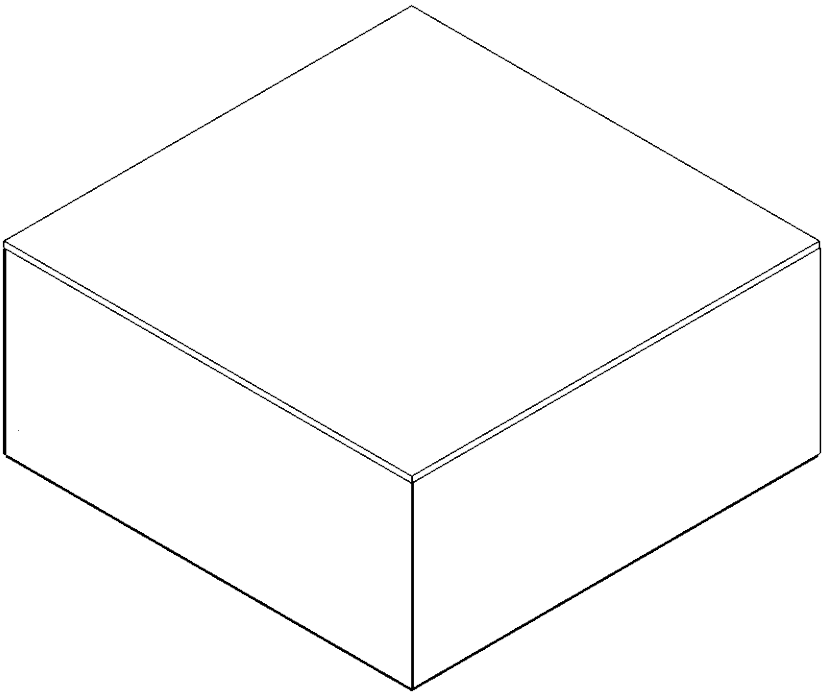


2

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

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

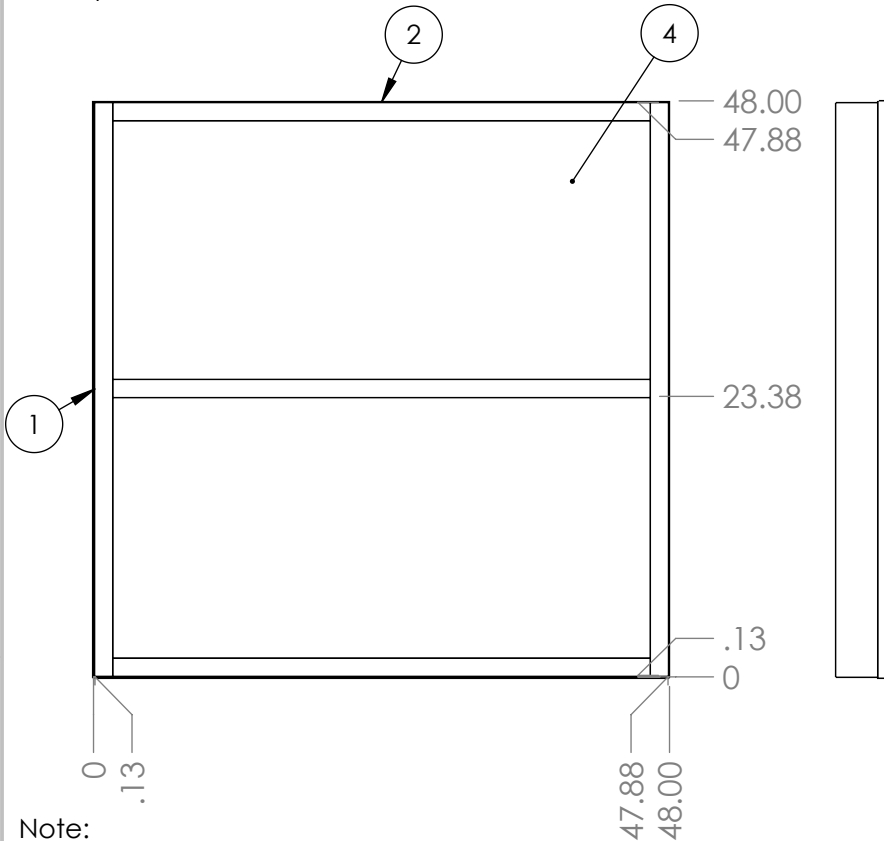
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2

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Step 1:



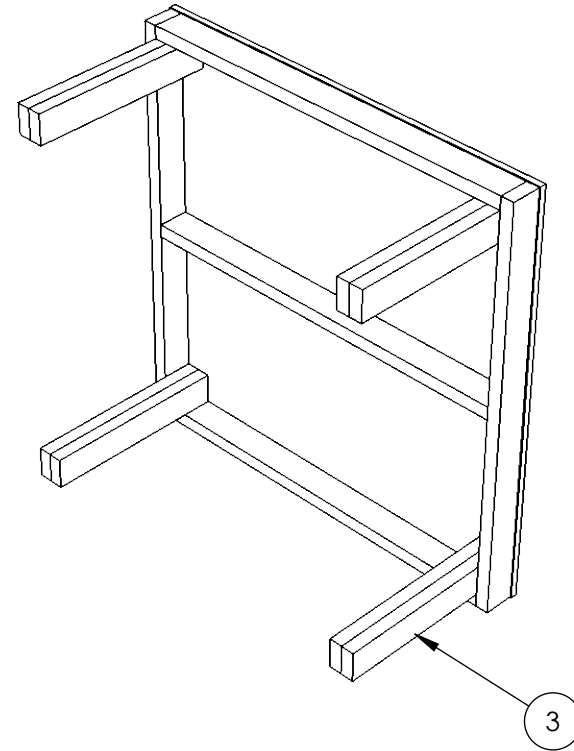
Note:

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

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NEXT ASSY

USED ON

APPLICATION

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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:

2"x 4" Hab lvl 3

SIZE

A

DWG. NO.

TE-19102

REV

SCALE: 1:16 WEIGHT:

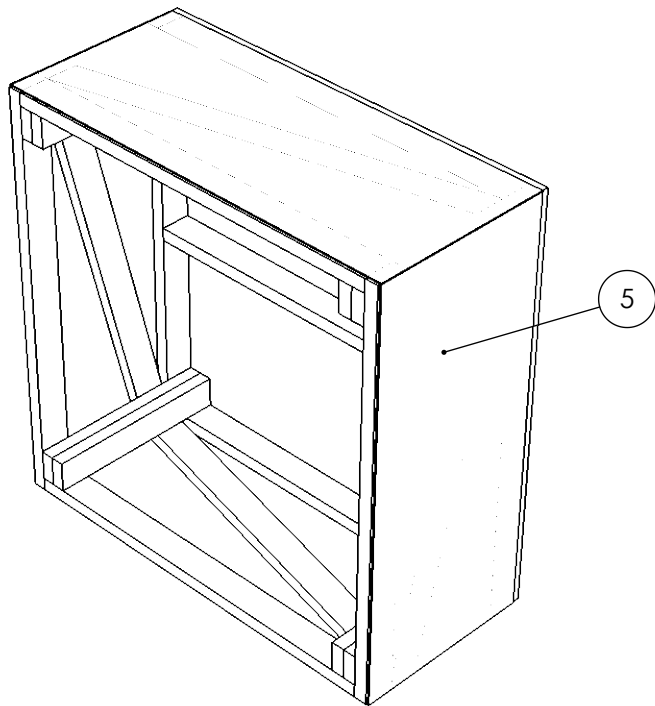
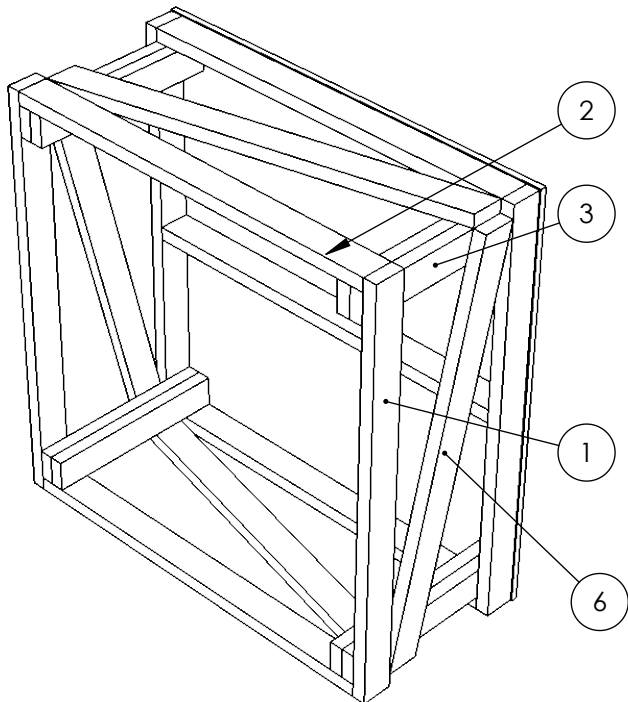
SHEET 2 OF 5

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

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		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:
2"x 4" Hab lvl 3

SIZE	DWG. NO.	REV
A	TE-19102	
SCALE: 1:16		WEIGHT:
		SHEET 3 OF 5

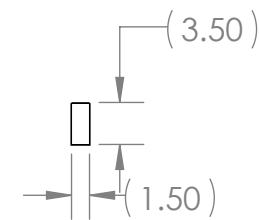
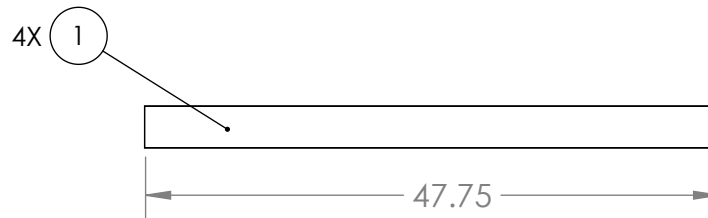
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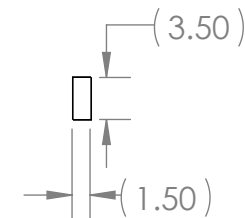
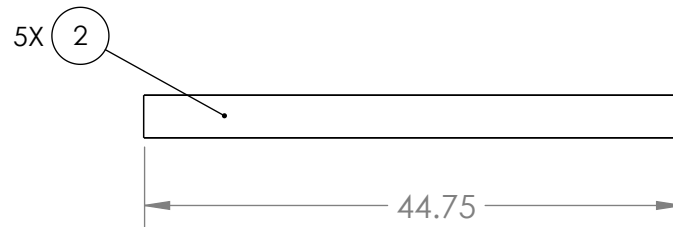
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TE-19102-01



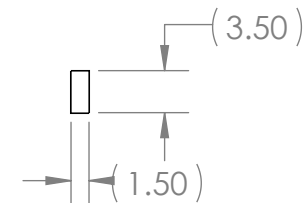
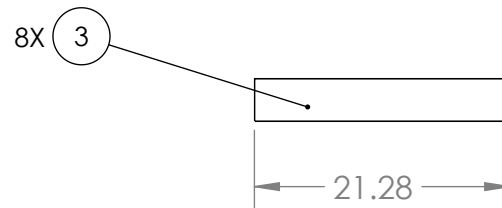
Note:
2 x 4 Pine Lumber

TE-19102-02



Note:
2 x 4 Pine Lumber

TE-19102-03



Note:
2 x 4 Pine Lumber

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		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:		



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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

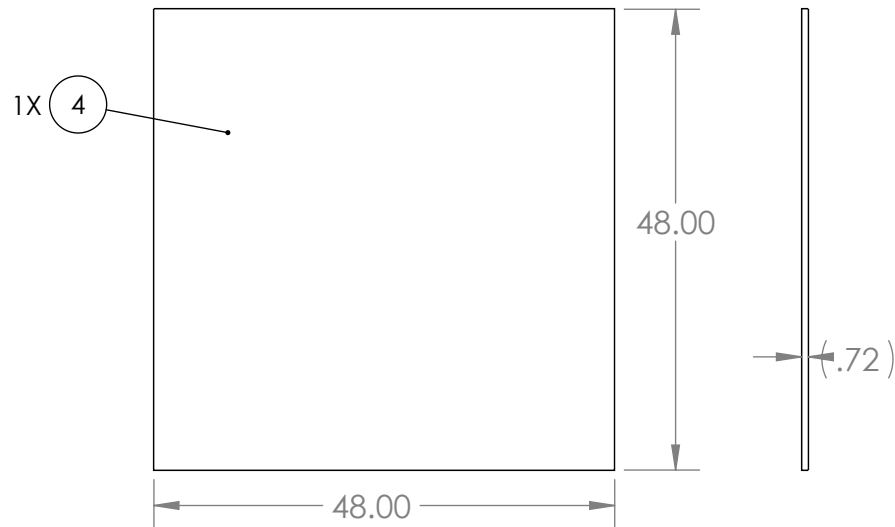
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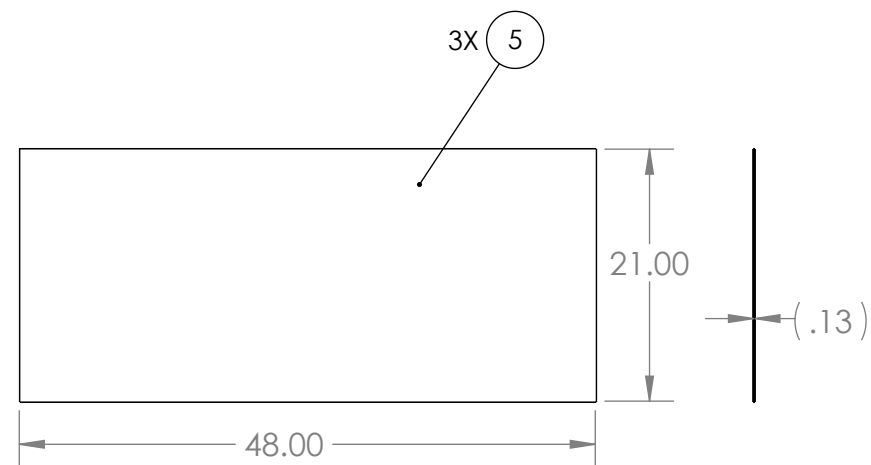
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TE-19102-04



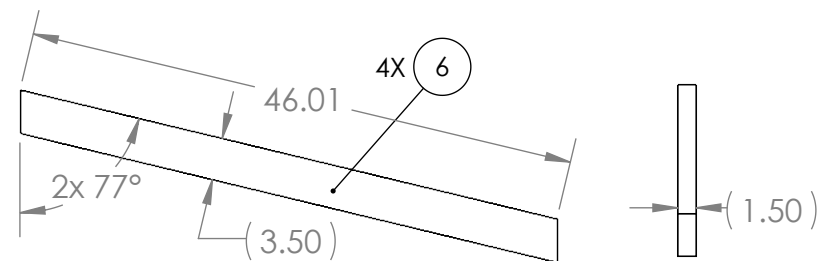
TE-19102-05



Note:
1/8" Hardboard

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

TE-19102-06



Note:
2"x 4" Lumber Pine

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		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 Ivl 3

SIZE

A

DWG. NO.

TE-19102

REV

SCALE: 1:16 WEIGHT:

SHEET 5 OF 5

2

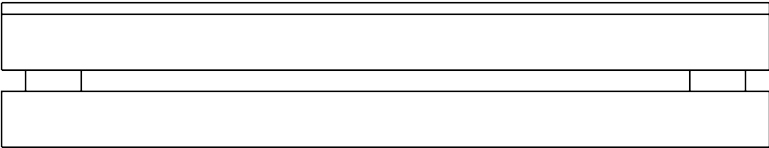
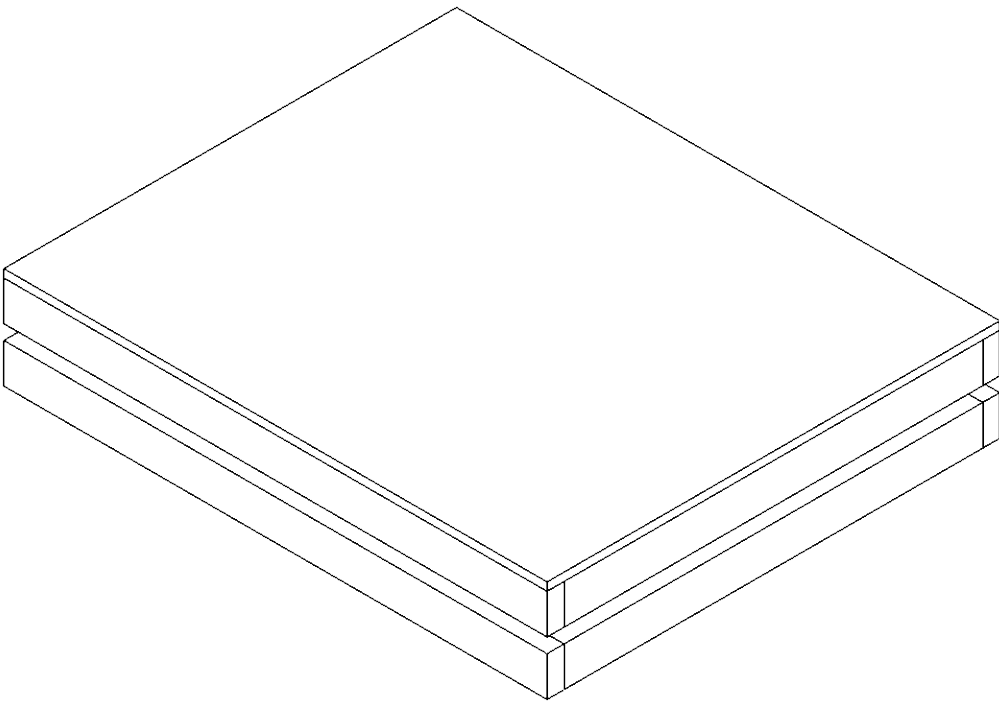
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2

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

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		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

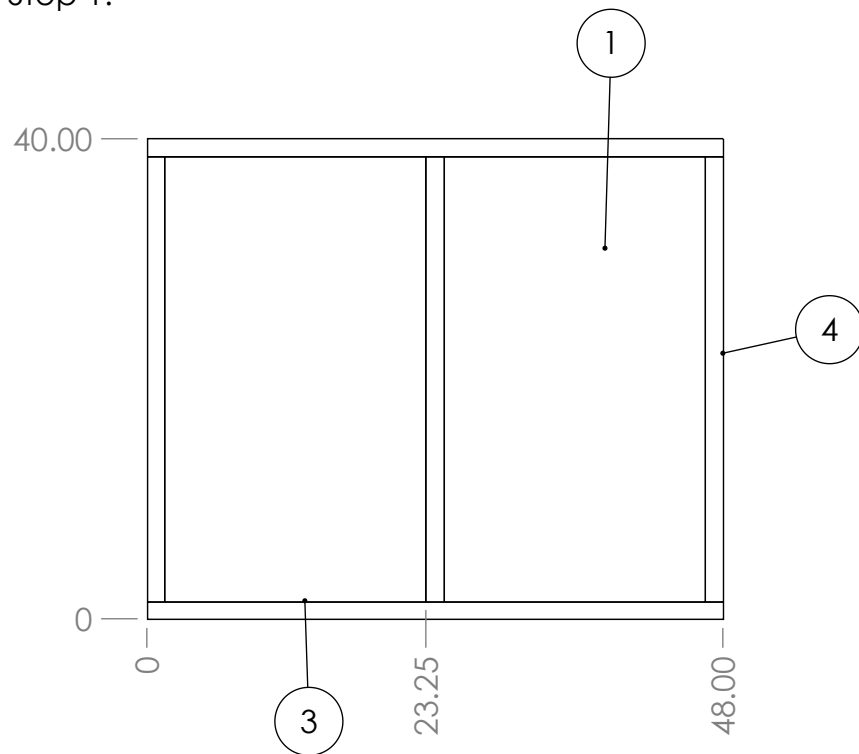
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Step 1:



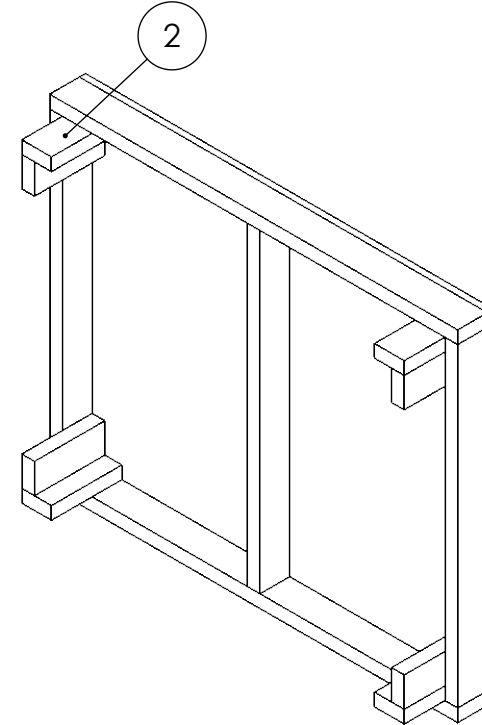
Note:

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

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		FRACTIONAL $\pm 1/16$
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		TWO PLACE DECIMAL $\pm .01$
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		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 VI 2

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

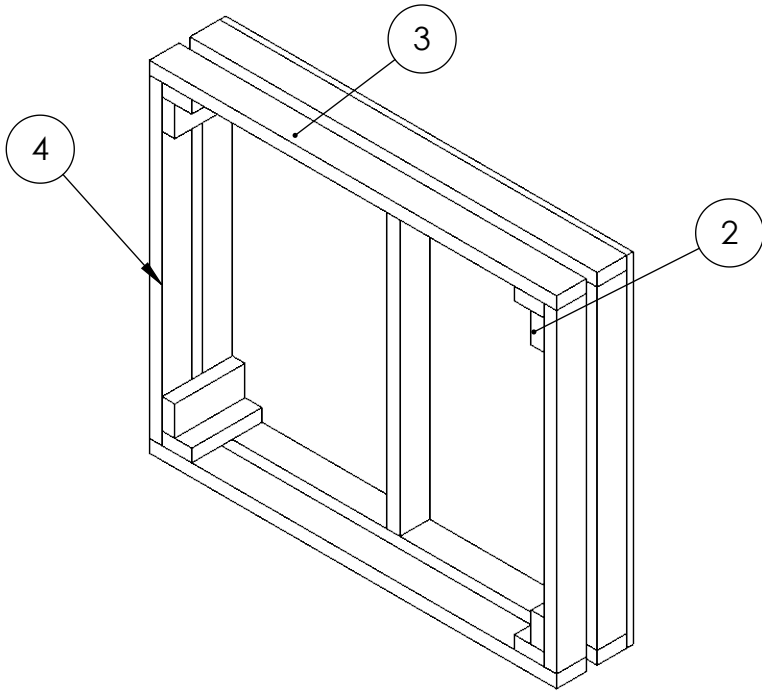
2

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Step 3:



Note:

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



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		TOLERANCES:
		FRACTIONAL $\pm 1/16$
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		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 3 OF 5

2

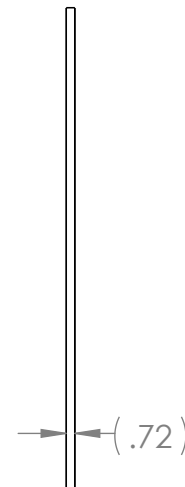
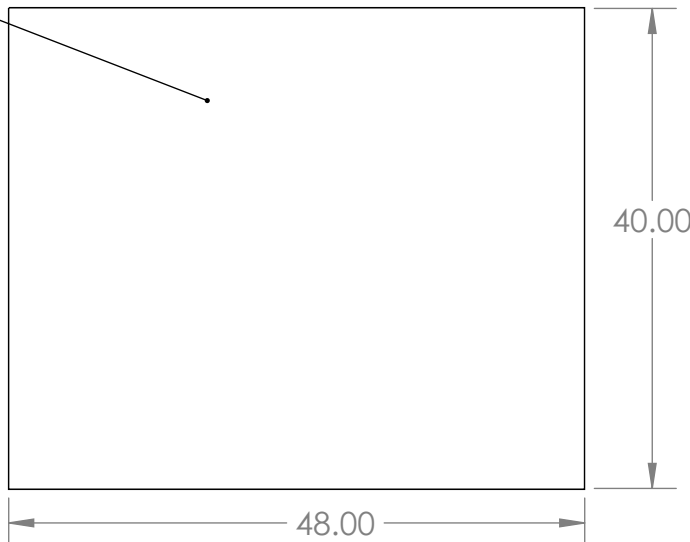
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TE-19103-01

1X (1)



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

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TOLERANCES:
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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 IV 2

SIZE

A

DWG. NO.

TE-19103

REV

SCALE: 1:12 WEIGHT:

SHEET 4 OF 5

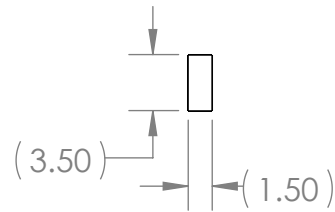
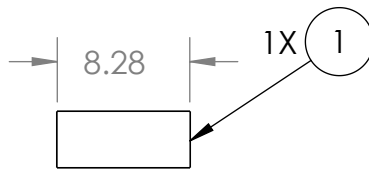
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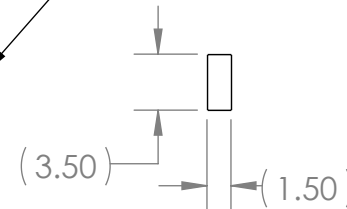
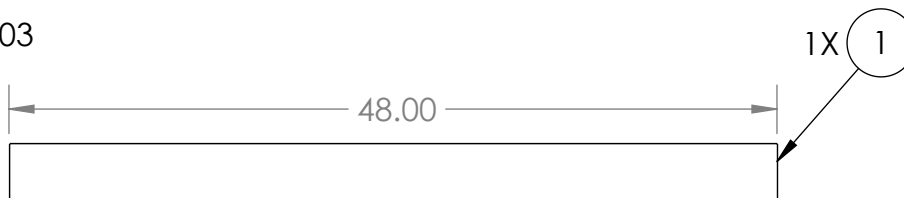
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TE-19103-02



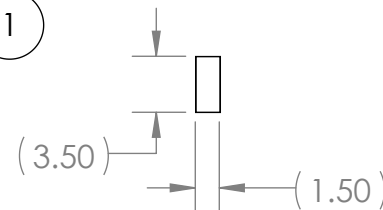
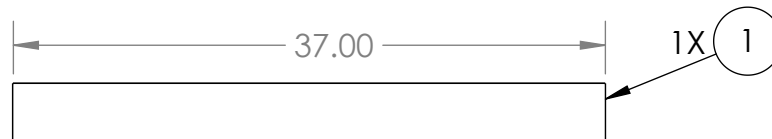
Notes:
2"x 4" Pine

TE-19103-03



Notes:
2"x 4" Pine

TE-19103-04



Notes:
2"x 4" Pine

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		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
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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

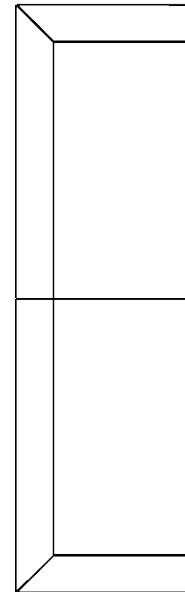
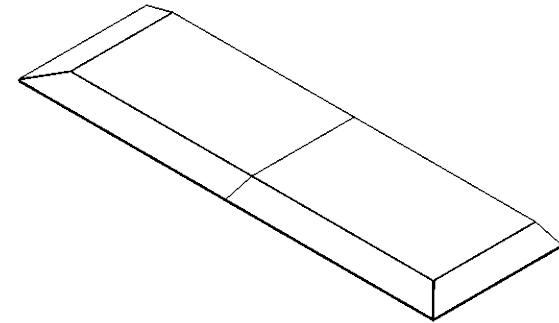
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ITEM NO.	PART NUMBER	QTY.
1	TE-19104-01	2
2	TE-19104-02	2
3	TE-19104-03	2
4	TE-19104-04	4
5	TE-19104-05	2
6	TE-19104-06	8
7	TE-19104-07	2

Material	QTY
23/32" (3/4") A/C or CDX Plywood	2 sheets
2"x 4"x 8' Lumber Pine	8
1.25 wood screws	~70
2.5 wood screws	~50





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		TOLERANCES:		CHECKED		
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		MATERIAL				SIZE A DWG. NO. TE-19104 REV
NEXT ASSY		USED ON				SCALE: 1:48 WEIGHT: SHEET 1 OF 5
APPLICATION		DO NOT SCALE DRAWING				

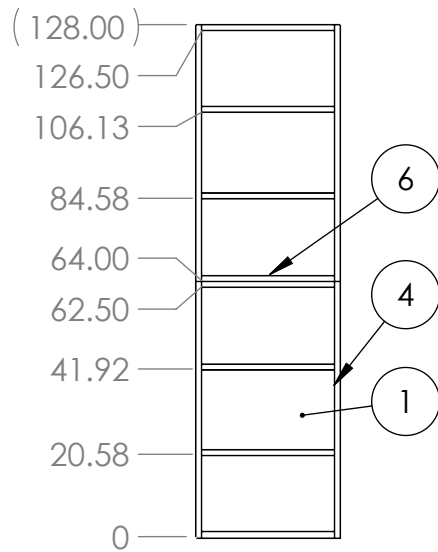
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Step 1

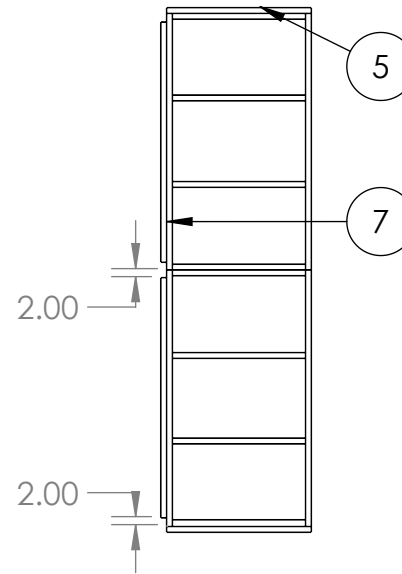


Assembly notes:

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

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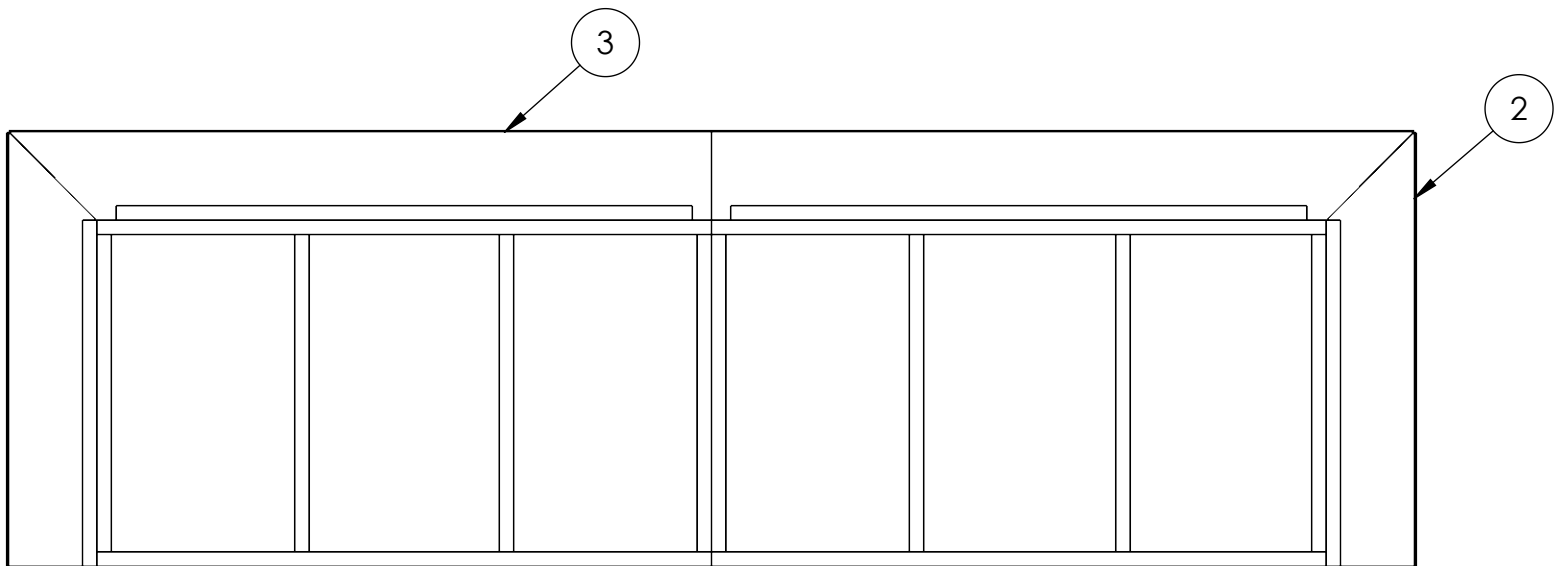
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		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	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

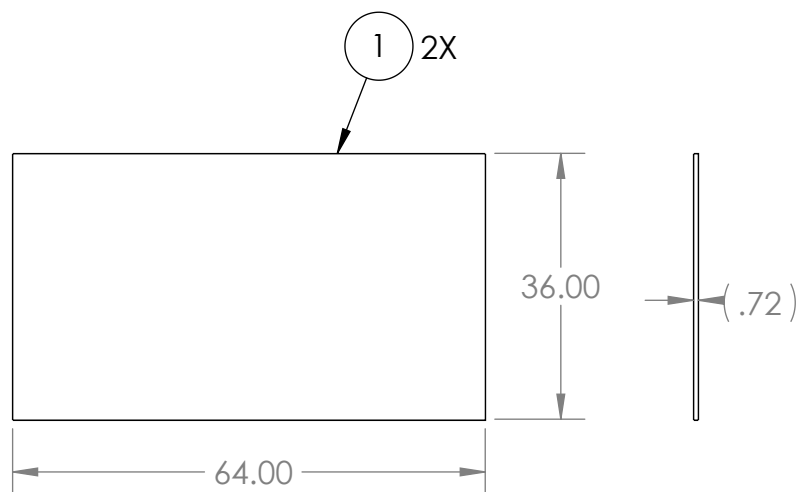
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		DIMENSIONS ARE IN INCHES	DRAWN				
		TOLERANCES:	CHECKED				
		FRACTIONAL $\pm 1/16$	ENG APPR.				
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.				
		TWO PLACE DECIMAL $\pm .01$	Q.A.			TITLE: Full Hab lvl 1	
		THREE PLACE DECIMAL $\pm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

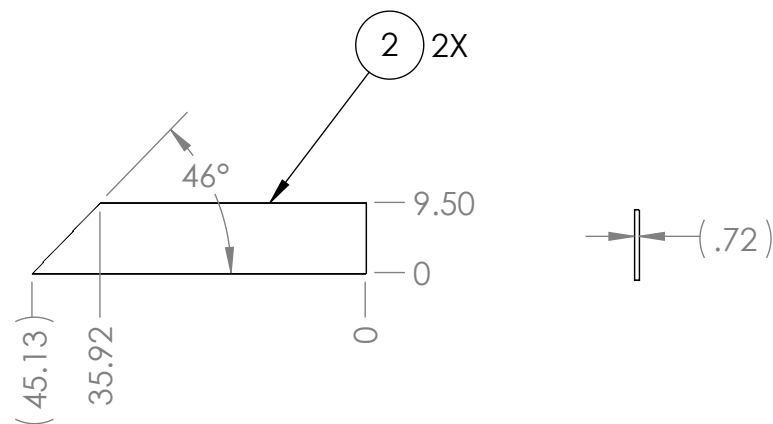
2

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

A

A

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

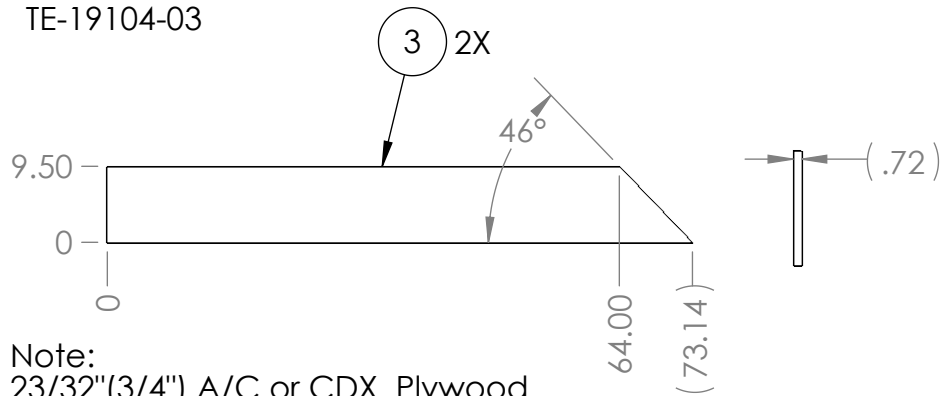
SIZE	DWG. NO.	REV
A	TE-19104	
SCALE: 1:48		WEIGHT:
		SHEET 4 OF 5

2

1

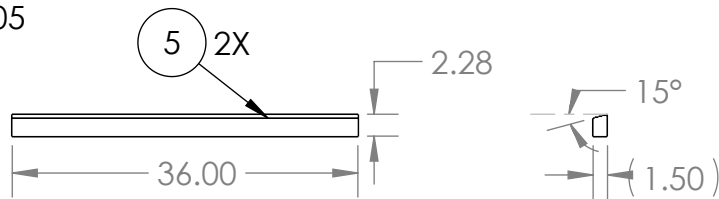
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TE-19104-03



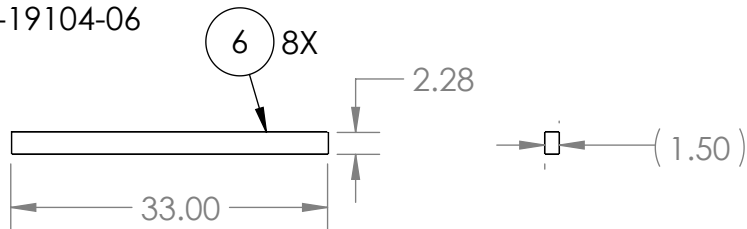
Note:
23/32"(3/4") A/C or CDX Plywood

TE-19104-05



Note:
2"x 4" Pine lumber

TE-19104-06



Note:
2"x 4" Pine lumber

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

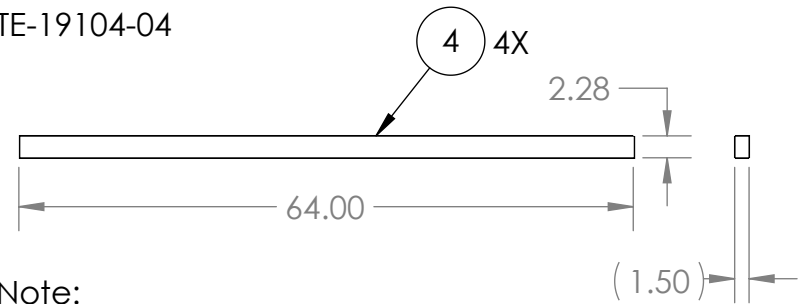
INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

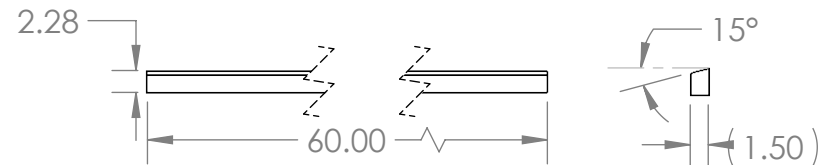
DO NOT SCALE DRAWING

TE-19104-04



Note:
2"x 4" Pine lumber

TE-19104-07



Note:
2"x 4" Pine lumber



**FIRST
ROBOTICS
COMPETITION**

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Full Hab lvl 1

SIZE

A

DWG. NO.

TE-19104

REV

SCALE: 1:48 WEIGHT:

SHEET 5 OF 5

B

A

2

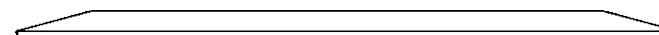
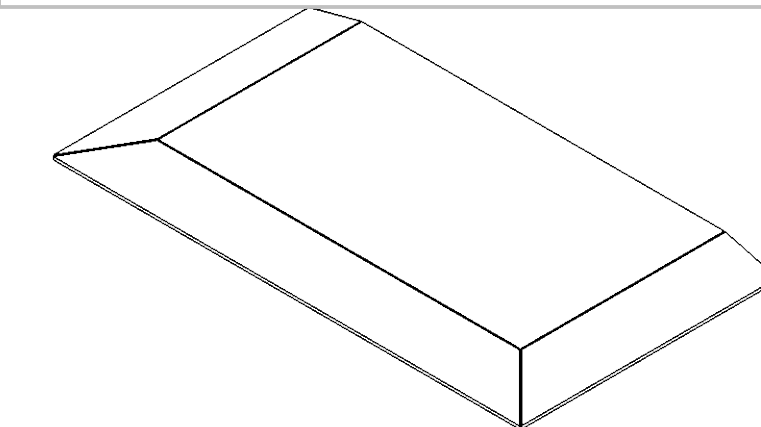
1

2

1

ITEM NO.	PART NUMBER	QTY.
1	TE-19105-01	1
2	TE-19105-02	2
3	TE-19105-03	1
4	TE-19105-04	1
5	TE-19105-05	4
6	TE-19105-06	2
7	TE-19105-07	2

Material	QTY
23/32" (3/4") A/C or CDX Plywood	1 sheet
2"x 4"x 8' Lumber Pine	5
1.25" Wood screw	~40
2.5" wood screw	~30



B

A

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		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

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Half Hab

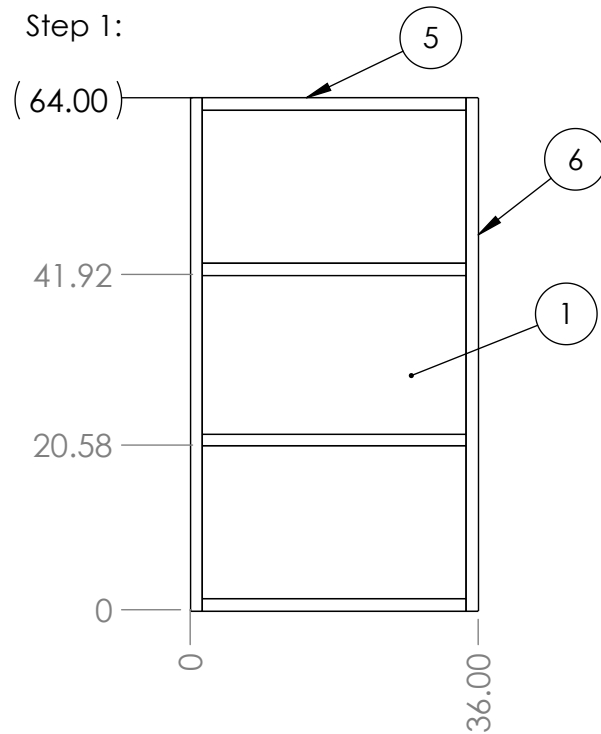
SIZE	DWG. NO.	REV
A	TE-19105	
SCALE: 1:24 WEIGHT:		SHEET 1 OF 5

2

1

B

Step 1:



Note:

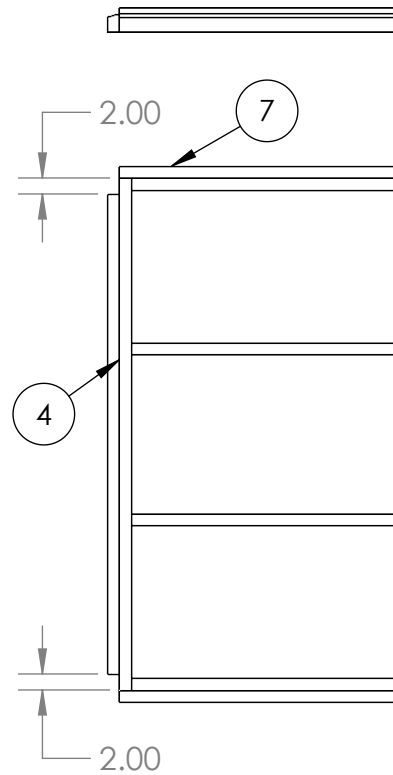
Attach Item 5 and 6 with 2.5" screws

Attach Item 1, 5, and 6 with

1.25" screws

Pre-drill

Step 2:

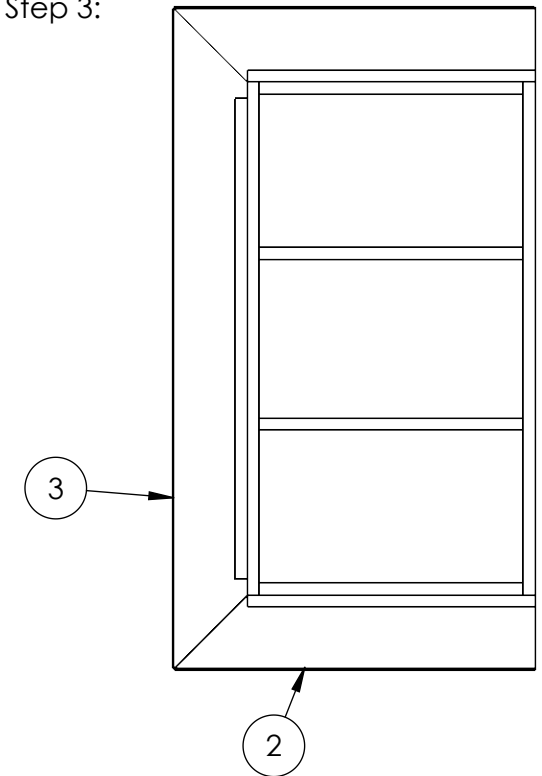


Note:

Attach 4 and 7 to assembly

Pre-drill and use 2.5" screws

Step 3:



Note:

Attach 2 so it is flush to the edge of 7

Attach 3 so it is flush to the edge of 4

Pre-drill and use 1.25" screws

B

A

A

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		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**

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Half Hab

SIZE A	DWG. NO. TE-19105	REV
SCALE: 1:24 WEIGHT:		SHEET 2 OF 5

2

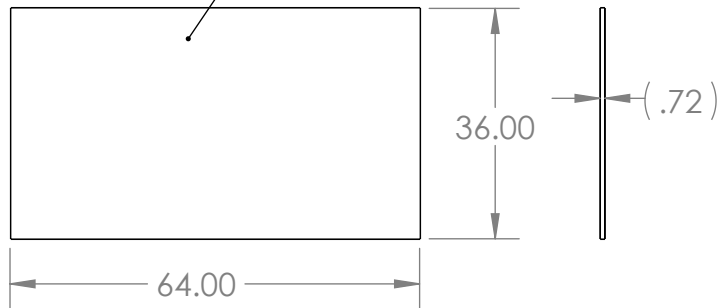
1

2

1

TE-19105-01

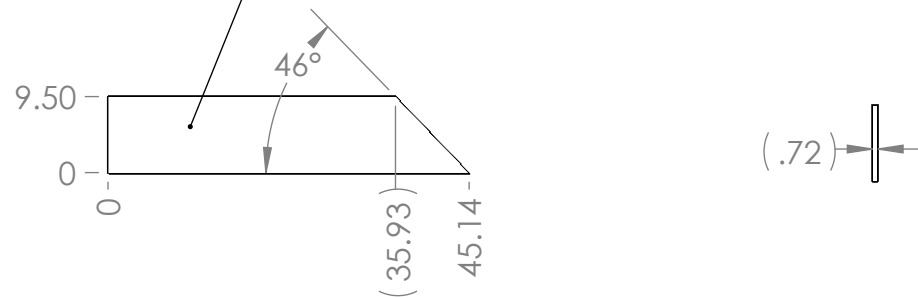
1 1X



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

TE-19105-02

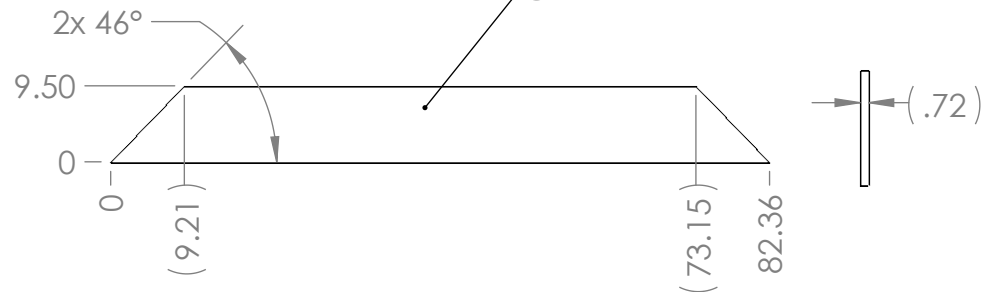
2 2X



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

TE-19105-03

3 1X



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

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NEXT ASSY

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APPLICATION

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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



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Half Hab

SIZE

A

DWG. NO.

TE-19105

REV

SCALE: 1:24 WEIGHT:

SHEET 3 OF 5

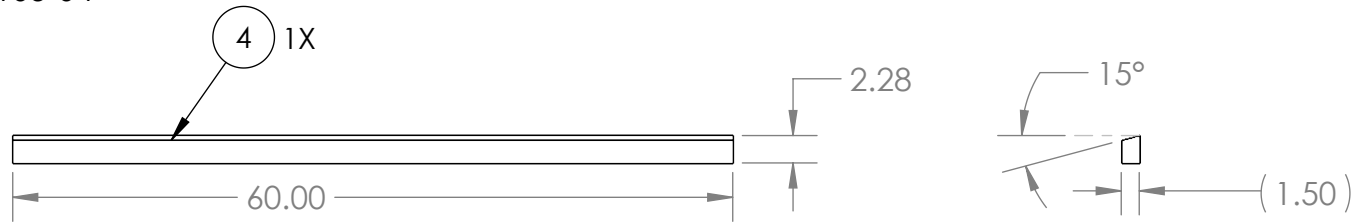
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1

B

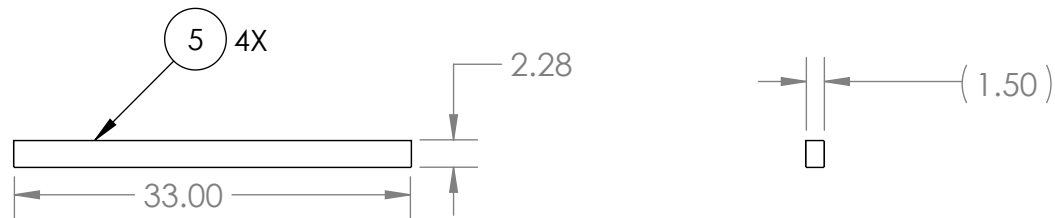
B

TE-19105-04



Note:
2x 4" Pine Lumber

TE-19105-05



Note:
2x 4" Pine Lumber

A

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

**FIRST
ROBOTICS
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TITLE:

Half Hab

SIZE	DWG. NO.	REV
A	TE-19105	
SCALE: 1:24		WEIGHT:
		SHEET 4 OF 5

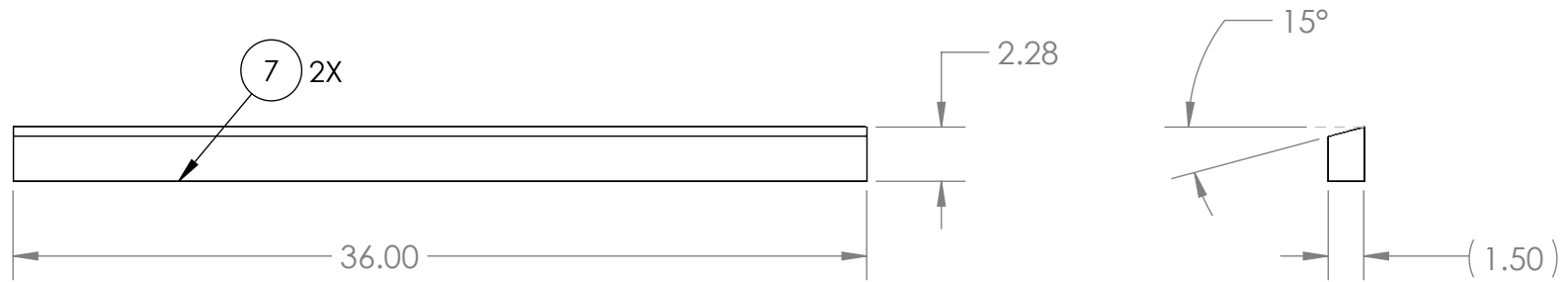
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1

B

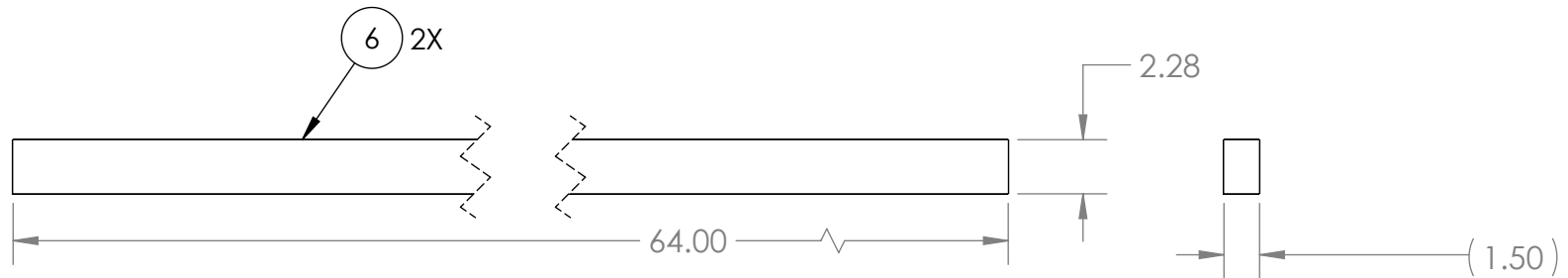
B

TE-19105



Note:
2x 4" Pine Lumber

TE-19105



Note:
2x 4" Pine Lumber

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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

**FIRST
ROBOTICS
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TITLE:

Half Hab

SIZE

A

DWG. NO.

TE-19105

REV

SCALE: 1:24 WEIGHT:

SHEET 5 OF 5

A

2

1

B

A

2

1A

FIRST
ROBOTICS
COMPETITION



SOLIDWORKS
Modeling Solutions Partner

TITLE:

Single Bay Side

SIZE	PRICE	SALES
Small	10	100
Medium	20	200
Large	30	300

DWG. NO.	
----------	--

REV

A

TE-19106

SCALE: 1:24 WEIGHT:

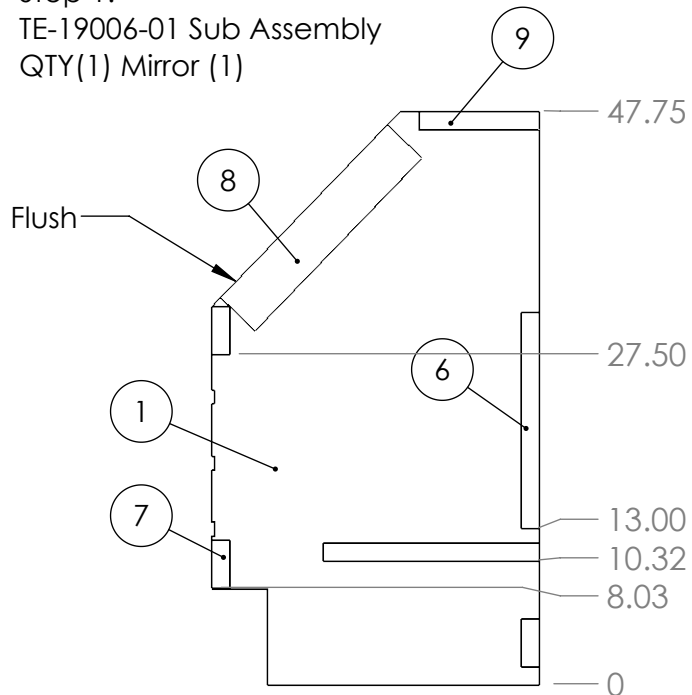
SHEET 1 OF 12

1

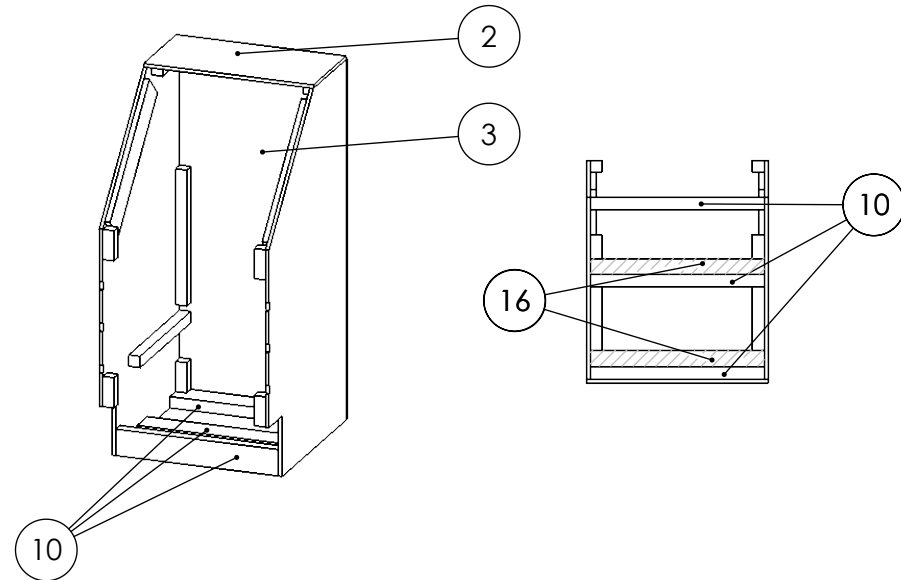
2

1

Step 1:
TE-19006-01 Sub Assembly
QTY(1) Mirror (1)



Step 2:



Notes:

Attach (9), (6) and (8) flush to (1) as indicated and touching (7).
Pre-drill and attach using 1.25" screws.

Notes:

Connect the assemblies from step 1 with three (10), (2) and (3).
Attach using 1.25" and 2.5" screws.
If using on carpet add (16) to bottom of (10)

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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:

Single Bay Side

SIZE

DWG. NO.

REV

A

TE-19106

SCALE: 1:24 WEIGHT:

SHEET 2 OF 12

Notes:

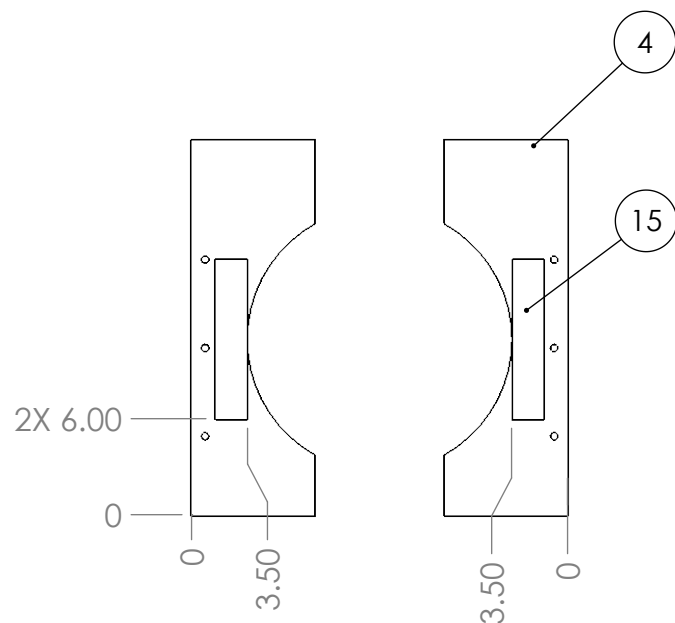
2

1

2

1

Step 3:



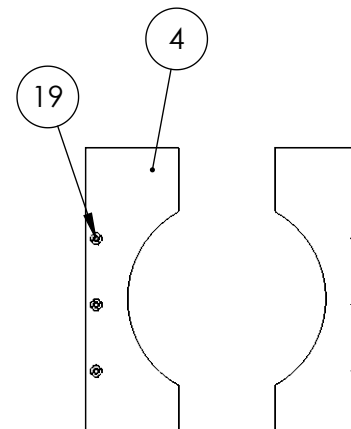
Notes:

Attach (15) to (4).

(15) should be tangent to circular cutout.

Mirror for the second.

Step 4:



Notes:

Flip assembly from Step 3 over .

Insert (19) to all holes on (4), hammer in to seat.

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		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:

Single Bay Side

SIZE	DWG. NO.	REV
A	TE-19106	

SCALE: 1:24 WEIGHT: SHEET 3 OF 12

2

1

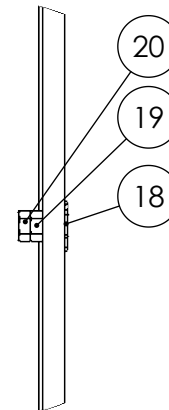
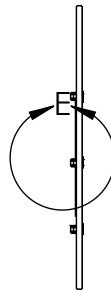
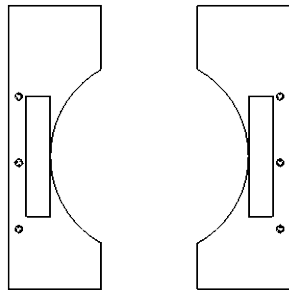
2

1

Step 5:

B

B





Notes:
Thread (19) all the way on to (20) .
Insert into (18) repeat, for all instances.

DETAIL E
SCALE 1 : 4

A

A

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			DIMENSIONS ARE IN INCHES	DRAWN				SIZE	DWG. NO.	REV
			TOLERANCES:	CHECKED				A	TE-19106	
			FRACTIONAL $\pm 1/16$	ENG APPR.				SCALE: 1:24 WEIGHT: SHEET 4 OF 12		
			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							

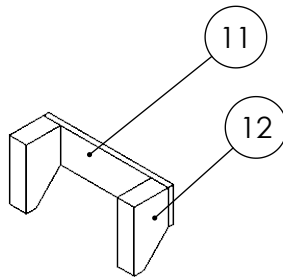
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1

2

1

Step 6:

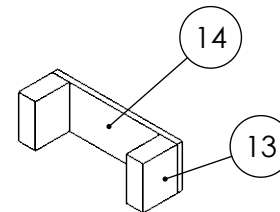


Notes:

Attach (12) to (11).

Pre-drill and attach using 1.25" long screws

Step 7:



Notes:



Attach (13) to (14).

Pre-drill and attach using 1.25" long screws

B

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		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$	DRAWN			TITLE: Single Bay Side			
			CHECKED						
			ENG APPR.						
			MFG APPR.						
			Q.A.						
		INTERPRET GEOMETRIC TOLERANCING PER:	COMMENTS:			SIZE DWG. NO. REV A TE-19106			
		MATERIAL							
		FINISH							
NEXT ASSY	USED ON								
APPLICATION		DO NOT SCALE DRAWING				SCALE: 1:24 WEIGHT: SHEET 5 OF 12			

SIZE	DWG. NO.	REV
A	TE-19106	
SCALE: 1:24		WEIGHT:
		SHEET 5 OF 12

2

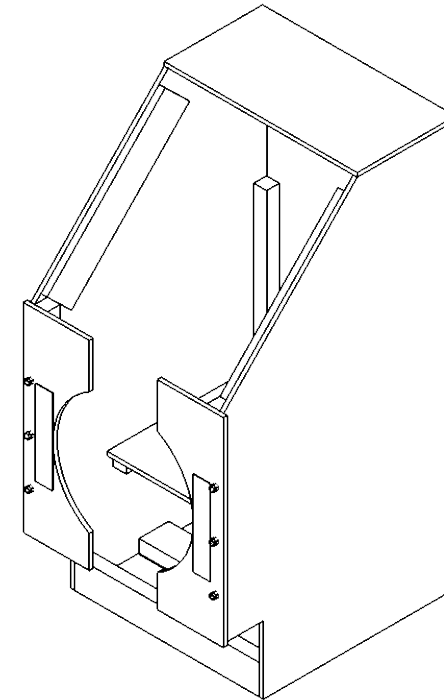
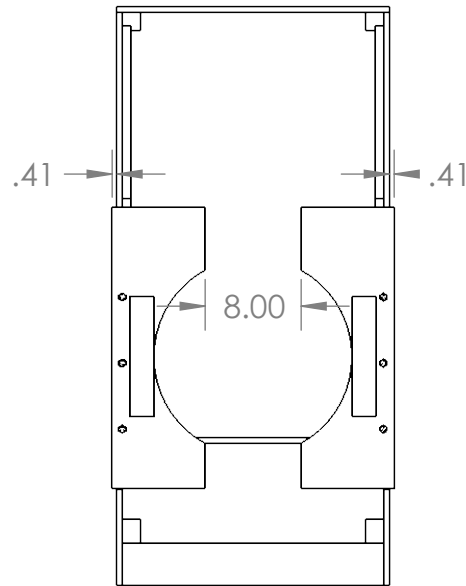
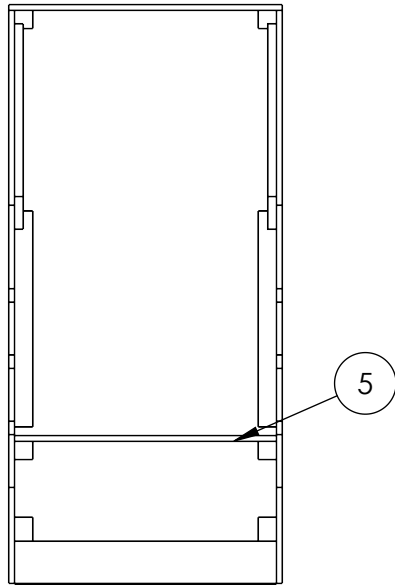
1

2

1

Step 8:

Step 9:



Notes:

Attach (5) flush to the cleats of step 2.
Pre drill and attach with 1.25" screws.

Notes:

Attach assemblies from Step 5 to Step 8
Pre drill and use 1.25" screws. Step 5
over hangs .41 on both sides.

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		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:

Single Bay Side

SIZE	DWG. NO.	REV
A	TE-19106	

SCALE: 1:24	WEIGHT:	SHEET 6 OF 12
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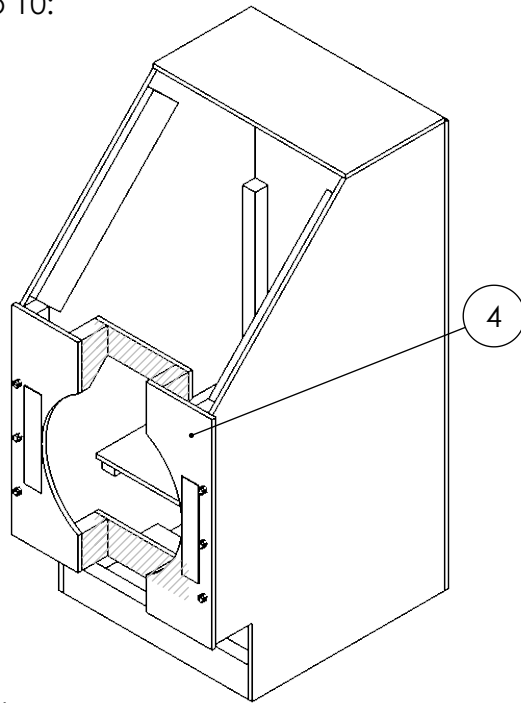
2

1

2

1

Step 10:



Notes:

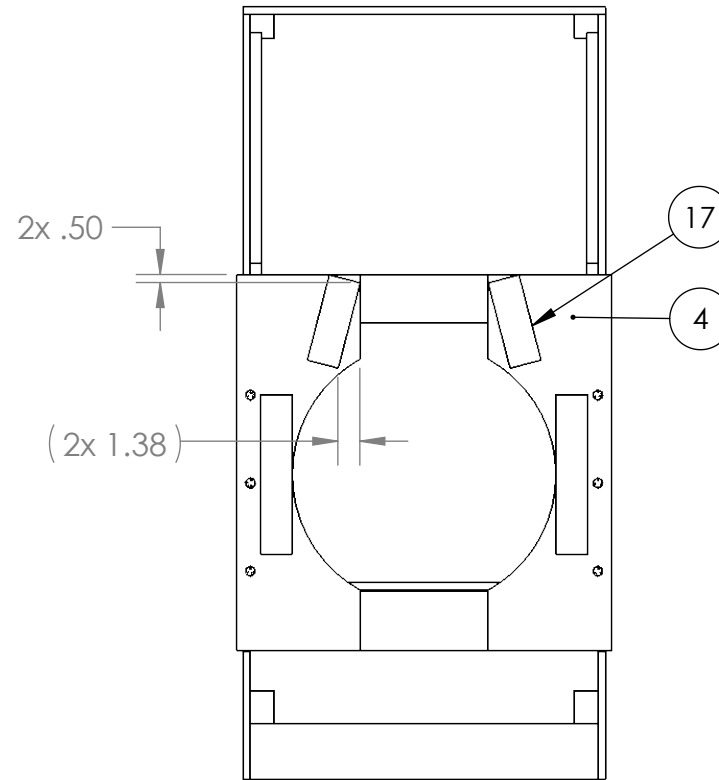
Attach Step 6 and Step 7 to (4).

Step 6 Flush to opening and to Top of (4).

Step 7 Flush to opening and to bottom of (4).

Pre drill and attach using 2.5" wood screws.

Step 11:



Notes:

Attach (17) to (4), mirror for the other side

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NEXT ASSY

USED ON

APPLICATION

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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:

Single Bay Side

SIZE

A

DWG. NO.

TE-19106

REV

SCALE: 1:24 WEIGHT:

SHEET 7 OF 12

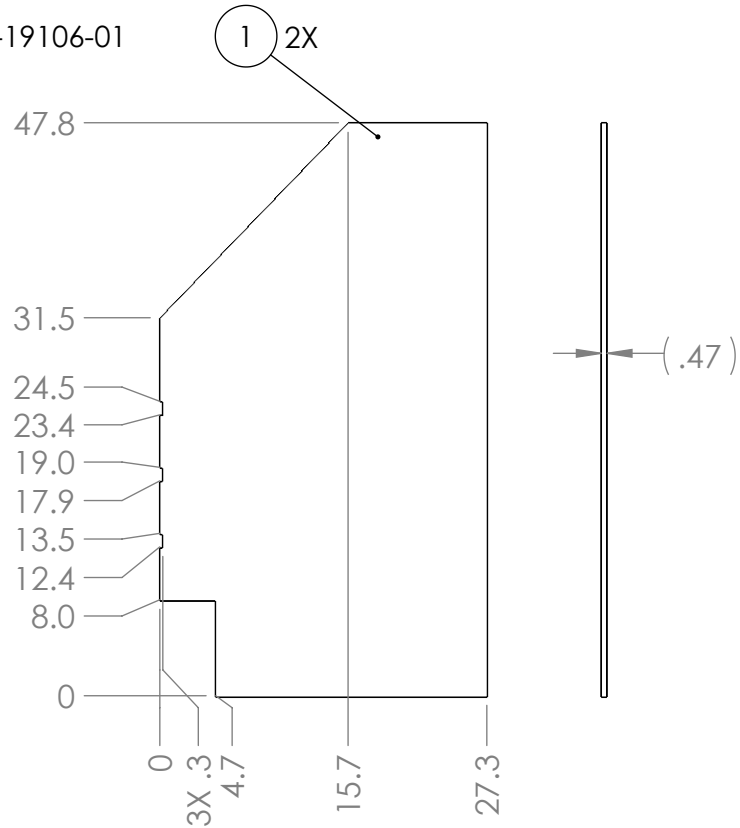
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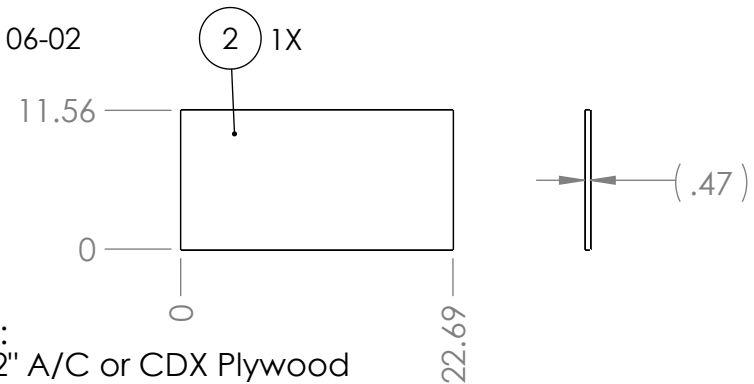
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TE-19106-01



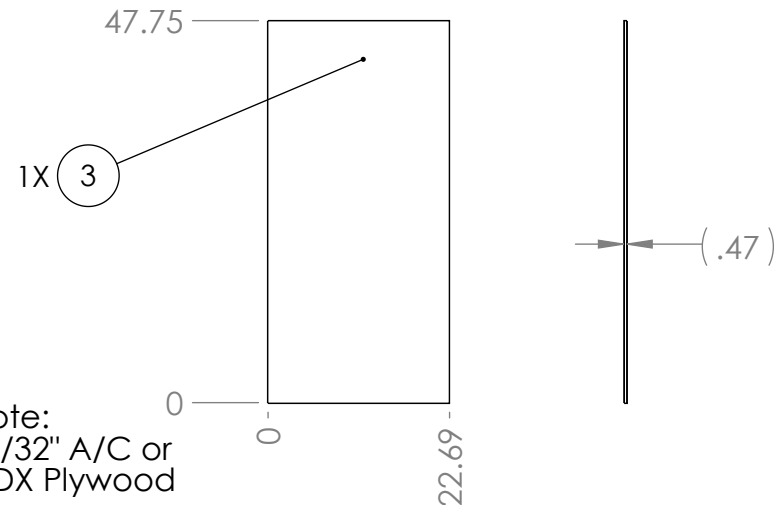
Note:
15/32" A/C or CDX Plywood

TE-19106-02



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

TE-19106-03



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

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TOLERANCES:
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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:

Single Bay Side

SIZE

A

DWG. NO.

TE-19106

REV

SCALE: 1:24 WEIGHT:

SHEET 8 OF 12

A

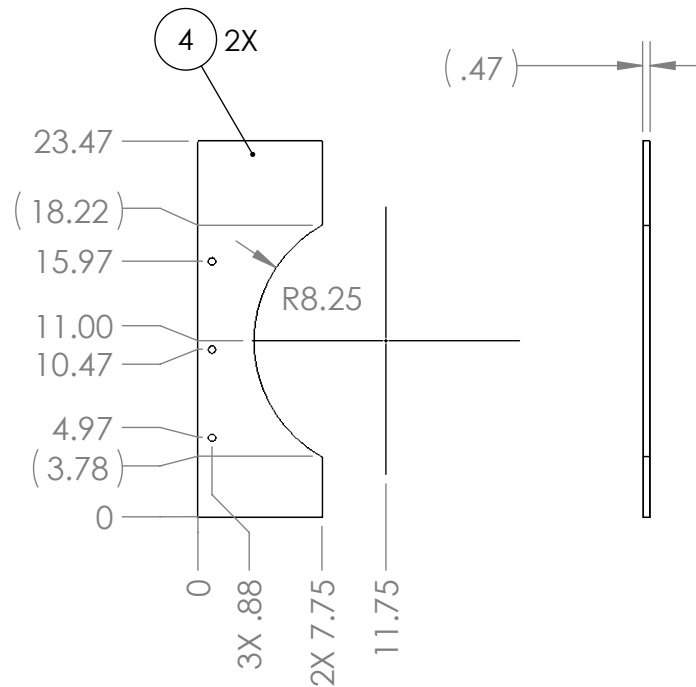
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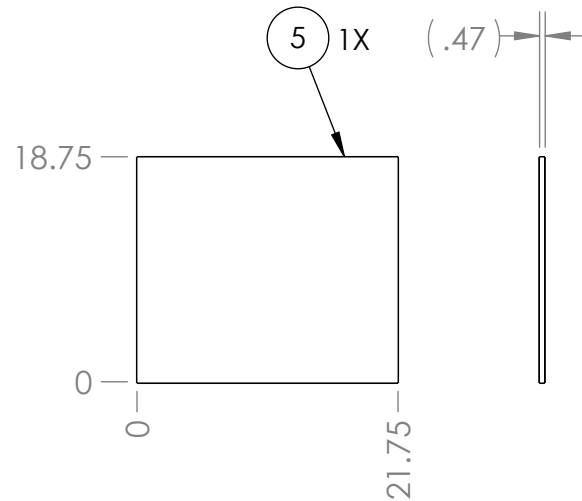
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TE-19106-04



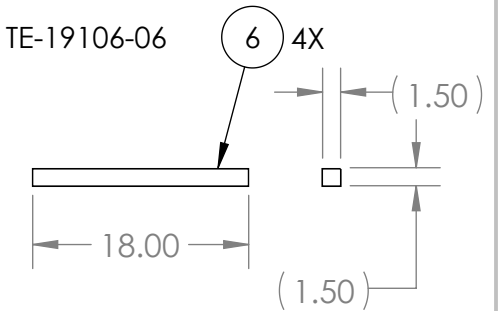
Note:
15/32" A/C or CDX Plywood

TE-19106-05



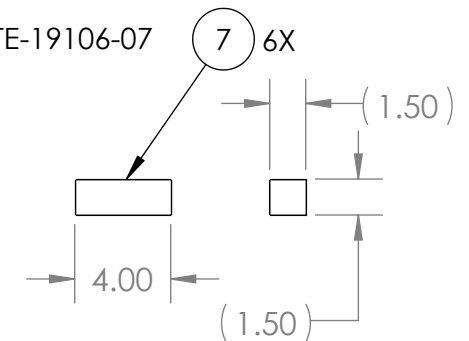
Note:
15/32" A/C or CDX Plywood

TE-19106-06



Note:
2" x 2" Pine Lumber

TE-19106-07



Note:
2" x 2" Pine Lumber

B

B

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		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			



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Modeling Solutions Partner

TITLE:

Single Bay Side

SIZE	DWG. NO.	REV
A	TE-19106	
SCALE: 1:24 WEIGHT:		SHEET 9 OF 12

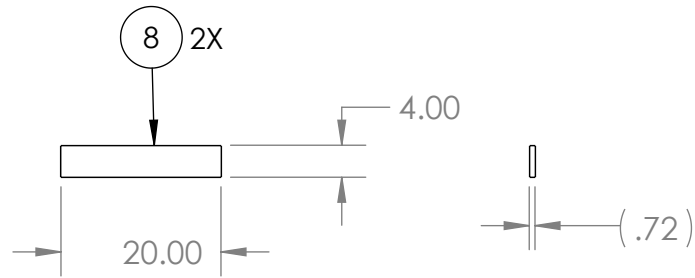
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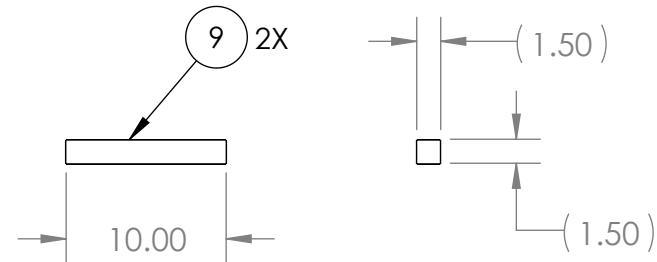
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TE-19106-08



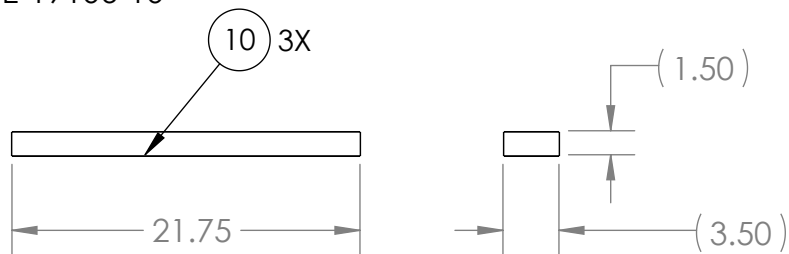
Note:
23/32" A/C or CDX Plywood

TE-19106-09



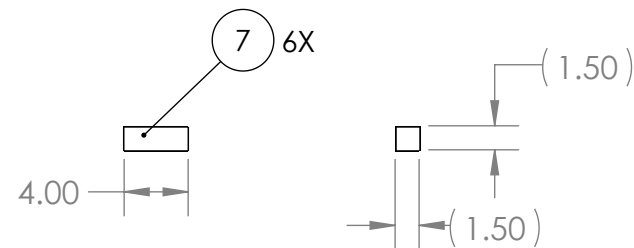
Note:
2" x 4" Pine Lumber

TE-19106-10



Note:
2" x 4" Pine Lumber

TE-19106-07



Note:
2" x 4" Pine Lumber

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TOLERANCES:
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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:

Single Bay Side

SIZE

A

DWG. NO.

TE-19106

REV

SCALE: 1:24 WEIGHT:

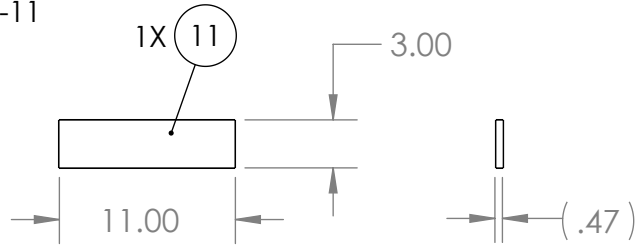
SHEET 10 OF 12

2

1

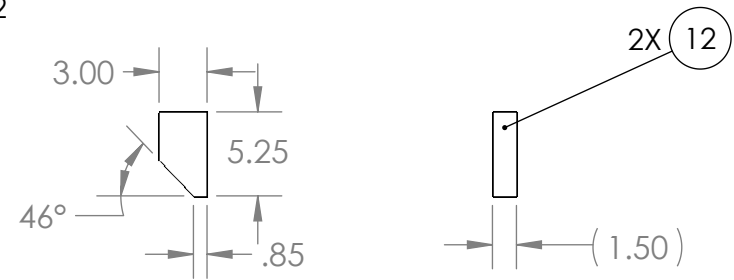
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TE-19106-11



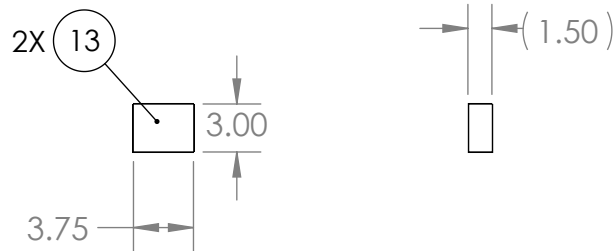
Note:
15/32" (1/2") A/C or CDX Plywood

TE-19106-12



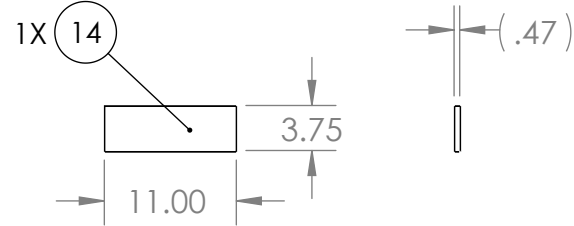
Note:
2"X4" Pine Lumber

TE-19106-13



Note:
2"X4" Pine Lumber

TE-19106-14



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

A

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		TOLERANCES:	CHECKED		
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		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			



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COMPETITION**

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TITLE:

Single Bay Side

SIZE

A

DWG. NO.

TE-19106

REV

SCALE: 1:24 WEIGHT:

SHEET 11 OF 12

B

A

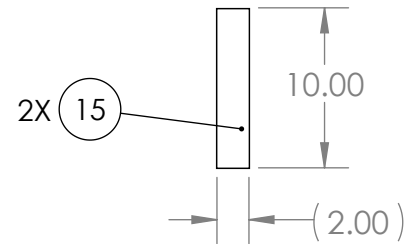
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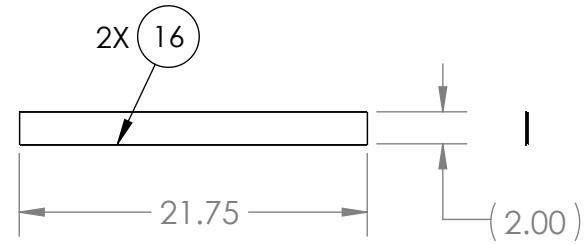
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TE-19106-15



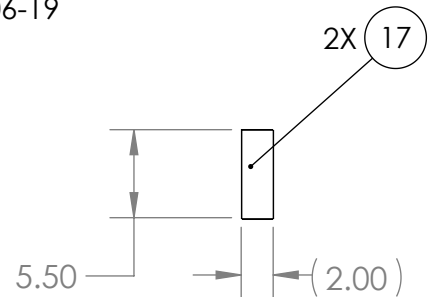
Note:
2" Hook Fastener

TE-19106-18



Note:
2" Hook Fastener

TE-19106-19



Note:
2" Vison tape

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		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:

Single Bay Side

SIZE	DWG. NO.	REV
A	TE-19106	

SCALE: 1:24 WEIGHT: SHEET 12 OF 12

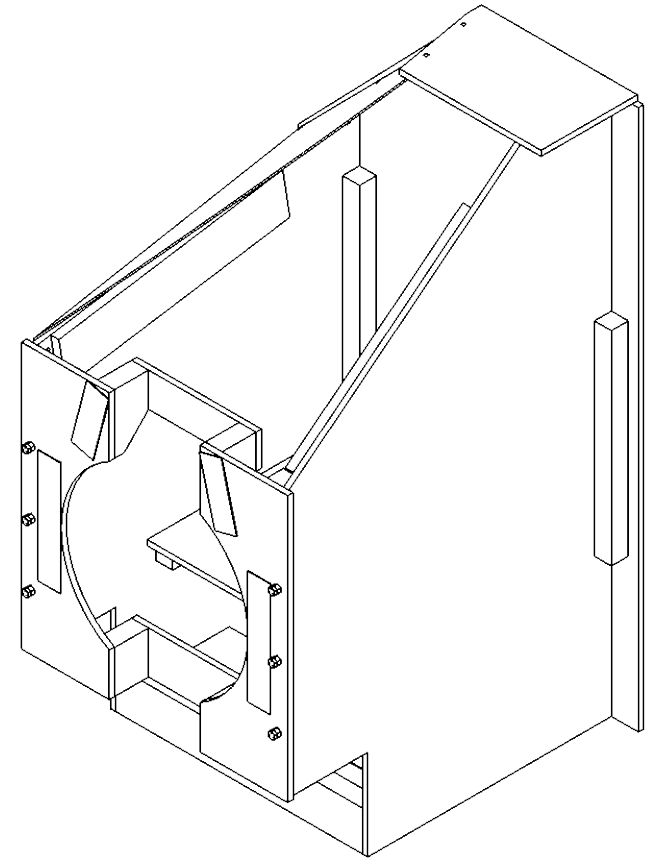
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1

B

ITEM NO.	PART NUMBER	QTY.
1	TE-19107-01	1
2	TE-19107-02	1
3	TE-19107-03	1
4	TE-19107-04	1
5	TE-19107-05	1
6	TE-19107-06	2
7	TE-19107-07	1
8	TE-19107-08	6
9	TE-19107-09	2
10	TE-19107-10	9
11	TE-19107-11	3
12	TE-19107-12	2
13	TE-19107-13	4
14	TE-19107-14	4
15	TE-19107-15	2
16	TE-19107-16	2
17	TE-19107-19	2
18	TE-19107-20	2
19	Tee nut .375_16	6
20	hex nut_.375_16	6
21	hex_.375_16_.625	6

Material	QTY
15/32" (1/2") A/C or CDX Plywood	1.5 sheets
1/8" Hardboard	.25 sheet
23/32"(3/4") A/C or CDX Plywood	.125 sheet
2"x 2"x 8'	1.5
2"x 4"x 8'	1
TEE nut 3/8"-16	6
Hex Nut 3/8"-16	6
Hex Head 3/8"-16 x .75	6
2" Hook Fastener	63.5"
2" Vison Tape	11"
1.25" wood screws	50
2.5" wood screws	25



B

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		ANGULAR: MACH ±1° BEND ±1°
		TWO PLACE DECIMAL ±.01
		THREE PLACE DECIMAL ±.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:

Cargo Front Single

SIZE	DWG. NO.	REV
A	TE-19107	
SCALE: 1:24 WEIGHT:		SHEET 1 OF 14

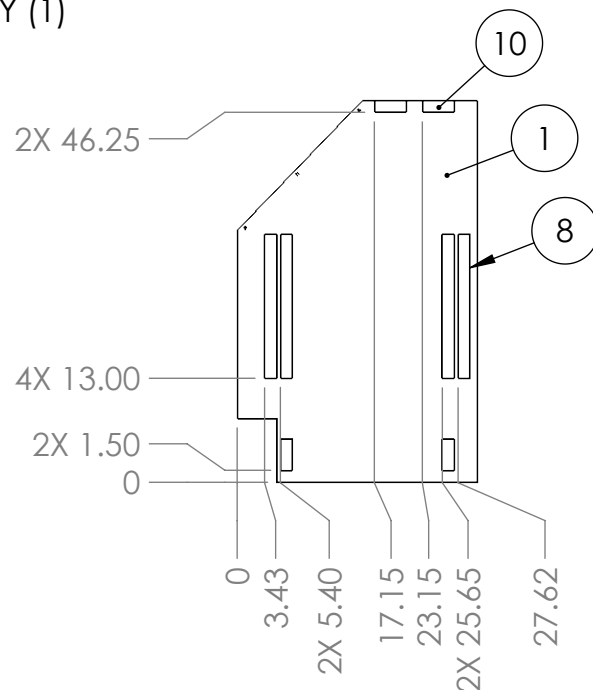
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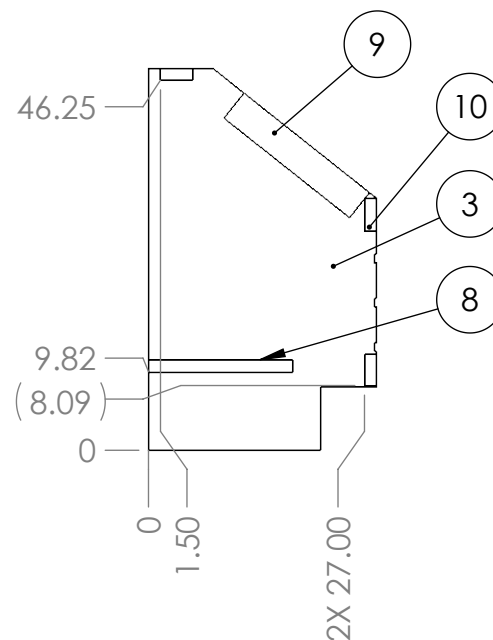
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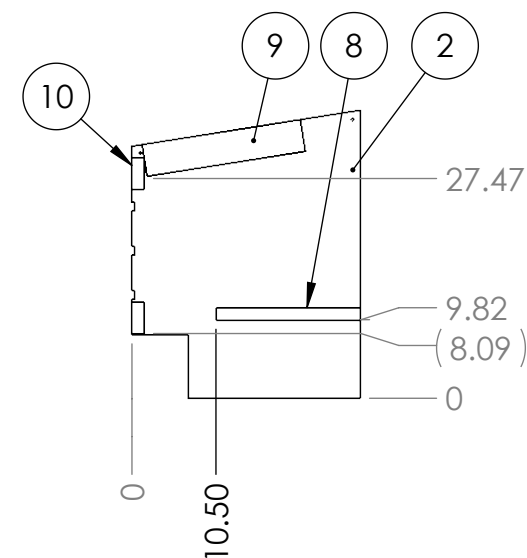
Step 1:
QTY (1)



Step 2:
QTY (1)



Step 3:
QTY (1)



Note:

Attach 10 8 to 1

Spacing between 8 is for 1/2" Plywood

Use a scrap piece of plywood help set spacing
Pre-drill and use 1.25" wood screws

Note:

Attach 8 10 9 to 3

Pre-drill and use 1.25" wood screws

Note:

Attach 10 9 8 to 2

Pre-drill and use 1.25" wood screws

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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:

Cargo Front
Single

SIZE

DWG. NO.

REV

A

TE-19107

SCALE: 1:24 WEIGHT:

SHEET 2 OF 14

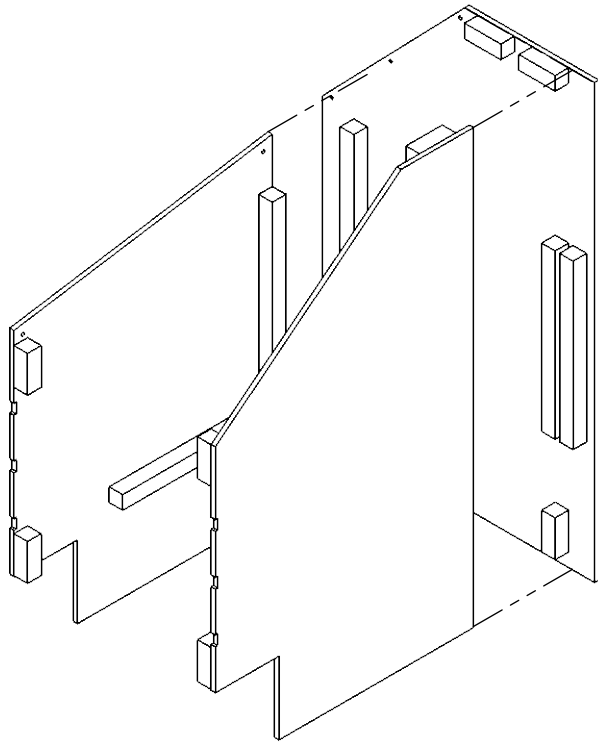
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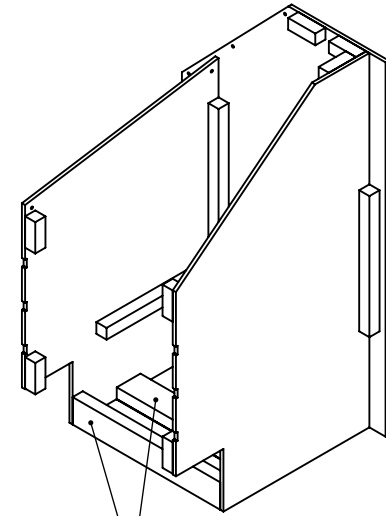
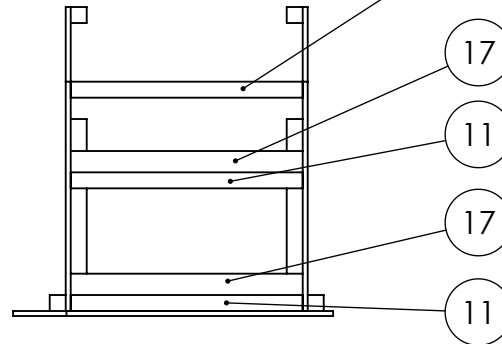
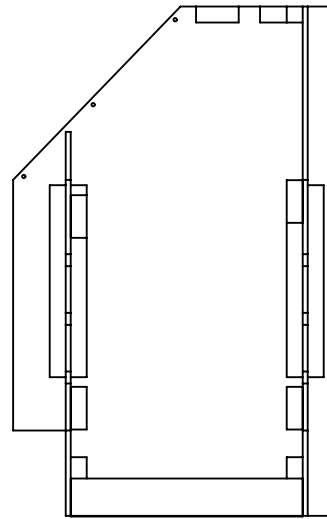
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Step 4:



Slide the assemblies from Step 2 and Step 3 into the assembly from Step 1.

Step 5:



Attach (11) to bottom as shown
Pre-drill and use 2.5" wood screws


Apply (17) if used on carpet to the
bottom of the 2"x 4"

A

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		TOLERANCES:	CHECKED	
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		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		
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TITLE:

Cargo Front
Single

SIZE A	DWG. NO. TE-19107	REV
SCALE: 1:24	WEIGHT:	SHEET 3 OF 14

2

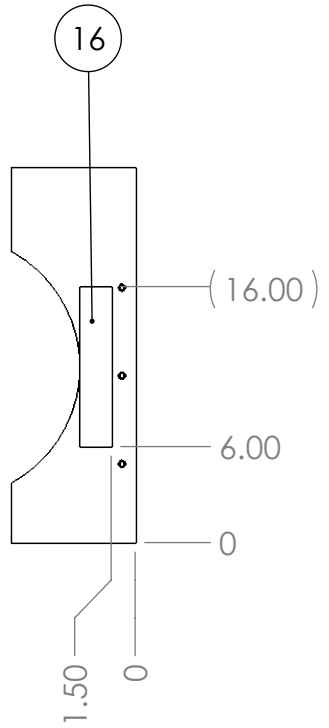
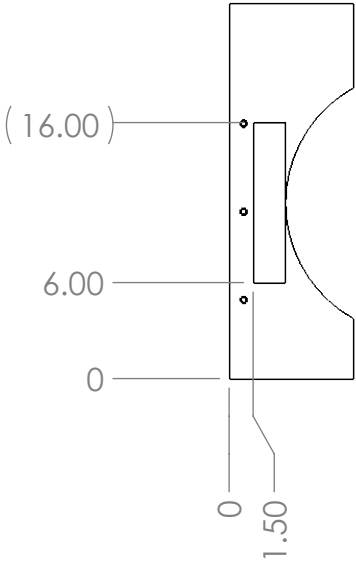
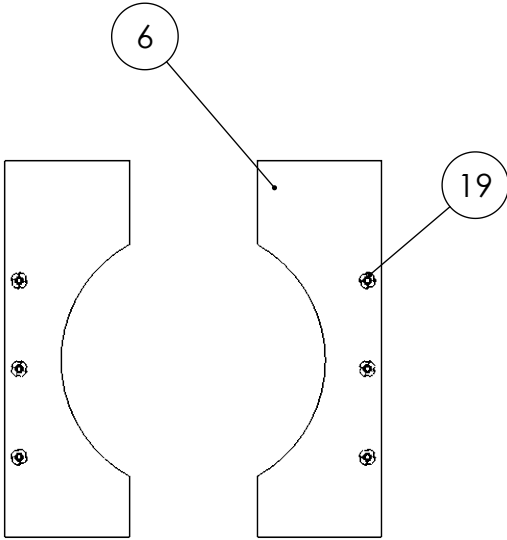
1

2

1

Step 6:

Step 7:



Install Tee Nut (19)
Hammer in to seat

Flip over
Attach (16) to (6) front.
Hook should be tangent to
the circular cutouts.



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		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
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		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:

Cargo Front Single

SIZE	DWG. NO.	REV
A	TE-19107	

SCALE: 1:24 WEIGHT: SHEET 4 OF 14

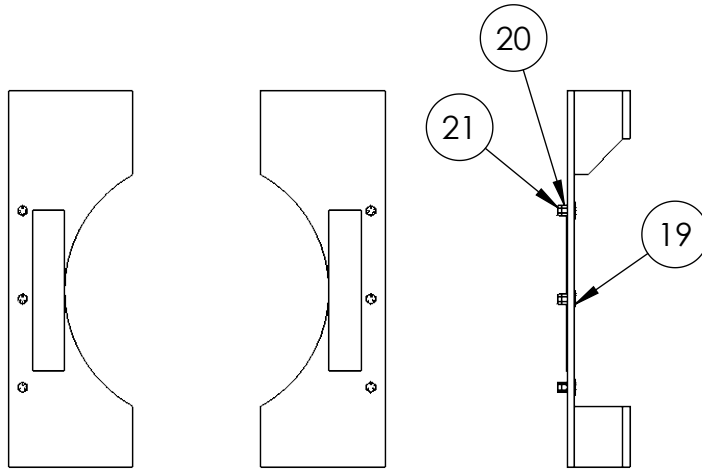
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1

2

1

Step 8:

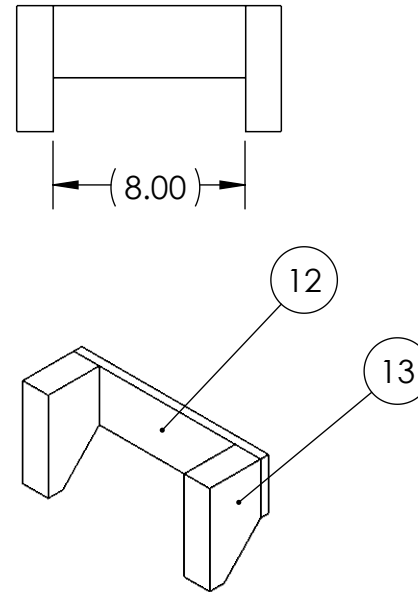


Note:

Attach (21) (20), then attach to (19)

Repeat for all instances

Step 9:

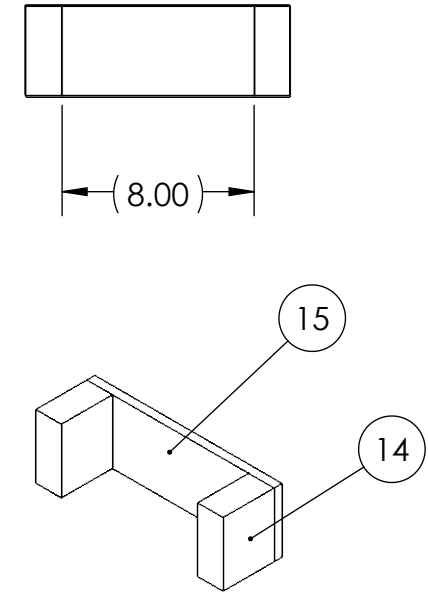


Note:

Attach (13) to (12) as shown

Pre-drill and use 1.25" screws

Step 10:



Note:

Attach (14) to (15) as shown

Pre-drill and use 1.25" screws

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TOLERANCES:
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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:

Cargo Front Single

SIZE

A

DWG. NO.

TE-19107

REV

SCALE: 1:24 WEIGHT:

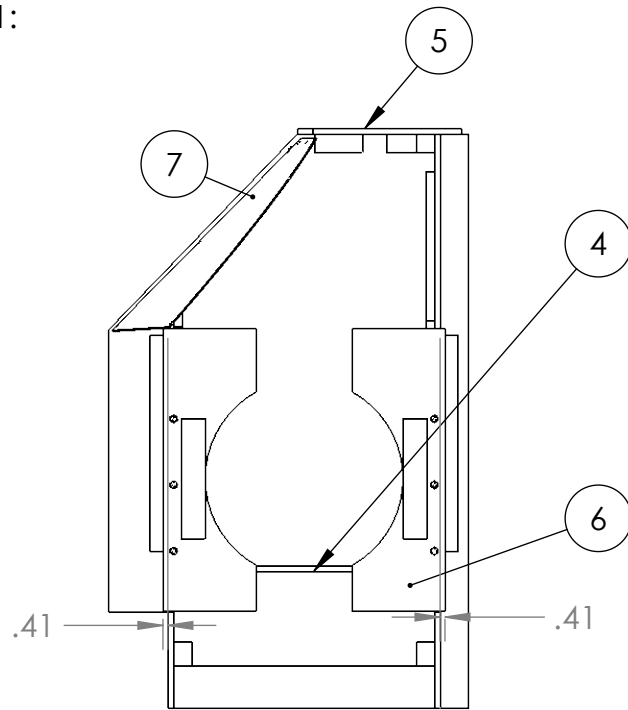
SHEET 5 OF 14

2

1

B

Step 11:



Note:

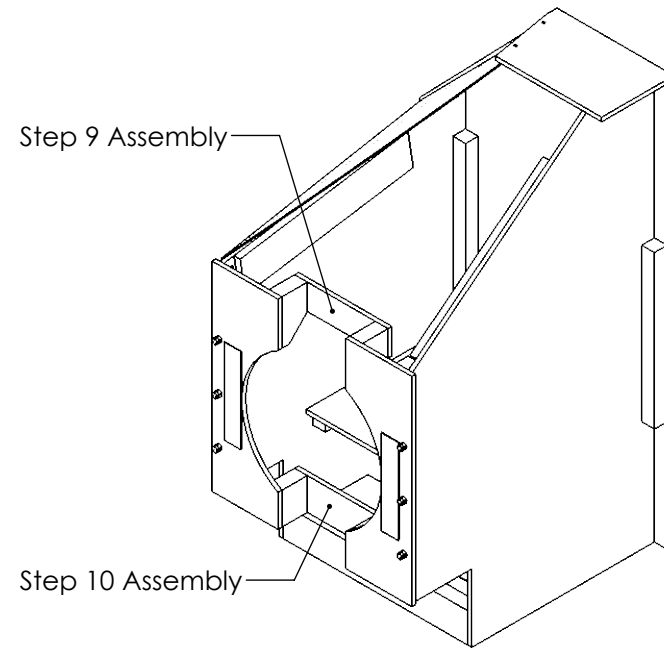
Attach (6) to assembly, with an overhang of .41"; pre-drill and use 1.25" screws

Attach (5) to assembly; pre-drill and use 1.25" screws

Attach (7) to (5) and rest of assembly with cable ties

Attach (4) to (8); pre-drill and use 1.25" screws

Step 12:



Note:

Attach assembly from Step 9 flush to the opening and top of (6)

Attach assembly from Step 10 flush to the opening and bottom of (6)

(6)

Pre-drill and use 2.5" screws

A

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		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
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		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

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



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TITLE:

**Cargo Front
Single**

SIZE	DWG. NO.	REV
A	TE-19107	
SCALE: 1:24 WEIGHT:		SHEET 6 OF 14

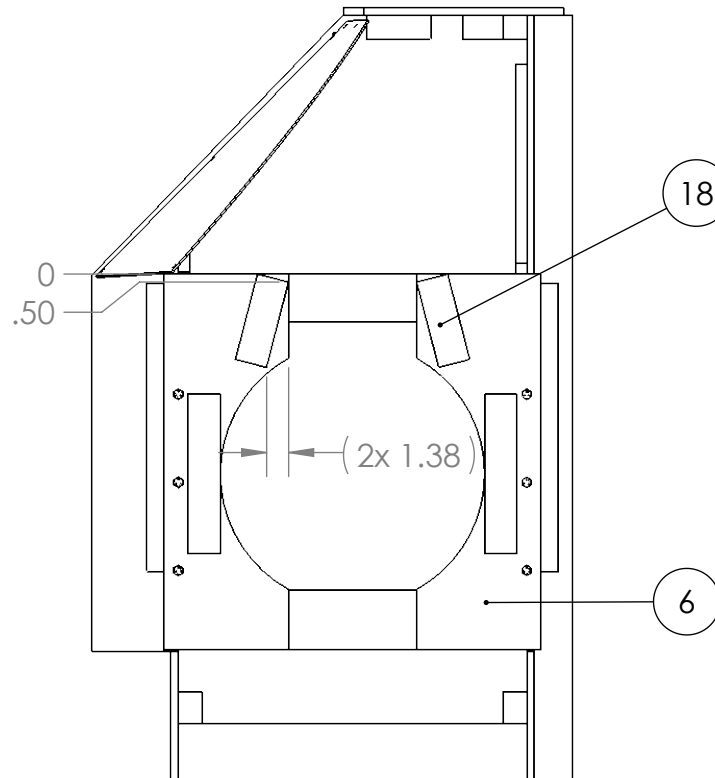
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A

2

1

Step 13:



Note:

Attach 18 to 6

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		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:

Cargo Front
Single

SIZE	DWG. NO.	REV
A	TE-19107	
SCALE: 1:24 WEIGHT:		SHEET 7 OF 14

2

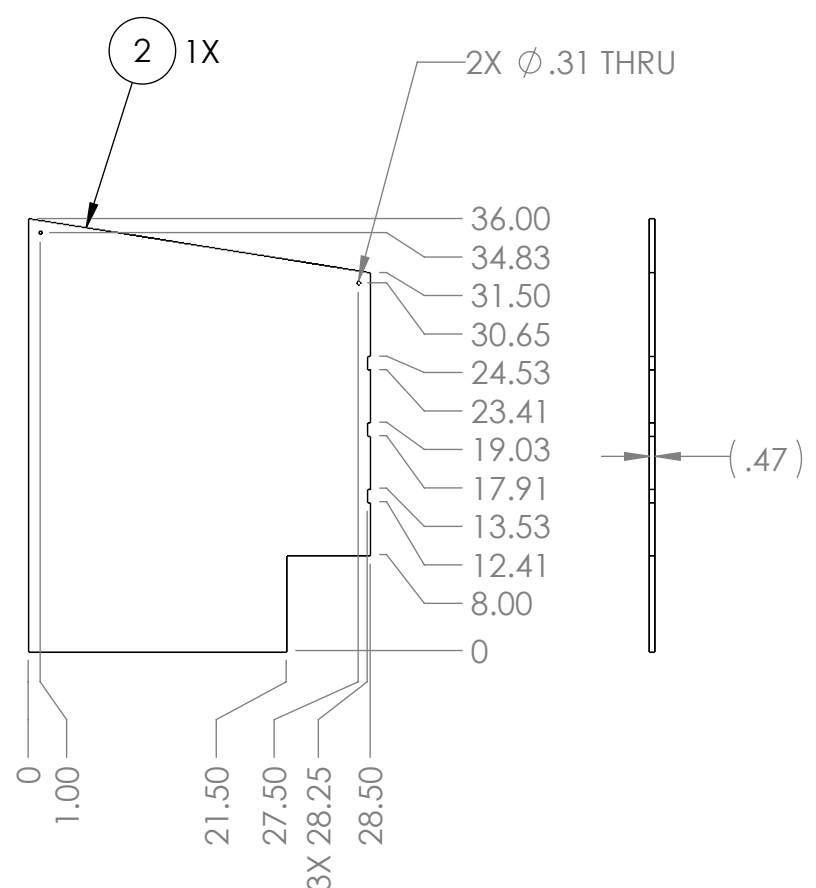
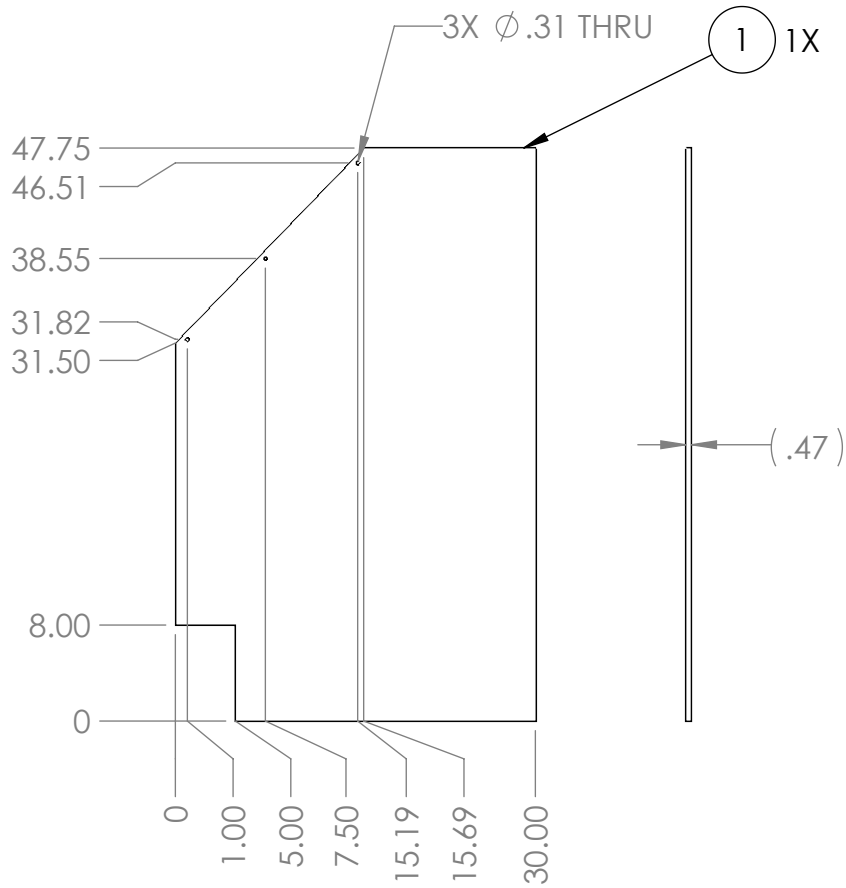
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TE-19107-01

TE-19107-02

B

B



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

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


A

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		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:		

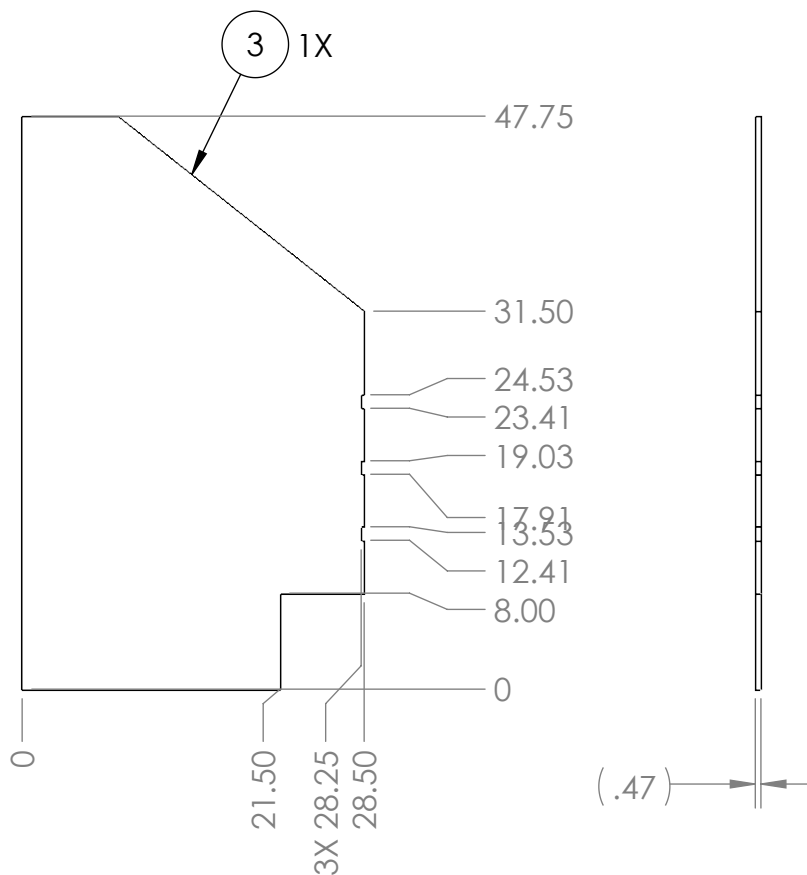
 		
TITLE:		
Cargo Front Single		
SIZE	DWG. NO.	REV
A	TE-19107	
SCALE: 1:24 WEIGHT:		SHEET 8 OF 14

2

1

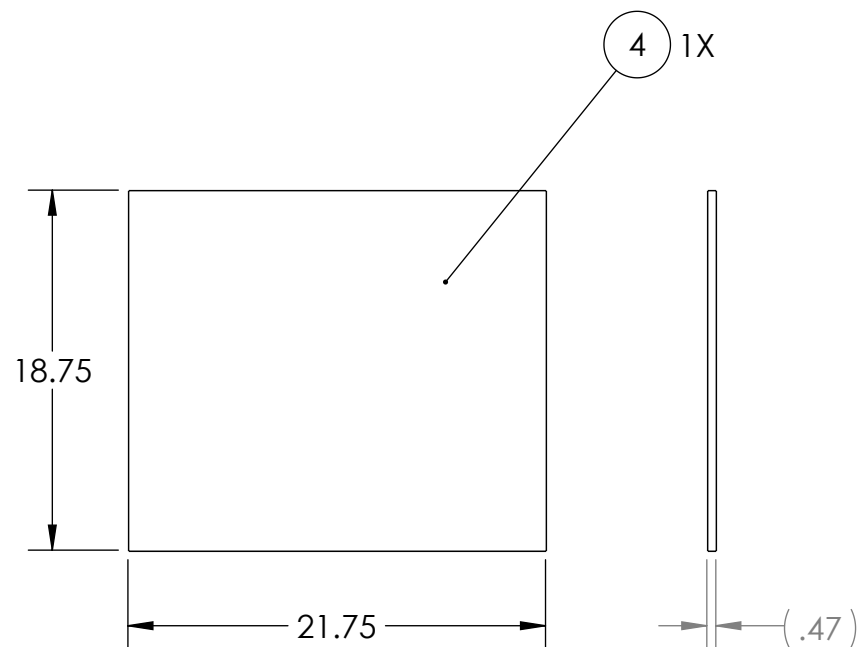
B

TE-19107-03



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

TE-19107-04



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

B

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		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:

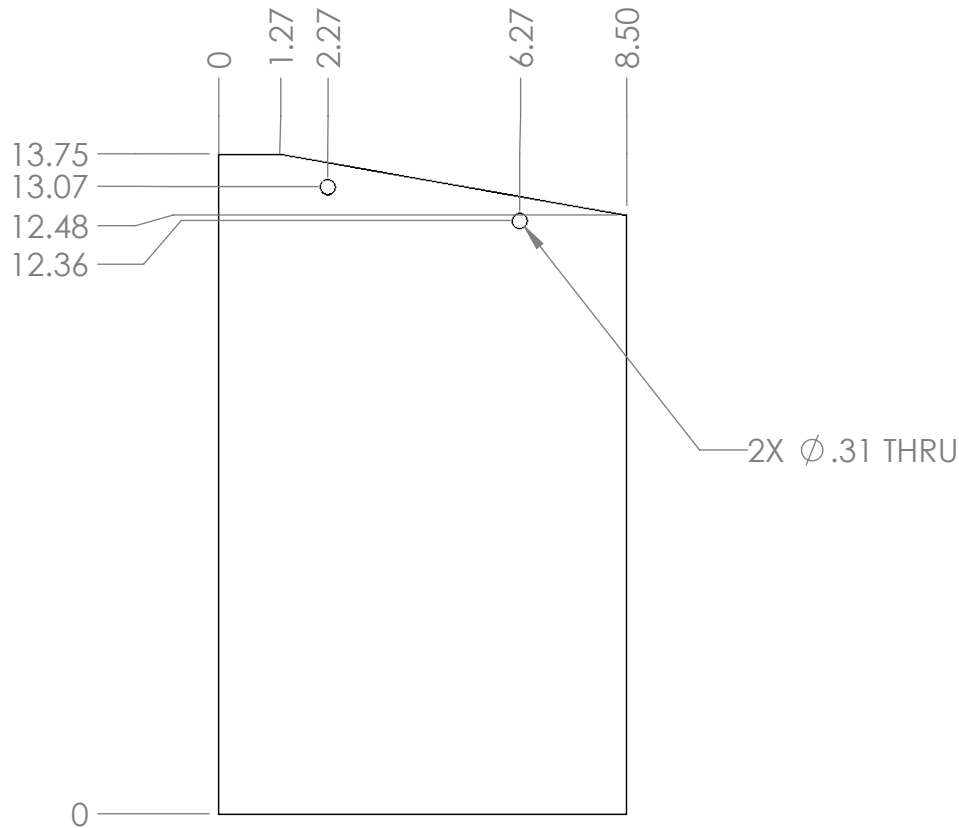
Cargo Front Single

SIZE	DWG. NO.	REV
A	TE-19107	
SCALE: 1:24		WEIGHT:
SHEET 9 OF 14		

2

1

TE-19107-05



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

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		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

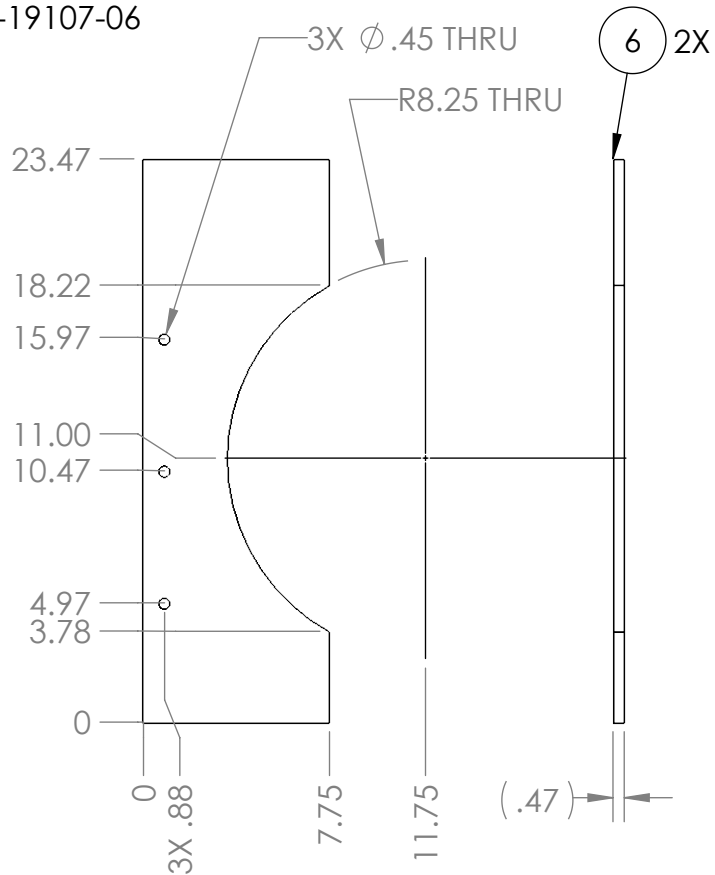
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DRAWN		
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE: Cargo Front Single		
SIZE A	DWG. NO. TE-19107	REV
SCALE: 1:24 WEIGHT:		SHEET 10 OF 14

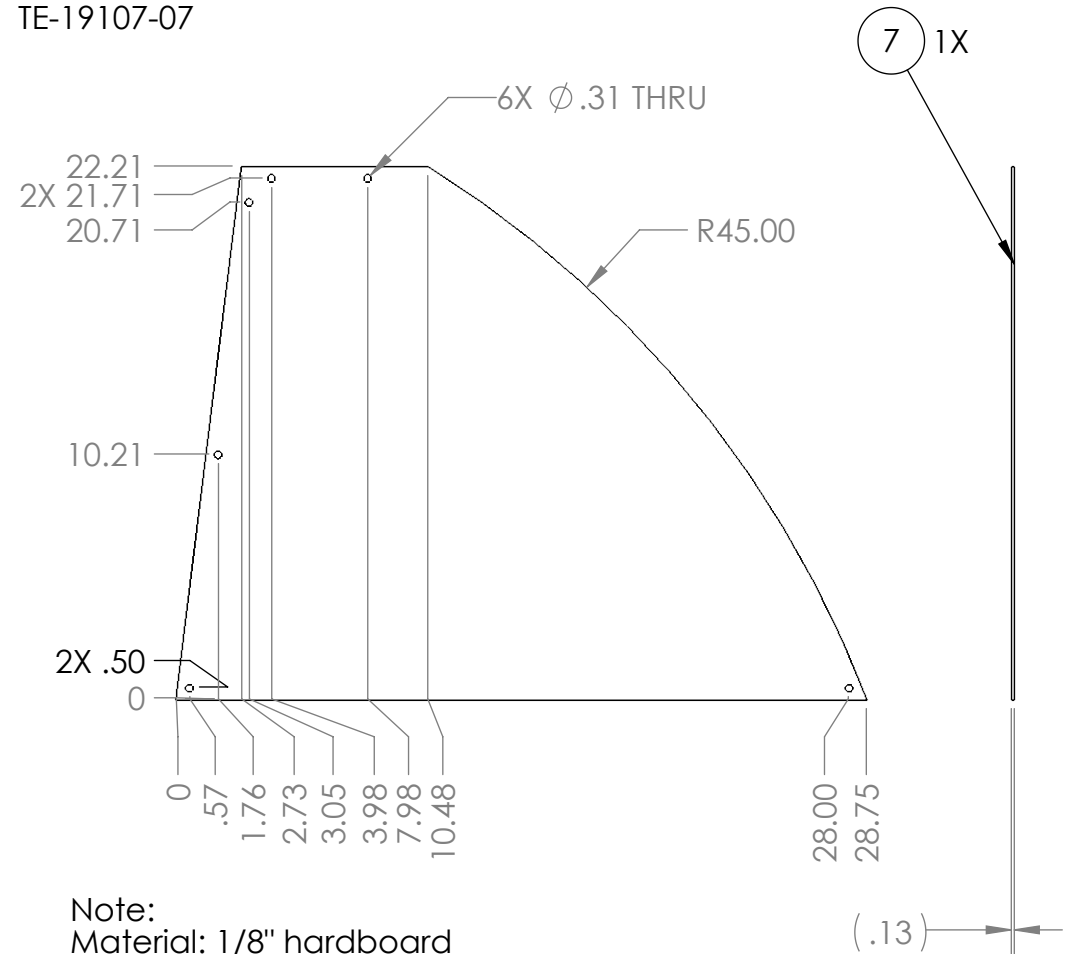
B

TE-19107-06



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

TE-19107-07



Note:
Material: 1/8" hardboard

B

A

A

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		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			



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TITLE:

**Cargo Front
Single**

SIZE	DWG. NO.	REV
A	TE-19107	

SCALE: 1:24 WEIGHT:

SHEET 11 OF 14

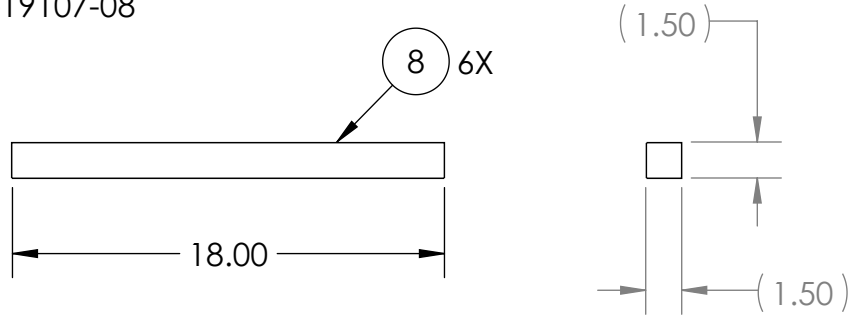
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1

2

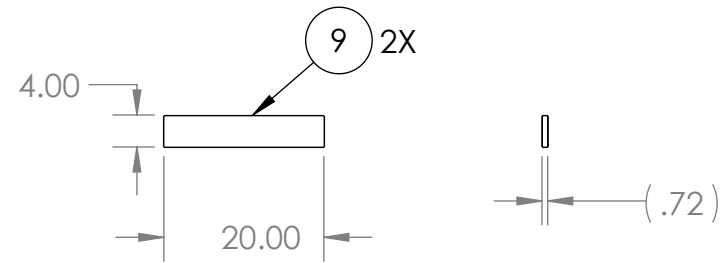
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TE-19107-08



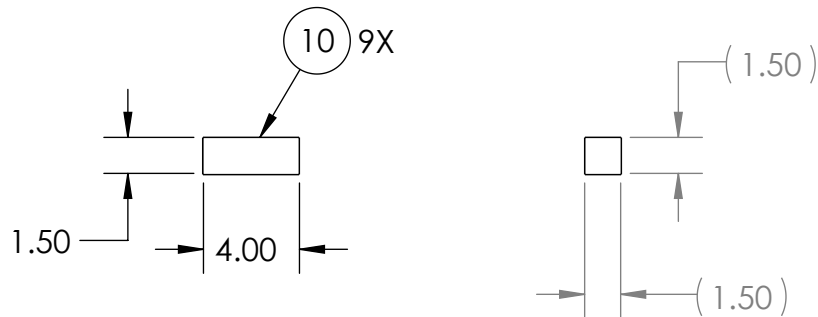
Note:
Material 2"x 2" Pine Lumber

TE-19107-09



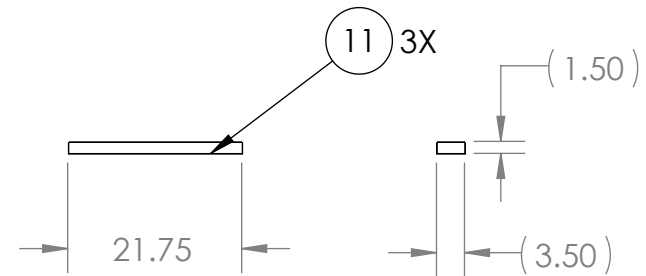
Note:
Material: 23/32" (3/4") A/C or CDX Plywood

TE-19107-10



Note:
Material 2"x 2" Pine Lumber

TE-19107-11



Note:
Material 2"x 4" Pine Lumber

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		TOLERANCES:
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		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: Cargo Front Single		
SIZE A	DWG. NO. TE-19107	REV
SCALE: 1:24 WEIGHT:		SHEET 12 OF 14

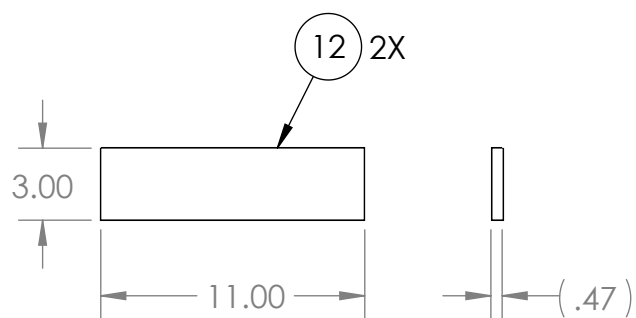
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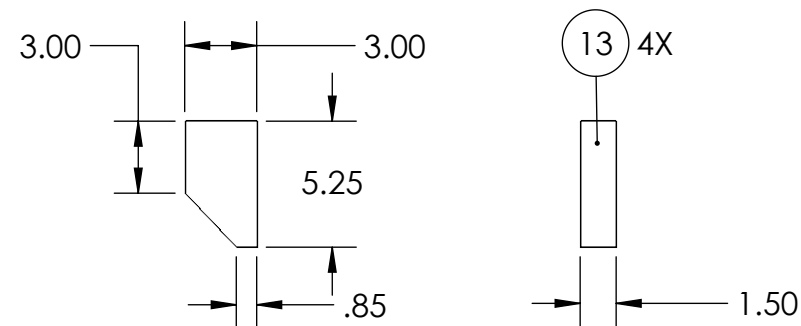
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TE-19107-12



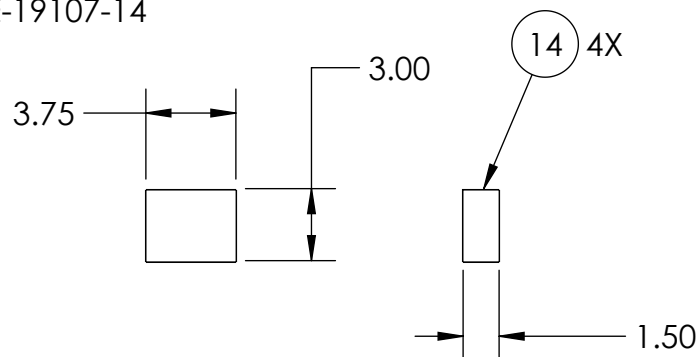
Note:
Material: 15/32" (1/2") A/C or CDX Plywood

TE-19107-13



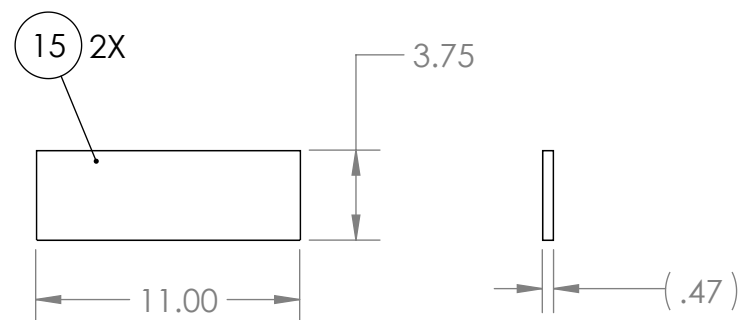
Note:
Material 2"x 4" Pine Lumber

TE-19107-14



Note:
Material 2"x 4" Pine Lumber

TE-19107-15



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

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		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:

Cargo Front Single

SIZE	DWG. NO.	REV
A	TE-19107	

SCALE: 1:24 WEIGHT: SHEET 13 OF 14

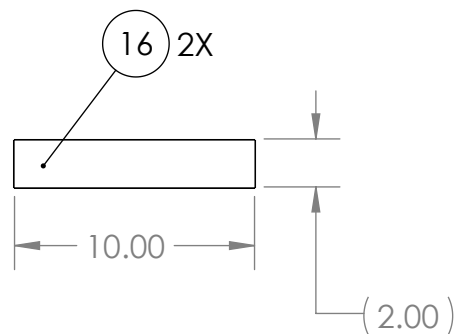
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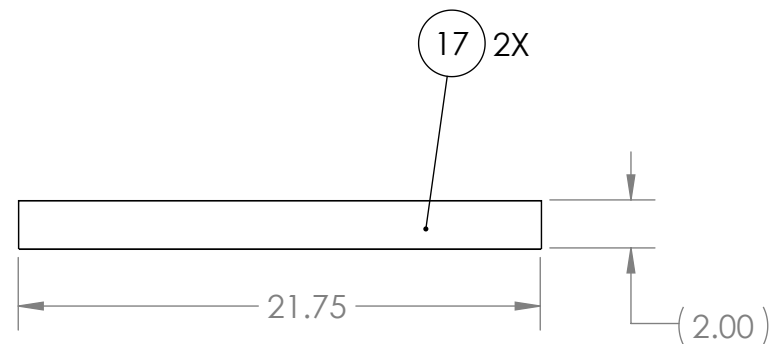
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TE-19107-16



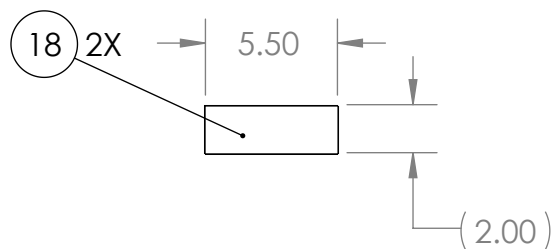
Note:
2" Hook Fastener

TE-19107-19



Note:
2" Hook Fastener

TE-19107-20



Note:
2" Vison Tape

A

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		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			



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TITLE:

**Cargo Front
Single**

SIZE

A

DWG. NO.

TE-19107

REV

SCALE: 1:24 WEIGHT:

SHEET 14 OF 14

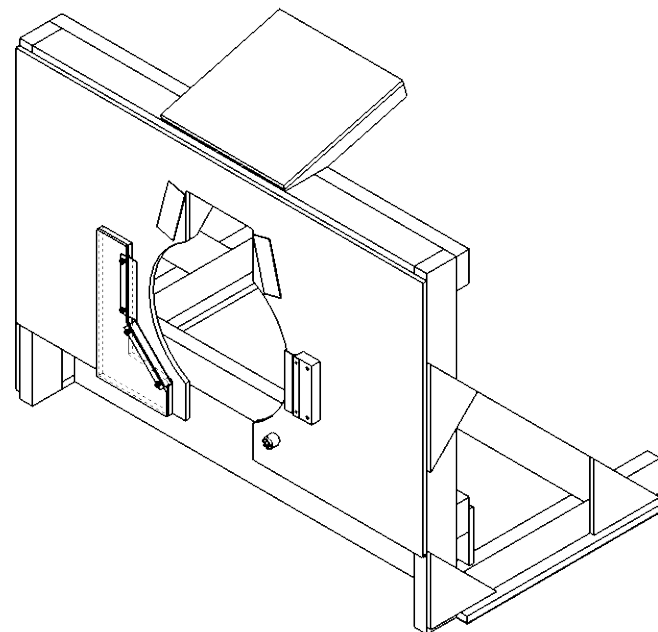
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1

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



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2, 2-B2, 13-B1, 15-B2	A	Moved materials table to sheet 2. Updated dimensions of TE-19108-16 to more closely match field elements. Added sheet with modification instructions to make initial Rev perform as Rev A intends.	1/30/2019	

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



B

A

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			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:

Loading Station

SIZE **DWG. NO.** **REV**

A

TE-19108

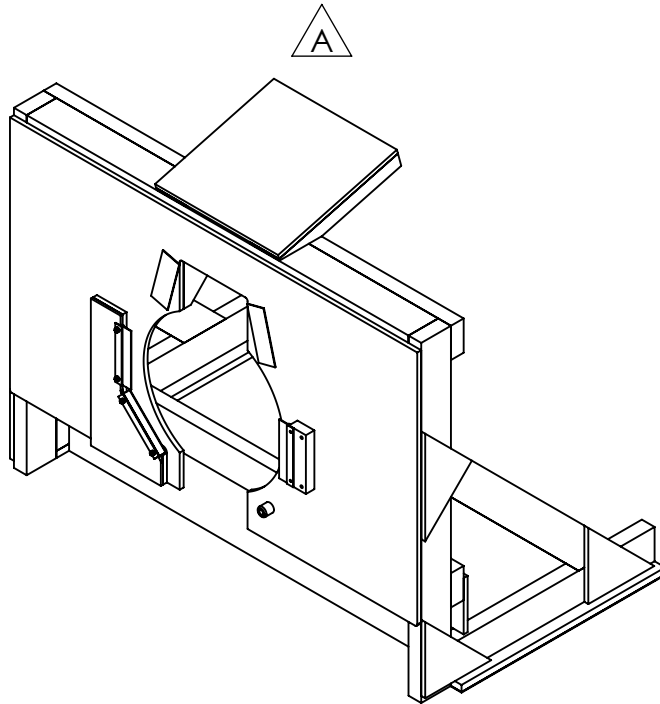
A

SCALE: 1:16

WEIGHT:

SHEET 1 OF 15

B





B

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

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

TITLE:

Loading Station

SIZE	DWG. NO.	REV
A	TE-19108	A

SCALE: 1:16

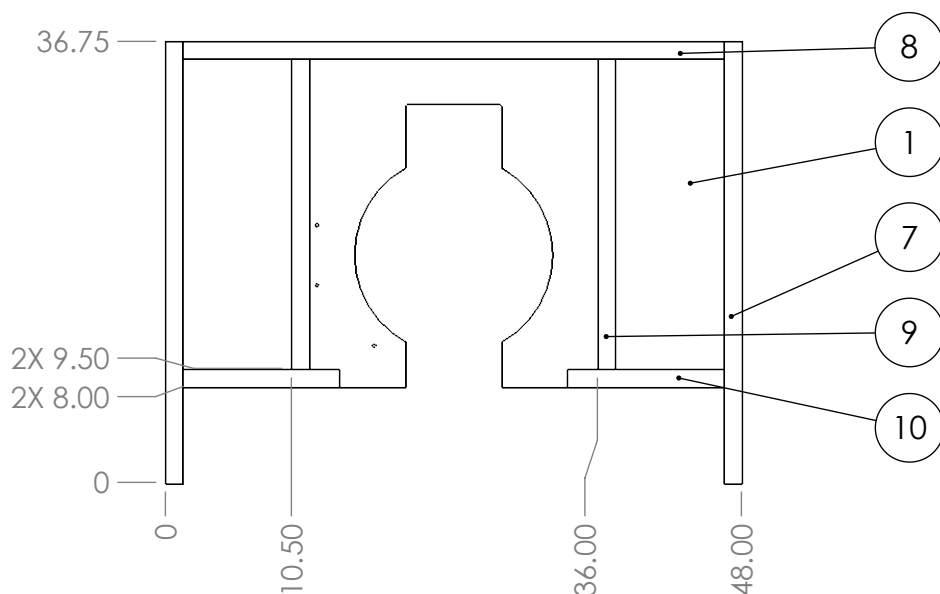
WEIGHT:

SHEET 2 OF 15

2

1

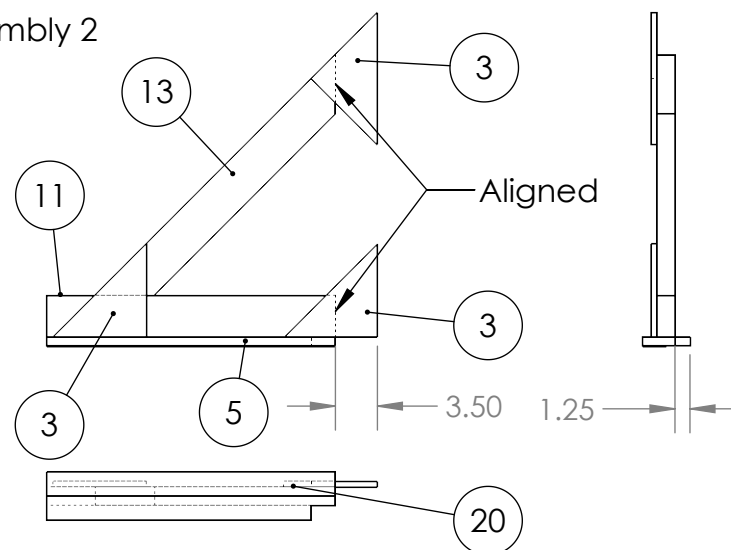
Subassembly 1



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.

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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

DWG. NO.

REV

A

TE-19108

A

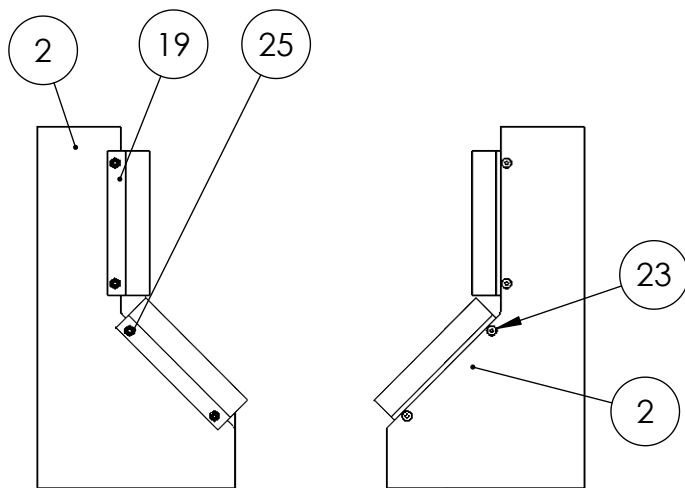
SCALE: 1:16 WEIGHT:

SHEET 3 OF 15

2

1

B



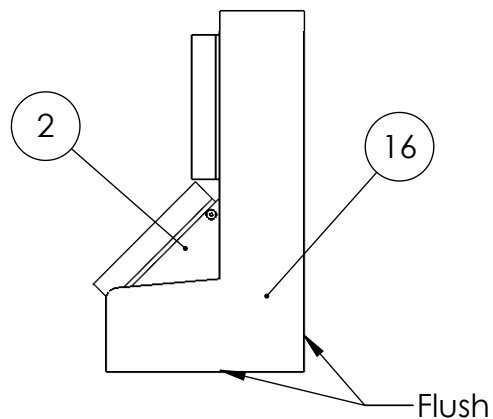
Front

Back

Note:

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

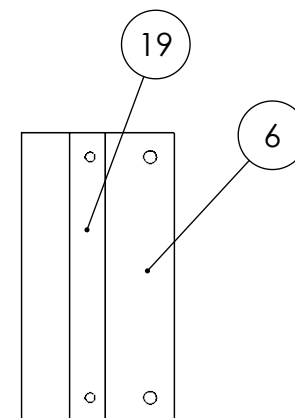
Subassembly 3:



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

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		THREE PLACE DECIMAL $\pm .001$	COMMENTS:		
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			



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TITLE:

Loading Station

SIZE

A

DWG. NO.

TE-19108

REV

A

SCALE: 1:16 WEIGHT:

SHEET 4 OF 15

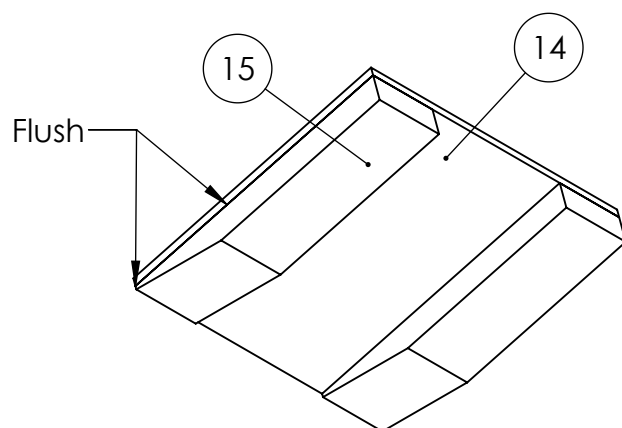
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1

2

1

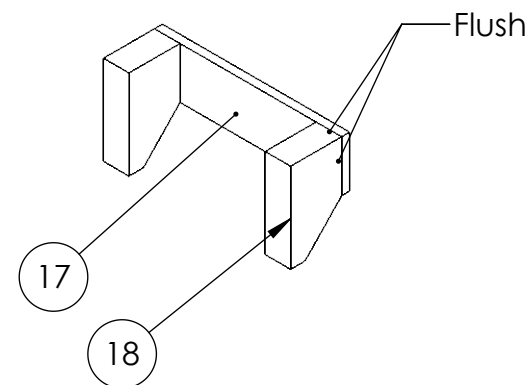
Subassembly 5:



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.

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		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
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TITLE:

Loading Station

SIZE

A

DWG. NO.

TE-19108

REV

A

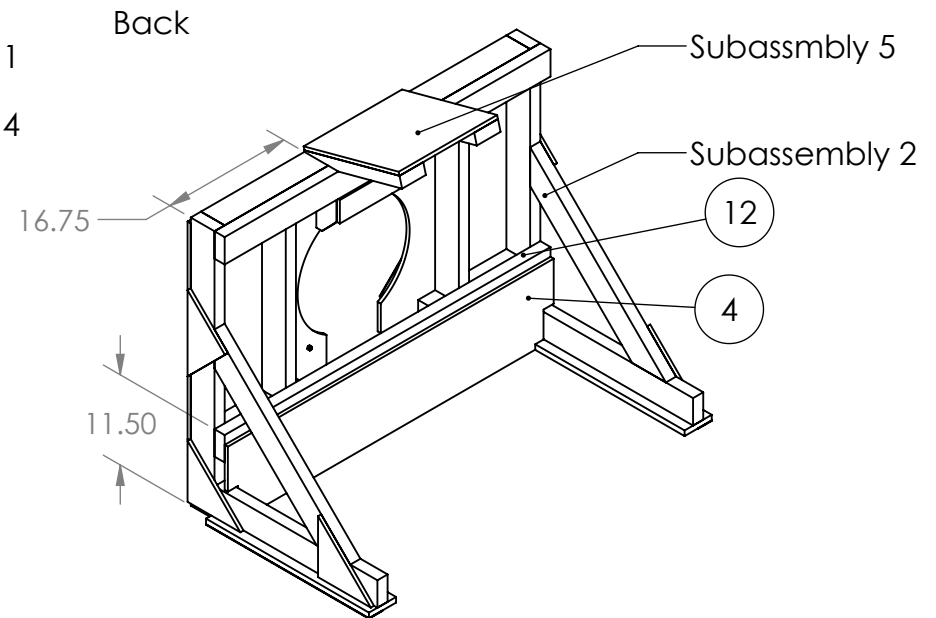
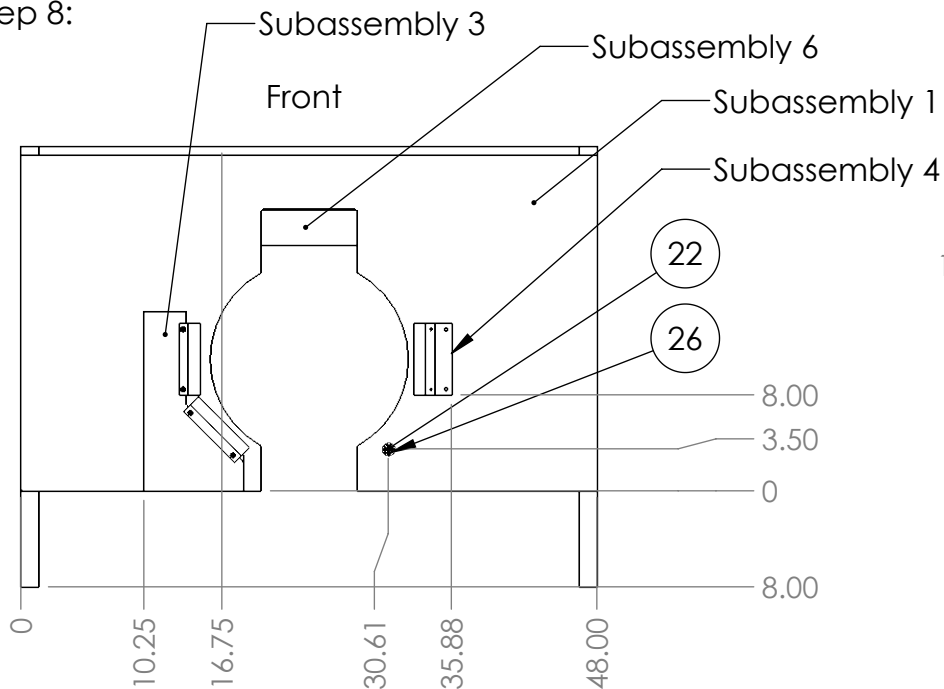
SCALE: 1:16 WEIGHT:

SHEET 5 OF 15

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

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		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			



TITLE:

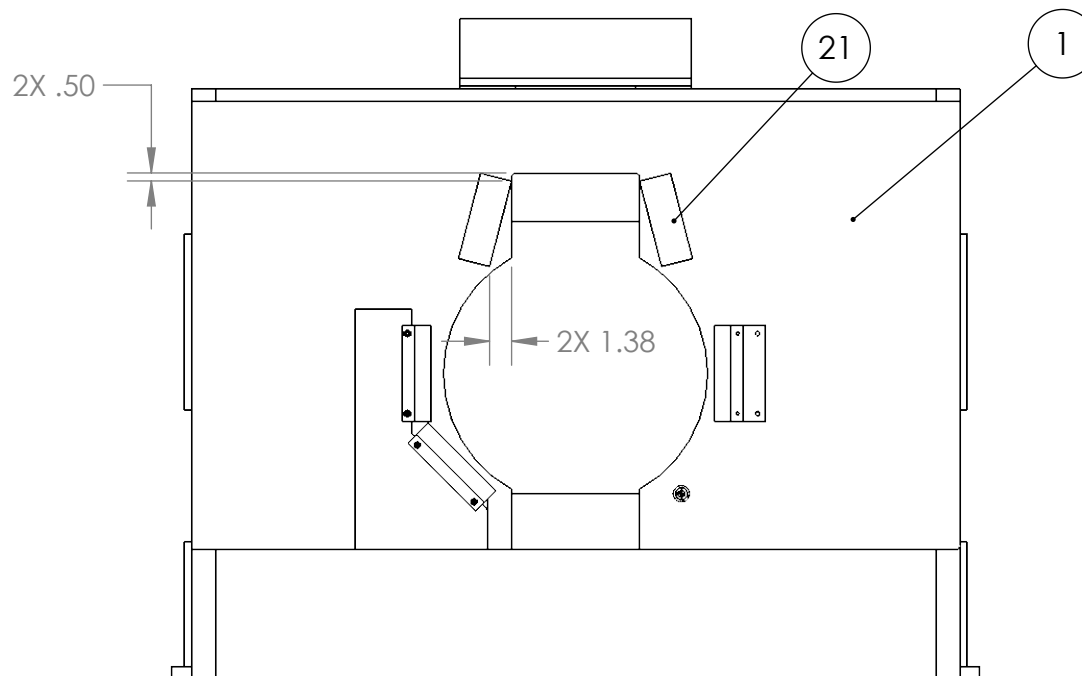
Loading Station

SIZE	DWG. NO.	REV
A	TE-19108	A
SCALE: 1:16		WEIGHT:
		SHEET 6 OF 15

2

1

Step 10:



Note:

Attach (21) to (1) as shown.

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		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
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		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:		



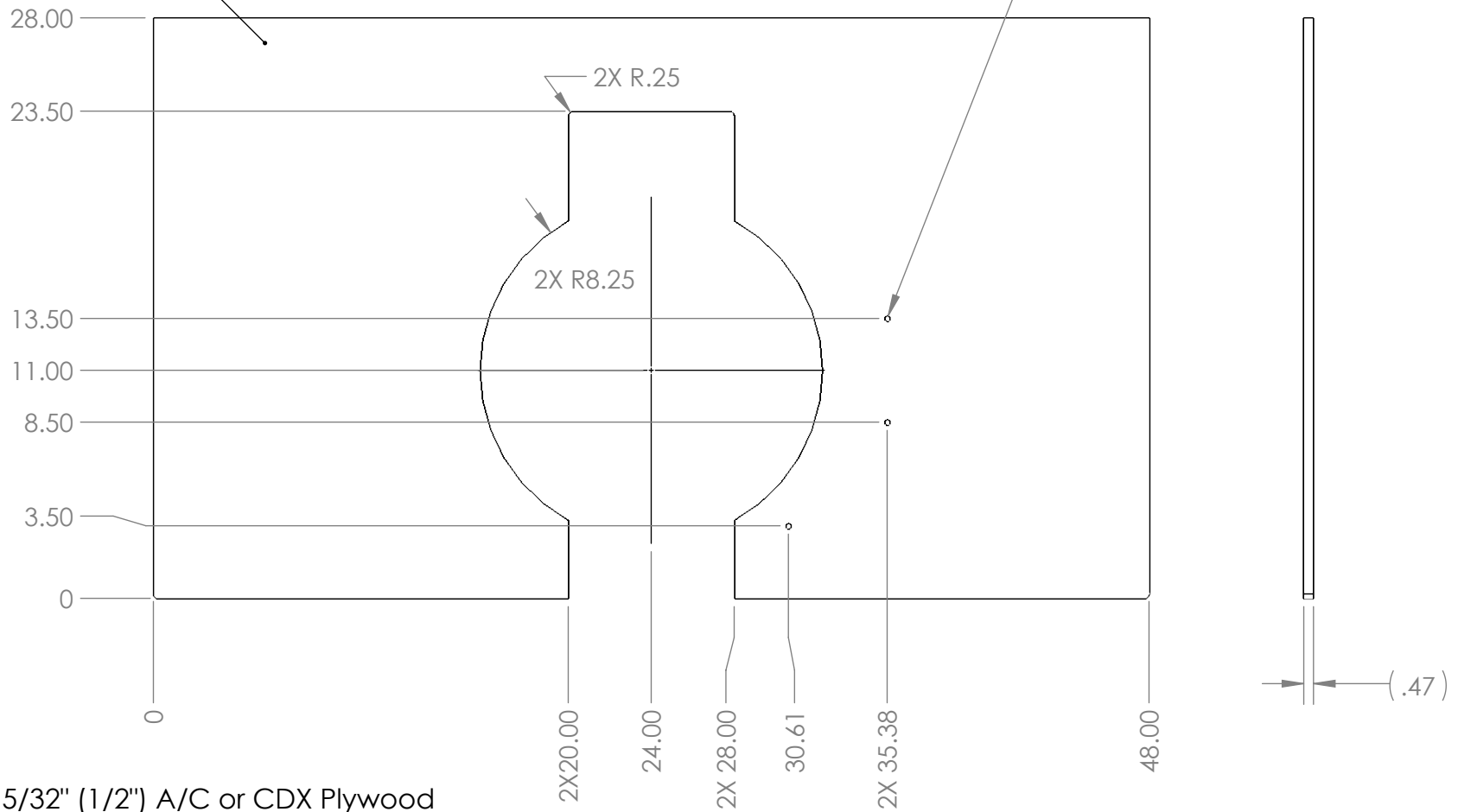
TITLE:
Loading Station

SIZE	DWG. NO.	REV
A	TE-19108	A
SCALE: 1:16		WEIGHT:
		SHEET 7 OF 15

2

1

TE-19108-01



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		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
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COMPETITION**

SOLIDWORKS
Modeling Solutions Partner

TITLE:

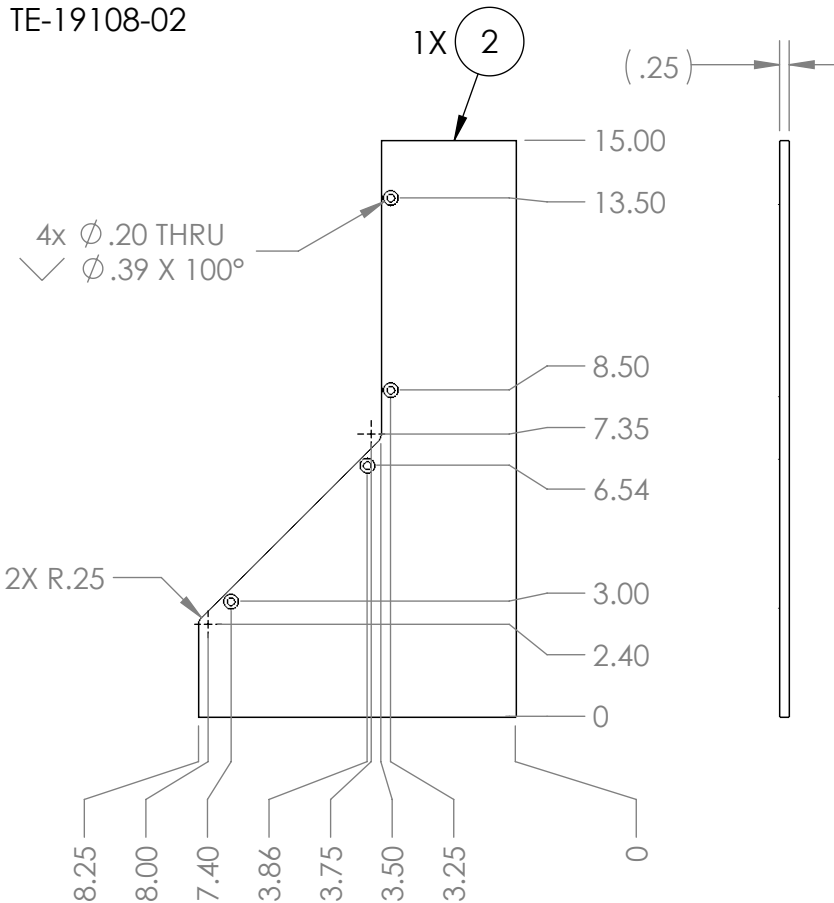
Loading Station

SIZE	DWG. NO.	REV
A	TE-19108	A
SCALE: 1:16		WEIGHT:
		SHEET 8 OF 15

2

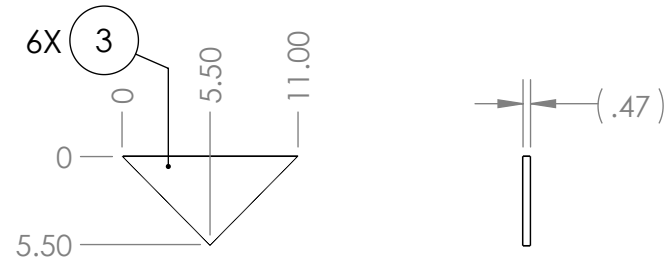
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TE-19108-02



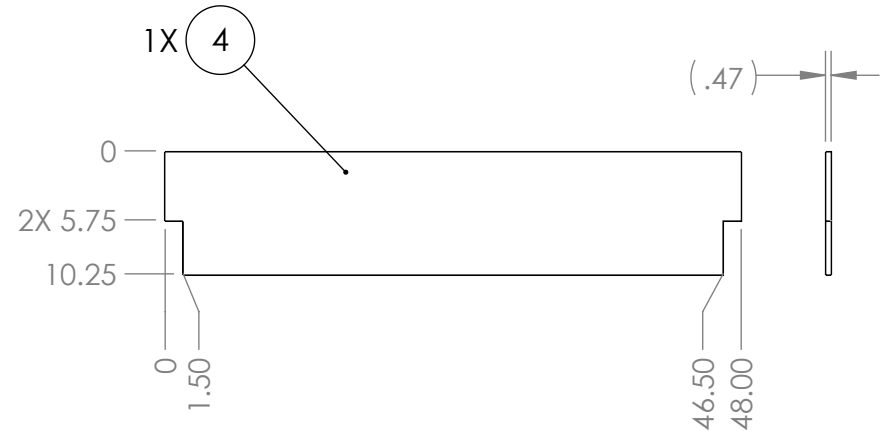
Note:
Material 1/4" Hardboard

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

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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

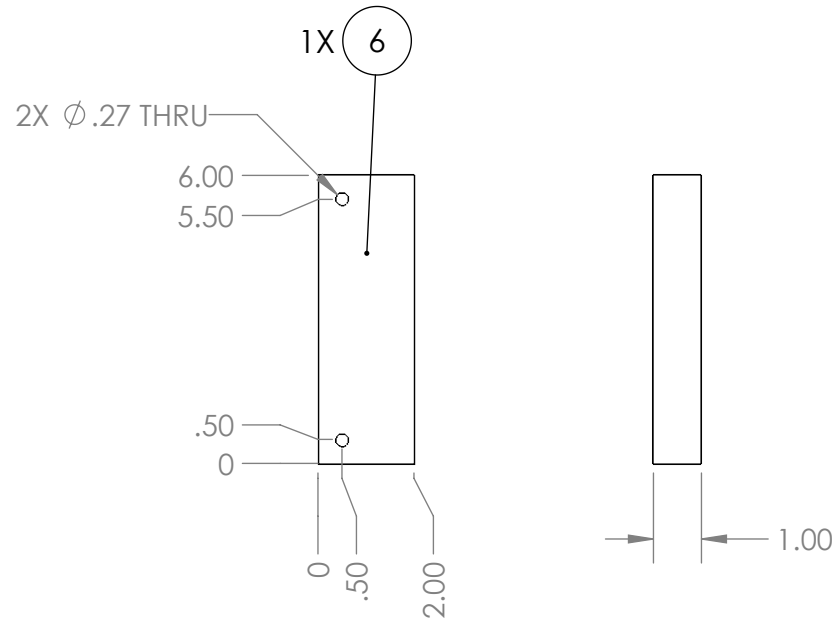
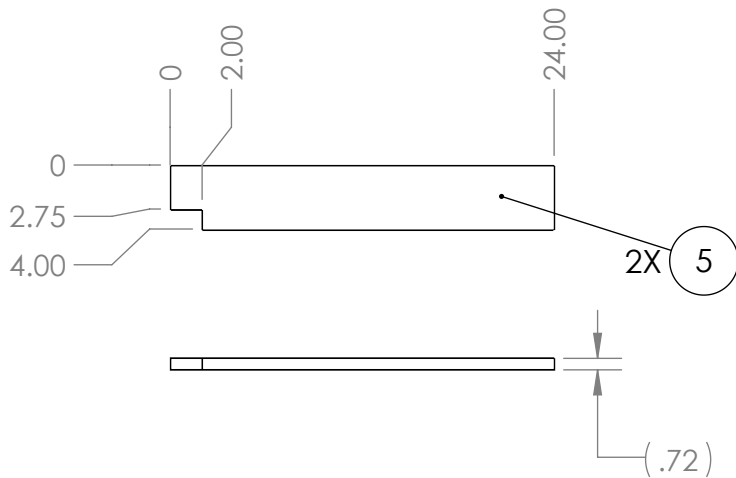
SIZE	DWG. NO.	REV
A	TE-19108	A
SCALE: 1:16		WEIGHT:
SHEET 9 OF 15		

2

1

TE-19108-05

TE-19108-06



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

Notes:
Material 2"x 4" Lumber Pine

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		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	A

SCALE: 1:16 WEIGHT: SHEET 10 OF 15

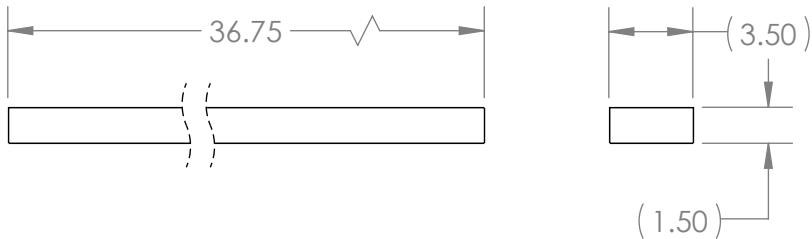
2

1

2

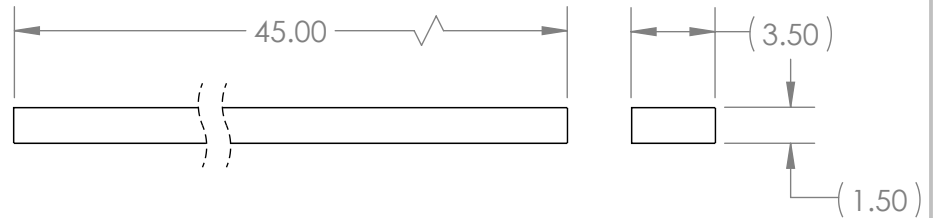
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TE-19108-07



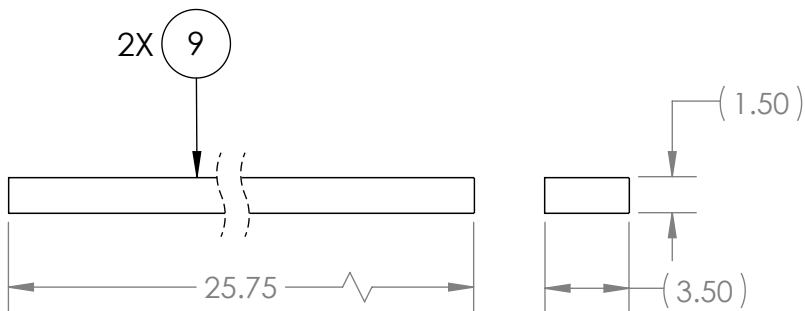
Notes:
Material 2"x 4" Lumber Pine

TE-19108-08



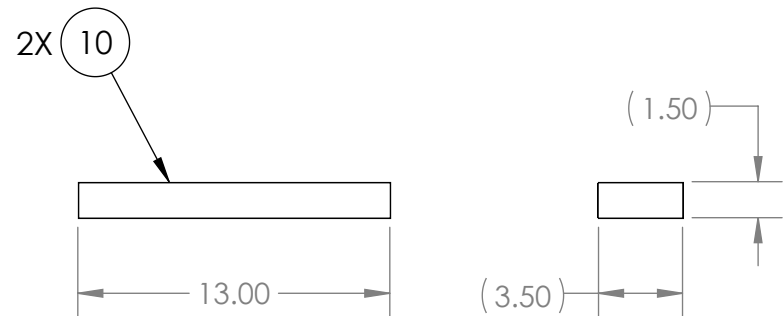
Notes:
Material 2"x 4" Lumber Pine

TE-19108-09



Notes:
Material 2"x 4" Lumber Pine

TE-19108-10



Notes:
Material 2"x 4" Lumber Pine

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		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	A
SCALE: 1:16		WEIGHT:
SHEET 11 OF 15		

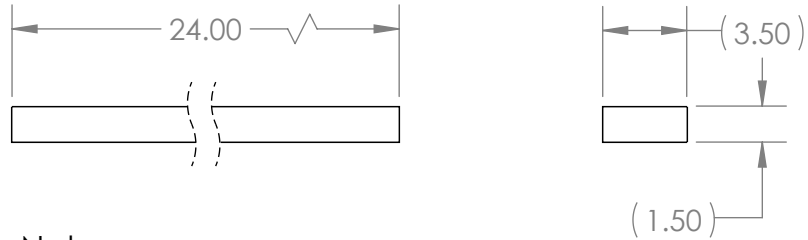
2

1

2

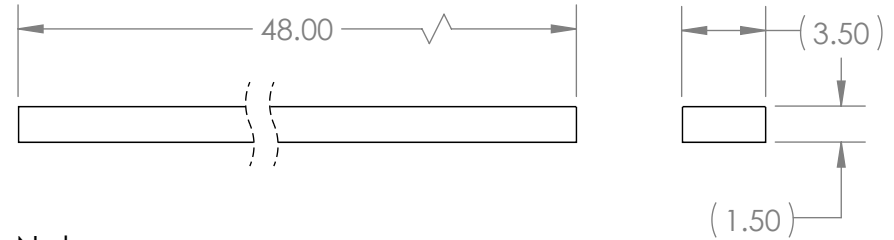
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TE-19108-11



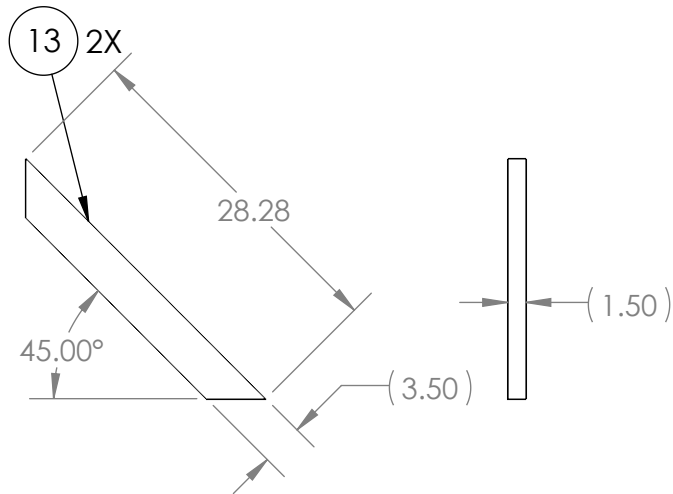
Notes:
Material 2"x 4" Lumber Pine

TE-19108-12



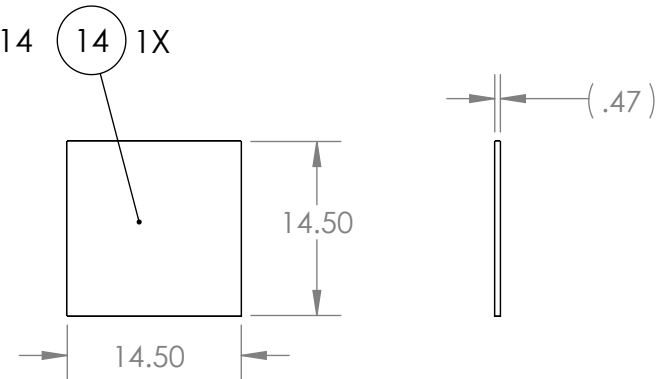
Notes:
Material 2"x 4" Lumber Pine

TE-19108-13



Notes:
Material 2"x 4" Lumber Pine

TE-19108-14



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

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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

A

SCALE: 1:16 WEIGHT:

SHEET 12 OF 15

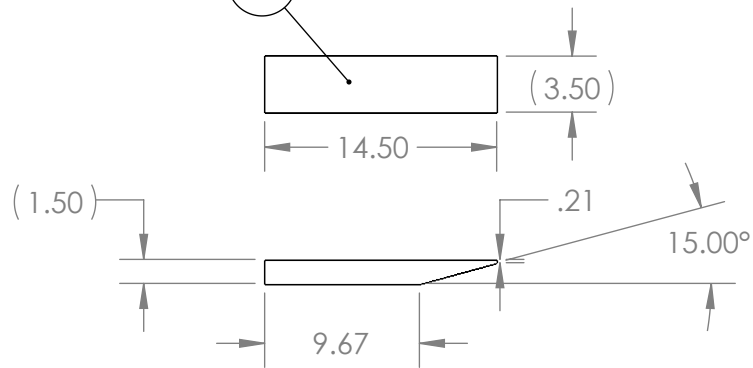
2

1

B

TE-19108-15

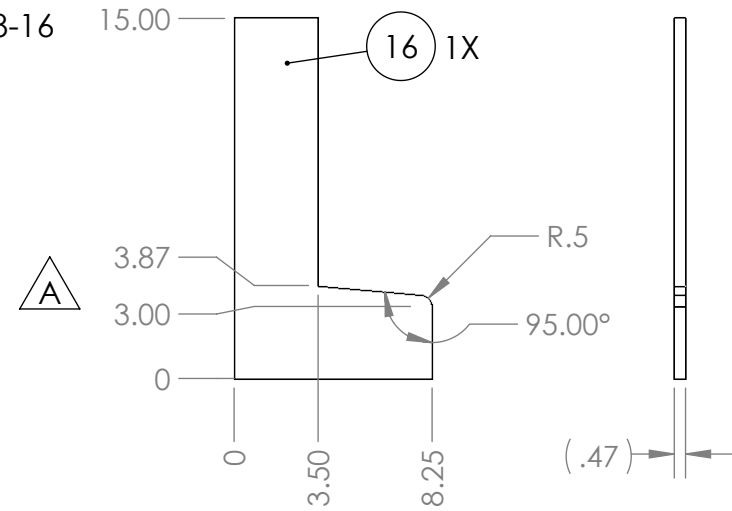
2X (15)



Note:
Material 2"x4" Pine Lumber

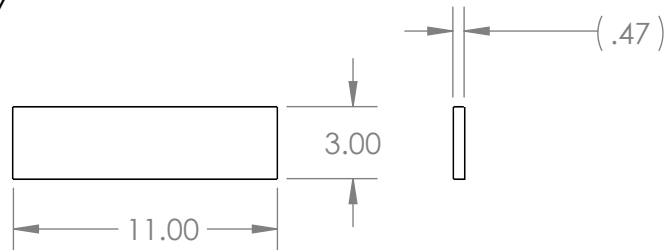
TE-19108-16

15.00 1X (16)



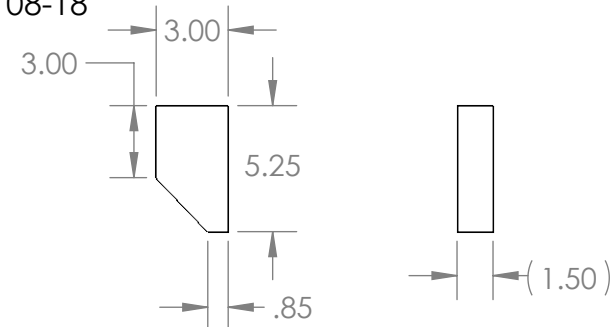
Note:
Material 15/32"(1/2") A/C or CDX Plywood

TE-19108-17



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

TE-19108-18



Note:
Material 2"x4" Pine Lumber

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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:

Loading Station

SIZE

A

DWG. NO.

TE-19108

REV

A

SCALE: 1:16 WEIGHT:

SHEET 13 OF 15

B

A

A

2

1

2

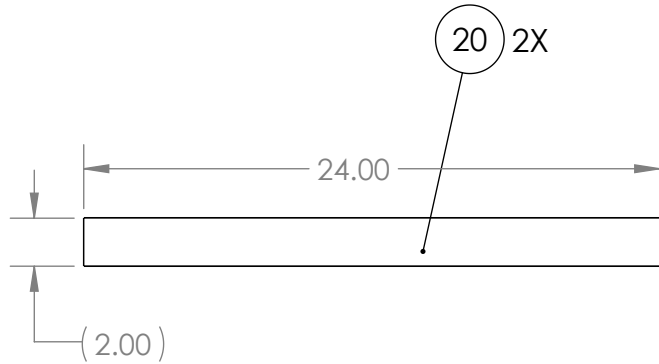
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TE-19108-20

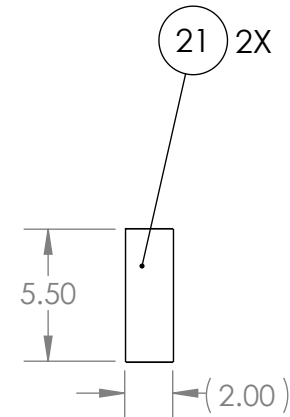
TE-19108-21

B

B

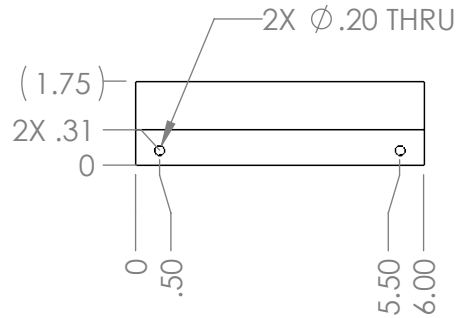


2" Hook Fastener



2" Vision Tape

TE-19108-19



Note:
Material Frost King C35PH

A

A

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		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	A
SCALE: 1:16		WEIGHT:
SHEET 14 OF 15		

2

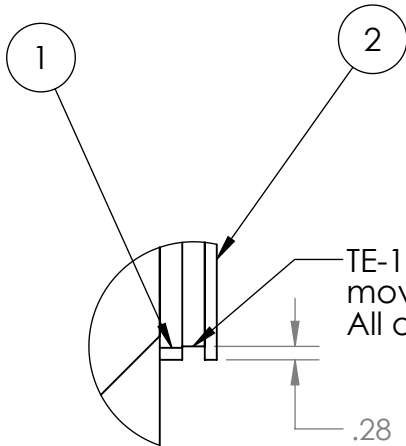
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2

1

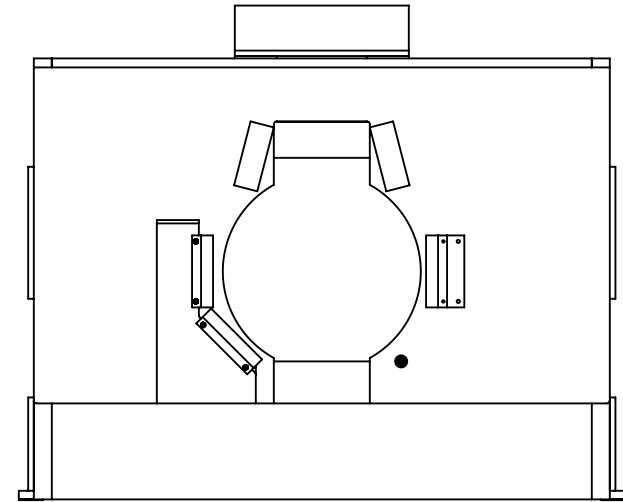
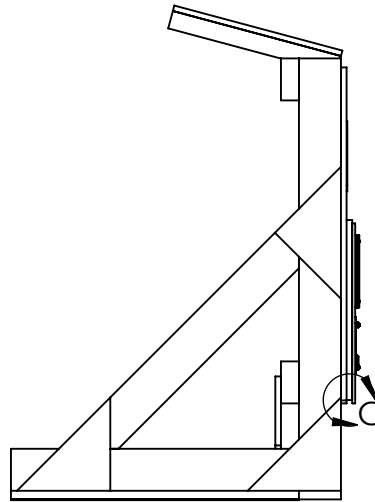


This page shows the change needed to revise an initial Rev TE-19108 to function as Rev A intends without having to remake TE-19108-16.



TE-19108-16 initial release version needs to be moved up 0.28" (~9/32") relative to the mating parts. All other alignment stays the same.

DETAIL C
SCALE 1 : 4



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		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:
Loading Station

SIZE	DWG. NO.	REV
A	TE-19108	A

SCALE: 1:16	WEIGHT:	SHEET 15 OF 15
-------------	---------	----------------

2

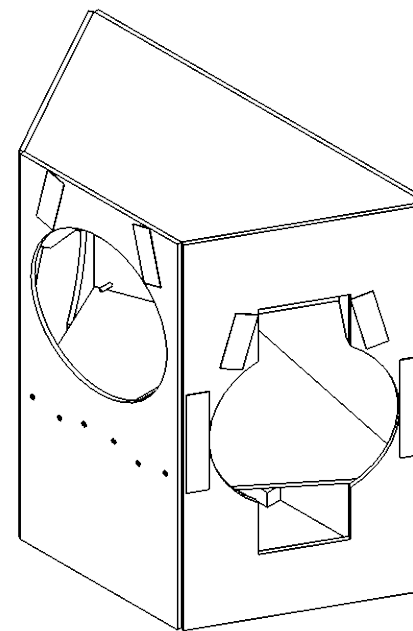
1

2

1



ITEM NO.	PART NUMBER	QTY.
1	TE-19110-01	1
2	TE-19110-02	2
3	TE-19110-03	1
4	TE-19110-04	2
5	TE-19110-05	2
6	TE-19110-06	11
7	TE-19110-07	4
8	TE-19110-08	2
9	TE-19110-09	4
10	TE-19110-11	6
11	TE-19110-12	3
12	flat_phil_.25_20_1.75	12

Material	QTY
15/32"(1/2") A/C or CDX Plywood	1.5 sheets
2"x 4"x 8'	.25
2"x 2"x 8'	1
Flat head Philips 1/4"-20 x 1.75"	12
2" Hook Fastener	94"
2" Vison Tape	33"
1.25" screws	~60
2.5" screws	~10



A

A

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			DIMENSIONS ARE IN INCHES	DRAWN				TITLE: <h1>Single Bay Rocket</h1>
			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					

SIZE	DWG. NO.	REV
A	TE-19110	
SCALE: 1:16		WEIGHT:
		SHEET 1 OF 8

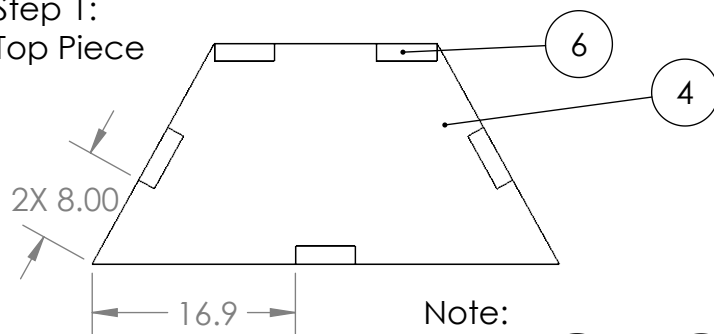
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1

2

1

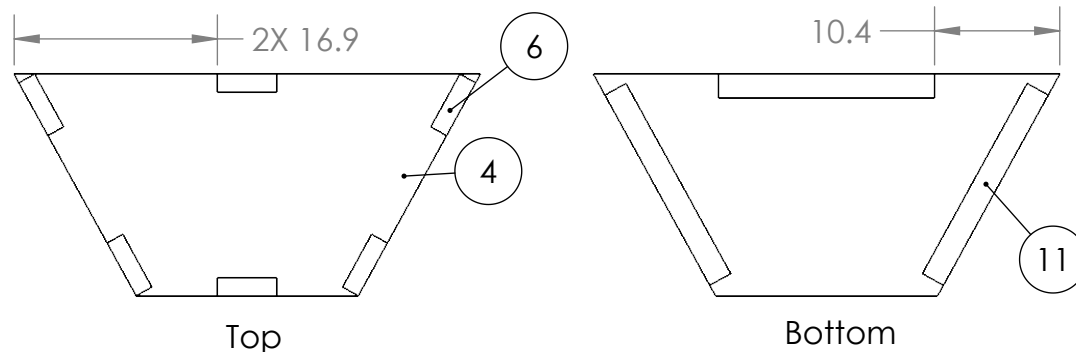
Step 1: Top Piece



Note:

Attach (6) to (4), 5 places.
Pre-drill and attach using 1.25" screws

Step 2: Bottom Piece



Top

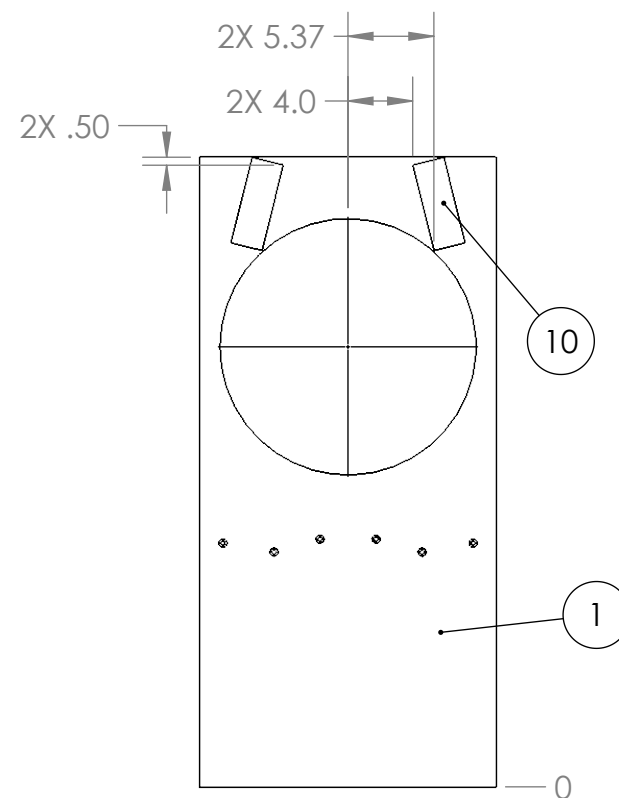
Bottom

Note:

Attach (6) to (4), 6 places.
Pre-drill and attach using 1.25" screws.

Attach (11) to the bottom in 3 places.
Pre-drill and attach using 1.25" screws.

Step 3:



Note:

Attach (10) to (1) as shown.

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NEXT ASSY

USED ON

APPLICATION

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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:



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Modeling Solutions Partner

TITLE:

Single Bay
Rocket

SIZE

A

DWG. NO.

TE-19110

REV

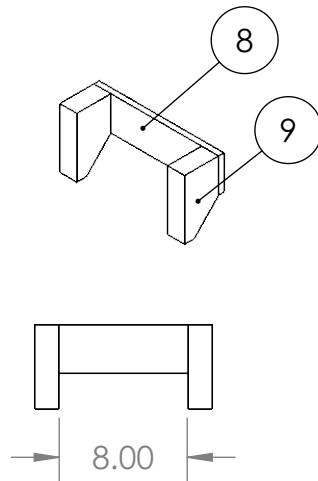
SCALE: 1:16 WEIGHT:

SHEET 2 OF 8

2

1

Step 4:

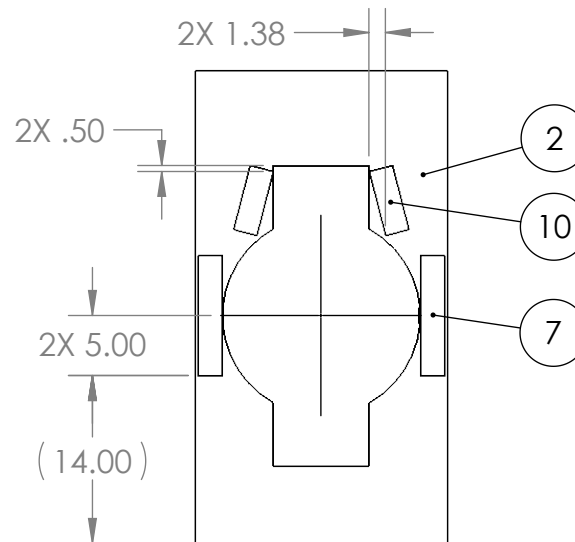


Notes:

Attach 8 to 9 as shown.

Pre-drill and attach using 1.25" screws.

Step 5:



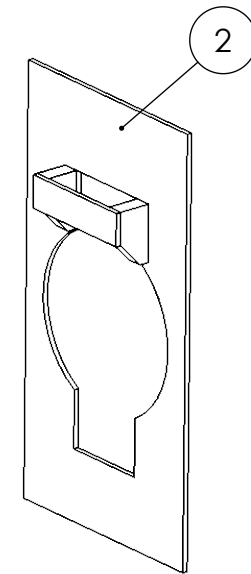
Note:

Attach 7 to 2 tangent to circle.

Attach 10 to 2 as shown.

Repeat for both Item 2.

Step 6:



Note:

Attach assembly from Step 4 to Item 2.

It should be flush to the top and side of cut out. Repeat.

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		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			



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TITLE:

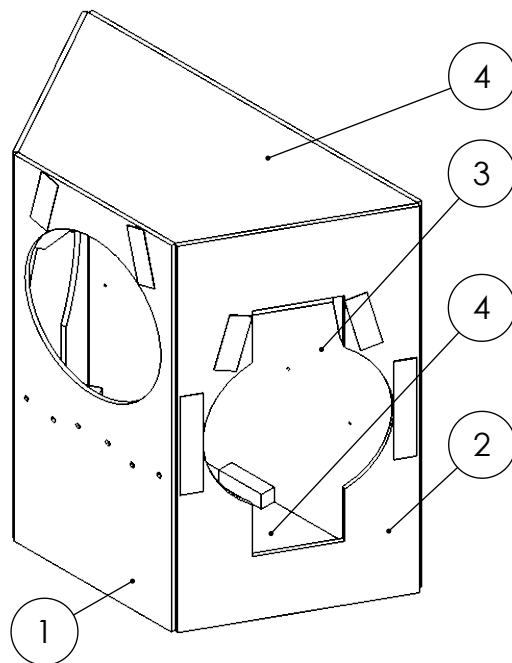
Single Bay
Rocket

SIZE	DWG. NO.	REV
A	TE-19110	
SCALE: 1:16 WEIGHT:		SHEET 3 OF 8

2

1

Step 7:

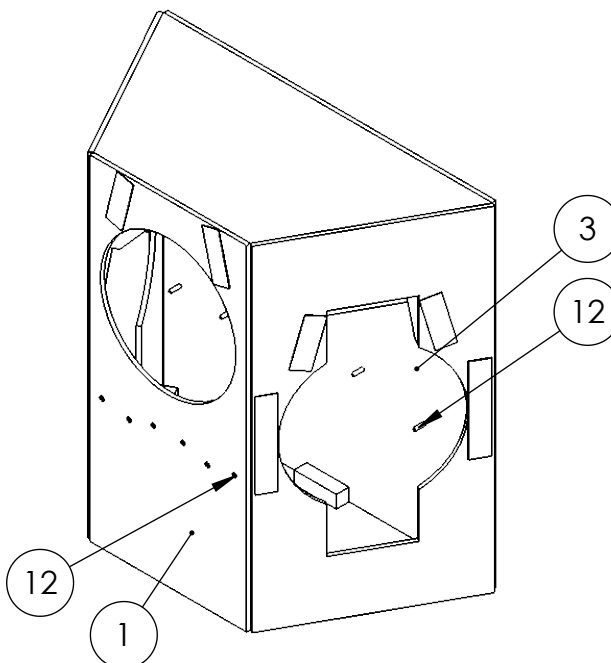


Note:

Attach Items (1), (2), and (3) to Item (4) as shown.

Pre-drill and use 1.25" screws.

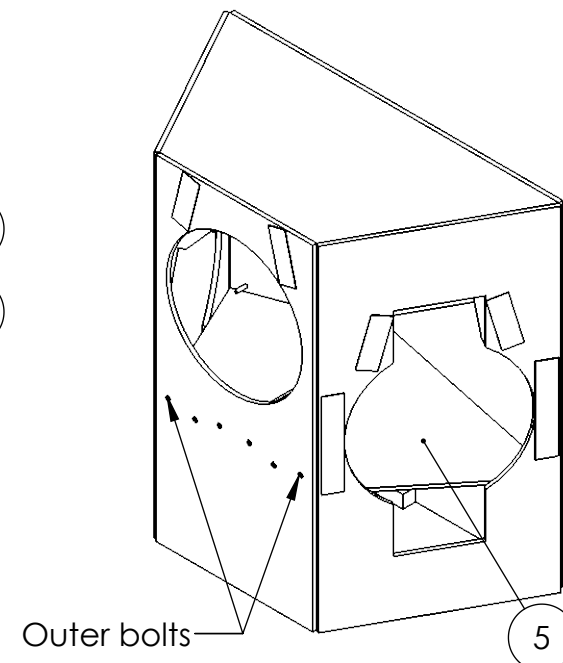
Step 8:



Note:

Insert (12) x12 in to (1) and (3). There should be a bolt in each counter sunk hole.

Step 9:



Note:

Place two Item (5) on top of the two inner bolts.

The outer bolts will be located on top of each ramp, securing it in position.



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Single Bay
Rocket

SIZE

A

DWG. NO.

TE-19110

REV

SCALE: 1:16 WEIGHT:

SHEET 4 OF 8

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NEXT ASSY

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APPLICATION

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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:

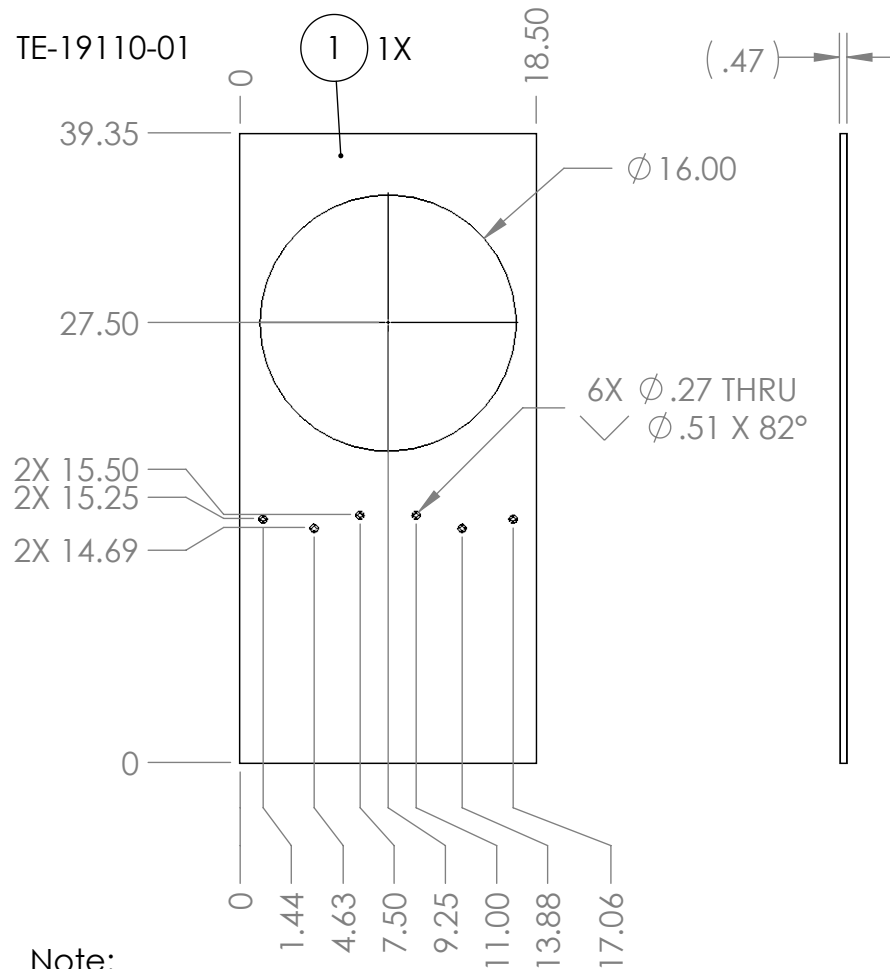
NAME

DATE

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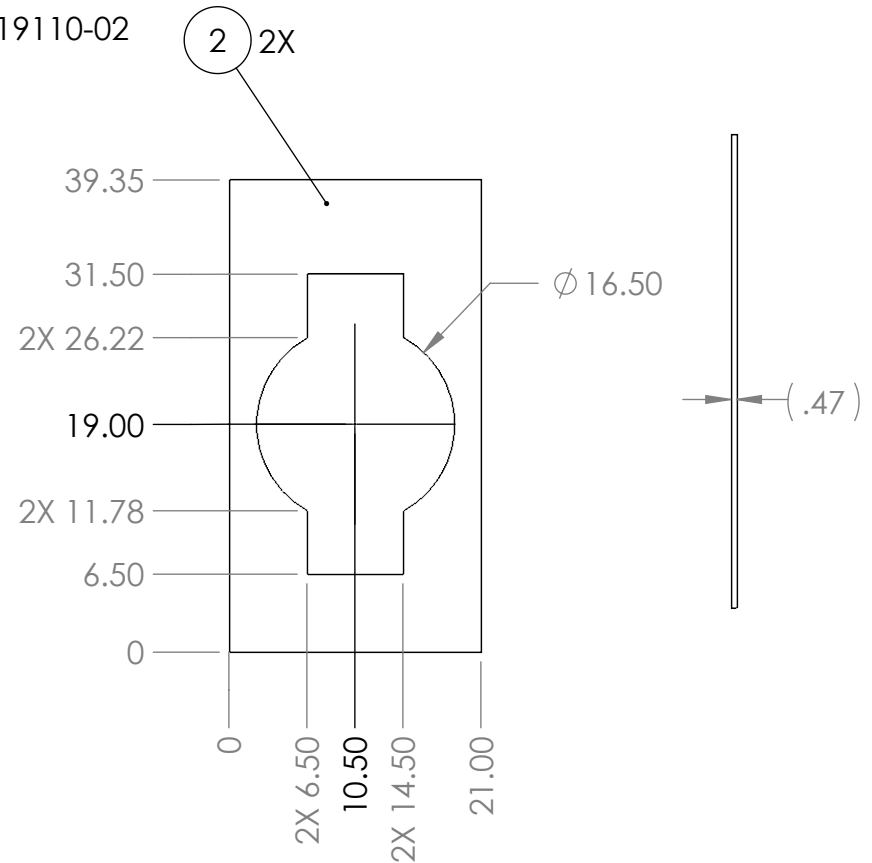
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B



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

TE-19110-02



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

B

A

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		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
		FINISH
NEXT ASSY	USED ON	
APPLICATION		DO NOT SCALE DRAWING

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



TITLE:

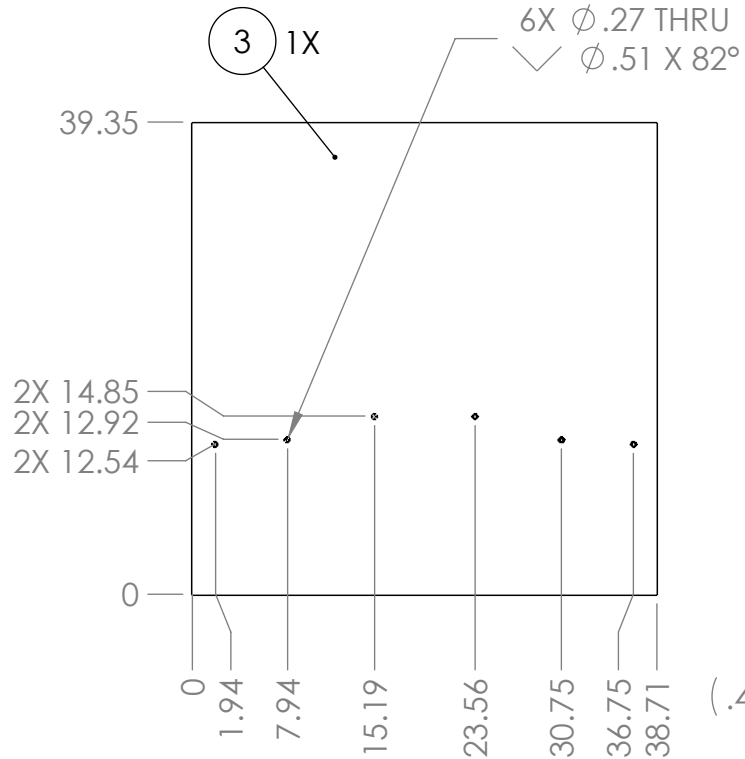
Single Bay Rocket

SIZE	DWG. NO.	REV
A	TE-19110	
SCALE: 1:16	WEIGHT:	SHEET 5 OF 8

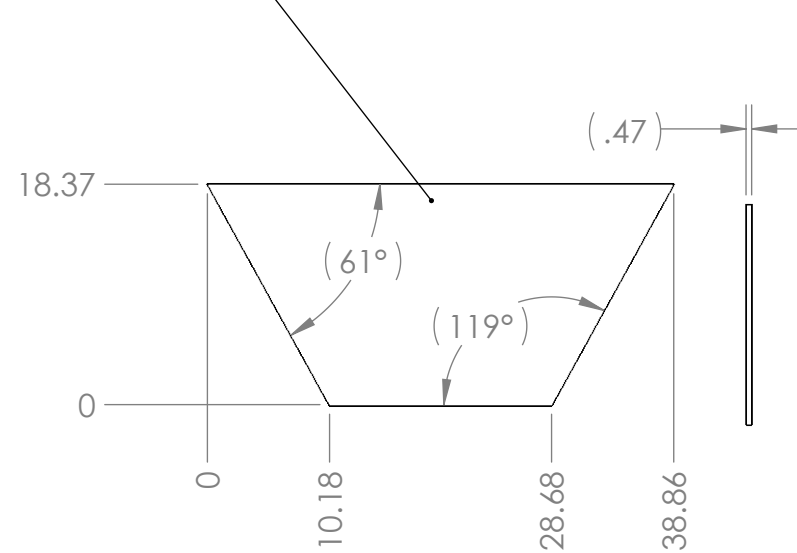
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TE-19110-03



TE-19110-04





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

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NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

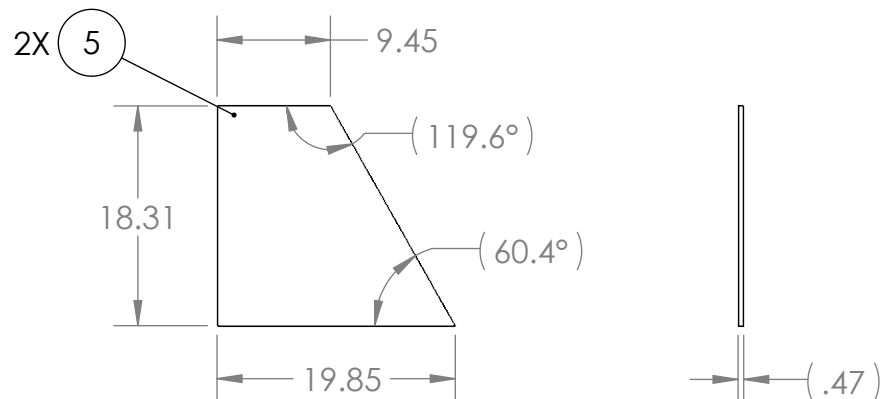
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ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

 		
TITLE:		
Single Bay Rocket		
SIZE	DWG. NO.	REV
A	TE-19110	
SCALE: 1:16		WEIGHT:
		SHEET 6 OF 8

2

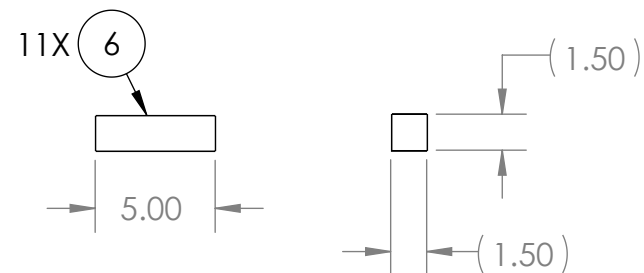
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TE-19110-05



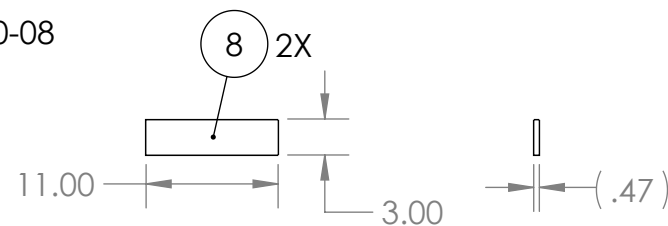
Note:
15/32"(1/2") A/C or CDX Plywood

TE-19110-06



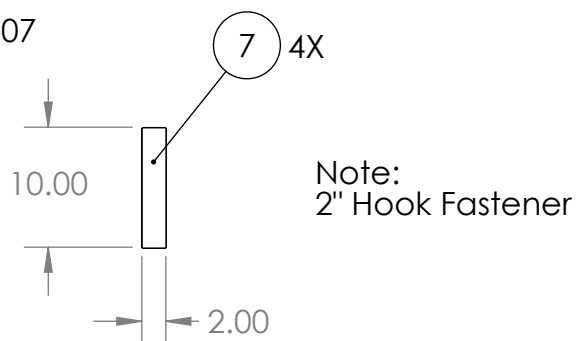
Note:
2"x 2" Pine Lumber

TE-19110-08



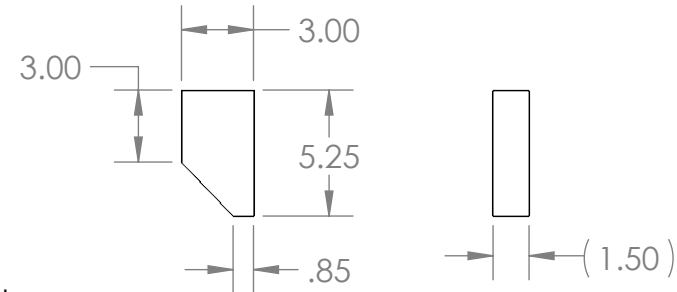
Note:
15/32"(1/2") A/C or CDX Plywood

TE-19110-07



Note:
2" Hook Fastener

TE-19110-09



Note:
2"x 4" Pine Lumber

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		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

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



**FIRST
ROBOTICS
COMPETITION**

SOLIDWORKS
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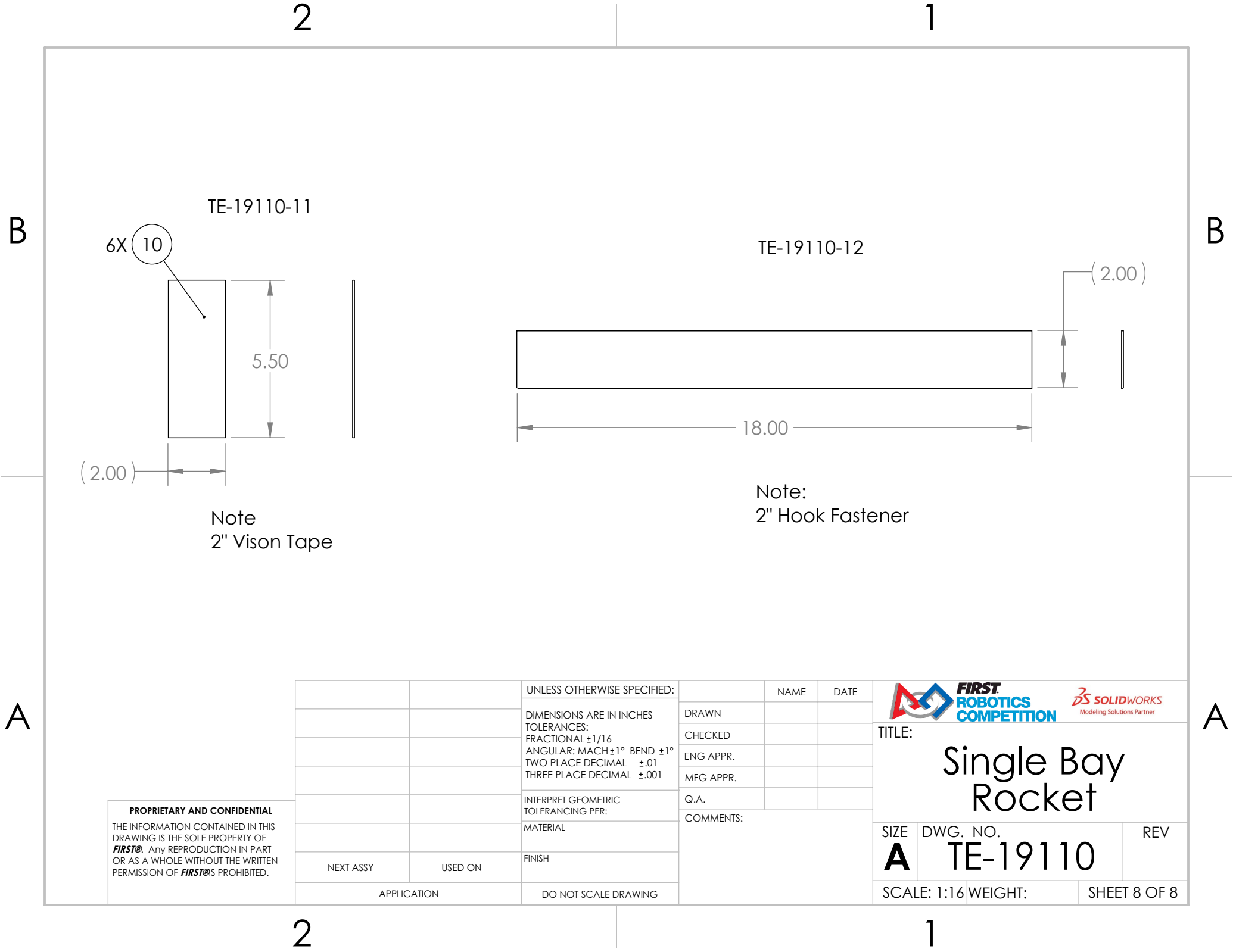
TITLE:

Single Bay
Rocket

SIZE	DWG. NO.	REV
A	TE-19110	
SCALE: 1:16		WEIGHT:
		SHEET 7 OF 8

2



1



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		INTERPRET GEOMETRIC
		TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
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MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:

Single Bay Rocket

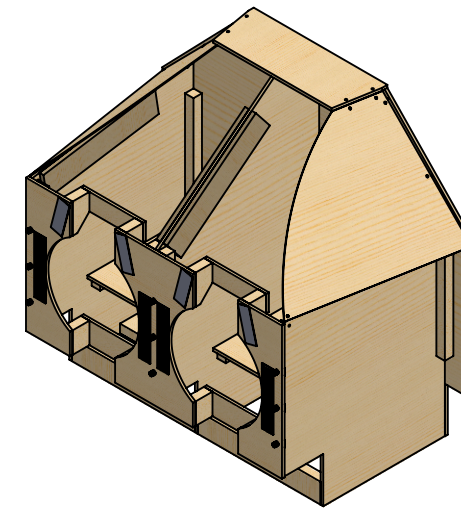
SIZE	DWG. NO.	REV
A	TE-19110	

SCALE: 1:16	WEIGHT:	SHEET 8 OF 8
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2

1



ITEM NO.	PART NUMBER	QTY.
1	TE-19111-01	1
2	TE-19111-02	2
3	TE-19111-03	1
4	TE-19111-04	1
5	TE-19111-05	2
6	TE-19111-06	2
7	TE-19111-07	1
8	TE-19111-08	2
9	TE-19111-09	12
10	TE-19111-10	10
11	TE-19111-11	4
12	TE-19111-12	4
13	TE-19111-13	2
14	TE-19111-14	4
15	TE-19111-15	4
16	TE-19111-16	2
17	TE-19111-17	4
18	TE-19111-20	4
19	TE-19111-21	2
20	Tee nut .375_16	9
21	hex nut_.375_16	9
22	hex_.375_16_.625	9



Material	QTY
15/32"(1/2") A/C or CDX Plywood	2 sheets
1/8" Hardboard	.5 sheet
2"x4"x8'	1
2"x 2"x 8'	3
2" hook	83.5"
1.25" wood screws	~100
2.5" wood screws	~40
2" Vison Tape	22"
23/32"(3/4") A/C or CDX Plywood	.25 sheet
TEE nut 3/8"-16	9
Hex nut 3/8"-16	9
Hex head bolt 3/8"-16 x.625(.75)	9

A

A

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			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					

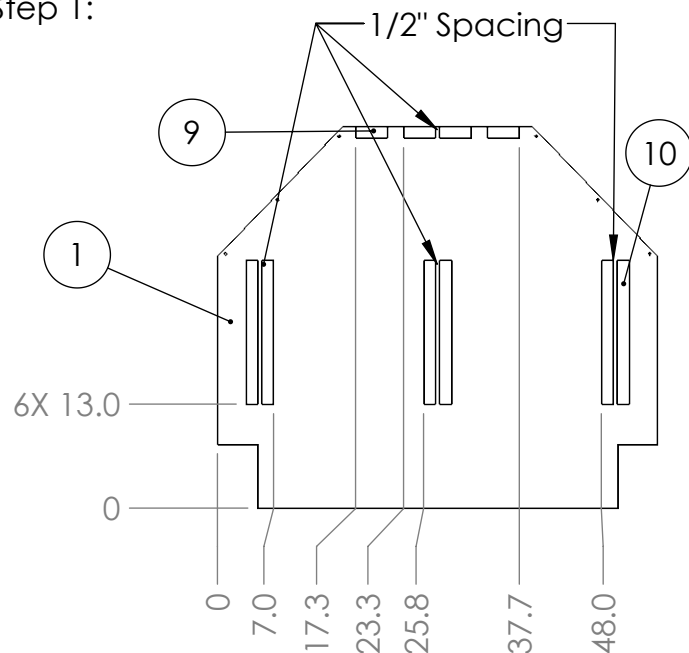
SIZE	DWG. NO.	REV
A	TE-19111	
SCALE: 1:24 WEIGHT:		SHEET 1 OF 13

2

1

2

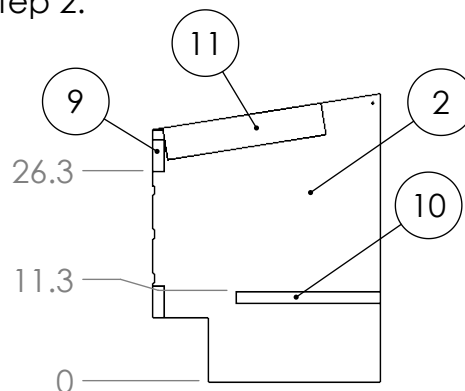
Step 1:



Note:

- Attach (9) flush to the top of (1) as shown using 1.25" screws.
- Attach (10) to (1) as shown using 1.25" screws.
- Leave enough room for 1/2" plywood where indicated.
- Pre-drill for all hardware.

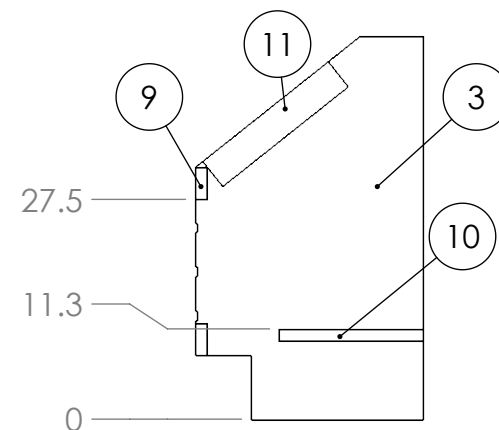
Step 2:



Note:

- Attach (9) flush to front of (2).
- Attach (11) flush to the top (2).
- Attach (10) to (2).
- Pre-drill all holes and use and 1.25" screws
- Create mirrored version of this assembly.

Step 3:



Note:

- Attach (9) flush to front of (3).
- Attach (11) flush to angle (3).
- Attach (10) to (3).
- Pre-drill and attach items using 1.25" and 2.5" screws
- Repeat on opposite side.

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NEXT ASSY

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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

3D SOLIDWORKS
Modeling Solutions Partner

TITLE:

Cargo Front

SIZE

A

DWG. NO.

TE-19111

REV

SCALE: 1:24 WEIGHT:

SHEET 2 OF 13

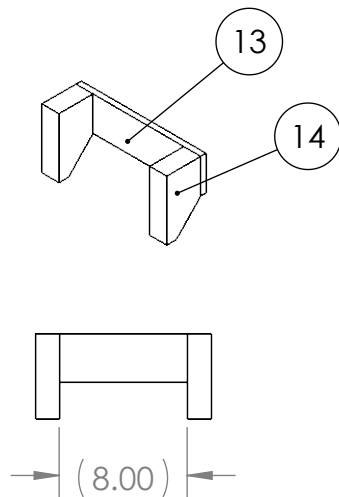
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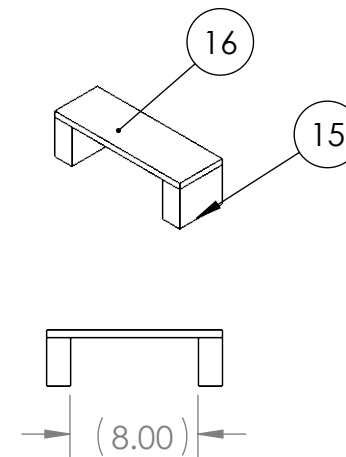
Step 4:
QTY 2



Notes:

- Attach (13) to (14) as shown
- Pre-drill and use 1.25" screws.

Step 5:
QTY 2



Notes:

- Attach (16) to (15) as shown.
- Pre-drill and use 1.25" screws.

B

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		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			



**FIRST
ROBOTICS
COMPETITION**

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Cargo Front

SIZE

A

DWG. NO.

TE-19111

REV

SCALE: 1:24 WEIGHT:

SHEET 3 OF 13

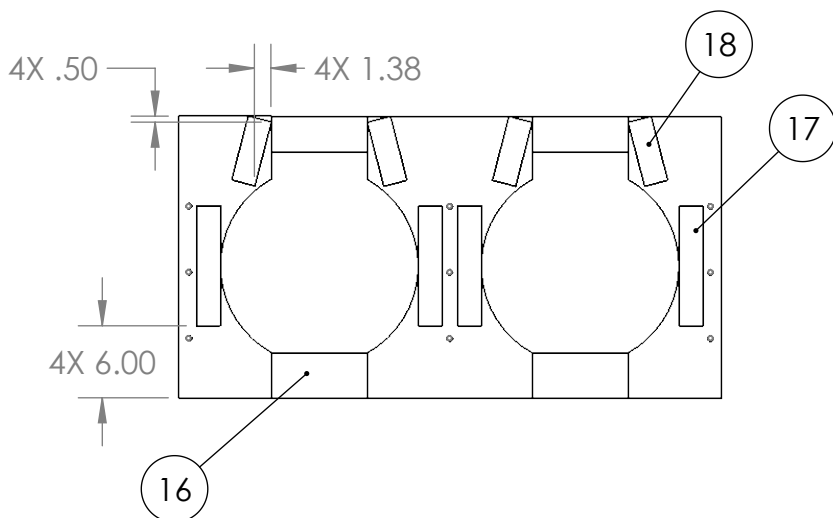
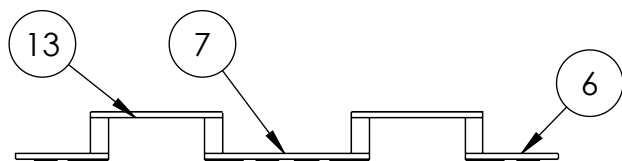
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Step 6

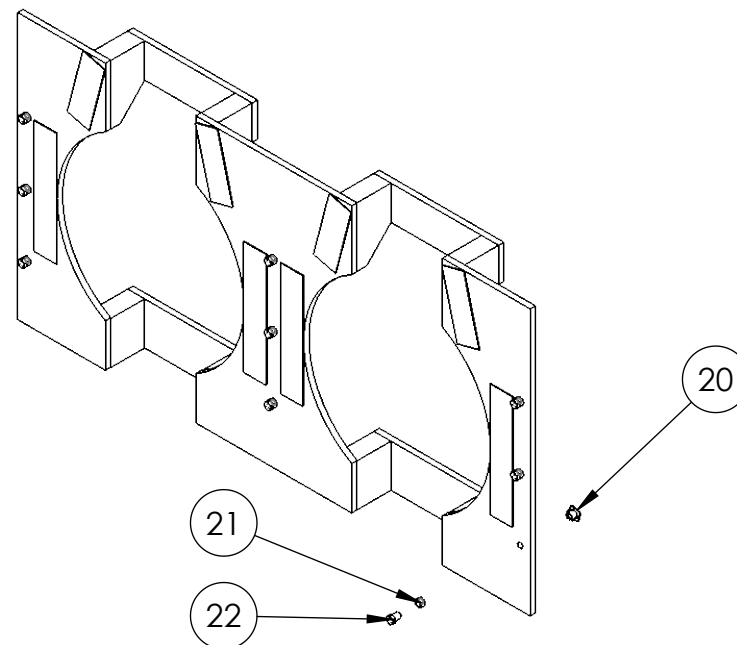


Note:

- Attach assemblies from Step 4 and Step 5 to Items (6) and (7) as shown using 2.5" screws. Pre-drill as necessary.

- Attach (18) and (17) to (6) and (7)

Step 7



Note:

- Flip over and insert (20) to holes. Use a hammer to press them in.

- Flip and thread (22) and (21) in to (20).

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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:



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COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Cargo Front

SIZE

DWG. NO.

REV

A**TE-19111**

SCALE: 1:24 WEIGHT:

SHEET 4 OF 13

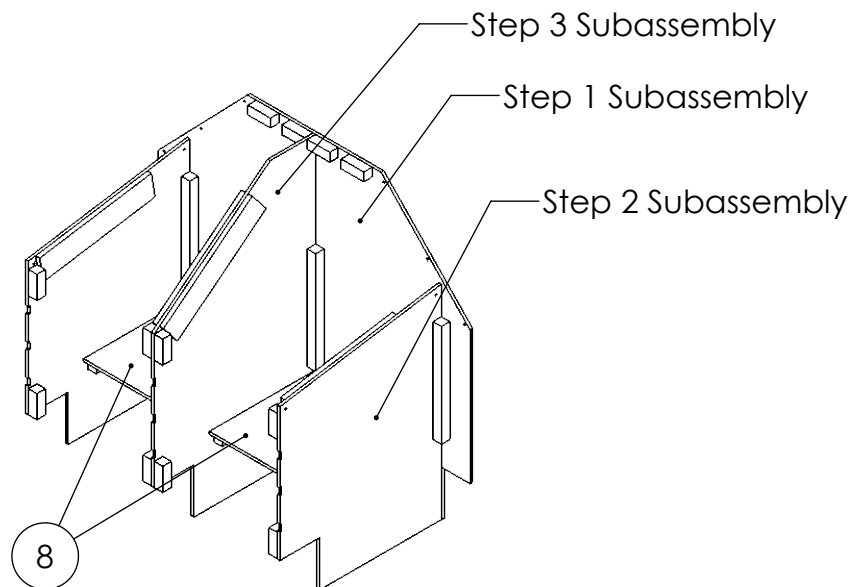
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Step 8:



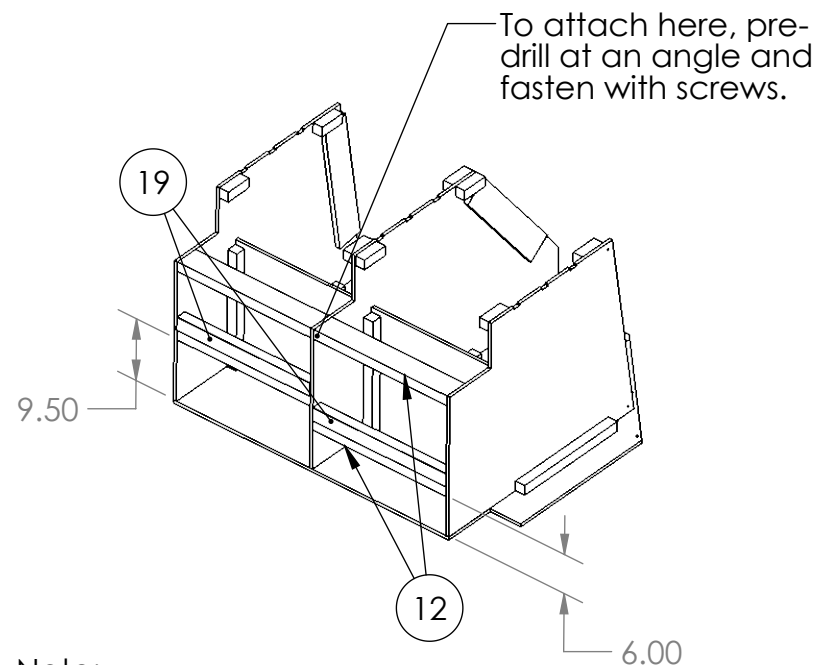
Note:

- Insert subassemblies from Steps 2 and 3 into subassembly from Step 1 as shown. Secure with 2.5" screws.

- Place Item (8) on to the supports. Secure with 1.25" screws.

- Pre-drill as necessary.

Step9:



Note:

- Attach Item (12) as shown, using 2.5" screws. 4 Places.

- Add Item (19) to bottom of Item (12) .

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NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

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FIRST
ROBOTICS
COMPETITION



Modeling Solutions Partner

TITLE:

Cargo Front

SIZE	DWG. NO.	REV
A	TE-19111	

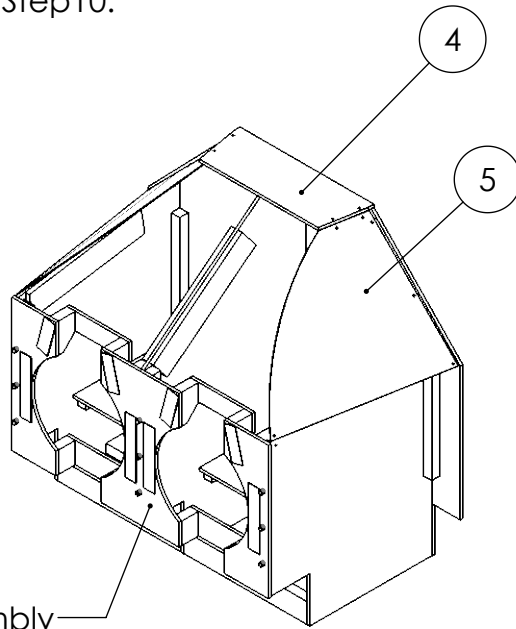
SCALE: 1:24 WEIGHT:

SHEET 5 OF 13

2

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Step10:



Note:

- Attach subassembly from Step 7 as shown using 1.25" screws.
- Attach Item (4) using 1.25" screws.
- Attach (5) with cable ties.

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NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			



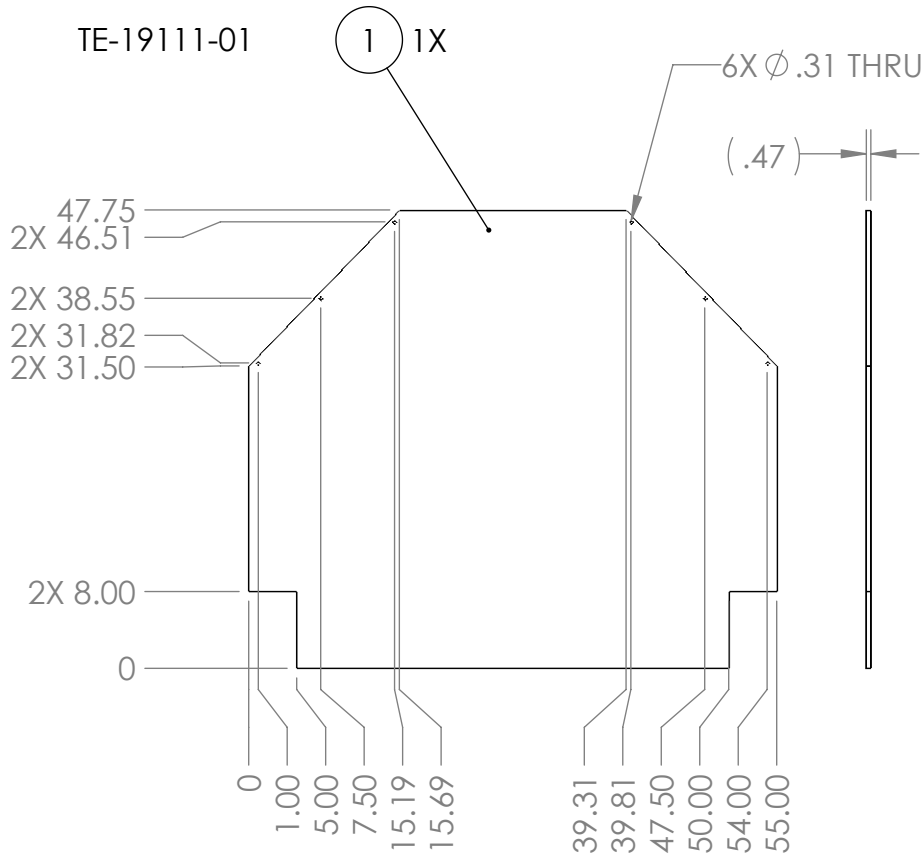
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Cargo Front		
SIZE	DWG. NO.	REV
A	TE-19111	
SCALE: 1:24		WEIGHT:
		SHEET 6 OF 13

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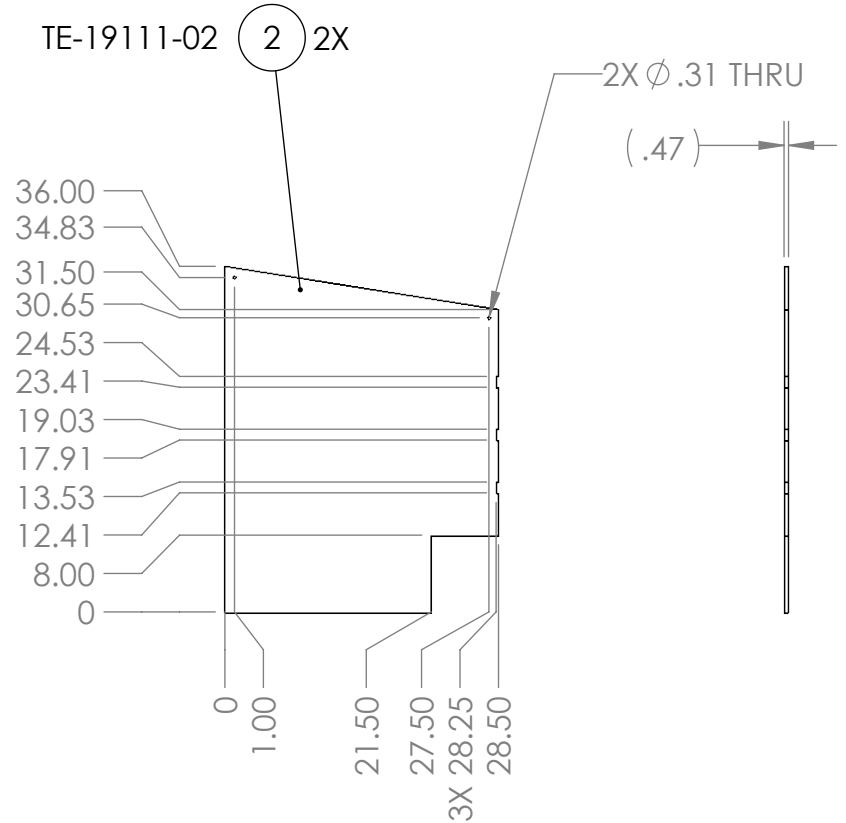
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B

B



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



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

A

A

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		TWO PLACE DECIMAL ±.01
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		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

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ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE: Cargo Front		
SIZE A	DWG. NO. TE-19111	REV
SCALE: 1:24 WEIGHT:		SHEET 7 OF 13

2

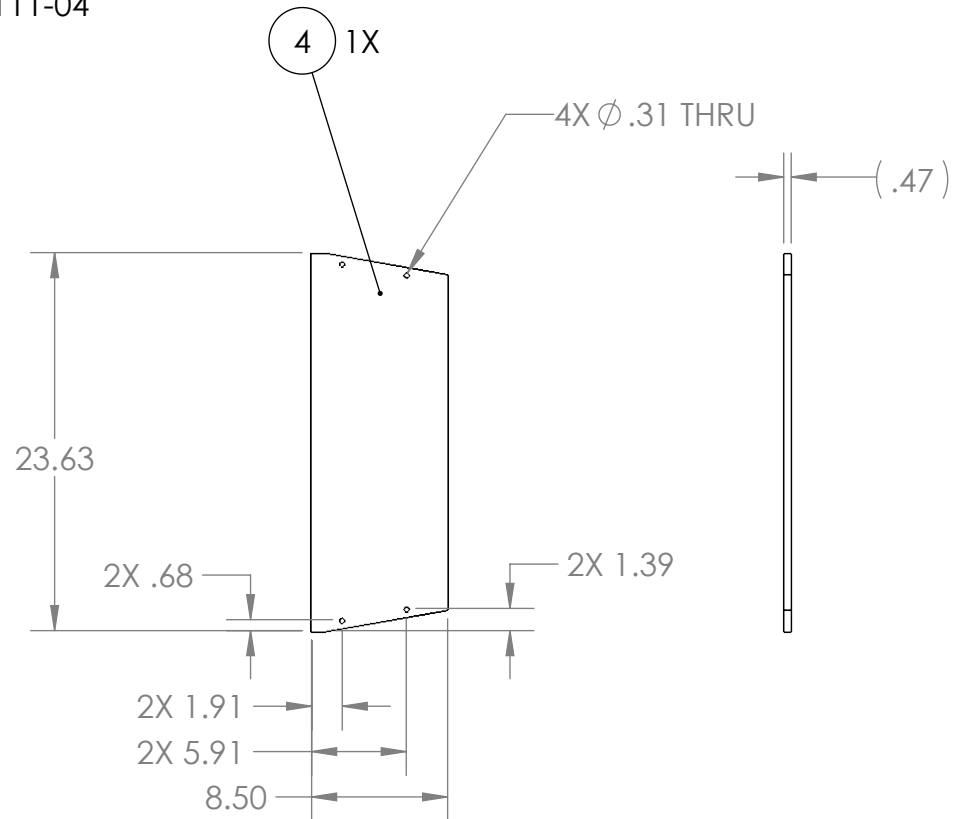
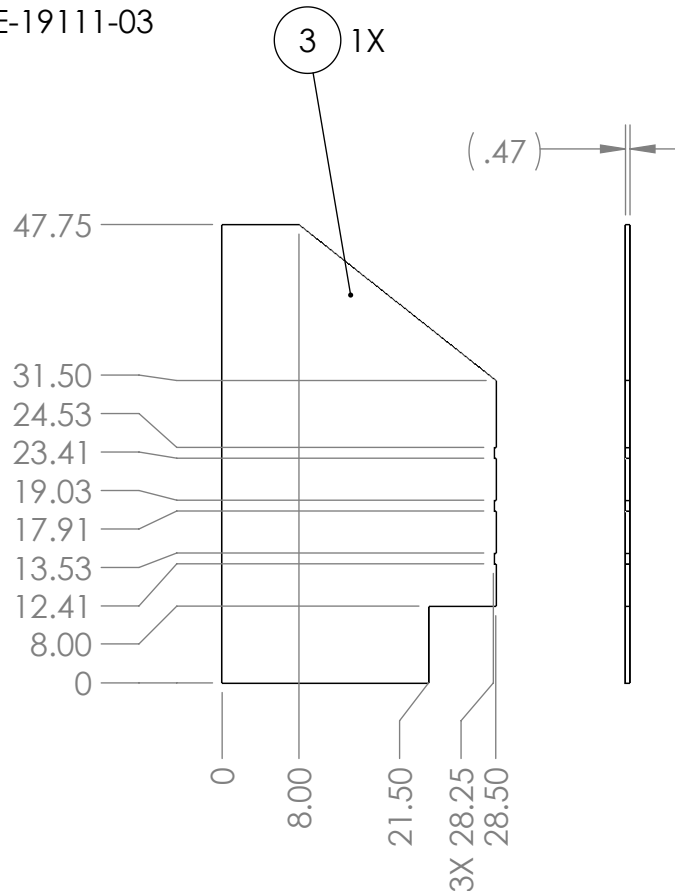
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TE-19111-03

TE-19111-04



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

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

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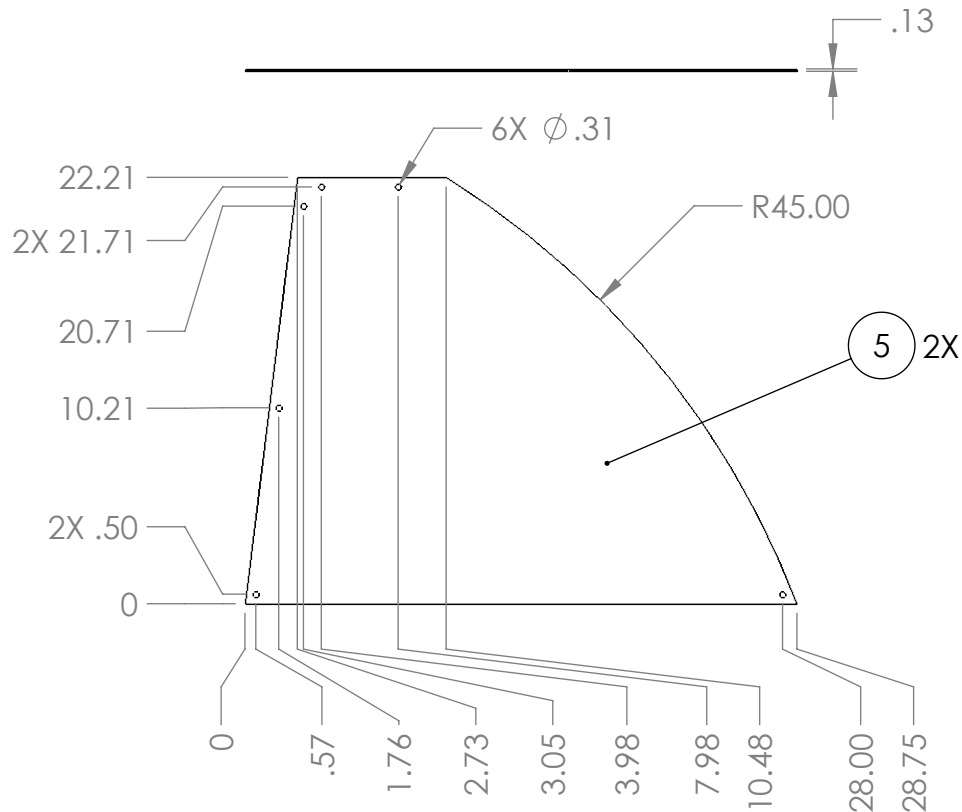


TITLE: Cargo Front		
SIZE A	DWG. NO. TE-19111	REV
SCALE: 1:24	WEIGHT:	SHEET 8 OF 13

2

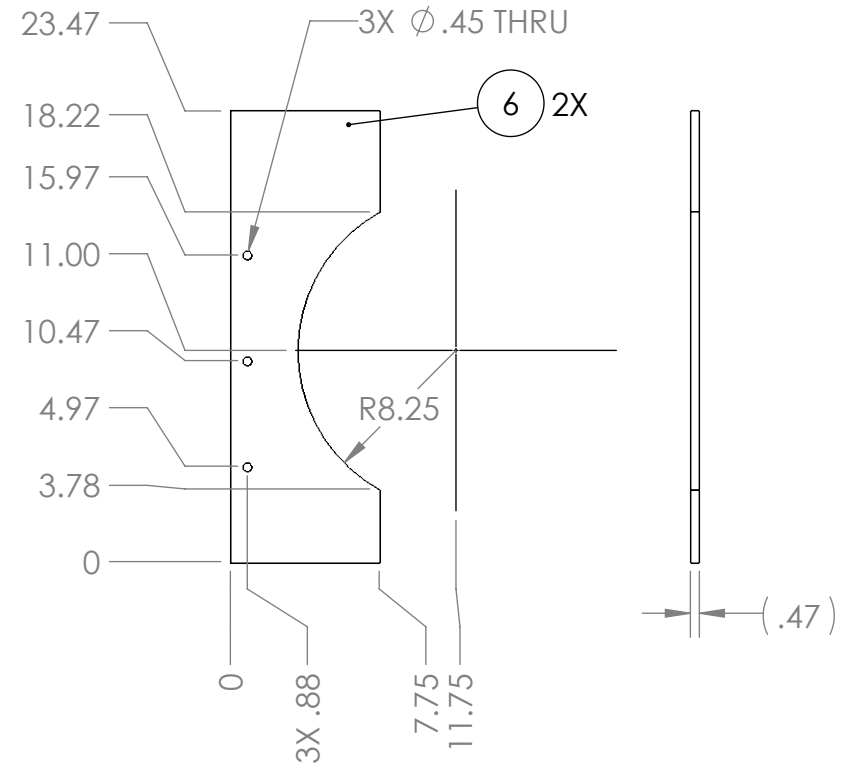
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TE-19111-05



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

TE-19111-06



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

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:

Cargo Front

SIZE

A

DWG. NO.

TE-19111

REV

SCALE: 1:24 WEIGHT:

SHEET 9 OF 13

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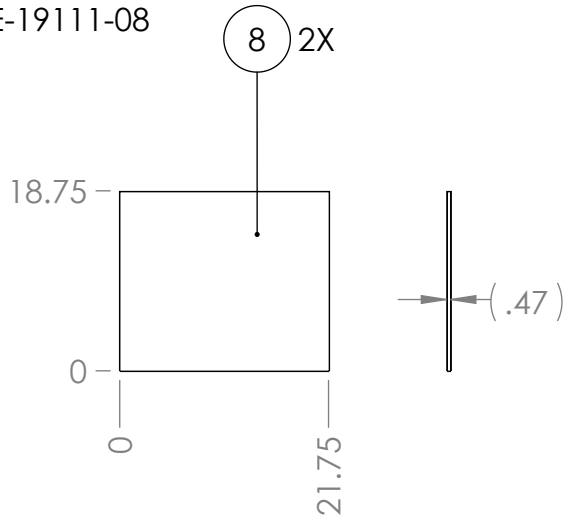
NEXT ASSY

USED ON

APPLICATION

B

TE-19111-08



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

A

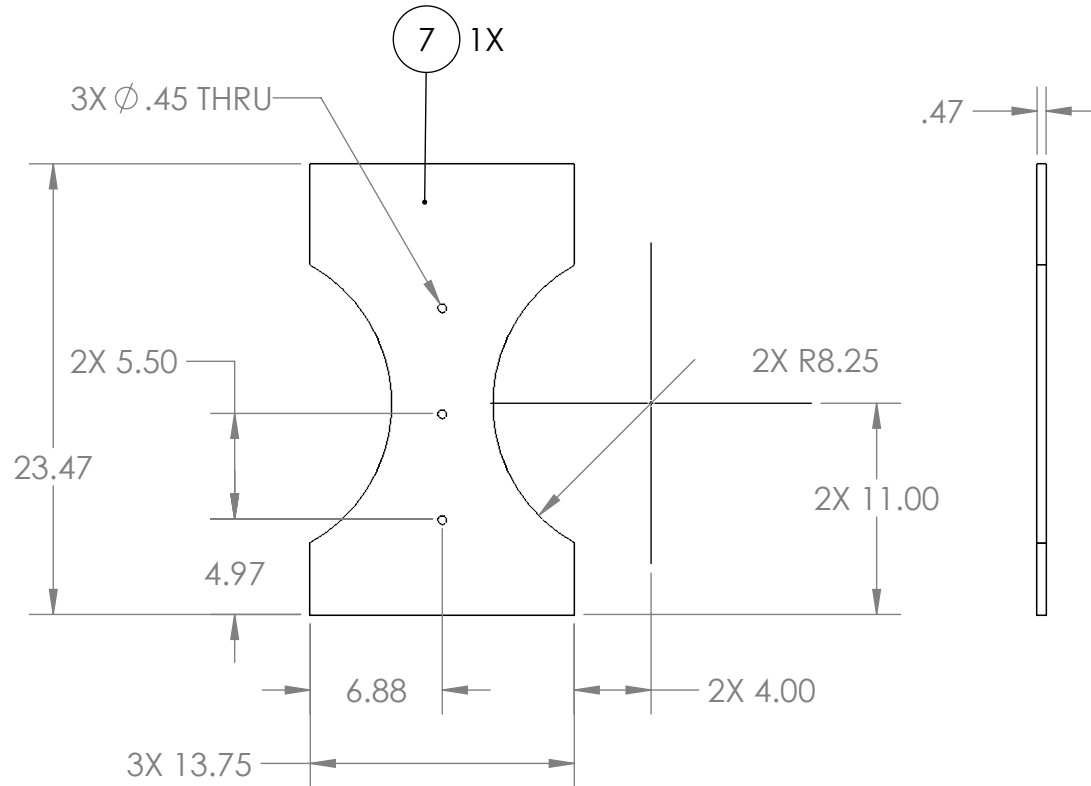
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NEXT ASSY

USED ON

APPLICATION

TE-19111-07



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

B

A

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

Cargo Front

SIZE

A

DWG. NO.

TE-19111

REV

SCALE: 1:24 WEIGHT:

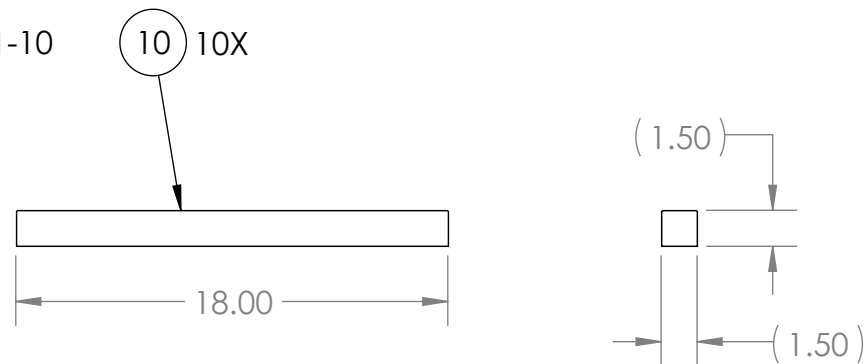
SHEET 10 OF 13

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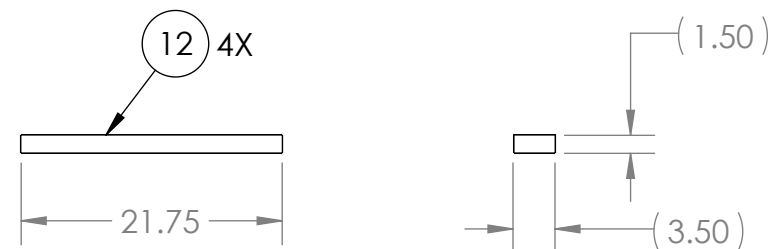
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TE-19111-10



Note:
2"X 2" Pine Lumber

TE-19111-12



Note:
2"X 4" Pine Lumber



SOLIDWORKS
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Cargo Front

REV

TE-19111

SHEET 11 OF 13

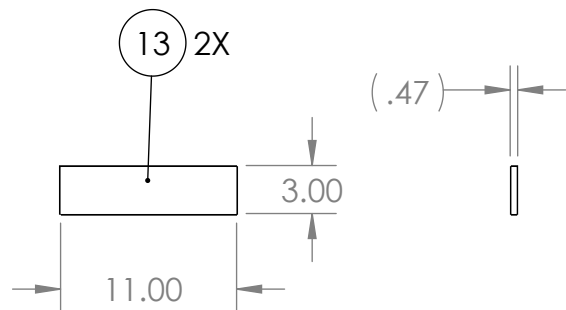
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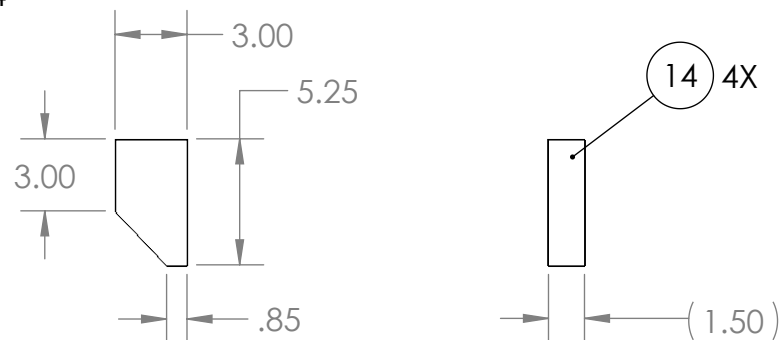
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TE-19111-13



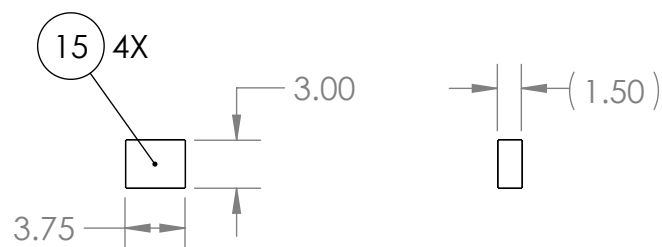
Note:
15/32" (1/2") A/C or CDX Plywood

TE-19111-14



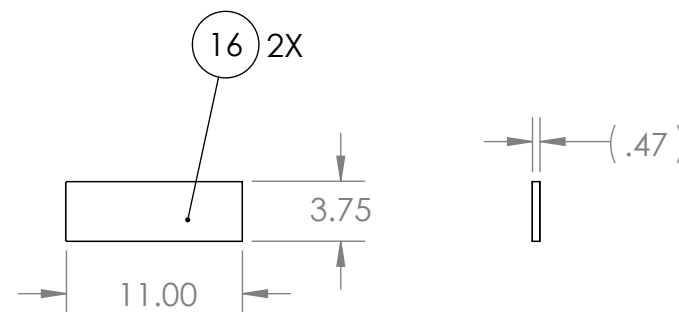
Note:
2"X 4" Pine Lumber

TE-19111-15



Note:
2"X 4" Pine Lumber

TE-19111-16



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

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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

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NAME DATE

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ENG APPR.

MFG APPR.

Q.A.

COMMENTS:



FIRST
ROBOTICS
COMPETITION



Modeling Solutions Partner

TITLE:

Cargo Front

SIZE

A

DWG. NO.

TE-19111

REV

SCALE: 1:24 WEIGHT:

SHEET 12 OF 13

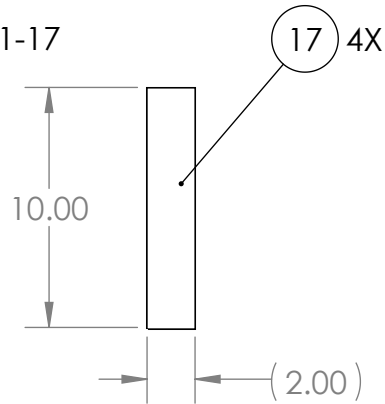
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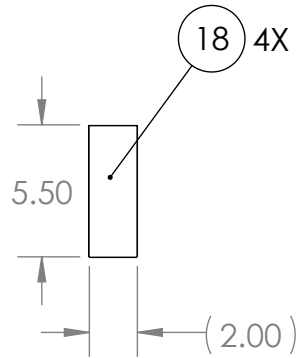
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TE-19111-17



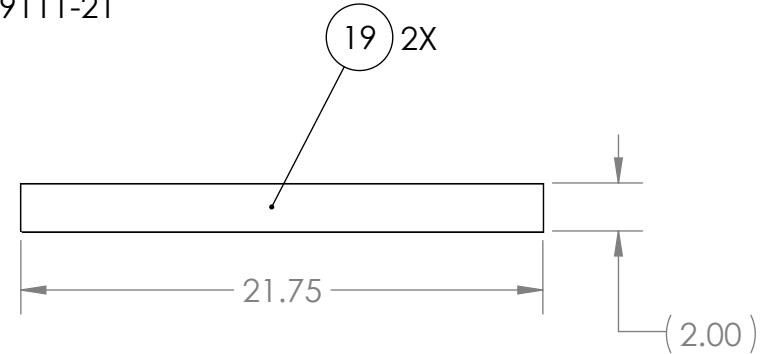
Note:
2" Hook Fastener

TE-19111-20



Note:
2" Vision Tape

TE-19111-21



Note:
2" Hook Fastener

A

A

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		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**

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Cargo Front

SIZE	DWG. NO.	REV
A	TE-19111	

SCALE: 1:24	WEIGHT:	SHEET 13 OF 13
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2

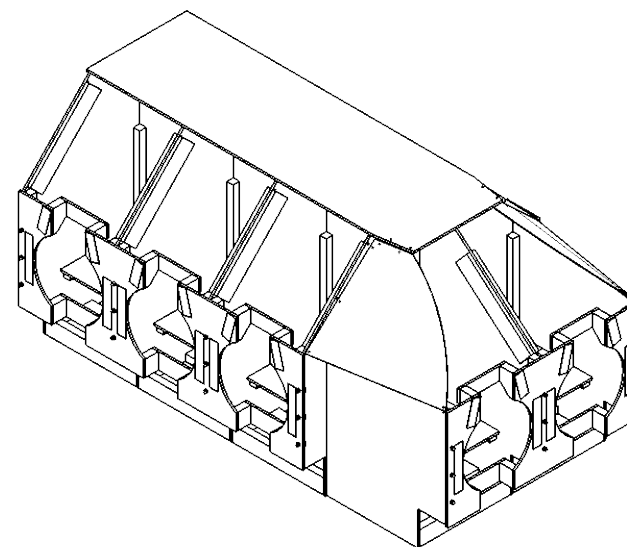
1

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

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			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

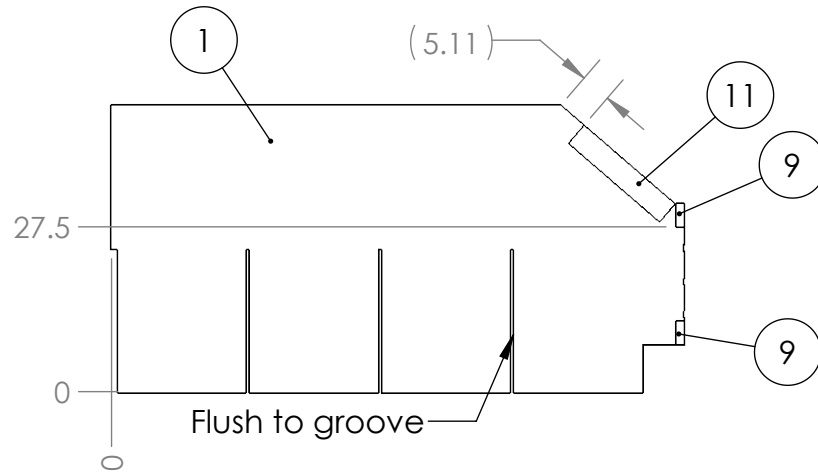
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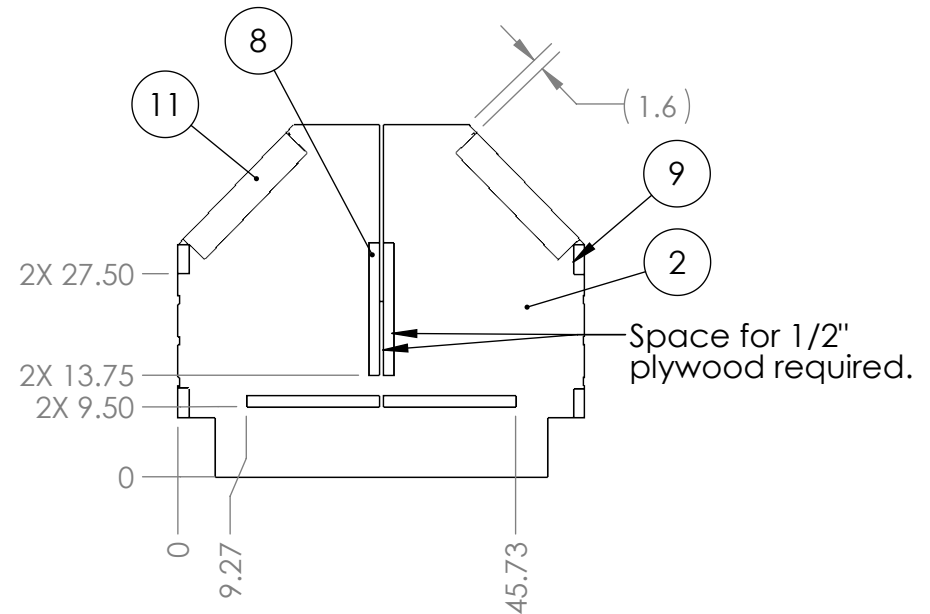
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Subassembly 1:



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.

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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 Cargo Ship

SIZE

DWG. NO.

REV

A

TE-19112

SCALE: 1:32 WEIGHT:

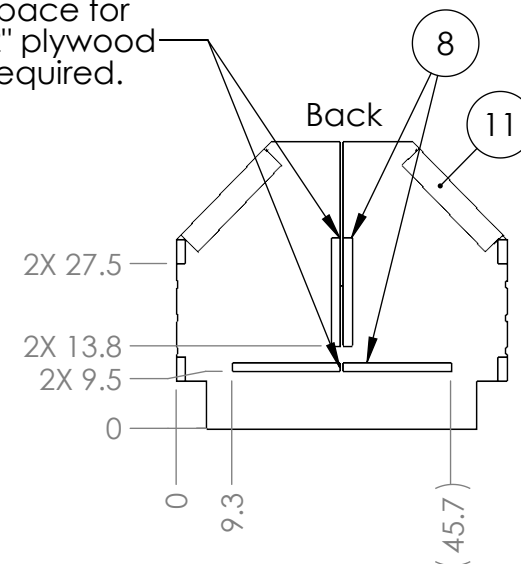
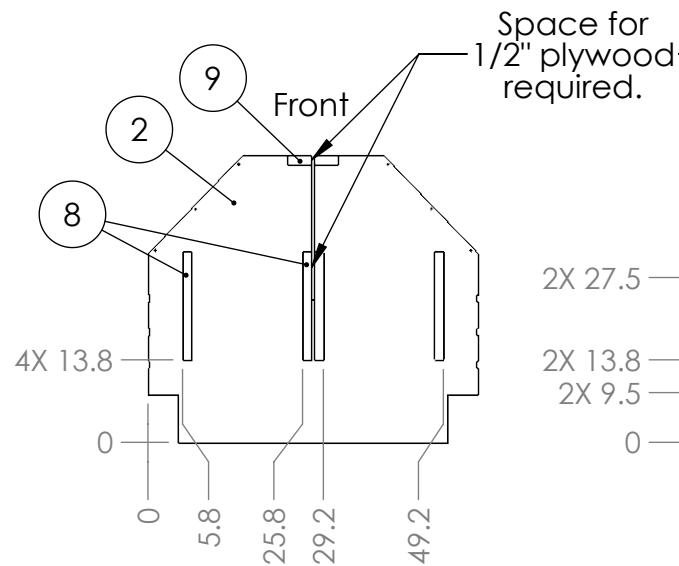
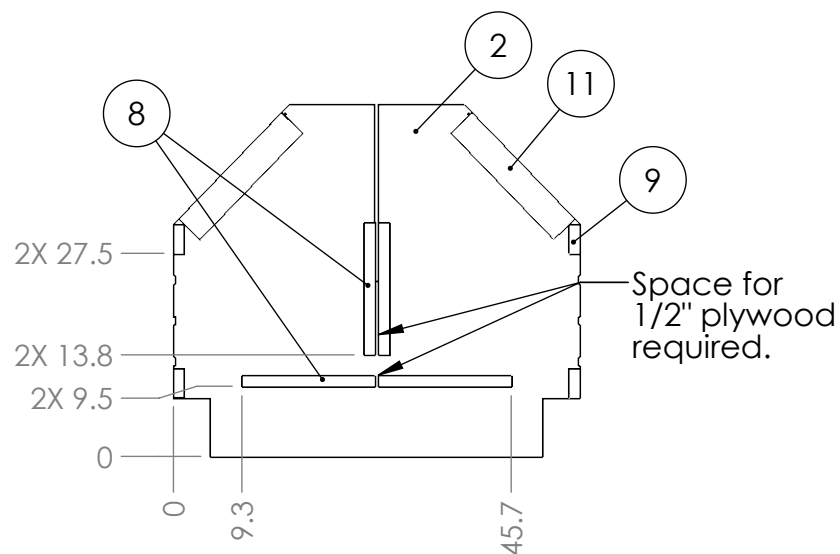
SHEET 2 OF 17

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

Notes:

- 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

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		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

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



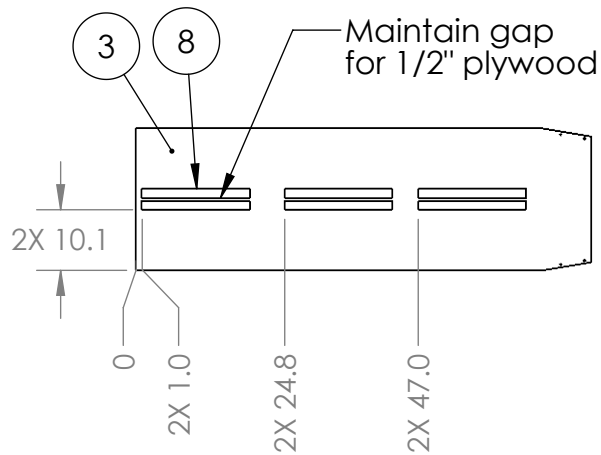
TITLE:

Full Cargo Ship

SIZE	DWG. NO.	REV
A	TE-19112	

SCALE: 1:32 WEIGHT: SHEET 3 OF 17

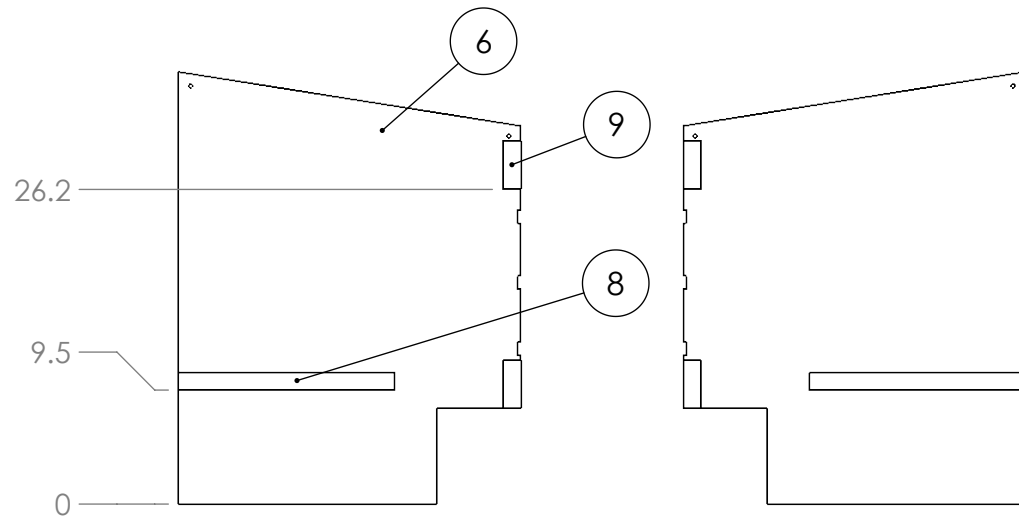
Subassembly 5:



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.

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TOLERANCES:
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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

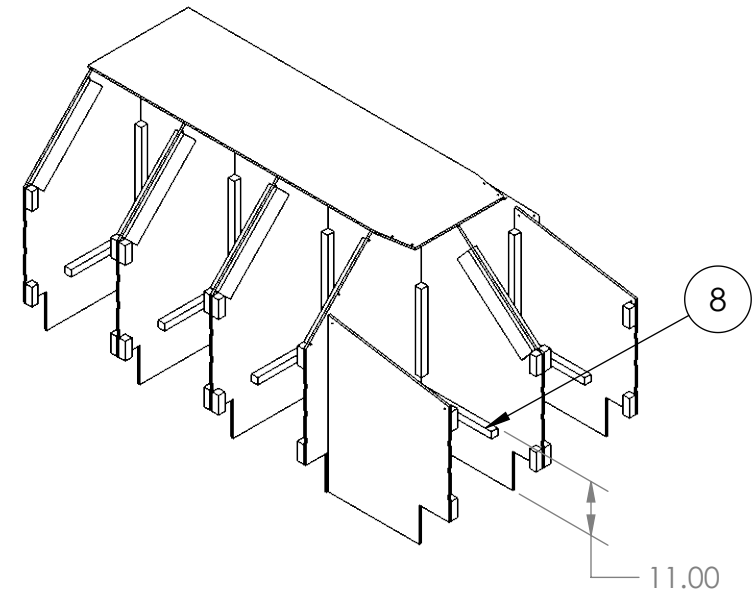
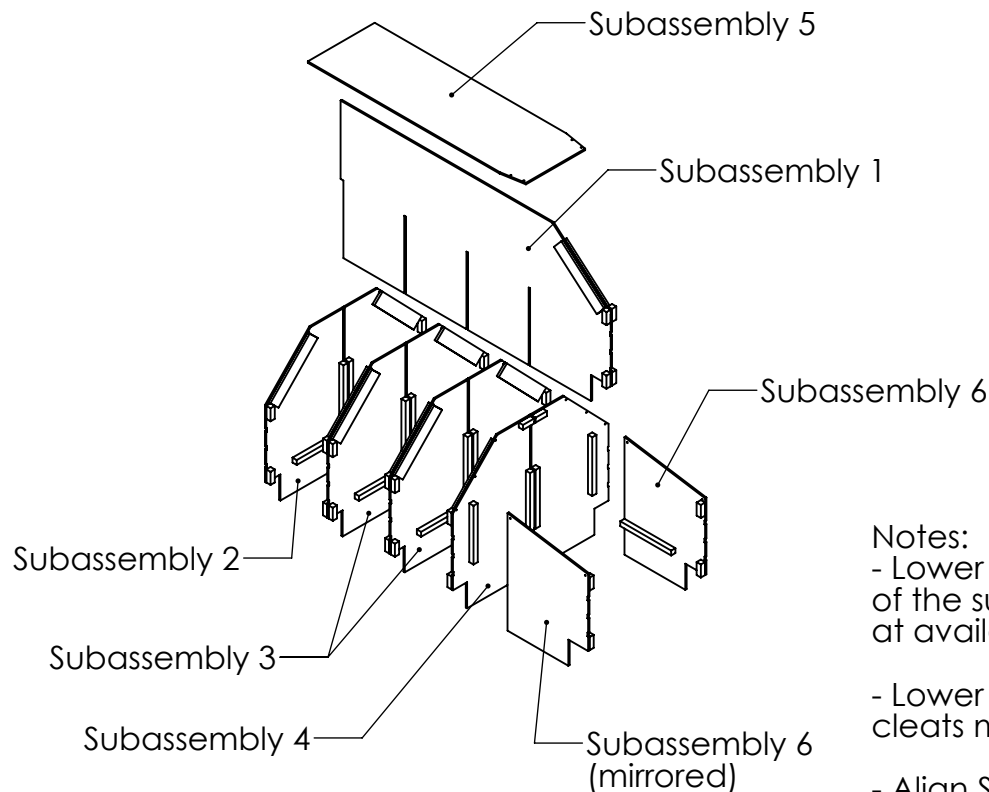
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TE-19112

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.

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		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:

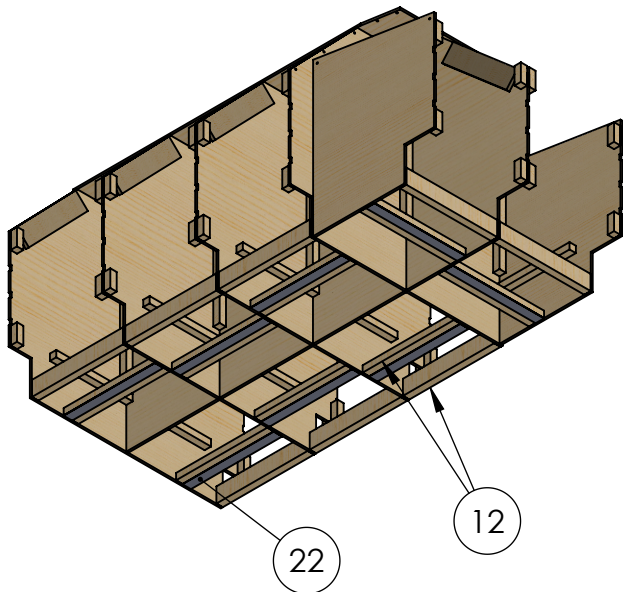
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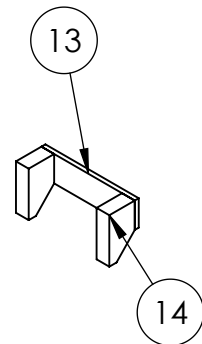
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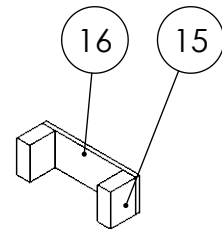
B



- 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

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		TWO PLACE DECIMAL ±.01	Q.A.			
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		INTERPRET GEOMETRIC TOLERANCING PER:				
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APPLICATION		DO NOT SCALE DRAWING				



TITLE:

Full Cargo Ship

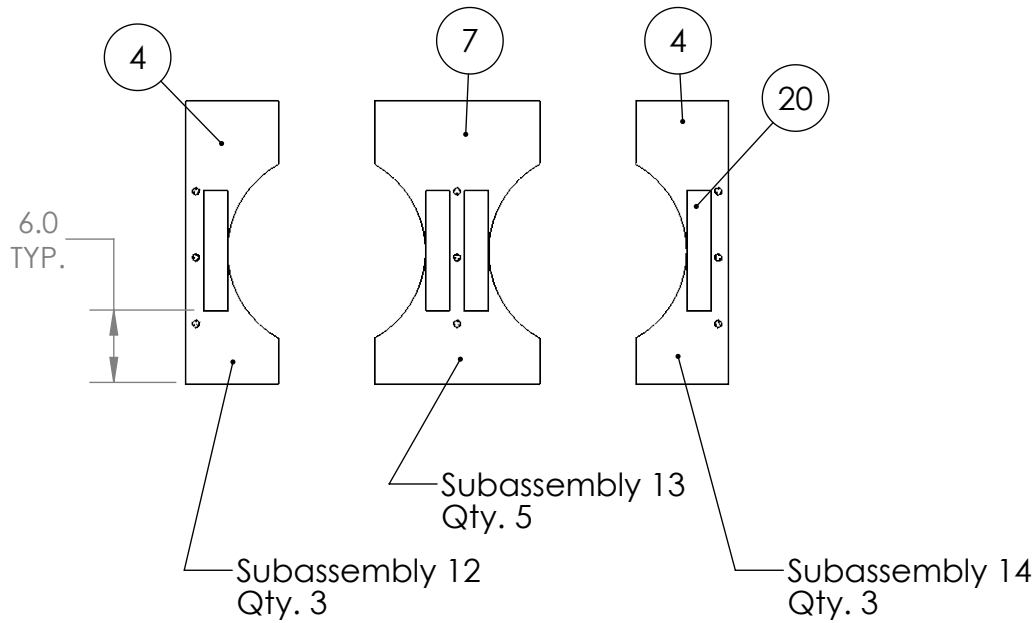
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A	TE-19112	

SCALE: 1:32	WEIGHT:	SHEET 6 OF 17
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2

1

B

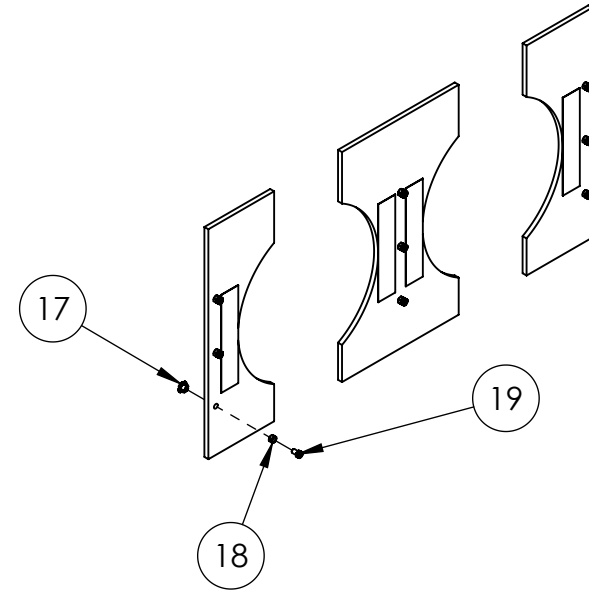


Note:

-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

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		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

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ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:

Full Cargo Ship

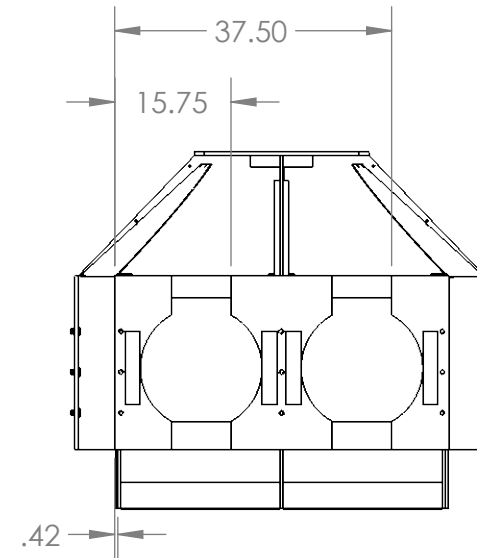
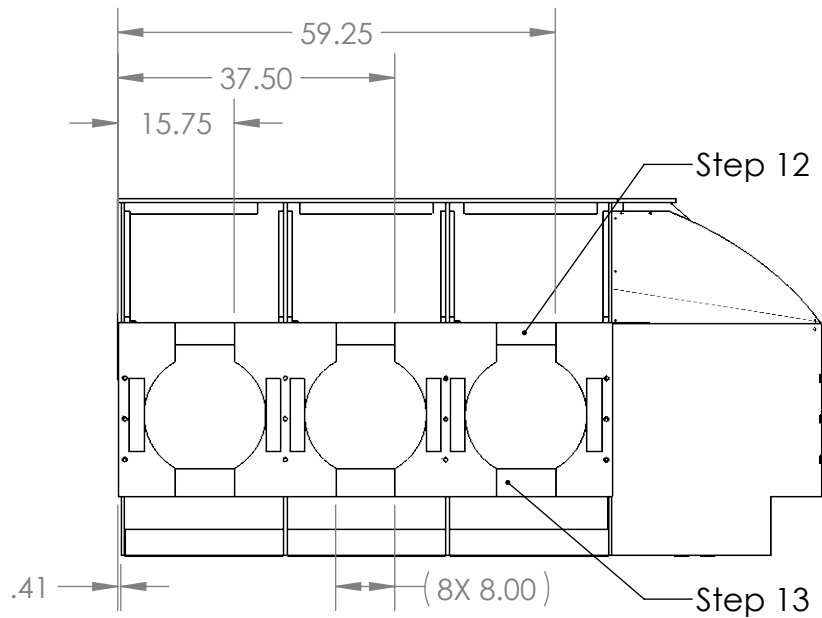
SIZE	DWG. NO.	REV
A	TE-19112	
SCALE: 1:32		WEIGHT:
		SHEET 7 OF 17

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.

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		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

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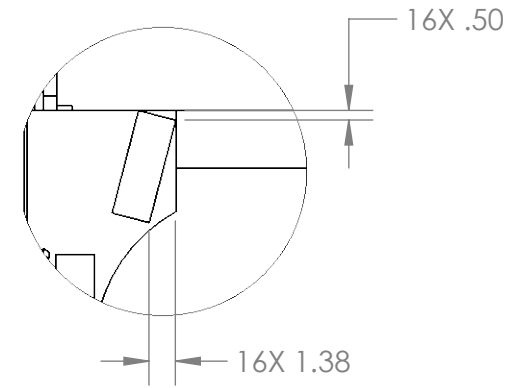
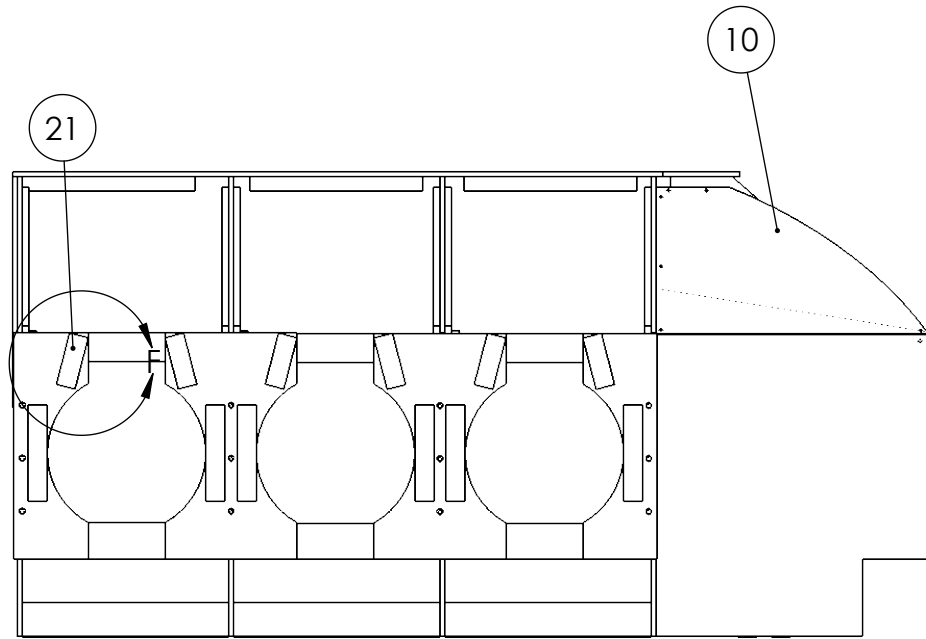


TITLE:

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.

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		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
		FINISH
NEXT ASSY	USED ON	
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
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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 9 OF 17

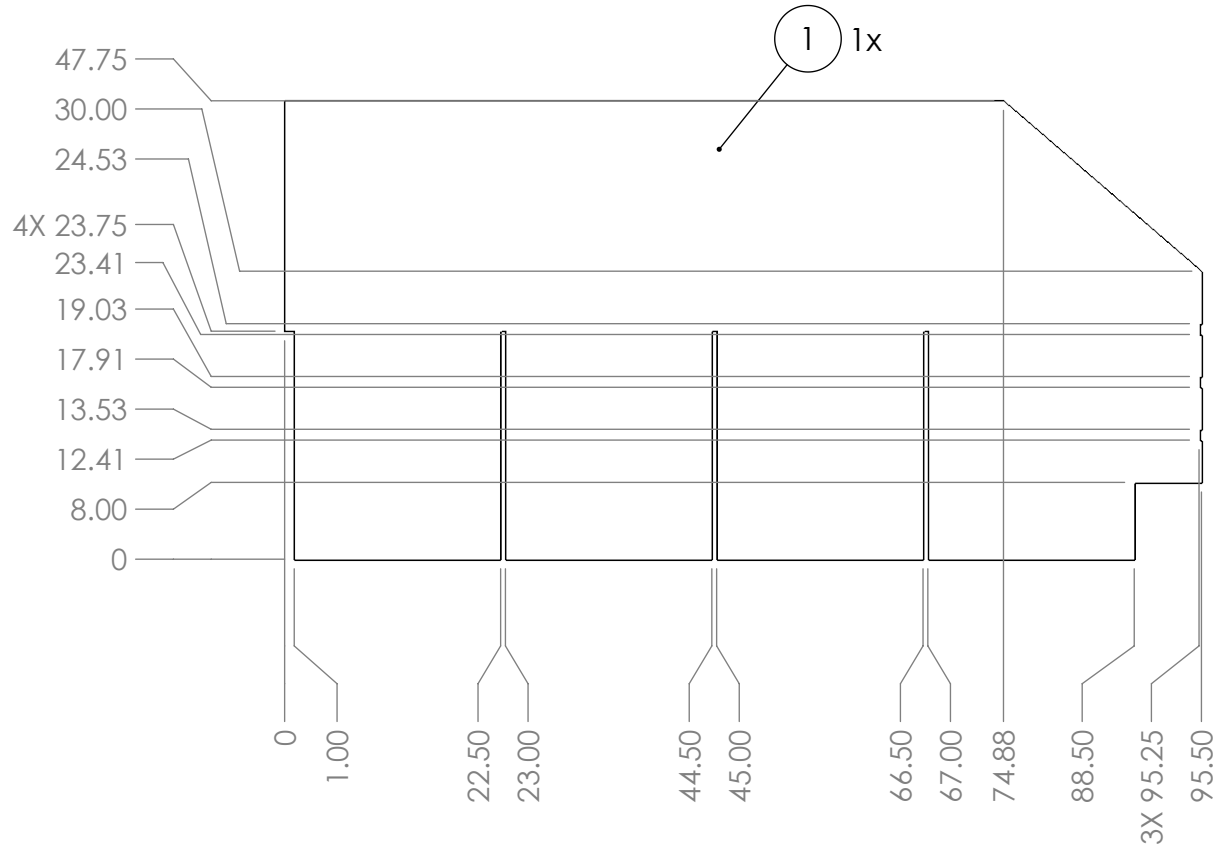
B

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1

TE-19112-01



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

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		INTERPRET GEOMETRIC TOLERANCING PER:			
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NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			



FIRST
ROBOTICS
COMPETITION

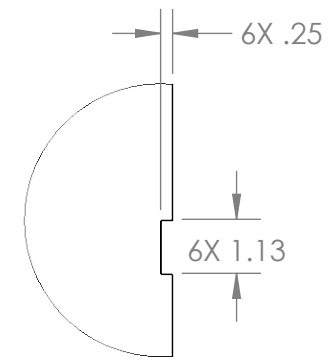
SOLIDWORKS
Modeling Solutions Partner

TITLE:

Full Cargo Ship

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

B



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A

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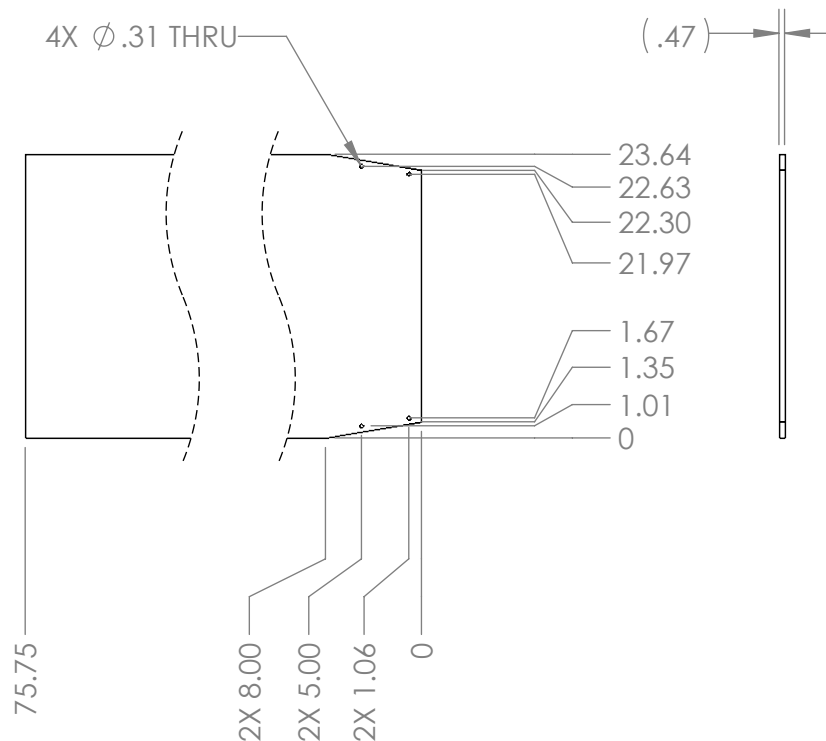
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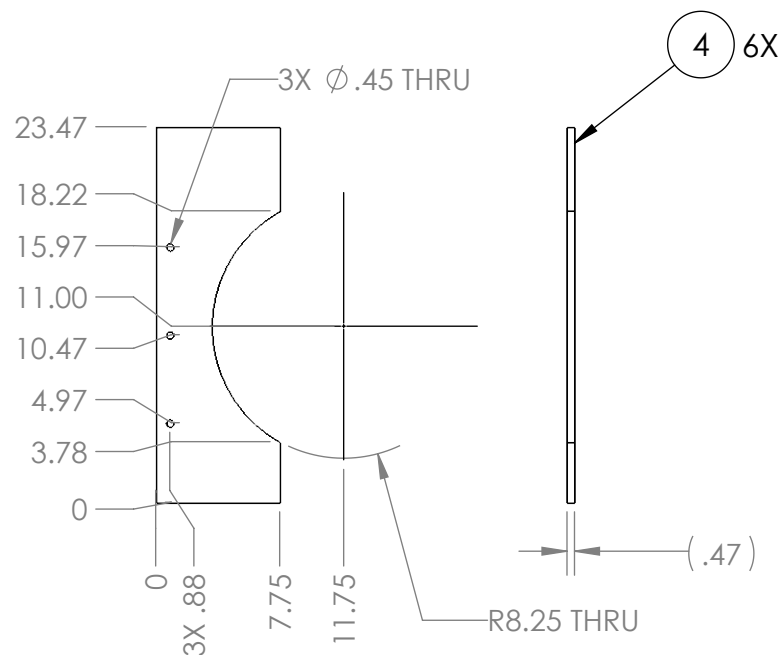
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TE-19112-03



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

TE-19112-04



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

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NEXT ASSY

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APPLICATION

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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 Cargo Ship

SIZE

DWG. NO.

REV

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TE-19112

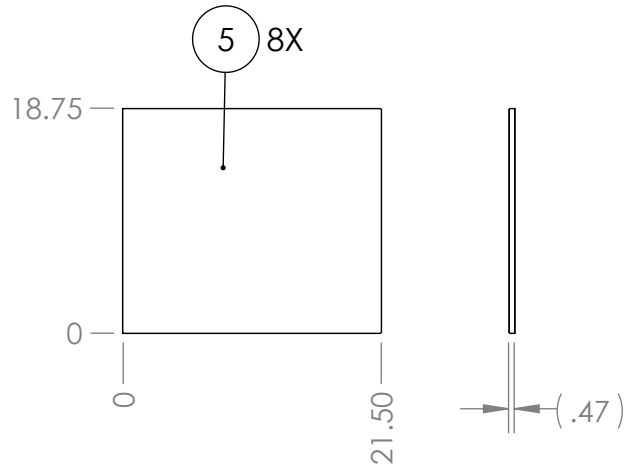
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SHEET 12 OF 17

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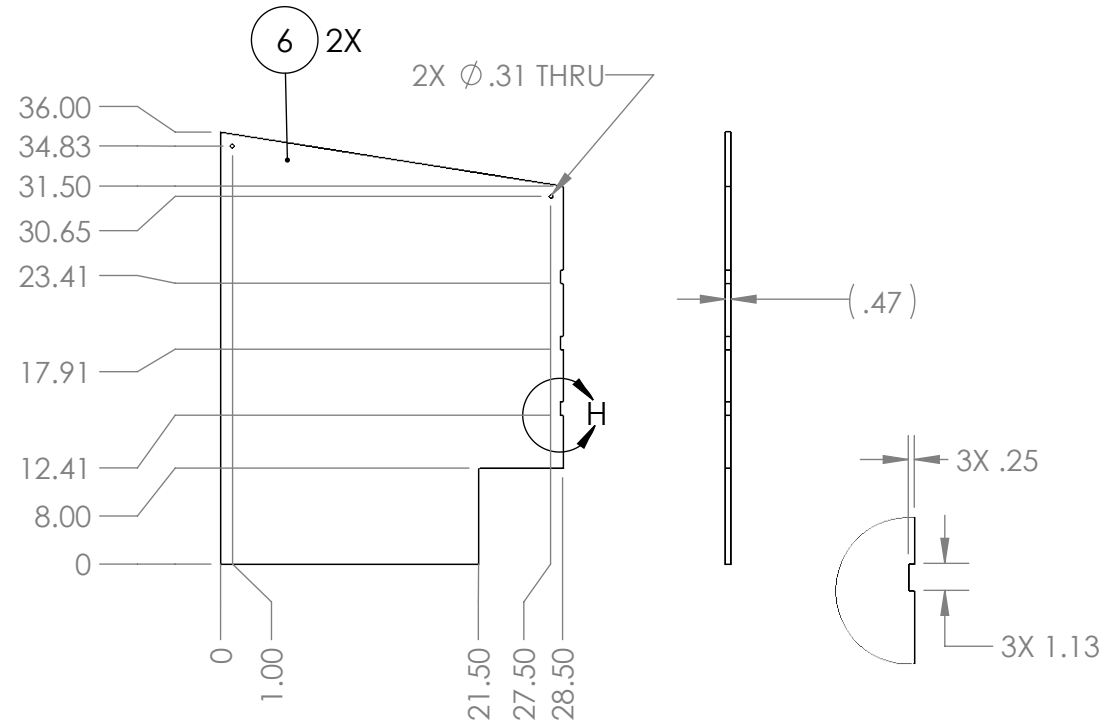
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TE-19112-05



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

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		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Full Cargo Ship

SIZE

A

DWG. NO.

TE-19112

REV

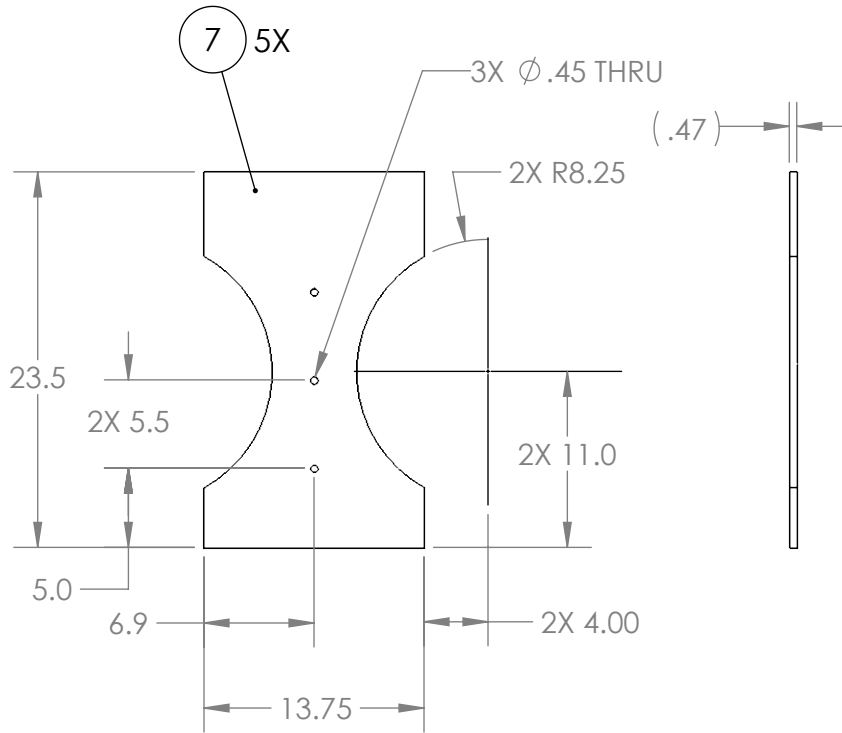
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SHEET 13 OF 17

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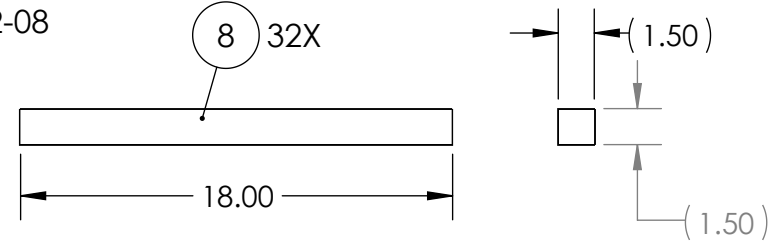
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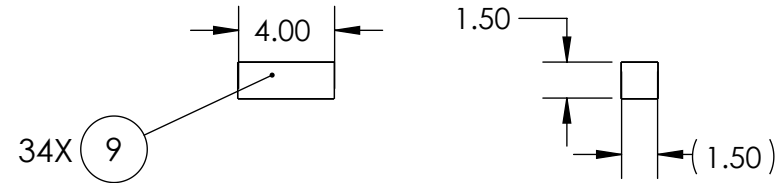
Note:
Material 15/32" (1/2") A/C or CDX Plywood

TE-19112-08



Note:
Material 2"x 2" Lumber Pine

TE-19112-09



Note:
Material 2"x 2" Lumber Pine

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		INTERPRET GEOMETRIC TOLERANCING PER:			
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NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			



TITLE:
Full Cargo Ship

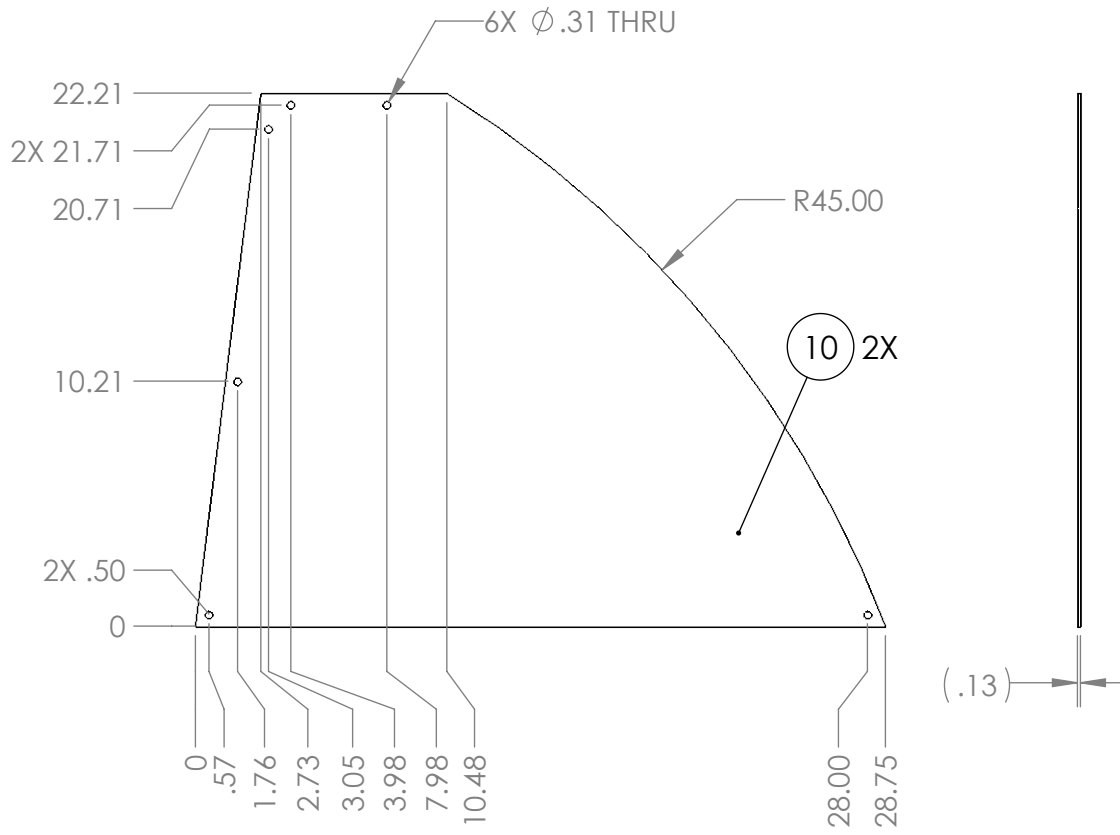
SIZE DWG. NO. REV
A **TE-19112**

SCALE: 1:32 WEIGHT: SHEET 14 OF 17

2

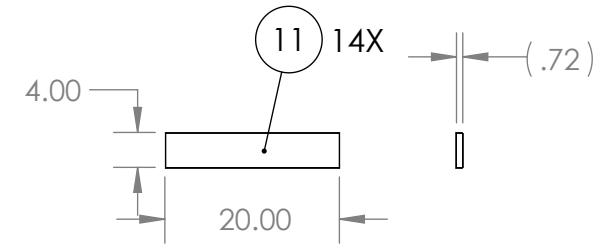
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TE-19112-10



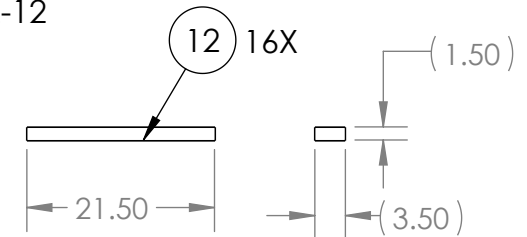
Note:
Material 1/8" Hardboard

TE-19112-11



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

TE-19112-12



Note:
2"x4" Pine Lumber

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		THREE PLACE DECIMAL $\pm .001$		COMMENTS:	
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
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APPLICATION		DO NOT SCALE DRAWING			



FIRST
ROBOTICS
COMPETITION



TITLE:

Full Cargo Ship

SIZE

A

DWG. NO.

TE-19112

REV

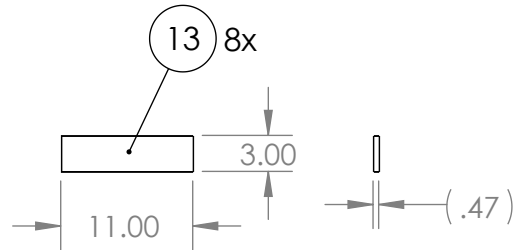
SCALE: 1:32

WEIGHT:

SHEET 15 OF 17

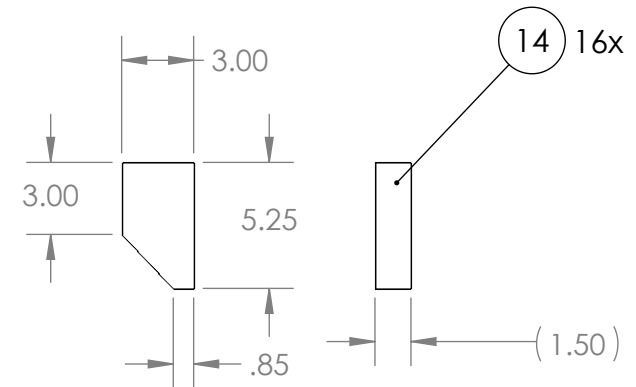
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TE-19112-13



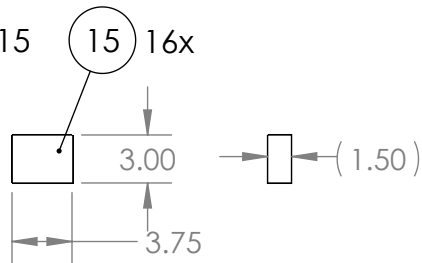
Note:
15/32" (1/2") A/C or CDX Plywood

TE-19112-14



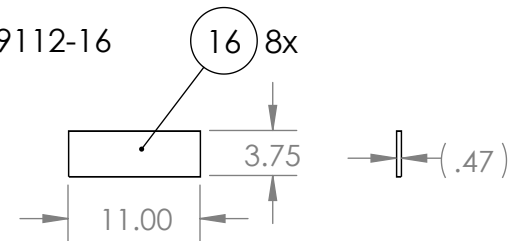
Note:
2"x 4" Pine lumber

TE-19112-15



Note:
2"x 4" Pine lumber

TE-19112-16



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

B

A

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		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
		TWO PLACE DECIMAL $\pm .01$
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		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
		FINISH
NEXT ASSY	USED ON	
APPLICATION		DO NOT SCALE DRAWING

	NAME	DATE
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MFG APPR.		
Q.A.		
COMMENTS:		



TITLE:

Full Cargo Ship

SIZE	DWG. NO.	REV
A	TE-19112	

SCALE: 1:32 WEIGHT: SHEET 16 OF 17

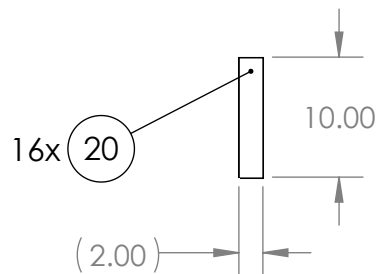
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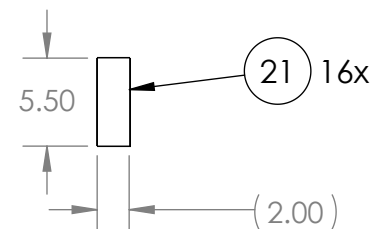
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TE-19112-19



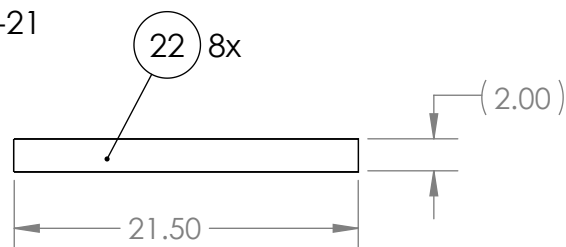
2" Hook Fastener

TE-19112-20



2" Vision Tape

TE-19112-21



2" Hook Fastener

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		MATERIAL	Q.A.	
			COMMENTS:	
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 17 OF 17
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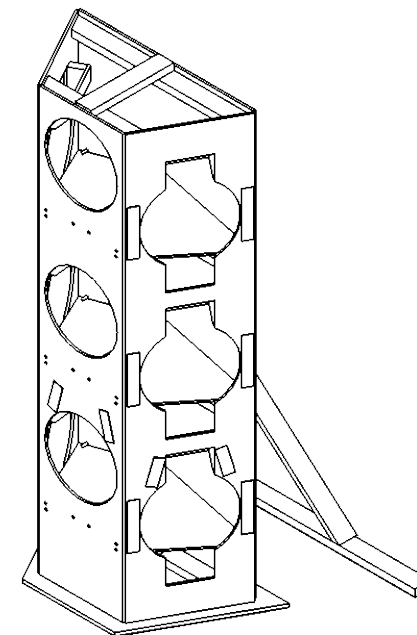
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1

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

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				DRAWN				
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				ENG APPR.				
				MFG APPR.				
INTERPRET GEOMETRIC TOLERANCING PER:		Q.A.				<p>TITLE:</p> <p>Full Rocket</p>		
MATERIAL		COMMENTS:						
FINISH								
NEXT ASSY	USED ON			SIZE		DWG. NO.		REV
APPLICATION		DO NOT SCALE DRAWING		A		TE-19113		
				SCALE: 1:32		WEIGHT:		SHEET 1 OF 11

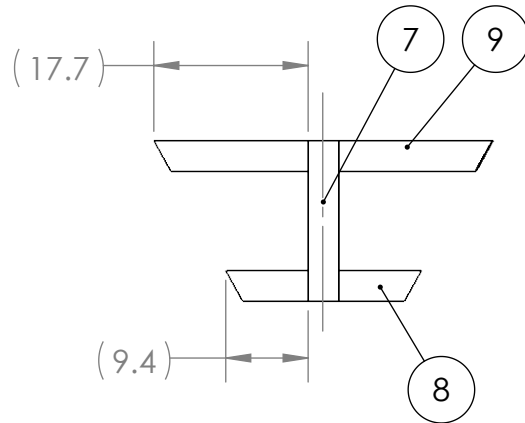
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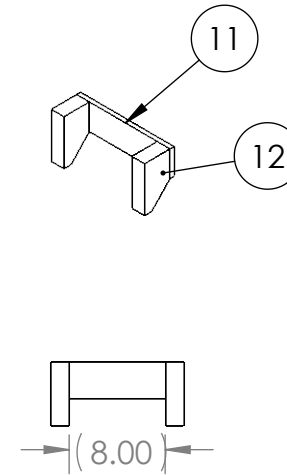
Subassembly 1: QTY 4



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

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		INTERPRET GEOMETRIC TOLERANCING PER:		
		MATERIAL		
NEXT ASSY	USED ON	FINISH		
APPLICATION		DO NOT SCALE DRAWING		



FIRST
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Modeling Solutions Partner

TITLE:

Full Rocket

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

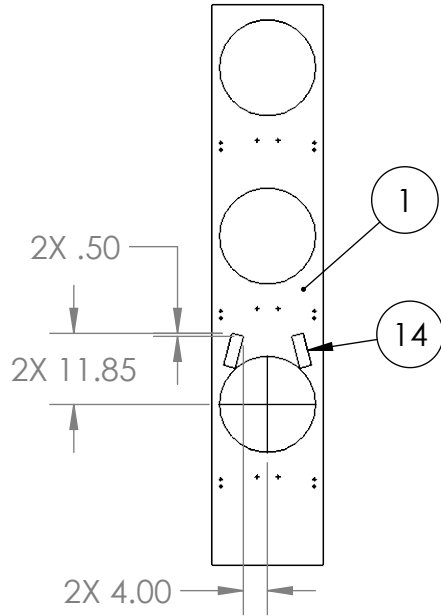
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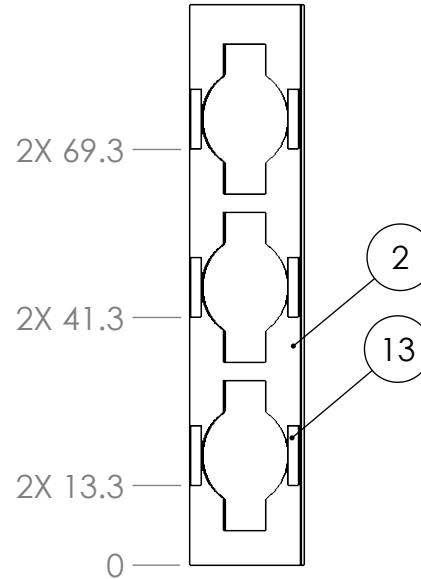
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Subassembly 3:



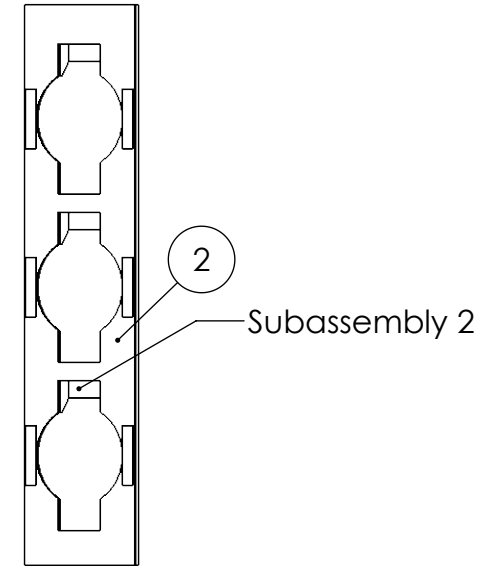
Note:

Attach (14)x2 to (1).

Subassembly 4:
Qty. 2

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.



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NEXT ASSY

USED ON

APPLICATION

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

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

FINISH

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DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:



TITLE:

Full Rocket

SIZE

DWG. NO.

REV

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TE-19113

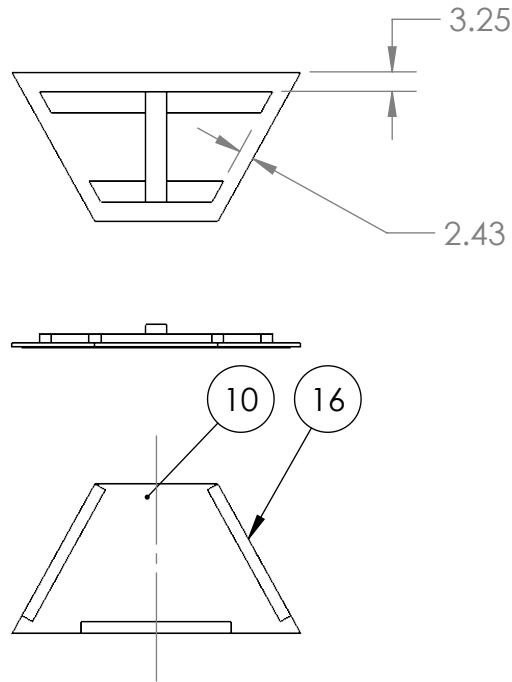
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SHEET 3 OF 11

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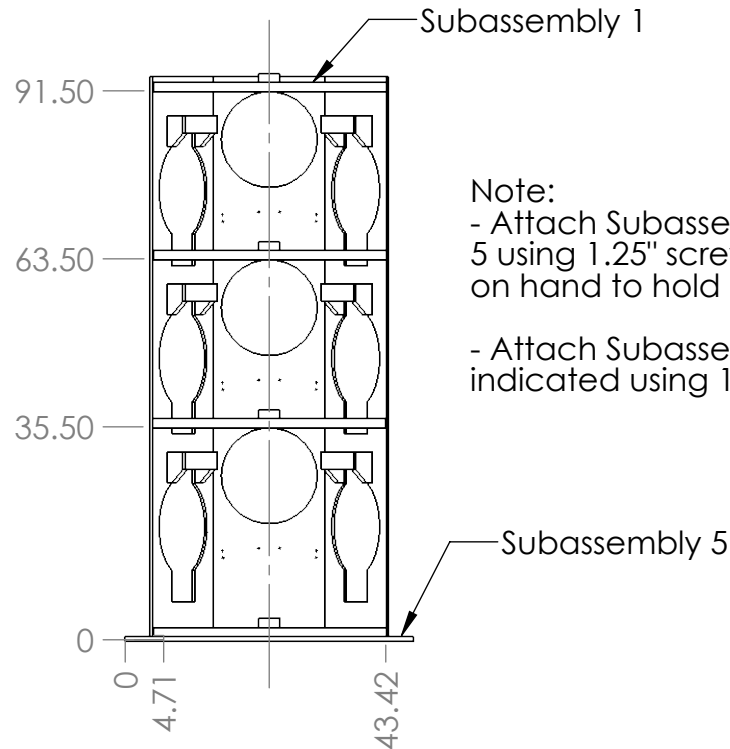
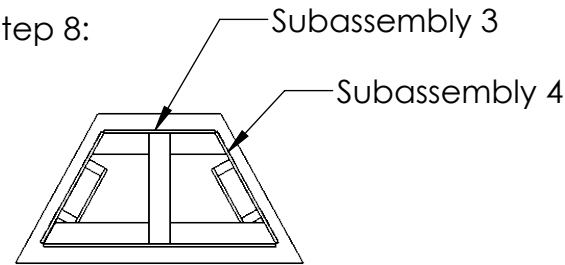
Subassembly 5:



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.

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		THREE PLACE DECIMAL ±.001			
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
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APPLICATION		DO NOT SCALE DRAWING			

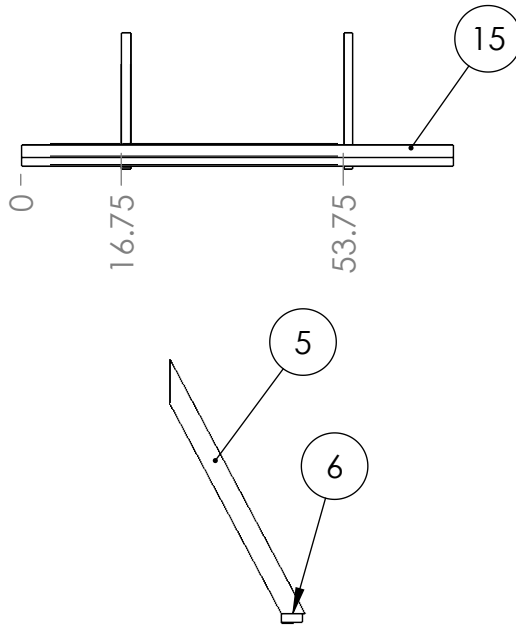


TITLE:
Full Rocket

SIZE	DWG. NO.	REV
A	TE-19113	
SCALE: 1:32		WEIGHT:
		SHEET 4 OF 11

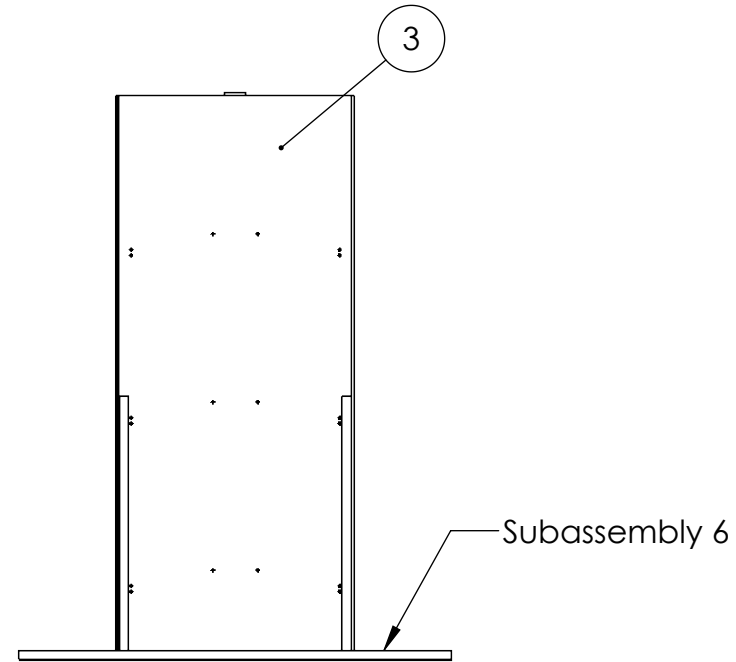
Subassembly 6:

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

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		THREE PLACE DECIMAL $\pm .001$
		INTERPRET GEOMETRIC TOLERANCING PER:
		MATERIAL
NEXT ASSY	USED ON	FINISH
APPLICATION		DO NOT SCALE DRAWING

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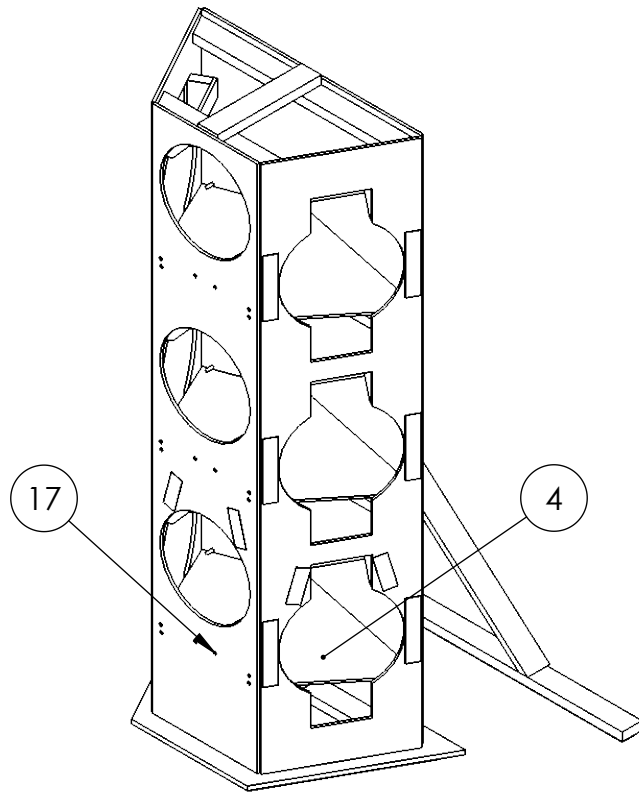


TITLE:

Full Rocket

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

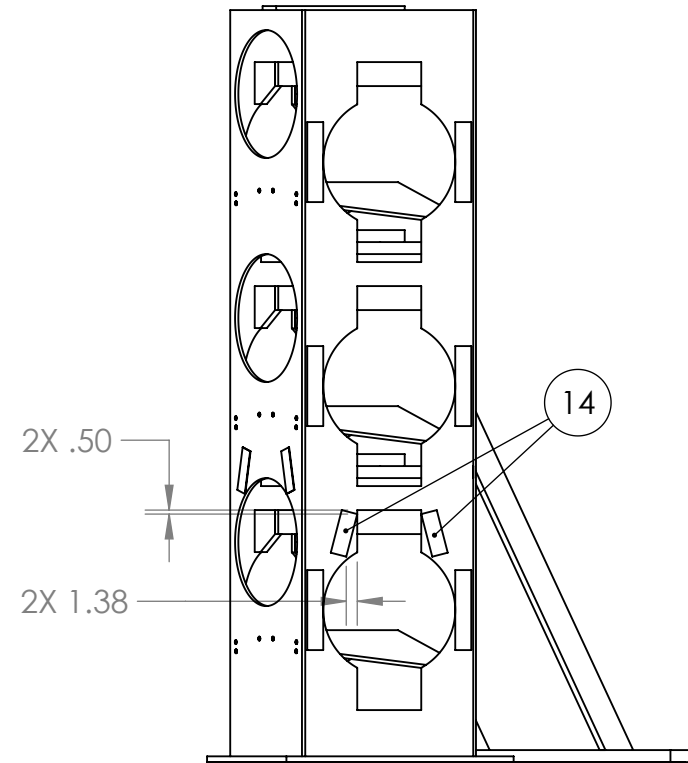
B



Note:

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

1



Note:

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

A

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		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

B

A

2

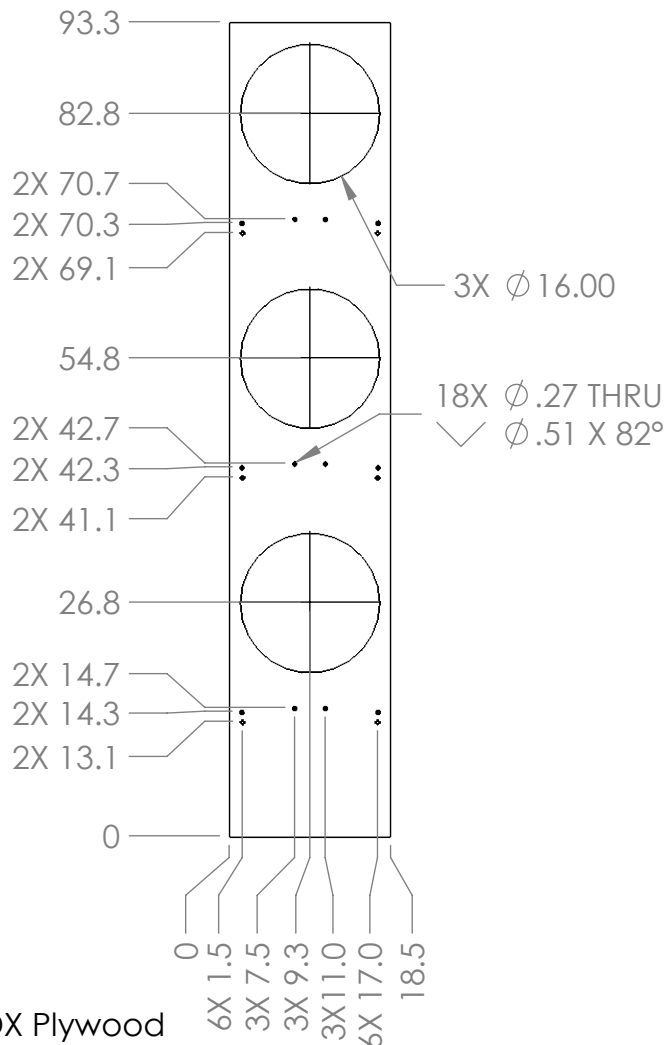
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B

TE-19113-01

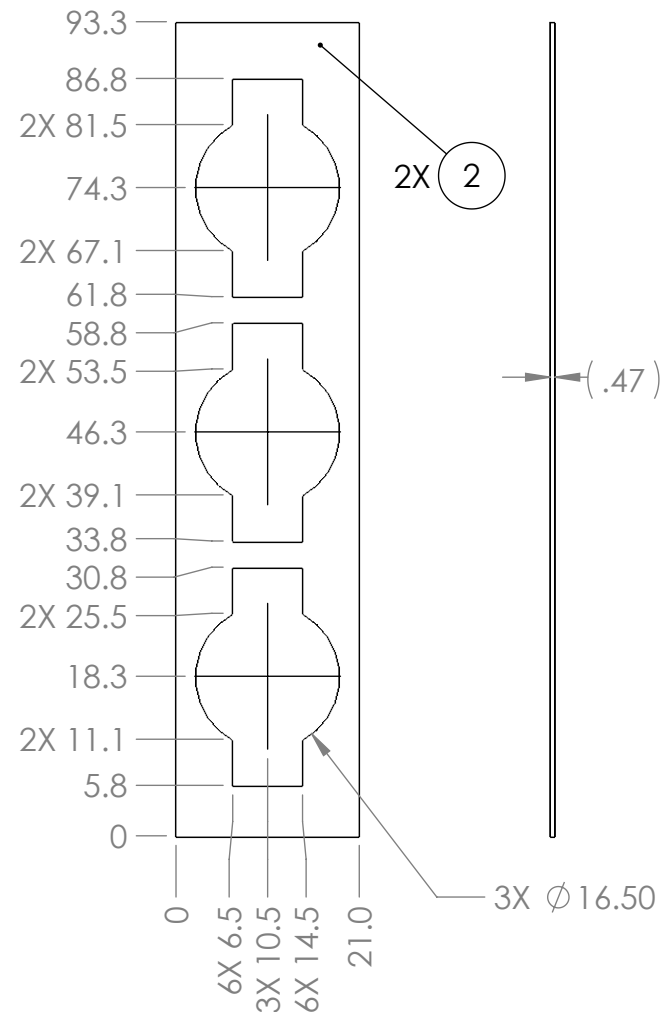
1X (1)

(.47)



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

TE-19113-02



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

B

A

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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



FIRST
ROBOTICS
COMPETITION



Modeling Solutions Partner

TITLE:

Full Rocket

SIZE

A

DWG. NO.

TE-19113

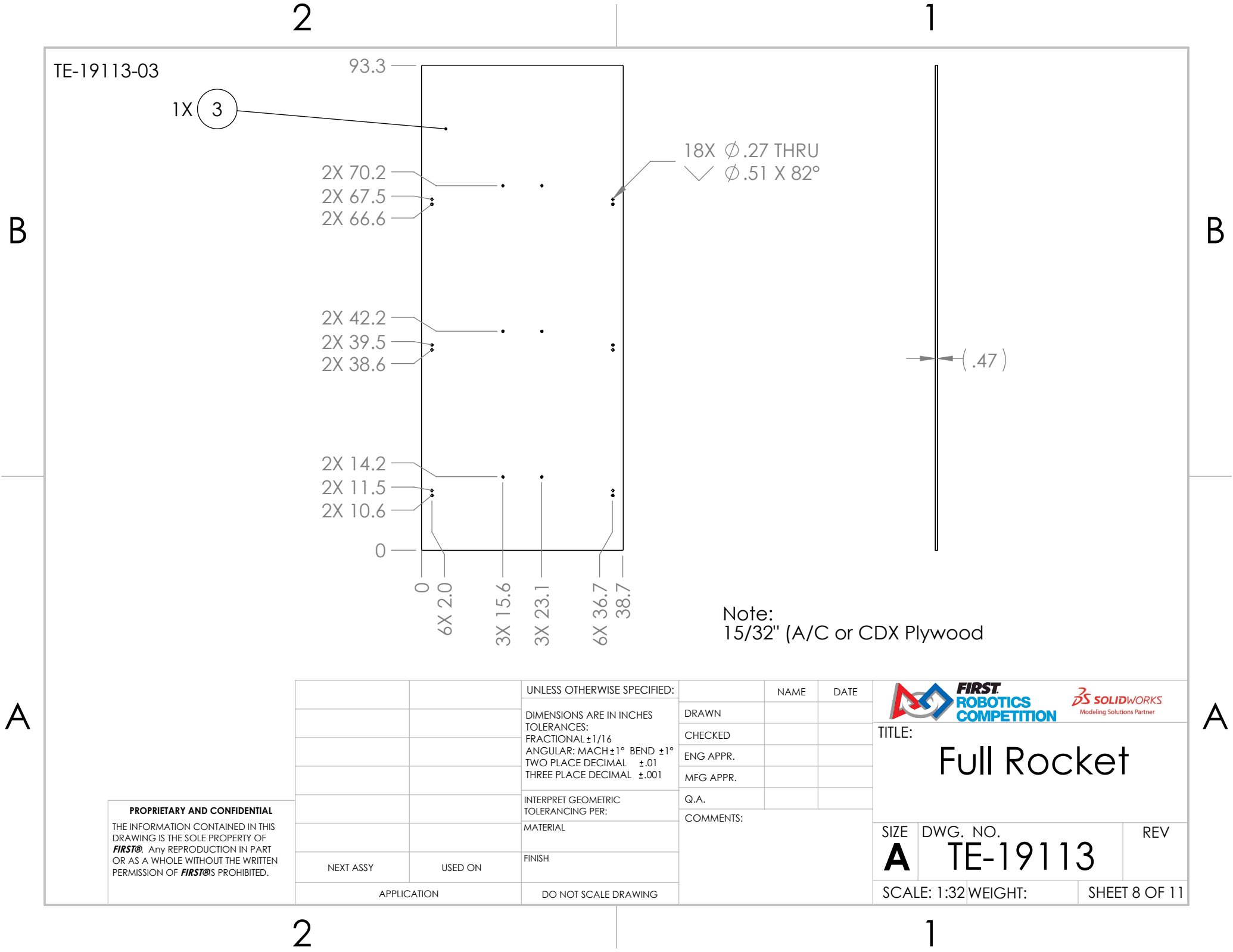
REV



SCALE: 1:32 WEIGHT:

SHEET 7 OF 11

2

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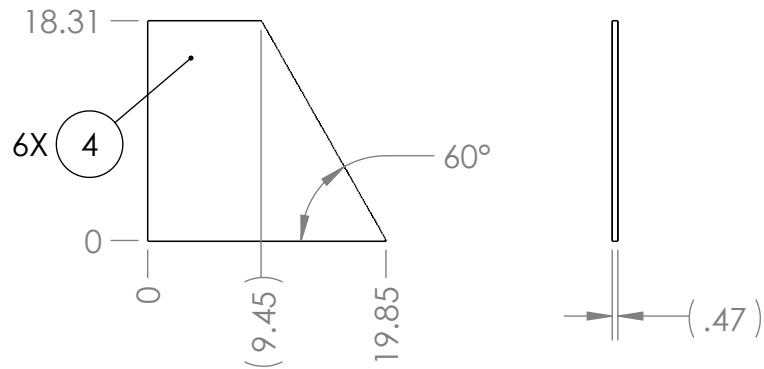


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		DIMENSIONS ARE IN INCHES		DRAWN		
		TOLERANCES:		CHECKED		
		FRACTIONAL $\pm 1/16$		ENG APPR.		
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$		MFG APPR.		
		TWO PLACE DECIMAL $\pm .01$		Q.A.		
		THREE PLACE DECIMAL $\pm .001$		COMMENTS:		
		INTERPRET GEOMETRIC TOLERANCING PER:				SIZE DWG. NO. REV
		MATERIAL				A TE-19113
NEXT ASSY		FINISH				SCALE: 1:32 WEIGHT: SHEET 8 OF 11
APPLICATION		DO NOT SCALE DRAWING				

2

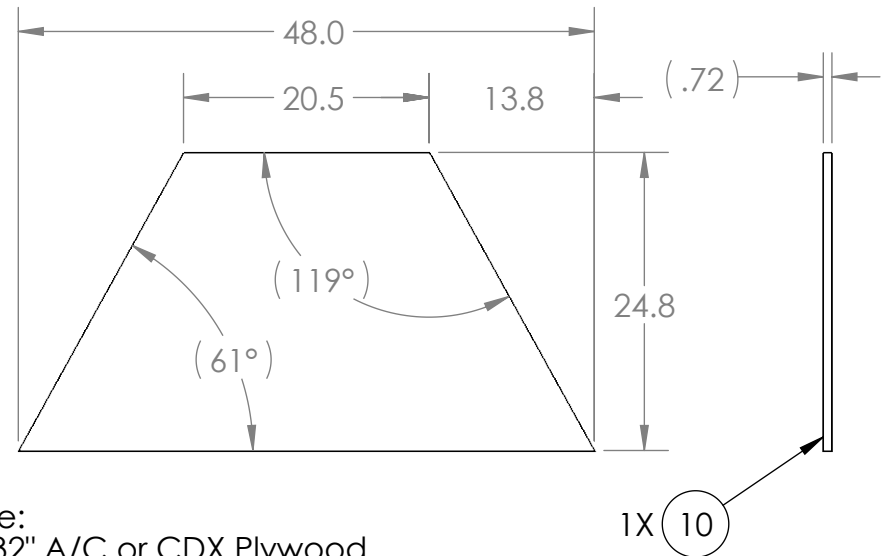
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TE-19113-04



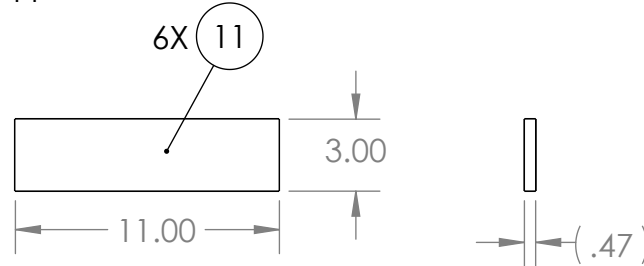
Note:
15/32" A/C or CDX Plywood

TE-19113-10



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

TE-19113-11



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

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		FRACTIONAL $\pm 1/16$	ENG APPR.			
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		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

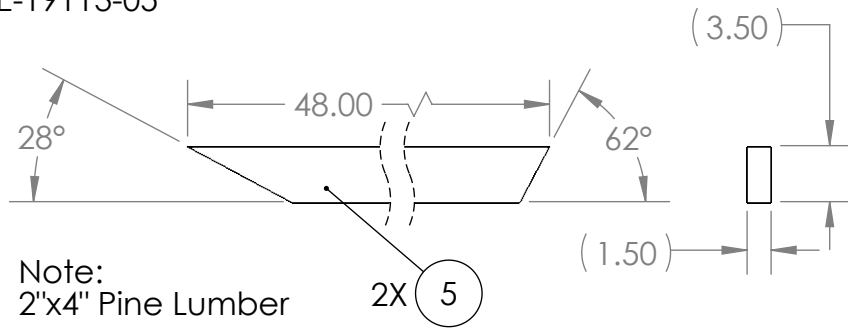
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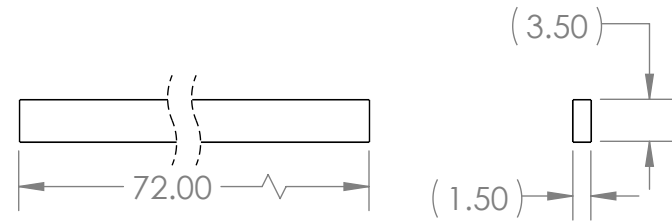
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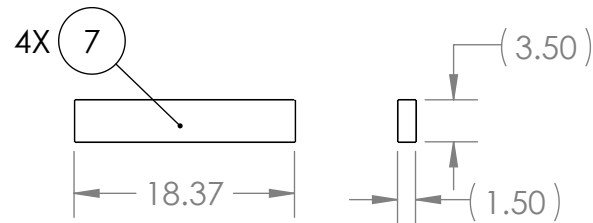
TE-19113-05



TE-19113-06

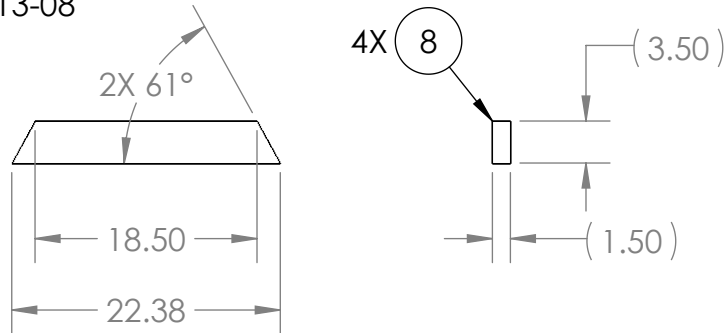


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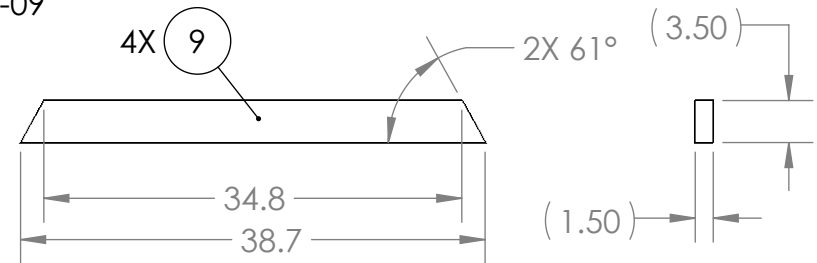


Note:
2"x4" Pine Lumber

TE-19113-08



TE-19113-09



Note:
2"x4" Pine Lumber

Note:
2"x4" Pine Lumber

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		TOLERANCES:
		FRACTIONAL $\pm 1/16$
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$
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		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 Rocket		
SIZE A	DWG. NO. TE-19113	REV
SCALE: 1:32 WEIGHT:		SHEET 10 OF 11

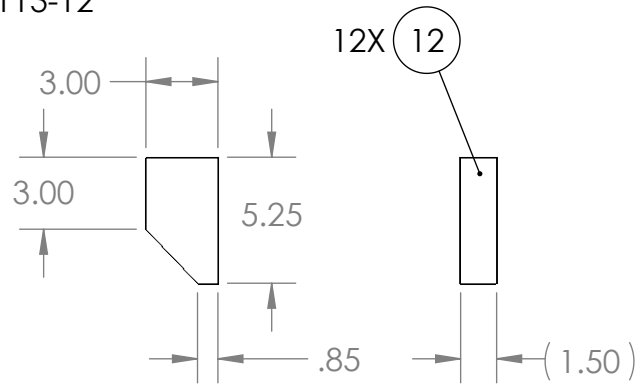
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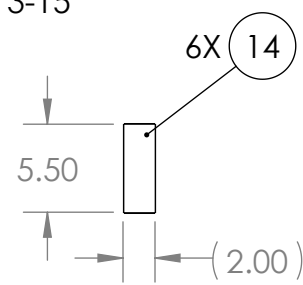
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TE-19113-12



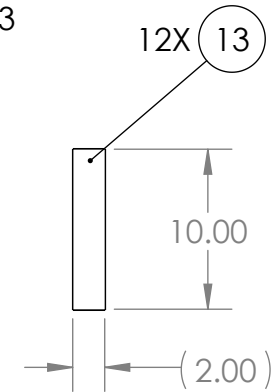
Note:
2"x 4" Pine lumber

TE-19113-15



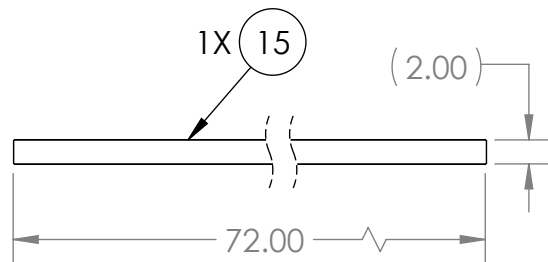
2" Vison Tape

TE-19113-13



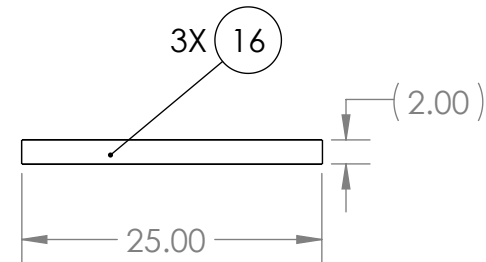
2" Hook Fastener

TE-19113-16



2" Hook Fastener

TE-19113-17



2" Hook Fastener

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NEXT ASSY

USED ON

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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



FIRST
ROBOTICS
COMPETITION

SOLIDWORKS
Modeling Solutions Partner

TITLE:

Full Rocket

SIZE

A

DWG. NO.

TE-19113

REV

SCALE: 1:32 WEIGHT:

SHEET 11 OF 11

2

1

2

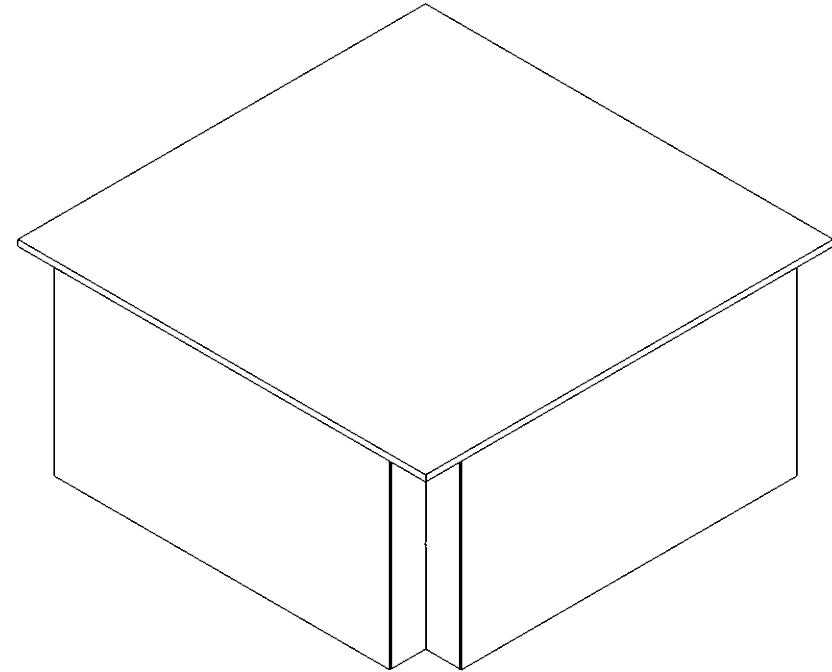
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ITEM NO.	PART NUMBER	QTY.
1	TE-19117-01	1
2	TE-19117-02	6
3	TE-19117-03	4
4	TE-19117-04	3
5	TE-19117-05	9
6	TE-19117-06	9

B

B

Material	QTY
23/32"(3/4") A/C or CDX Plywood	2 sheets
1/8" Hardboard	.75 sheets
2"x4"x8"	.125 sheets
1" Hook Fastener	210"
1" Loop Fastener	210"
2.5" screws	8




A


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		TOLERANCES:	CHECKED					
		FRACTIONAL $\pm 1/16$	ENG APPR.					
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.					
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		INTERPRET GEOMETRIC TOLERANCING PER:						
		MATERIAL						
NEXT ASSY		USED ON						
APPLICATION		DO NOT SCALE DRAWING						



FIRST
ROBOTICS
COMPETITION



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TITLE:

Hab Ivl 3

SIZE **A**

DWG. NO. **TE-19117**

REV

SCALE: 1:16

WEIGHT:

SHEET 1 OF 5

2

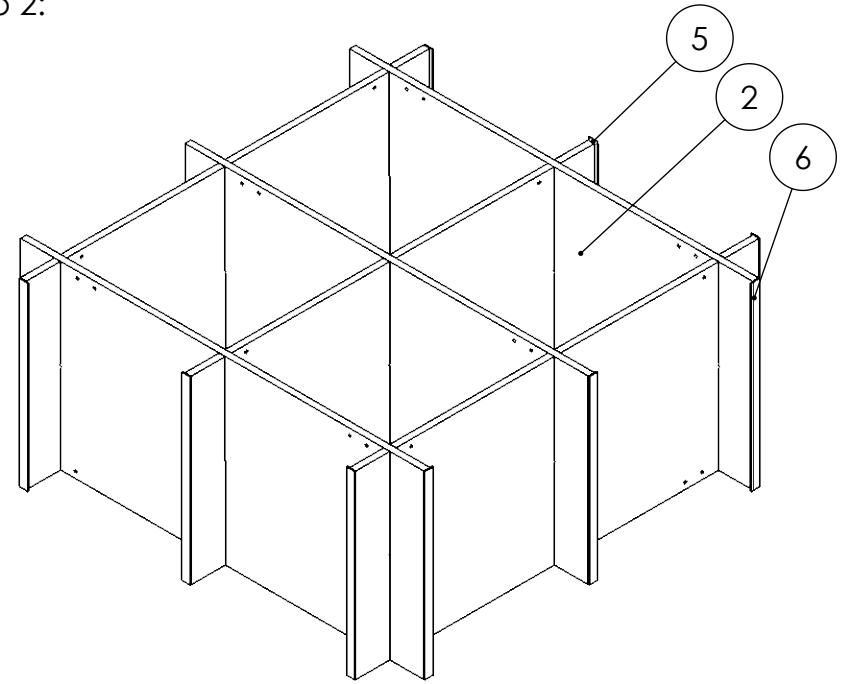
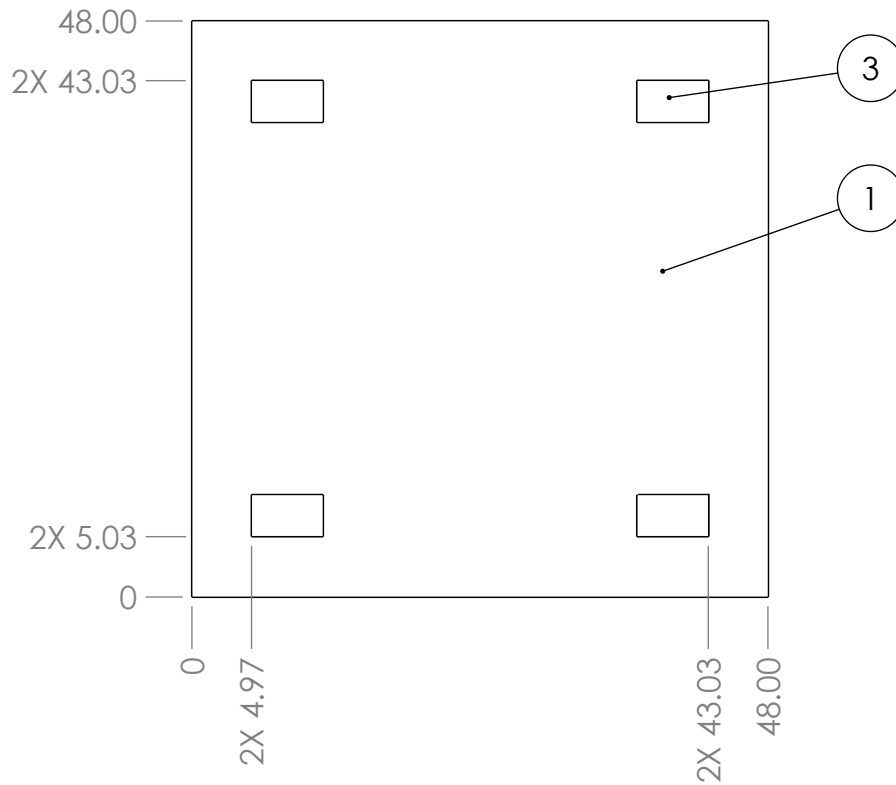
1

2

1

Step 1:

Step 2:



Note:

- Attach (3) to (1).
- Pre drill and attach using 2.5" Screws

Note:

- Arrange (2) in pattern above.
- Apply (5) to the edge of (2) on 3 sides
- Apply (6) to (5), Do not remove the protective backing.

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		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
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TITLE:

Hab lvl 3

SIZE	DWG. NO.	REV
A	TE-19117	
SCALE: 1:16		WEIGHT:
		SHEET 2 OF 5

2

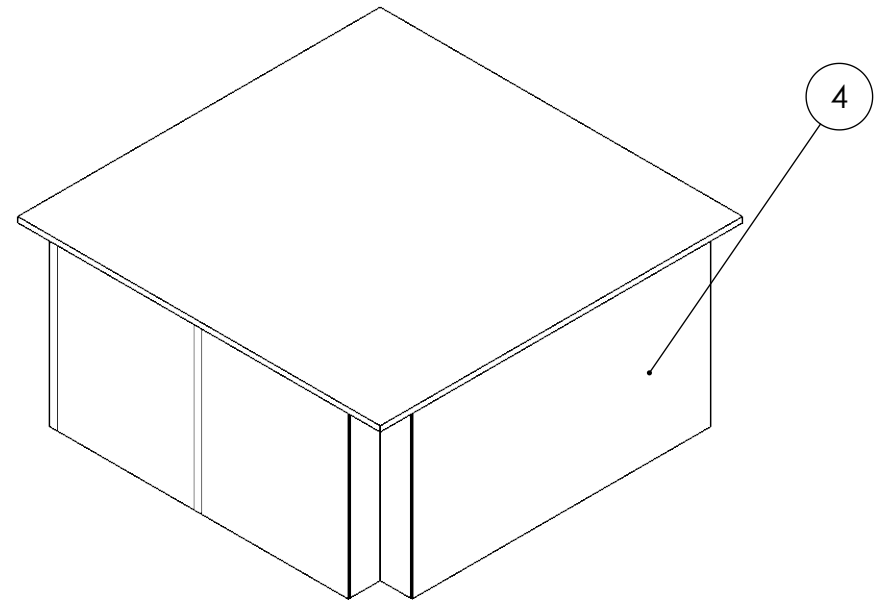
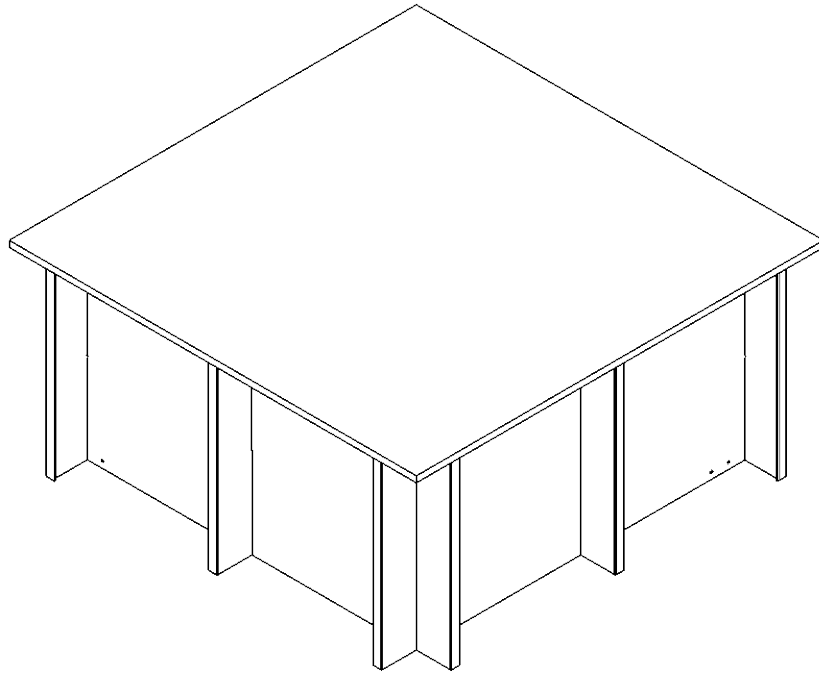
1

2

1

Step 3:

Step 4:



Note:

- Attach assembly from Step 1 to Step 3
- Pre drill and attach using 2.5" screws

Note:

- Remove the protective backing from the loop.
- Attach (4) on three sides by pressing firmly to the loop.

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		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:		



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TITLE:

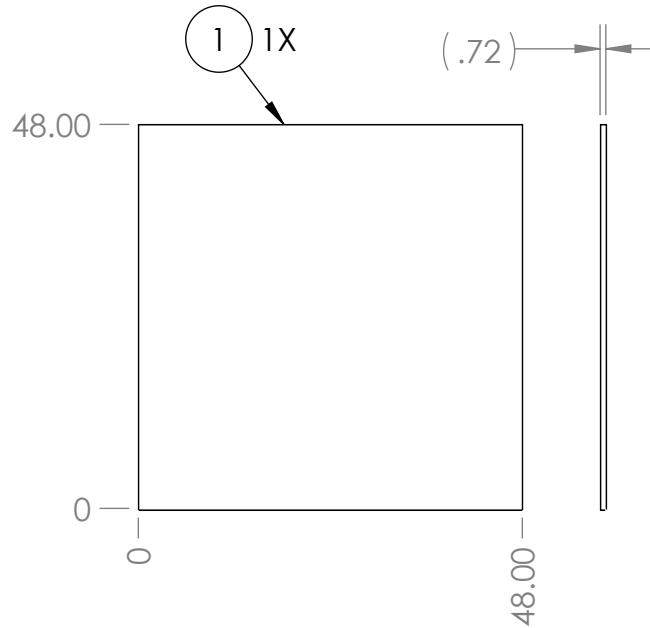
Hab lvl 3

SIZE	DWG. NO.	REV
A	TE-19117	
SCALE: 1:16		WEIGHT:
		SHEET 3 OF 5

2

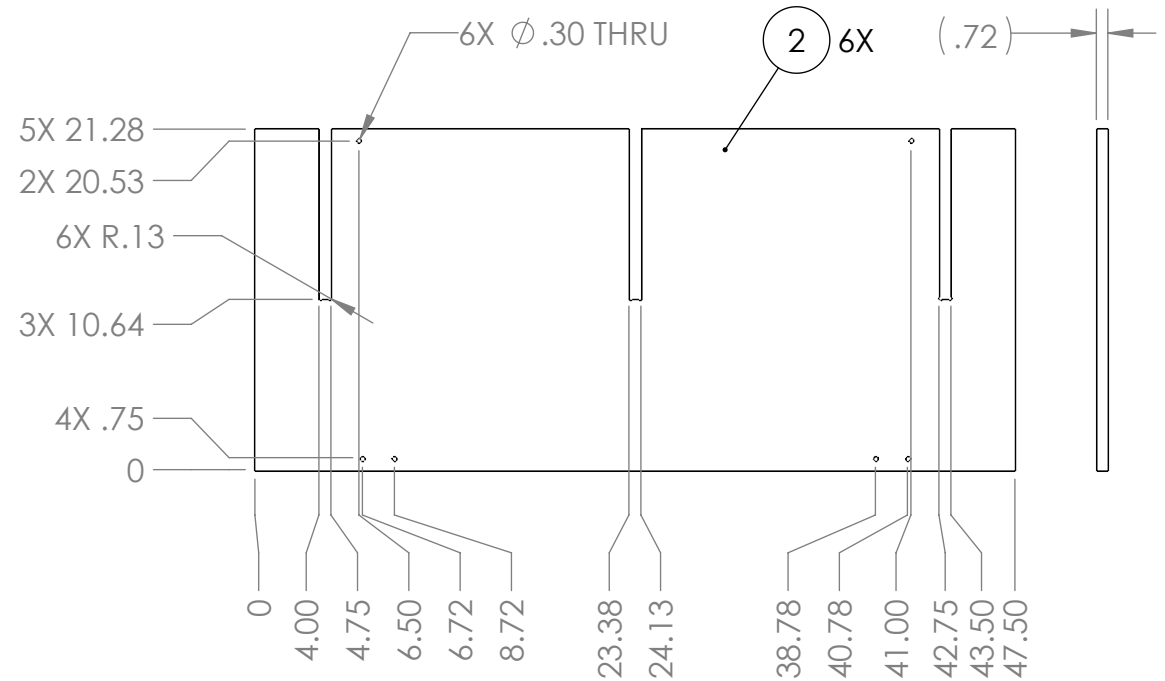
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TE-19117-01



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

TE-19117-02



Notes:
23/32" (3/4") A/C or CDX Plywood
(6X R.13 added for router)

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		FRACTIONAL $\pm 1/16$
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		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:

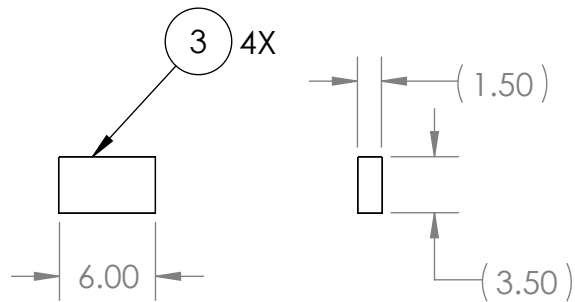
Hab Ivl 3

SIZE	DWG. NO.	REV
A	TE-19117	
SCALE: 1:16	WEIGHT:	SHEET 4 OF 5

2

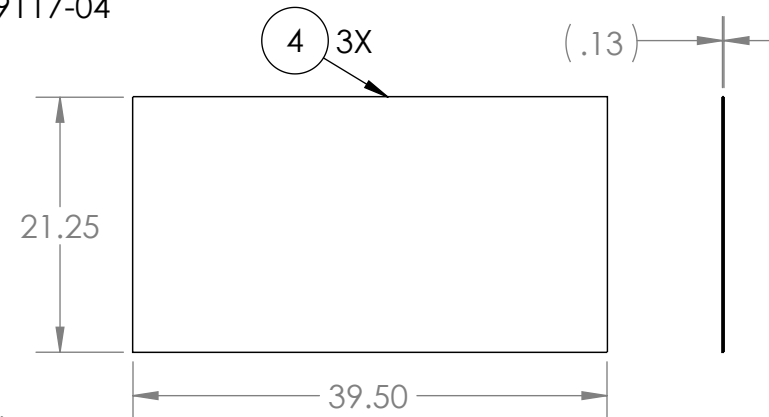
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TE-19117-03



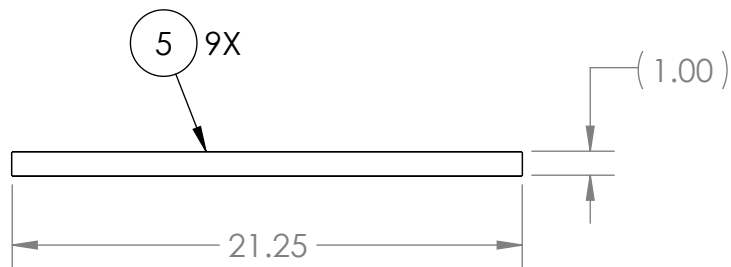
Note:
Material: 2"X 4" Lumber Pine

TE-19117-04



Note:
Material: 1/8" HardBoard

TE-19117-05



Note:
Material: 1" Hook Fastener

TE-19117-06



Note:
Material: 1" Loop Fastener

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NEXT ASSY

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APPLICATION

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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:

Hab lvl 3

SIZE

A

DWG. NO.

TE-19117

REV

SCALE: 1:16 WEIGHT:

SHEET 5 OF 5

2

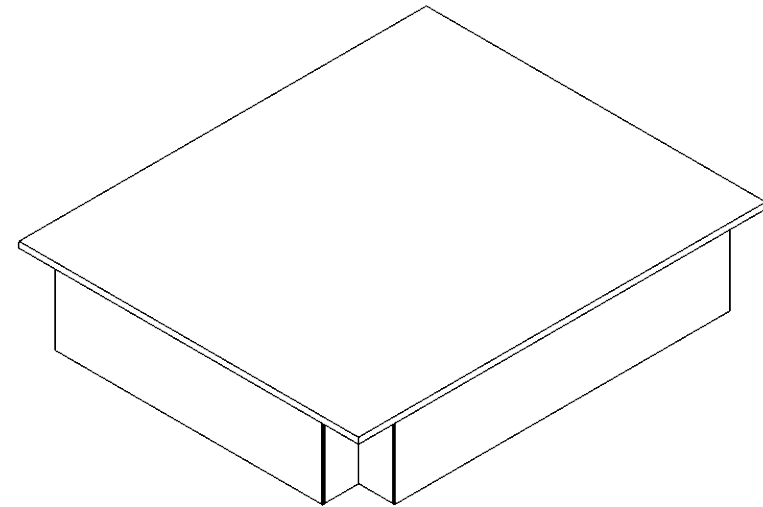
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1



ITEM NO.	PART NUMBER	QTY.
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2	TE-19118-02	3
3	TE-19118-03	3
4	TE-19118-04	1
5	TE-19118-05	1
6	TE-19118-06	4
7	TE-19118-07	6
8	TE-19118-08	6

Material	QTY
23/32" (3/4") A/C or CDX Plywood	.75 sheet
2"x4"x8'	.125
1/8" Hardboard	.125
1" Hook Fastener	24"
1" Loop Fastener	24"
2.5" screws	16



Note:
Double and mirror for half field

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		FRACTIONAL $\pm 1/16$	ENG APPR.						
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		MATERIAL				SIZE	DWG. NO.	REV	
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APPLICATION		DO NOT SCALE DRAWING				SCALE: 1:16		WEIGHT:	SHEET 1 OF 5

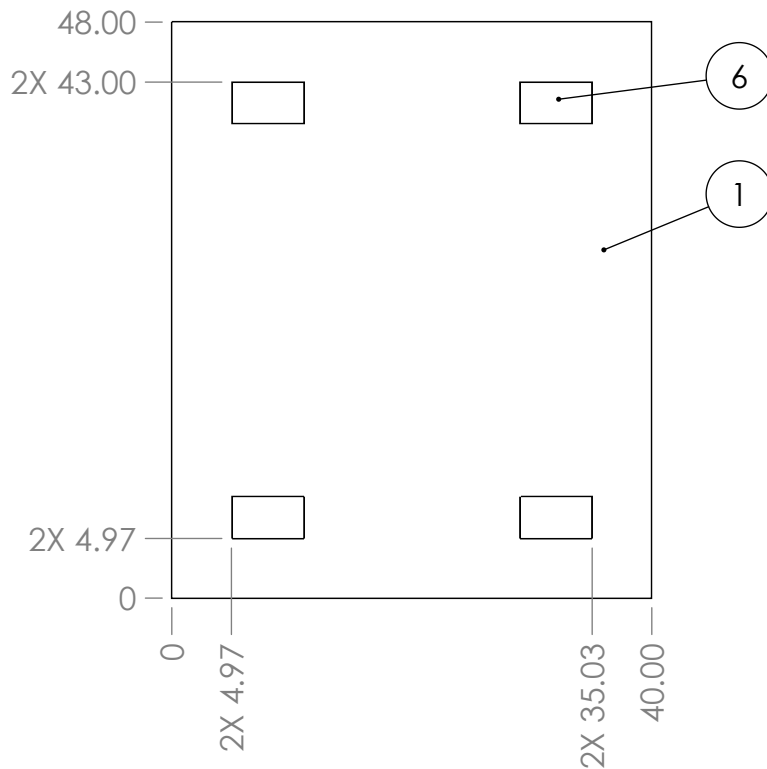
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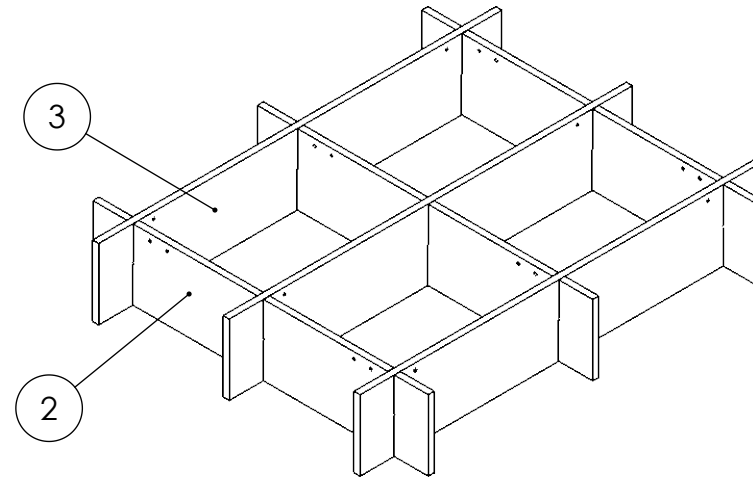
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1

Step 1:



Step 2:



Note:

- Attach 6 to 1 at locations shown.
- Pre drill and use 1.25" screws to attach.

Note

- Arrange 2 and 3 as shown. Grooves in the parts will intersect with one another.

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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:

Hab lvl 2

SIZE

A

DWG. NO.

TE-19118

REV

SCALE: 1:16 WEIGHT:

SHEET 2 OF 5

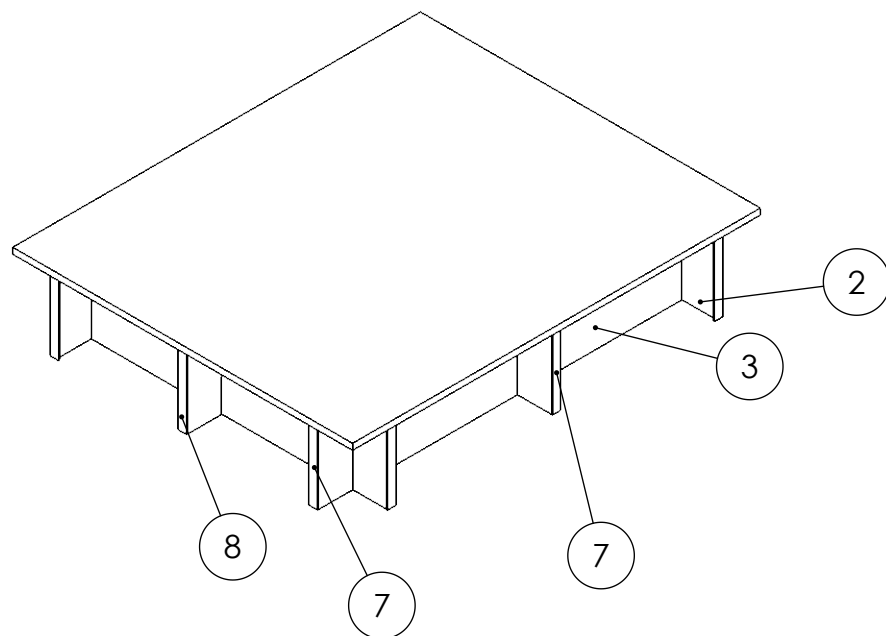
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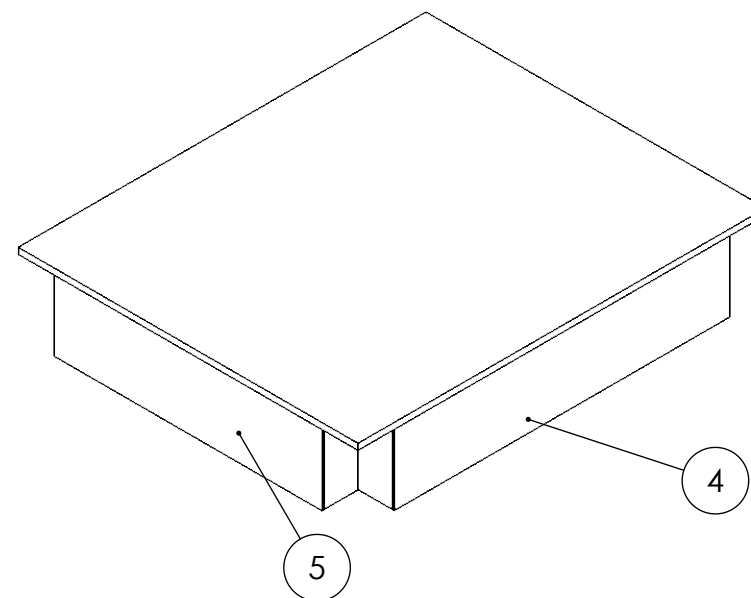
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Step 3:



Step 4:



Note:



- Place subassembly from Step 1 onto the plywood frame from Step 2. Pre-drill and secure with 2.5" screws.
- Attach (7)x6 to the edge of (3) and (2) on two sides only
- Apply (8)x6 to (7), and remove the backing.

Note:

- Press (5) and (4) to (8) Flush to floor and edges.
- Press firmly to ensure loop adhesion to hardboard.

A

A

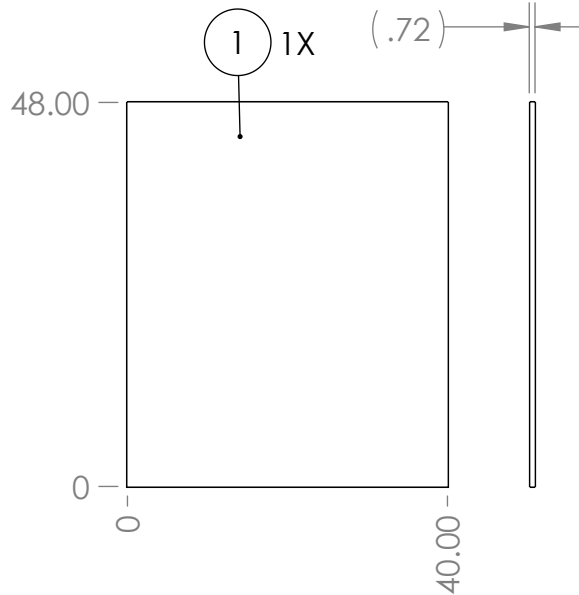
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		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL $\pm 1/16$ ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$ TWO PLACE DECIMAL $\pm .01$ THREE PLACE DECIMAL $\pm .001$		DRAWN				
		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED		TITLE: <h1>Hab lvl 2</h1>		
		MATERIAL		ENG APPR.				
		FINISH		MFG APPR.				
NEXT ASSY	USED ON			Q.A.		SIZE	DWG. NO.	REV
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:		A	TE-19118	
						SCALE: 1:16 WEIGHT:		SHEET 3 OF 5

2

1

B

TE-19118-01



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

A

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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:

Hab lvl 2

SIZE

DWG. NO.

REV

A

TE-19118

SCALE: 1:16

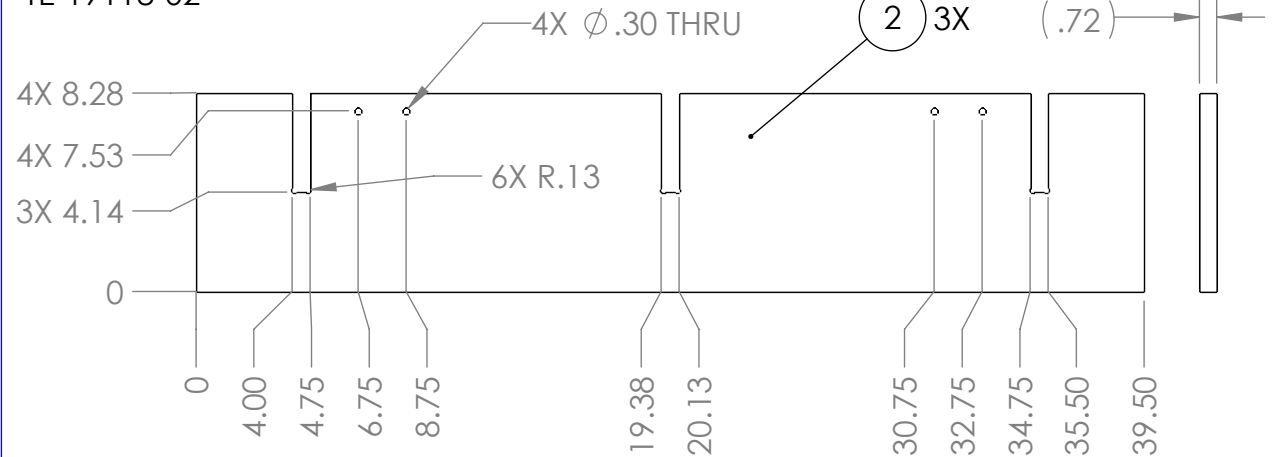
WEIGHT:

SHEET 4 OF 5

2

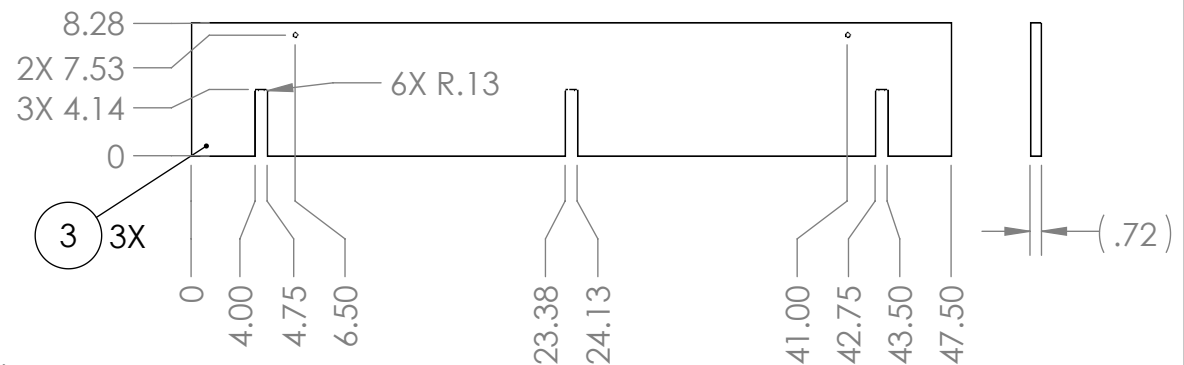
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TE-19118-02



Note:
23/32" (3/4") A/C or CDX Plywood (6X R.13 added for router)

TE-19118-03



Note:
23/32" (3/4") A/C or CDX Plywood (6X R.13 added for router)

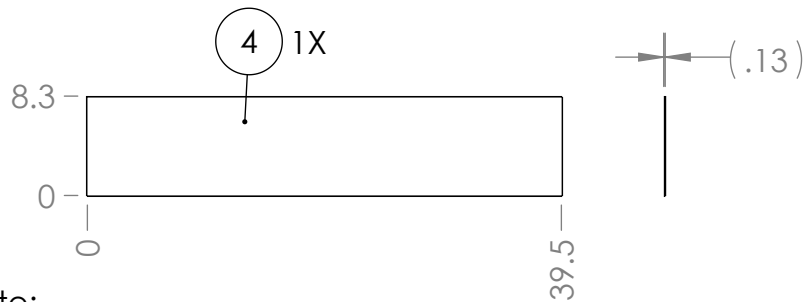
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2

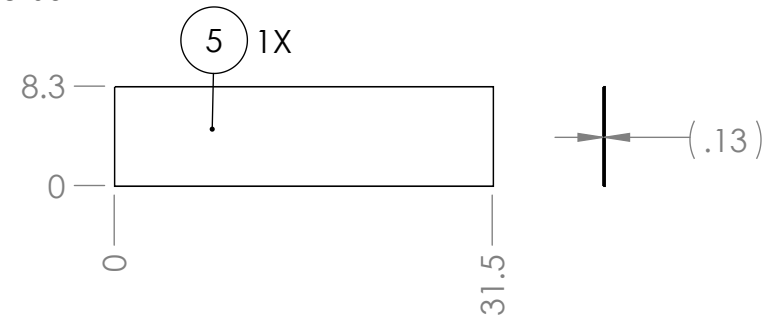
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TE-19118-04



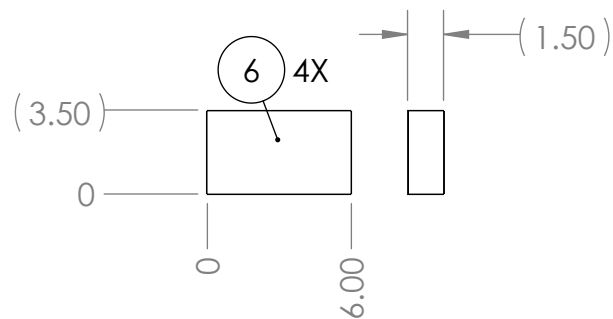
Note:
1/8" Hardboard

TE-19118-05



Note:
1/8" Hardboard

TE-19118-06



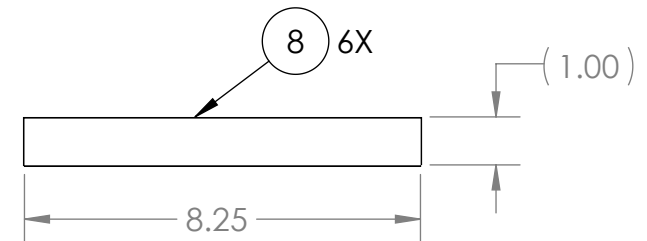
Note:
2"x 4" Lumber Pine

TE-19118-07



Note:
1" Hook Fastener

TE-19118-08



Note:
1" Loop Fastener

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NEXT ASSY

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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



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COMPETITION

SOLIDWORKS
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TITLE:

Hab lvl 2

SIZE

A

DWG. NO.

TE-19118

REV

SCALE: 1:16 WEIGHT:

SHEET 5 OF 5

2

1