



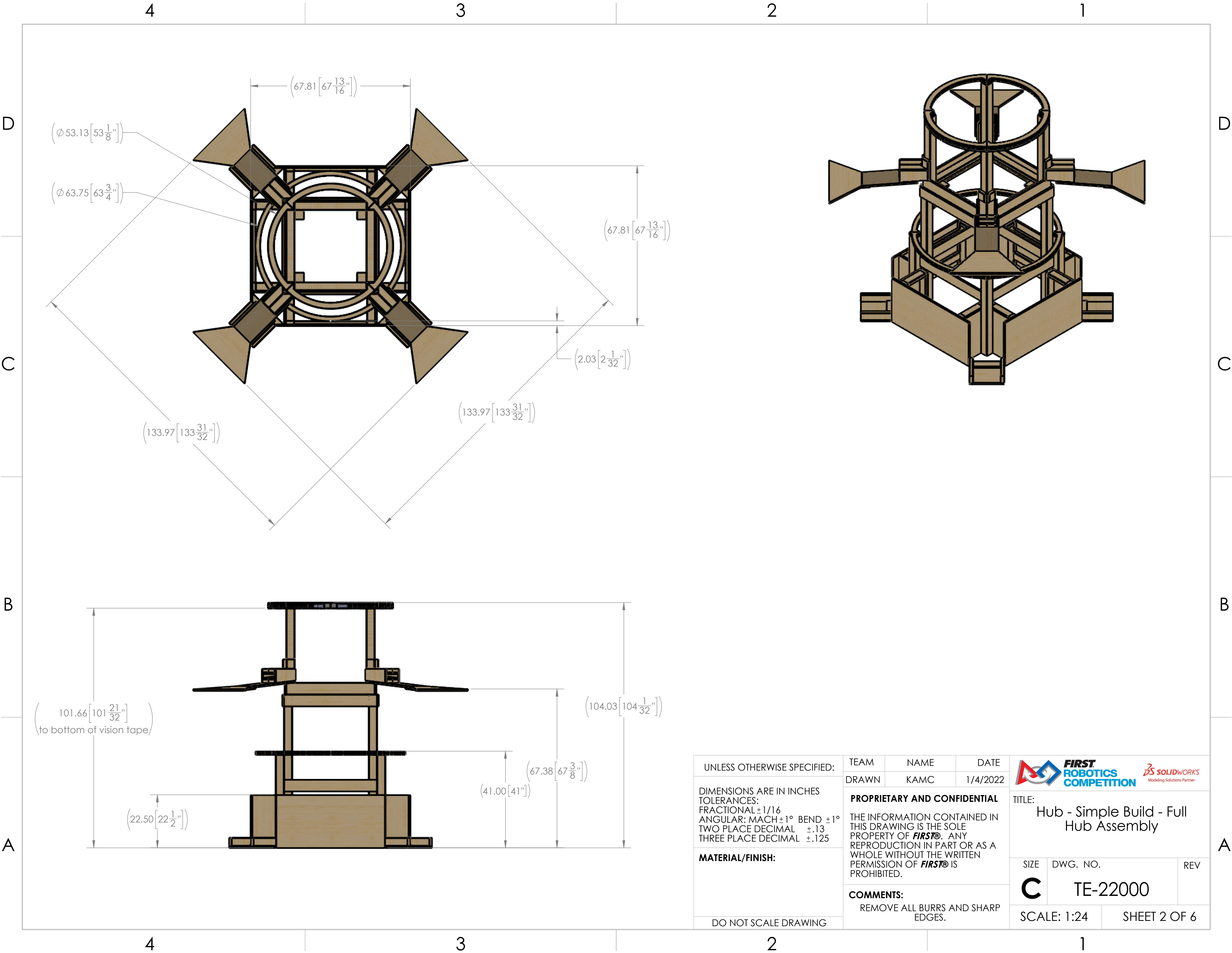
Hardware Needed:  
#8 x 1.25" Long Screw - Qty 16  
#8 x 2" Long Screw - Qty 32  
#8 x 2.5" Long Screw - Qty 20  
#8 x 3" Long Screw - Qty 16  
#10 x 3.5" Long Screw - Qty 64  
Wood Staples, Thumb Tacks, Tape, etc. for TE-22070 attachment  
Optional, but encouraged: Safety Edging

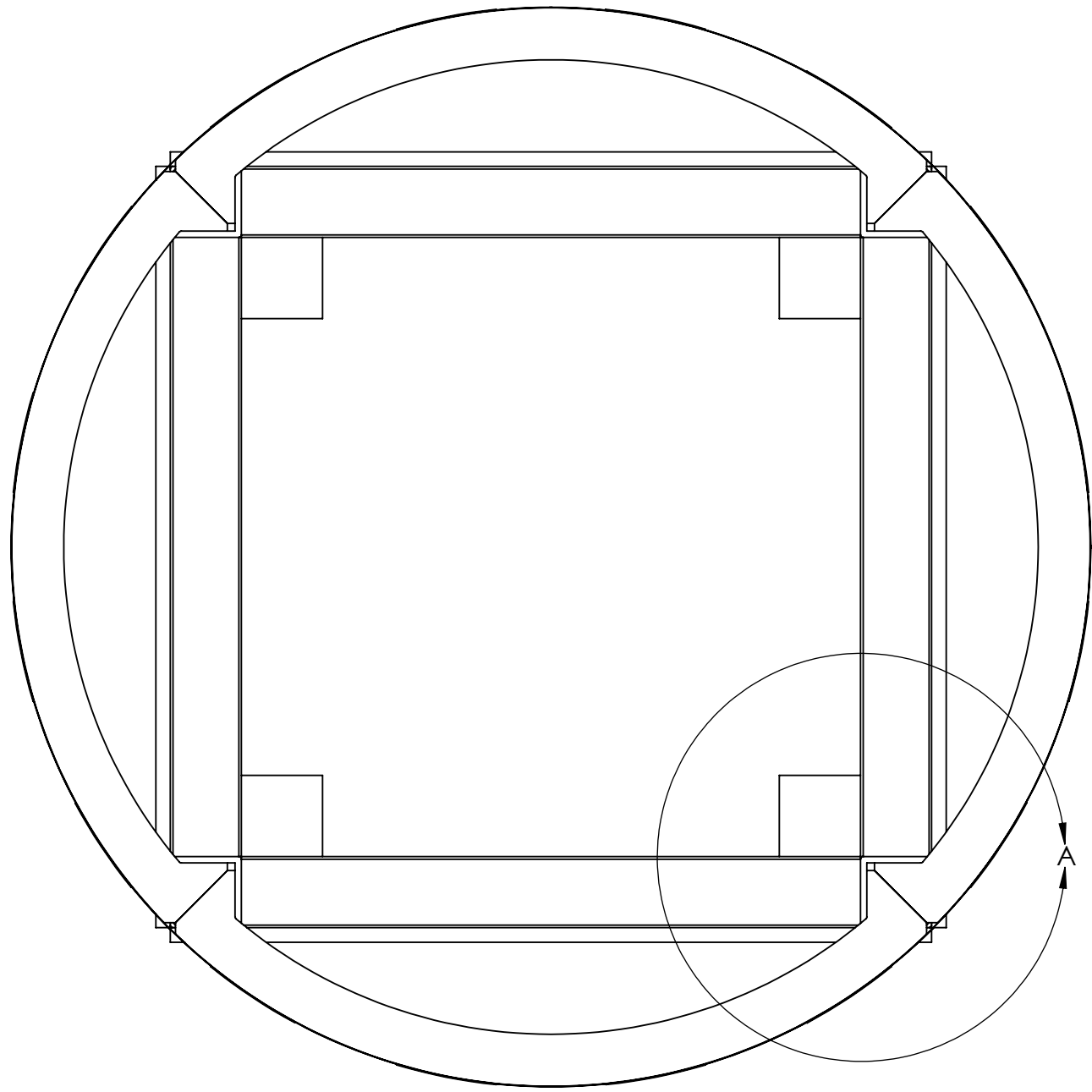
ITEM NO.	PART NUMBER	DESCRIPTION	
1	TE-22010	Hub - Simple Build - Fender Assembly	4
2	TE-22023-Multiple	Hub - Simple Build - Lower Hub Ring Assembly - Multiple	4
3	TE-22025	HUB - Simple Build - Vertical for Lower Hub Ring 4x4	4
4	TE-22030	Hub - Simple Build - Upper Hub Goal Assembly	1
5	TE-22040	Hub - 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
8	TE-22070	Hub - Simple Build - Vision Assembly	8

UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125		TEAM	NAME	DATE	 		
		DRAWN	KAMC	1/4/2022			
<b>MATERIAL/FINISH:</b>		<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE:  Hub - Simple Build - Full Hub Assembly		
		<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING					SIZE	DWG. NO.	REV
					C	TE-22000	
					SCALE: 1:18		SHEET 1 OF 6

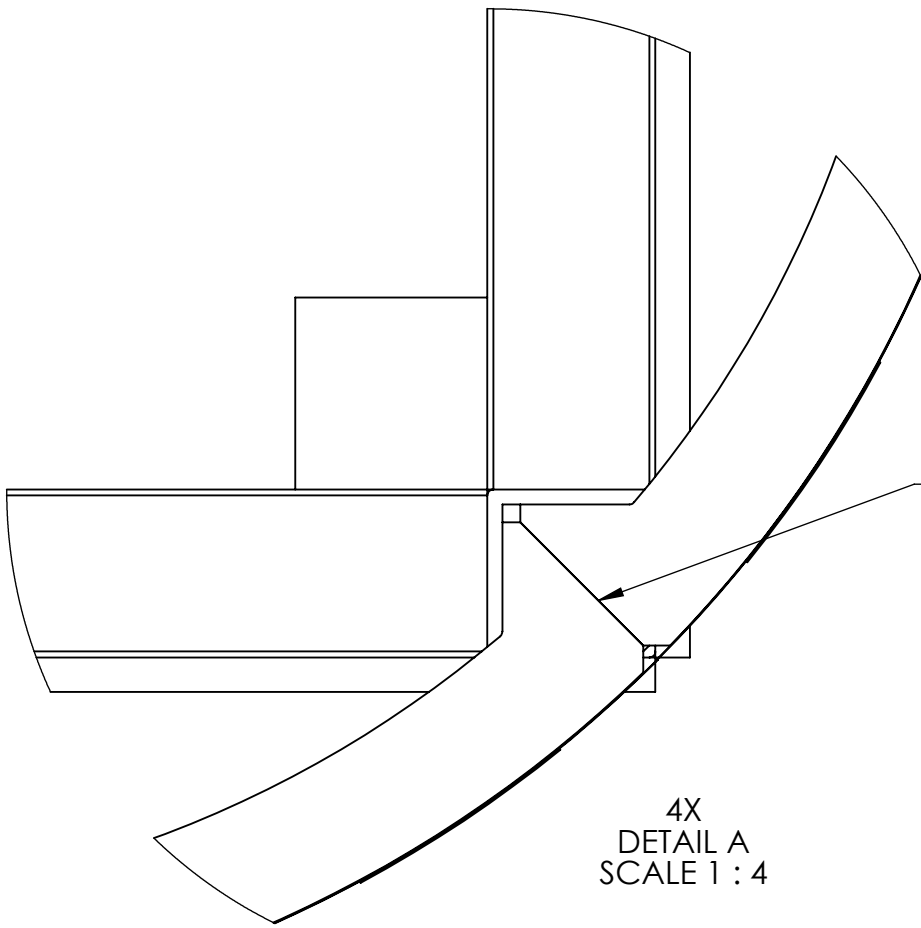
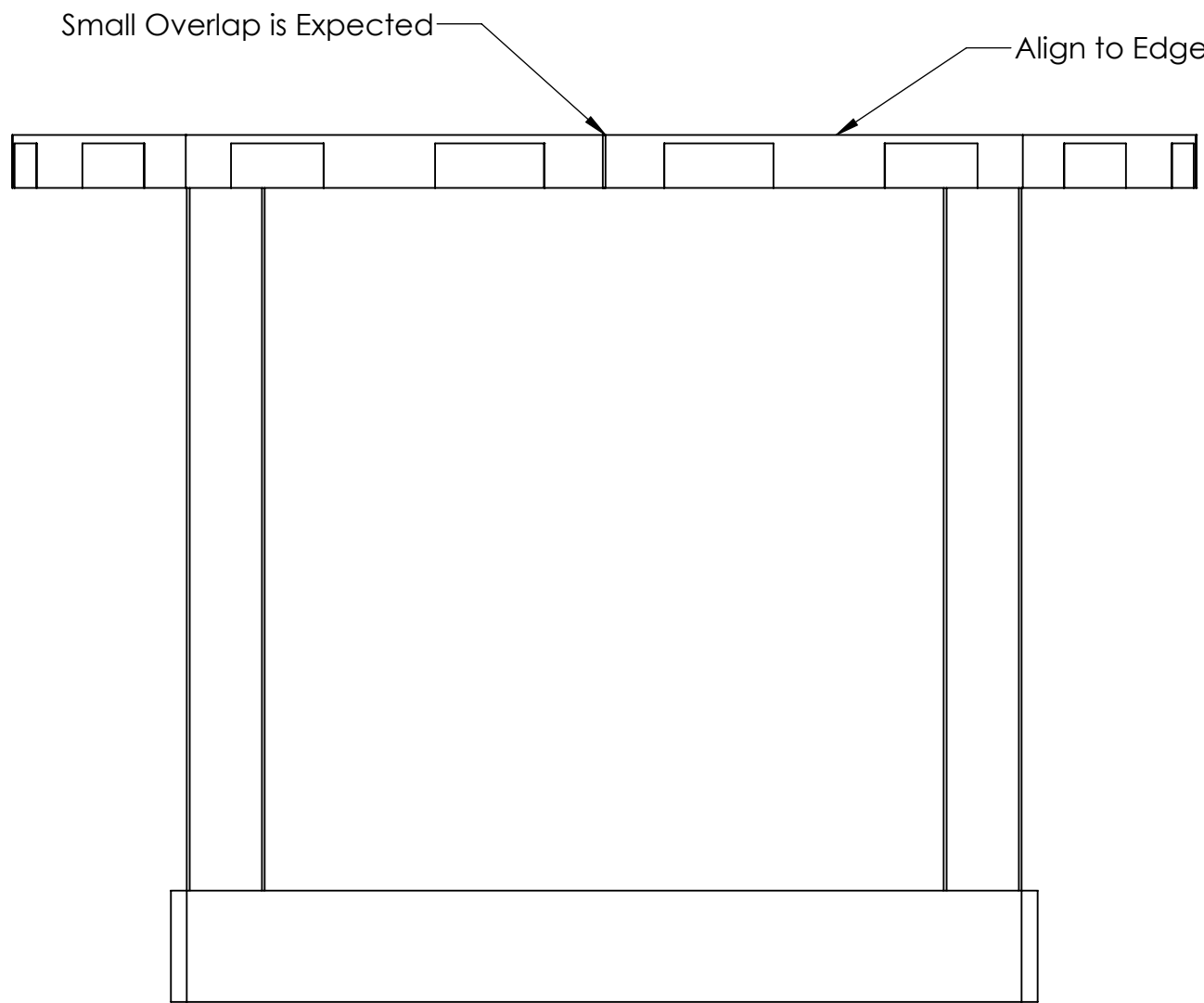
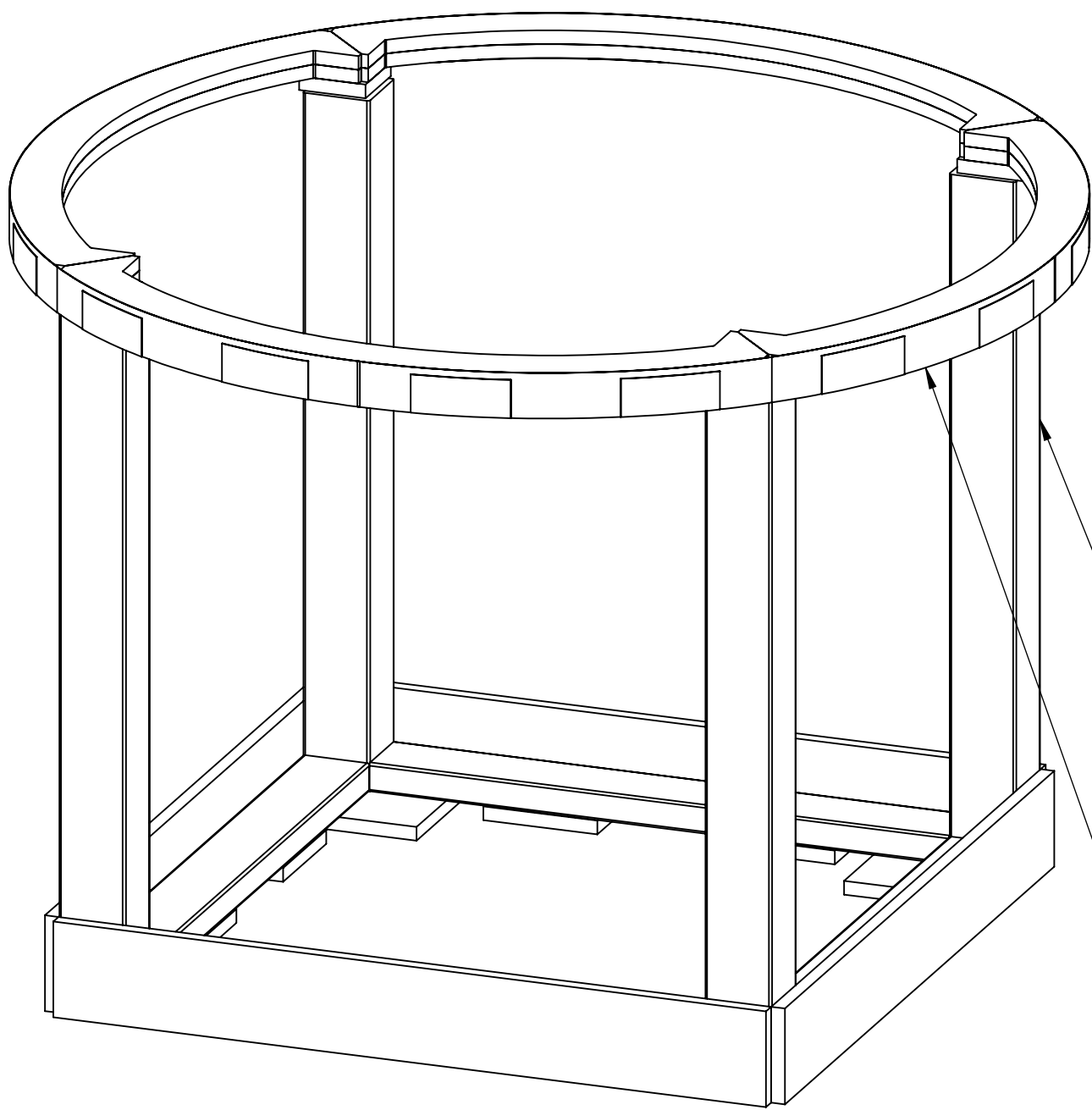
Note:  
1. Use TE-22000-AM if pairing with AndyMark Ring AM-4672.  
2. If you are planning to disassemble frequently, you may want to consider using bolted connections instead of screws. It is helpful to consider ceiling height and ability to move assembly through doors before fastening sub-assemblies together.









Step 1

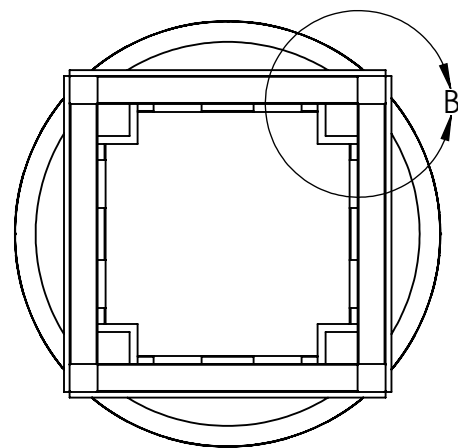
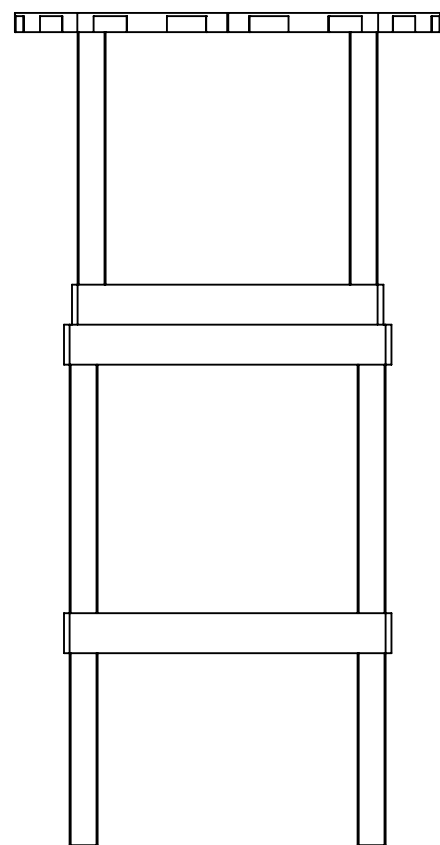
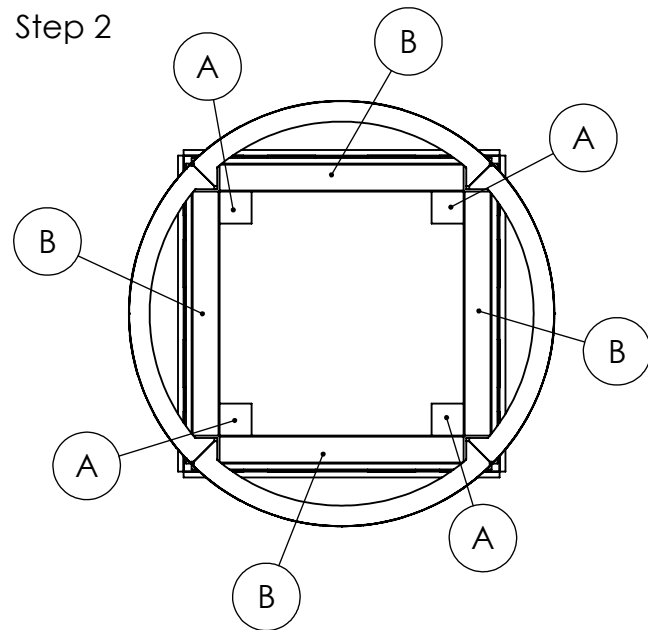


Align edge of 8 with this edge. There will be a gap between 8 and the plywood ring of 4.

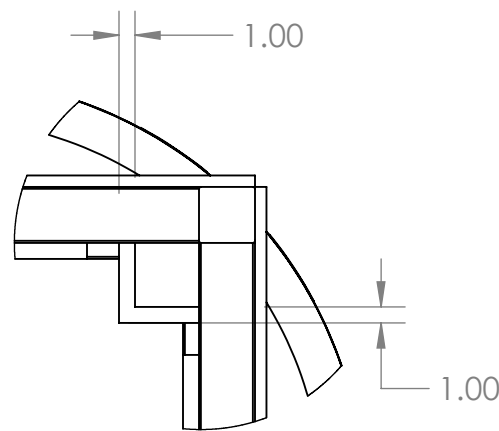
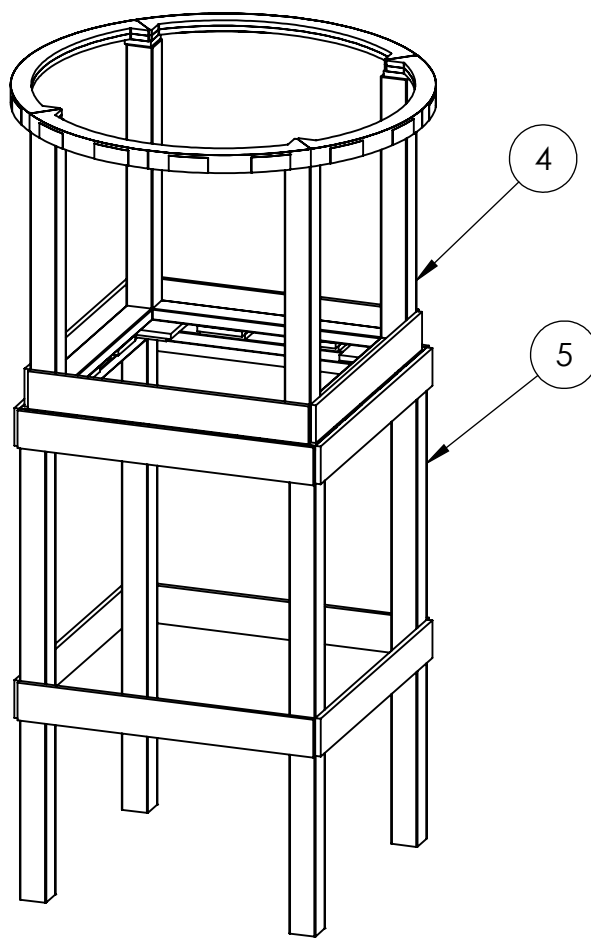
Align 8 to 4 as shown. Note alignment information called out in Detail A.  
Connect 8 to 4 using a fastener. Some recommendations would be Wood Staples, Thumb Tacks, or Tape,  
Repeat 7x time, until there is a total of 8x 8 attached to 4.

UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$  <b>MATERIAL/FINISH:</b>     <b>DO NOT SCALE DRAWING</b>	FIELD	NAME	DATE	 	
	DRAWN	KAMC	1/4/2022		
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST</b> IS PROHIBITED.				TITLE: Hub - Simple Build - Full Hub Assembly
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.				SIZE <b>C</b> SCALE: 1:8
				DWG. NO. TE-22000	REV
				SHEET 3 OF 6	

Step 2

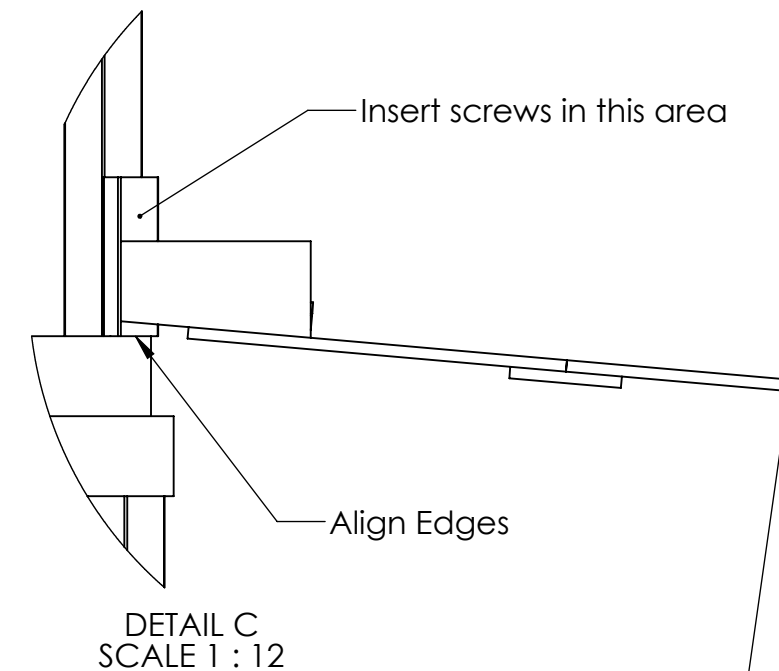
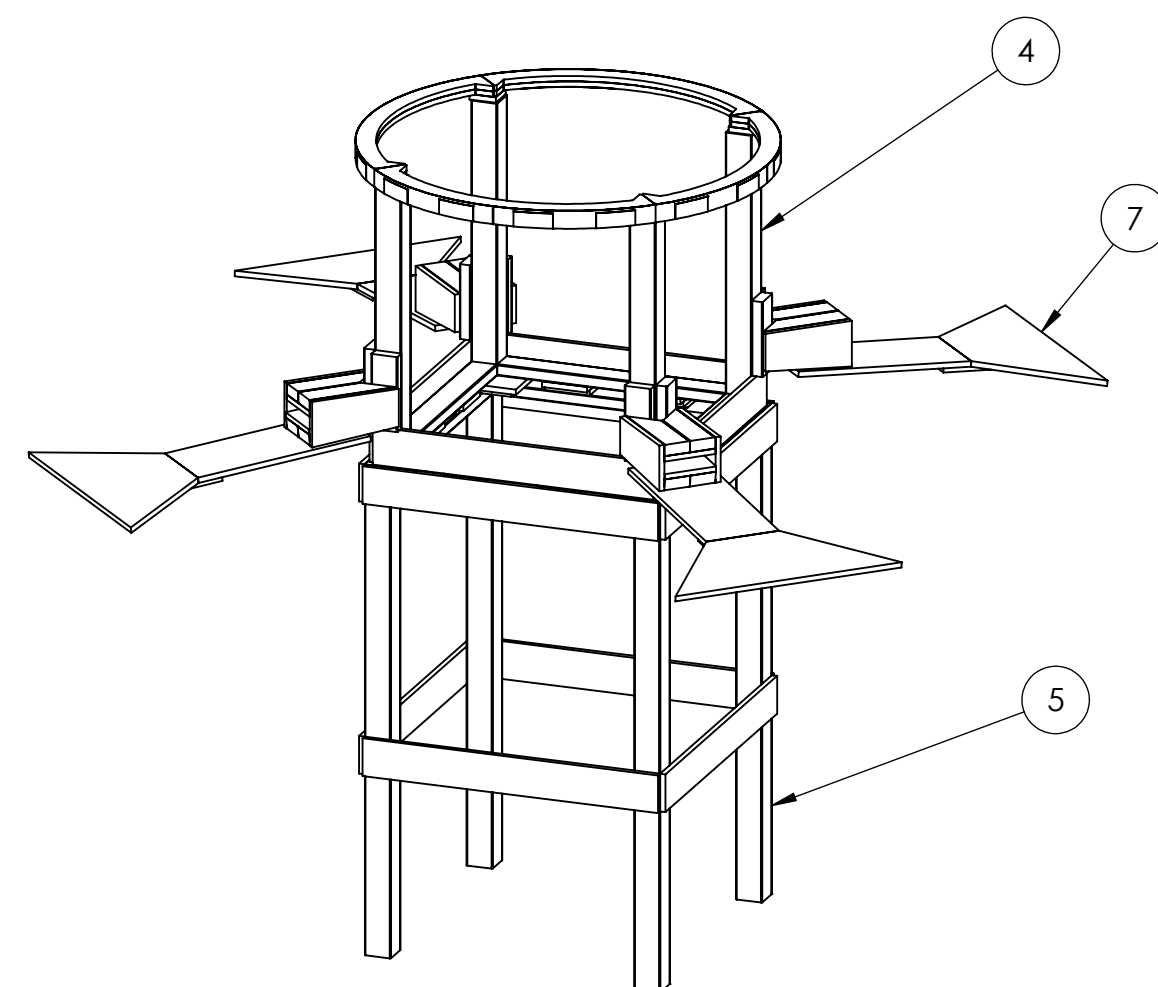
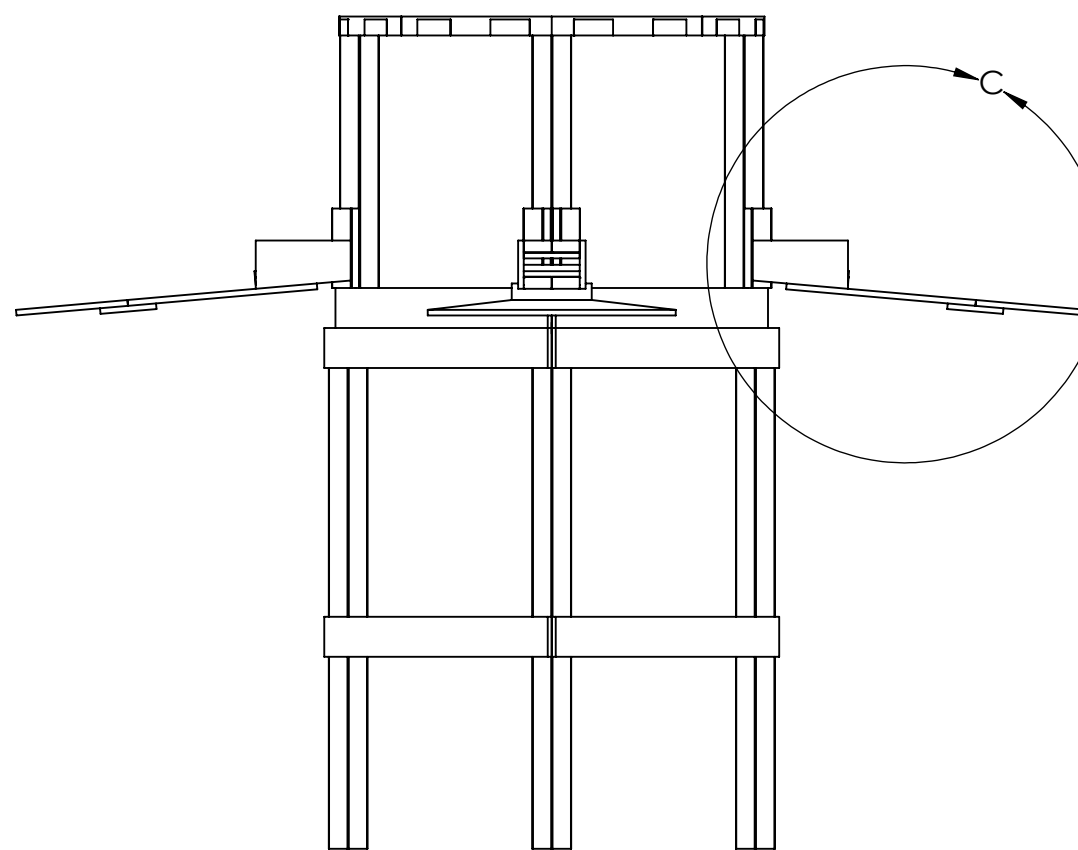
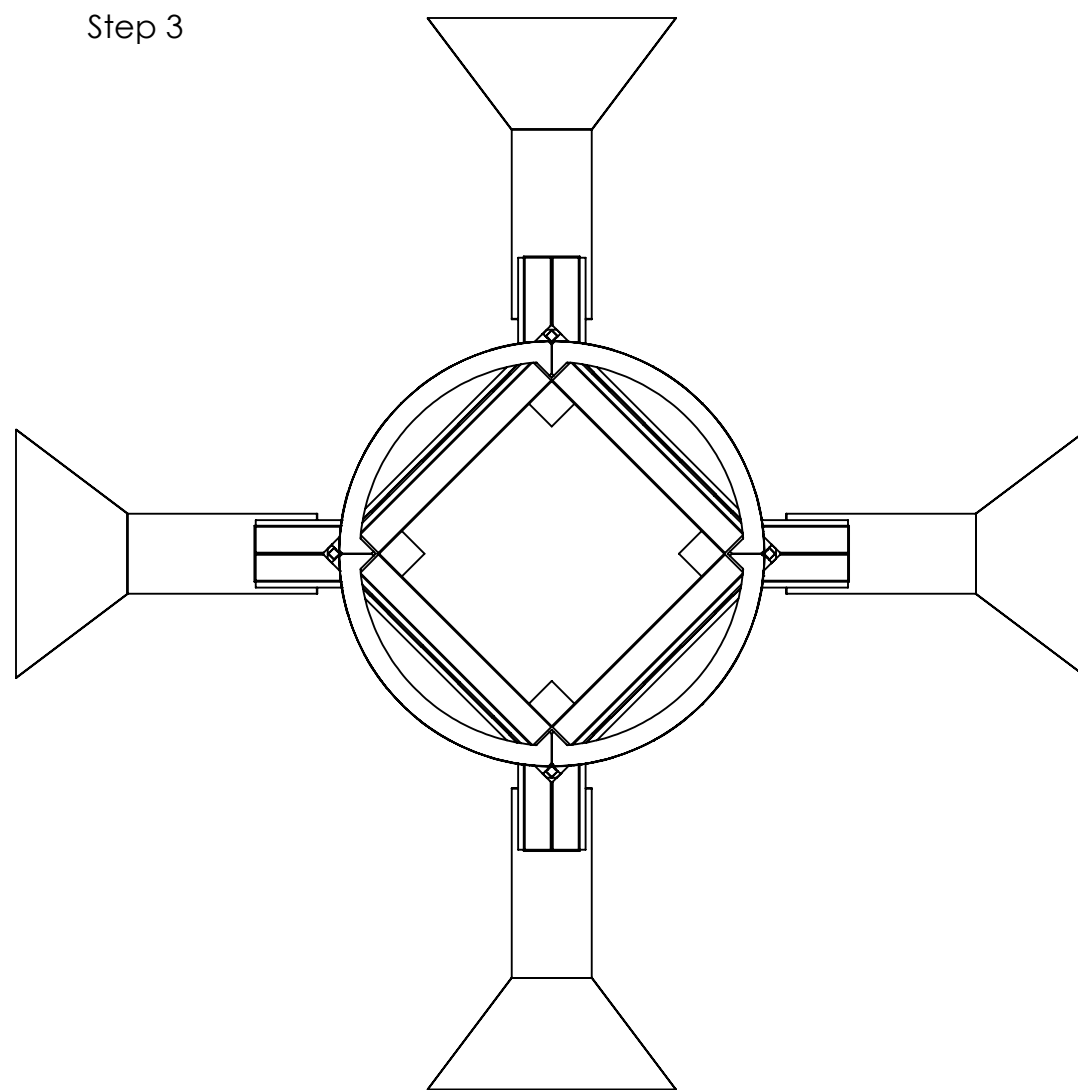


Bottom View



4X  
DETAIL B  
SCALE 1 : 12



Step 3



DETAIL C  
SCALE 1 : 12

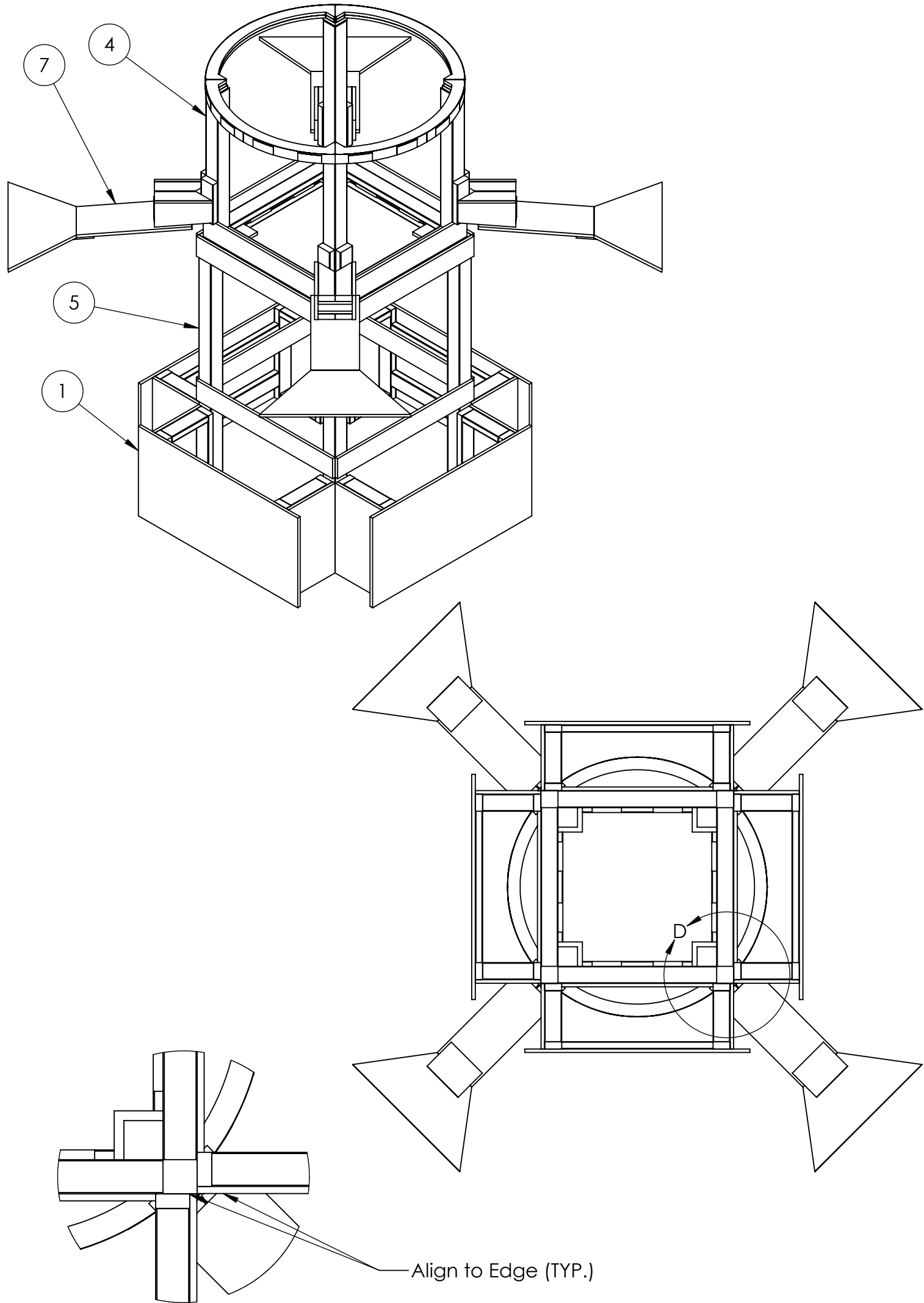
It is recommended to install Safety Edging on (7)

1. Align 4x (7) to (4) on the assembly from Step 2, as shown.
2. 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.
3. Optional: It is recommended to install safety edging on (7) at this time. Safety edging could be pool noodles, baby proofing material, etc.

UNLESS OTHERWISE SPECIFIED:	FIELD	NAME	DATE	  TITLE: Hub - Simple Build - Full Hub Assembly	
	DRAWN	KAMC	1/4/2022		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/2$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .50$	PROPRIETARY AND CONFIDENTIAL				
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MATERIAL/FINISH:	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE C DWG. NO. TE-22000 SCALE: 1:24	REV   SHEET 4 OF 6
DO NOT SCALE DRAWING					



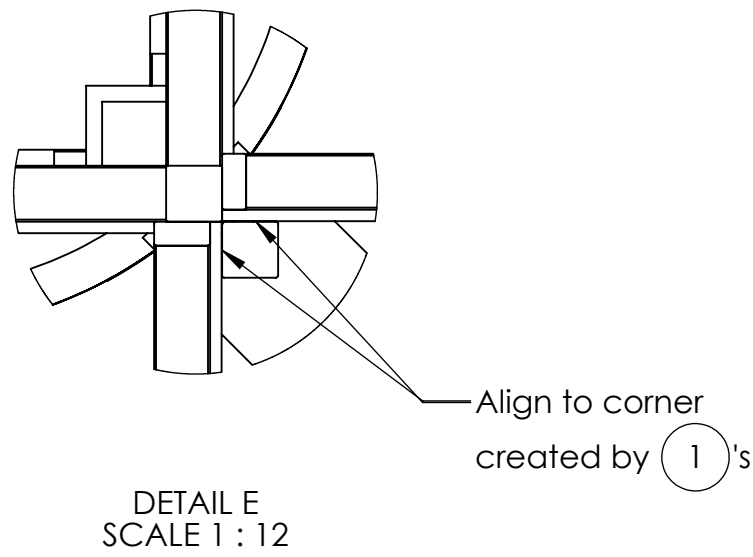
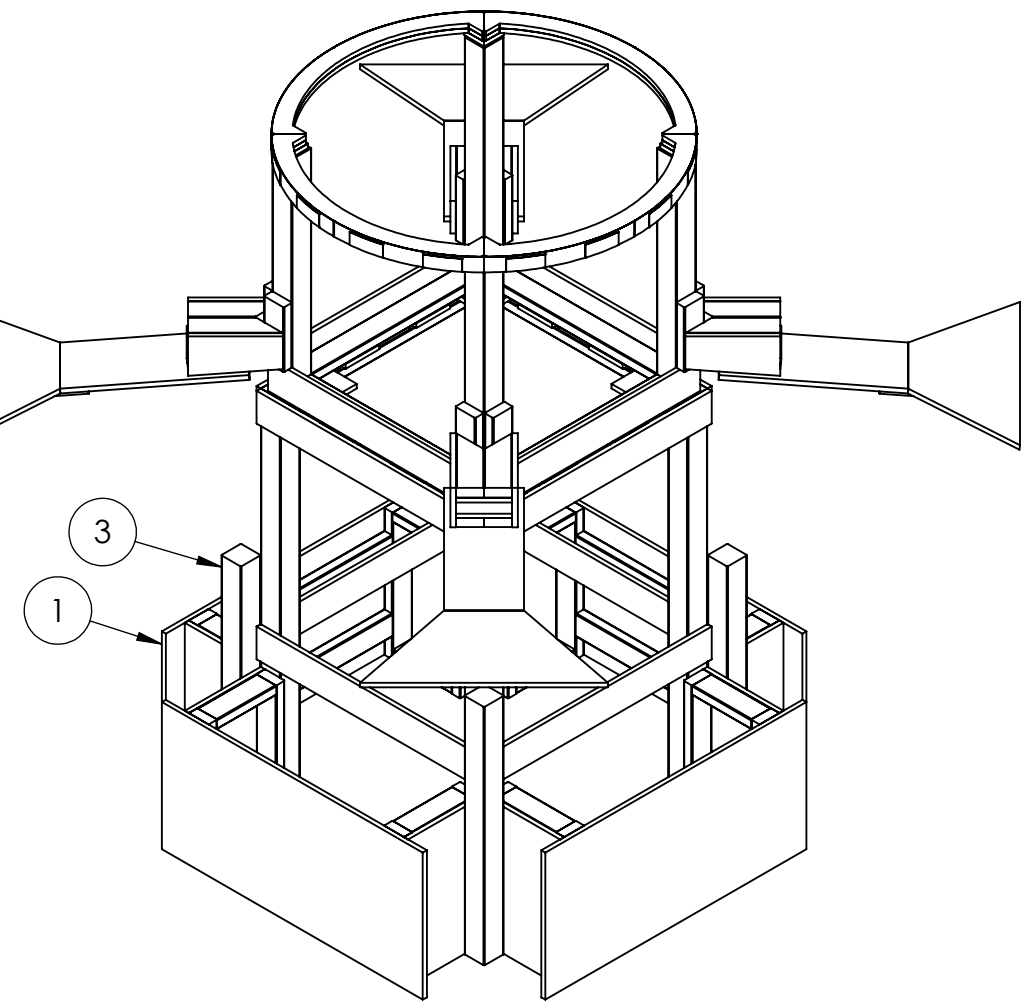
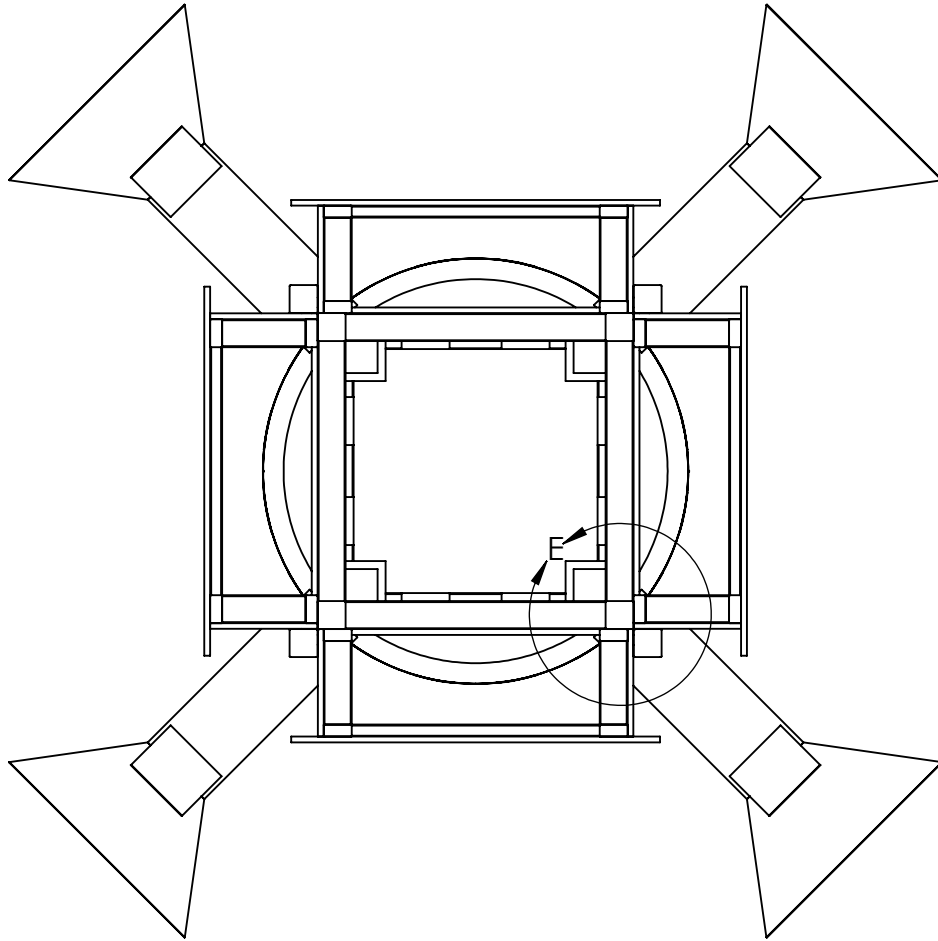
Step 4



DETAIL D  
SCALE 1 : 12

- Align 4x (1) to (5) from Step 3, as shown.
- Connect using 3.5" long screws. It is recommended to use 8x screws per (1) , 4x into each 2"x4" lumber of (1) .

Step 5



- Align 4x (3) to corners created by (1)'s in Step 4 , as shown.
- Connect (3) to the surrounding 2x (1) using 2" long screws. It is recommended to use 8x screws per (3) , 4x screws per (1) .

UNLESS OTHERWISE SPECIFIED:

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

**MATERIAL/FINISH:**

DO NOT SCALE DRAWING

FIELD

DRAWN

NAME

KAMC

DATE

1/4/2022

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**COMMENTS:**

REMOVE ALL BURRS AND SHARP EDGES.



**FIRST**  
ROBOTICS  
COMPETITION



TITLE:

Hub - Simple Build - Full  
Hub Assembly

SIZE

**C**

DWG. NO.

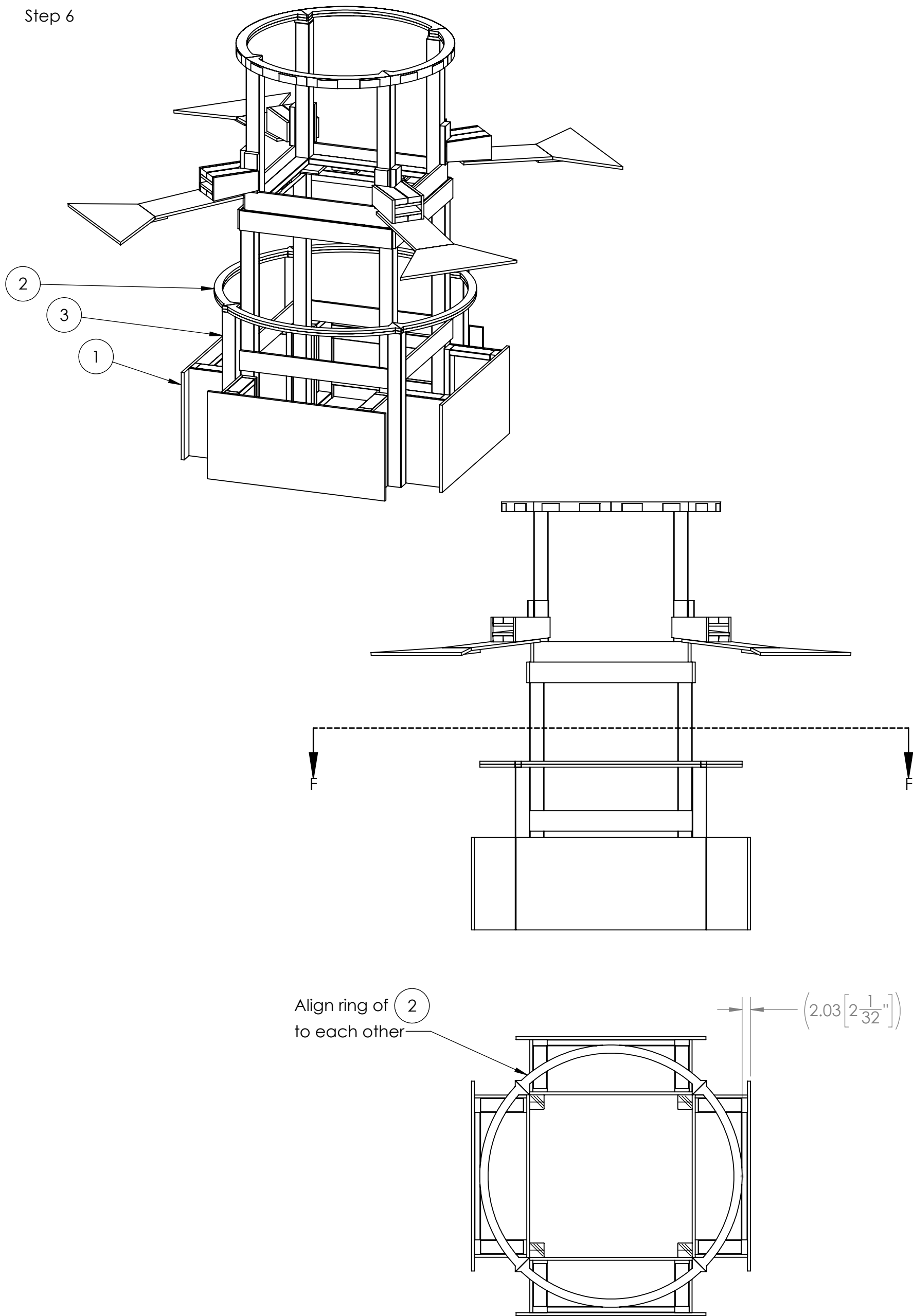
TE-22000

REV

SCALE: 1:24

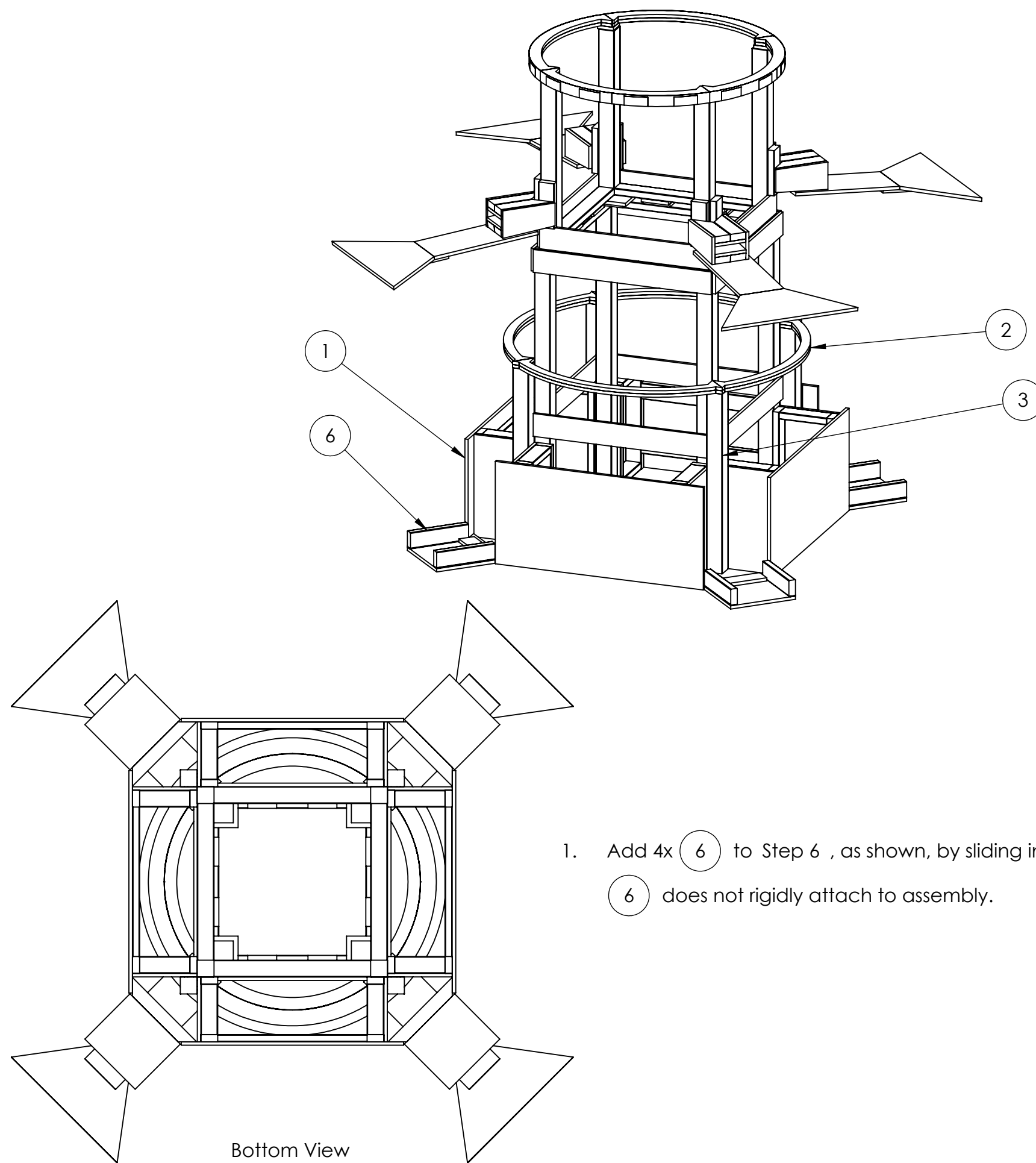
SHEET 5 OF 6

Step 6





- 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.
- 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).

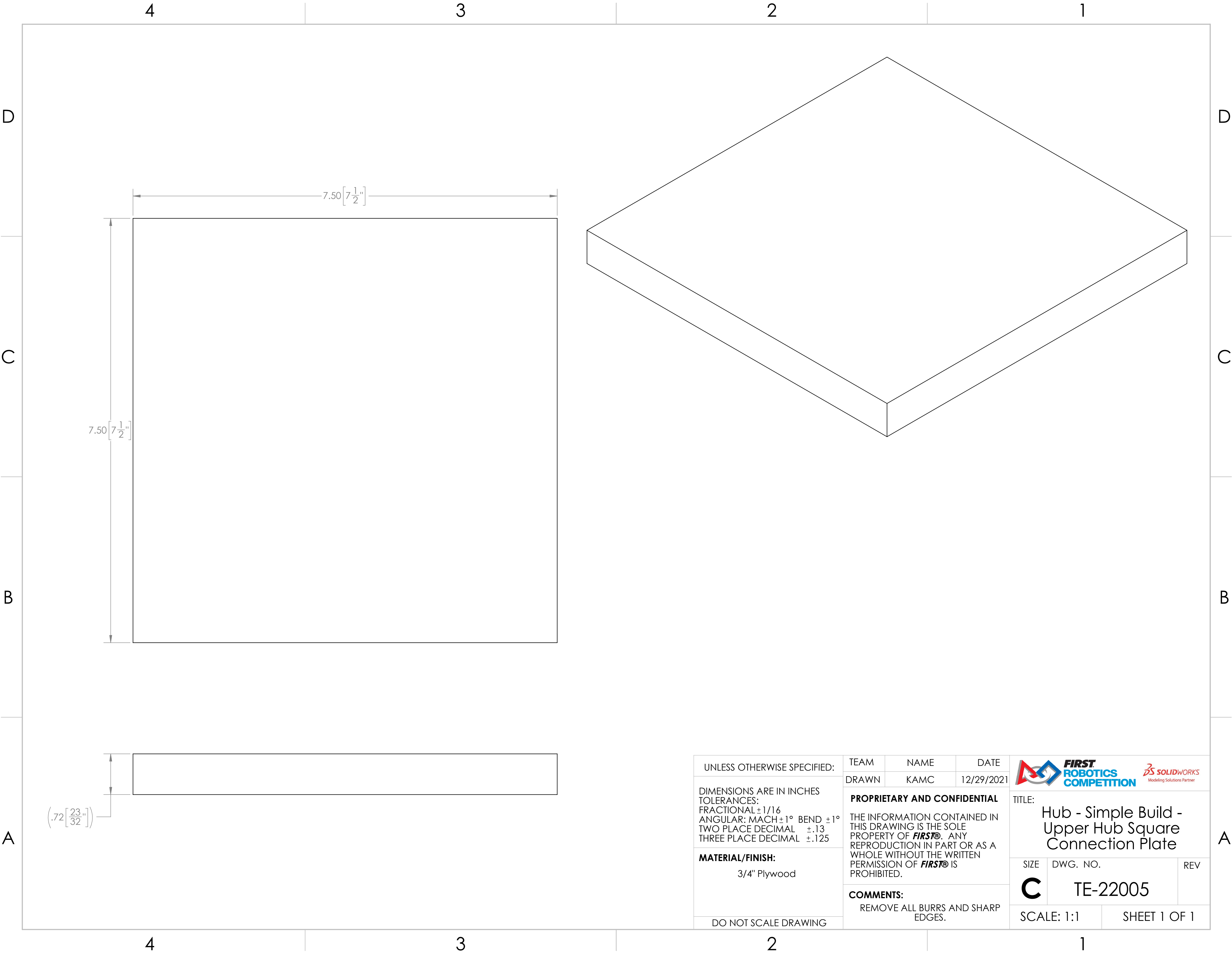
Step 7





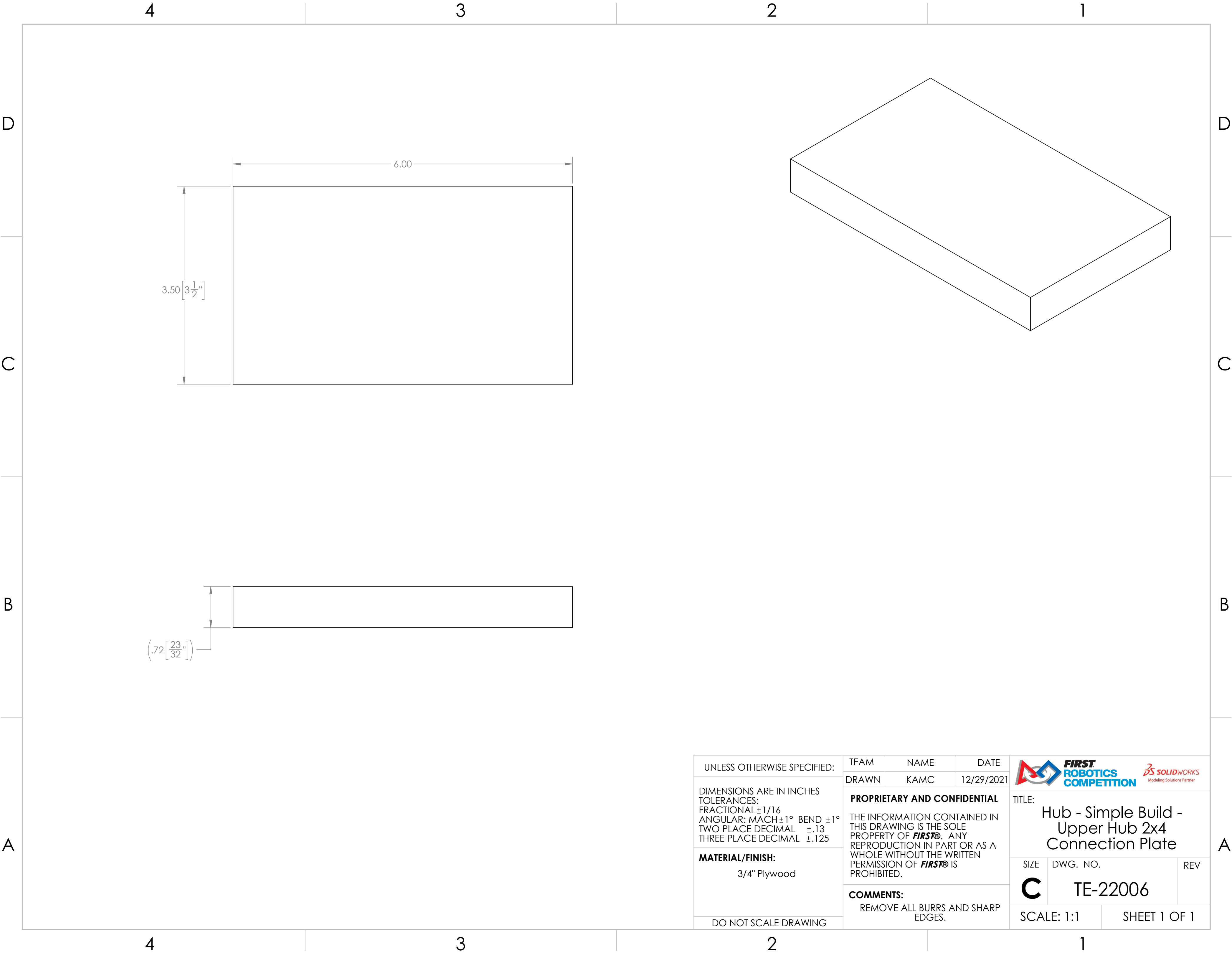
- Add 4x (6) to Step 6, as shown, by sliding into place.  
(6) does not rigidly attach to assembly.



UNLESS OTHERWISE SPECIFIED:		FIELD	NAME	DATE	 <b>FIRST ROBOTICS COMPETITION</b>		 <b>SOLIDWORKS</b> Modeling Solutions Partner		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2 ANGULAR: MACH ± 1° BEND ± 1° TWO PLACE DECIMAL ± .50		DRAWN	KAMC	1/4/2022	TITLE: Hub - Simple Build - Full Hub Assembly				
		PROPRIETARY AND CONFIDENTIAL							
		THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			SIZE				DWG. NO.
MATERIAL/FINISH:		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			C		TE-22000		
DO NOT SCALE DRAWING							SCALE: 1:24		SHEET 6 OF 6



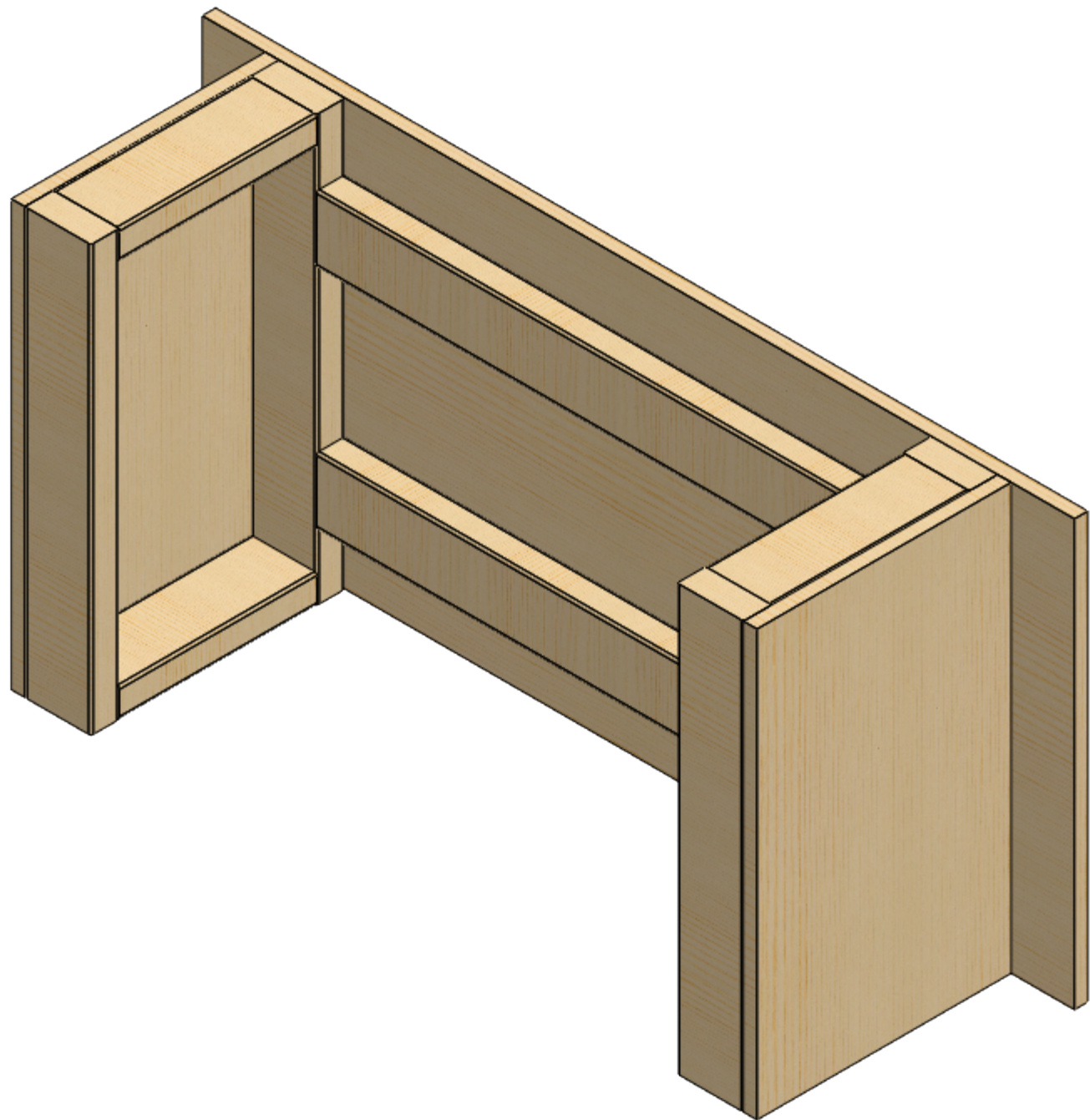
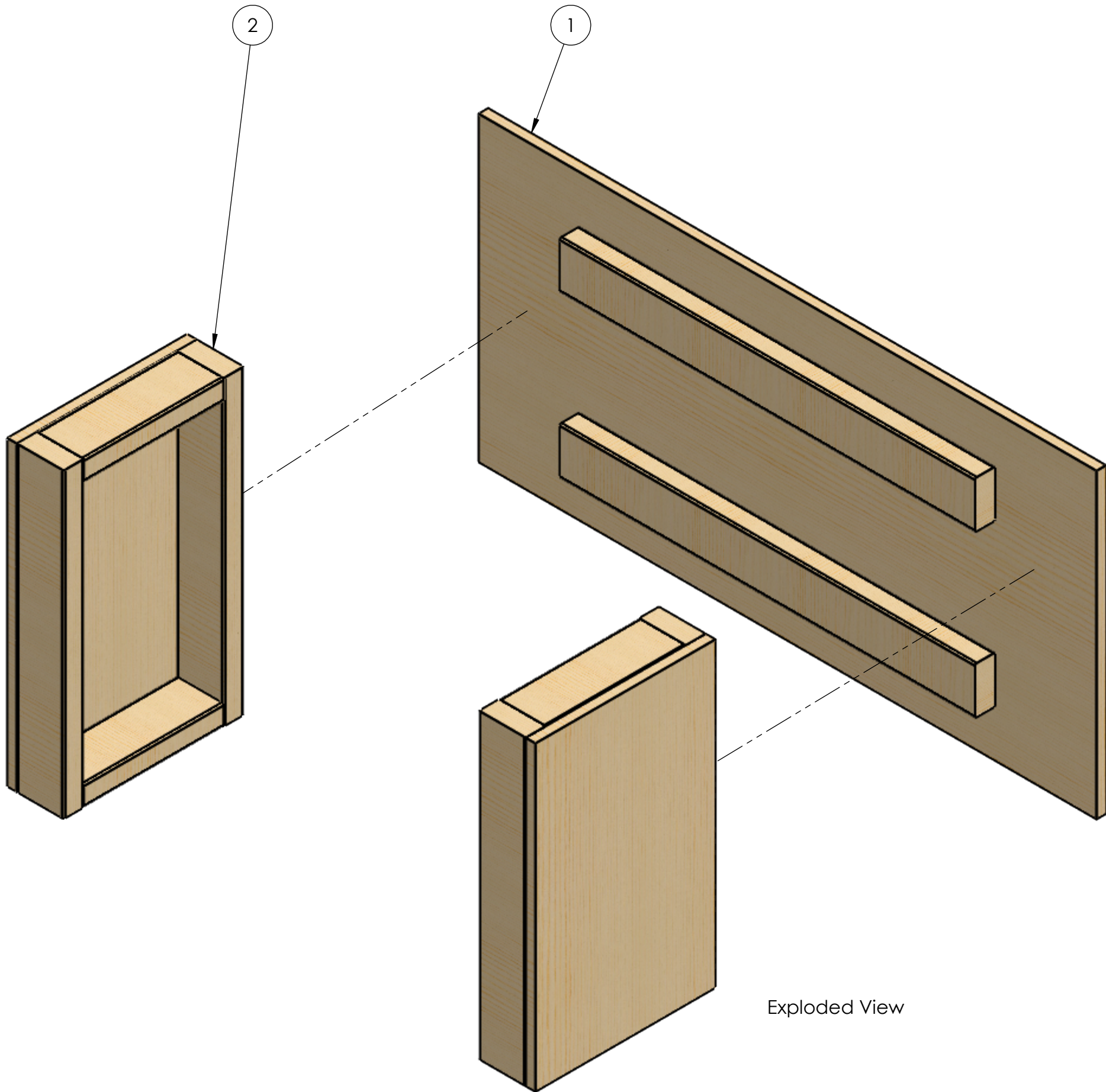


UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>  3/4" Plywood  DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>	
	DRAWN	KAMC	12/29/2021		
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.				
TITLE:				Hub - Simple Build - Upper Hub Square Connection Plate	
SIZE		DWG. NO.		REV	
C		TE-22005			
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  <b>MATERIAL/FINISH:</b>  3/4" Plywood  DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>	
	DRAWN	KAMC	12/29/2021		
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE: Hub - Simple Build - Upper Hub 2x4 Connection Plate	
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			SIZE <b>C</b>	DWG. NO. TE-22006
		SCALE: 1:1		SHEET 1 OF 1	



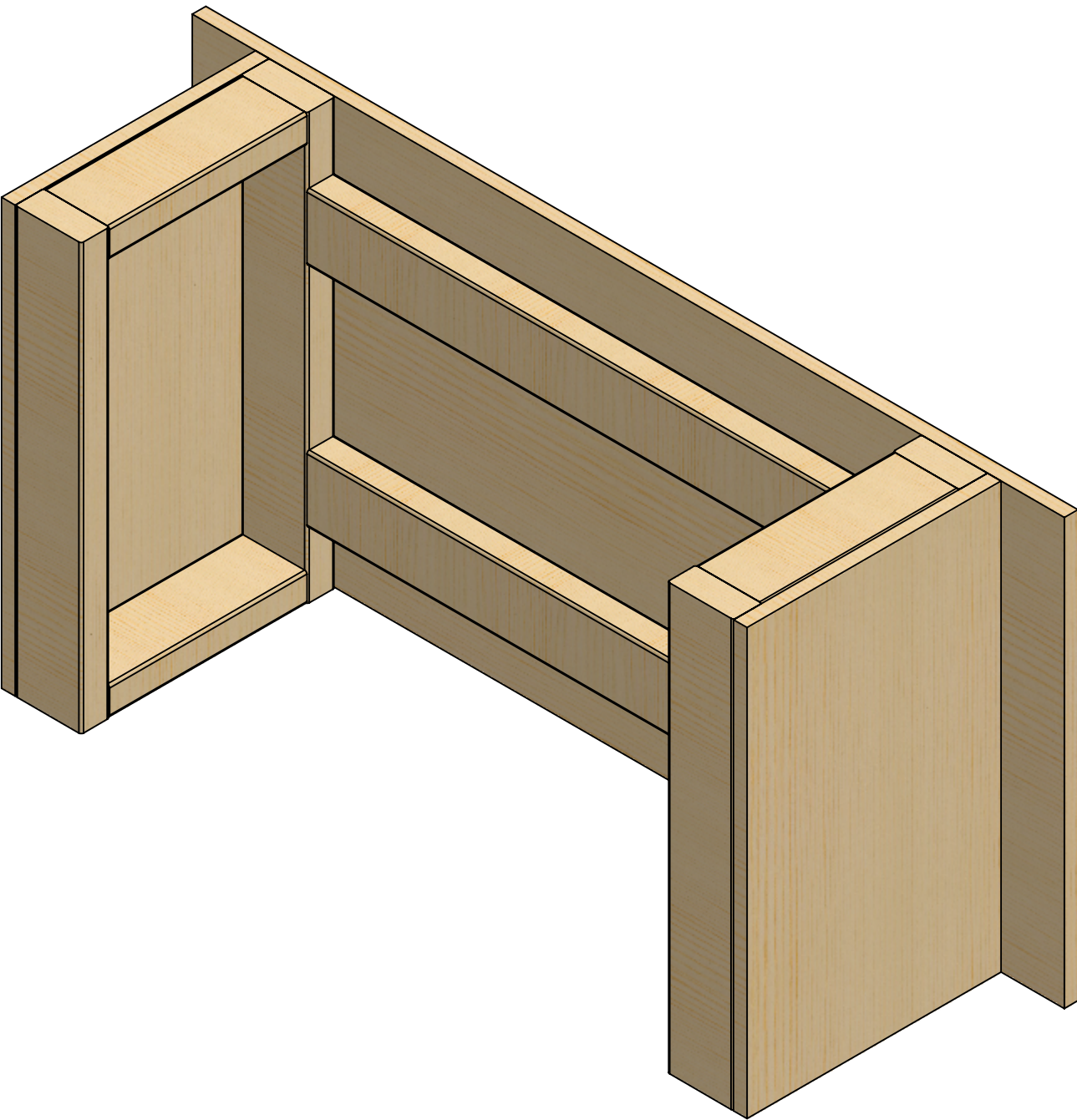




Hardware Needed:  
#8 x 2" Long Screw - Qty 10

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 ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>     <b>DO NOT SCALE DRAWING</b>	TEAM	NAME	DATE	<div><div></div><div>TITLE: Hub - Simple Build - Fender Assembly</div><div><div>SIZE C</div><div>DWG. NO. TE-22010</div><div>REV</div></div><div><div>SCALE: 1:6</div><div>SHEET 1 OF 3</div></div></div>
	DRAWN	KAMC	12/30/2021	
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	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			

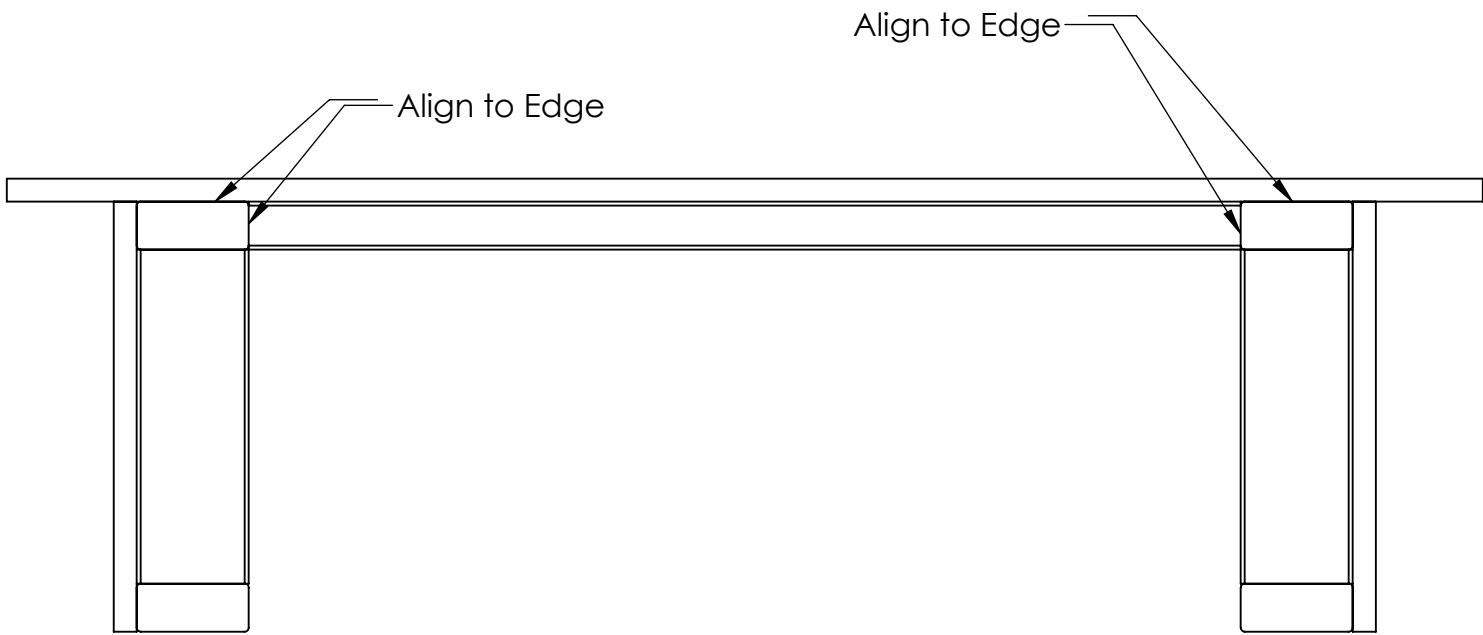




UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>     <b>DO NOT SCALE DRAWING</b>	TEAM	NAME	DATE	<div></div>	
	DRAWN	KAMC	12/30/2021		
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	<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.
C				TE-22010	
			SCALE: 1:6		SHEET 2 OF 3

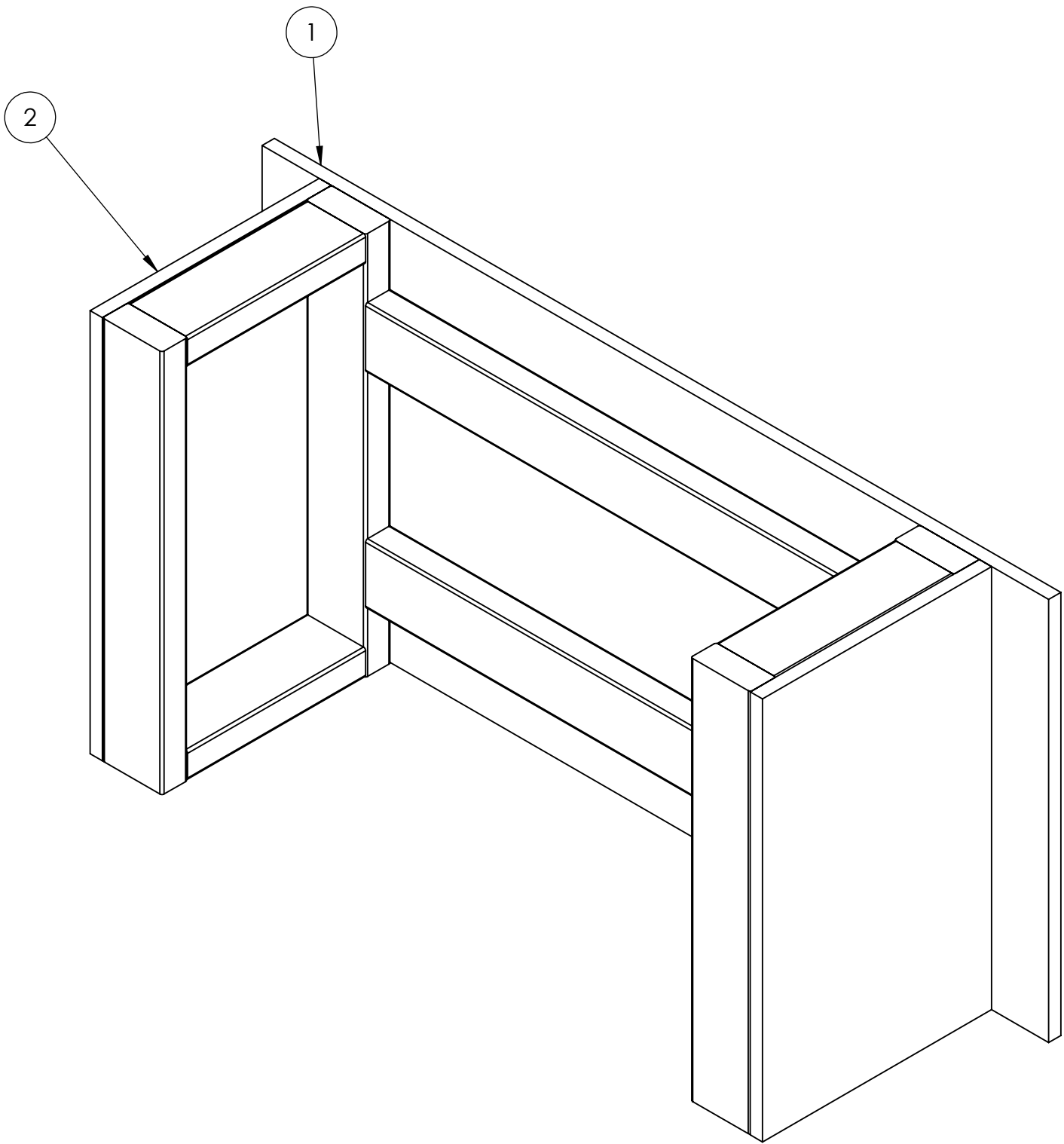


Step 1



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  $\pm 1/16$   
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

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**COMMENTS:**

REMOVE ALL BURRS AND SHARP EDGES.



**FIRST**  
**ROBOTICS**  
**COMPETITION**

**SOLIDWORKS**  
Modeling Solutions Partner

TITLE:

Hub - Simple Build -  
Fender Assembly

SIZE

**C**

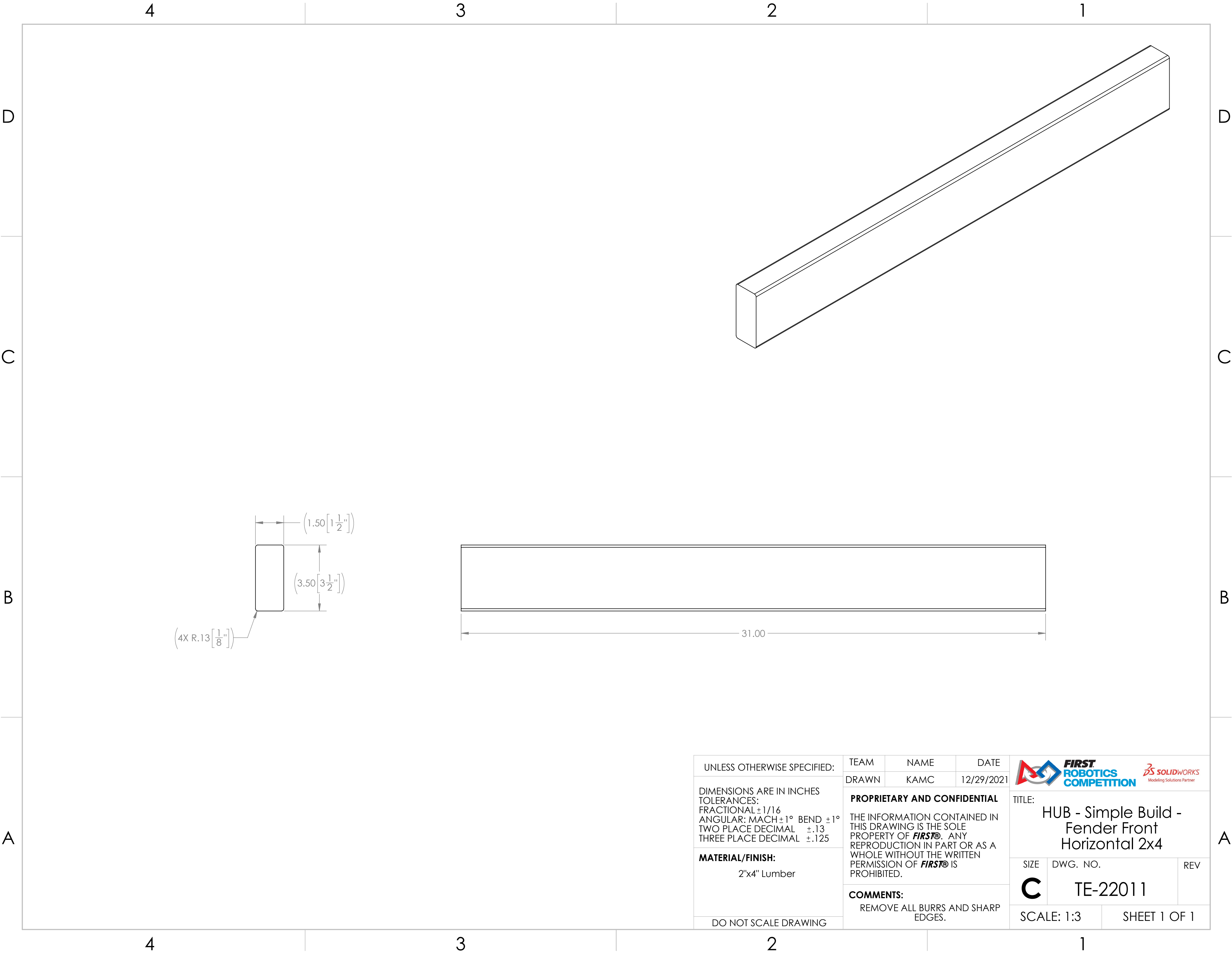
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TE-22010

REV

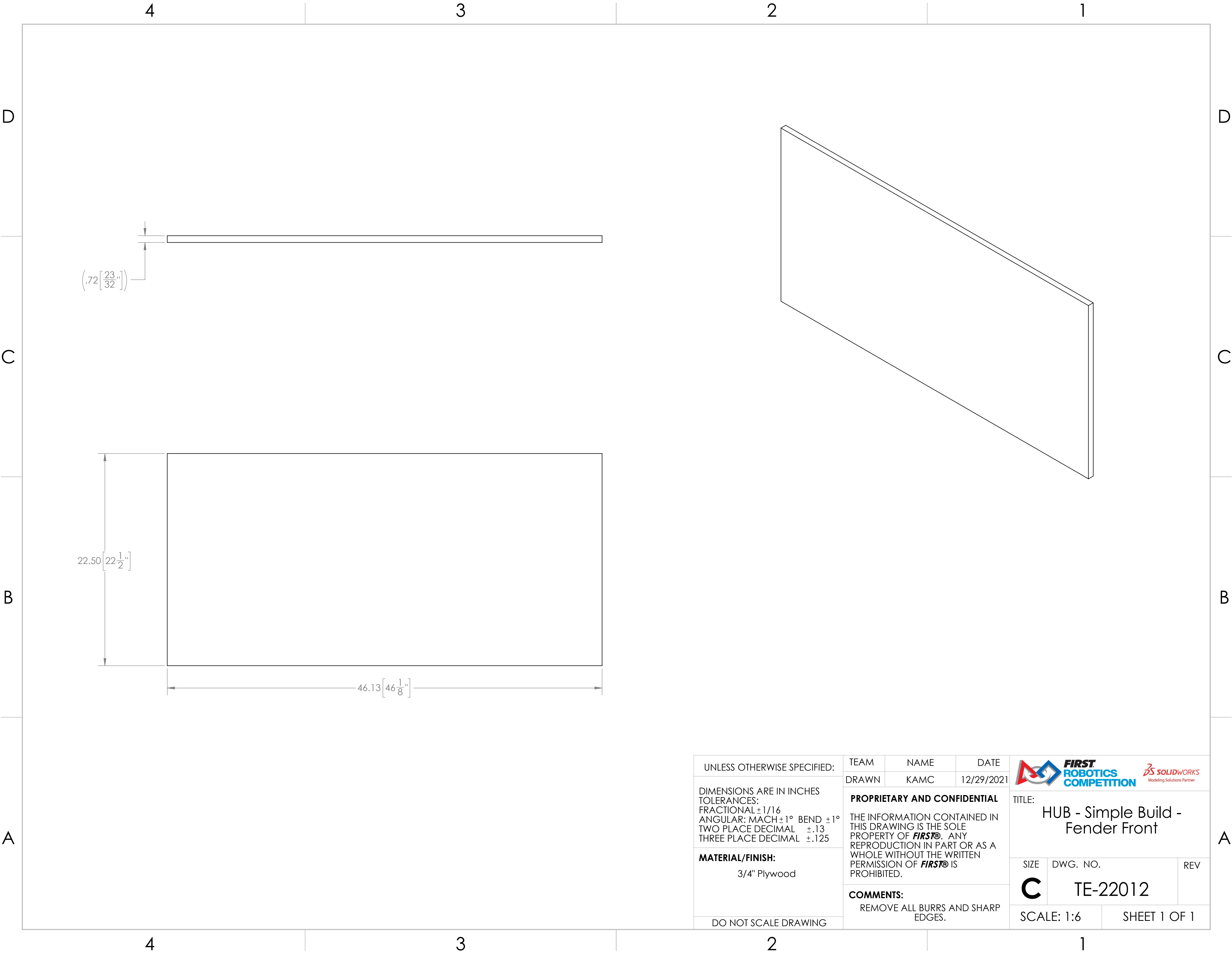
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SHEET 3 OF 3



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	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE:  HUB - Simple Build - Fender Front Horizontal 2x4		
	<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	TE-22011	
<b>MATERIAL/FINISH:</b>  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  <b>MATERIAL/FINISH:</b>  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			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.					
SIZE		DWG. NO.		REV		
C		TE-22012				
SCALE: 1:6			SHEET 1 OF 1			

D

C

B

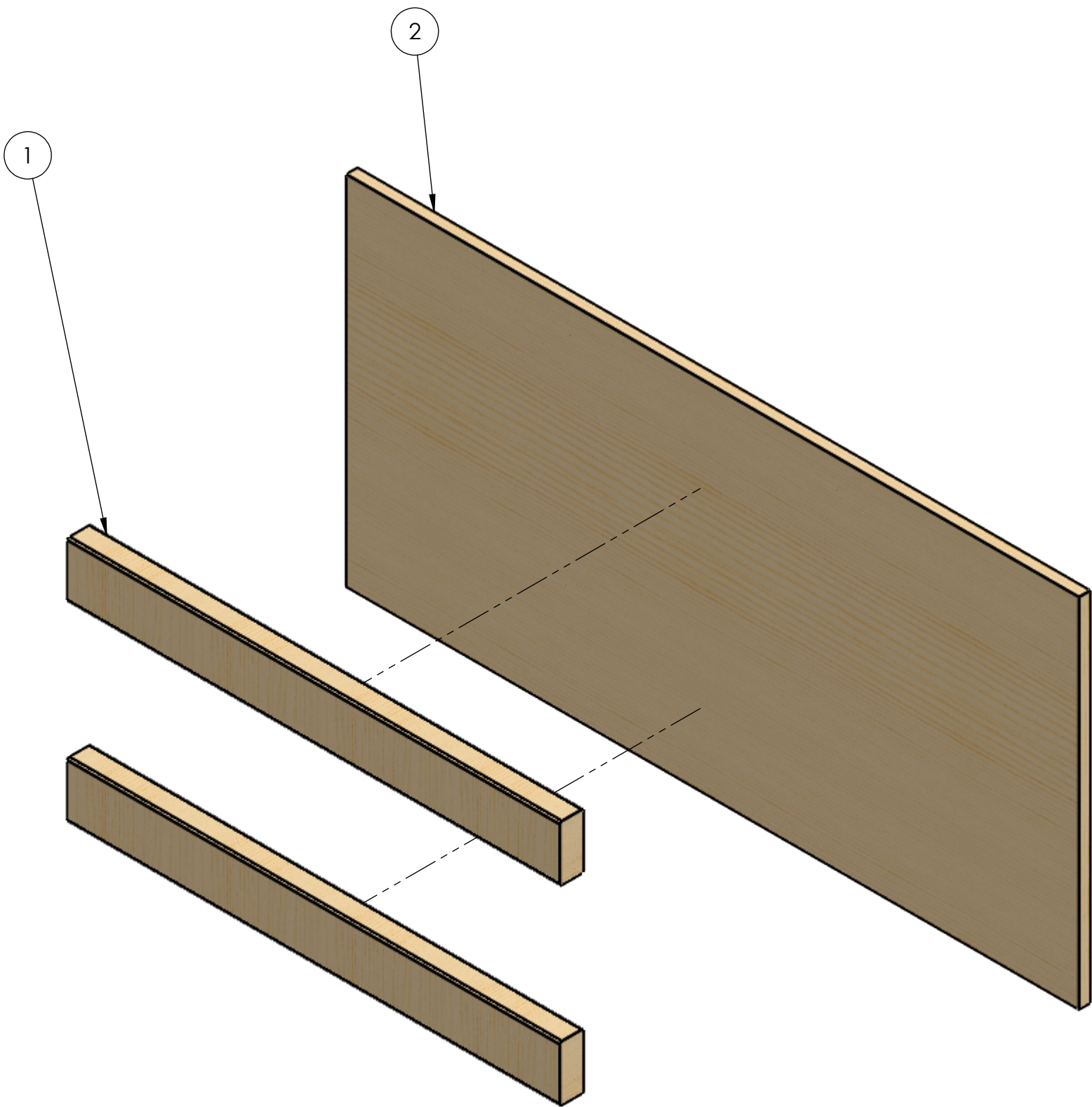
A

D

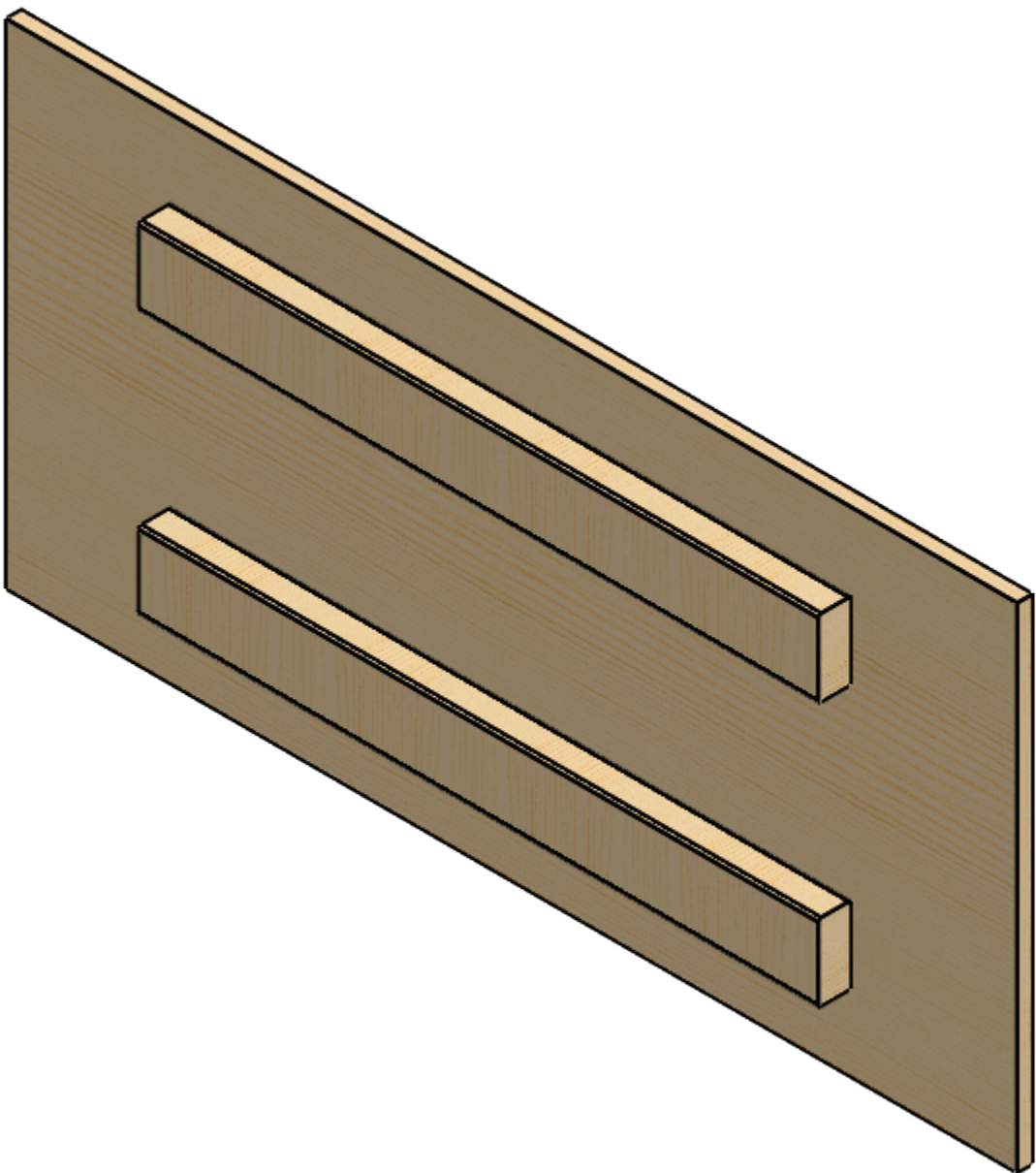
C

B

A



Exploded View



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

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

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COMMENTS:

REMOVE ALL BURRS AND SHARP EDGES.



**FIRST**  
ROBOTICS  
COMPETITION



TITLE:  
HUB - Basic Build -  
Fender Front Assembly

SIZE

**C**

DWG. NO.

TE-22013

REV

SCALE: 1:6

SHEET 1 OF 2



D

C

B

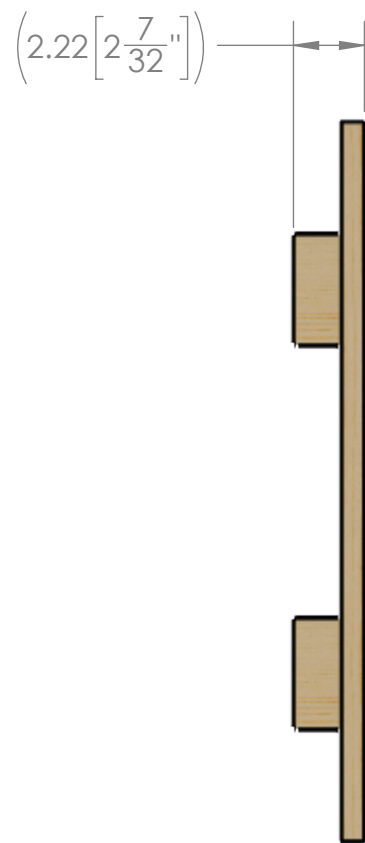
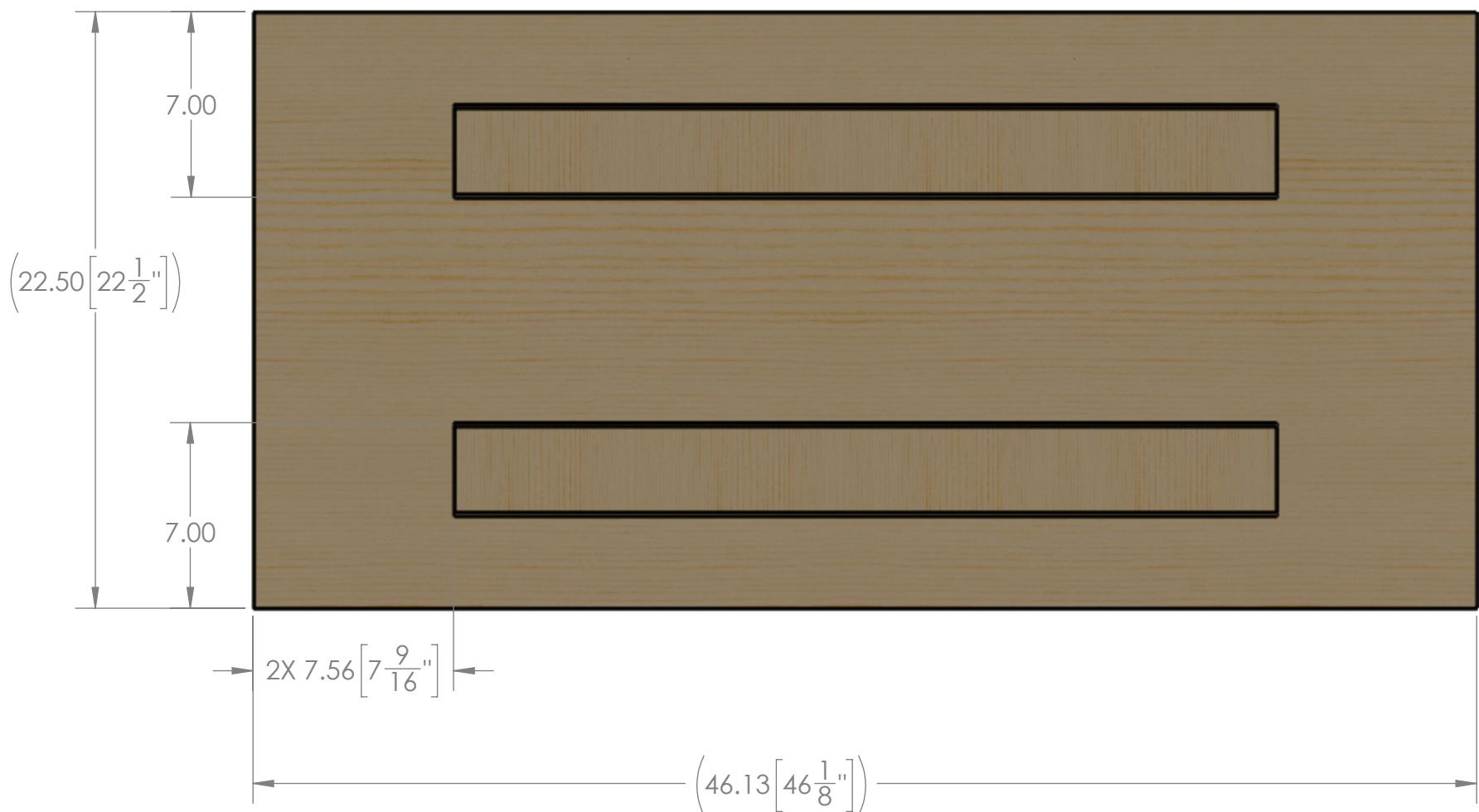
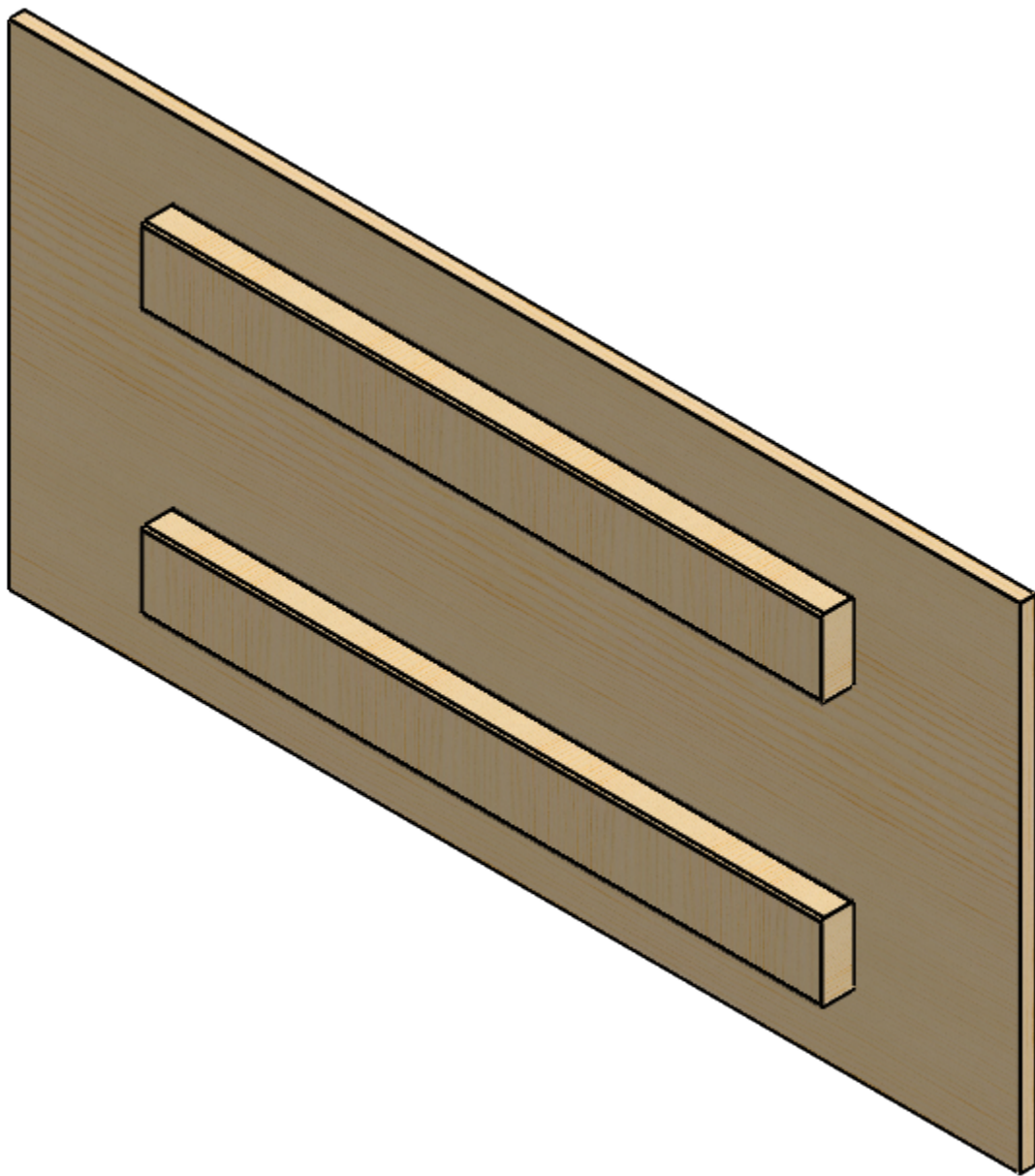
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D

C

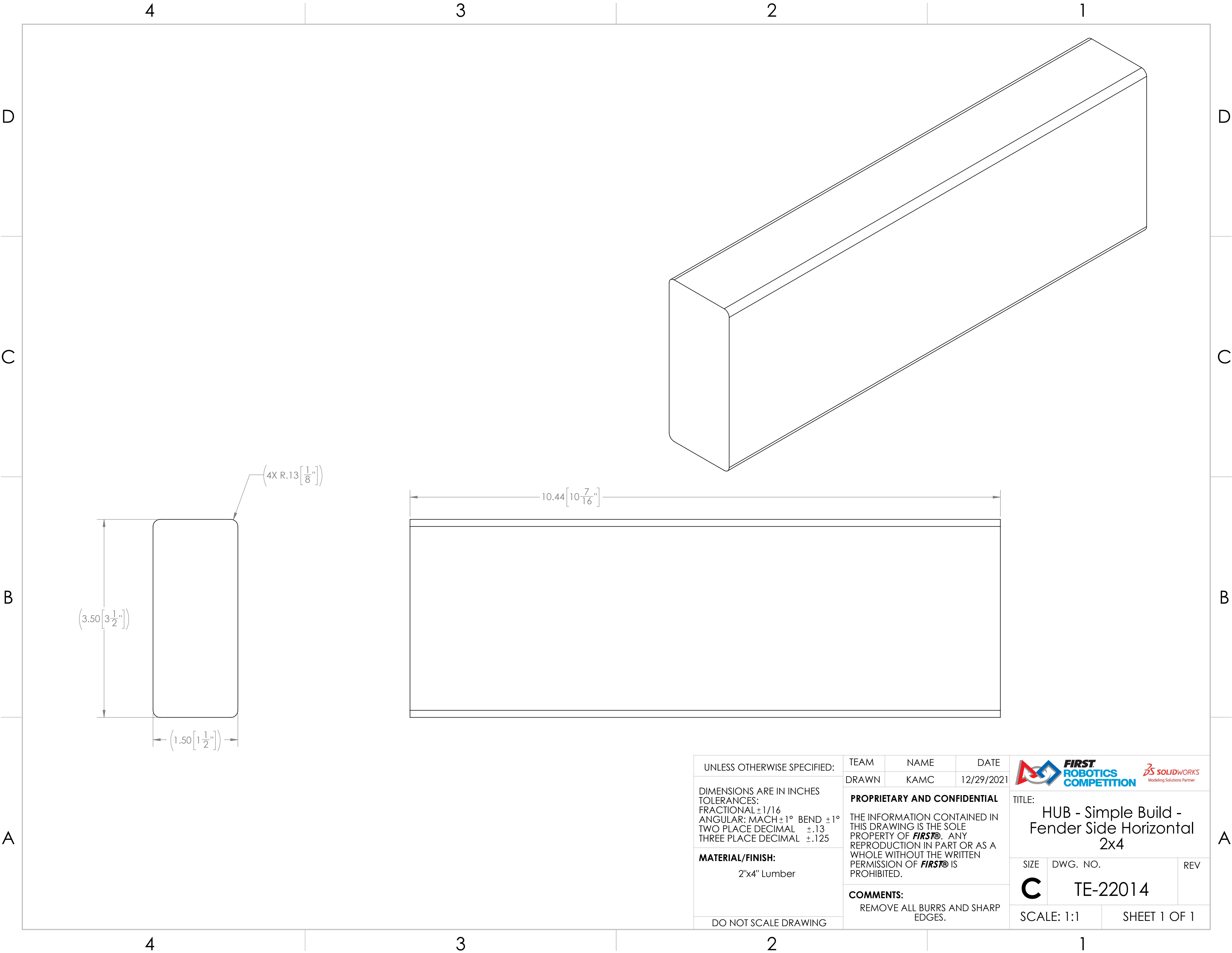
B



A

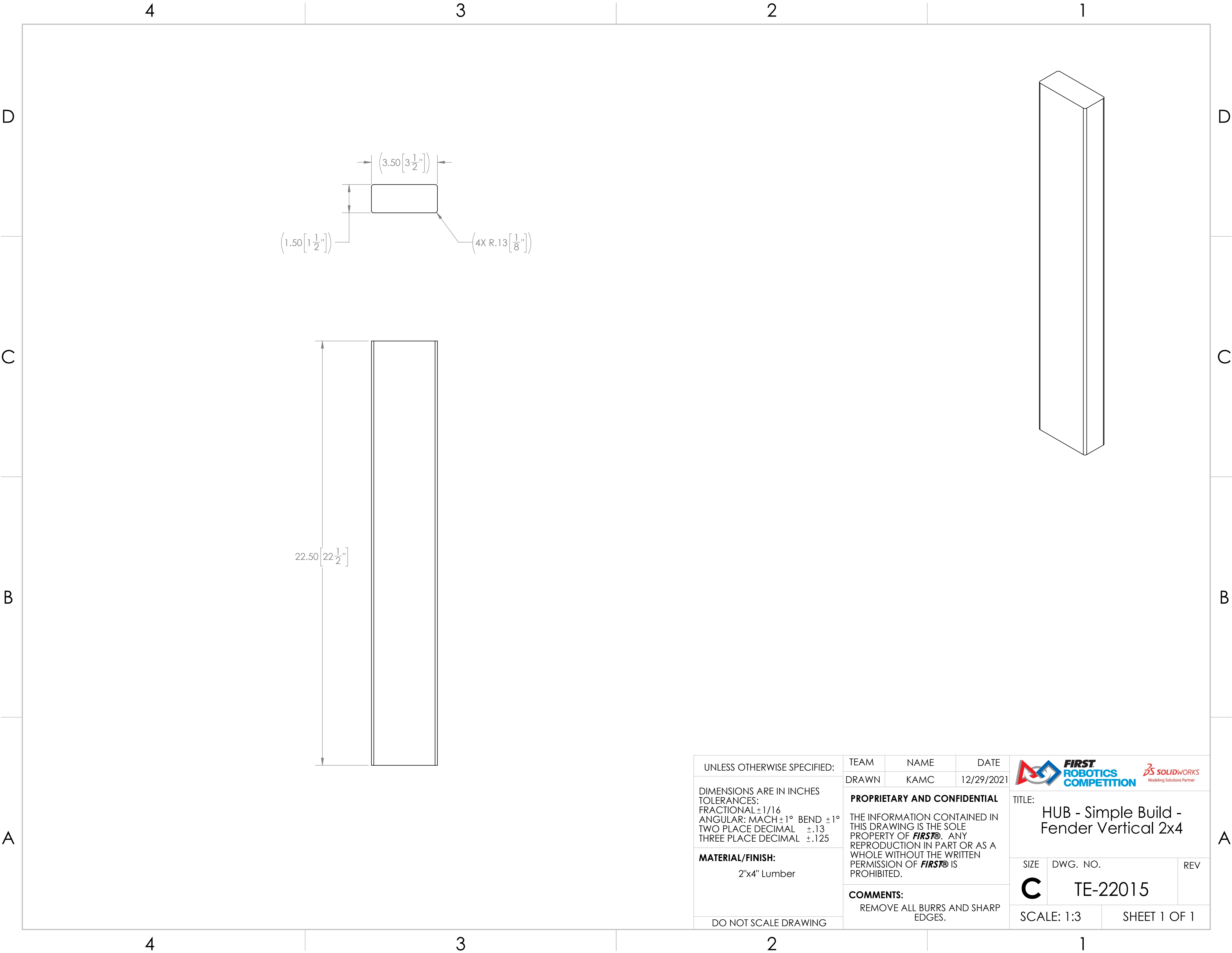




UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>     DO NOT SCALE DRAWING	TEAM	NAME	DATE	 		
	DRAWN	KAMC	12/30/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.				TITLE:  HUB - Basic Build - Fender Front Assembly	
				SIZE	DWG. NO.	REV
				C	TE-22013	
				SCALE: 1:6		SHEET 2 OF 2

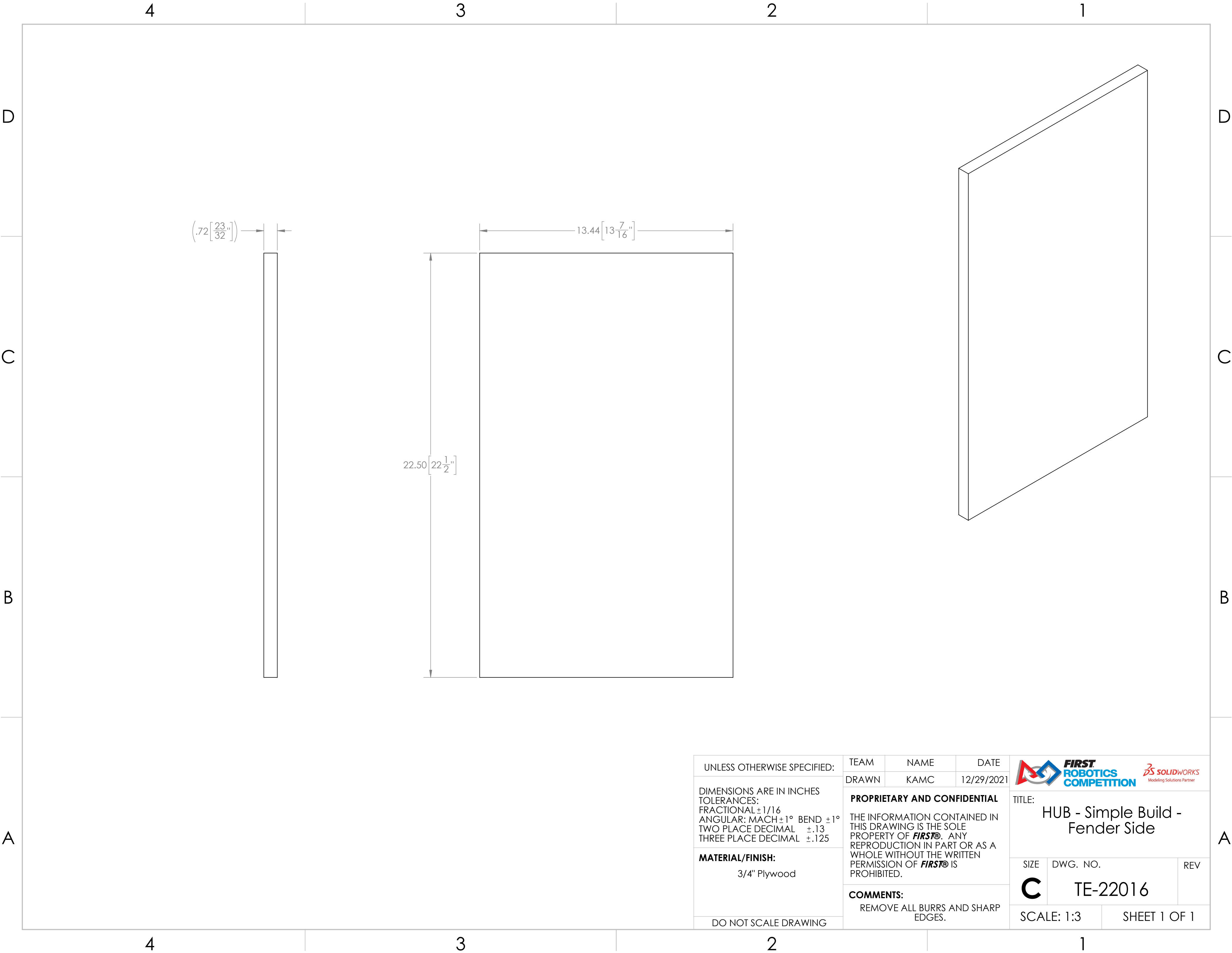






UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>  2"x4" Lumber   DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div> <div>TITLE: HUB - Simple Build - Fender Side Horizontal 2x4</div>		
	DRAWN	KAMC	12/29/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
C				TE-22014		
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  <b>MATERIAL/FINISH:</b>  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		
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.				
SIZE		DWG. NO.		REV	
C		TE-22015			
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  <b>MATERIAL/FINISH:</b>  3/4" Plywood   DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/29/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>			TITLE: HUB - Simple Build - Fender Side		
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			SIZE <b>C</b>	DWG. NO. TE-22016	REV
<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			SCALE: 1:3		SHEET 1 OF 1	



4

3

2

1

D

D

C

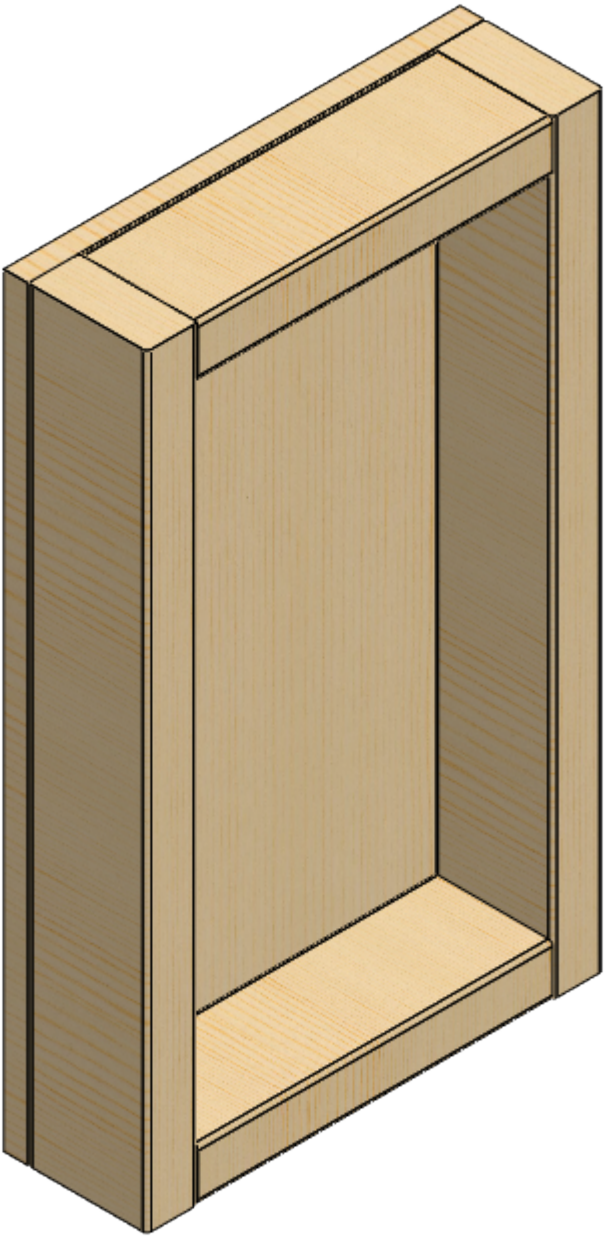
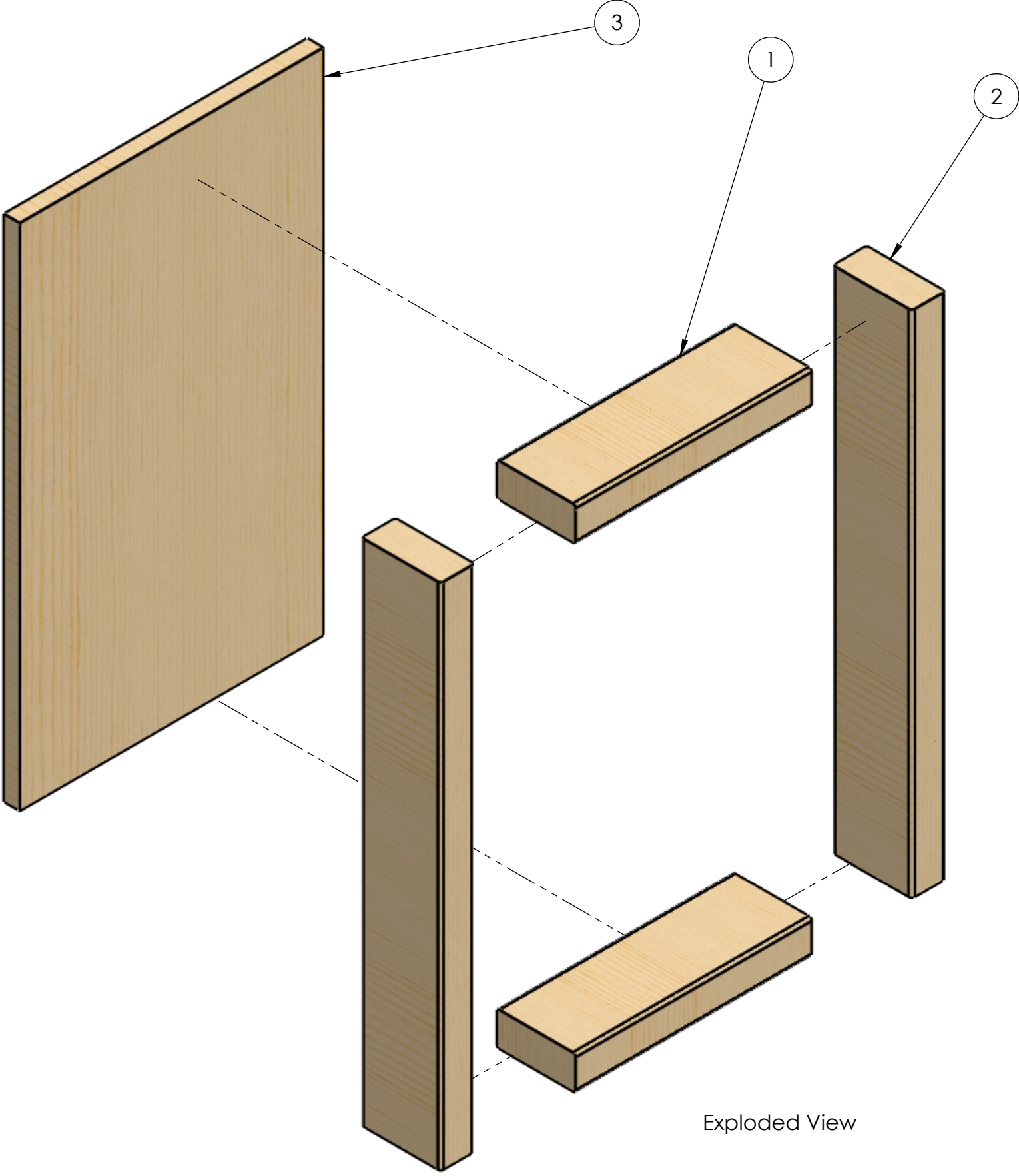
C

B

B



A

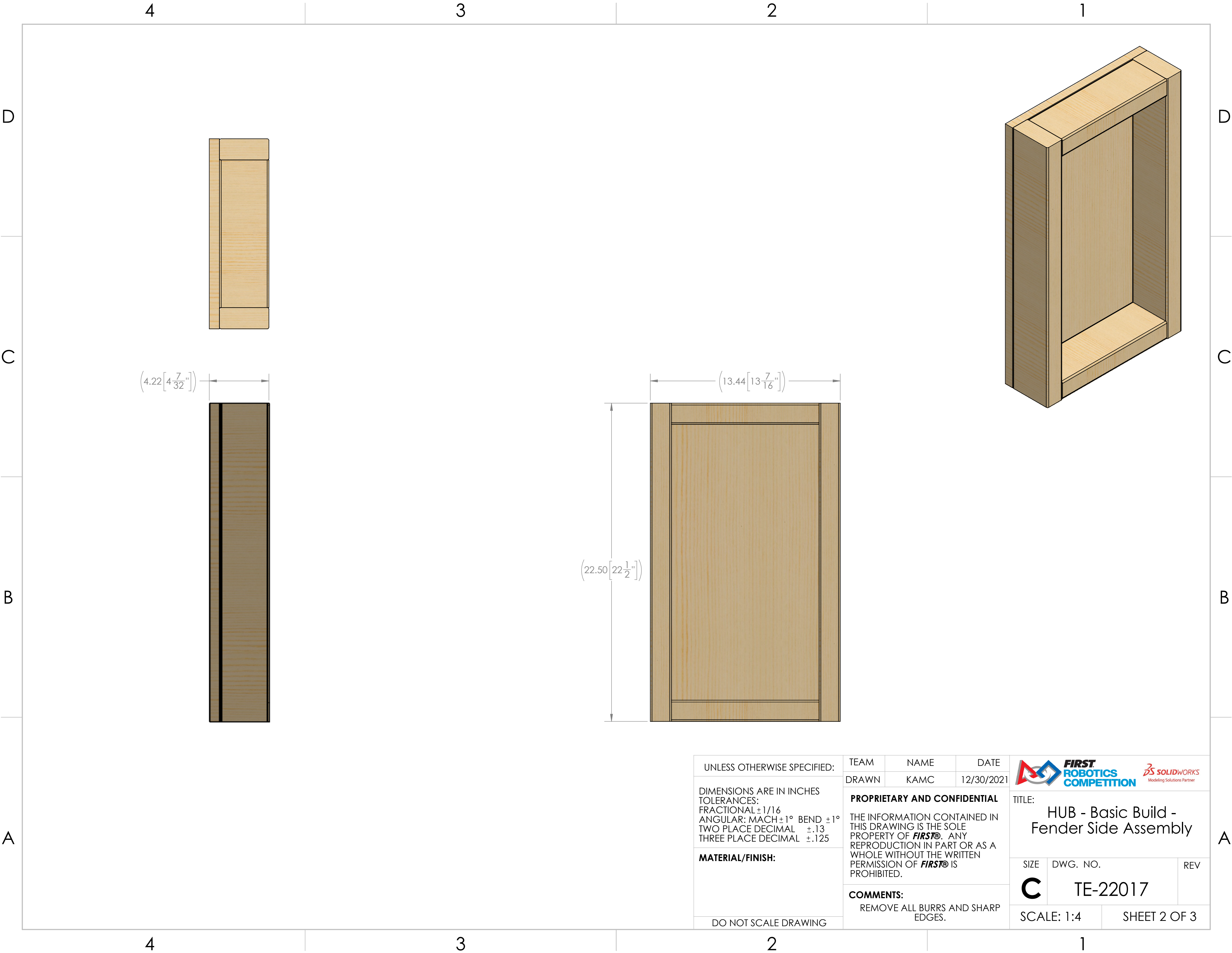
A





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 ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>      <b>DO NOT SCALE DRAWING</b>	TEAM	NAME	DATE	 	
	DRAWN	KAMC	12/30/2021		
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			TITLE:  HUB - Basic Build - Fender Side Assembly	
			SIZE	DWG. NO.	REV
			C	TE-22017	
			SCALE: 1:4		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 $\pm .125$  <b>MATERIAL/FINISH:</b>		TEAM	NAME	DATE	<div></div> <div>TITLE: HUB - Basic Build - Fender Side Assembly</div>	
		DRAWN	KAMC	12/30/2021		
DO NOT SCALE DRAWING		<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			SIZE <b>C</b>	DWG. NO. TE-22017
		<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			REV	
					SCALE: 1:4	
					SHEET 2 OF 3	



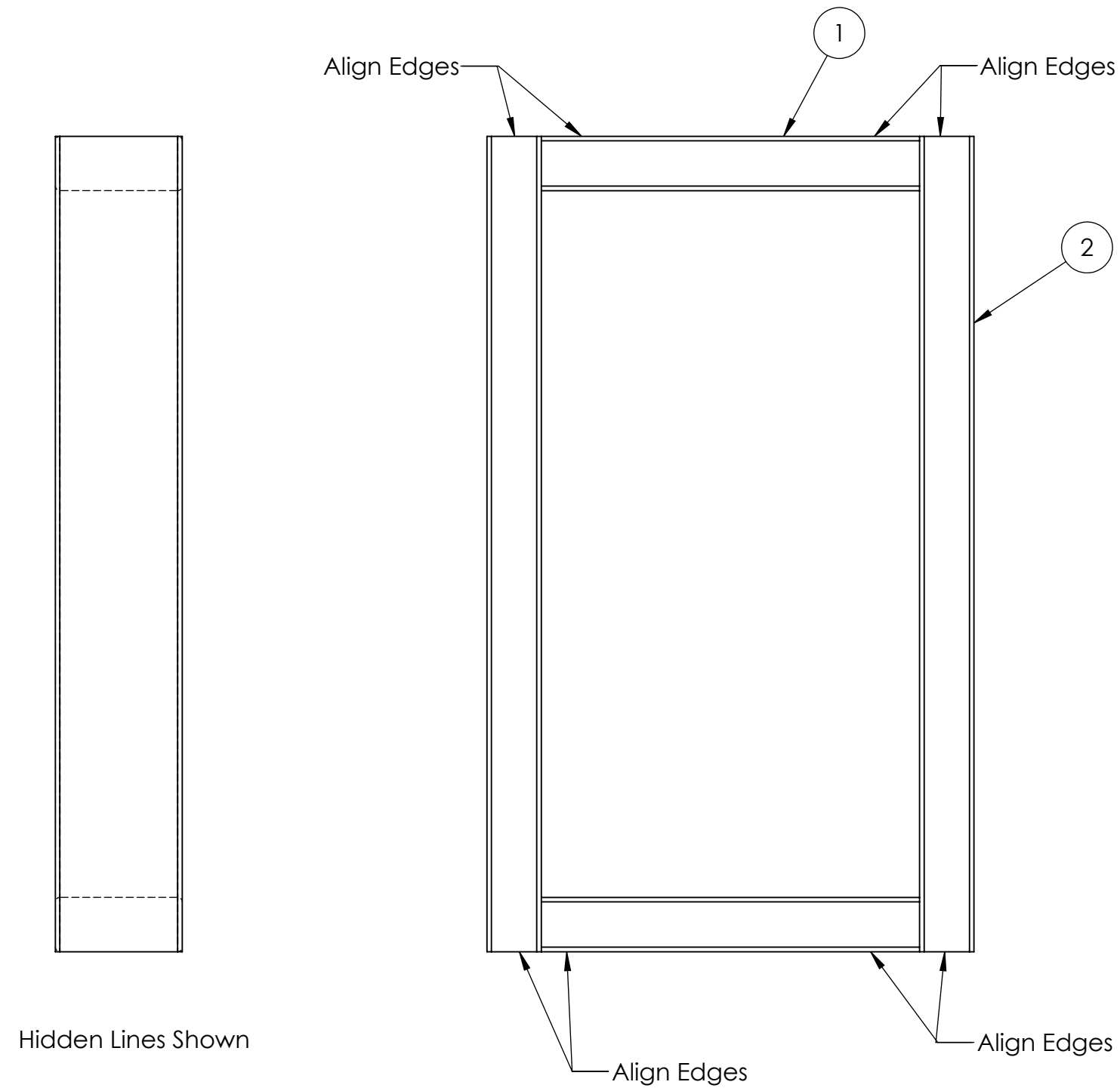
4

3

2

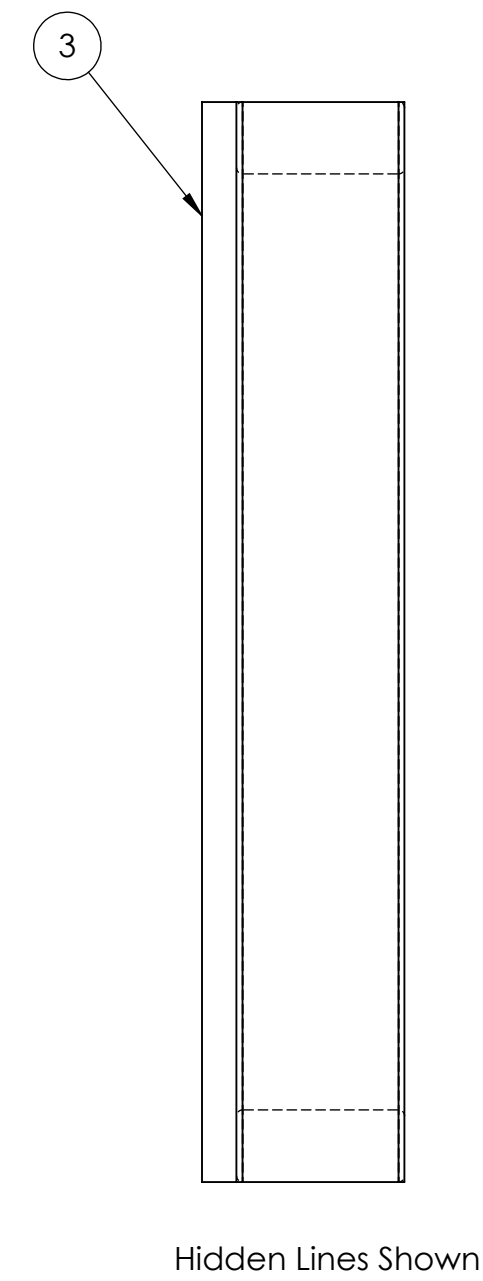
1

Step 1

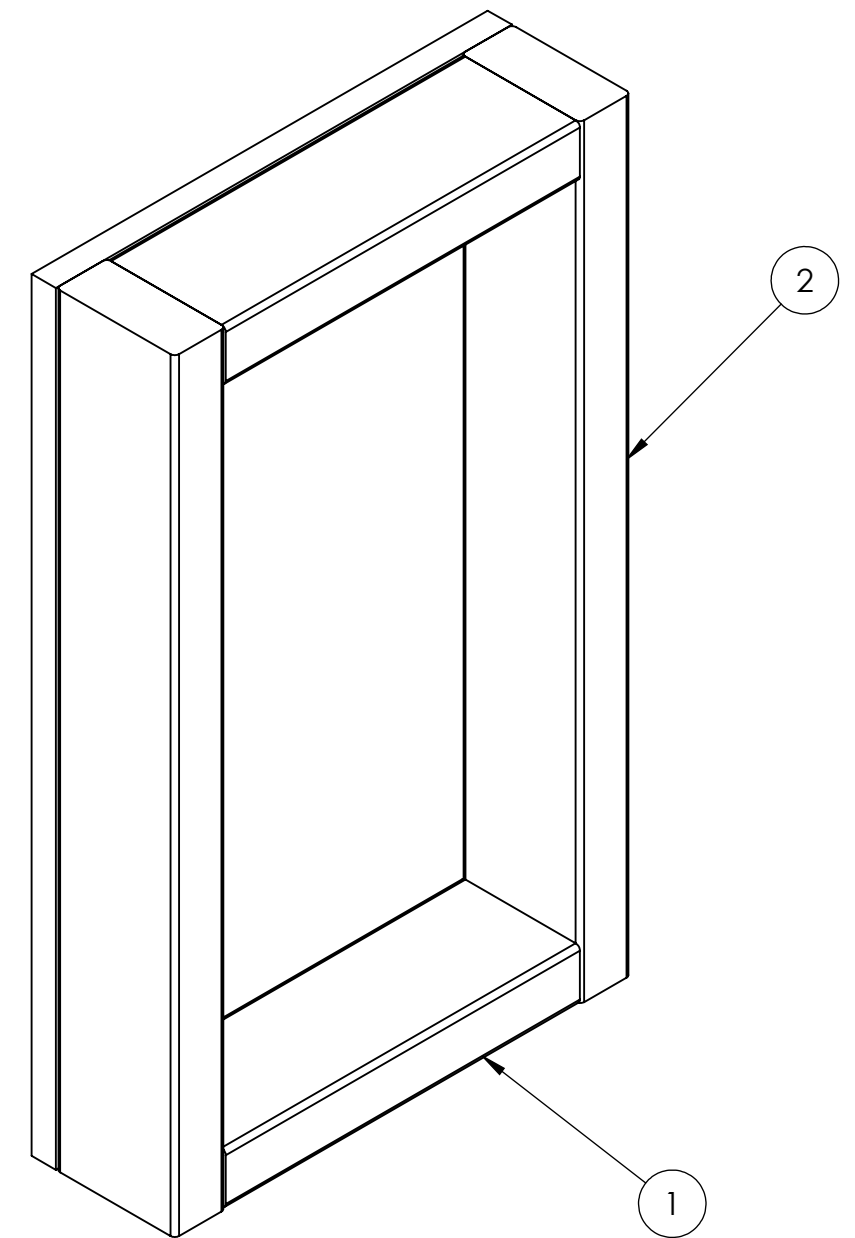




1. Align 2x (1) and 2x (2), as shown.
2. Attach using 2.5" long screws. It is recommended to use 2x screws into each interface between a (2) and (1).

Step 2

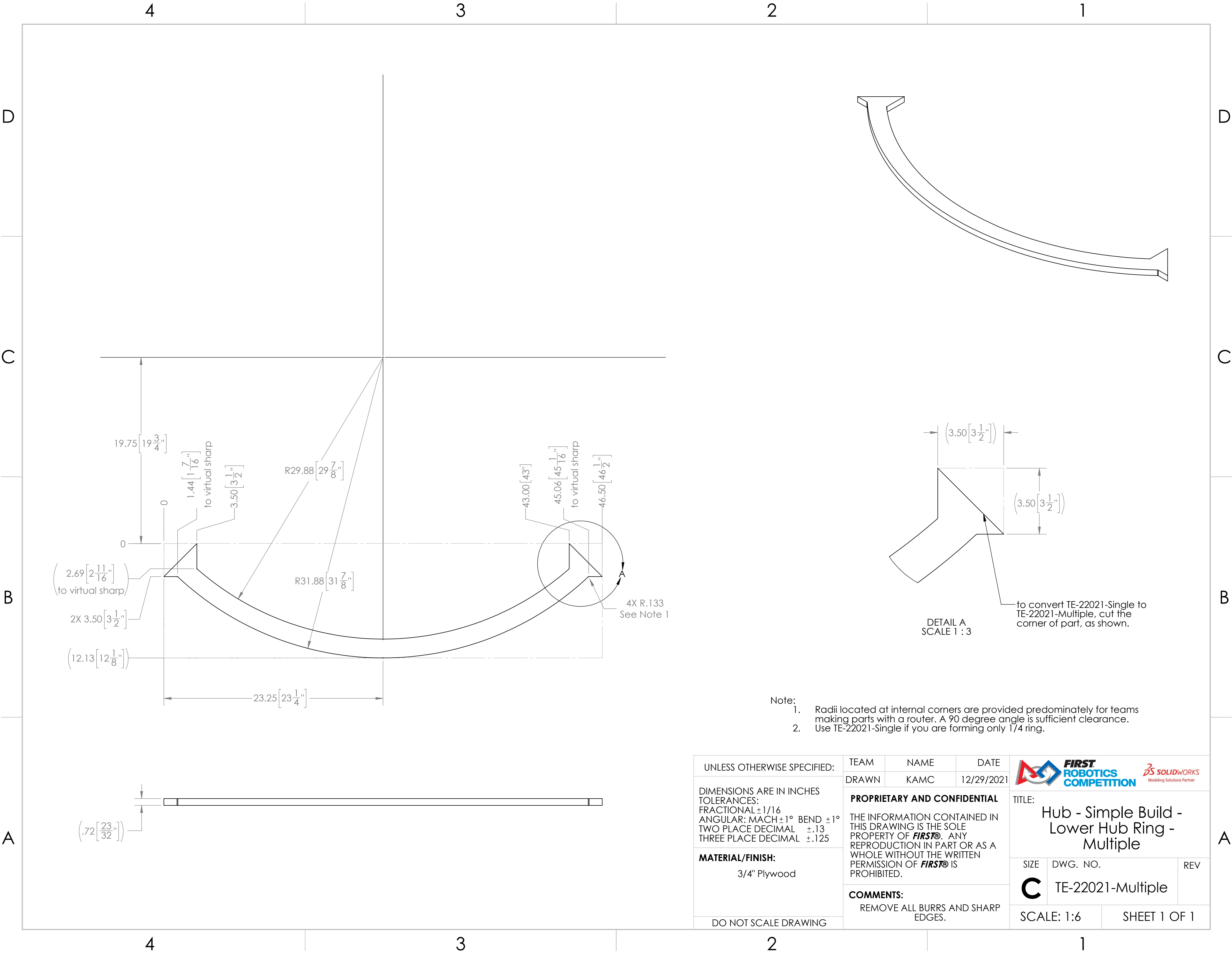


1. Align (3) to the assembly made in Step 1, as shown.
2. Attach using 2" Long Screws. It is recommended to use 5x screws into each (2) and 3x screws into each (1).





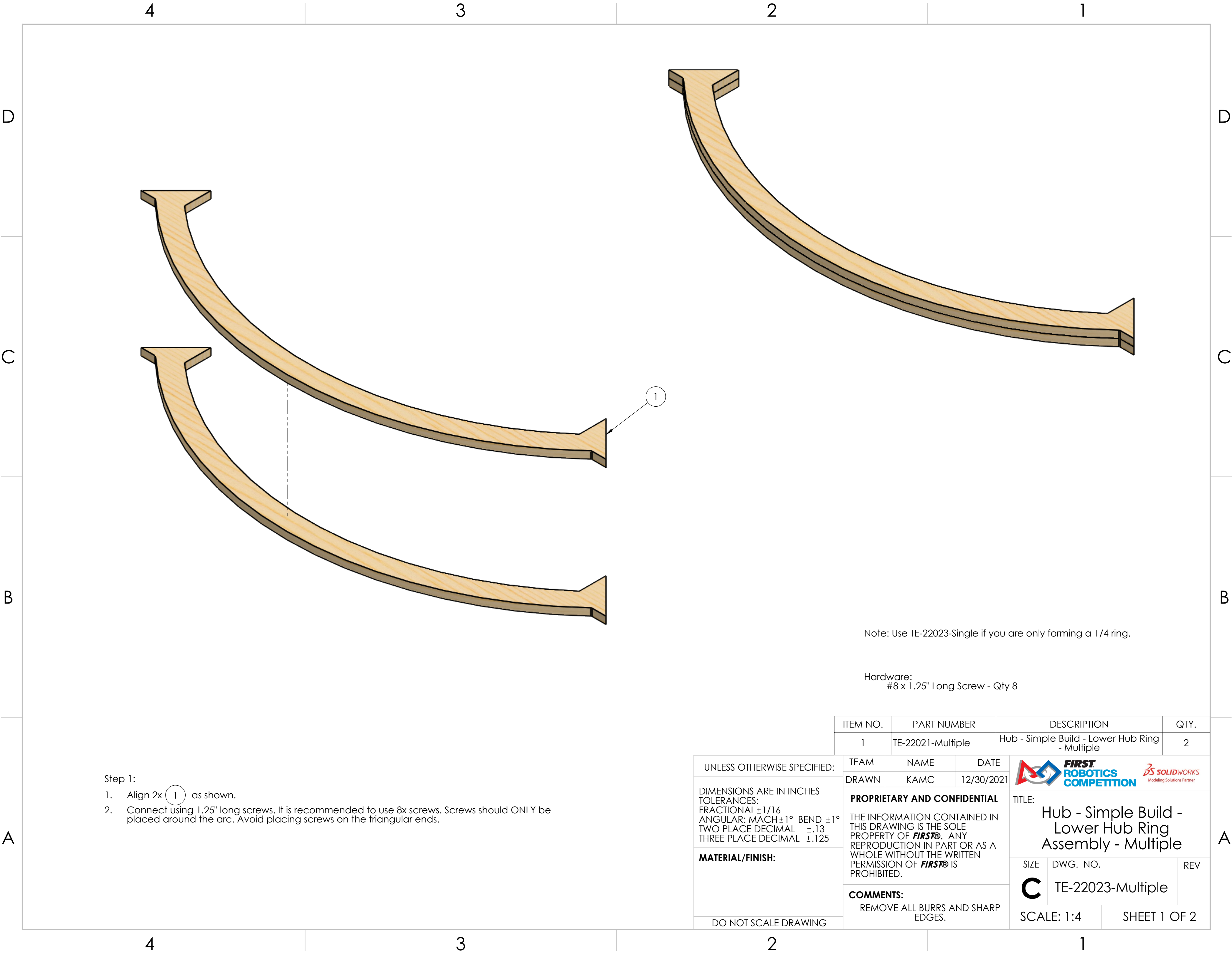
UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$  <b>MATERIAL/FINISH:</b>  DO NOT SCALE DRAWING	TEAM	NAME	DATE	 
	DRAWN	KAMC	12/30/2021	
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			
TITLE: <div>HUB - Basic Build - Fender Side Assembly</div>				
SIZE		DWG. NO.		REV
C		TE-22017		
SCALE: 1:4			SHEET 3 OF 3	





- 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 $\pm .125$  <b>MATERIAL/FINISH:</b>  3/4" Plywood  DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	KAMC	12/29/2021		
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.				TITLE: Hub - Simple Build - Lower Hub Ring - Multiple
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			SIZE <b>C</b>	DWG. NO. TE-22021-Multiple REV
SCALE: 1:6		SHEET 1 OF 1			

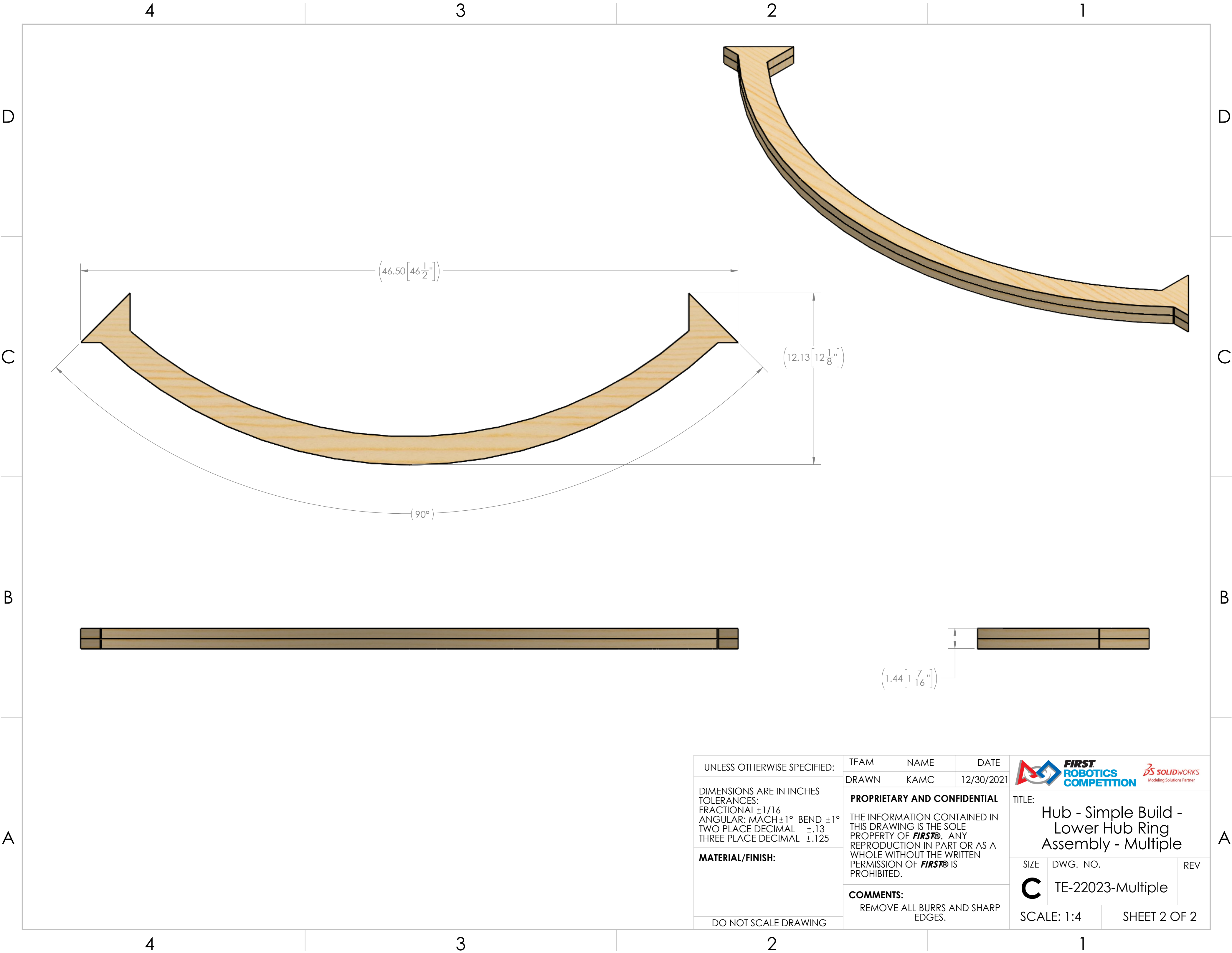




Step 1:

- 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.

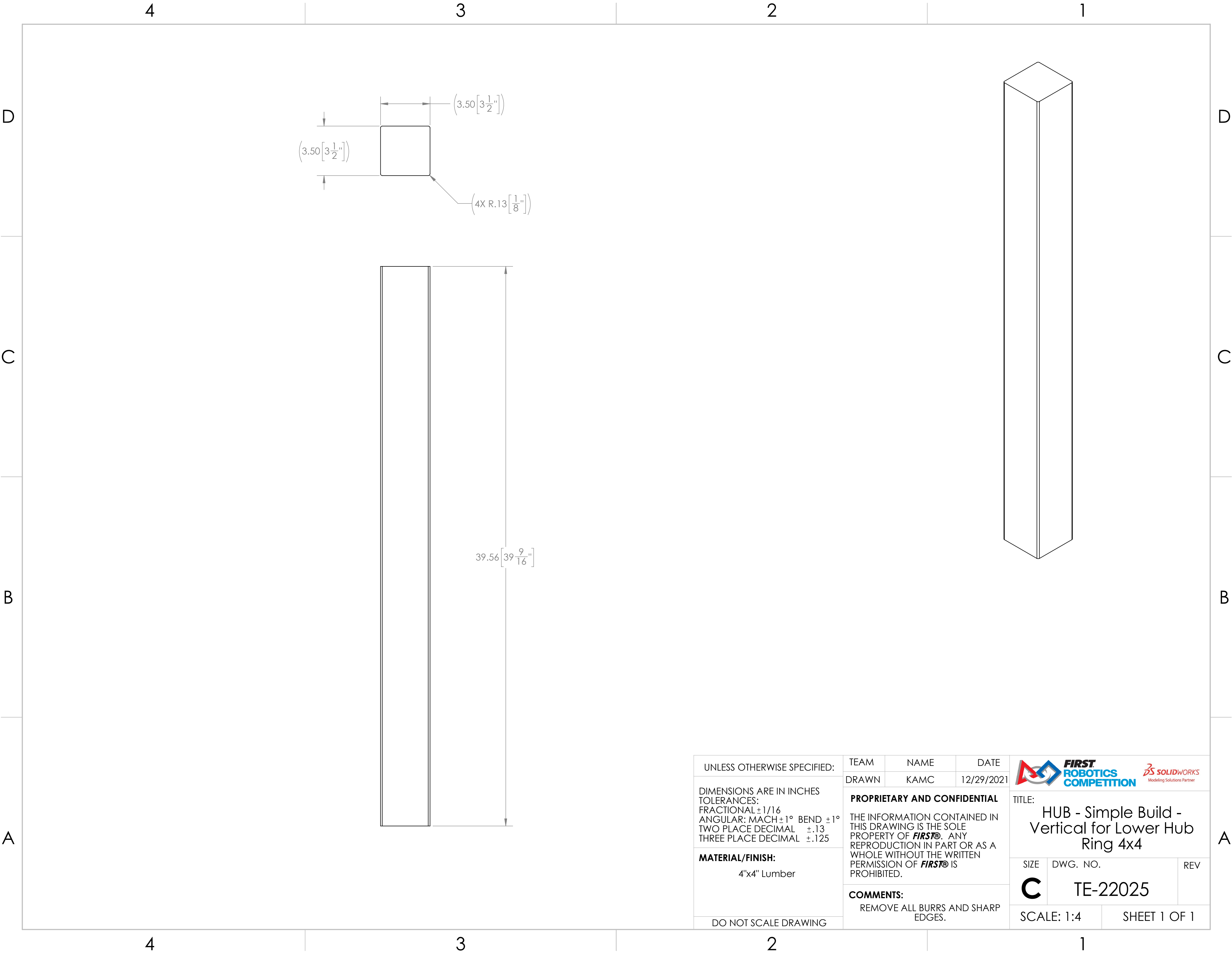
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-22021-Multiple	Hub - Simple Build - Lower Hub Ring - Multiple	2



UNLESS OTHERWISE SPECIFIED:	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	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE:  Hub - Simple Build - Lower Hub Ring Assembly - Multiple		
	<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
C				TE-22023-Multiple		
DO NOT SCALE DRAWING				SCALE: 1:4		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	<div></div>	
	DRAWN	KAMC	12/30/2021		
	PROPRIETARY AND CONFIDENTIAL			TITLE:  Hub - Simple Build - Lower Hub Ring Assembly - Multiple	
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.				
COMMENTS:  REMOVE ALL BURRS AND SHARP EDGES.			SIZE <b>C</b>	DWG. NO. TE-22023-Multiple	REV
			SCALE: 1:4		SHEET 2 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:		
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			HUB - Simple Build - Vertical for Lower Hub Ring 4x4		
MATERIAL/FINISH:  4"x4" Lumber	COMMENTS:			SIZE	DWG. NO.	REV
	REMOVE ALL BURRS AND SHARP EDGES.			C	TE-22025	
DO NOT SCALE DRAWING				SCALE: 1:4		SHEET 1 OF 1

4

3

2

1

D

D

C

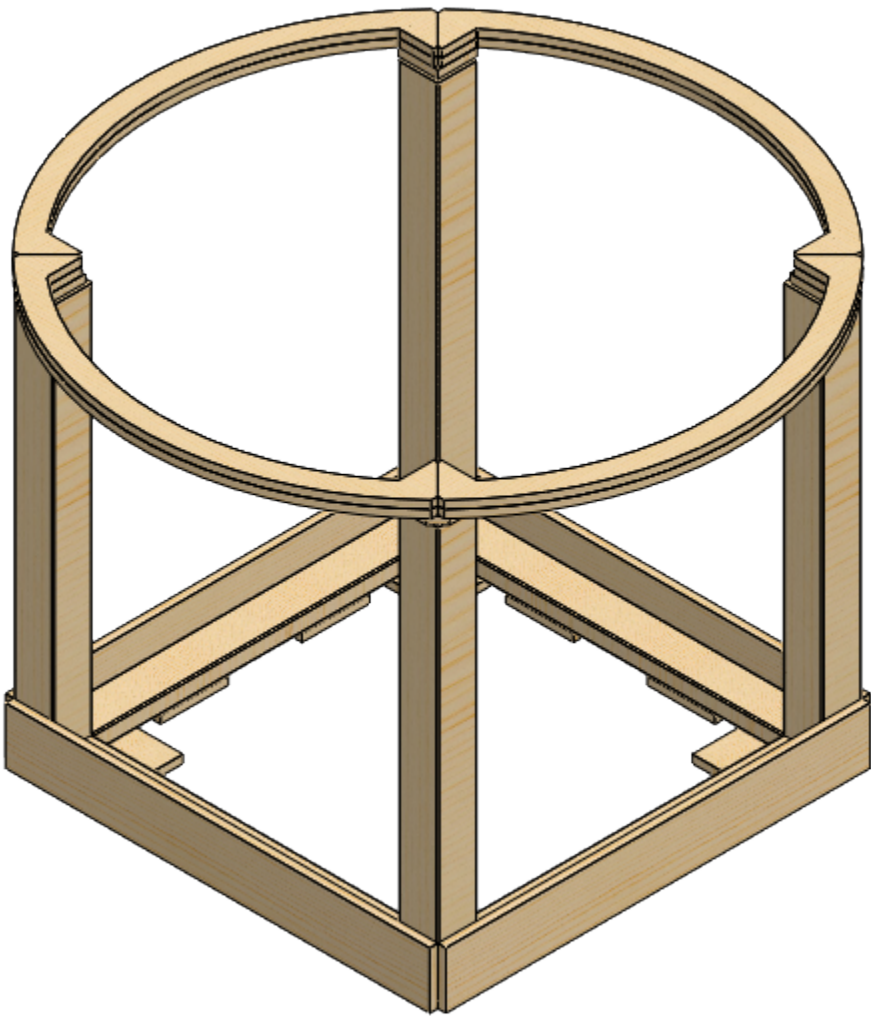
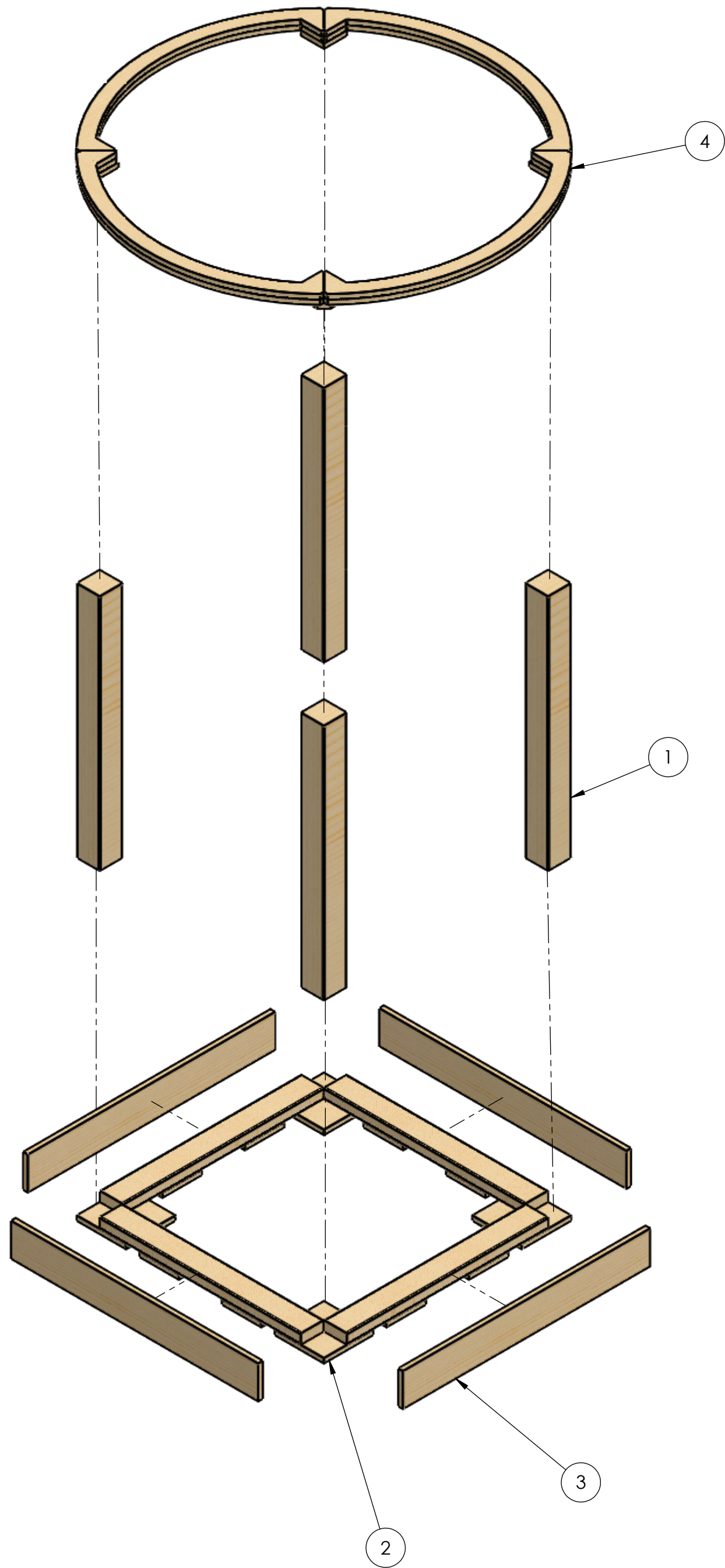
C

B

B

A



A

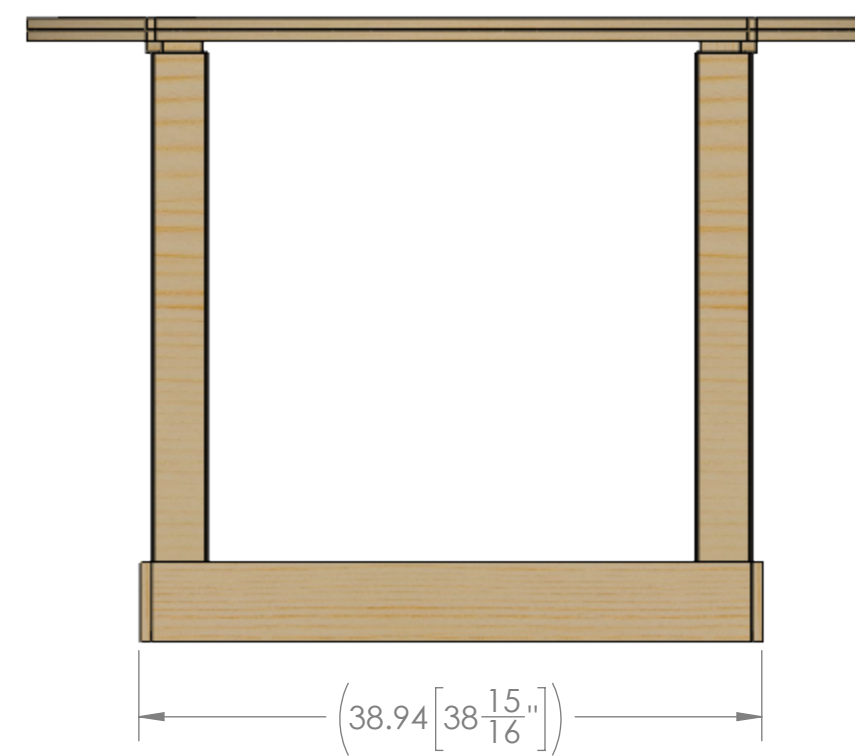
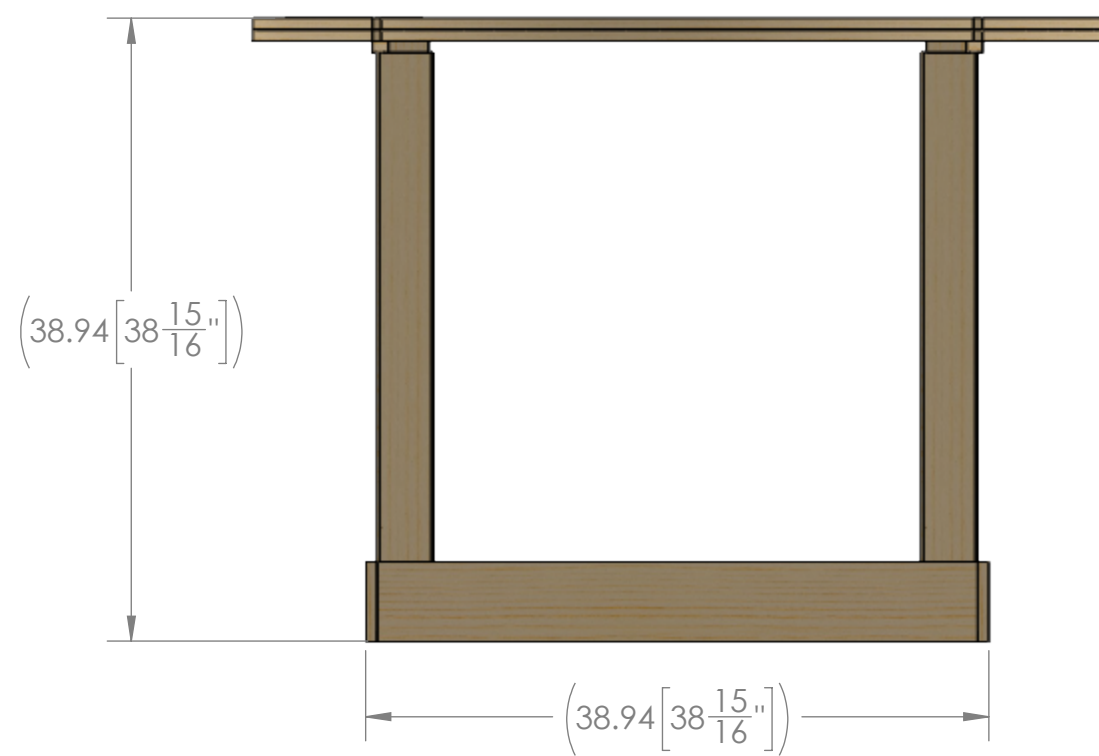
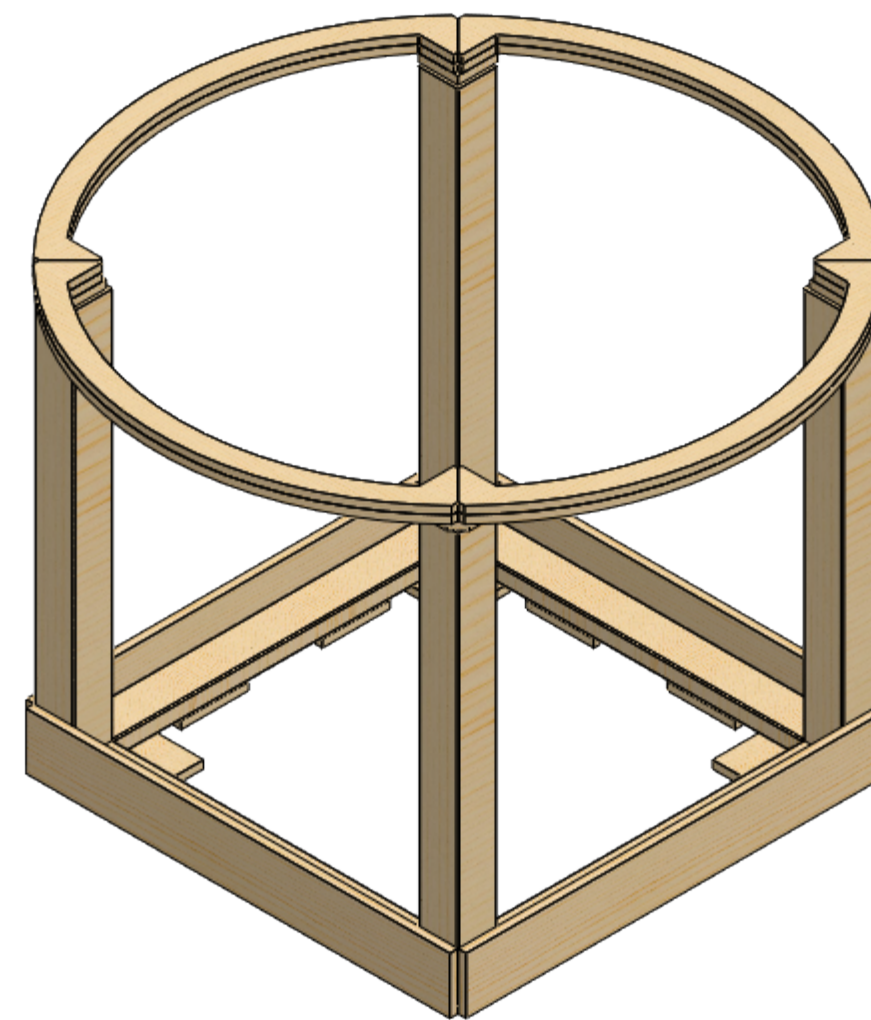
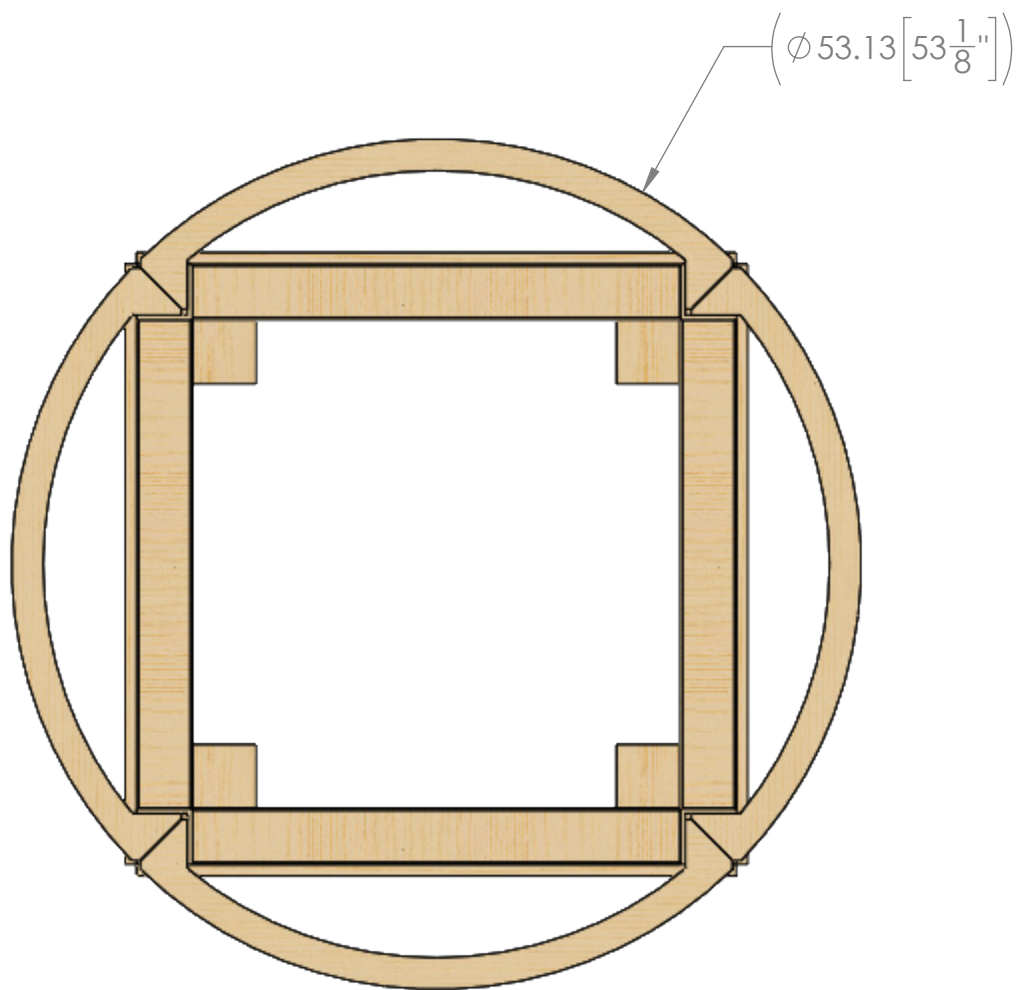




Note:  
Use Assembly TE-22030-AM if pairing with AndyMark's  
Upper Hub Vision Ring Assembly (AM-4672)

Hardware Needed:  
#8 x 1.25" Long Screw - Qty 12  
#8 x 2" Long Screw - Qty 48  
#10 x 3.5" Long Screw - Qty 16

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-22036	Hub - Simple Build - Upper Hub Goal 4x4	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	TE-22034	Hub - Simple Build - Upper Hub Full Ring Assembly	1

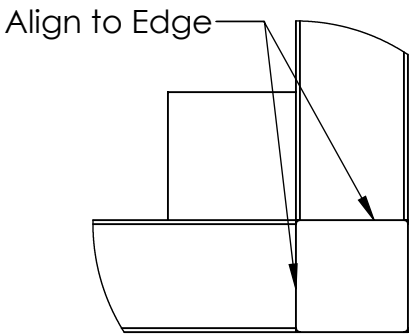
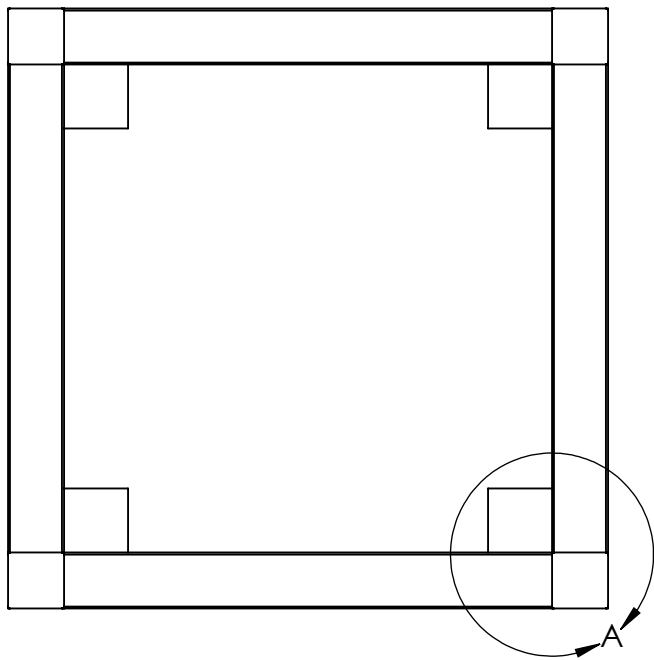
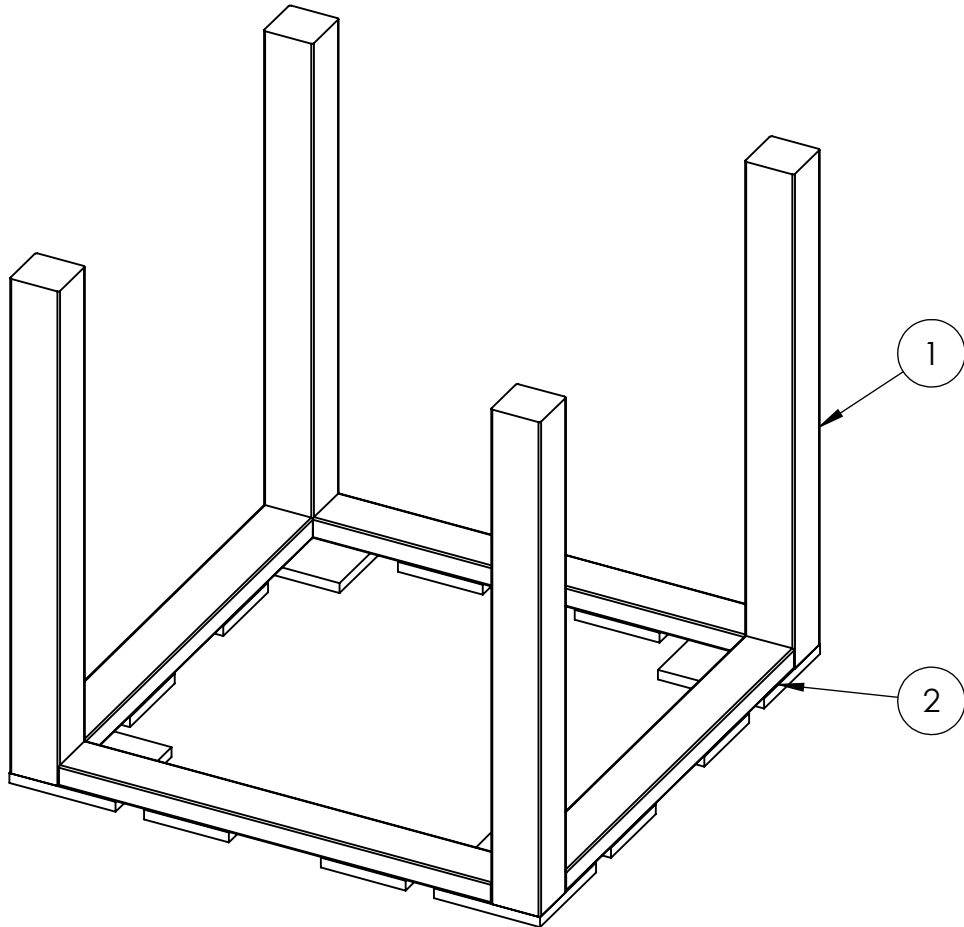
UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125		TEAM	NAME	DATE	 		
		DRAWN	KAMC	12/30/2021			
<b>MATERIAL/FINISH:</b>          <b>DO NOT SCALE DRAWING</b>		<b>PROPRIETARY AND CONFIDENTIAL</b>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



UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<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 $\pm .125$  <b>MATERIAL/FINISH:</b>	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE:  Hub - Simple Build - Upper Hub Goal Assembly		
	<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING				SIZE <b>C</b>	DWG. NO.  TE-22030	REV
				SCALE: 1:12		SHEET 2 OF 4



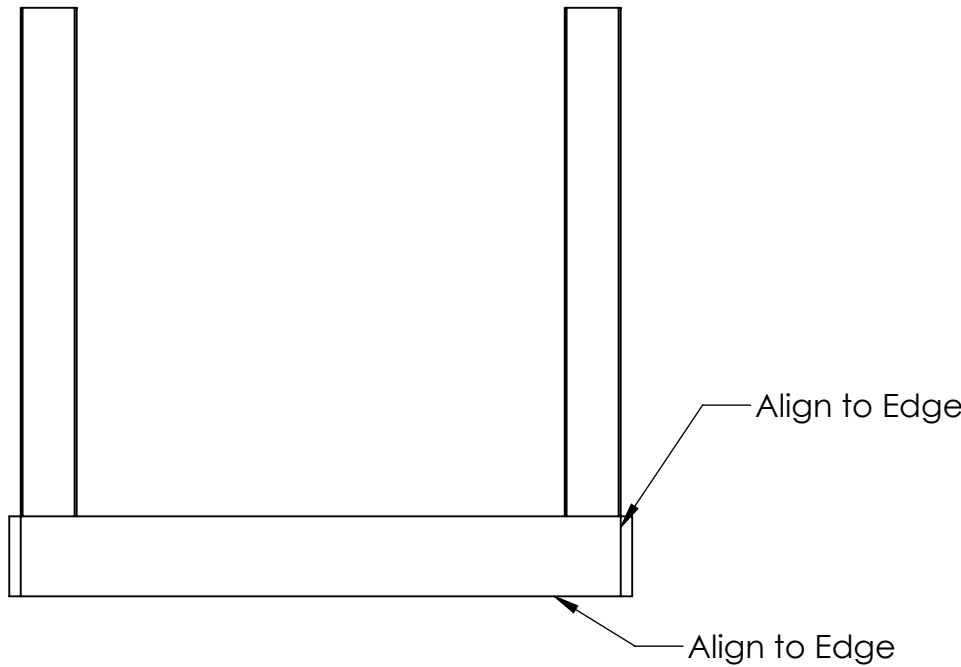
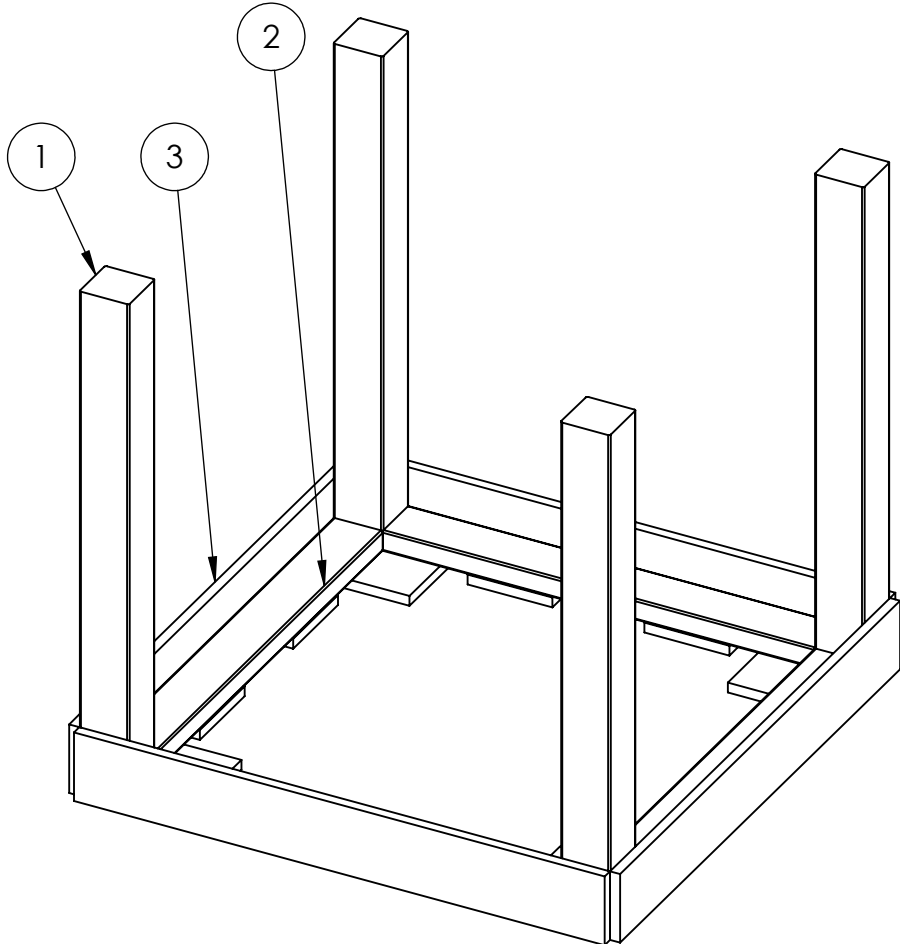
Step 1





4X  
DETAIL A  
SCALE 1 : 6

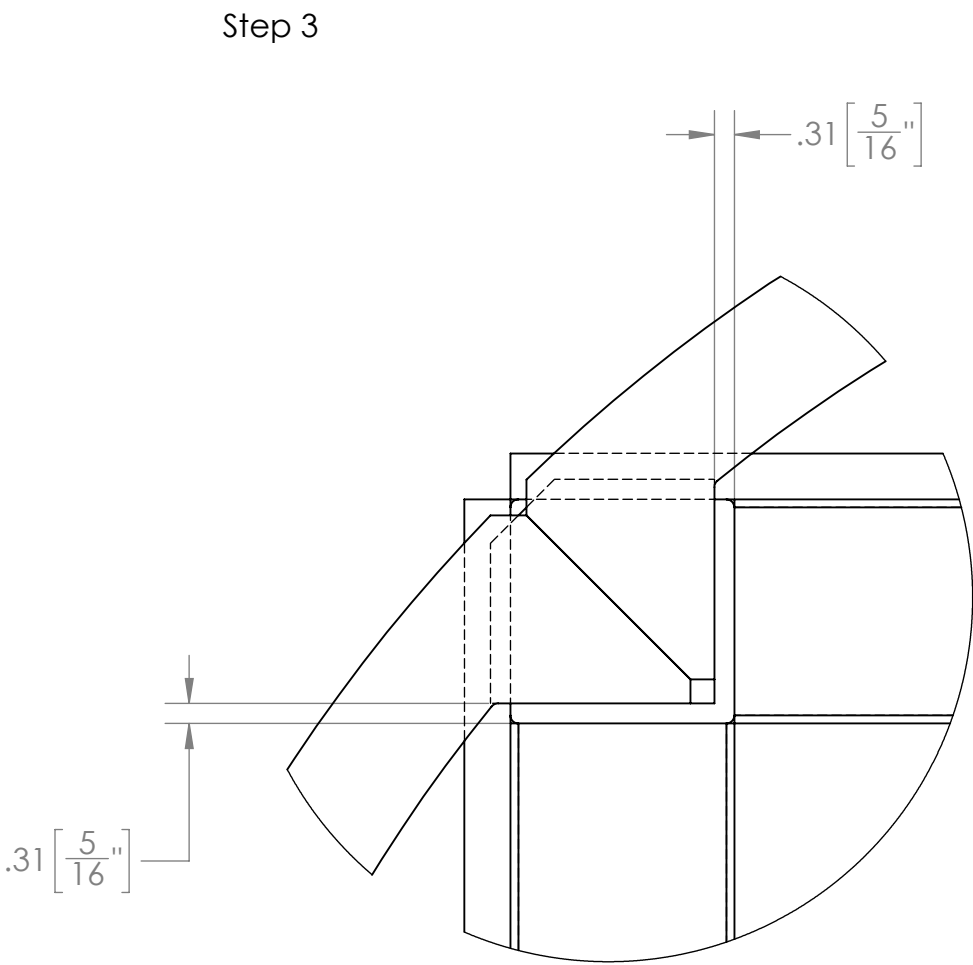
- Align 4x (1) to (2) , as shown.
- Connect using 2" Long Screws. It is recommended to use 4x screws per (1) .

Step 2

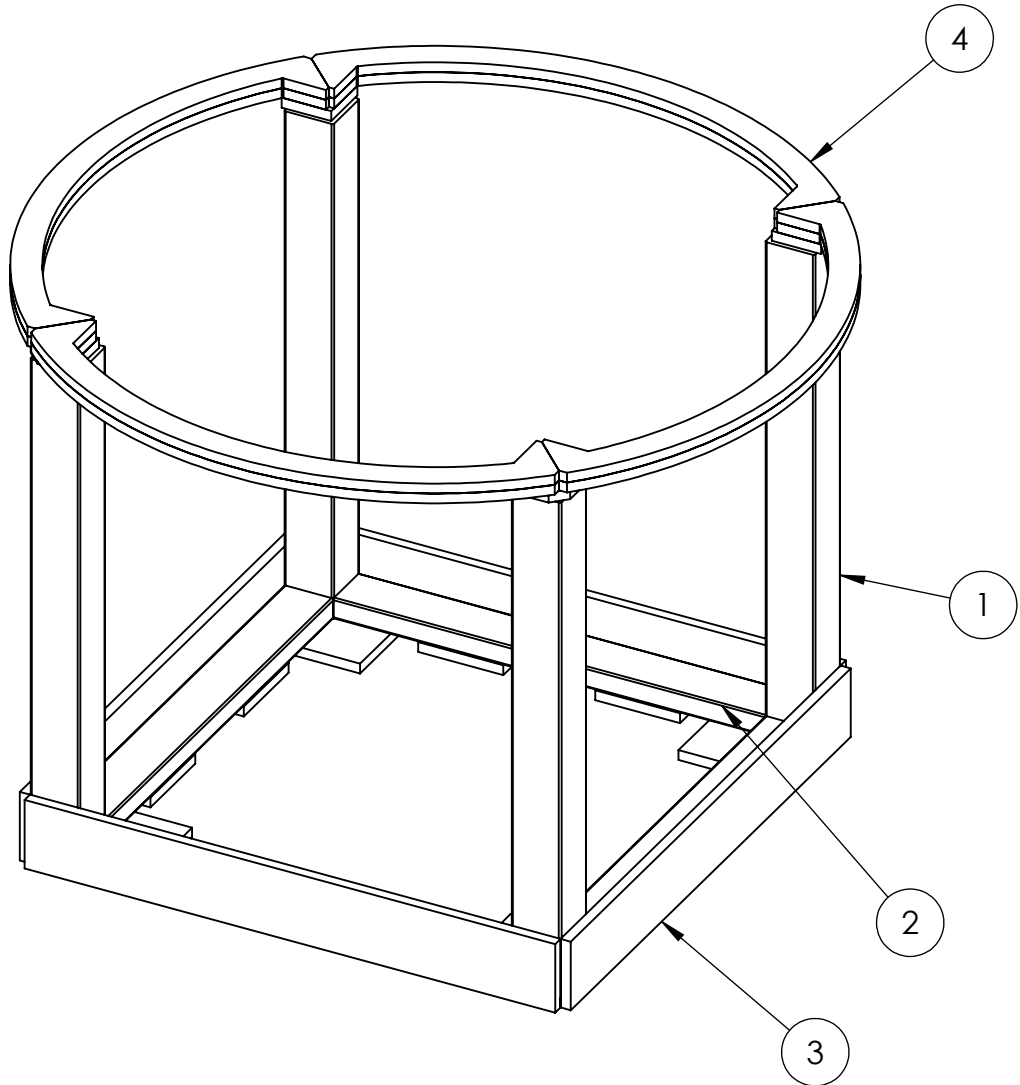
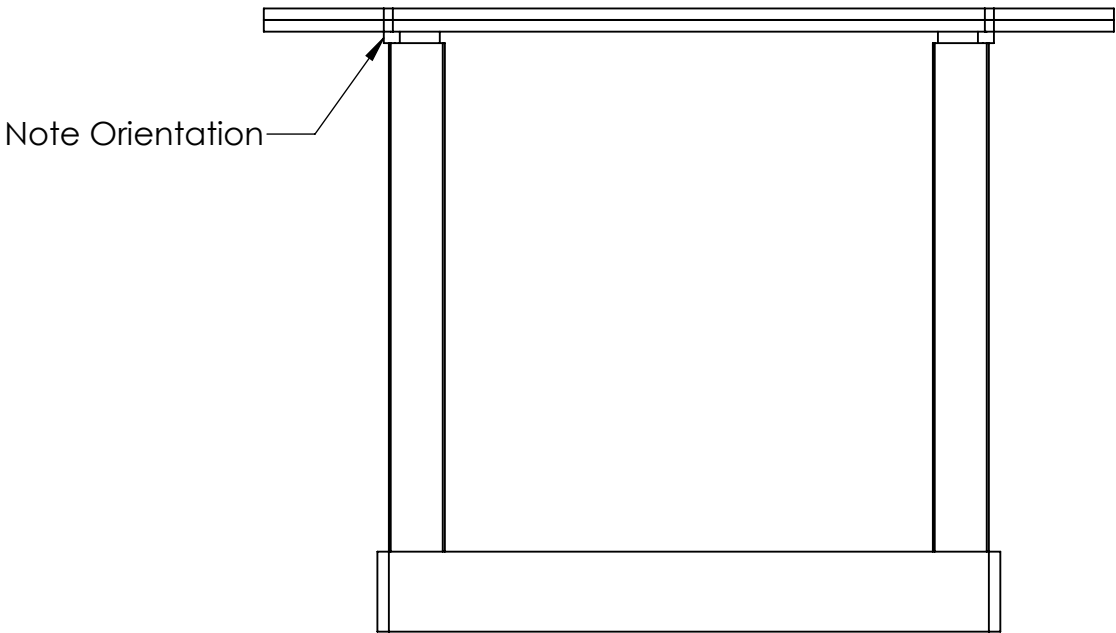
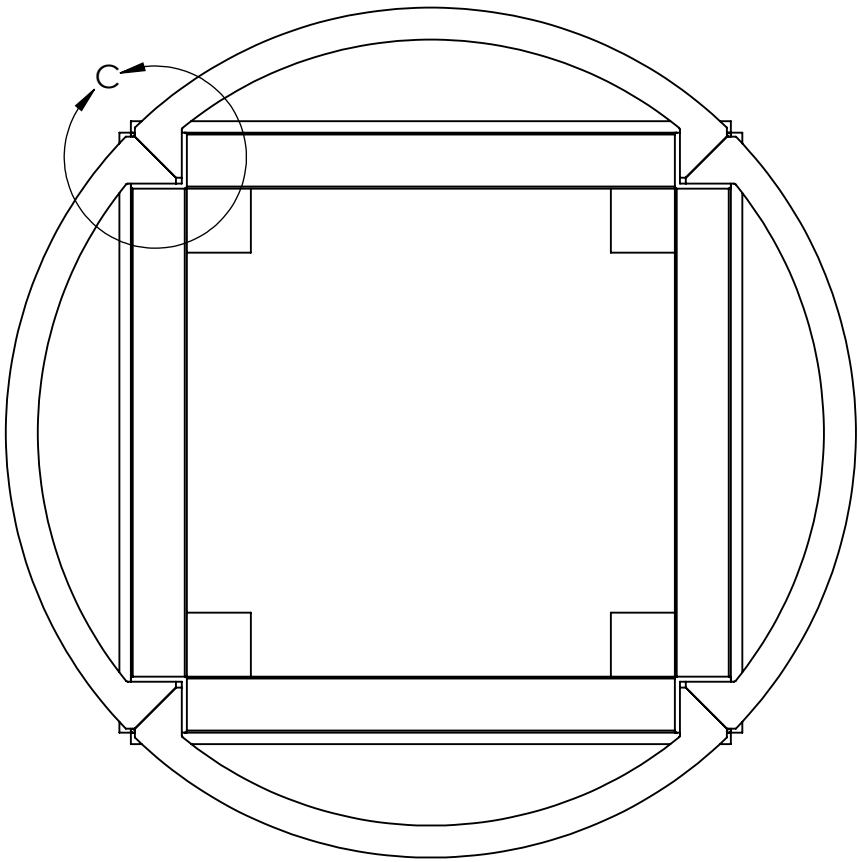


- Align 4x (3) to Step 1 , as shown.
- Attach (3) to (1) using 2" Long Screws. It is recommended to use 8x screws per (3) , 4x into each (1) .
- Attach (3) to the 2"x4" Lumber of (2) using 1.25" Long Screws. It is recommended to use 3x screws per (3) . Be careful to center the screw into the 2"x4" Lumber 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 <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			TITLE:  Hub - Simple Build - Upper Hub Goal Assembly  <table><tr><td>SIZE</td><td>DWG. NO.</td><td>REV</td></tr><tr><td>C</td><td>TE-22030</td><td></td></tr></table> <table><tr><td>SCALE: 1:12</td><td>SHEET 3 OF 4</td></tr></table>		SIZE	DWG. NO.	REV	C	TE-22030		SCALE: 1:12
SIZE	DWG. NO.	REV										
C	TE-22030											
SCALE: 1:12	SHEET 3 OF 4											

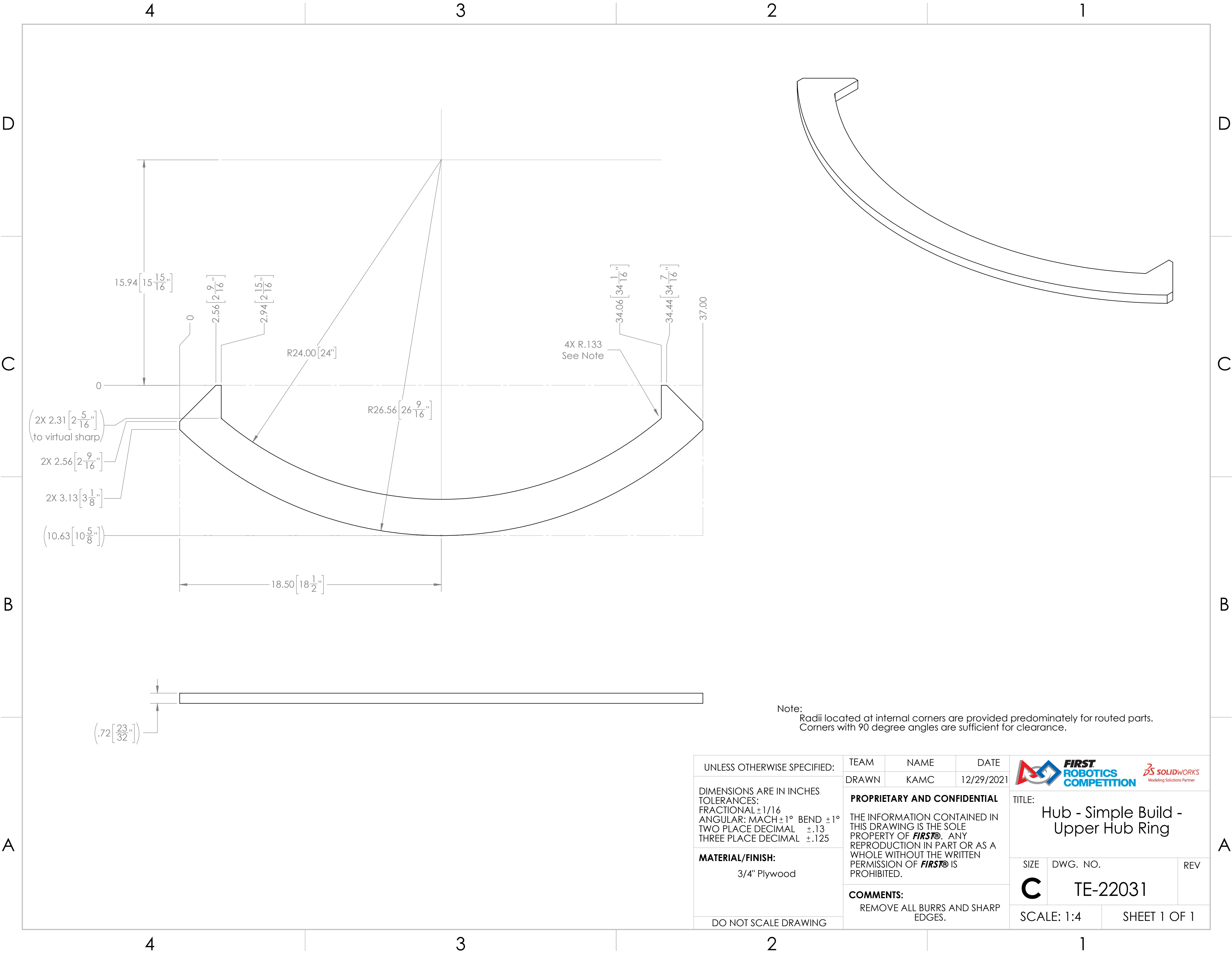


4X  
DETAIL C  
SCALE 1 : 3  
Hidden Lines Shown

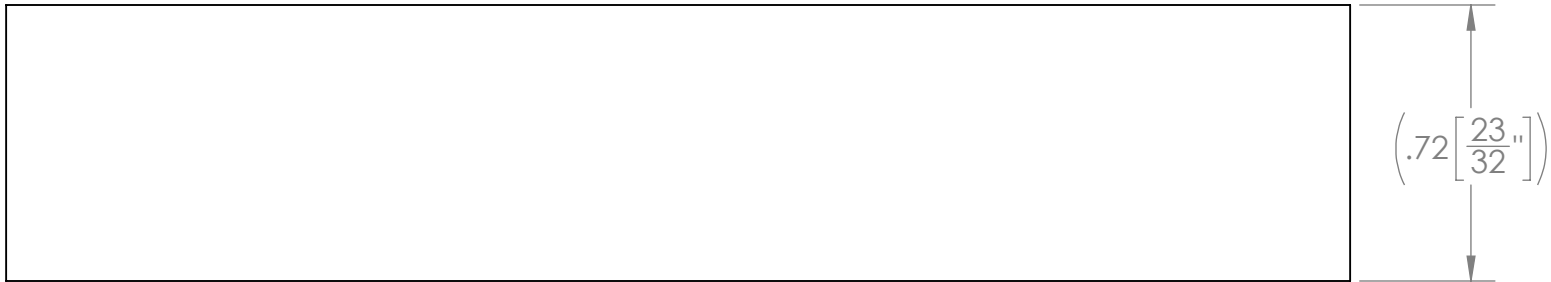
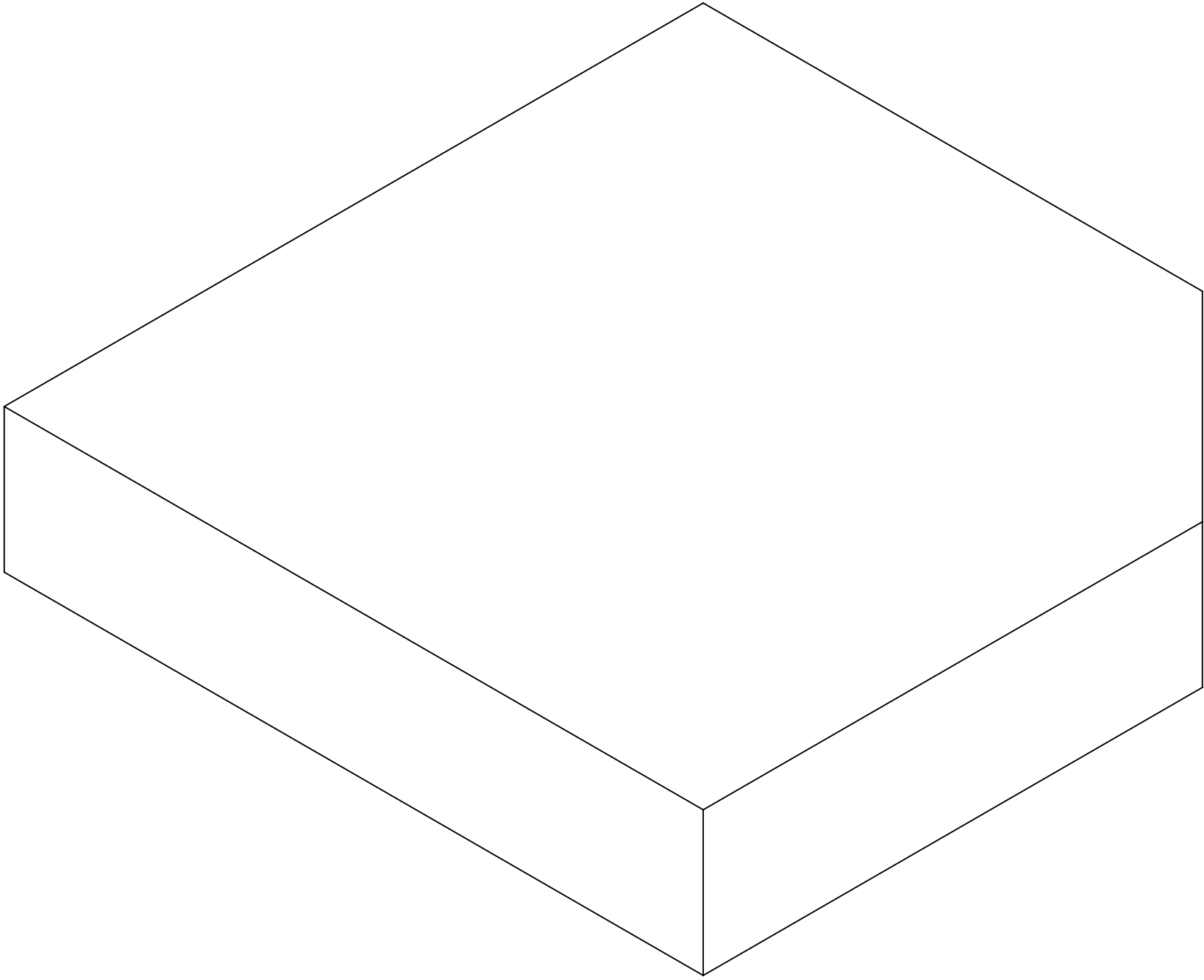
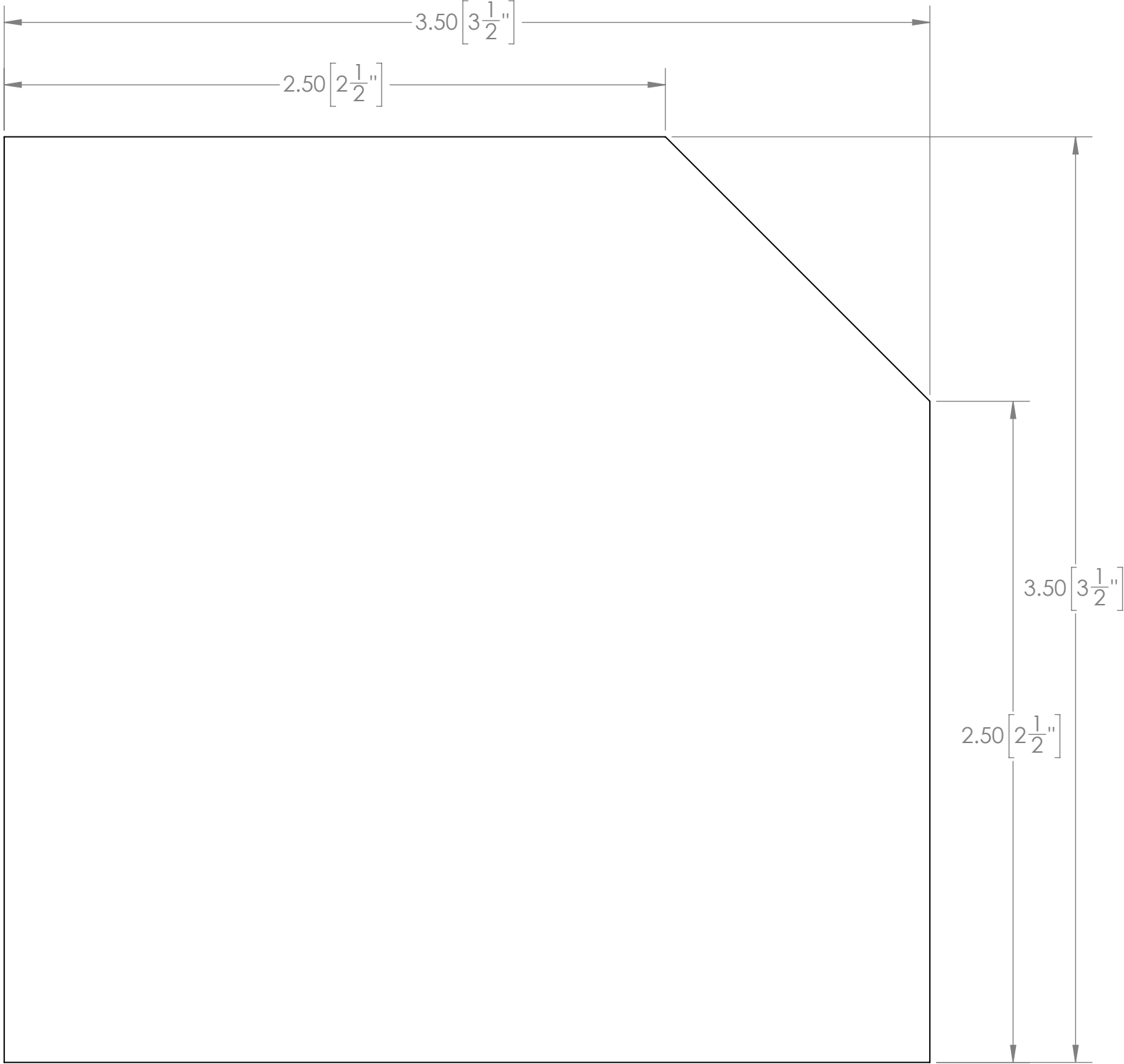
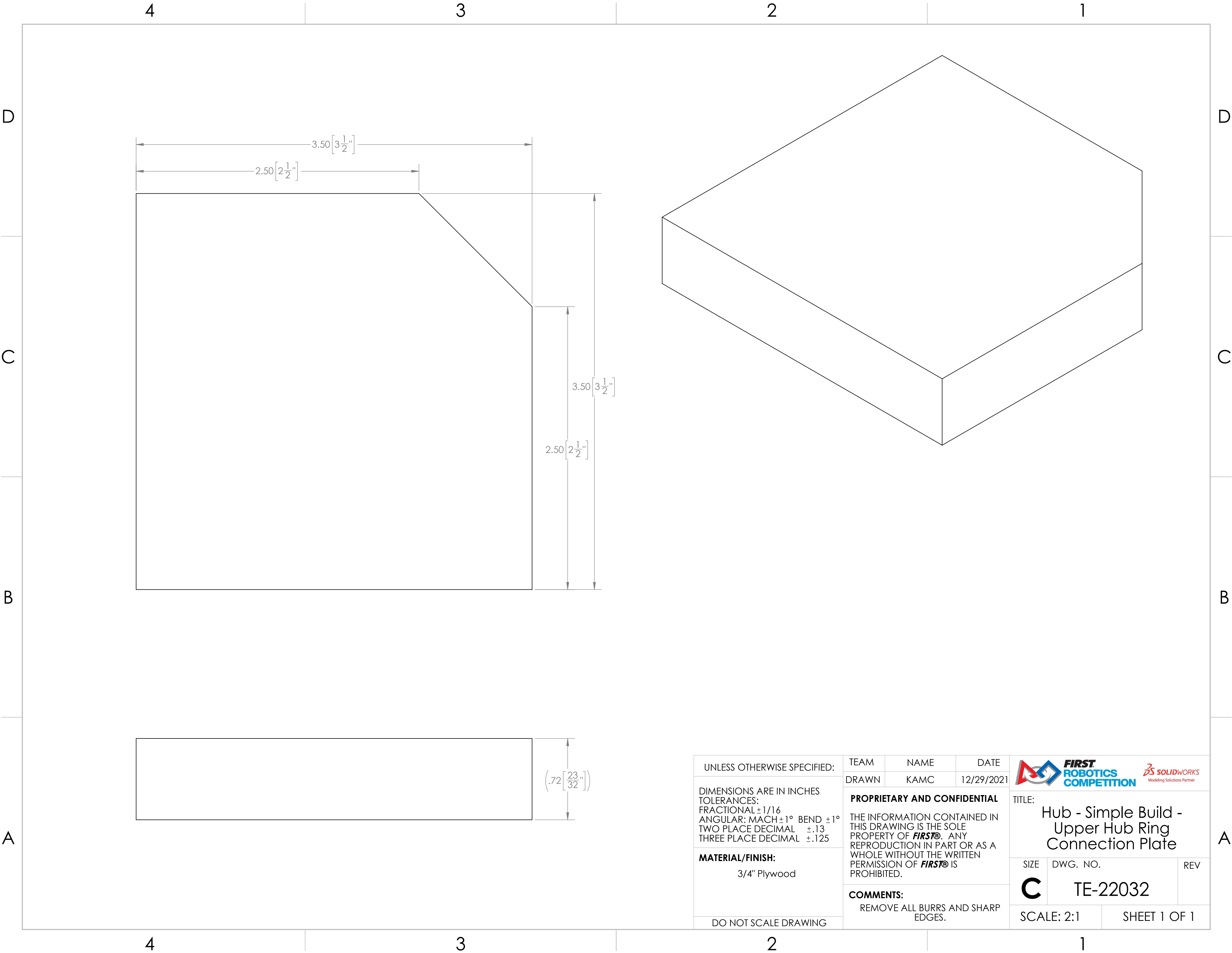




- Align **4** to Step 2, as shown. Note the orientation of **4** .  
Note: Warping may be present on **1** . If this is the case, evenly split the difference from the dimensions provided in Detail C to center **4** on assembly.
- Connect using 3.5" Long Screws. It is recommended to use 4x screws into each **1** .

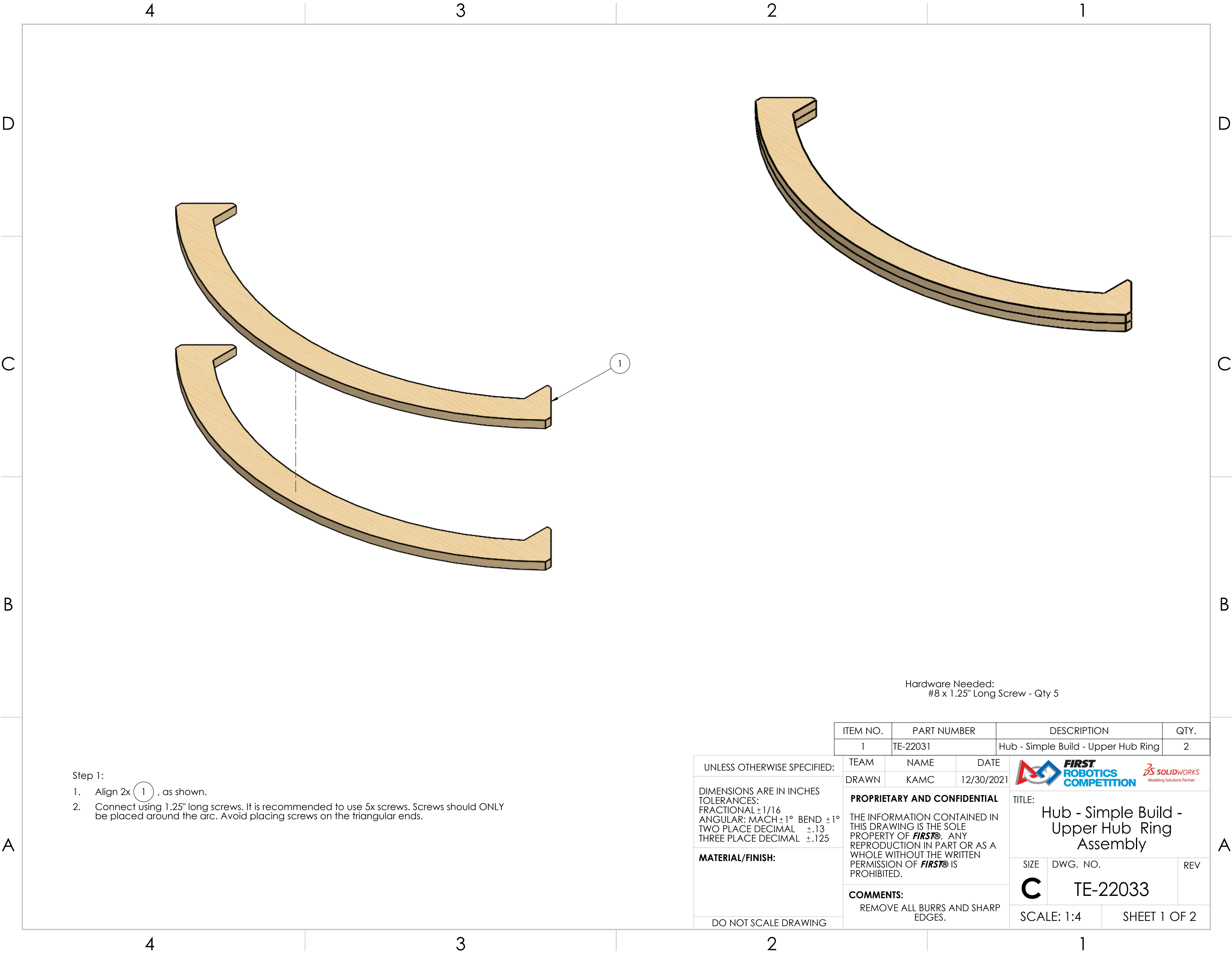
UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>          DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	KAMC	12/30/2021		
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			TITLE:  Hub - Simple Build - Upper Hub Goal Assembly	
			SIZE	DWG. NO.	REV
			C	TE-22030	
			SCALE: 1:12		SHEET 4 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  <b>MATERIAL/FINISH:</b>  3/4" Plywood  DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/29/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE:  Hub - Simple Build - Upper Hub Ring Connection Plate		
	<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
C				TE-22032		
			SCALE: 2:1		SHEET 1 OF 1	



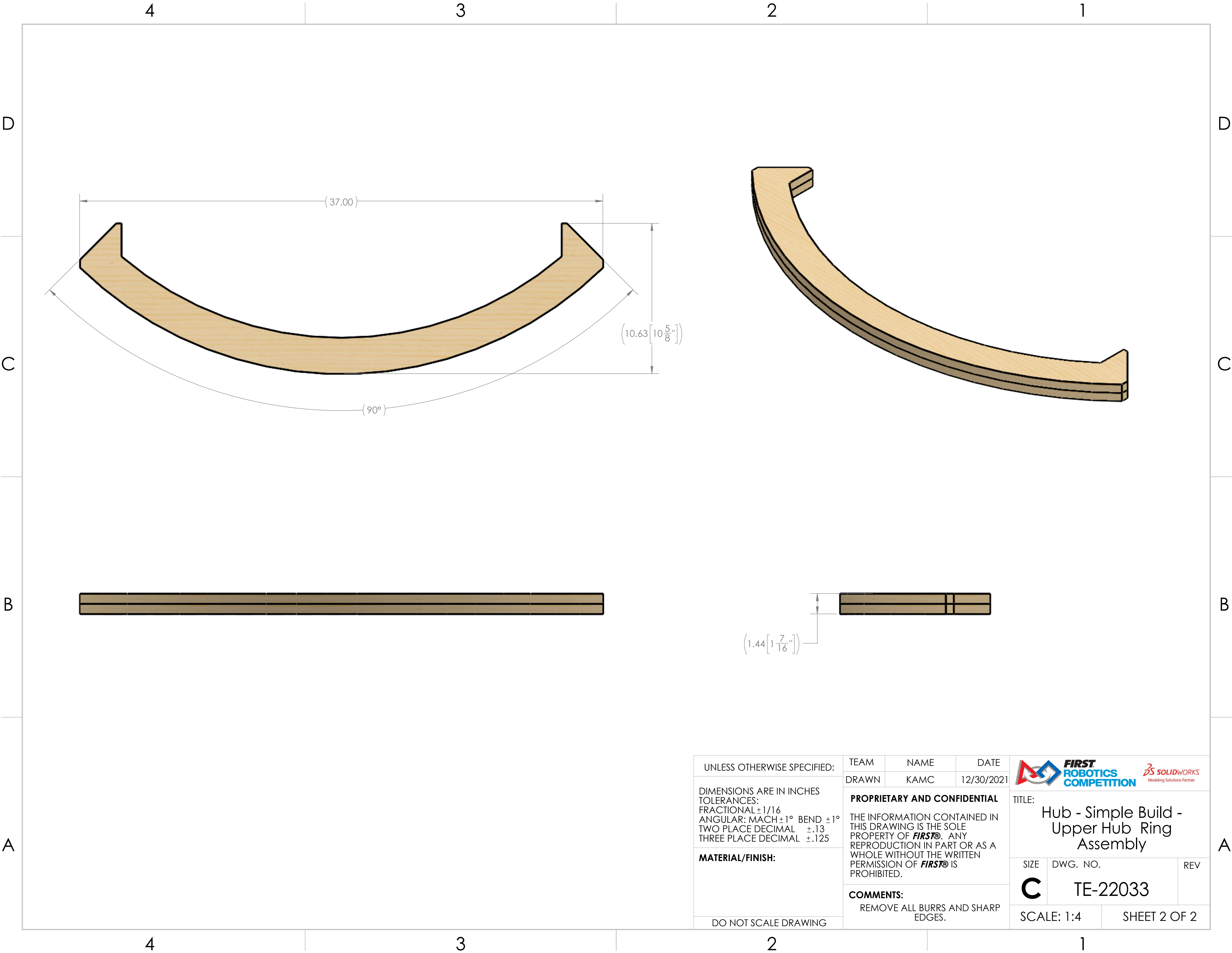
Step 1:



1. Align 2x 1 , as shown.
2. Connect using 1.25" long screws. It is recommended to use 5x screws. Screws should ONLY be placed around the arc. Avoid placing screws on the triangular ends.

Hardware Needed:  
#8 x 1.25" Long Screw - Qty 5

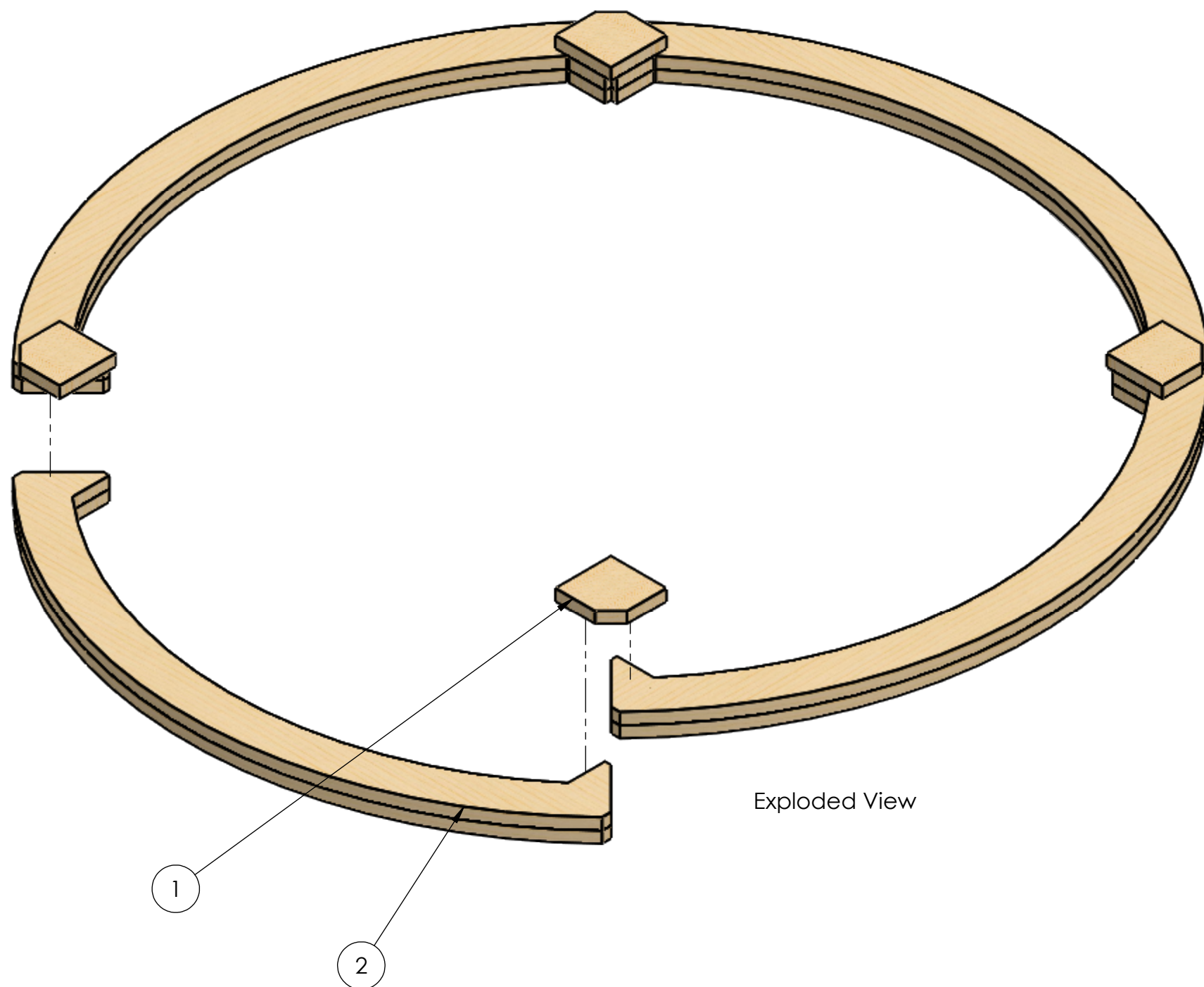
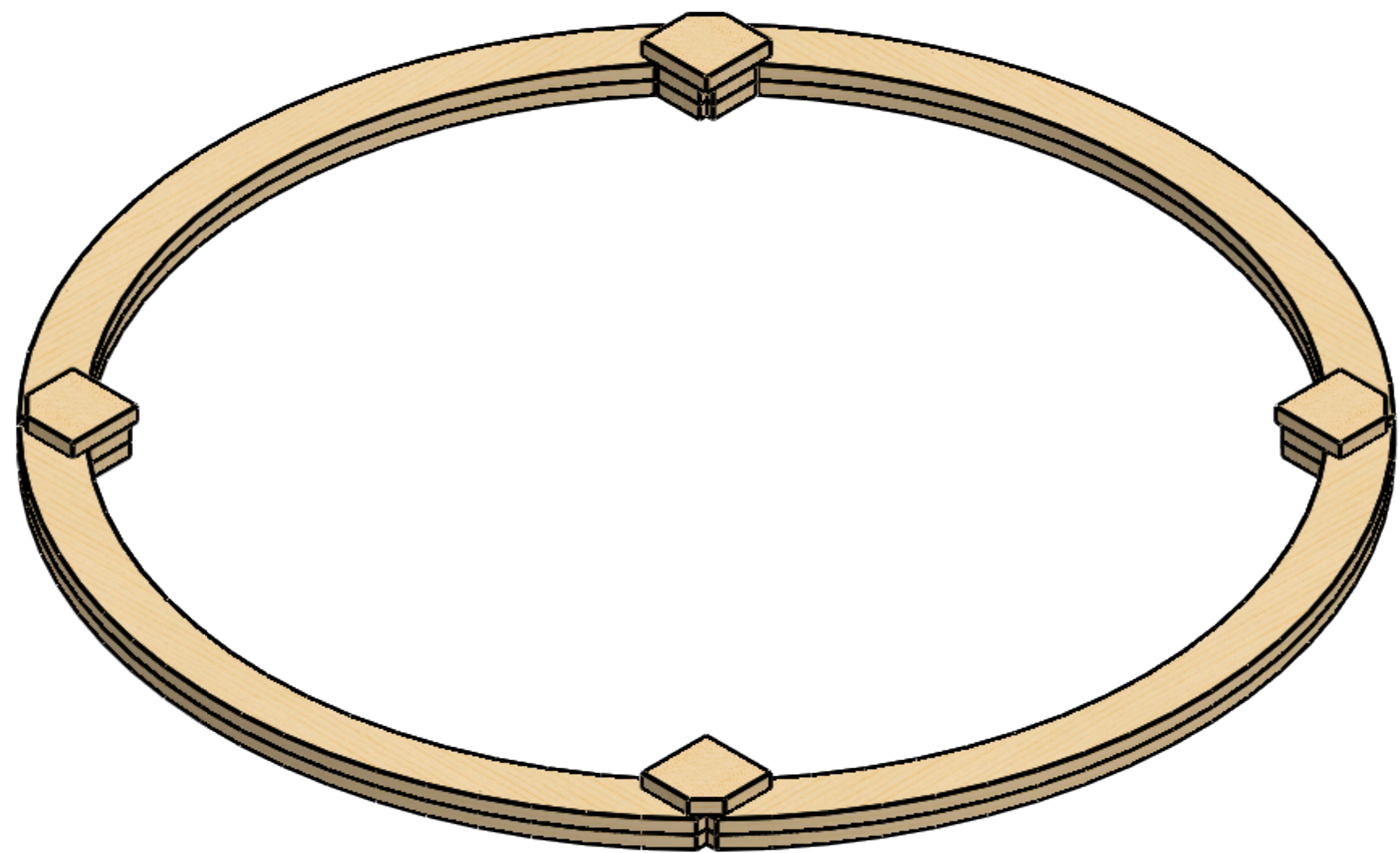
		ITEM NO.		PART NUMBER		DESCRIPTION		QTY.			
		1		TE-22031		Hub - Simple Build - Upper Hub Ring		2			
UNLESS OTHERWISE SPECIFIED:		TEAM		NAME		DATE		<div></div>			
<div>DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL <math>\pm 1/16</math> ANGULAR: MACH <math>\pm 1^\circ</math> BEND <math>\pm 1^\circ</math> TWO PLACE DECIMAL <math>\pm .13</math> THREE PLACE DECIMAL <math>\pm .125</math></div> <div>MATERIAL/FINISH:</div>		DRAWN		KAMC		12/30/2021		TITLE: <div>Hub - Simple Build - Upper Hub Ring Assembly</div>			
		<div>PROPRIETARY AND CONFIDENTIAL</div> <div>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b>. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.</div>						SIZE <div>C</div>		DWG. NO. <div>TE-22033</div>	REV
		<div>COMMENTS:</div> <div>REMOVE ALL BURRS AND SHARP EDGES.</div>						SCALE: 1:4		SHEET 1 OF 2	
DO NOT SCALE DRAWING											





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 $\pm .125$  <b>MATERIAL/FINISH:</b>    DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/30/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>			TITLE:		
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			Hub - Simple Build - Upper Hub Ring Assembly		
<b>COMMENTS:</b>		REMOVE ALL BURRS AND SHARP EDGES.		SIZE	DWG. NO.	REV
				<b>C</b>	TE-22033	
				SCALE: 1:4		SHEET 2 OF 2





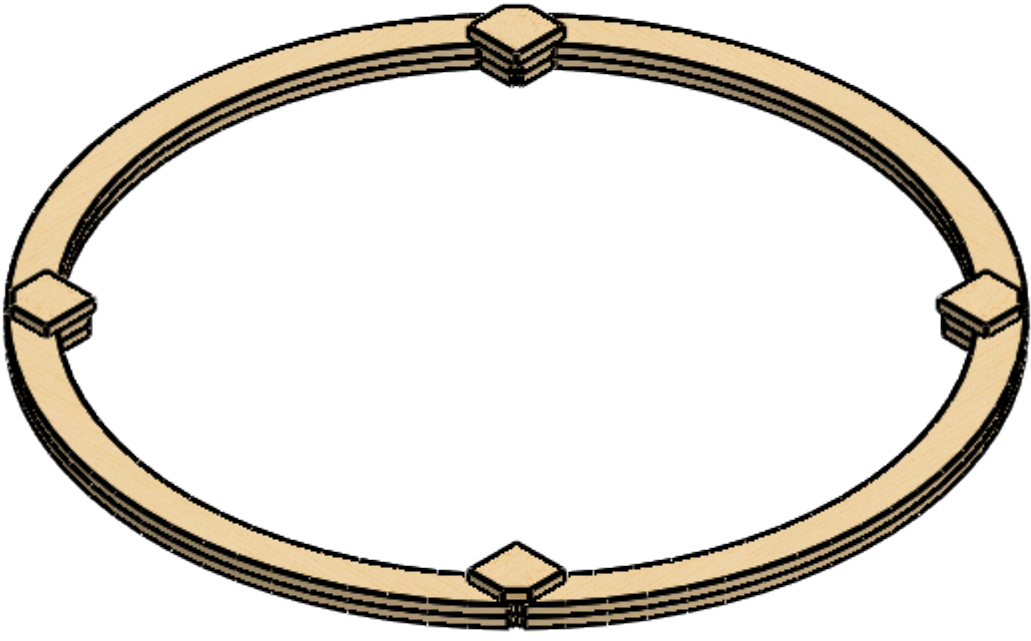
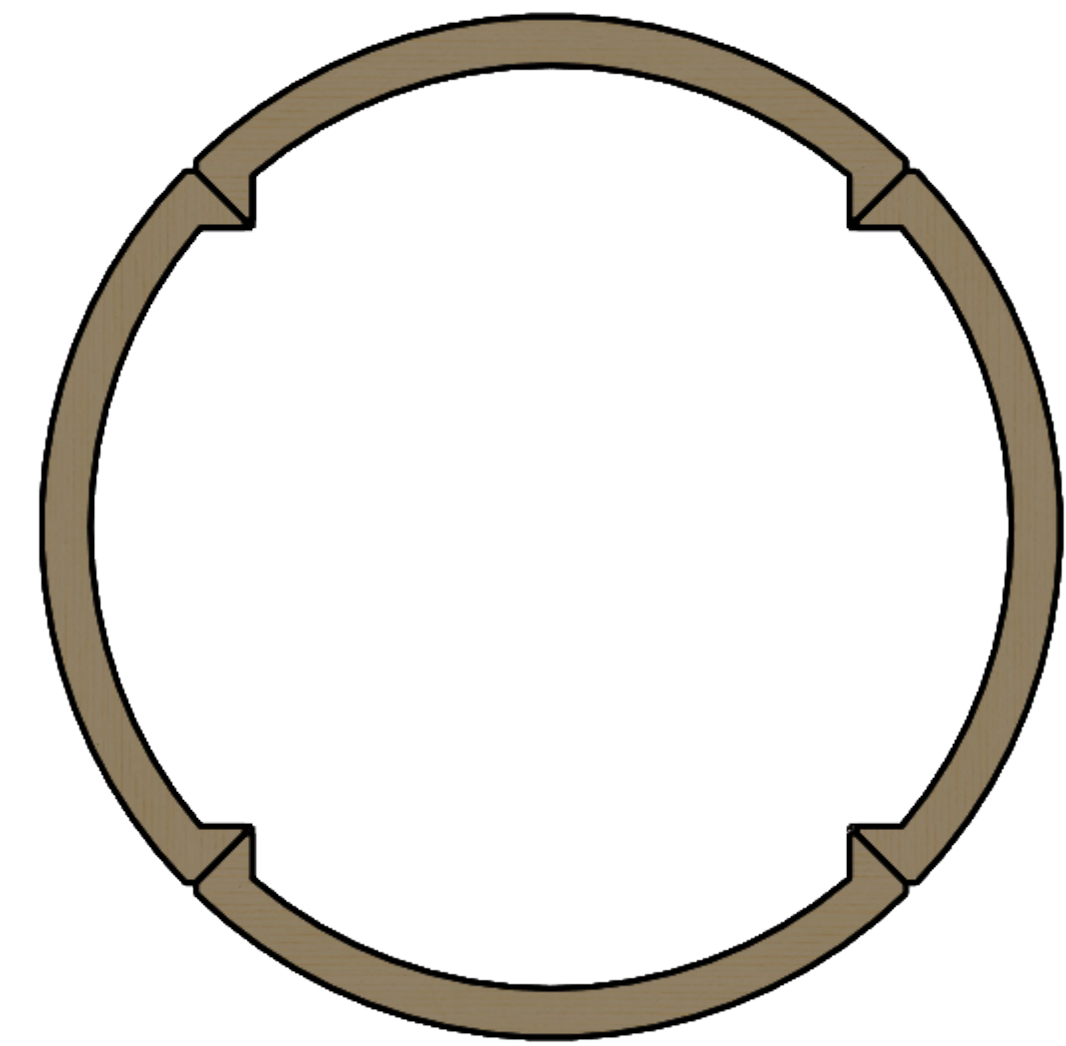
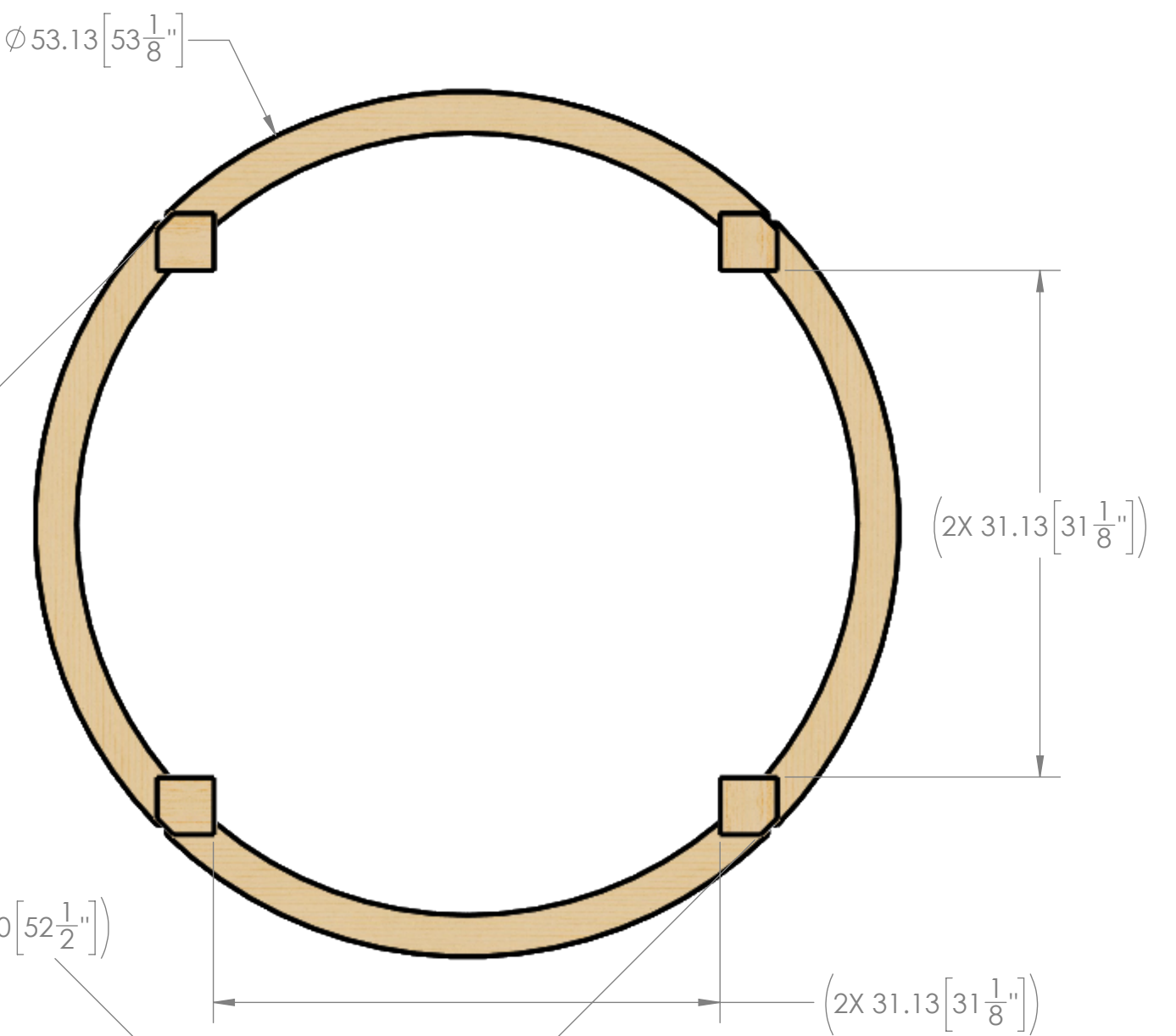




Exploded View

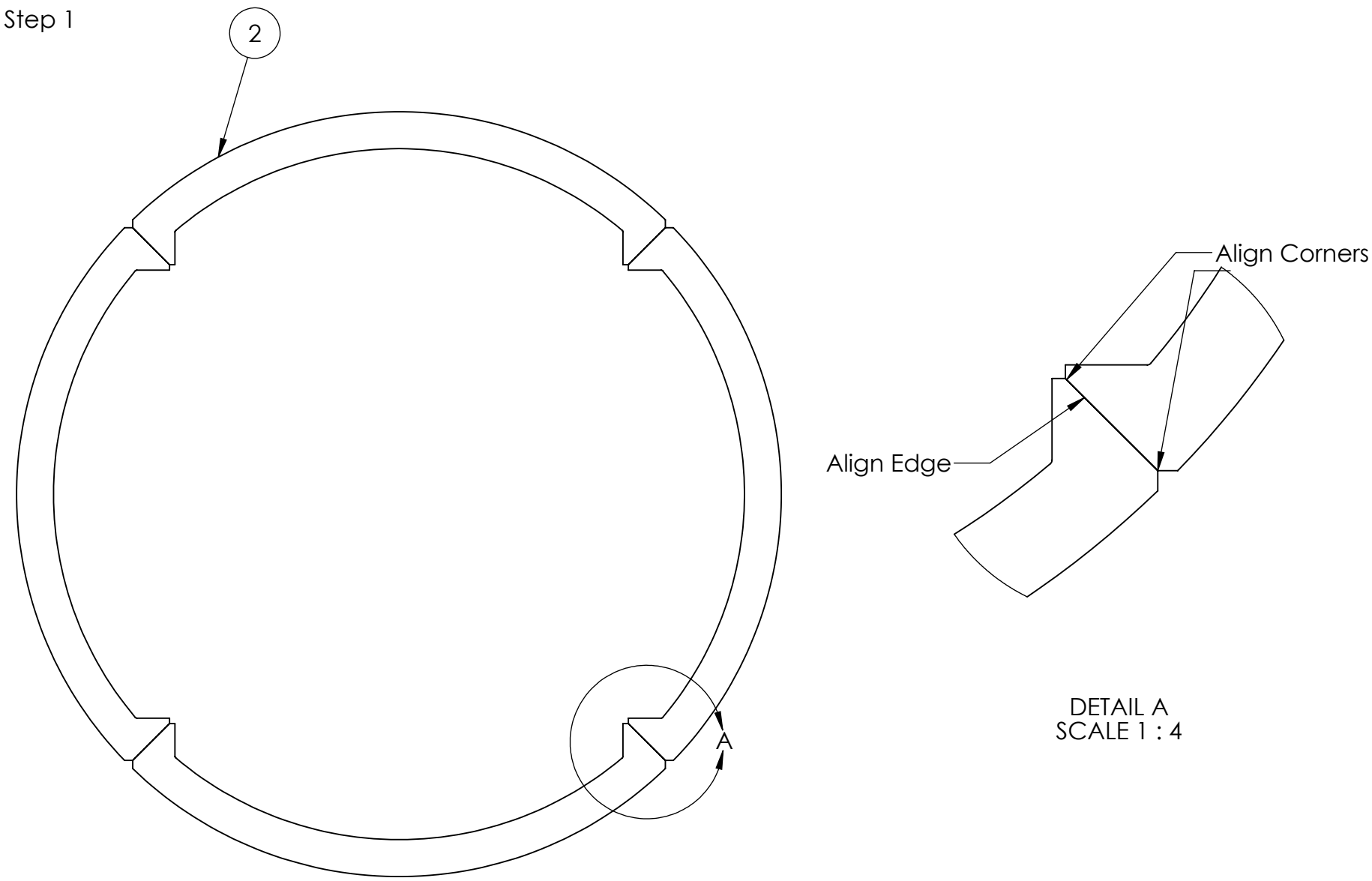
Hardware Needed:  
#8 x 2" Long Screw - Qty 8

ITEM NO.	PART NUMBER	DESCRIPTION	
1	TE-22032	Hub - Simple Build - Upper Hub Ring Connection Plate	4
2	TE-22033	Hub - Simple Build - Upper Hub Ring Assembly	4

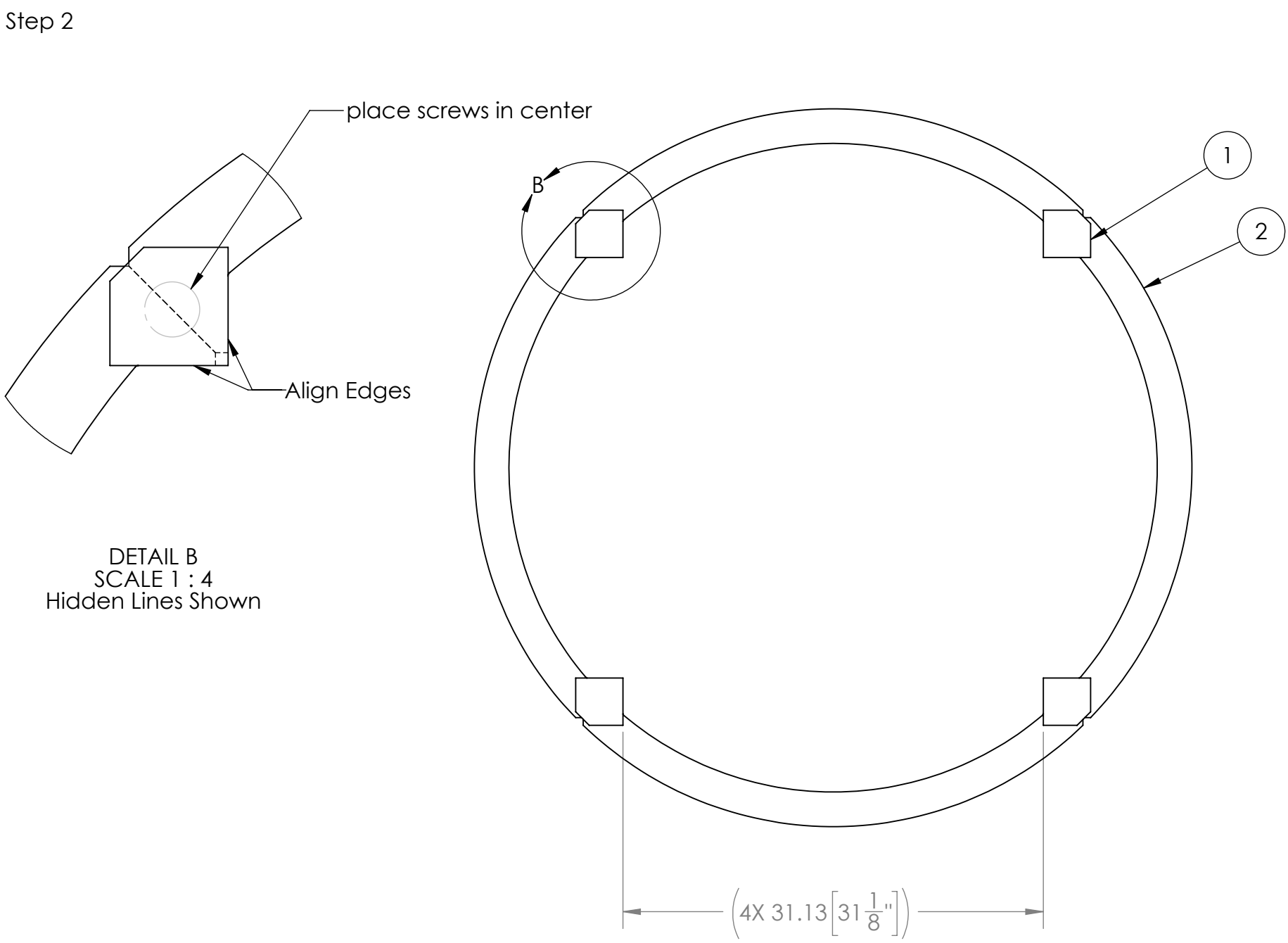
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	DRAWN	KAMC	12/30/2021			
	PROPRIETARY AND CONFIDENTIAL			TITLE:  Hub - Simple Build - Upper Hub Full Ring Assembly		
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.					
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE    DWG. NO.    REV			
			C    TE-22034			
			SCALE: 1:6    SHEET 1 OF 3			





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 $\pm .125$	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE:  Hub - Simple Build - Upper Hub Full Ring Assembly		
	<b>MATERIAL/FINISH:</b>			SIZE	DWG. NO.	REV
DO NOT SCALE DRAWING	<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.			C	TE-22034	
				SCALE: 1:10		SHEET 2 OF 3



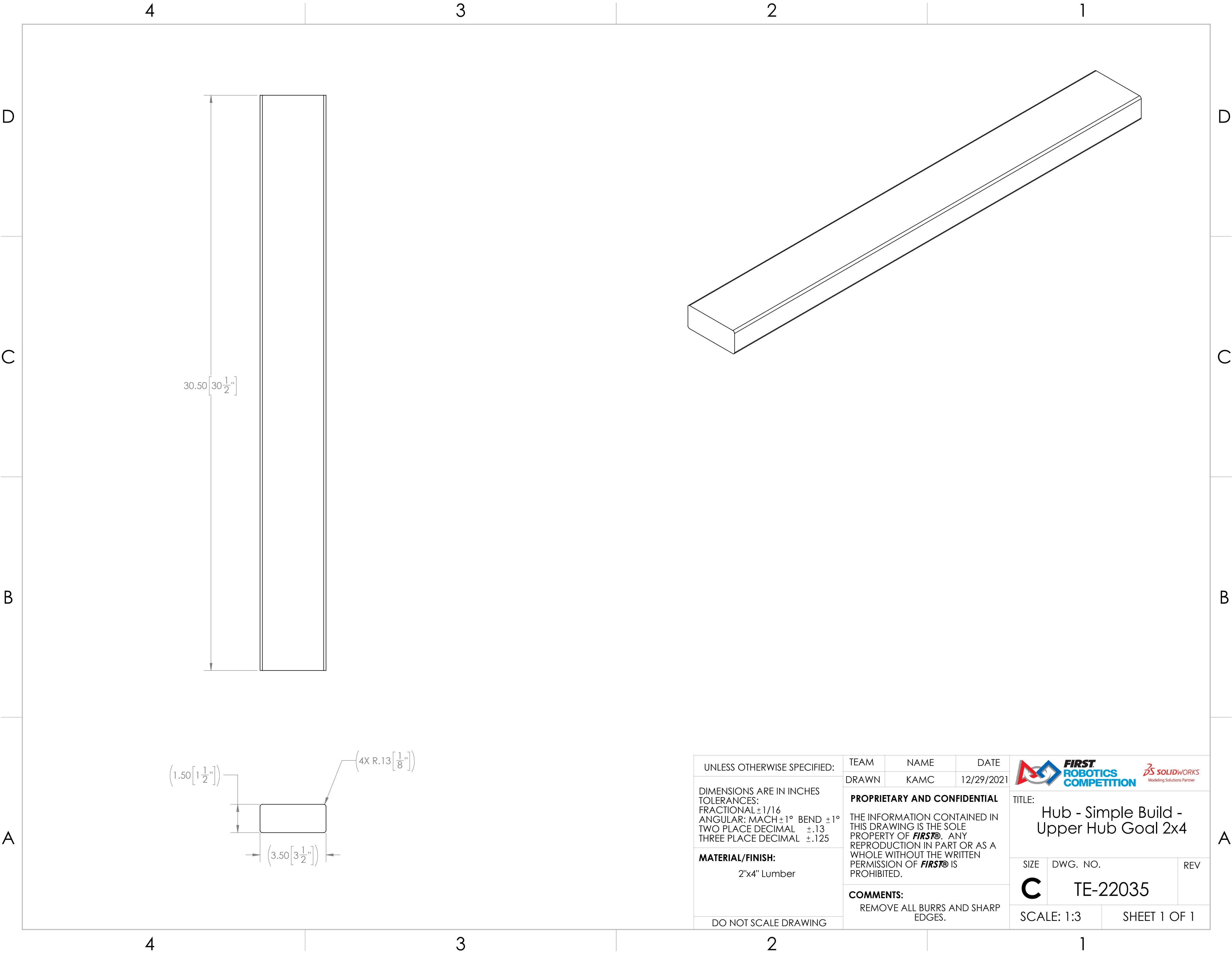
1. Align 4x 2 , as shown. Attachment will happen in next step.





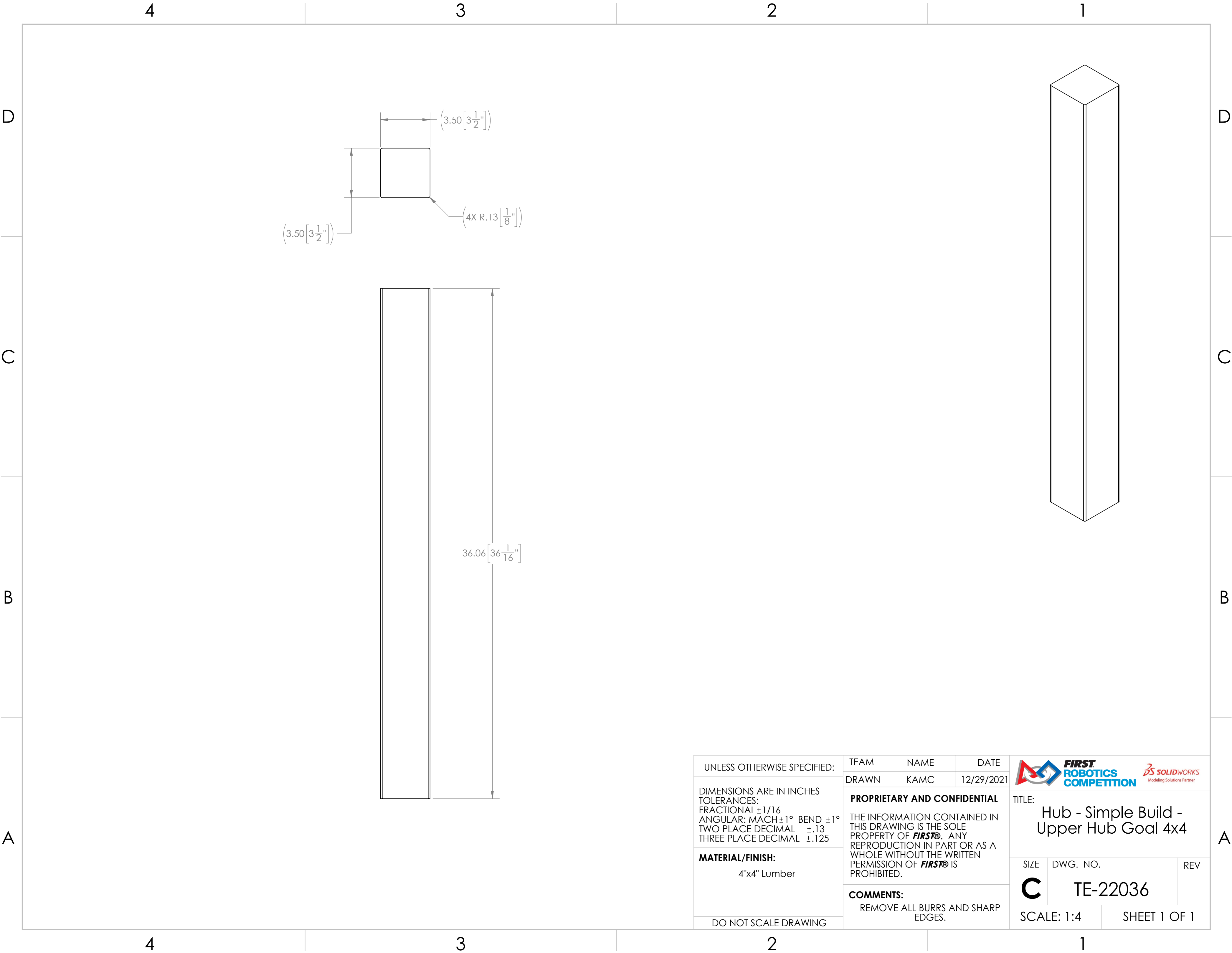
- Align 4x 1 onto the ring formed in Step 1 , as shown.
- Connect using 2" long screws. It is recommended to use only 2x screws towards the center of 1 , one into each 2 . This will ensure there is room for connection when added to TE-22030.



UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>     <b>DO NOT SCALE DRAWING</b>	TEAM	NAME	DATE	<div><div><b>FIRST</b> ROBOTICS COMPETITION</div><div>Modeling Solutions Partner</div></div> <div>TITLE:  Hub - Simple Build - Upper Hub Full Ring Assembly</div>		
	DRAWN	KAMC	12/30/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.				SIZE	DWG. NO.
				C	TE-22034	
				SCALE: 1:10		SHEET 3 OF 3

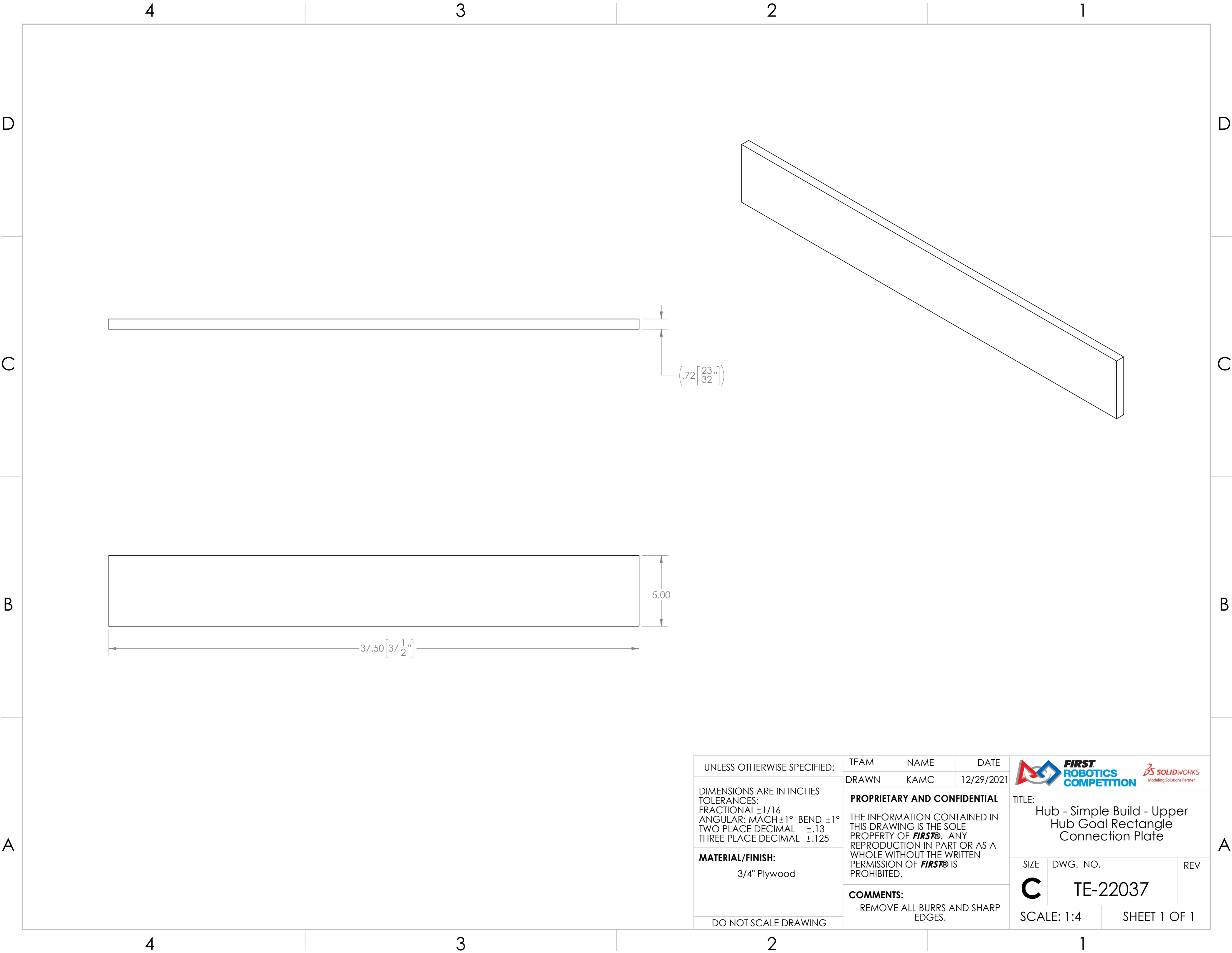






UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>  2"x4" Lumber  DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div> <div>TITLE: Hub - Simple Build - Upper Hub Goal 2x4</div>		
	DRAWN	KAMC	12/29/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			SIZE	DWG. NO.	REV
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			<b>C</b>	TE-22035	
SCALE: 1:3		SHEET 1 OF 1				

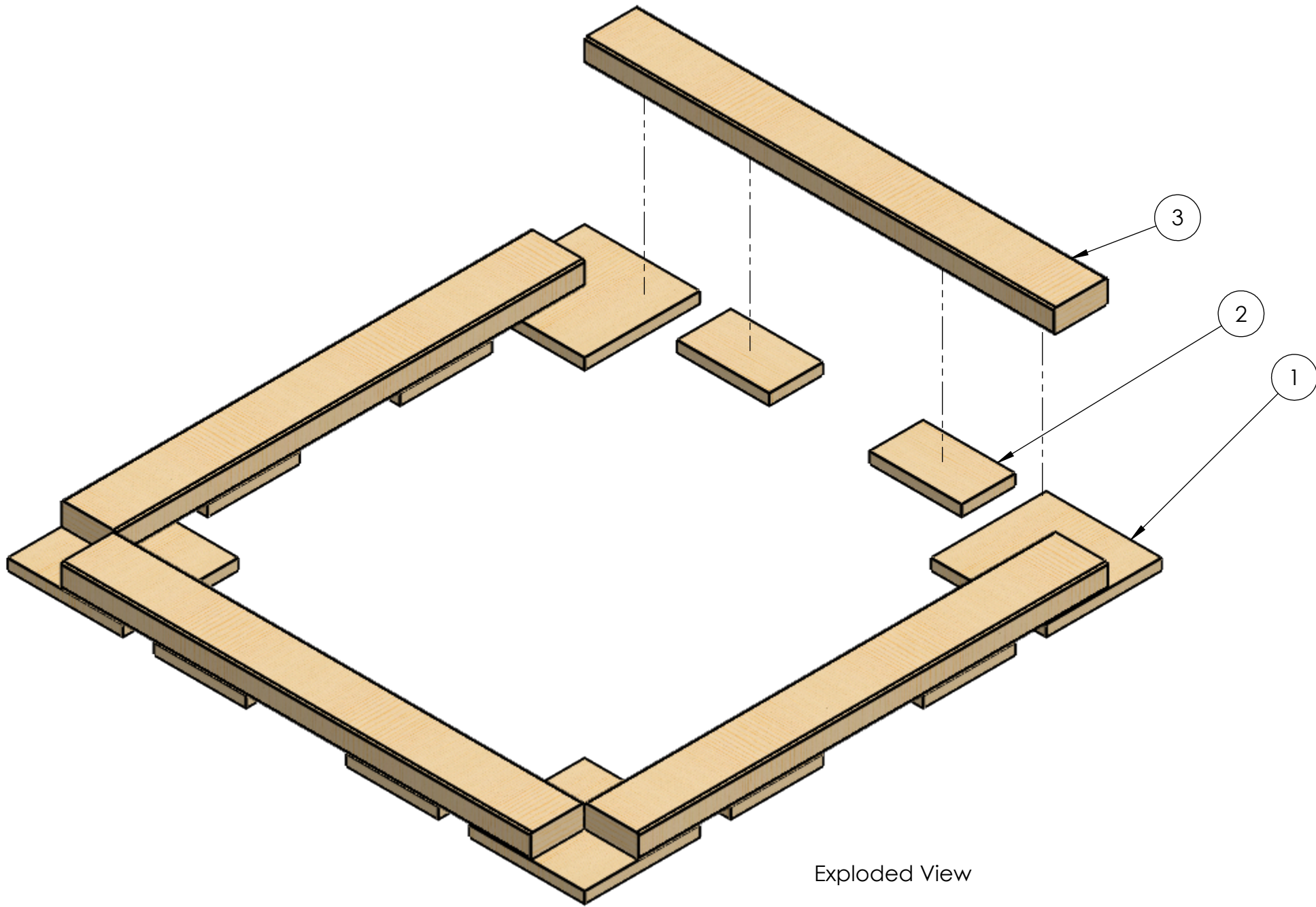


UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/29/2021			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE:  Hub - Simple Build - Upper Hub Goal 4x4		
	<b>MATERIAL/FINISH:</b>  4"x4" Lumber	<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.
DO NOT SCALE DRAWING	C				TE-22036	
	SCALE: 1:4		SHEET 1 OF 1			

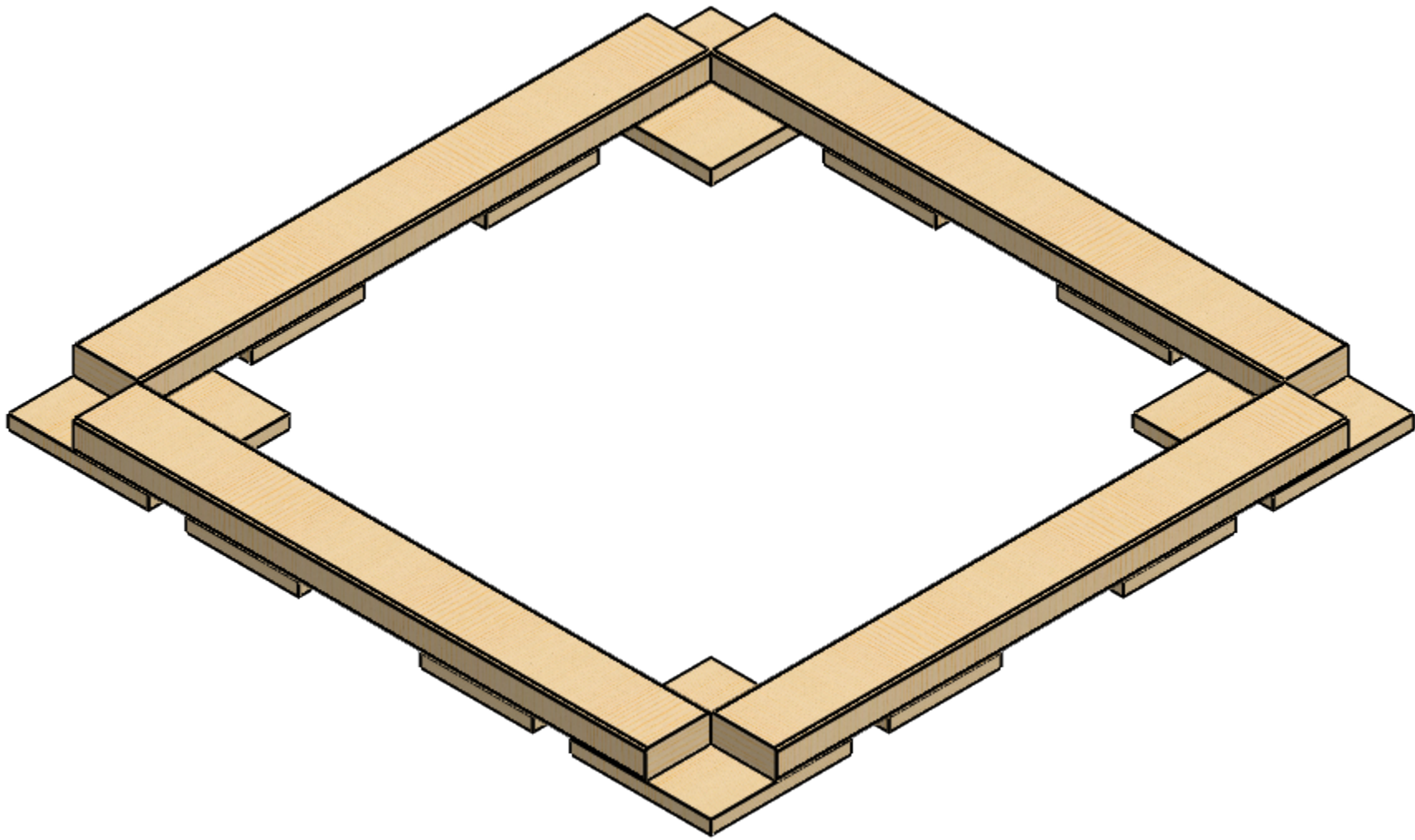


UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>  3/4" Plywood   DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/29/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE: Hub - Simple Build - Upper Hub Goal Rectangle Connection Plate		
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			SIZE <b>C</b>	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  $\pm 1/16$   
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 Hub Goal Bottom Assembly

SIZE  
C

DWG. NO.  
TE-22038

REV

SCALE: 1:6

SHEET 1 OF 3

4

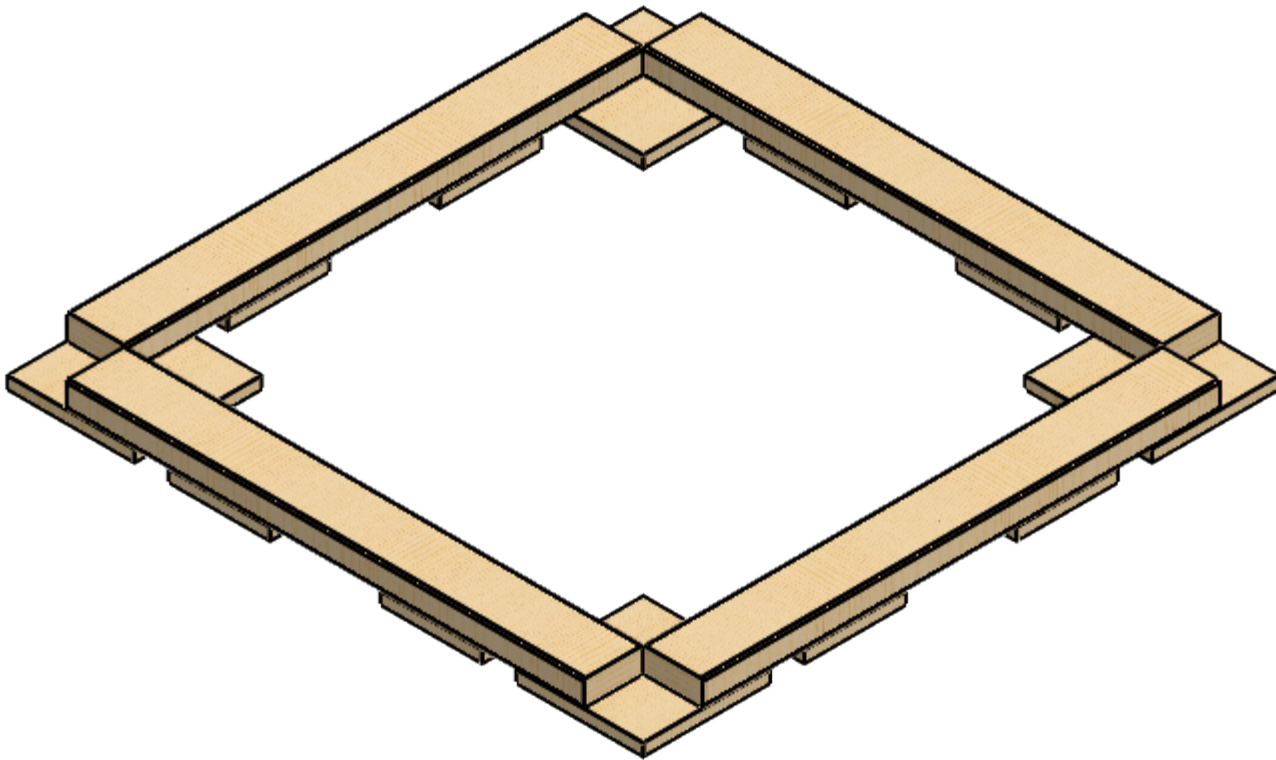
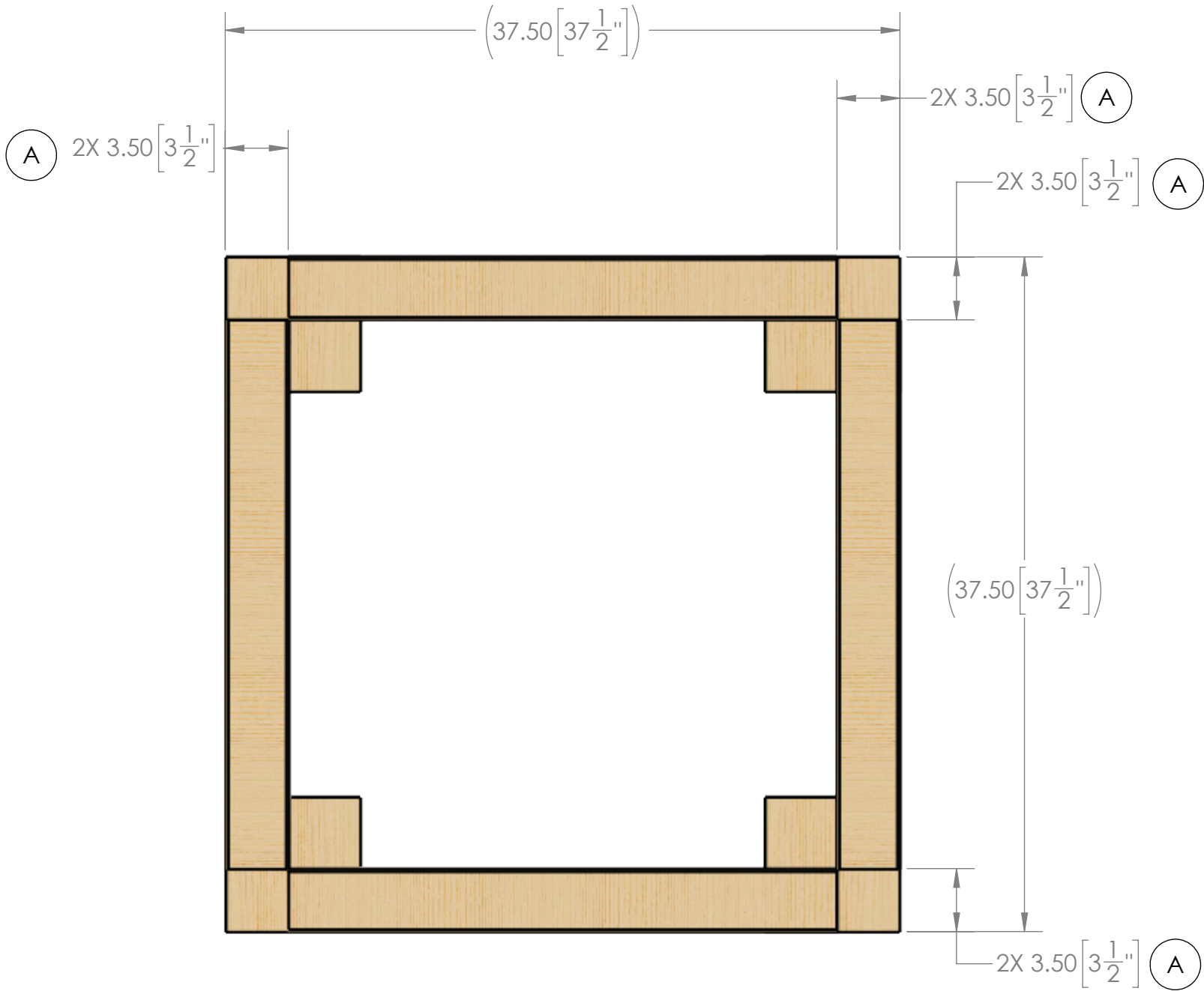
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2

1

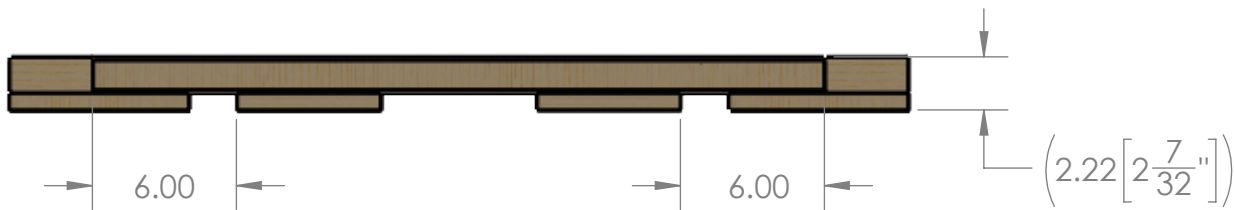
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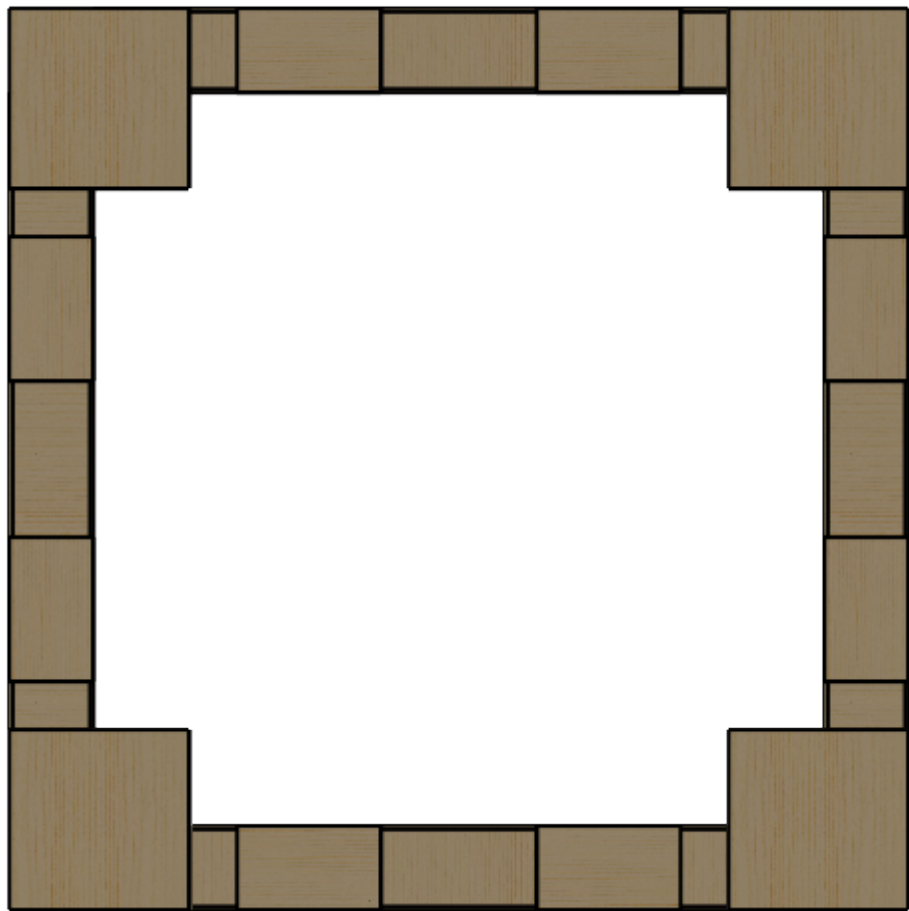
C

C





B

B



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  <b>MATERIAL/FINISH:</b>    DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div> <div>TITLE: Hub - Simple Build - Upper Hub Goal Bottom Assembly</div> <div><div>SIZE</div><div>DWG. NO.</div><div>REV</div><div>C</div><div>TE-22038</div><div>SCALE: 1:8</div><div>SHEET 2 OF 3</div></div>
	DRAWN	KAMC	12/30/2021	
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			

4

3

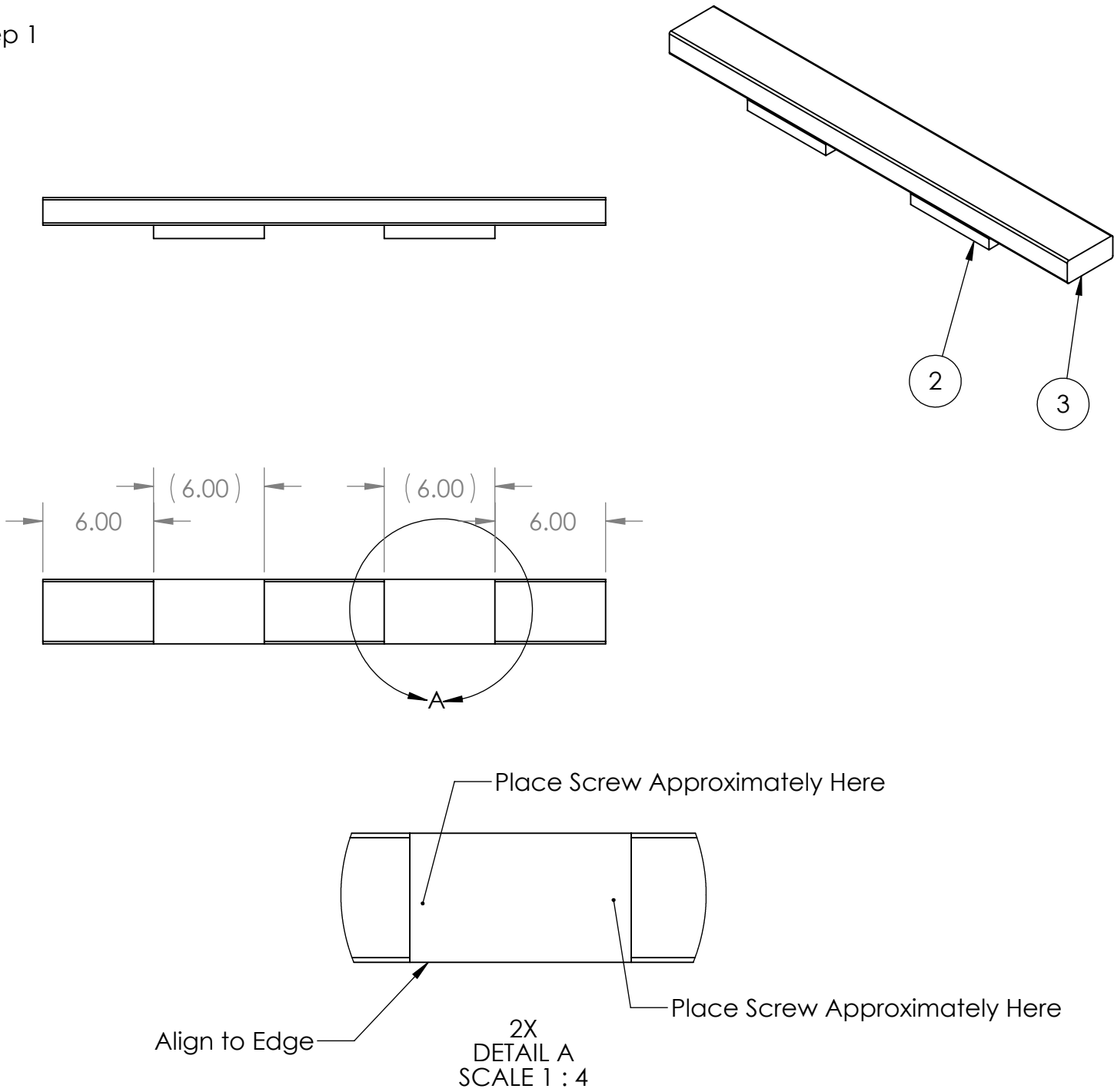
2

1

A

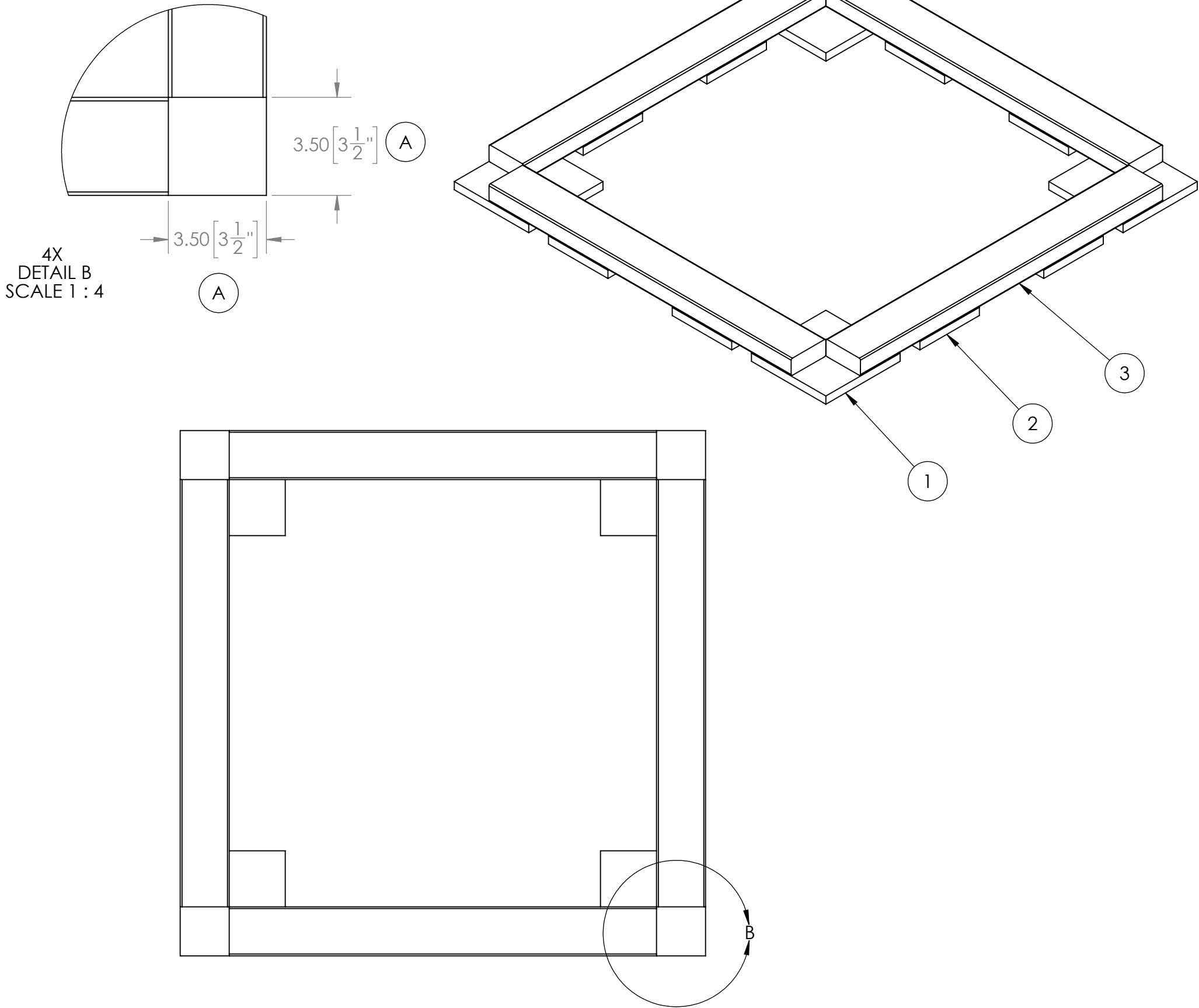


Step 1





- 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.

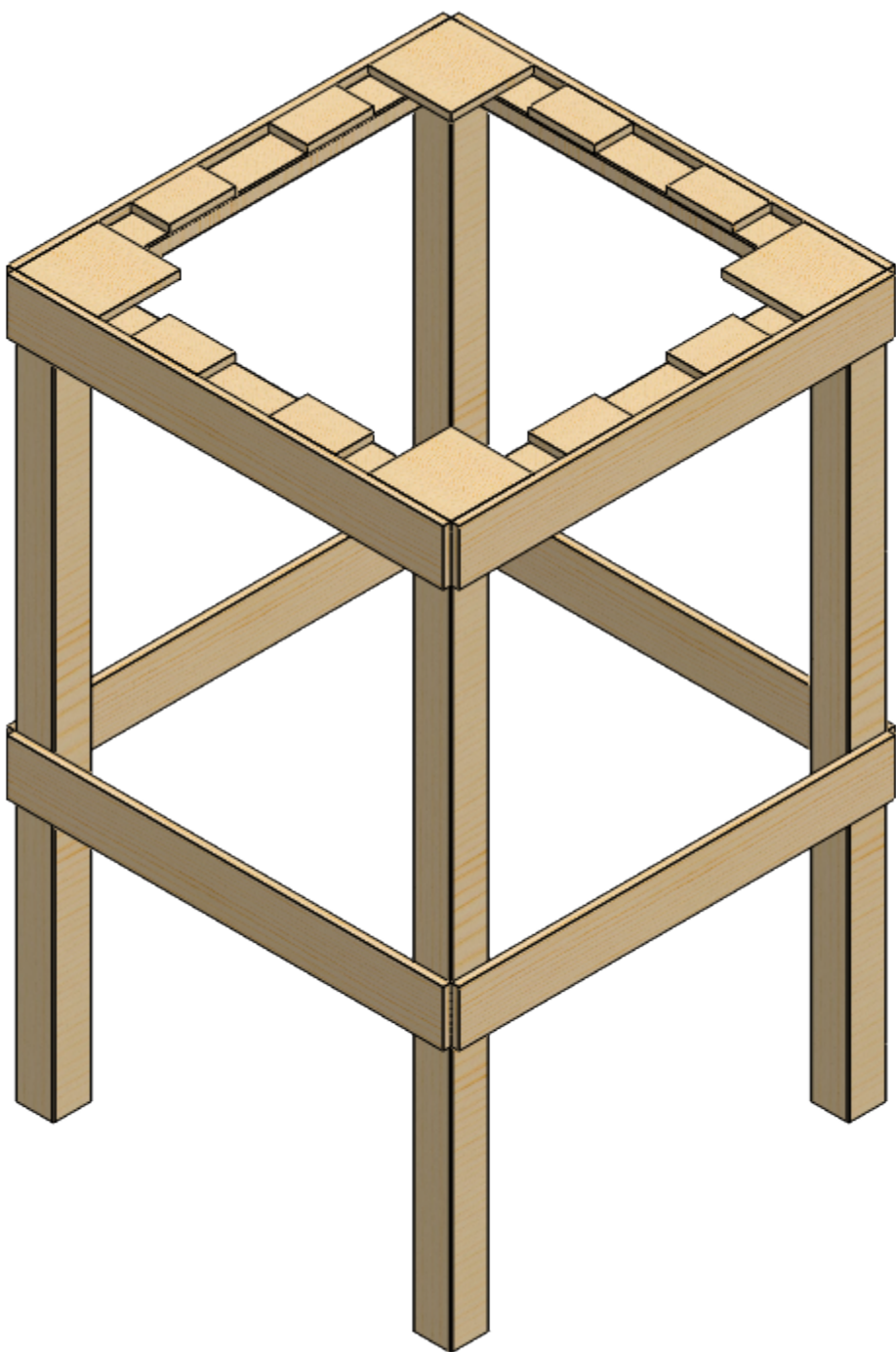
Step 2



- 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.



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:	
	THE INFORMATION CONTAINED IN 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

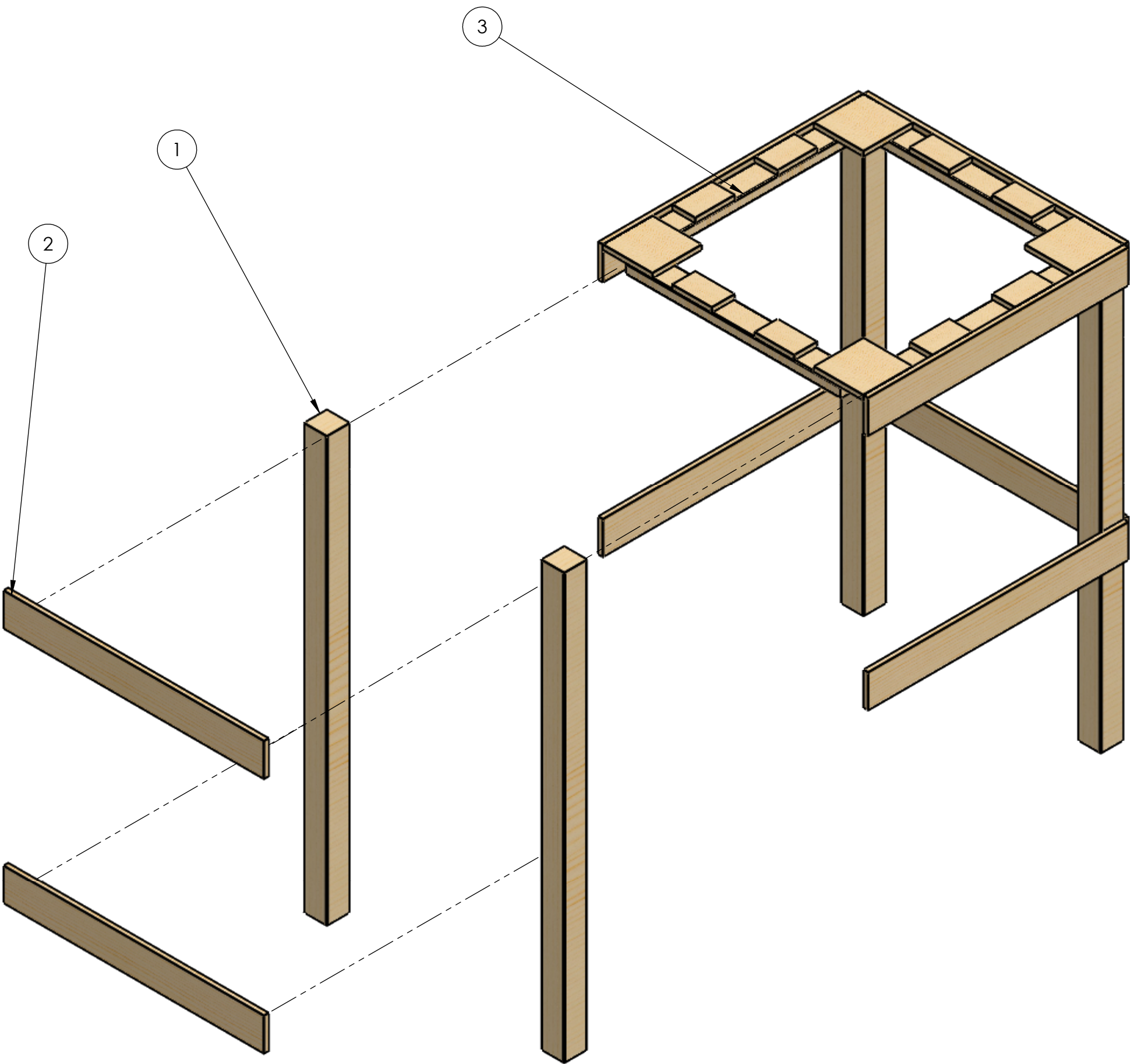


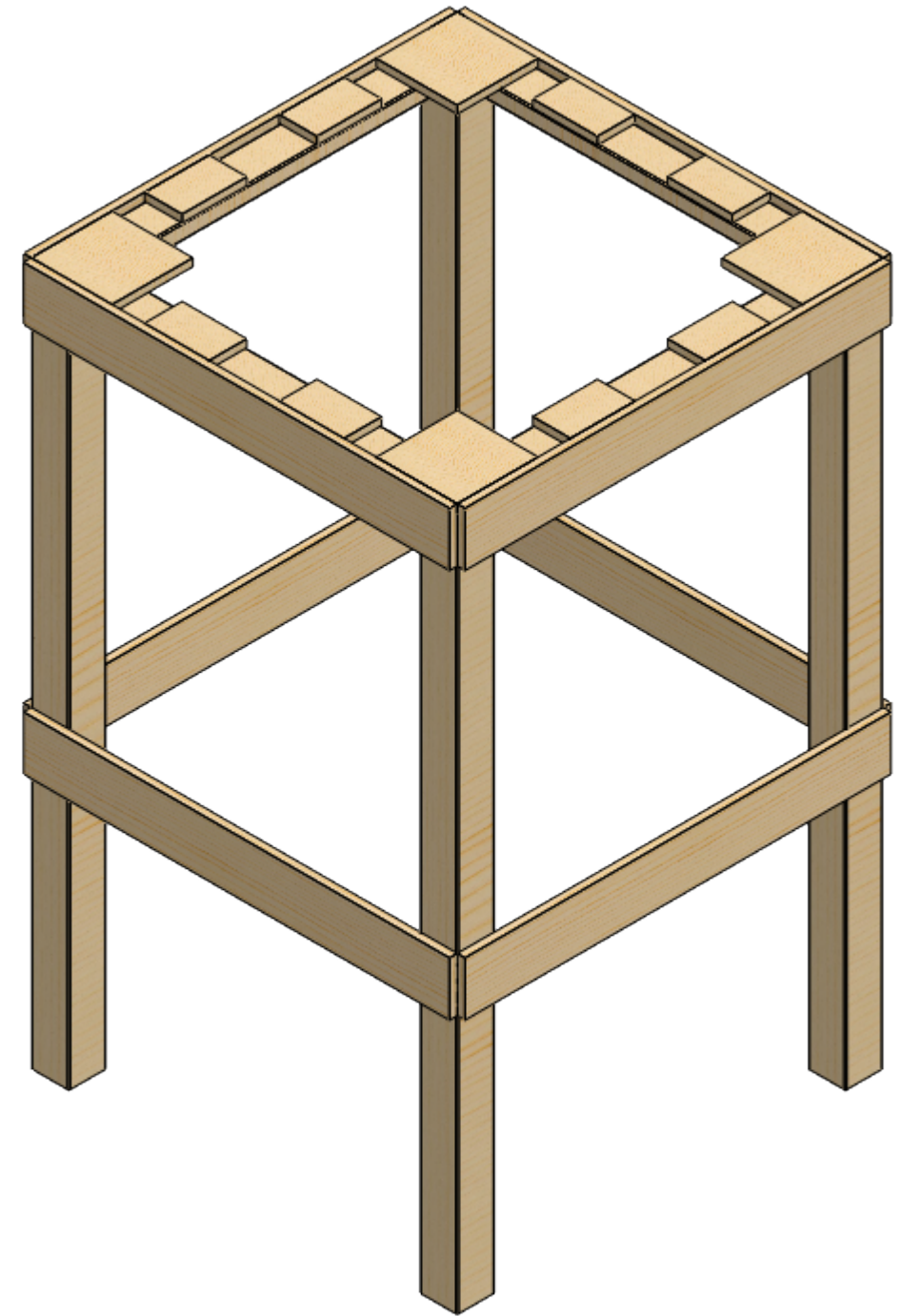
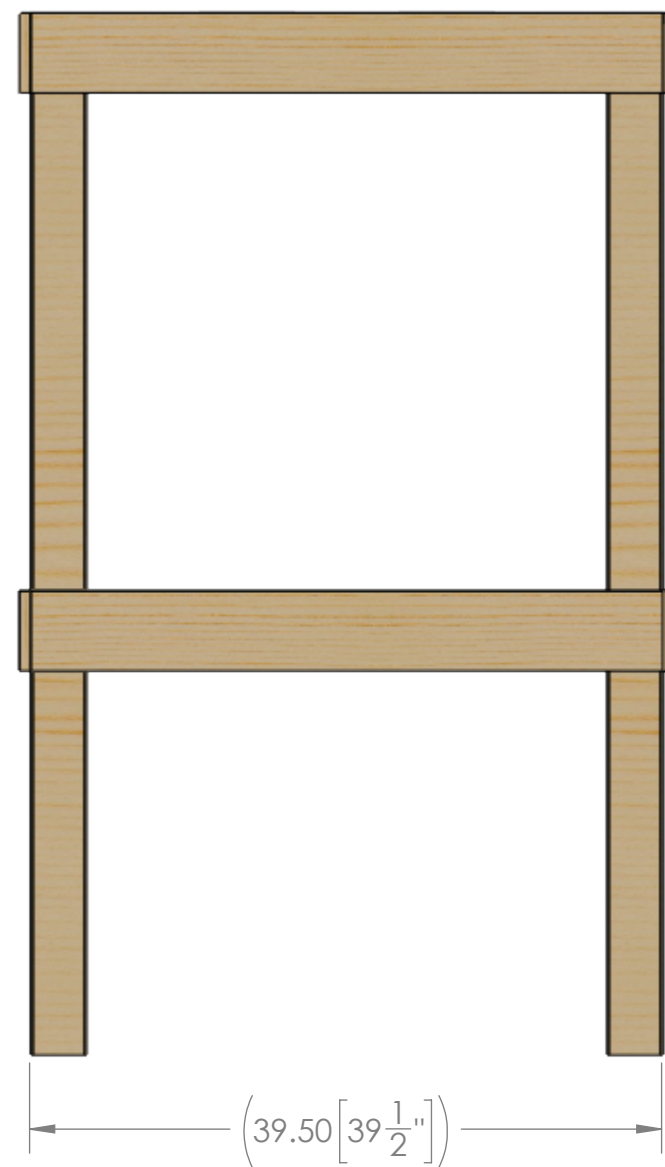
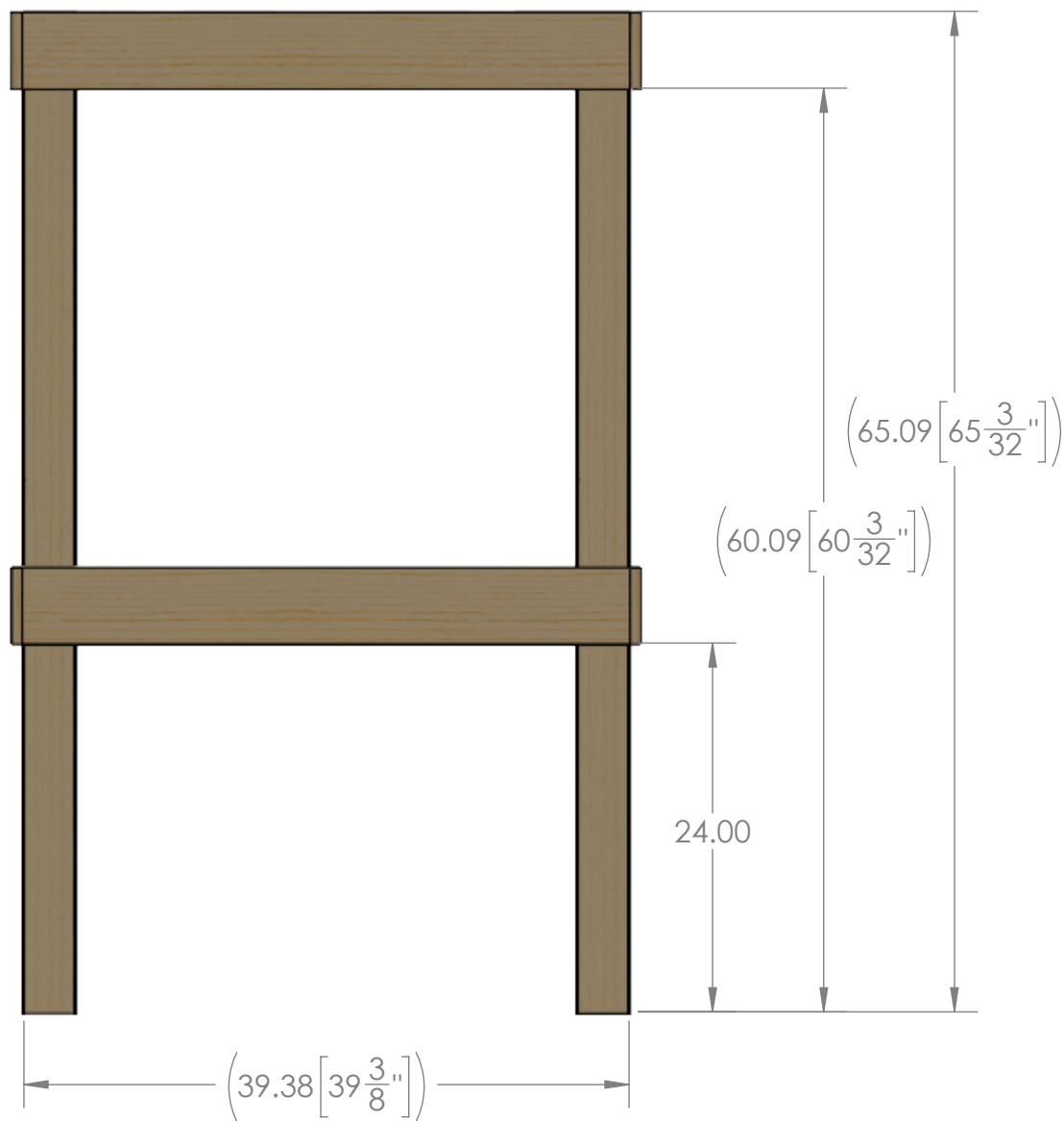
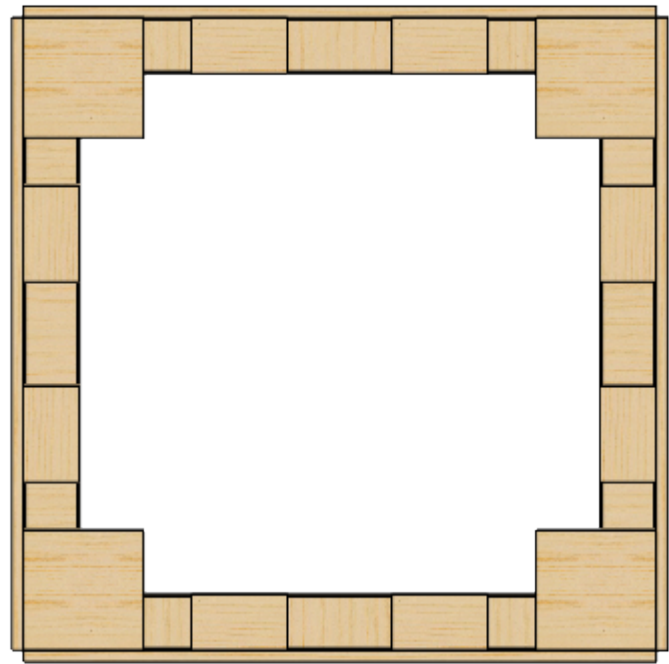




Hardware Needed:  
#8 x 1.25" Long Screw - Qty 12  
#8 x 2" Long Screw - Qty 80

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

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

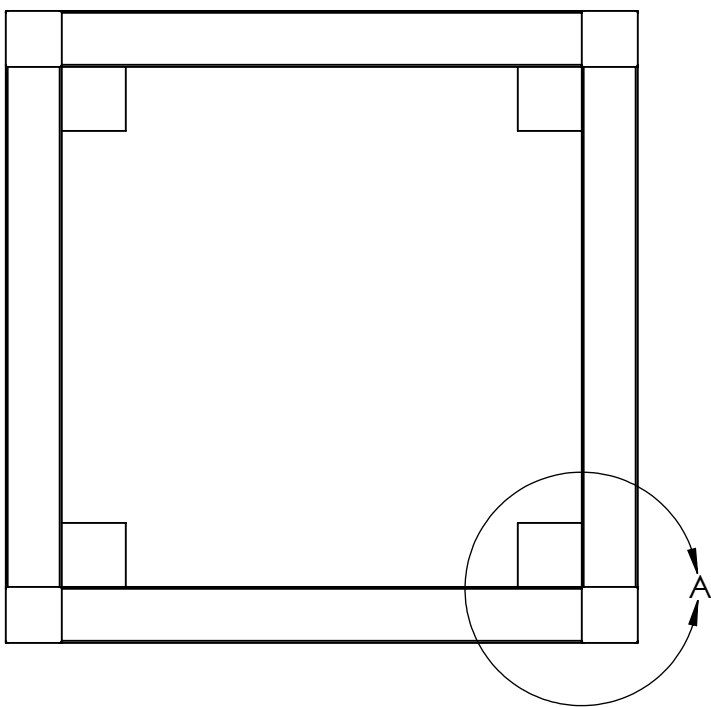
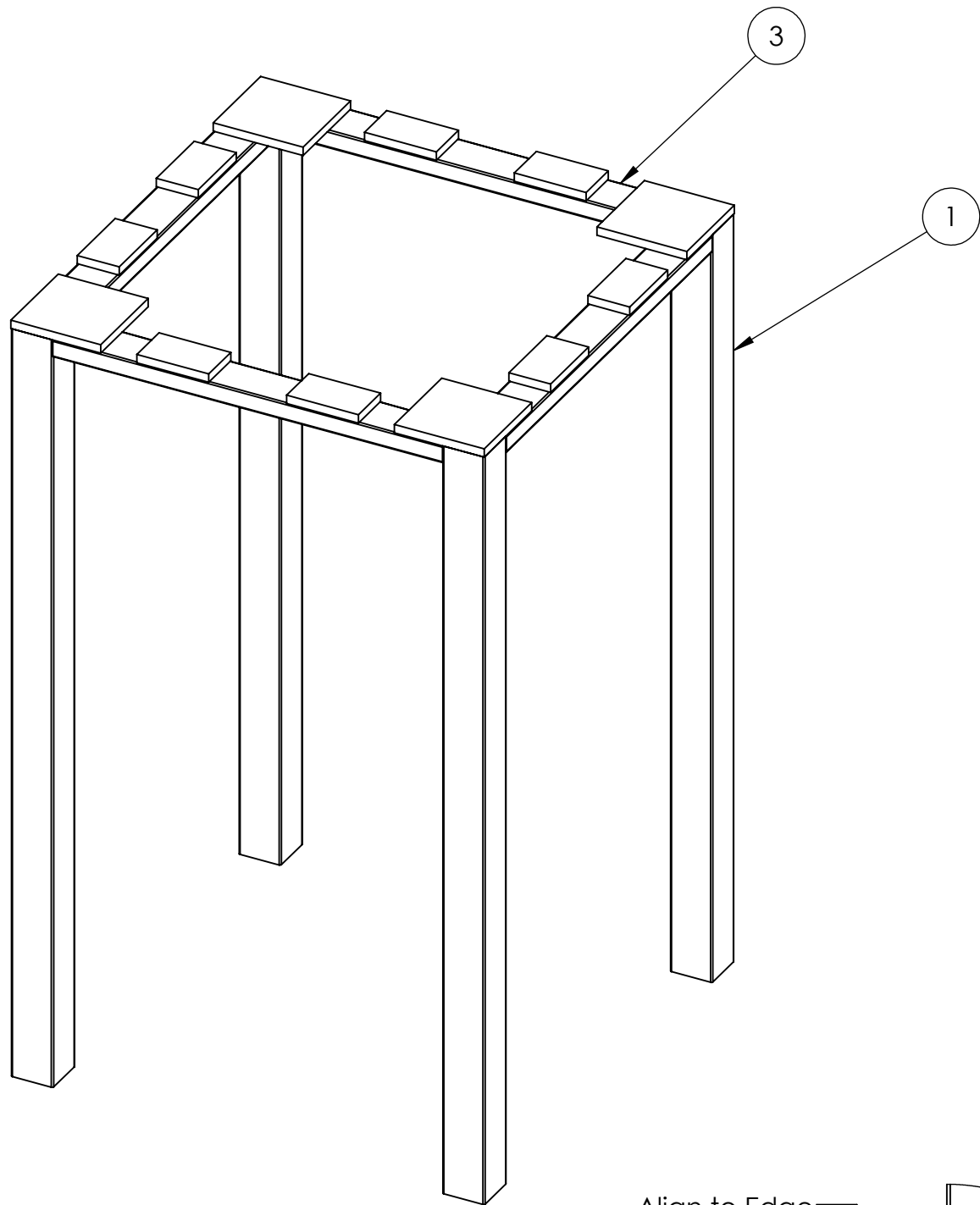




<div>UNLESS OTHERWISE SPECIFIED:</div> <div>DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL <math>\pm 1/16</math> ANGULAR: MACH <math>\pm 1^\circ</math> BEND <math>\pm 1^\circ</math> TWO PLACE DECIMAL <math>\pm .13</math> THREE PLACE DECIMAL <math>\pm .125</math></div> <div>MATERIAL/FINISH:</div> <div>DO NOT SCALE DRAWING</div>	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 <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			Hub - Simple Build - Upper Hub Base Assembly	
COMMENTS:		SIZE	DWG. NO.	REV	
REMOVE ALL BURRS AND SHARP EDGES.		<b>C</b>	TE-22040		
SCALE: 1:12			SHEET 2 OF 4		

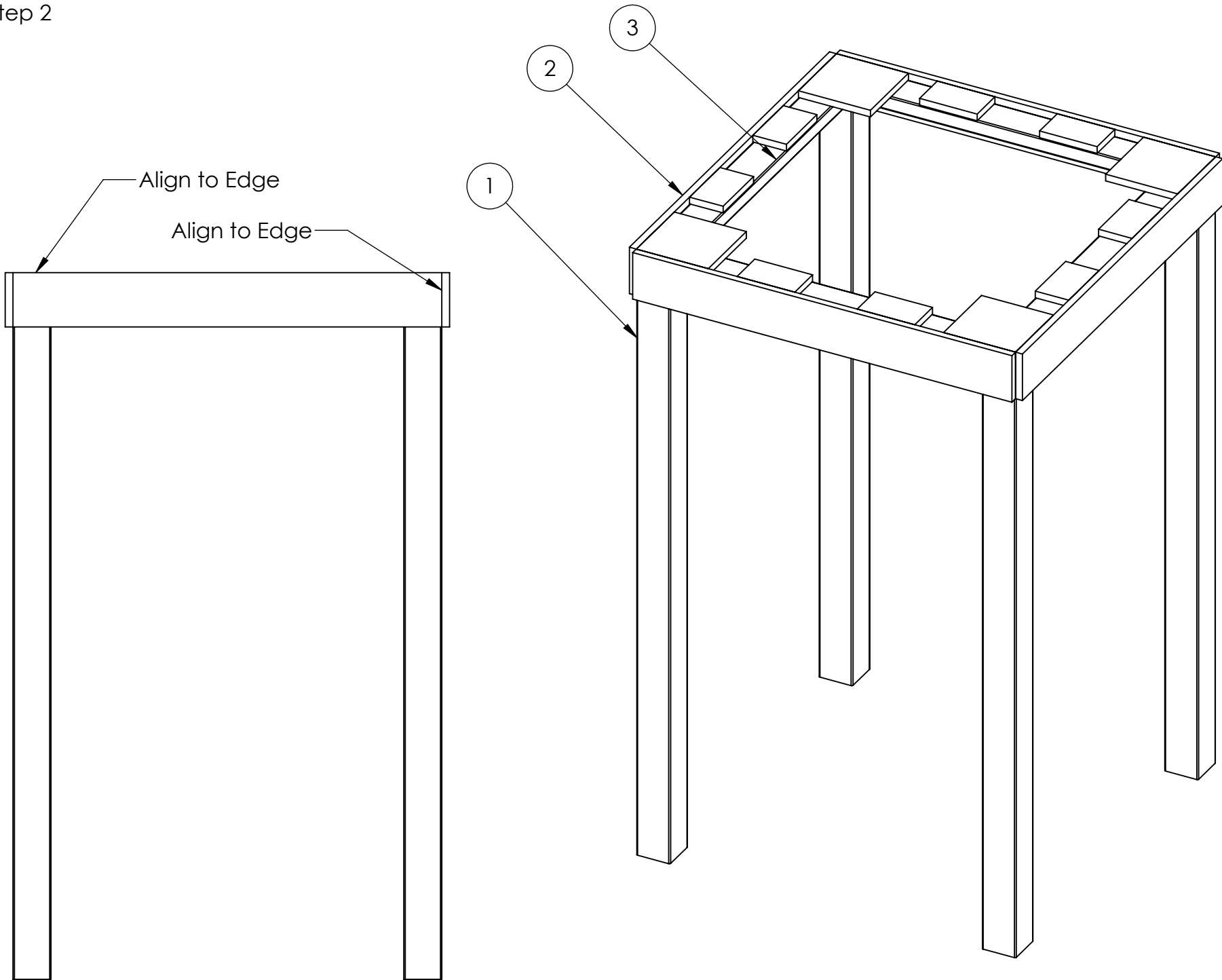


Step 1



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  $\pm 1/16$   
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**

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**COMMENTS:**

REMOVE ALL BURRS AND SHARP EDGES.



**FIRST**  
ROBOTICS  
COMPETITION

**SOLIDWORKS**  
Modeling Solutions Partner

TITLE:

Hub - Simple Build -  
Upper Hub Base  
Assembly

SIZE

**C**

DWG. NO.

TE-22040

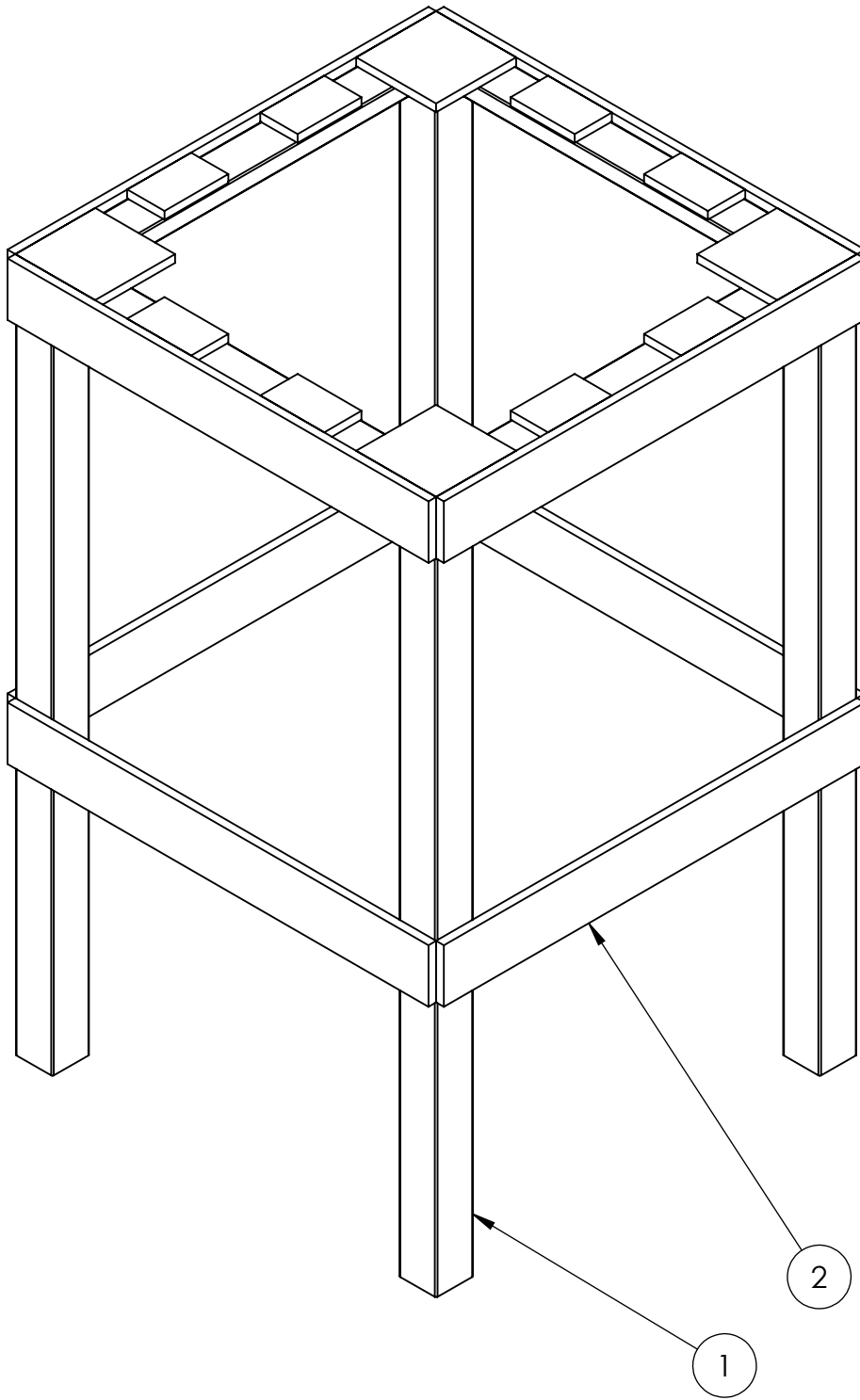
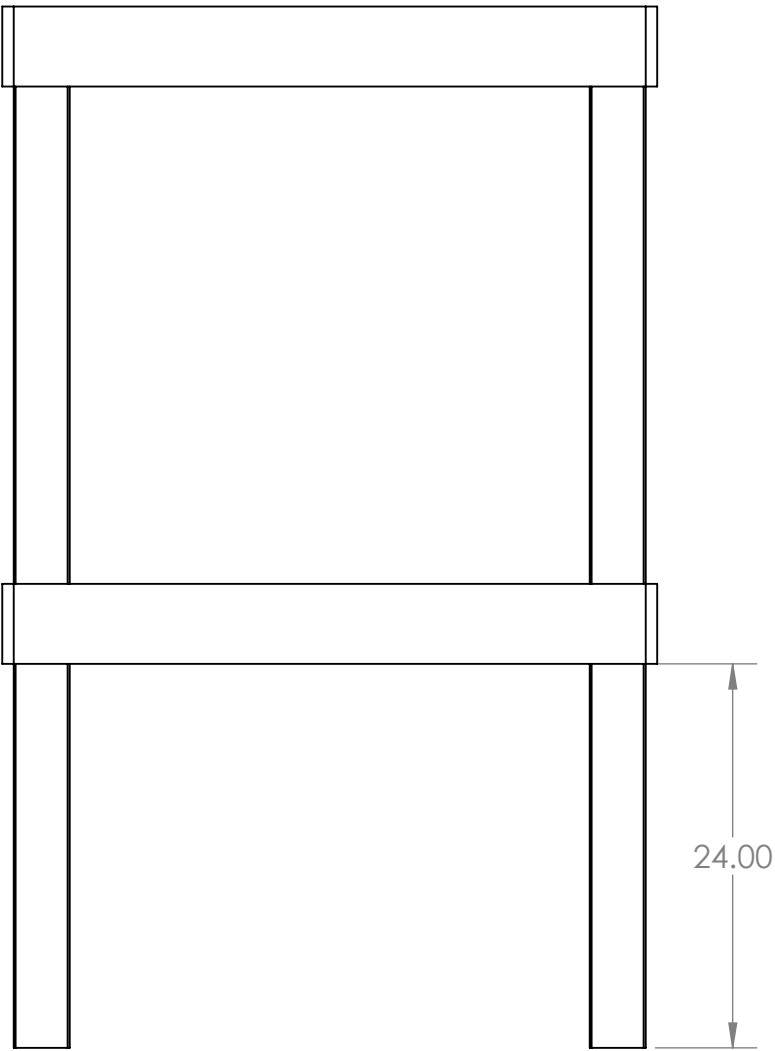
REV

SCALE: 1:12



SHEET 3 OF 4

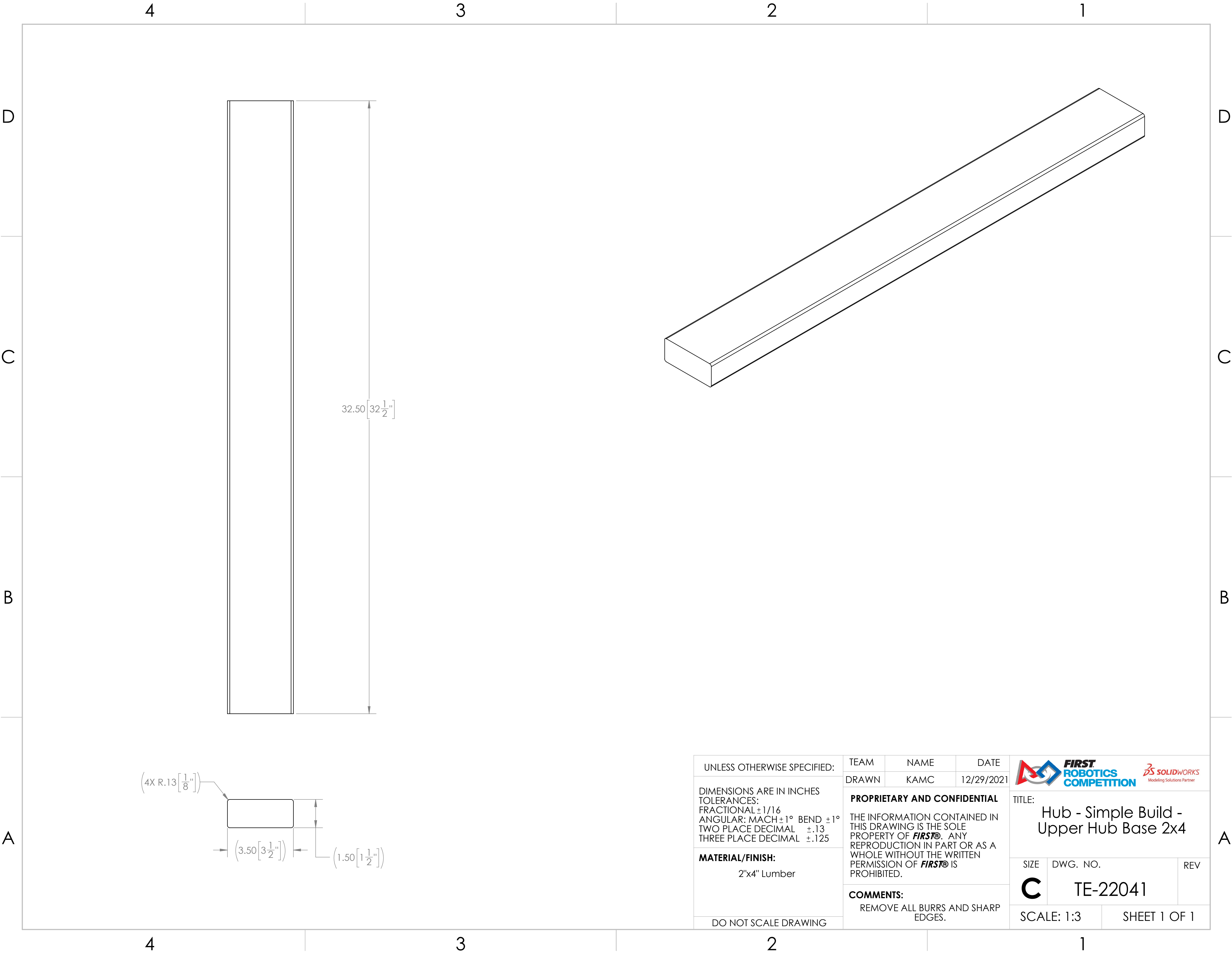




Step 3

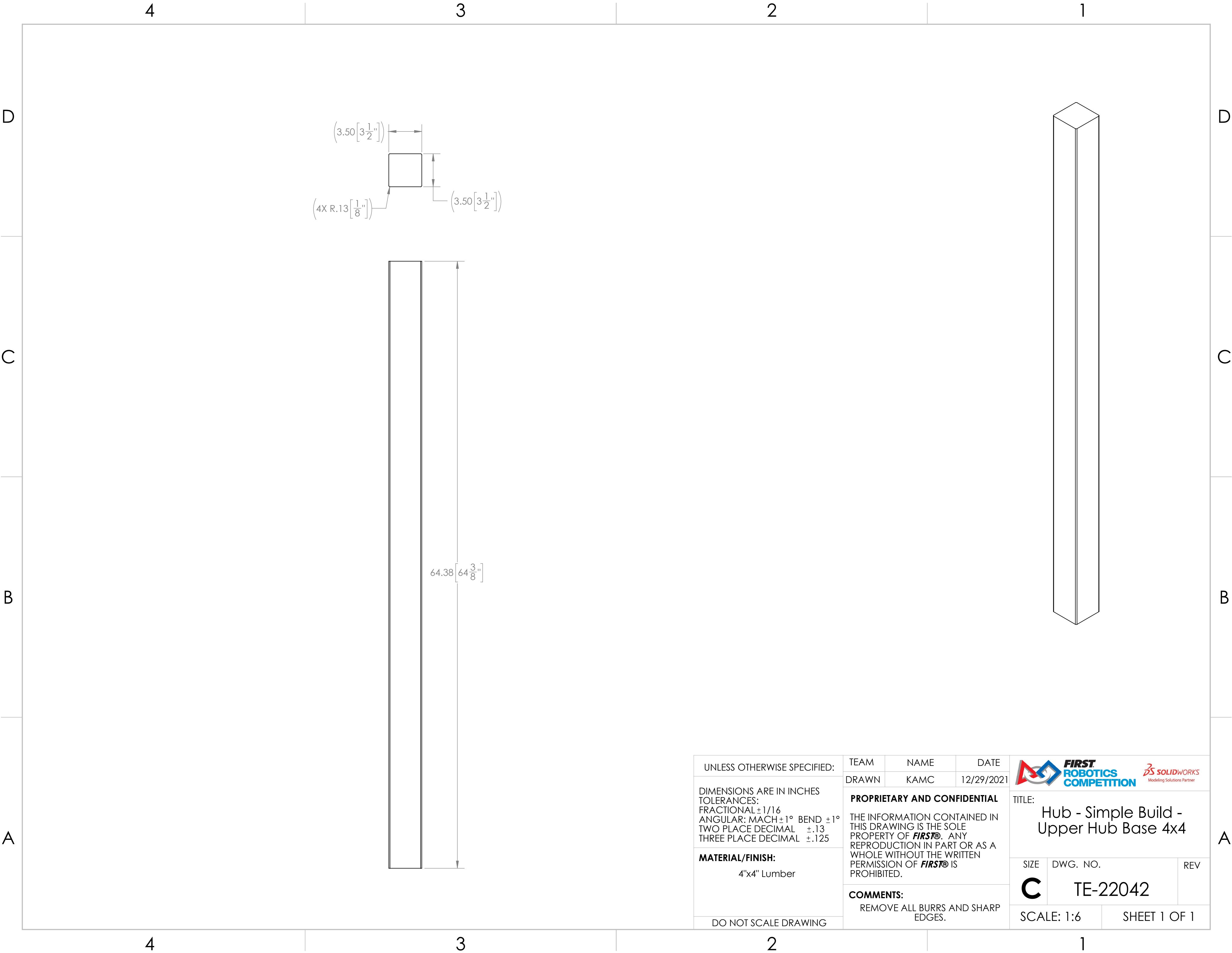




1. Align 4x **2** to Step 2 , as shown.
2. Attach **2** to **1** using 2" Long Screws. It is recommended to use 8x screws per **2** , 4x into each **1** .

UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>          DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div><div></div><div>TITLE: Hub - Simple Build - Upper Hub Base Assembly</div></div>		
	DRAWN	KAMC	12/30/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.				SIZE	DWG. NO.
				C	TE-22040	
				SCALE: 1:12		SHEET 4 OF 4

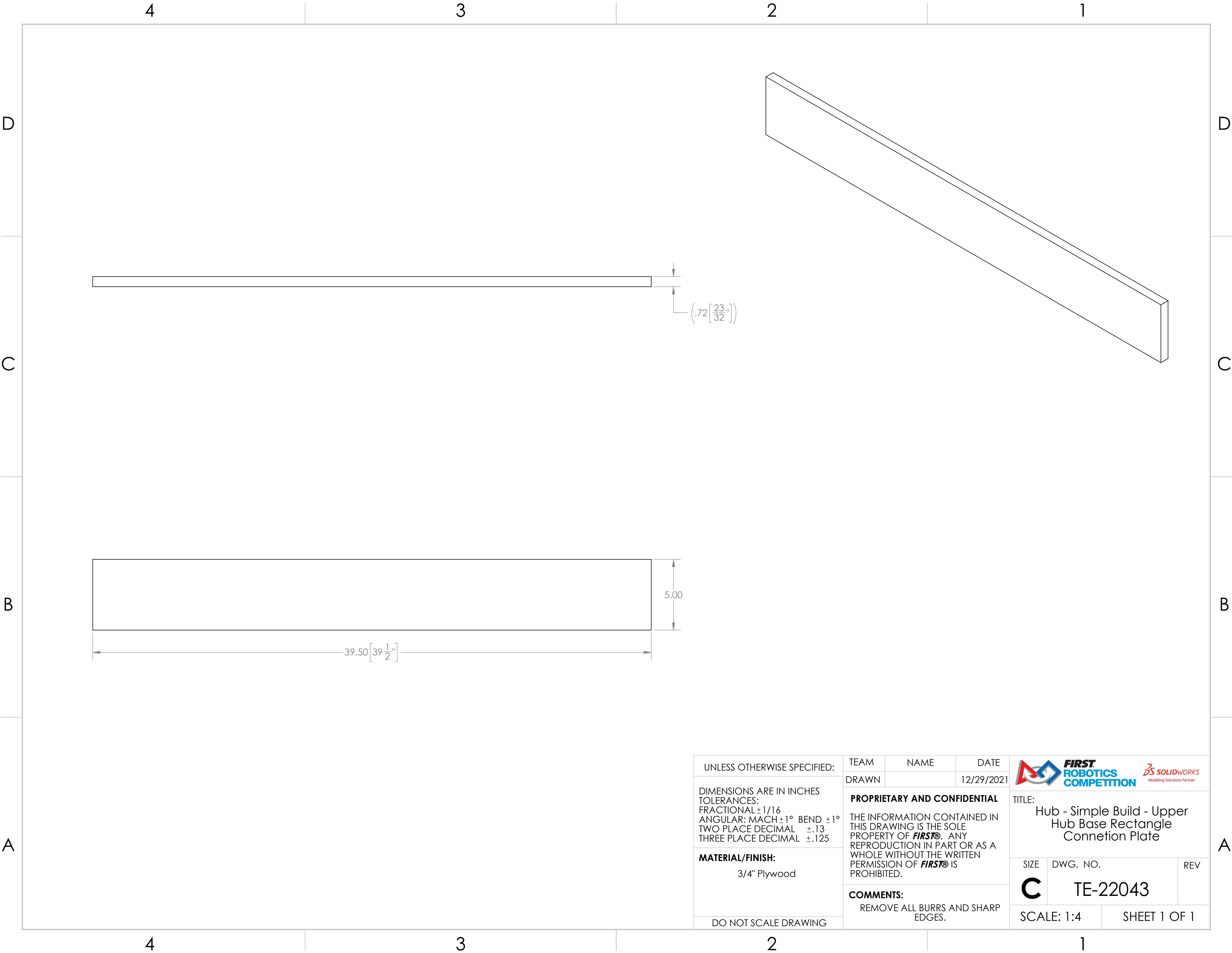




UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/29/2021			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	<b>PROPRIETARY AND CONFIDENTIAL</b>			TITLE:  Hub - Simple Build - Upper Hub Base 2x4		
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.					
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
<b>MATERIAL/FINISH:</b>  2"x4" Lumber				<b>C</b>	TE-22041	
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  <b>MATERIAL/FINISH:</b>  4"x4" Lumber  DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div><div></div><div>TITLE: Hub - Simple Build - Upper Hub Base 4x4</div></div>		
	DRAWN	KAMC	12/29/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> 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>FIRST ROBOTICS COMPETITION</div><div>Modeling Solutions Partner</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			TITLE:		
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			Hub - Simple Build - Upper Hub Base Rectangle Connetion Plate		
MATERIAL/FINISH:  3/4" Plywood	COMMENTS:  REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	TE-22043	
DO NOT SCALE DRAWING				SCALE: 1:4		SHEET 1 OF 1





4

3

2

1

D

D

C

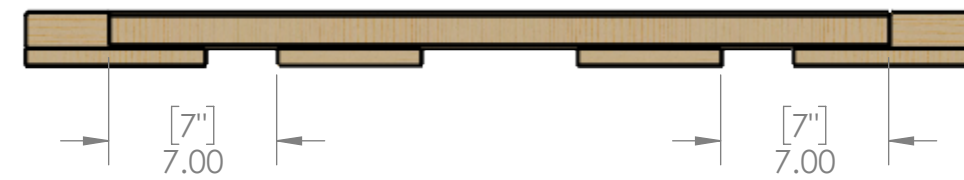
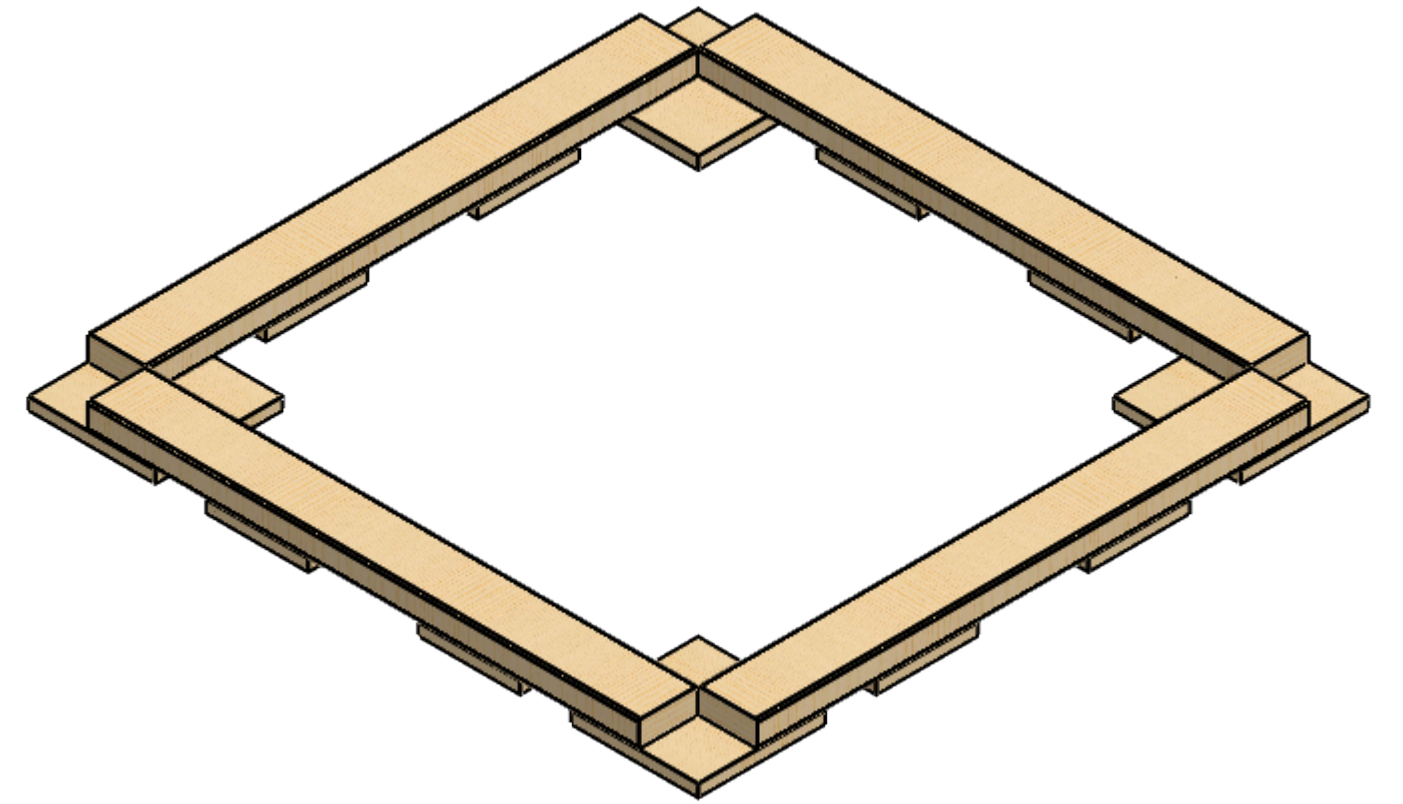
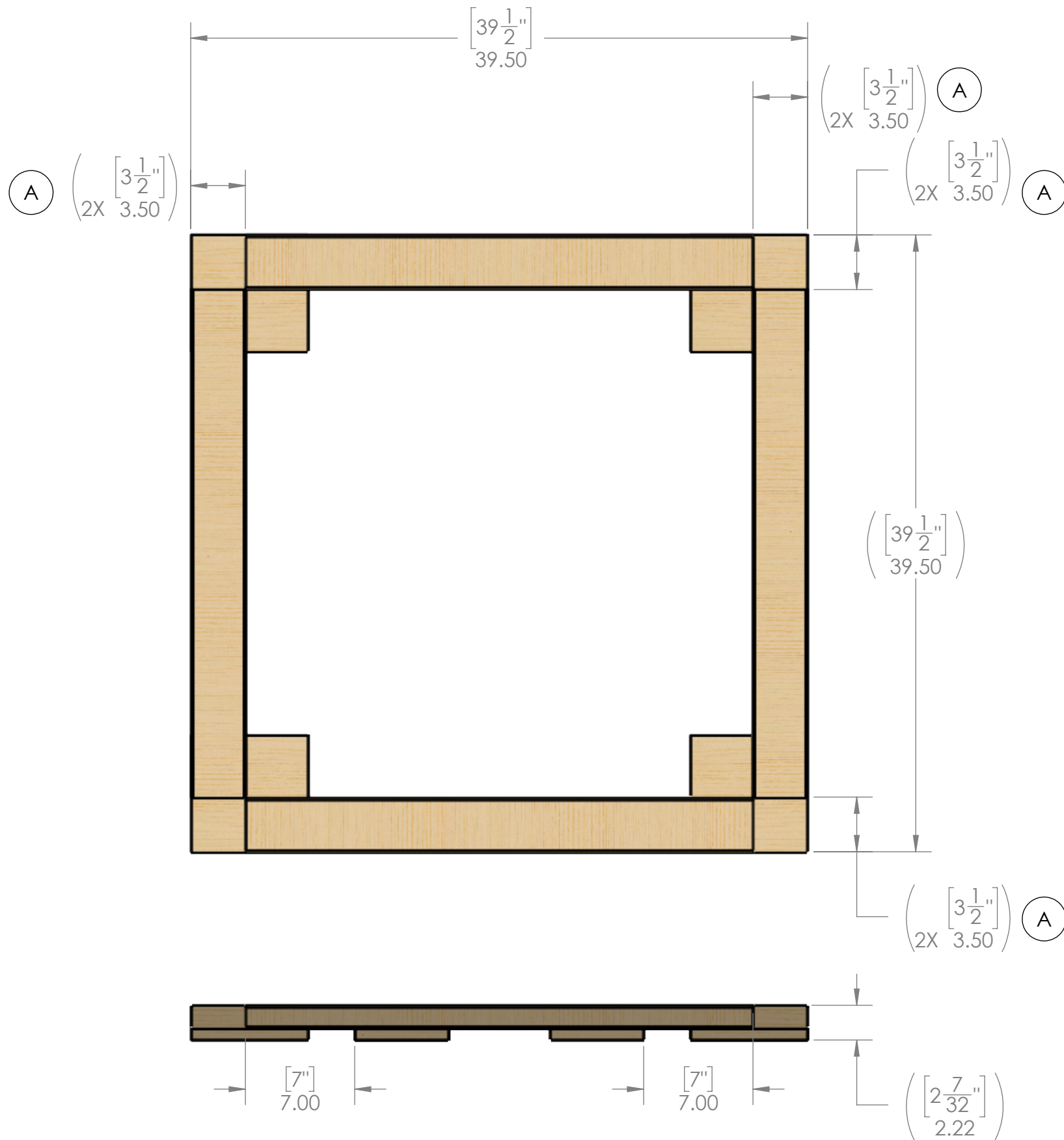
C

B

B



A

A



Note:

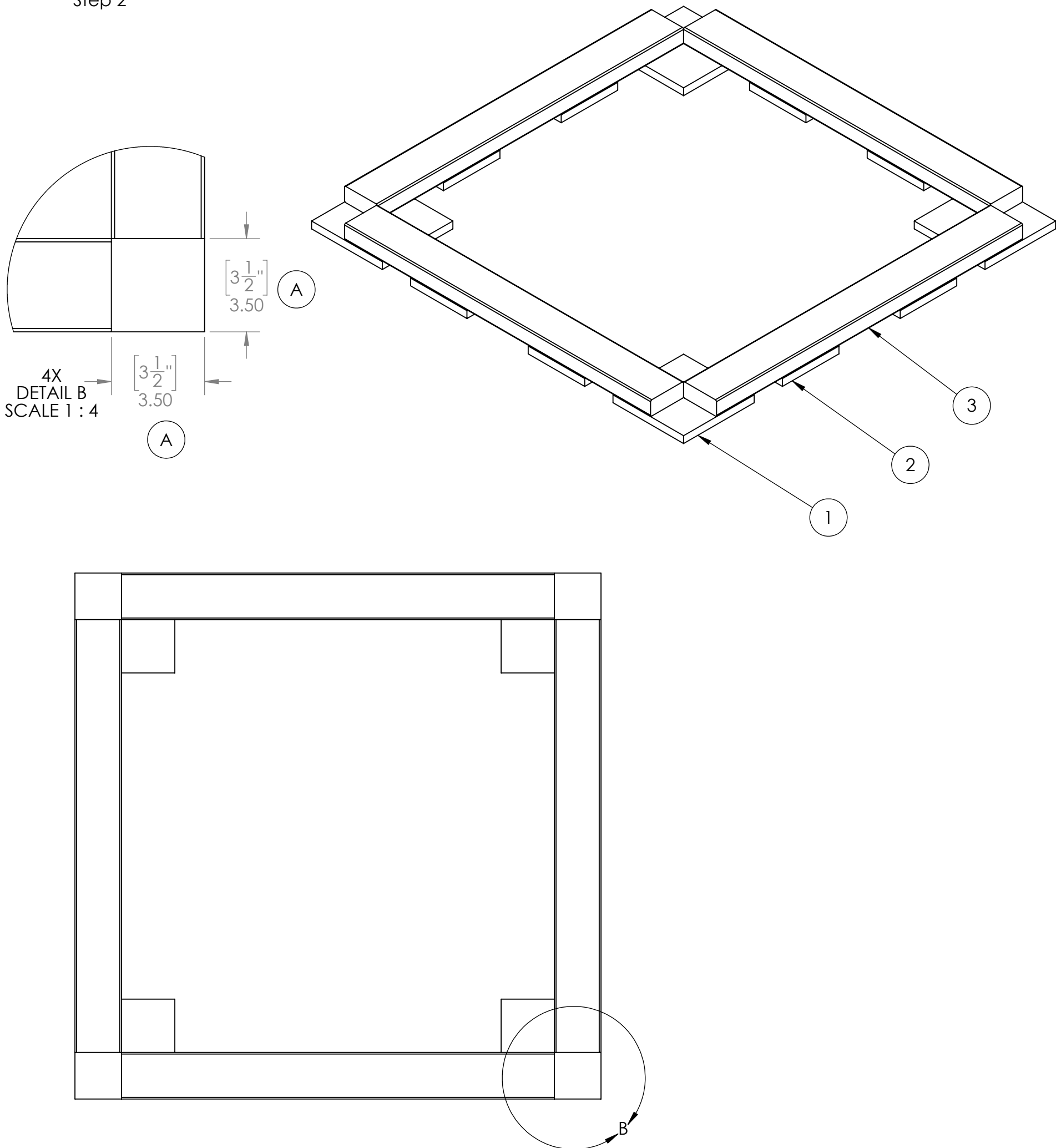
Dimensions with (A) indicate spacing for 4"x4" lumber from TE-22042. It is recommended to measure the cross section of TE-22042 and modify these dimensions as needed.

UNLESS OTHERWISE SPECIFIED:  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>TITLE: Hub - Simple Build - Upper Hub Base Top Assembly</div> <div><div>SIZE</div><div>DWG. NO.</div><div>REV</div><div>C</div><div>TE-22044</div><div>SCALE: 1:8</div><div>SHEET 2 OF 3</div></div>	
	DRAWN	KAMC	12/30/2021		
<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.					
<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.					





1

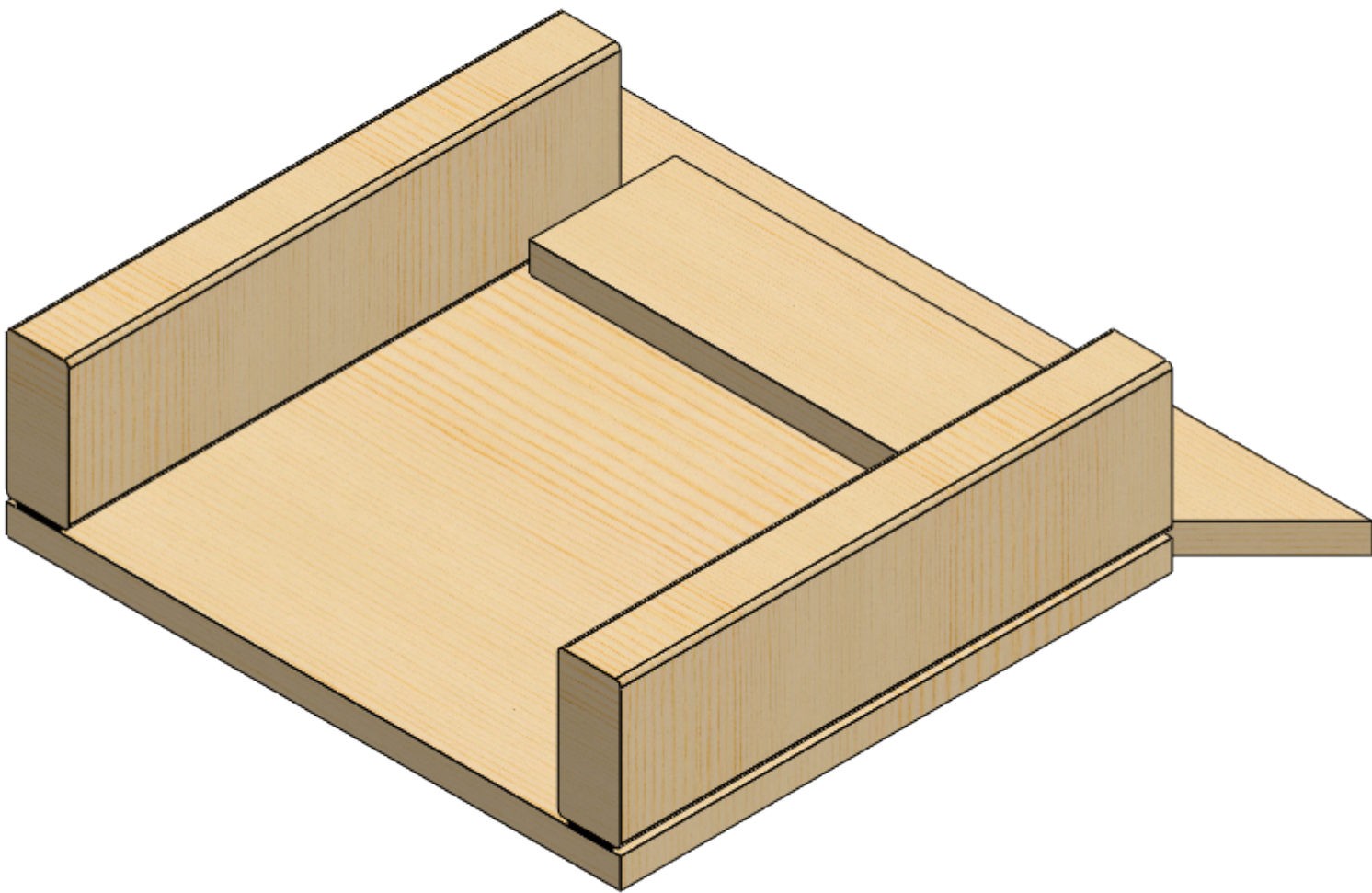
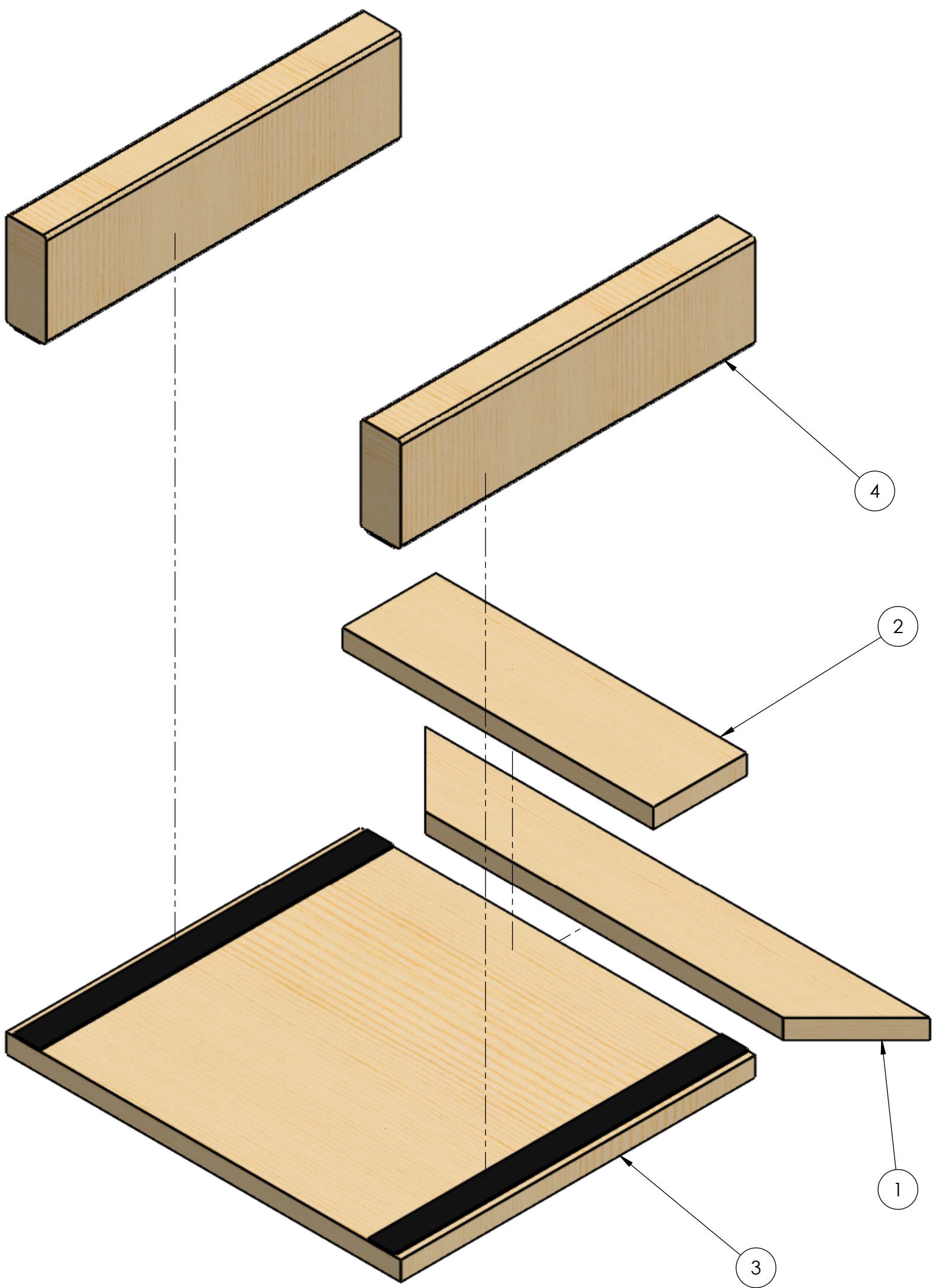
## Step 2



- 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					
		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		<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.				TITLE:  Hub - Simple Build - Upper Hub Base Top Assembly					
<b>MATERIAL/FINISH:</b>											
		<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.				SIZE		DWG. NO.		REV	
						C		TE-22044			
DO NOT SCALE DRAWING						SCALE: 1:8		SHEET 3 OF 3			



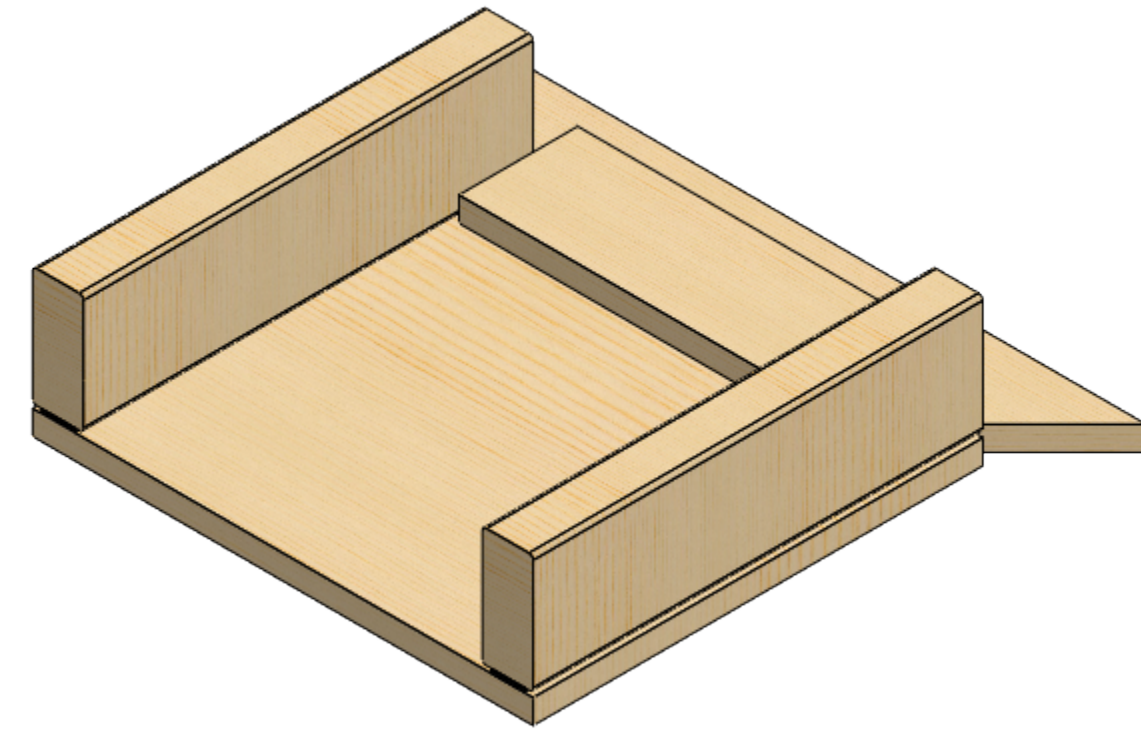
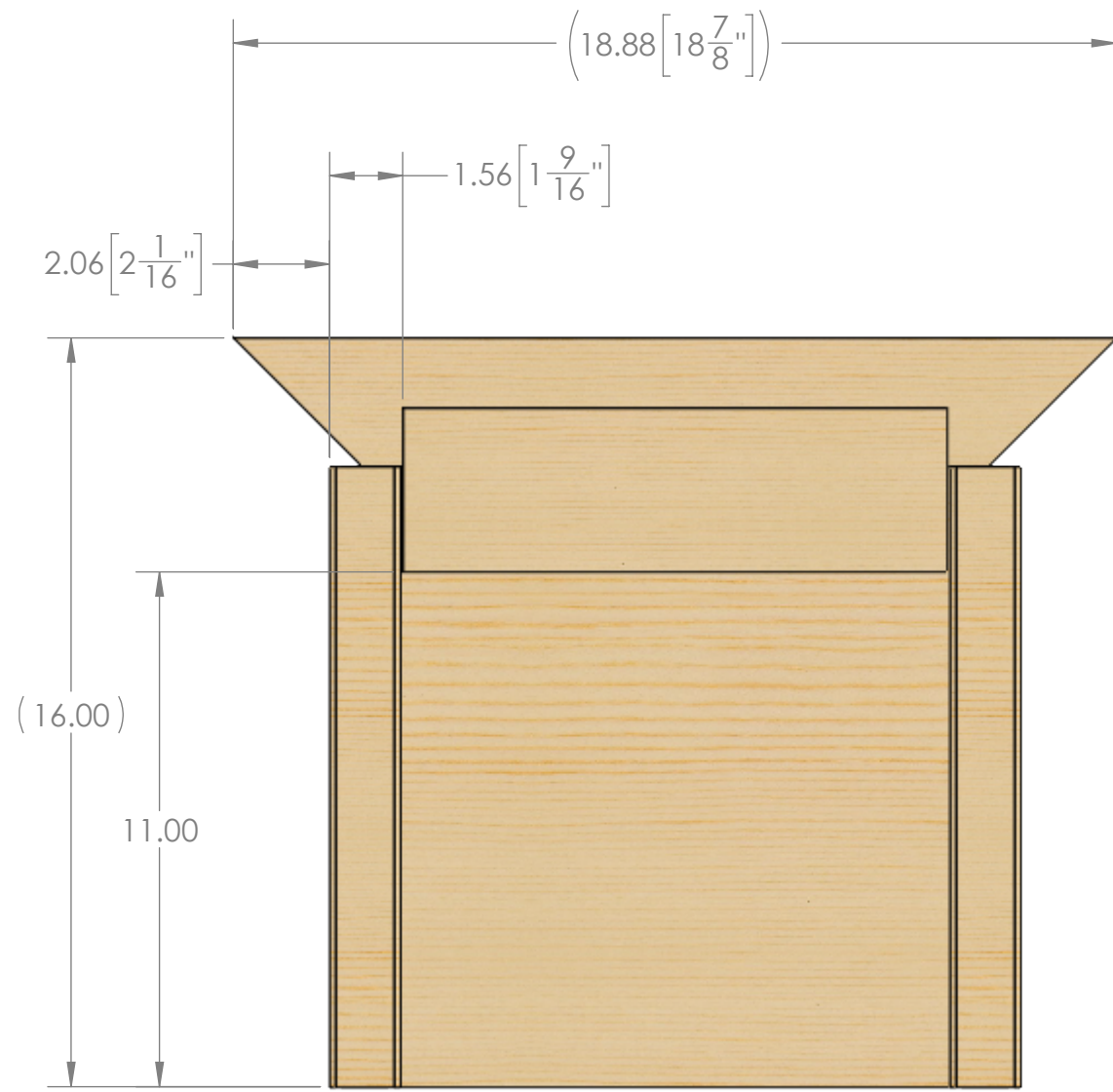




Hardware Needed:  
#8 x 1.25" Long Screw - Qty 8

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 $\pm .125$  <b>MATERIAL/FINISH:</b>     <b>DO NOT SCALE DRAWING</b>	TEAM	NAME	DATE	 	
	DRAWN	KAMC	12/30/2021		
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE:  Hub - Simple Build - Lower Exit Assembly	
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			SIZE <b>C</b>	DWG. NO. TE-22050  REV
SCALE: 1:3		SHEET 1 OF 3			





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			TITLE:  Hub - Simple Build - Lower Exit Assembly		
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.					
	MATERIAL/FINISH:	COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			SIZE <b>C</b>	DWG. NO. <b>TE-22050</b>
DO NOT SCALE DRAWING				SCALE: 1:4		SHEET 2 OF 3



D

C

B

A

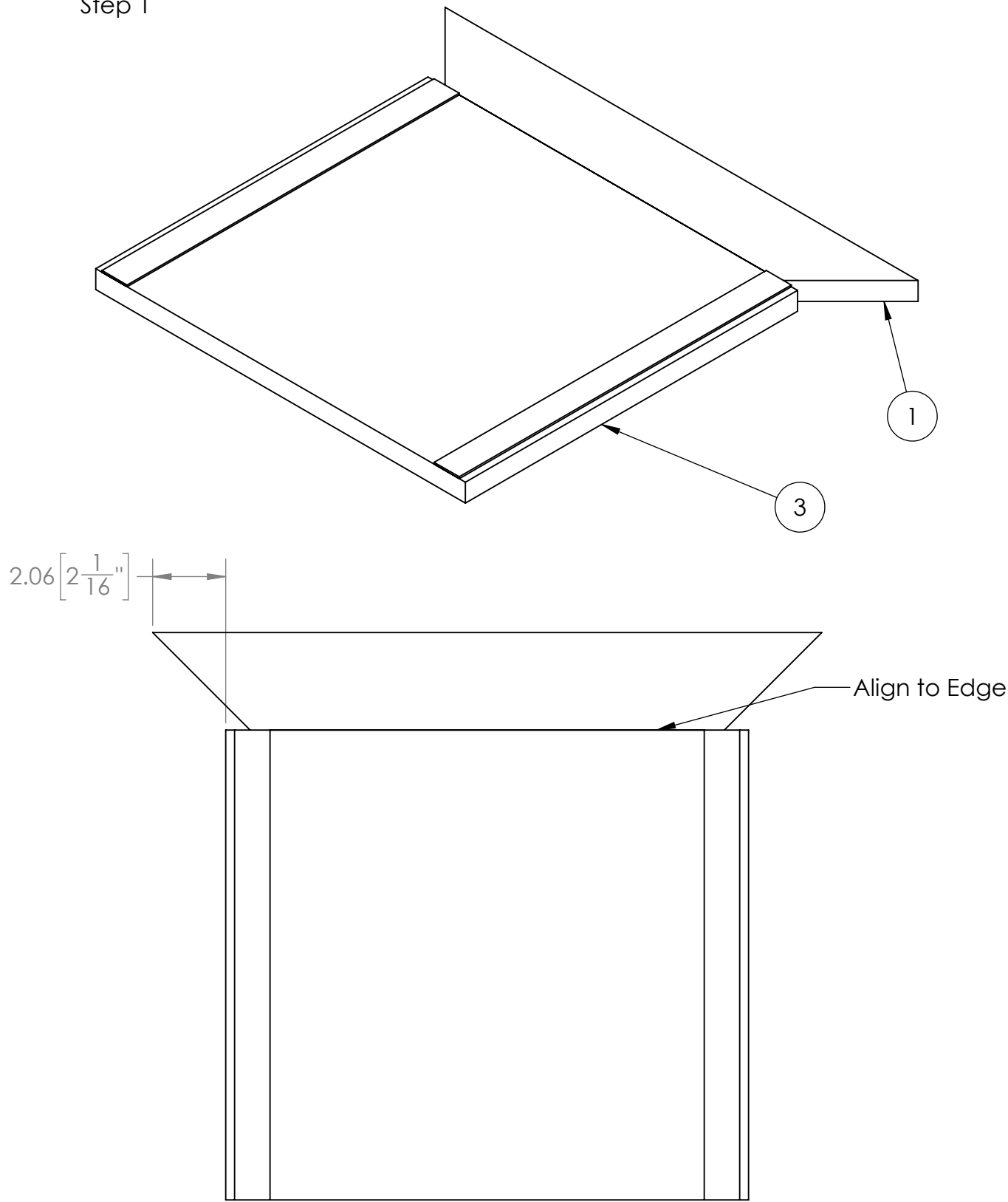
D

C

B

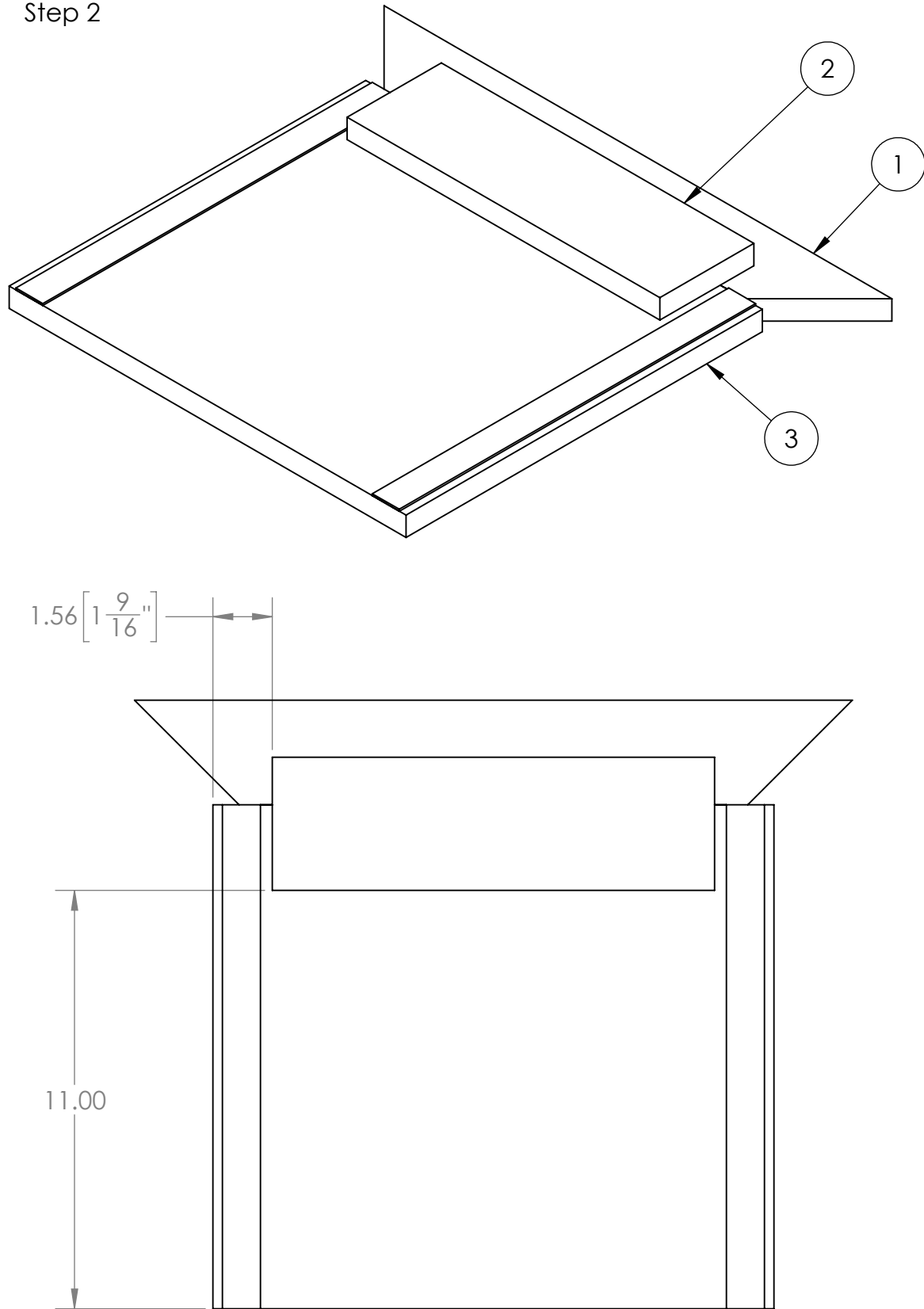
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Step 1



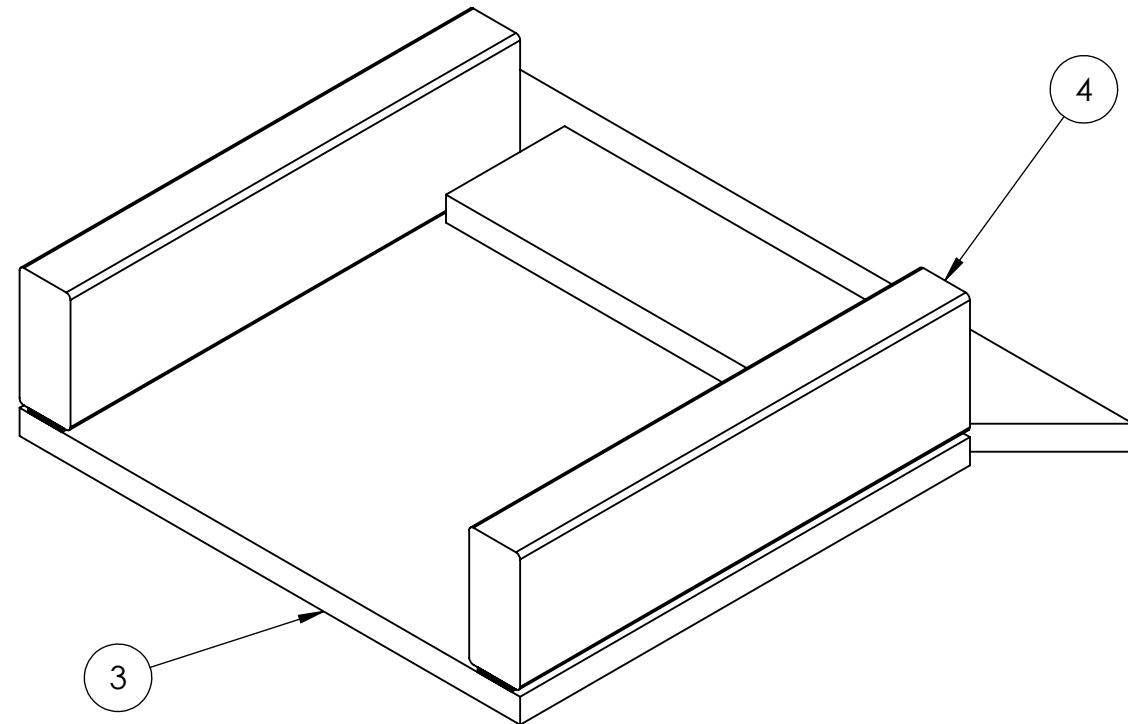
1. Align (3) to (1) , as shown. Connection will happen in the next step.

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.

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.



**FIRST**  
ROBOTICS  
COMPETITION



Modeling Solutions Partner

TITLE:

Hub - Simple Build -  
Lower Exit Assembly

SIZE

**C**

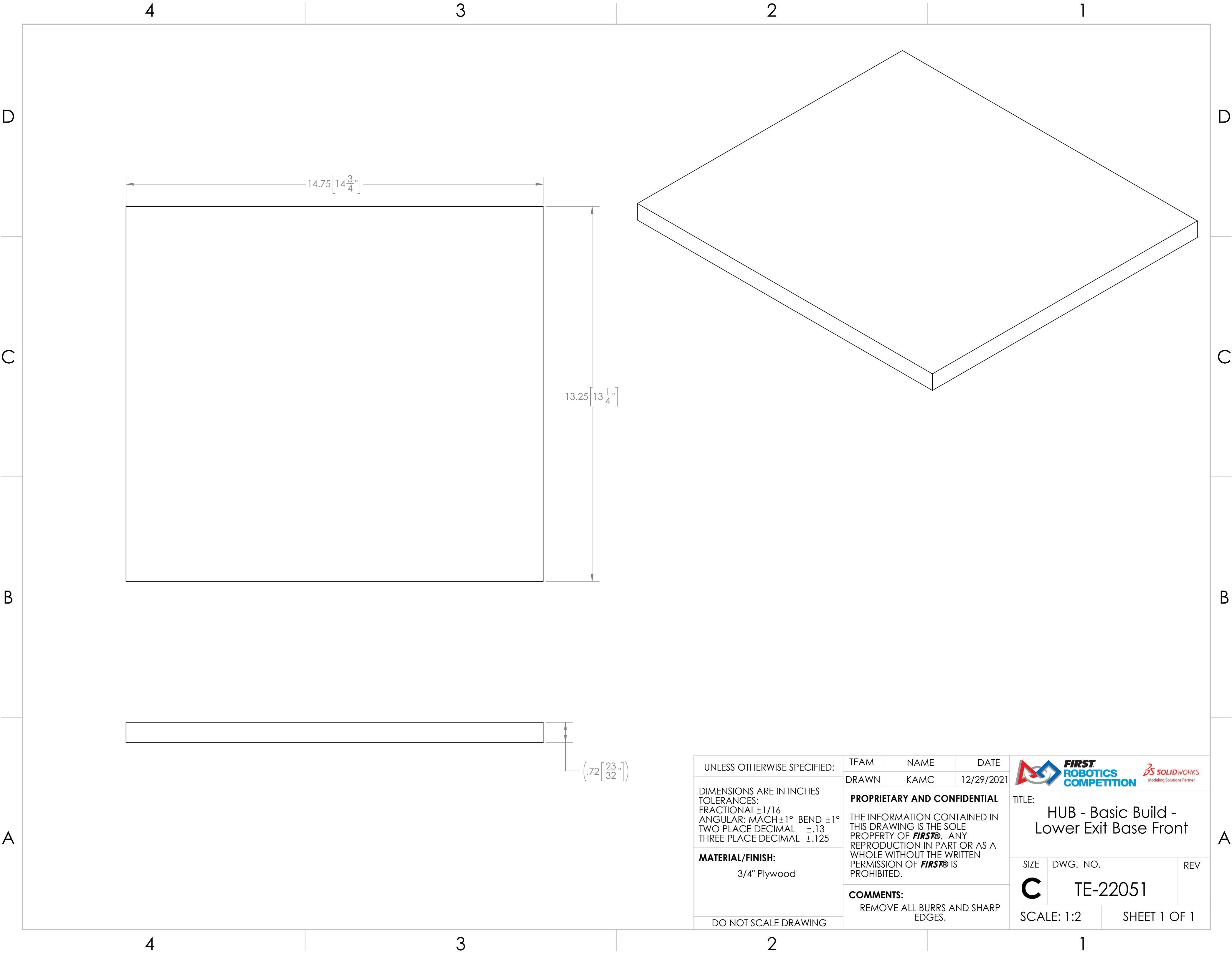
DWG. NO.

TE-22050



REV

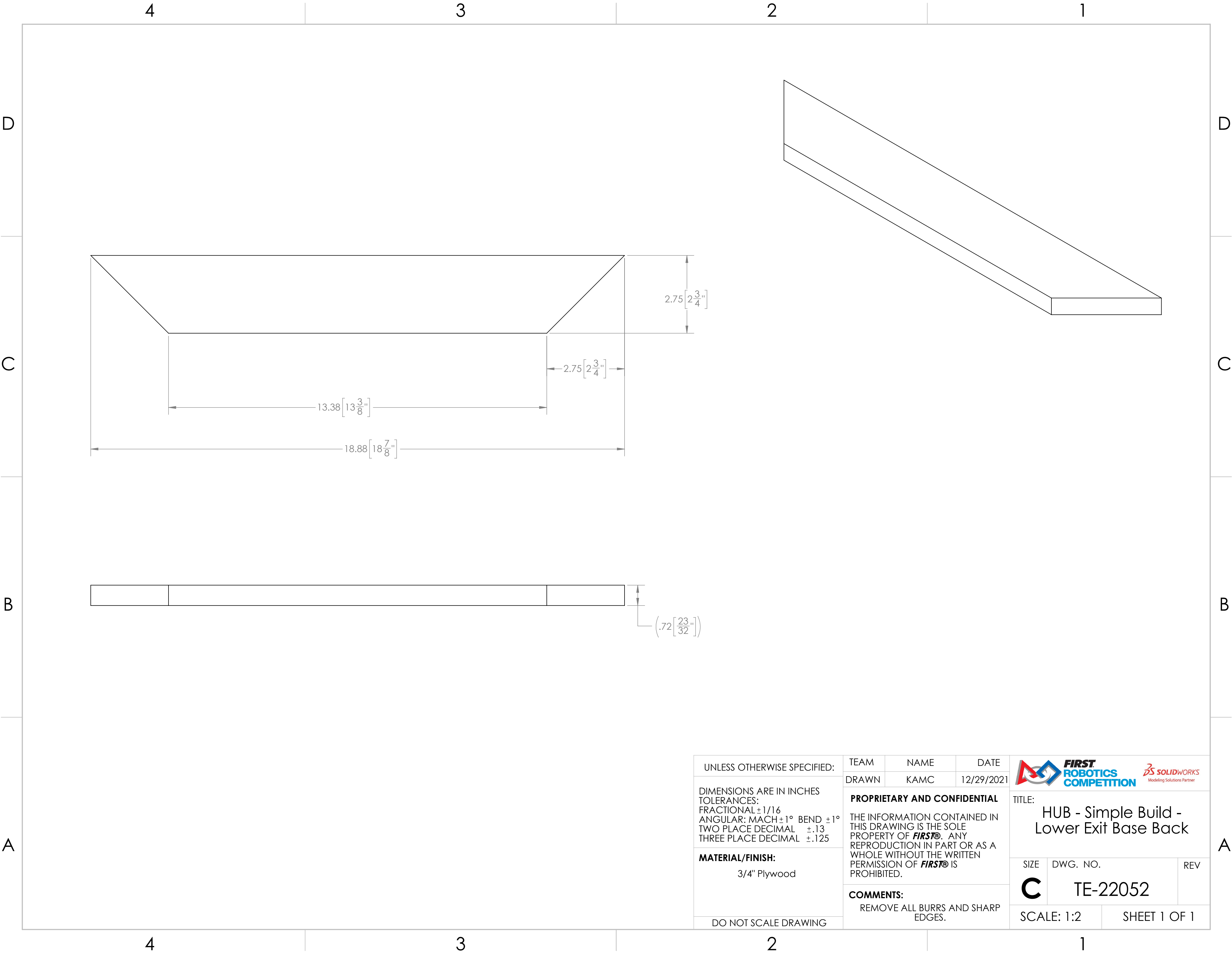
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SHEET 3 OF 3



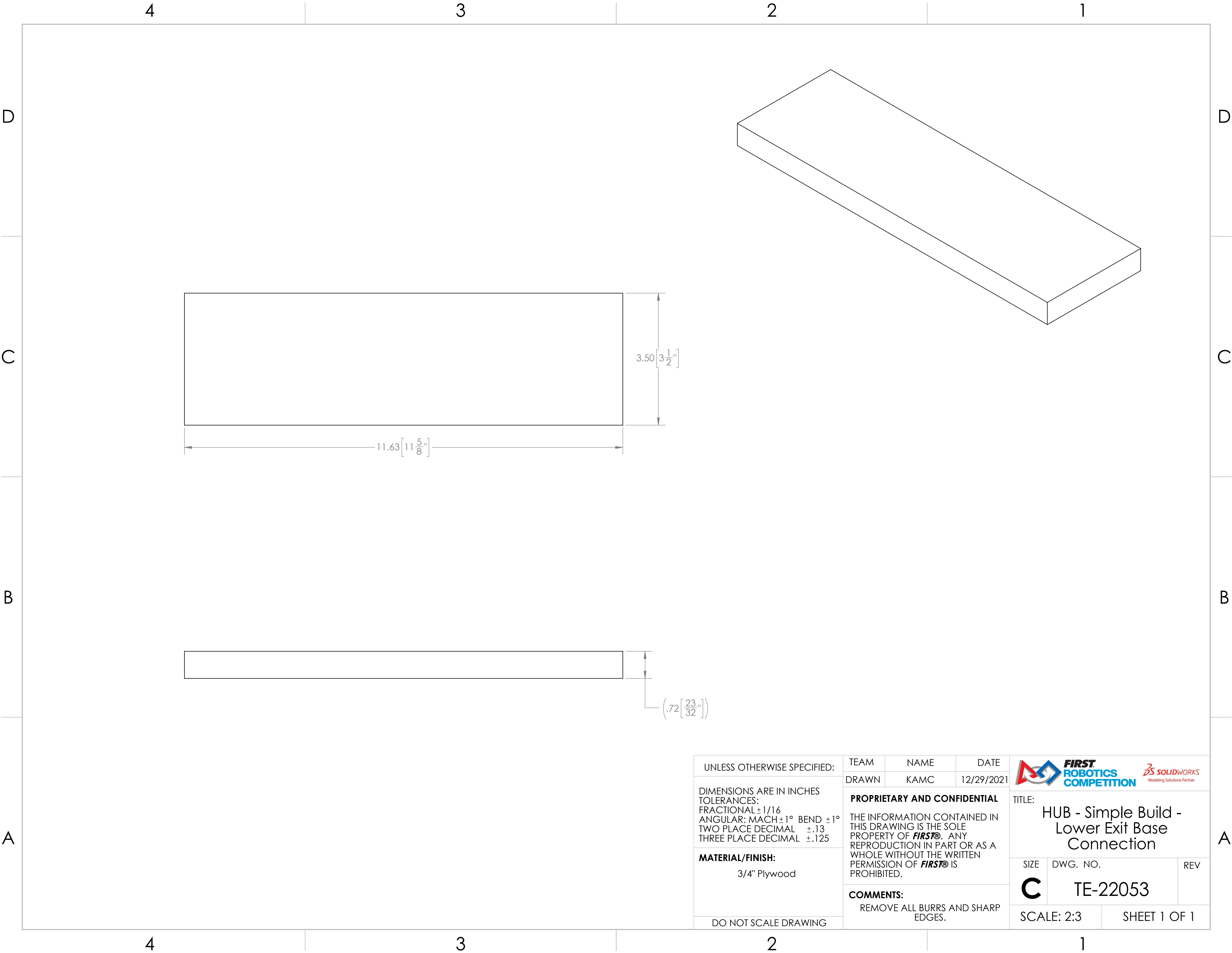
UNLESS OTHERWISE SPECIFIED:		TEAM	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125		DRAWN	KAMC	12/29/2021
		PROPRIETARY AND CONFIDENTIAL  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.		
		COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.		
MATERIAL/FINISH:  3/4" Plywood				
DO NOT SCALE DRAWING				



					
TITLE: HUB - Basic Build - Lower Exit Base Front					
SIZE C	DWG. NO. TE-22051			REV	
SCALE: 1:2			SHEET 1 OF 1		

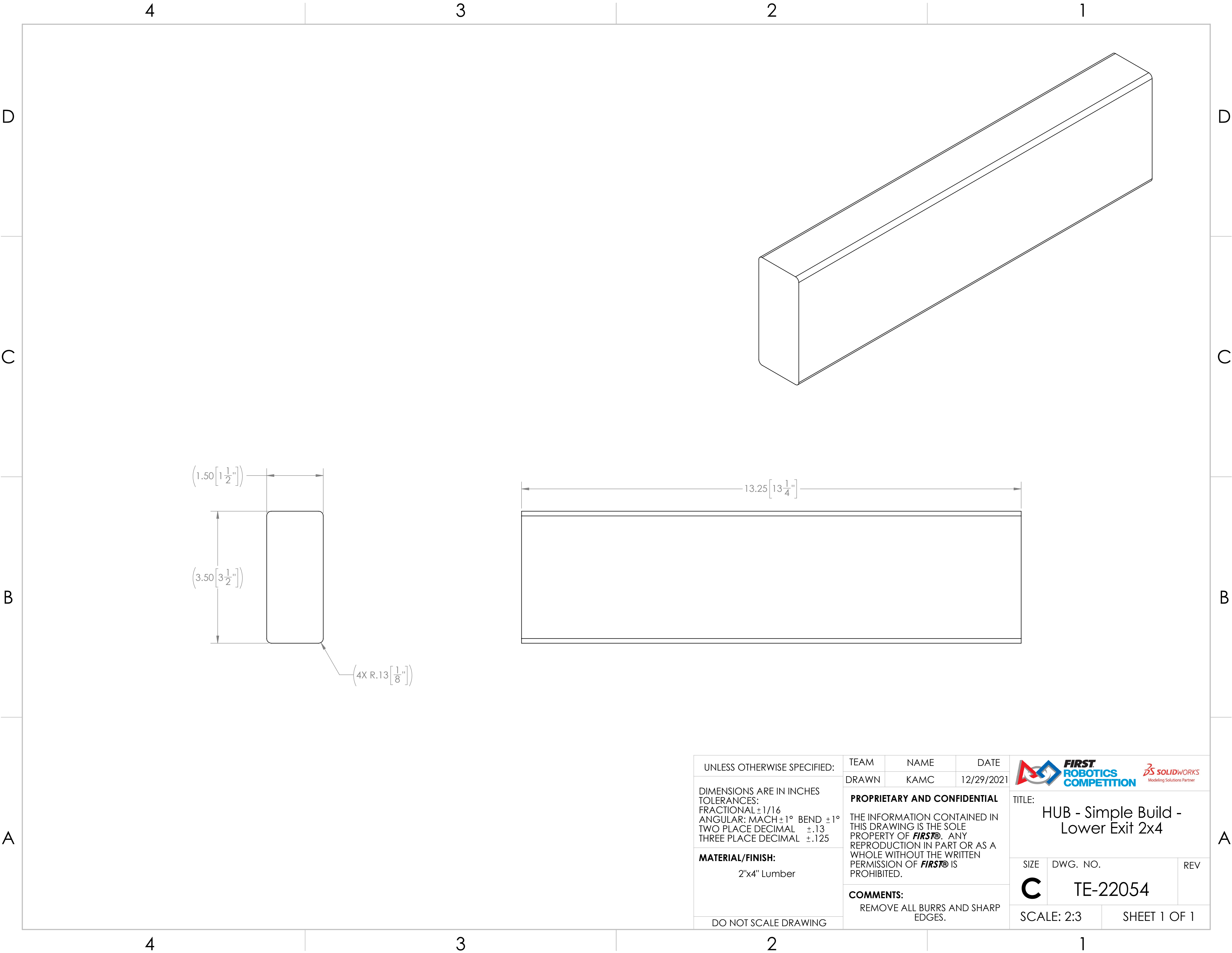




UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$  <b>MATERIAL/FINISH:</b>  3/4" Plywood		TEAM	NAME	DATE	 	
		DRAWN	KAMC	12/29/2021		
DO NOT SCALE DRAWING		<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE:  HUB - Simple Build - Lower Exit Base Back	
		<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			SIZE <b>C</b>	DWG. NO. TE-22052
					REV	
					SCALE: 1:2	
					SHEET 1 OF 1	

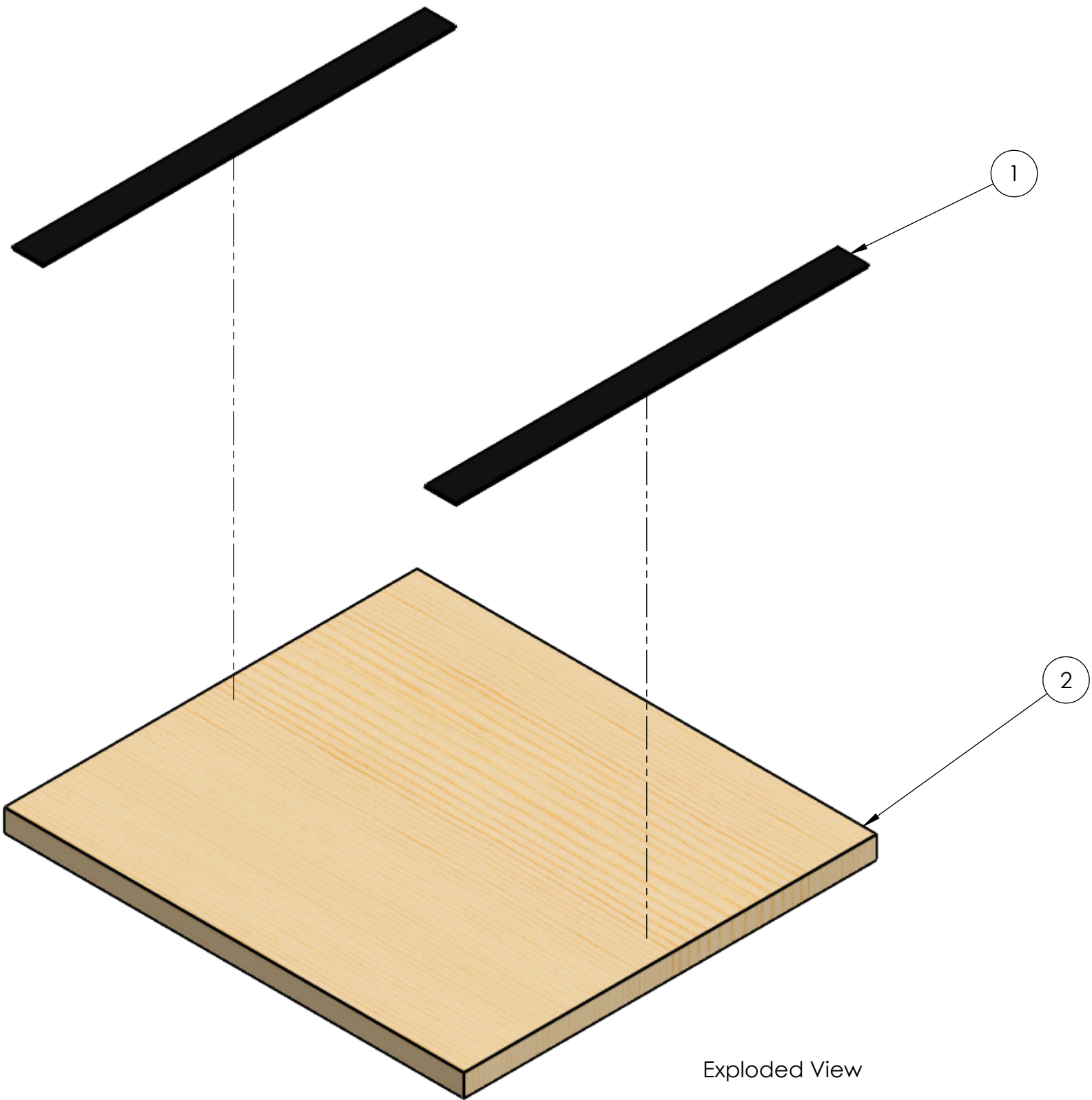




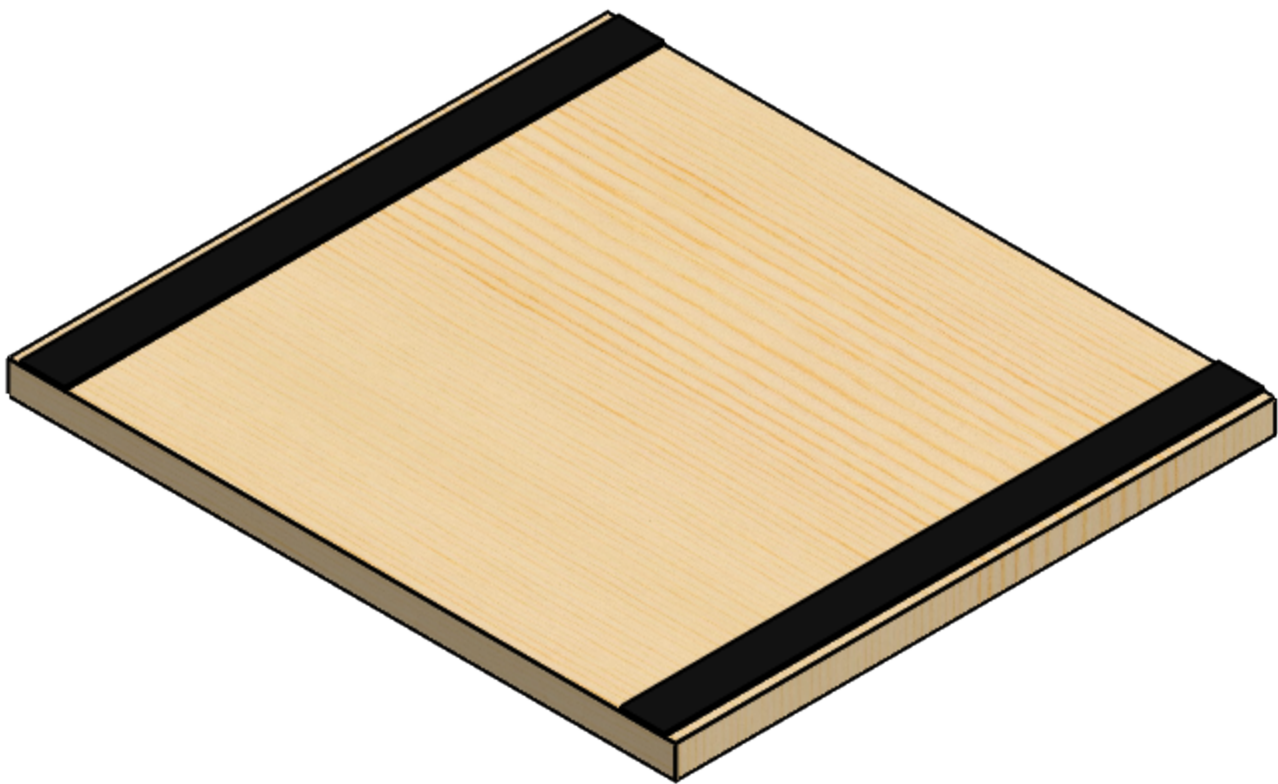
UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/29/2021			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE:  HUB - Simple Build - Lower Exit Base Connection		
	<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	TE-22053	
MATERIAL/FINISH:  3/4" Plywood				SCALE: 2:3		
DO NOT SCALE DRAWING				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:  HUB - Simple Build - Lower Exit 2x4		
	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.					
	COMMENTS:			SIZE	DWG. NO.	REV
MATERIAL/FINISH:  2"x4" Lumber	REMOVE ALL BURRS AND SHARP EDGES.			C	TE-22054	
				SCALE: 2:3		
DO NOT SCALE DRAWING						





Exploded View



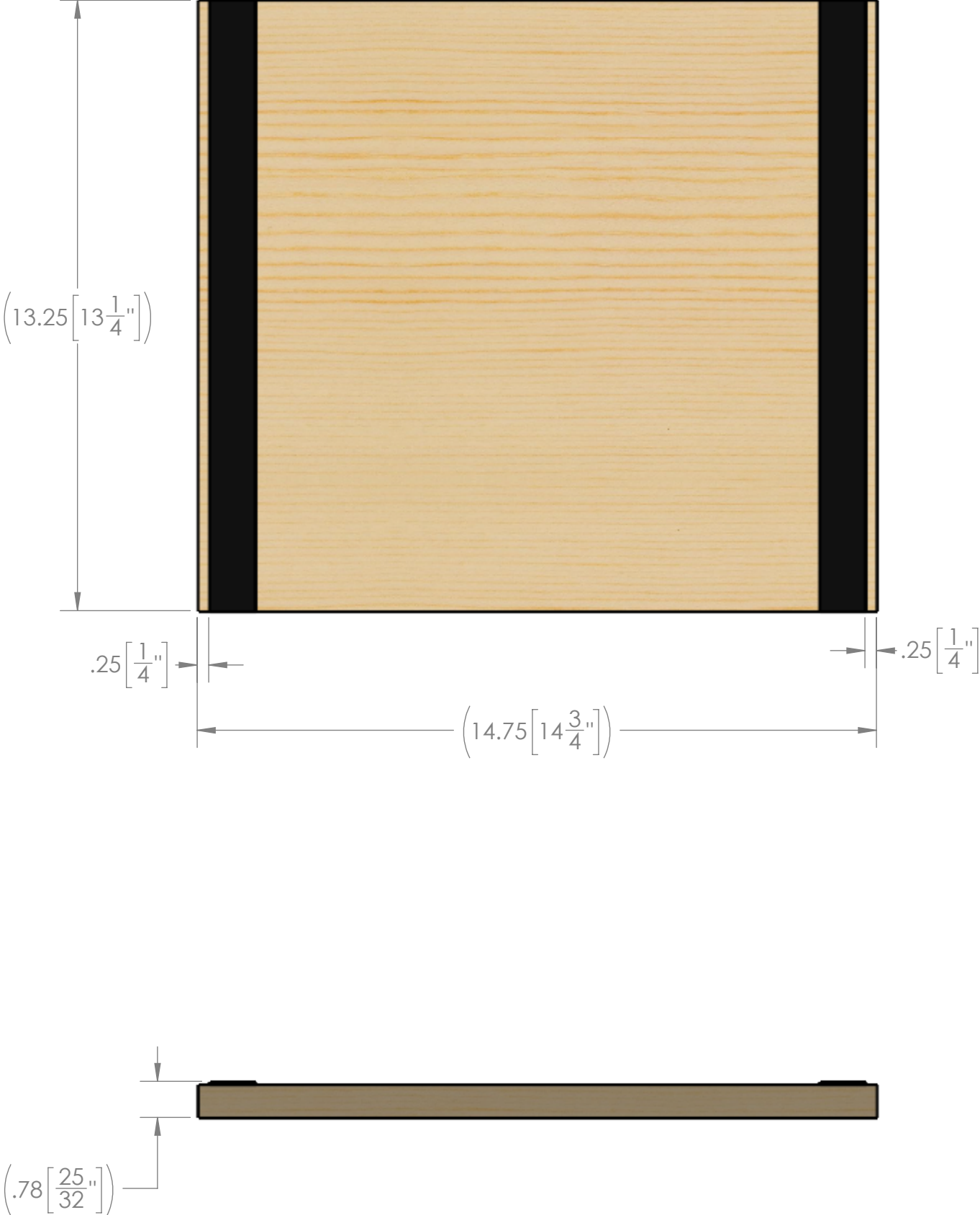
Hardware Needed:  
Optional: Wood Staples



- 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

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	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE:  HUB - Simple Build - Lower Exit Base Front with Loop Assembly		
	<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
				C	TE-22055	
DO NOT SCALE DRAWING				SCALE: 1:3		SHEET 1 OF 2

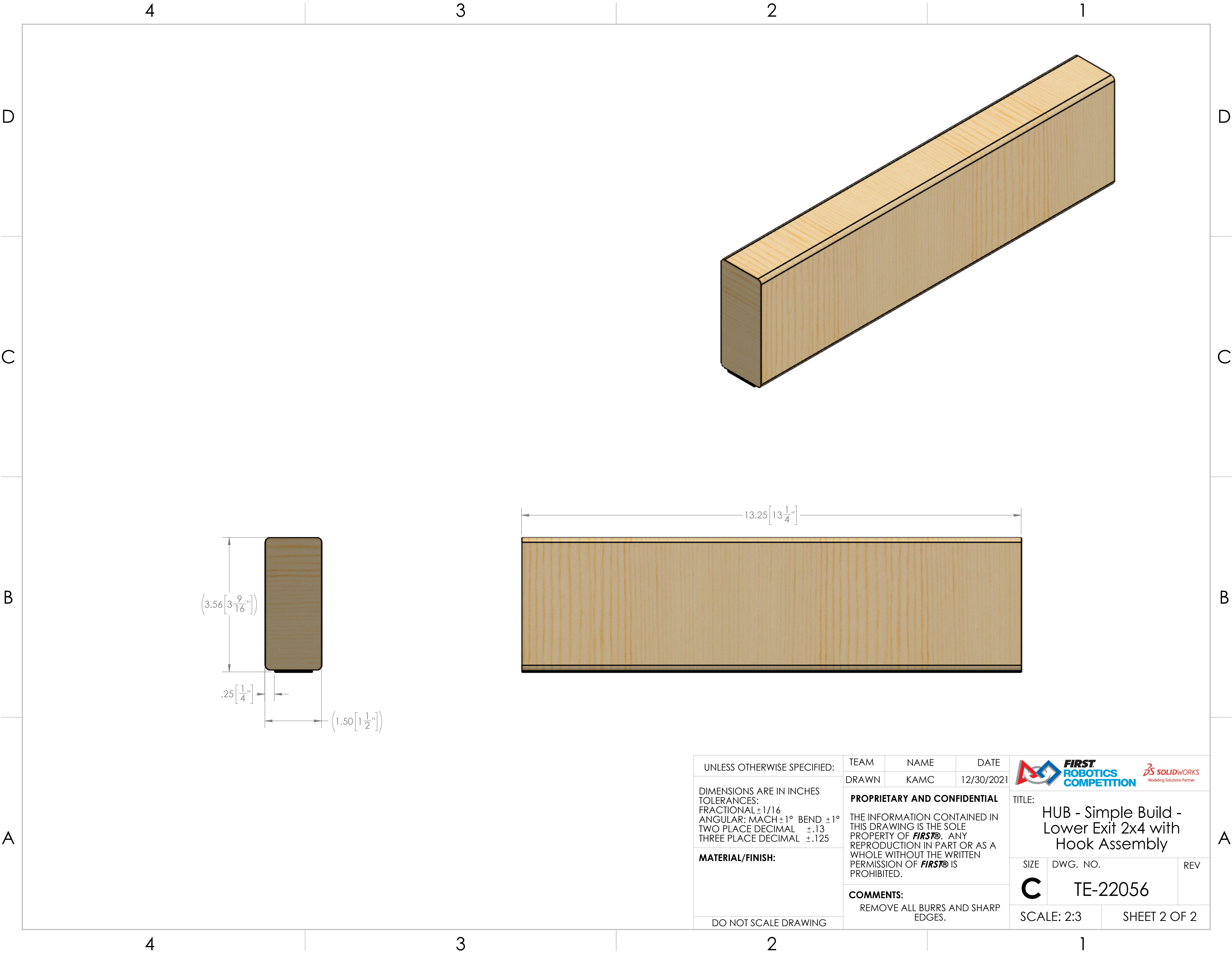






UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>     DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	KAMC	12/30/2021		
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> 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







UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>          DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>	
	DRAWN	KAMC	12/30/2021		
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE: HUB - Simple Build - Lower Exit 2x4 with Hook Assembly	
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.
C				TE-22056	
			SCALE: 2:3		SHEET 2 OF 2



D

D

C

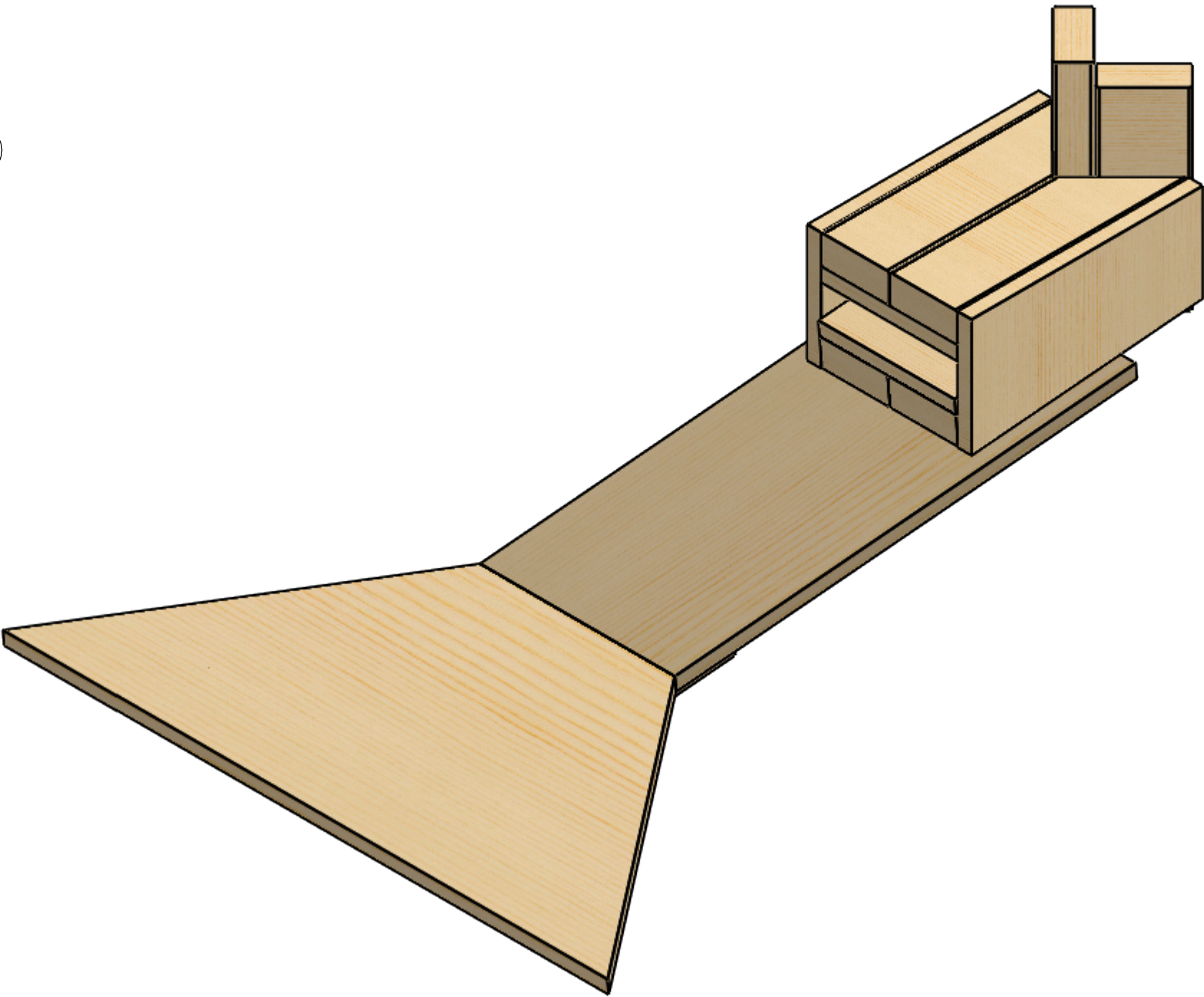
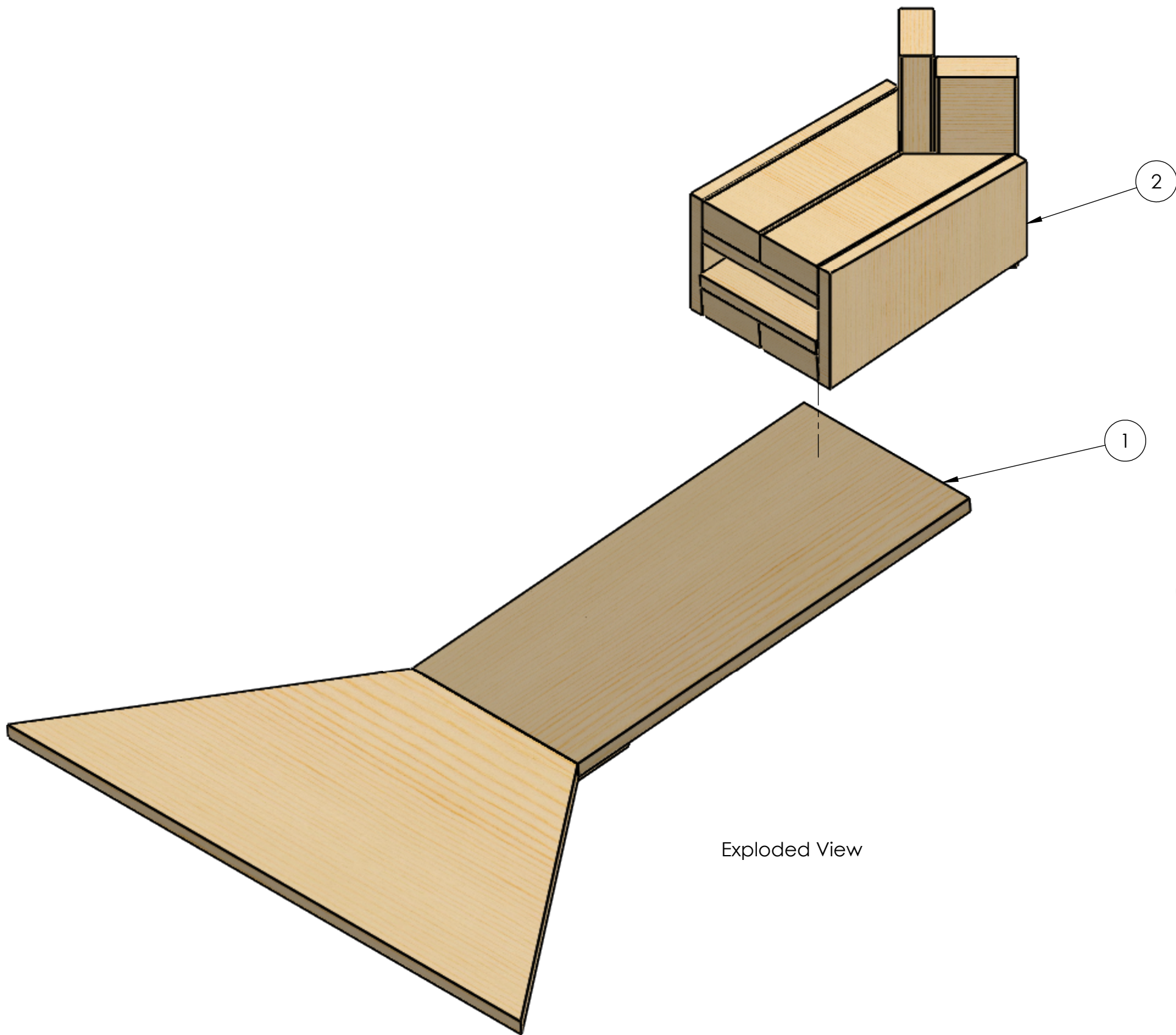
C

B

B

A


A



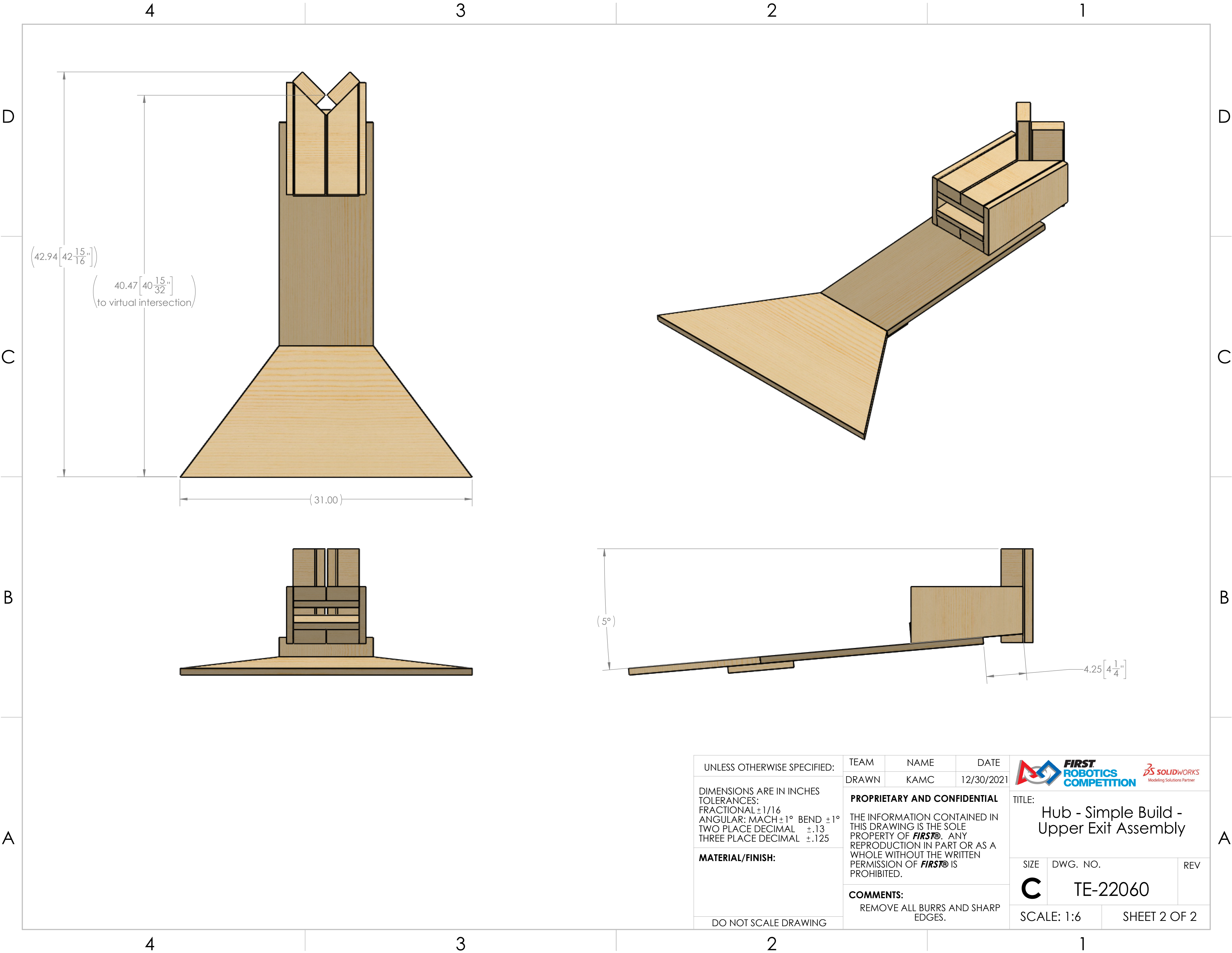
Hardware Needed:  
#8 x 2" Long Screw - Qty 6

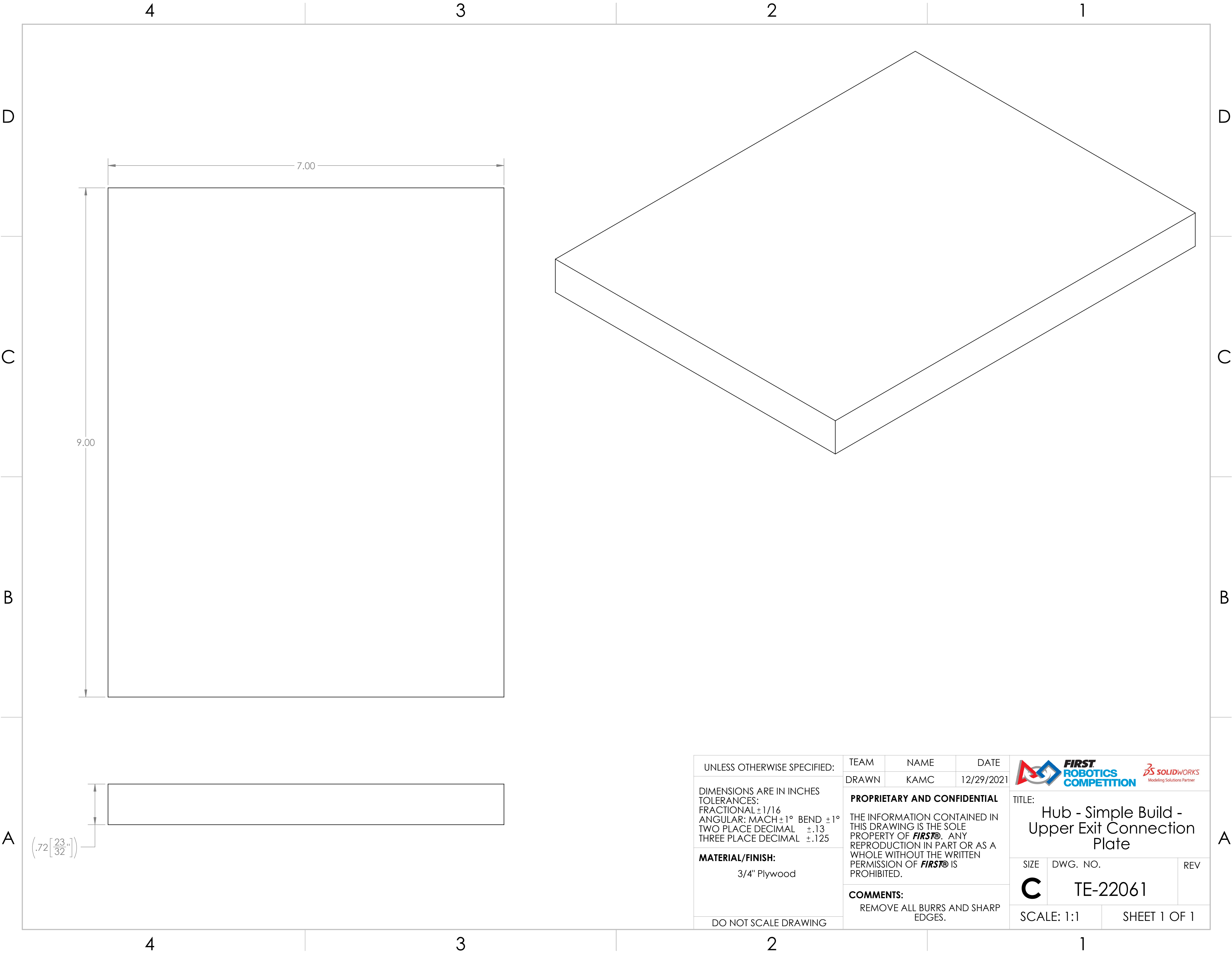
- Step 1:
1. Align ① and ② , as shown on Sheet 2.
  2. Connect using 2" Long Screws. It is recommended to use 6x screws.



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:  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 $\pm .125$  <b>MATERIAL/FINISH:</b>          DO NOT SCALE DRAWING	TEAM	NAME	DATE	 <b>TITLE:</b> Hub - Simple Build - Upper Exit Assembly	
	DRAWN	KAMC	12/30/2021		
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			SIZE	DWG. NO.
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			<b>C</b>	TE-22060
SCALE: 1:5		SHEET 1 OF 2			

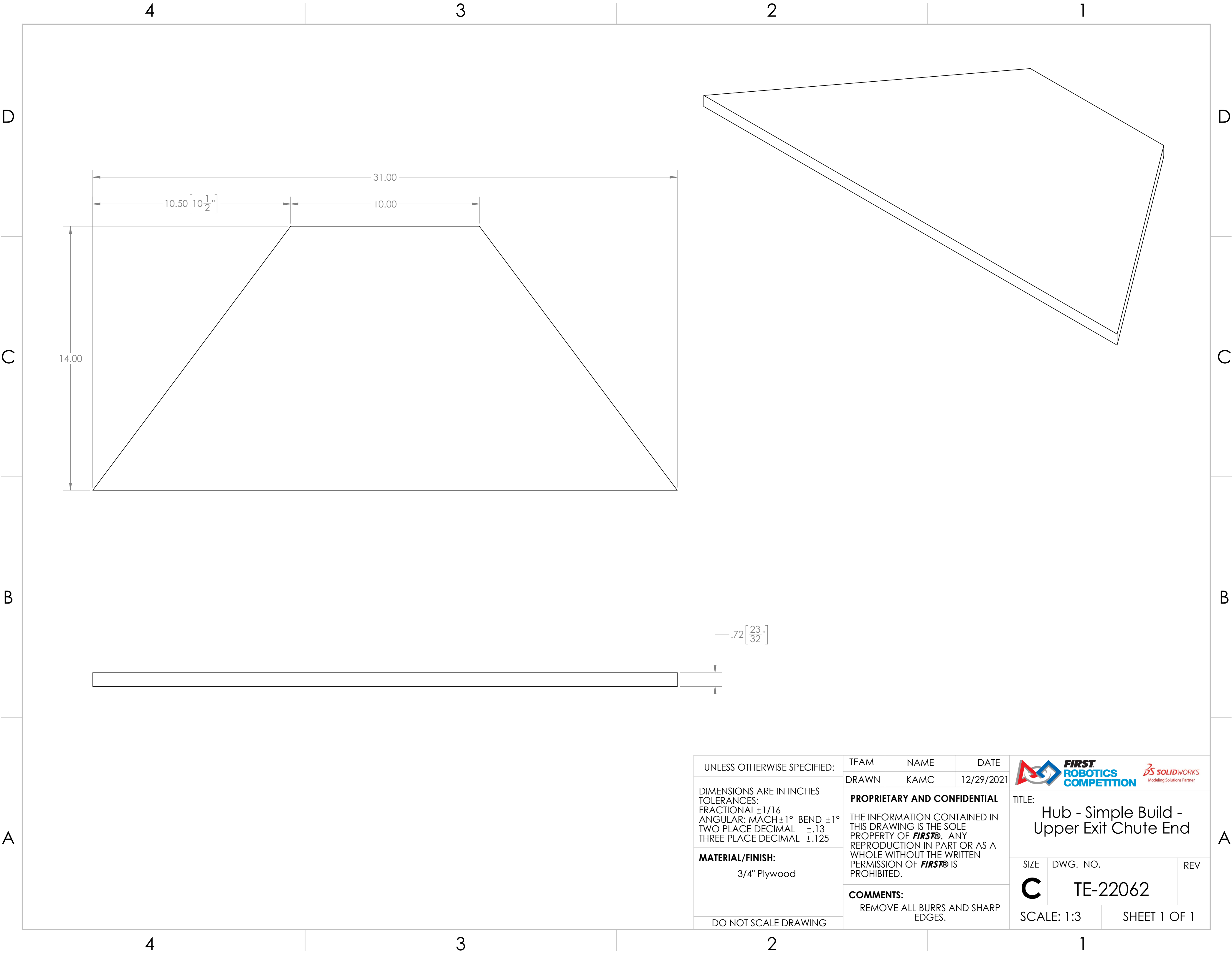






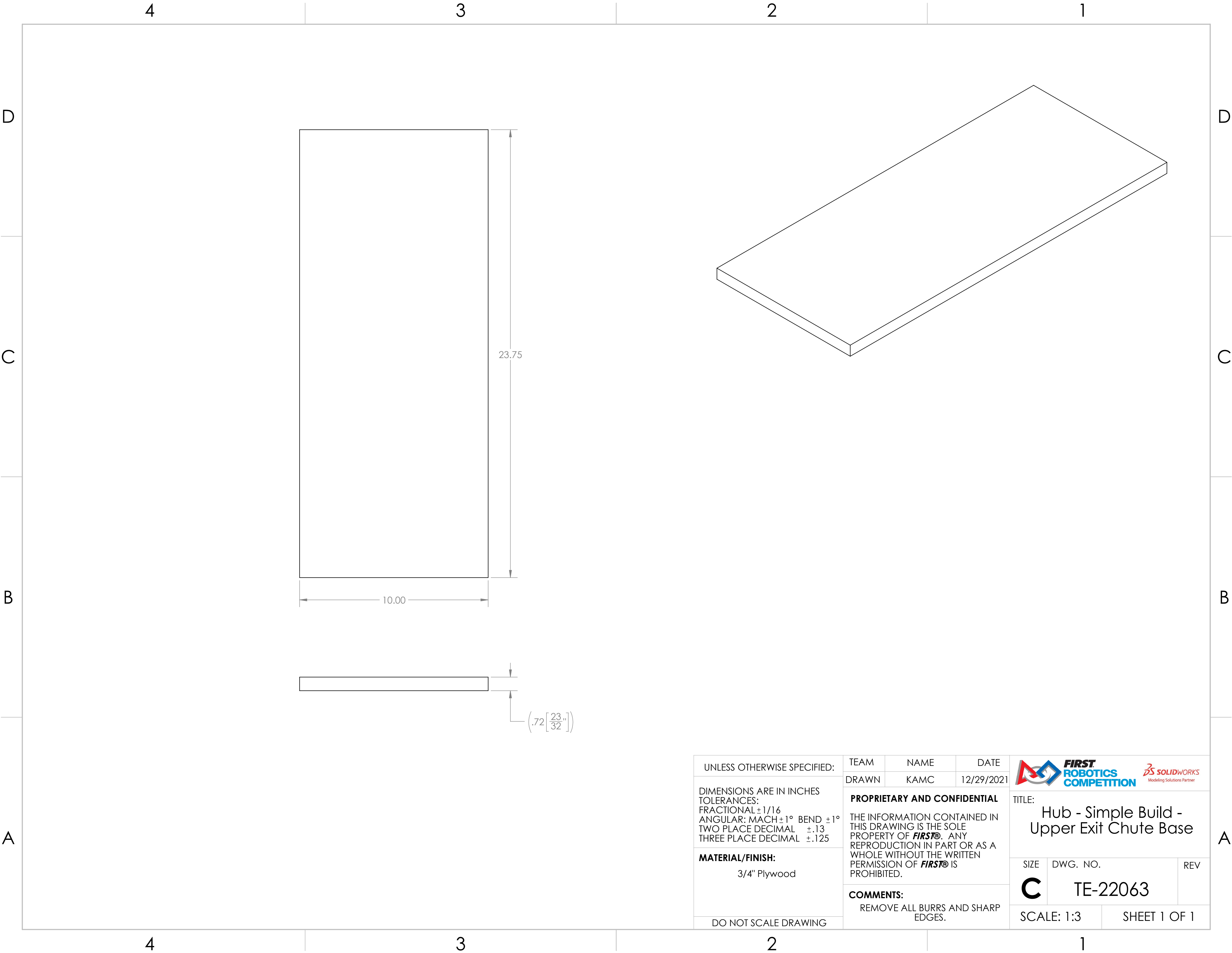




UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div><div></div><div>TITLE: Hub - Simple Build - Upper Exit Connection Plate</div></div>		
	DRAWN	KAMC	12/29/2021			
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			SIZE	DWG. NO.	REV
	<b>MATERIAL/FINISH:</b>  3/4" Plywood	<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.			<b>C</b>	TE-22061
DO NOT SCALE DRAWING				SCALE: 1:1		SHEET 1 OF 1

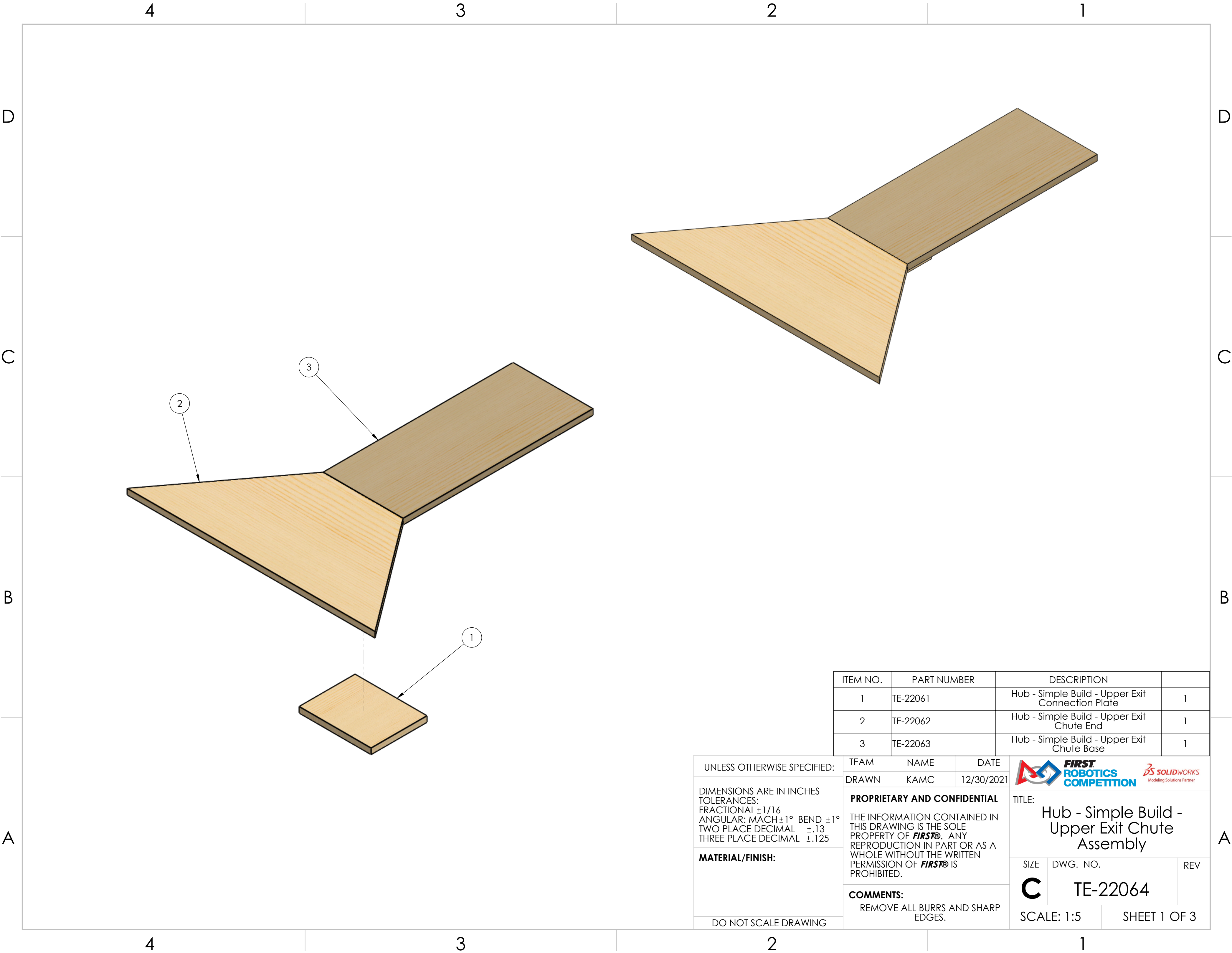




UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$  <b>MATERIAL/FINISH:</b>  3/4" Plywood   DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div><div></div><div>TITLE: Hub - Simple Build - Upper Exit Chute End</div></div>		
	DRAWN	KAMC	12/29/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			SIZE	DWG. NO.	REV
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			<b>C</b>	TE-22062	
SCALE: 1:3		SHEET 1 OF 1				



UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$  <b>MATERIAL/FINISH:</b>  3/4" Plywood   DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div> <div>TITLE: Hub - Simple Build - Upper Exit Chute Base</div>		
	DRAWN	KAMC	12/29/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			SIZE	DWG. NO.	REV
		<b>C</b>		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**

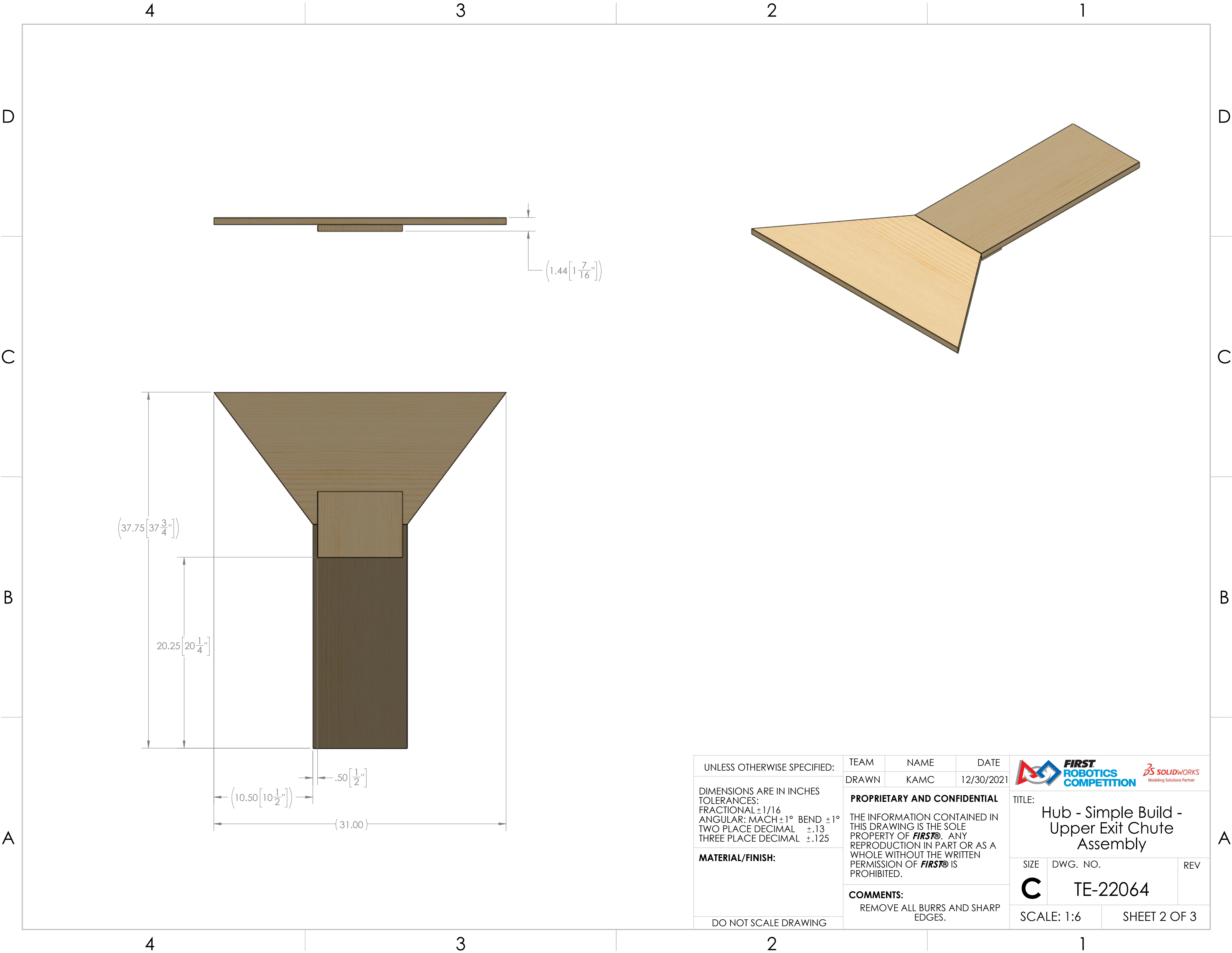
DWG. NO.  
TE-22064



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  <b>MATERIAL/FINISH:</b>    DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/30/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> 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

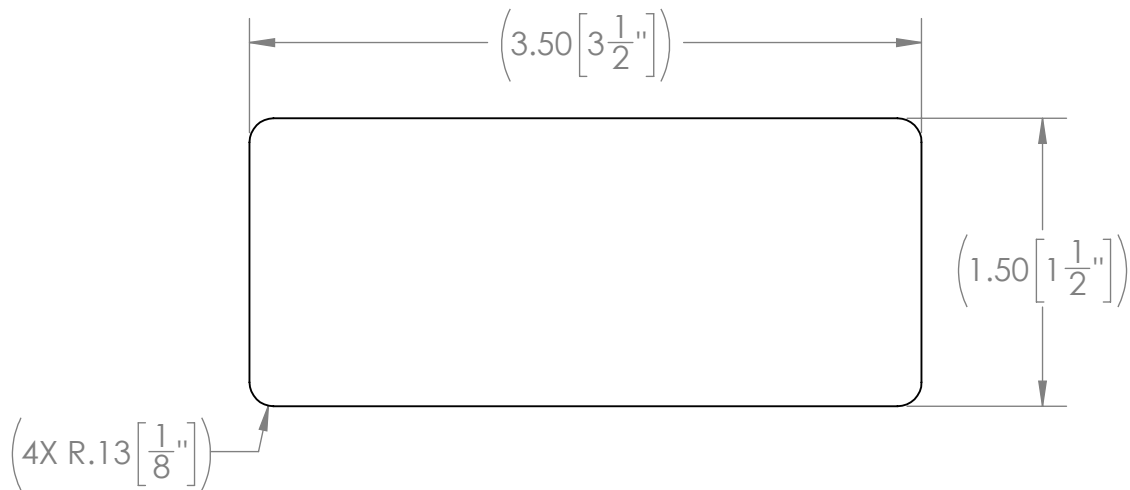
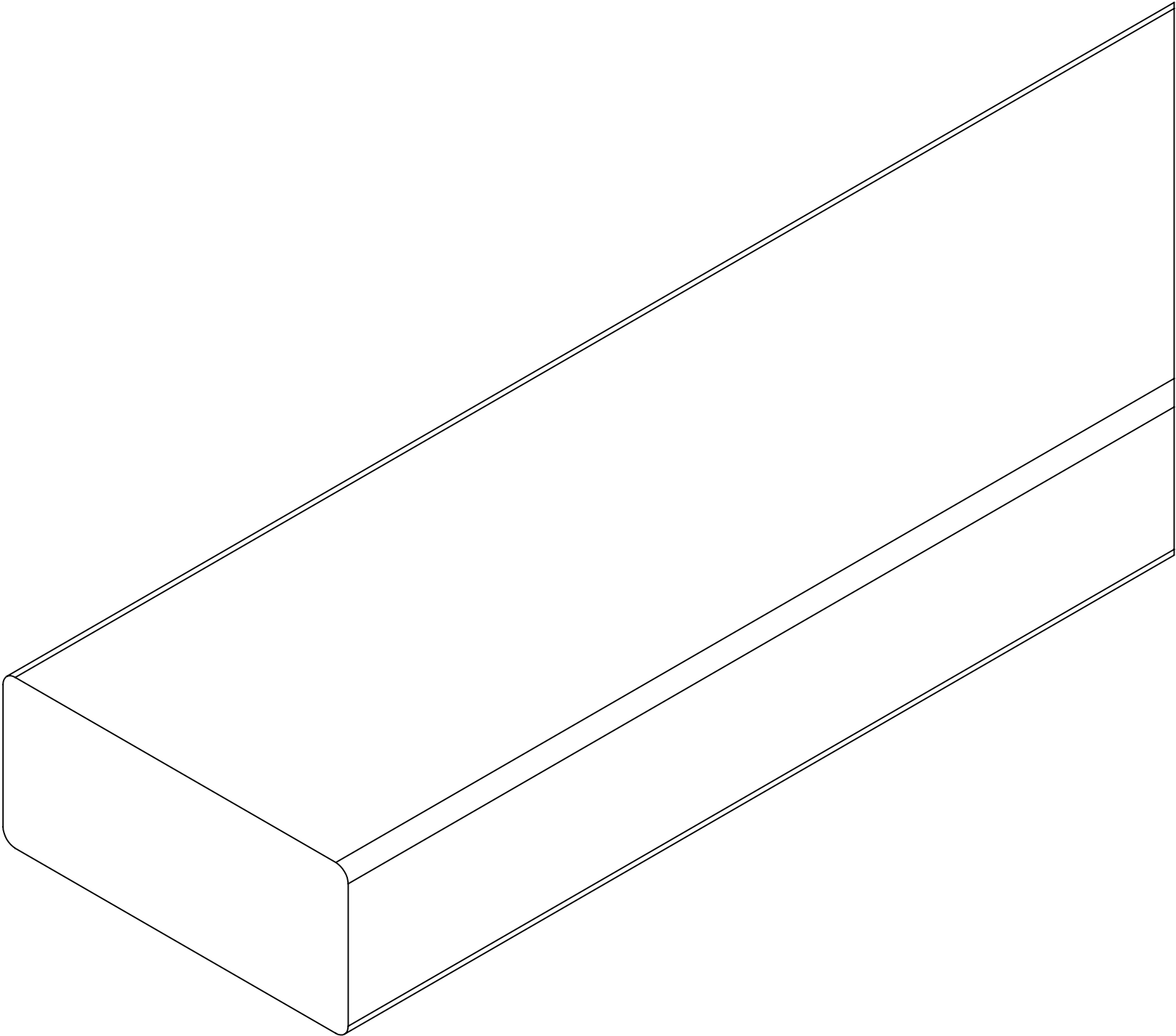
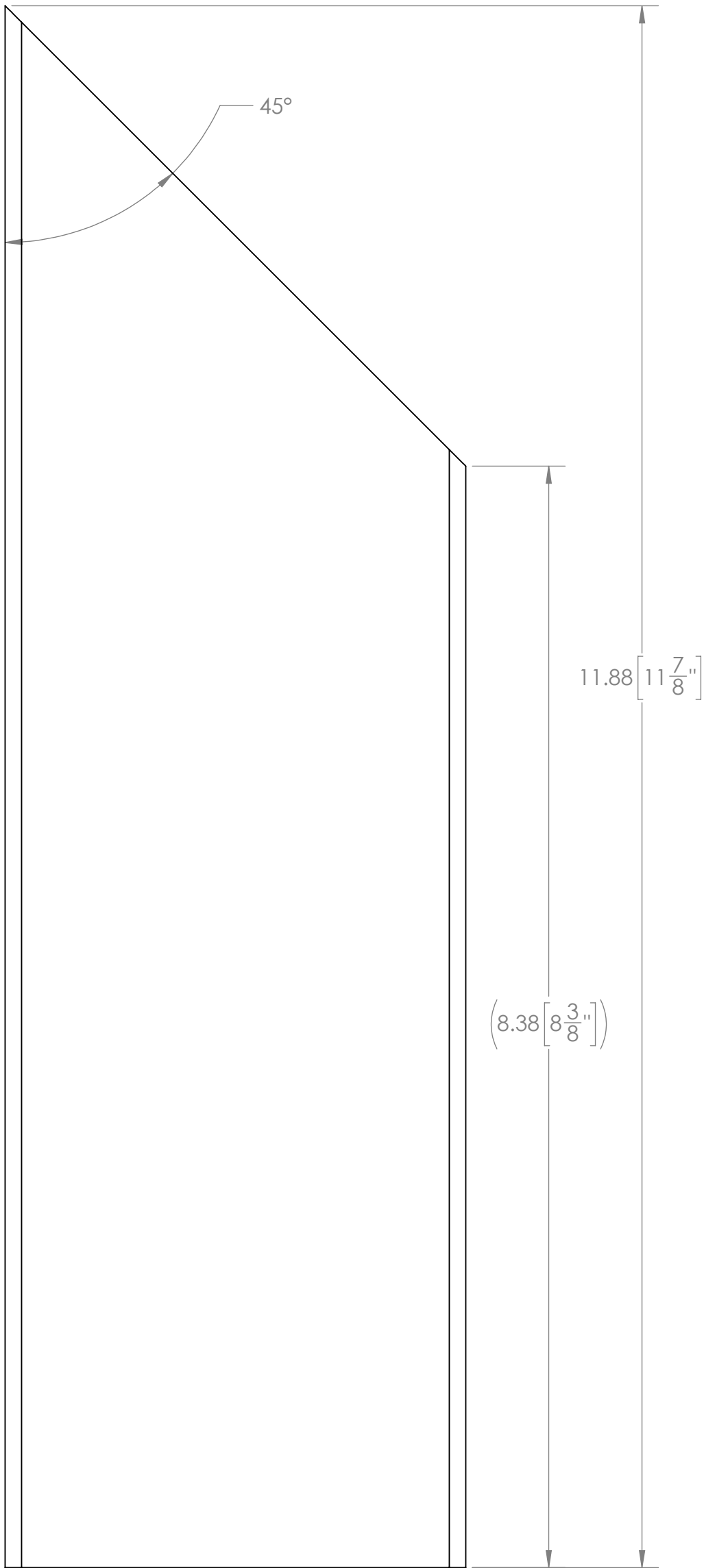
$$20.25 \left[ 20\frac{1}{4}'' \right]$$



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

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).

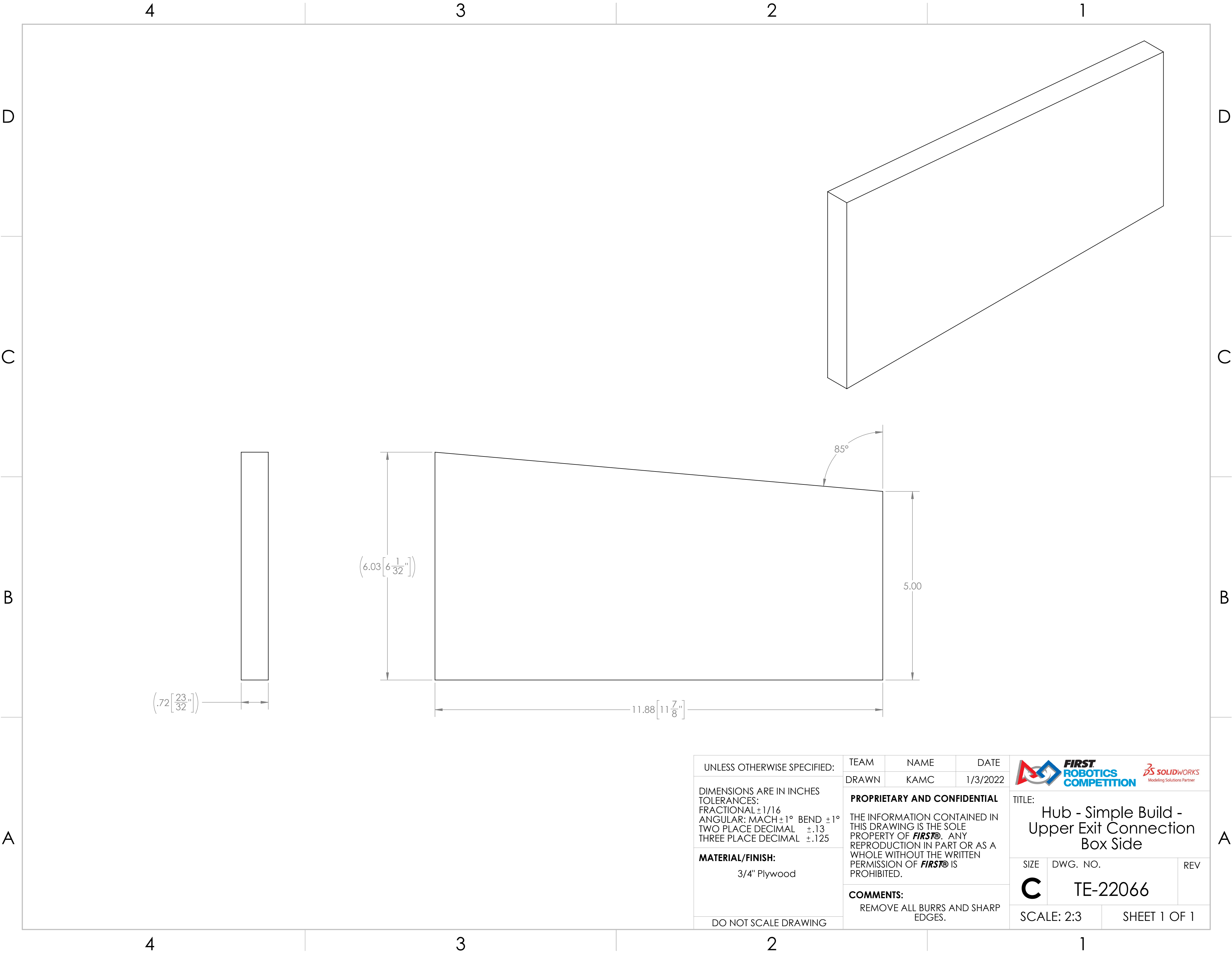
1. Align  $\begin{pmatrix} 3 \end{pmatrix}$  to  $\begin{pmatrix} 2 \end{pmatrix}$ , as shown. Connection will happen in the next step.



UNLESS OTHERWISE SPECIFIED:		TEAM		NAME		DATE	
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		KAMC		12/30/2021	
		<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.					
		<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.					
MATERIAL/FINISH:		 					
DO NOT SCALE DRAWING							
		TITLE:		Hub - Simple Build - Upper Exit Chute Assembly			
		SIZE		DWG. NO.		REV	
		C		TE-22064			
		SCALE: 1:6		SHEET 3 OF 3			

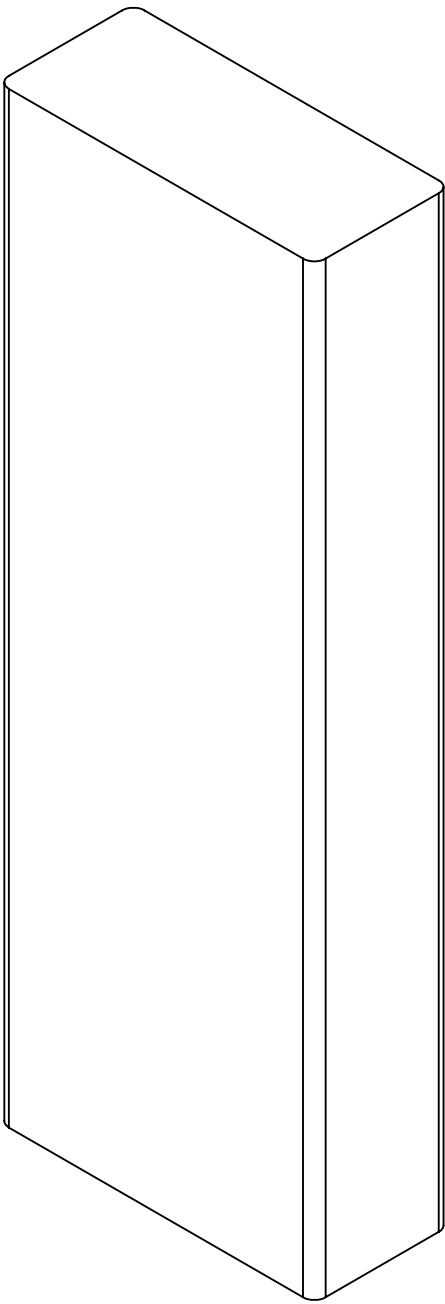
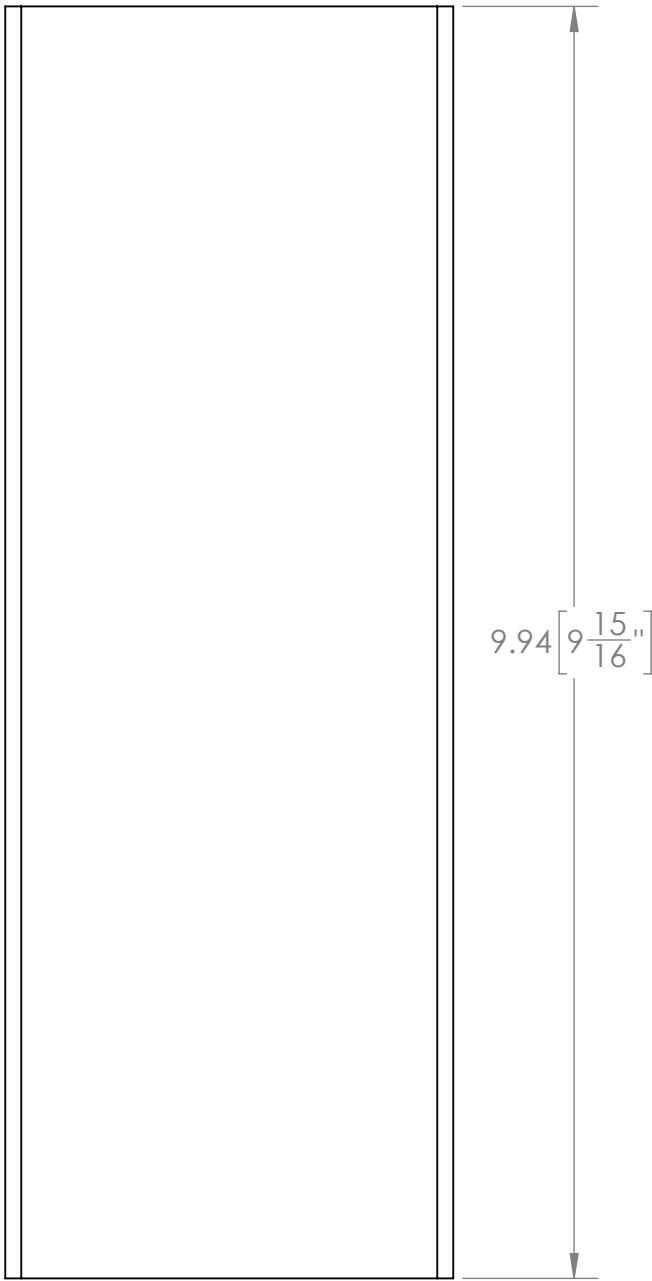
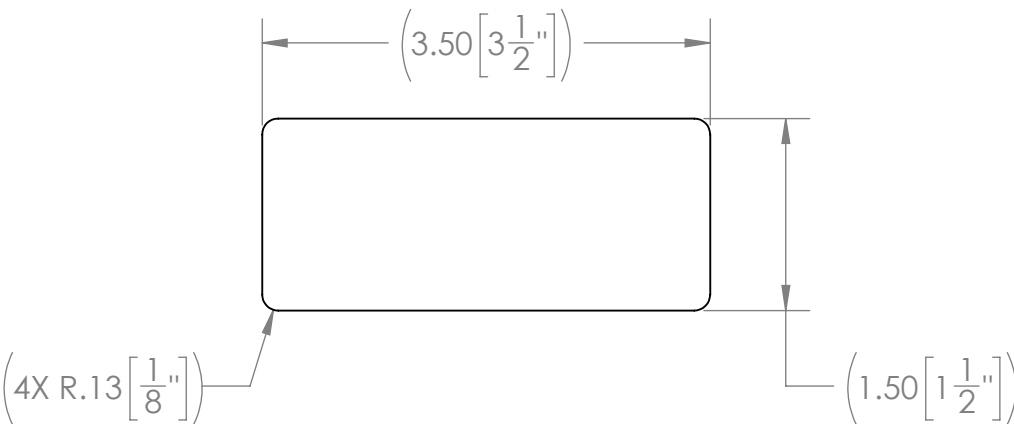




UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>  2"x4" Lumber  DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div><div></div><div>TITLE: Hub - Simple Build - Upper Exit Connection Box 2x4</div><div><div>SIZE</div><div>DWG. NO.</div><div>REV</div></div><div><div>C</div><div>TE-22065</div></div><div><div>SCALE: 1:1</div><div>SHEET 1 OF 1</div></div></div>		
	DRAWN	KAMC	12/29/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.					

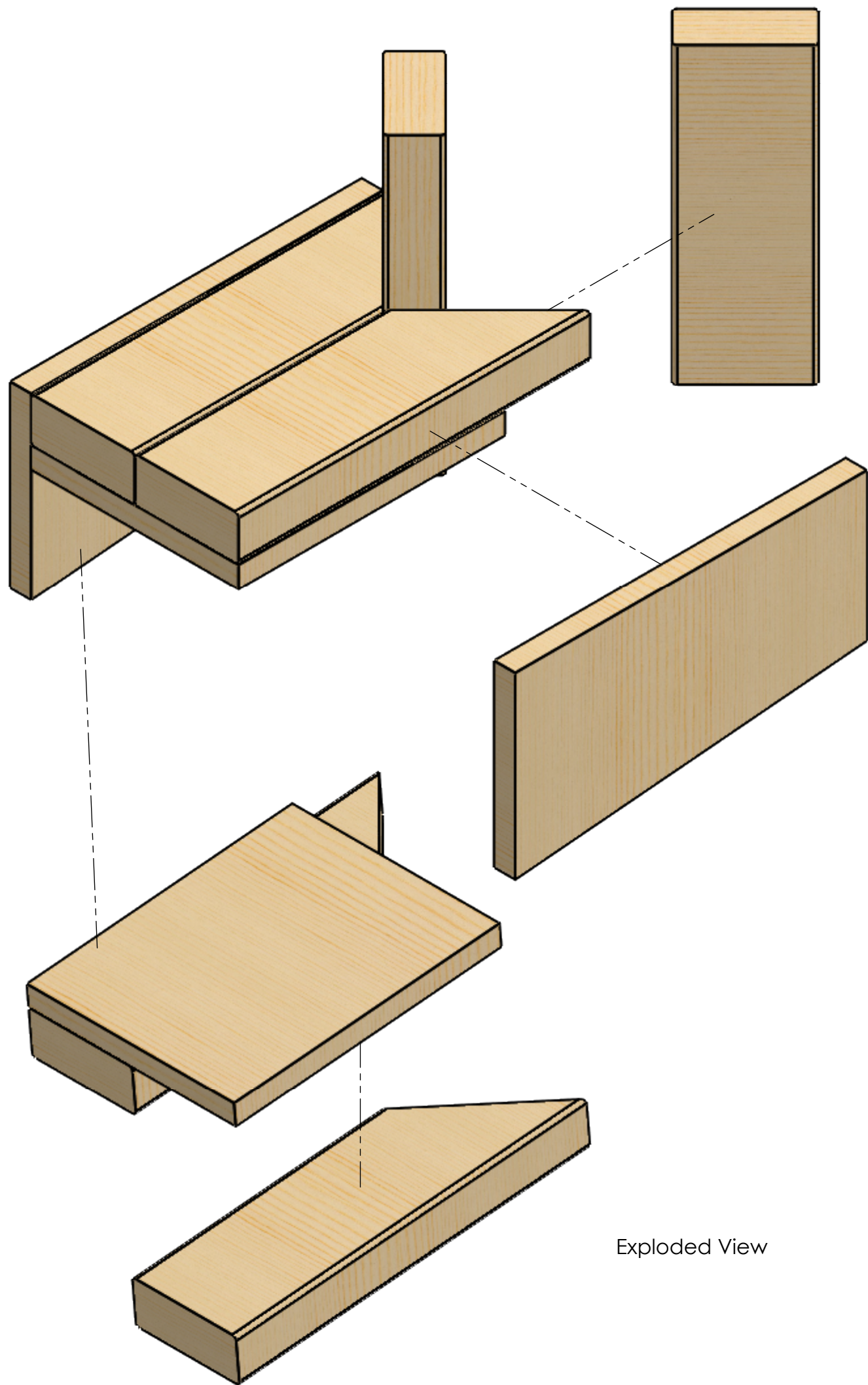




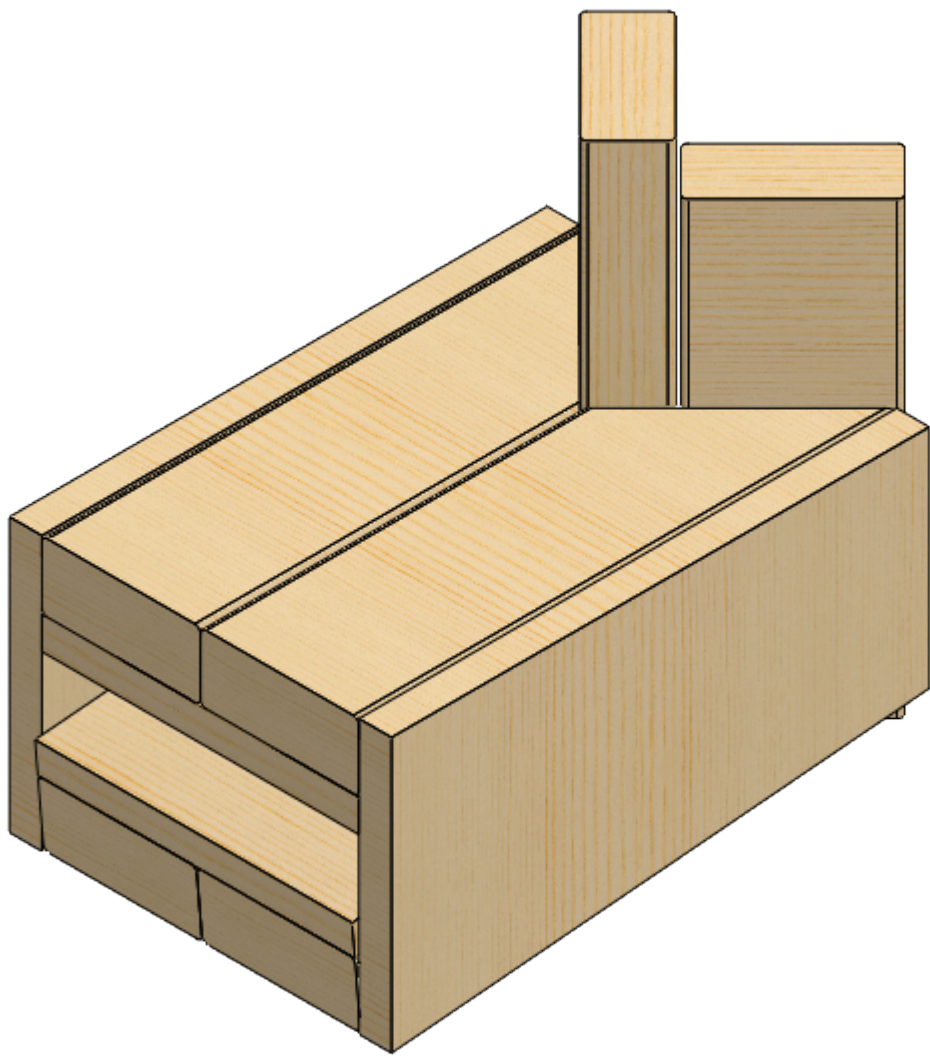
UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125  <b>MATERIAL/FINISH:</b>  3/4" Plywood   DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div> <div>TITLE: Hub - Simple Build - Upper Exit Connection Box Side</div>
	DRAWN	KAMC	1/3/2022	
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.  <b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			
SIZE		DWG. NO.		REV
<b>C</b>		TE-22066		
SCALE: 2:3			SHEET 1 OF 1	



UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	<div><div></div><div>TITLE: Hub - Simple Build - Upper Exit Connection 2x4</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	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			SIZE			DWG. NO.			REV		
	<b>MATERIAL/FINISH:</b>  2"x4" Lumber	<b>COMMENTS:</b>  REMOVE ALL BURRS AND SHARP EDGES.			<b>C</b>			TE-22067				
DO NOT SCALE DRAWING				SCALE: 2:3			SHEET 1 OF 1					





Exploded View

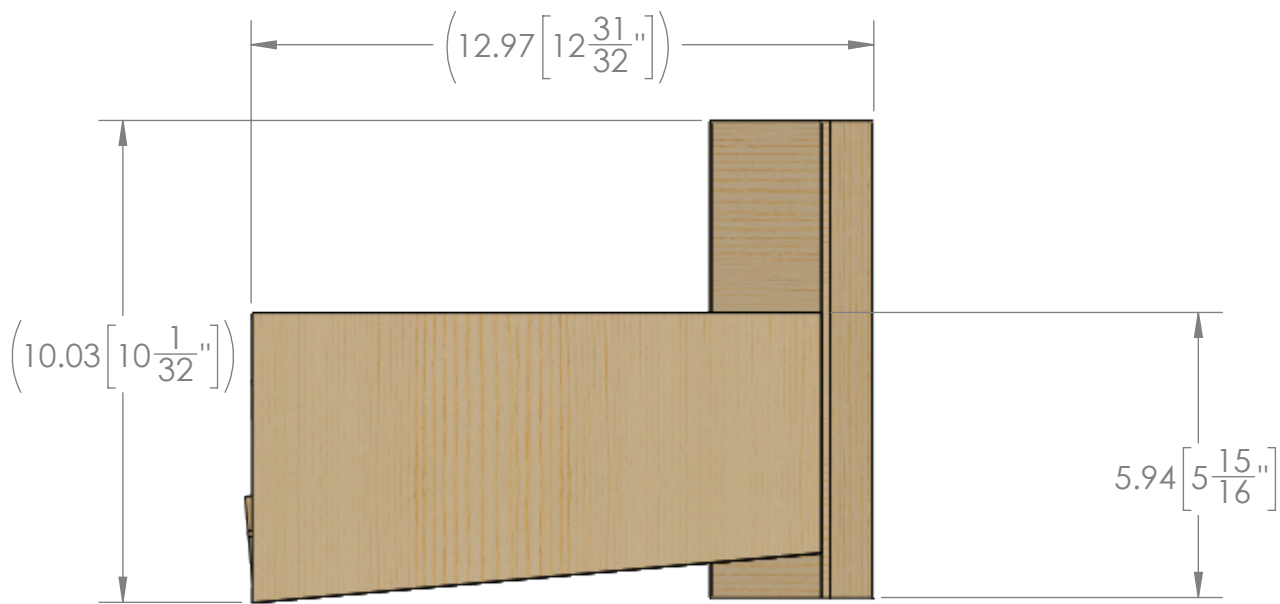
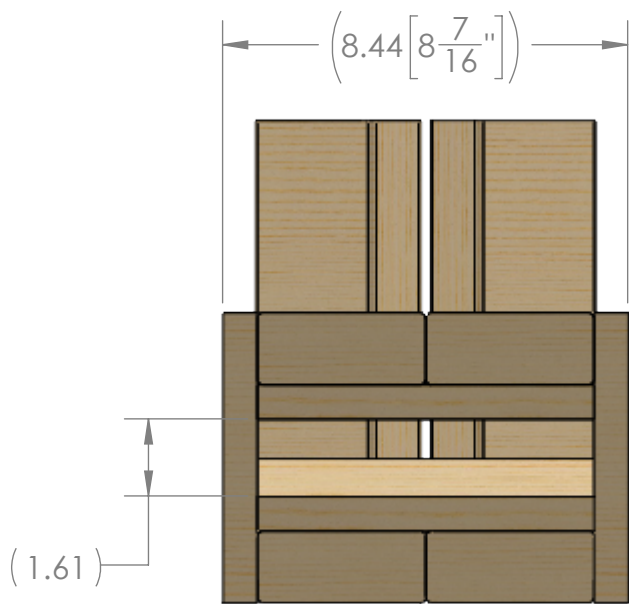
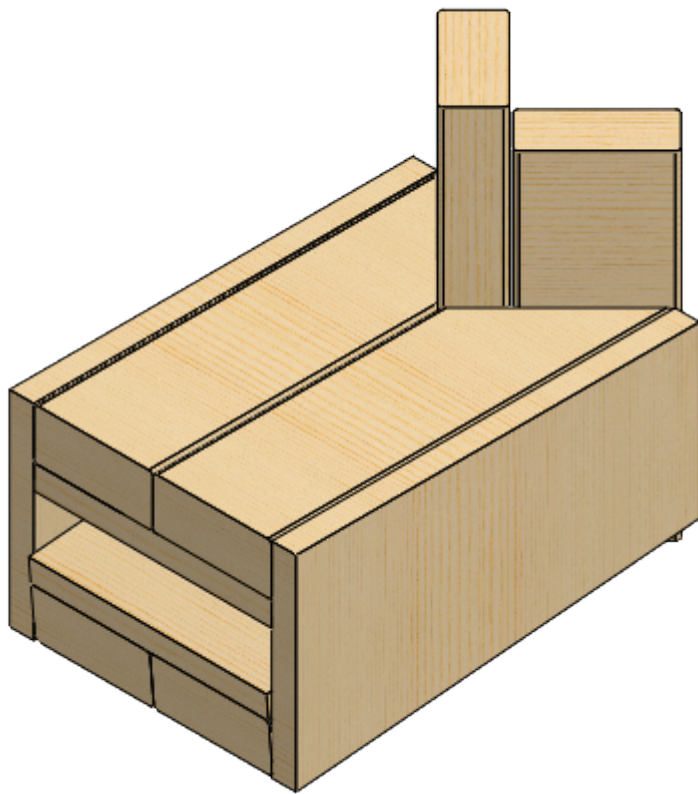
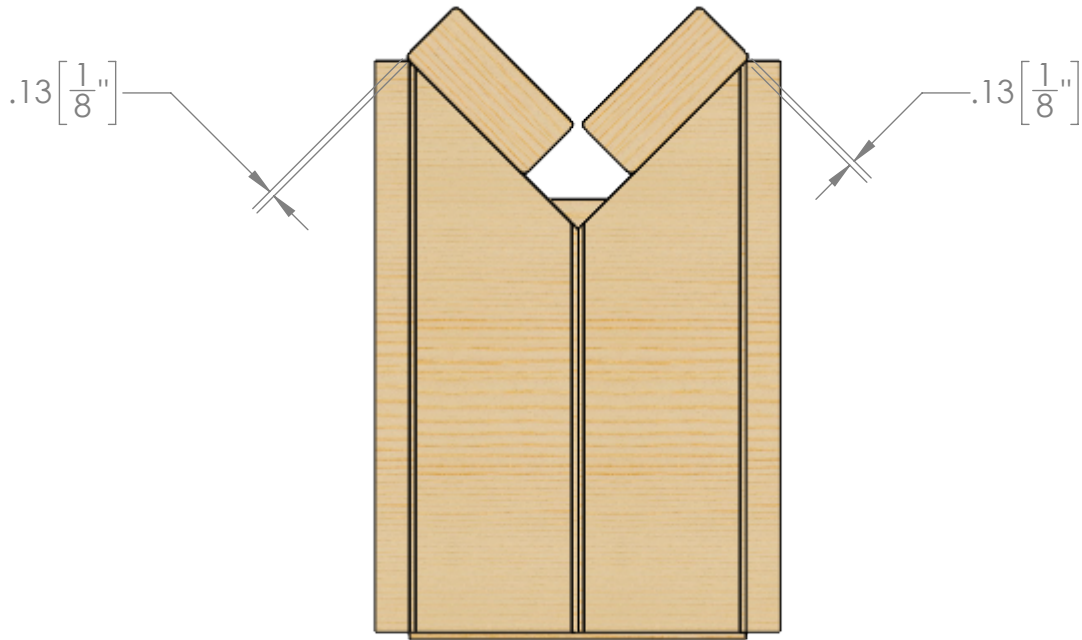




Hardware Needed:  
#8 x 2" Long Screw - Qty 24  
#8 x 2.5" Long Screw - Qty 8

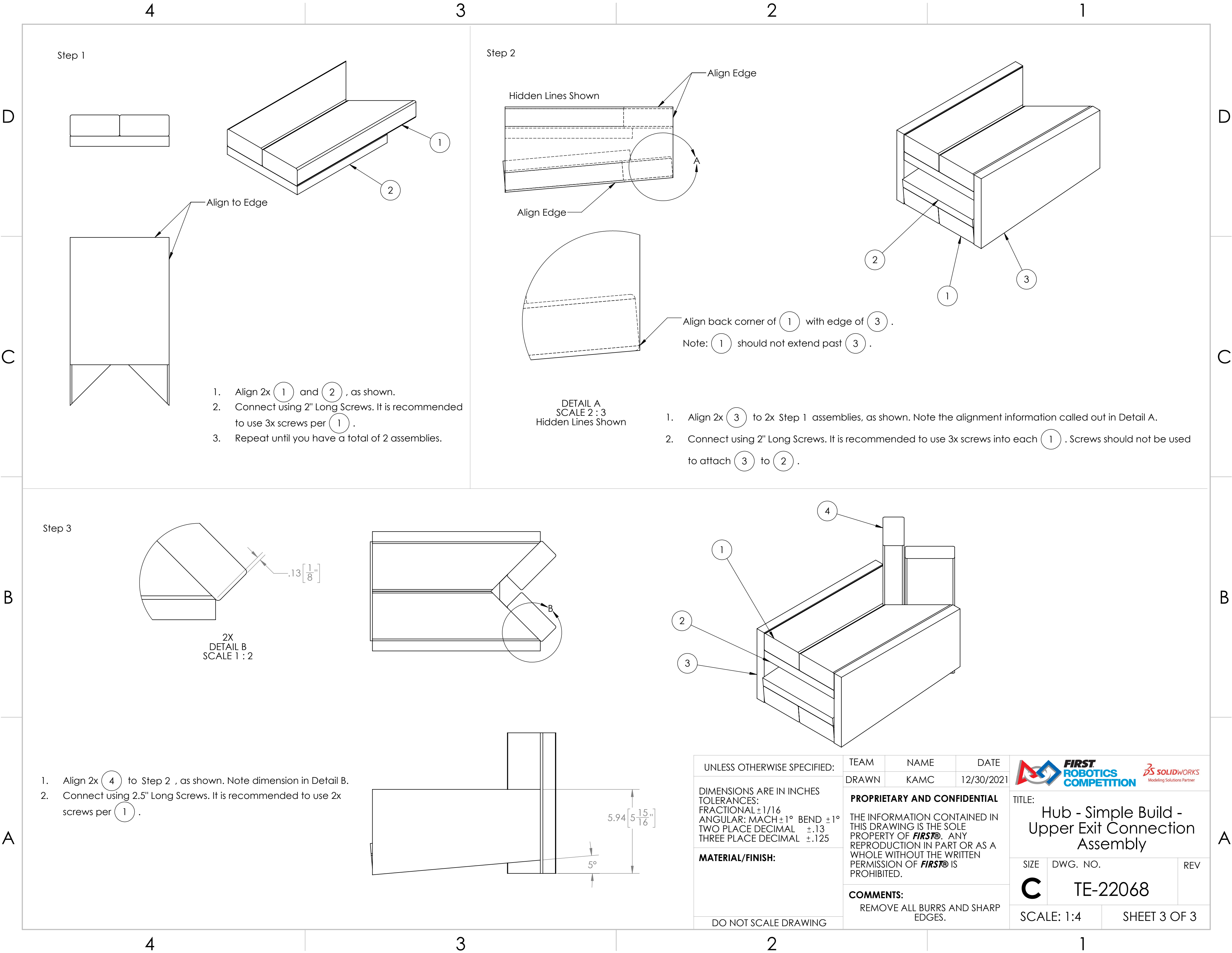
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-22065	Hub - Simple Build - Upper Exit Connection Box 2x4	4
2	TE-22061	Hub - Simple Build - Upper Exit Connection Plate	2
3	TE-22066	Hub - Simple Build - Upper Exit Connection Box Side	2
4	TE-22067	Hub - Simple Build - Upper Exit Connection 2x4	2

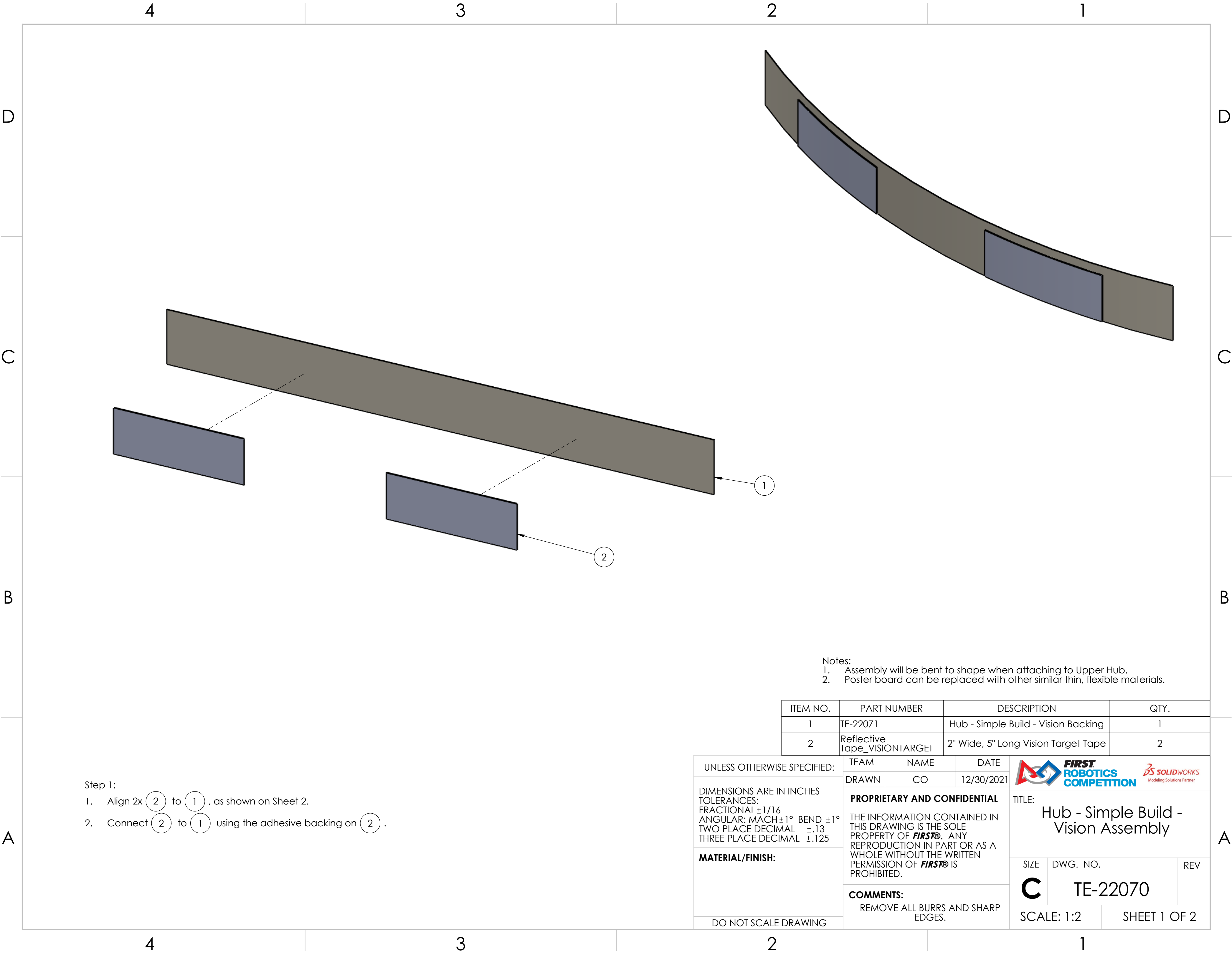
UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE	  TITLE: Hub - Simple Build - Upper Exit Connection Assembly		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	DRAWN	KAMC	12/30/2021			
MATERIAL/FINISH:	PROPRIETARY AND CONFIDENTIAL  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.					
	COMMENTS:  REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING				SIZE <b>C</b> SCALE: 1:3	DWG. NO. TE-22068 SHEET 1 OF 3	REV





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 $\pm .125$  <b>MATERIAL/FINISH:</b>     DO NOT SCALE DRAWING	TEAM	NAME	DATE	<div></div>		
	DRAWN	KAMC	12/30/2021			
	<b>PROPRIETARY AND CONFIDENTIAL</b>  THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF <b>FIRST®</b> . ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF <b>FIRST®</b> IS PROHIBITED.			TITLE: Hub - Simple Build - Upper Exit Connection Assembly		
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			SIZE <b>C</b>	DWG. NO. TE-22068	REV
SCALE: 1:4		SHEET 2 OF 3				







- Notes:
- 1. Assembly will be bent to shape when attaching to Upper Hub.
  - 2. Poster board can be replaced with other similar thin, flexible materials.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-22071	Hub - Simple Build - Vision Backing	1
2	Reflective Tape_VISIONTARGET	2" Wide, 5" Long Vision Target Tape	2

- Step 1:
- 1. Align 2x (2) to (1) , as shown on Sheet 2.
  - 2. Connect (2) to (1) using the adhesive backing on (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  <b>MATERIAL/FINISH:</b>          DO NOT SCALE DRAWING	TEAM DRAWN	NAME CO	DATE 12/30/2021	<div></div> <div>TITLE: Hub - Simple Build - Vision Assembly</div> <div><div>SIZE C</div><div>DWG. NO. TE-22070</div><div>REV</div></div> <div>SCALE: 1:2</div> <div>SHEET 1 OF 2</div>		
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	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.					



