

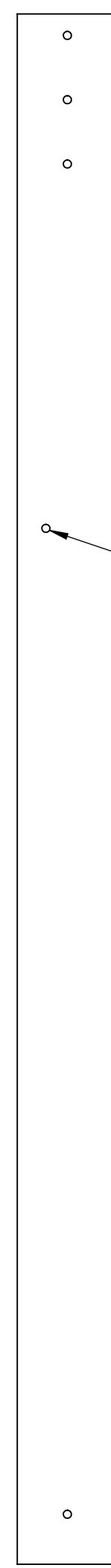
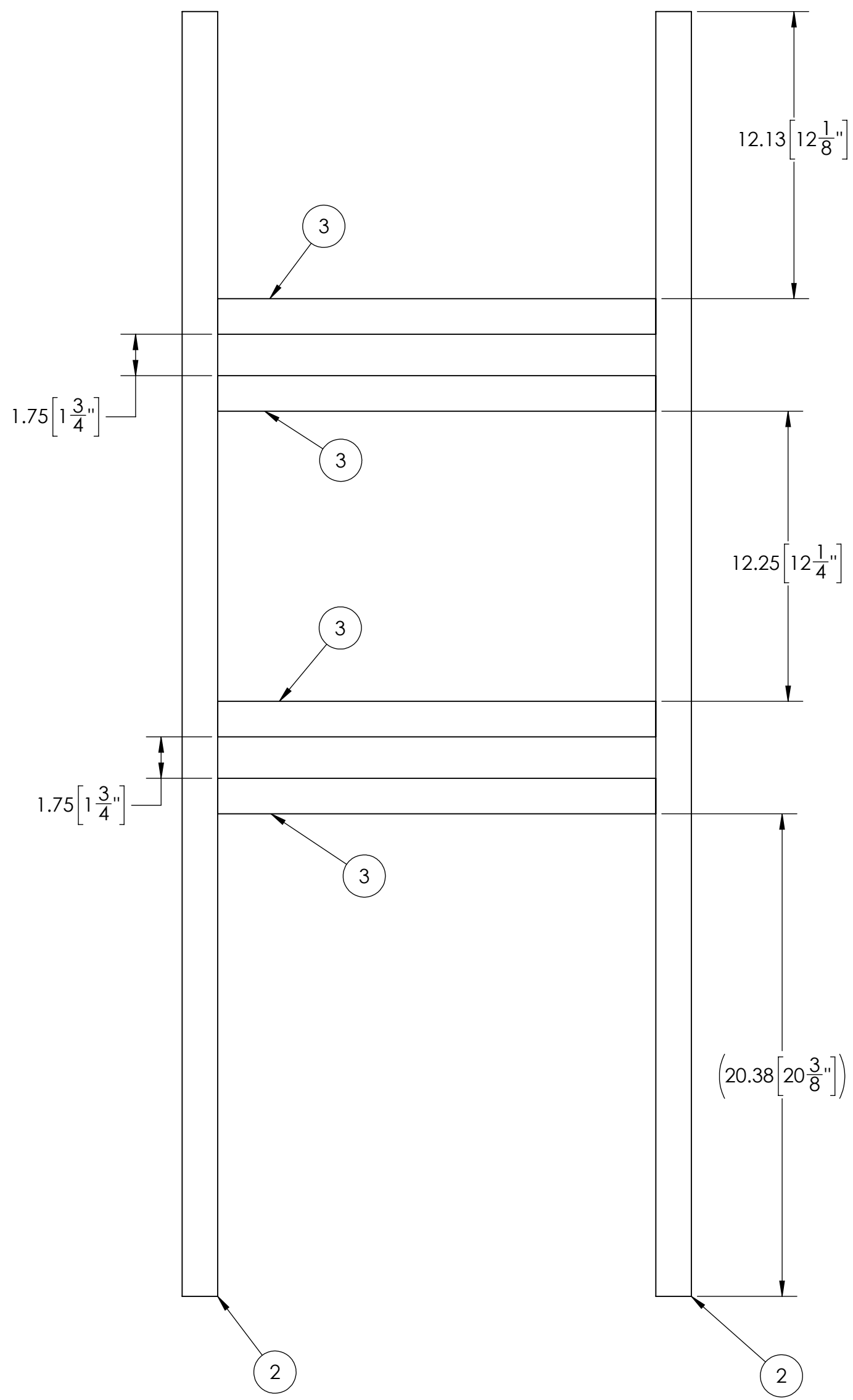


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TE-23007	Shark Fin	1
2	TE-23008	Cone Ramp Horizontal	2
3	TE-23010	Cone Ramp Crossbeams	4
4	TE-23011	Cone Ramp Vertical	2
5	TE-23012	Cone Ramp Gusset	2
6	TE-23013	Cone Ramp Diagonal Beam	2
7	TE-23015	Cone Ramp Diagonal Panel	1
8	TE-23016	Lower Pole	1
9	TE-23017	Upper Pole	1
10	CCF-RT-13-1	Pole Cap	2
11	tape_VISIONTARGET	tape_VISIONTARGET	4
12	hex_.25_20_2.5_partial	Steel Hex Head Screw, 1/4"-20 x 2-1/2" long, partially threaded	6
13	hex_.25_20_3.5_partial	Steel Hex Head Bolt, 1/4"-20 x 3.5", partially threaded	2
14	hex.25_20_5.5	Steel Hex Head Bolt, 1/4"-20 x 5.5", partially threaded	4
15	wing_.25_20	Steel Wing Nut, 1/4"-20, 31/64" Base Diameter	12
16	washer_flat_.25	Flat Washer for 1/4" Screw	24

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

UNLESS OTHERWISE SPECIFIED:		TEAM	NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$		DRAWN	JO	12/16/2022
MATERIAL/FINISH:		<b>PROPRIETARY AND CONFIDENTIAL</b>		
DO NOT SCALE DRAWING		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: <b>Middle Cone Ramp</b>		
SIZE	DWG. NO.	REV		
<b>C</b>	TE-23003			
SCALE: 1:5		SHEET 1 OF 9		



Please note orientation of all holes in (2) while assembling. The holes in the two side beams should match up.

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

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	DRAWN	JO	12/16/2022
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>		
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<b>MATERIAL/FINISH:</b>	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING	TITLE: <b>Middle Cone Ramp</b>		
	SIZE	DWG. NO.	REV
	<b>C</b>	TE-23003	
	SCALE: 1:5		SHEET 2 OF 9

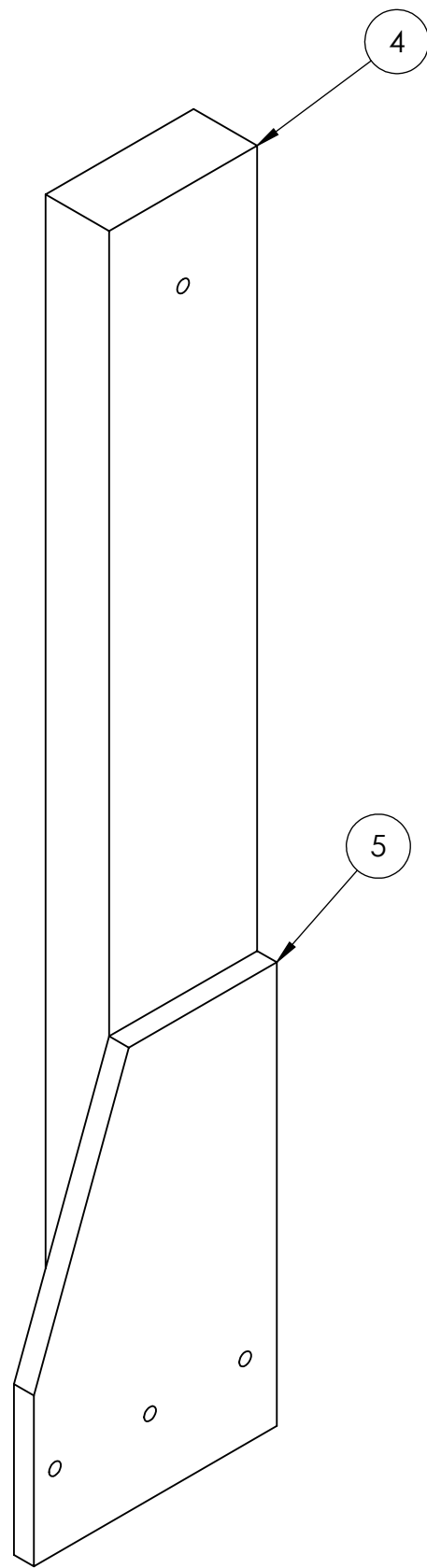


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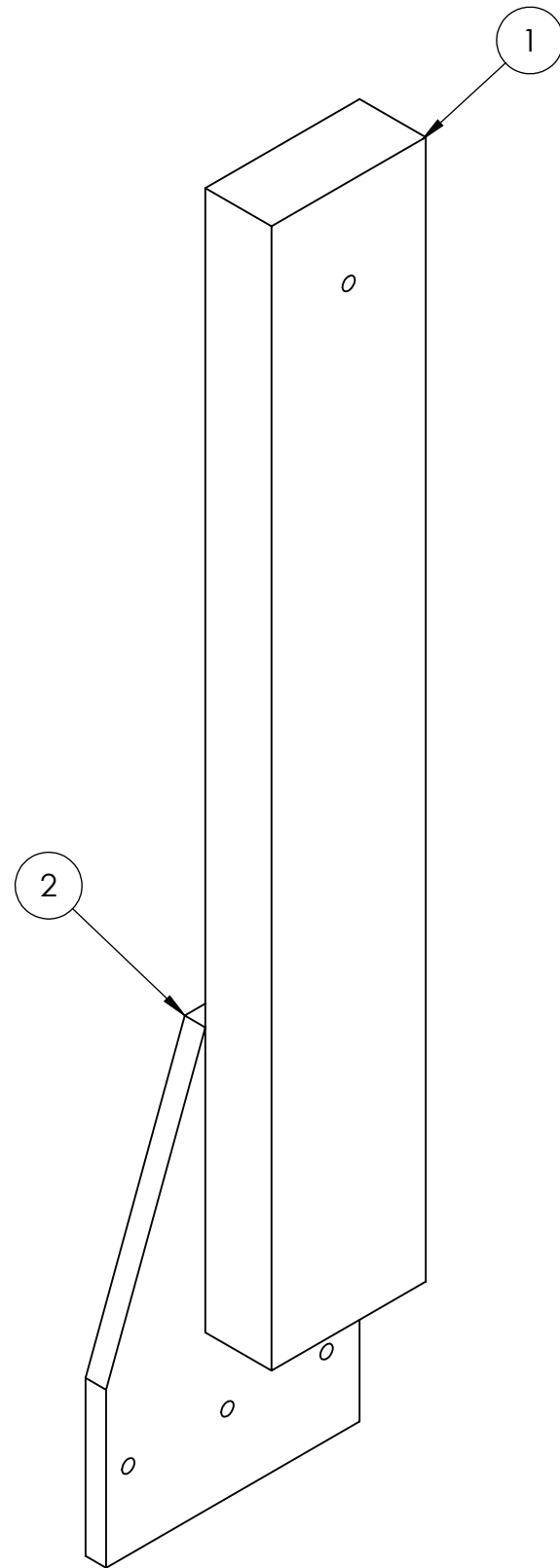
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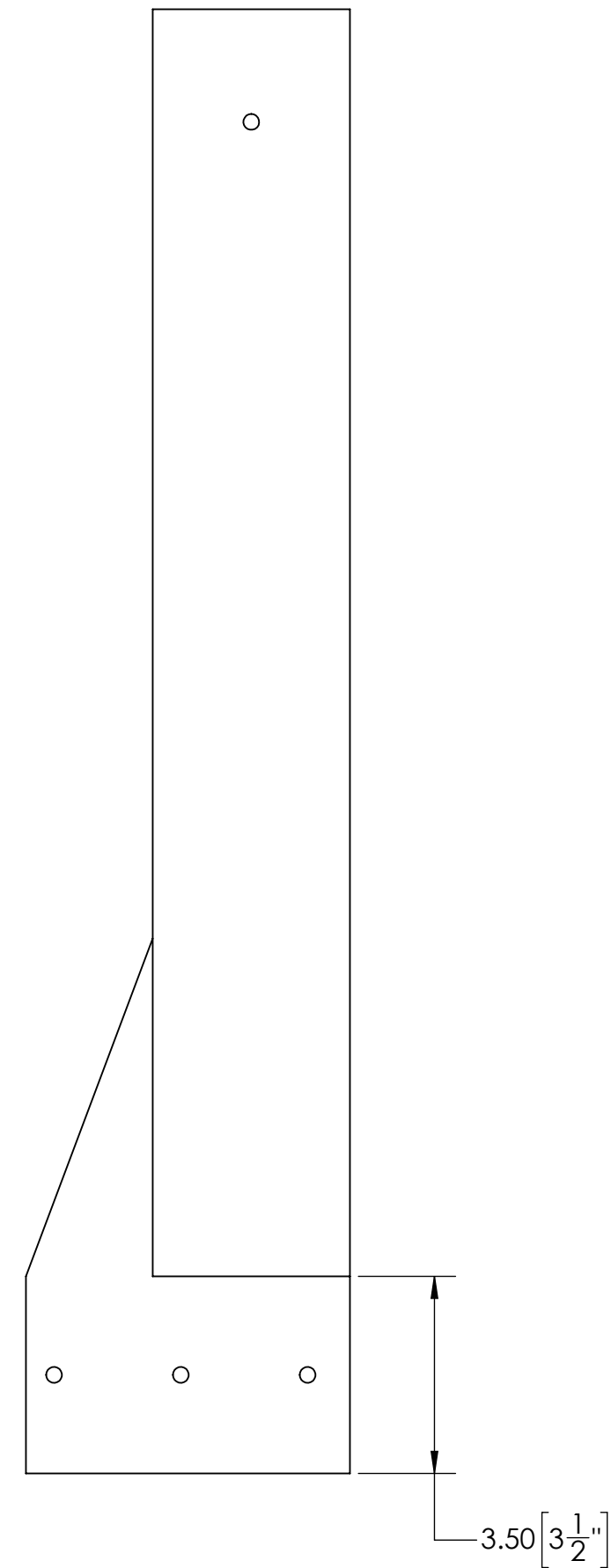
1





Left hand



Right hand



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

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	DRAWN	JO	12/16/2022		
	<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:
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.				Middle Cone Ramp
SIZE		DWG. NO.	REV		
<b>C</b>		TE-23003			
SCALE: 1:3			SHEET 3 OF 9		

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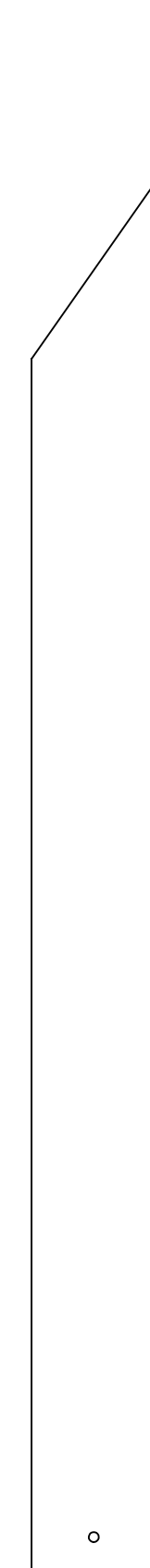
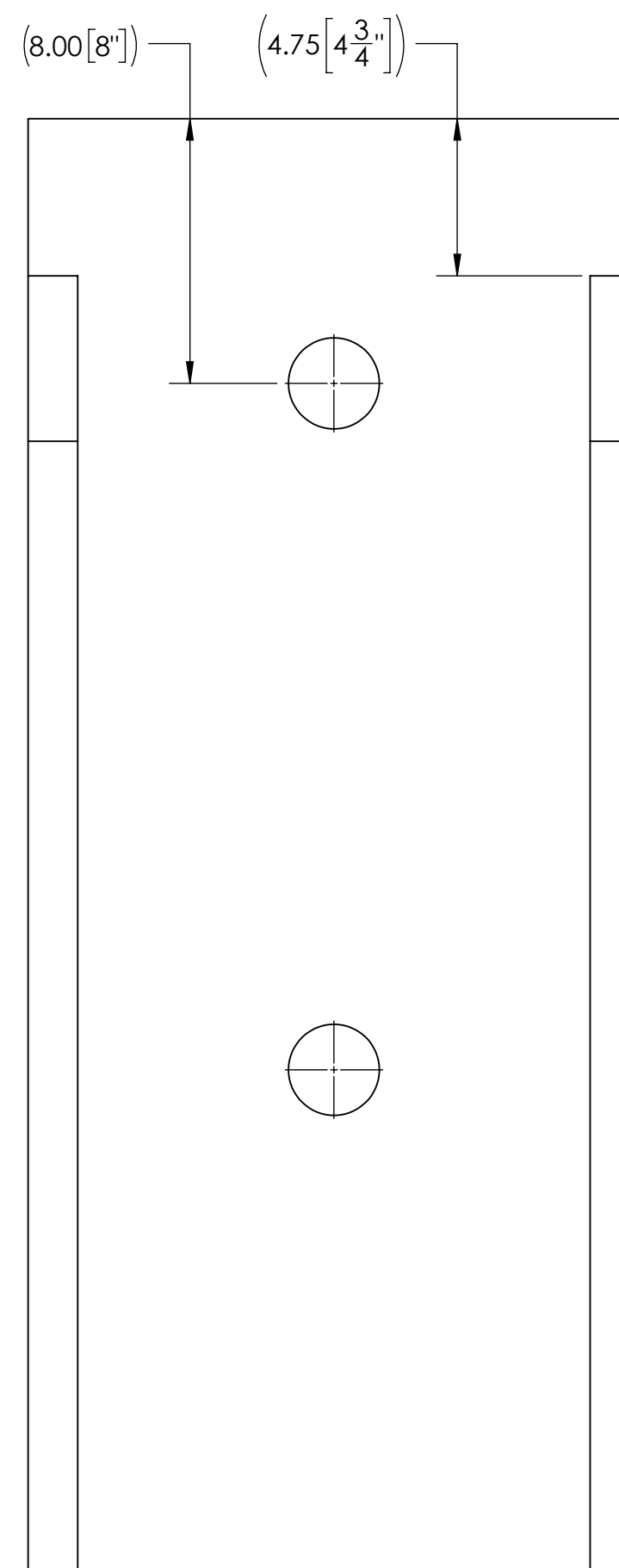
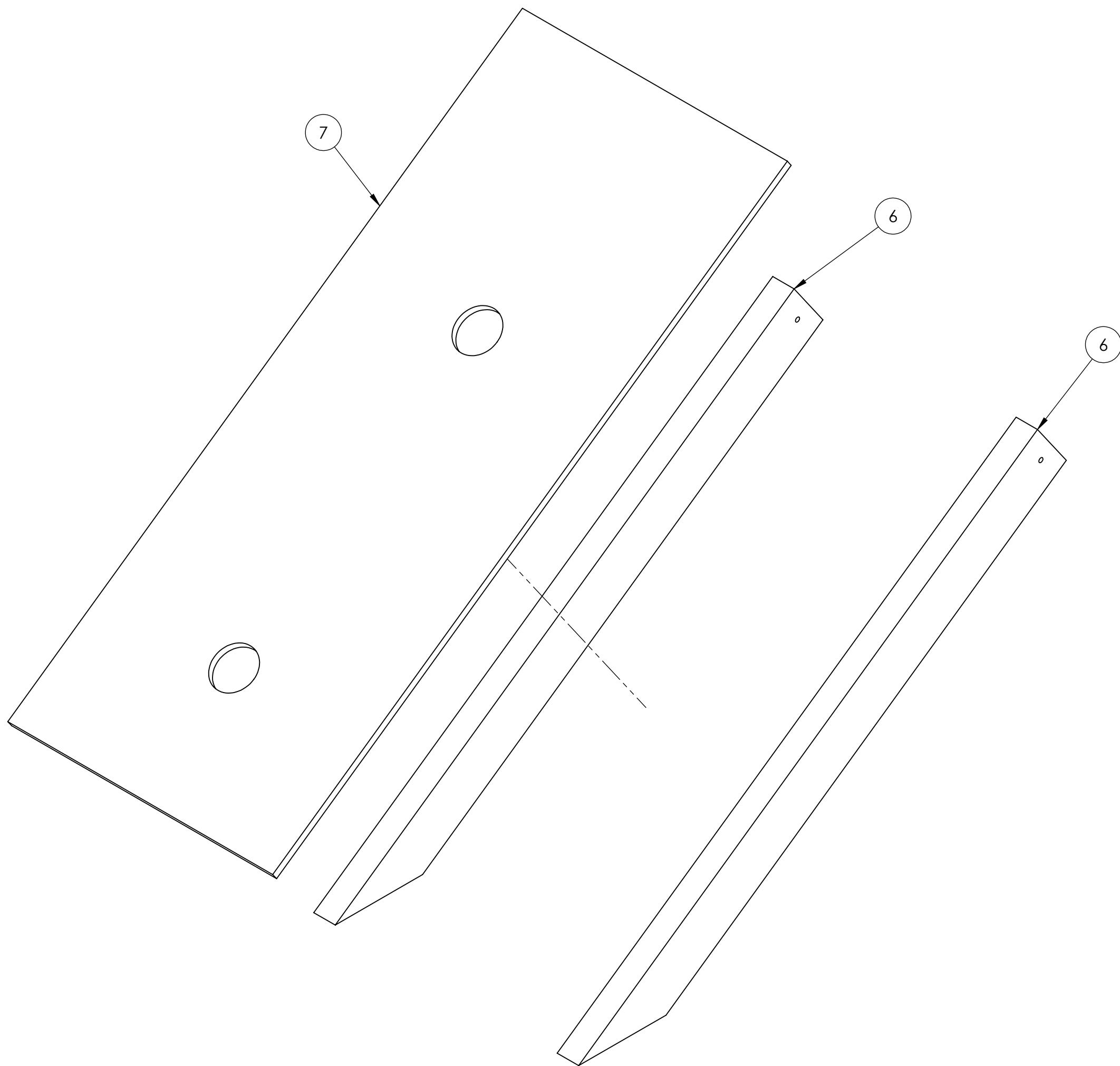
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Step 3: Assemble Cone Ramp Diagonal Assembly with #8 wood screws as shown. Note orientation of holes while assembling.

UNLESS OTHERWISE SPECIFIED:	TEAM	NAME	DATE
	DRAWN	JO	12/16/2022
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>		
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<b>MATERIAL/FINISH:</b>	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.		
DO NOT SCALE DRAWING	TITLE: Middle Cone Ramp		
	SIZE	DWG. NO.	REV
	<b>C</b>	TE-23003	
	SCALE: 1:5		SHEET 4 OF 9

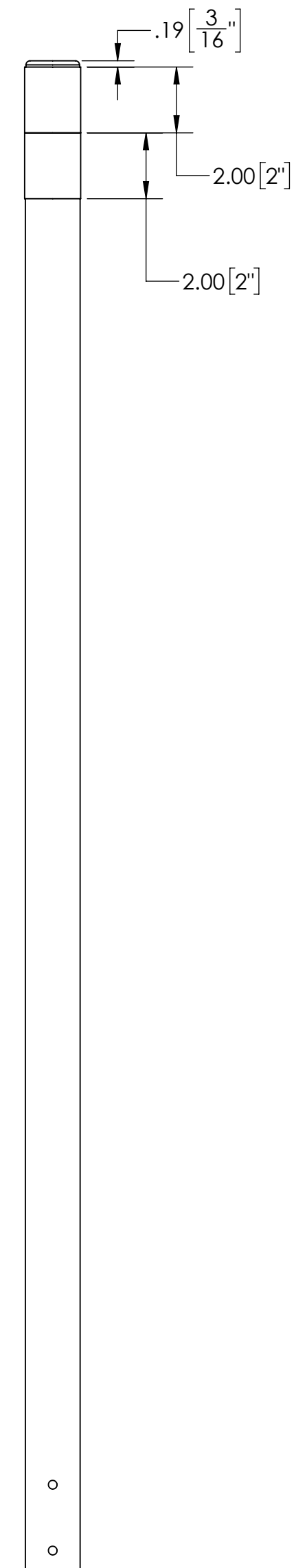
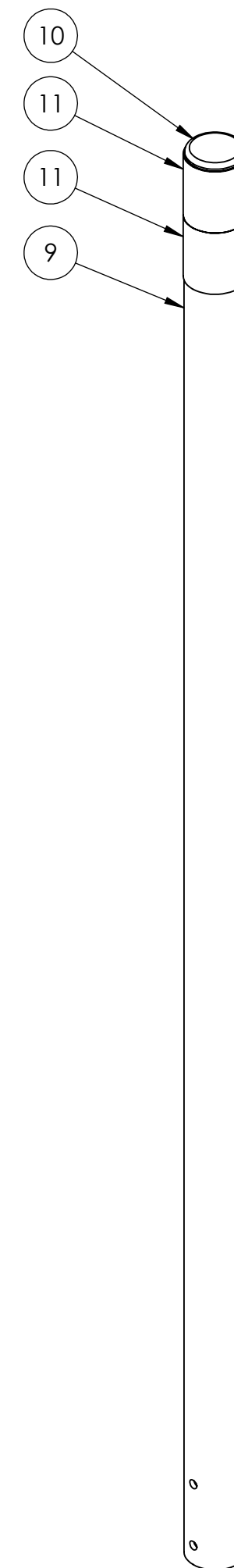
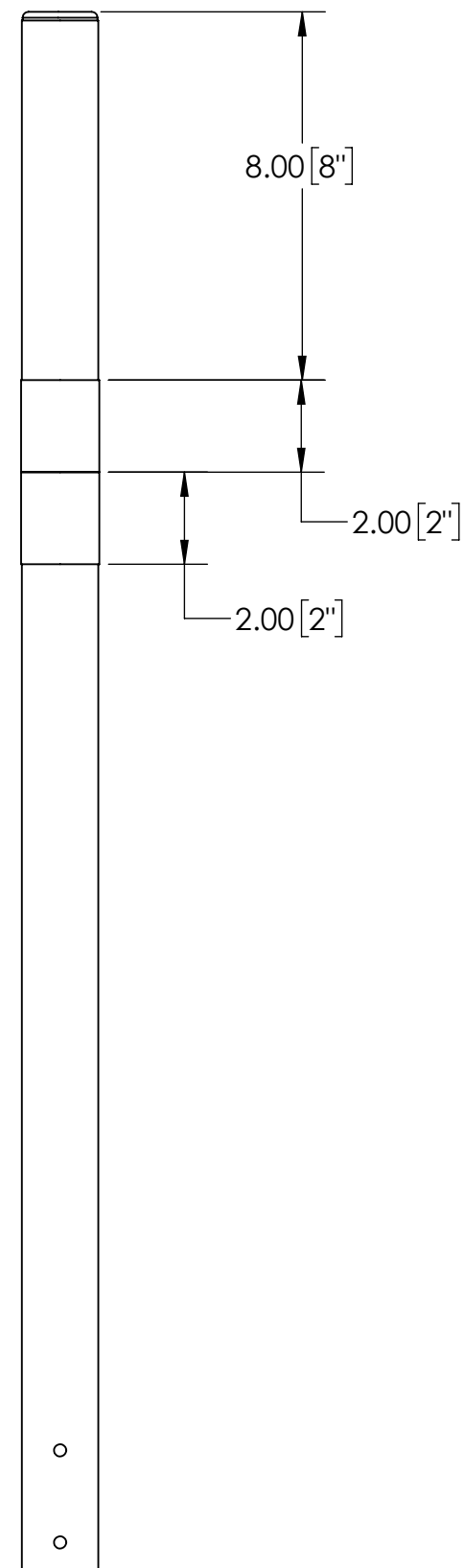
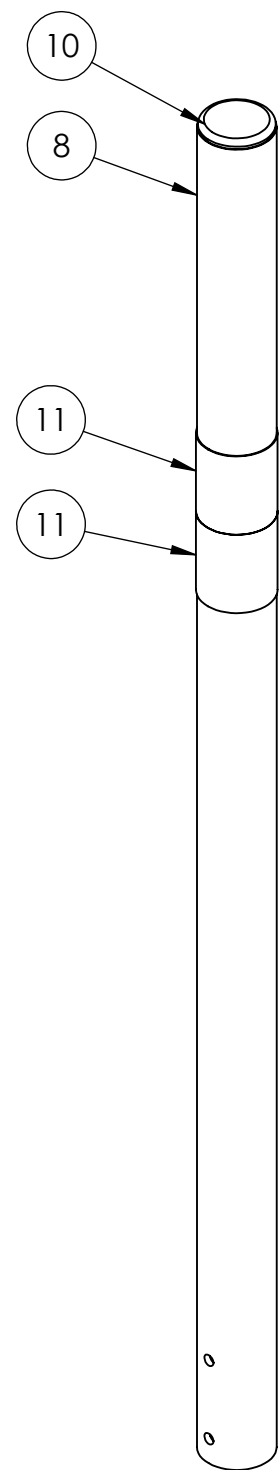


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Step 4: If making the poles yourself, install the (10) caps to the end of the pipe with no holes with an arbor press or mallet. There is a CAD file of a similar but not exact version of the cap in the shared CAD files for this assembly that can be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

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

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

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	DRAWN	JO	12/16/2022	
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				<b>Middle Cone Ramp</b>
SIZE		DWG. NO.	REV	
<b>C</b>		TE-23003		
SCALE: 1:4			SHEET 5 OF 9	

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

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

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

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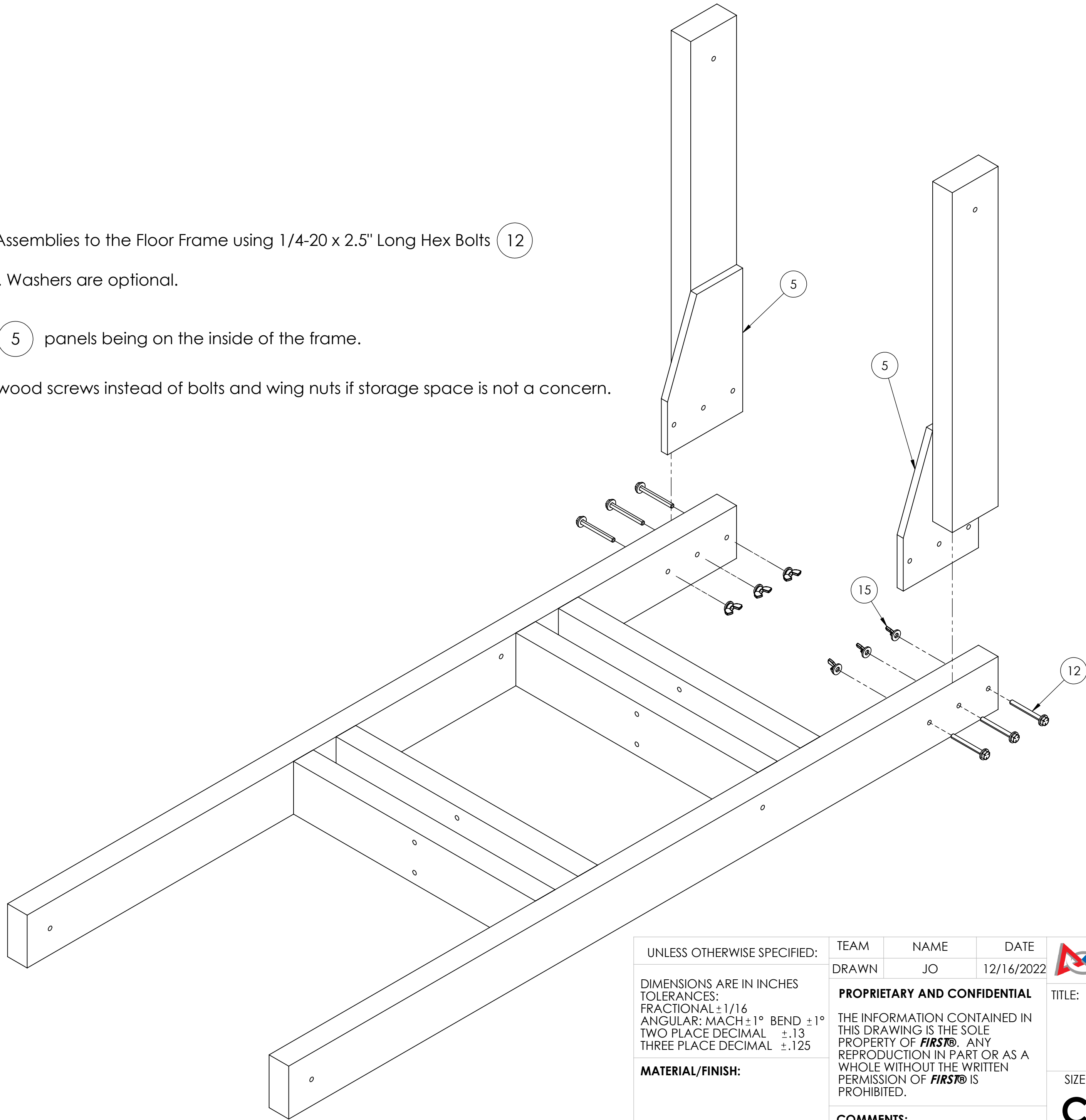
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UNLESS OTHERWISE SPECIFIED:  DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$  <b>MATERIAL/FINISH:</b>   DO NOT SCALE DRAWING	TEAM	NAME	DATE	 	
	DRAWN	JO	12/16/2022		
	<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:	<b>Middle Cone Ramp</b>
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			SIZE: <b>C</b>	
SCALE: 1:4		SHEET 6 OF 9			

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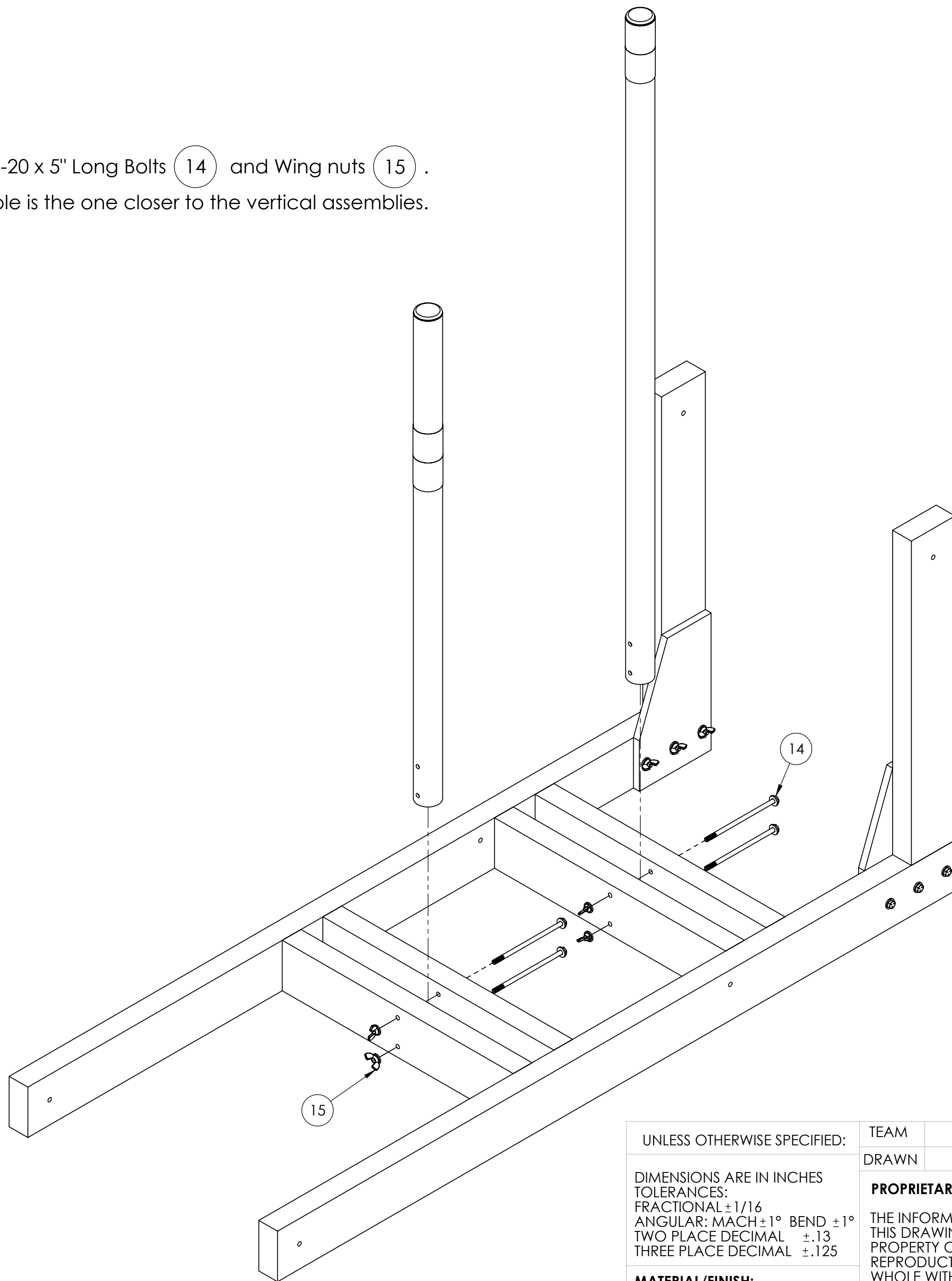
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Step 6: Install Poles into assembly using 1/4-20 x 5" Long Bolts (14) and Wing nuts (15). Washers are optional. Note that the tall pole is the one closer to the vertical assemblies.



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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	JO	12/16/2022
<b>MATERIAL/FINISH:</b>	<b>PROPRIETARY AND CONFIDENTIAL</b>		
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DO NOT SCALE DRAWING	<b>COMMENTS:</b>		
	REMOVE ALL BURRS AND SHARP EDGES.		



TITLE: <b>Middle Cone Ramp</b>		
SIZE	DWG. NO.	REV
<b>C</b>	<b>TE-23003</b>	
SCALE: 1:5		SHEET 7 OF 9

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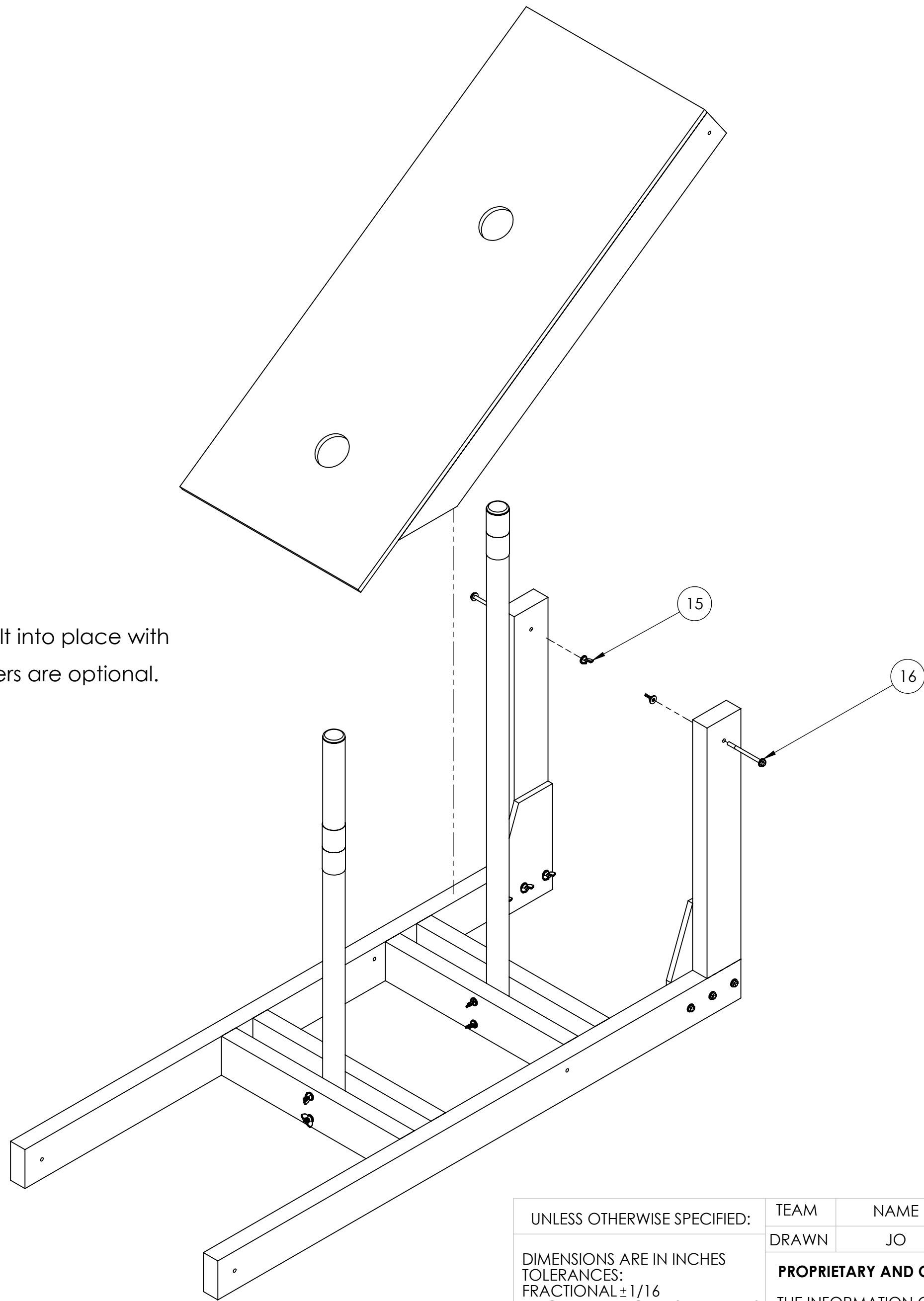
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Step 7: Install Diagonal Assembly over the poles, and bolt into place with 1/4-20 x 3.5" Long Bolts (16) and wing nuts (15). Washers are optional.

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	DRAWN	JO	12/16/2022	
	<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:
	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			<b>Middle Cone Ramp</b>
SIZE		DWG. NO.	REV	
<b>C</b>		TE-23003		
SCALE: 1:7		SHEET 8 OF 9		

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

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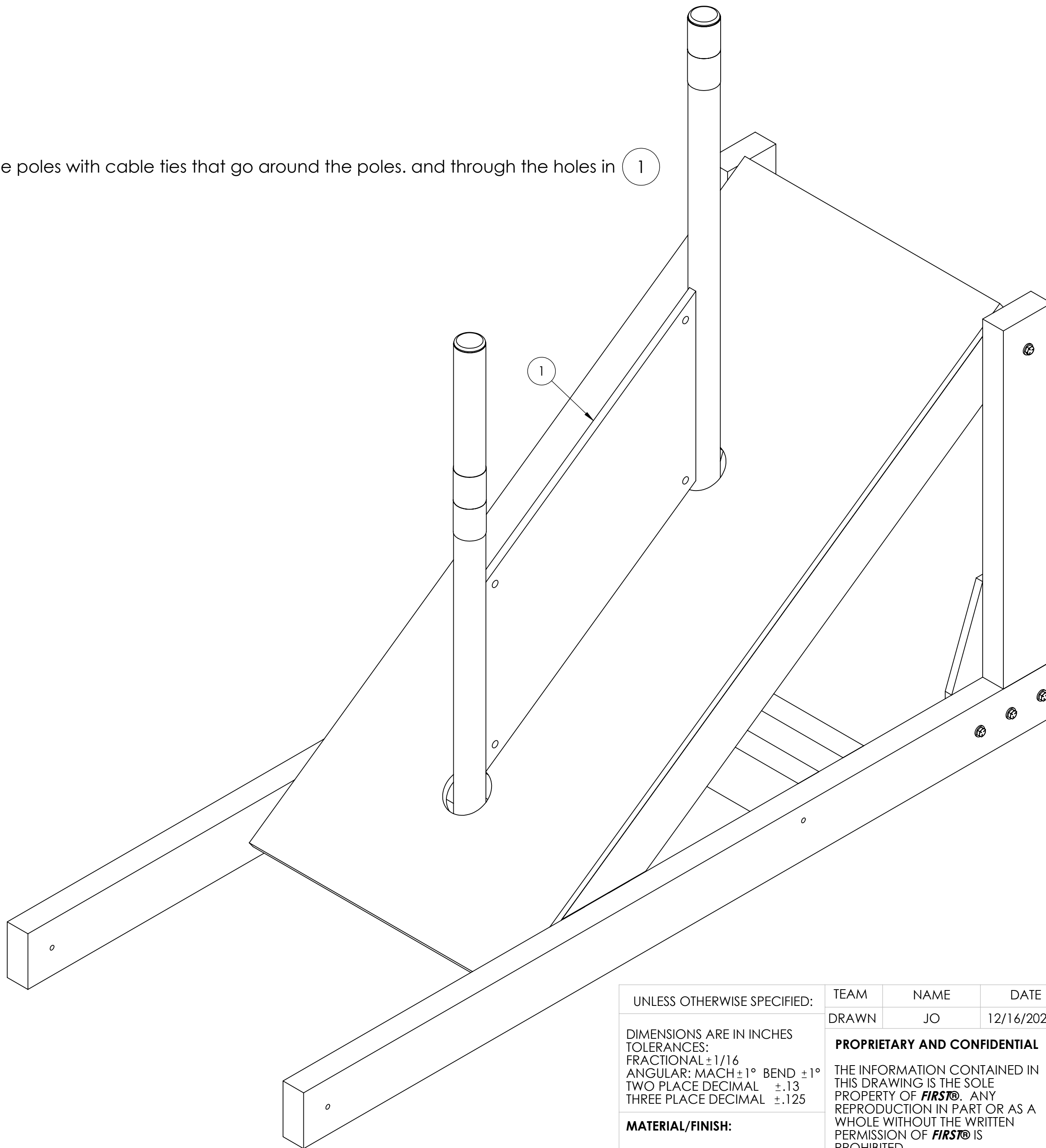
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UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.13 THREE PLACE DECIMAL ±.125	TEAM	NAME	DATE
	DRAWN	JO	12/16/2022
<b>MATERIAL/FINISH:</b>	<b>PROPRIETARY AND CONFIDENTIAL</b>		
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DO NOT SCALE DRAWING	<b>COMMENTS:</b>		
	REMOVE ALL BURRS AND SHARP EDGES.		



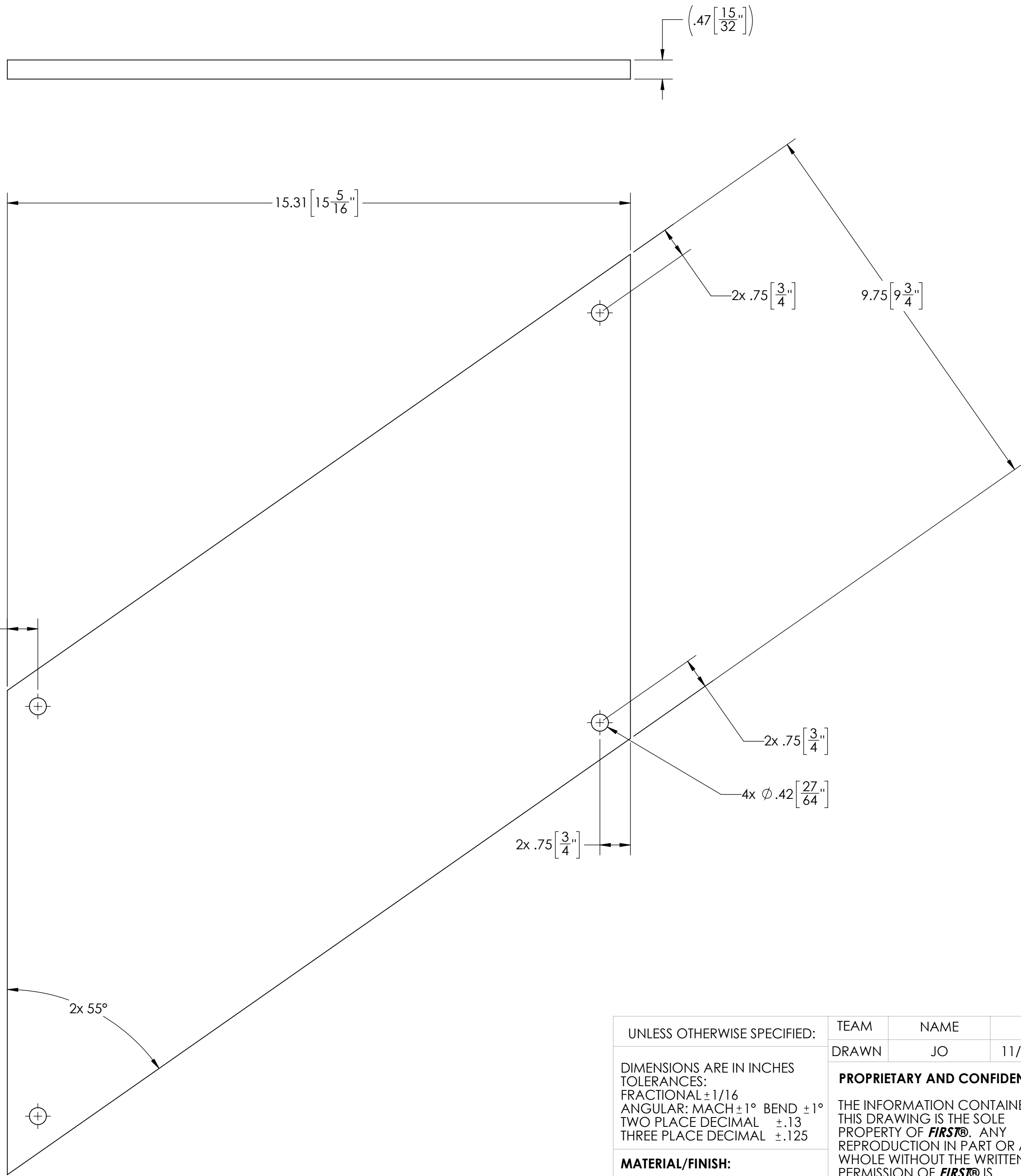
TITLE: <b>Middle Cone Ramp</b>		
SIZE	DWG. NO.	REV
<b>C</b>	<b>TE-23003</b>	
SCALE: 1:4		SHEET 9 OF 9

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UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES  
 TOLERANCES:  
 FRACTIONAL ± 1/16  
 ANGULAR: MACH ± 1° BEND ± 1°  
 TWO PLACE DECIMAL ± .13  
 THREE PLACE DECIMAL ± .125

**MATERIAL/FINISH:**  
 1/2" Plywood

DO NOT SCALE DRAWING

TEAM	NAME	DATE
DRAWN	JO	11/7/2022

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**COMMENTS:**  
 REMOVE ALL BURRS AND SHARP EDGES.



TITLE:  
**Shark Fin**

SIZE	DWG. NO.	REV
<b>C</b>	TE-23007	

SCALE: 1:2 SHEET 1 OF 1

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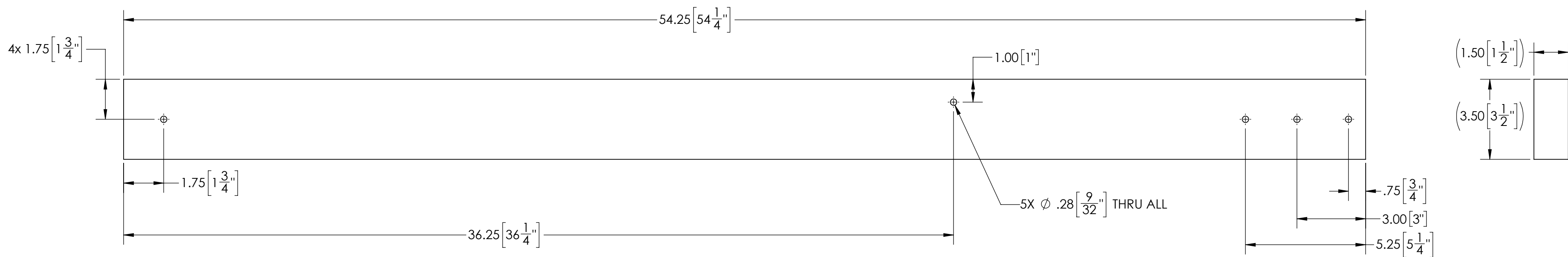
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	DRAWN	JO	11/7/2022	
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				<b>Cone Ramp Horizontal</b>
SIZE		DWG. NO.	REV	
<b>C</b>		TE-23008		
SCALE: 3:10			SHEET 1 OF 1	

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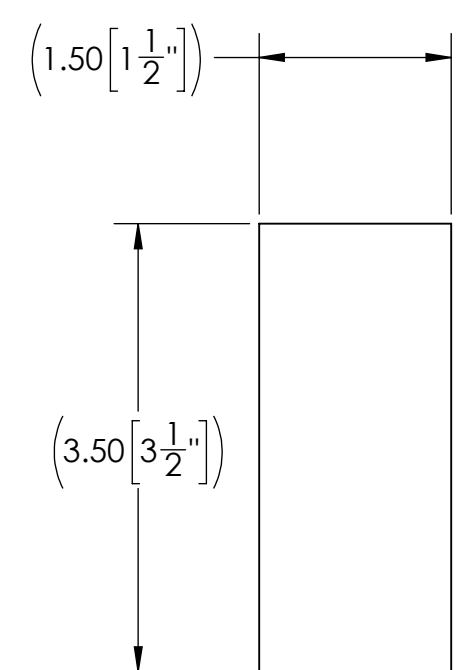
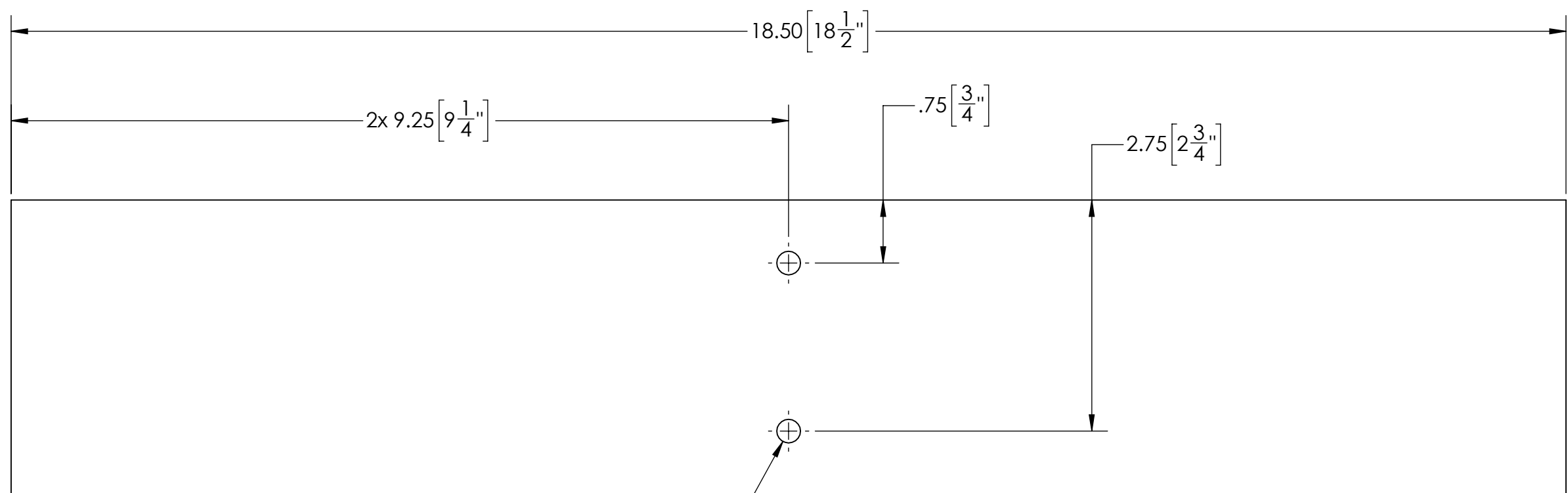
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2X Ø .28 [9/32" ] THRU ALL

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	DRAWN	JO	11/7/2022		
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	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			SIZE: <b>C</b>	
DWG. NO.		REV		SCALE: 2:3	SHEET 1 OF 1
TE-23010					

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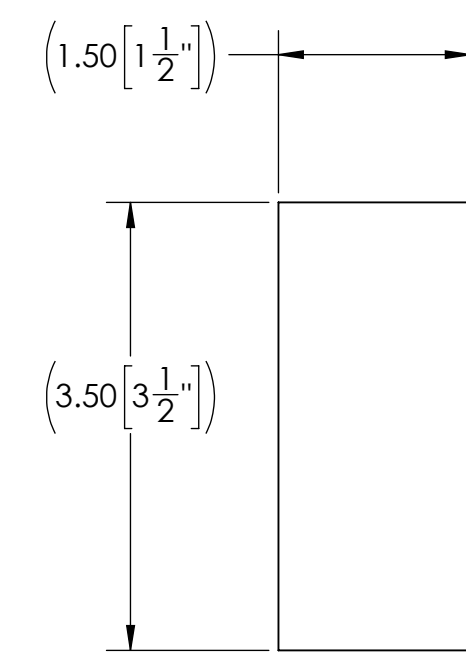
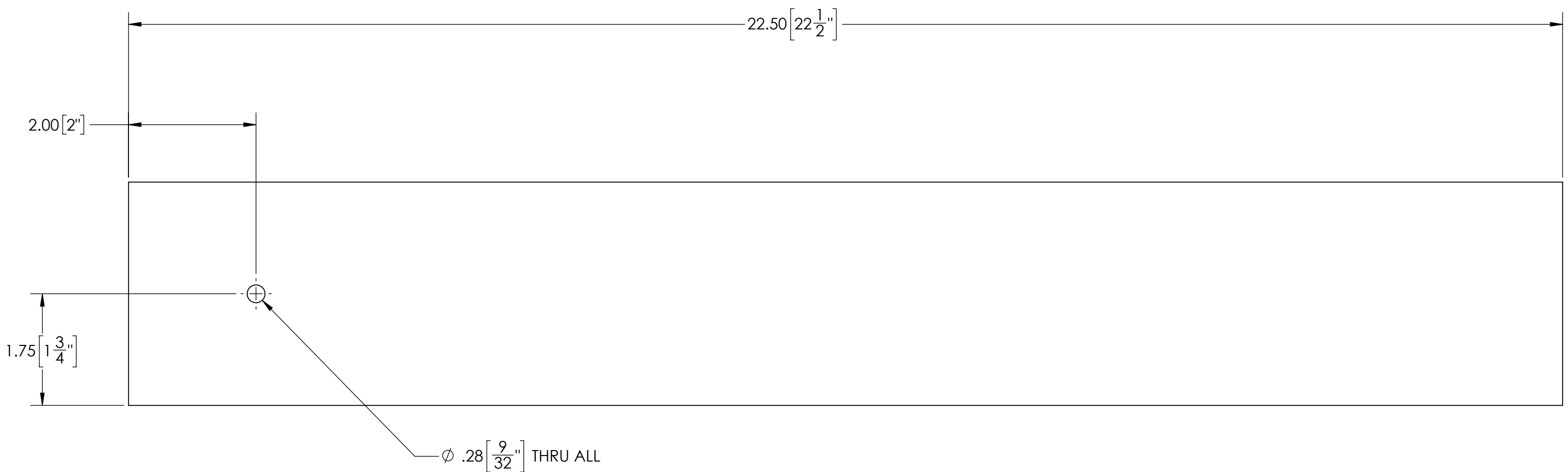
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UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .13$ THREE PLACE DECIMAL $\pm .125$	TEAM	NAME	DATE							
	DRAWN	JO	11/7/2022							
<b>MATERIAL/FINISH:</b> 2" x 4" Lumber	<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: <b>Cone Ramp Vertical</b>						
DO NOT SCALE DRAWING	<b>COMMENTS:</b> REMOVE ALL BURRS AND SHARP EDGES.			<table border="1"> <tr> <td>SIZE</td> <td>DWG. NO.</td> <td>REV</td> </tr> <tr> <td><b>C</b></td> <td>TE-23011</td> <td></td> </tr> </table>	SIZE	DWG. NO.	REV	<b>C</b>	TE-23011	
	SIZE	DWG. NO.	REV							
<b>C</b>	TE-23011									
SCALE: 2:3			SHEET 1 OF 1							

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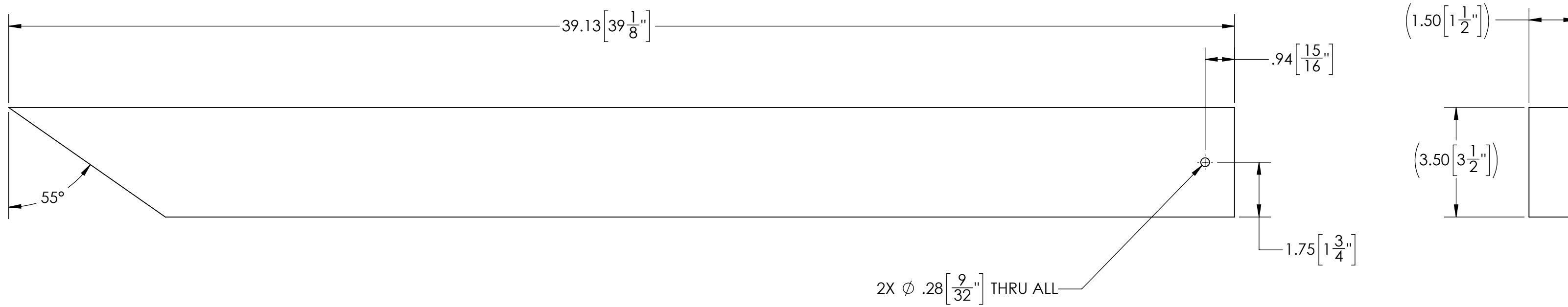
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	DRAWN	JO	11/7/2022	
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				<b>Cone Ramp Diagonal Beam</b>
SIZE		DWG. NO.	REV	
<b>C</b>		TE-23013		
SCALE: 1:3			SHEET 1 OF 1	

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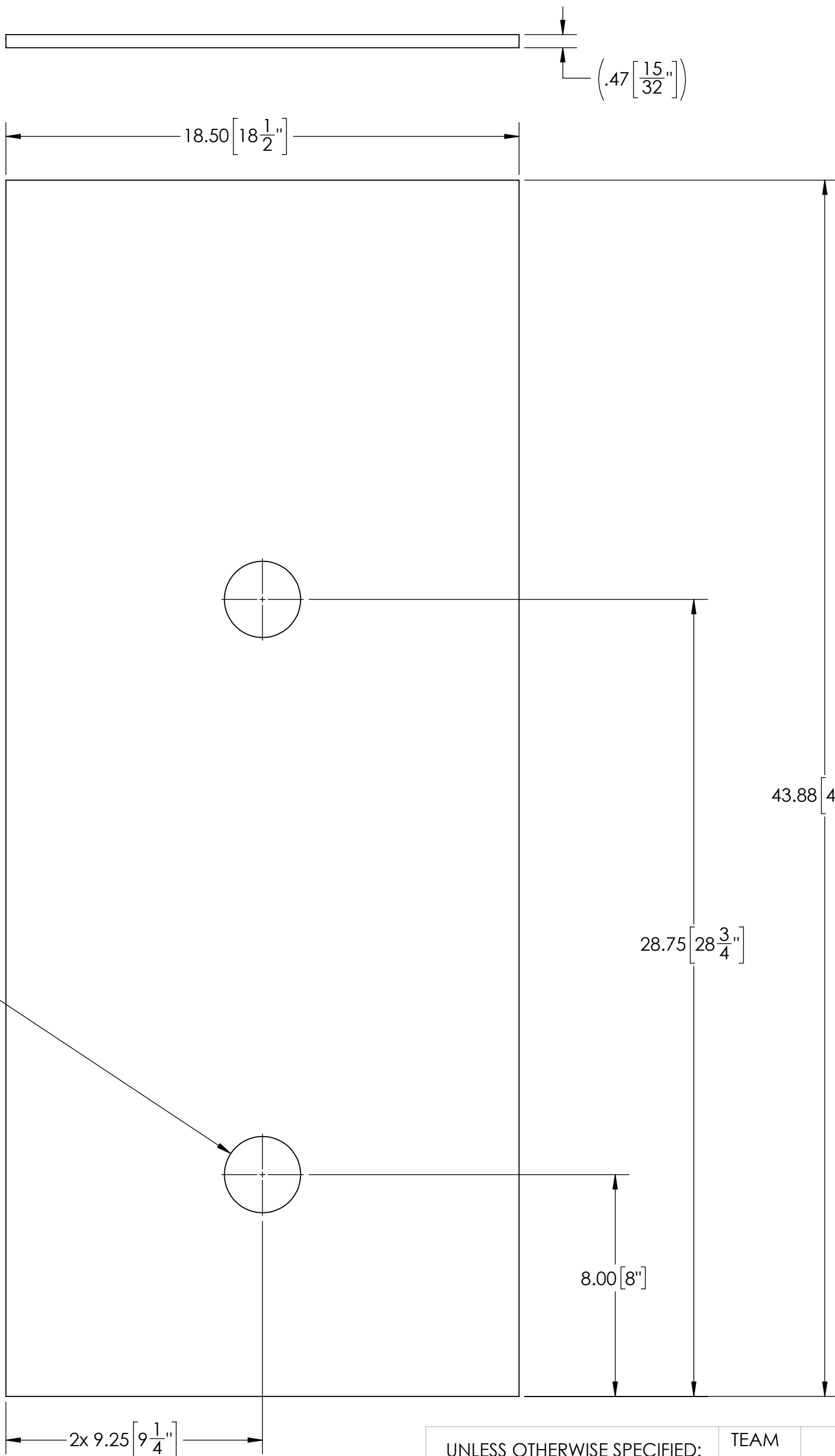
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2X Ø 2.75 [2 3/4]" THRU ALL

18.50 [18 1/2]"

(.47 [15/32]"

43.88 [43 7/8]"

28.75 [28 3/4]"

8.00 [8]"

2x 9.25 [9 1/4]"

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> 1/2" Plywood  DO NOT SCALE DRAWING	TEAM	NAME	DATE
	DRAWN	JO	11/7/2022
	<b>PROPRIETARY AND CONFIDENTIAL</b>		
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<b>COMMENTS:</b>			
REMOVE ALL BURRS AND SHARP EDGES.			



TITLE:		
Cone Ramp Diagonal Panel		
SIZE	DWG. NO.	REV
<b>C</b>	TE-23015	
SCALE: 1:4		SHEET 1 OF 1

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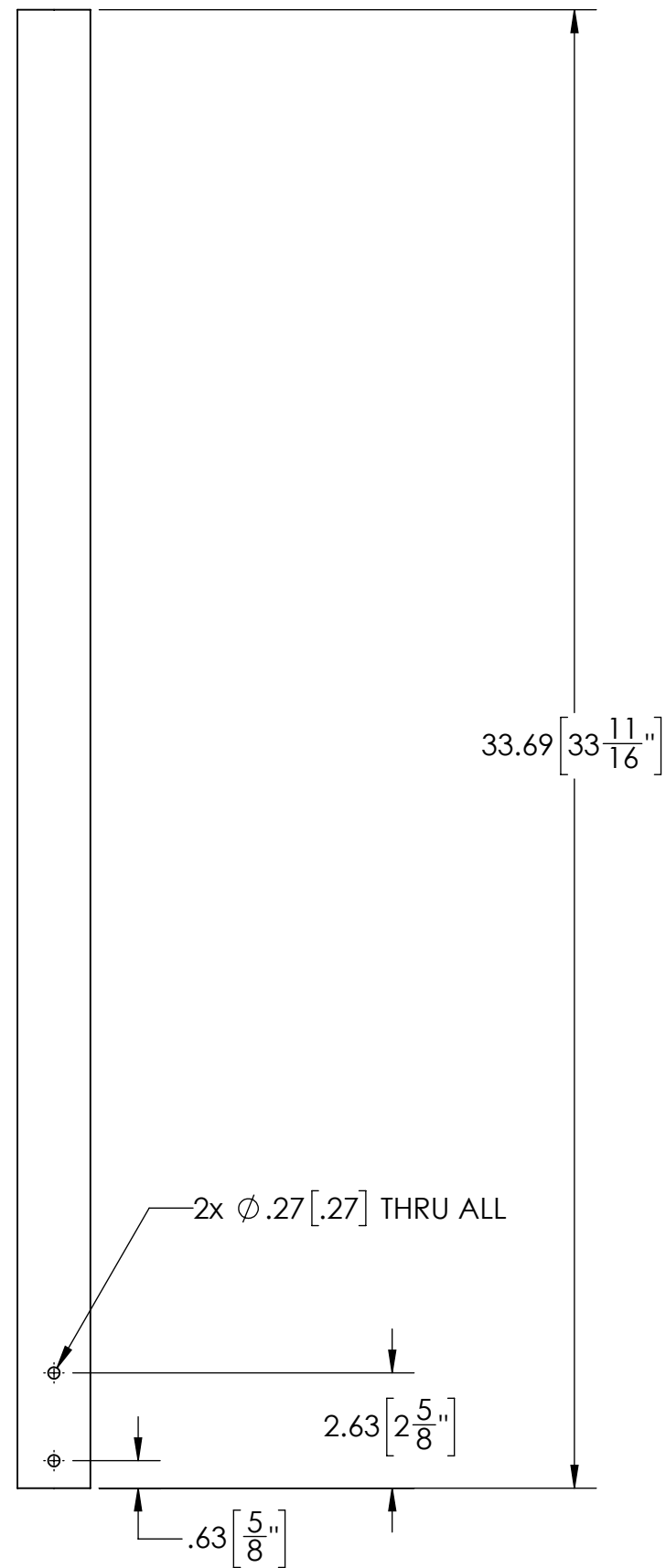
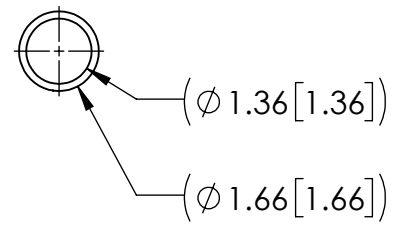


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UNLESS OTHERWISE SPECIFIED:

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:**  
 1.25" SCH40 AL Tube

DO NOT SCALE DRAWING

TEAM	NAME	DATE
DRAWN	JO	12/21/2022

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**COMMENTS:**  
 REMOVE ALL BURRS AND SHARP EDGES.



TITLE:  
**Lower Pole**

SIZE	DWG. NO.	REV
<b>C</b>	TE-23016	

SCALE: 1:4      SHEET 1 OF 1

D

D

C

C

B

B

A

A

4

3

2

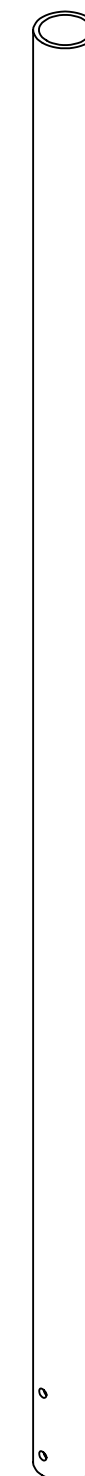
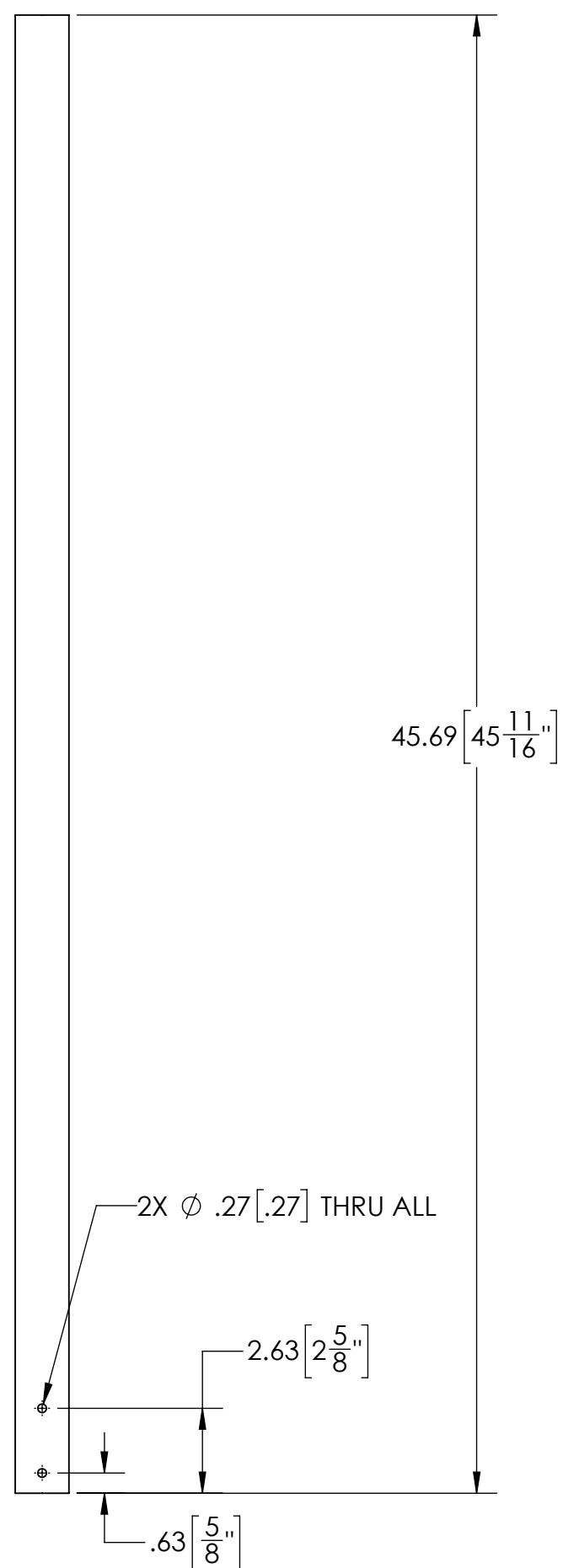
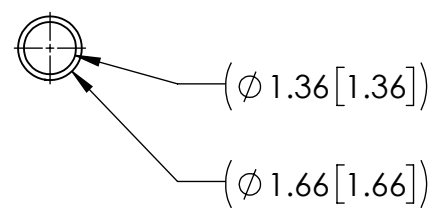
1

4

3

2

1



UNLESS OTHERWISE SPECIFIED:

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

**MATERIAL/FINISH:**  
 1.25" SCH40 Aluminum  
 Tube

DO NOT SCALE DRAWING

TEAM	NAME	DATE
DRAWN	JO	12/21/2022

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**COMMENTS:**  
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TITLE:  
**Upper Pole**

SIZE	DWG. NO.	REV
<b>C</b>	TE-23017	

SCALE: 1:5 SHEET 1 OF 1

D

D

C

C

B

B

A

A

4

3

2

1