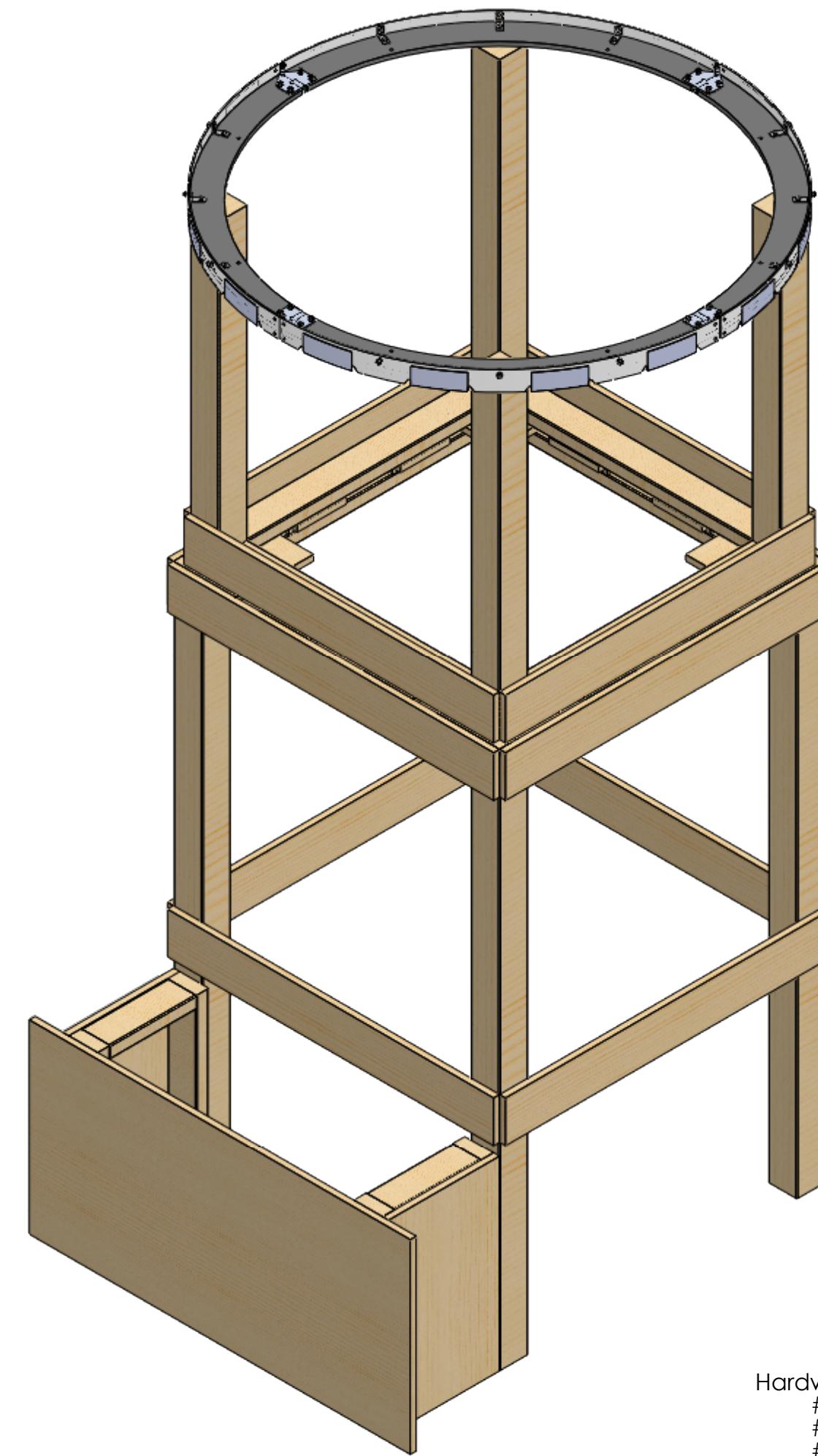


Note: If you are planning to disassemble frequently, you may want to consider using bolted connections instead of screws. It is helpful to consider ceiling height ability to move assembly through doors before fastening sub-assemblies together.



Hardware Needed:
 #8 x 1.25" Long Screw - Qty 16
 #8 x 2.5" Long Screw - Qty 20
 #10 x 3.5" Long Screw - Qty 8

ITEM NO.	PART NUMBER	DESCRIPTION	
1	TE-22010	Hub - Simple Build - Fender Assembly	1
2	TE-22040	Hub - Simple Build - Upper Hub Base Assembly	1
3	TE-22030-AM	Hub - Simple Build - Upper Hub Goal Assembly for AM Ring AM-4672	1

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TEAM	NAME	DATE
DRAWN	KAMC	1/4/2022
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COMMENTS:		
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DO NOT SCALE DRAWING		

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

TITLE: Hub - Simple Build - Full Upper Hub for AndyMark Ring AM-4672 + 1/4 Fender Assembly

SIZE DWG. NO. REV
C TE-22002-AM

SCALE: 1:12 SHEET 1 OF 3

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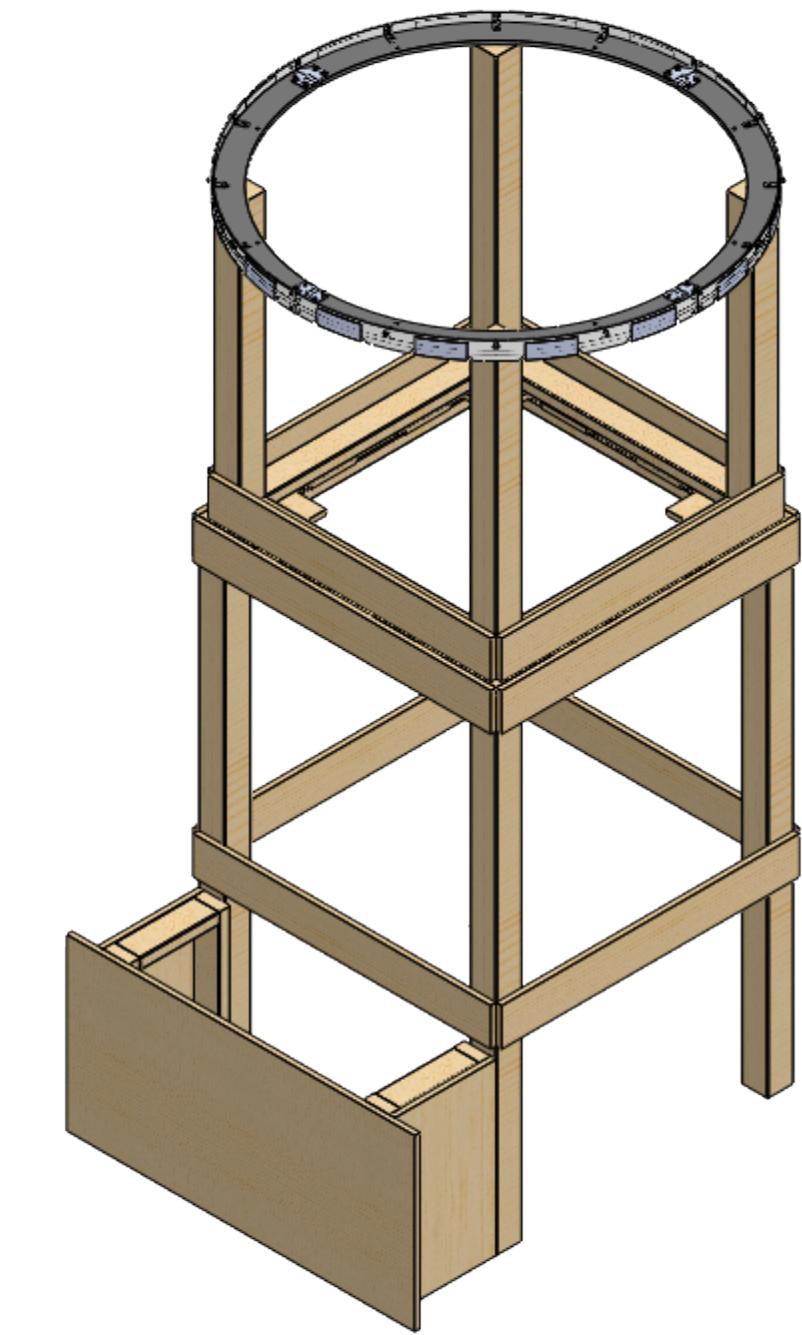
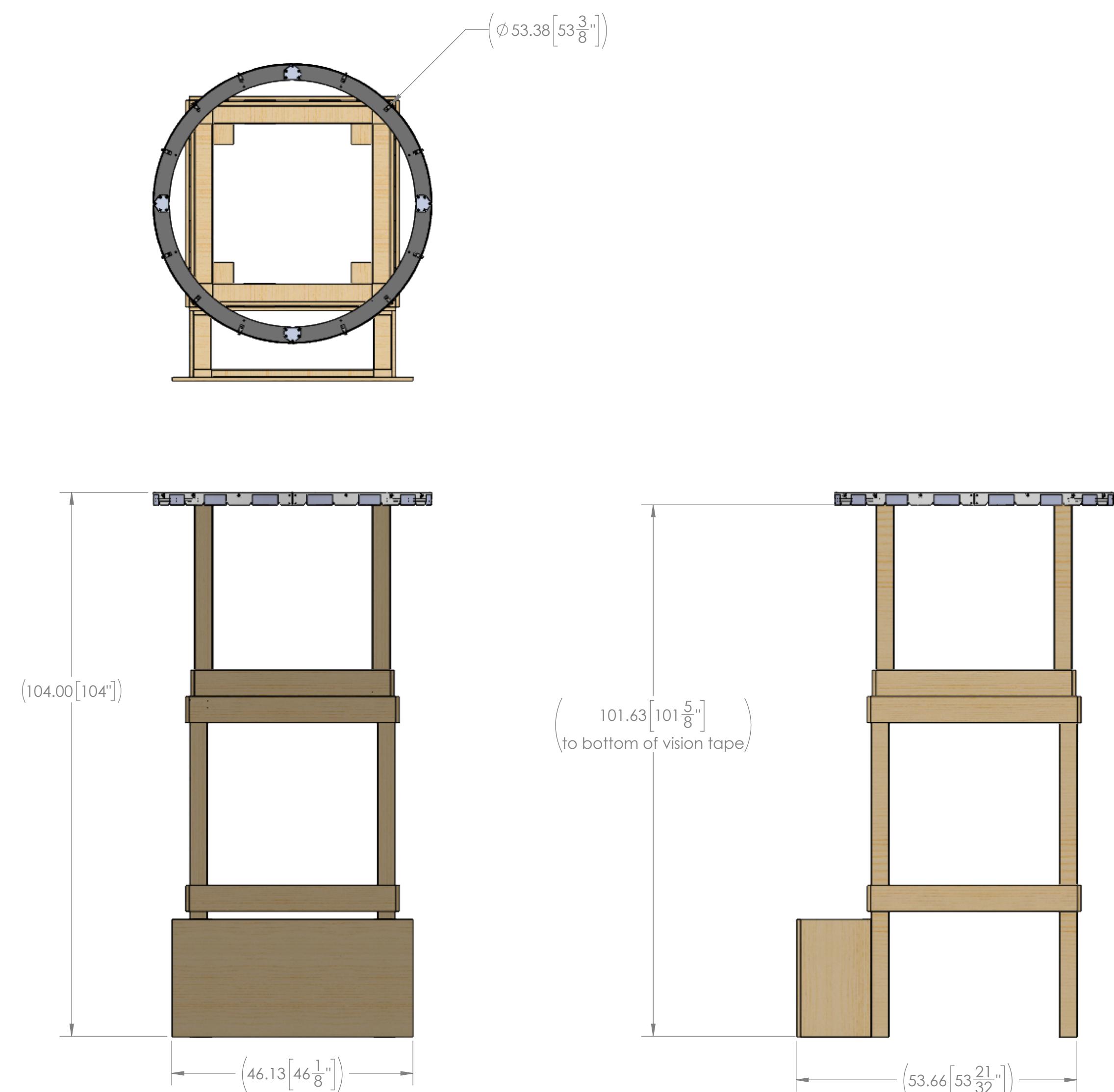
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MATERIAL/FINISH:	SIZE	DWG. NO.	REV
C	TE-22002-AM		
SCALE: 1:18		SHEET 2 OF 3	
DO NOT SCALE DRAWING			

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE: Hub - Simple Build - Full
Upper Hub for
AndyMark Ring AM-4672
+ 1/4 Fender Assembly

SIZE DWG. NO. REV
C TE-22002-AM
SCALE: 1:18 SHEET 2 OF 3

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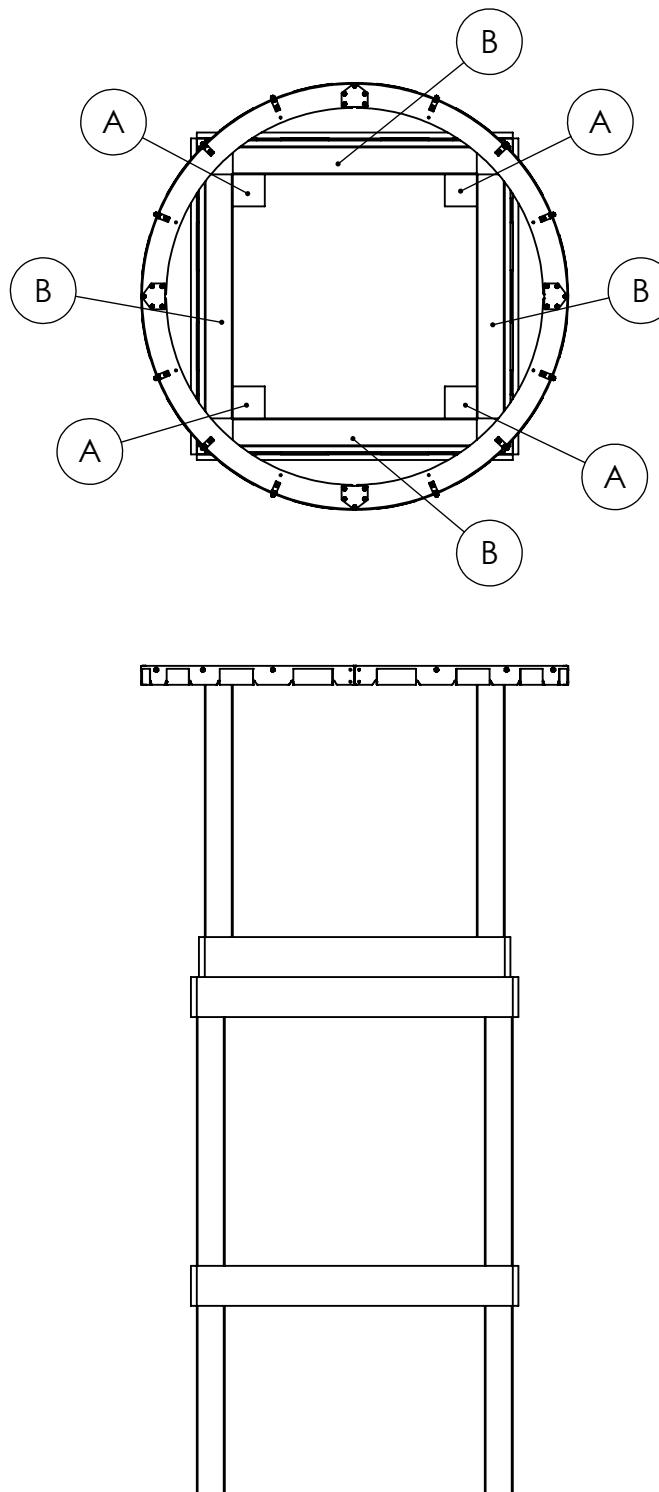
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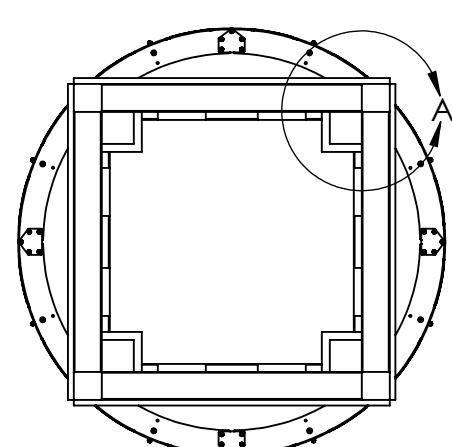
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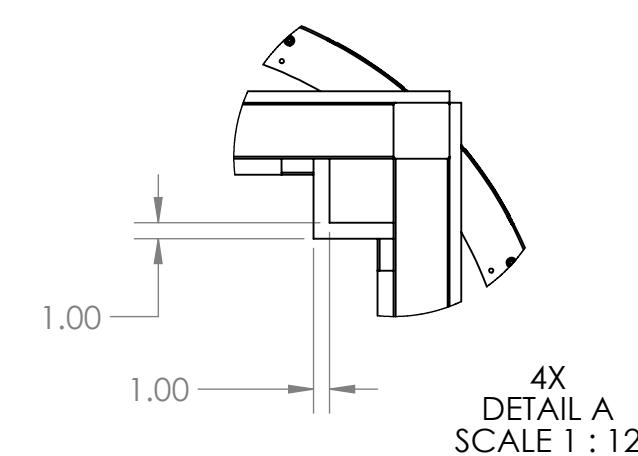
Step 1



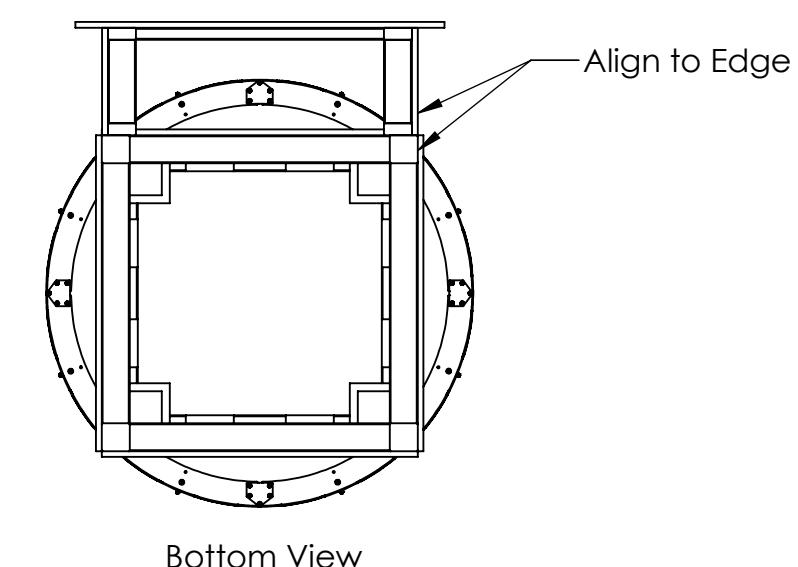
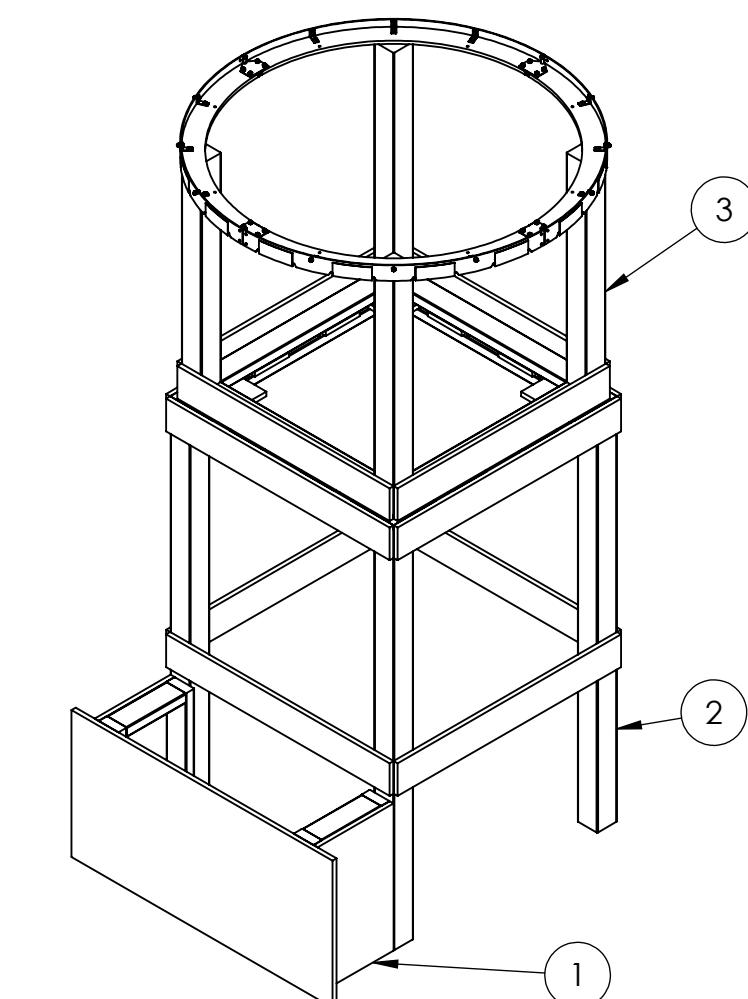
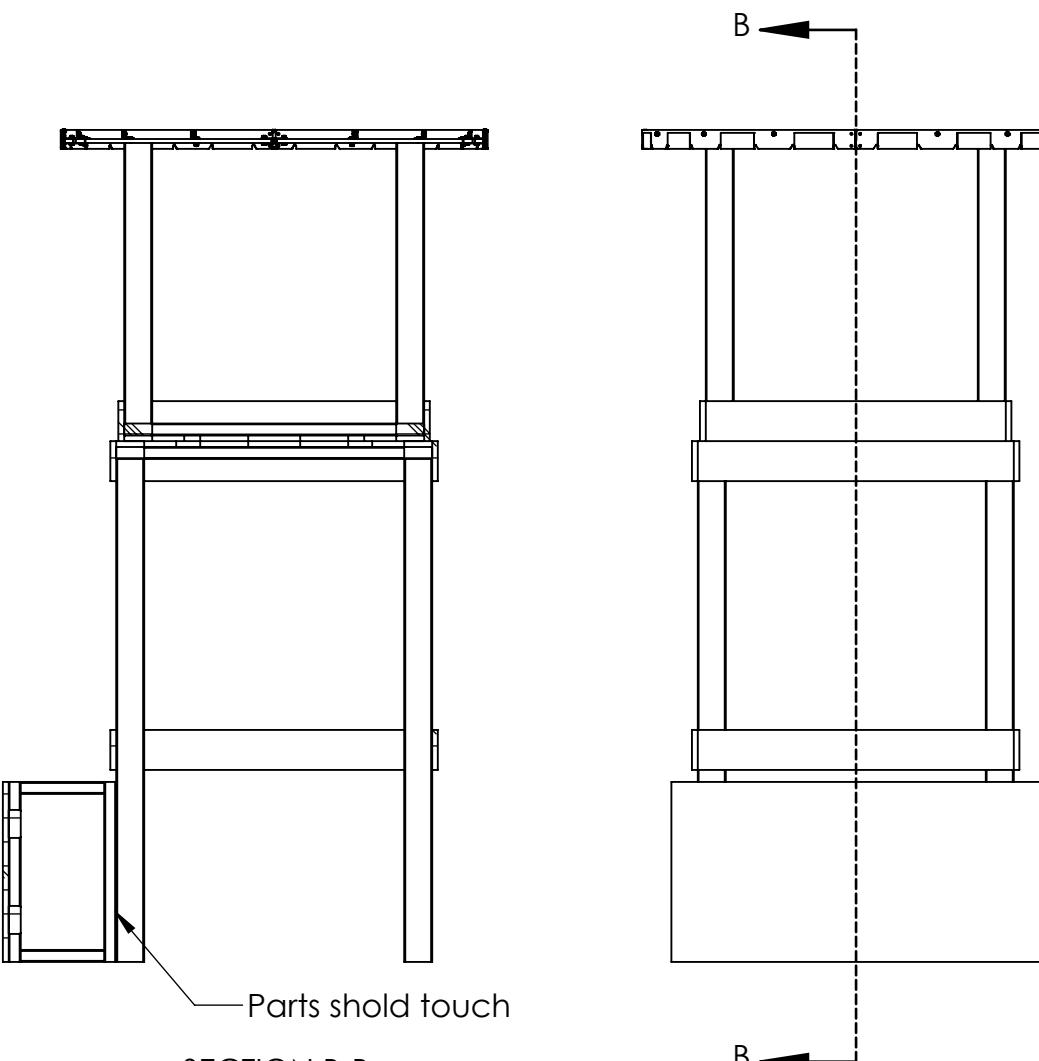
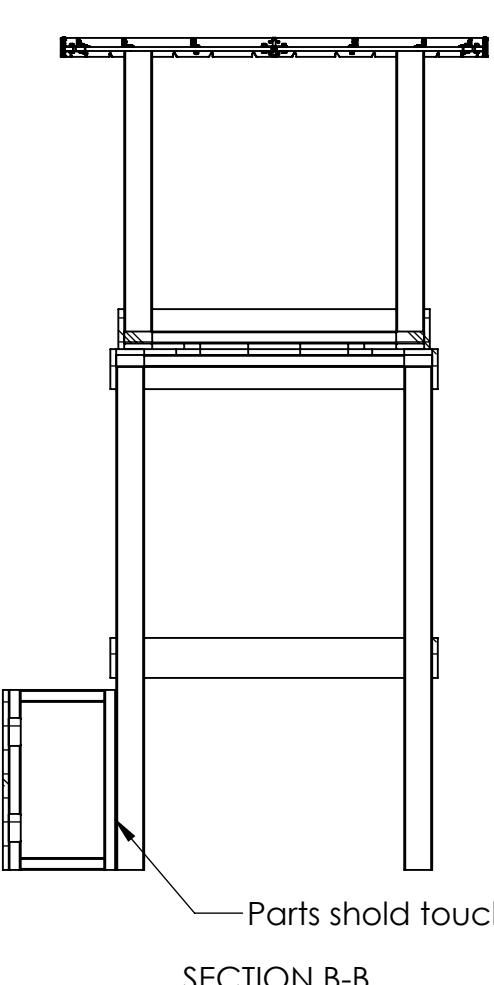
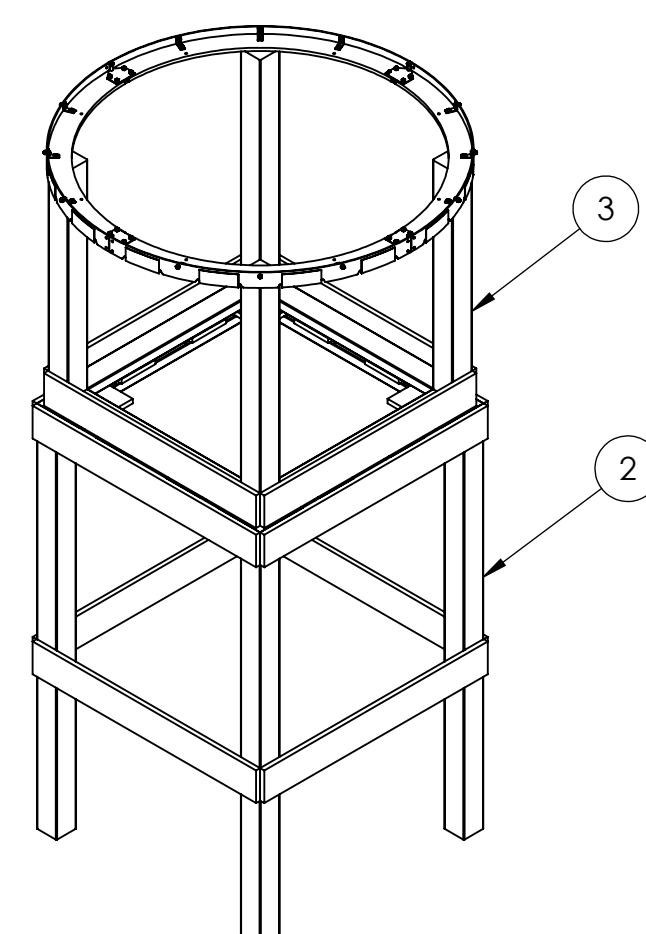
Bottom View



1. Align (3) to (2) as shown. Note the dimensions in Detail A.
2. Connect using 1.25" and 2.5" Long Screws. It is recommended to use 4x 1.25" long screws into each area indicated by (A). It is recommended to use 5x 2.5" long screws into each area indicated by (B).



Step 2



1. Align (1) to Step 1 , as shown.
2. Connect using 3.5" long screws. It is recommended to use 4x screws into each vertical leg of (2) . The screw head should be on the 2"x4" lumber of (1) .

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DRAWN	KAMC	1/4/2022	
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MATERIAL/FINISH:	SIZE	DWG. NO.	REV
	C	TE-22002-AM	
COMMENTS:	REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING	SCALE: 1:24	SHEET 3 OF 3	

FIRST ROBOTICS COMPETITION **SOLIDWORKS**
Modeling Solutions Partner

TITLE: Hub - Simple Build - Full
Upper Hub for
AndyMark Ring AM-4672
+ 1/4 Fender Assembly

SIZE DWG. NO. REV
C TE-22002-AM

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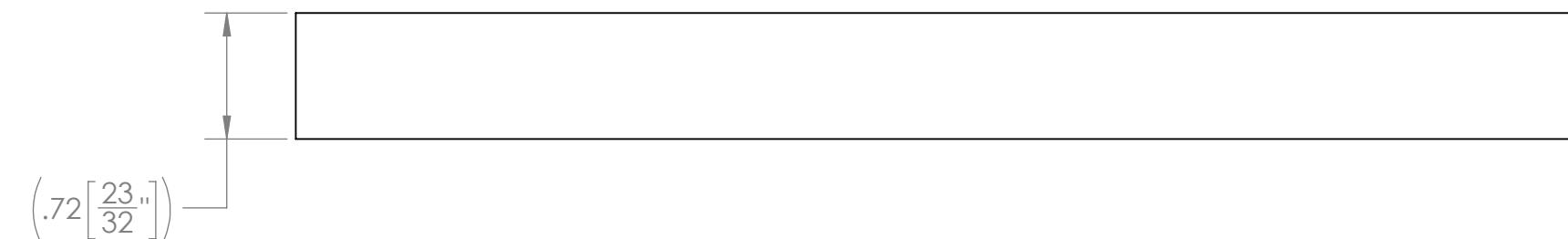
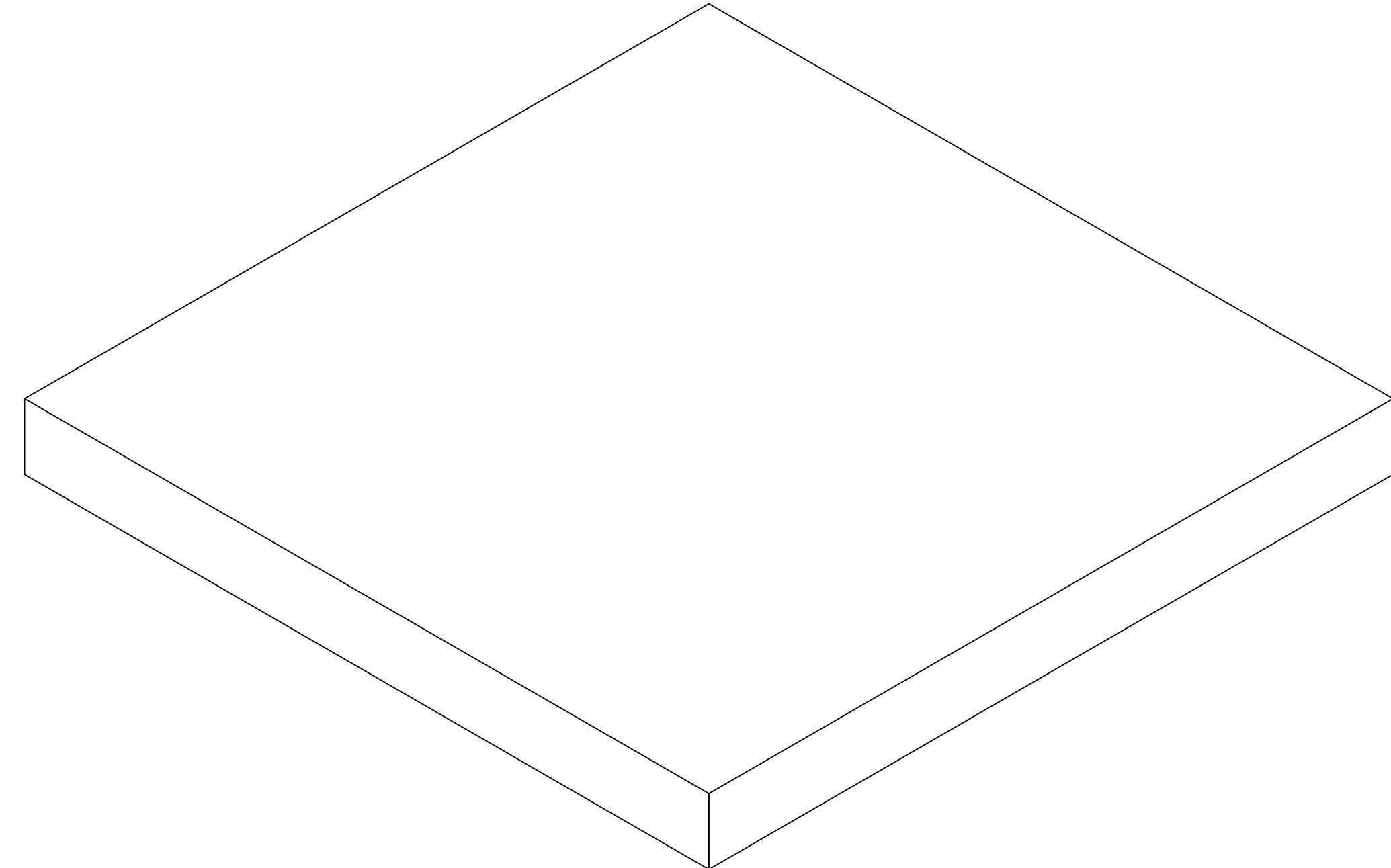
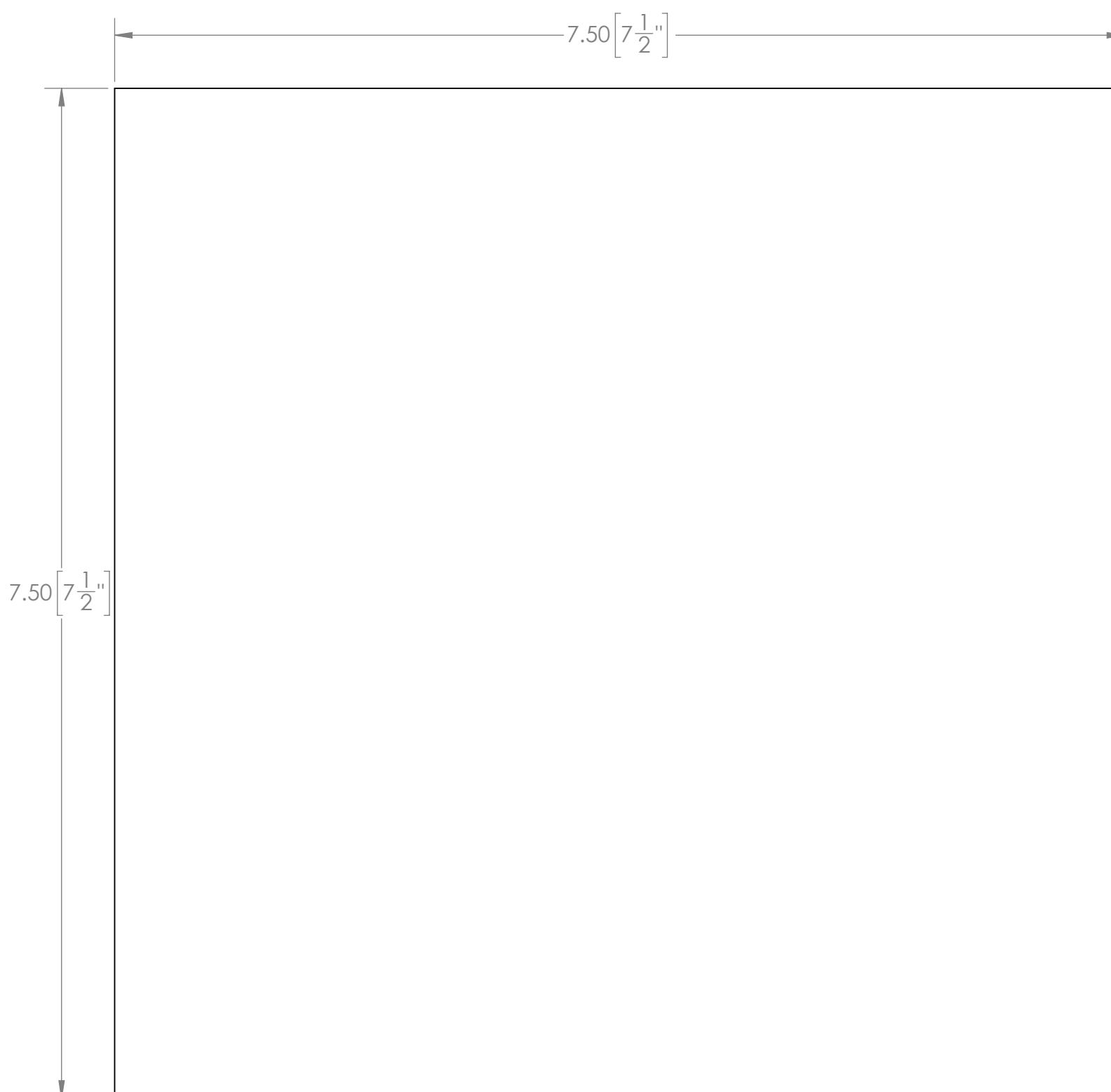
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DIMENSIONS ARE IN INCHES	DRAWN	KAMC	12/29/2021
PROPRIETARY AND CONFIDENTIAL			
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MATERIAL/FINISH:	SIZE	DWG. NO.	REV
3/4" Plywood	C	TE-22005	
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING	SCALE: 1:1	SHEET 1 OF 1	

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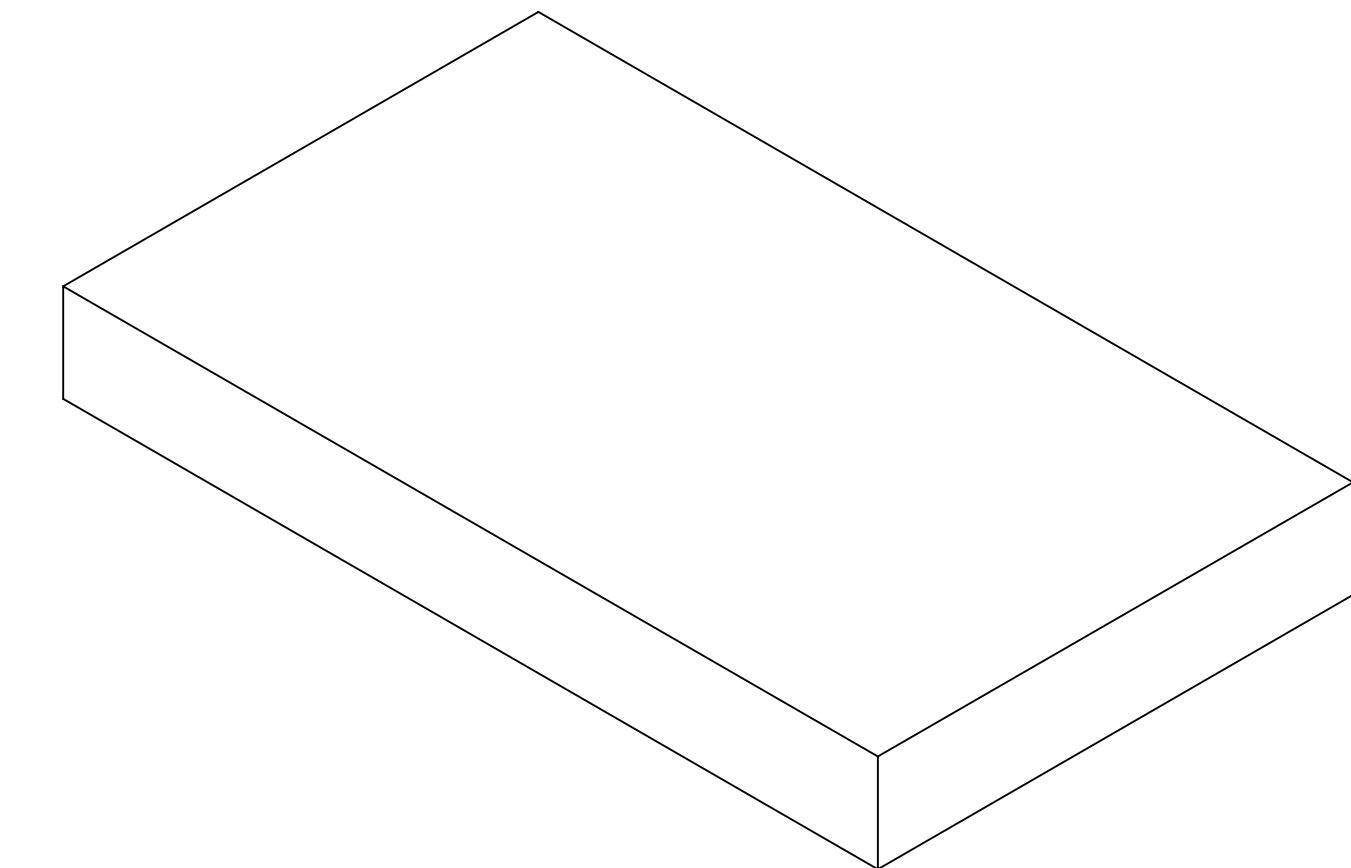
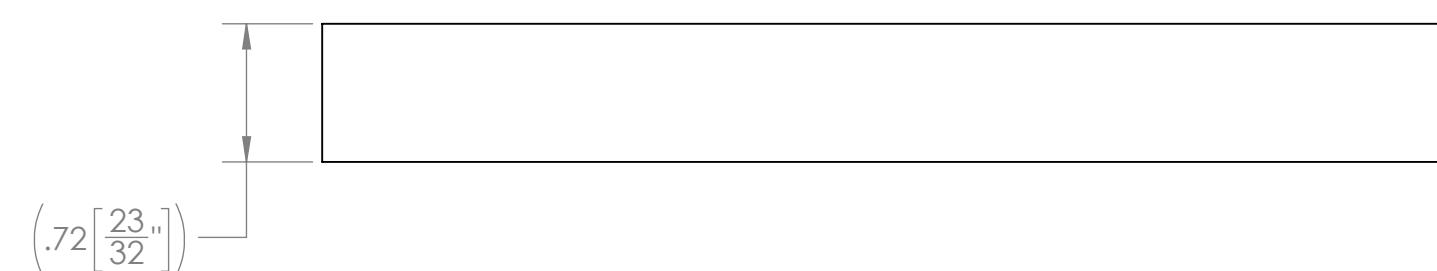
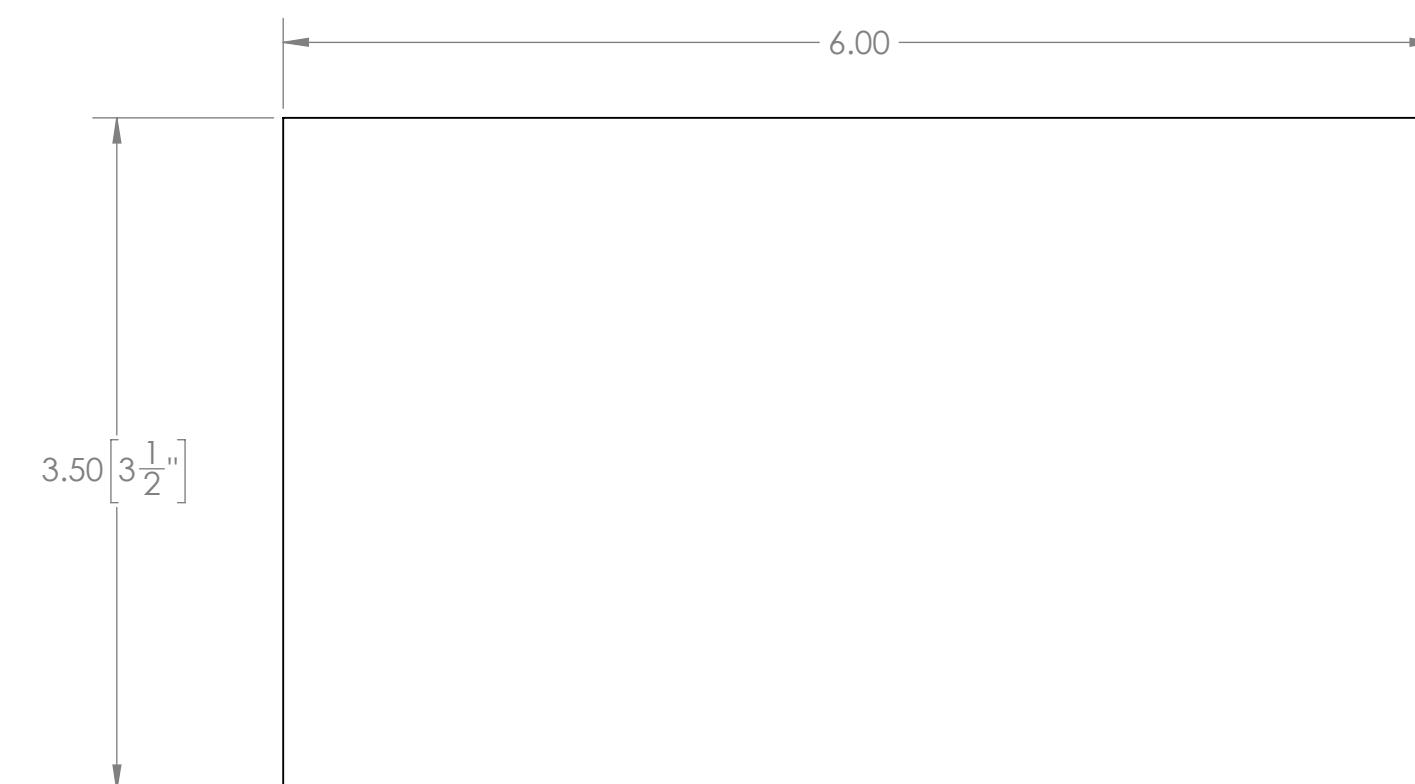
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UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$	DRAWN	KAMC	12/29/2021
PROPRIETARY AND CONFIDENTIAL			
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MATERIAL/FINISH: 3/4" Plywood	SIZE	DWG. NO.	REV
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.	C	TE-22006	
DO NOT SCALE DRAWING	SCALE: 1:1	SHEET 1 OF 1	

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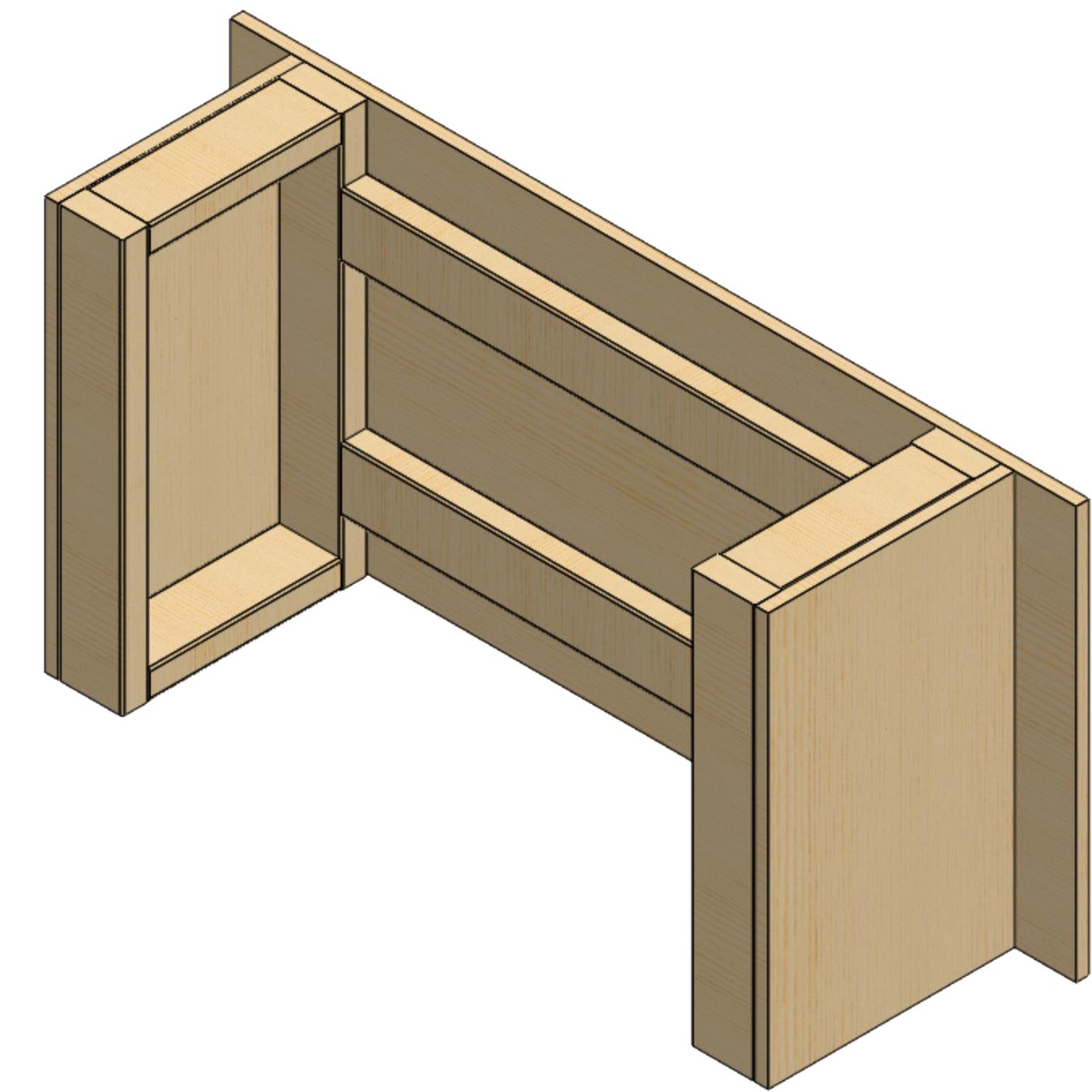
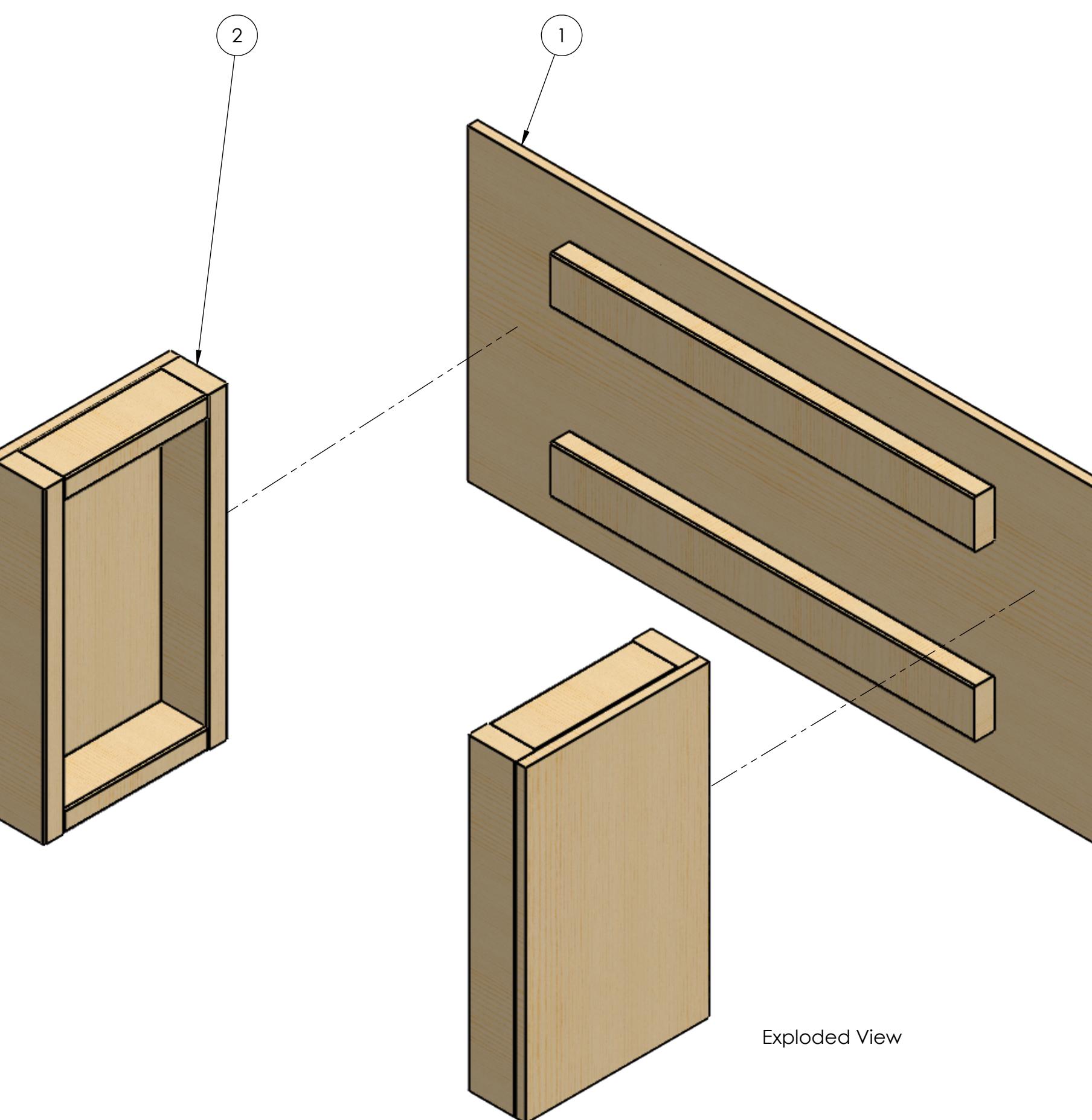
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Hardware Needed:
#8 x 2" Long Screw - Qty 10

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-22013	HUB - Basic Build - Fender Front Assembly	1
2	TE-22017	HUB - Basic Build - Fender Side Assembly	2

UNLESS OTHERWISE SPECIFIED:

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

MATERIAL/FINISH:

COMMENTS:
REMOVE ALL BURRS AND SHARP EDGES.

DO NOT SCALE DRAWING

TEAM NAME DATE
DRAWN KAMC 12/30/2021

FIRST ROBOTICS COMPETITION DS SOLIDWORKS Modeling Solutions Partner

TITLE: Hub - Simple Build - Fender Assembly

SIZE DWG. NO. REV

C TE-22010

SCALE: 1:6 SHEET 1 OF 3

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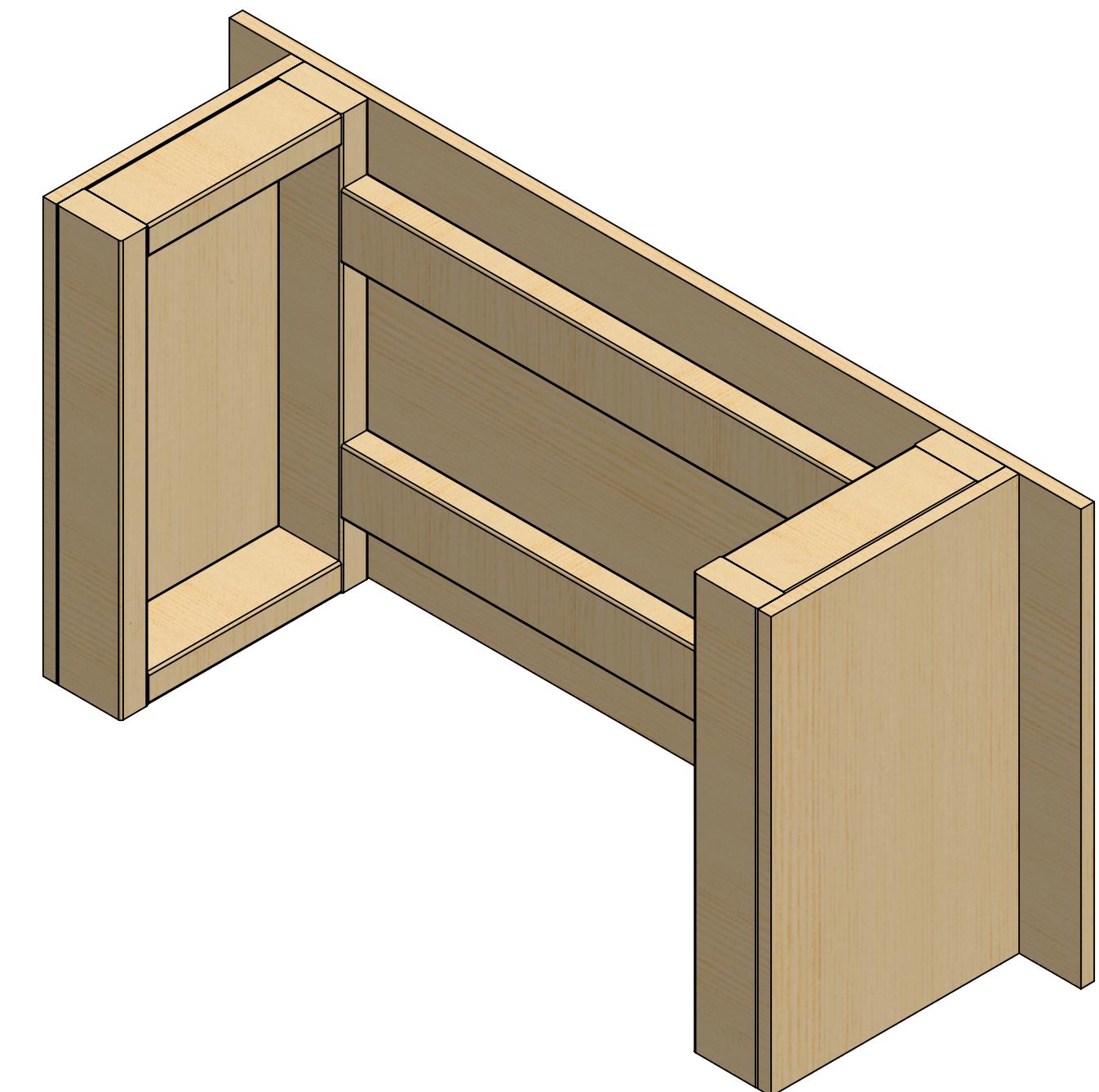
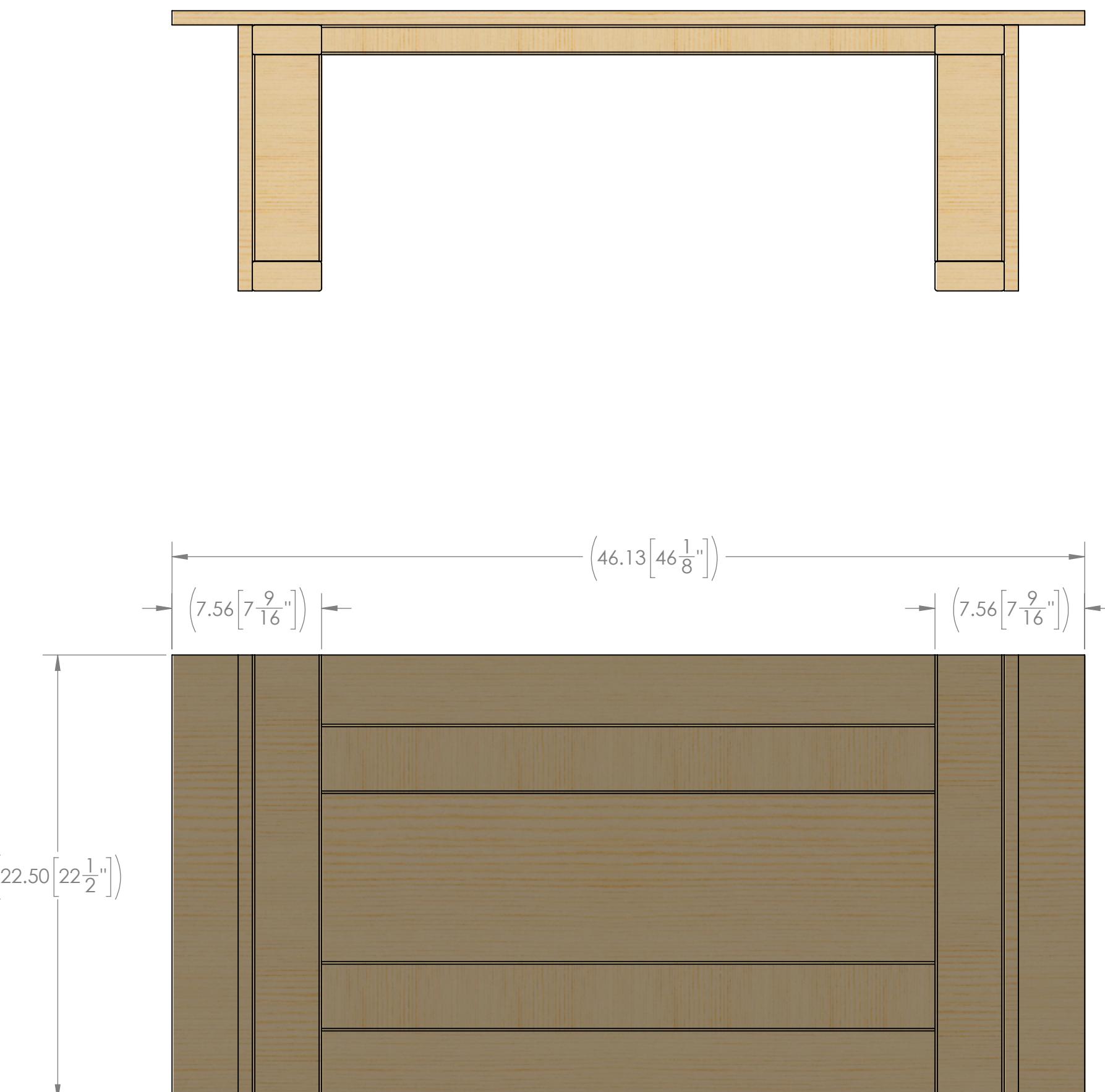
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DRAWN	KAMC	12/30/2021	
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MATERIAL/FINISH:			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			
 FIRST ROBOTICS COMPETITION  SOLIDWORKS Modeling Solutions Partner			
TITLE: Hub - Simple Build - Fender Assembly			
SIZE DWG. NO. REV			
C TE-22010			
SCALE: 1:6 SHEET 2 OF 3			

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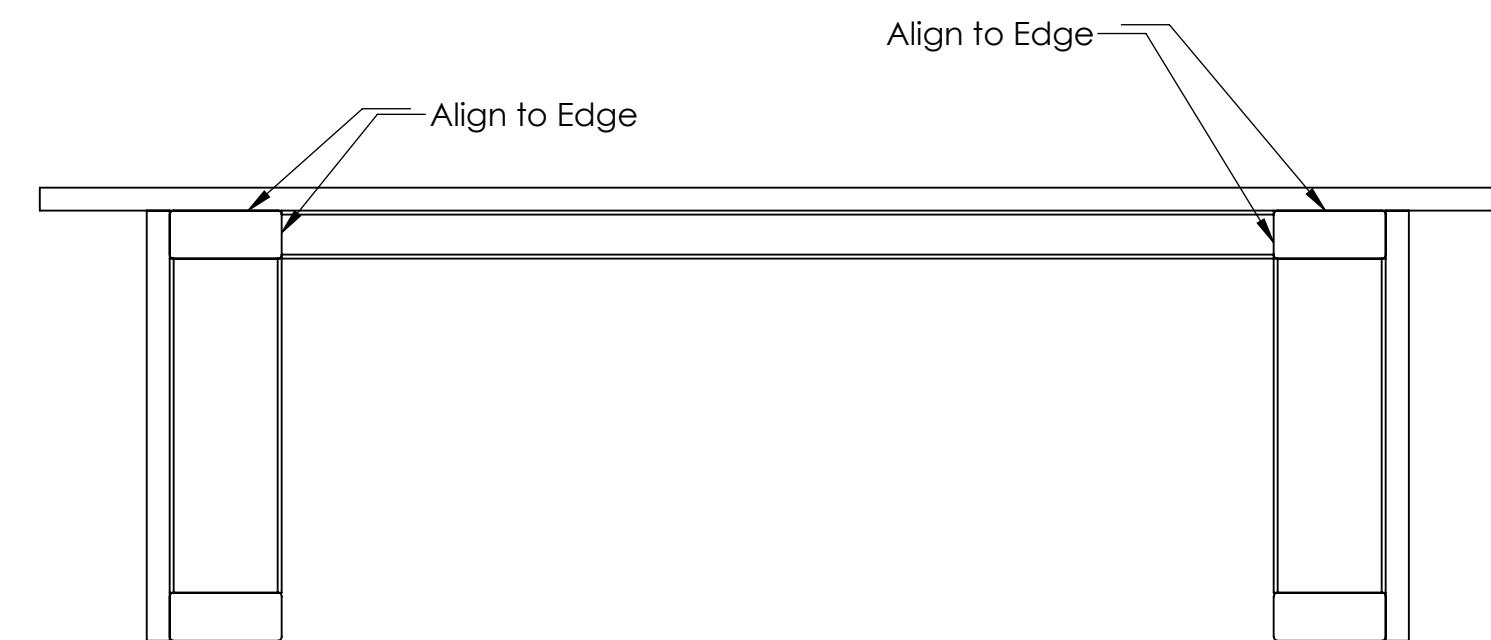
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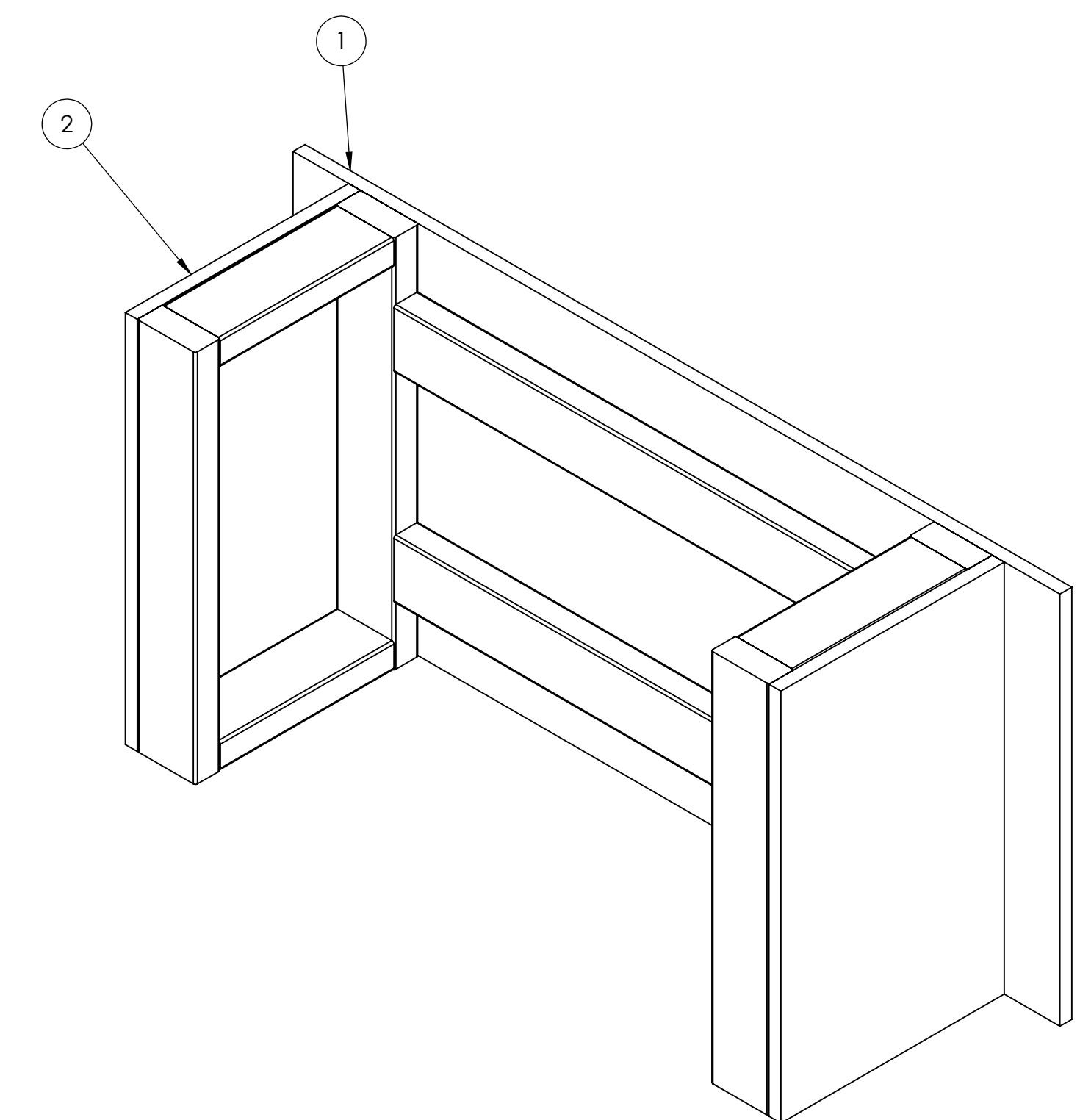
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Step 1



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).



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MATERIAL/FINISH:	SIZE	DWG. NO.	REV
	C	TE-22010	
COMMENTS:		SCALE: 1:6	
REMOVE ALL BURRS AND SHARP EDGES.		SHEET 3 OF 3	
DO NOT SCALE DRAWING			

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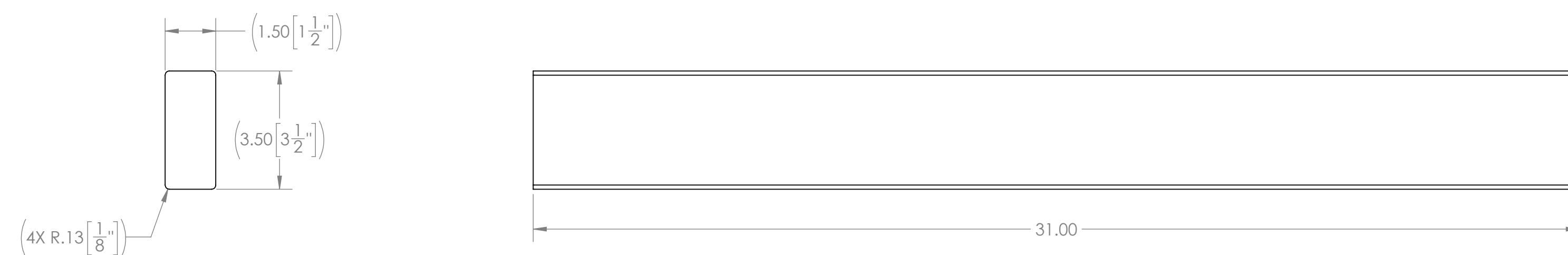
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UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$	DRAWN	KAMC	12/29/2021
PROPRIETARY AND CONFIDENTIAL			
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MATERIAL/FINISH: 2"x4" Lumber	SIZE	DWG. NO.	REV
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.	C	TE-22011	
DO NOT SCALE DRAWING	SCALE: 1:3	SHEET 1 OF 1	

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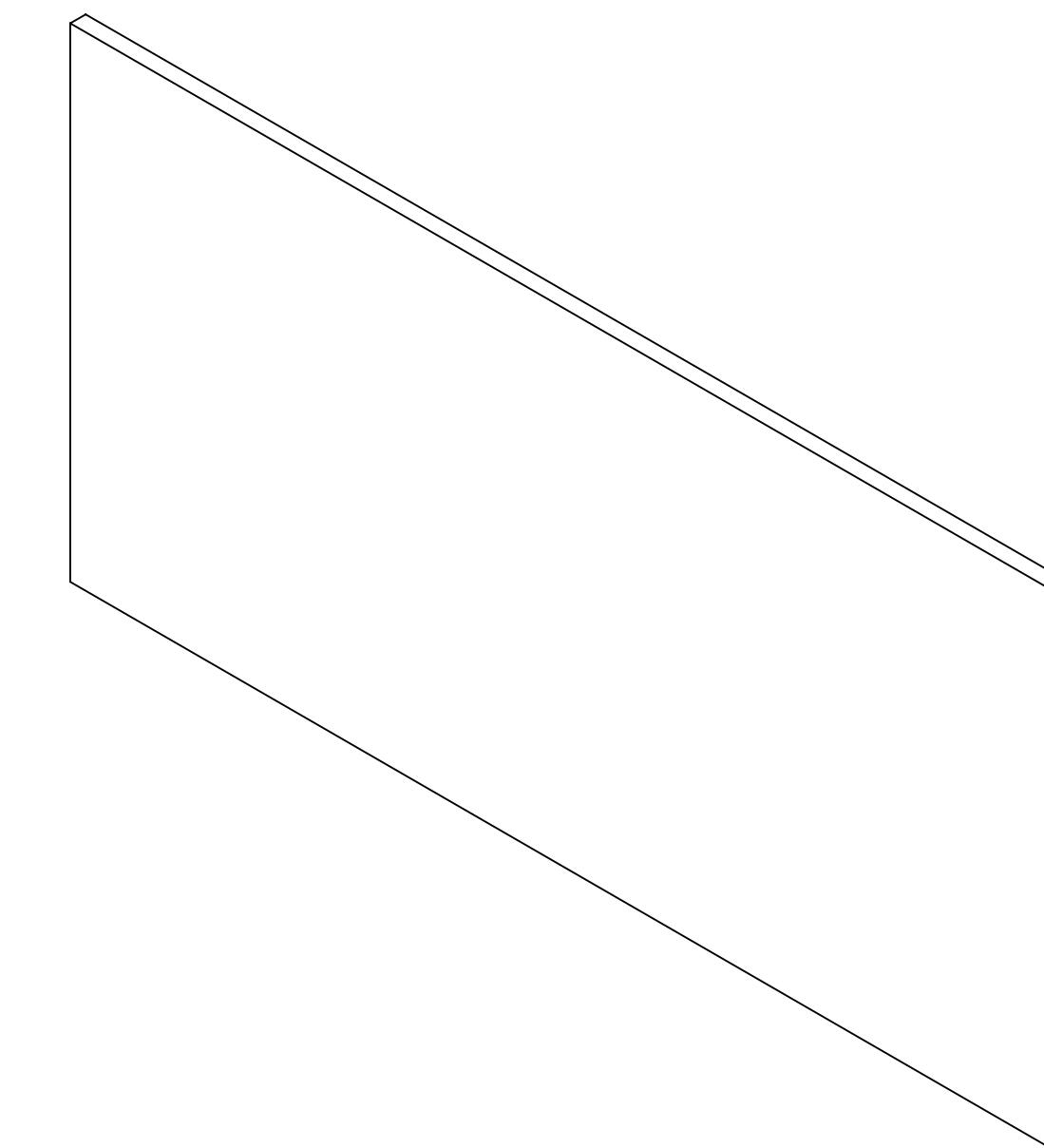
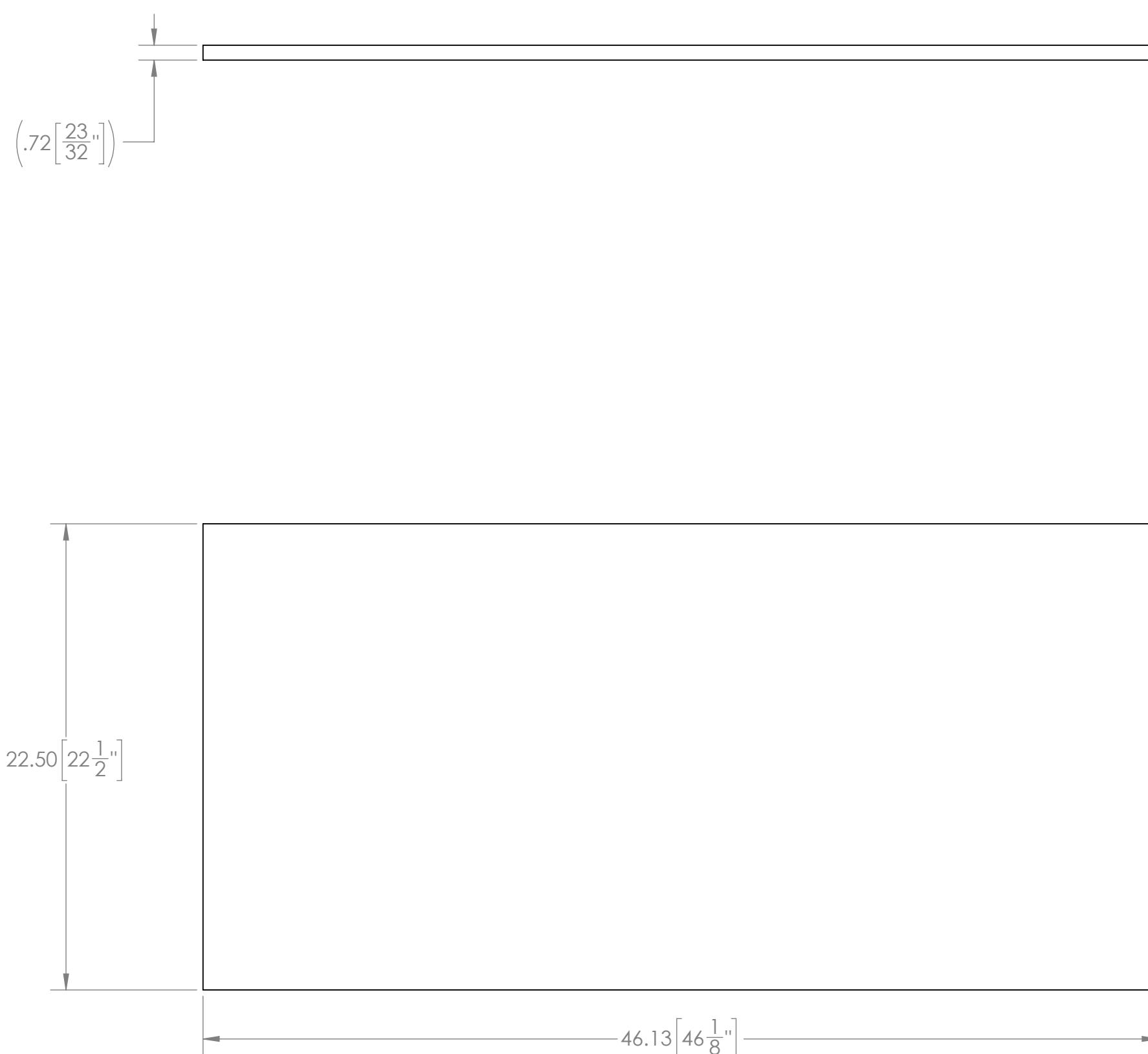
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UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$	DRAWN	KAMC	12/29/2021
PROPRIETARY AND CONFIDENTIAL			
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MATERIAL/FINISH: 3/4" Plywood	SIZE	DWG. NO.	REV
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.	C	TE-22012	
DO NOT SCALE DRAWING	SCALE: 1:6	SHEET 1 OF 1	

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A technical diagram illustrating a wooden board assembly. The main board (2) is shown in perspective, featuring a light-colored wood grain and a thin, dark-colored strip running along its top edge. A callout circle labeled '2' points to this strip. A dashed line extends from the top edge of the main board down to a smaller, horizontal board (1) positioned below it. This smaller board also has a similar dark strip along its top edge. Another callout circle labeled '1' points to the top edge of this smaller board. The boards are set against a white background.

Exploded View

Step 1:

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



UNLESS OTHERWISE SPECIFIED

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

MATERIAL/FINISH

DO NOT SCALE DRAWING

Hardware Needed:

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



COMPETITION

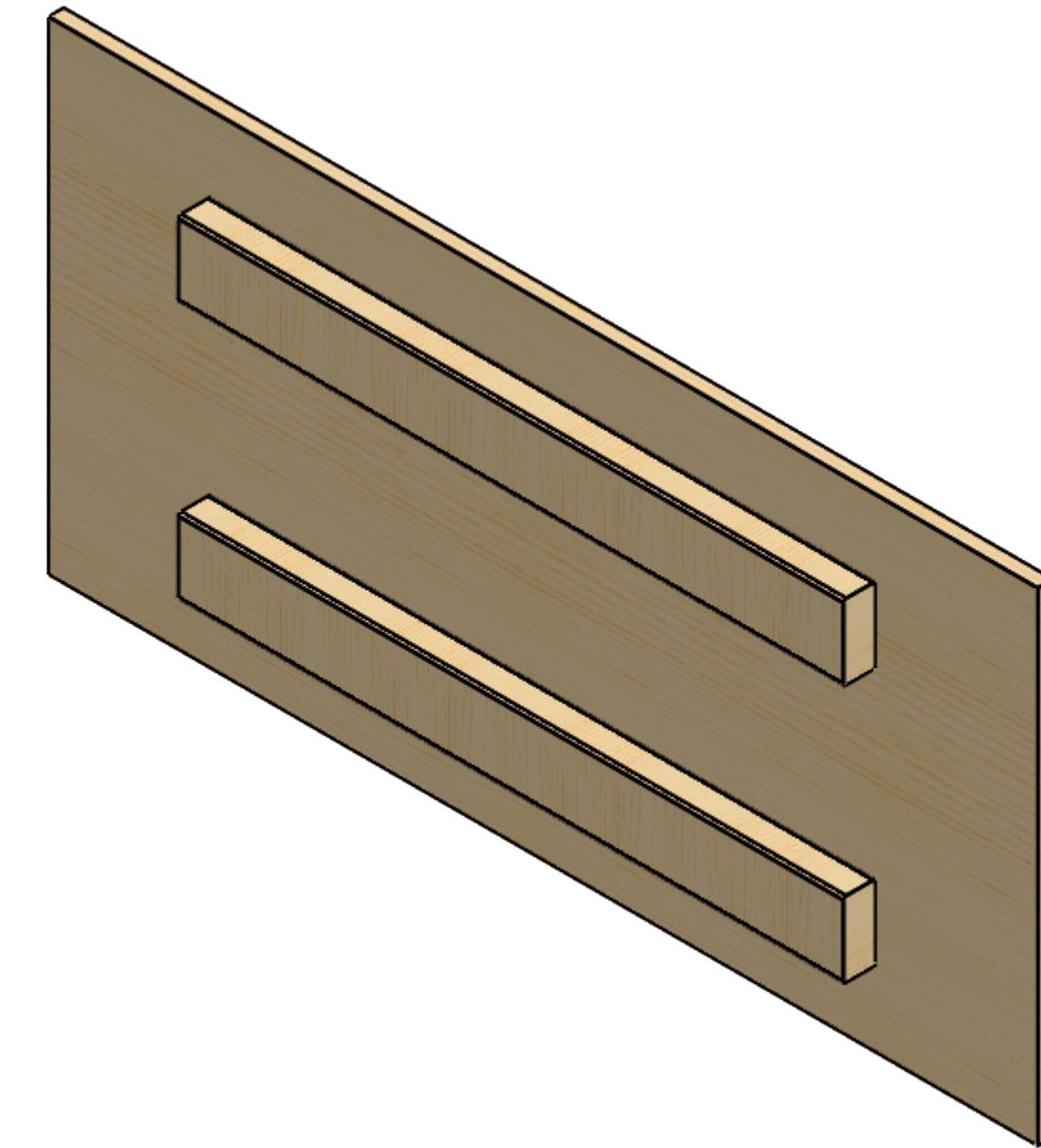
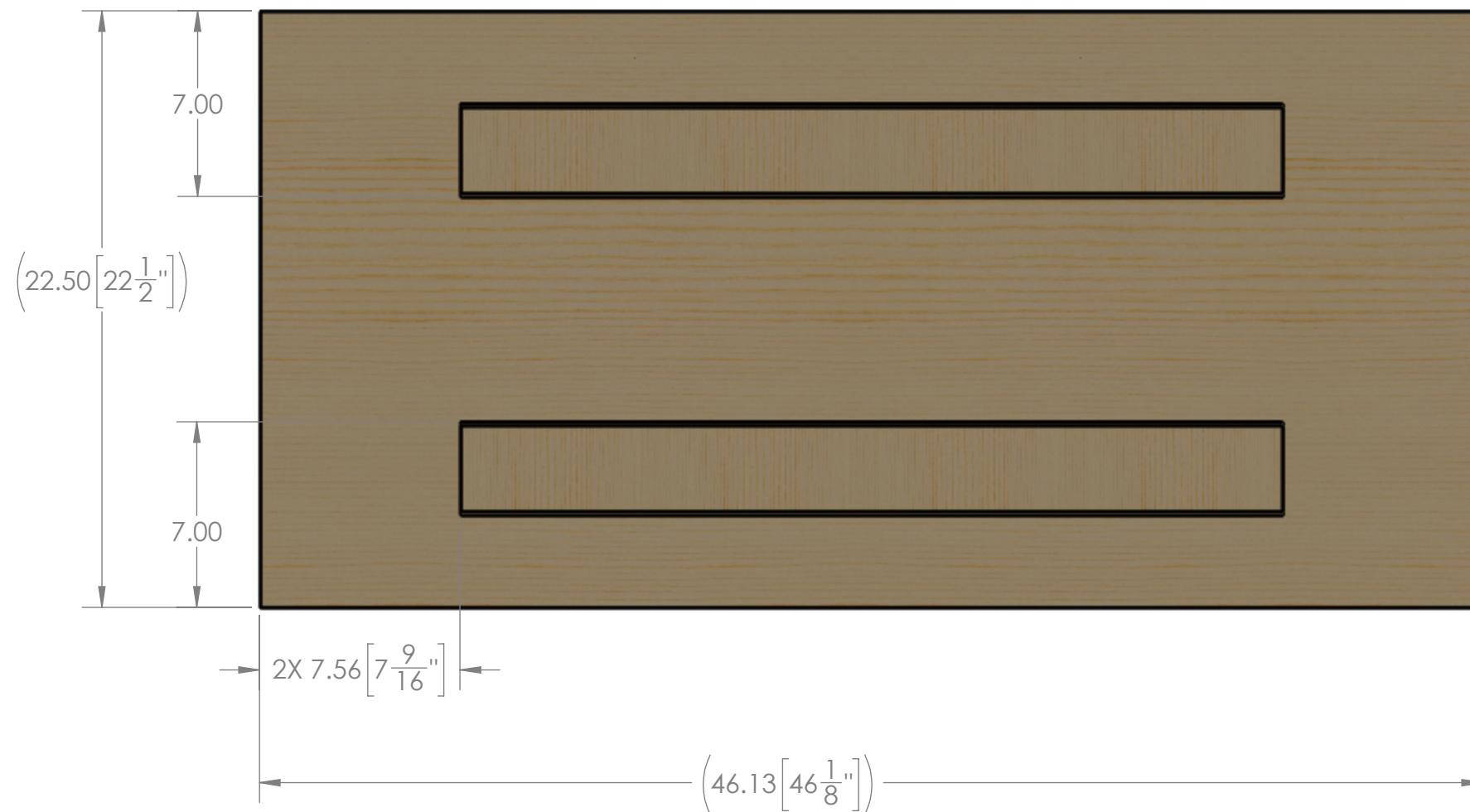
TITLE: HUB - Basic Build - Fender Front Assembly

SIZE	DWG. NO.	REV
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C TF-22013

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MATERIAL/FINISH:	SIZE	DWG. NO.	REV
	C	TE-22013	
COMMENTS:	REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING	SCALE: 1:6	SHEET 2 OF 2	

FIRST ROBOTICS COMPETITION
SOLIDWORKS
Modeling Solutions Partner

TITLE: HUB - Basic Build -
Fender Front Assembly

SIZE DWG. NO. REV
C TE-22013

SCALE: 1:6 SHEET 2 OF 2

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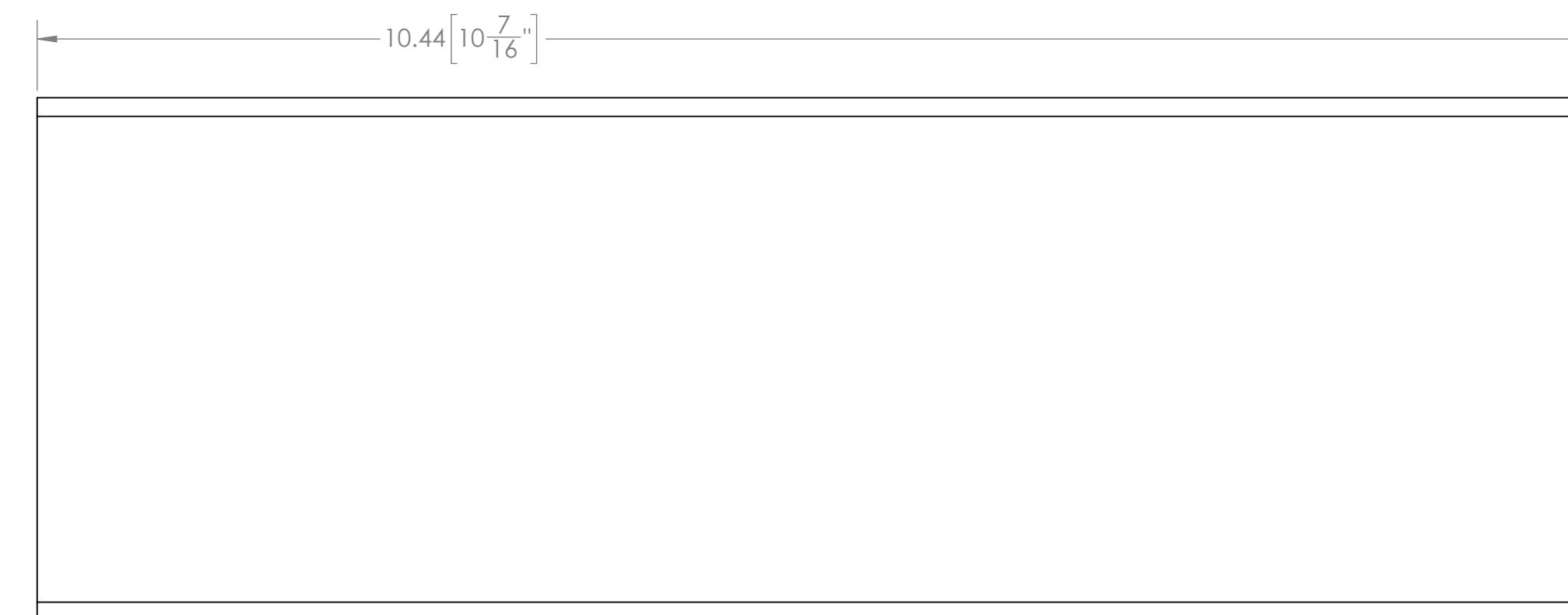
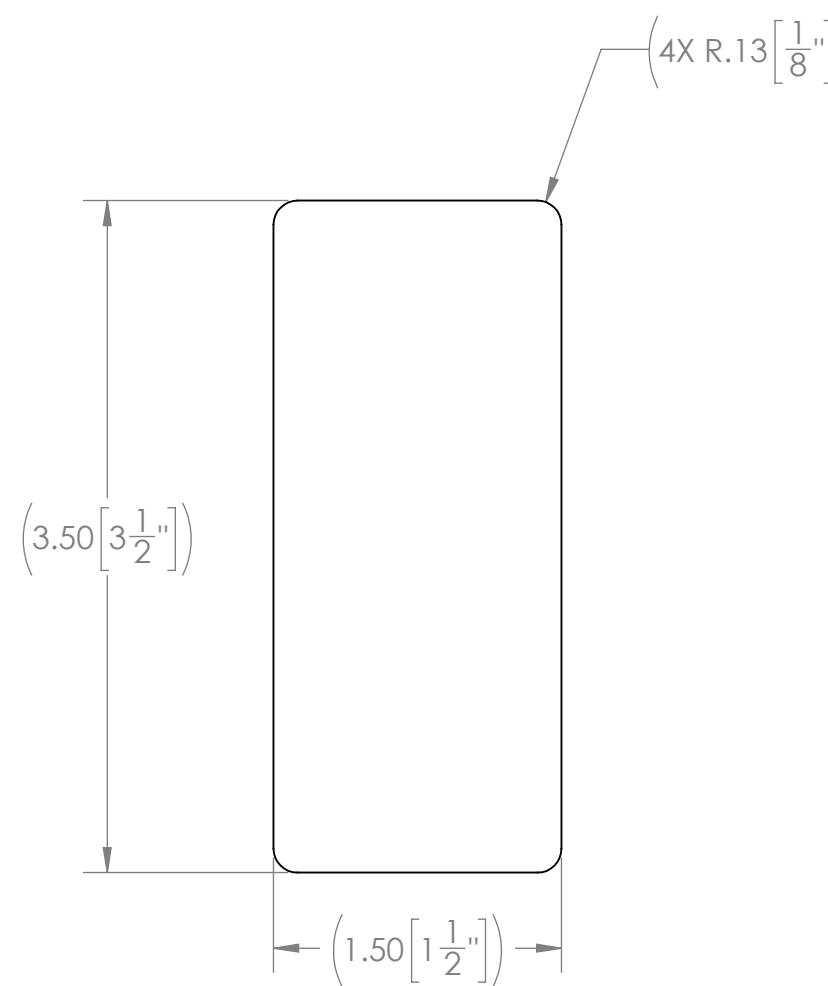
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DRAWN	KAMC	12/29/2021	
PROPRIETARY AND CONFIDENTIAL			
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MATERIAL/FINISH:	SIZE	DWG. NO.	REV
2"x4" Lumber	C	TE-22014	
COMMENTS:		SCALE: 1:1	
REMOVE ALL BURRS AND SHARP EDGES.		SHEET 1 OF 1	
DO NOT SCALE DRAWING			

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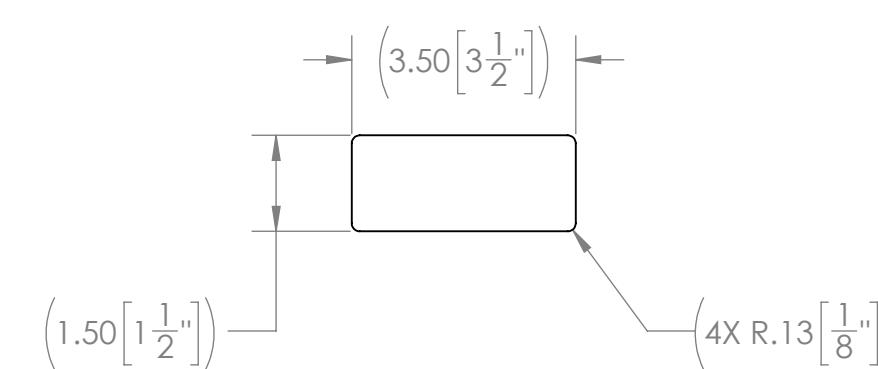
FIRST ROBOTICS COMPETITION
SOLIDWORKS
 Modeling Solutions Partner

 TITLE: HUB - Simple Build -
 Fender Side Horizontal
 2x4

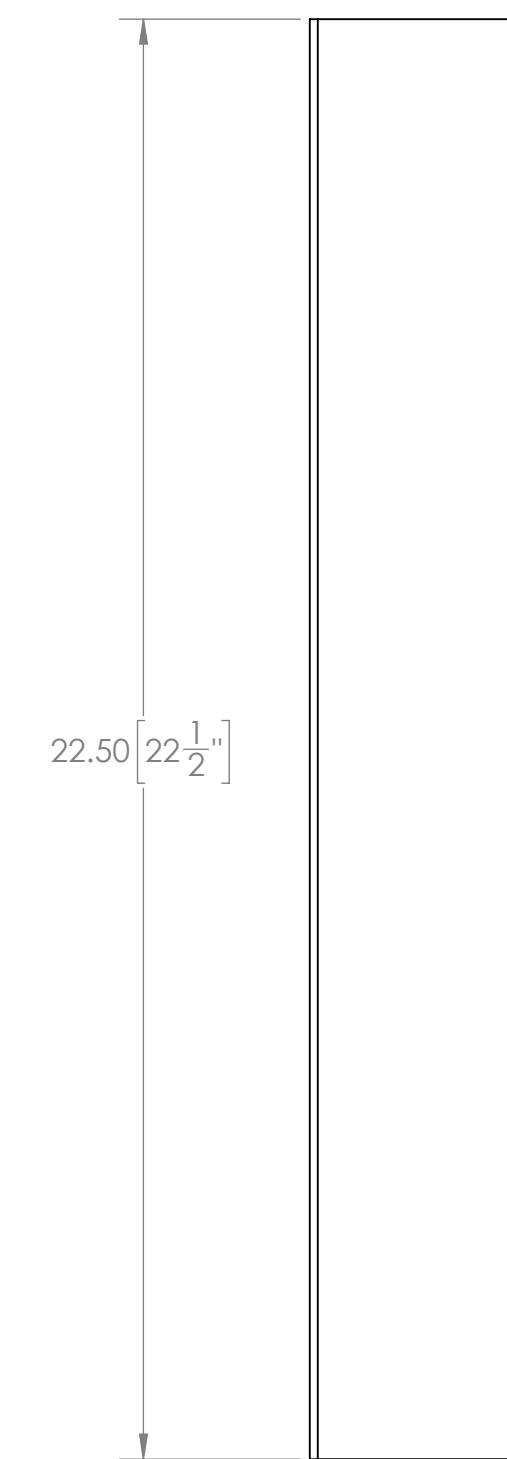
 SIZE DWG. NO. REV
 C TE-22014

SCALE: 1:1 SHEET 1 OF 1

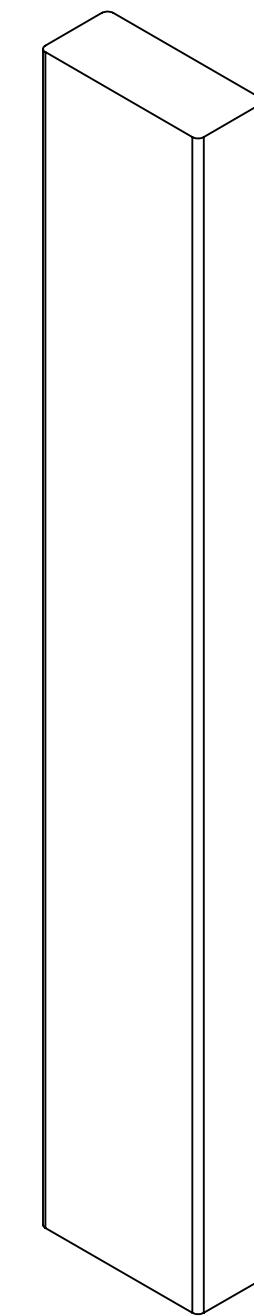
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UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$	DRAWN	KAMC	12/29/2021
PROPRIETARY AND CONFIDENTIAL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

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

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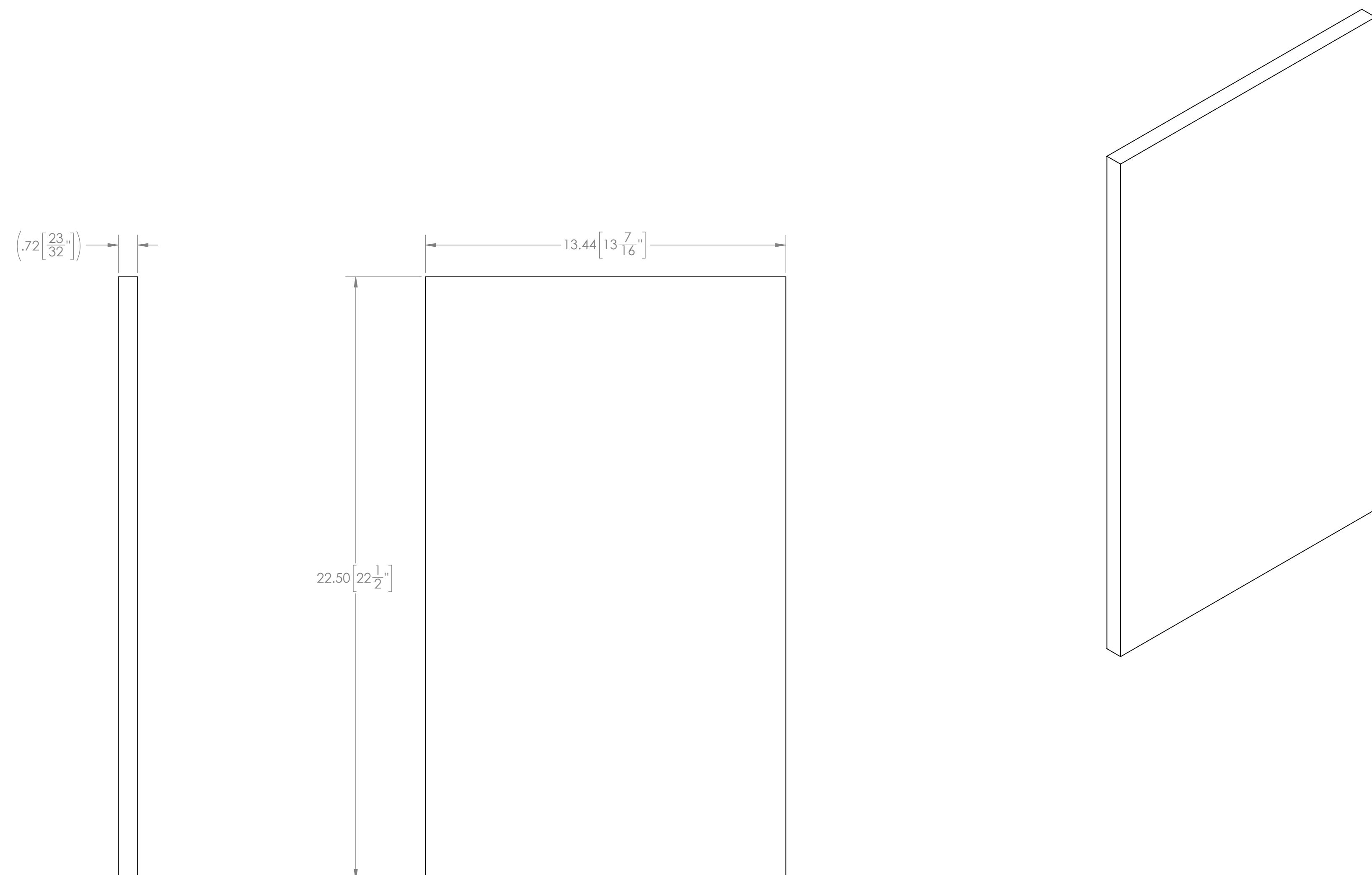
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UNLESS OTHERWISE SPECIFIED:

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

MATERIAL/FINISH:

3/4" Plywood

DO NOT SCALE DRAWING

TEAM NAME DATE

DRAWN KAMC 12/29/2021

SOLIDWORKS
Modeling Solutions Partner

TITLE: HUB - Simple Build -
Fender Side

SIZE DWG. NO. REV

C TE-22016

SCALE: 1:3 SHEET 1 OF 1

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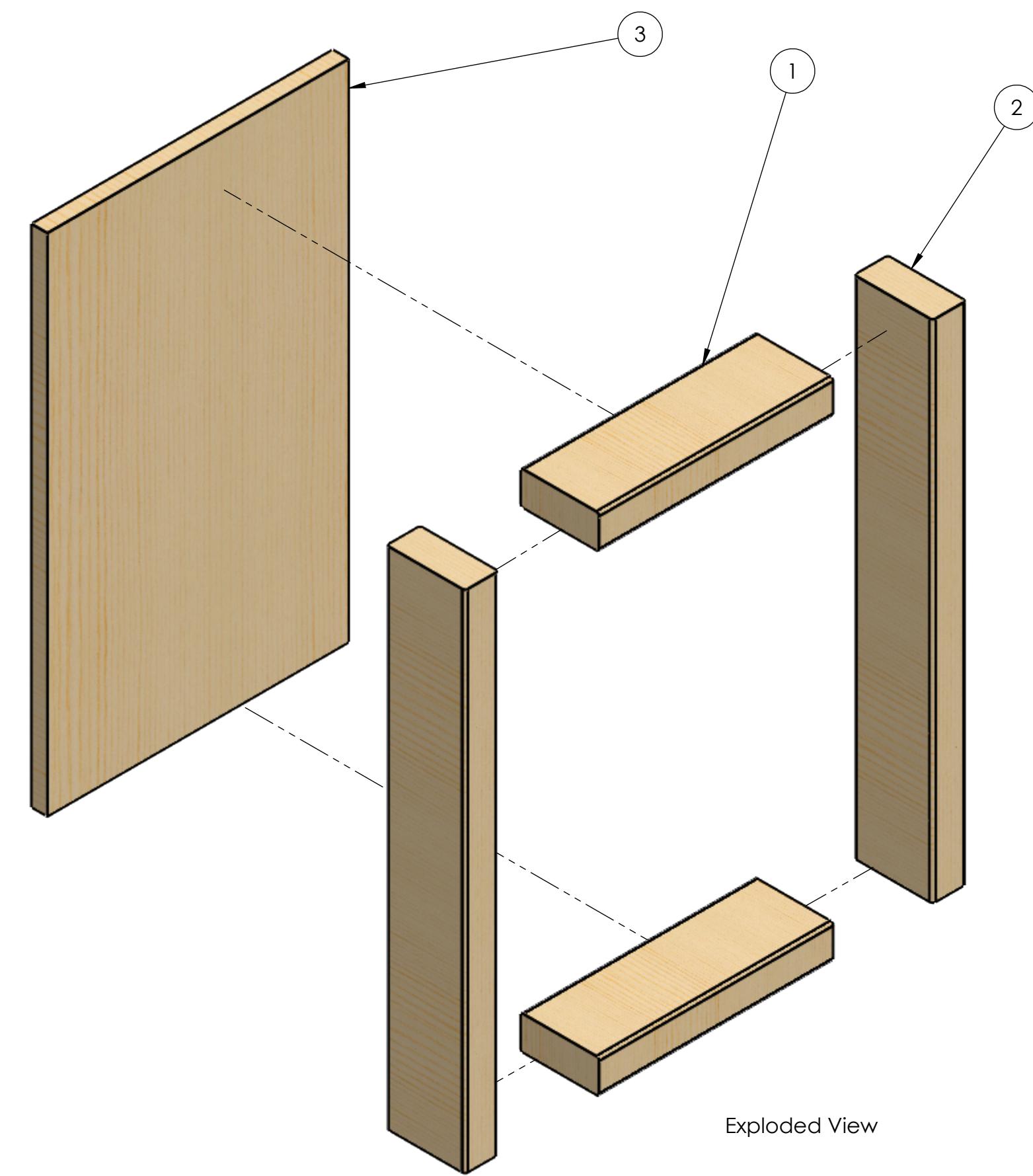
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Exploded View

An isometric perspective drawing of a wooden cabinet or box. The main body of the cabinet is made of light-colored wood with a vertical grain pattern. A dark brown vertical panel is attached to the left side. The top edge features a decorative molding. At the bottom front corner, there is a dovetail joint where two pieces of wood meet. A small, light-colored wooden shelf or tray is positioned inside the cabinet near the bottom.

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

ITEM NO.	PART NUMBER	DESCRIPTION	
1	TE-22014	HUB - Simple Build - Fender Side Horizontal 2x4	2
2	TE-22015	HUB - Simple Build - Fender Vertical 2x4	2
3	TE-22016	HUB - Simple Build - Fender Side	1

UNLESS OTHERWISE SPECIFIED

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

MATERIAL/FIN

DO NOT SCALE DRAWING

 FIRST.
ROBOTICS
COMPETITION

 DS SOLIDWORKS
Modeling Solutions Partner

TITLE:

HUB - Basic Build - Fender Side Assembly

SIZE	DWG. NO.	REV
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SCALE: 1:4

SHEET 1 OF 3

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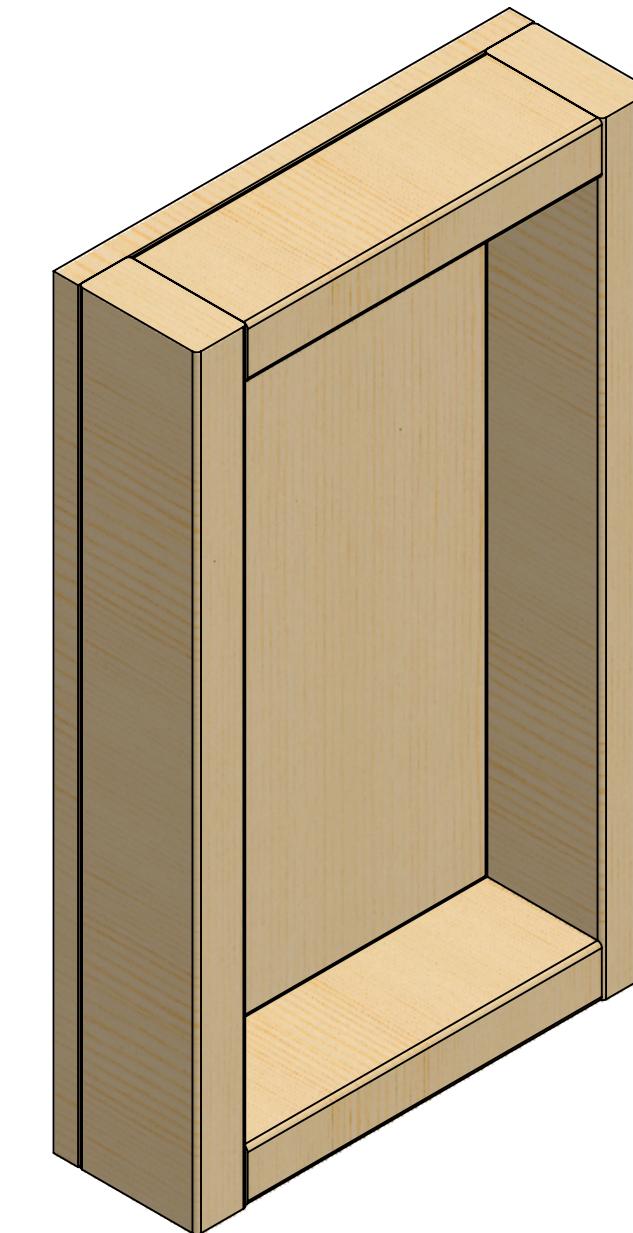
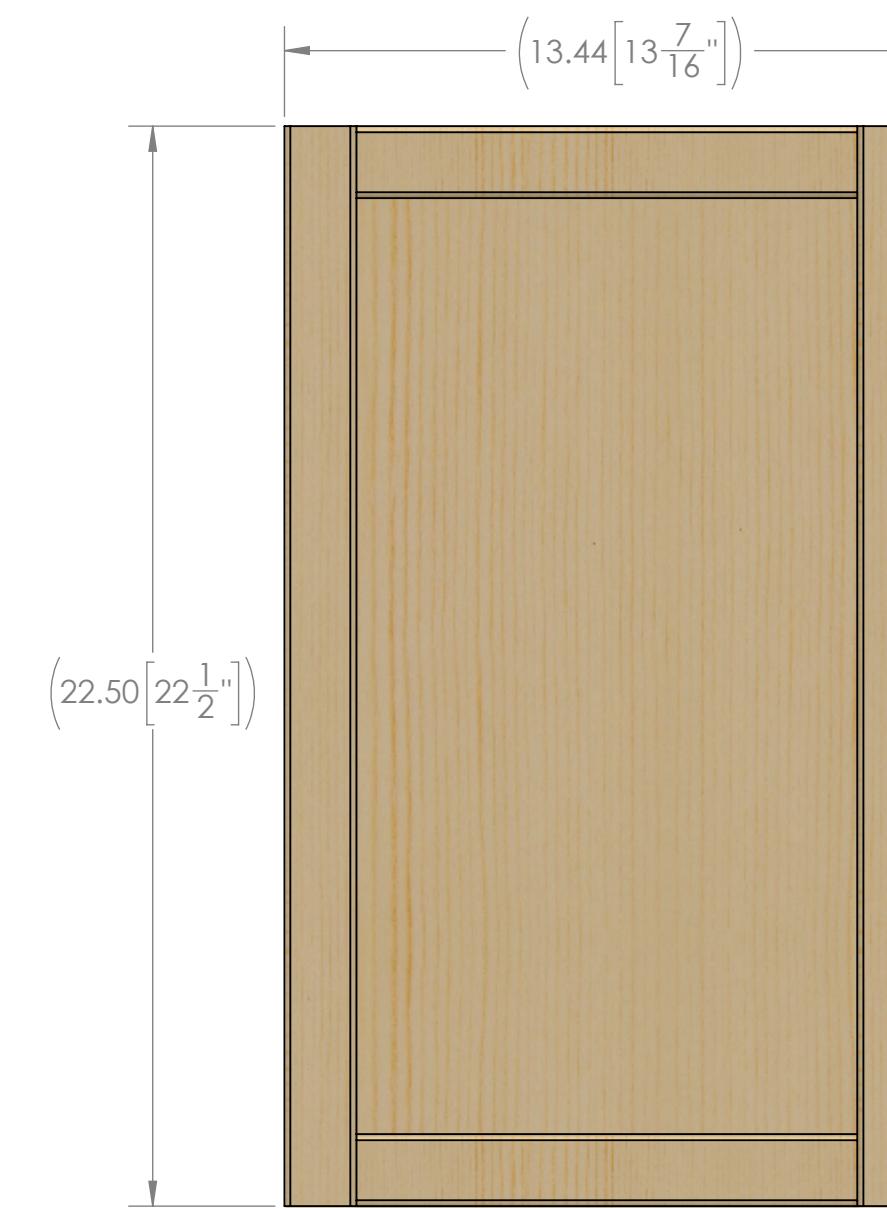
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 **FIRST
ROBOTICS
COMPETITION**  **SOLIDWORKS**
Modeling Solutions Partner

TITLE: **HUB - Basic Build -
Fender Side Assembly**

SIZE DWG. NO. REV
C TE-22017

SCALE: 1:4 SHEET 2 OF 3

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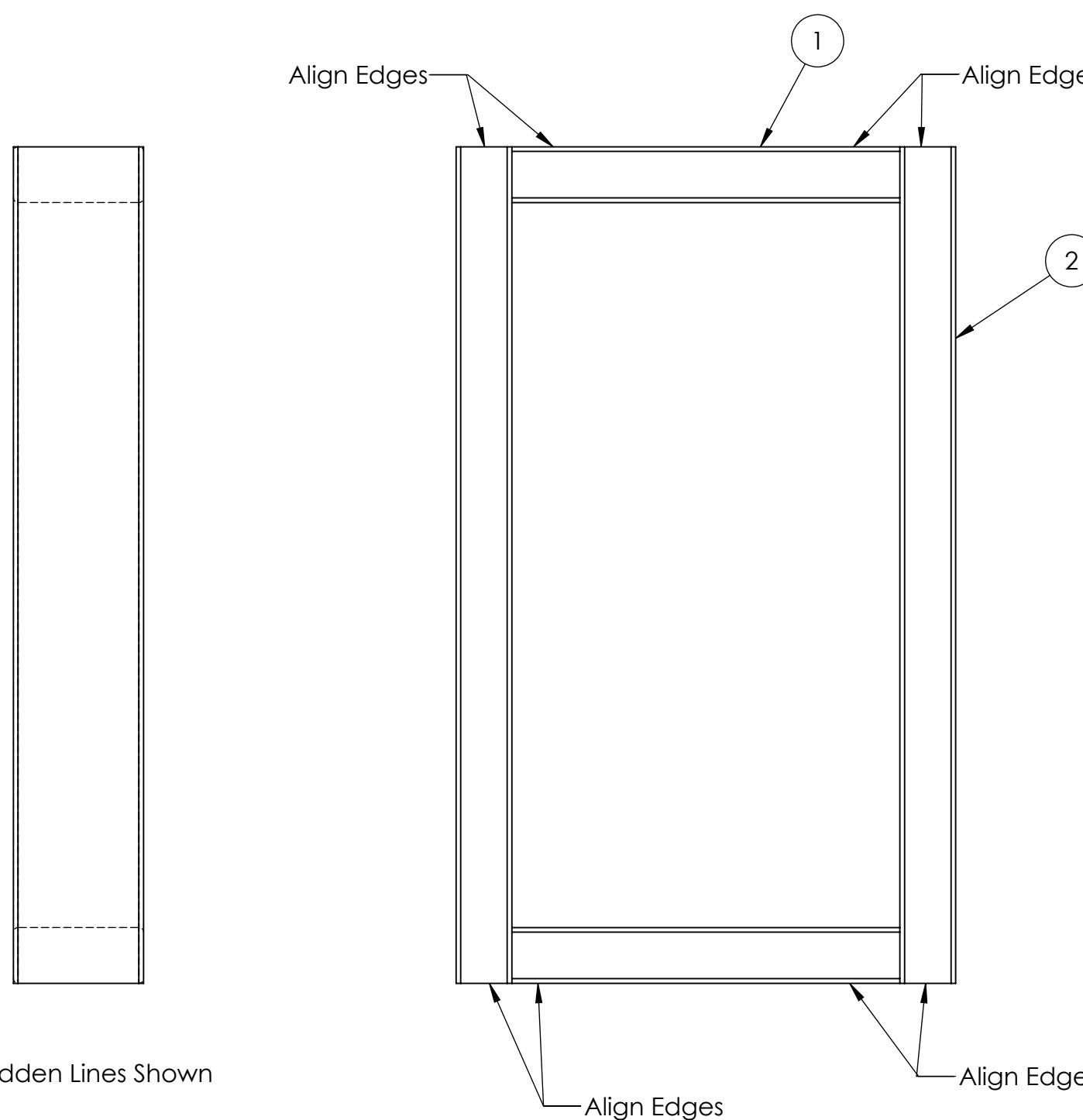
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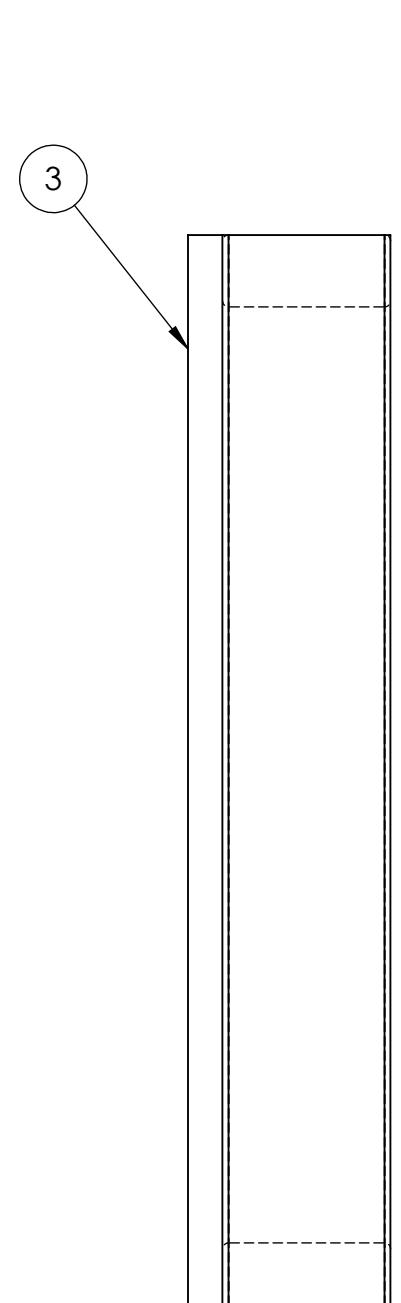
Step 1



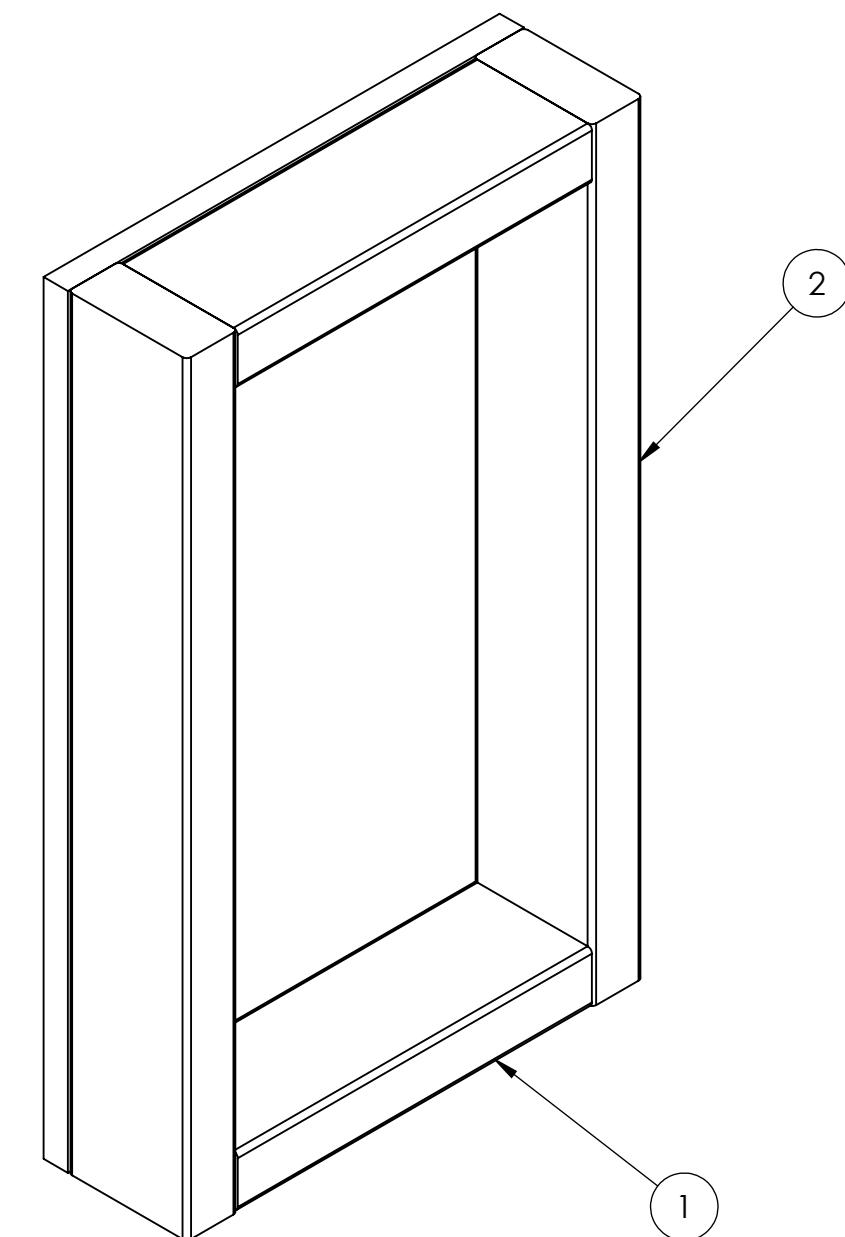
Hidden Lines Shown

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

Step 2



Hidden Lines Shown



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

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	C	TE-22017	
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DO NOT SCALE DRAWING	SCALE: 1:4	SHEET 3 OF 3	

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

TITLE: **HUB - Basic Build -
Fender Side Assembly**

SIZE DWG. NO. REV
C **TE-22017**

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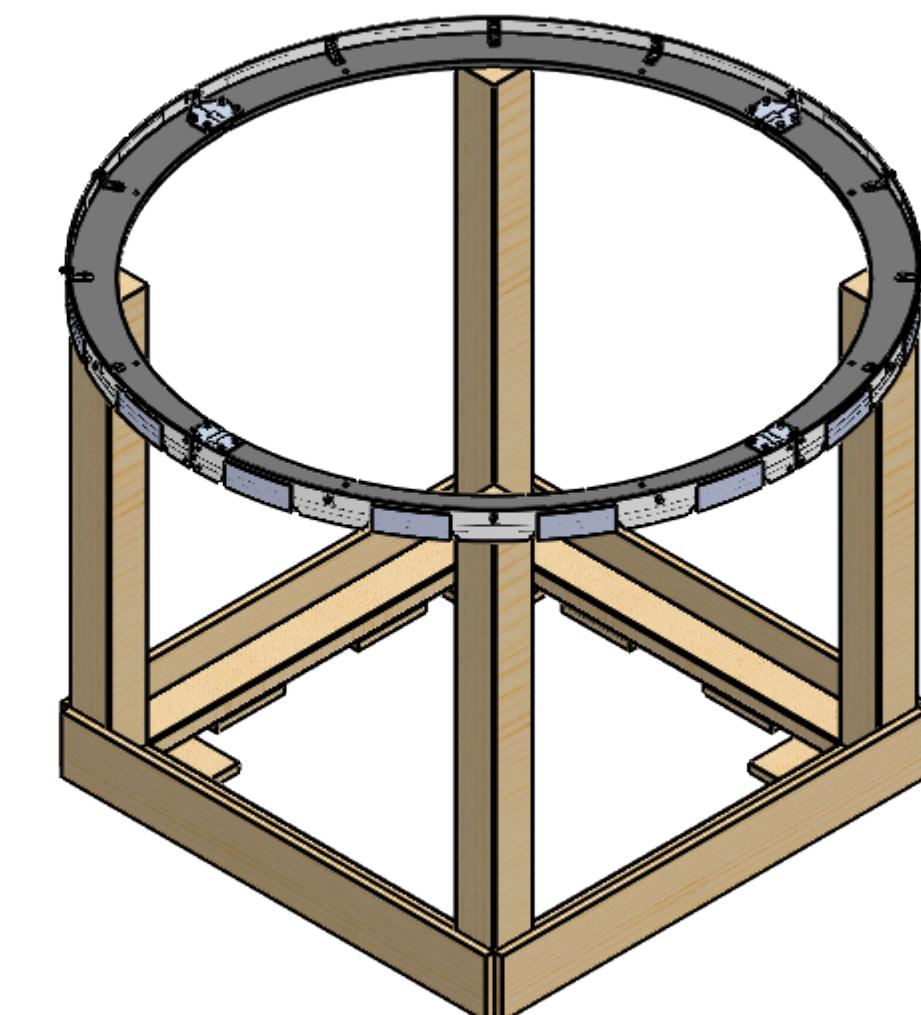
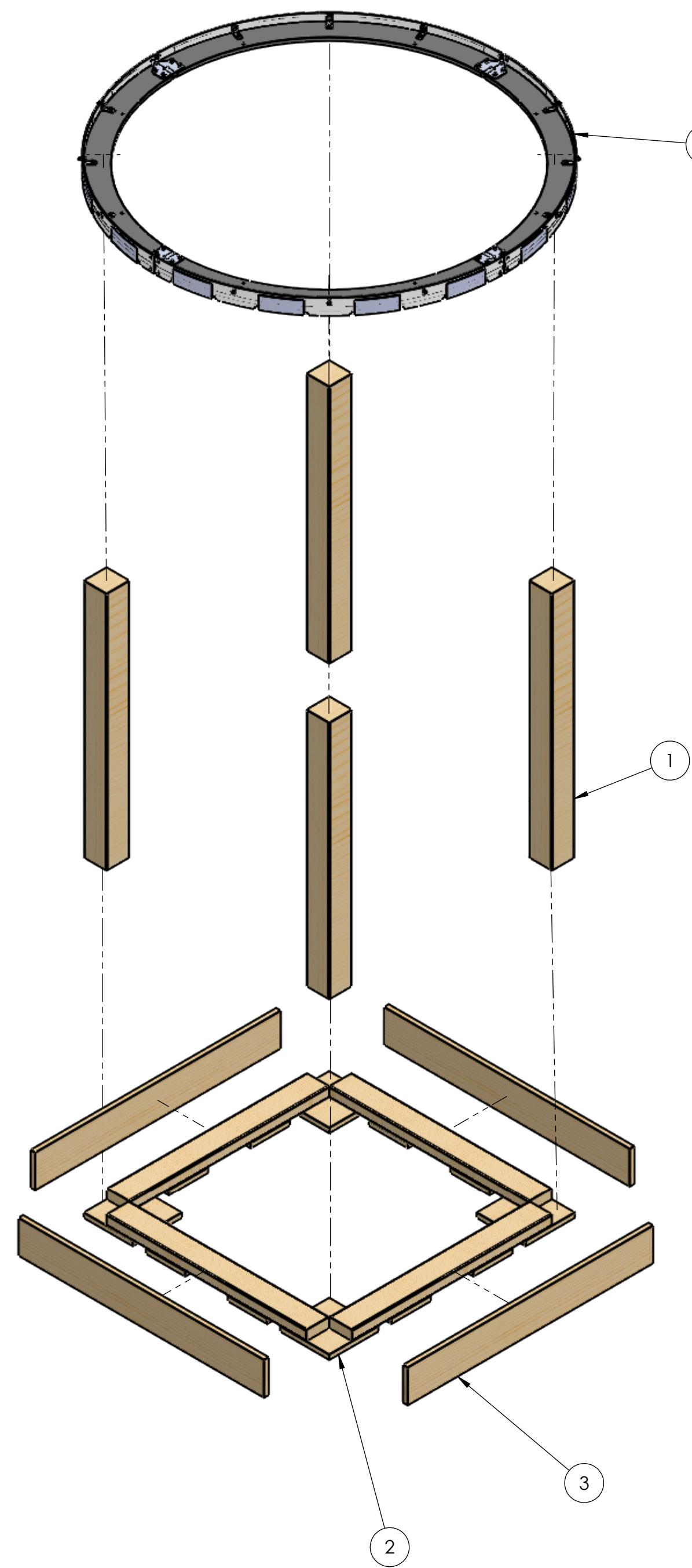
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Note: Use Assembly TE-22030-AM if pairing with AndyMark's AM-4672 Assembly

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

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

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL $\pm\frac{1}{16}$

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



SOLIDWORKS

Modeling Solutions Partner

TITLE:
 Hub - Simple Build - Upper
 Hub Goal Assembly for AM
 Ring AM-4672

SIZE DWG. NO. REV

C TE-22030-AM

SCALE: 1:12 SHEET 1 OF 4

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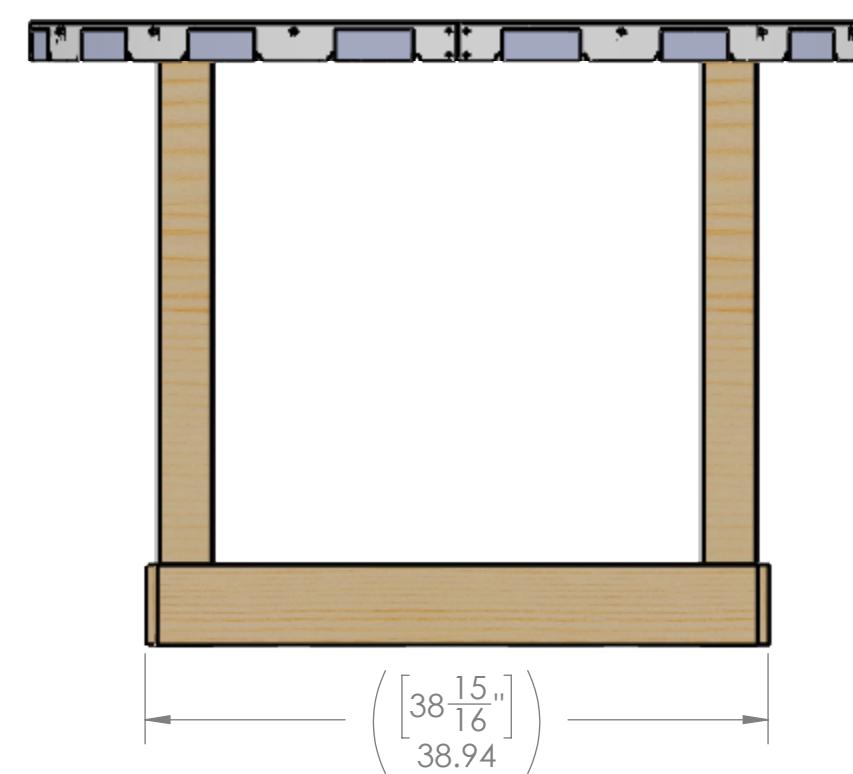
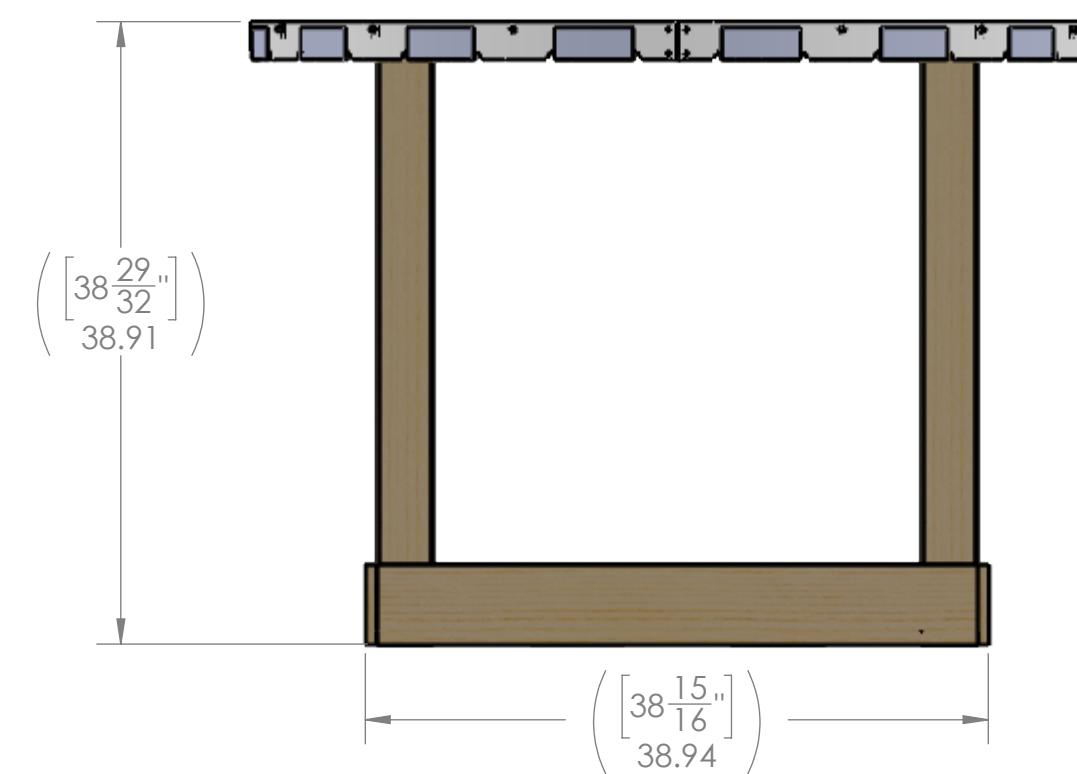
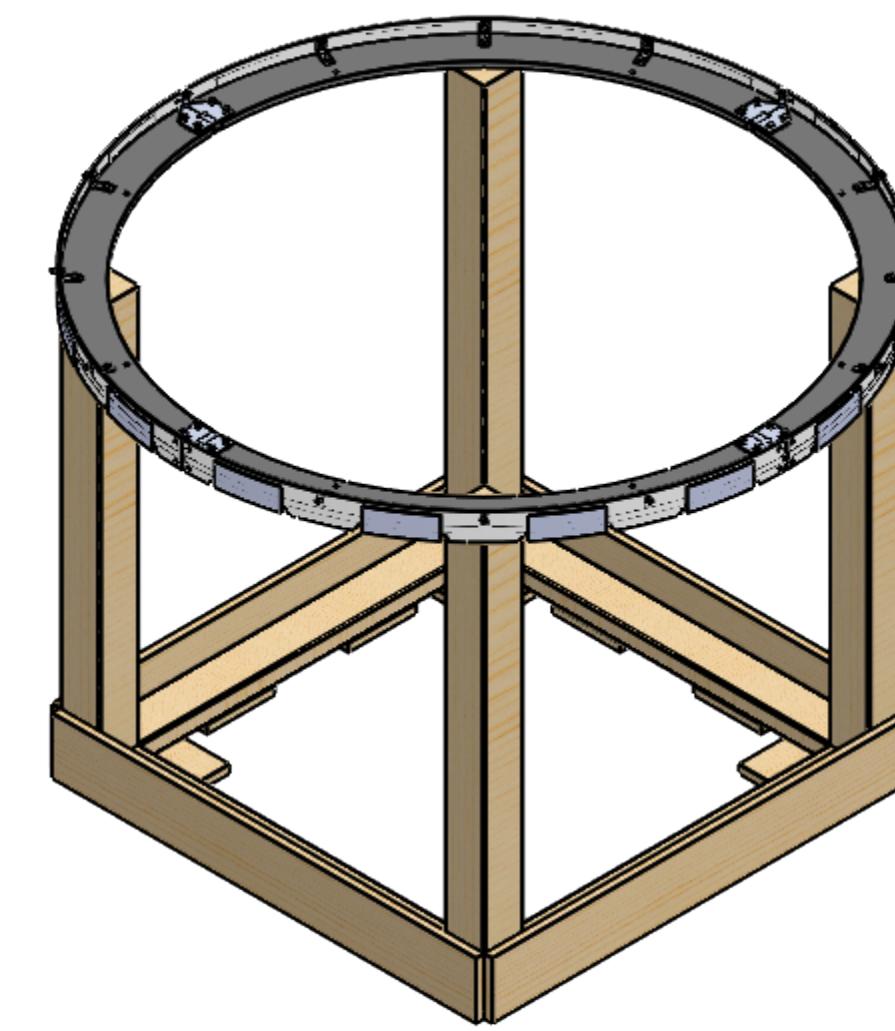
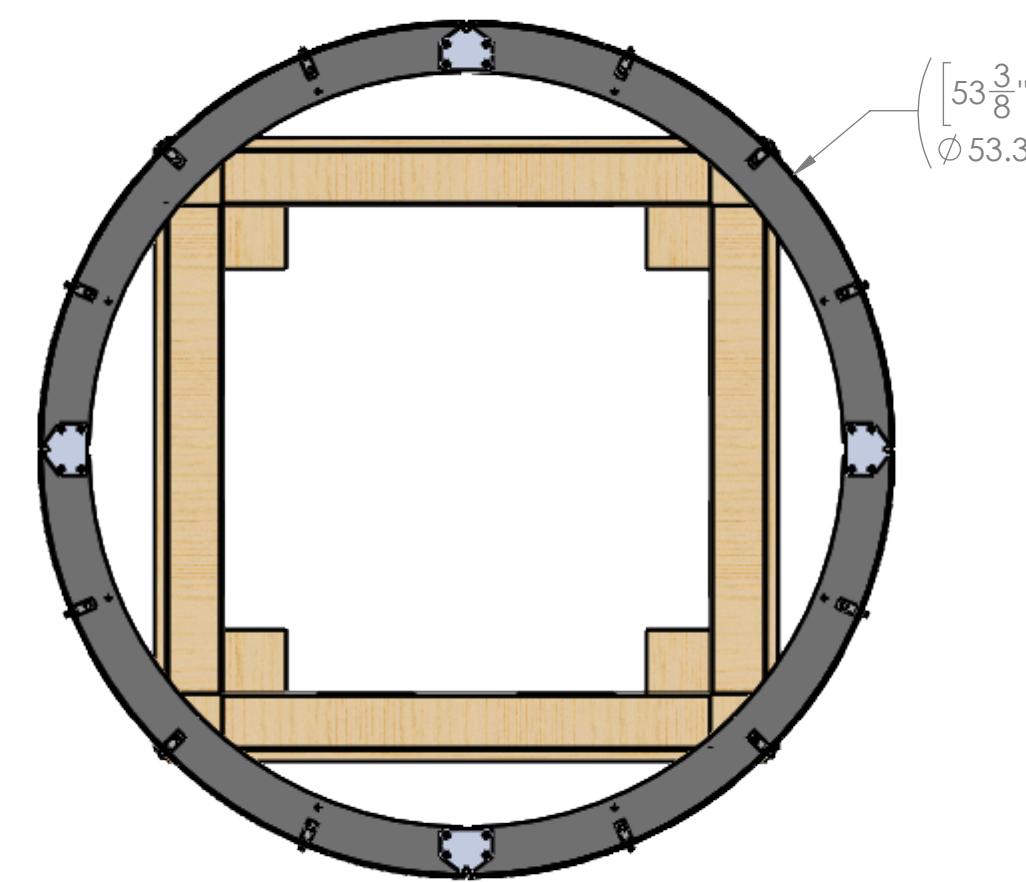
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DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$	DRAWN	KAMC	12/30/2021
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 **FIRST ROBOTICS COMPETITION**  Modeling Solutions Partner

TITLE: Hub - Simple Build - Upper Hub Goal Assembly for AM Ring AM-4672

SIZE DWG. NO. REV
C TE-22030-AM

SCALE: 1:12 SHEET 2 OF 4

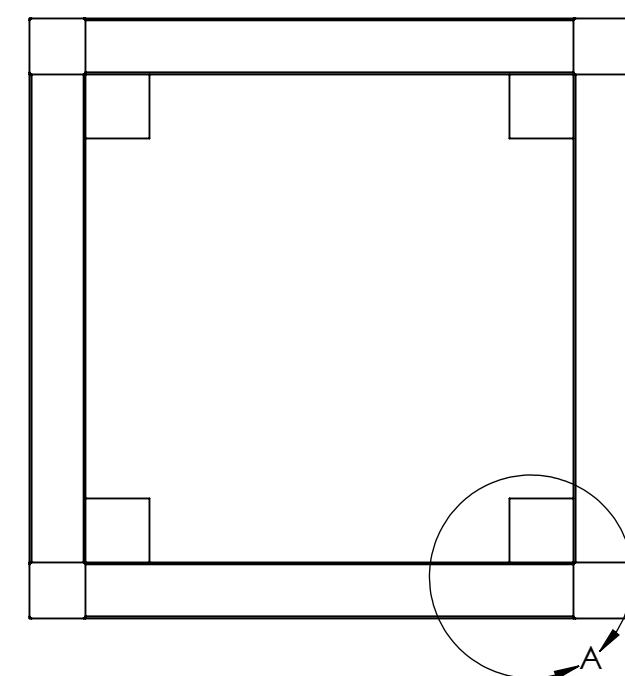
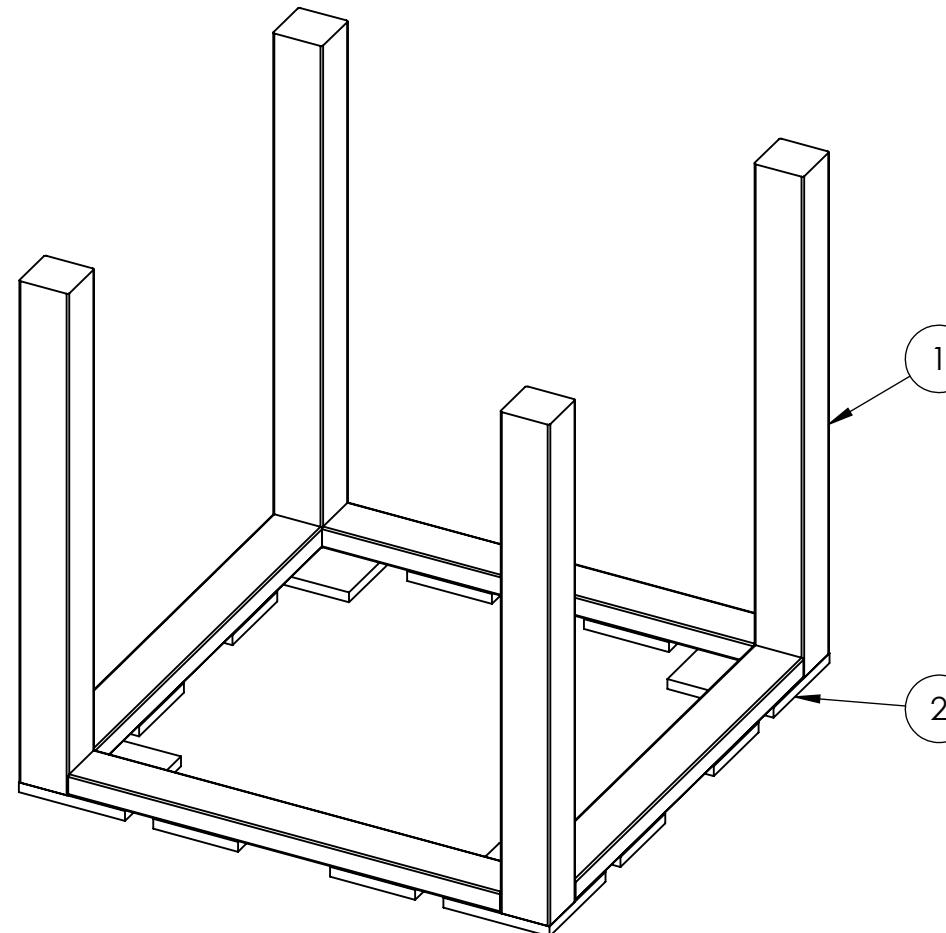
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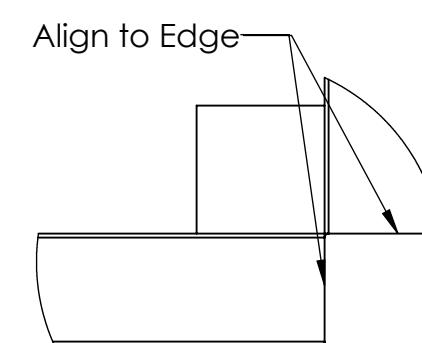
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Step 1

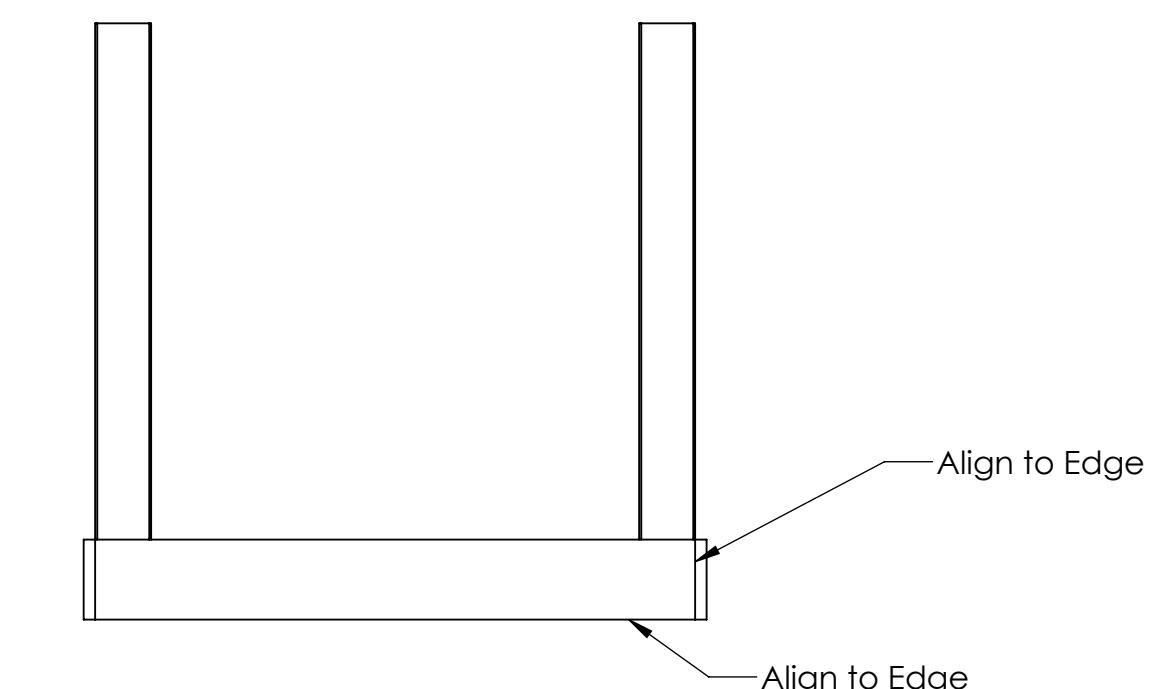
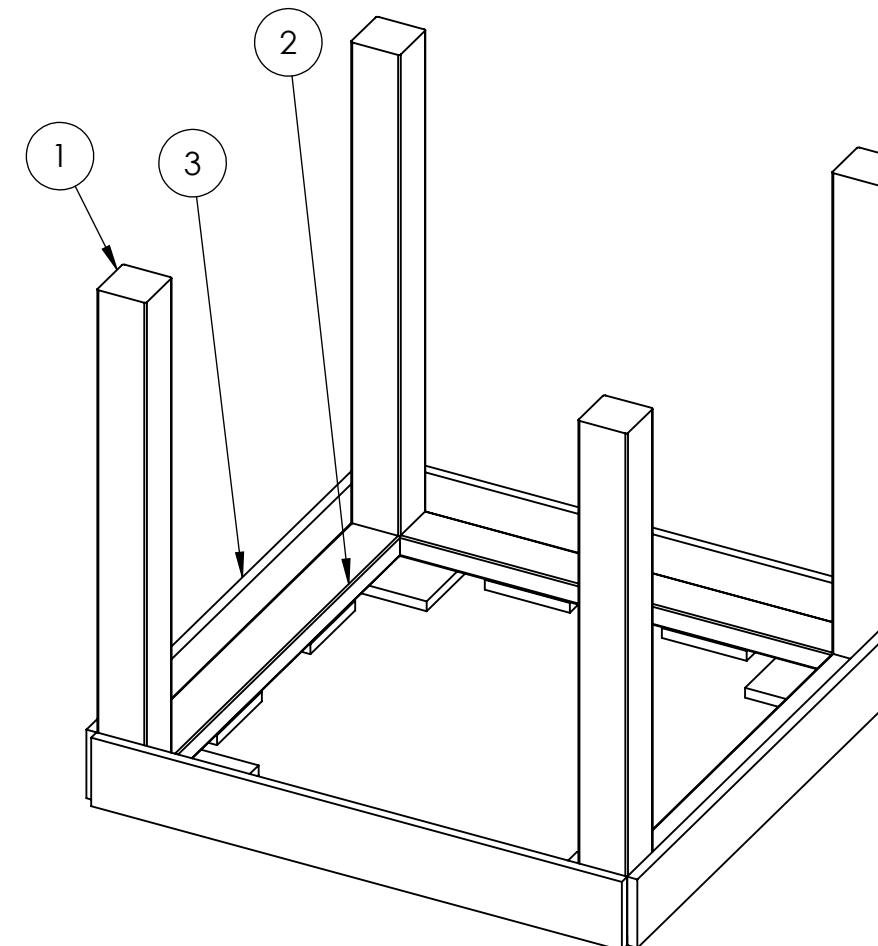


1. Align 4x (1) to (2), as shown.
2. Connect using 2" Long Screws. It is recommended to use 4x screws per (1).



4X
DETAIL A
SCALE 1 : 6

Step 2



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

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MATERIAL/FINISH:	SIZE	DWG. NO.	REV
	C	TE-22030-AM	
COMMENTS:	REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING	SCALE: 1:12	SHEET 3 OF 4	

FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:
Hub - Simple Build - Upper
Hub Goal Assembly for AM
Ring AM-4672

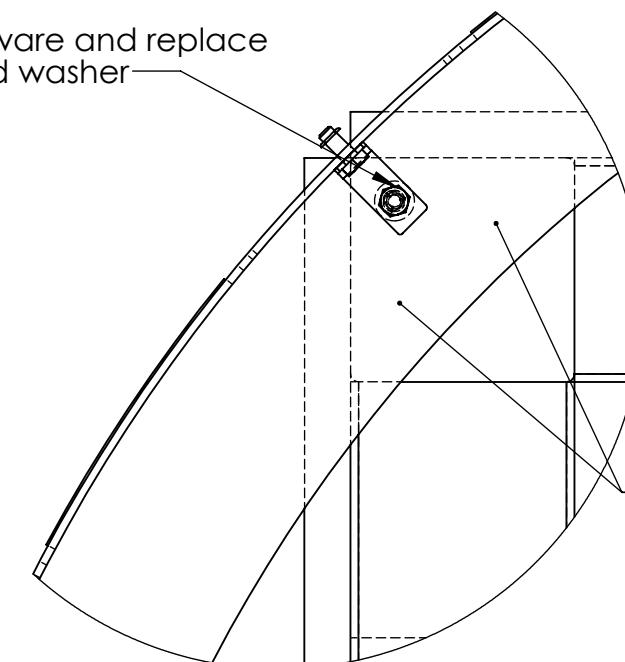
SIZE DWG. NO. REV
C TE-22030-AM

SCALE: 1:12 SHEET 3 OF 4

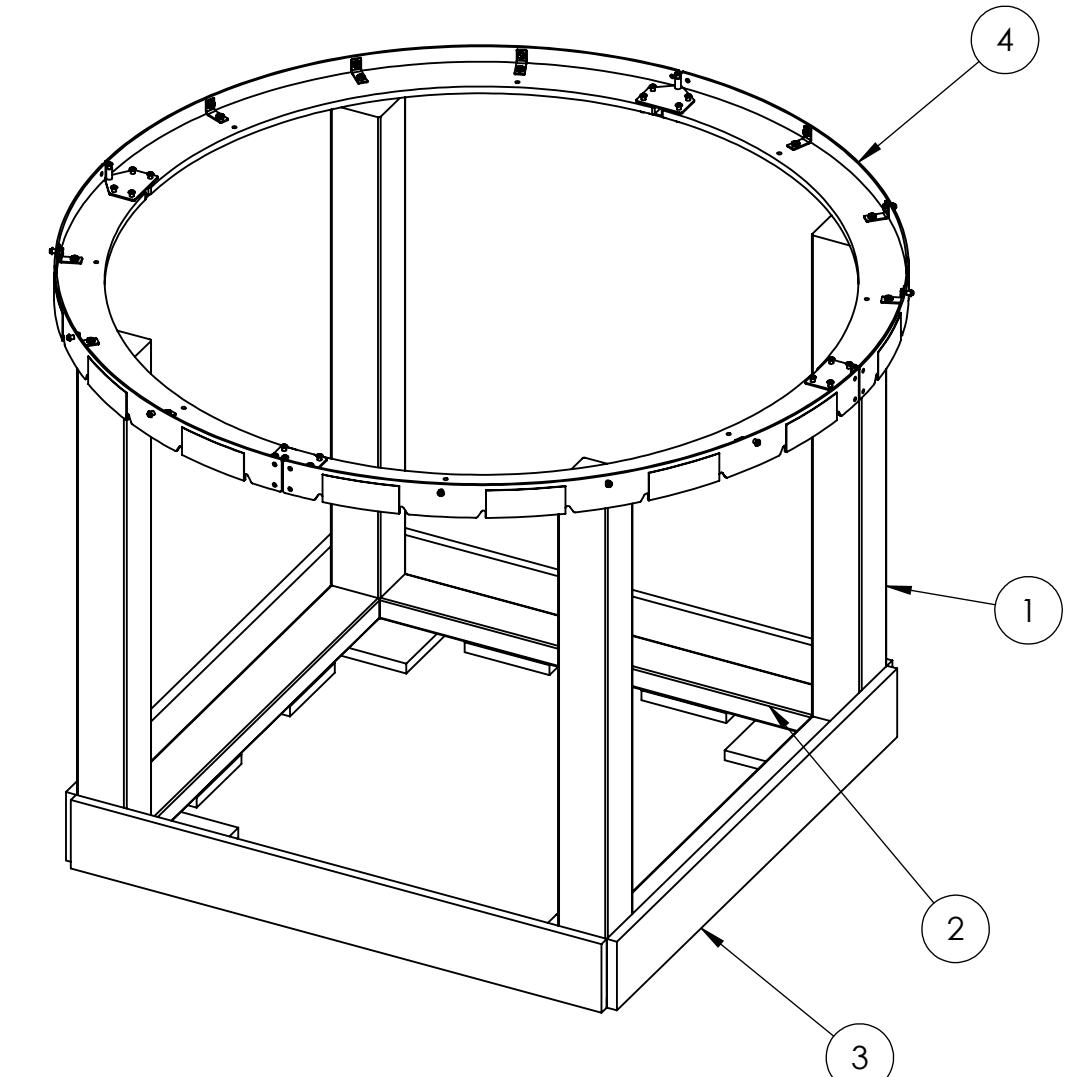
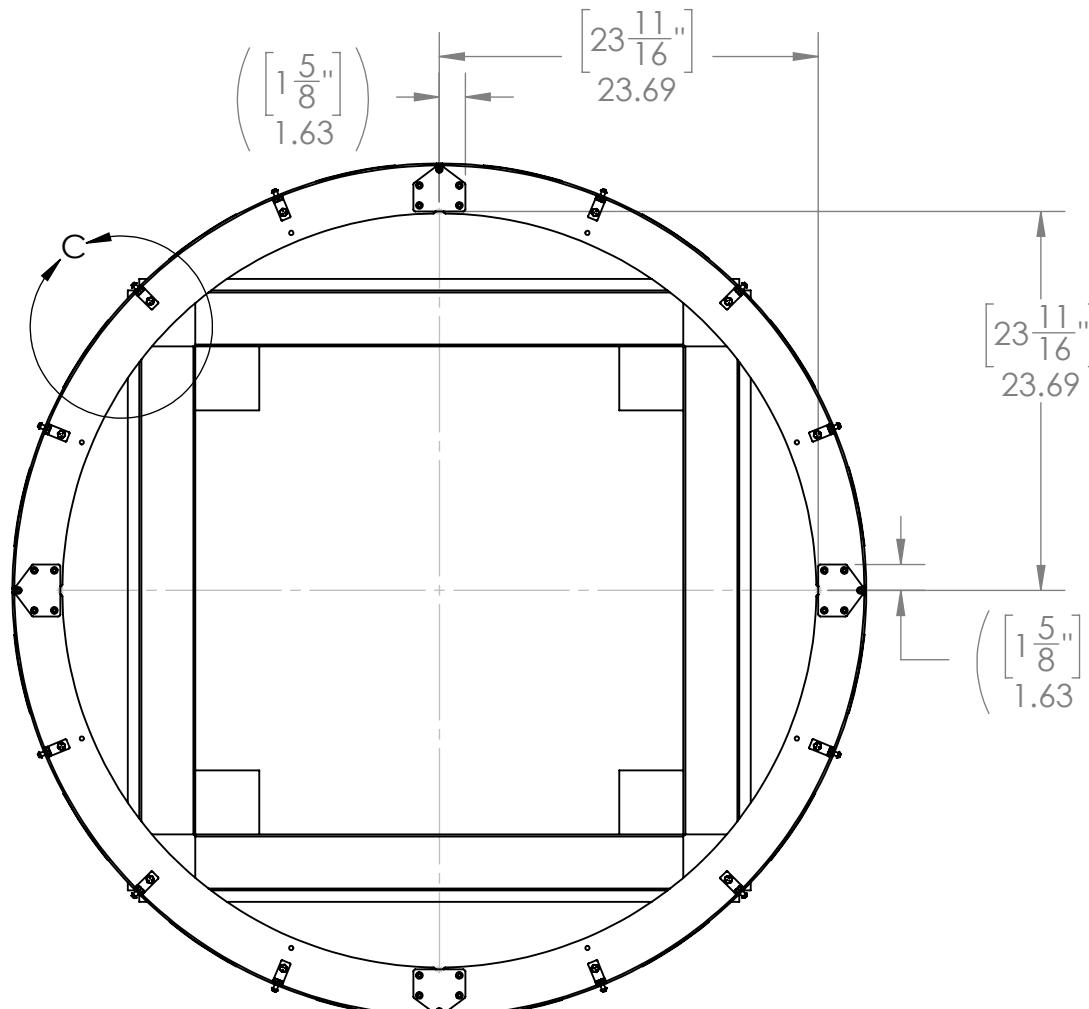
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Step 3

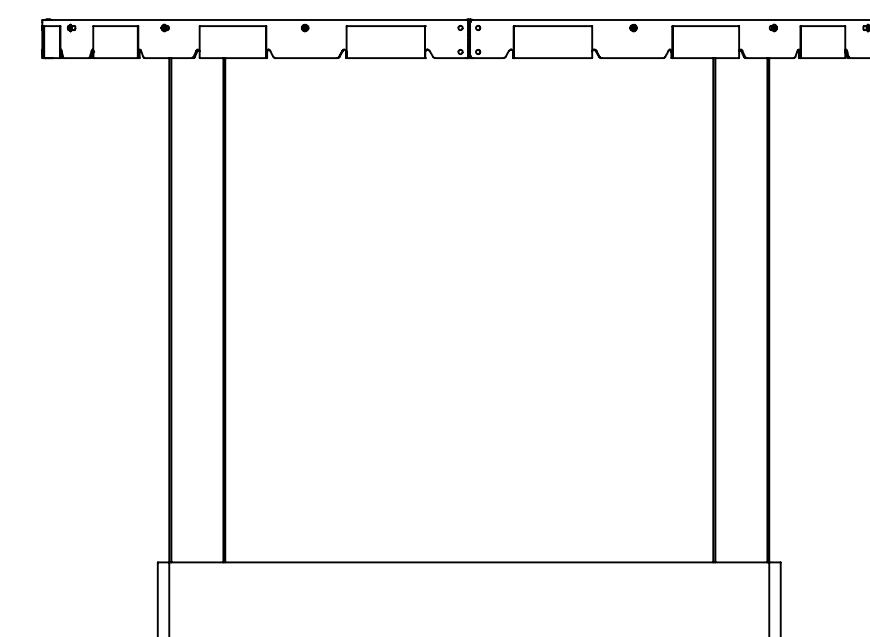
Remove hardware and replace
with screw and washer



Add screw in this location



4X
DETAIL C
SCALE 1 : 3
Hidden Lines Shown



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

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TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$									
TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$									
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DO NOT SCALE DRAWING									
FIRST ROBOTICS COMPETITION	SOLIDWORKS Modeling Solutions Partner	TITLE: Hub - Simple Build - Upper Hub Goal Assembly for AM Ring AM-4672							
SIZE	DWG. NO.	REV							
C	TE-22030-AM								
SCALE: 1:12									
SHEET 4 OF 4									

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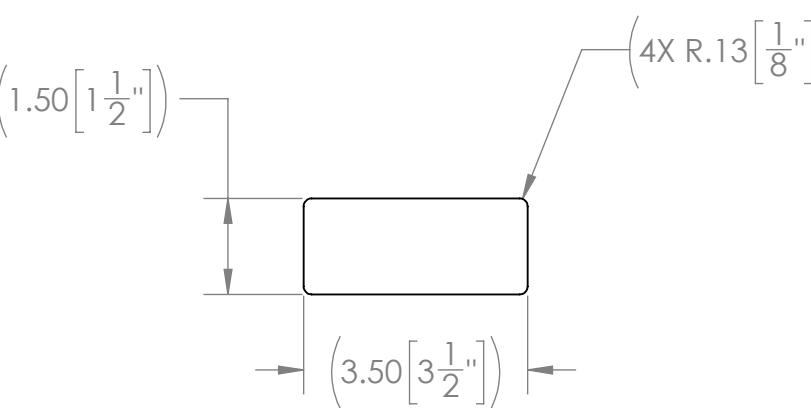
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MATERIAL/FINISH:	SIZE	DWG. NO.	REV
2"x4" Lumber	C	TE-22035	
COMMENTS:		SCALE: 1:3	
REMOVE ALL BURRS AND SHARP EDGES.		SHEET 1 OF 1	
DO NOT SCALE DRAWING			

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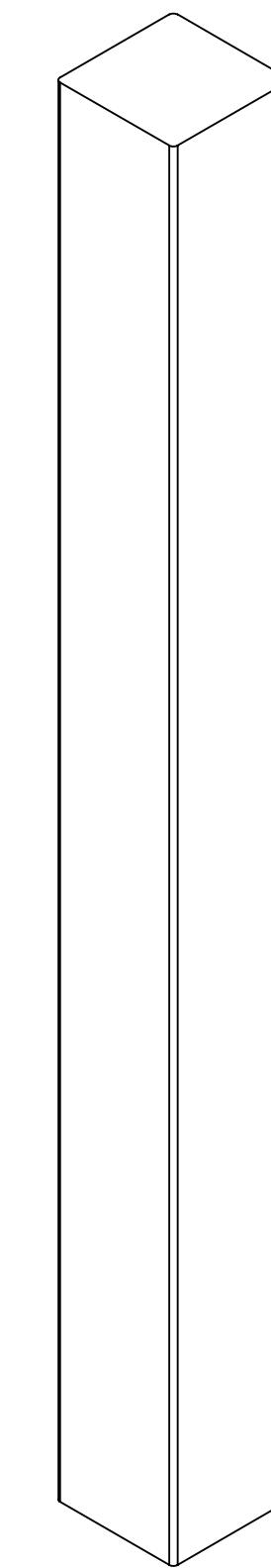
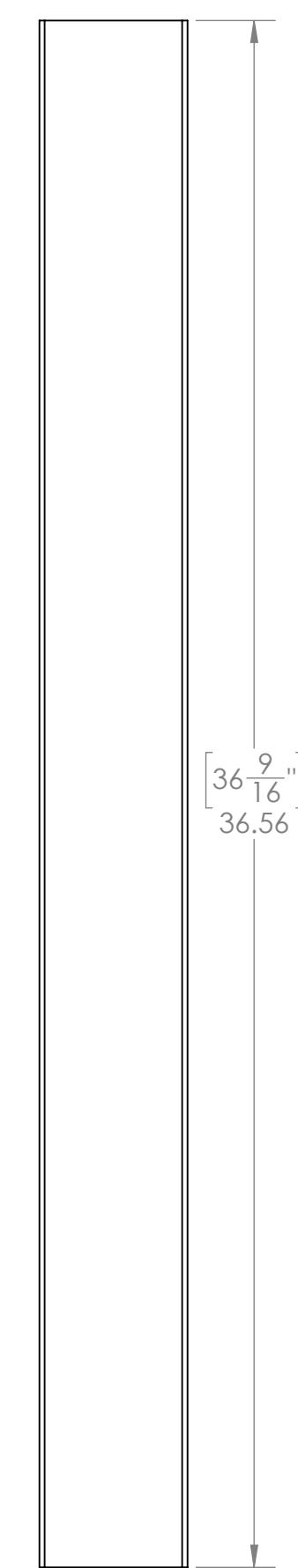
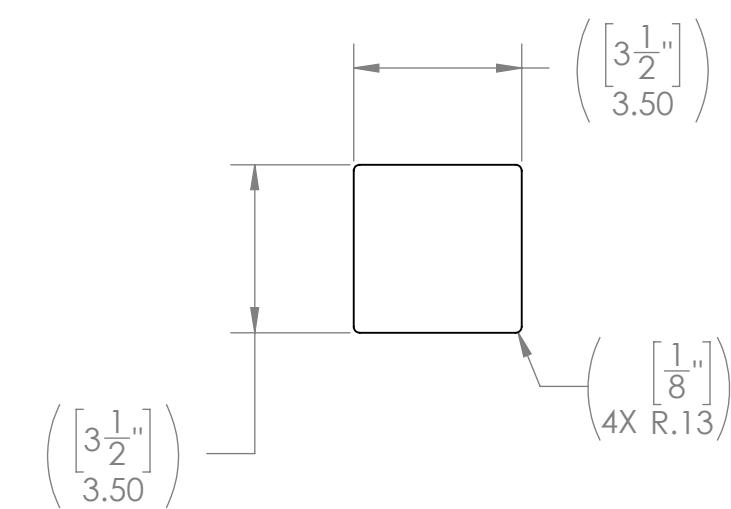
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MATERIAL/FINISH:	SIZE	DWG. NO.	REV
4"x4" Lumber	C	TE-22036-AM	
COMMENTS:		REMOVE ALL BURRS AND SHARP EDGES.	
DO NOT SCALE DRAWING		SCALE: 1:4	SHEET 1 OF 1

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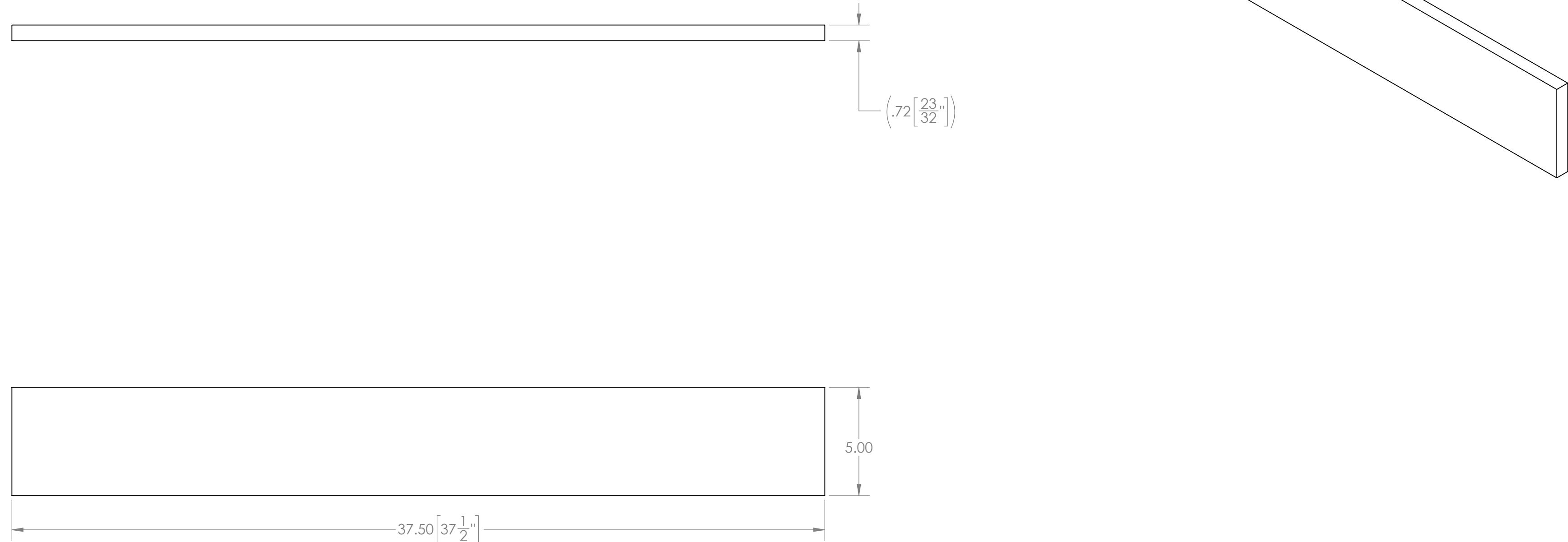
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MATERIAL/FINISH: 3/4" Plywood	SIZE	DWG. NO.	REV
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.	C	TE-22037	
DO NOT SCALE DRAWING	SCALE: 1:4	SHEET 1 OF 1	

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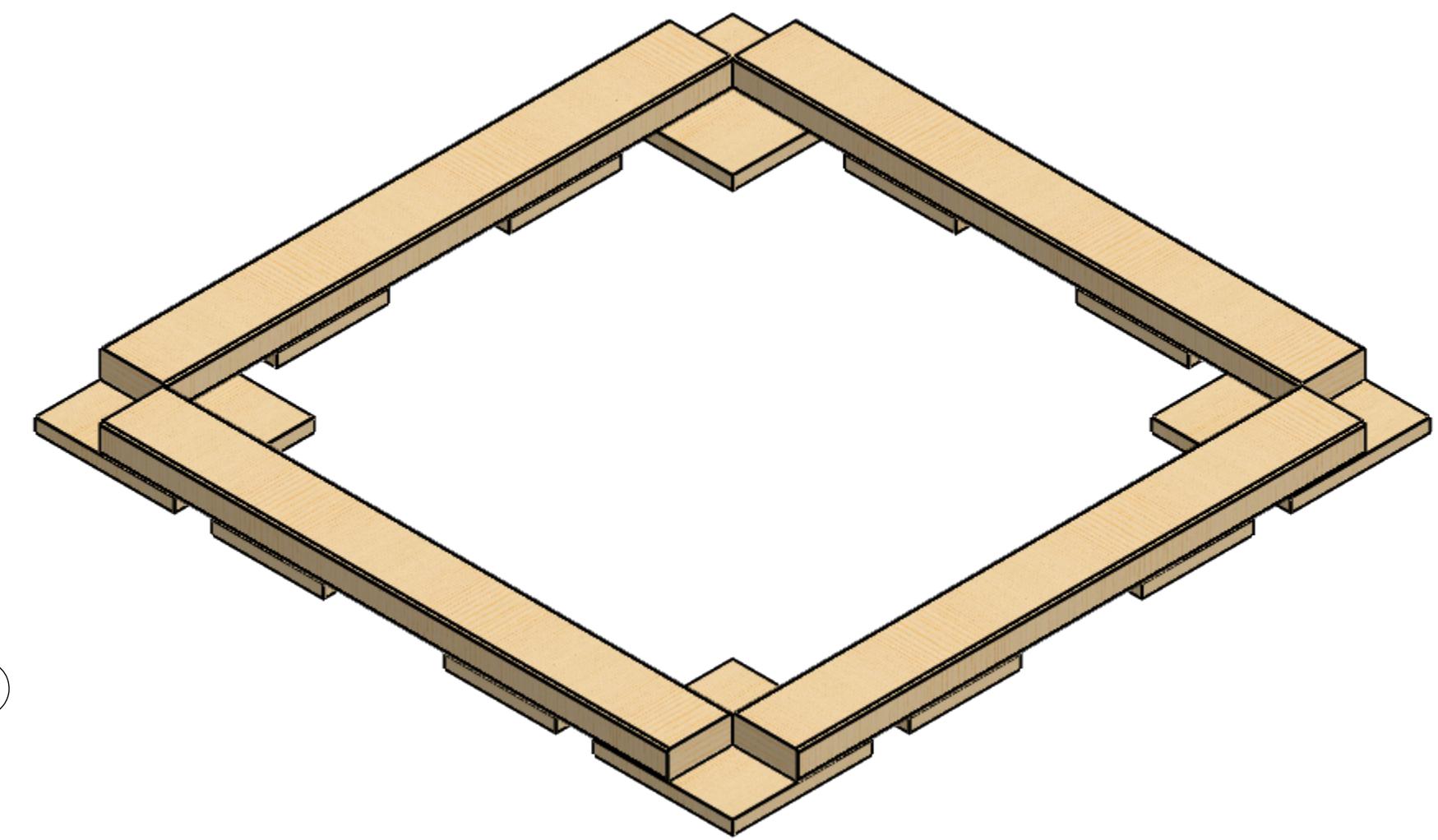
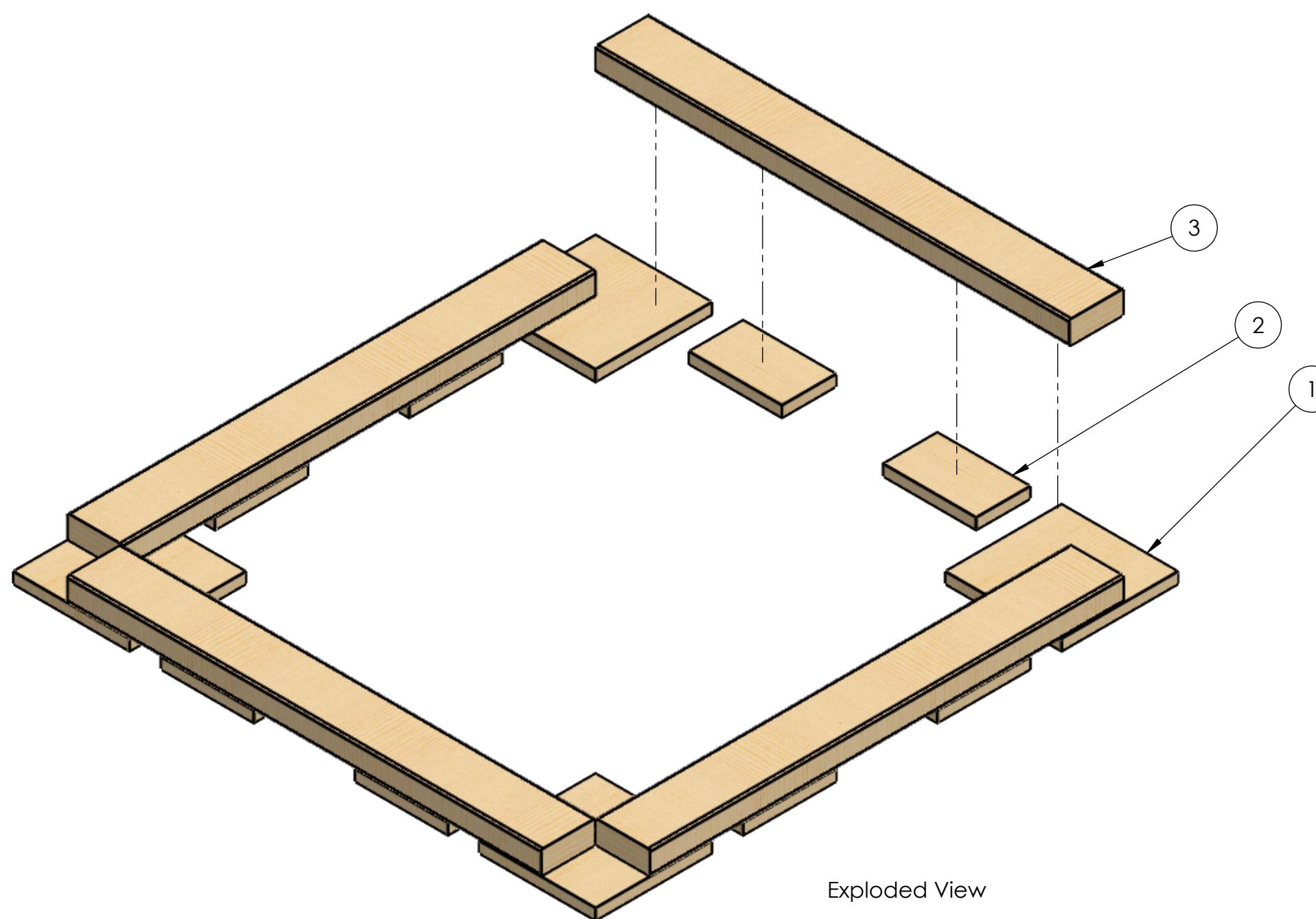
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Hardware Needed:
#8 x 2" Long Screw - Qty 58

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

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MATERIAL/FINISH:						TITLE: Hub - Simple Build - Upper Hub Goal Bottom Assembly		
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.						SIZE	DWG. NO.	REV
						C	TE-22038	
DO NOT SCALE DRAWING						SCALE: 1:6	SHEET 1 OF 3	

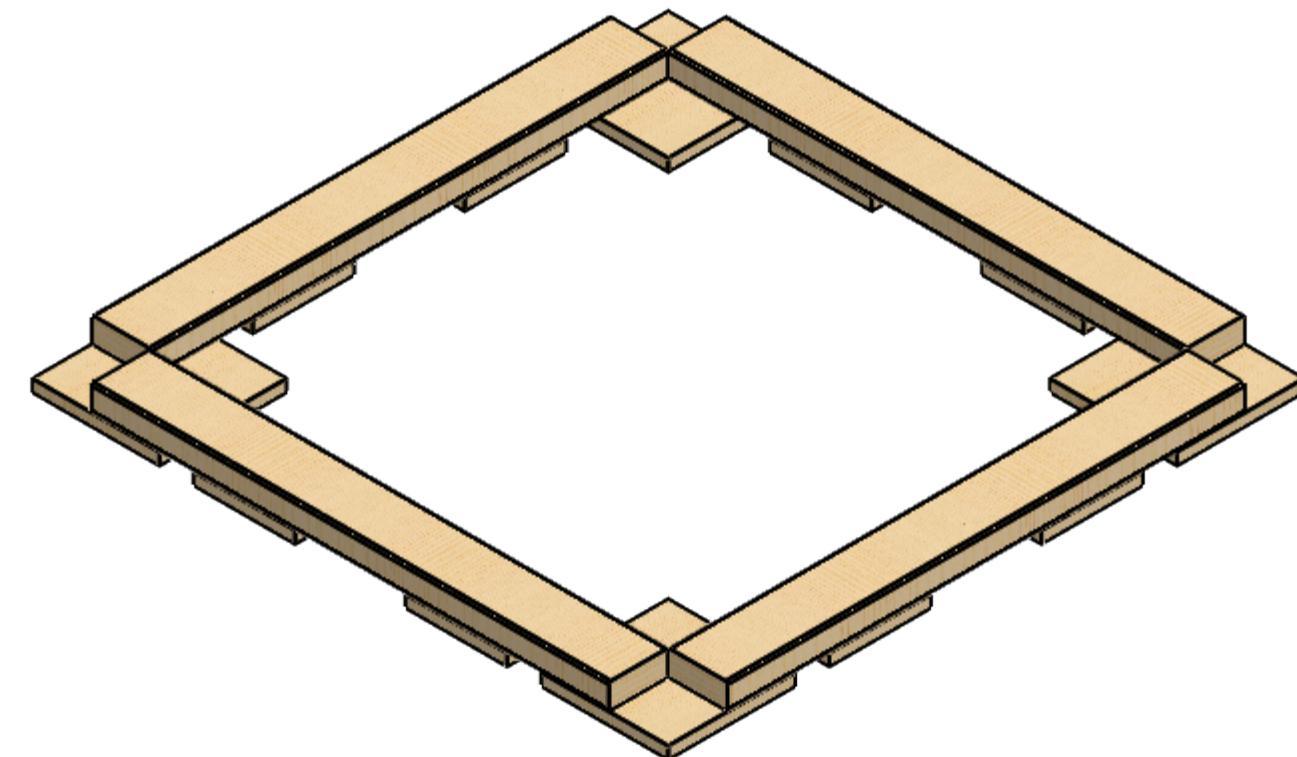
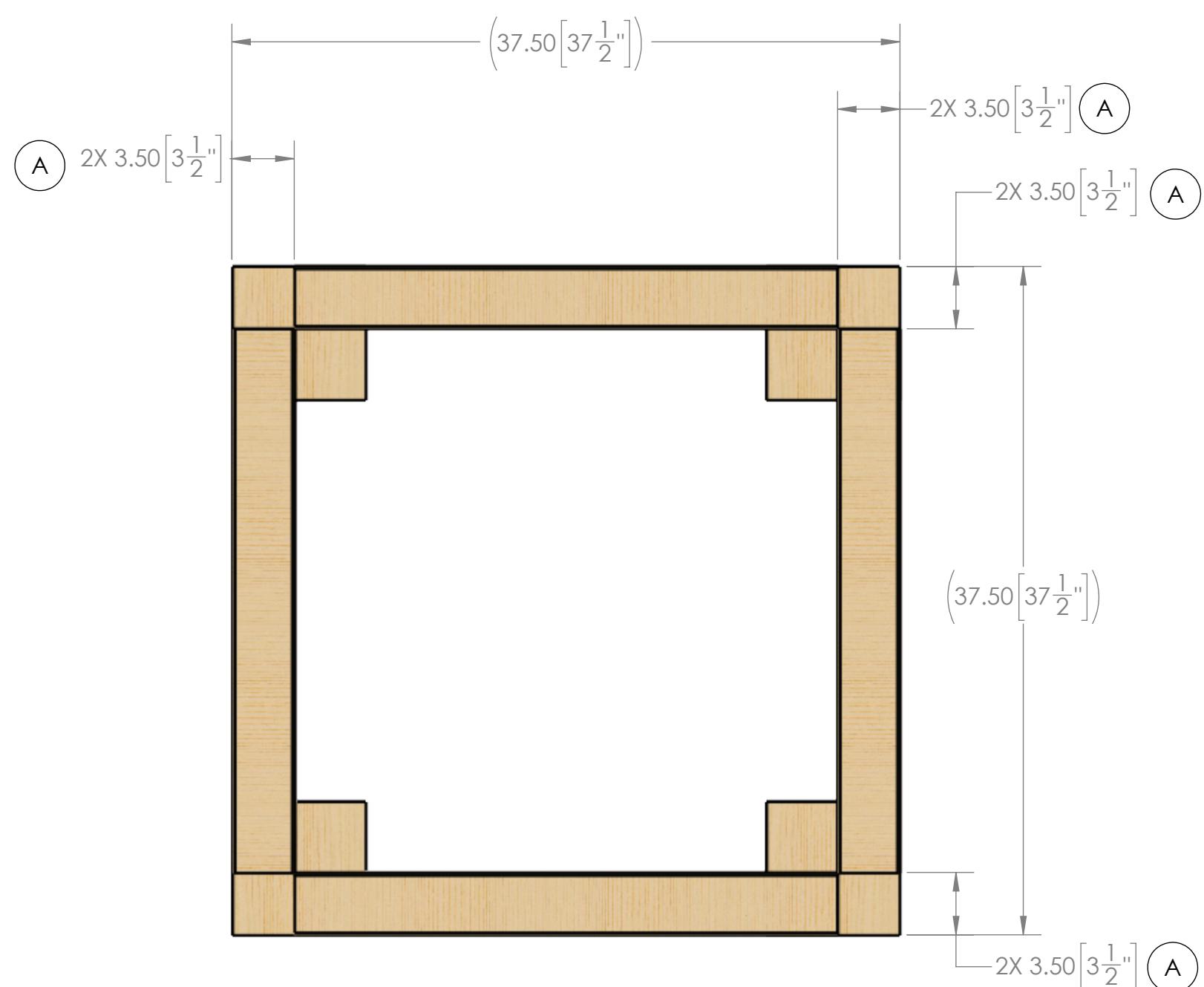
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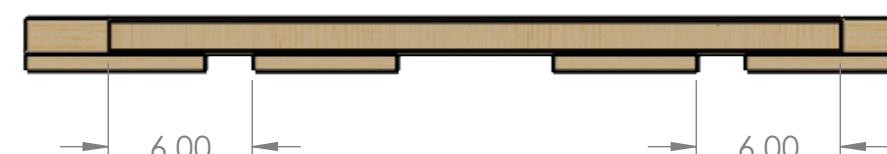
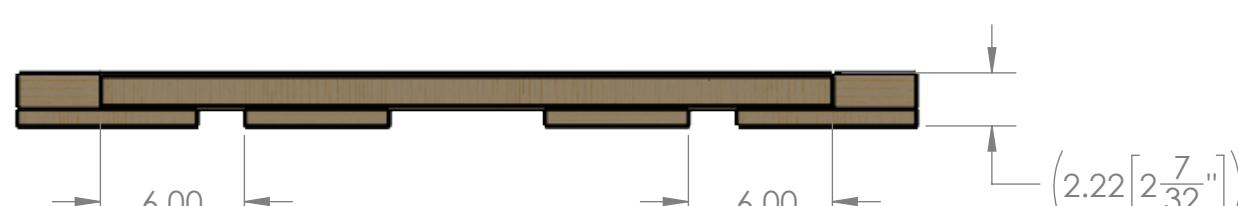
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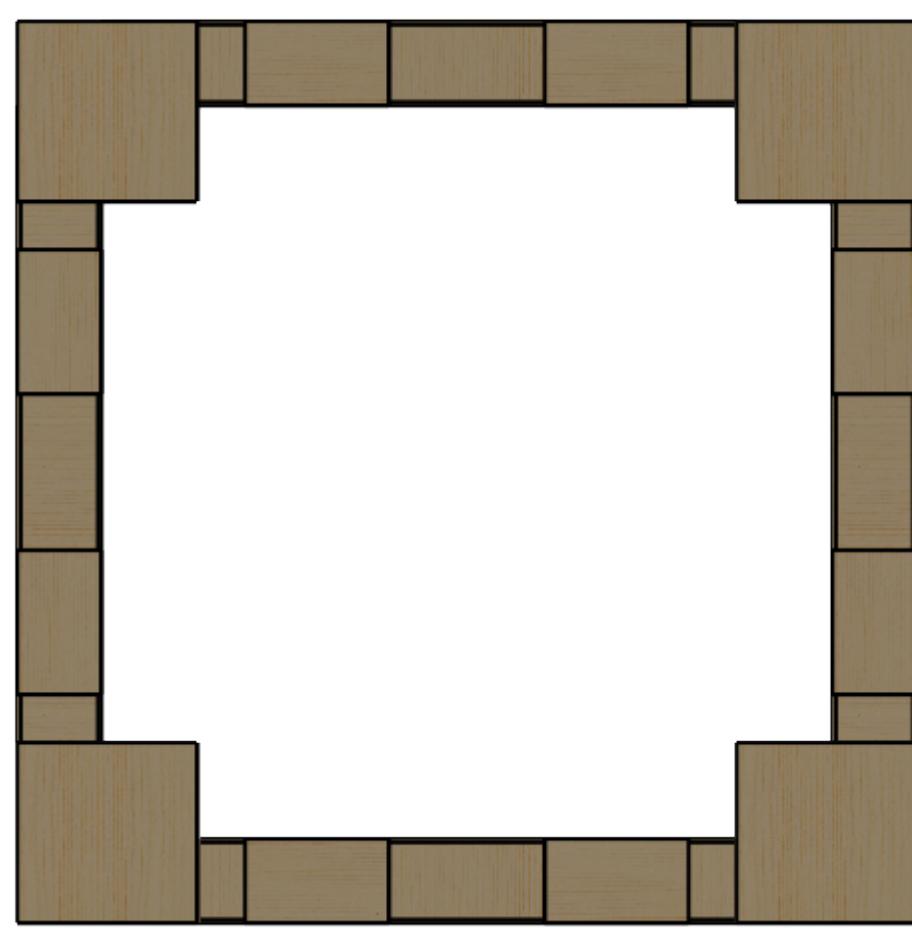
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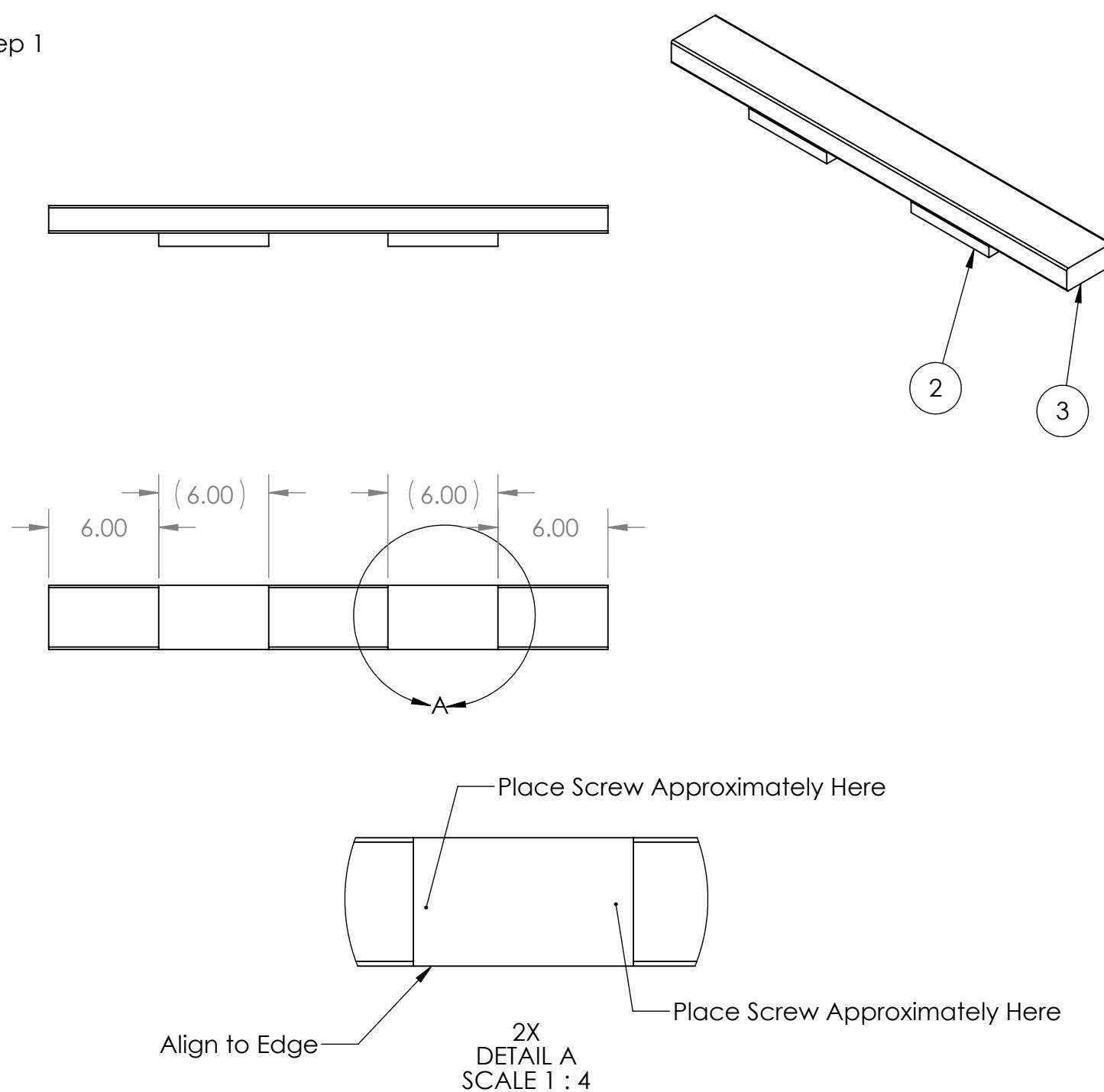
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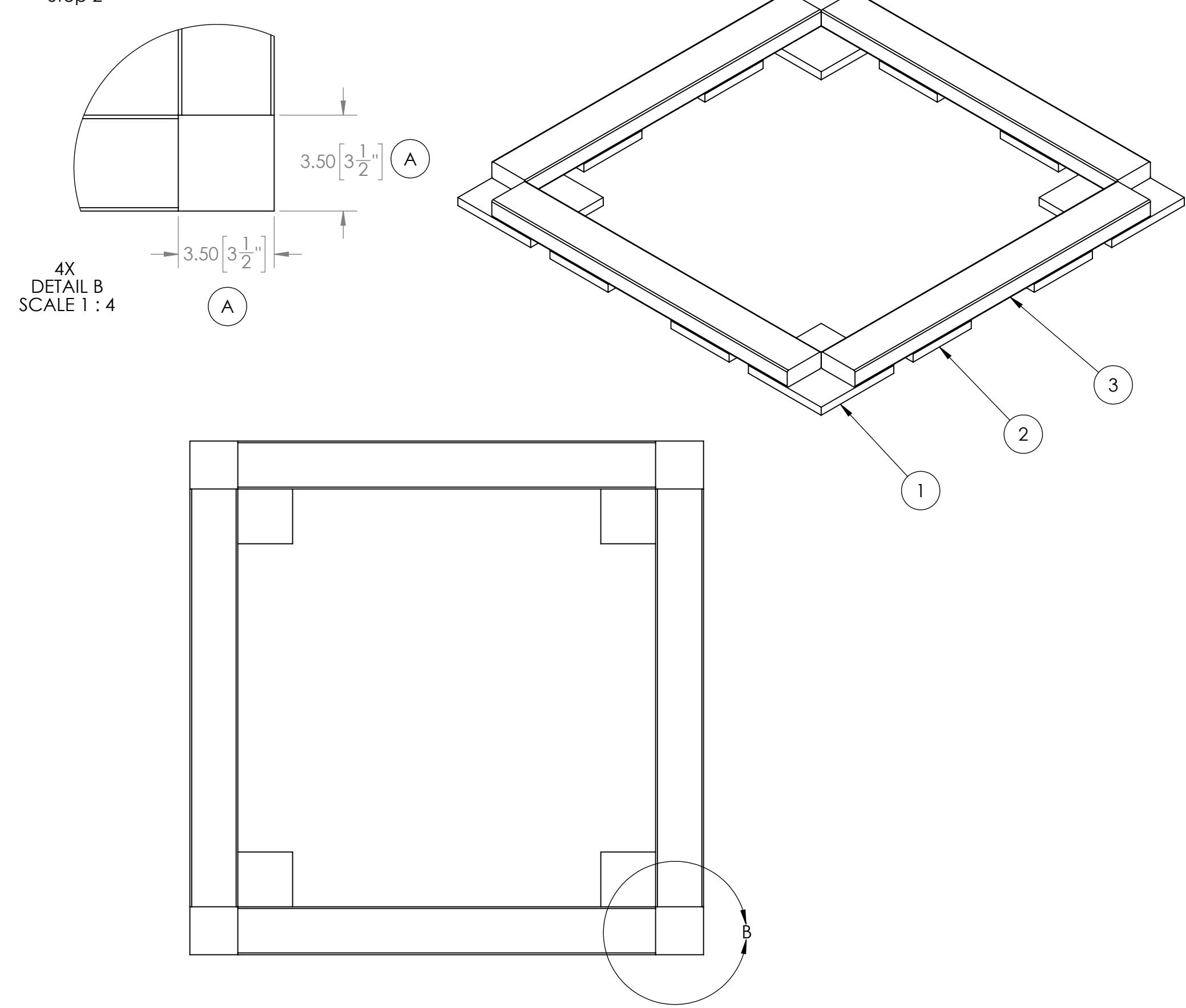
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TITLE: FIRST ROBOTICS COMPETITION SOLIDWORKS Hub - Simple Build - Upper Hub Goal Bottom Assembly			
SIZE DWG. NO. REV			
C TE-22038			
SCALE: 1:8 SHEET 2 OF 3			

Step 1



1. Align 2x (2) on (3), as shown.
2. 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.
3. Repeat until you have a total of 4x sub-assemblies.

Step 2



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COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
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	SCALE: 1:8	SHEET 3 OF 3	

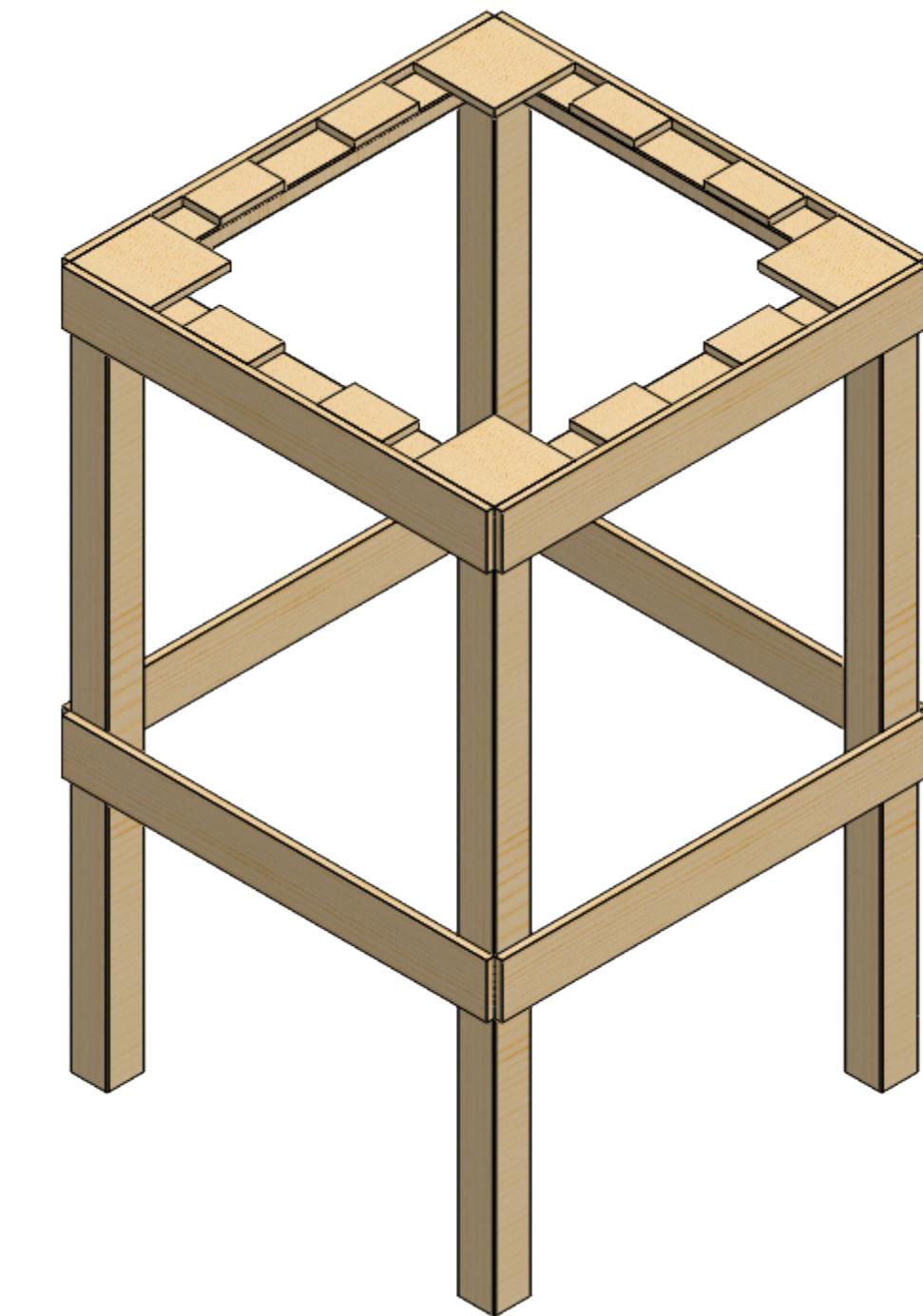
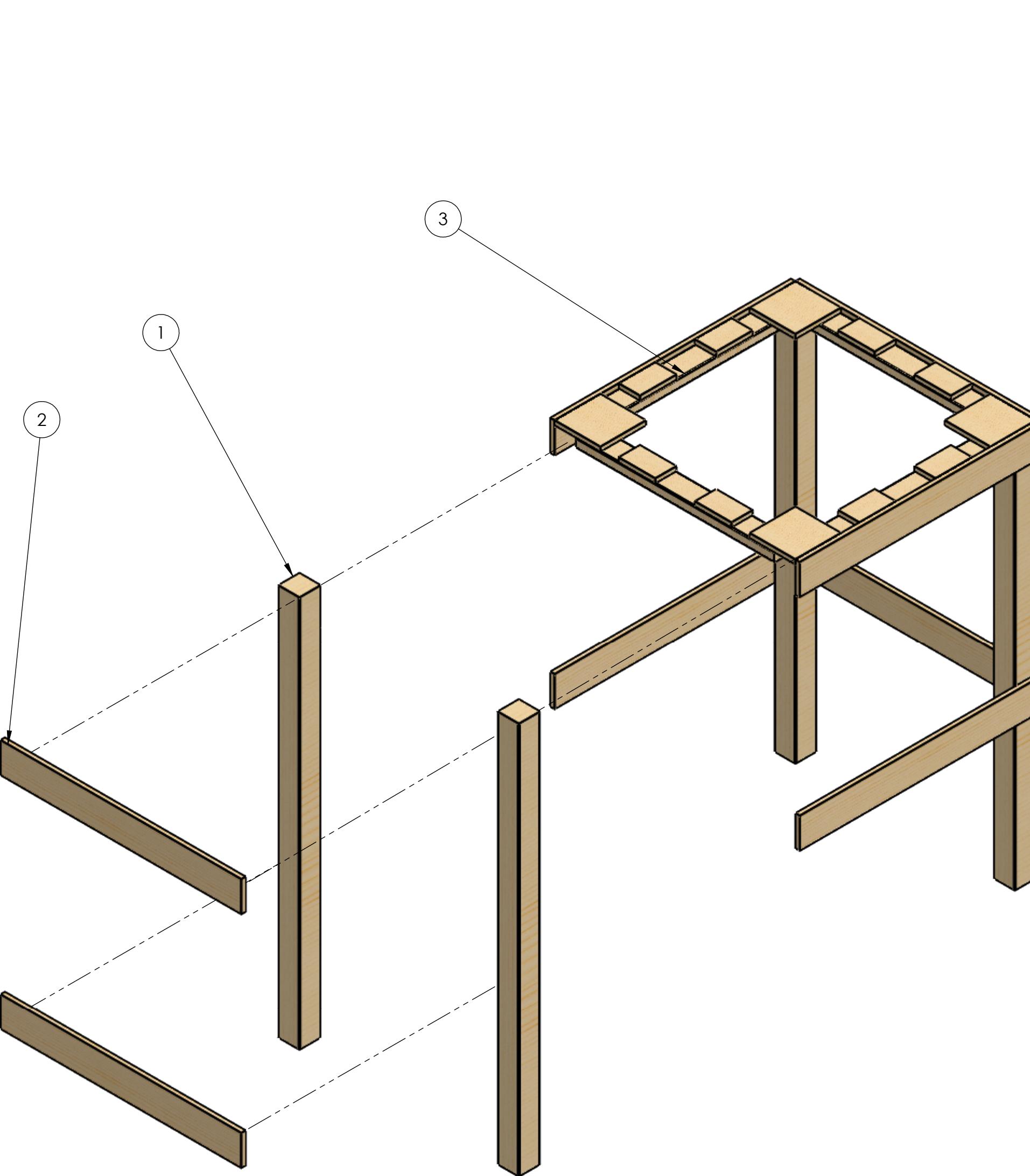


TITLE: Hub - Simple Build - Upper Hub Goal Bottom Assembly

SIZE DWG. NO. REV

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 Connection Plate	8
3	TE-22044	Hub - Simple Build - Upper Hub Base Top Assembly	1

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MATERIAL/FINISH:								
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.								
DO NOT SCALE DRAWING								
SIZE	DWG. NO.	REV	TITLE: Hub - Simple Build - Upper Hub Base Assembly					
C	TE-22040							
SCALE: 1:12				SHEET 1 OF 4				

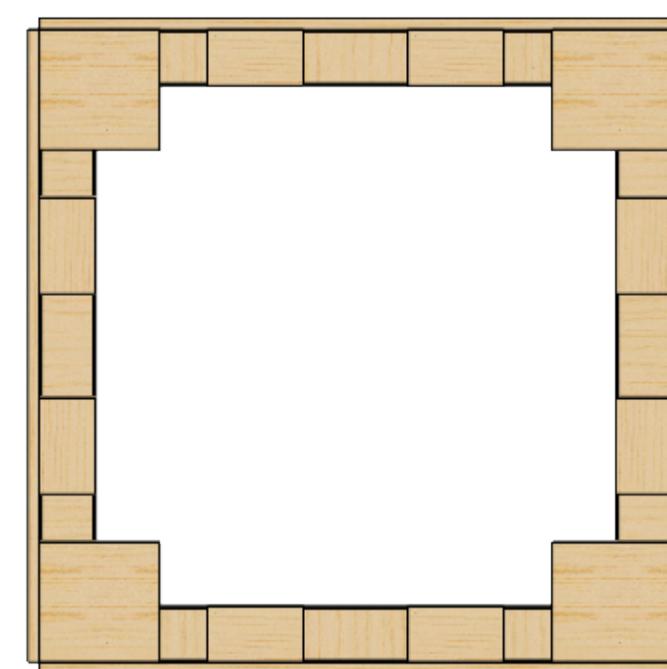
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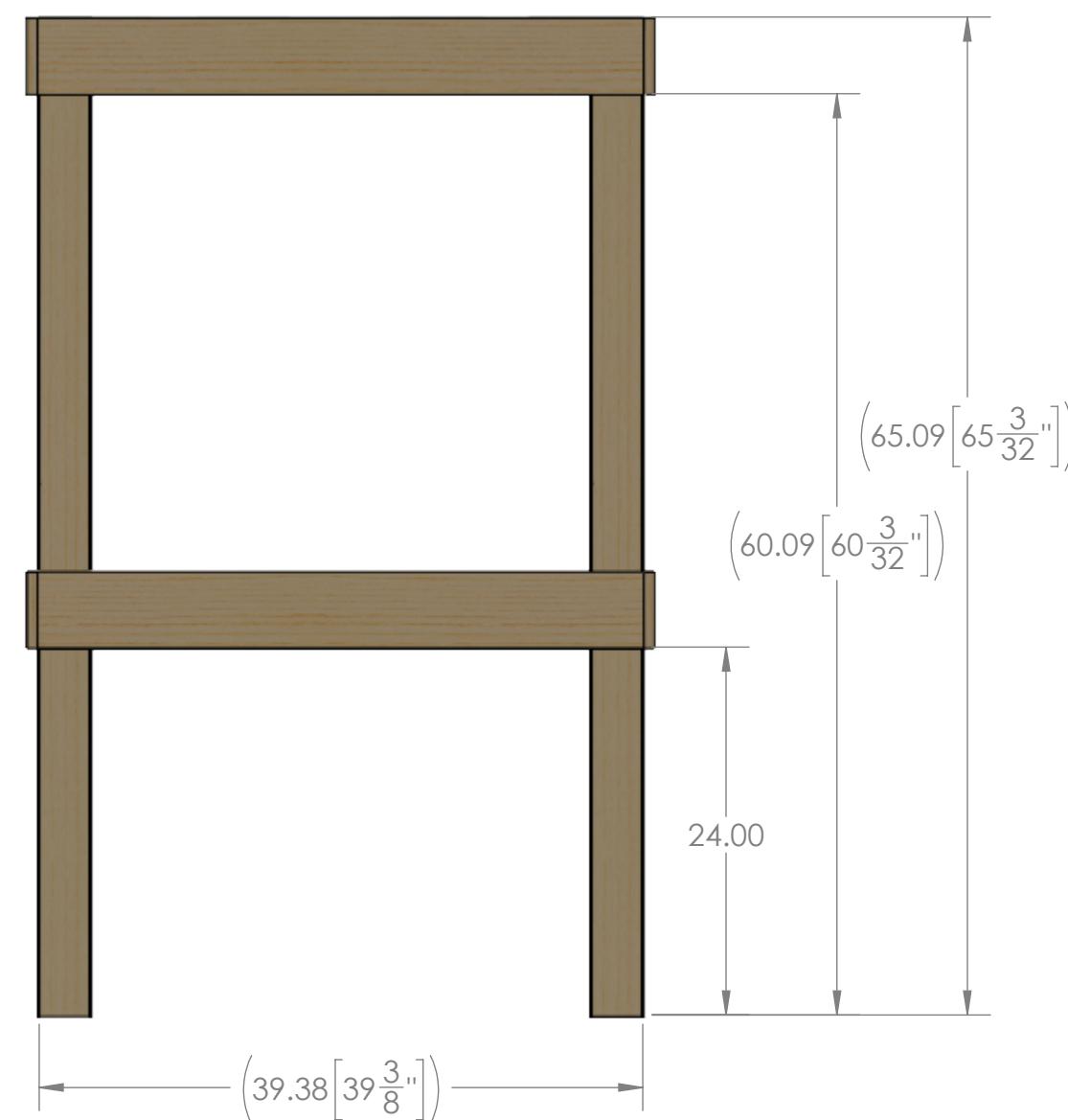
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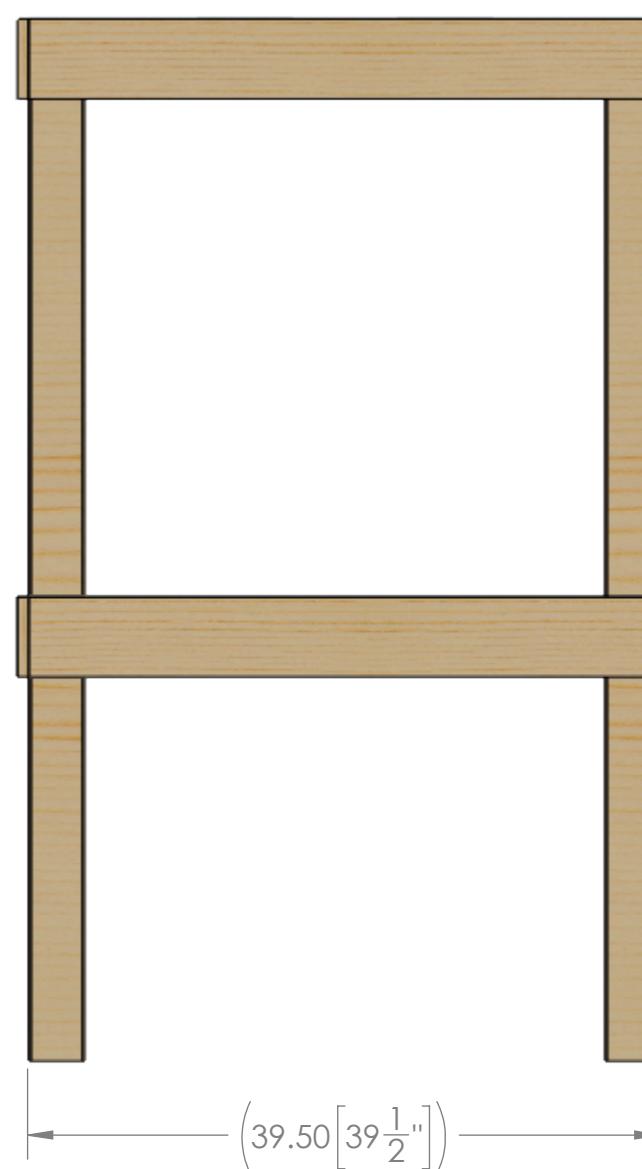
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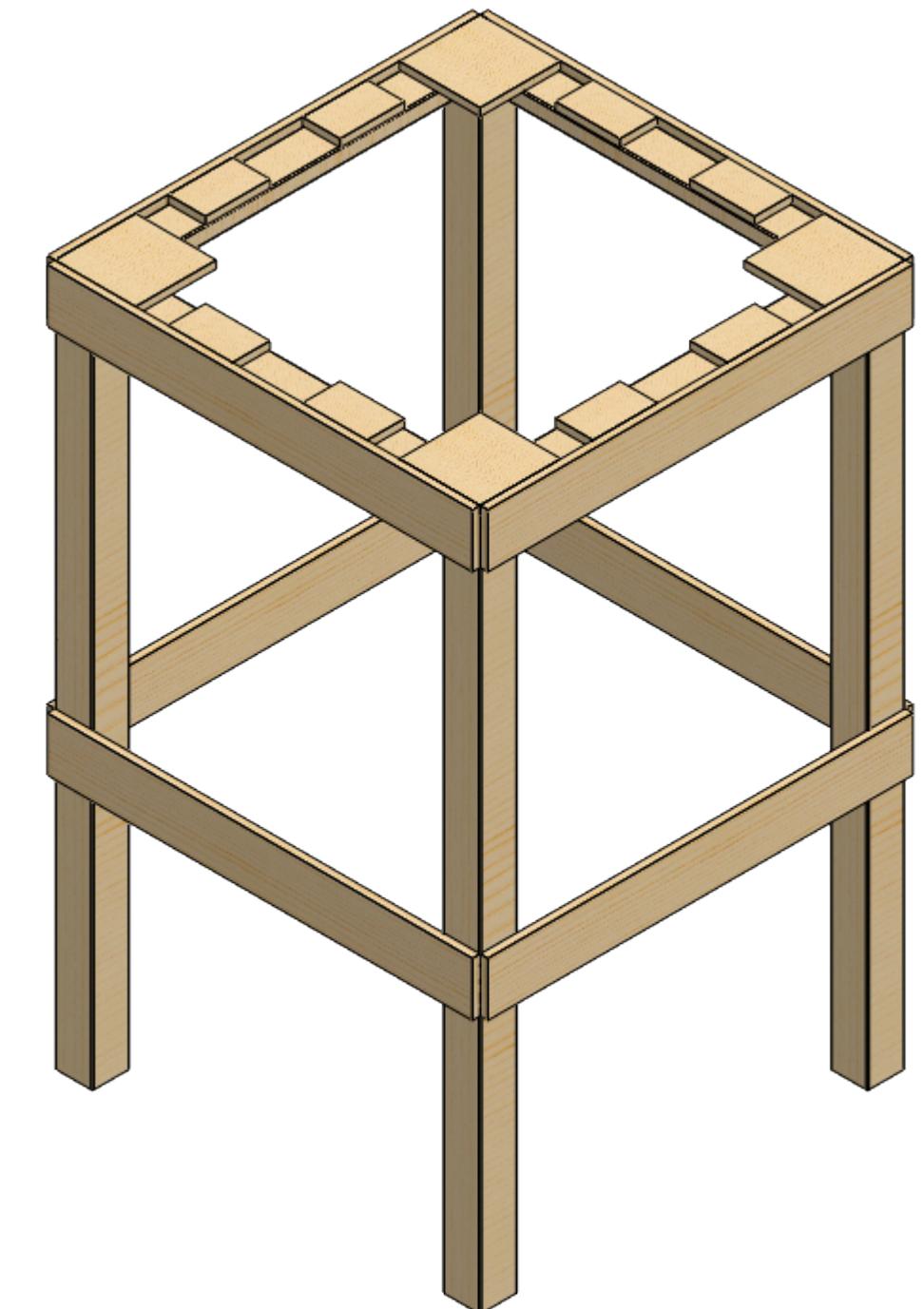


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DIMENSIONS ARE IN INCHES	DRAWN	KAMC	12/30/2021
TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$			
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MATERIAL/FINISH:	SIZE	DWG. NO.	REV
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.	C	TE-22040	
DO NOT SCALE DRAWING	SCALE: 1:12	SHEET 2 OF 4	



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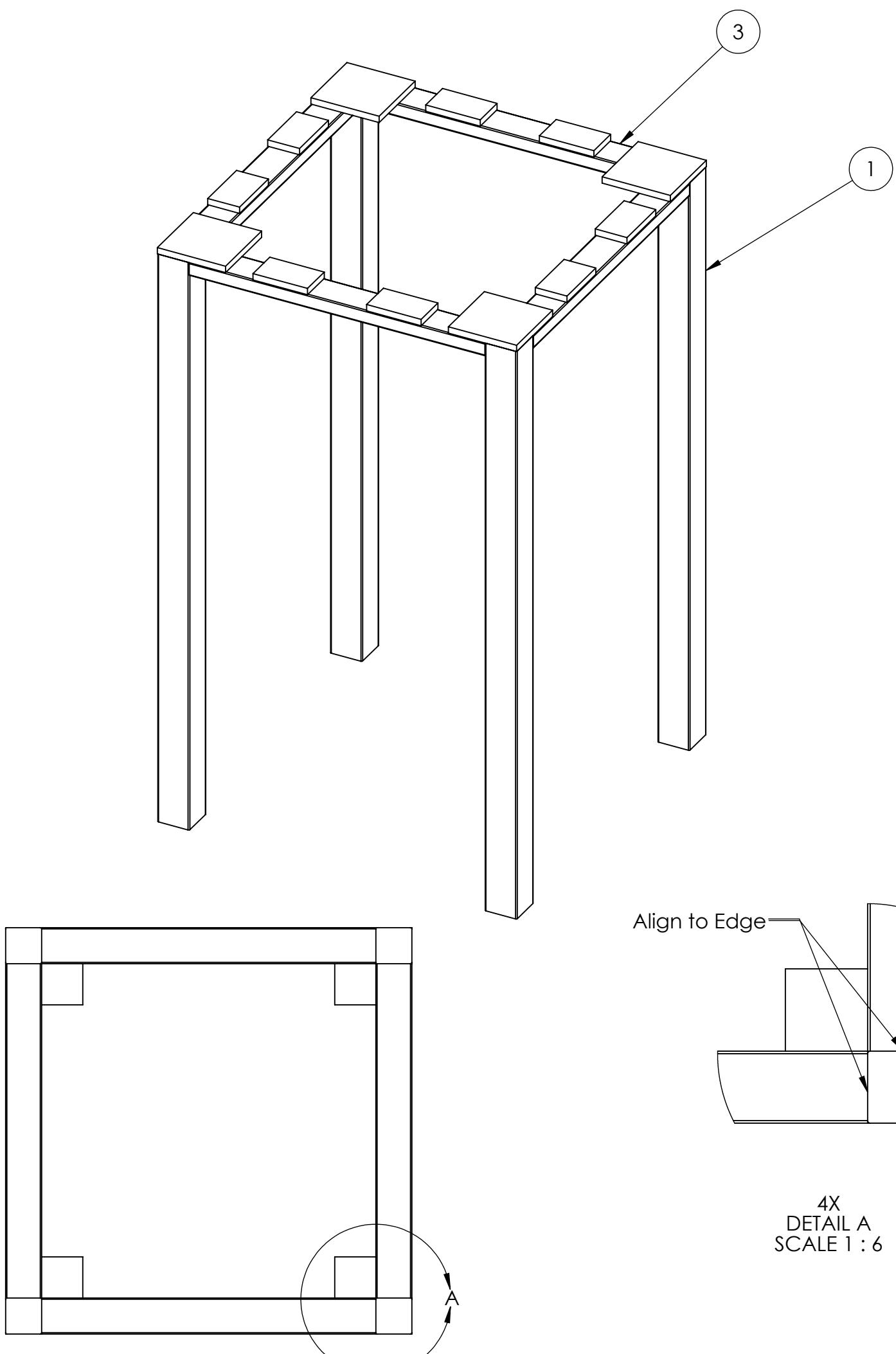
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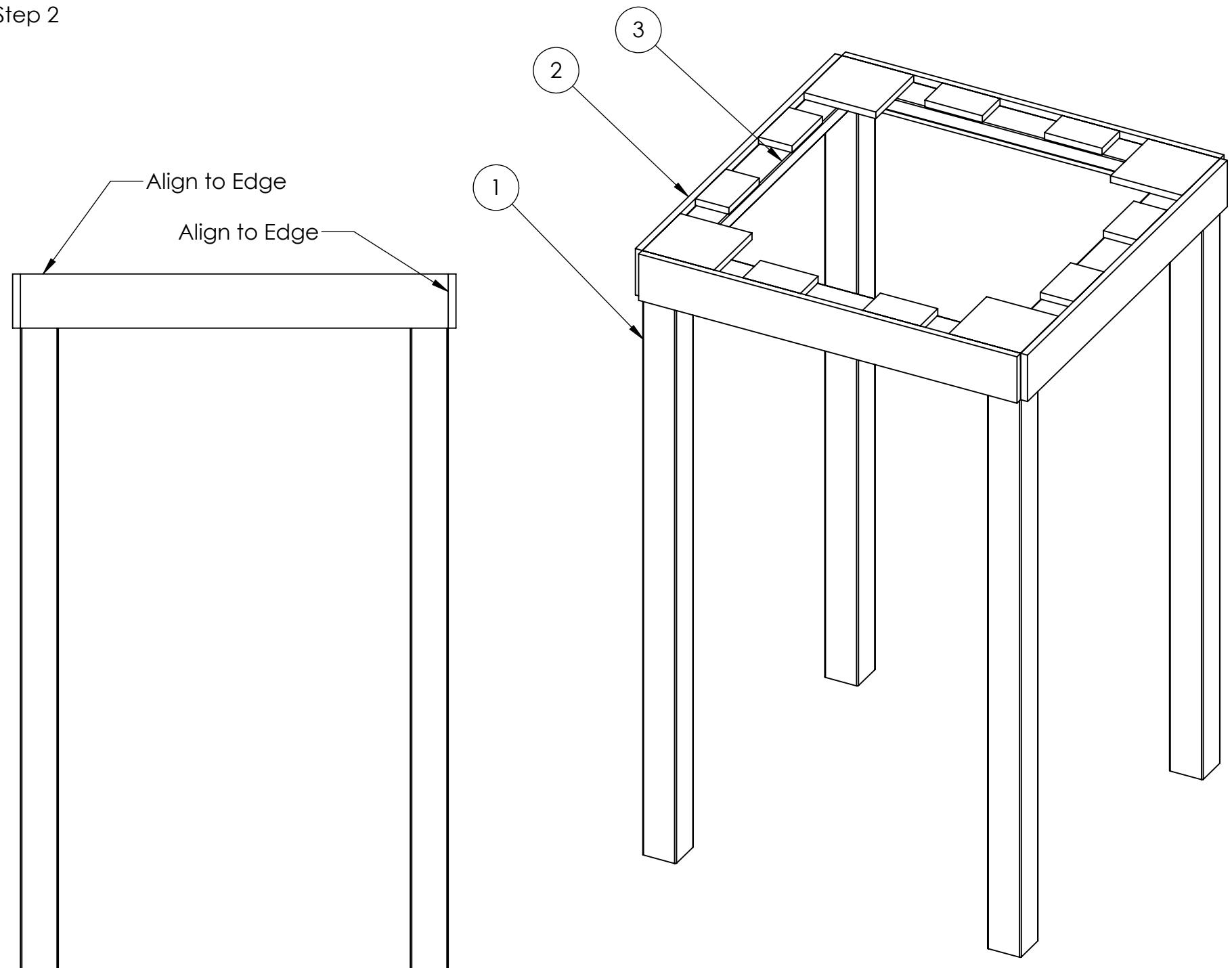
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Step 1



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.

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MATERIAL/FINISH:			
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING			

FIRST ROBOTICS COMPETITION SOLIDWORKS Modeling Solutions Partner

TITLE:
Hub - Simple Build -
Upper Hub Base
Assembly

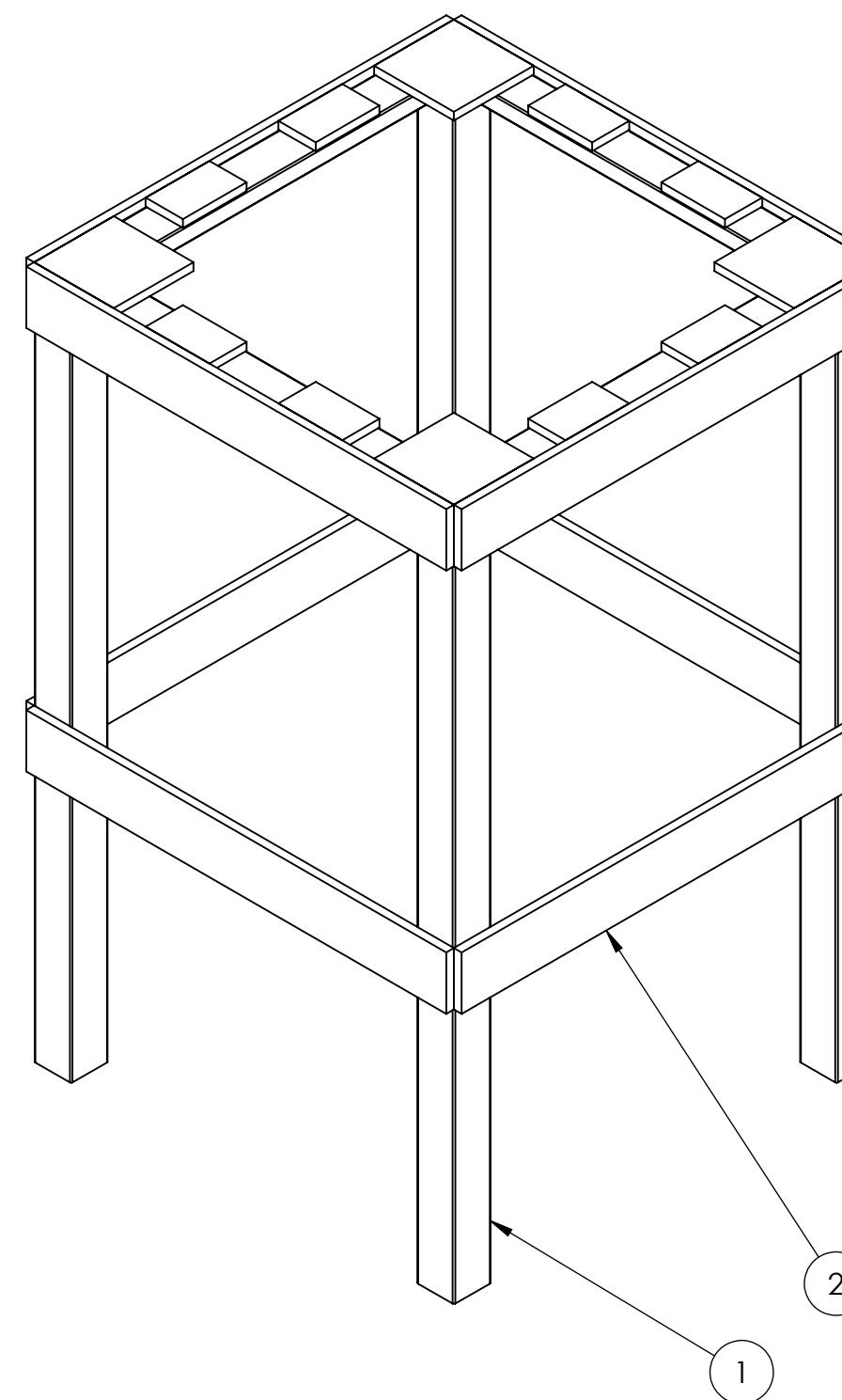
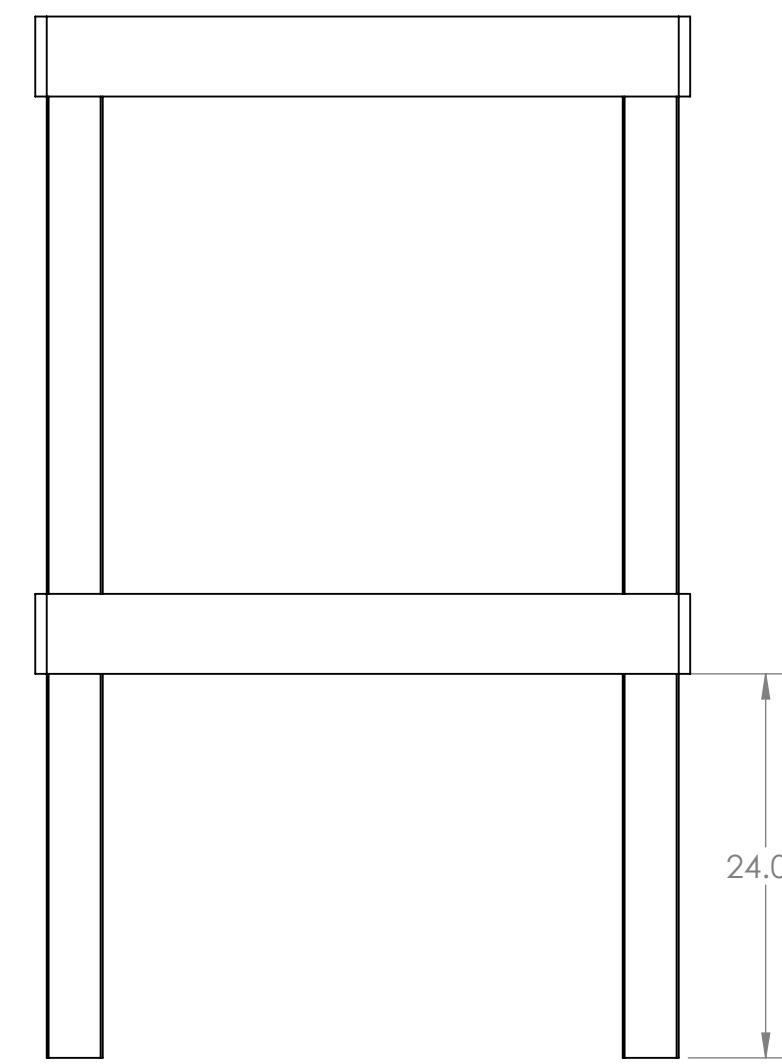
SIZE DWG. NO. REV

C TE-22040

SCALE: 1:12 SHEET 3 OF 4

D

Step 3



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

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MATERIAL/FINISH:	SIZE	DWG. NO.	REV
	C	TE-22040	
COMMENTS:		SCALE: 1:12	
REMOVE ALL BURRS AND SHARP EDGES.		SHEET 4 OF 4	
DO NOT SCALE DRAWING			

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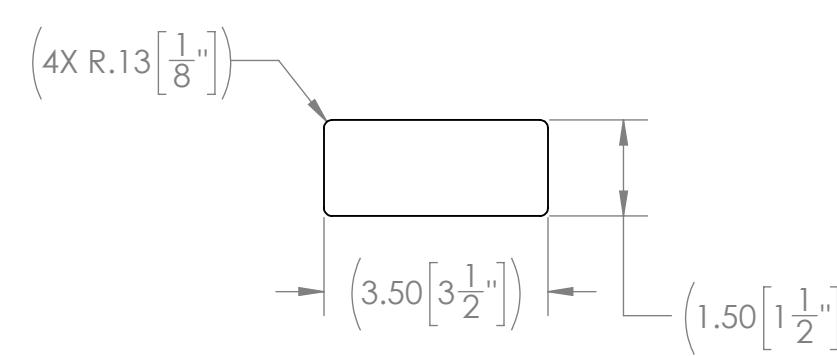
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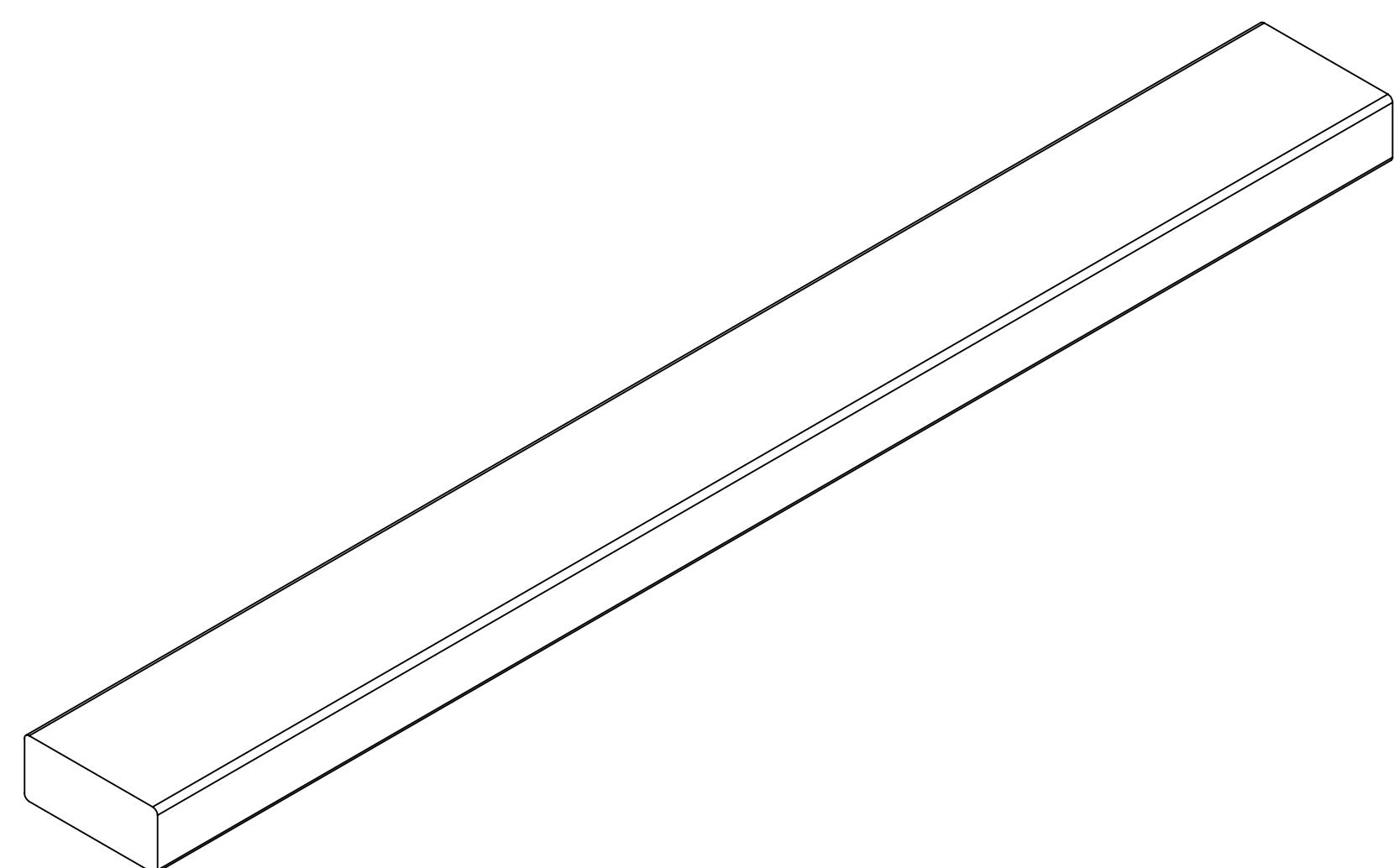
B

A

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32.50 [32 1/2"]



UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

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

MATERIAL/FINISH:

2"x4" Lumber

DO NOT SCALE DRAWING

TEAM NAME DATE

DRAWN KAMC 12/29/2021



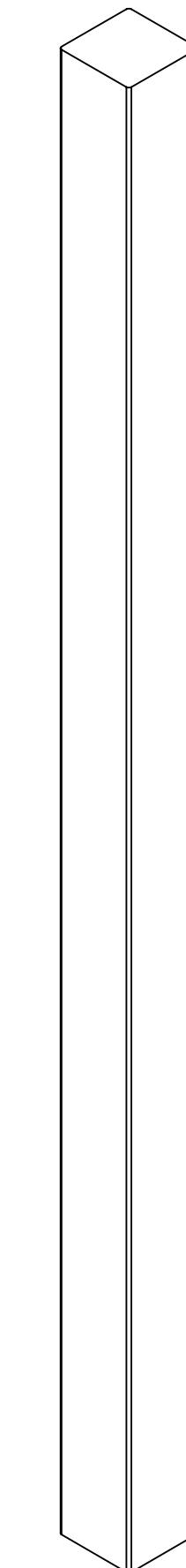
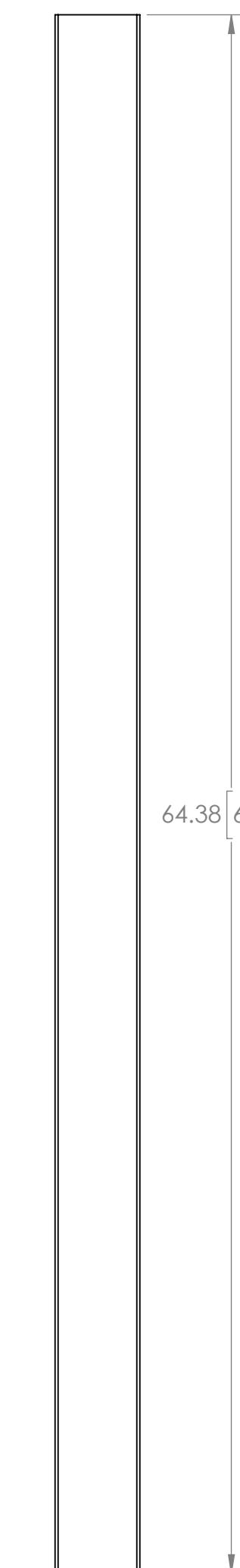
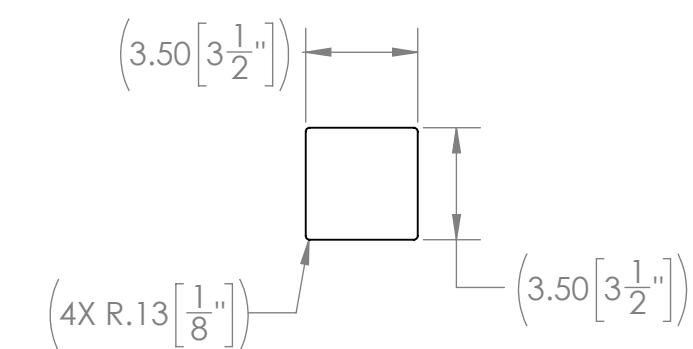
TITLE:
Hub - Simple Build -
Upper Hub Base 2x4

SIZE DWG. NO. REV

C TE-22041

SCALE: 1:3 SHEET 1 OF 1

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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	12/29/2021
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MATERIAL/FINISH: 4"x4" Lumber	SIZE	DWG. NO.	REV
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.	C	TE-22042	
DO NOT SCALE DRAWING	SCALE: 1:6	SHEET 1 OF 1	

 **FIRST
ROBOTICS
COMPETITION**  SOLIDWORKS
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TITLE: Hub - Simple Build -
Upper Hub Base 4x4

SIZE DWG. NO. REV
C TE-22042

SCALE: 1:6 SHEET 1 OF 1

4

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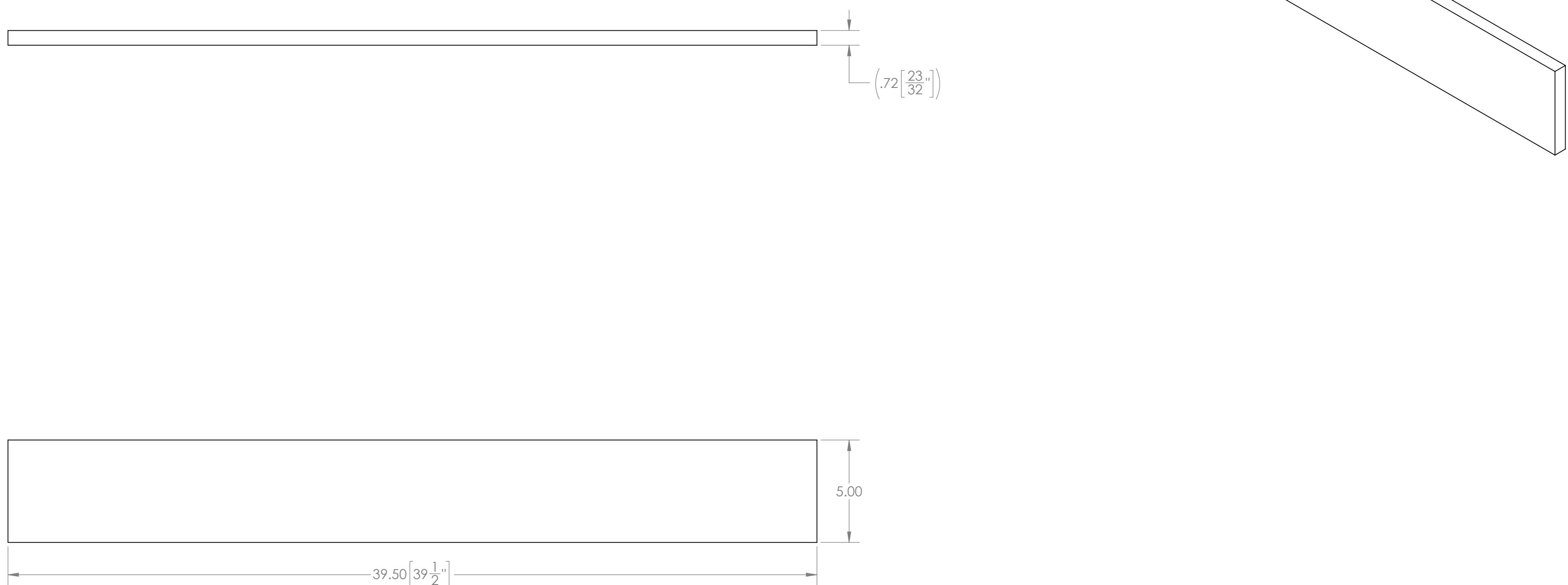
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MATERIAL/FINISH:	SIZE	DWG. NO.	REV
3/4" Plywood	C	TE-22043	
COMMENTS: REMOVE ALL BURRS AND SHARP EDGES.			
DO NOT SCALE DRAWING	SCALE: 1:4	SHEET 1 OF 1	

 **FIRST
ROBOTICS
COMPETITION**  SOLIDWORKS
Modeling Solutions Partner

TITLE:
Hub - Simple Build - Upper
Hub Base Rectangle
Connection Plate

SIZE DWG. NO. REV
C TE-22043

SCALE: 1:4 SHEET 1 OF 1

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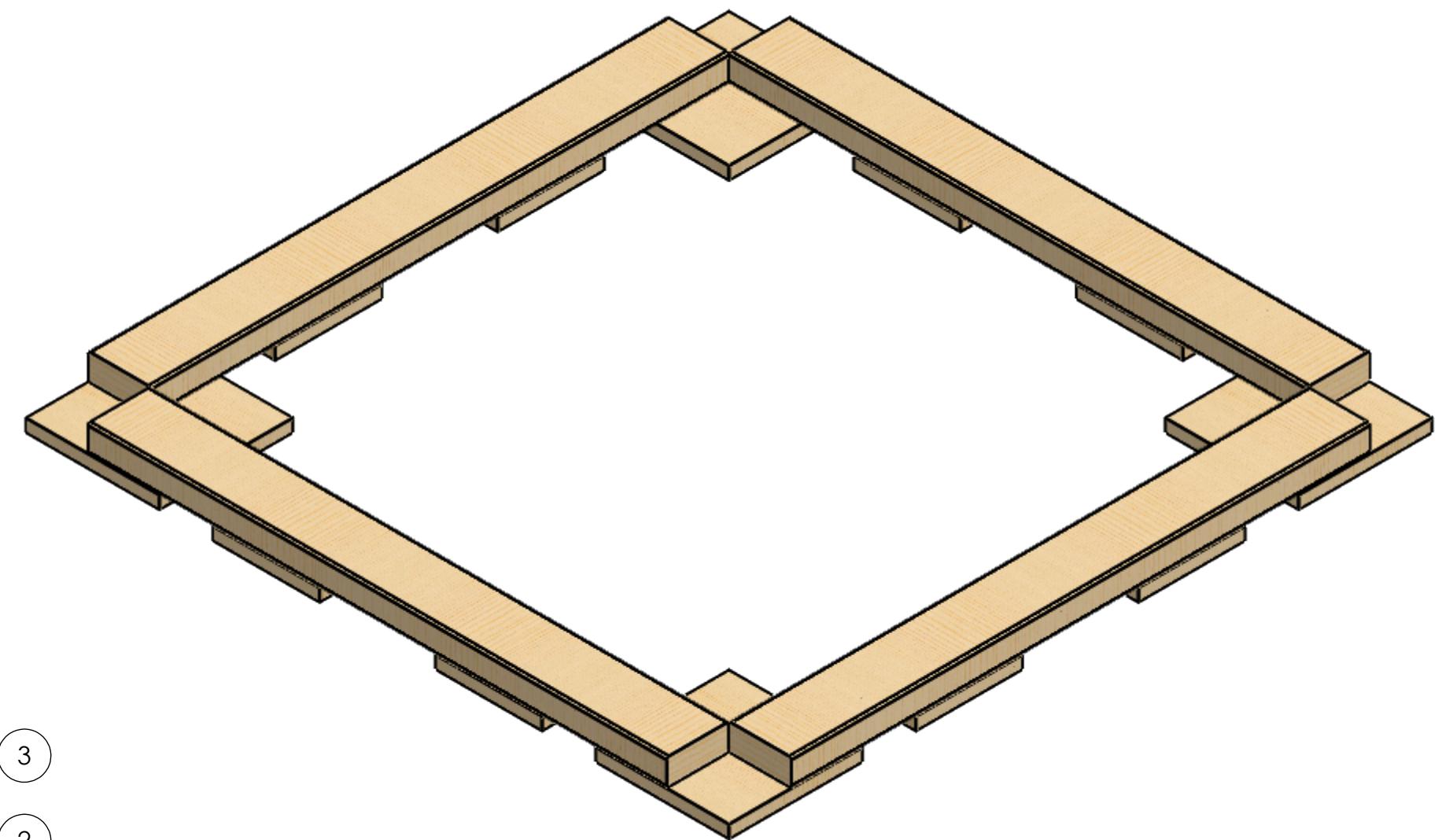
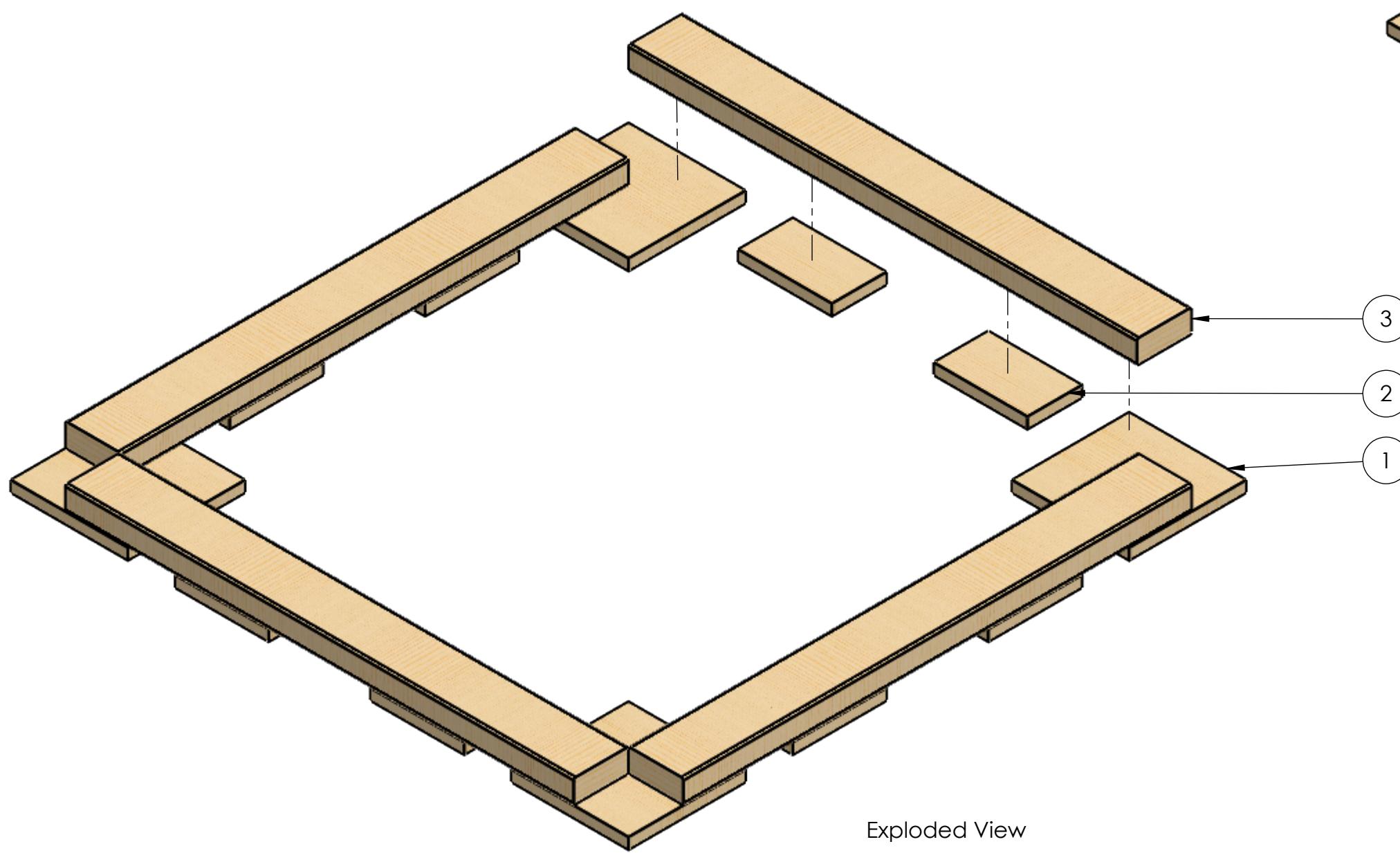
C

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

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

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COMMENTS:					
REMOVE ALL BURRS AND SHARP EDGES.					
DO NOT SCALE DRAWING			SIZE	DWG. NO.	REV
			C	TE-22044	
			SCALE: 1:6	SHEET 1 OF 3	

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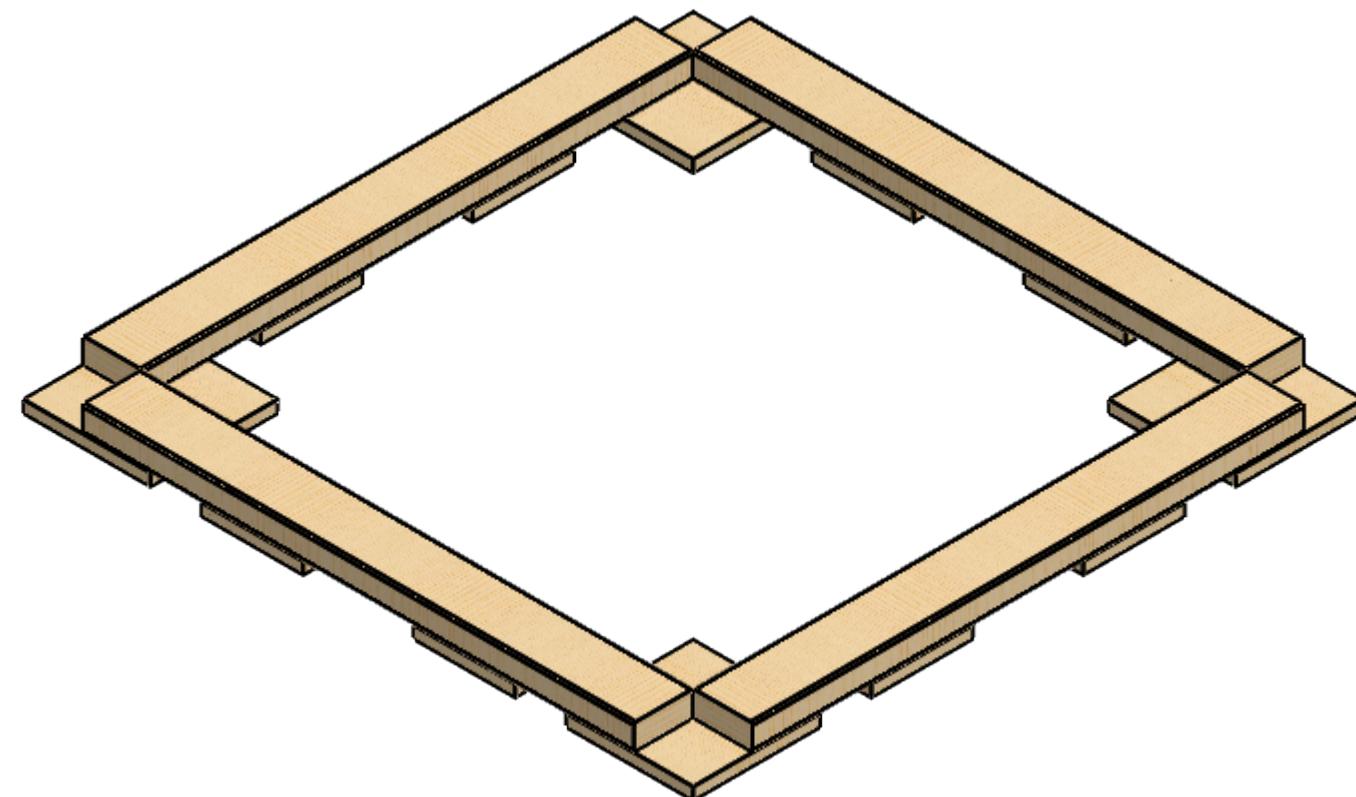
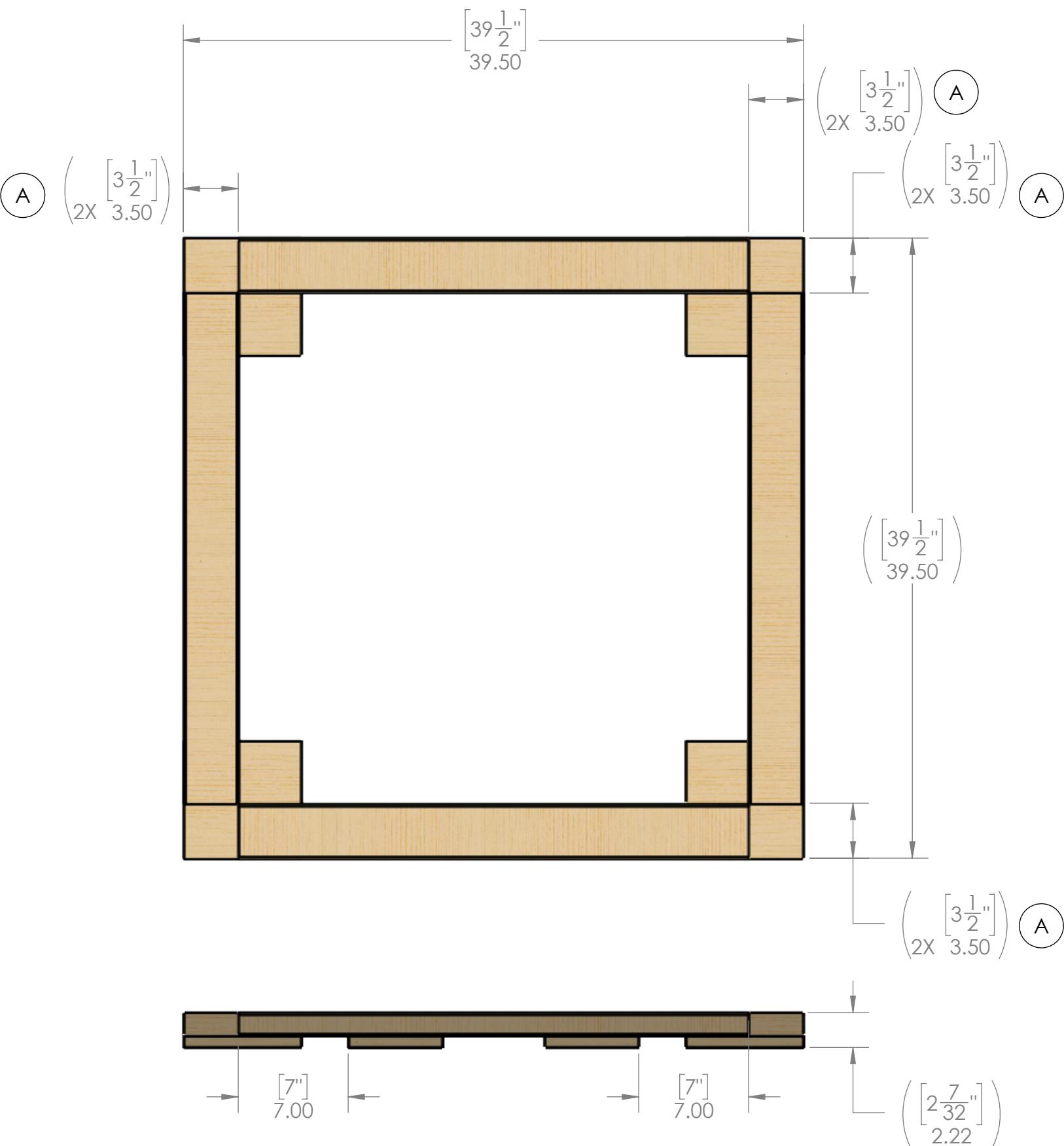
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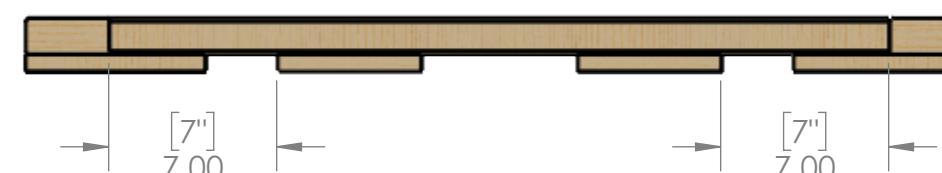
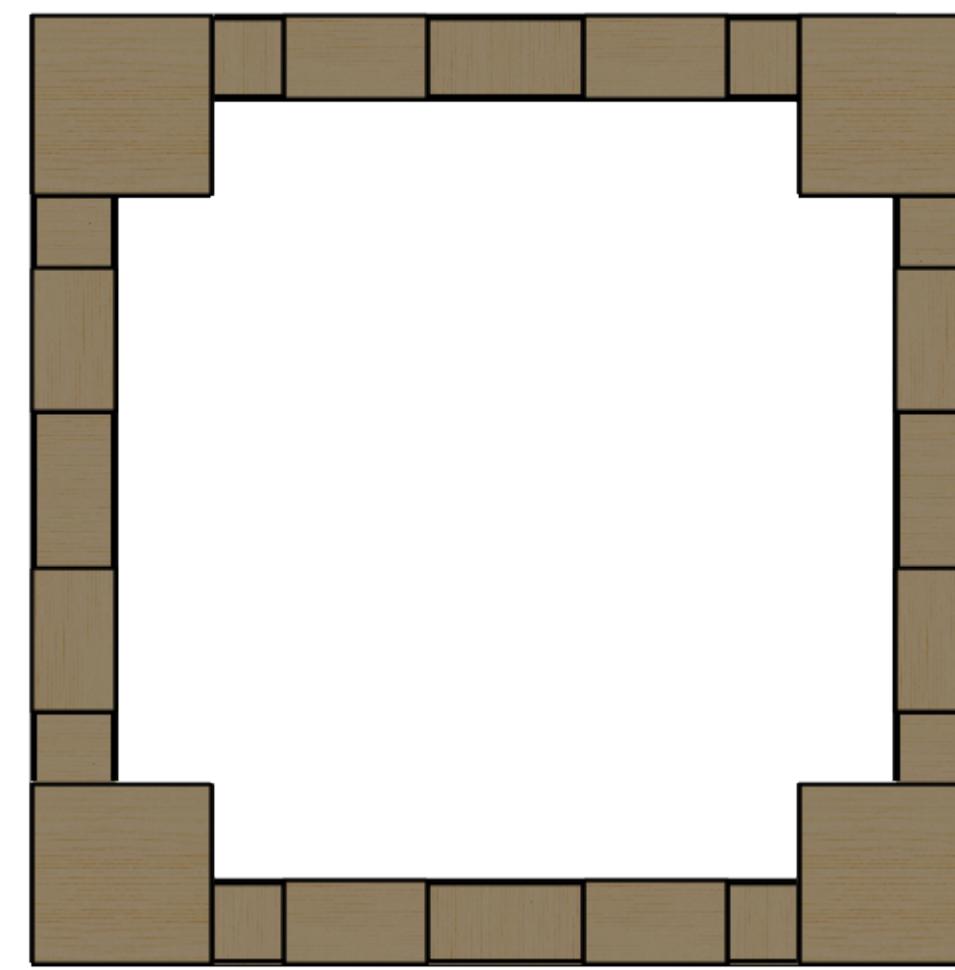
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Note:

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.

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SOLIDWORKS Modeling Solutions Partner			
TITLE: Hub - Simple Build - Upper Hub Base Top Assembly			
SIZE DWG. NO. REV			
C TE-22044			
SCALE: 1:8 SHEET 2 OF 3			

4

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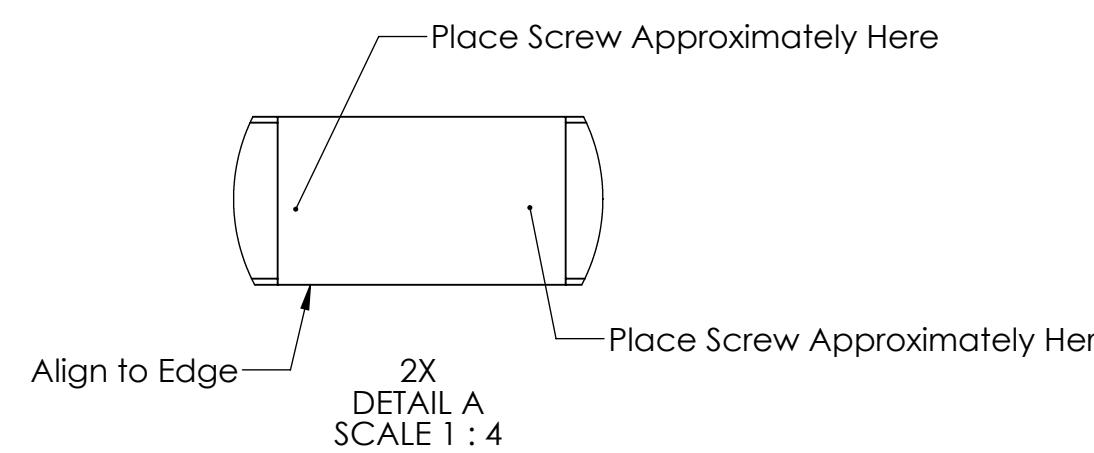
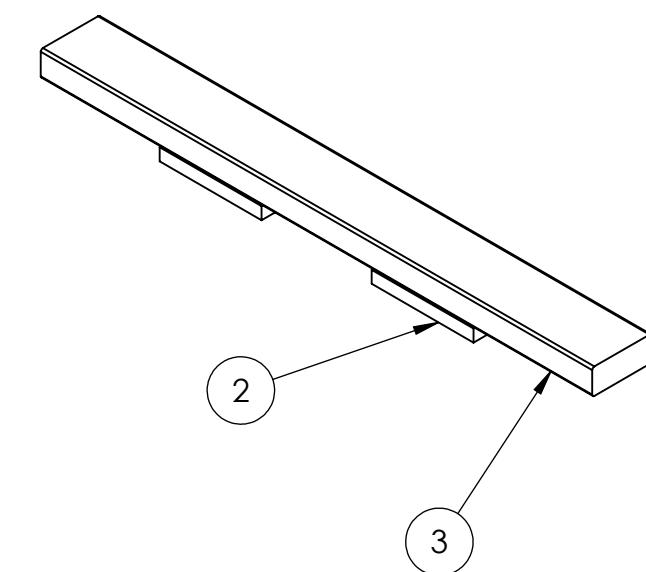
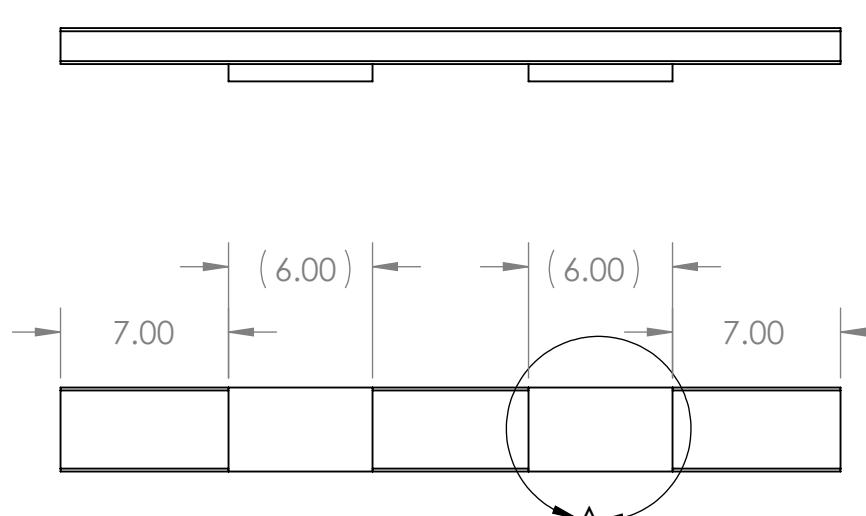
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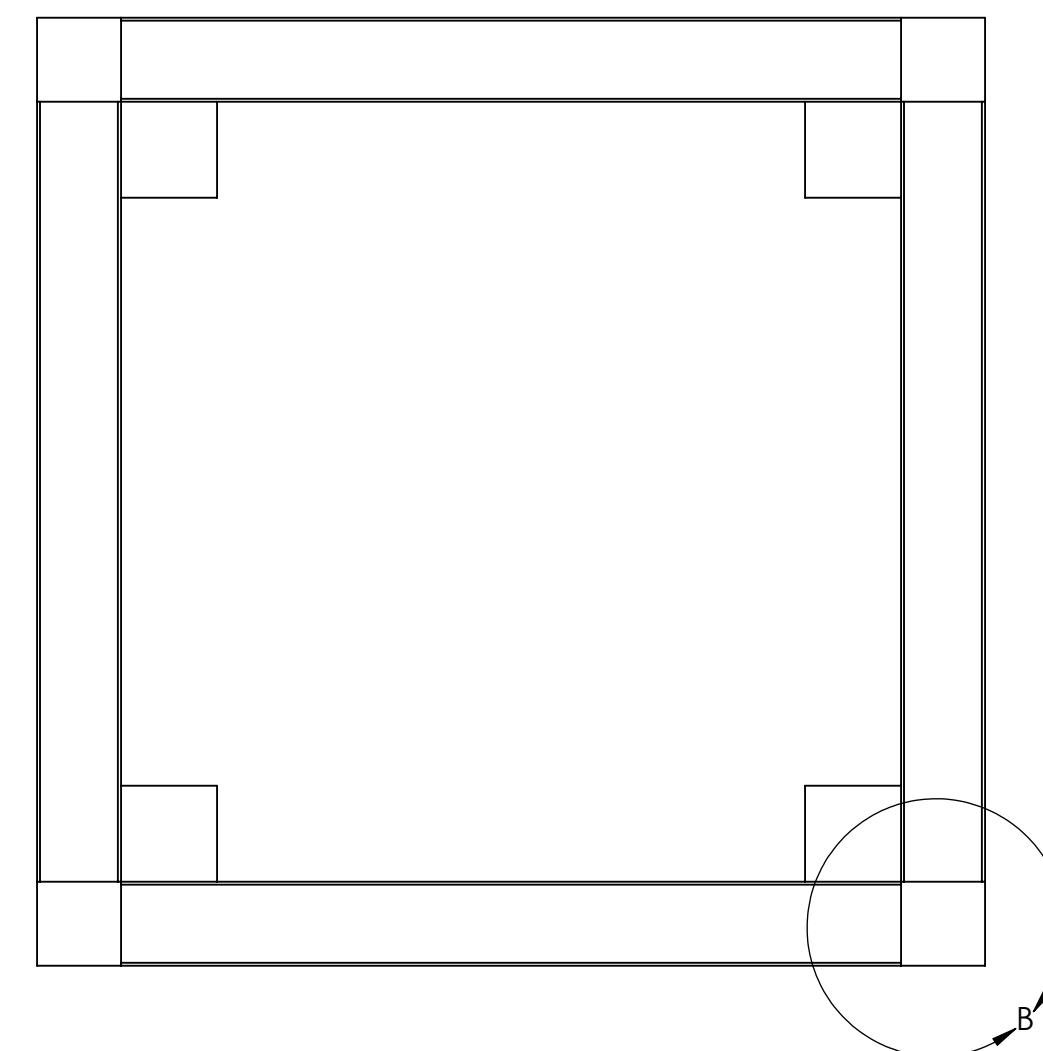
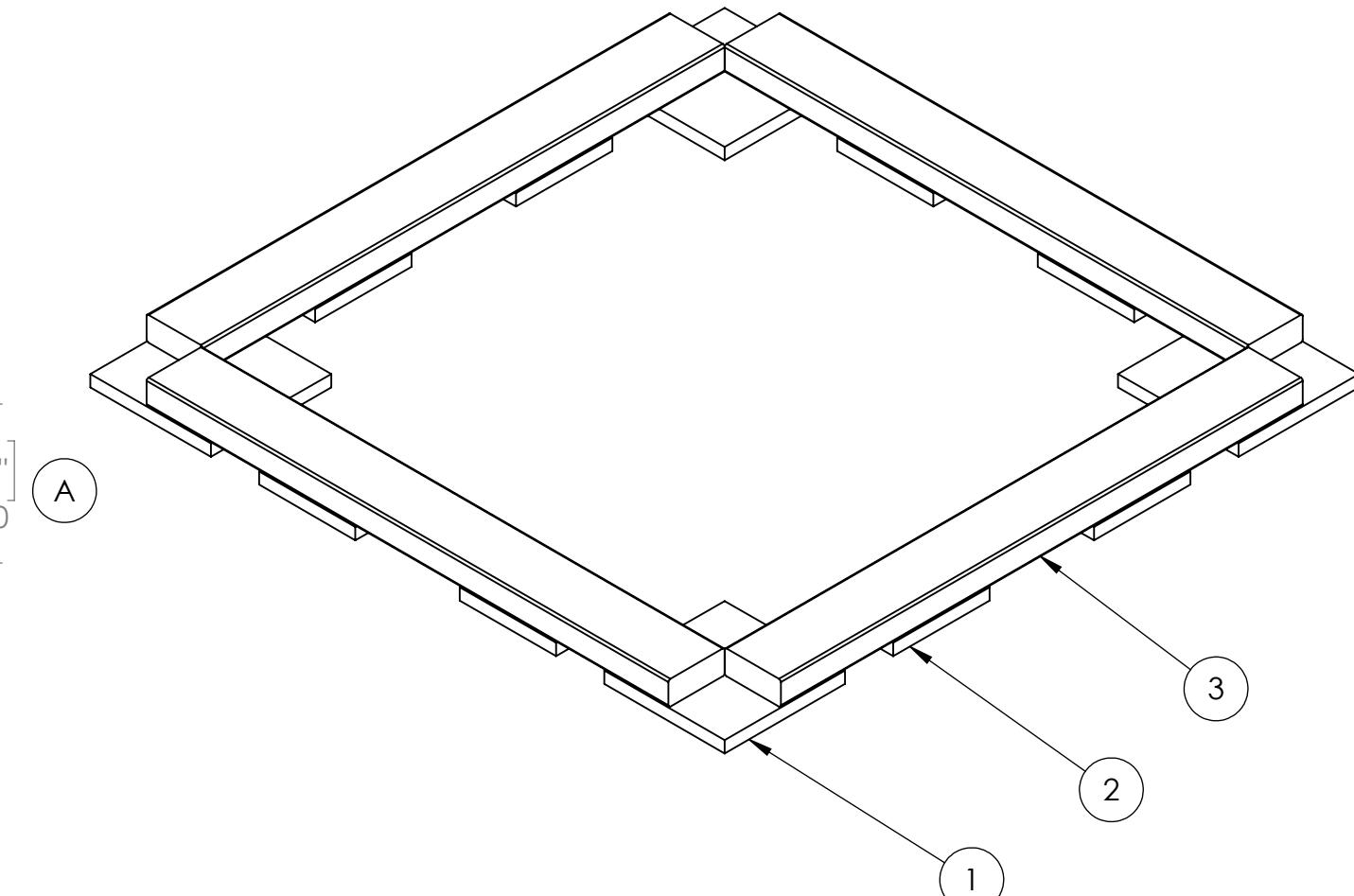
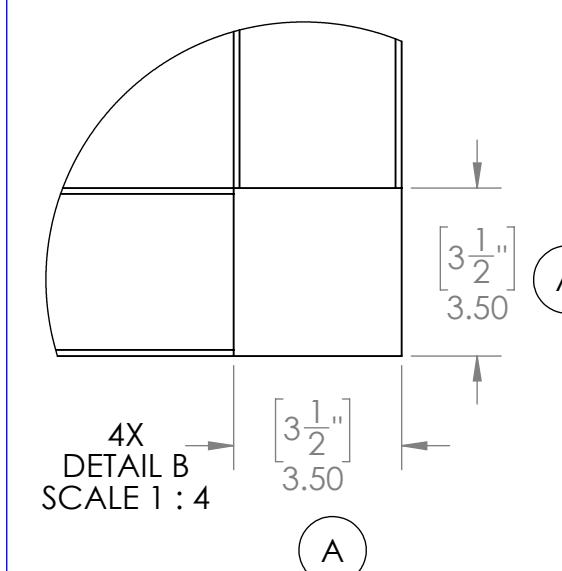
1

Step 1



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

Step 2



1. 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.

2. Connect using 2" long screws. It is recommended to use x8 screws per (2), x4 into each end.

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FIRST ROBOTICS COMPETITION			
SOLIDWORKS Modeling Solutions Partner			
TITLE: Hub - Simple Build - Upper Hub Base Top Assembly			
SIZE	DWG. NO.	REV	
C	TE-22044		
SCALE: 1:8		SHEET 3 OF 3	

4

3

2

1