



Hardware Needed:

- #8 x 1.25" Long Screw - Qty 16
- #8 x 2" Long Screw - Qty 32
- #8 x 2.5" Long Screw - Qty 20
- #8 x 3" Long Screw - Qty 16
- #10 x 3.5" Long Screw - Qty 64

Optional, but encouraged: Safety Edging

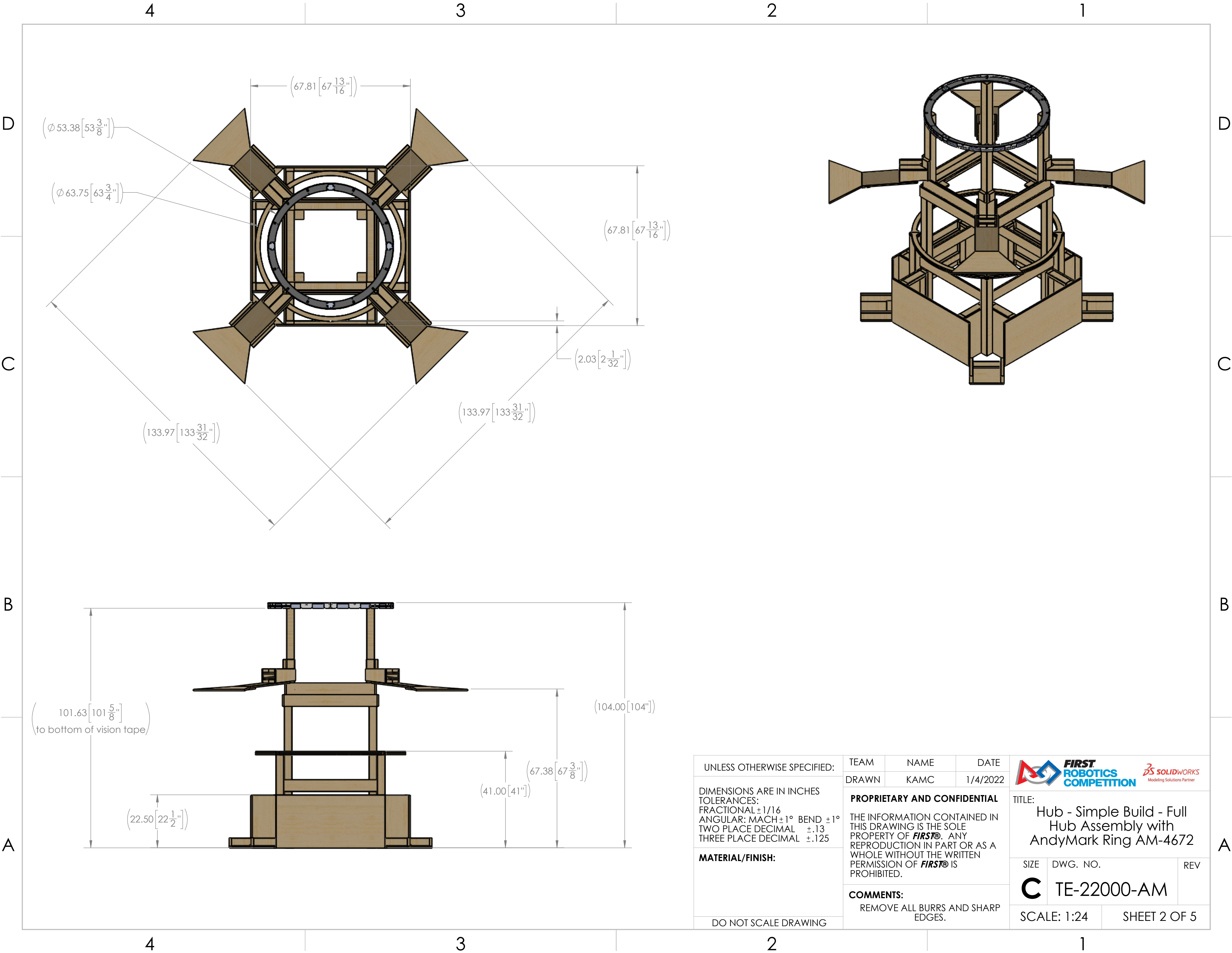
ITEM NO.	PART NUMBER	DESCRIPTION	
1	TE-22010	Hub - Simple Build - Fender Assembly	4
2	TE-22023-Multiple	Hub - Simple Build - Lower Hub Ring Assembly - Multiple	4
3	TE-22025	HUB - Simple Build - Vertical for Lower Hub Ring 4x4	4
4	TE-22030-AM	Hub - Simple Build - Upper Hub Goal Assembly for AM Ring AM-4672	1
5	TE-22040	Hub - Simple Build - Upper Hub Base Assembly	1
6	TE-22050	Hub - Simple Build - Lower Exit Assembly	4
7	TE-22060	Hub - Simple Build - Upper Exit Assembly	4

UNLESS OTHERWISE SPECIFIED:		TEAM	NAME	DATE	 FIRST ROBOTICS COMPETITION		 SOLIDWORKS Modeling Solutions Partner	
		DRAWN	KAMC	1/4/2022				
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: Hub - Simple Build - Full Hub Assembly with AndyMark Ring AM-4672			
MATERIAL/FINISH:					SIZE	DWG. NO.	REV	
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	TE-22000-AM		
DO NOT SCALE DRAWING					SCALE: 1:18		SHEET 1 OF 5	

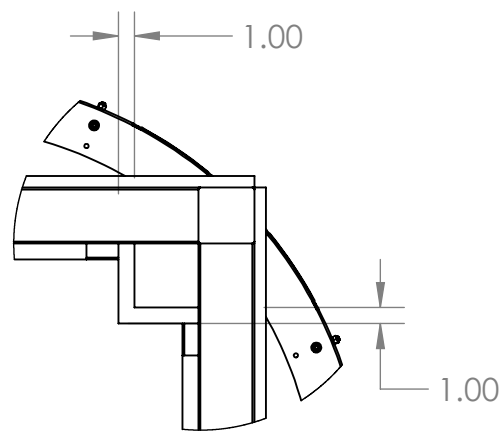
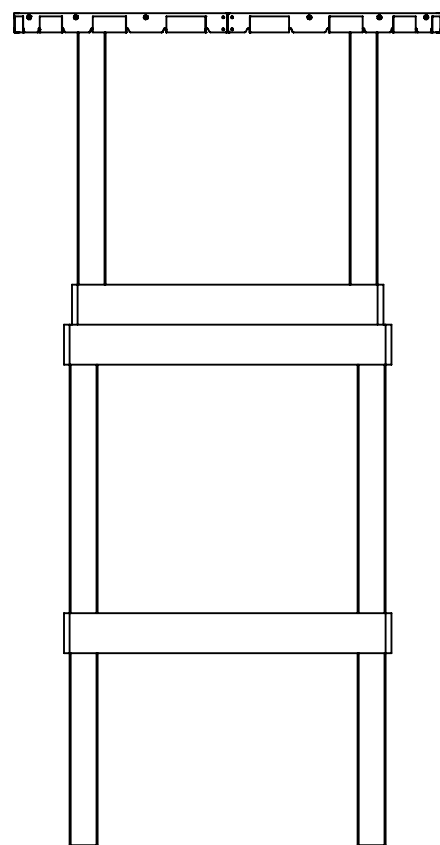
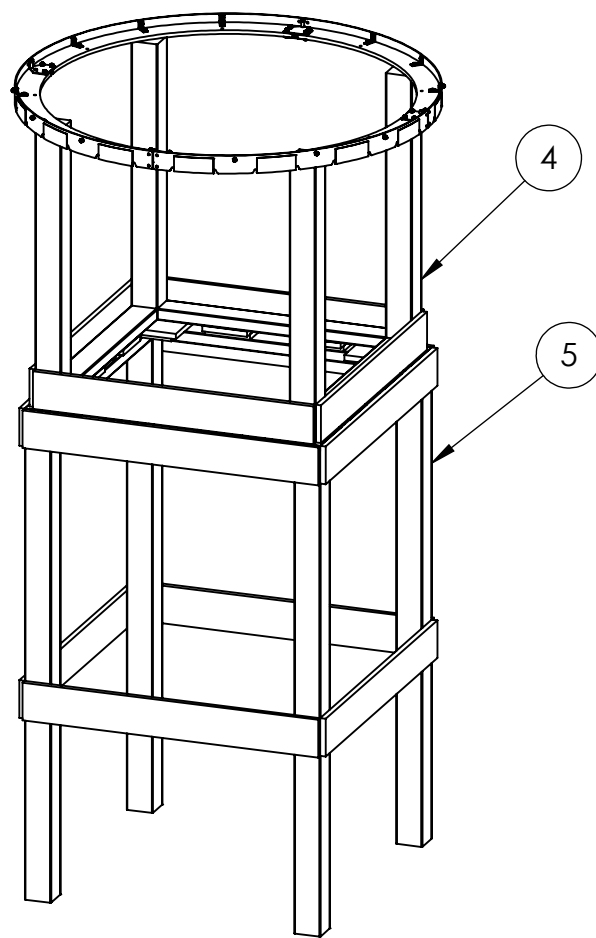
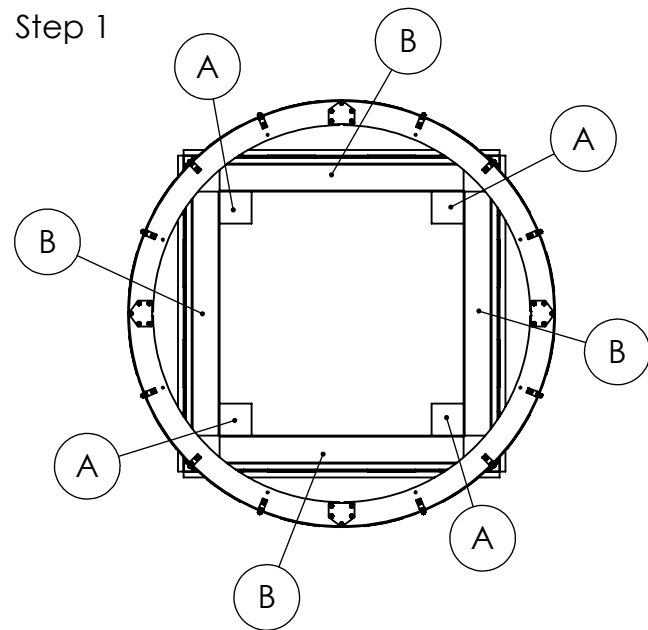
Note:

1. Use TE-22000 if NOT pairing with AndyMark Ring AM-4672.
2. If you are planning to disassemble frequently, you may want to consider using bolted connections instead of screws. It is helpful to consider ceiling height and ability to move assembly through doors before fastening sub-assemblies together.

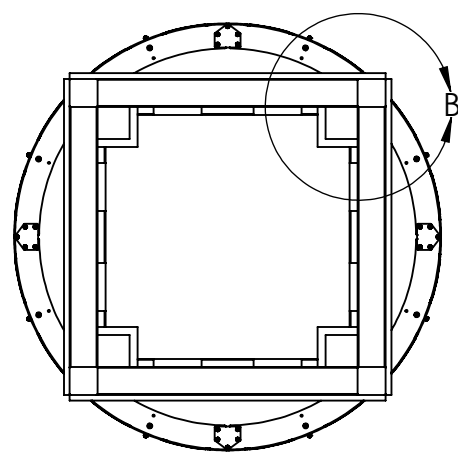
SCALE: 1:18 SHEET 1 OF 5



Step 1



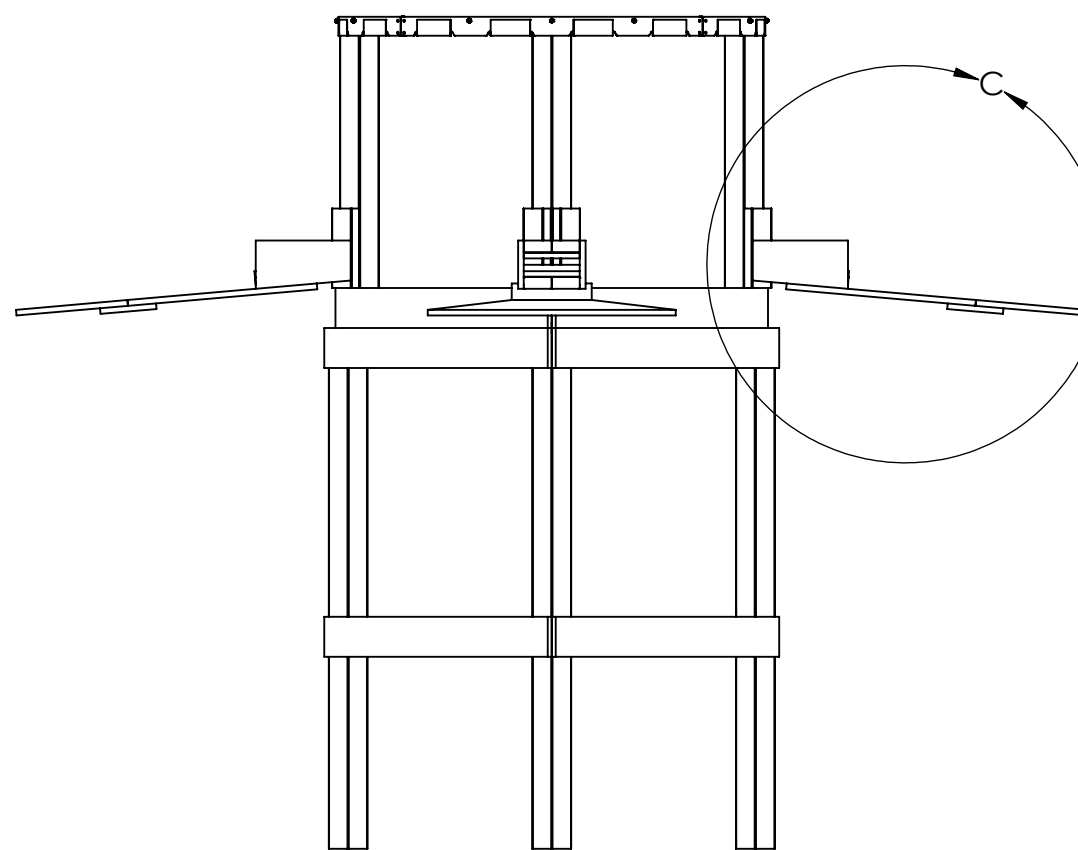
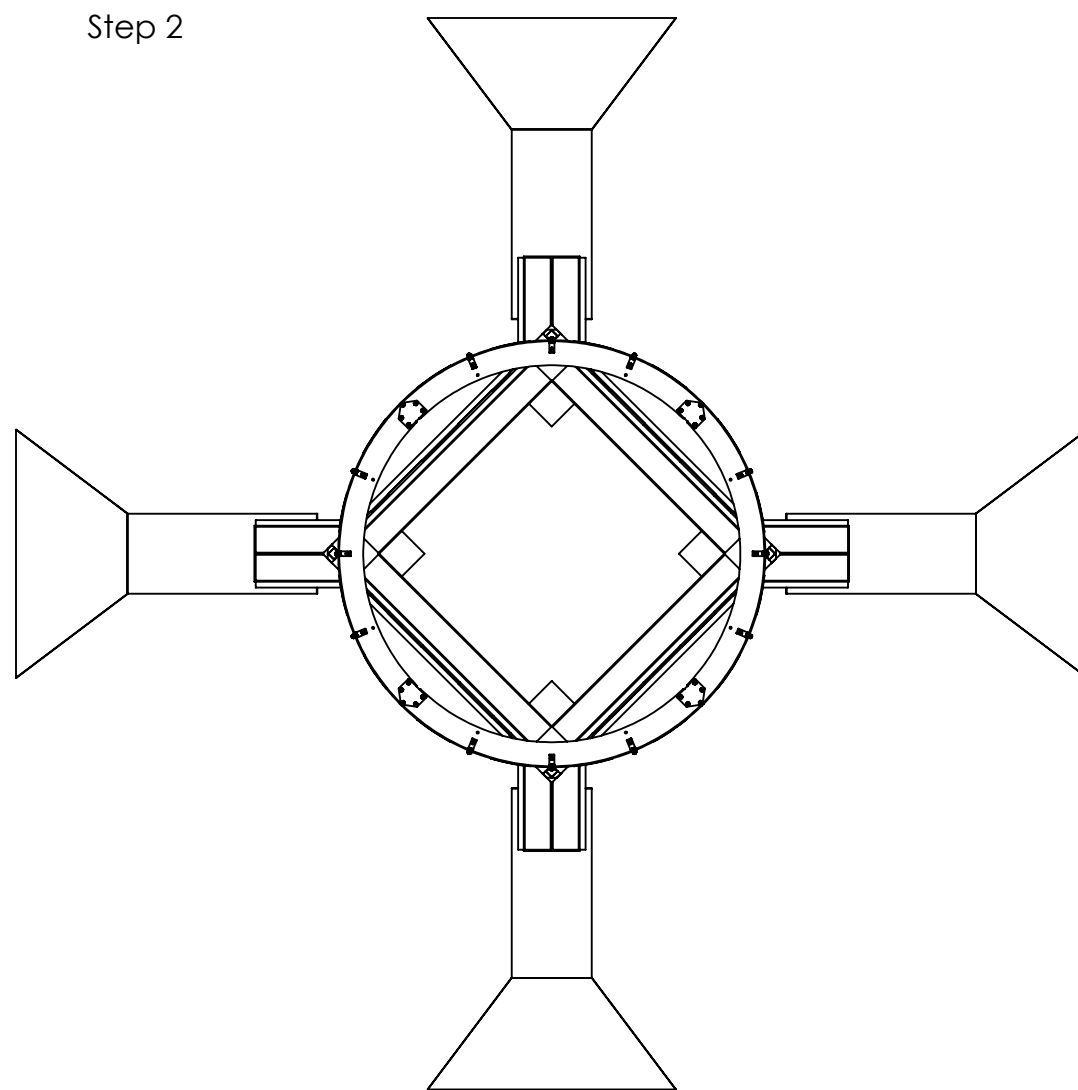
4X
DETAIL B
SCALE 1 : 12



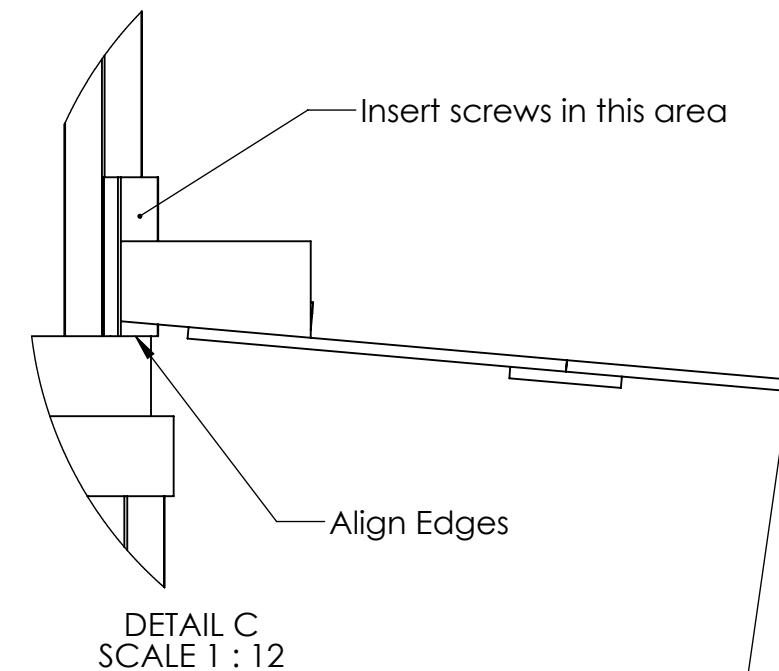
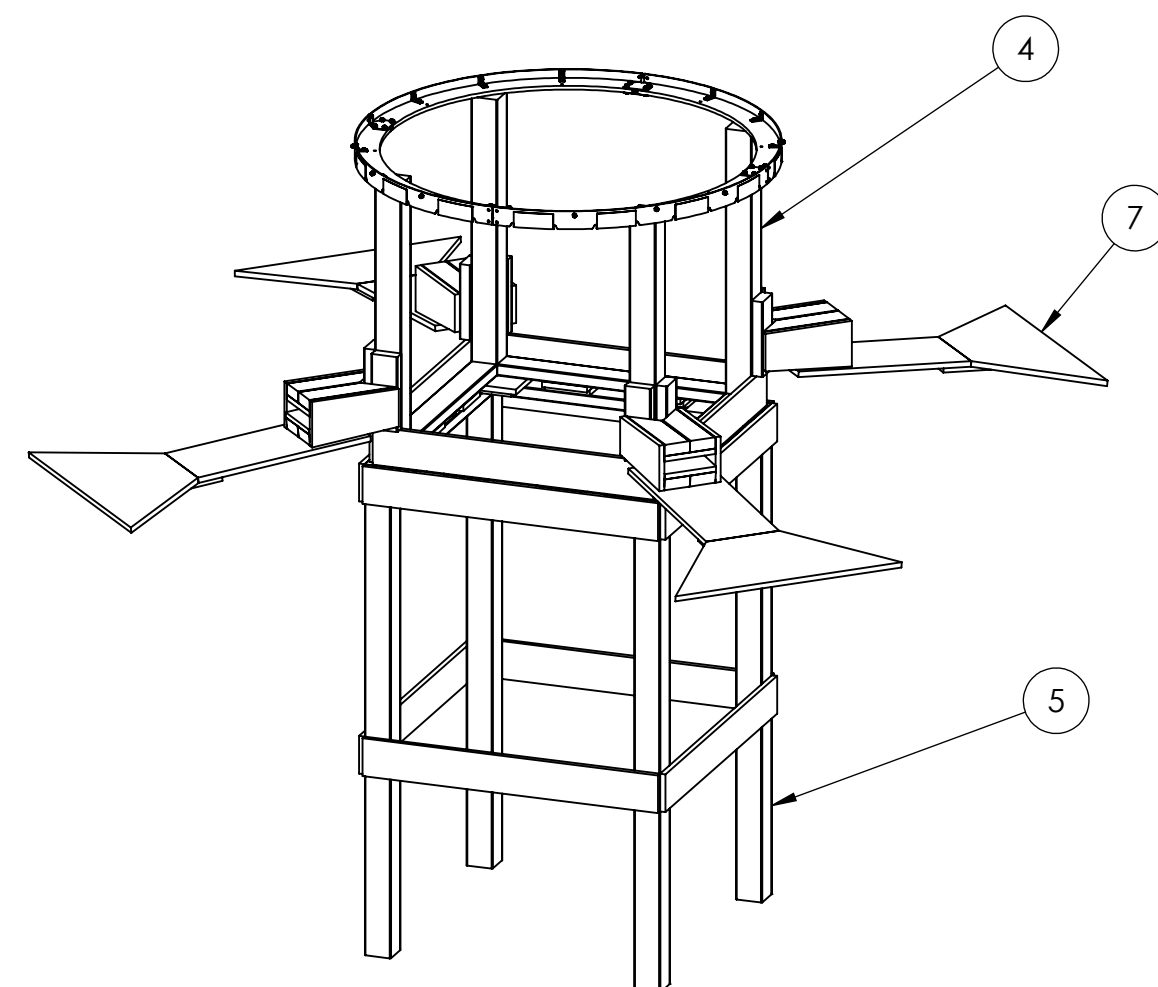
Bottom View

- Align 4 to 5 as shown. Note the dimensions in Detail B.
- Connect using 1.25" and 2.5" Long Screws. It is recommended to use 4x 1.25" long screws into each area indicated by A . It is recommended to use 5x 2.5" long screws into each area indicated by B .



Step 2



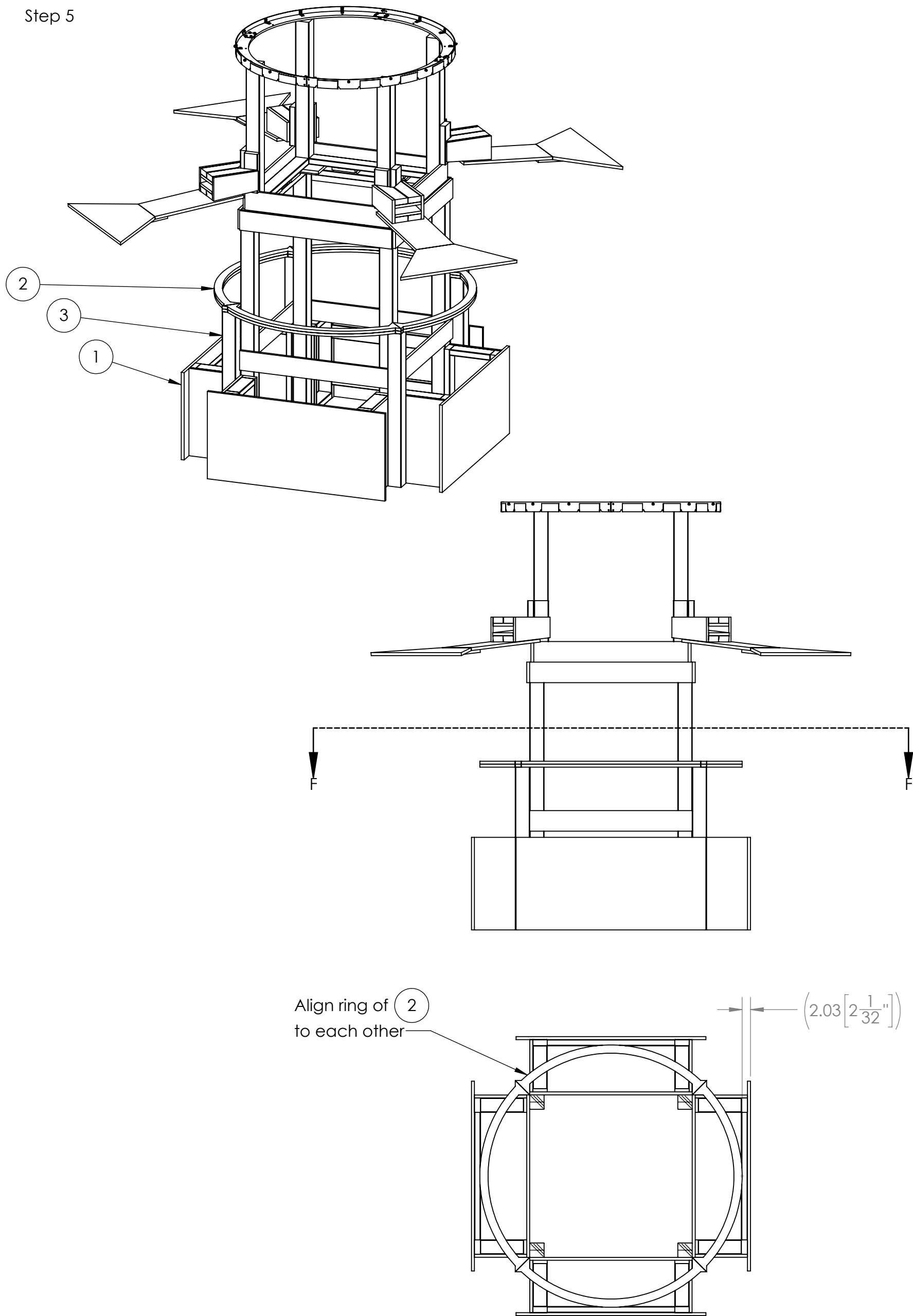
- Align 4x 7 to 4 on the assembly from Step 1 , as shown.
- Connect using 3.5" long screws. It is recommended to use 8x screws per 7 , 4x screws per 2"x4" lumber on 7 . Note: Be mindful of screw placement into the 4"x4" lumber to ensure two screws do not collide.
- Optional: It is recommended to install safety edging on 7 at this time. Safety edging could be pool noodles, baby proofing material, etc.



It is recommended to install Safety Edging on 7 .

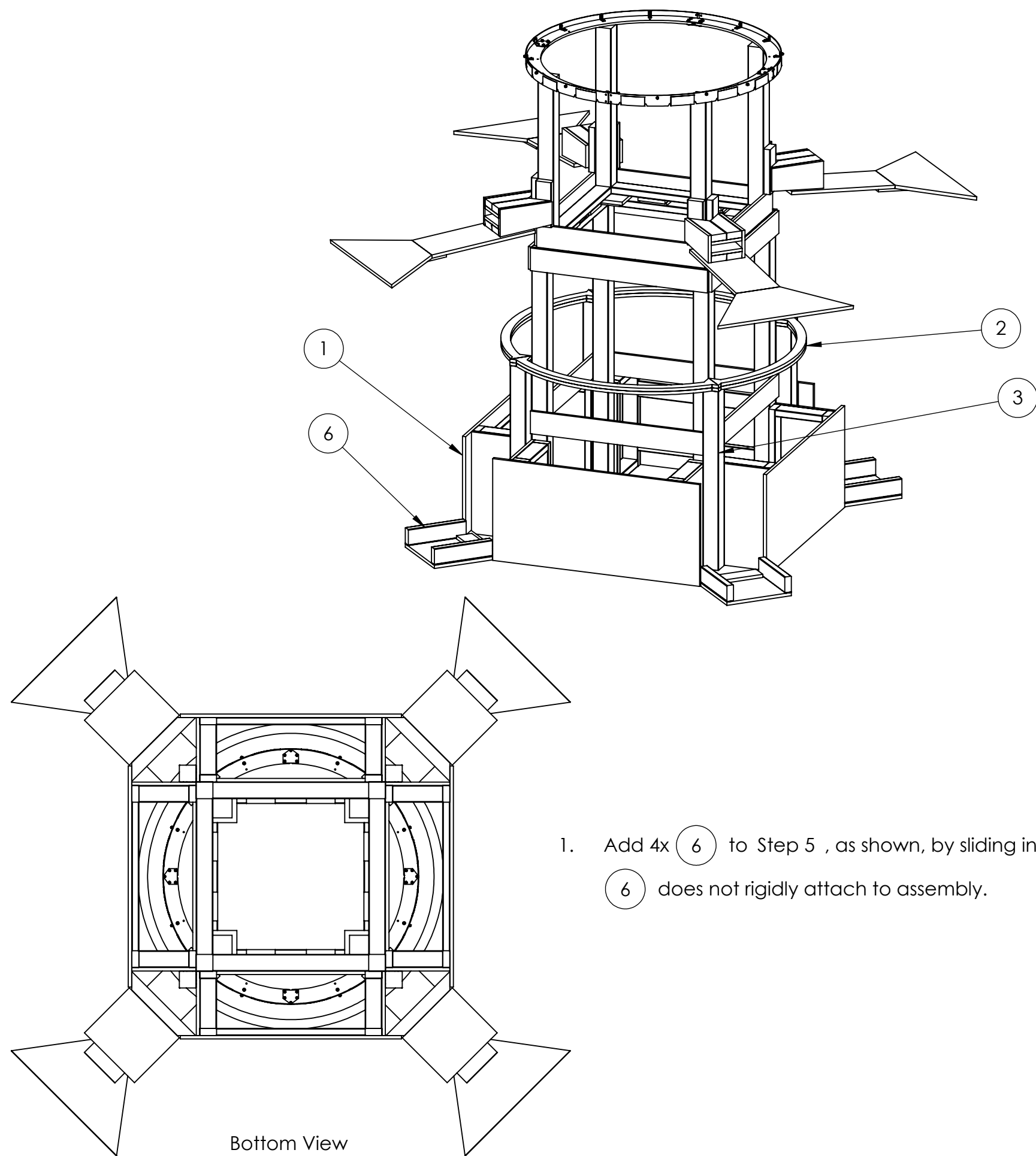
UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	 
	DRAWN	KAMC	1/4/2022	
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL			TITLE: Hub - Simple Build - Full Hub Assembly with AndyMark Ring AM-4672
	THE INFORMATION CONTAINED IN 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				TE-22000-AM
	SCALE: 1:24		SHEET 3 OF 5	

Step 5





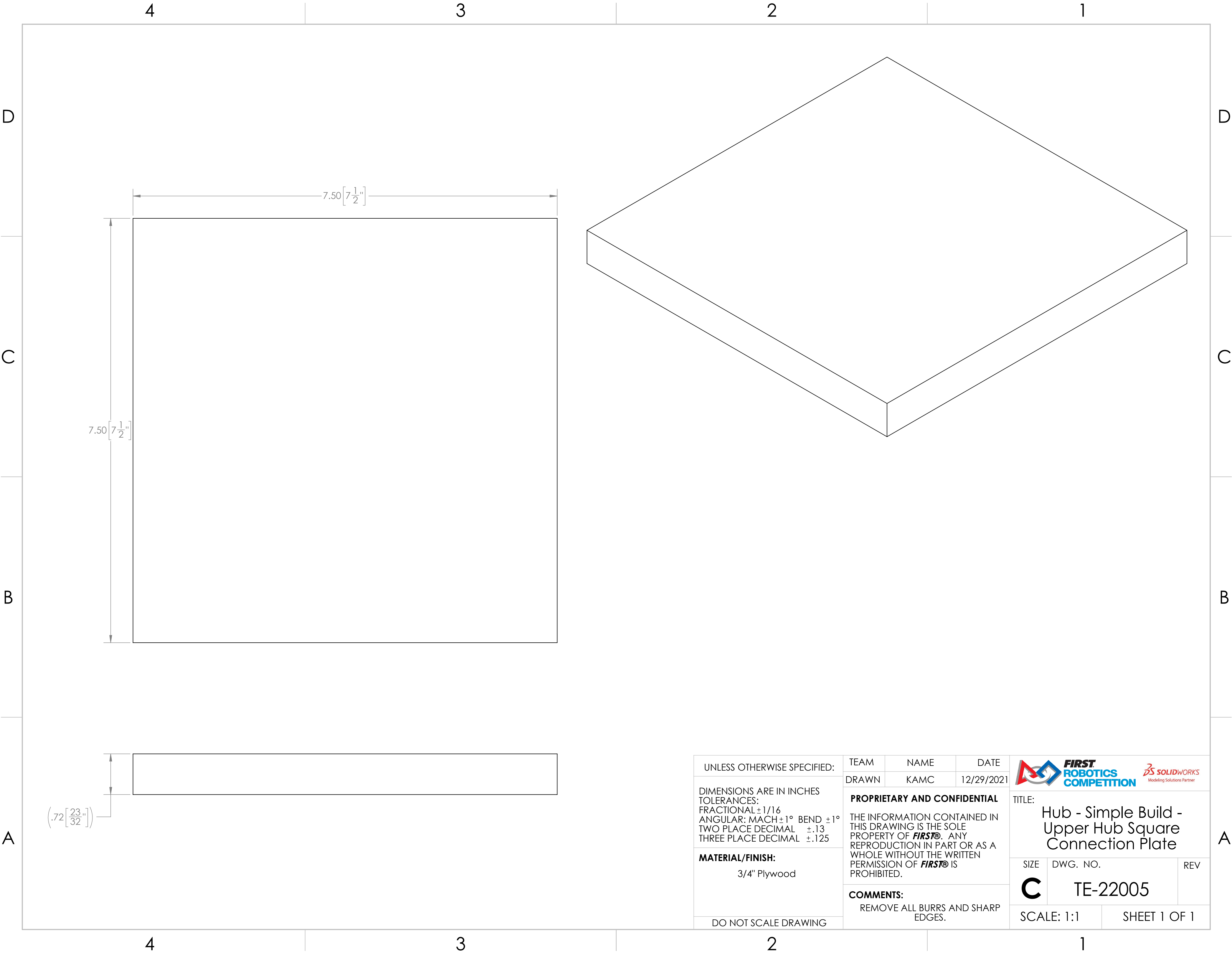
1. Align 4x (2) to each other, on top of 4x (3). Ideally, the triangular edges of (2) align with adjacent (2). If this does not occur, split the difference evenly amongst all (3)'s.
2. Connect (2) to (3) using 3" long screws. It is recommended to use 4x screws per (2), 2x per (3).
Note: Be careful not to screw too close to the edge of (3).

Step 6



1. Add 4x (6) to Step 5, as shown, by sliding into place.
(6) does not rigidly attach to assembly.

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	 		
	DRAWN	KAMC	1/4/2022			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/2 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.50	PROPRIETARY AND CONFIDENTIAL			TITLE: Hub - Simple Build - Full Hub Assembly with AndyMark Ring AM-4672		
	THE INFORMATION CONTAINED IN 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	TE-22000-AM	
DO NOT SCALE DRAWING				SCALE: 1:24		SHEET 5 OF 5



4

3

2

1

D

D

C

C

B

B

A

A

7.50 $\left[7\frac{1}{2}''\right]$

7.50 $\left[7\frac{1}{2}''\right]$

$\left(.72\left[\frac{23}{32}''\right]\right)$

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:
3/4" Plywood

DO NOT SCALE DRAWING

TEAM

NAME

DATE

DRAWN

KAMC

12/29/2021

PROPRIETARY AND CONFIDENTIAL

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



TITLE:
Hub - Simple Build -
Upper Hub Square
Connection Plate

SIZE

C

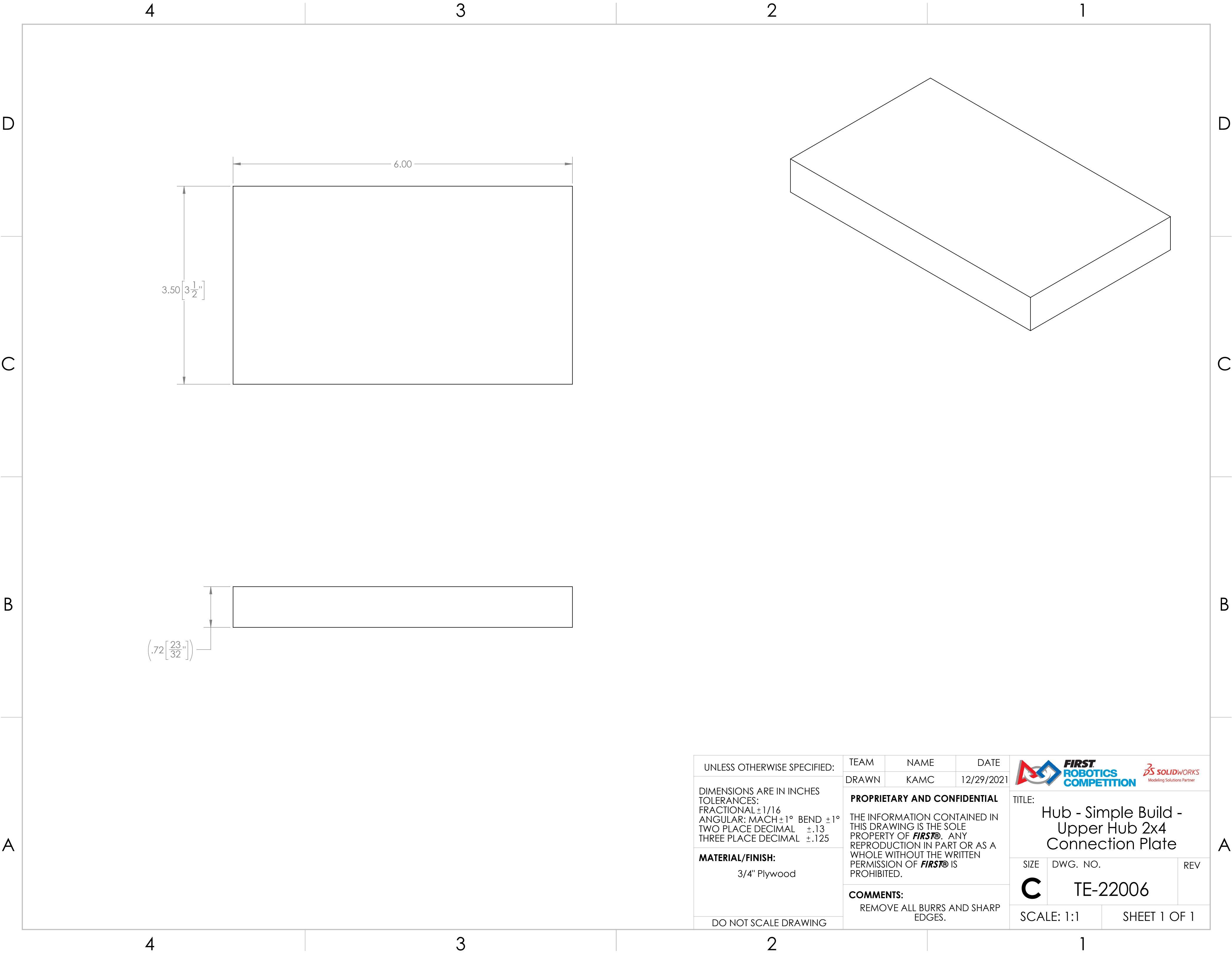
DWG. NO.



TE-22005

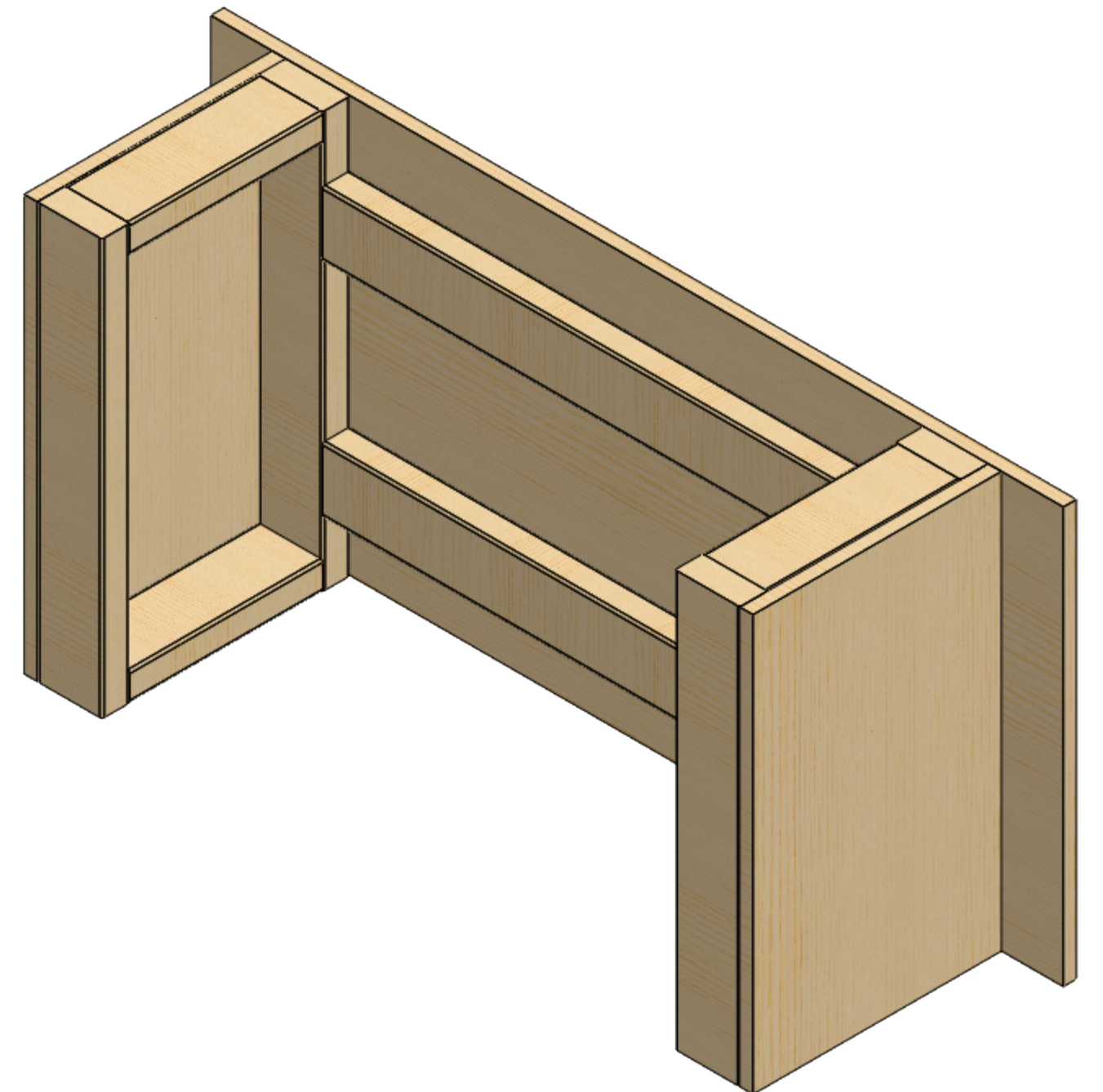
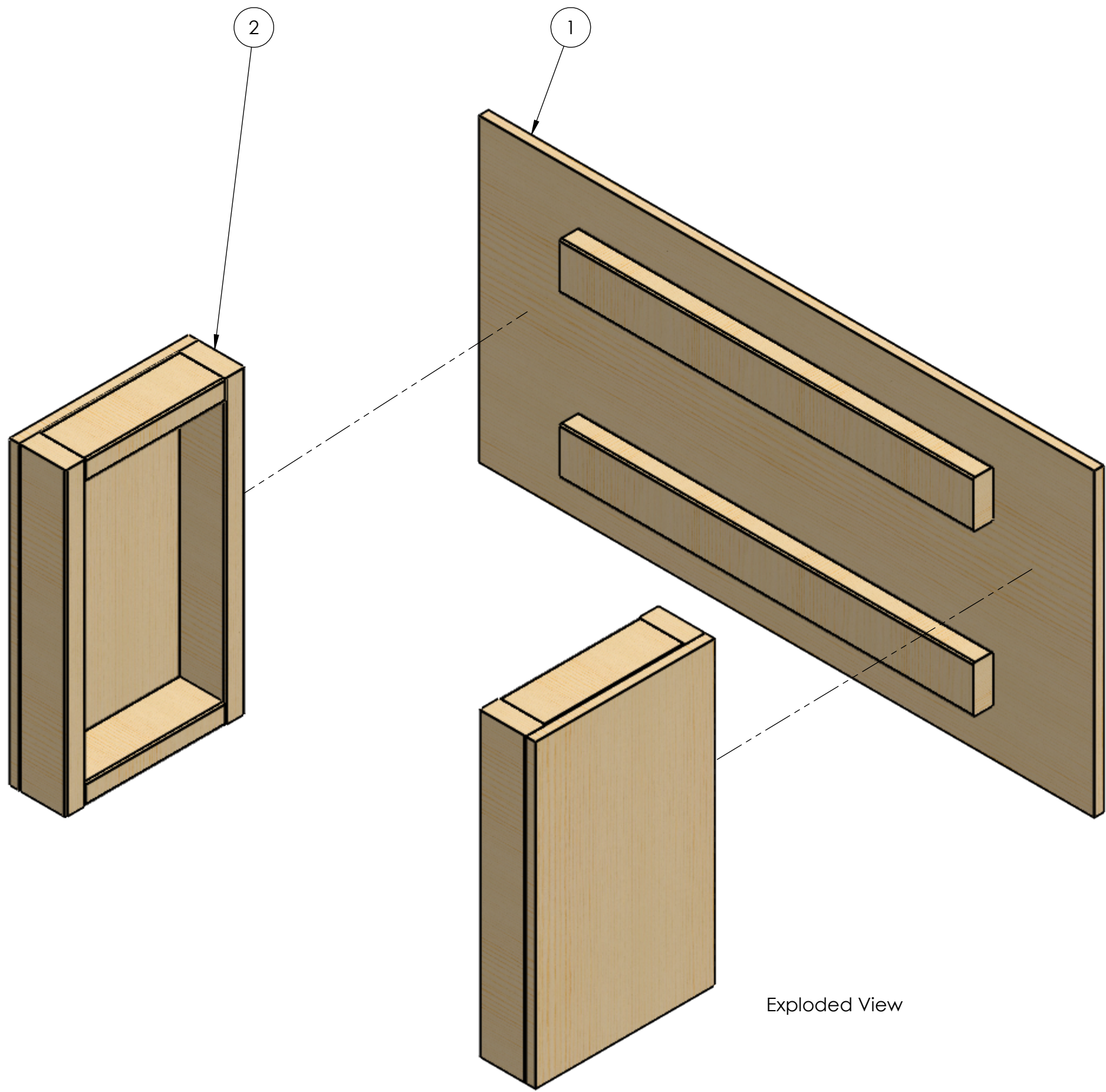
REV

SCALE: 1:1

SHEET 1 OF 1



UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/29/2021			
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.			Hub - Simple Build - Upper Hub 2x4 Connection Plate		
MATERIAL/FINISH: 3/4" Plywood	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	TE-22006	
DO NOT SCALE DRAWING				SCALE: 1:1		SHEET 1 OF 1



Hardware Needed:
#8 x 2" Long Screw - Qty 10

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-22013	HUB - Basic Build - Fender Front Assembly	1
2	TE-22017	HUB - Basic Build - Fender Side Assembly	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 $\pm .13$
THREE PLACE DECIMAL $\pm .125$
MATERIAL/FINISH:



DO NOT SCALE DRAWING

TEAM
DRAWN

NAME
KAMC

DATE
12/30/2021

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN 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:
Hub - Simple Build - Fender Assembly

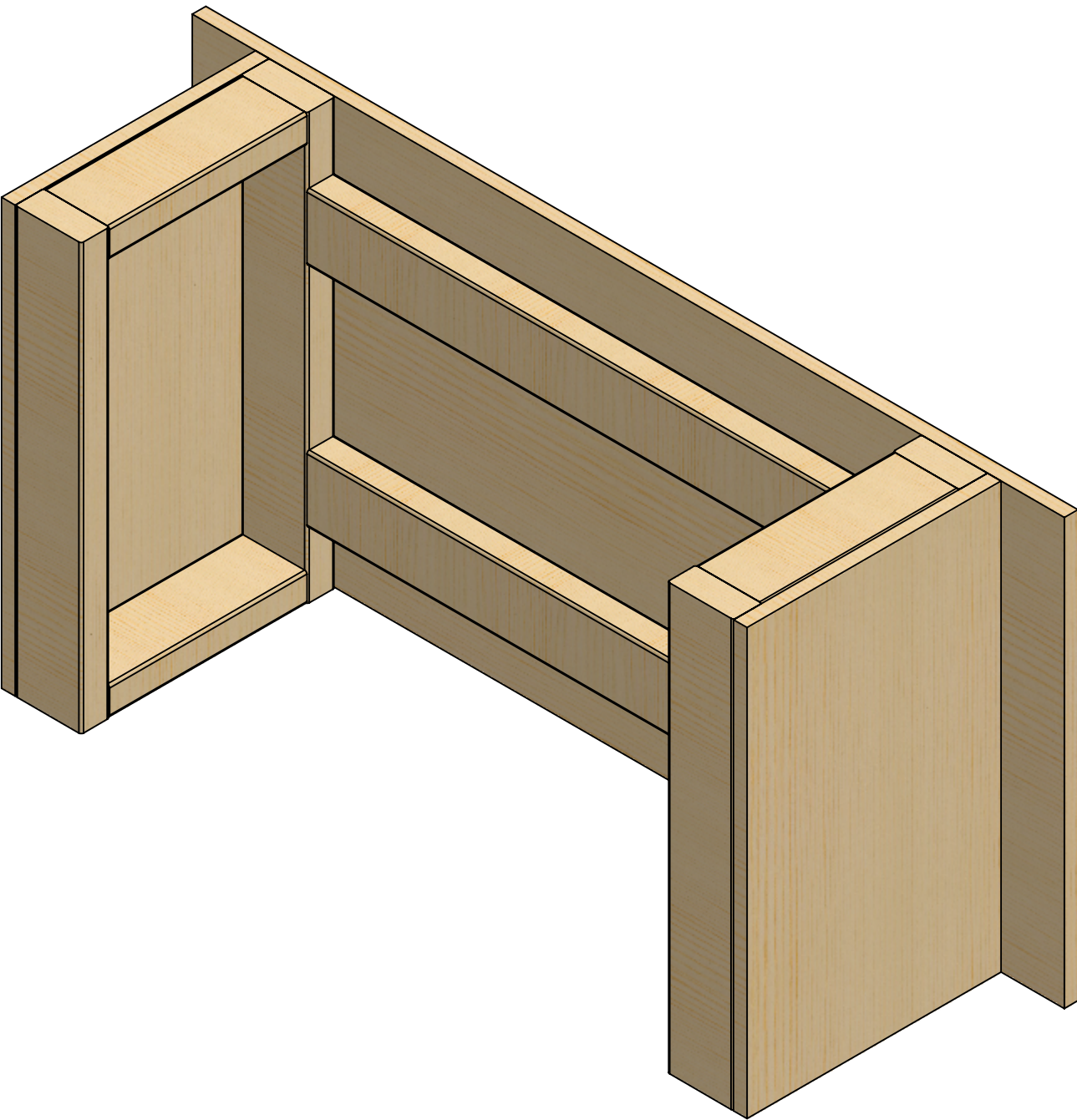
SIZE
C



DWG. NO.
TE-22010

REV

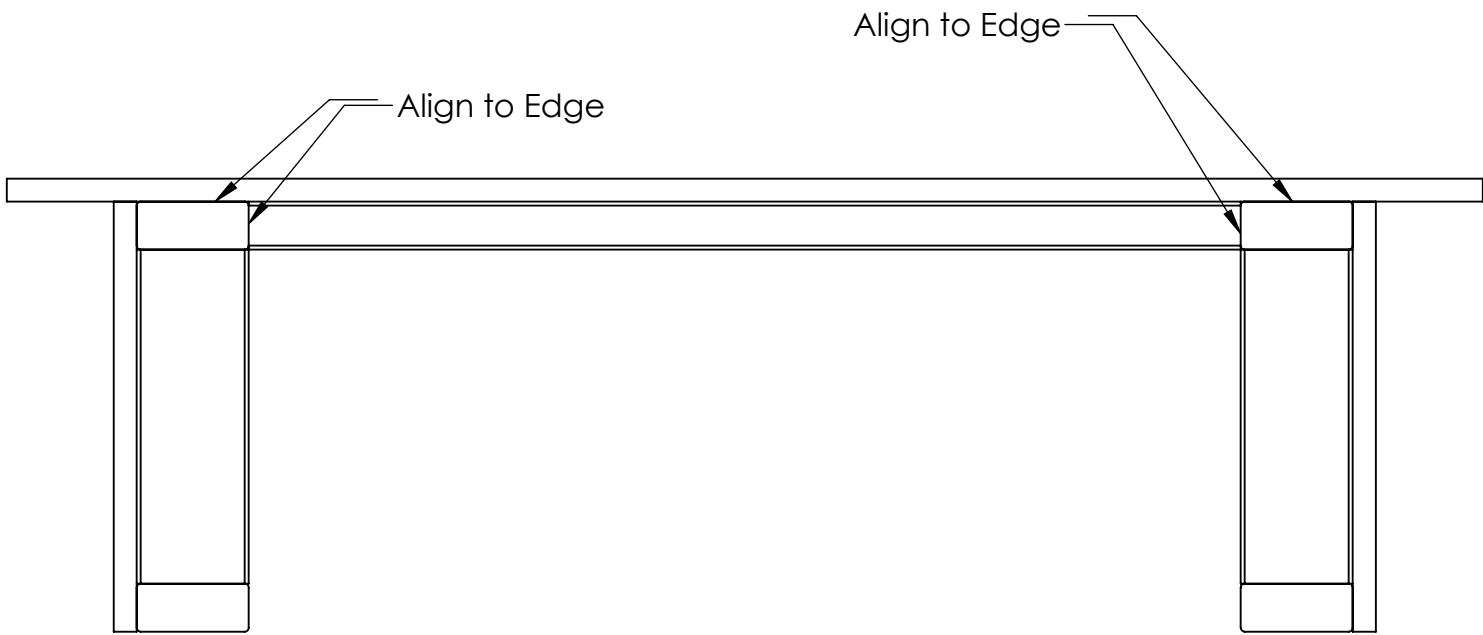
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SHEET 1 OF 3



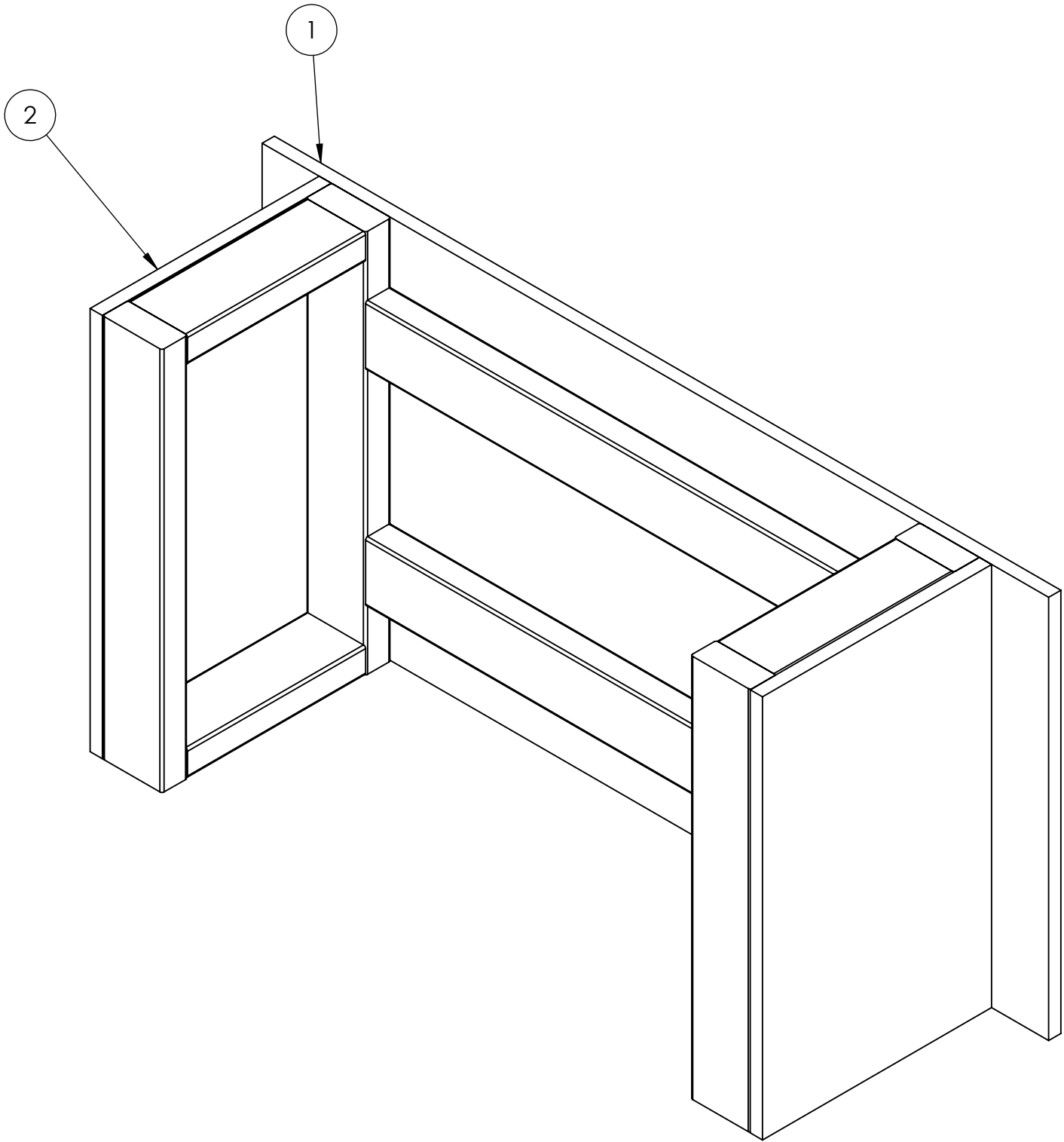
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>	
	DRAWN	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: Hub - Simple Build - Fender Assembly	
			SIZE	DWG. NO.	REV
			C	TE-22010	
			SCALE: 1:6		SHEET 2 OF 3



Step 1

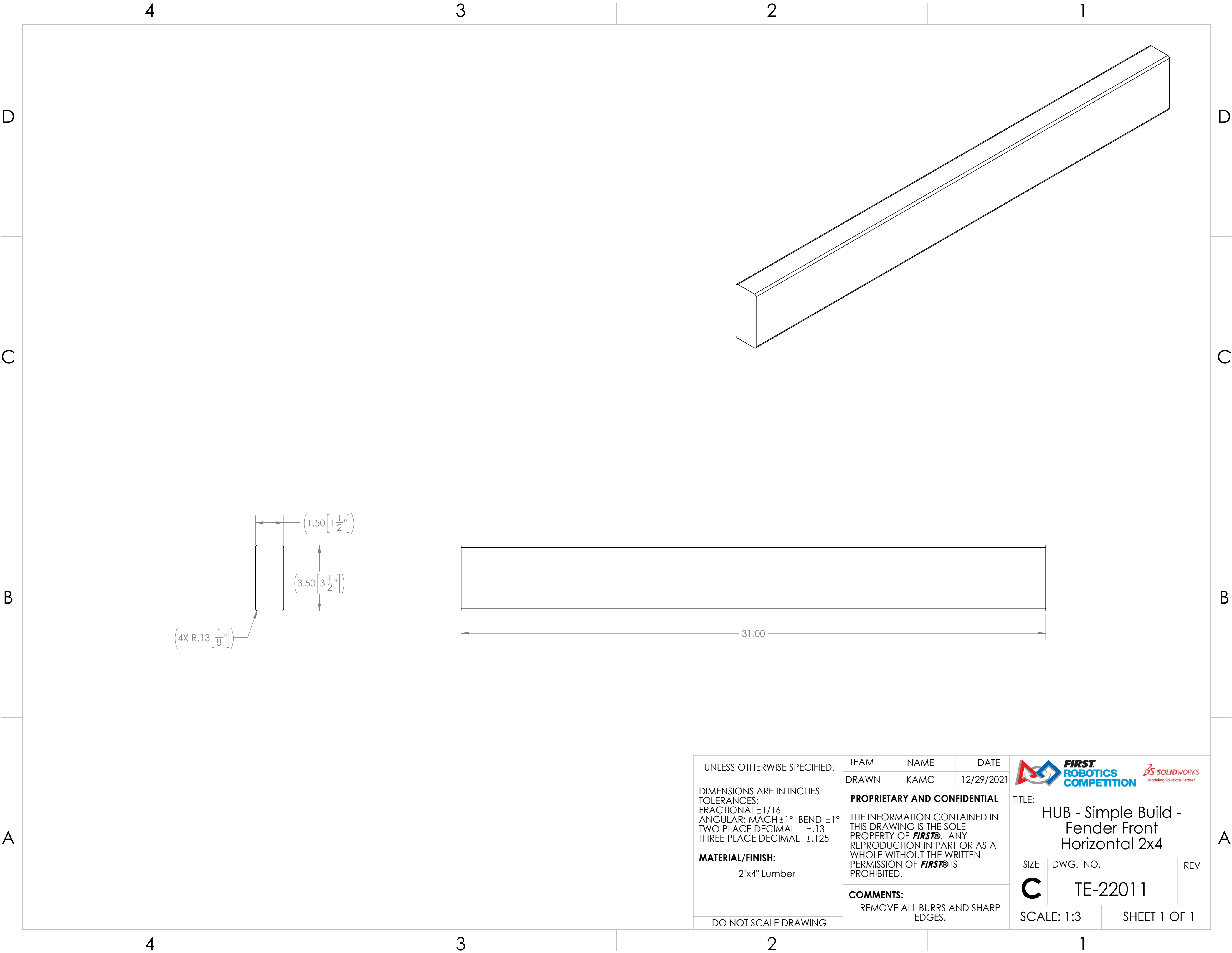




Step 1:

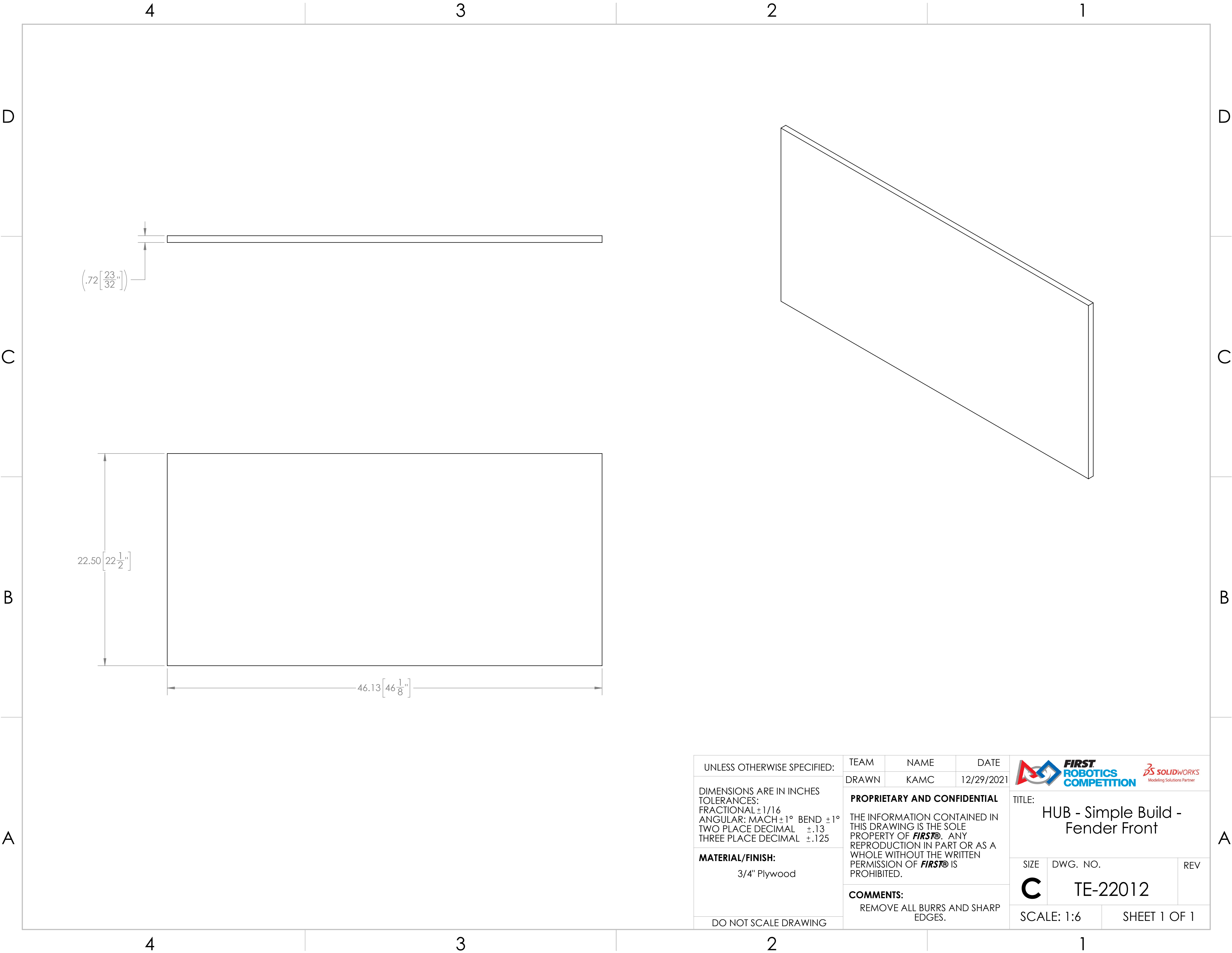
- 1. Align 2x (2) to (1) as shown.
- 2. Connect using 2" long screws. It is recommended to use 5x screws into each (2).





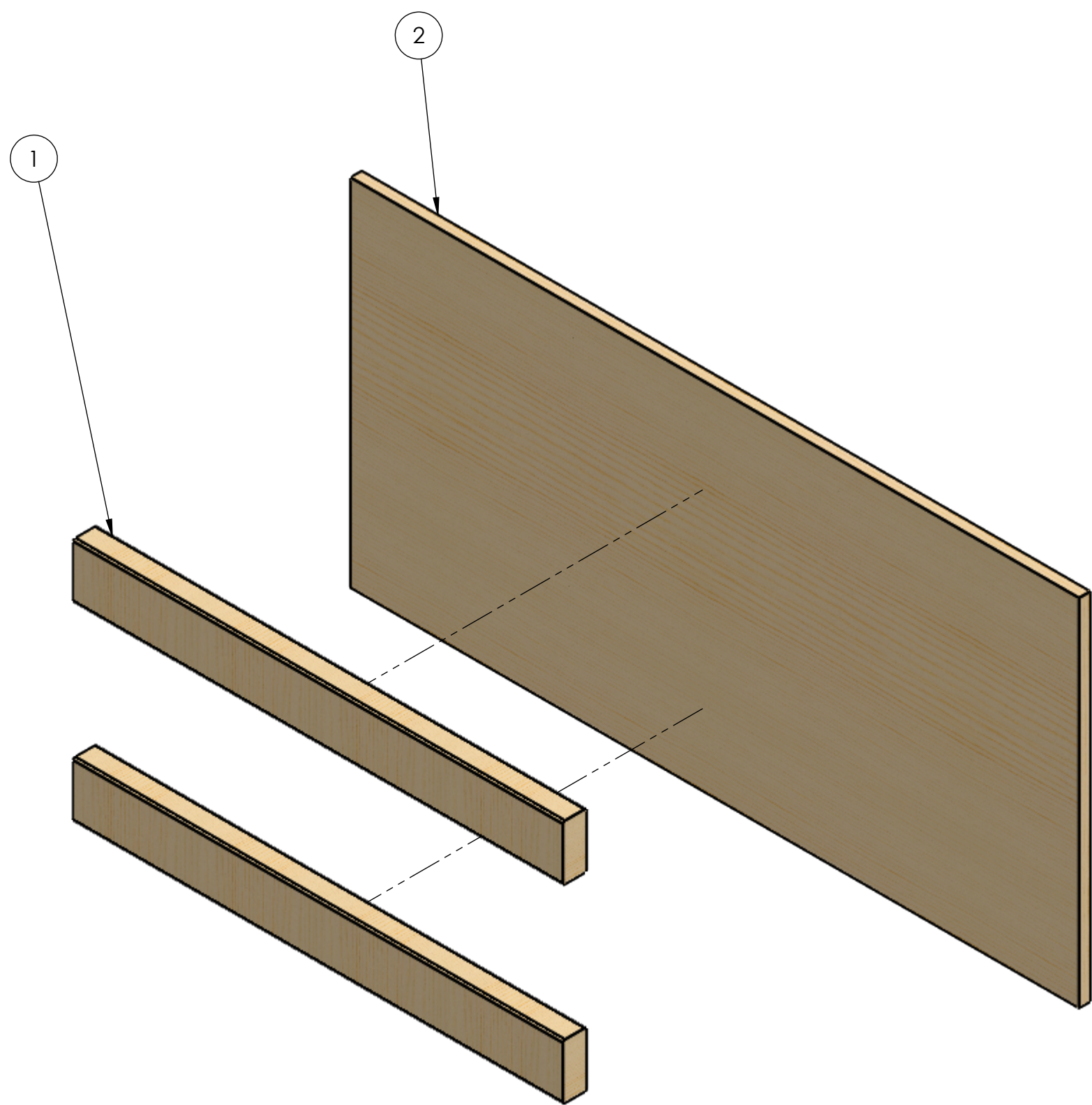
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS 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: Hub - Simple Build - Fender Assembly	
			SIZE	DWG. NO.	REV
			C	TE-22010	
			SCALE: 1:6		SHEET 3 OF 3



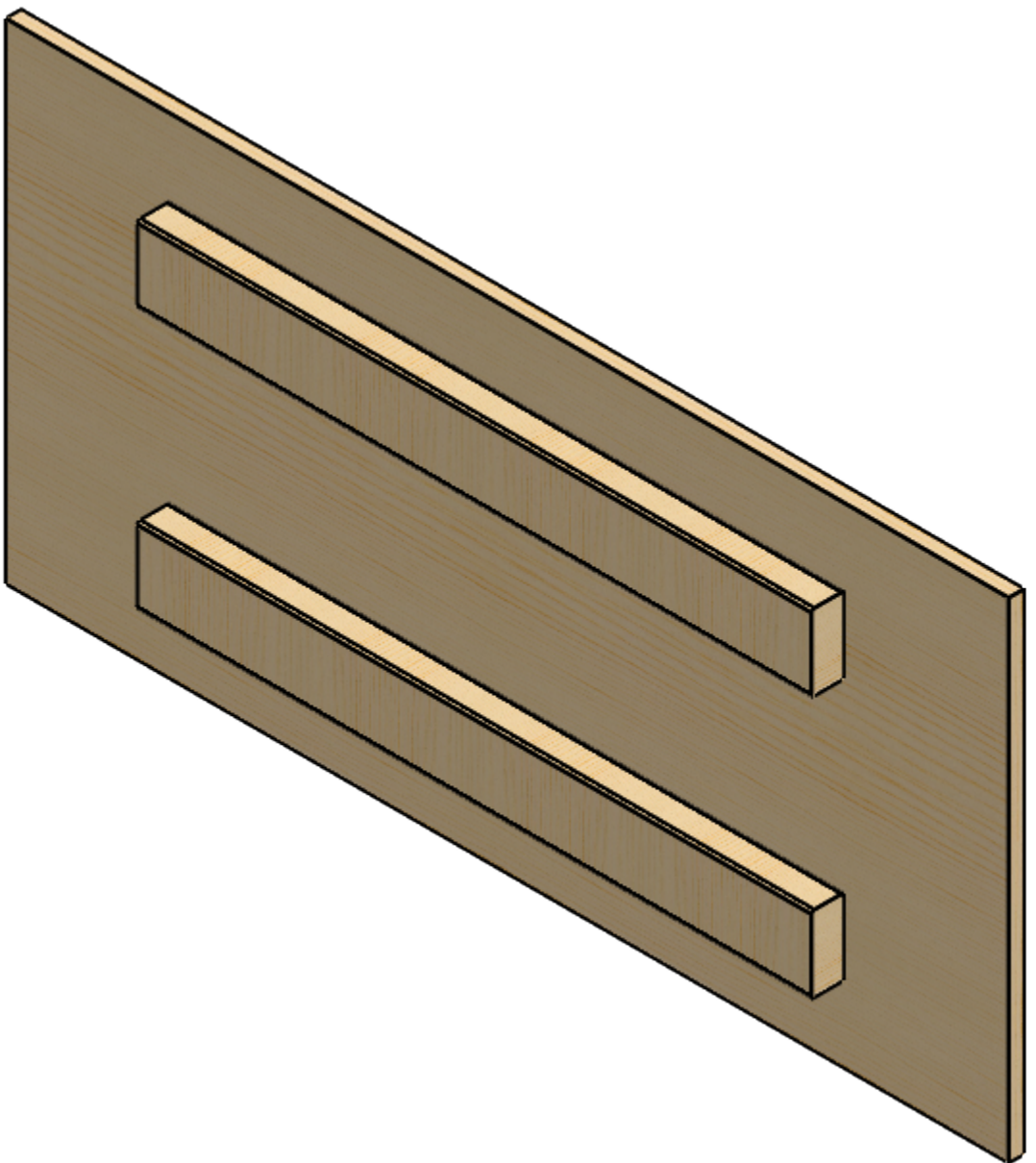
UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div><div>FIRST ROBOTICS COMPETITION</div><div>Modeling Solutions Partner</div></div>		
	DRAWN	KAMC	12/29/2021			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND 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: HUB - Simple Build - Fender Front Horizontal 2x4		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	TE-22011	
MATERIAL/FINISH: 2"x4" Lumber				SCALE: 1:3		SHEET 1 OF 1
DO NOT SCALE DRAWING						



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: 3/4" Plywood DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div> <div>TITLE: HUB - Simple Build - Fender Front</div>		
	DRAWN	KAMC	12/29/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: 1:6		SHEET 1 OF 1				





Exploded View



- Step 1:
- 1. Align 2x 1 to 2 as shown, using dimensions provided on Sheet 2.
 - 2. Connect using 2" long screws. It is recommended to use 7x screws into each 1.

Hardware Needed:
#8 x 2" Long Screws - Qty 14

		ITEM NO.	PART NUMBER		DESCRIPTION		QTY.			
		1	TE-22011		HUB - Simple Build - Fender Front Horizontal 2x4		2			
		2	TE-22012		HUB - Simple Build - Fender Front		1			
UNLESS OTHERWISE SPECIFIED:		TEAM	NAME		DATE		<div><div></div><div></div></div>			
		DRAWN	KAMC		12/30/2021					
<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 ±.13</div> <div>THREE PLACE DECIMAL ±.125</div> <div>MATERIAL/FINISH:</div>		PROPRIETARY AND CONFIDENTIAL				TITLE: <div>HUB - Basic Build - Fender Front 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.								
		COMMENTS:				SIZE		DWG. NO.		REV
		REMOVE ALL BURRS AND SHARP EDGES.				C		TE-22013		
DO NOT SCALE DRAWING						SCALE: 1:6		SHEET 1 OF 2		

D

C

B

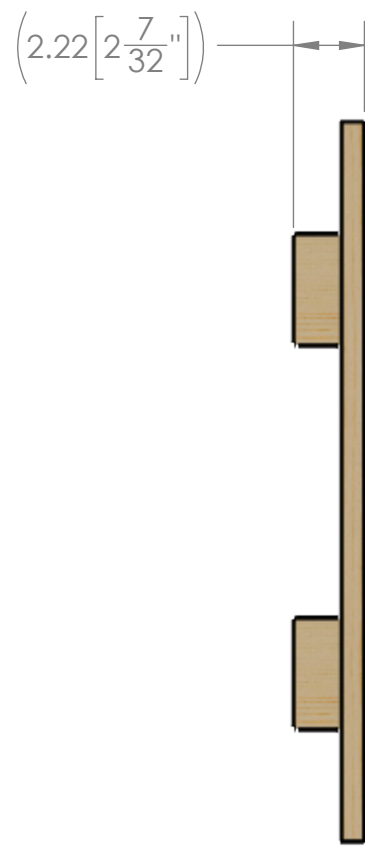
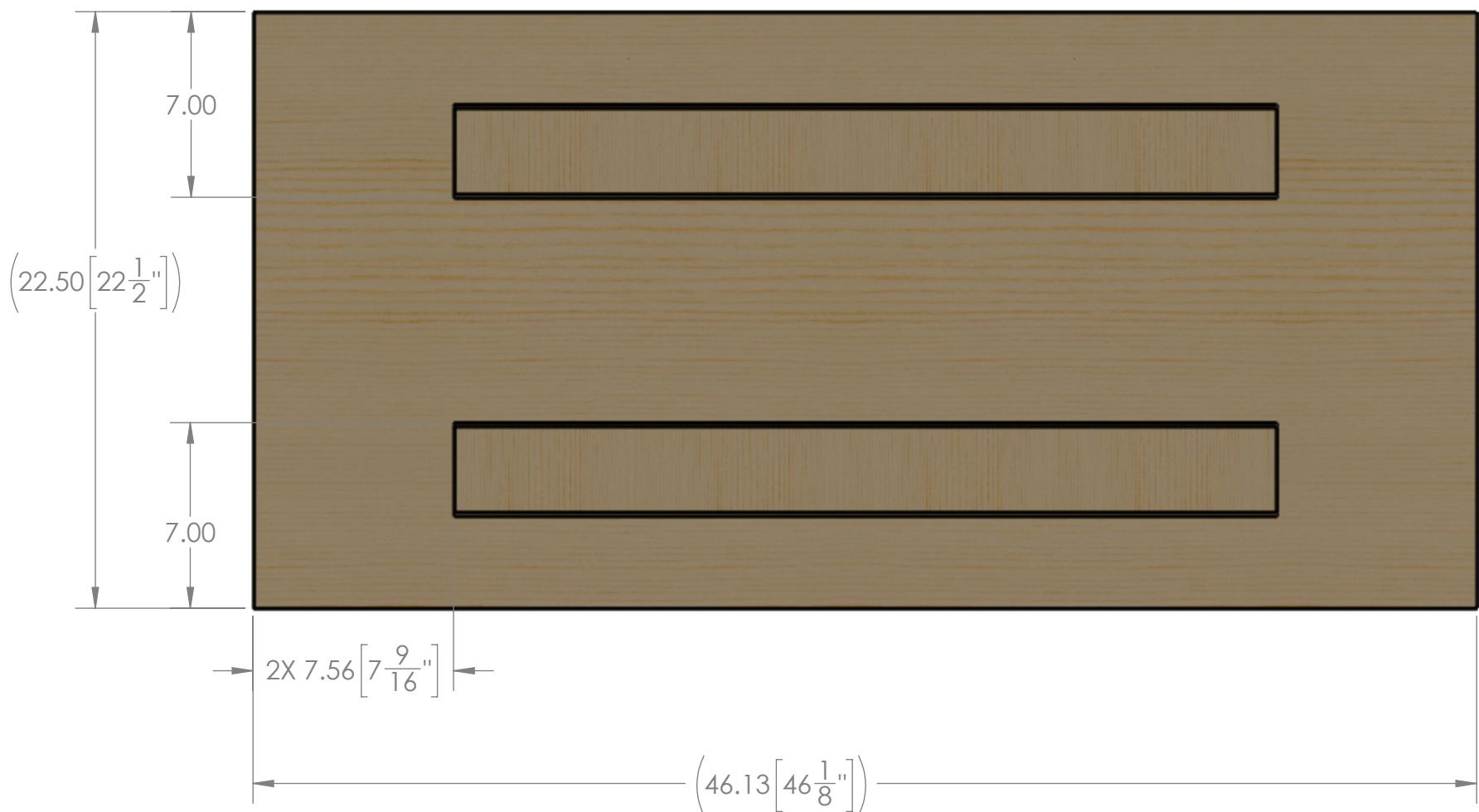
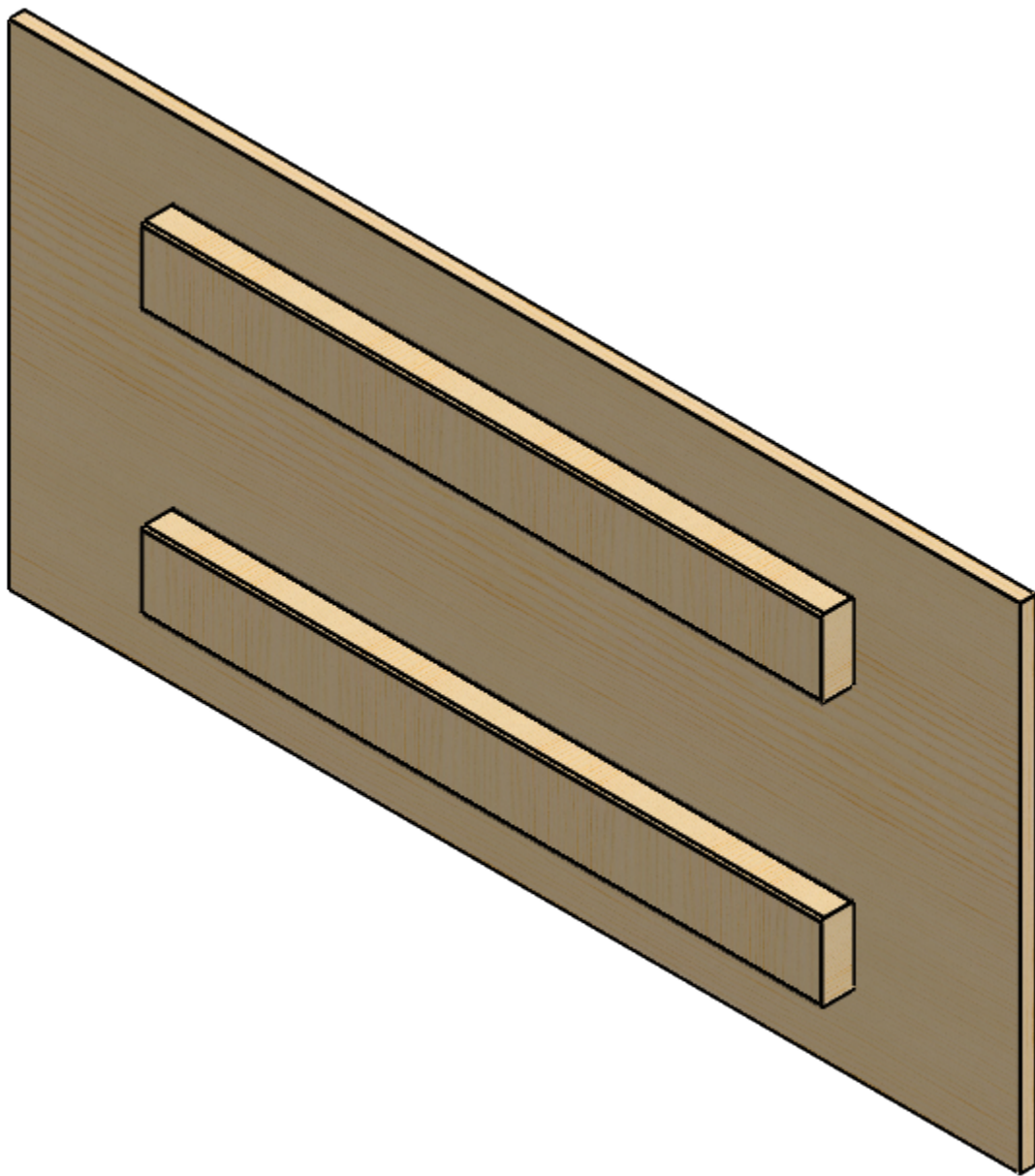
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D

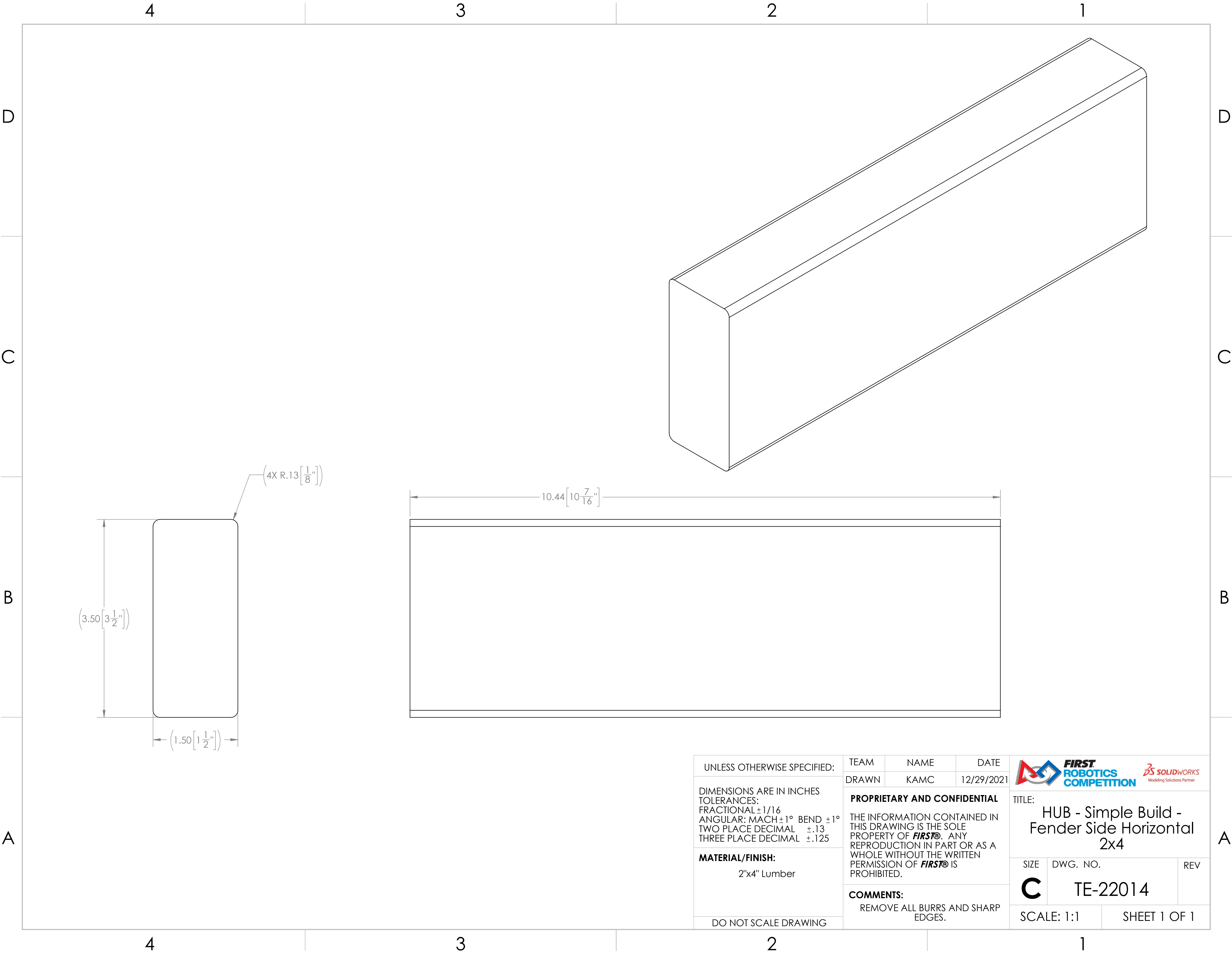
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B

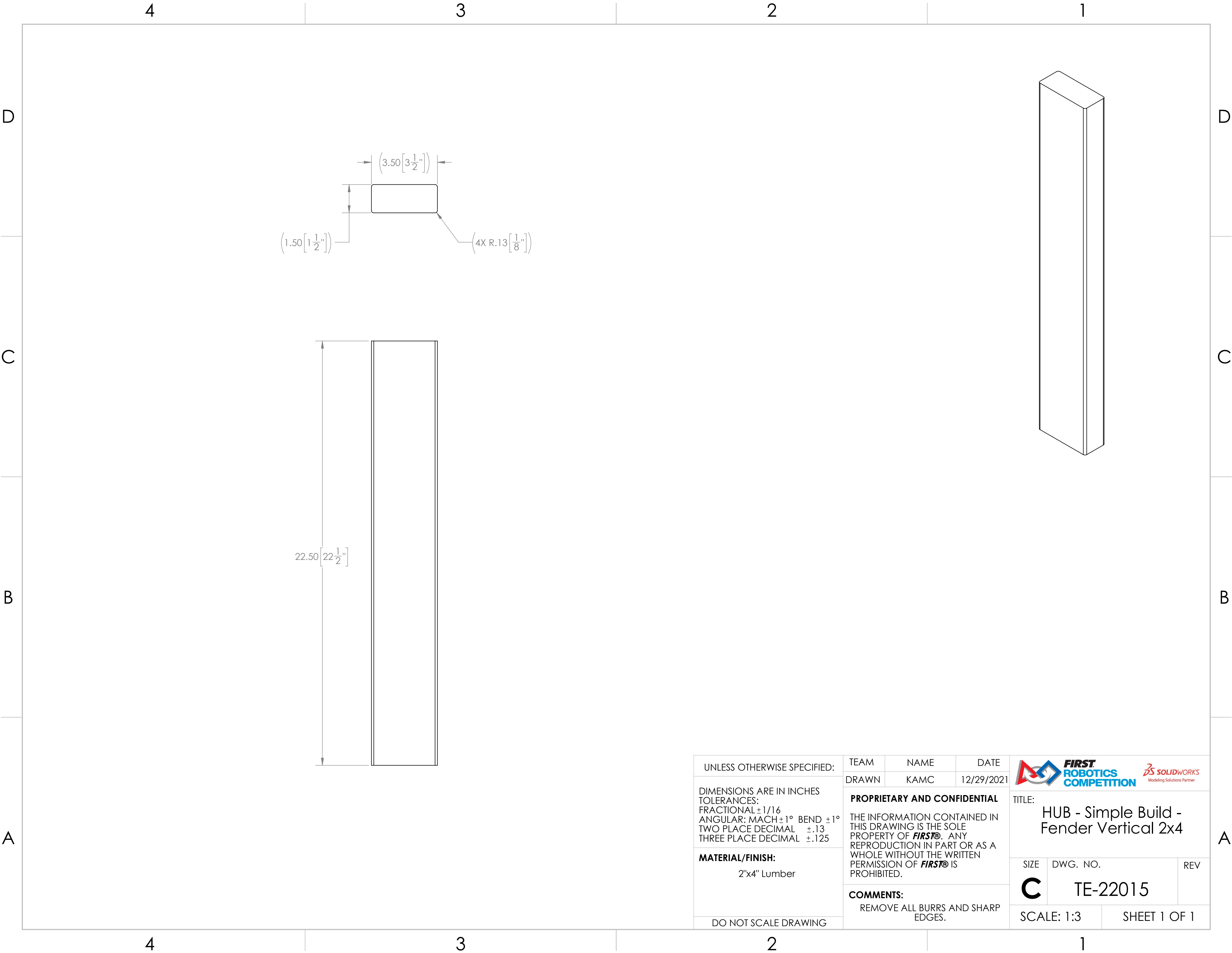
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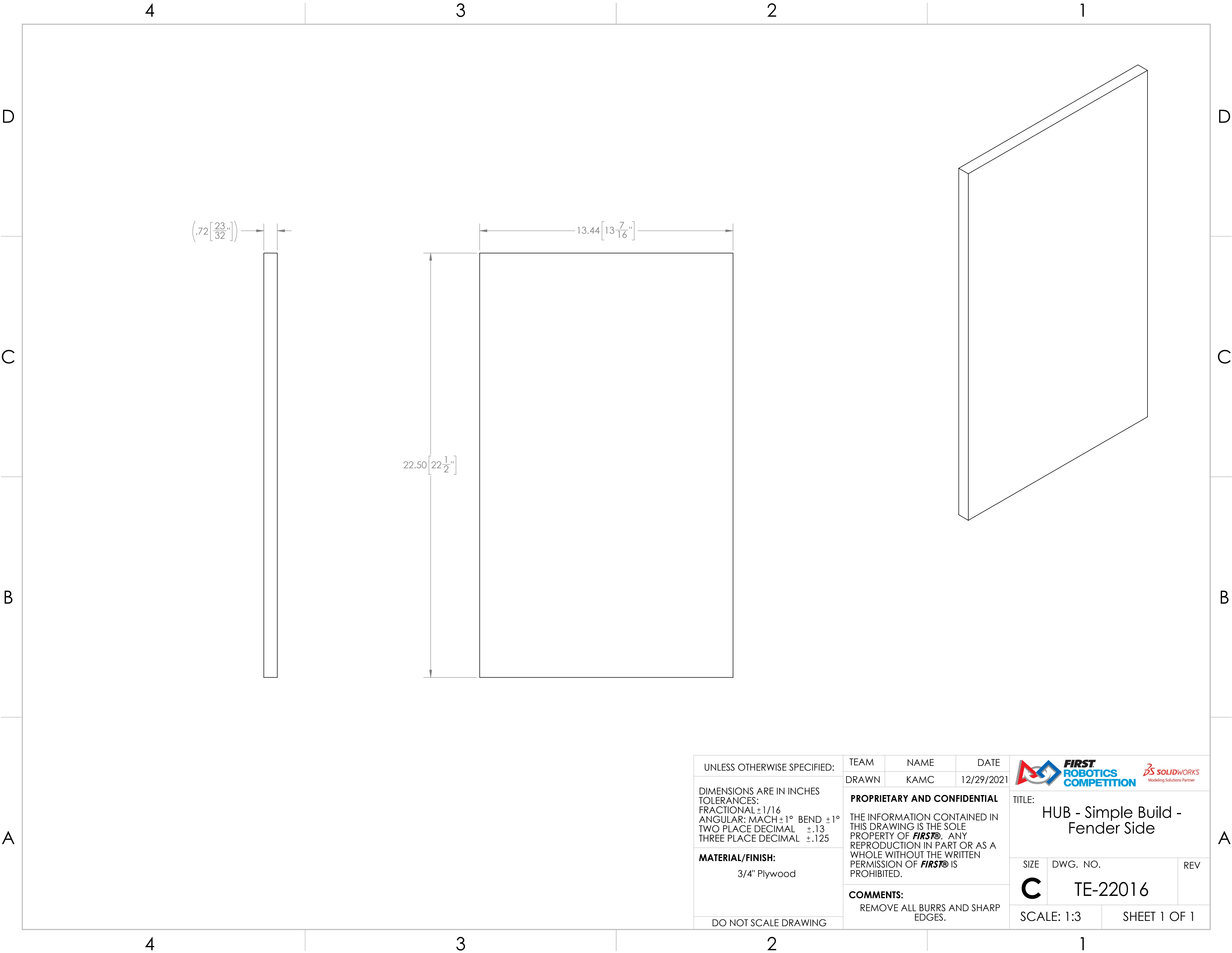
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$ MATERIAL/FINISH: DO NOT SCALE DRAWING	TEAM	NAME	DATE	  TITLE: HUB - Basic Build - Fender Front Assembly		
	DRAWN	KAMC	12/30/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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-22013	
SCALE: 1:6		SHEET 2 OF 2				





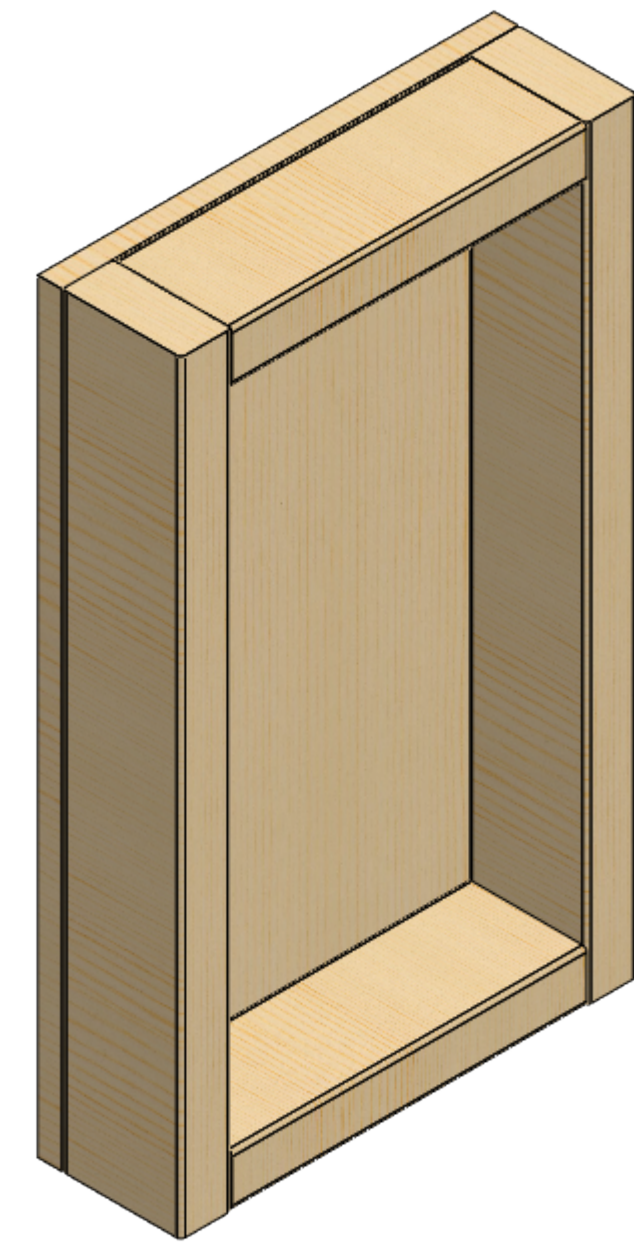
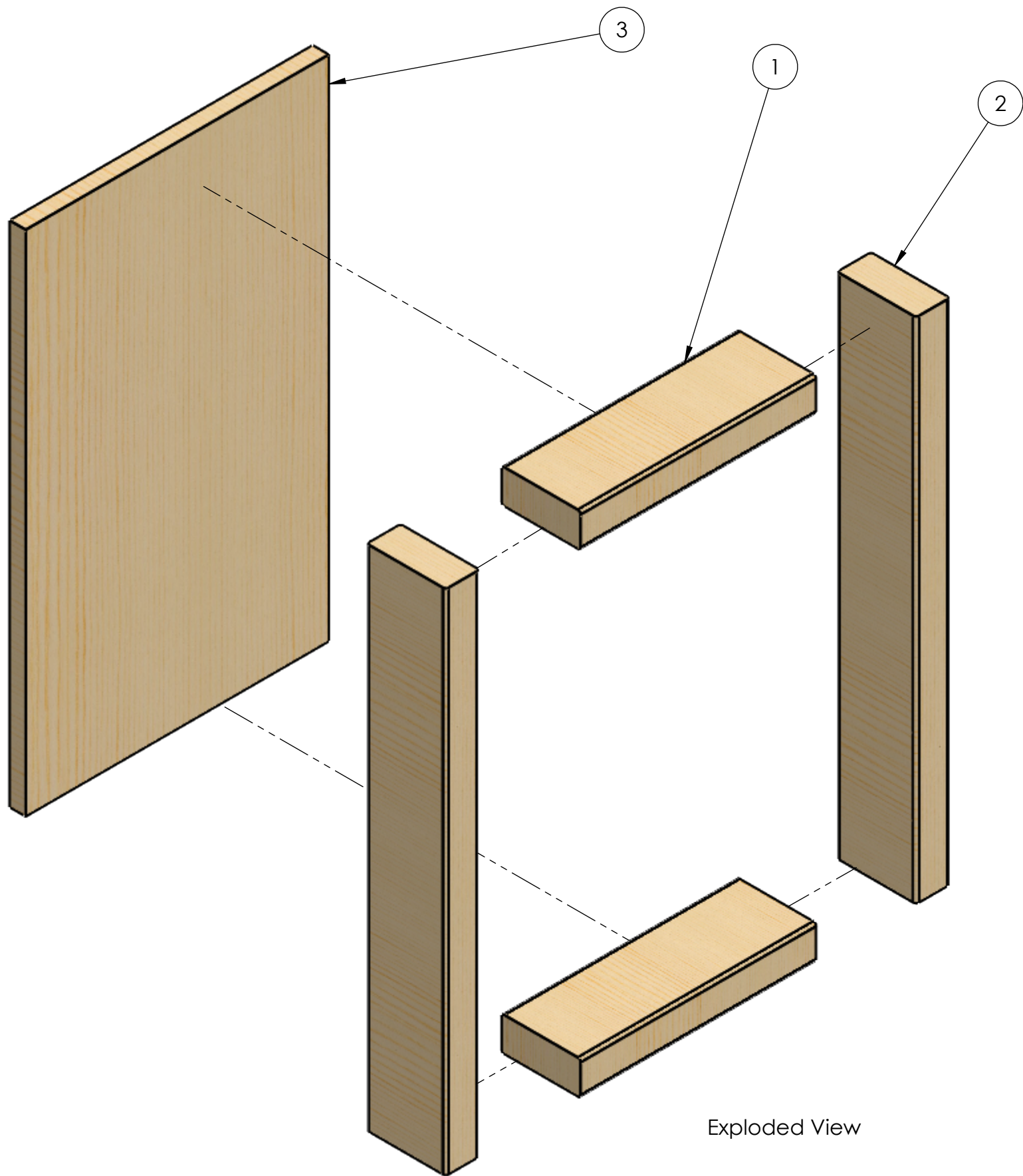
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$ MATERIAL/FINISH: 2"x4" Lumber DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/29/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: HUB - Simple Build - Fender Side Horizontal 2x4		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. TE-22014	REV
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"x4" Lumber DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div> <div>TITLE: HUB - Simple Build - Fender Vertical 2x4</div>	
	DRAWN	KAMC	12/29/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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-22015			
SCALE: 1:3			SHEET 1 OF 1		





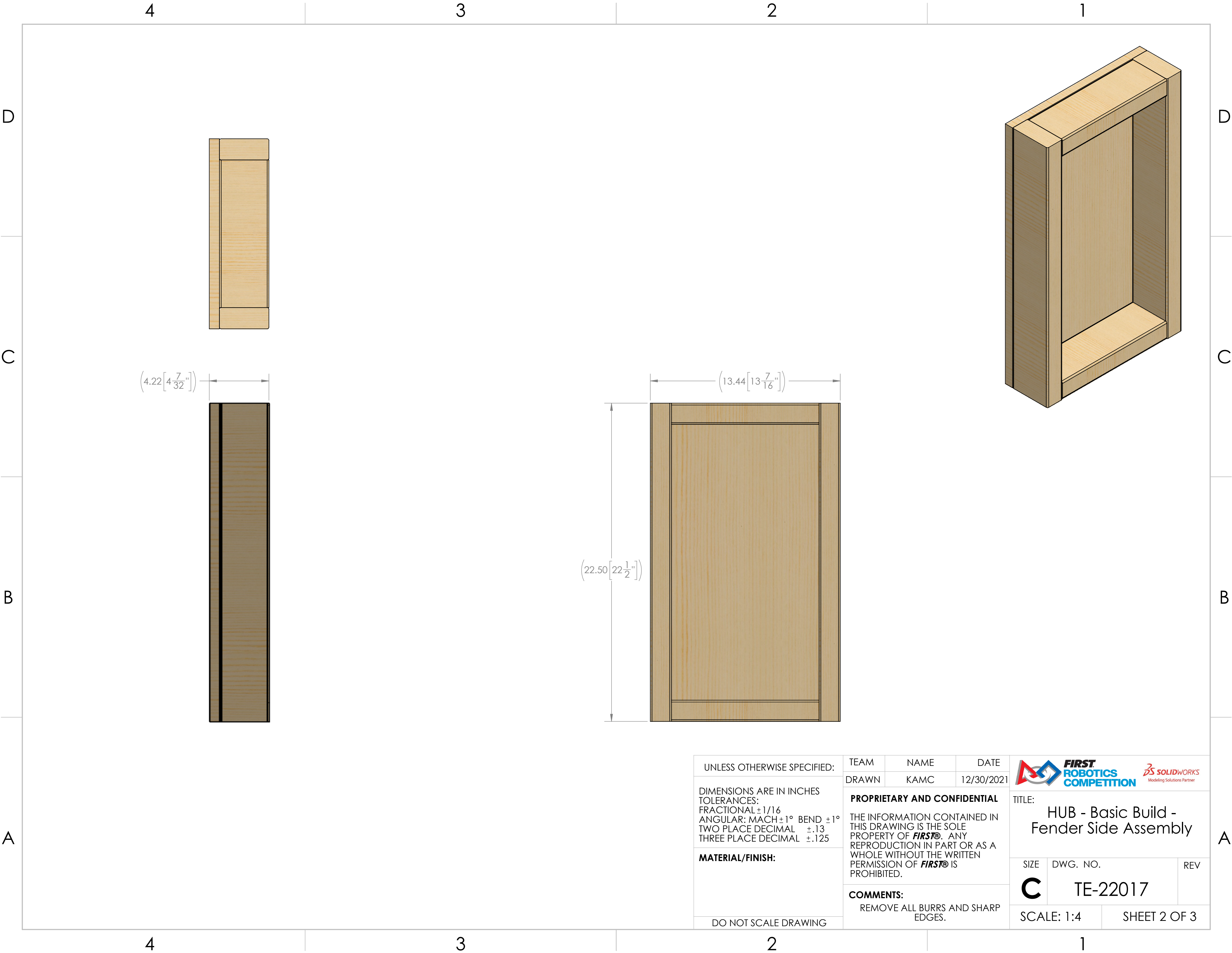
UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/29/2021			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED 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: HUB - Simple Build - Fender Side		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	TE-22016	
MATERIAL/FINISH: 3/4" Plywood	DO NOT SCALE DRAWING			SCALE: 1:3		SHEET 1 OF 1





Hardware:
#8 x 2" Long Screw - Qty 16
#8 x 2.5" Long Screw - Qty 8

ITEM NO.	PART NUMBER	DESCRIPTION	
1	TE-22014	HUB - Simple Build - Fender Side Horizontal 2x4	2
2	TE-22015	HUB - Simple Build - Fender Vertical 2x4	2
3	TE-22016	HUB - Simple Build - Fender Side	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: DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: HUB - Basic Build - Fender Side Assembly	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. TE-22017 REV
SCALE: 1:4		SHEET 1 OF 3			



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>		
	DRAWN	KAMC	12/30/2021			
	PROPRIETARY AND CONFIDENTIAL			TITLE: HUB - Basic Build - Fender 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.			SIZE C	DWG. NO. TE-22017	REV
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:4		SHEET 2 OF 3	

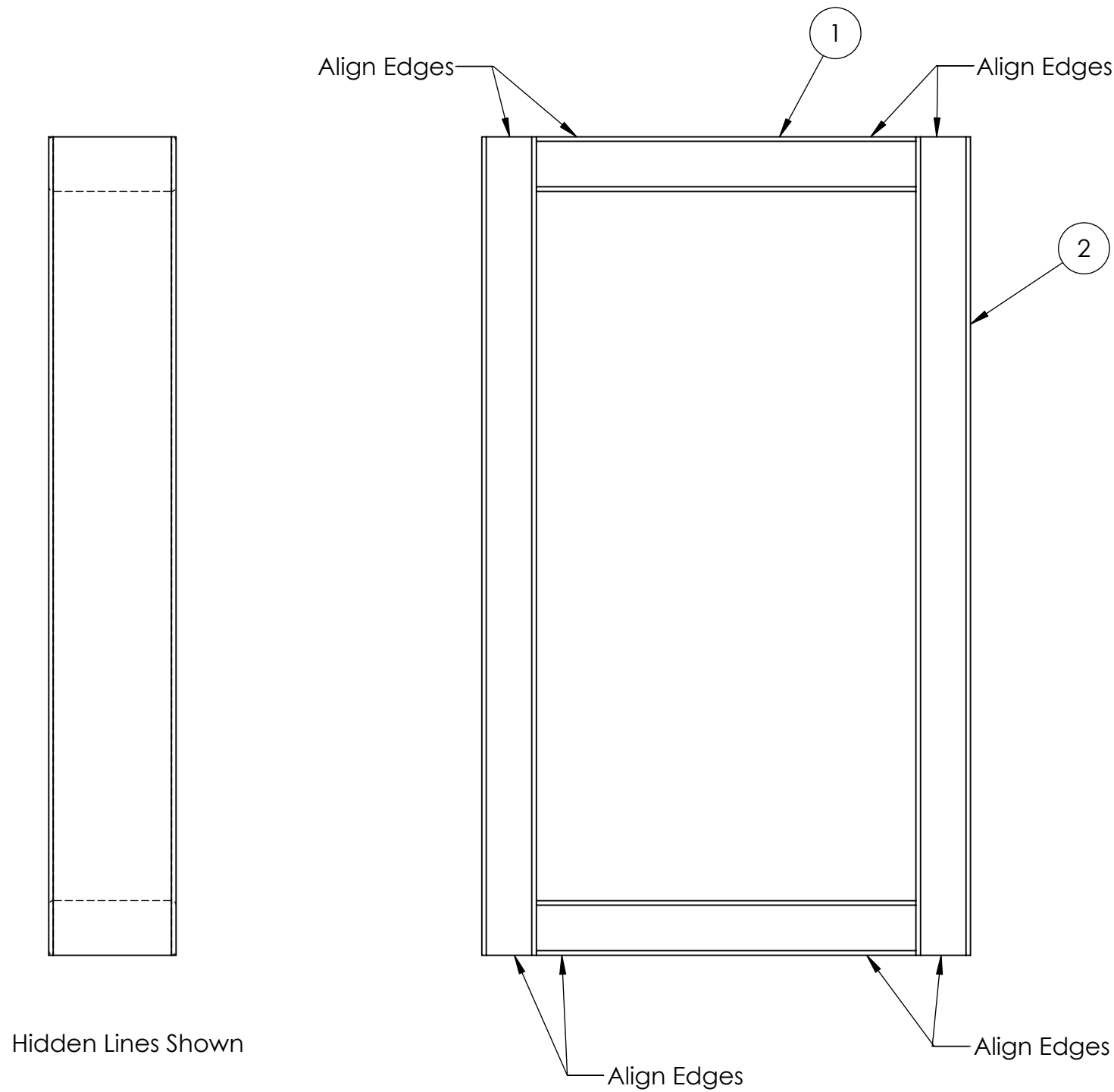
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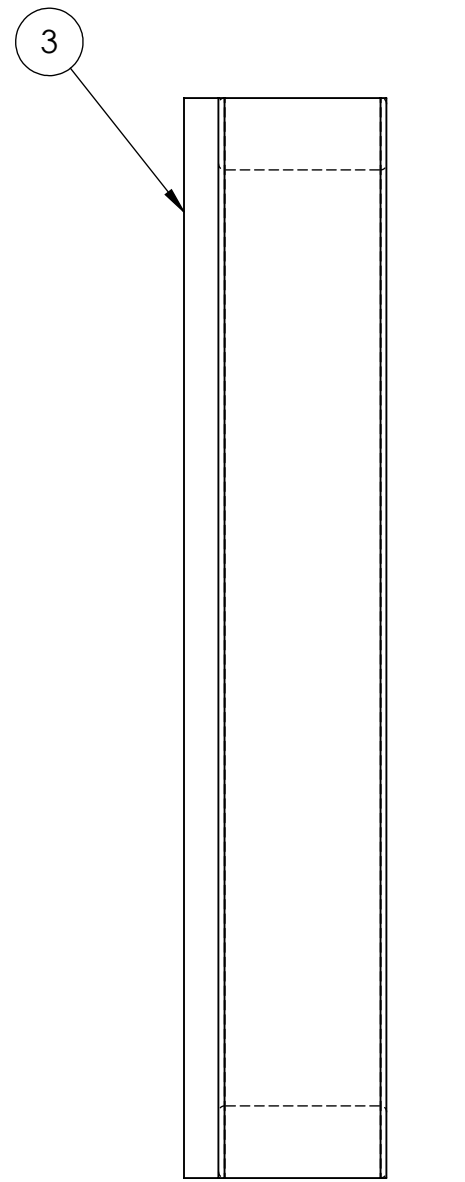
A

Step 1

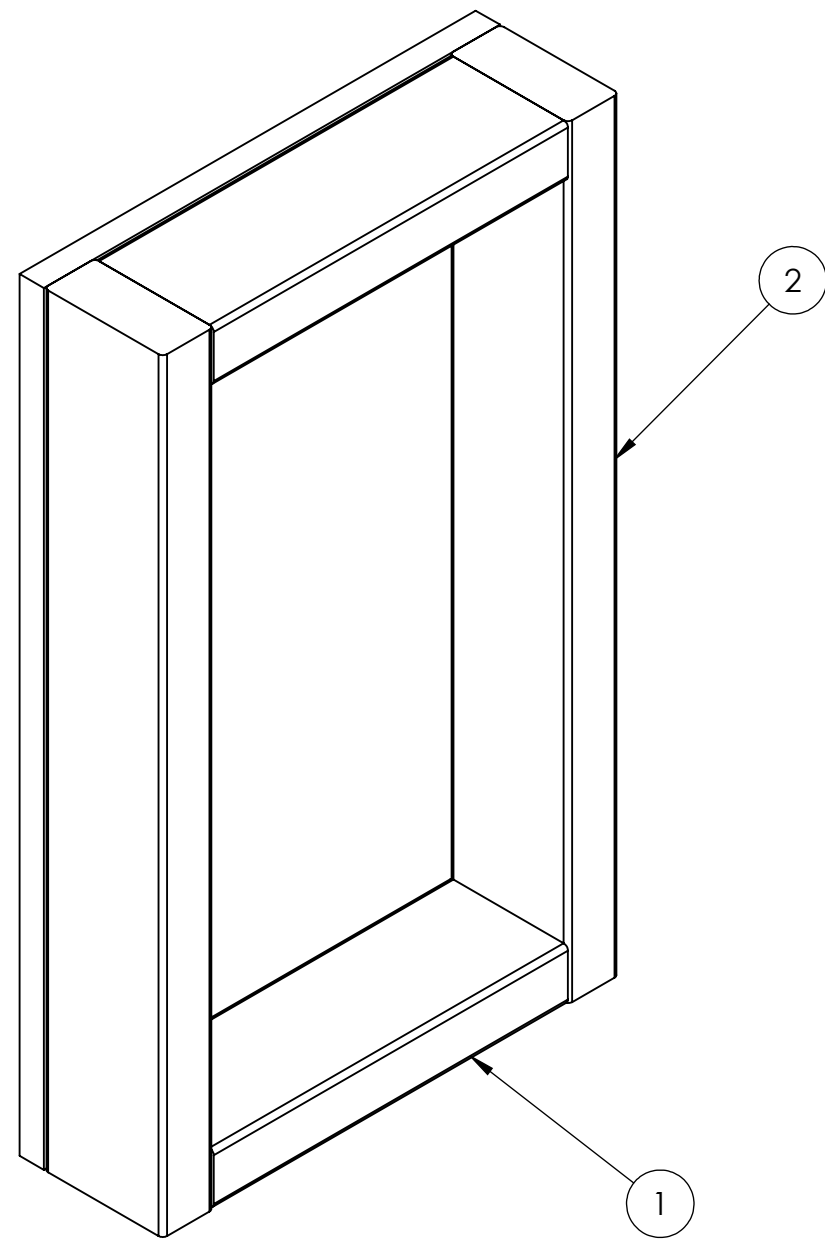


1. Align 2x (1) and 2x (2) , as shown.
2. Attach using 2.5" long screws. It is recommended to use 2x screws into each interface between a (2) and (1) .



Step 2



Hidden Lines Shown



1. Align (3) to the assembly made in Step 1 , as shown.
2. Attach using 2" Long Screws. It is recommended to use 5x screws into each (2) and 3x screws into each (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: DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: HUB - Basic Build - Fender Side Assembly
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				SIZE C SCALE: 1:4
				DWG. NO. TE-22017	REV
				SHEET 3 OF 3	

D

C

B

A

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2

1

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1

D

C

B

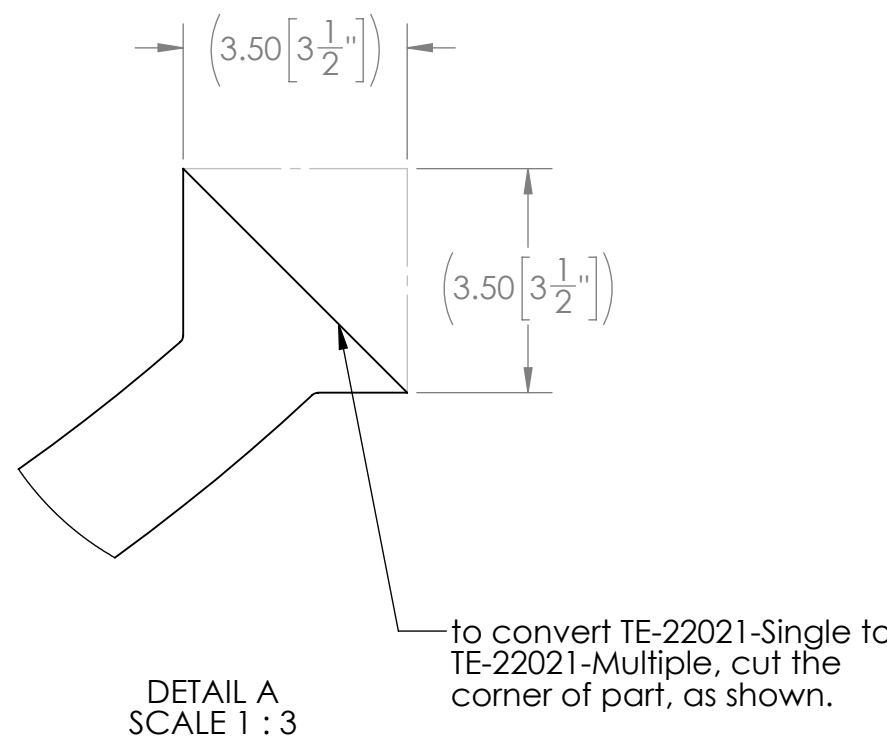
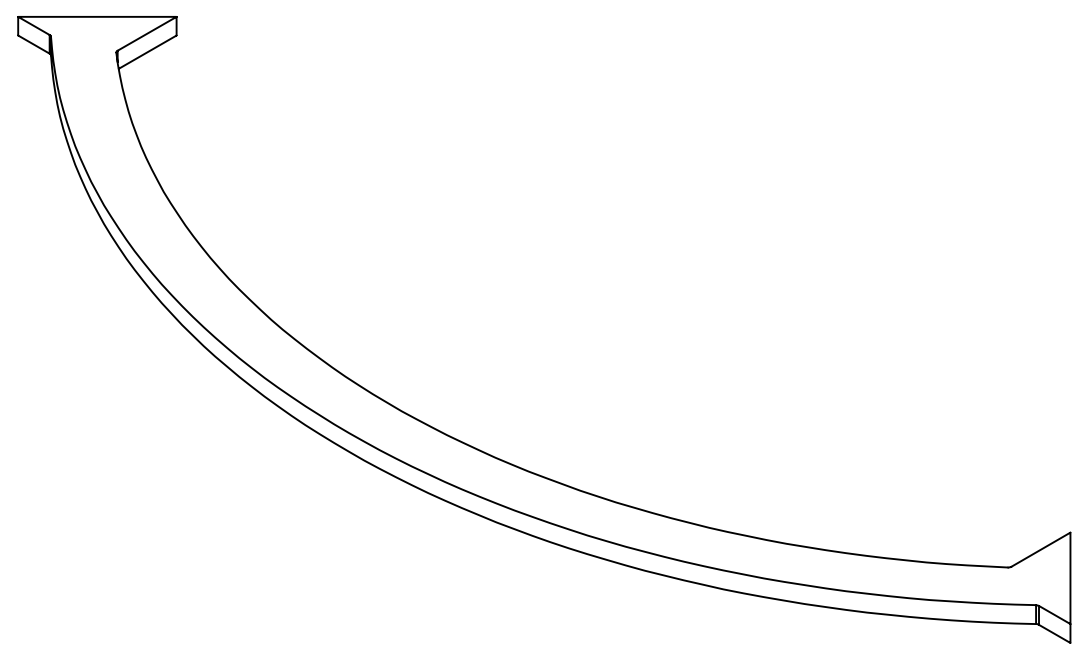
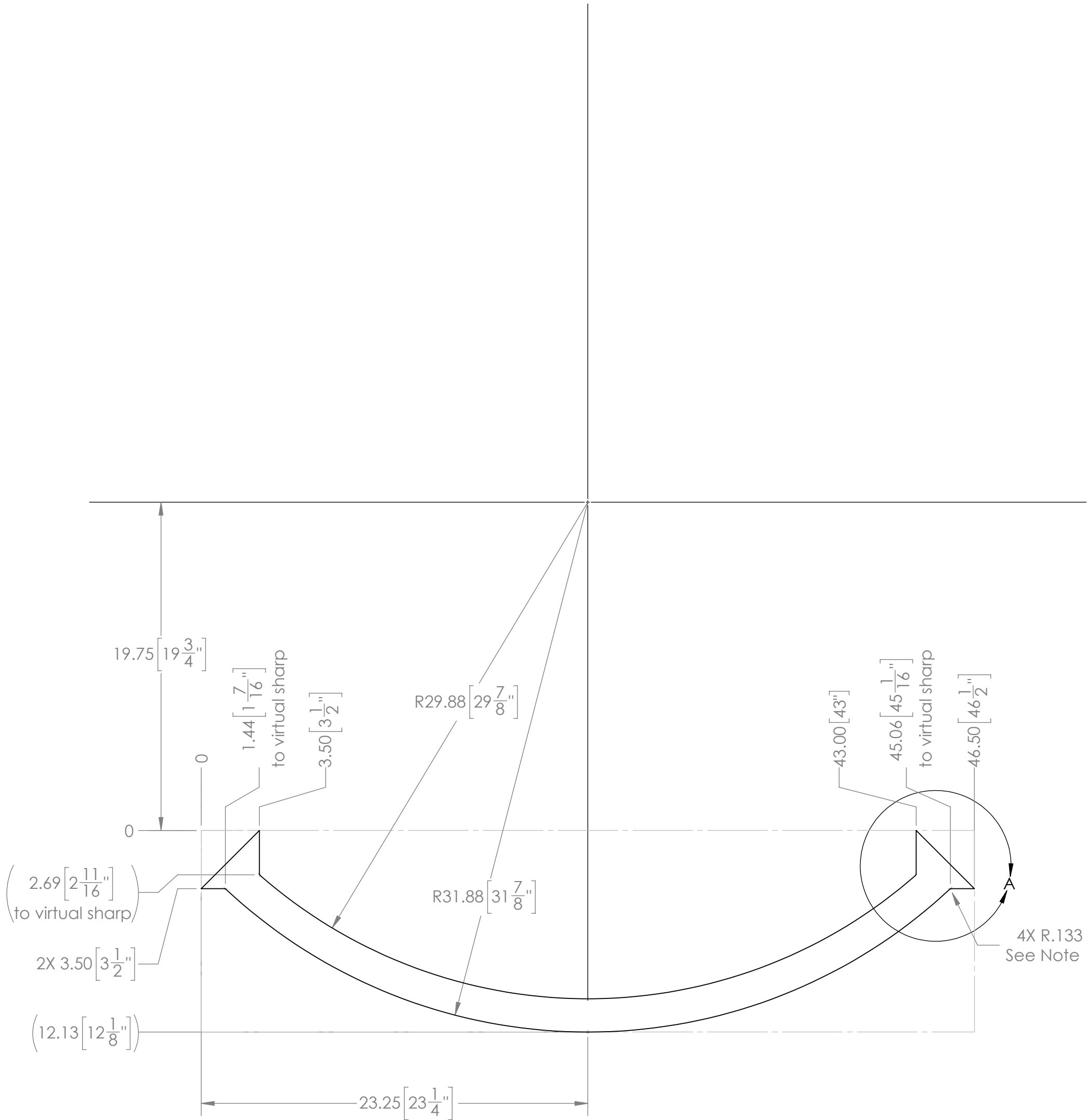
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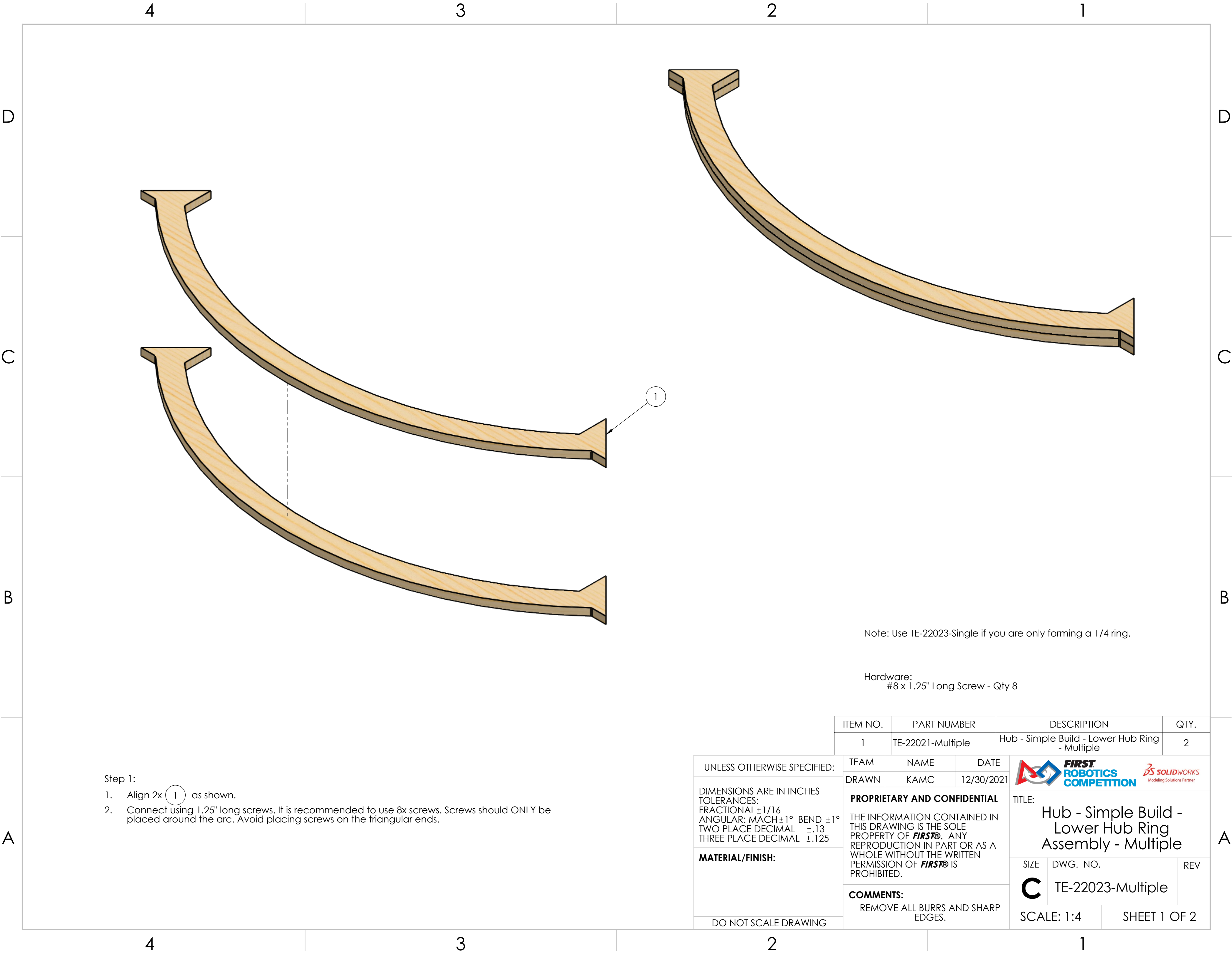
B

A



- Note:
1. Radii located at internal corners are provided predominately for teams making parts with a router. A 90 degree angle is sufficient clearance.
 2. Use TE-22021-Single if you are forming only 1/4 ring.


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: 3/4" Plywood DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	KAMC	12/29/2021		
	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.			Hub - Simple Build - Lower Hub Ring - Multiple	
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		SIZE	DWG. NO.	REV	
		C	TE-22021-Multiple		
		SCALE: 1:6		SHEET 1 OF 1	

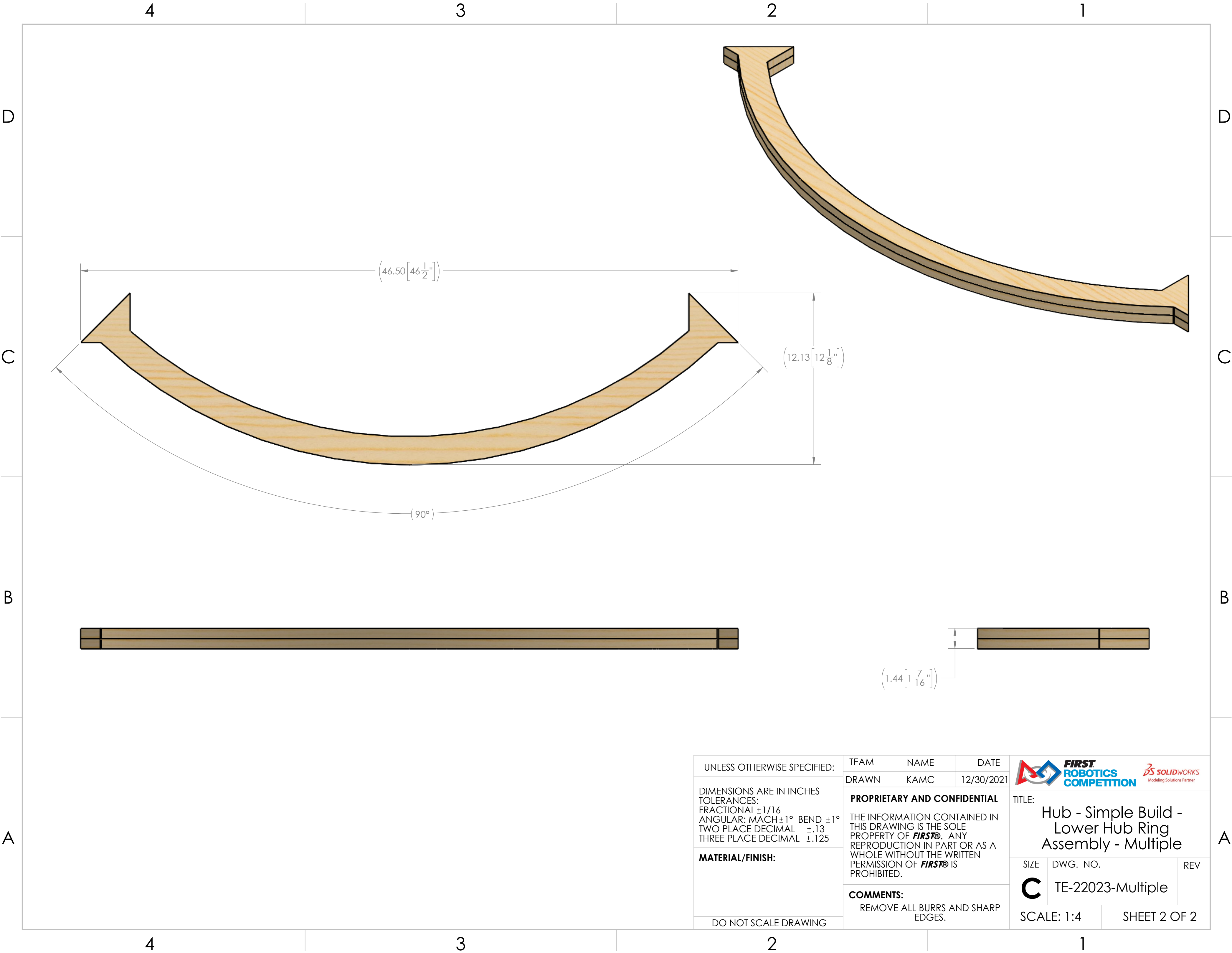




Step 1:

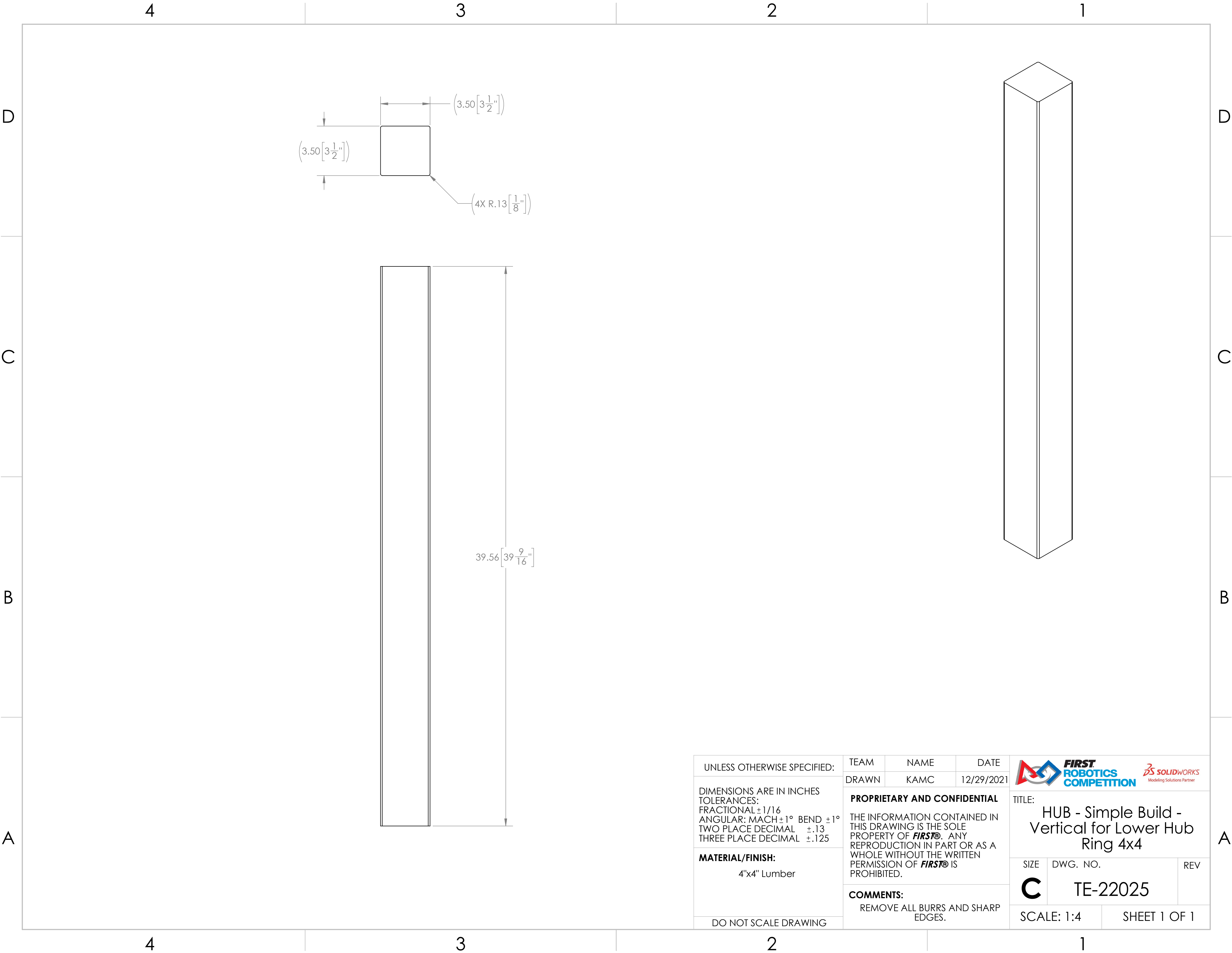
- 1. Align 2x 1 as shown.
- 2. Connect using 1.25" long screws. It is recommended to use 8x screws. Screws should ONLY be placed around the arc. Avoid placing screws on the triangular ends.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-22021-Multiple	Hub - Simple Build - Lower Hub Ring - Multiple	2

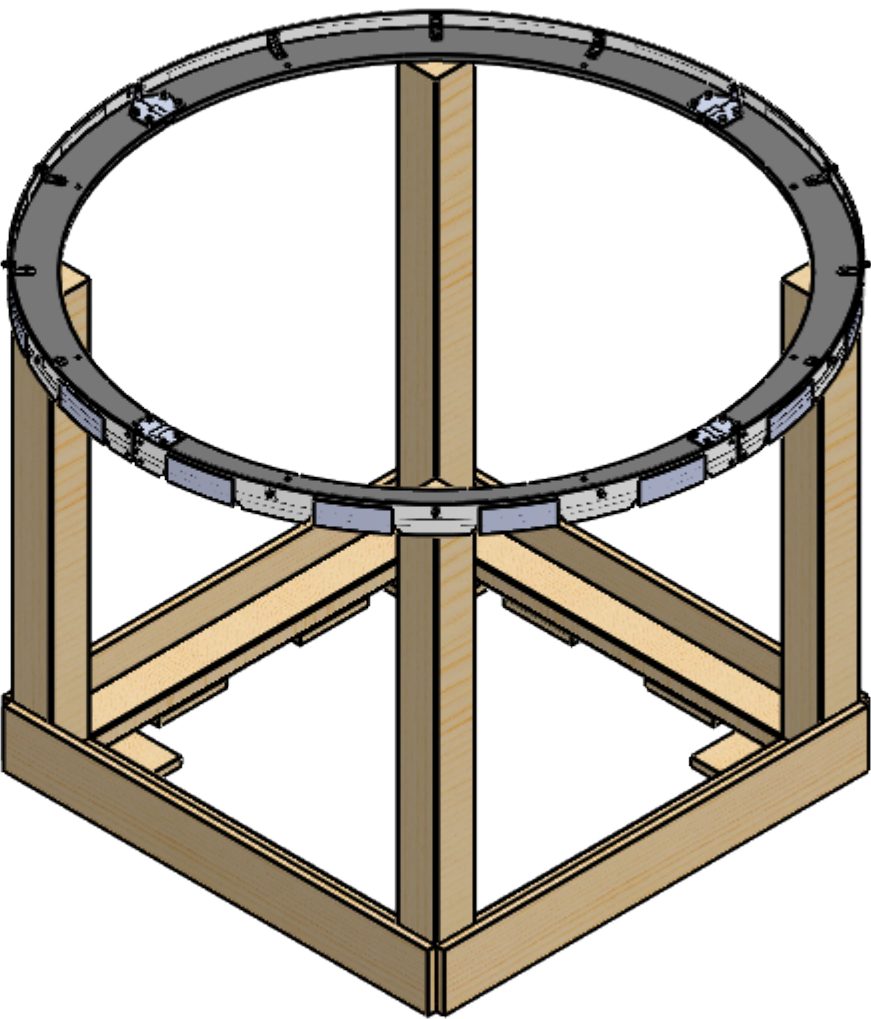
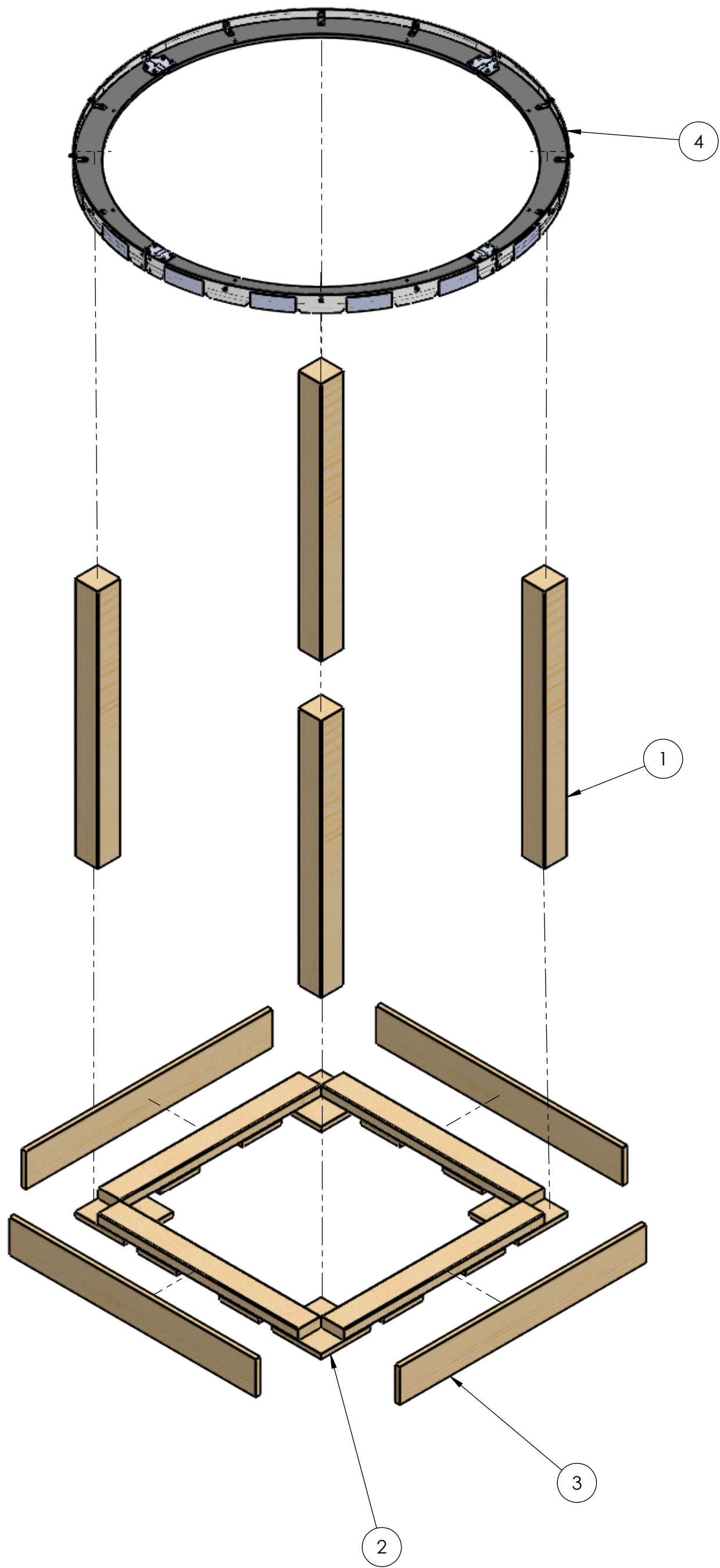
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: DO NOT SCALE DRAWING	TEAM	NAME	DATE		
	DRAWN	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE: Hub - Simple Build - Lower Hub Ring Assembly - Multiple	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.
C				TE-22023-Multiple	
			SCALE: 1:4		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 $\pm .13$ THREE PLACE DECIMAL $\pm .125$ MATERIAL/FINISH: DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/30/2021			
	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.			Hub - Simple Build - Lower Hub Ring Assembly - Multiple		
COMMENTS:		REMOVE ALL BURRS AND SHARP EDGES.		SIZE	DWG. NO.	REV
				C	TE-22023-Multiple	
				SCALE: 1:4		SHEET 2 OF 2





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: 4"x4" Lumber DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div> <div>TITLE: HUB - Simple Build - Vertical for Lower Hub Ring 4x4</div>		
	DRAWN	KAMC	12/29/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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-22025		
SCALE: 1:4				SHEET 1 OF 1		

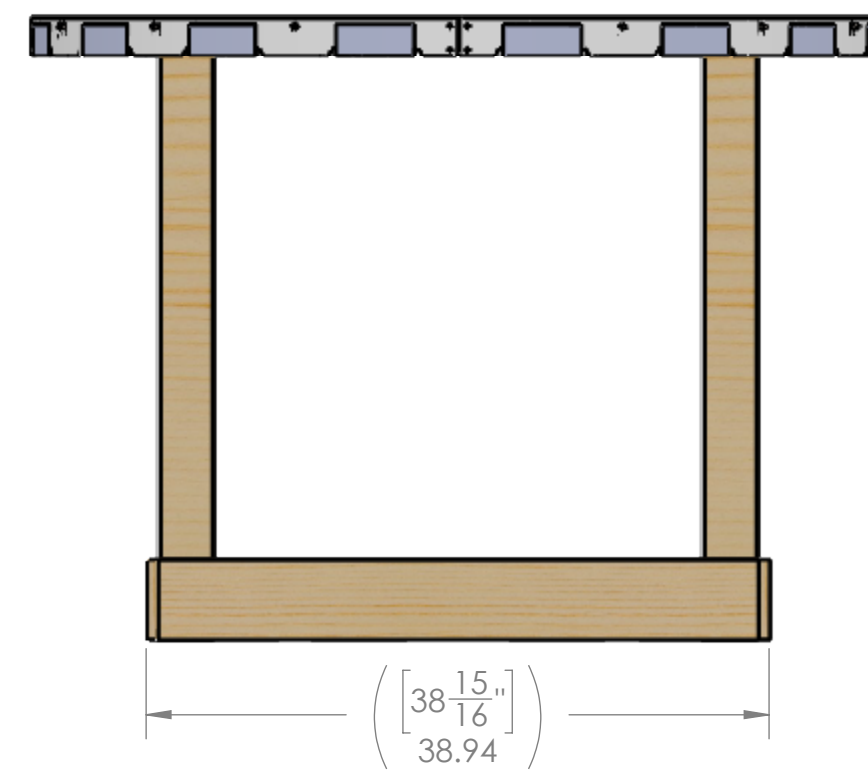
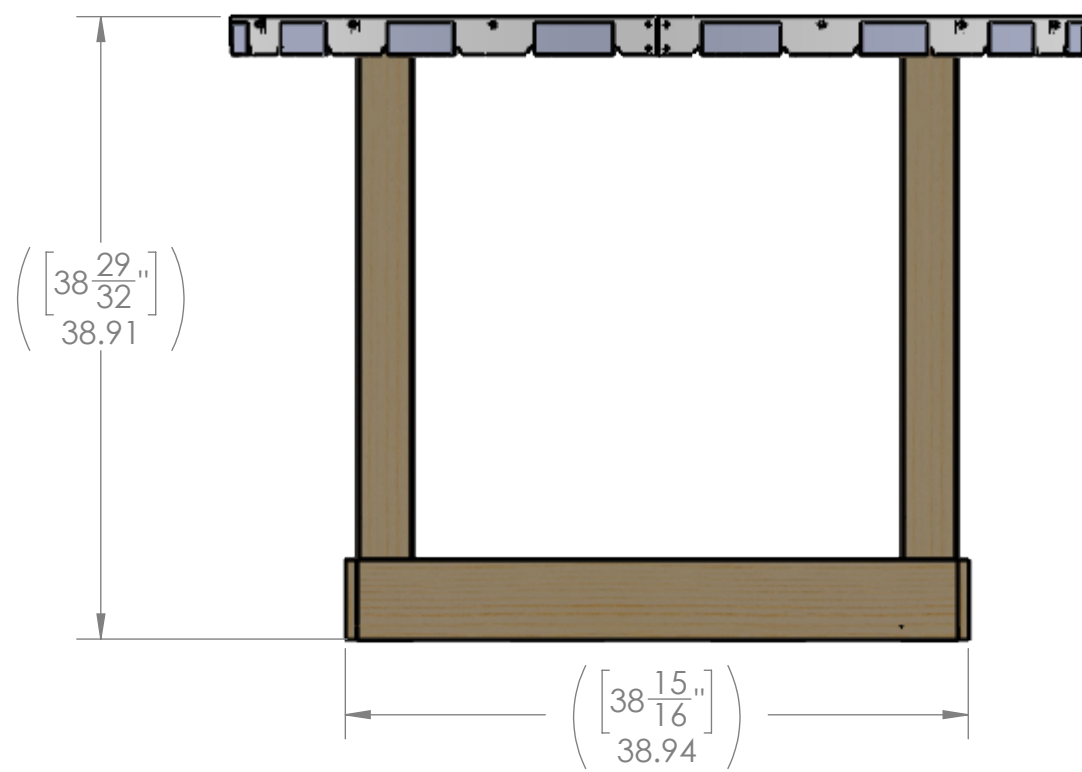
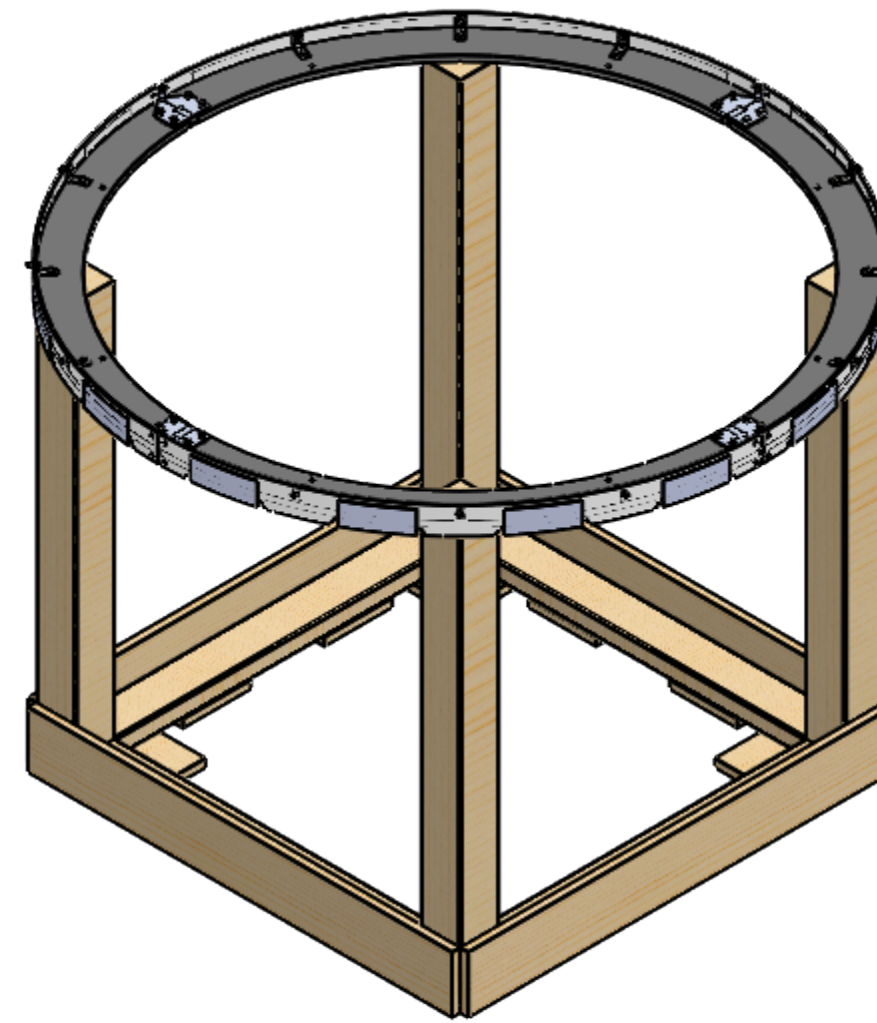
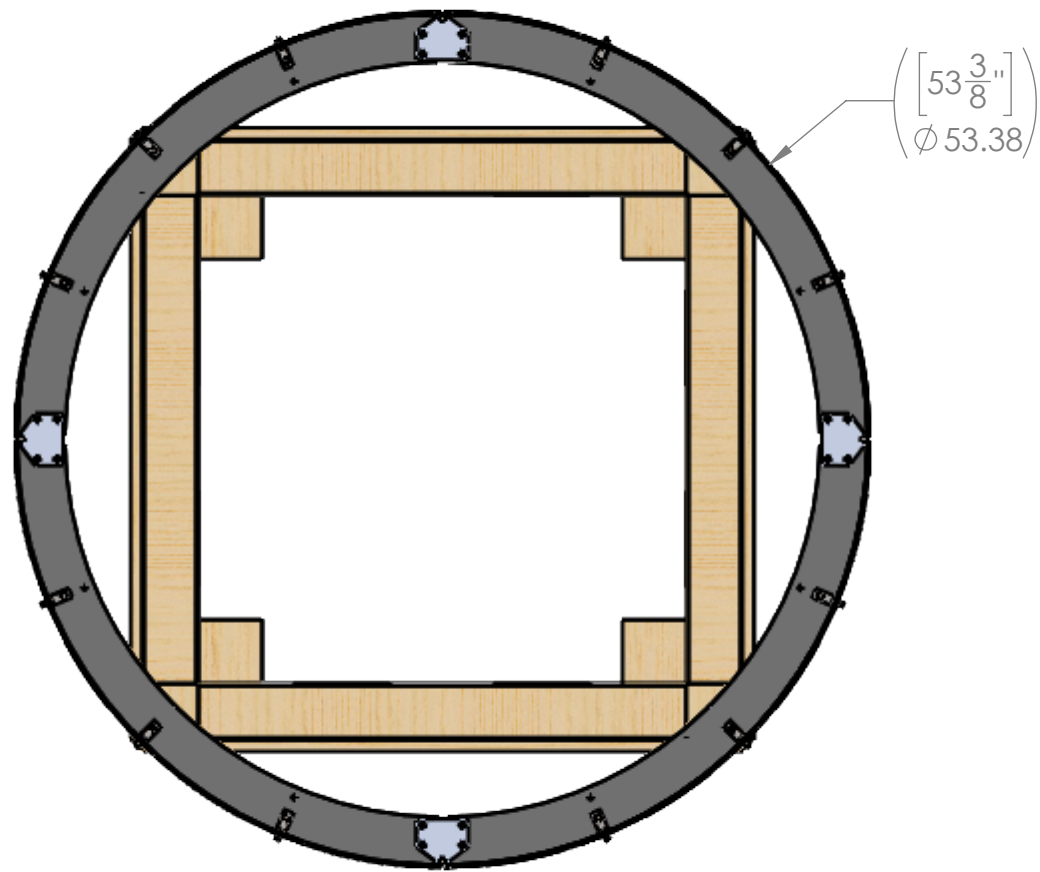




Note: Use Assembly TE-22030-AM if pairing with AndyMark's AM-4672 Assembly

Hardware Needed:
#8 x 1.25" Long Screw - Qty 12
#8 x 2" Long Screw - Qty 60

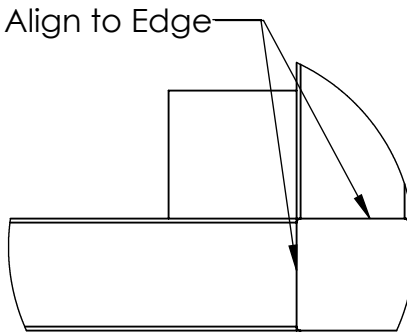
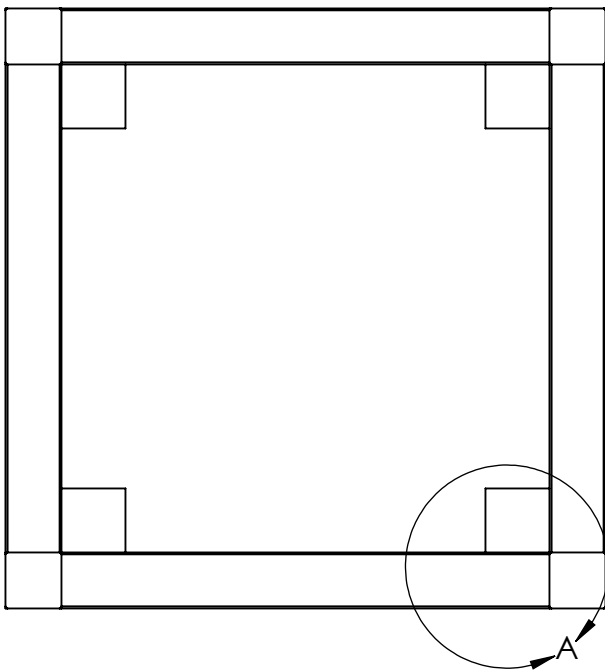
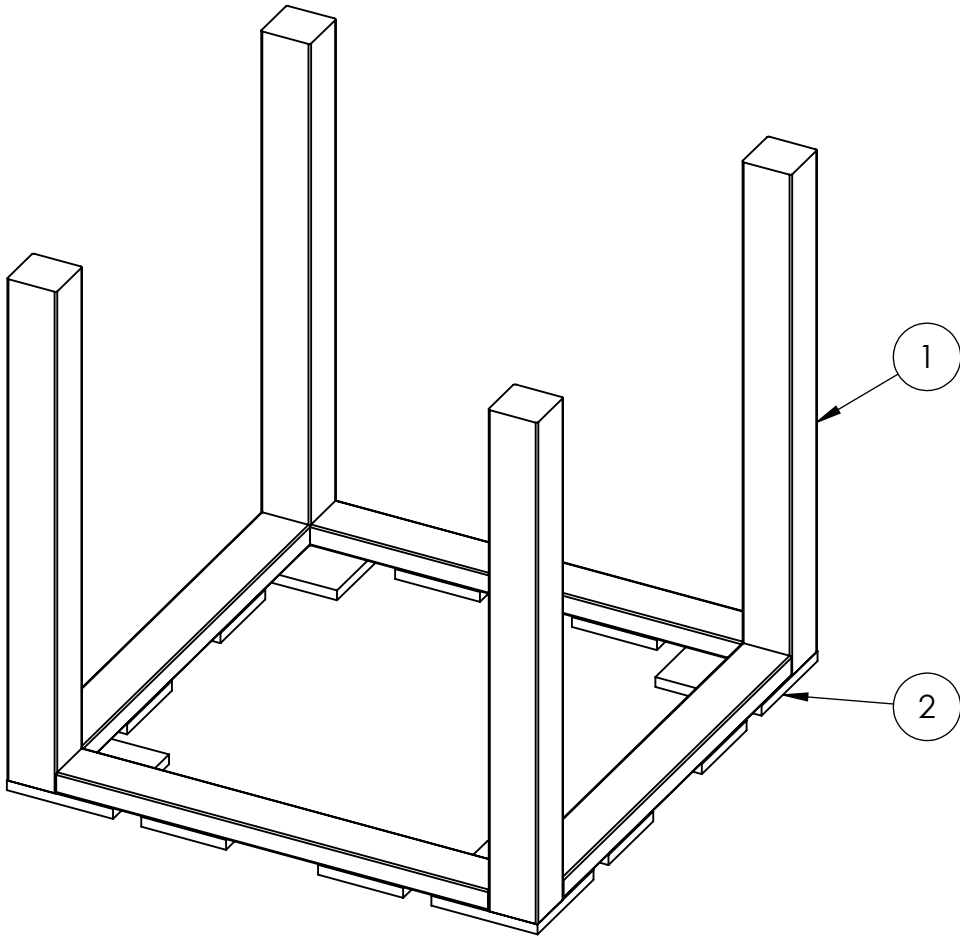
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-22036-AM	Hub - Simple Build - Upper Hub Goal 4x4 for AM Ring AM-4672	4
2	TE-22038	Hub - Simple Build - Upper Hub Goal Bottom Assembly	1
3	TE-22037	Hub - Simple Build - Upper Hub Goal Rectangle Connection Plate	4
4	AM-4672	AndyMark Produced - Upper Hub Vision Ring	1

UNLESS OTHERWISE SPECIFIED:		TEAM	NAME	DATE	 	
		DRAWN	KAMC	12/30/2021		
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: Hub - Simple Build - Upper Hub Goal Assembly for AM Ring AM-4672	
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE DWG. NO. REV	
					C TE-22030-AM	
DO NOT SCALE DRAWING					SCALE: 1:12 SHEET 1 OF 4	



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	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: Hub - Simple Build - Upper Hub Goal Assembly for AM Ring AM-4672	
			SIZE	DWG. NO.	REV
			C	TE-22030-AM	
			SCALE: 1:12		SHEET 2 OF 4

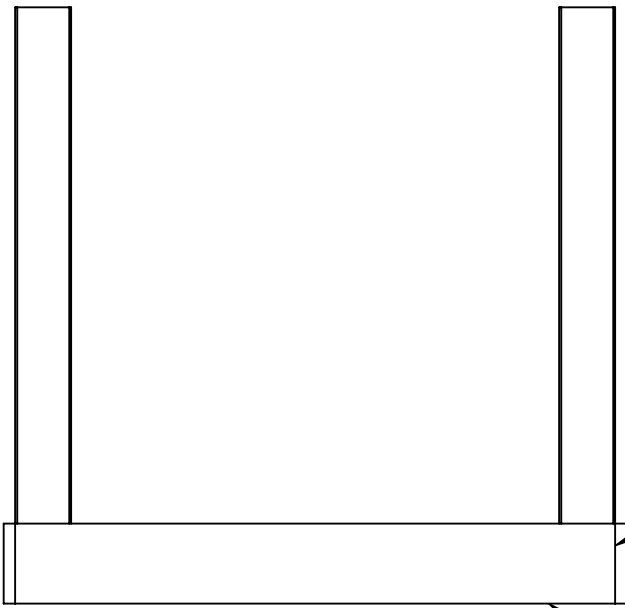
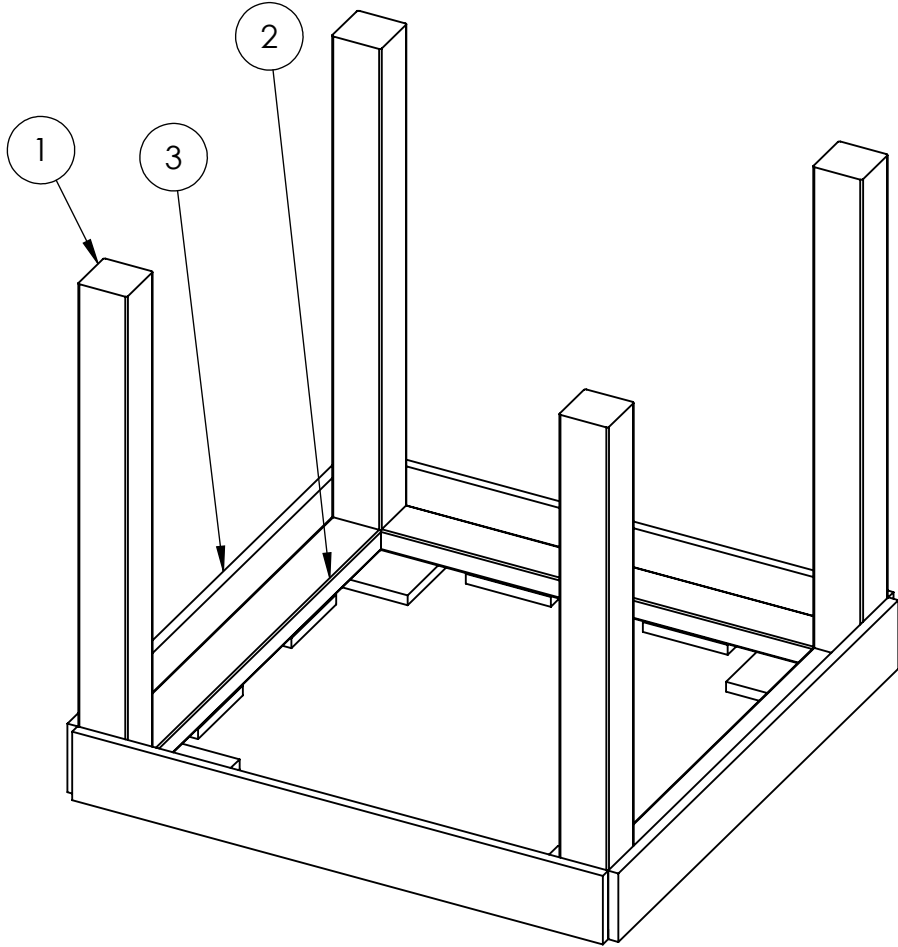
Step 1



4X
DETAIL A
SCALE 1 : 6

- Align 4x (1) to (2) , as shown.
- Connect using 2" Long Screws. It is recommended to use 4x screws per (1) .



Step 2



Align to Edge

Align to Edge

- Align 4x (3) to Step 1 , as shown.
- Attach (3) to (1) using 2" Long Screws. It is recommended to use x8 screws per (3) , x4 into each (1) .
- Attach (3) to the 2"x4" Lumber of (2) using 1.25" Long Screws. It is recommended to use x3 screws per (3) . Be careful to center the screw into the 2"x4" Lumber to avoid splitting the wood.

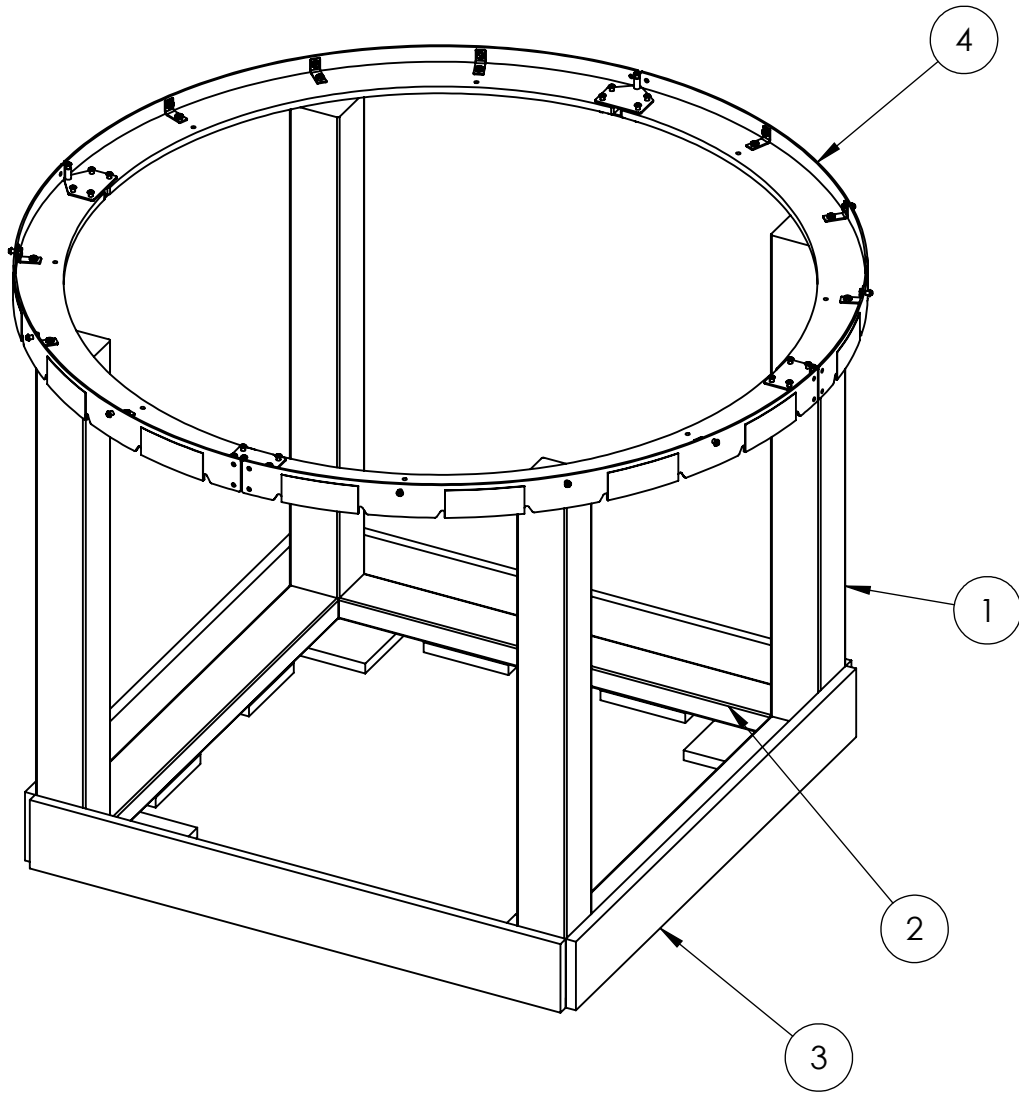
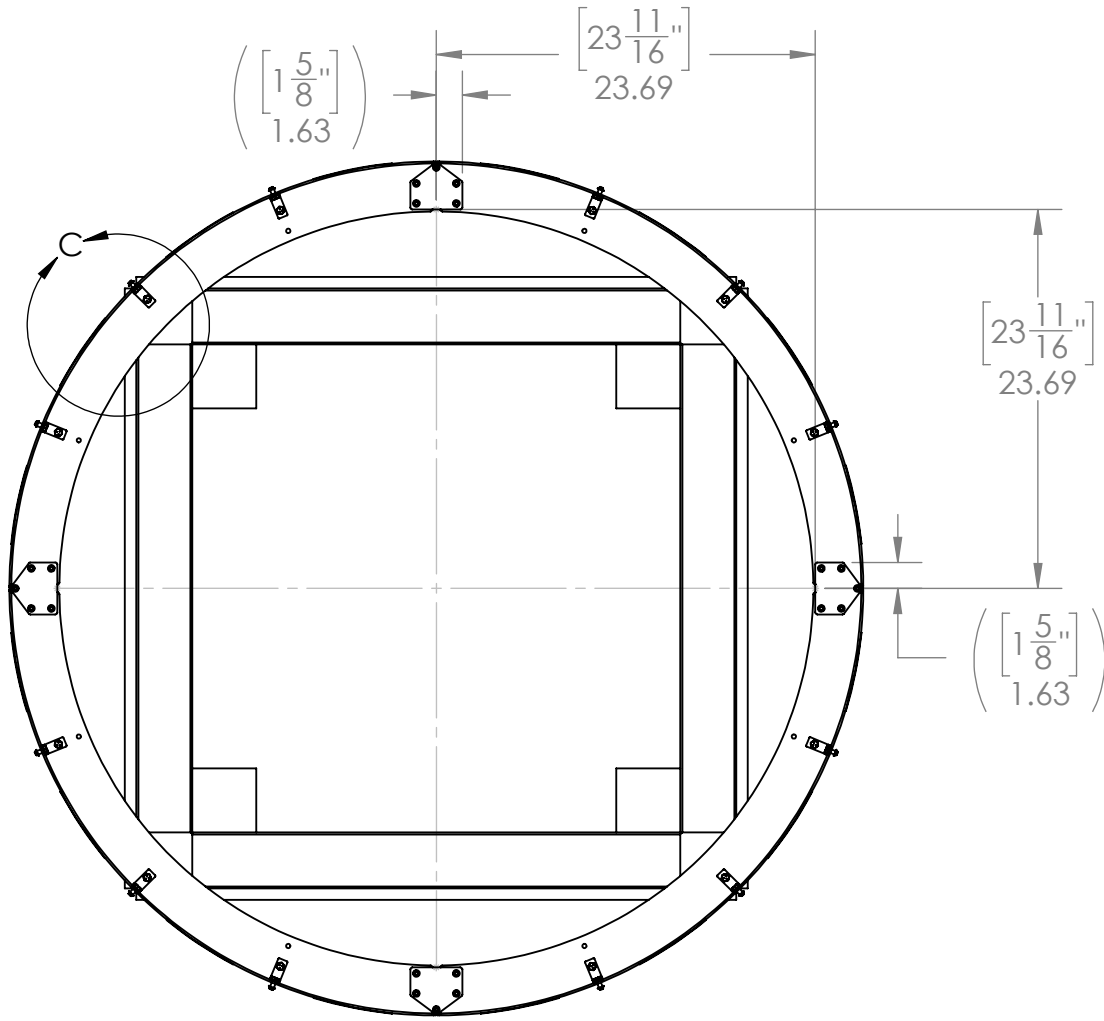
UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div> FIRST ROBOTICS COMPETITION</div> <div> SOLIDWORKS Modeling Solutions Partner</div>	
	DRAWN	KAMC	12/30/2021		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND 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: Hub - Simple Build - Upper Hub Goal Assembly for AM Ring AM-4672	
	MATERIAL/FINISH:			SIZE	DWG. NO.
DO NOT SCALE DRAWING	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C TE-22030-AM	
				SCALE: 1:12 SHEET 3 OF 4	

Step 3



Remove hardware and replace with screw and washer

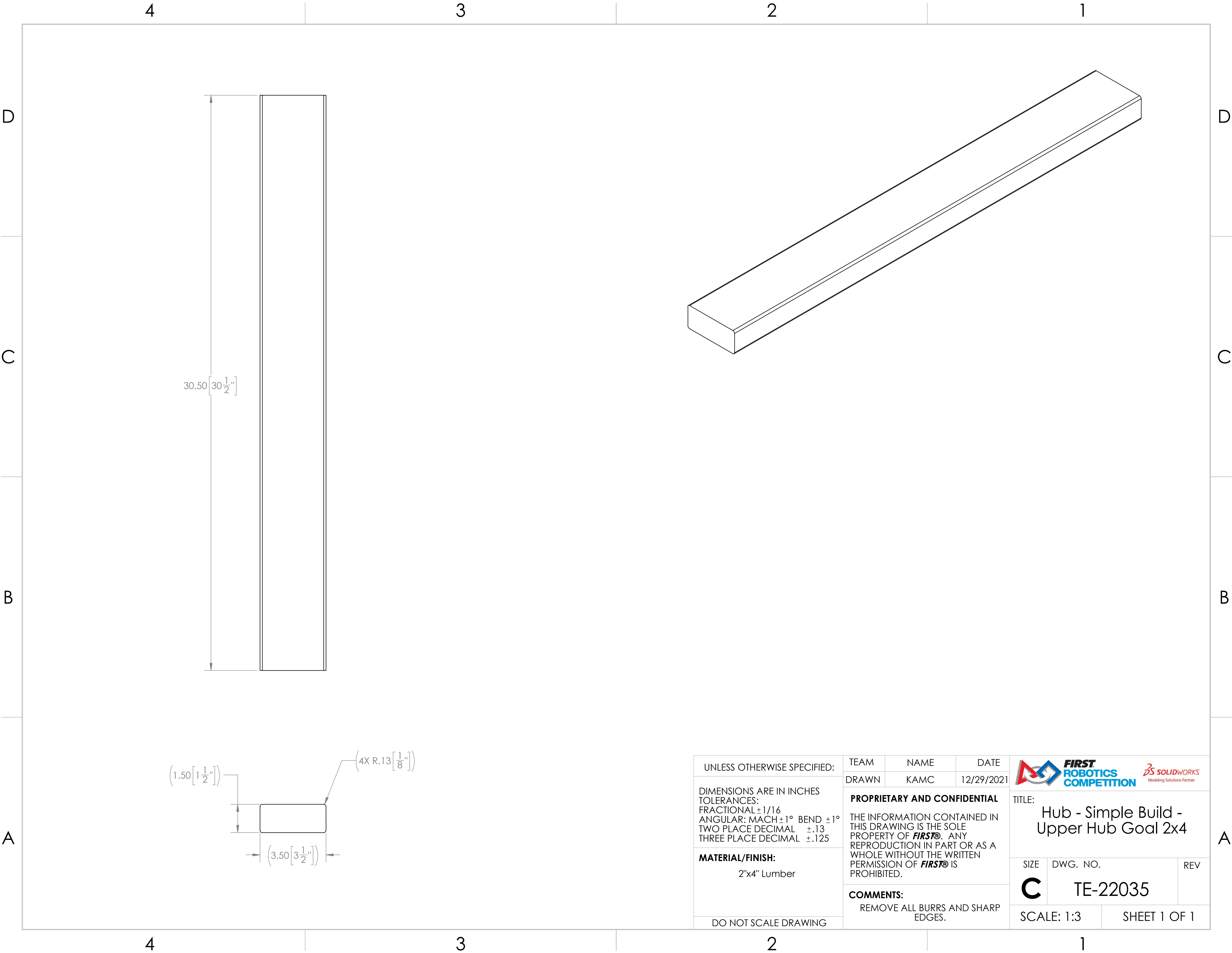
Add screw in this location



4X
DETAIL C
SCALE 1 : 3
Hidden Lines Shown

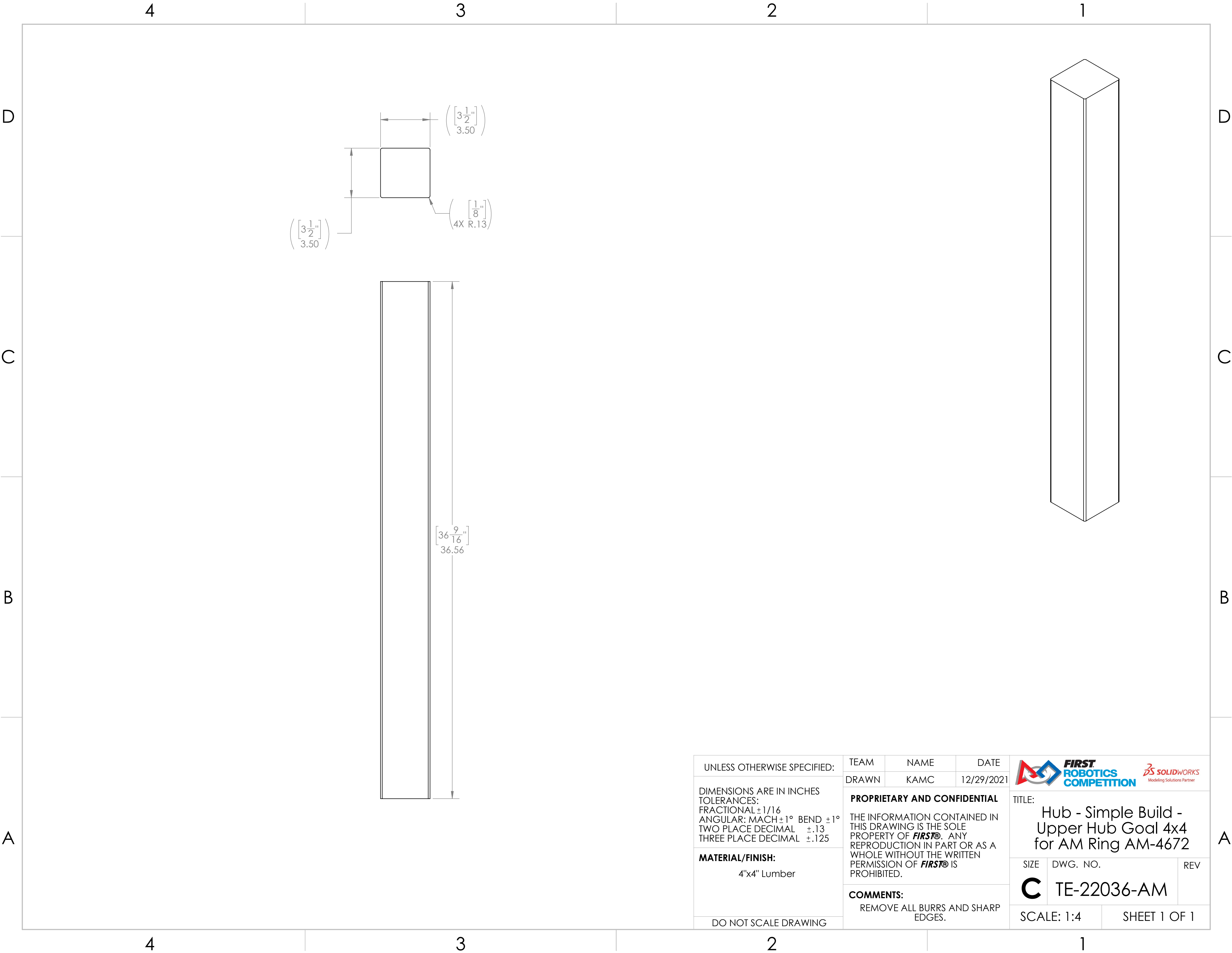




1. Remove center bolt stack from (4) as shown in Detail C.
2. Align (4) to Step 2, as shown.
Note: Warping may be present on (1) . If this is the case, evenly split the difference from the dimensions provided to center (4) on assembly.
3. Connect using 2" Long Screws and 1/4" Washers. It is recommended to use 1x Washer (salvage from AM-4672) and 1x Screw to replace the removed bolt stack. It is recommended to use an additional 2x screws into the HDPE of (4) into each (1) . Note: drilling under-sized pilot holes into the HDPE may allow for easier assembly.

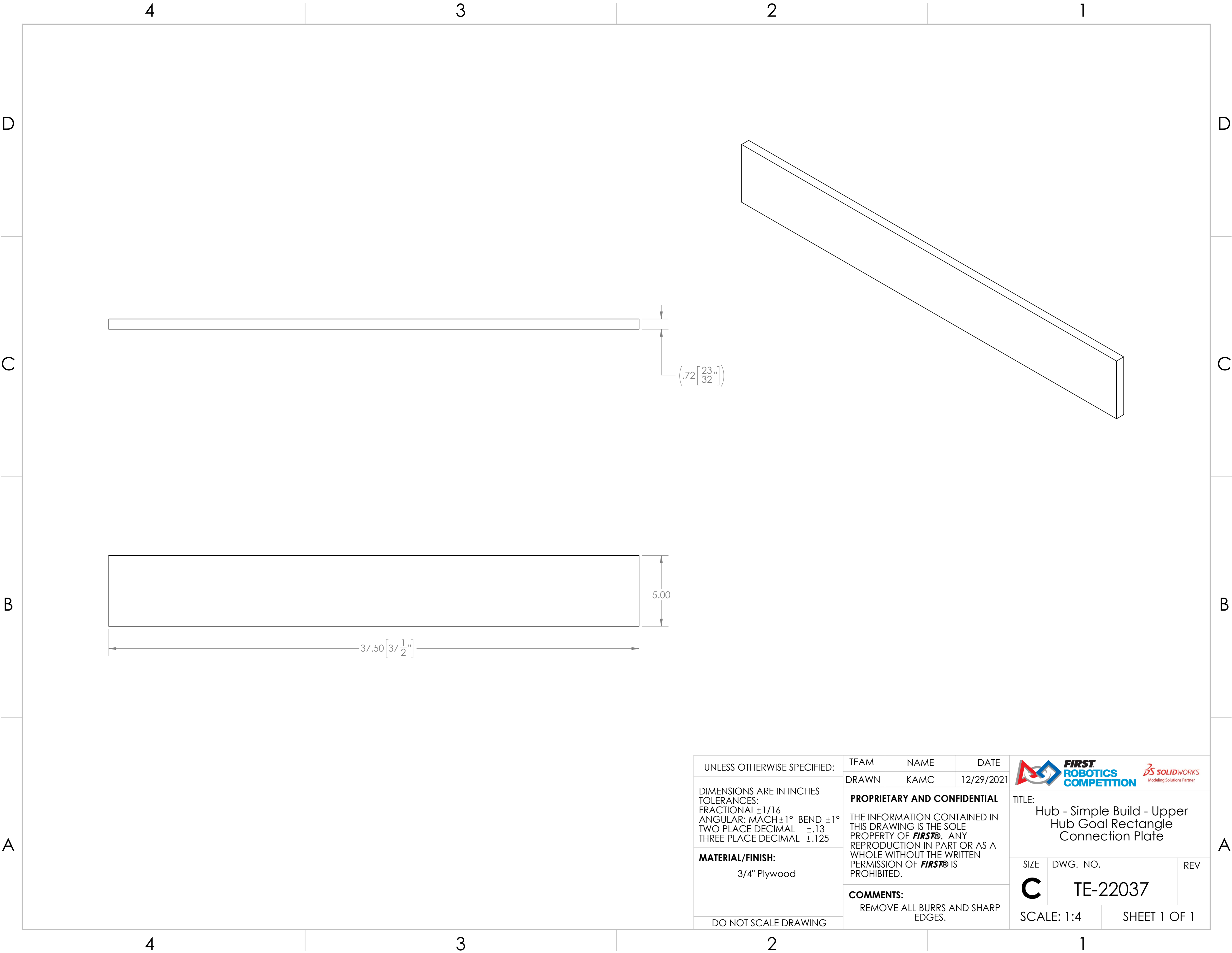
UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div><div>FIRST ROBOTICS COMPETITION</div><div>SOLIDWORKS Modeling Solutions Partner</div></div>		
	DRAWN	KAMC	12/30/2021			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$	PROPRIETARY AND CONFIDENTIAL			TITLE:		
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST ®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST ® IS PROHIBITED.			Hub - Simple Build - Upper Hub Goal Assembly for AM Ring AM-4672		
MATERIAL/FINISH:				SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	TE-22030-AM	
				SCALE: 1:12		SHEET 4 OF 4





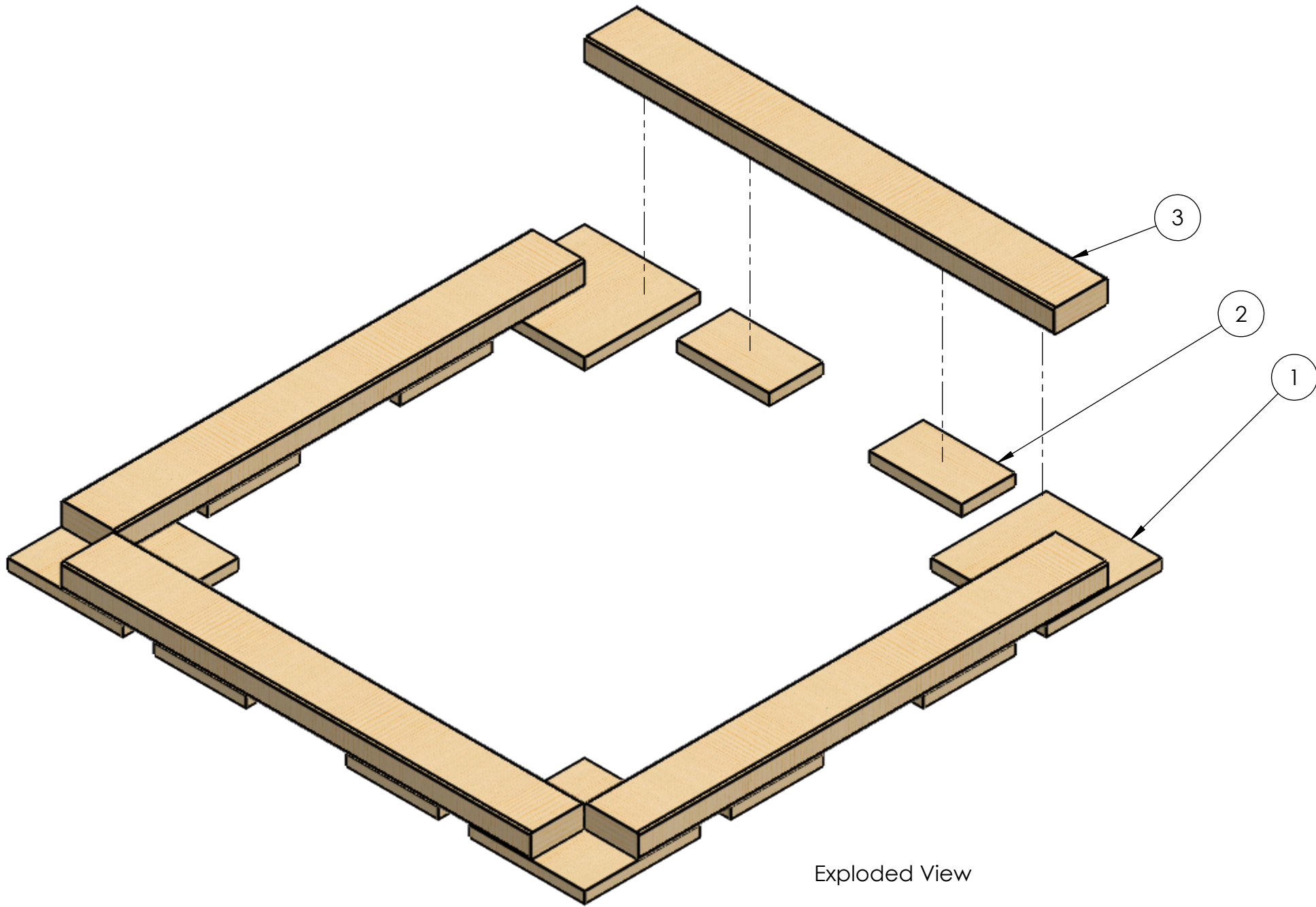
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	DRAWN	KAMC	12/29/2021			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL			TITLE: Hub - Simple Build - Upper Hub Goal 2x4		
	THE INFORMATION CONTAINED IN 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"x4" Lumber				C	TE-22035	
DO NOT SCALE DRAWING				SCALE: 1:3		SHEET 1 OF 1



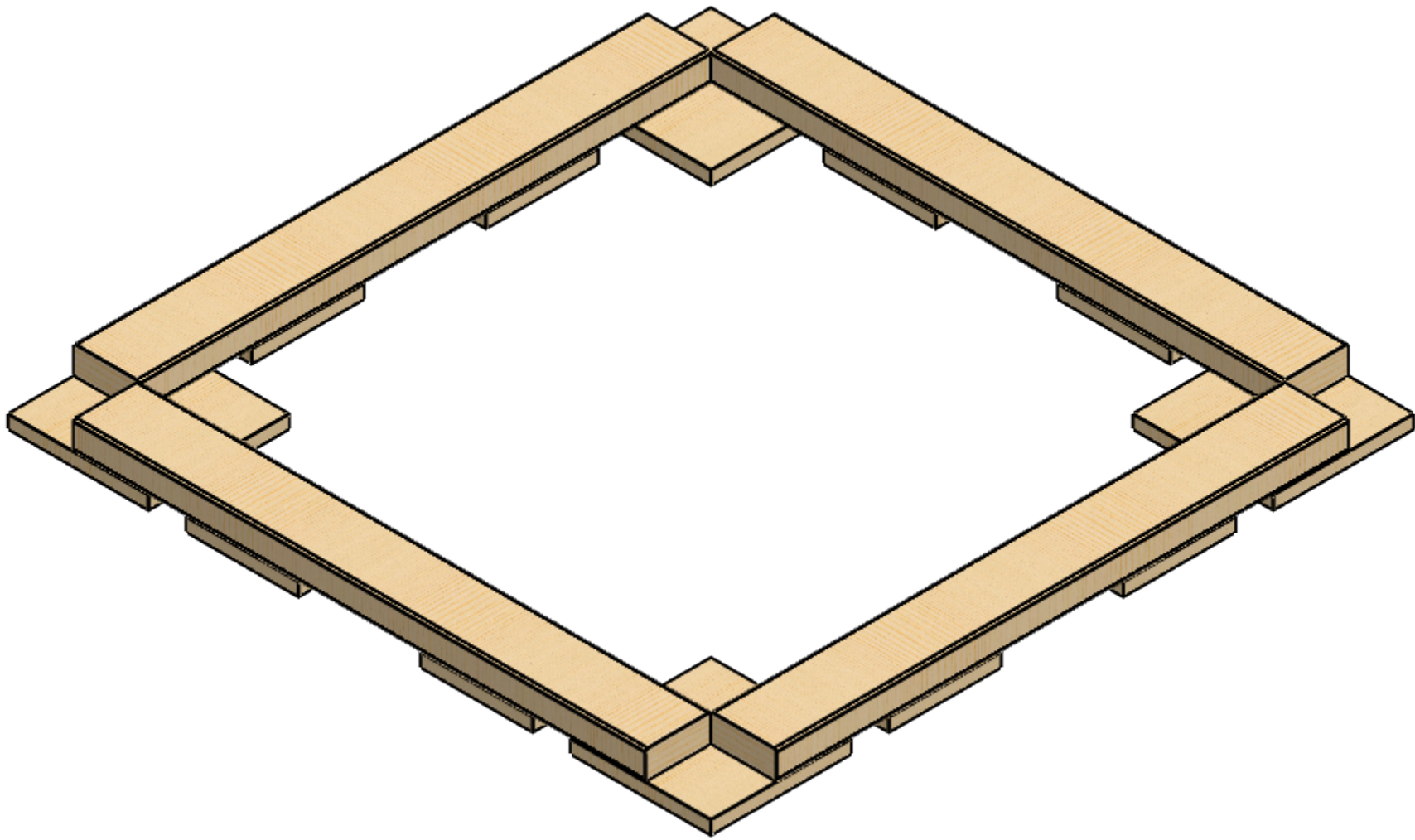
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	DRAWN	KAMC	12/29/2021	
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
SIZE		DWG. NO.		REV
C		TE-22036-AM		
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 $\pm .13$ THREE PLACE DECIMAL $\pm .125$ MATERIAL/FINISH: 3/4" Plywood DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/29/2021			
	PROPRIETARY AND CONFIDENTIAL			TITLE: Hub - Simple Build - Upper Hub Goal Rectangle Connection Plate		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. TE-22037	REV
SCALE: 1:4		SHEET 1 OF 1				





Exploded View



Hardware Needed:
#8 x 2" Long Screw - Qty 58

ITEM NO.	PART NUMBER	DESCRIPTION	
1	TE-22005	Hub - Simple Build - Upper Hub Square Connection Plate	4
2	TE-22006	Hub - Simple Build - Upper Hub 2x4 Connection Plate	8
3	TE-22035	Hub - Simple Build - Upper Hub Goal 2x4	4

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	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL			TITLE: Hub - Simple Build - Upper Hub Goal 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.				
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
			C	TE-22038	
			SCALE: 1:6		SHEET 1 OF 3

4

3

2

1

D

D

C

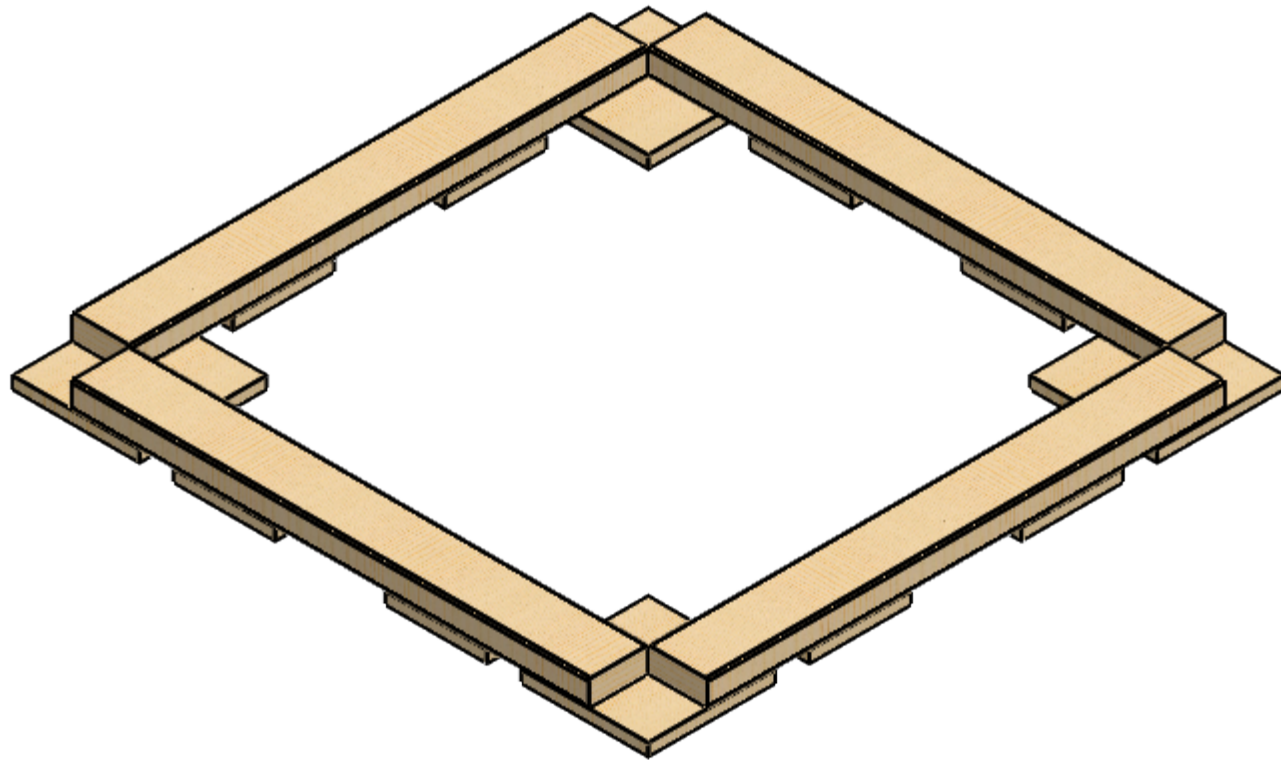
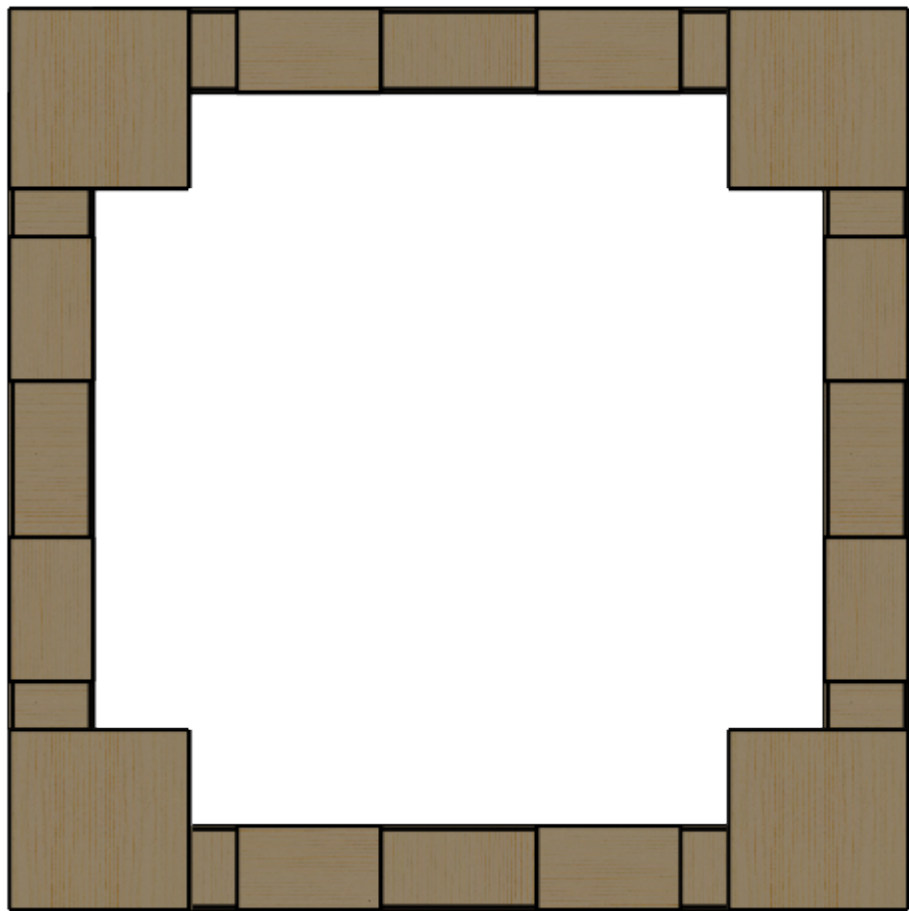
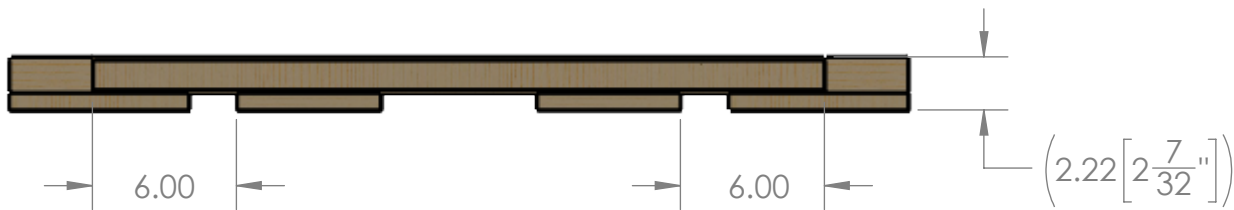
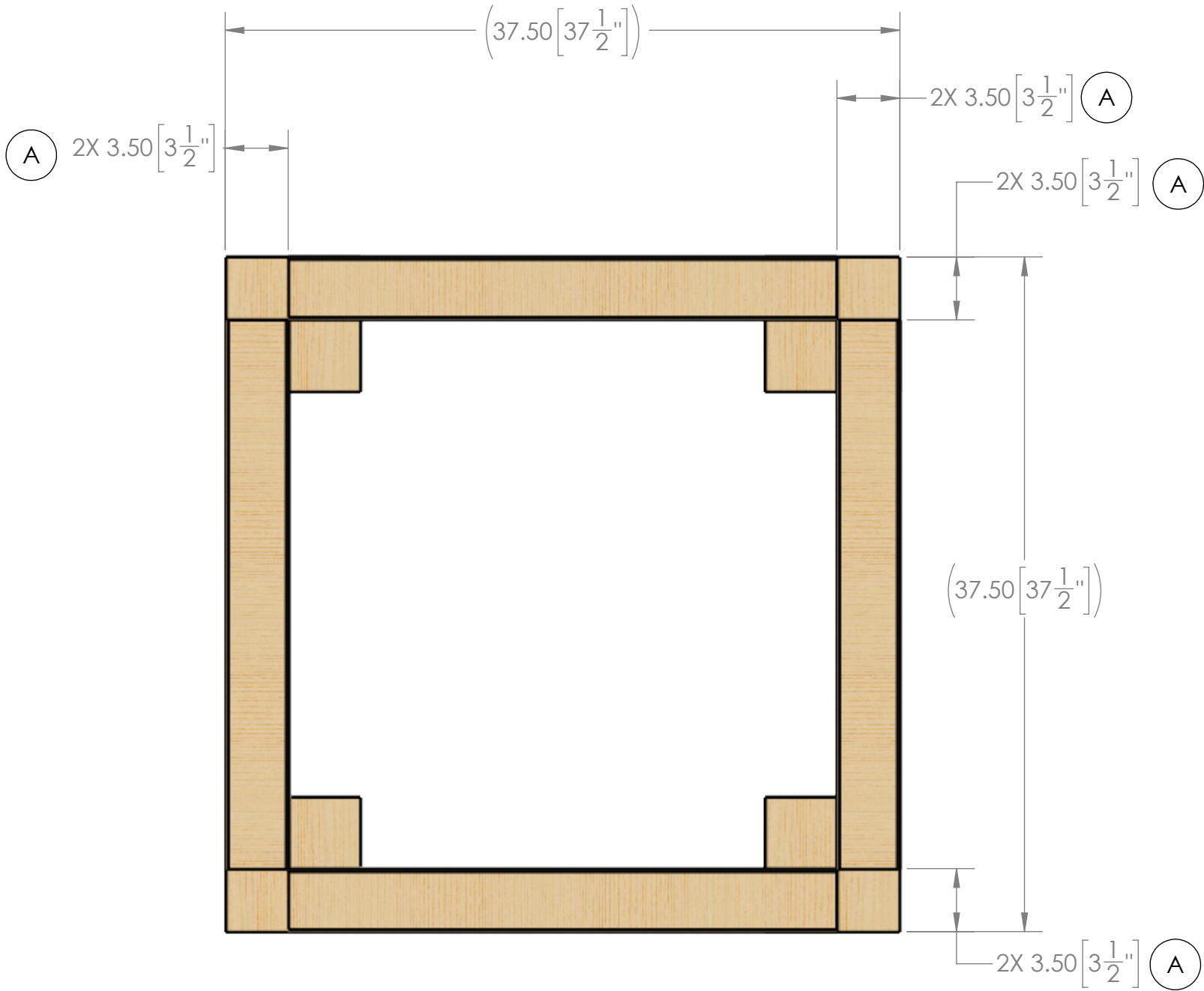
C

B



B

A

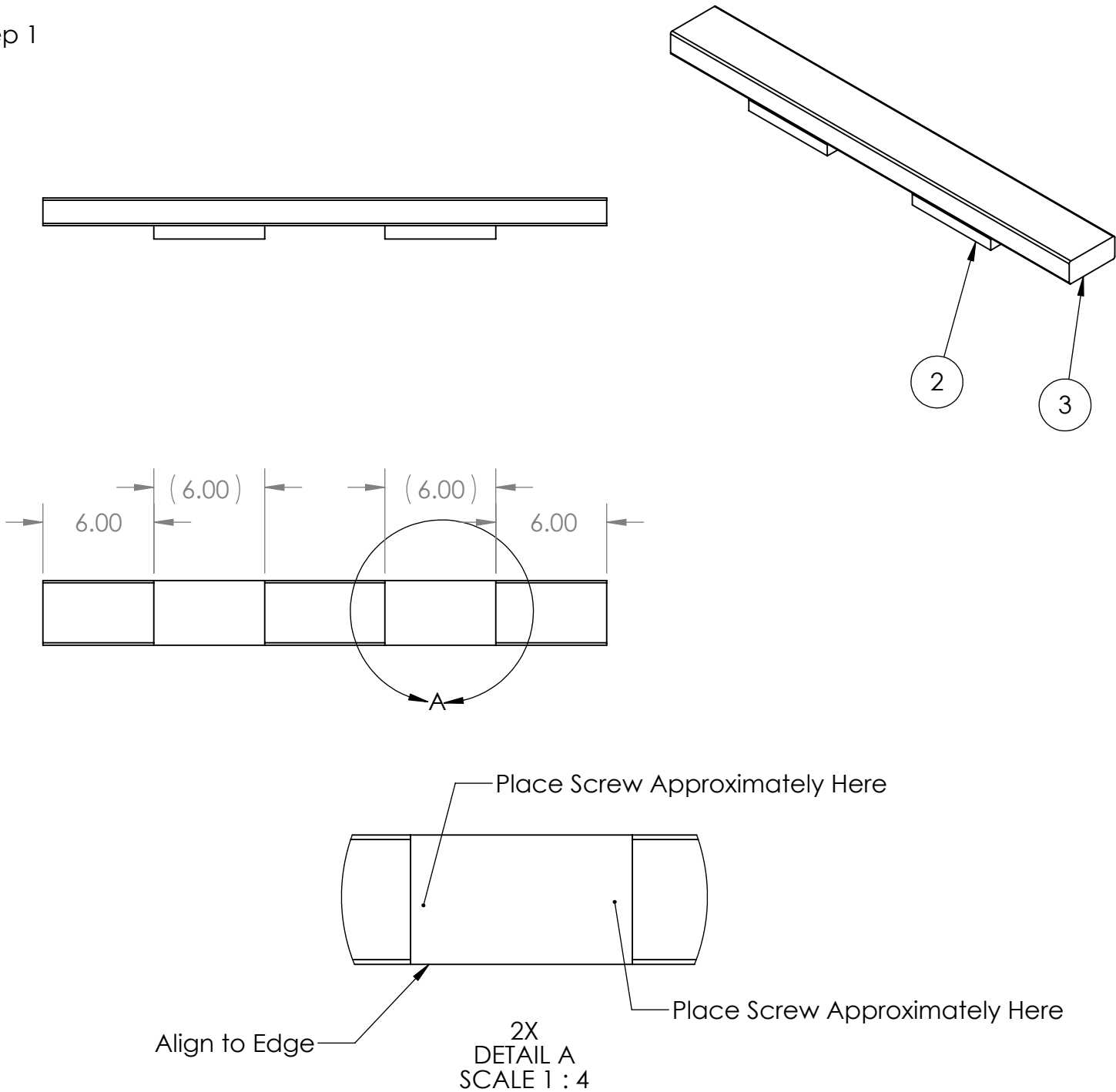
A



Note:
Dimensions with (A) indicate spacing for 4"x4" lumber from TE-22036 (or TE-22036-AM if you are connecting to AndyMark's Upper Hub Vision Ring AM-4672). It is recommended to measure the cross section of TE-22036 (or TE-22036-AM) and modify these dimensions as needed.

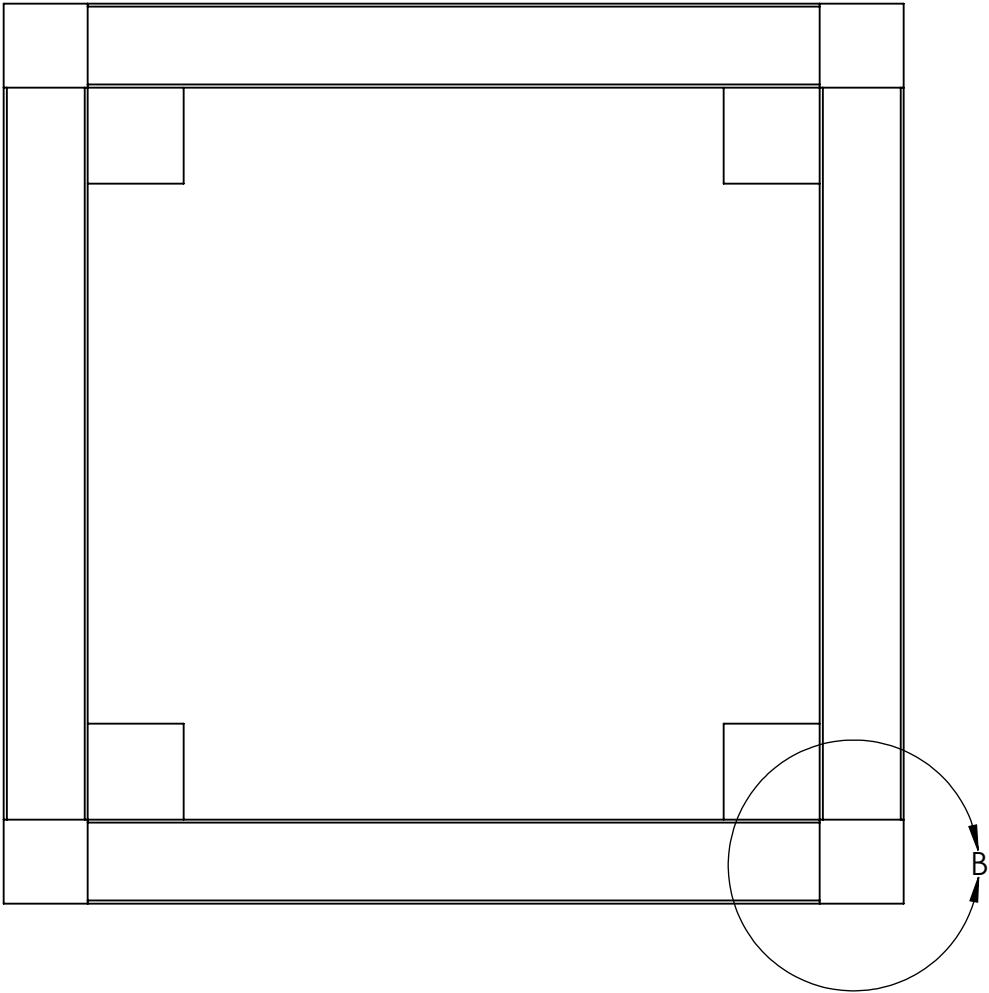
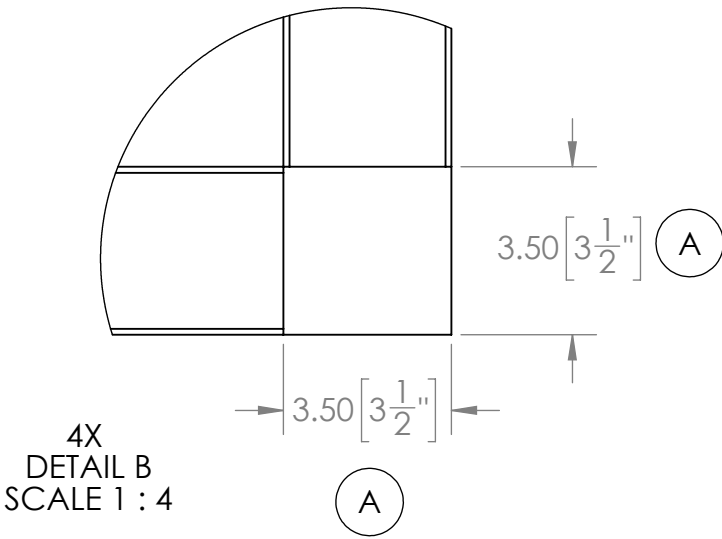
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE: Hub - Simple Build - Upper Hub Goal Bottom Assembly	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. TE-22038 REV
SCALE: 1:8 SHEET 2 OF 3					

Step 1





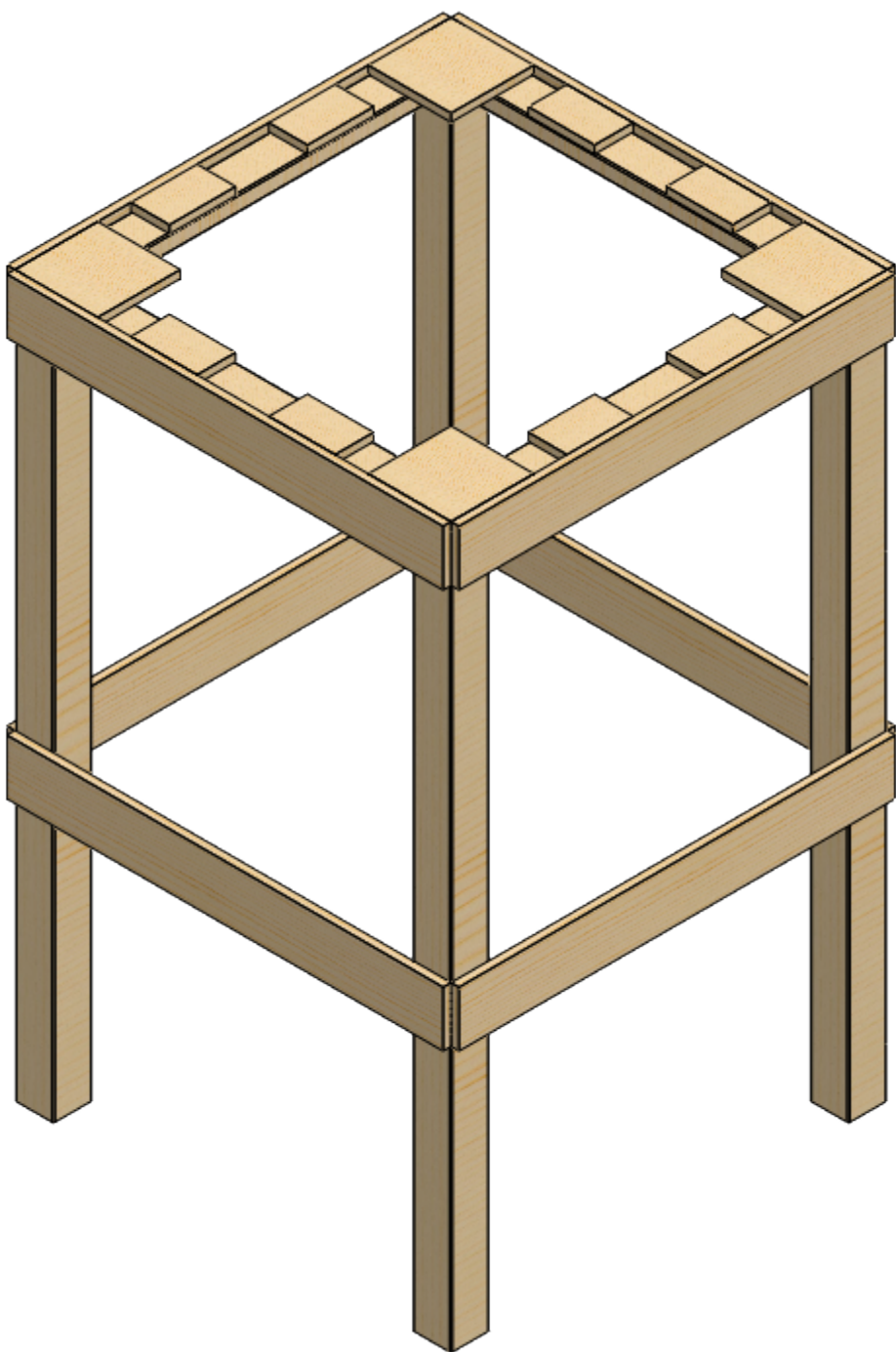
- Align 2x (2) on (3) , as shown.
- Connect using 2" long screws. It is recommended to use 2x screws per (2) and locate them as shown above. Keep center of (2) clear of screws.
- Repeat until you have a total of 4x sub-assemblies.

Step 2





- Align 4x (1) to the 4x Step 1 assemblies, as shown.
Dimensions with (A) indicate spacing for 4"x4" lumber from TE-22036 (or TE-22036-AM if you are connecting to AndyMark's Upper Hub Vision Ring AM-4672). It is recommended to measure the cross section of TE-22036 (or TE-22036-AM) and modify these dimensions as needed.
- Connect using 2" long screws. It is recommended to use 8x screws per (3) , 4x into each end.

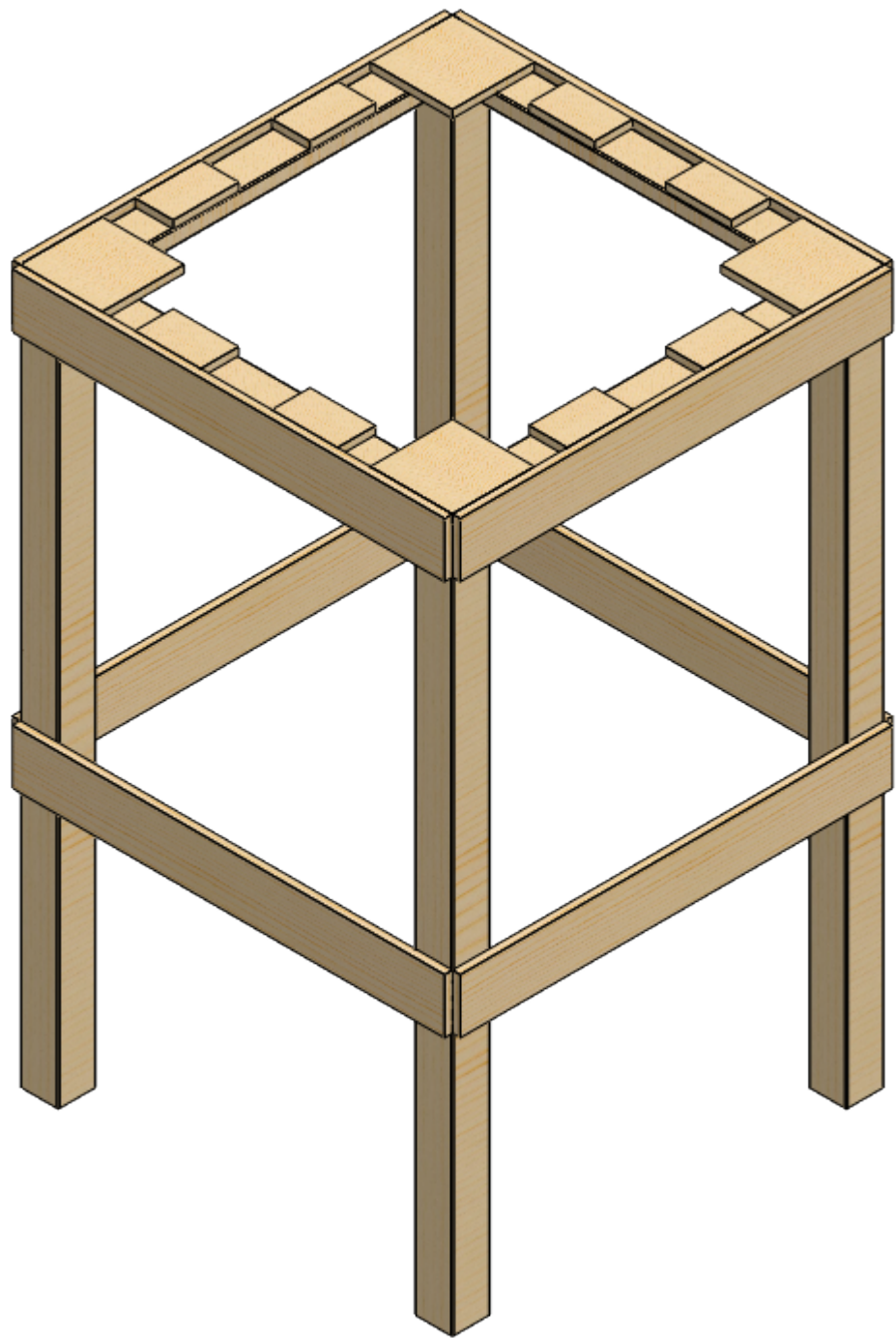
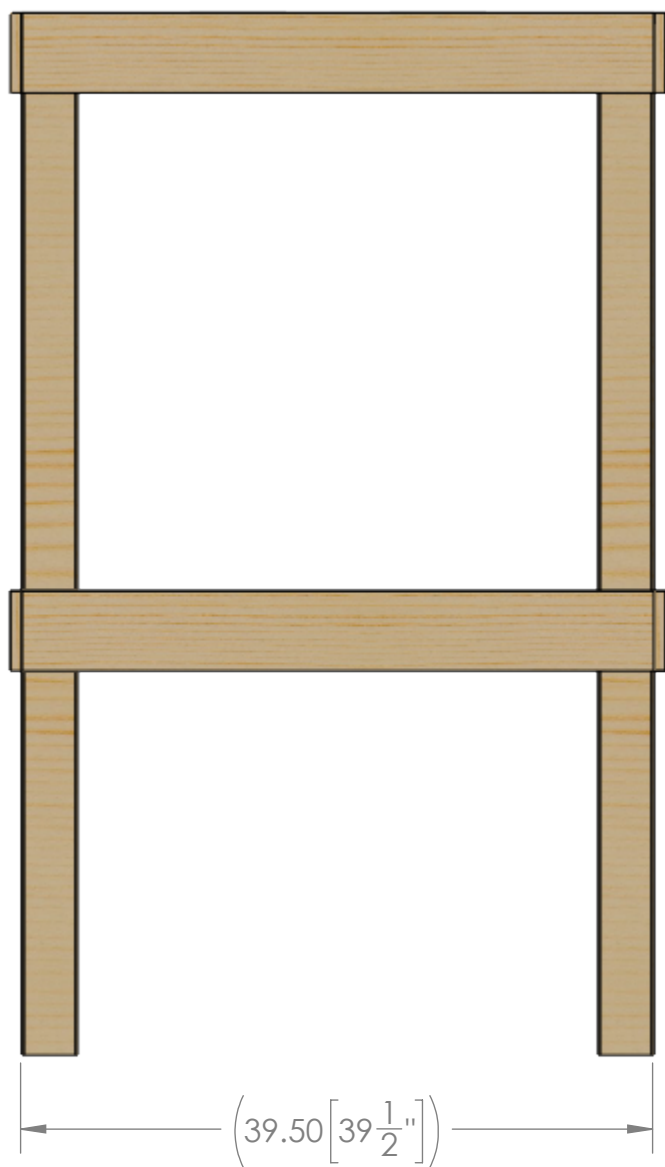
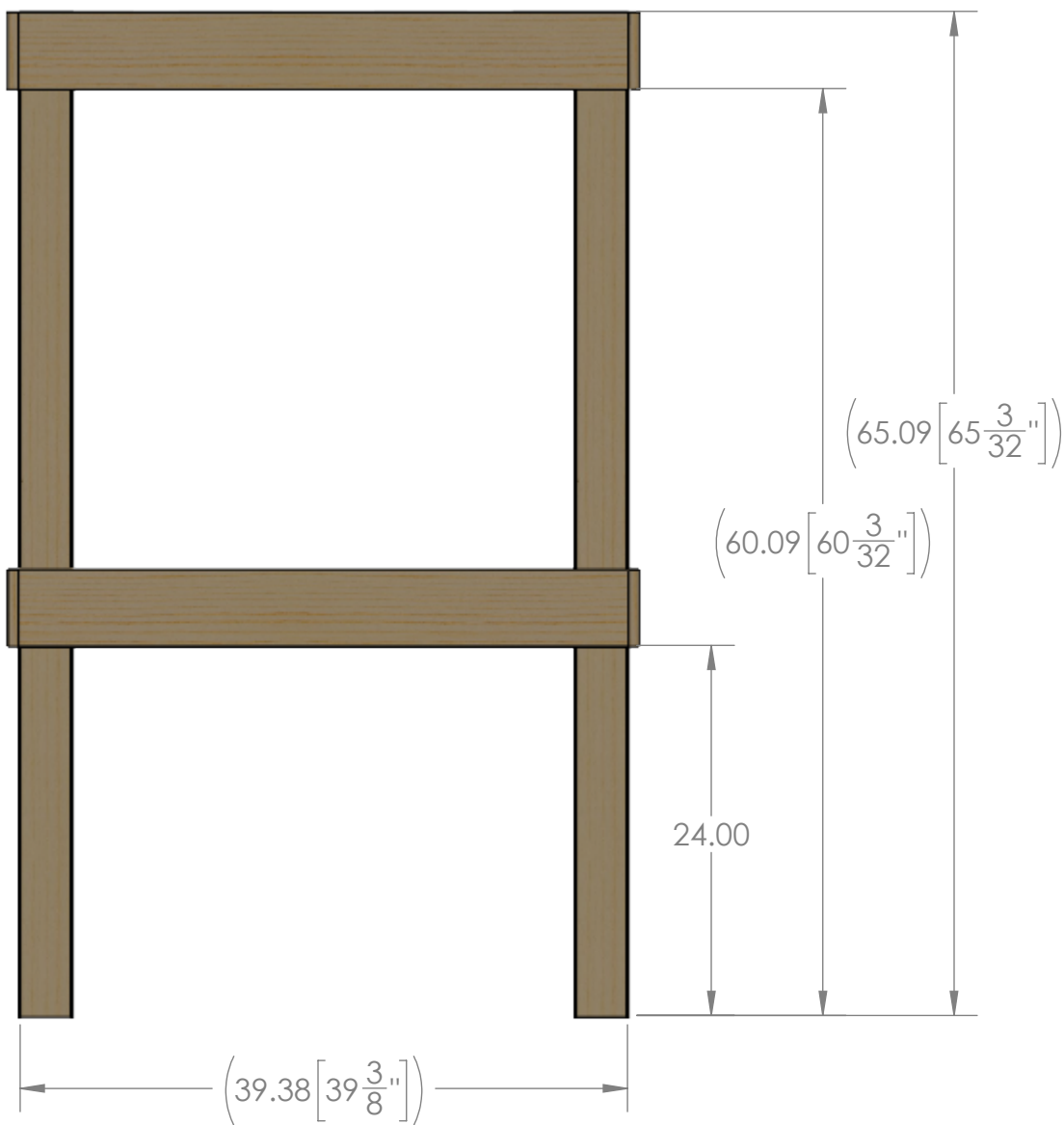
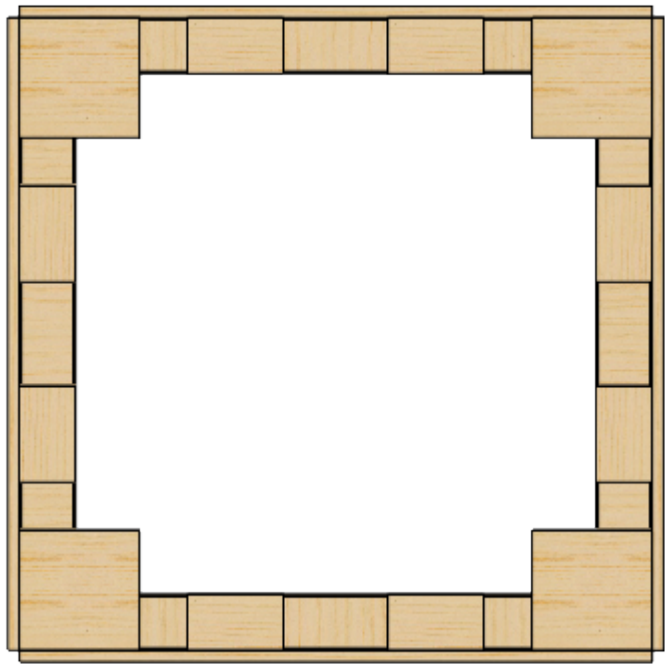
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	DRAWN	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL			TITLE:	
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			Hub - Simple Build - Upper Hub Goal Bottom Assembly	
COMMENTS:		REMOVE ALL BURRS AND SHARP EDGES.		SIZE	DWG. NO.
				C	TE-22038
				SCALE: 1:8	SHEET 3 OF 3





Hardware Needed:
#8 x 1.25" Long Screw - Qty 12
#8 x 2" Long Screw - Qty 80

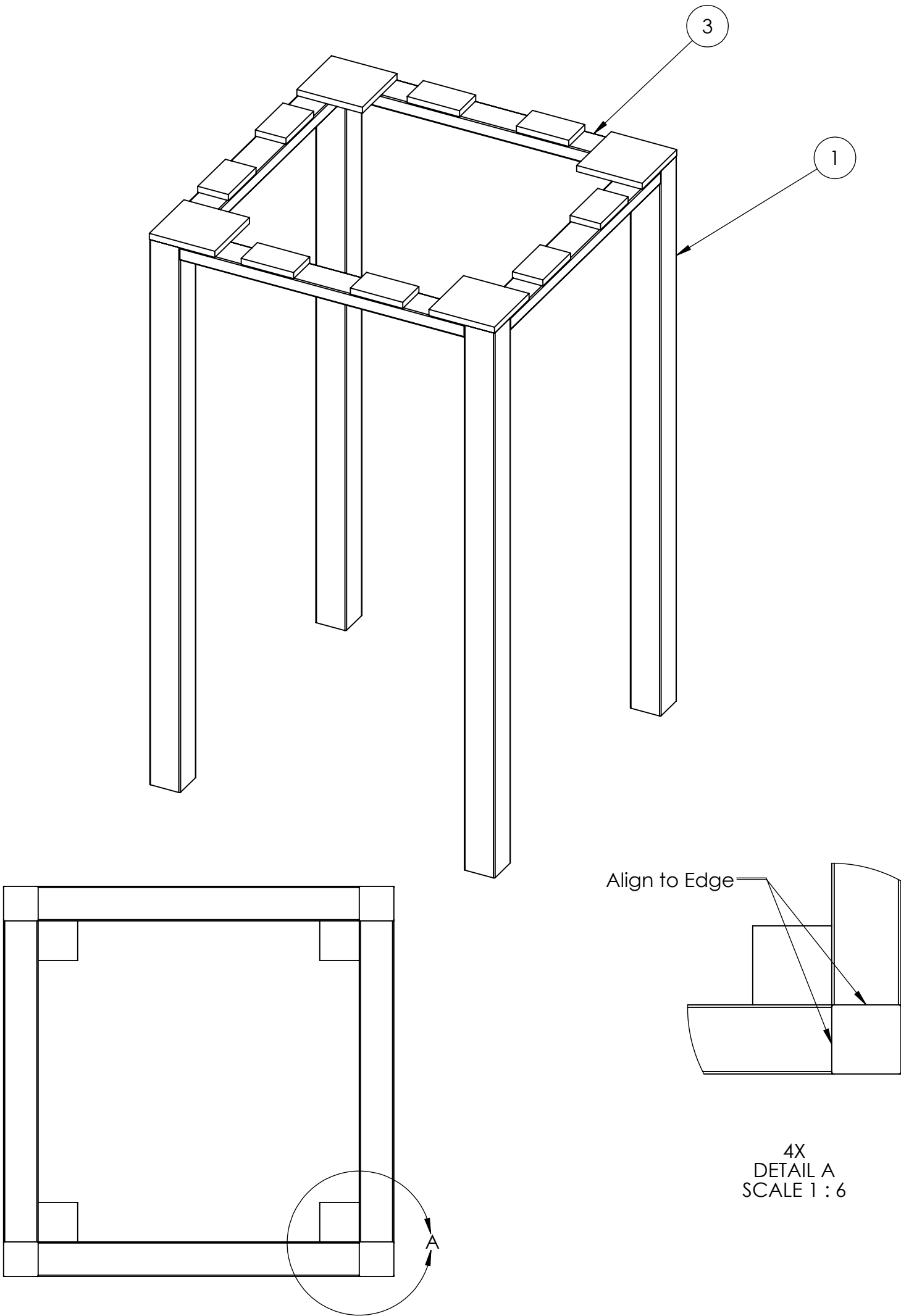
ITEM NO.	PART NUMBER	DESCRIPTION	
1	TE-22042	Hub - Simple Build - Upper Hub Base 4x4	4
2	TE-22043	Hub - Simple Build - Upper Hub Base Rectangle Connexion Plate	8
3	TE-22044	Hub - Simple Build - Upper Hub Base Top Assembly	1

UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div><div></div><div>TITLE: Hub - Simple Build - Upper Hub Base Assembly</div></div>		
	DRAWN	KAMC	12/30/2021			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL			<div>SIZE</div> <div>C</div> <div>DWG. NO.</div> <div>TE-22040</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:					
MATERIAL/FINISH:	REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:12		
DO NOT SCALE DRAWING				SHEET 1 OF 4		



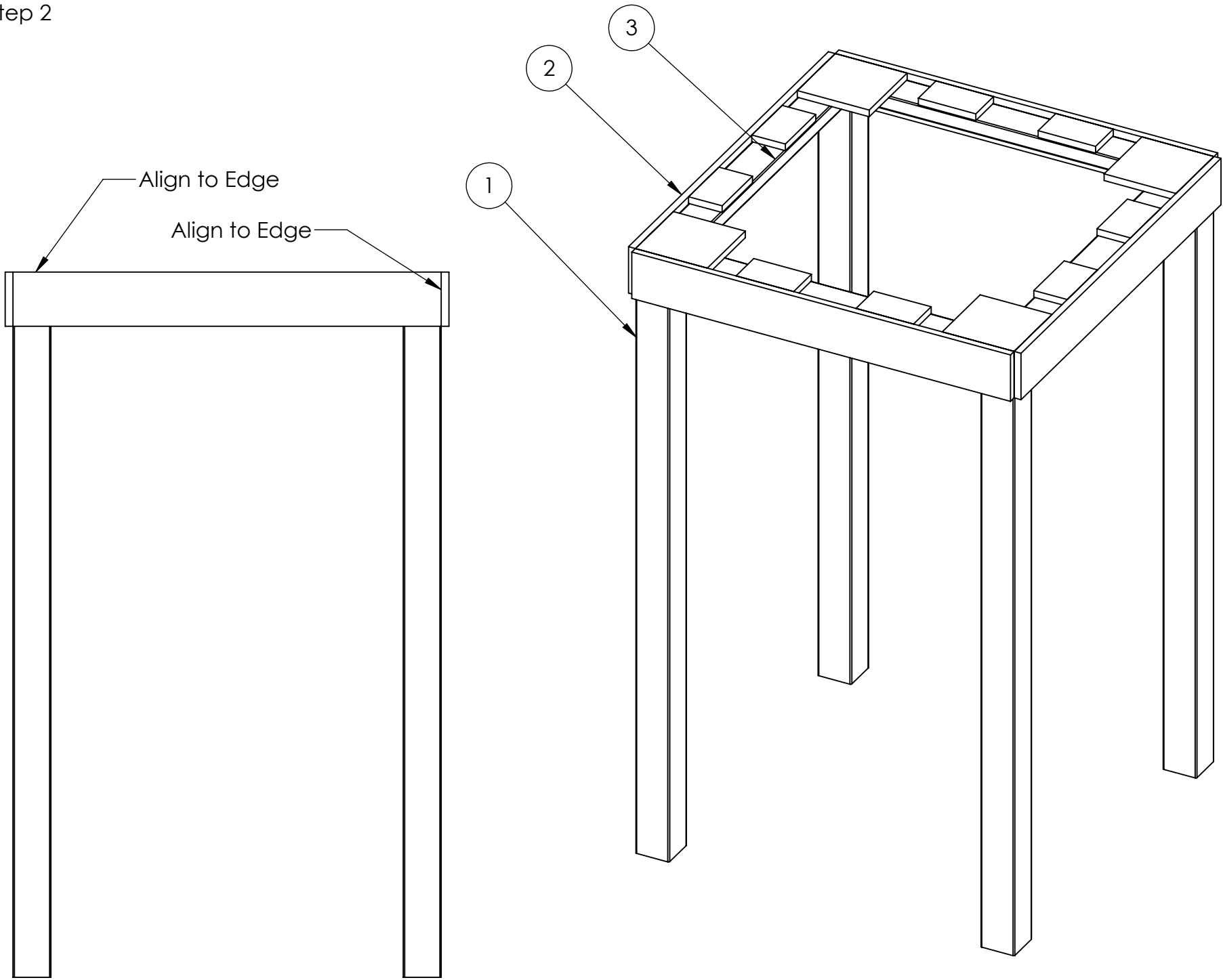
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	DRAWN	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE: Hub - Simple Build - Upper Hub Base Assembly	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. TE-22040 REV
SCALE: 1:12		SHEET 2 OF 4			

Step 1





- 1. Align 4x (1) to (3) , as shown.
- 2. Connect using 2" Long Screws. It is recommended to use 4x screws per (1) .

Step 2



- 1. Align 4x (2) to Step 1 , as shown.
- 2. Attach (2) to (1) using 2" Long Screws. It is recommended to use 8x screws per (2) , 4x into each (1) .
- 3. Attach (2) to the 2"x4" Lumber of (3) using 1.25" long screws. It is recommended to use 3x screws per (2) . Be careful to center the screw into the 2"x4" Lumber to avoid splitting the wood.

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	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: Hub - Simple Build - Upper Hub Base Assembly	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. TE-22040
			SCALE: 1:12		SHEET 3 OF 4

4

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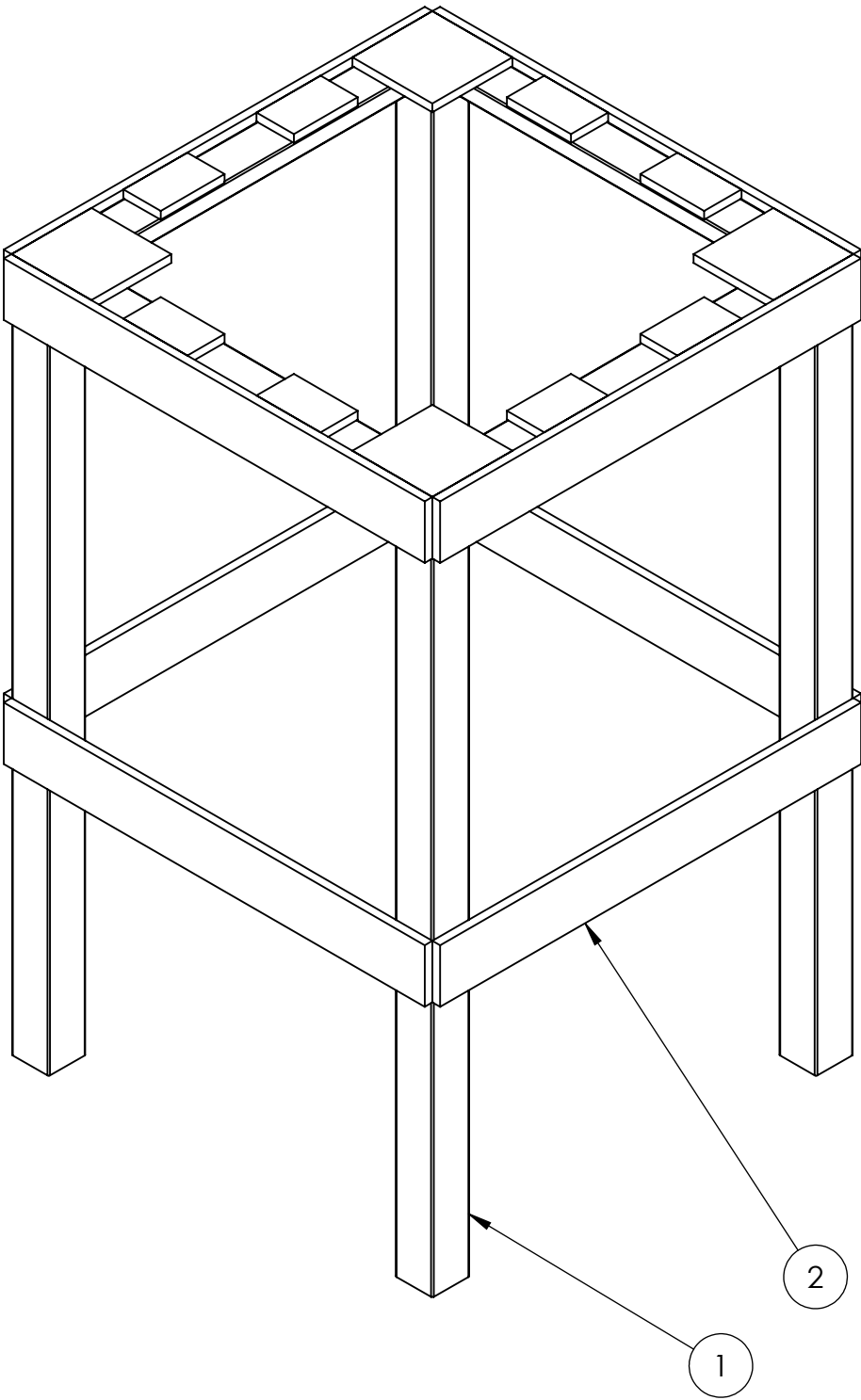
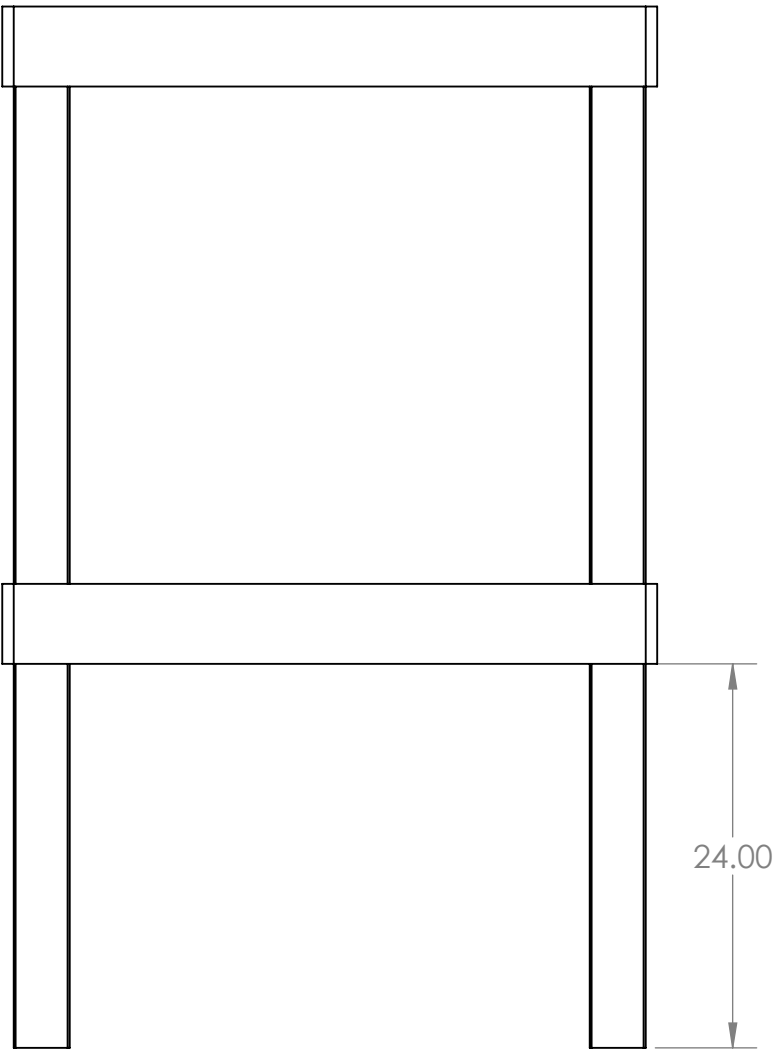
D

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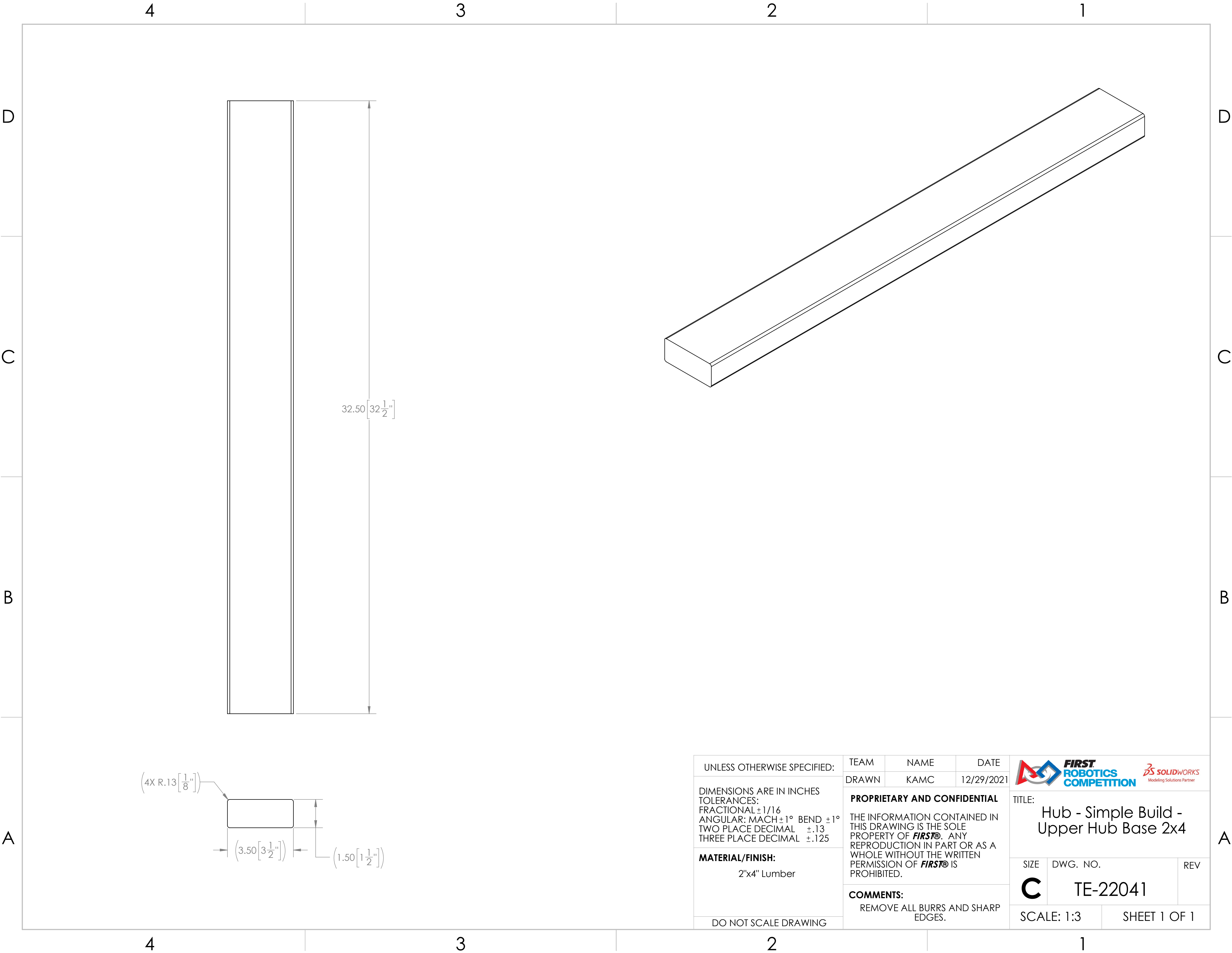
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Step 3

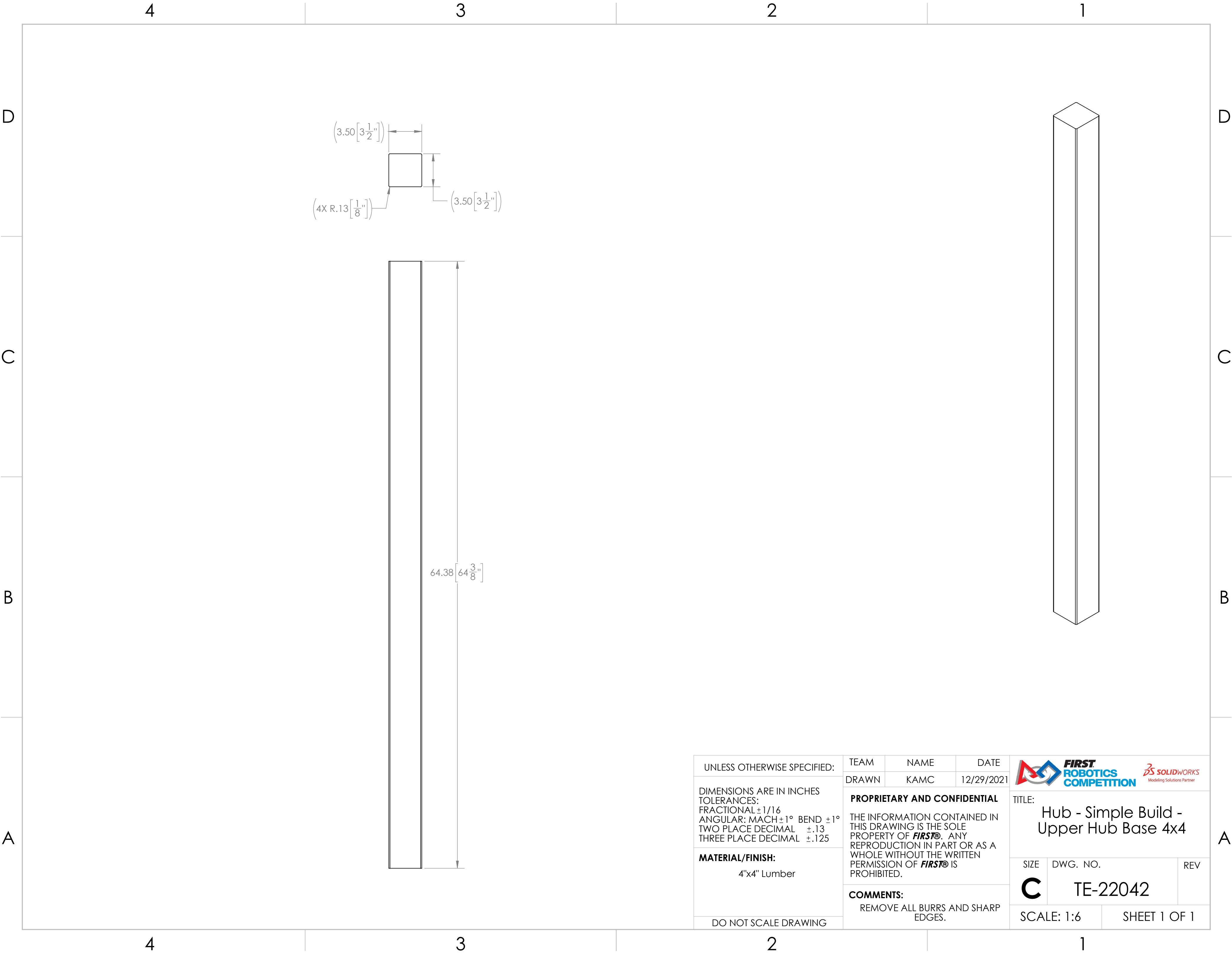




1. Align 4x 2 to Step 2 , as shown.
2. Attach 2 to 1 using 2" Long Screws. It is recommended to use 8x screws per 2 , 4x into each 1 .

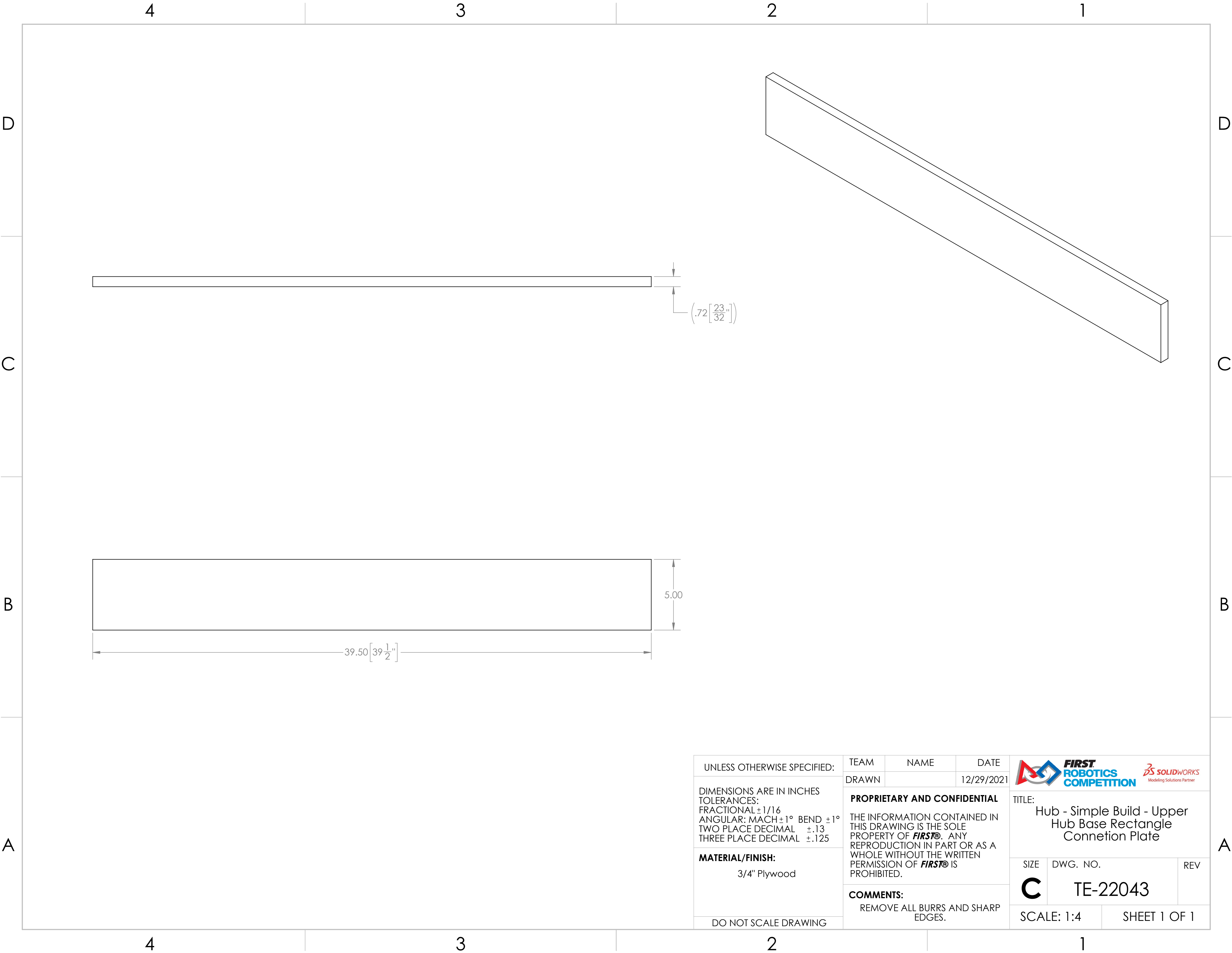
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	DRAWN		KAMC		12/30/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.						TITLE: Hub - Simple Build - Upper Hub Base Assembly	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.						SIZE C	
						DWG. NO. TE-22040		REV
				SCALE: 1:12		SHEET 4 OF 4		





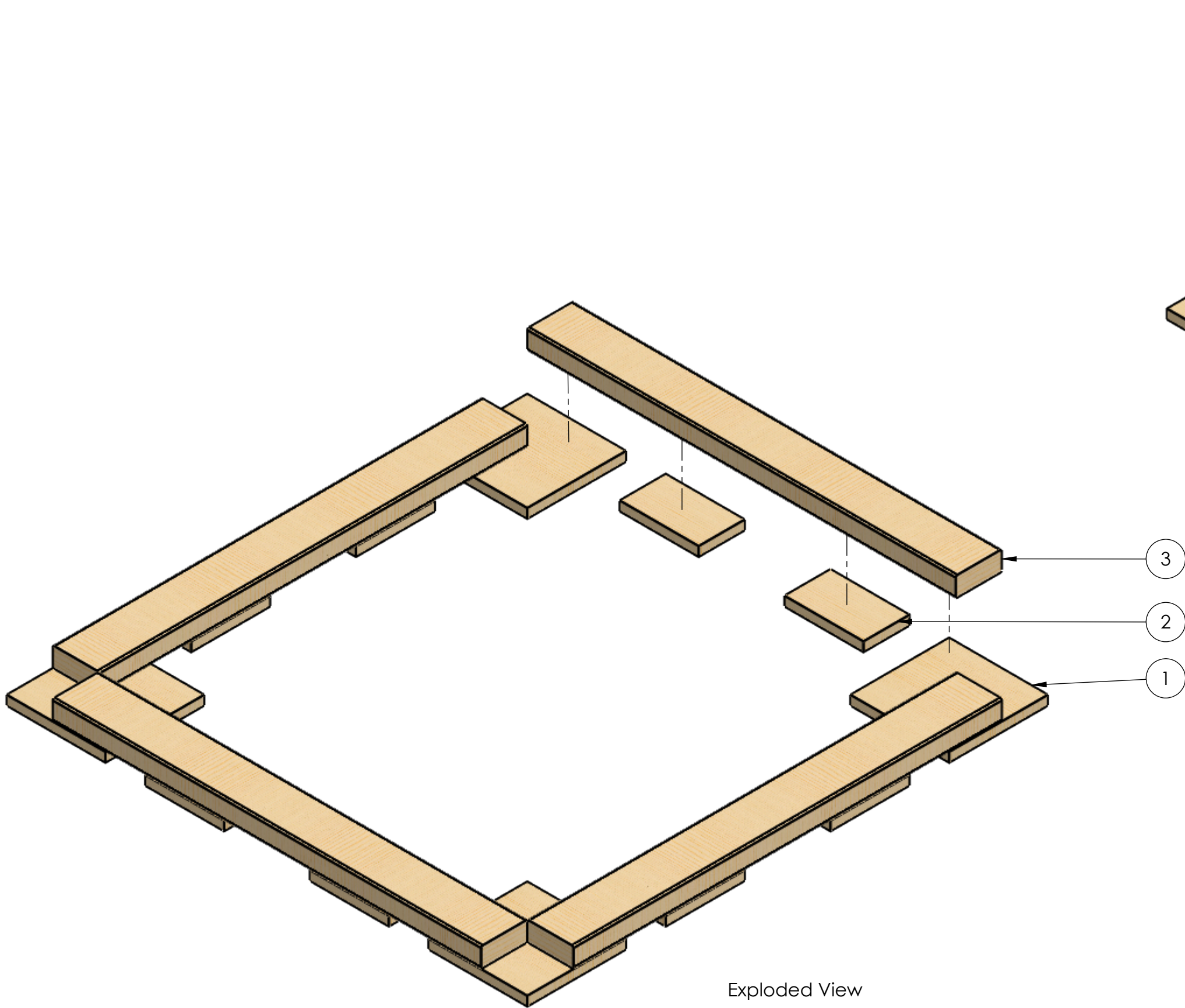
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	DRAWN	KAMC	12/29/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	TE-22041	
		SCALE: 1:3		SHEET 1 OF 1		



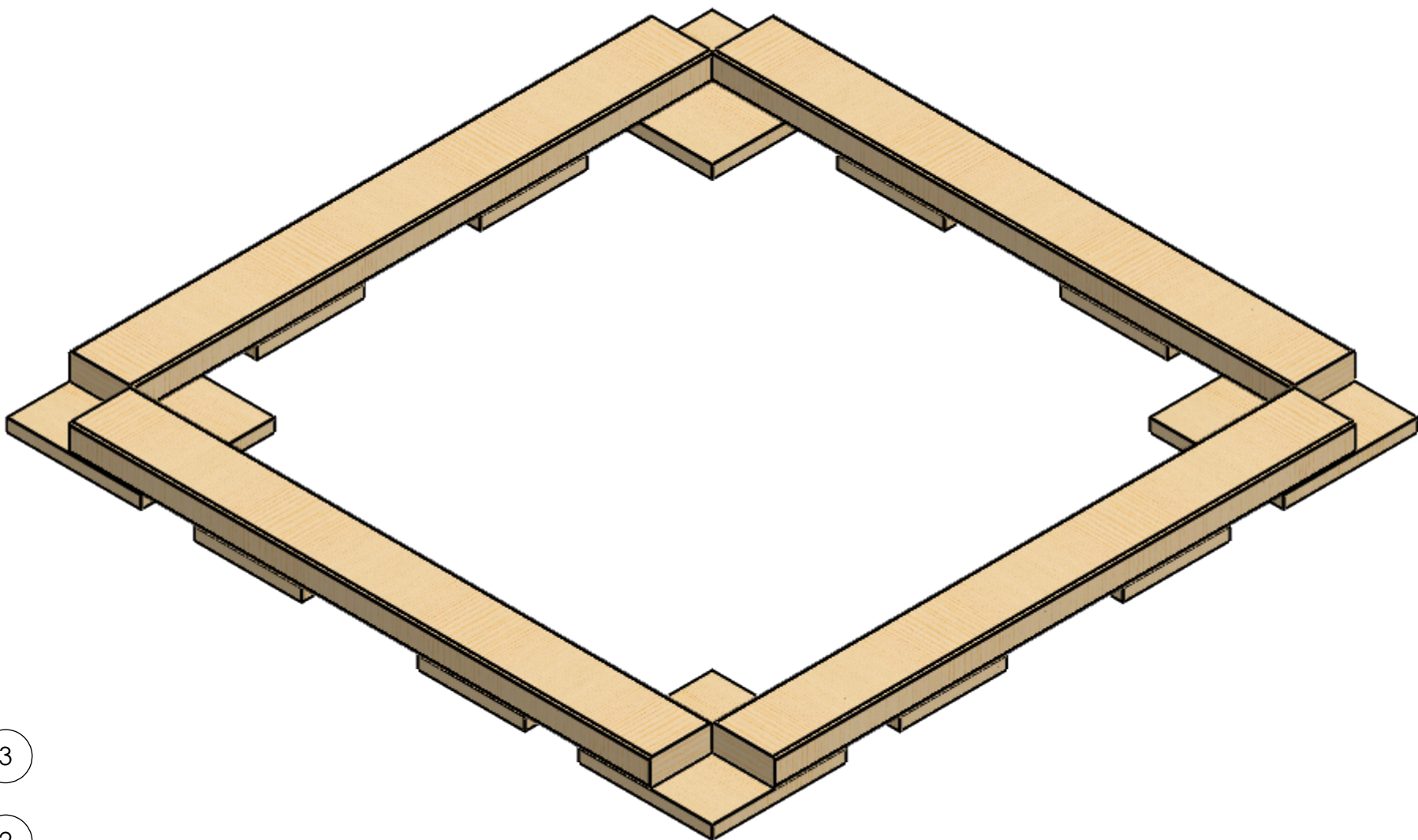
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	DRAWN	KAMC	12/29/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED. COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
C				TE-22042		
SCALE: 1:6				SHEET 1 OF 1		



UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div></div>		
	DRAWN		12/29/2021			
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: Hub - Simple Build - Upper Hub Base Rectangle Connetion Plate		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	TE-22043	
MATERIAL/FINISH: 3/4" Plywood	DO NOT SCALE DRAWING			SCALE: 1:4		SHEET 1 OF 1





Exploded View



Hardware Needed:
#8 x 2" Long Screw - Qty 58

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-22005	Hub - Simple Build - Upper Hub Square Connection Plate	4
2	TE-22006	Hub - Simple Build - Upper Hub 2x4 Connection Plate	8
3	TE-22041	Hub - Simple Build - Upper Hub Base 2x4	4

UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	 		
	DRAWN	KAMC	12/30/2021			
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: Hub - Simple Build - Upper Hub Base Top Assembly		
MATERIAL/FINISH:	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	TE-22044	
DO NOT SCALE DRAWING				SCALE: 1:6		SHEET 1 OF 3

4

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1

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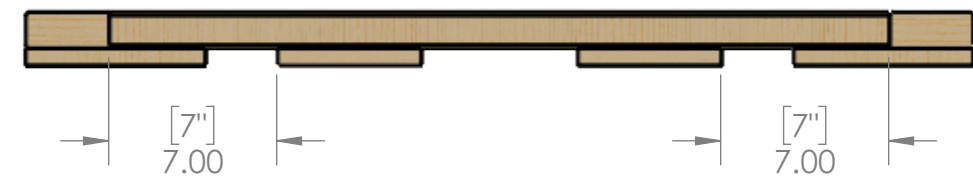
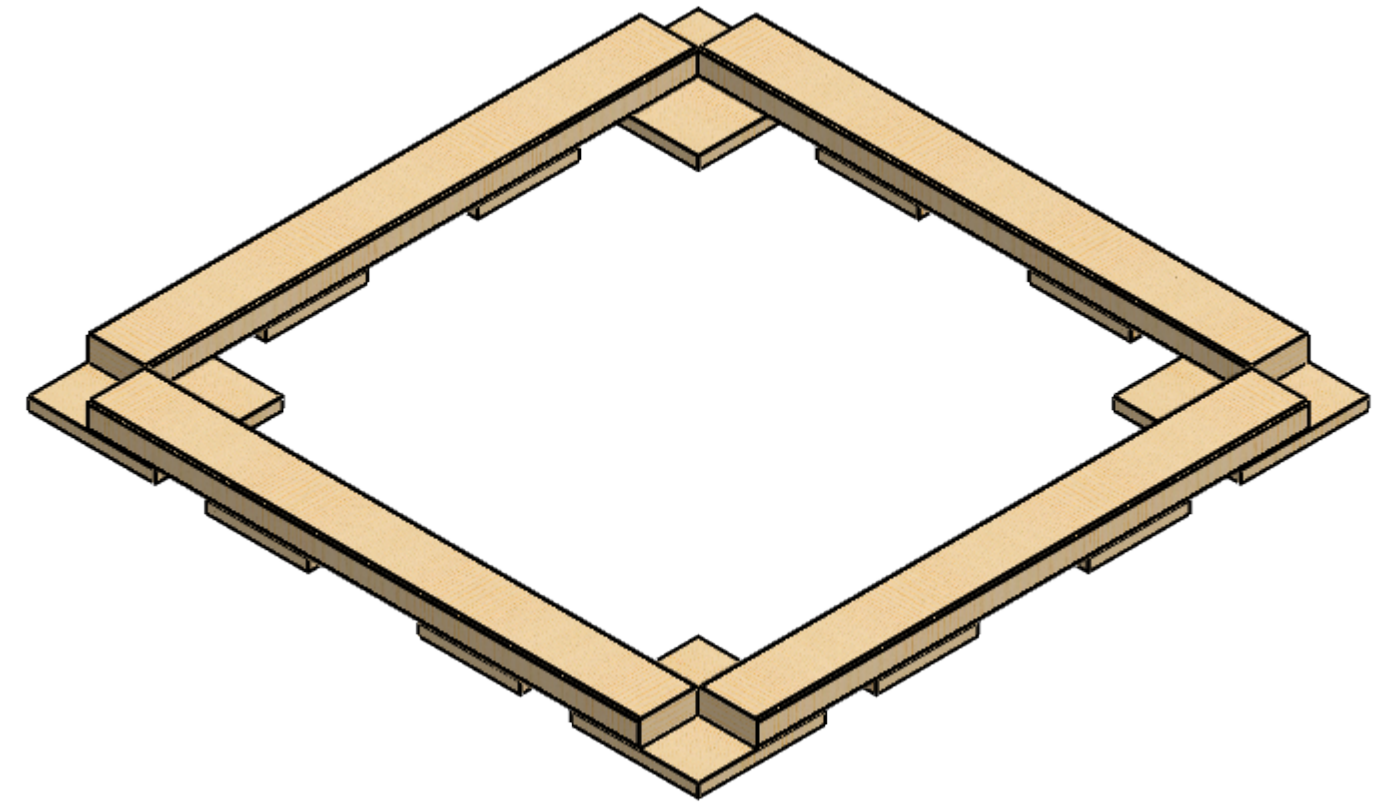
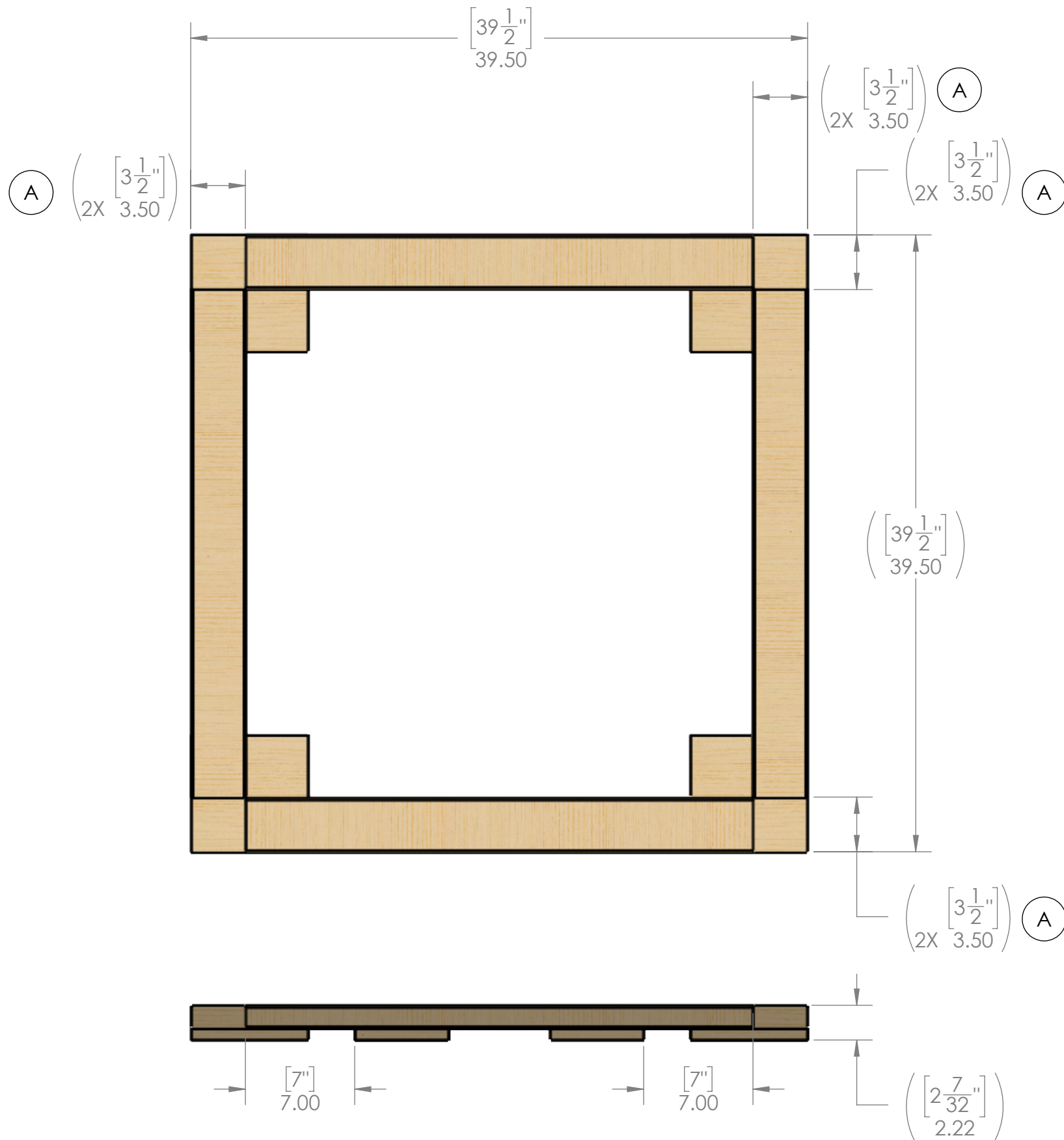
C

B

B



A

A



Note:

Dimensions with (A) indicate spacing for 4"x4" lumber from TE-22042. It is recommended to measure the cross section of TE-22042 and modify these dimensions as needed.

UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	 	
	DRAWN	KAMC	12/30/2021		
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: Hub - Simple Build - Upper Hub Base 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 C	
	REMOVE ALL BURRS AND SHARP EDGES.				
DO NOT SCALE DRAWING				DWG. NO. TE-22044	REV
			SCALE: 1:8		SHEET 2 OF 3

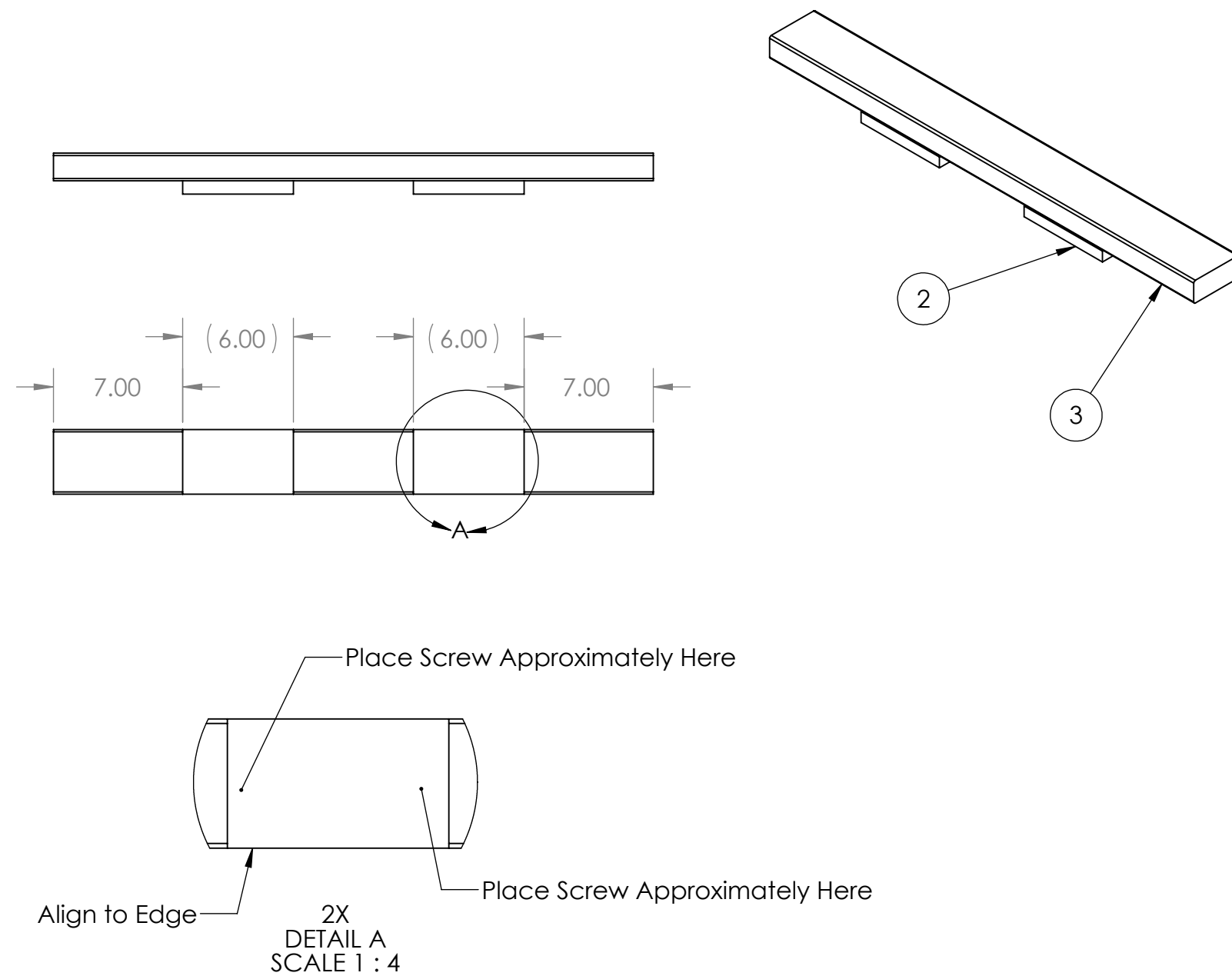
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2

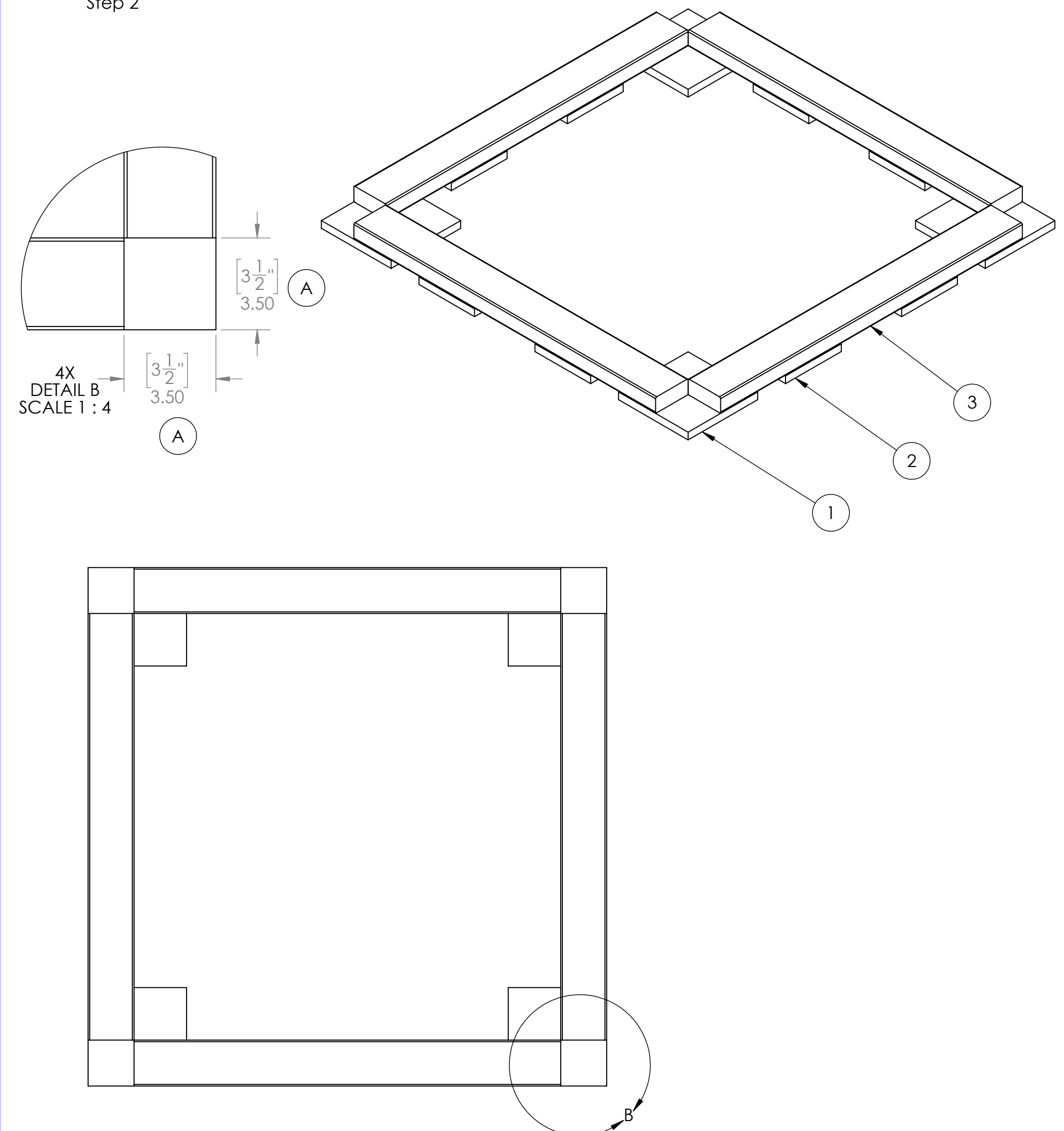
1

Step 1



1. Align 2x (2) on (3) , as shown.
2. Connect using 2" long screws. It is recommended to use x2 screws per (2) and locate them as shown above. Keep center of (2) clear of screws.
3. Repeat until you have a total of 4 assemblies.

Step 2

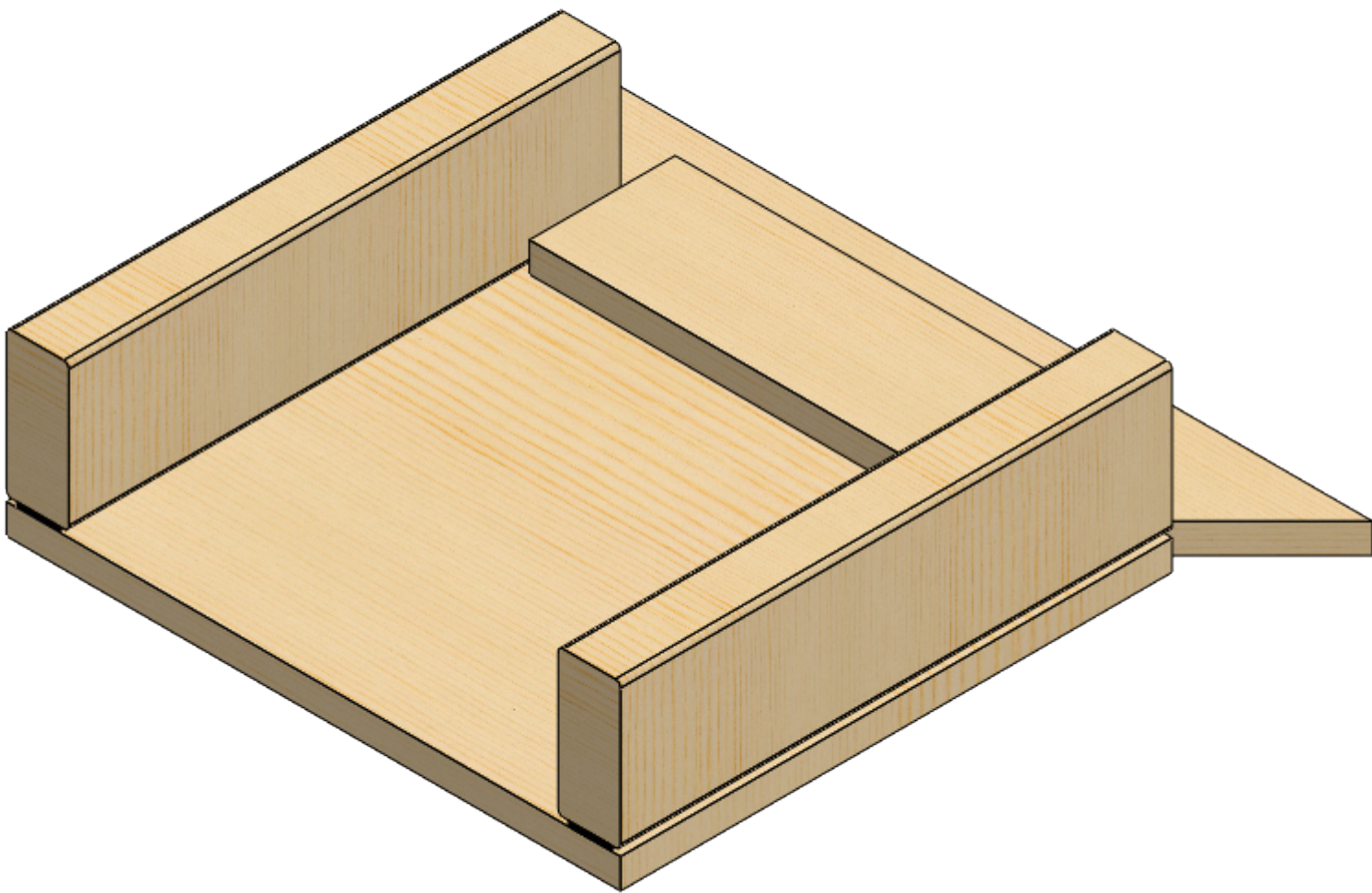
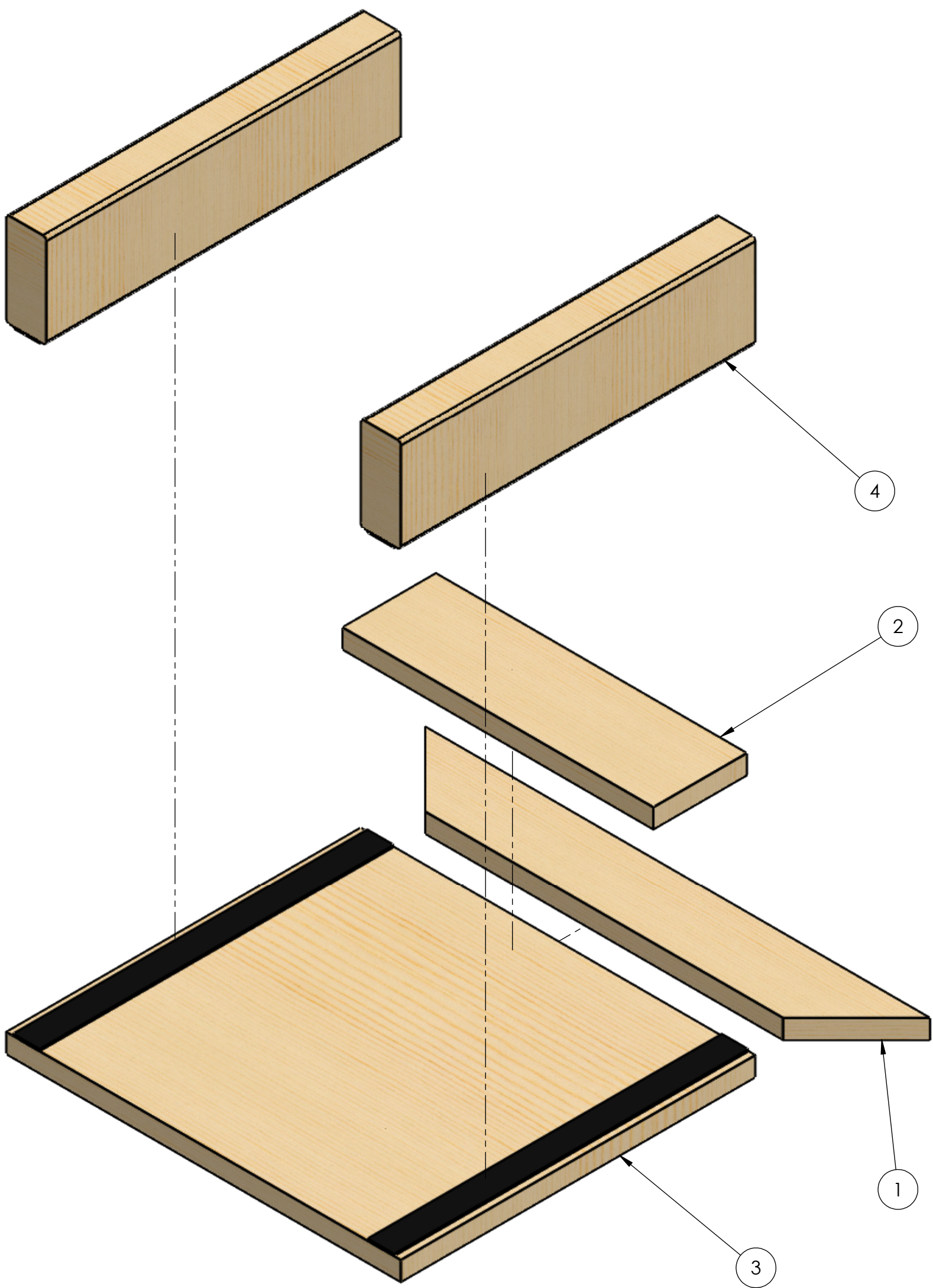


- Align 4x (1) to the x4 Step 1 assemblies, as shown.
Dimensions with (A) indicate spacing for 4"x4" lumber from TE-22042. It is recommended to measure the cross section of TE-22042 and modify these dimensions as needed.
- Connect using 2" long screws. It is recommended to use x8 screws per (2), x4 into each end.

UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	DRAWN	KAMC	12/30/2021
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.		



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COMPETITION

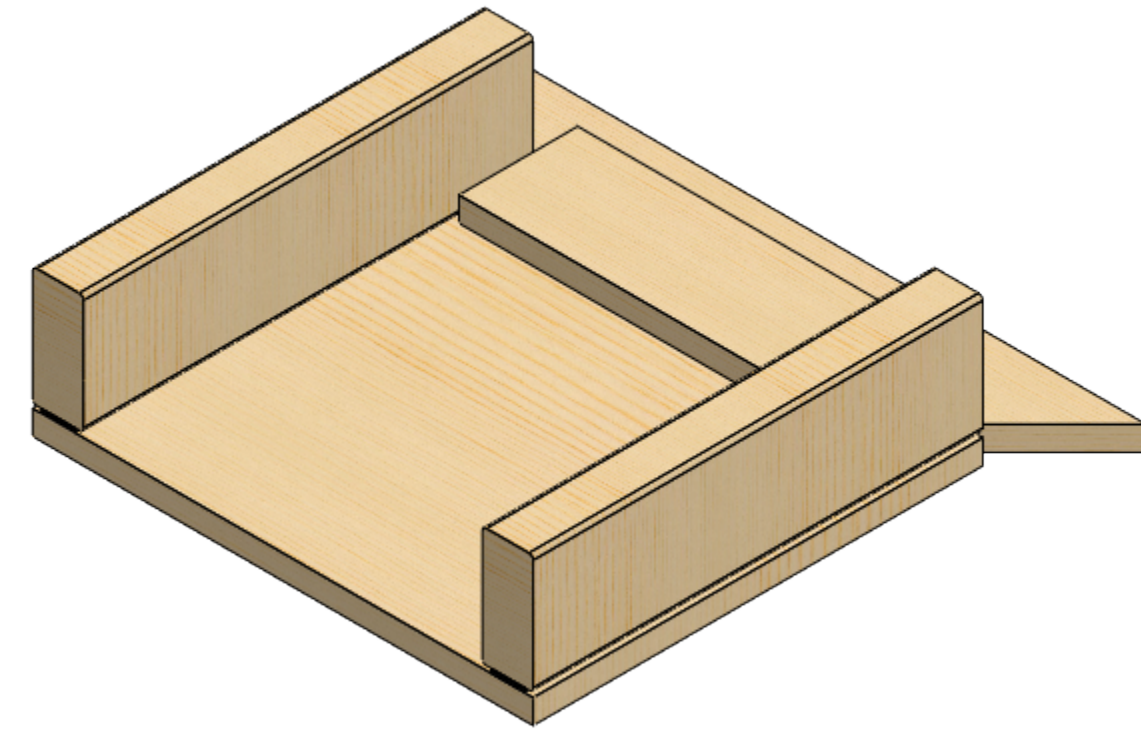
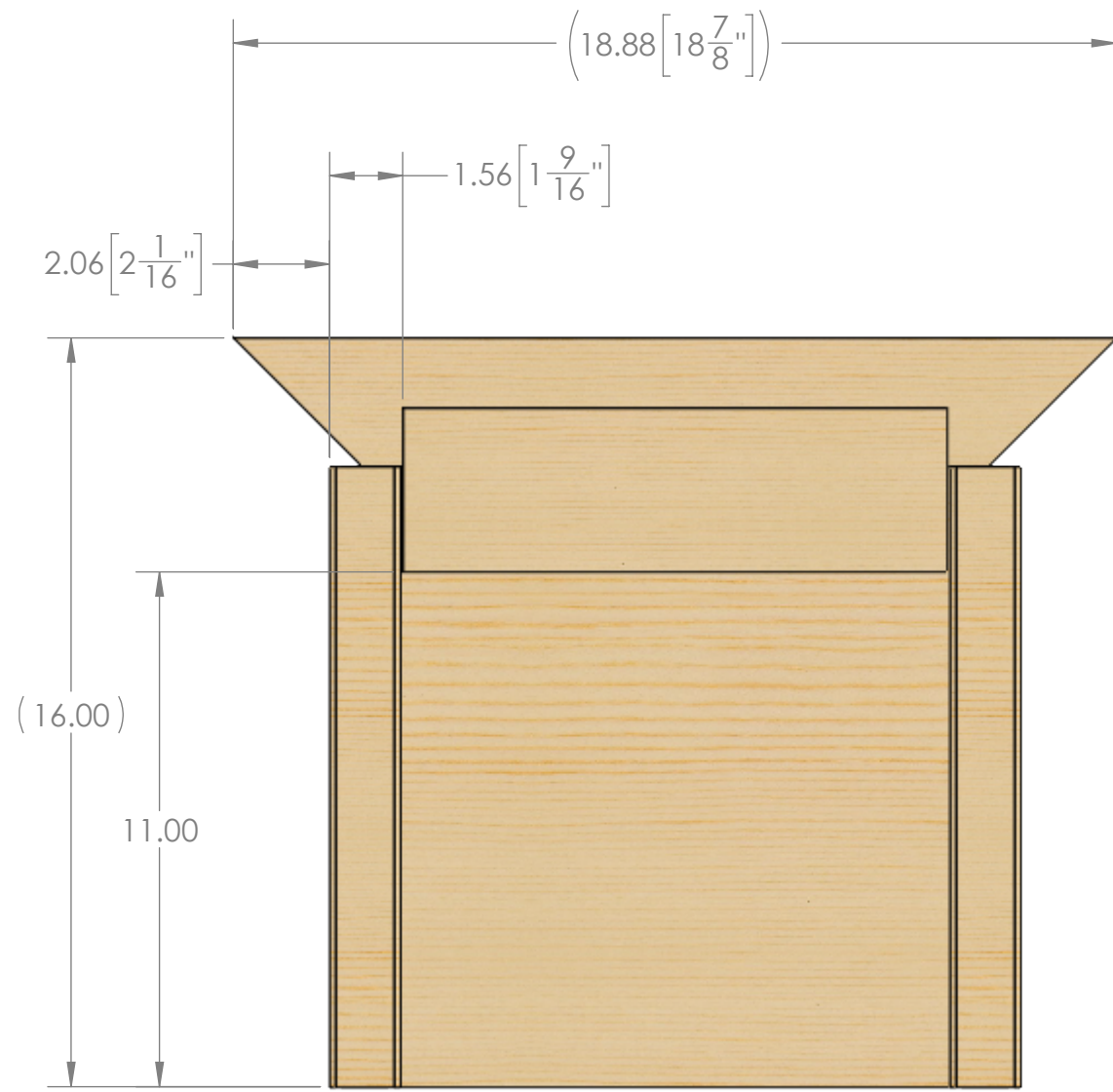
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SIZE <div style="font-size: 2em; font-weight: bold; text-align: center;">C</div>	DWG. NO. <div style="font-size: 1.5em; text-align: center;">TE-22044</div>	REV
SCALE: 1:8		SHEET 3 OF 3





Hardware Needed:
#8 x 1.25" Long Screw - Qty 8

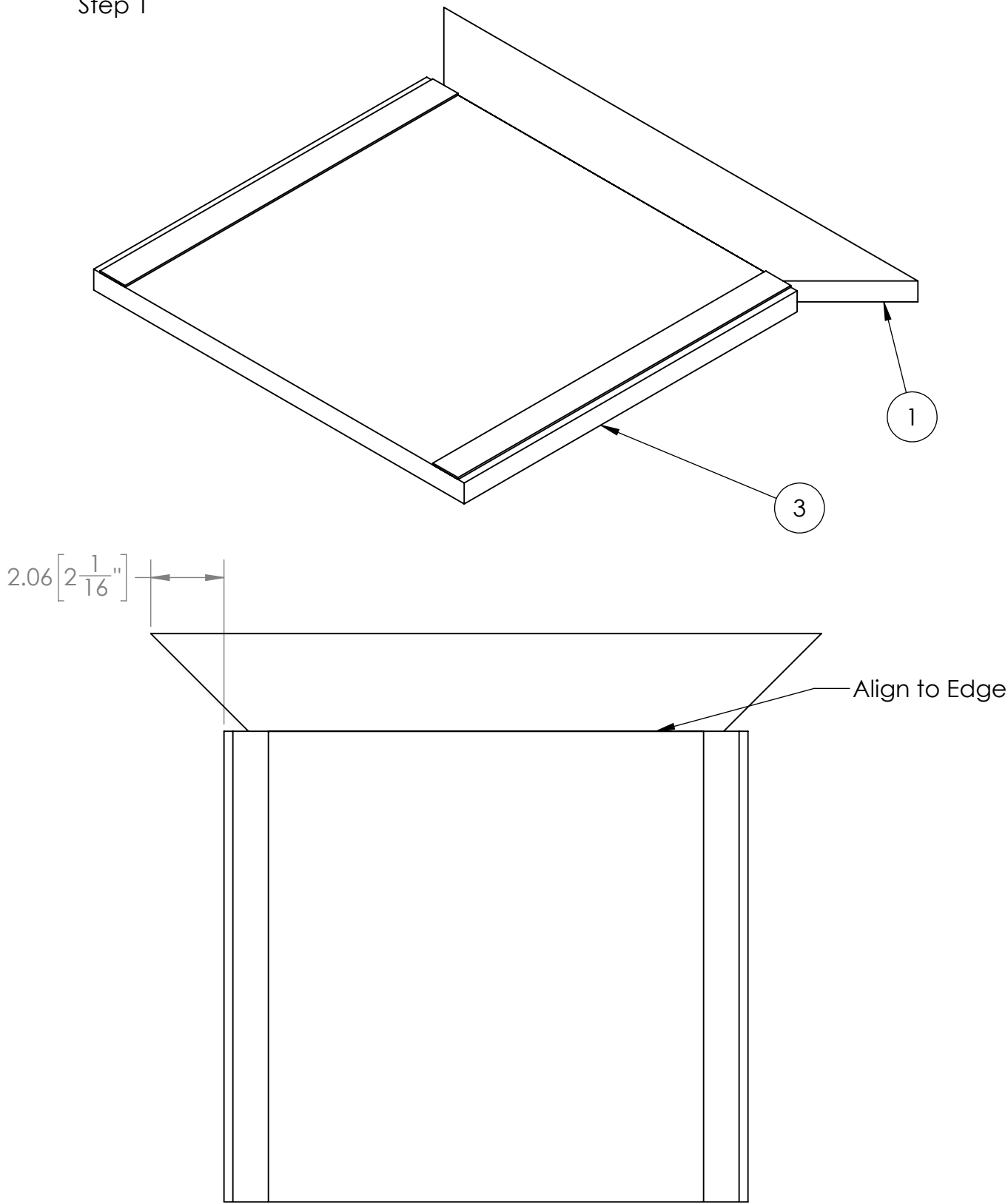
ITEM NO.	PART NUMBER	DESCRIPTION	
1	TE-22052	HUB - Simple Build - Lower Exit Base Back	1
2	TE-22053	HUB - Simple Build - Lower Exit Base Connection	1
3	TE-22055	HUB - Simple Build - Lower Exit Base Front with Loop Assembly	1
4	TE-22056	HUB - Simple Build - Lower Exit 2x4 with Hook Assembly	2

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$ MATERIAL/FINISH: DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: Hub - Simple Build - Lower Exit Assembly	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. TE-22050 REV
		SCALE: 1:3		SHEET 1 OF 3	



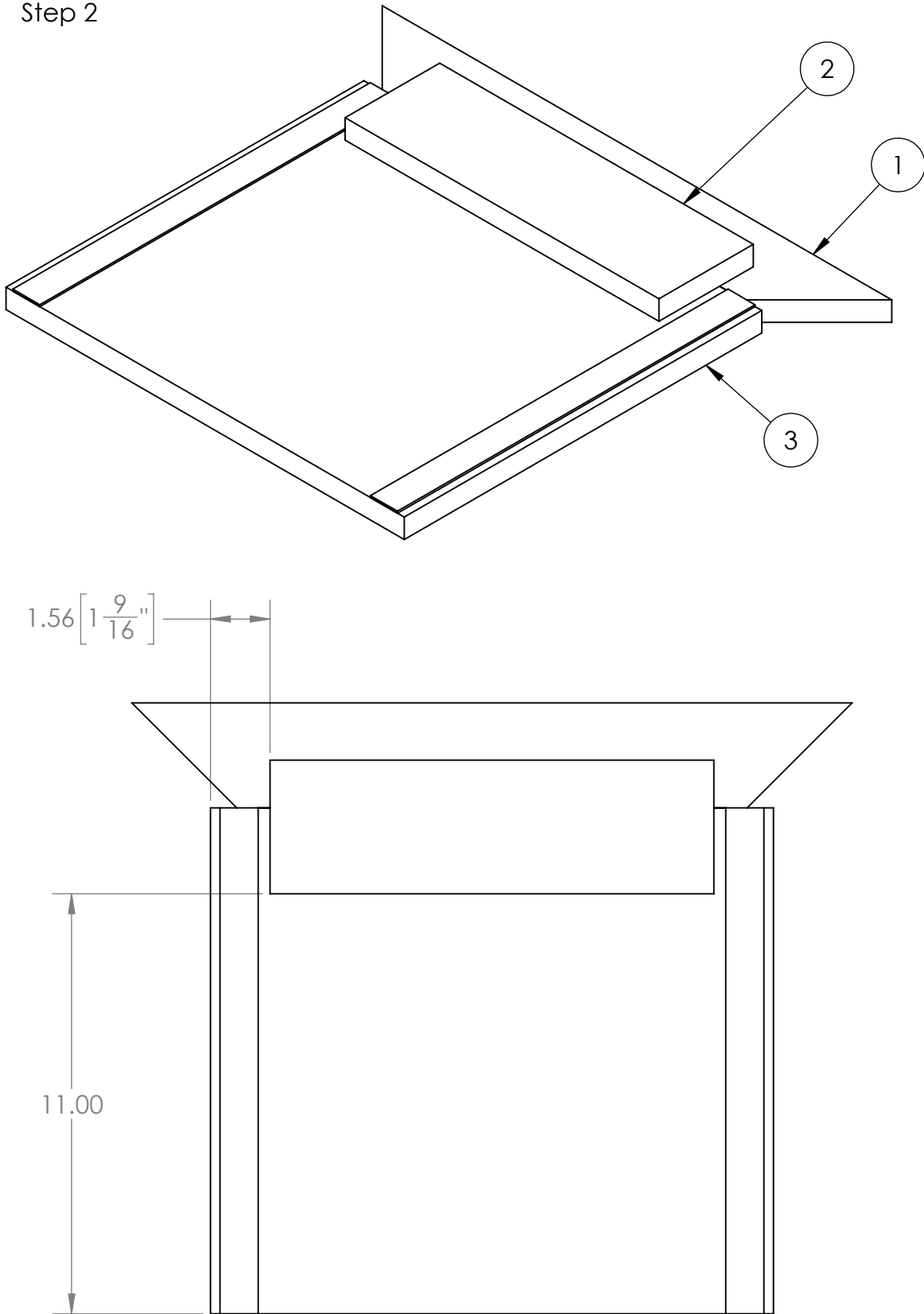
UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	 		
	DRAWN	KAMC	12/30/2021			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL			TITLE: Hub - Simple Build - Lower Exit Assembly		
	THE INFORMATION CONTAINED 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
DO NOT SCALE DRAWING	REMOVE ALL BURRS AND SHARP EDGES.			C	TE-22050	
				SCALE: 1:4		SHEET 2 OF 3

Step 1



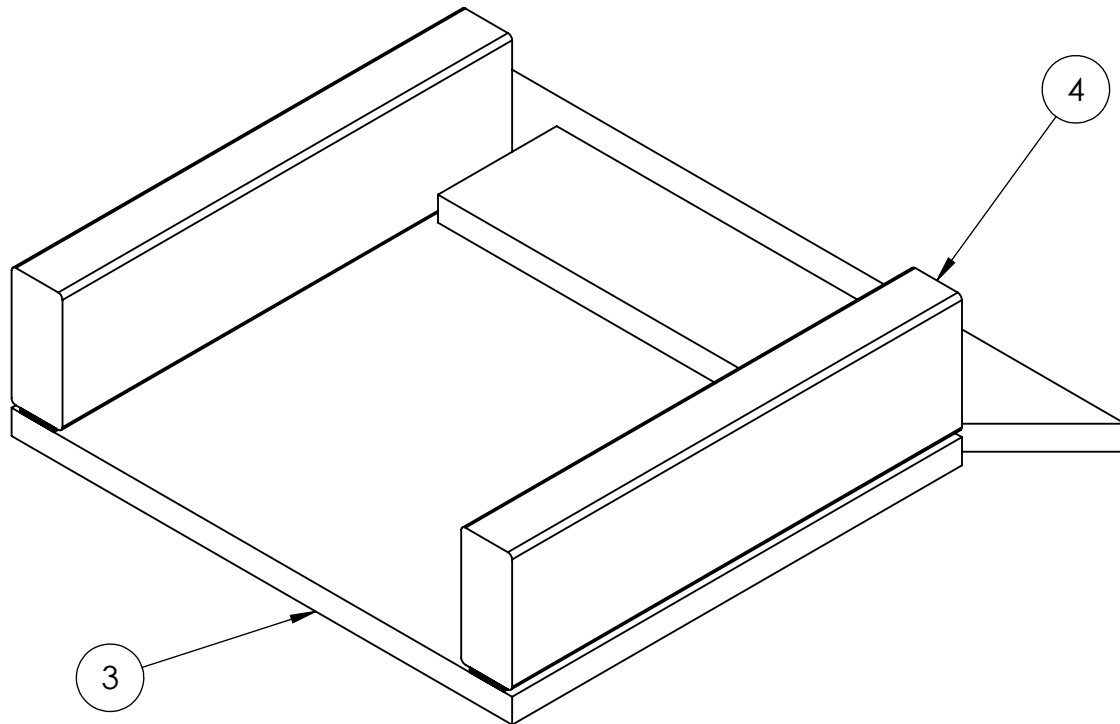
1. Align (3) to (1) , as shown. Connection will happen in the next step.

Step 2





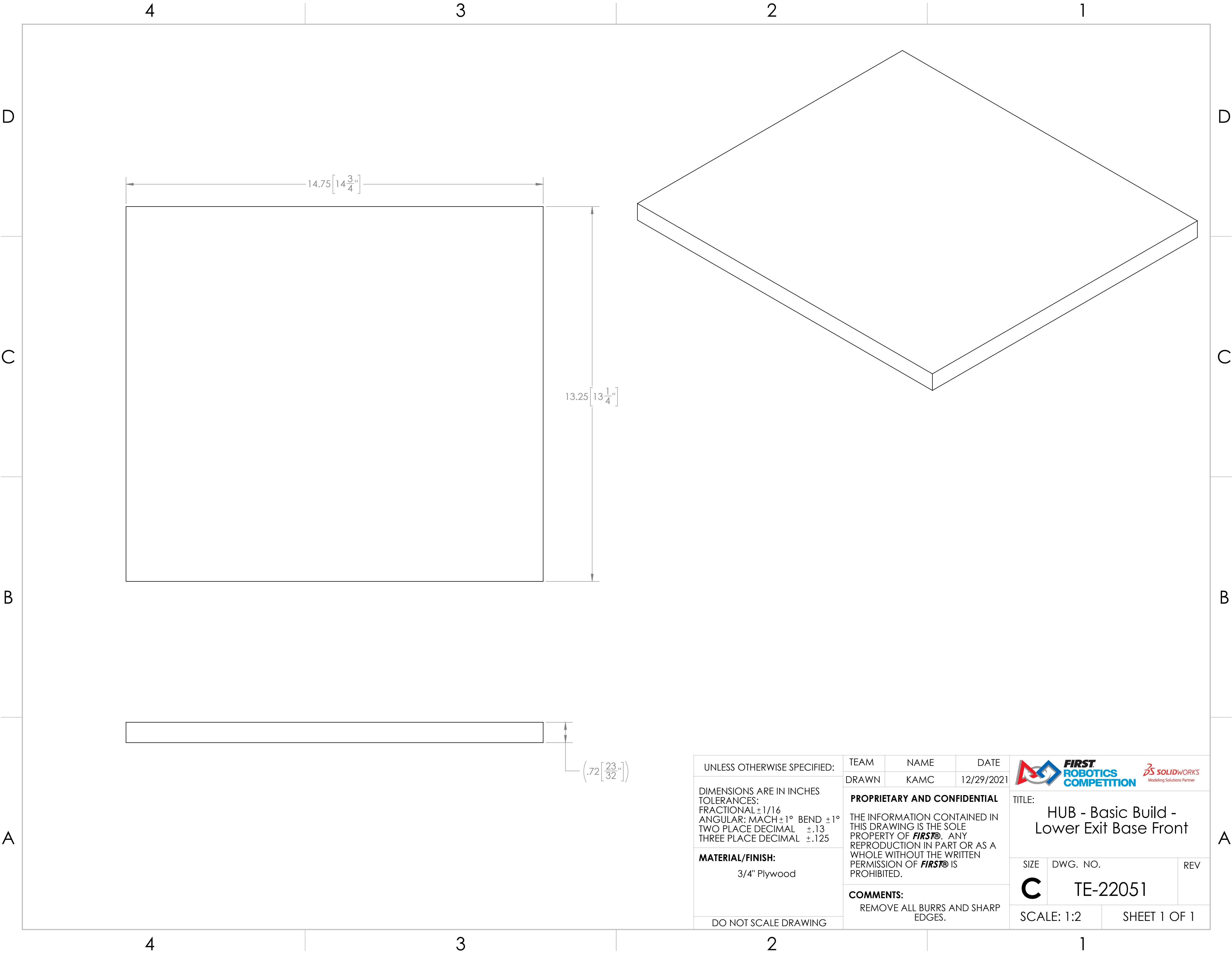
1. Align (2) to Step 1 , as shown.
2. Connect using 1.25" Long Screws. It is recommended to use 8x screws, 4x into (3) and 4x into (1) .



Step 3

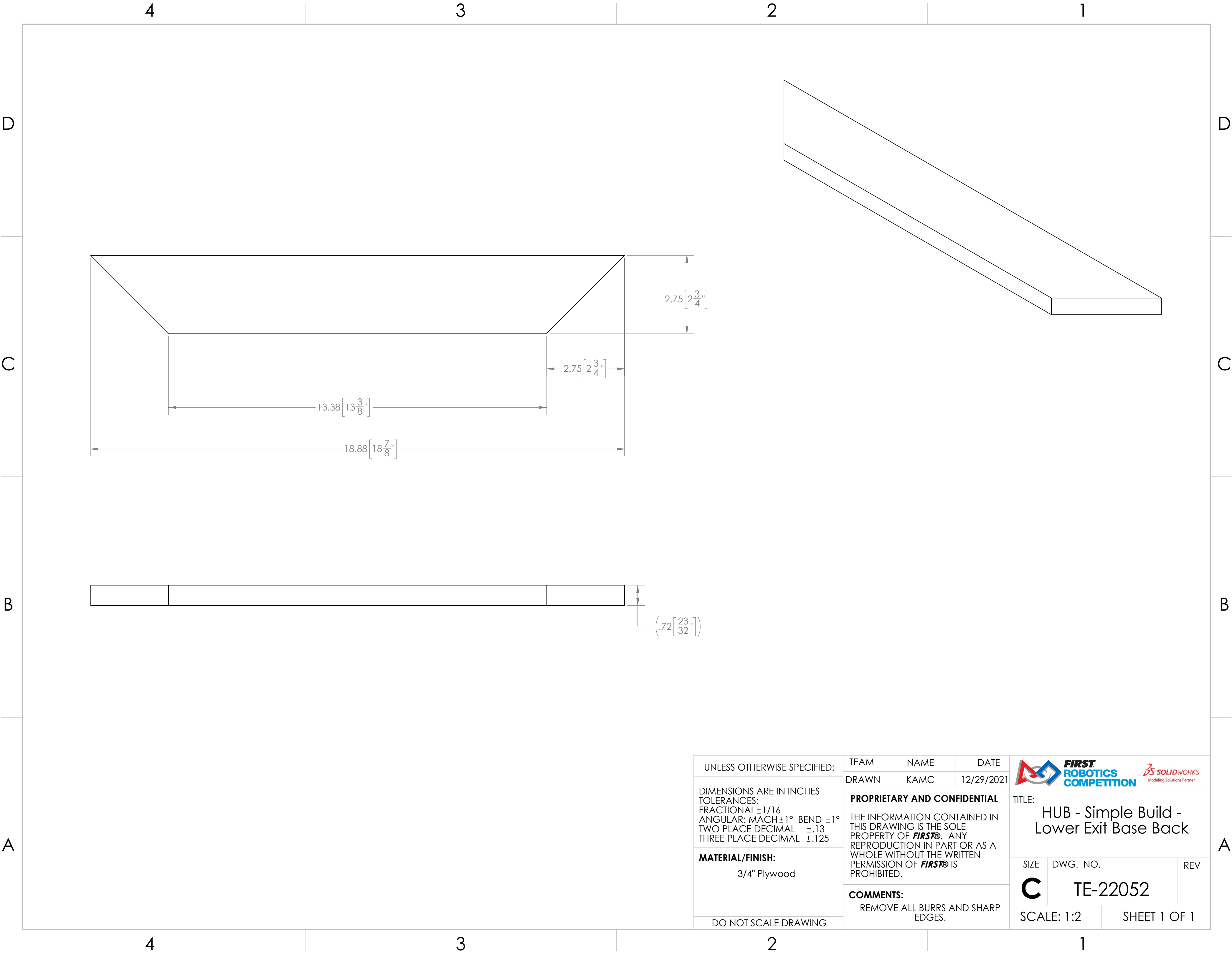




1. Add 2x (4) to hook on (3) , as shown.

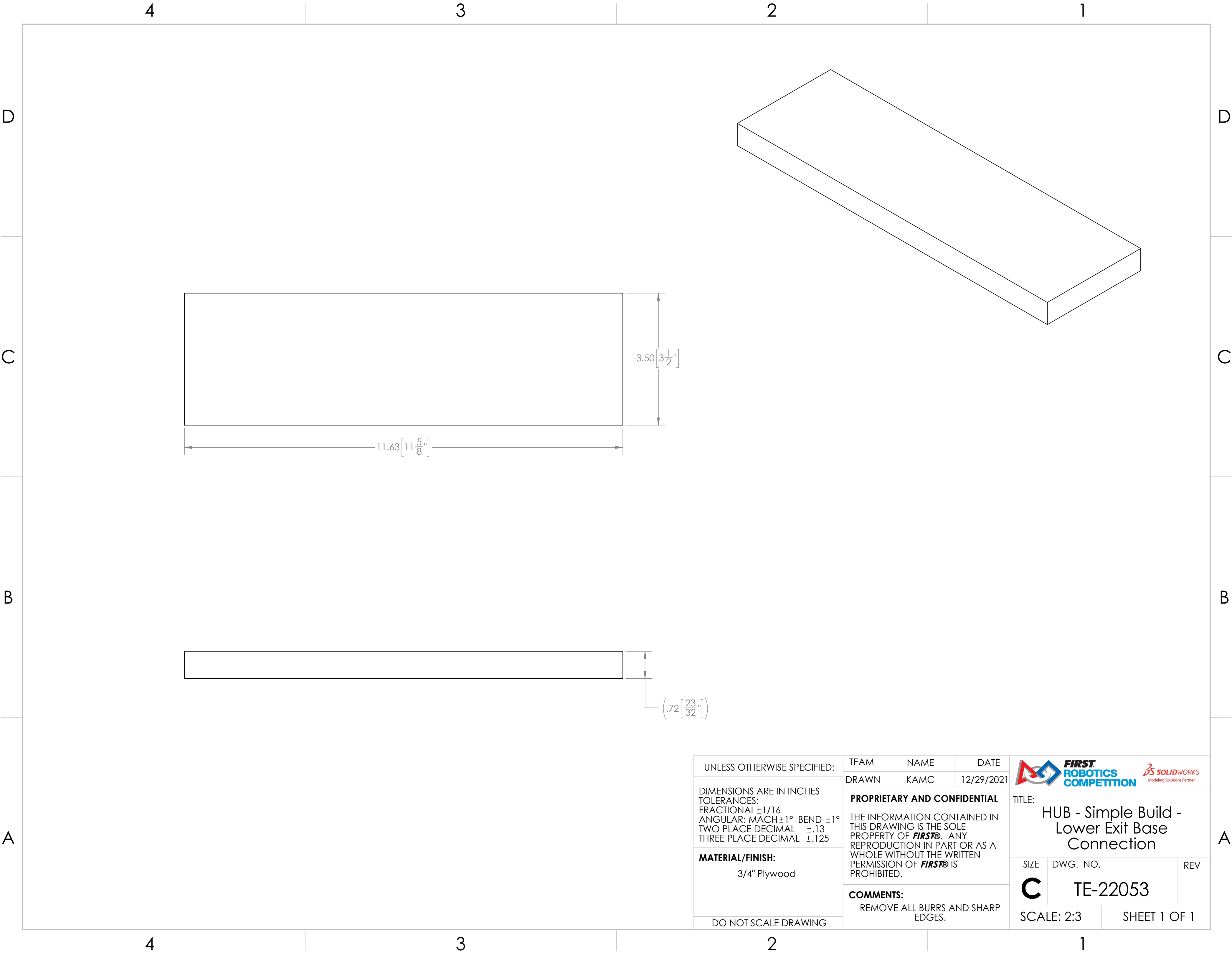
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	DRAWN	KAMC	12/30/2021			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL			TITLE:		
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			Hub - Simple Build - Lower Exit Assembly		
MATERIAL/FINISH:	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	TE-22050	
DO NOT SCALE DRAWING				SCALE: 1:4		SHEET 3 OF 3





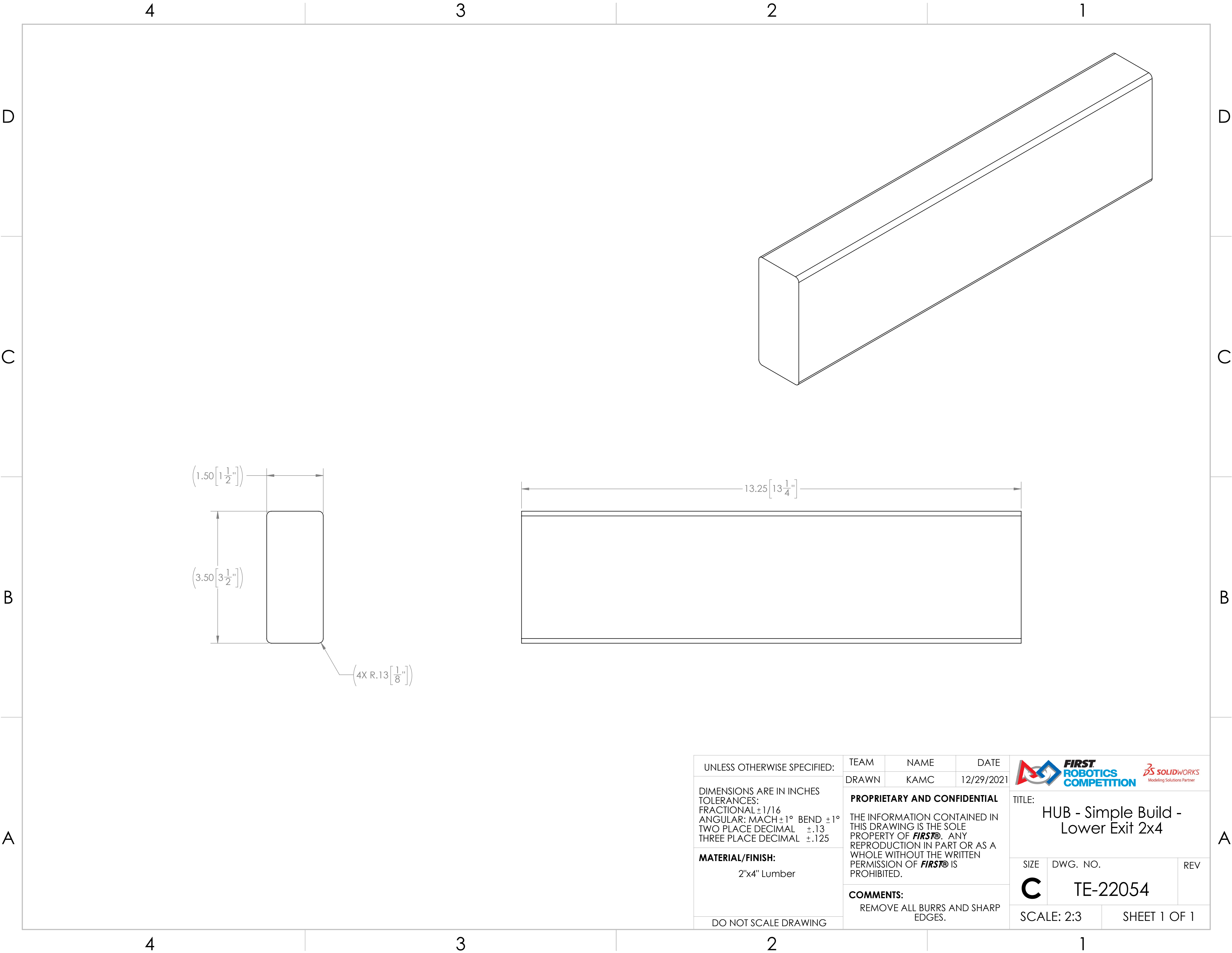
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	DRAWN	KAMC	12/29/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			SIZE	DWG. NO.	REV
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C	TE-22051	
SCALE: 1:2		SHEET 1 OF 1				





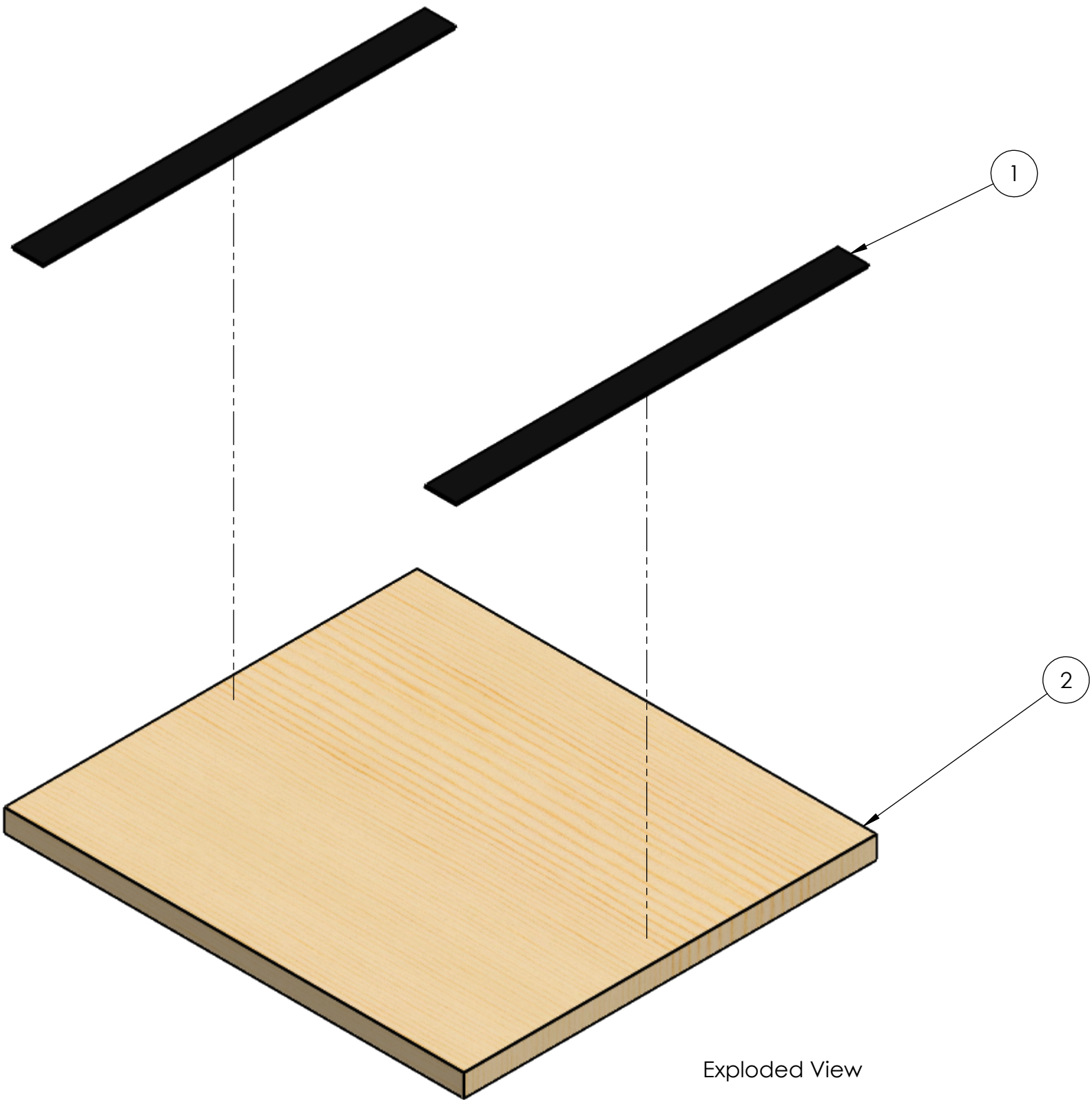
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$ MATERIAL/FINISH: 3/4" Plywood DO NOT SCALE DRAWING	TEAM	NAME	DATE	 		
	DRAWN	KAMC	12/29/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: HUB - Simple Build - Lower Exit Base Back		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. TE-22052	REV
SCALE: 1:2		SHEET 1 OF 1				



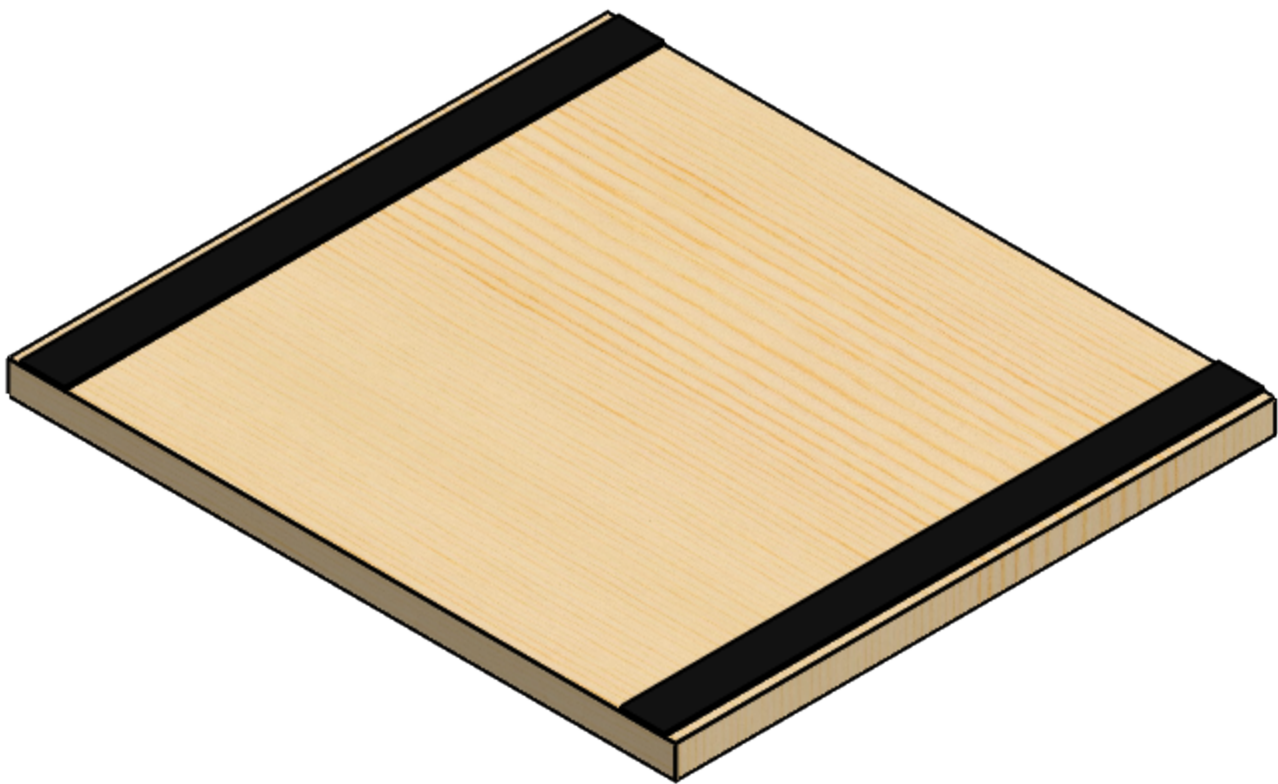
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	DRAWN	KAMC	12/29/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE: HUB - Simple Build - Lower Exit Base Connection		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. TE-22053	REV
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 ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: 2"x4" Lumber DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div> <div>TITLE: HUB - Simple Build - Lower Exit 2x4</div>		
	DRAWN	KAMC	12/29/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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. TE-22054	REV
SCALE: 2:3		SHEET 1 OF 1				




Exploded View

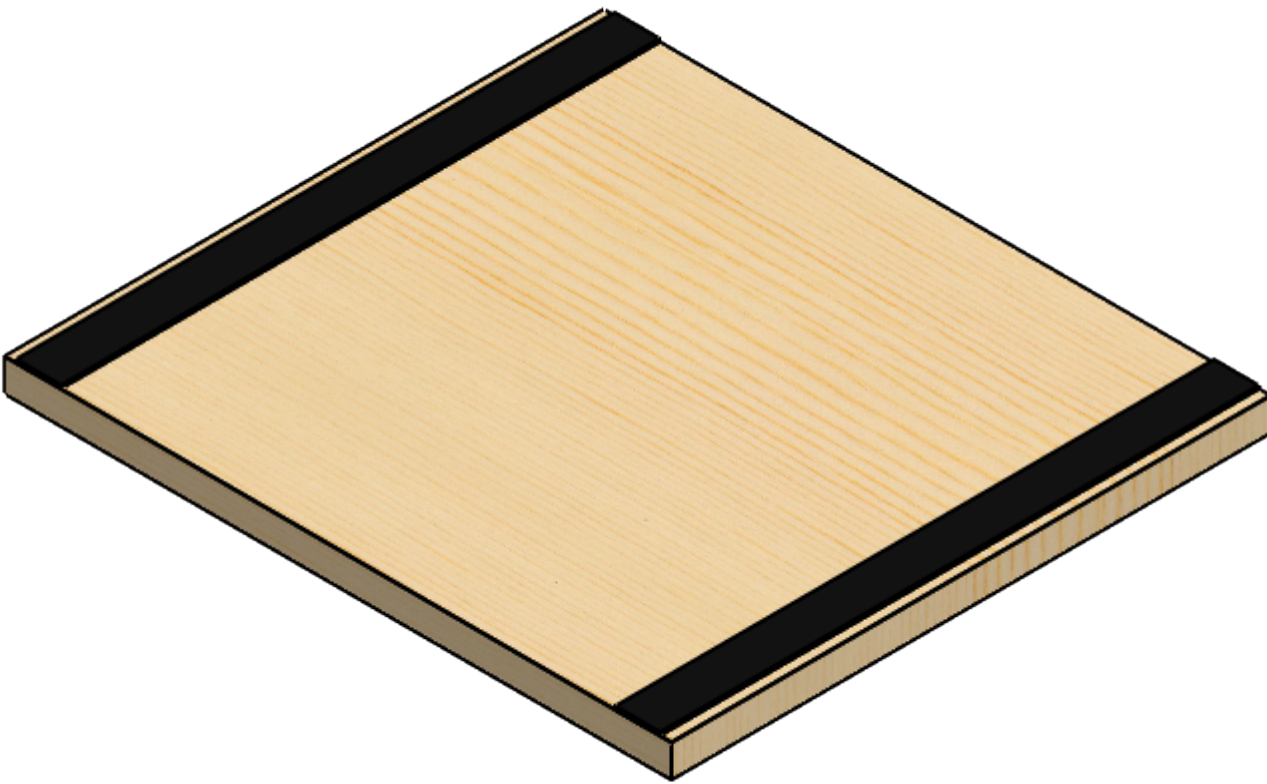
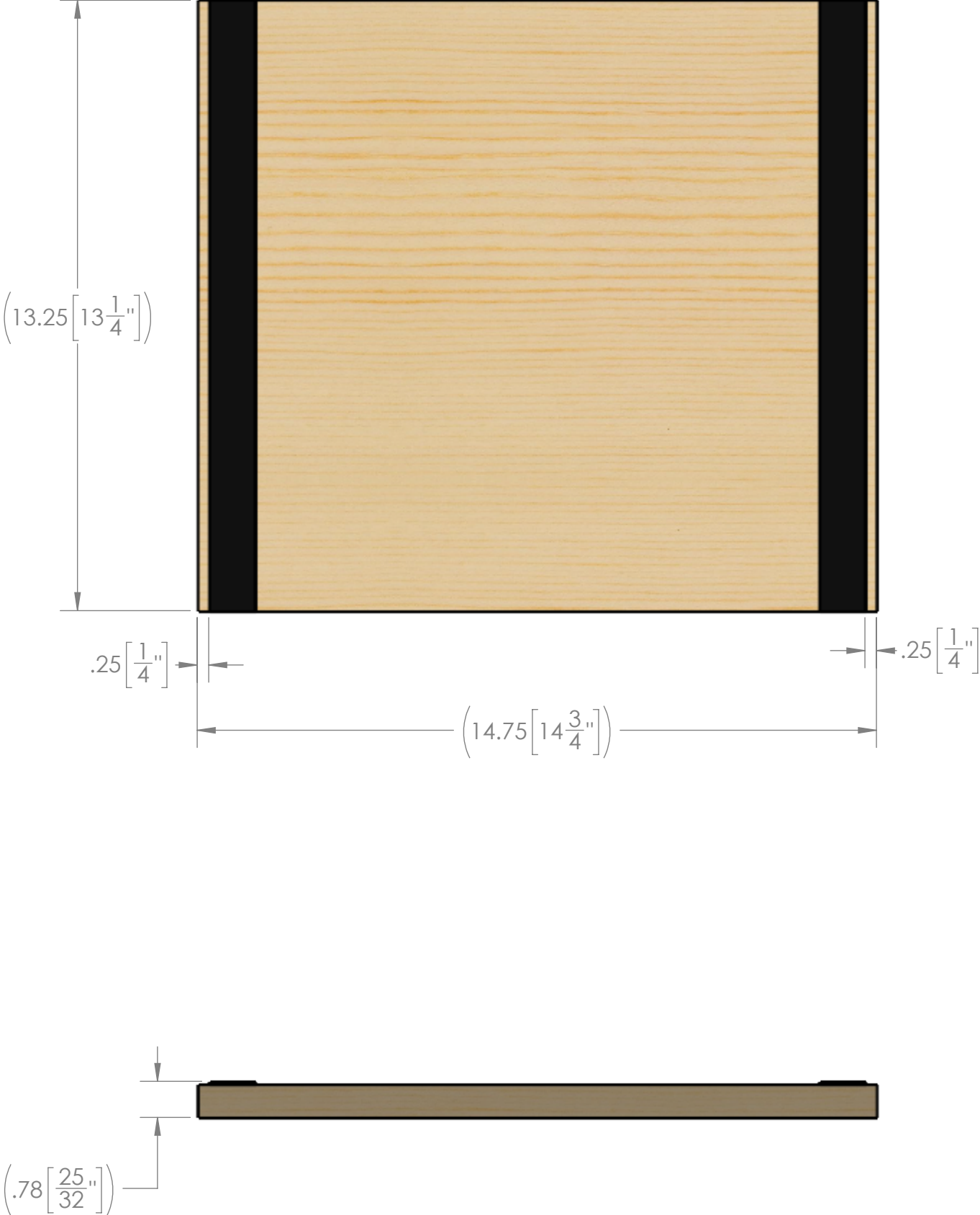




Hardware Needed:
Optional: Wood Staples

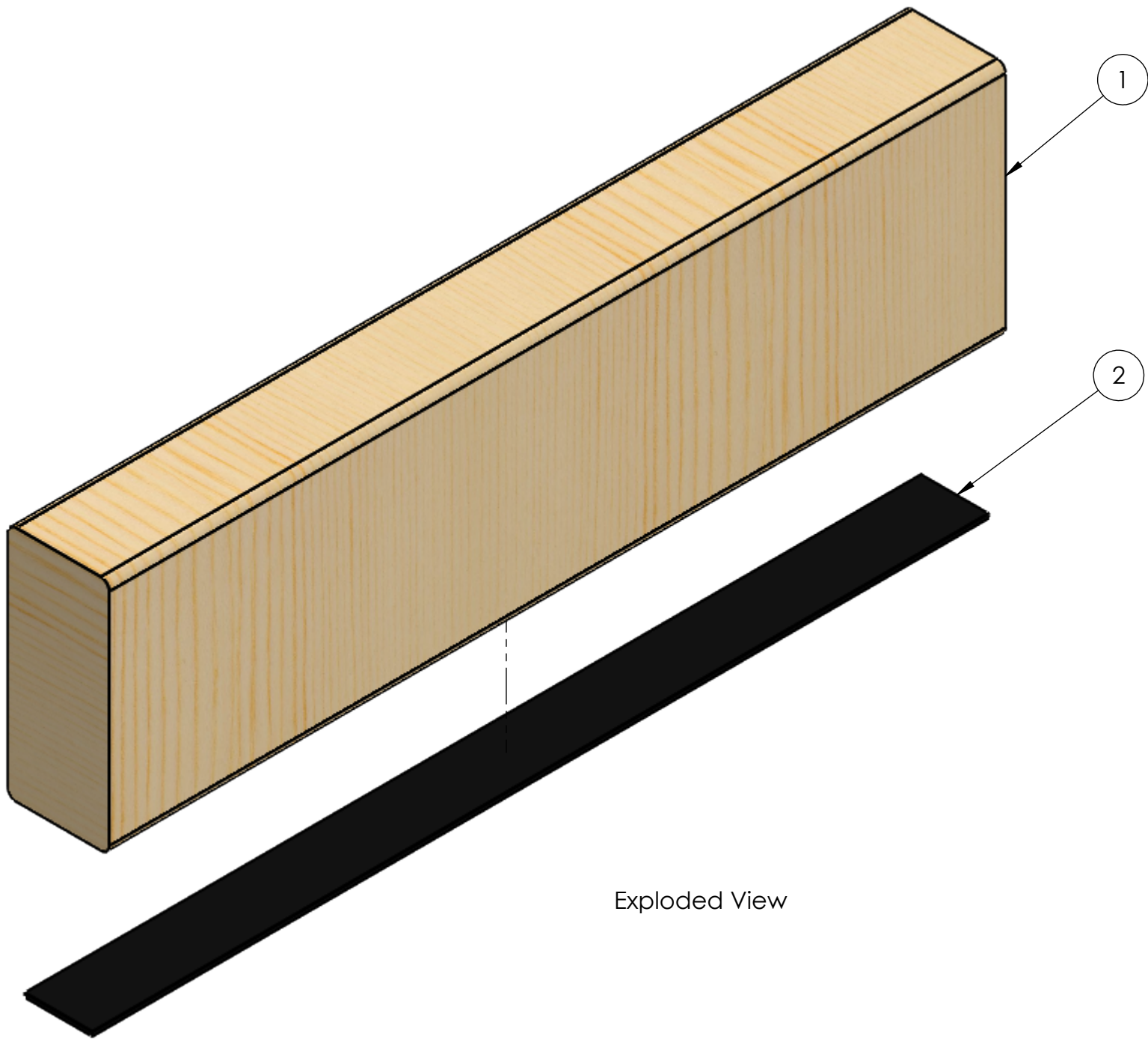
- Step 1
1. Attach 2x (1) to (2) as shown using adhesive backing.
 2. Optional: Use wood staples to connect (1) to (2).

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Loop_1_13.25	1" x 13.25" Loop, Adhesive Backed	2
2	TE-22051	HUB - Basic Build - Lower Exit Base Front	1

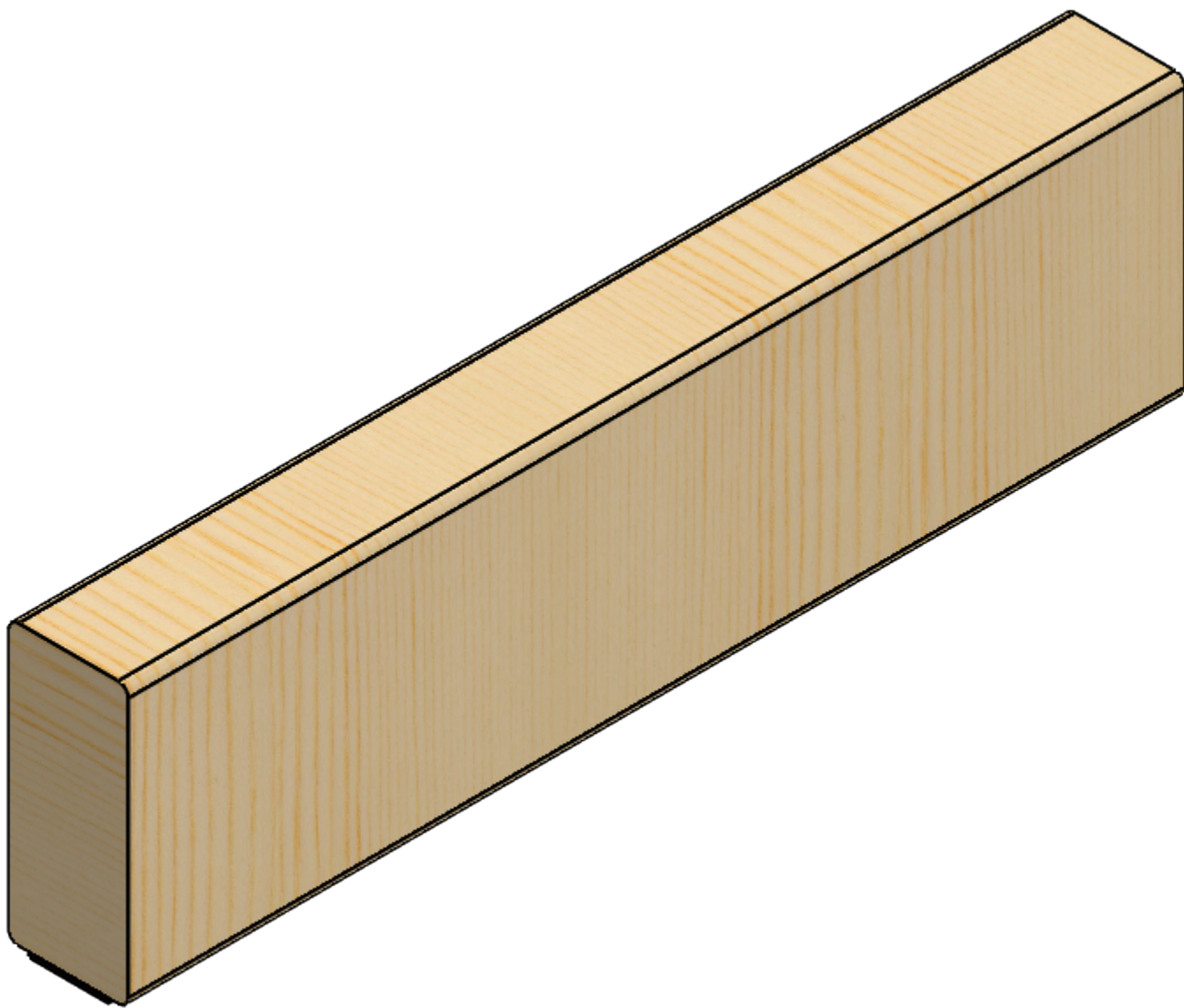
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	DRAWN	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST® . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.			TITLE: HUB - Simple Build - Lower Exit Base Front with Loop Assembly	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	SCALE: 1:3
				DWG. NO. TE-22055	REV
				SHEET 1 OF 2	



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	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: HUB - Simple Build - Lower Exit Base Front with Loop Assembly	
			SIZE	DWG. NO.	REV
			C	TE-22055	
			SCALE: 1:3		SHEET 2 OF 2





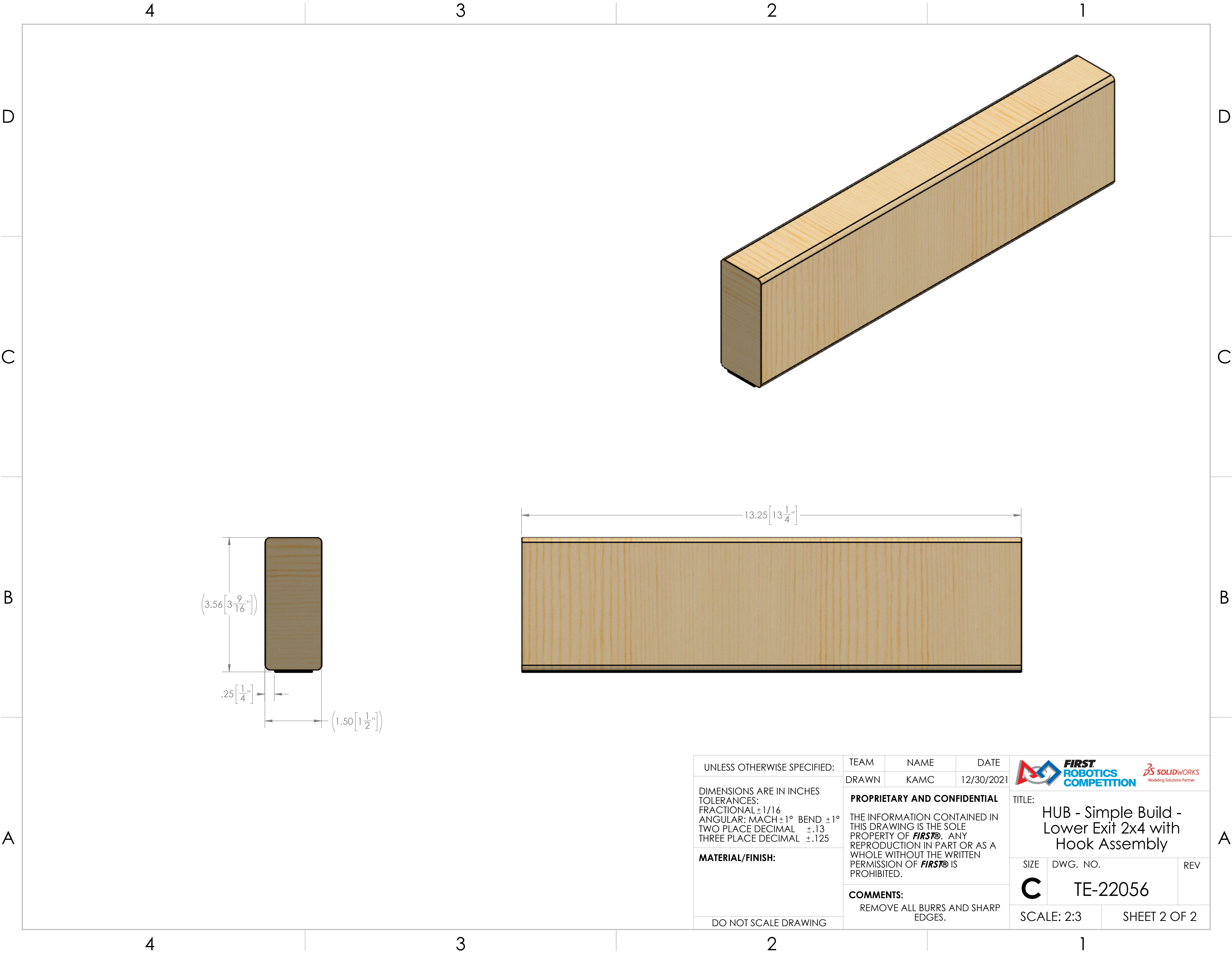
Attach (2) to (1) as shown using adhesive backing.
Optional: Use wood staples to connect (2) to (1) .





Hardware Needed:
Optional: Wood Staples

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-22054	HUB - Simple Build - Lower Exit 2x4	1
2	Hook_1_13.25	1" x 13" Hook, Adhesive Backed	1

UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div><div></div><div>TITLE: HUB - Simple Build - Lower Exit 2x4 with Hook Assembly</div></div>	
	DRAWN	KAMC	12/30/2021		
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	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			DWG. NO.	
REV					
MATERIAL/FINISH:				C	TE-22056
DO NOT SCALE DRAWING				SCALE: 2:3	



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>	
	DRAWN	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: HUB - Simple Build - Lower Exit 2x4 with Hook Assembly	
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.
C				TE-22056	
			SCALE: 2:3		SHEET 2 OF 2

D

D

C

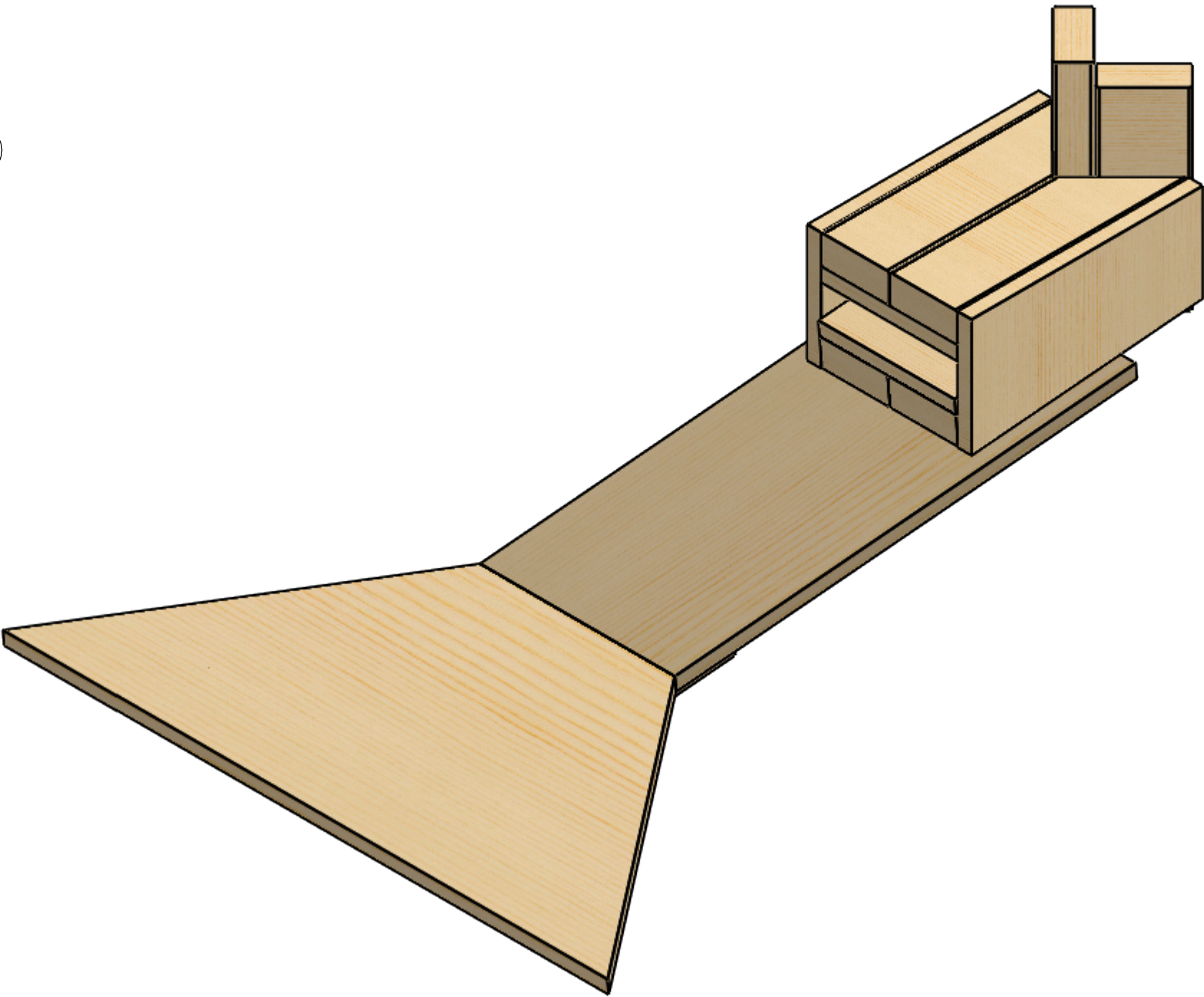
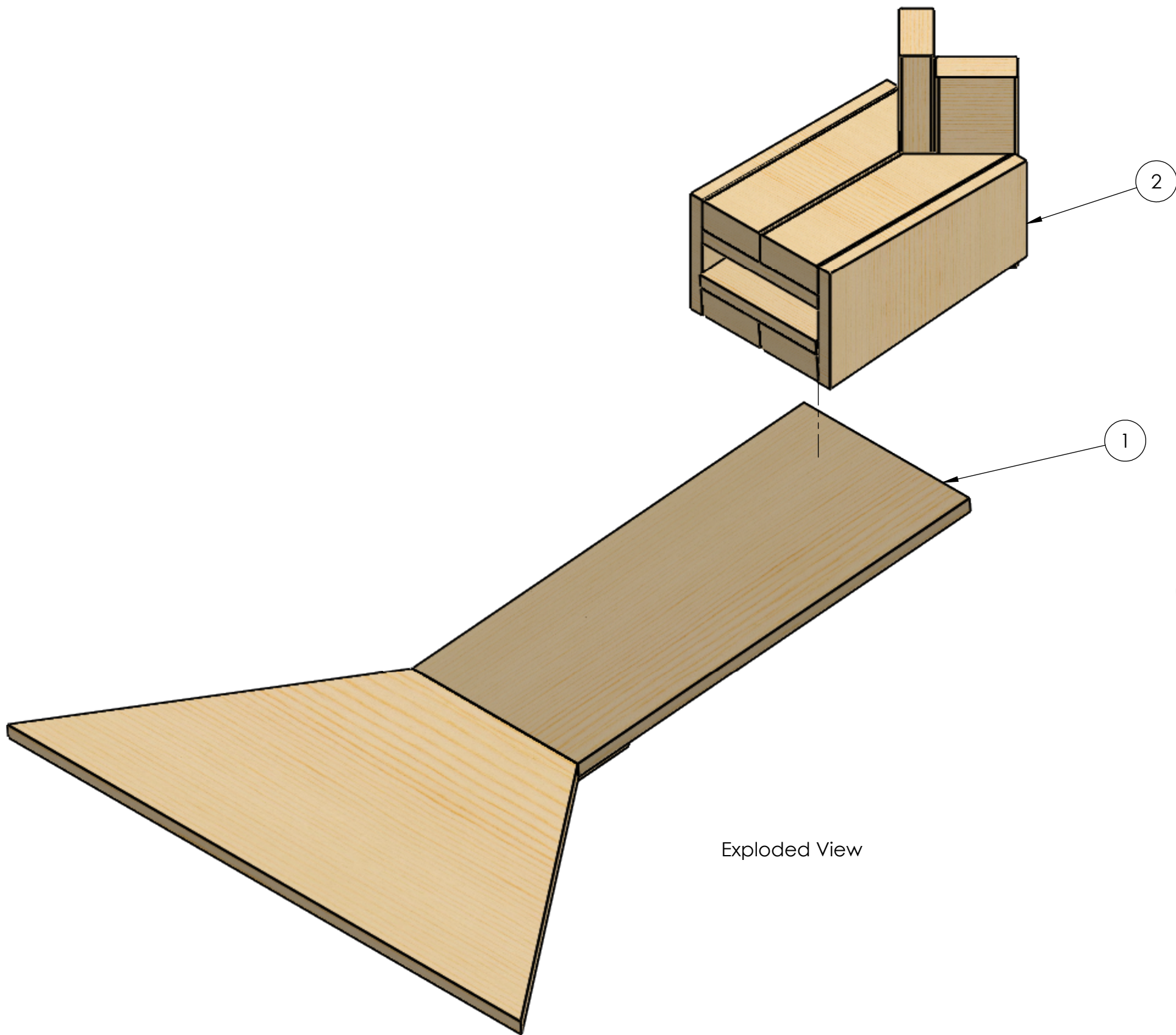
C

B

B

A



A

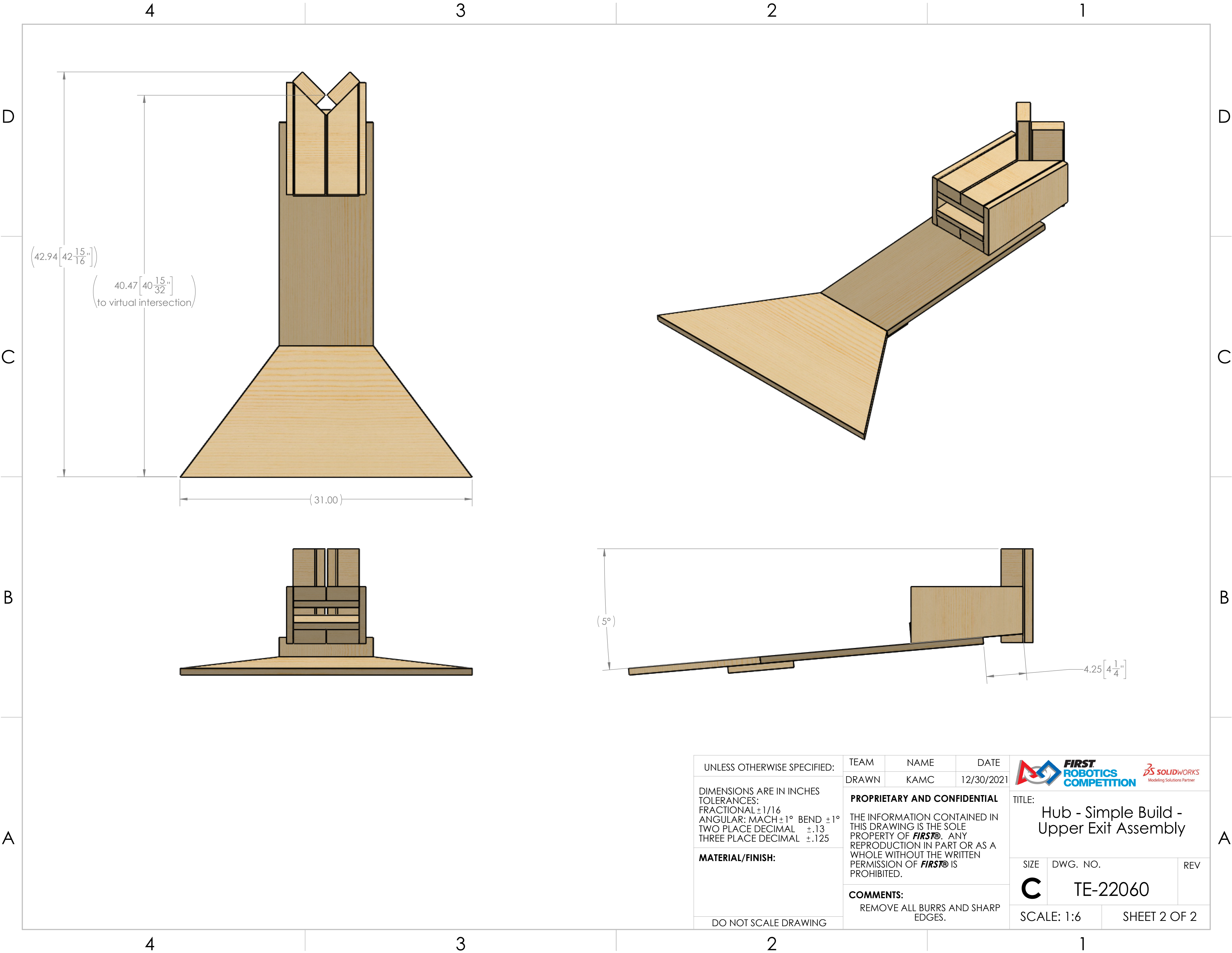


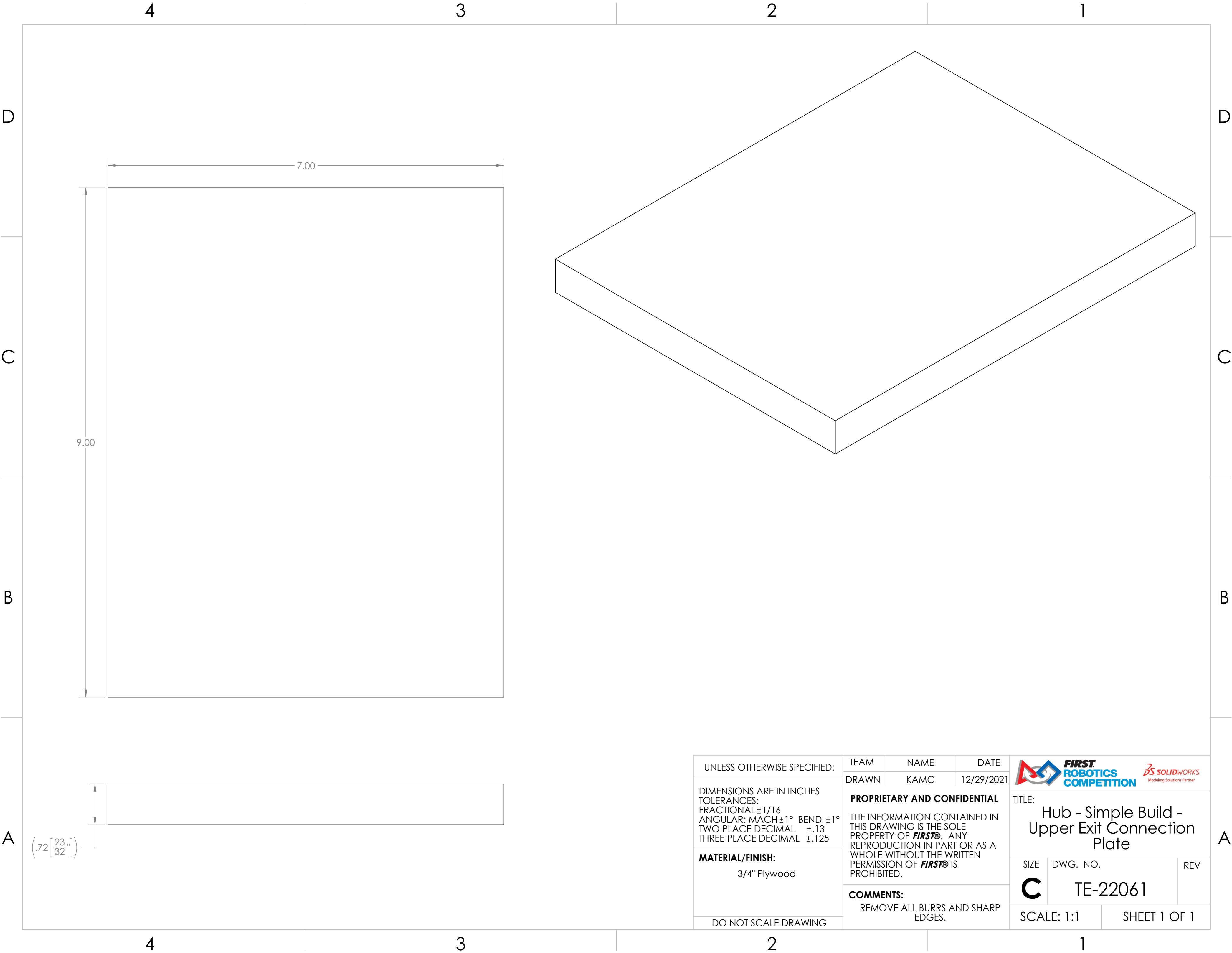
Hardware Needed:
#8 x 2" Long Screw - Qty 6



- Step 1:
1. Align ① and ② , as shown on Sheet 2.
 2. Connect using 2" Long Screws. It is recommended to use 6x screws.

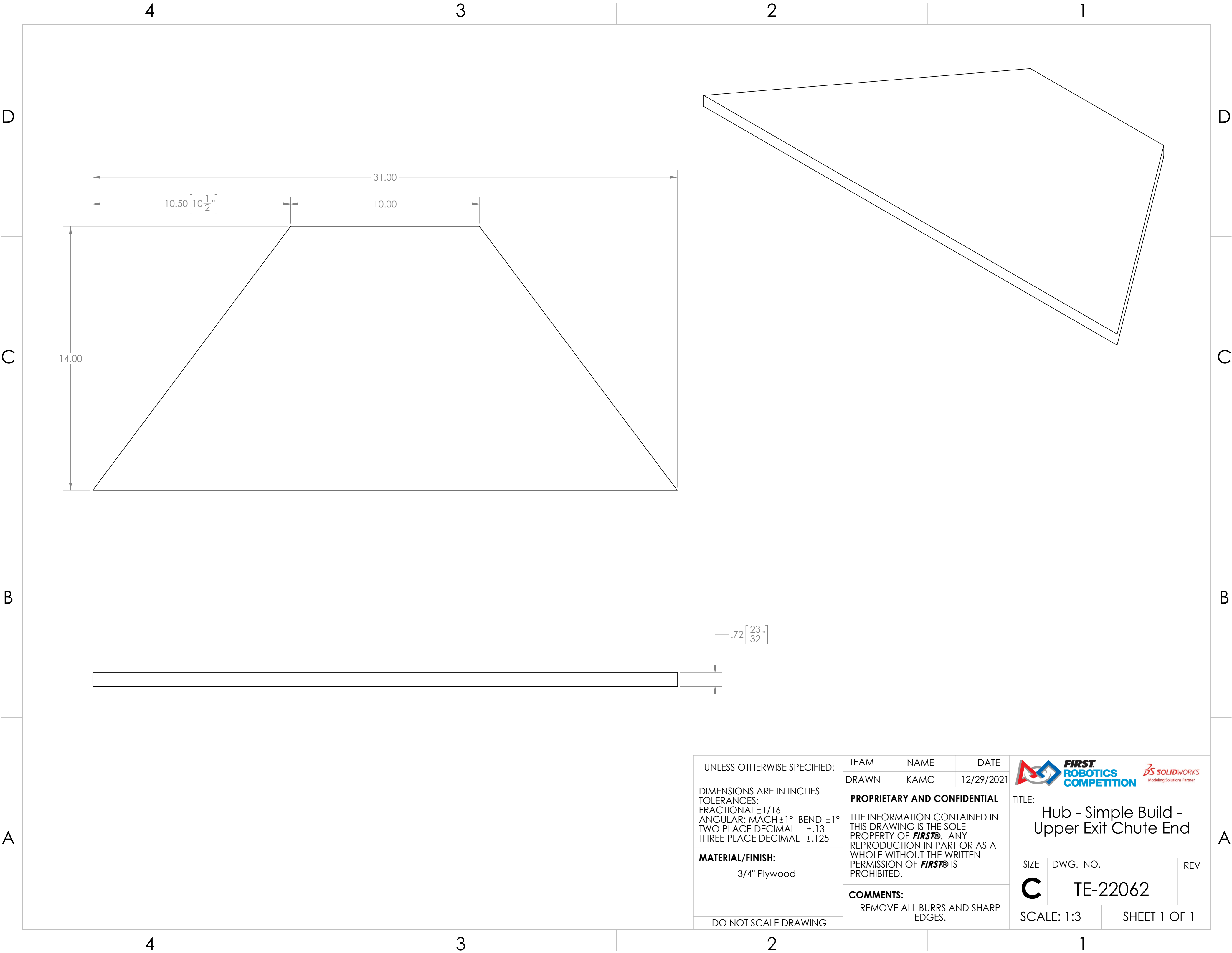
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-22064	Hub - Simple Build - Upper Exit Chute Assembly	1
2	TE-22068	Hub - Simple Build - Upper Exit Connection Assembly	1



UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/30/2021			
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: Hub - Simple Build - Upper Exit Assembly		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	TE-22060	
MATERIAL/FINISH:				SCALE: 1:5		
DO NOT SCALE DRAWING				SHEET 1 OF 2		

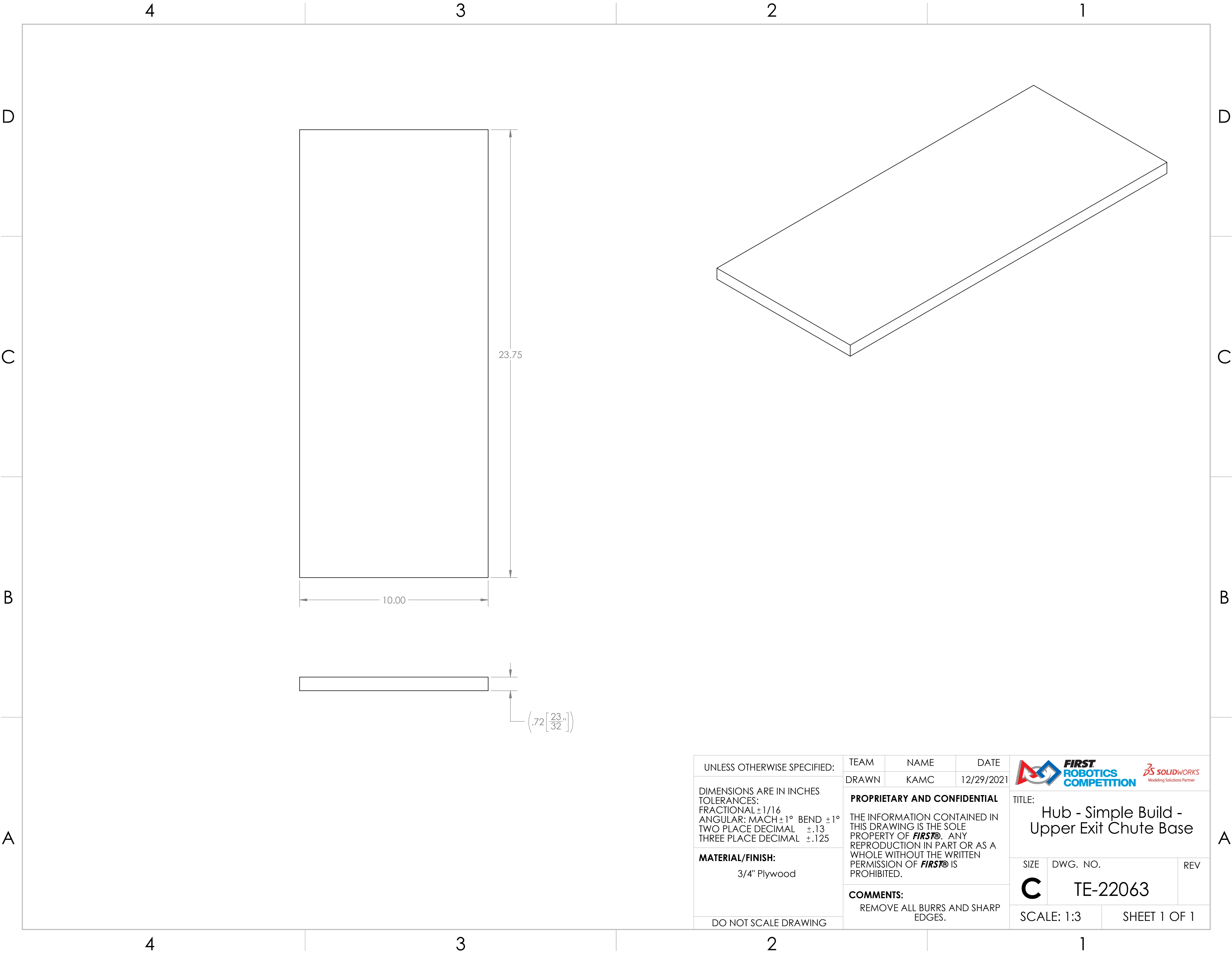






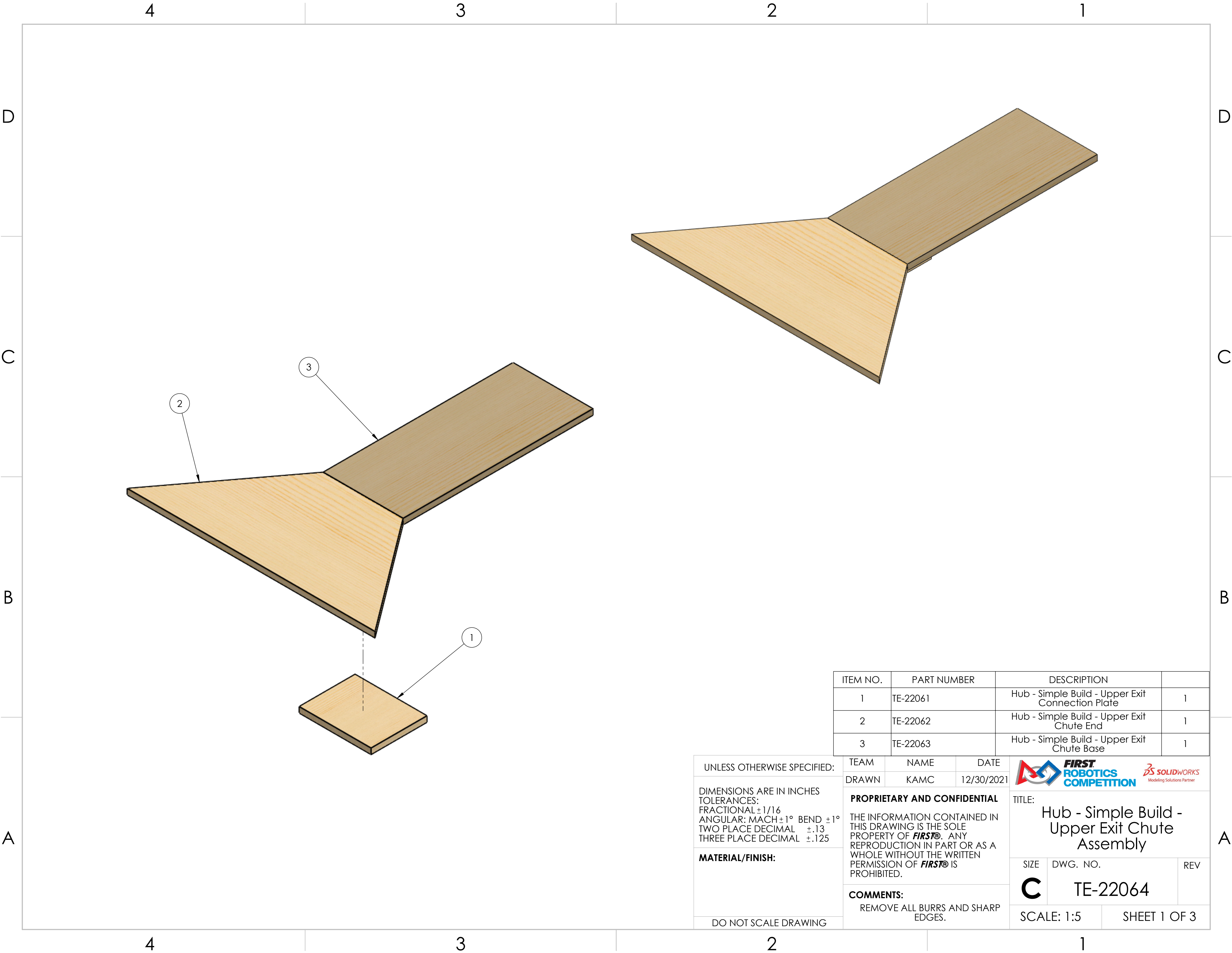
UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div></div>			
	DRAWN	KAMC	12/29/2021				
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL			TITLE: Hub - Simple Build - Upper Exit Connection Plate			
	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.						
	MATERIAL/FINISH: 3/4" Plywood			SIZE C			DWG. NO. TE-22061
DO NOT SCALE DRAWING	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			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 $\pm .13$ THREE PLACE DECIMAL $\pm .125$ MATERIAL/FINISH: 3/4" Plywood DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/29/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: Hub - Simple Build - Upper Exit Chute End		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. TE-22062	REV
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: 3/4" Plywood DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div><div></div><div>TITLE: Hub - Simple Build - Upper Exit Chute Base</div></div>
	DRAWN	KAMC	12/29/2021	
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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-22063		
SCALE: 1:3			SHEET 1 OF 1	



ITEM NO.	PART NUMBER	DESCRIPTION	
1	TE-22061	Hub - Simple Build - Upper Exit Connection Plate	1
2	TE-22062	Hub - Simple Build - Upper Exit Chute End	1
3	TE-22063	Hub - Simple Build - Upper Exit Chute Base	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:

DO NOT SCALE DRAWING

TEAM
DRAWN



NAME
KAMC

DATE
12/30/2021

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN 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:
Hub - Simple Build - Upper Exit Chute Assembly

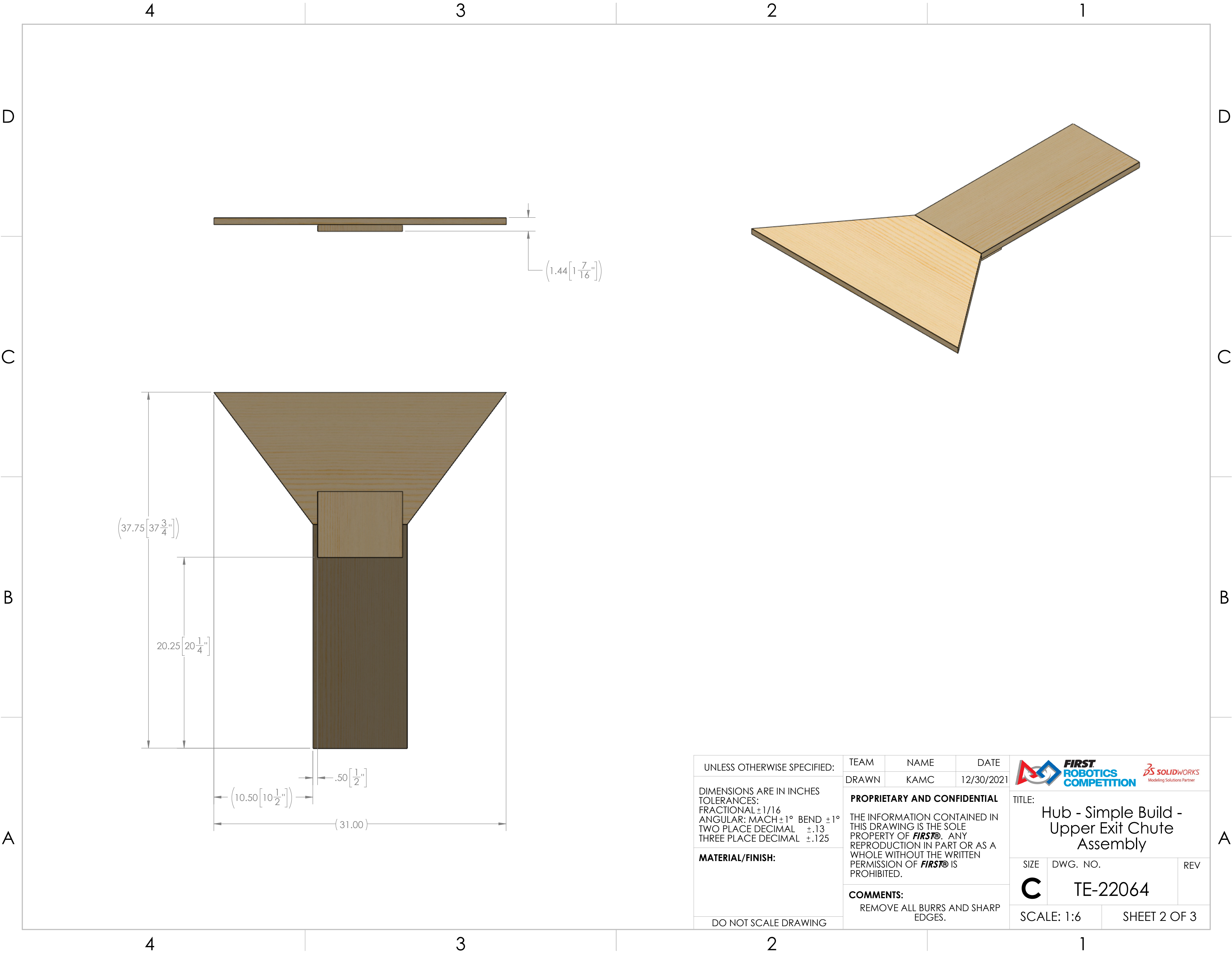
SIZE
C



DWG. NO.
TE-22064

REV

SCALE: 1:5

SHEET 1 OF 3



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>		
	DRAWN	KAMC	12/30/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: Hub - Simple Build - Upper Exit Chute Assembly	
				SIZE	DWG. NO.	REV
				C	TE-22064	
				SCALE: 1:6		SHEET 2 OF 3

1

Step 2

$$20.25 \left[20\frac{1}{4}'' \right]$$

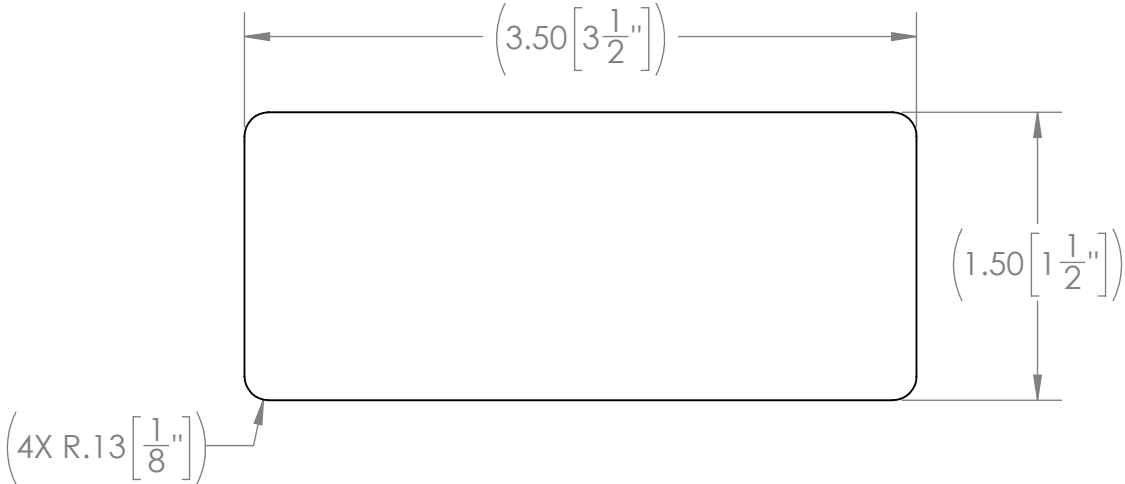
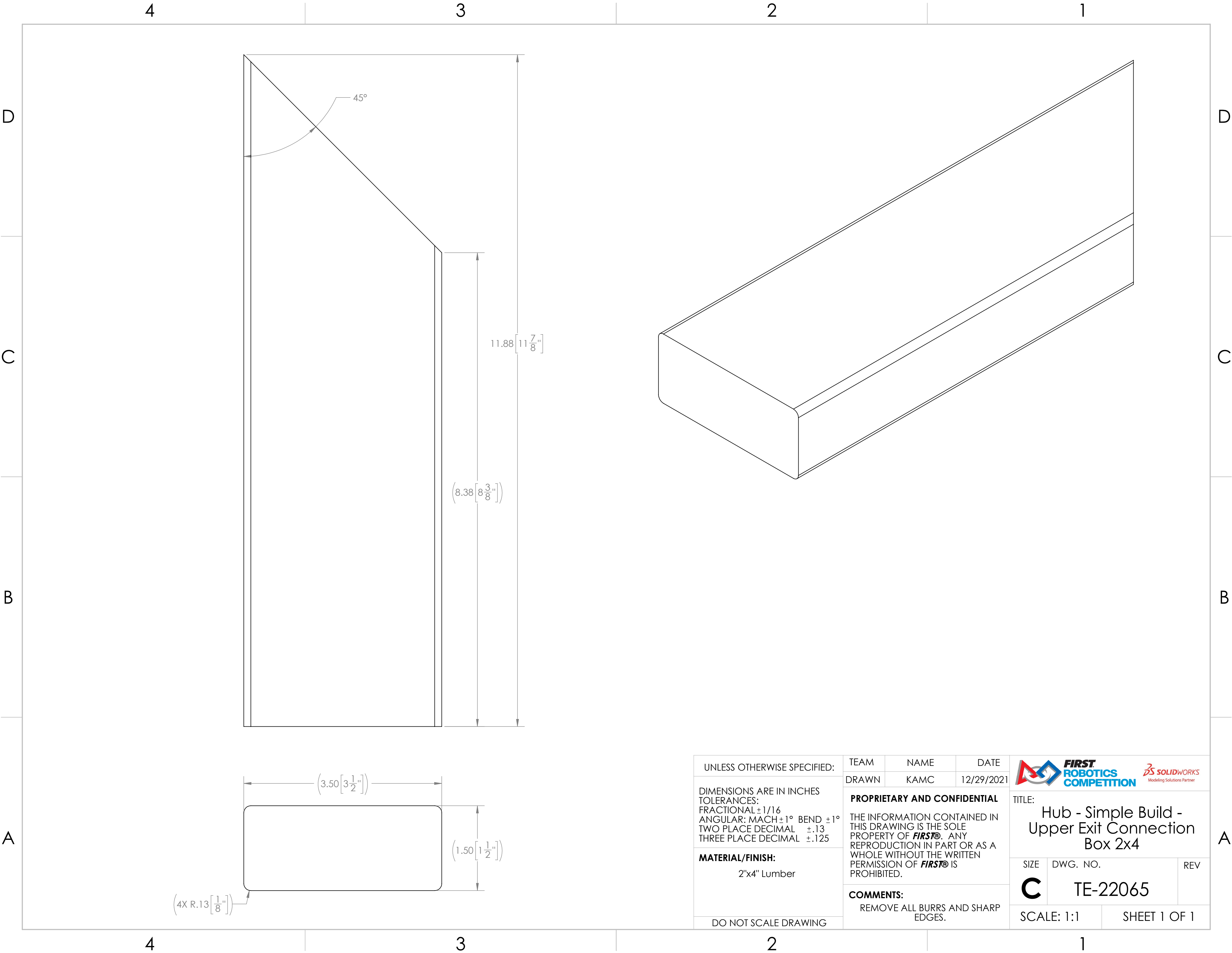
$.50 \left[\frac{1}{2}'' \right]$ 



1. Align (1) to Step 1, as shown.
2. Connect using 1.25" Long Screws. It is recommended to use 8x screws, 4x screws into (3) and 4x screws into (2).

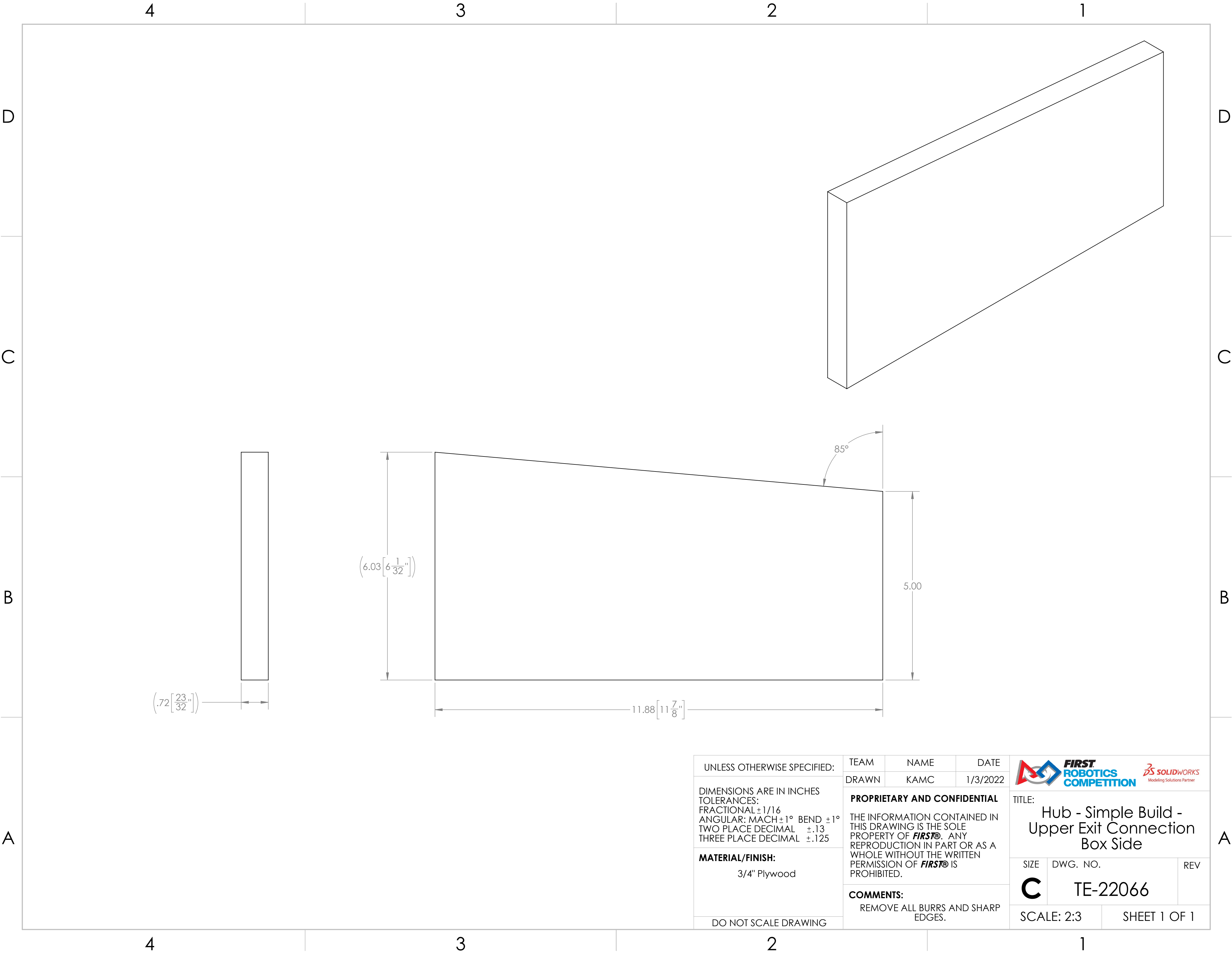
1. Align $\begin{pmatrix} 3 \end{pmatrix}$ to $\begin{pmatrix} 2 \end{pmatrix}$, as shown. Connection will happen in the next step.



UNLESS OTHERWISE SPECIFIED:		TEAM		NAME		DATE	
		DRAWN		KAMC		12/30/2021	
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: Hub - Simple Build - Upper Exit Chute Assembly	
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.					
MATERIAL/FINISH:		SIZE		DWG. NO.		REV	
		C		TE-22064			
DO NOT SCALE DRAWING		SCALE: 1:6		SHEET 3 OF 3			

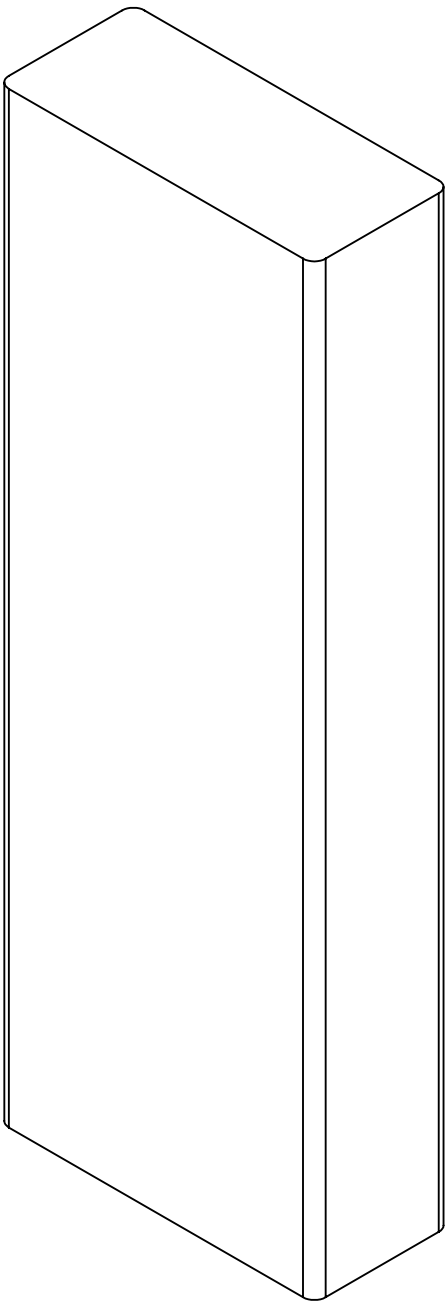
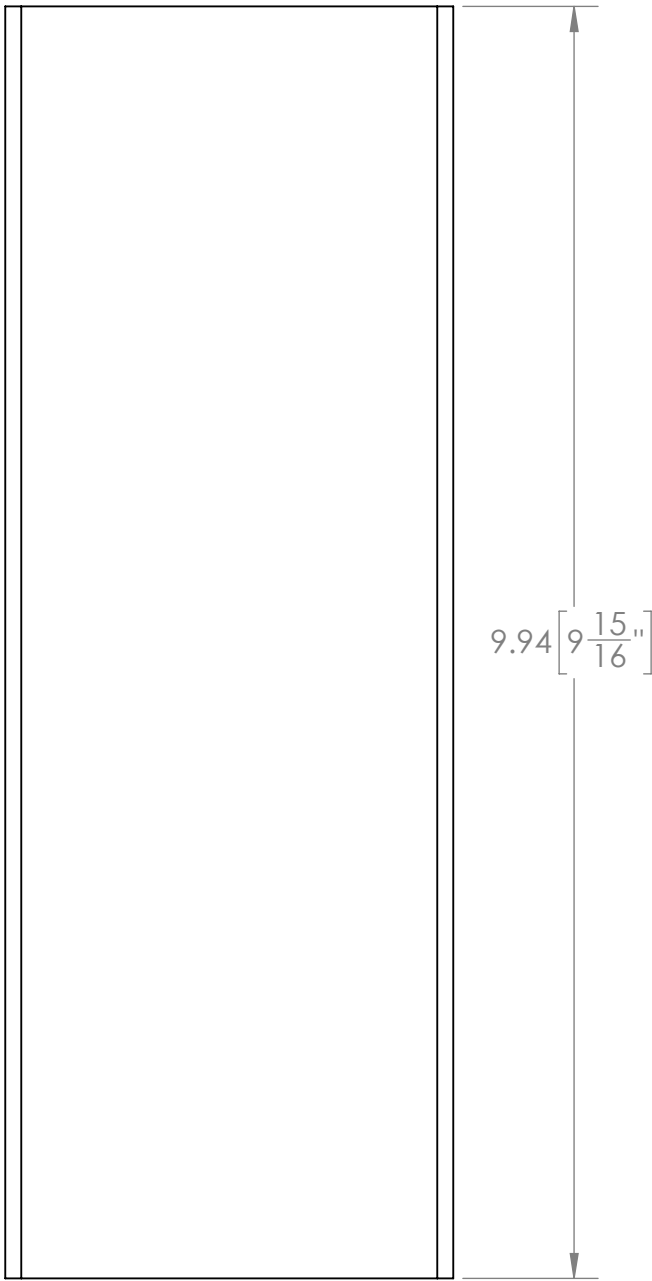
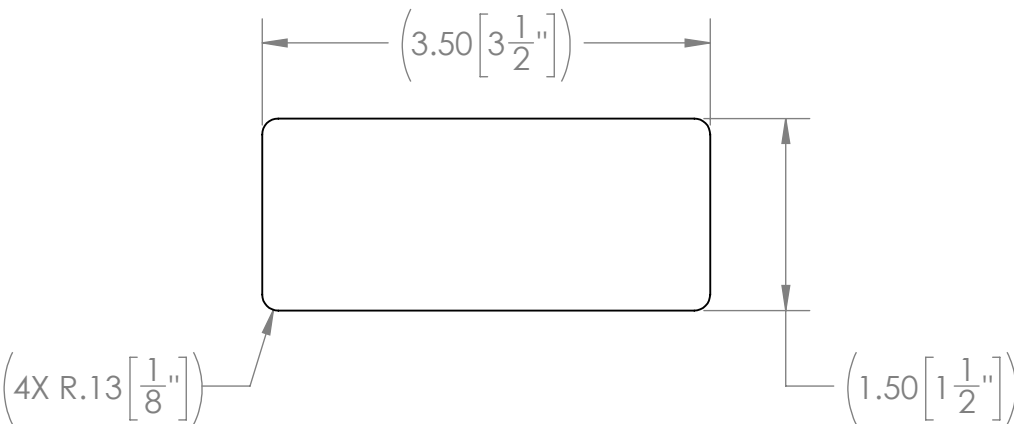
1





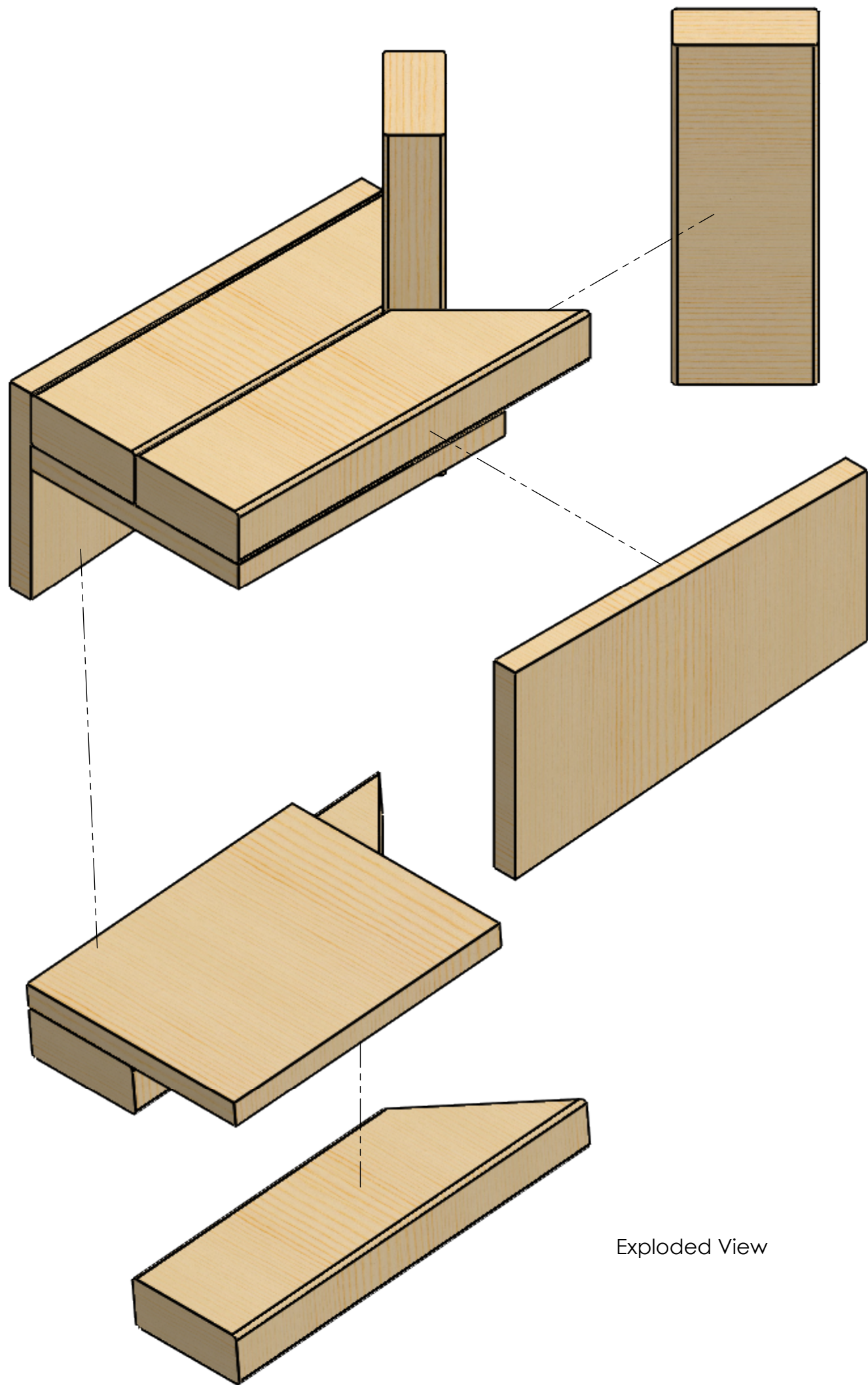
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: 2"x4" Lumber DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/29/2021			
	<div>PROPRIETARY AND CONFIDENTIAL THE 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.</div>					
TITLE: <div>Hub - Simple Build - Upper Exit Connection Box 2x4</div>				SIZE <div>C</div>	DWG. NO. <div>TE-22065</div>	REV
SCALE: 1:1				SHEET 1 OF 1		



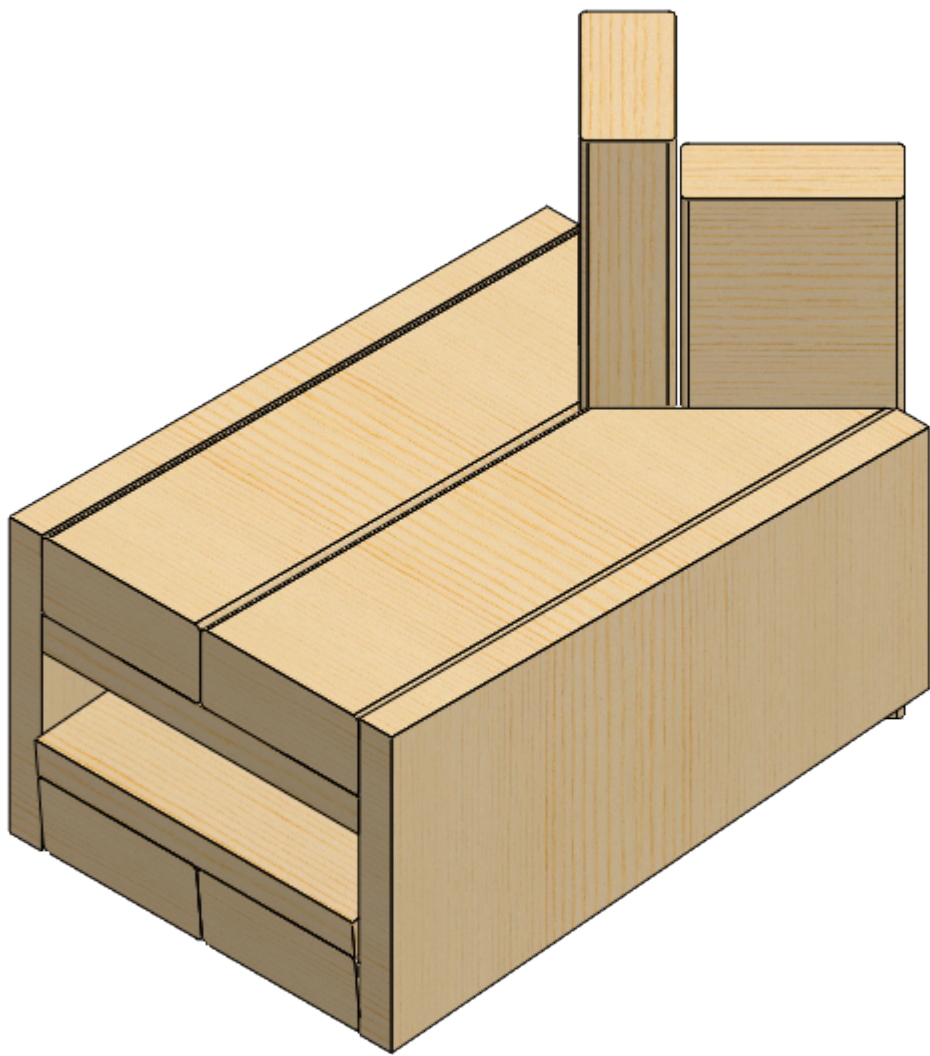
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DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	PROPRIETARY AND CONFIDENTIAL			TITLE: Hub - Simple Build - Upper Exit Connection Box Side		
	THE INFORMATION CONTAINED IN 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: 3/4" Plywood				SIZE C	DWG. NO. TE-22066	REV
DO NOT SCALE DRAWING				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 ±.13 THREE PLACE DECIMAL ±.125 MATERIAL/FINISH: 2"x4" Lumber DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div><div></div><div>TITLE: Hub - Simple Build - Upper Exit Connection 2x4</div><div><div>SIZE</div><div>DWG. NO.</div><div>REV</div></div><div><div>C</div><div>TE-22067</div></div><div><div>SCALE: 2:3</div><div>SHEET 1 OF 1</div></div></div>		
	DRAWN	KAMC	12/29/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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.					





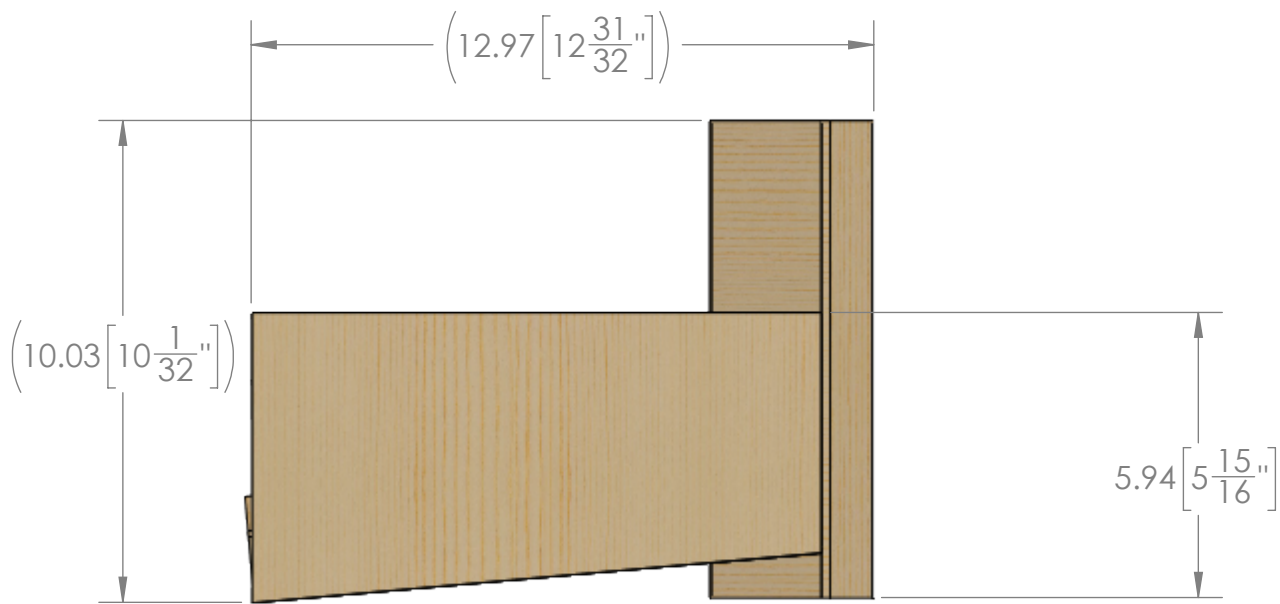
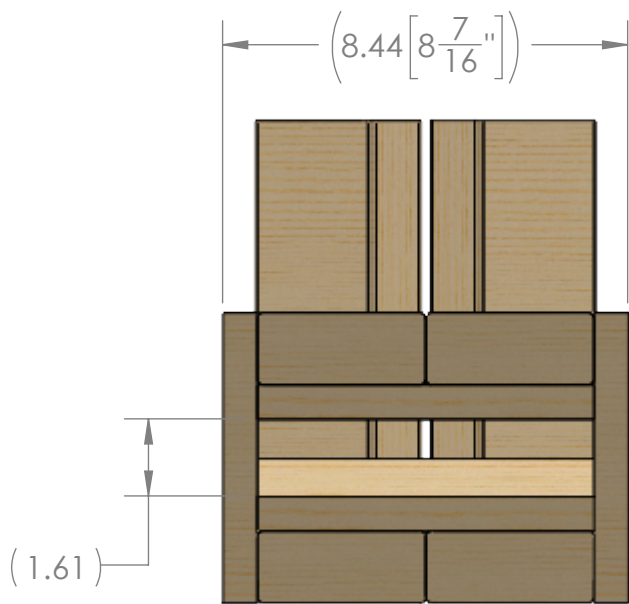
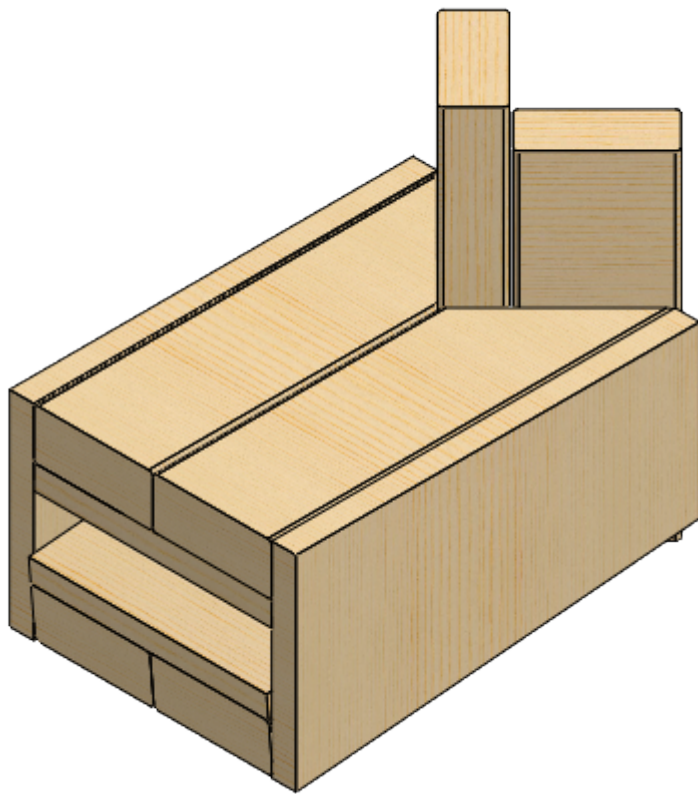
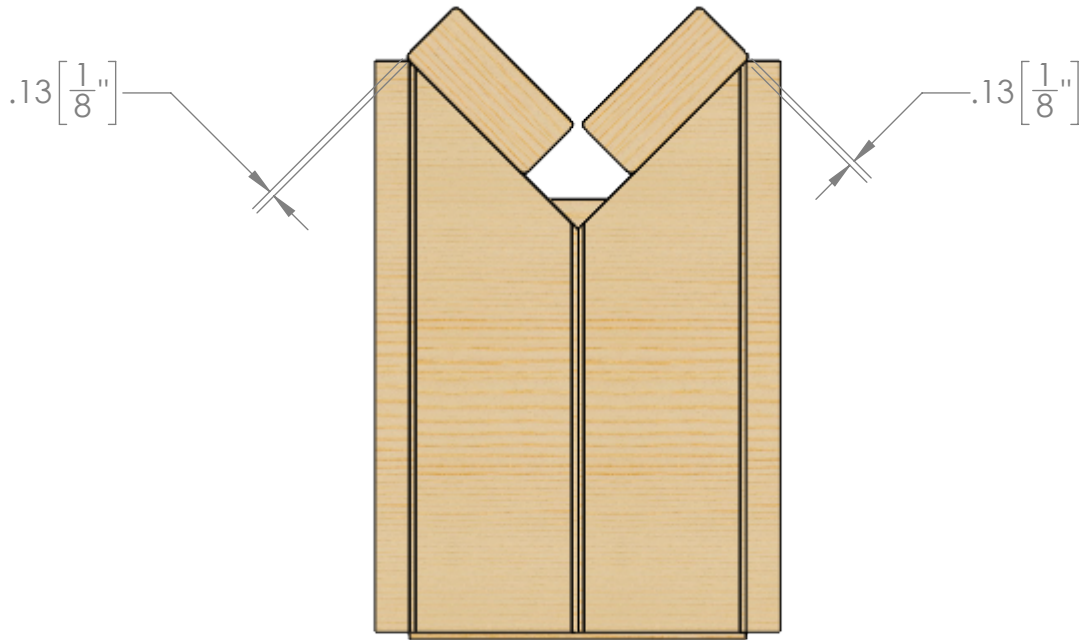
Exploded View





Hardware Needed:
#8 x 2" Long Screw - Qty 24
#8 x 2.5" Long Screw - Qty 8

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-22065	Hub - Simple Build - Upper Exit Connection Box 2x4	4
2	TE-22061	Hub - Simple Build - Upper Exit Connection Plate	2
3	TE-22066	Hub - Simple Build - Upper Exit Connection Box Side	2
4	TE-22067	Hub - Simple Build - Upper Exit Connection 2x4	2

UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/30/2021			
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: Hub - Simple Build - Upper Exit Connection Assembly		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	TE-22068	
DO NOT SCALE DRAWING				SCALE: 1:3		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 $\pm .13$ THREE PLACE DECIMAL $\pm .125$ MATERIAL/FINISH: DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/30/2021			
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: Hub - Simple Build - Upper Exit Connection Assembly		
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C	DWG. NO. TE-22068	REV
SCALE: 1:4		SHEET 2 OF 3				

D

C

B

A

D

C

B

A

4

3

2

1

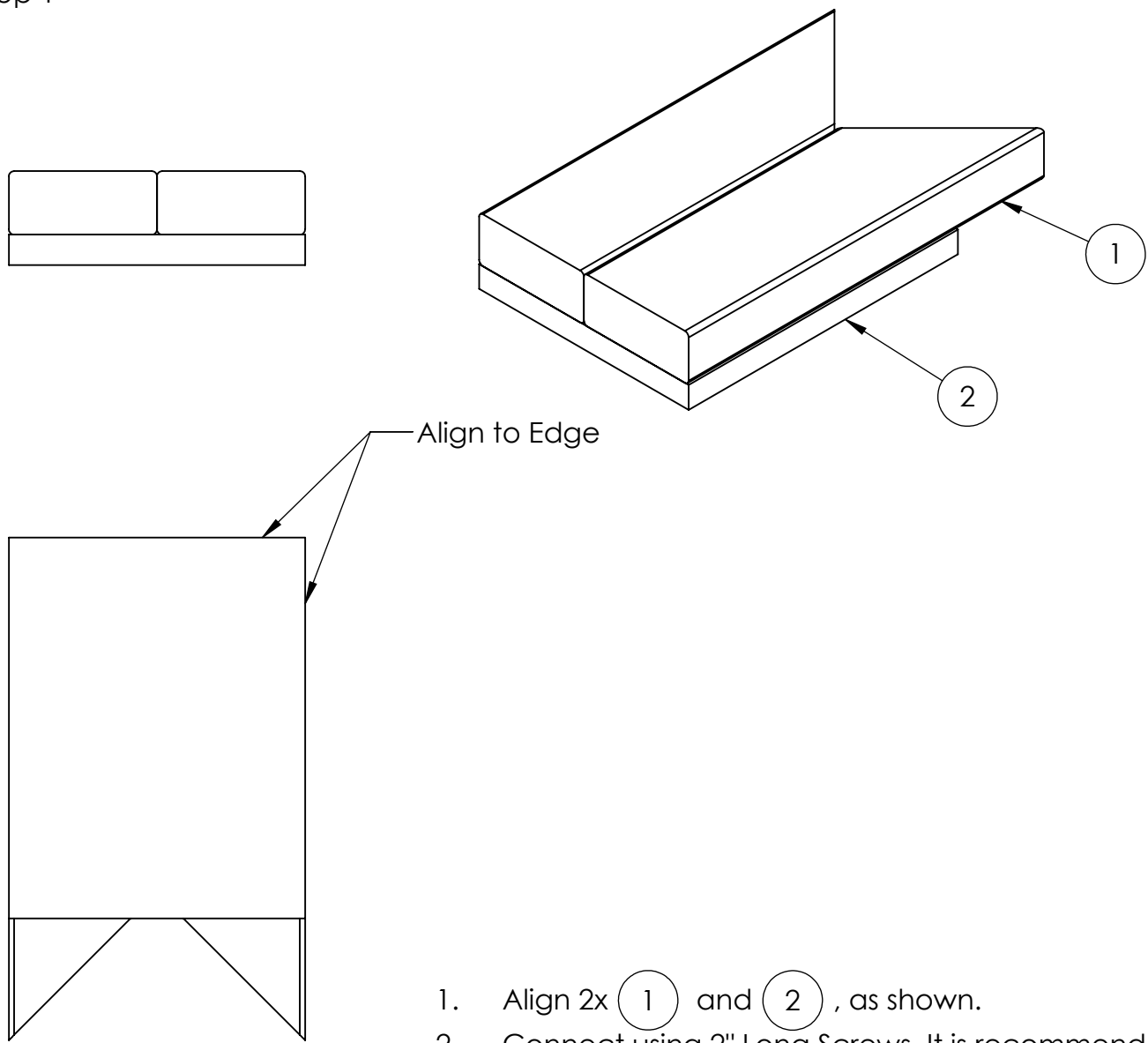
4

3

2

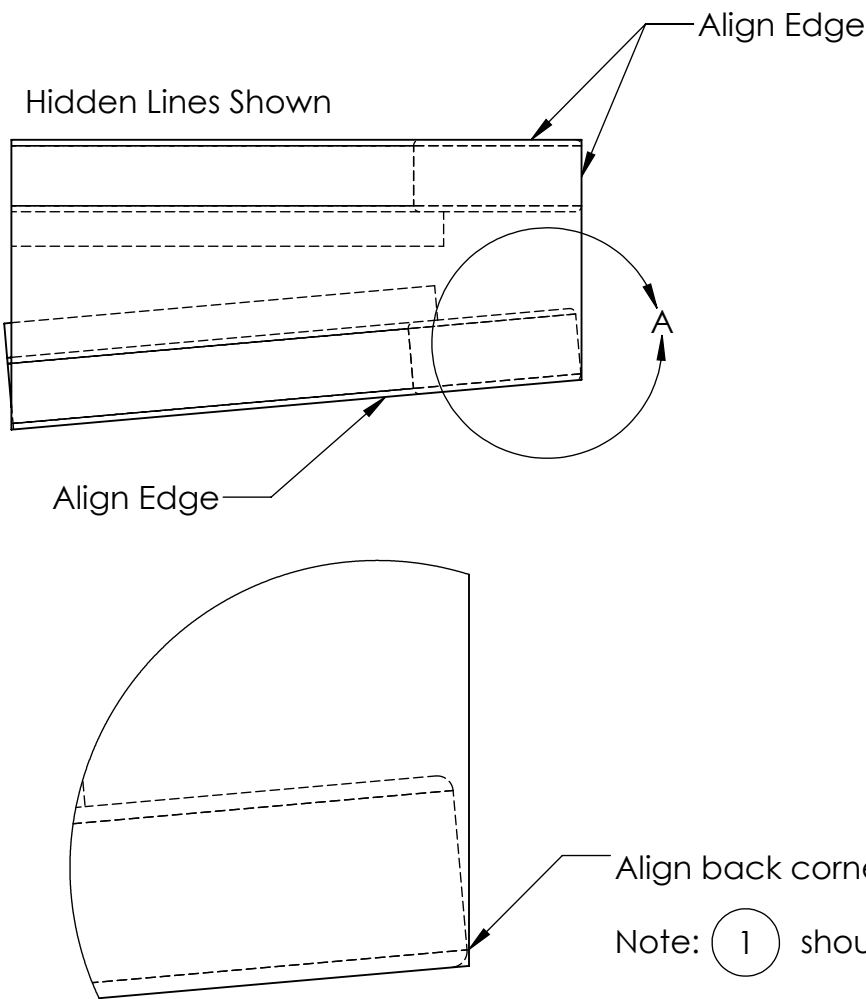
1

Step 1



1. Align 2x (1) and (2) , as shown.
2. Connect using 2" Long Screws. It is recommended to use 3x screws per (1) .
3. Repeat until you have a total of 2 assemblies.

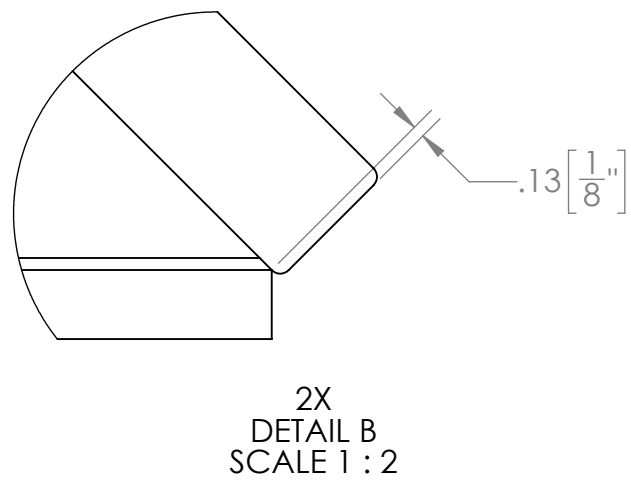
Step 2



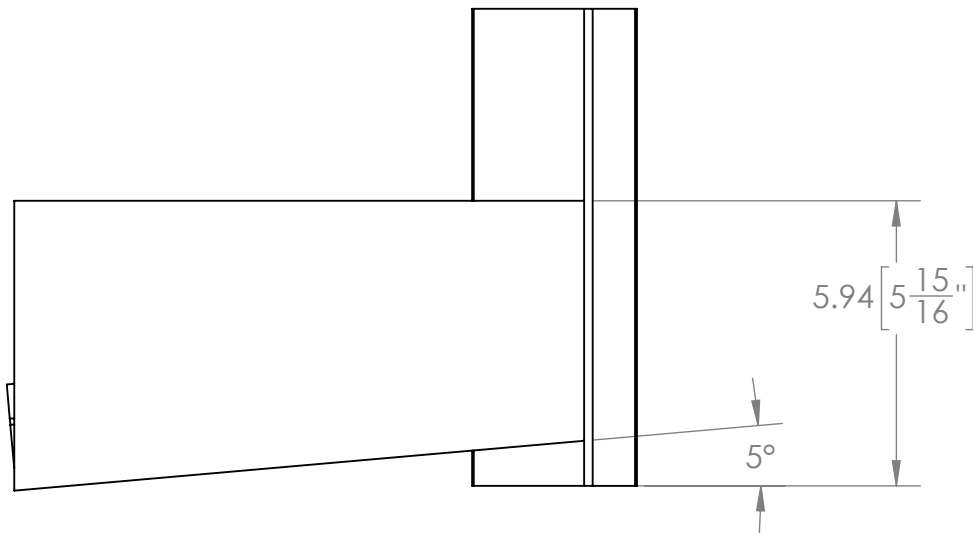
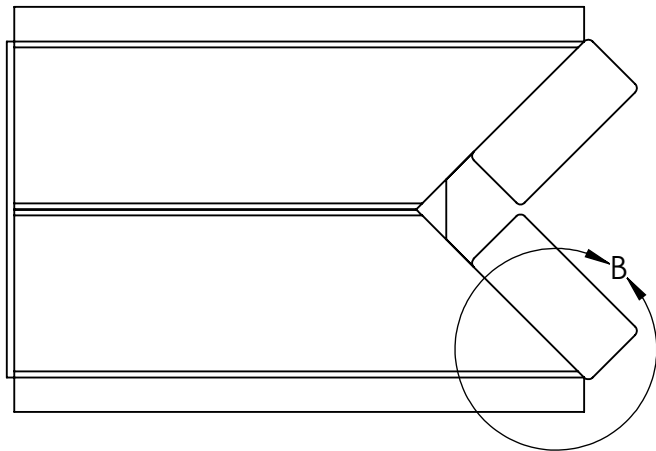
DETAIL A
SCALE 2 : 3
Hidden Lines Shown

1. Align 2x (3) to 2x Step 1 assemblies, as shown. Note the alignment information called out in Detail A.
2. Connect using 2" Long Screws. It is recommended to use 3x screws into each (1) . Screws should not be used to attach (3) to (2) .

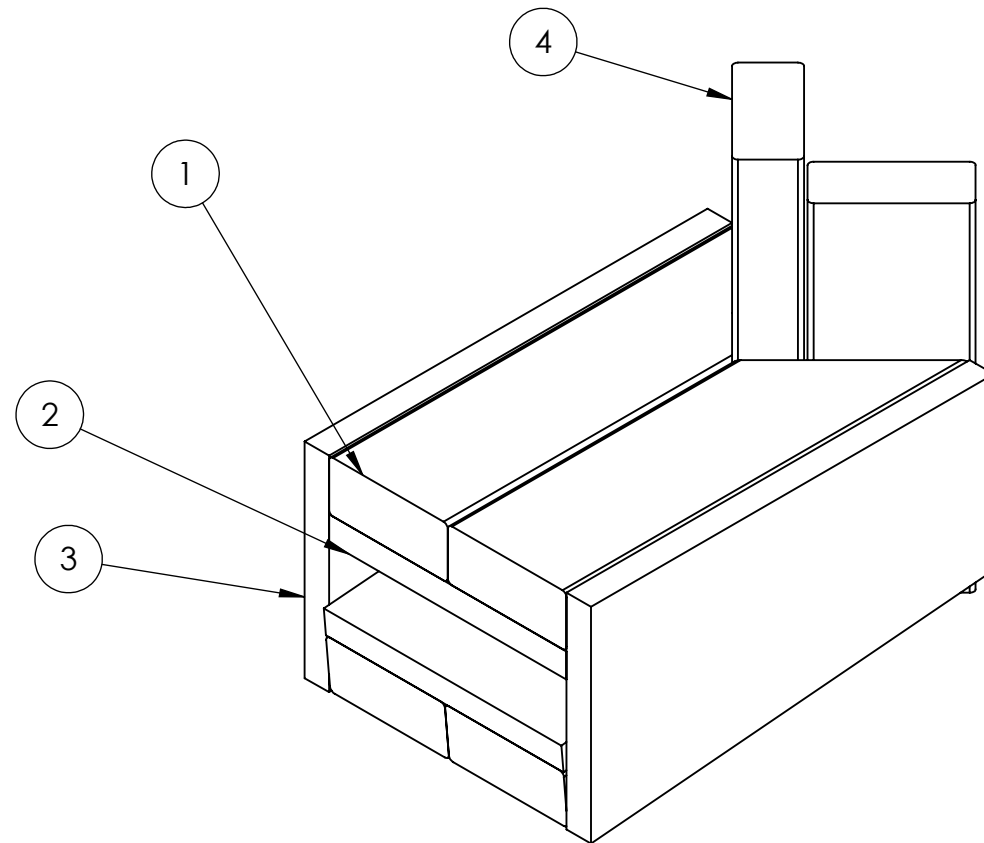
Step 3





2X
DETAIL B
SCALE 1 : 2



1. Align 2x (4) to Step 2 , as shown. Note dimension in Detail B.
2. Connect using 2.5" Long Screws. It is recommended to use 2x screws per (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: DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN 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: Hub - Simple Build - Upper Exit Connection Assembly
	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.				SIZE C
		DWG. NO.		REV	
		TE-22068			
		SCALE: 1:4		SHEET 3 OF 3	