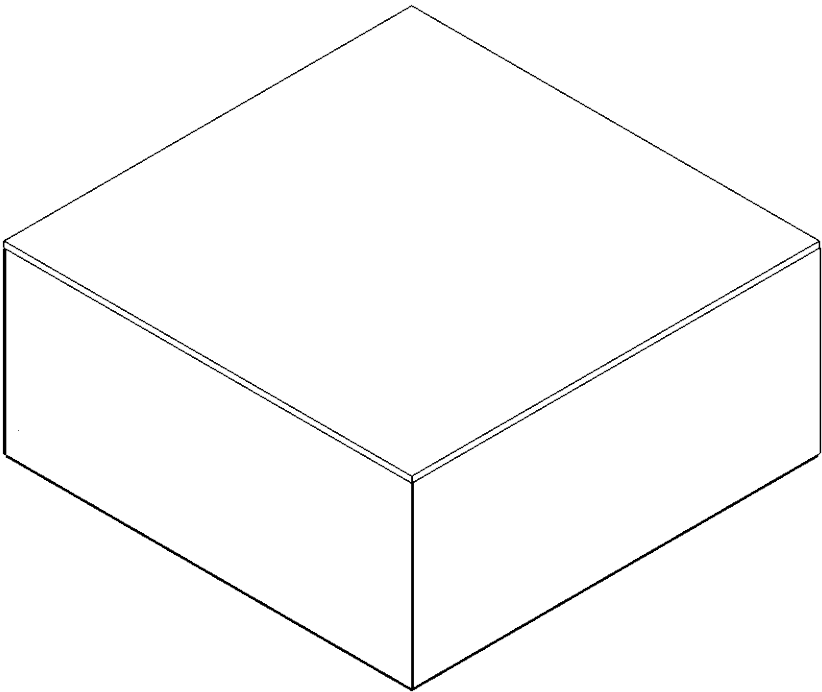


2

1

ITEM NO.	PART NUMBER	QTY.
1	TE-19102-01	4
2	TE-19102-02	5
3	TE-19102-03	8
4	TE-19102-04	1
5	TE-19102-05	3
6	TE-19102-06	4





Material	QTY
23/32" (3/4") A/C or CDX Plywood	0.5 sheet
1/8" Hardboard	0.75 sheet
2"x 4"x 8'	8
1.25" wood screws	~40
2.5" wood screws	~60

B

B

A

A

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 	
		DIMENSIONS ARE IN INCHES	DRAWN				TITLE:
		TOLERANCES:	CHECKED				2"x 4" Hab lvl 3
		FRACTIONAL $\pm 1/16$	ENG APPR.				
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.				
		TWO PLACE DECIMAL $\pm .01$	Q.A.				
		THREE PLACE DECIMAL $\pm .001$	COMMENTS:				
		INTERPRET GEOMETRIC TOLERANCING PER:					
		MATERIAL					SIZE DWG. NO. REV
		FINISH					A TE-19102
	NEXT ASSY	USED ON					SCALE: 1:16 WEIGHT: SHEET 1 OF 5
	APPLICATION		DO NOT SCALE DRAWING				

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.

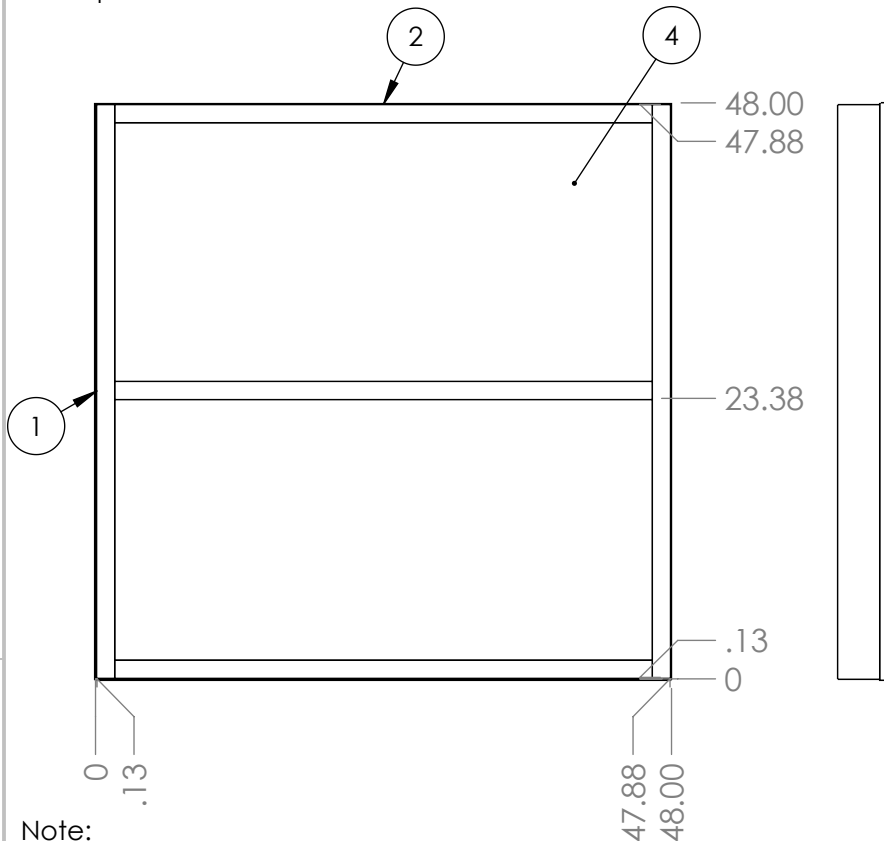
2

1

2

1

Step 1:



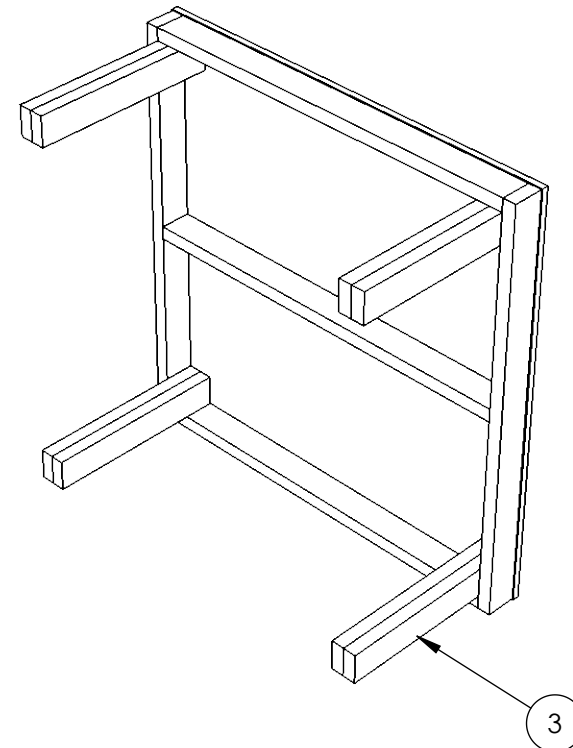
Note:

Attach (1) and (2) with 2.5" screws

Attach (1), (2), and (4) with 1.25" screws

Pre drill if needed

Step 2:



Note:

Assemble Item (3) QTY 2 together with 2.5" screws

Attach with 2.5" screws to rest of assembly

B

A

A

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



**FIRST
ROBOTICS
COMPETITION**



TITLE:

2"x 4" Hab Ivl 3

SIZE	DWG. NO.	REV
A	TE-19102	
SCALE: 1:16		WEIGHT:
		SHEET 2 OF 5

2

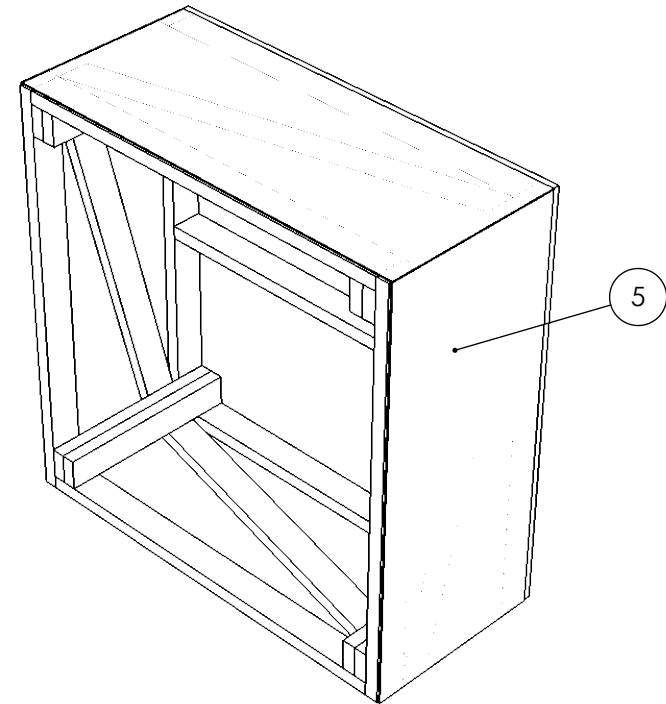
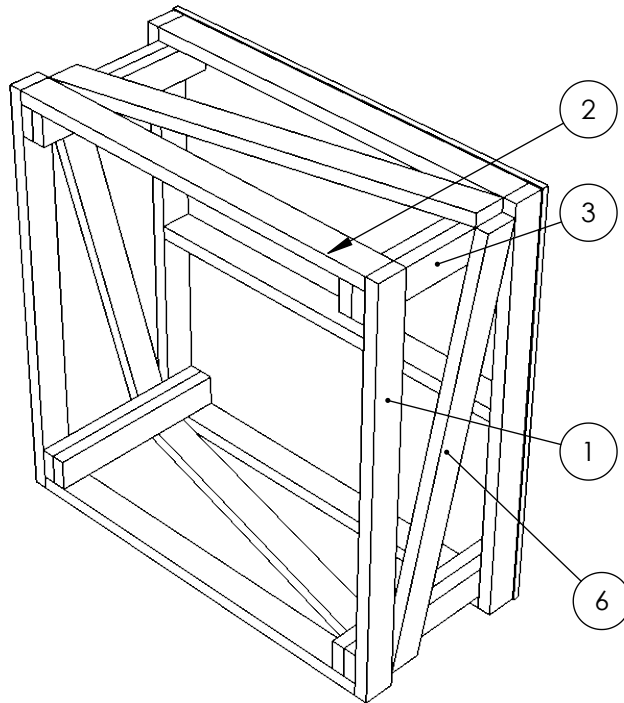
1

2

1

Step 3:

Step 4





Note:

Assemble Item 2 and 1 to the bottom of 3 with 2.5" screws

Assemble Item 6 to assembly using 2.5" screws as shown

Add item 5 sides with 1.25" screws

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.

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$		NAME	DATE	 
			DRAWN			
			CHECKED			
			ENG APPR.			
			MFG APPR.			
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.			TITLE: 2"x 4" Hab Ivl 3
		MATERIAL	COMMENTS:			
		FINISH				SIZE A DWG. NO. TE-19102 REV
NEXT ASSY	USED ON					SCALE: 1:16 WEIGHT: SHEET 3 OF 5
APPLICATION		DO NOT SCALE DRAWING				

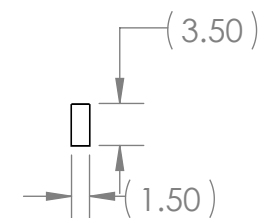
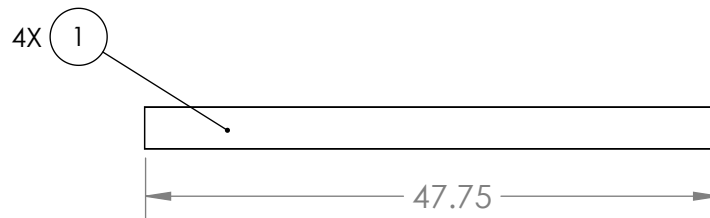
2

1

2

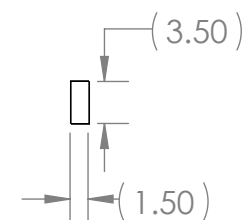
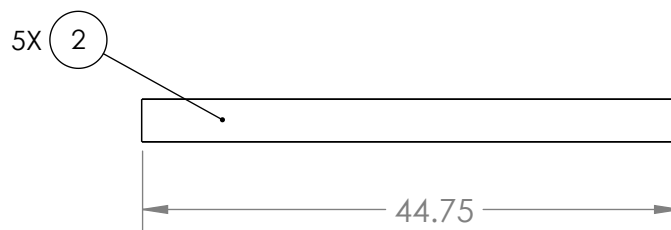
1

TE-19102-01



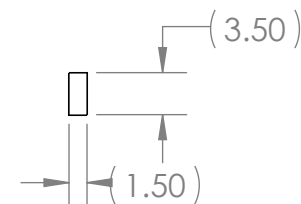
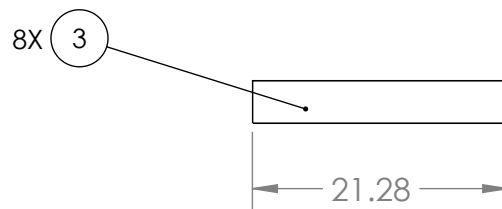
Note:
2 x 4 Pine Lumber

TE-19102-02



Note:
2 x 4 Pine Lumber

TE-19102-03



Note:
2 x 4 Pine Lumber

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS
DRAWING IS THE SOLE PROPERTY OF
FIRST®. Any REPRODUCTION IN PART
OR AS A WHOLE WITHOUT THE WRITTEN
PERMISSION OF **FIRST®** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL: $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC
		TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

2"x 4" Hab lvl 3

SIZE	DWG. NO.	REV
A	TE-19102	
SCALE: 1:16		WEIGHT:
		SHEET 4 OF 5

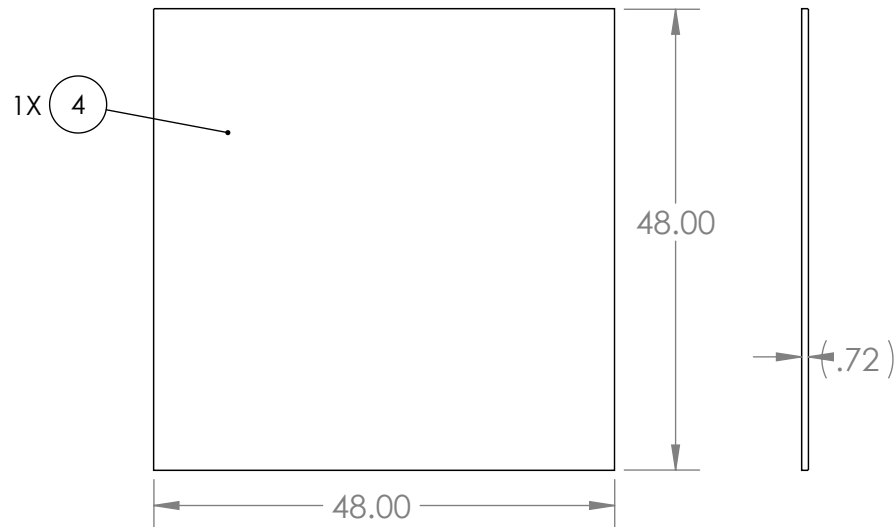
2

1

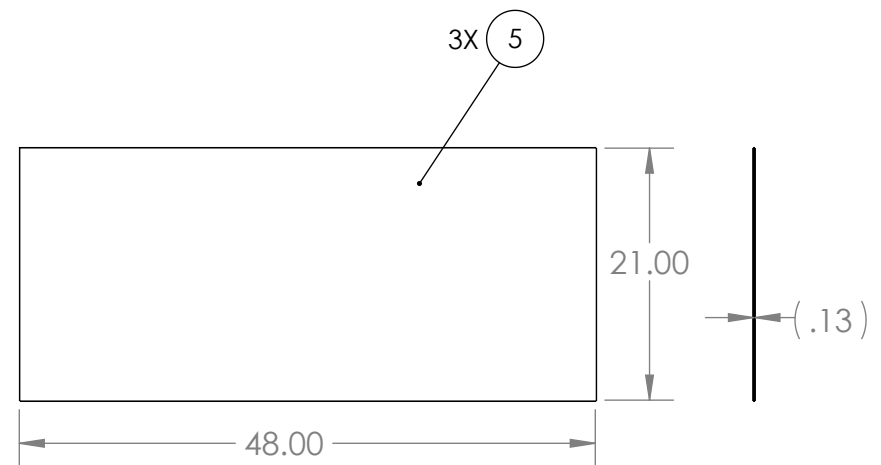
2

1

TE-19102-04



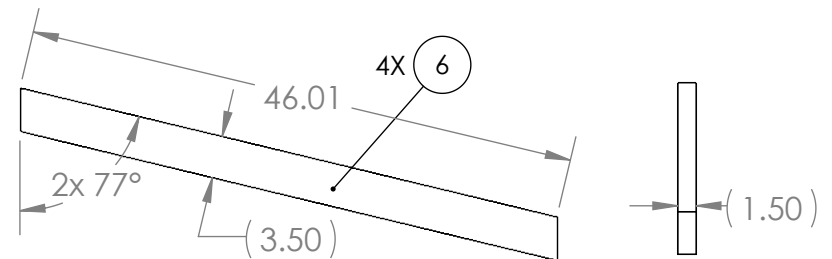
TE-19102-05



Note:
A/C or CDX 23/32" Plywood

Note:
1/8" Hardboard

TE-19102-06



Note:
2"x 4" Lumber Pine

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

2"x 4" Hab lvl 3

SIZE

A

DWG. NO.

TE-19102

REV

SCALE: 1:16

WEIGHT:

SHEET 5 OF 5

2

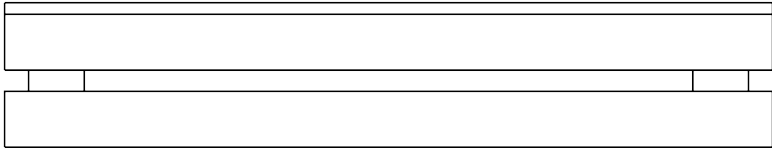
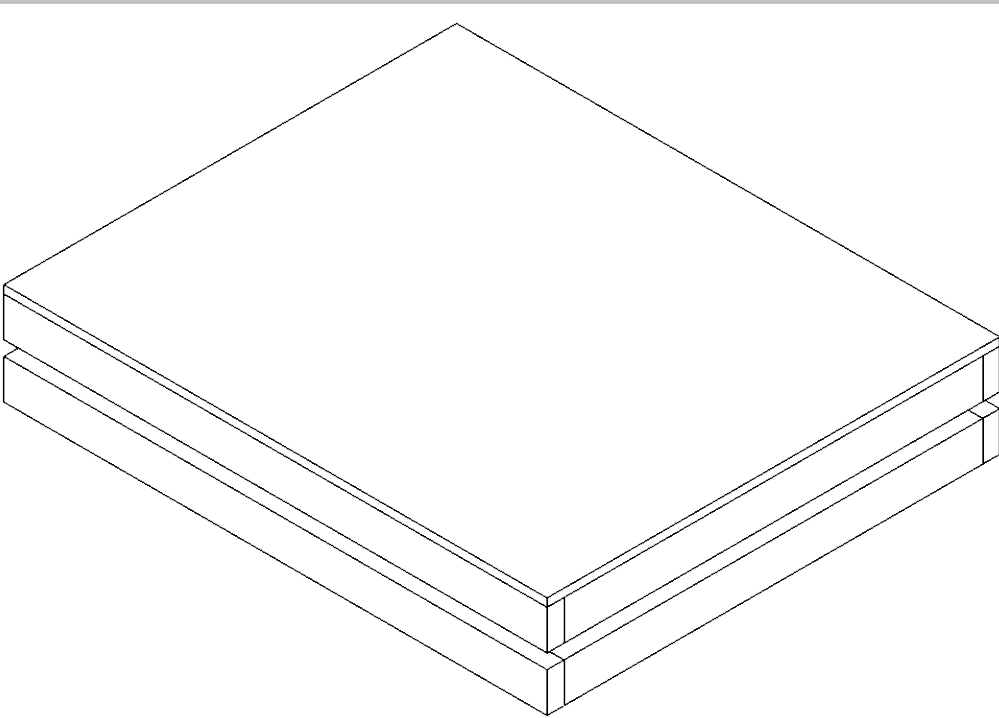
1

2

1

ITEM NO.	PART NUMBER	QTY.
1	TE-19103-01	1
2	TE-19103-02	8
3	te-19103-03	4
4	TE-19103-04	5

Material	QTY
23/32" (3/4") A/C or CDX Plywood	0.5 sheet
2"x 4"x 8'	5
1.25" wood screws	~20
2.5" wood screws	~48



Note:
To build the entire Hab, build QTY 2 of the TE-19103

A

A

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:
2"X4" HAB v1 2

SIZE	DWG. NO.	REV
A	TE-19103	

SCALE: 1:12 WEIGHT: SHEET 1 OF 5

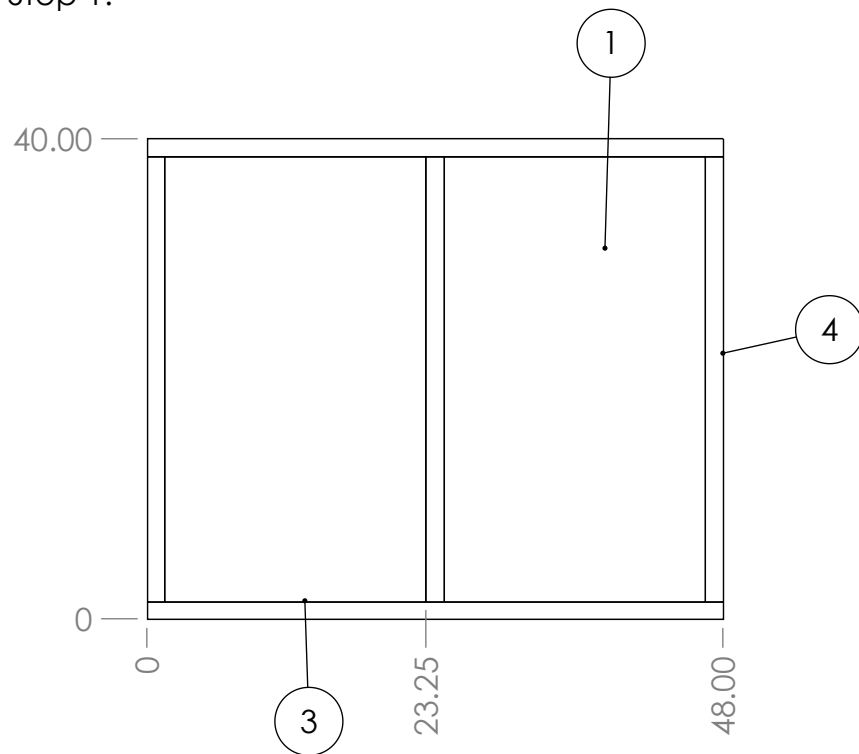
2

1

2

1

Step 1:



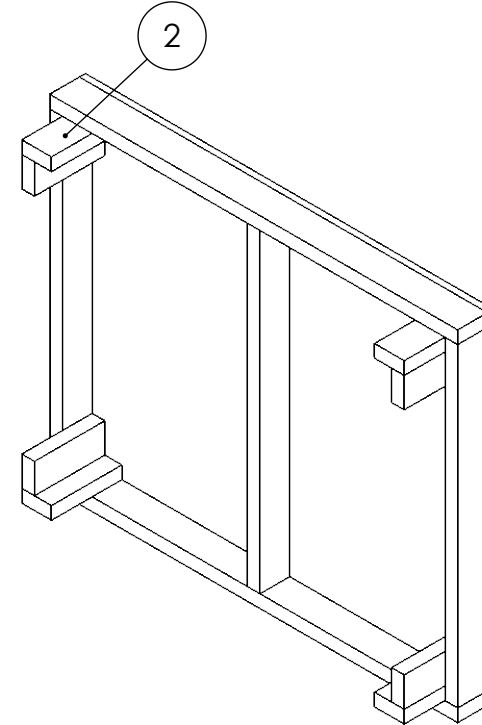
Note:

Attach item (3) and (4) with 2.5" screws

Attach item (1) to assembly with 1.25" screws

Pre drill if needed

Step 2:



Note:

Attach item (2) to assembly with 2.5" screws, as shown

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
		FINISH
NEXT ASSY	USED ON	
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:

2"X4" HAB v1 2

SIZE	DWG. NO.	REV
A	TE-19103	
SCALE: 1:12 WEIGHT:		SHEET 2 OF 5

2

1

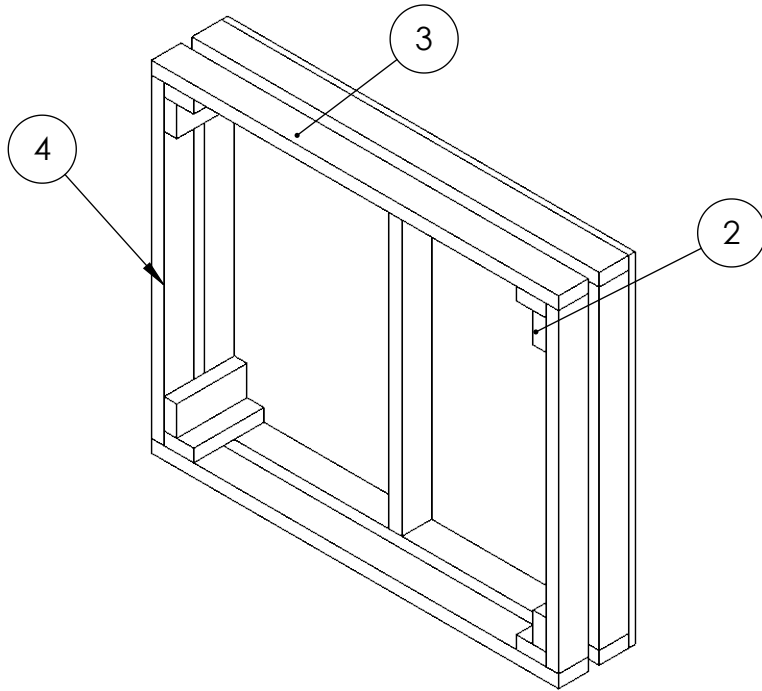
2

1

Step 3:

B

B



Note:

Attach item 4 and 3 to the lower part of item 2 with pre drilled 2.5" screw

A

A

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.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		
		FRACTIONAL $\pm 1/16$	ENG APPR.		
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.		
		TWO PLACE DECIMAL $\pm .01$	Q.A.		
		THREE PLACE DECIMAL $\pm .001$	COMMENTS:		
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			



FIRST
ROBOTICS
COMPETITION



TITLE:
2"X4" HAB v1 2

SIZE	DWG. NO.	REV
A	TE-19103	

SCALE: 1:12	WEIGHT:	SHEET 3 OF 5
-------------	---------	--------------

2

1

2

1

TE-19103-01

1X

1

40.00

48.00

(.72)

Notes:
A/C or CDX plywood 23/32"

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.

NEXT ASSY

USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .001$

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

DO NOT SCALE DRAWING

NAME DATE

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:



FIRST
ROBOTICS
COMPETITION



TITLE:

2"X4" HAB lvl 2

SIZE

A

DWG. NO.

TE-19103

REV

SCALE: 1:12 WEIGHT:

SHEET 4 OF 5

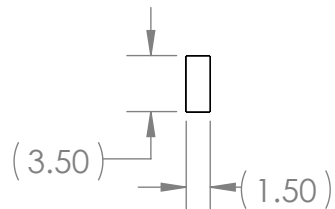
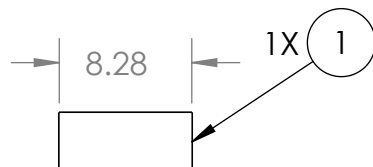
2

1

2

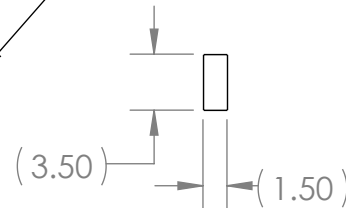
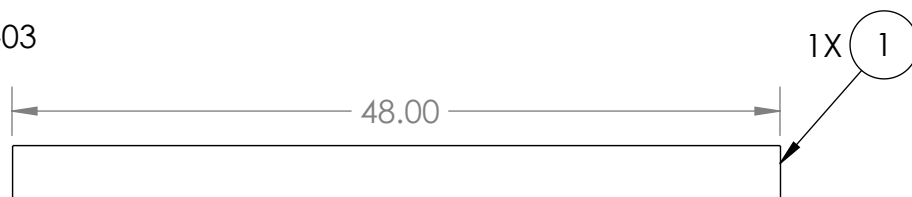
1

TE-19103-02



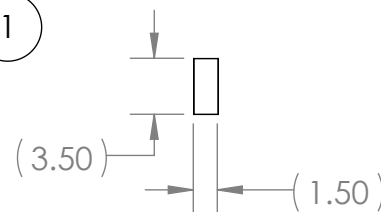
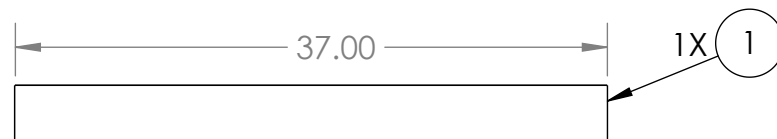
Notes:
2"x 4" Pine

TE-19103-03



Notes:
2"x 4" Pine

TE-19103-04



Notes:
2"x 4" Pine

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



**FIRST
ROBOTICS
COMPETITION**

SOLIDWORKS
Modeling Solutions Partner

TITLE:

2"X4" HAB IV 2

SIZE

A

DWG. NO.

TE-19103

REV

SCALE: 1:12 WEIGHT:

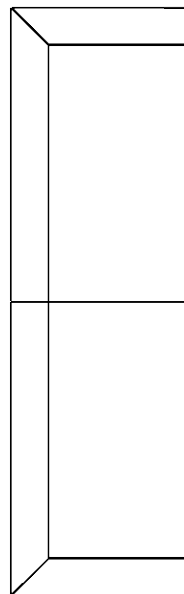
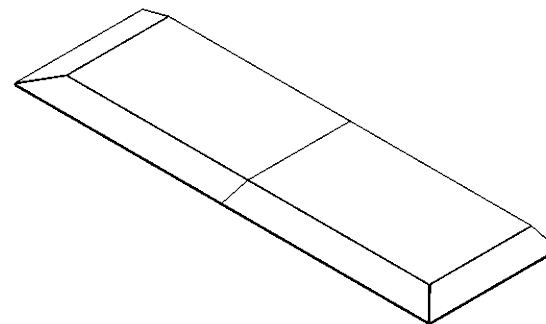
SHEET 5 OF 5

2

1

1

B

B

A

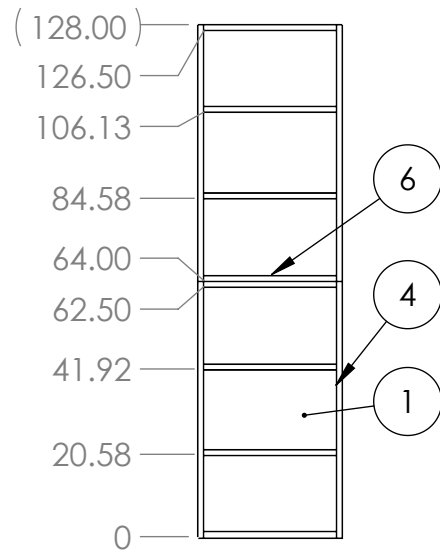
A

1

2

1

Step 1

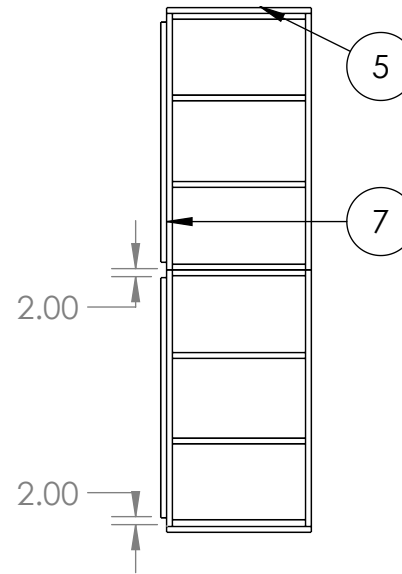


Assembly notes:

Assemble (6) and (4) to make frame
pre drill and use 2.5" screws

Attach (1) to the frame; pre-drill and use 1.25" screws

Step 2





Assembly notes:

Attach (5) and (7) to assembly as shown
Pre-drill and use 2.5" screws

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.

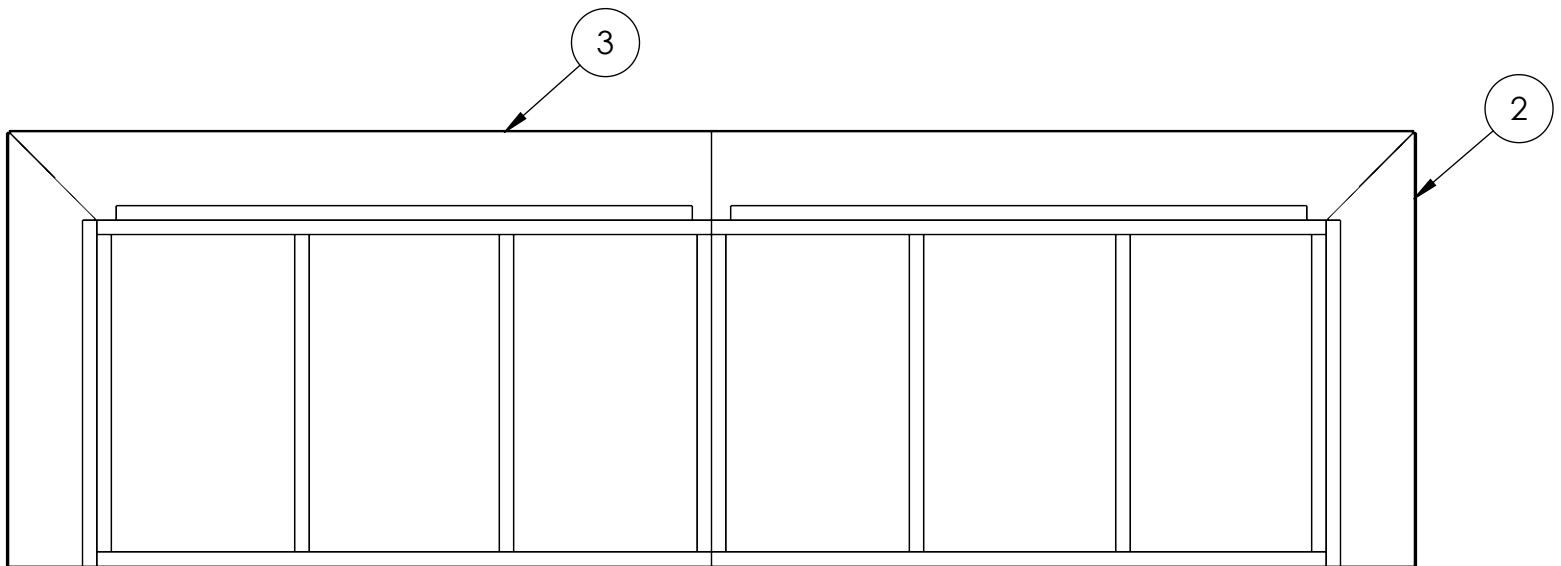
		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

 		
TITLE: Full Hab lvl 1		
SIZE A	DWG. NO. TE-19104	REV
SCALE: 1:48 WEIGHT:		SHEET 2 OF 5

2



1



Assembly notes:

Attach **3** and **2** to assembly as shown
Pre-drill and use 1.25" screws

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.

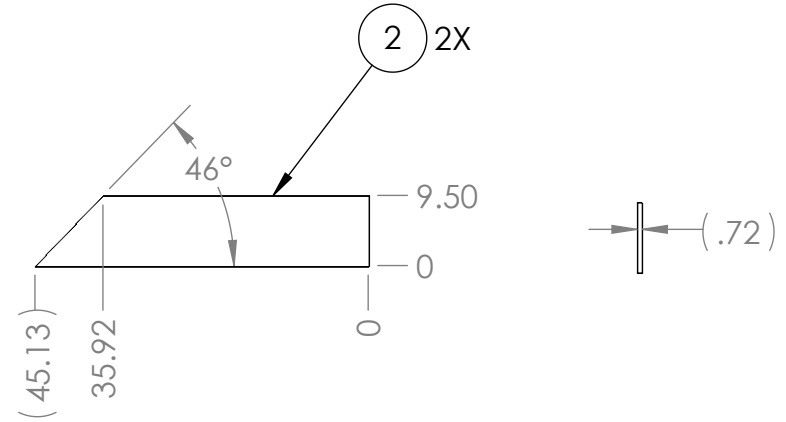
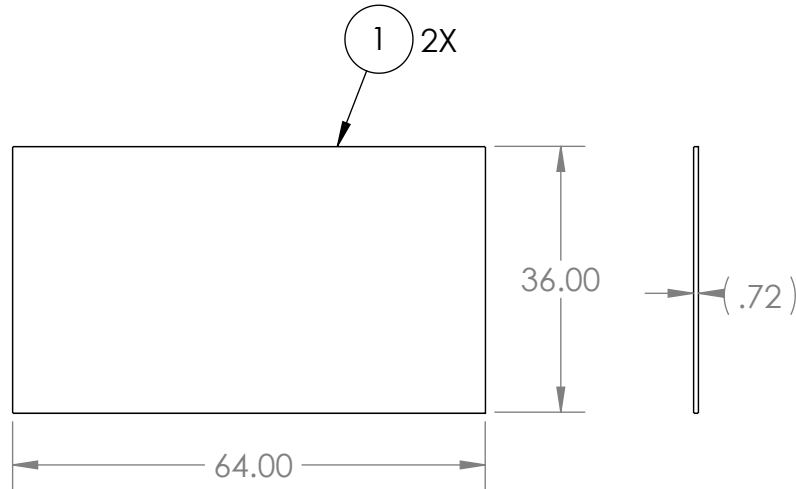
		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 
		DIMENSIONS ARE IN INCHES		DRAWN		
		TOLERANCES:		CHECKED		
		FRACTIONAL $\pm 1/16$		ENG APPR.		
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$		MFG APPR.		
		TWO PLACE DECIMAL $\pm .01$		Q.A.		TITLE: Full Hab lvl 1
		THREE PLACE DECIMAL $\pm .001$		COMMENTS:		
		INTERPRET GEOMETRIC TOLERANCING PER:				SIZE A DWG. NO. TE-19104 REV
		MATERIAL				
NEXT ASSY	USED ON	FINISH				SCALE: 1:48 WEIGHT: SHEET 3 OF 5
APPLICATION		DO NOT SCALE DRAWING				

2

1

TE-19104-01

TE-19104-02



Note:
23/32"(3/4") A/C or CDX Plywood

Note:
23/32"(3/4") A/C or CDX Plywood

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



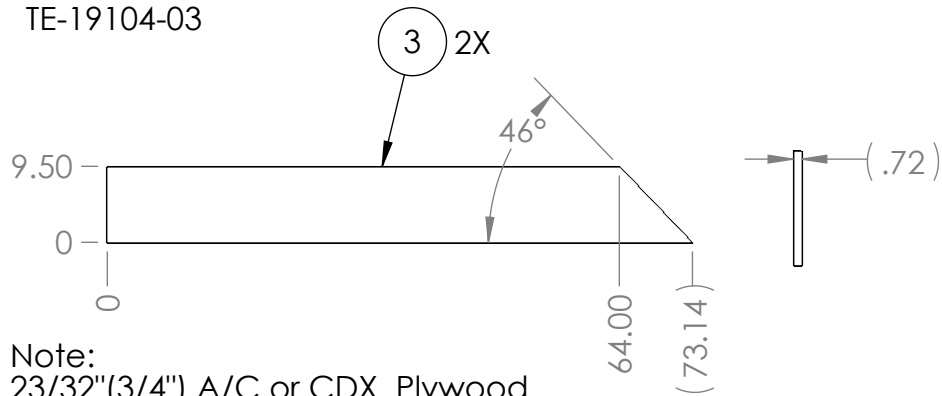
TITLE: Full Hab lvl 1		
SIZE A	DWG. NO. TE-19104	REV
SCALE: 1:48 WEIGHT:		SHEET 4 OF 5

2

1

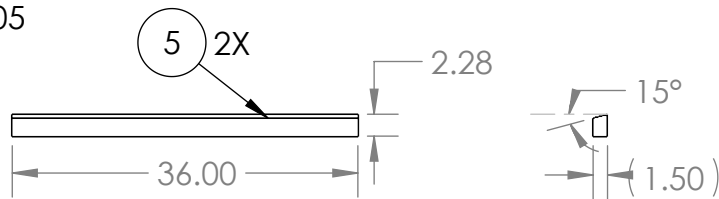
B

TE-19104-03



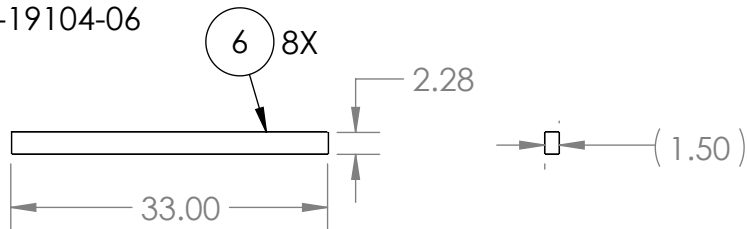
Note:
23/32"(3/4") A/C or CDX Plywood

TE-19104-05



Note:
2"x 4" Pine lumber

TE-19104-06



Note:
2"x 4" Pine lumber

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF **FIRST®**. Any REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF **FIRST®** IS PROHIBITED.

NEXT ASSY

USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .001$

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

DO NOT SCALE DRAWING

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:

NAME

DATE



TITLE:

Full Hab lvl 1

SIZE

A

DWG. NO.

TE-19104

REV

SCALE: 1:48 WEIGHT:

SHEET 5 OF 5

B

A

2

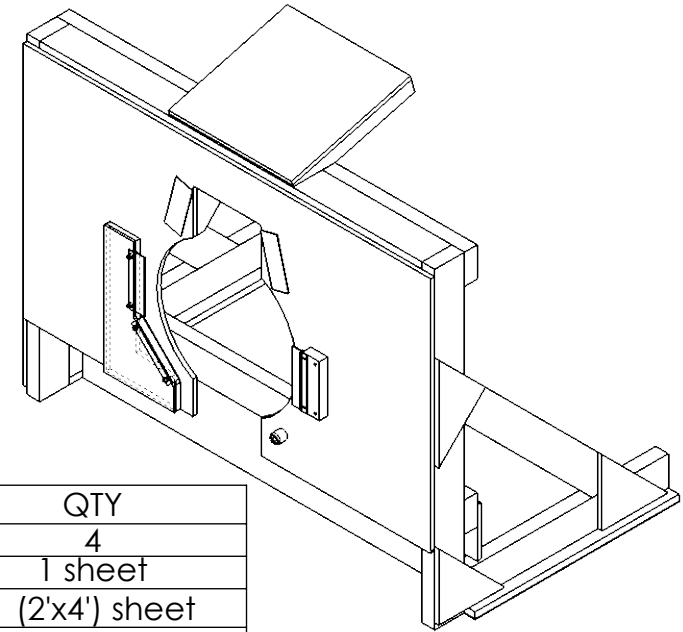
1

2

1

ITEM NO.	PART NUMBER	QTY.
1	TE-19108-01	1
2	TE-19108-02	1
3	TE-19108-03	6
4	TE-19108-04	1
5	TE-19108-05	2
6	TE-19108-06	1
7	TE-19108-07	2
8	TE-19108-08	1
9	TE-19108-09	2
10	TE-19108-10	2
11	TE-19108-11	2
12	TE-19108-12	2
13	TE-19108-13	2
14	TE-19108-14	1
15	TE-19108-15	2
16	TE-19108-16	1
17	TE-19108-17	1
18	TE-19108-18	2
19	TE-19108-19	3
20	TE-19108-20	2
21	TE-19108-21	2
22	button_hex_.25_20_1.25	1
23	flat_hex_10_24_.625	4
24	nylock_.25_20	1
25	nylock_10_24	4
26	MMC# 9540K953	1

Note:
Set up for one side
Mirror Assembly for Half Field for
the opposite side



Material	QTY
Flat head 10-24 X0.625"	4
15/32"(1/2") A/C or CDX Plywood	1 sheet
1/4" Hardboard	1 (2'x4') sheet
2"x 4"x 8'	5.5
Frost King C35PH	1
McMaster 9540K953	1
Button Head 1/4"-20 x 1.25	1
Nylock 1/4"-20	1
Nylock 10-24	4
Frost King door sweep	1
2" Hook Fastener	48"
2" Vison Tape	11"
1.25" wood screws	~90
2.5" wood screws	~40

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.

		UNLESS OTHERWISE SPECIFIED:			
		DIMENSIONS ARE IN INCHES			
		TOLERANCES:			
		FRACTIONAL $\pm 1/16$			
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$			
		TWO PLACE DECIMAL $\pm .01$			
		THREE PLACE DECIMAL $\pm .001$			
		INTERPRET GEOMETRIC			
		TOLERANCING PER:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:

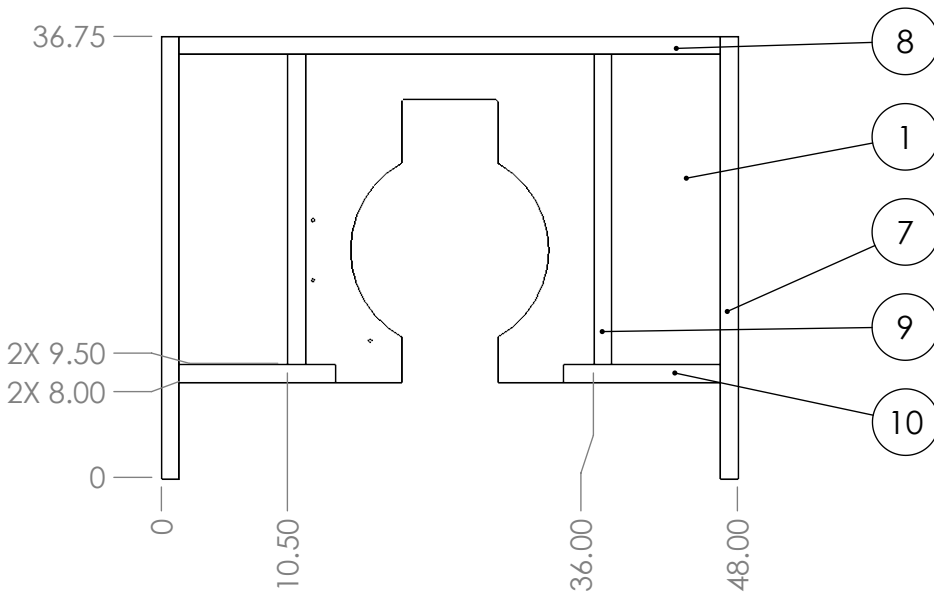
Loading Station

SIZE	DWG. NO.	REV
A	TE-19108	
SCALE: 1:16		WEIGHT:
		SHEET 1 OF 13

2

1

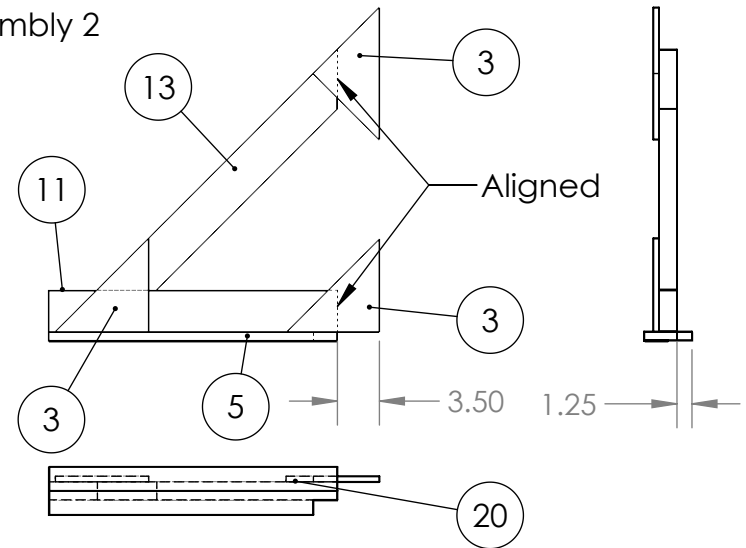
Subassembly 1



Note:

- Attach 9 10 7 8 together to make a frame. Use 2.5" screws to attach.
- Attach 1 to the frame flush to 7 and 10. Use 1.25" screws.
- Pre-drill as necessary

Subassembly 2




Note:

- Attach 13 to 11 with 2.5" screws. Reinforce with 3.
- Attach two more 3 as shown using 1.25" screws.
- Attach 20 as shown with 1.25" screws. Apply 20 to bottom.

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

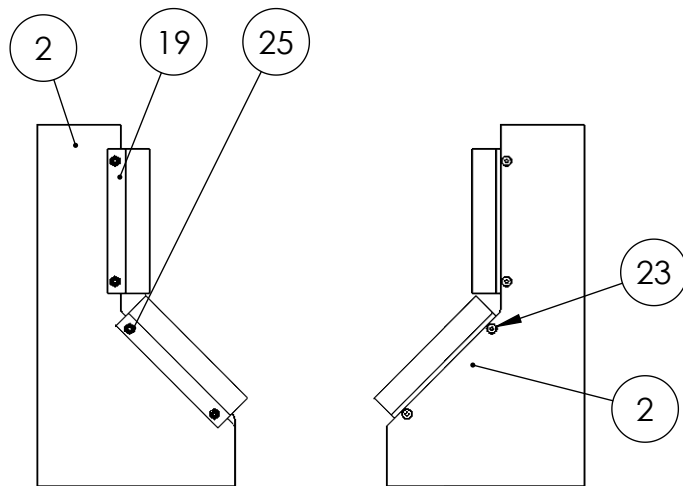
	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

 		
TITLE: Loading Station		
SIZE A	DWG. NO. TE-19108	REV
SCALE: 1:16 WEIGHT:		SHEET 2 OF 13

2

1

B



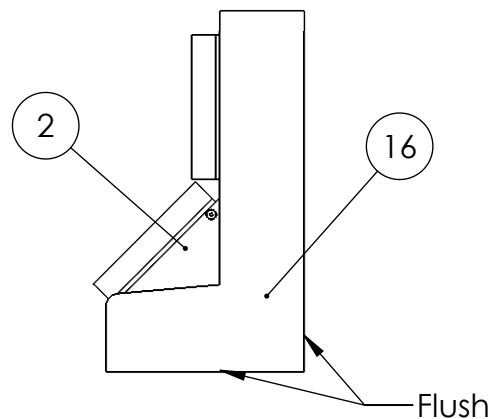
Front

Back

Note:

Attach (19) to (2) with (23) and (25).

Subassembly 3:



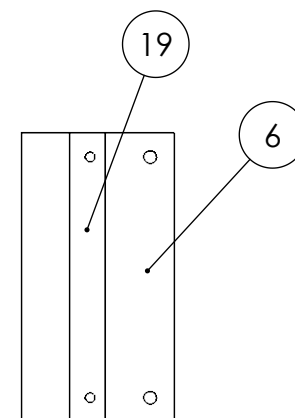
Flush

Note:

- Attach (16) to the back of (2) flush on indicated edges.

- Use 1.25" screws, but do not screw in all the way.

Subassembly 4:



Note:

Attach (19) to (6) with 1.25" screws

B

A

A

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.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		
		FRACTIONAL $\pm 1/16$	ENG APPR.		
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.		
		TWO PLACE DECIMAL $\pm .01$	Q.A.		
		THREE PLACE DECIMAL $\pm .001$	COMMENTS:		
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
NEXT ASSY	USED ON	FINISH			
		DO NOT SCALE DRAWING			



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Loading Station

SIZE DWG. NO. REV
A TE-19108

SCALE: 1:16 WEIGHT: SHEET 3 OF 13

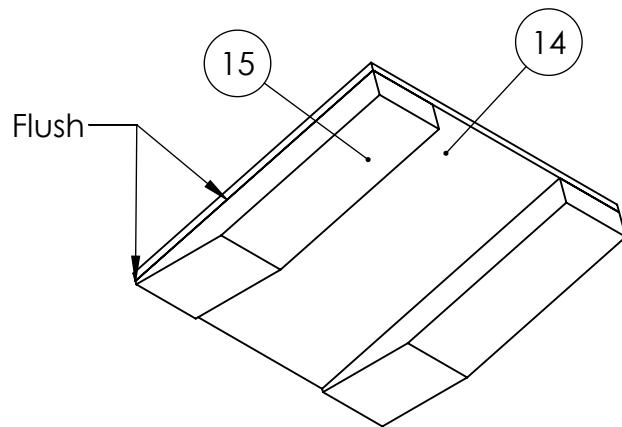
2

1

2

1

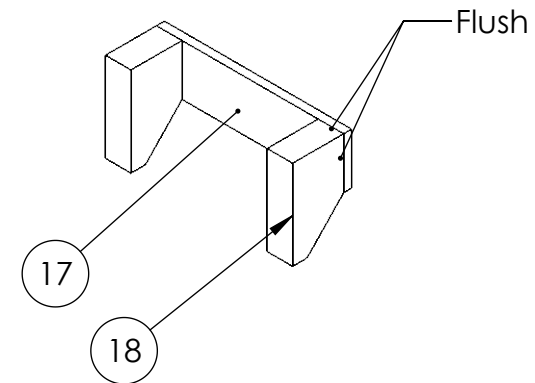
Subassembly 5:



Note:

- Attach 14 to 15 with 1.25" screws.
- Keep flush at indicated edges.

Subassembly 6:



Note:

- Attach 17 to 18 with 1.25" screws
- Keep flush at indicated edges.

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.

NEXT ASSY

USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .001$

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

DO NOT SCALE DRAWING

NAME DATE

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Loading Station

SIZE

A

DWG. NO.

TE-19108

REV

SCALE: 1:16 WEIGHT:

SHEET 4 OF 13

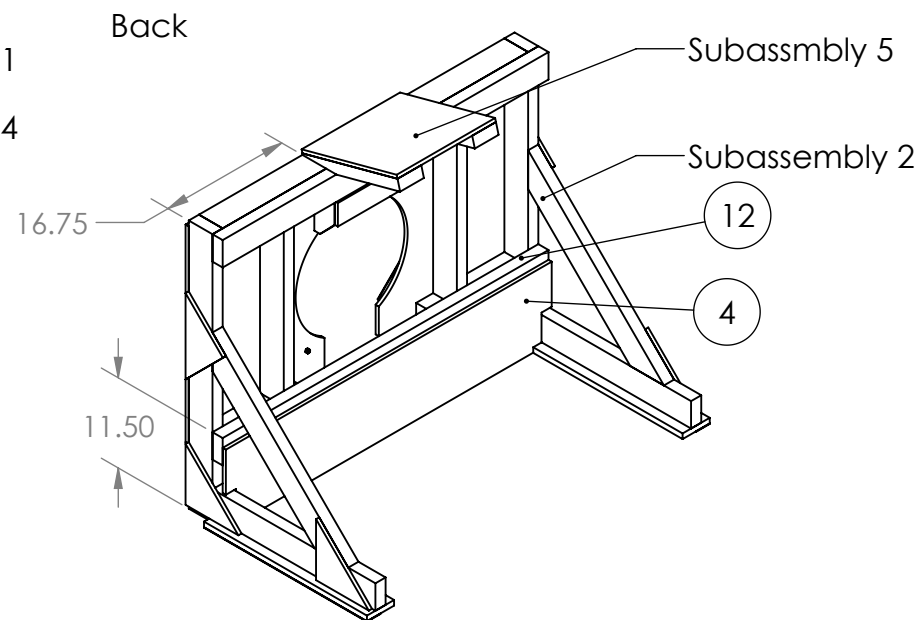
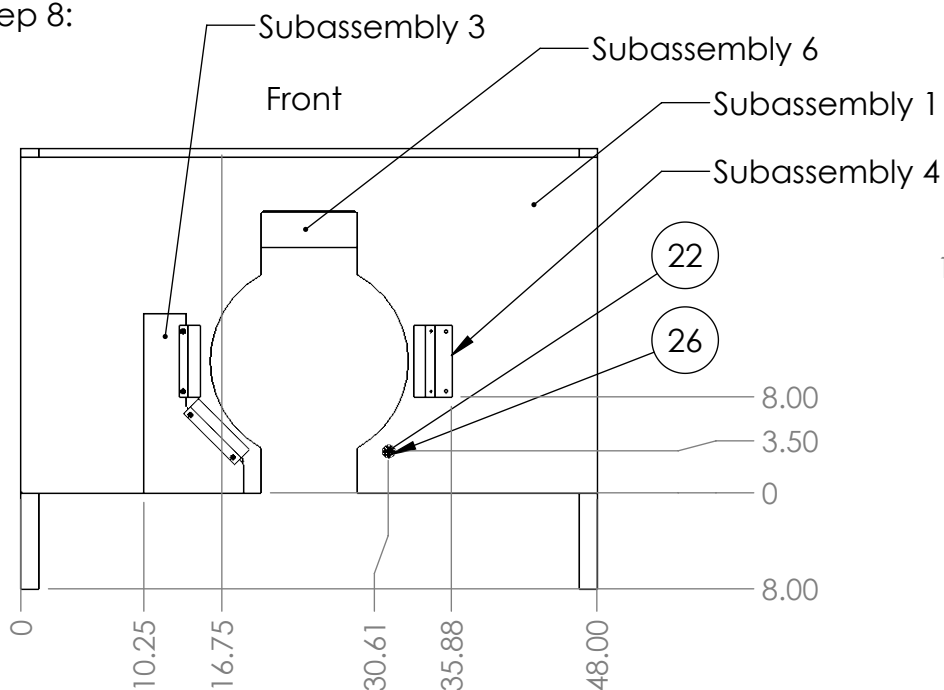
2

1

2

1

Step 8:



Note:

- Attach Subassembly 3 to Subassembly 1 using 1.25" screws.
- Attach Subassembly 4 to Subassembly 6 using 1.25" screws.
- Attach Subassembly 6 using 2.5" screws. Keep sides and top flush to opening.

Notes:

- Attach Subassembly 2 to the sides of Subassembly 1.
- Attach Subassembly 5 as shown. Use 2.5" screws to attach.
- Attach (12) using 2.5" screws.
- Attach (4) to (12) using 1.25" screws

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.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES		DRAWN	
		TOLERANCES:		CHECKED	
		FRACTIONAL $\pm 1/16$		ENG APPR.	
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$		MFG APPR.	
		TWO PLACE DECIMAL $\pm .01$		Q.A.	
		THREE PLACE DECIMAL $\pm .001$		COMMENTS:	
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



**FIRST
ROBOTICS
COMPETITION**

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Loading Station

SIZE

A

DWG. NO.

TE-19108

REV

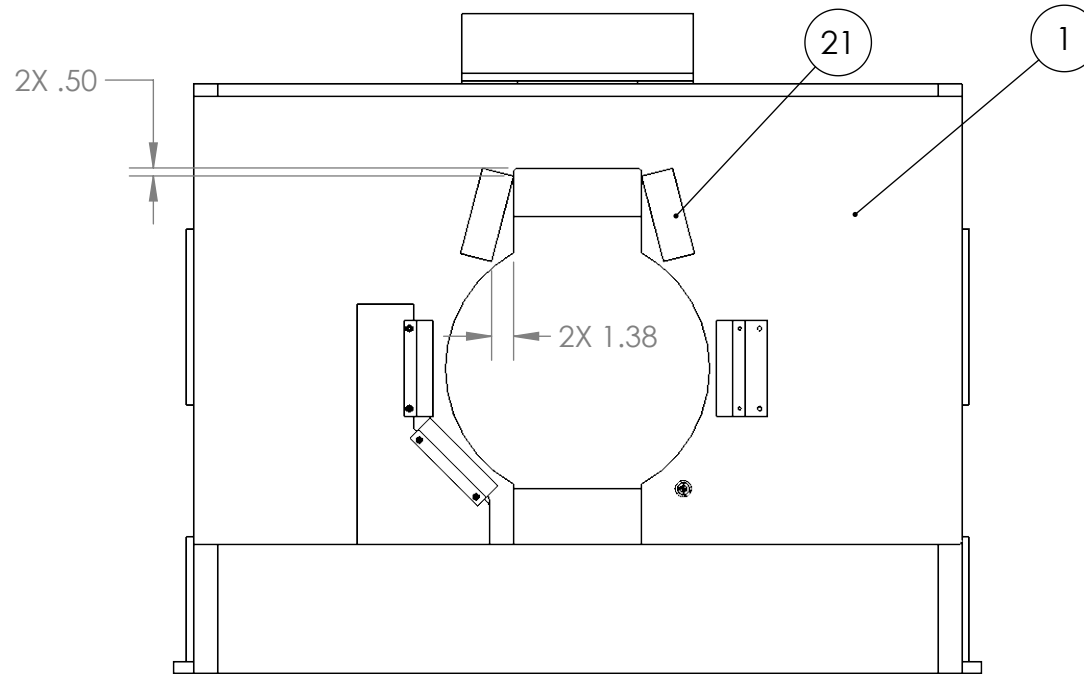
SCALE: 1:16 WEIGHT:

SHEET 5 OF 13

2

1

Step 10:



Note:

Attach (21) to (1) as shown.

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

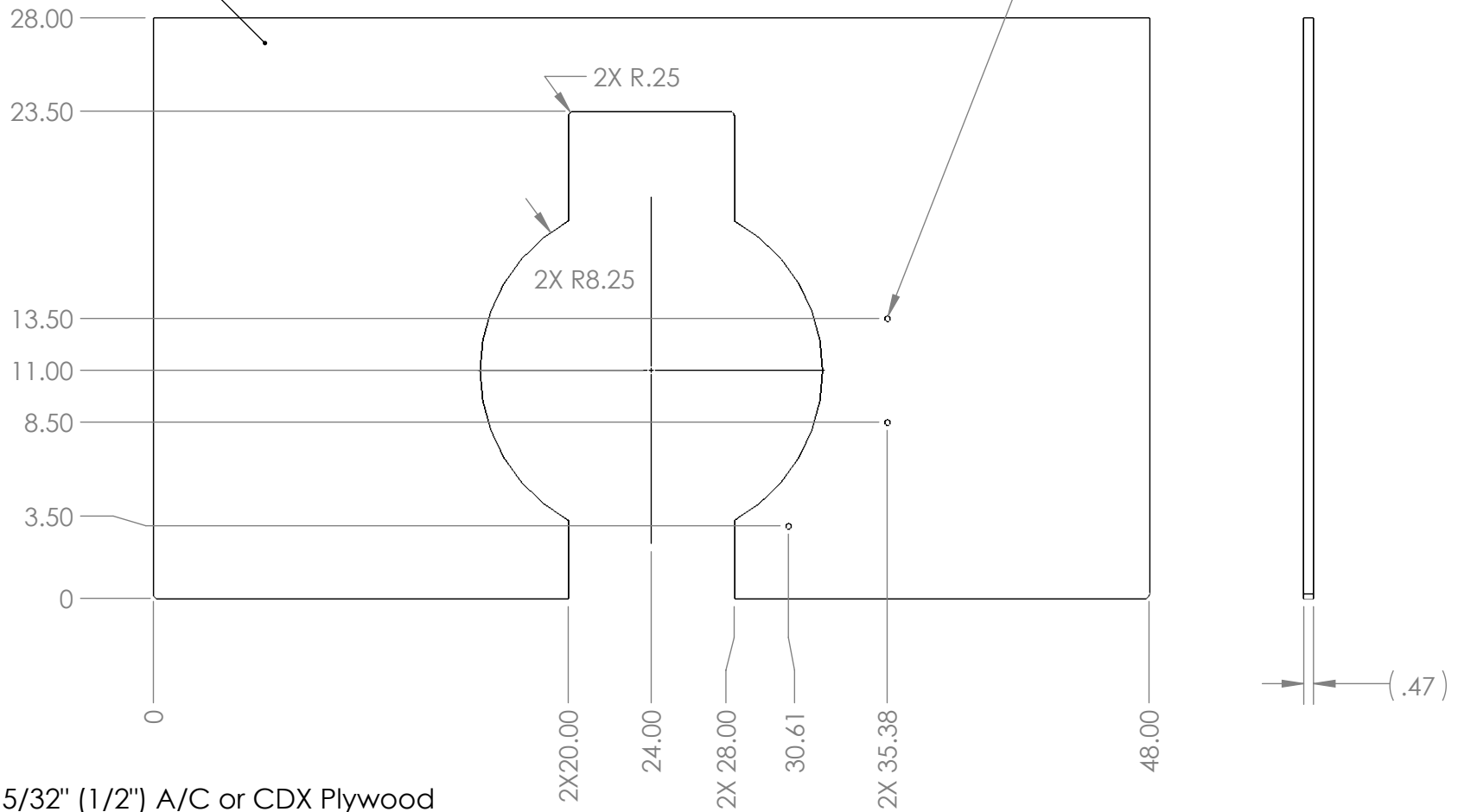
	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:
Loading Station

SIZE	DWG. NO.	REV
A	TE-19108	
SCALE: 1:16		WEIGHT:
		SHEET 6 OF 13

TE-19108-01



Note:
Material 15/32" (1/2") A/C or CDX Plywood

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



**FIRST
ROBOTICS
COMPETITION**

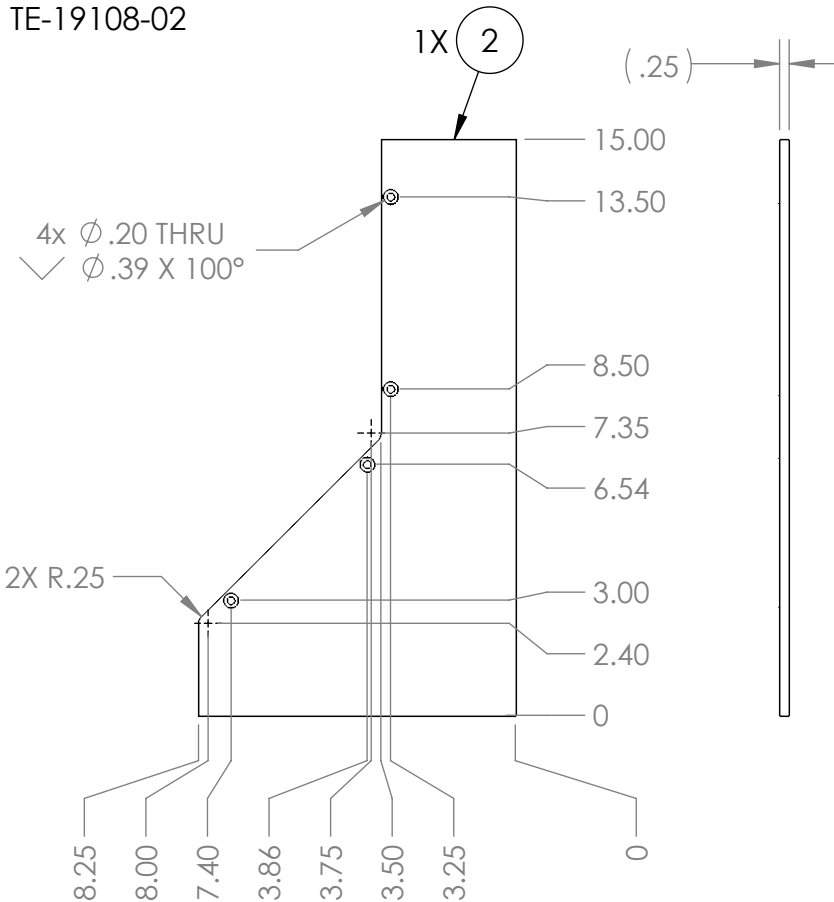
SOLIDWORKS
Modeling Solutions Partner

TITLE:

Loading Station

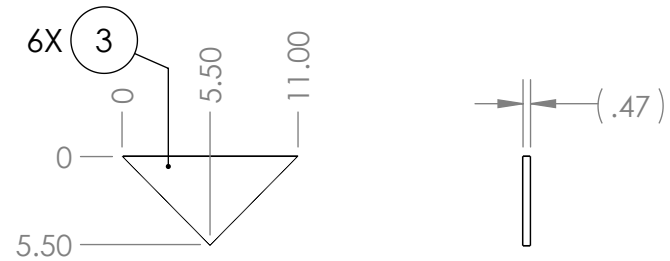
SIZE	DWG. NO.	REV
A	TE-19108	
SCALE: 1:16		WEIGHT:
SHEET 7 OF 13		

TE-19108-02



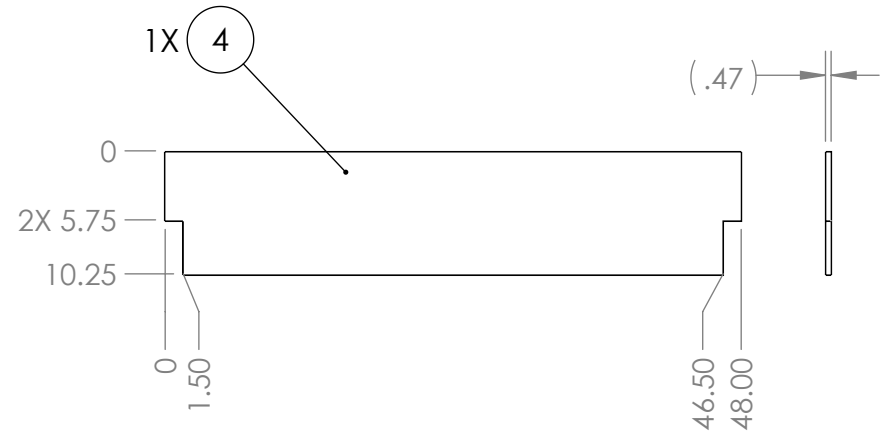
Note:
Material 1/4" Hardboard

TE-19108-03



Note:
Material 15/32" (1/2") A/C or CDX Plywood

TE-19108-04



Note:
Material 15/32" (1/2") A/C or CDX Plywood

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.

UNLESS OTHERWISE SPECIFIED:	
DIMENSIONS ARE IN INCHES	
TOLERANCES:	
FRACTIONAL ±1/16	
ANGULAR: MACH ±1° BEND ±1°	
TWO PLACE DECIMAL ±.01	
THREE PLACE DECIMAL ±.001	
INTERPRET GEOMETRIC TOLERANCING PER:	
MATERIAL	
FINISH	
NEXT ASSY	USED ON
APPLICATION	
DO NOT SCALE DRAWING	

NAME	DATE
DRAWN	
CHECKED	
ENG APPR.	
MFG APPR.	
Q.A.	
COMMENTS:	



TITLE:

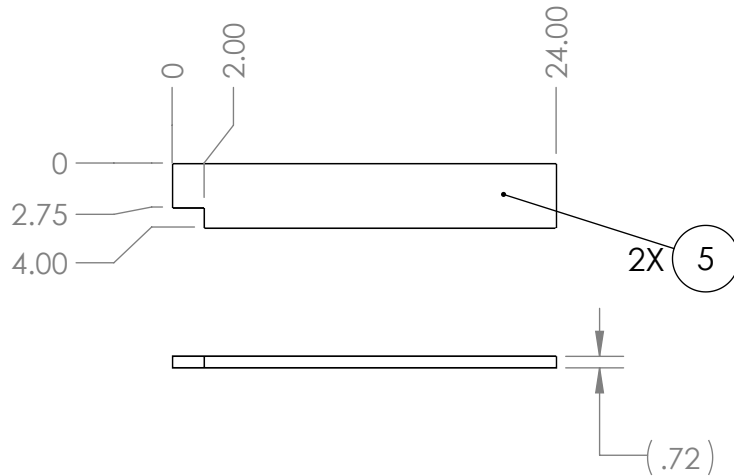
Loading Station

SIZE	DWG. NO.	REV
A	TE-19108	
SCALE: 1:16		WEIGHT:
SHEET 8 OF 13		

2

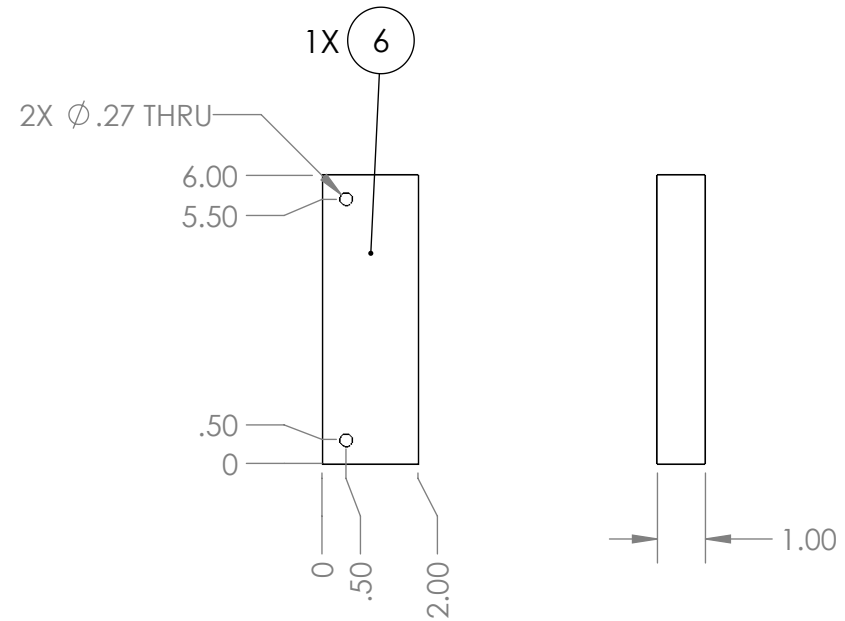
1

TE-19108-05



Note:
Material 23/32" (3/4") A/C or CDX Plywood

TE-19108-06



Notes:
Material 2"x 4" Lumber Pine

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:

Loading Station

SIZE	DWG. NO.	REV
A	TE-19108	
SCALE: 1:16		WEIGHT:
		SHEET 9 OF 13

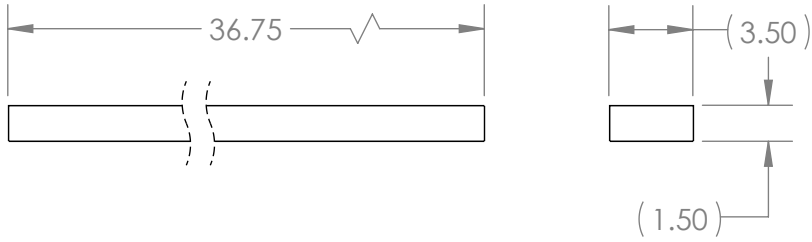
2

1

2

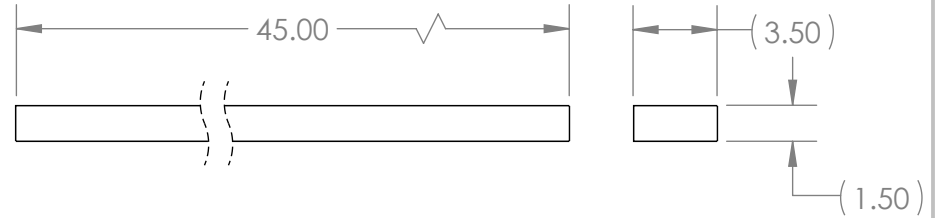
1

TE-19108-07



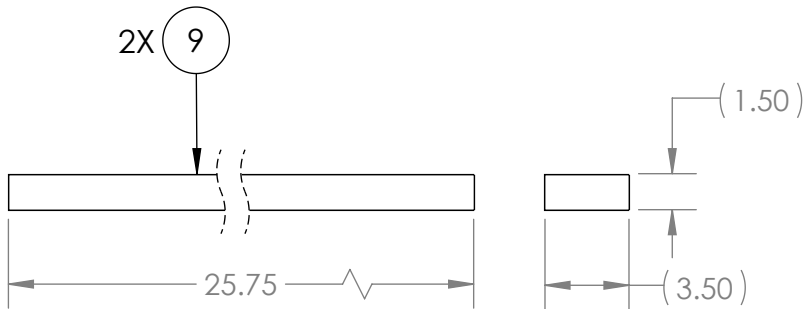
Notes:
Material 2"x 4" Lumber Pine

TE-19108-08



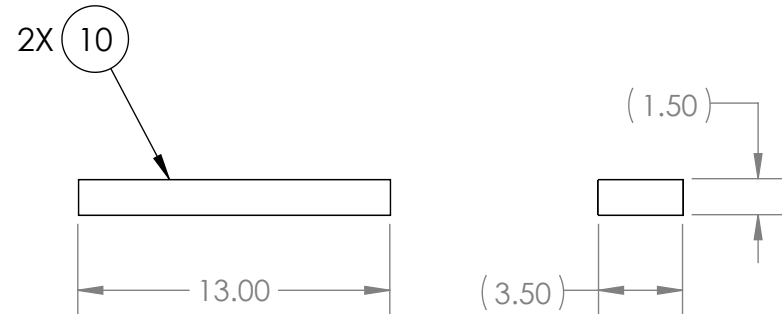
Notes:
Material 2"x 4" Lumber Pine

TE-19108-09



Notes:
Material 2"x 4" Lumber Pine

TE-19108-10



Notes:
Material 2"x 4" Lumber Pine

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.

NEXT ASSY

USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .001$

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

DO NOT SCALE DRAWING

NAME DATE

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:



TITLE:

Loading Station

SIZE

A

DWG. NO.

TE-19108

REV

SCALE: 1:16 WEIGHT:

SHEET 10 OF 13

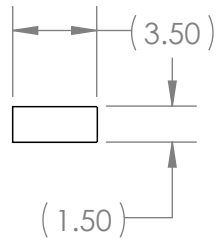
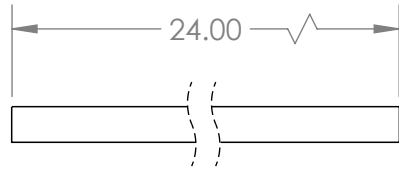
2

1

2

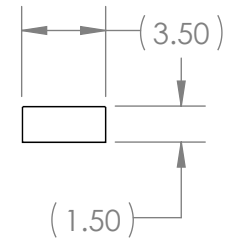
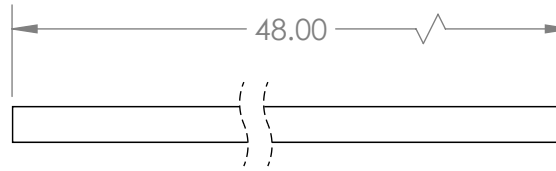
1

TE-19108-11



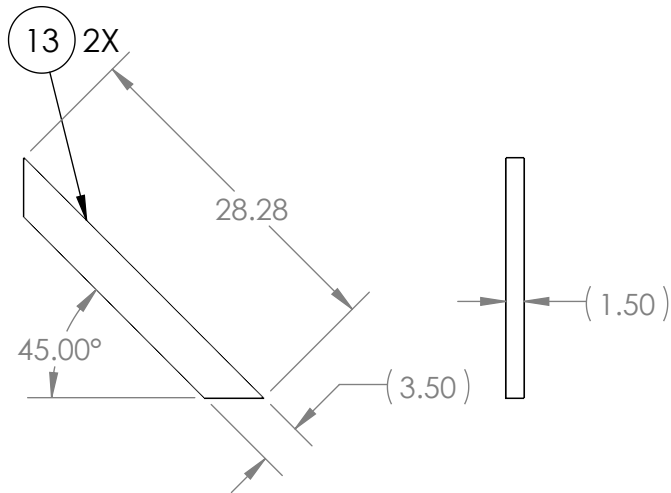
Notes:
Material 2"x 4" Lumber Pine

TE-19108-12



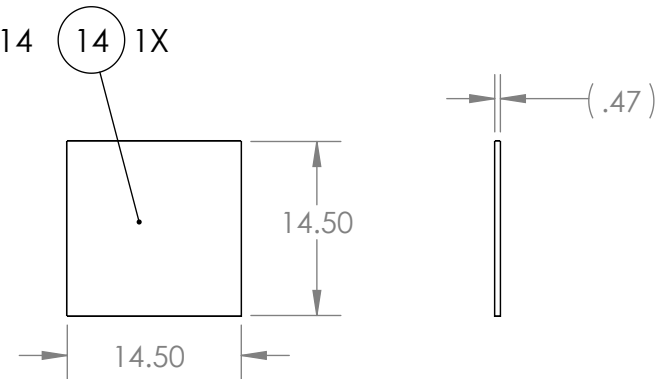
Notes:
Material 2"x 4" Lumber Pine

TE-19108-13



Notes:
Material 2"x 4" Lumber Pine

TE-19108-14



Note:
Material 15/32" (1/2") A/C or CDX Plywood

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.

NEXT ASSY

USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .001$

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

DO NOT SCALE DRAWING

NAME DATE

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:



TITLE:

Loading Station

SIZE

A

DWG. NO.

TE-19108

REV

SCALE: 1:16 WEIGHT:

SHEET 11 OF 13

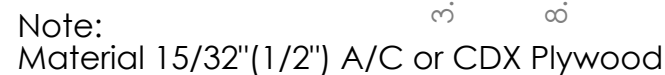
2

1

B



B



Note:
Material 15/32"(1/2") A/C or CDX Plywood

Note:
Material 2"x4" Pine Lumber

A

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING




SIZE A	DWG. NO. TE-19108	REV
------------------	-----------------------------	-----

SCALE: 1:16	WEIGHT:	SHEET 12 OF 13
-------------	---------	----------------

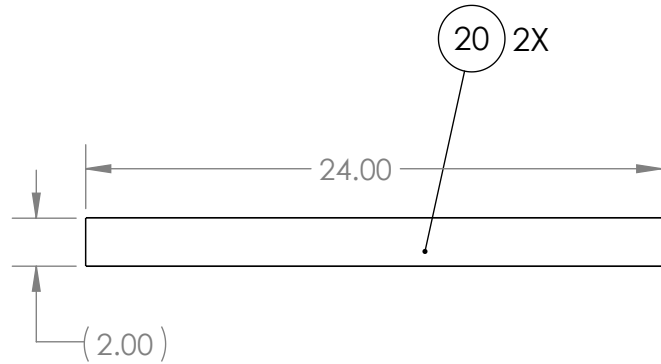
A

1

2

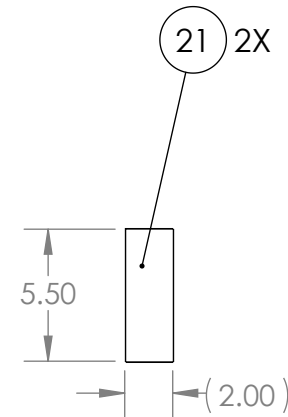
1

TE-19108-20



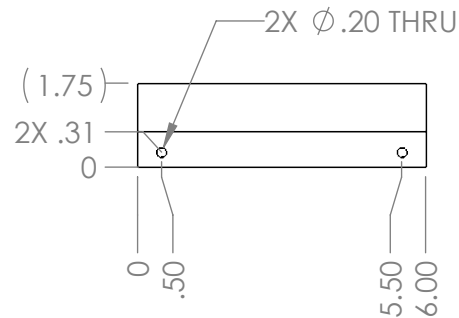
2" Hook Fastener

TE-19108-21





2" Vision Tape

TE-19108-19



Note:
Material Frost King C35PH

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.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	<div></div>		
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN			TITLE: <h1>Loading Station</h1>		
			CHECKED					
			ENG APPR.					
			MFG APPR.					
			Q.A.					
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:			SIZE DWG. NO. REV A TE-19108		
		MATERIAL						
NEXT ASSY	USED ON	FINISH						
APPLICATION		DO NOT SCALE DRAWING				SCALE: 1:16 WEIGHT: SHEET 13 OF 13		

2

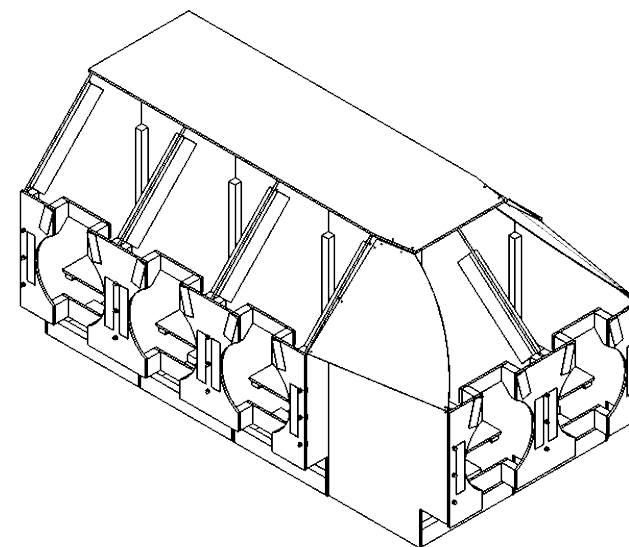
1

2

1

B



ITEM NO.	PART NUMBER	QTY.
1	TE-19112-01	1
2	TE-19112-02	4
3	TE-19112-03	1
4	TE-19112-04	6
5	TE-19112-05	8
6	TE-19112-06	2
7	TE-19112-07	5
8	TE-19112-08	32
9	TE-19112-09	34
10	TE-19112-10	2
11	TE-19112-11	14
12	TE-19112-12	16
13	TE-19112-13	8
14	TE-19112-14	16
15	TE-19112-15	16
16	TE-19112-16	8
17	Tee nut .375_16	33
18	hex nut_.375_16	33
19	hex_.375_16_.625	33
20	TE-19112-19	16
21	TE-19112-20	16
22	TE-19112-21	8



B

Material	QTY
15/32"(1/2" A/C or CDX Plywood	6 sheets
23/32"(3/4" A/C or CDX Plywood	.5 sheet
2"x 4"x 8'	4.5
2"x 2"x 8'	5
1/8" Hardboard	0.5 sheet
2" Vison Tape	88"
2" Hook Fastener	334"
1.25" screws	~200
2.5" screws	~100

A

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.			UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 	
			DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN				TITLE: <h1>Full Cargo Ship</h1>
			INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED				
			MATERIAL	ENG APPR.				
			FINISH	MFG APPR.				
	NEXT ASSY	USED ON		Q.A.			SIZE DWG. NO. REV A TE-19112	
	APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		SCALE: 1:32 WEIGHT: SHEET 1 OF 17		

A

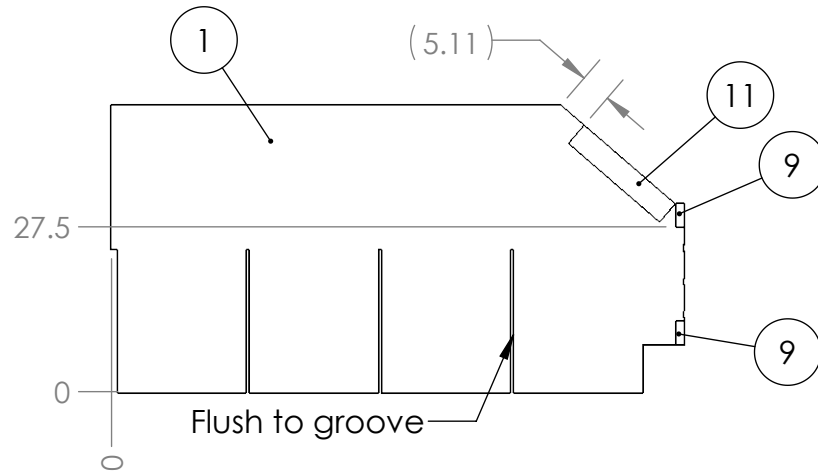
2

1

2

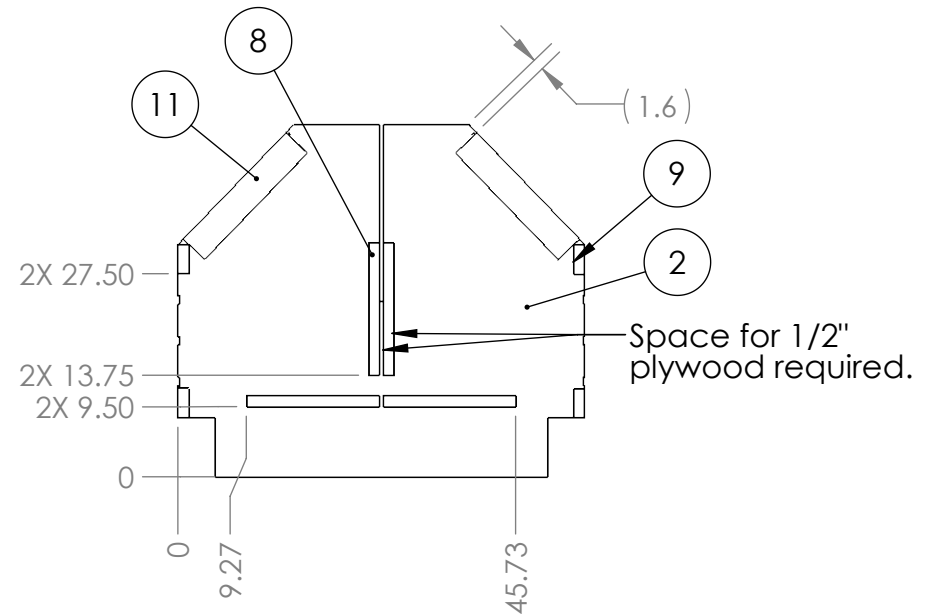
1

Subassembly 1:



Notes:

- Attach Items (9), and (11) to Item (1) as shown.
- Repeat on opposite side.
- Pre-drill and use 1.25 and 2.5" screws as necessary.

Subassembly 2:
QTY 1

Notes:

- Attach Items (8), (9) and (11) to Item (2) as shown.
- Pre-drill and use 1.25" screws as necessary.

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:

Full Cargo Ship

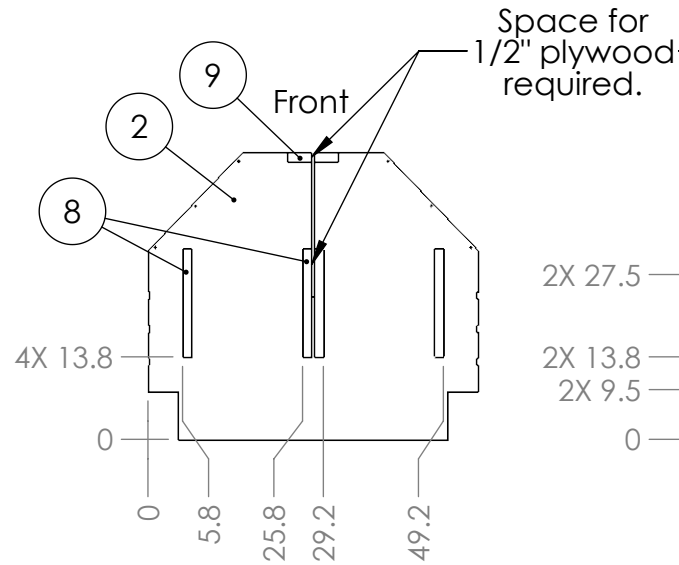
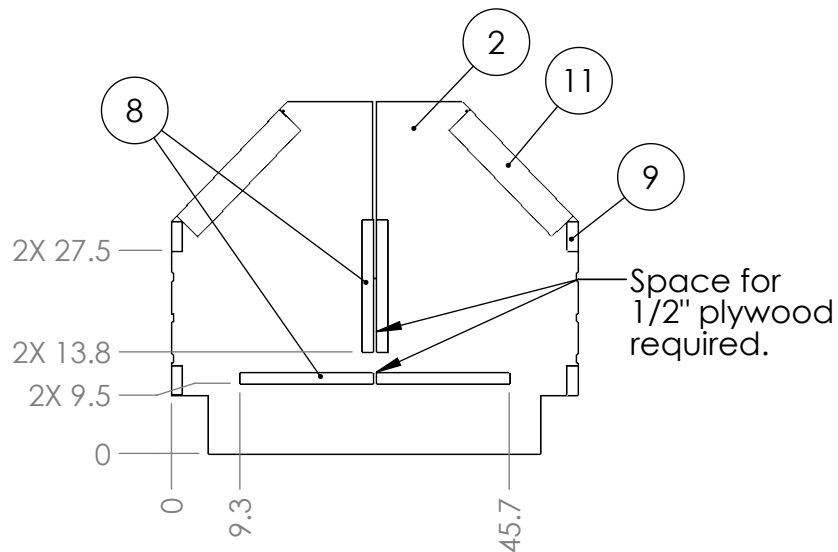
SIZE	DWG. NO.	REV
A	TE-19112	
SCALE: 1:32		WEIGHT:
		SHEET 2 OF 17

2

1

Subassembly 3: QTY(2)

Subassembly 4: QTY(1)



Notes:

- Repeat on both sides
- Attach 9 x4 flush to surfaces of 2 as shown.
- Attach 11 x4 flush to surfaces of 2 as shown.
- Attach 8 x4 to 2 vertical flush to cutout
- Pre-drill and attach with 1.25" and 2.5" screws

- Attach 9 to 2 flush to top and cutout.
- Attach 8 to 2 as shown. Middle items to be flush with cutout.
- Attach 11 flush to angled surfaces of 2.
- Pre-drill and attach with 1.25" and 2.5" screws

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.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES		DRAWN	
		TOLERANCES:		CHECKED	
		FRACTIONAL $\pm 1/16$		ENG APPR.	
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$		MFG APPR.	
		TWO PLACE DECIMAL $\pm .01$		Q.A.	
		THREE PLACE DECIMAL $\pm .001$		COMMENTS:	
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



**FIRST
ROBOTICS
COMPETITION**

SOLIDWORKS
Modeling Solutions Partner

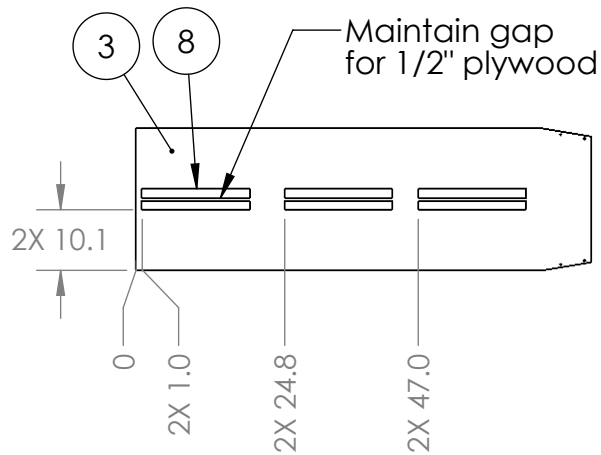
TITLE:

Full Cargo Ship

SIZE DWG. NO. REV
A **TE-19112**

SCALE: 1:32 WEIGHT: SHEET 3 OF 17

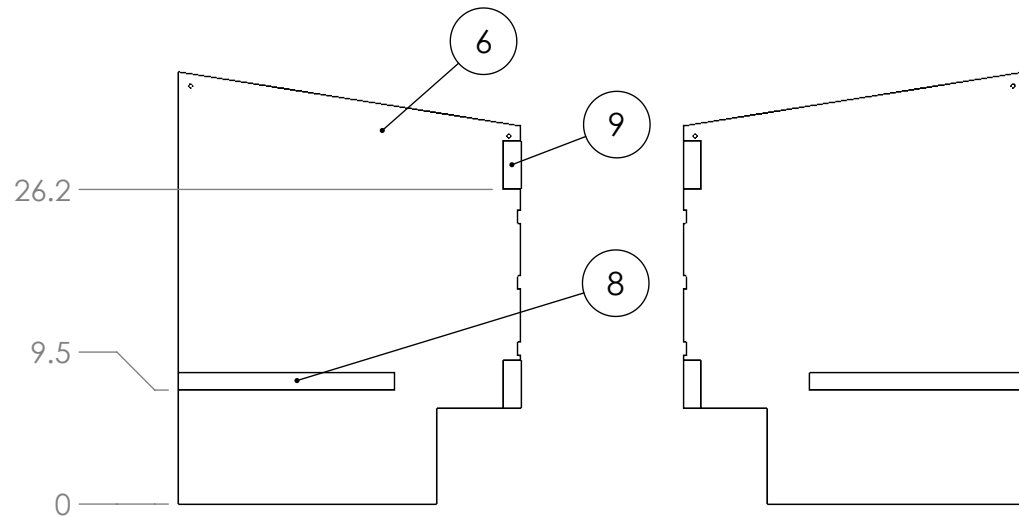
Subassembly 5:



Notes:

- Attach (8) x6 to (3) as shown using 1.25" screws.
- Pre-drill as necessary.

Subassembly 6:



Mirrored Version

Notes:

- Attach (9) flush to surfaces of (6) as shown using 1.25" screws.
- Attach (8) to (6) as shown using 1.25" screws.
- Pre-drill as necessary.
- Repeat process to create a mirrored version of subassembly.

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.

NEXT ASSY

USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .001$

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

DO NOT SCALE DRAWING

NAME

DATE

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:



FIRST
ROBOTICS
COMPETITION



TITLE:

Full Cargo Ship

SIZE

DWG. NO.

REV

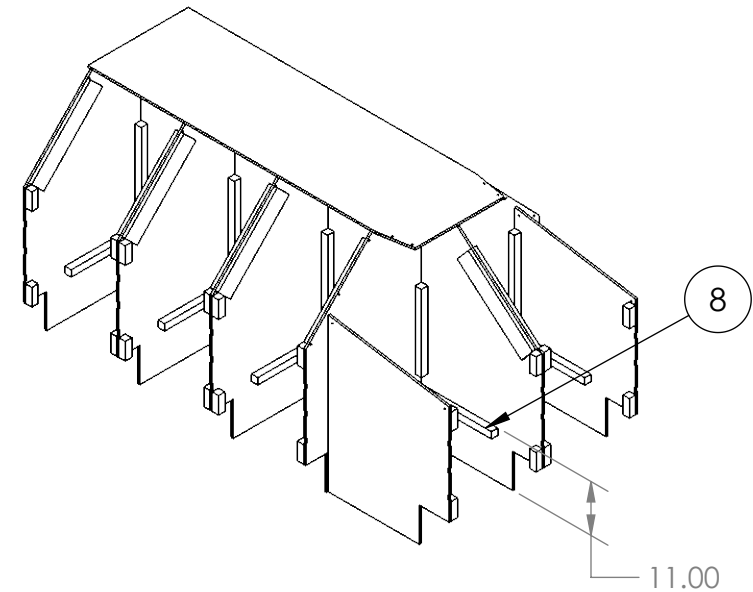
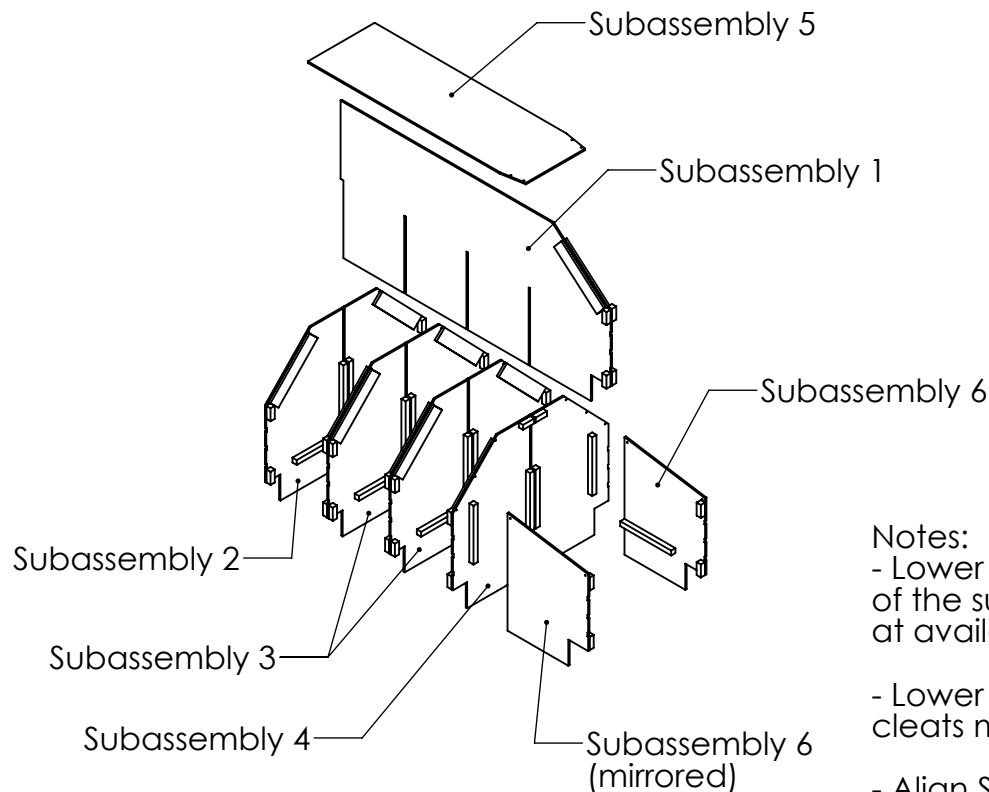
A

TE-19112

SCALE: 1:32 WEIGHT:

SHEET 4 OF 17

Subassembly 9:



Notes:

- Lower Subassembly 1 onto Subassemblies 2, 3 and 4. Cutouts of the subassemblies should intersect. Secure with 2.5" screws at available cleats.
- Lower Subassembly 5 so that Subassembly 1 sits inside the cleats mounted on the bottom. Secure with 2.5" screws.
- Align Subassembly 6 (and mirrored) with the cleats on Subassembly 4. Secure with 1.25" screws.
- Attach Item 8 as shown on both sides of suSubassembly 1. Secure with 2.5" screws.

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.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES		DRAWN	
		TOLERANCES:		CHECKED	
		FRACTIONAL $\pm 1/16$		ENG APPR.	
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$		MFG APPR.	
		TWO PLACE DECIMAL $\pm .01$		Q.A.	
		THREE PLACE DECIMAL $\pm .001$		COMMENTS:	
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



FIRST
ROBOTICS
COMPETITION



TITLE:

Full Cargo Ship

SIZE

A

DWG. NO.

TE-19112

REV

SCALE: 1:32 WEIGHT:

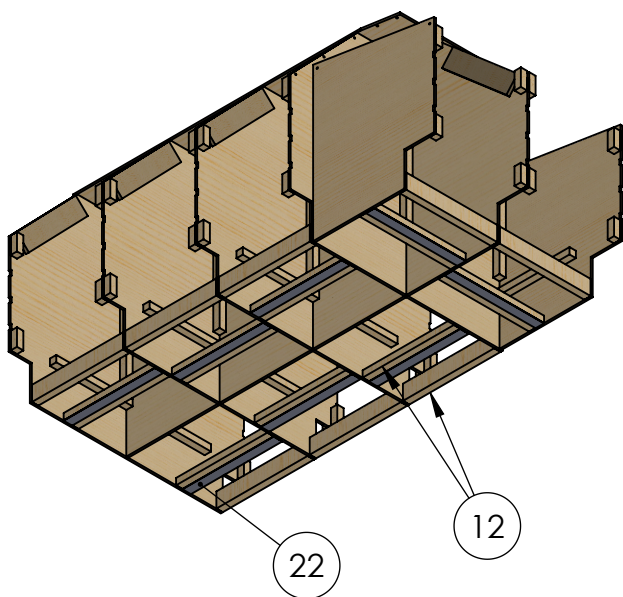
SHEET 5 OF 17

2

1

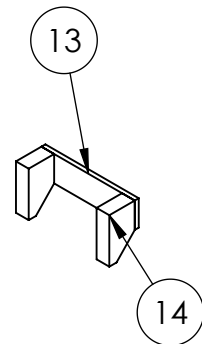
B

B



Note:

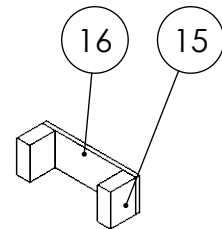
- Attach (12) 16X as shown using 1.25" screws. Stagger inner 2x4's for easy attachment. Outer 2x4's will require pre-drilling at an angle to attach. All 2x4's should be flush with the bottom of frames.
- Add (22) to the bottom of the inner 2x4's.



Subassembly 10:
QTY 8

Note:

- Attach (14) to (13) using 1.25" screws. Top surfaces should be flush.
- Pre-drill as necessary



Subassembly 11:
QTY 8

Note:



- Attach (15) to (16) using 1.25" screws. Top surfaces should be flush.
- Pre-drill as necessary.

A

A

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.

		UNLESS OTHERWISE SPECIFIED:			NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN			
		TOLERANCES:	CHECKED			
		FRACTIONAL ±1/16	ENG APPR.			
		ANGULAR: MACH ±1° BEND ±1°	MFG APPR.			
		TWO PLACE DECIMAL ±.01	Q.A.			
		THREE PLACE DECIMAL ±.001	COMMENTS:			
		INTERPRET GEOMETRIC TOLERANCING PER:				
		MATERIAL				
NEXT ASSY	USED ON	FINISH				
APPLICATION		DO NOT SCALE DRAWING				



TITLE:

Full Cargo Ship

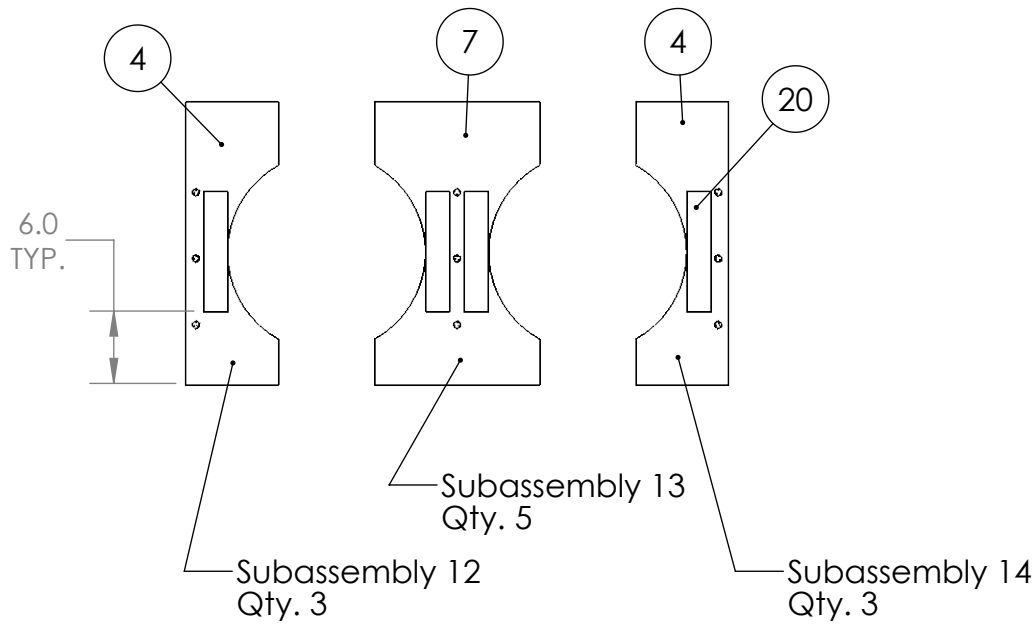
SIZE	DWG. NO.	REV
A	TE-19112	

SCALE: 1:32	WEIGHT:	SHEET 6 OF 17
-------------	---------	---------------

2

1

B

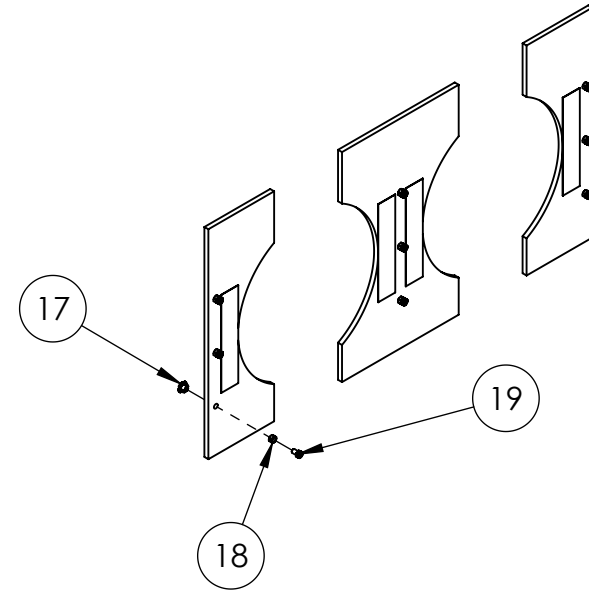


Note:

-Apply (20) to (4) and (7) as shown.

(20) should be tangent to the curve.

-Create the quantities listed.



Note:

-Press in (17) into each hole in subassembly 12, 13 and 14. Flange should be on the non-hook side of plywood. Use hammer if necessary.

-Thread (18) (19) into (17)

A

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Full Cargo Ship

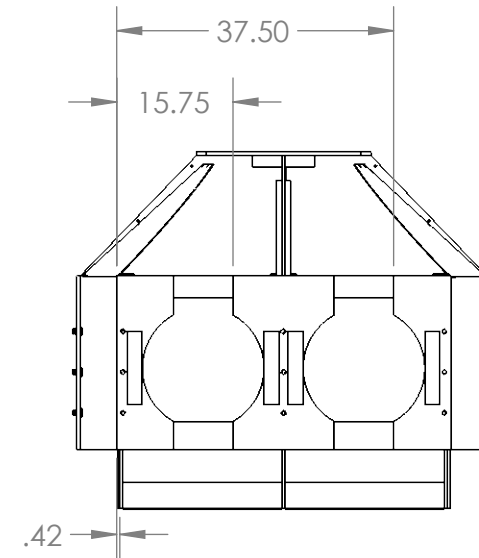
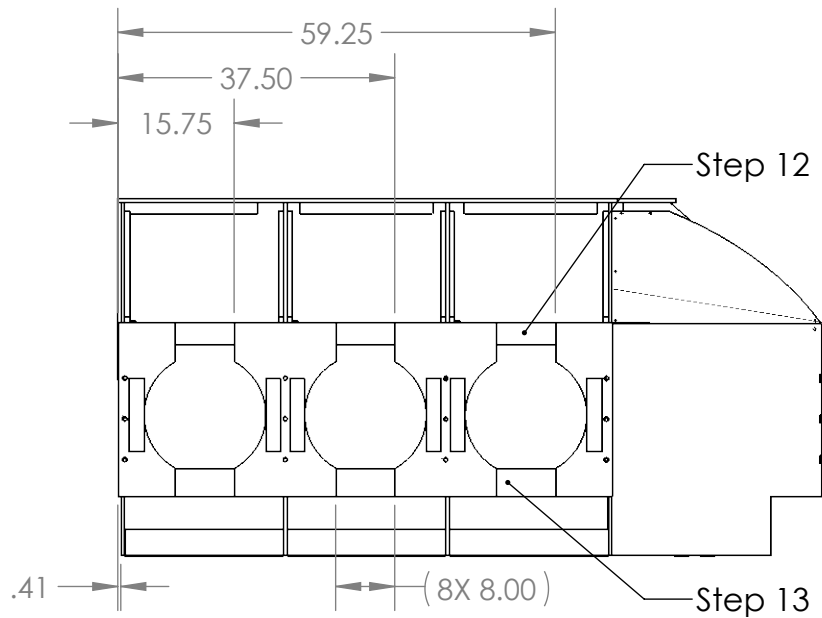
SIZE	DWG. NO.	REV
A	TE-19112	
SCALE: 1:32 WEIGHT:		SHEET 7 OF 17

B

A

2

1



Note:

- Attach Subassemblies 12, 13 and 14 as shown using 1.25" screws.
- Attach Subassemblies 10 and 11 as shown using 1.25" screws.
- Pre-drill as necessary.

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



FIRST
ROBOTICS
COMPETITION

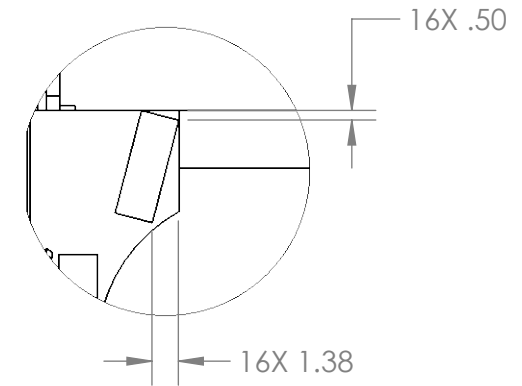
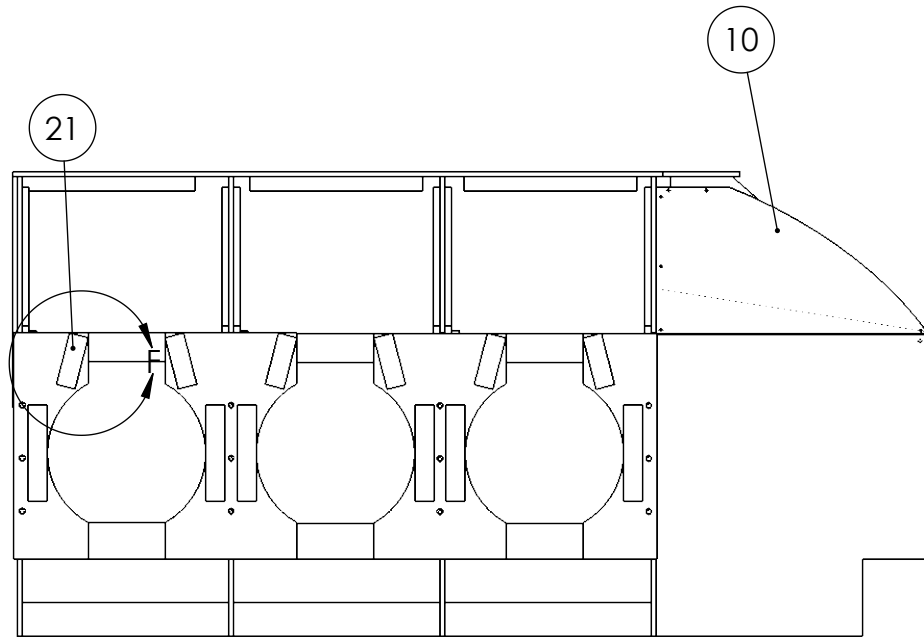


TITLE:

Full Cargo Ship

SIZE	DWG. NO.	REV
A	TE-19112	
SCALE: 1:32		WEIGHT:
		SHEET 8 OF 17

B



DETAIL F
SCALE 1 : 10

Notes:

- Apply (21) as shown.
- Attach (10) with cable ties. Quantity 2.

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:

Full Cargo Ship

SIZE	DWG. NO.	REV
A	TE-19112	
SCALE: 1:32		WEIGHT:
		SHEET 9 OF 17

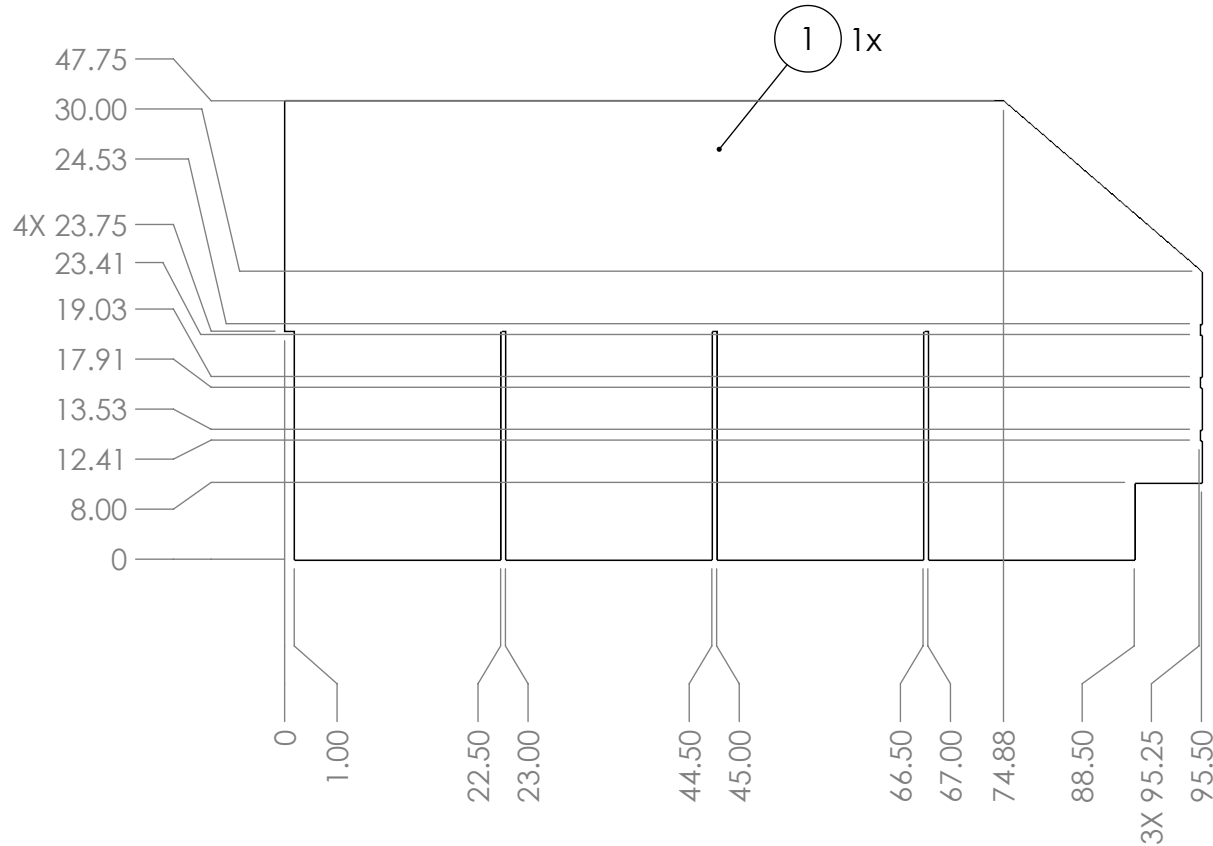
B

A

2

1

TE-19112-01



Note:
Material 15/32" (1/2") A/C or CDX Plywood

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.

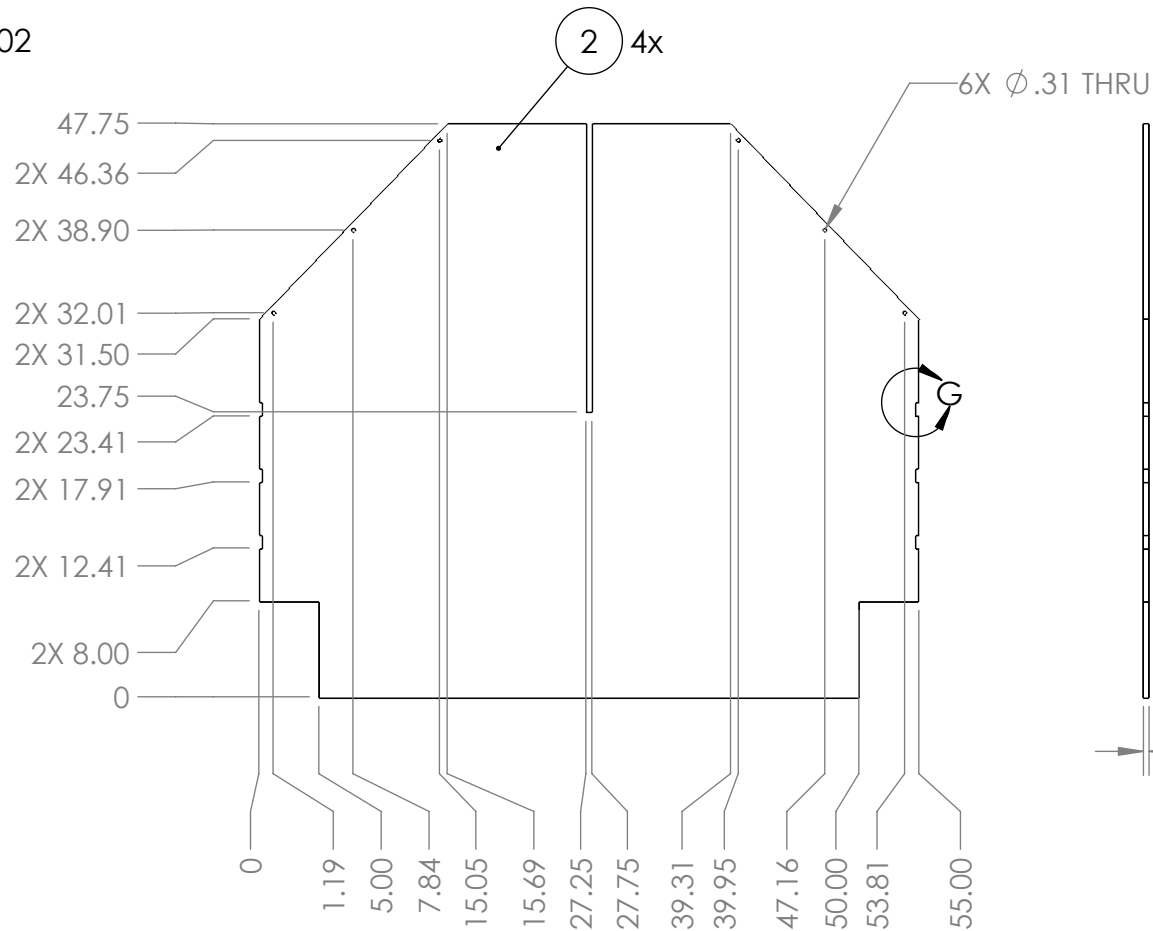
		UNLESS OTHERWISE SPECIFIED:	NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN	
		TOLERANCES:	CHECKED	
		FRACTIONAL $\pm 1/16$	ENG APPR.	
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.	
		TWO PLACE DECIMAL $\pm .01$	Q.A.	
		THREE PLACE DECIMAL $\pm .001$	COMMENTS:	
		INTERPRET GEOMETRIC TOLERANCING PER:		
		MATERIAL		
NEXT ASSY	USED ON	FINISH		
APPLICATION		DO NOT SCALE DRAWING		



TITLE:
Full Cargo Ship

SIZE A	DWG. NO. TE-19112	REV
SCALE: 1:32		WEIGHT:
SHEET 10 OF 17		

TE-19112-02



Note:
Material 15/32" (1/2") A/C or CDX Plywood

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
		FINISH
NEXT ASSY	USED ON	
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:

Full Cargo Ship

SIZE	DWG. NO.	REV
A	TE-19112	

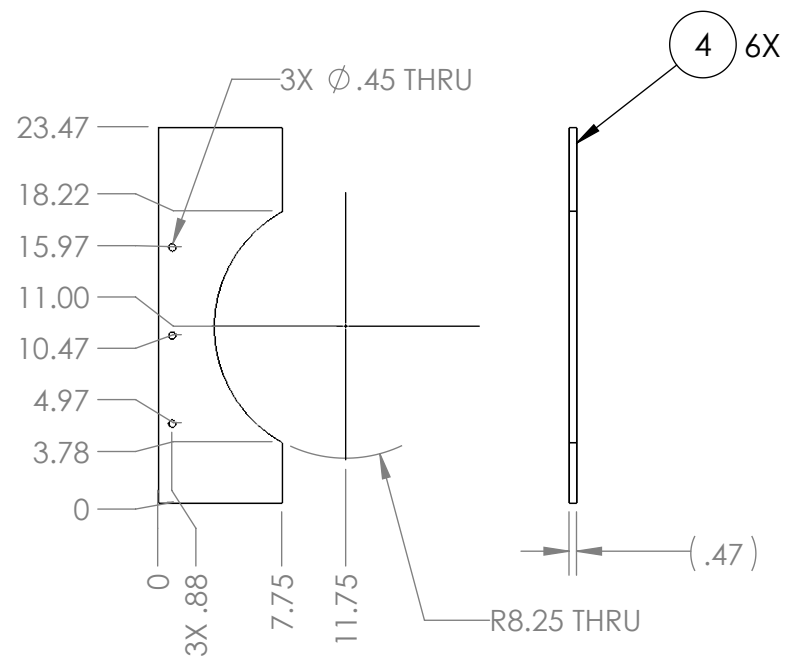
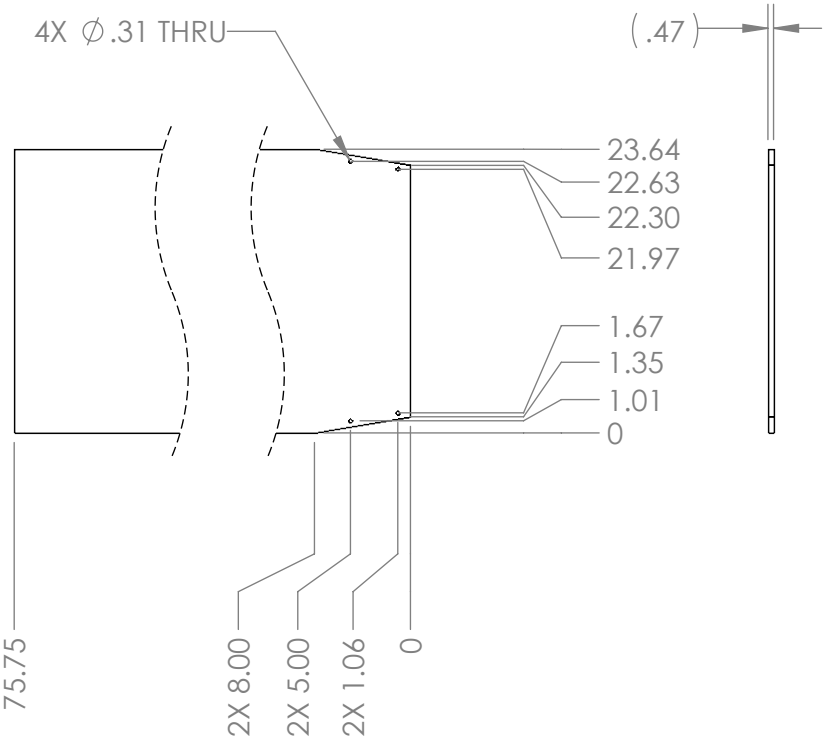
SCALE: 1:32 WEIGHT: SHEET 11 OF 17

2

1

TE-19112-03

TE-19112-04



Note:
Material 15/32" (1/2") A/C or CDX Plywood

Note:
Material 15/32" (1/2") A/C or CDX Plywood

B



B

A

A

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.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		
		FRACTIONAL ±1/16	ENG APPR.		
		ANGULAR: MACH ±1° BEND ±1°	MFG APPR.		
		TWO PLACE DECIMAL ±.01	Q.A.		
		THREE PLACE DECIMAL ±.001	COMMENTS:		
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



TITLE:
Full Cargo Ship

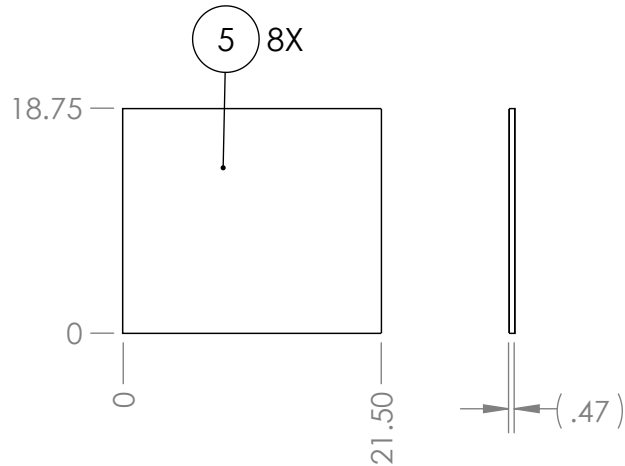
SIZE	DWG. NO.	REV
A	TE-19112	

SCALE: 1:32	WEIGHT:	SHEET 12 OF 17
-------------	---------	----------------

2

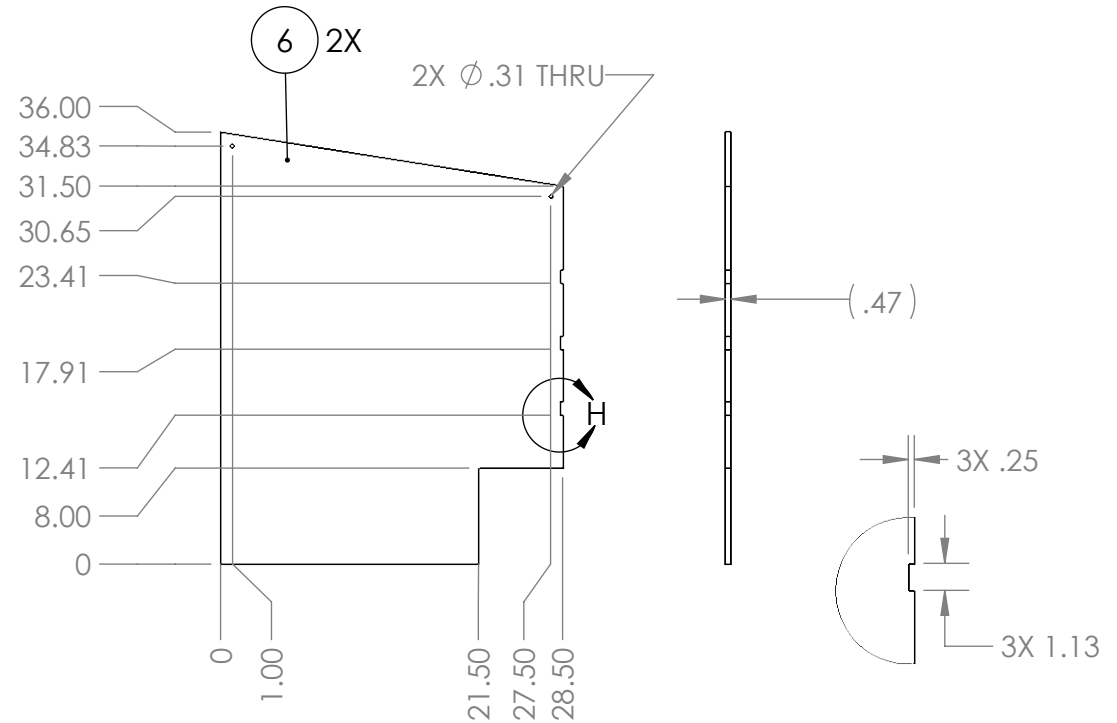
1

TE-19112-05



Note:
Material 15/32" (1/2") A/C or CDX Plywood

TE-19112-06



Note:
Material 15/32" (1/2") A/C or CDX Plywood

DETAIL H
SCALE 1 : 8

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.

		UNLESS OTHERWISE SPECIFIED:	NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN	
		TOLERANCES:	CHECKED	
		FRACTIONAL $\pm 1/16$	ENG APPR.	
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.	
		TWO PLACE DECIMAL $\pm .01$	Q.A.	
		THREE PLACE DECIMAL $\pm .001$	COMMENTS:	
		INTERPRET GEOMETRIC TOLERANCING PER:		
		MATERIAL		
		FINISH		
NEXT ASSY	USED ON			
APPLICATION		DO NOT SCALE DRAWING		



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Full Cargo Ship

SIZE

A

DWG. NO.

TE-19112

REV

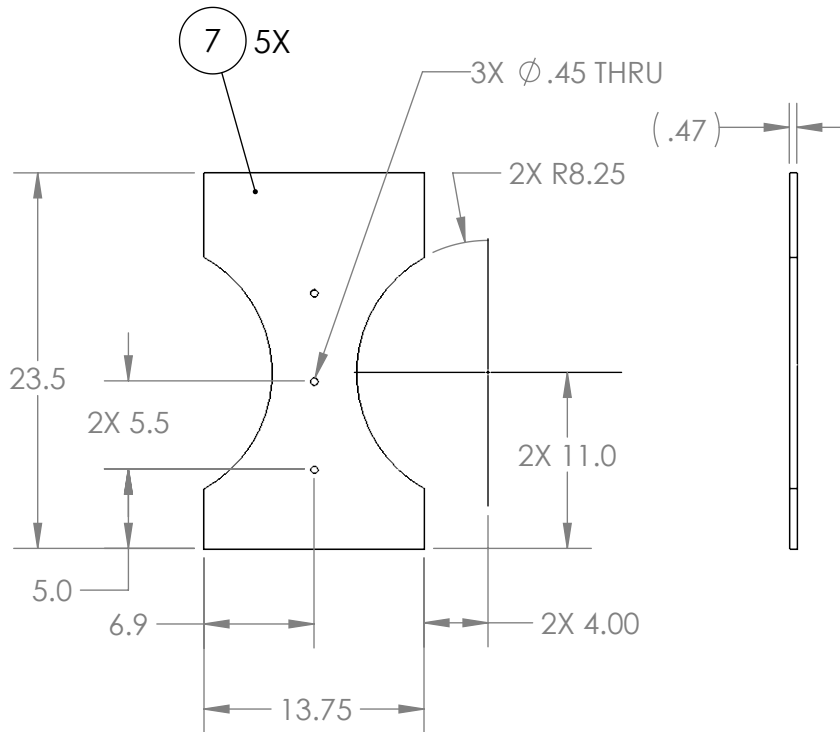
SCALE: 1:32 WEIGHT:

SHEET 13 OF 17

2

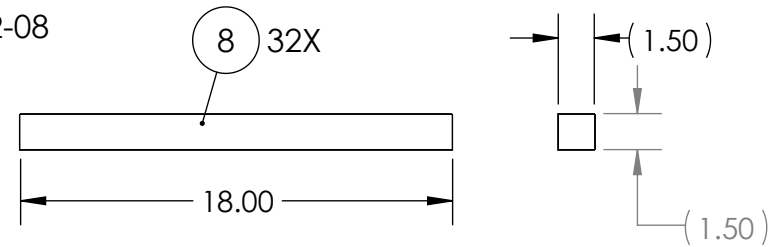
1

TE-19112-07



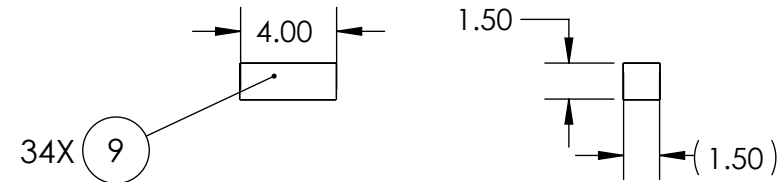
Note:
Material 15/32" (1/2") A/C or CDX Plywood

TE-19112-08



Note:
Material 2"x 2" Lumber Pine

TE-19112-09



Note:
Material 2"x 2" Lumber Pine

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
		FINISH
NEXT ASSY	USED ON	
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:

Full Cargo Ship

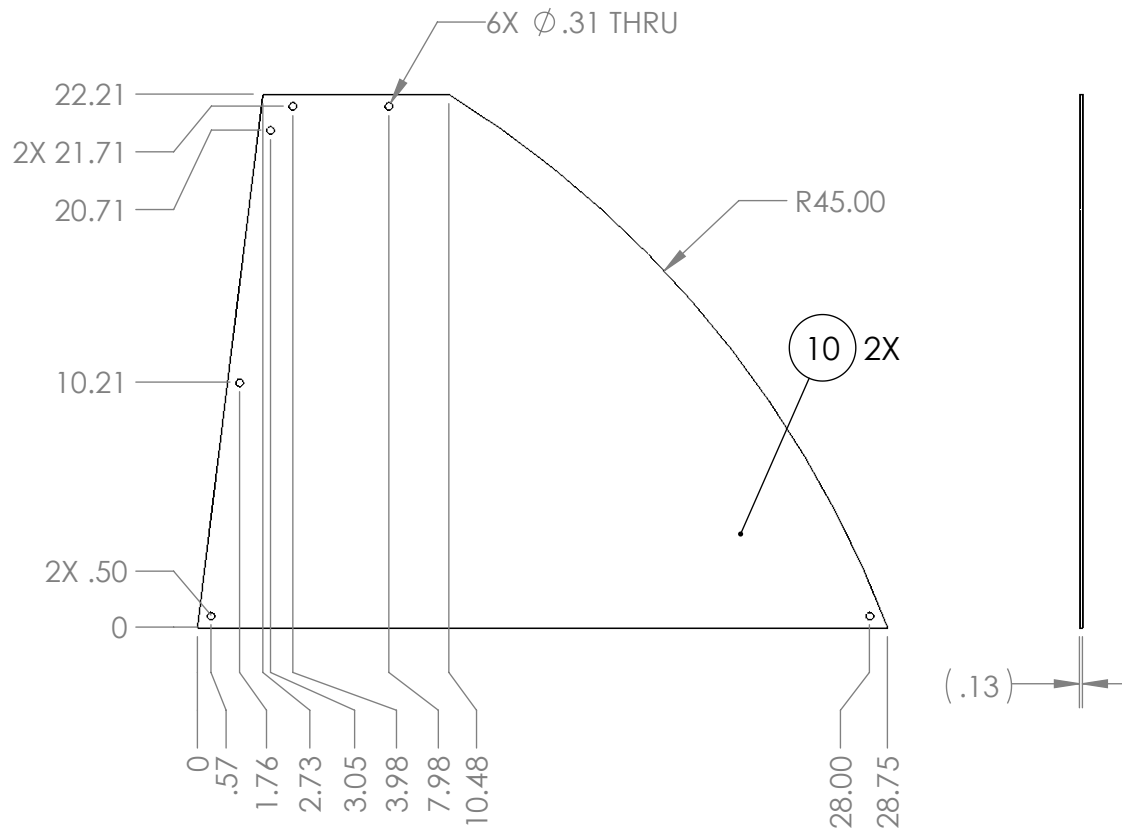
SIZE	DWG. NO.	REV
A	TE-19112	

SCALE: 1:32 WEIGHT: SHEET 14 OF 17

2

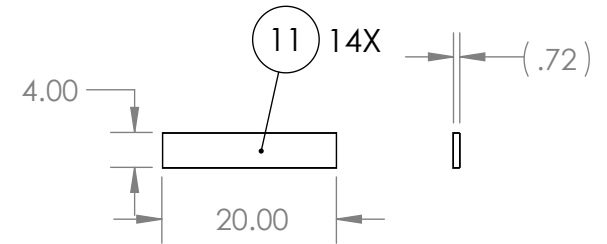
1

TE-19112-10



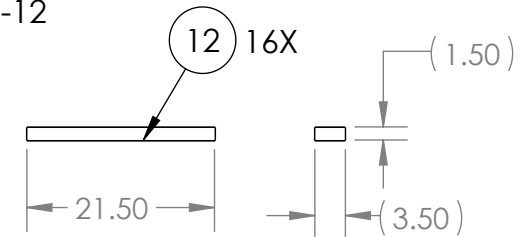
Note:
Material 1/8" Hardboard

TE-19112-11



Note:
23/32"(3/4") A/C or CDX Plywood

TE-19112-12



Note:
2"x4" Pine Lumber

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF **FIRST®**. Any REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF **FIRST®** IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES		DRAWN	
		TOLERANCES:		CHECKED	
		FRACTIONAL $\pm 1/16$		ENG APPR.	
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$		MFG APPR.	
		TWO PLACE DECIMAL $\pm .01$		Q.A.	
		THREE PLACE DECIMAL $\pm .001$		COMMENTS:	
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



FIRST
ROBOTICS
COMPETITION



TITLE:

Full Cargo Ship

SIZE

A

DWG. NO.

TE-19112

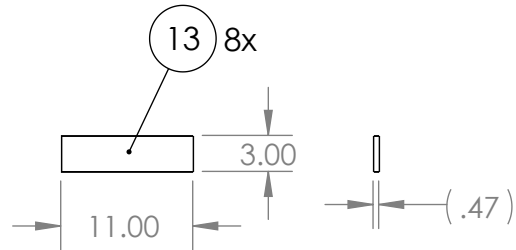
REV

SCALE: 1:32 WEIGHT:

SHEET 15 OF 17

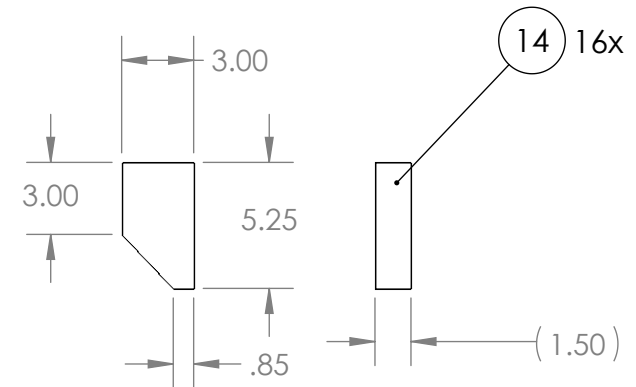
B

TE-19112-13



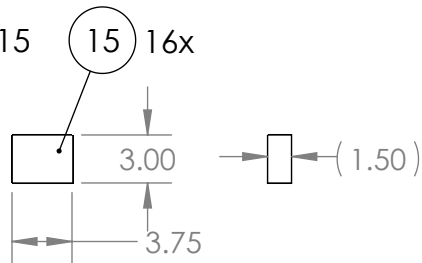
Note:
15/32" (1/2") A/C or CDX Plywood

TE-19112-14



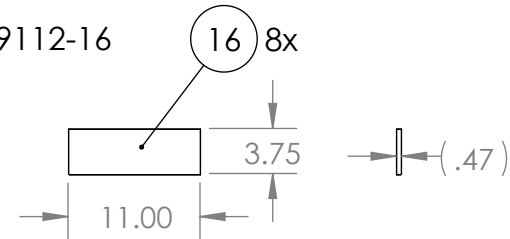
Note:
2"x 4" Pine lumber

TE-19112-15



Note:
2"x 4" Pine lumber

TE-19112-16



Note:
15/32" (1/2") A/C or CDX Plywood

B

A

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:

Full Cargo Ship

SIZE	DWG. NO.	REV
A	TE-19112	

SCALE: 1:32 WEIGHT:

SHEET 16 OF 17

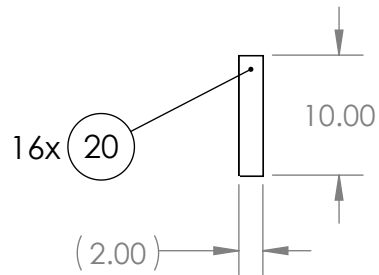
2

1

2

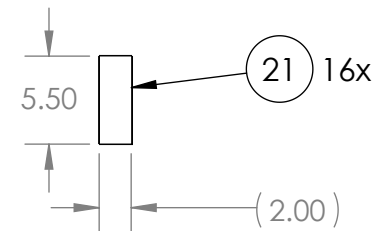
1

TE-19112-19



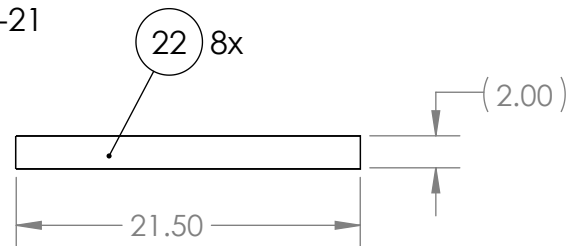
2" Hook Fastener

TE-19112-20



2" Vision Tape

TE-19112-21



2" Hook Fastener

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.

NEXT ASSY

USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .001$

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

DO NOT SCALE DRAWING

NAME DATE

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Full Cargo Ship

SIZE

A

DWG. NO.

TE-19112

REV

SCALE: 1:32 WEIGHT:

SHEET 17 OF 17

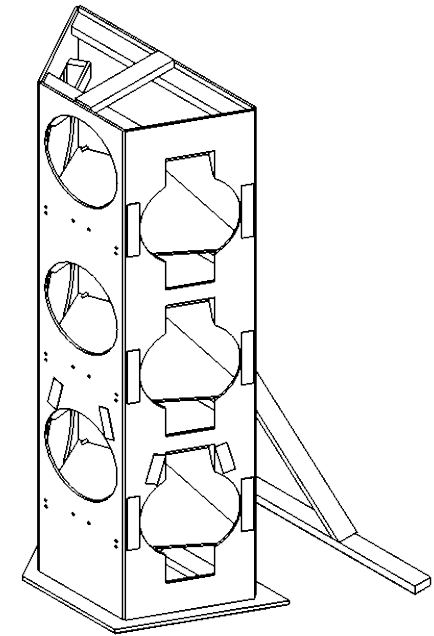
2

1

2

1

ITEM NO.	PART NUMBER	QTY.
1	TE-19113-01	1
2	TE-19113-02	2
3	TE-19113-03	1
4	TE-19113-04	6
5	TE-19113-05	2
6	TE-19113-06	1
7	TE-19113-07	4
8	TE-19113-08	4
9	TE-19113-09	4
10	TE-19113-10	1
11	TE-19113-11	6
12	TE-19113-12	12
13	TE-19113-13	12
14	TE-19113-15	6
15	TE-19113-16	1
16	TE-19113-17	3
17	flat_phil_.25_20_1.75	36



Material	QTY
23/32" (4/3") A/C or CDX Plywood	0.25 sheets
15/32" (1/2") A/C or CDX Plywood	3 sheets
2"x4"x8'	4
Flat Head 1/4"-20 x1.75	18
2" Hook Fastener	267"
2" Vison Tape	33"
1.25" screws	~60
2.5" screws	~100

<p>PROPRIETARY AND CONFIDENTIAL</p> <p>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.</p>		<p>UNLESS OTHERWISE SPECIFIED:</p> <p>DIMENSIONS ARE IN INCHES</p> <p>TOLERANCES:</p> <p>FRACTIONAL $\pm 1/16$</p> <p>ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$</p> <p>TWO PLACE DECIMAL $\pm .01$</p> <p>THREE PLACE DECIMAL $\pm .001$</p>		NAME		DATE	<p>FIRST ROBOTICS COMPETITION</p> <p>SOLIDWORKS</p> <p>Modeling Solutions Partner</p>	
				DRAWN				
				CHECKED				
				ENG APPR.				
				MFG APPR.				
INTERPRET GEOMETRIC TOLERANCING PER:		Q.A.				<p>TITLE:</p> <p>Full Rocket</p>		
MATERIAL		COMMENTS:						
FINISH								
NEXT ASSY	USED ON	APPLICATION		DO NOT SCALE DRAWING		<p>SIZE A</p> <p>DWG. NO. TE-19113</p> <p>SCALE: 1:32</p>	<p>REV</p> <p>WEIGHT:</p> <p>SHEET 1 OF 11</p>	

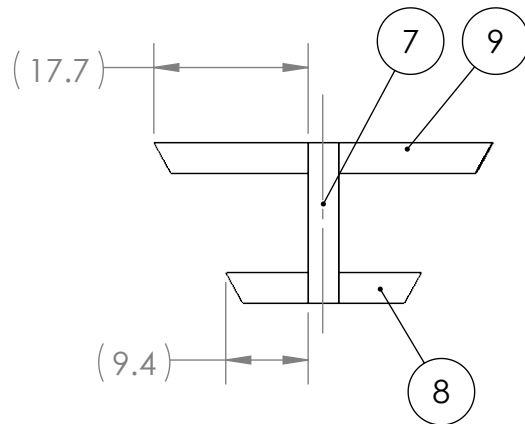
2

1

2

1

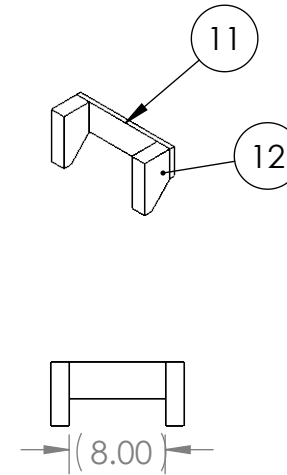
Subassembly 1: QTY 4



Notes:

- Attach (7) to (8) and (9).
- (7) is centered on top of (8) and (9).
- Pre-drill and attach items with 2.5" screws.

Subassembly 2: QTY 6



Note:

- Attach (11) to (12) 2X.
- (12) should be flush to top edge and side faces of (11).
- Pre drill and attach using 1.25" screws

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.

		UNLESS OTHERWISE SPECIFIED:	NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN	
		TOLERANCES:	CHECKED	
		FRACTIONAL $\pm 1/16$	ENG APPR.	
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.	
		TWO PLACE DECIMAL $\pm .01$	Q.A.	
		THREE PLACE DECIMAL $\pm .001$	COMMENTS:	
		INTERPRET GEOMETRIC TOLERANCING PER:		
		MATERIAL		
NEXT ASSY	USED ON	FINISH		
APPLICATION		DO NOT SCALE DRAWING		



TITLE: Full Rocket		
SIZE A	DWG. NO. TE-19113	REV
SCALE: 1:32		WEIGHT:
		SHEET 2 OF 11

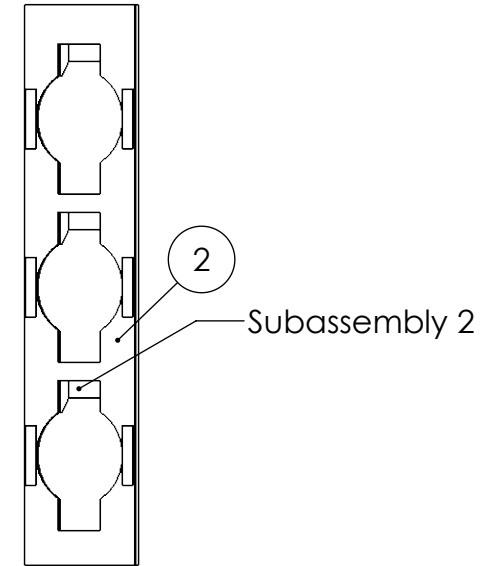
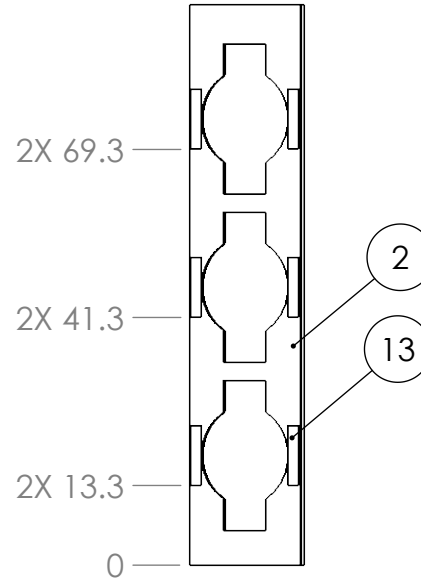
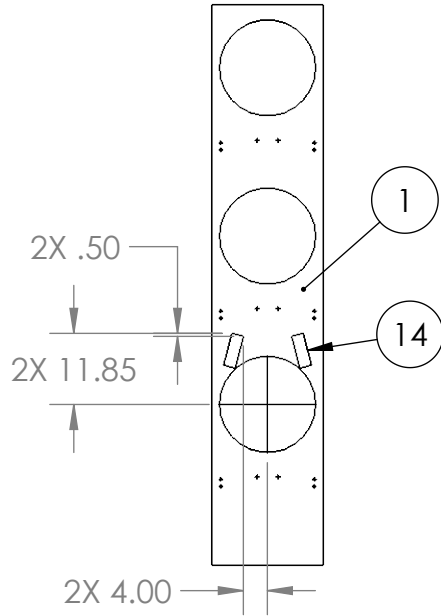
2

1

2

1

Subassembly 3:

Subassembly 4:
Qty. 2

Note:

Attach (14)x2 to (1).

Note:

- Attach (13) x6 to (2). (13) should be tangent to opening.
- Attach Subassembly 2 (qty.3) to (2). It should be flush to the top opening edges.
- Use 1.25" or 2.5" screws to attach items.

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.

NEXT ASSY

USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .001$

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

DO NOT SCALE DRAWING

NAME DATE

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:



TITLE:

Full Rocket

SIZE

DWG. NO.

REV

A

TE-19113

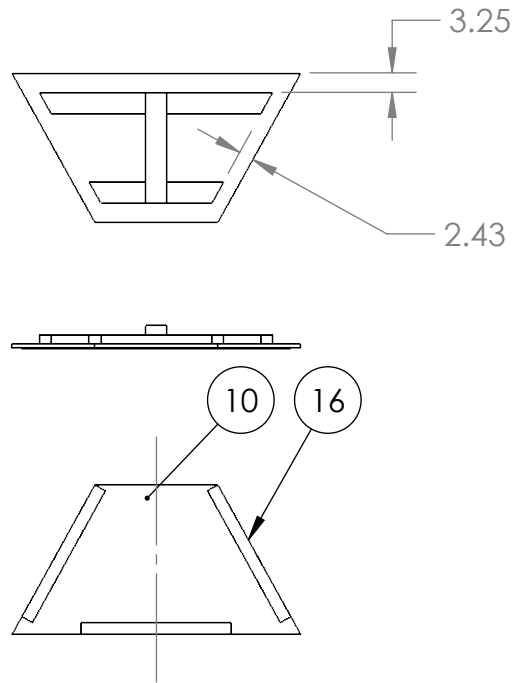
SCALE: 1:32 WEIGHT:

SHEET 3 OF 11

2

1

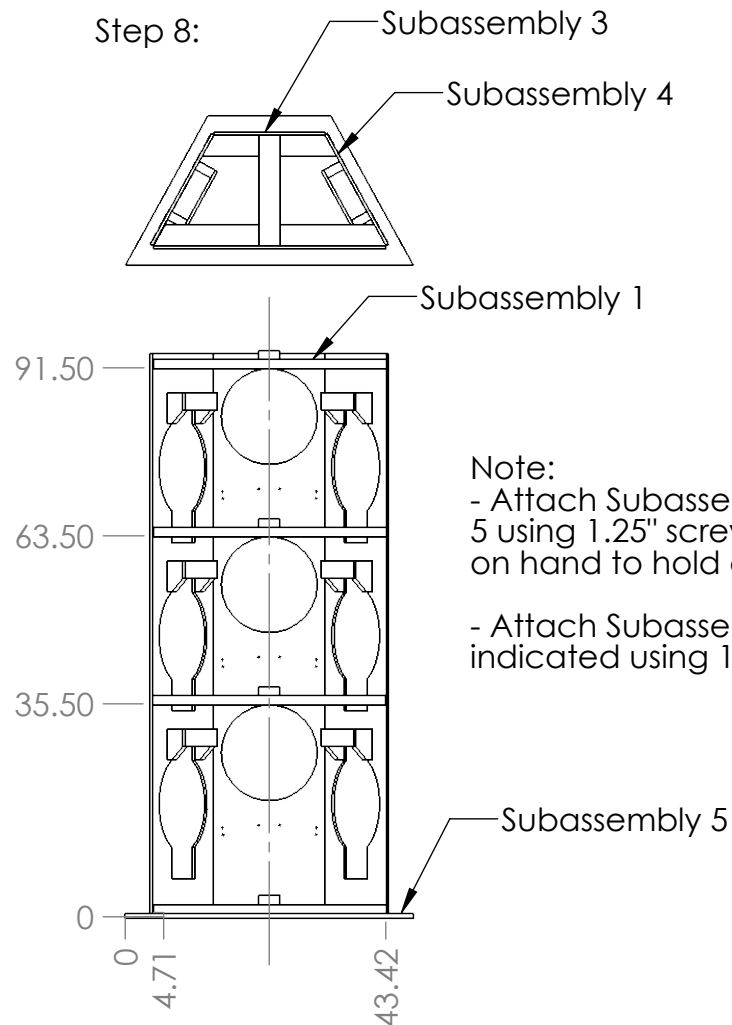
Subassembly 5:



Note:

- Attach 16 to 10 as shown.
- Attach Subassembly 1 using 1.25" screws.

Step 8:



Note:

- Attach Subassembly 3 and 4 to Subassembly 5 using 1.25" screws. Have additional people on hand to hold components in place.

- Attach Subassembly 1 at the locations indicated using 1.25" screws.

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.

NEXT ASSY

USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .001$

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

DO NOT SCALE DRAWING

NAME DATE

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:



FIRST
ROBOTICS
COMPETITION



TITLE:

Full Rocket

SIZE

A

DWG. NO.

TE-19113

REV

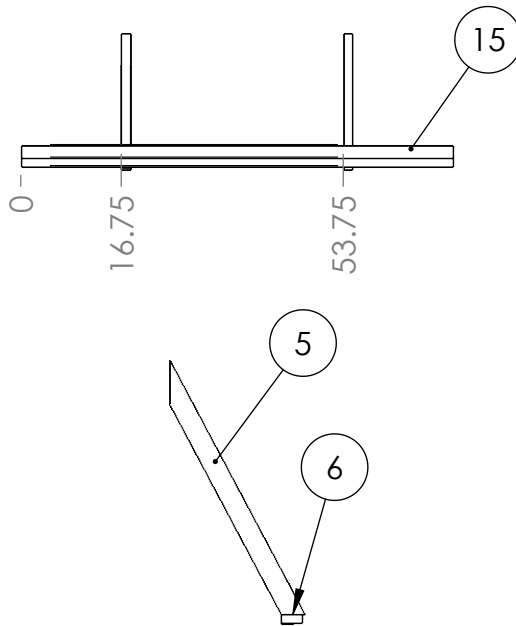
SCALE: 1:32

WEIGHT:

SHEET 4 OF 11

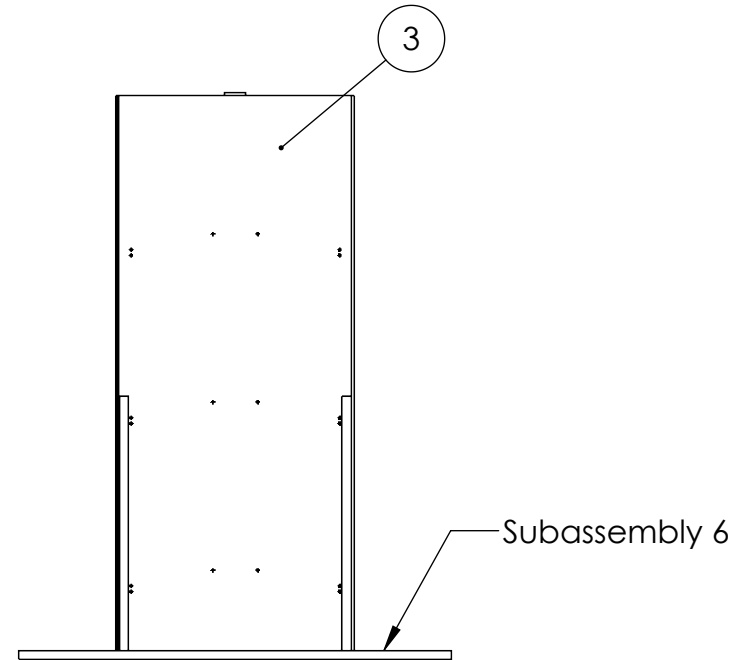
Subassembly 6:

Step 10:



Notes:

- Attach (5) to (6) at the two locations indicated. Pre-drill and use 2.5" screws.
- Attach (15) to (6)



Note:

- Attach (3) to Step 8 pre drill 2.5" screws
 - Attach Step 9 to (3) pre drill and 2.5" screw
- Step 9 sits flush to floor

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:

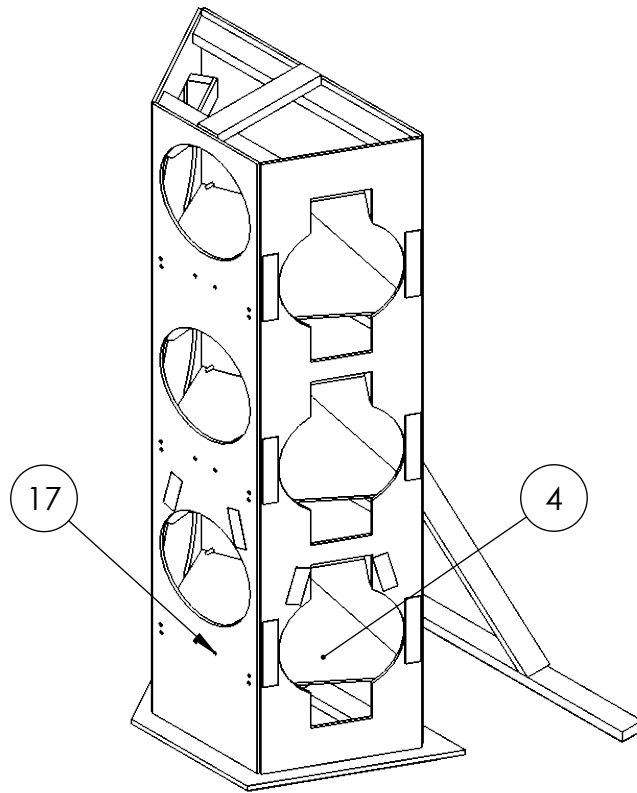
Full Rocket

SIZE	DWG. NO.	REV
A	TE-19113	
SCALE: 1:32		WEIGHT:
		SHEET 5 OF 11

2

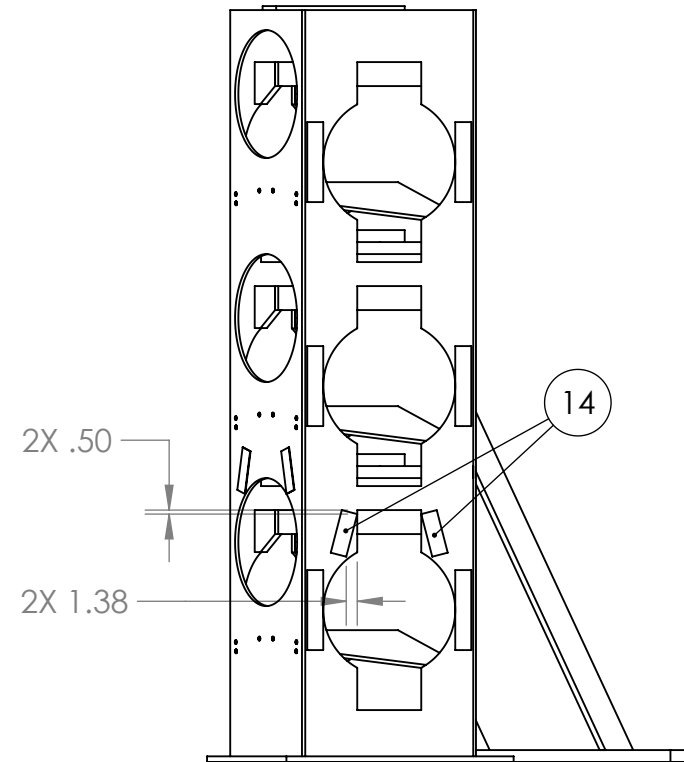
1

B



Note:

- Insert (17) x36 into all countersunk holes
- Lay (4) onto (17). One of the (17) will be on top of (4)



Note:

- Attach (14) 2X as shown. Repeat on other side.

A

A

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.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:

Full Rocket

SIZE	DWG. NO.	REV
A	TE-19113	
SCALE: 1:32 WEIGHT:		SHEET 6 OF 11

2

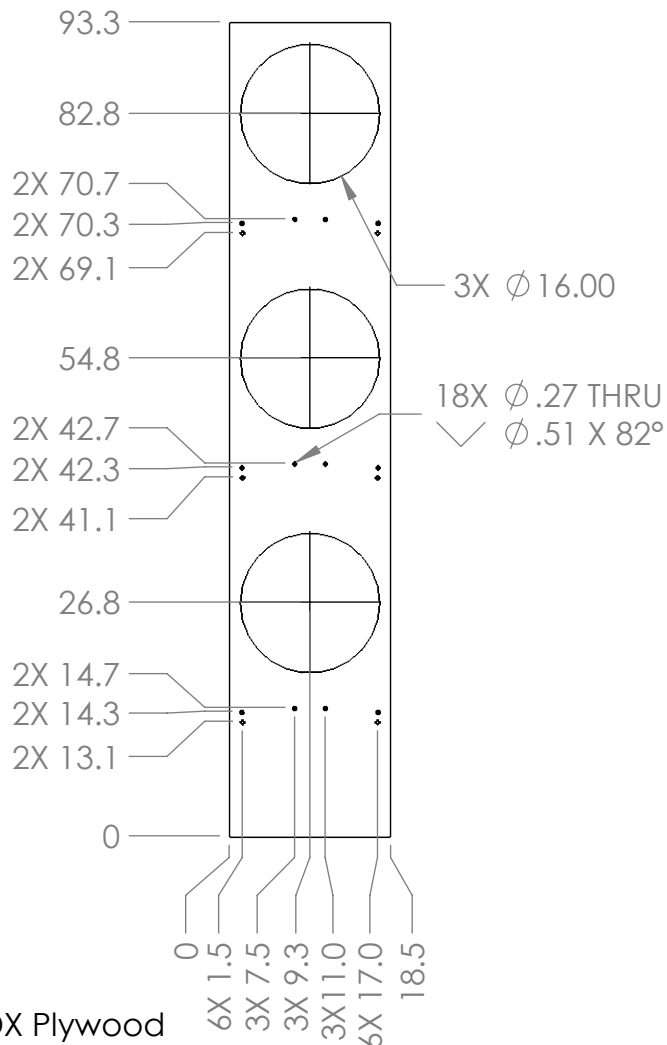
1

B

TE-19113-01

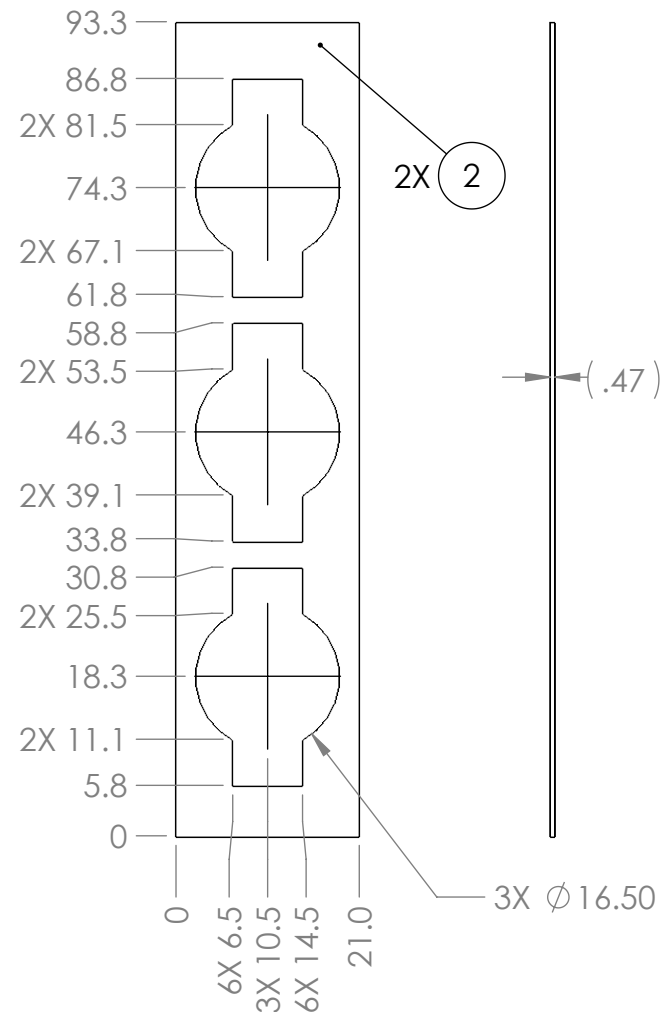
1X (1)

(.47)



Note:
15/32" A/C or CDX Plywood

TE-19113-02



Note:
15/32" A/C or CDX Plywood

B

A

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.

NEXT ASSY

USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .001$

INTERPRET GEOMETRIC TOLERANCING PER:

MATERIAL

FINISH

DO NOT SCALE DRAWING

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:

NAME

DATE



TITLE:

Full Rocket

SIZE

DWG. NO.

REV

A

TE-19113

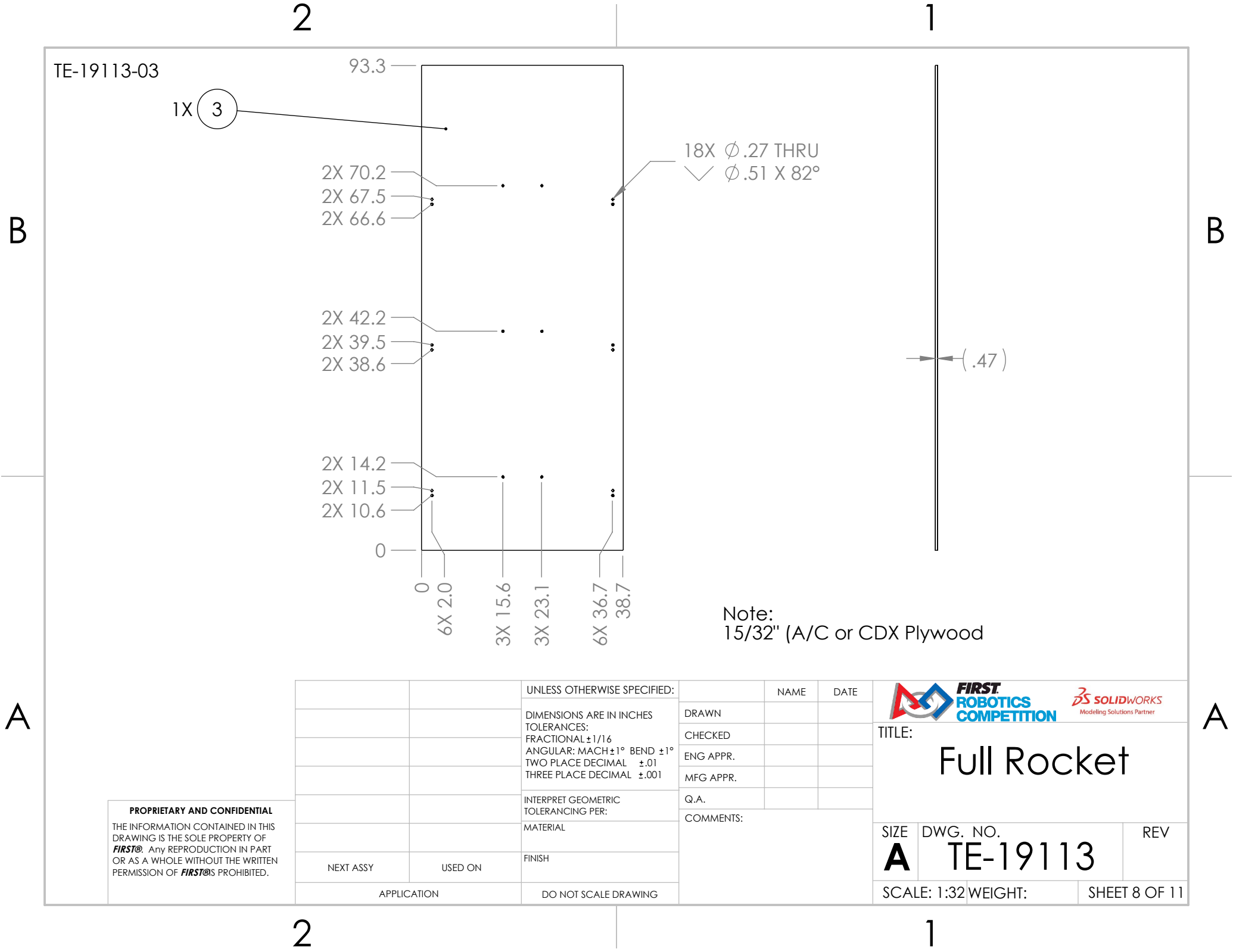
SCALE: 1:32

WEIGHT:

SHEET 7 OF 11

2

1



B



B

A

A

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.

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		
		FRACTIONAL $\pm 1/16$	ENG APPR.		
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.		
		TWO PLACE DECIMAL $\pm .01$	Q.A.		
		THREE PLACE DECIMAL $\pm .001$	COMMENTS:		
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			



TITLE:

Full Rocket

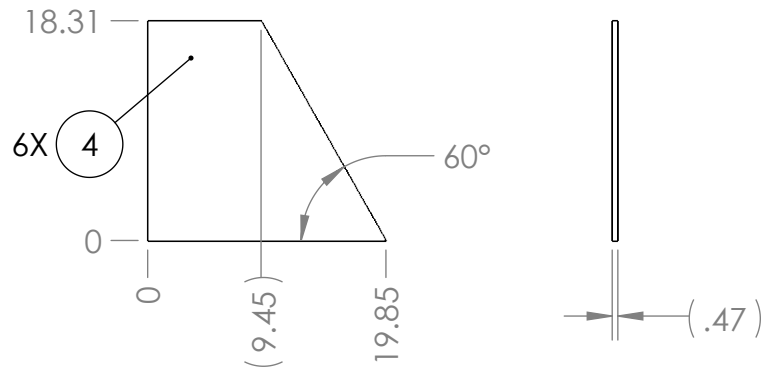
SIZE	DWG. NO.	REV
A	TE-19113	

SCALE: 1:32	WEIGHT:	SHEET 8 OF 11
-------------	---------	---------------

2

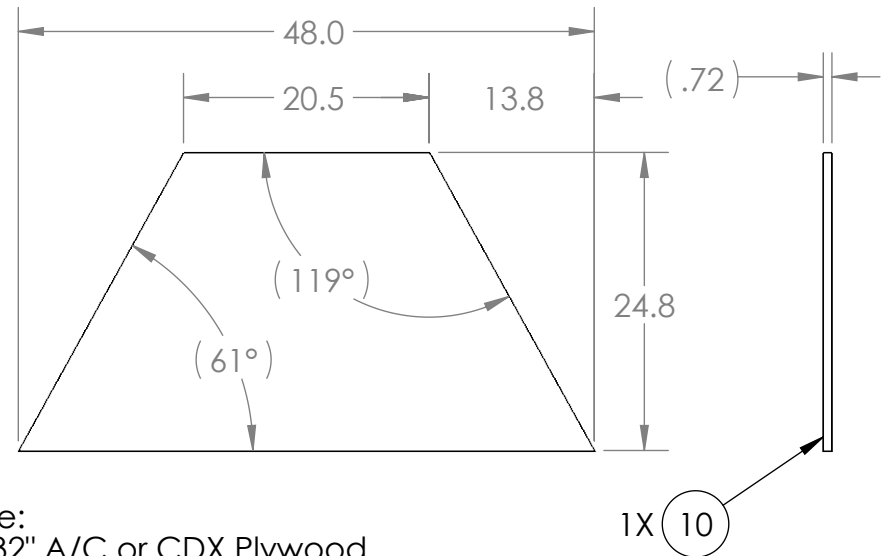
1

TE-19113-04



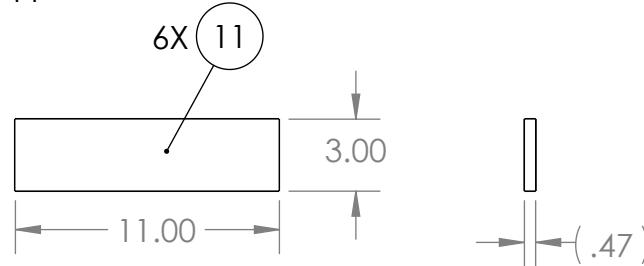
Note:
15/32" A/C or CDX Plywood

TE-19113-10



Note:
23/32" A/C or CDX Plywood

TE-19113-11



Note:
15/32" A/C or CDX Plywood

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.

		UNLESS OTHERWISE SPECIFIED:			NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN			
		TOLERANCES:	CHECKED			
		FRACTIONAL $\pm 1/16$	ENG APPR.			
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.			
		TWO PLACE DECIMAL $\pm .01$	Q.A.			
		THREE PLACE DECIMAL $\pm .001$	COMMENTS:			
		INTERPRET GEOMETRIC TOLERANCING PER:				
		MATERIAL				
NEXT ASSY	USED ON	FINISH				
APPLICATION		DO NOT SCALE DRAWING				



TITLE: Full Rocket		
SIZE A	DWG. NO. TE-19113	REV
SCALE: 1:32	WEIGHT:	SHEET 9 OF 11

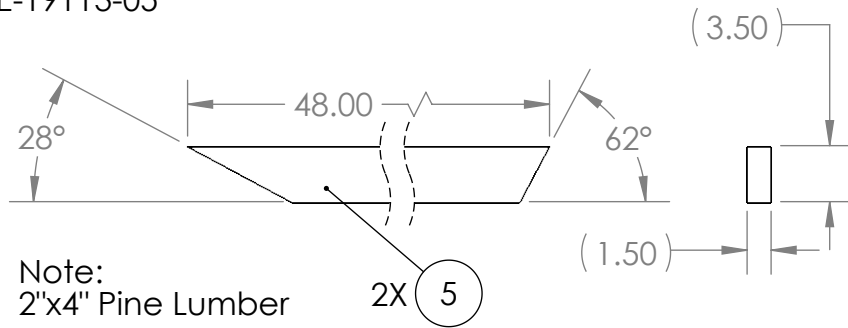
2

1

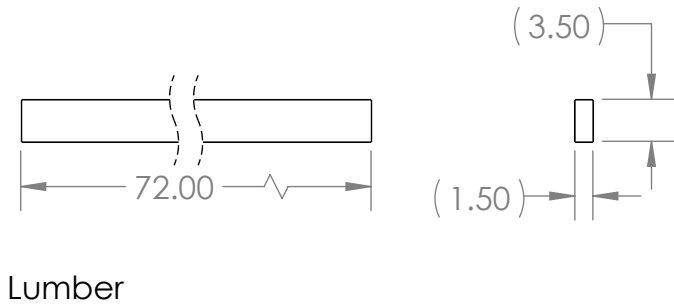
2

1

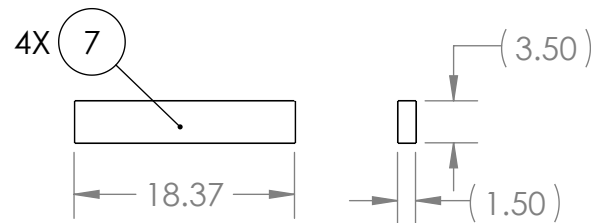
TE-19113-05



TE-19113-06

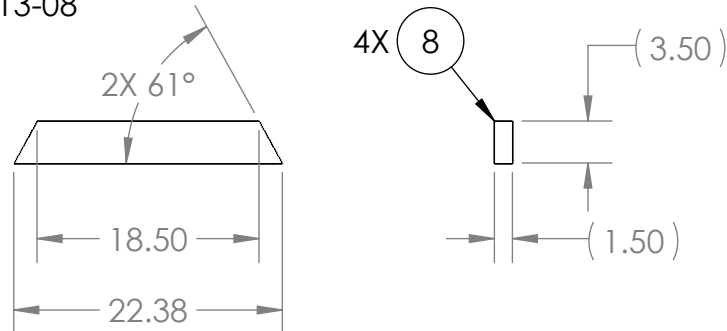


TE-19113-07

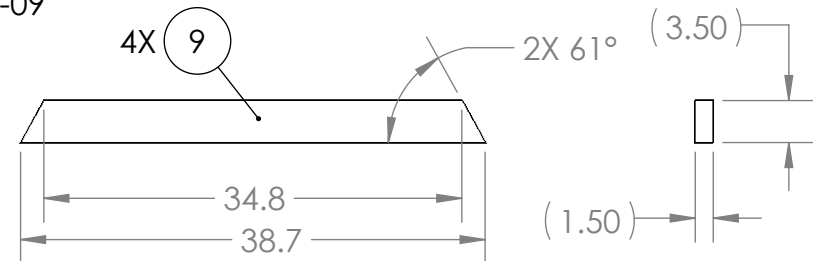


Note:
2"x4" Pine Lumber

TE-19113-08



TE-19113-09



Note:
2"x4" Pine Lumber

Note:
2"x4" Pine Lumber

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FIRST®. Any REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF FIRST® IS PROHIBITED.

		UNLESS OTHERWISE SPECIFIED:
		DIMENSIONS ARE IN INCHES
		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
		FINISH
NEXT ASSY	USED ON	
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



FIRST
ROBOTICS
COMPETITION

3D SOLIDWORKS
Modeling Solutions Partner

TITLE:

Full Rocket

SIZE	DWG. NO.	REV
A	TE-19113	
SCALE: 1:32		WEIGHT:
		SHEET 10 OF 11

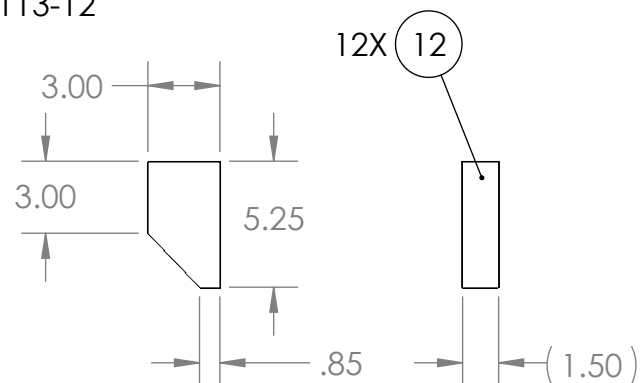
2

1

2

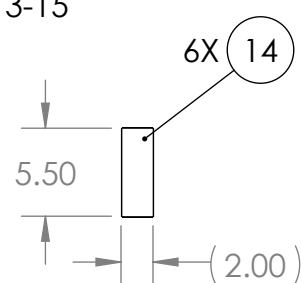
1

TE-19113-12



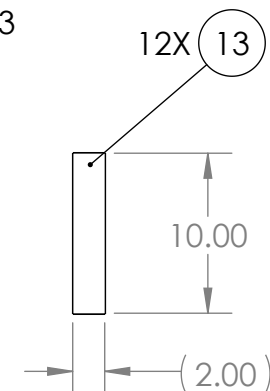
Note:
2"x 4" Pine lumber

TE-19113-15



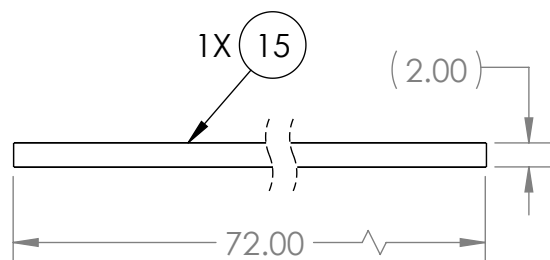
2" Vison Tape

TE-19113-13



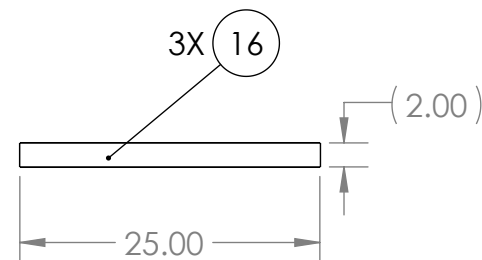
2" Hook Fastener

TE-19113-16



2" Hook Fastener

TE-19113-17



2" Hook Fastener

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.

NEXT ASSY

USED ON

APPLICATION

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL $\pm 1/16$
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
TWO PLACE DECIMAL $\pm .01$
THREE PLACE DECIMAL $\pm .001$

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

DO NOT SCALE DRAWING

NAME

DATE

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:



FIRST
ROBOTICS
COMPETITION



TITLE:

Full Rocket

SIZE

A

DWG. NO.

TE-19113

REV

SCALE: 1:32 WEIGHT:

SHEET 11 OF 11

2

1