF

DATE

12/21/2023

PROPRIETARY AND CONFIDENTIAL

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PROHIBITED.

COMMENTS:

REMOVE ALL BURRS AND SHARP
EDGES.



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

2024 Field
Layout and
Marking

SIZE

DWG. NO.

REV

C

FE-2024

SCALE: 1:50

SHEET 5 OF 6

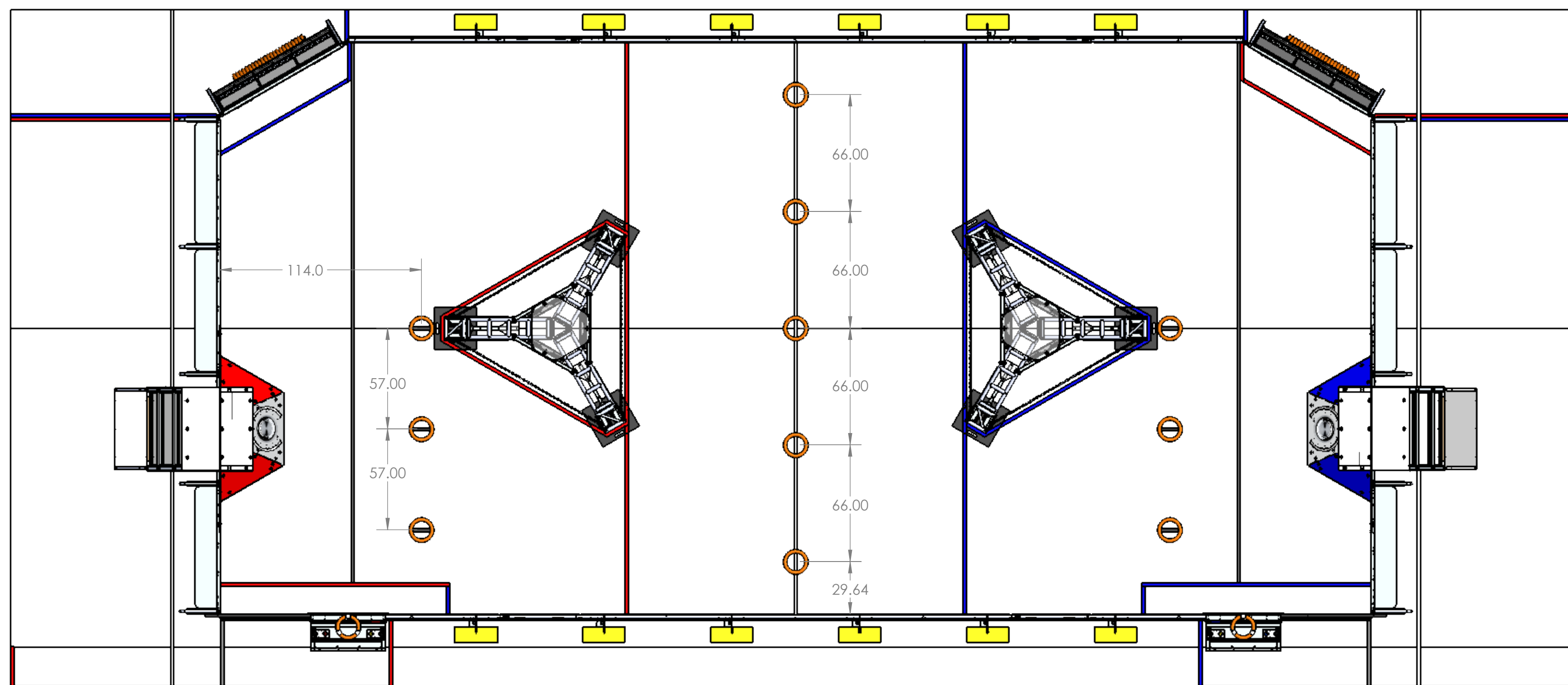
1

D



C

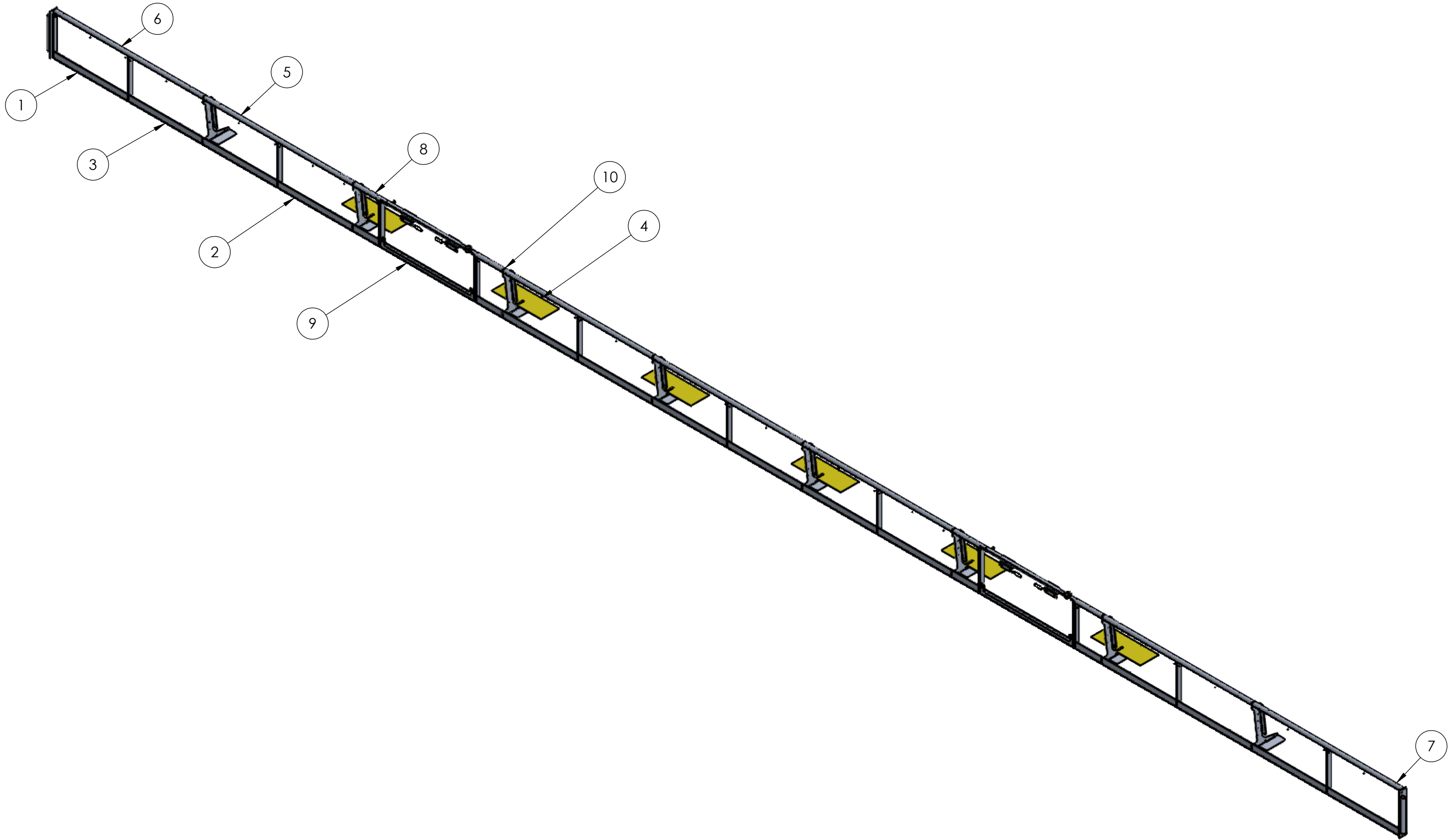
B

A





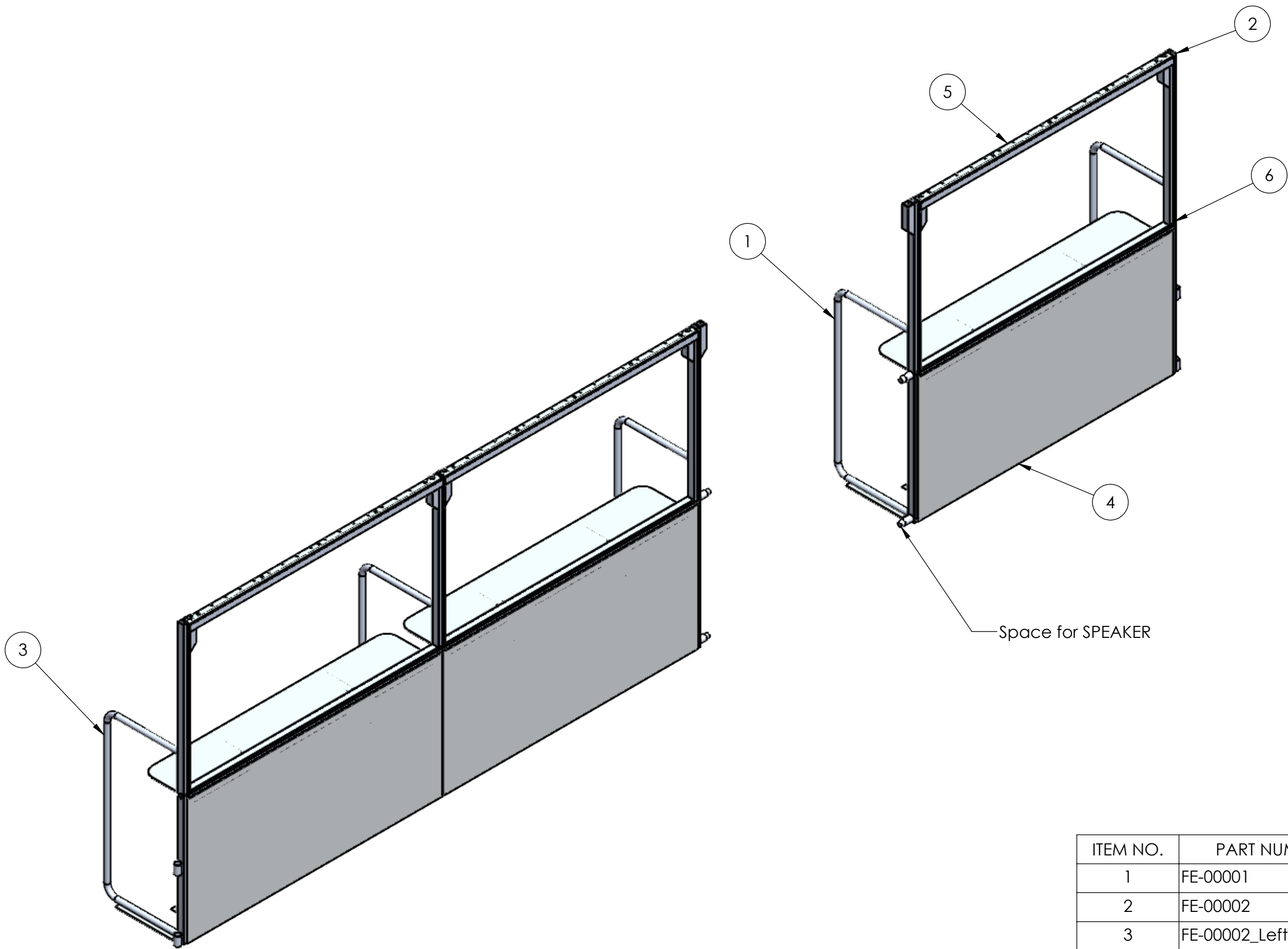
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DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$		DRAWN	DF	12/21/2023
MATERIAL/FINISH:		PROPRIETARY AND CONFIDENTIAL		
		THE INFORMATION CONTAINED IN THIS DRAWING IS 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: 2024 Field Layout and Marking		
SIZE	DWG. NO.	REV
C	FE-2024	
SCALE: 1:50		SHEET 6 OF 6



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00008	Field Plastic "A"	2
2	FE-00009	Field Plastic "B"	4
3	FE-00010	Field Plastic "C"	4
4	FE-00015	Trip Guard	6
5	FE-00022	Field Rail Assy - Mid	5
6	FE-00023	Field Rail Assy - Left	1
7	FE-00024	Field Rail Assy - Right	1
8	FE-00029	Field Gate, Assembly	2
9	FE-00047	Gate Plastic Assembly	2
10	FE-00050	Outrigger	8

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>	
	DRAWN	JO	12/21/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.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.			TITLE: Side Border	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.
C				FE-2024-02	
DO NOT SCALE DRAWING				SCALE: 1:30	SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00001	Drivers Station Support	3
2	FE-00002	Corner Supports, Right	1
3	FE-00002_Left	Corner Supports, Left	1
4	FE-00004	End Panel	3
5	FE-00007	Field Top Rail	3
6	FE-00012	Drivers Station Acrylic	3

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	JO	12/21/2023

PROPRIETARY AND CONFIDENTIAL

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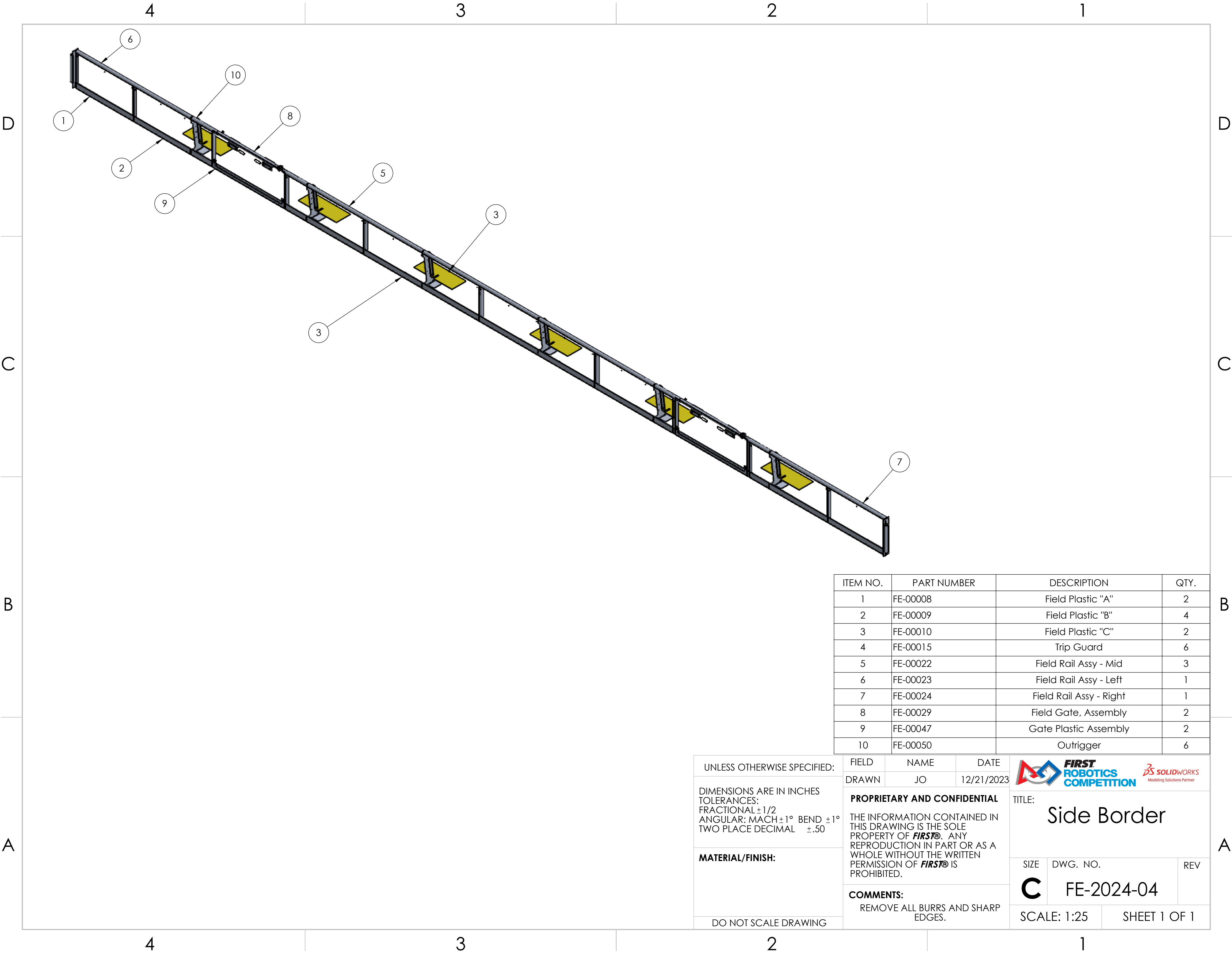
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
End Wall

SIZE	DWG. NO.	REV
C	FE-2024-03	

SCALE: 1:20 SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00008	Field Plastic "A"	2
2	FE-00009	Field Plastic "B"	4
3	FE-00010	Field Plastic "C"	2
4	FE-00015	Trip Guard	6
5	FE-00022	Field Rail Assy - Mid	3
6	FE-00023	Field Rail Assy - Left	1
7	FE-00024	Field Rail Assy - Right	1
8	FE-00029	Field Gate, Assembly	2
9	FE-00047	Gate Plastic Assembly	2
10	FE-00050	Outrigger	6

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
DRAWN



NAME
JO

DATE
12/21/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:

Side Border

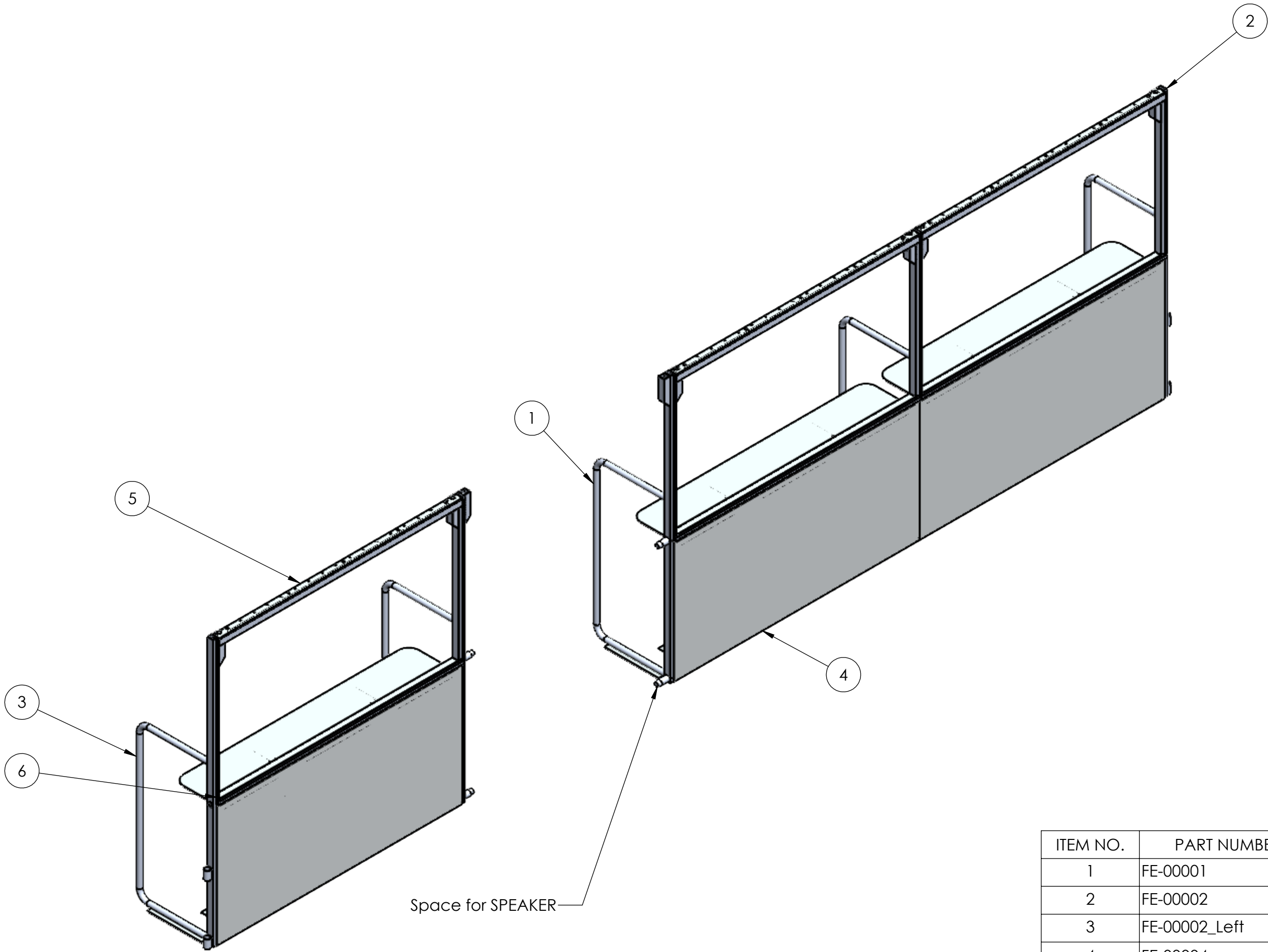
SIZE
C

DWG. NO.
FE-2024-04

REV

SCALE: 1:25

SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00001	Drivers Station Support	3
2	FE-00002	Corner Supports, Right	1
3	FE-00002_Left	Corner Supports, Left	1
4	FE-00004	End Panel	3
5	FE-00007	Field Top Rail	3
6	FE-00012	Drivers Station Acrylic	3

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

JO



12/21/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



TITLE:

End Wall

SIZE

DWG. NO.

REV

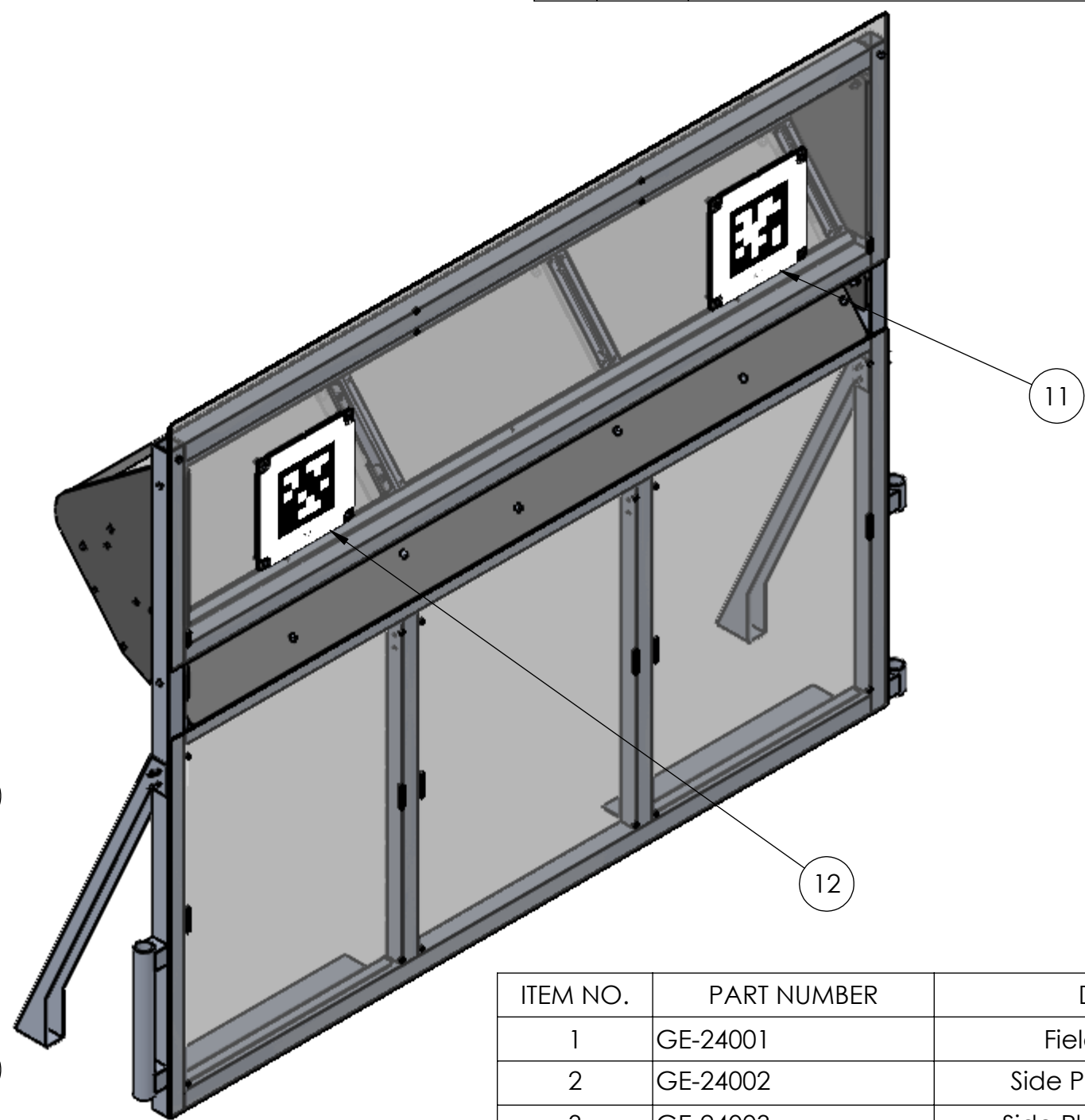
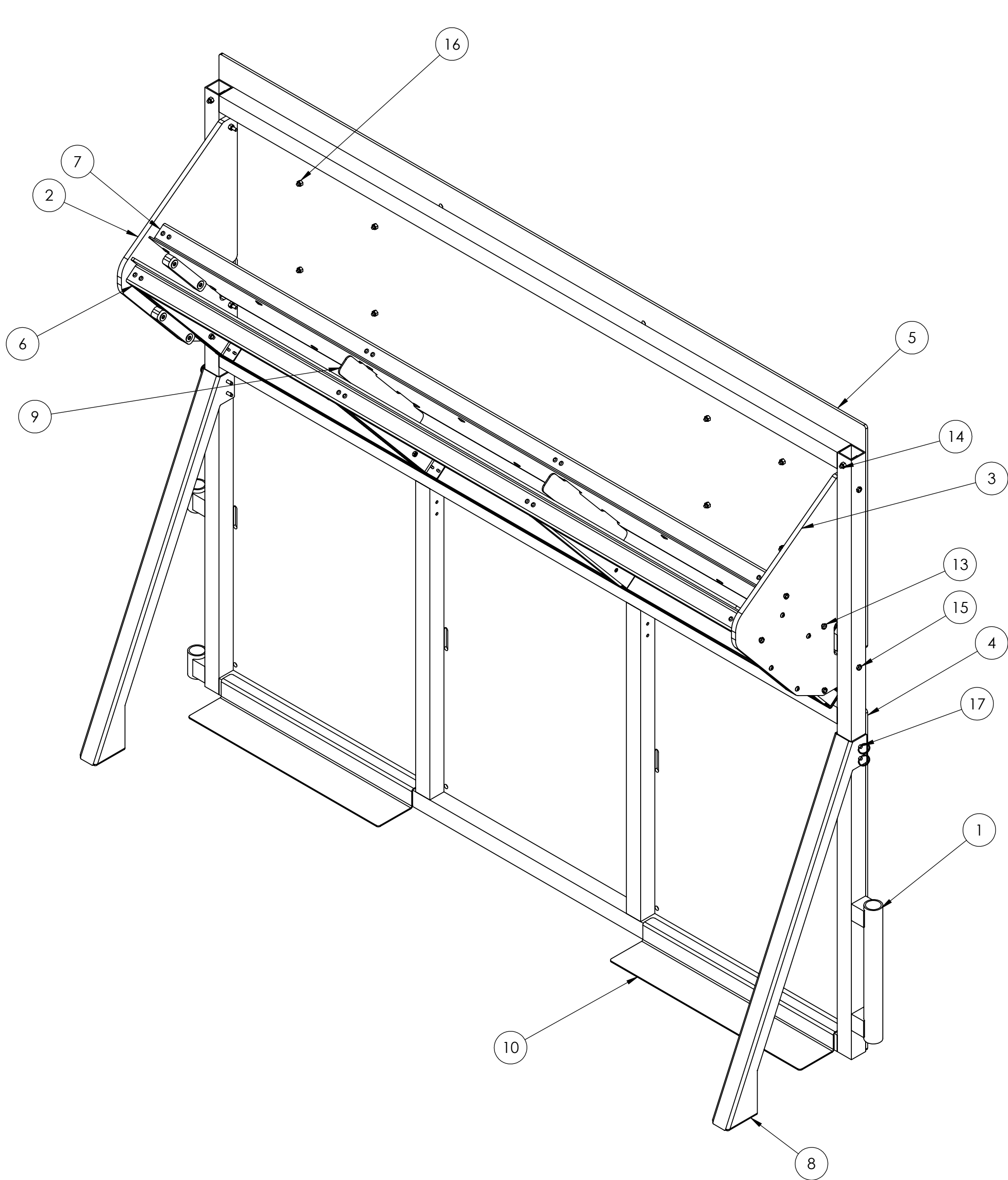
C

FE-2024-05

SCALE: 1:20

SHEET 1 OF 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
2-B1, 2-B2	A	Sheet 2 added	12/19/2023	JO



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24001	Field Border Frame	1
2	GE-24002	Side Plate Assembly Left	1
3	GE-24003	Side Plate Assembly Right	1
4	GE-24006	Lower Front Plastic	1
5	GE-24007	Upper Front Plastic	1
6	GE-24008	Chute Ramp Assembly	1
7	GE-24013	Chute Cover Assembly	1
8	GE-24017	Frame Support Leg	2
9	GE-24018	Chute Divider	2
10	FE-00070	Anchor	2
11	FE-00083-ID1	AprilTag	1
12	FE-00083-ID2	AprilTag	1
13	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	20
14	Configurable Bolt	2.5" Long 1/4-20 Hex Head Bolt	2
15	Configurable Bolt	3" Long 1/4-20 Hex Head Bolt	4
16	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	14
17	98320A143	Zinc-Plated Steel Ring-Grip Quick-Release Pin	4

Notes:
Blue Source shown above, Red Source has 1 flipped and different ID numbers on April Tags

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	JO	12/18/2023

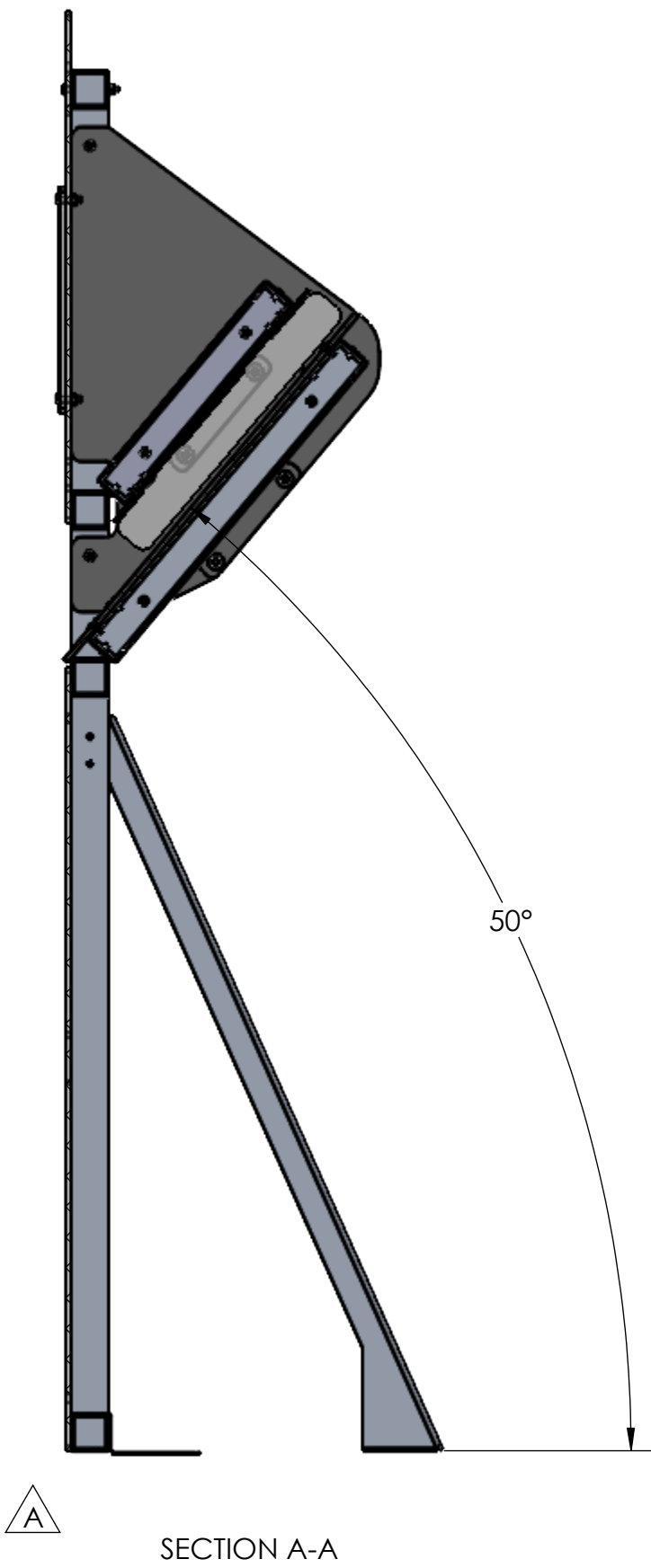
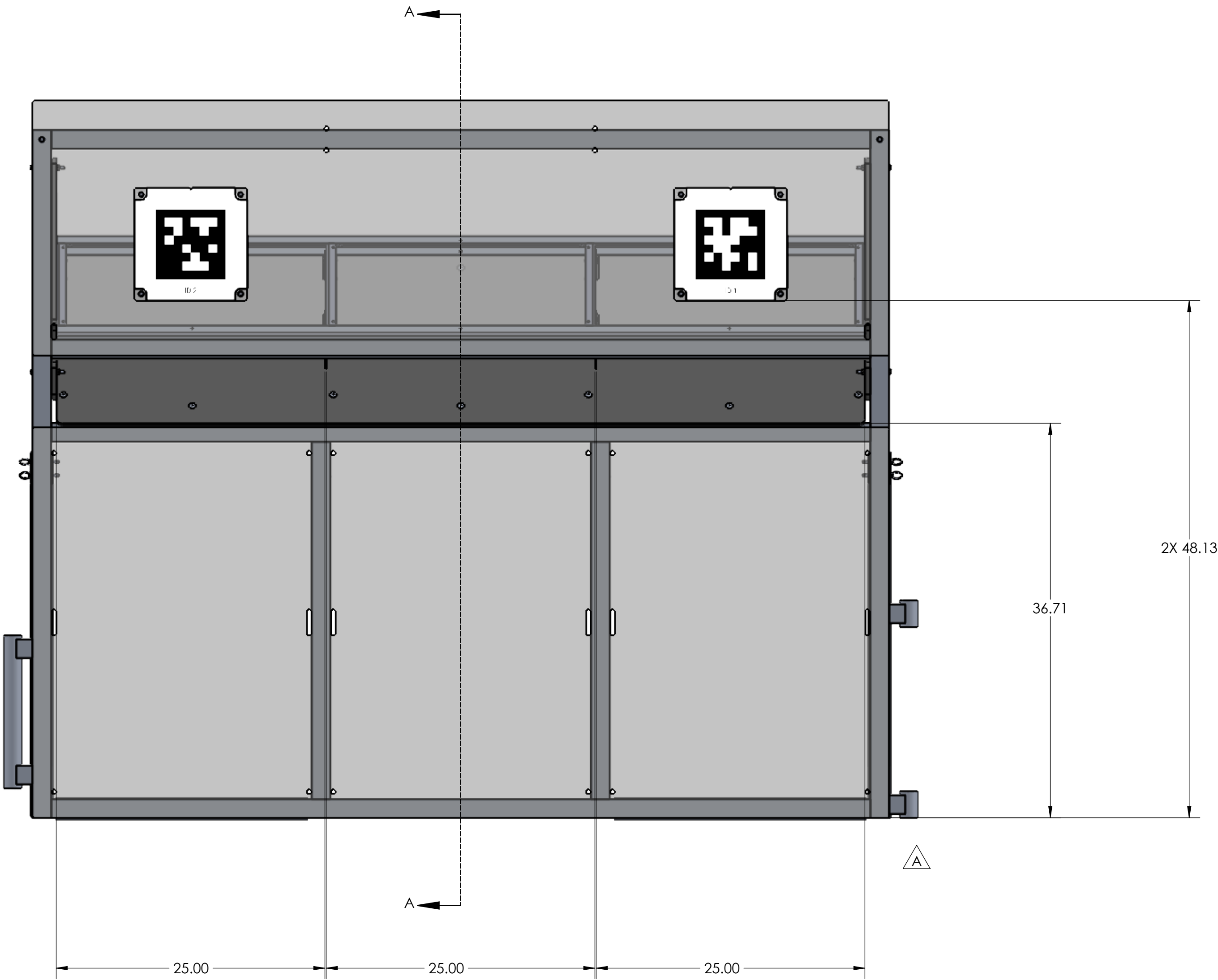
PROPRIETARY AND CONFIDENTIAL

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

TITLE: Source		
SIZE C	DWG. NO. GE-24000	REV A
SCALE: 1:8		SHEET 1 OF 7

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
-	-	See Sheet1	-	-



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	JO	12/18/2023

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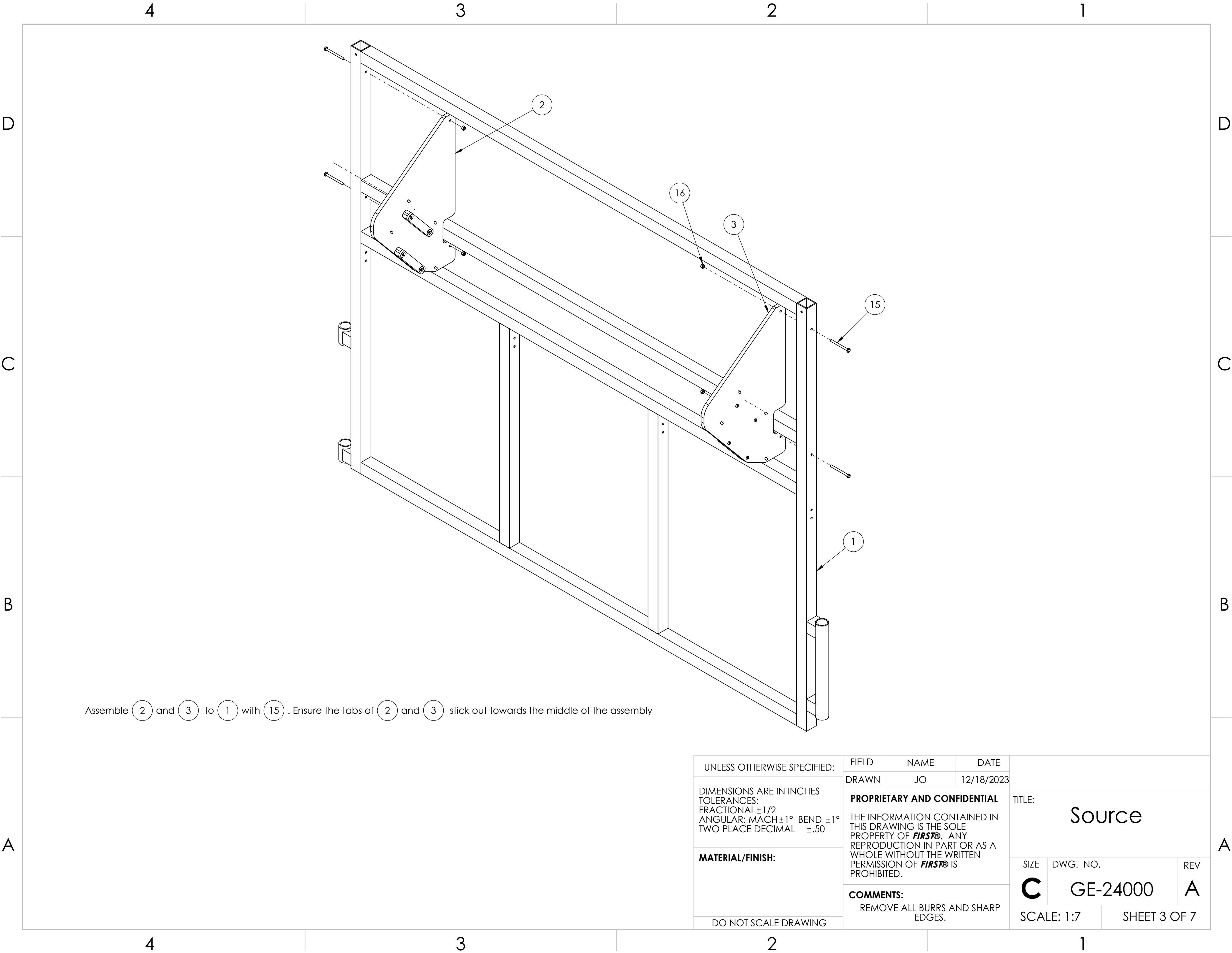
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



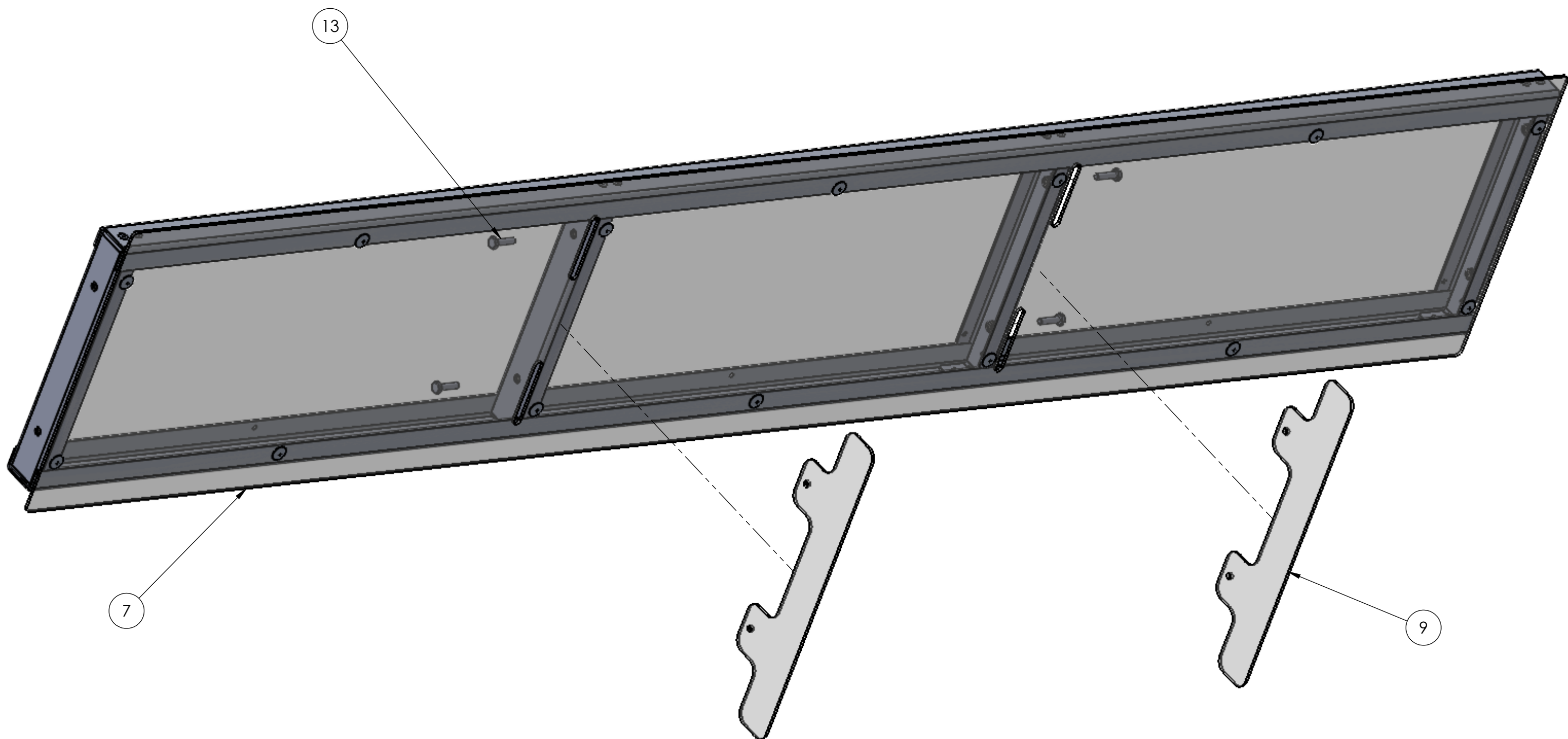
TITLE:
Source

SIZE	DWG. NO.	REV
C	GE-24000	A

SCALE: 1:8 SHEET 2 OF 7



UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	TITLE:		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50		DRAWN	JO	12/18/2023			
MATERIAL/FINISH:		PROPRIETARY AND CONFIDENTIAL			Source		
		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:					
DO NOT SCALE DRAWING		REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
					C	GE-24000	A
					SCALE: 1:7		SHEET 3 OF 7



Slide (9) through the slots in (7) and attach with (13).

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

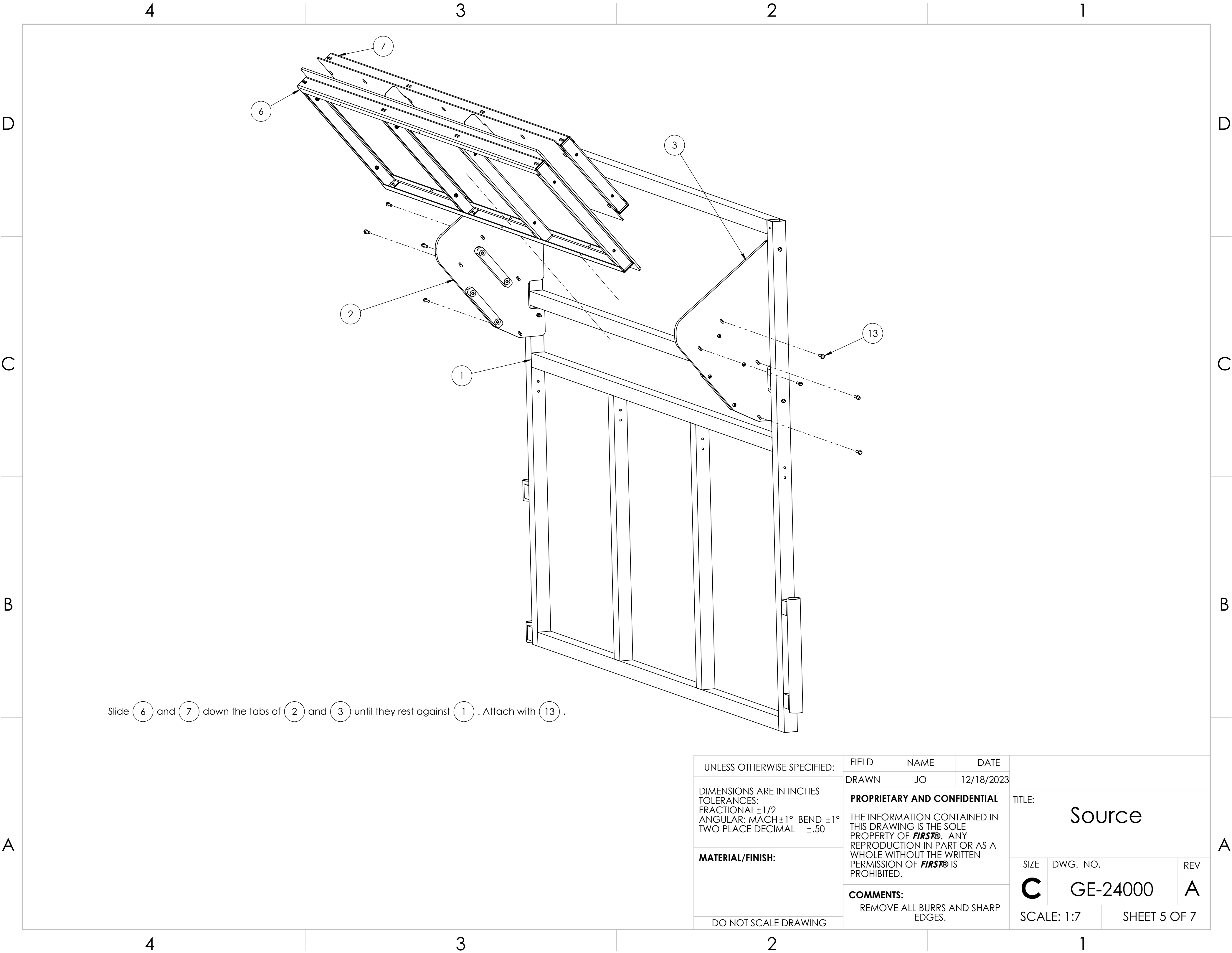
FIELD	NAME	DATE
DRAWN	JO	12/18/2023

PROPRIETARY AND CONFIDENTIAL
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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

TITLE: Source

SIZE	DWG. NO.	REV
C	GE-24000	A



Slide 6 and 7 down the tabs of 2 and 3 until they rest against 1 . Attach with 13 .

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	TITLE:	
		DRAWN	JO	12/18/2023		
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.			Source	
MATERIAL/FINISH:		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24000
DO NOT SCALE DRAWING					REV A	
					SCALE: 1:7	
					SHEET 5 OF 7	

4

3

2

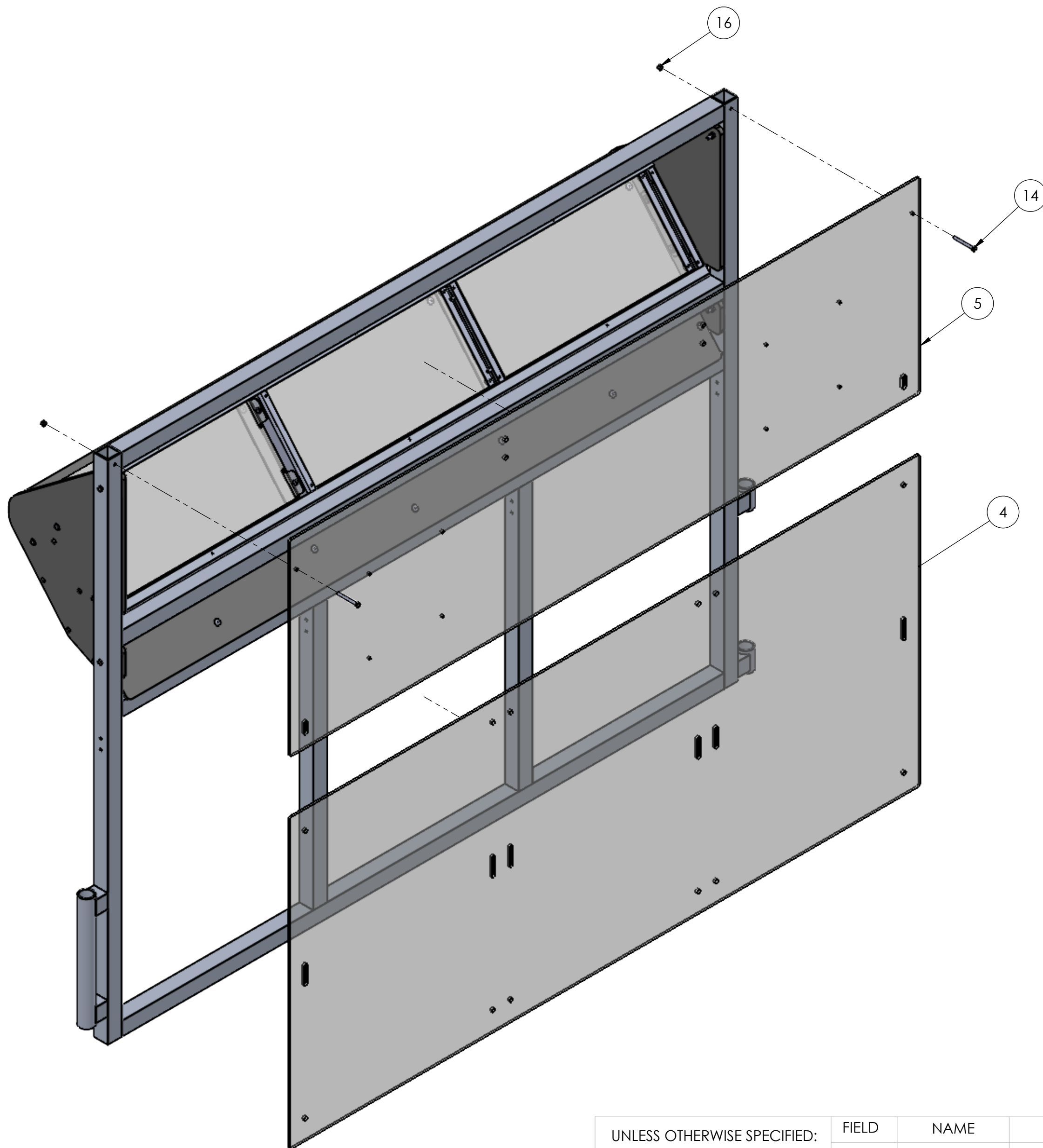
1

D

C

B

A



Attach (5) to the assembly using (14) and (16), then attach with 4x 120lb Cable Ties.

Attach (4) to the assembly with 12x 120 lb Cable Ties

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	TITLE:		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50		DRAWN	JO	12/18/2023			
		PROPRIETARY AND CONFIDENTIAL			Source		
		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:			SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING		REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24000	A
					SCALE: 1:8		SHEET 6 OF 7

4

3

2

1

4

3

2

1

D

D

C

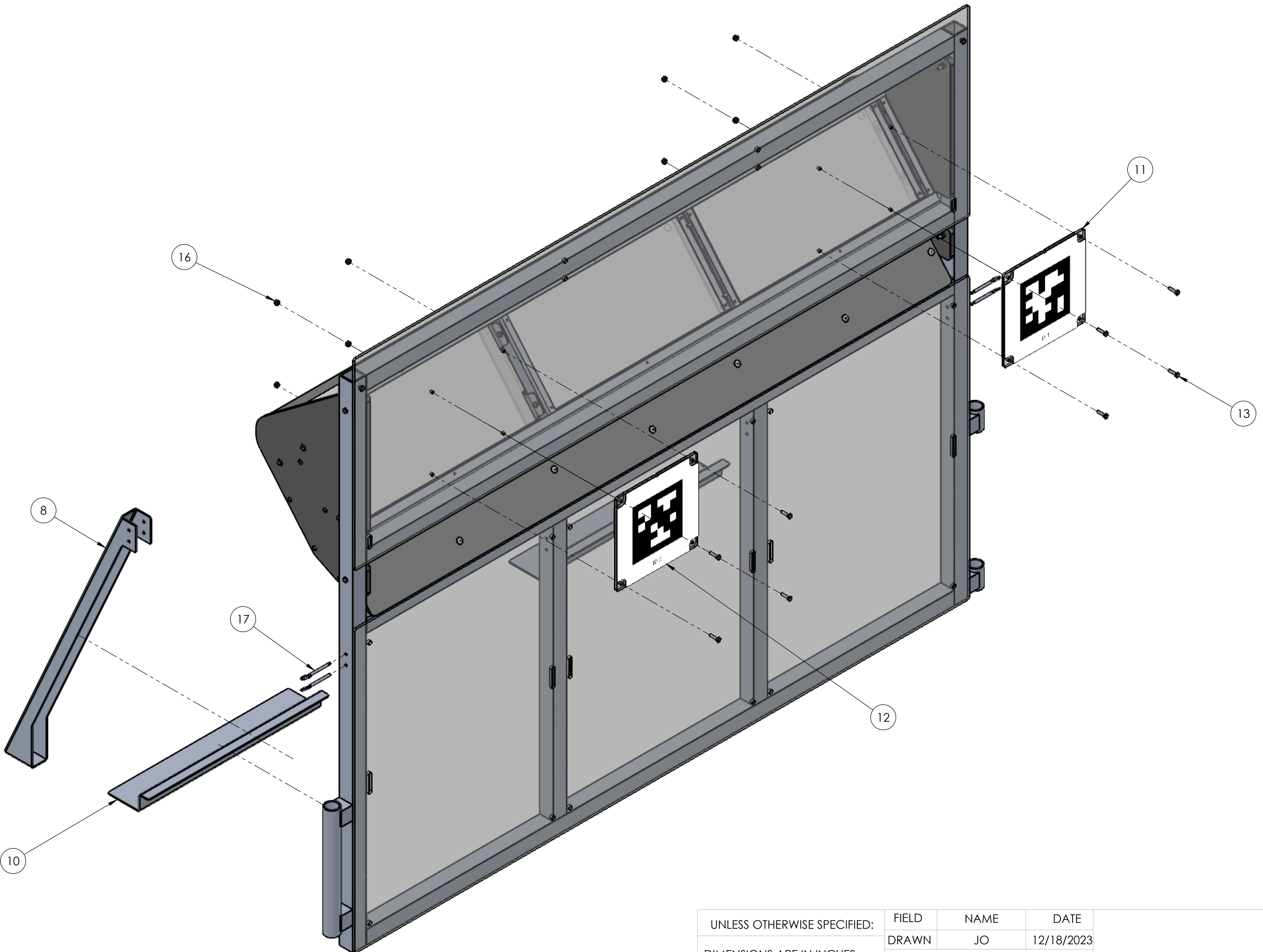
C

B

B

A

A

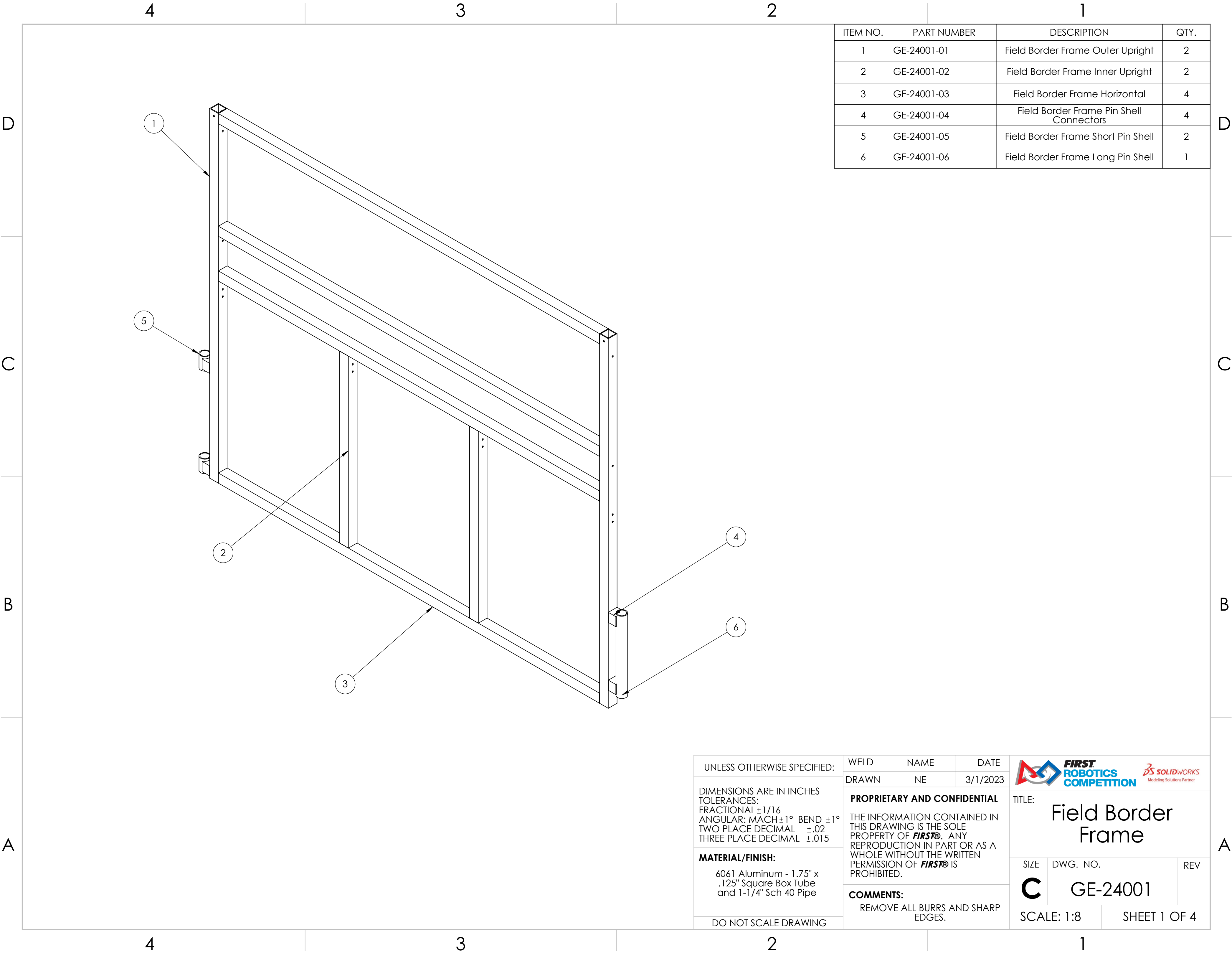


Attach (8) to the assembly with (17).

Slide (10) into place along floor and over the assembly.

Attach the correct (11) and (12) with (13) and (16).

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	TITLE: Source		
	DRAWN	JO	12/18/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL			SIZE C		
	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:			DWG. NO.	
REMOVE ALL BURRS AND SHARP EDGES.			GE-24000		A	
DO NOT SCALE DRAWING				SCALE: 1:6.5		SHEET 7 OF 7



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24001-01	Field Border Frame Outer Upright	2
2	GE-24001-02	Field Border Frame Inner Upright	2
3	GE-24001-03	Field Border Frame Horizontal	4
4	GE-24001-04	Field Border Frame Pin Shell Connectors	4
5	GE-24001-05	Field Border Frame Short Pin Shell	2
6	GE-24001-06	Field Border Frame Long Pin Shell	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 $\pm .02$
THREE PLACE DECIMAL $\pm .015$

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

DO NOT SCALE DRAWING

WELD

NAME

DATE

DRAWN



NE

3/1/2023

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Field Border Frame

SIZE

DWG. NO.

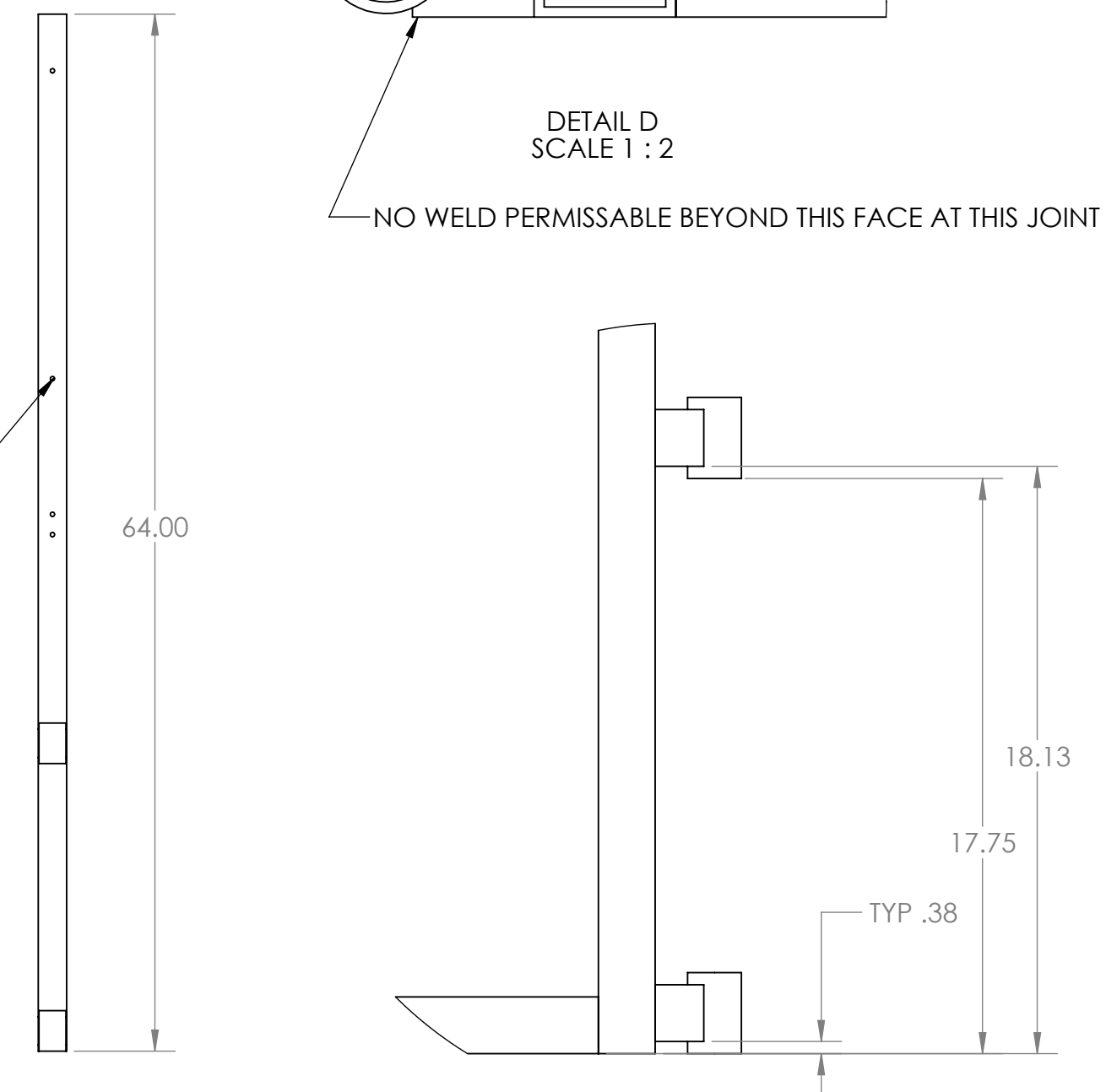
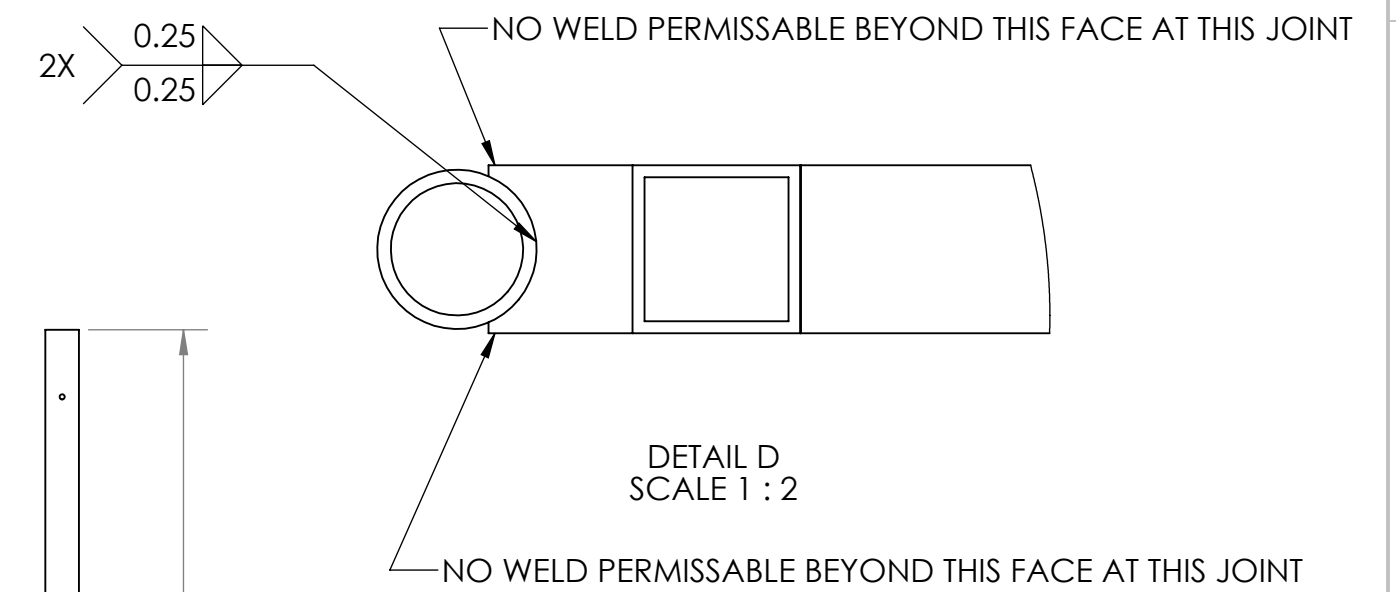
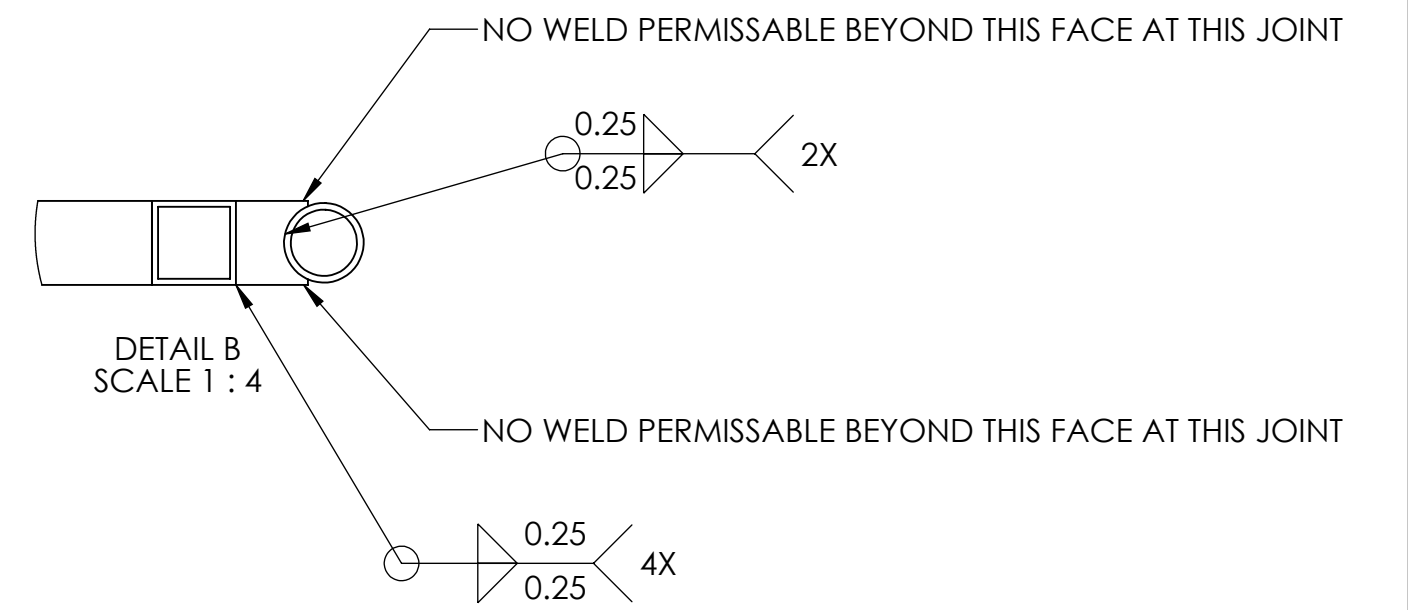
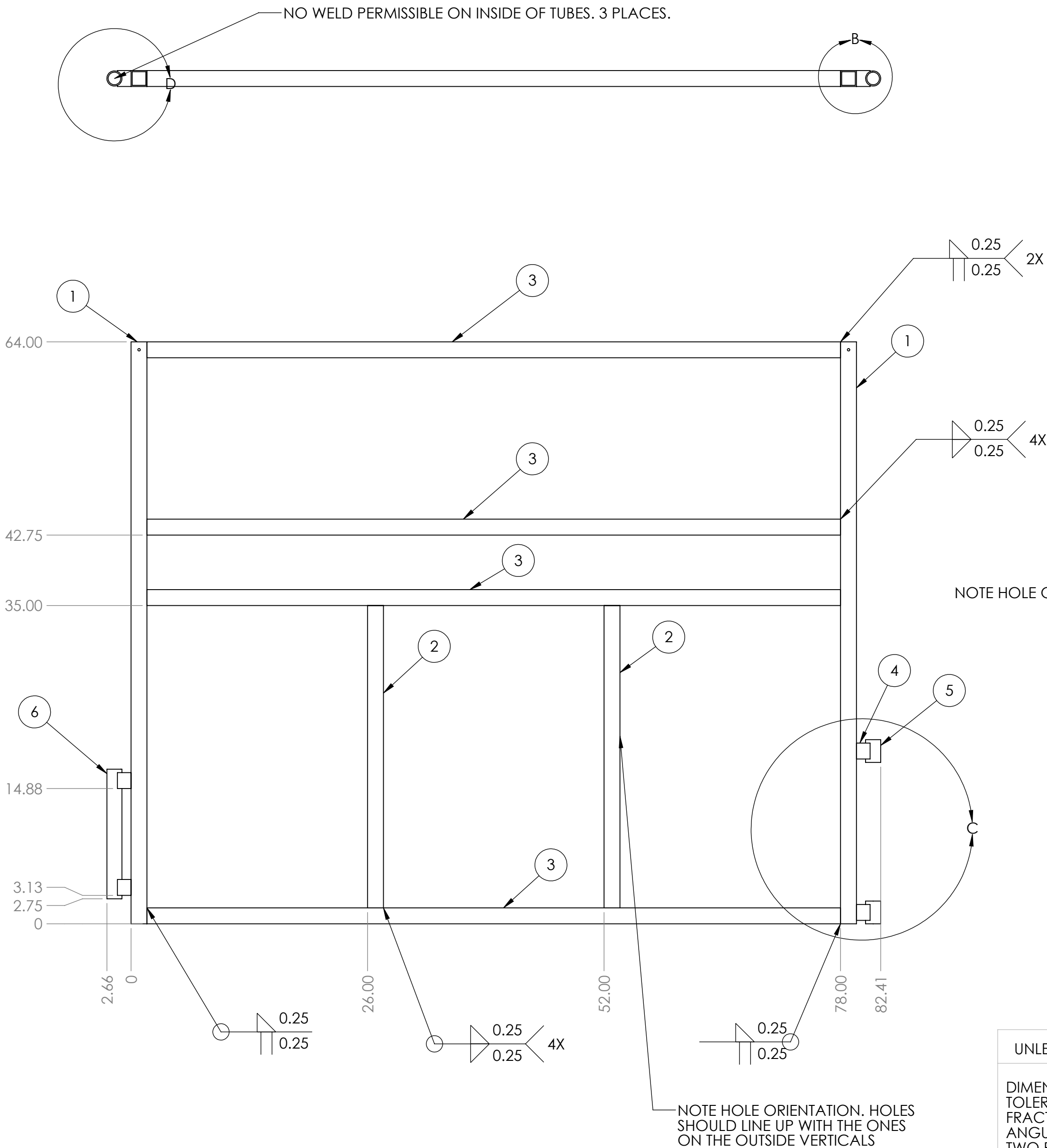
REV



C

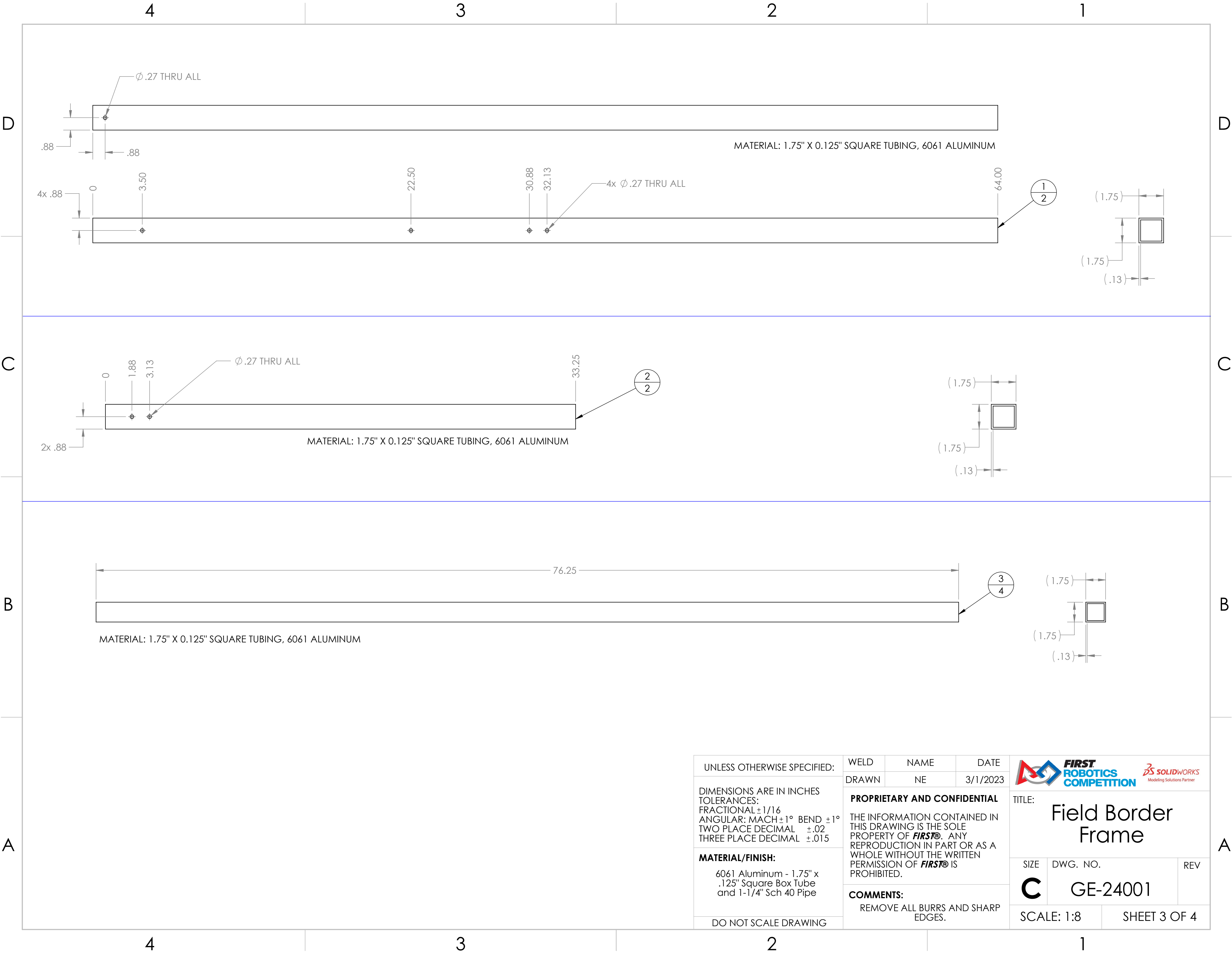
GE-24001

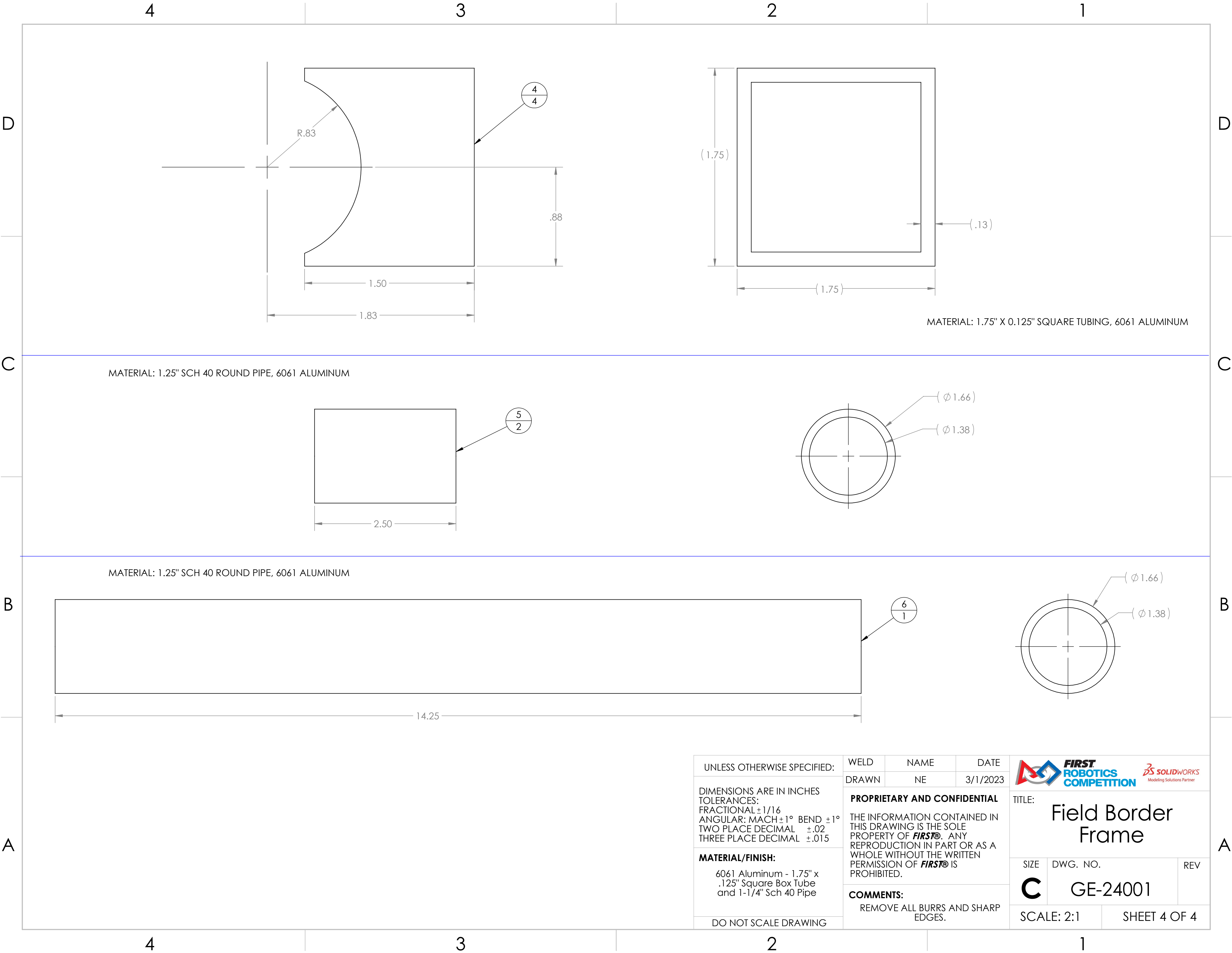
SCALE: 1:8

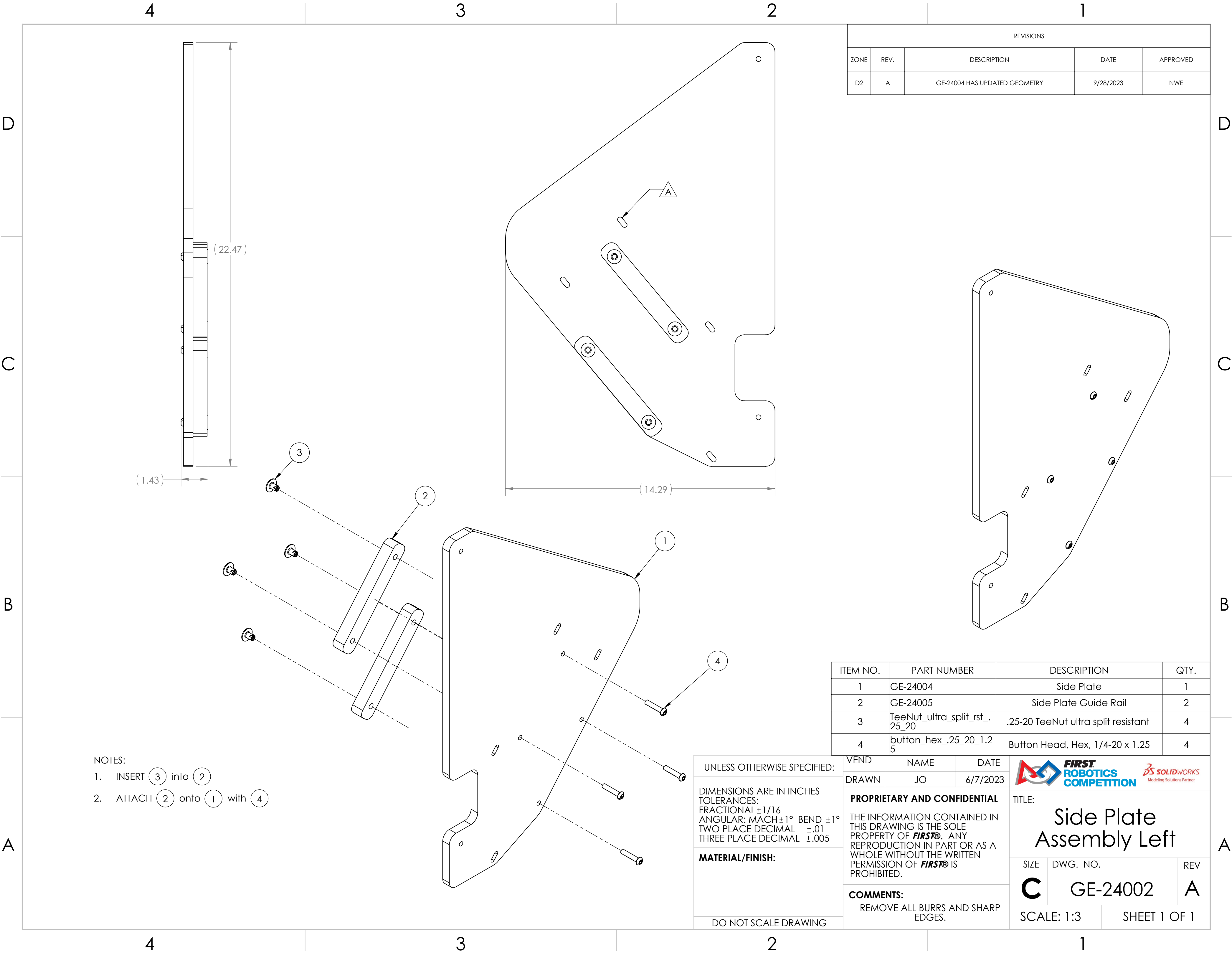
SHEET 1 OF 4



UNLESS OTHERWISE SPECIFIED:		WELD	NAME	DATE	 FIRST ROBOTICS COMPETITION		 SOLIDWORKS Modelling Solutions Partner	
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 $\pm .015$		DRAWN	NE	3/1/2023	TITLE: <h1>Field Border Frame</h1>			
MATERIAL/FINISH: 6061 Aluminum - 1.75" x .125" Square Box Tube and 1-1/4" Sch 40 Pipe		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.			SIZE C	DWG. NO. GE-24001		REV
					SCALE: 1:10		SHEET 2 OF 4	







NOTES:

1. INSERT (3) into (2)
2. ATTACH (2) onto (1) with (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 $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:



DO NOT SCALE DRAWING

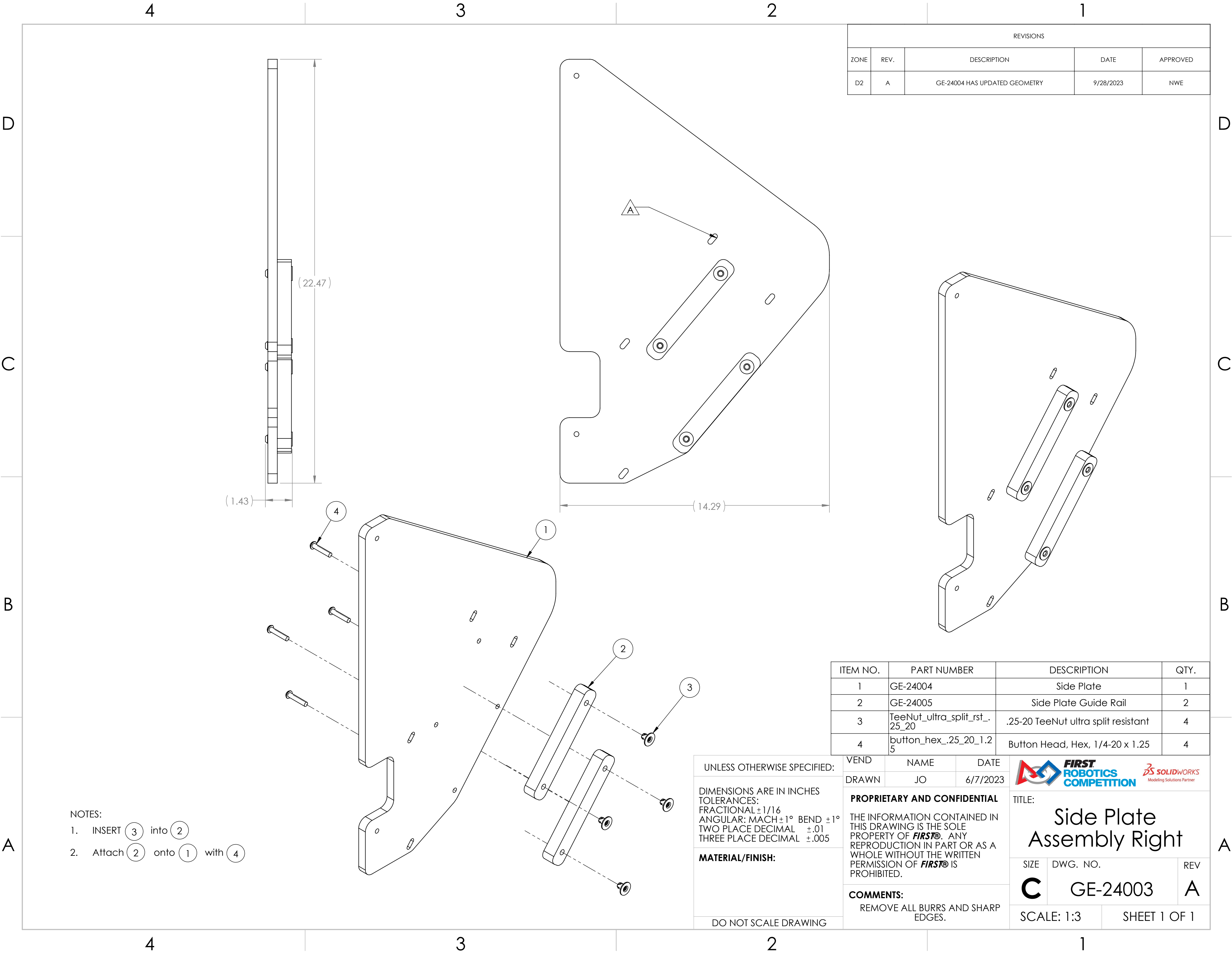
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24004	Side Plate	1
2	GE-24005	Side Plate Guide Rail	2
3	TeeNut_ultra_split_rst_.25_20	.25-20 TeeNut ultra split resistant	4
4	button_hex_.25_20_1.25	Button Head, Hex, 1/4-20 x 1.25	4

VEND	NAME	DATE
DRAWN	JO	6/7/2023

PROPRIETARY AND CONFIDENTIAL		
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COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

TITLE: Side Plate Assembly Left		
SIZE C	DWG. NO. GE-24002	REV A
SCALE: 1:3		SHEET 1 OF 1





REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
D2	A	GE-24004 HAS UPDATED GEOMETRY	9/28/2023	NWE

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24004	Side Plate	1
2	GE-24005	Side Plate Guide Rail	2
3	TeeNut_ultra_split_rst_.25_20	.25-20 TeeNut ultra split resistant	4
4	button_hex_.25_20_1.25	Button Head, Hex, 1/4-20 x 1.25	4

VEND	NAME	DATE
DRAWN	JO	6/7/2023



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

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

TITLE:

Side Plate
Assembly Right

SIZE

C

DWG. NO.

GE-24003

REV

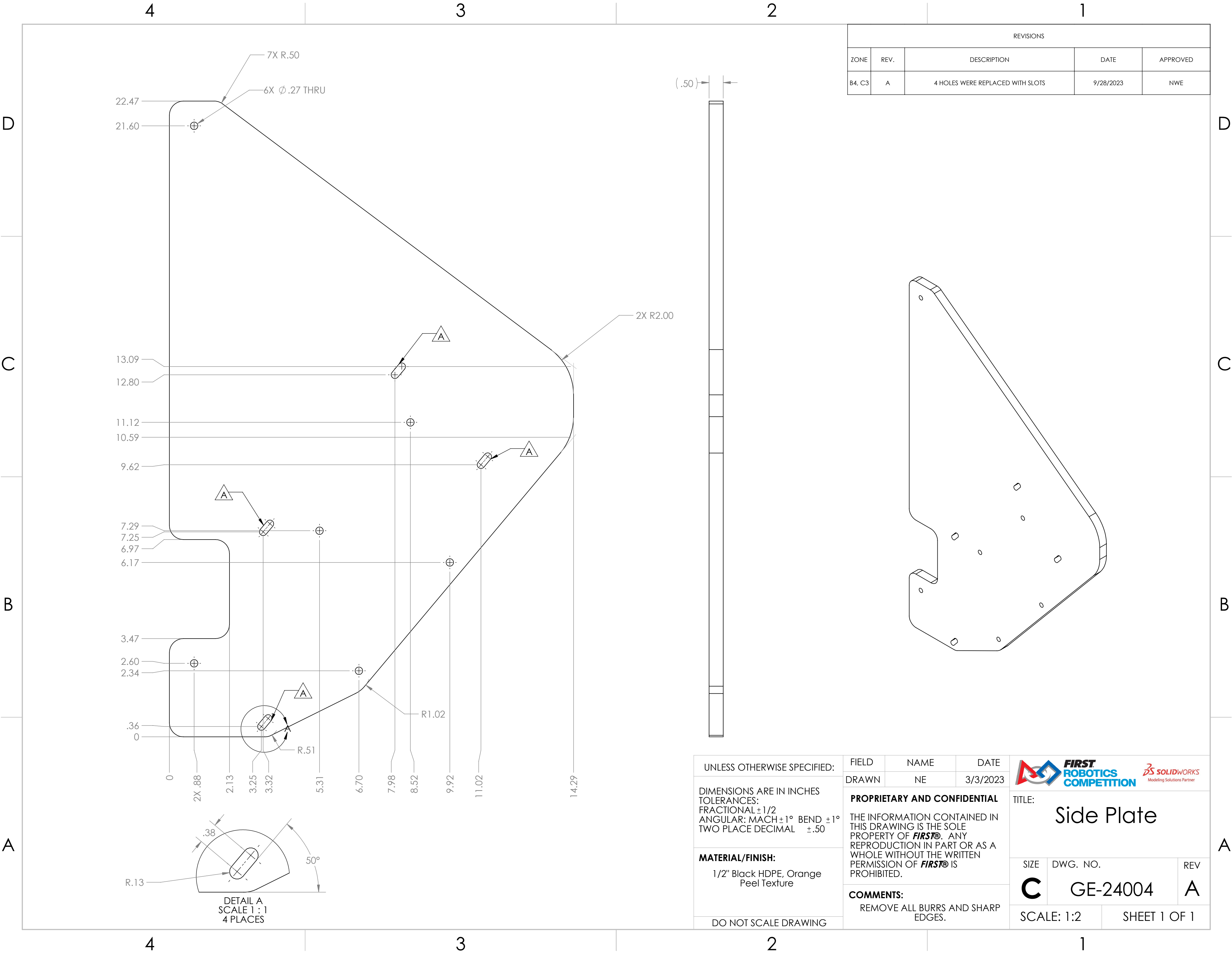
A

SCALE: 1:3

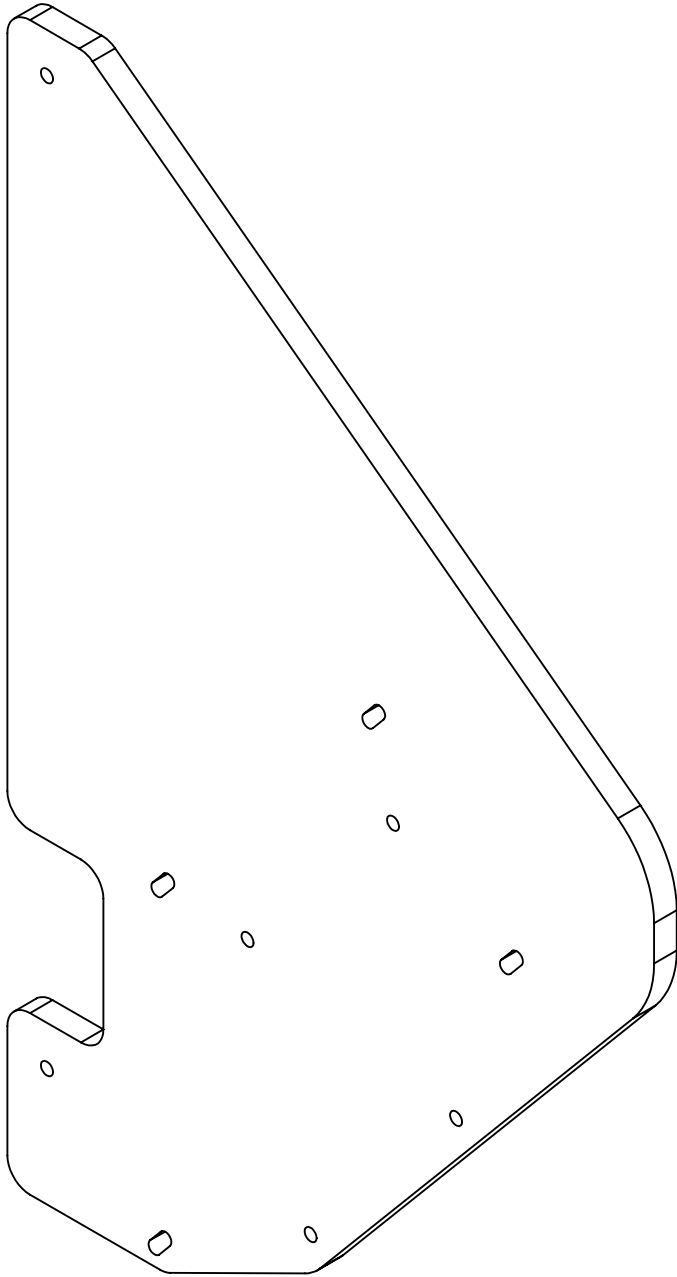
SHEET 1 OF 1



NOTES:

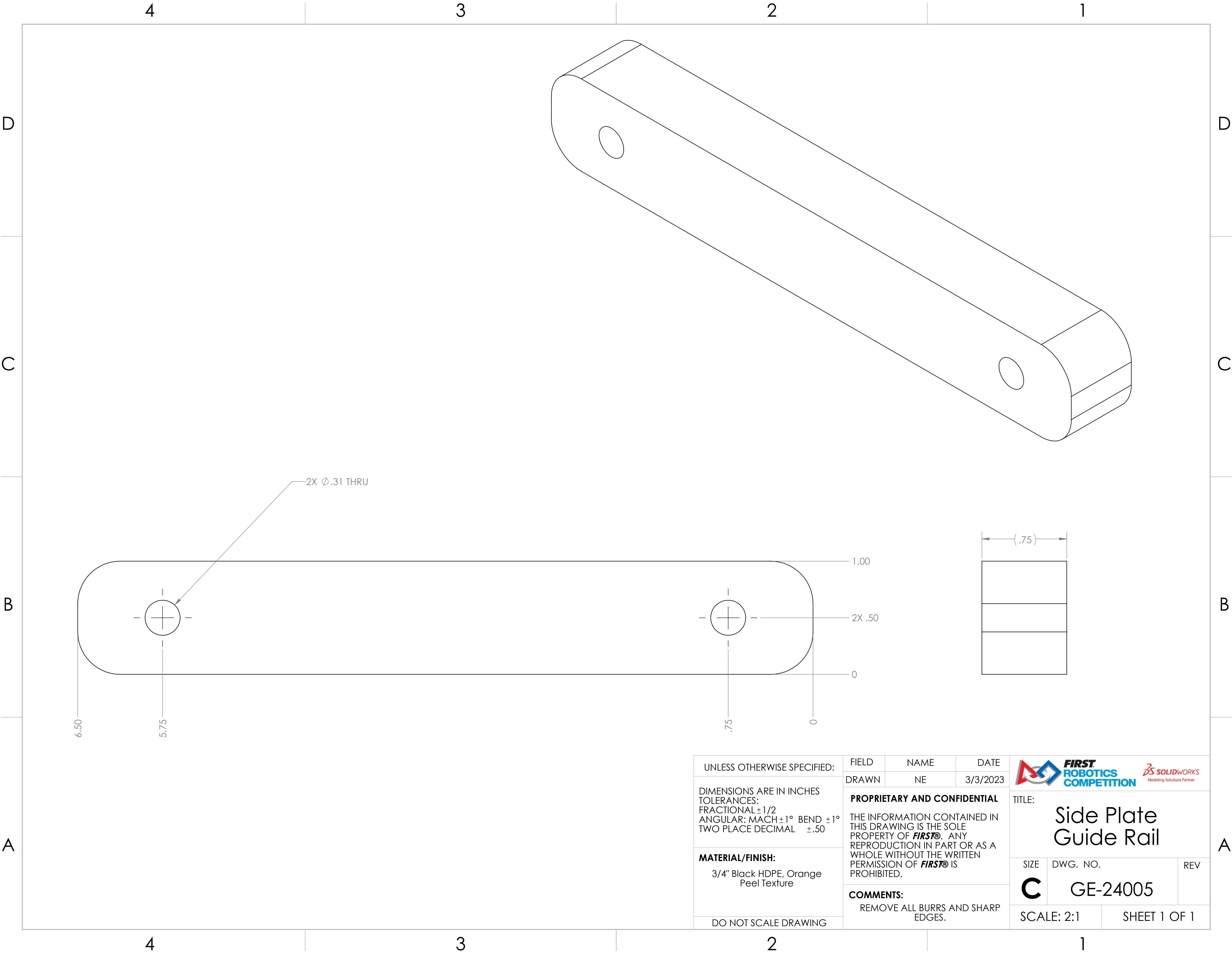
1. INSERT (3) into (2)
2. Attach (2) onto (1) with (4)





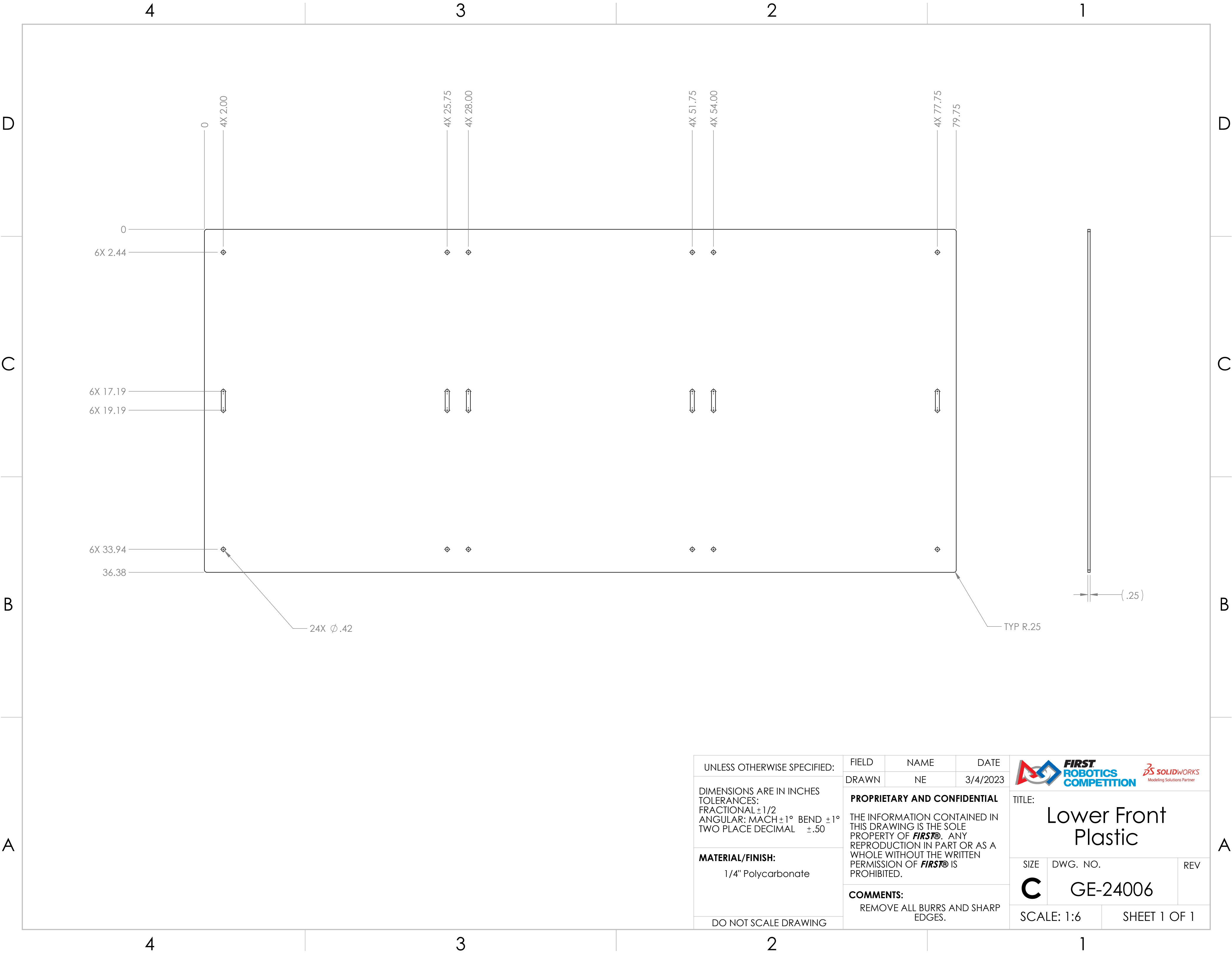
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B4, C3	A	4 HOLES WERE REPLACED WITH SLOTS	9/28/2023	NWE





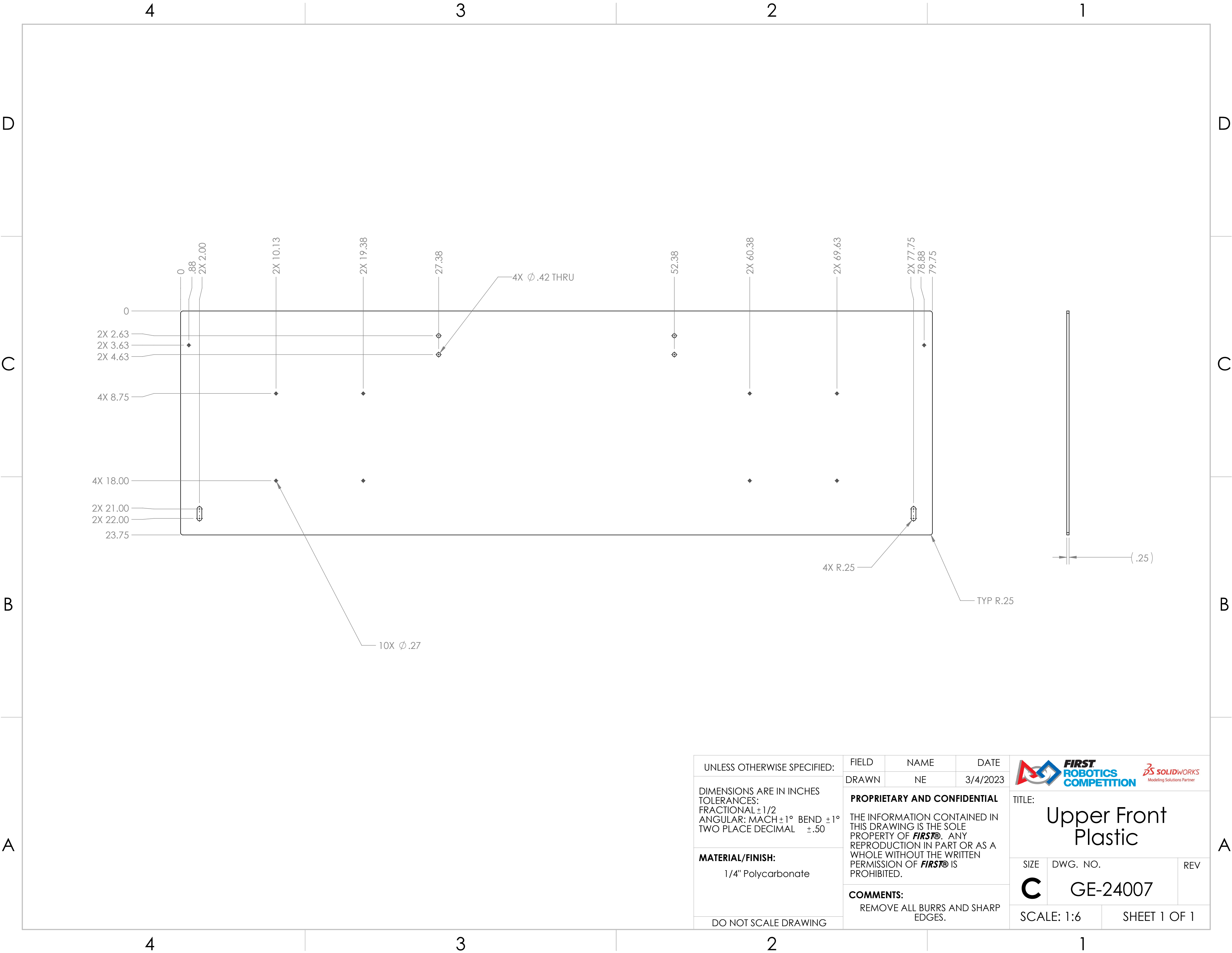
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$ MATERIAL/FINISH: 1/2" Black HDPE, Orange Peel Texture DO NOT SCALE DRAWING	FIELD	NAME	DATE	  TITLE: Side Plate		
	DRAWN	NE	3/3/2023			
	PROPRIETARY 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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24004	A
			SCALE: 1:2		SHEET 1 OF 1	





UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	NE	3/3/2023	TITLE: Side Plate Guide Rail			
MATERIAL/FINISH: 3/4" Black HDPE, Orange Peel Texture	PROPRIETARY AND CONFIDENTIAL			SIZE		DWG. NO.	REV
	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.			C		GE-24005	
DO NOT SCALE DRAWING	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 2:1		SHEET 1 OF 1	



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: 1/4" Polycarbonate DO NOT SCALE DRAWING	FIELD	NAME	DATE	<div></div> <div>TITLE: Lower Front Plastic</div>		
	DRAWN	NE	3/4/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24006	
SCALE: 1:6		SHEET 1 OF 1				



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>		
	DRAWN	NE	3/4/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.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.			TITLE: Upper Front Plastic		
MATERIAL/FINISH: 1/4" Polycarbonate	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	GE-24007	
DO NOT SCALE DRAWING				SCALE: 1:6		SHEET 1 OF 1

D

C

B

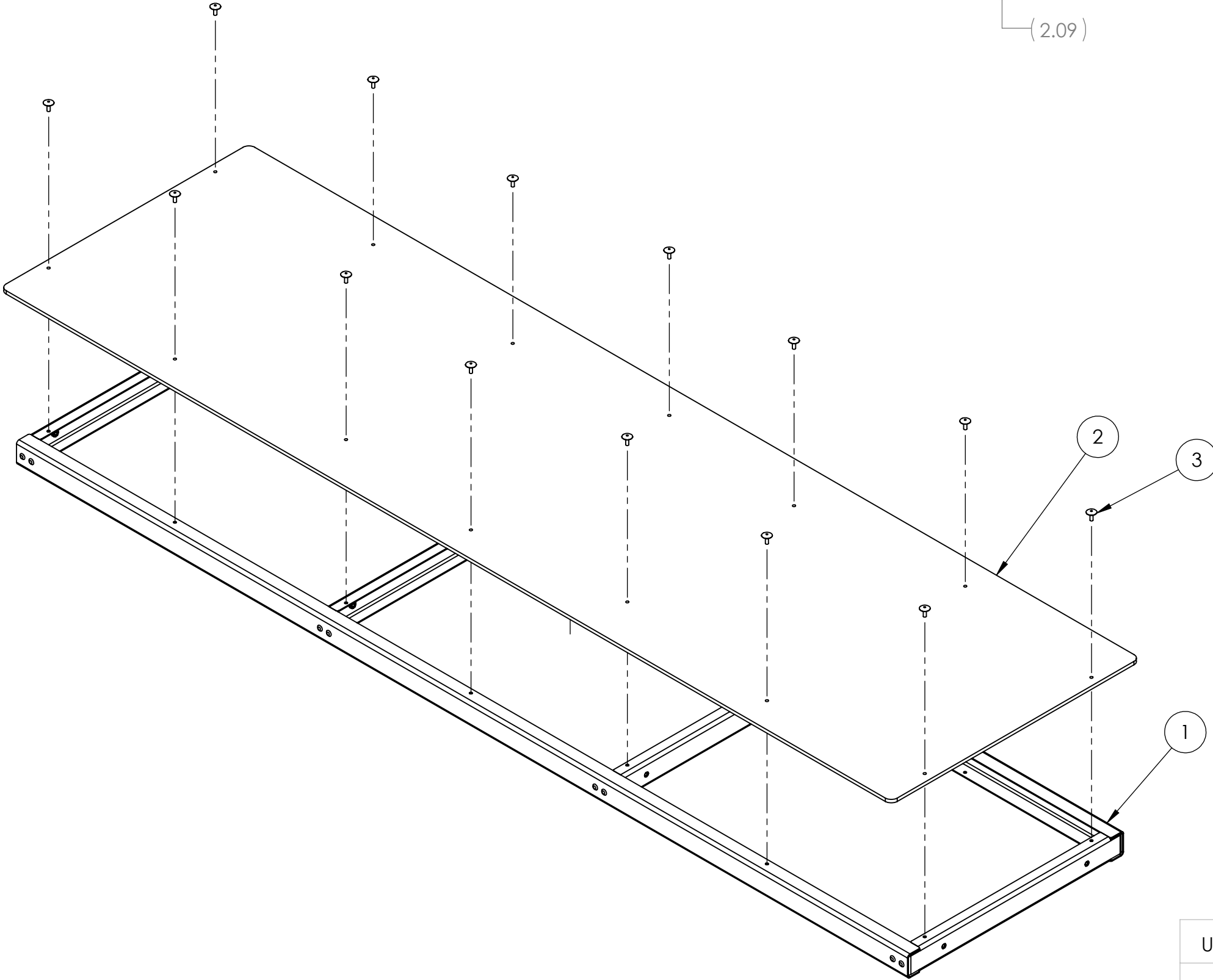
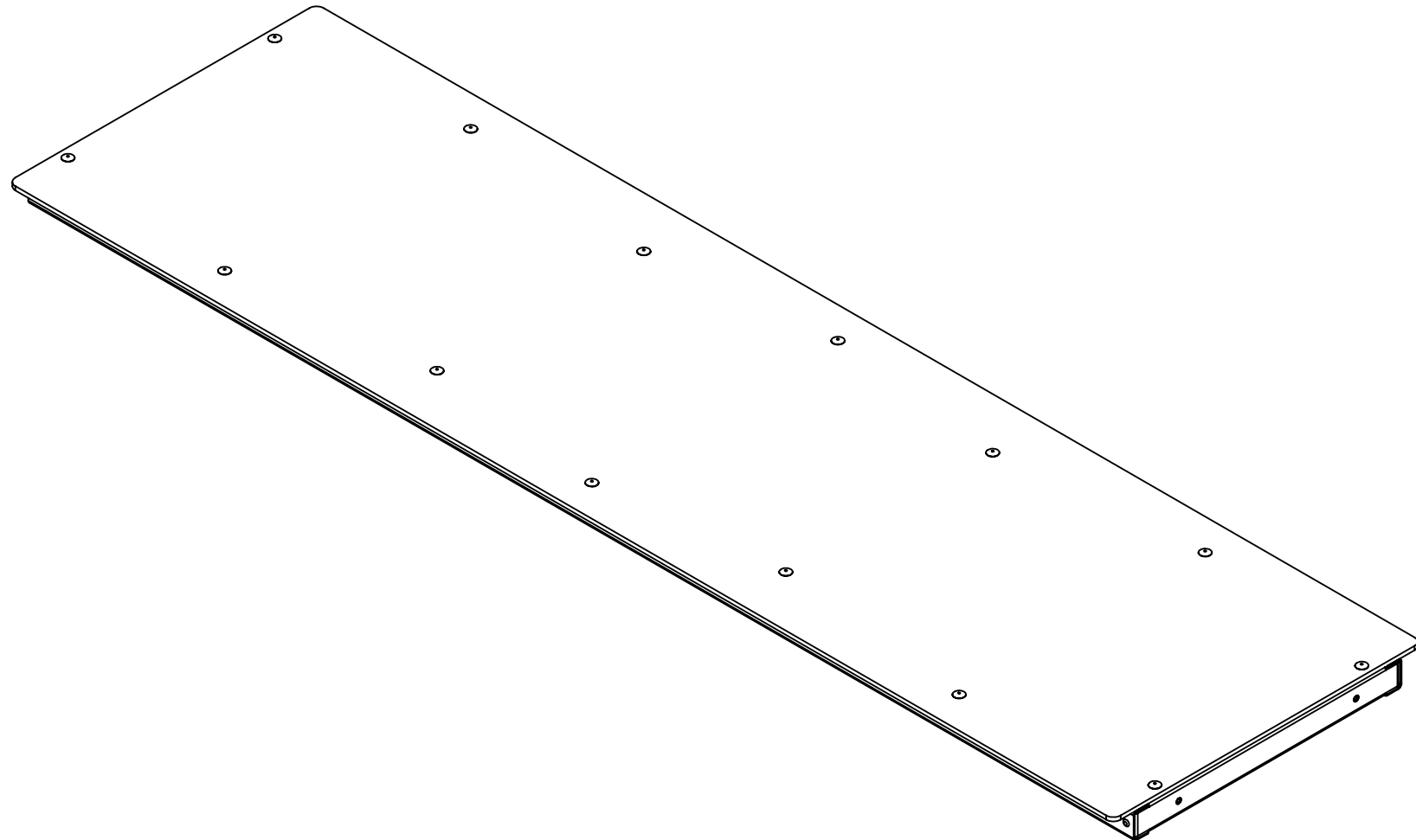
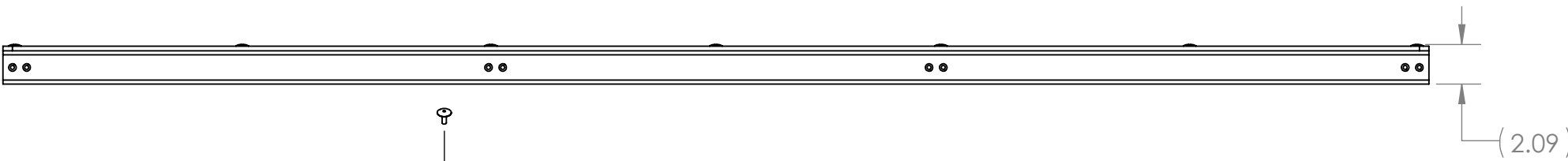
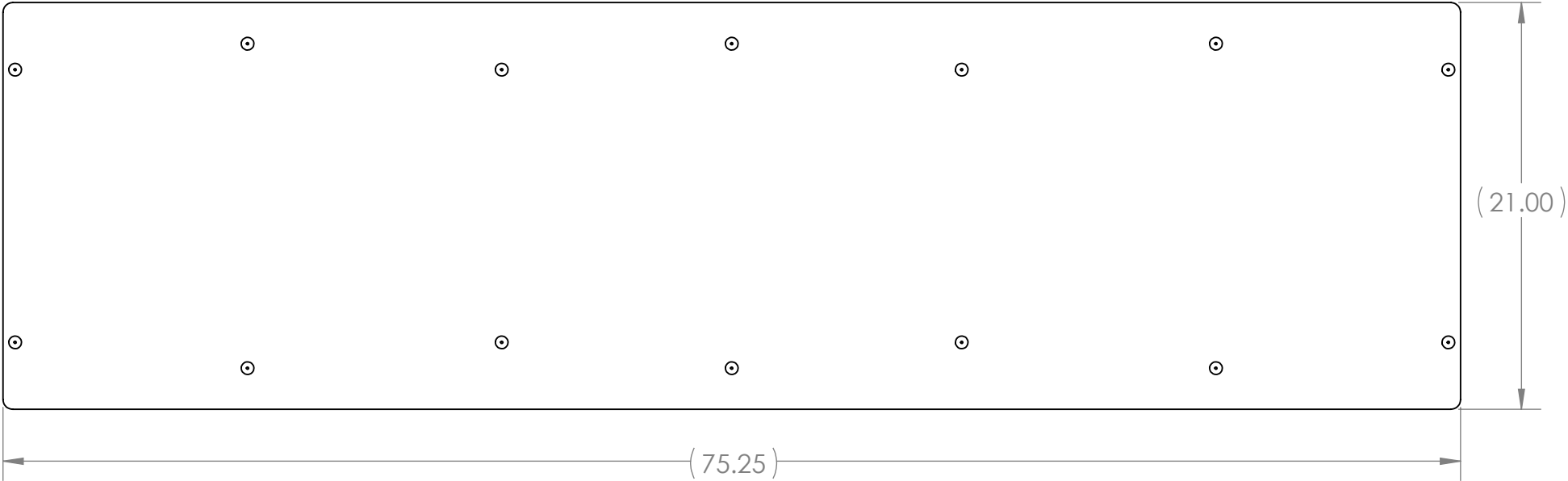
A

D

C

B

A



NOTES:
1. ASSEMBLE AS SHOWN
2. LABEL ASSEMBLY 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 $\pm .005$

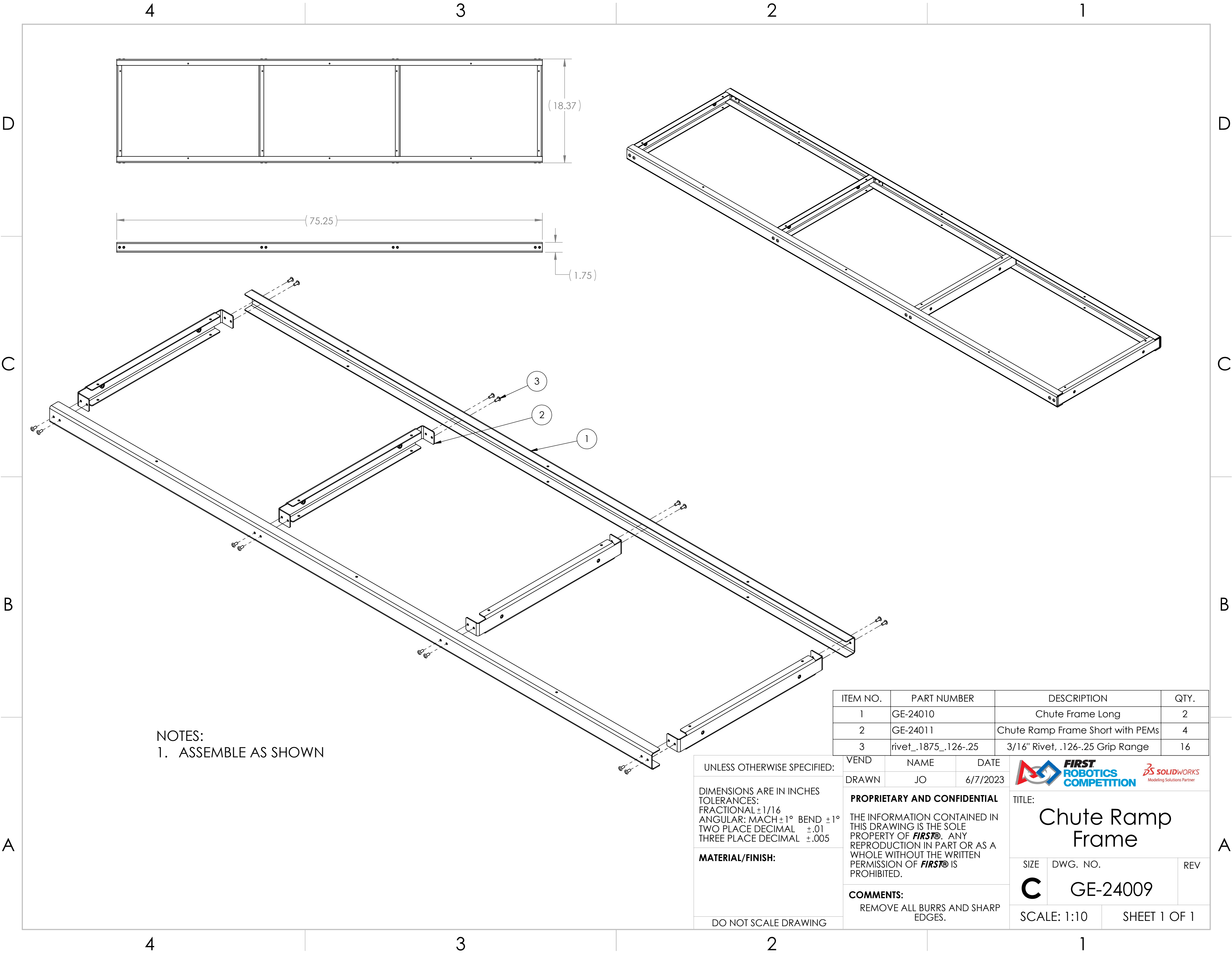
MATERIAL/FINISH:

DO NOT SCALE DRAWING

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24009	Chute Ramp Frame	1
2	GE-24012	Chute Ramp HDPE	1
3	rivet_.1875_.251-.375_largeHead	3/16" Large Head Aluminum Rivet, .251-.375 Grip Range	14

VEND	NAME	DATE
DRAWN	JO	6/7/2023
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.		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
TITLE: Chute Ramp Assembly		
SIZE C	DWG. NO. GE-24008	REV
SCALE: 1:8		SHEET 1 OF 1





NOTES:
1. ASSEMBLE 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:

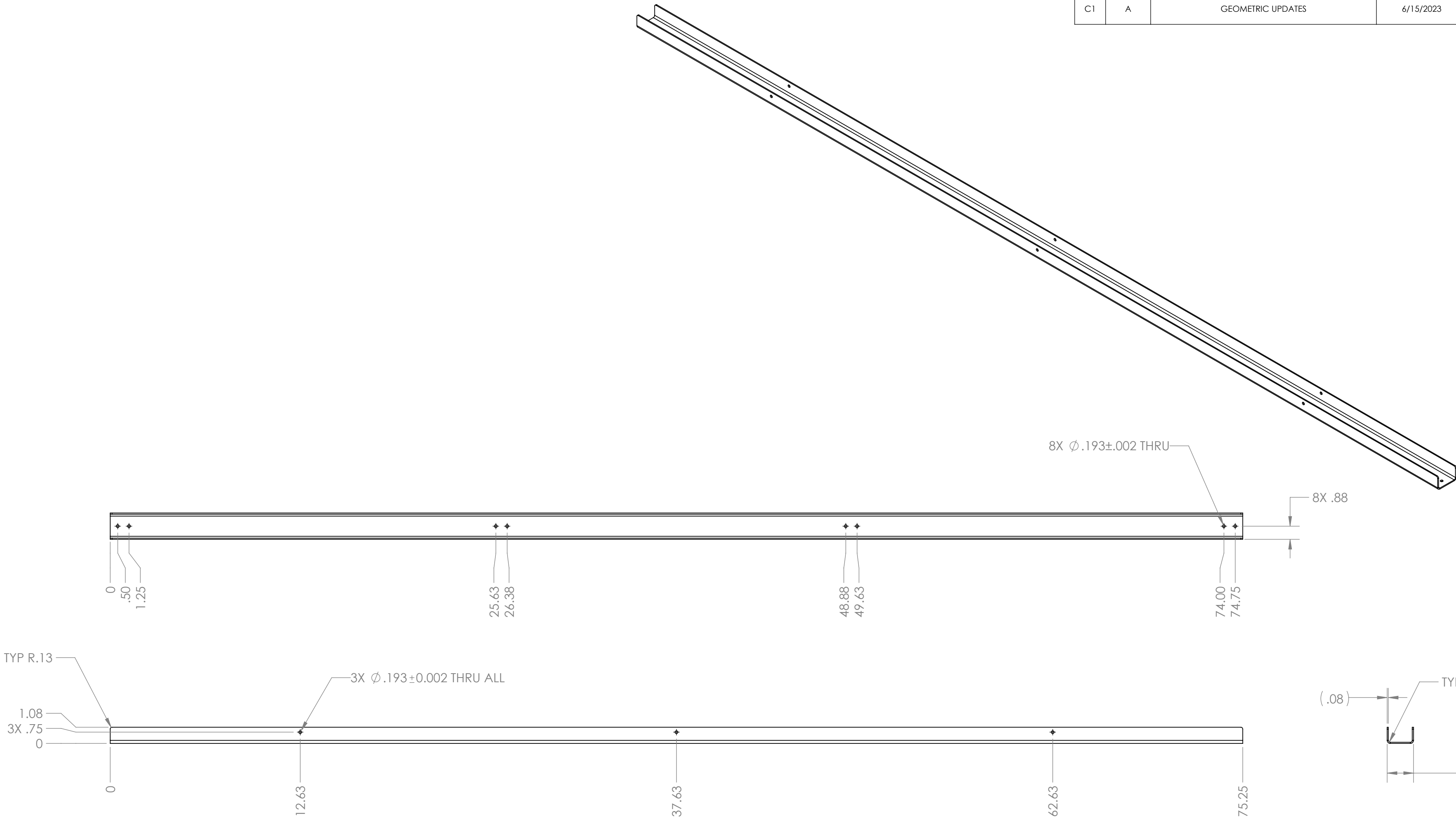
DO NOT SCALE DRAWING

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24010	Chute Frame Long	2
2	GE-24011	Chute Ramp Frame Short with PEMs	4
3	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range	16

VEND	NAME	DATE
DRAWN	JO	6/7/2023
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.		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

 		
TITLE: Chute Ramp Frame		
SIZE C	DWG. NO. GE-24009	REV
SCALE: 1:10		SHEET 1 OF 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C1	A	GEOMETRIC UPDATES	6/15/2023	NWE



NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES

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:
12 Gauge (0.08") 5052
Aluminum

DO NOT SCALE DRAWING

BEND	NAME	DATE
DRAWN	NE	3/21/2023

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.

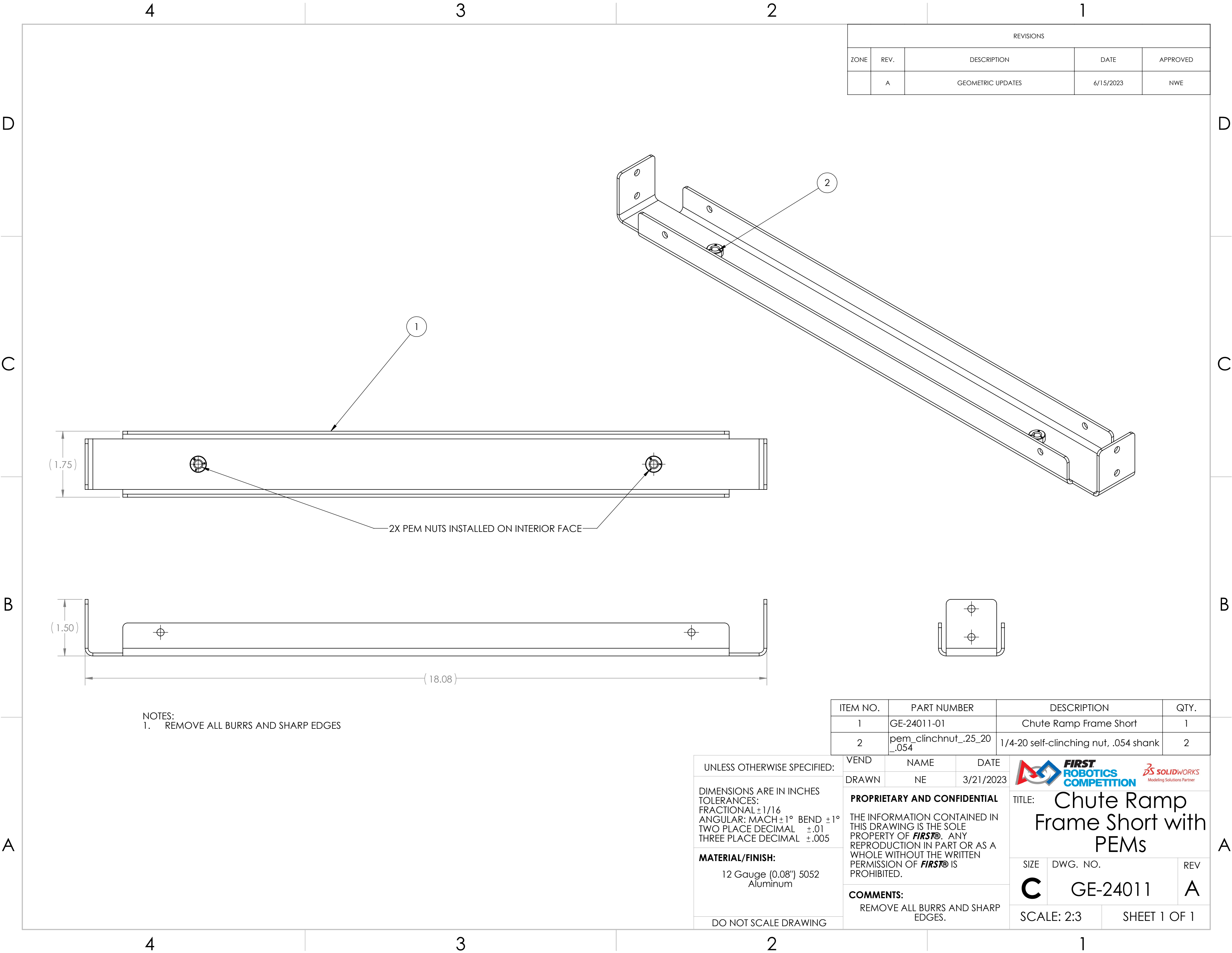
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Chute Frame Long

SIZE	DWG. NO.	REV
C	GE-24010	A



SCALE: 1:5 SHEET 1 OF 1



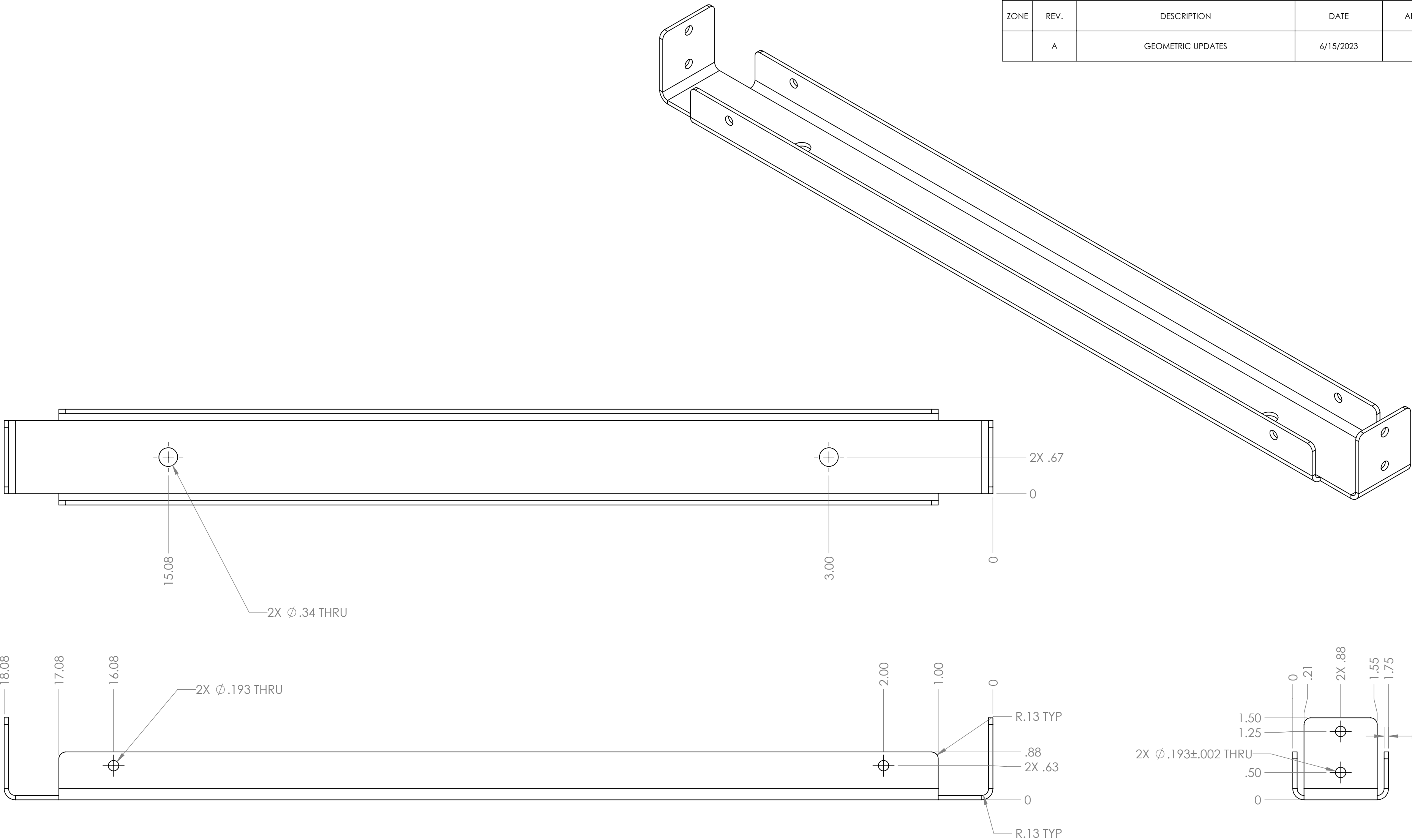
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATES	6/15/2023	NWE

NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24011-01	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	<div></div>		
	DRAWN	NE	3/21/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Chute Ramp Frame Short with PEMs		
	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	COMMENTS:			SIZE	DWG. NO.	REV
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24011	A
DO NOT SCALE DRAWING				SCALE: 2:3		SHEET 1 OF 1

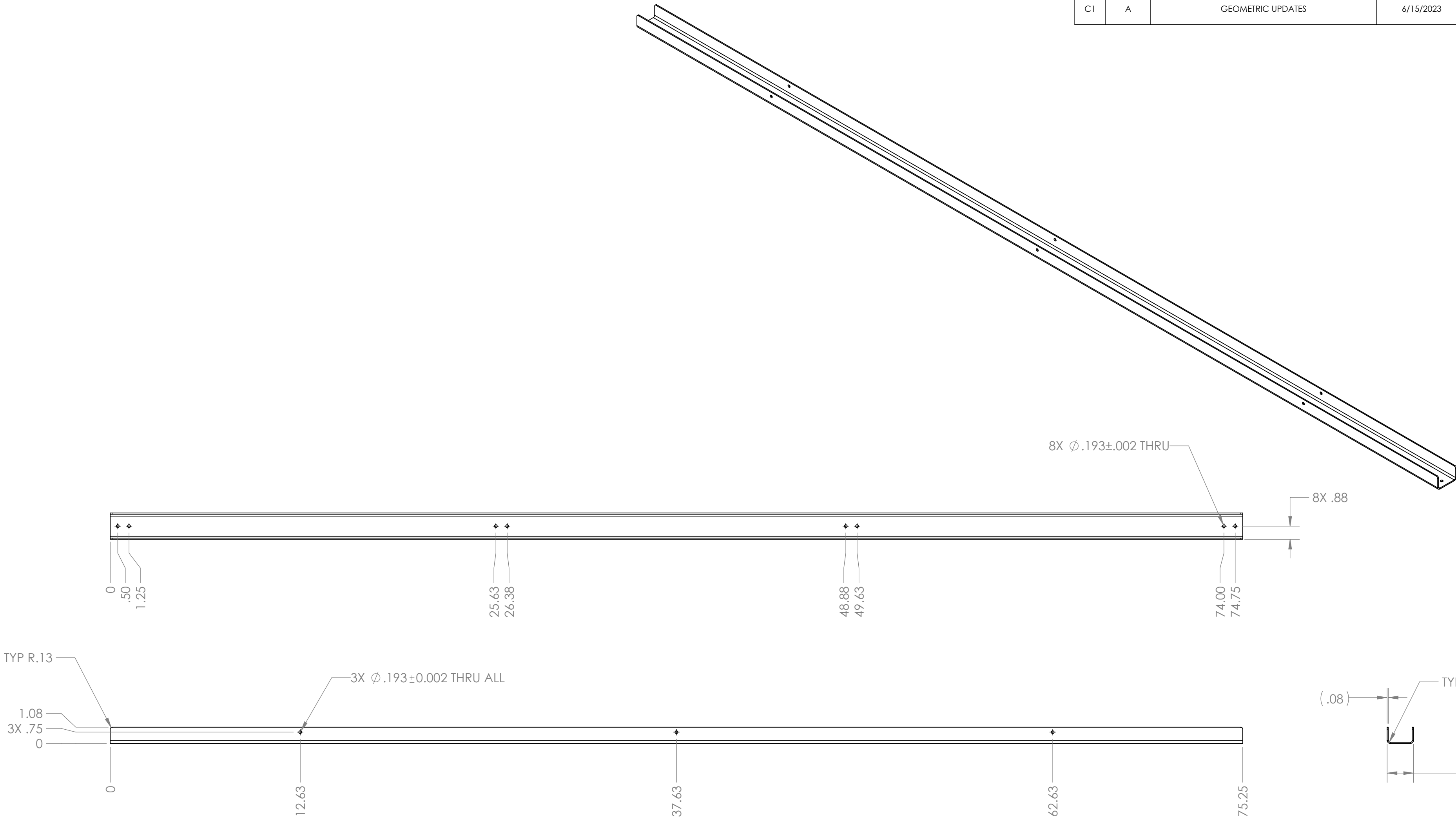
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATES	6/15/2023	NWE





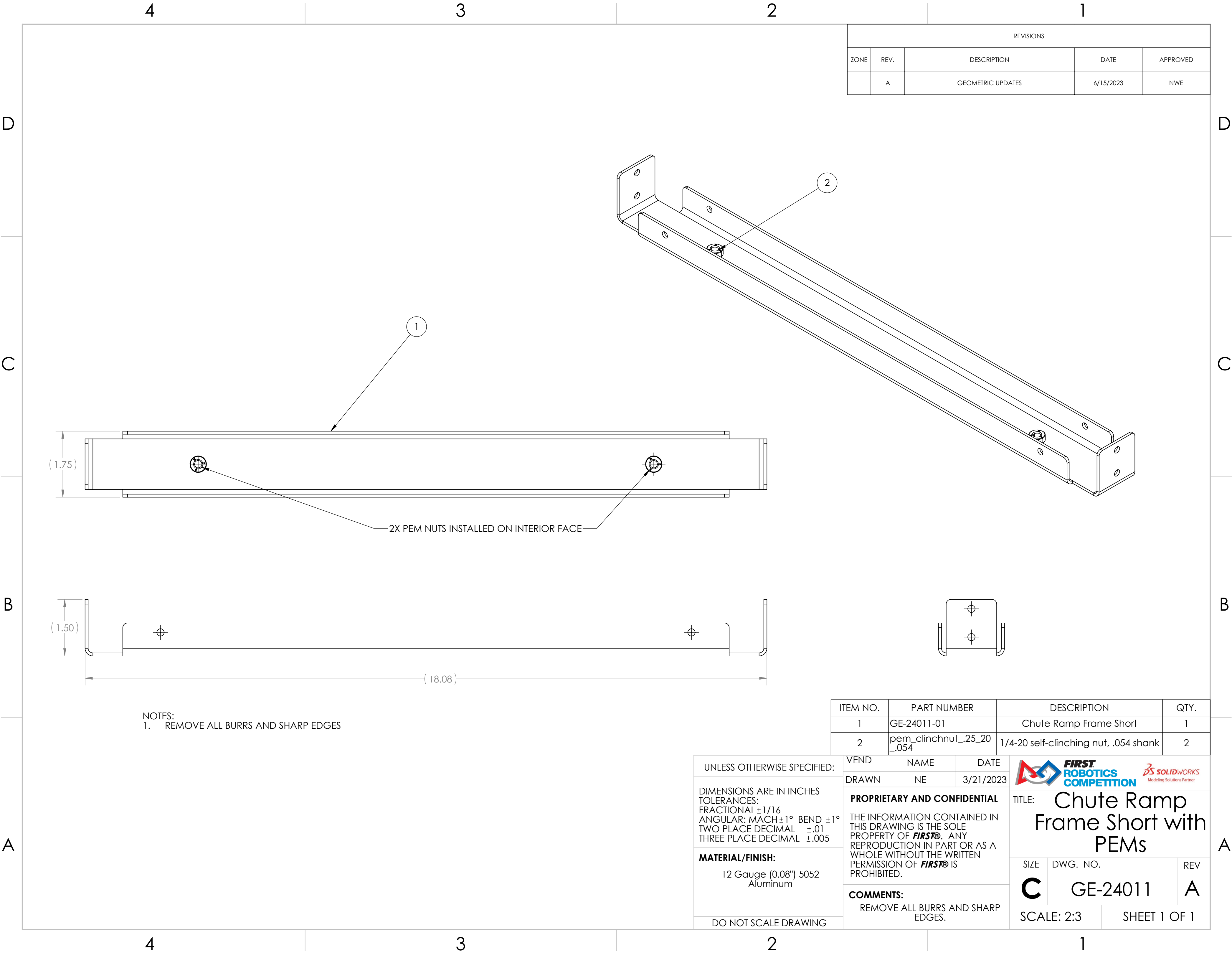
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	DRAWN	JO	6/6/2023
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

 		
TITLE: Chute Ramp Frame Short		
SIZE C	DWG. NO. GE-24011-01	REV A
SCALE: 3:4		SHEET 1 OF 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C1	A	GEOMETRIC UPDATES	6/15/2023	NWE





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: 12 Gauge (0.08") 5052 Aluminum DO NOT SCALE DRAWING	BEND DRAWN	NAME NE	DATE 3/21/2023	  TITLE: Chute Frame Long		
	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.			SIZE C	DWG. NO. GE-24010	REV A
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:5 SHEET 1 OF 1		



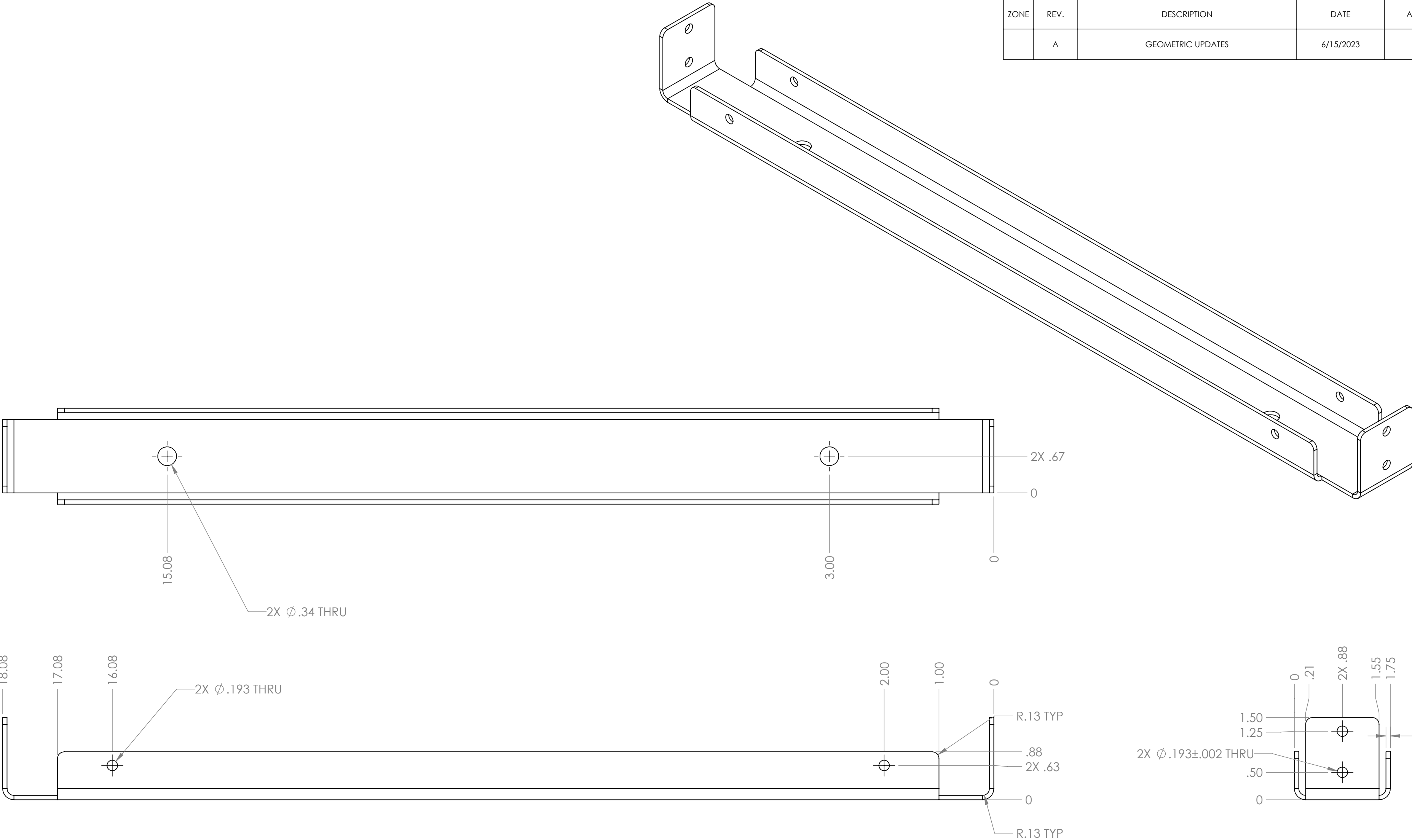
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATES	6/15/2023	NWE

NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24011-01	Chute Ramp Frame Short	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	2

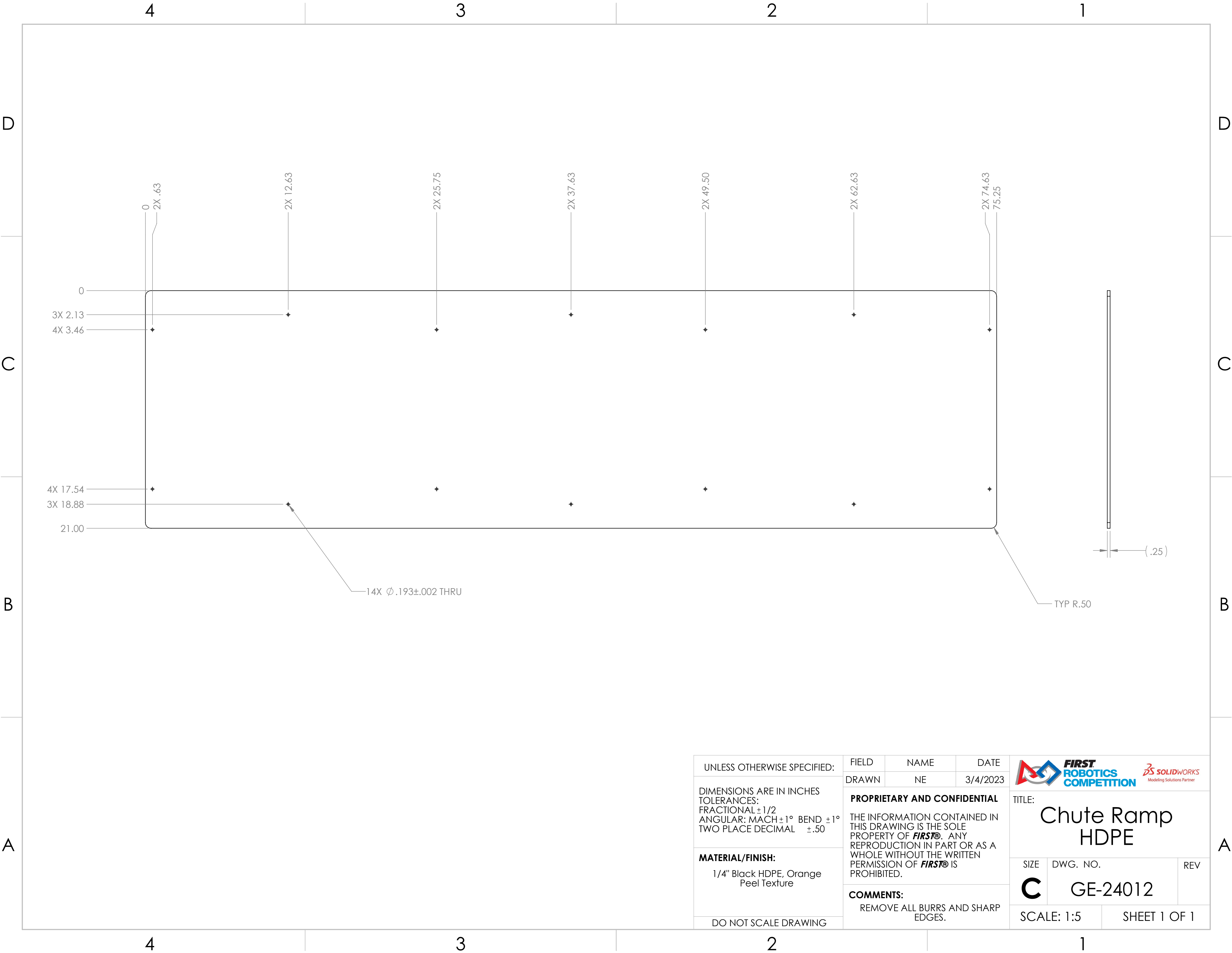
UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE				
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005		DRAWN	NE	3/21/2023	TITLE: Chute Ramp Frame Short with PEMs			
		PROPRIETARY AND CONFIDENTIAL						
		THE INFORMATION CONTAINED 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.			SIZE	DWG. NO.		REV
MATERIAL/FINISH:		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24011		A
12 Gauge (0.08") 5052 Aluminum								
DO NOT SCALE DRAWING					SCALE: 2:3		SHEET 1 OF 1	



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATES	6/15/2023	NWE

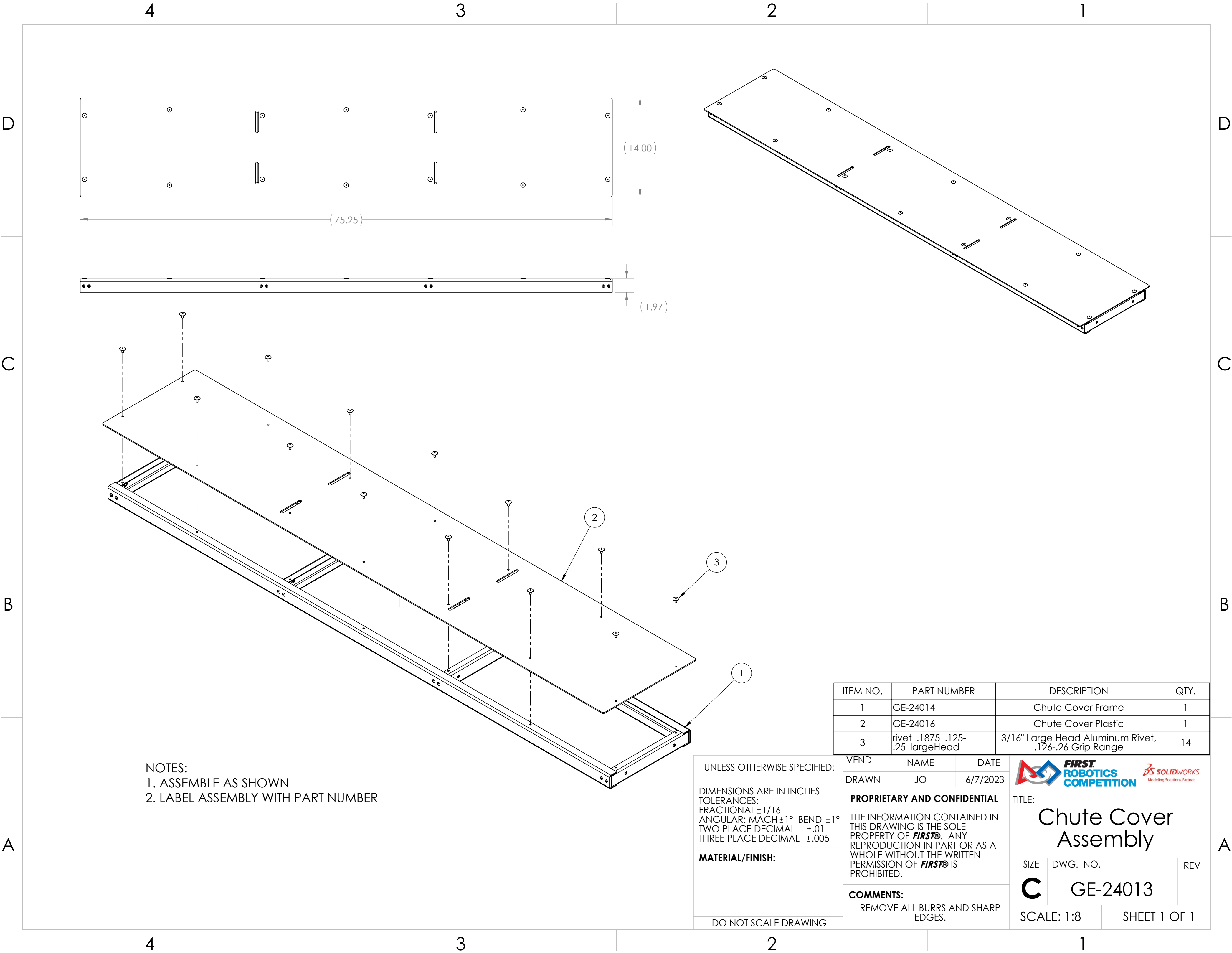


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 12 Gauge (0.08") 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE
	DRAWN	JO	6/6/2023
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION 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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

 		
TITLE: Chute Ramp Frame Short		
SIZE C	DWG. NO. GE-24011-01	REV A
SCALE: 3:4		SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div> <div>TITLE: <h1>Chute Ramp HDPE</h1></div>		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	NE	3/4/2023			
MATERIAL/FINISH: 1/4" 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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24012	
DO NOT SCALE DRAWING				SCALE: 1:5		SHEET 1 OF 1



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

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24014	Chute Cover Frame	1
2	GE-24016	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:
DO NOT SCALE DRAWING

VEND
DRAWN



NAME
JO

DATE
6/7/2023

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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



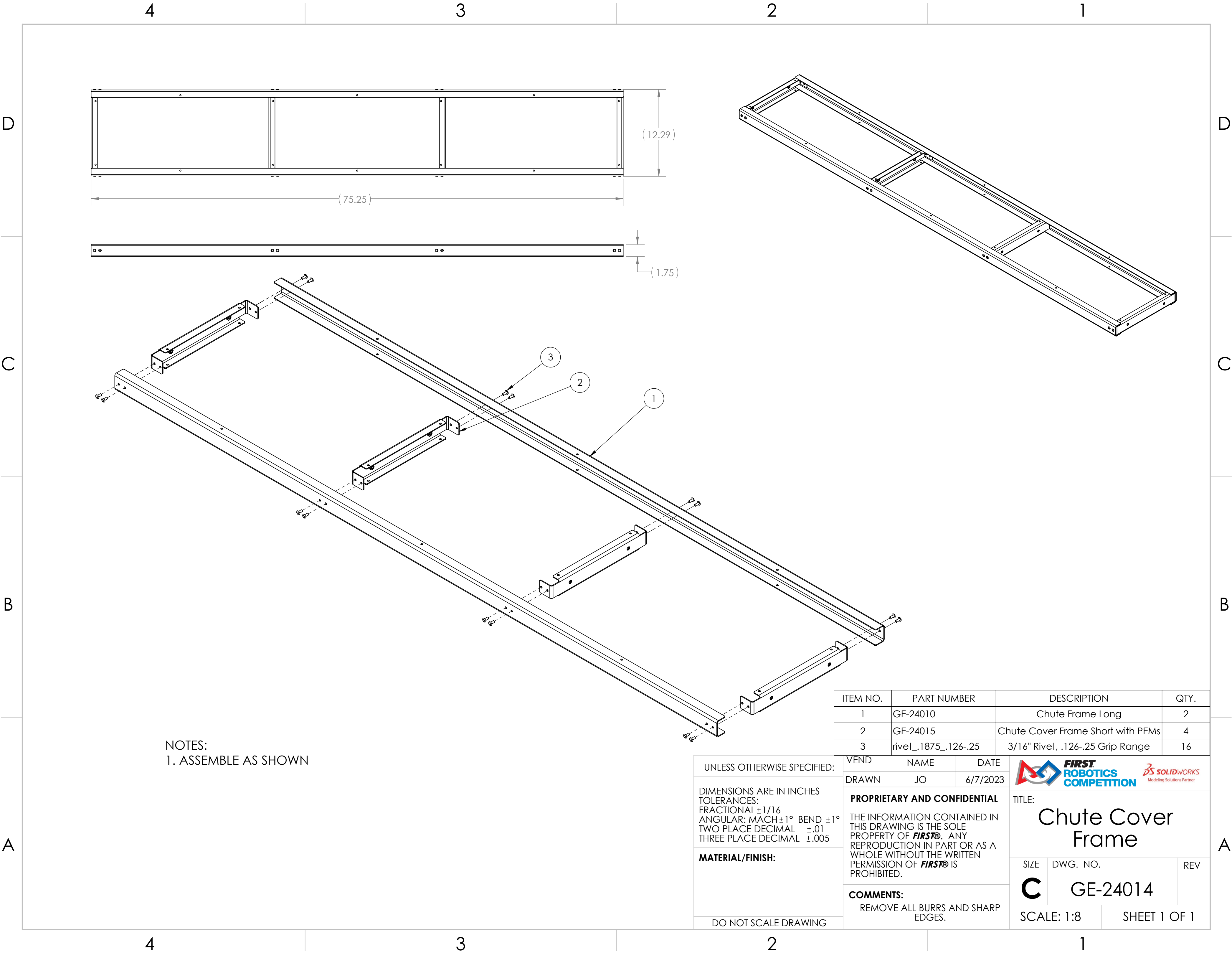
TITLE:
Chute Cover Assembly

SIZE
C

DWG. NO.
GE-24013

REV

SCALE: 1:8
SHEET 1 OF 1



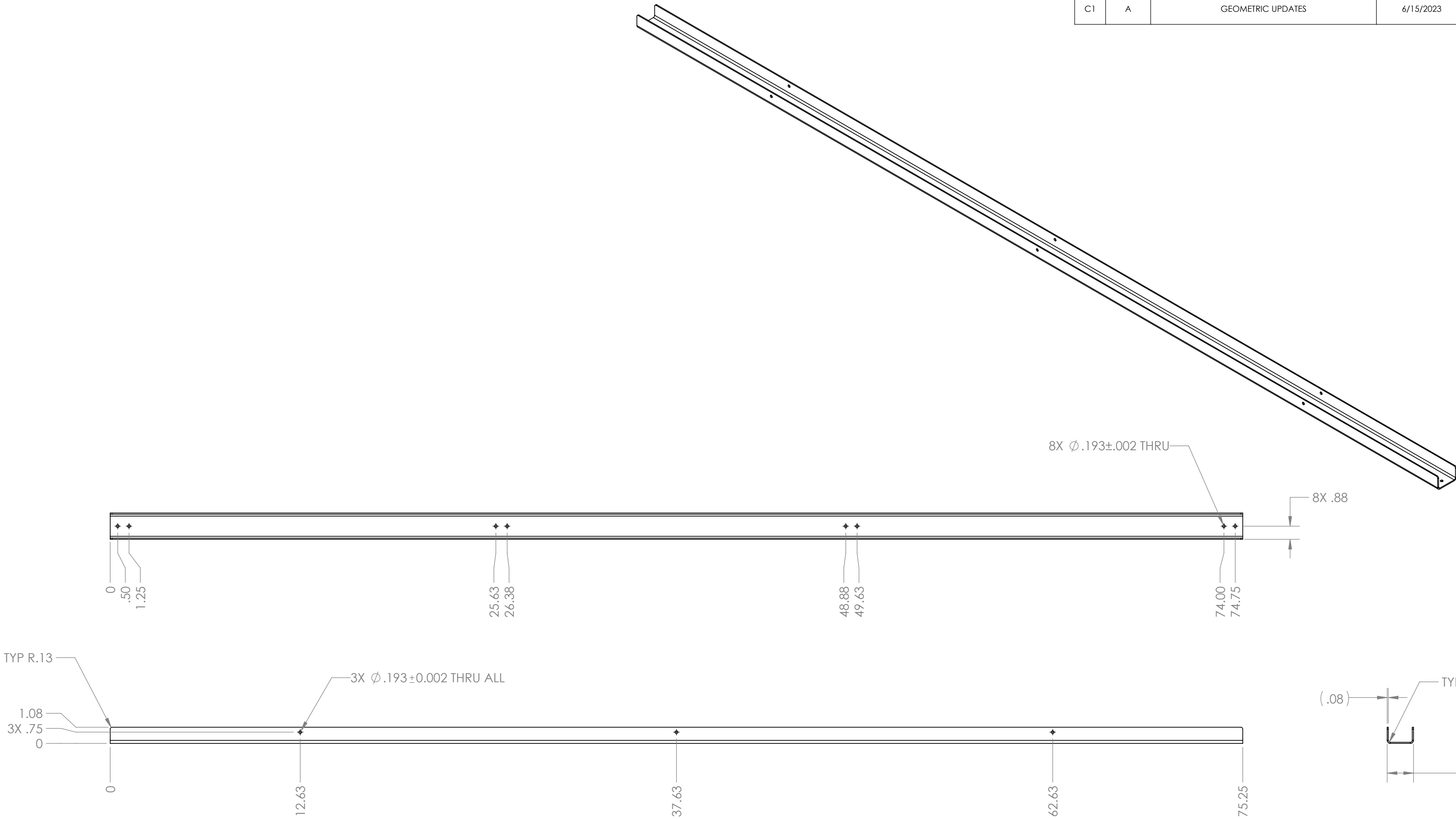
NOTES:
1. ASSEMBLE AS SHOWN

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24010	Chute Frame Long	2
2	GE-24015	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 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	6/7/2023
MATERIAL/FINISH:		PROPRIETARY AND CONFIDENTIAL		
DO NOT SCALE DRAWING		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: Chute Cover Frame		
		SIZE C	DWG. NO. GE-24014	REV
		SCALE: 1:8 SHEET 1 OF 1		

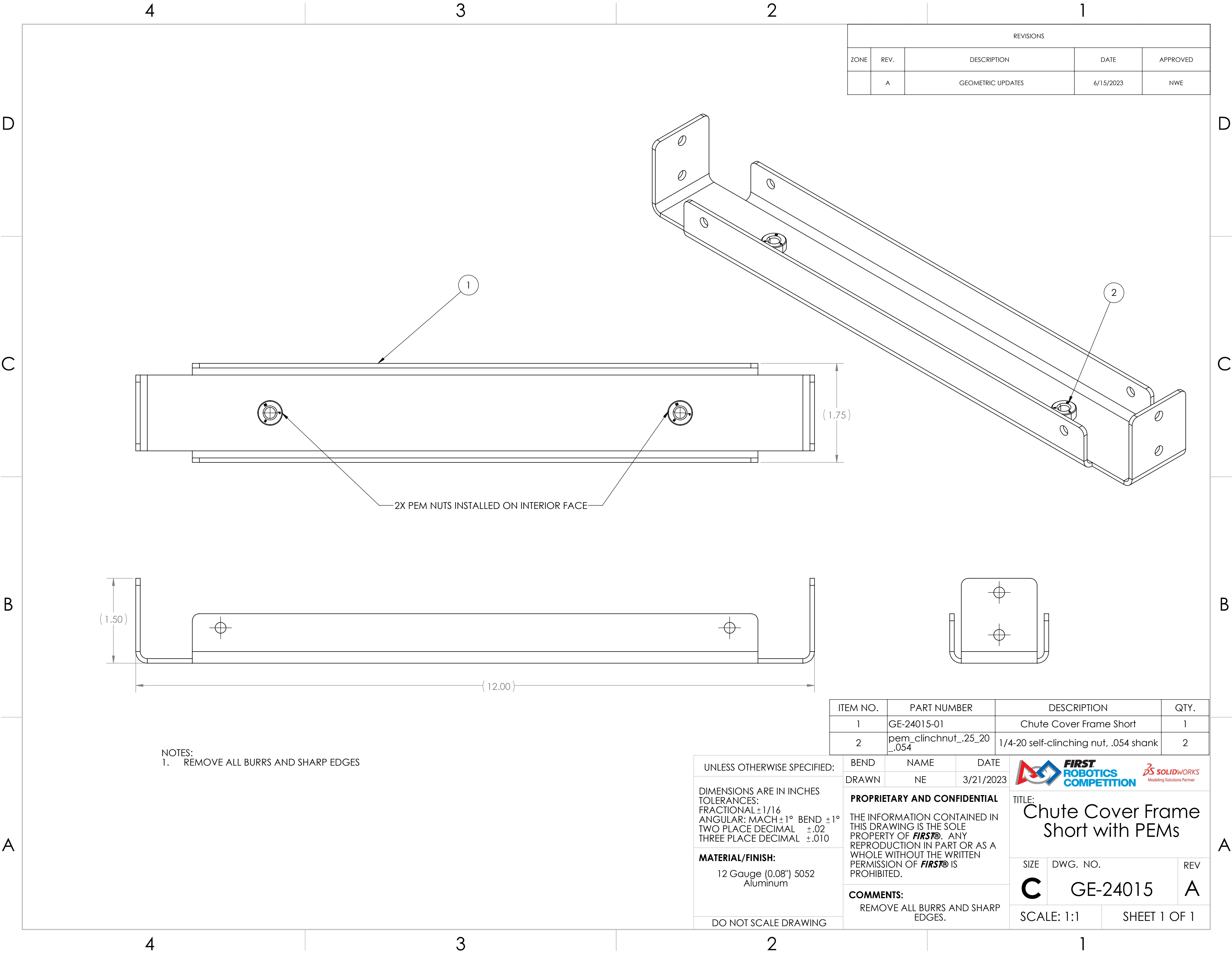


REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C1	A	GEOMETRIC UPDATES	6/15/2023	NWE



NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES



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: 12 Gauge (0.08") 5052 Aluminum DO NOT SCALE DRAWING	BEND DRAWN	NAME NE	DATE 3/21/2023	<div></div> <div>TITLE: Chute Frame Long</div>		
	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.			SIZE C	DWG. NO. GE-24010	REV A
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:5 SHEET 1 OF 1		

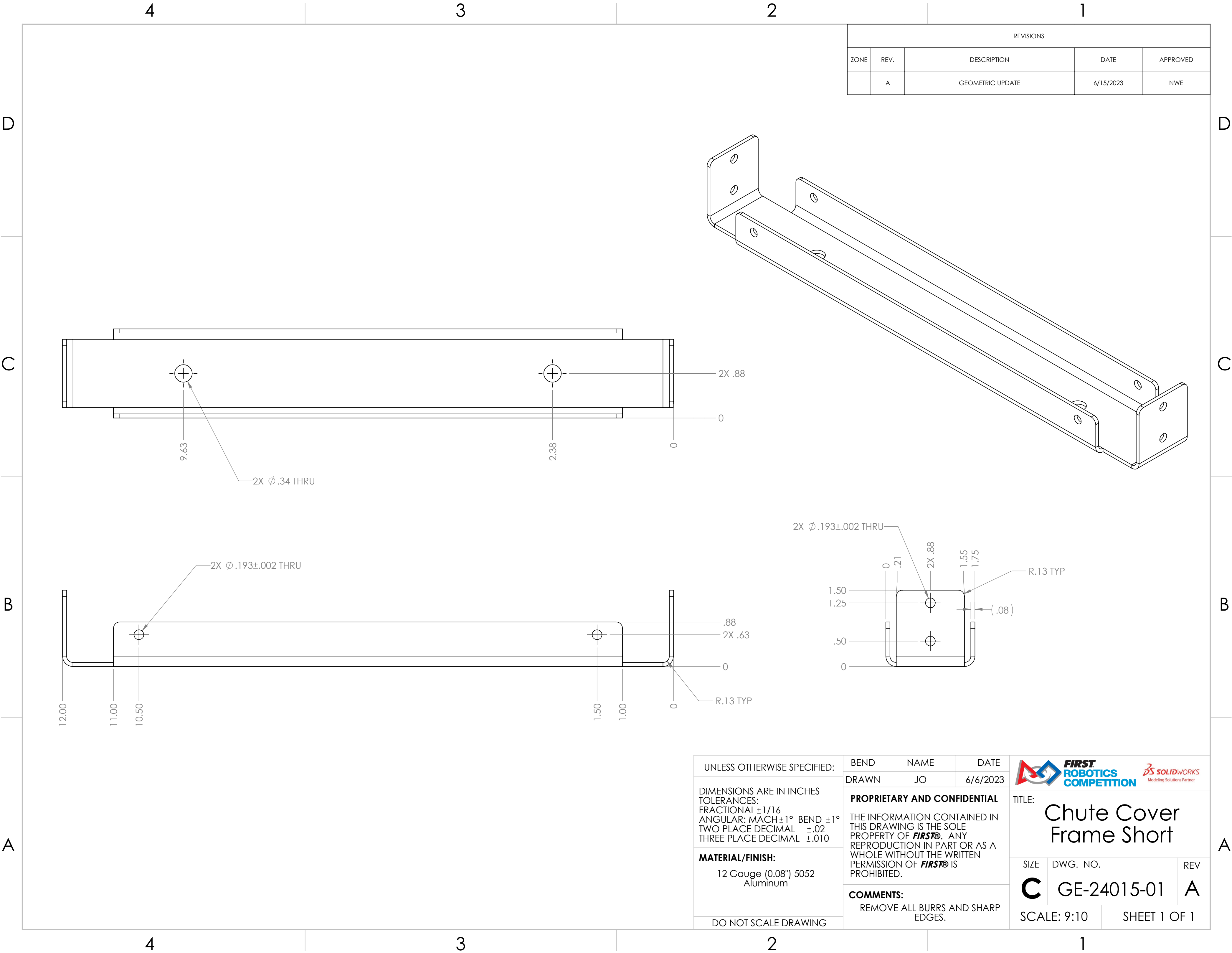


REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATES	6/15/2023	NWE

NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24015-01	Chute Cover Frame Short	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	2

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 12 Gauge (0.08") 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	 		
	DRAWN	NE	3/21/2023			
	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.				TITLE: Chute Cover Frame Short with PEMs	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
				SIZE	DWG. NO.	REV
				C	GE-24015	A
				SCALE: 1:1		SHEET 1 OF 1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATE	6/15/2023	NWE

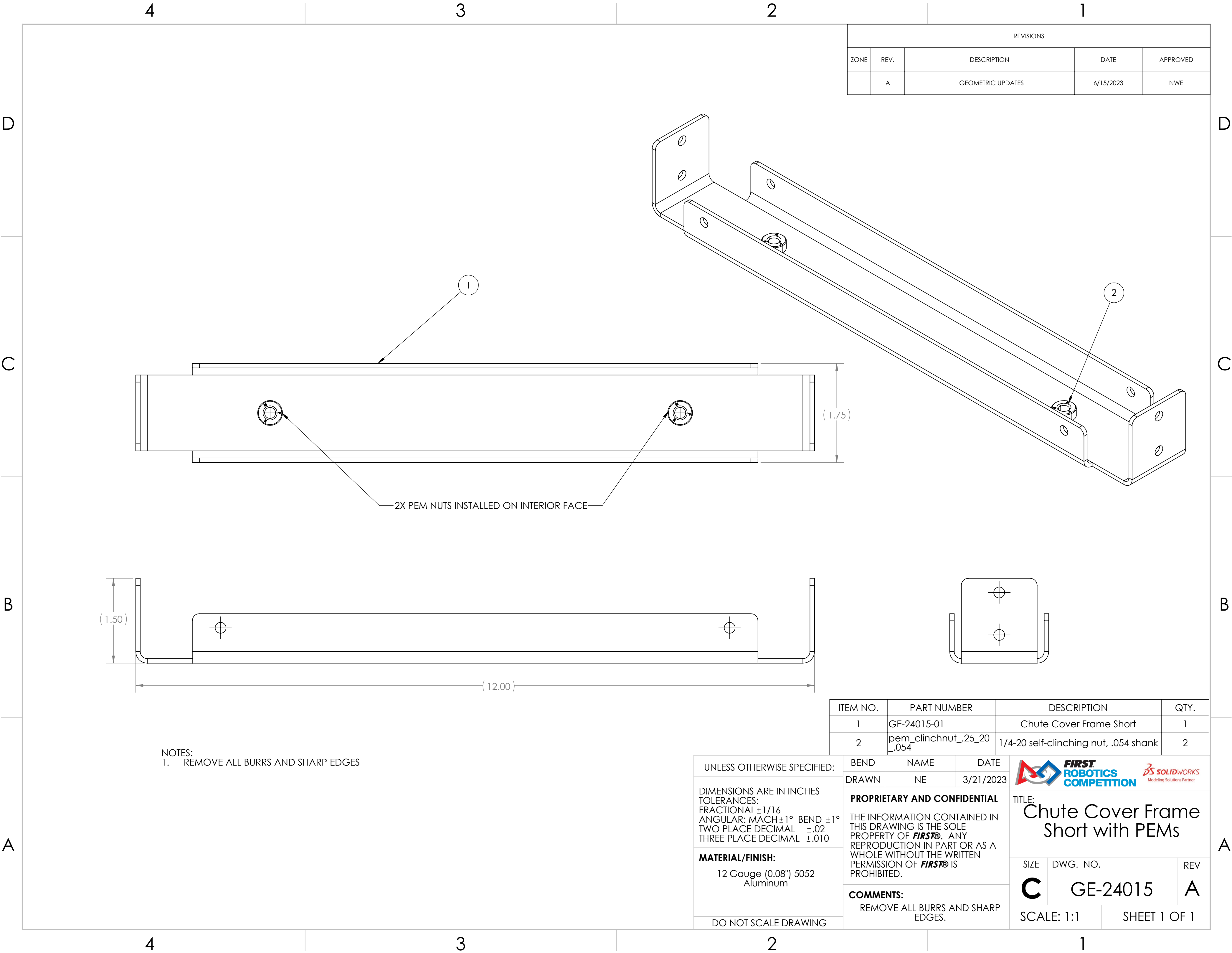
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	DRAWN	JO	6/6/2023
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		



TITLE: Chute Cover Frame Short

SIZE	DWG. NO.	REV
C	GE-24015-01	A



SCALE: 9:10 SHEET 1 OF 1

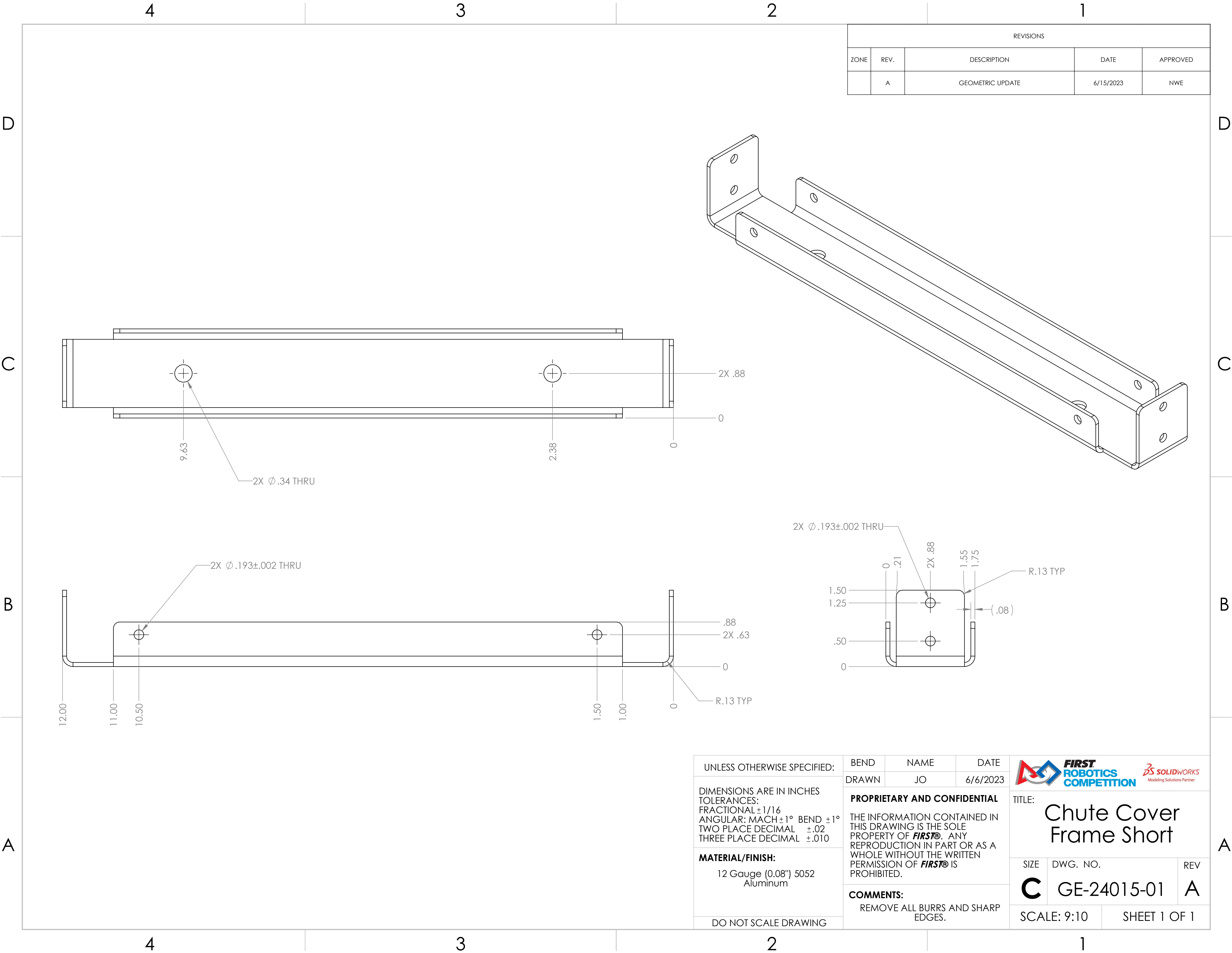


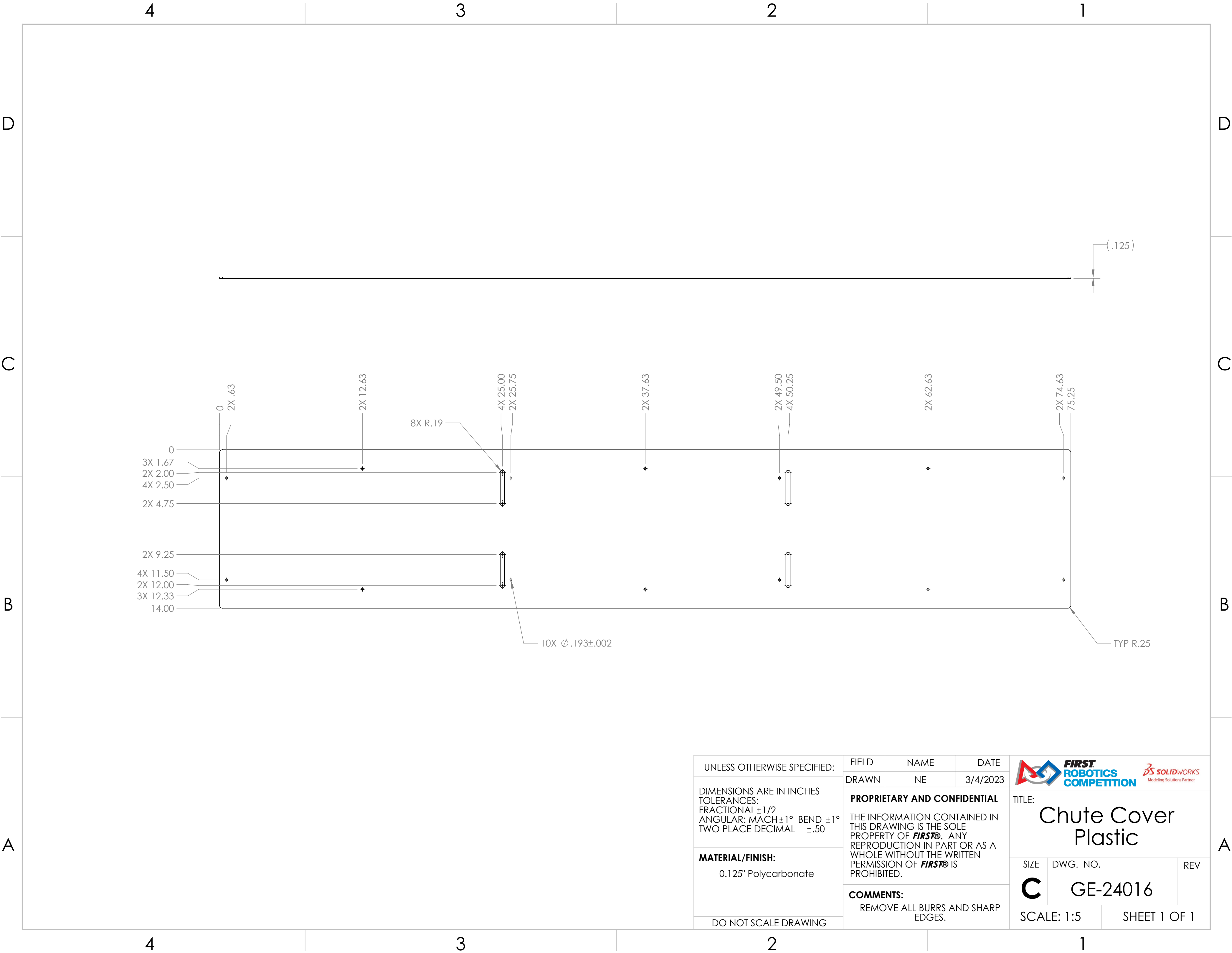
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	GEOMETRIC UPDATES	6/15/2023	NWE



NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24015-01	Chute Cover Frame Short	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	2

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 12 Gauge (0.08") 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	 		
	DRAWN	NE	3/21/2023			
	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.				TITLE: Chute Cover Frame Short with PEMs	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
				SIZE	DWG. NO.	REV
				C	GE-24015	A
				SCALE: 1:1		SHEET 1 OF 1

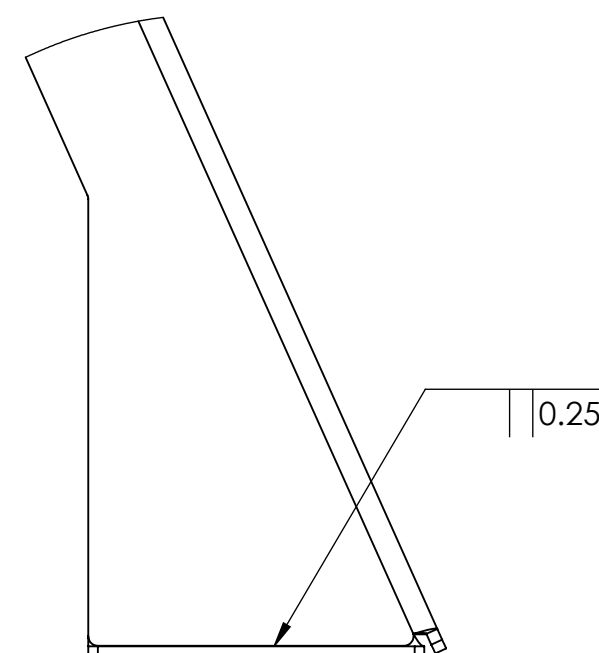
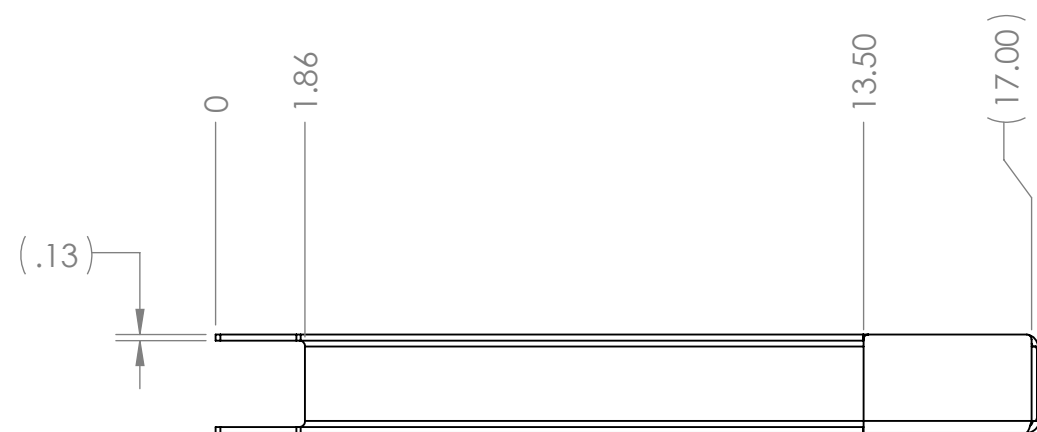






UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>		
	DRAWN	NE	3/4/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$	PROPRIETARY AND CONFIDENTIAL			TITLE: Chute Cover Plastic		
	THE INFORMATION CONTAINED IN 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.			SIZE	DWG. NO.	REV
0.125" Polycarbonate				C	GE-24016	
DO NOT SCALE DRAWING				SCALE: 1:5		SHEET 1 OF 1

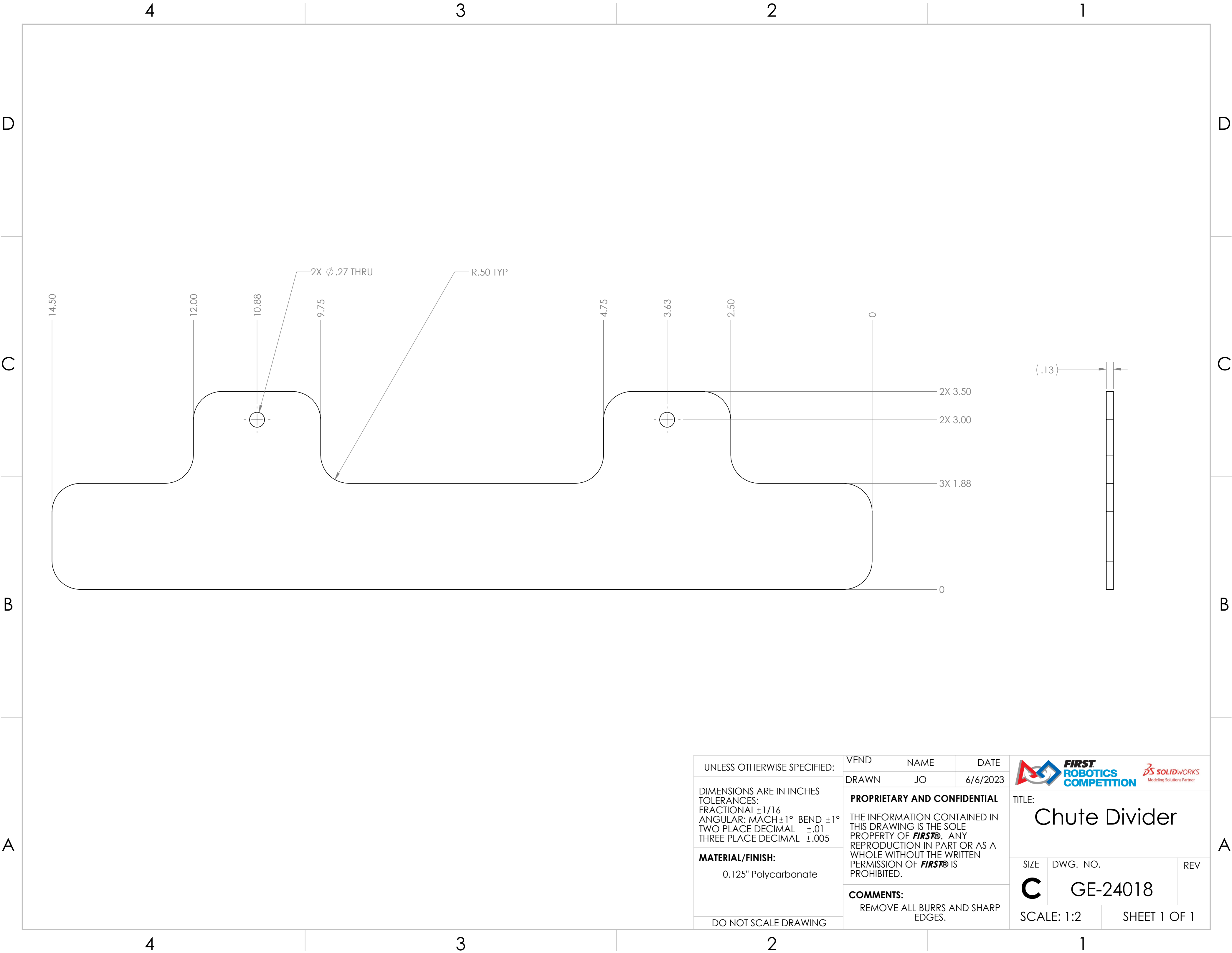
1



A

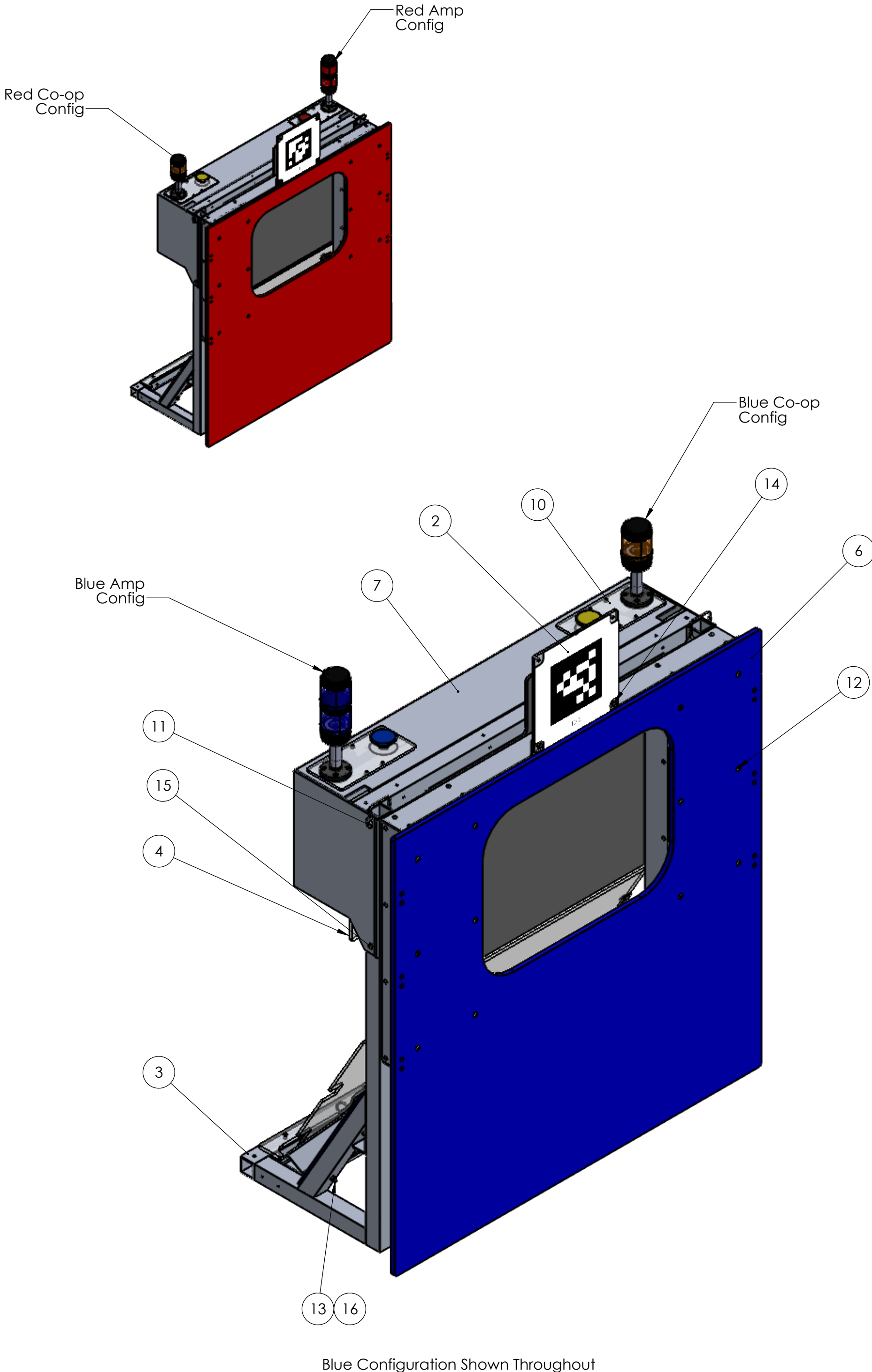


DETAIL B
SCALE 1 : 2

UNLESS OTHERWISE SPECIFIED:		BEND	NAME	DATE	 	
<p>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 $\pm .010$</p> <p>MATERIAL/FINISH: 0.125" 5052 Aluminum</p> <p>DO NOT SCALE DRAWING</p>		DRAWN	NE	6/22/2023		
		PROPRIETARY AND CONFIDENTIAL			TITLE: Frame Support Leg	
		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.				



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 0.125" Polycarbonate DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div>		
	DRAWN	JO	6/6/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				TITLE: Chute Divider	
				SIZE	DWG. NO.	REV
				C	GE-24018	
				SCALE: 1:2		SHEET 1 OF 1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
2-B2	A	Added Sheet 2	12/20/2023	DAF

ITEM NO.	PART NUMBER	DESCRIPTION	BLUE CONFIG QTY.	RED CONFIG QTY.
1	FE-00083-ID5	AprilTag	-	1
2	FE-00083-ID6	AprilTag	1	-
3	GE-24101	Amp Permanent Assembly	1	1
4	GE-24113	Truss Capture Large	1	1
5	GE-24114	Front Red	1	-
6	GE-24115	Front Blue	-	1
7	GE-24116	Stacklight and Button Box	1	1
8	GE-24118	Ring Counter Red	1	-
9	GE-24119	Ring Counter Blue	-	1
10	GE-24128	Stacklight and Button Plate Assembly	2	2
11	98416A013	pin_clevis_.25_2.1875	2	2
12	flat_phil_.25_20_1	Steel Phillips Flat Head Screw, 1/4"x20 x 1" long, fully threaded	12	12
13	flat_phil_.25_20_2.5	Steel Phillips Flat Head Screw, 1/4"-20 x 2-1/2" long, fully threaded	4	4
14	hex_.25_20_0.75	Steel Hex Head Screw, 1/4"-20 x 0.75" long, fully threaded	2	2
15	hex_.25_20_2.5_partial	Steel Hex Head Screw, 1/4"-20 x 2-1/2" long, partially threaded	2	2
16	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	6	6

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	DF	12/18/2023

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.

COMMENTS:

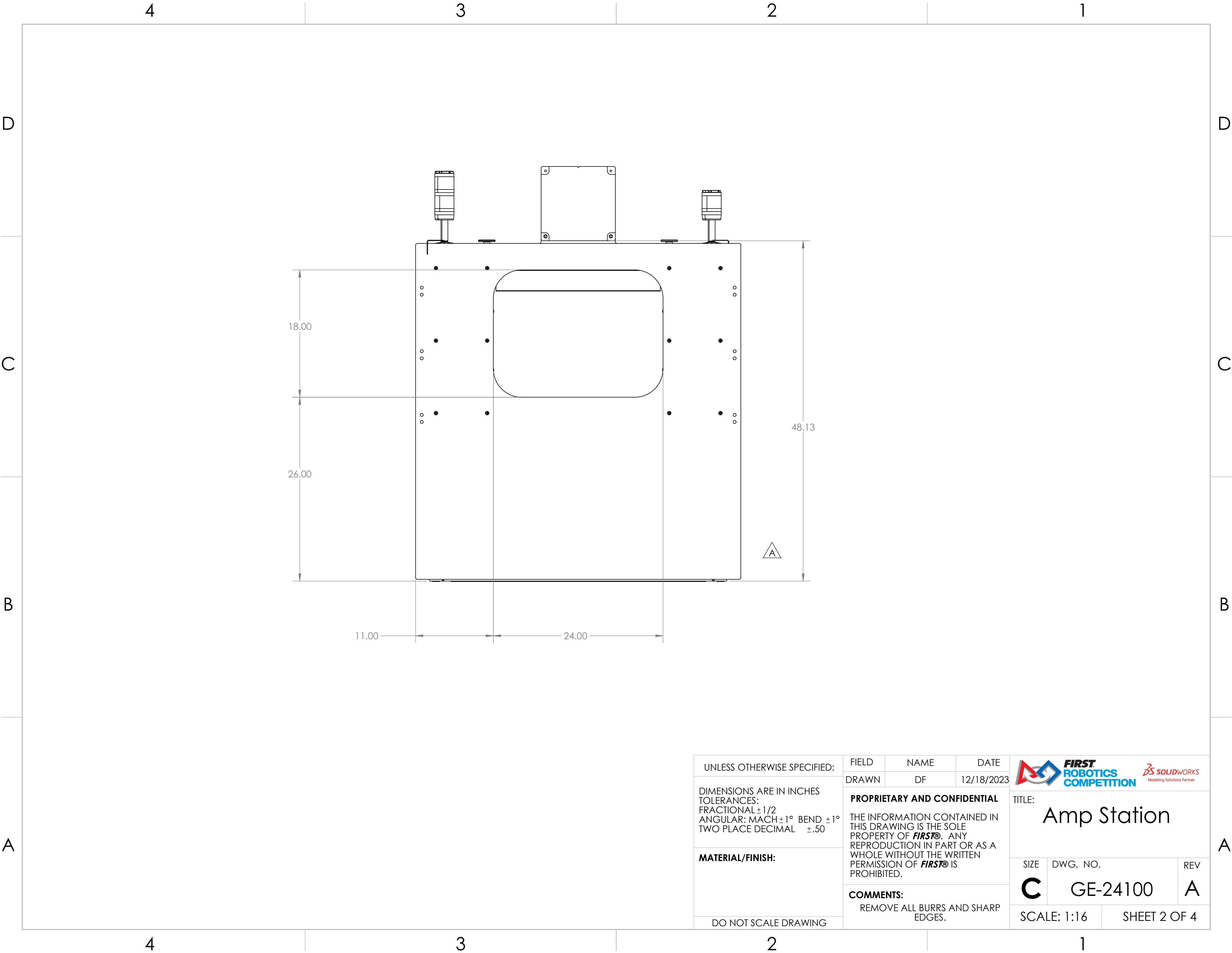
REMOVE ALL BURRS AND SHARP EDGES.





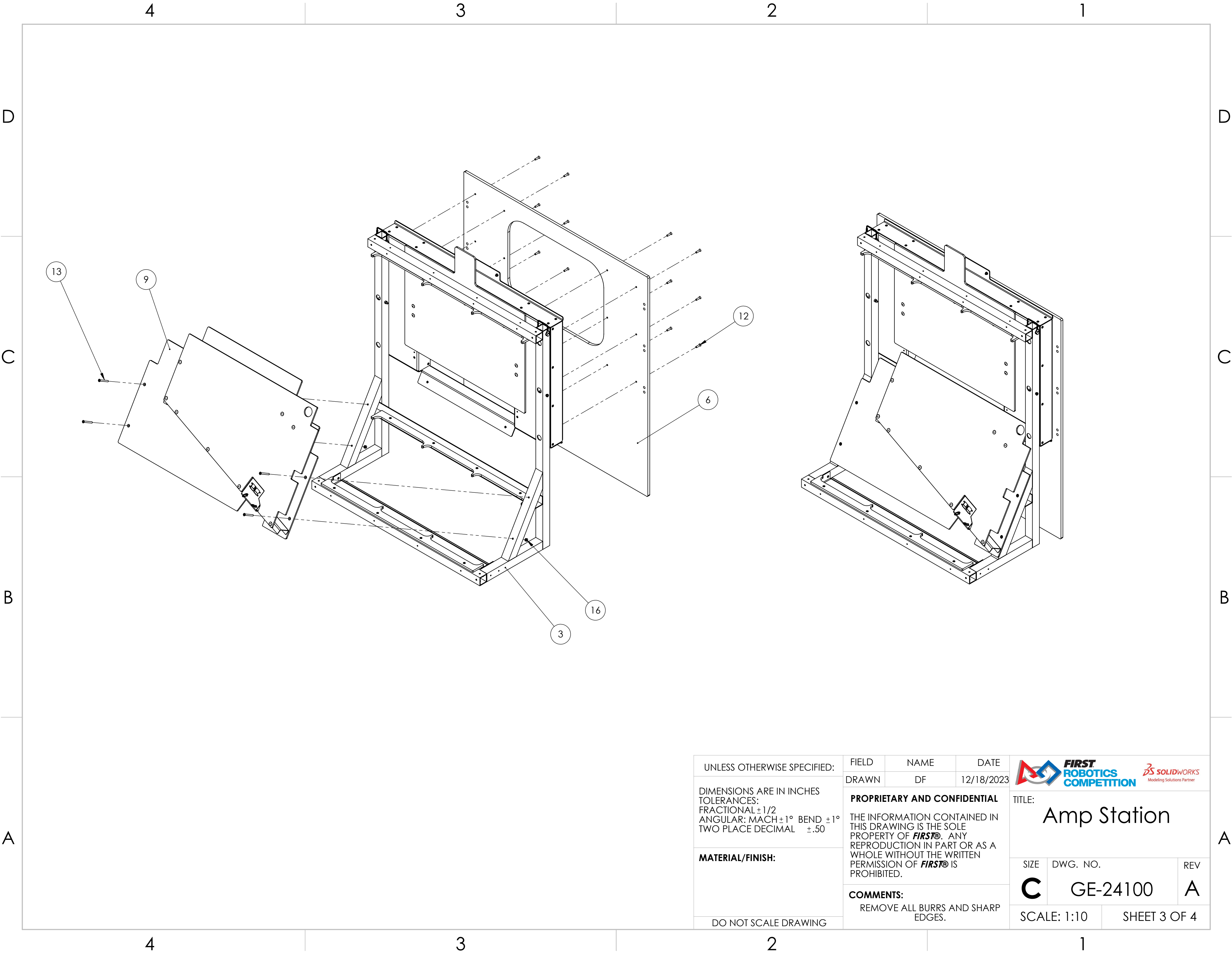
TITLE:
Amp Station



SIZE	DWG. NO.	REV
C	GE-24100	A

SCALE: 1:8 SHEET 1 OF 4



UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	 	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50		DRAWN	DF	12/18/2023	TITLE:	
		PROPRIETARY AND CONFIDENTIAL			Amp Station	
		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:			SIZE	DWG. NO.
		REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24100
					REV	
DO NOT SCALE DRAWING					SCALE: 1:16	SHEET 2 OF 4



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	DF	12/18/2023	TITLE: Amp Station		
	PROPRIETARY AND CONFIDENTIAL			SIZE C		
	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:			DWG. NO.		REV
DO NOT SCALE DRAWING	REMOVE ALL BURRS AND SHARP EDGES.			GE-24100		A
				SCALE: 1:10		SHEET 3 OF 4

D

C

B

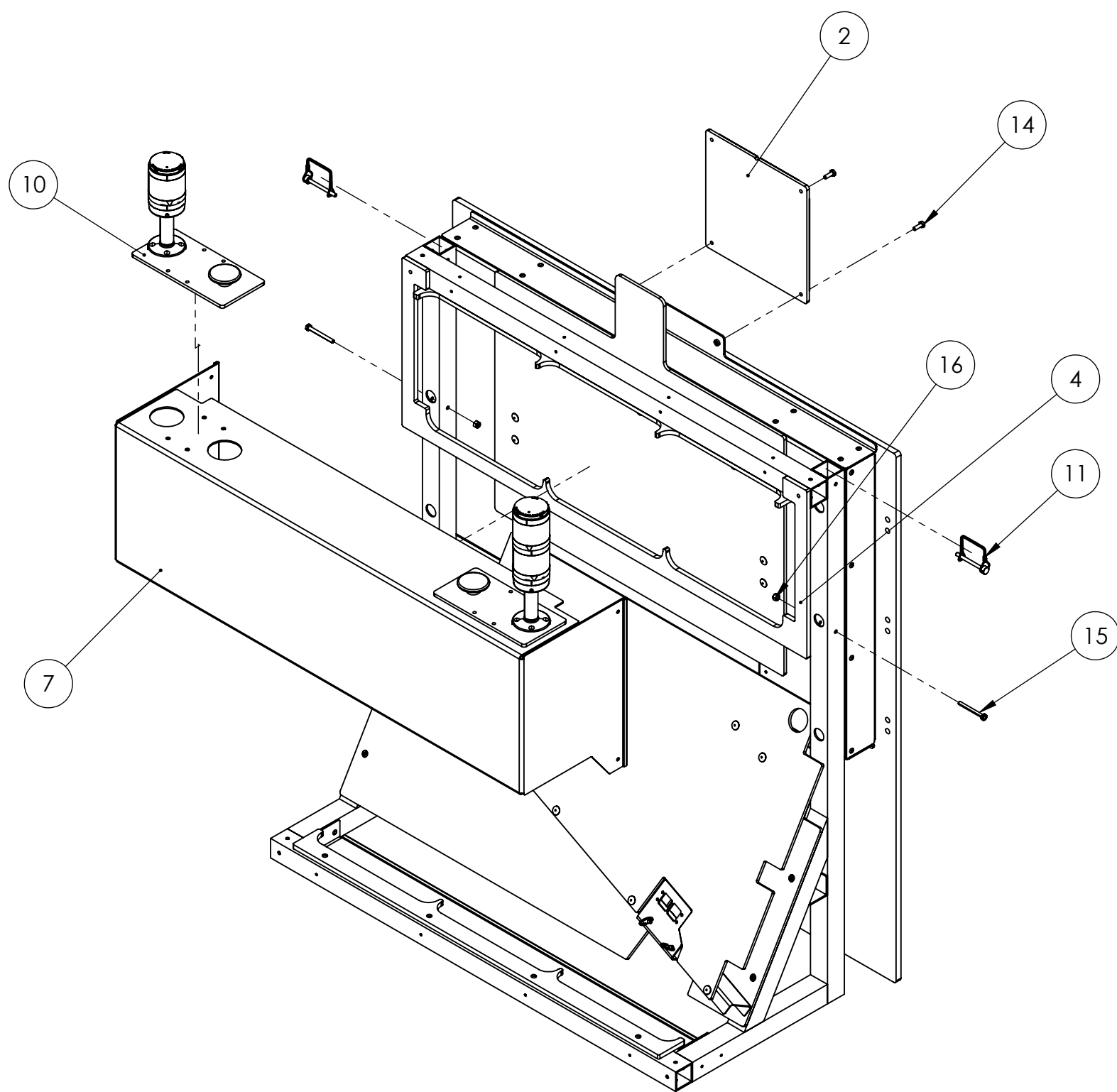
A

D

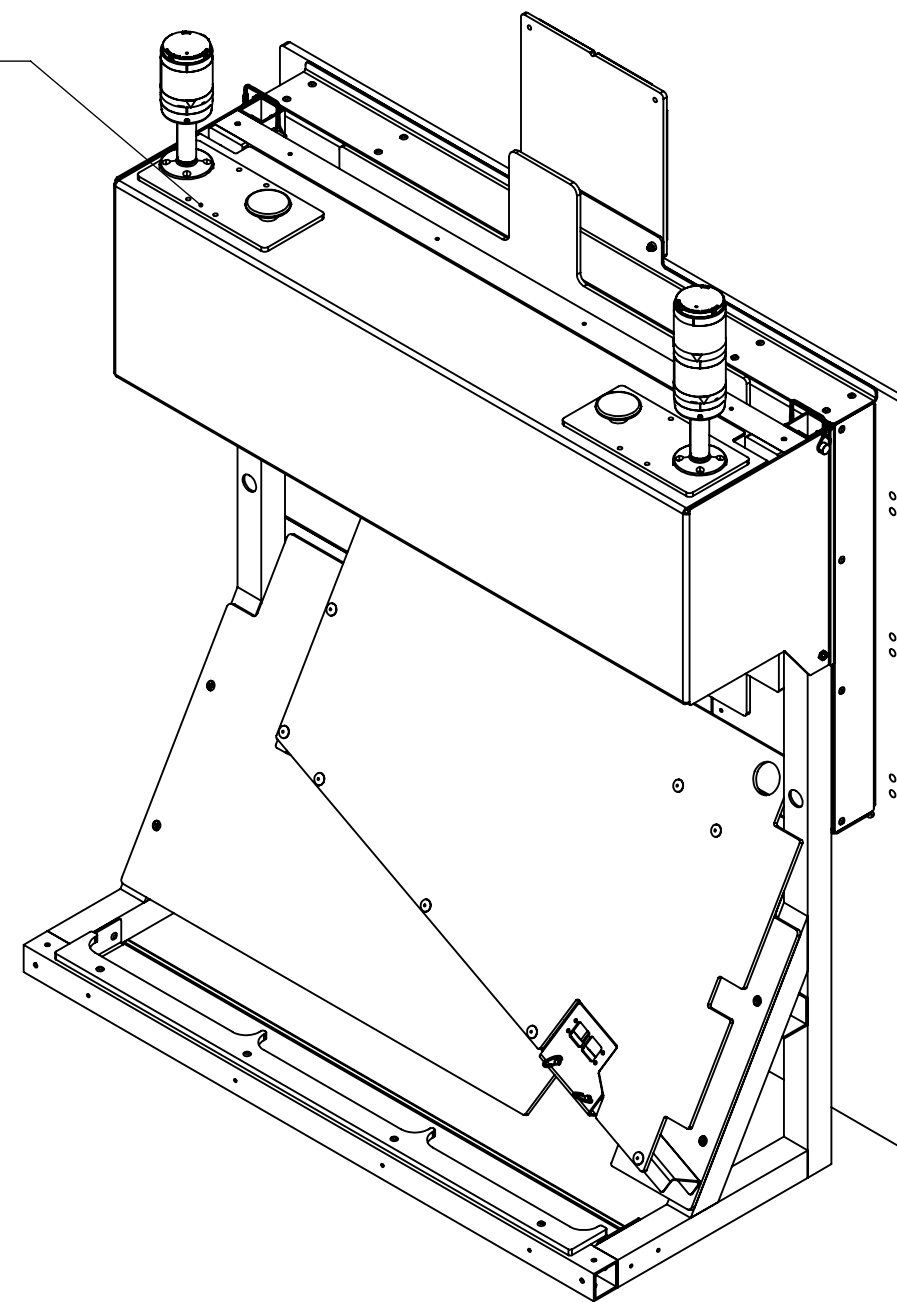
C



B

A



Attach with cable ties. 4 places



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div> <div>TITLE: <div>Amp Station</div></div>		
	DRAWN	DF	12/18/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL			<div>SIZE</div> <div>C</div> <div>DWG. NO.</div> <div>GE-24100</div> <div>REV</div> <div>A</div>		
	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.					
MATERIAL/FINISH:				SCALE: 1:10		
DO NOT SCALE DRAWING				SHEET 4 OF 4		

4

3

2

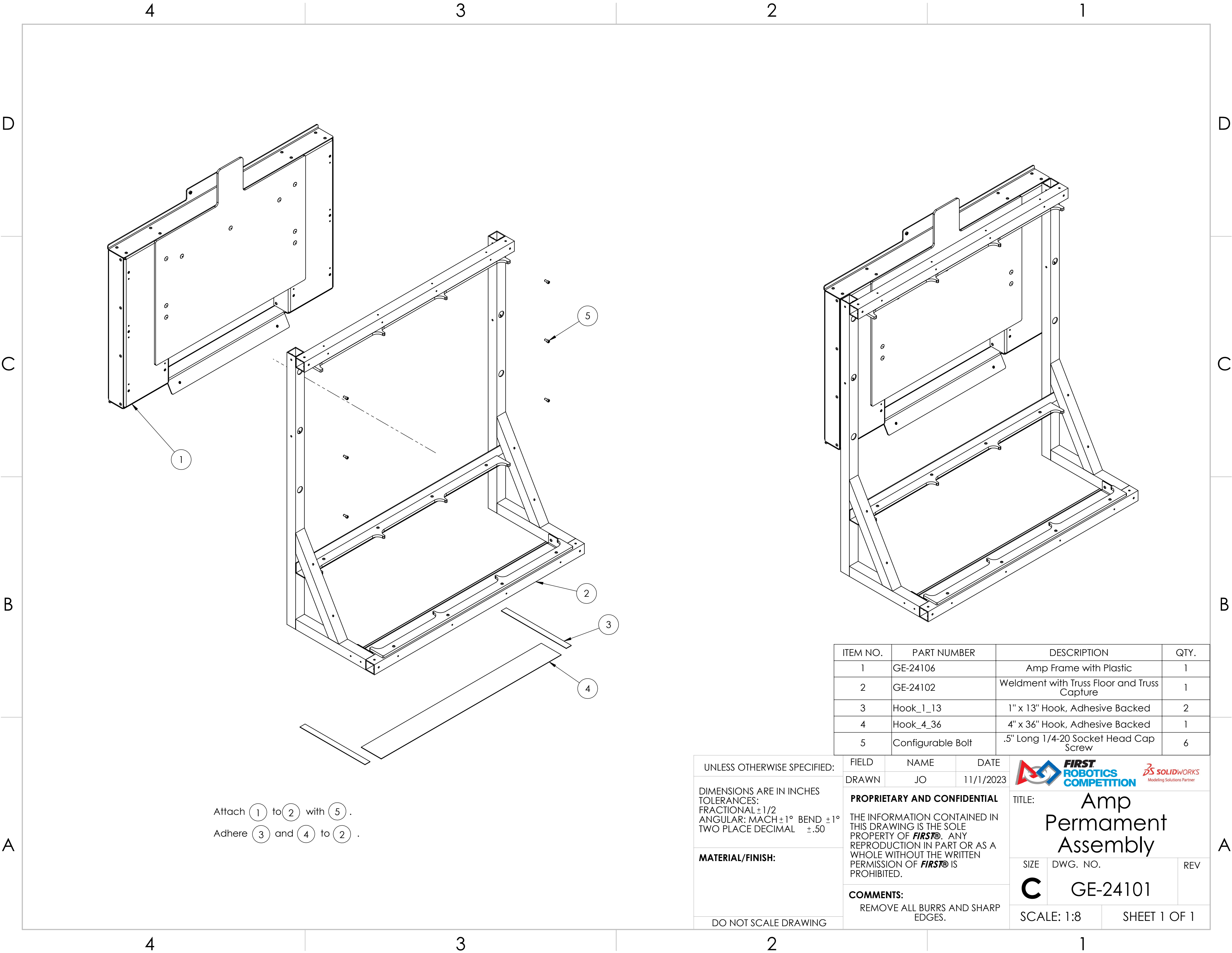
1

4



3

2

1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24106	Amp Frame with Plastic	1
2	GE-24102	Weldment with Truss Floor and Truss Capture	1
3	Hook_1_13	1" x 13" Hook, Adhesive Backed	2
4	Hook_4_36	4" x 36" Hook, Adhesive Backed	1
5	Configurable Bolt	.5" Long 1/4-20 Socket Head Cap Screw	6

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	JO	11/1/2023	TITLE: Amp Permanent Assembly	
	PROPRIETARY AND CONFIDENTIAL			SIZE: C	
	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.			DWG. NO. GE-24101	
MATERIAL/FINISH:	COMMENTS:			REV:	
DO NOT SCALE DRAWING	REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:8	
				SHEET 1 OF 1	

4

3

2

1

D

D

C

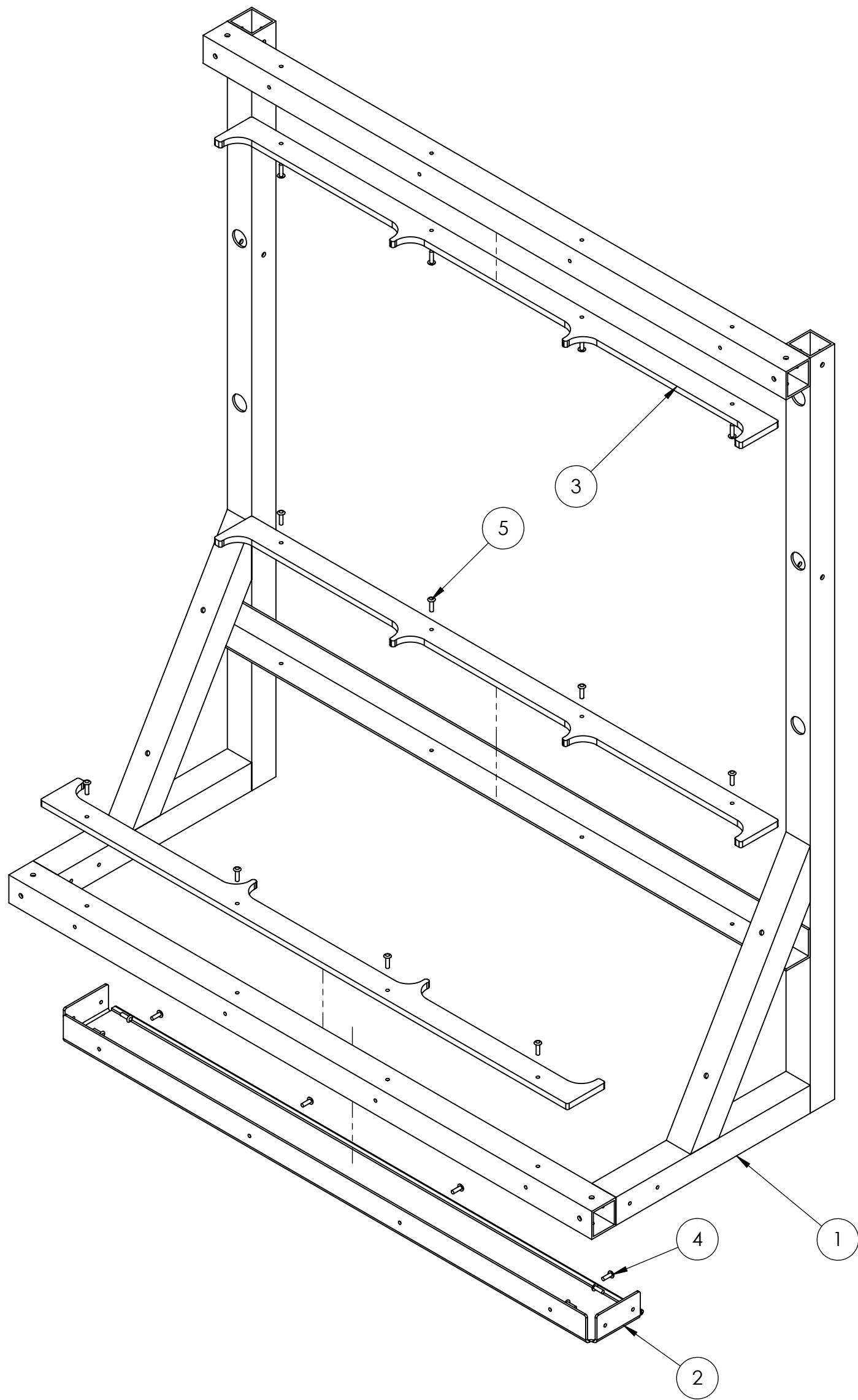
C

B

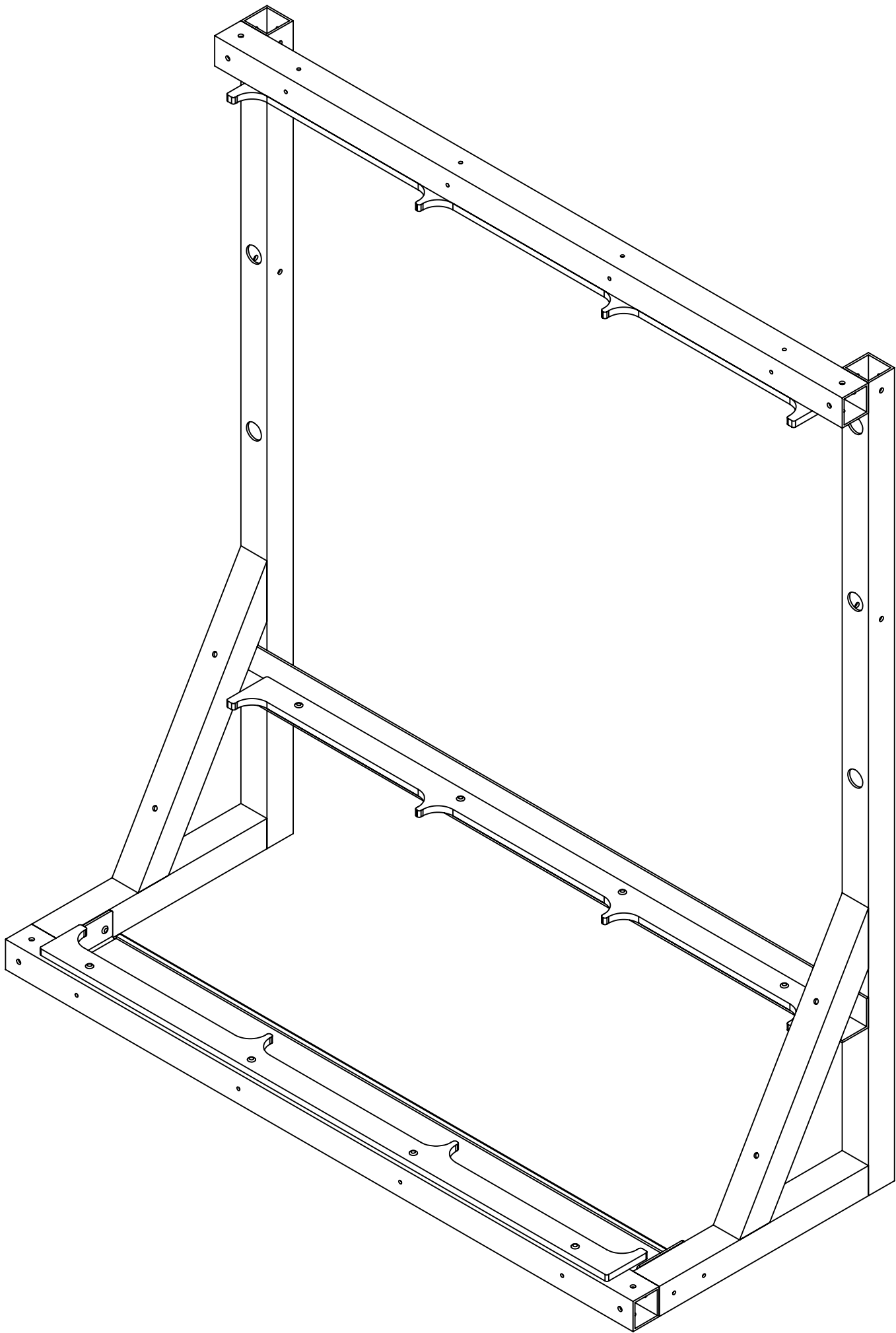
B

A



A

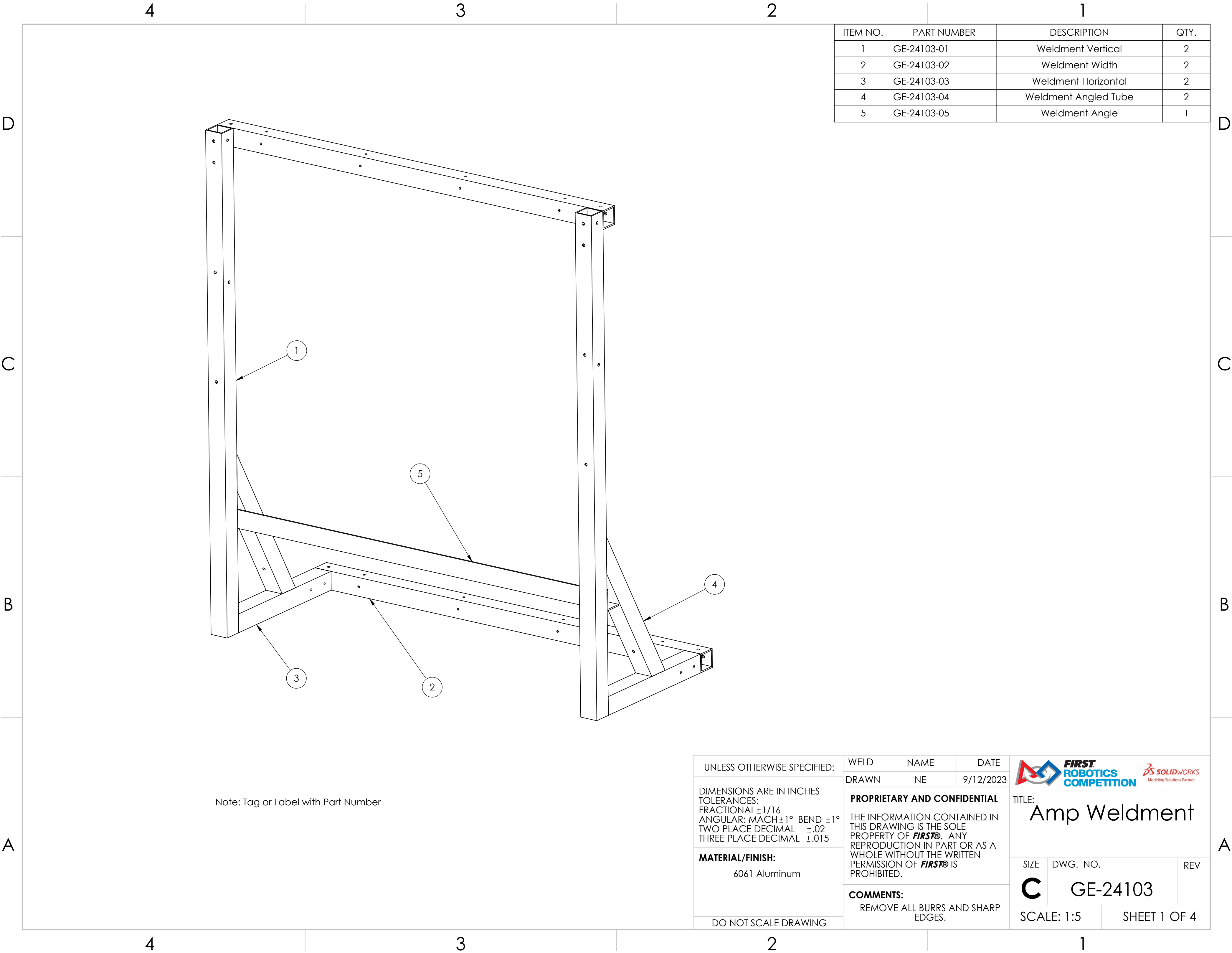


Attach (3) to (1) with (5) in 3 places.
Attach (2) to (1) with (4)





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24103	Amp Weldment	1
2	GE-24104	Truss Floor	1
3	GE-24105	Truss Capture Small	3
4	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	8
5	rivet_.1875_.376-.5	3/16" Aluminum Rivet, .376-.5 Grip Range	12

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50 MATERIAL/FINISH: DO NOT SCALE DRAWING	FIELD	NAME	DATE	<div></div> <div>TITLE: Weldment with Truss Floor and Truss Capture</div> <div><div>SIZE</div><div>DWG. NO.</div><div>REV</div></div> <div><div>C</div><div>GE-24102</div></div> <div><div>SCALE: 1:6</div><div>SHEET 1 OF 1</div></div>
	DRAWN	JO	11/1/2023	
	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.			
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24103-01	Weldment Vertical	2
2	GE-24103-02	Weldment Width	2
3	GE-24103-03	Weldment Horizontal	2
4	GE-24103-04	Weldment Angled Tube	2
5	GE-24103-05	Weldment Angle	1

Note: Tag or Label with Part Number

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.015 MATERIAL/FINISH: 6061 Aluminum DO NOT SCALE DRAWING	WELD	NAME	DATE
	DRAWN	NE	9/12/2023
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
 			
TITLE:			Amp Weldment
SIZE	DWG. NO.		REV
C	GE-24103		
SCALE: 1:5		SHEET 1 OF 4	



1

D





-NO WELD PERMISSIBLE ON OUTSIDE FACE FOR THIS WELD

-NOTE HOLE ORIENTATION

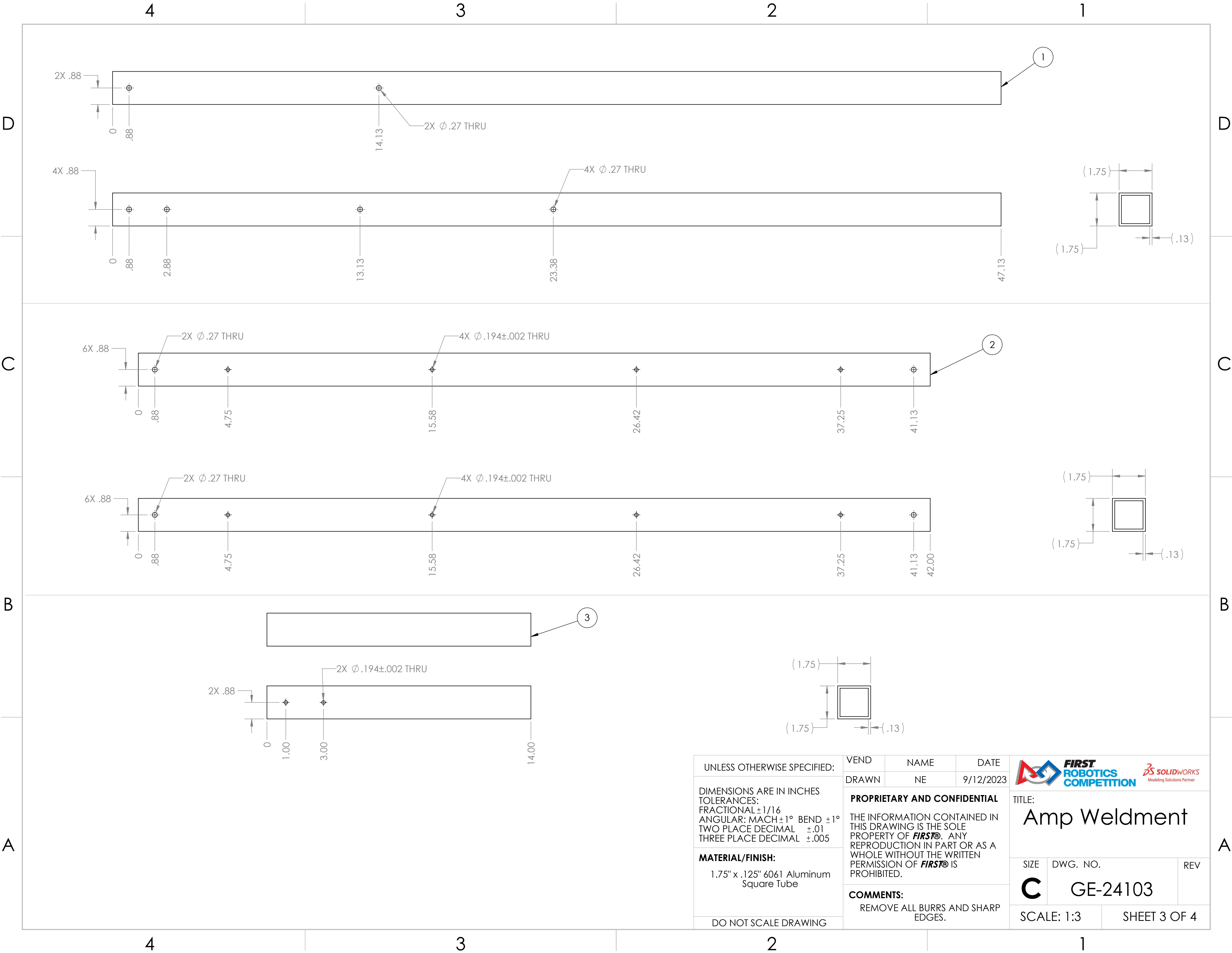


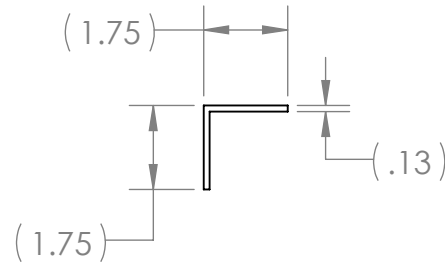
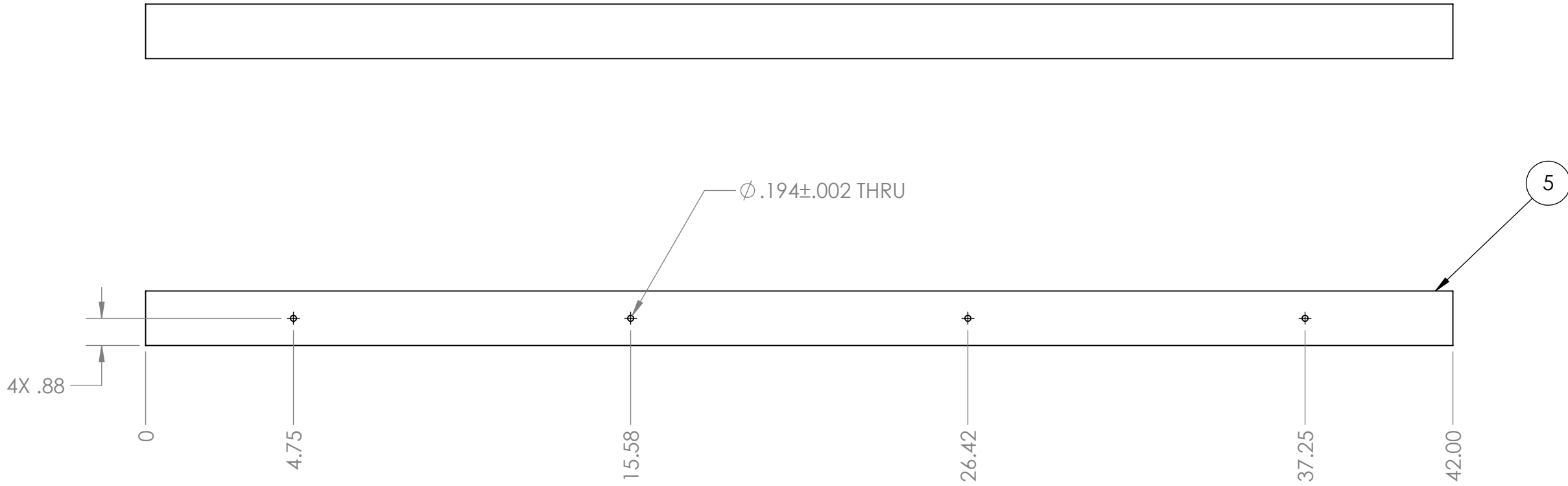
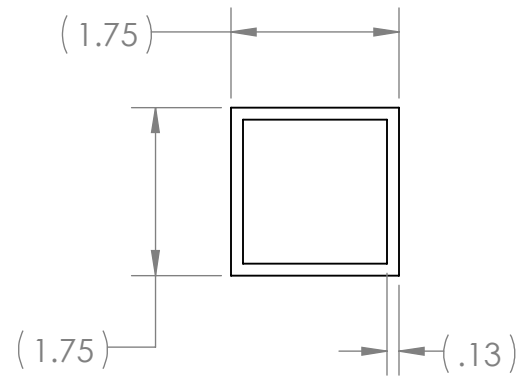
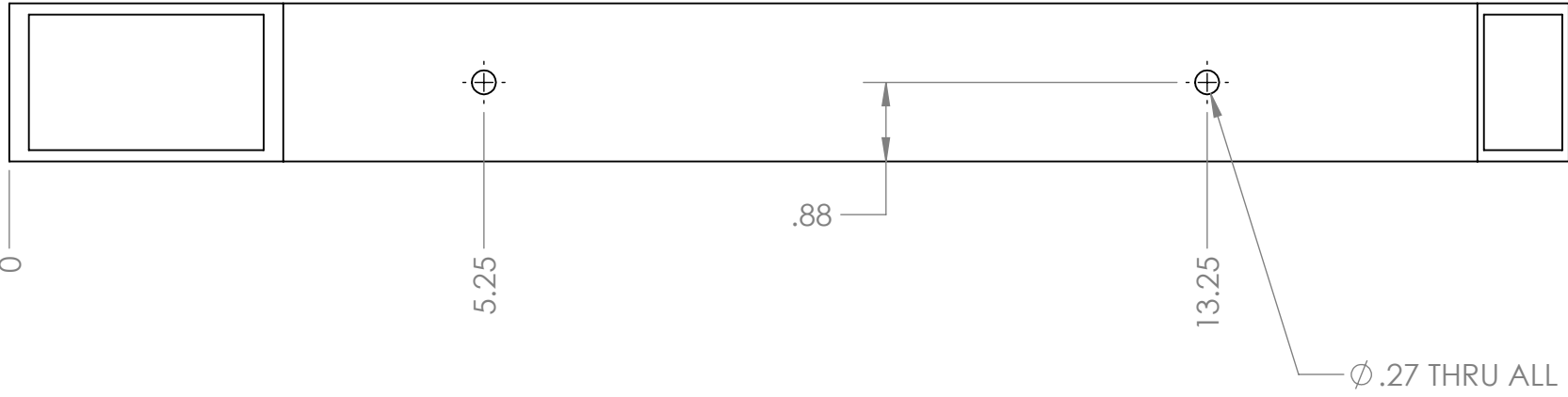
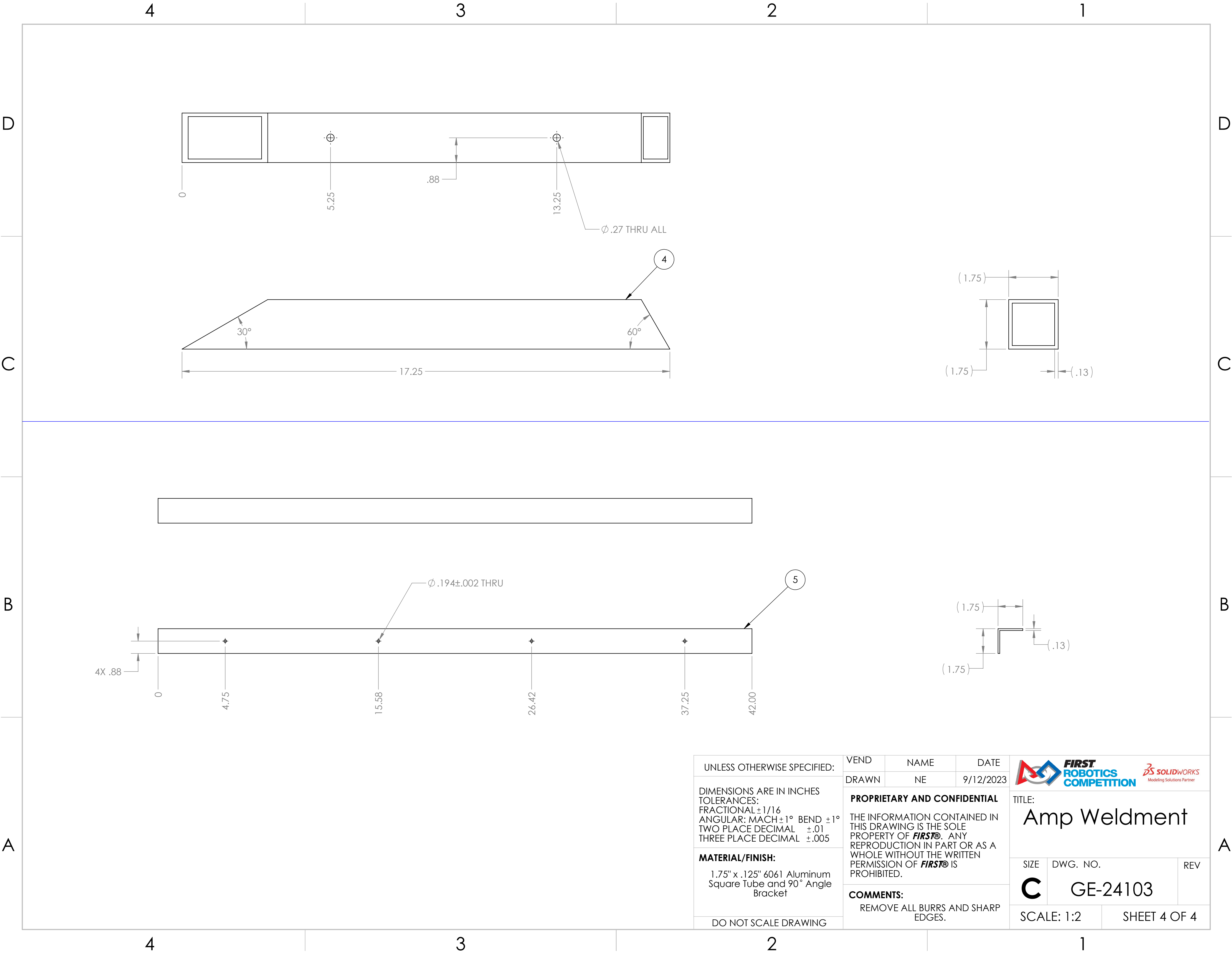
-NO WELD PERMISSIBLE ON
BOTTOM OF THIS JOINT



UNLESS OTHERWISE SPECIFIED:		WELD	NAME	DATE	 	
		DRAWN	NE	9/12/2023		
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 $\pm .015$		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.			TITLE: <h1>Amp Weldment</h1>	
MATERIAL/FINISH: 6061 Aluminum					SIZE	DWG. NO.
					C	GE-24103
DO NOT SCALE DRAWING		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:8	
					SHEET 2 OF 4	

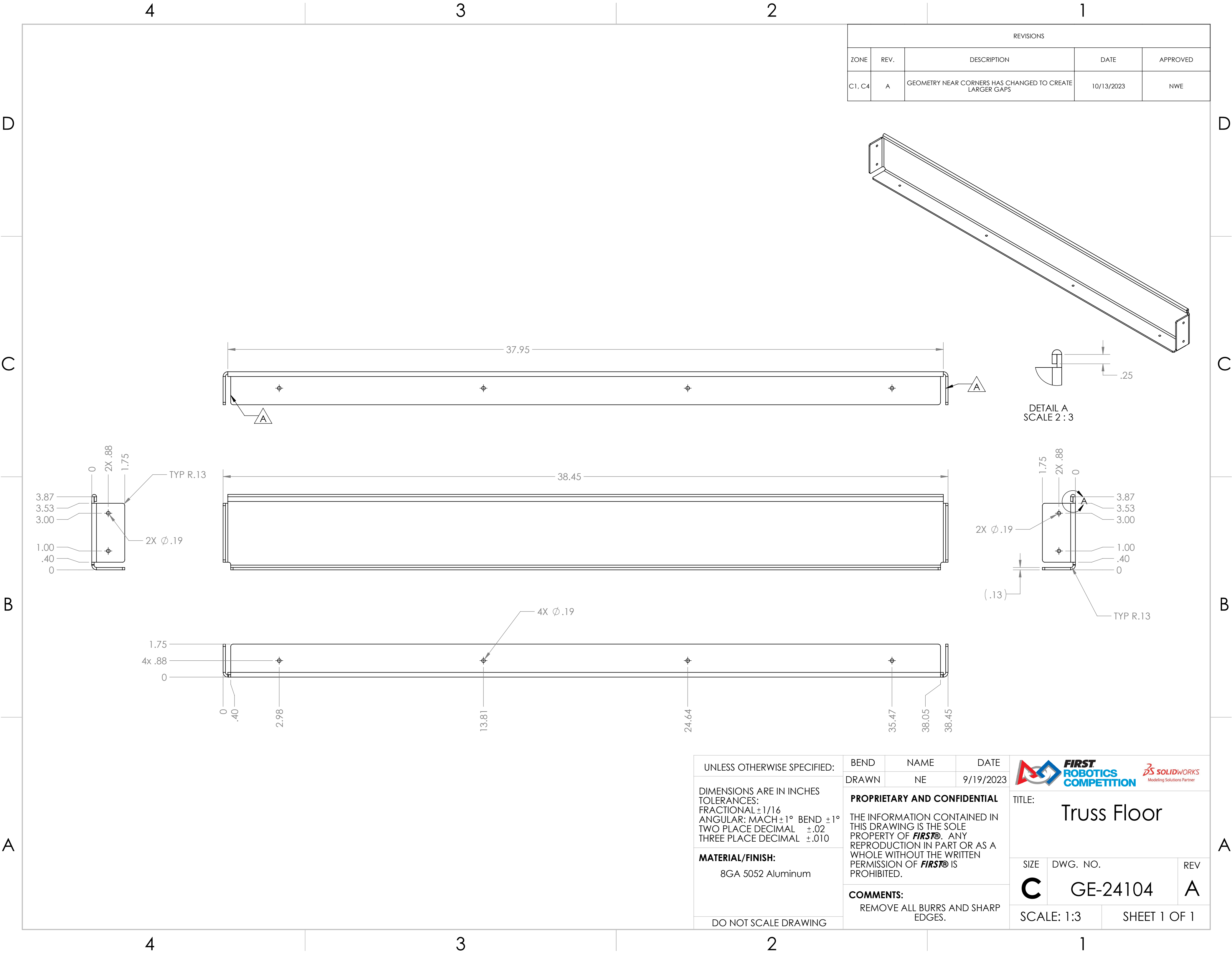
A

1

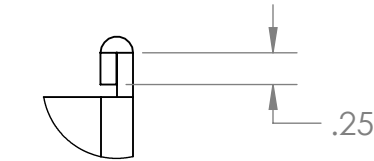




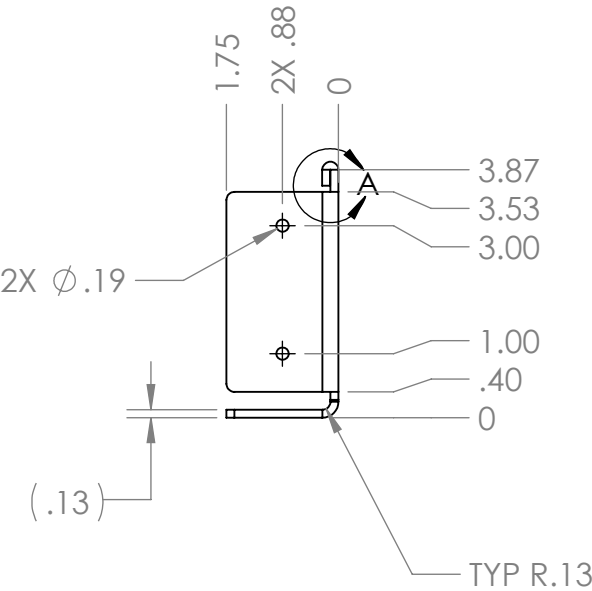
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$ MATERIAL/FINISH: 1.75" x .125" 6061 Aluminum Square Tube and 90° Angle Bracket DO NOT SCALE DRAWING	VEND	NAME	DATE	  TITLE: Amp Weldment		
	DRAWN	NE	9/12/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24103	
SCALE: 1:2		SHEET 4 OF 4				



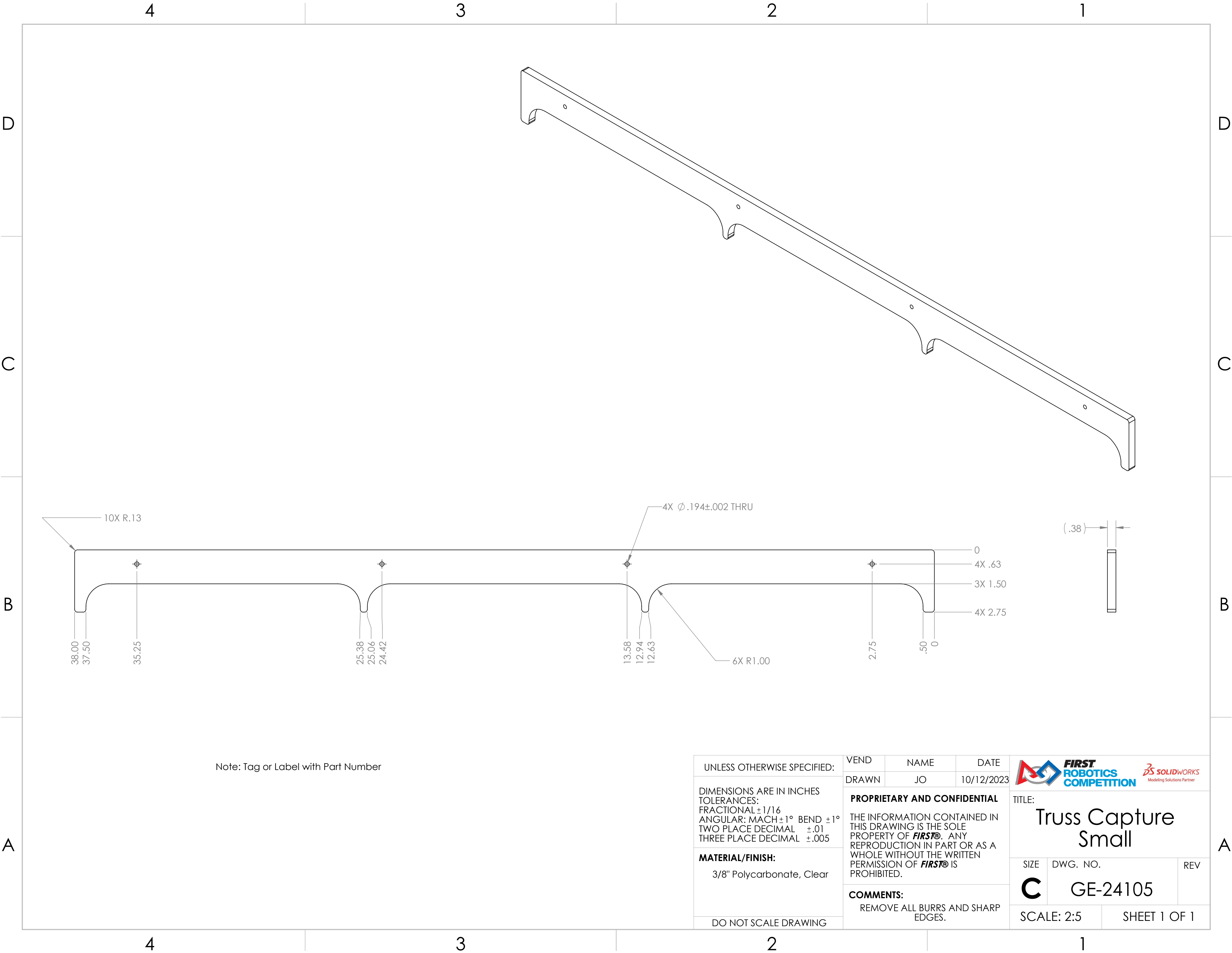
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C1, C4	A	GEOMETRY NEAR CORNERS HAS CHANGED TO CREATE LARGER GAPS	10/13/2023	NWE



DETAIL A
SCALE 2 : 3



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	9/19/2023
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:		Truss Floor		
SIZE	DWG. NO.	REV		
C	GE-24104	A		
SCALE: 1:3		SHEET 1 OF 1		



Note: Tag or 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:
3/8" Polycarbonate, Clear

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	10/12/2023

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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



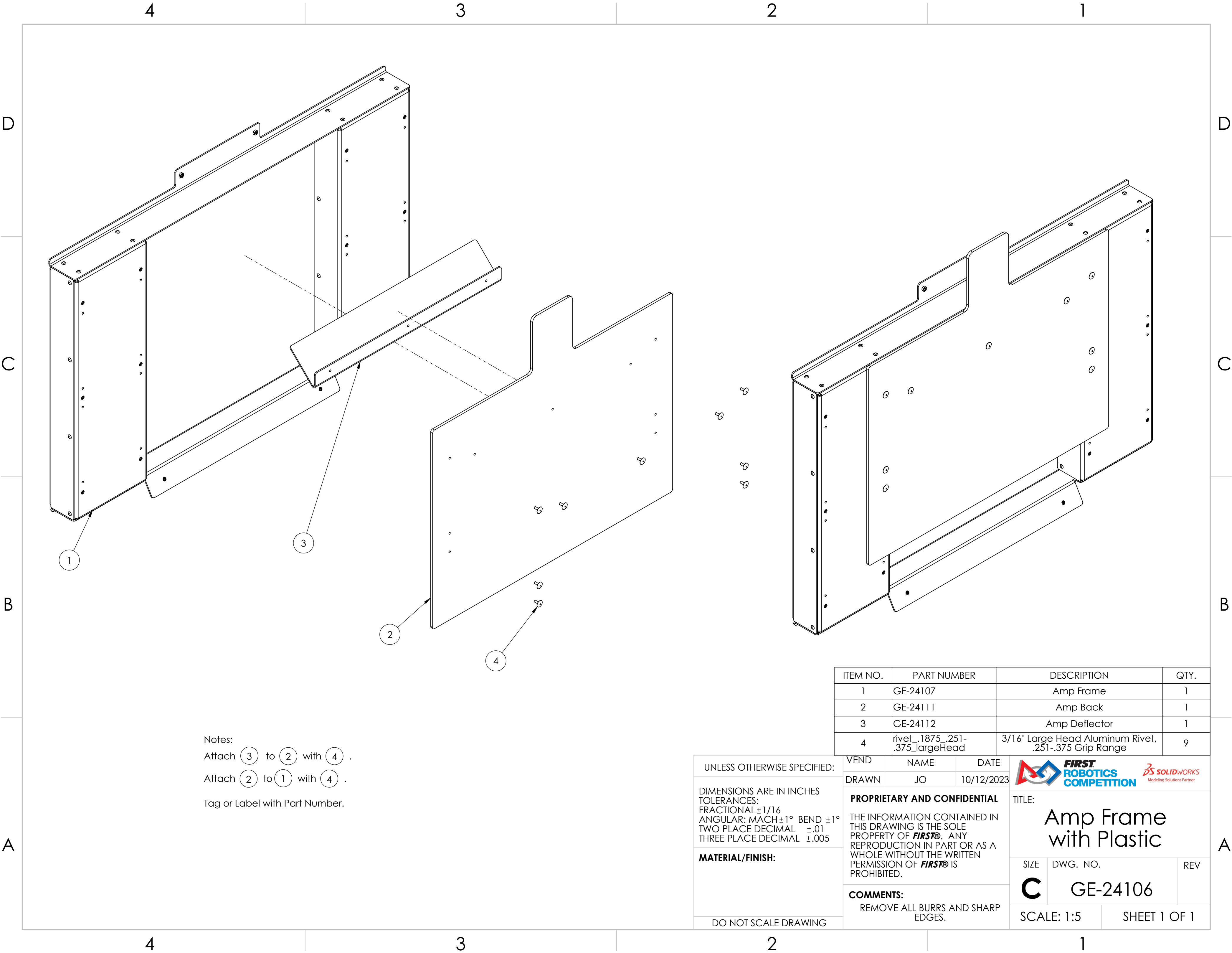
TITLE:

Truss Capture Small

SIZE	DWG. NO.	REV
C	GE-24105	

SCALE: 2:5

SHEET 1 OF 1



Notes:
Attach 3 to 2 with 4 .
Attach 2 to 1 with 4 .
Tag or Label with Part Number.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24107	Amp Frame	1
2	GE-24111	Amp Back	1
3	GE-24112	Amp Deflector	1
4	rivet .1875_.251-.375_largeHead	3/16" Large Head Aluminum Rivet, .251-.375 Grip Range	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
DRAWN


NAME
JO


DATE
10/12/2023

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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.





TITLE:
Amp Frame with Plastic

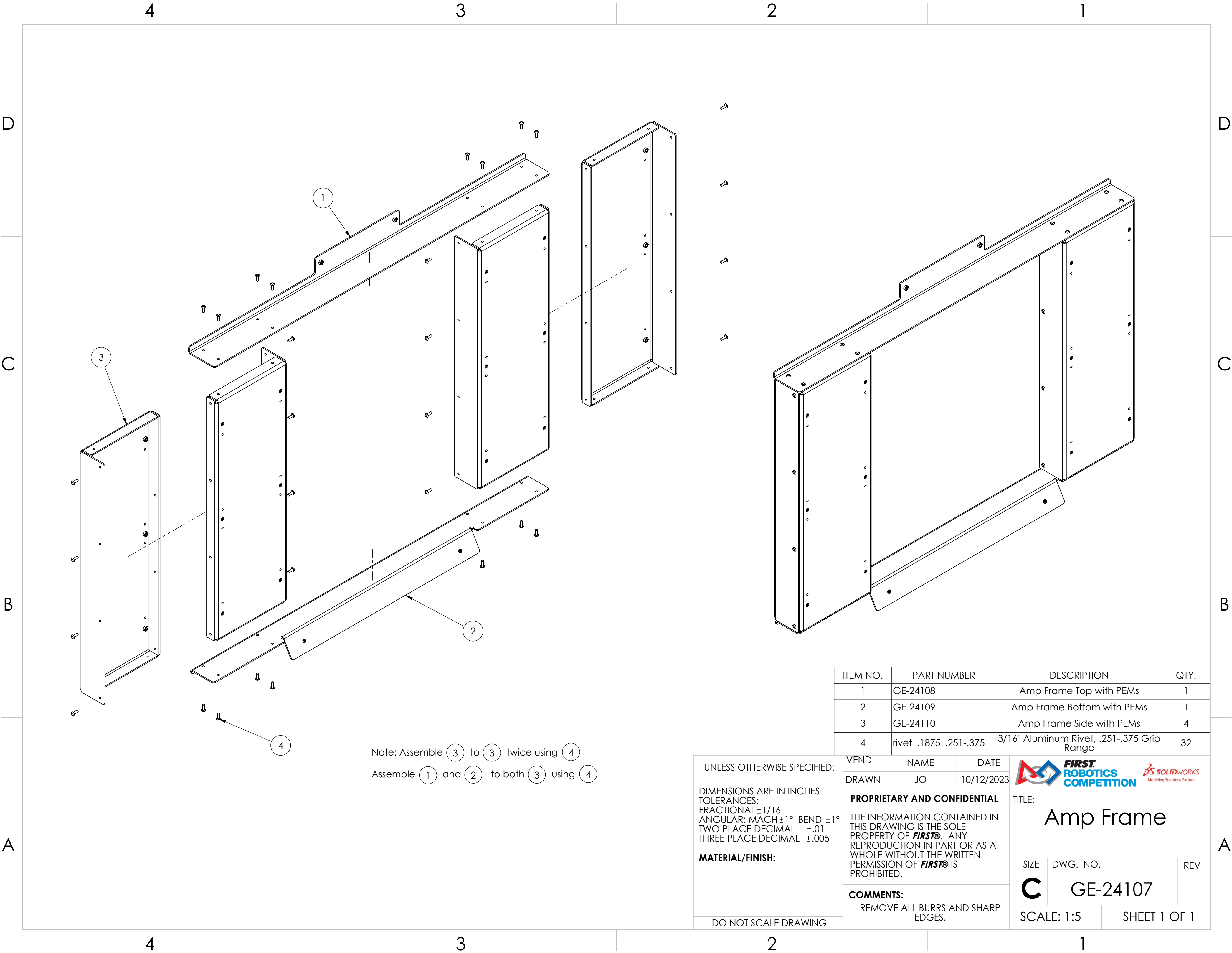
SIZE
C

DWG. NO.
GE-24106

REV

SCALE: 1:5

SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24108	Amp Frame Top with PEMs	1
2	GE-24109	Amp Frame Bottom with PEMs	1
3	GE-24110	Amp Frame Side with PEMs	4
4	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	32

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

JO

10/12/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION



Modeling Solutions Partner

TITLE:

Amp Frame

SIZE

C

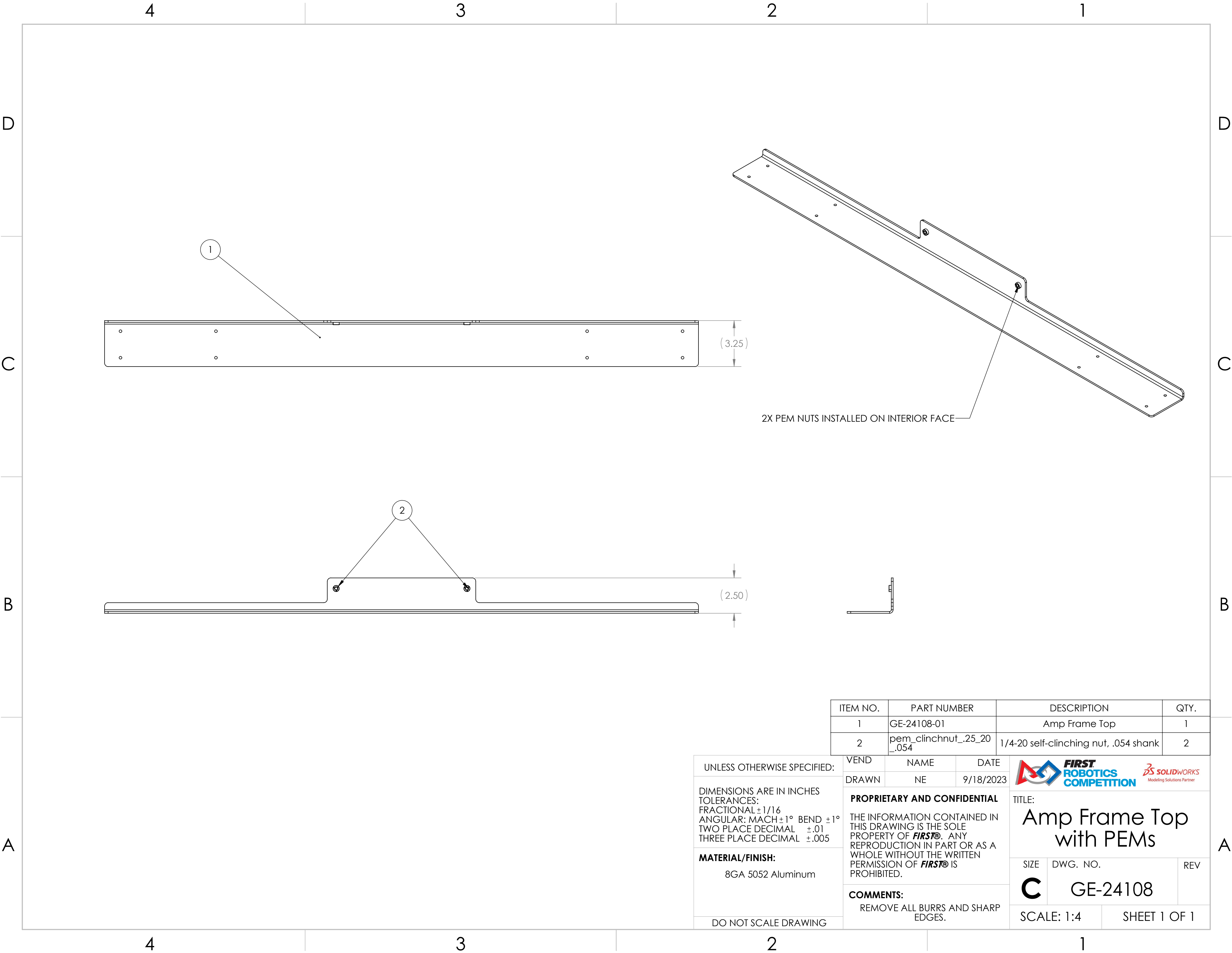
DWG. NO.

GE-24107



REV

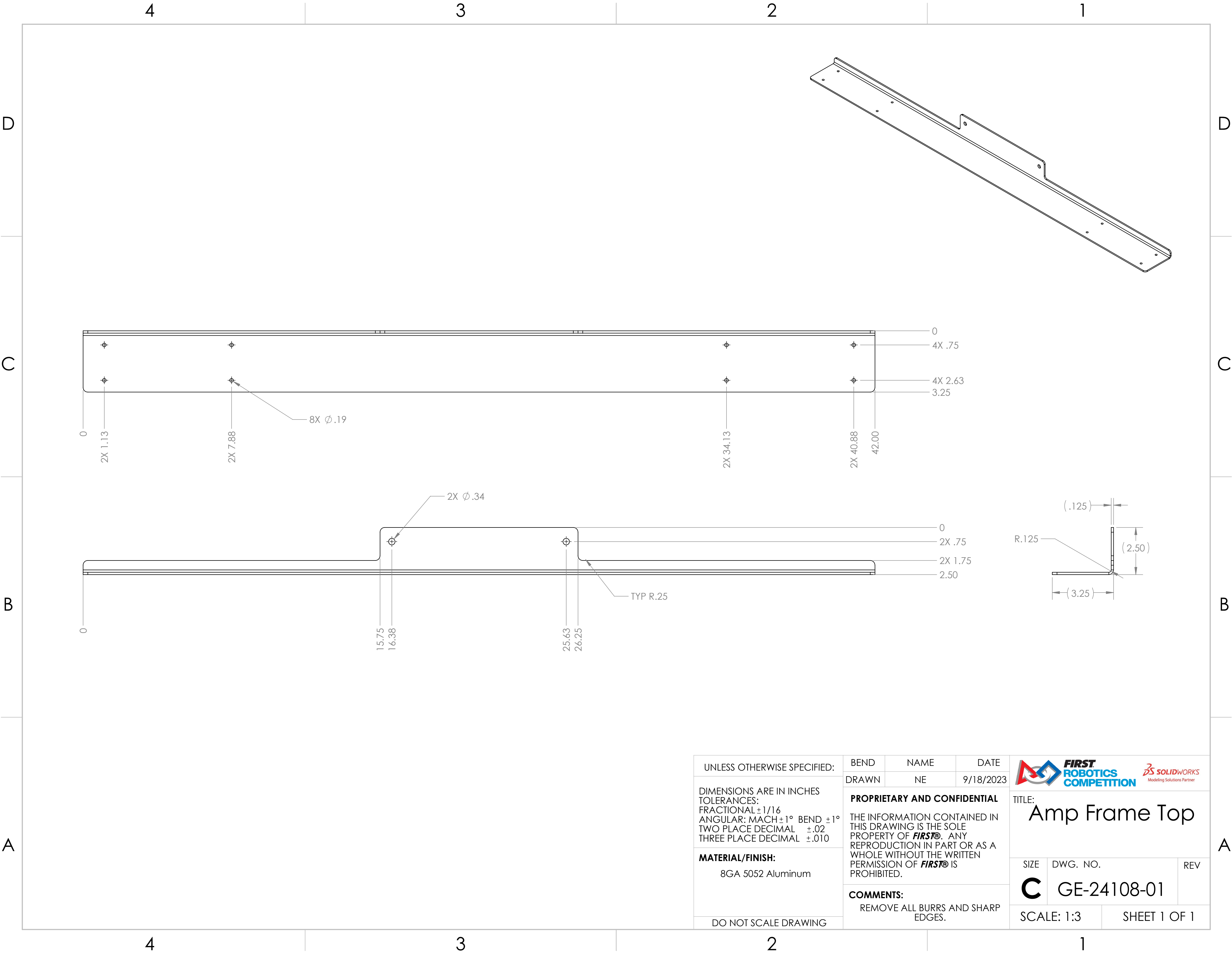
SCALE: 1:5



SHEET 1 OF 1

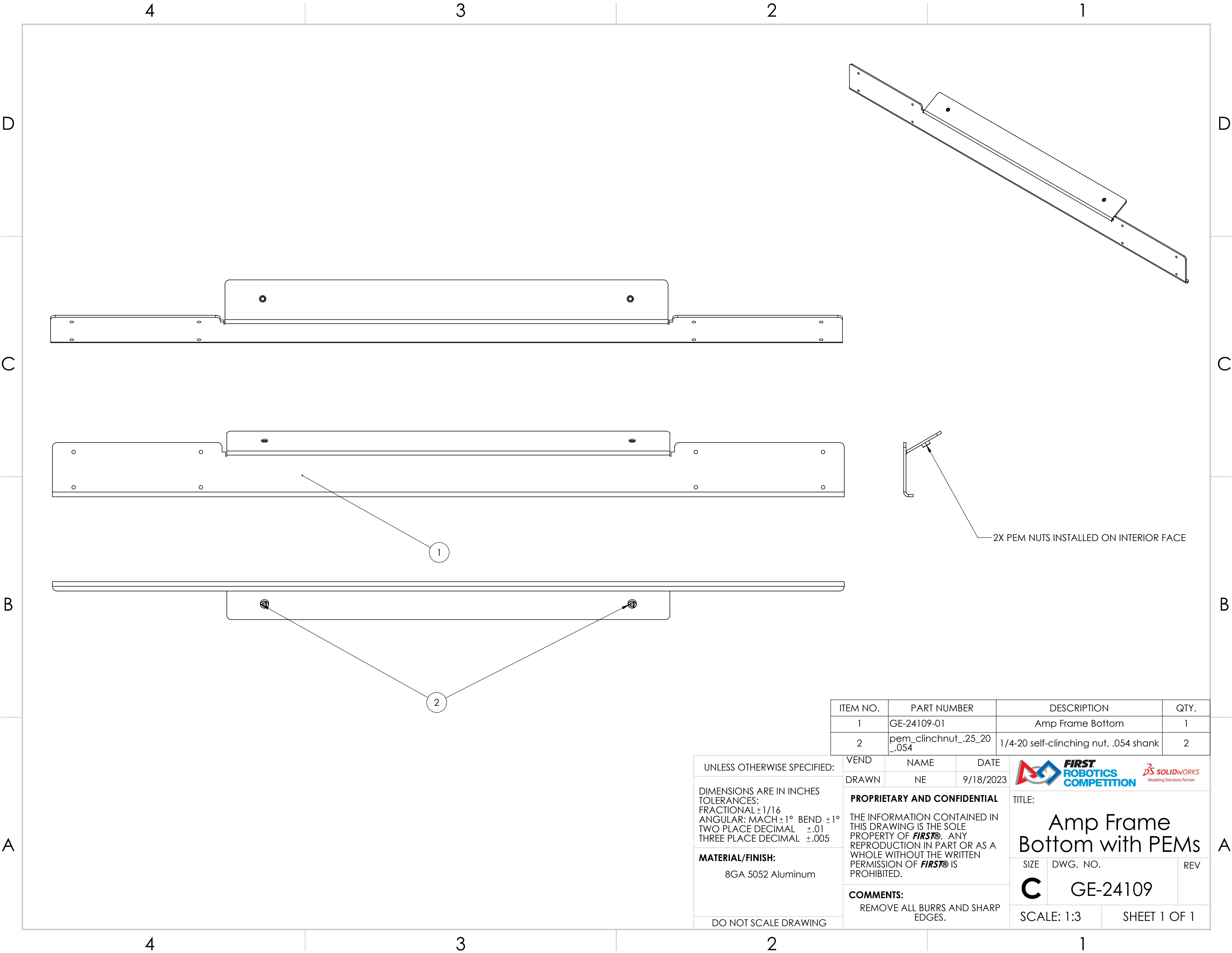


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24108-01	Amp Frame Top	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	2

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>	
	DRAWN	NE	9/18/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.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.			Amp Frame Top with PEMs	
MATERIAL/FINISH: 8GA 5052 Aluminum	COMMENTS:			SIZE	DWG. NO.
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24108
DO NOT SCALE DRAWING				SCALE: 1:4	
				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 $\pm .02$ THREE PLACE DECIMAL $\pm .010$ MATERIAL/FINISH: 8GA 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	  TITLE: Amp Frame Top	
	DRAWN	NE	9/18/2023		
	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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24108-01
SCALE: 1:3		SHEET 1 OF 1			



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24109-01	Amp Frame Bottom	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	2

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: 8GA 5052 Aluminum
DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	NE	9/18/2023
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.		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

 		
TITLE: Amp Frame Bottom with PEMs		
SIZE C	DWG. NO. GE-24109	REV
SCALE: 1:3		SHEET 1 OF 1

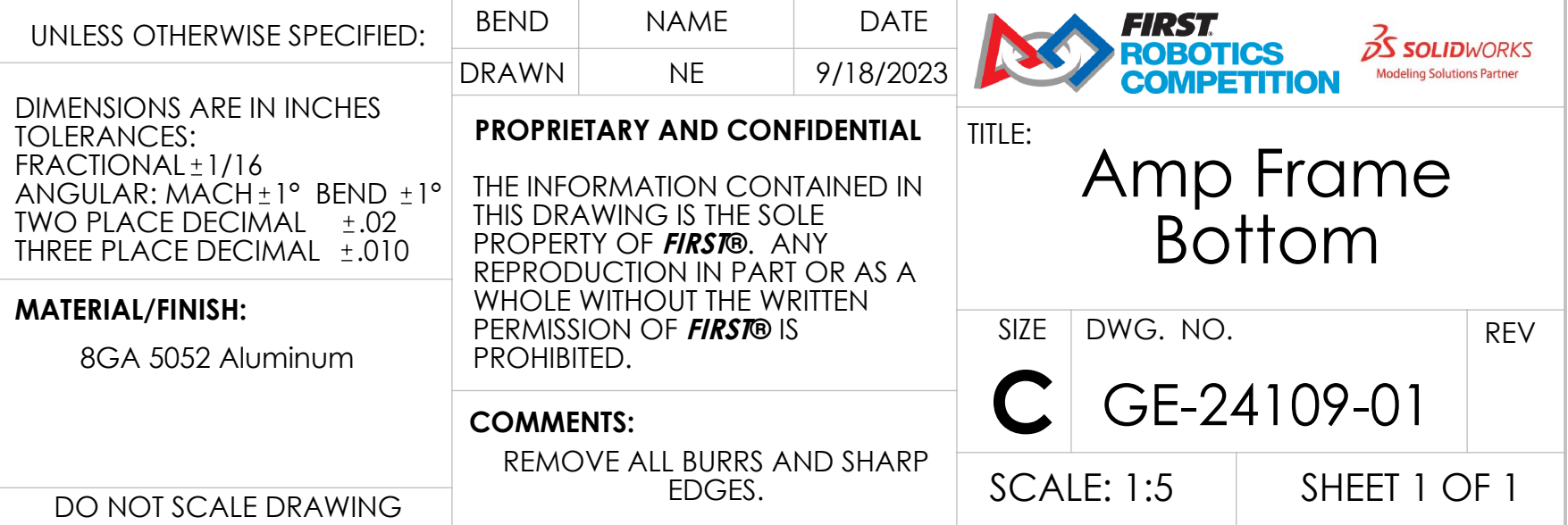
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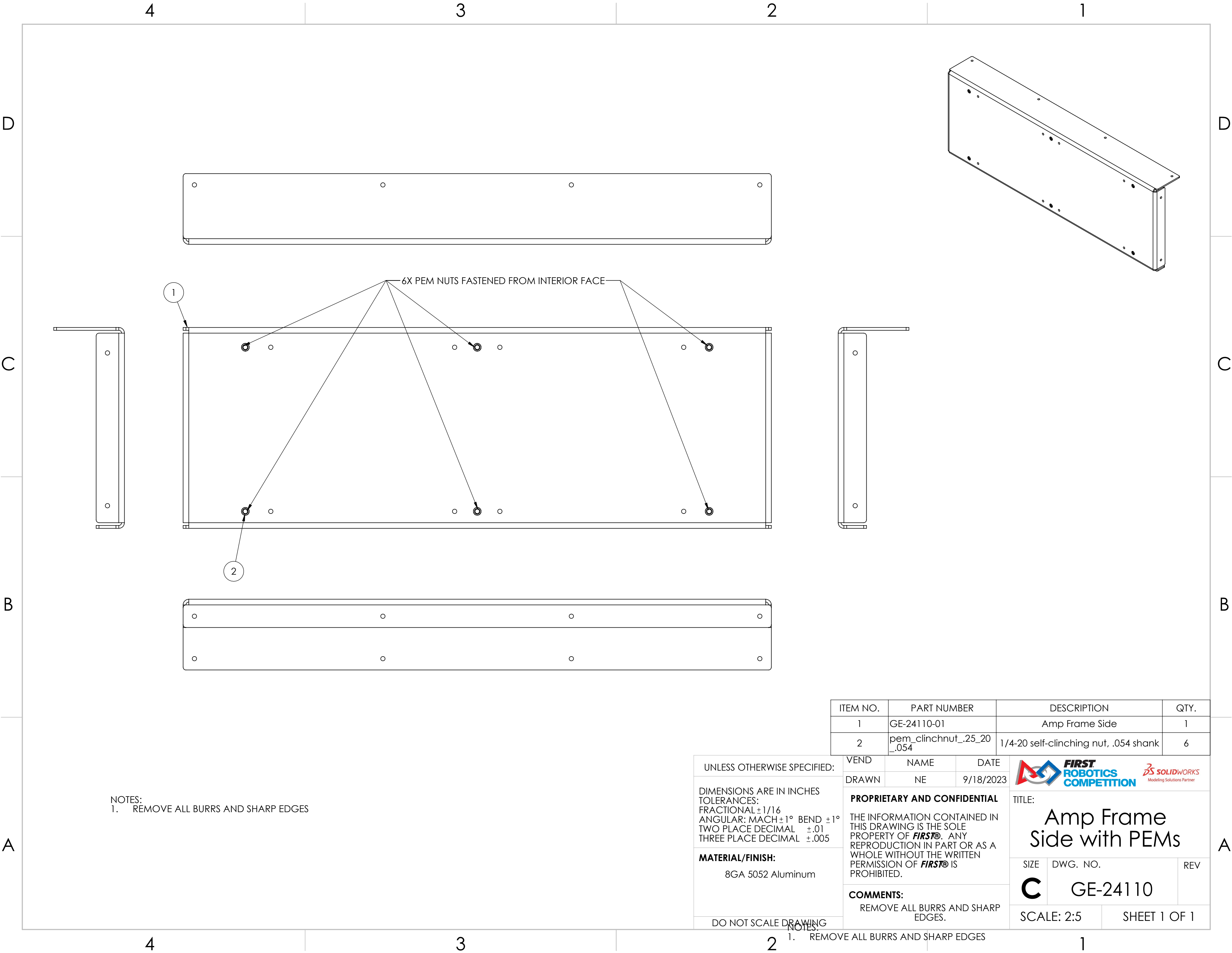
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C

B

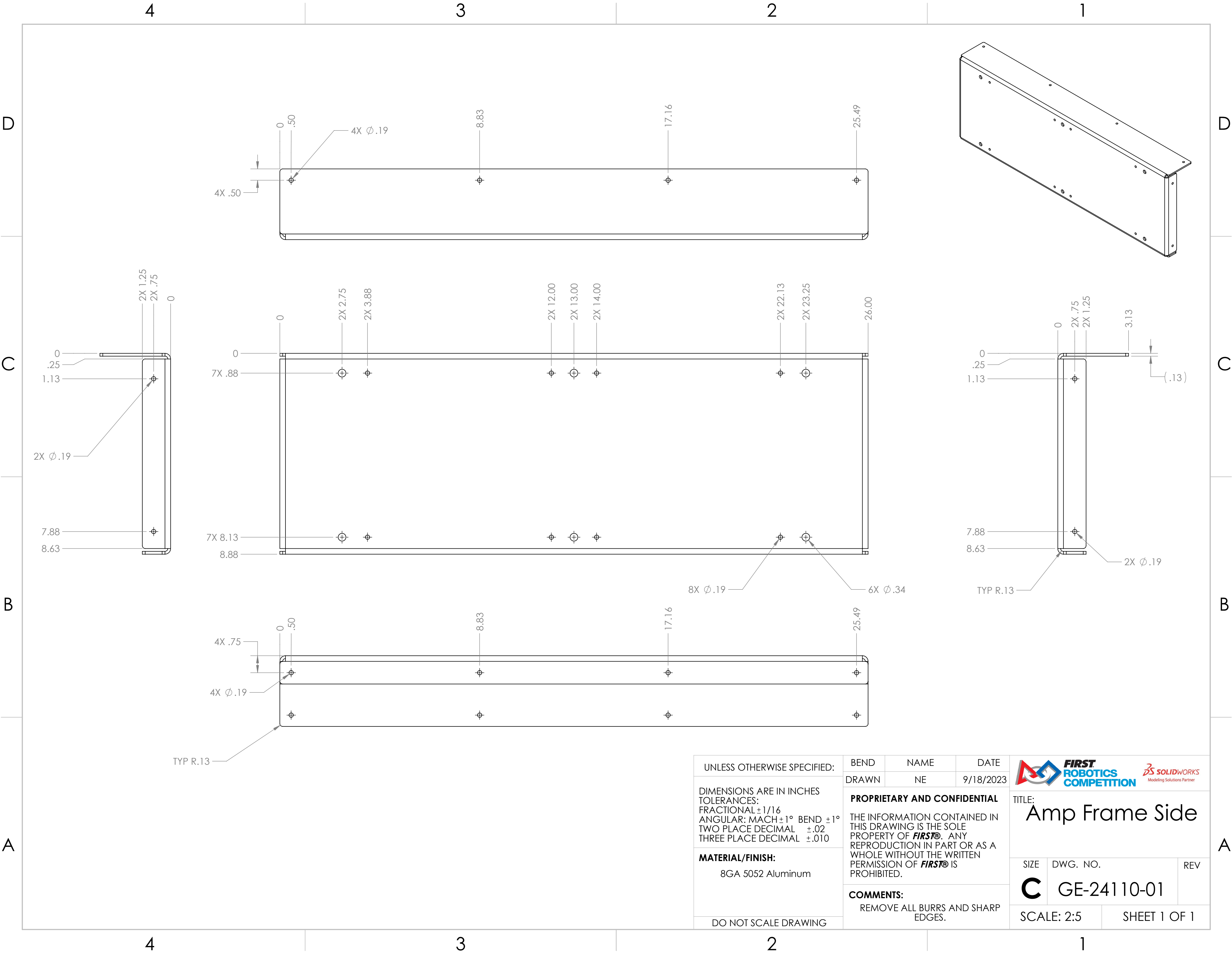
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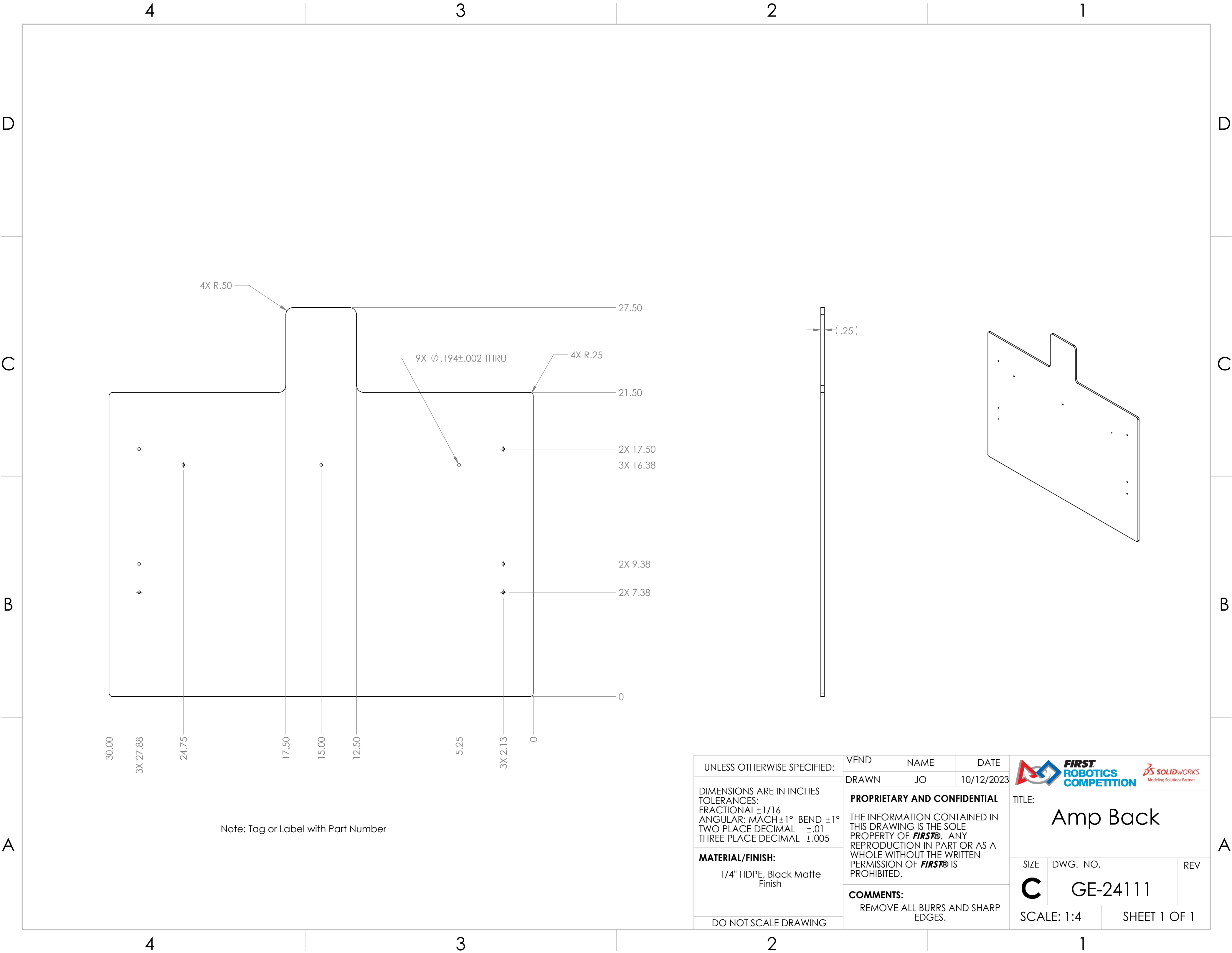


NOTES:
1. REMOVE ALL BURRS AND SHARP EDGES

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: 8GA 5052 Aluminum			
DO NOT SCALE DRAWING			
NOTES: 1. REMOVE ALL BURRS AND SHARP EDGES			
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24110-01	Amp Frame Side	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	6
VEND	NAME	DATE	
DRAWN	NE	9/18/2023	
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.			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
TITLE: Amp Frame Side with PEMs			
SIZE	DWG. NO.	REV	
C	GE-24110		
SCALE: 2:5		SHEET 1 OF 1	



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 8GA 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Amp Frame Side</div>	
	DRAWN	NE	9/18/2023		
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				
SIZE		DWG. NO.		REV	
C		GE-24110-01			
SCALE: 2:5			SHEET 1 OF 1		



4X R.50

9X ϕ .194 \pm .002 THRU

4X R.25

27.50

21.50

2X 17.50

3X 16.38

2X 9.38

2X 7.38

0

(.25)

30.00

3X 27.88

24.75

17.50

15.00


12.50

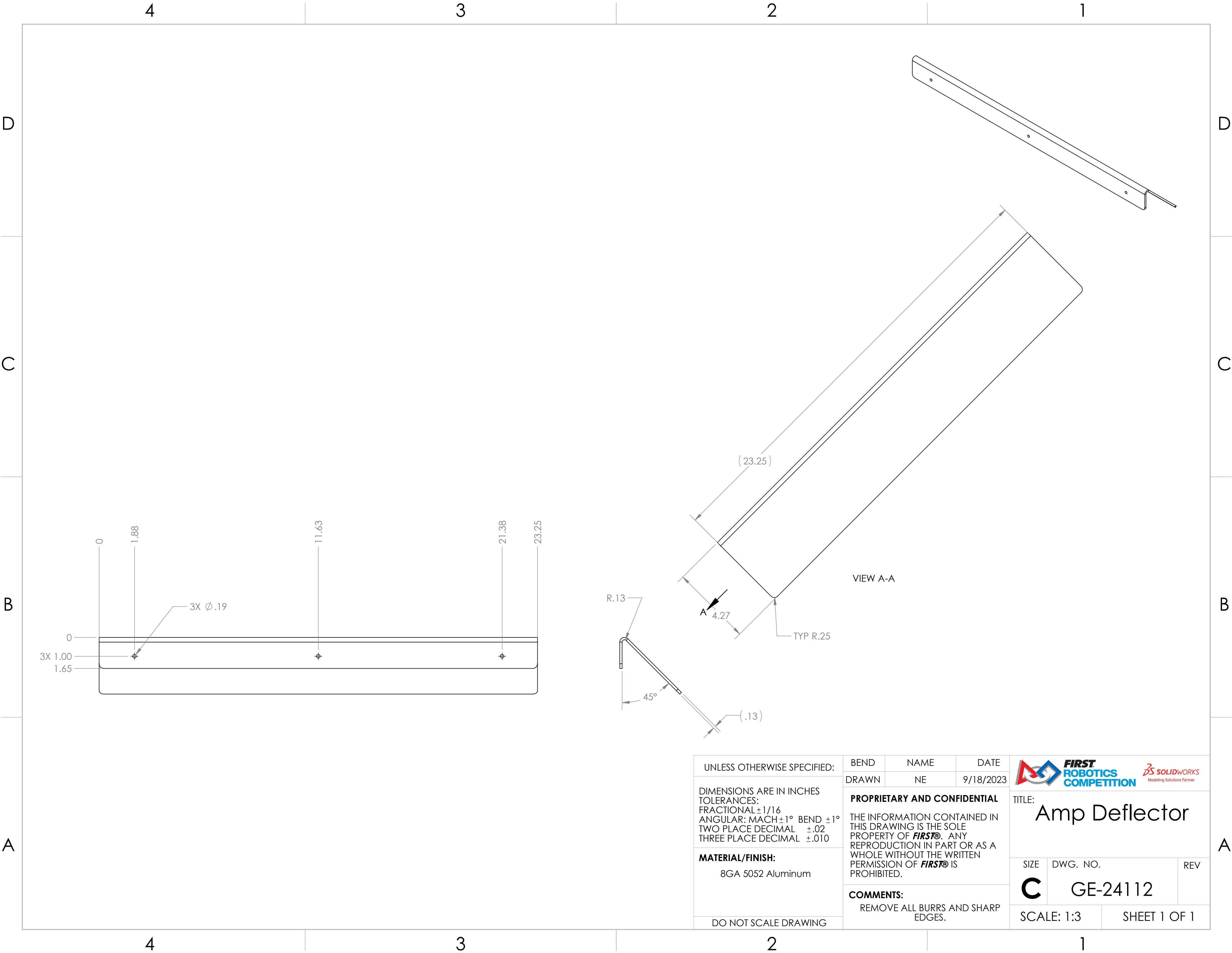
5.25



3X 2.13

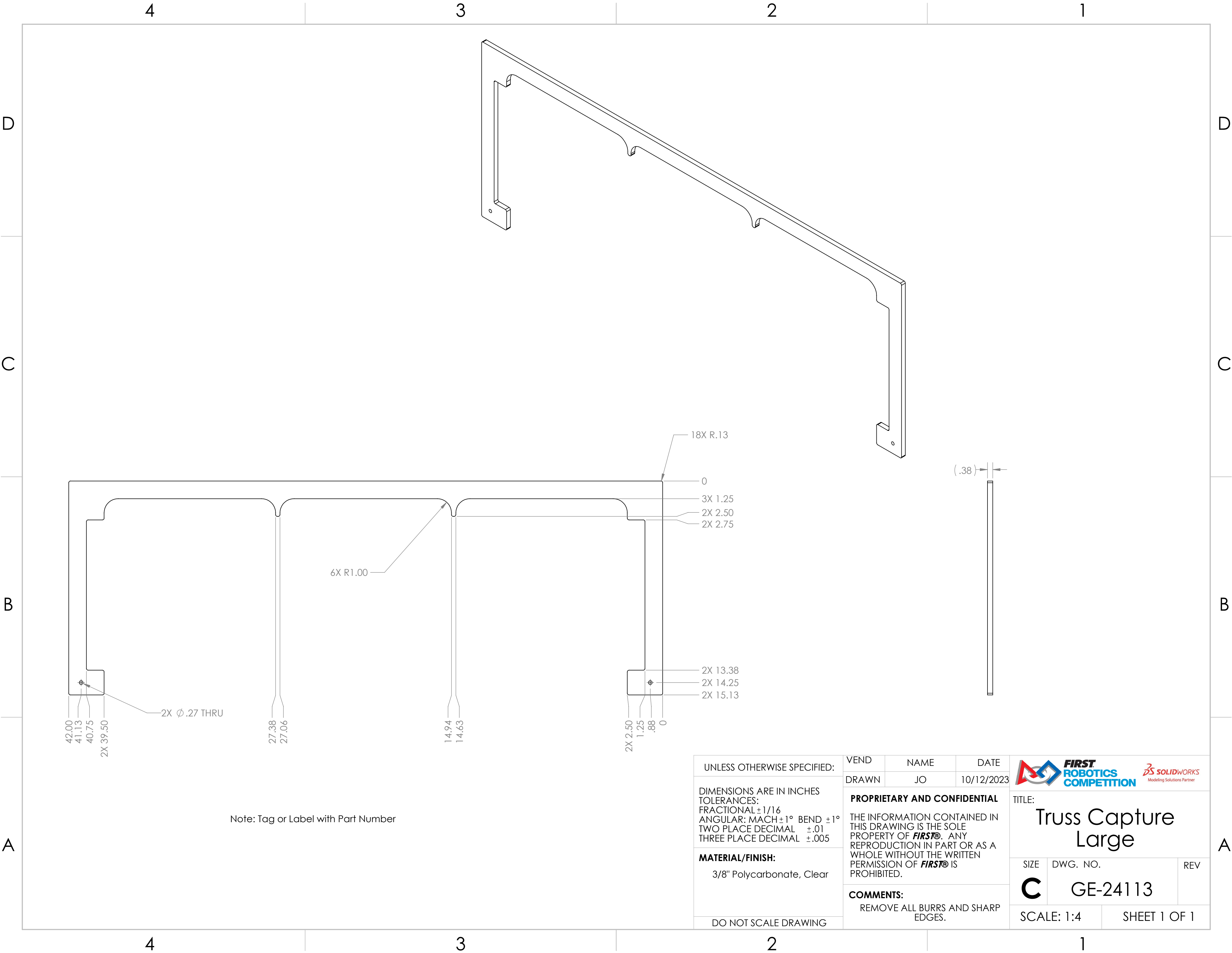
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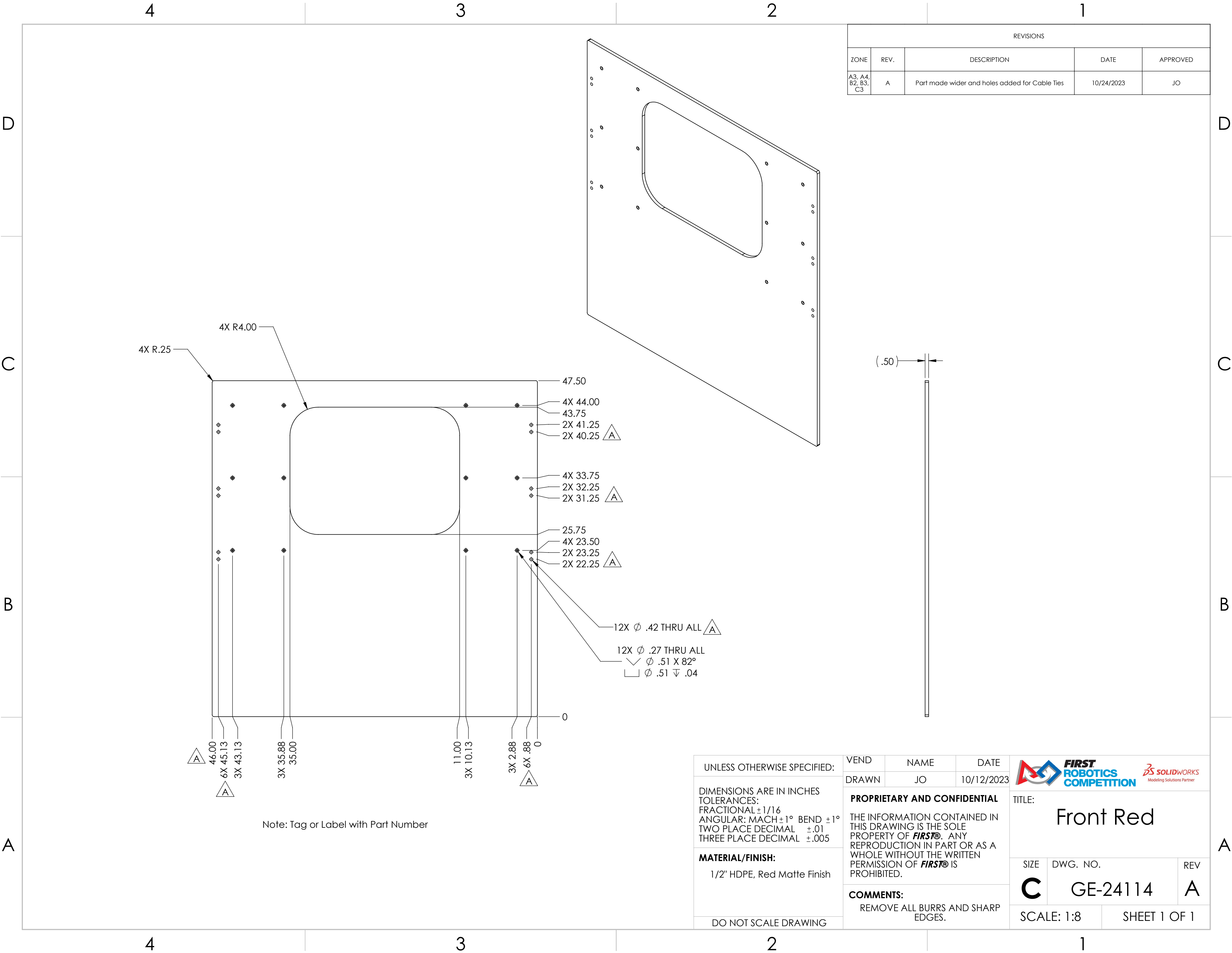
Note: Tag or Label with Part Number

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL \pm 1/16 ANGULAR: MACH \pm 1° BEND \pm 1° TWO PLACE DECIMAL \pm .01 THREE PLACE DECIMAL \pm .005 MATERIAL/FINISH: 1/4" HDPE, Black Matte Finish DO NOT SCALE DRAWING	VEND	NAME	DATE	 TITLE: <h1>Amp Back</h1>		
	DRAWN	JO	10/12/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24111	REV
SCALE: 1:4		SHEET 1 OF 1				





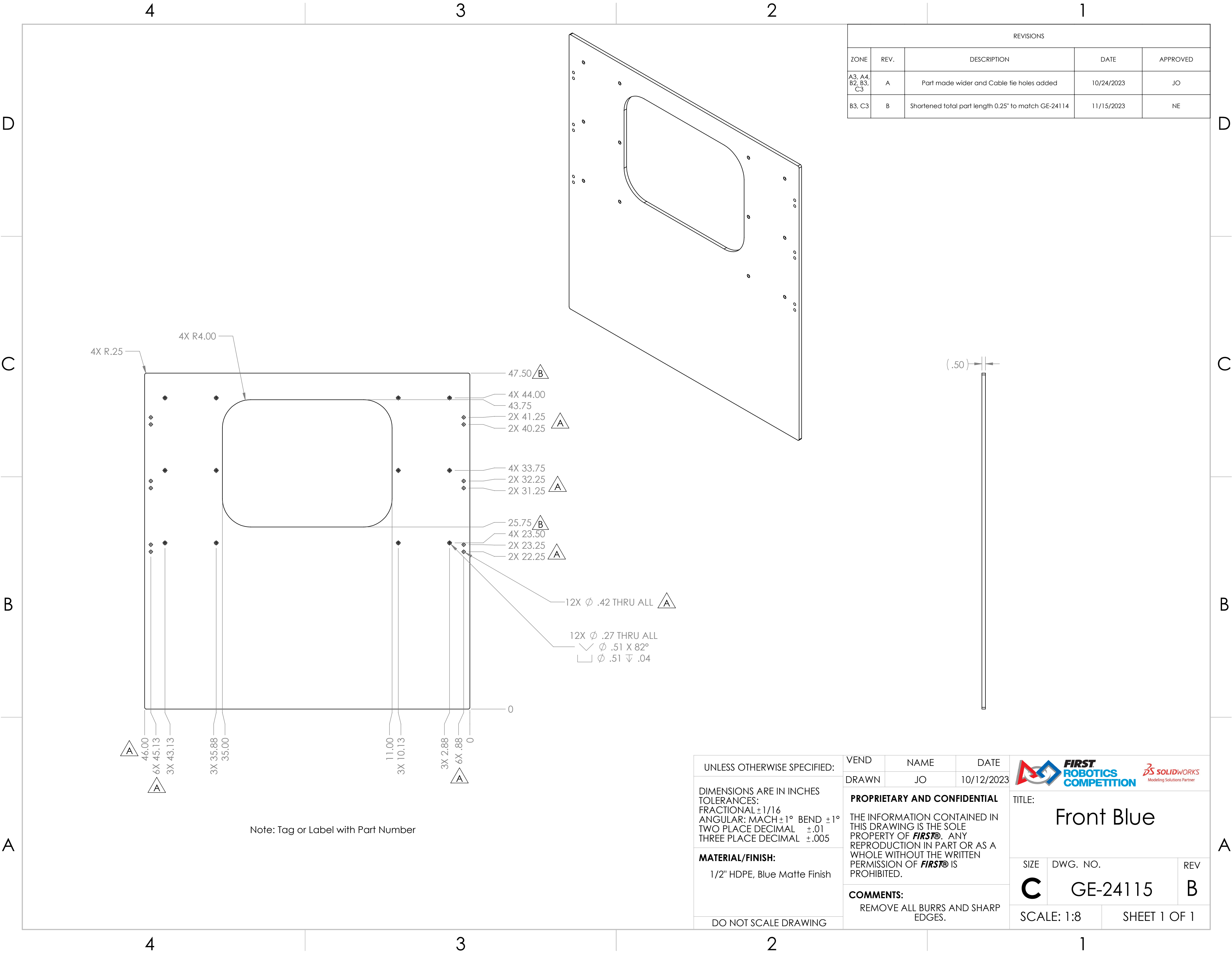
UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div></div> <div>TITLE: Amp Deflector</div>		
	DRAWN	NE	9/18/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24112	
				SCALE: 1:3		SHEET 1 OF 1
MATERIAL/FINISH:	8GA 5052 Aluminum					
DO NOT SCALE DRAWING						



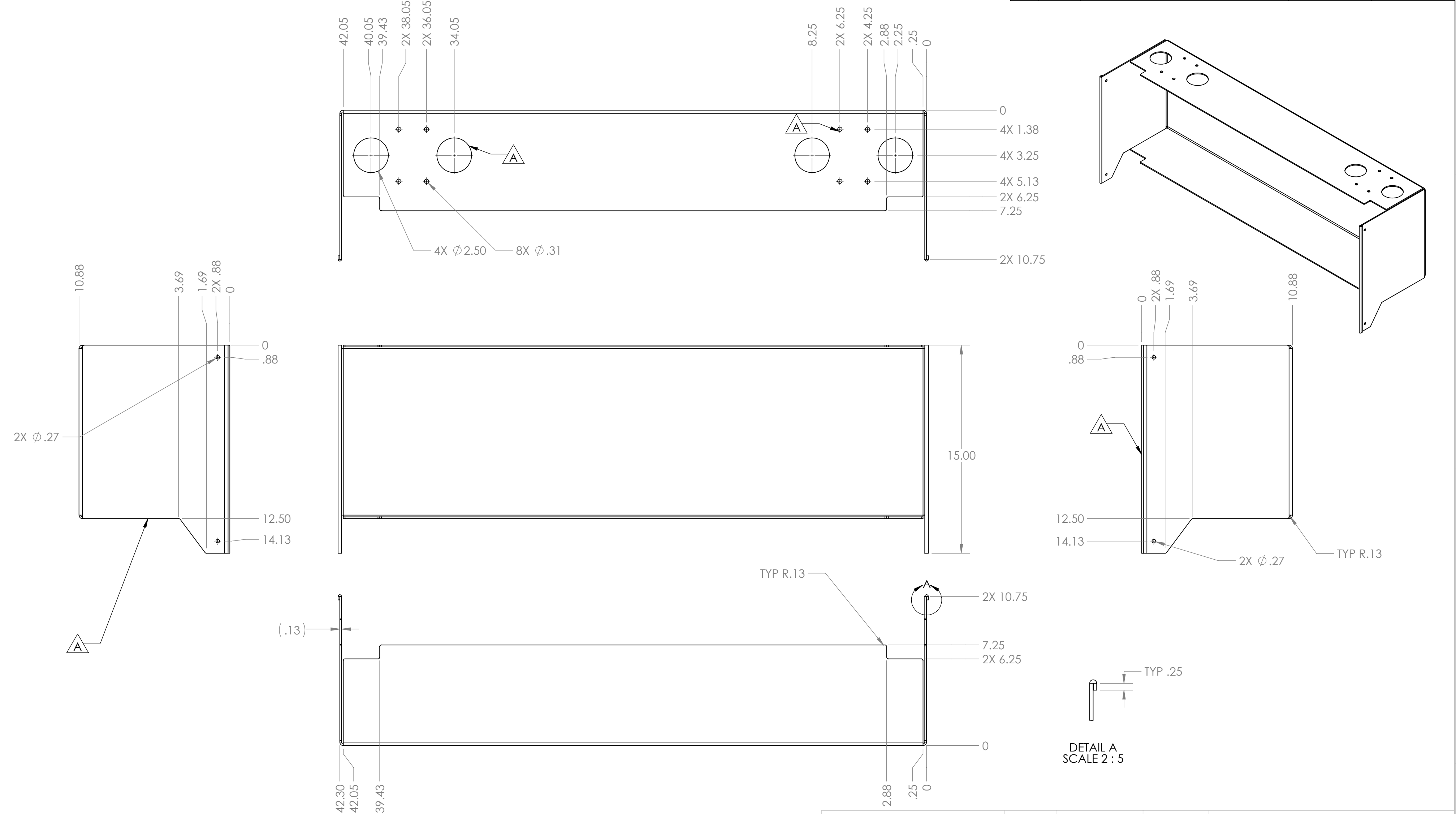


REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A3, A4, B2, B3, C3	A	Part made wider and holes added for Cable Ties	10/24/2023	JO

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div> TITLE: <div>Front Red</div>		
	DRAWN	JO	10/12/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			SIZE <div>C</div>		
	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 Matte Finish	COMMENTS:			DWG. NO.		REV
	REMOVE ALL BURRS AND SHARP EDGES.			GE-24114		A
DO NOT SCALE DRAWING				SCALE: 1:8		SHEET 1 OF 1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B4, C2, D2, D3	A	TOTAL PART SIZE HAS CHANGED, ALONG WITH HOLE PATTERN ON TOP	10/13/2023	NWE



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	9/19/2023

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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE: **Stacklight and Button Box**

SIZE	DWG. NO.	REV
C	GE-24116	A

SCALE: 1:5 SHEET 1 OF 1

D

C

B

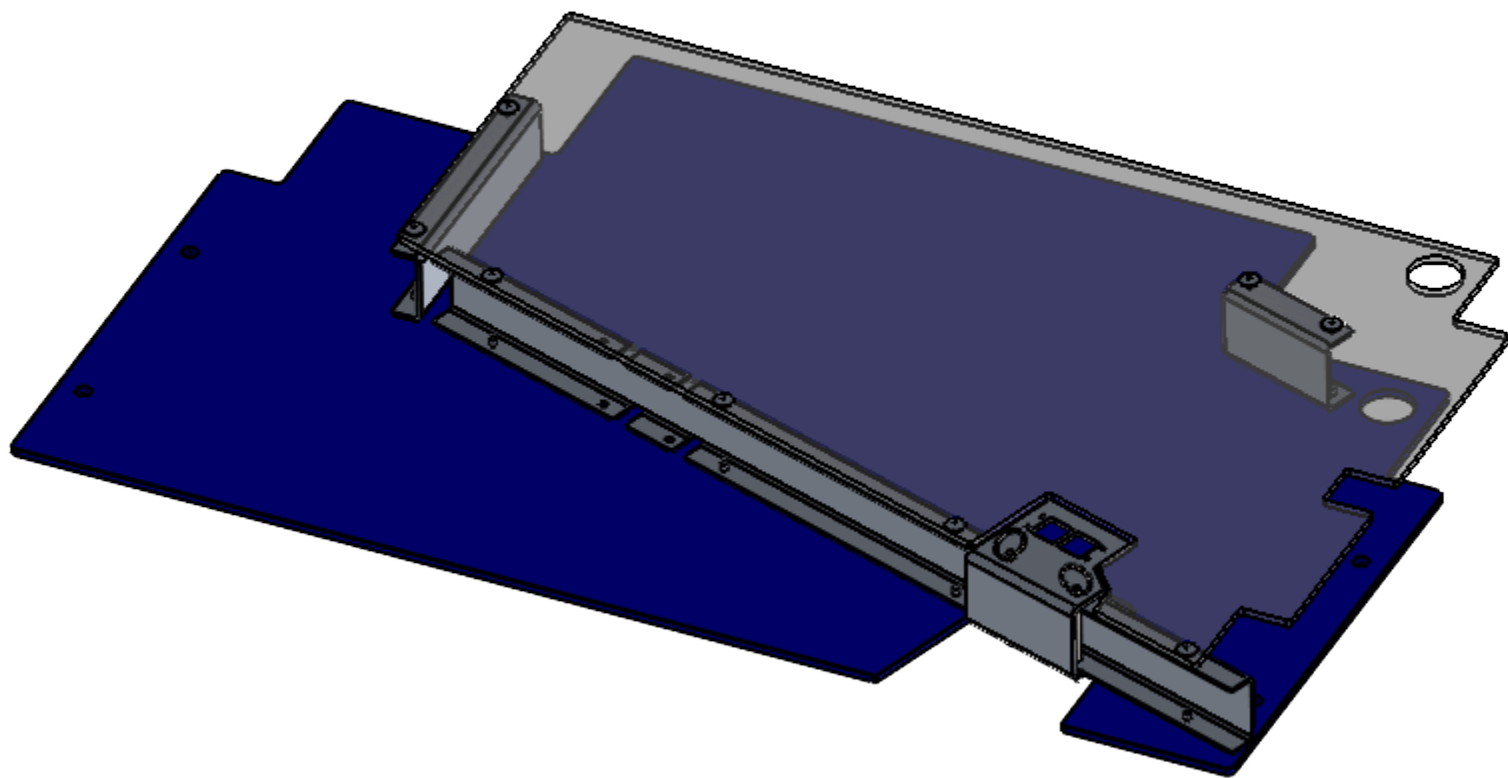
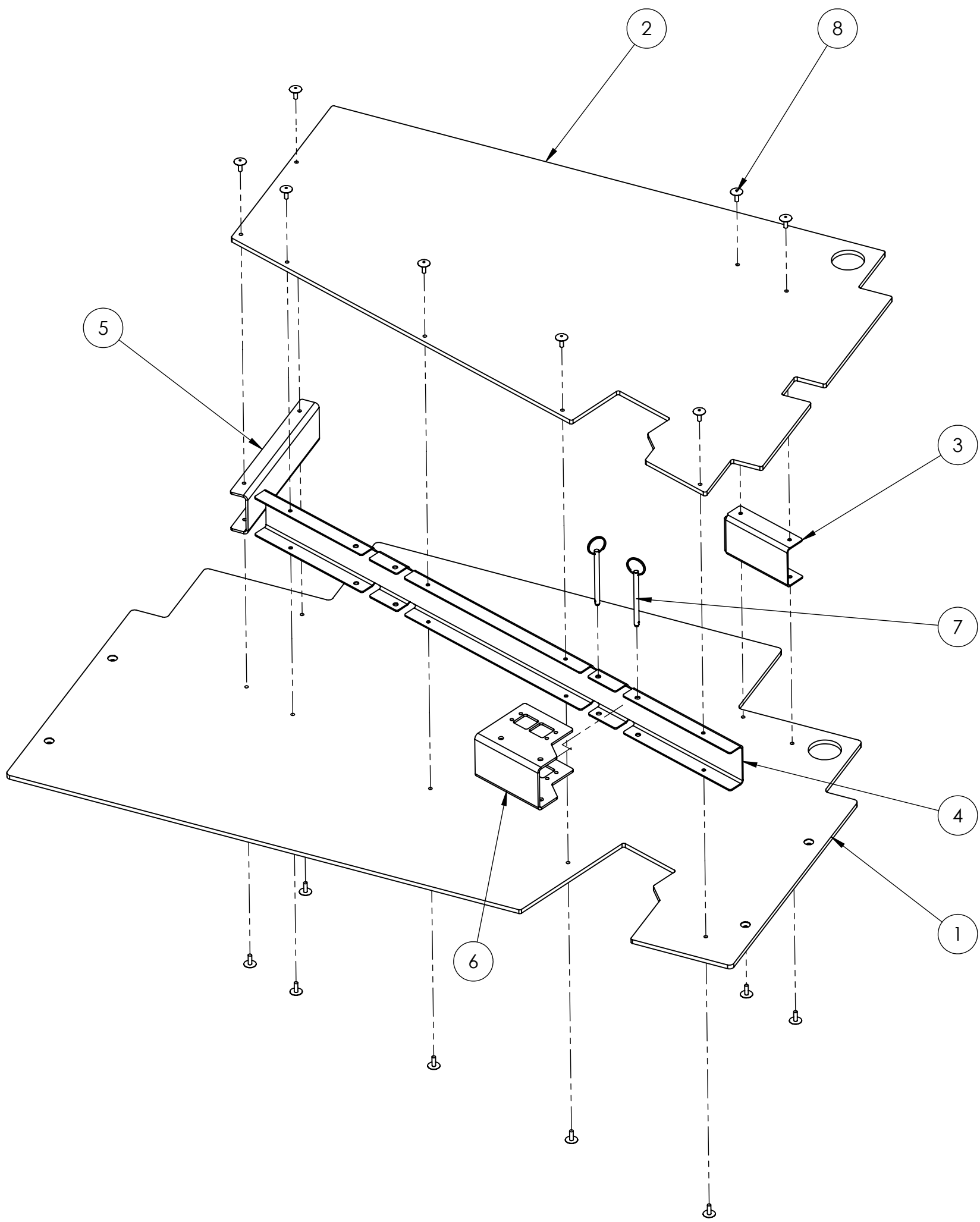
A

D

C

B

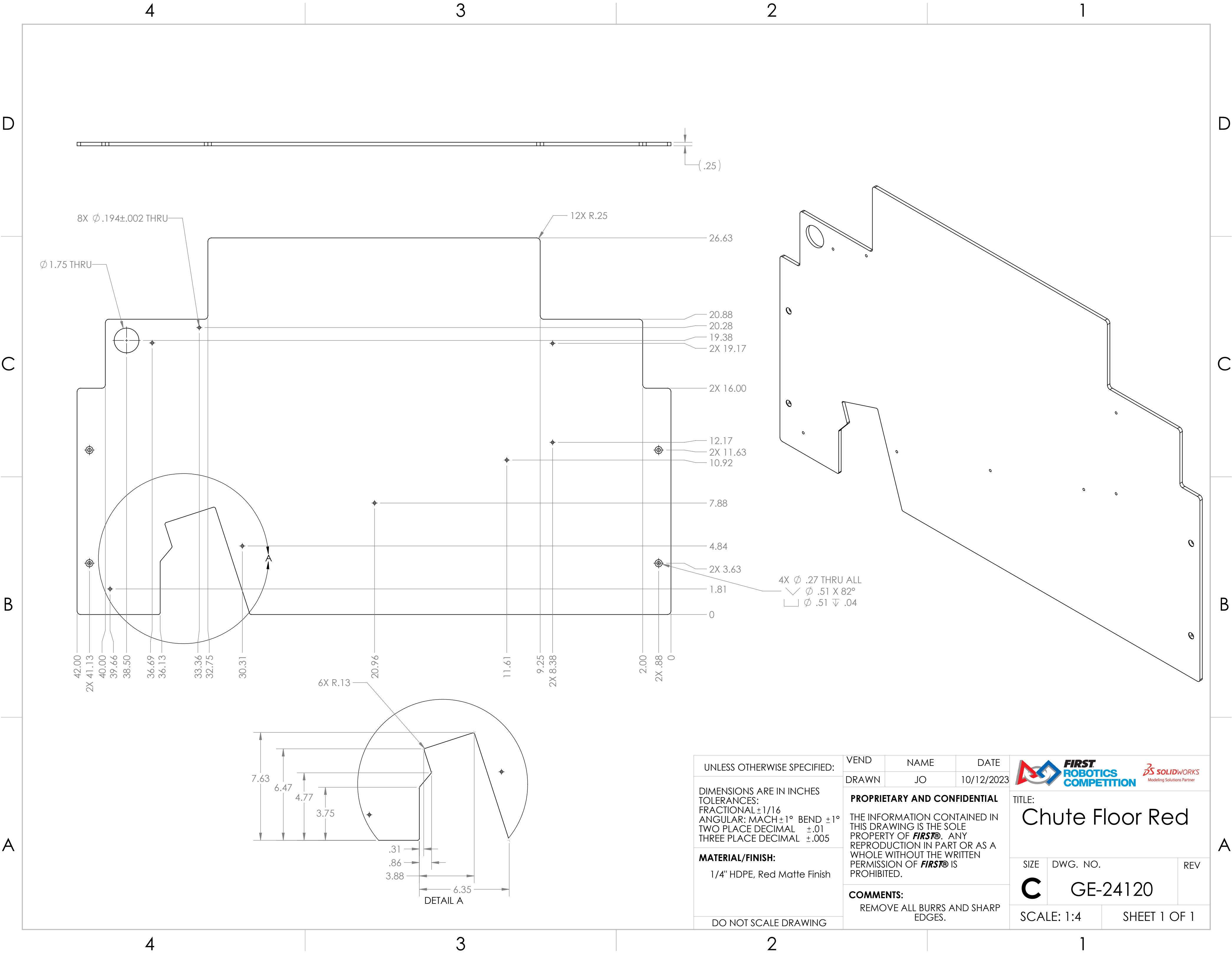
A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24121	Chute Floor Blue	1
2	GE-24122	Chute Top	1
3	GE-24123	Ring Capture Top	1
4	GE-24124	Ring Capture Bottom	1
5	GE-24125	Ring Capture Side	1
6	GE-24126	Sensor Bracket	1
7	pin_quick_ring_.25_3	Pin, Ring-Grip Quick-Release with SS Ring, 1/4" Diameter, 3" Usable Length	2
8	rivet_.1875_.251-.375_largeHead	3/16" Large Head Aluminum Rivet, .251-.375 Grip Range	16

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	12/18/2023
MATERIAL/FINISH:		PROPRIETARY AND CONFIDENTIAL		
DO NOT SCALE DRAWING		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: Ring Counter Blue		
		SIZE	DWG. NO.	REV
		C	GE-24119	
		SCALE: 1:6		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:
1/4" HDPE, Red Matte Finish

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	10/12/2023

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.

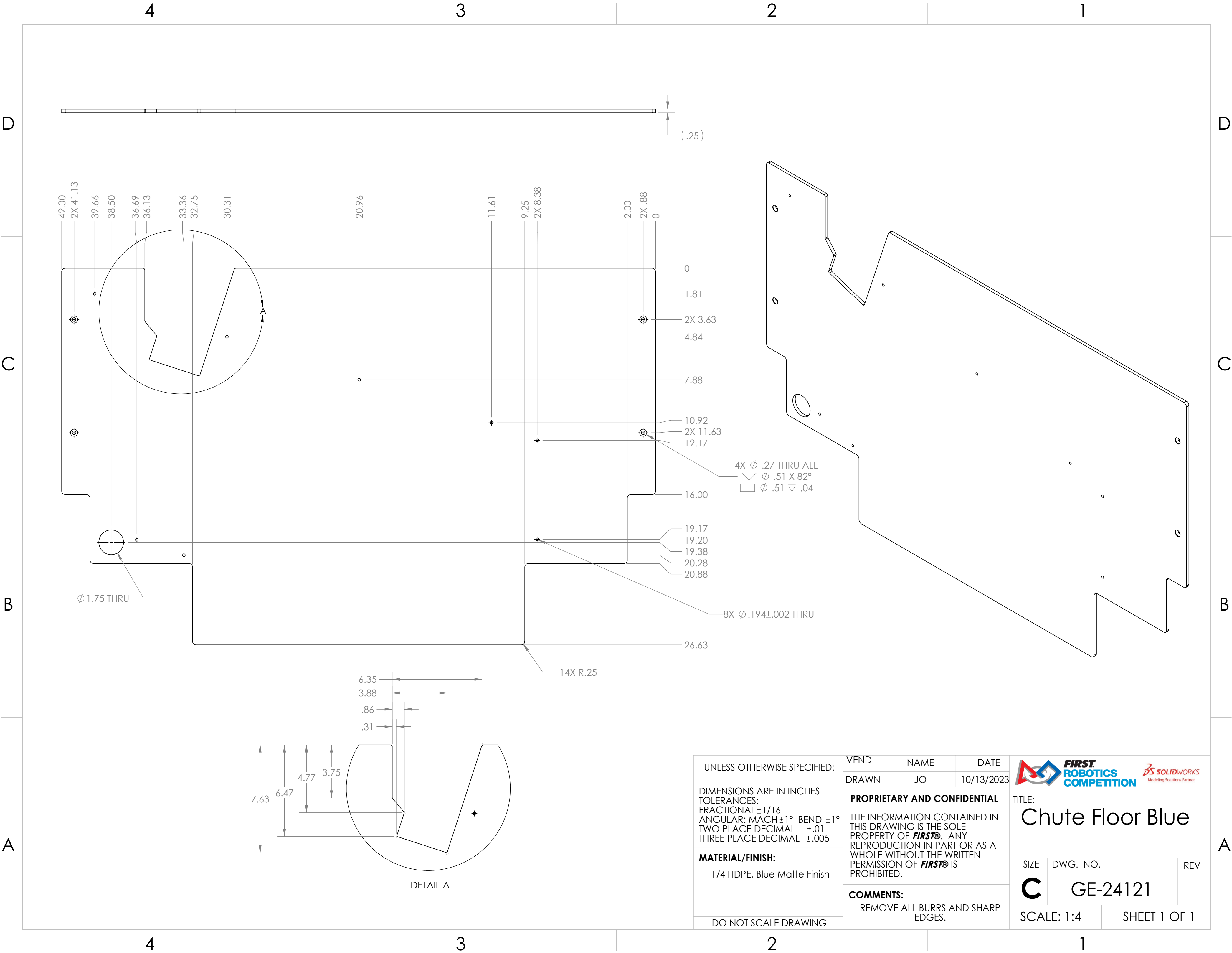
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Chute Floor Red

SIZE	DWG. NO.	REV
C	GE-24120	

SCALE: 1:4 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:
1/4 HDPE, Blue Matte Finish

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	10/13/2023

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.

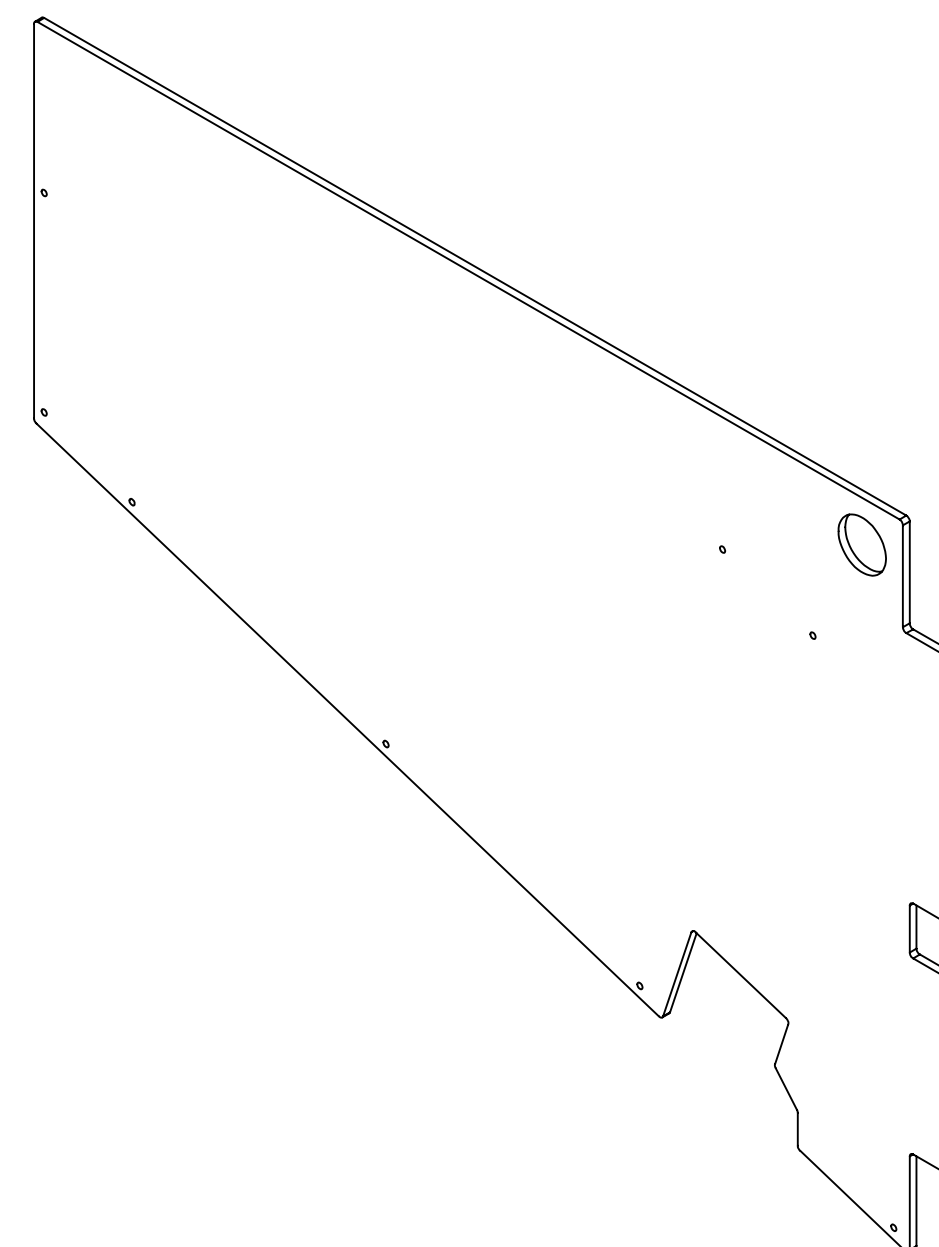
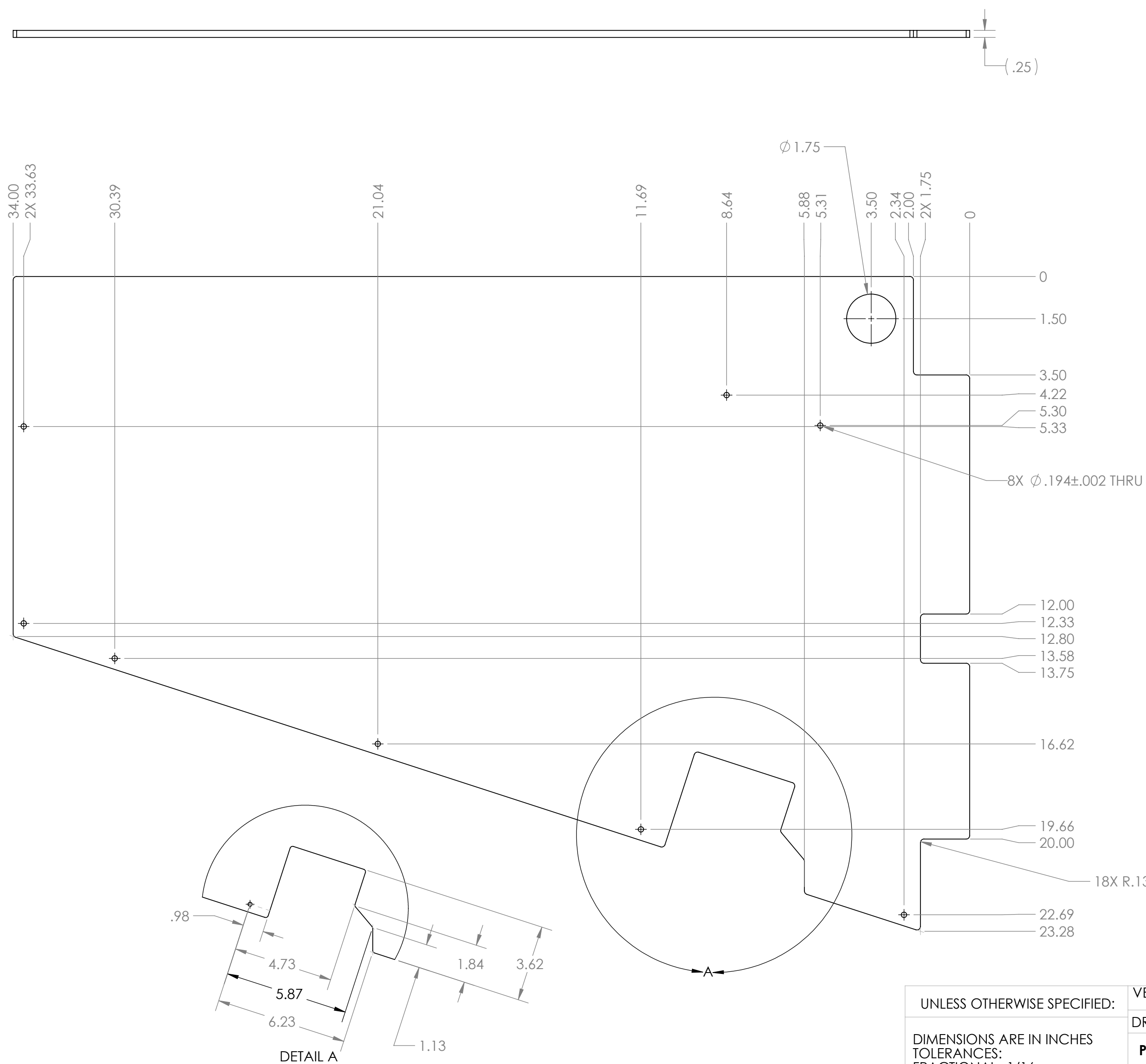
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.





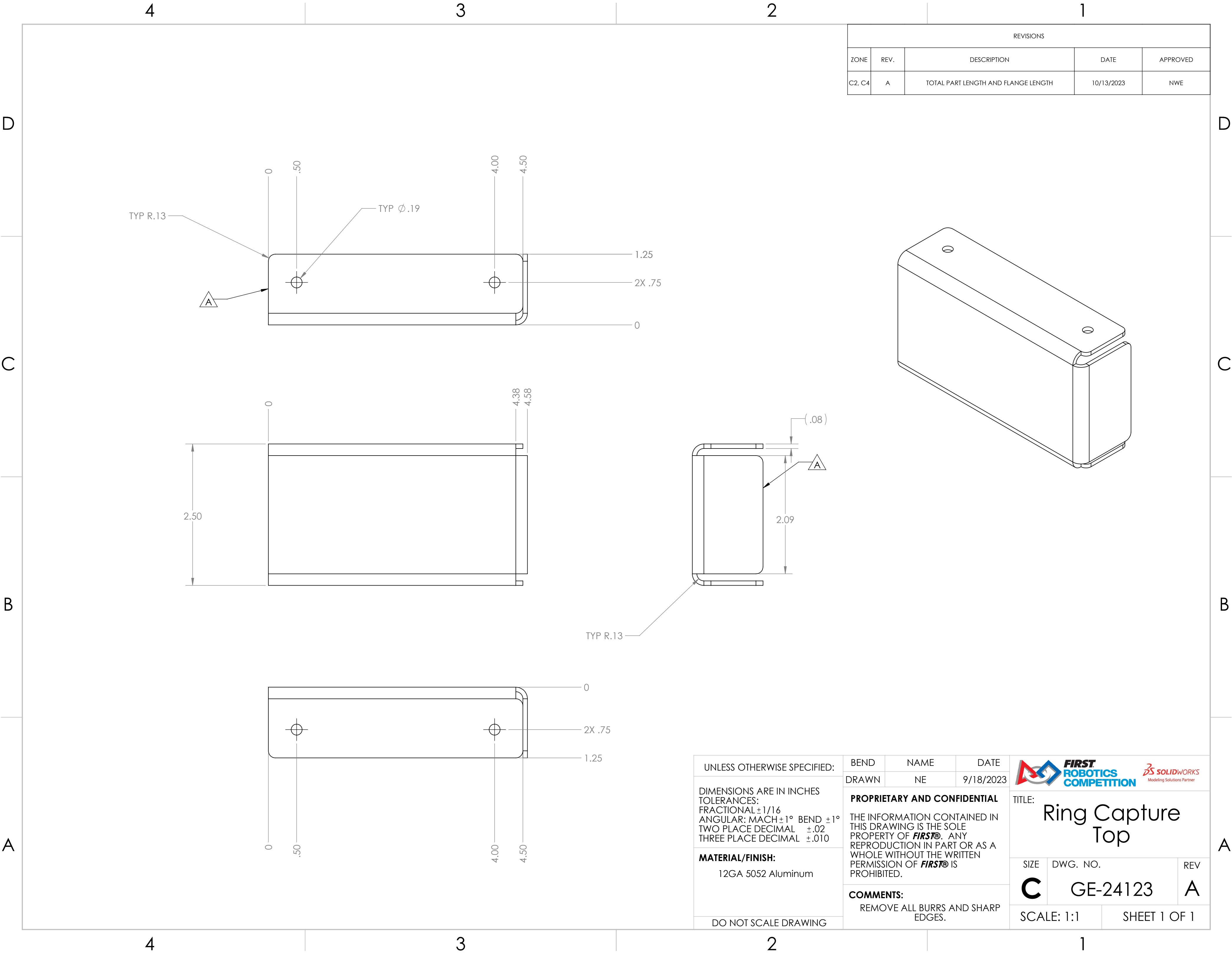
TITLE:
Chute Floor Blue

SIZE	DWG. NO.	REV
C	GE-24121	



SCALE: 1:4 SHEET 1 OF 1

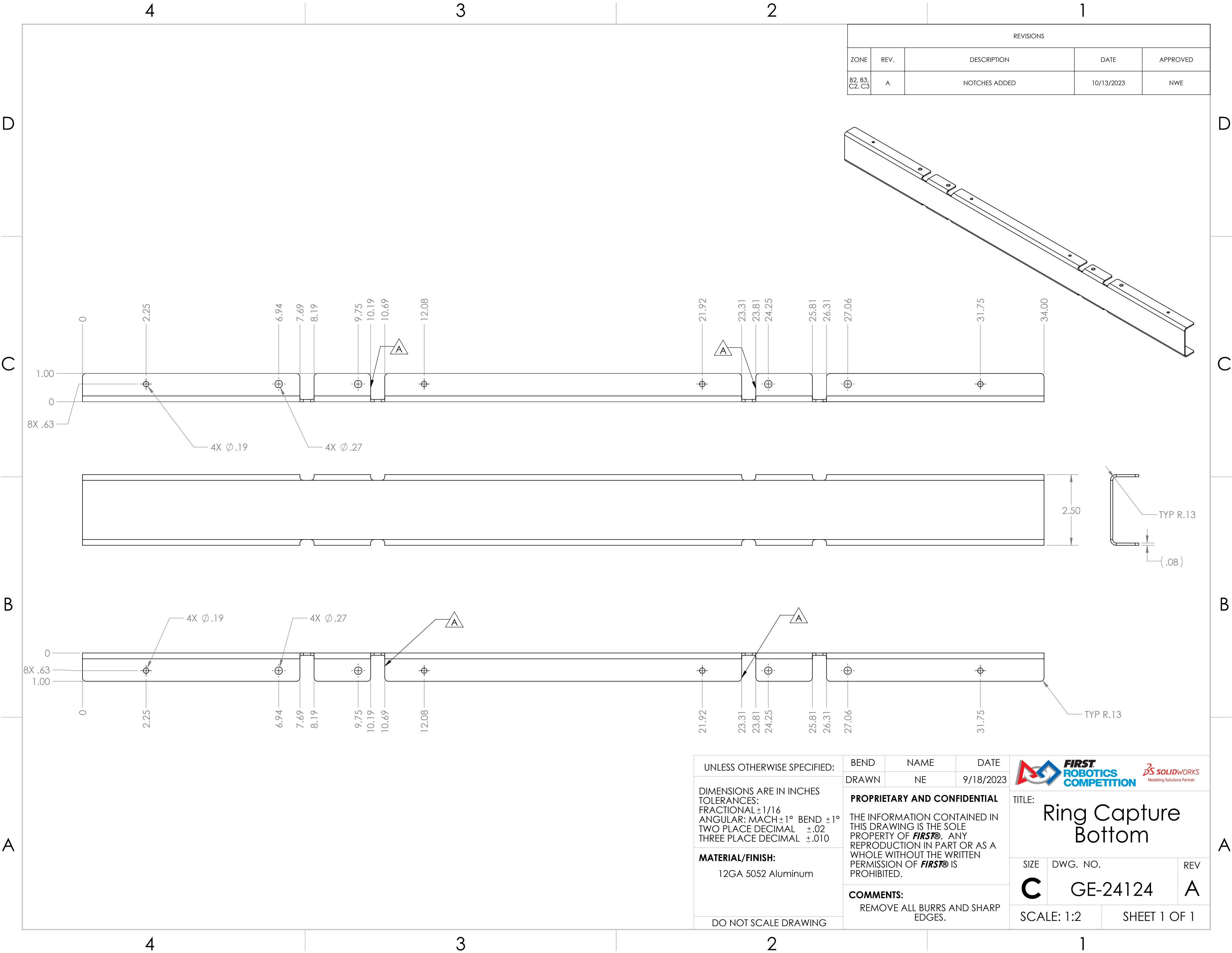


UNLESS OTHERWISE SPECIFIED:		VEND		NAME		DATE	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$ MATERIAL/FINISH: 1/4" Polycarbonate, Clear		DRAWN		JO		10/12/2023	
		PROPRIETARY AND CONFIDENTIAL 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.					
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING		<div><div></div><div>TITLE: Chute Top</div></div> <div><div>SIZE</div><div>DWG. NO.</div><div>REV</div></div> <div><div>C</div><div>GE-24122</div></div> <div><div>SCALE: 1:4</div><div>SHEET 1 OF 1</div></div>					





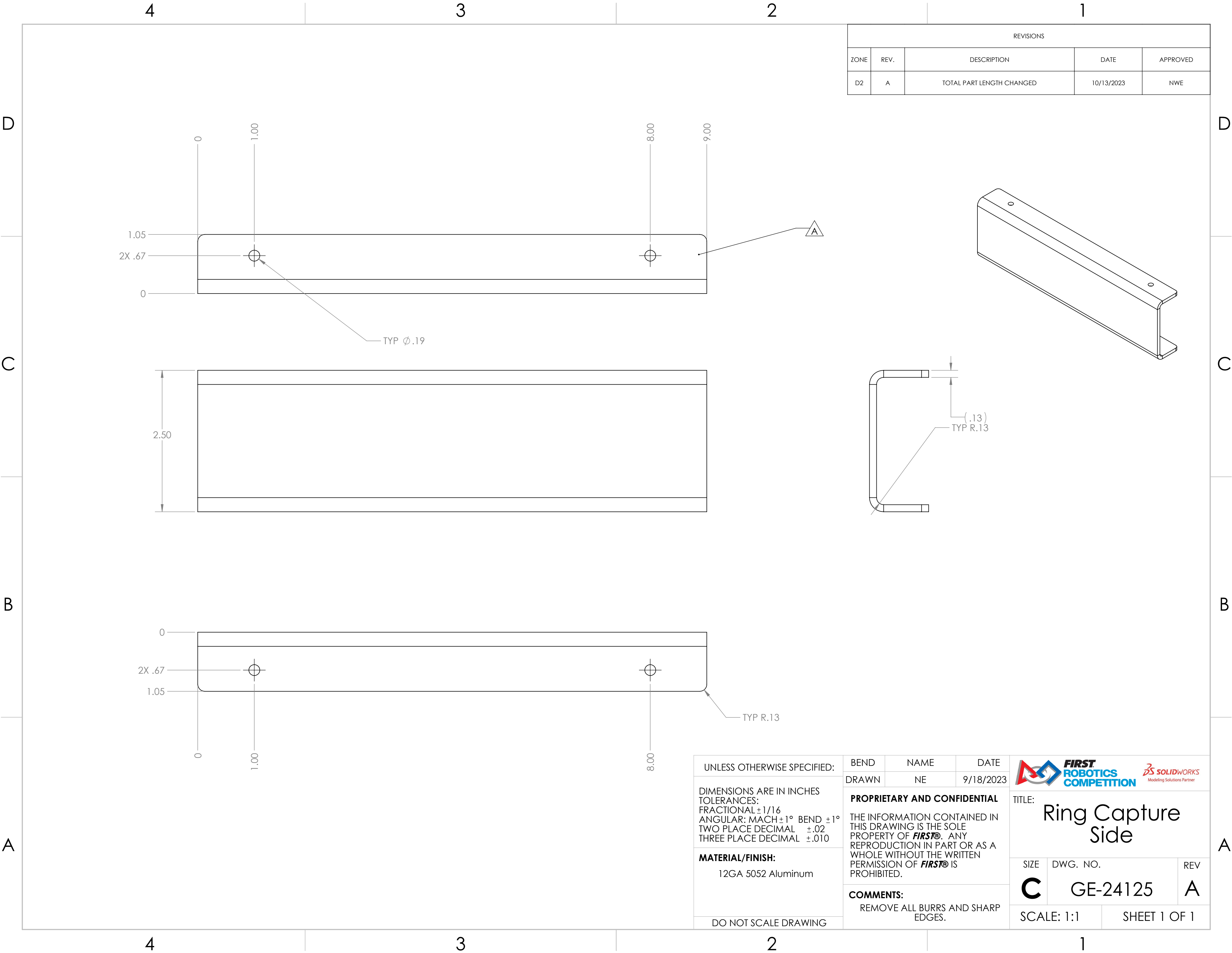
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2, C4	A	TOTAL PART LENGTH AND FLANGE LENGTH	10/13/2023	NWE

UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div></div>
	DRAWN	NE	9/18/2023	
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			TITLE: Ring Capture Top
	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: 12GA 5052 Aluminum	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			<div><div>SIZE</div><div>C</div></div> <div><div>DWG. NO.</div><div>GE-24123</div></div> <div><div>REV</div><div>A</div></div>
DO NOT SCALE DRAWING				<div>SCALE: 1:1</div> <div>SHEET 1 OF 1</div>





REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2, B3, C2, C3	A	NOTCHES ADDED	10/13/2023	NWE

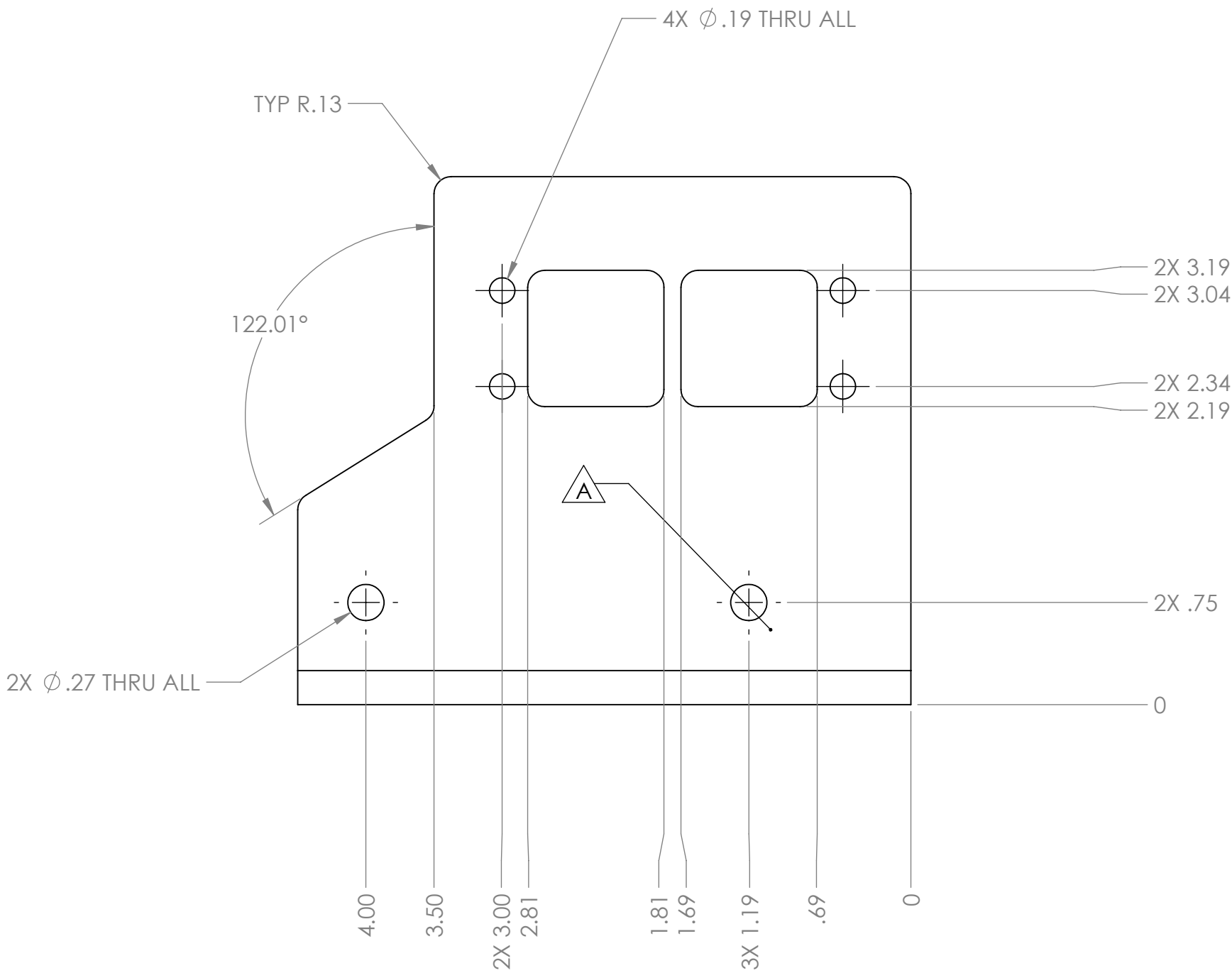
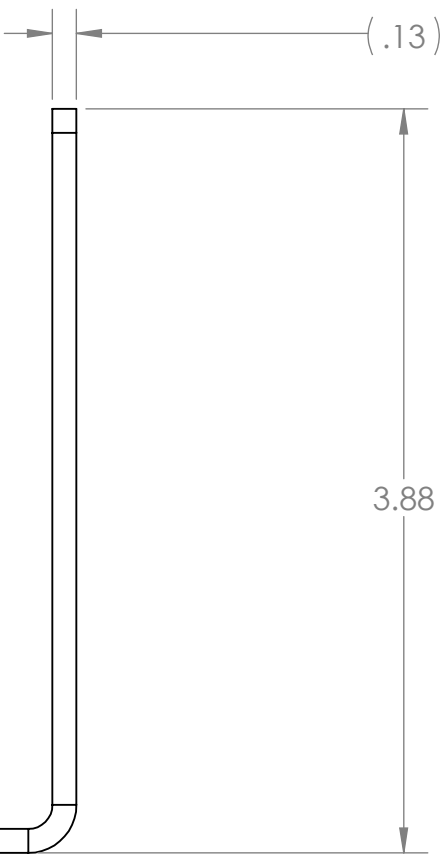
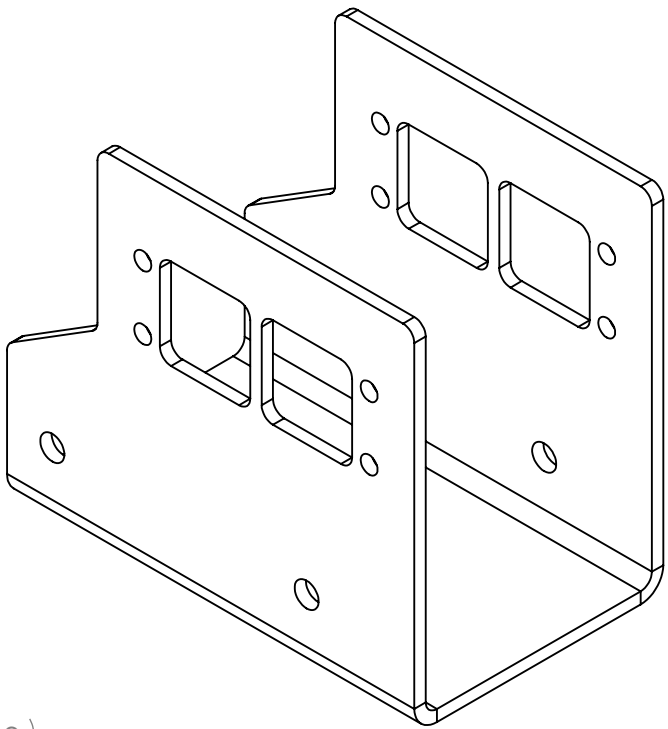
UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div></div>	
	DRAWN	NE	9/18/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$	PROPRIETARY AND CONFIDENTIAL			TITLE: <div>Ring Capture Bottom</div>	
	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: 12GA 5052 Aluminum	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C
DO NOT SCALE DRAWING				REV A	
SCALE: 1:2				SHEET 1 OF 1	





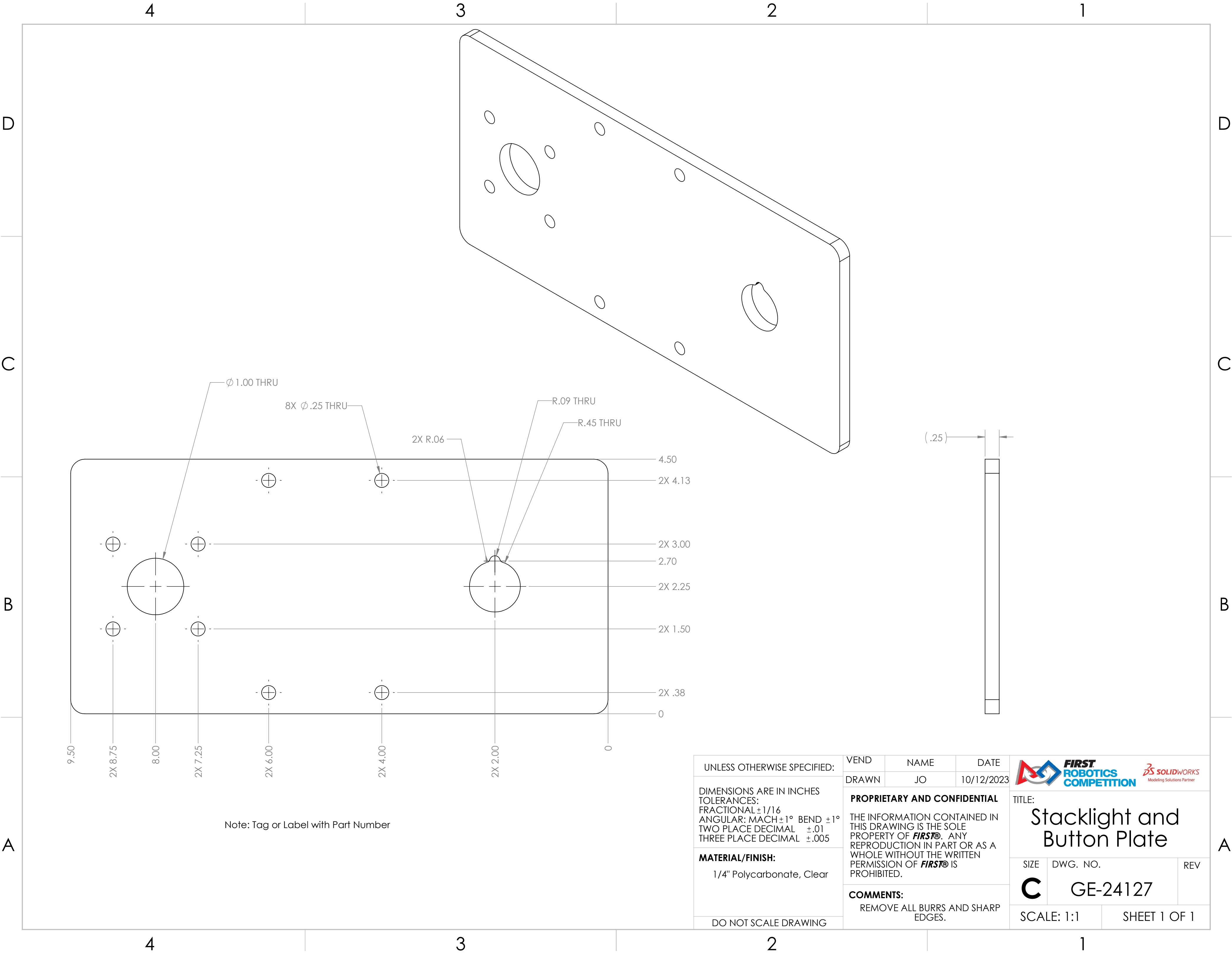
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
D2	A	TOTAL PART LENGTH CHANGED	10/13/2023	NWE

UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div></div>
	DRAWN	NE	9/18/2023	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	PROPRIETARY AND CONFIDENTIAL			TITLE: <div>Ring Capture Side</div>
	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: 12GA 5052 Aluminum	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			<div><div>SIZE</div><div>C</div><div>DWG. NO.</div><div>GE-24125</div><div>REV</div><div>A</div></div>
DO NOT SCALE DRAWING				<div>SCALE: 1:1</div> <div>SHEET 1 OF 1</div>

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	A	HOLE LOCATION MOVED	10/13/2023	NWE



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	<div></div> <div>TITLE: Sensor Bracket</div>		
	DRAWN	NE	9/18/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24126	A
			SCALE: 1:1		SHEET 1 OF 1	



Note: Tag or 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, Clear

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	10/12/2023

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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Stacklight and Button Plate

SIZE	DWG. NO.	REV
C	GE-24127	

SCALE: 1:1 SHEET 1 OF 1

D

D

C

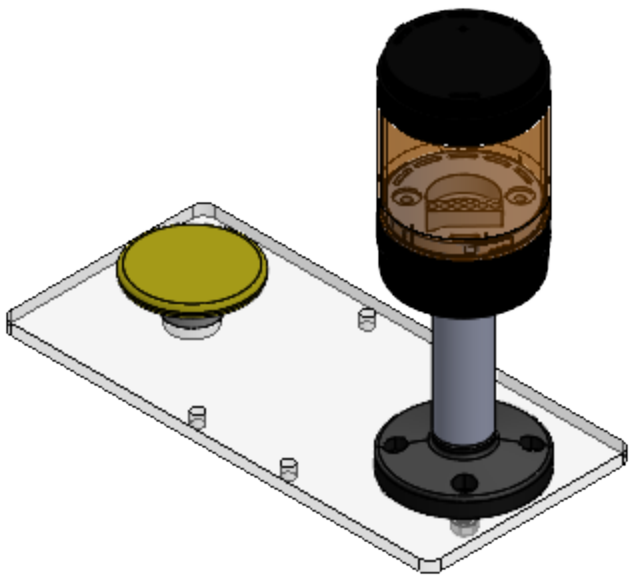
C

B

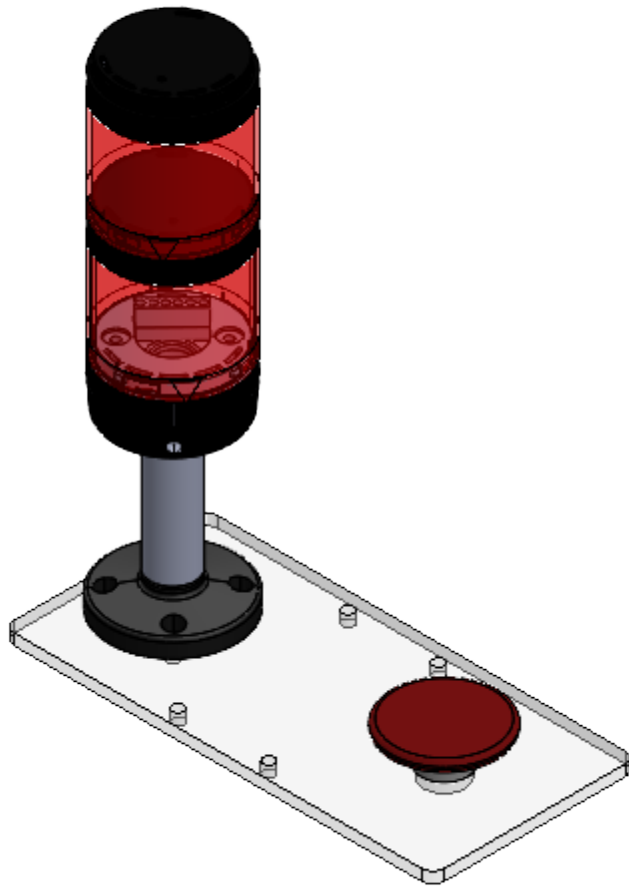
B

A

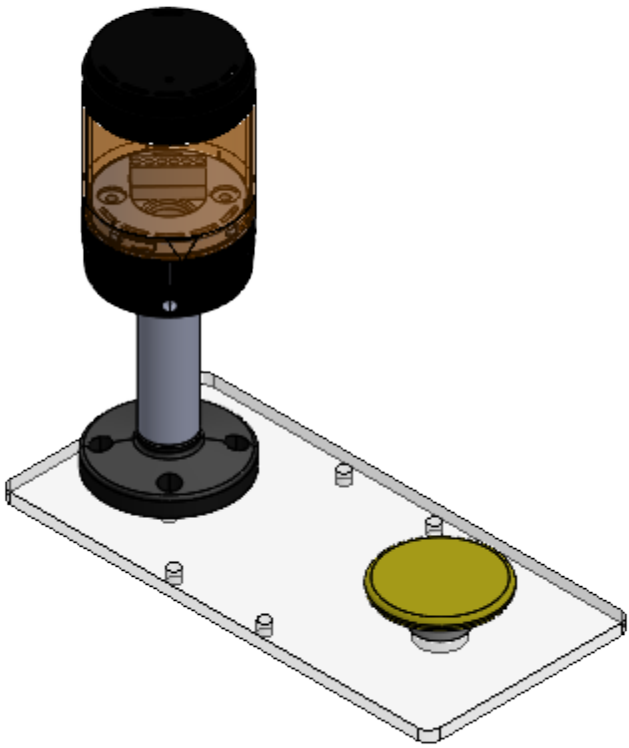
A



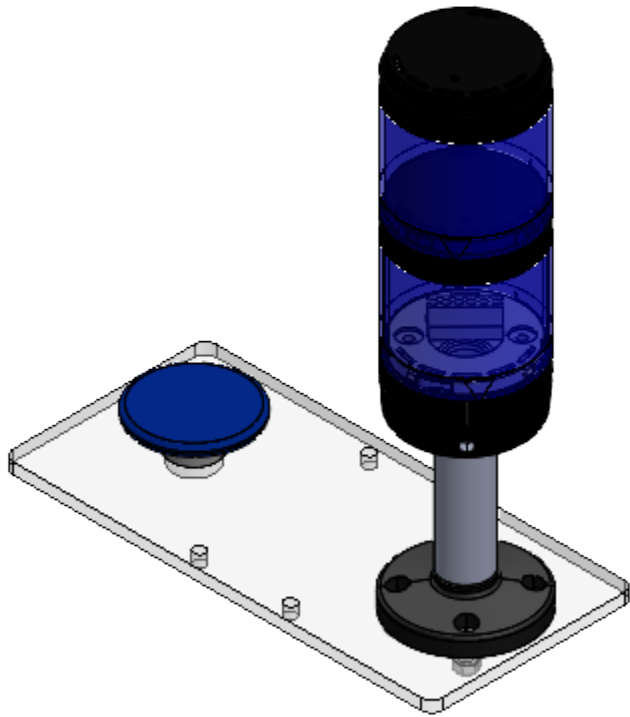
Red Co-op



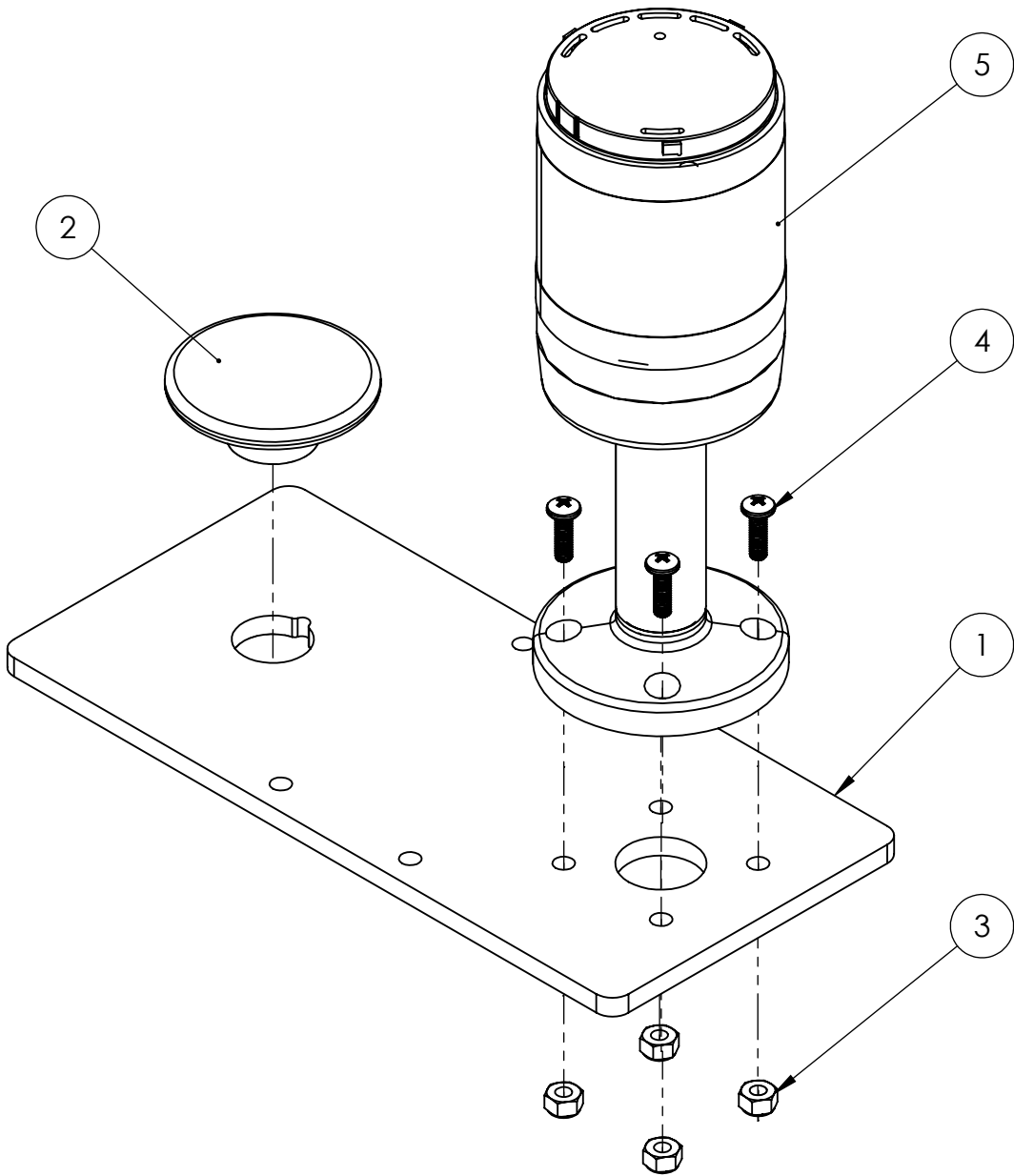
Red Amp



Blue Co-op



Blue Amp



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24127	Stacklight and Button Plate	1
2	Amp_Button_Yellow	Button, Push, Yellow	1
3	nylock_10_32	Low-Strength Steel Nylon-Insert Locknut, Zinc-Plated, 10-32 Thread Size	4
4	Pan_phil_10-32_.625	Pan head Phil 10-32 x 5/8	4
5	StackLight_Assembly	Stack Light Assembly	1

Note:

1. 2 comes in the following configurations:
1.

Red Co-op
2.

Red Boost
3.

Blue Co-op
4.

Blue Boost

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

DF

12/18/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

FIRST

ROBOTICS

COMPETITION

DS

SOLIDWORKS

Modeling Solutions Partner

TITLE:

Stacklight and Button Plate Assembly

SIZE

DWG. NO.

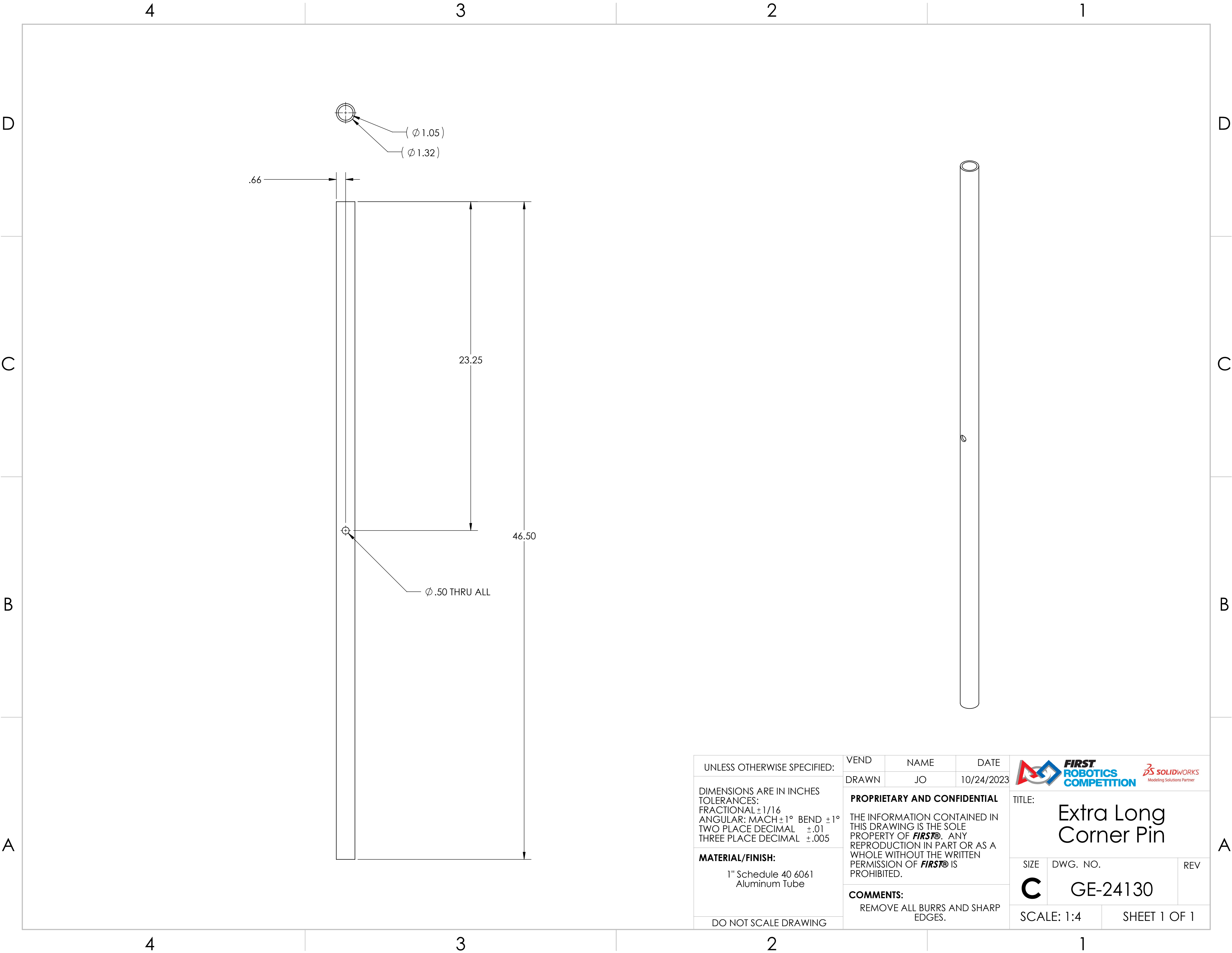
REV



C

GE-24128

SCALE: 1:2

SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ± .01 THREE PLACE DECIMAL ± .005 MATERIAL/FINISH: 1" Schedule 40 6061 Aluminum Tube DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Extra Long Corner Pin</div>		
	DRAWN	JO	10/24/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24130	REV
SCALE: 1:4		SHEET 1 OF 1				

4

3

2

1

D

D

C

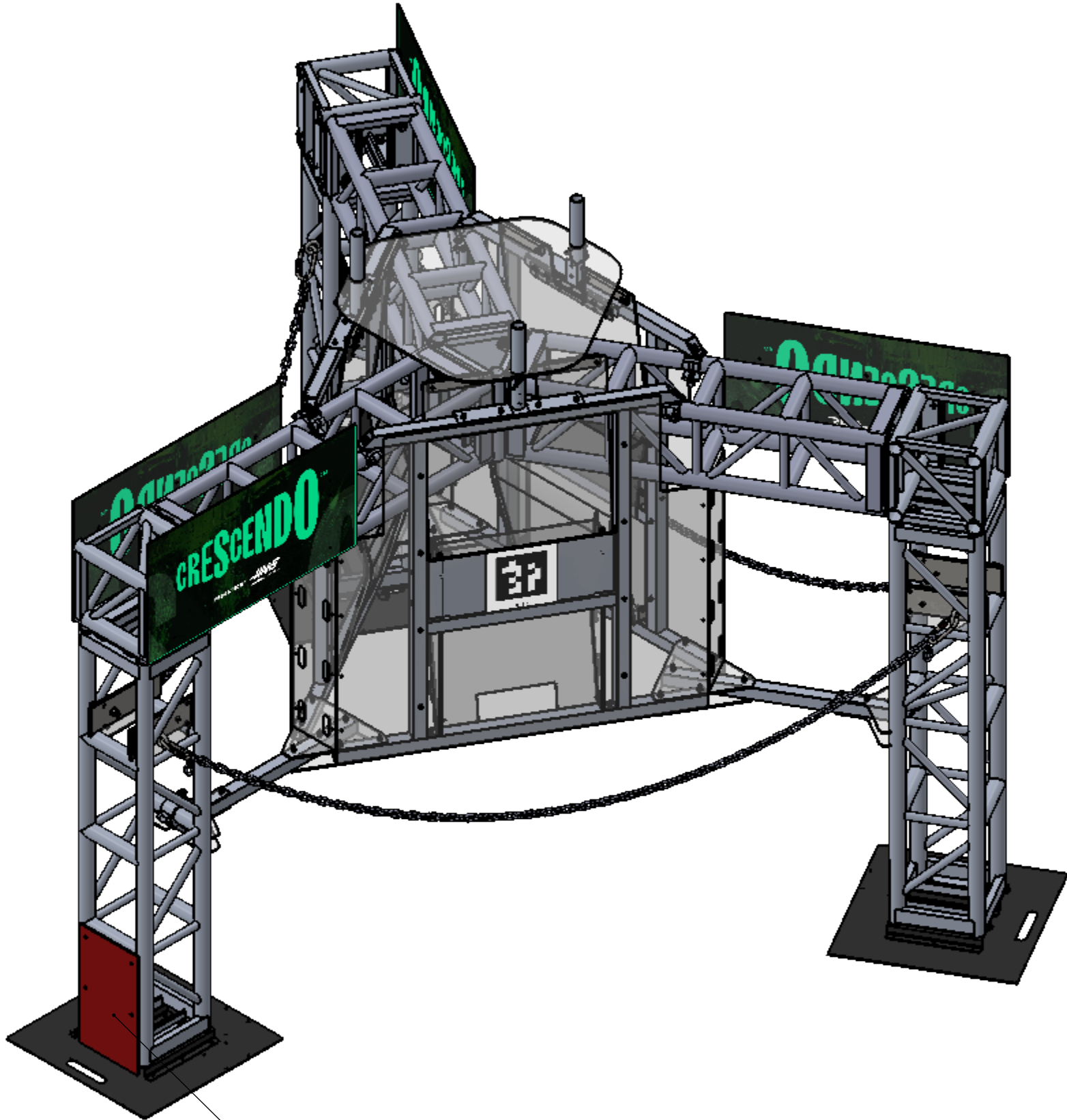
C

B

B



A

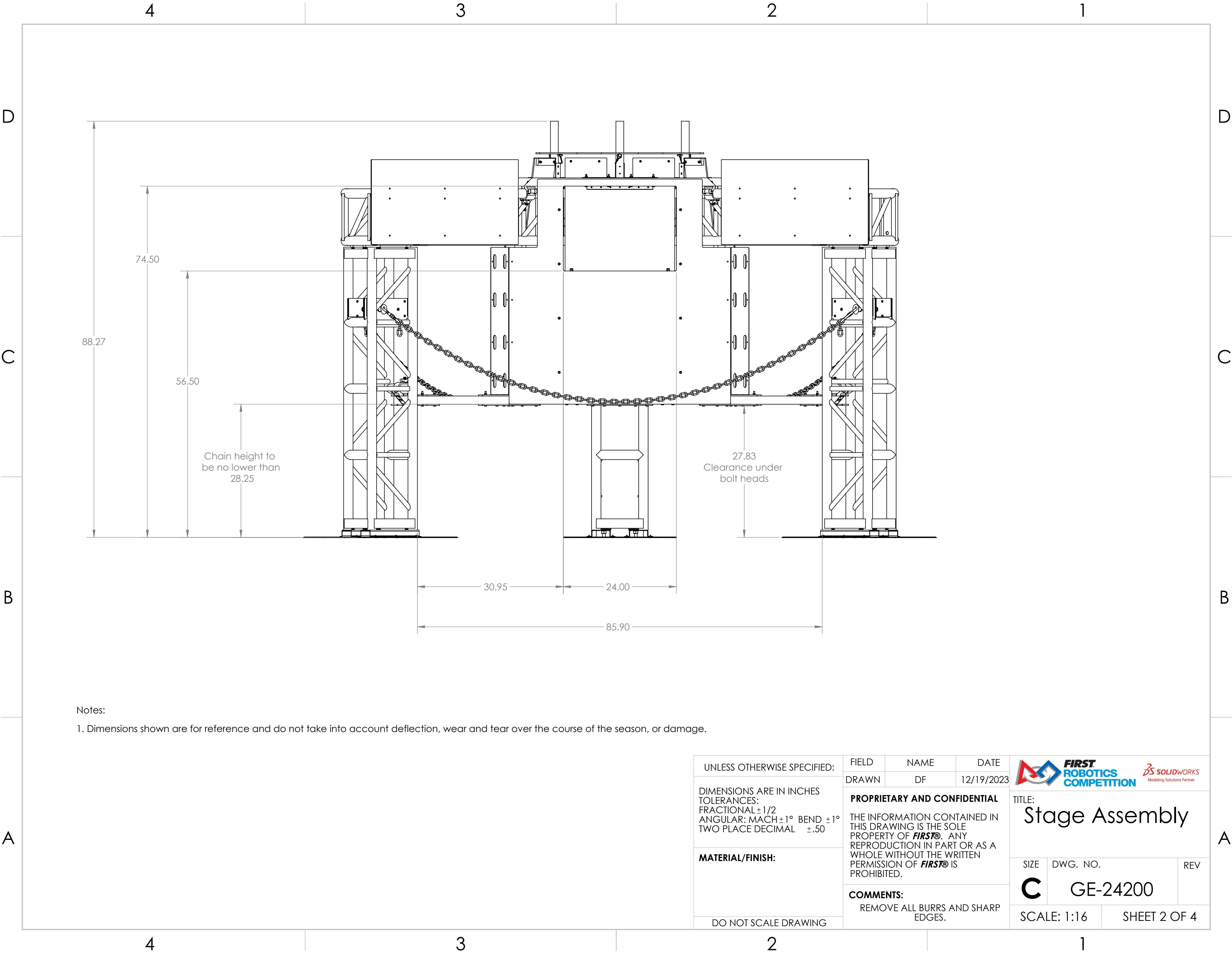
A

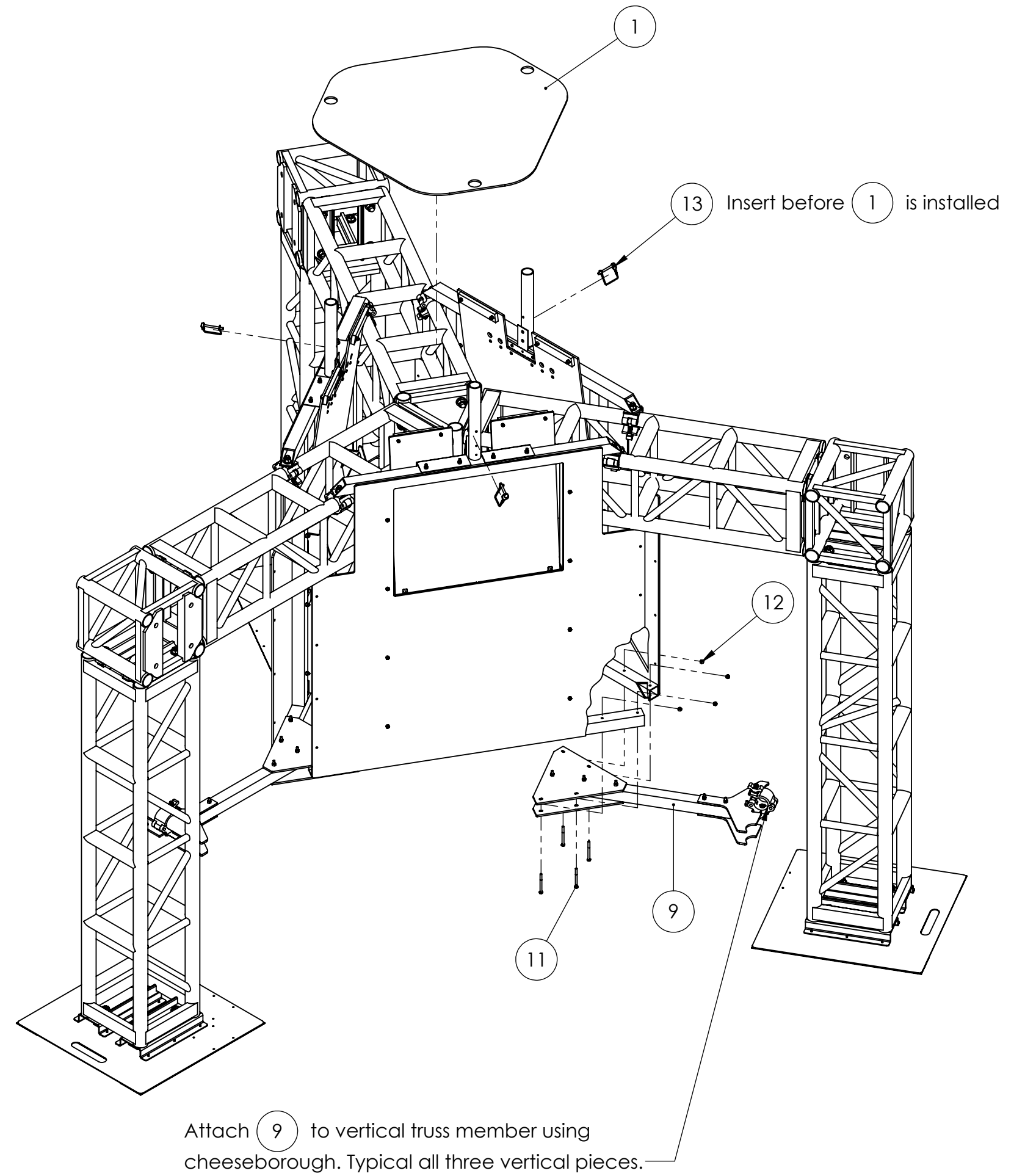
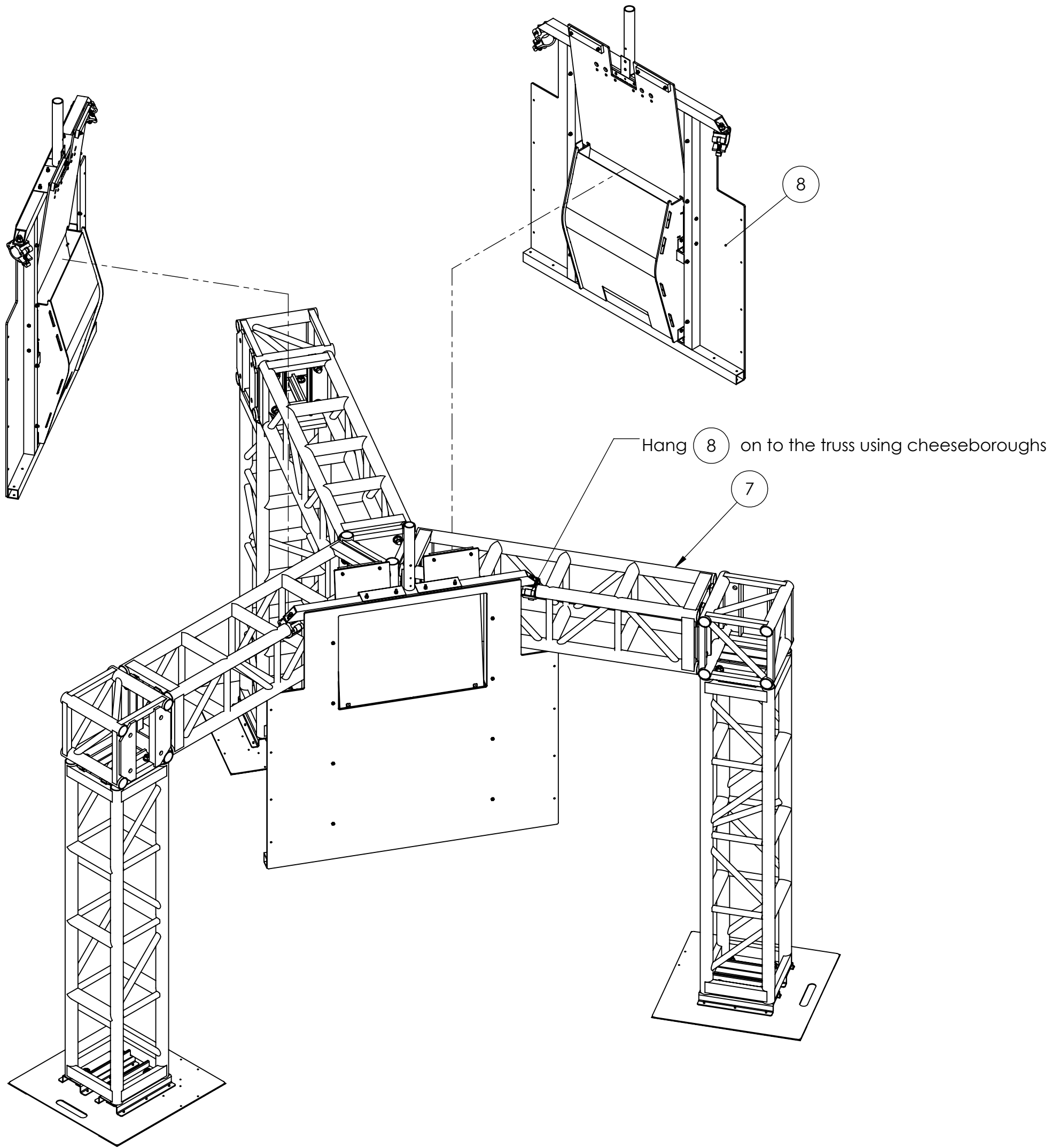




There is a blue configuration for this plastic

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24201	Stage Top	1
2	GE-24202	Stage Vinyl Logo	4
3	GE-24204	Stage Face Filler Poly	3
4	GE-24205	Stage Chain	3
5	GE-24207-RED	Podium - Red	1
6	GE-24208	Chain Plate with Fasteners	6
7	GE-24210	Base Truss Assembly	1
8	GE-24220	Wall Assembly	3
9	GE-24250	Stage Lateral Support	3
10	3216T41_Carabiner	Carabiner, Locking Steel, .38 thick	6
11	hex_.25_20_3-partial	Steel Hex Head Screw, 1/4"-20 x 3" long, partially threaded	12
12	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	12
13	pin_wire_lock_.25_2.18 75	1/4" Steel Wire Lock Pin, 3 1/16" Long, 2 3/16" Usable Length	3

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	<div><div>FIRST ROBOTICS COMPETITION</div></div>	
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	12/19/2023		
MATERIAL/FINISH:		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.			Stage Assembly	
		COMMENTS:			SIZE	DWG. NO.
		REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24200
DO NOT SCALE DRAWING					SCALE: 1:16	
					SHEET 1 OF 4	





UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>		
	DRAWN	DF	12/19/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ± .50	PROPRIETARY AND CONFIDENTIAL			TITLE: <div>Stage Assembly</div>		
	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:			SIZE	DWG. NO.	REV
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24200	
DO NOT SCALE DRAWING				SCALE: 1:16		SHEET 3 OF 4

4

3

2

1

D

D

C

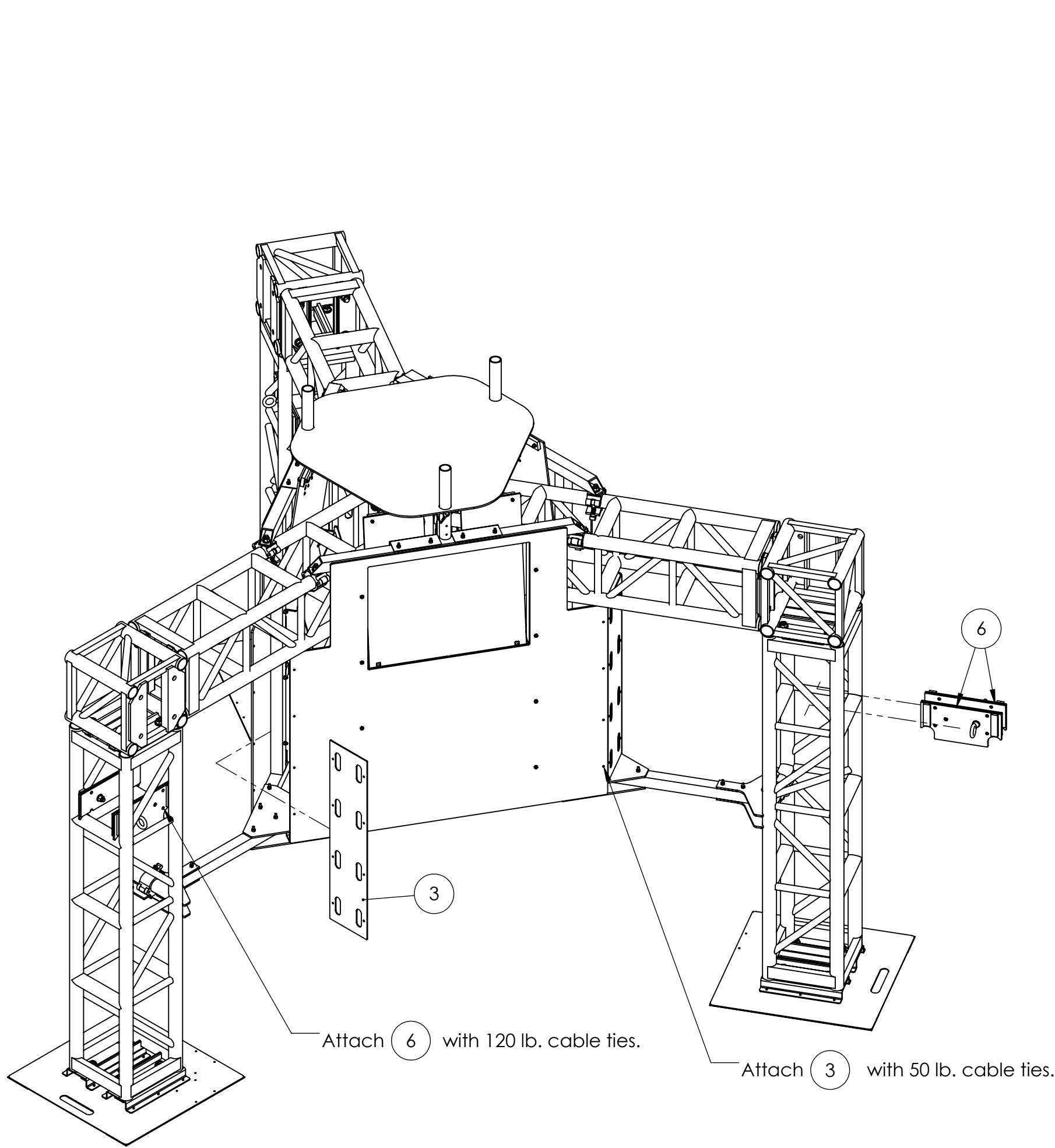
C

B

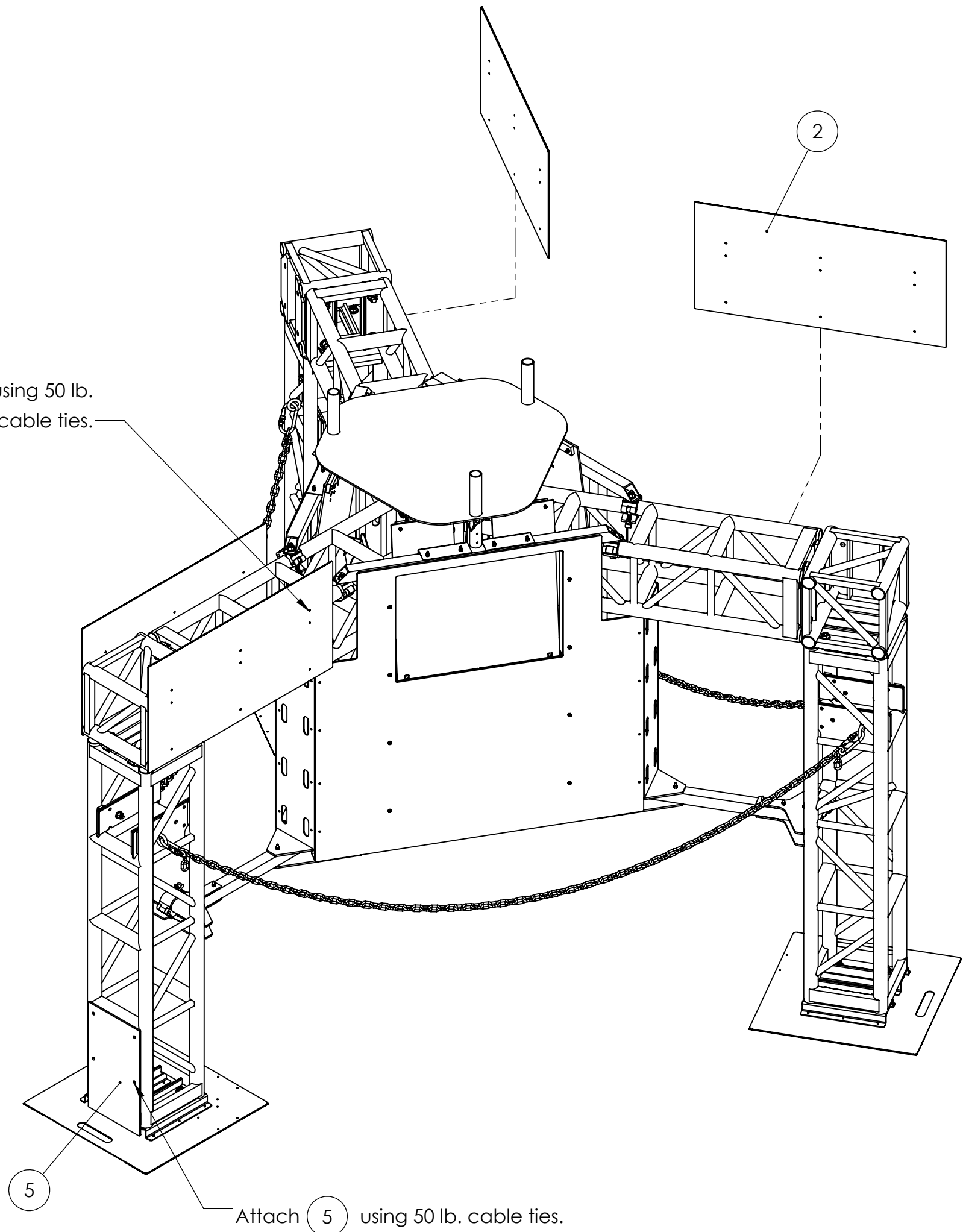
B



A

A



Attach 2 using 50 lb. black cable ties.



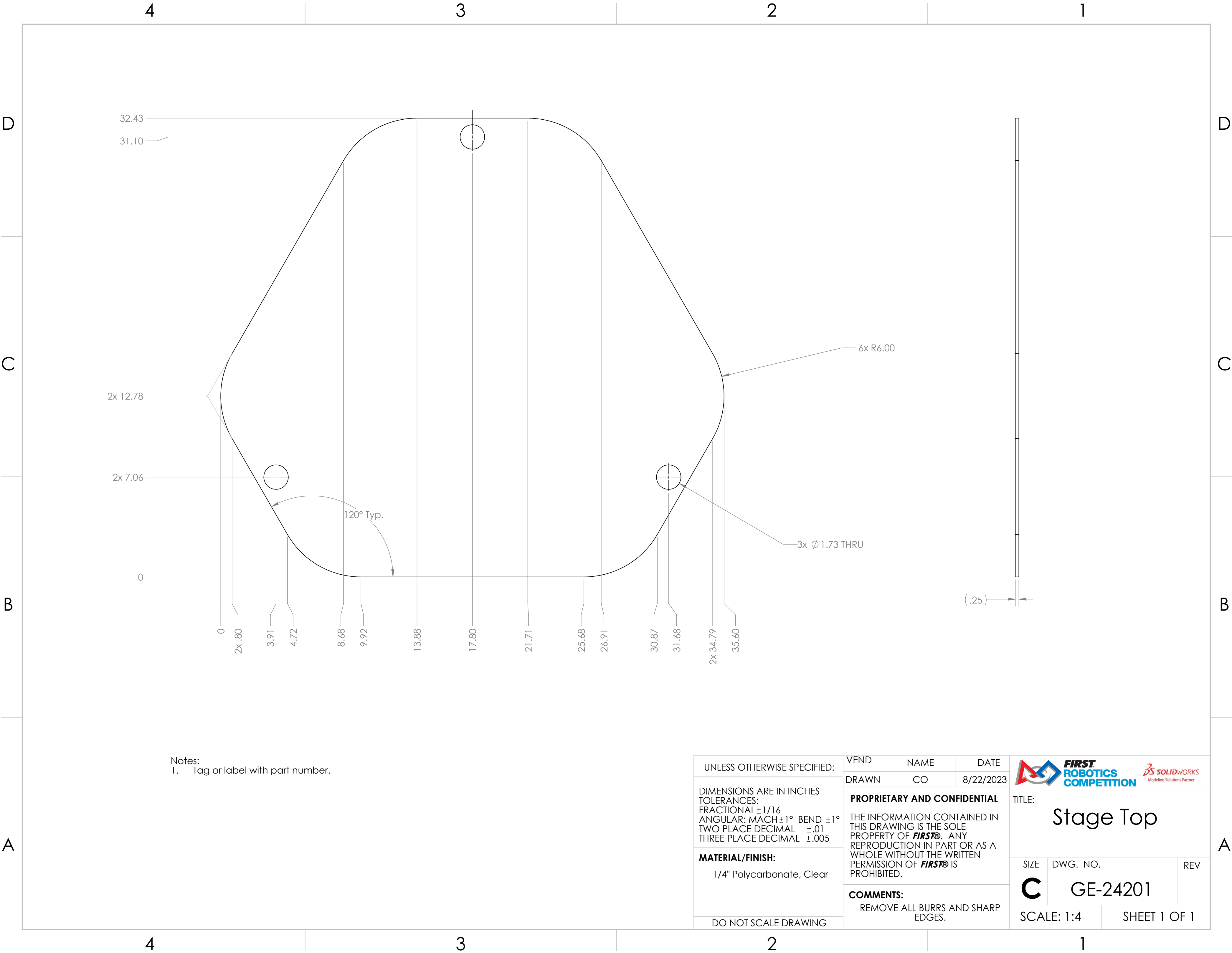
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	 
	DRAWN	DF	12/19/2023	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE: Stage Assembly
MATERIAL/FINISH:	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C
DO NOT SCALE DRAWING				DWG. NO. GE-24200
			SCALE: 1:16	REV SHEET 4 OF 4

4



3

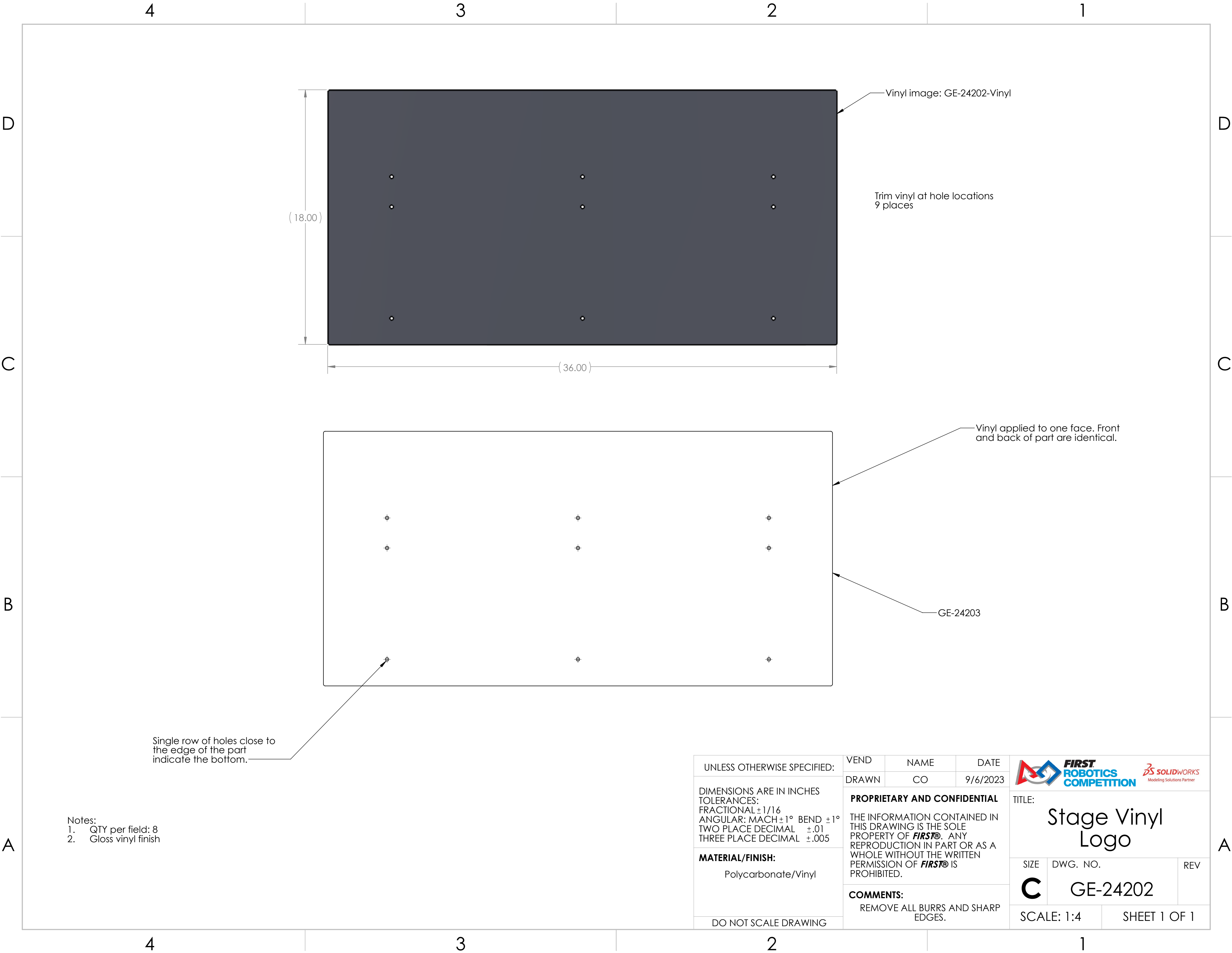
2

1





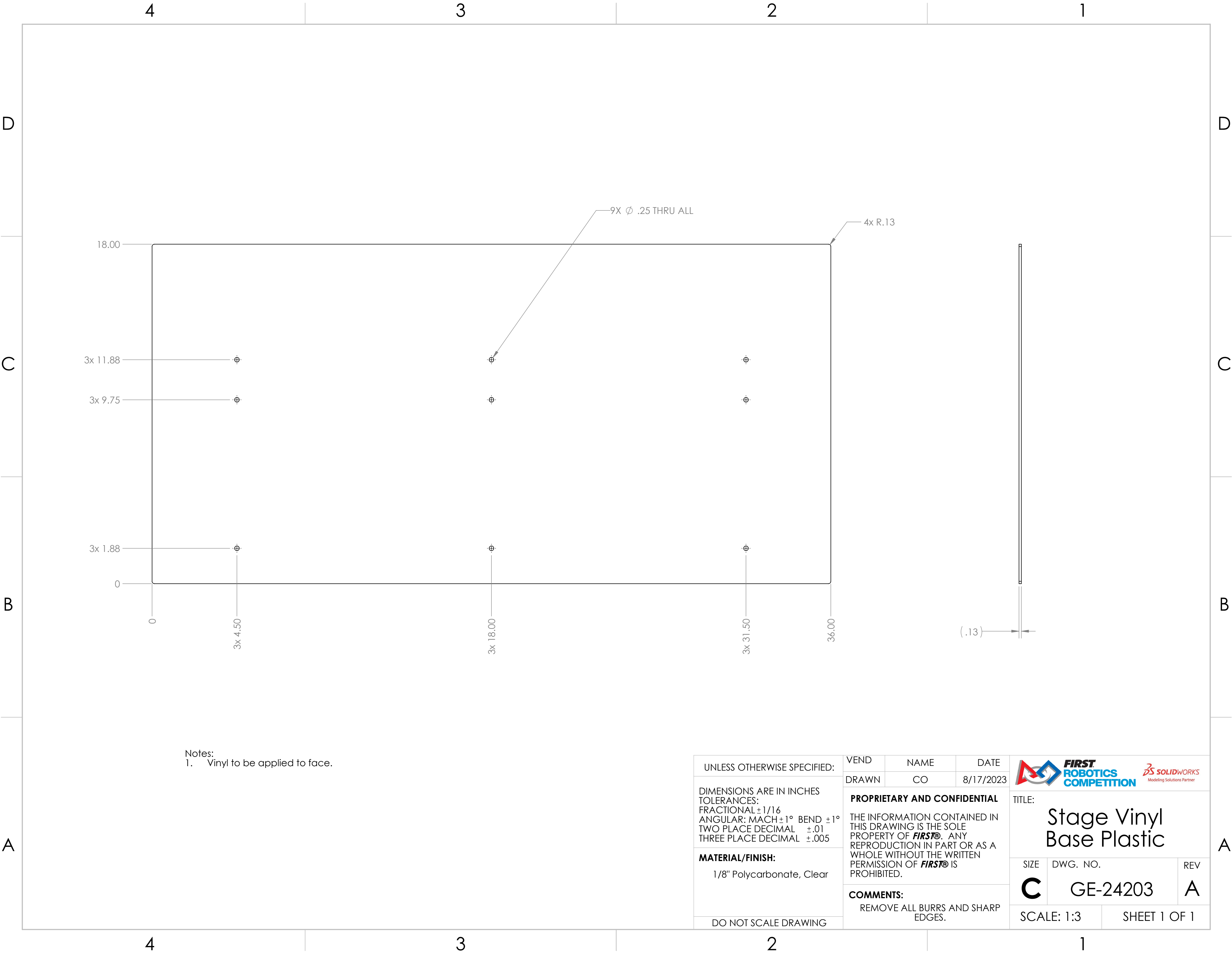
Notes:
1. Tag or label with part number.

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div> <div>TITLE: <h1>Stage Top</h1></div>		
	DRAWN	CO	8/22/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			<div>SIZE</div> <div>DWG. NO.</div> <div>REV</div>		
	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:			<div>C</div> <div>GE-24201</div>		
	REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING				SCALE: 1:4		SHEET 1 OF 1





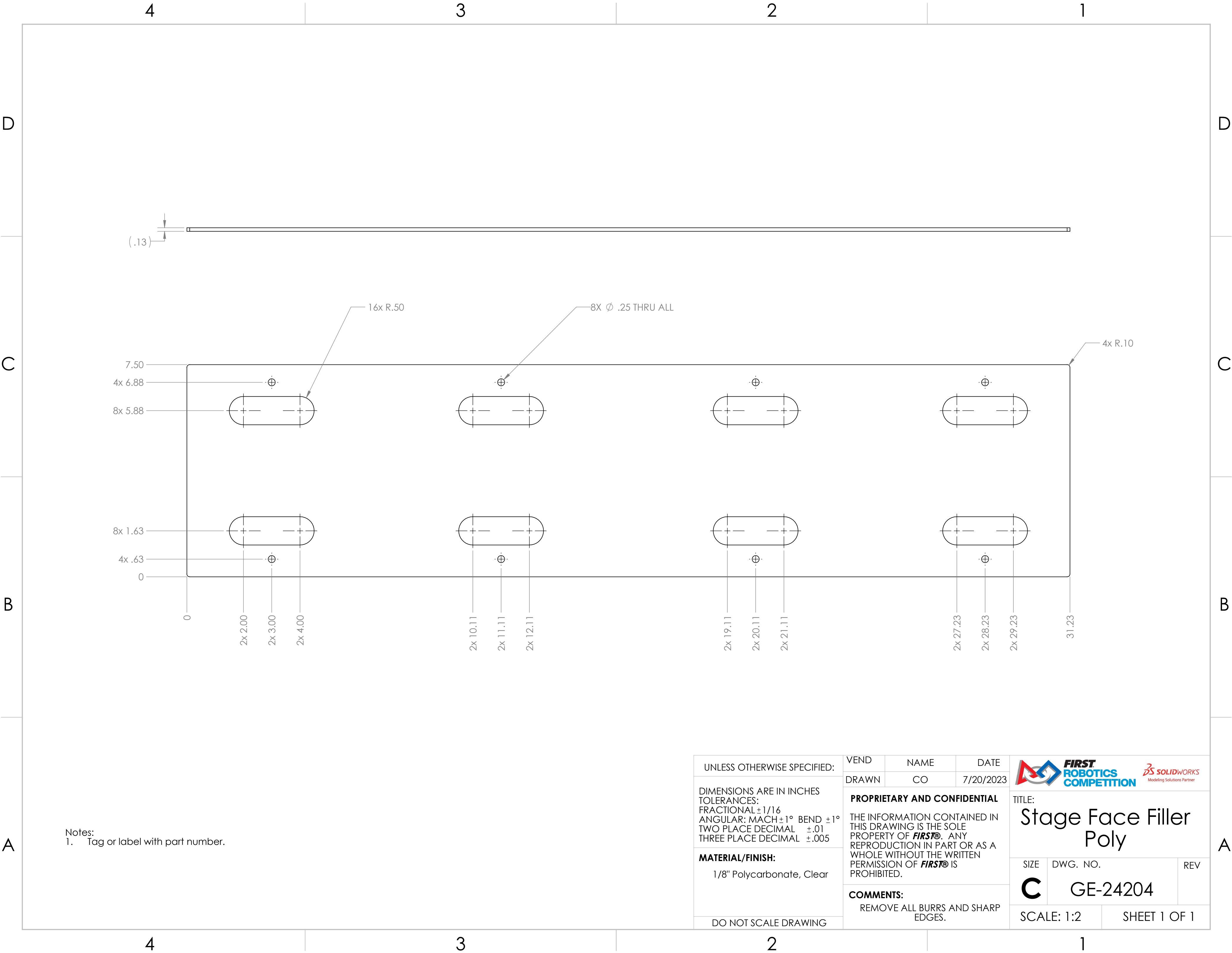
- Notes:
- QTY per field: 8
 - Gloss vinyl finish

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: Polycarbonate/Vinyl DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div>		
	DRAWN	CO	9/6/2023	<div><div>TITLE:</div><div>Stage Vinyl Logo</div><div><div>SIZE</div><div>DWG. NO.</div><div>REV</div></div><div><div>C</div><div>GE-24202</div></div><div><div>SCALE: 1:4</div><div>SHEET 1 OF 1</div></div></div>		
	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.						





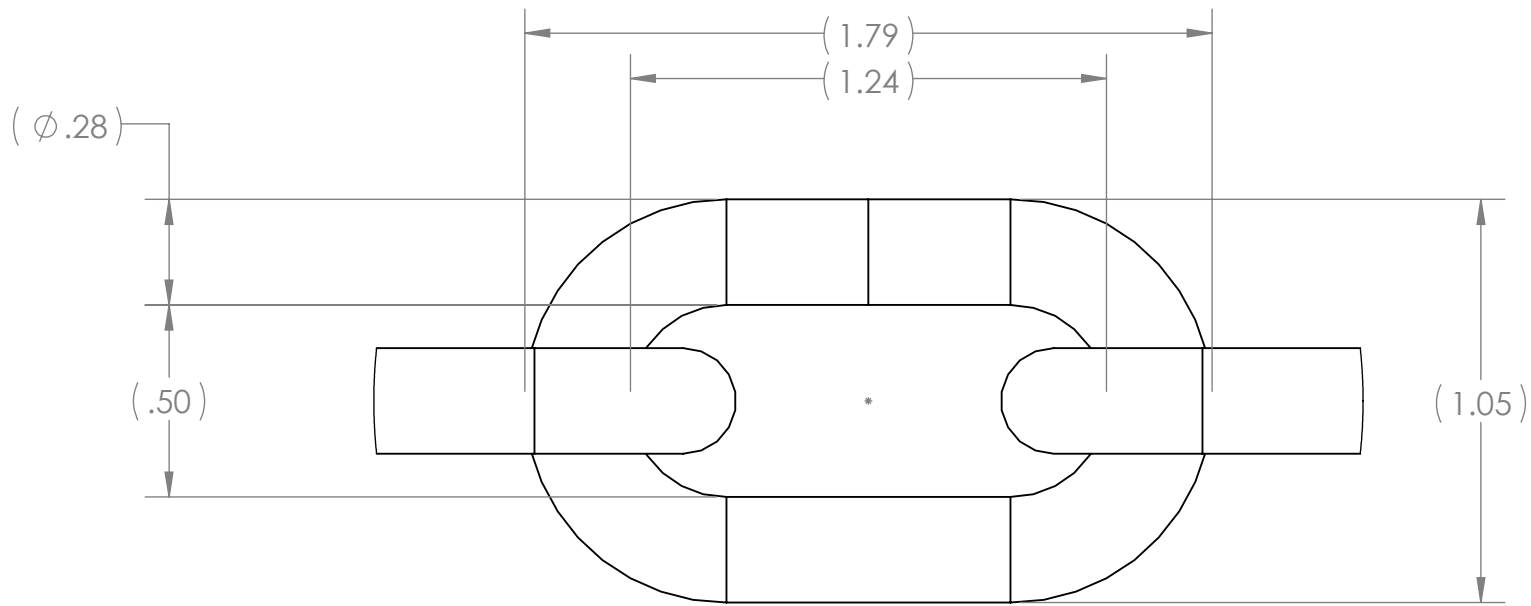
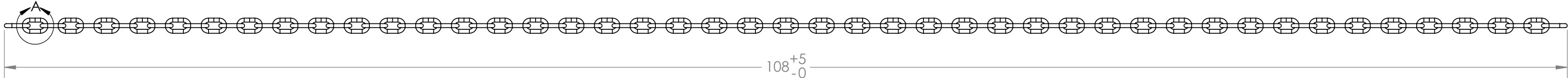
Notes:
1. Vinyl to be applied to face.

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div> <div>TITLE: <h1>Stage Vinyl Base Plastic</h1></div>		
	DRAWN	CO	8/17/2023			
DIMENSIONS ARE IN INCHES 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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24203	A
MATERIAL/FINISH: 1/8" Polycarbonate, Clear				SCALE: 1:3		SHEET 1 OF 1
DO NOT SCALE DRAWING						





Notes:
1. Tag or label with part number.

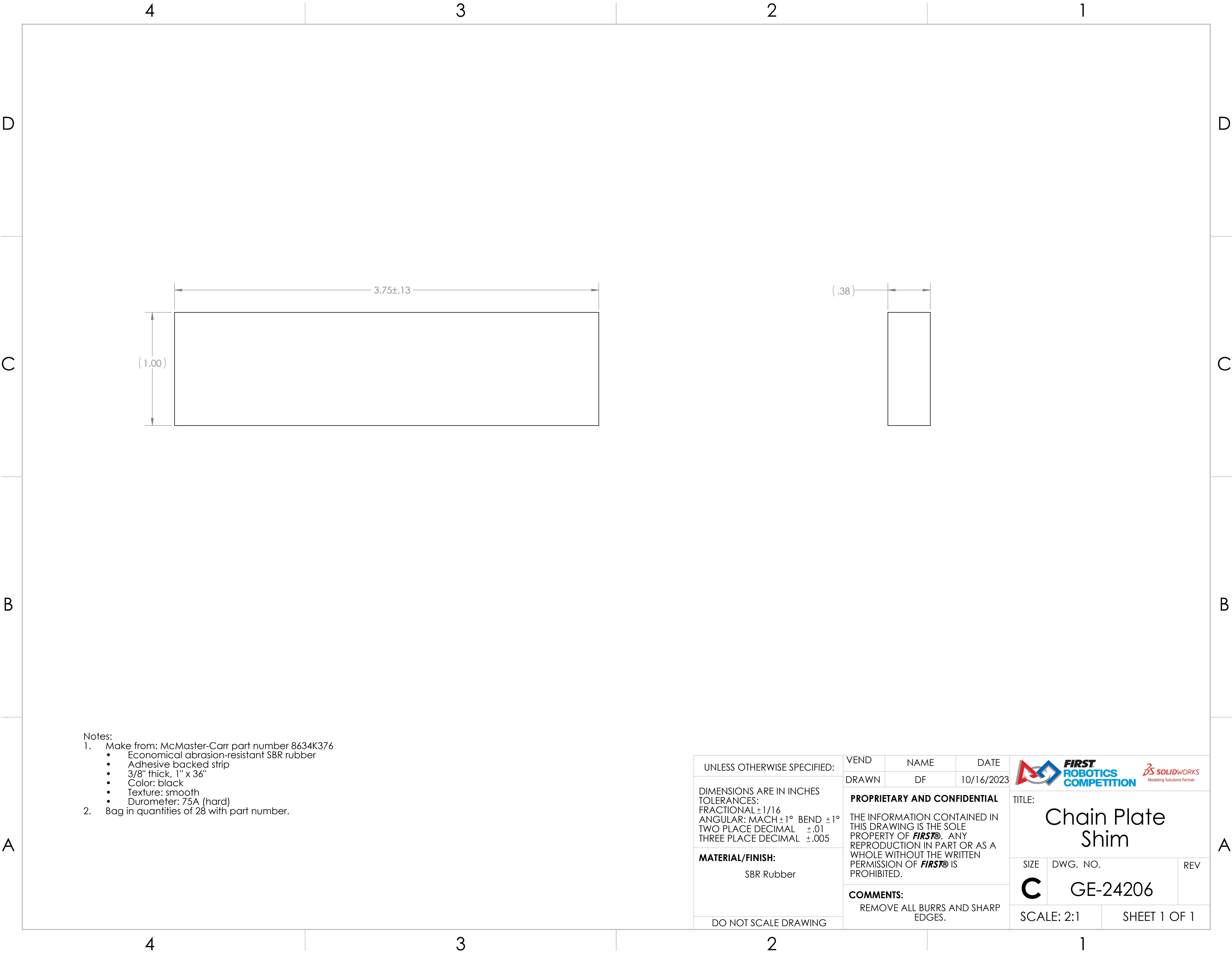
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$ MATERIAL/FINISH: 1/8" Polycarbonate, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	 	
	DRAWN	CO	7/20/2023		
	PROPRIETARY 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.				TITLE: Stage Face Filler Poly
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		SIZE C		DWG. NO. GE-24204
		SCALE: 1:2		SHEET 1 OF 1	





DETAIL A
SCALE 2 : 1

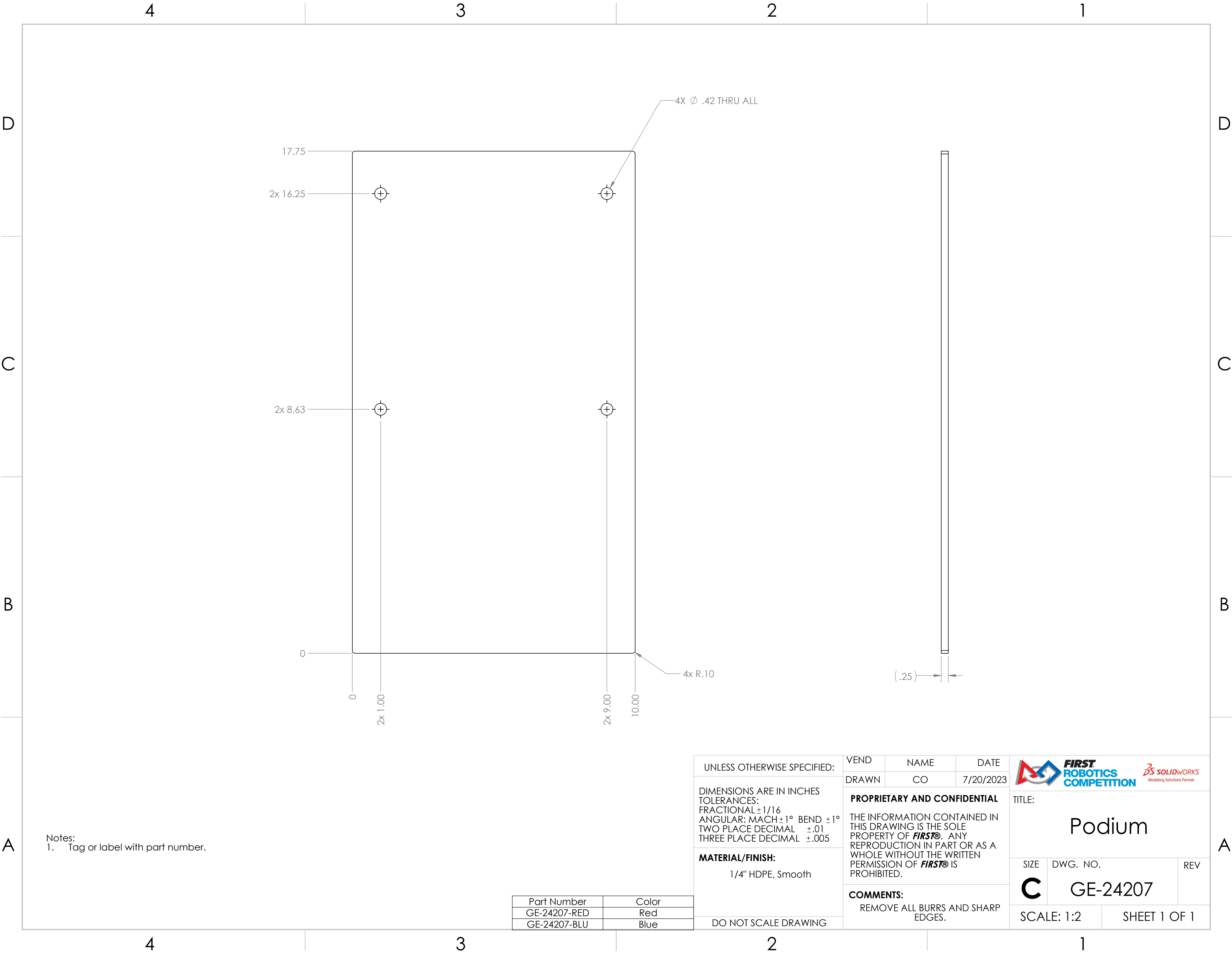
- Notes:
- 1. Supplier: Perfection Chain Products
 - 2. Packaged in groups of 9
 - 3. Individual link dimensions provided as reference for teams based on a measured sample. Sizes of chain of a given grade and trade size vary.

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div><div></div><div>TITLE: <h1>Stage Chain</h1></div></div>	
	DRAWN	CO	9/25/2023		
DIMENSIONS ARE IN INCHES 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: Grade 43 Zinc Plated Chain, 1/4" Trade Size	COMMENTS:				
	REMOVE ALL BURRS AND SHARP EDGES.				
DO NOT SCALE DRAWING	SIZE		DWG. NO.		REV
	C		GE-24205-straight		
	SCALE: 1:6			SHEET 1 OF 1	





- Notes:
1. Make from: McMaster-Carr part number 8634K376
 - Economical abrasion-resistant SBR rubber
 - Adhesive backed strip
 - 3/8" thick, 1" x 36"
 - Color: black
 - Texture: smooth
 - Durometer: 75A (hard)
 2. Bag in quantities of 28 with part number.

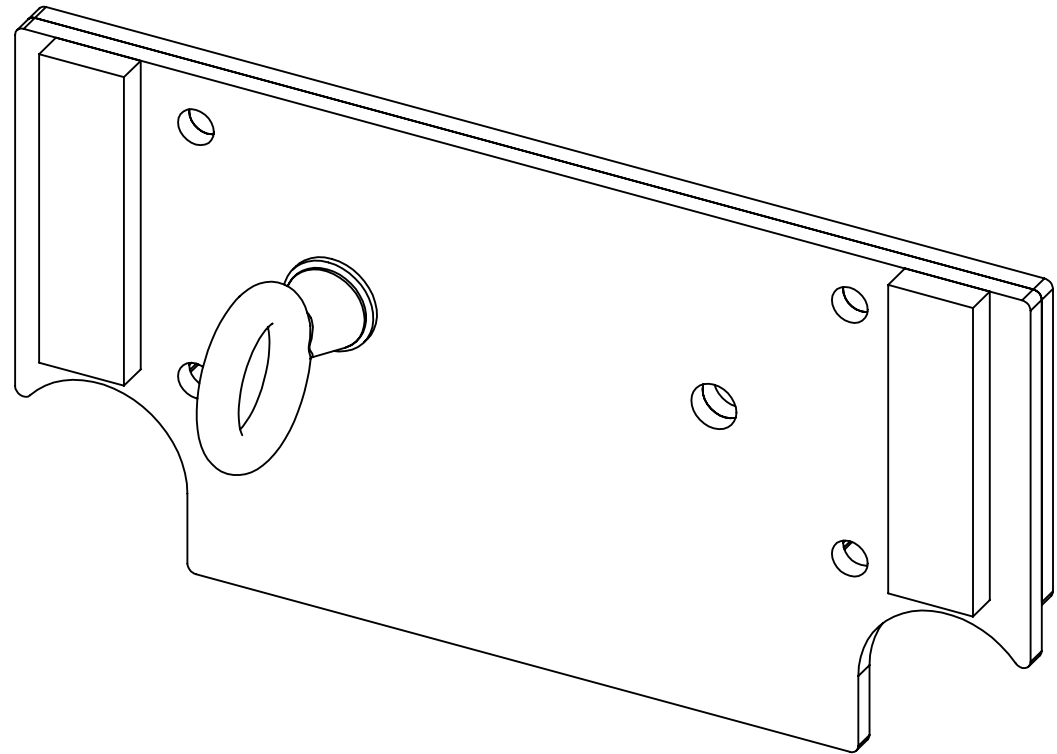
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>		
	DRAWN	DF	10/16/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE:		
				Chain Plate Shim		
	MATERIAL/FINISH: SBR Rubber	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.
	C				GE-24206	
DO NOT SCALE DRAWING				SCALE: 2:1		SHEET 1 OF 1



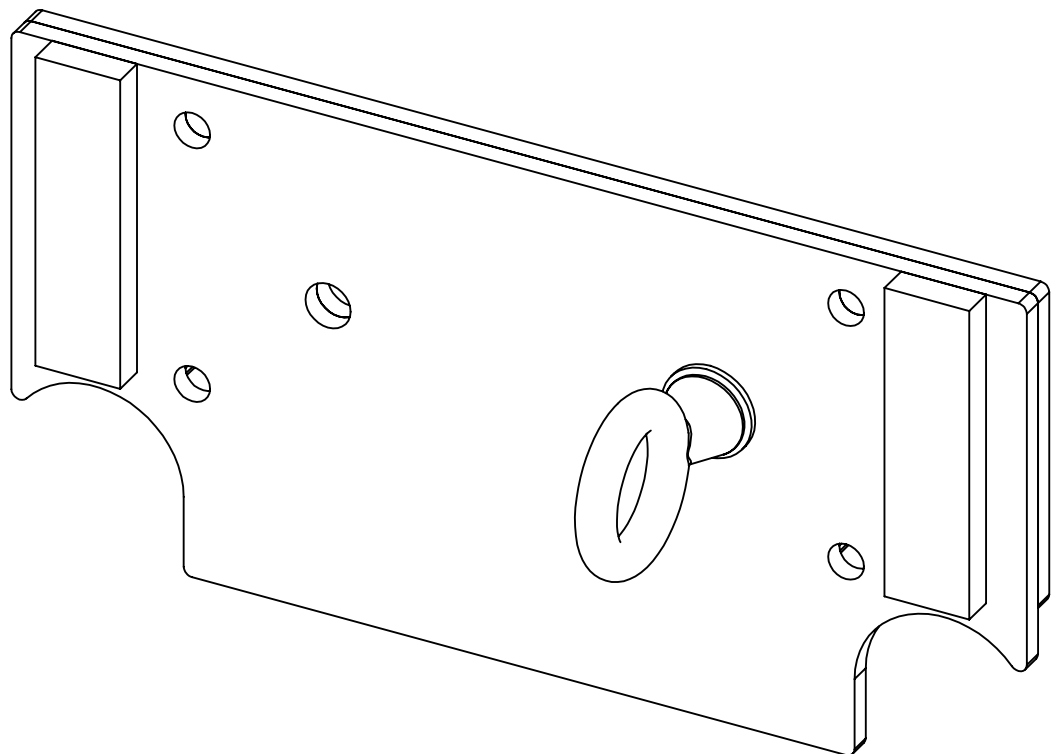
Notes:
1. Tag or label with part number.

Part Number	Color
GE-24207-RED	Red
GE-24207-BLU	Blue

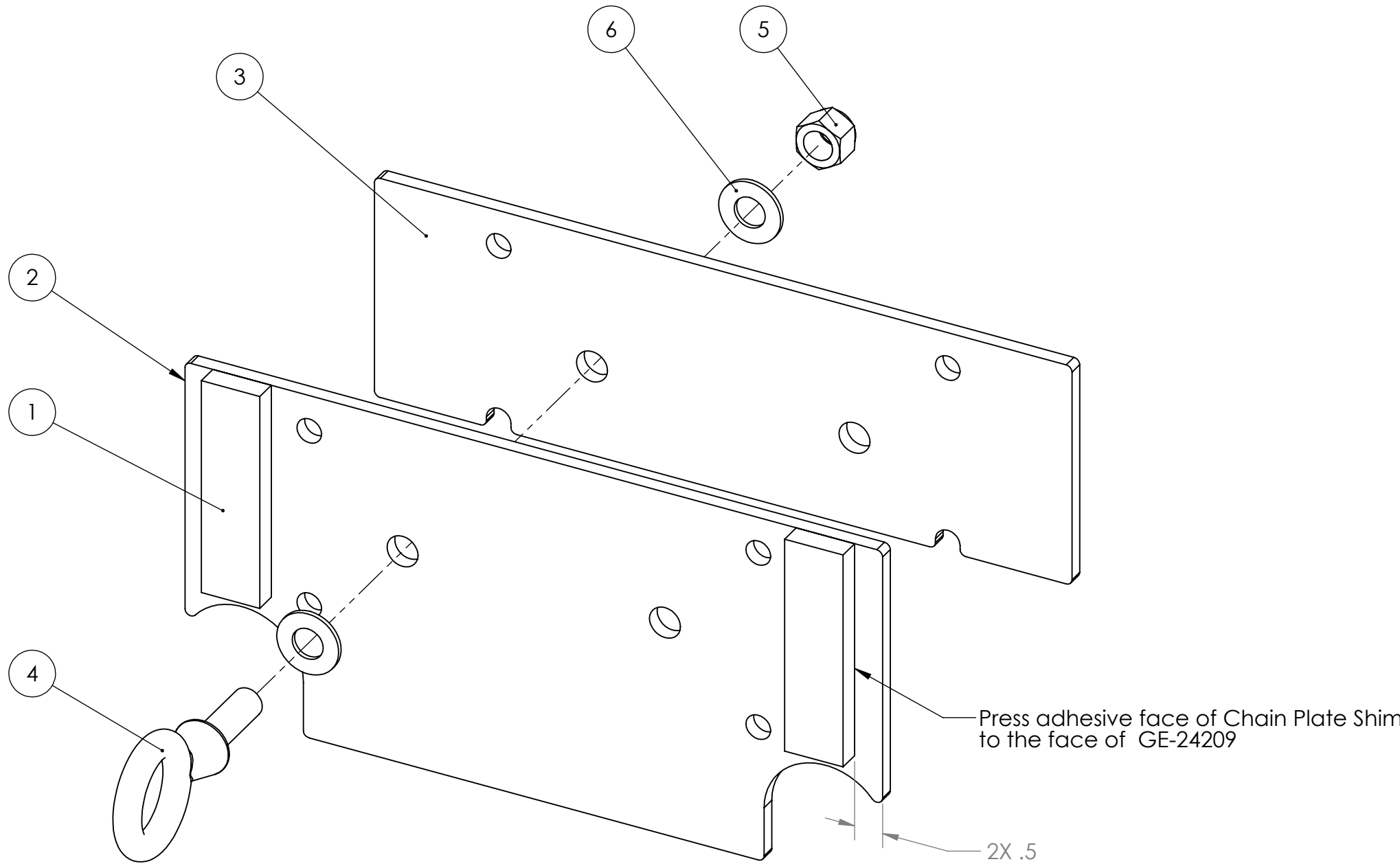
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/4" HDPE, Smooth DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> TITLE: Podium		
	DRAWN	CO	7/20/2023			
	PROPRIETARY AND CONFIDENTIAL 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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				SIZE	DWG. NO.
				C	GE-24207	
				SCALE: 1:2		SHEET 1 OF 1



Left Version



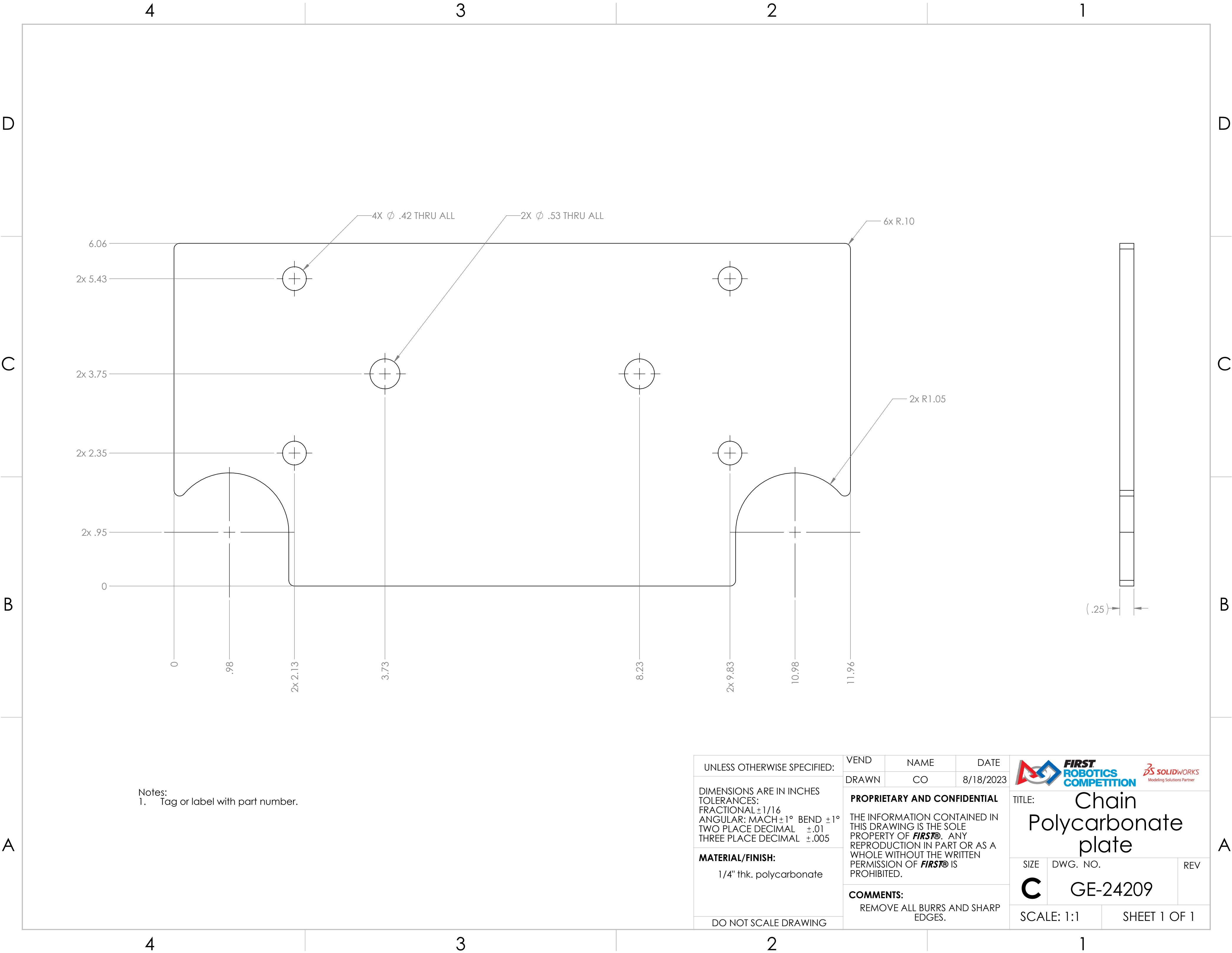
Right Version

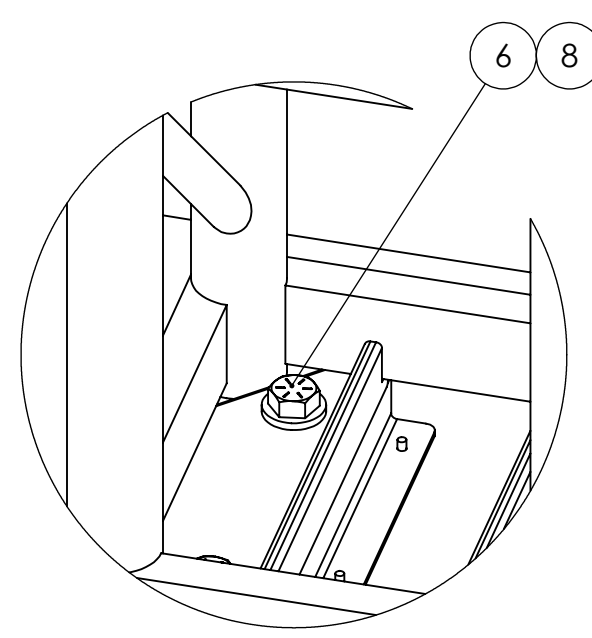
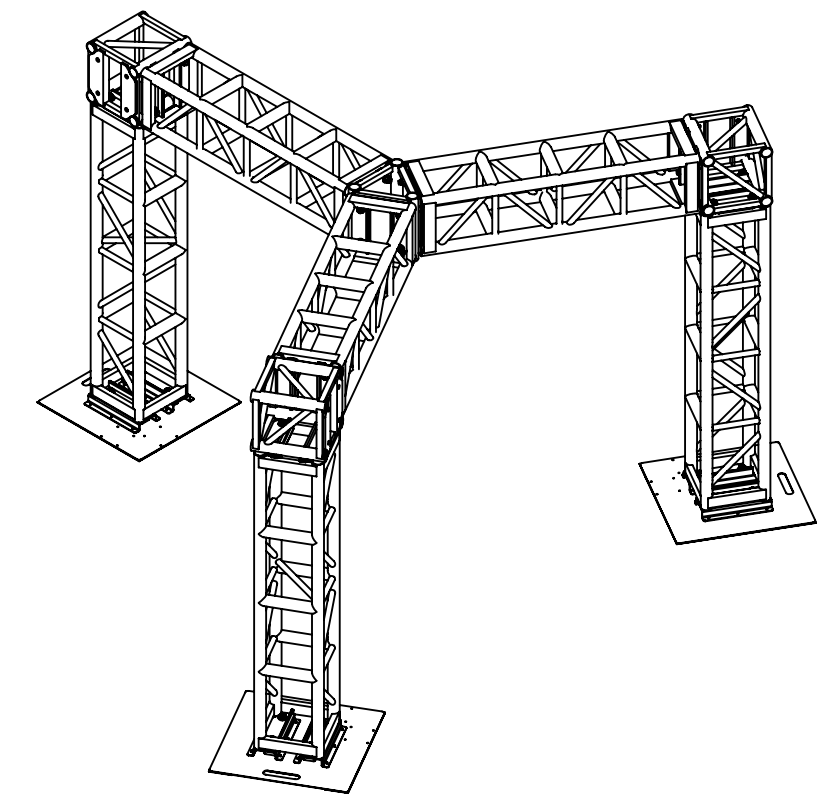
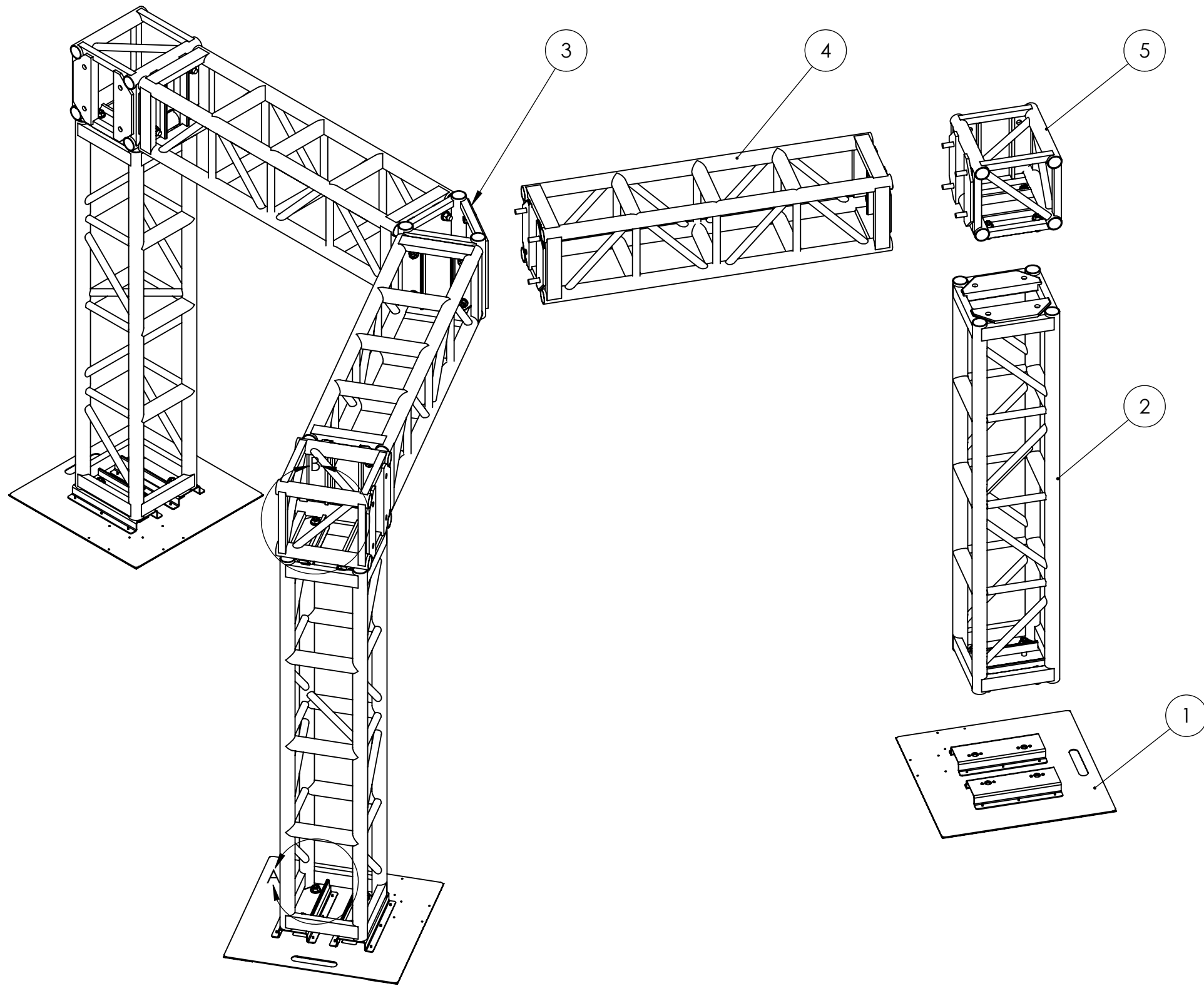


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24206	Chain Plate Shim	2
2	GE-24209	Chain Polycarbonate plate	1
3	GE-24213	Chain Metal plate	1
4	eyebolt_shoulder_.5_13_1.5	Steel Eyebolt with Shoulder, 1/2"-13 x 1.5" long, fully threaded	1
5	nylock_.5_13	Steel nylon-insert locknut, 1/2" - 13	1
6	washer_flat_.5	Flat Washer for 1/2" Screw	2

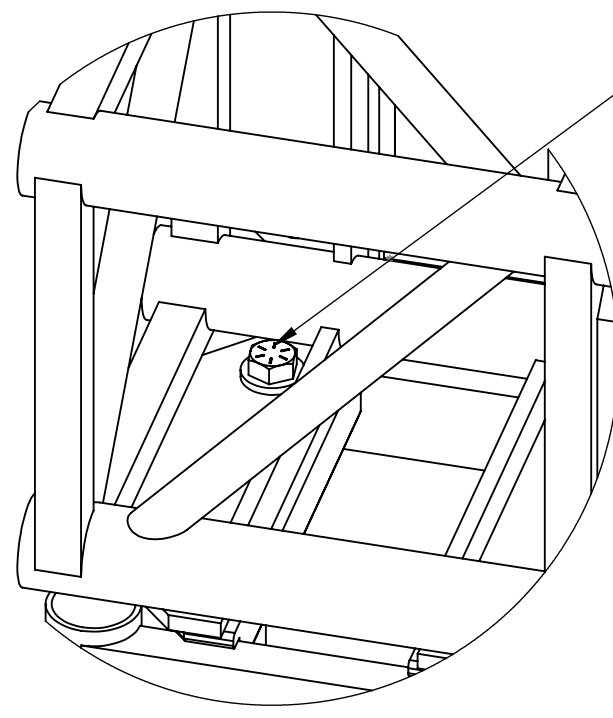
UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$		DRAWN	DF	11/27/2023
MATERIAL/FINISH:		PROPRIETARY AND CONFIDENTIAL		
DO NOT SCALE DRAWING		THE INFORMATION CONTAINED IN THIS 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: Chain Plate with Fasteners		
		SIZE	DWG. NO.	REV
		C	GE-24208	
		SCALE: 1:2		SHEET 1 OF 1







DETAIL A
SCALE 1 : 4



DETAIL B
SCALE 1 : 4

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-01021	Truss Base	3
2	FE-01003	5' x 1' x 1' Square Truss	3
3	GE-24211	Triangular Truss Block	1
4	FE-01002	4' x 1' x 1' Square Truss	3
5	FE-01012	3 Way Corner Block	3
6	hex_.625_11_2.00	Hex Head Bolt, 5/8"-11 Thread, 2" length	48
7	hexnut_.625_11	5/8"-11 hex nut	36
8	washer_flat_.625	Flat washer for 5/8" screw	84

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:

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

FIELD	NAME	DATE
DRAWN	DF	12/7/2023

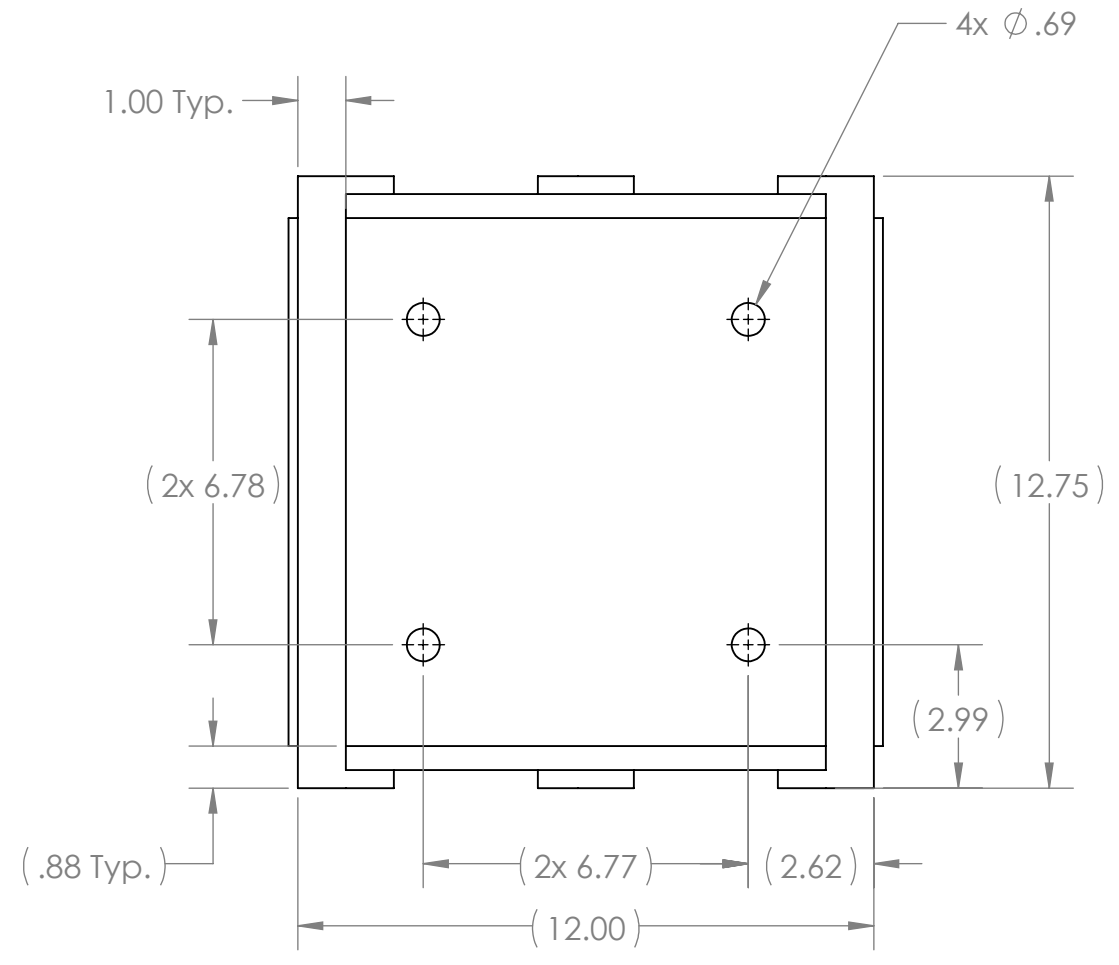
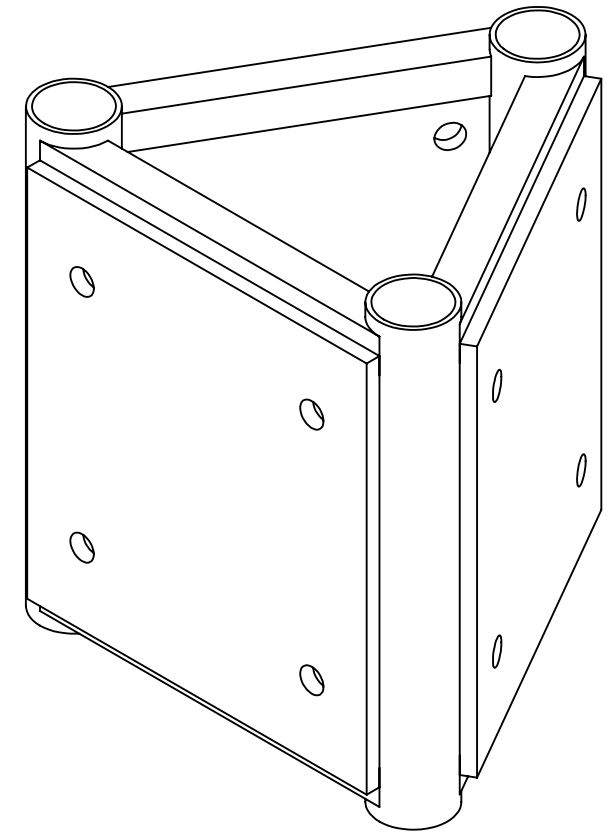
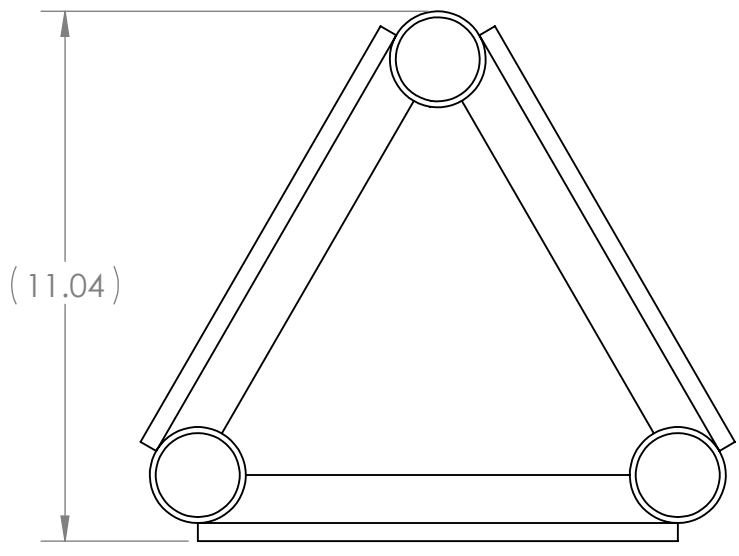
PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF **FIRST®**. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF **FIRST®** IS PROHIBITED.

COMMENTS:



REMOVE ALL BURRS AND SHARP EDGES.

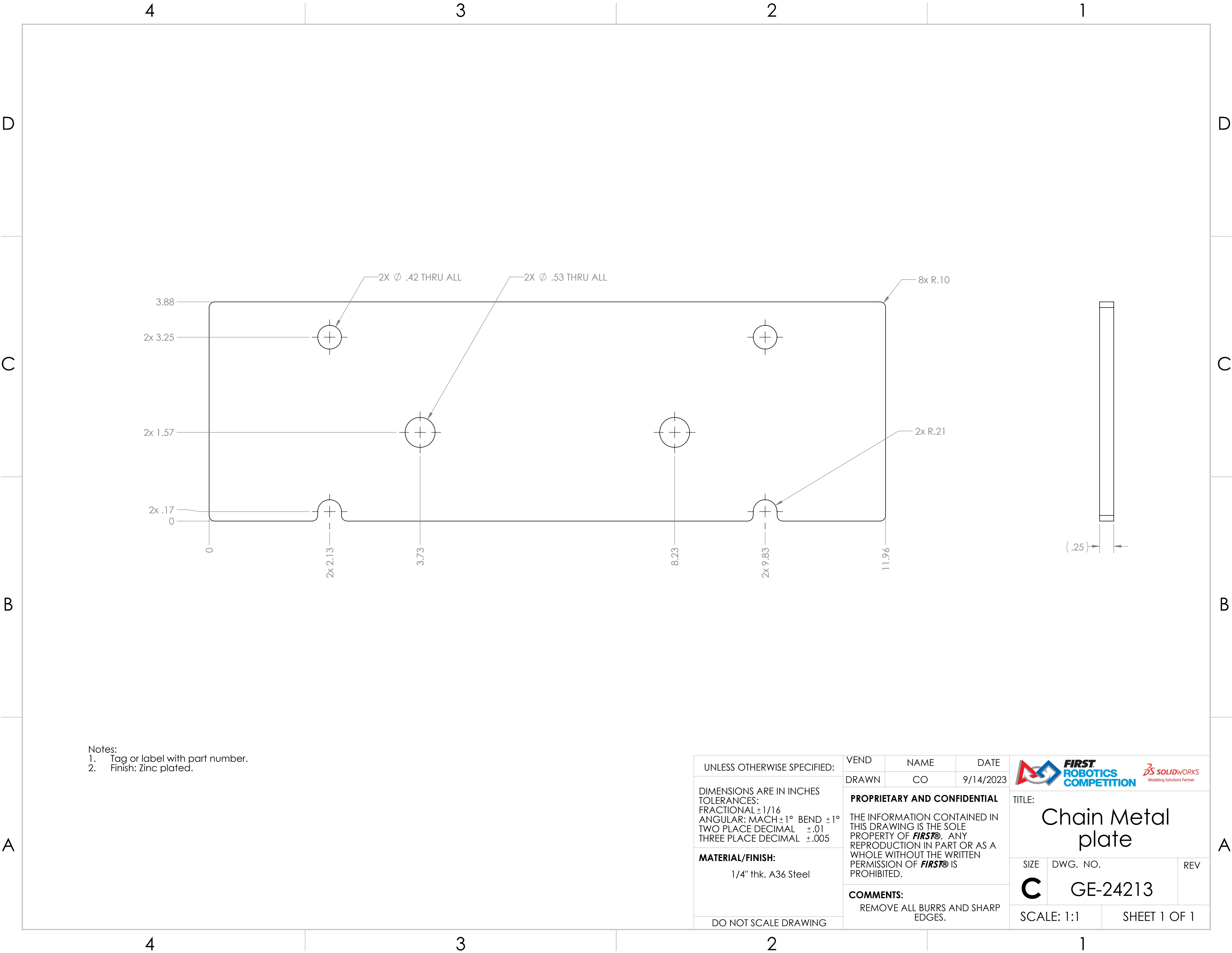


TITLE: Base Truss Assembly		
SIZE C	DWG. NO. GE-24210	REV
SCALE: 1:16		SHEET 1 OF 1





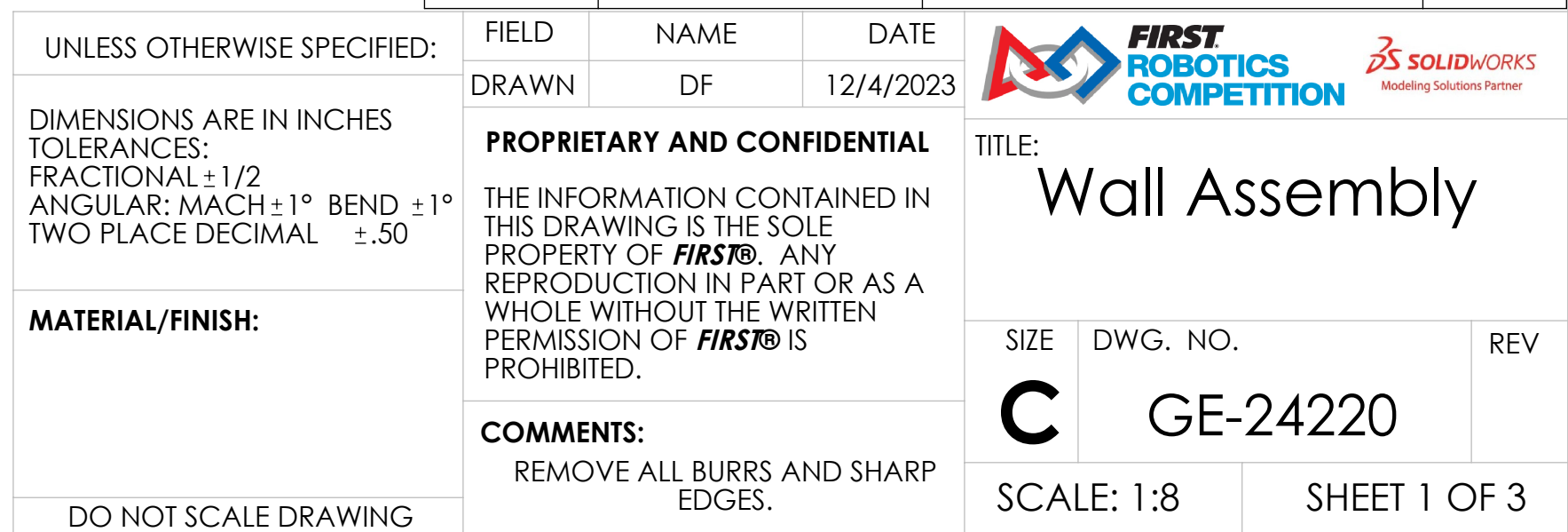
- Notes:
- 1. Description: 6061-T6 Aluminum - Light Duty 3 Way Spoke Corner Block
 - 2. Vendor: Total Structures
 - 3. Part Number: 1212LD 3WAY SPOKE
 - 4. Note: Substitutions not allowed

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	<div></div> <div>TITLE: Triangular Truss Block</div>	
	DRAWN	CO	7/20/2023		
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24211
SCALE: 1:4		SHEET 1 OF 1			



Notes:
1. Tag or label with part number.
2. Finish: Zinc plated.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/4" thk. A36 Steel DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: <h1>Chain Metal plate</h1></div>		
	DRAWN	CO	9/14/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
SIZE		DWG. NO.		REV		
C		GE-24213				
SCALE: 1:1			SHEET 1 OF 1			



D

C

B

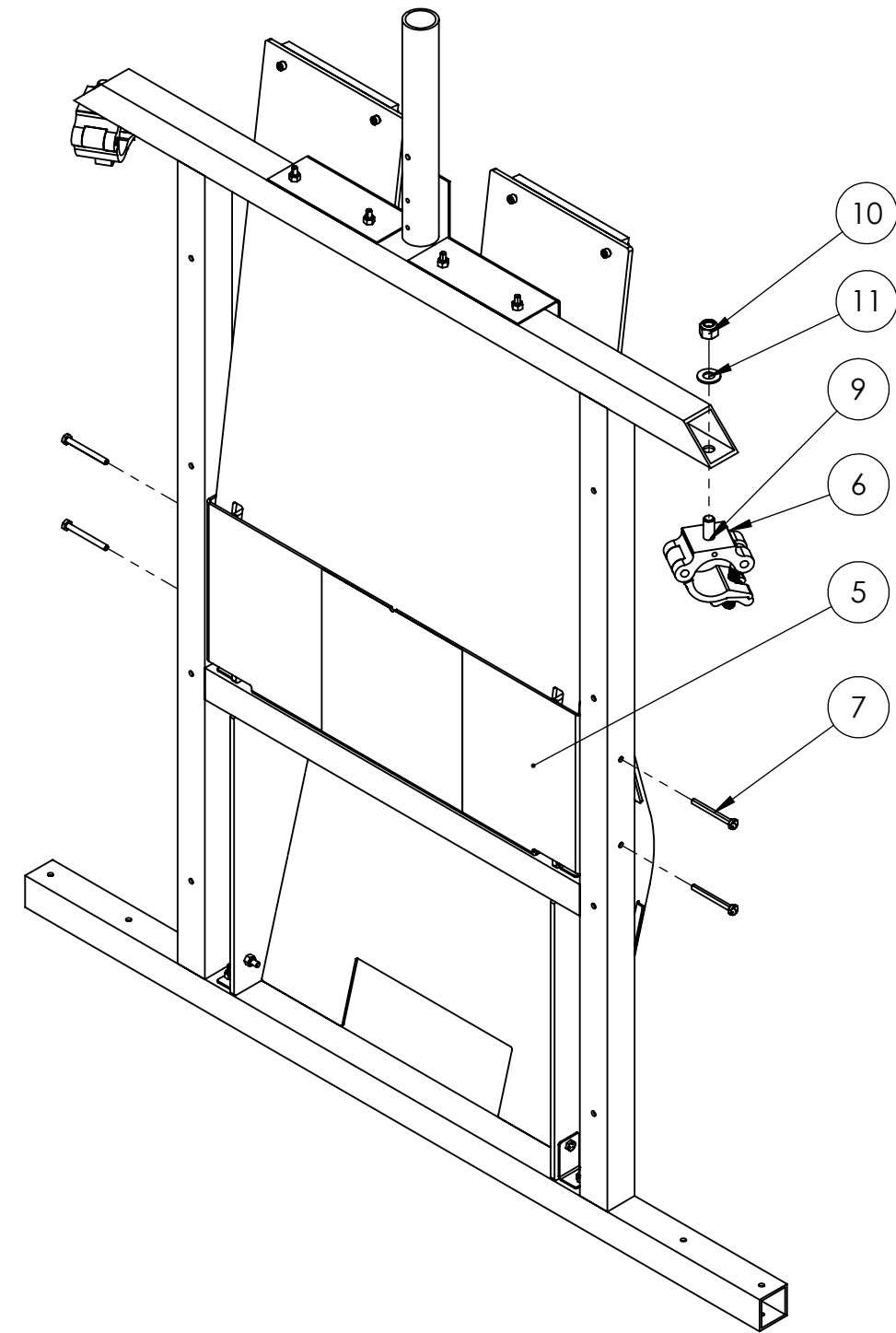
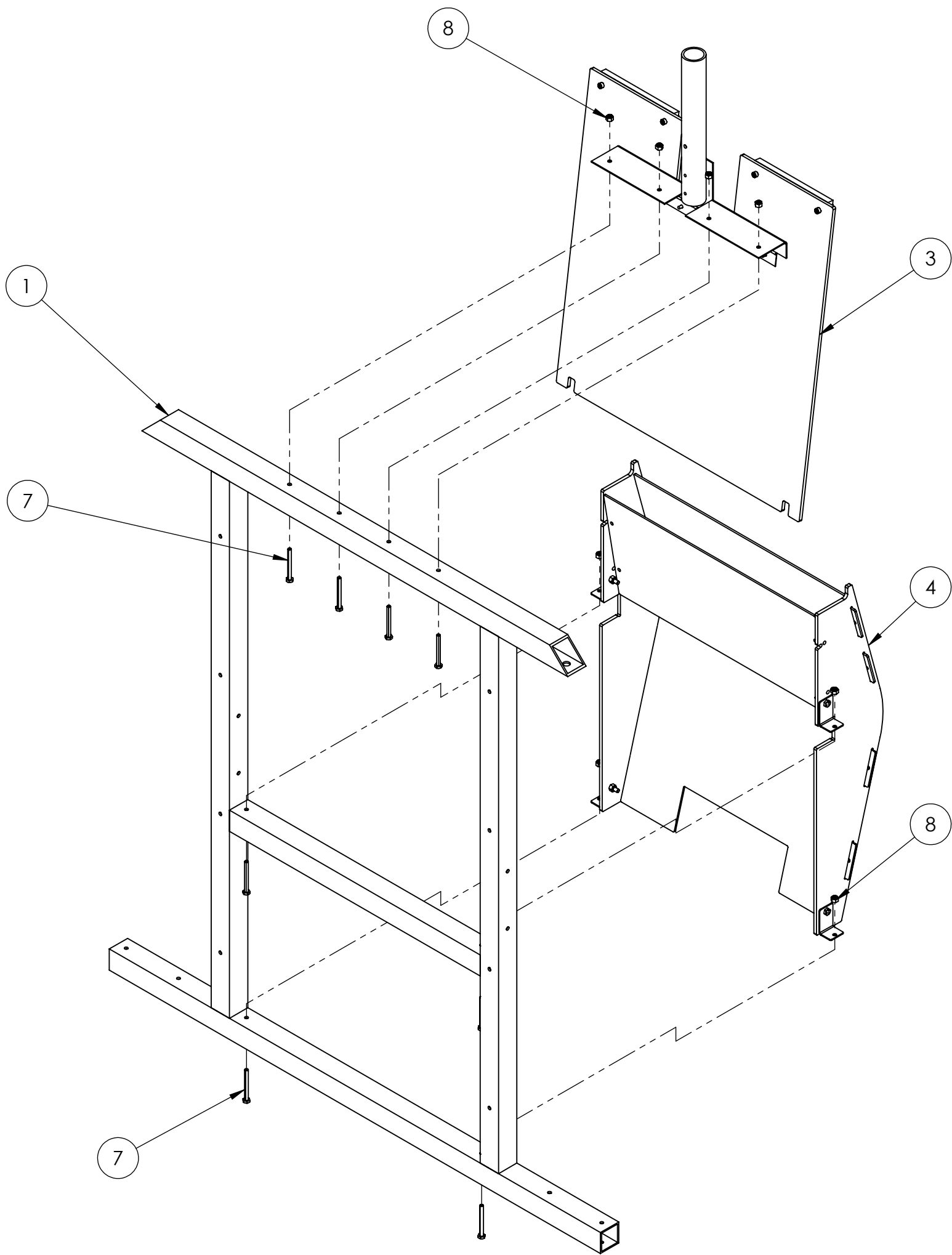
A

D

C

B

A



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

DRAWN

NAME

DF

DATE

12/4/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Wall Assembly

SIZE

C

DWG. NO.

GE-24220

REV

SCALE: 1:8

SHEET 2 OF 3

4

3

2

1

4

3

2

1

D

D

C

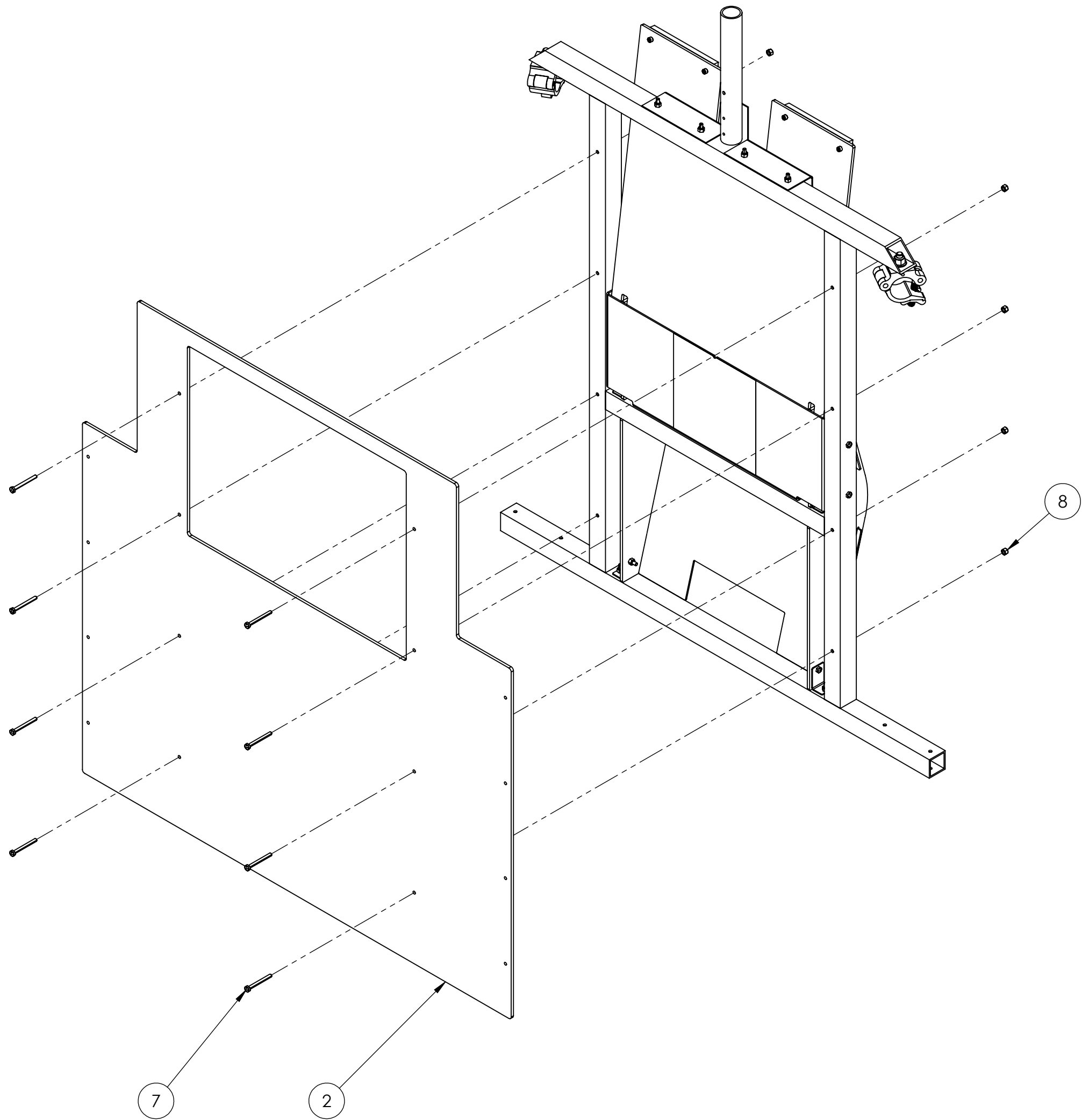
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B

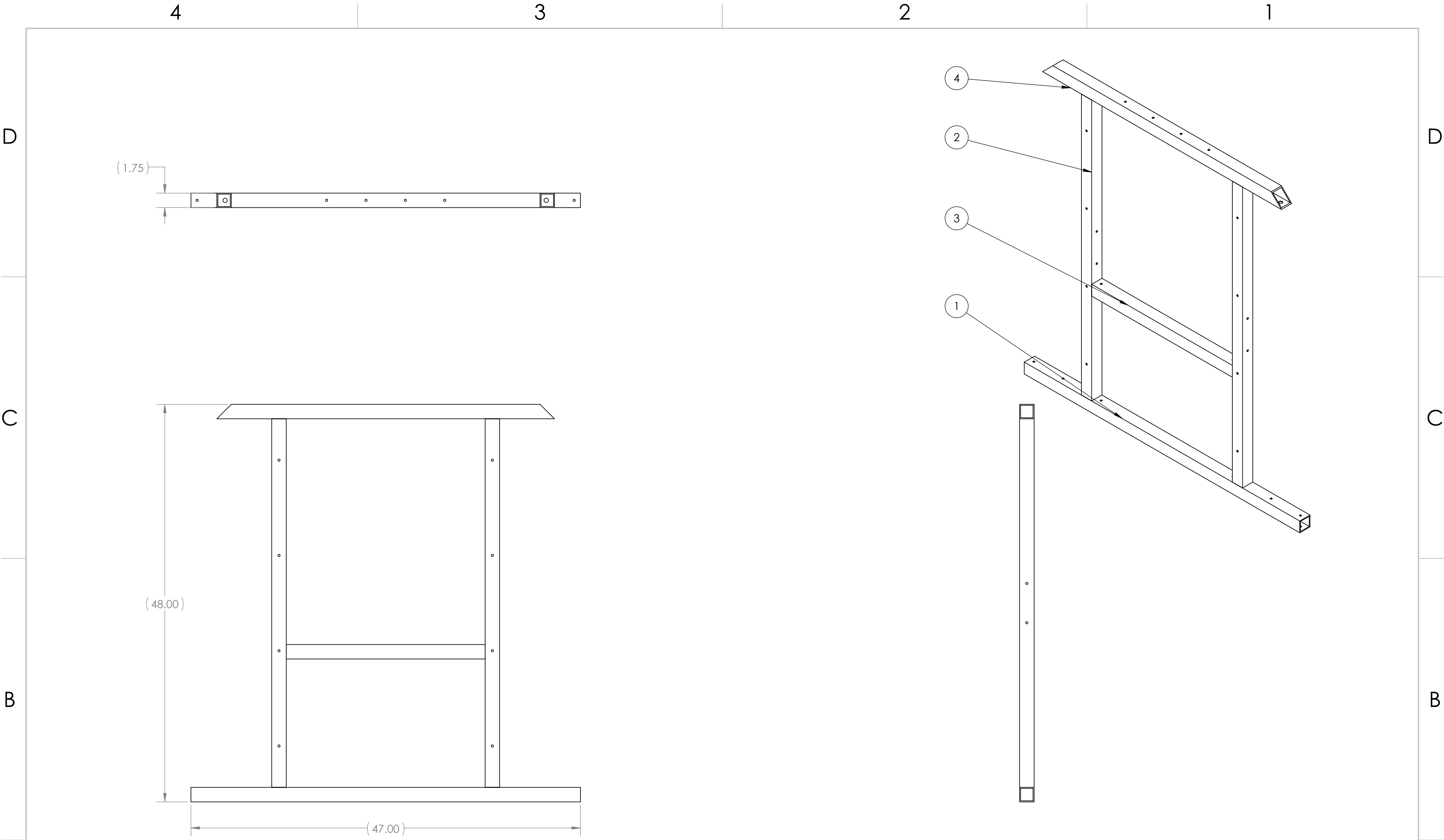
B

A

A



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50 MATERIAL/FINISH: DO NOT SCALE DRAWING	FIELD	NAME	DATE	 		
	DRAWN	DF	12/4/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				TITLE: Wall Assembly	
				SIZE	DWG. NO.	REV
				C	GE-24220	
				SCALE: 1:8		SHEET 3 OF 3

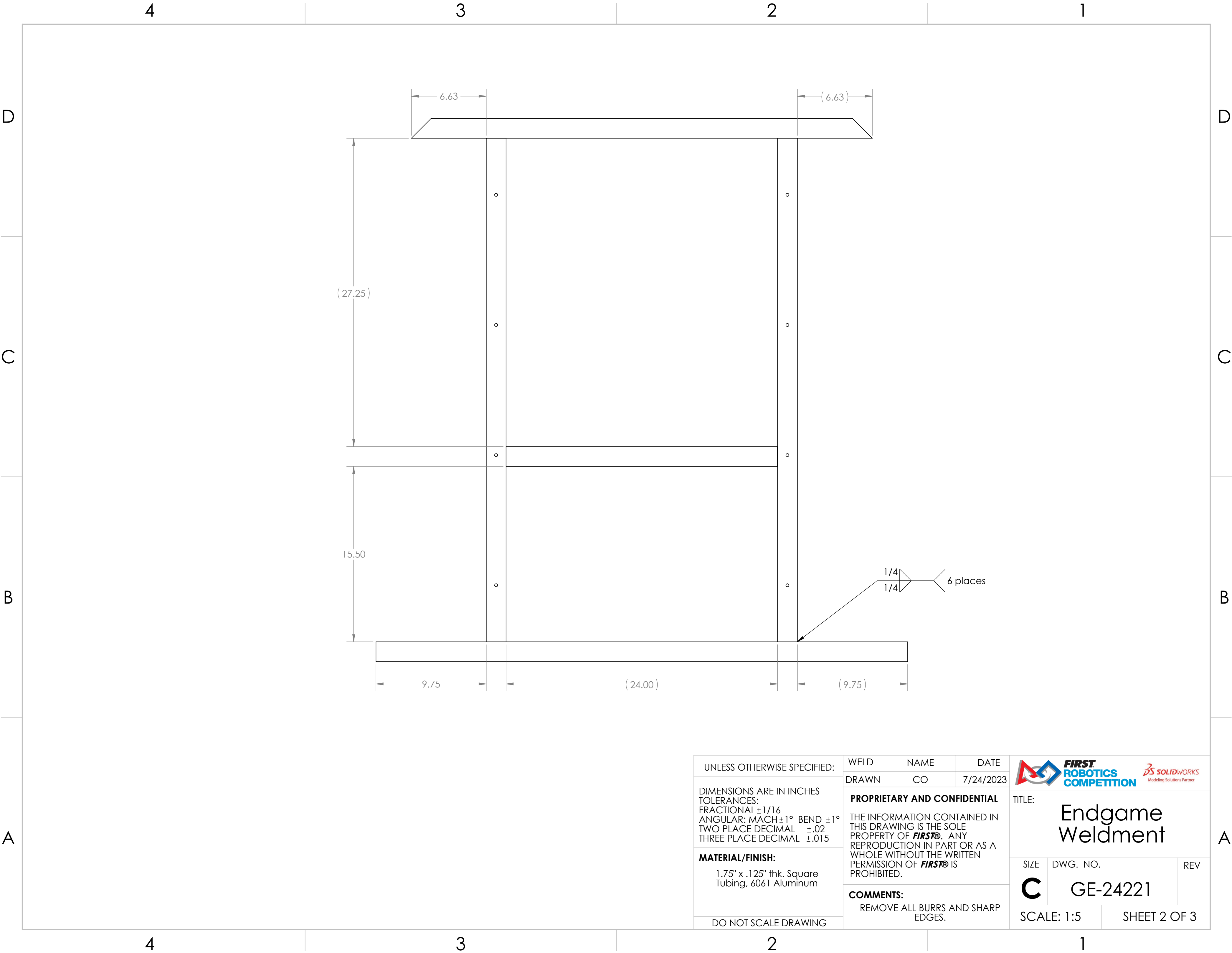


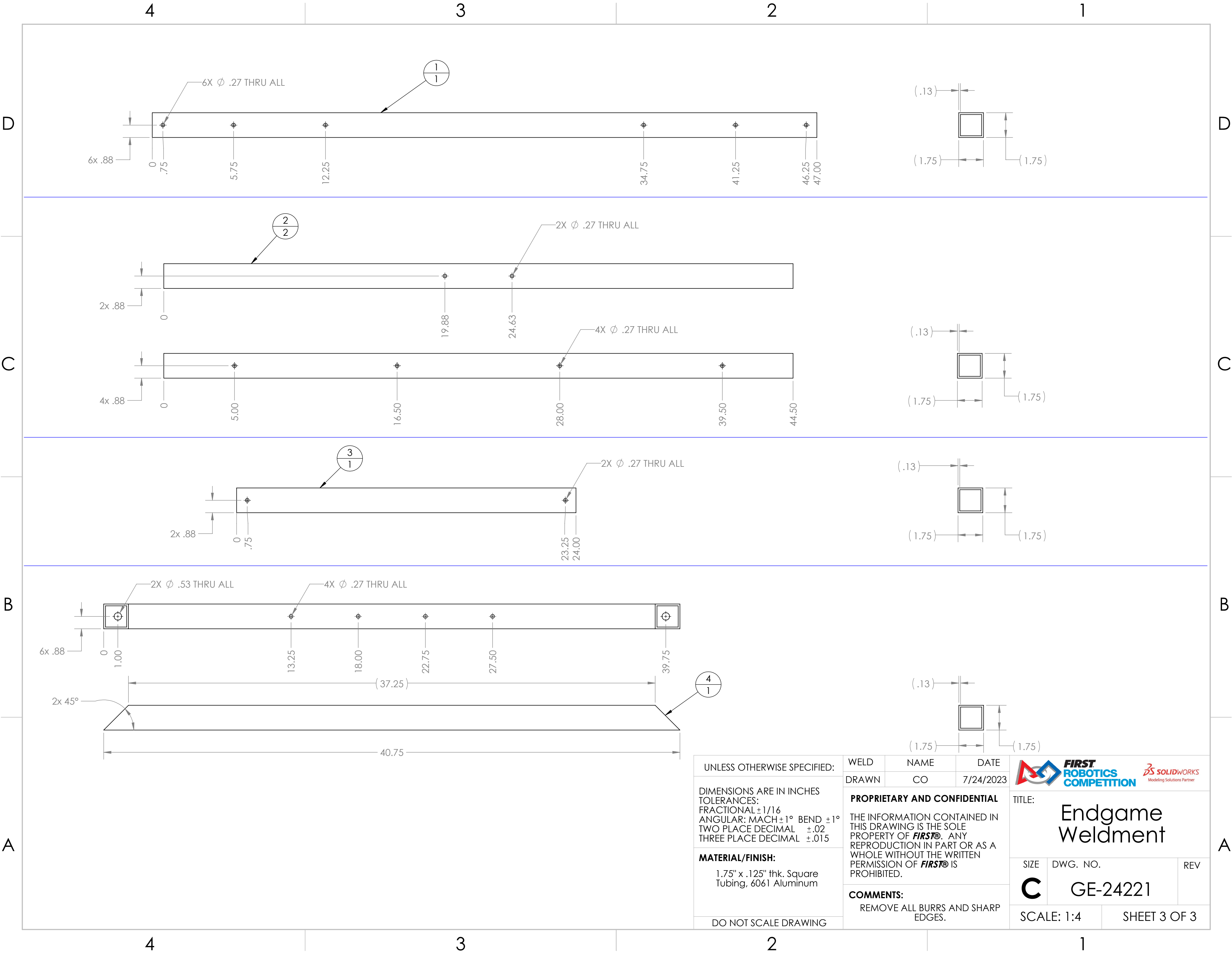
Notes:
1. Tag or label with part number.

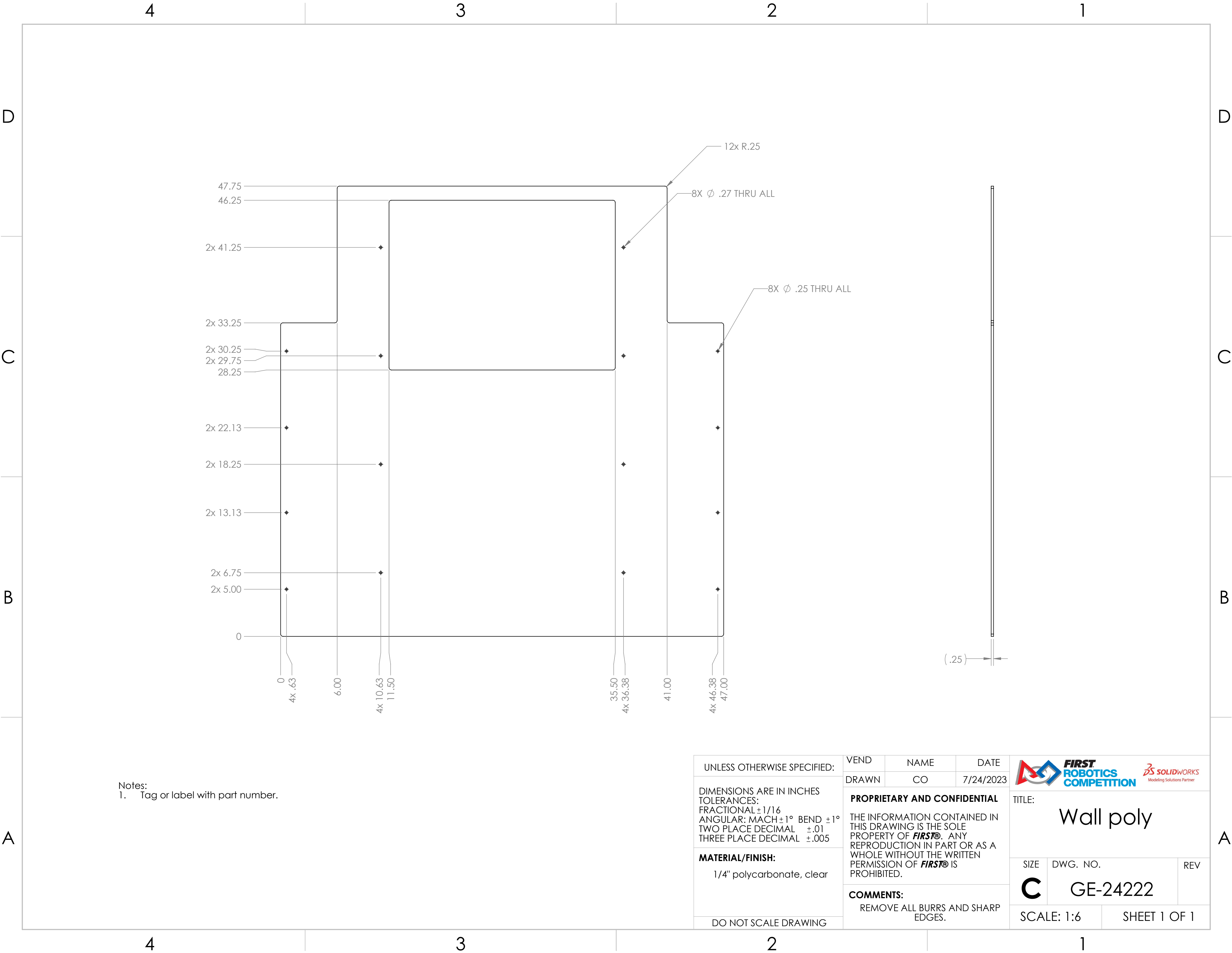
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24221-01	1.75" x .125" thk. Square Tubing, 6061	1
2	GE-24221-02	1.75" x .125" thk. Square Tubing, 6061	2
3	GE-24221-03	1.75" x .125" thk. Square Tubing, 6061	1
4	GE-24221-04	1.75" x .125" thk. Square Tubing, 6061	1

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .015$ MATERIAL/FINISH: 1.75" x .125" thk. Square Tubing, 6061 Aluminum DO NOT SCALE DRAWING	WELD	NAME	DATE
	DRAWN	CO	7/24/2023
	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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
	TITLE: Endgame Weldment		
SIZE C		DWG. NO. GE-24221	REV
SCALE: 1:8		SHEET 1 OF 3	





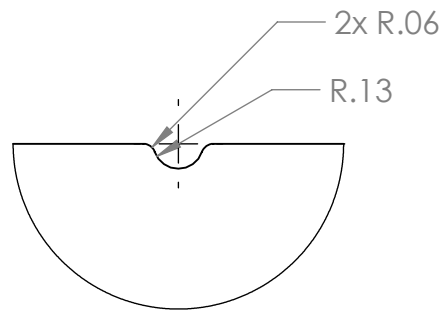
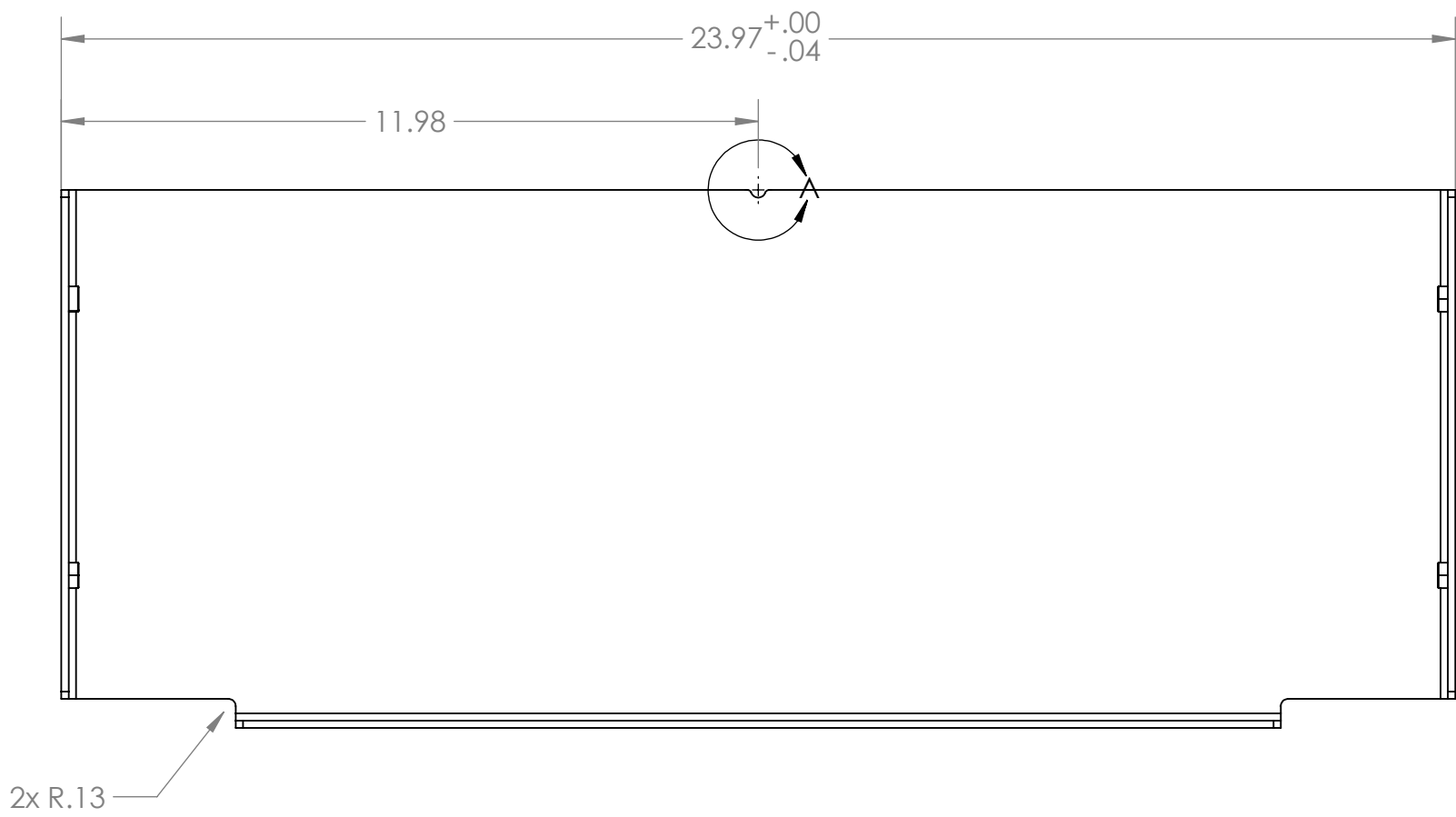
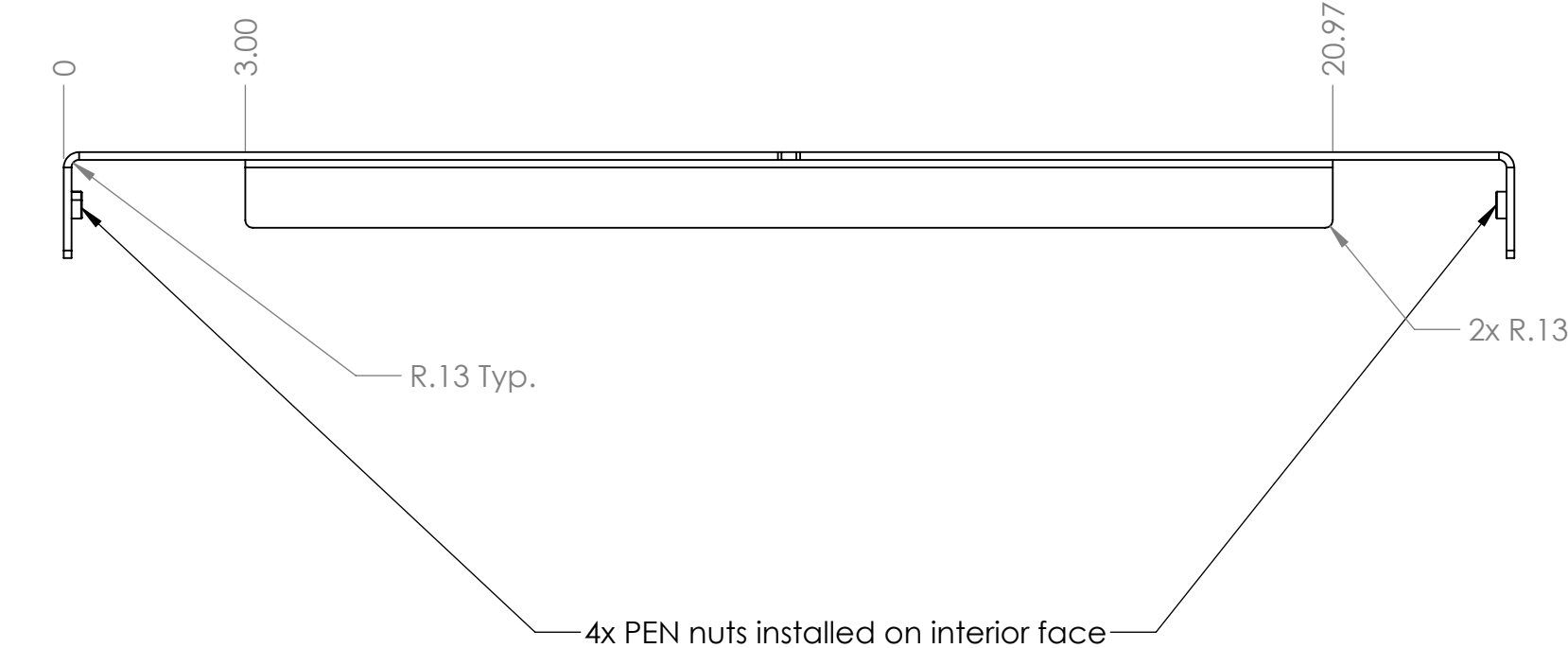






Notes:
1. Tag or label with part number.

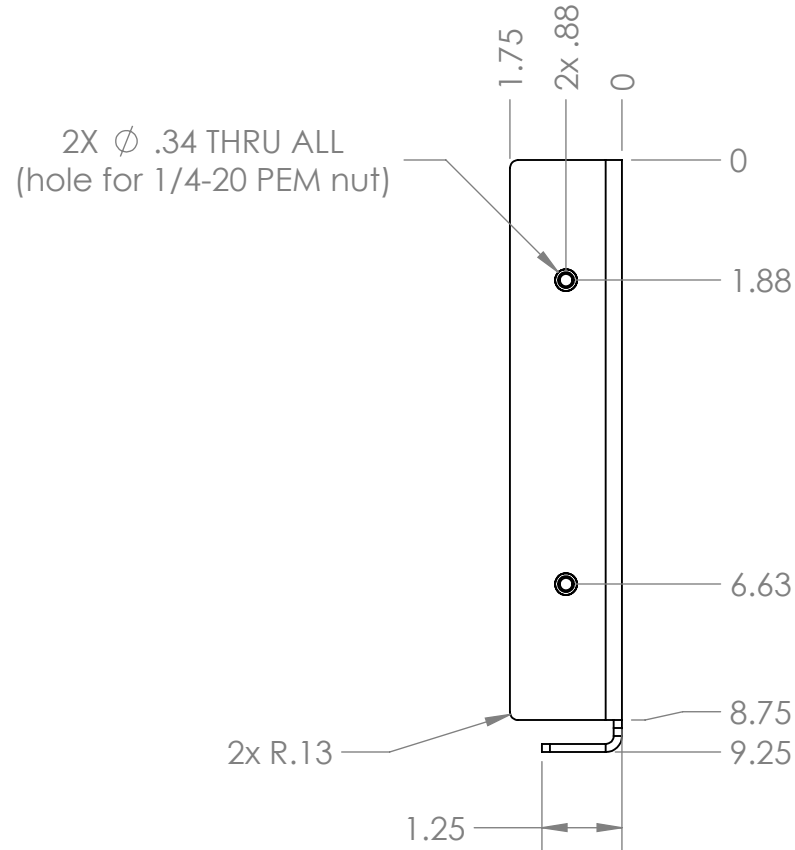
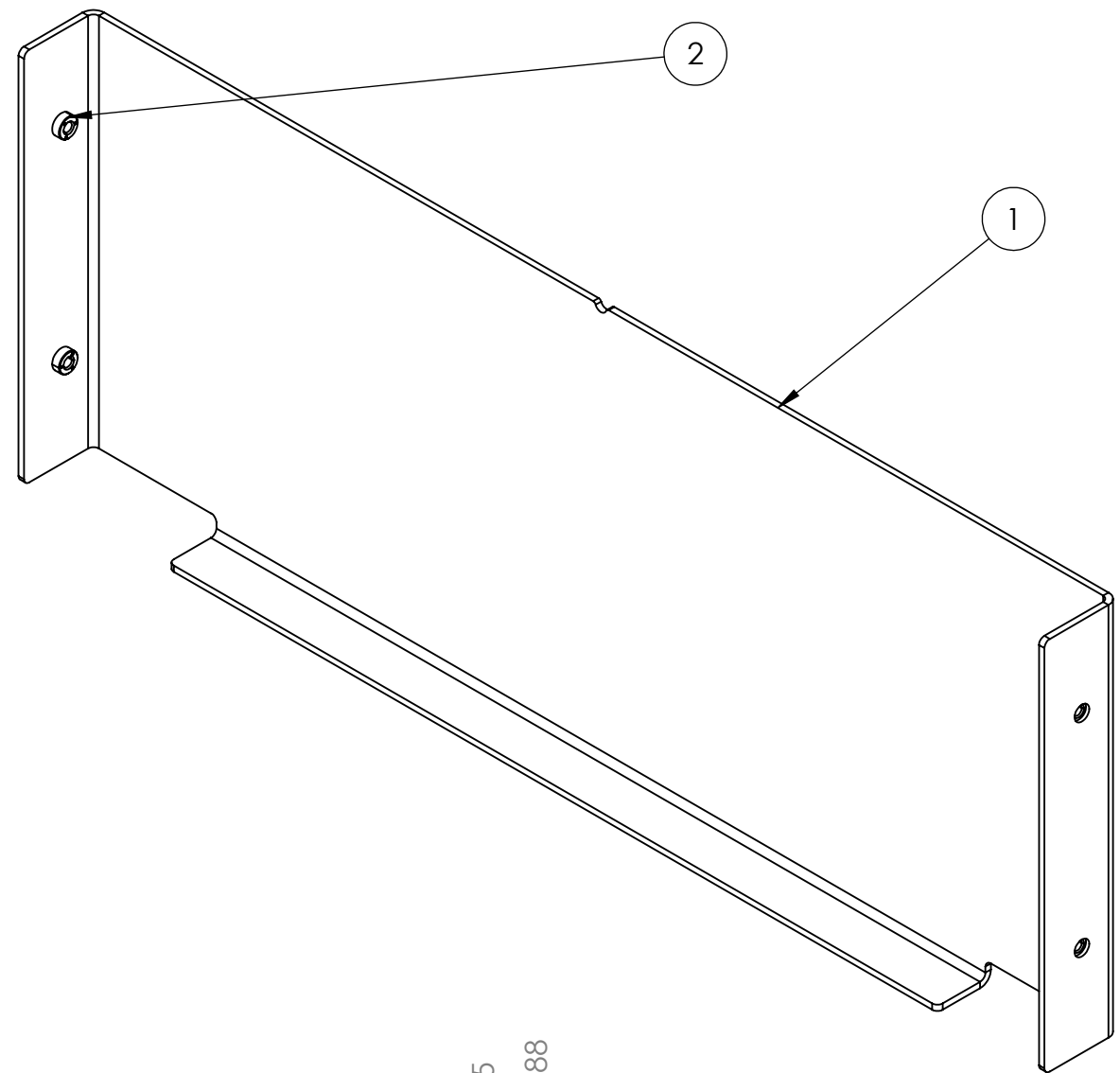
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div> <div>TITLE: <h1>Wall poly</h1></div>		
	DRAWN	CO	7/24/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED 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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24222	
				SCALE: 1:6		SHEET 1 OF 1
MATERIAL/FINISH: 1/4" polycarbonate, clear						
DO NOT SCALE DRAWING						





DETAIL A
SCALE 1 : 1

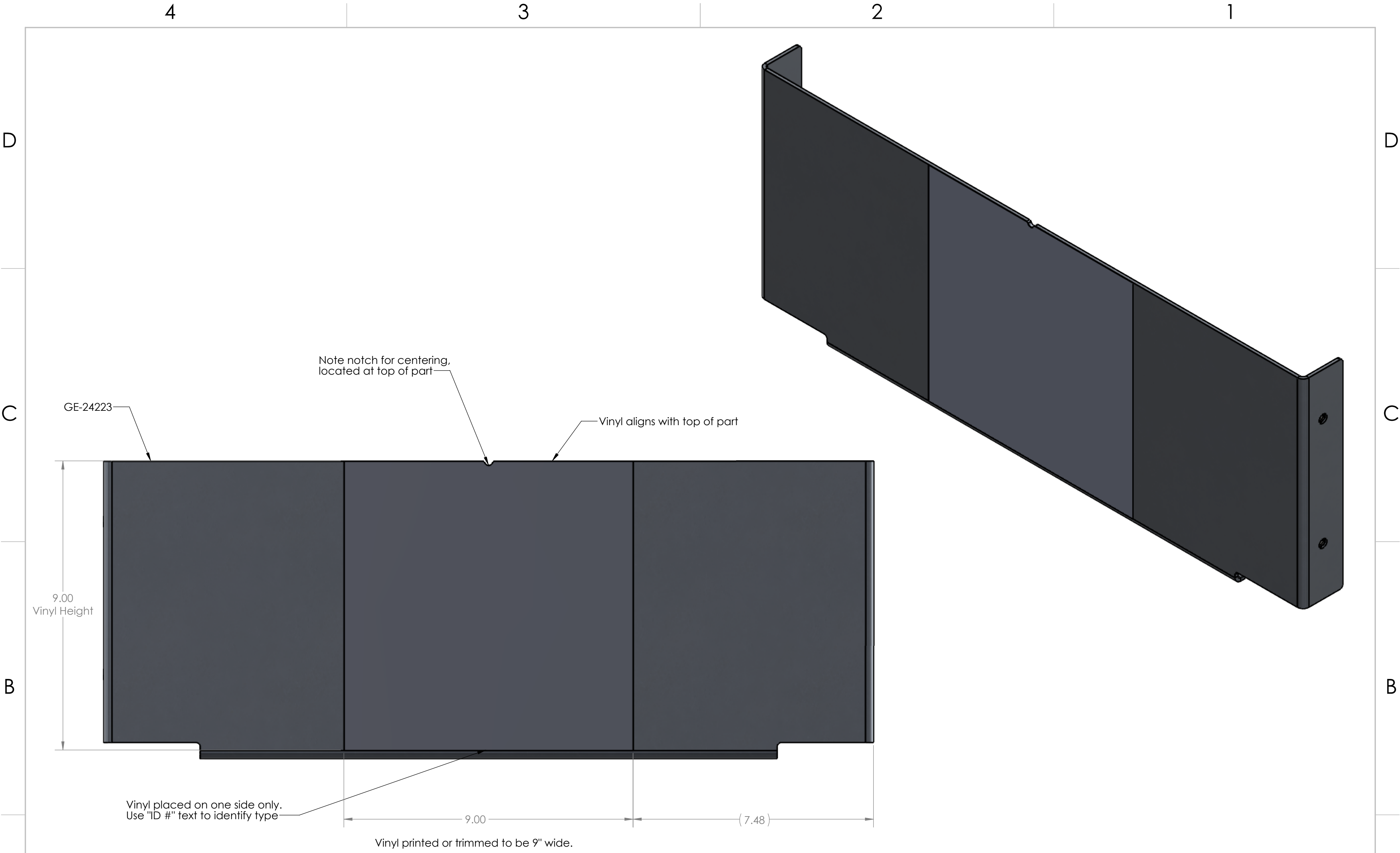
Notes:
1. Vinyl to be applied to face.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24223-01	8 Ga. Aluminum 5052	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	4





UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	 
	DRAWN	CO	7/24/2023	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	PROPRIETARY AND CONFIDENTIAL			TITLE: Endgame April Base
	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. Aluminum 5052	COMMENTS:			SIZE C
	REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING				DWG. NO. GE-24223
				REV A
	SCALE: 1:3		SHEET 1 OF 1	

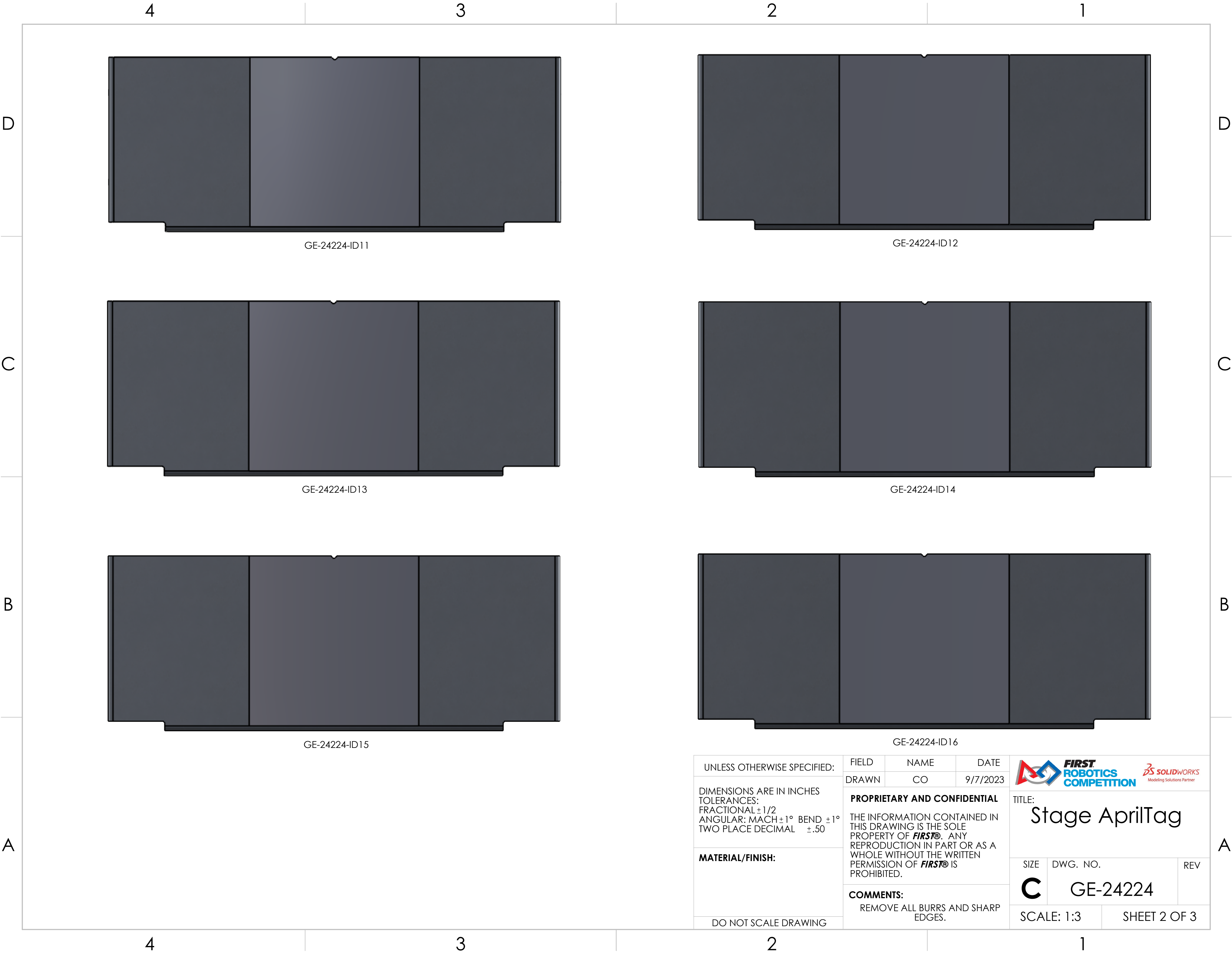






Notes:
1. Matte vinyl

Tag Variations			
Part Number	Vinyl Image	Vinyl QTY per field	Part QTY per field
GE-24224-ID11	GE-24224-ID11-Vinyl	1	1
GE-24224-ID12	GE-24224-ID12-Vinyl	1	1
GE-24224-ID13	GE-24224-ID13-Vinyl	1	1
GE-24224-ID14	GE-24224-ID14-Vinyl	1	1
GE-24224-ID15	GE-24224-ID15-Vinyl	1	1
GE-24224-ID16	GE-24224-ID16-Vinyl	1	1

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	CO	9/7/2023			
	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.					
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
 						
TITLE: Stage AprilTag						
SIZE	DWG. NO.		REV			
C	GE-24224					
SCALE: 1:2		SHEET 1 OF 3				



UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div> <div>TITLE: Stage AprilTag</div>		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	CO	9/7/2023			
	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:	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING				C	GE-24224	
				SCALE: 1:3		SHEET 2 OF 3

4

3

2

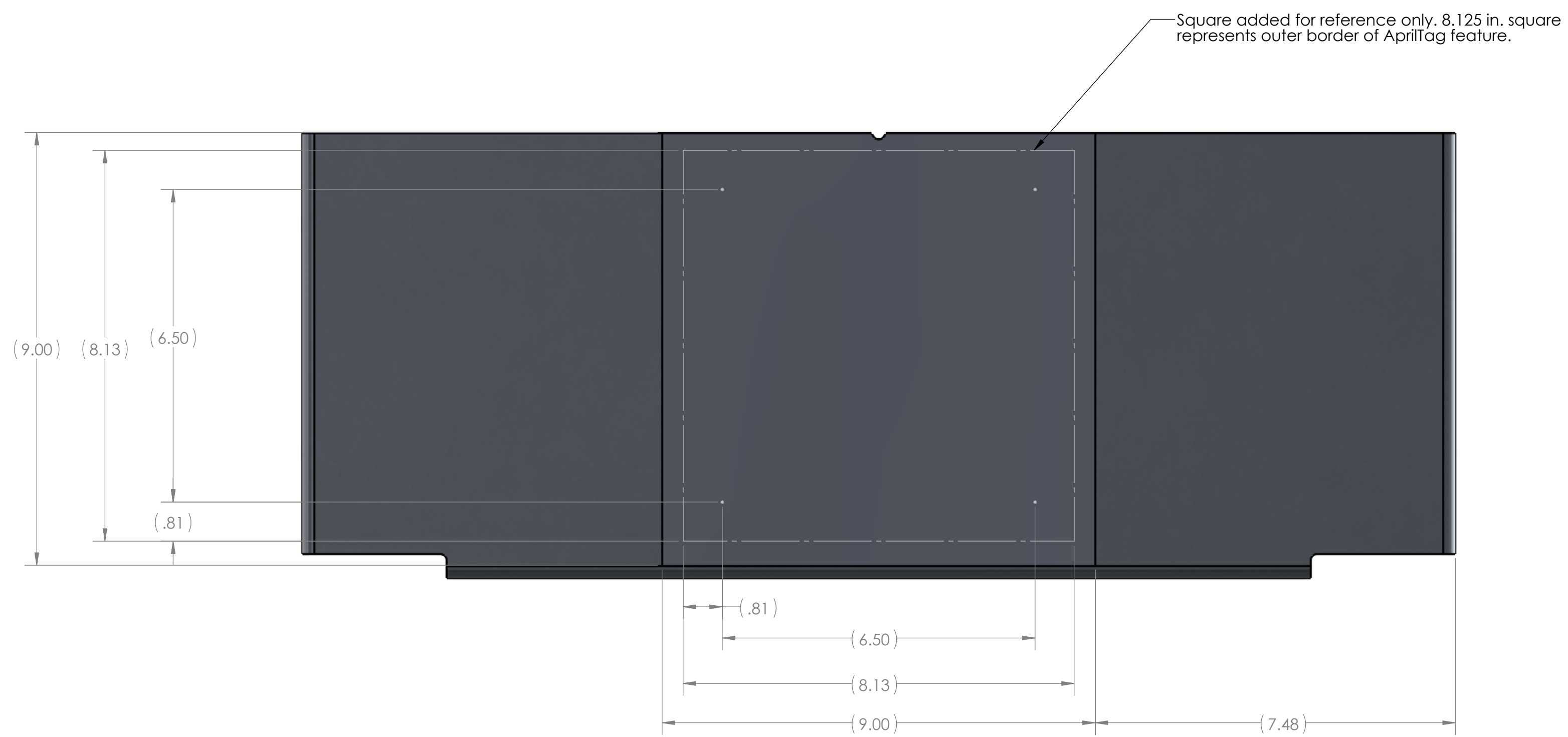
1



D

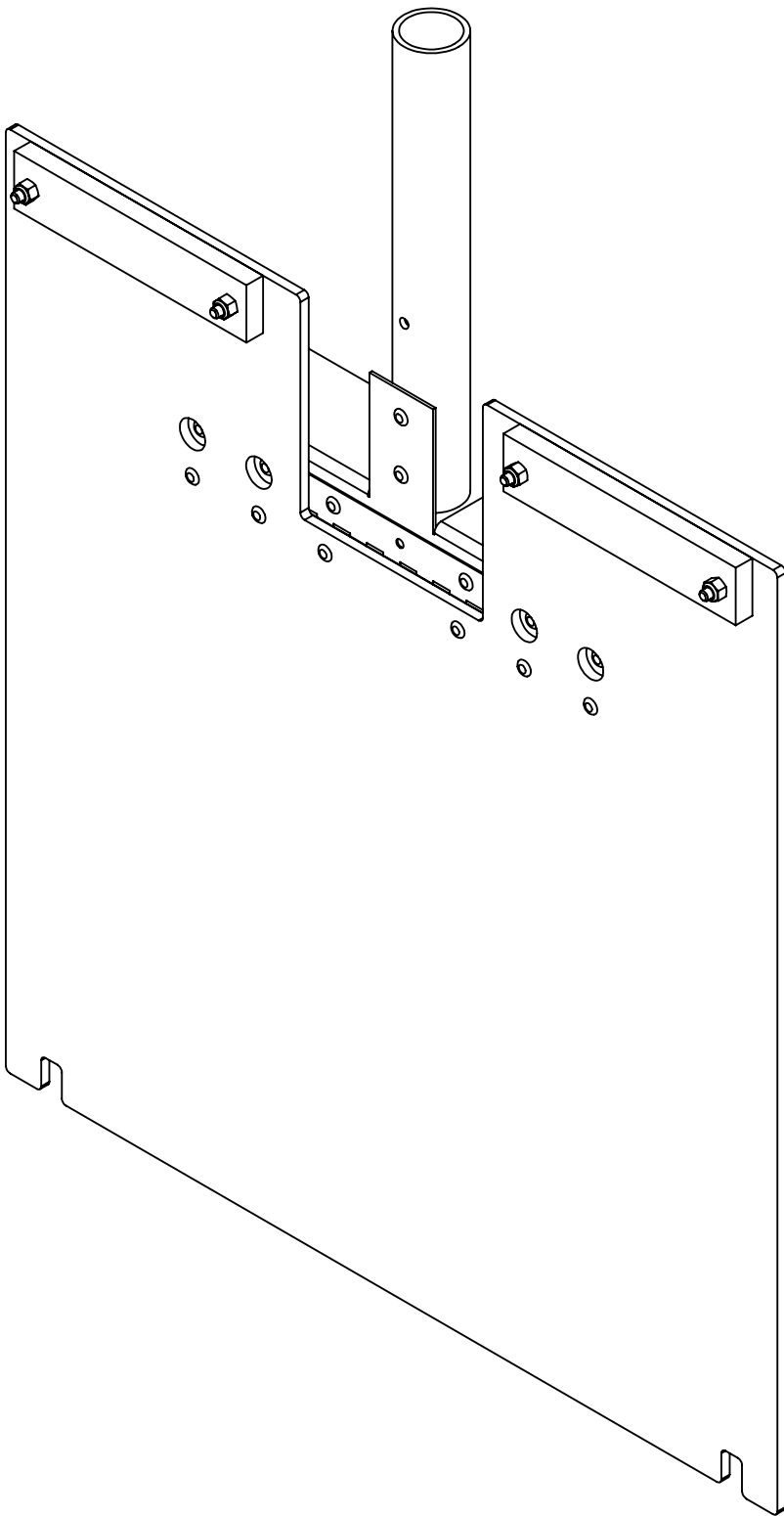
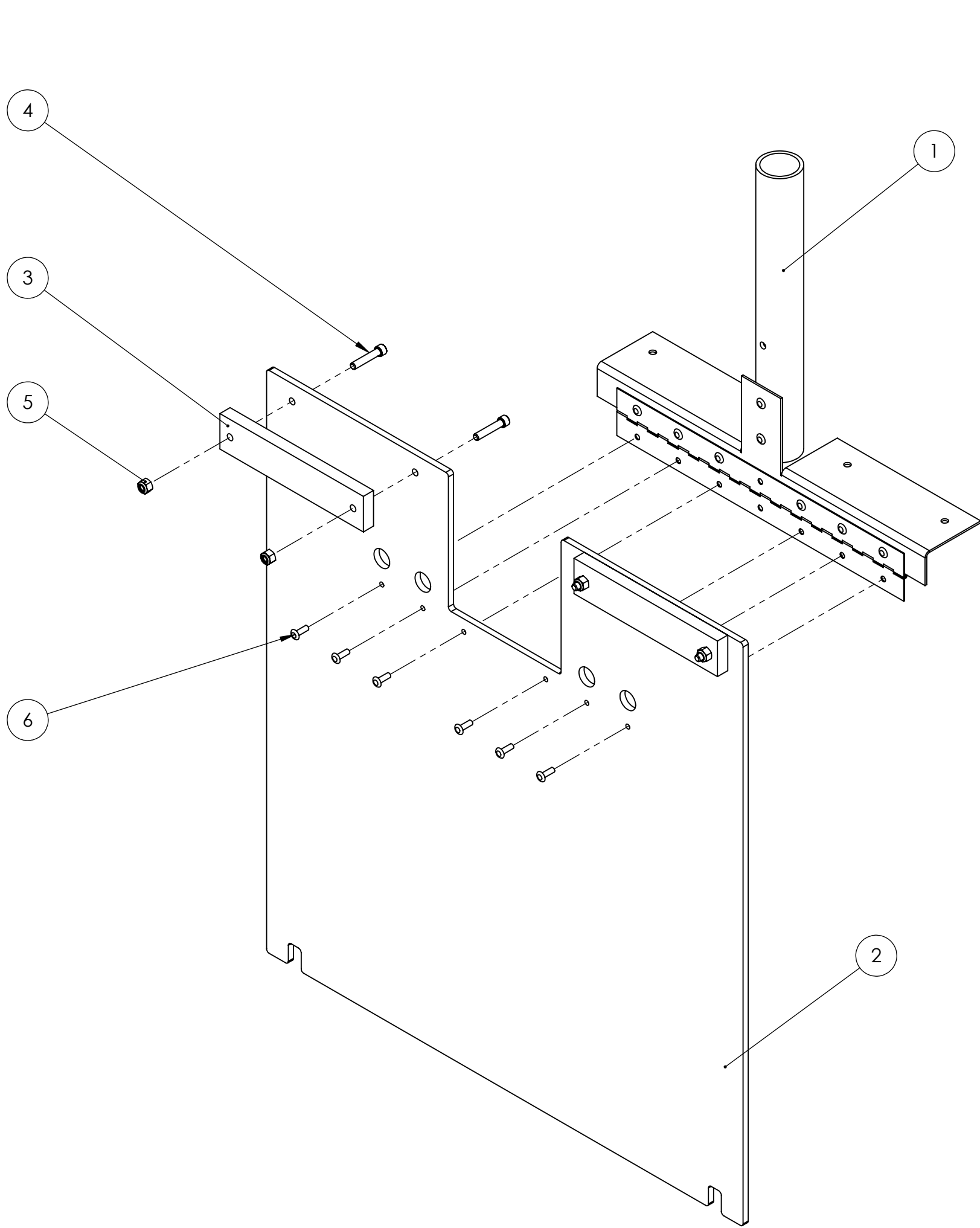
C

B

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	CO	9/7/2023	TITLE: Stage AprilTag	
		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.			SIZE C	
DO NOT SCALE DRAWING					DWG. NO. GE-24224	
					REV	
					SCALE: 1:2	
					SHEET 3 OF 3	



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24231	Flap Hinge Microphone Subassembly	1
2	GE-24232	Flap	1
3	GE-24233	Flap Weight	2
4	socket_hex_.25_20_1.25	Socket Head Screw, 1/4-20 x 1.25" long, fully threaded	4
5	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	4
6	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	6

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

DF


11/27/2023


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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.





TITLE:

Flap/Pole Assembly

SIZE

DWG. NO.

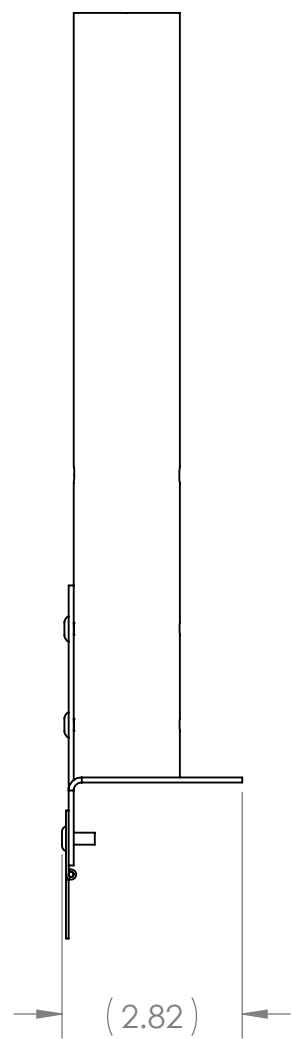
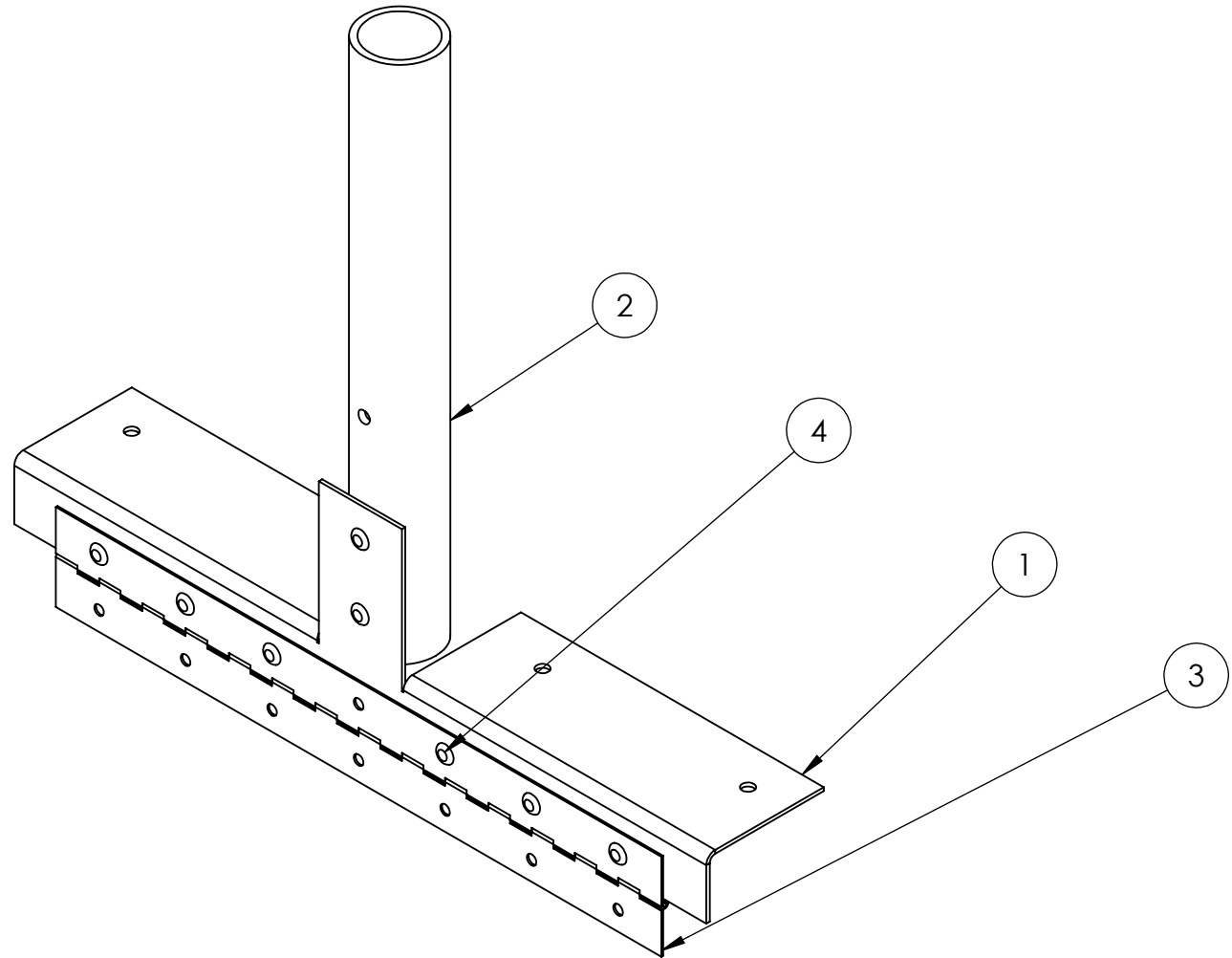
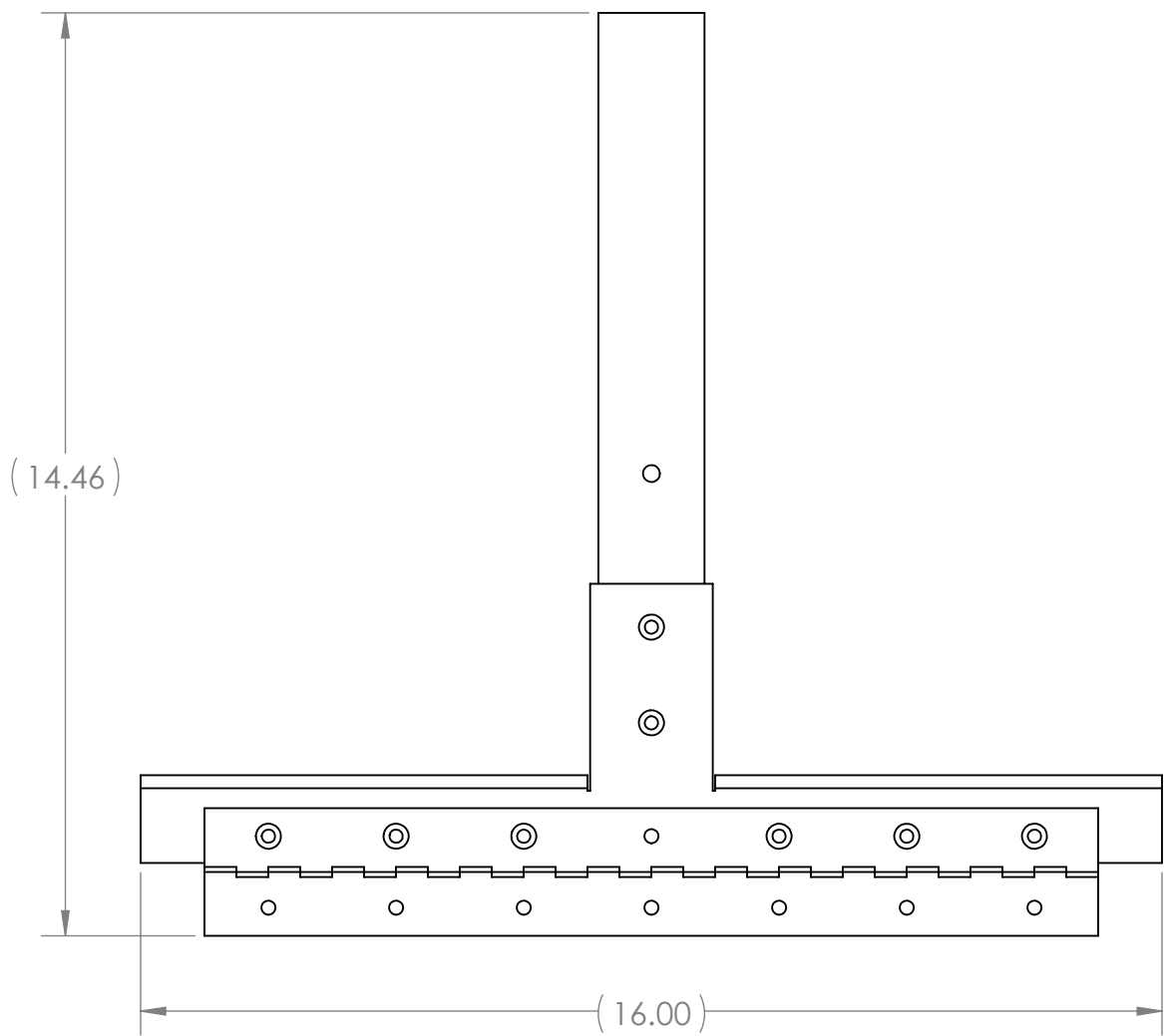
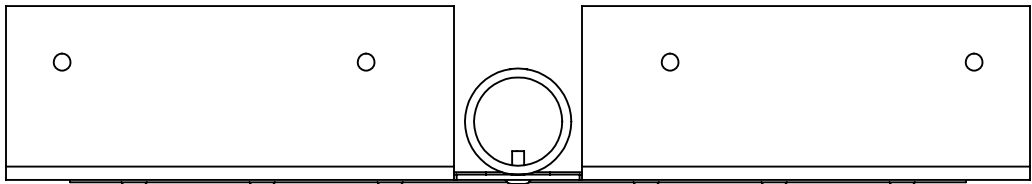
REV

C

GE-24230

SCALE: 1:4

SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24231-01	12 ga. Aluminum 5052	1
2	GE-24231-02	1.25" Schedule 40 Pipe, 6061 Aluminum	1
3	GE-24231-03	0.04" x 2.0" x 14 Steel Hinge with Nickel Plate & Mounting Holes	1
4	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range	8

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:

DO NOT SCALE DRAWING

BEND

DRAWN

NAME

CO

DATE



8/22/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



TITLE:

Flap Hinge
Microphone
Subassembly

SIZE

C

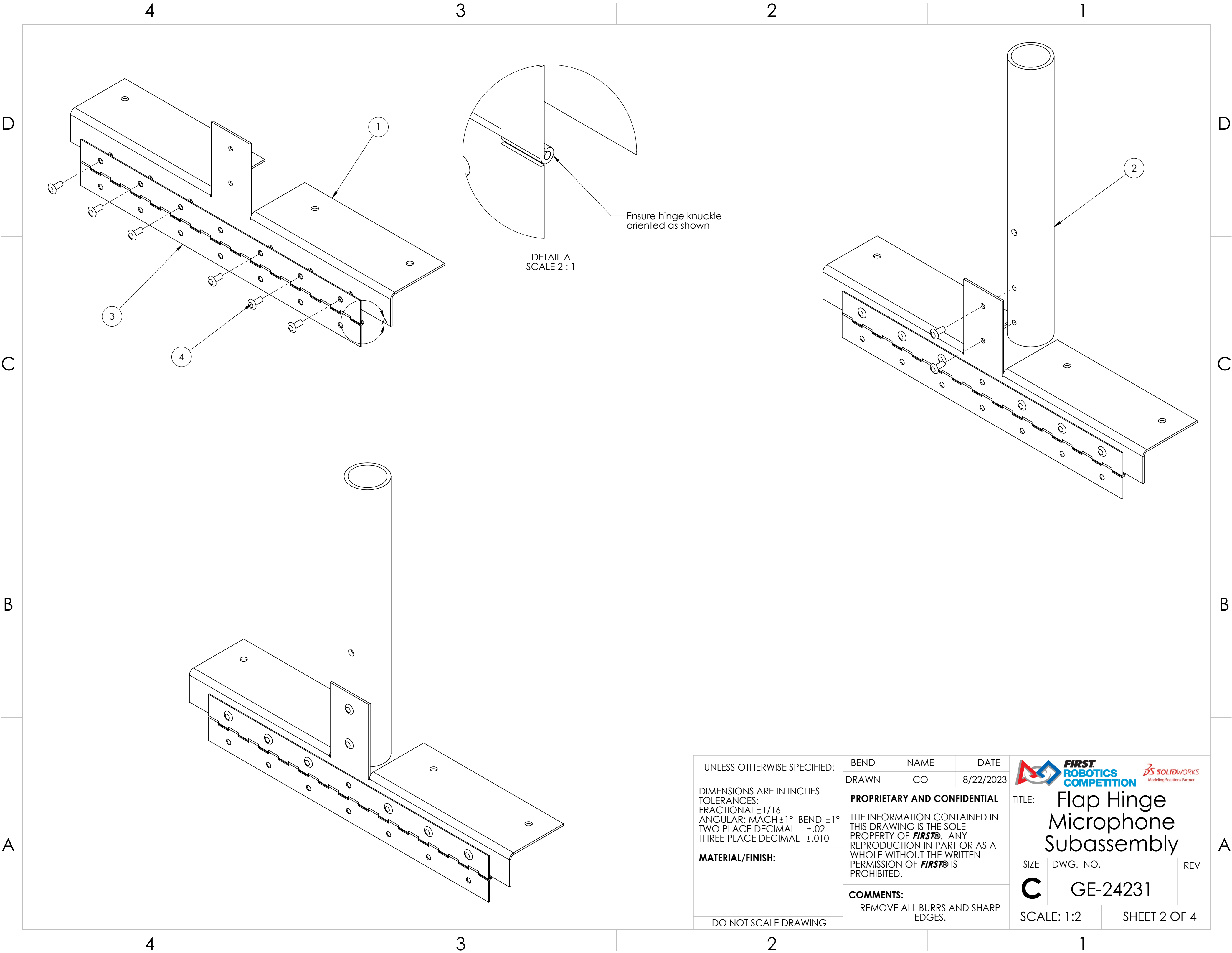
DWG. NO.

GE-24231

REV

SCALE: 1:3

SHEET 1 OF 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 $\pm .010$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

BEND

DRAWN

NAME

CO

DATE

8/22/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



**FIRST
ROBOTICS
COMPETITION**



Modeling Solutions Partner

TITLE:

Flap Hinge
Microphone
Subassembly

SIZE

C

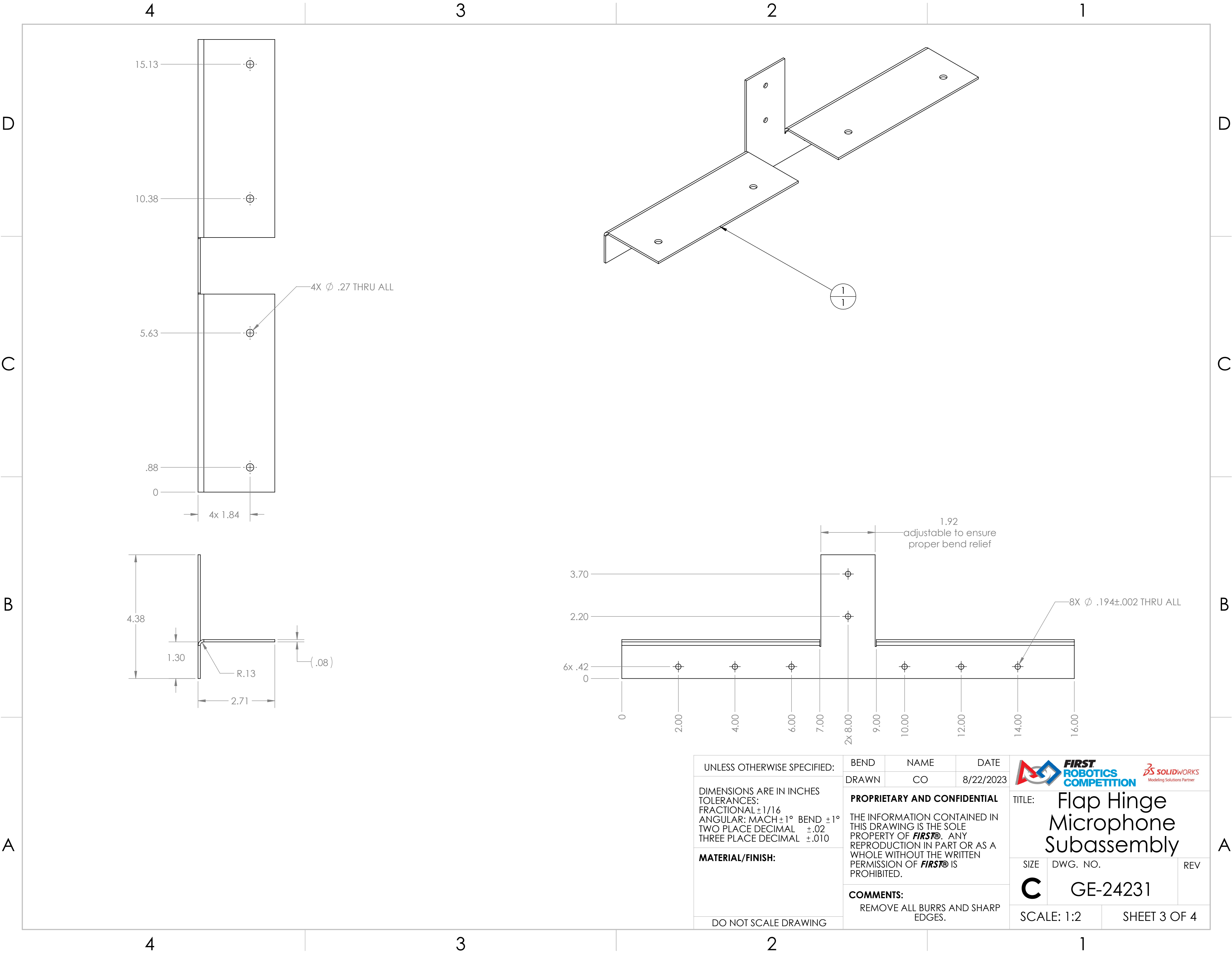
DWG. NO.

GE-24231

REV

SCALE: 1:2

SHEET 2 OF 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 $\pm .010$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

BEND

DRAWN

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.

NAME

CO

DATE

8/22/2023



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Flap Hinge
Microphone
Subassembly

SIZE

C

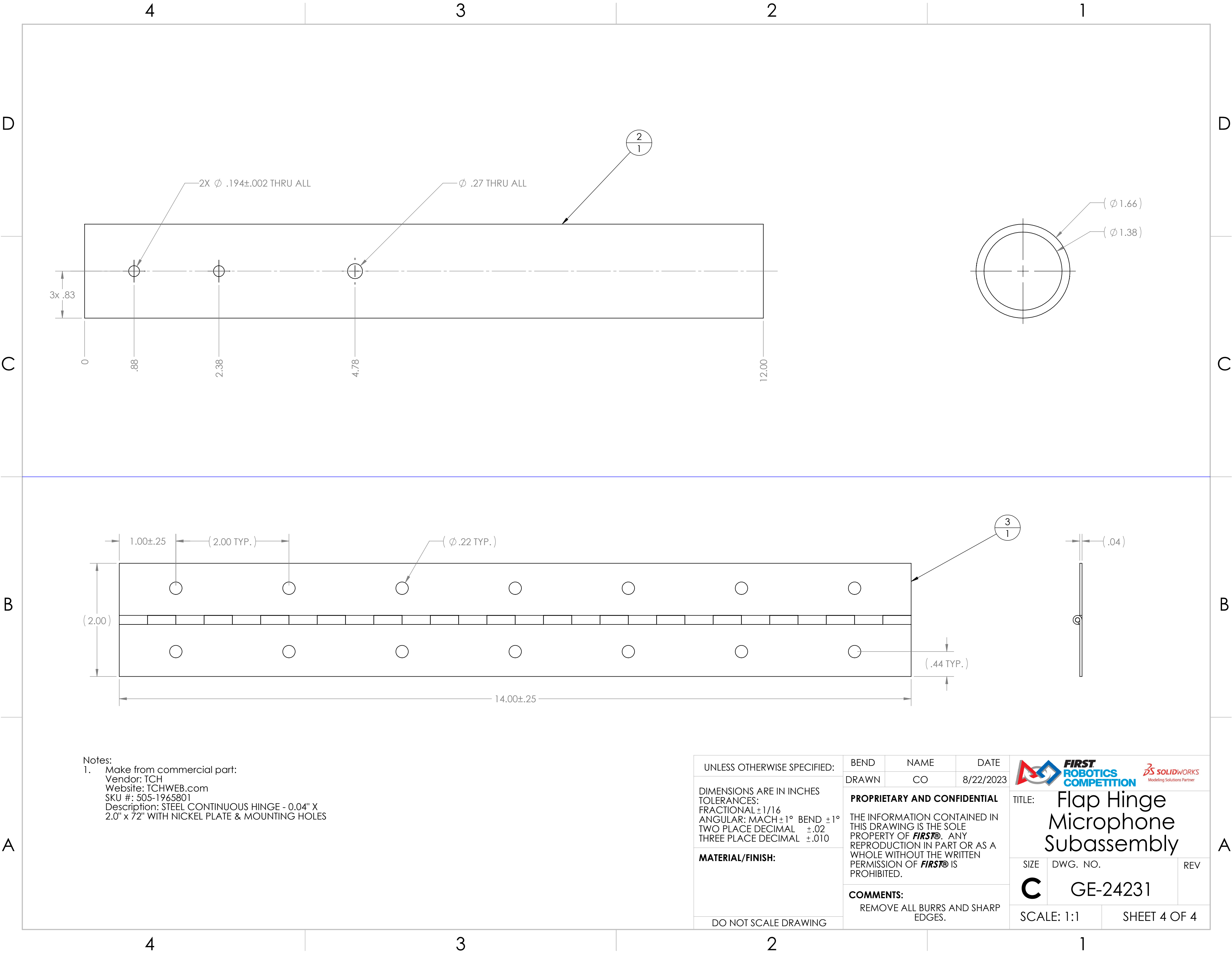
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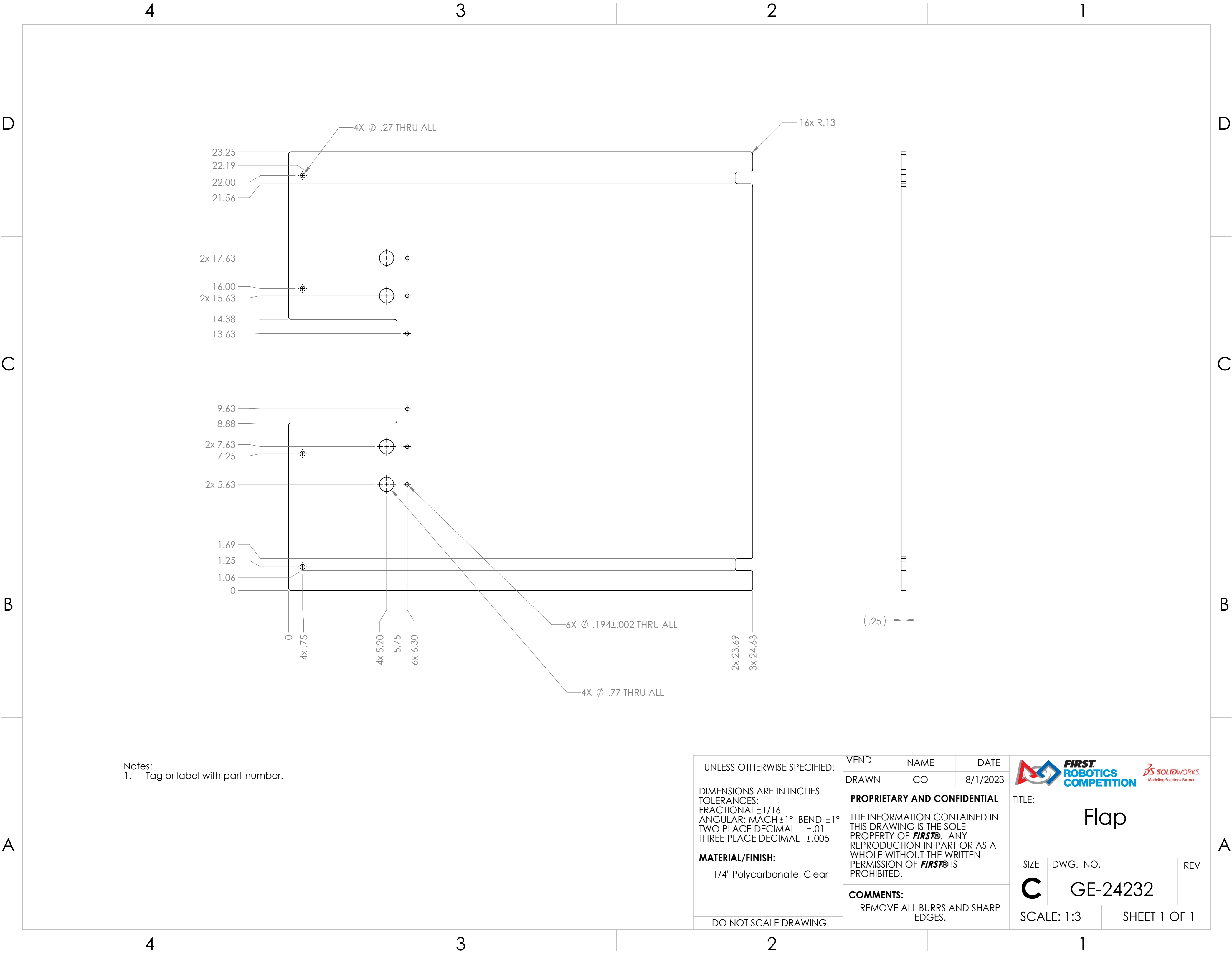
GE-24231

REV



SCALE: 1:2

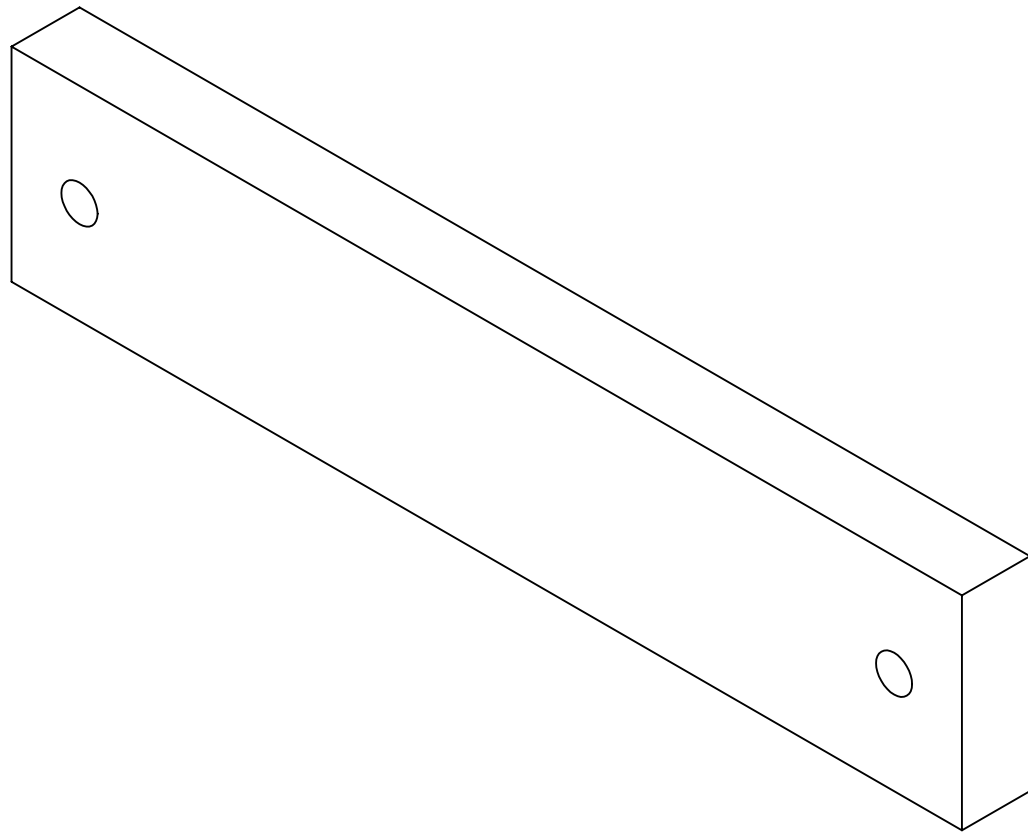
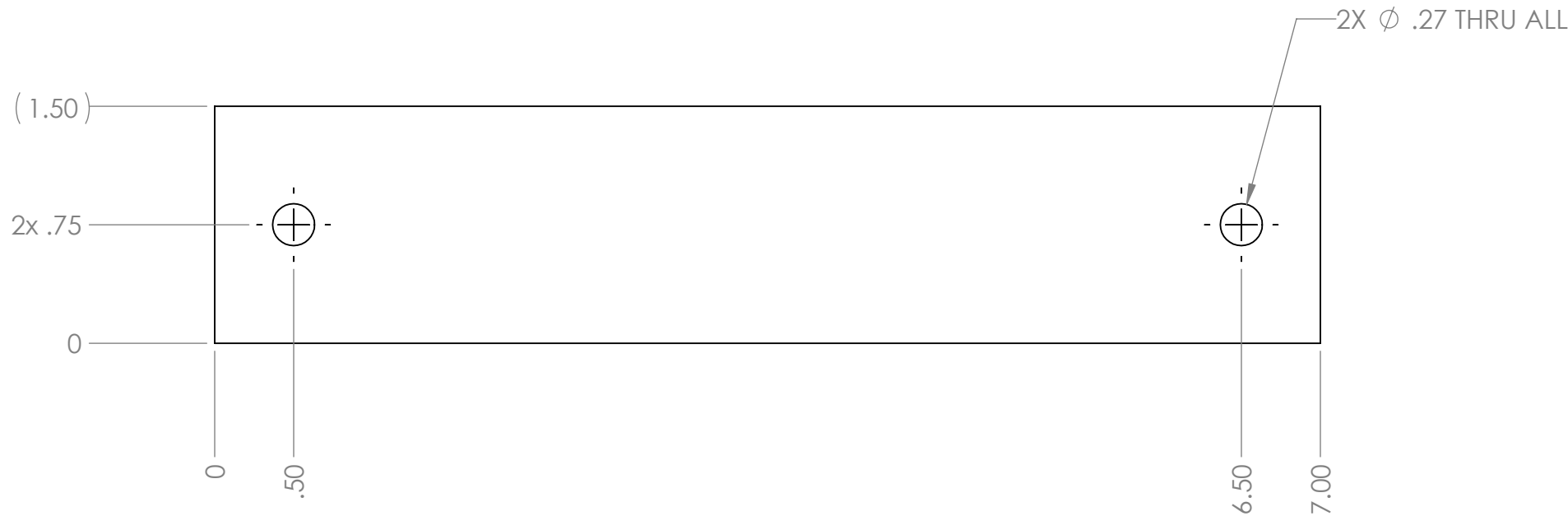
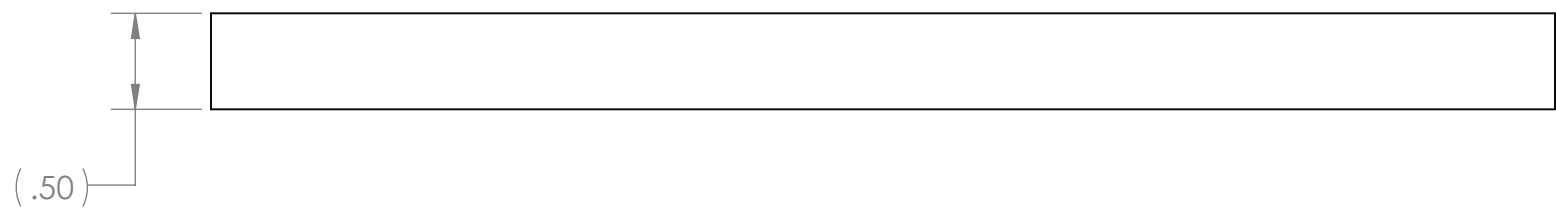
SHEET 3 OF 4







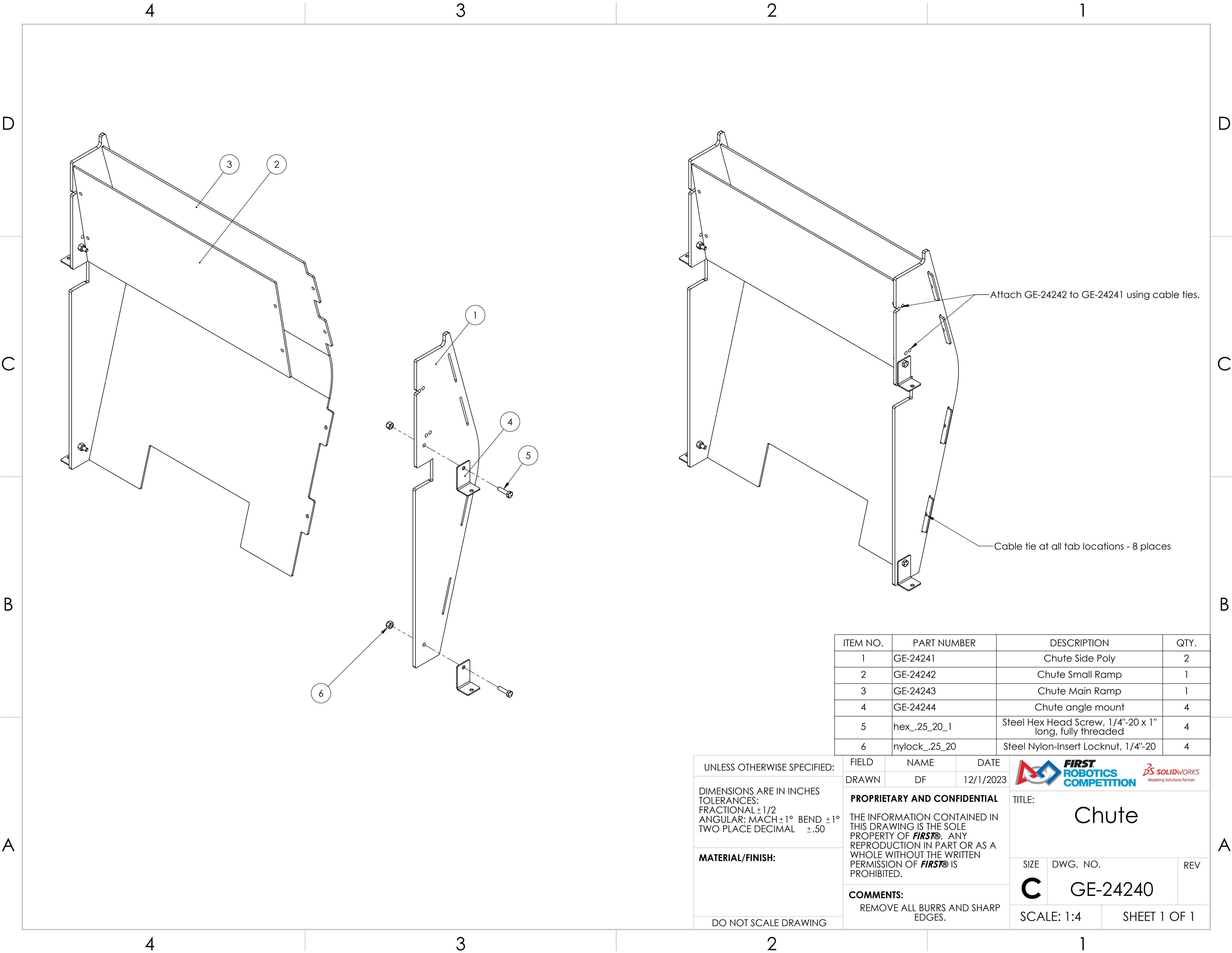
Notes:
1. Tag or label with part number.

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, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Flap</div>		
	DRAWN	CO	8/1/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24232	
SCALE: 1:3		SHEET 1 OF 1				





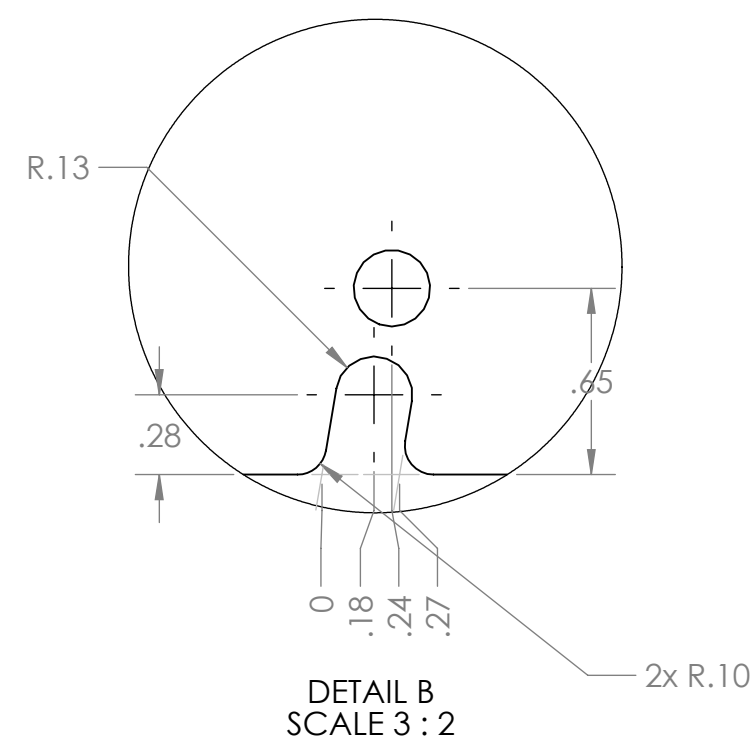
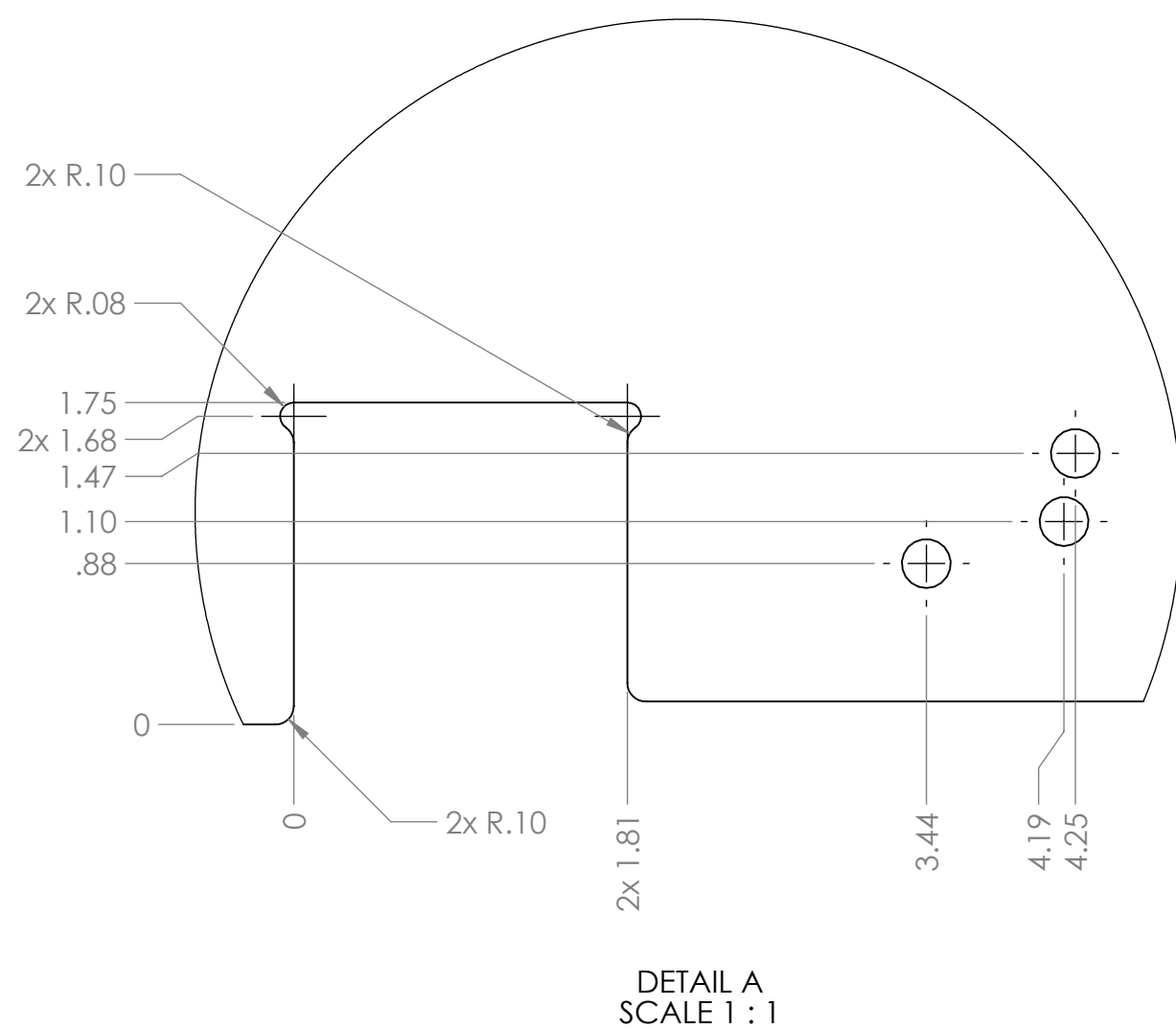
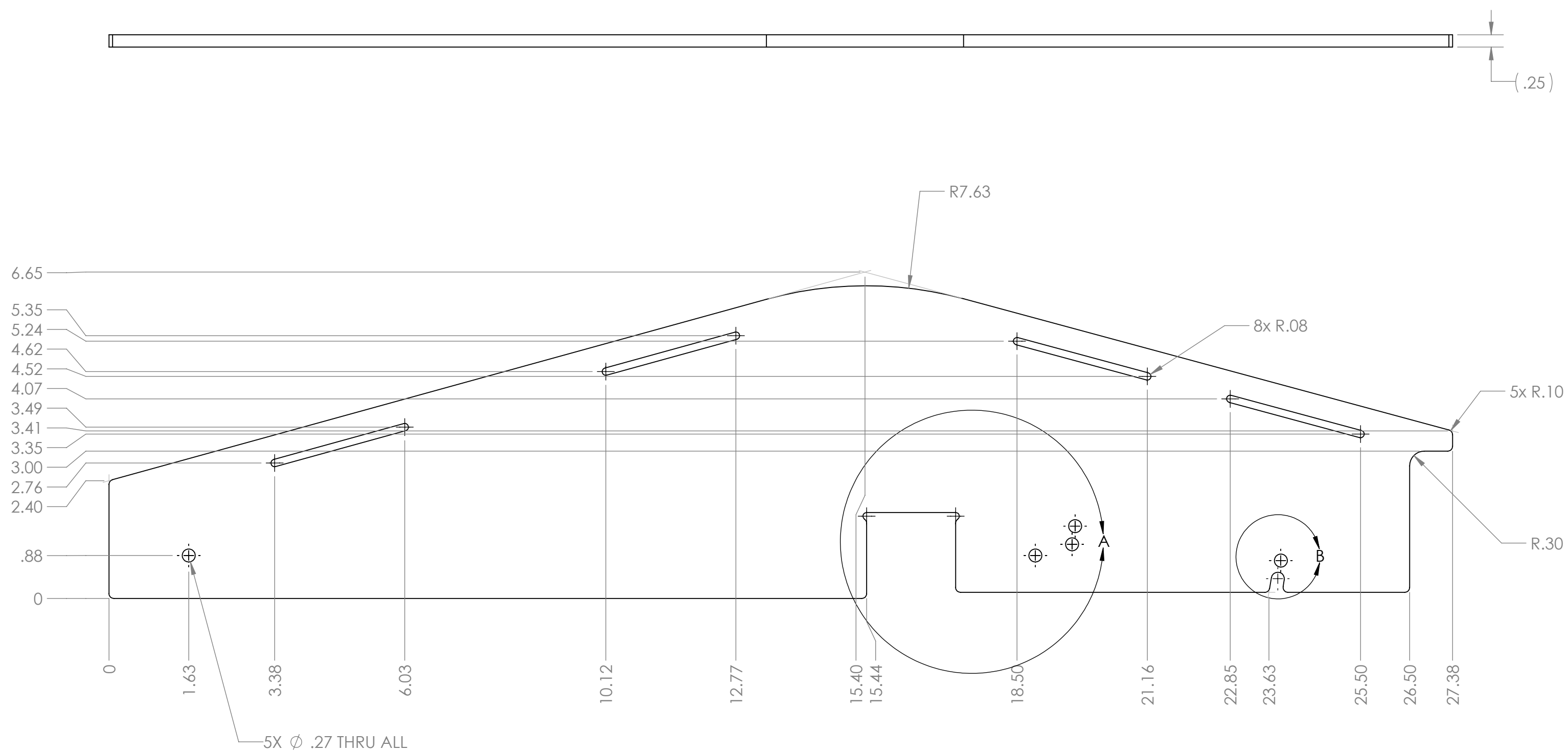
Notes:
1. Tag or label with part number.

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div><div></div><div>TITLE: <h1>Flap Weight</h1></div></div>		
	DRAWN	CO	7/31/2023			
DIMENSIONS ARE IN INCHES 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:	COMMENTS:					
1.5" x 0.5" Cold Rolled Steel Bar	REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING				SIZE	DWG. NO.	REV
				C	GE-24233	
				SCALE: 1:1		SHEET 1 OF 1





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24241	Chute Side Poly	2
2	GE-24242	Chute Small Ramp	1
3	GE-24243	Chute Main Ramp	1
4	GE-24244	Chute angle mount	4
5	hex_.25_20_1	Steel Hex Head Screw, 1/4"-20 x 1" long, fully threaded	4
6	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	4

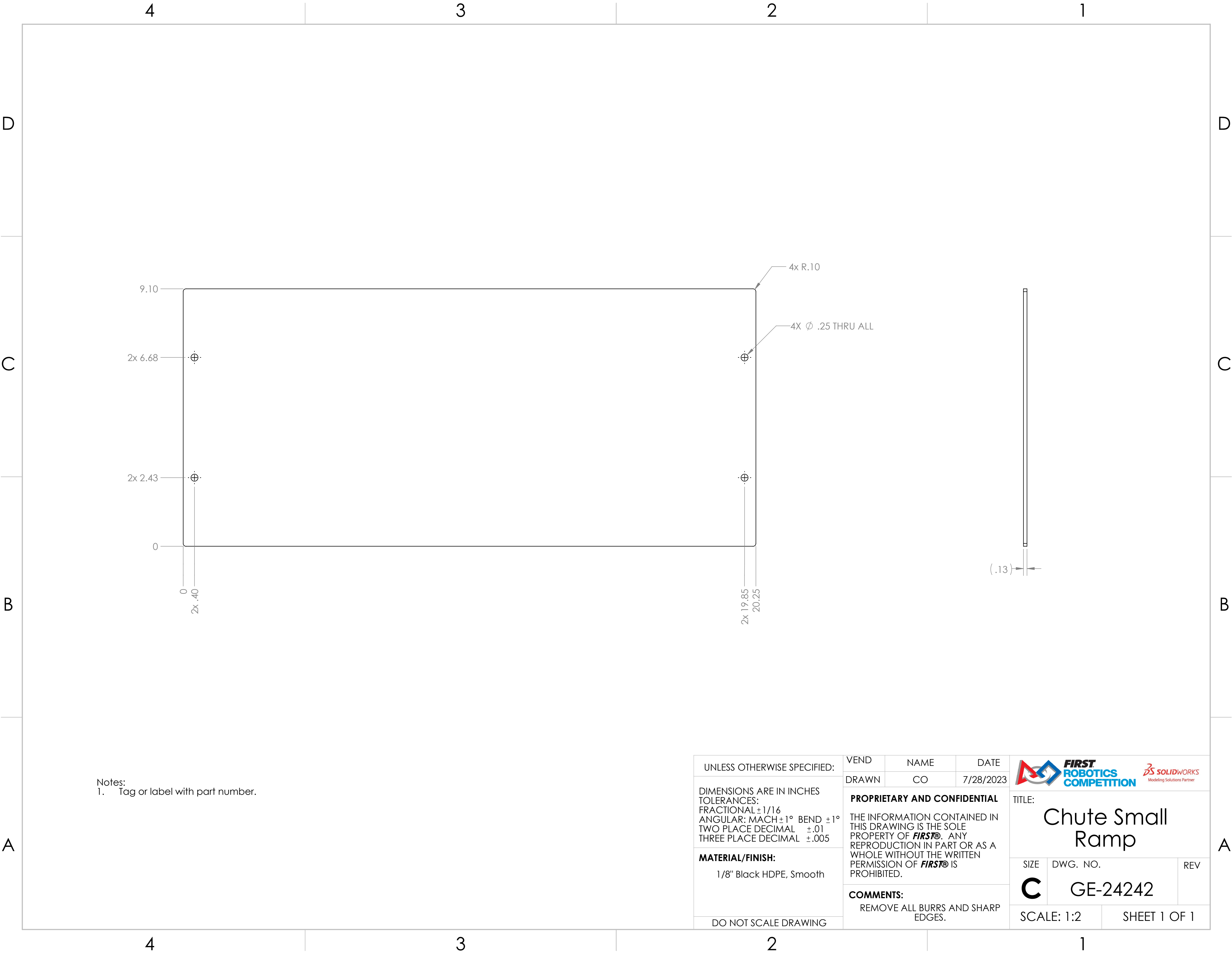
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>		
	DRAWN	DF	12/1/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE: Chute		
	MATERIAL/FINISH:			SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24240	
				SCALE: 1:4		SHEET 1 OF 1





Notes:

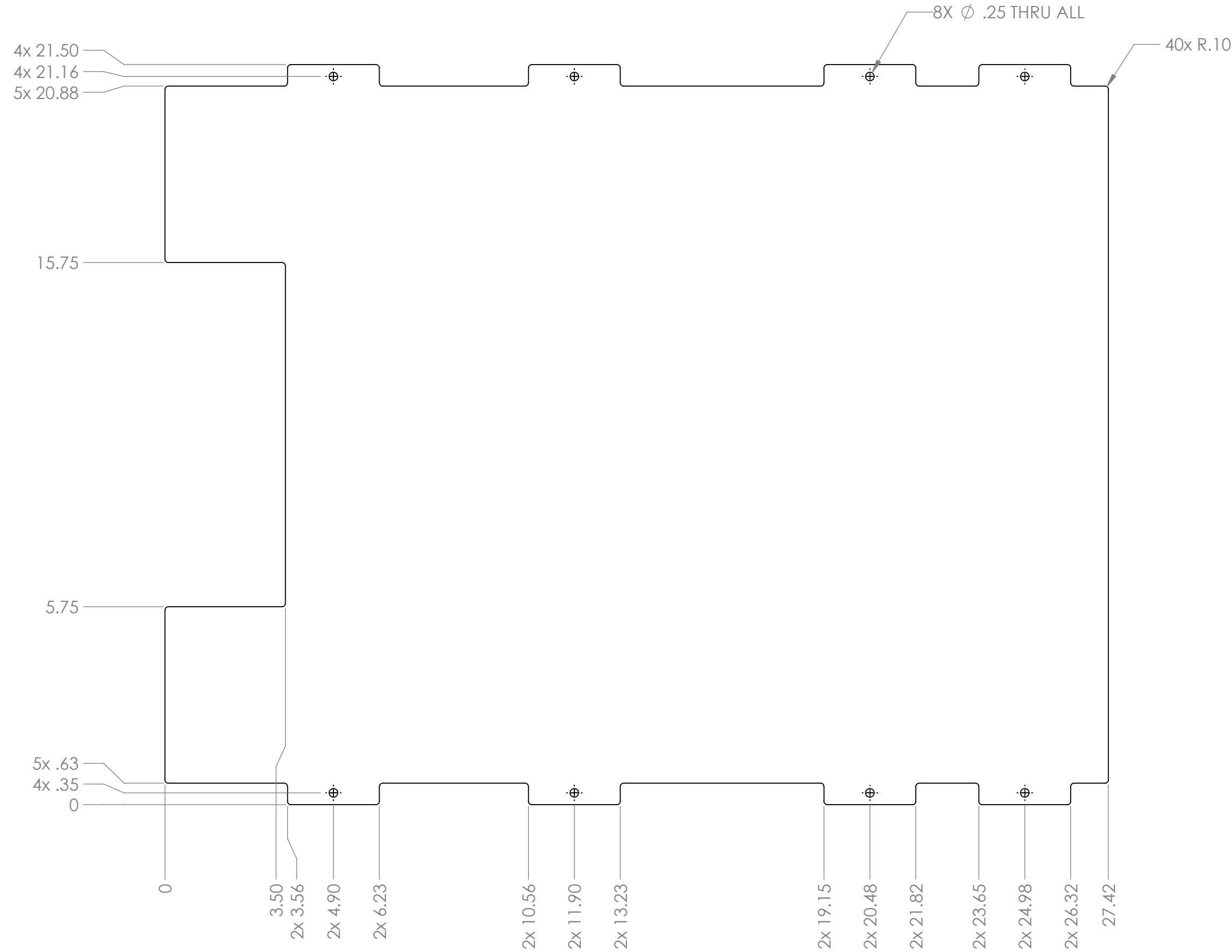
1. Tag or label with part number.

UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	 										
<p>DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005</p> <p>MATERIAL/FINISH: 1/4" Polycarbonate, Clear</p> <p>DO NOT SCALE DRAWING</p>		DRAWN	CO	7/25/2023											
		PROPRIETARY AND CONFIDENTIAL			<p>TITLE: Chute Side Poly</p> <table><tr><td>SIZE</td><td>DWG. NO.</td><td>REV</td></tr><tr><td>C</td><td>GE-24241</td><td></td></tr><tr><td colspan="2">SCALE: 1:2</td><td>SHEET 1 OF 1</td></tr></table>		SIZE	DWG. NO.	REV	C	GE-24241		SCALE: 1:2		SHEET 1 OF 1
		SIZE	DWG. NO.	REV											
		C	GE-24241												
SCALE: 1:2		SHEET 1 OF 1													
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.															





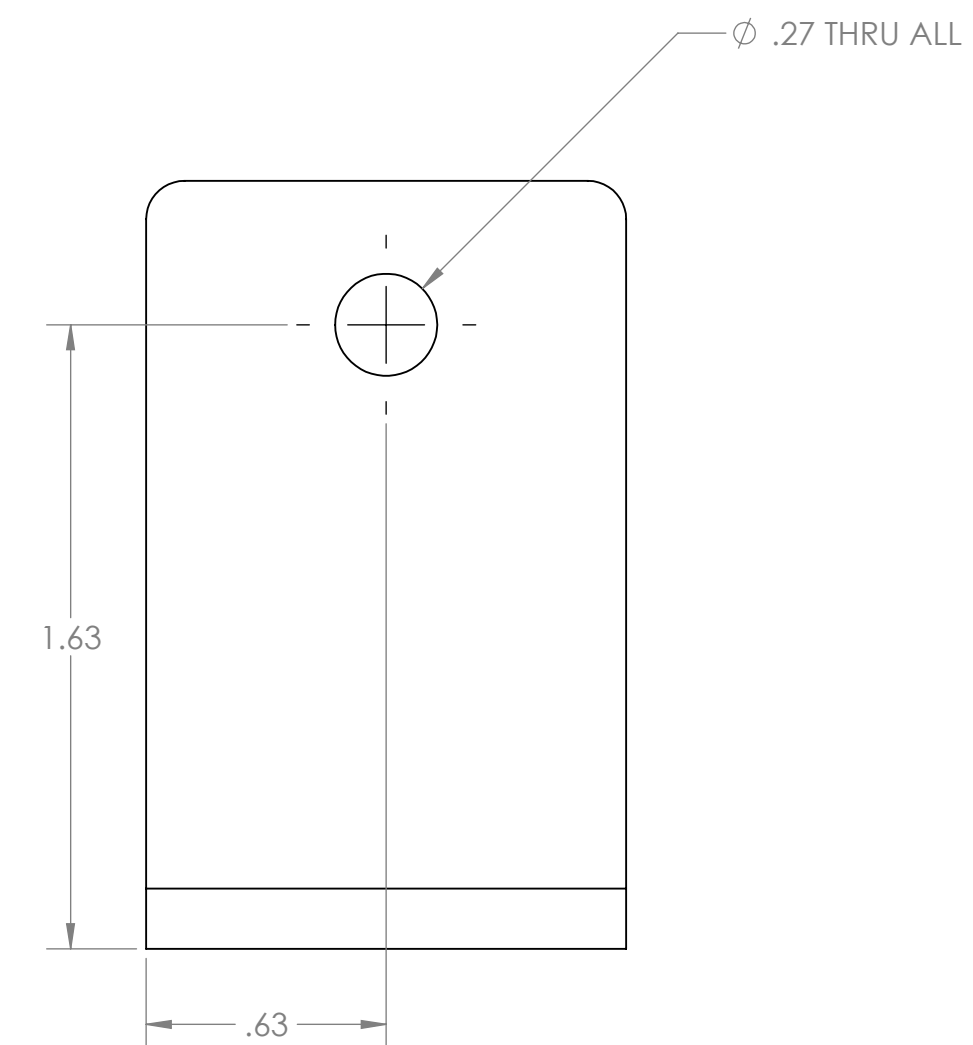
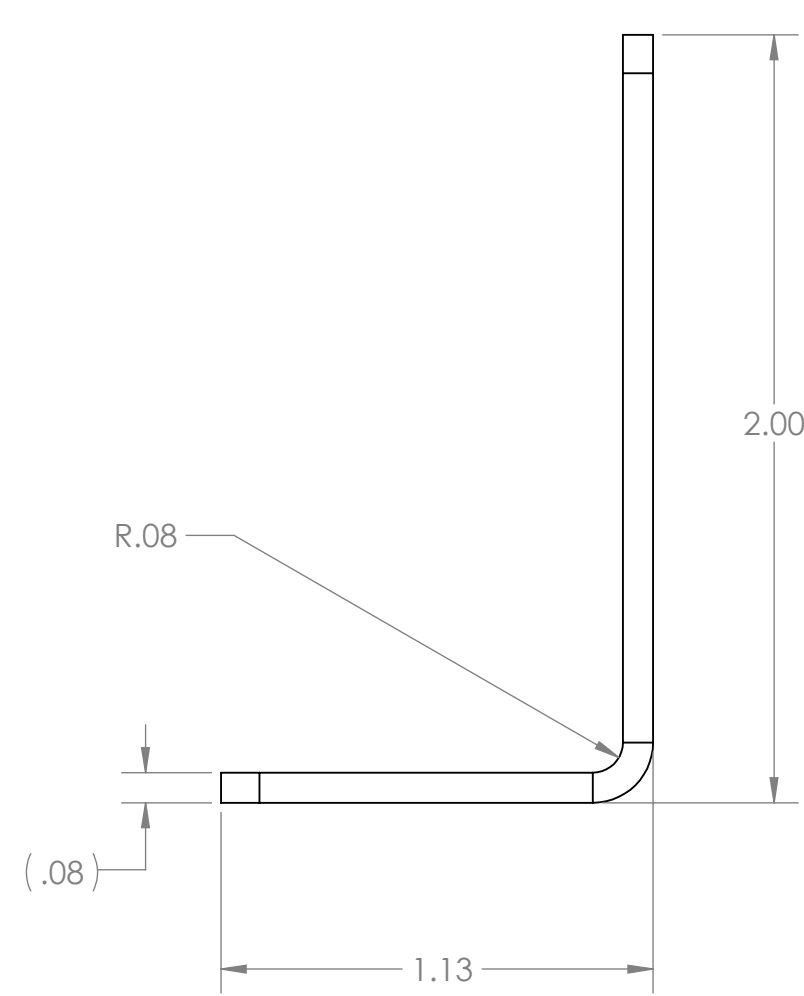
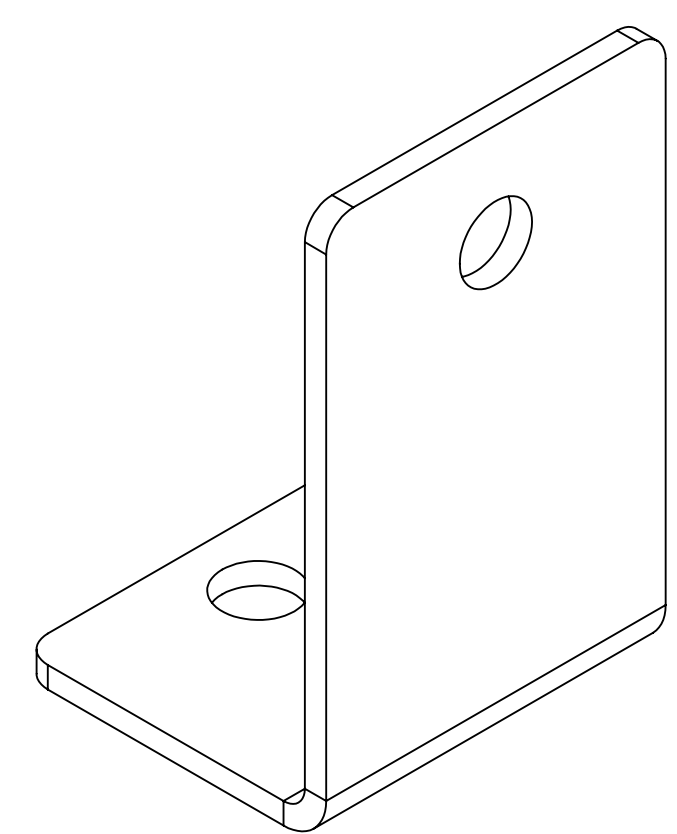
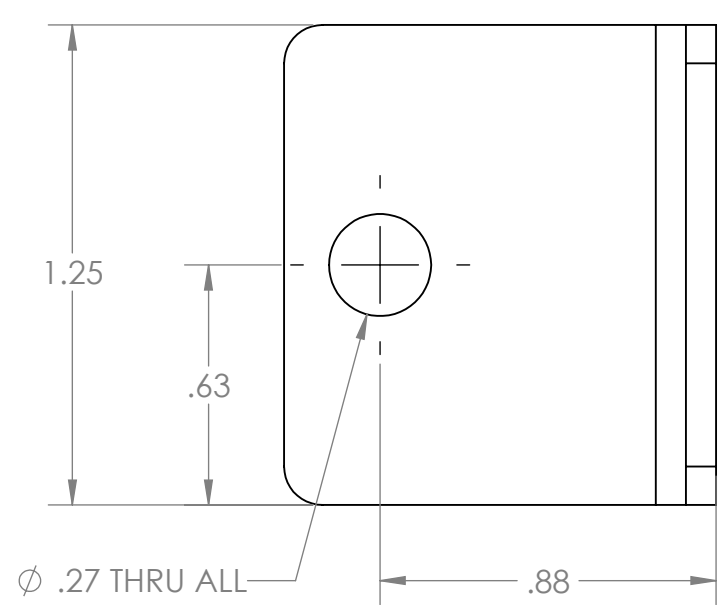
Notes:
1. Tag or label with part number.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/8" Black HDPE, Smooth DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div>		
	DRAWN	CO	7/28/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				TITLE: Chute Small Ramp	
SIZE C		DWG. NO. GE-24242		REV		
SCALE: 1:2		SHEET 1 OF 1				





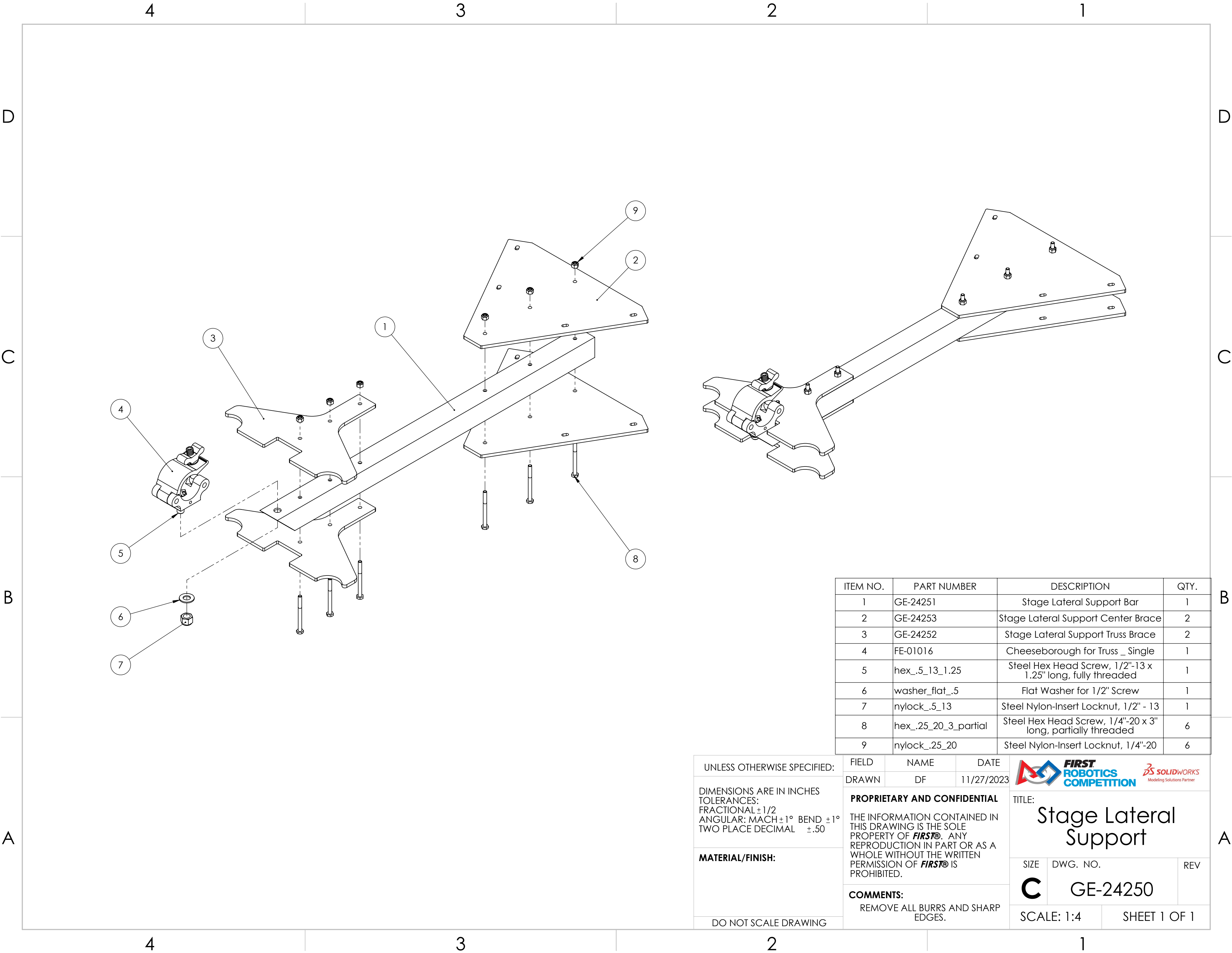
Notes:
1. Tag or label with part number.

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>		
	DRAWN	CO	7/28/2023			
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	PROPRIETARY AND CONFIDENTIAL			TITLE: Chute Main Ramp		
	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.			SIZE	DWG. NO.	REV
			C	GE-24243		
			SCALE: 1:3		SHEET 1 OF 1	





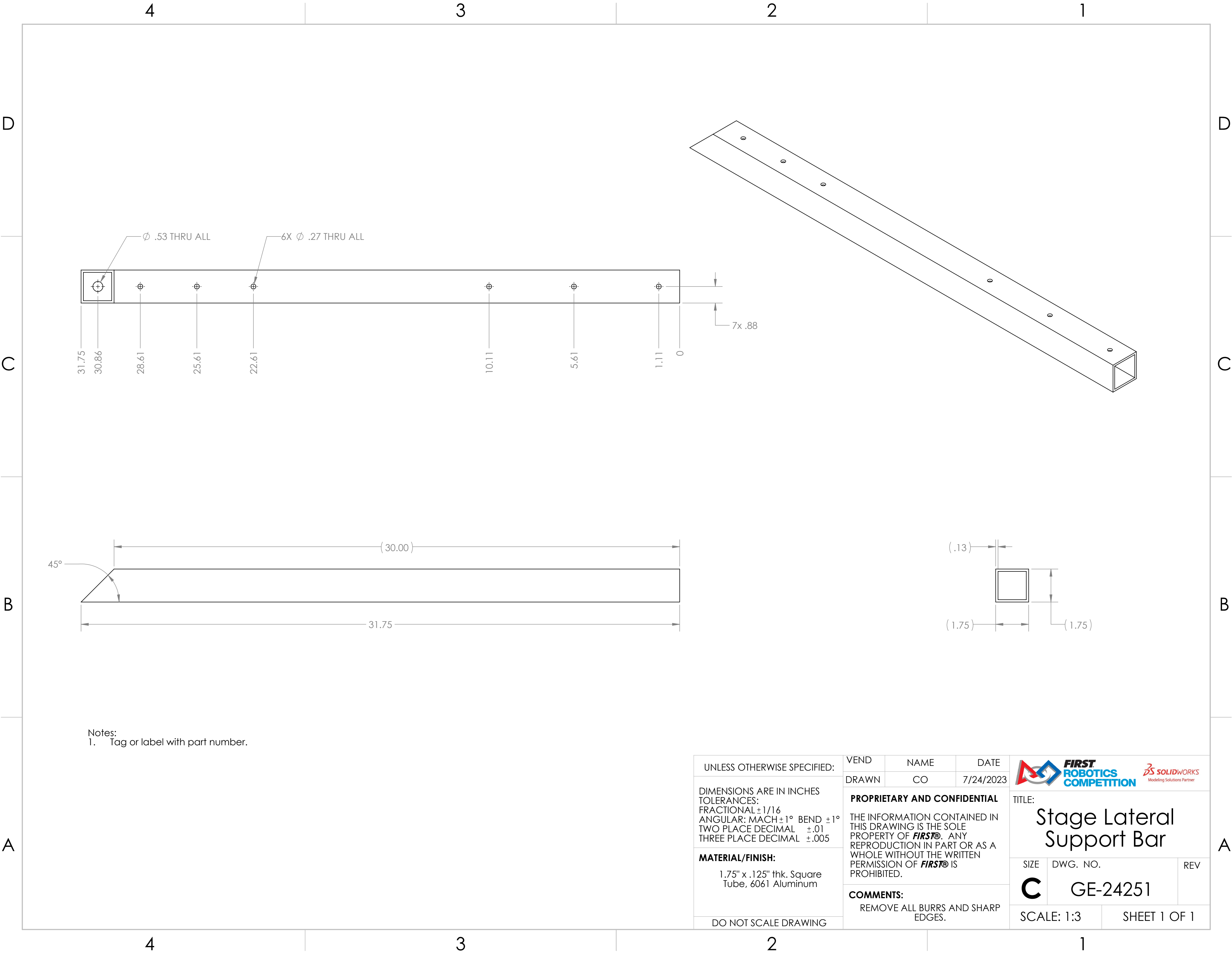
- Notes:
- 1. Tag or label with part number.
 - 2. Package in groups of 12 or 24.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 14 Ga. Preplated Steel DO NOT SCALE DRAWING	BEND	NAME	DATE	 	
	DRAWN	CO	7/31/2023		
	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.			TITLE: Chute angle mount	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24244
			SCALE: 2:1		SHEET 1 OF 1





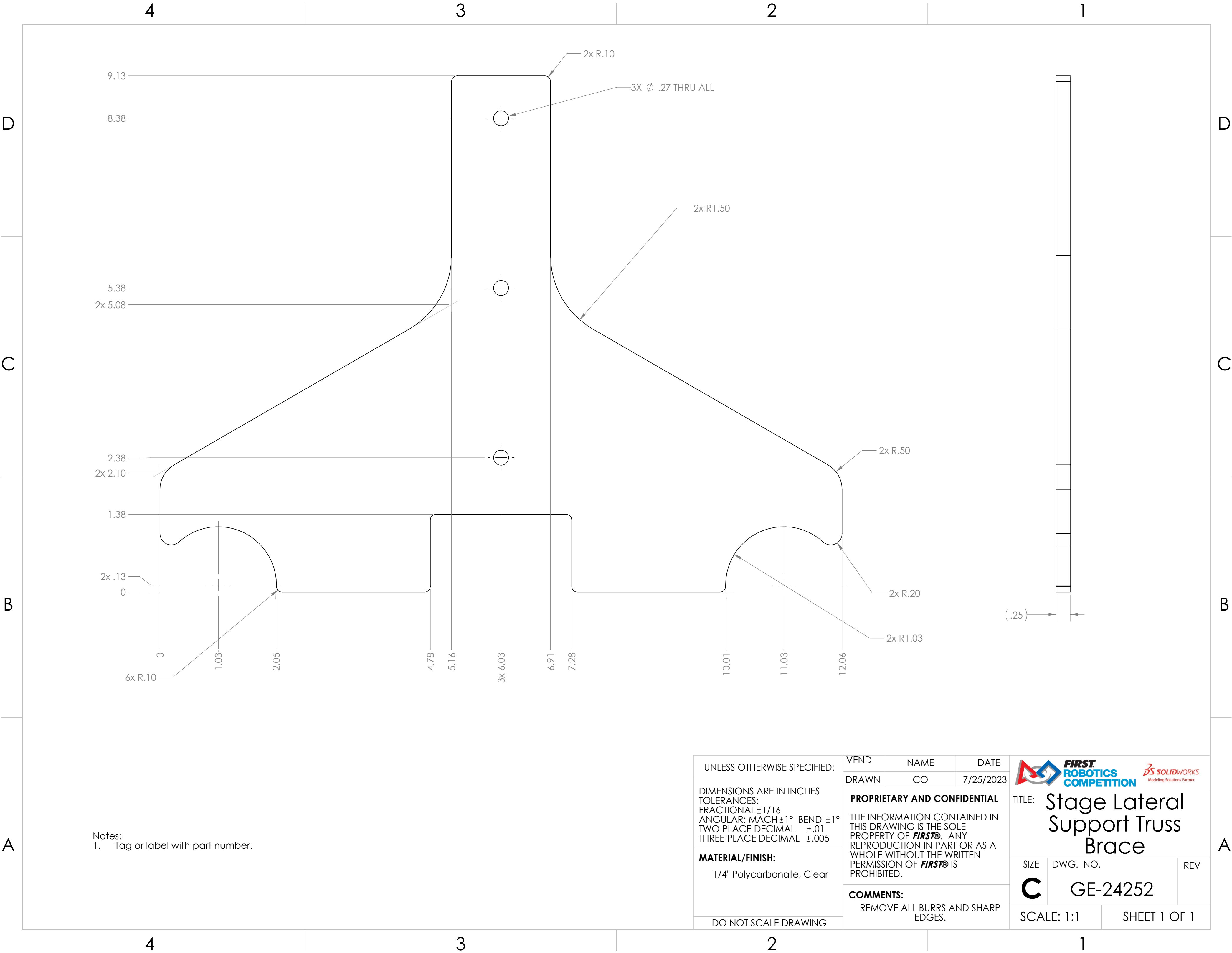
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24251	Stage Lateral Support Bar	1
2	GE-24253	Stage Lateral Support Center Brace	2
3	GE-24252	Stage Lateral Support Truss Brace	2
4	FE-01016	Cheeseborough for Truss _ Single	1
5	hex_.5_13_1.25	Steel Hex Head Screw, 1/2"-13 x 1.25" long, fully threaded	1
6	washer_flat_.5	Flat Washer for 1/2" Screw	1
7	nylock_.5_13	Steel Nylon-Insert Locknut, 1/2" - 13	1
8	hex_.25_20_3_partial	Steel Hex Head Screw, 1/4"-20 x 3" long, partially threaded	6
9	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	6

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div><div></div><div>TITLE: <h1>Stage Lateral Support</h1></div></div>	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	DF	11/27/2023		
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.				
DO NOT SCALE DRAWING	COMMENTS:			SIZE	DWG. NO.
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24250
				SCALE: 1:4	SHEET 1 OF 1





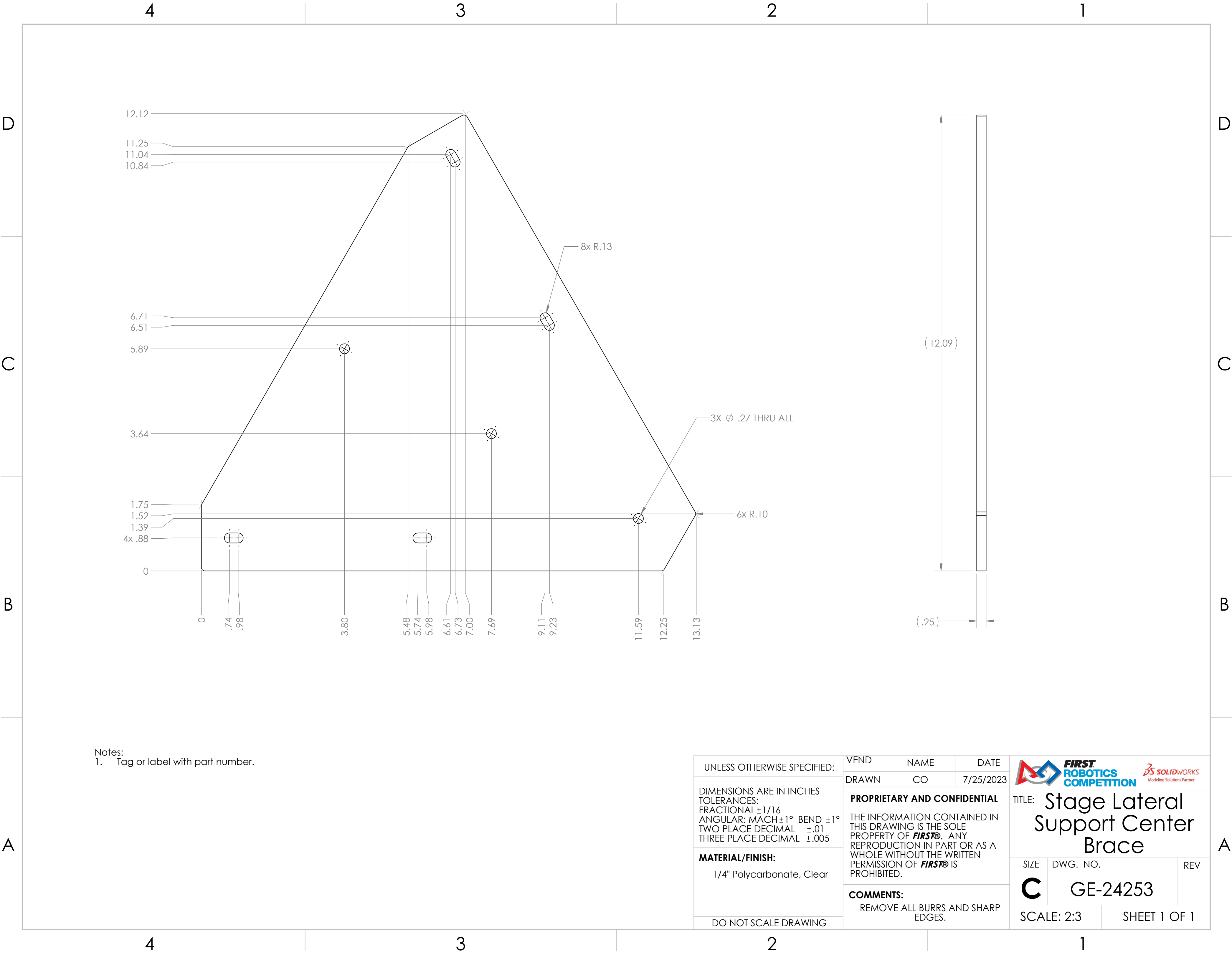
Notes:
1. Tag or label with part number.

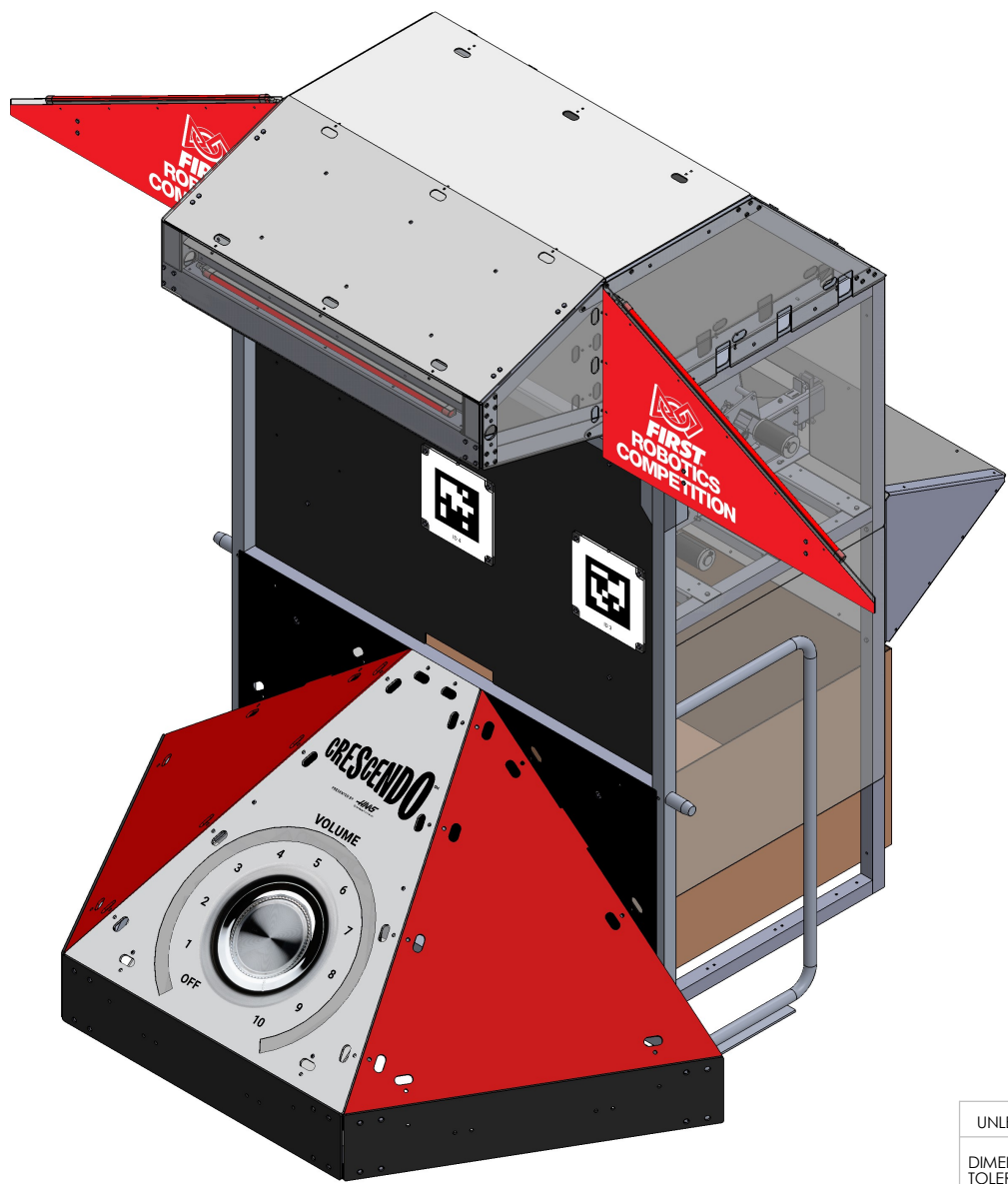
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	DRAWN	CO	7/24/2023			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24251	
SCALE: 1:3		SHEET 1 OF 1				





Notes:
1. Tag or label with part number.

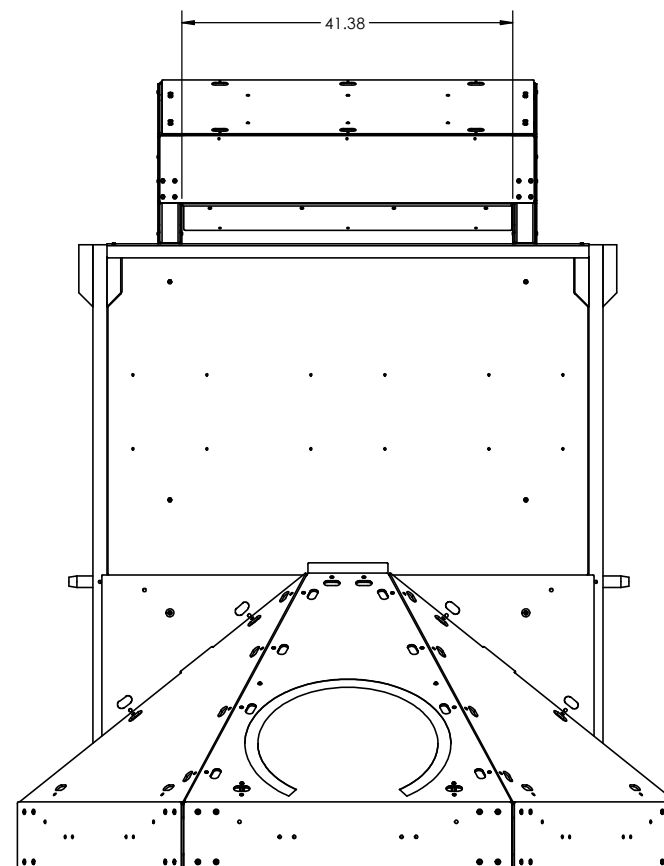
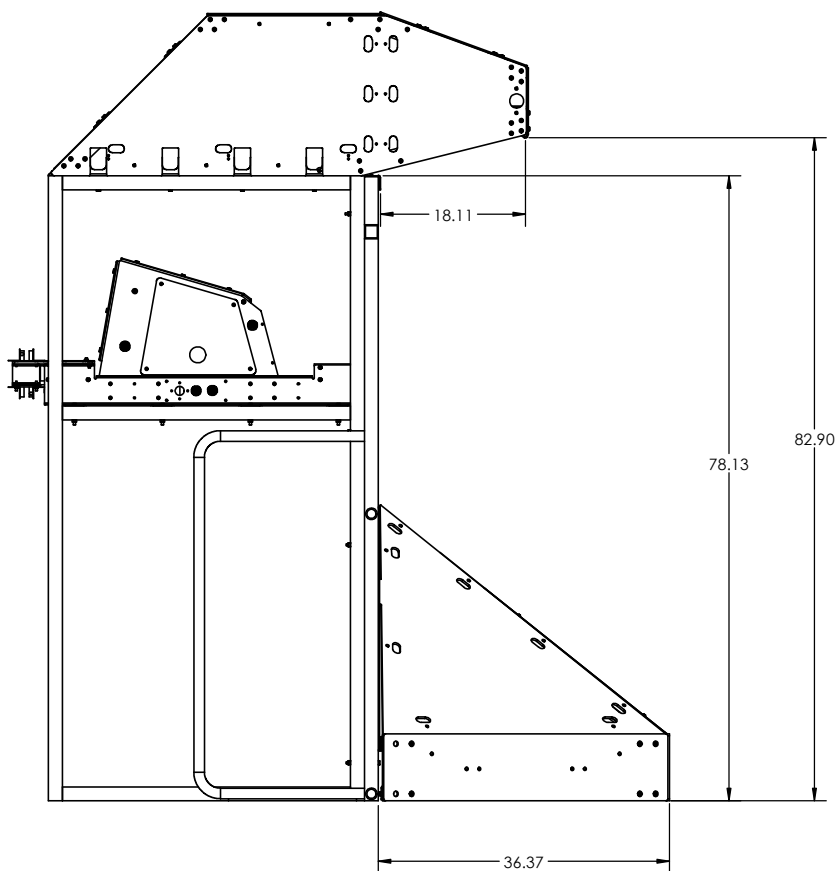
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div> <div>TITLE: Stage Lateral Support Truss Brace</div>		
	DRAWN	CO	7/25/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			SIZE DWG. NO. REV		
	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:			C GE-24252		
REMOVE ALL BURRS AND SHARP EDGES.						
MATERIAL/FINISH:	DO NOT SCALE DRAWING			SCALE: 1:1		SHEET 1 OF 1
1/4" Polycarbonate, Clear						





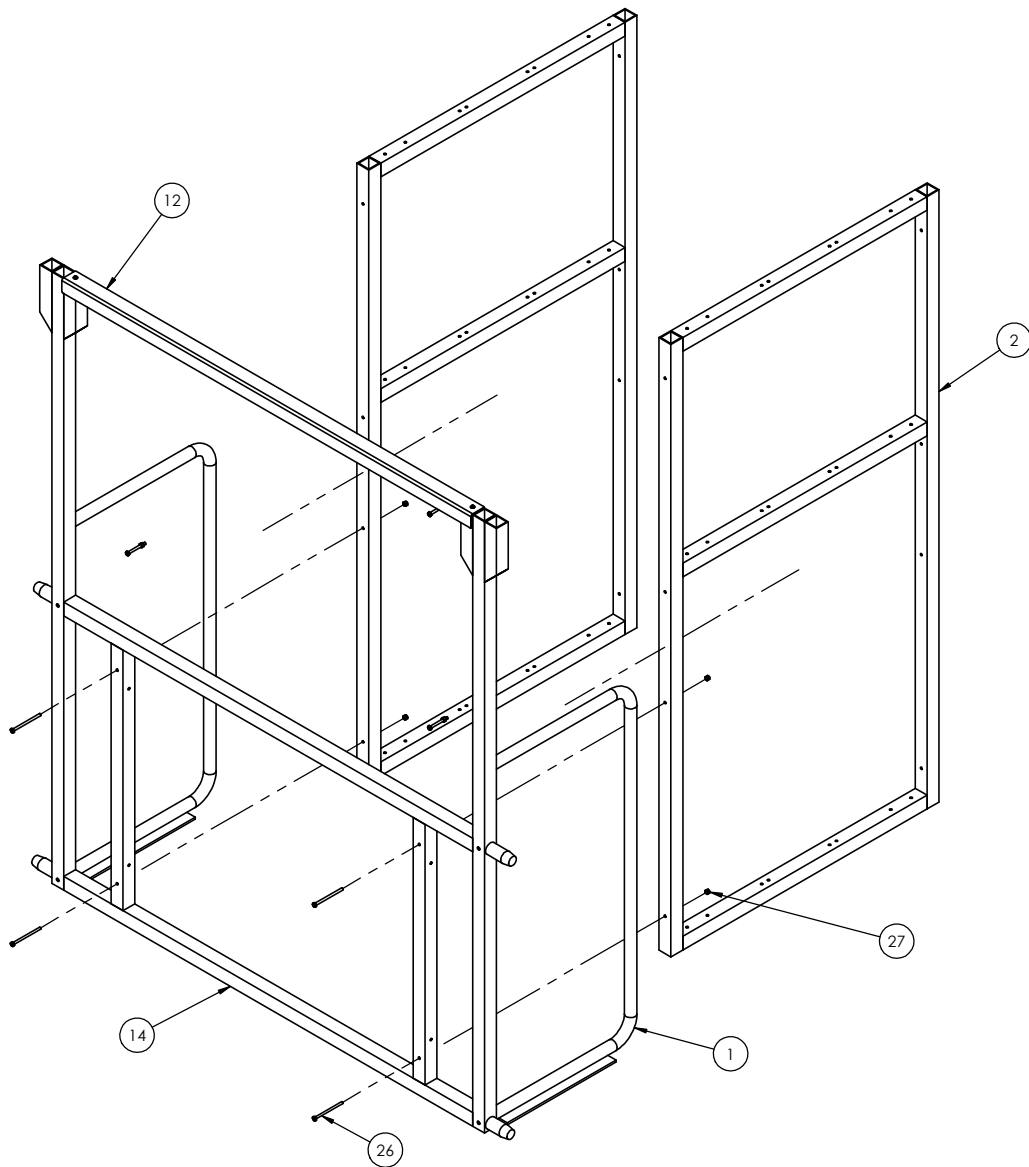


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00001	Drivers Station Support	2
2	GE-24301	Speaker Side Frame	2
3	GE-24302	Speaker Crossbeams with PEMs	4
4	GE-24303	Side Guard Walls	4
5	GE-24306	Speaker Back Cover	1
6	GE-24307	Speaker Inner Side Ramp	2
7	GE-24308	Speaker Inner Back Ramp	1
8	GE-24309	Speaker Inner Side Wall	2
9	GE-24310	Speaker Top Frame	1
10	GE-24321	Backboard Bracket	4
11	GE-24322	Speaker Alliance Wall Plastic	1
12	GE-24325	Briweld Field Crossbeam Assembly	1
13	GE-24330	Subwoofer	1
14	GE-24331	Wall Goal Frame Weldment	1
15	GE-24350	Ring Counter	1
16	GE-24391	Collection Ramp w/ PEMs	2
17	GE-24392	Collection Ramp	1
18	GE-24328-LeftRed	Speaker Wing Plastic with Vinyl	1
19	barLight-36		3
20	GE-24328-RightRed	Speaker Wing Plastic with Vinyl	1
21	S-4478	Cardboard Box	1
22	FE-00083-ID3	AprilTag	1
23	FE-00083-ID4	AprilTag	1
24	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	28
25	Configurable Bolt	2.5" Long 1/4-20 Hex Head Bolt	24
26	Configurable Bolt	1/4-20 Hex Head Bolt 4" Long	4
27	nylock_25_20	Steel Nylon-Insert Locknut, 1/4"-20	32

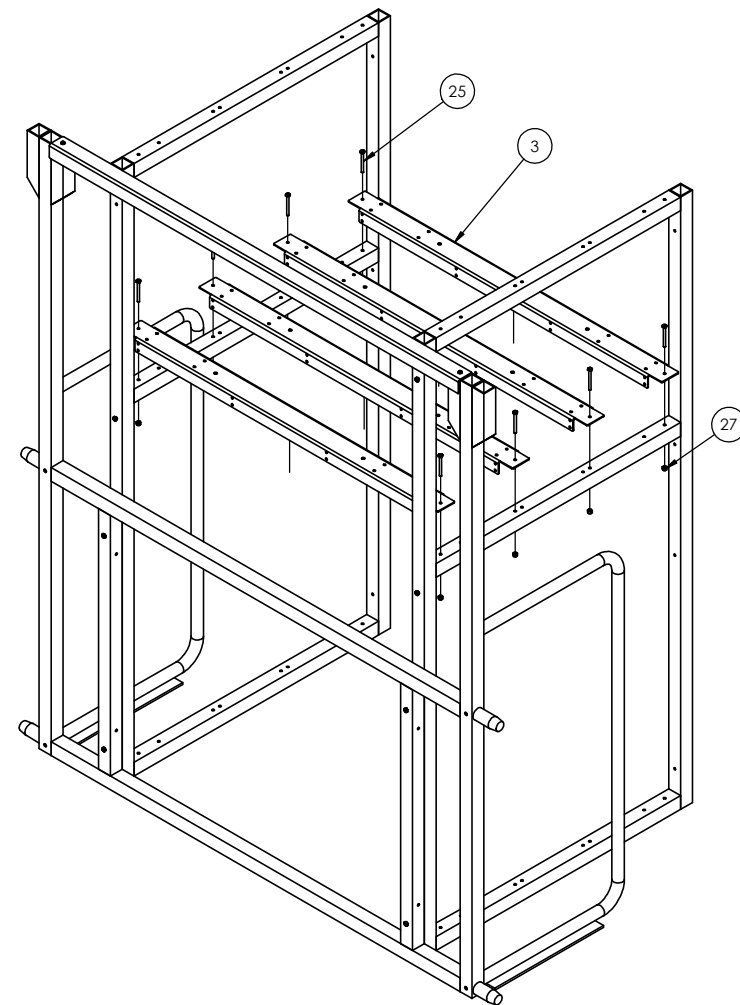
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	DRAWN	JO	12/19/2023		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE: Speaker	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24300 REV SCALE: 1:10 SHEET 1 OF 6





UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	 
	DRAWN	JO	12/19/2023	
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			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.			Speaker
MATERIAL/FINISH:	COMMENTS:			SIZE
	REMOVE ALL BURRS AND SHARP EDGES.			DWG. NO.
DO NOT SCALE DRAWING				REV
				C
			GE-24300	
			SCALE: 1:12	SHEET 2 OF 6



Include (14) in the Alliance Wall assembly as a starting point between two (1) segments.
slide (2) into position and attach with (26) and (27).



Attach (3) to the assembly with (25) and (27)

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	 
	DRAWN	JO	12/19/2023	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL			TITLE: Speaker
	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:			SIZE C
	REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING	SCALE: 1:10		SHEET 3 OF 6	

D

C

B

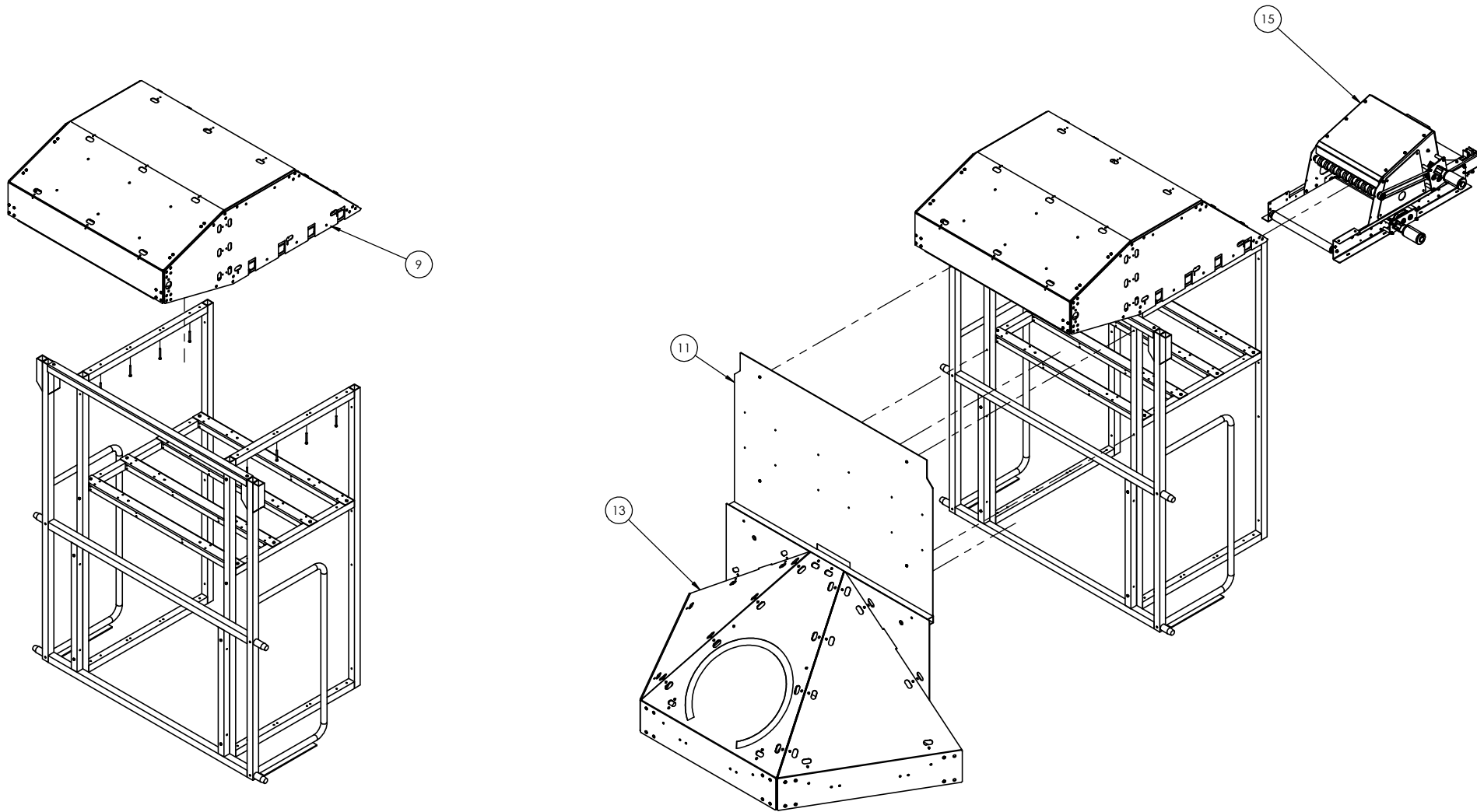
A

D


C

B

A



Attach all Subassemblies and panels as shown

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	 FIRST ROBOTICS COMPETITION <small>Modeling Solutions Partners</small>
	DRAWN	JO	12/19/2023	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL			TITLE: Speaker
	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:			SIZE DWG. NO. REV
	REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING				C GE-24300
				SCALE: 1:16 SHEET 4 OF 6



D

D

C

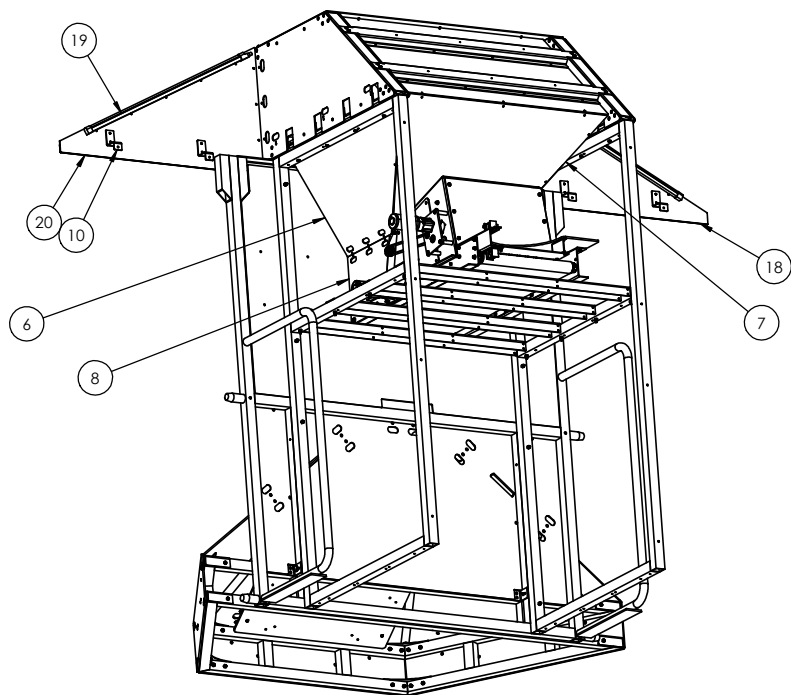
C

B

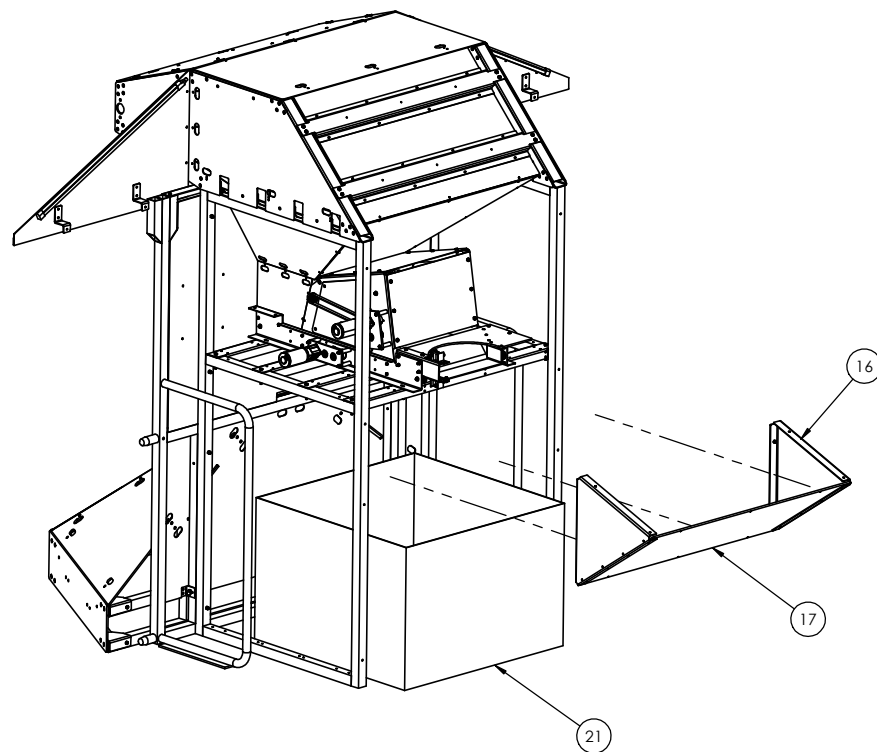
B

A

A





Attach Ramps, Wings and Lights with 50lb Cable Ties



Attach (16) to assembly with 1" bolts, then attach (17) with 50lb cable ties

Slide (21) into place under ring counter

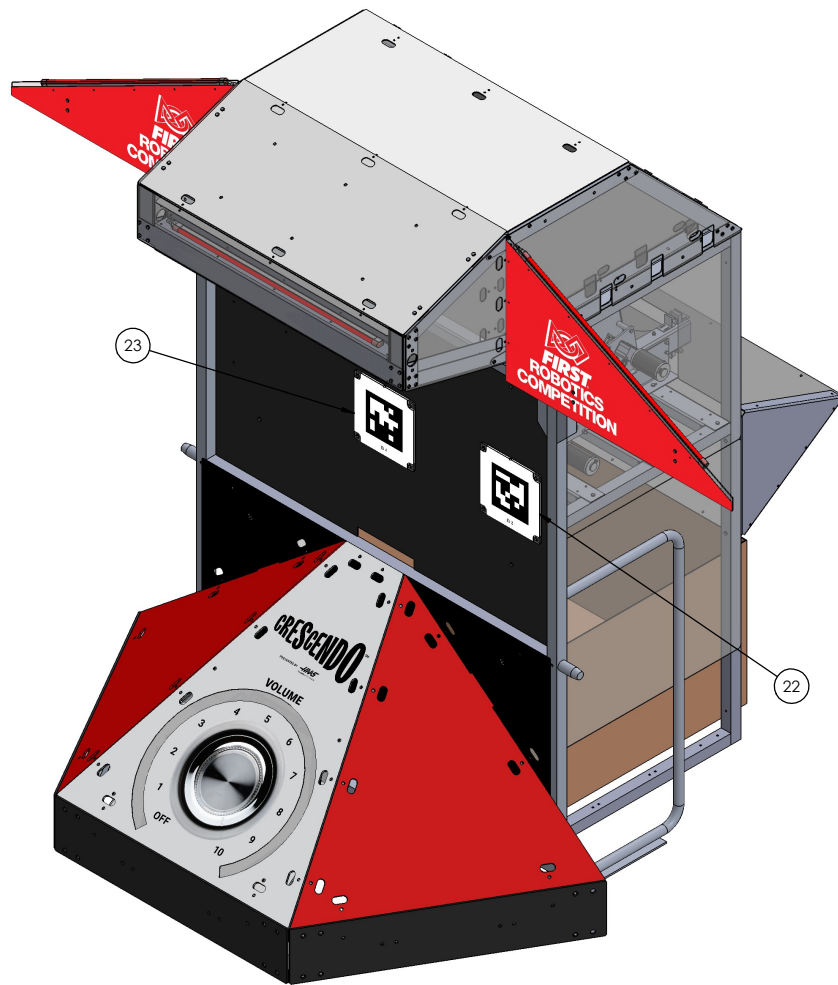
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	DRAWN	JO	12/19/2023		
	PROPRIETARY AND CONFIDENTIAL			TITLE:	
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			Speaker	
COMMENTS:		REMOVE ALL BURRS AND SHARP EDGES.		SIZE	DWG. NO.
				C	GE-24300
				SCALE: 1:16	SHEET 5 OF 6

4

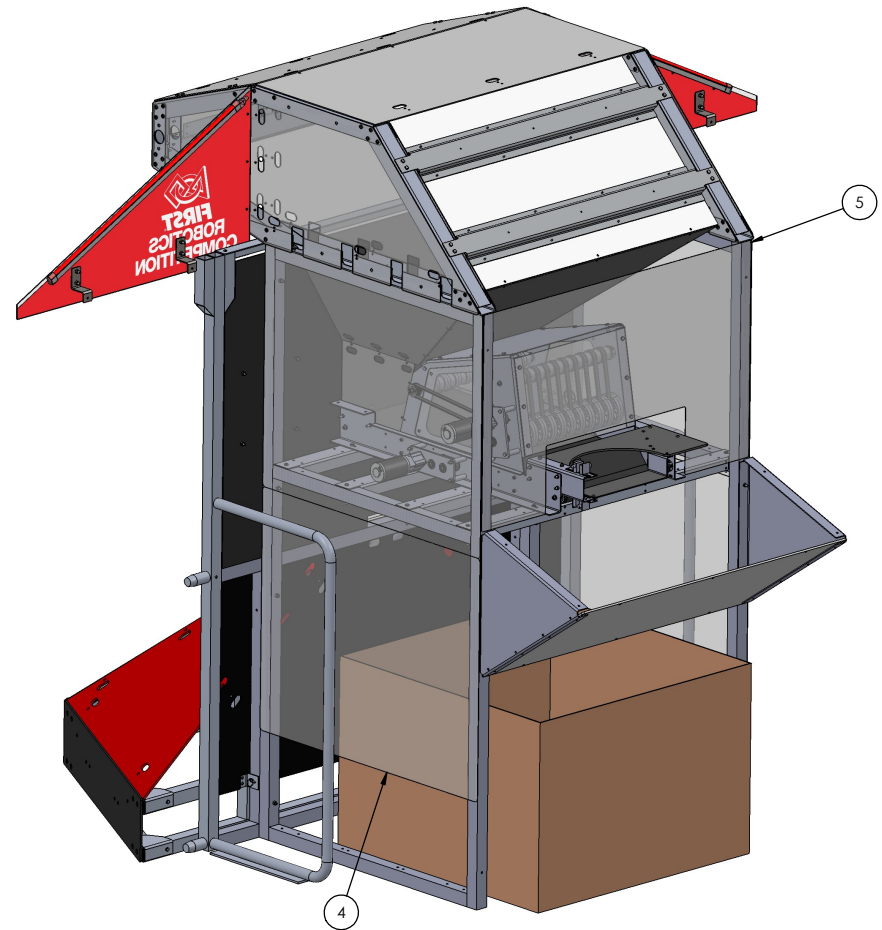
3

2



1

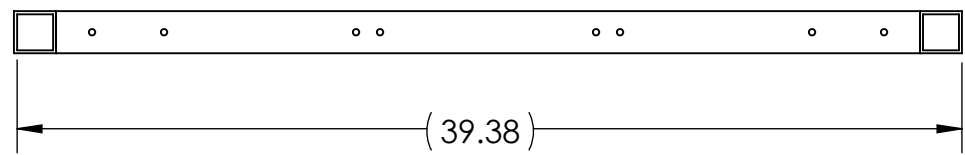


Attach (22) and (23) with 1" bolts and locknuts

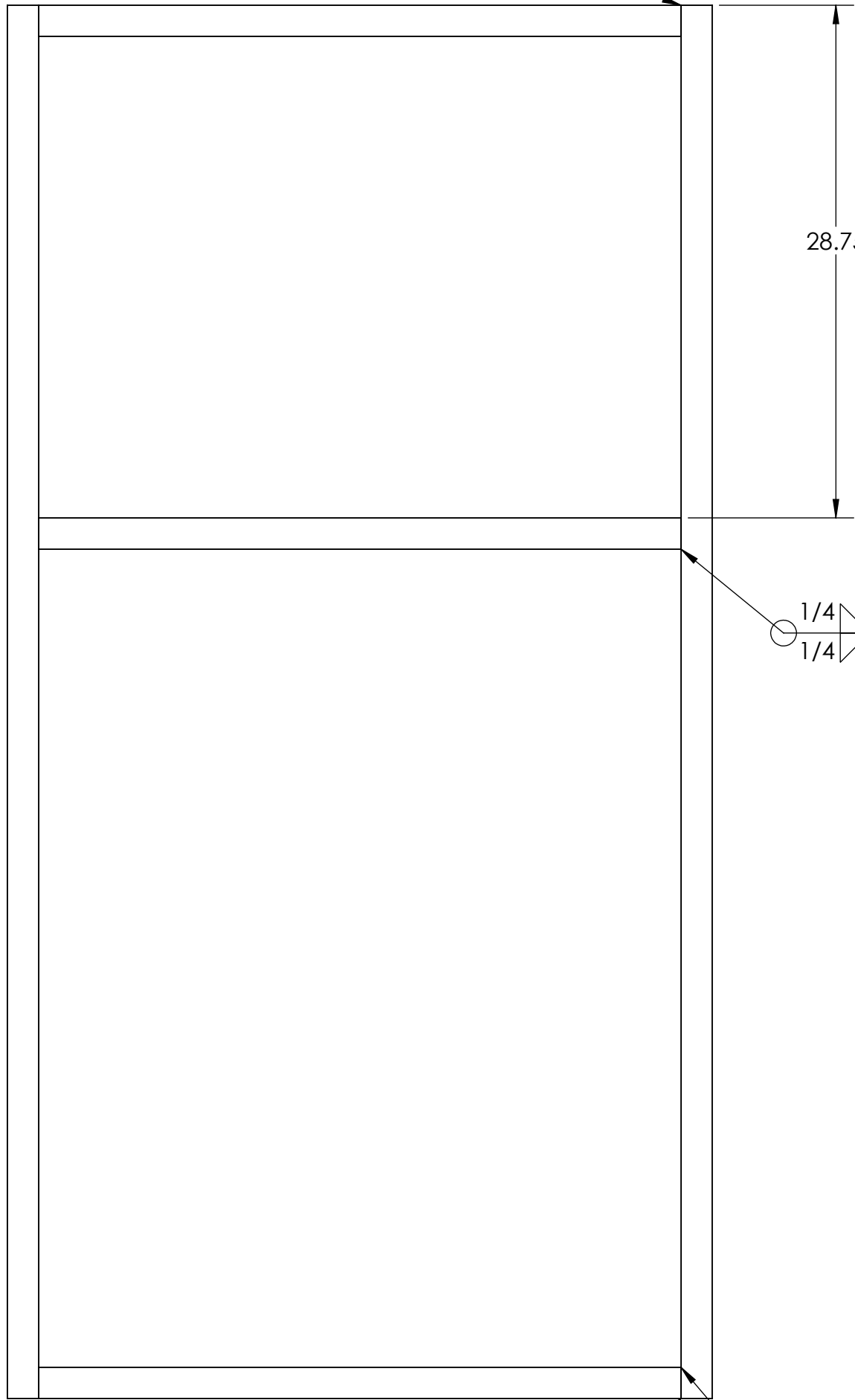


Attach (4) and (5) with hook and loop adhesive

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.50 MATERIAL/FINISH: DO NOT SCALE DRAWING	FIELD	NAME	DATE	<div>FIRST ROBOTICS COMPETITION</div> <div>SOLIDWORKS Modeling Solutions Partner</div>	
	DRAWN	JO	12/19/2023		
	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.			Speaker	
COMMENTS:			SIZE	DWG. NO.	REV
REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24300	
			SCALE: 1:12		SHEET 6 OF 6

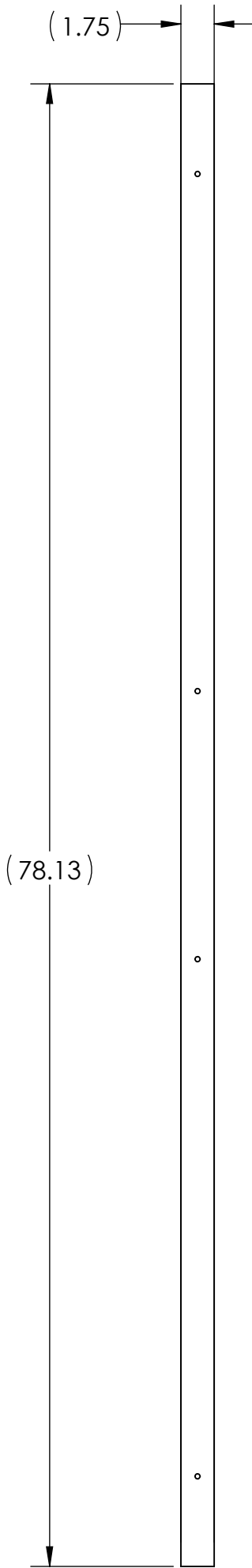


Grind Welds to flat on this edge



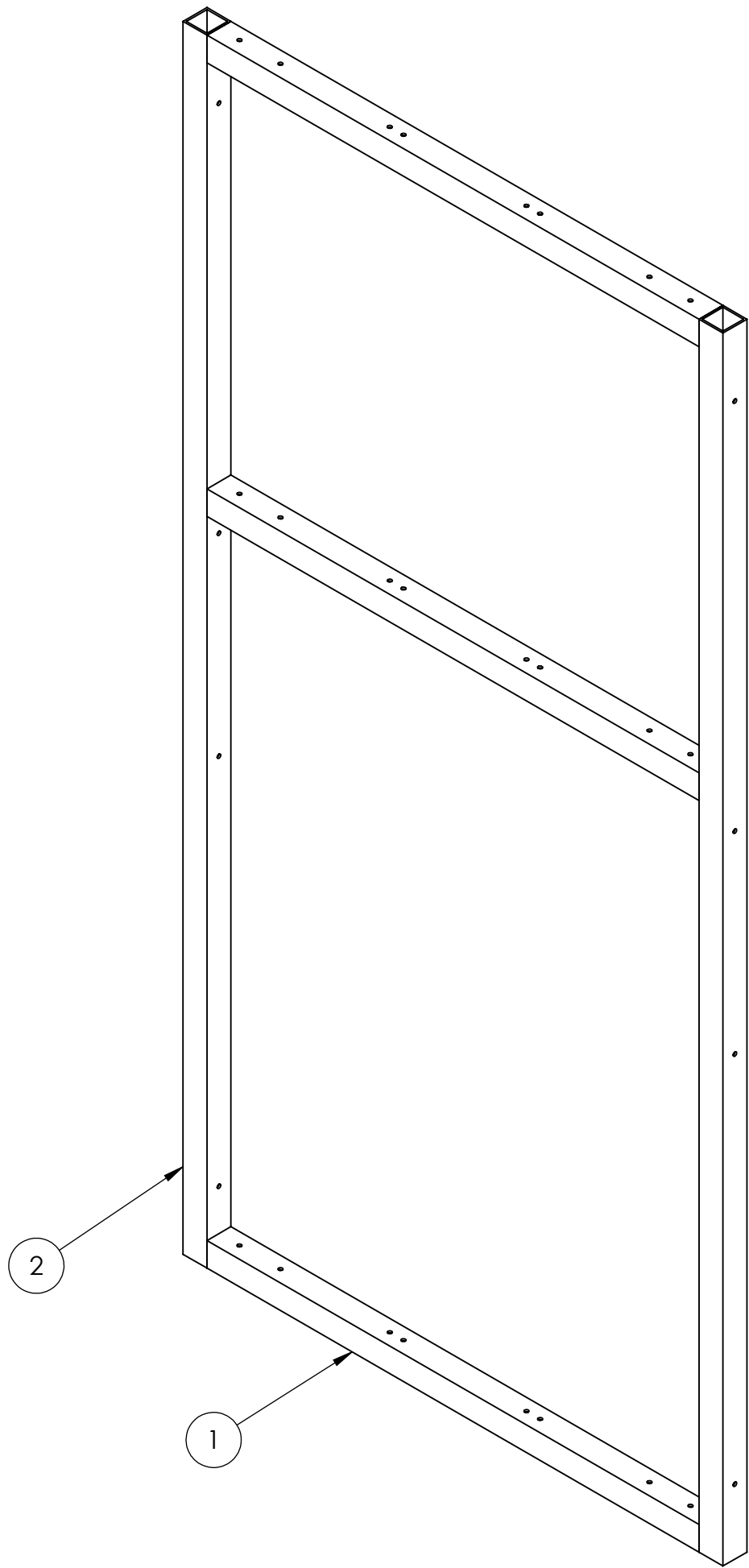
28.75

1/4
1/4 2X



(1.75)



(78.13)



2

1

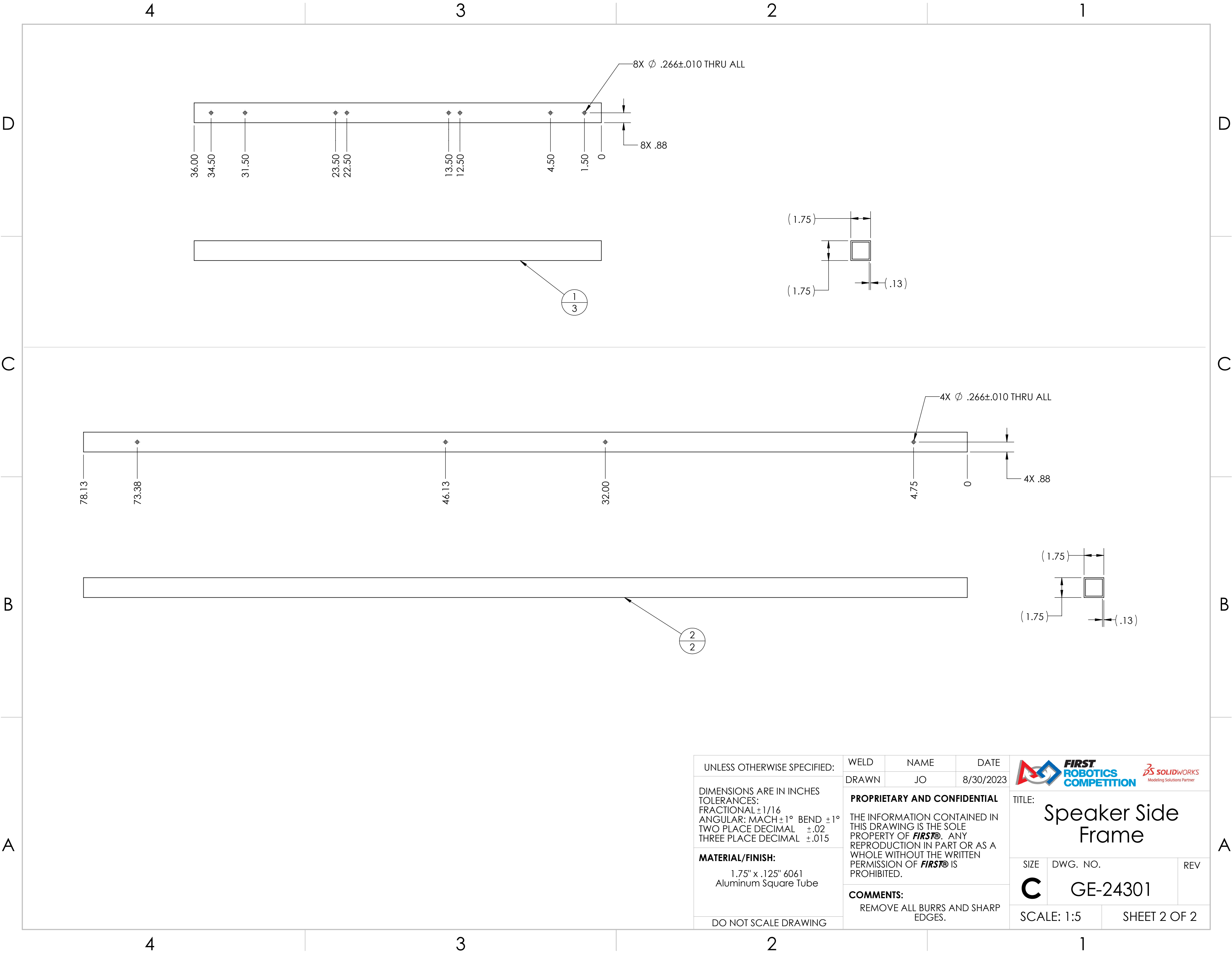
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24301-01	Speaker Depth Tube	3
2	GE-24301-02	Speaker Frame Height Tube	2



UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE	 		
	DRAWN	JO	8/30/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.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.			TITLE: Speaker Side Frame		
	MATERIAL/FINISH: 1.75" x .125" 6061 Aluminum Square Tube			SIZE C	DWG. NO. GE-24301	REV
DO NOT SCALE DRAWING	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:8		SHEET 1 OF 2

Notes:
Note hole orientation before welding
Tag or Label with Part Number

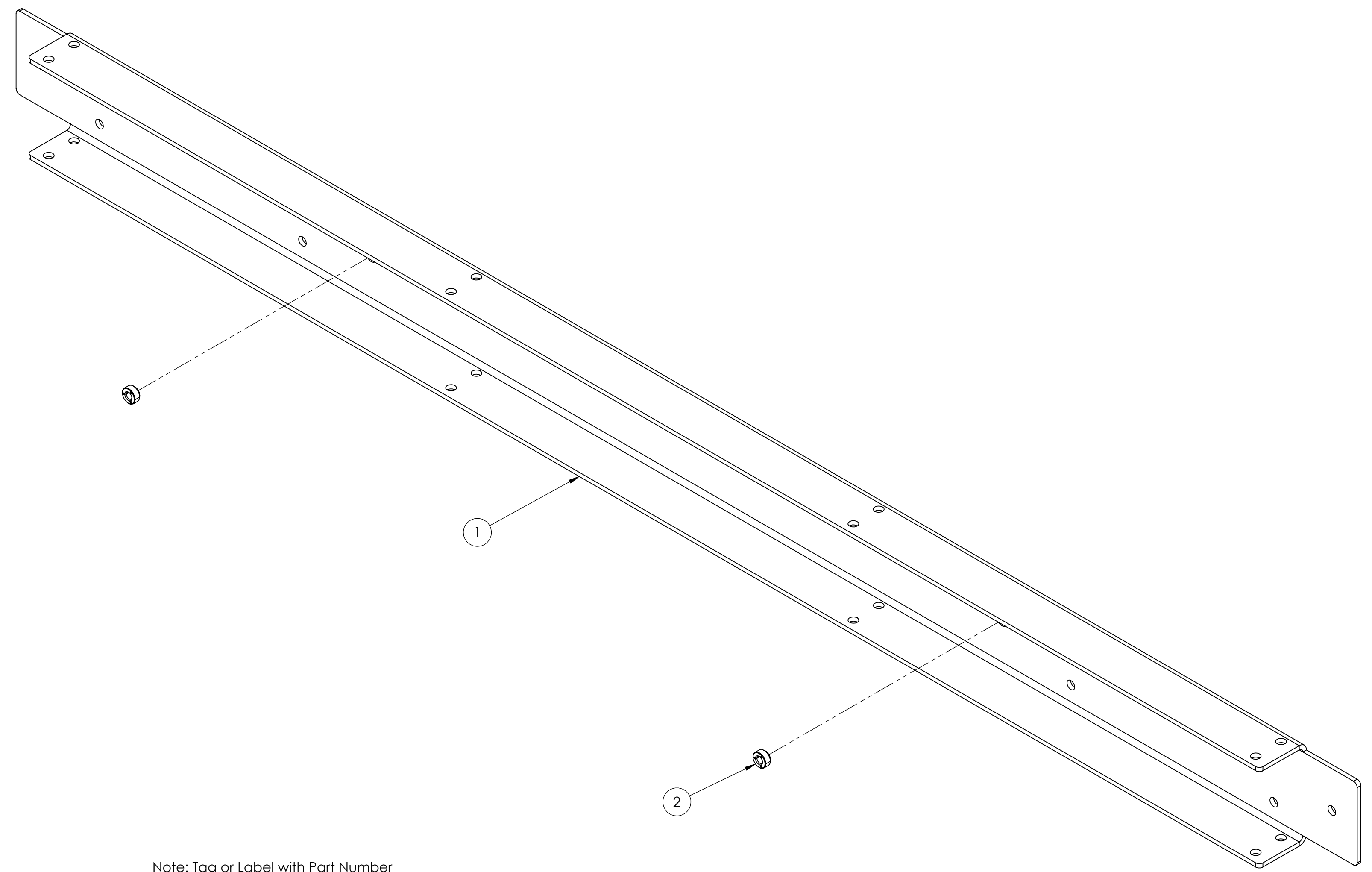
1/4
1/4 4X

Grind Welds to flat on this edge





UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE	<div></div>		
	DRAWN	JO	8/30/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.015	PROPRIETARY AND CONFIDENTIAL			TITLE: <div>Speaker Side Frame</div>		
	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: <div>1.75" x .125" 6061 Aluminum Square Tube</div>	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE <div>C</div>	DWG. NO. <div>GE-24301</div>
DO NOT SCALE DRAWING				SCALE: 1:5		SHEET 2 OF 2

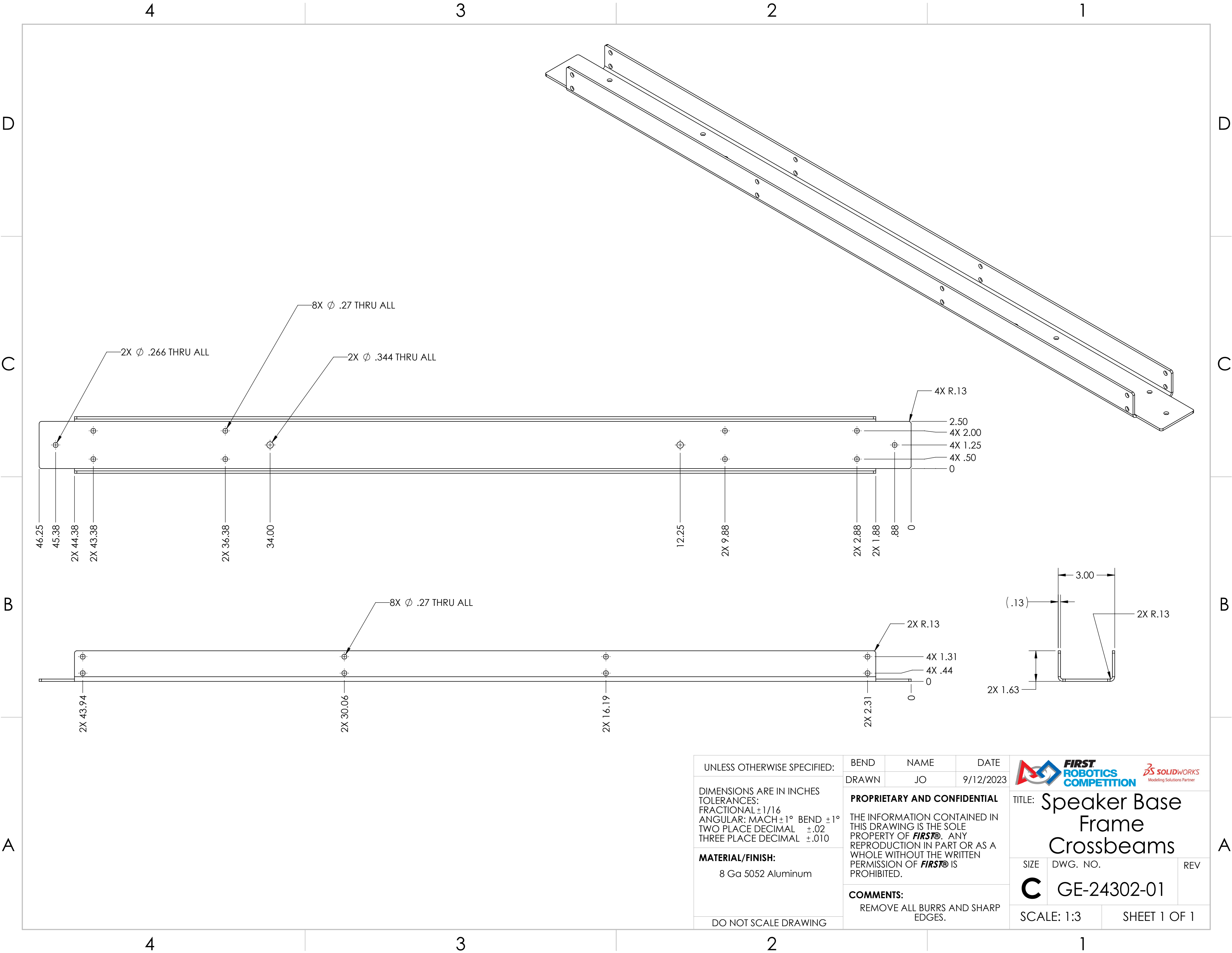
4321





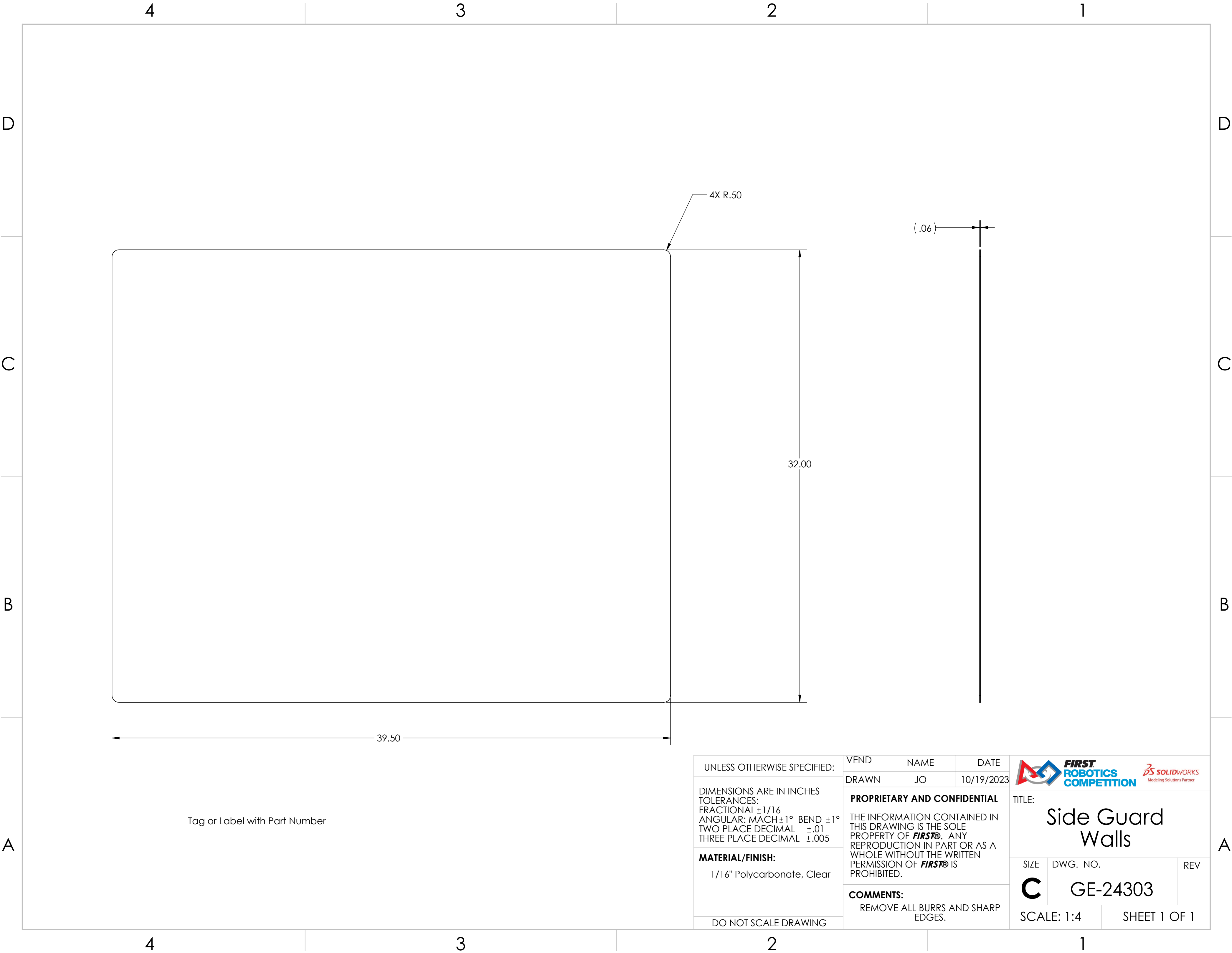
Note: Tag or Label with Part Number



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24302-01	Speaker Base Frame Crossbeams	1
2	pem_clinchnut_.25_20 _.054	1/4-20 self-clinching nut, .054 shank	2

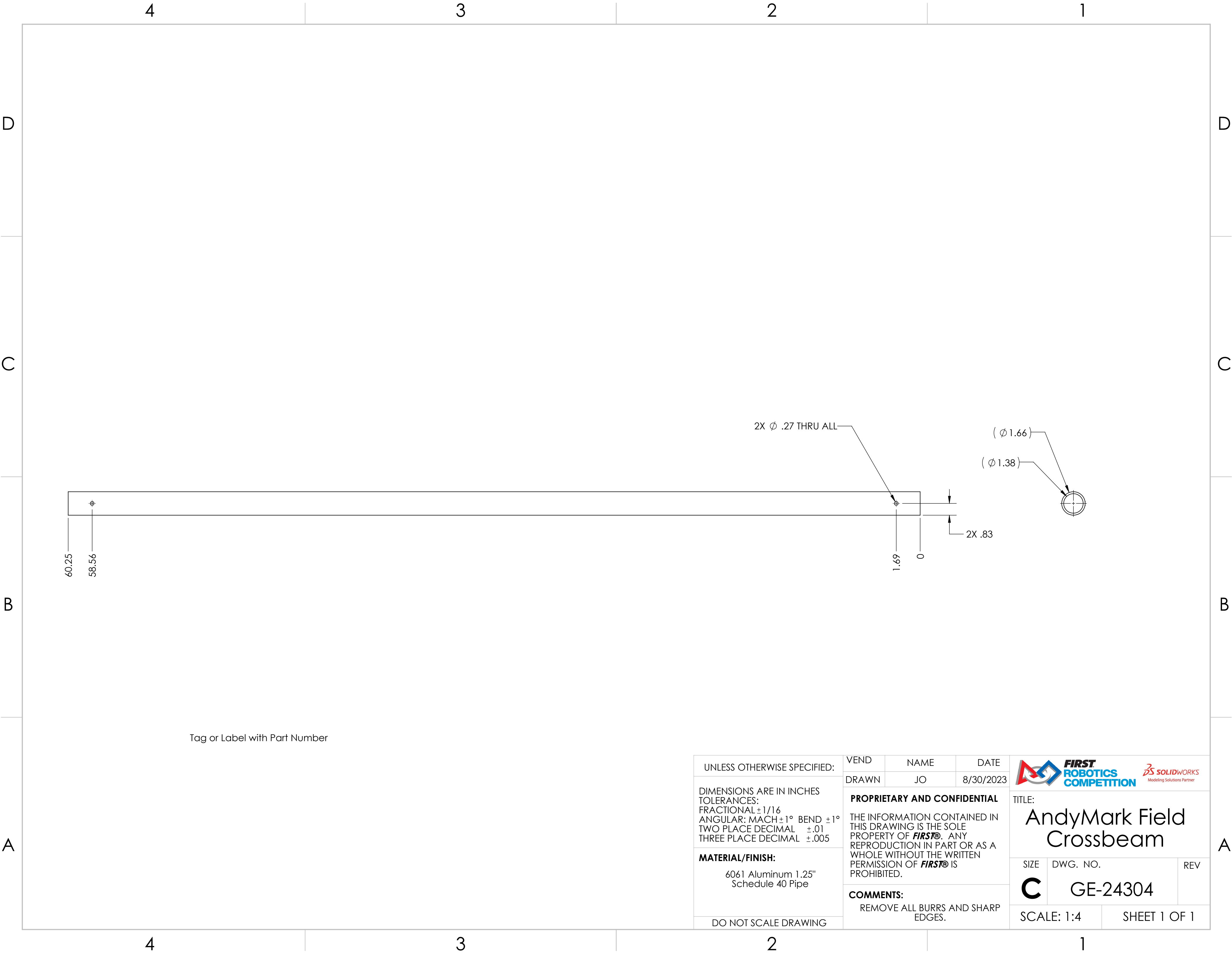
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: DO NOT SCALE DRAWING	VEND	NAME	DATE	<div><div></div><div>TITLE: Speaker Crossbeams with PEMs</div><div><div>SIZE</div><div>DWG. NO.</div><div>REV</div></div><div><div>C</div><div>GE-24302</div></div><div><div>SCALE: 1:2</div><div>SHEET 1 OF 1</div></div></div>					
	DRAWN	JO	10/6/2023						
	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.								
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.								





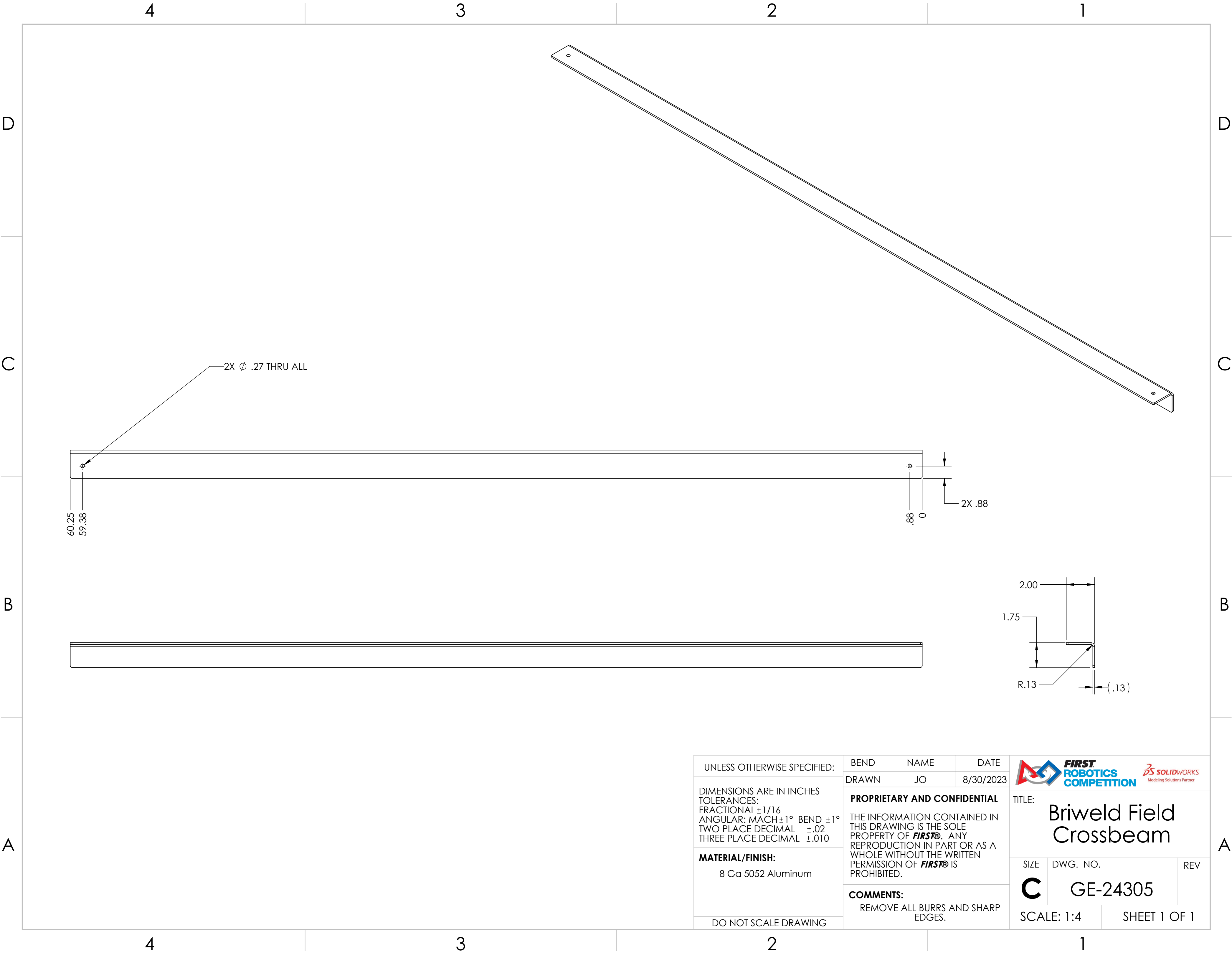
UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div></div>		
	DRAWN	JO	9/12/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	PROPRIETARY AND CONFIDENTIAL			TITLE: Speaker Base Frame Crossbeams		
	THE INFORMATION CONTAINED 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.					
MATERIAL/FINISH:				SIZE	DWG. NO.	REV
8 Ga 5052 Aluminum				C	GE-24302-01	
DO NOT SCALE DRAWING				SCALE: 1:3		SHEET 1 OF 1





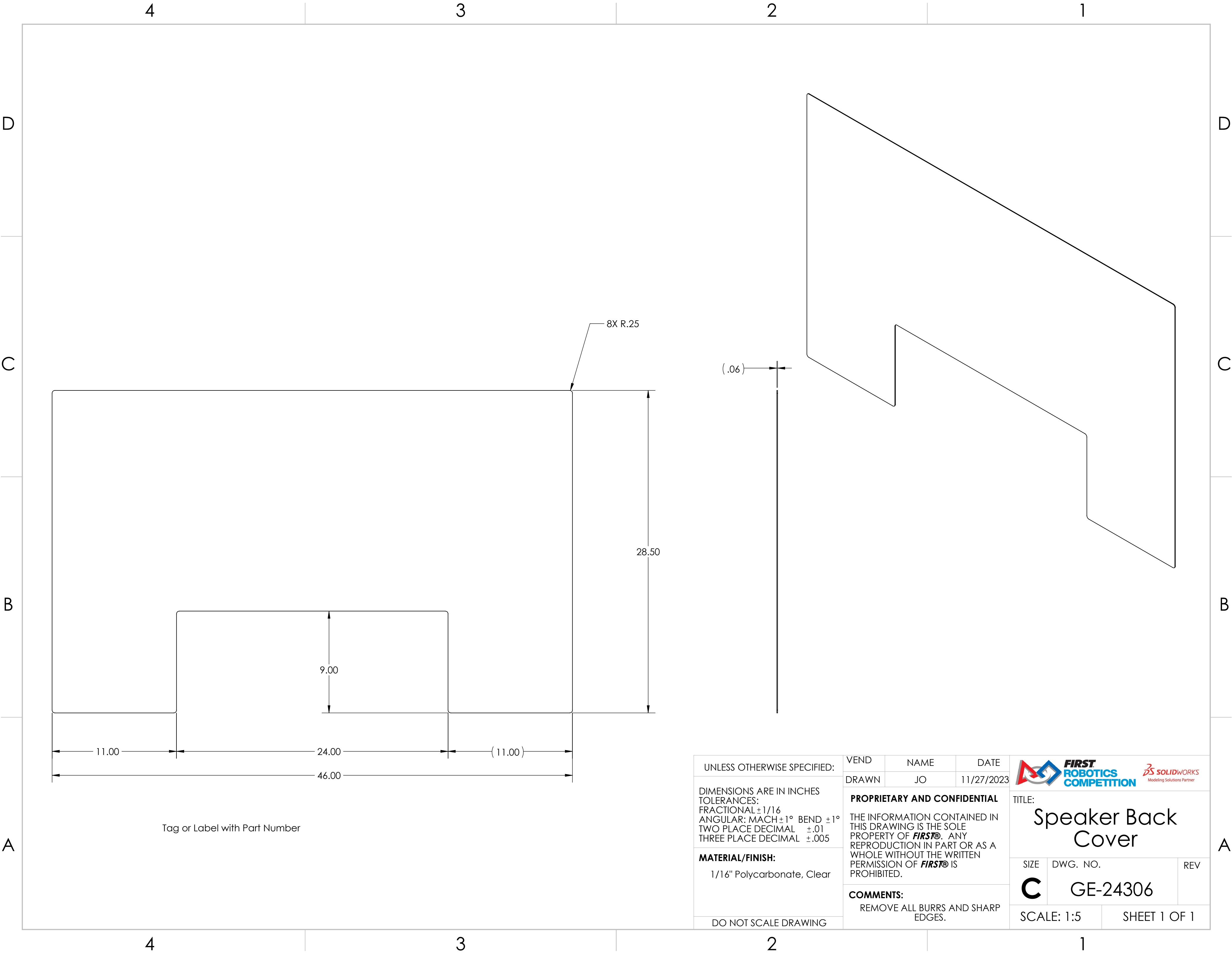
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/16" Polycarbonate, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Side Guard Walls</div>		
	DRAWN	JO	10/19/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
				SIZE	DWG. NO.	REV
				C	GE-24303	
				SCALE: 1:4		SHEET 1 OF 1

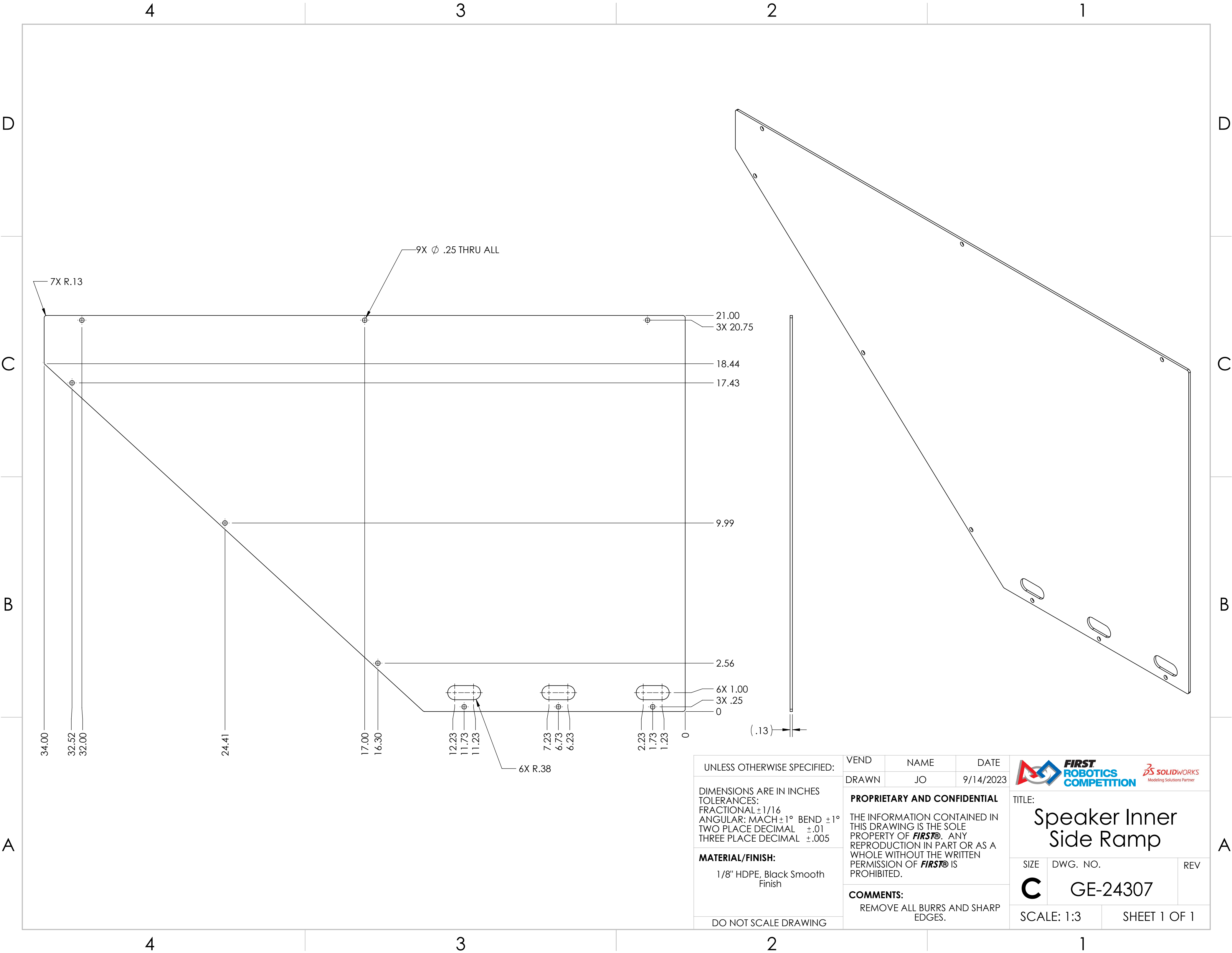


UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>		
	DRAWN	JO	8/30/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: AndyMark Field Crossbeam		
	THE INFORMATION CONTAINED 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 1.25" Schedule 40 Pipe	COMMENTS:			SIZE	DWG. NO.	REV
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24304	
DO NOT SCALE DRAWING				SCALE: 1:4		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 $\pm .02$ THREE PLACE DECIMAL $\pm .010$ MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Briweld Field Crossbeam</div>		
	DRAWN	JO	8/30/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24305	
SCALE: 1:4		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:
1/8" HDPE, Black Smooth Finish

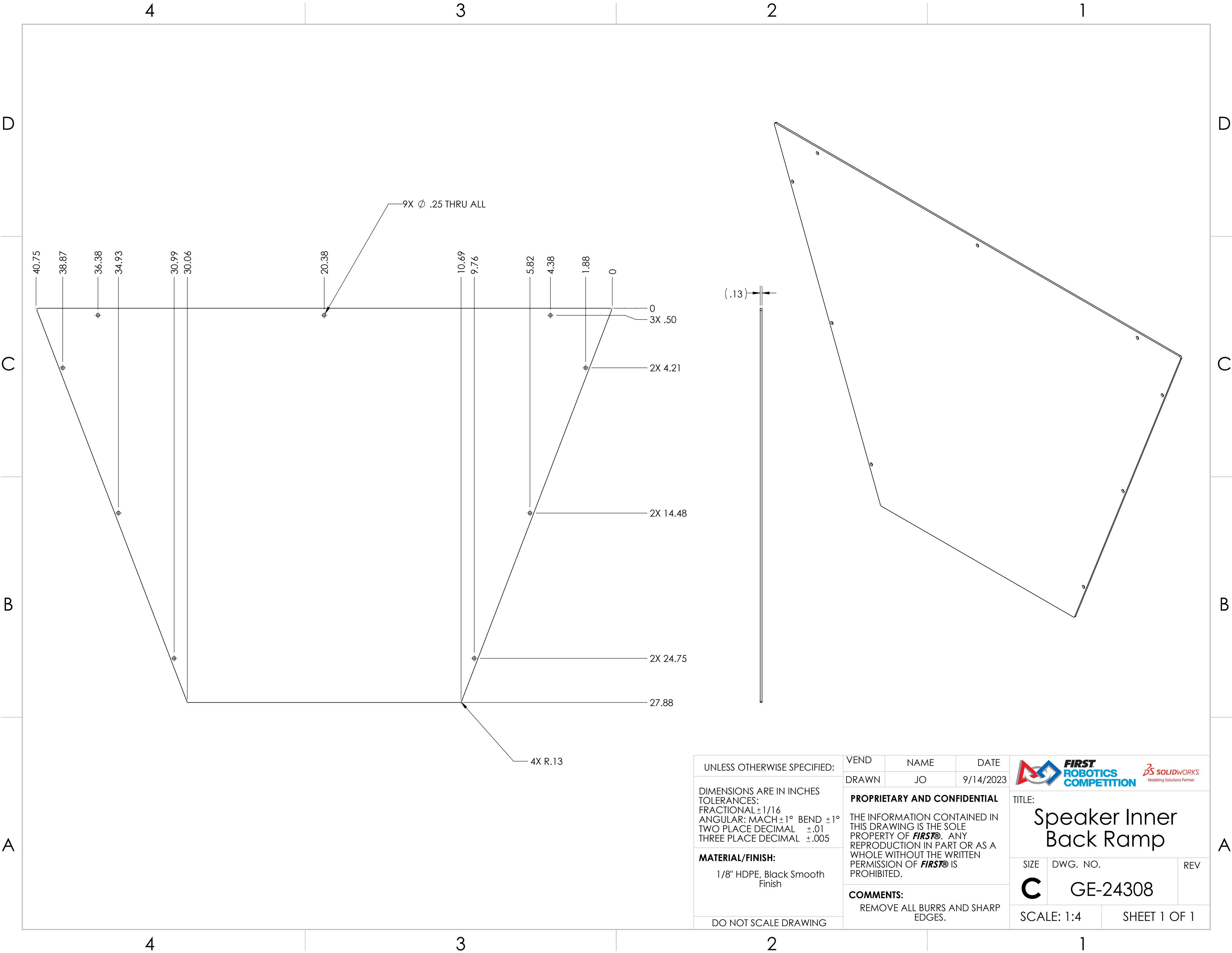
DO NOT SCALE DRAWING



VEND	NAME	DATE
DRAWN	JO	9/14/2023

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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

 		
TITLE: Speaker Inner Side Ramp		
SIZE C	DWG. NO. GE-24307	REV
SCALE: 1:3		SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div> <div>TITLE: <div>Speaker Inner Back Ramp</div></div>		
	DRAWN	JO	9/14/2023			
DIMENSIONS ARE IN INCHES 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.			SIZE	DWG. NO.	REV
				C	GE-24308	
	MATERIAL/FINISH: 1/8" HDPE, Black Smooth Finish	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:4	
DO NOT SCALE DRAWING						

D

C

B

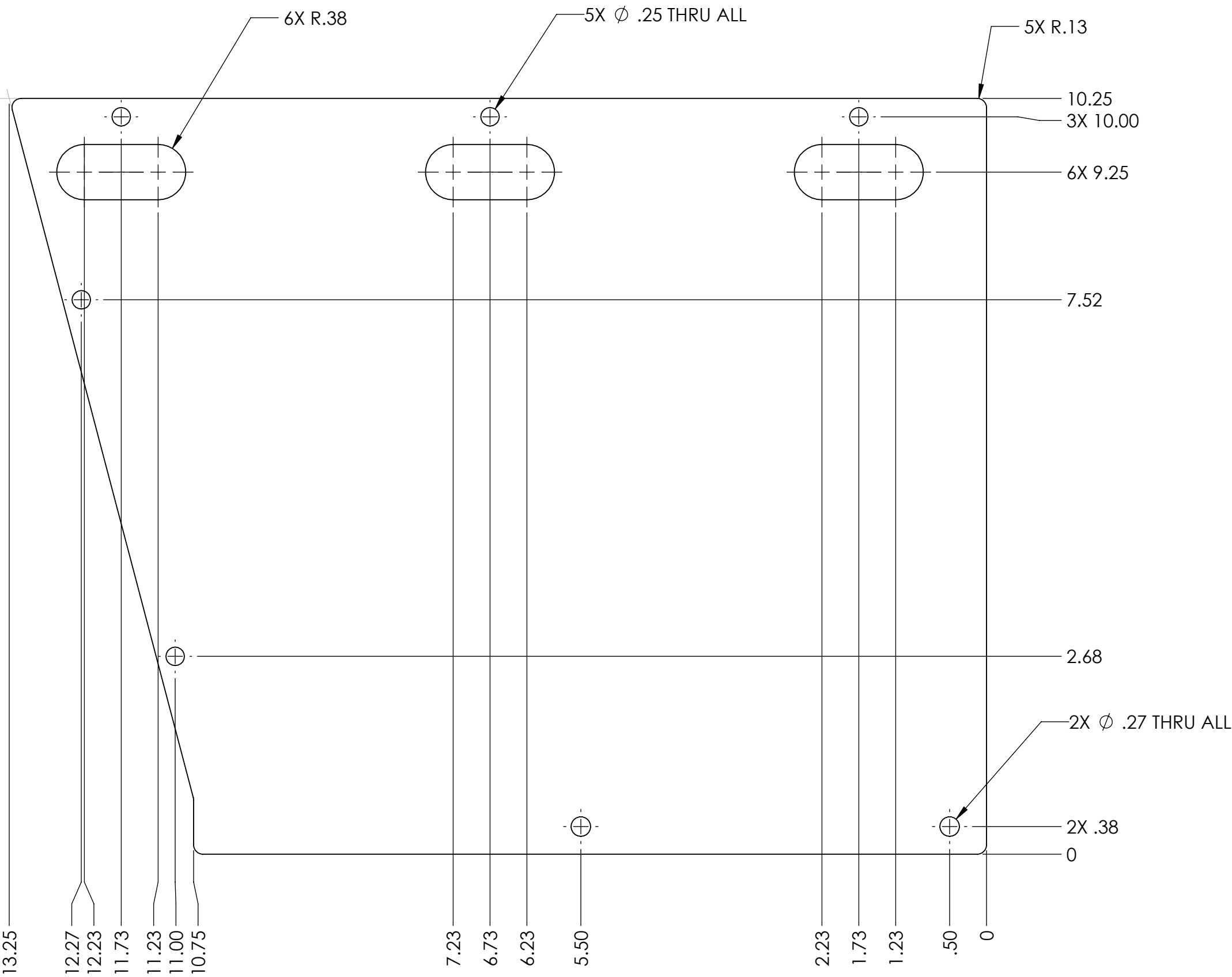
A



D

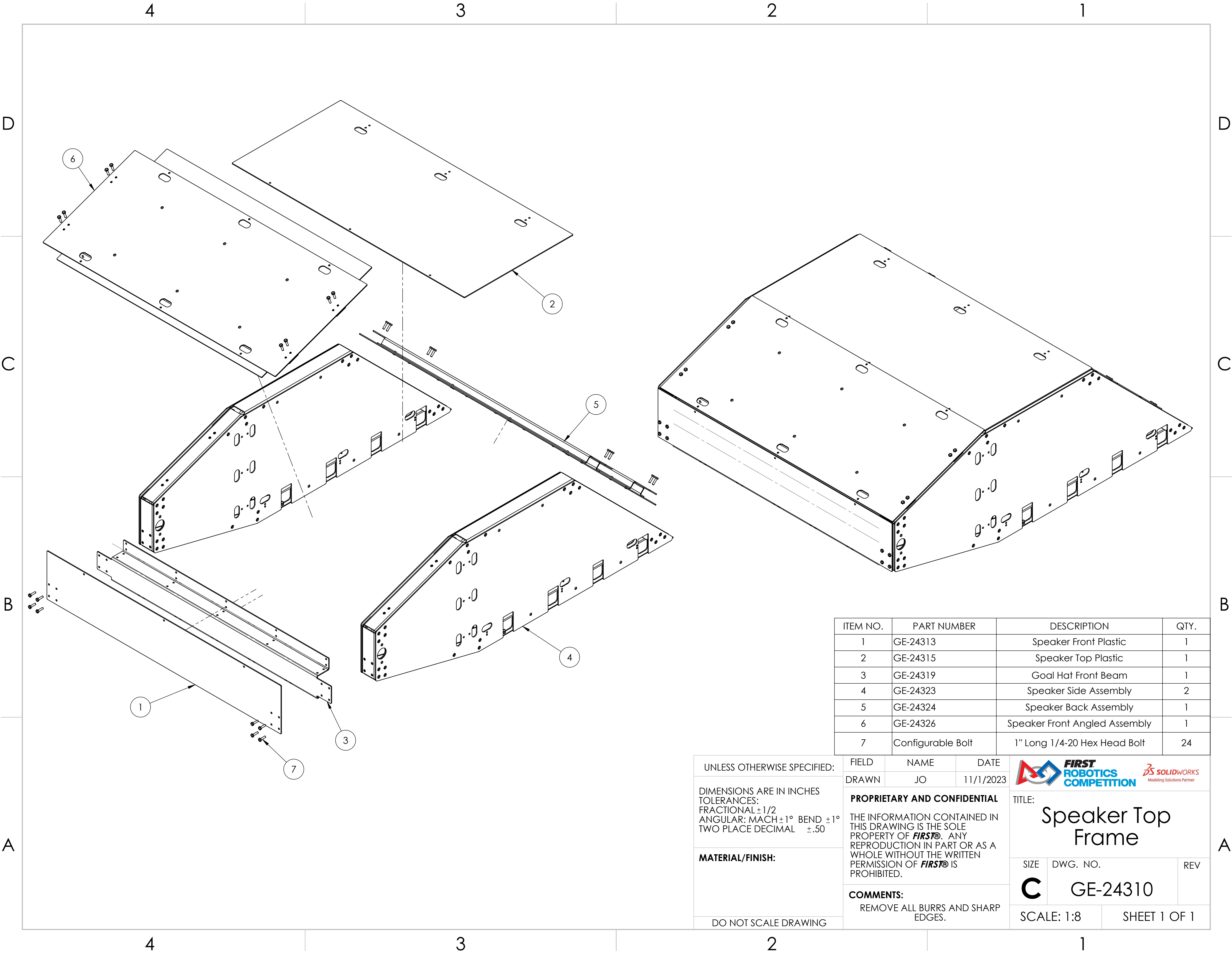
C

B



A

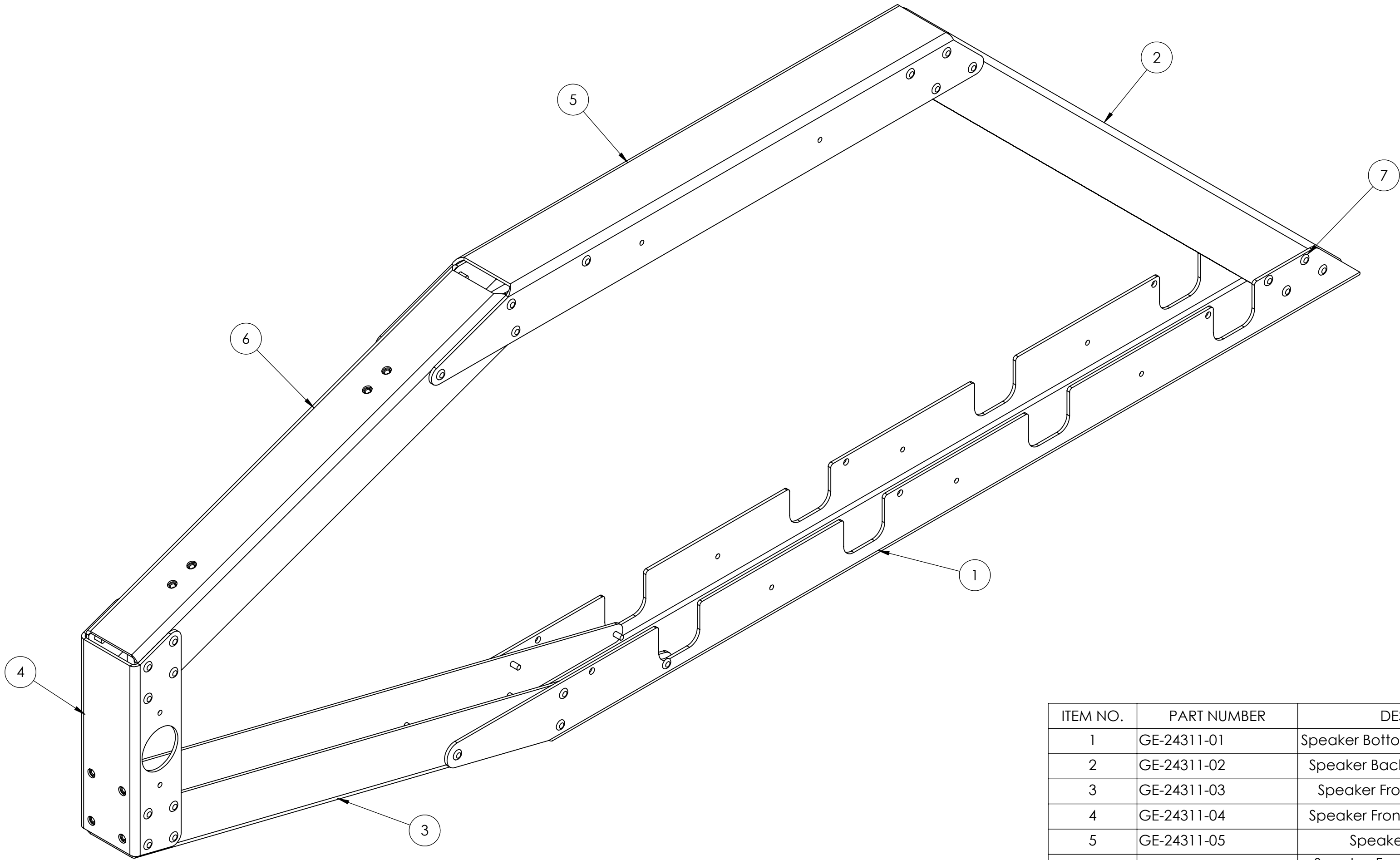


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$ MATERIAL/FINISH: 1/8" Polycarbonate, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	 	
	DRAWN	JO	9/14/2023		
	PROPRIETARY 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.			TITLE: Speaker Inner Side Wall	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24309
			SCALE: 2:3		SHEET 1 OF 1



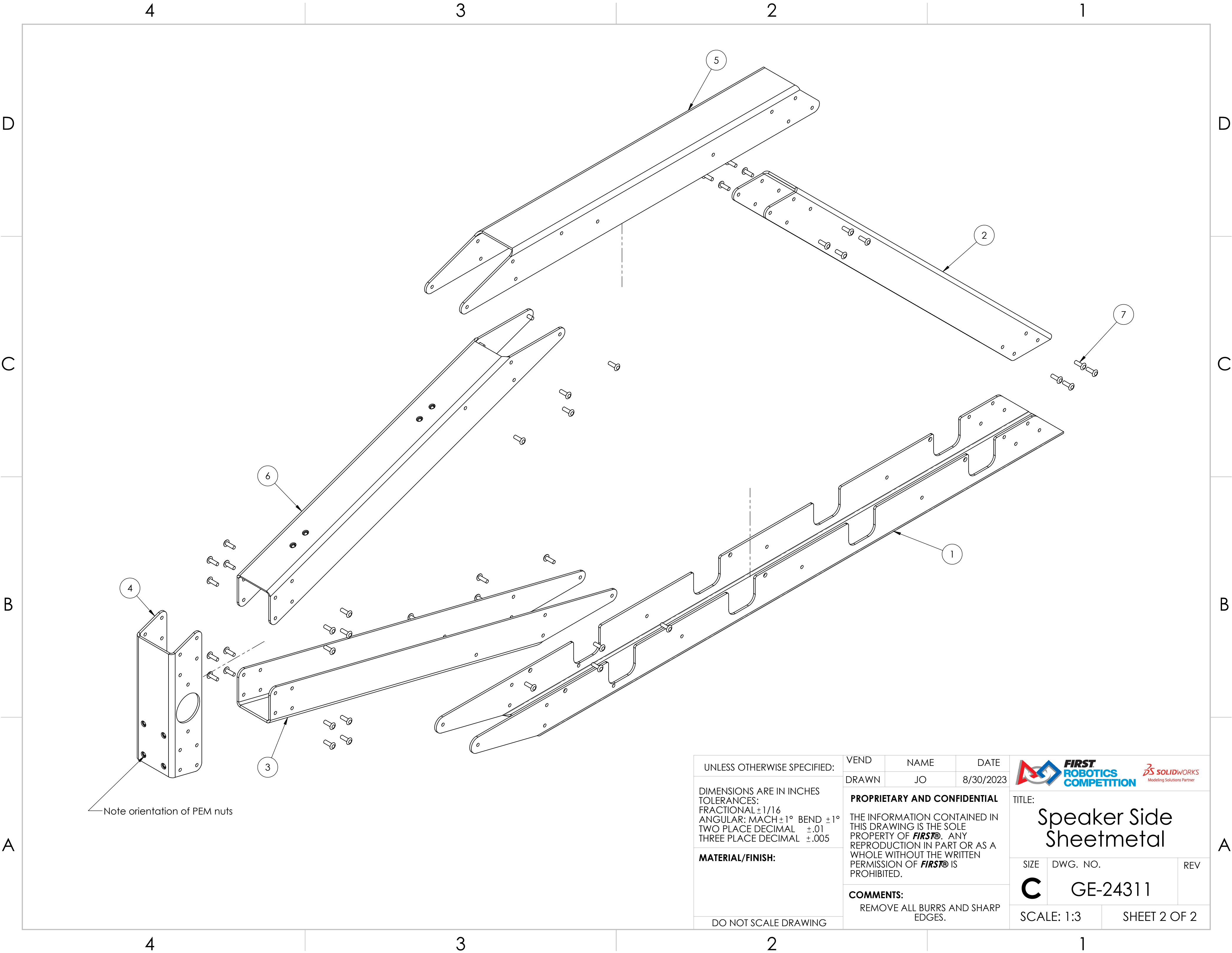
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24313	Speaker Front Plastic	1
2	GE-24315	Speaker Top Plastic	1
3	GE-24319	Goal Hat Front Beam	1
4	GE-24323	Speaker Side Assembly	2
5	GE-24324	Speaker Back Assembly	1
6	GE-24326	Speaker Front Angled Assembly	1
7	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	24

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	JO	11/1/2023	TITLE: <div>Speaker Top Frame</div>	
MATERIAL/FINISH:	PROPRIETARY AND CONFIDENTIAL			SIZE	
	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.			DWG. NO.	
DO NOT SCALE DRAWING	COMMENTS:			REV	
	REMOVE ALL BURRS AND SHARP EDGES.			C	
			SCALE: 1:8		SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24311-01	Speaker Bottom Channel with PEMs	1
2	GE-24311-02	Speaker Back Channel with PEMs	1
3	GE-24311-03	Speaker Front Bottom Channel	1
4	GE-24311-04	Speaker Front Channel with PEMs	1
5	GE-24311-05	Speaker Top Channel	1
6	GE-24311-06	Speaker Front Top Channel with PEMs	1
7	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	48

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	TITLE: Speaker Side Sheetmetal	
	DRAWN	JO	8/30/2023		
	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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24311
		SCALE: 1:3		SHEET 1 OF 2	



Note orientation of PEM nuts

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

DRAWN

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.

NAME

JO

DATE

8/30/2023

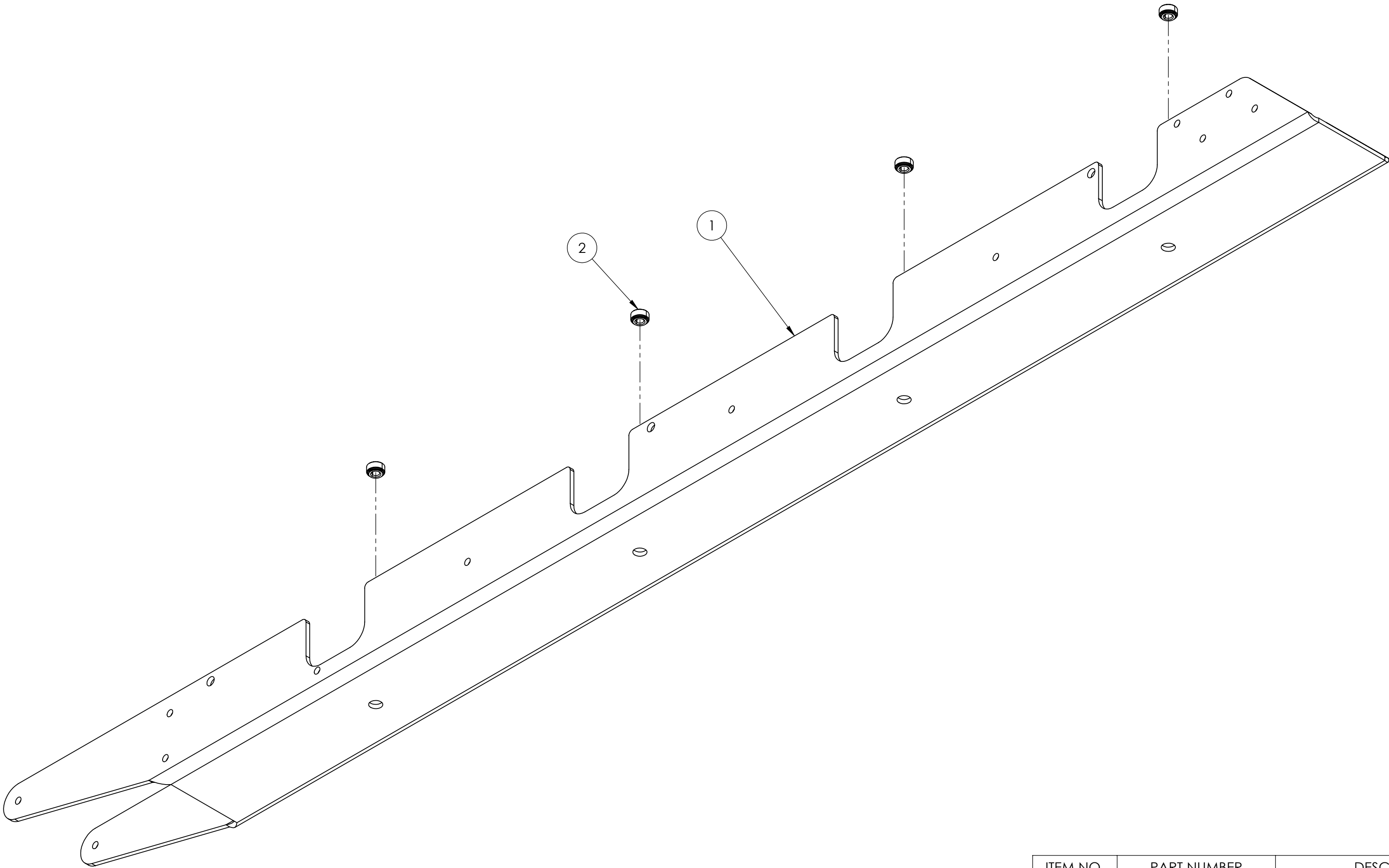


TITLE:
Speaker Side Sheetmetal

SIZE DWG. NO. REV

C GE-24311

SCALE: 1:3 SHEET 2 OF 2



Notes:
Insert PEM hardware as shown

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24311-07	Speaker Bottom Channel	1
2	pem_clinchnut_.25_20 -.054	1/4-20 self-clinching nut, .054 shank	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 $\pm .01$
THREE PLACE DECIMAL $\pm .005$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	8/30/2023

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.

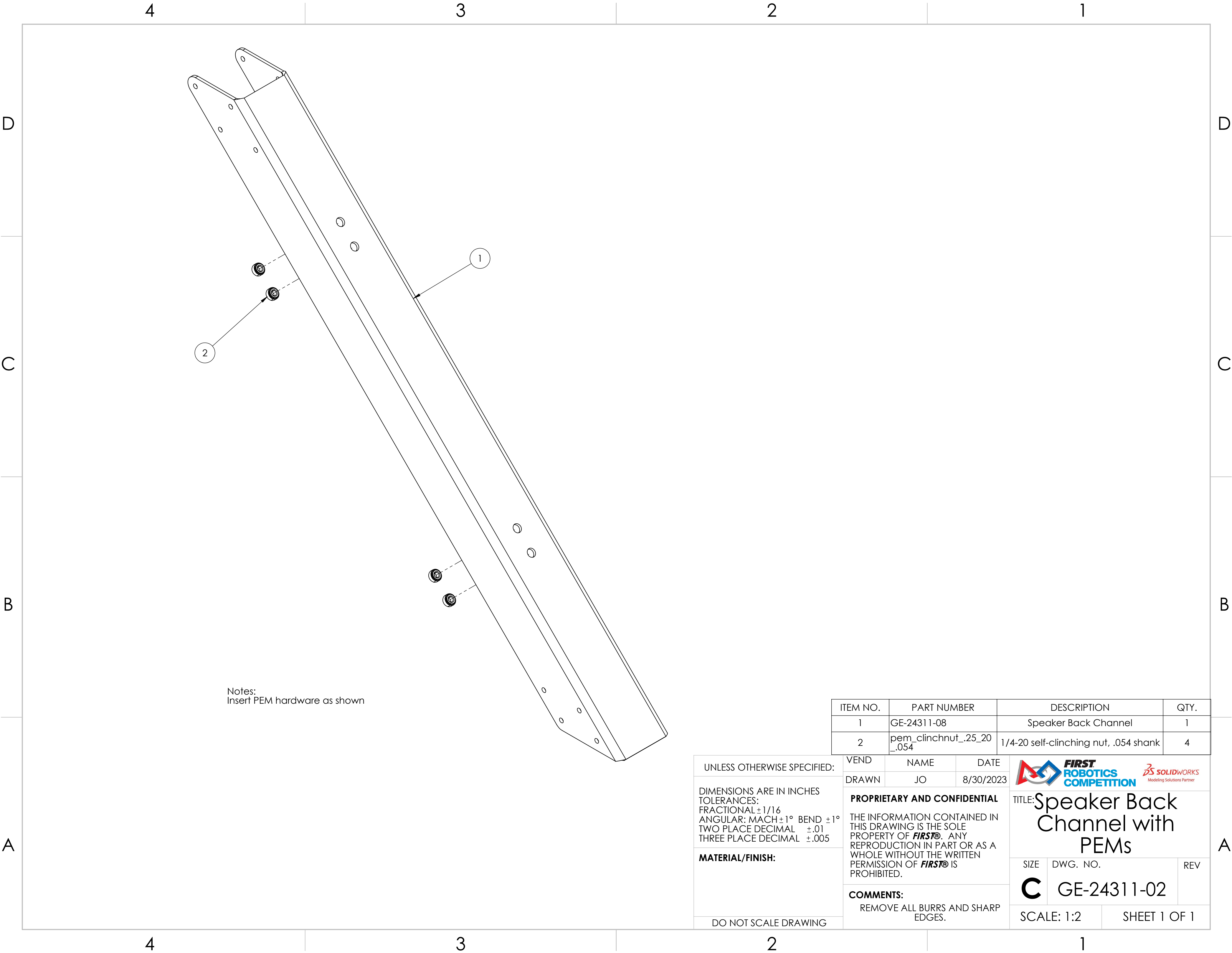
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE: **Speaker Bottom Channel with PEMs**



SIZE	DWG. NO.	REV
C	GE-24311-01	

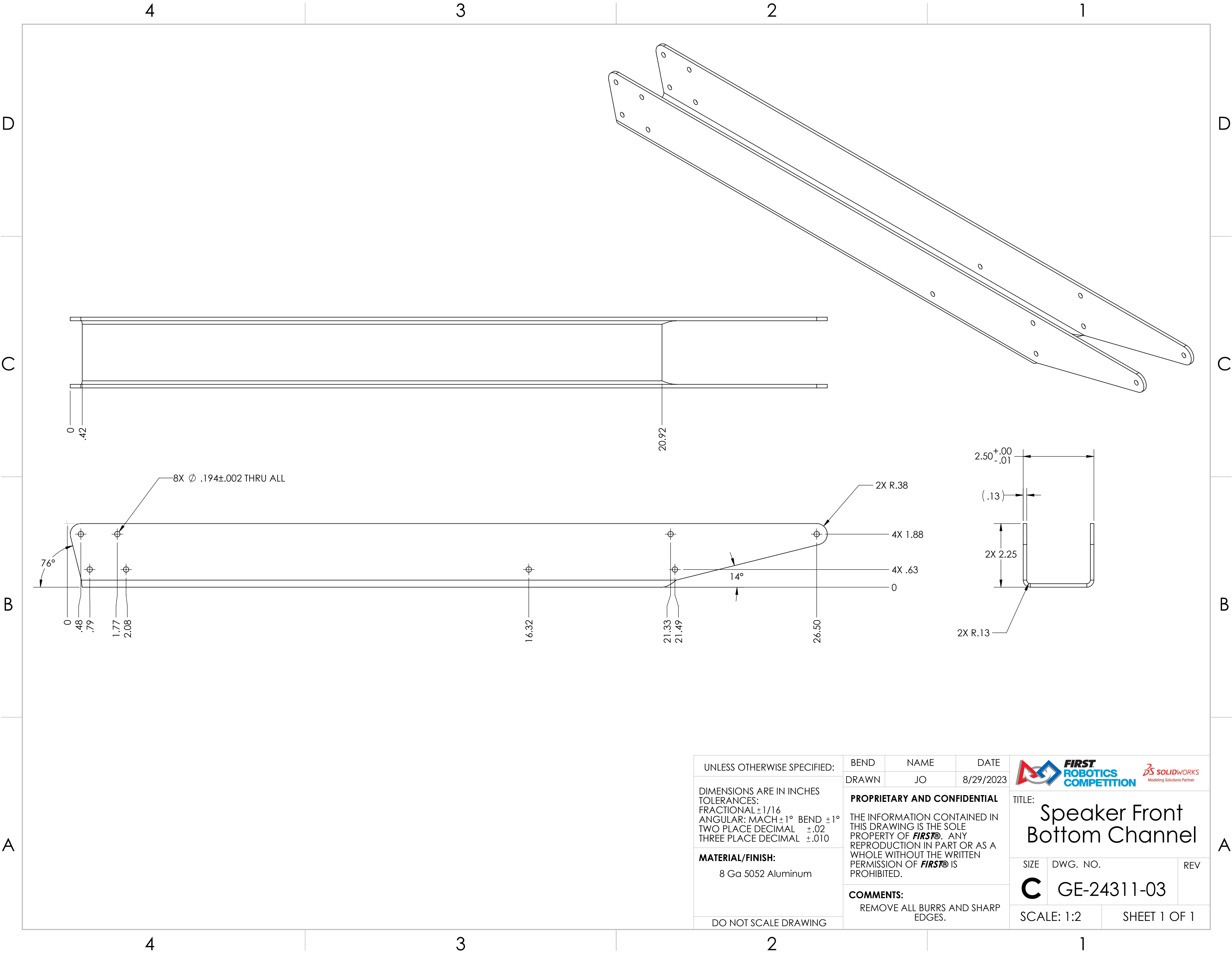
SCALE: 1:2 SHEET 1 OF 1



Notes:
Insert PEM hardware as shown

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24311-08	Speaker Back Channel	1
2	pem_clinchnut_.25_20 _.054	1/4-20 self-clinching nut, .054 shank	4

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: DO NOT SCALE DRAWING	VEND	NAME	DATE	<div><div></div><div>TITLE: Speaker Back Channel with PEMs</div><div><div>SIZE</div><div>DWG. NO.</div><div>REV</div></div><div><div>SCALE: 1:2</div><div>SHEET 1 OF 1</div></div></div>					
	DRAWN	JO	8/30/2023						
	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.								
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.								



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:
8 Ga 5052 Aluminum

DO NOT SCALE DRAWING

BEND	NAME	DATE
DRAWN	JO	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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

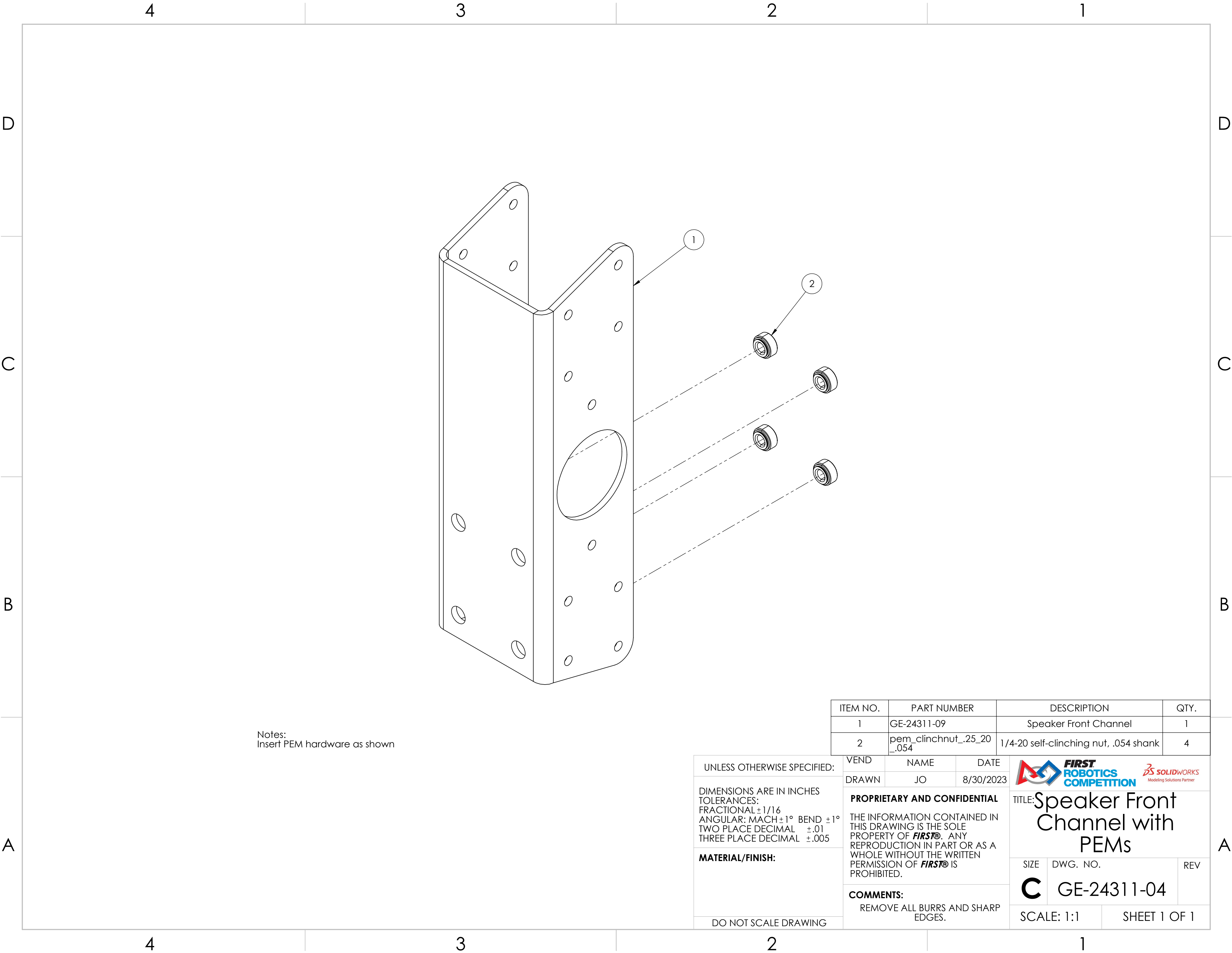


TITLE:
Speaker Front Bottom Channel

SIZE	DWG. NO.	REV
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C	GE-24311-03	
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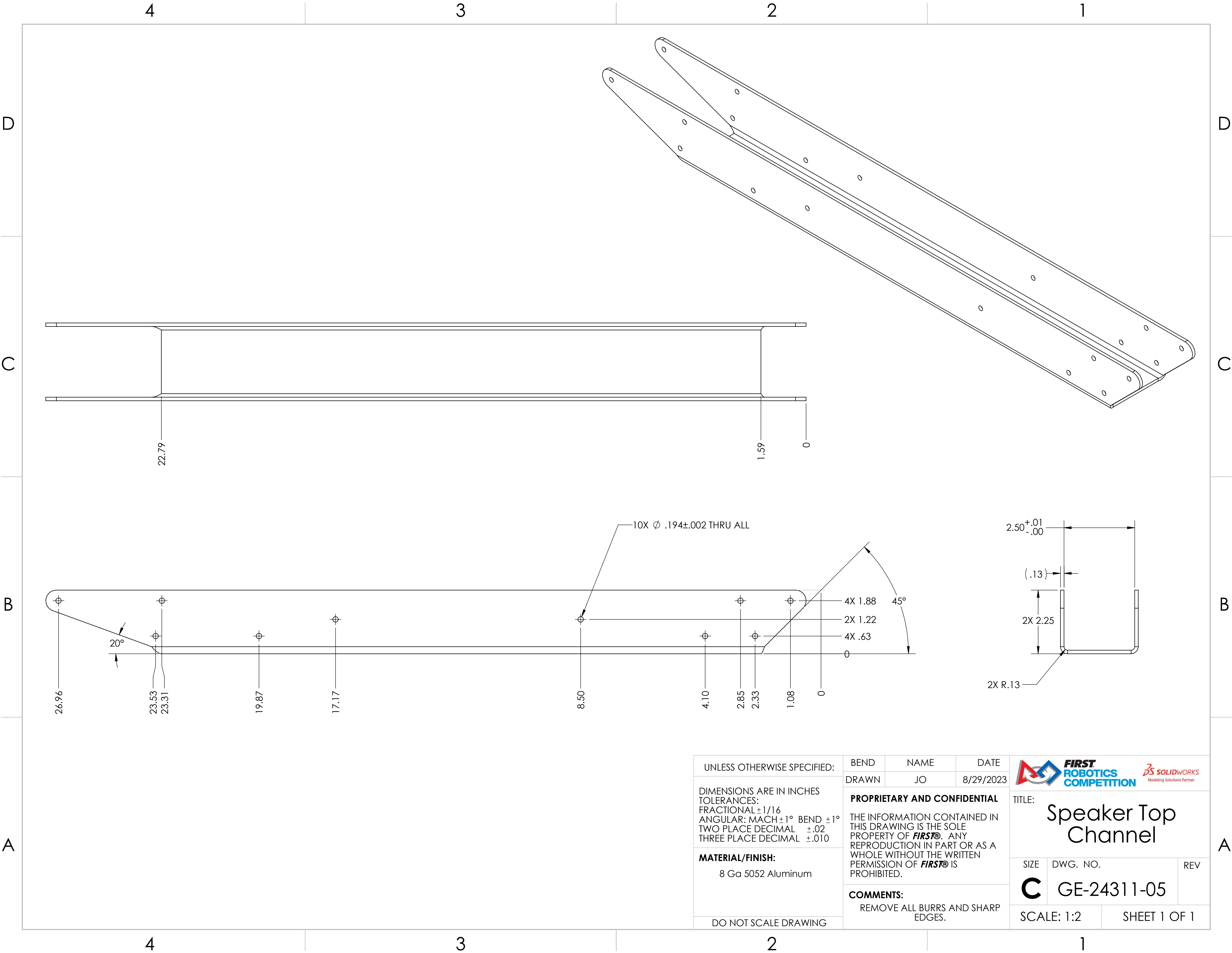
SCALE: 1:2	SHEET 1 OF 1
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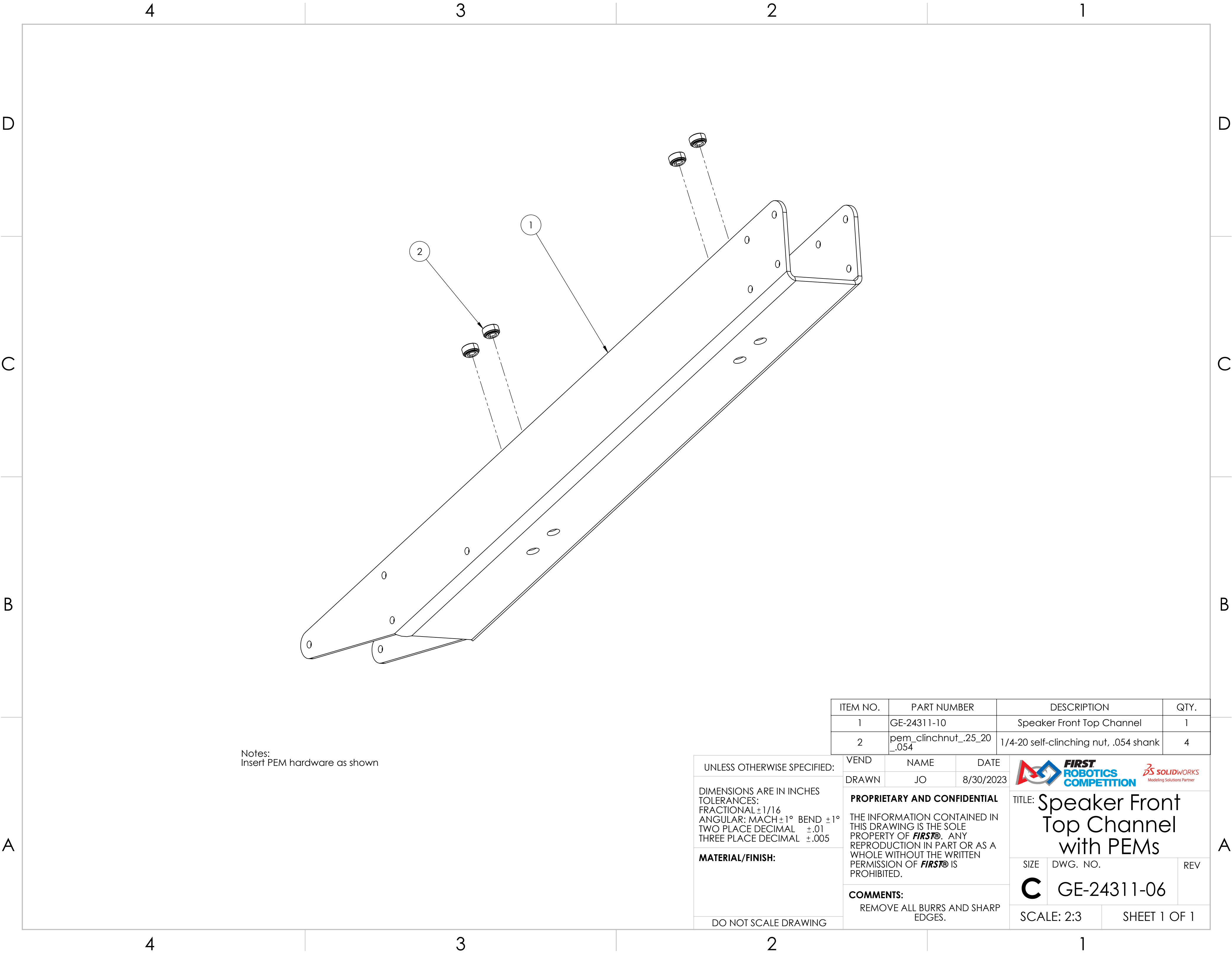
Notes:
Insert PEM hardware as shown

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24311-09	Speaker Front Channel	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	4

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div>	
	DRAWN	JO	8/30/2023		
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			TITLE: Speaker Front Channel with PEMs	
			SIZE	DWG. NO.	REV
			C	GE-24311-04	
			SCALE: 1:1		SHEET 1 OF 1





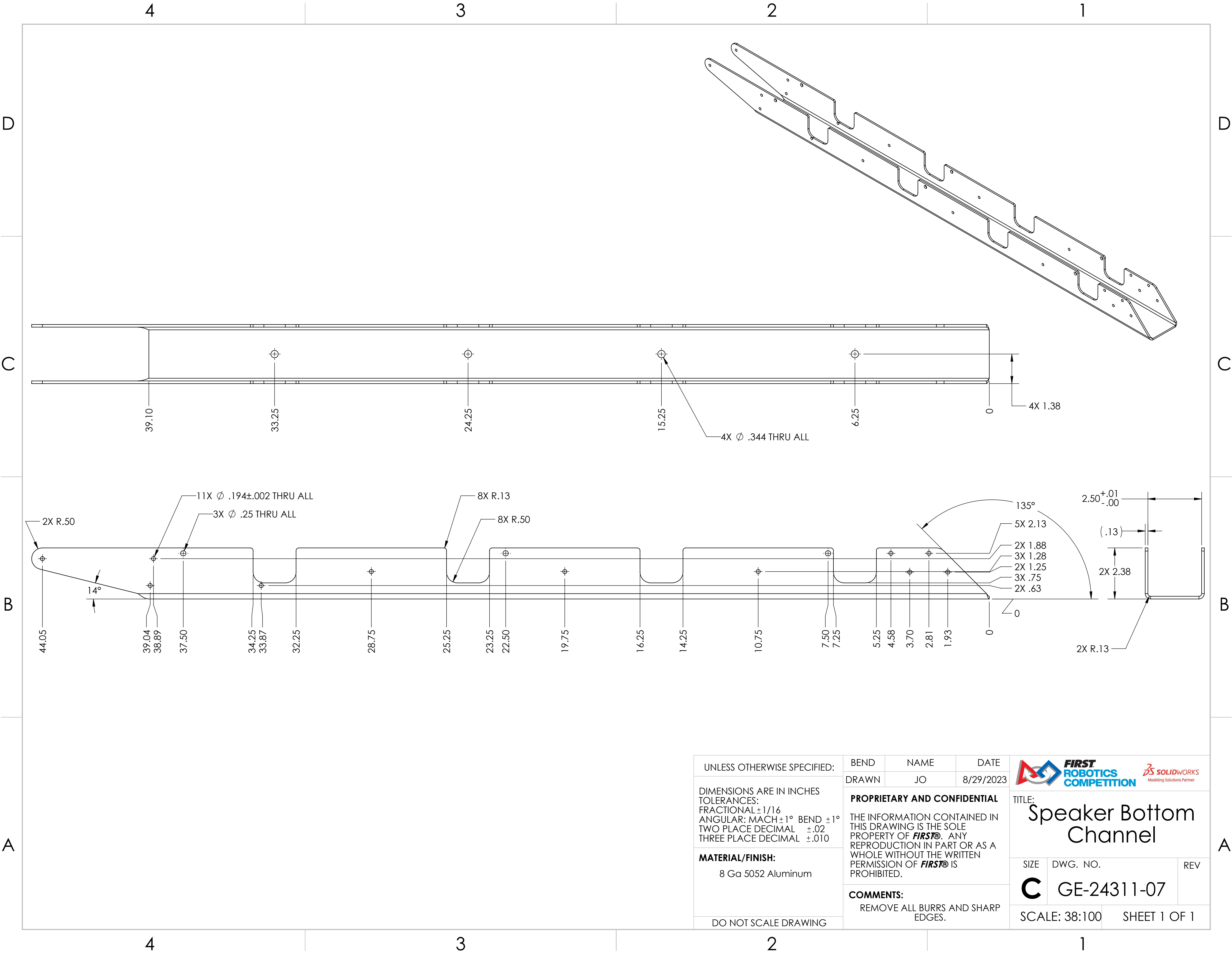
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Speaker Top Channel</div>		
	DRAWN	JO	8/29/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				SIZE	DWG. NO.
				C	GE-24311-05	
				SCALE: 1:2		SHEET 1 OF 1





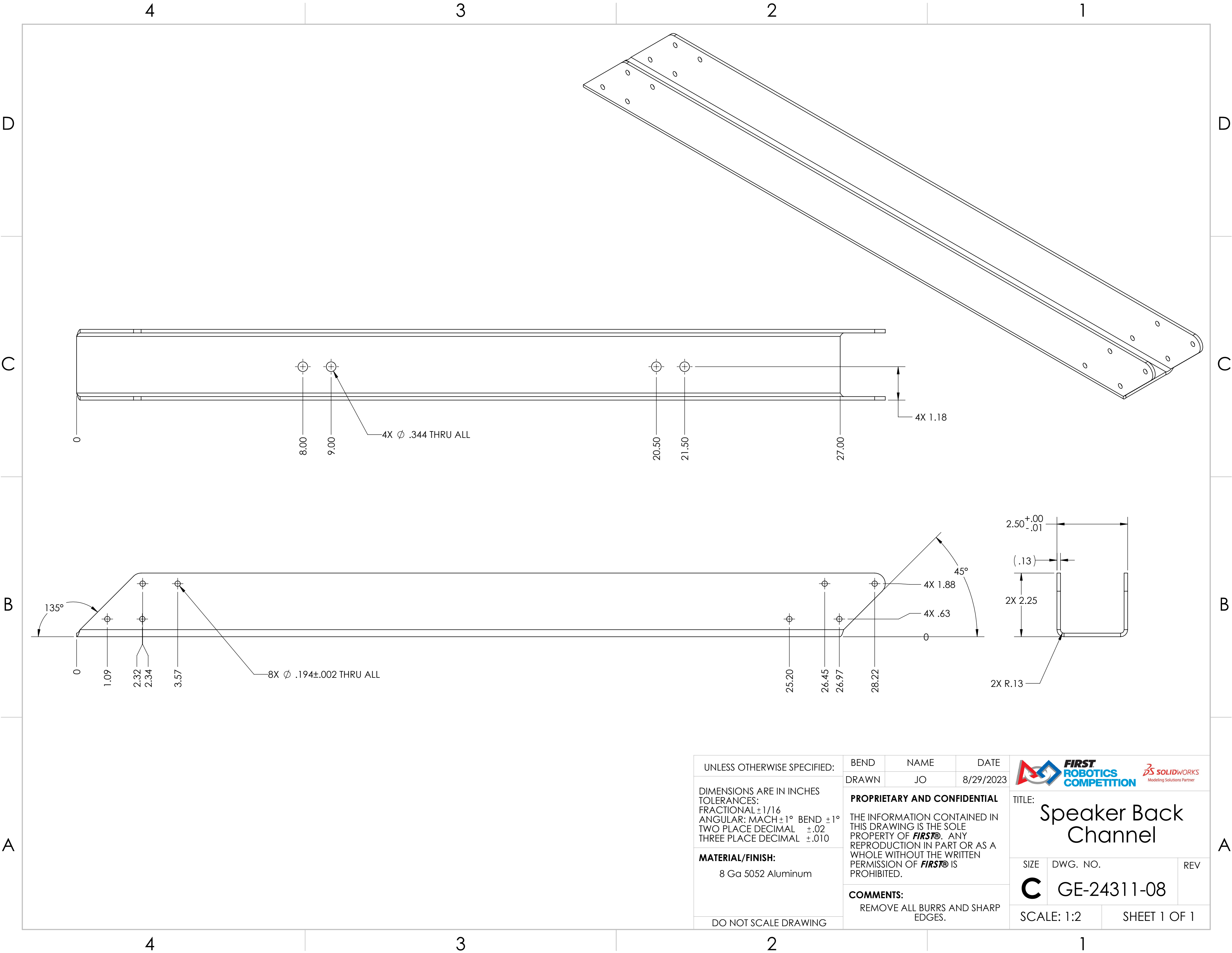
Notes:
Insert PEM hardware as shown



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24311-10	Speaker Front Top Channel	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	4

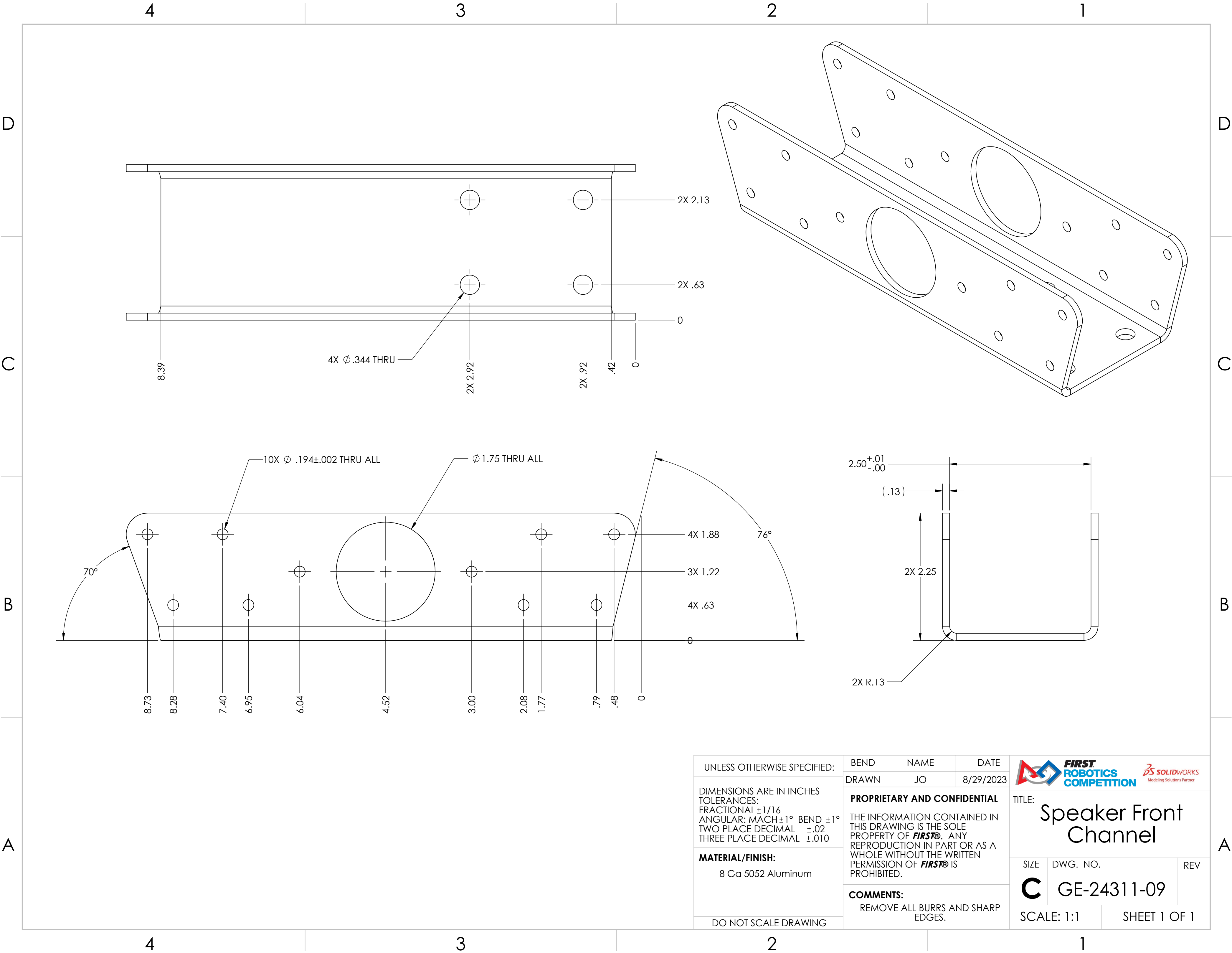
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Speaker Front Top Channel with PEMs</div>			
	DRAWN	JO	8/30/2023				
	PROPRIETARY AND CONFIDENTIAL				SIZE DWG. NO. REV		
	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.				C GE-24311-06			
				SCALE: 2:3		SHEET 1 OF 1	



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Speaker Bottom Channel</div> <div>SIZE: C DWG. NO. GE-24311-07 REV</div> <div>SCALE: 38:100 SHEET 1 OF 1</div>	
	DRAWN	JO	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.				
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				



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: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND DRAWN	NAME JO	DATE 8/29/2023	  TITLE: Speaker Back Channel	
	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.			SIZE C	DWG. NO. GE-24311-08
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			REV	SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ±1/16
ANGULAR: MACH ±1° BEND ±1°
TWO PLACE DECIMAL ±.02
THREE PLACE DECIMAL ±.010

MATERIAL/FINISH:
8 Ga 5052 Aluminum

DO NOT SCALE DRAWING

BEND

DRAWN

NAME

JO

DATE

8/29/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION



TITLE:

Speaker Front
Channel

SIZE

C

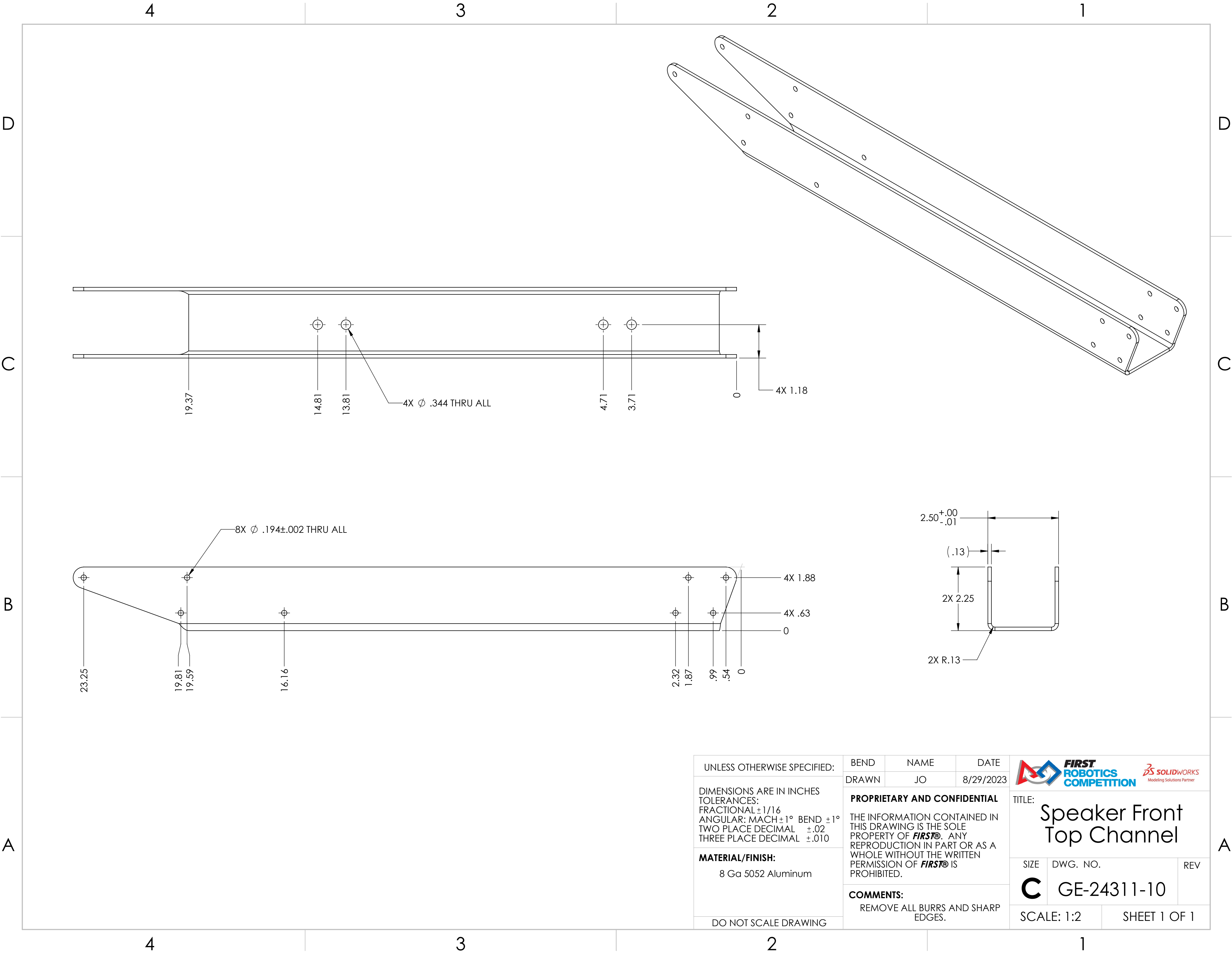
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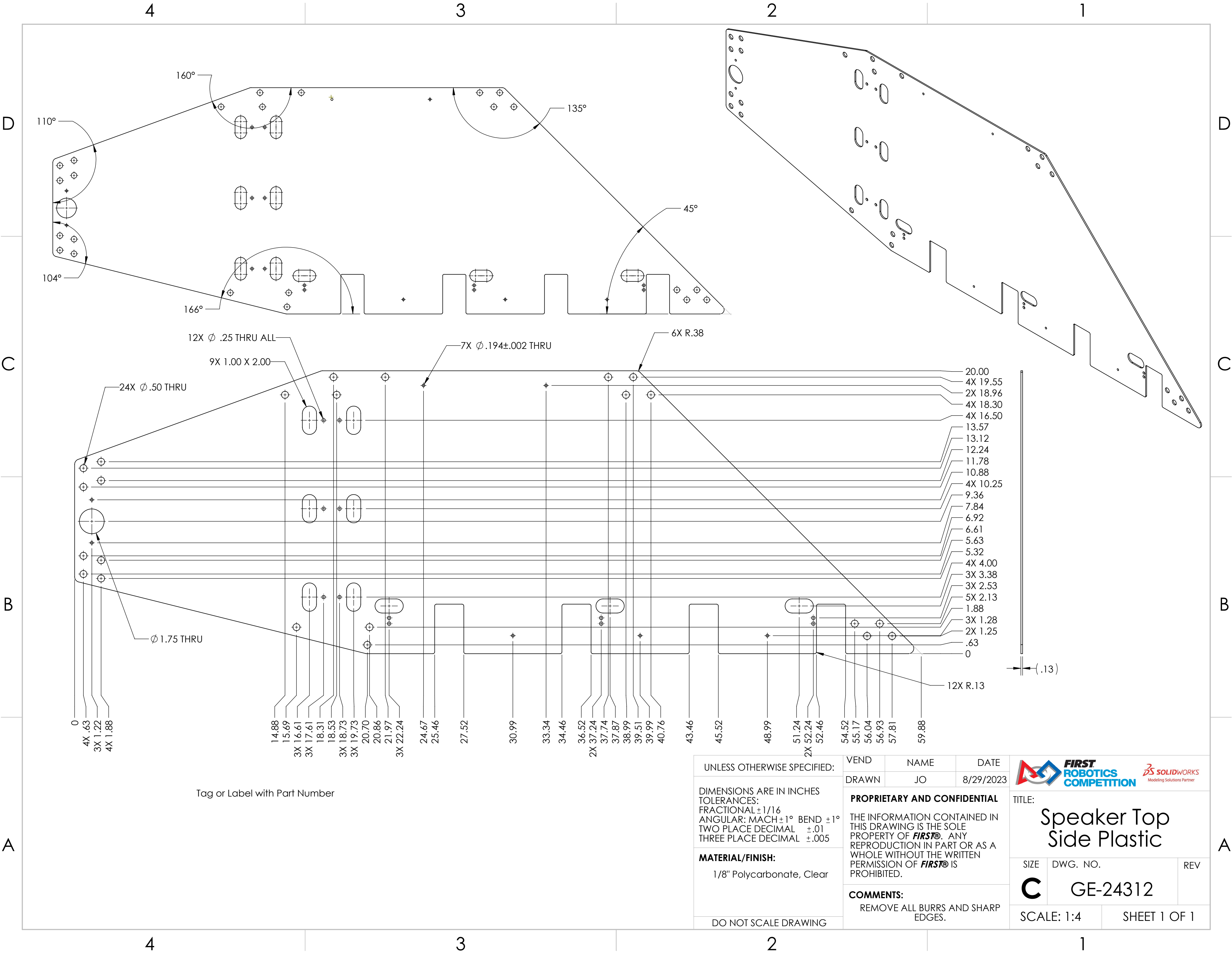
GE-24311-09

REV

SCALE: 1:1

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:
1/8" Polycarbonate, Clear

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	8/29/2023

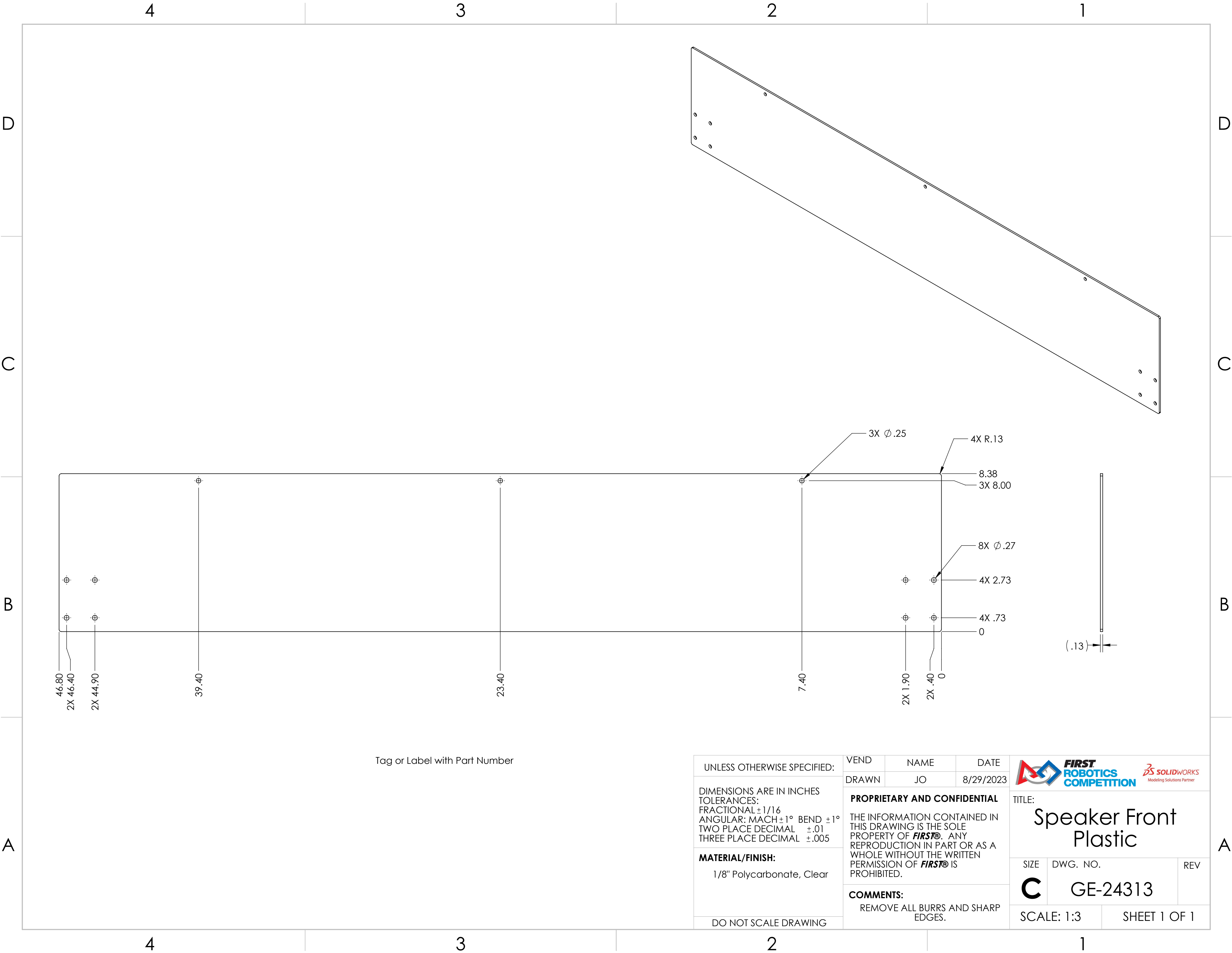
PROPRIETARY AND CONFIDENTIAL

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE: Speaker Top Side Plastic		
SIZE C	DWG. NO. GE-24312	REV
SCALE: 1:4		SHEET 1 OF 1



Tag or 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:
1/8" Polycarbonate, Clear

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

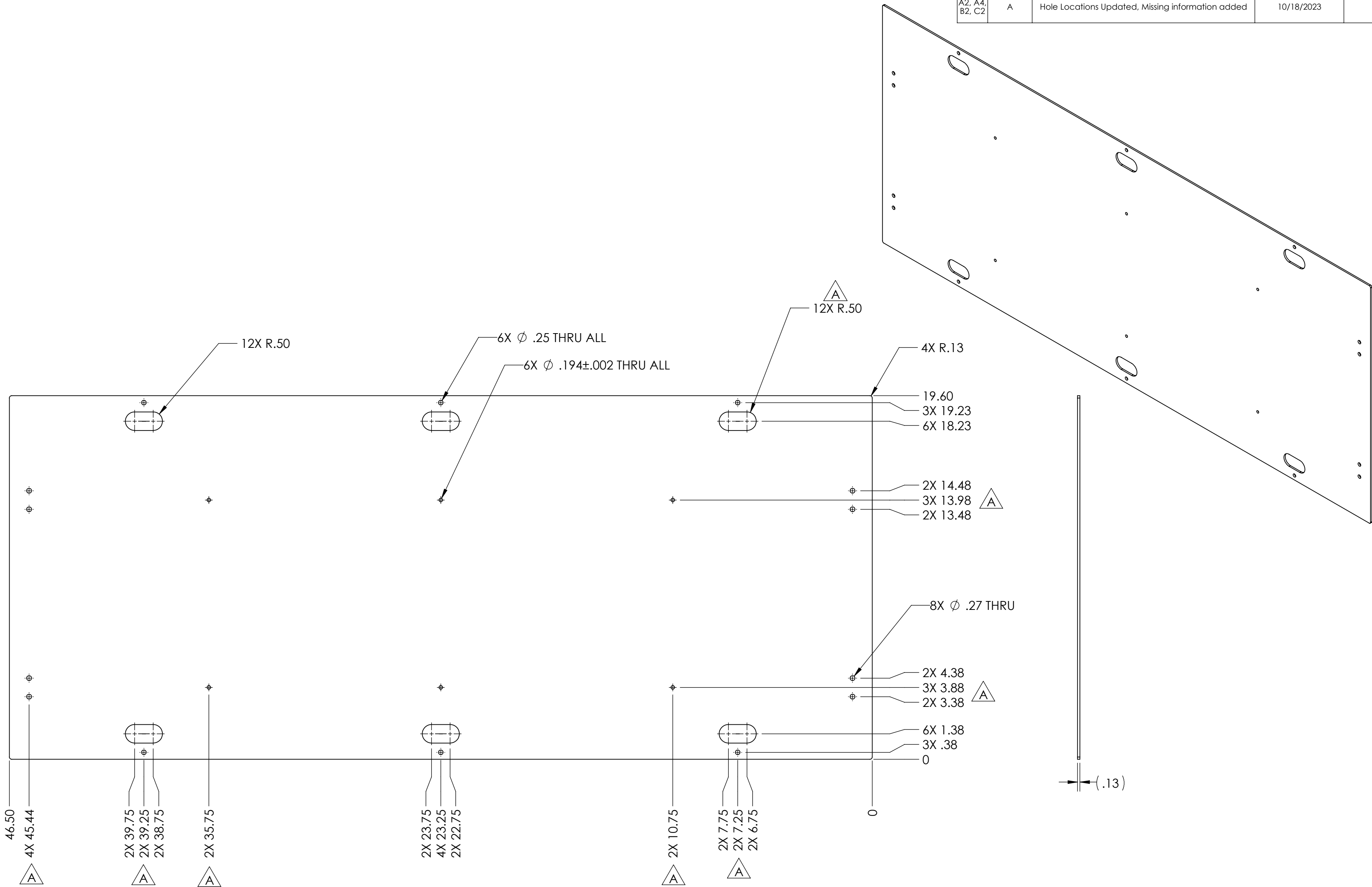


TITLE:
Speaker Front Plastic

SIZE	DWG. NO.	REV
C	GE-24313	

SCALE: 1:3 SHEET 1 OF 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, A4, B2, C2	A	Hole Locations Updated, Missing information added	10/18/2023	JO



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, White, Smooth Finish

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	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.

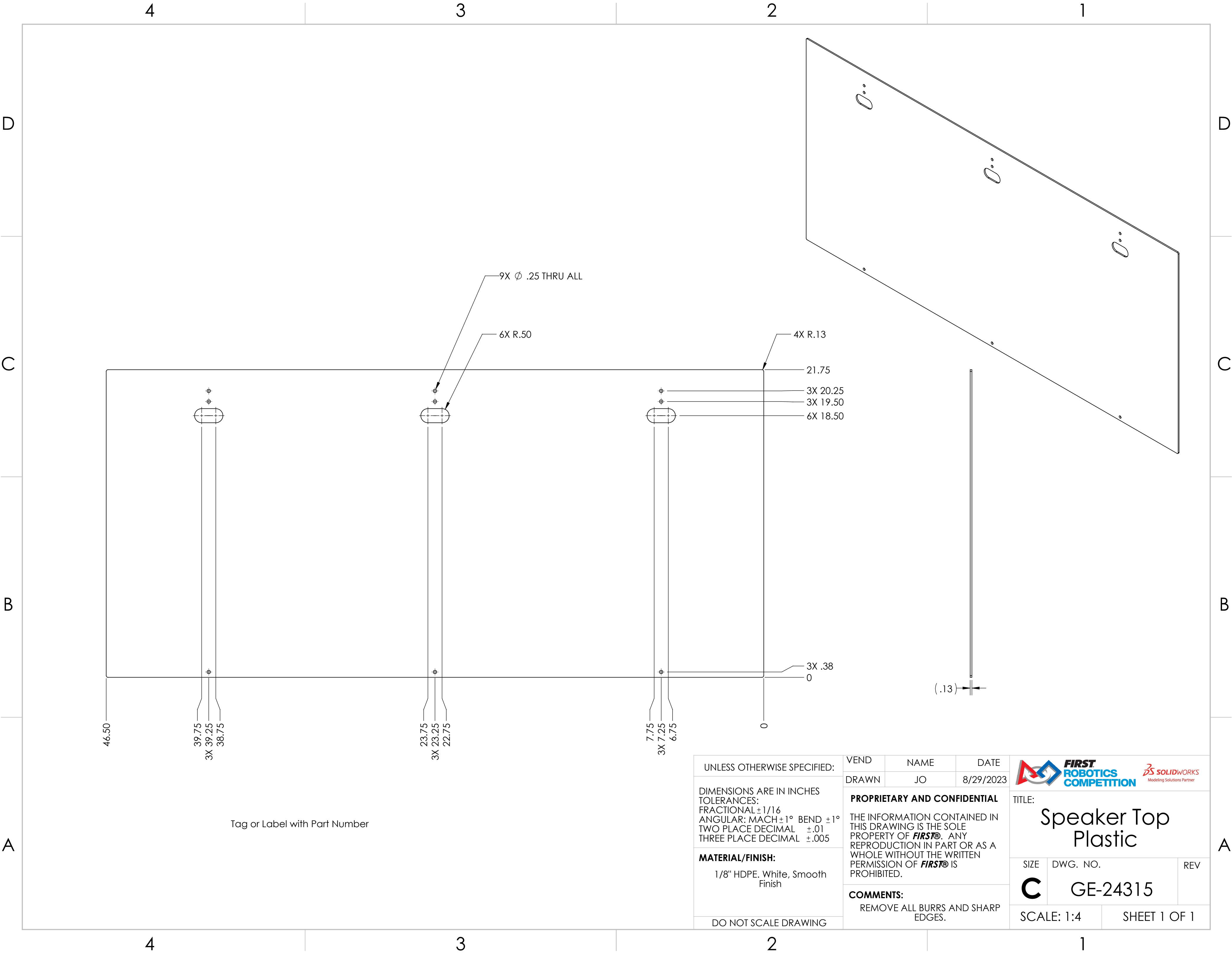
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Speaker Front Top Plastic

SIZE	DWG. NO.	REV
C	GE-24314	A

SCALE: 1:4 SHEET 1 OF 1



Tag or 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:
1/8" HDPE. White, Smooth Finish

DO NOT SCALE DRAWING

VEND

NAME

DATE

DRAWN

JO

8/29/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION



TITLE:

Speaker Top
Plastic

SIZE

DWG. NO.

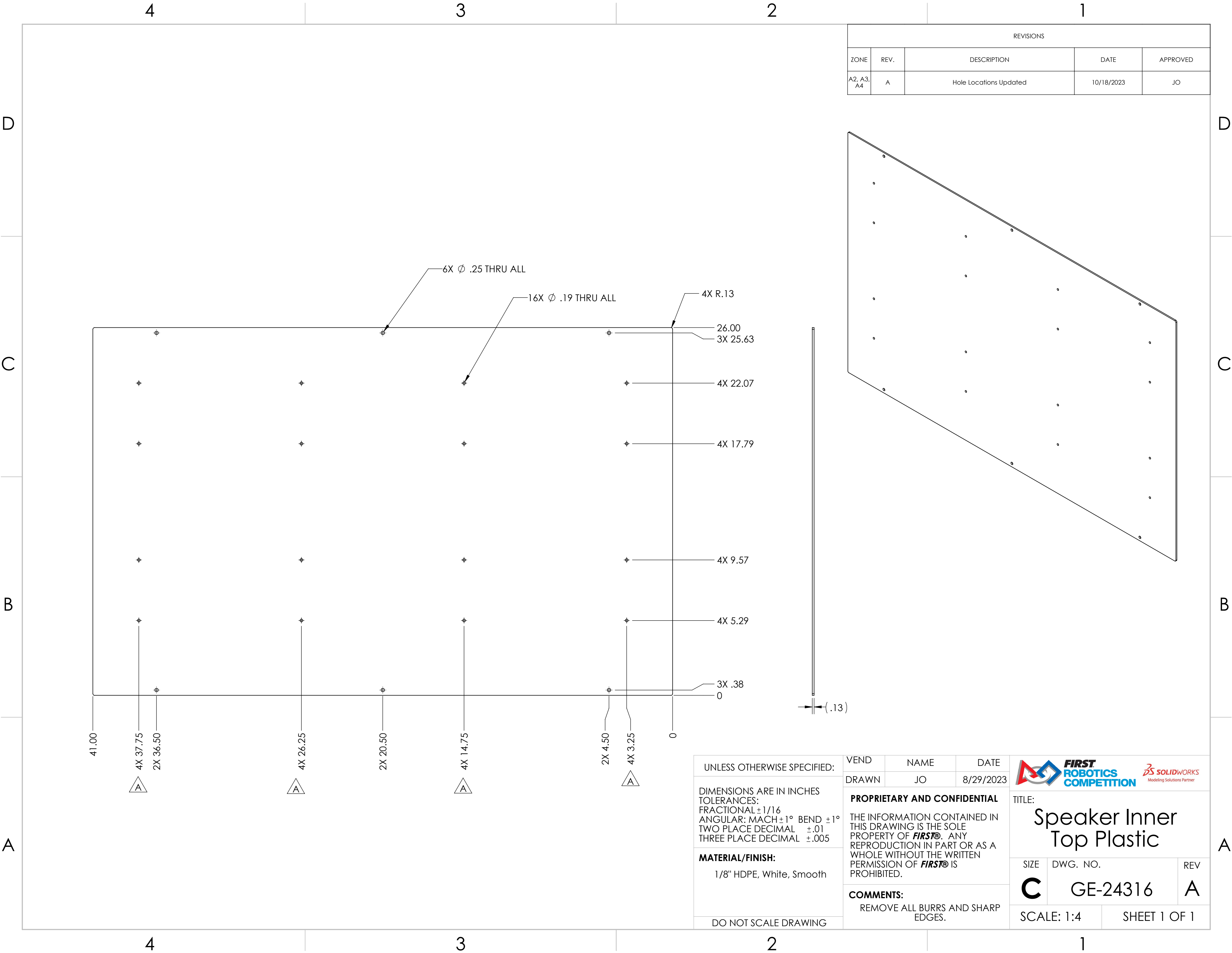
REV

C

GE-24315

SCALE: 1:4

SHEET 1 OF 1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, A3, A4	A	Hole Locations Updated	10/18/2023	JO

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, White, Smooth

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	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.

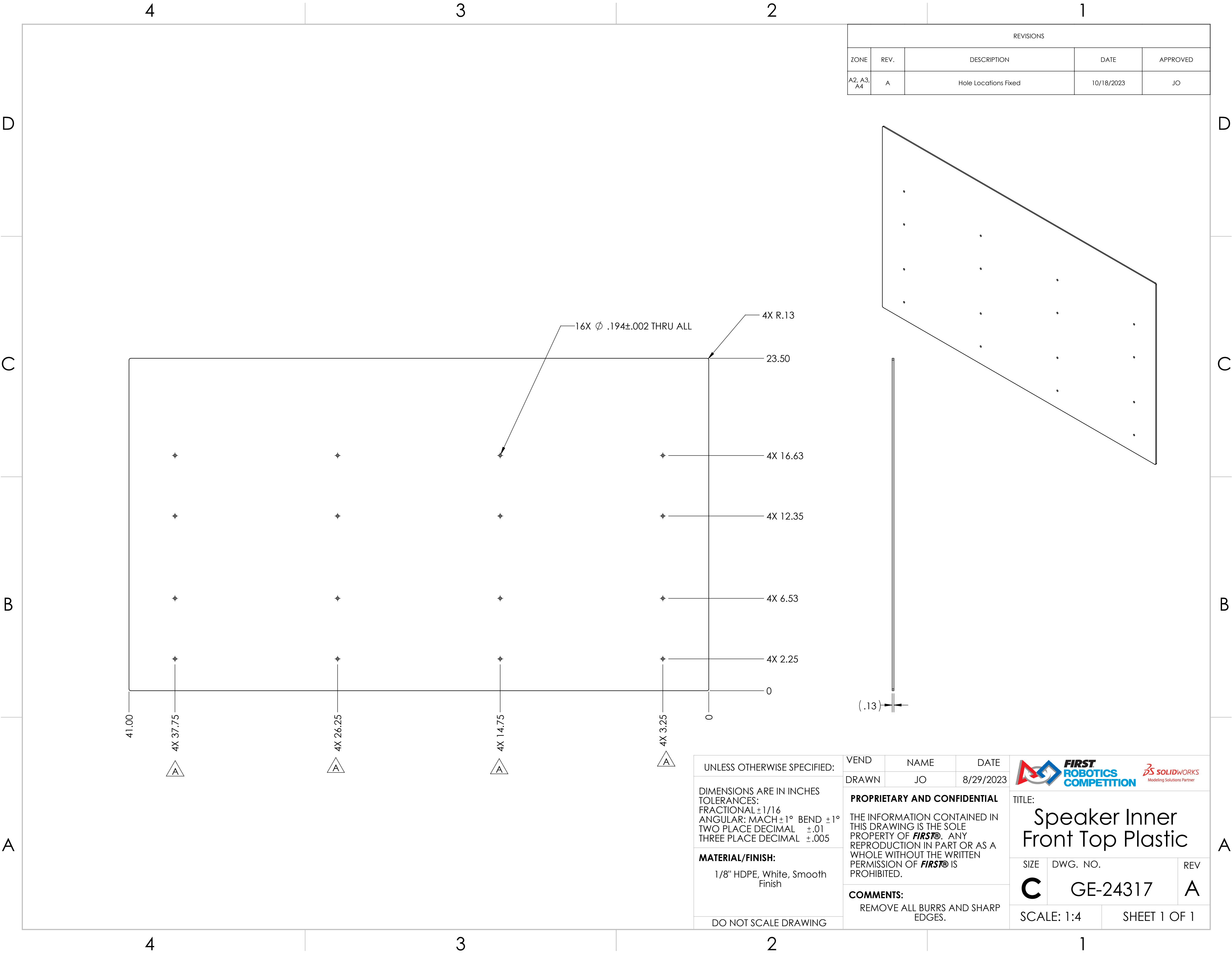
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.





TITLE:
Speaker Inner Top Plastic

SIZE	DWG. NO.	REV
C	GE-24316	A

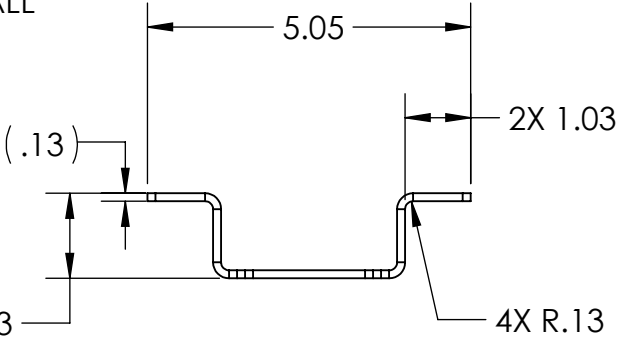
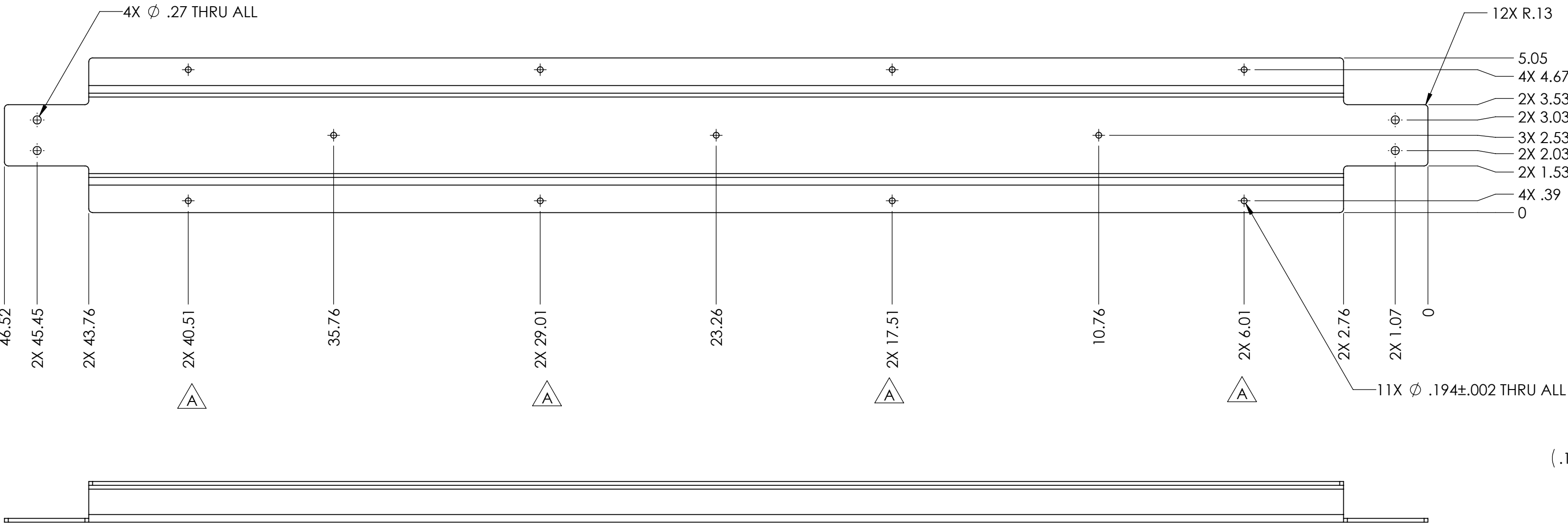
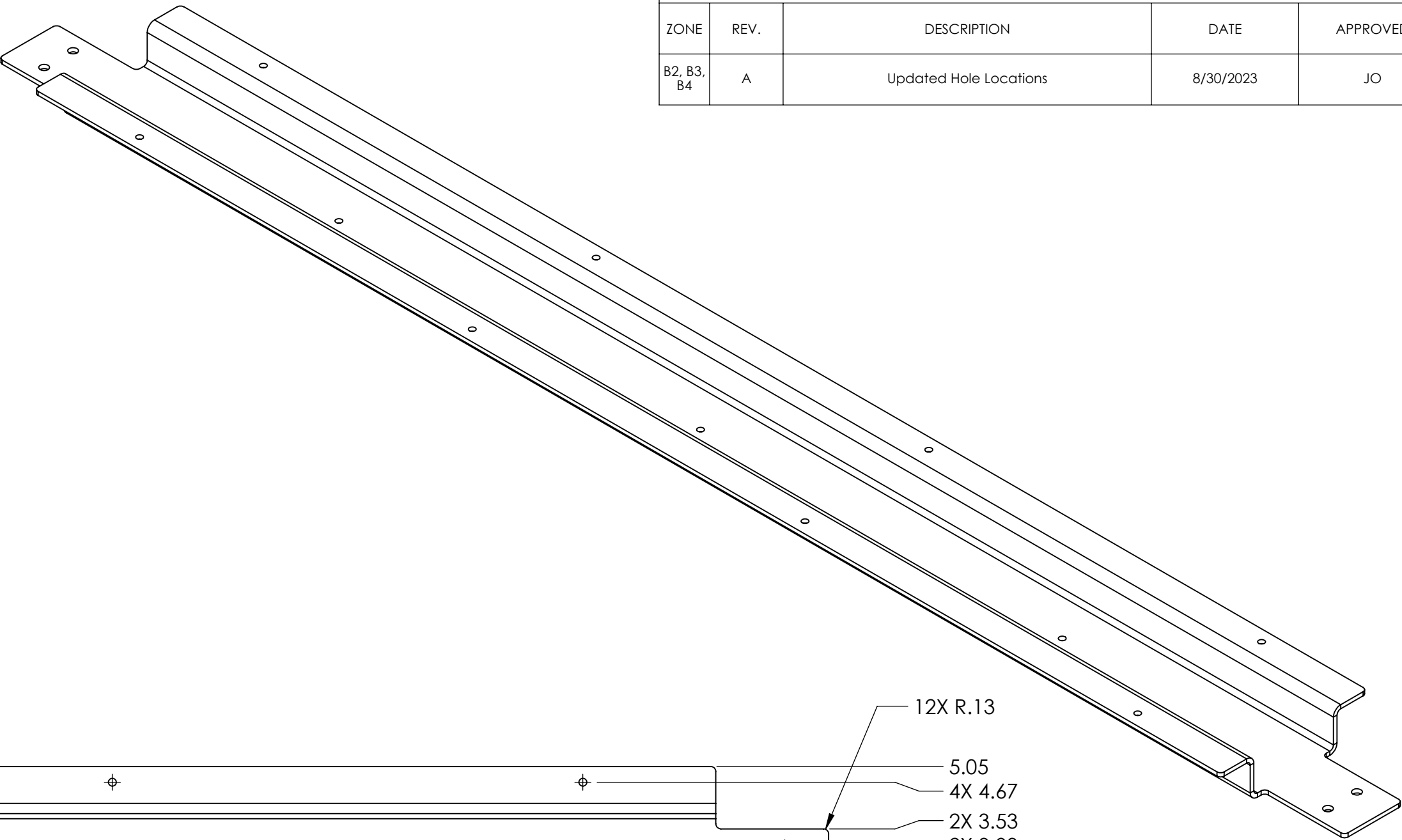
SCALE: 1:4 SHEET 1 OF 1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, A3, A4	A	Hole Locations Fixed	10/18/2023	JO

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>		
	DRAWN	JO	8/29/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Speaker Inner Front Top Plastic		
	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" HDPE, White, Smooth Finish	COMMENTS:			SIZE	DWG. NO.	REV
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24317	A
DO NOT SCALE DRAWING				SCALE: 1:4		SHEET 1 OF 1

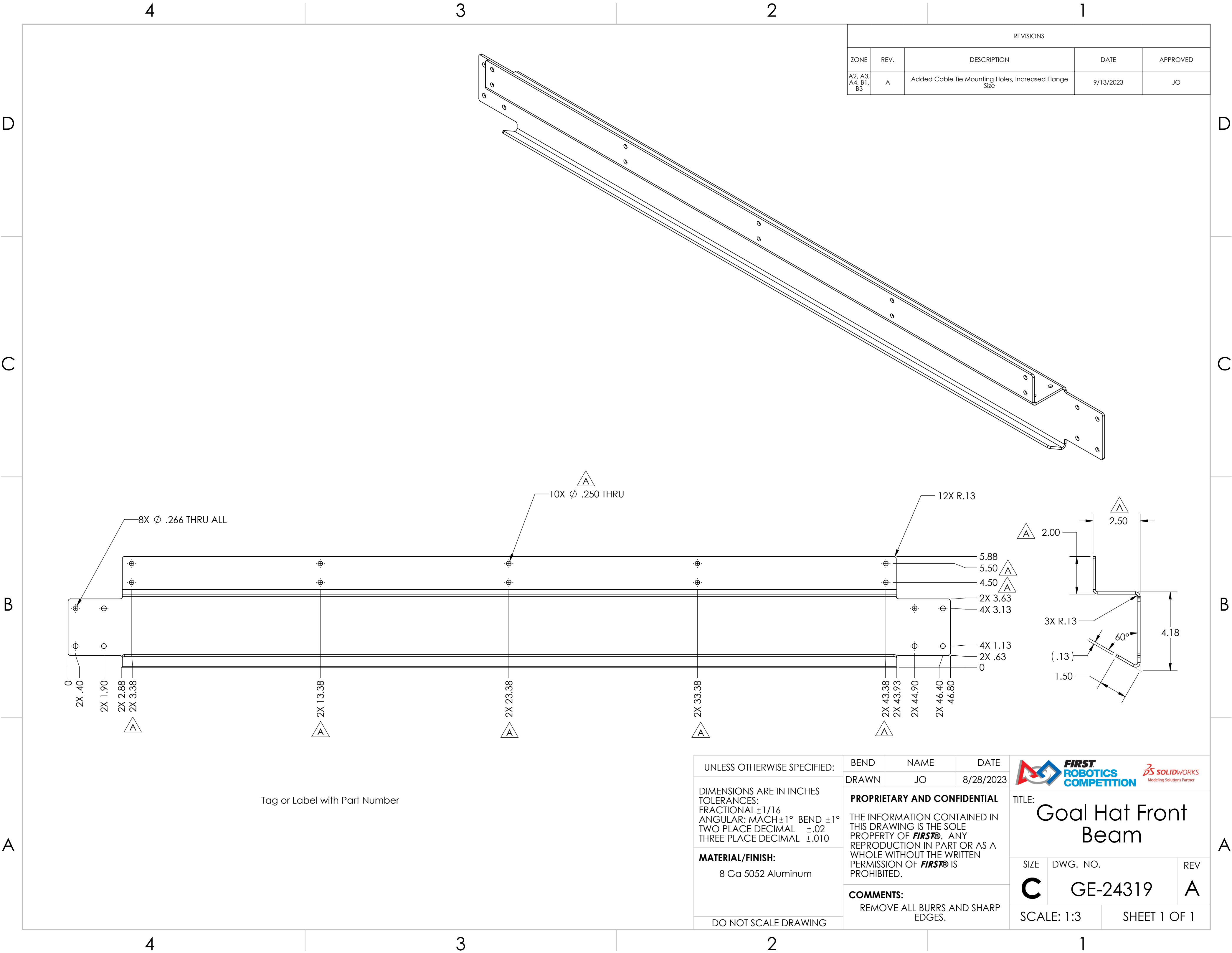
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2, B3, B4	A	Updated Hole Locations	8/30/2023	JO



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: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE
	DRAWN	JO	8/28/2023
	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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		





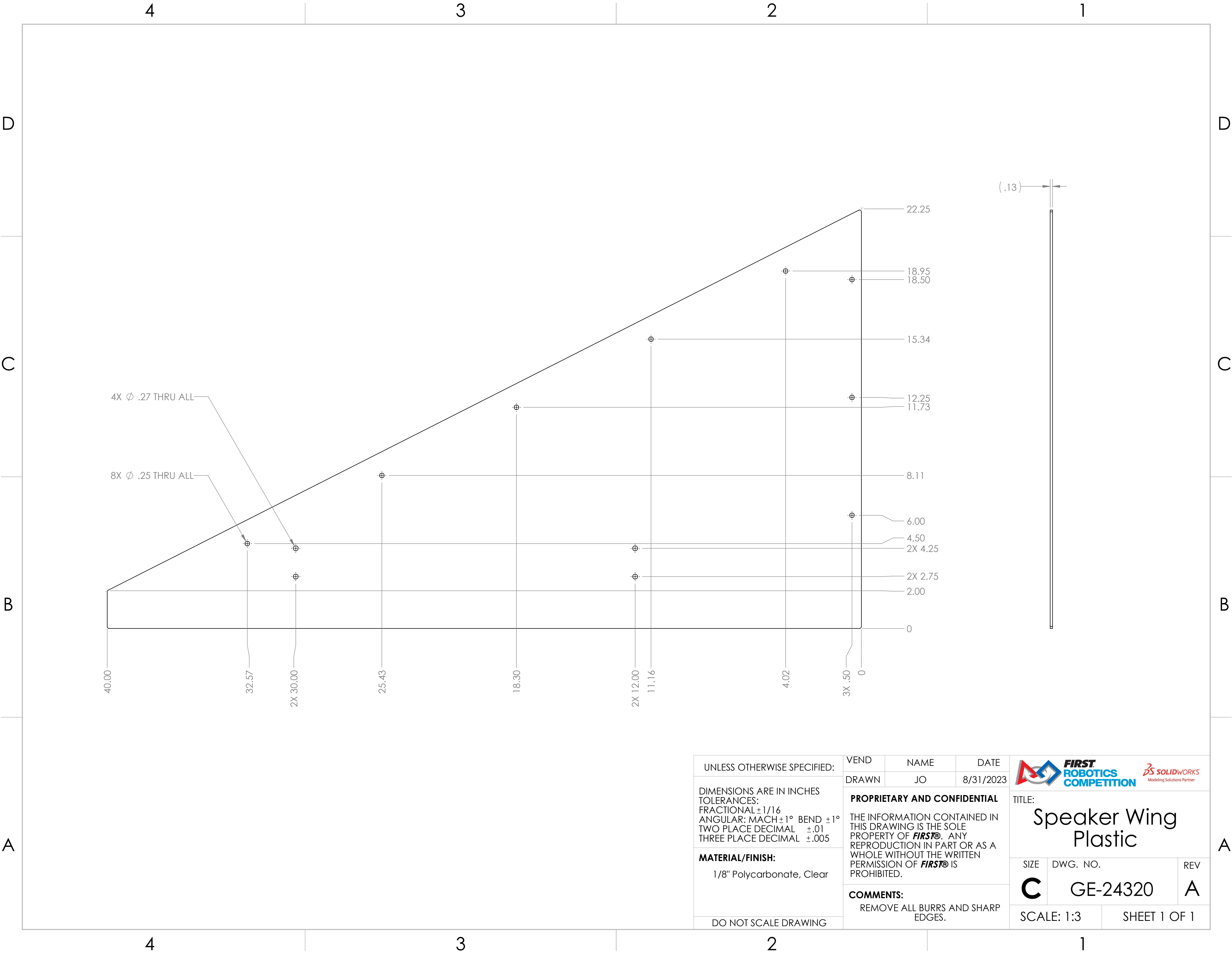
TITLE: <h1>Goal Hat Crossbeam</h1>		
SIZE C	DWG. NO. GE-24318	REV B
SCALE: 1:3		SHEET 1 OF 1





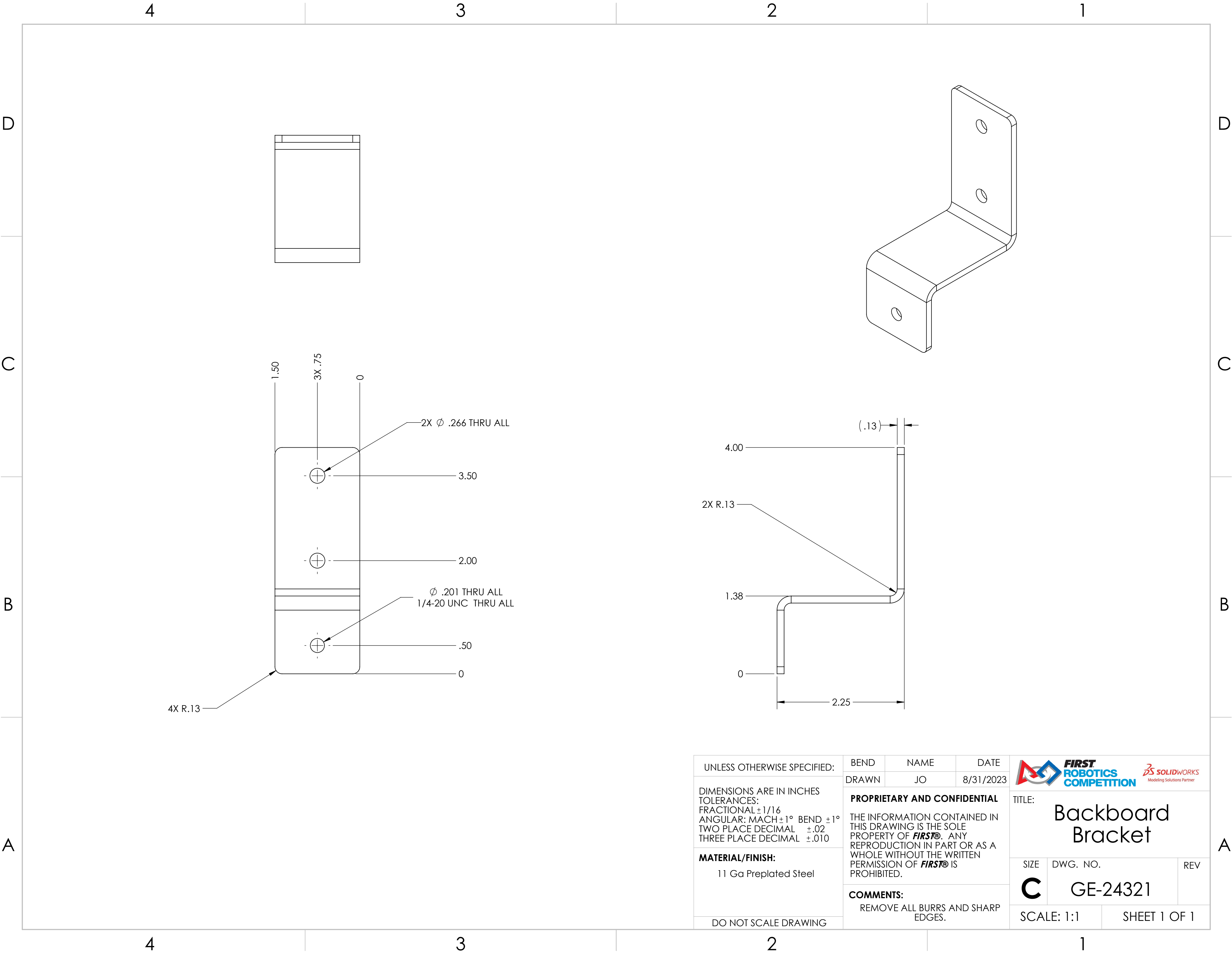
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, A3, A4, B1, B3	A	Added Cable Tie Mounting Holes, Increased Flange Size	9/13/2023	JO



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: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE
	DRAWN	JO	8/28/2023
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

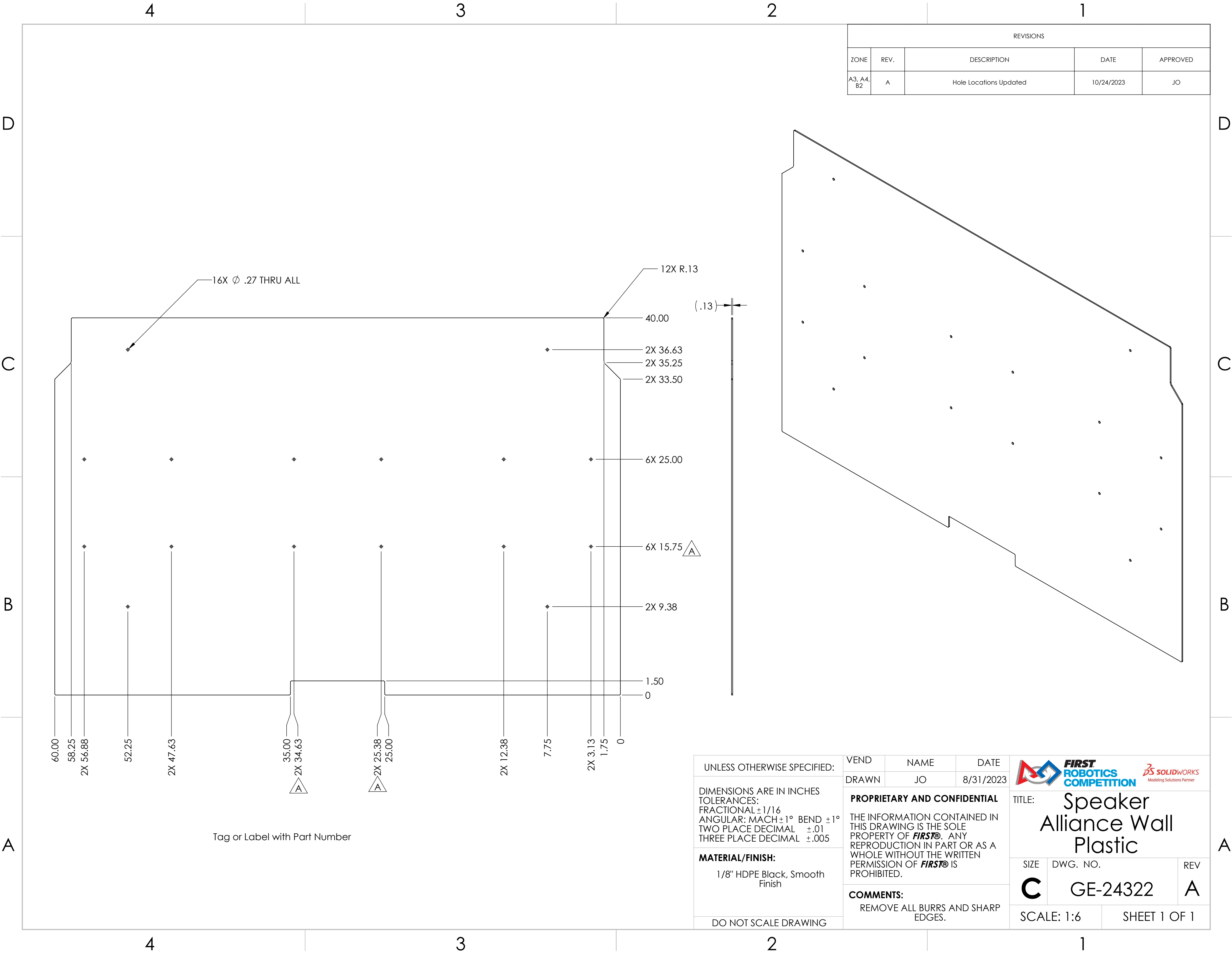
			
TITLE: Goal Hat Front Beam			
SIZE C	DWG. NO. GE-24319		REV A
SCALE: 1:3		SHEET 1 OF 1	



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: 1/8" Polycarbonate, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Speaker Wing Plastic</div>		
	DRAWN	JO	8/31/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24320	A
SCALE: 1:3		SHEET 1 OF 1				



UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div></div>		
	DRAWN	JO	8/31/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010	PROPRIETARY AND CONFIDENTIAL			TITLE: Backboard Bracket		
	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:			SIZE	DWG. NO.	REV
MATERIAL/FINISH:	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24321	
11 Ga Preplated Steel						
DO NOT SCALE DRAWING				SCALE: 1:1		SHEET 1 OF 1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A3, A4, B2	A	Hole Locations Updated	10/24/2023	JO

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 Black, Smooth Finish

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	8/31/2023

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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE: **Speaker Alliance Wall Plastic**

SIZE	DWG. NO.	REV
C	GE-24322	A

SCALE: 1:6	SHEET 1 OF 1
------------	--------------

4

3

2

1

D

D

C

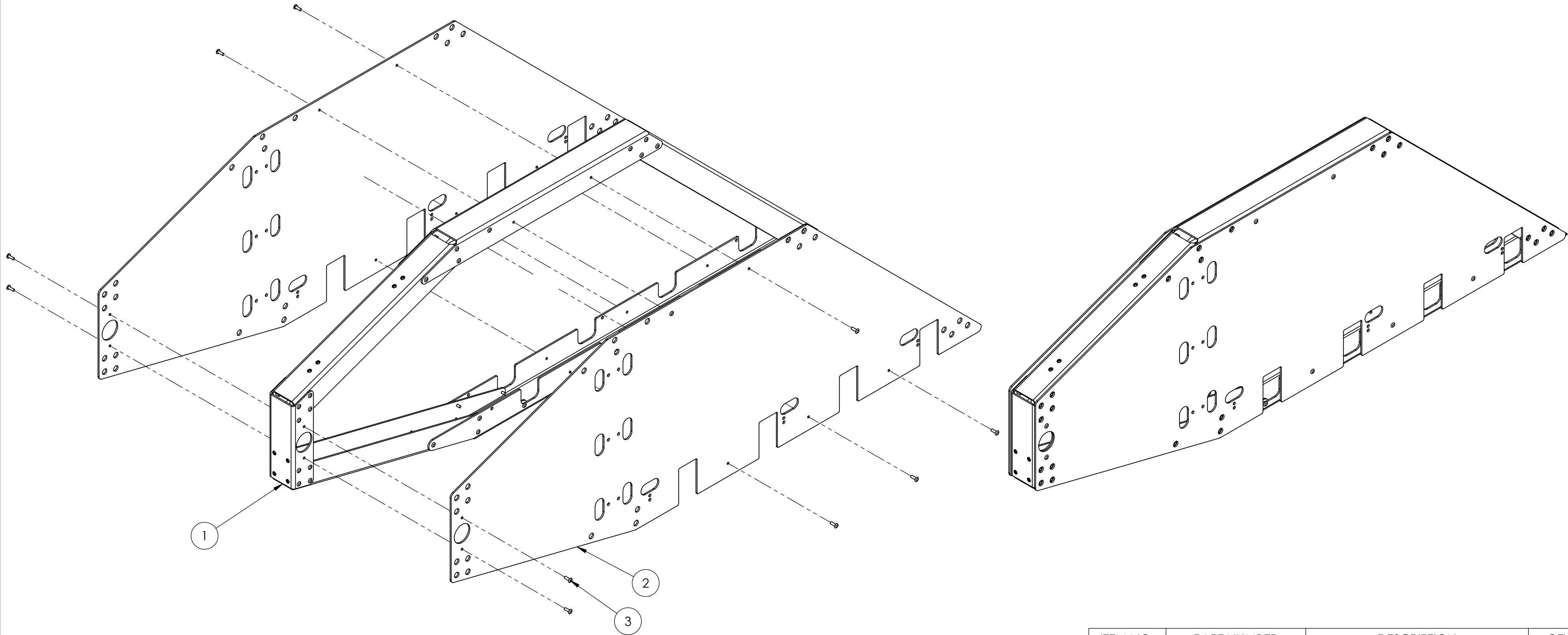
C

B

B



A

A

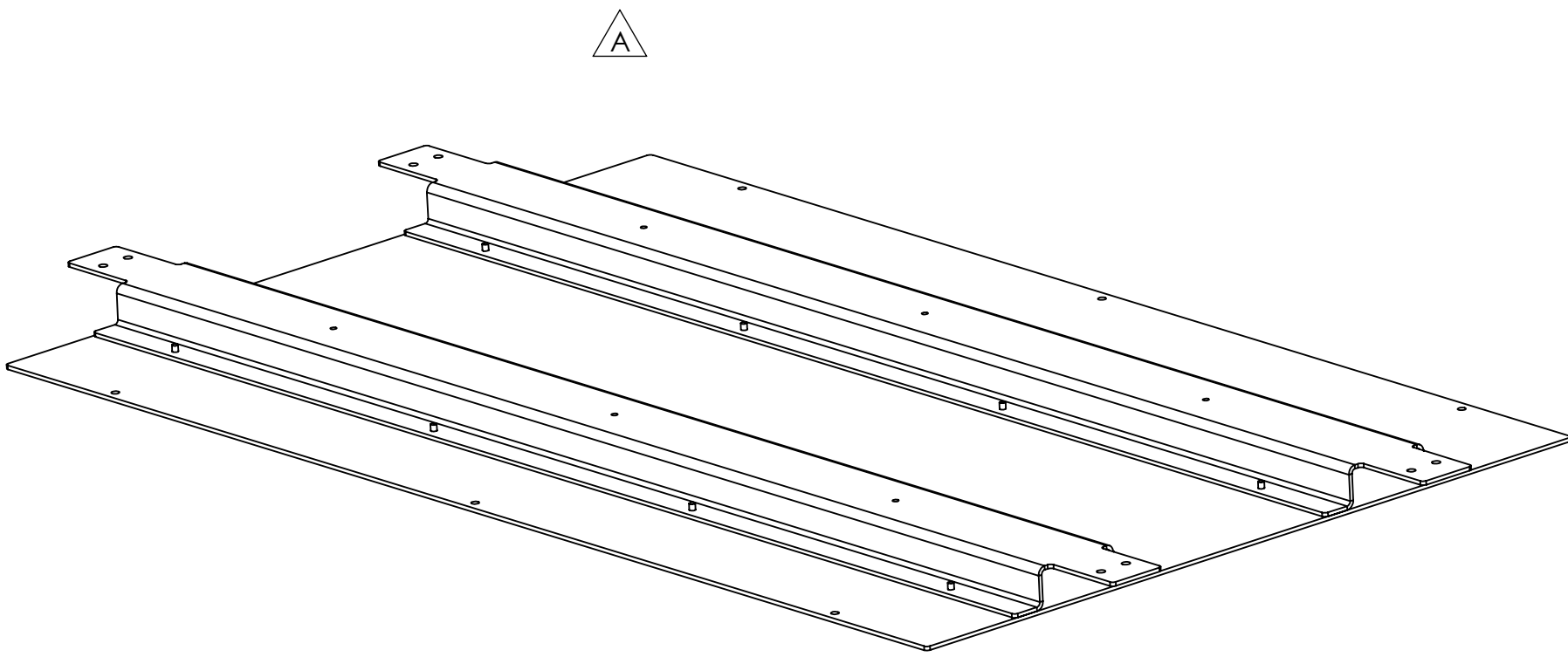
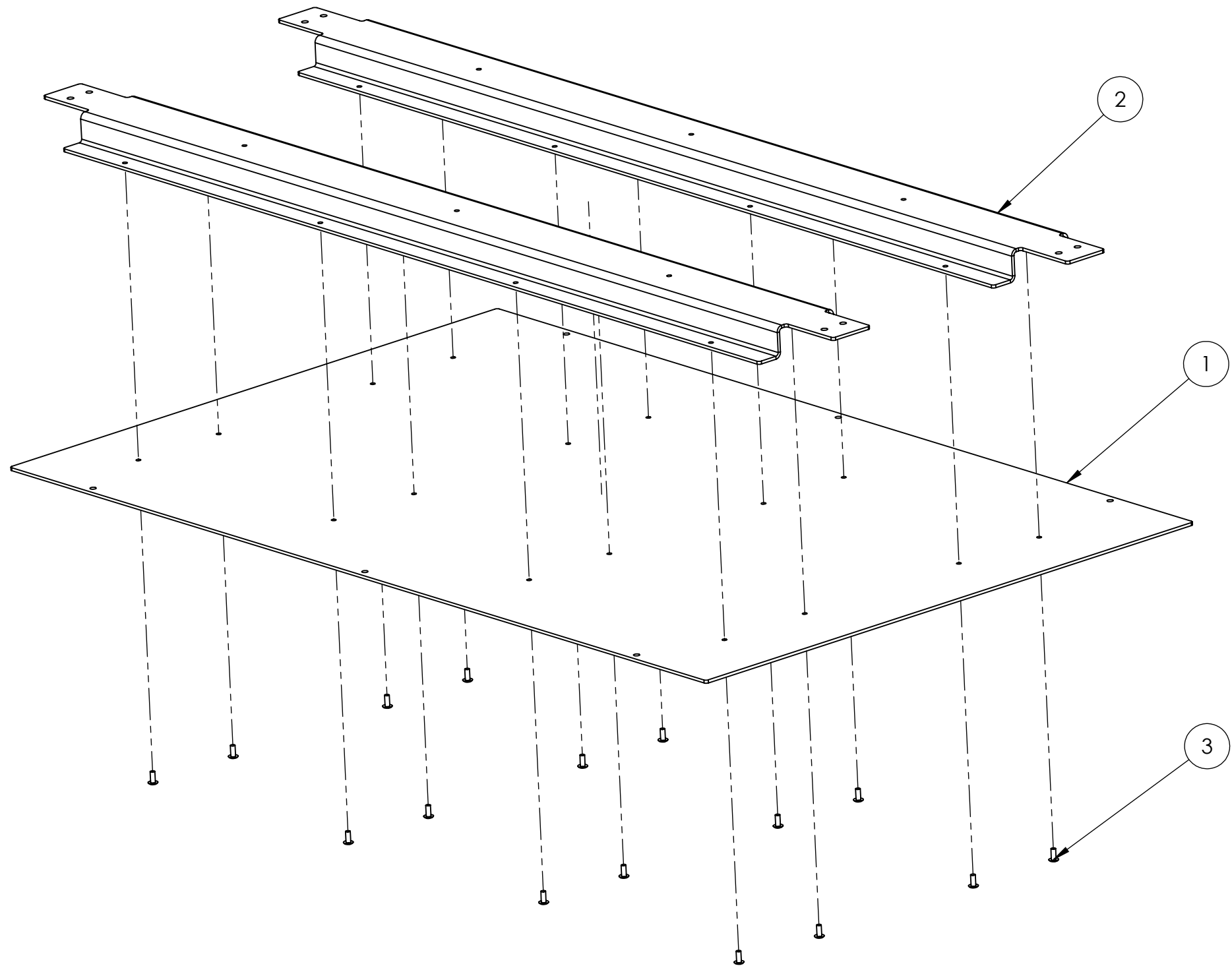


Notes:
Assemble 2 to 1 using 3
Tag or Label with Part Number

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24311	Speaker Side Sheetmetal	1
2	GE-24312	Speaker Top Side Plastic	2
3	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	14



UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	<div></div> <div>TITLE:</div> <div>Speaker Side Assembly</div>	
		DRAWN	JO	8/30/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005		PROPRIETARY AND CONFIDENTIAL			SIZE	
		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:			DWG. NO.	
		REMOVE ALL BURRS AND SHARP EDGES.			REV	
DO NOT SCALE DRAWING					C	GE-24323
					SCALE: 1:6	
					SHEET 1 OF 1	

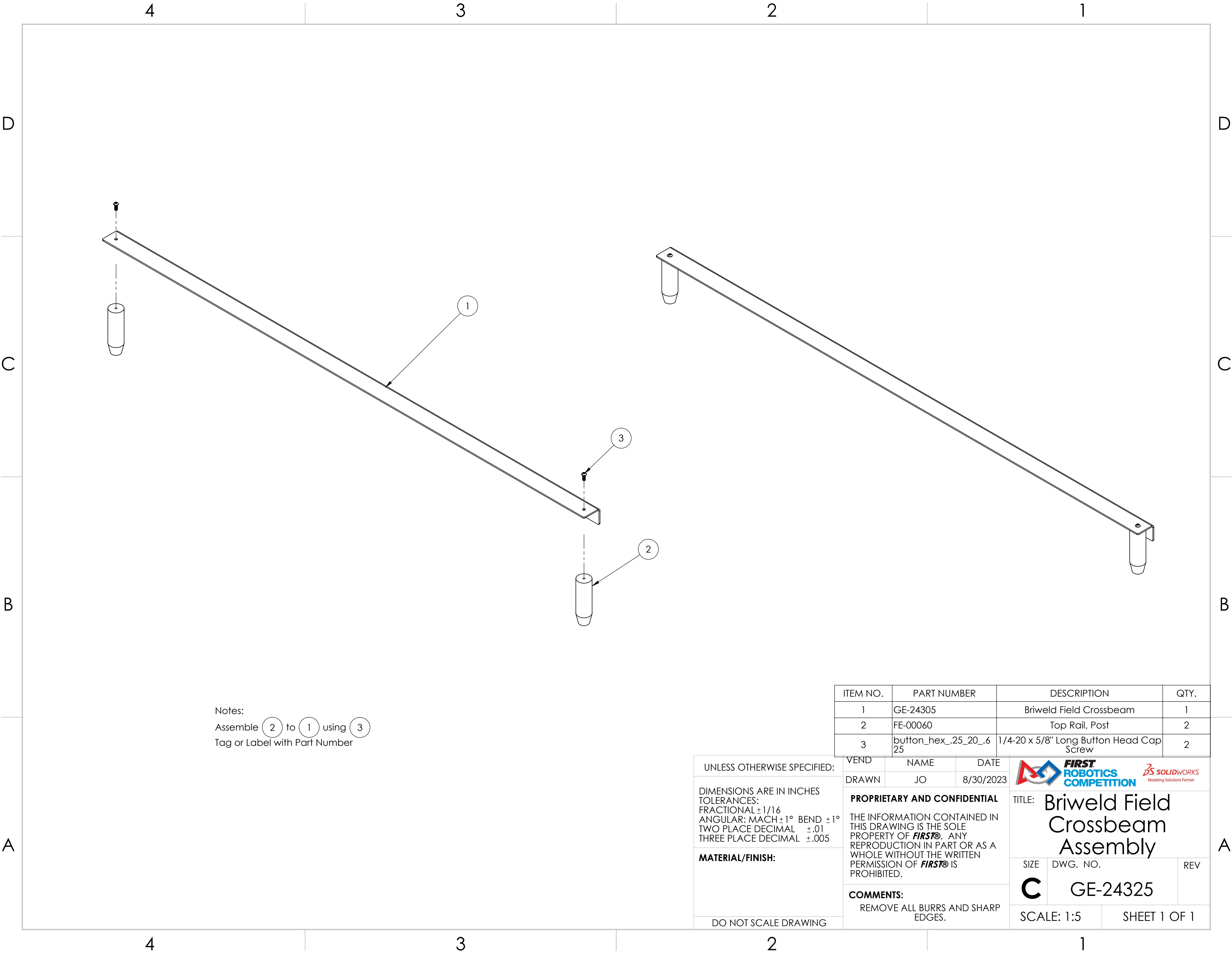
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2	A	All Parts updated to fix symmetry issues	10/18/2023	JO



Notes:
Assemble (2) to (1) using (3)
Tag or Label with Part Number



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24316	Speaker Inner Top Plastic	1
2	GE-24318	Goal Hat Crossbeam	2
3	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range	16

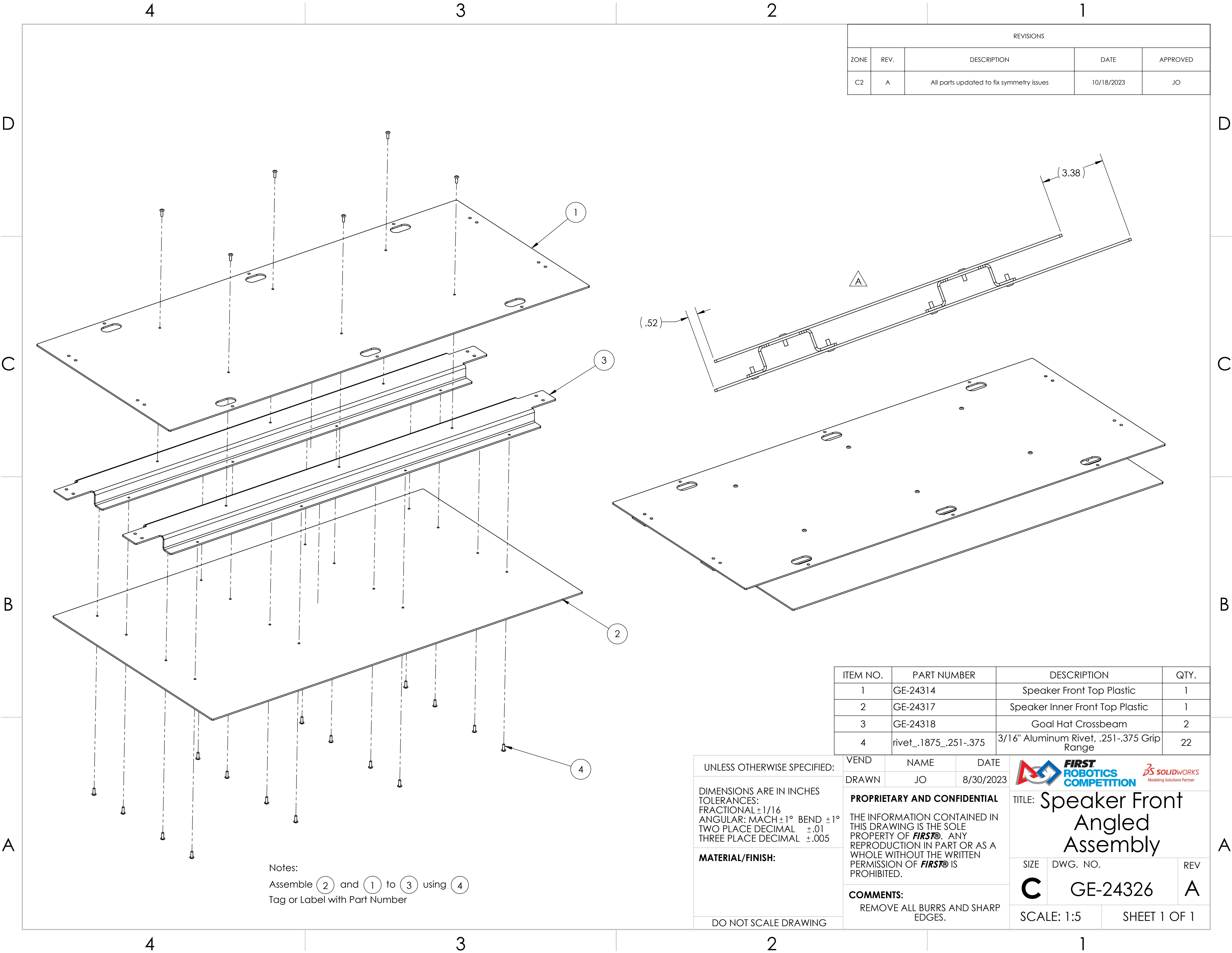
UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>		
	DRAWN	JO	8/30/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE:		
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			Speaker Back Assembly		
MATERIAL/FINISH:	COMMENTS:			SIZE	DWG. NO.	REV
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24324	A
DO NOT SCALE DRAWING				SCALE: 1:5		SHEET 1 OF 1



Notes:
Assemble (2) to (1) using (3)
Tag or Label with Part Number



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24305	Briweld Field Crossbeam	1
2	FE-00060	Top Rail, Post	2
3	button_hex_.25_20_.625	1/4-20 x 5/8" Long Button Head Cap Screw	2

UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	 		
		DRAWN	JO	8/30/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 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.			TITLE: Briweld Field Crossbeam Assembly		
					SIZE	DWG. NO.	REV
					C	GE-24325	
		SCALE: 1:5			SHEET 1 OF 1		

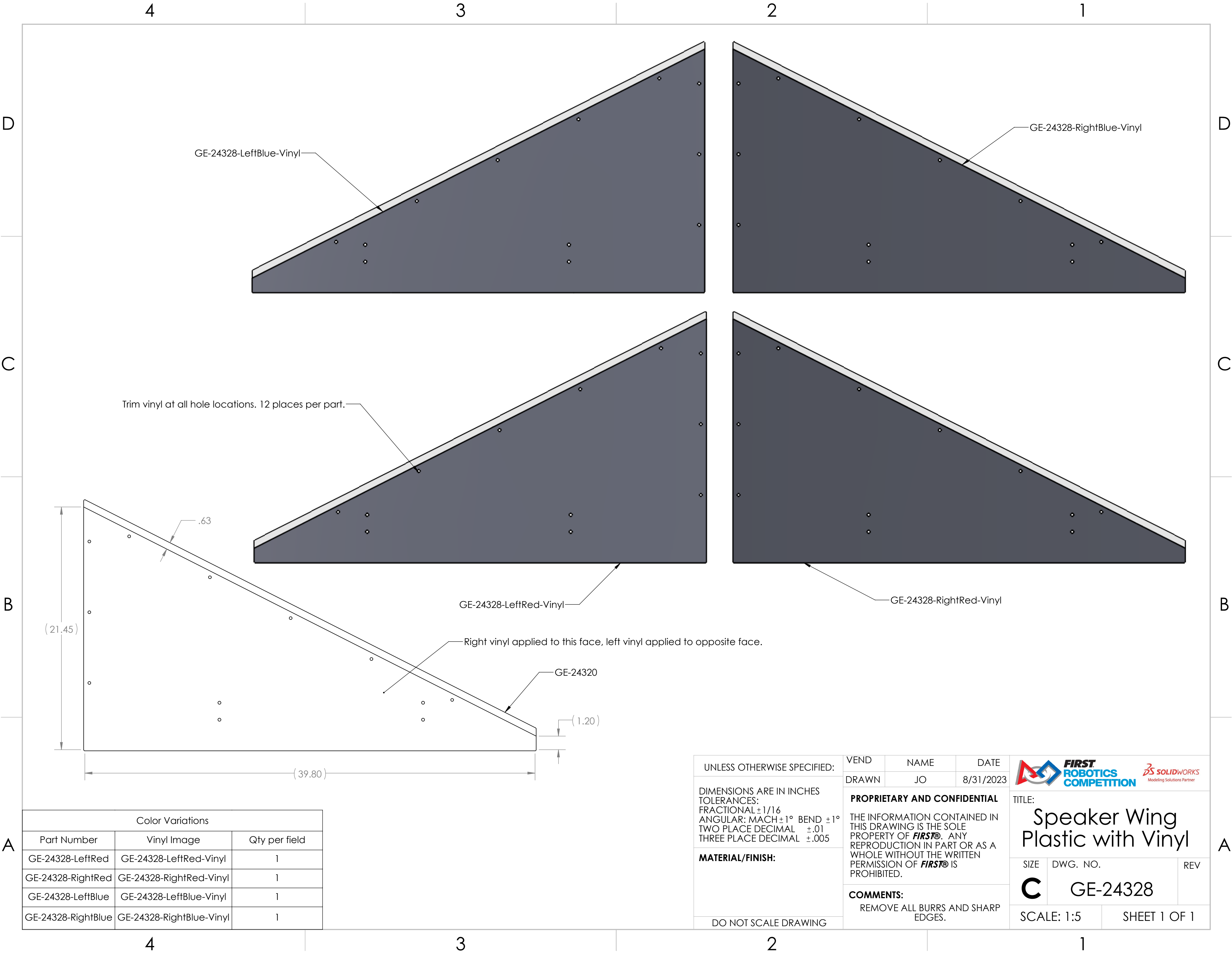


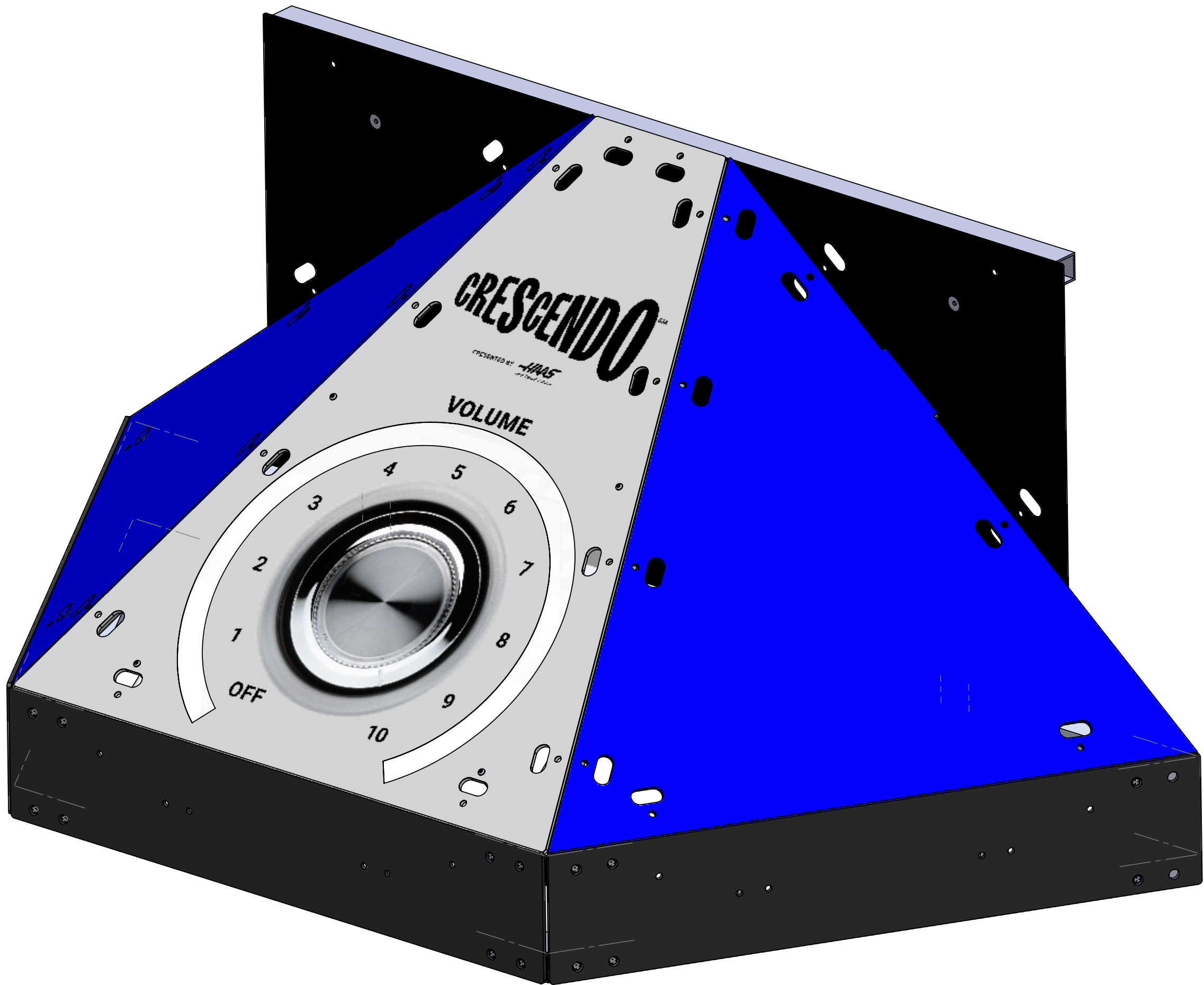
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2	A	All parts updated to fix symmetry issues	10/18/2023	JO

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24314	Speaker Front Top Plastic	1
2	GE-24317	Speaker Inner Front Top Plastic	1
3	GE-24318	Goal Hat Crossbeam	2
4	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	22

UNLESS OTHERWISE SPECIFIED:		VEND		NAME		DATE		 	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005		DRAWN		JO		8/30/2023		TITLE: Speaker Front Angled Assembly	
		PROPRIETARY AND CONFIDENTIAL						SIZE DWG. NO. REV C GE-24326 A	
		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:						SCALE: 1:5 SHEET 1 OF 1	
		REMOVE ALL BURRS AND SHARP EDGES.							
DO NOT SCALE DRAWING									

Notes:
Assemble (2) and (1) to (3) using (4)
Tag or Label with Part Number

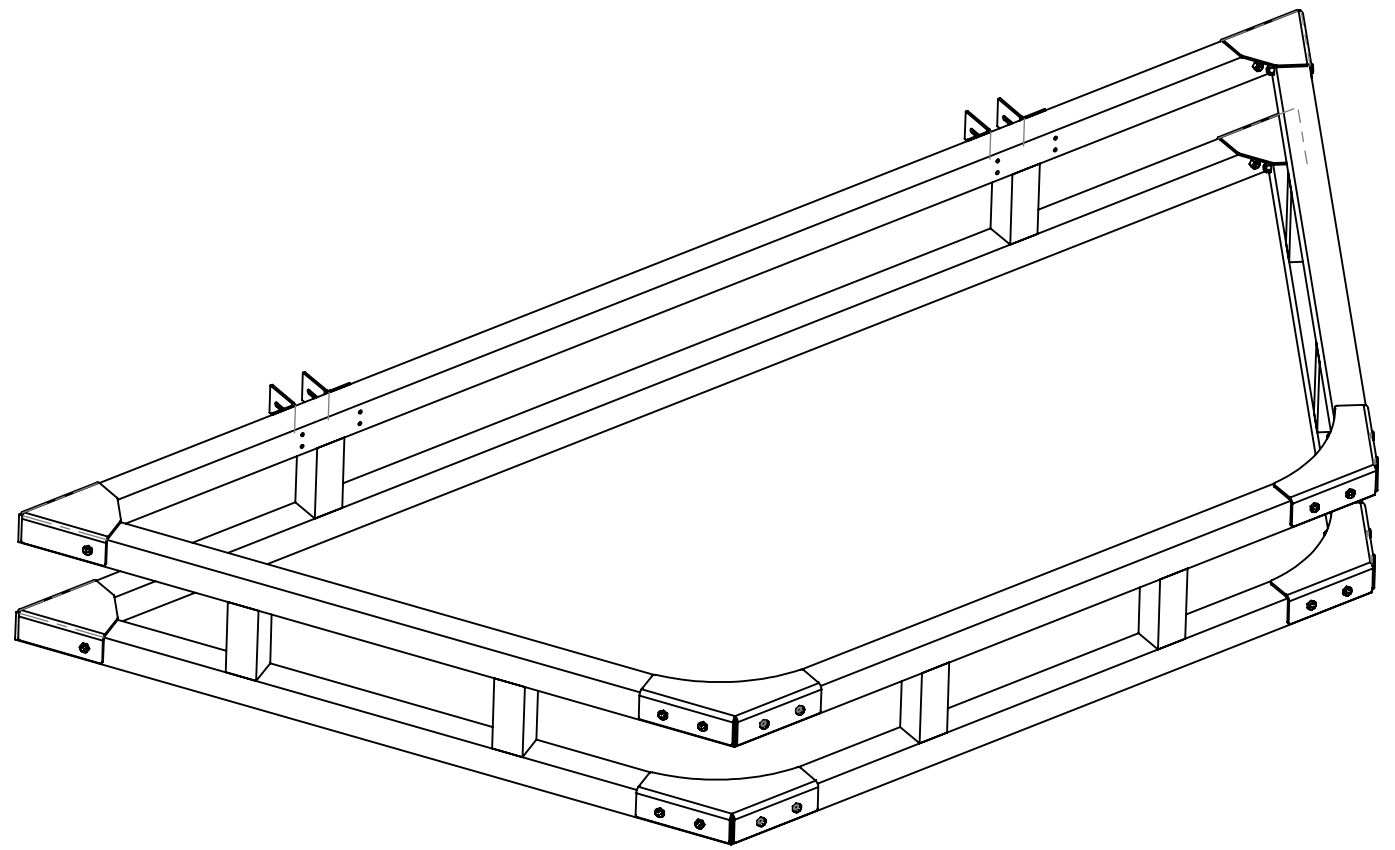
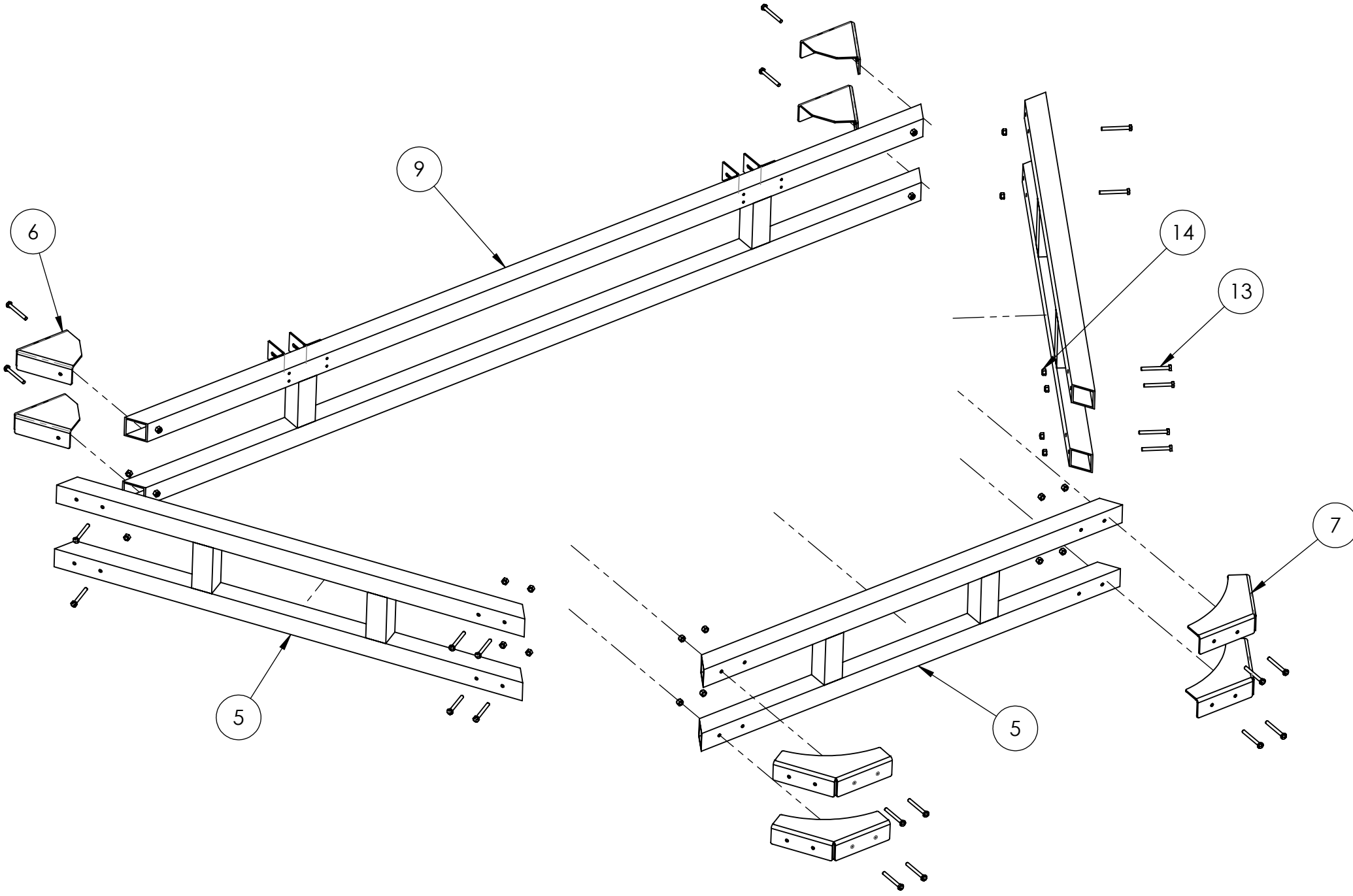






ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24331	Wall Goal Frame Weldment	1
2	GE-24332	Subwoofer Backboard	1
3	GE-24333	Subwoofer Side Panel	2
4	GE-24335	Subwoofer Bumper	3
5	GE-24336	Subwoofer Small Frame	3
6	GE-24338	Subwoofer Back Bracket	4
7	GE-24339	Front Subwoofer Bracket	4
8	GE-24341	Subwoofer Support Pipe	2
9	GE-24342	Subwoofer Back Frame with Brackets	1
10	GE-24343	Subwoofer Middle Panel with Vinyl	1
11	GE-24345	Subwoofer Light Panel Assembly	1
12	Configurable Bolt	.75" Long 1/4-20 Button Head Cap Screw	8
13	Configurable Bolt	2.25" Long 1/4-20 Hex Head Bolt	24
14	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	24
15	91780A363_Female Threaded Hex Standoff	Female Threaded Hex Standoff, 1/4-20 x 1" Long	4
16	98320A143	Zinc-Plated Steel Ring-Grip Quick-Release Pin	2

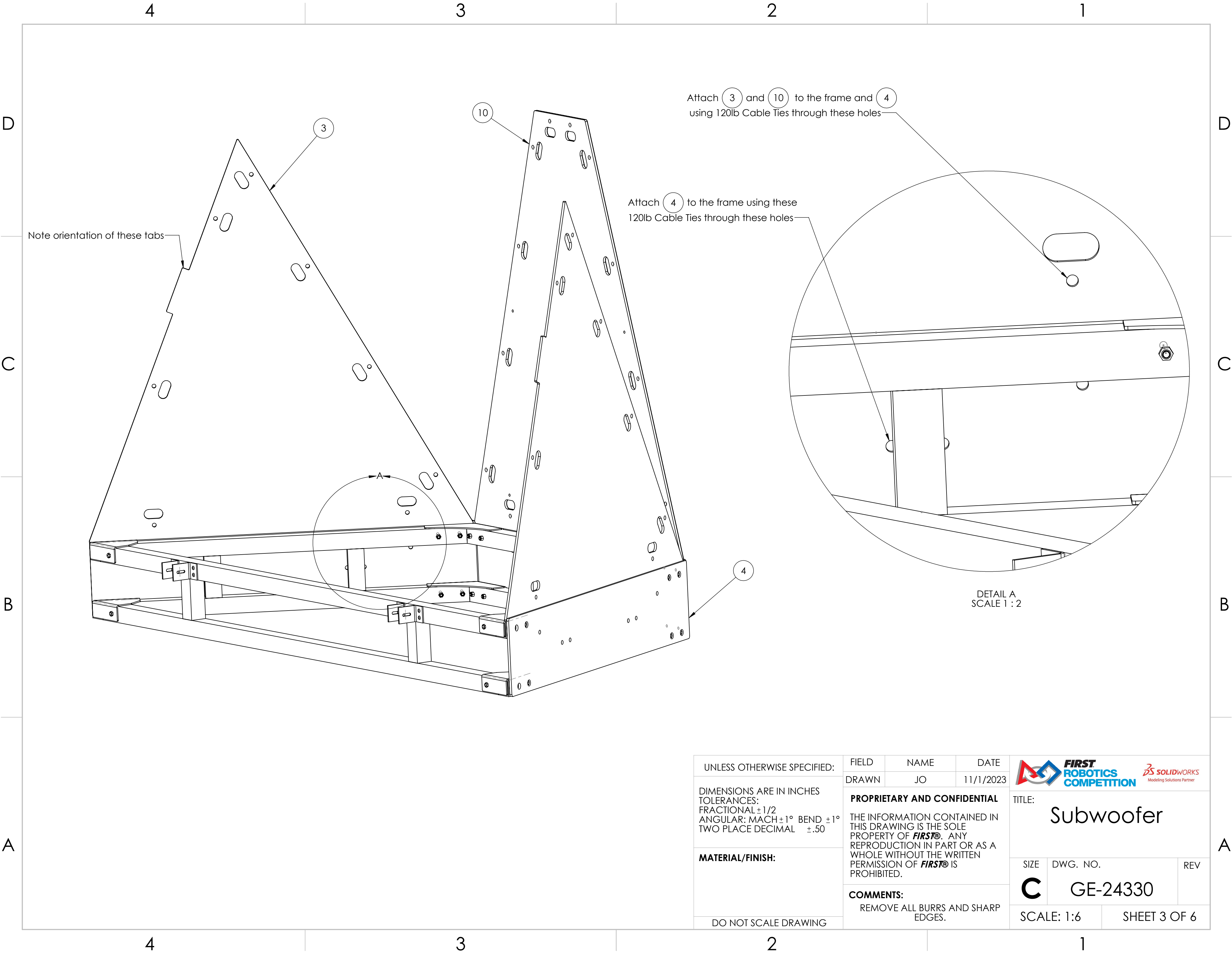
UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$		DRAWN	JO	11/1/2023
MATERIAL/FINISH:		PROPRIETARY AND CONFIDENTIAL		
		THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST IS PROHIBITED.		
DO NOT SCALE DRAWING		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
		TITLE: Subwoofer		
		SIZE C	DWG. NO. GE-24330	REV
		SCALE: 1:6 SHEET 1 OF 6		





Assemble as shown, do not over-tighten bolts

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div><div></div><div>TITLE: <h1>Subwoofer</h1></div></div>	
	DRAWN	JO	11/1/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24330
SCALE: 1:10				SHEET 2 OF 6	
MATERIAL/FINISH:				REV	
DO NOT SCALE DRAWING					





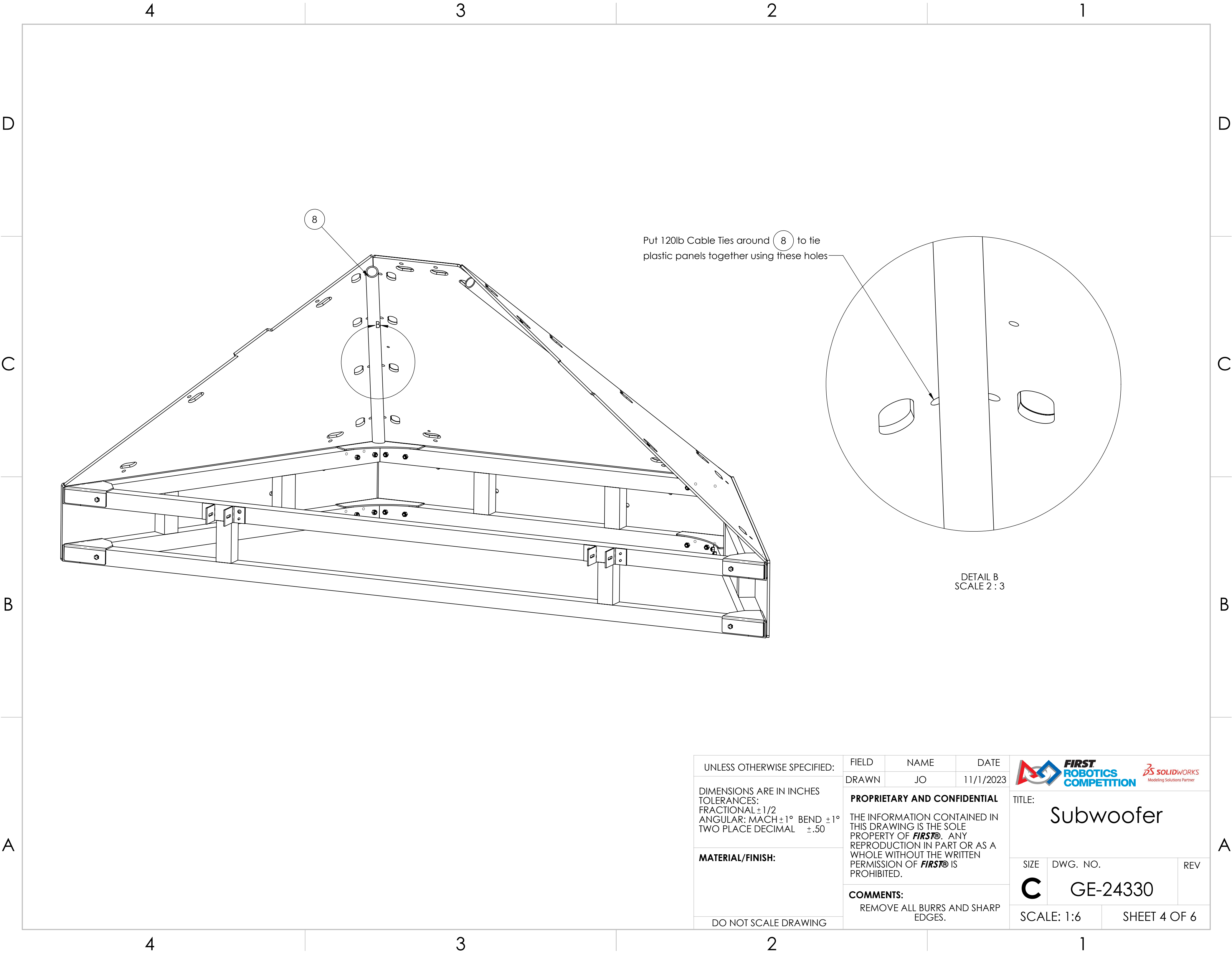
Note orientation of these tabs

Attach 3 and 10 to the frame and 4 using 120lb Cable Ties through these holes

Attach 4 to the frame using these 120lb Cable Ties through these holes

DETAIL A
SCALE 1:2

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	 	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	DRAWN	JO	11/1/2023	TITLE: Subwoofer	
	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.			SIZE C	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			DWG. NO. GE-24330 REV	
MATERIAL/FINISH:				SCALE: 1:6	
DO NOT SCALE DRAWING				SHEET 3 OF 6	



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	JO	11/1/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Subwoofer

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

C	GE-24330	
----------	----------	--

SCALE: 1:6	SHEET 4 OF 6
------------	--------------

4

3

2

1

D

D

C

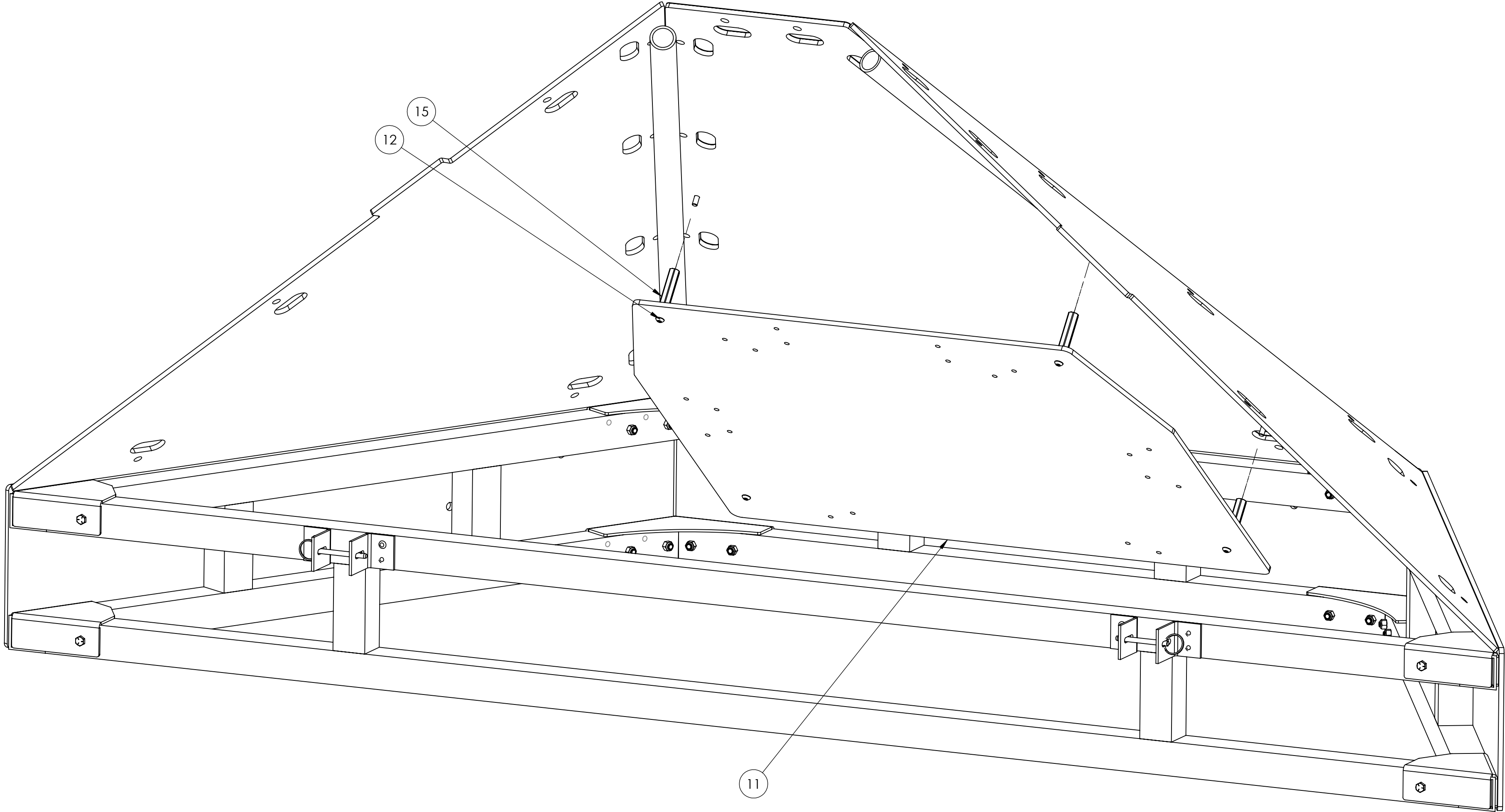
C

B

B

A

A



Attach (11) to the underside of the assembly with (15) and (12).

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

JO

11/1/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION



Modeling Solutions Partner

TITLE:

Subwoofer

SIZE

DWG. NO.

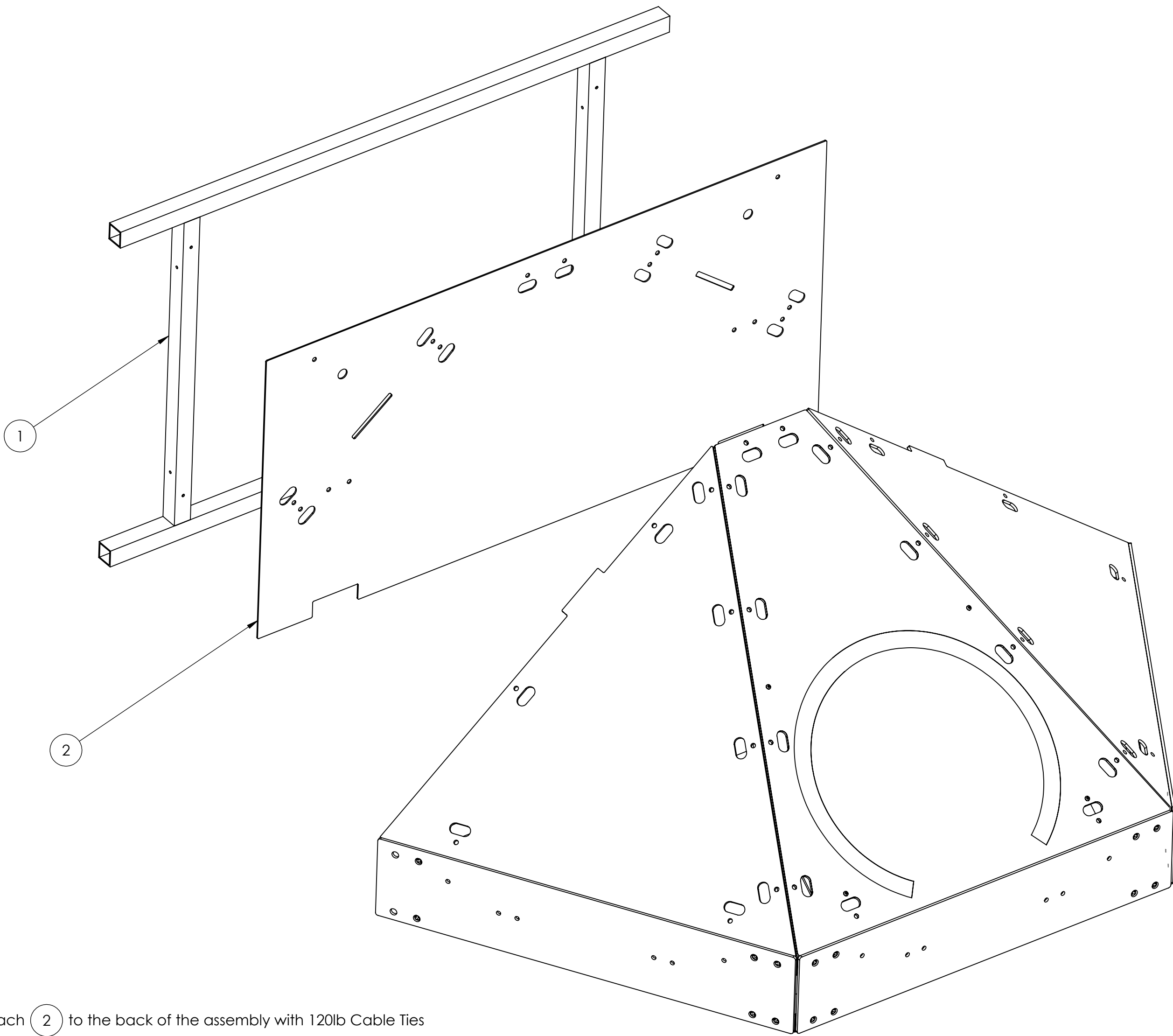
REV

C

GE-24330

SCALE: 1:4

SHEET 5 OF 6



Attach ② to the back of the assembly with 120lb Cable Ties
Slide assembly up to ① and attach with pins

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	JO	11/1/2023

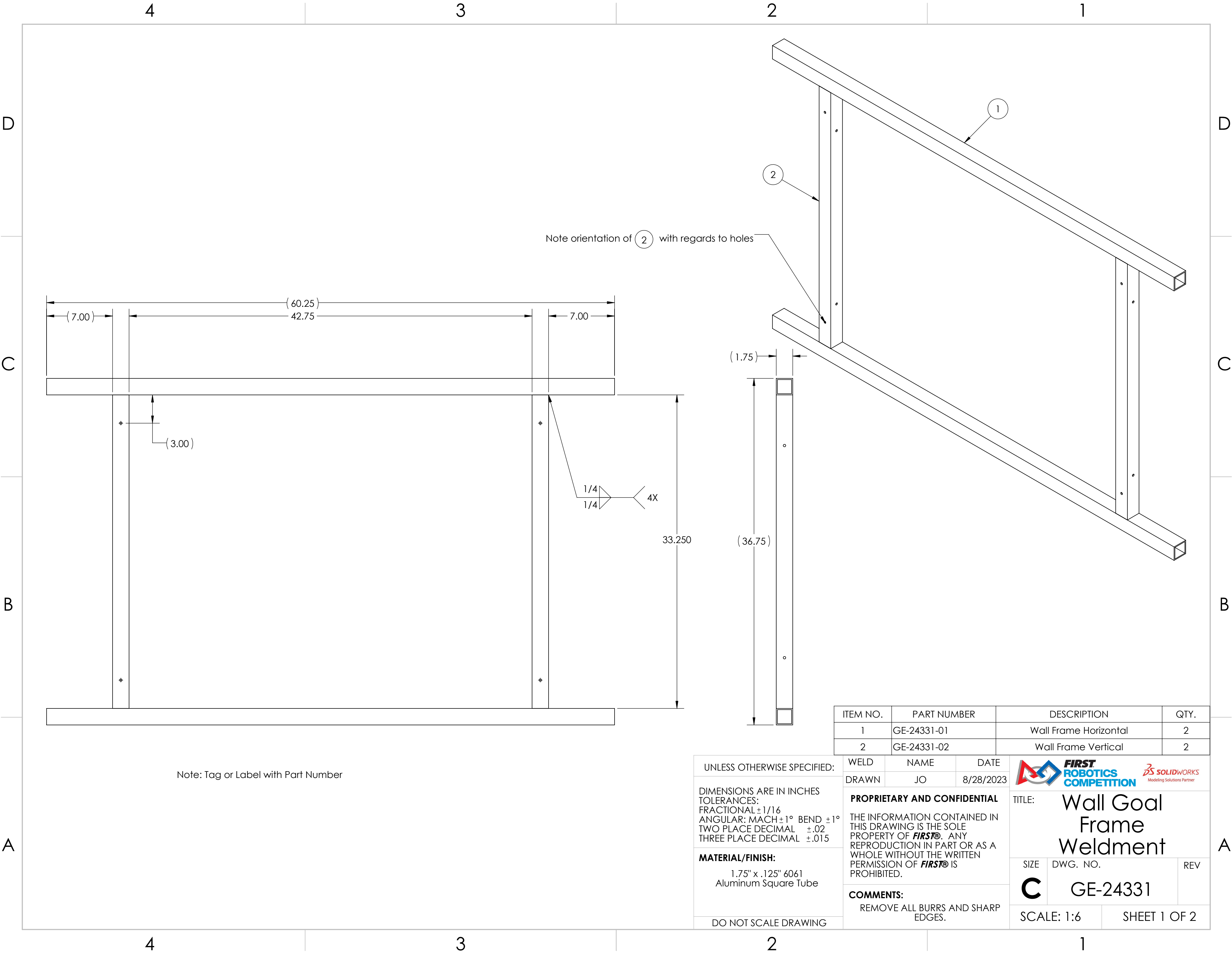
PROPRIETARY AND CONFIDENTIAL
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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Subwoofer

SIZE	DWG. NO.	REV
C	GE-24330	



Note orientation of 2 with regards to holes

Note: Tag or Label with Part Number

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24331-01	Wall Frame Horizontal	2
2	GE-24331-02	Wall Frame Vertical	2

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:
1.75" x .125" 6061
Aluminum Square Tube

DO NOT SCALE DRAWING

WELD	NAME	DATE
DRAWN	JO	8/28/2023

PROPRIETARY AND CONFIDENTIAL

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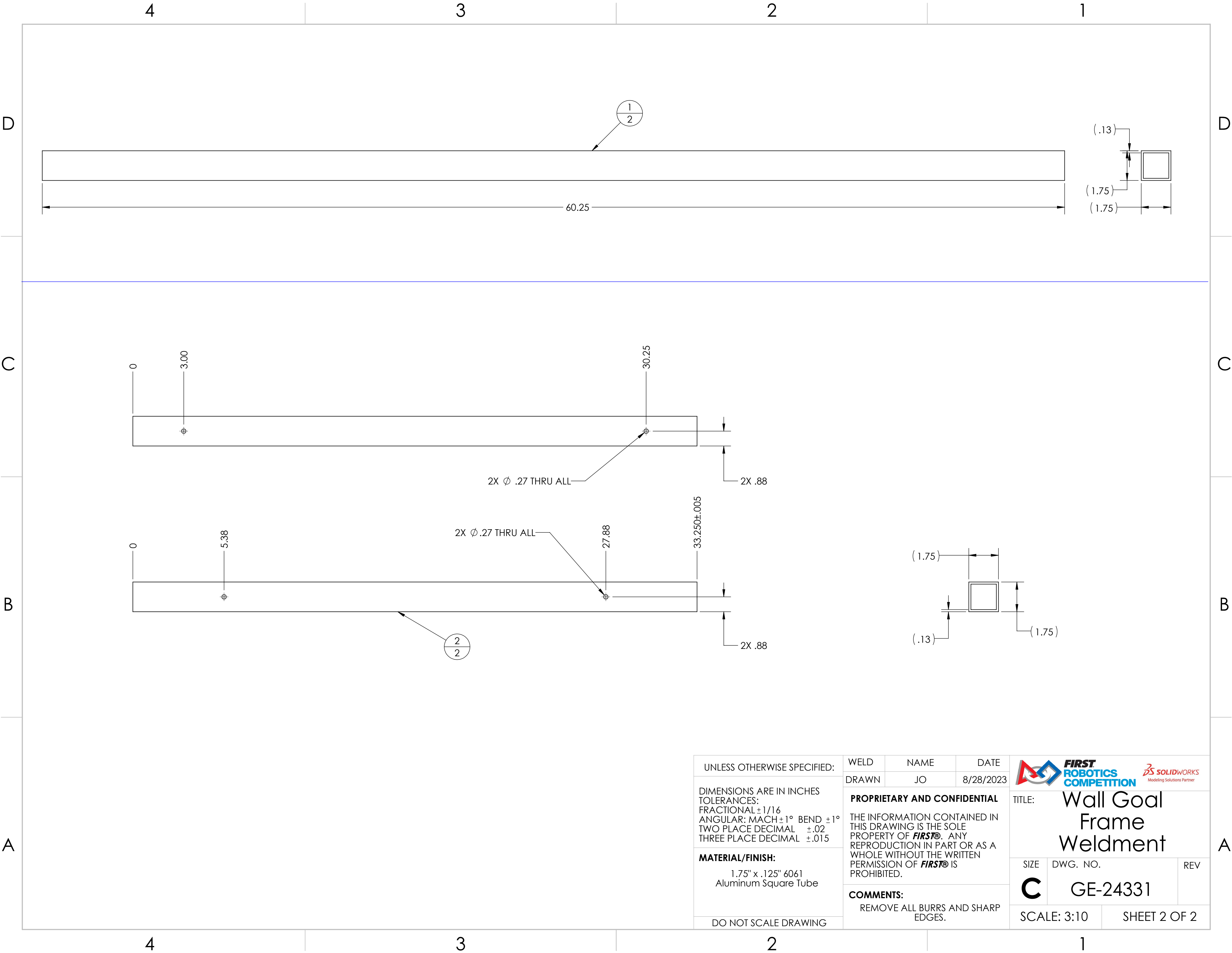
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE: **Wall Goal Frame Weldment**

SIZE	DWG. NO.	REV
C	GE-24331	

SCALE: 1:6 SHEET 1 OF 2



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:
1.75" x .125" 6061
Aluminum Square Tube

DO NOT SCALE DRAWING

WELD	NAME	DATE
DRAWN	JO	8/28/2023

PROPRIETARY AND CONFIDENTIAL

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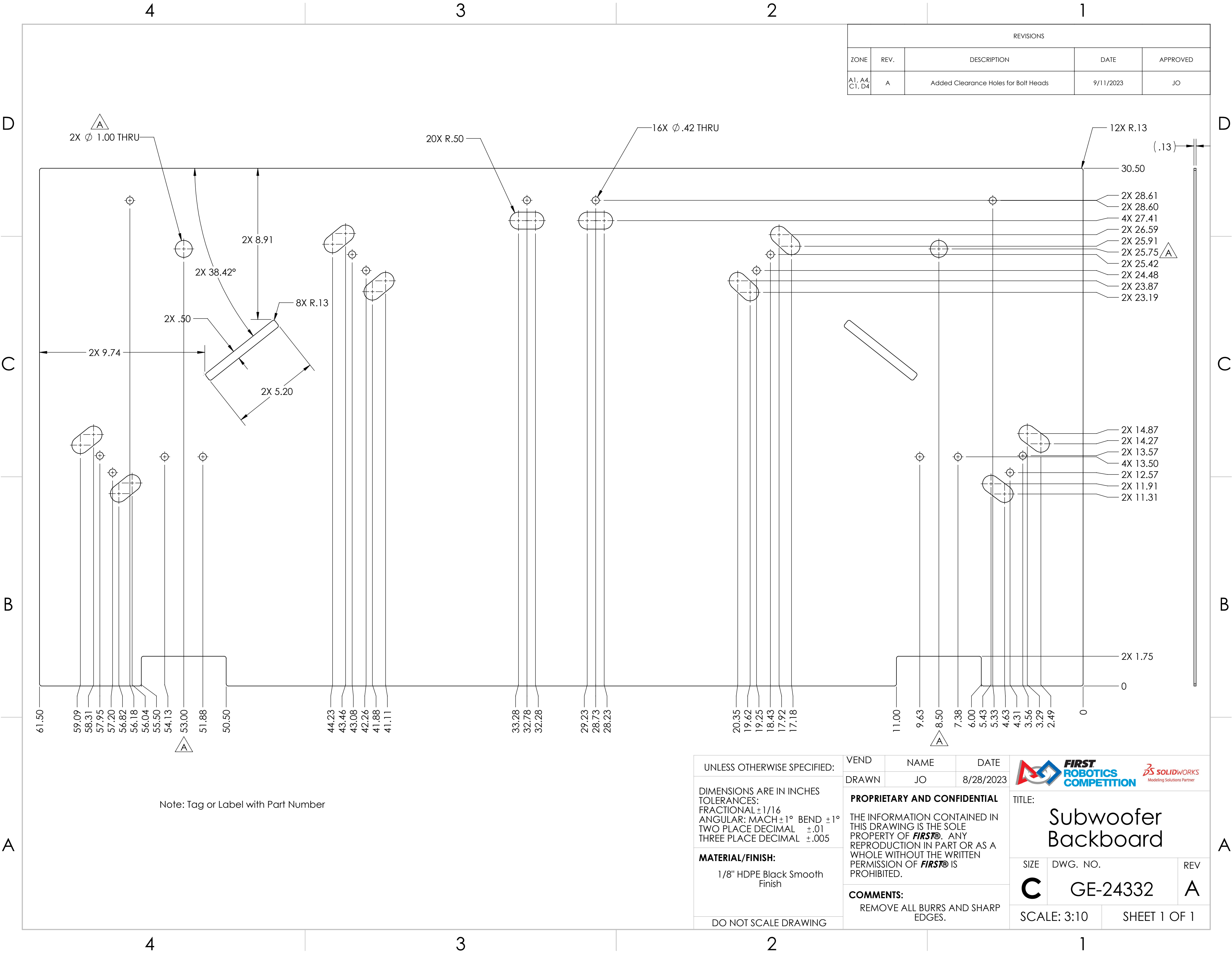
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE: **Wall Goal Frame Weldment**

SIZE	DWG. NO.	REV
C	GE-24331	



SCALE: 3:10 SHEET 2 OF 2

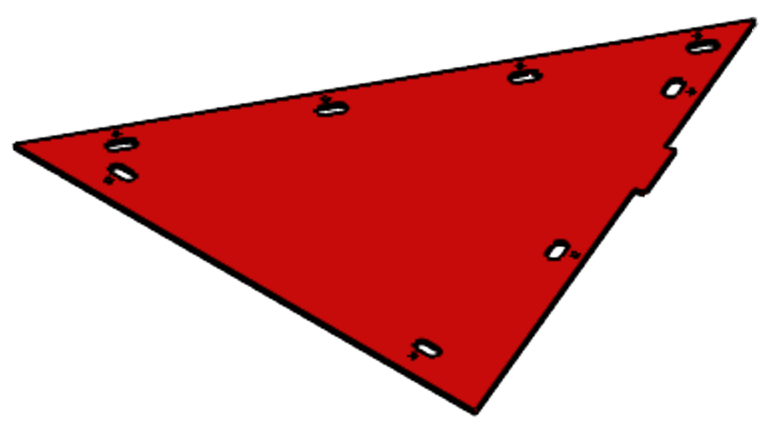
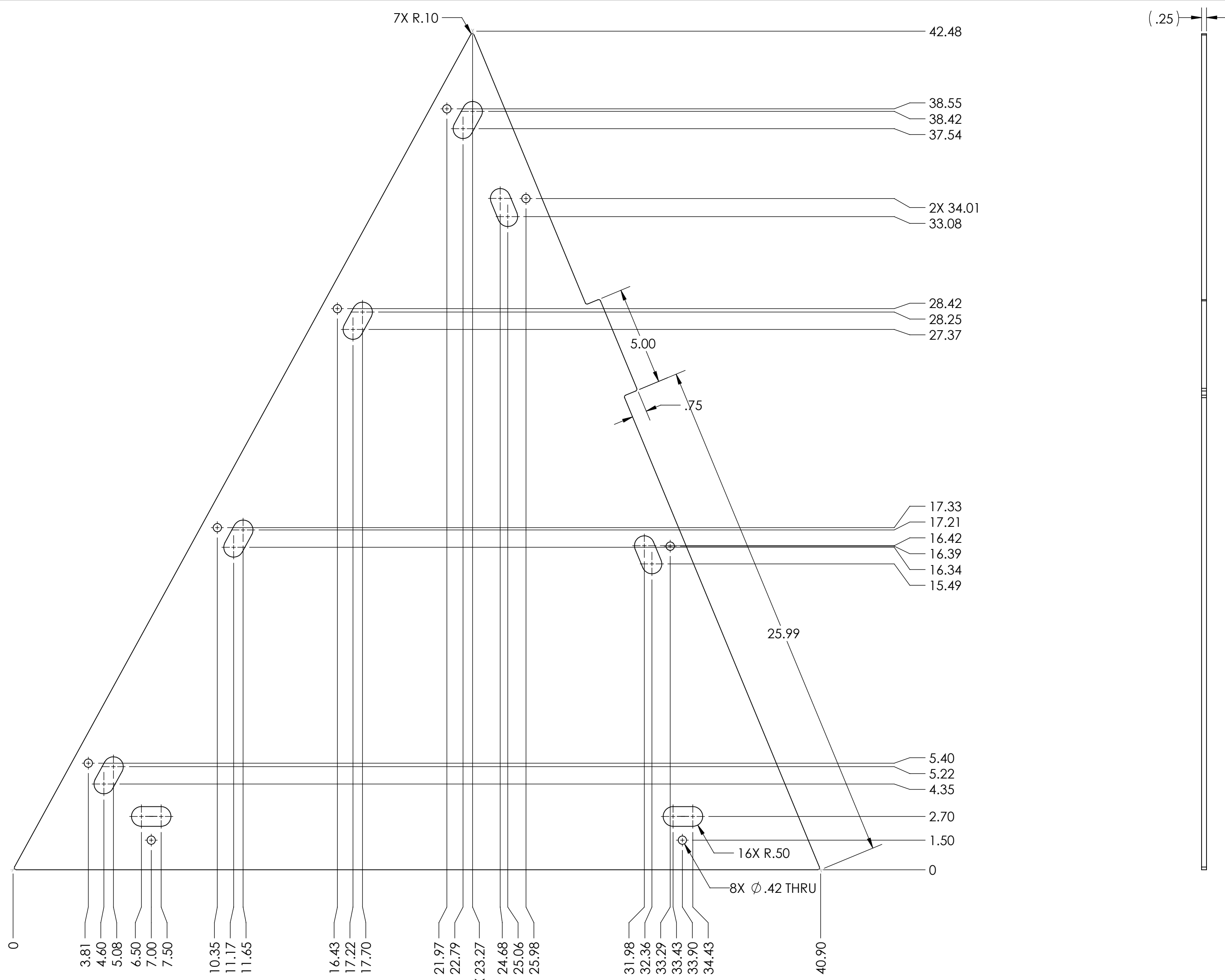


REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A1, A4, C1, D4	A	Added Clearance Holes for Bolt Heads	9/11/2023	JO

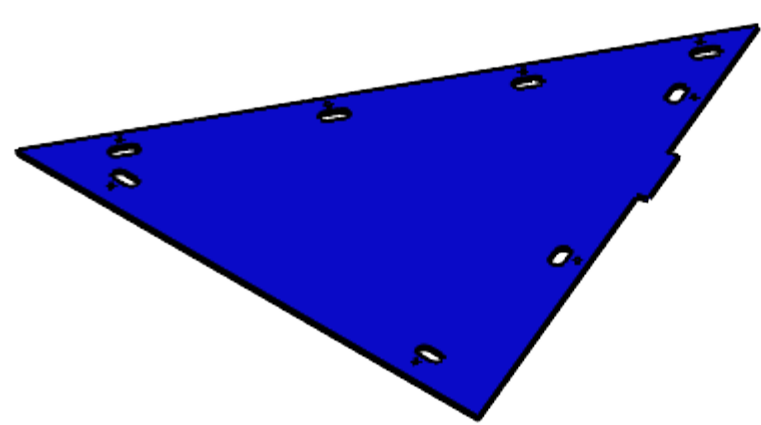
UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005
MATERIAL/FINISH: 1/8" HDPE Black Smooth Finish
DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	8/28/2023
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.		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		


 		
TITLE: Subwoofer Backboard		
SIZE C	DWG. NO. GE-24332	REV A
SCALE: 3:10		SHEET 1 OF 1

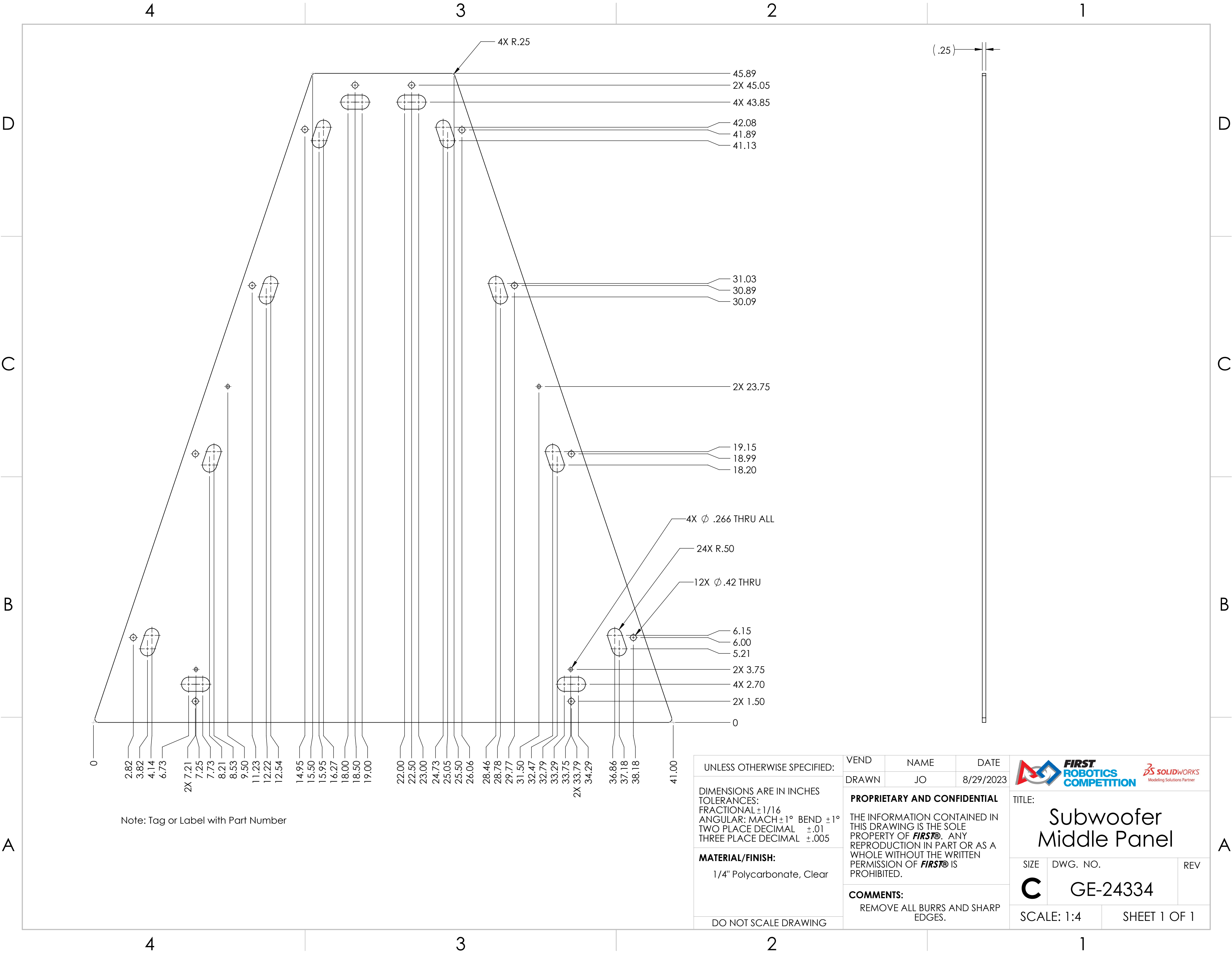


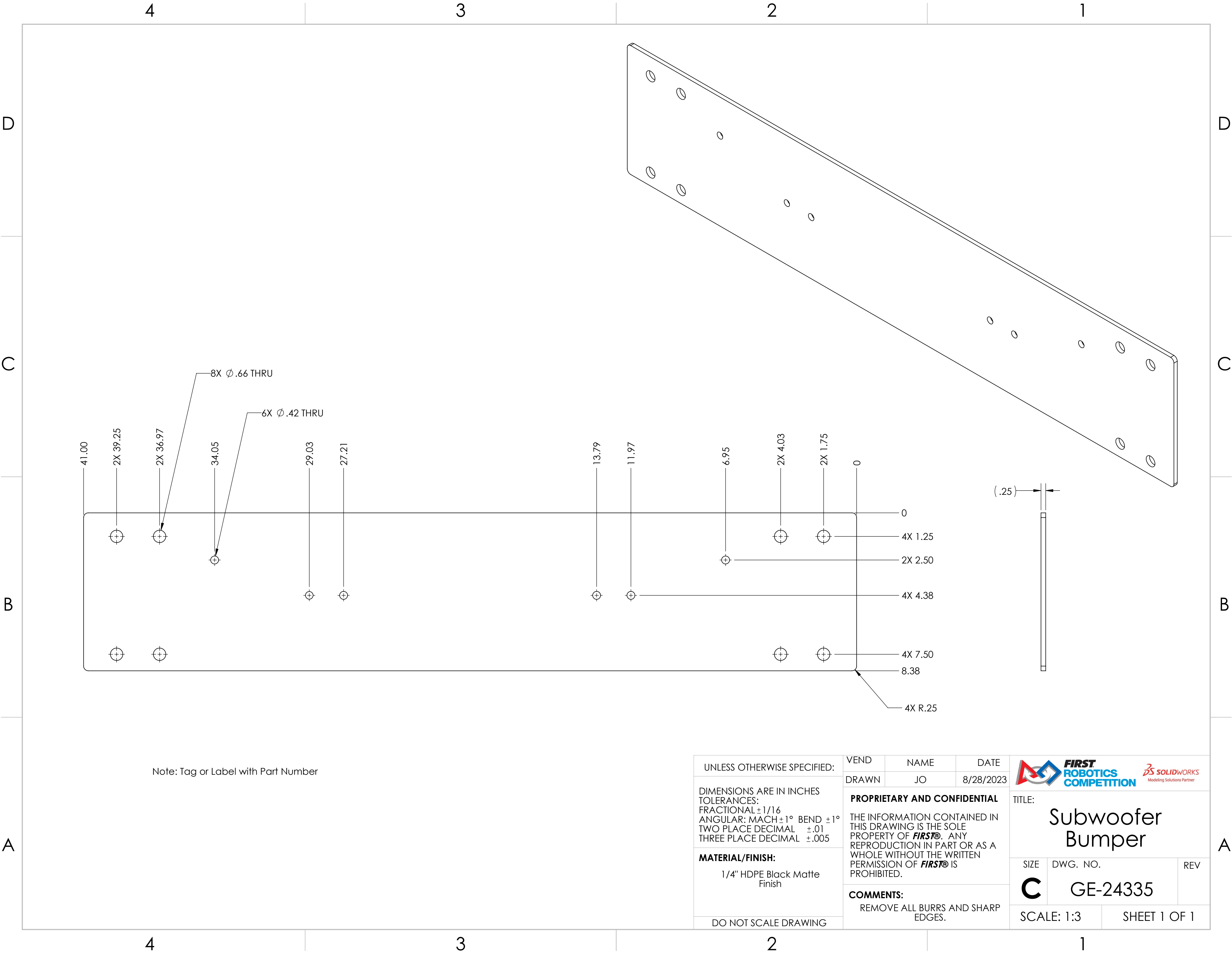
GE-24333-RED





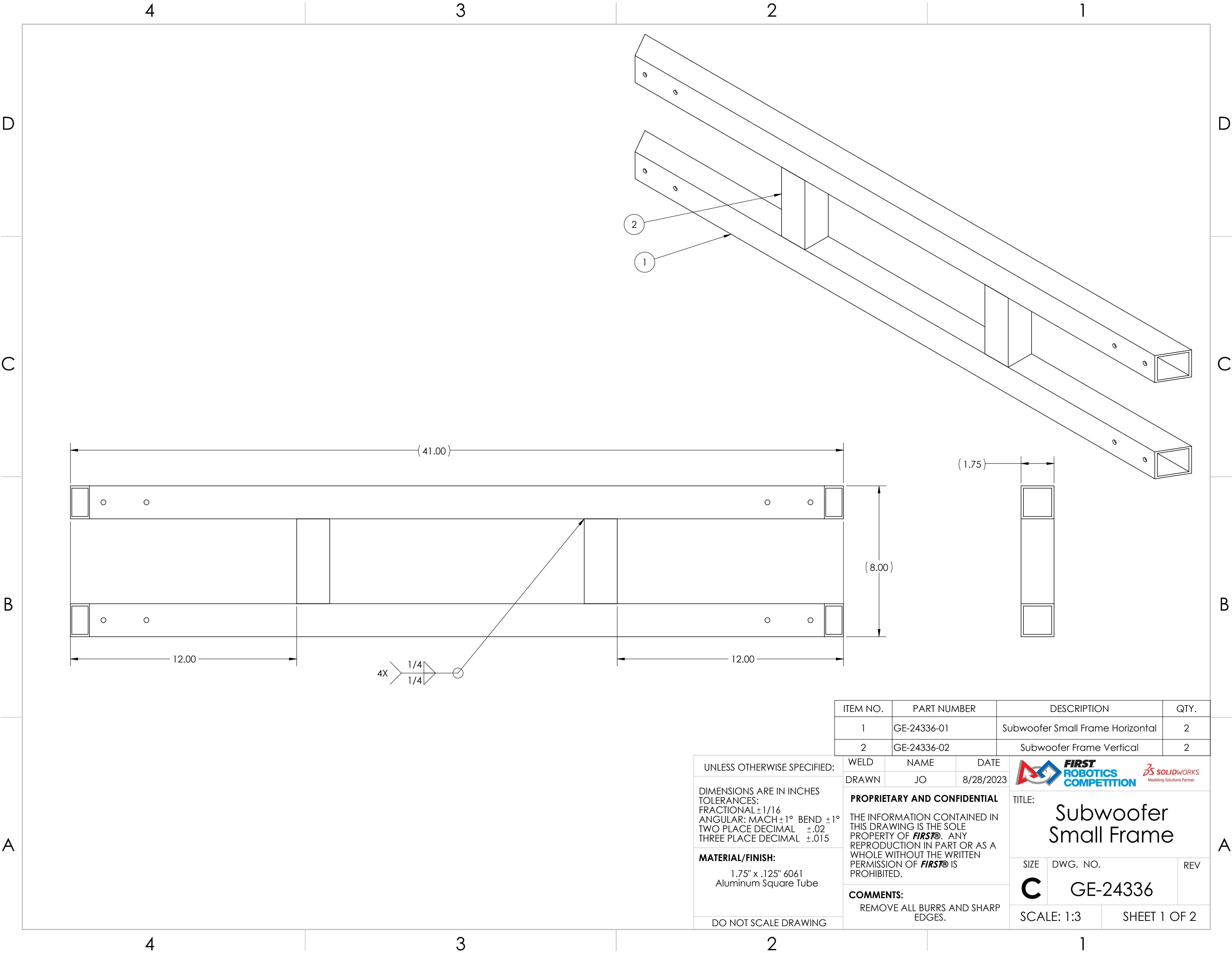
GE-24333-BLUE

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" HDPE, Matte Finish, See Part Number For Color DO NOT SCALE DRAWING	VEND	NAME	DATE	 TITLE: Subwoofer Side Panel	
	DRAWN	JO	8/28/2023		
	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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24333
SCALE: 1:4		SHEET 1 OF 1			





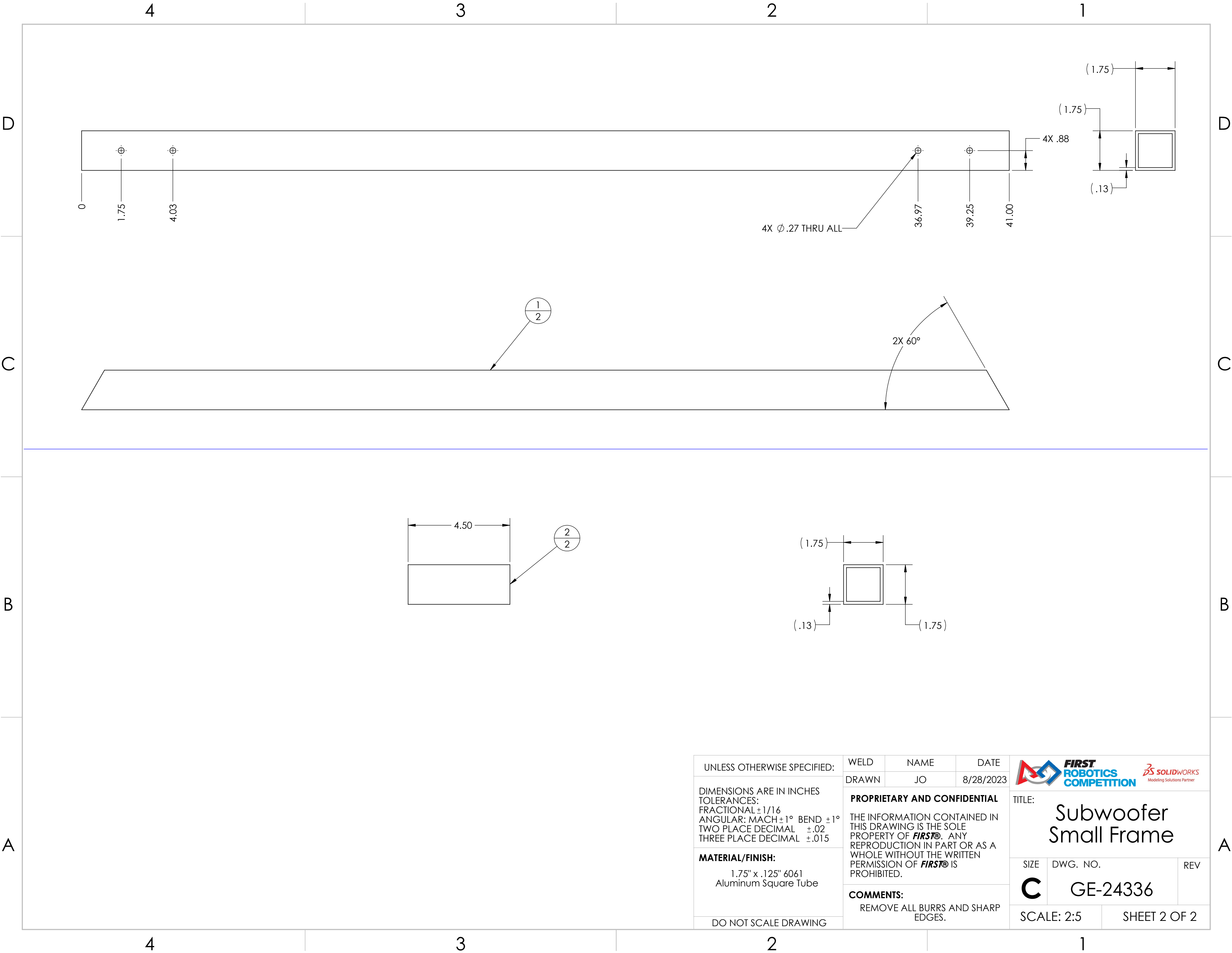




UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>		
	DRAWN	JO	8/28/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE:		
				Subwoofer Bumper		
MATERIAL/FINISH: 1/4" HDPE Black Matte Finish	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	GE-24335	
DO NOT SCALE DRAWING				SCALE: 1:3		SHEET 1 OF 1

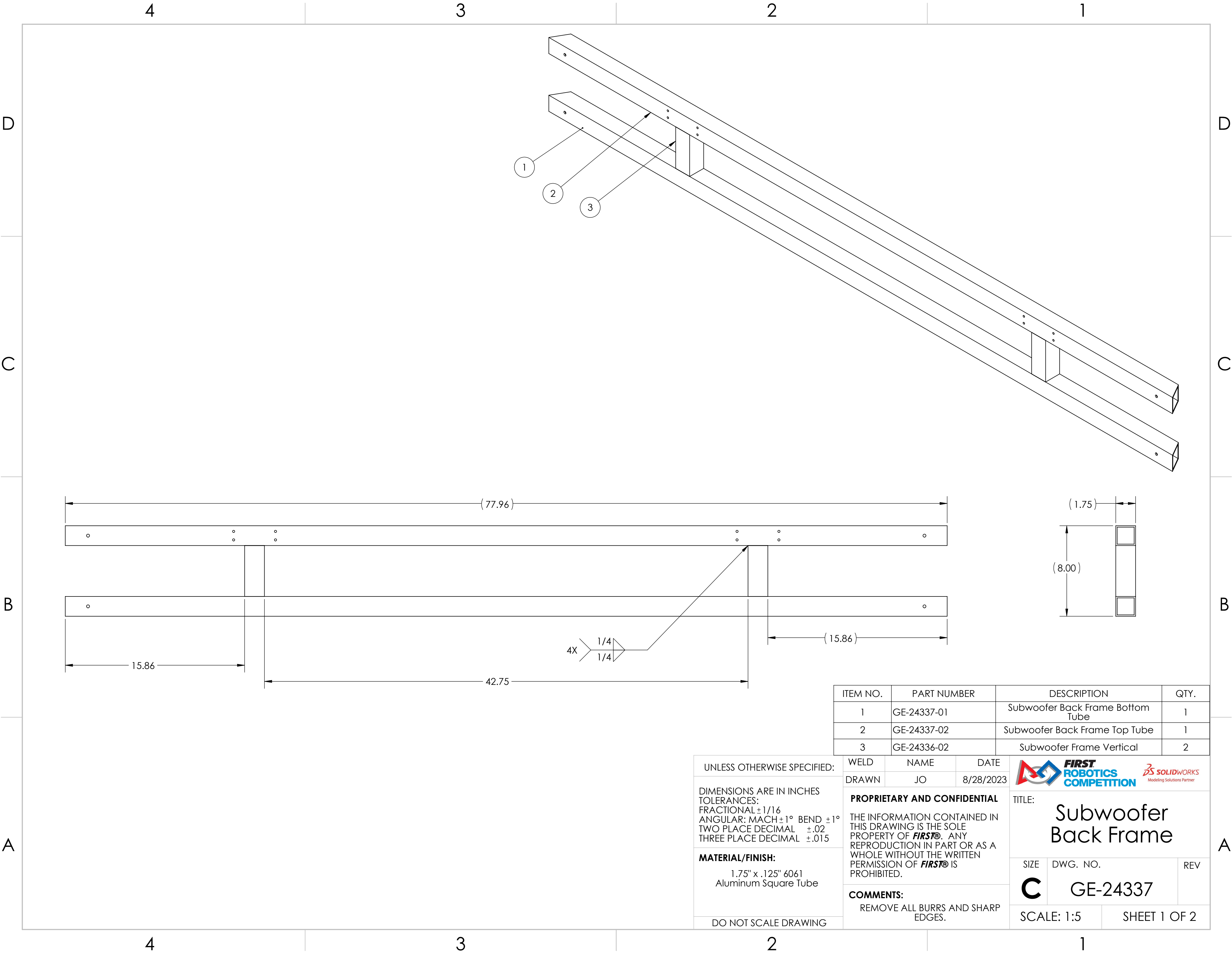


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24336-01	Subwoofer Small Frame Horizontal	2
2	GE-24336-02	Subwoofer Frame Vertical	2



UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE	<div></div>		
	DRAWN	JO	8/28/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.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.			TITLE: Subwoofer Small Frame		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	GE-24336	
MATERIAL/FINISH: 1.75" x .125" 6061 Aluminum Square Tube				SCALE: 1:3		
DO NOT SCALE DRAWING				SHEET 1 OF 2		

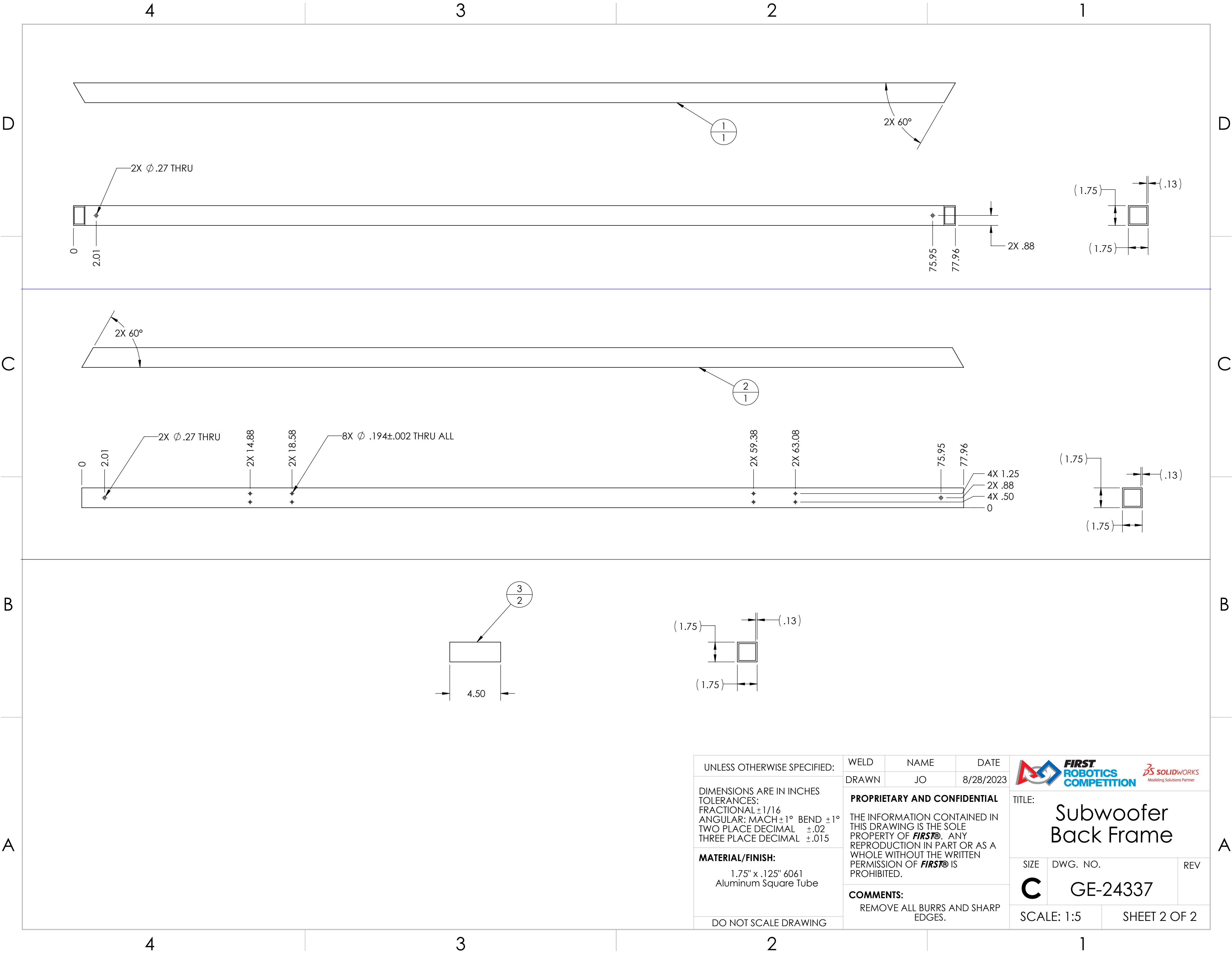




UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE	<div></div>		
	DRAWN	JO	8/28/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.015	PROPRIETARY AND CONFIDENTIAL			TITLE: Subwoofer Small Frame		
	THE INFORMATION CONTAINED IN 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.			SIZE	DWG. NO.	REV
MATERIAL/FINISH: 1.75" x .125" 6061 Aluminum Square Tube				C	GE-24336	
				SCALE: 2:5		
DO NOT SCALE DRAWING						

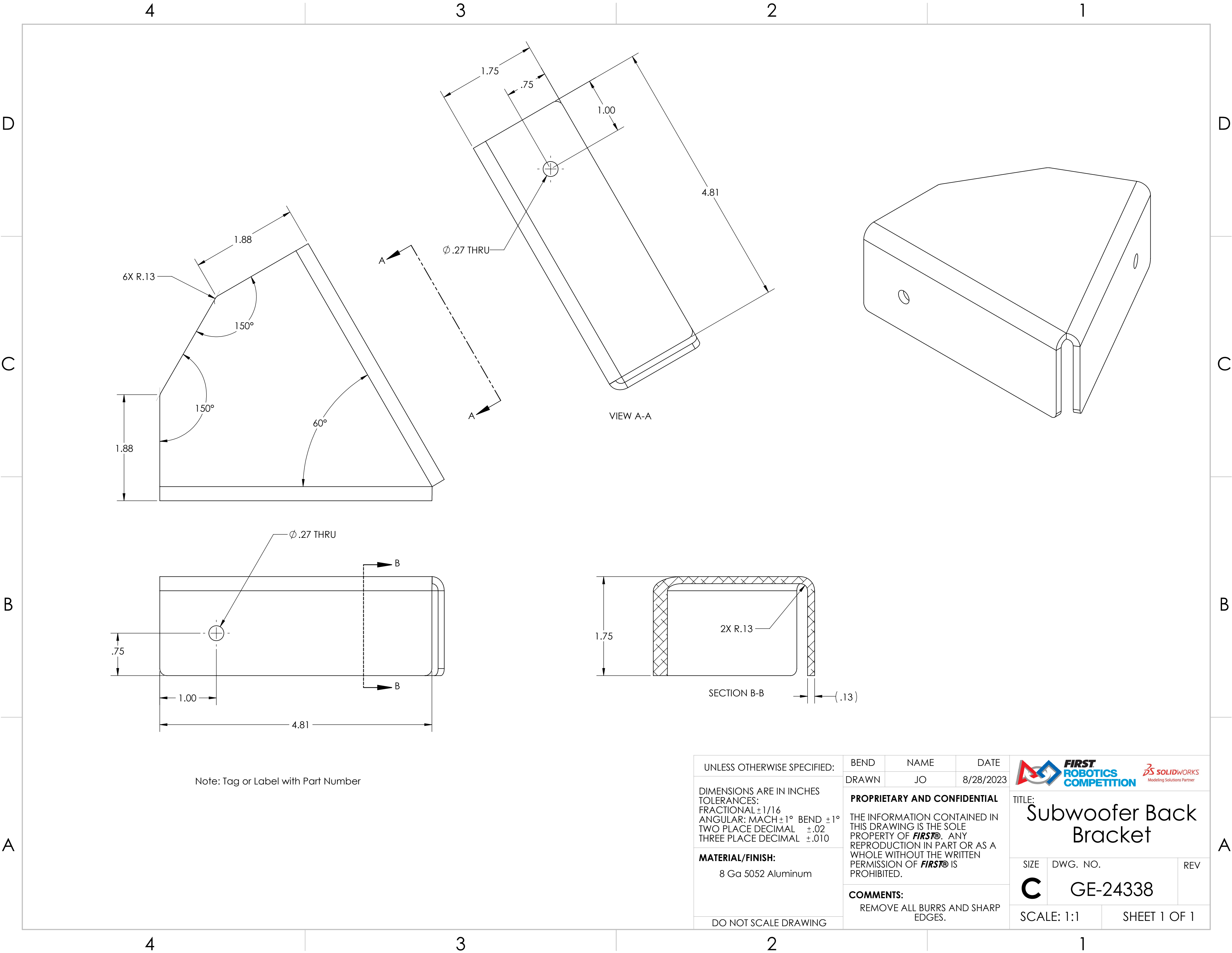




ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24337-01	Subwoofer Back Frame Bottom Tube	1
2	GE-24337-02	Subwoofer Back Frame Top Tube	1
3	GE-24336-02	Subwoofer Frame Vertical	2

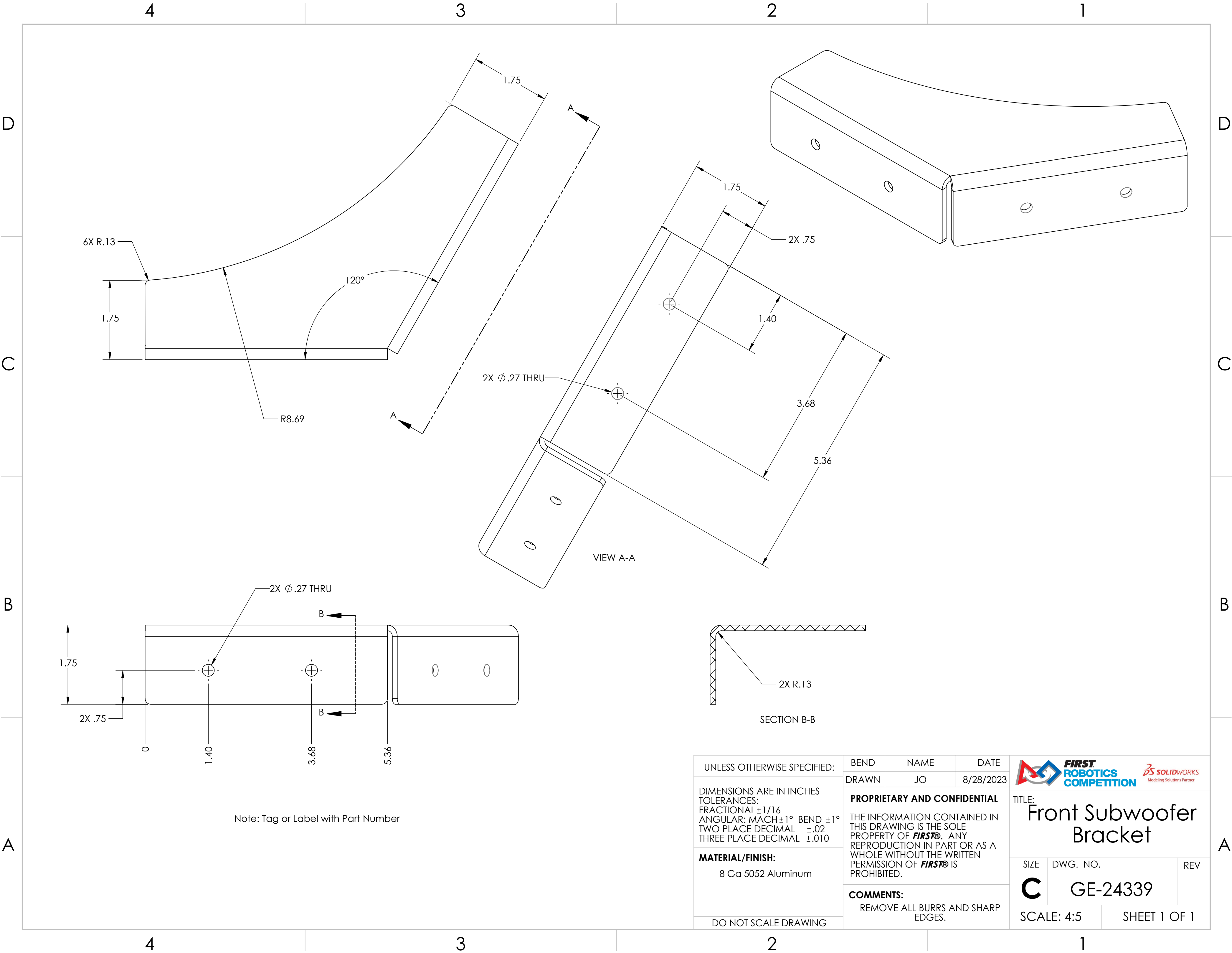
UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE	<div></div>
	DRAWN	JO	8/28/2023	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.015	PROPRIETARY AND CONFIDENTIAL			TITLE: Subwoofer Back Frame
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			
	COMMENTS:			
MATERIAL/FINISH: 1.75" x .125" 6061 Aluminum Square Tube	REMOVE ALL BURRS AND SHARP EDGES.			SIZE C
				DWG. NO. GE-24337
DO NOT SCALE DRAWING				REV SHEET 1 OF 2





UNLESS OTHERWISE SPECIFIED:	WELD	NAME	DATE	<div><div></div><div>TITLE: <h1>Subwoofer Back Frame</h1></div></div>	
	DRAWN	JO	8/28/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.015	PROPRIETARY AND CONFIDENTIAL			SIZE C	
	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: 1.75" x .125" 6061 Aluminum Square Tube	COMMENTS:			DWG. NO.	
	REMOVE ALL BURRS AND SHARP EDGES.			GE-24337	
DO NOT SCALE DRAWING				REV	
			SCALE: 1:5		SHEET 2 OF 2

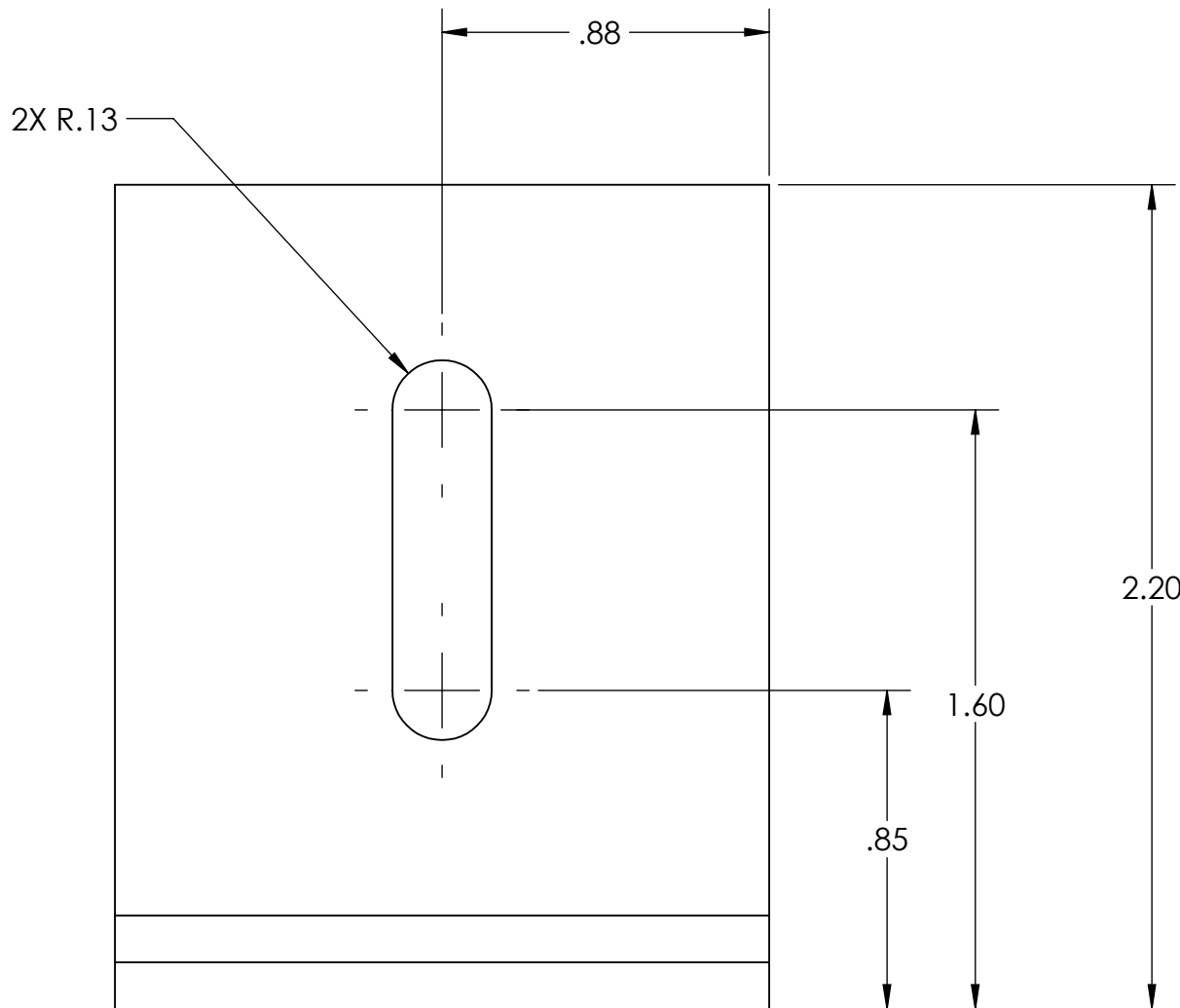
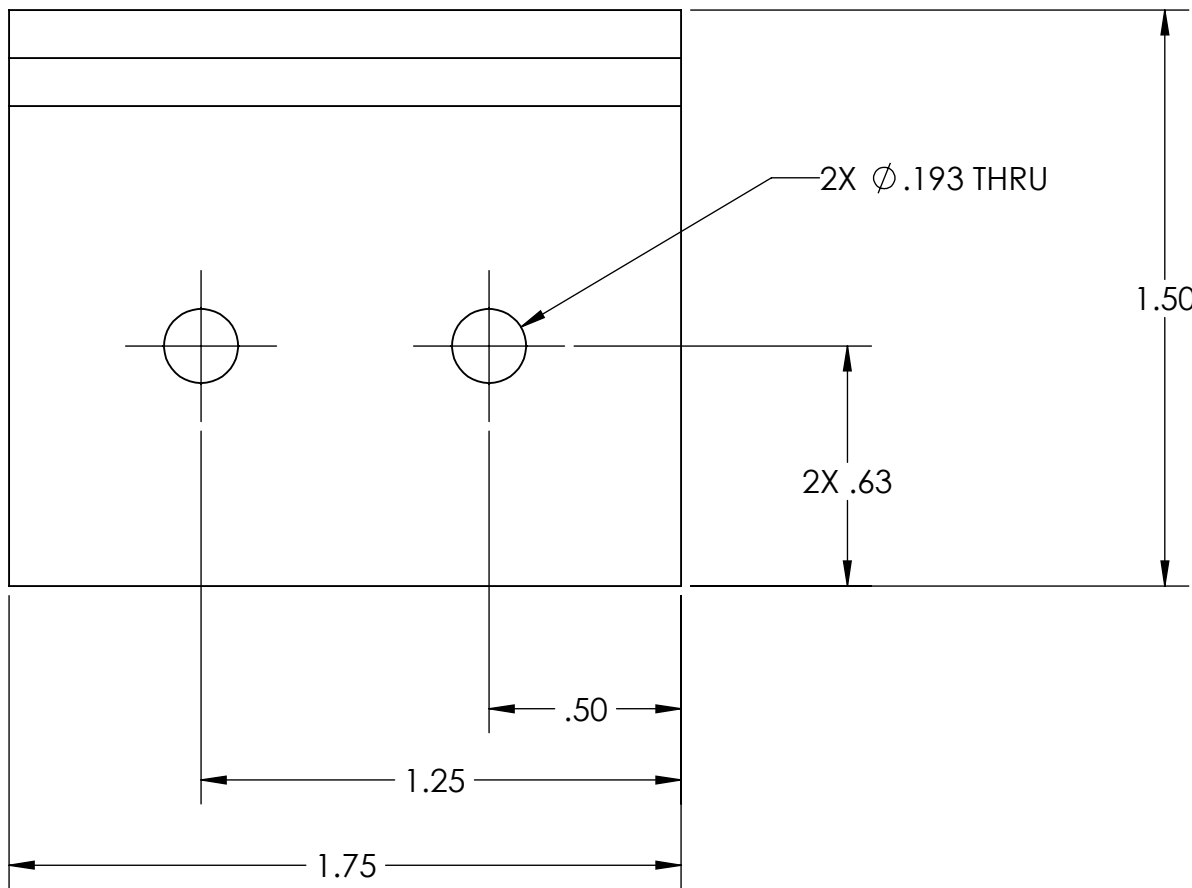


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$ MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Subwoofer Back Bracket</div>	
	DRAWN	JO	8/28/2023		
	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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24338
SCALE: 1:1		SHEET 1 OF 1			

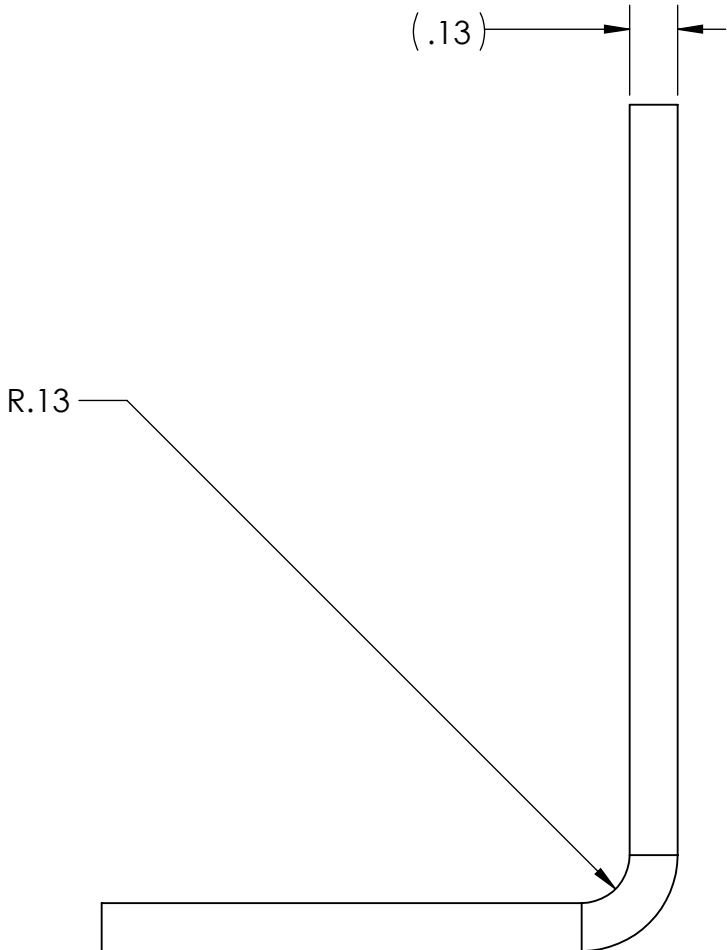
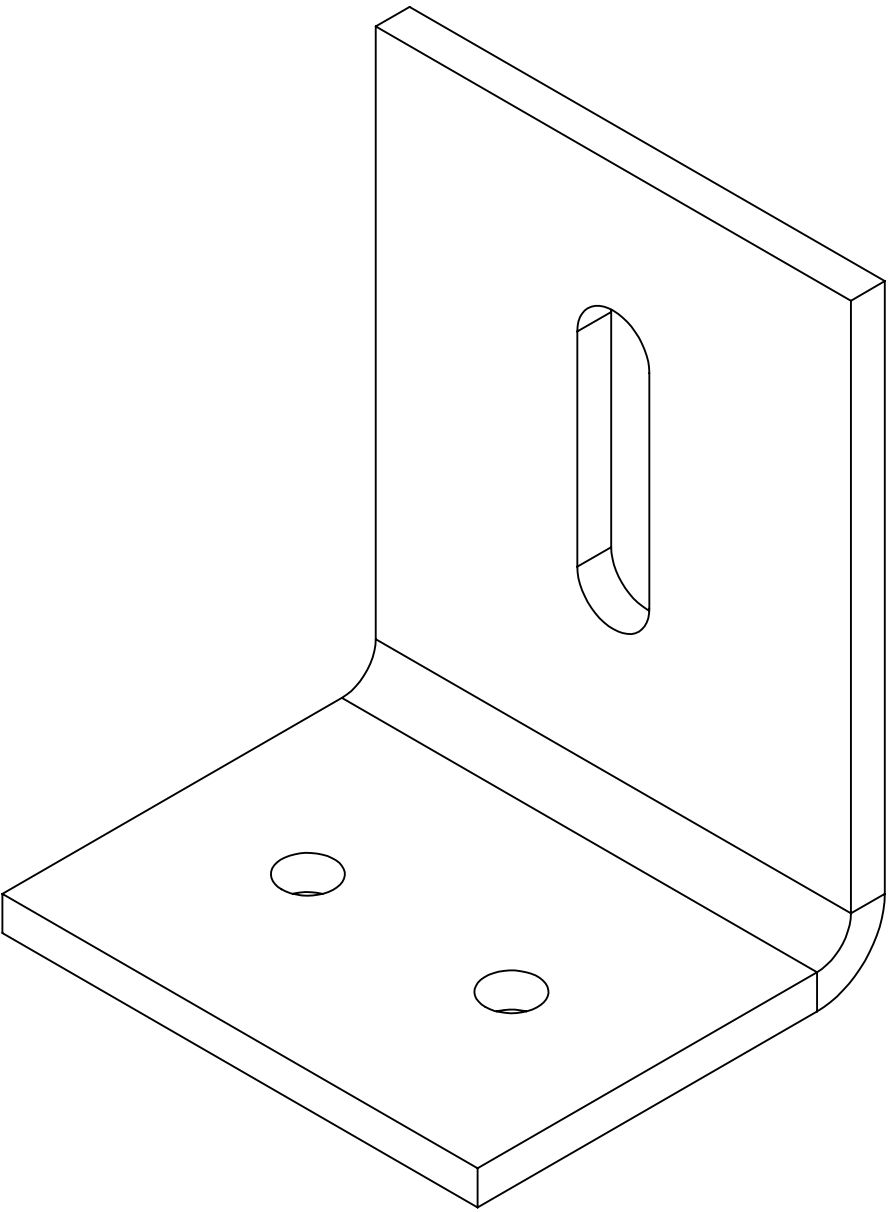




Note: Tag or Label with Part Number

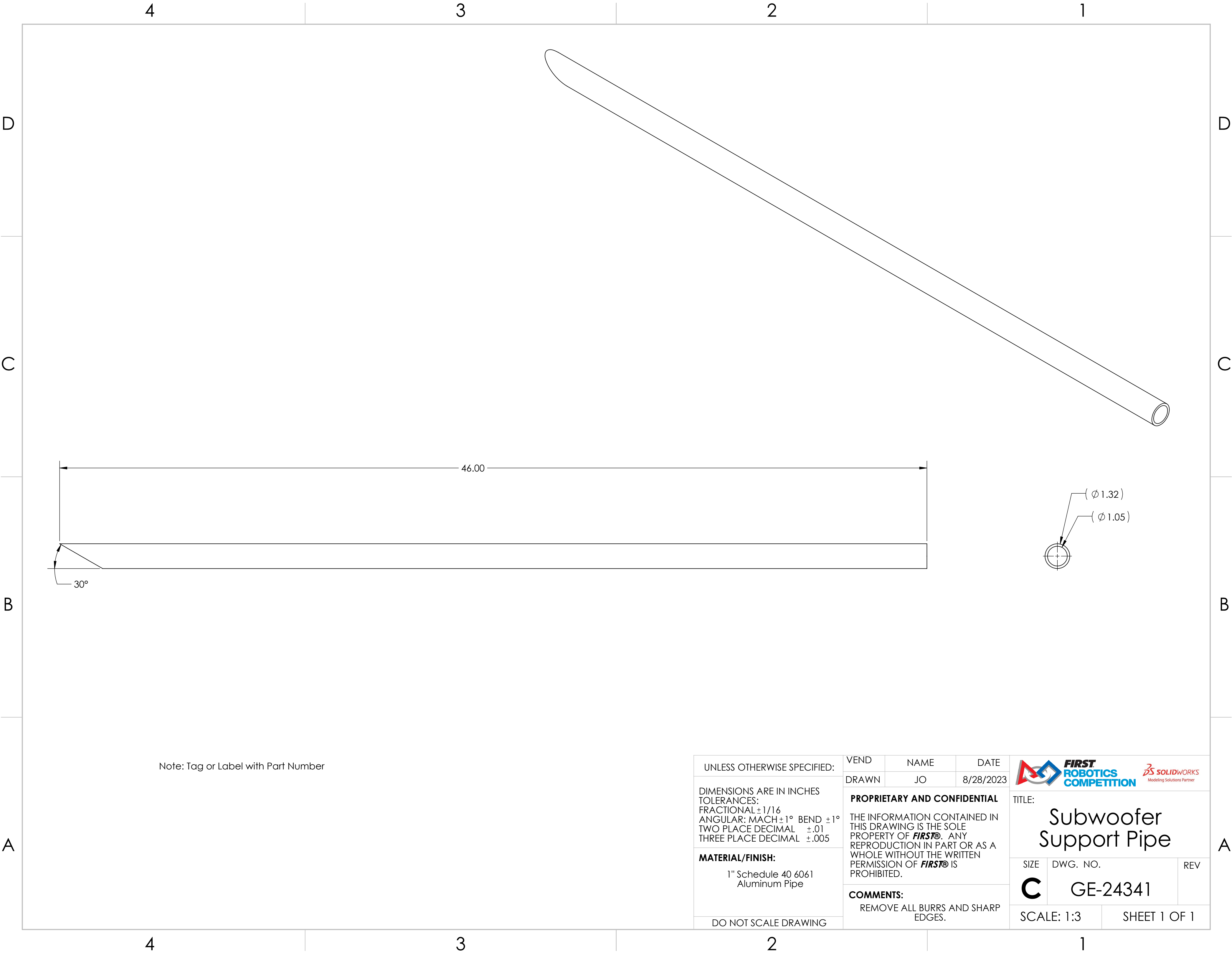
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$ MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Front Subwoofer Bracket</div>	
	DRAWN	JO	8/28/2023		
	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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24339
SCALE: 4:5		SHEET 1 OF 1			





Note: Tag or Label with Part Number

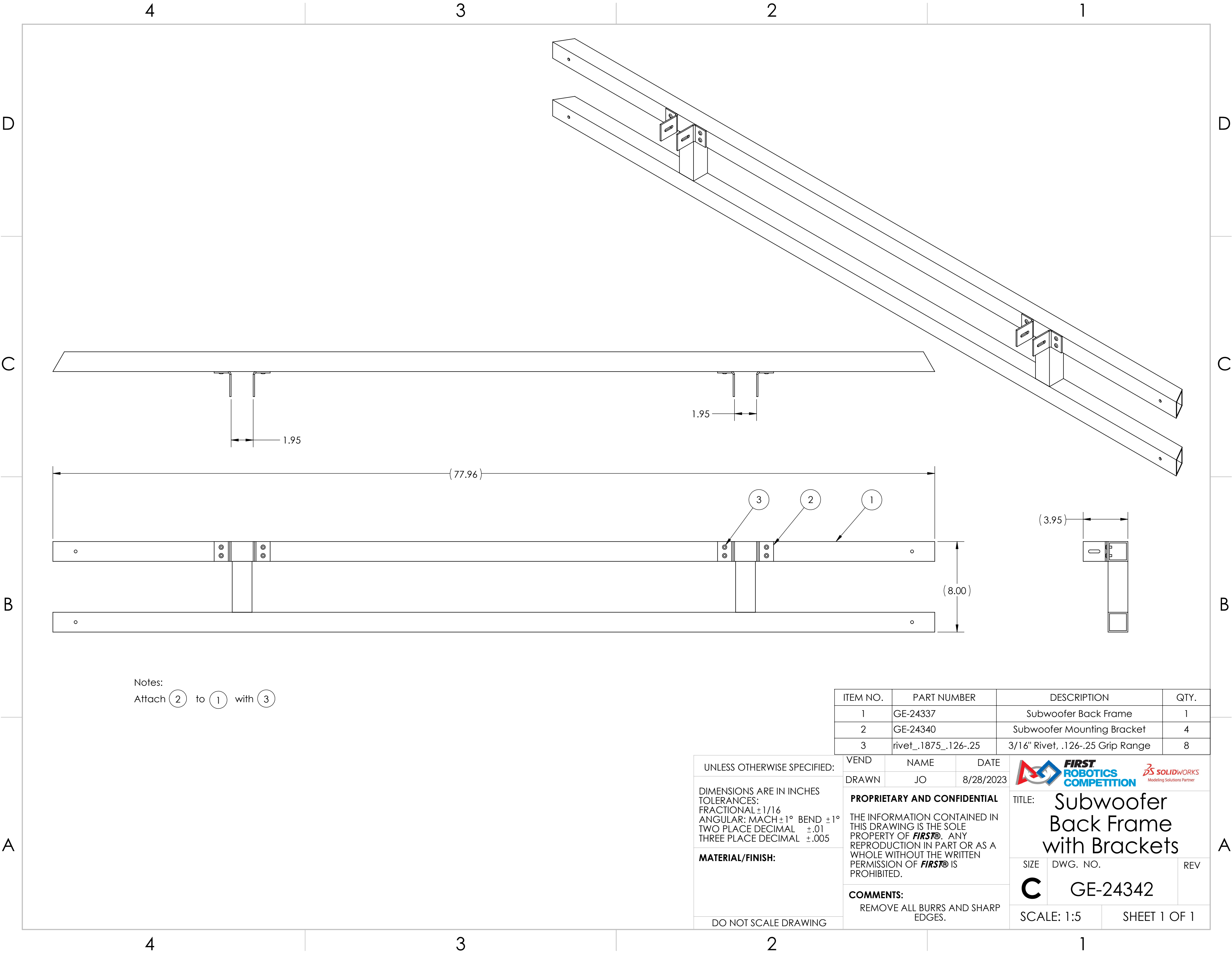


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	 	
	DRAWN	JO	8/28/2023		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION 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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			TITLE: Subwoofer Mounting Bracket	
			SIZE	DWG. NO.	REV
			C	GE-24340	
			SCALE: 2:1		SHEET 1 OF 1





Note: Tag or 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" Schedule 40 6061 Aluminum Pipe DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: <h1>Subwoofer Support Pipe</h1></div>		
	DRAWN	JO	8/28/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24341	
		SCALE: 1:3		SHEET 1 OF 1		



Notes:
Attach (2) to (1) with (3)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24337	Subwoofer Back Frame	1
2	GE-24340	Subwoofer Mounting Bracket	4
3	rivet_.1875_.126-.25	3/16" Rivet, .126-.25 Grip Range	8

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div>	
	DRAWN	JO	8/28/2023		
	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.			TITLE: Subwoofer Back Frame with Brackets	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24342
			SCALE: 1:5		SHEET 1 OF 1

4

3

2

1

D

D

C

C

B

B

A

A



GE-24334

GE-24343-Vinyl
Apply vinyl to one face. Front
and back of part are identical.

Cut out vinyl at all slot and hole locations.
28 places.

Translucent vinyl to be mounted on the
opposite side of the plastic in this area.

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

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

DF

10/18/2023

PROPRIETARY AND CONFIDENTIAL

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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: Subwoofer
Middle Panel
with Vinyl

SIZE

DWG. NO.

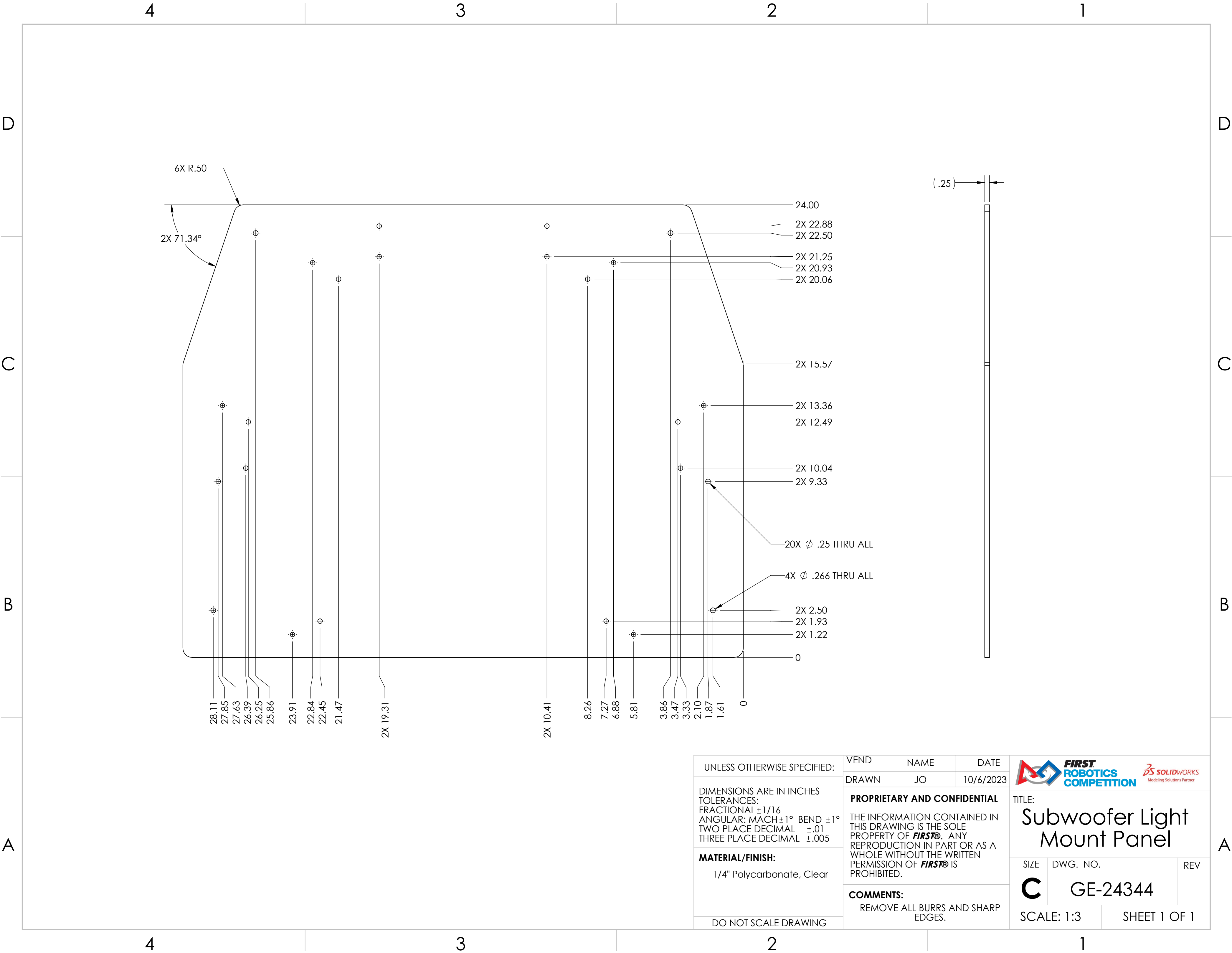
REV



C

GE-24343

SCALE: 1:4

SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/4" Polycarbonate, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div>		
	DRAWN	JO	10/6/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				TITLE: Subwoofer Light Mount Panel	
				SIZE	DWG. NO.	REV
				C	GE-24344	
				SCALE: 1:3		SHEET 1 OF 1

4

3

2

1

D

D

C

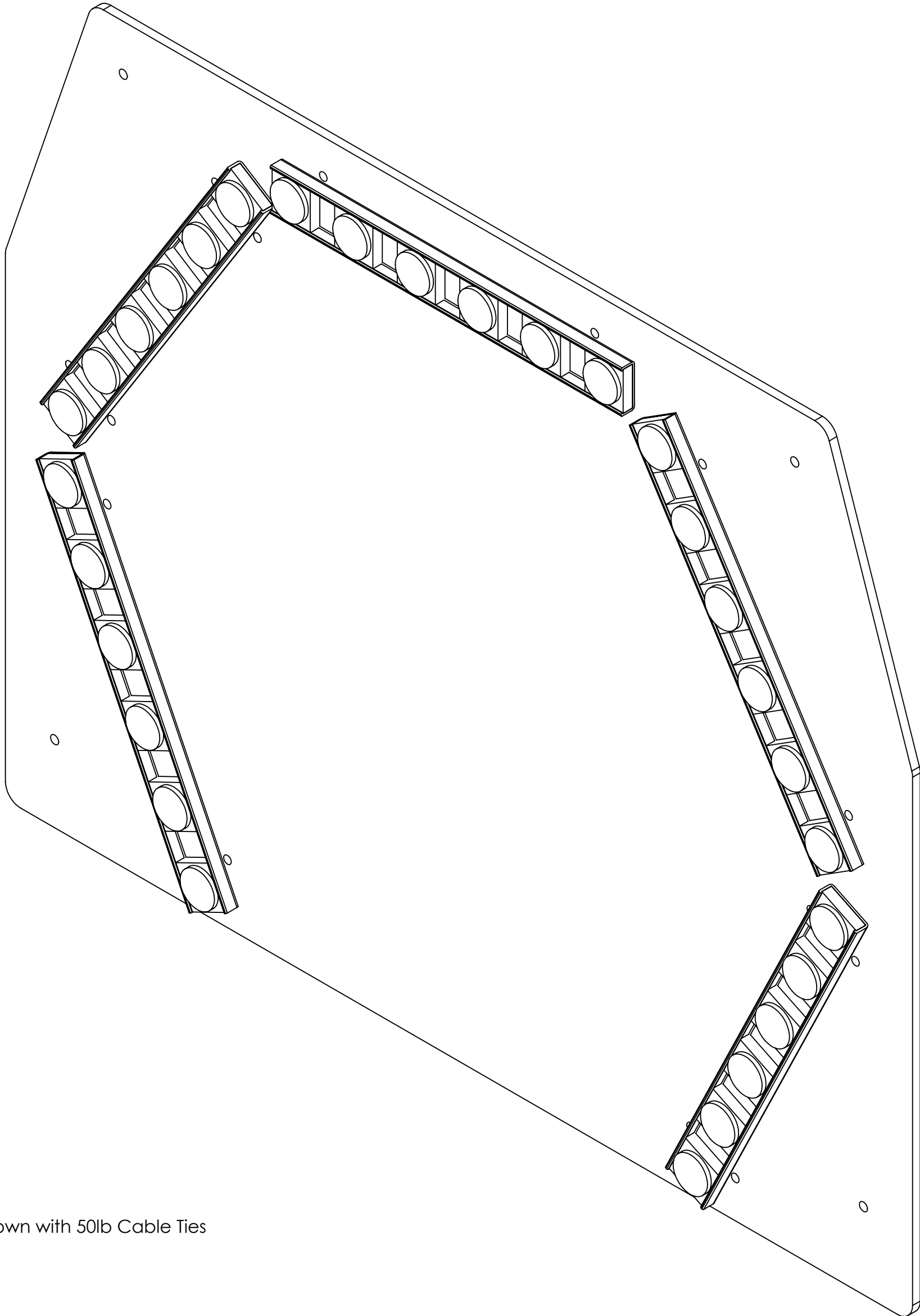
C

B

B



A

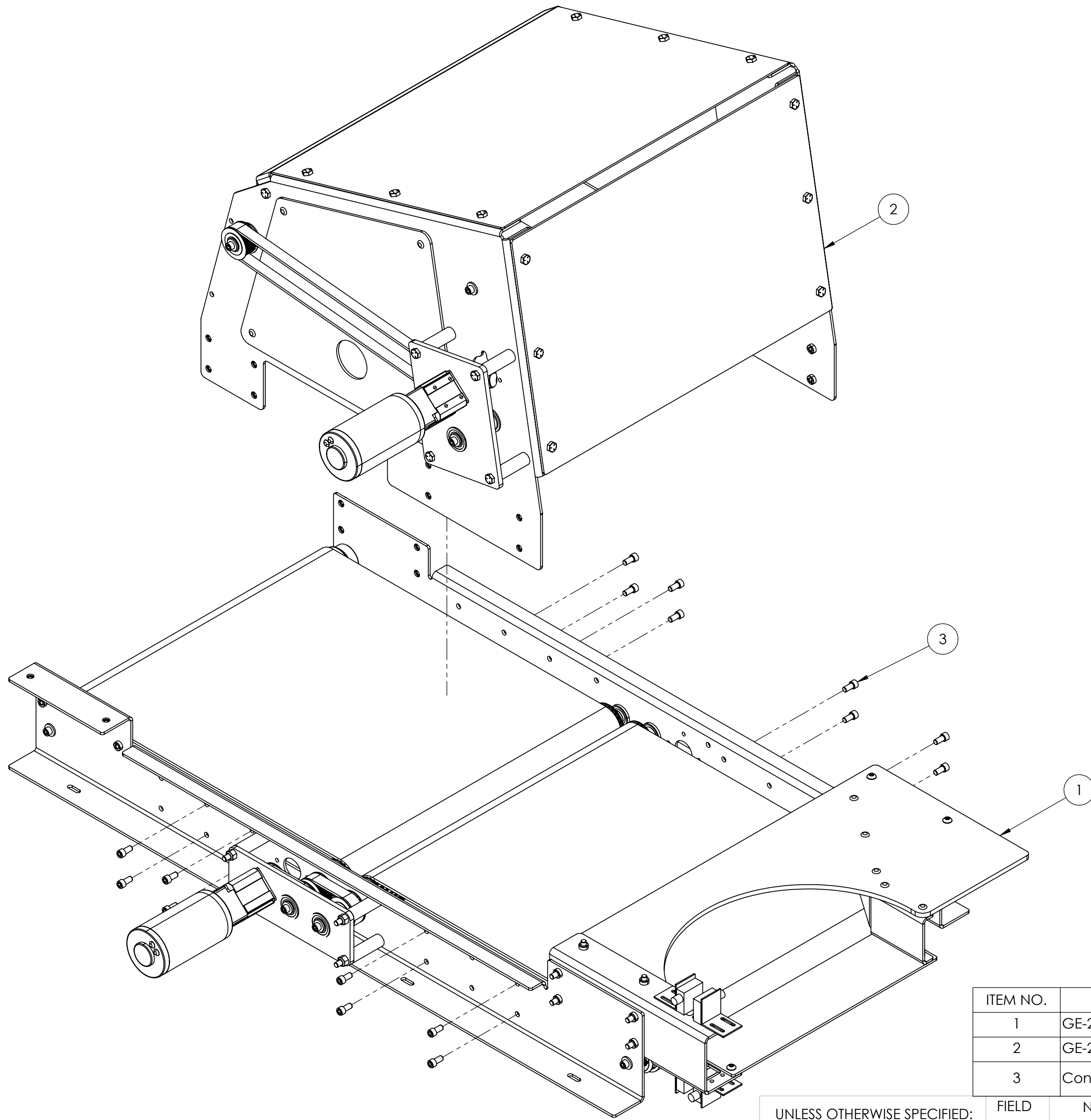
A





Attach Ligths as shown with 50lb Cable Ties

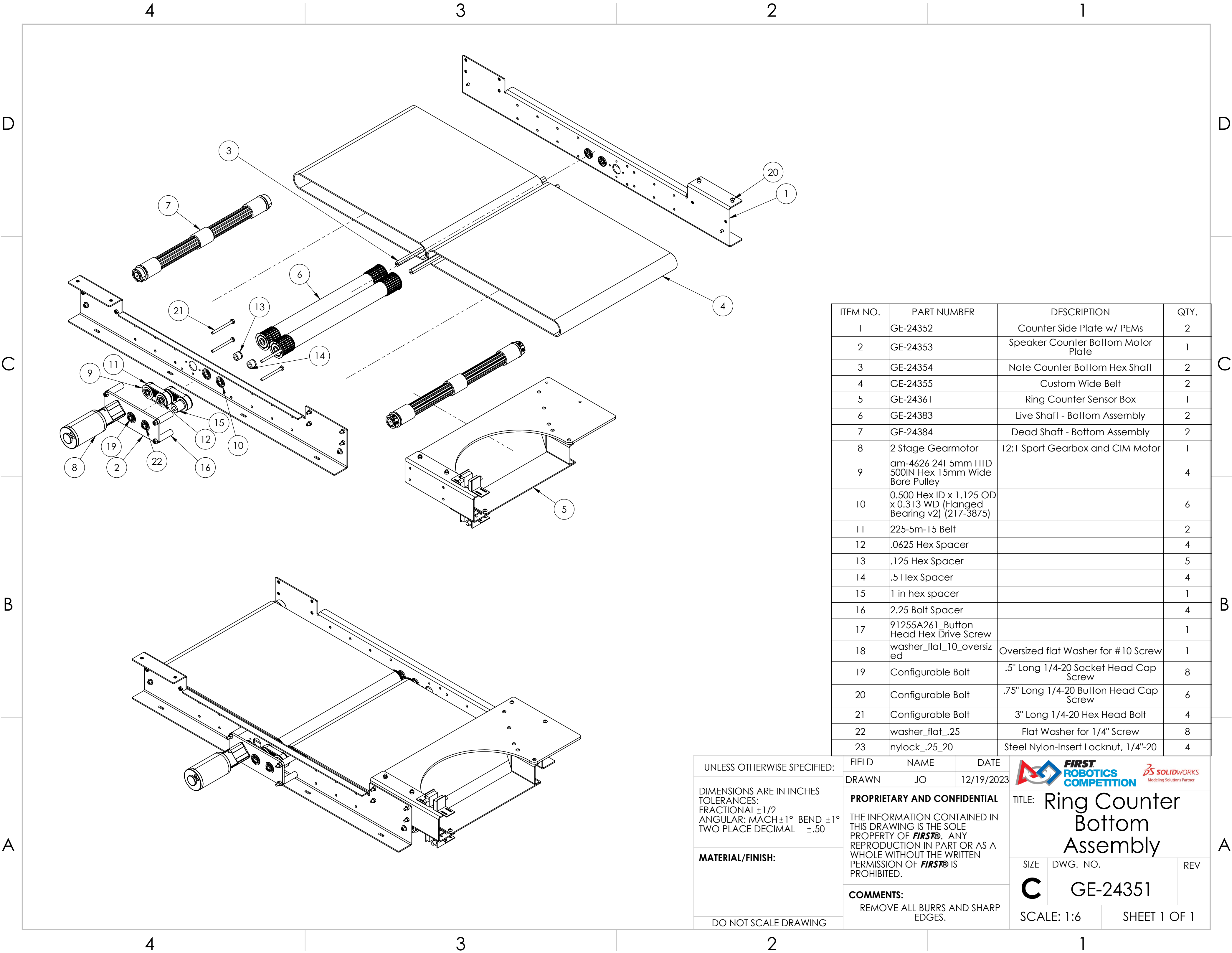
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24344	Subwoofer Light Mount Panel	1
2	lightTrackWithLights_duckbill		5

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	<div> FIRST ROBOTICS COMPETITION</div> <div> SOLIDWORKS Modeling Solutions Partner</div>		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50		DRAWN	JO	12/19/2023			
MATERIAL/FINISH:		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.			Subwoofer Light Panel Assembly		
DO NOT SCALE DRAWING		COMMENTS:			SIZE	DWG. NO.	REV
		REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24345	
					SCALE: 1:2.5		SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24351	Ring Counter Bottom Assembly	1
2	GE-24370	Ring Counter Top Assembly	1
3	Configurable Bolt	.5" Long 1/4-20 Socket Head Cap Screw	16

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	<div><div>FIRST ROBOTICS COMPETITION</div></div> <div><div>SOLIDWORKS Modeling Solutions Partner</div></div>		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50		DRAWN	JO	12/19/2023			
MATERIAL/FINISH:		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.			Ring Counter		
DO NOT SCALE DRAWING		COMMENTS:			SIZE	DWG. NO.	REV
		REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24350	
					SCALE: 1:4		SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24352	Counter Side Plate w/ PEMs	2
2	GE-24353	Speaker Counter Bottom Motor Plate	1
3	GE-24354	Note Counter Bottom Hex Shaft	2
4	GE-24355	Custom Wide Belt	2
5	GE-24361	Ring Counter Sensor Box	1
6	GE-24383	Live Shaft - Bottom Assembly	2
7	GE-24384	Dead Shaft - Bottom Assembly	2
8	2 Stage Gearmotor	12:1 Sport Gearbox and CIM Motor	1
9	am-4626 24T 5mm HTD 500IN Hex 15mm Wide Bore Pulley		4
10	0.500 Hex ID x 1.125 OD x 0.313 WD (Flanged Bearing v2) (217-3875)		6
11	225-5m-15 Belt		2
12	.0625 Hex Spacer		4
13	.125 Hex Spacer		5
14	.5 Hex Spacer		4
15	1 in hex spacer		1
16	2.25 Bolt Spacer		4
17	91255A261 Button Head Hex Drive Screw		1
18	washer_flat_10_oversized	Oversized flat Washer for #10 Screw	1
19	Configurable Bolt	.5" Long 1/4-20 Socket Head Cap Screw	8
20	Configurable Bolt	.75" Long 1/4-20 Button Head Cap Screw	6
21	Configurable Bolt	3" Long 1/4-20 Hex Head Bolt	4
22	washer_flat_.25	Flat Washer for 1/4" Screw	8
23	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	4

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
DRAWN



NAME
JO

DATE
12/19/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE: Ring Counter Bottom Assembly

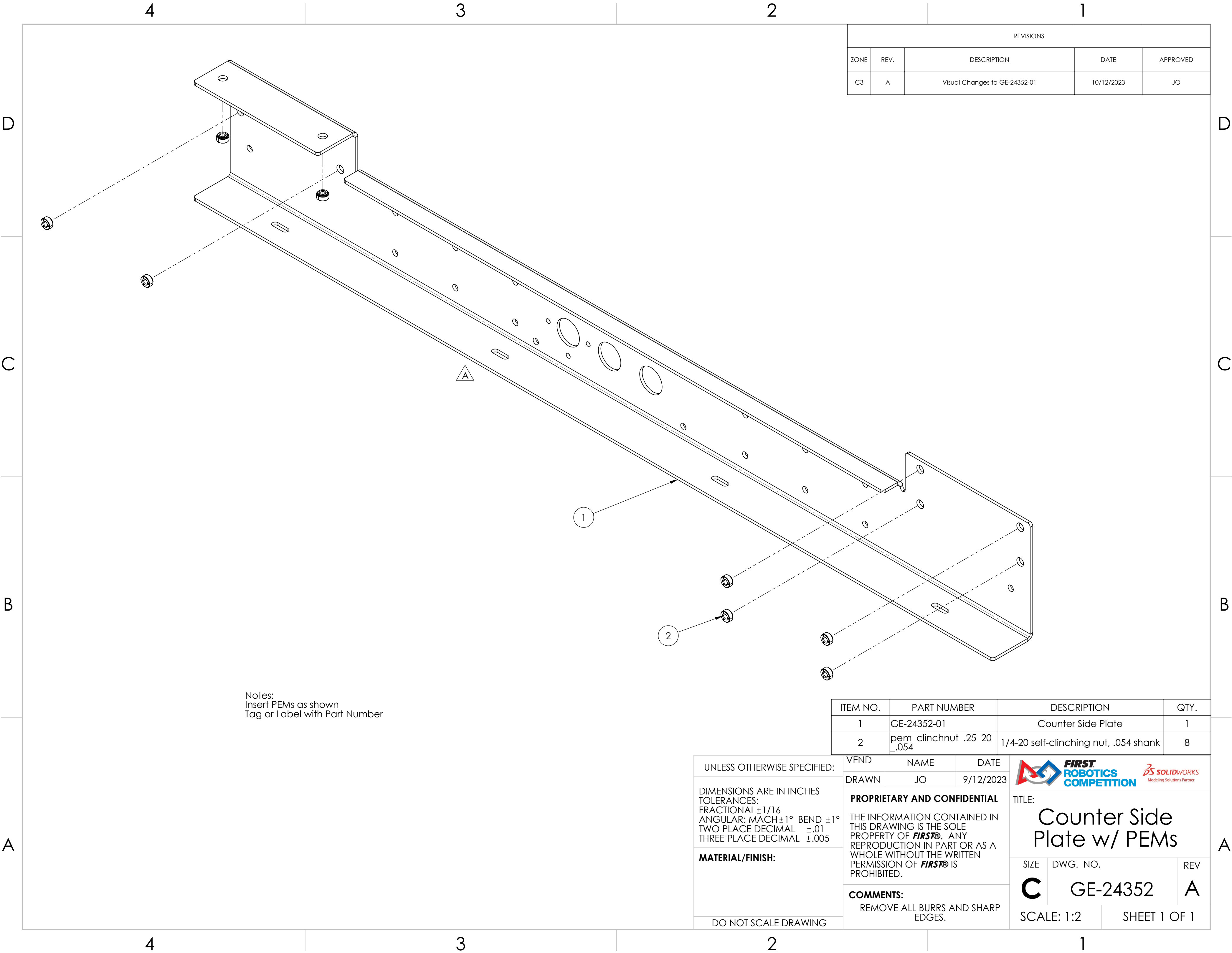
SIZE
C

DWG. NO.
GE-24351

REV

SCALE: 1:6



SHEET 1 OF 1



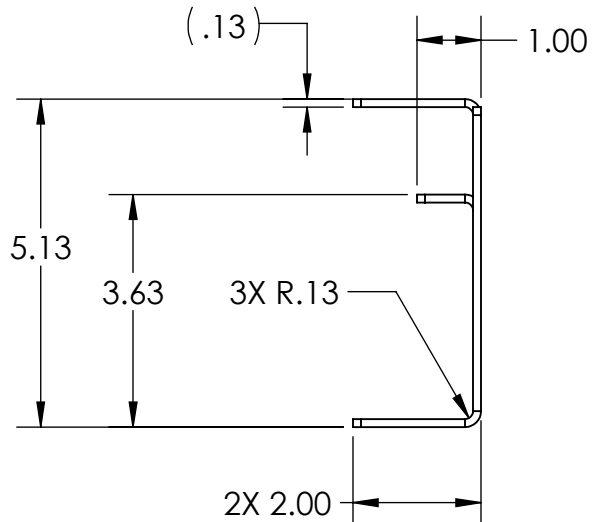
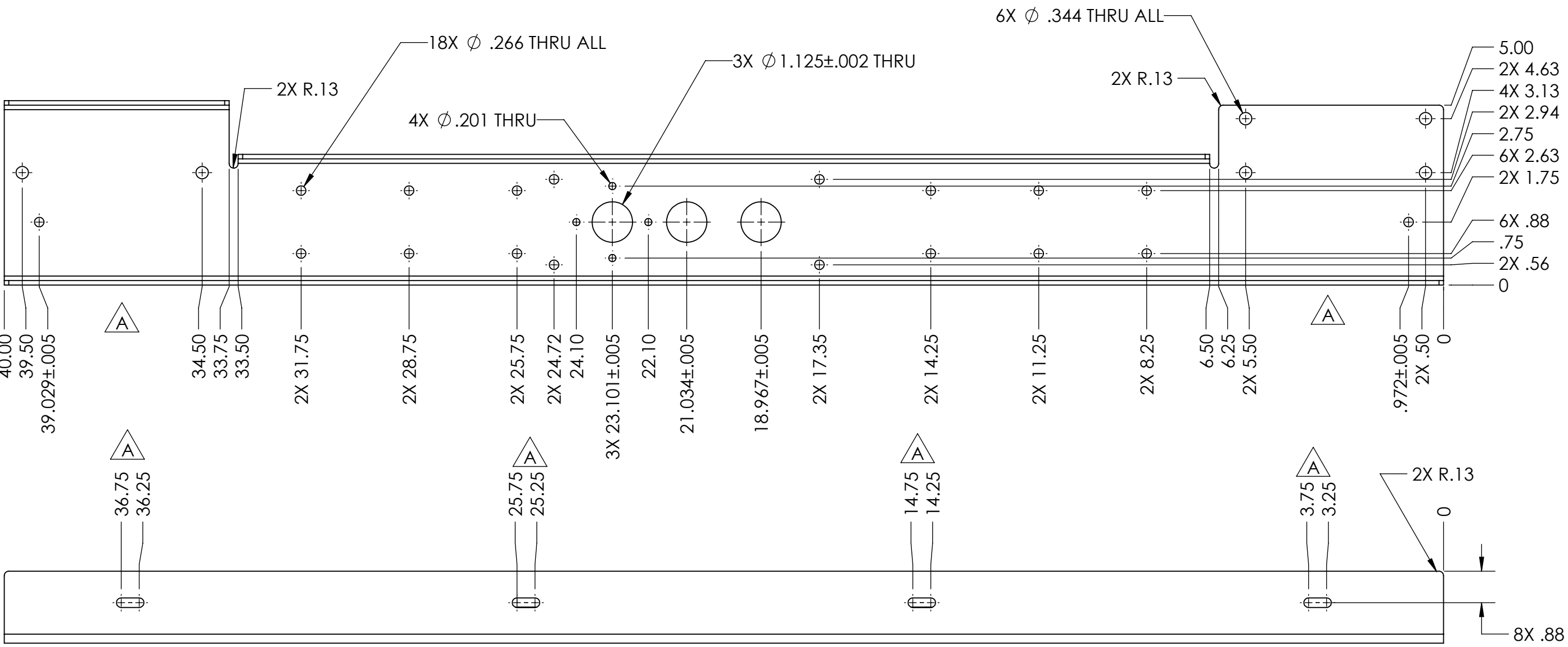
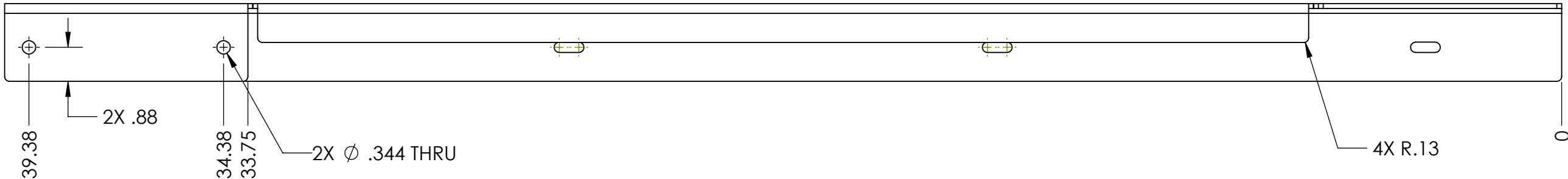
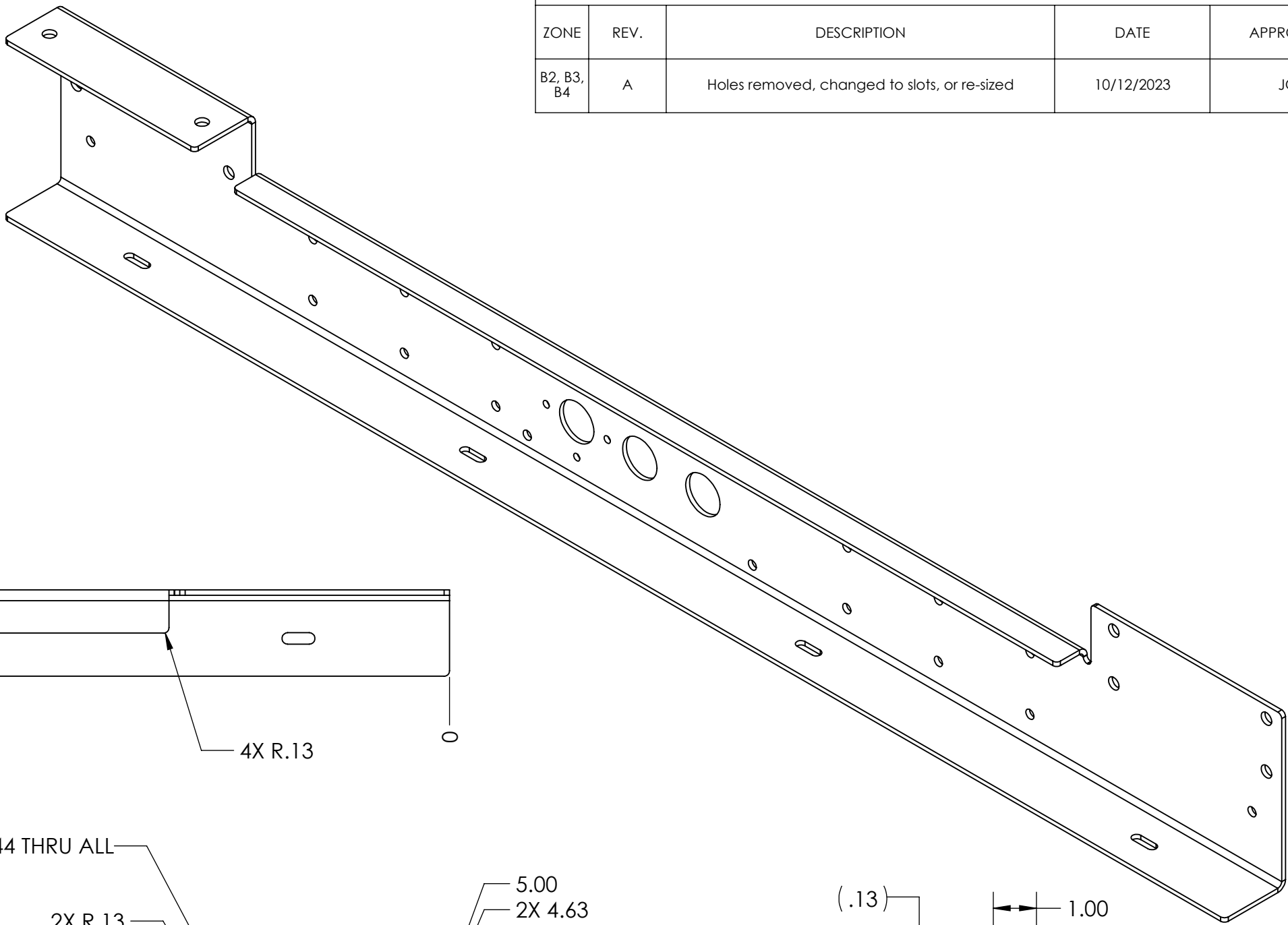
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C3	A	Visual Changes to GE-24352-01	10/12/2023	JO



Notes:
Insert PEMs as shown
Tag or Label with Part Number

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24352-01	Counter Side Plate	1
2	pem_clinchnut_.25_20 _.054	1/4-20 self-clinching nut, .054 shank	8

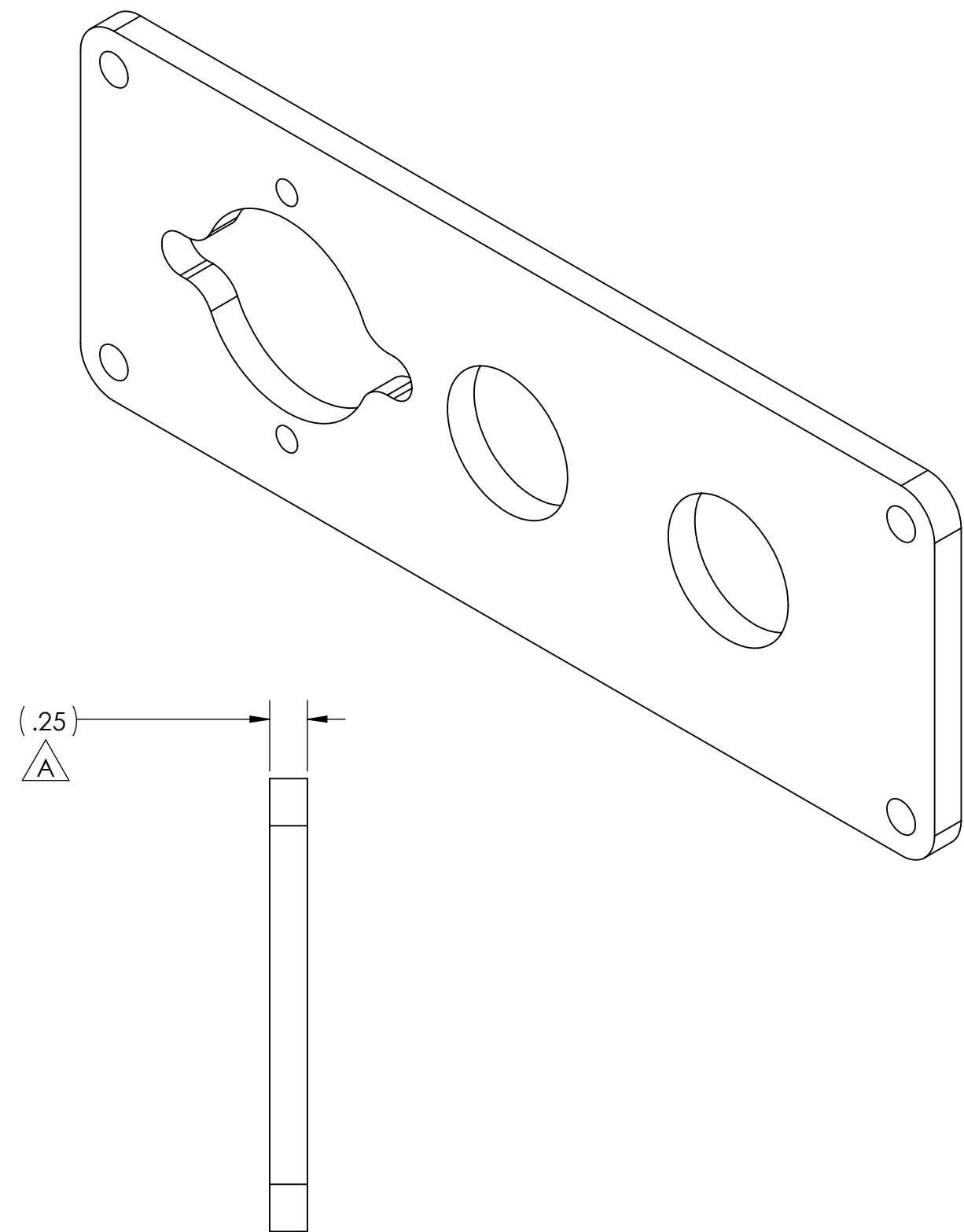
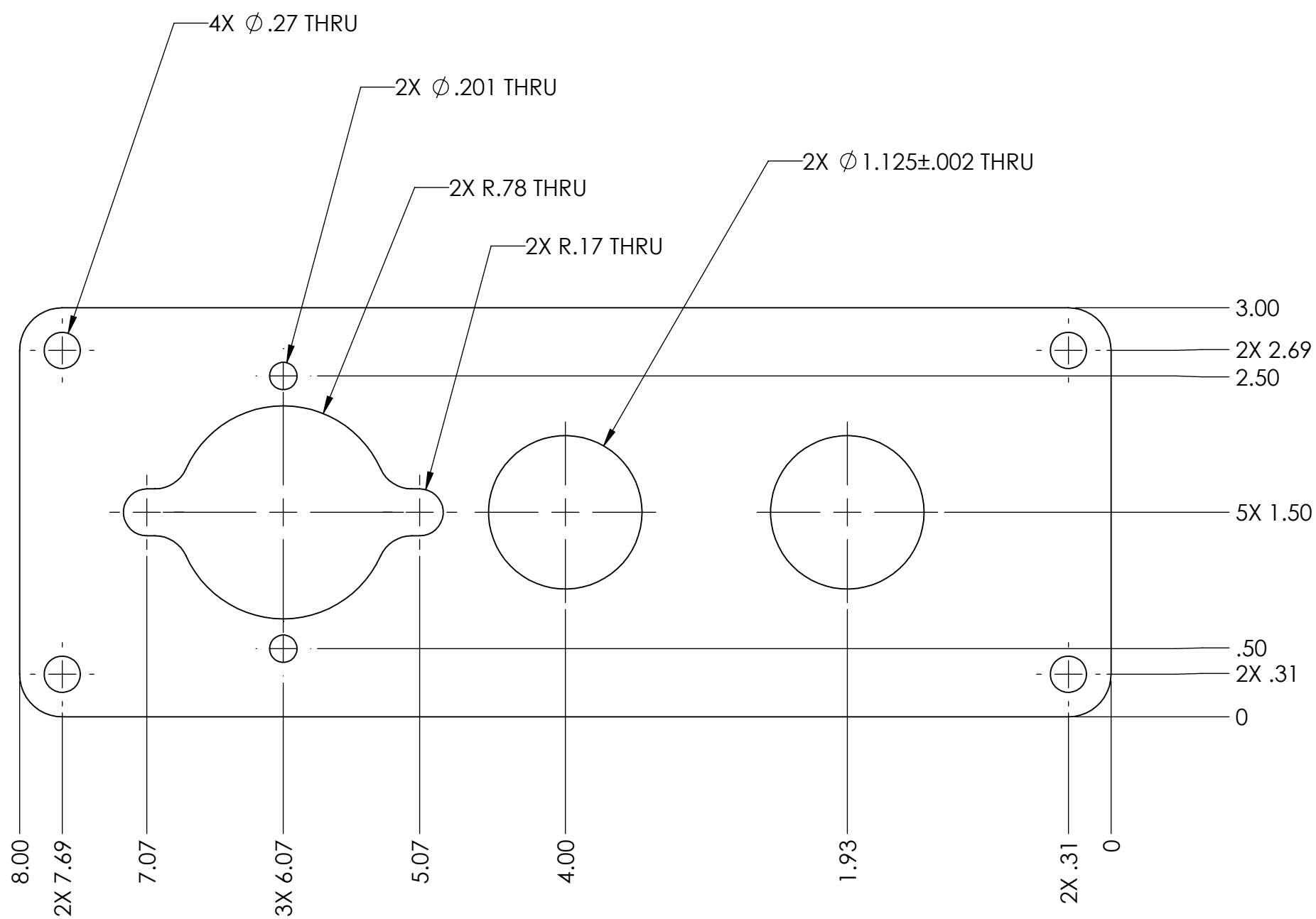
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: <h1>Counter Side Plate w/ PEMs</h1></div> <table><tr><td>SIZE</td><td>DWG. NO.</td><td>REV</td></tr><tr><td>C</td><td>GE-24352</td><td>A</td></tr><tr><td colspan="2">SCALE: 1:2</td><td>SHEET 1 OF 1</td></tr></table>	SIZE	DWG. NO.	REV	C	GE-24352	A	SCALE: 1:2		SHEET 1 OF 1
	SIZE	DWG. NO.	REV										
	C	GE-24352	A										
SCALE: 1:2		SHEET 1 OF 1											
DRAWN	JO	9/12/2023											
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.													
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.													



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2, B3, B4	A	Holes removed, changed to slots, or re-sized	10/12/2023	JO



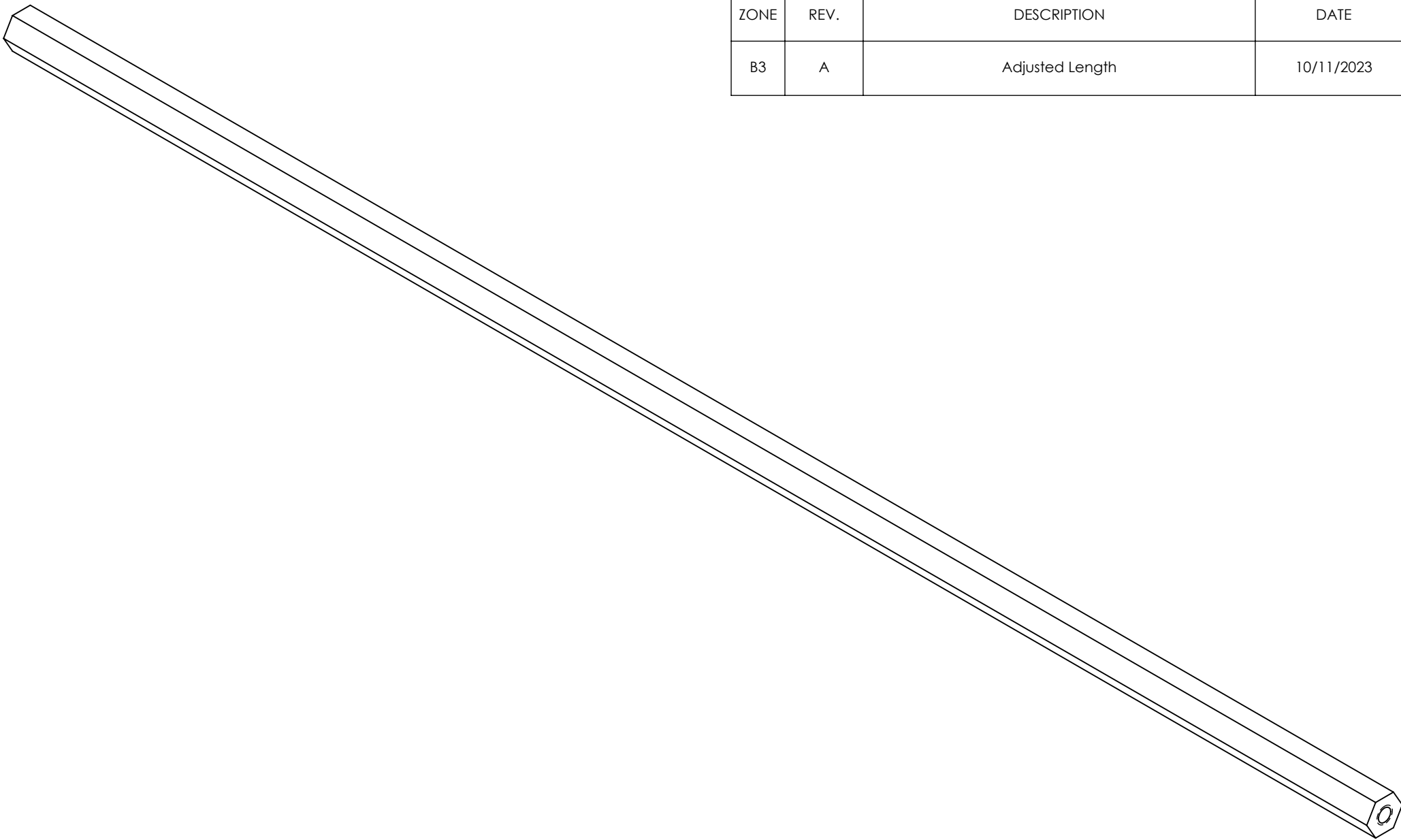
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> TITLE: Counter Side Plate			
	DRAWN	JO	9/12/2023				
	PROPRIETARY 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.				SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				C	GE-24352-01	A
				SCALE: 1:3		SHEET 1 OF 1	

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, C2	A	Thickness Increased	10/11/2023	JO



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/4" 6061 Aluminum DO NOT SCALE DRAWING	VEND	NAME	DATE	 
	DRAWN	JO	9/14/2023	
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
TITLE: Speaker Counter Bottom Motor Plate				
	SIZE	DWG. NO.		REV
	C	GE-24353		A
SCALE: 1:1		SHEET 1 OF 1		

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	A	Adjusted Length	10/11/2023	JO





$\phi .20 \begin{smallmatrix} \nabla \\ \nabla \end{smallmatrix} .65$
1/4-20 UNC $\begin{smallmatrix} \nabla \\ \nabla \end{smallmatrix} .50$

$\phi .20 \begin{smallmatrix} \nabla \\ \nabla \end{smallmatrix} .65$
1/4-20 UNC $\begin{smallmatrix} \nabla \\ \nabla \end{smallmatrix} .50$



$.500^{+.000}_{-.002}$ HEX

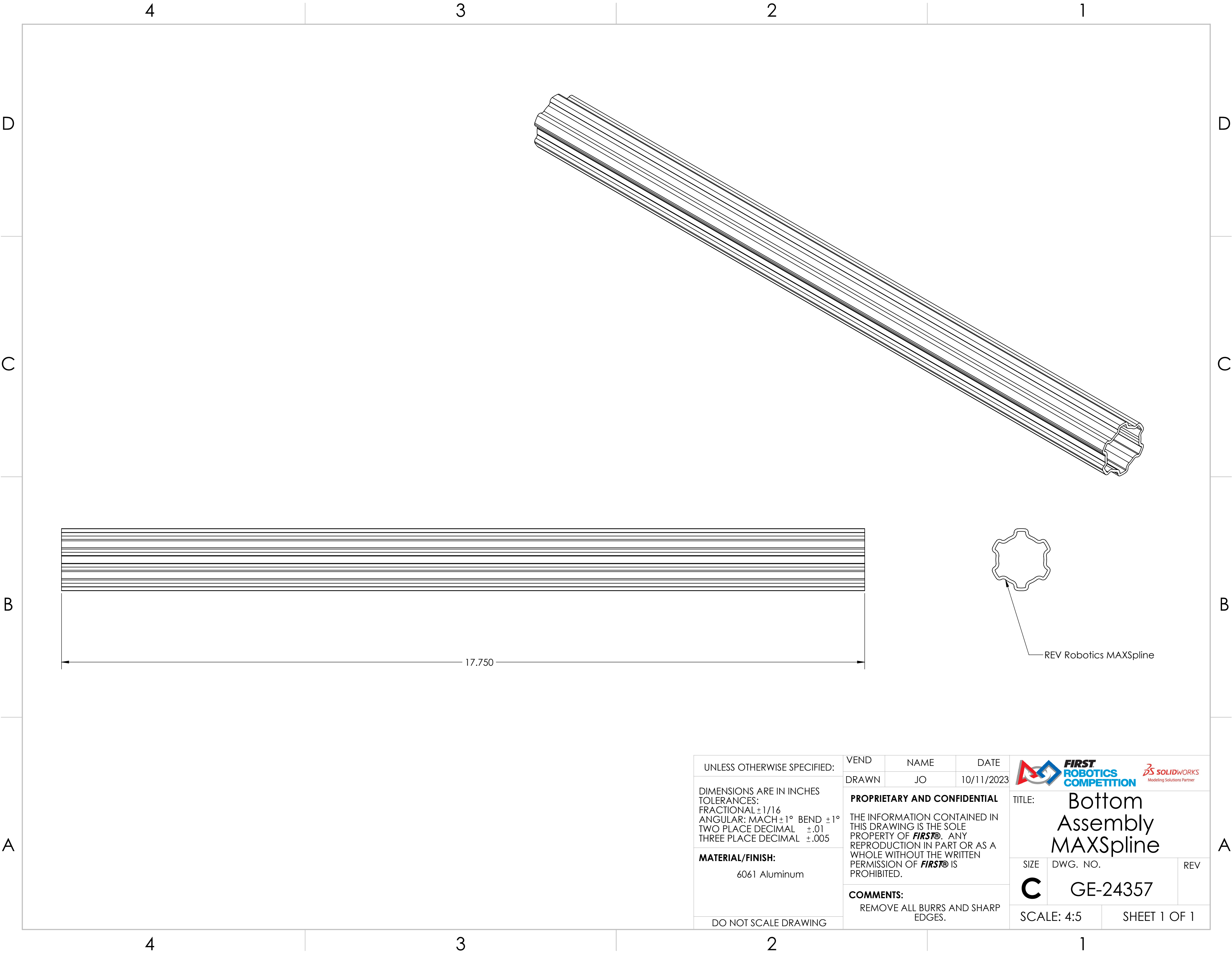
22.13



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div> <div>TITLE: Note Counter Bottom Hex Shaft</div>	
	DRAWN	JO	9/12/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			SIZE DWG. NO. REV	
	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:			C GE-24354 A	
1018 Steel 1/2" Hex Shaft	REMOVE ALL BURRS AND SHARP EDGES.				
DO NOT SCALE DRAWING	SCALE: 2:3		SHEET 1 OF 1		

Specs:
168 Tooth, RT-25 Profile
Length: 17.50" Long

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: REV Robotics RT-25 Belt DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div>		
	DRAWN	JO	10/11/2023			
	PROPRIETARY AND CONFIDENTIAL			TITLE: Custom Wide Belt		
	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.			SIZE C	DWG. NO. GE-24355	REV
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:4		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:
6061 Aluminum



DO NOT SCALE DRAWING

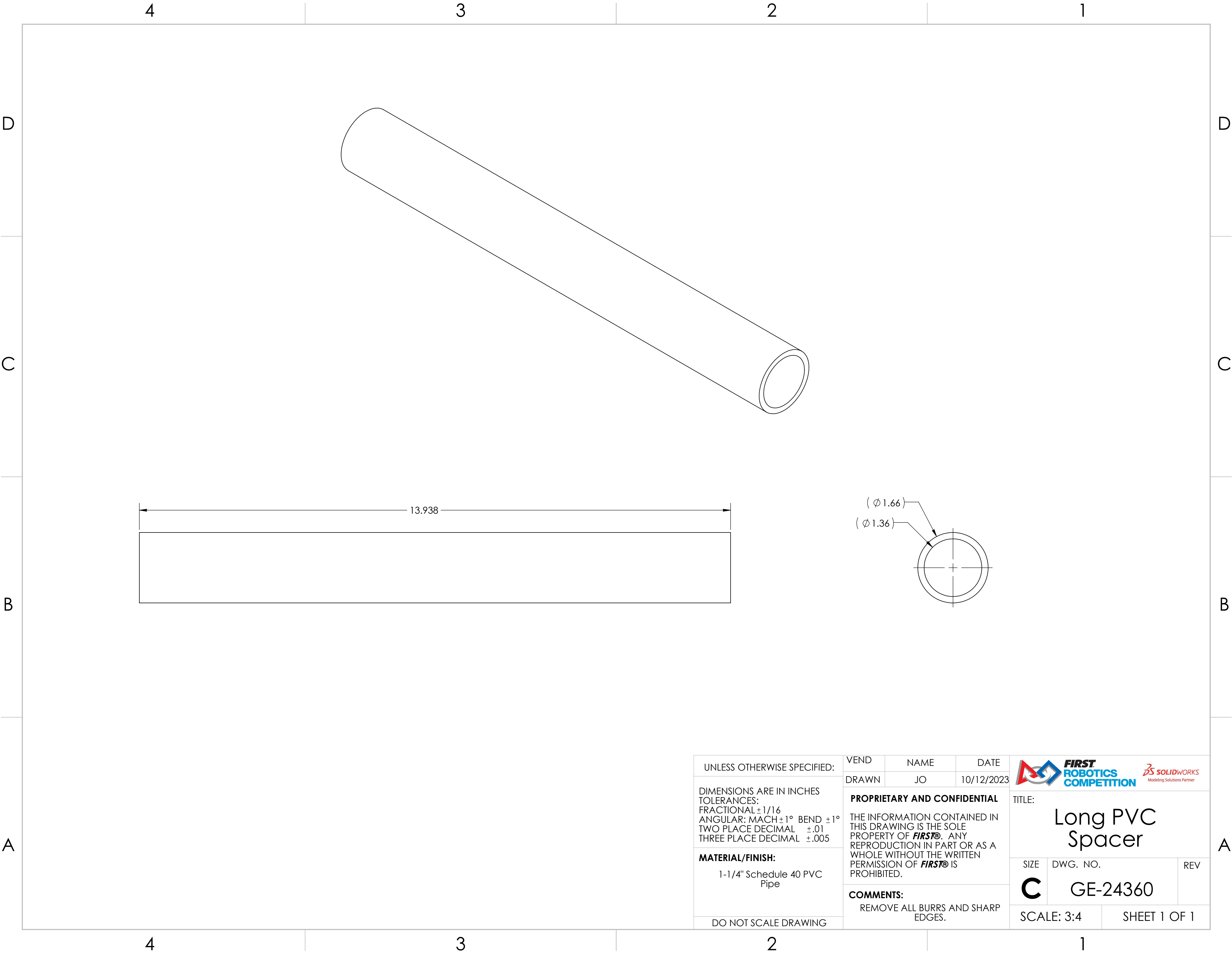
VEND	NAME	DATE
DRAWN	JO	10/11/2023

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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

 		
TITLE: Bottom Assembly MAXSpline		
SIZE C	DWG. NO. GE-24357	REV
SCALE: 4:5		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:
1-1/4" Schedule 40 PVC
Pipe



DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	JO	10/12/2023

PROPRIETARY AND CONFIDENTIAL

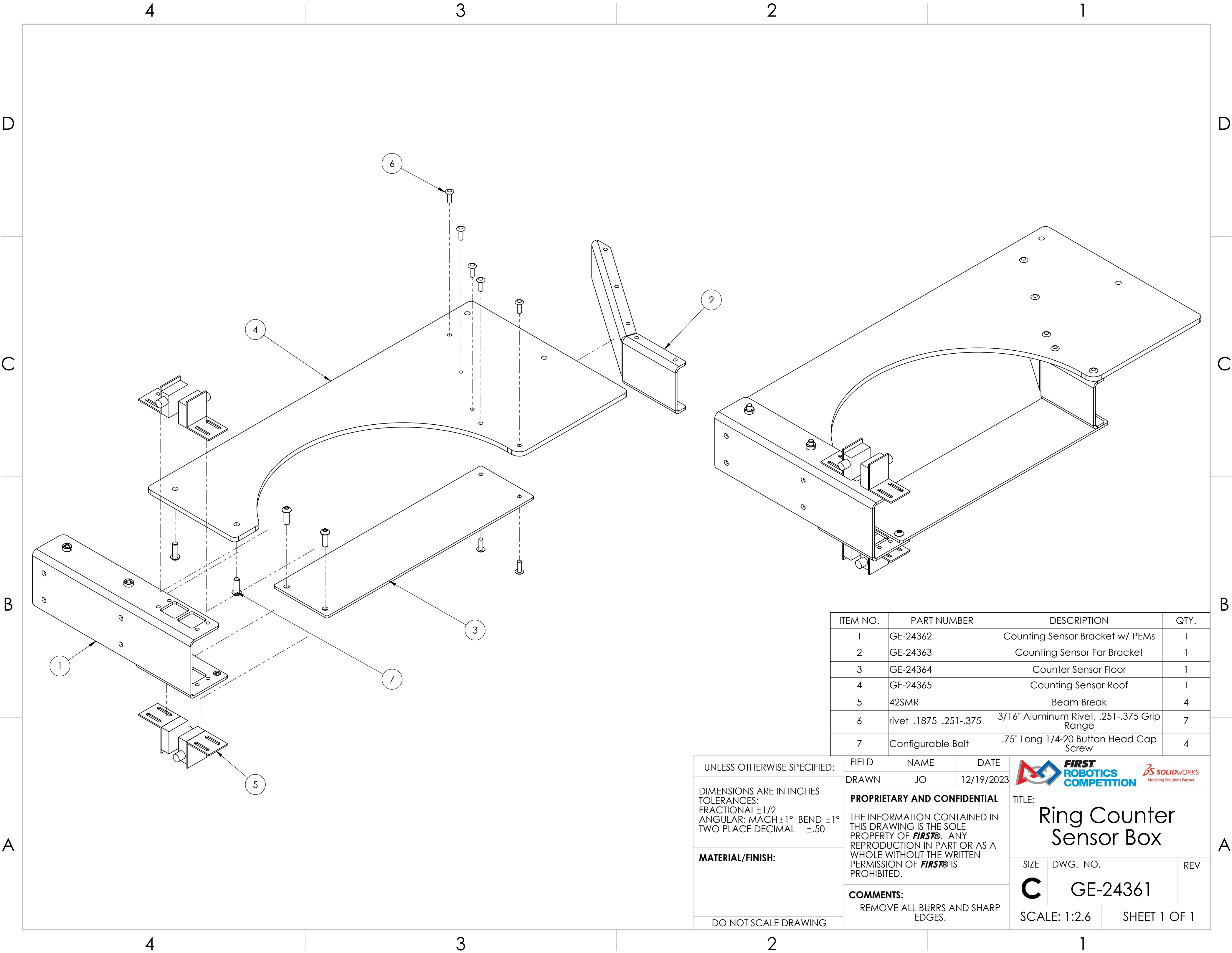
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF **FIRST®**. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF **FIRST®** IS PROHIBITED.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.





TITLE:
**Long PVC
Spacer**

SIZE C	DWG. NO. GE-24360	REV
SCALE: 3:4		SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24362	Counting Sensor Bracket w/ PEMs	1
2	GE-24363	Counting Sensor Far Bracket	1
3	GE-24364	Counter Sensor Floor	1
4	GE-24365	Counting Sensor Roof	1
5	42SMR	Beam Break	4
6	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	7
7	Configurable Bolt	.75" Long 1/4-20 Button Head Cap Screw	4

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	<div></div> <div>TITLE: Ring Counter Sensor Box</div>	
	DRAWN	JO	12/19/2023		
	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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24361
		SCALE: 1:2.6		SHEET 1 OF 1	

4

3

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1

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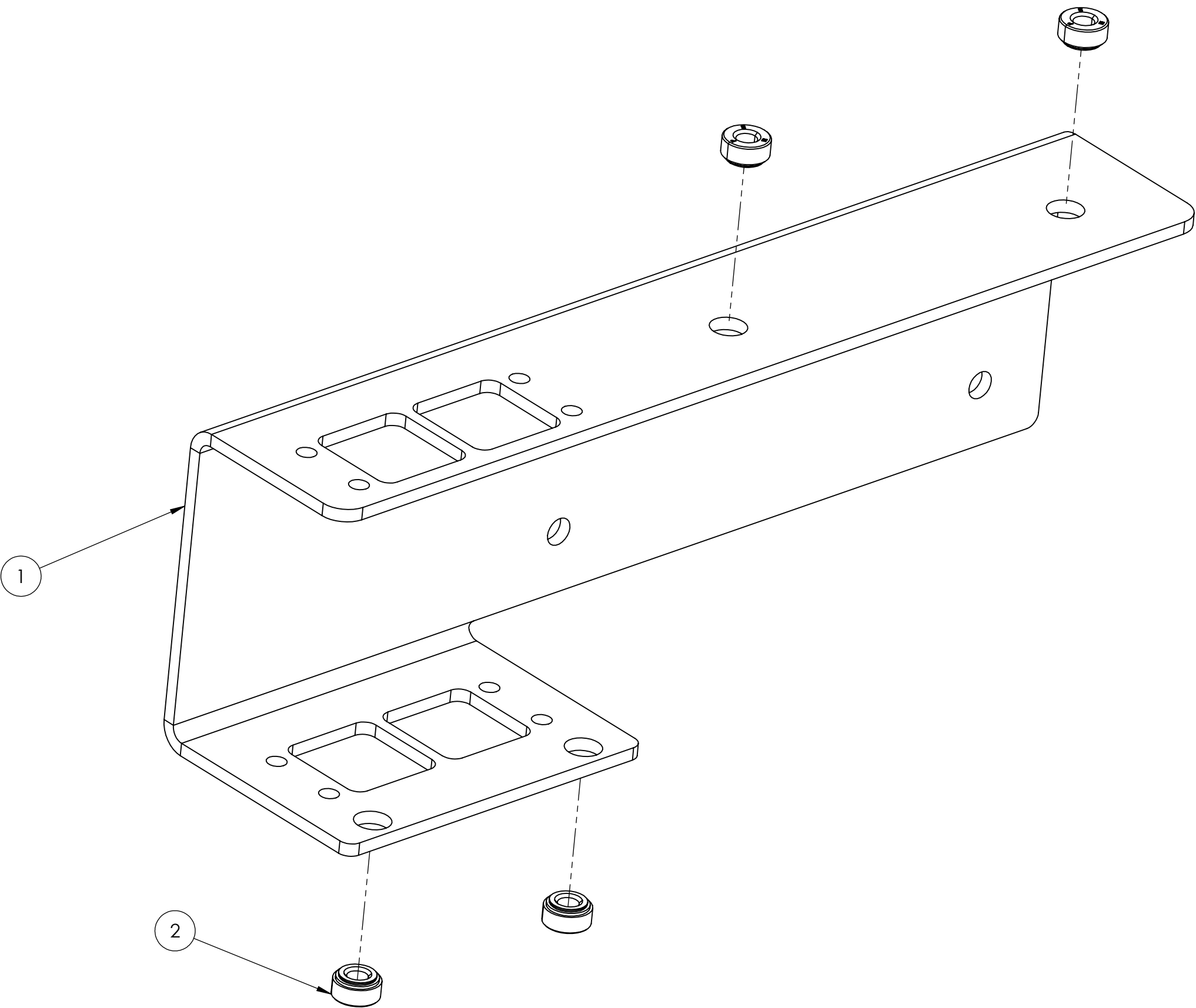
C

B

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A

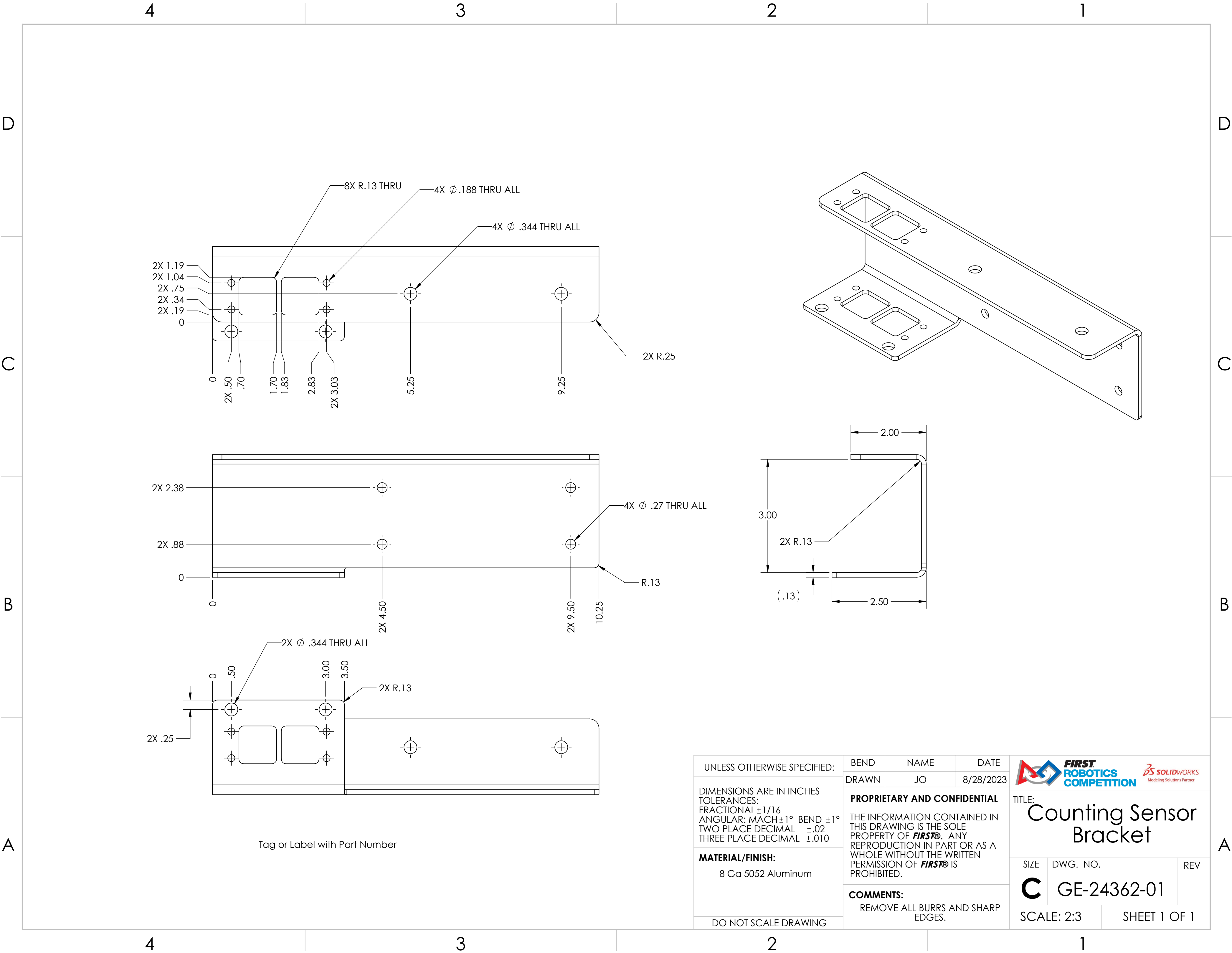
A





Tag or Label with Part Number

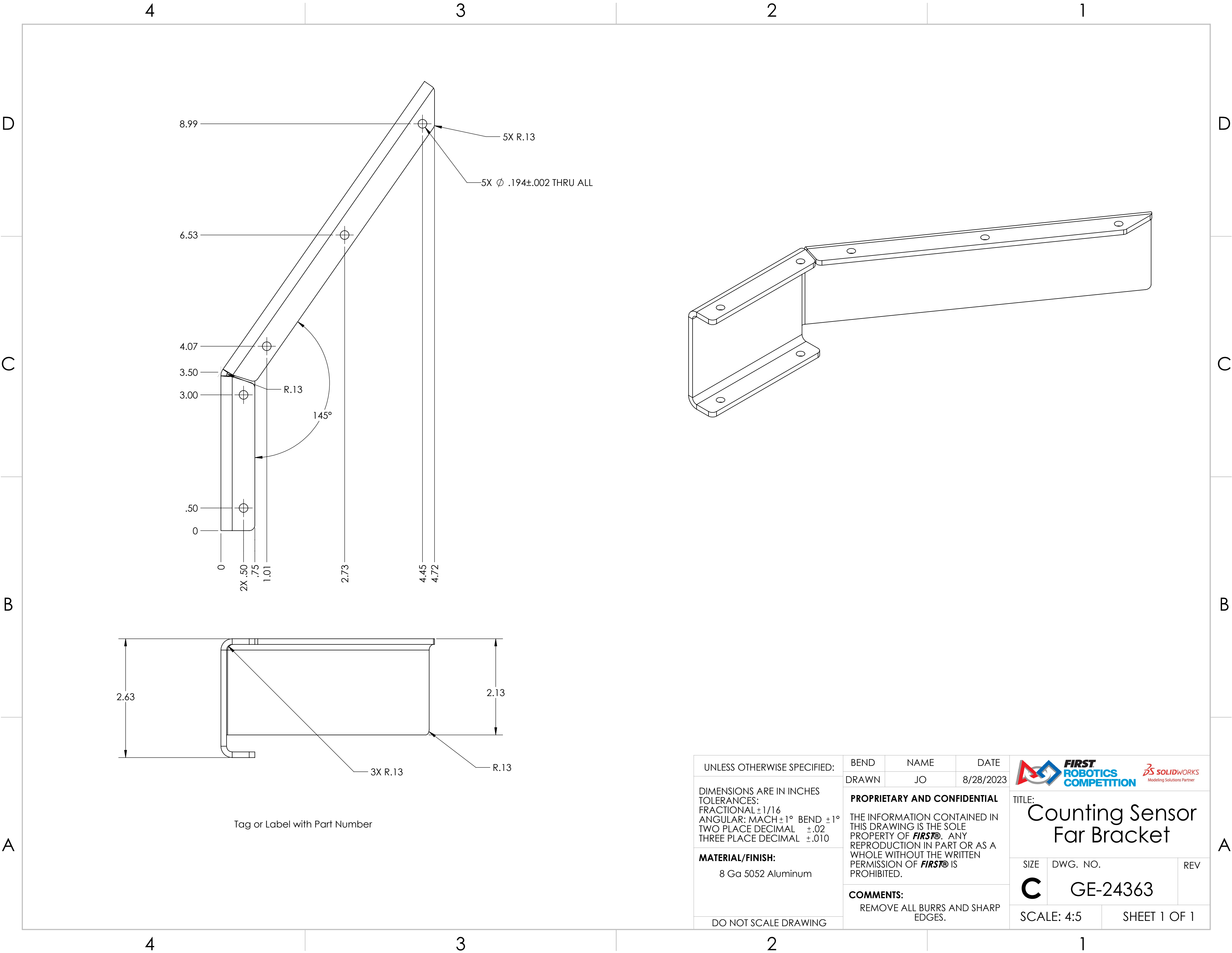
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24362-01	Counting Sensor Bracket	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	4



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$ MATERIAL/FINISH: DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> TITLE: Counting Sensor Bracket w/ PEMs		
	DRAWN	JO	10/19/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24362	
		SCALE: 1:1		SHEET 1 OF 1		

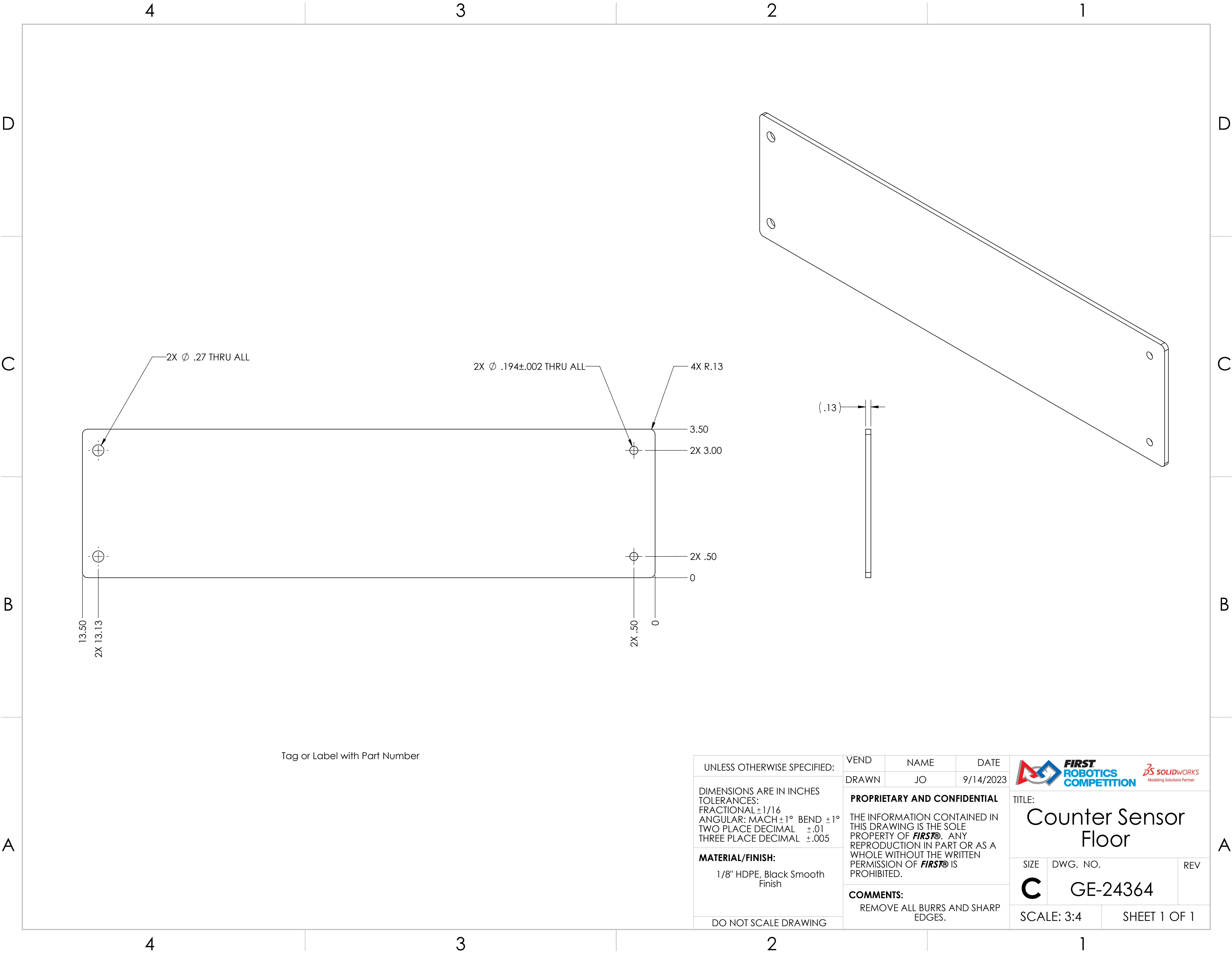


Tag or Label with Part Number

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$ MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	  TITLE: Counting Sensor Bracket	
	DRAWN	JO	8/28/2023		
	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.			SIZE	DWG. NO.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24362-01
SCALE: 2:3		SHEET 1 OF 1			



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.010 MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Counting Sensor Far Bracket</div>		
	DRAWN	JO	8/28/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24363	
SCALE: 4:5		SHEET 1 OF 1				



Tag or 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:

1/8" HDPE, Black Smooth
Finish

DO NOT SCALE DRAWING

VEND

NAME

DATE

DRAWN

JO

9/14/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP
EDGES.



**FIRST
ROBOTICS
COMPETITION**

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Counter Sensor
Floor

SIZE

C

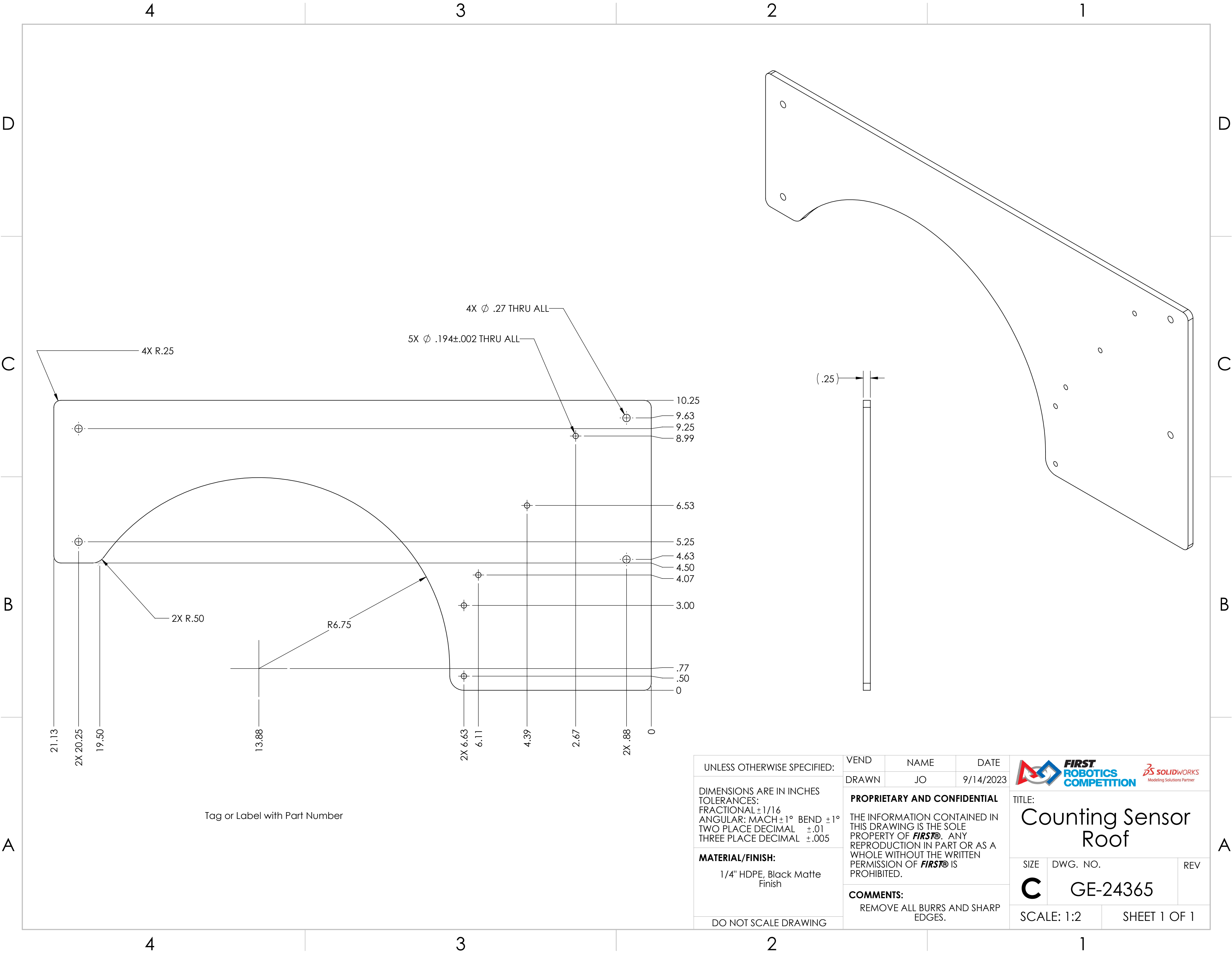
DWG. NO.

GE-24364

REV

SCALE: 3:4

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:
1/4" HDPE, Black Matte Finish


DO NOT SCALE DRAWING

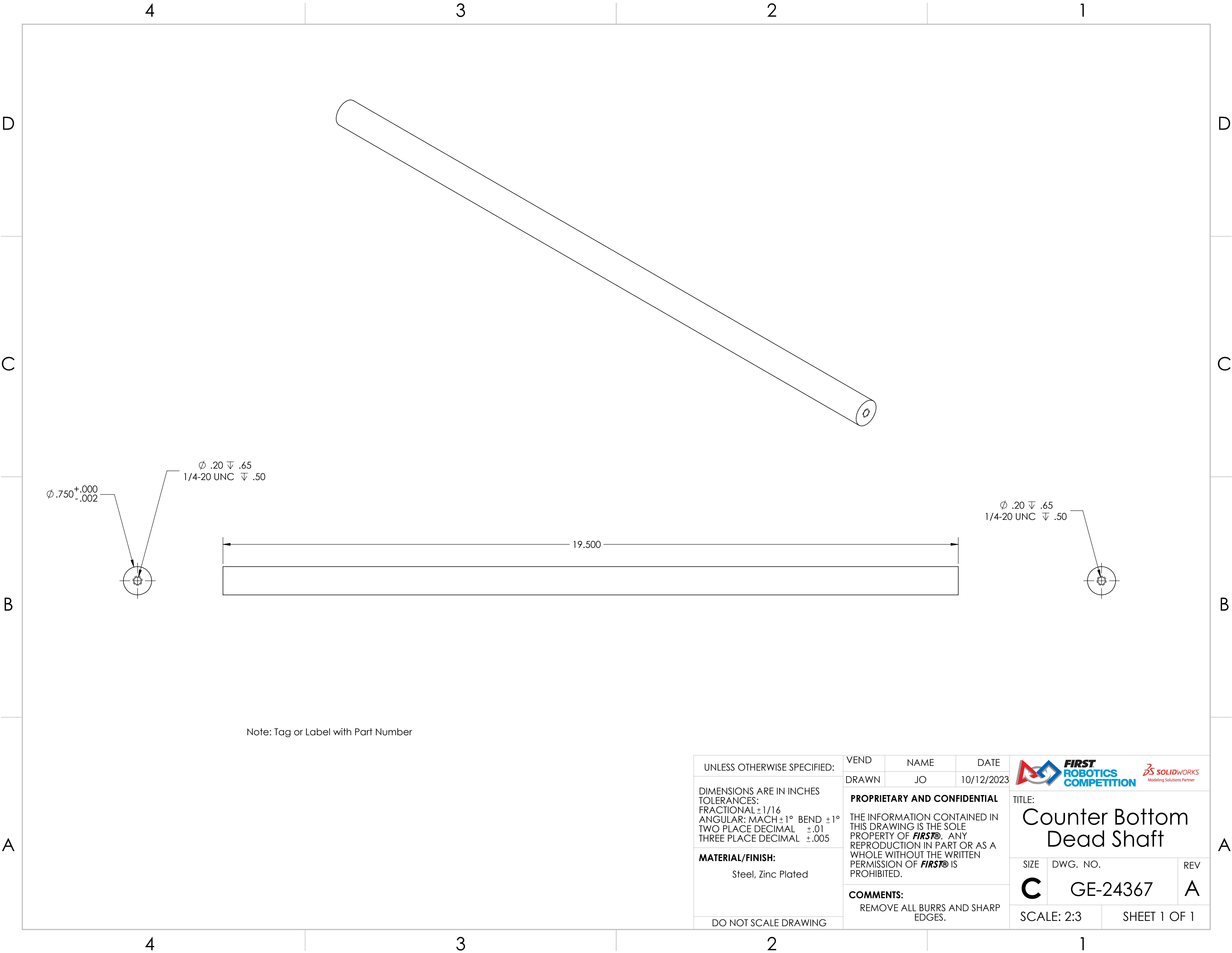
VEND	NAME	DATE
DRAWN	JO	9/14/2023



PROPRIETARY AND CONFIDENTIAL

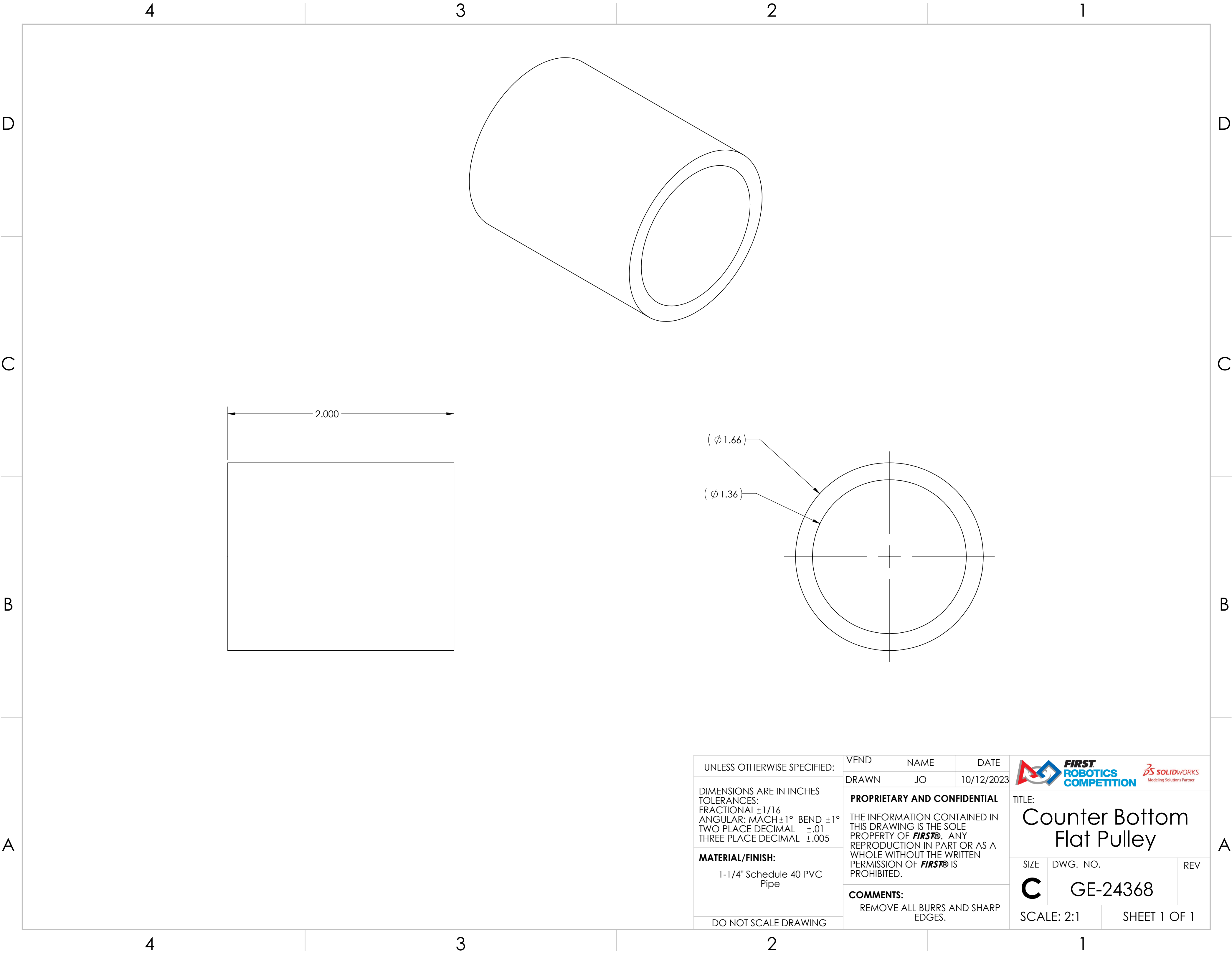
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF **FIRST®**. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF **FIRST®** IS PROHIBITED.



COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

		
TITLE: Counting Sensor Roof		
SIZE C	DWG. NO. GE-24365	REV
SCALE: 1:2		SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: Steel, Zinc Plated DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Counter Bottom Dead Shaft</div>		
	DRAWN	JO	10/12/2023			
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
SCALE: 2:3		SHEET 1 OF 1		SIZE	DWG. NO.	REV
C		GE-24367		A		



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>		
	DRAWN	JO	10/12/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Counter Bottom Flat Pulley		
	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.			SIZE	DWG. NO.	REV
MATERIAL/FINISH: 1-1/4" Schedule 40 PVC Pipe				C	GE-24368	
DO NOT SCALE DRAWING				SCALE: 2:1		SHEET 1 OF 1

D

C

B

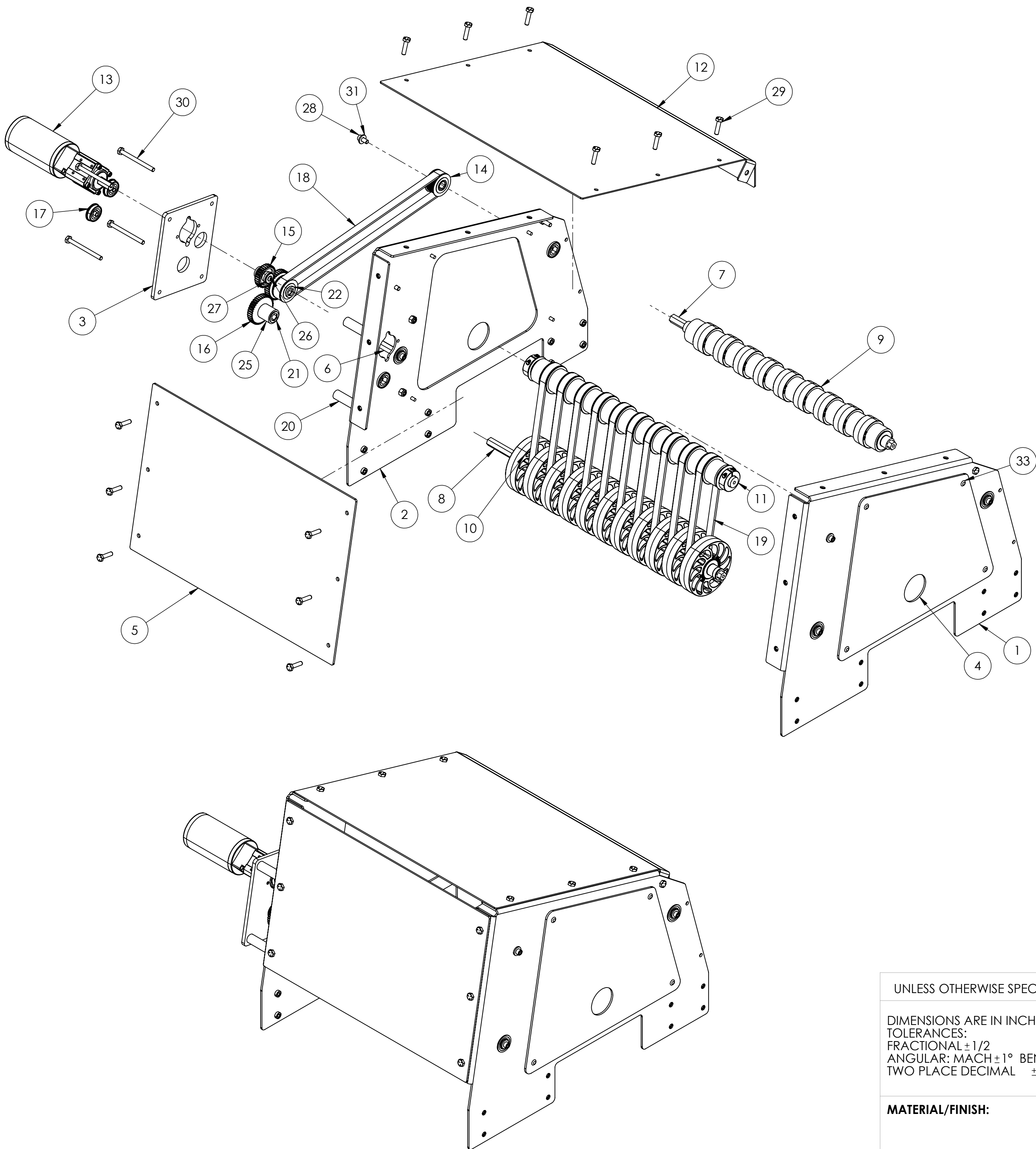
A

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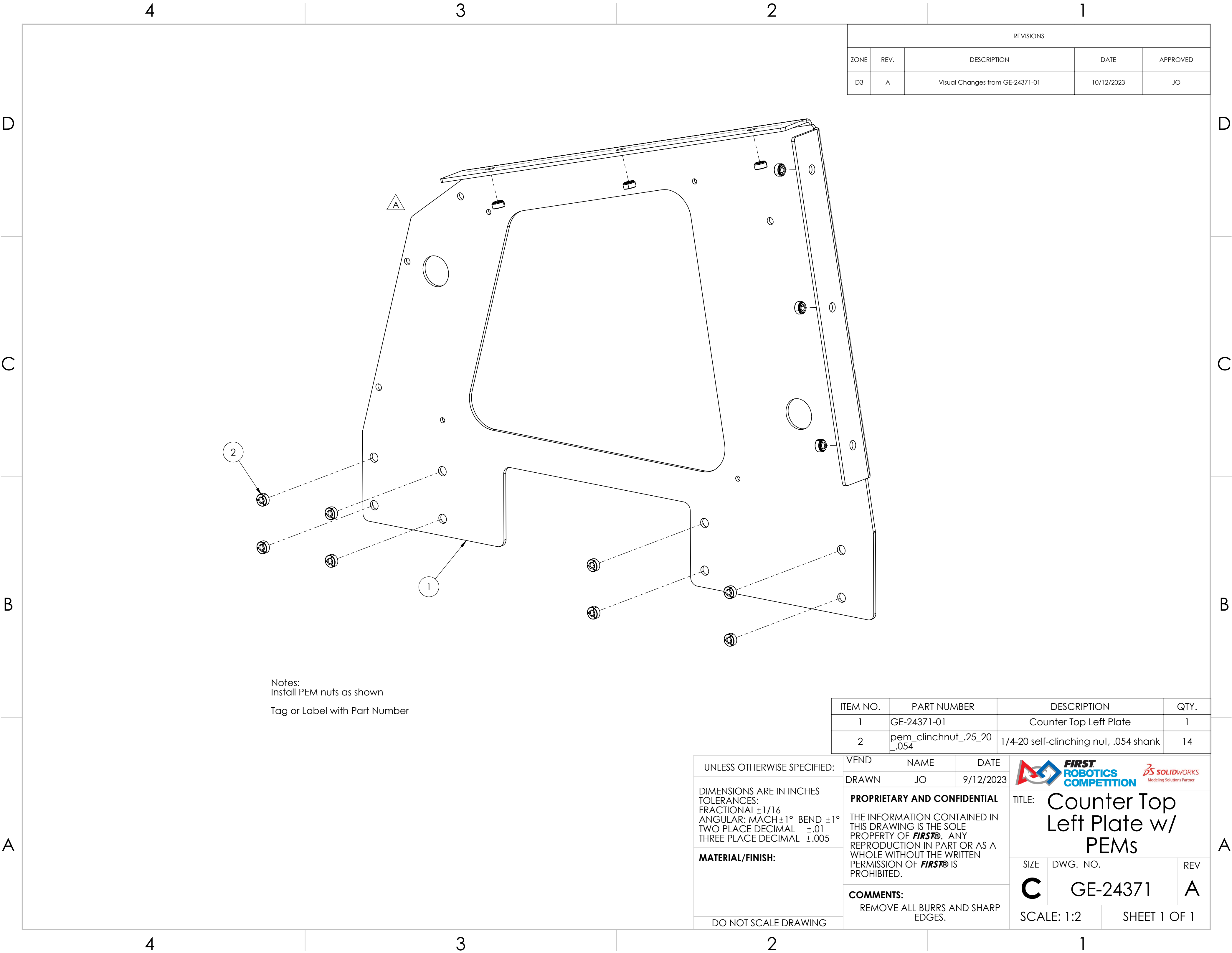
B

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24371	Counter Top Left Plate w/ PEMs	1
2	GE-24372	Counter Top Right Plate w/ PEMs	1
3	GE-24373	Counter Upper Motor Plate	1
4	GE-24374	Speaker Counter Side Shield	2
5	GE-24375	Speaker Counter Back Cover	1
6	GE-24377	Counter Top Short Hex Shaft	1
7	GE-24378	Counter Top Medium Hex Shaft	1
8	GE-24379	Counter Top Long Hex Shaft	1
9	GE-24385	Roller Shaft - Top Assembly	1
10	GE-24386	Live Shaft - Top Assembly	1
11	GE-24387	Dead Shaft - Top Assembly	1
12	GE-24390	Counter Roof w/ PEMs	1
13	2 Stage Gearmotor	12:1 Sport Gearbox and CIM Motor	1
14	am-4626 24T 5mm HTD 500IN Hex 15mm Wide Bore Pulley		2
15	am-4215 30T 20DP 500hex 375 FW		1
16	am-4710 40T 20DP 500hex 375 FW		2
17	0.500 Hex ID x 1.125 OD x 0.313 WD (Flanged Bearing v2) (217-3875)		7
18	850-5m-15 Belt		1
19	80 tooth RT-25 Belt		10
20	2.25 Bolt Spacer		4
21	.0625 Hex Spacer		4
22	.125 Hex Spacer		6
23	.25 Hex Spacer		5
24	.5 Hex Spacer		4
25	1 in hex spacer		1
26	91255A261 Button Head Hex Drive Screw		1
27	washer_flat_10_oversized	Oversized flat Washer for #10 Screw	1
28	Configurable Bolt	.5" Long 1/4-20 Socket Head Cap Screw	8
29	Configurable Bolt	1" Long 1/4-20 Hex Head Bolt	14
30	Configurable Bolt	3" Long 1/4-20 Hex Head Bolt	4
31	washer_flat_.25	Flat Washer for 1/4" Screw	8
32	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	4
33	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	8



UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	 			
<p>DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$</p> <p>MATERIAL/FINISH:</p> <p>DO NOT SCALE DRAWING</p>		DRAWN	JO	12/19/2023	TITLE: <h1>Ring Counter Top Assembly</h1>			
		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.			SIZE		DWG. NO.	REV
					C		GE-24370	
					SCALE: 1:5		SHEET 1 OF 1	



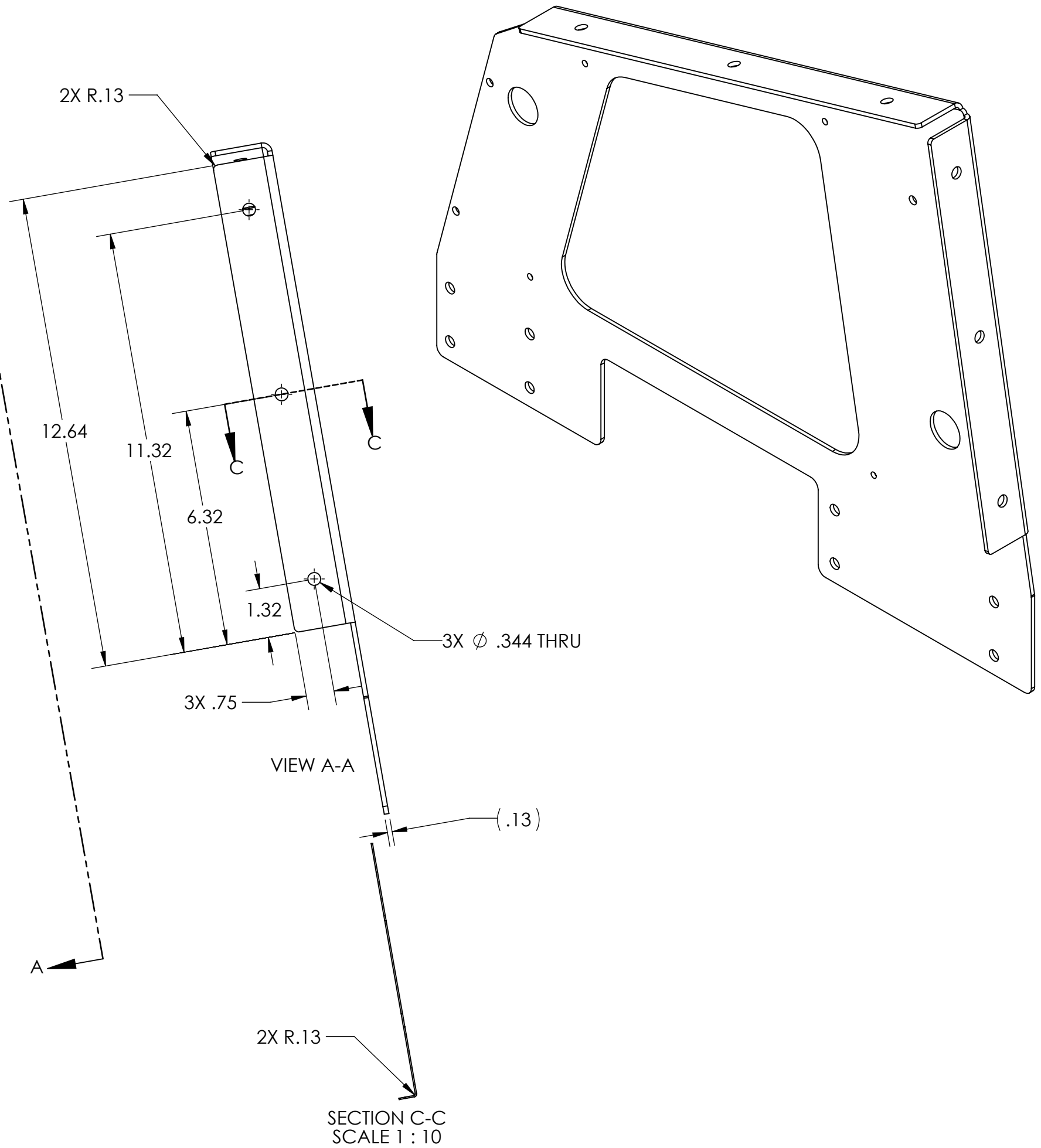
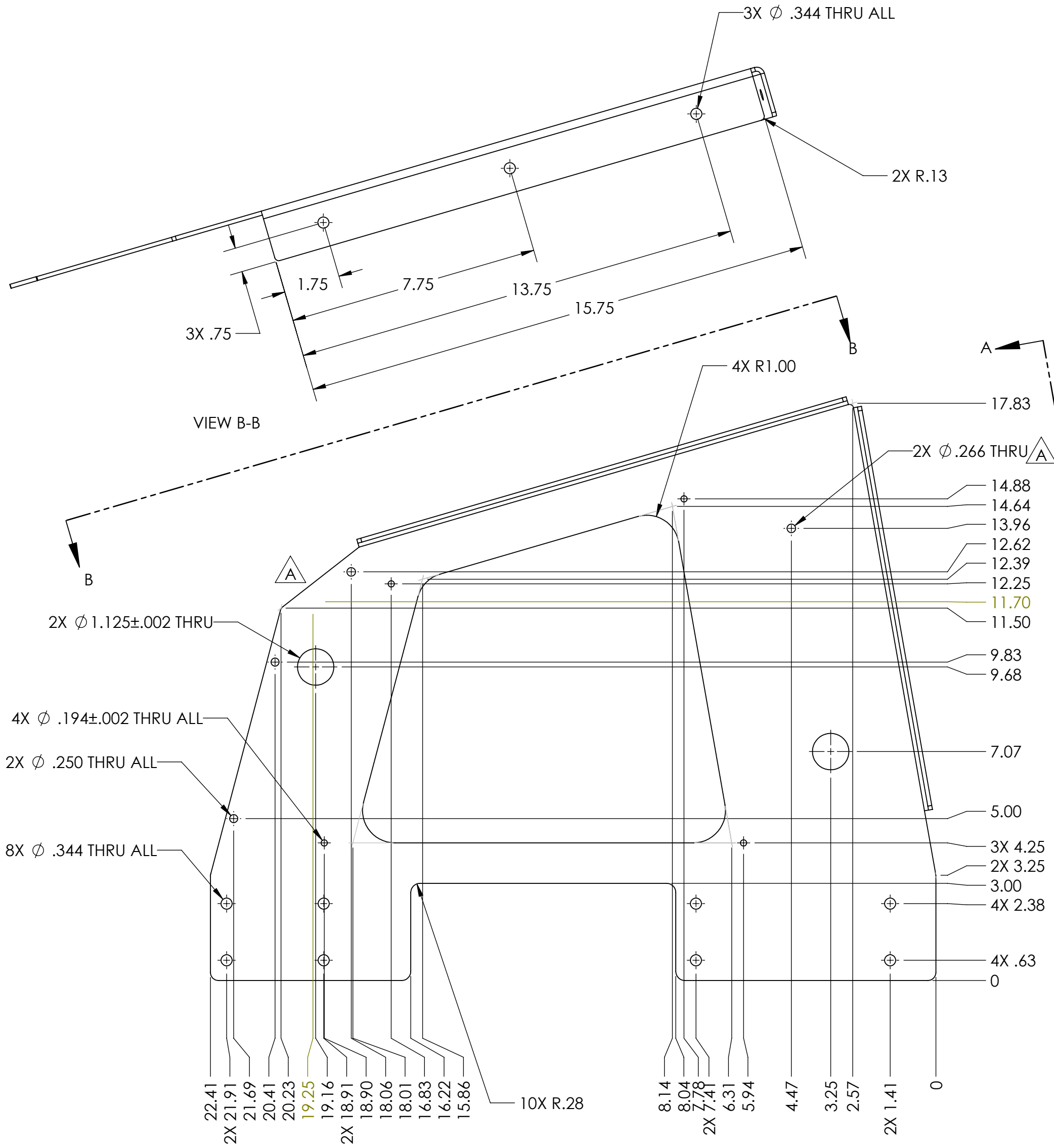
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
D3	A	Visual Changes from GE-24371-01	10/12/2023	JO

Notes:
Install PEM nuts as shown
Tag or Label with Part Number



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24371-01	Counter Top Left Plate	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	14

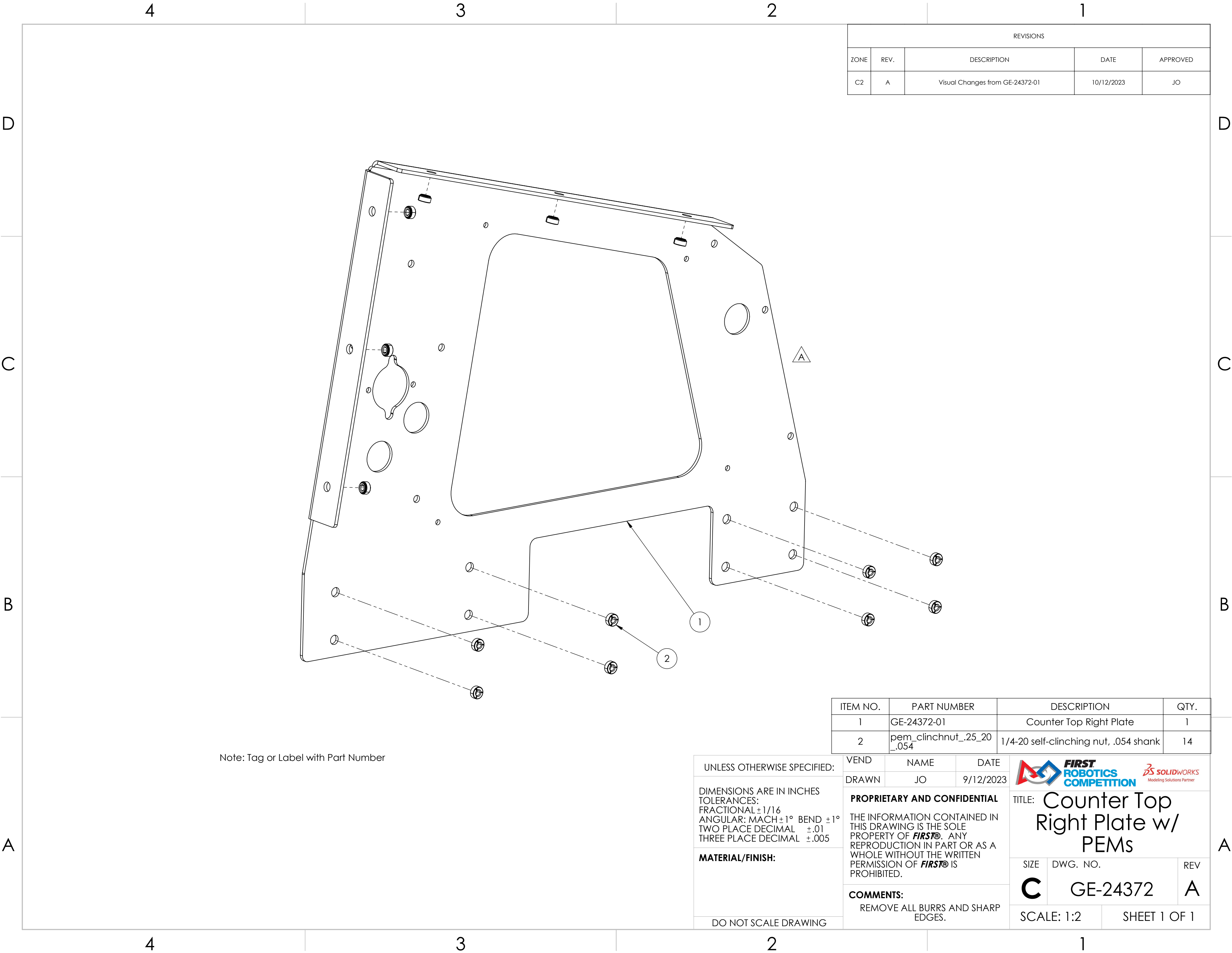
UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	<div></div>	
<div>DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005</div> <div>MATERIAL/FINISH:</div> <div>DO NOT SCALE DRAWING</div>		DRAWN	JO	9/12/2023	TITLE: Counter Top Left Plate w/ PEMs	
		<div>PROPRIETARY AND CONFIDENTIAL</div> <div>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.</div>				
		<div>COMMENTS:</div> <div>REMOVE ALL BURRS AND SHARP EDGES.</div>				
					SIZE DWG. NO. REV	
					C GE-24371 A	
					SCALE: 1:2 SHEET 1 OF 1	

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2, C4	A	One hole removed, one re-sized	10/12/2023	JO





UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL \pm 1/16 ANGULAR: MACH \pm 1° BEND \pm 1° TWO PLACE DECIMAL \pm .02 THREE PLACE DECIMAL \pm .010 MATERIAL/FINISH: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE
	DRAWN	JO	9/12/2023
	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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

 			TITLE: Counter Top Left Plate	
SIZE C	DWG. NO. GE-24371-01	REV A	SCALE: 1:3 SHEET 1 OF 1	

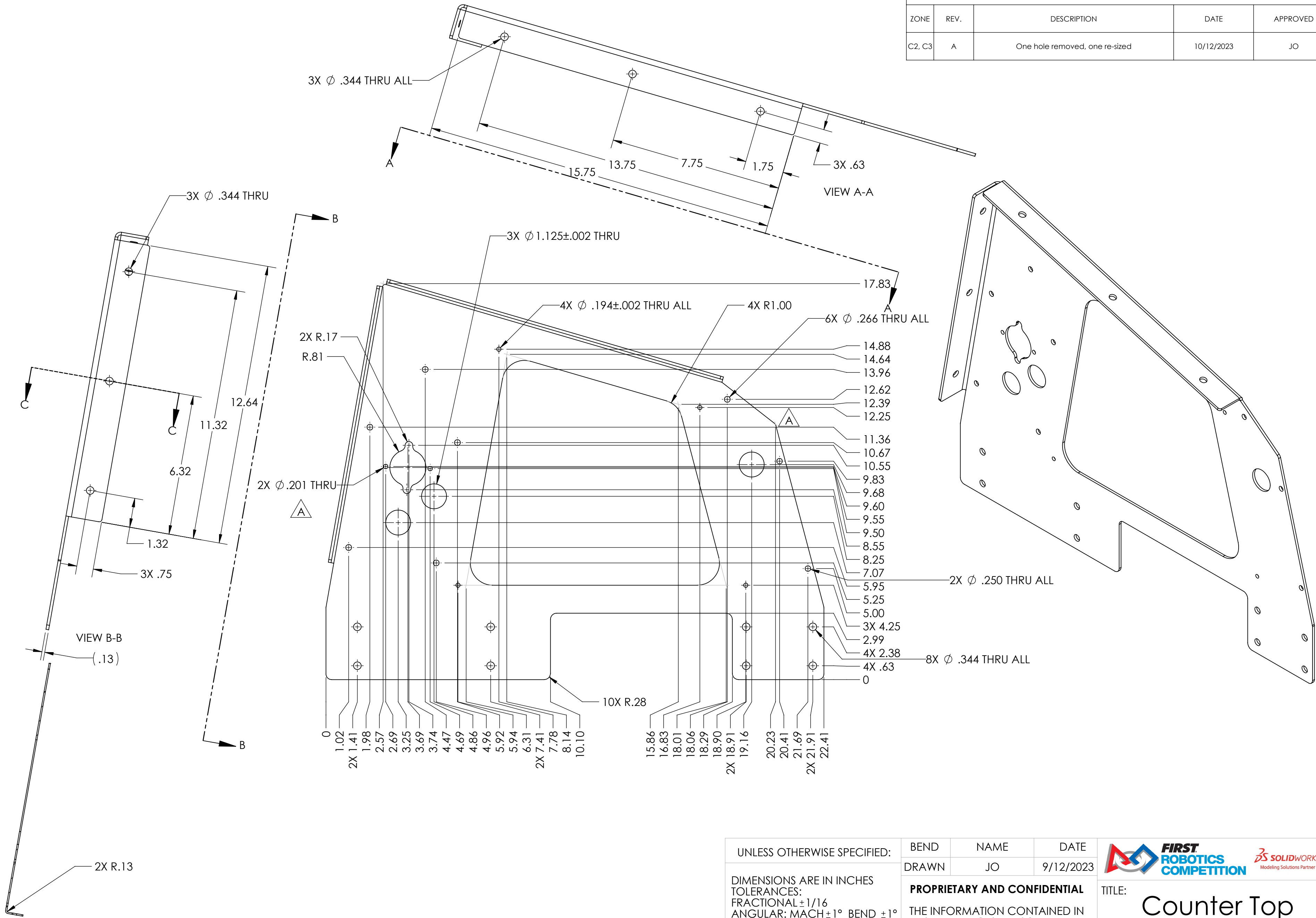


REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2	A	Visual Changes from GE-24372-01	10/12/2023	JO



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24372-01	Counter Top Right Plate	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	14

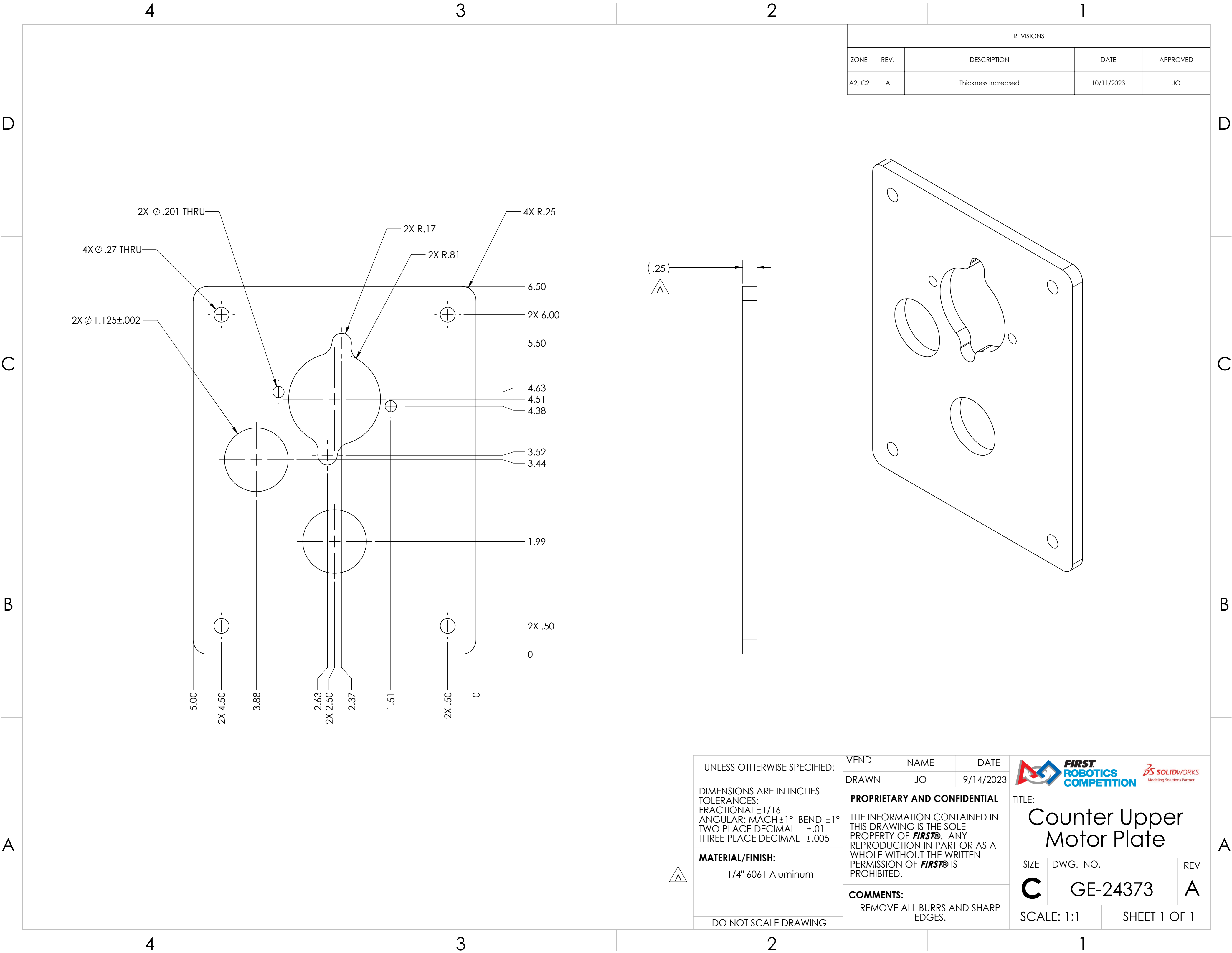
UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	<div></div> TITLE: Counter Top Right Plate w/ PEMs		
		DRAWN	JO	9/12/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: DO NOT SCALE DRAWING		PROPRIETARY 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.			SIZE C SCALE: 1:2		
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
					REV A		SHEET 1 OF 1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
C2, C3	A	One hole removed, one re-sized	10/12/2023	JO





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: 8 Ga 5052 Aluminum DO NOT SCALE DRAWING	BEND	NAME	DATE
	DRAWN	JO	9/12/2023
	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.		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

 		
TITLE: Counter Top Right Plate		
SIZE C	DWG. NO. GE-24372-01	REV A
SCALE: 1:3		SHEET 1 OF 1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2, C2	A	Thickness Increased	10/11/2023	JO

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" 6061 Aluminum DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Counter Upper Motor Plate</div>		
	DRAWN	JO	9/14/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24373	A
SCALE: 1:1			SHEET 1 OF 1			

D

D

C

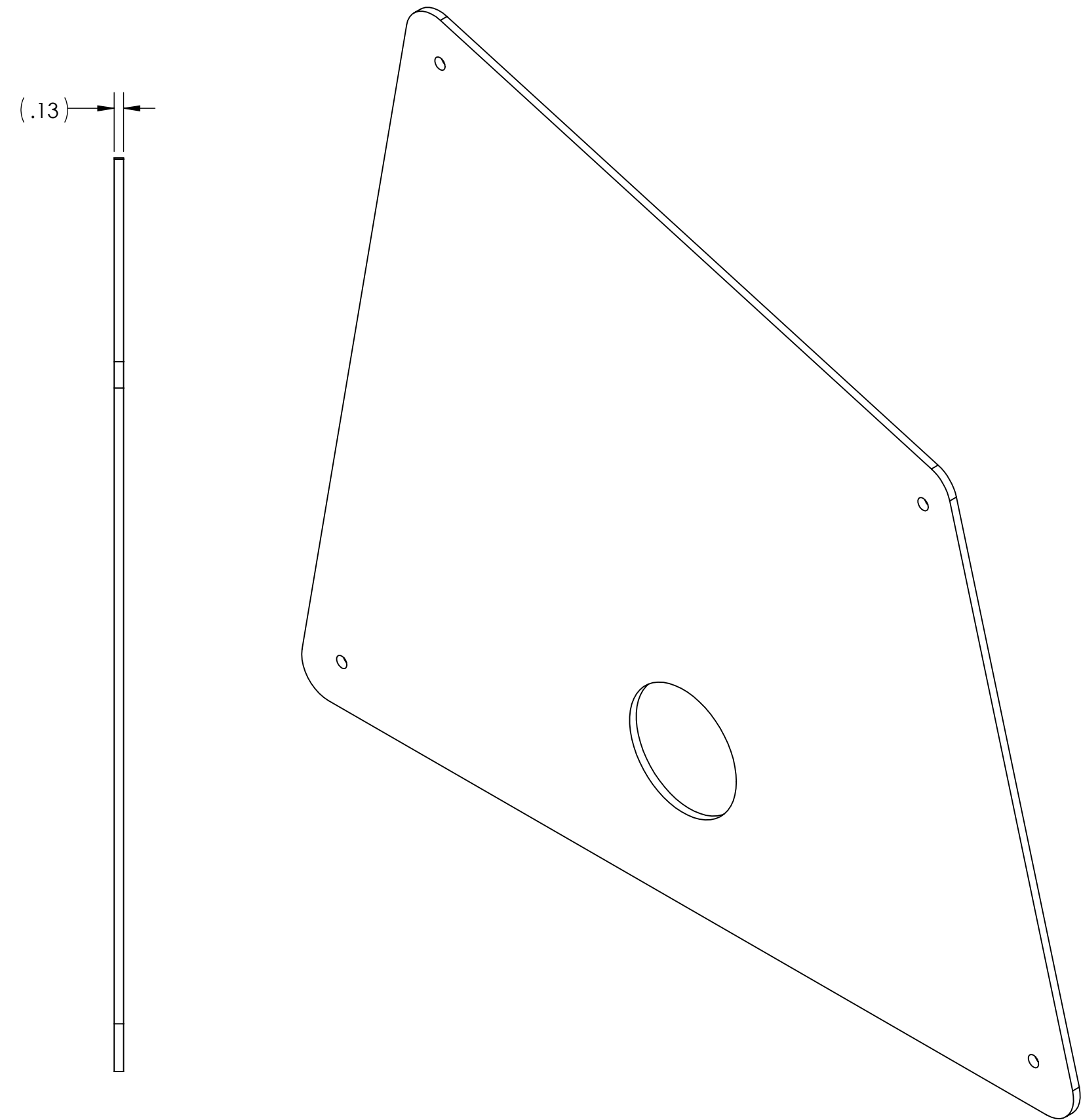
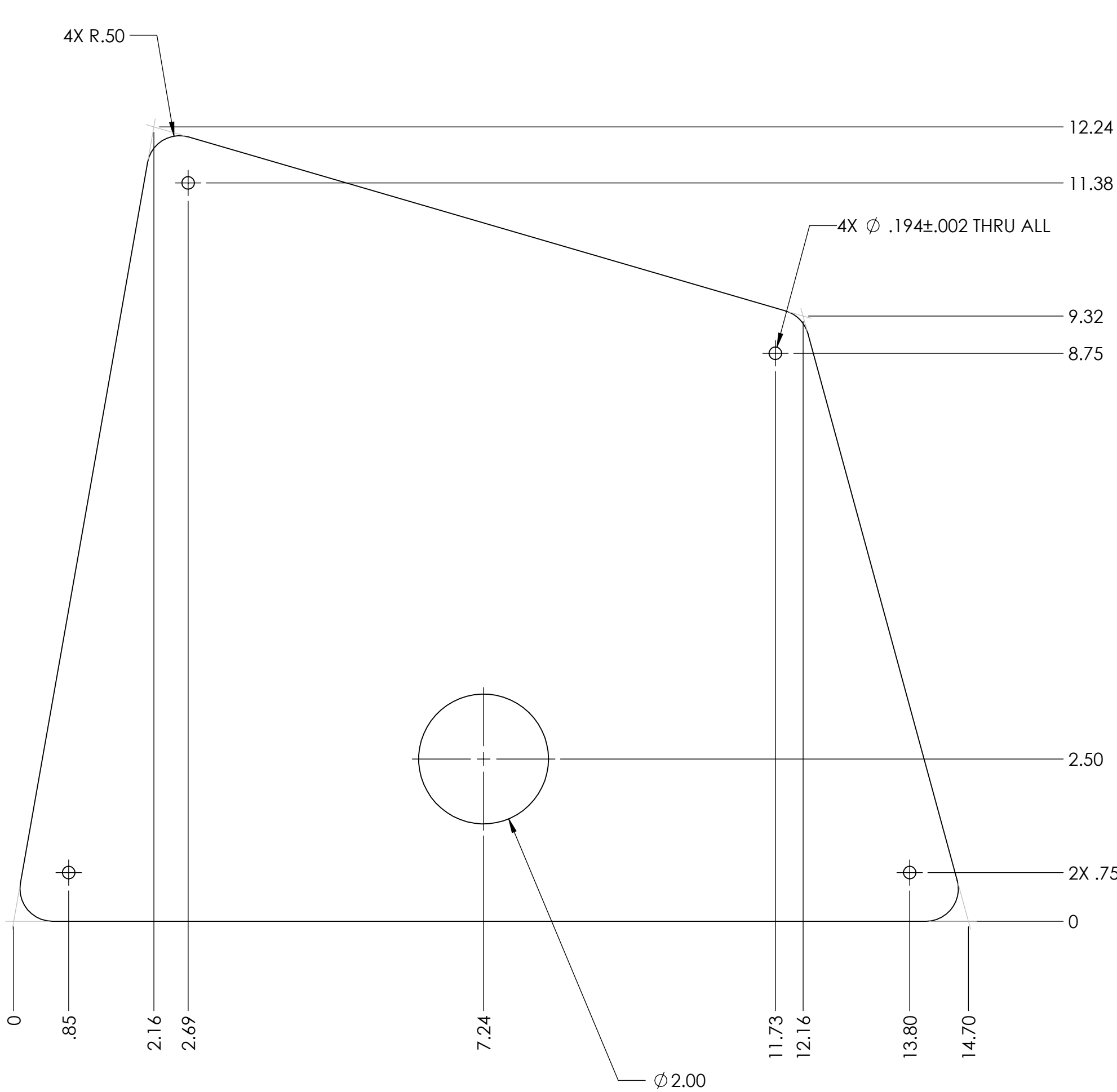
C



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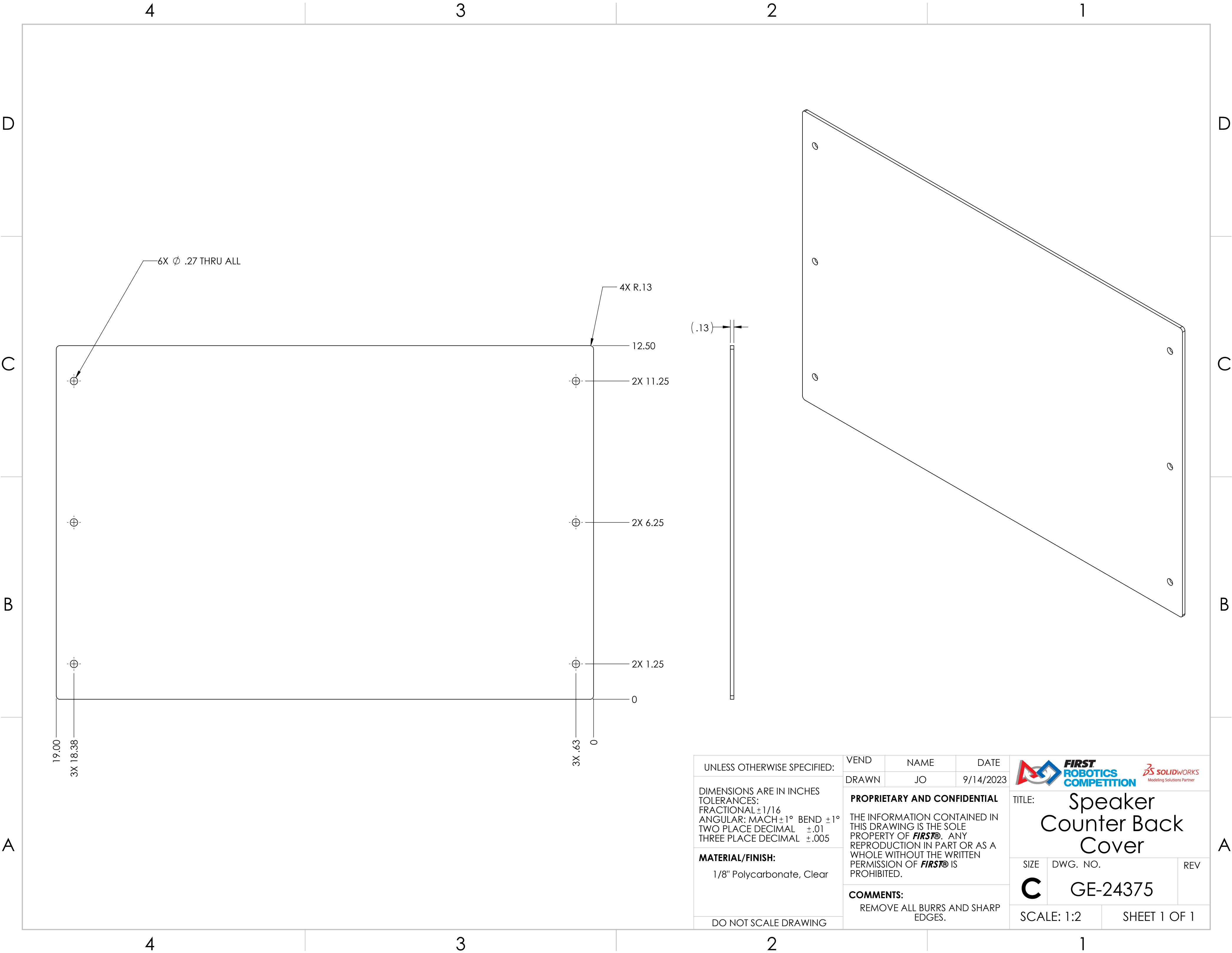
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A

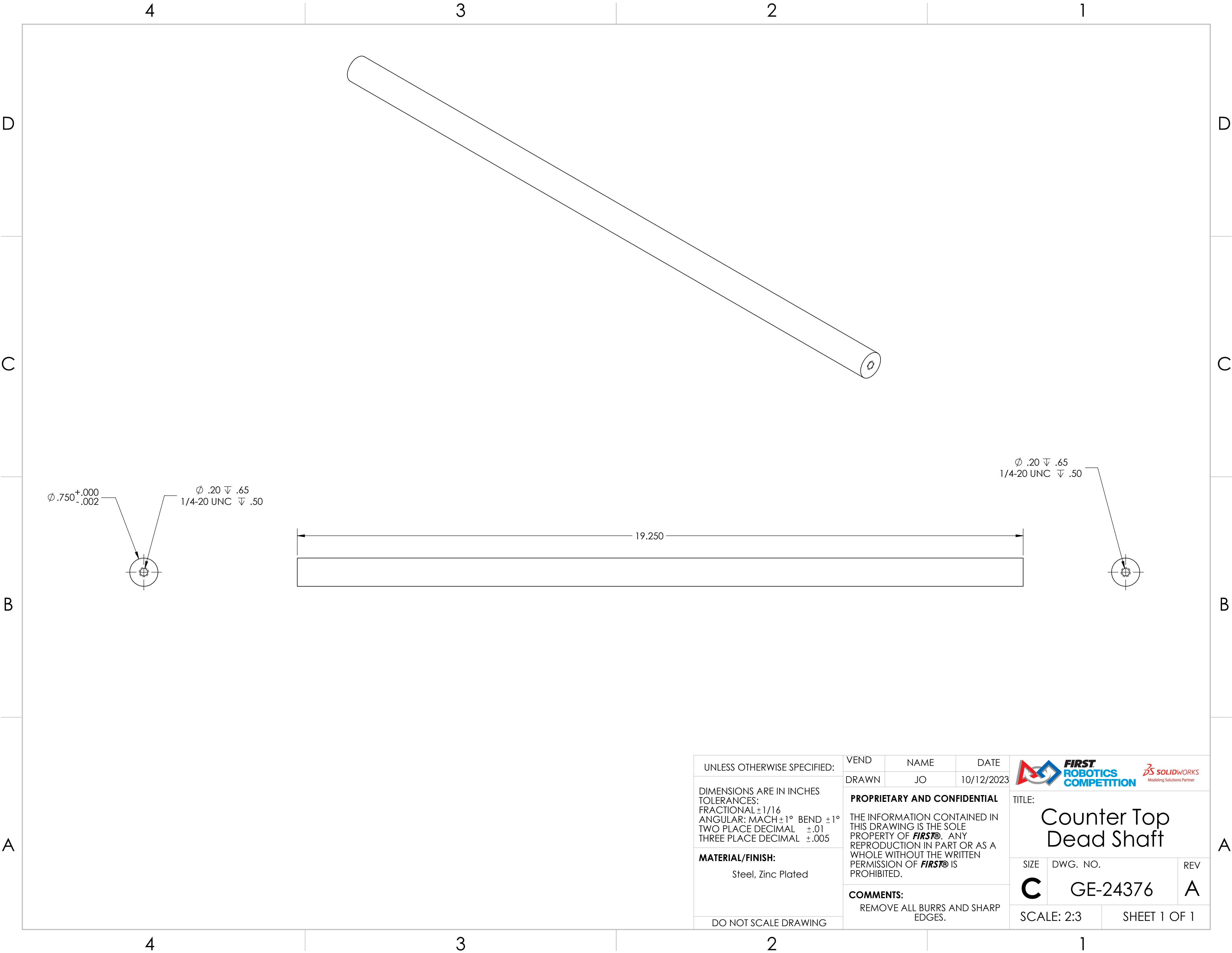
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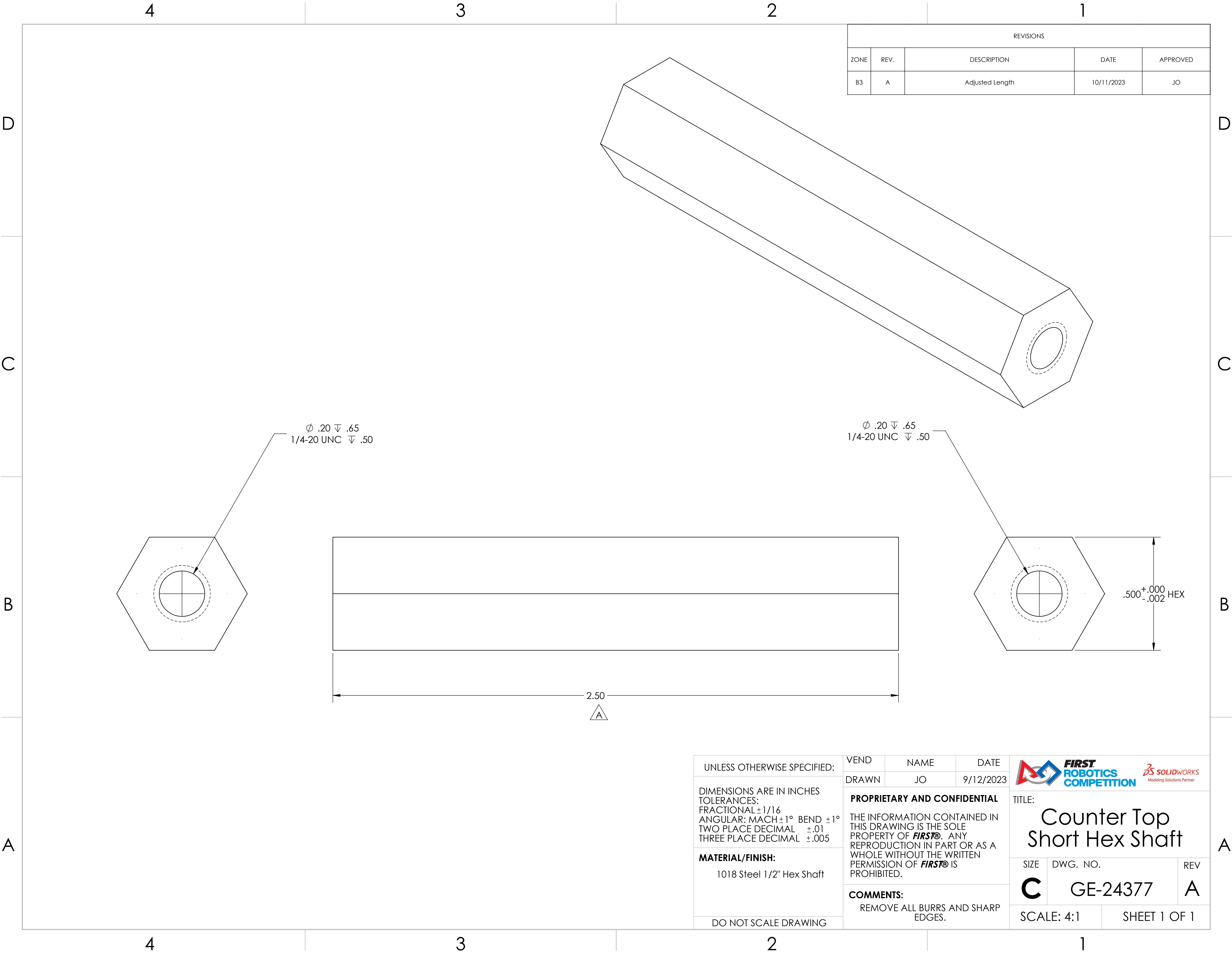
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/8" Polycarbonate, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	 	
	DRAWN	JO	9/14/2023		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION 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.			TITLE: Speaker Counter Side Shield	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. GE-24374 REV
			SCALE: 6:10		SHEET 1 OF 1





UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ± .01 THREE PLACE DECIMAL ± .005 MATERIAL/FINISH: 1/8" Polycarbonate, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Speaker Counter Back Cover</div>		
	DRAWN	JO	9/14/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24375	
SCALE: 1:2		SHEET 1 OF 1				

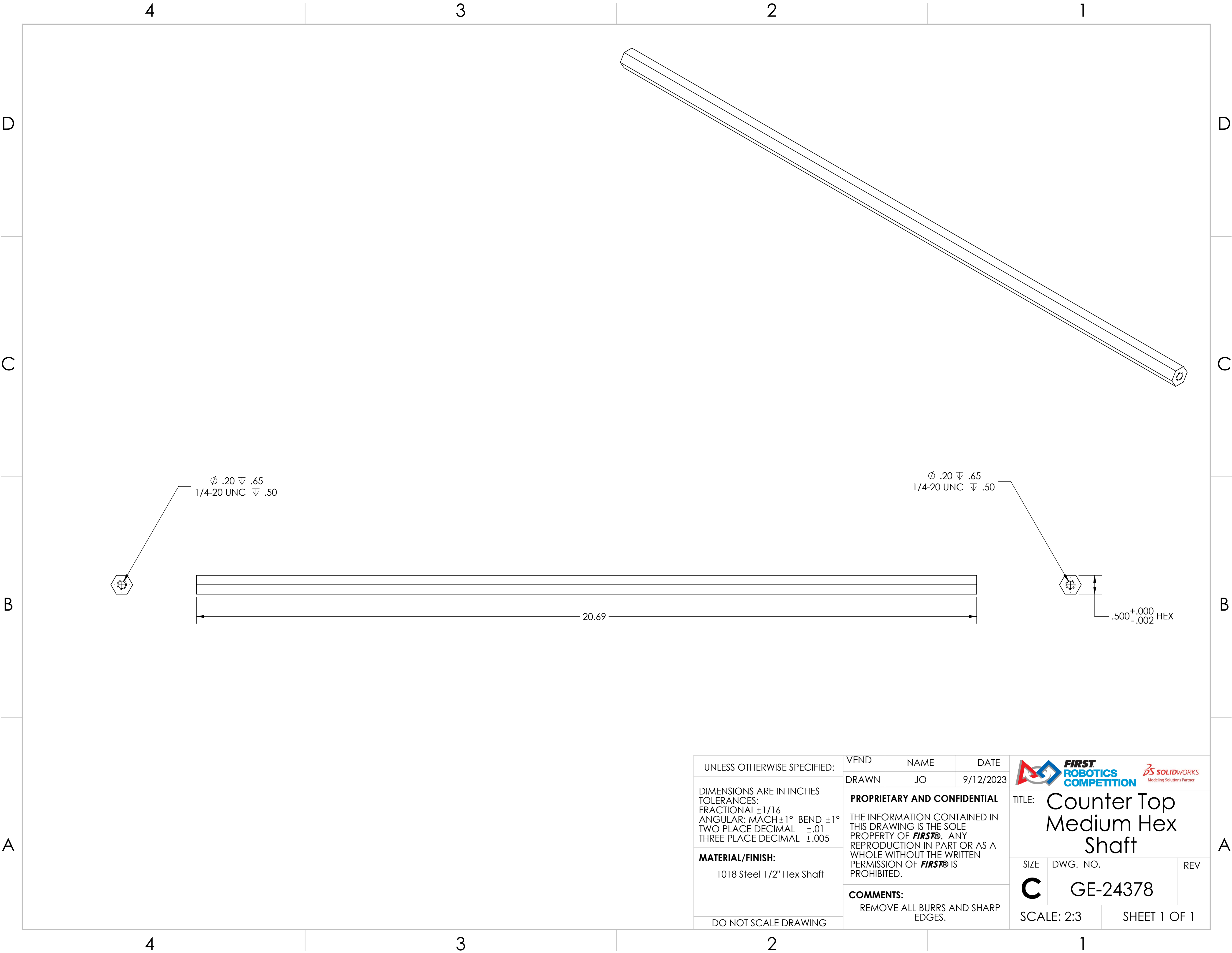




UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: Steel, Zinc Plated DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: <h1>Counter Top Dead Shaft</h1></div> <table><tr><td>SIZE</td><td>DWG. NO.</td><td>REV</td></tr><tr><td>C</td><td>GE-24376</td><td>A</td></tr><tr><td colspan="2">SCALE: 2:3</td><td>SHEET 1 OF 1</td></tr></table>		SIZE	DWG. NO.	REV	C	GE-24376	A	SCALE: 2:3		SHEET 1 OF 1
	SIZE	DWG. NO.	REV											
	C	GE-24376	A											
SCALE: 2:3		SHEET 1 OF 1												
DRAWN	JO	10/12/2023												
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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.														

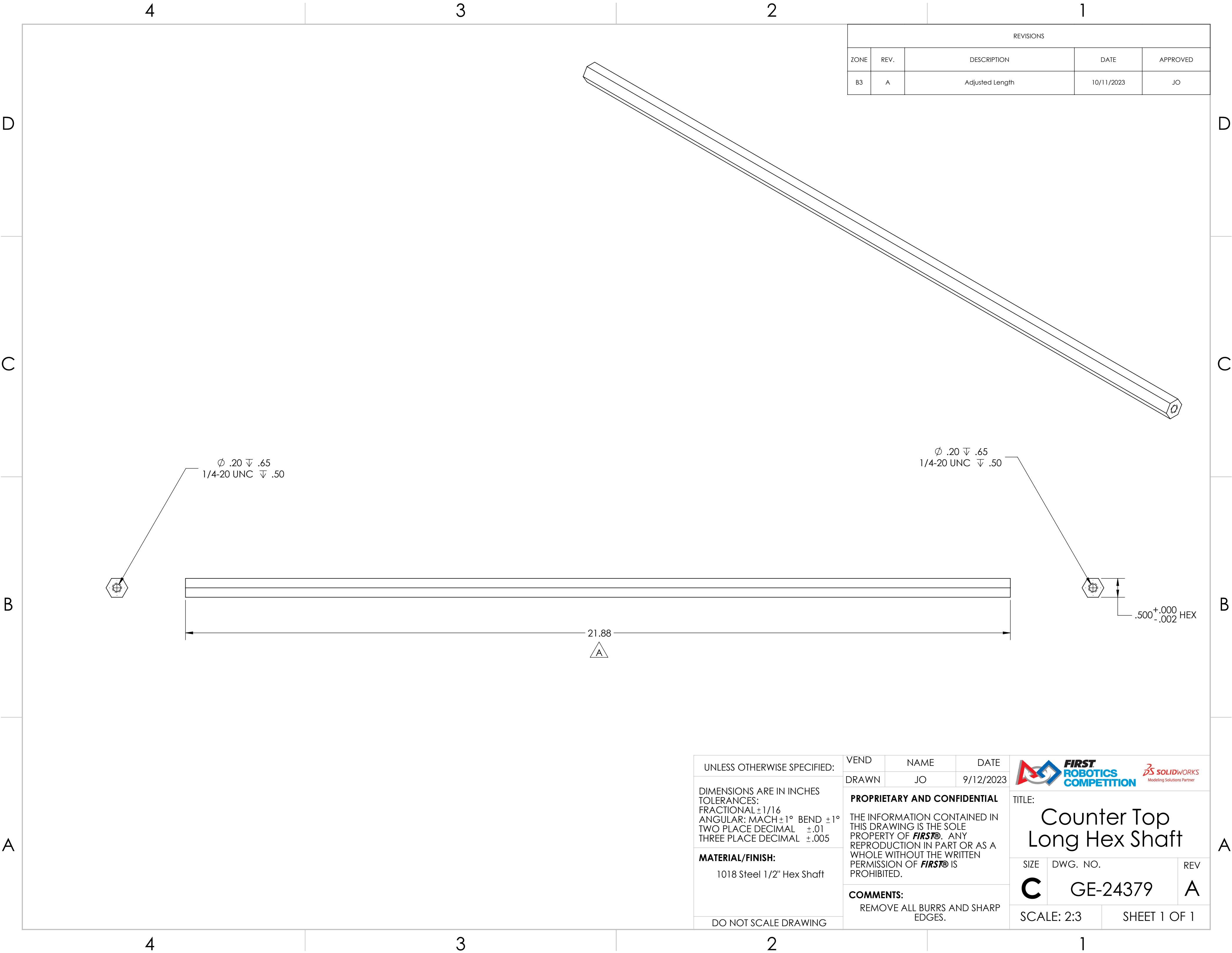


REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	A	Adjusted Length	10/11/2023	JO



UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div><div>FIRST ROBOTICS COMPETITION</div></div> <div><div>SOLIDWORKS Modeling Solutions Partner</div></div>		
	DRAWN	JO	9/12/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Counter Top Short Hex Shaft		
	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: 1018 Steel 1/2" Hex Shaft	COMMENTS:			SIZE	DWG. NO.	REV
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24377	A
DO NOT SCALE DRAWING				SCALE: 4:1		SHEET 1 OF 1

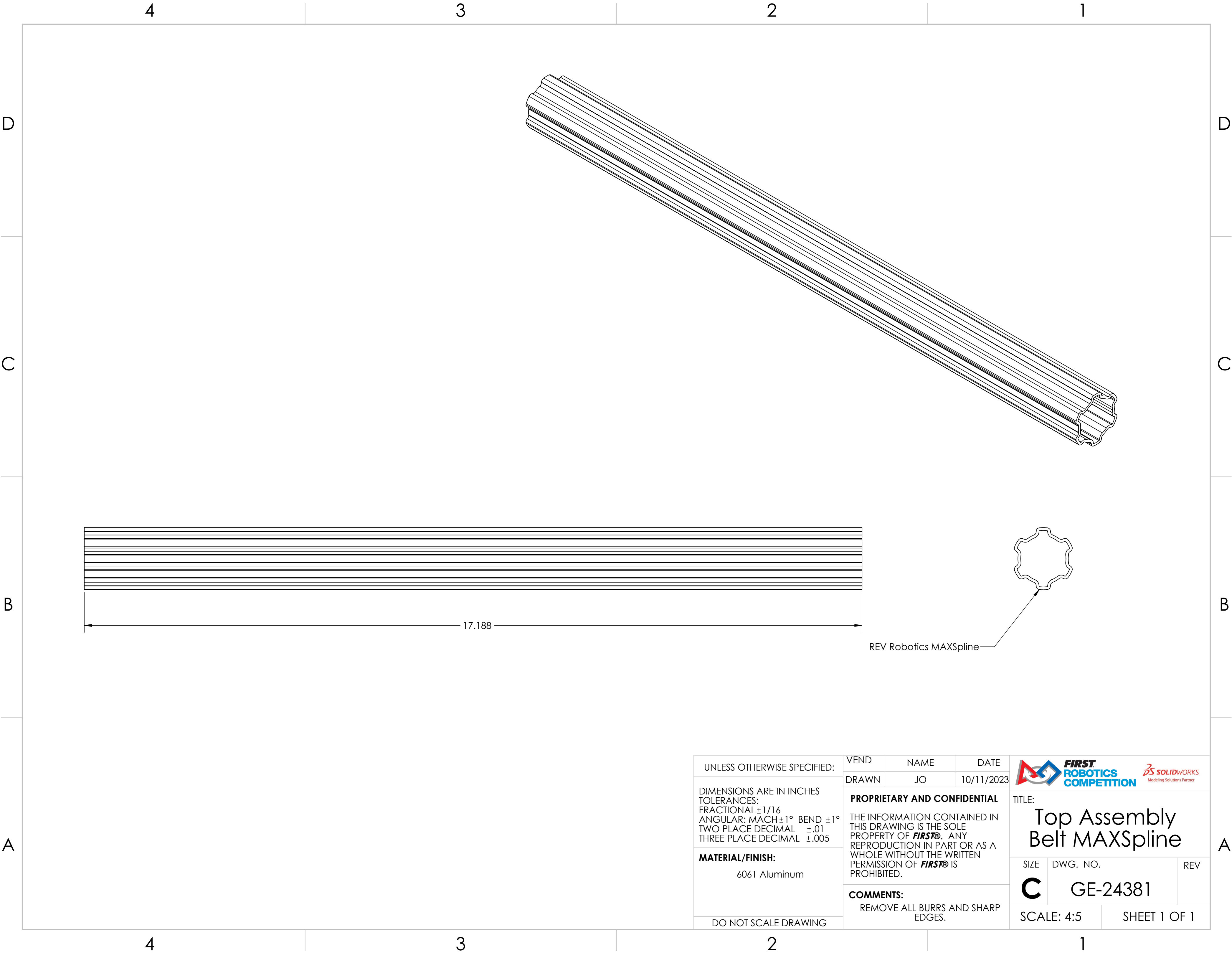


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$ MATERIAL/FINISH: 1018 Steel 1/2" Hex Shaft DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <p>TITLE: Counter Top Medium Hex Shaft</p>		
	DRAWN	JO	9/12/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24378	
SCALE: 2:3		SHEET 1 OF 1				



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	A	Adjusted Length	10/11/2023	JO

UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>			
	DRAWN	JO	9/12/2023				
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Counter Top Long Hex Shaft			
	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:			SIZE		DWG. NO.	REV
MATERIAL/FINISH:	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24379	A	
1018 Steel 1/2" Hex Shaft							
DO NOT SCALE DRAWING				SCALE: 2:3		SHEET 1 OF 1	



REV Robotics MAXSpline

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:
6061 Aluminum

DO NOT SCALE DRAWING

VEND

NAME

DATE

DRAWN

JO

10/11/2023

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.

COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION



Modeling Solutions Partner

TITLE:

Top Assembly
Belt MAXSpline

SIZE

C

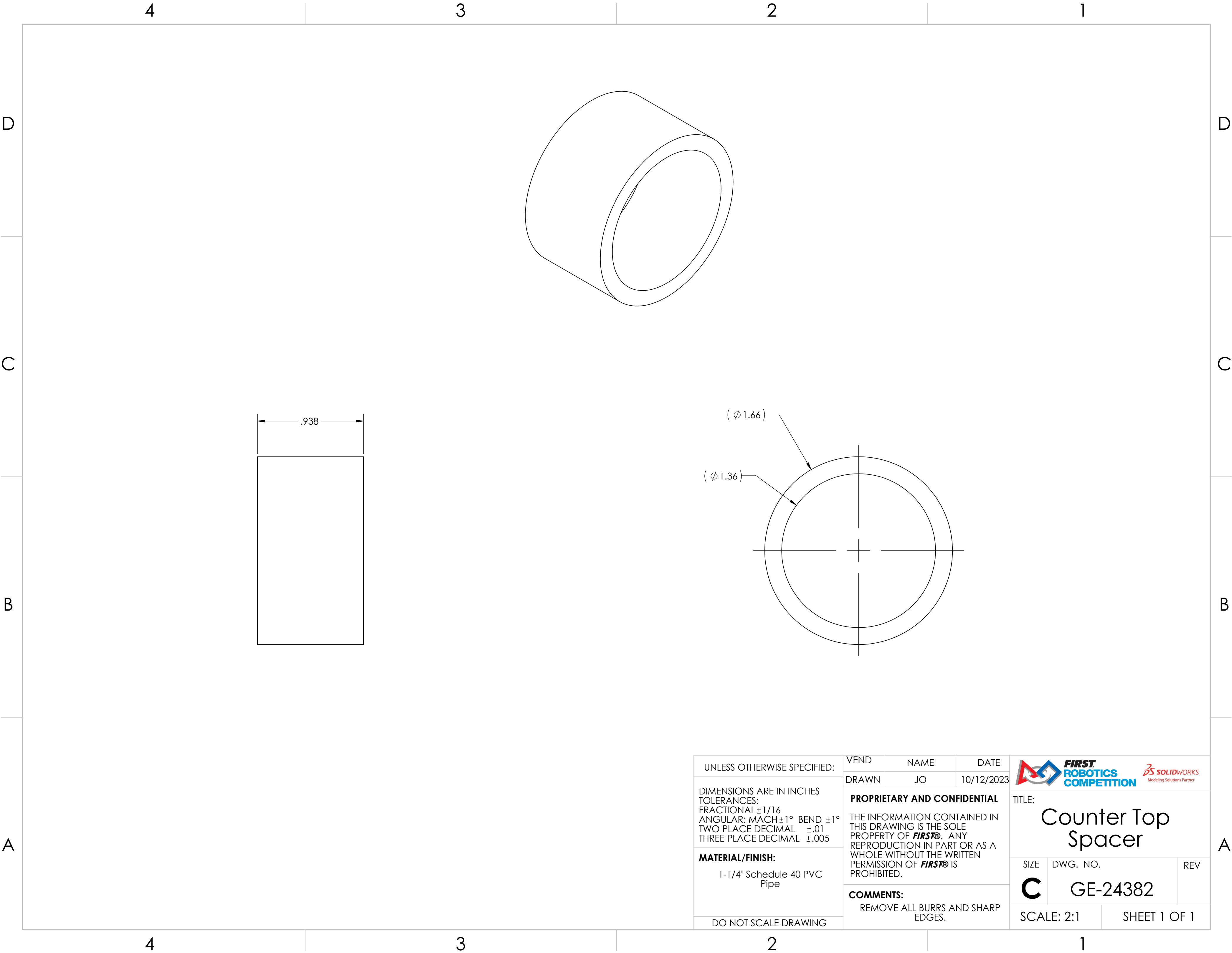
DWG. NO.



GE-24381

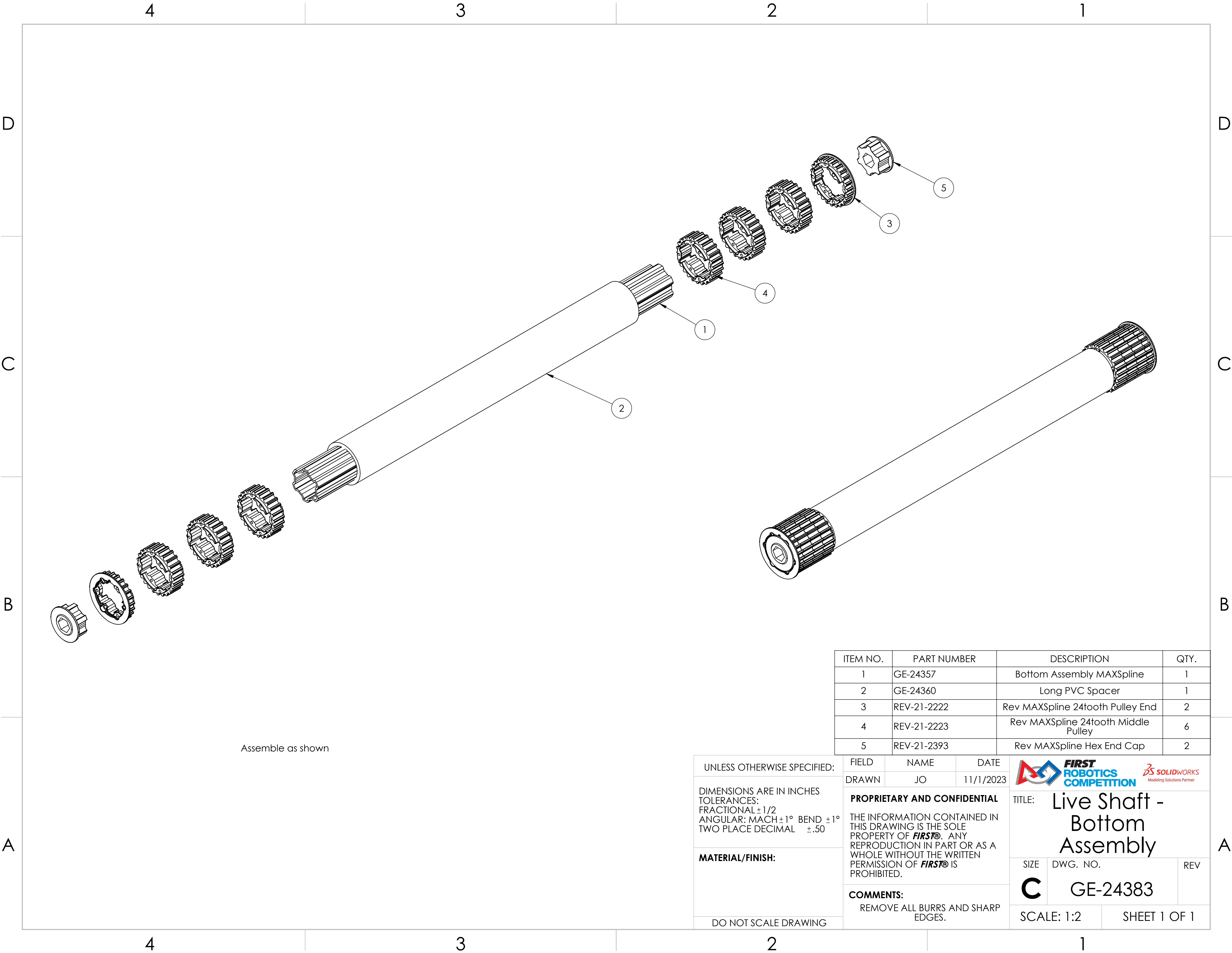
REV

SCALE: 4:5

SHEET 1 OF 1





UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ± .01 THREE PLACE DECIMAL ± .005 MATERIAL/FINISH: 1-1/4" Schedule 40 PVC Pipe DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: Counter Top Spacer</div>		
	DRAWN	JO	10/12/2023			
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24382	
		SCALE: 2:1		SHEET 1 OF 1		



Assemble as shown

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24357	Bottom Assembly MAXSpline	1
2	GE-24360	Long PVC Spacer	1
3	REV-21-2222	Rev MAXSpline 24tooth Pulley End	2
4	REV-21-2223	Rev MAXSpline 24tooth Middle Pulley	6
5	REV-21-2393	Rev MAXSpline Hex End Cap	2

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	<div><div>FIRST ROBOTICS COMPETITION</div><div>Modeling Solutions Partner</div></div>	
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	11/1/2023		
MATERIAL/FINISH:		PROPRIETARY AND CONFIDENTIAL			TITLE: Live Shaft - Bottom Assembly	
		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.			SIZE DWG. NO. REV	
DO NOT SCALE DRAWING		COMMENTS:			C GE-24383	
		REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:2 SHEET 1 OF 1	

4

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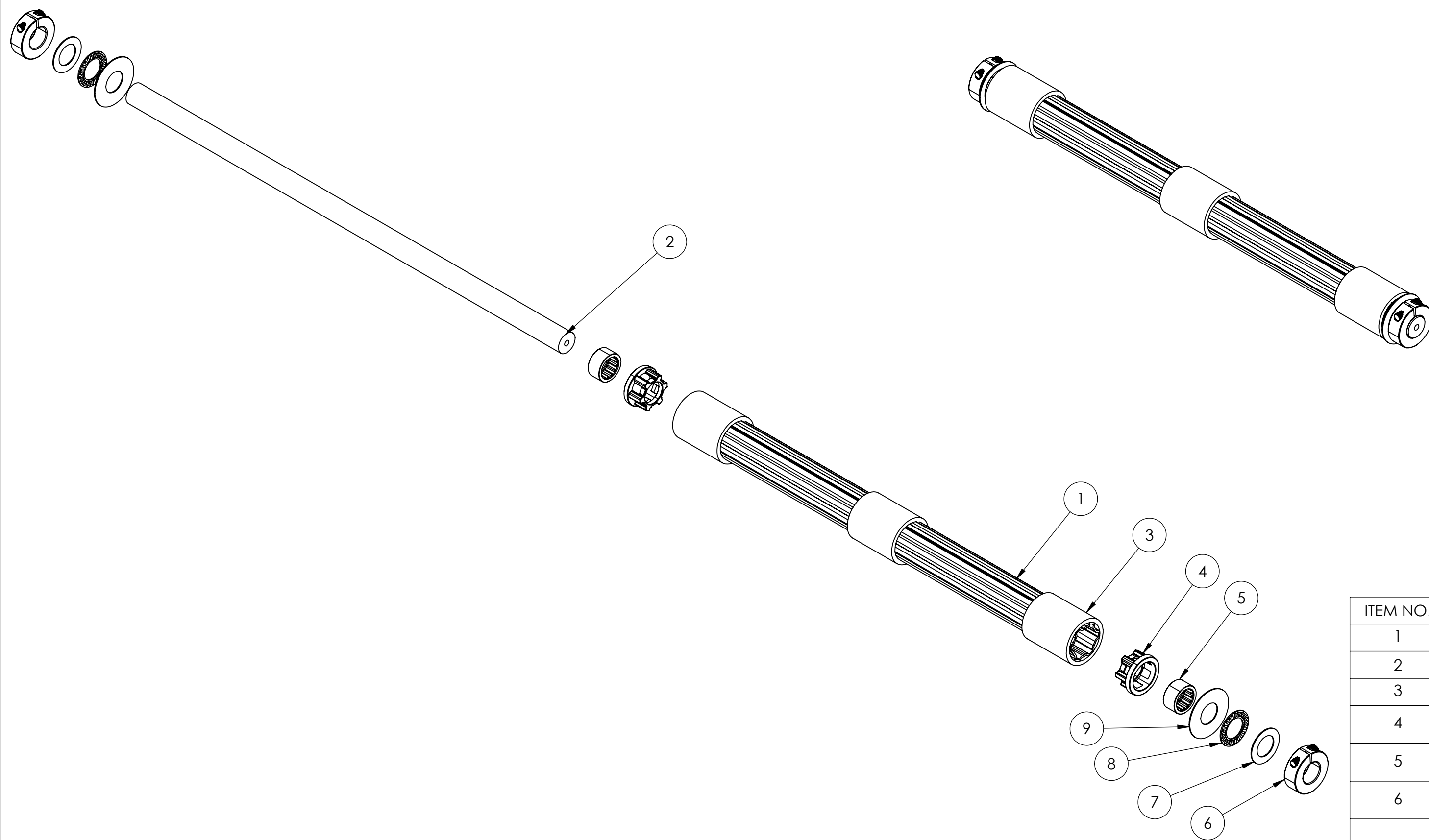
1

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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24357	Bottom Assembly MAXSpline	1
2	GE-24367	Counter Bottom Dead Shaft	1
3	GE-24368	Counter Bottom Flat Pulley	3
4	REV-21-2385	Rev MAXSpline Needle Bearing Housing	2
5	REV-21-2386	Rev MAXSpline Needle Roller Bearing	2
6	6435K16_Clamping Shaft Collar	McMaster 3/4" Clamping Shaft Collar	2
7	5909K46_0.032 Thick Washer for 3-4 Shaft Diameter Needle-Roller Thrust Bearing	McMaster 3/4" Needle Roller Bearing Washer	2
8	5909K33_Needle-Roller Thrust Bearing	McMaster 3/4" Needle Roller Thrust Bearing	2
9	GE-24393	Custom Thrust Washer	2

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

JO

11/1/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP
EDGES.



TITLE: Dead Shaft -
Bottom
Assembly

SIZE

DWG. NO.

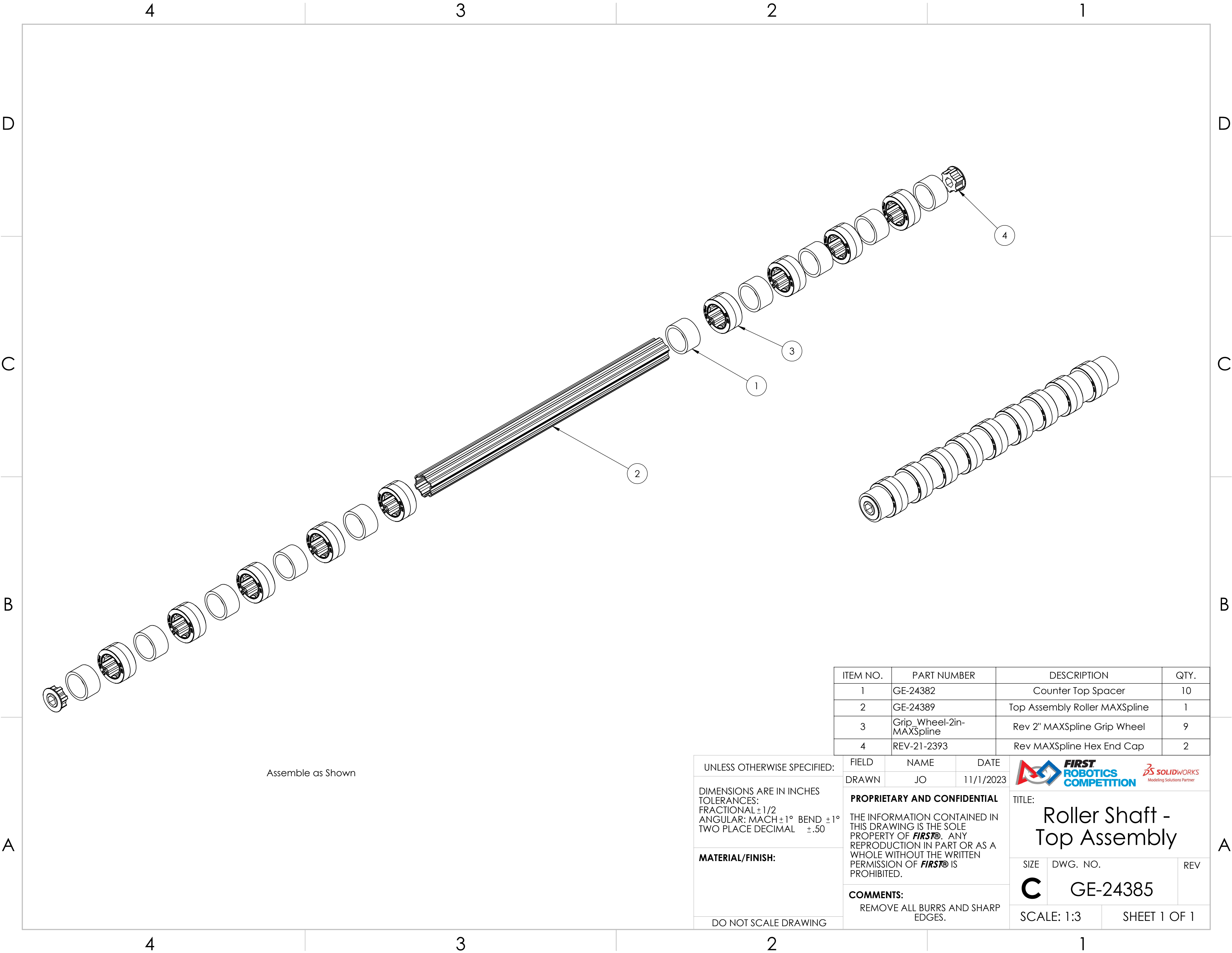
RFV

C

GE-24384



SCALE: 1:3

SHEET 1 OF 1



Assemble as Shown

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24382	Counter Top Spacer	10
2	GE-24389	Top Assembly Roller MAXSpline	1
3	Grip_Wheel-2in-MAXSpline	Rev 2" MAXSpline Grip Wheel	9
4	REV-21-2393	Rev MAXSpline Hex End Cap	2

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	<div></div>		
	DRAWN	JO	11/1/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL			TITLE: Roller Shaft - Top Assembly		
	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:			SIZE	DWG. NO.	REV
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24385	
DO NOT SCALE DRAWING				SCALE: 1:3		SHEET 1 OF 1

4

3

2

1

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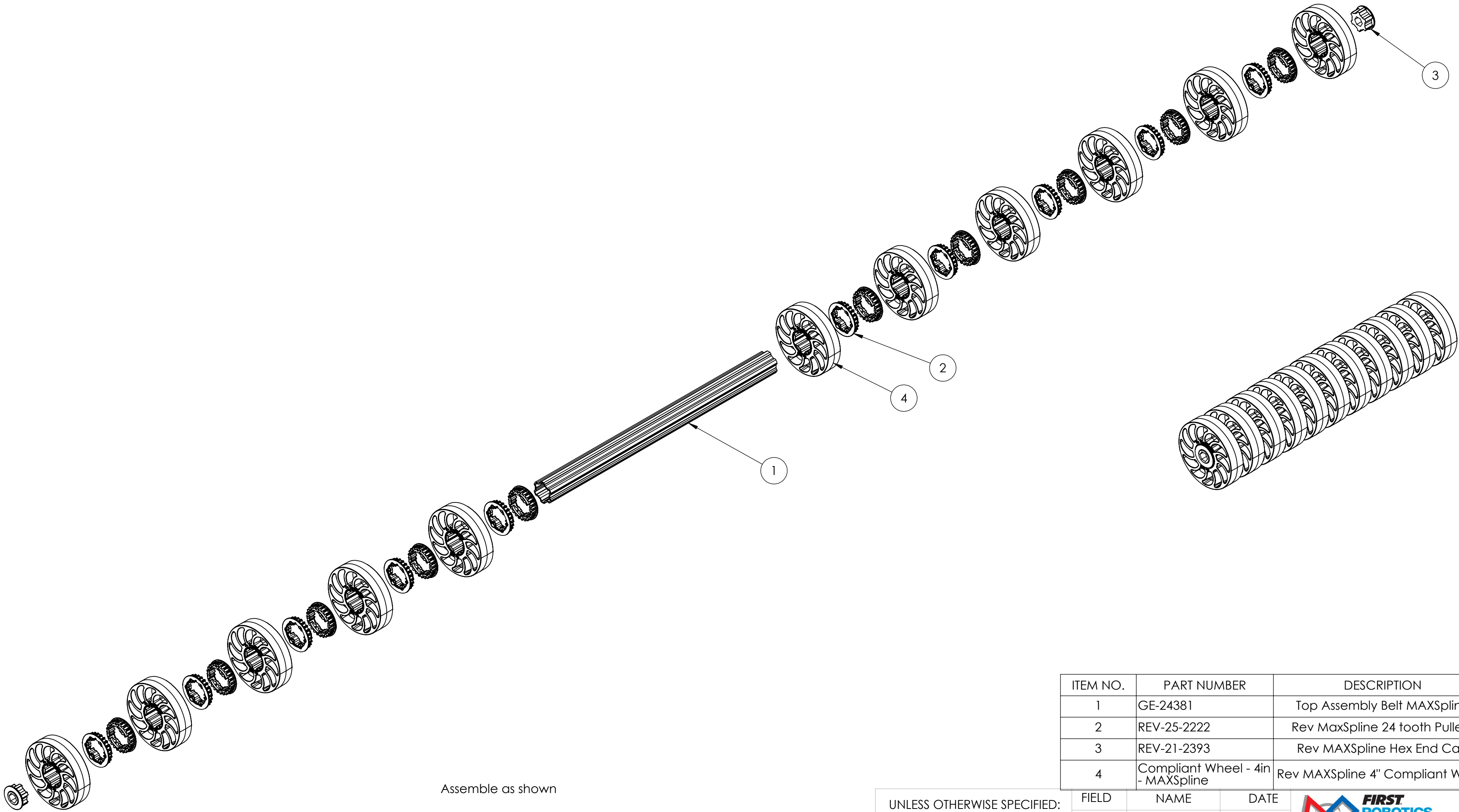
C

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B



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A



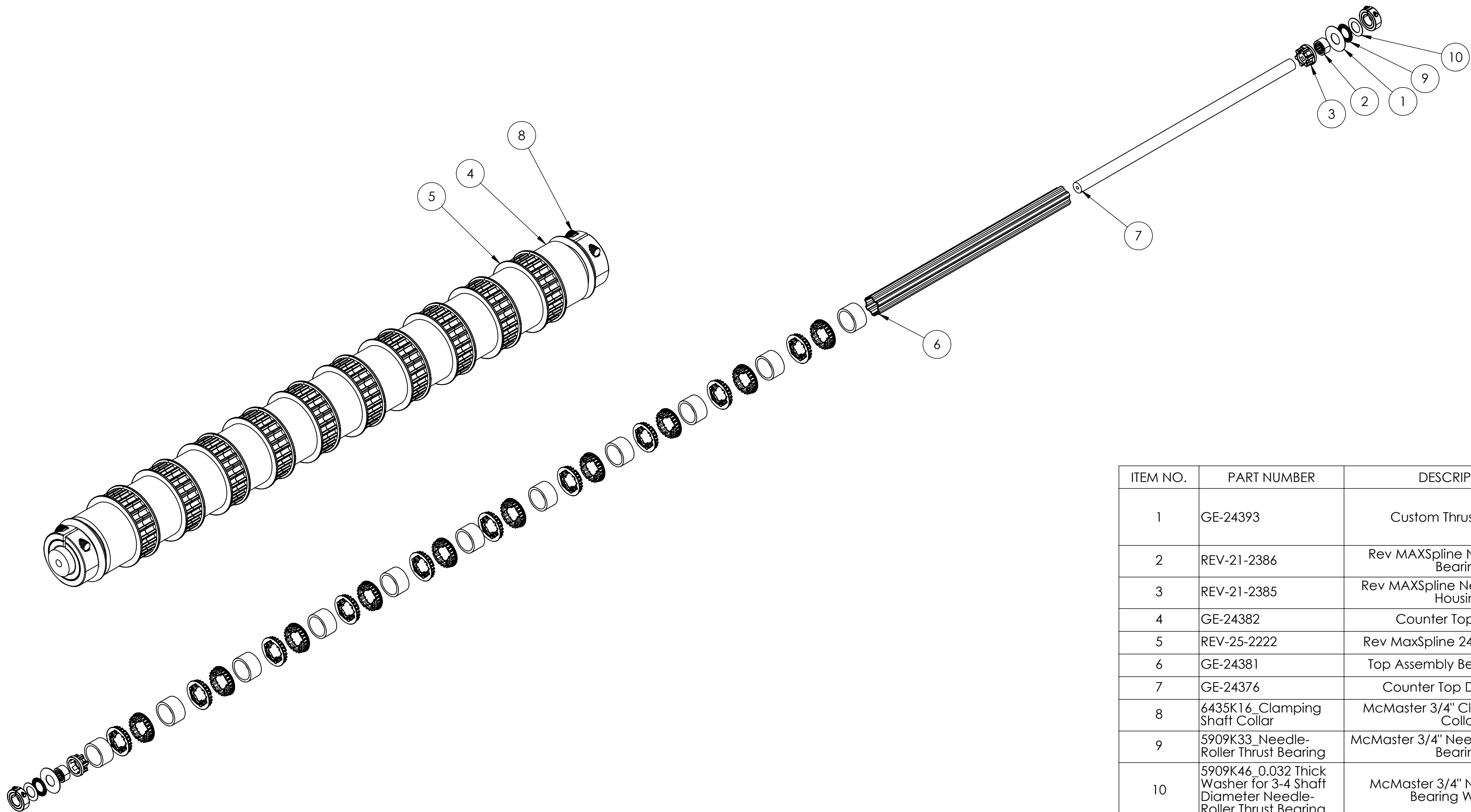
Assemble as shown

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24381	Top Assembly Belt MAXSpline	1
2	REV-25-2222	Rev MaxSpline 24 tooth Pulleys	10
3	REV-21-2393	Rev MAXSpline Hex End Cap	2
4	Compliant Wheel - 4in - MAXSpline	Rev MAXSpline 4" Compliant Wheel	11

UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	<div></div>		
		DRAWN	JO	11/1/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.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.			TITLE: <div>Live Shaft - Top Assembly</div>		
MATERIAL/FINISH:		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
					C	GE-24386	
DO NOT SCALE DRAWING					SCALE: 1:4		SHEET 1 OF 1

D

D



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24393	Custom Thrust Washer	2
2	REV-21-2386	Rev MAXSpline Needle Roller Bearing	2
3	REV-21-2385	Rev MAXSpline Needle Bearing Housing	2
4	GE-24382	Counter Top Spacer	11
5	REV-25-2222	Rev MaxSpline 24 tooth Pulleys	10
6	GE-24381	Top Assembly Belt MAXSpline	1
7	GE-24376	Counter Top Dead Shaft	1
8	6435K16_Clamping Shaft Collar	McMaster 3/4" Clamping Shaft Collar	2
9	5909K33_Needle-Roller Thrust Bearing	McMaster 3/4" Needle Roller Thrust Bearing	2
10	5909K46_0.032 Thick Washer for 3-4 Shaft Diameter Needle-Roller Thrust Bearing	McMaster 3/4" Needle Roller Bearing Washer	2

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

JO

11/1/2023

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST[®]
ROBOTICS
COMPETITION



TITLE:

Dead Shaft - Top Assembly

SIZE

DWG. NO.

RFV

C

GE-24387

SCALE: 1:5

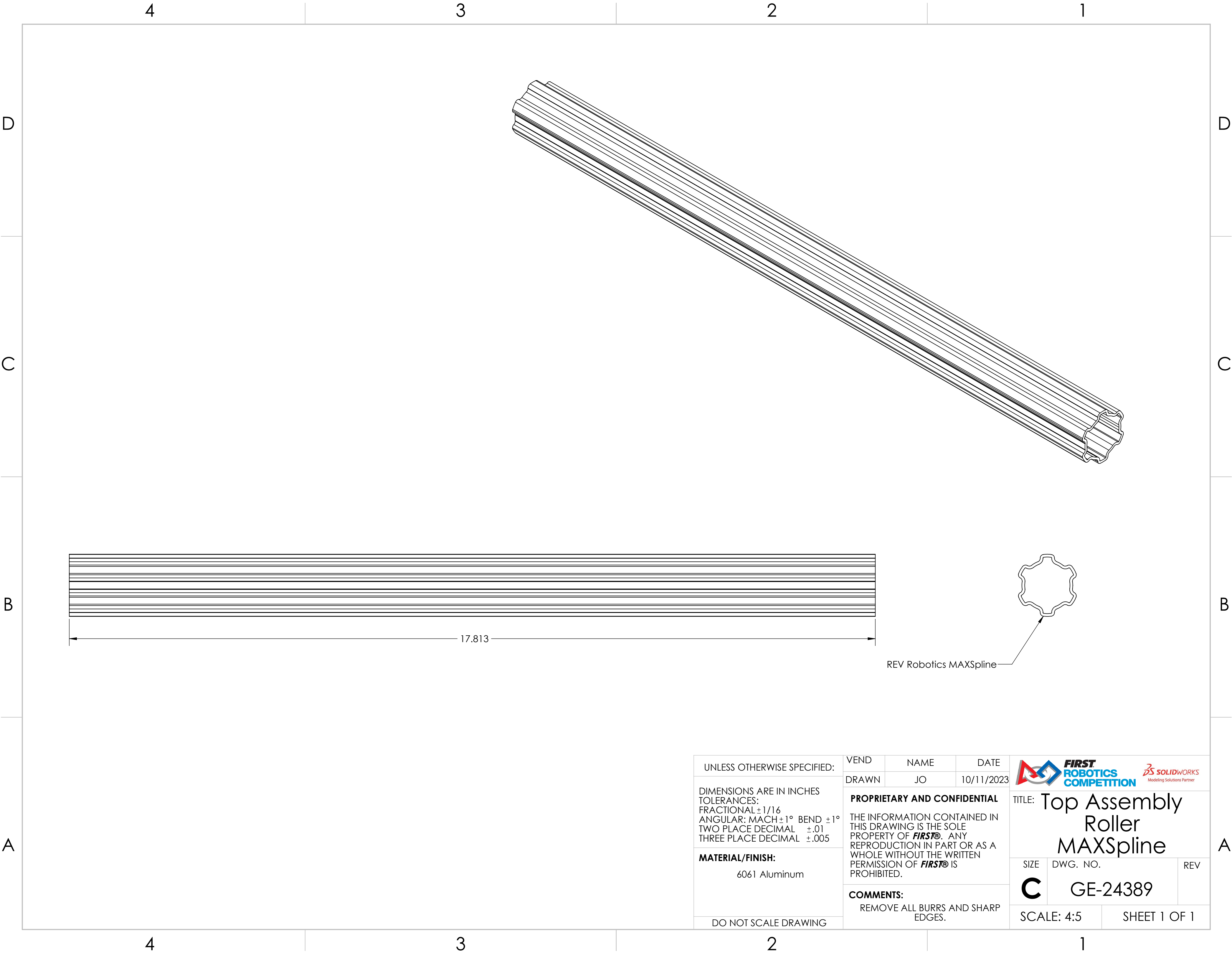
SHEET 1 OF 1



B

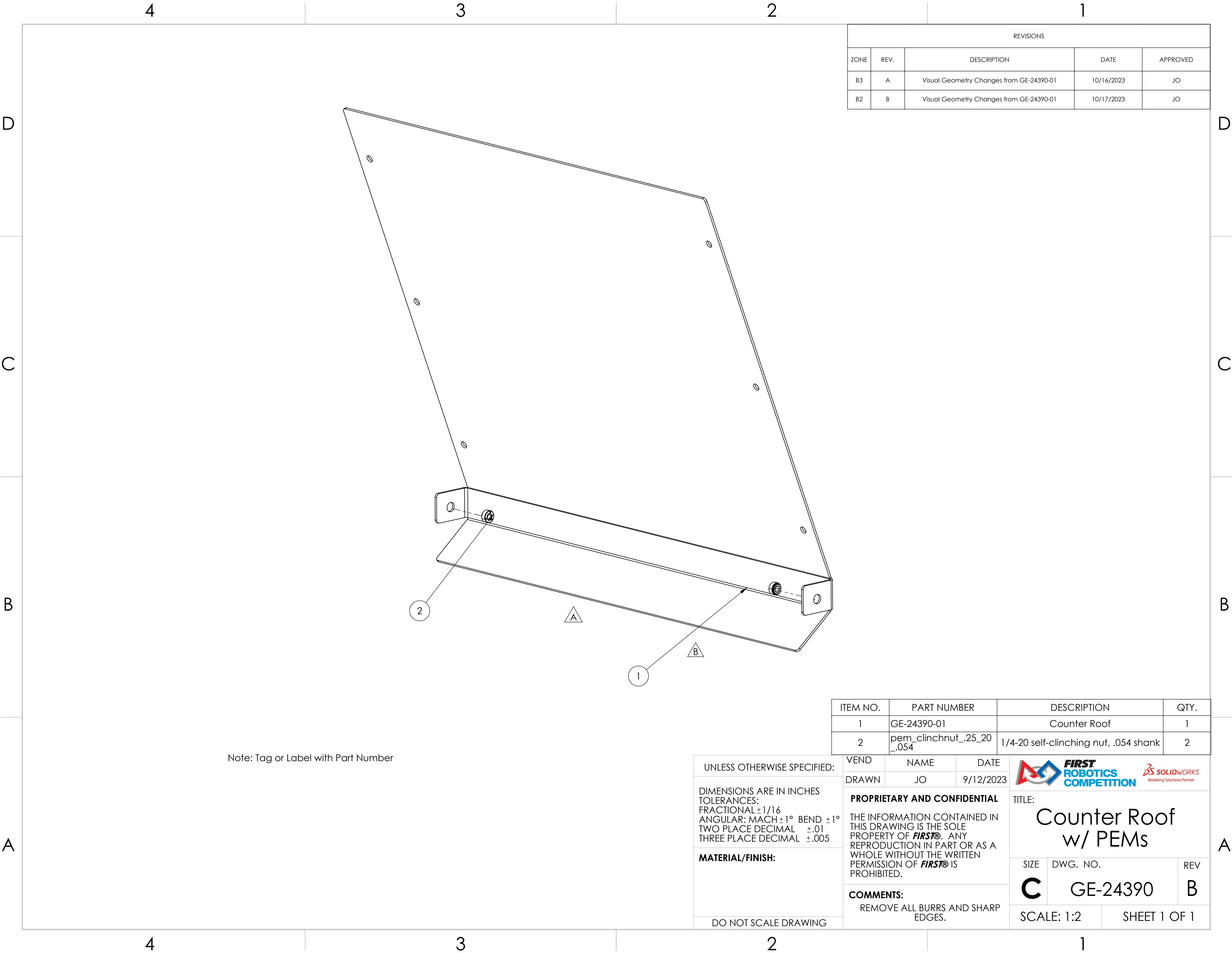
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UNLESS OTHERWISE SPECIFIED:	VEND	NAME	DATE	<div></div>	
	DRAWN	JO	10/11/2023		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005	PROPRIETARY AND CONFIDENTIAL			TITLE: Top Assembly Roller MAXSpline	
	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:			SIZE	DWG. NO.
	REMOVE ALL BURRS AND SHARP EDGES.			C	GE-24389
MATERIAL/FINISH:				REV	
6061 Aluminum					
DO NOT SCALE DRAWING				SCALE: 4:5	SHEET 1 OF 1



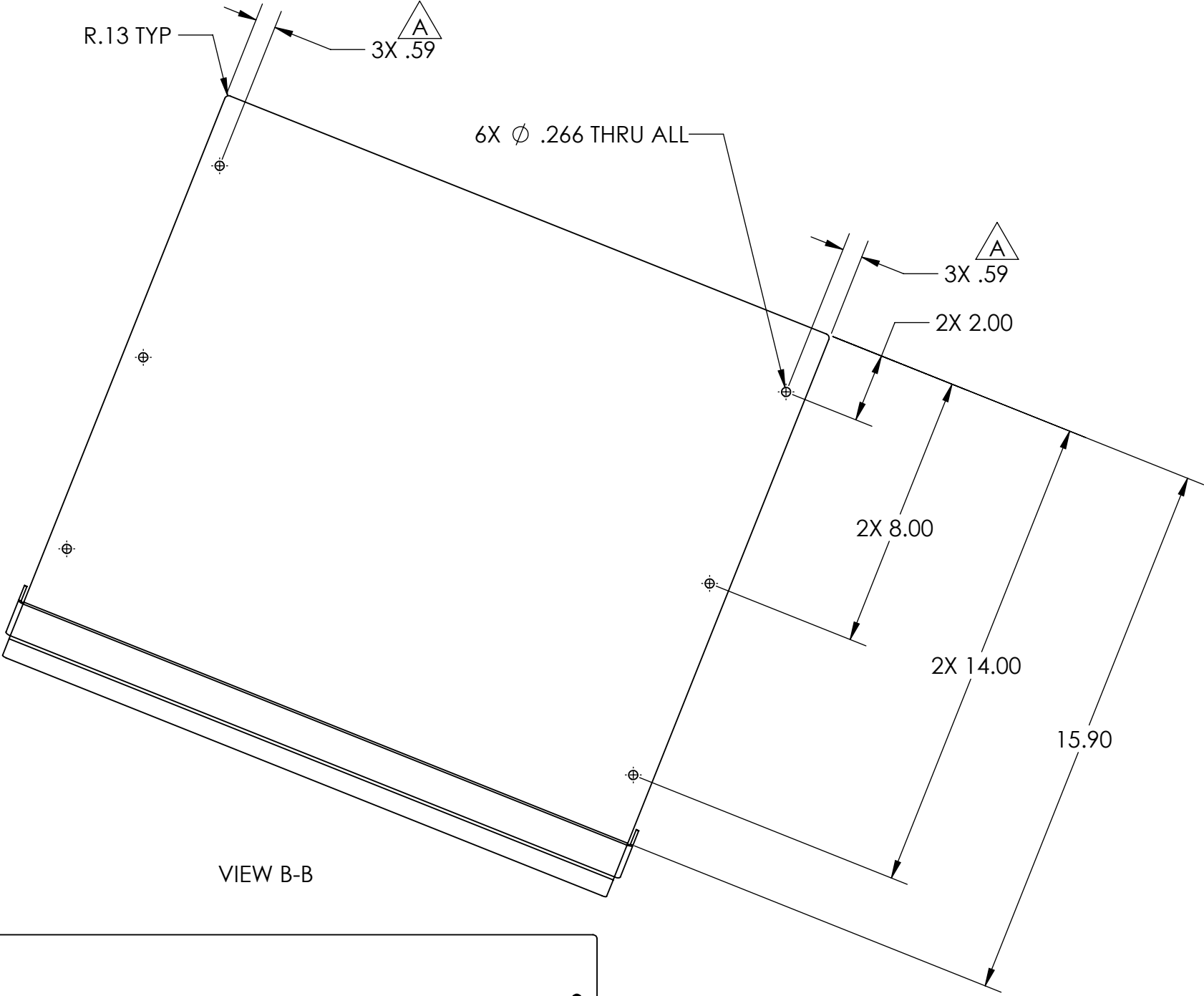
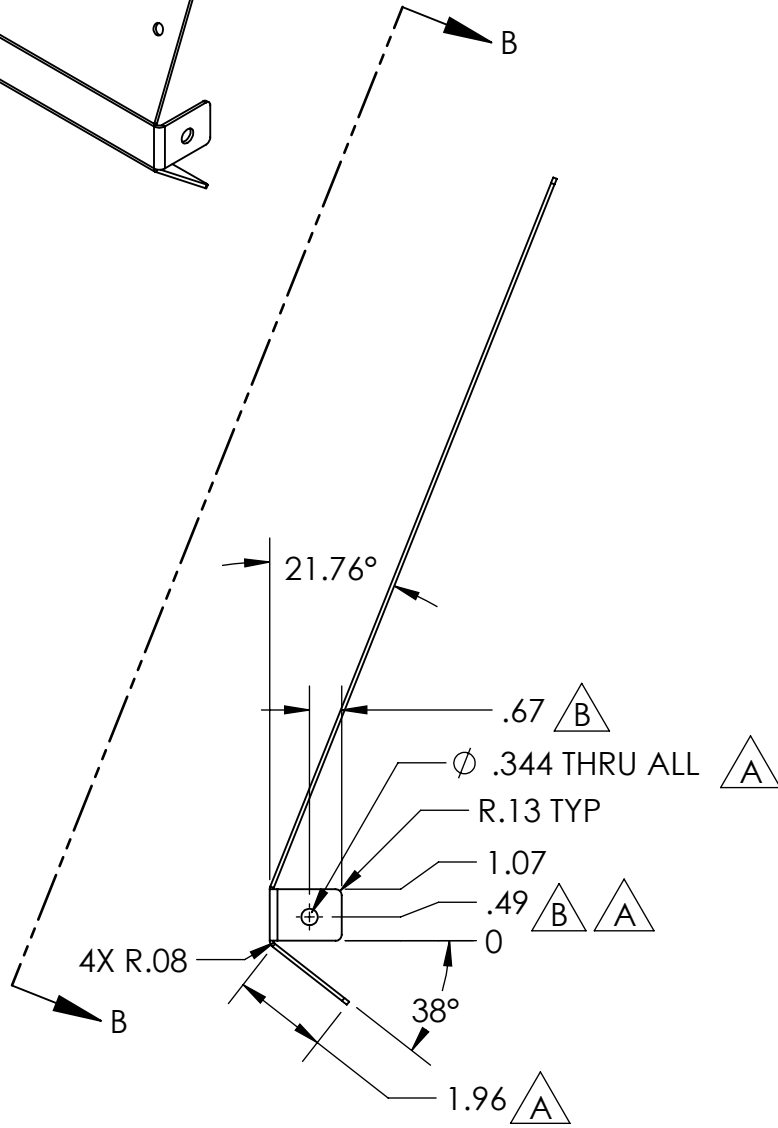
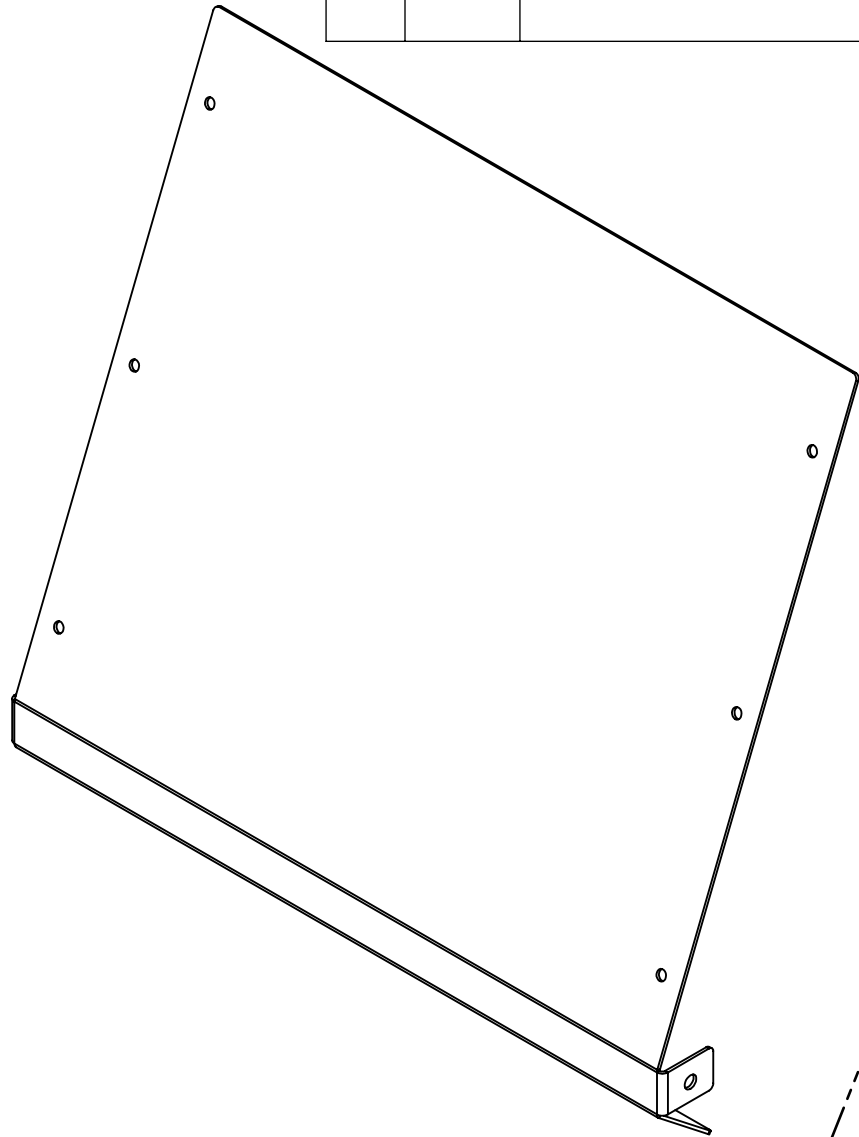
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	A	Visual Geometry Changes from GE-24390-01	10/16/2023	JO
B2	B	Visual Geometry Changes from GE-24390-01	10/17/2023	JO

Note: Tag or Label with Part Number

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24390-01	Counter Roof	1
2	pem_clinchnut_.25_20 _.054	1/4-20 self-clinching nut, .054 shank	2

UNLESS OTHERWISE SPECIFIED:		VEND	NAME	DATE	<div></div>	
<div>DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005</div> <div>MATERIAL/FINISH:</div> <div>DO NOT SCALE DRAWING</div>		DRAWN	JO	9/12/2023	<div>TITLE: <div>Counter Roof w/ PEMs</div><div><div>SIZE</div><div>DWG. NO.</div><div>REV</div><div><div>C</div><div>GE-24390</div><div>B</div></div></div><div>SCALE: 1:2</div><div>SHEET 1 OF 1</div></div>	
		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
A1, B1, D3, D4	A	Changes to Side and Bottom Flanges, and hole locations	10/16/2023	JO
B1	B		10/17/2023	



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:
12 Ga 5052 Aluminum

DO NOT SCALE DRAWING

BEND	NAME	DATE
DRAWN	JO	9/12/2023

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.

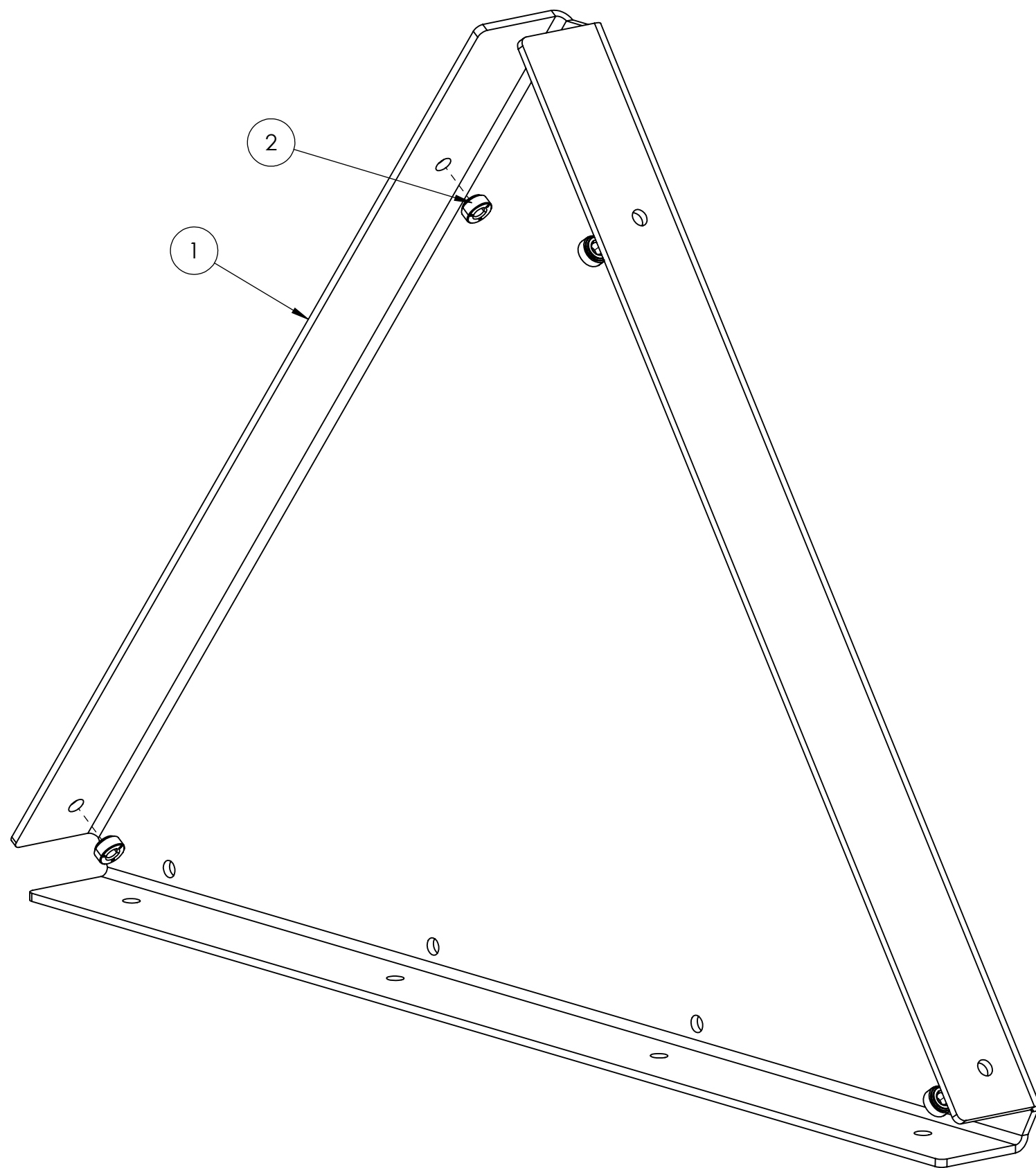
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Counter Roof



SIZE	DWG. NO.	REV
C	GE-24390-01	B

SCALE: 1:4 SHEET 1 OF 1



Notes:
Assemble as shown
Tag or Label with Part Number

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24391-01	Collection Side Ramp	1
2	pem_clinchnut_.25_20_.054	1/4-20 self-clinching nut, .054 shank	4

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		10/19/2023	
		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.					
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
MATERIAL/FINISH:		 FIRST ROBOTICS COMPETITION 					
DO NOT SCALE DRAWING							
		TITLE: <h1>Collection Ramp w/ PEMs</h1>					
		SIZE		DWG. NO.			REV
		C		GE-24391			
		SCALE: 1:2			SHEET 1 OF 1		

D

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2

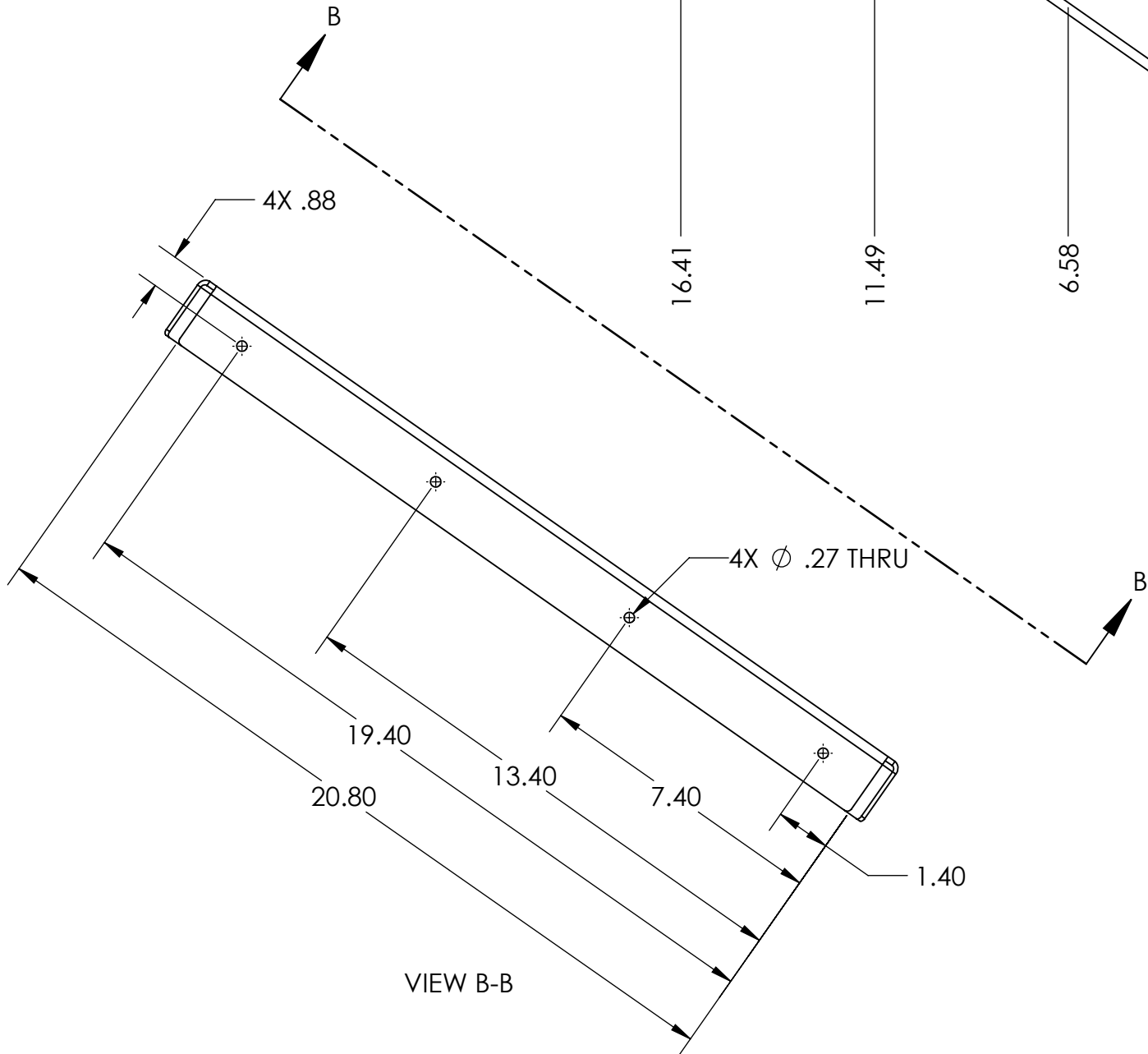
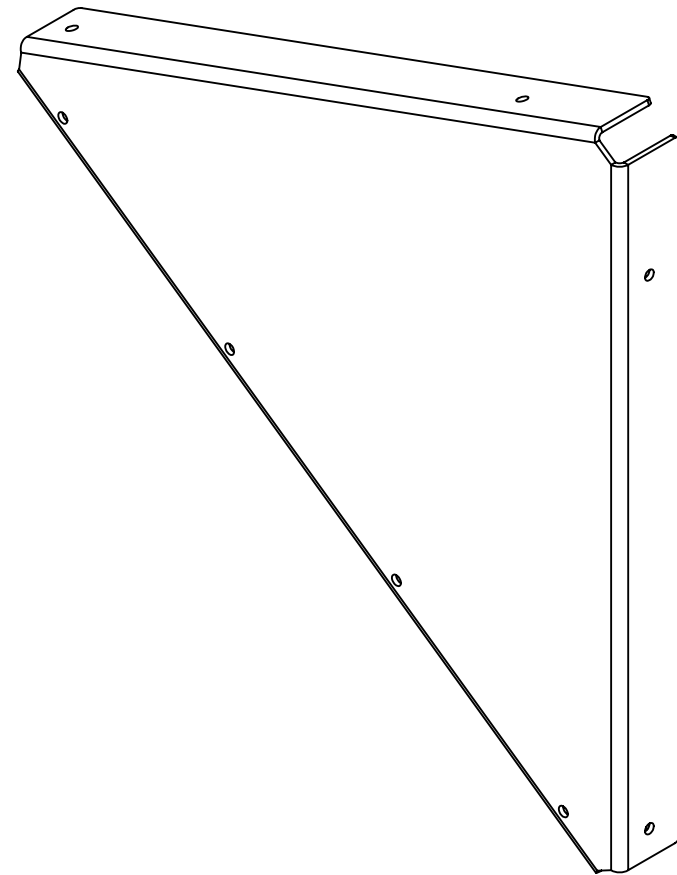
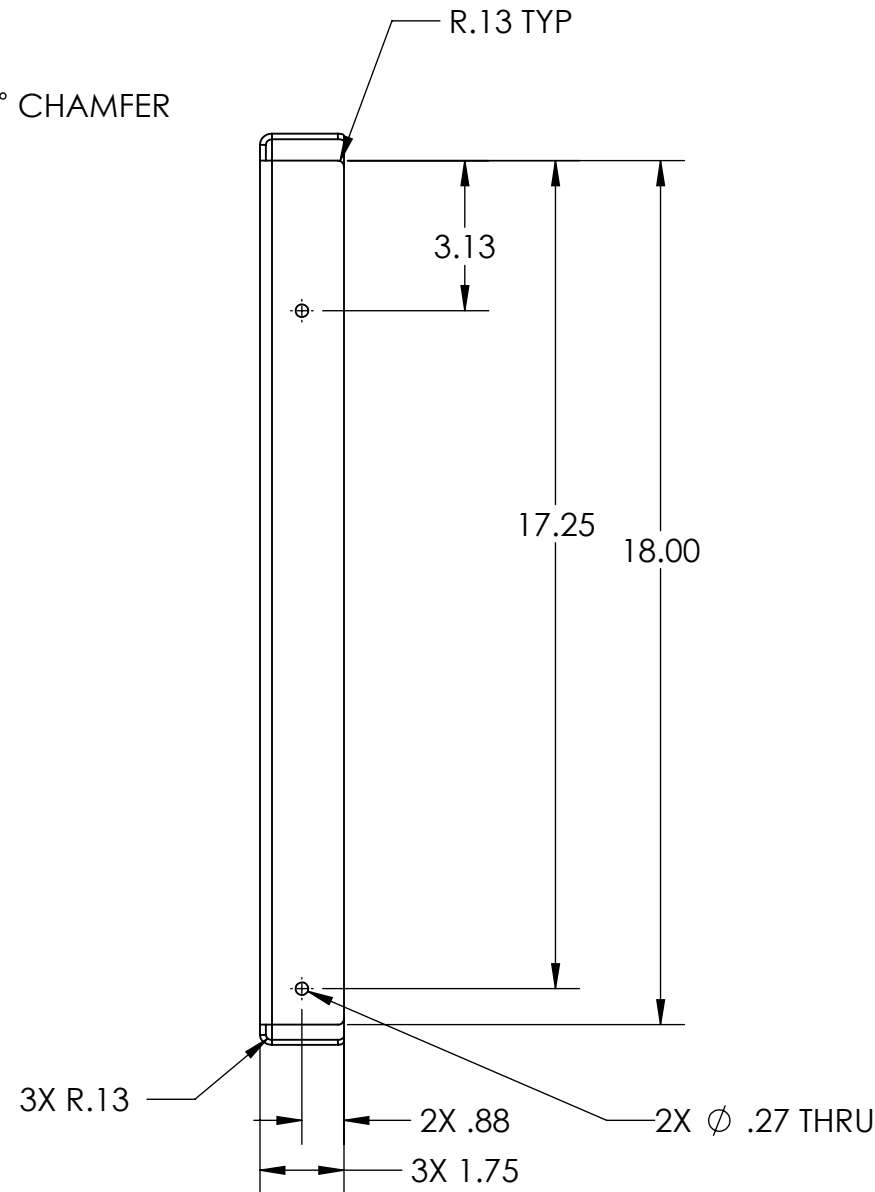
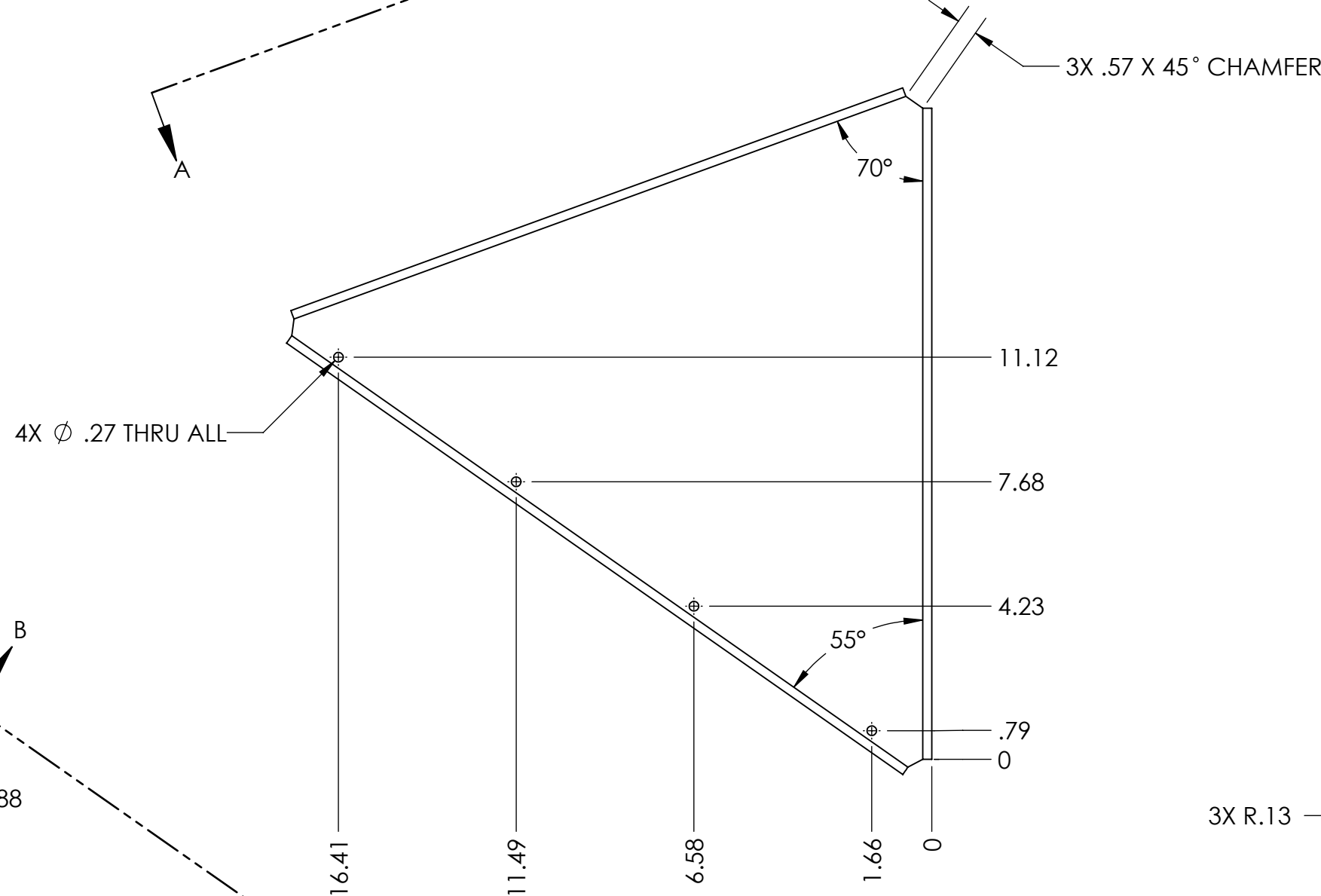
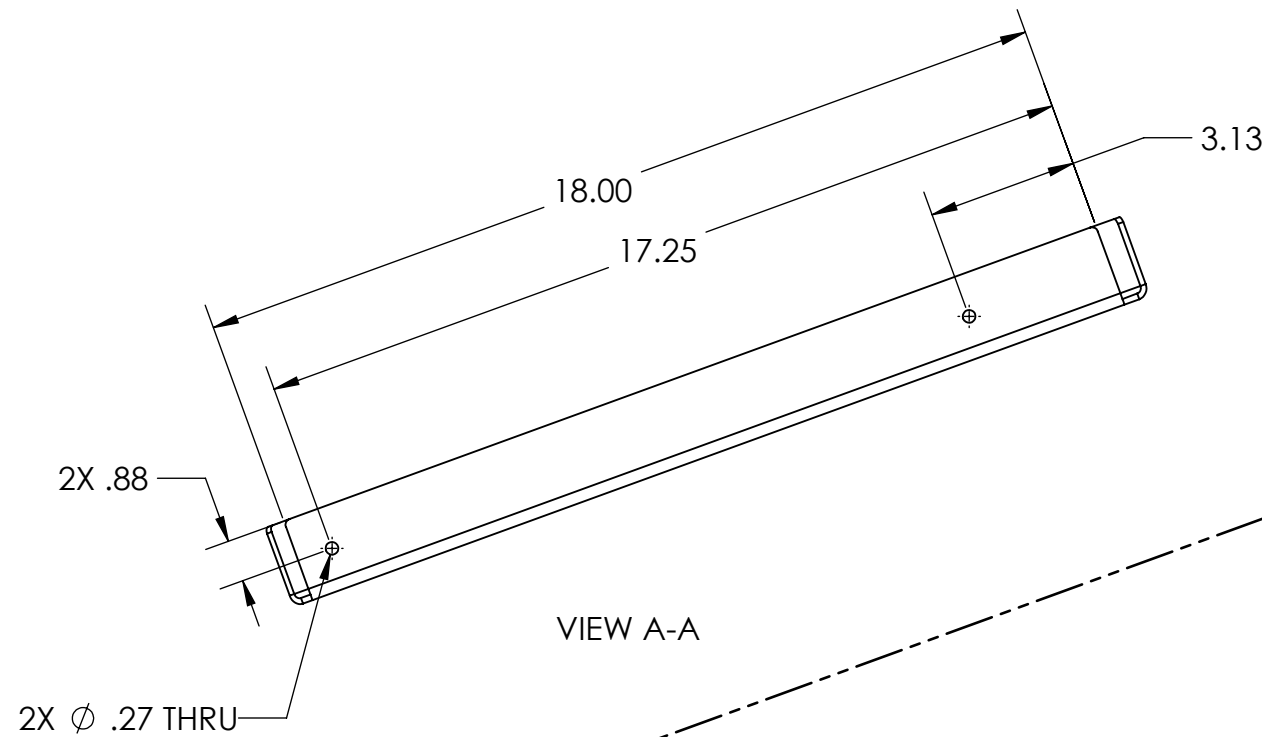
1

4

3

2

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 $\pm .02$
THREE PLACE DECIMAL $\pm .010$

MATERIAL/FINISH:
8 Ga 5052 Aluminum

DO NOT SCALE DRAWING

BEND	NAME	DATE
DRAWN	JO	10/19/2023

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.

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

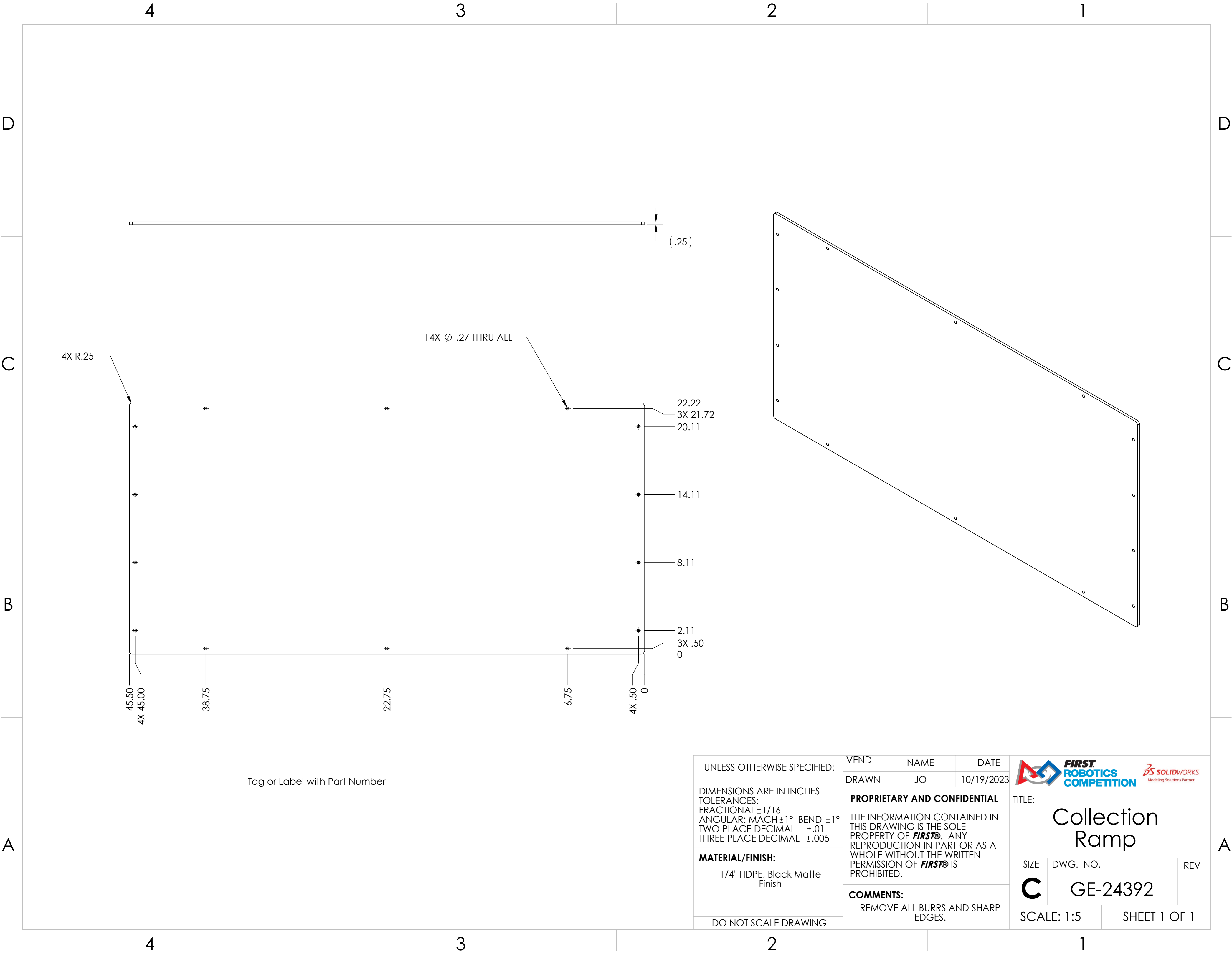


TITLE: **Collection Side Ramp**



SIZE	DWG. NO.	REV
C	GE-24391-01	

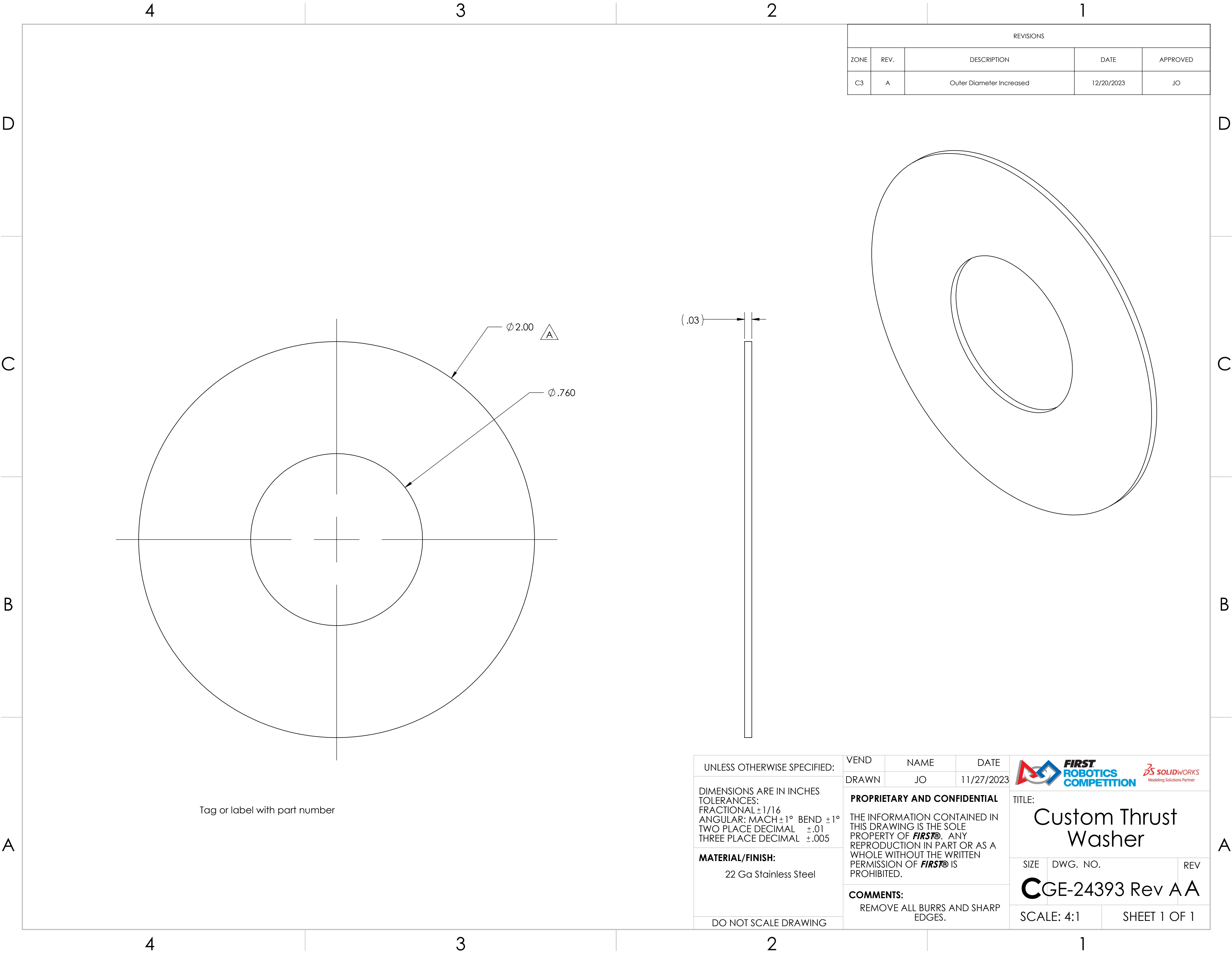
SCALE: 1:4

SHEET 1 OF 1



Tag or Label with Part Number

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 MATERIAL/FINISH: 1/4" HDPE, Black Matte Finish DO NOT SCALE DRAWING	VEND	NAME	DATE	 	
	DRAWN	JO	10/19/2023		
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				TITLE: Collection Ramp SIZE DWG. NO. REV C GE-24392
				SCALE: 1:5	SHEET 1 OF 1



4

3

2

1

D

D

C

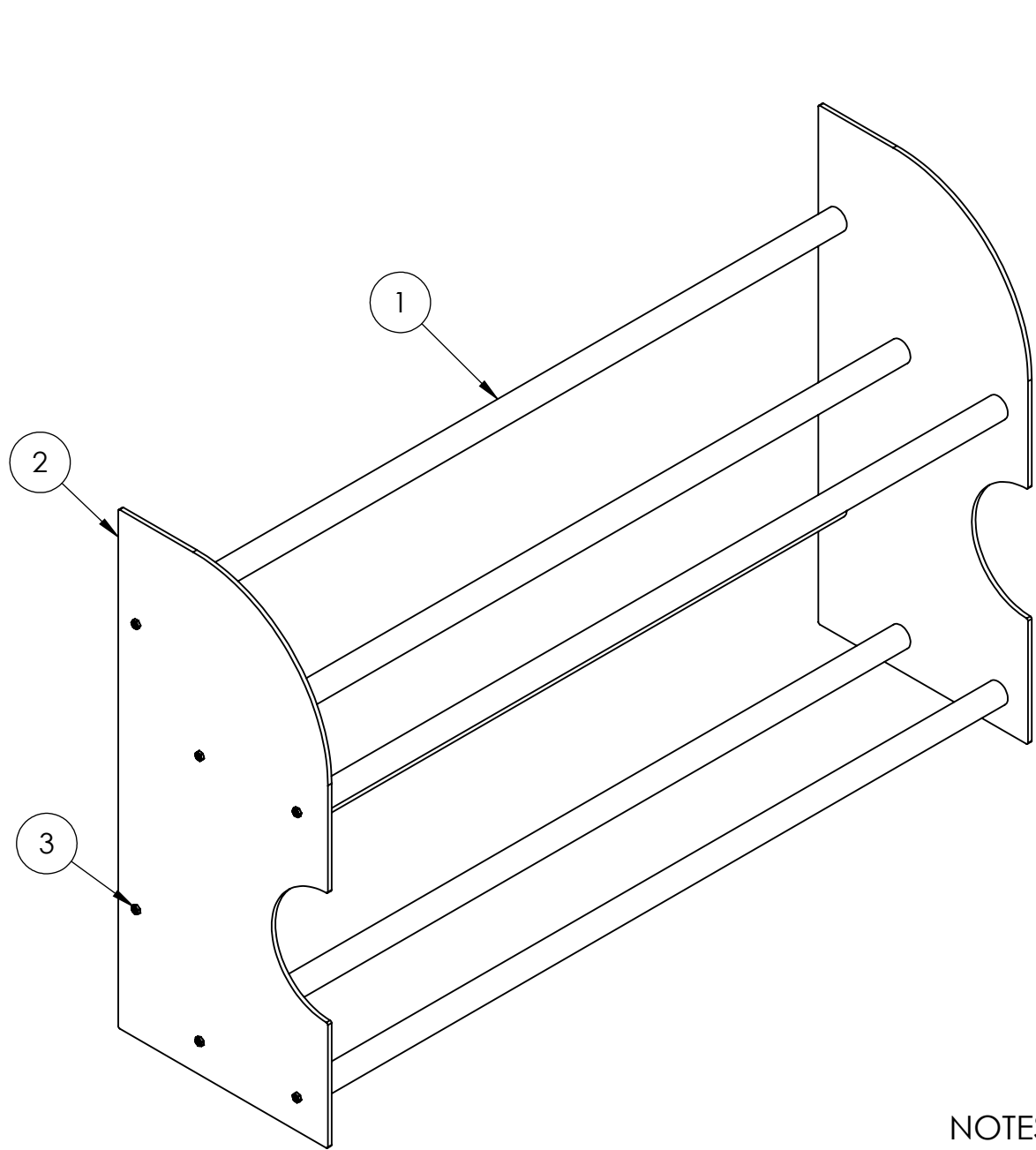
C

B

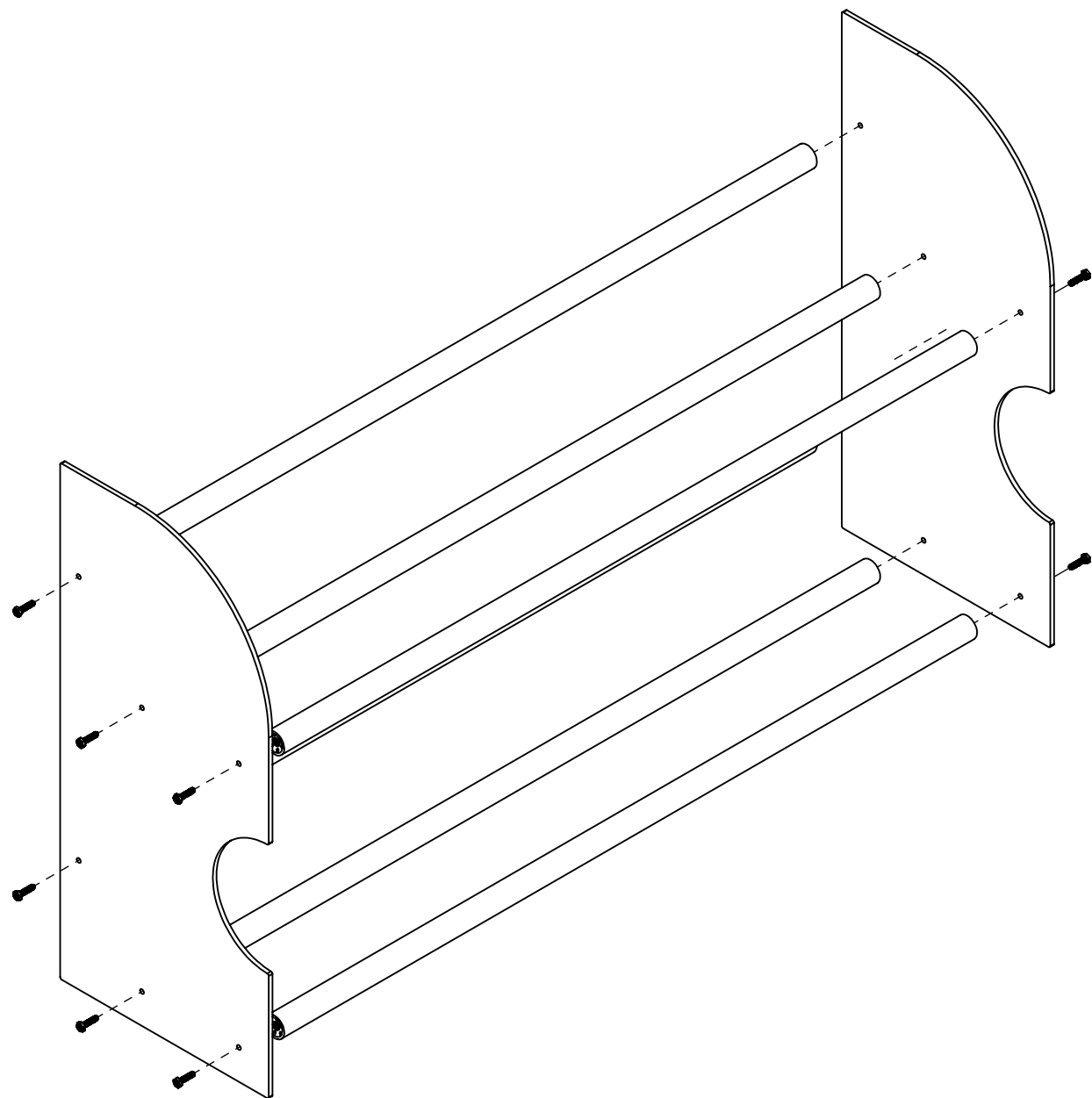
B

A

A



NOTES:
1. Bolt the tubes to the side panels



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24401	Pipe_Tubenut	6
2	GE-24403	Plastic Side Panel	2
3	91286A109	High-Strength Grade 8 Steel Hex Head Screw	12

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

EA

8/2/2023

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



FIRST
ROBOTICS
COMPETITION



TITLE:

Note Holder

SIZE

C

DWG. NO.

GE-24400

REV

SCALE: 1:8

SHEET 1 OF 1

4

3

2

1

D

C

B

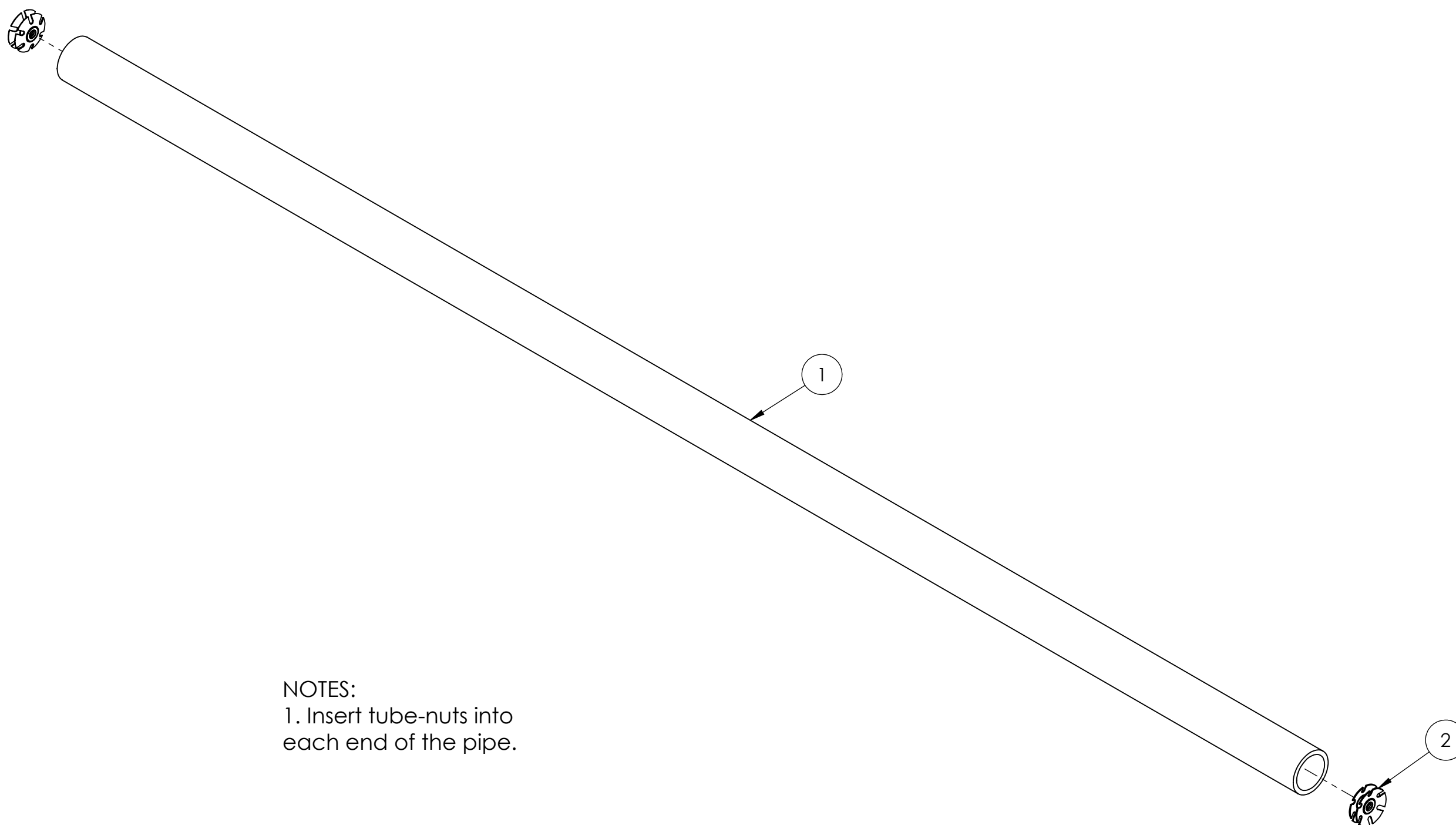
A

D

C



B

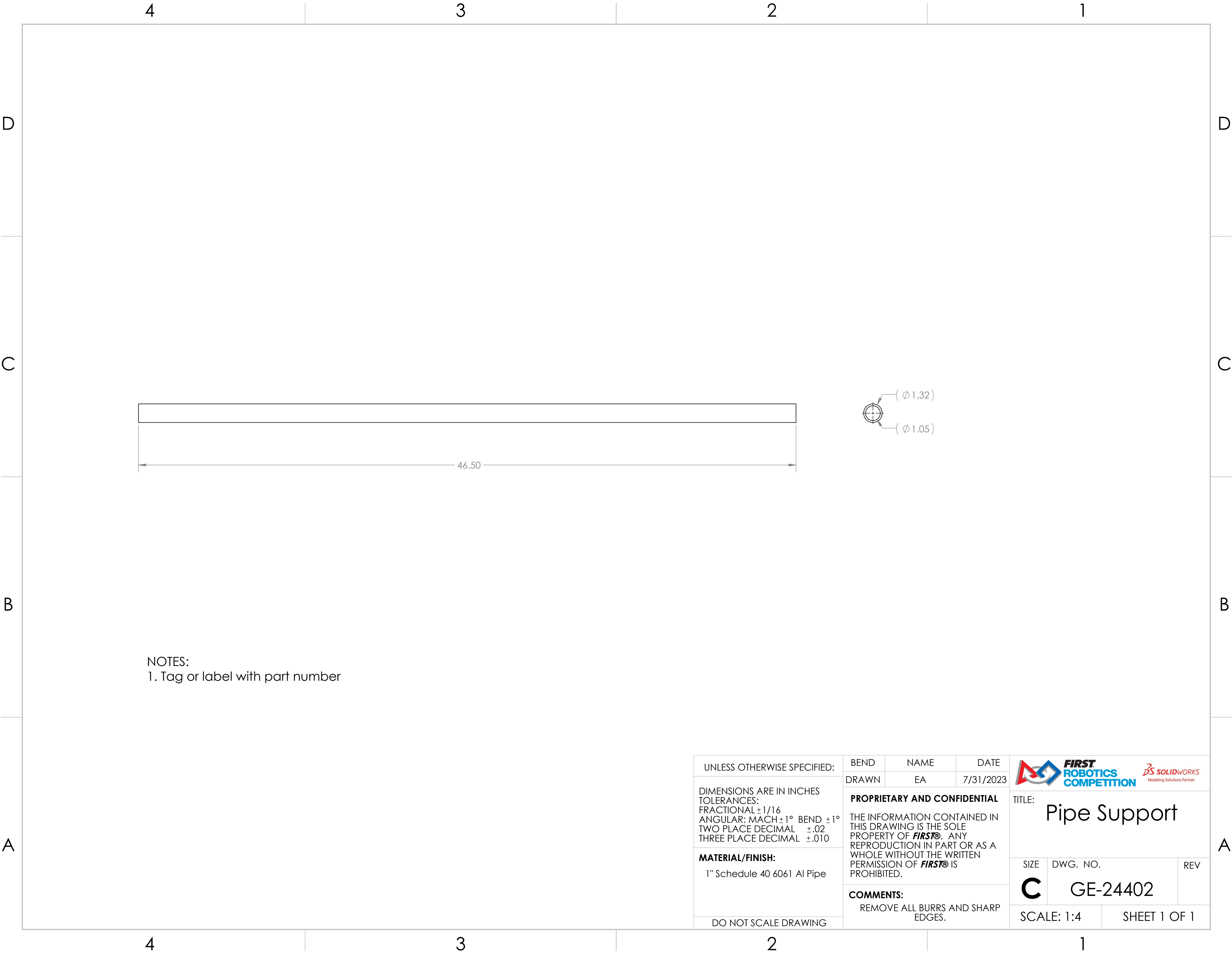
A





NOTES:
1. Insert tube-nuts into each end of the pipe.

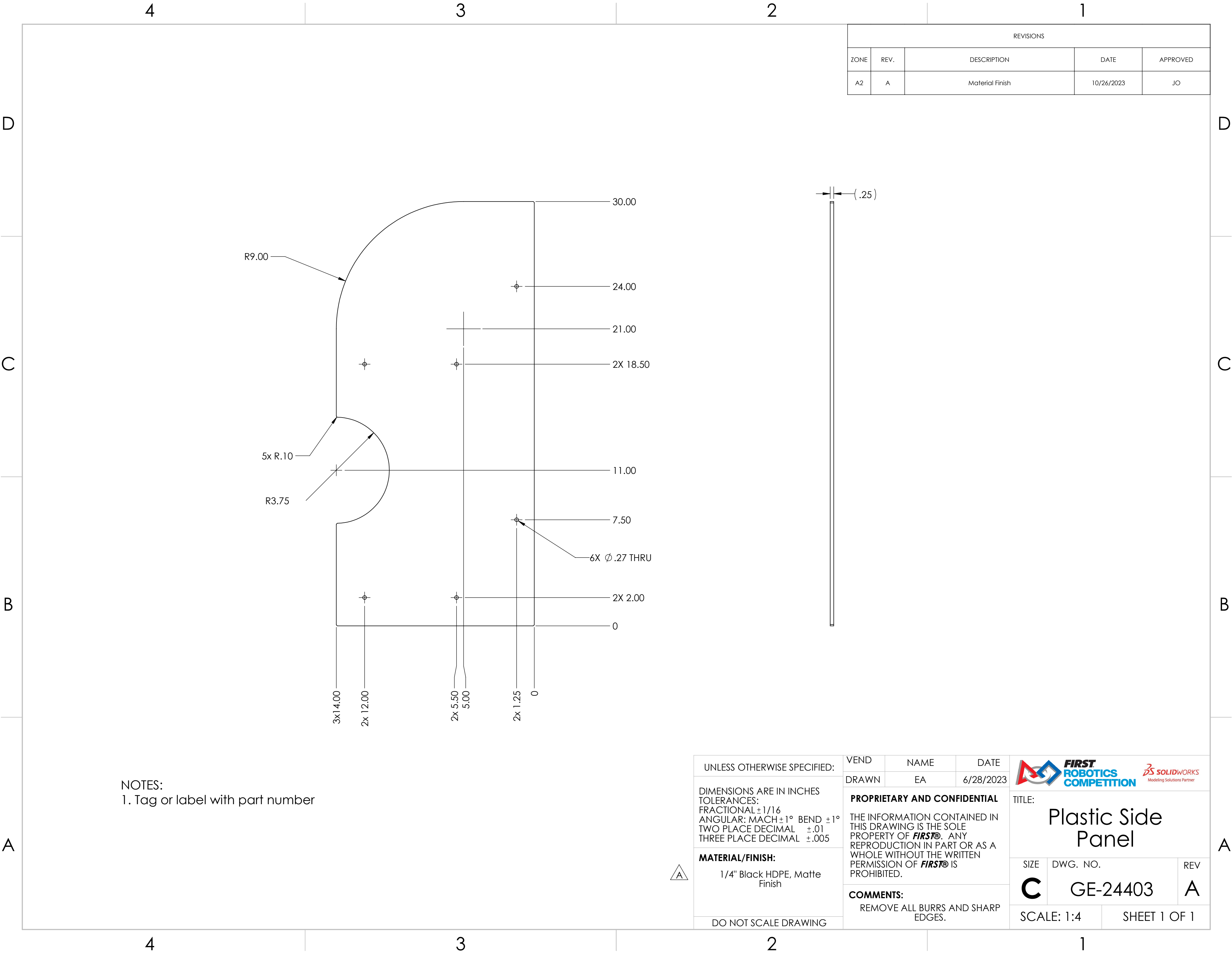
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-24402	Pipe Support	1
2	94290A557	Tube-Connecting Nut	2

UNLESS OTHERWISE SPECIFIED:		VEN	NAME	DATE	 	
<p>DIMENSIONS ARE IN INCHES</p> <p>TOLERANCES:</p> <p>FRACTIONAL $\pm 1/16$</p> <p>ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$</p> <p>TWO PLACE DECIMAL $\pm .01$</p> <p>THREE PLACE DECIMAL $\pm .005$</p> <p>MATERIAL/FINISH:</p> <p>DO NOT SCALE DRAWING</p>		DRAWN	EA	8/2/2023	TITLE:	
		PROPRIETARY AND CONFIDENTIAL			Pipe_Tubenut	
		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.			SIZE DWG. NO. REV	
		COMMENTS:			C GE-24401	
		REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:3 SHEET 1 OF 1	



NOTES:
1. Tag or label with part number

UNLESS OTHERWISE SPECIFIED:	BEND	NAME	DATE	<div></div> <div>TITLE: <h1>Pipe Support</h1></div>		
	DRAWN	EA	7/31/2023			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.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.			<div>SIZE</div> <div>C</div> <div>DWG. NO.</div> <div>GE-24402</div> <div>REV</div>		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
	MATERIAL/FINISH: 1" Schedule 40 6061 Al Pipe				SCALE: 1:4	
DO NOT SCALE DRAWING						



NOTES:
1. Tag or 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" Black HDPE, Matte Finish

DO NOT SCALE DRAWING

VEND	NAME	DATE
DRAWN	EA	6/28/2023

PROPRIETARY AND CONFIDENTIAL

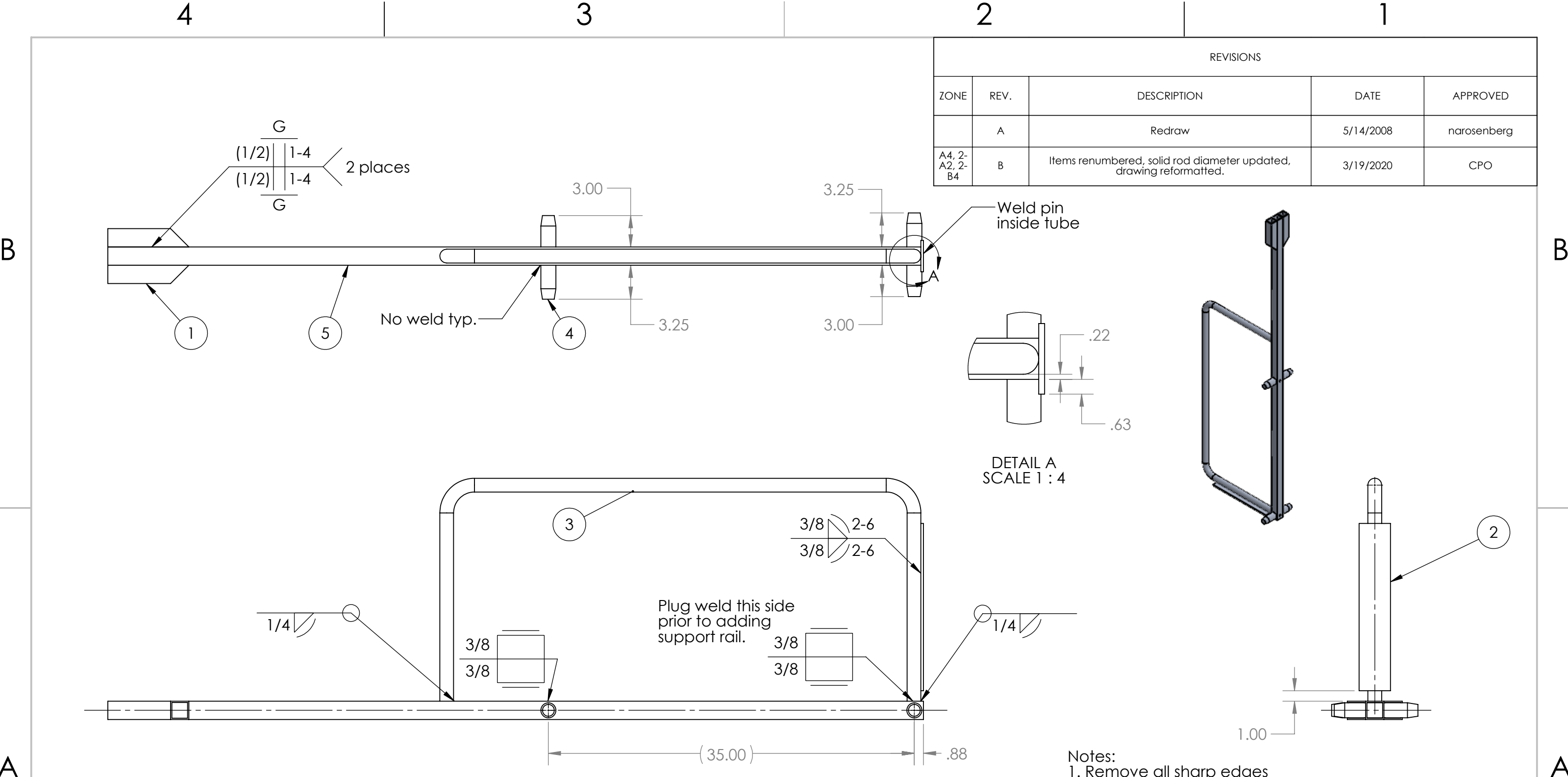
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COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.



TITLE: Plastic Side Panel		
SIZE C	DWG. NO. GE-24403	REV A

SCALE: 1:4 SHEET 1 OF 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

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

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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:			
MATERIAL			
FINISH			
NEXT ASSY	USED ON		
APPLICATION		DO NOT SCALE DRAWING	



TITLE:
Drivers Station Support

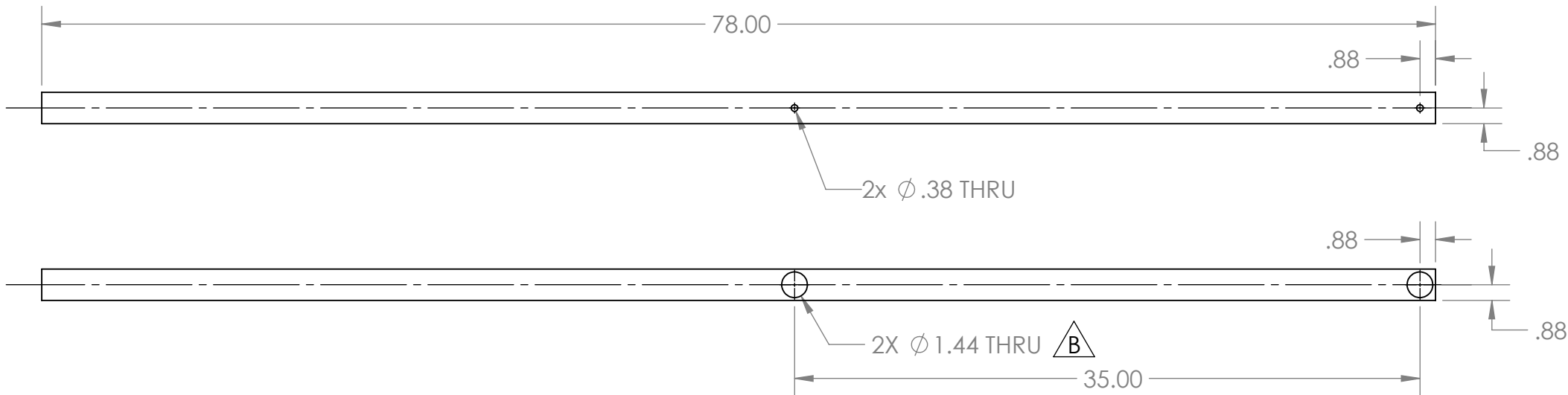
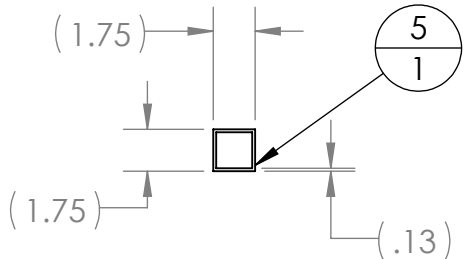
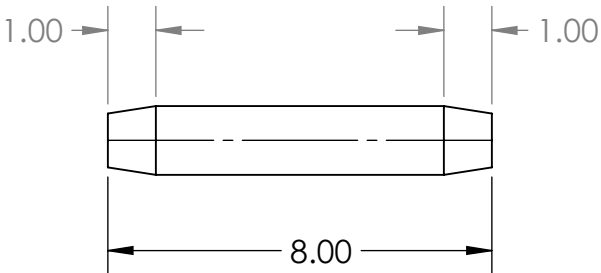
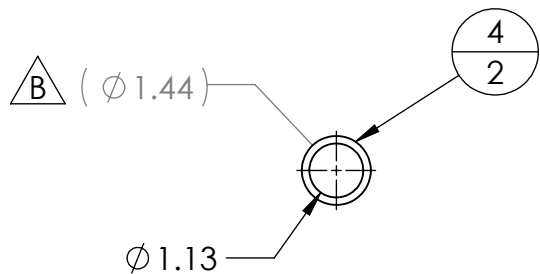
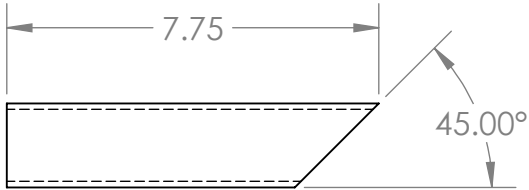
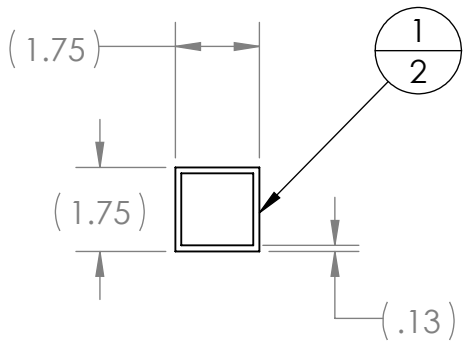
SIZE B	DWG. NO. FE-00001	REV B
SCALE: 1:9 WEIGHT:		SHEET 1 OF 3

4

3

2

1



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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 $\pm .001$

INTERPRET GEOMETRIC
TOLERANCING PER:
MATERIAL

FINISH

NAME DATE

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:



TITLE:
Drivers Station
Support

SIZE DWG. NO. REV
B FE-00001 B

SCALE: 1:2 WEIGHT: SHEET 2 OF 3

NEXT ASSY

USED ON

APPLICATION

DO NOT SCALE DRAWING

4

3

2

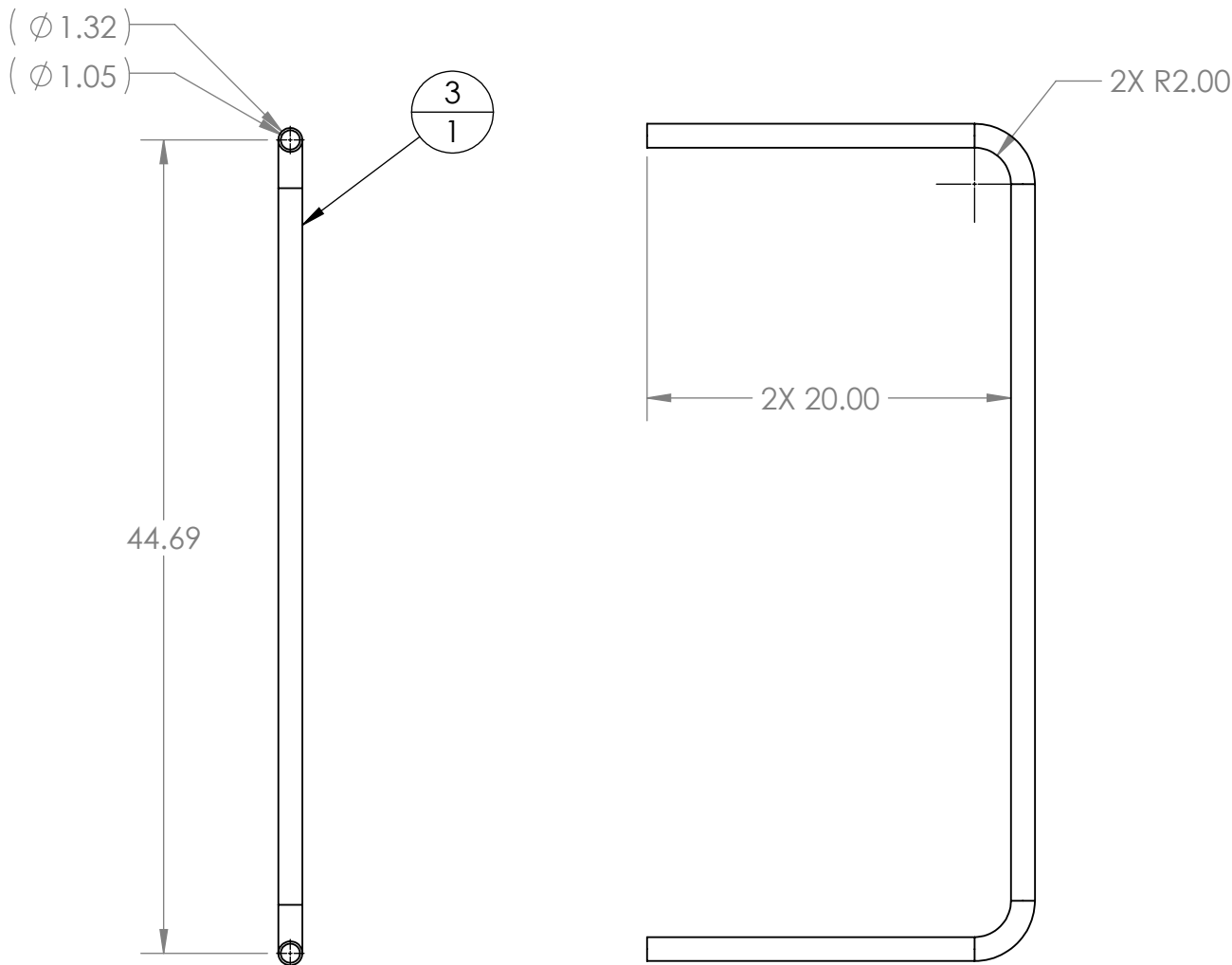
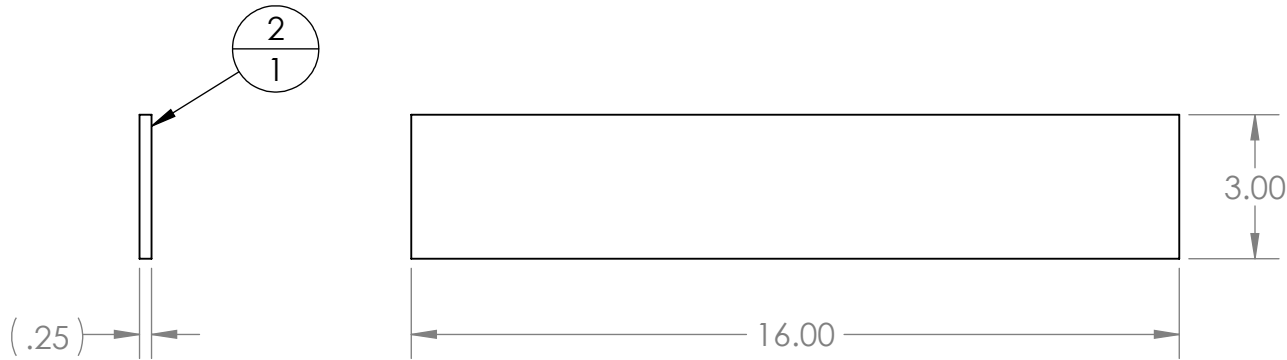
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4



3

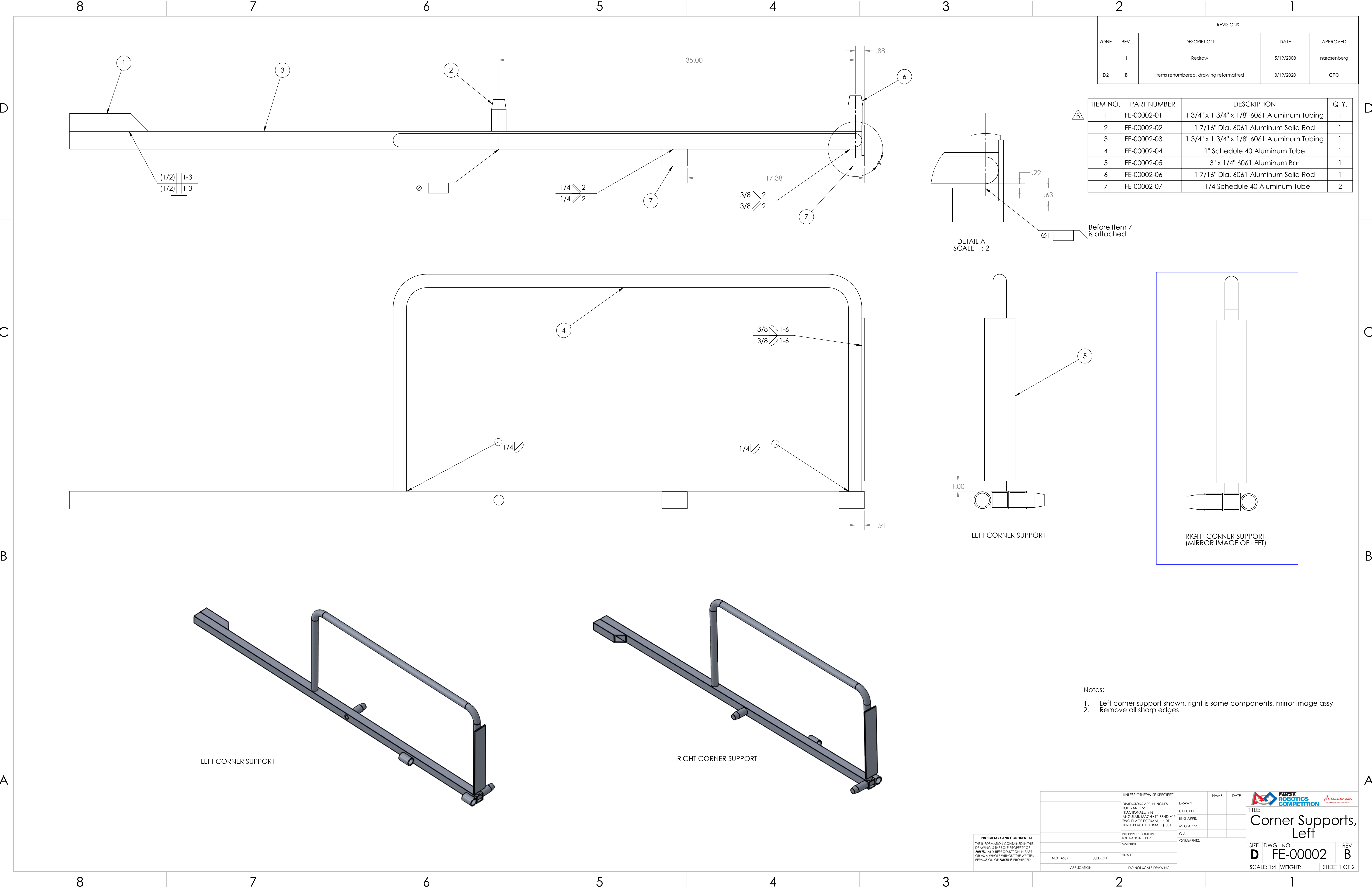
2

1



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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	<div></div>		
		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			TITLE: <h1>Drivers Station Support</h1>		
			CHECKED					
			ENG APPR.					
			MFG APPR.					
			Q.A.					
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:			SIZE DWG. NO. REV B FE-00001 B		
		MATERIAL						
		FINISH						
NEXT ASSY	USED ON							
APPLICATION		DO NOT SCALE DRAWING						
						WEIGHT:		SHEET 3 OF 3



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	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

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UNLESS OTHERWISE SPECIFIED:

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:

FINISH:

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:

NAME

DATE

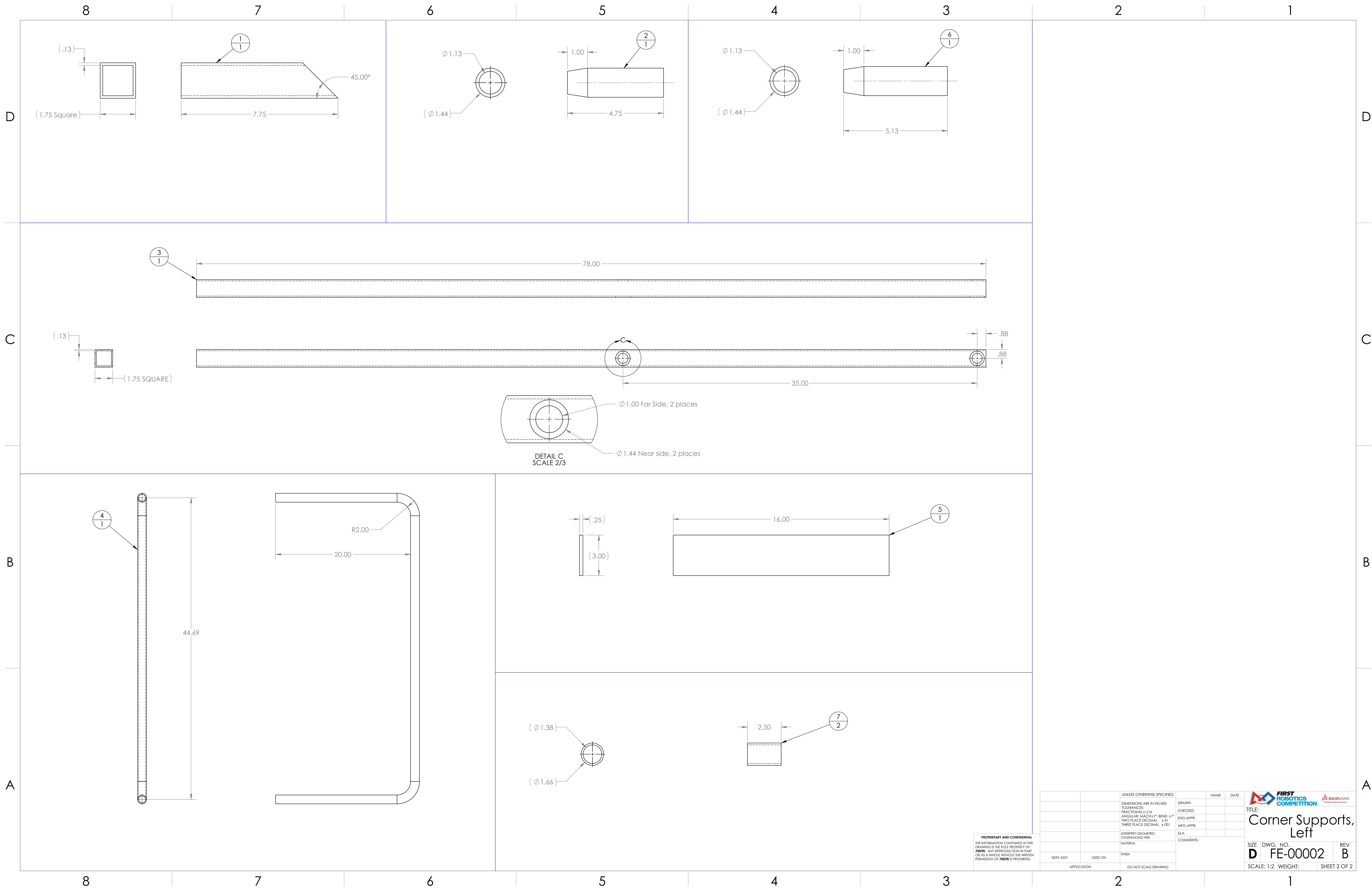
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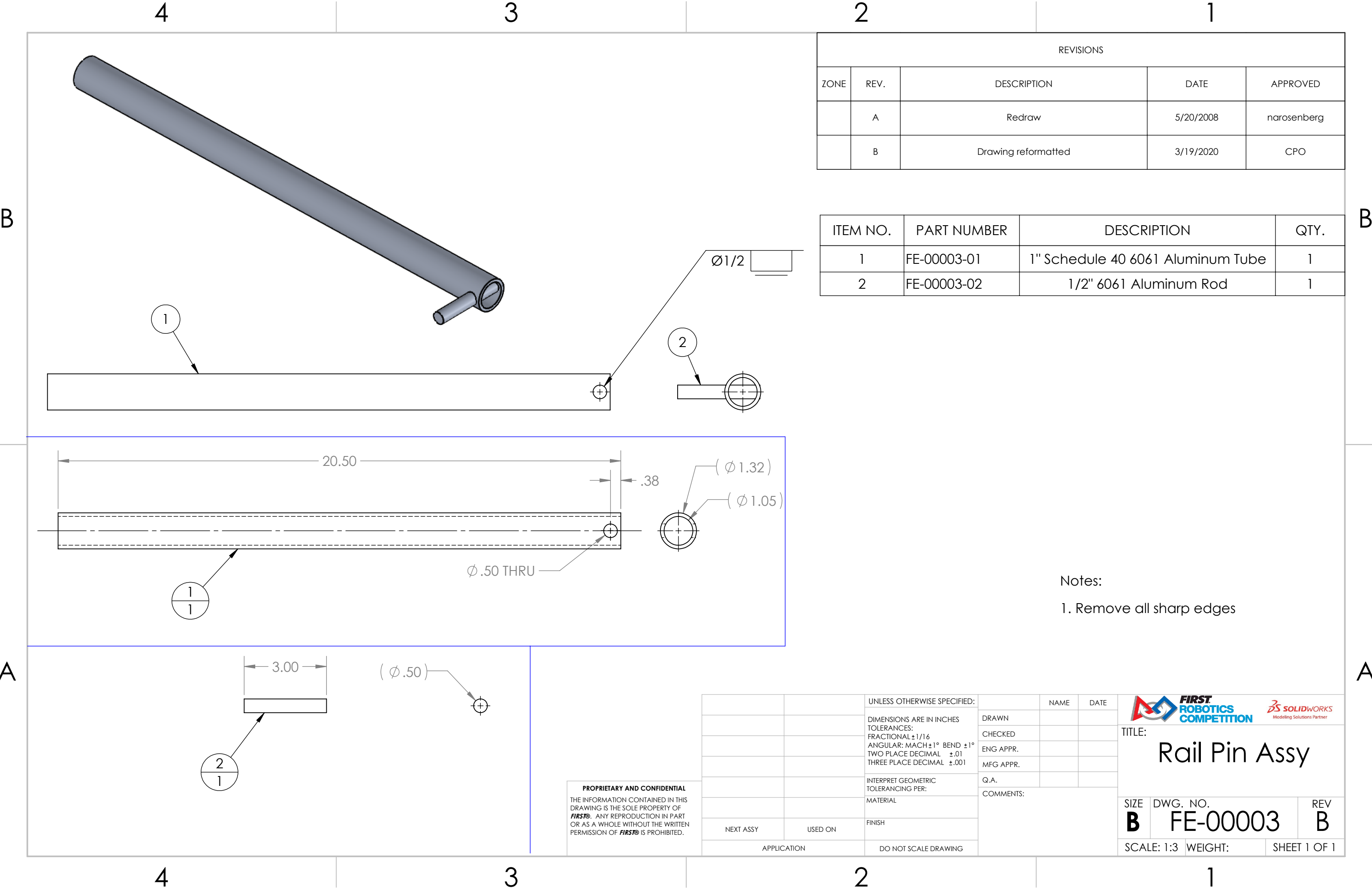
Corner Supports, Left

SIZE DWG. NO. REV

D FE-00002 B

SCALE: 1:4 WEIGHT: SHEET 1 OF 2







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

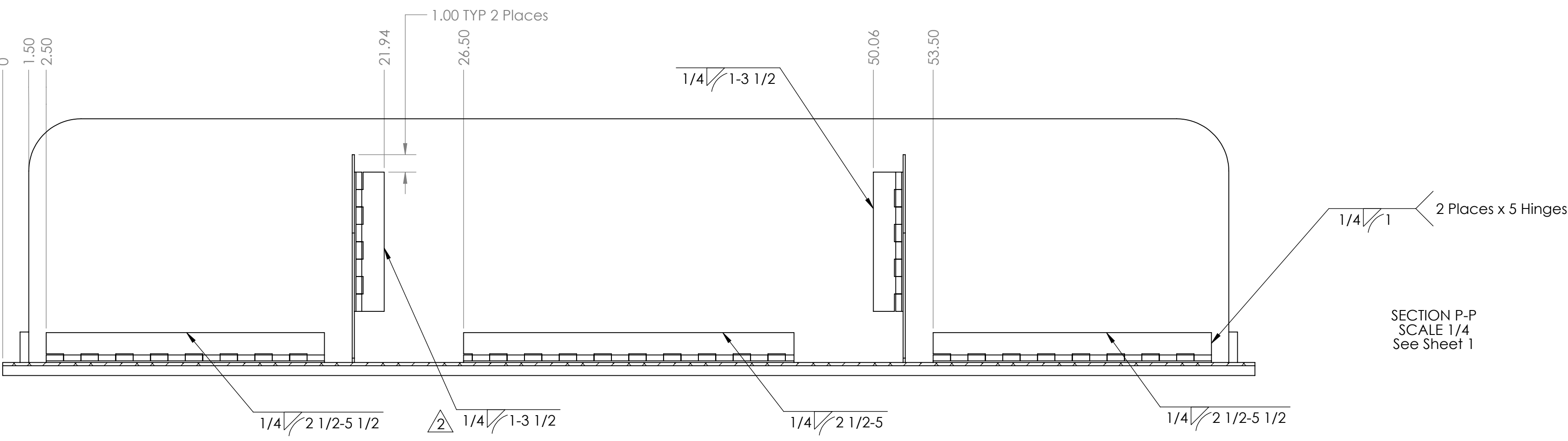
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00003-01	1" Schedule 40 6061 Aluminum Tube	1
2	FE-00003-02	1/2" 6061 Aluminum Rod	1

Notes:
1. Remove all sharp edges

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	<div></div>		
		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			TITLE: <h1>Rail Pin Assy</h1>		
			CHECKED					
			ENG APPR.					
			MFG APPR.					
			Q.A.					
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:			SIZE DWG. NO. REV B FE-00003 B		
		MATERIAL						
		FINISH						
NEXT ASSY	USED ON					SCALE: 1:3 WEIGHT: SHEET 1 OF 1		
APPLICATION		DO NOT SCALE DRAWING						

D

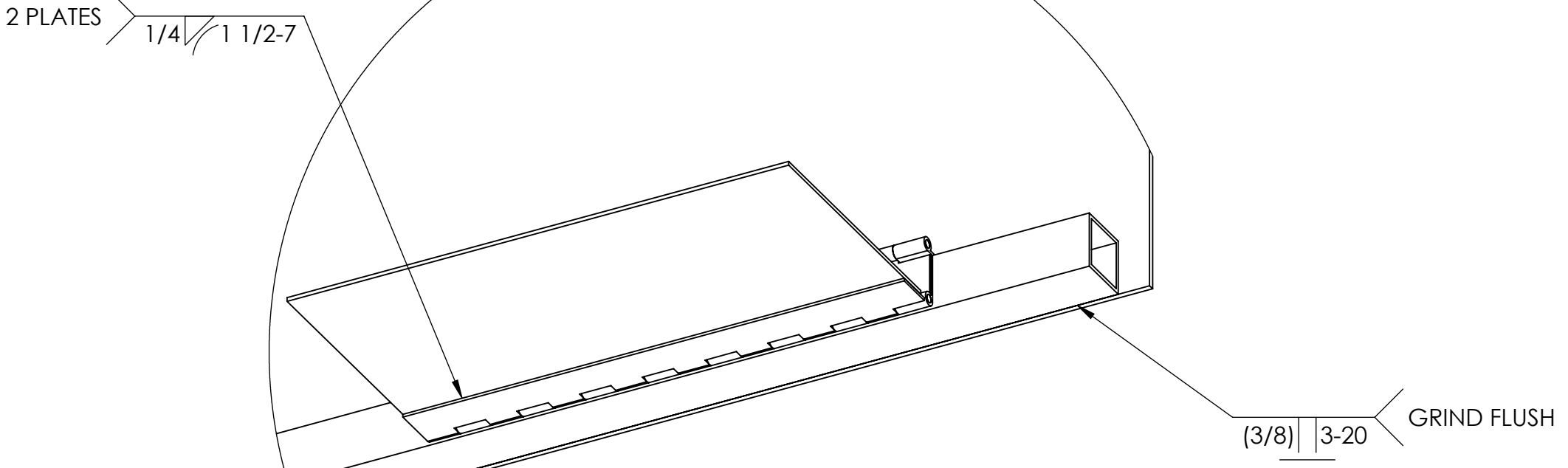
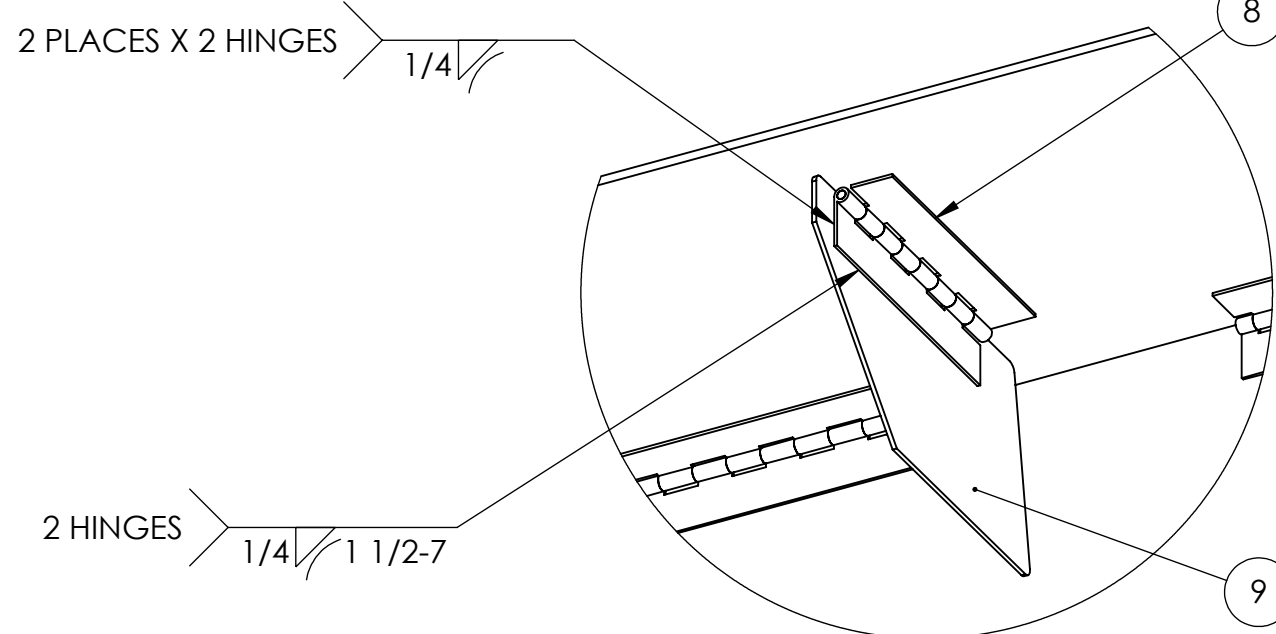
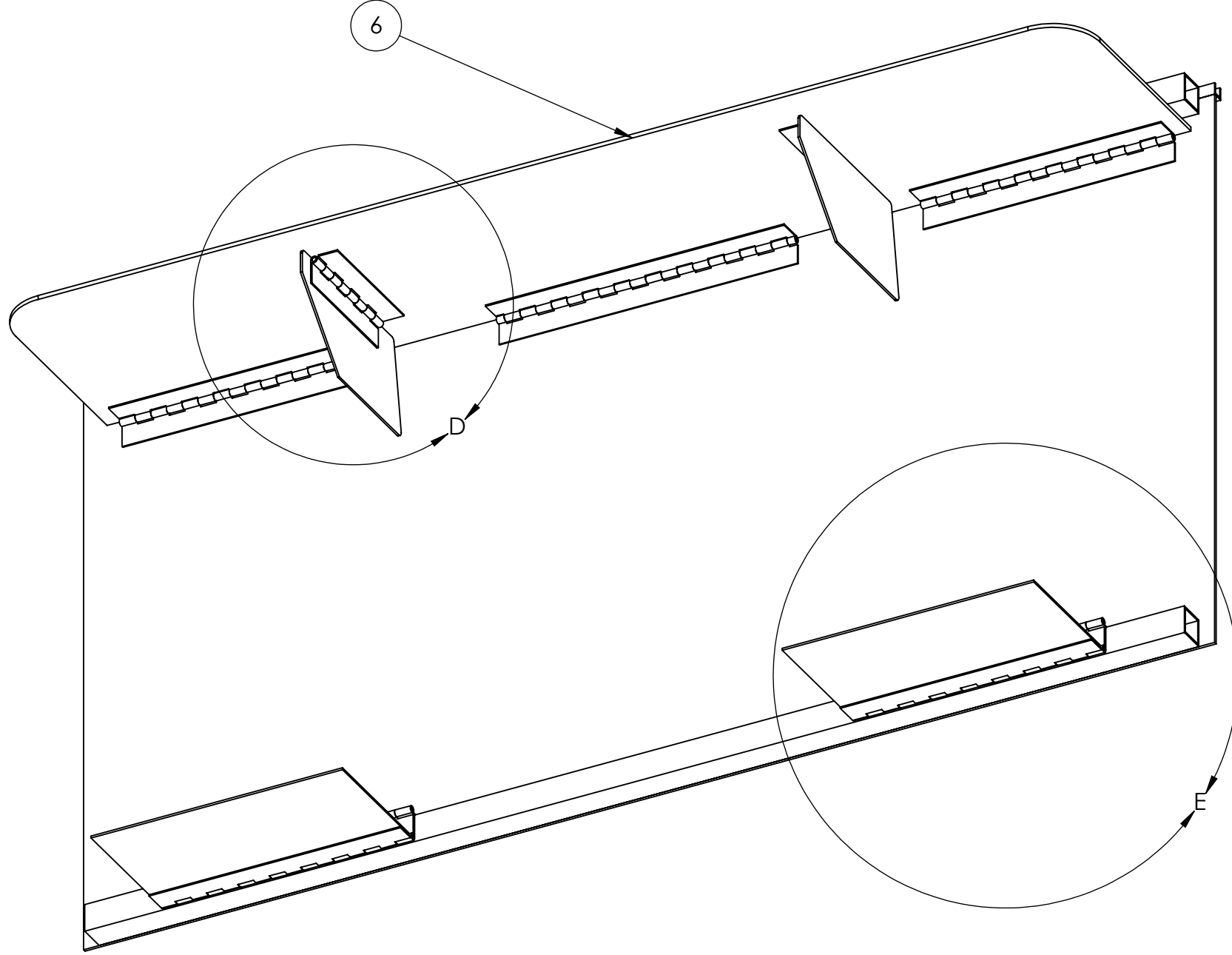


Notes:
1. Remove all sharp edges and burrs

SECTION P-P
SCALE 1/4
See Sheet 1

D

C

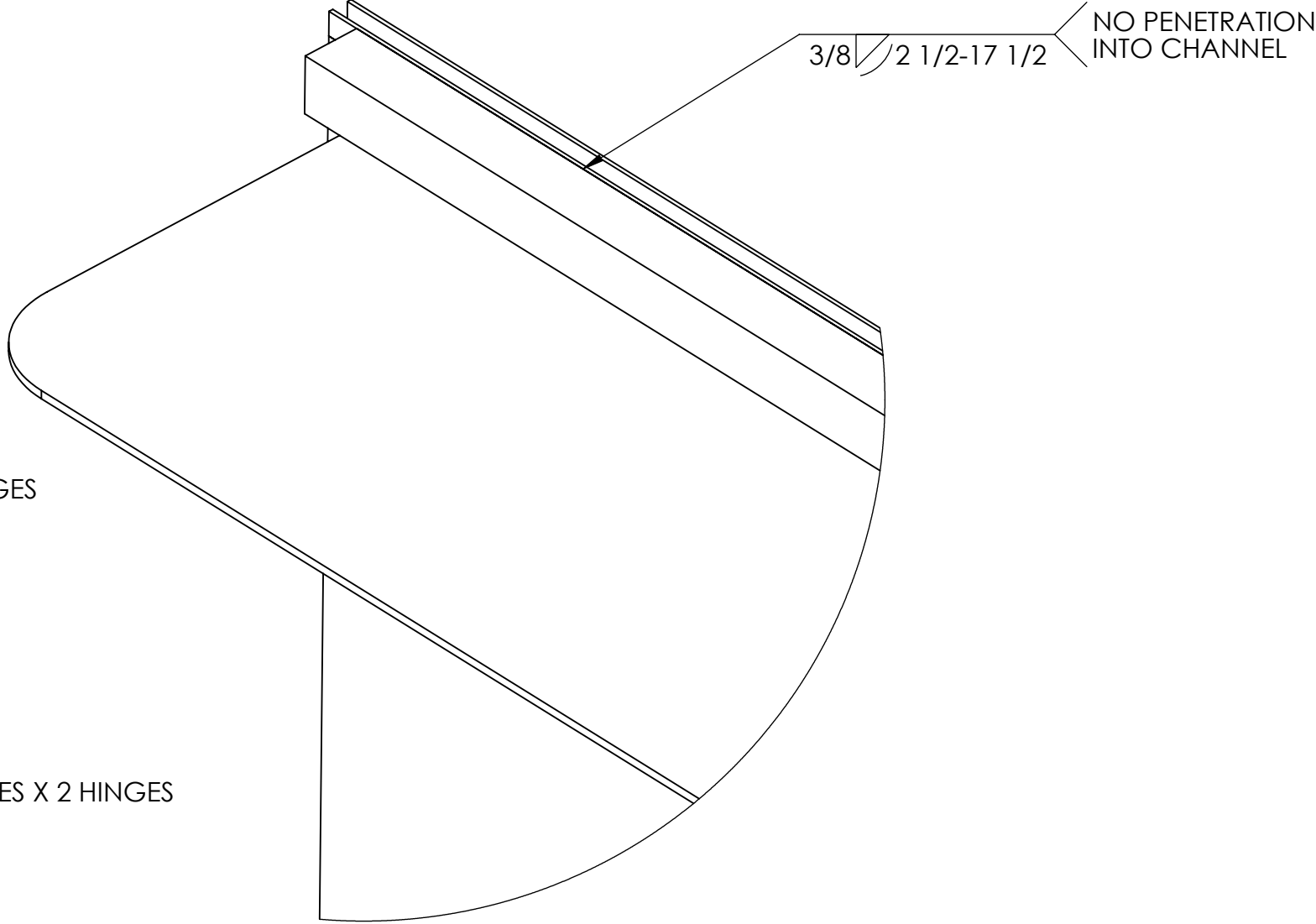
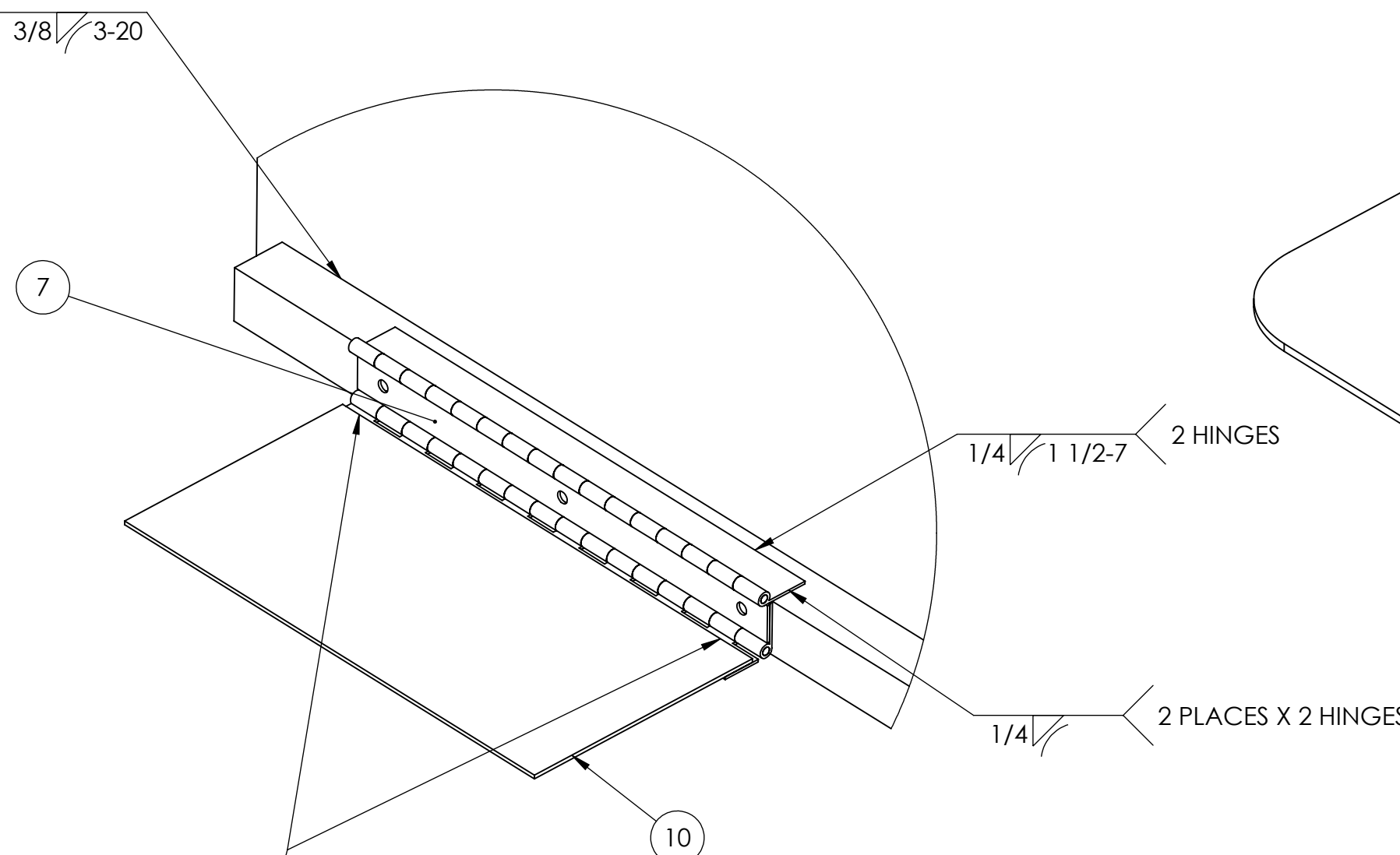
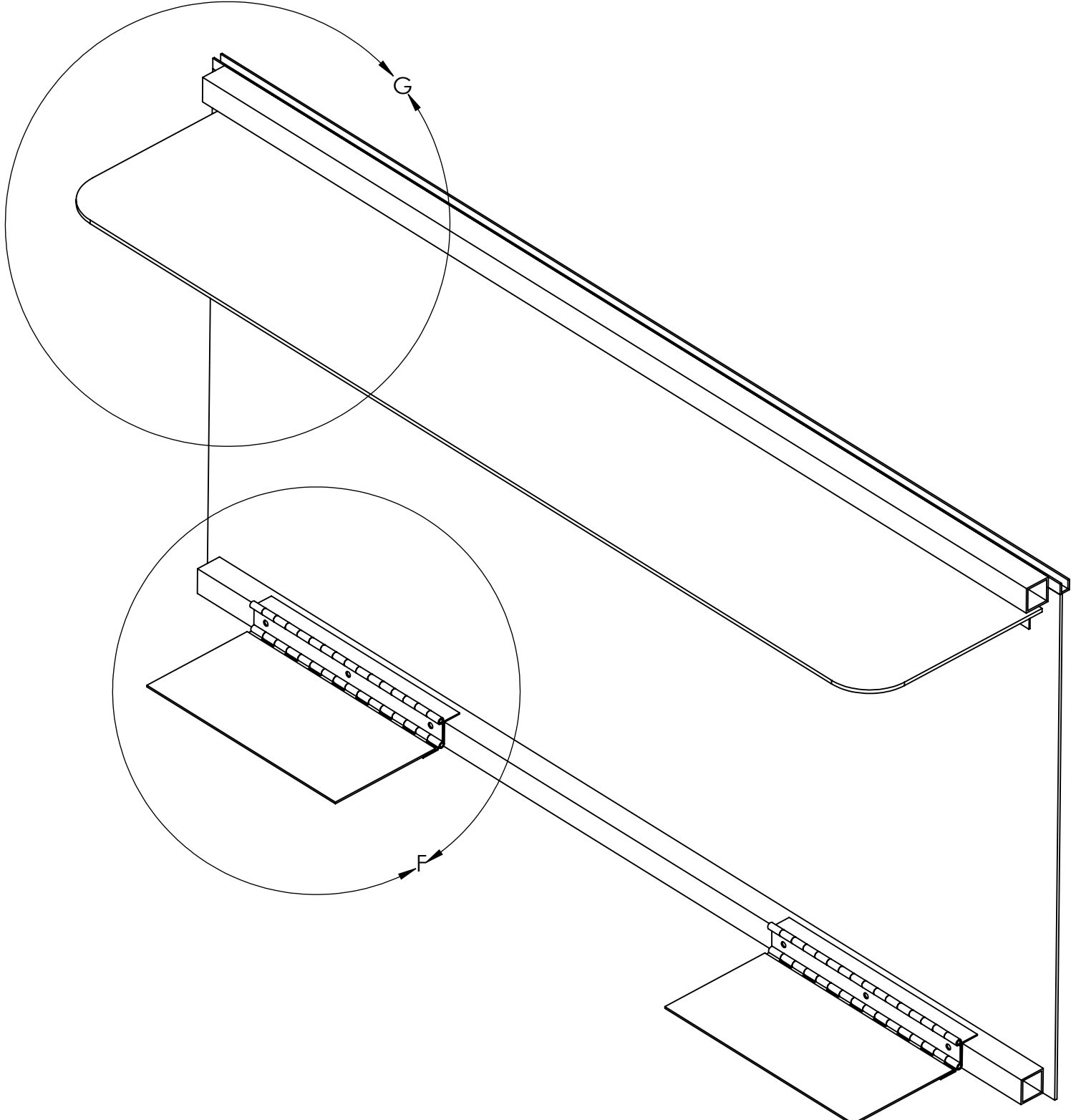


DETAIL D
SCALE 1/5

DETAIL E
SCALE 1/4

C

B



DETAIL F
SCALE 1/4

DETAIL G
SCALE 1/4



B

A

WELD APPLICABLE
HINGE FINGERS,
2 PER STOP PLATE HINGE

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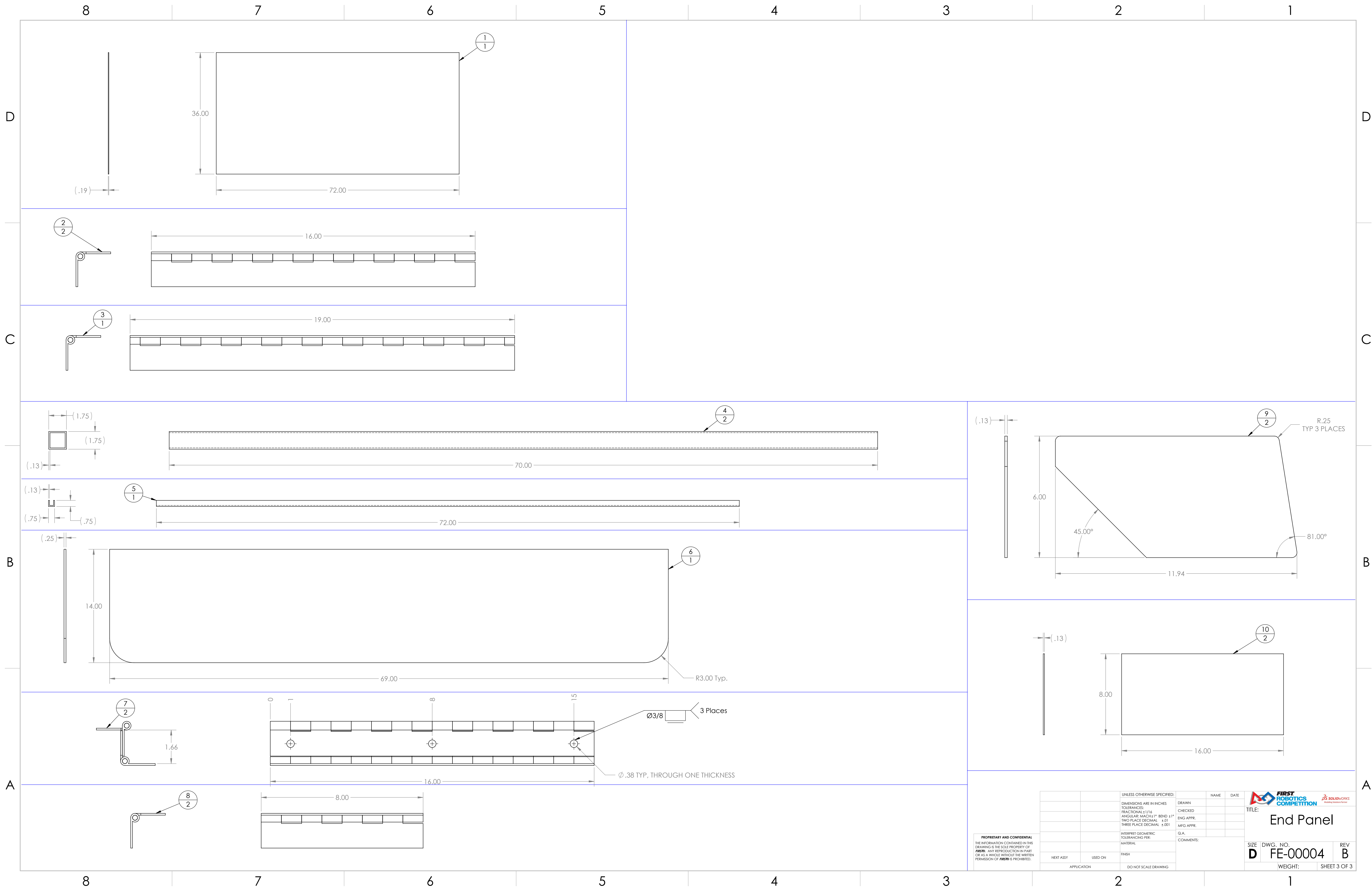
		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
NEXT ASSY	USED ON	DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		
		FRACTIONAL: 1/16	ENG APPR.		
		ANGULAR: MACH±1° BEND ±1°	MFG APPR.		
		TWO PLACE DECIMAL			
		THREE PLACE DECIMAL ±.001			
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS: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



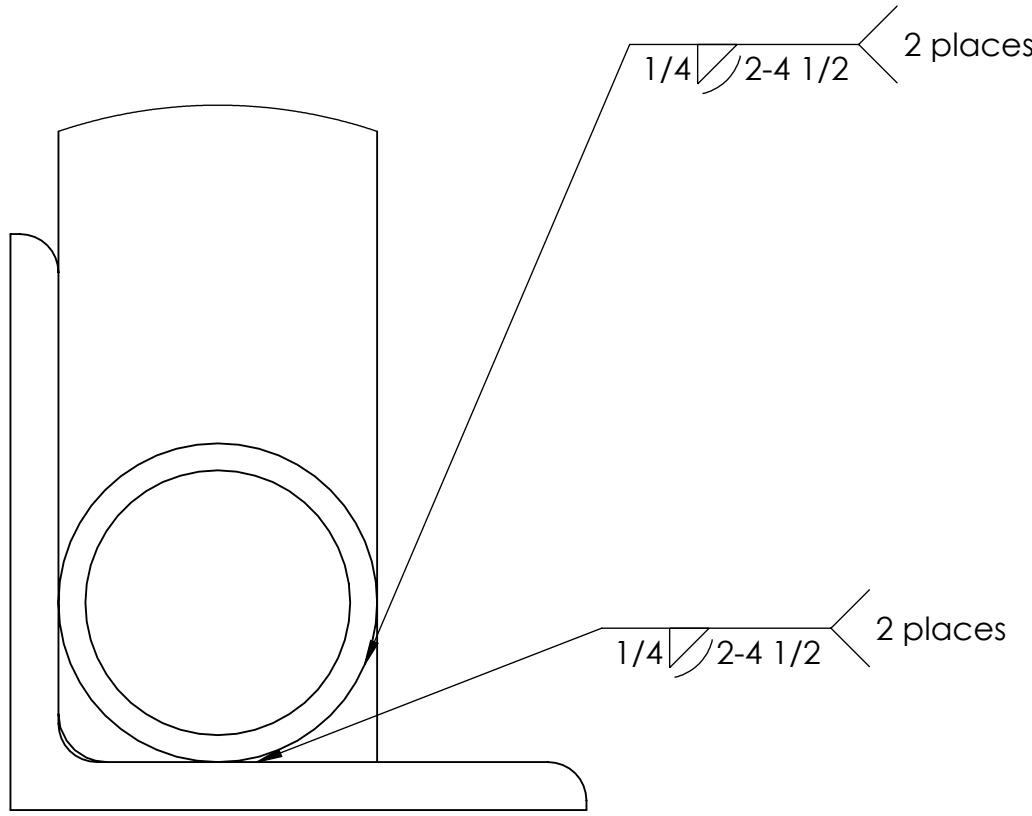
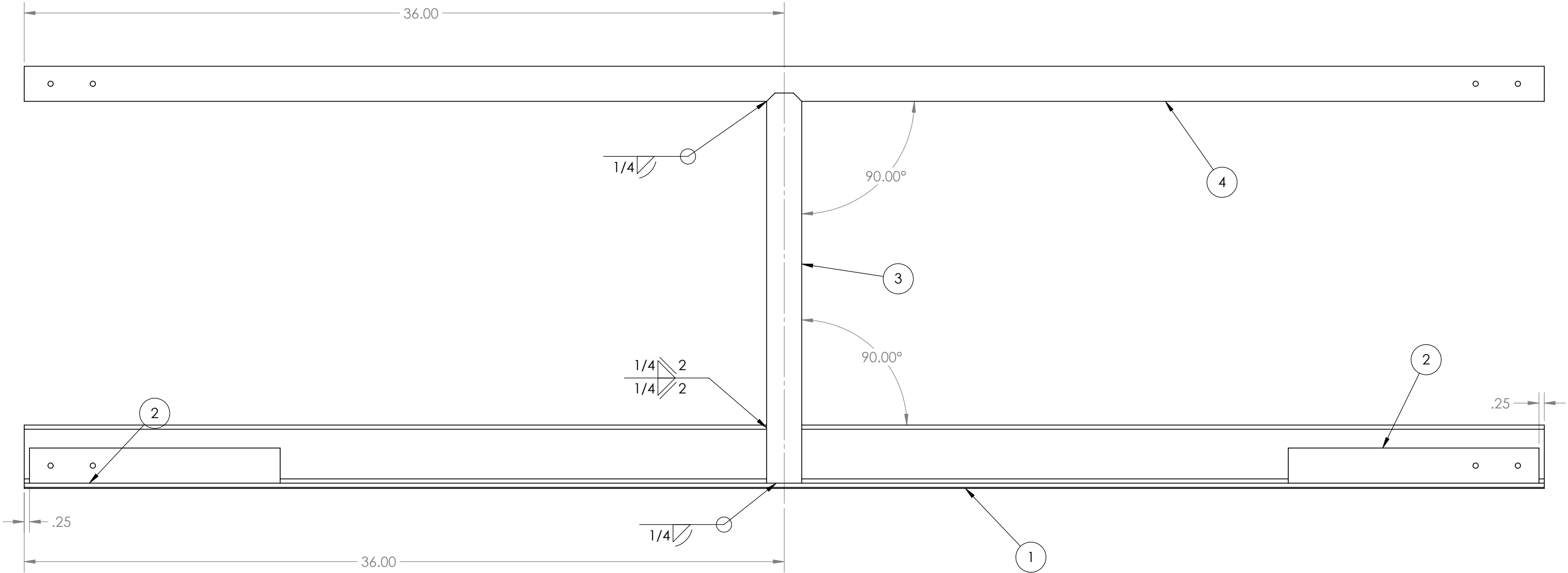
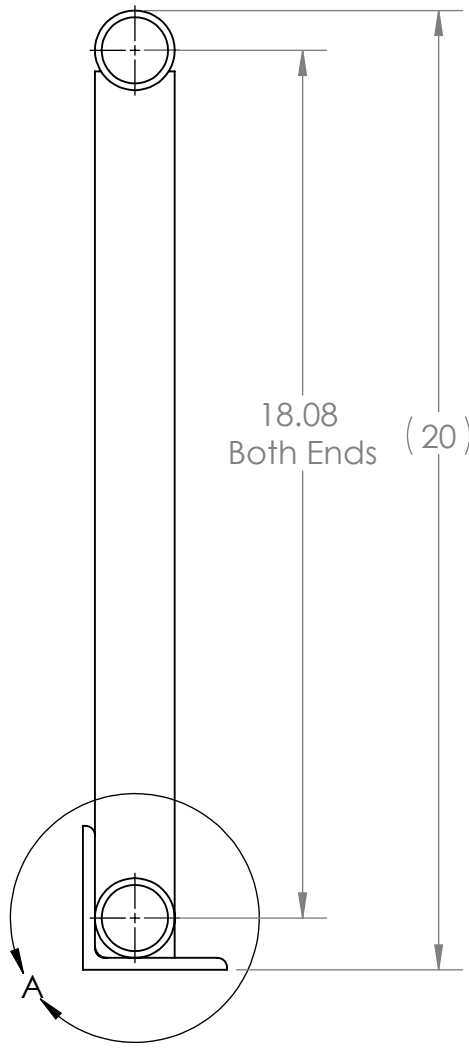
TITLE: End Panel

SIZE DWG. NO. REV
D FE-00004 B

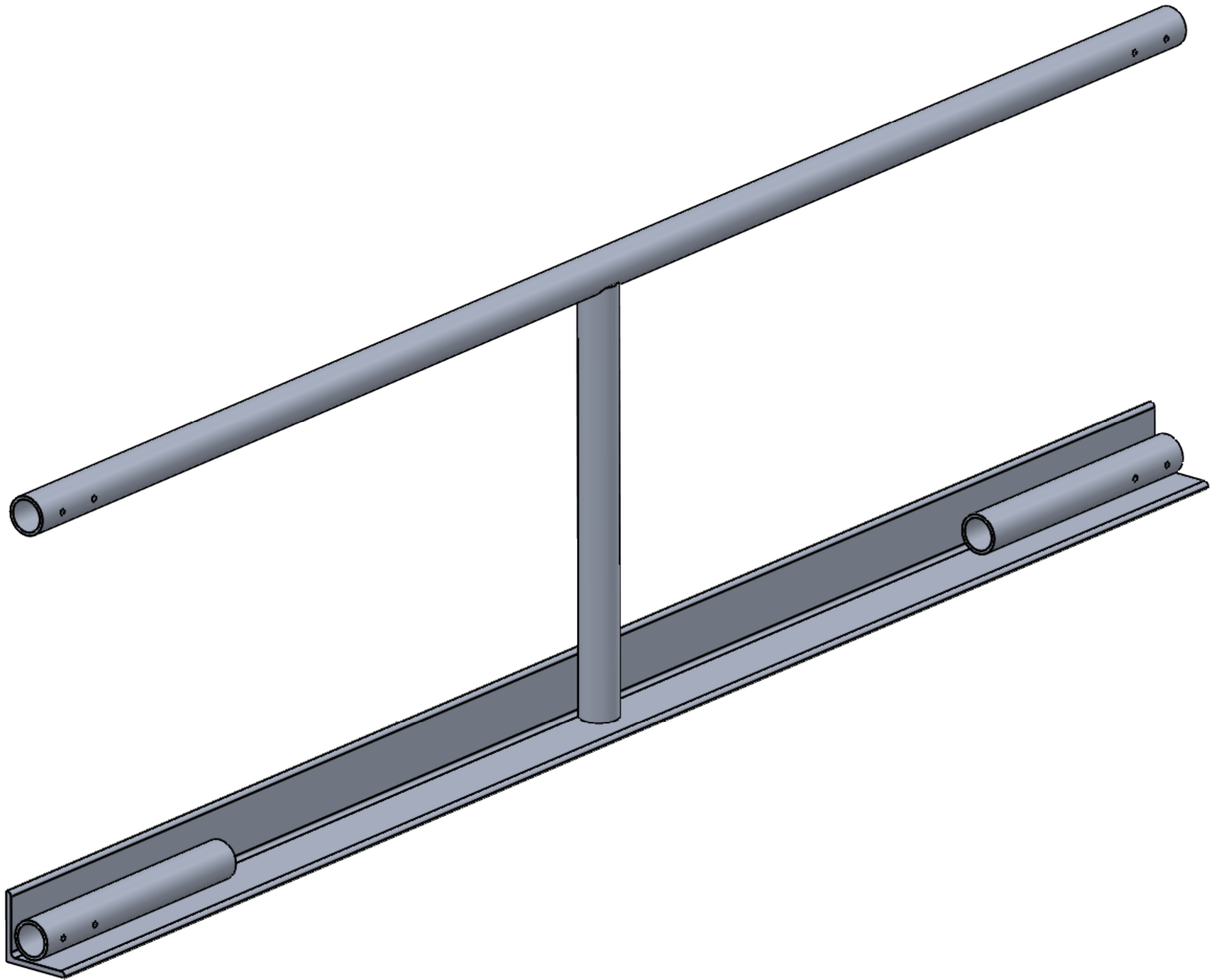
WEIGHT: SHEET 2 OF 3



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



DETAIL A
SCALE 1 : 1

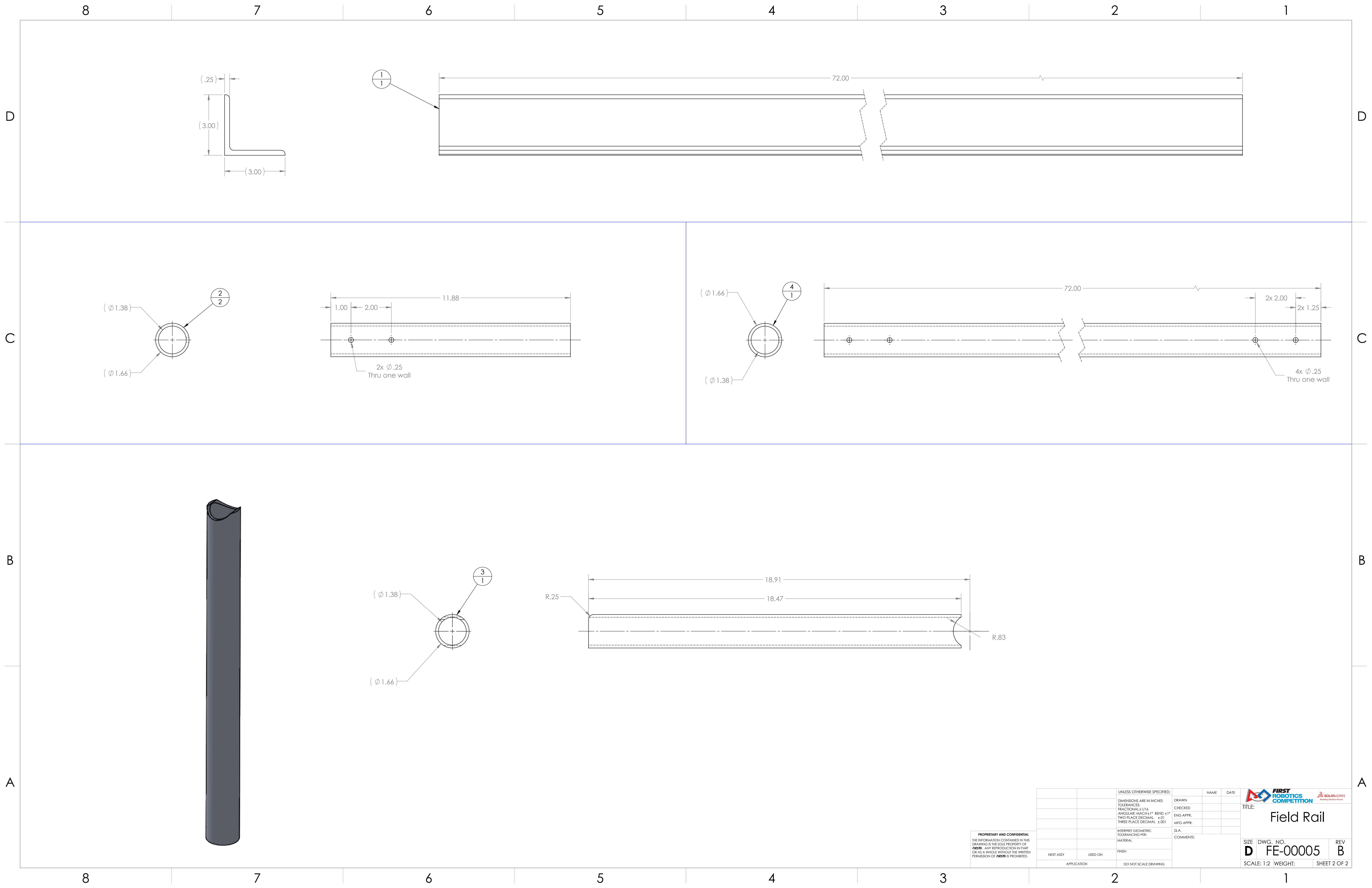


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00005-01	3" x 3" x 1/4" 6061-T6 Aluminum Angle	1
2	FE-00005-02	1 1/4" Schedule 40 6061-T6 Aluminum Pipe	2
3	FE-00005-03	1 1/4" Schedule 40 6061-T6 Aluminum Pipe	1
4	FE-00005-04	1 1/4" Schedule 40 6061-T6 Aluminum Pipe	1

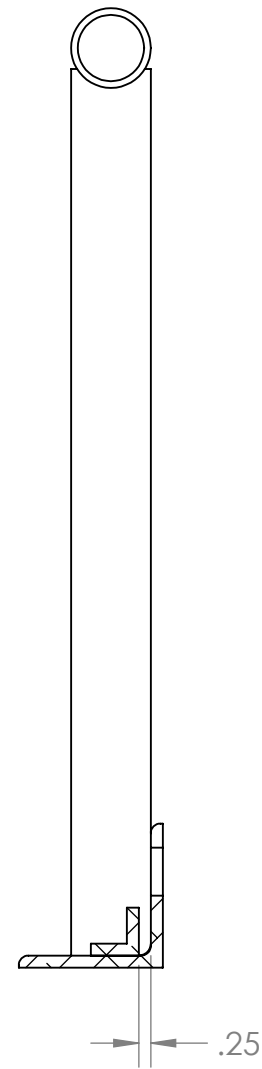
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UNLESS OTHERWISE SPECIFIED:		DRAWN	NAME	DATE
DIMENSIONS ARE IN INCHES		CHECKED		
TOLERANCES:		ENG APPR.		
FRACTIONAL ±1/16		MFG APPR.		
ANGULAR: MAACH±1° BEND ±1°		Q.A.		
TWO PLACE DECIMAL ±.01		COMMENTS:		
THREE PLACE DECIMAL ±.001				
INTERPRET GEOMETRIC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

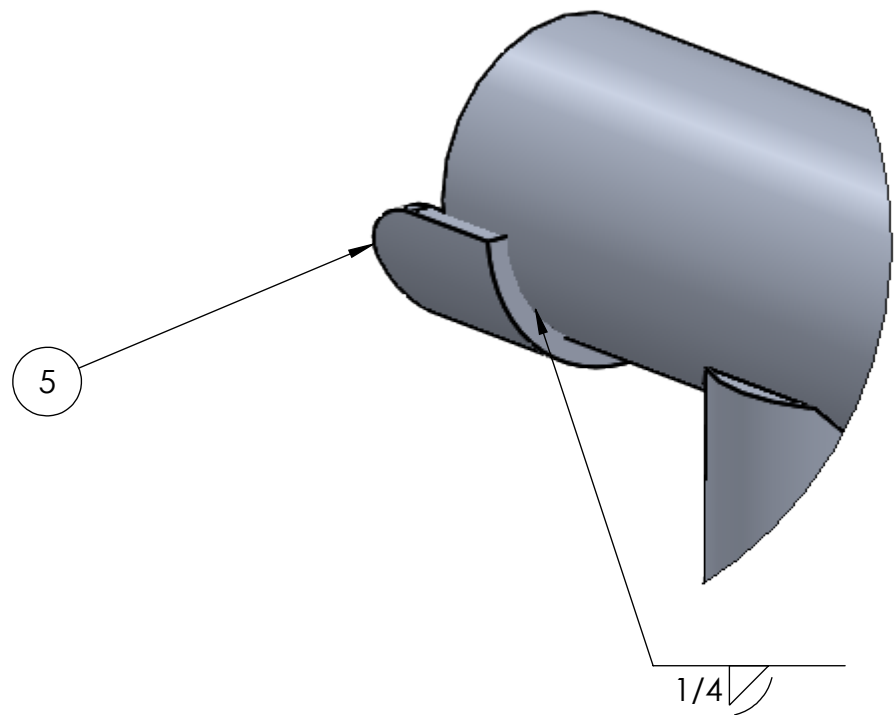
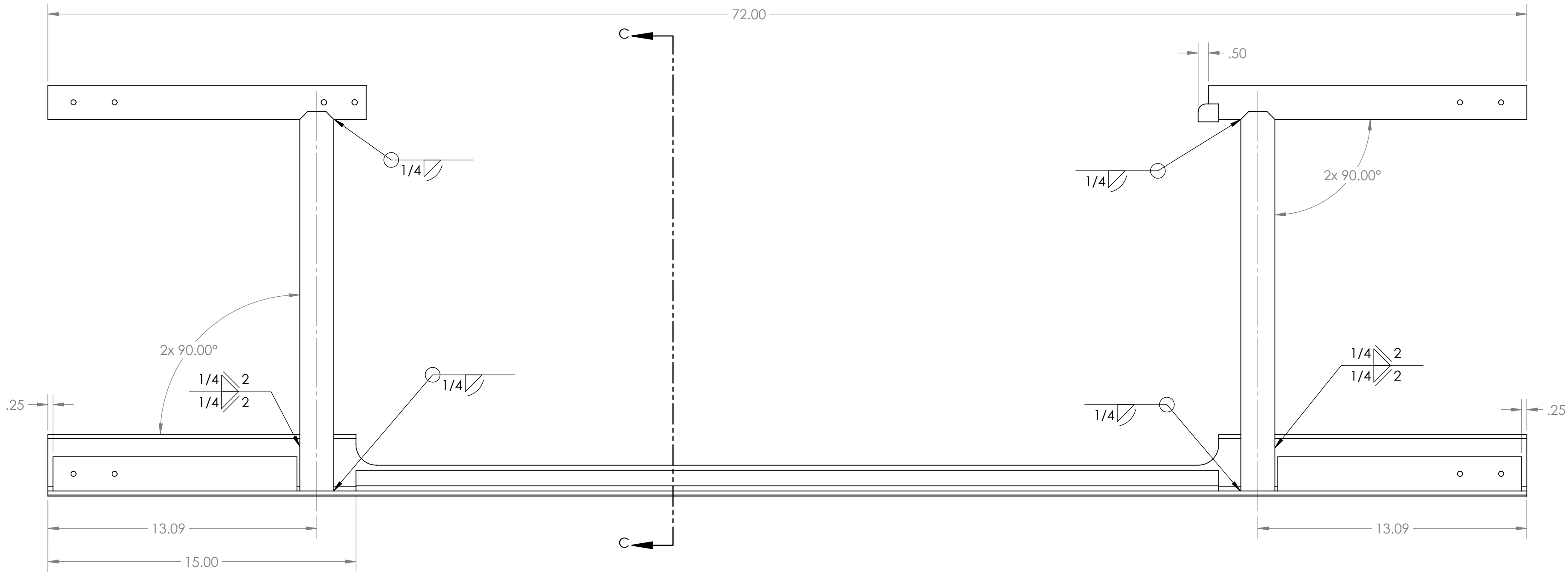
TITLE:		SIZE DWG. NO.		REV
Field Rail		D FE-00005		B
SCALE: 1:4 WEIGHT:		SHEET 1 OF 2		



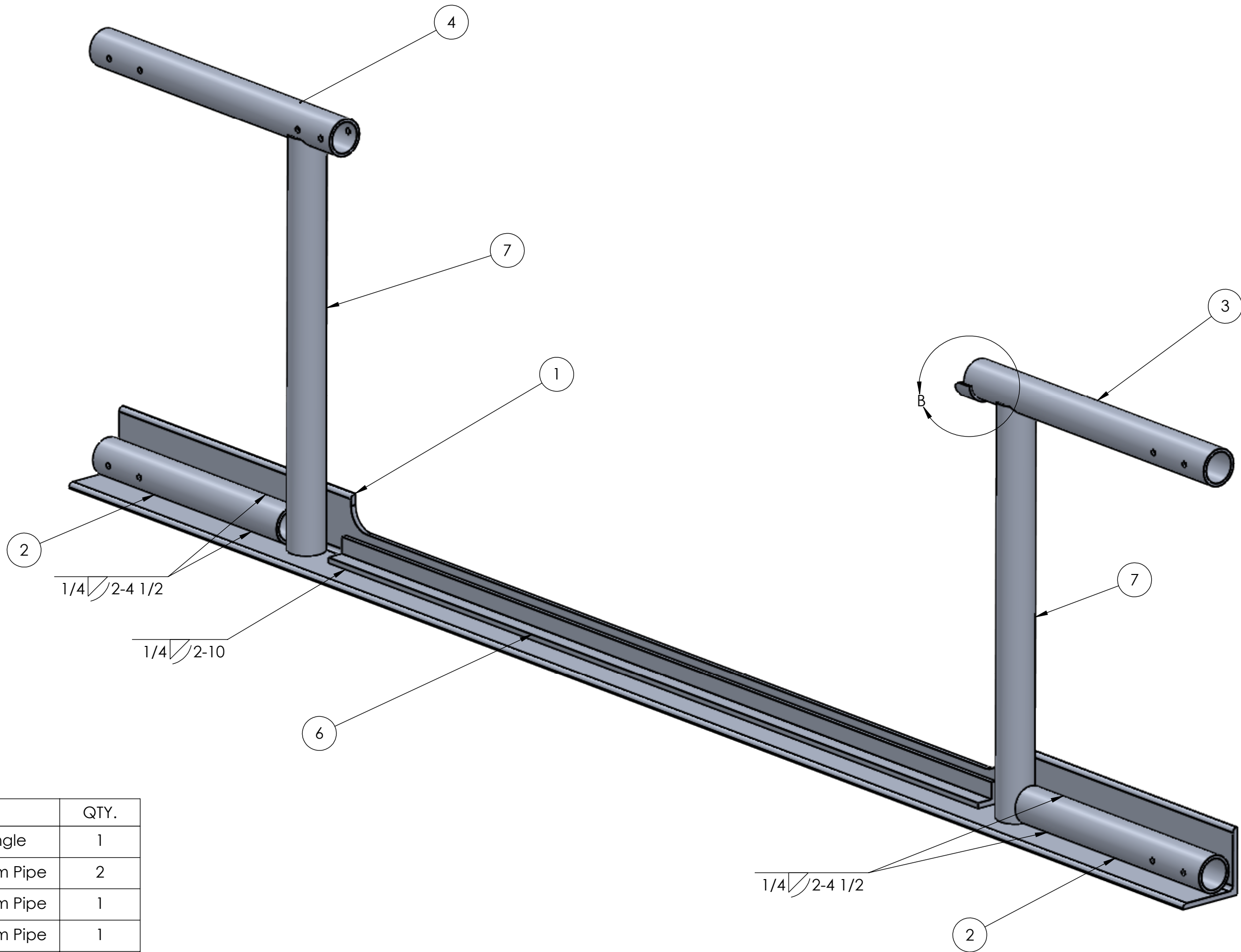
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	Redrawn	8/7/2008	narosenberg
A7, 2-B6, 3-C6	B	Parts renumbered, drawing reformatted, hole diameter updated, hole changed to thru one wall for consistency.	3/20/2020	CPO



SECTION C-C





DETAIL B
SCALE 1 : 1



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

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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	DRAWN		
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:		Q.A. COMMENTS:	
MATERIAL			
FINISH			
NEXT ASSY	USED ON		
APPLICATION		DO NOT SCALE DRAWING	



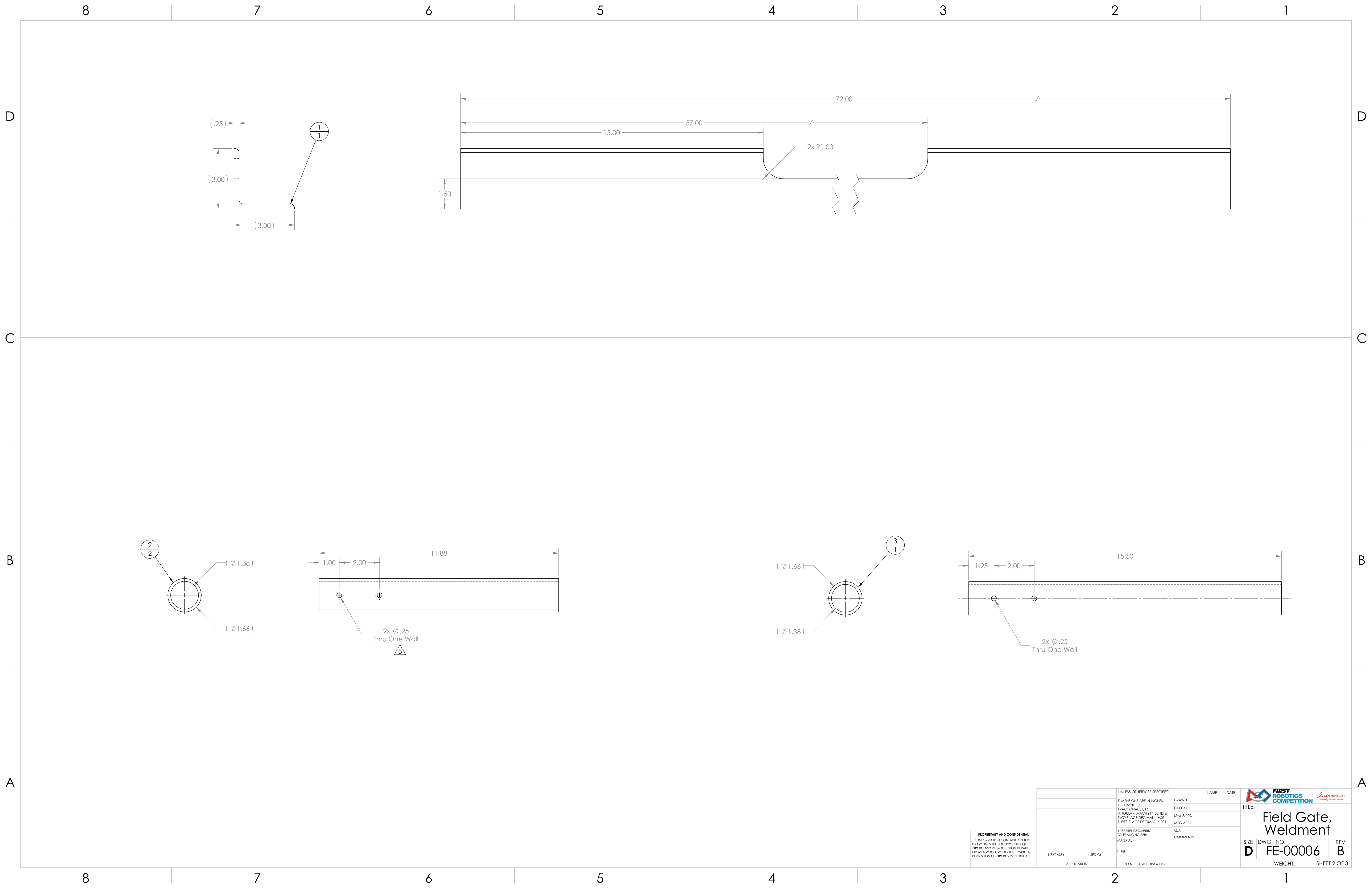
TITLE:

**Field Gate,
Weldment**

SIZE DWG. NO. REV



D FE-00006 B

SCALE: 1:4 WEIGHT: SHEET 1 OF 3



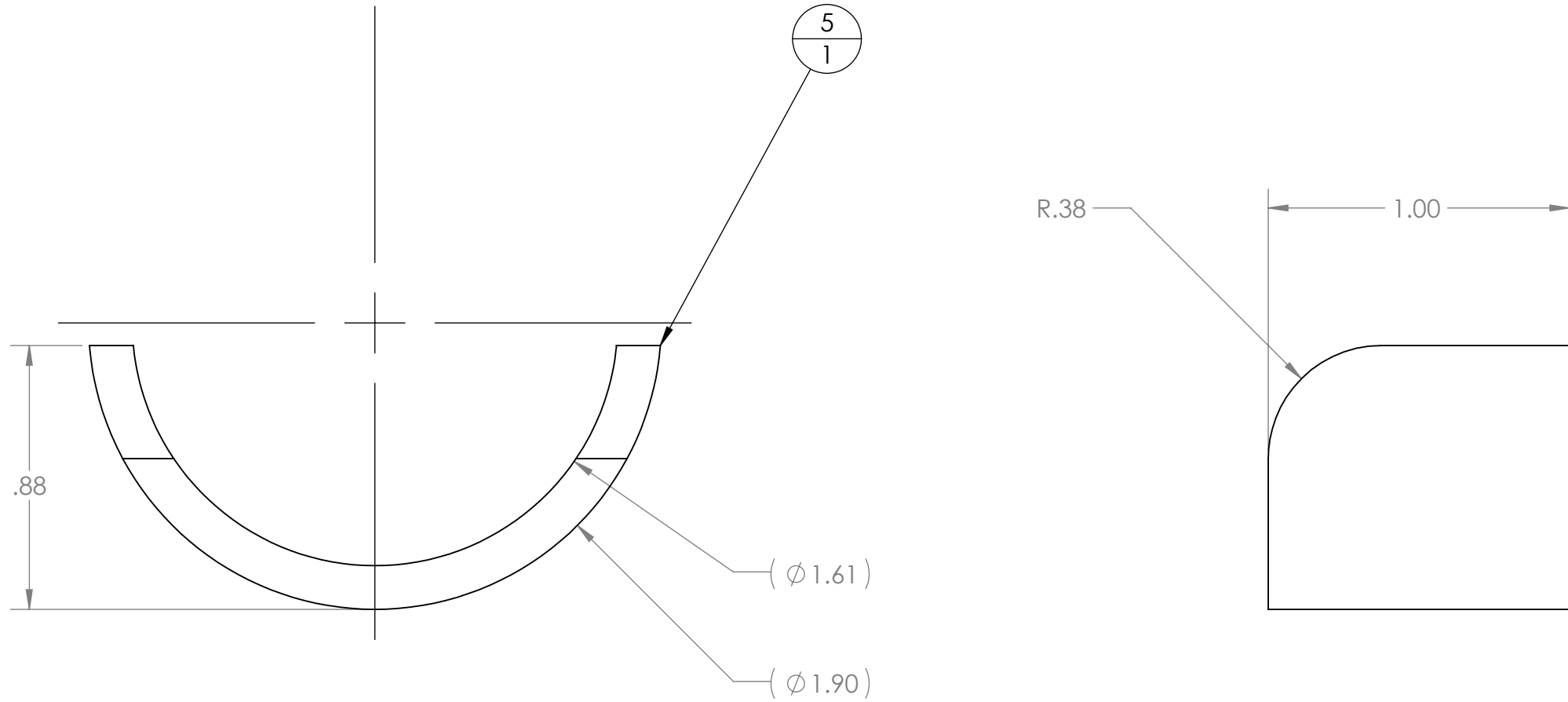
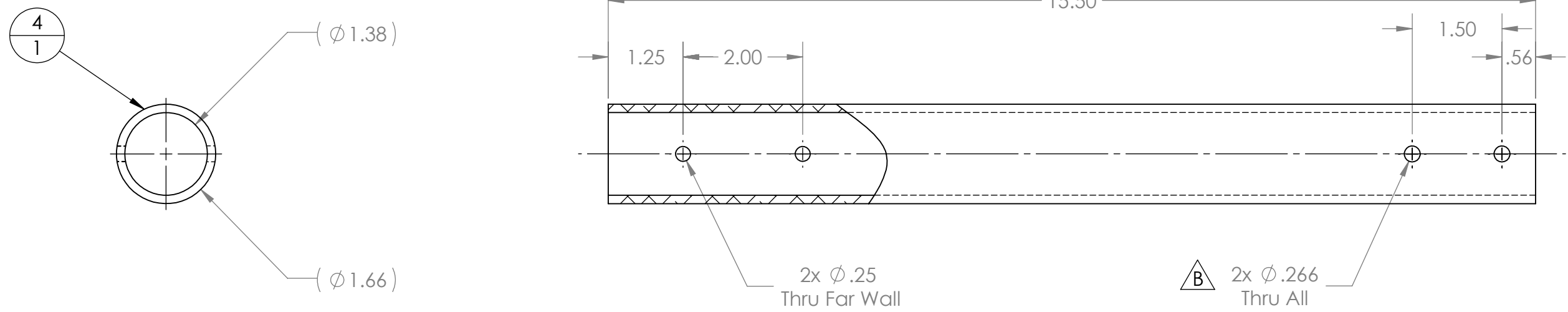
PROPRIETARY AND CONFIDENTIAL
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OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF FIRST IS PROHIBITED.

		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 $\pm .01$			
		THREE PLACE DECIMAL $\pm .001$			
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			

			
TITLE: Field Gate, Weldment			
SIZE	DWG. NO.	REV	
D	FE-00006	B	
WEIGHT:		SHEET 2 OF 3	

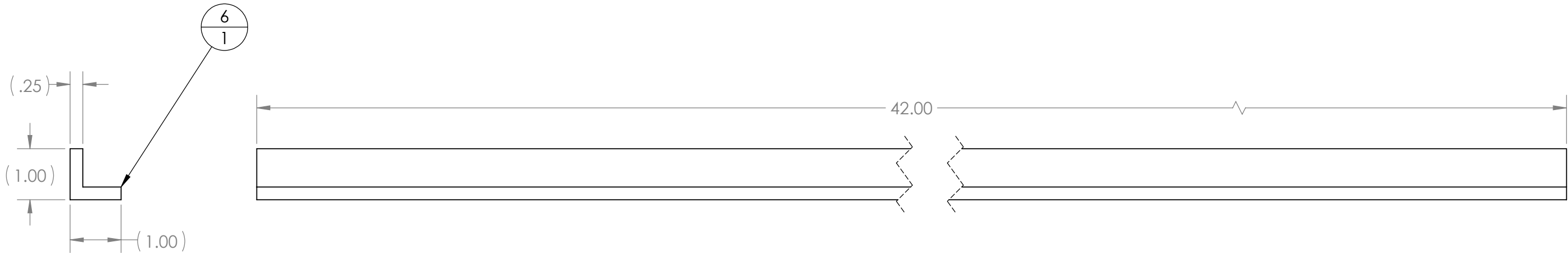
D

D



C

C



B



B

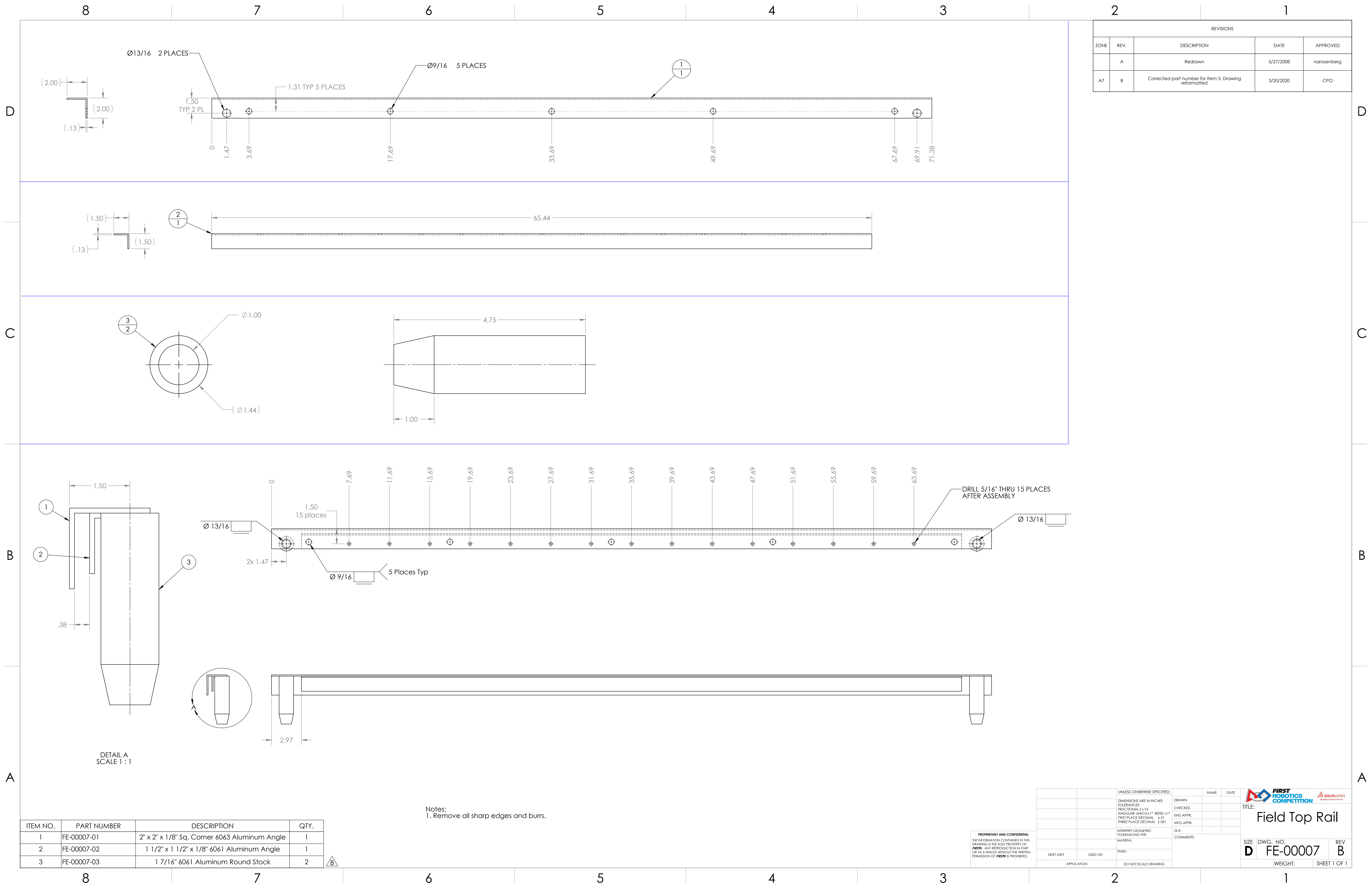
A

A

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		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:				
		MATERIAL				
		FINISH				
NEXT ASSY	USED ON	FINISH				
		APPLICATION				
		DO NOT SCALE DRAWING				

TITLE:		 FIRST ROBOTICS COMPETITION		 SOLIDWORKS empowering businesses forward			
Field Gate, Weldment							
SIZE	DWG. NO.	REV					
D	FE-00006	B					
WEIGHT:		SHEET 3 OF 3					



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	Redrawn	5/27/2008	narosenberg
A7	B	Corrected part number for item 3. Drawing reformatted	3/20/2020	CPO

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00007-01	2" x 2" x 1/8" Sq. Corner 6063 Aluminum Angle	1
2	FE-00007-02	1 1/2" x 1 1/2" x 1/8" 6061 Aluminum Angle	1
3	FE-00007-03	1 7/16" 6061 Aluminum Round Stock	2

Notes:
1. Remove all sharp edges and burrs.

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UNLESS OTHERWISE SPECIFIED:		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							
FINISH							
DO NOT SCALE DRAWING							
APPLICATION							
USED ON							
NEXT ASSY							
DATE							
NAME							
TITLE:							
SIZE DWG. NO.							
D FE-00007							
REV							
B							
WEIGHT:							
SHEET 1 OF 1							





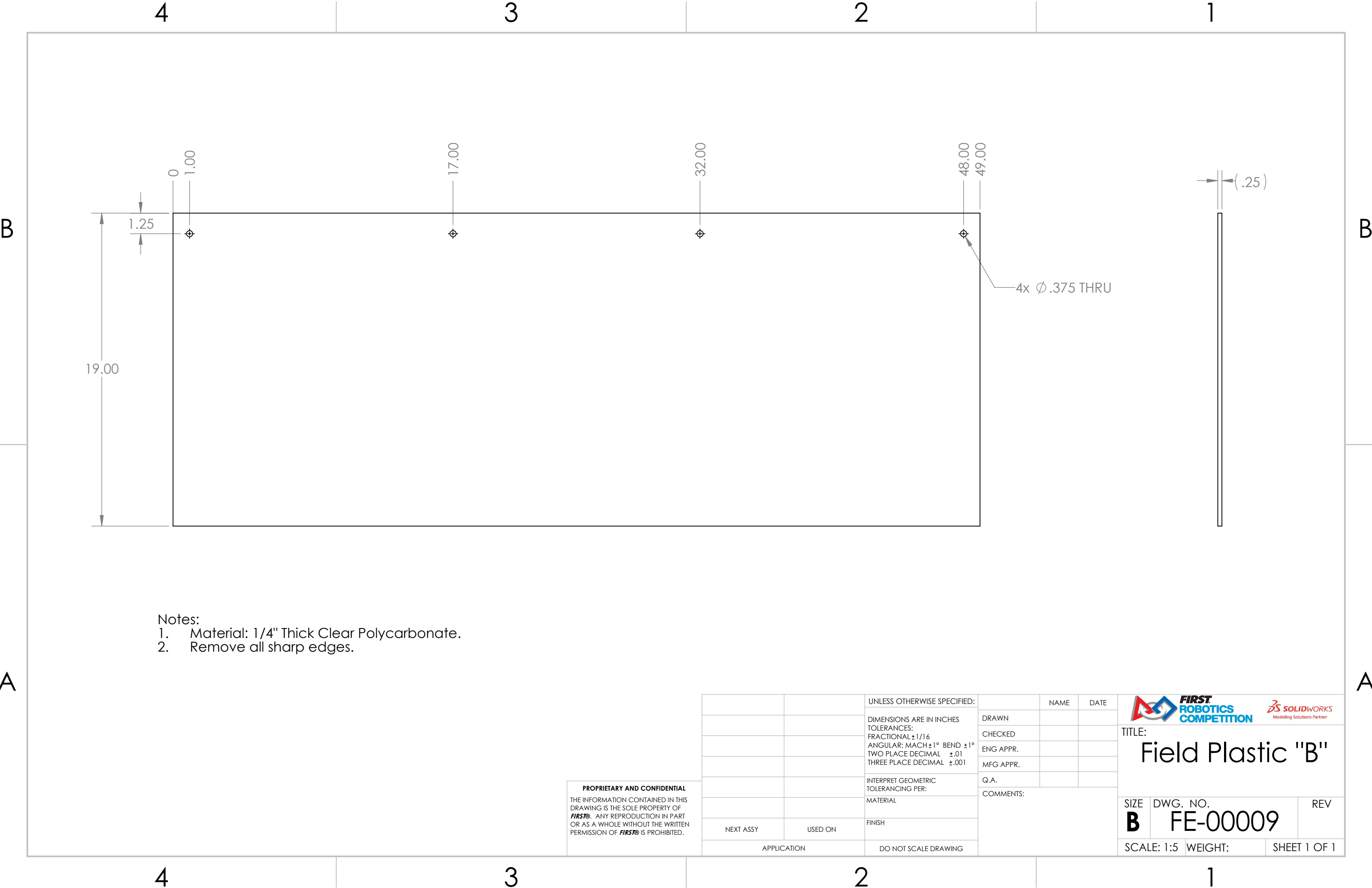
Field Top Rail



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



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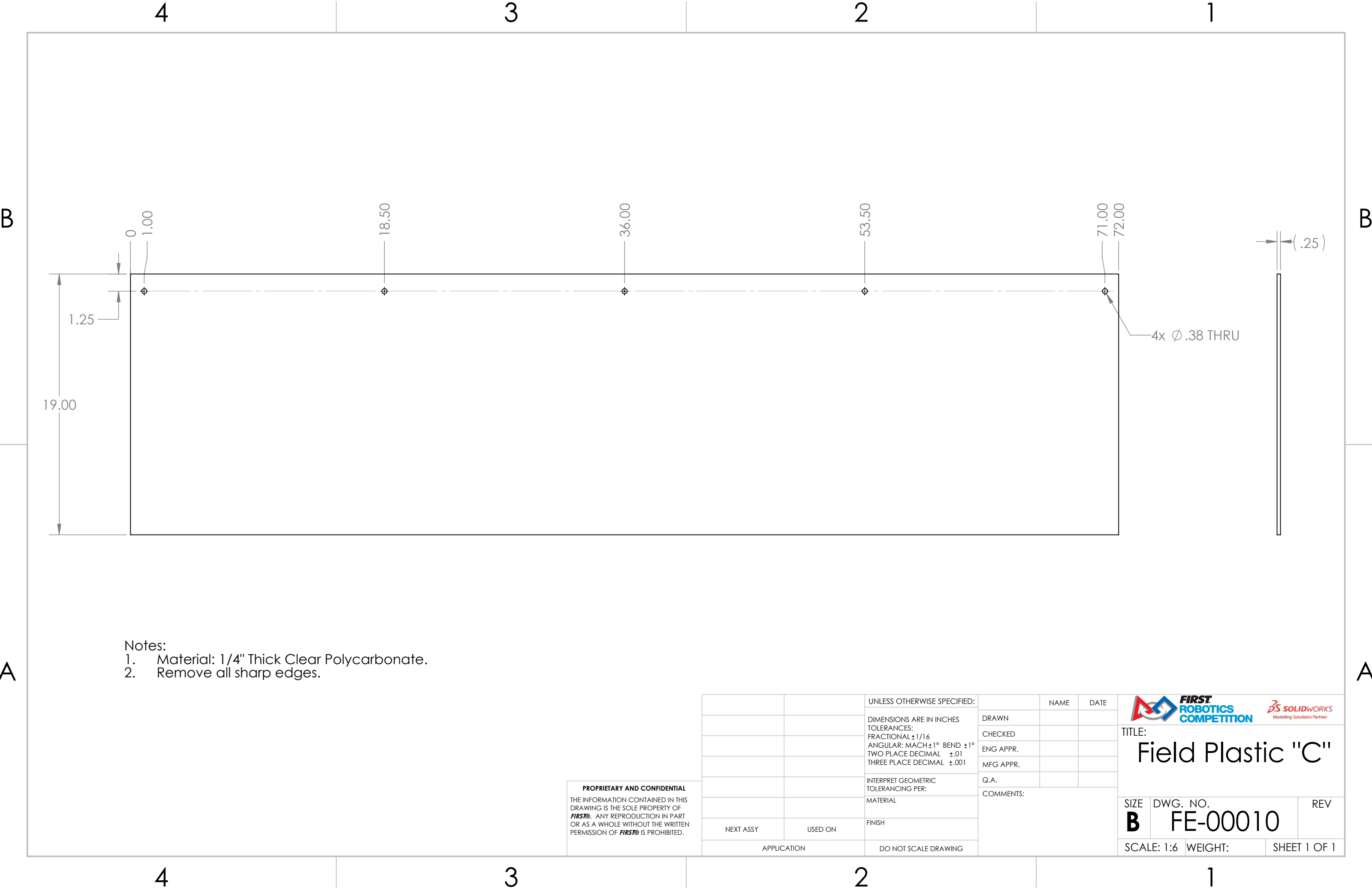
		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	<div><div>FIRST ROBOTICS COMPETITION</div></div> <div><div>SOLIDWORKS Modeling Solutions Partner</div></div>		
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN			TITLE: Field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



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

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		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 $\pm .001$ INTERPRET GEOMETRIC TOLERANCING PER: MATERIAL FINISH		NAME	DATE	<div> FIRST ROBOTICS COMPETITION</div> <div> SOLIDWORKS Modeling Solutions Partner</div>		
			DRAWN				TITLE: Field Plastic "B"	
			CHECKED					
			ENG APPR.					
			MFG APPR.					
		Q.A.						
			COMMENTS:			SIZE B	DWG. NO. FE-00009	REV
NEXT ASSY	USED ON					SCALE: 1:5	WEIGHT:	SHEET 1 OF 1
APPLICATION		DO NOT SCALE DRAWING						



Notes:

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



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		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.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			
			TITLE: Field Plastic "C"		
SIZE B	DWG. NO. FE-00010	REV			
SCALE: 1:6	WEIGHT:	SHEET 1 OF 1			

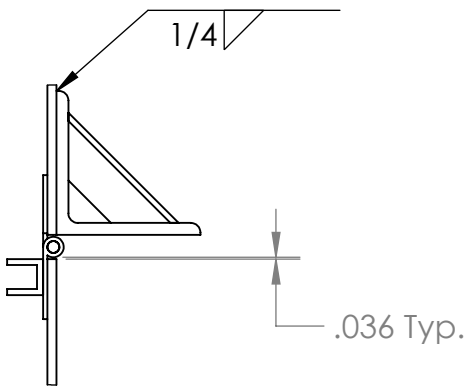


Notes:
1. Material: 3/8" Thick Acrylic Sheet

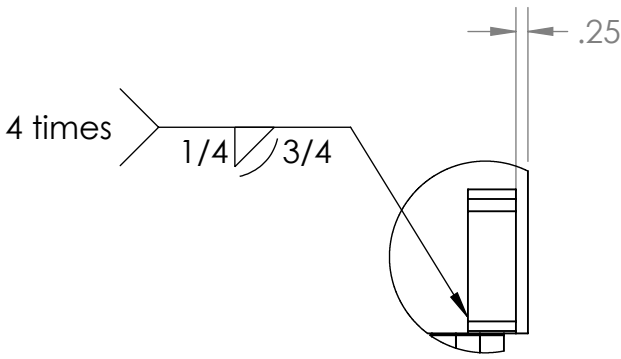
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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	<div></div>		
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$	DRAWN			TITLE: <h1>Drivers Station Acrylic</h1>		
			CHECKED					
			ENG APPR.					
			MFG APPR.					
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.			SIZE DWG. NO. REV B FE-00012		
		MATERIAL	COMMENTS:					
NEXT ASSY	USED ON	FINISH						
APPLICATION		DO NOT SCALE DRAWING						
						SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

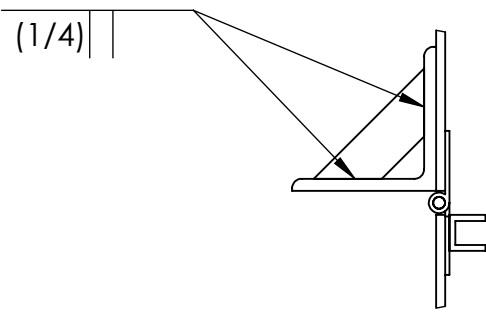
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	Redrawn	5/27/2008	narosenberg
	B	Drawing Reformatted	3/20/2020	CPO



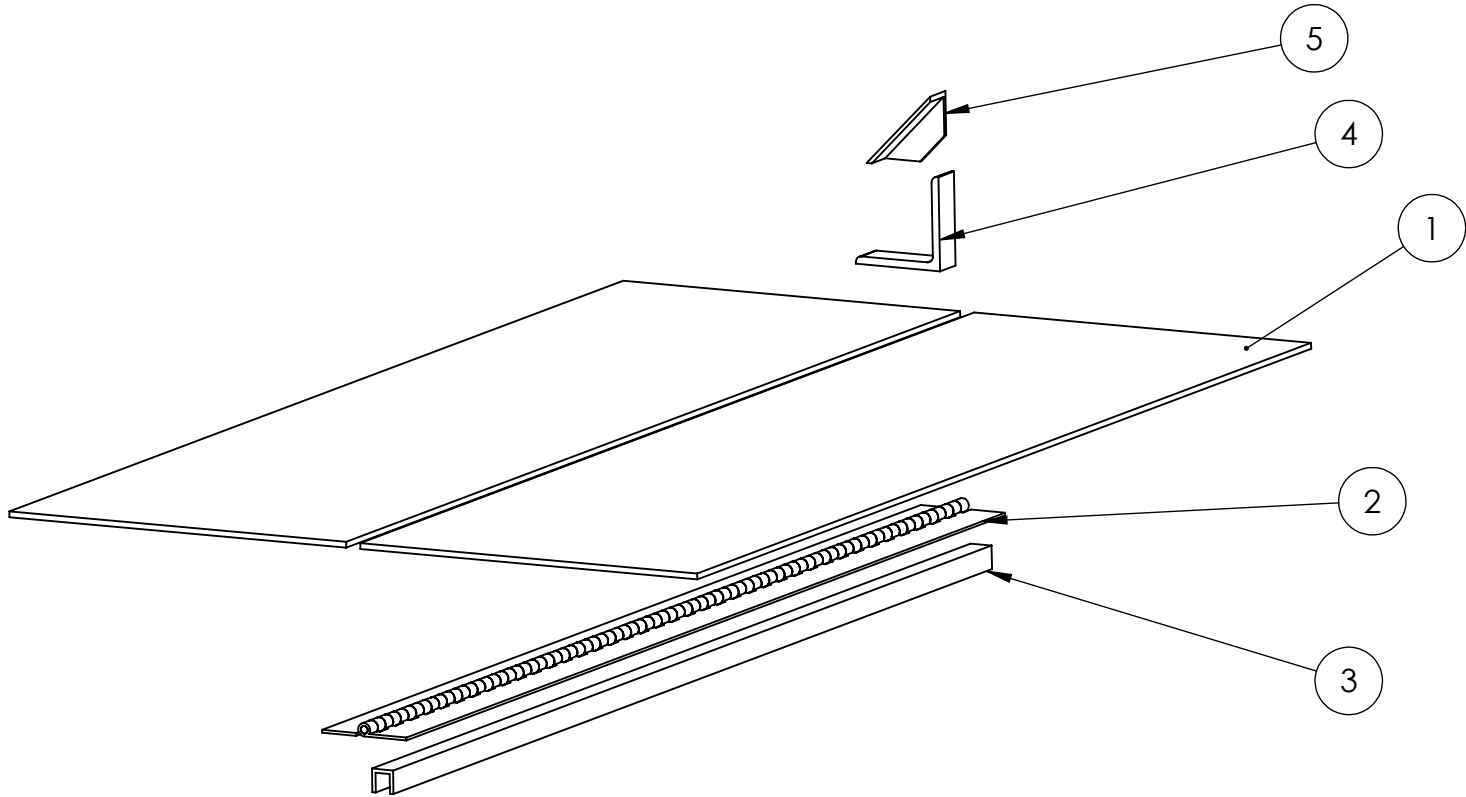
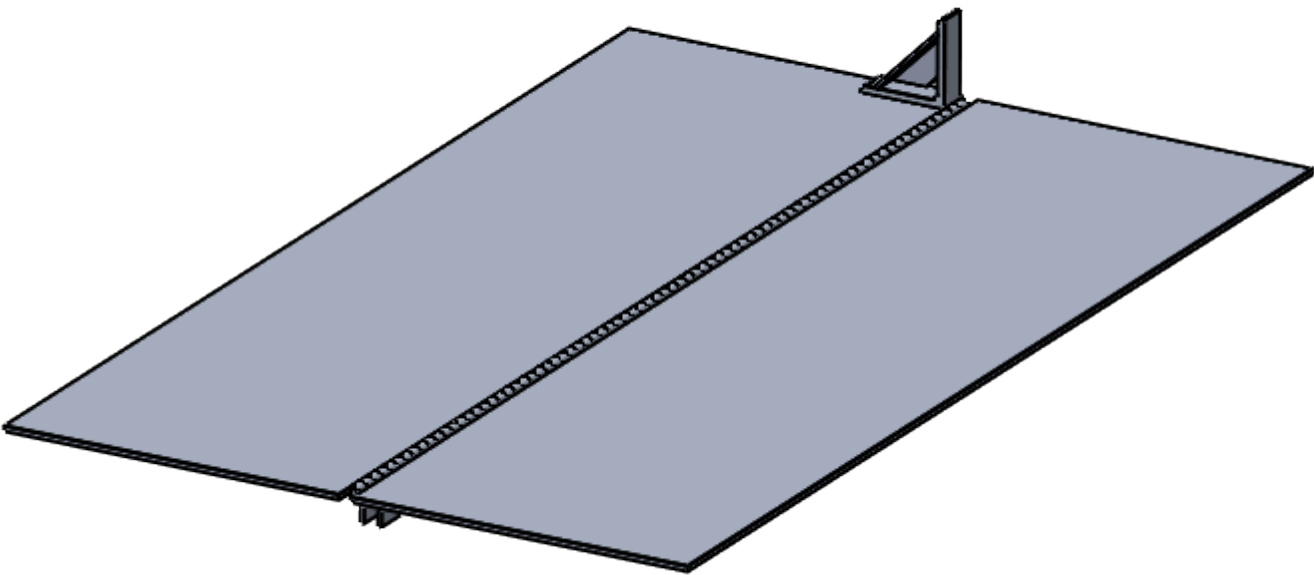
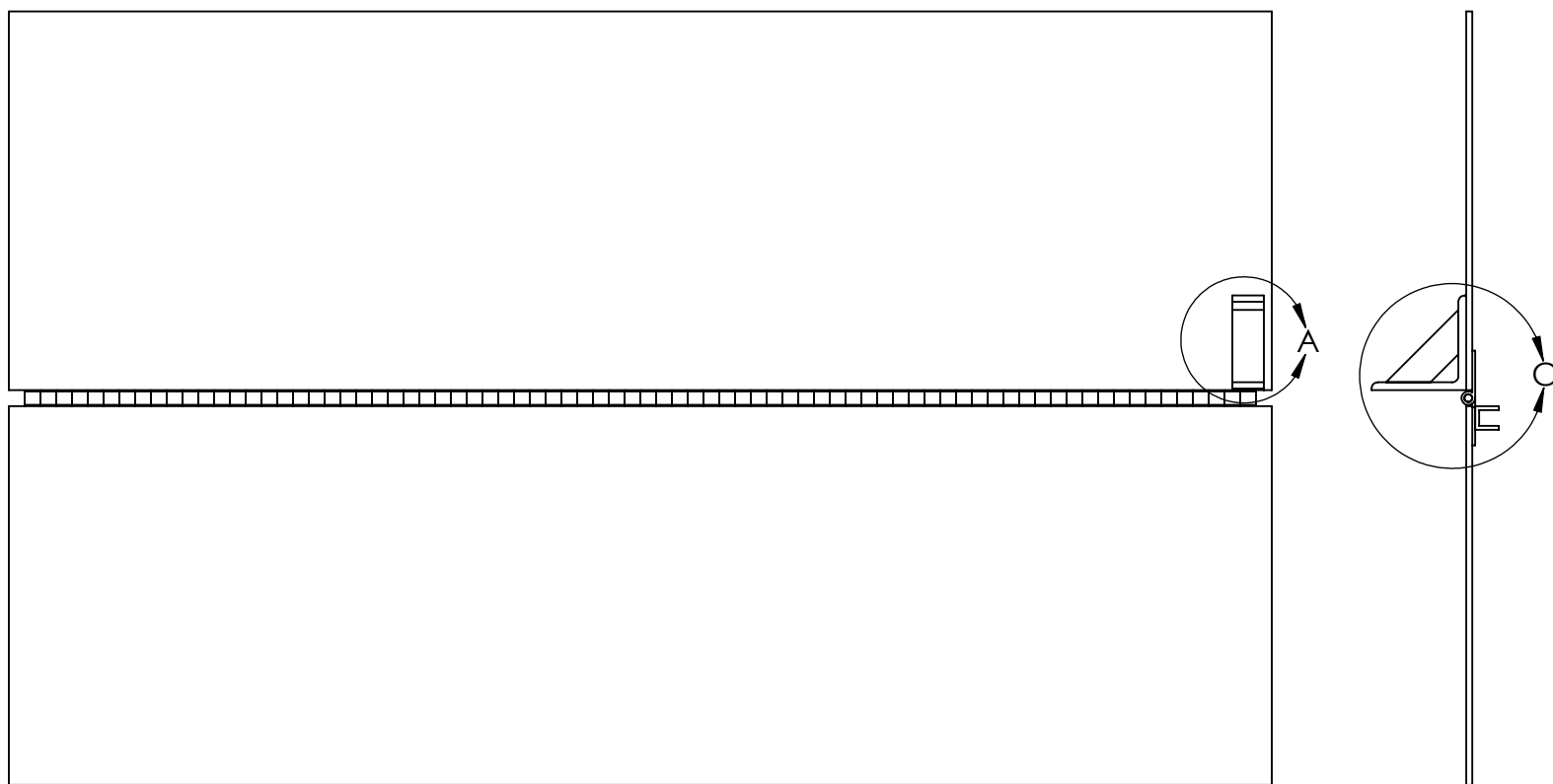
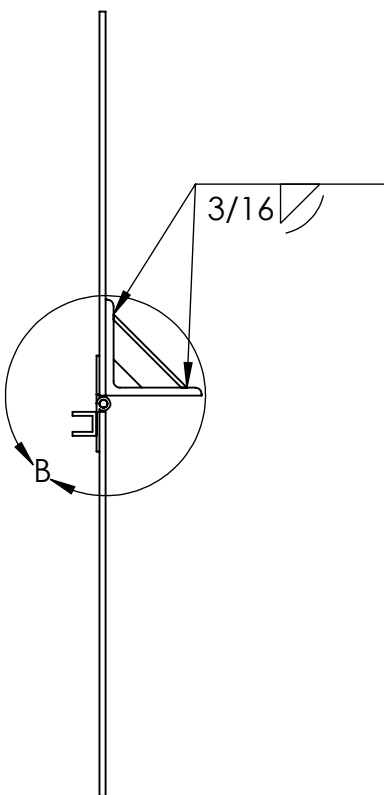
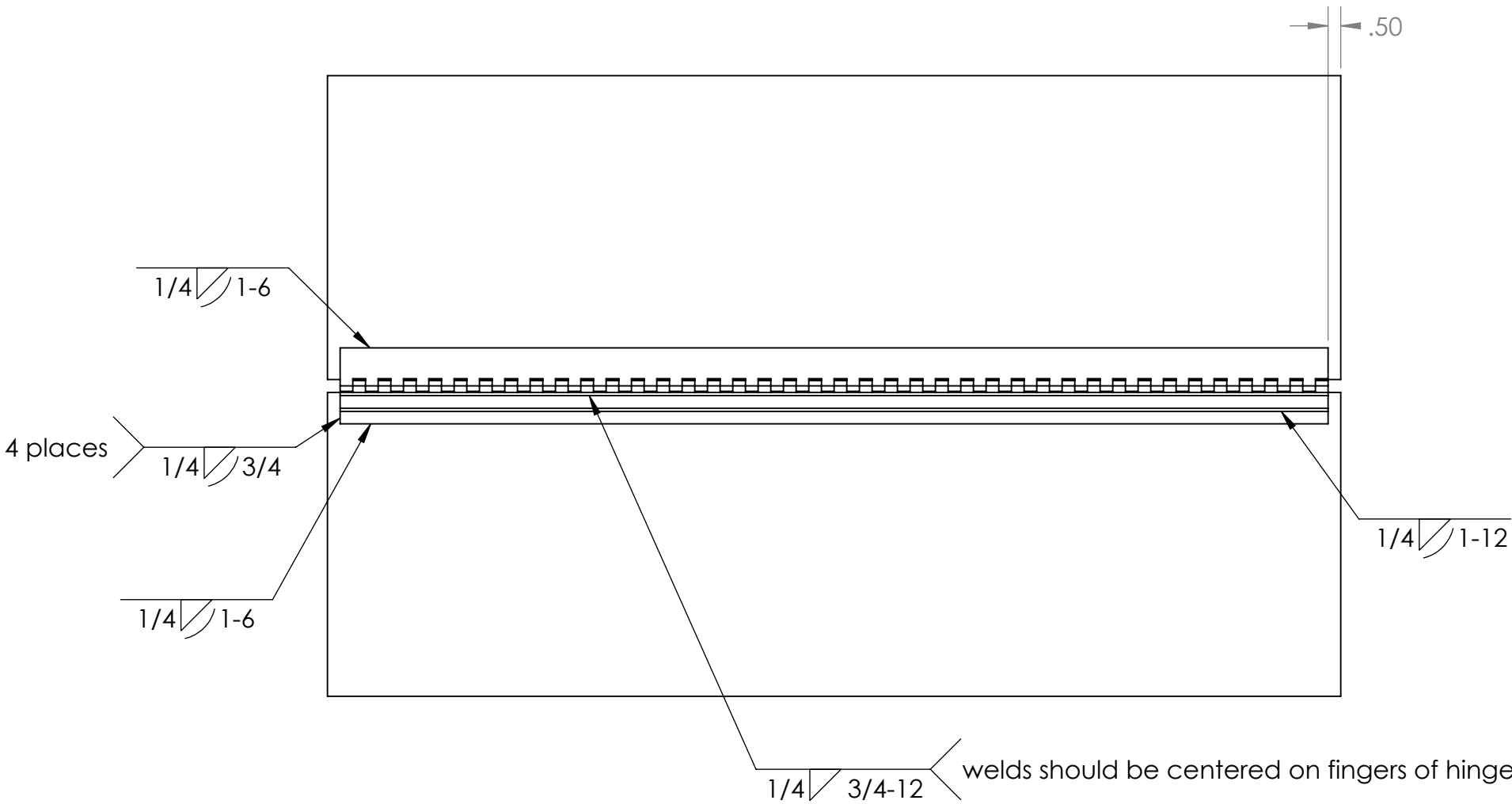
DETAIL B
SCALE 1 : 4



DETAIL A
SCALE 1 : 4





DETAIL C
SCALE 1 : 4

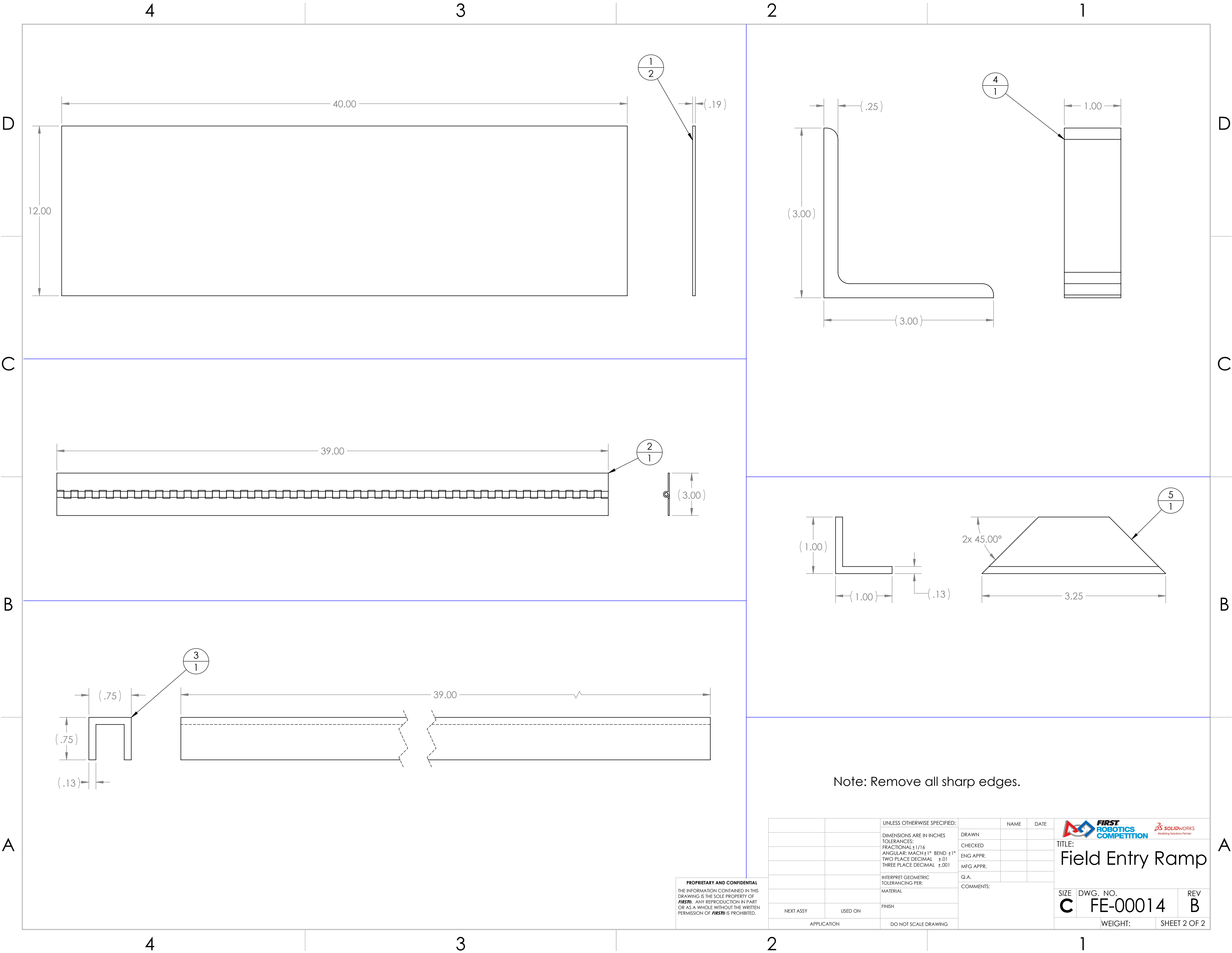


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00014-01	3/16" 3003 Aluminum Diamond Plate	2
2	FE-00014-02	3" Aluminum Hinge, 1/4" Pin	1
3	FE-00014-03	3/4" x 3/4" x 1/8" 6061-T6 Aluminum 'U' Channel	1
4	FE-00014-04	3" x 3" x 1/4" 6061-T6 Aluminum Angle	1
5	FE-00014-05	1" x 1" x 1/8" 6061-T6 Aluminum Angle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

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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:			
MATERIAL			
FINISH			
NEXT ASSY	USED ON		
APPLICATION			

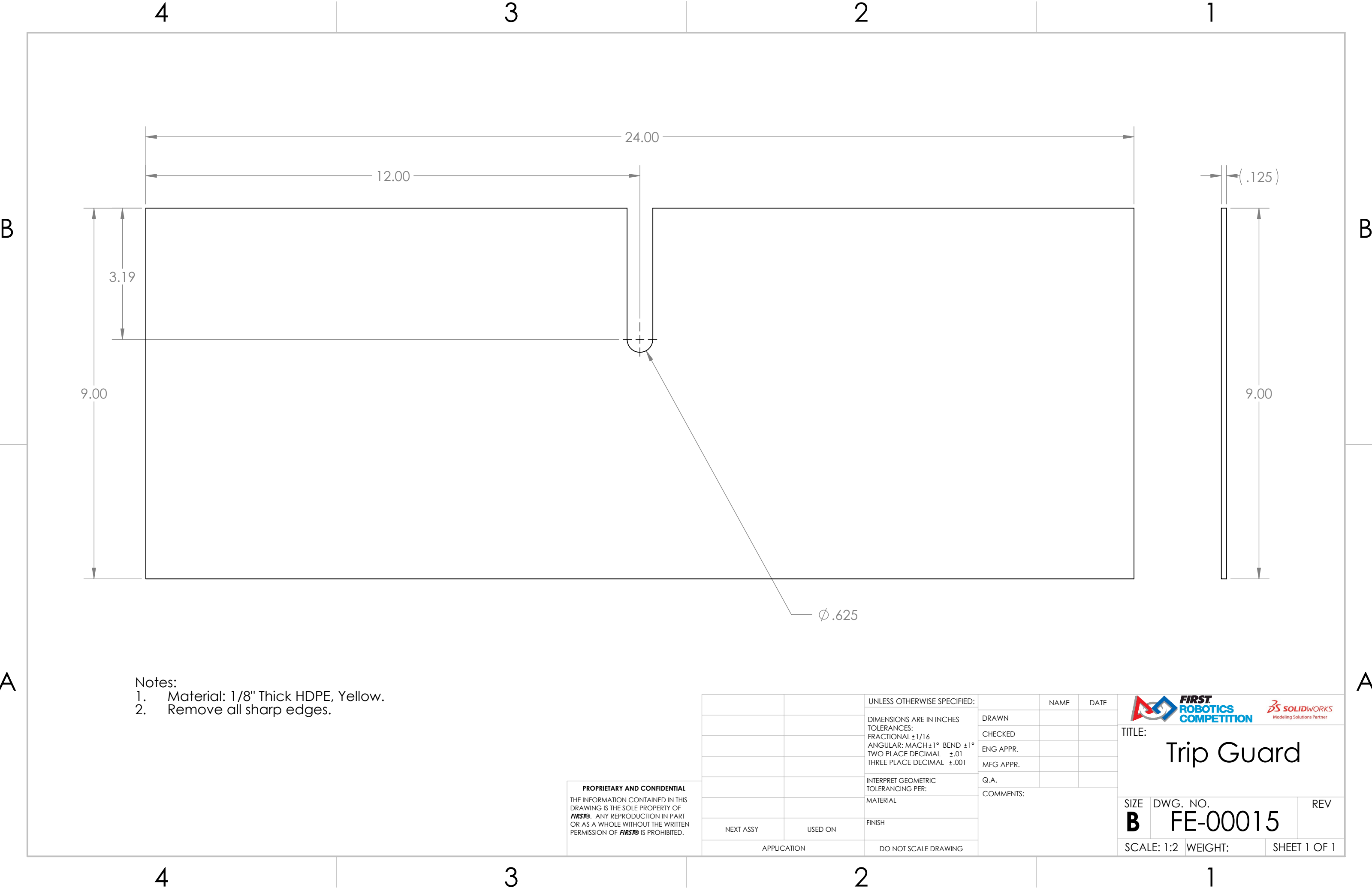
			
TITLE: Field Entry Ramp			
SIZE C	DWG. NO. FE-00014	REV B	
SCALE: 1:6 WEIGHT:		SHEET 1 OF 2	



Note: Remove all sharp edges.



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		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				TITLE:
			CHECKED				Field Entry Ramp
			ENG APPR.				
			MFG APPR.				
			Q.A.				
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:				
		MATERIAL					
		FINISH					SIZE DWG. NO. REV
NEXT ASSY	USED ON						C FE-00014 B
APPLICATION		DO NOT SCALE DRAWING				WEIGHT: SHEET 2 OF 2	



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

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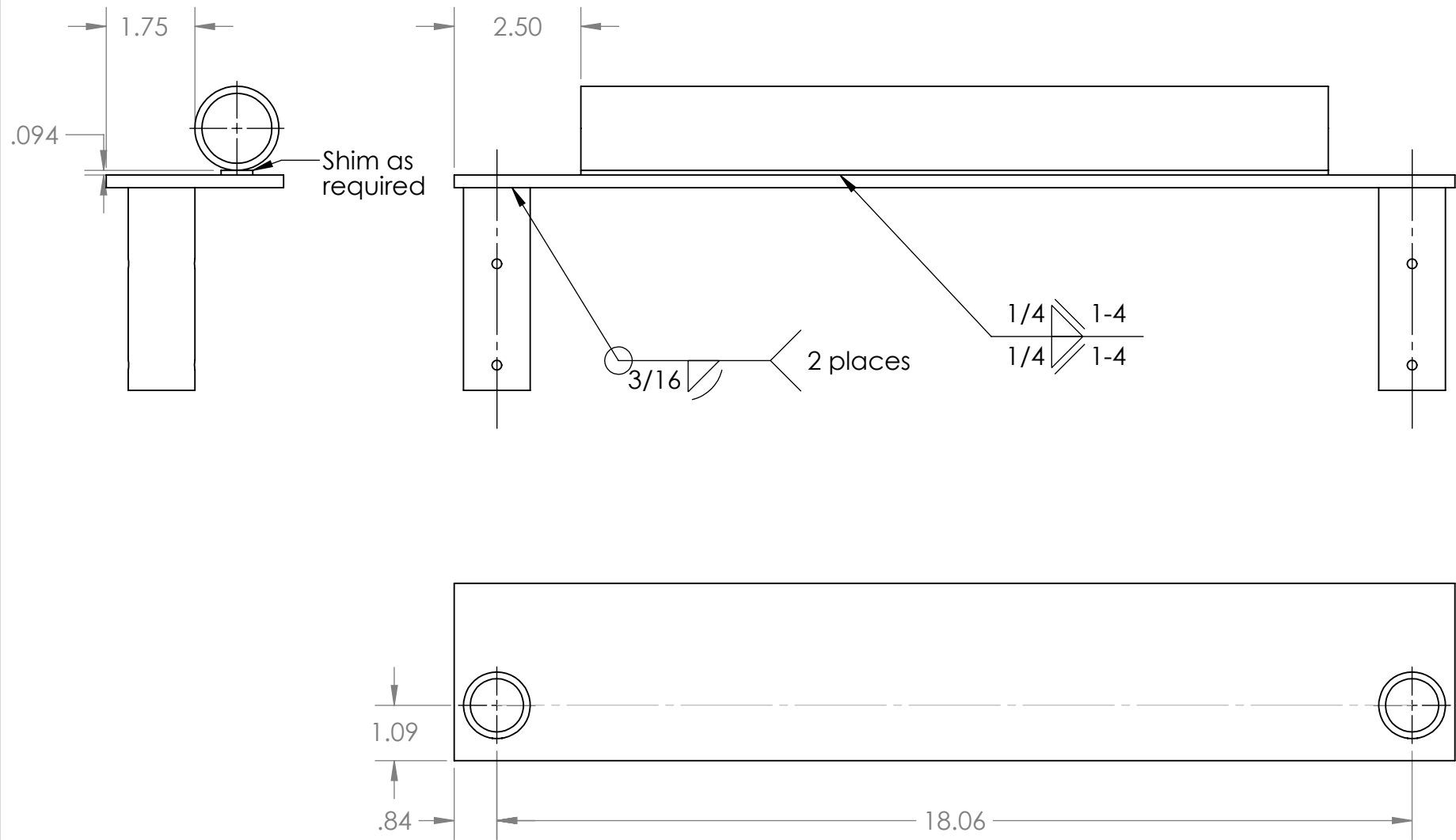
		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	<div></div>		
		DIMENSIONS ARE IN INCHES	DRAWN			TITLE: Trip Guard		
		TOLERANCES:	CHECKED					
		FRACTIONAL $\pm 1/16$	ENG APPR.					
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.					
		TWO PLACE DECIMAL $\pm .01$	Q.A.					
		THREE PLACE DECIMAL $\pm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

B

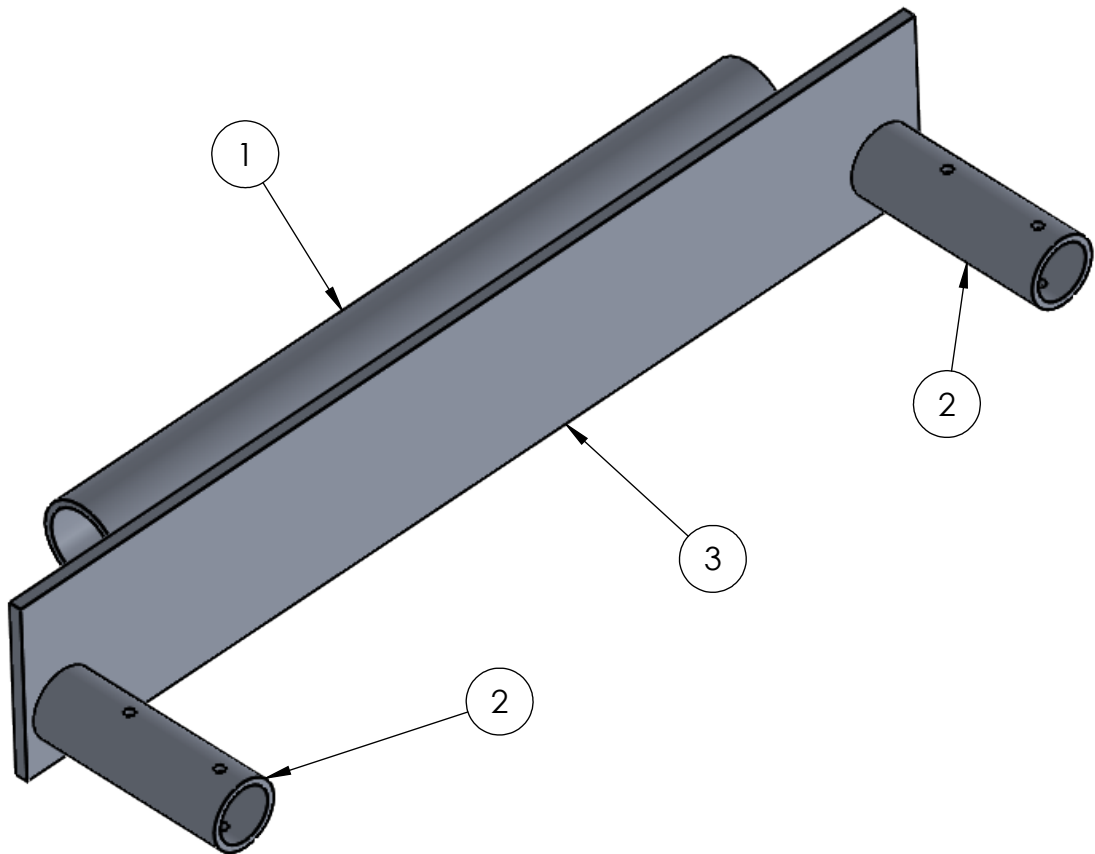
A

B

A





REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	Redrawn	5/30/2008	narosenberg
	B	Drawing reformatted.	3/20/2020	CPO

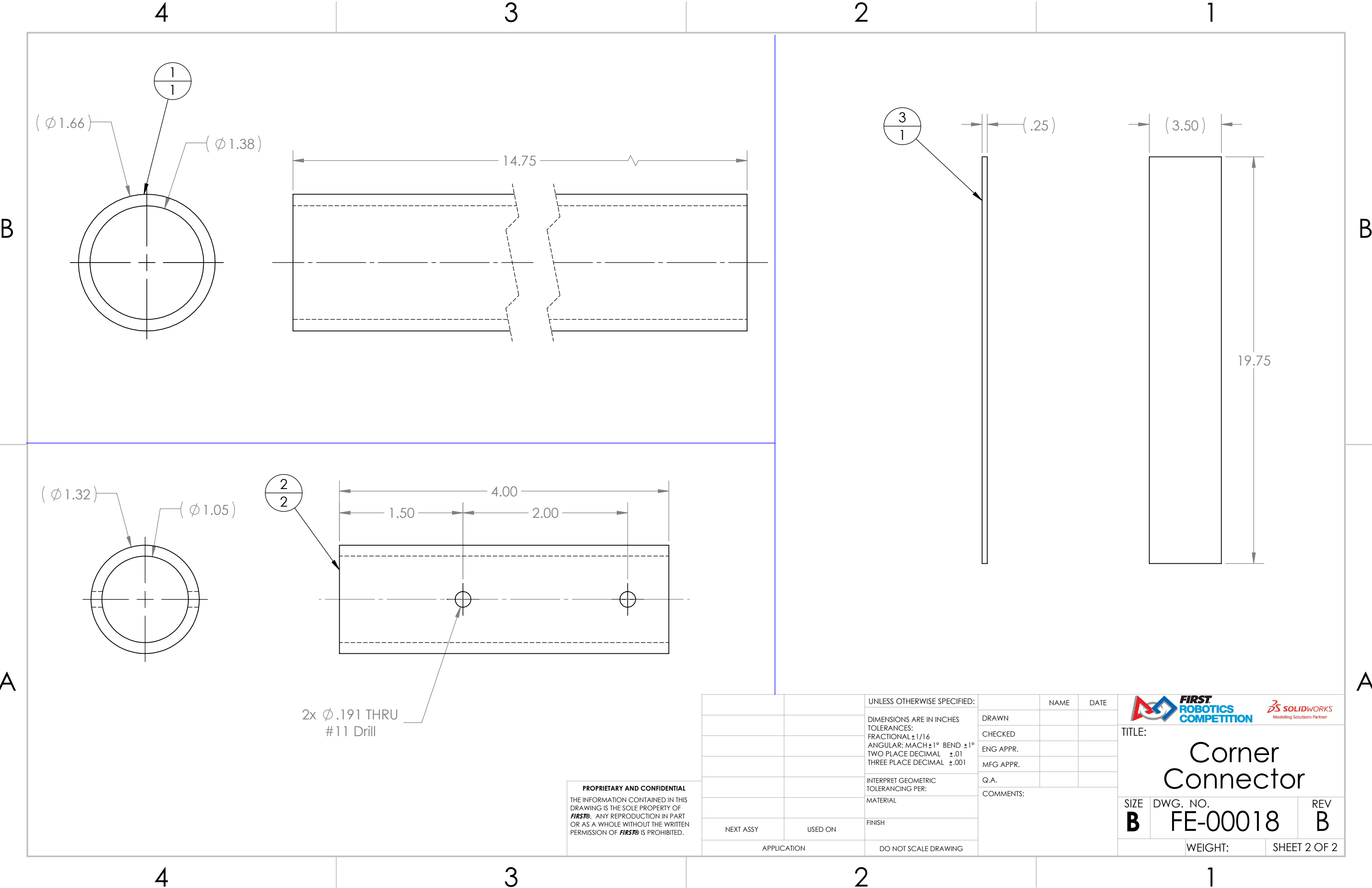


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	FE-00018-01	1 1/4" Schedule 40 6061-T6 Aluminum Pipe	1
2	FE-00018-02	1" Schedule 40 6061-T6 Aluminum Pipe	2
3	FE-00018-03	3 1/2" x 1/4" 6061-T6 Aluminum Bar	1



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		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN			TITLE: <h1>Corner Connector</h1>			
			CHECKED						
			ENG APPR.						
			MFG APPR.						
			Q.A.						
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:						
		MATERIAL							
		FINISH				SIZE B	DWG. NO. FE-00018	REV B	
NEXT ASSY	USED ON								
APPLICATION		DO NOT SCALE DRAWING				SCALE: 1:3		WEIGHT:	SHEET 1 OF 2



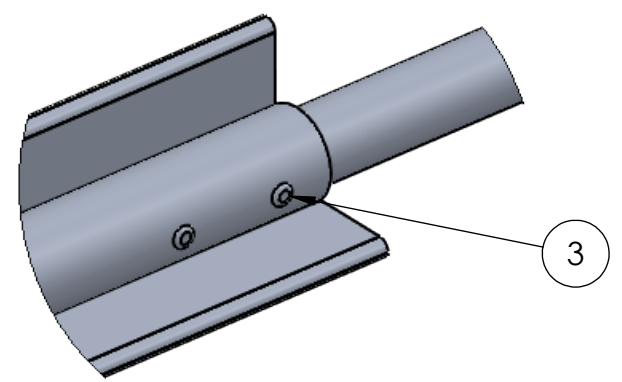
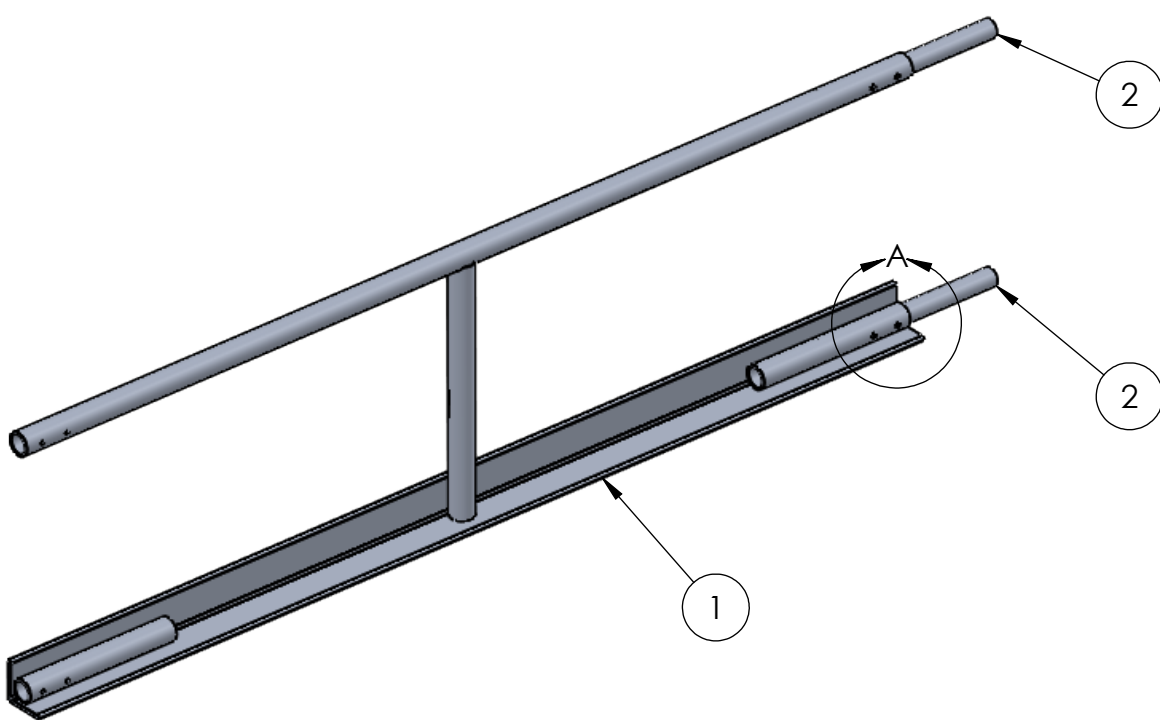
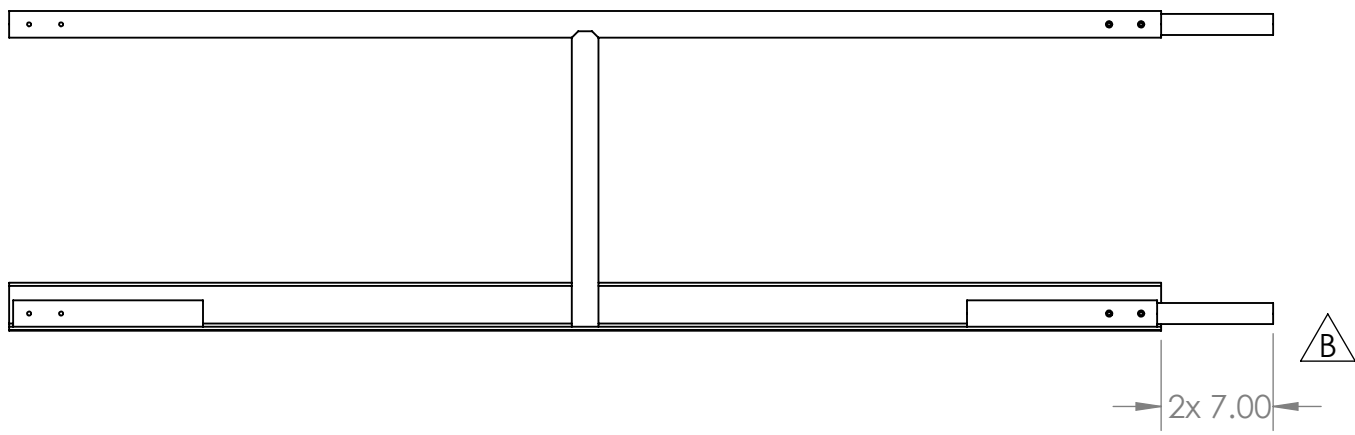


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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	<div></div>		
		DIMENSIONS ARE IN INCHES	DRAWN			TITLE: <h1>Corner Connector</h1>		
		TOLERANCES:	CHECKED					
		FRACTIONAL $\pm 1/16$	ENG APPR.					
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.					
		TWO PLACE DECIMAL $\pm .01$						
		THREE PLACE DECIMAL $\pm .001$				SIZE DWG. NO. REV B FE-00018 B		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.					
		MATERIAL	COMMENTS:			WEIGHT: SHEET 2 OF 2		
NEXT ASSY	USED ON	FINISH						
APPLICATION		DO NOT SCALE DRAWING						

B

B



DETAIL A
SCALE 1 : 3

A



A

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

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		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:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



TITLE:
Field Rail Assy - Mid

SIZE **B** DWG. NO. **FE-00022** REV **C**

SCALE: 1:12 WEIGHT: SHEET 1 OF 1

4

3

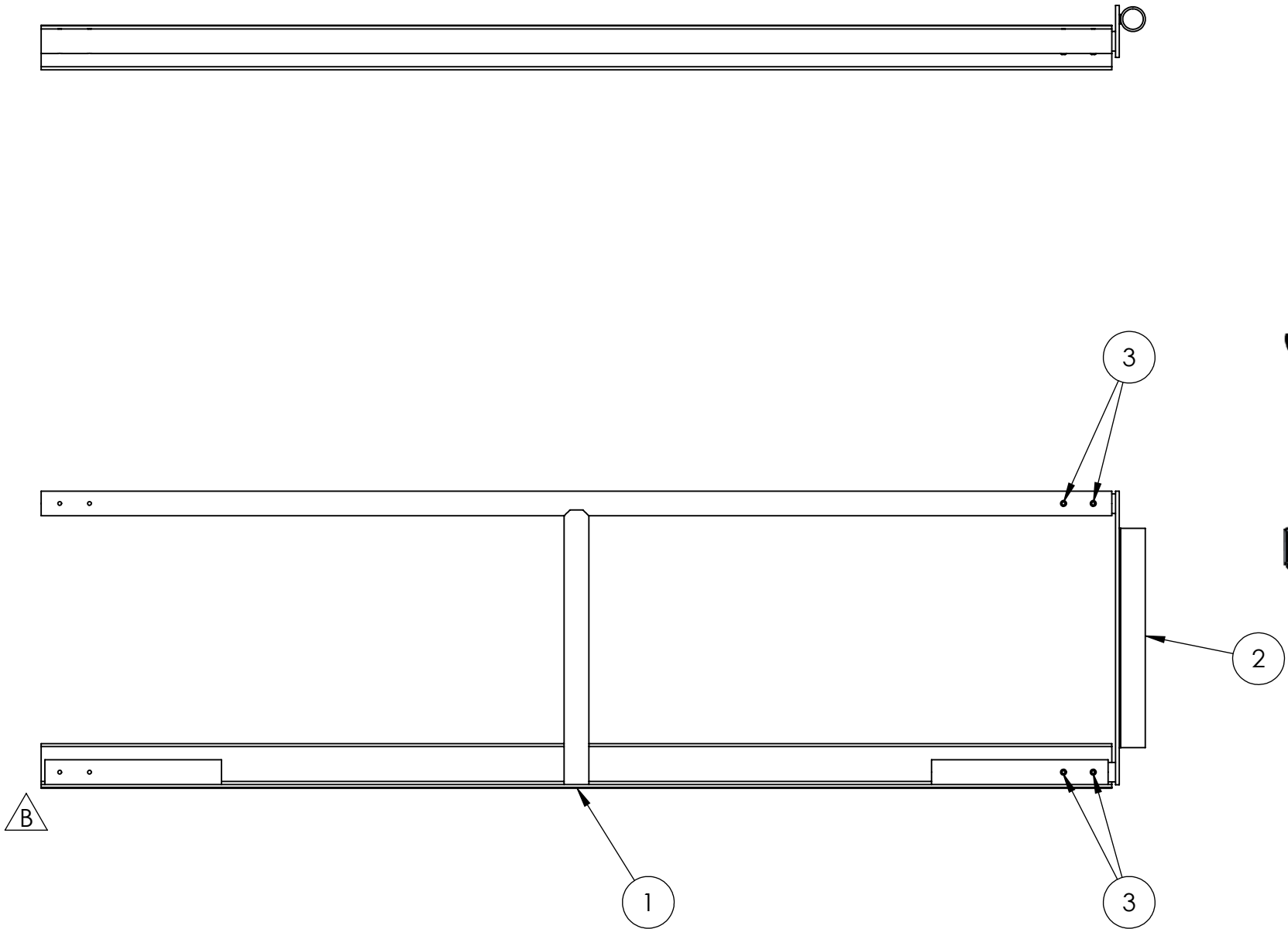
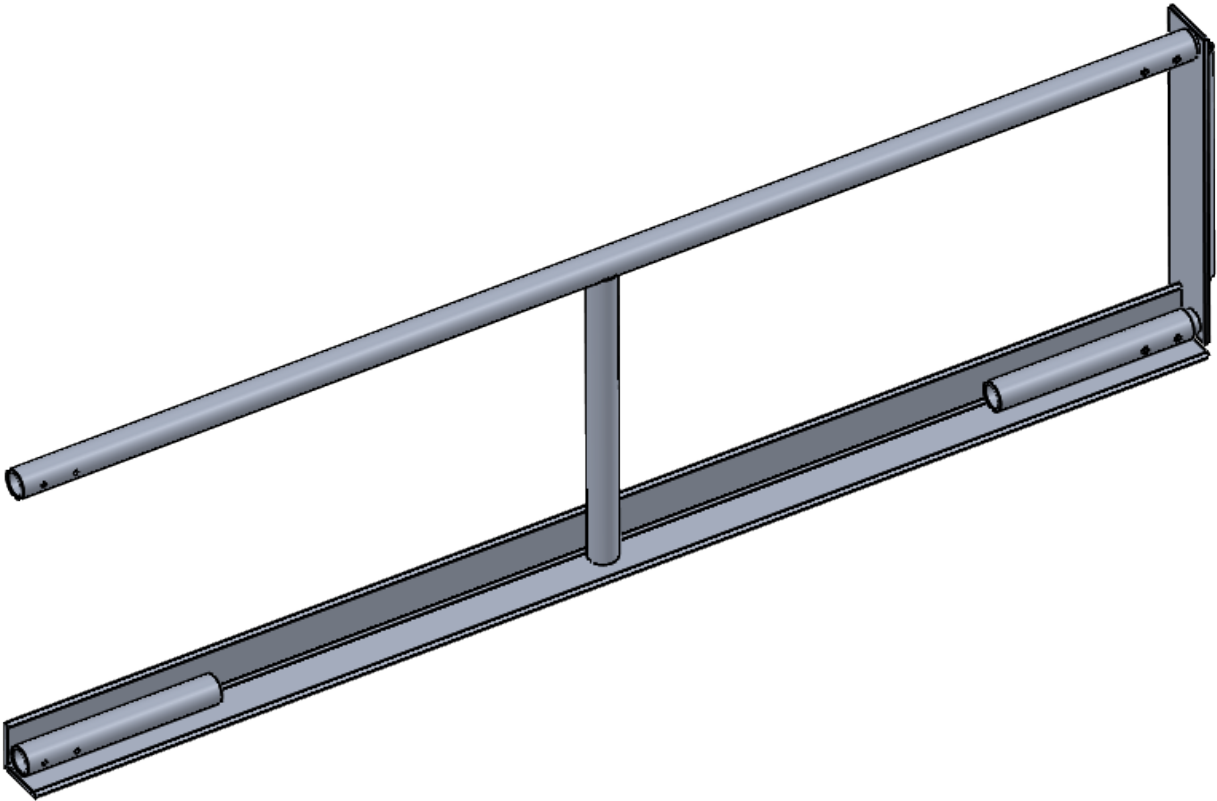
2

1

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

B

B



B



A

A

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

B

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		DIMENSIONS ARE IN INCHES	DRAWN			TITLE: <div>Field Rail Assy - Left</div>			
		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:			SIZE DWG. NO. REV <div>B FE-00023 B</div>			
		INTERPRET GEOMETRIC TOLERANCING PER:							
		MATERIAL							
		FINISH				SCALE: 1:10 WEIGHT: SHEET 1 OF 1			
NEXT ASSY	USED ON								
APPLICATION		DO NOT SCALE DRAWING							



4

3

2

1

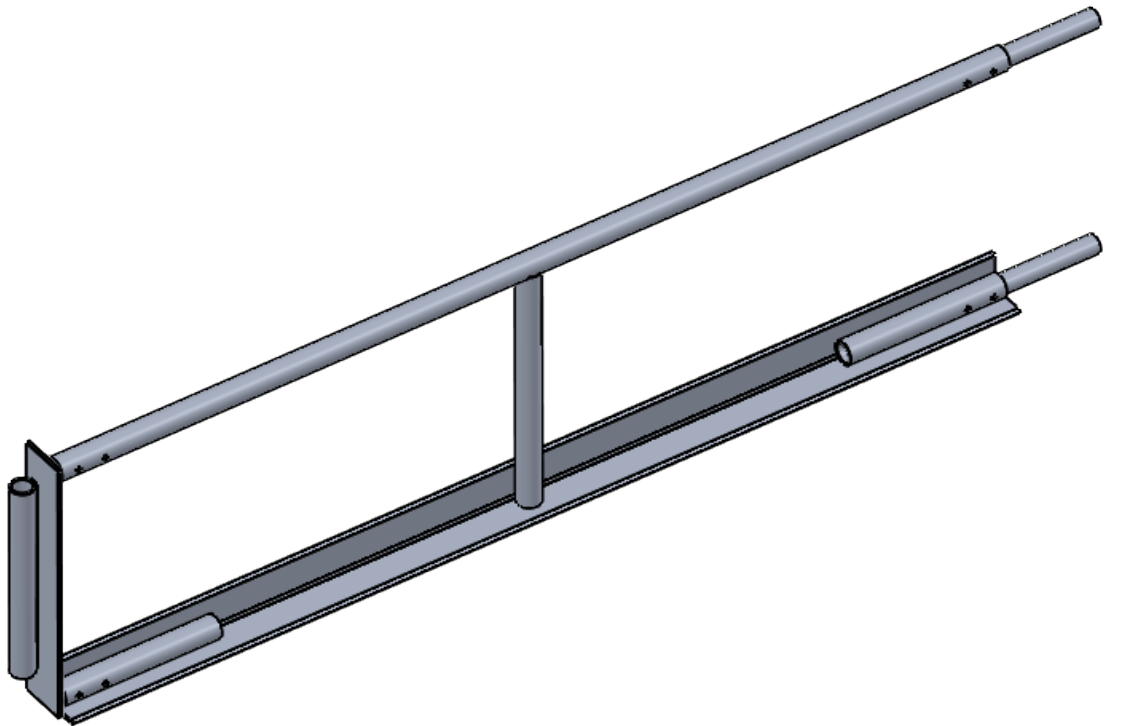
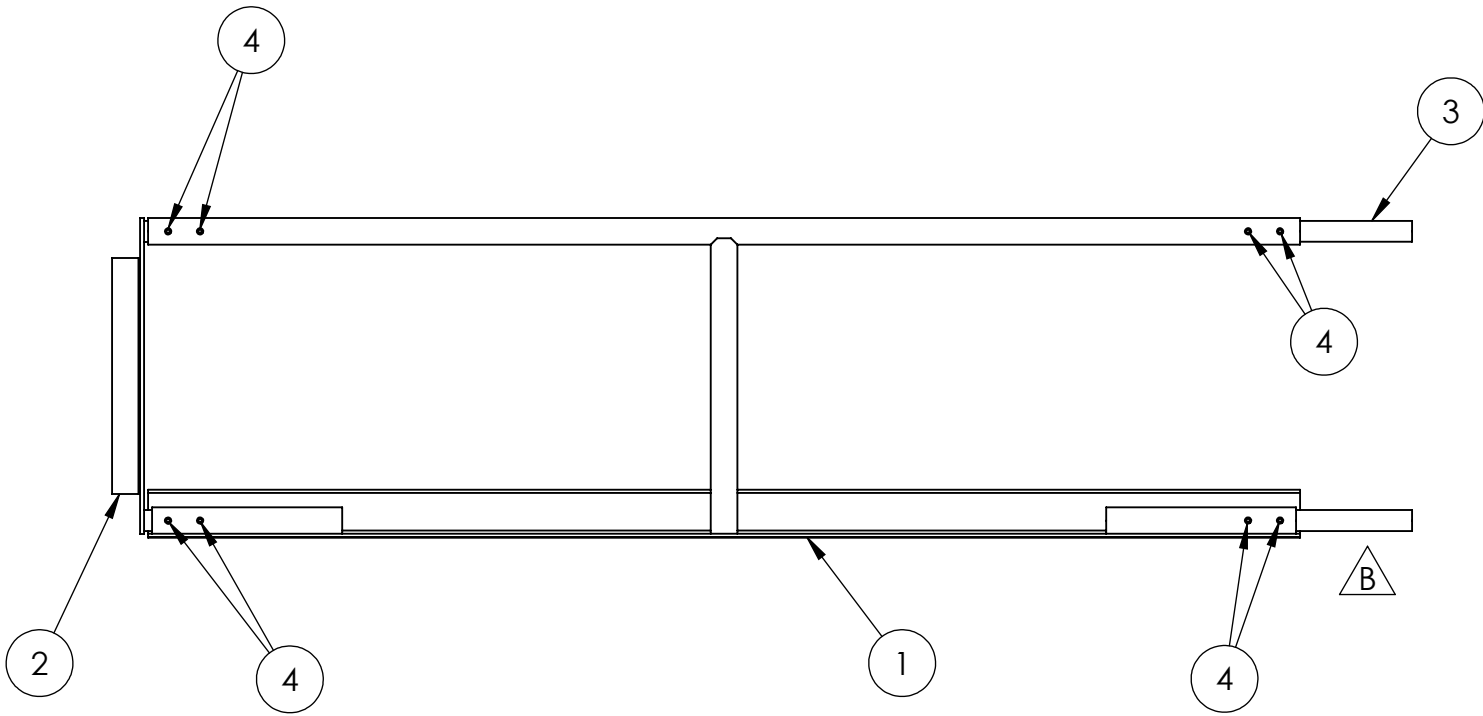
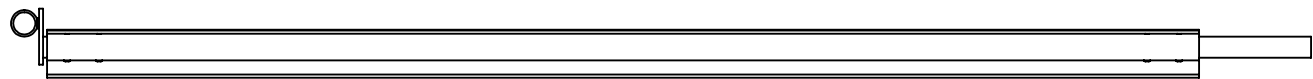
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3

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



B

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

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		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 $\pm .001$	DRAWN			TITLE: Field Rail Assy - Right		
			CHECKED					
			ENG APPR.					
			MFG APPR.					
			Q.A.					
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:			SIZE DWG. NO. REV B FE-00024 B		
		MATERIAL						
		FINISH						
NEXT ASSY	USED ON							
APPLICATION		DO NOT SCALE DRAWING				SCALE: 1:12 WEIGHT: SHEET 1 OF 1		

4

3

2

1

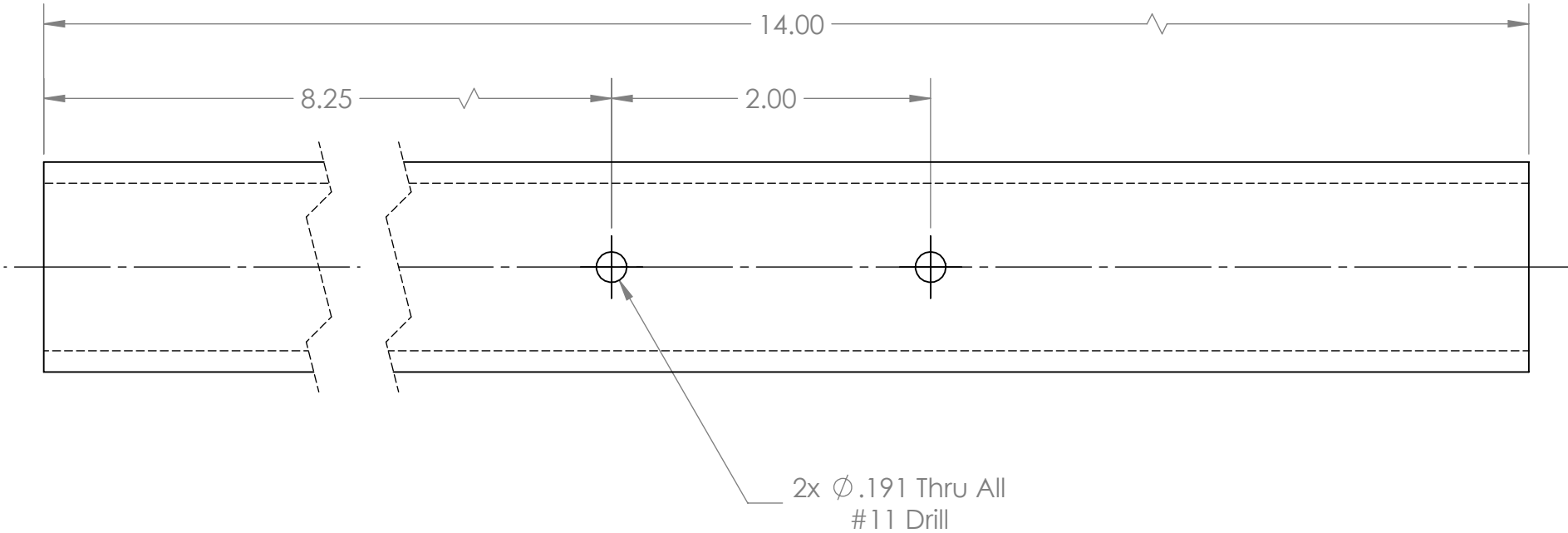
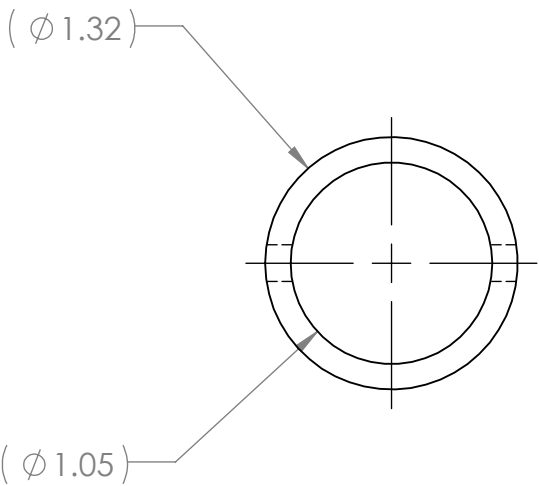
4

3

2



1

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



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

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		DIMENSIONS ARE IN INCHES	DRAWN			TITLE: Connector Pin			
		TOLERANCES:	CHECKED						
		FRACTIONAL $\pm 1/16$	ENG APPR.						
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.						
		TWO PLACE DECIMAL $\pm .01$							
		THREE PLACE DECIMAL $\pm .001$							
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.						
		MATERIAL	COMMENTS:						
		FINISH							
NEXT ASSY	USED ON					SIZE B	DWG. NO. FE-00026		REV A
APPLICATION		DO NOT SCALE DRAWING				SCALE: 1:1		WEIGHT:	SHEET 1 OF 1

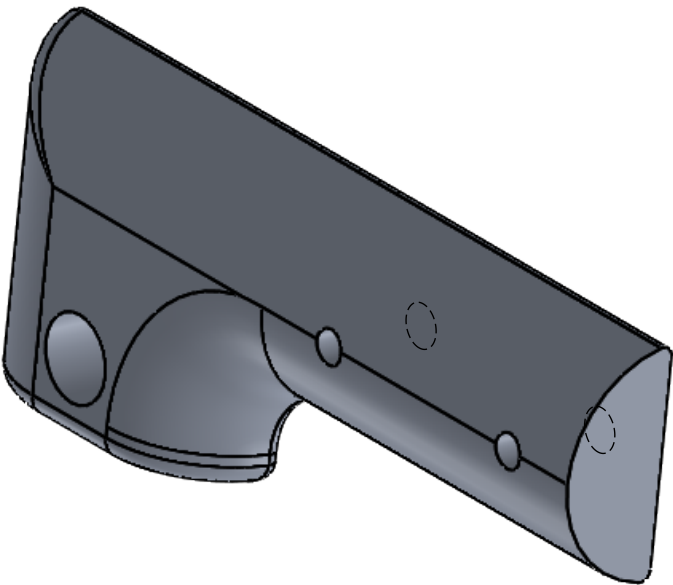
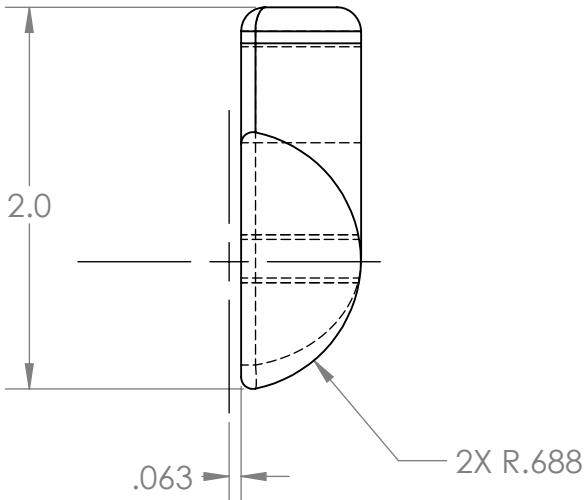
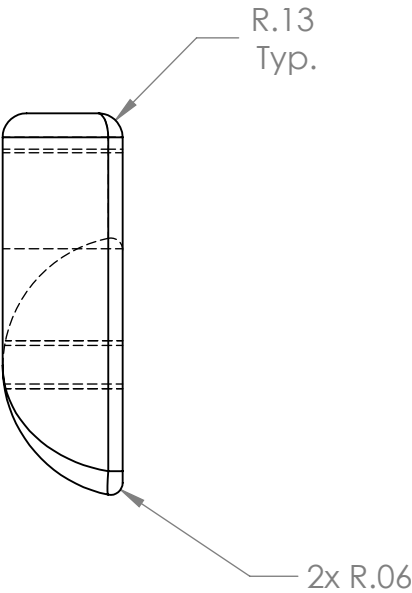
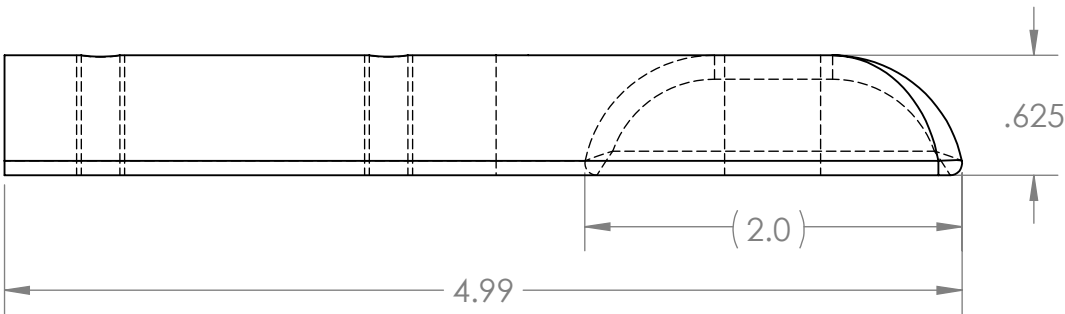
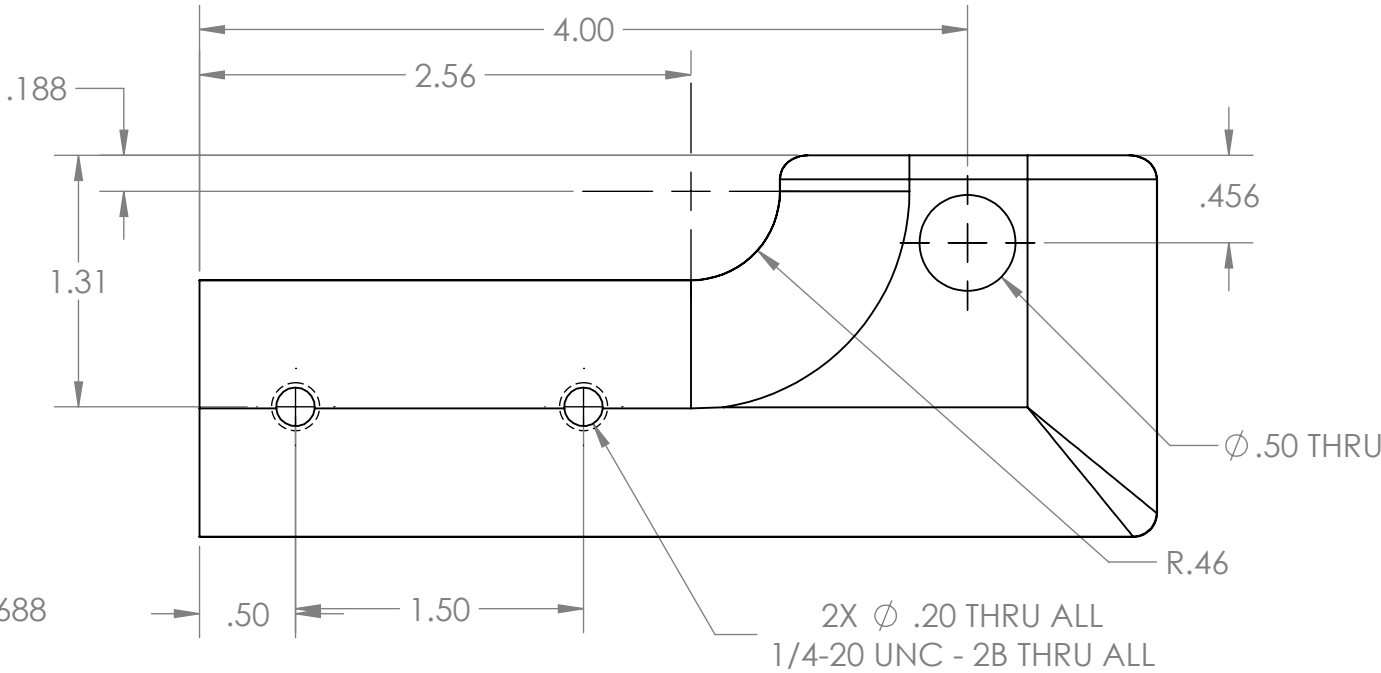
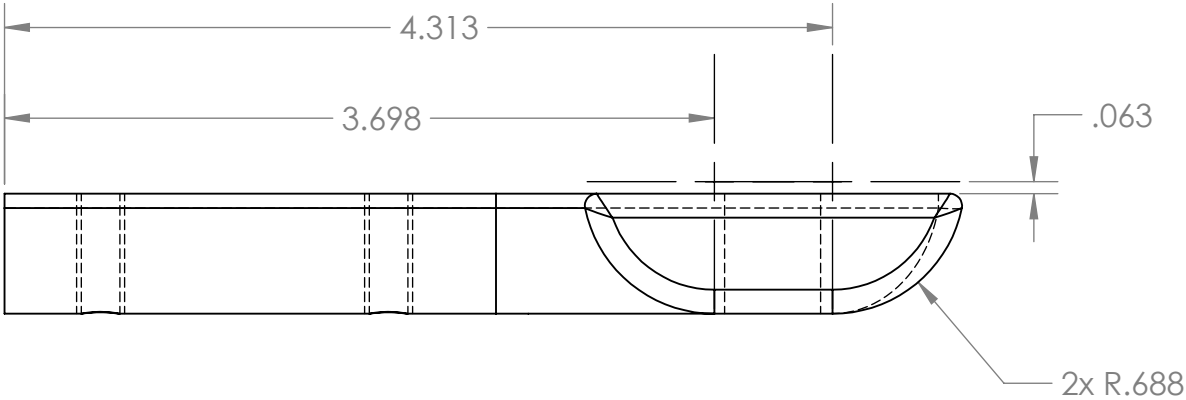
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3

2



1

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



- Notes:
1. Material: 6063 Aluminum
 2. Remove all sharp edges

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 		
		DIMENSIONS ARE IN INCHES	DRAWN			TITLE: <h1>Hinge, Insert</h1>		
		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:			SIZE DWG. NO. REV B FE-00027 A		
		INTERPRET GEOMETRIC TOLERANCING PER:						
		MATERIAL						
		FINISH						
NEXT ASSY	USED ON							
APPLICATION		DO NOT SCALE DRAWING				SCALE: 1:1 WEIGHT: SHEET 1 OF 1		

4

3

2

1

4

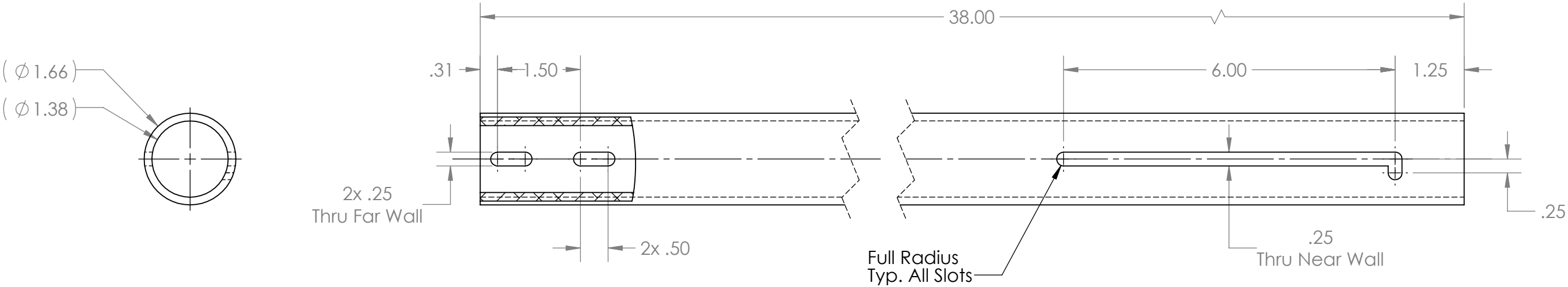
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2

1

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

B






B

A

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

A

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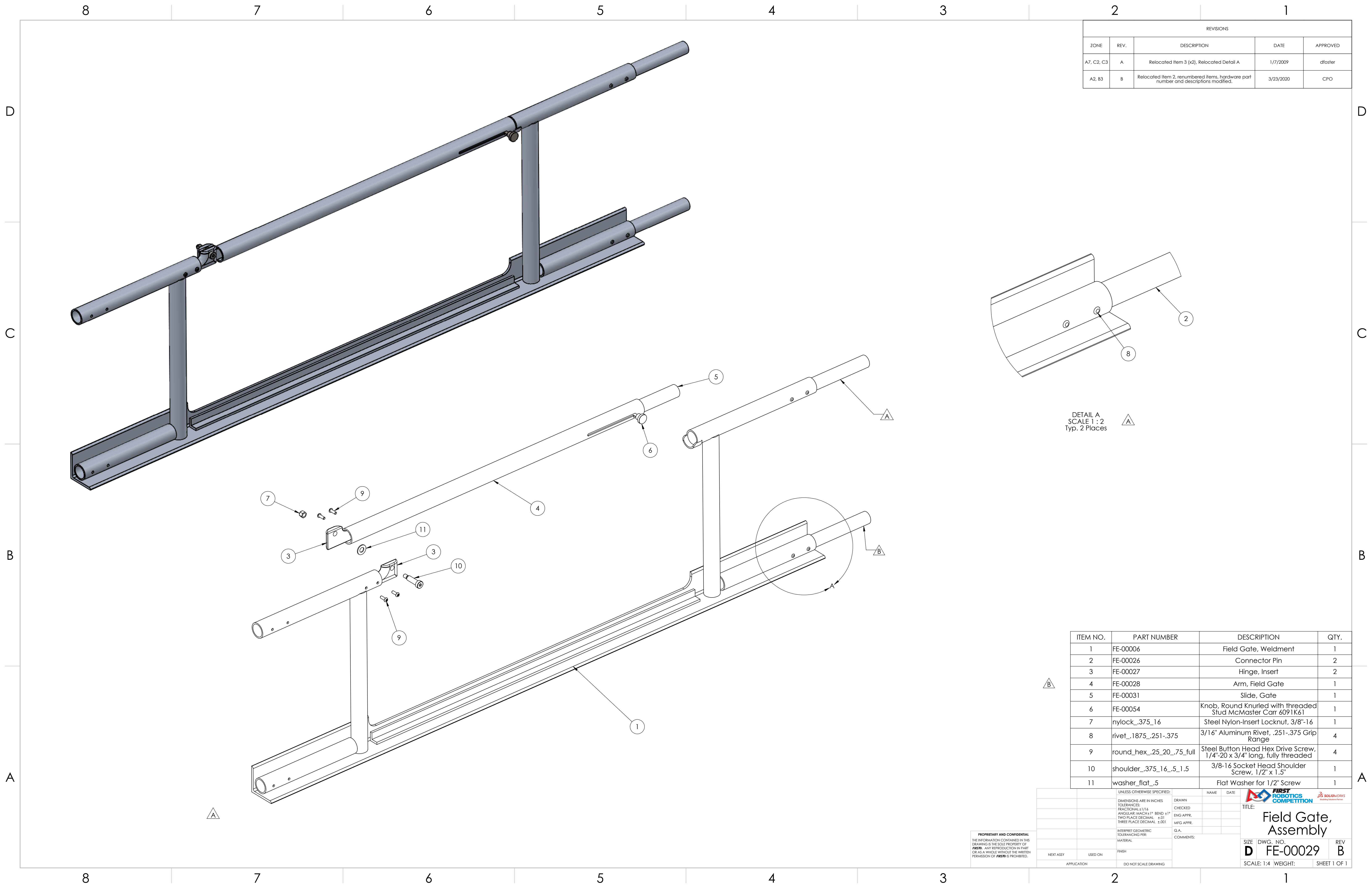
		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	  			
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$	DRAWN			TITLE: <h1>Arm, Field Gate</h1>			
			CHECKED						
			ENG APPR.						
			MFG APPR.						
			Q.A.						
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:			SIZE DWG. NO. REV B FE-00028 A			
		MATERIAL							
		FINISH							
NEXT ASSY	USED ON								
APPLICATION		DO NOT SCALE DRAWING							
						WEIGHT:		SHEET 1 OF 1	

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

DETAIL A
SCALE 1 : 2
Typ. 2 Places

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

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

TITLE:		FIRST ROBOTICS COMPETITION		SOLIDWORKS	
SIZE		DWG. NO.		REV	
D		FE-00029		B	
SCALE: 1:4		WEIGHT:		SHEET 1 OF 1	

4

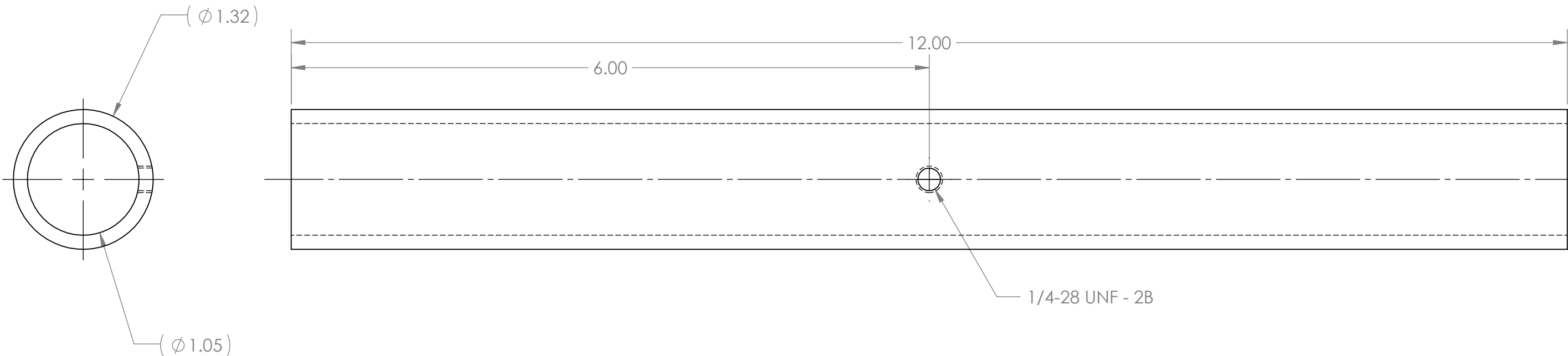
3

2

1

B



B



Notes:

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

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	<div></div>		
		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			TITLE: <h1>Slide, Gate</h1>		
			CHECKED					
			ENG APPR.					
			MFG APPR.					
			Q.A.					
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:			SIZE DWG. NO. REV B FE-00031		
		MATERIAL						
		FINISH						
NEXT ASSY	USED ON					SCALE: 1:1 WEIGHT: SHEET 1 OF 1		
APPLICATION		DO NOT SCALE DRAWING						

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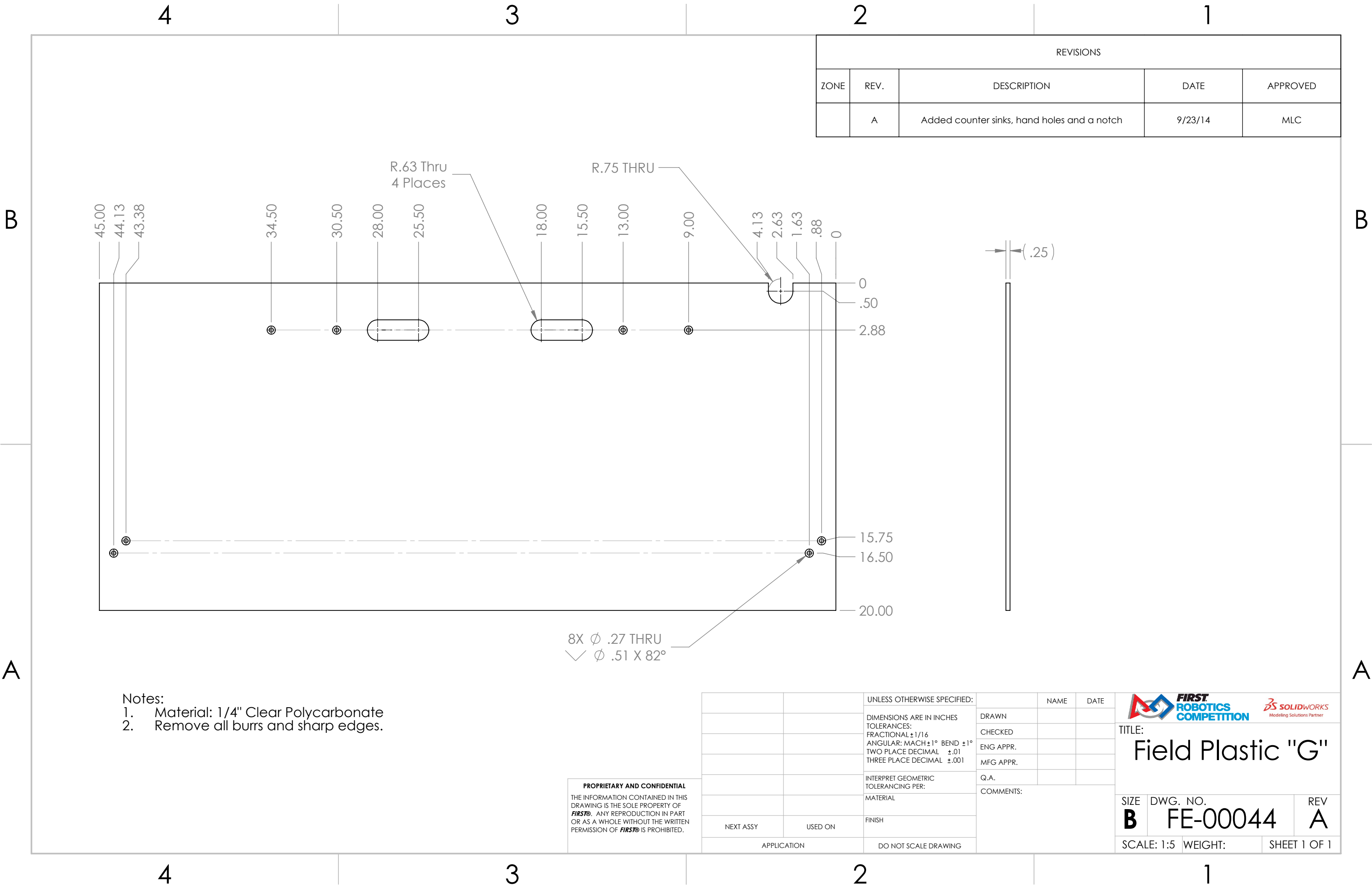
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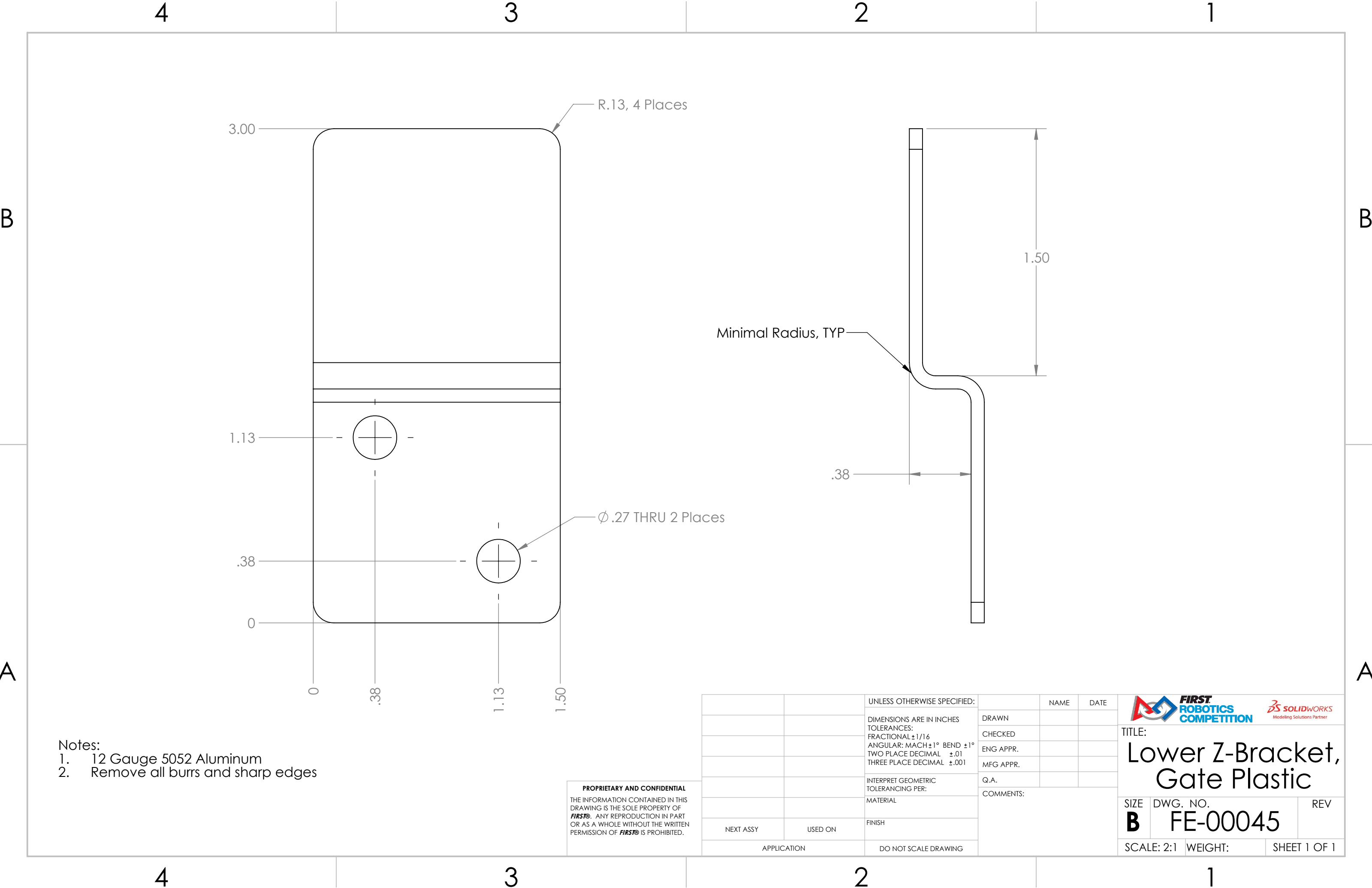
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1

A



A

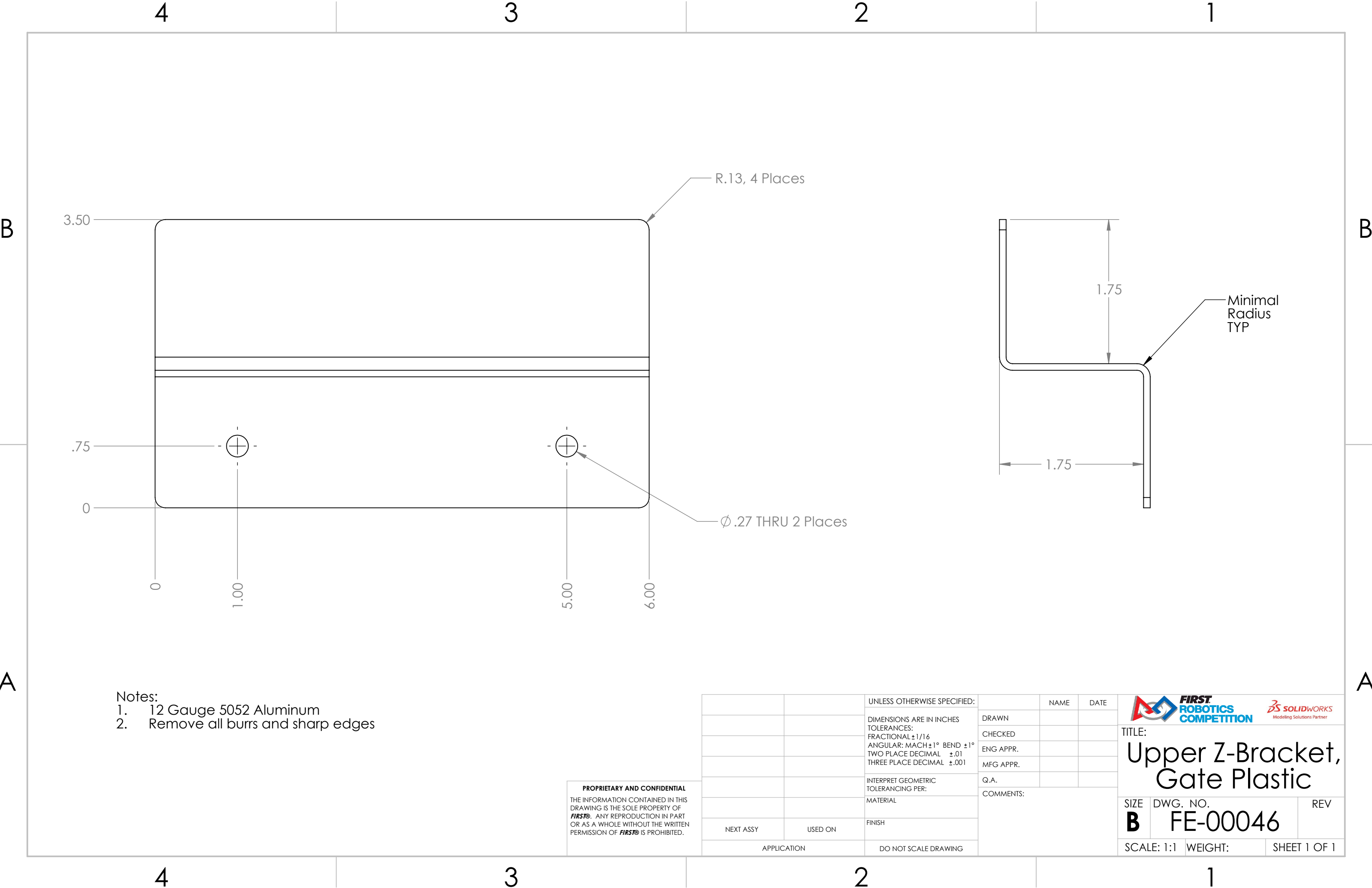




- Notes:
- 12 Gauge 5052 Aluminum
 - Remove all burrs and sharp edges

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	<div><div>FIRST ROBOTICS COMPETITION</div><div>SOLIDWORKS Modeling Solutions Partner</div></div>				
		DIMENSIONS ARE IN INCHES	DRAWN			TITLE: <div>Lower Z-Bracket, Gate Plastic</div>				
		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:			SIZE		DWG. NO.		REV
		INTERPRET GEOMETRIC				B		FE-00045		
		TOLERANCING PER:								
		MATERIAL								
		FINISH								
NEXT ASSY	USED ON									
APPLICATION		DO NOT SCALE DRAWING					SCALE: 2:1		WEIGHT:	SHEET 1 OF 1



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

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		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 $\pm .001$	DRAWN		
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			
			TITLE: Upper Z-Bracket, Gate Plastic		
			SIZE B	DWG. NO. FE-00046	REV
			SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

4

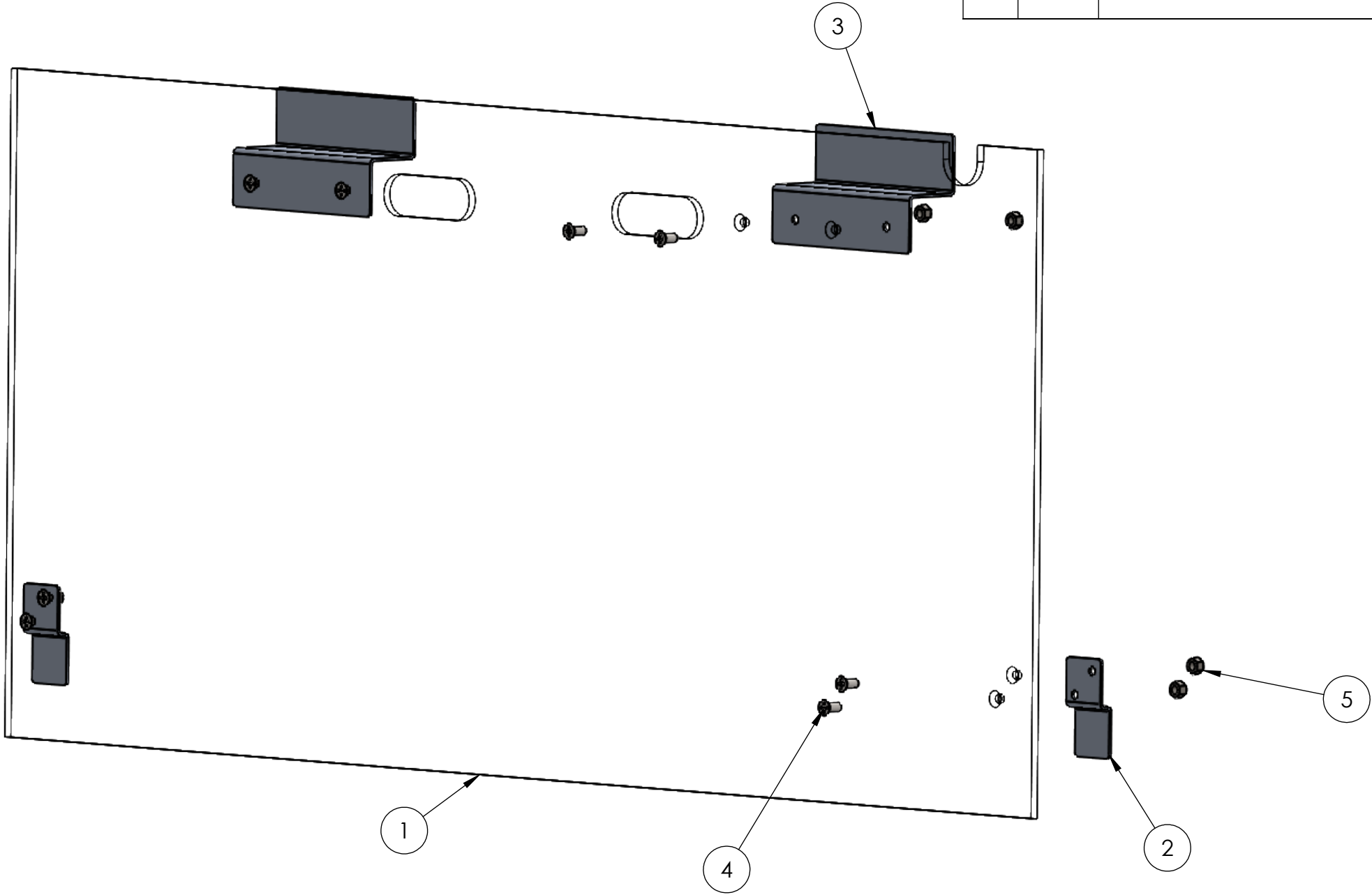
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2

1

REVISIONS

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





A

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

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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 $\pm .001$		DRAWN	
		CHECKED	
		ENG APPR.	
		MFG APPR.	
INTERPRET GEOMETRIC TOLERANCING PER:		Q.A.	
MATERIAL		COMMENTS:	
FINISH			
NEXT ASSY	USED ON		
APPLICATION		DO NOT SCALE DRAWING	



TITLE:

Gate Plastic Assembly

SIZE
B

DWG. NO.
FE-00047

REV
A

SCALE: 1:4

WEIGHT:

SHEET 1 OF 1

4

3

2

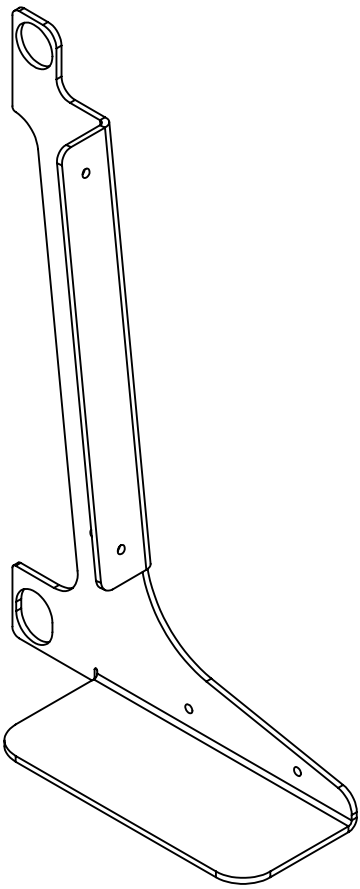
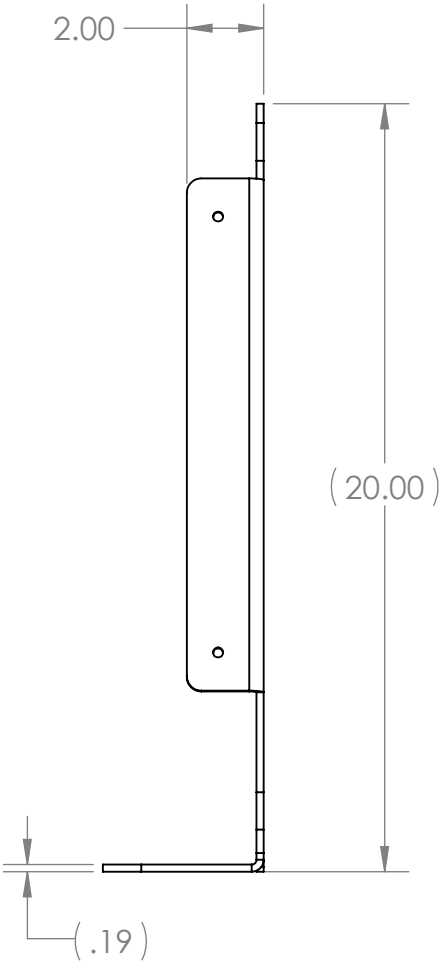
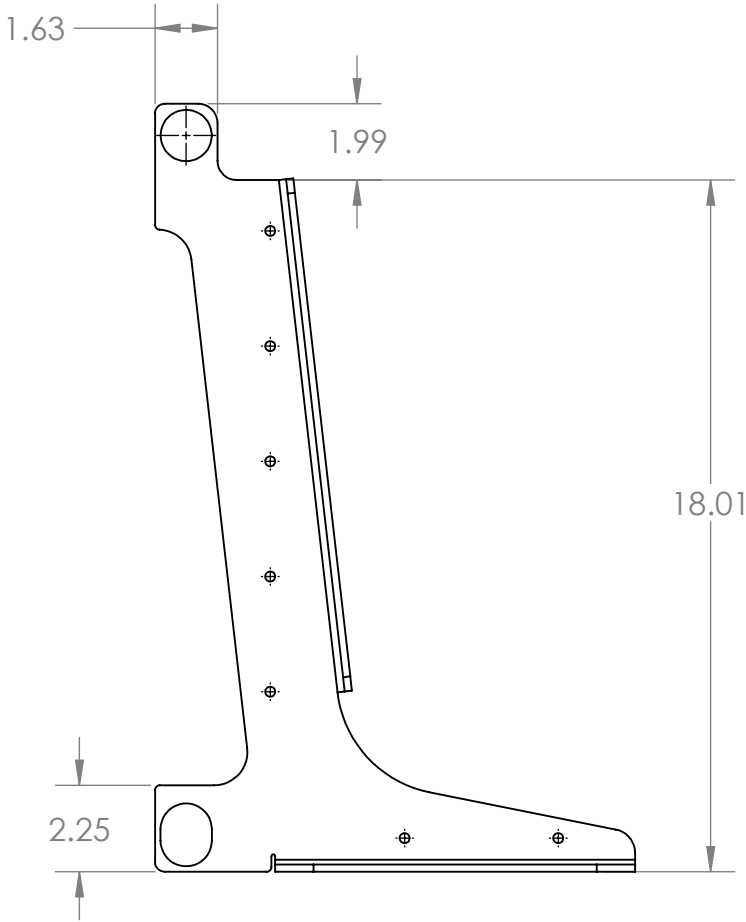
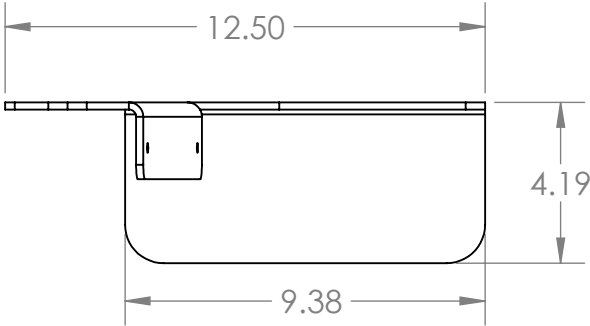
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4

3



2

1



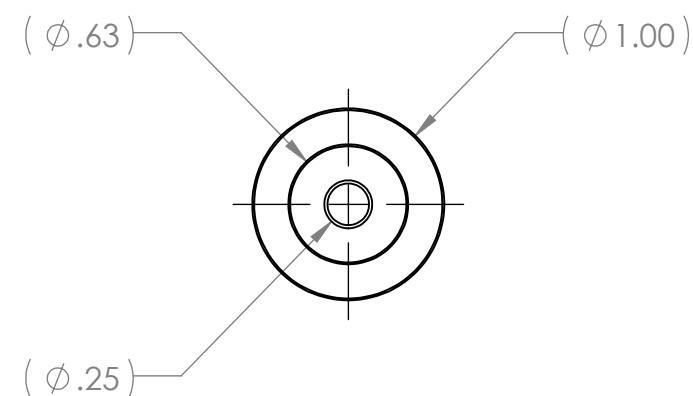
Note:
Material: 5052 Aluminum Sheet, 3/16" Thick
This drawing represents overall dimensions for AndyMark AM-2810. Please see the AndyMark website for more details regarding part dimensions.

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	<div><div>FIRST ROBOTICS COMPETITION</div></div> <div><div>SOLIDWORKS Modeling Solutions Partner</div></div>			
		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			TITLE: Outrigger			
			CHECKED						
			ENG APPR.						
			MFG APPR.						
			Q.A.						
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:			SIZE DWG. NO. REV B FE-00050			
		MATERIAL							
		FINISH							
NEXT ASSY	USED ON								
APPLICATION		DO NOT SCALE DRAWING				SCALE: 1:5 WEIGHT: SHEET 1 OF 1			

1

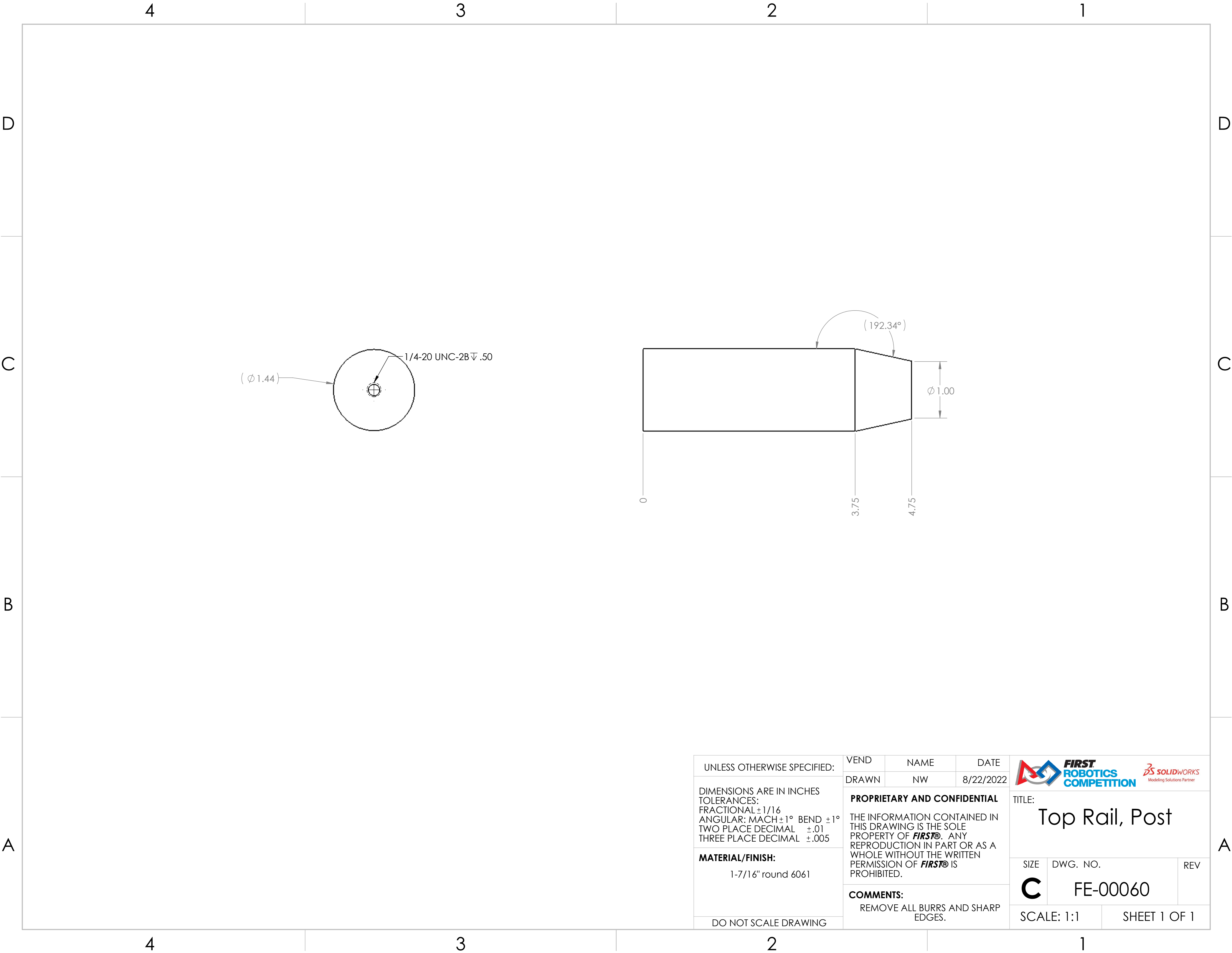
A





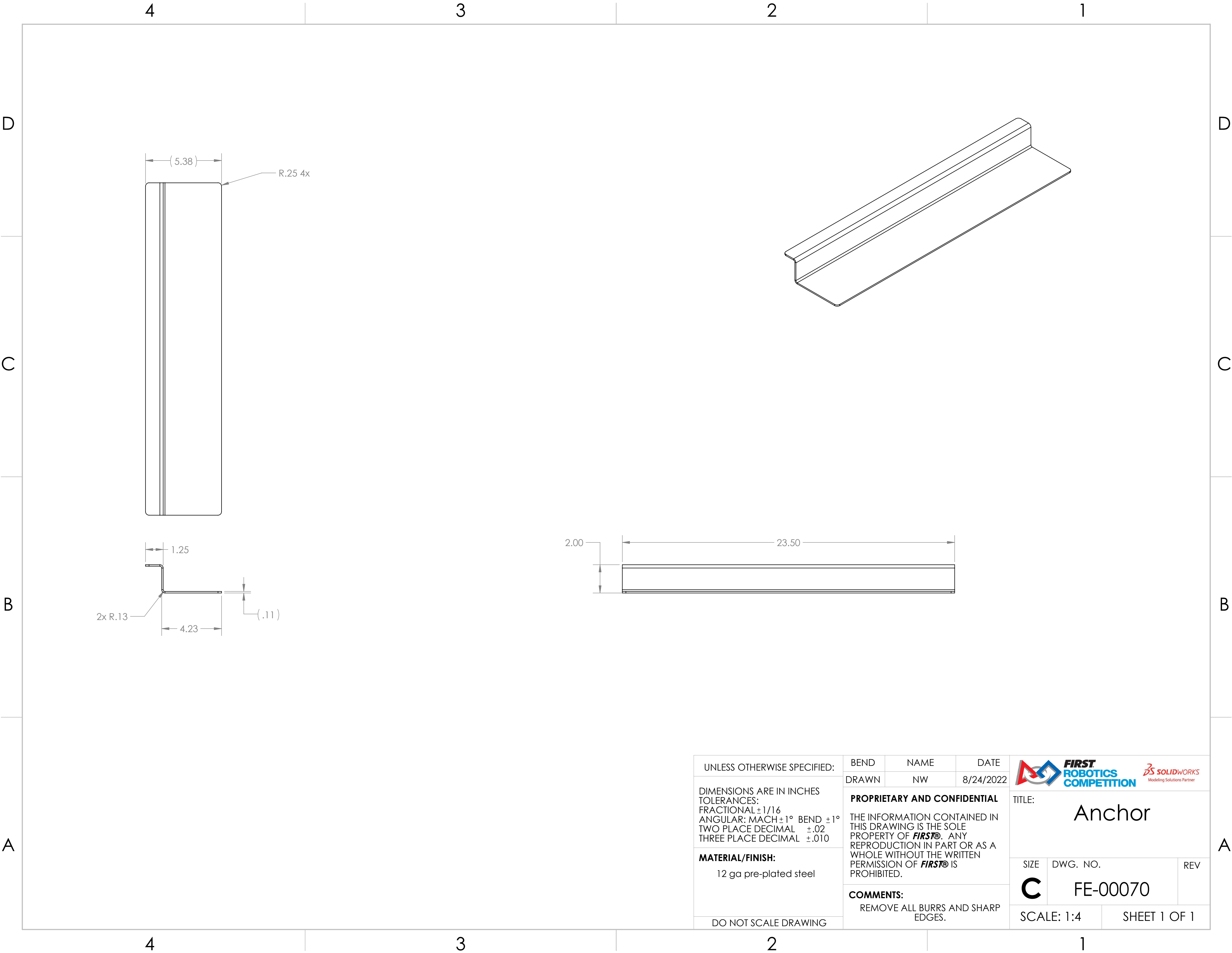
1. Description: 303 Stainless Steel Knurled Knob with 1/4"-28 Thread 1-3/4" Long Stud, 1" Head Diameter
2. Vendor: McMaster-Carr
3. Part Number: 6091K61
4. Equivalent substitutions allowed



		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 FIRST ROBOTICS COMPETITION	 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 $\pm .001$	DRAWN				TITLE: Knob, Round Knurled with threaded Stud McMaster Carr 6091K61
			CHECKED				
			ENG APPR.				
			MFG APPR.				
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		SIZE DWG. NO. REV B FE-00054 SCALE: 1:1 WEIGHT: SHEET 1 OF 1		
		MATERIAL	COMMENTS:				
		FINISH					
NEXT ASSY	USED ON						
APPLICATION		DO NOT SCALE DRAWING					

1

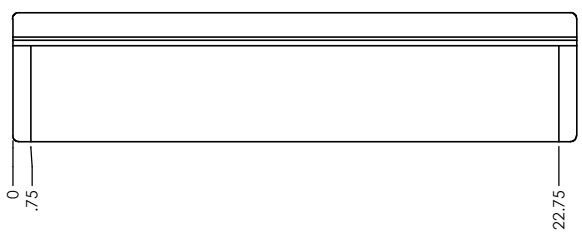
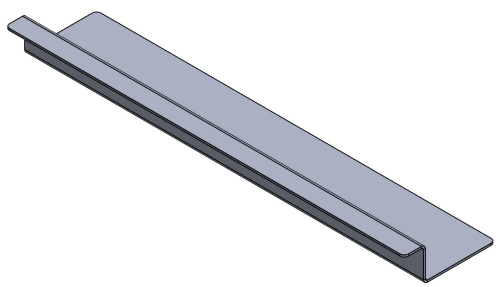
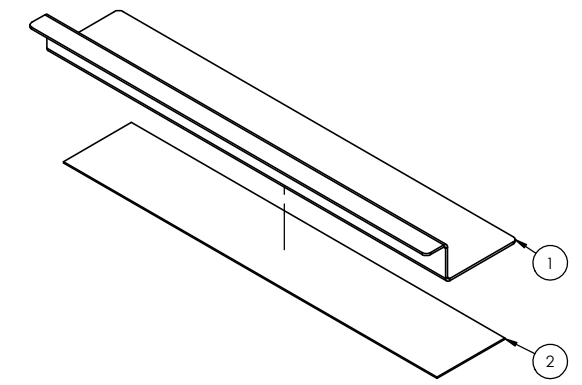




UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .005$ MATERIAL/FINISH: 1-7/16" round 6061 DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: <h1>Top Rail, Post</h1></div>		
	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. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. FE-00060	REV
SCALE: 1:1		SHEET 1 OF 1				

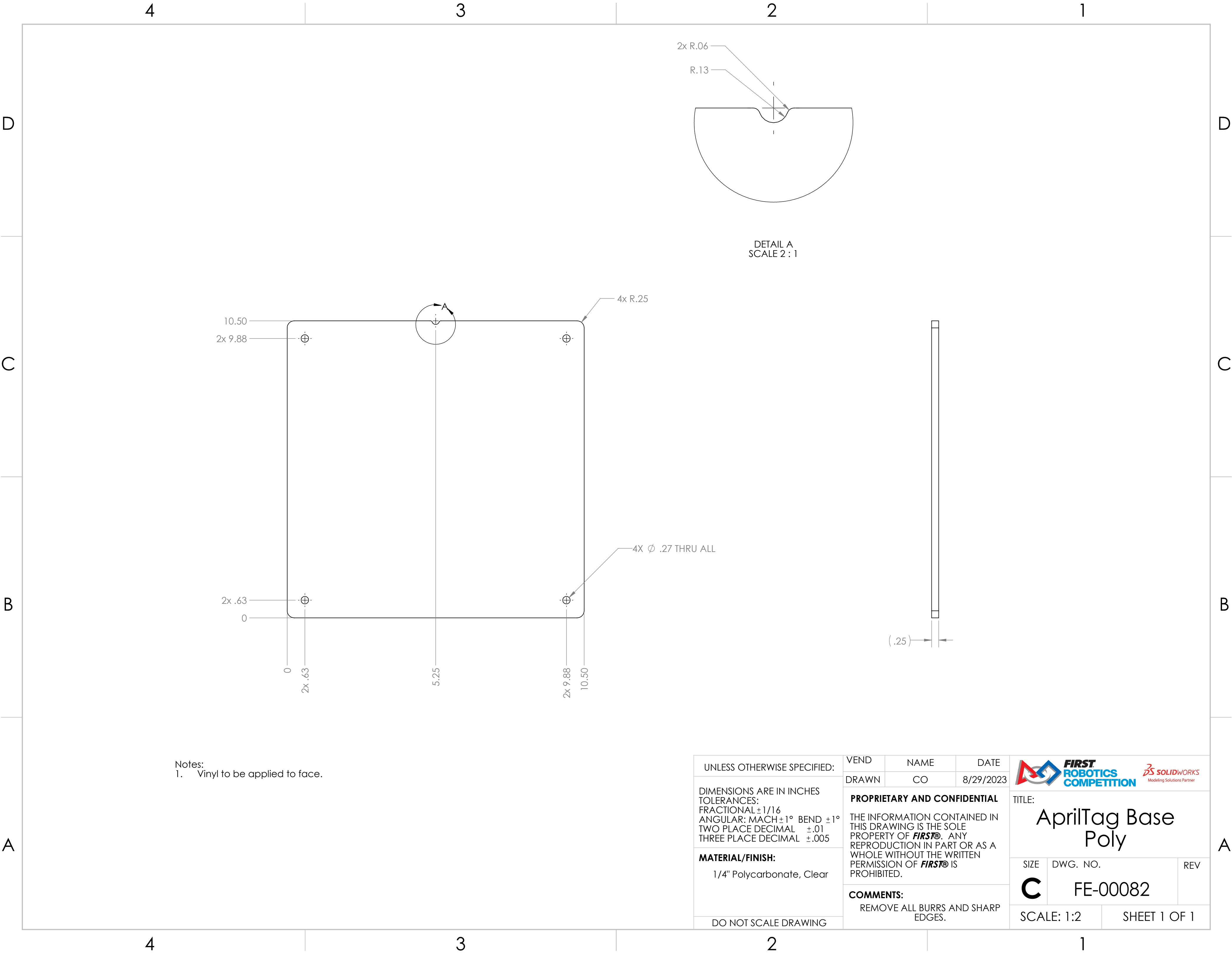


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .02$ THREE PLACE DECIMAL $\pm .010$ MATERIAL/FINISH: 12 ga pre-plated steel DO NOT SCALE DRAWING	BEND	NAME	DATE	<div></div> <div>TITLE: Anchor</div>		
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	FE-00070	
SCALE: 1:4		SHEET 1 OF 1				



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

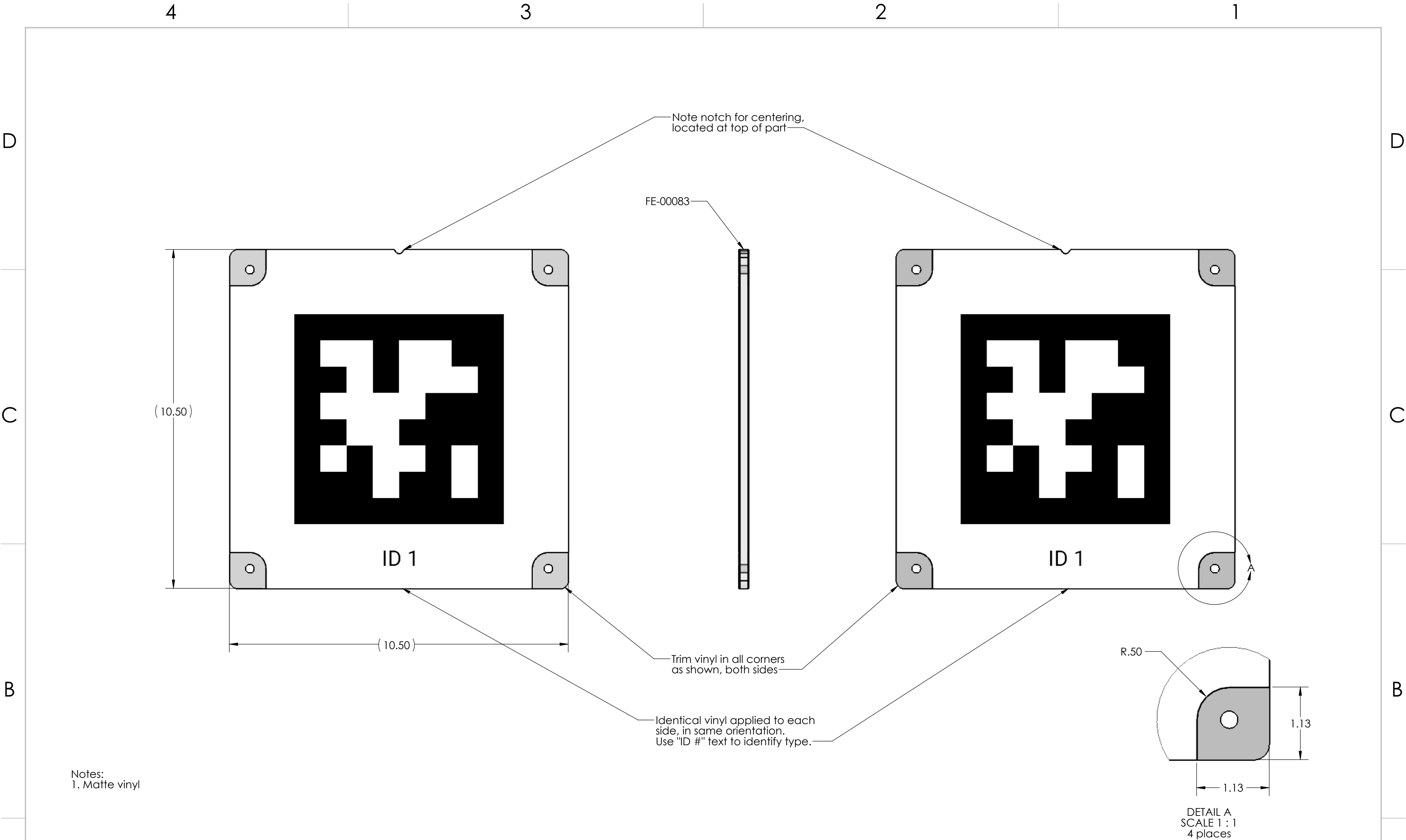


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$ MATERIAL/FINISH: DO NOT SCALE DRAWING	FIELD	NAME	DATE	 	
	DRAWN	NW	10/3/2022		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.				TITLE: <div>FE-00070 w/ hook</div>
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				SIZE DWG. NO. REV <div>C FE-00071</div>
			SCALE: 1:4	SHEET 1 OF 1	



Notes:
1. Vinyl to be applied to face.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ± .01 THREE PLACE DECIMAL ± .005 MATERIAL/FINISH: 1/4" Polycarbonate, Clear DO NOT SCALE DRAWING	VEND	NAME	DATE	<div></div> <div>TITLE: AprilTag Base Poly</div>		
	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.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	FE-00082	
SCALE: 1:2		SHEET 1 OF 1				



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:

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:
Polycarbonate/Vinyl

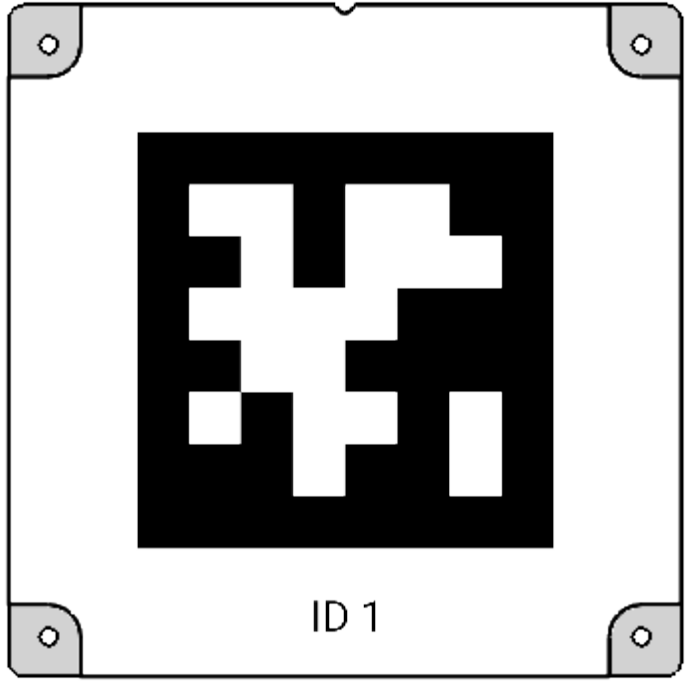
DO NOT SCALE DRAWING

FIELD	NAME	DATE
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.		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		

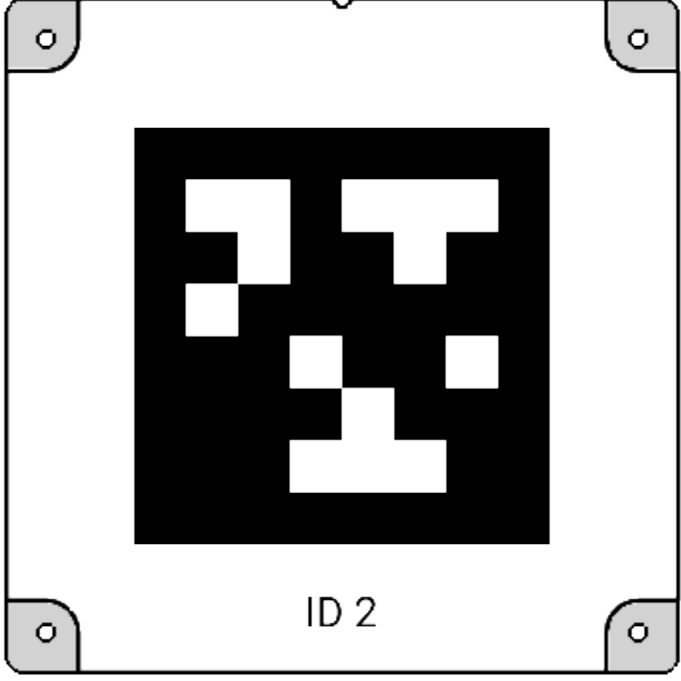


TITLE:
AprilTag

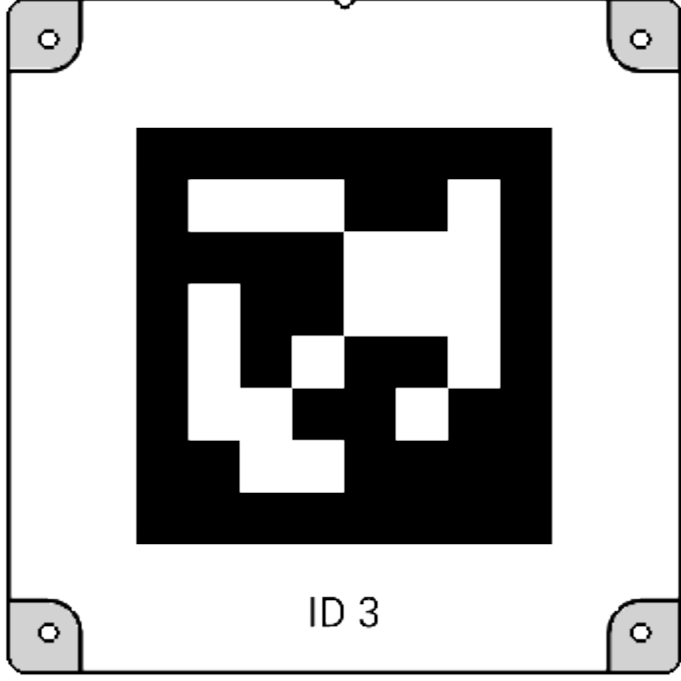
SIZE C	DWG. NO. FE-00083	REV
SCALE: 1:2		SHEET 1 OF 3



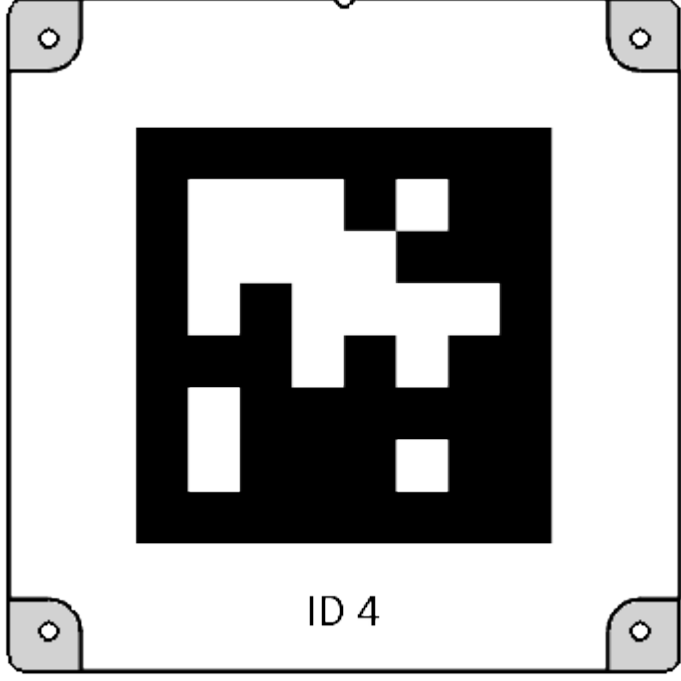
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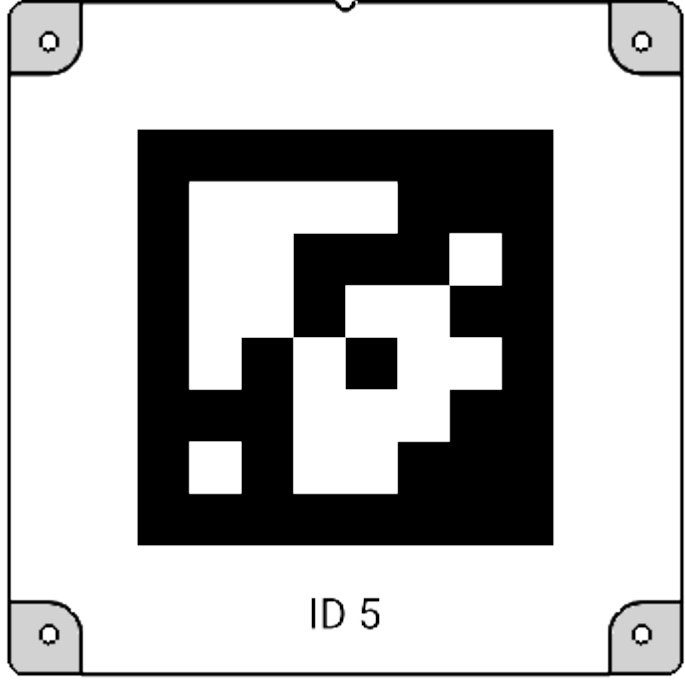
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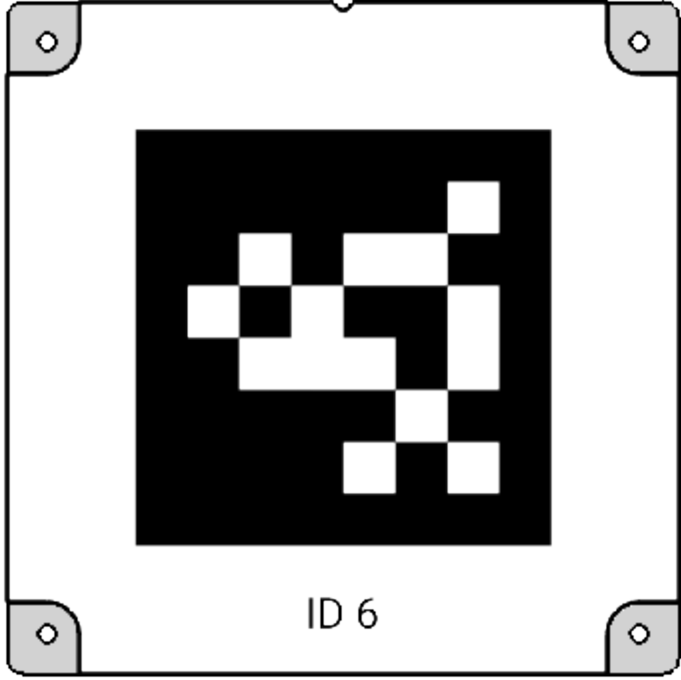
ID 3
FE-00083-ID3



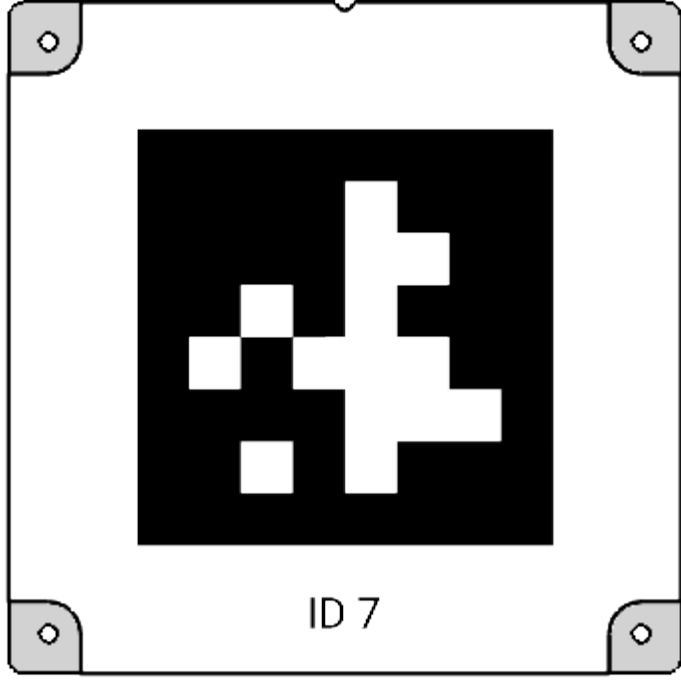
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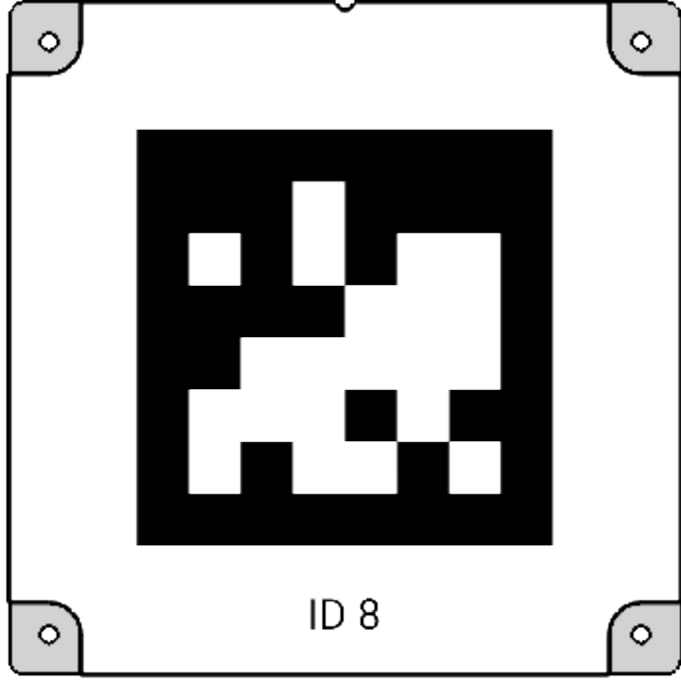
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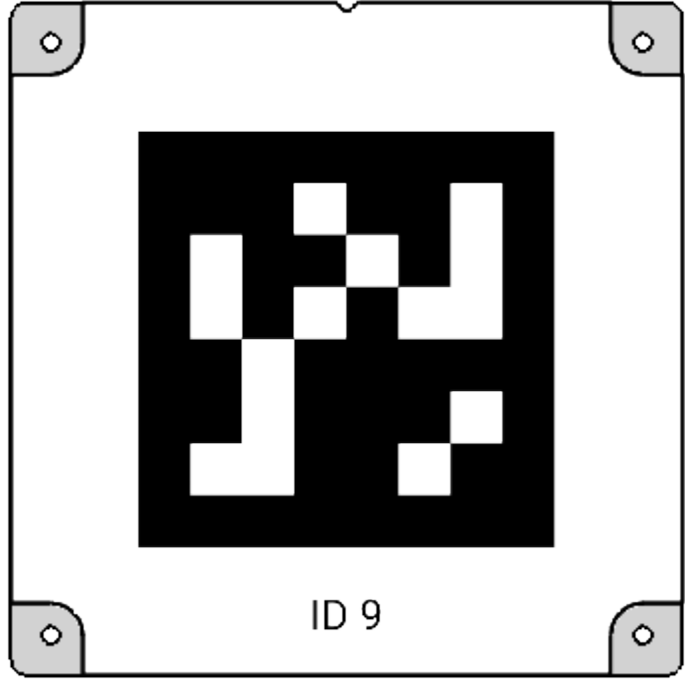
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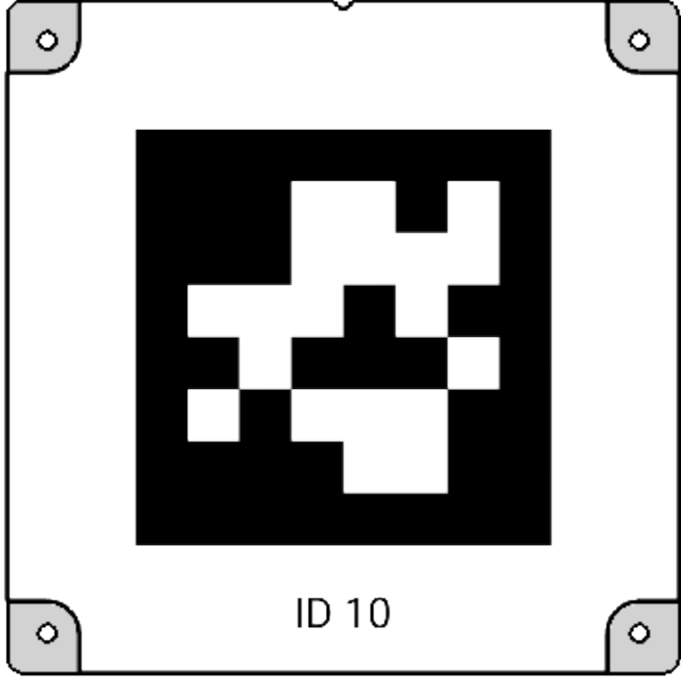
ID 7
FE-00083-ID7





ID 8
FE-00083-ID8

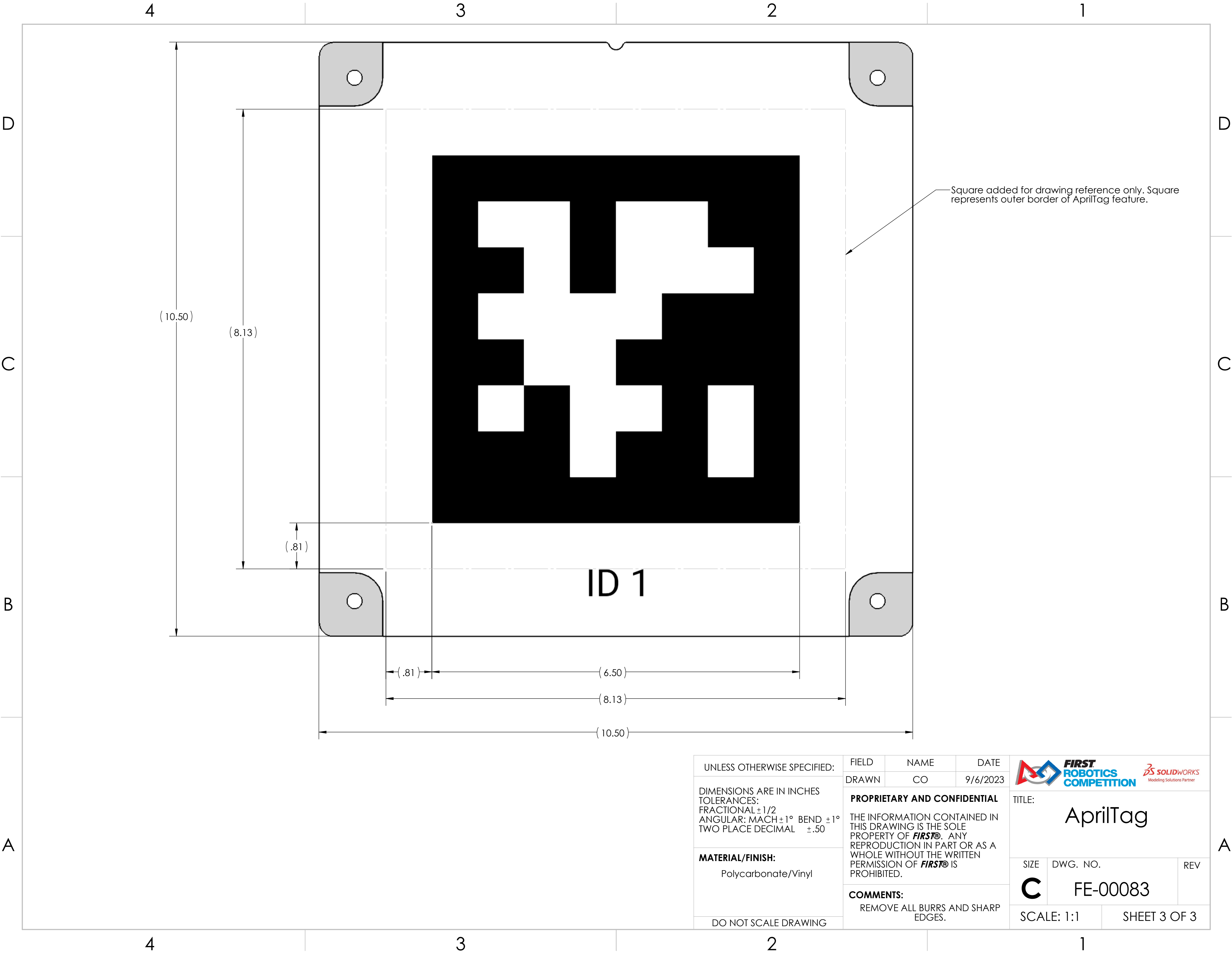


ID 9
FE-00083-ID9



ID 10
FE-00083-ID10

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: Polycarbonate/Vinyl DO NOT SCALE DRAWING	FIELD	NAME	DATE	 	
	DRAWN	CO	9/6/2023		
	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.			AprilTag	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.
			C	FE-00083	
			SCALE: 1:3		SHEET 2 OF 3



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	CO	9/6/2023
MATERIAL/FINISH: Polycarbonate/Vinyl	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: AprilTag	
		SIZE C	DWG. NO. FE-00083
		SCALE: 1:1	REV SHEET 3 OF 3