

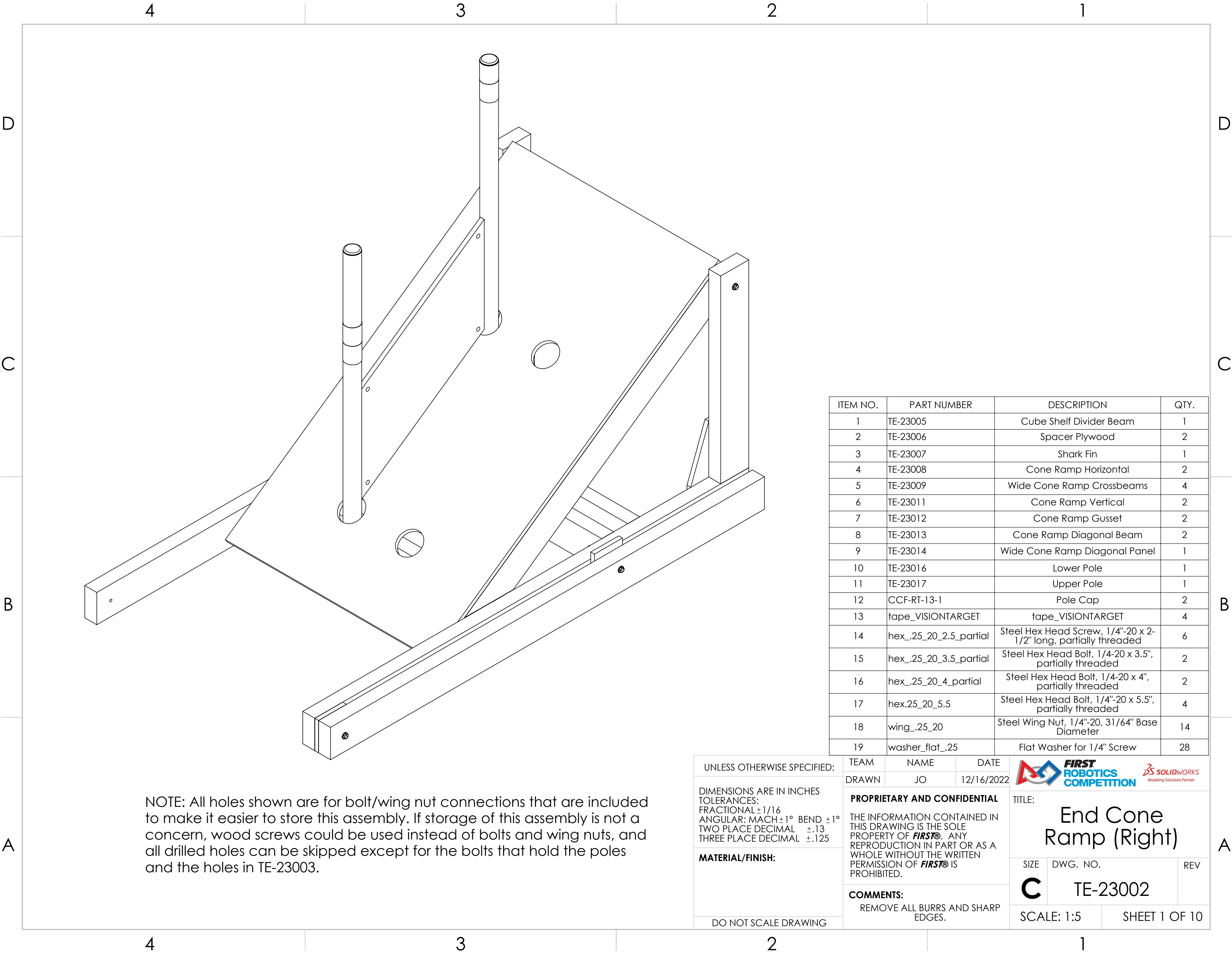
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-23002	End Cone Ramp (Right)	1
2	TE-23003	Middle Cone Ramp	1
3	TE-23004	Cube Shelf	1
4	TE-23006	Spacer Plywood	4
5	hex_.25_20_4_partial	Steel Hex Head Bolt, 1/4-20 x 4", partially threaded	4
6	wing_.25_20	Steel Wing Nut, 1/4"-20, 31/64" Base Diameter	4

Step 1 Build TE-23002, TE-23003 and TE-23004.
Step 2: Bolt together using 1/4-20 x 4" long hex head bolts and wing nuts, using 4 spacers in between each assembly. Washers are optional.

This can be converted to a co-op GRID by swapping out the 1 for another 2.

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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 $\pm .13$ THREE PLACE DECIMAL $\pm .125$		DRAWN	JO	12/21/2022
MATERIAL/FINISH:		PROPRIETARY AND CONFIDENTIAL		
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		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
		TITLE: End GRID		
		SIZE	DWG. NO.	REV
		C	TE-23001	
		SCALE: 1:10 SHEET 1 OF 1		



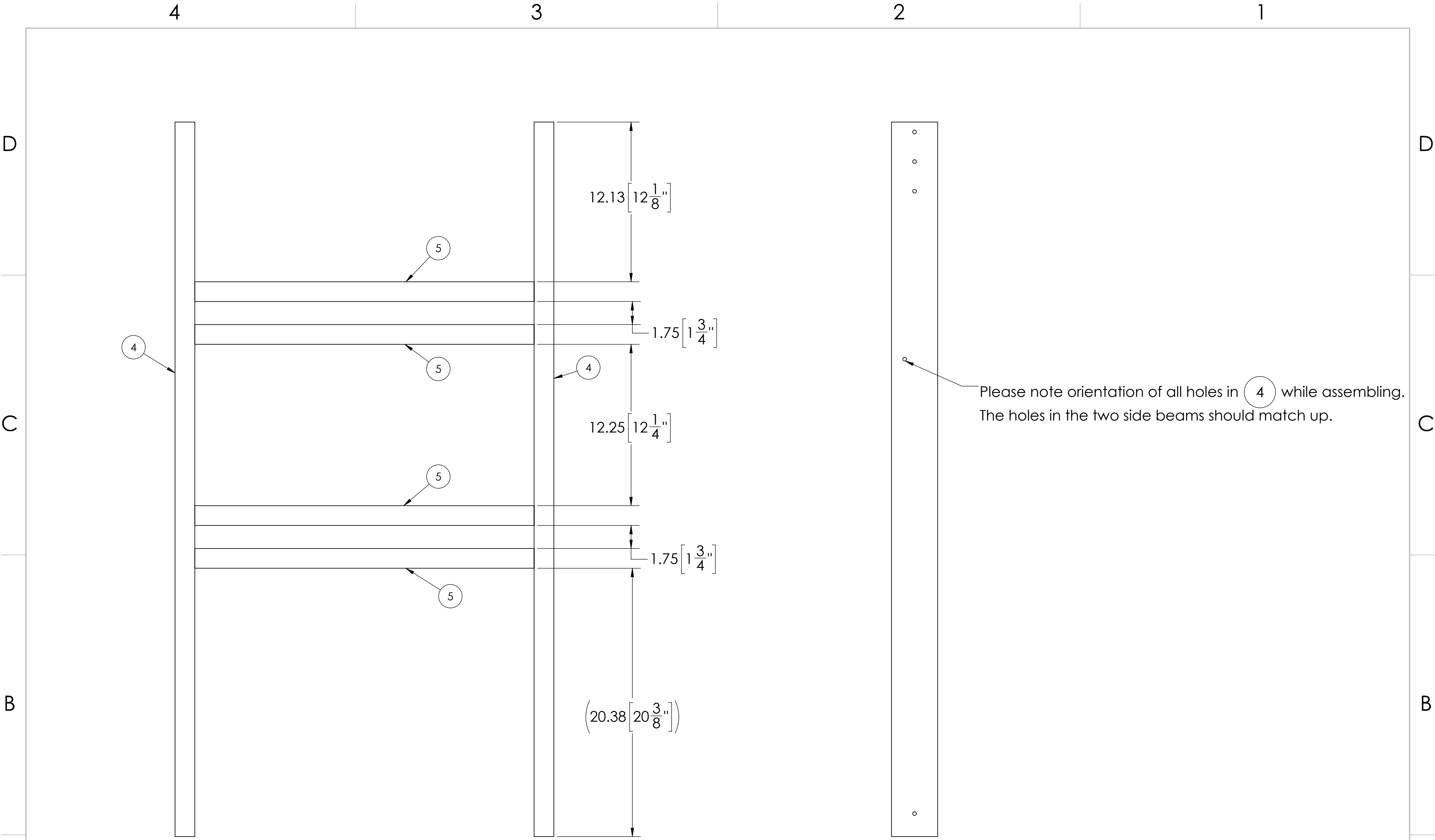


NOTE: All holes shown are for bolt/wing nut connections that are included to make it easier to store this assembly. If storage of this assembly is not a concern, wood screws could be used instead of bolts and wing nuts, and all drilled holes can be skipped except for the bolts that hold the poles and the holes in TE-23003.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-23005	Cube Shelf Divider Beam	1
2	TE-23006	Spacer Plywood	2
3	TE-23007	Shark Fin	1
4	TE-23008	Cone Ramp Horizontal	2
5	TE-23009	Wide Cone Ramp Crossbeams	4
6	TE-23011	Cone Ramp Vertical	2
7	TE-23012	Cone Ramp Gusset	2
8	TE-23013	Cone Ramp Diagonal Beam	2
9	TE-23014	Wide Cone Ramp Diagonal Panel	1
10	TE-23016	Lower Pole	1
11	TE-23017	Upper Pole	1
12	CCF-RT-13-1	Pole Cap	2
13	tape_VISIONTARGET	tape_VISIONTARGET	4
14	hex_.25_20_2.5_partial	Steel Hex Head Screw, 1/4"-20 x 2-1/2" long, partially threaded	6
15	hex_.25_20_3.5_partial	Steel Hex Head Bolt, 1/4-20 x 3.5", partially threaded	2
16	hex_.25_20_4_partial	Steel Hex Head Bolt, 1/4-20 x 4", partially threaded	2
17	hex.25_20_5.5	Steel Hex Head Bolt, 1/4"-20 x 5.5", partially threaded	4
18	wing_.25_20	Steel Wing Nut, 1/4"-20, 31/64" Base Diameter	14
19	washer_flat_.25	Flat Washer for 1/4" Screw	28

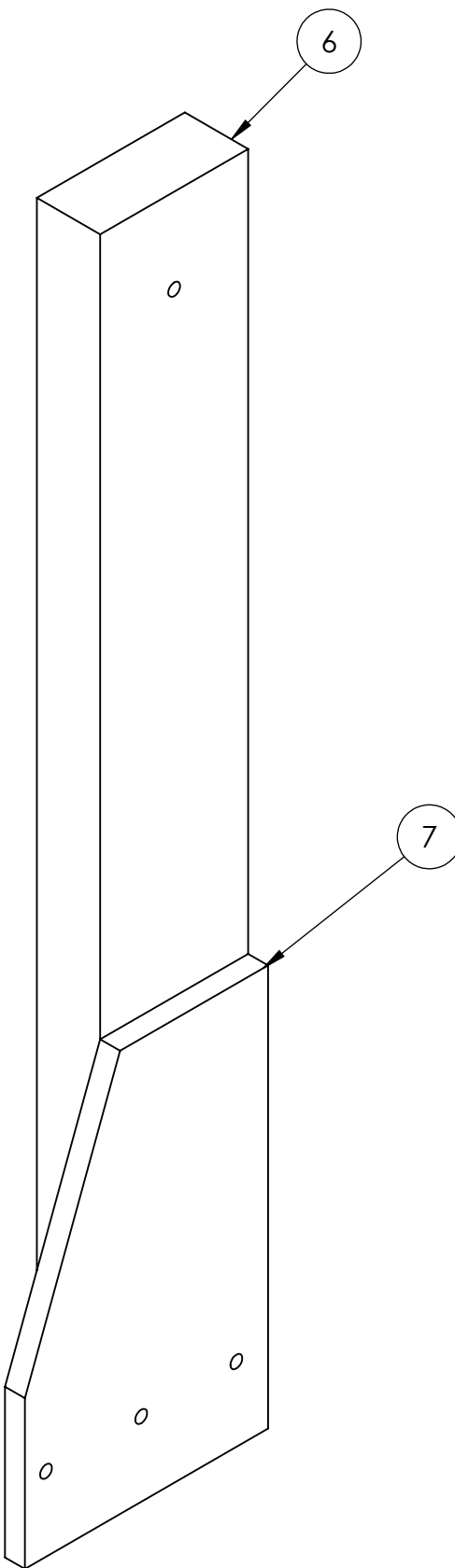
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DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$		DRAWN	JO	12/16/2022
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		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
		TITLE: End Cone Ramp (Right)		
		SIZE	DWG. NO.	REV
		C	TE-23002	
		SCALE: 1:5		SHEET 1 OF 10



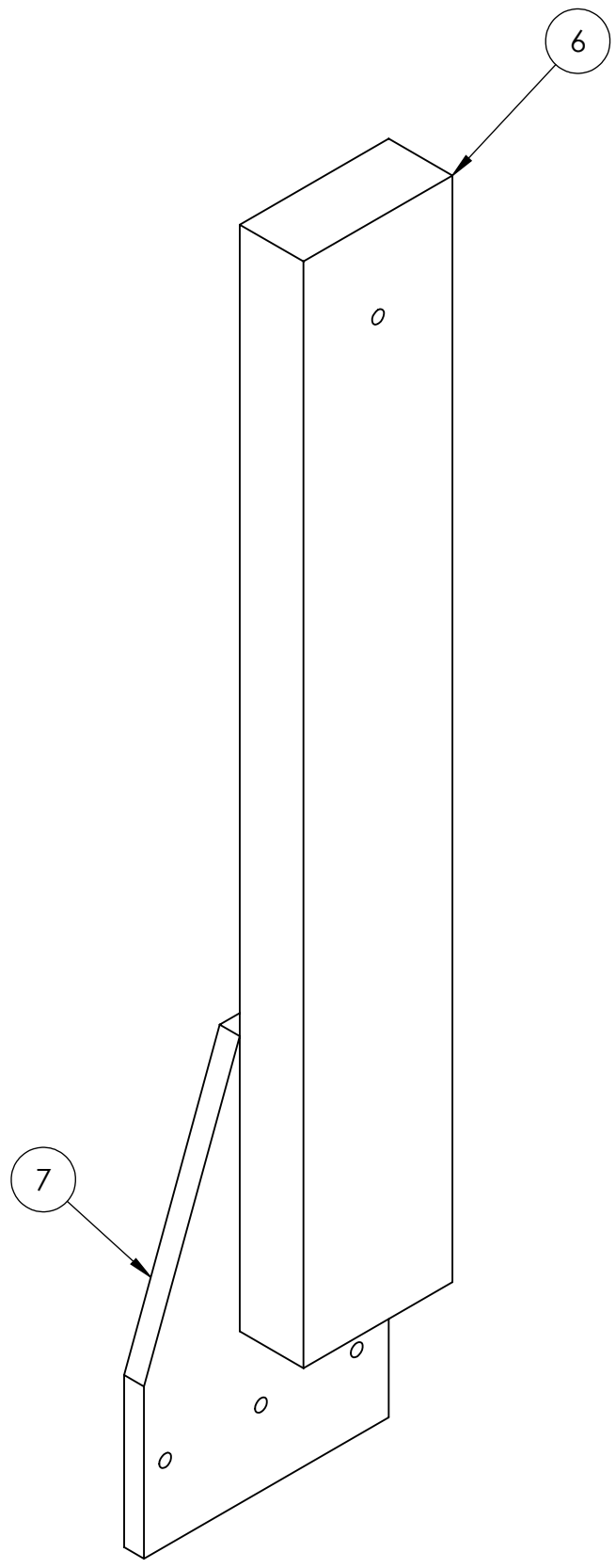


Step 1: Assemble floor frame of Cone Ramp with #8 wood screws as shown.

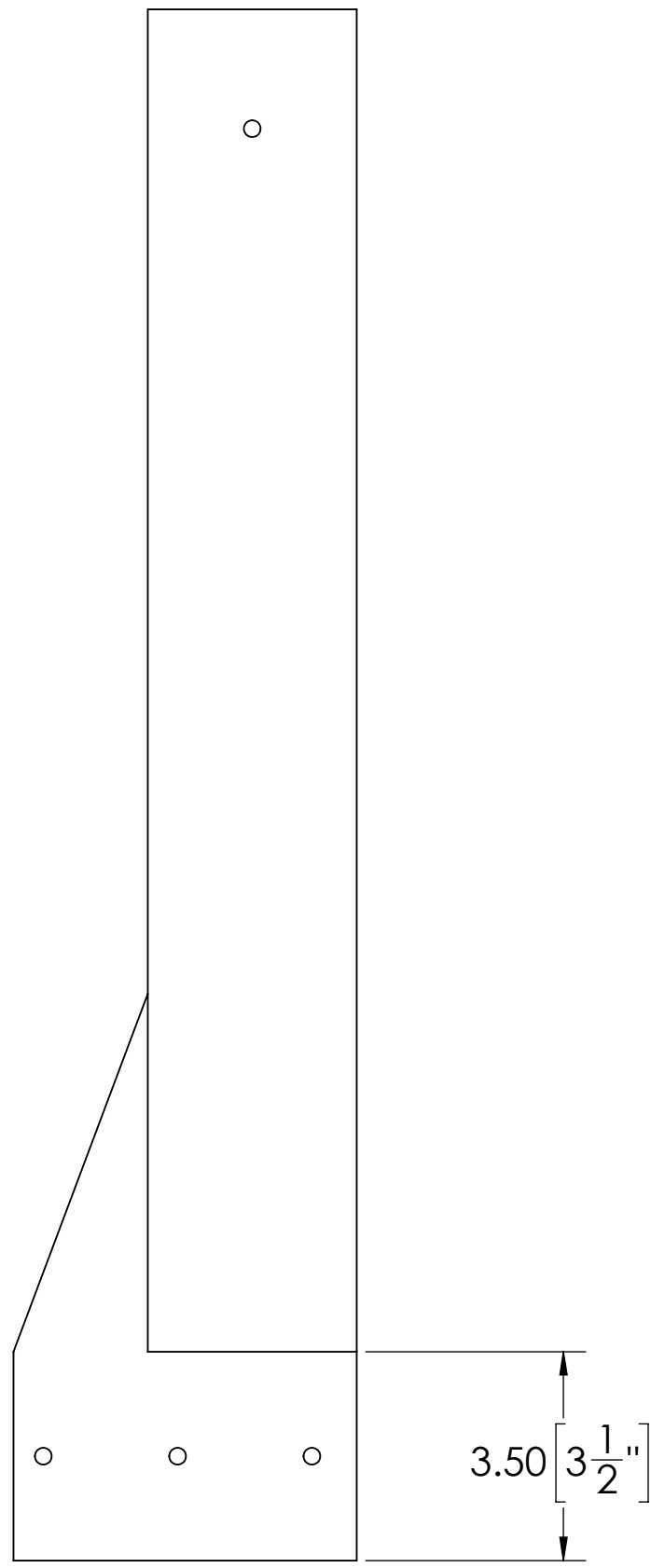
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	DRAWN	JO	12/16/2022		
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SIZE C		DWG. NO. TE-23002		REV	
SCALE: 1:5			SHEET 2 OF 10		





Left hand



Right hand



Step 2: Assemble 2x Cone Ramp Vertical assemblies using #8 wood screws as shown. Make a "left hand" and "right hand" version as shown.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div><div></div><div>TITLE: <h1>End Cone Ramp (Right)</h1></div><div><div>SIZE</div><div>DWG. NO.</div><div>REV</div></div><div><div>C</div><div>TE-23002</div></div><div><div>SCALE: 1:3</div><div>SHEET 3 OF 10</div></div></div>					
	DRAWN	JO	12/16/2022						
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	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.								

4

3

2

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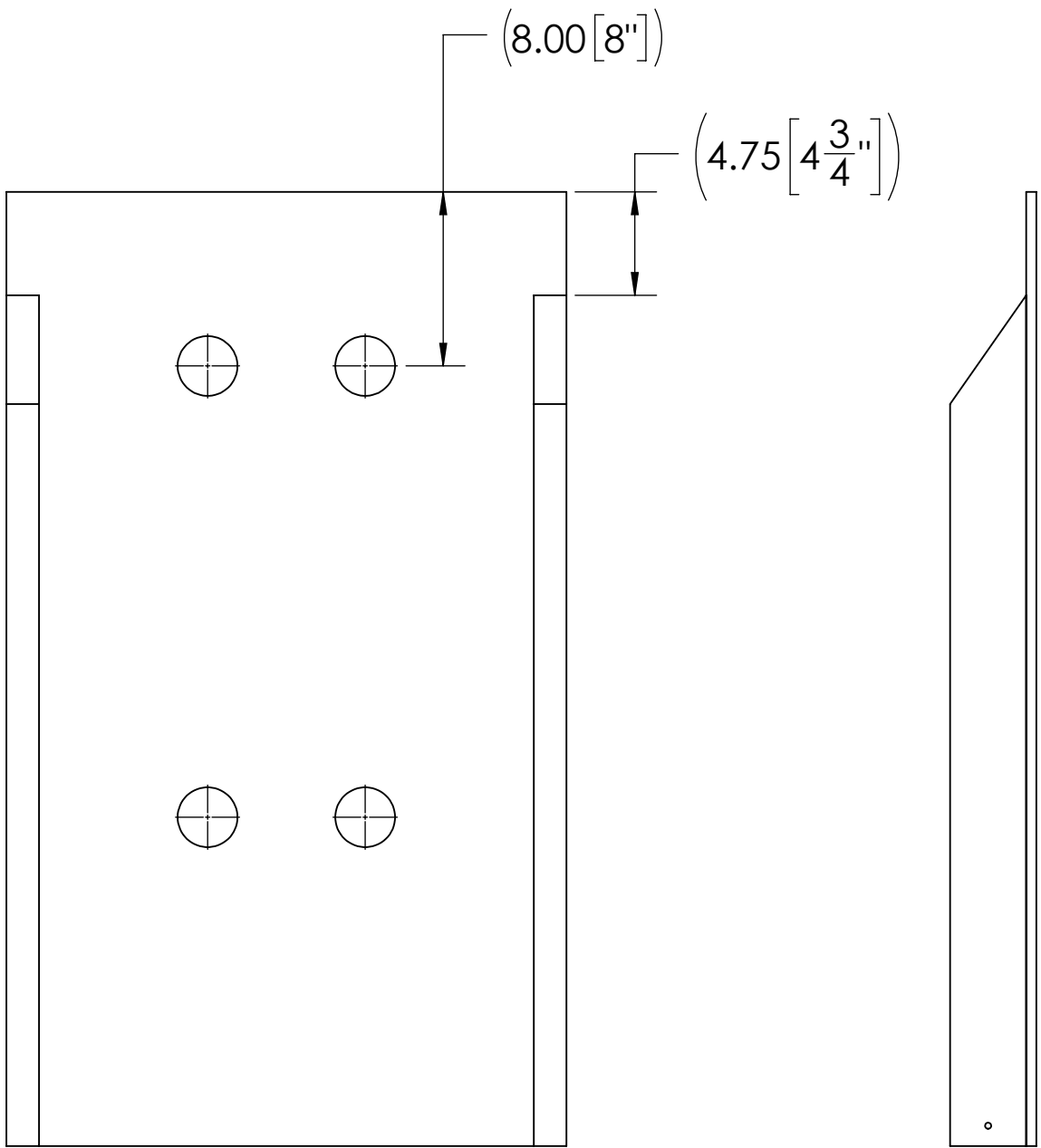
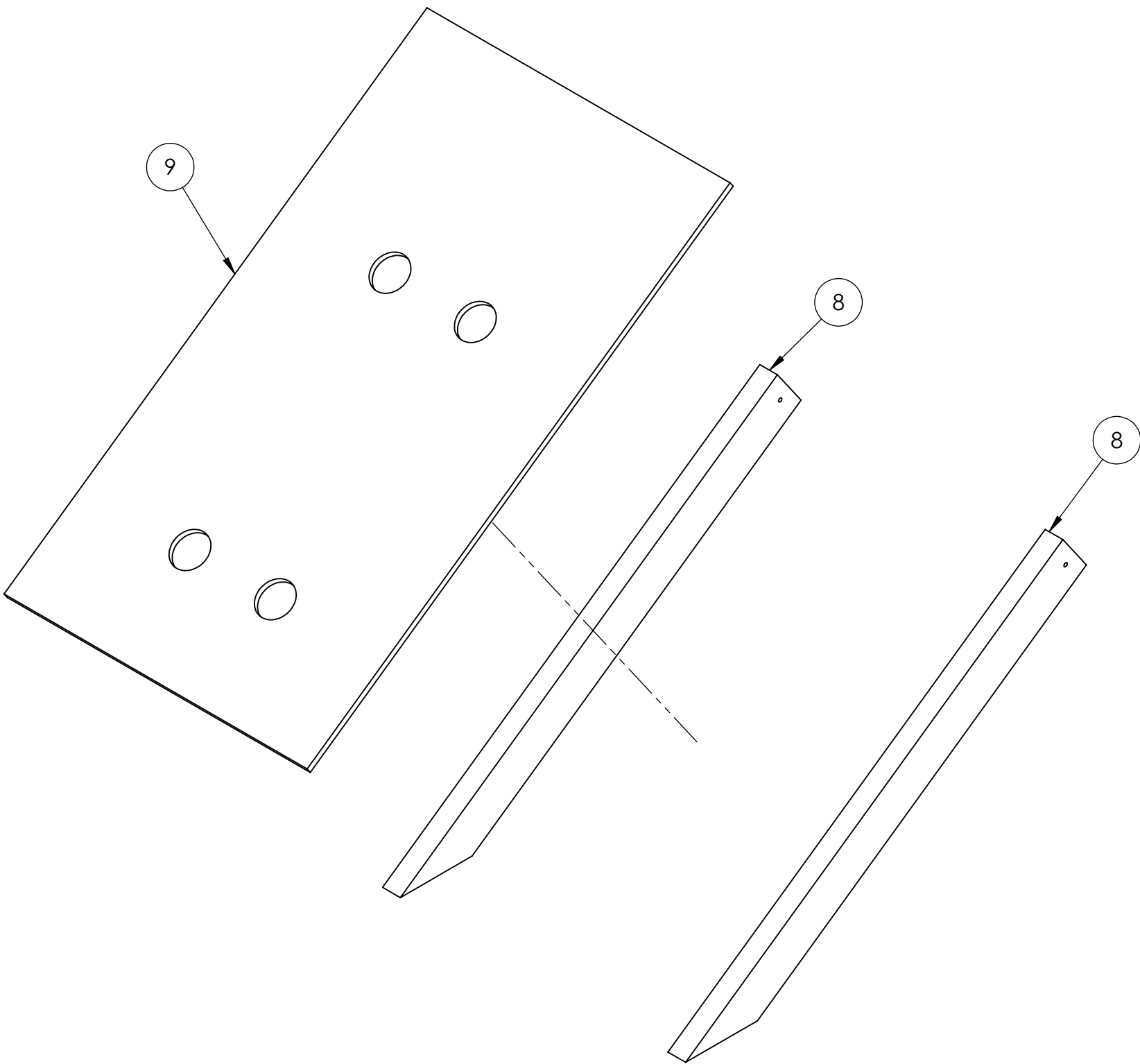
C

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A



Step 3: Assemble Cone Ramp Diagonal Assembly with #8 wood screws as shown.
Note orientation of holes while assembling.

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .13$
THREE PLACE DECIMAL $\pm .125$

MATERIAL/FINISH:

DO NOT SCALE DRAWING

TEAM

DRAWN

NAME

JO

DATE

12/16/2022

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COMMENTS:

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EDGES.



**FIRST
ROBOTICS
COMPETITION**



TITLE:

End Cone
Ramp (Right)

SIZE

C

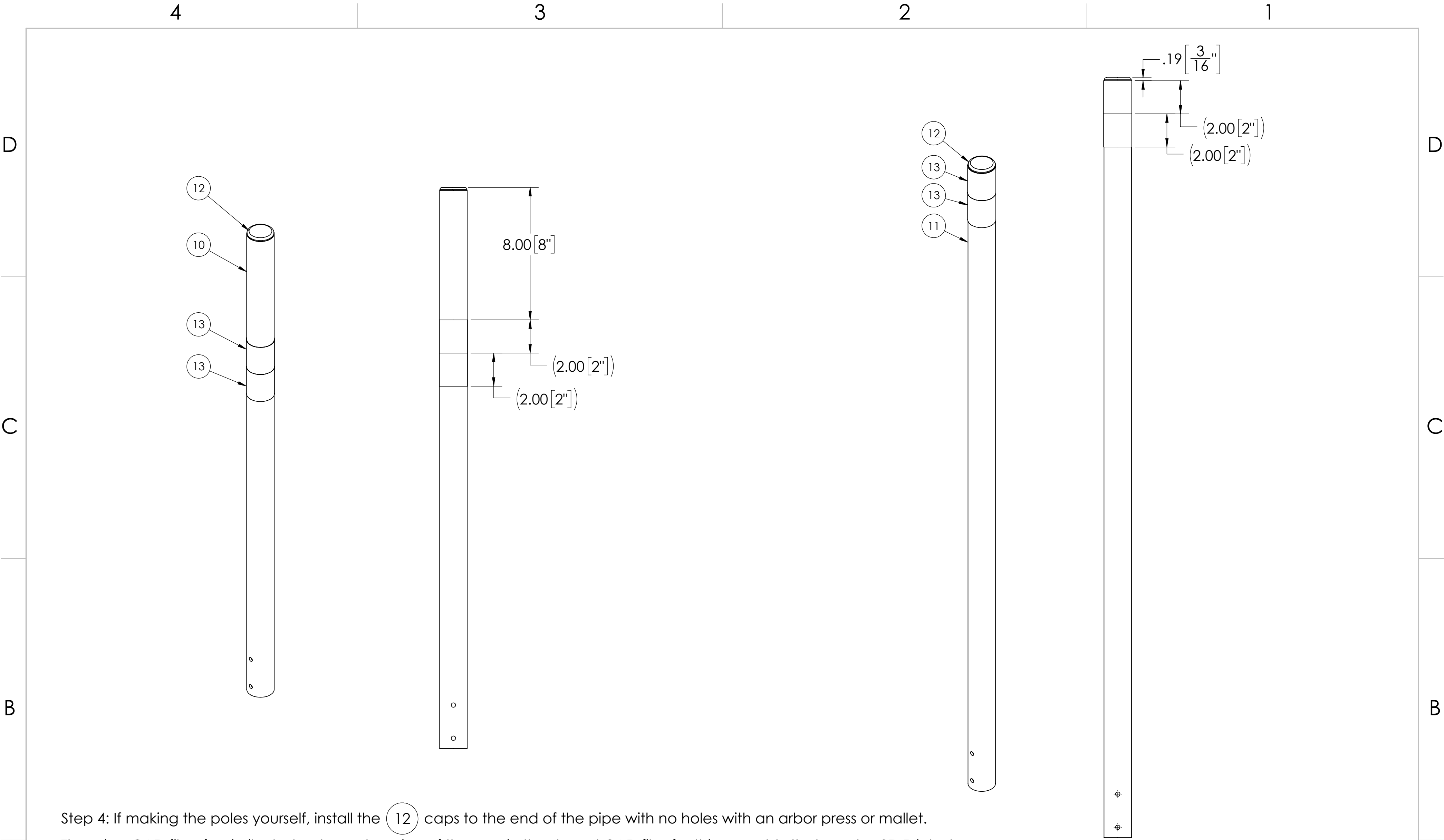
DWG. NO.

TE-23002

REV

SCALE: 1:8



SHEET 4 OF 10

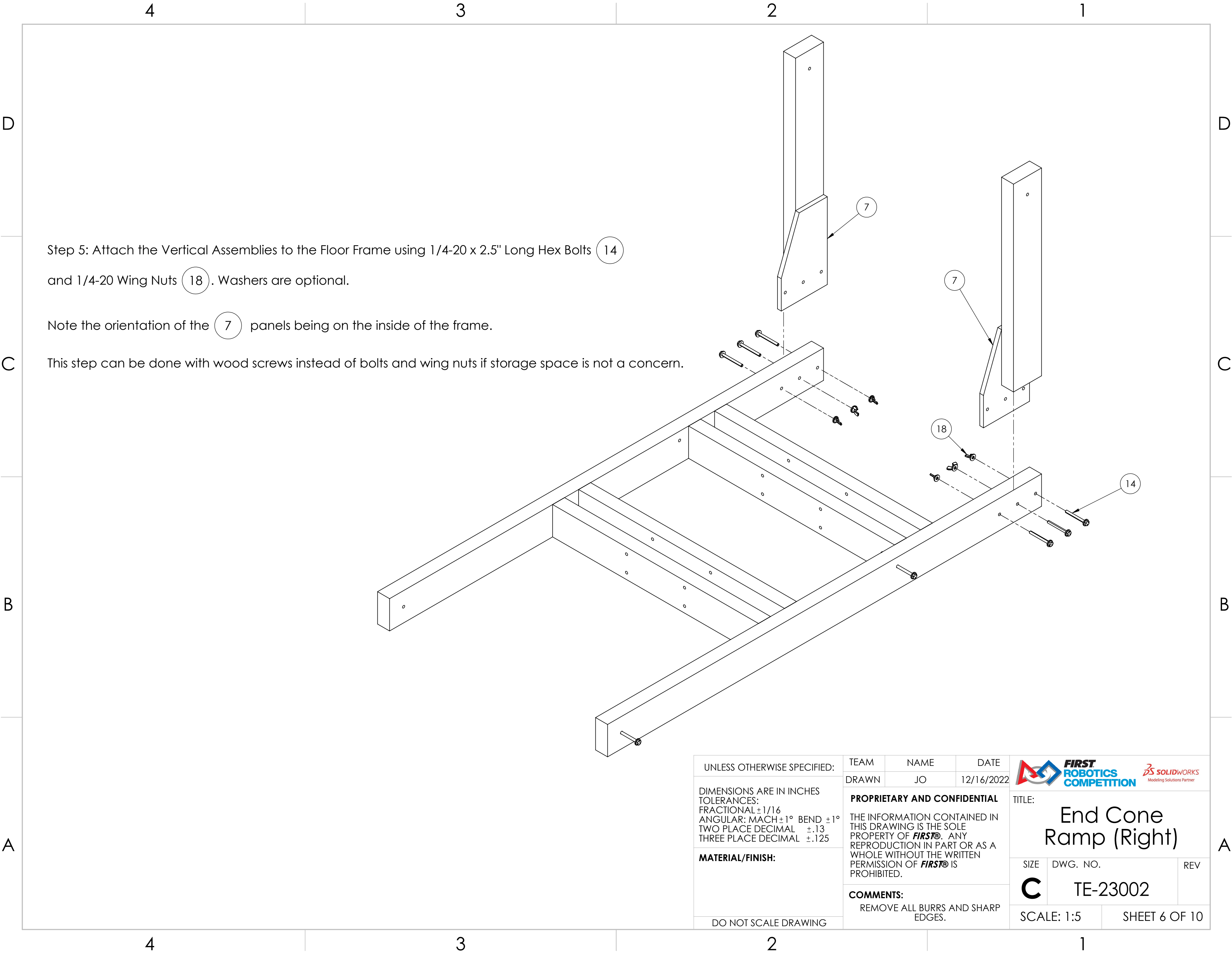


Step 4: If making the poles yourself, install the (12) caps to the end of the pipe with no holes with an arbor press or mallet.
There is a CAD file of a similar but not exact version of the cap in the shared CAD files for this assembly that can be 3D Printed.

Apply 2 pieces of (13) vision tape per pole as shown.

These poles with caps installed can be purchased from AndyMark.
These do not include the drilled holes or applied vision tape.



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	DRAWN	JO	12/16/2022		
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SIZE		DWG. NO.		REV	
C		TE-23002			
SCALE: 1:4			SHEET 5 OF 10		

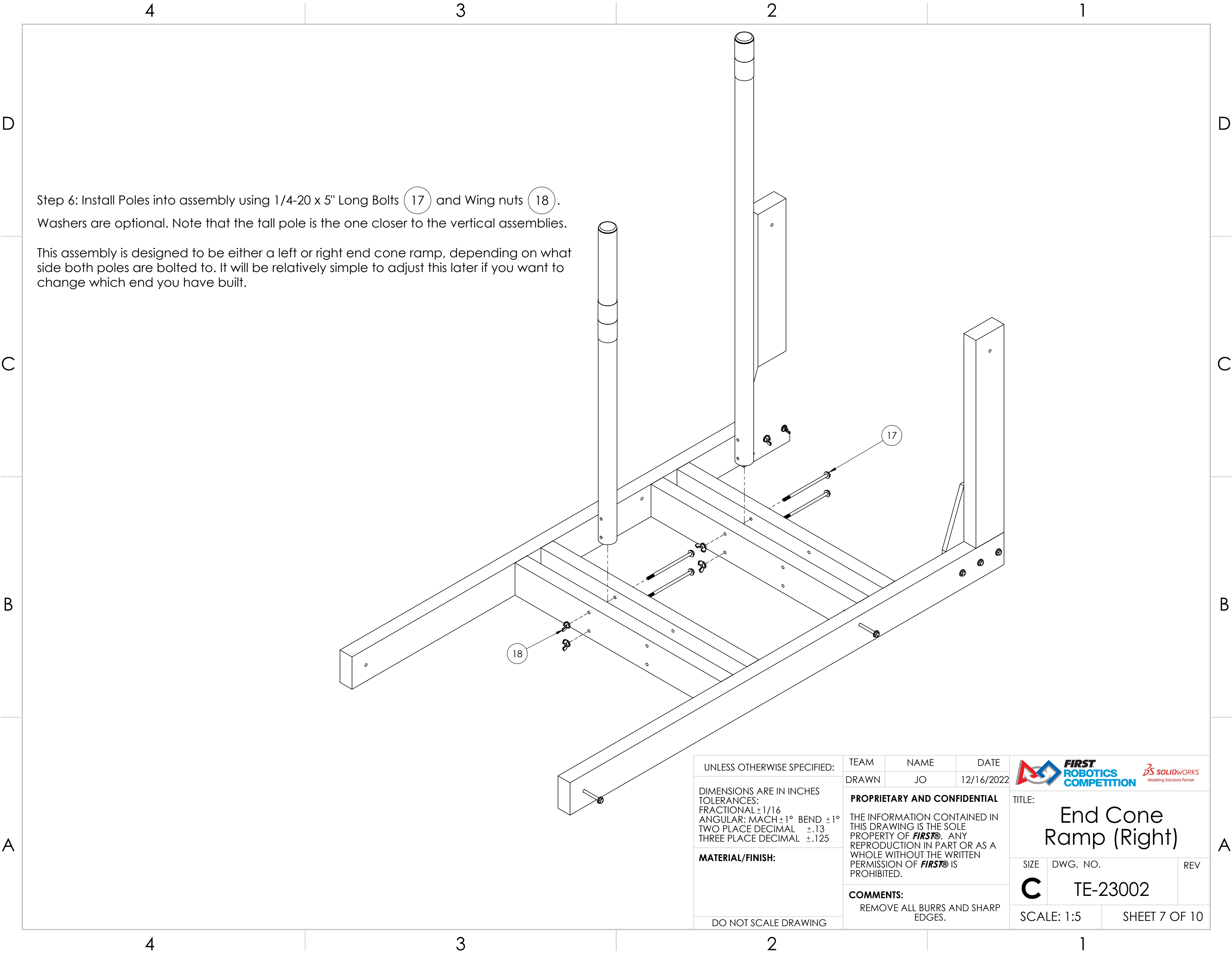


Step 5: Attach the Vertical Assemblies to the Floor Frame using 1/4-20 x 2.5" Long Hex Bolts (14) and 1/4-20 Wing Nuts (18). Washers are optional.

Note the orientation of the (7) panels being on the inside of the frame.

This step can be done with wood screws instead of bolts and wing nuts if storage space is not a concern.

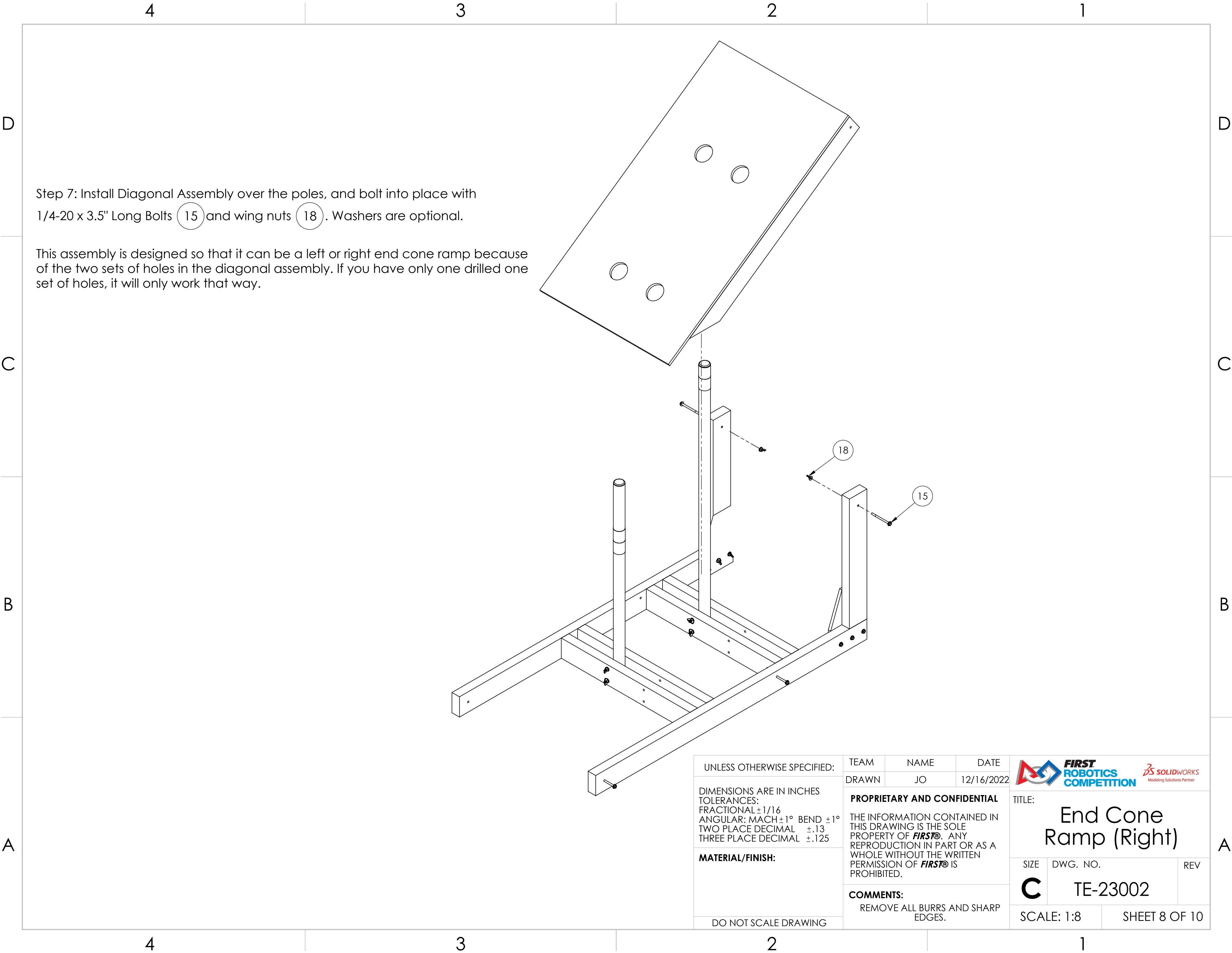
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	JO	12/16/2022		
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	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. TE-23002
		SCALE: 1:5		SHEET 6 OF 10	



Step 6: Install Poles into assembly using 1/4-20 x 5" Long Bolts (17) and Wing nuts (18). Washers are optional. Note that the tall pole is the one closer to the vertical assemblies.

This assembly is designed to be either a left or right end cone ramp, depending on what side both poles are bolted to. It will be relatively simple to adjust this later if you want to change which end you have built.

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		TITLE: End Cone Ramp (Right)		
		SIZE C	DWG. NO. TE-23002	REV
		SCALE: 1:5 SHEET 7 OF 10		

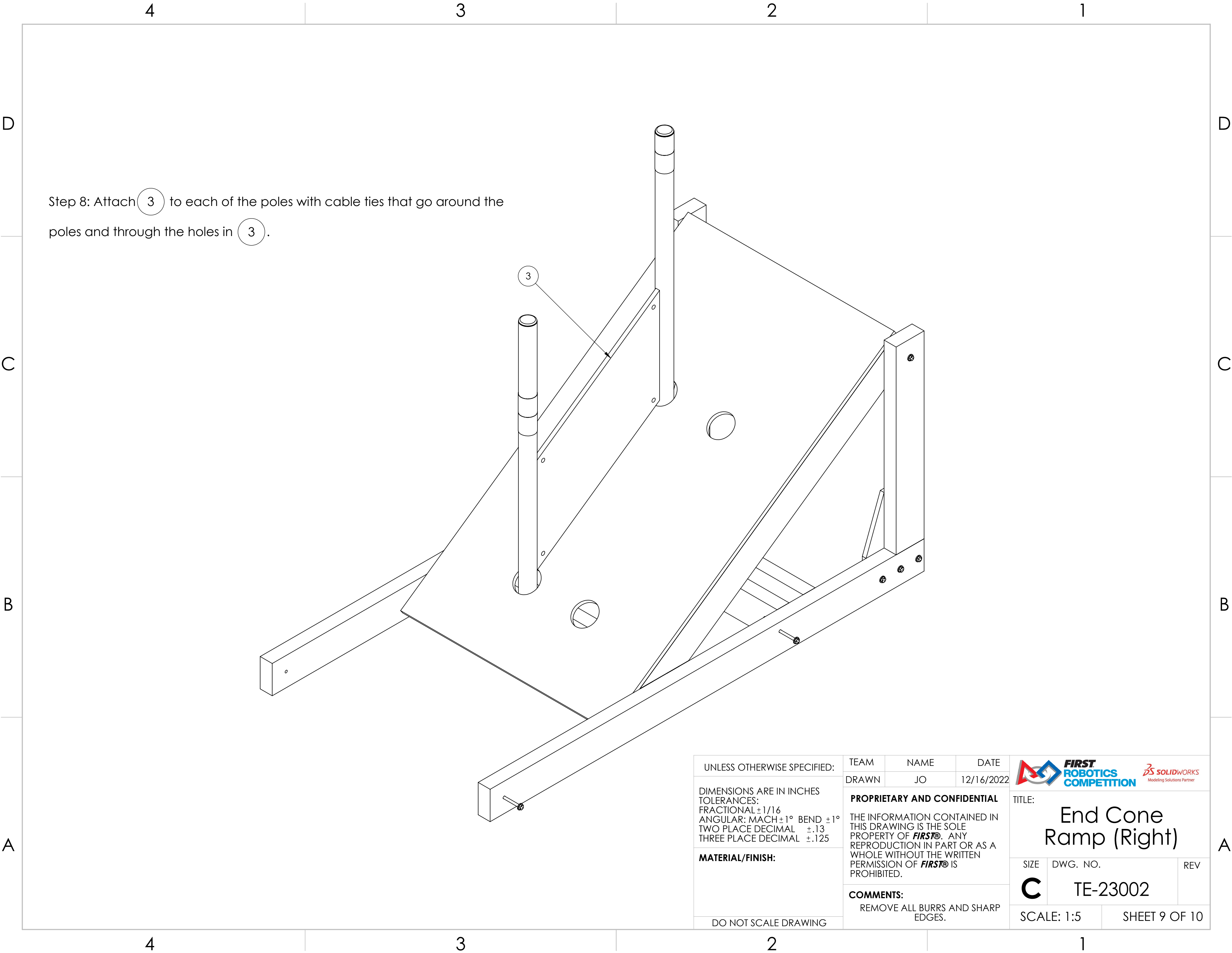


Step 7: Install Diagonal Assembly over the poles, and bolt into place with 1/4-20 x 3.5" Long Bolts (15) and wing nuts (18). Washers are optional.

This assembly is designed so that it can be a left or right end cone ramp because of the two sets of holes in the diagonal assembly. If you have only one drilled one set of holes, it will only work that way.



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DO NOT SCALE DRAWING				
		TITLE: End Cone Ramp (Right)		
		SIZE C	DWG. NO. TE-23002	REV
		SCALE: 1:8		SHEET 8 OF 10





Step 8: Attach (3) to each of the poles with cable ties that go around the poles and through the holes in (3).

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MATERIAL/FINISH:				
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TITLE:
End Cone Ramp (Right)

SIZE	DWG. NO.	REV
C	TE-23002	
SCALE: 1:5		SHEET 9 OF 10

D

C

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D

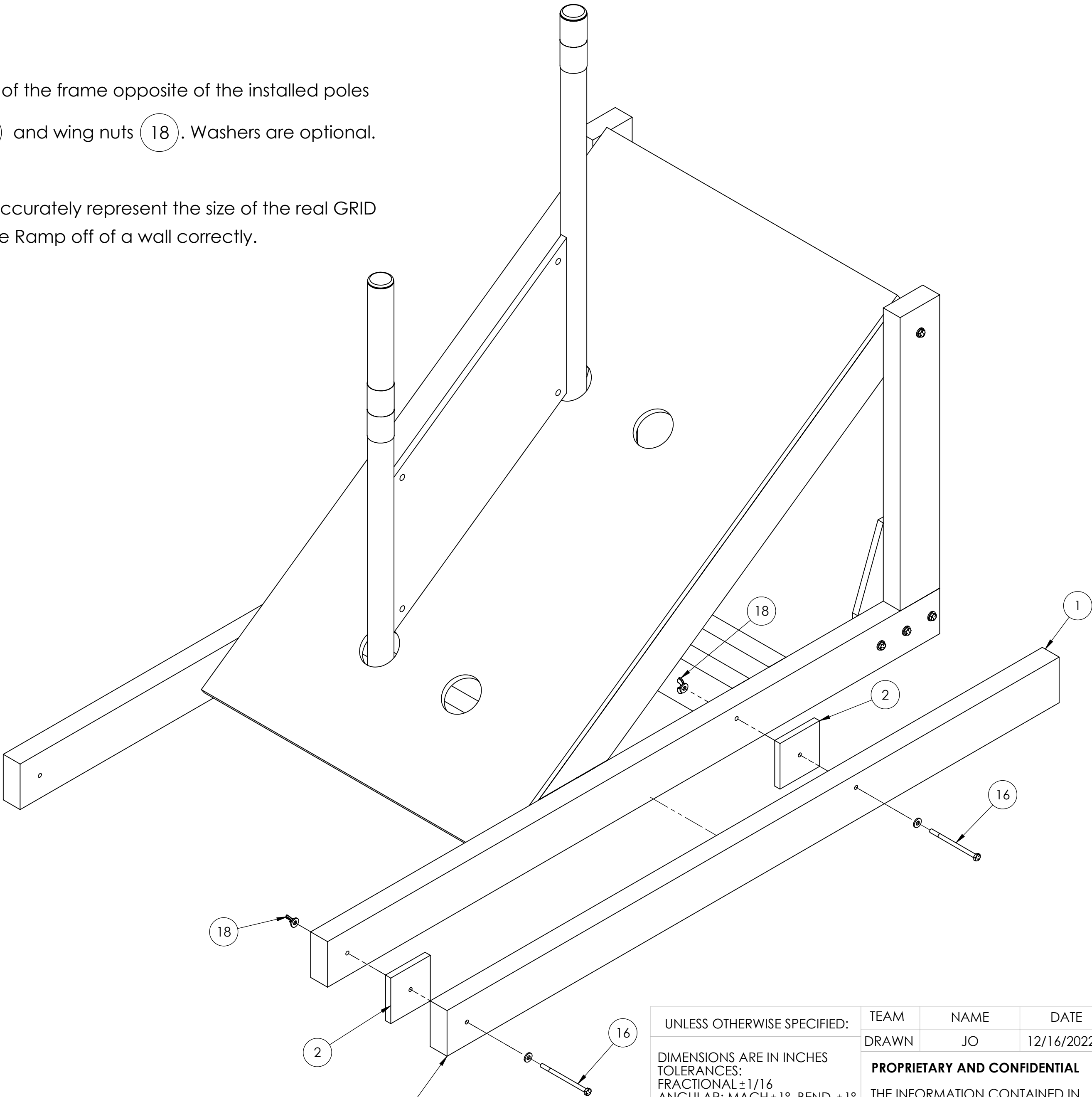
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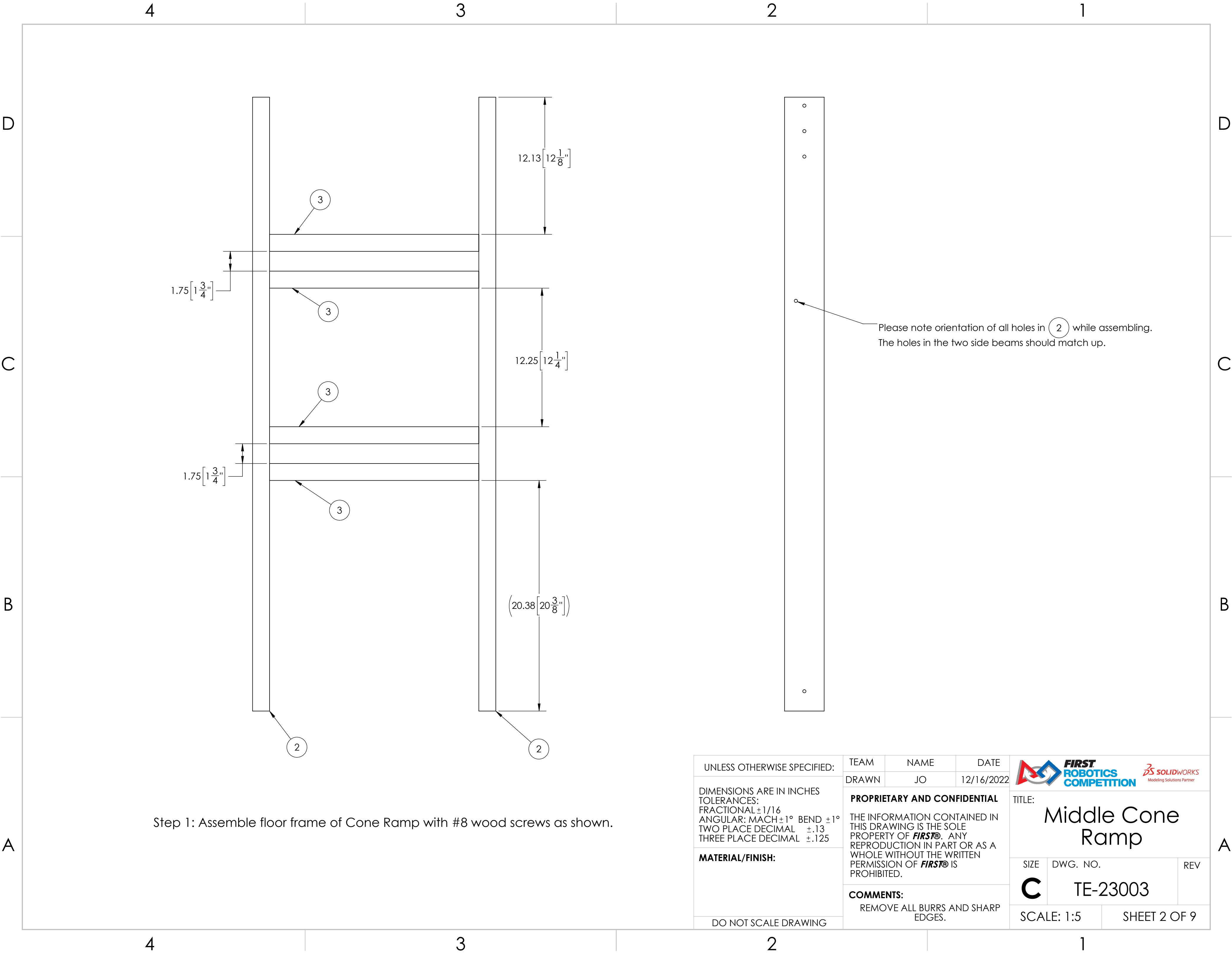
Step 9: Bolt (1) onto the side of the frame opposite of the installed poles using 1/4-20 x 4" long bolts (16) and wing nuts (18). Washers are optional.

(2) spacers can be used to accurately represent the size of the real GRID frame and locate the End Cone Ramp off of a wall correctly.



In this example, the poles are on the left side of the assembly so the (1) beam should be bolted on to the right side of the frame.

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	DRAWN	JO	12/16/2022		
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SCALE: 1:5		SHEET 10 OF 10			



Step 1: Assemble floor frame of Cone Ramp with #8 wood screws as shown.

D

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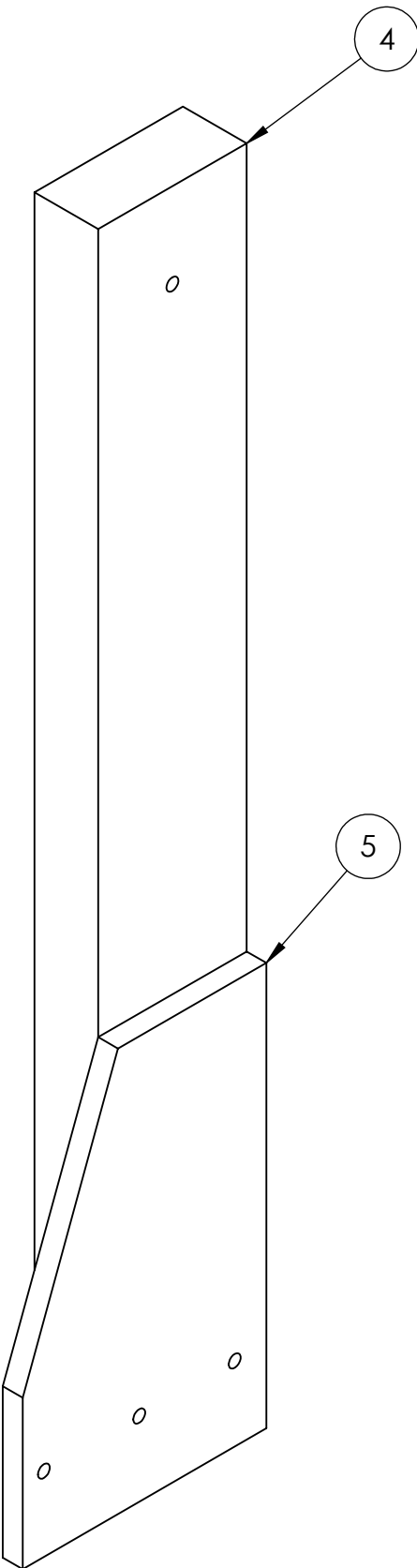
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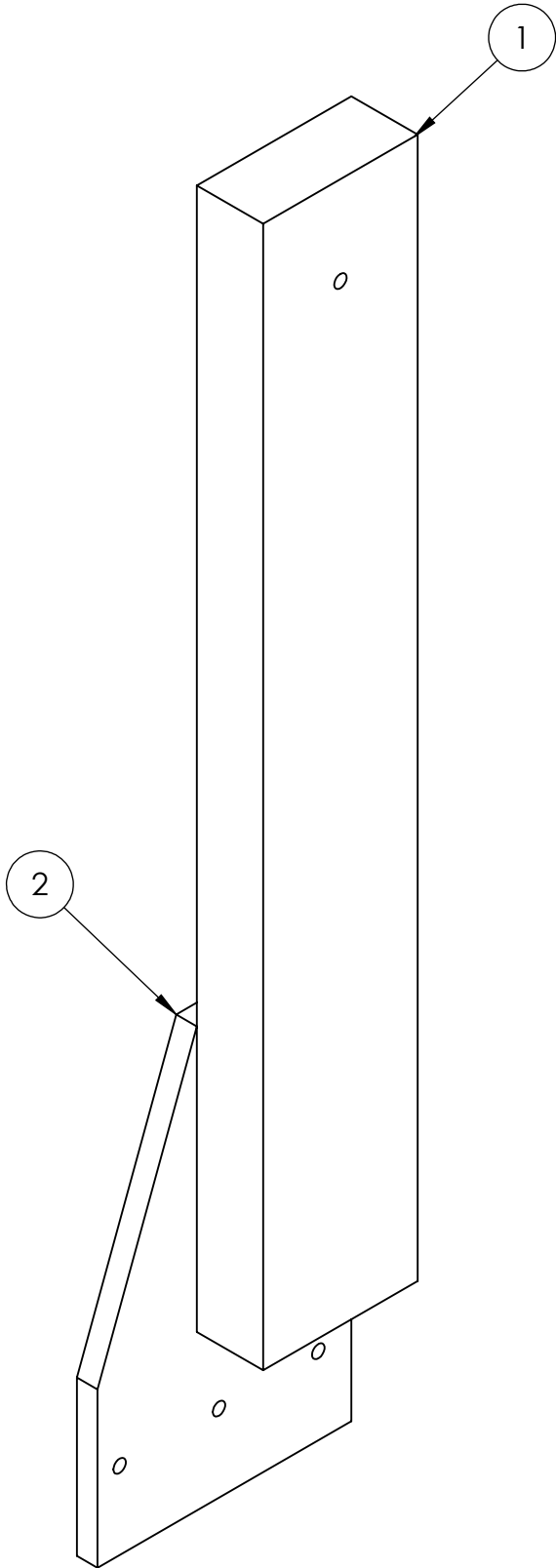
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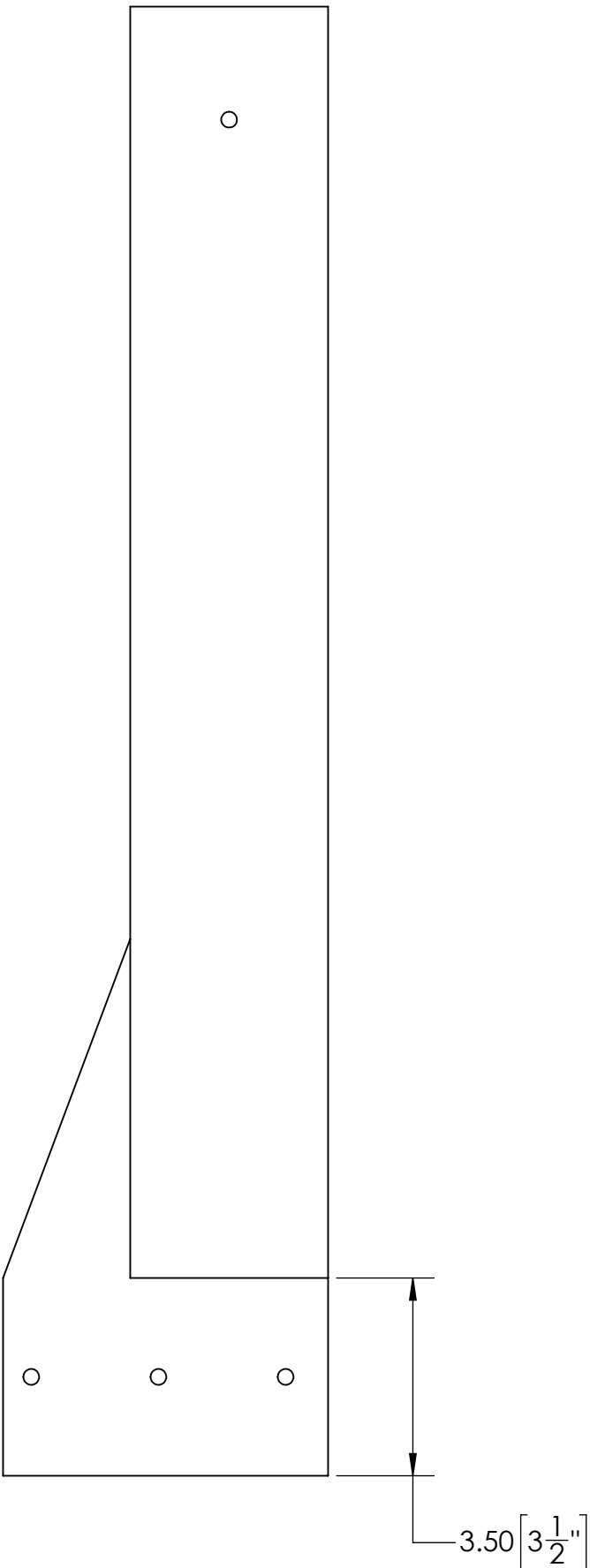
A





Left hand

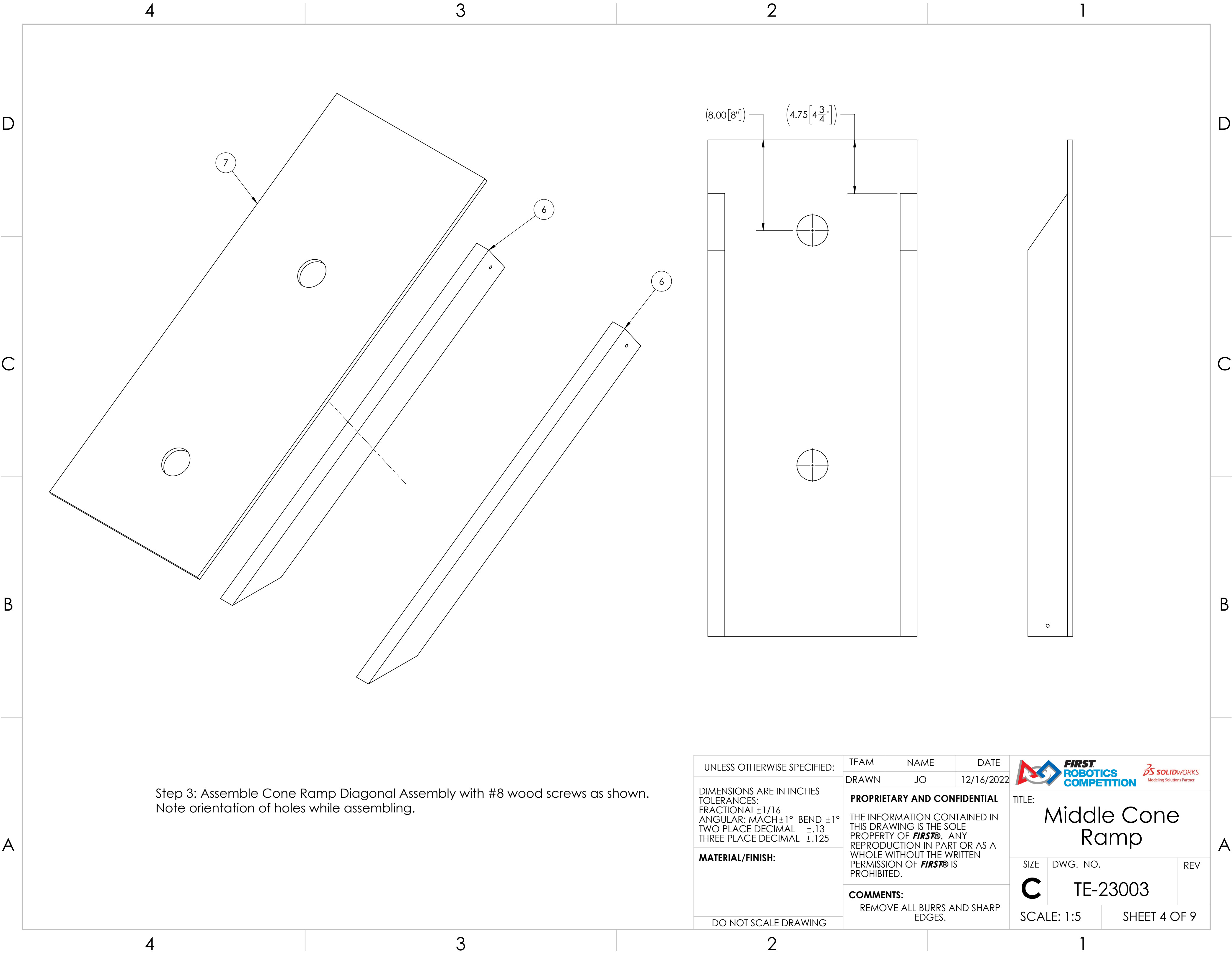


Right hand





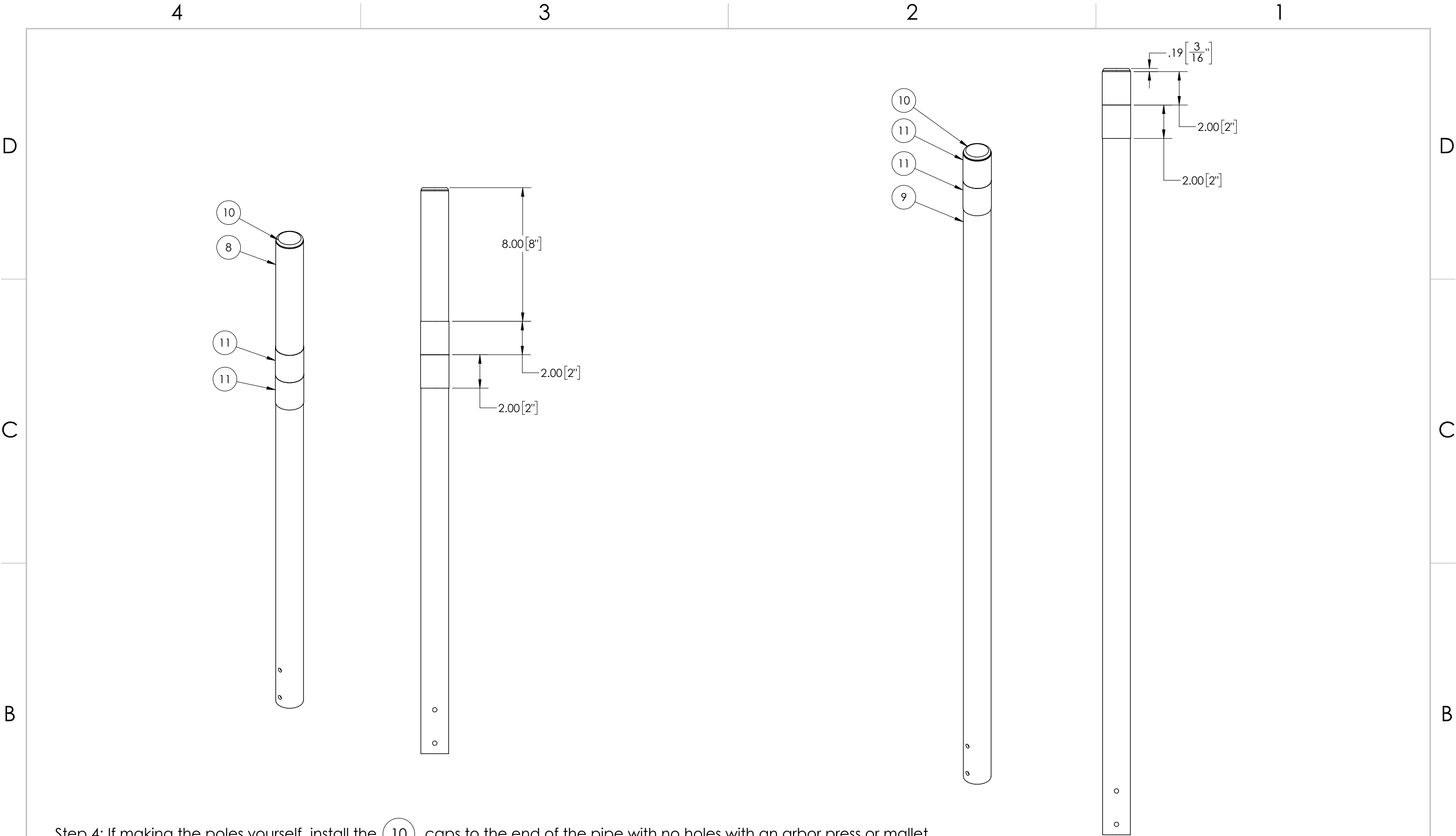
Step 2: Assemble 2x Cone Ramp Vertical assemblies using #8 wood screws as shown. Make a "left hand" and "right hand" version as shown.

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SIZE		DWG. NO.		REV	
C		TE-23003			
SCALE: 1:3			SHEET 3 OF 9		



Step 3: Assemble Cone Ramp Diagonal Assembly with #8 wood screws as shown.
Note orientation of holes while assembling.



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	DRAWN	JO	12/16/2022		
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			SIZE	DWG. NO.	REV
			C	TE-23003	
			SCALE: 1:5		SHEET 4 OF 9

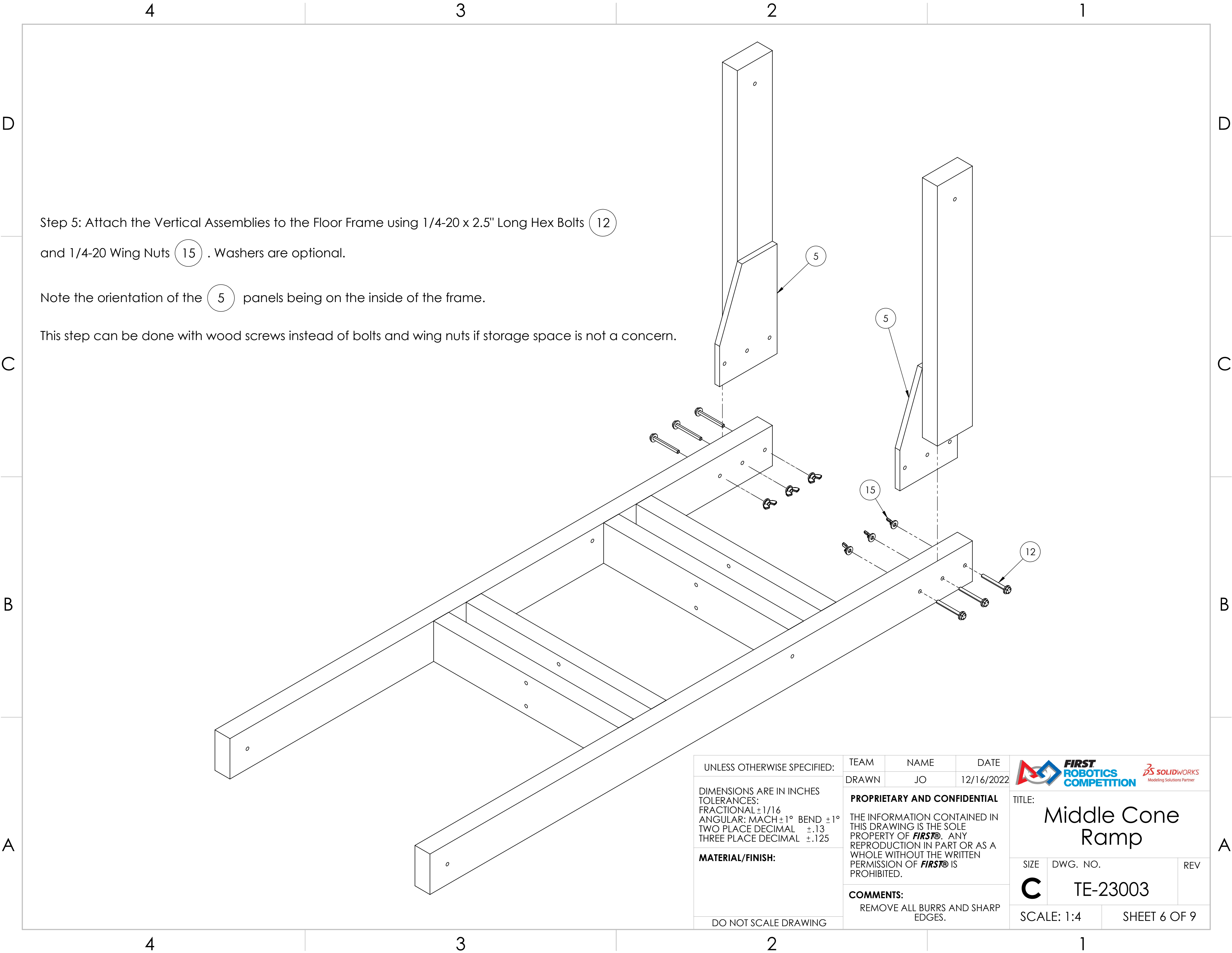


Step 4: If making the poles yourself, install the 10 caps to the end of the pipe with no holes with an arbor press or mallet.
There is a CAD file of a similar but not exact version of the cap in the shared CAD files for this assembly that can be 3D Printed.

Apply 2 pieces of 11 vision tape per pole as shown.

These poles with caps installed can be purchased from AndyMark.
These do not include the drilled holes or applied vision tape.



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	DRAWN	JO	12/16/2022		
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COMMENTS:		SIZE	DWG. NO.	REV	
REMOVE ALL BURRS AND SHARP EDGES.		C	TE-23003		
		SCALE: 1:4		SHEET 5 OF 9	

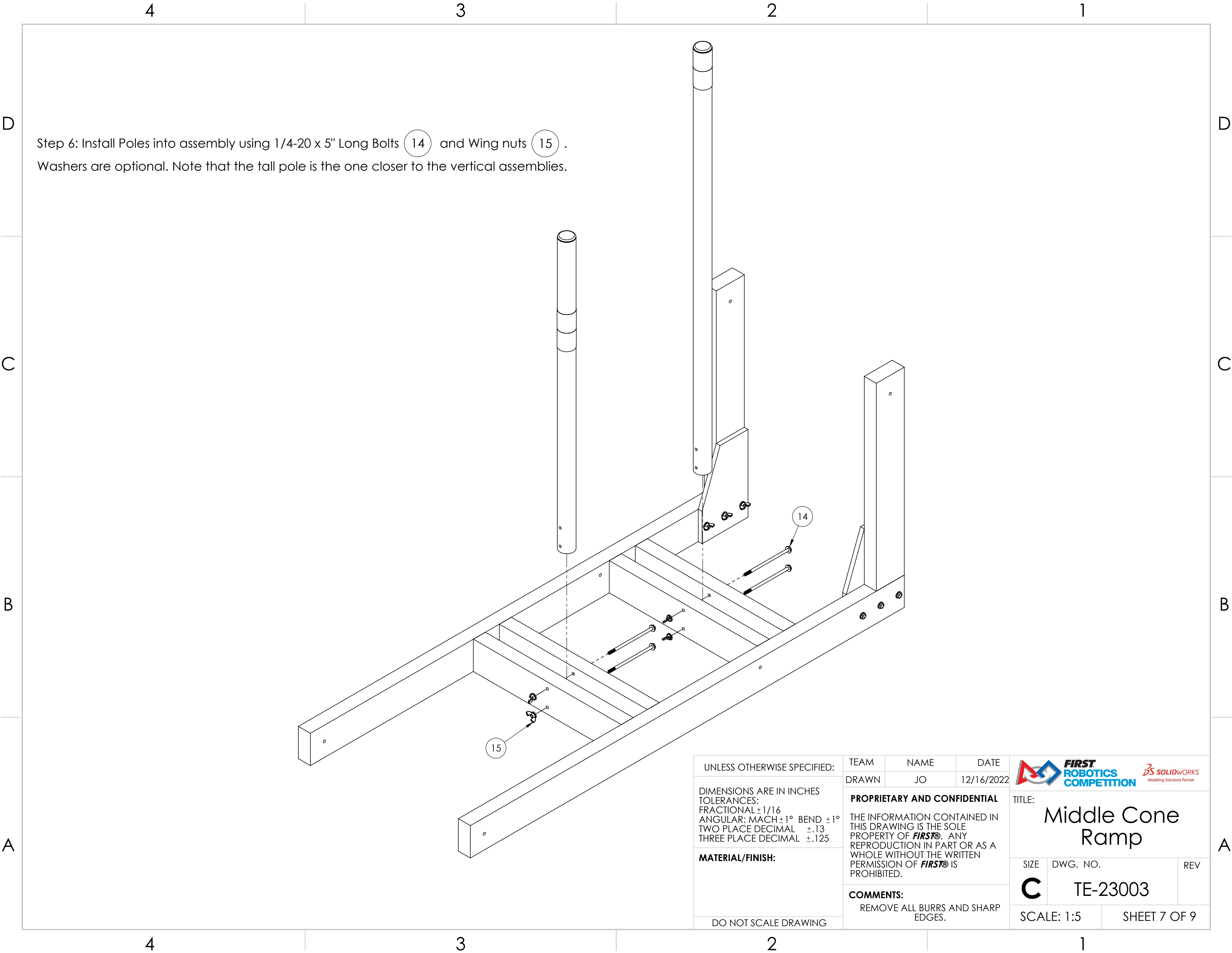


Step 5: Attach the Vertical Assemblies to the Floor Frame using 1/4-20 x 2.5" Long Hex Bolts (12) and 1/4-20 Wing Nuts (15) . Washers are optional.

Note the orientation of the (5) panels being on the inside of the frame.

This step can be done with wood screws instead of bolts and wing nuts if storage space is not a concern.

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DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL			TITLE: Middle Cone Ramp	
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MATERIAL/FINISH:				DWG. NO.	REV
				TE-23003	
DO NOT SCALE DRAWING				SCALE: 1:4	SHEET 6 OF 9



Step 6: Install Poles into assembly using 1/4-20 x 5" Long Bolts (14) and Wing nuts (15). Washers are optional. Note that the tall pole is the one closer to the vertical assemblies.

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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 $\pm .13$
THREE PLACE DECIMAL $\pm .125$

MATERIAL/FINISH:

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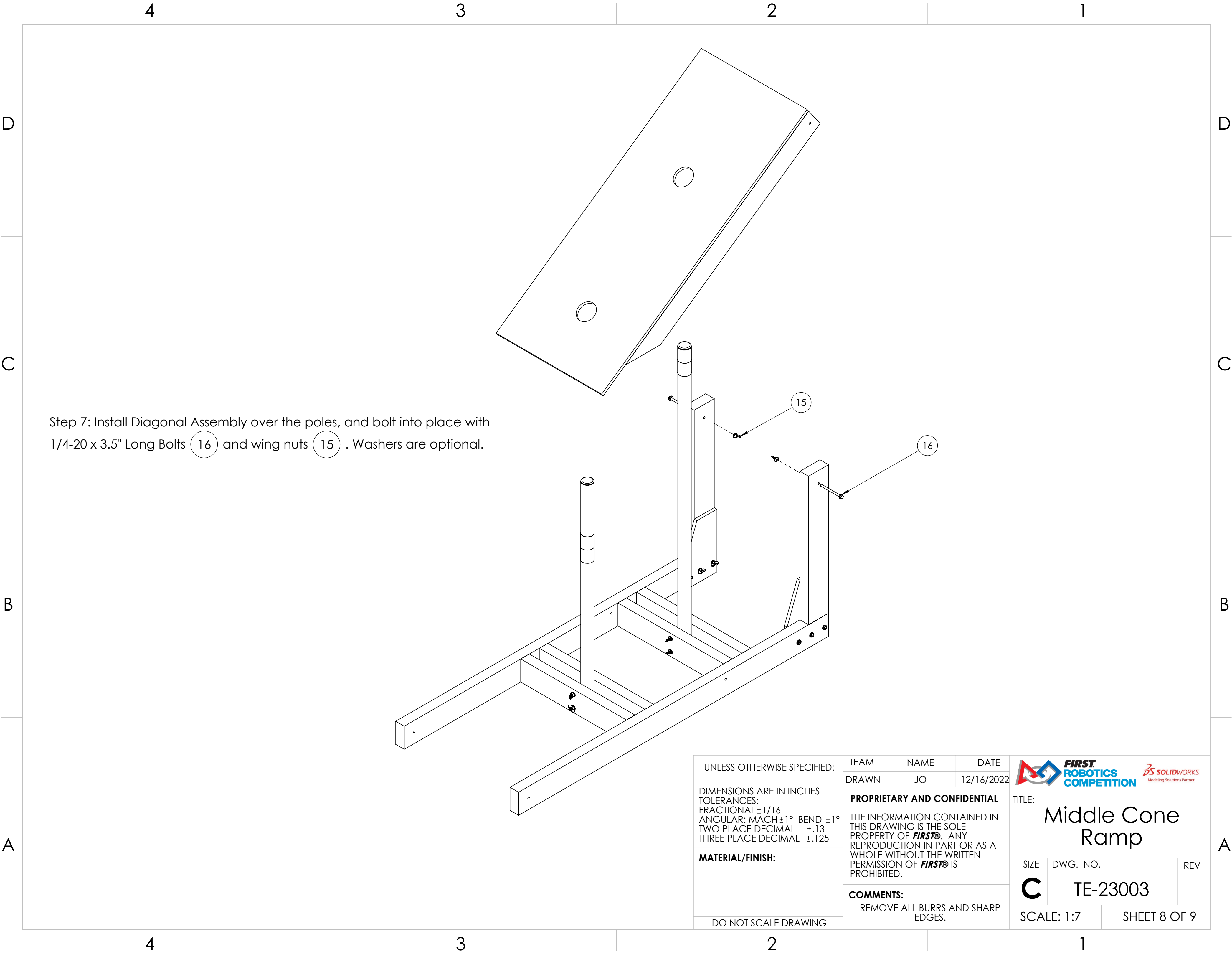
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.





TITLE:
Middle Cone Ramp

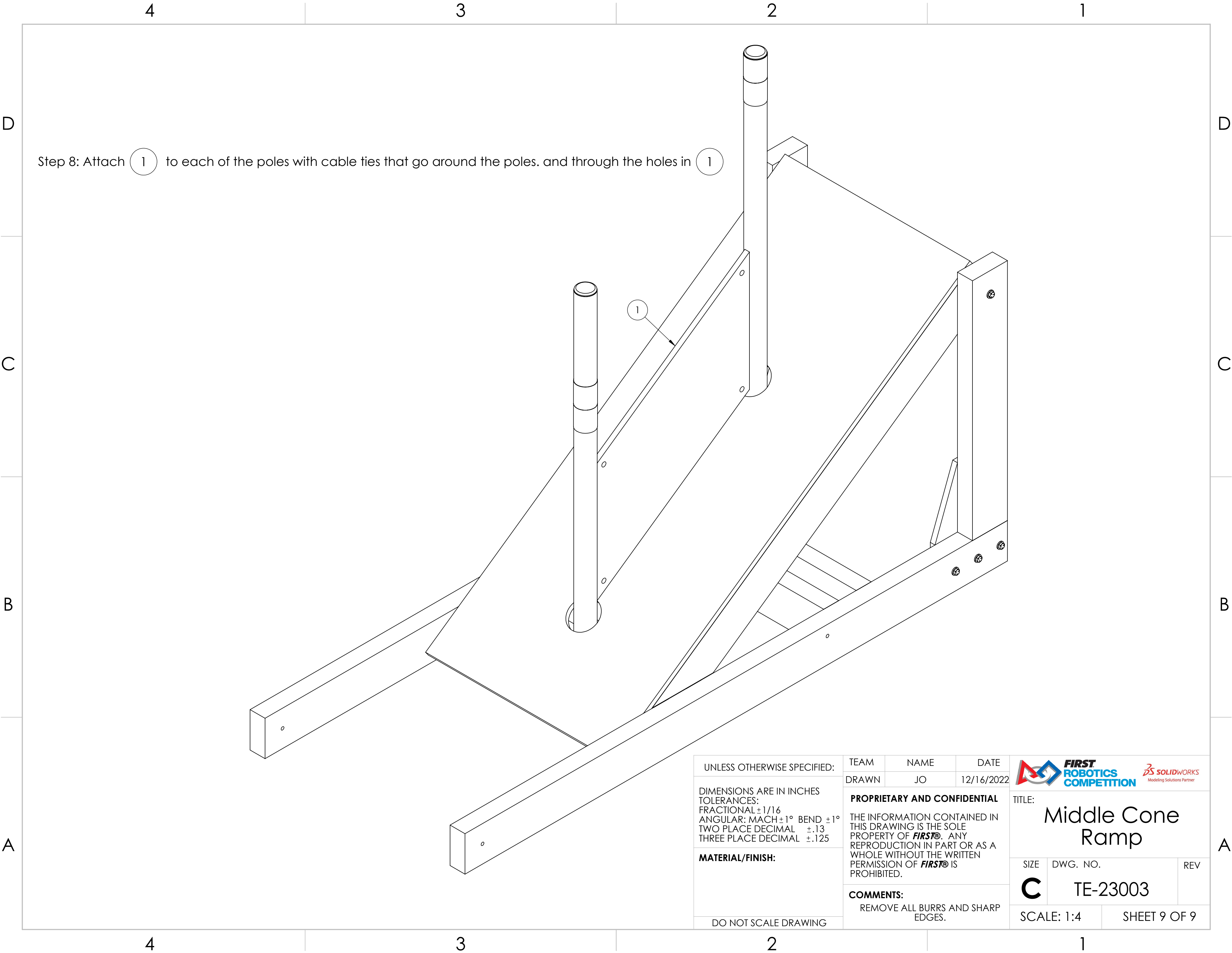
SIZE	DWG. NO.	REV
C	TE-23003	

SCALE: 1:5 SHEET 7 OF 9



Step 7: Install Diagonal Assembly over the poles, and bolt into place with 1/4-20 x 3.5" Long Bolts (16) and wing nuts (15) . Washers are optional.

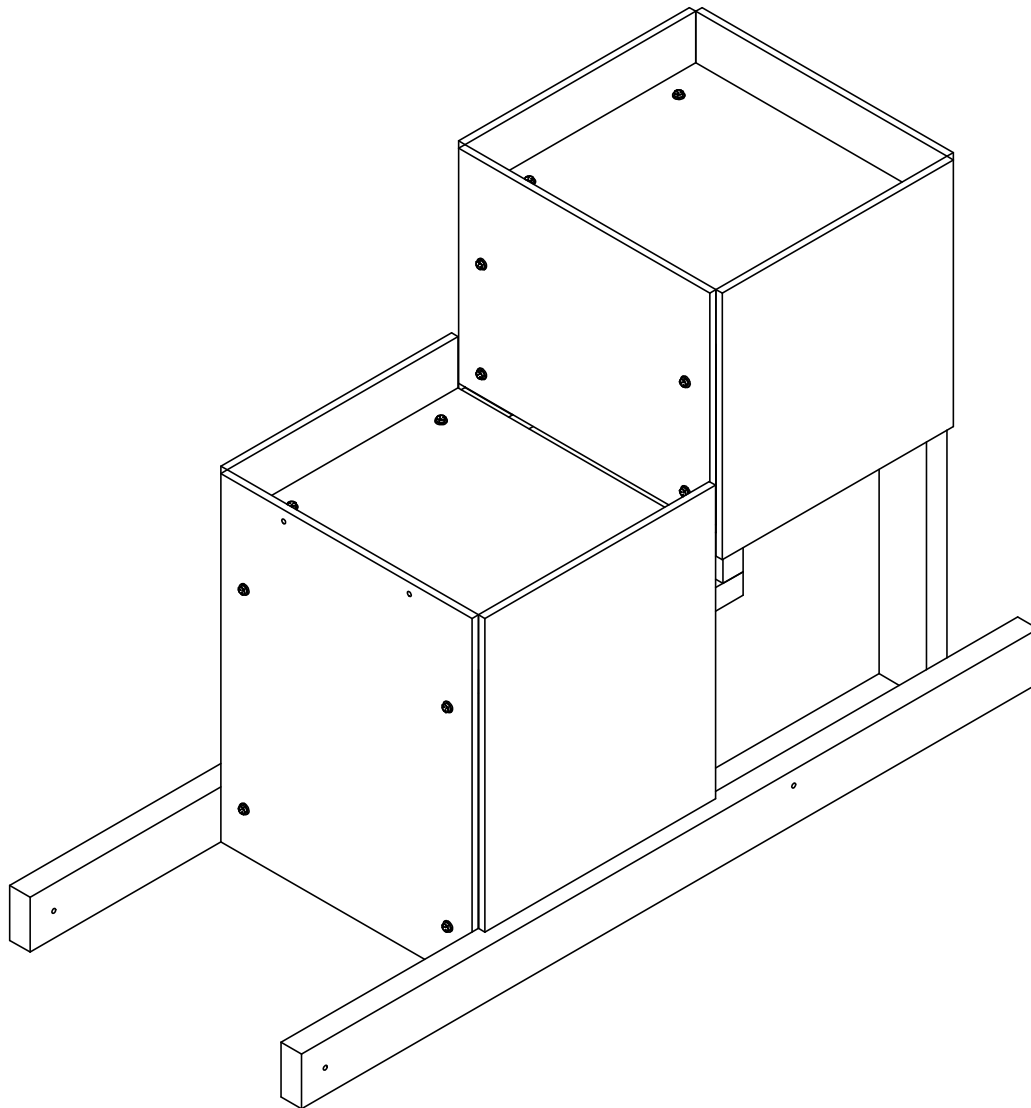
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DO NOT SCALE DRAWING				
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		SIZE	DWG. NO.	REV
		C	TE-23003	
		SCALE: 1:7		SHEET 8 OF 9



Step 8: Attach 1 to each of the poles with cable ties that go around the poles. and through the holes in 1



UNLESS OTHERWISE SPECIFIED:		TEAM	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$		DRAWN	JO	12/16/2022
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: Middle Cone Ramp		
		SIZE	DWG. NO.	REV
		C	TE-23003	
		SCALE: 1:4		SHEET 9 OF 9

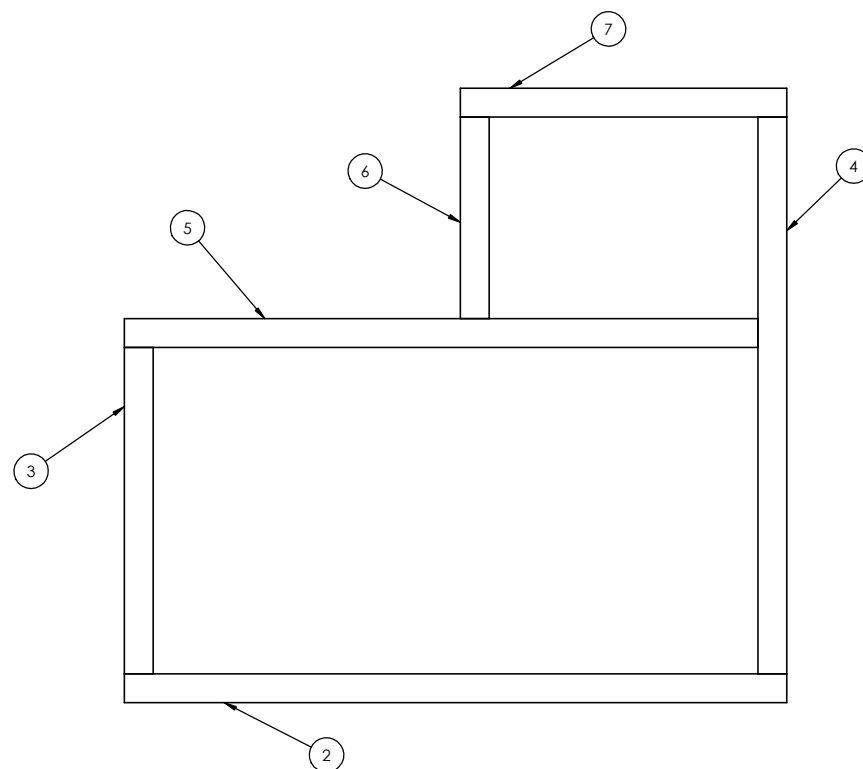
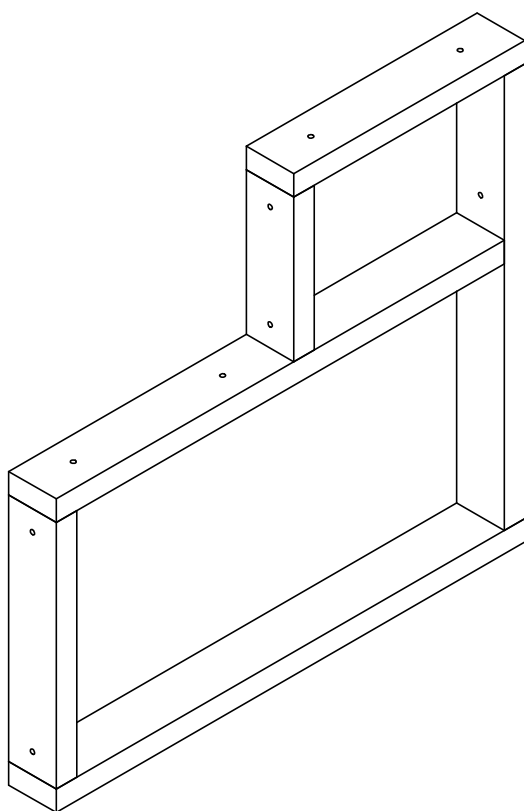






NOTE: All holes shown are for bolt/t-nut connections that are included to make it easier to store this assembly. If storage of this assembly is not a concern, wood screws could be used instead of bolts and t-nuts and all drilled holes can be skipped.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-23005	Cube Shelf Divider Beam	2
2	TE-23018	Cube Shelf Bottom Horizontal	2
3	TE-23019	Cube Shelf Front Vertical	2
4	TE-23020	Cube Shelf Rear Vertical	2
5	TE-23021	Cube Shelf Middle Horizontal	2
6	TE-23022	Cube Shelf Front Short Vertical	2
7	TE-23023	Cube Shelf Top Horizontal	2
8	TE-23024	Cube Shelf Lower Side Panel	2
9	TE-23025	Cube Shelf Upper Side Panel	2
10	TE-23026	Cube Shelf Front Panel	1
11	TE-23027	Cube Shelf Scoring Platform	2
12	TE-23028	Cube Shelf Upper Panel	2
13	hex_.25_20_2	Steel Hex Head Bolt 1/4"-20 x 2" long, fully threaded	20
14	TeeNut_.25_20	Soft wood fiber tee nut	20
15	washer_flat_.25	Flat Washer for 1/4" Screw	20

UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	 	
	DRAWN	JO	12/16/2022		
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$	PROPRIETARY AND CONFIDENTIAL			TITLE:
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.			Cube Shelf	
	COMMENTS:			SIZE	DWG. NO.
	REMOVE ALL BURRS AND SHARP EDGES.			C	TE-23004
DO NOT SCALE DRAWING				SCALE: 1:5	
				SHEET 1 OF 5	



Step 1: Assemble 2x Cube Shelf Side Frames using #8 wood screws. Match orientation of t-nut holes as shown above if you are using them.

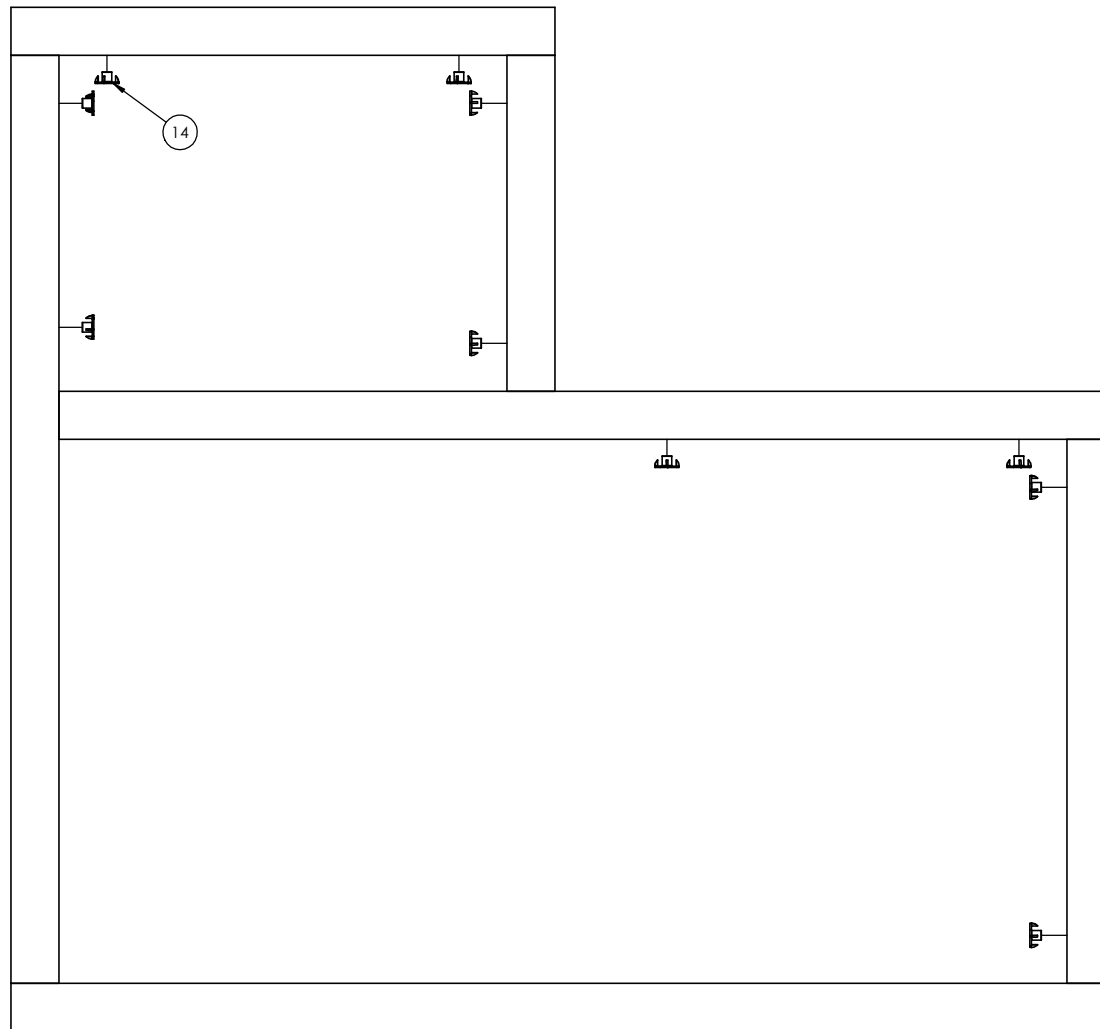
UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	 		
	DRAWN	JO	12/16/2022			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$	PROPRIETARY AND CONFIDENTIAL			TITLE: Cube Shelf		
	THE INFORMATION CONTAINED IN 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
				C	TE-23004	
DO NOT SCALE DRAWING				SCALE: 1:5		SHEET 2 OF 5

4



3

2

1



Step 2: Install (14) t-nuts as shown if you are using them for storage.

UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	 	
	DRAWN	JO	12/16/2022		
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$			PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: Cube Shelf SIZE DWG. NO. REV C TE-23004 SCALE: 1:3 SHEET 3 OF 5	

4

3

2

1

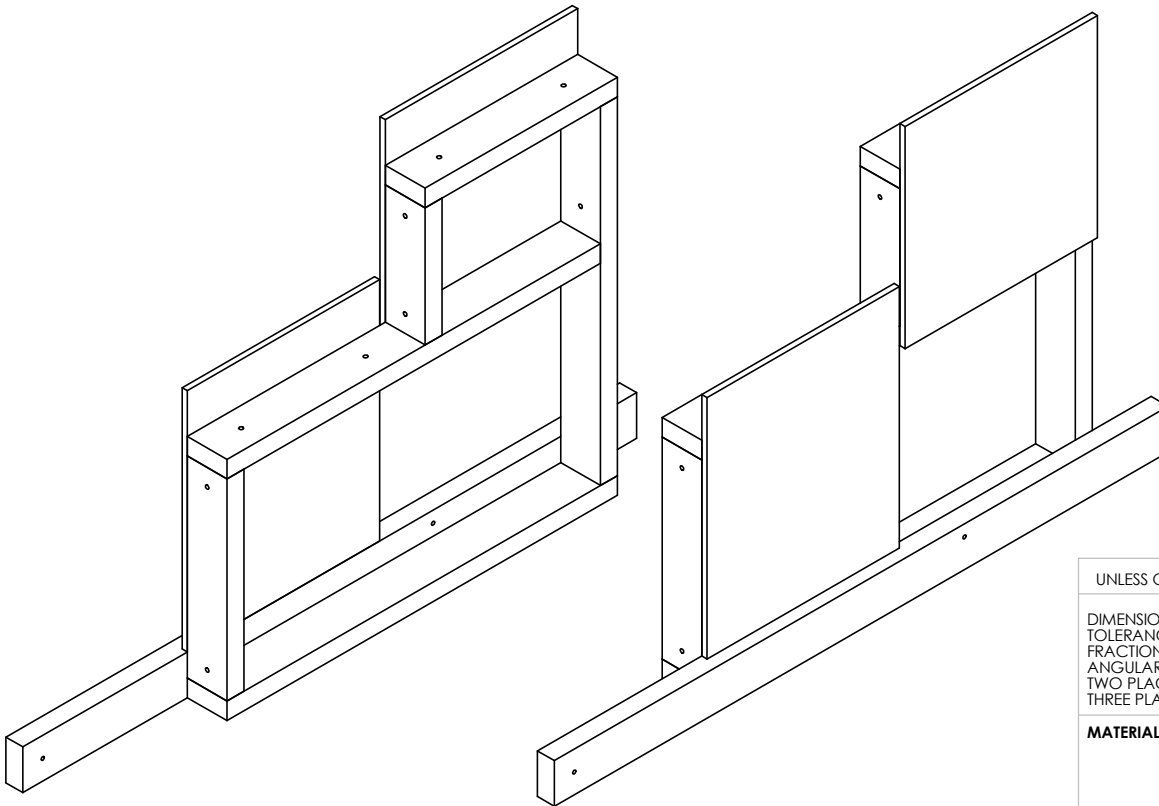
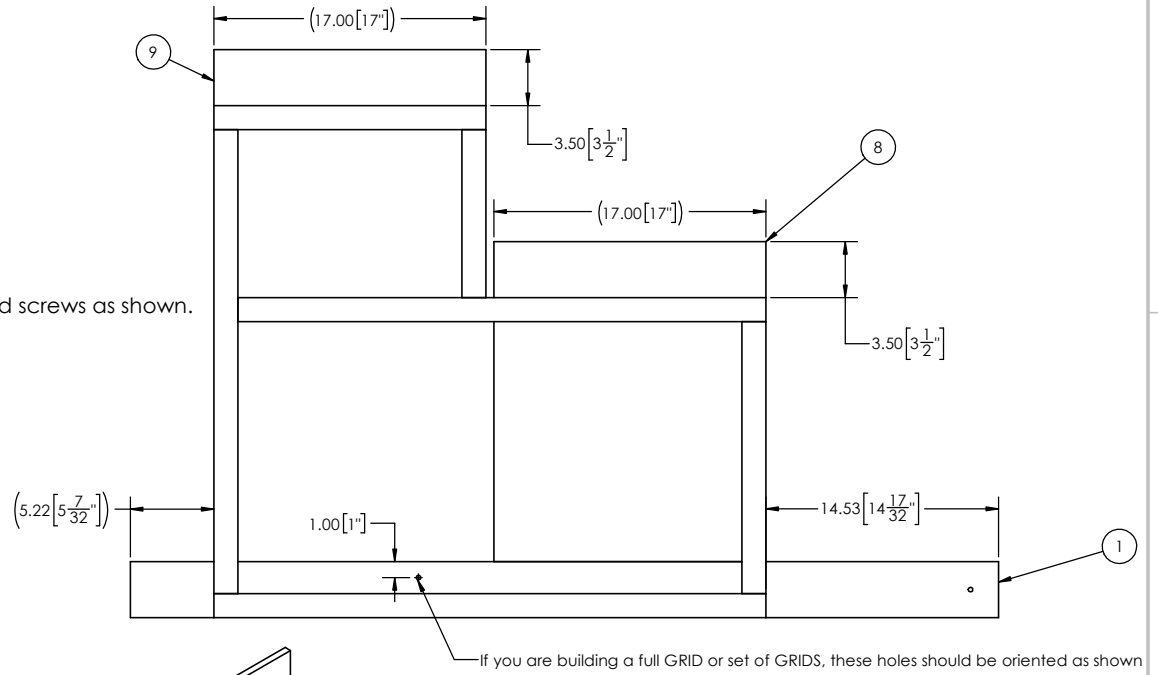
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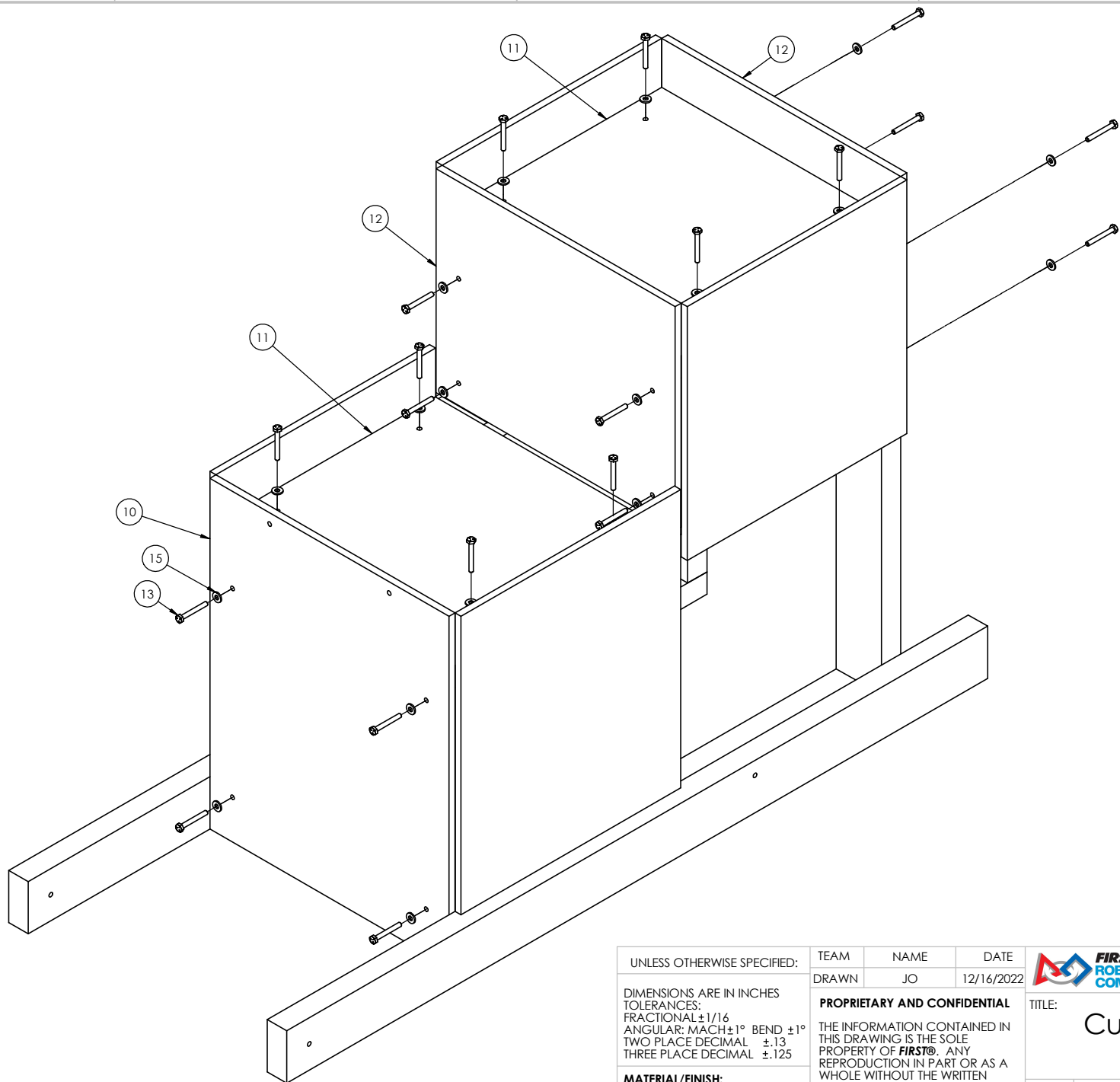
B

A



Step 3: Attach ①, ⑧ and ⑨ to the Cube Shelf Side Frames with #8 wood screws as shown.
Create a left and right version, as shown below.

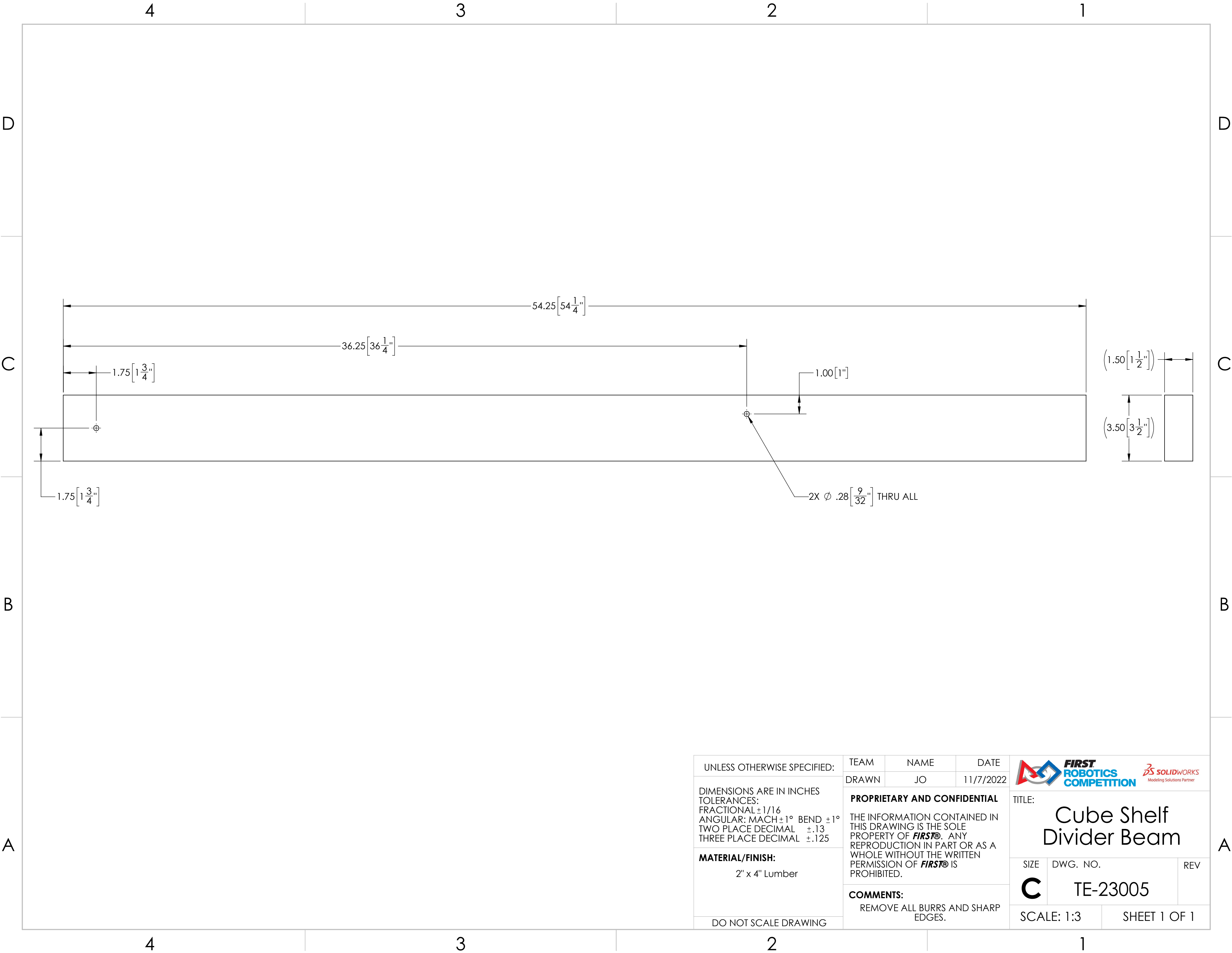




UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	 FIRST ROBOTICS COMPETITION  SOLIDWORKS Modeling Solutions Partner		
	DRAWN	JO	12/16/2022			
	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: Cube Shelf	
MATERIAL/FINISH:	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING				C	TE-23004	
				SCALE: 1:6		SHEET 4 OF 5

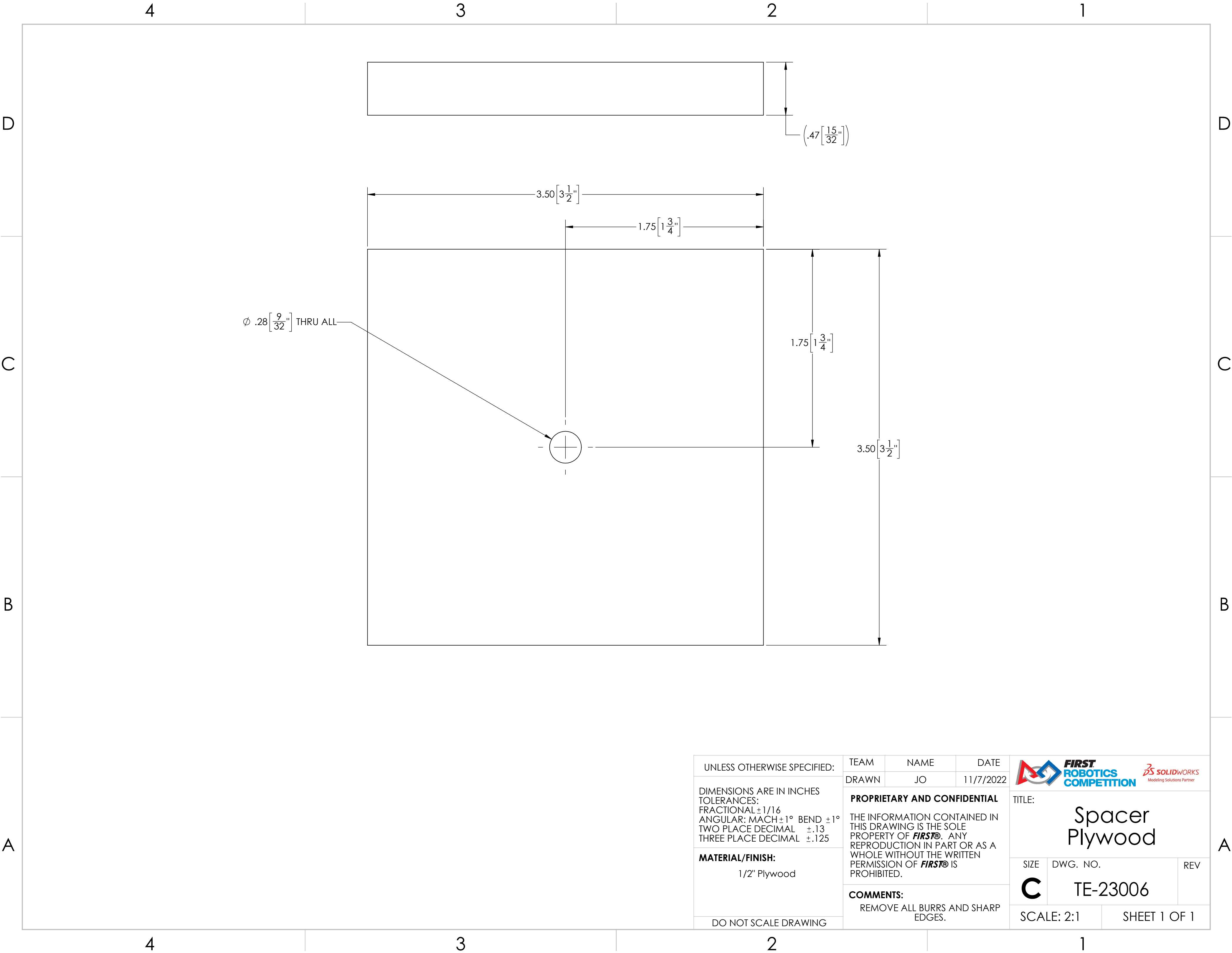




Step 4: Attach (10), (11) and (12) panels to the frames with 1/4-20 x 2" Long Hex Head Bolts (13) into t-nuts as shown (or #8 wood screws), washers (15) are optional. Panels should end up flush with each other at the top edges.

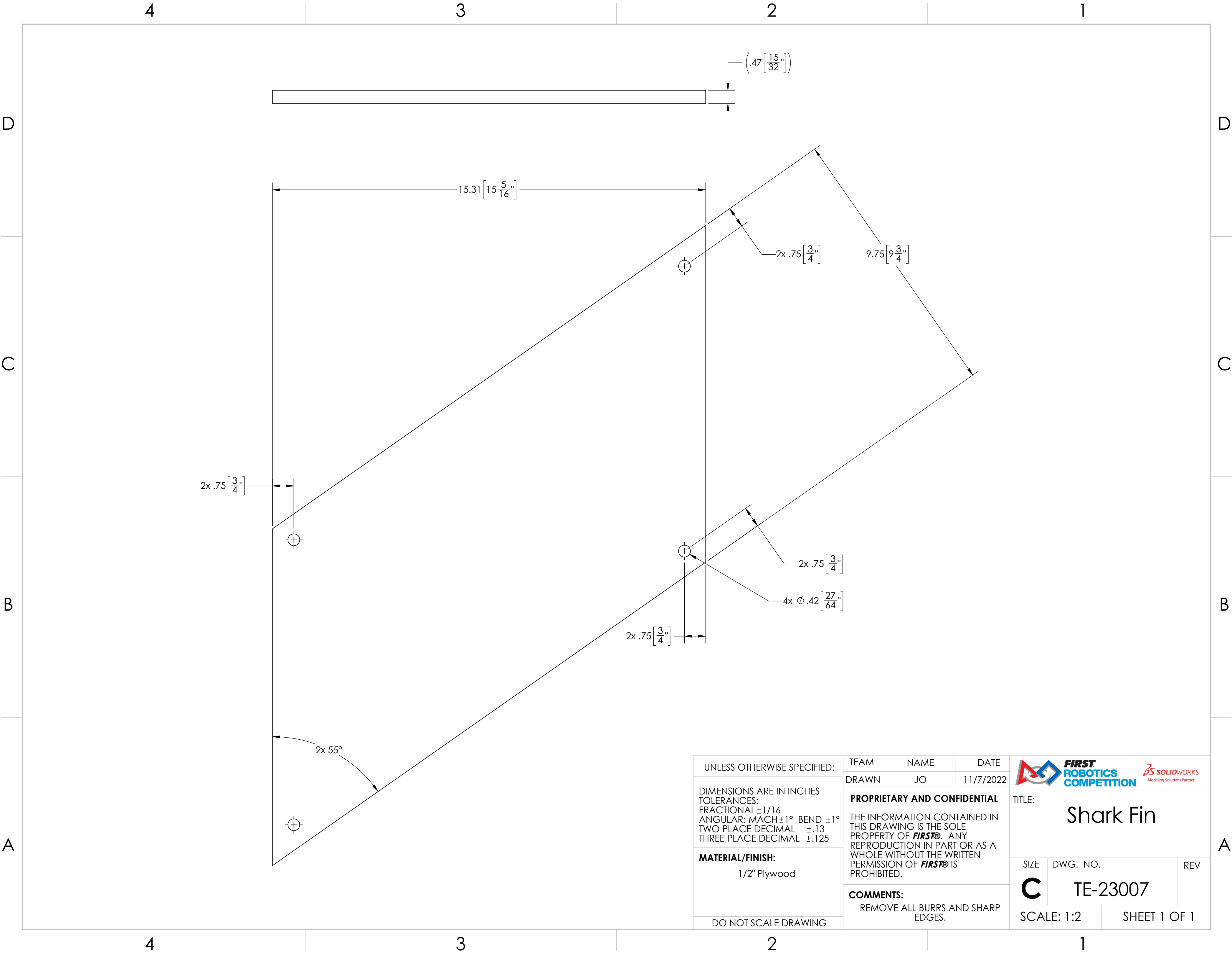
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	DRAWN	JO	12/16/2022		
	PROPRIETARY AND CONFIDENTIAL			TITLE:	
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			Cube Shelf	
COMMENTS:		REMOVE ALL BURRS AND SHARP EDGES.		SIZE	DWG. NO.
				C	TE-23004
				SCALE: 1:4	SHEET 5 OF 5





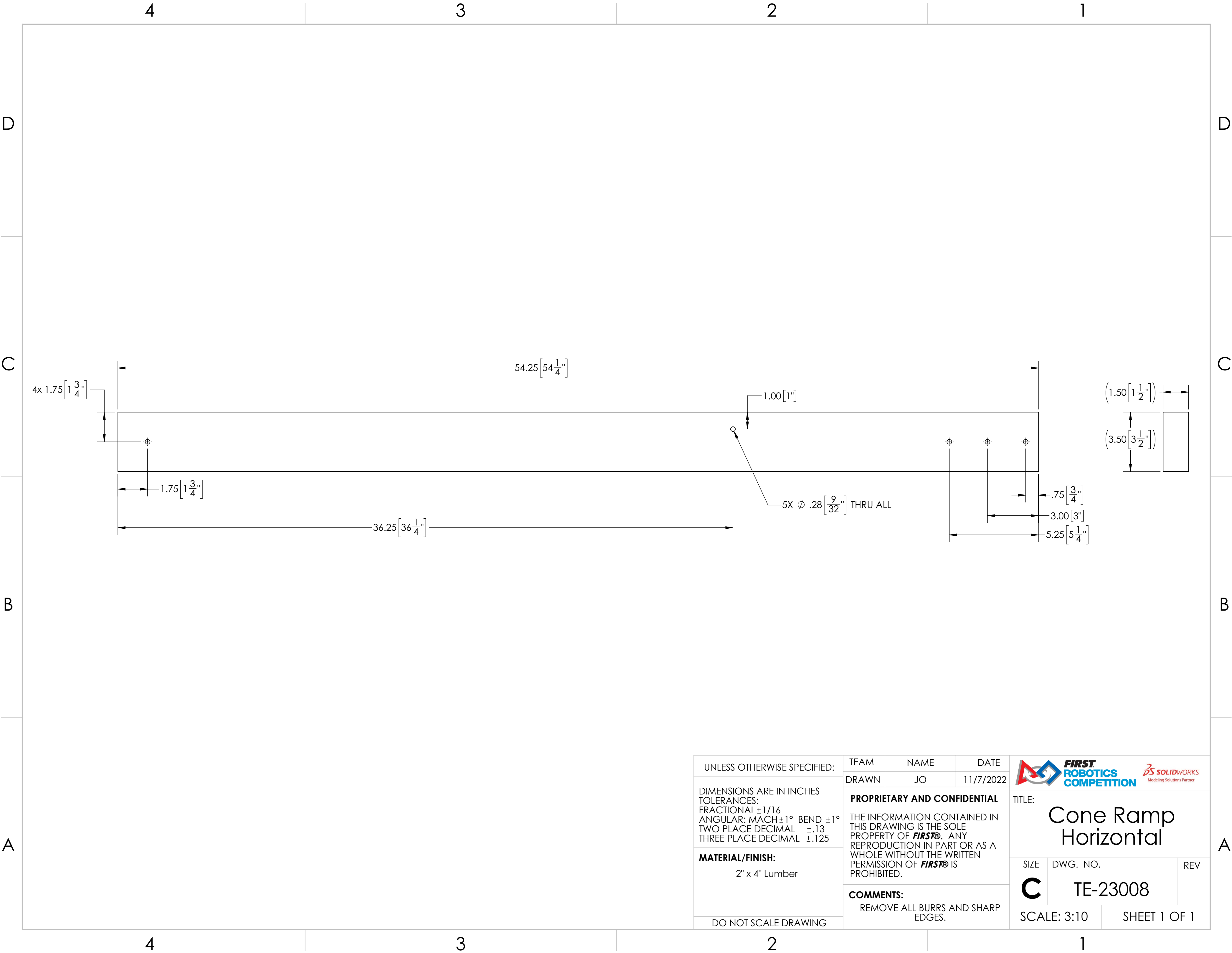
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	DRAWN	JO	11/7/2022			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL			TITLE:		
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			Cube Shelf Divider Beam		
MATERIAL/FINISH: 2" x 4" Lumber	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	TE-23005	
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 ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: 1/2" Plywood DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div><div></div><div>TITLE: Spacer Plywood</div></div>		
	DRAWN	JO	11/7/2022			
	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.					
SCALE: 2:1			SHEET 1 OF 1			



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: 1/2" Plywood DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>		
	DRAWN	JO	11/7/2022			
	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.				TITLE: Shark Fin	
				SIZE	DWG. NO.	REV
				C	TE-23007	
				SCALE: 1:2		SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div></div>		
	DRAWN	JO	11/7/2022			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: Cone Ramp Horizontal		
	MATERIAL/FINISH: 2" x 4" Lumber	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.
DO NOT SCALE DRAWING	C				TE-23008	
	SCALE: 3:10		SHEET 1 OF 1			

4

3

2

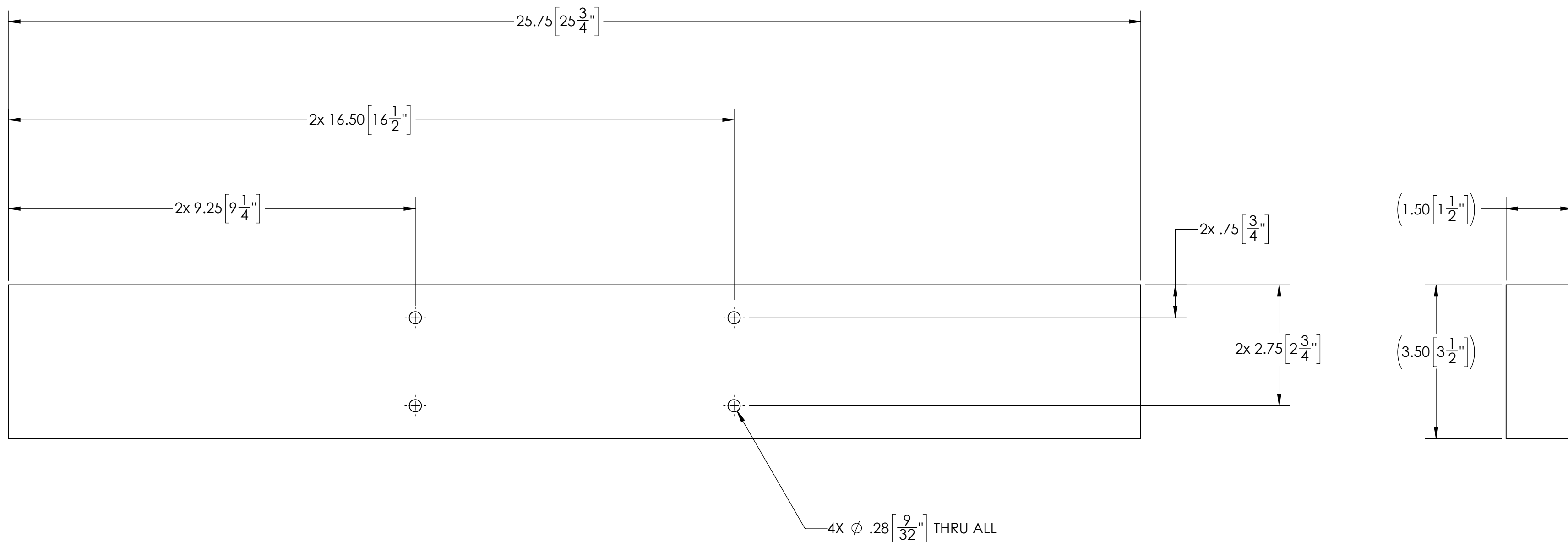
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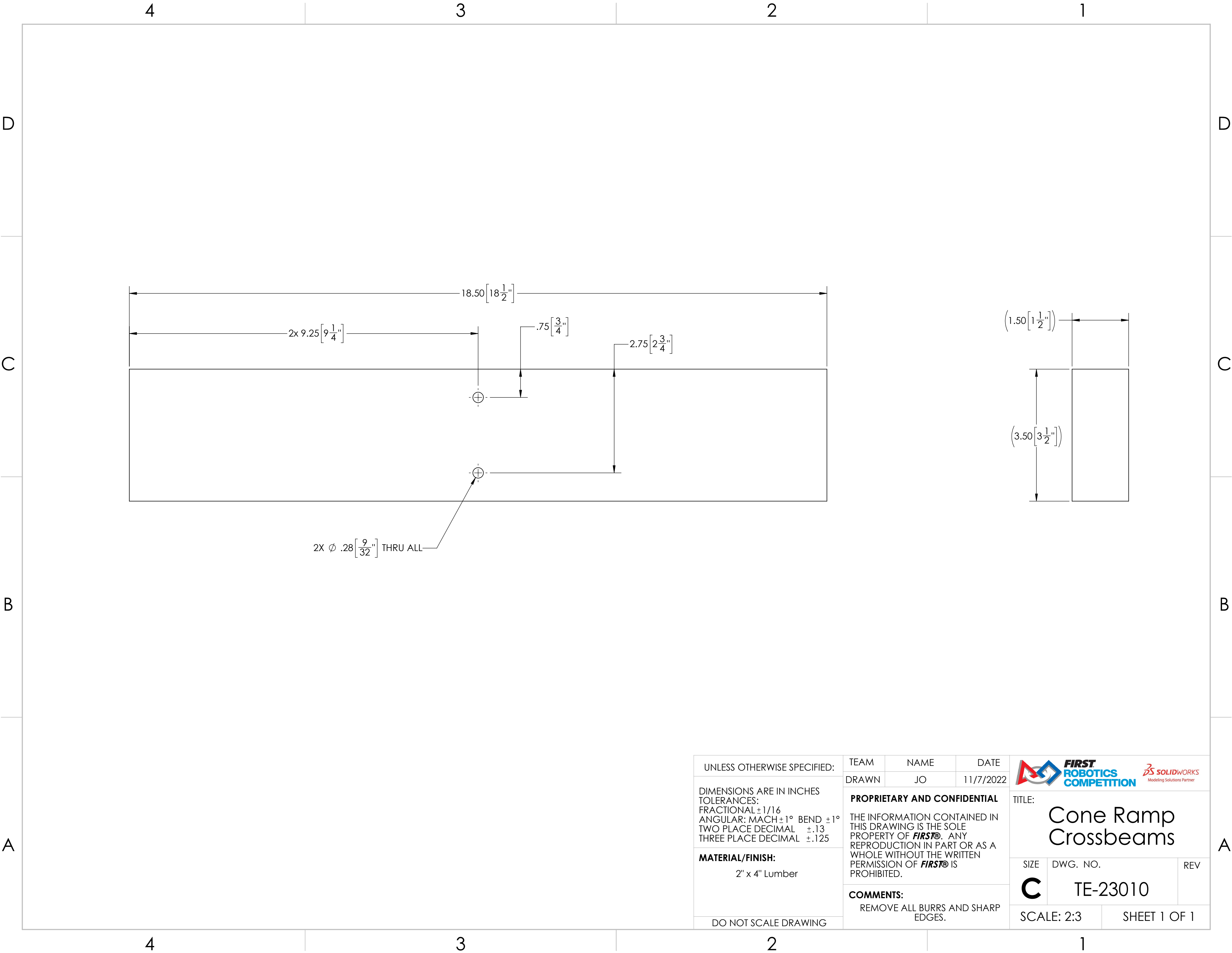
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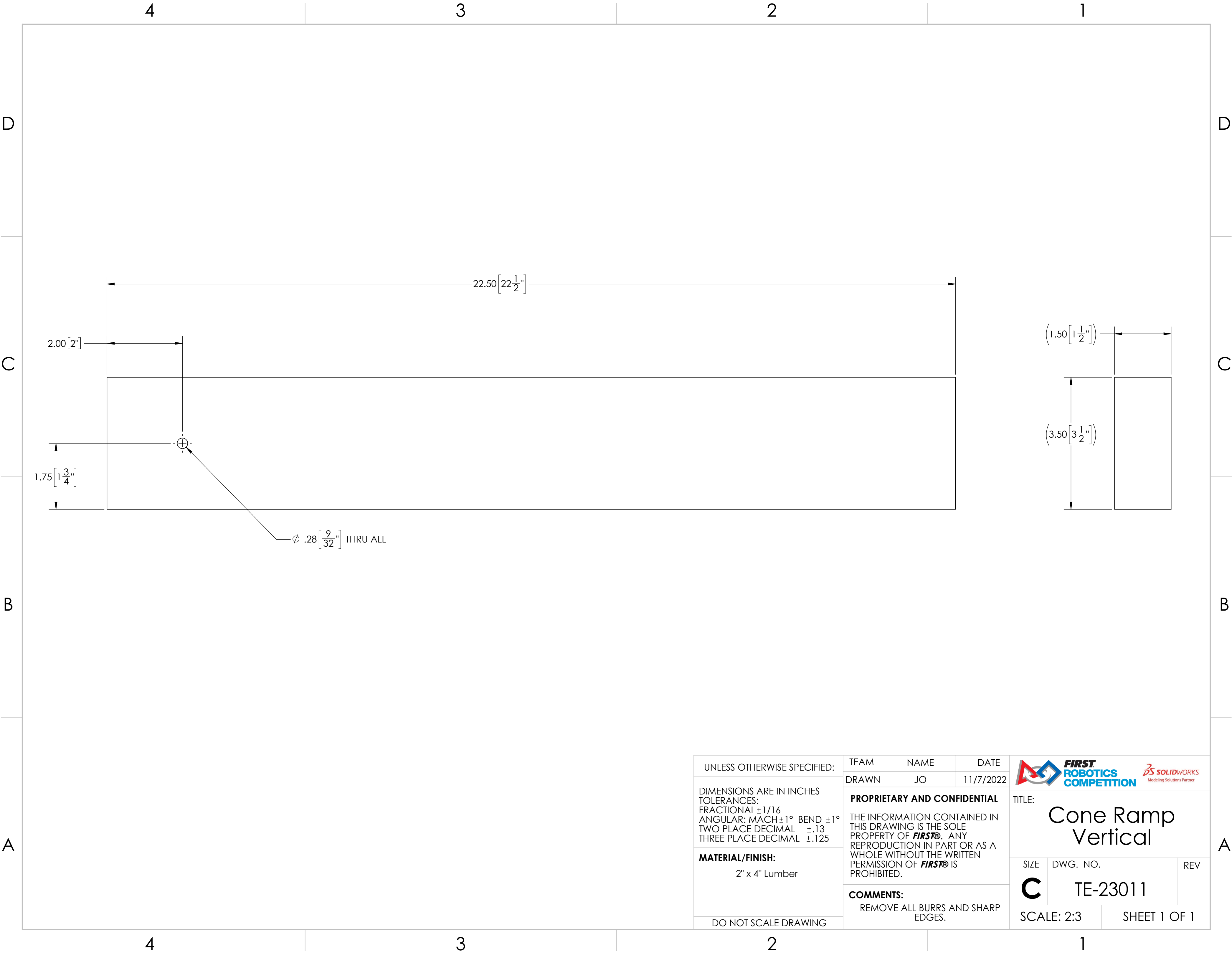
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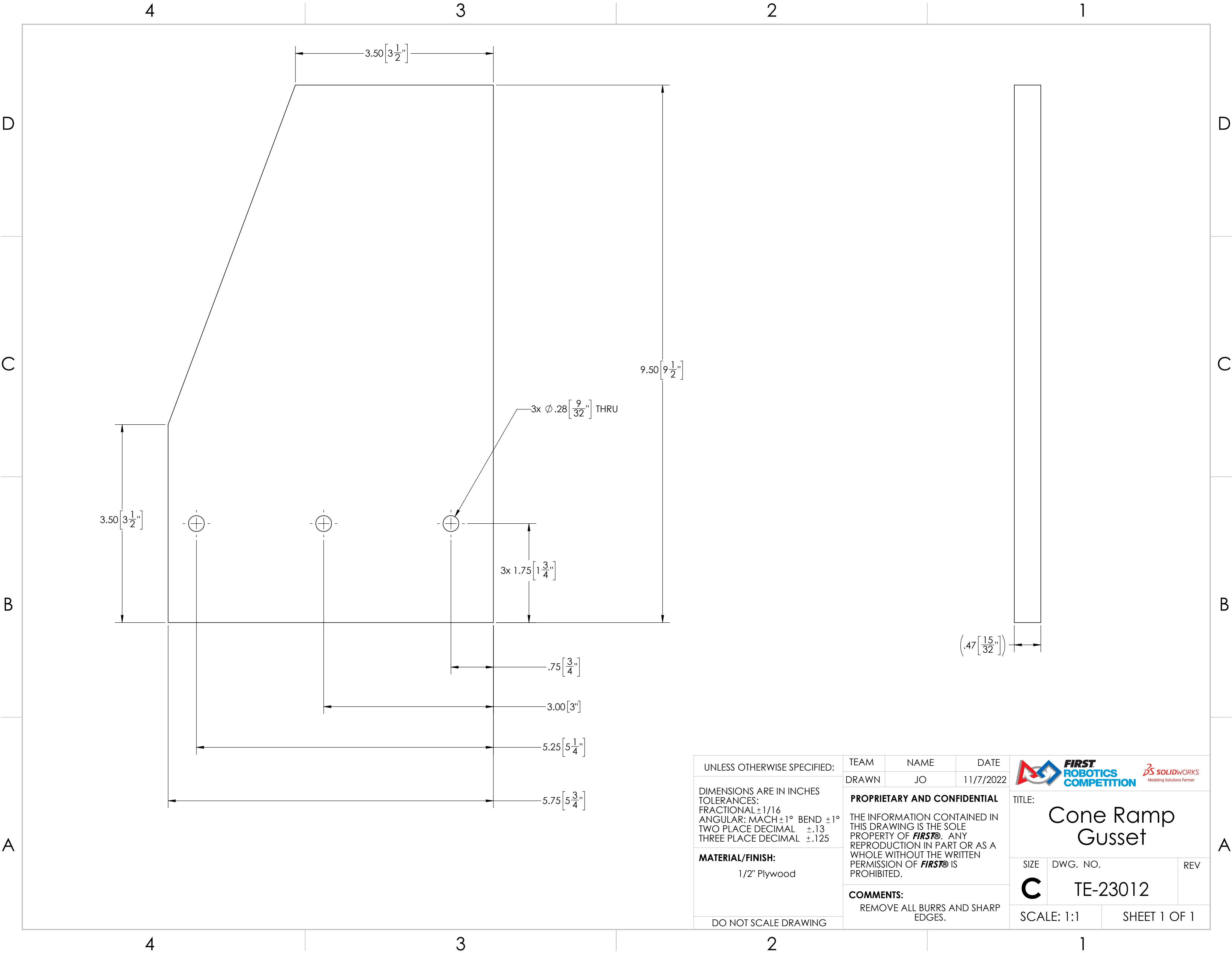
UNLESS OTHERWISE SPECIFIED:		TEAM	NAME	DATE	<div></div>		
		DRAWN	JO	11/7/2022			
<div>DIMENSIONS ARE IN INCHES</div> <div>TOLERANCES:</div> <div>FRACTIONAL $\pm 1/16$</div> <div>ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$</div> <div>TWO PLACE DECIMAL $\pm .13$</div> <div>THREE PLACE DECIMAL $\pm .125$</div> <div>MATERIAL/FINISH:</div> <div>2" x 4" Lumber</div>		PROPRIETARY AND CONFIDENTIAL			<div>TITLE:</div> <div>Wide Cone Ramp Crossbeams</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:			SIZE
					C	TE-23009	
DO NOT SCALE DRAWING					SCALE: 1:2		SHEET 1 OF 1

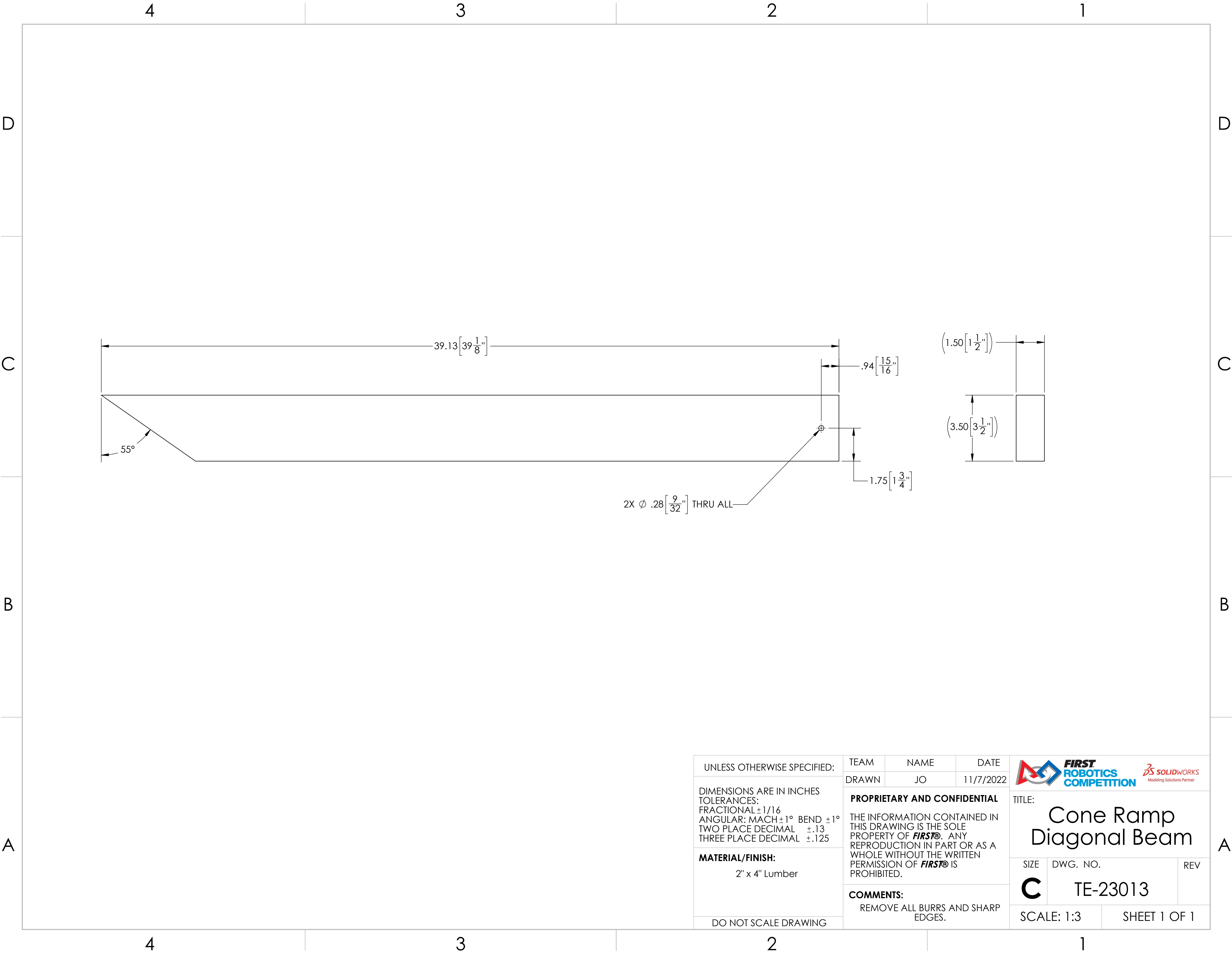




UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: 2" x 4" Lumber DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div> <div>TITLE: <h1>Cone Ramp Crossbeams</h1></div>	
	DRAWN	JO	11/7/2022		
	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	DWG. NO.
			C	TE-23010	
SCALE: 2:3			SHEET 1 OF 1		

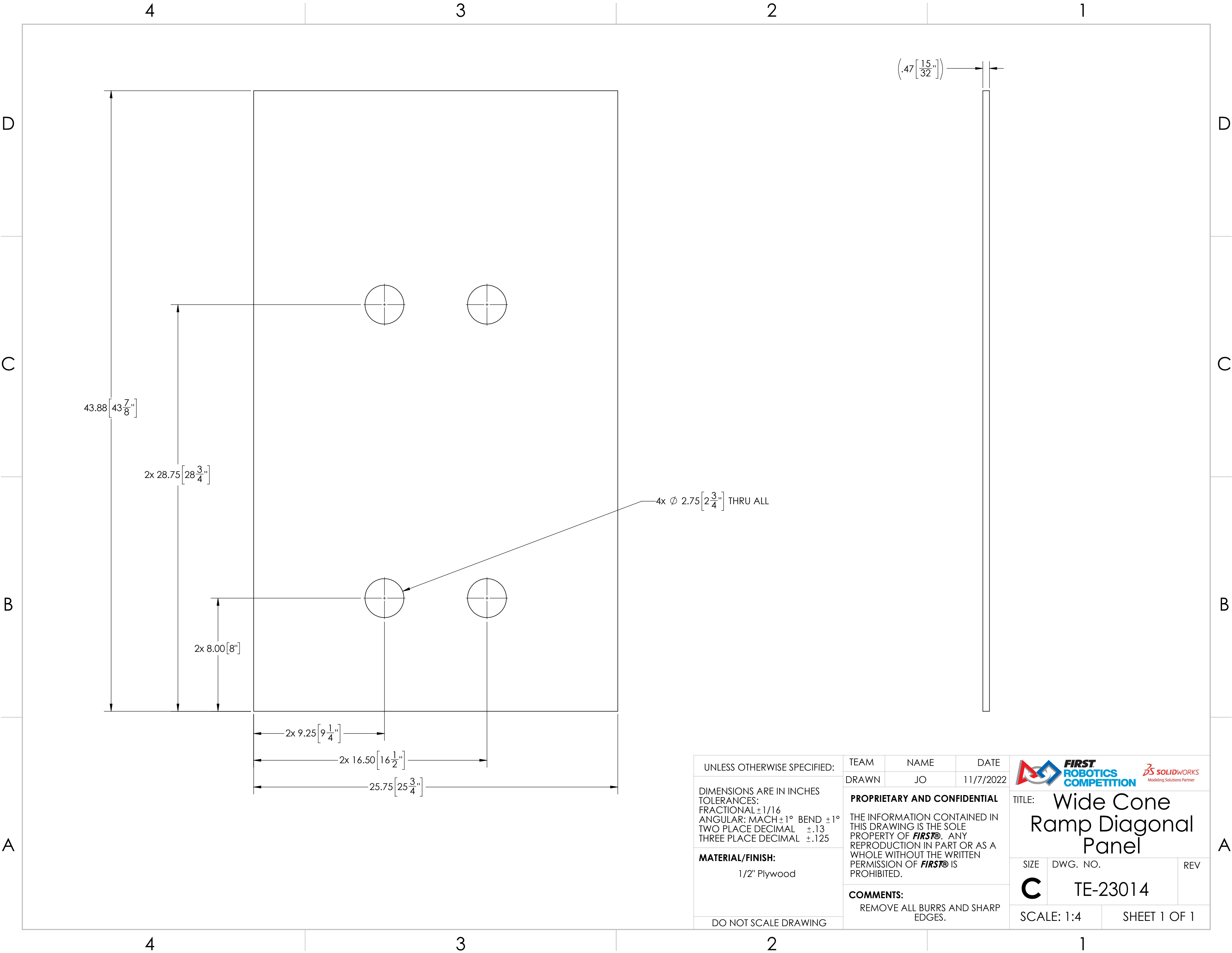


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$ MATERIAL/FINISH: 2" x 4" Lumber DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div> <div>TITLE: Cone Ramp Vertical</div>		
	DRAWN	JO	11/7/2022			
	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	DWG. NO.	REV
SCALE: 2:3		SHEET 1 OF 1				





UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div><div></div><div>TITLE: <h1>Cone Ramp Diagonal Beam</h1></div></div>		
	DRAWN	JO	11/7/2022			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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	TE-23013	
	DO NOT SCALE DRAWING			SCALE: 1:3		SHEET 1 OF 1
MATERIAL/FINISH: 2" x 4" Lumber						



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .13$
THREE PLACE DECIMAL $\pm .125$

MATERIAL/FINISH:
1/2" Plywood

DO NOT SCALE DRAWING

TEAM	NAME	DATE
DRAWN	JO	11/7/2022

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.

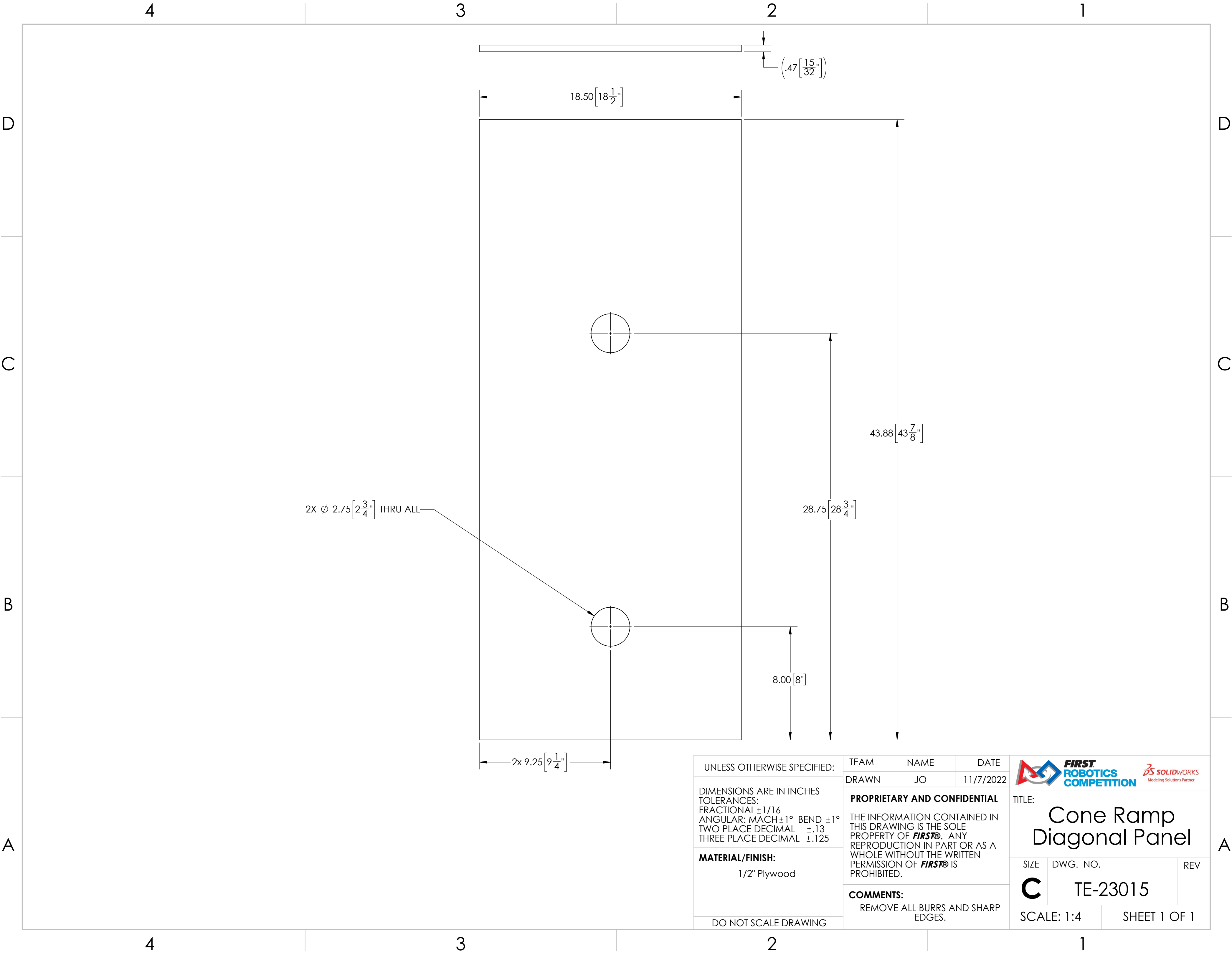
COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.





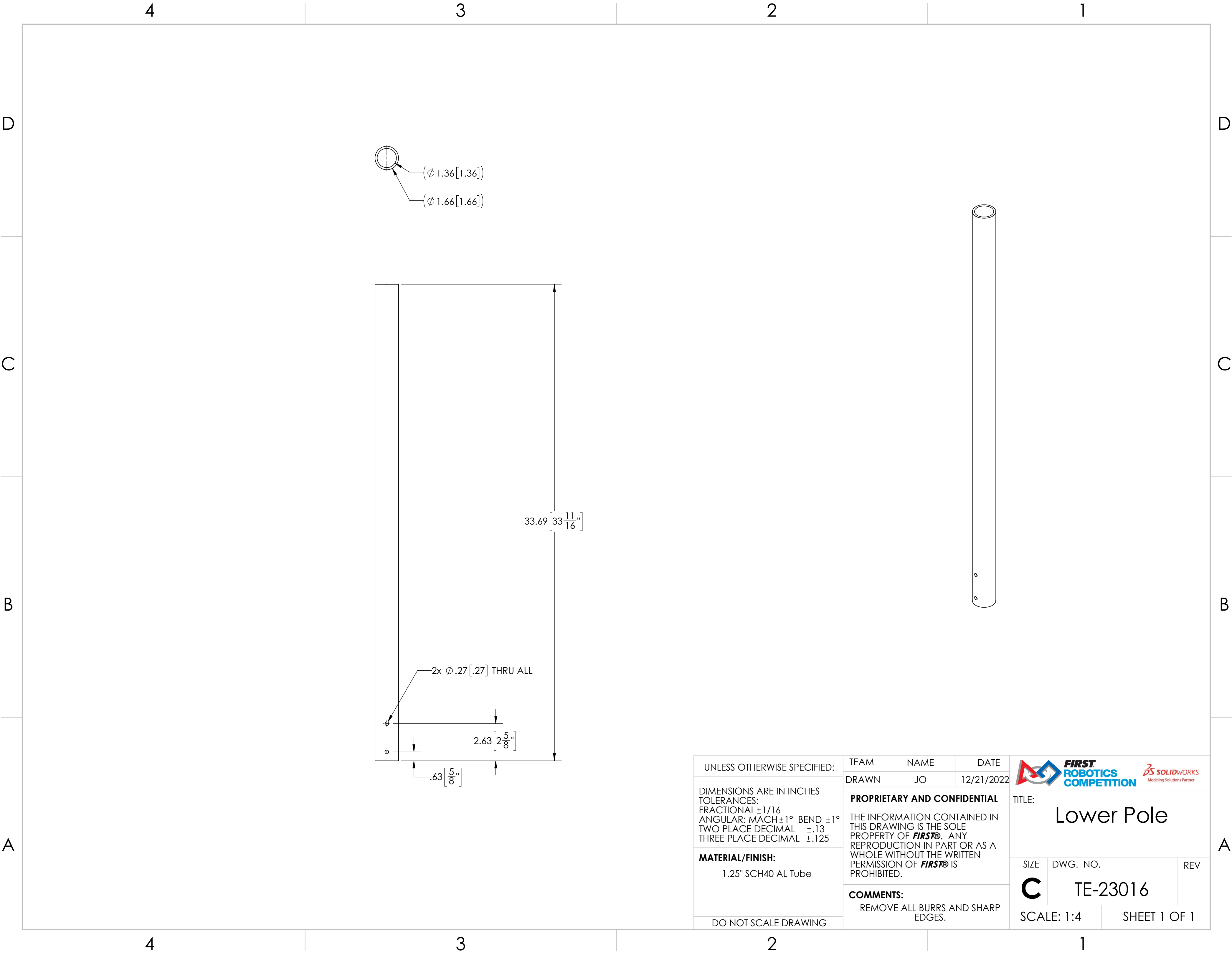
TITLE: **Wide Cone Ramp Diagonal Panel**



SIZE	DWG. NO.	REV
C	TE-23014	

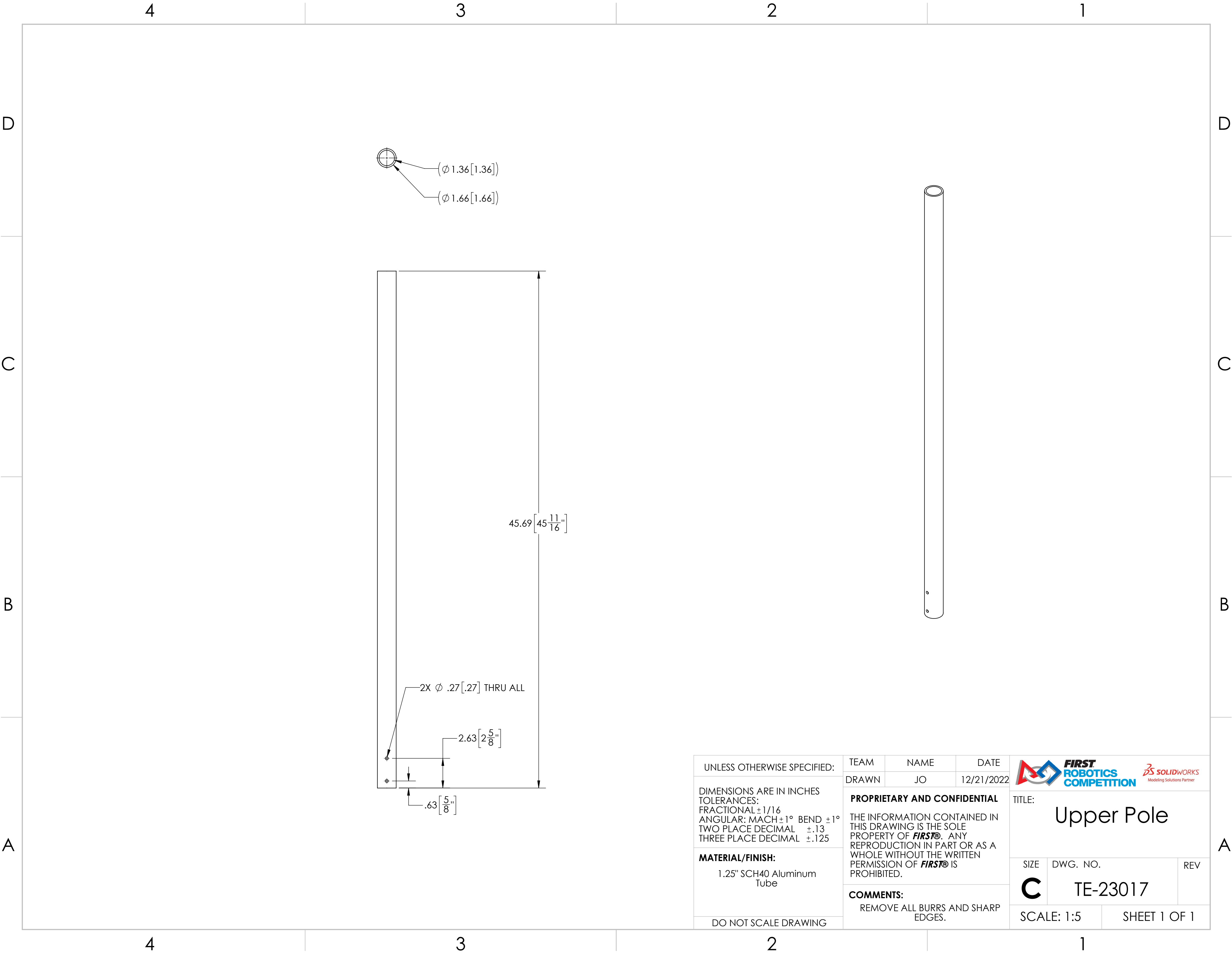
SCALE: 1:4 SHEET 1 OF 1





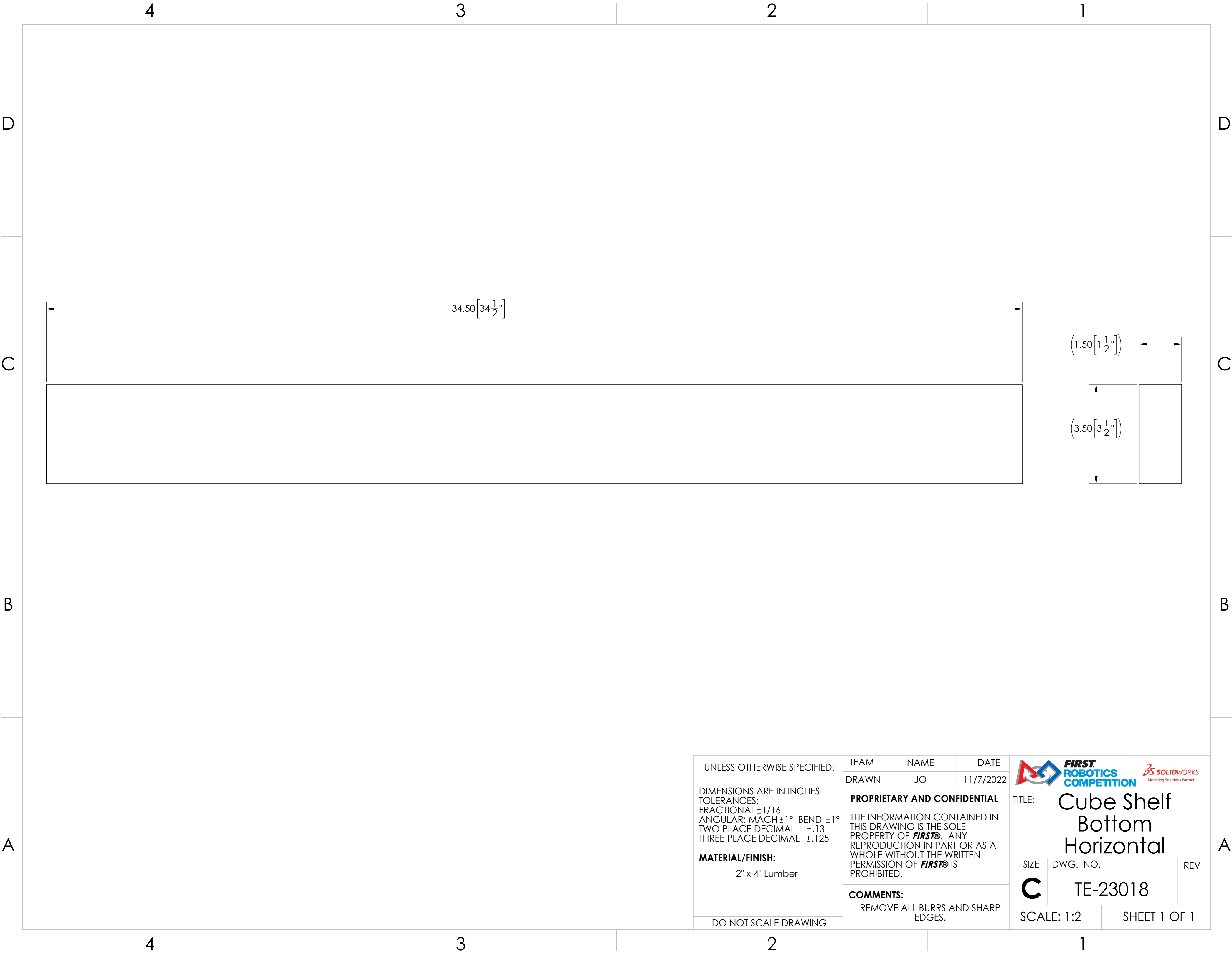
UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div></div>		
	DRAWN	JO	11/7/2022			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL			TITLE: Cone Ramp Diagonal Panel		
	THE INFORMATION CONTAINED IN 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		
MATERIAL/FINISH: 1/2" Plywood				DWG. NO.		REV
				TE-23015		
DO NOT SCALE DRAWING				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 ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: 1.25" SCH40 AL Tube DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div> <div>TITLE: Lower Pole</div>		
	DRAWN	JO	12/21/2022			
	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	DWG. NO.	REV
C				TE-23016		
SCALE: 1:4				SHEET 1 OF 1		



UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div></div> <div>TITLE: Upper Pole</div>		
	DRAWN	JO	12/21/2022			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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	TE-23017	
	MATERIAL/FINISH: 1.25" SCH40 Aluminum Tube	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:5	
DO NOT SCALE DRAWING						



UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div></div>	
	DRAWN	JO	11/7/2022		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL			TITLE: Cube Shelf Bottom Horizontal	
	THE INFORMATION CONTAINED IN 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: 2" x 4" Lumber				C	TE-23018
DO NOT SCALE DRAWING				SCALE: 1:2 SHEET 1 OF 1	

D

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C

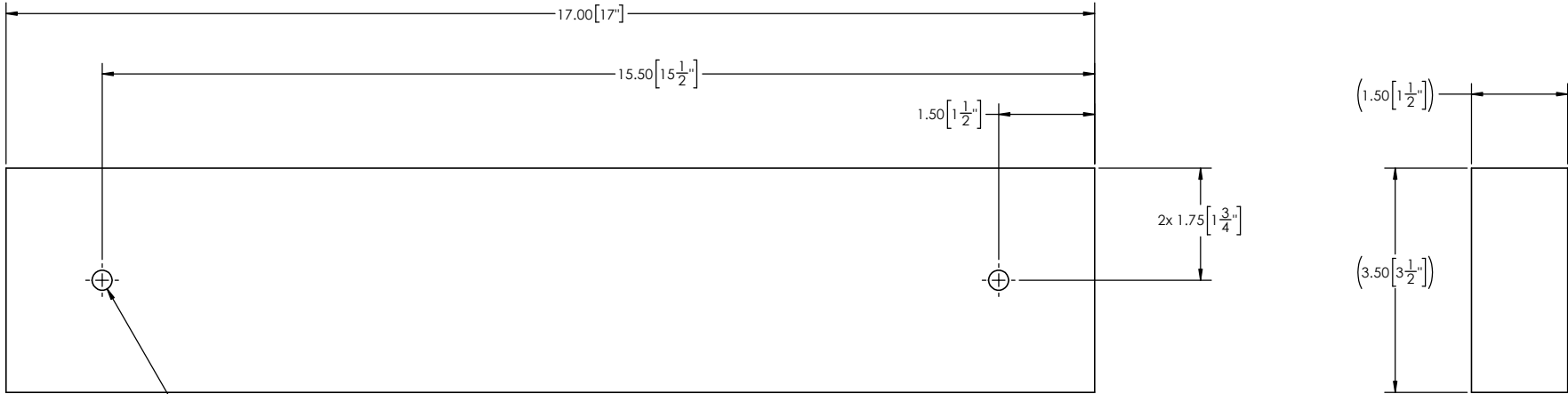
C

B



B

A

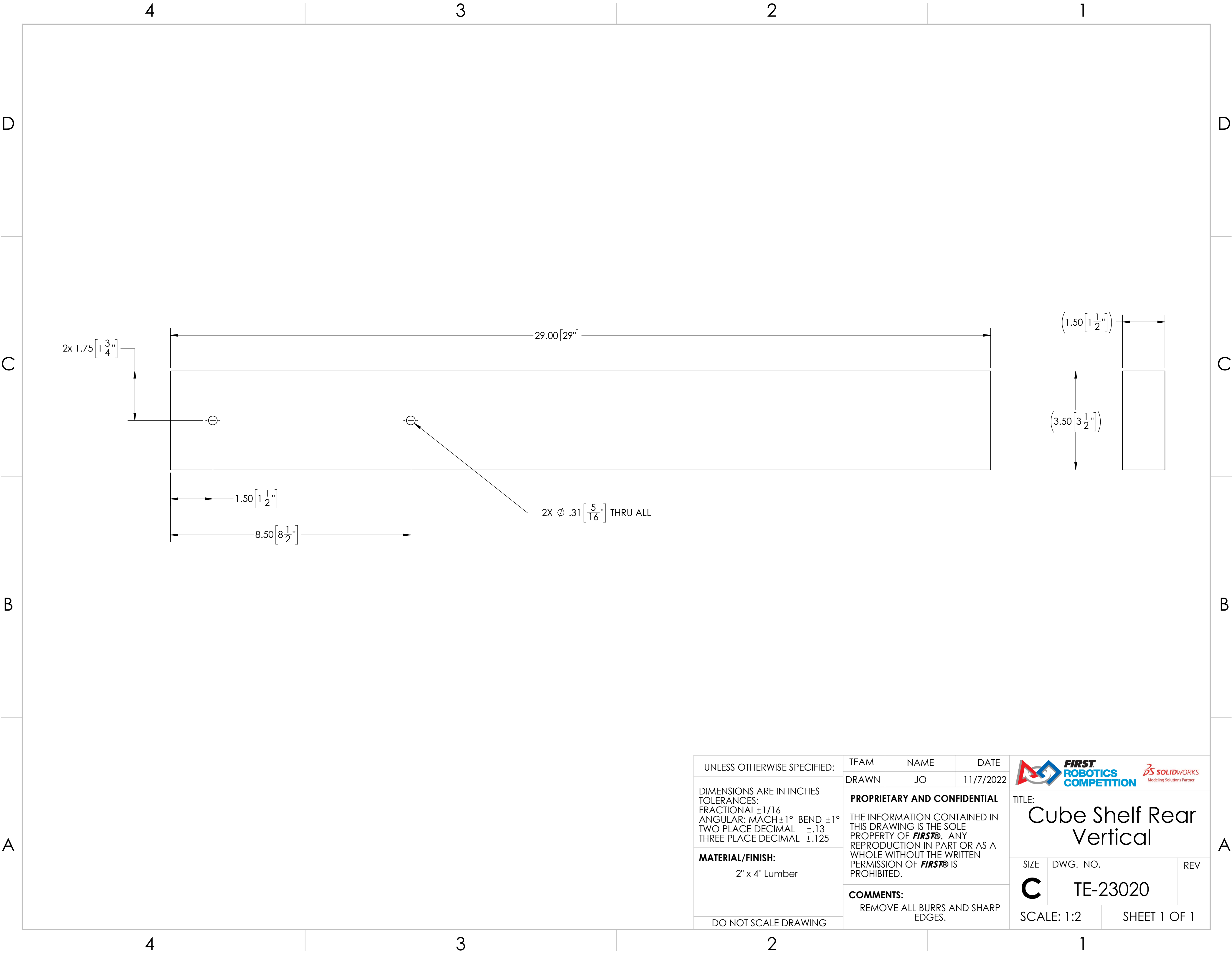
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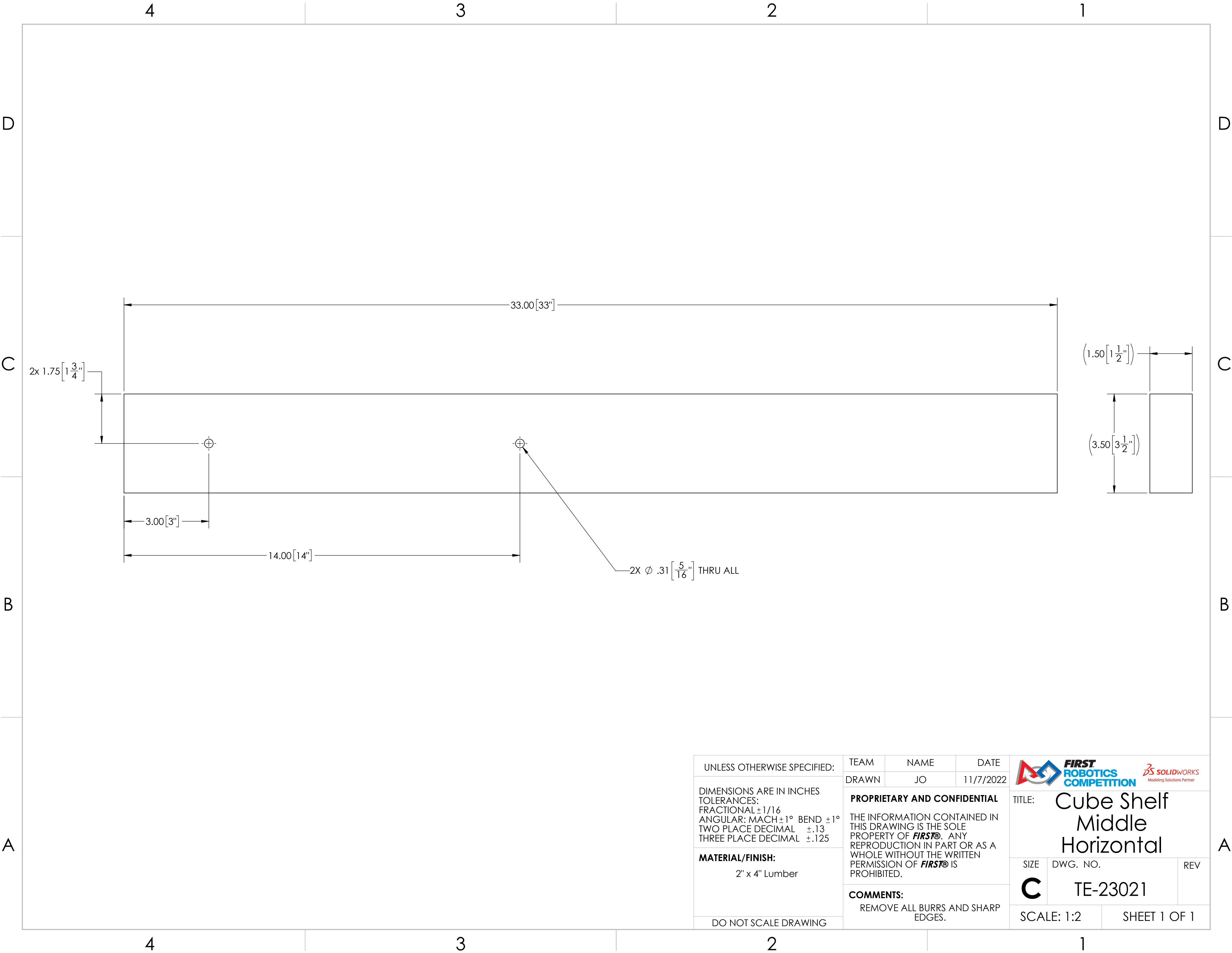


2X Ø .31 [5/16] THRU ALL

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: 2" x 4" Lumber DO NOT SCALE DRAWING	TEAM	NAME	DATE
	DRAWN	JO	11/7/2022
	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.		
<div><div></div><div>TITLE: Cube Shelf Front Vertical</div></div>			
SIZE		DWG. NO.	REV
C		TE-23019	
SCALE: 3:4		SHEET 1 OF 1	







UNLESS OTHERWISE SPECIFIED:		TEAM	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$		DRAWN	JO	11/7/2022
MATERIAL/FINISH: 2" x 4" Lumber		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: Cube Shelf Middle Horizontal		
		SIZE C	DWG. NO. TE-23021	REV
		SCALE: 1:2		SHEET 1 OF 1



D

C

B

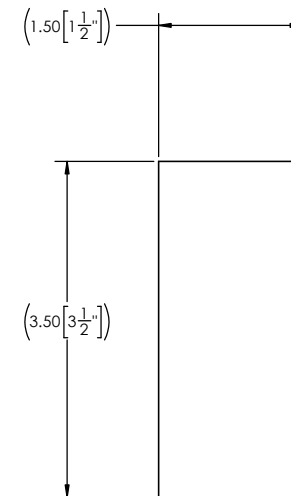
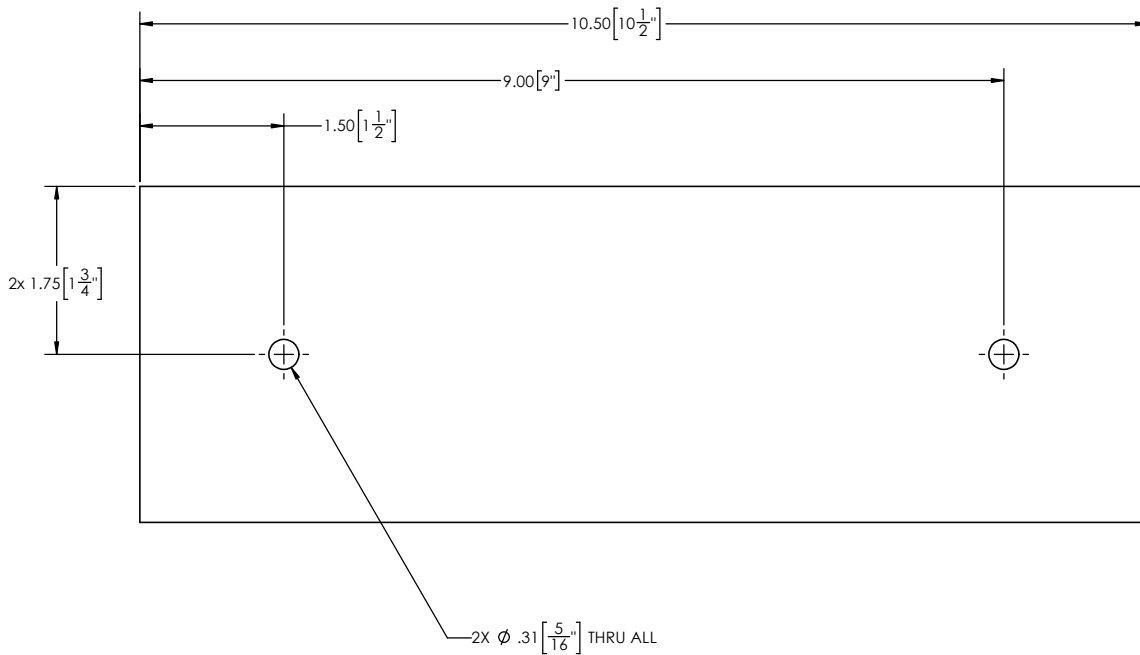
A



D

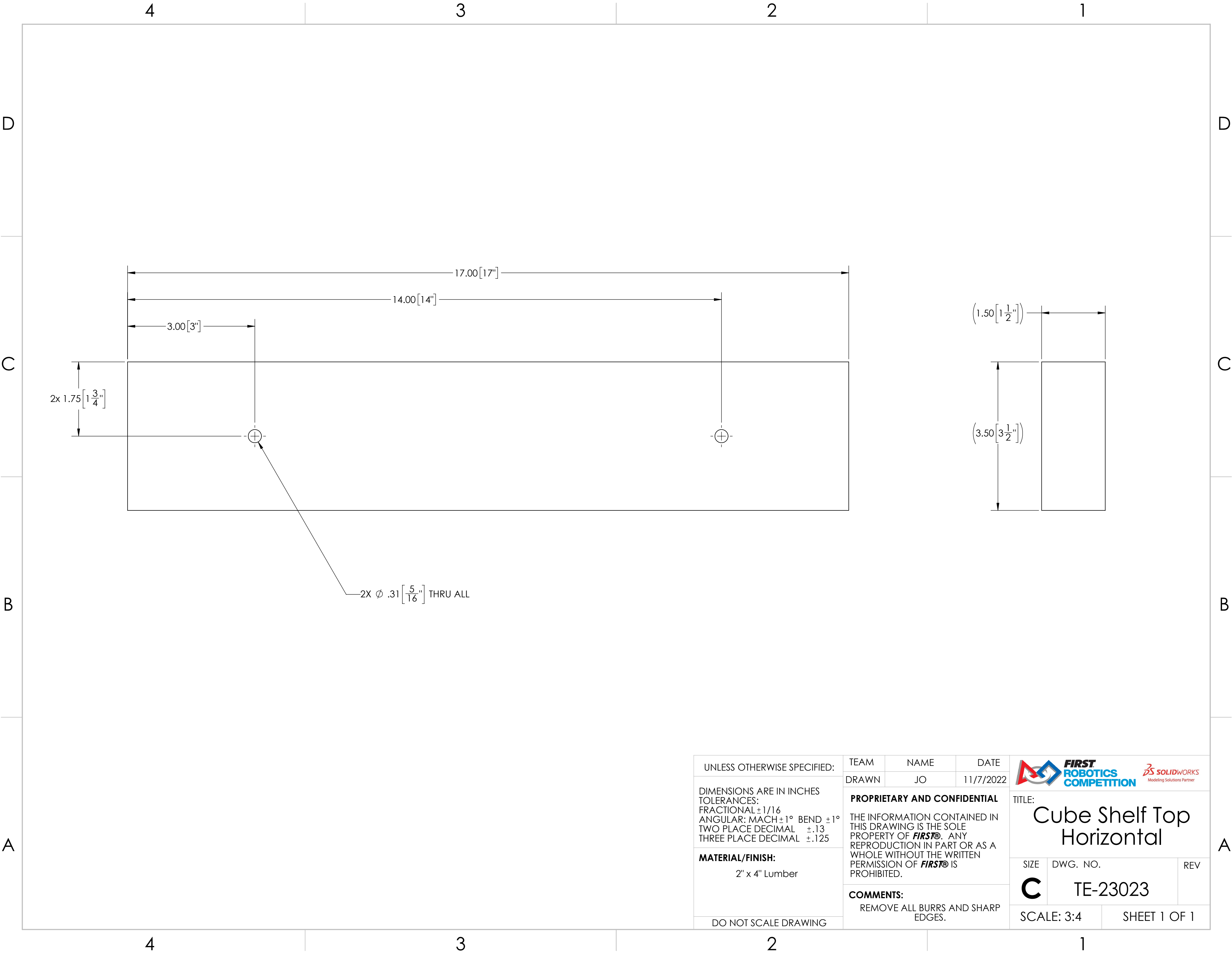
C



B

A



UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	 		
	DRAWN	JO	11/7/2022			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$	PROPRIETARY AND CONFIDENTIAL			TITLE: Cube Shelf Front Short Vertical		
	THE INFORMATION CONTAINED IN 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: 2" x 4" Lumber				SIZE	DWG. NO.	REV
				C	TE-23022	
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 ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: 2" x 4" Lumber DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div><div></div><div>TITLE: Cube Shelf Top Horizontal</div></div>		
	DRAWN	JO	11/7/2022			
	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.					
SCALE: 3:4		SHEET 1 OF 1		SIZE	DWG. NO.	REV
C		TE-23023				

D

C

B

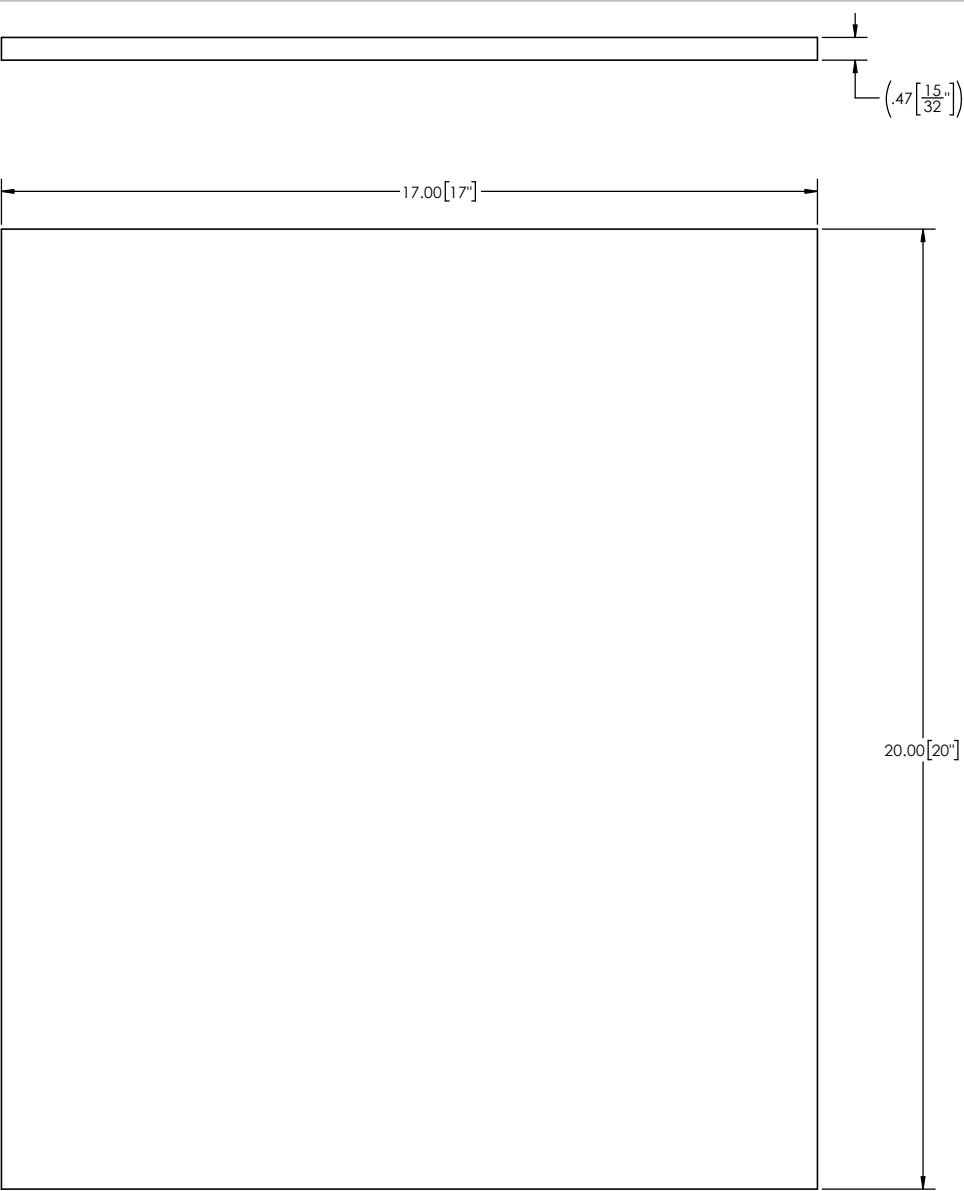
A



D

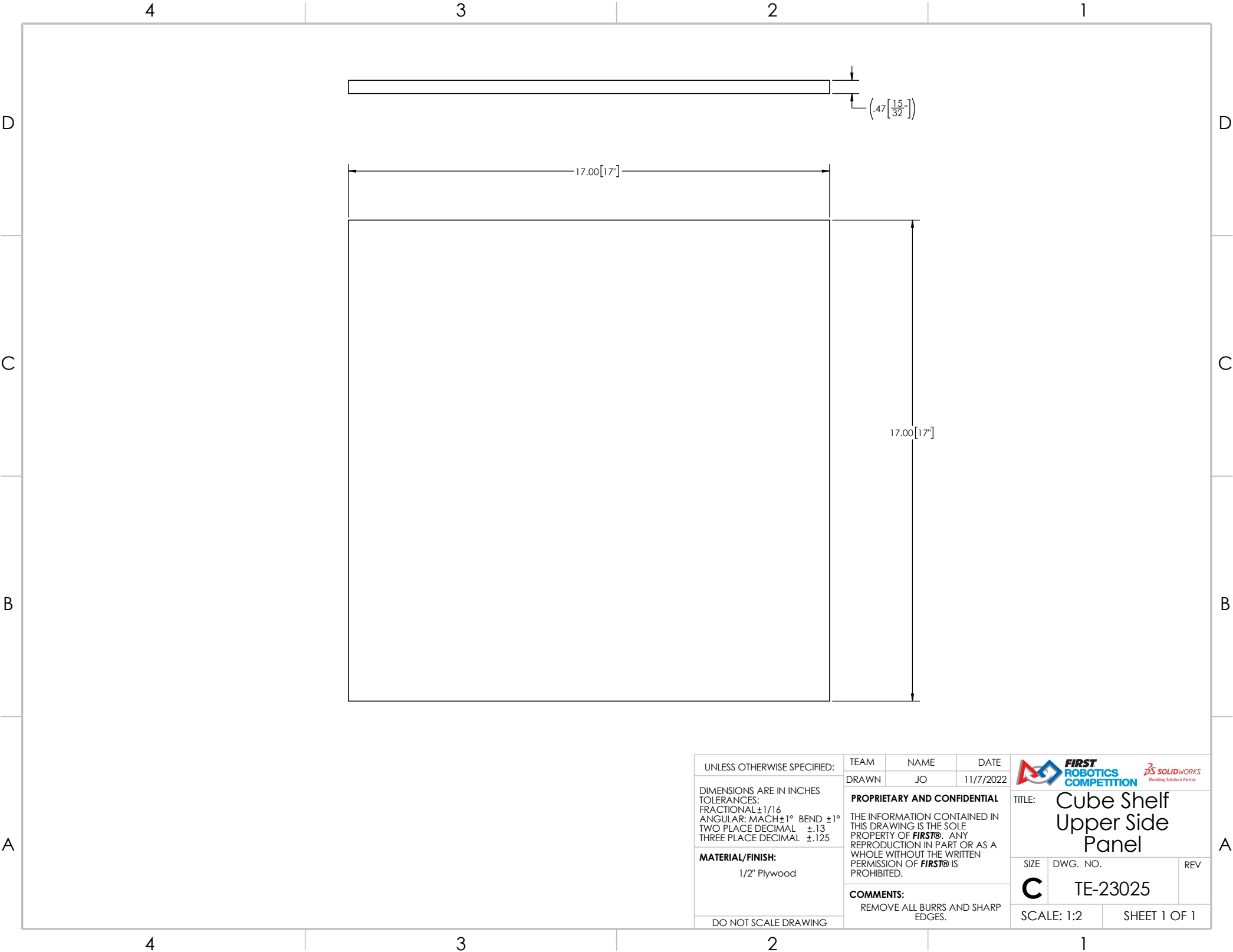
C



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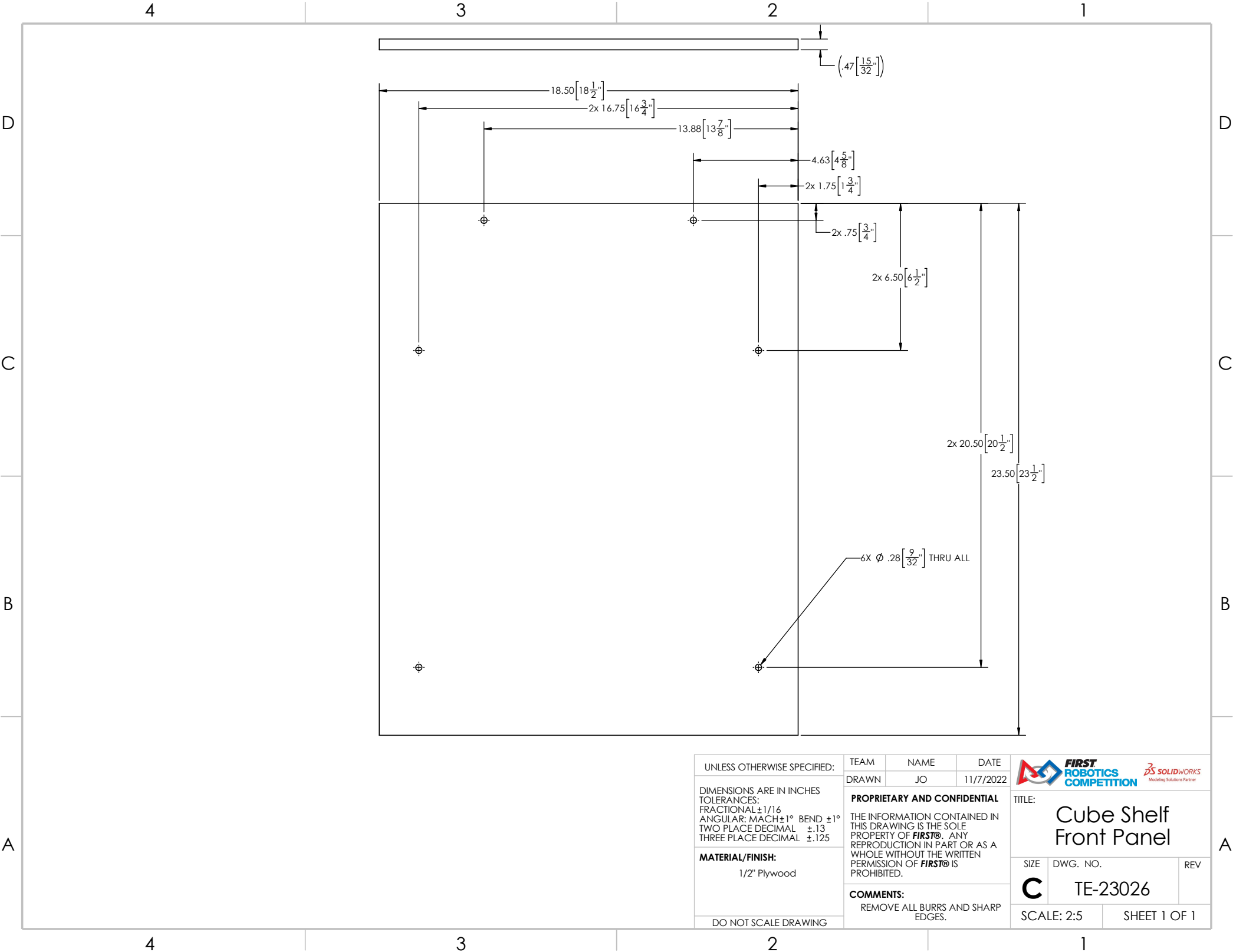
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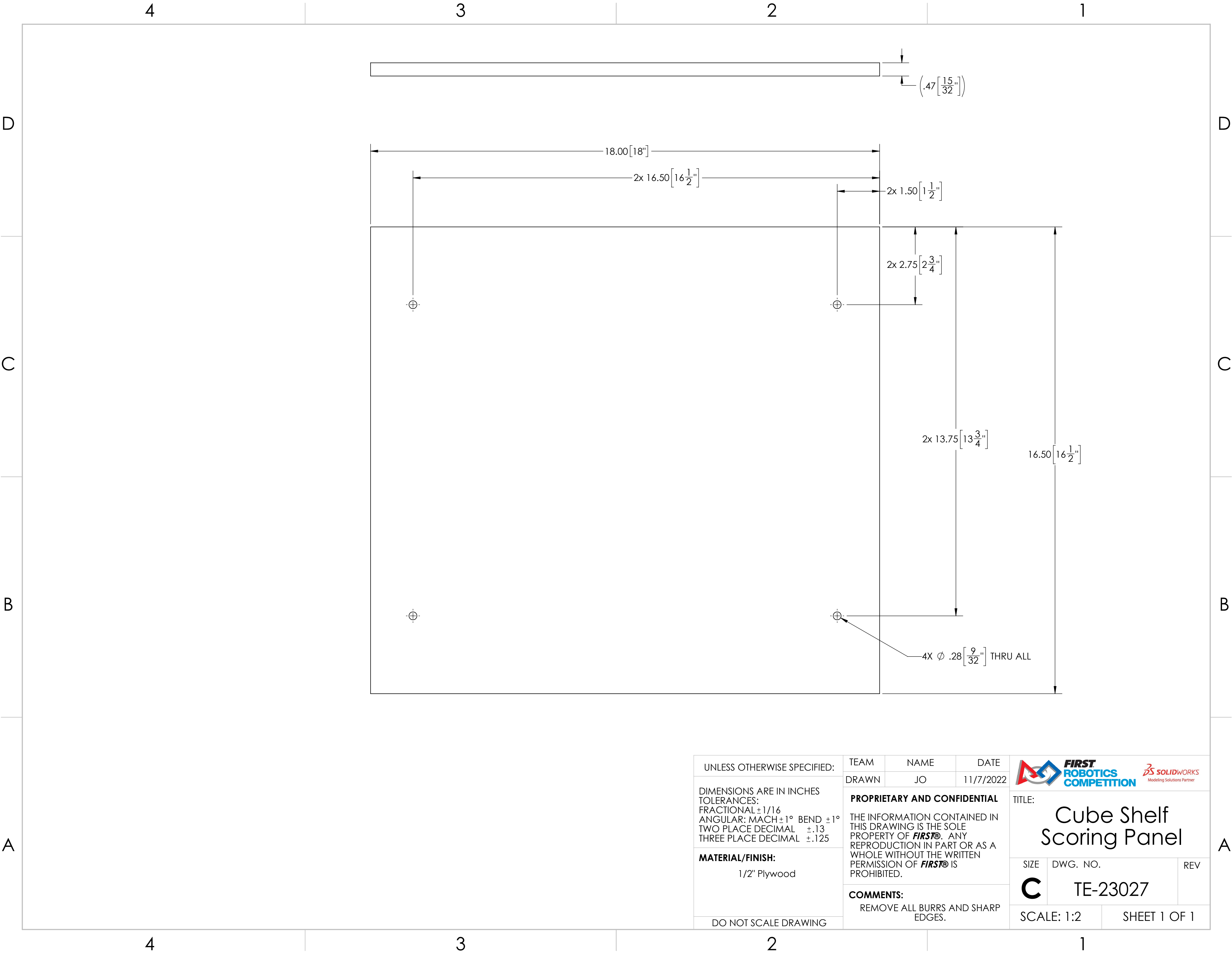




UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: ±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: 1/2" Plywood COMMENTS: REMOVE ALL BURRS AND SHARP EDGES. DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	JO	11/7/2022		
	PROPRIETARY 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: Cube Shelf Lower Side Panel	
			SIZE	DWG. NO.	REV
			C	TE-23024	
			SCALE: 1:2		SHEET 1 OF 1

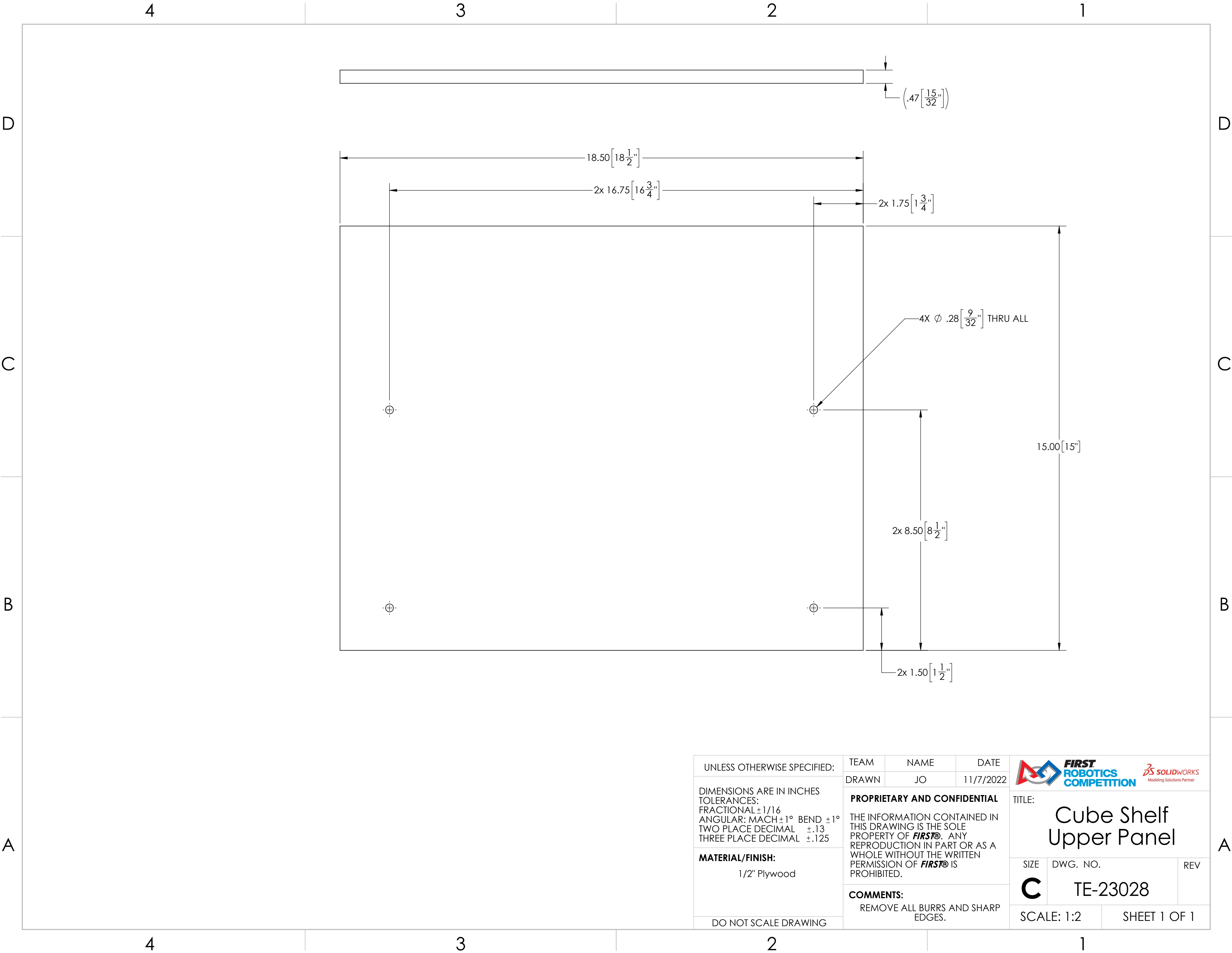




UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$ MATERIAL/FINISH: 1/2" Plywood DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	JO	11/7/2022		
	PROPRIETARY AND 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.			TITLE: Cube Shelf Upper Side Panel	
SIZE		DWG. NO.		REV	
C		TE-23025			
SCALE: 1:2			SHEET 1 OF 1		

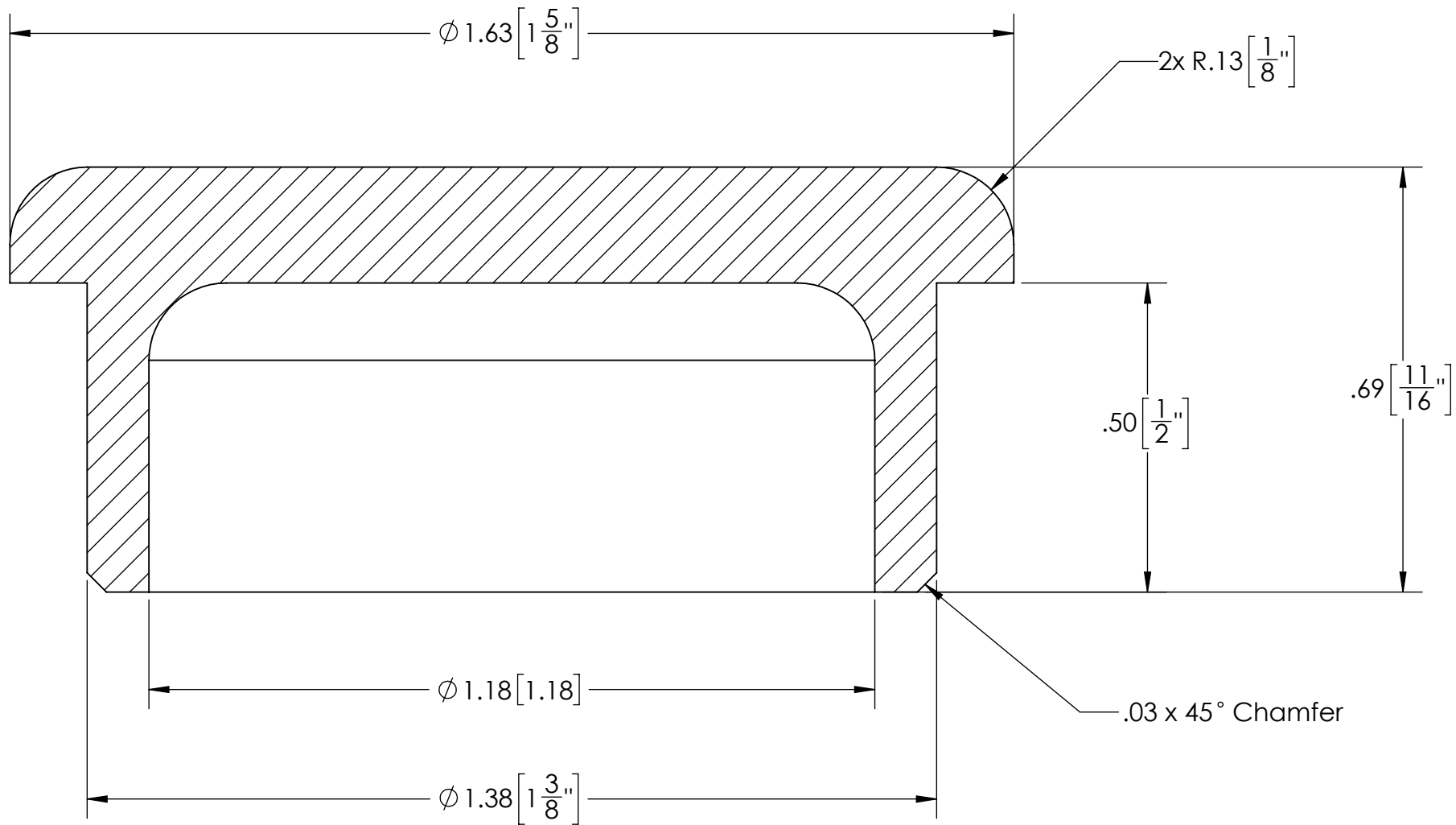
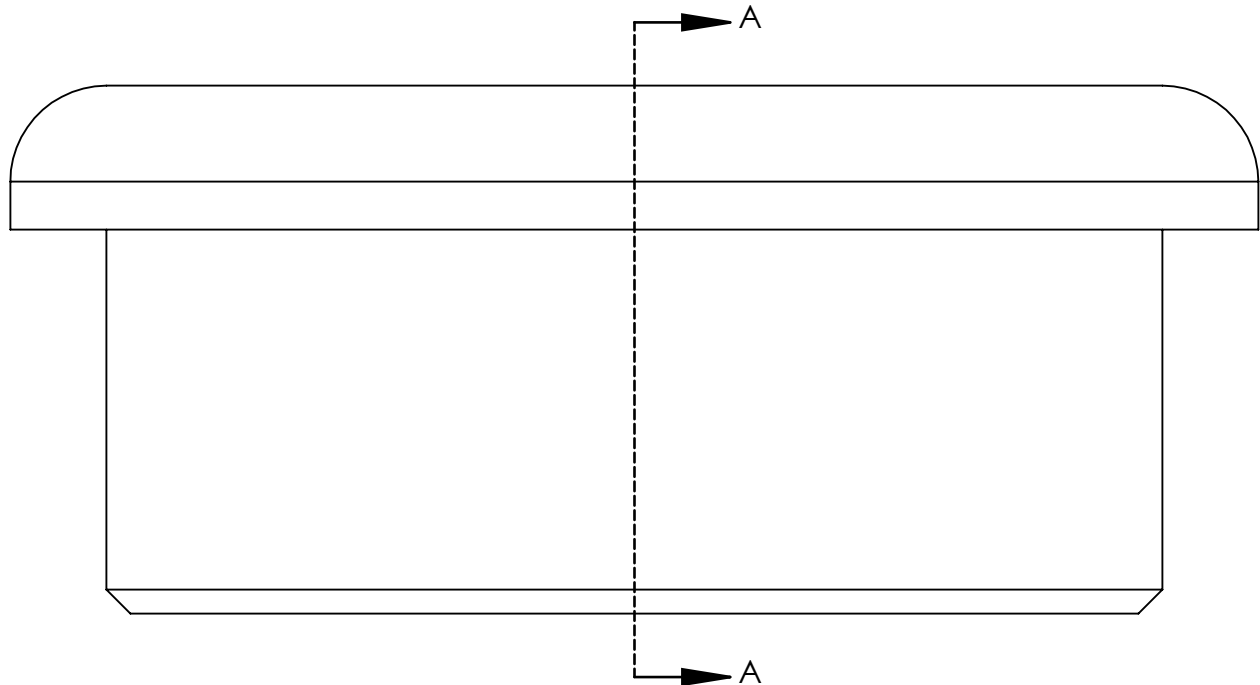






UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div><div></div><div>TITLE: <h1>Cube Shelf Scoring Panel</h1></div></div>		
	DRAWN	JO	11/7/2022			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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	TE-23027	
	DO NOT SCALE DRAWING			SCALE: 1:2		SHEET 1 OF 1
MATERIAL/FINISH: 1/2" Plywood						



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$ MATERIAL/FINISH: 1/2" Plywood DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div><div></div><div>TITLE: <h1>Cube Shelf Upper Panel</h1></div></div>	
	DRAWN	JO	11/7/2022		
	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.
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	TE-23028
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 ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div><div></div><div>TITLE: <h1>Alternate Pole Cap</h1></div></div>	
	DRAWN	JO	12/21/2022		
	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	DWG. NO.
			C	TE-23029	
			SCALE: 4:1		SHEET 1 OF 1