

4

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2

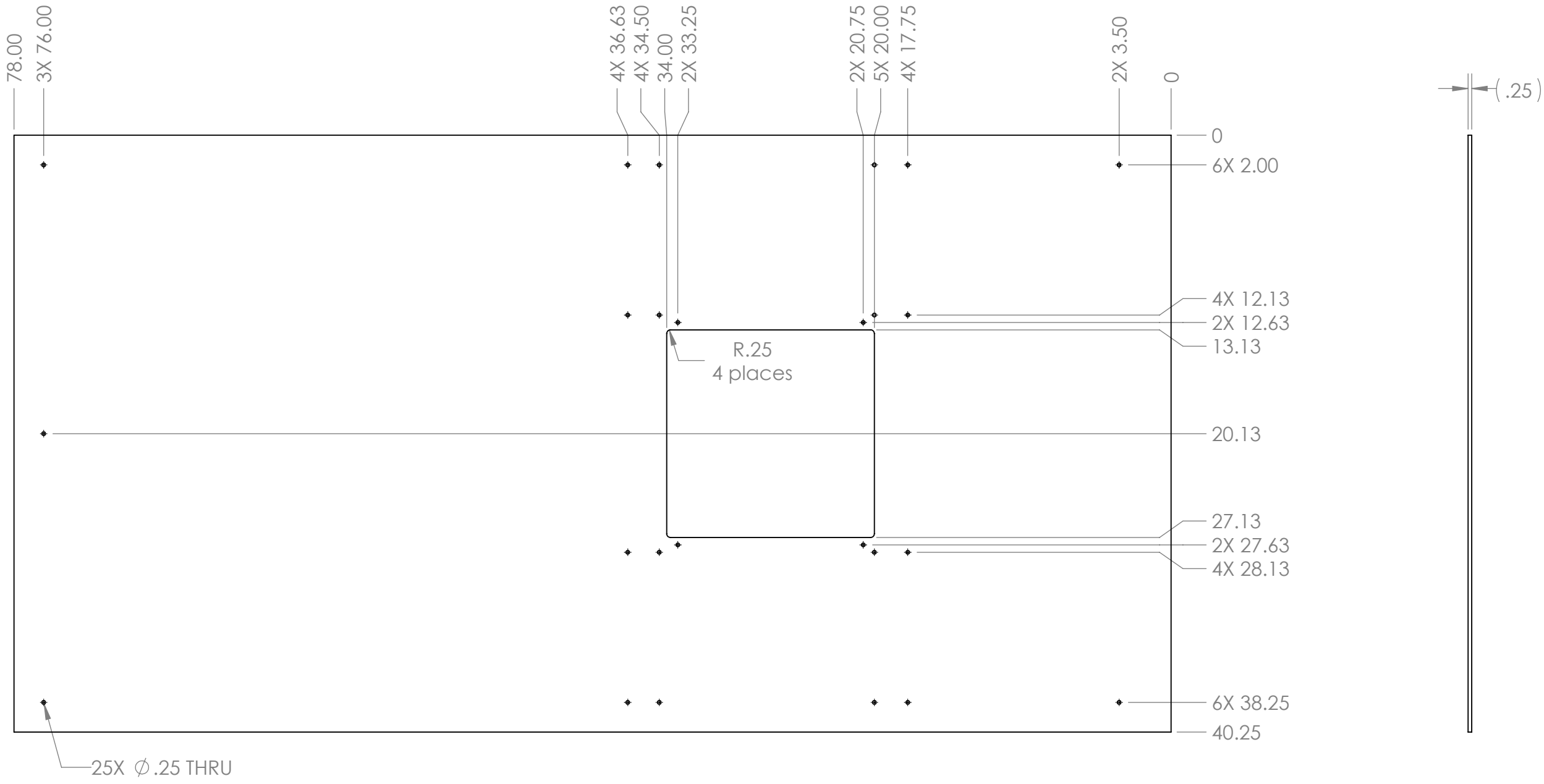
1

B

B

A

A



- Notes:
1. Material: 1/4" thick, clear polycarbonate.
  2. Remove all burrs and sharp edges

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



TITLE: <b>Panel, Portal</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18004</b>	REV
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

4

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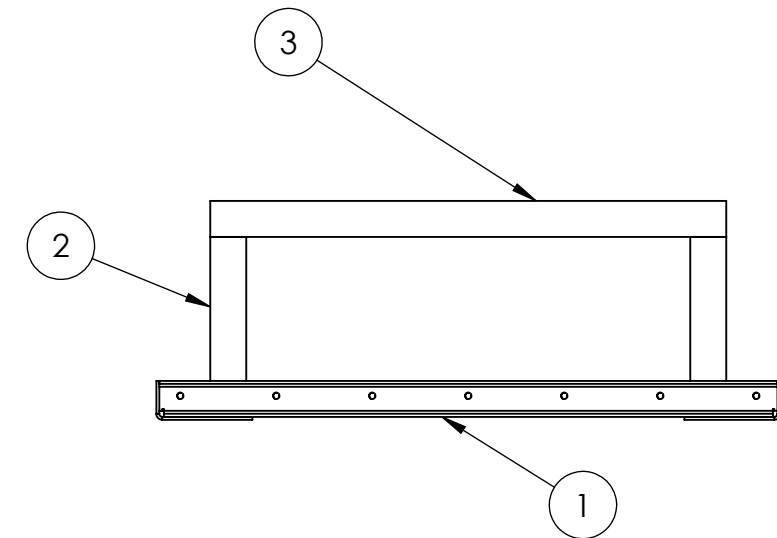
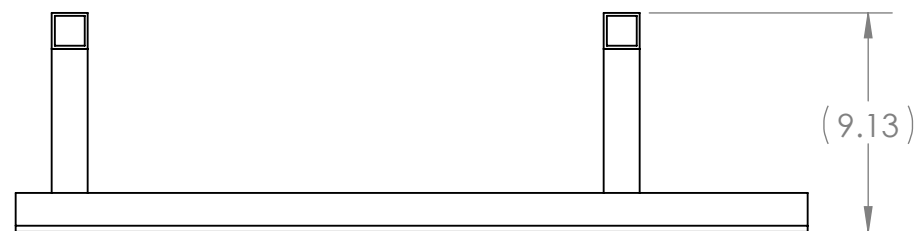
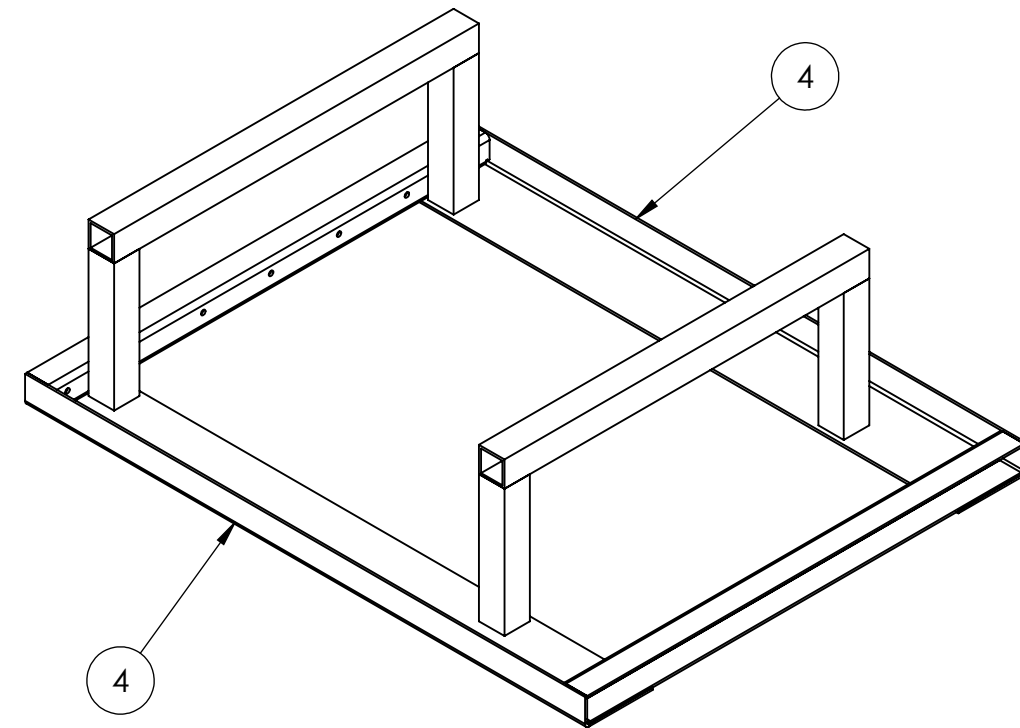
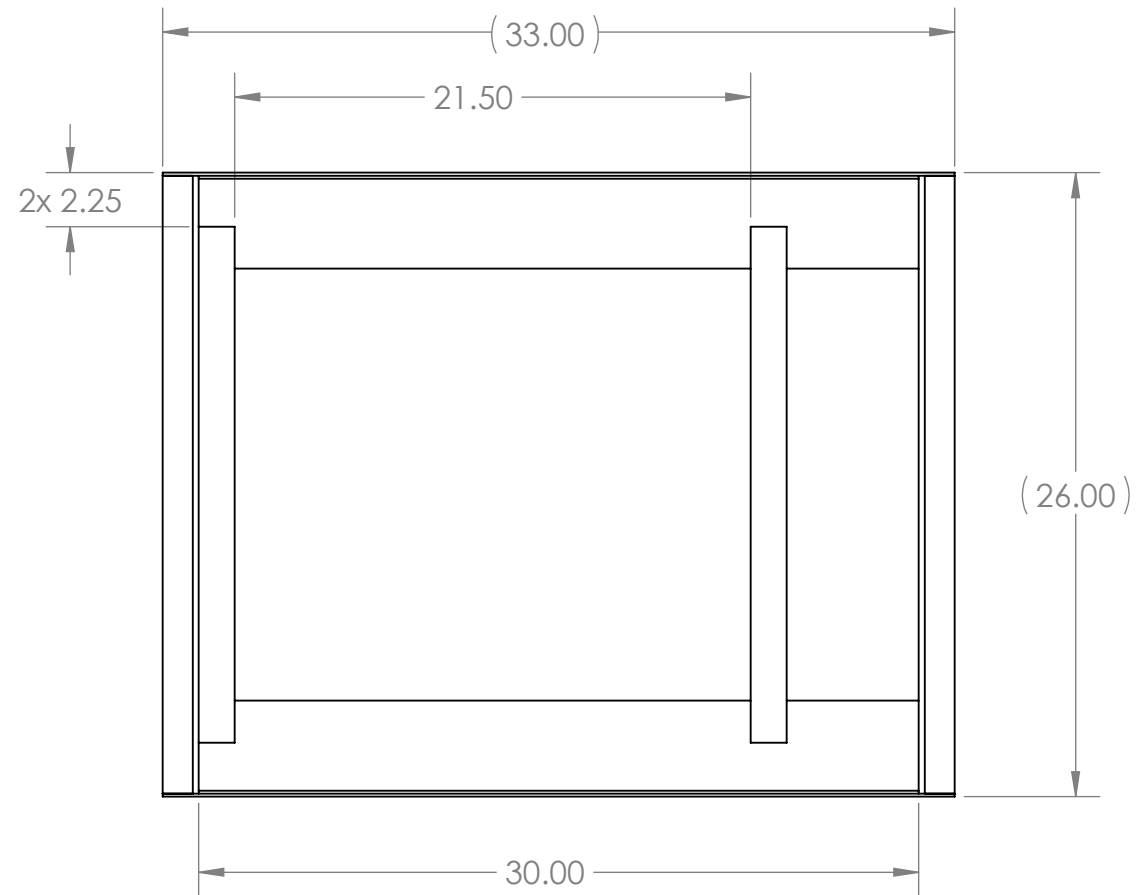
1

4

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1




ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18006-01	1/8" thk., 5052 Aluminum Sheet	2
2	GE-18006-02	1.5" x .125" thk. Square Tubing, 6063 Aluminum	4
3	GE-18006-03	1.5" x .125" thk. Square Tubing, 6063 Aluminum	2
4	GE-18006-04	1/8" thk., 5052 Aluminum Sheet	2

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





TITLE: **Roller Base**

SIZE <b>B</b>	DWG. NO. <b>GE-18006</b>	REV
SCALE: 1:8	WEIGHT:	SHEET 1 OF 3

4

3

2

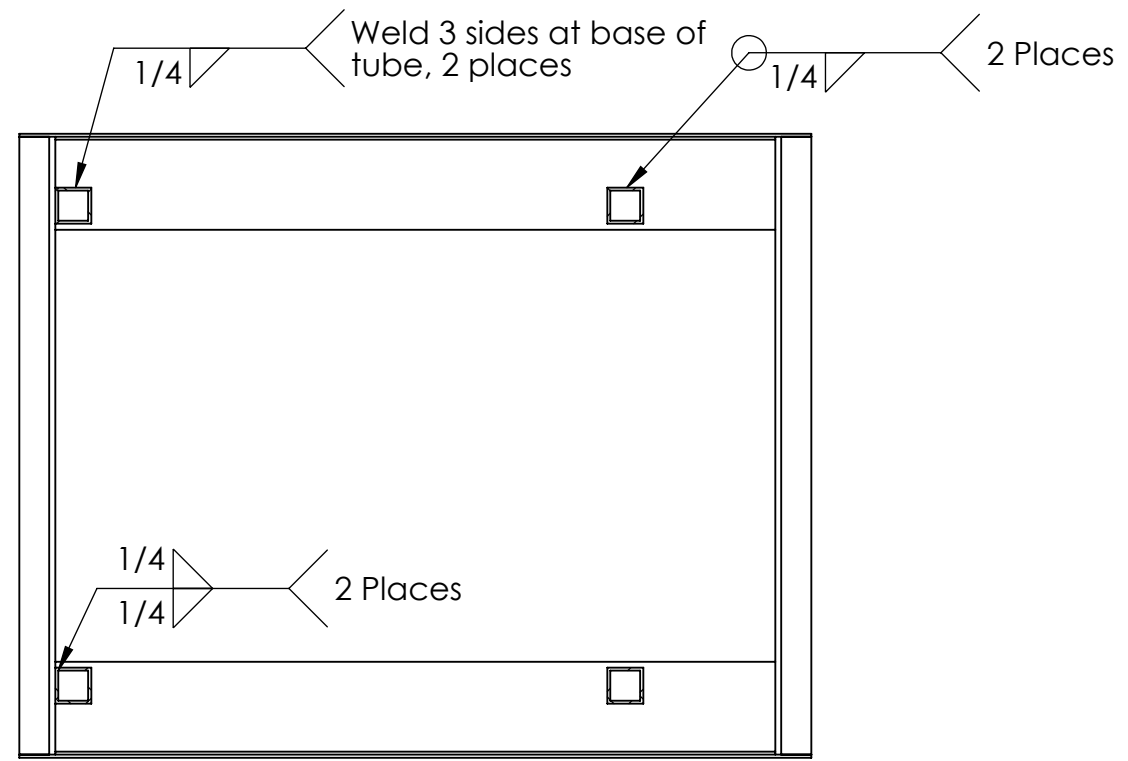
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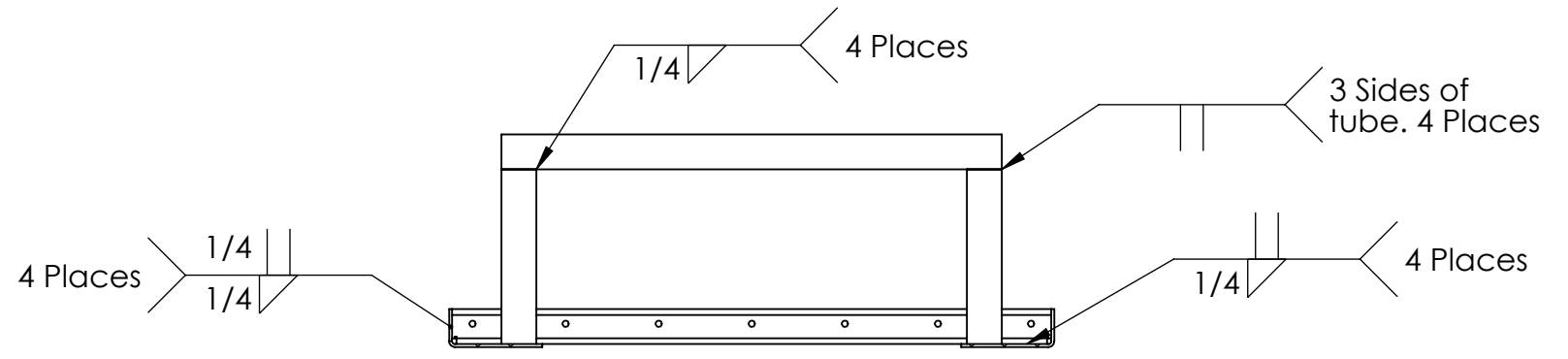
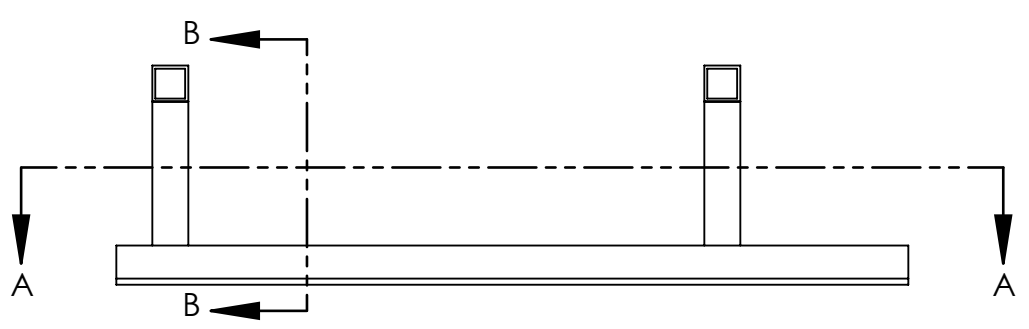
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1




SECTION A-A




SECTION B-B

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



**FIRST ROBOTICS COMPETITION**



**SOLIDWORKS**  
Modeling Solutions Partner

TITLE: **Roller Base**

SIZE <b>B</b>	DWG. NO. <b>GE-18006</b>	REV
SCALE: 1:8	WEIGHT:	SHEET 2 OF 3

4

3

2

1

B

B

A

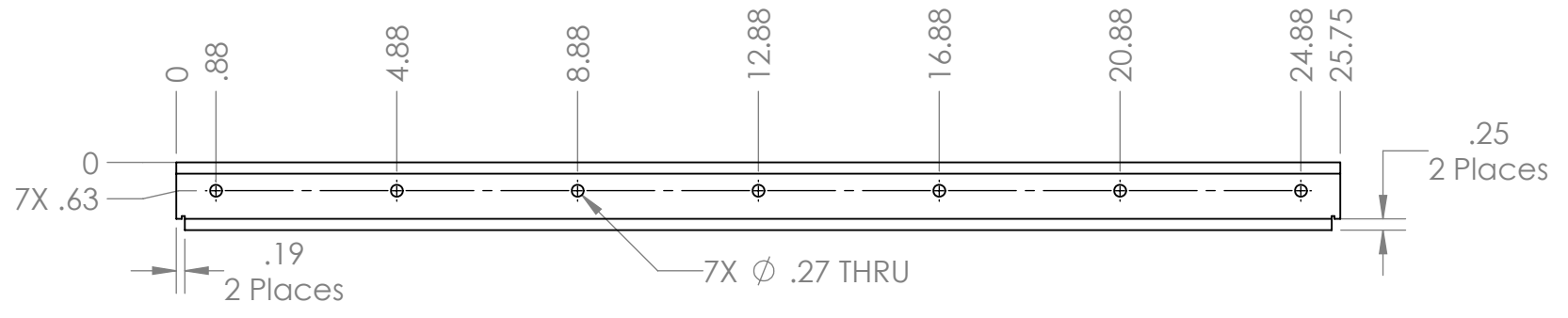
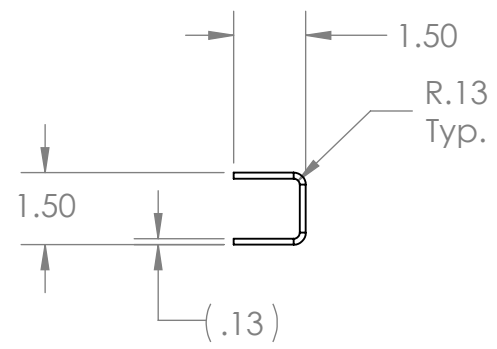
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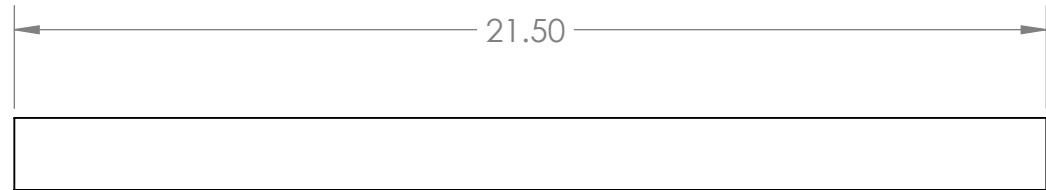
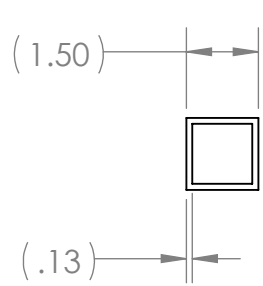
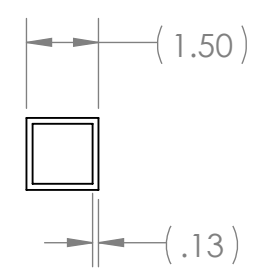
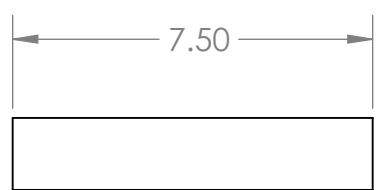
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Item 1: GE-18006-01  
 Quantity: 2  
 Material: 1/8" Thick, 5052 Aluminum Sheet

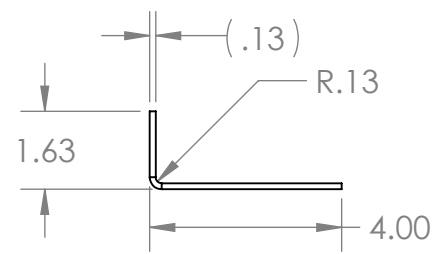
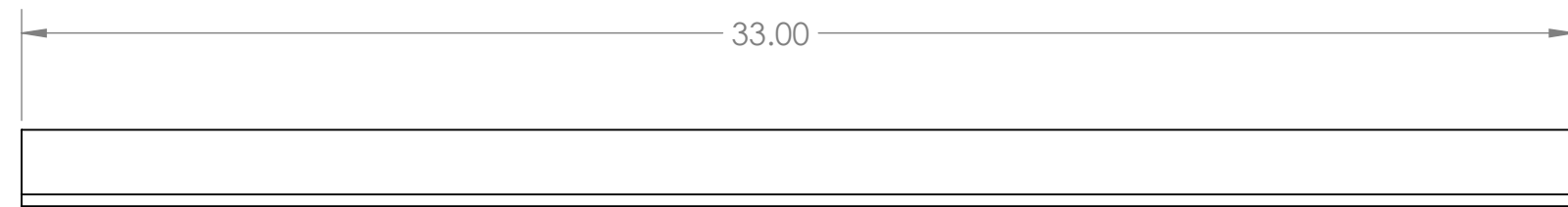
B

B



Item 2: GE-18006-02  
 Quantity: 4  
 Material 1-1/2" x .125" thick. Square Tubing, 6063 Aluminum

Item 3: GE 18006-03  
 Quantity: 4  
 Material 1-1/2" x .125" thick. Square Tubing, 6063 Aluminum



Item 4: GE18006-04  
 Quantity: 2  
 Material: 1/8" Thick, 5052 Aluminum Sheet

A

A

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



TITLE: <b>Roller Base</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18006</b>	REV
SCALE: 1:8	WEIGHT:	SHEET 3 OF 3

4

3

2

1

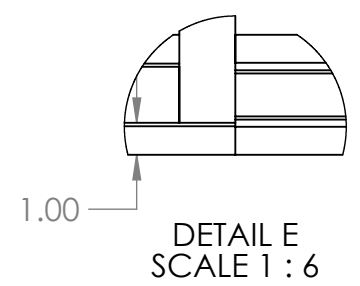
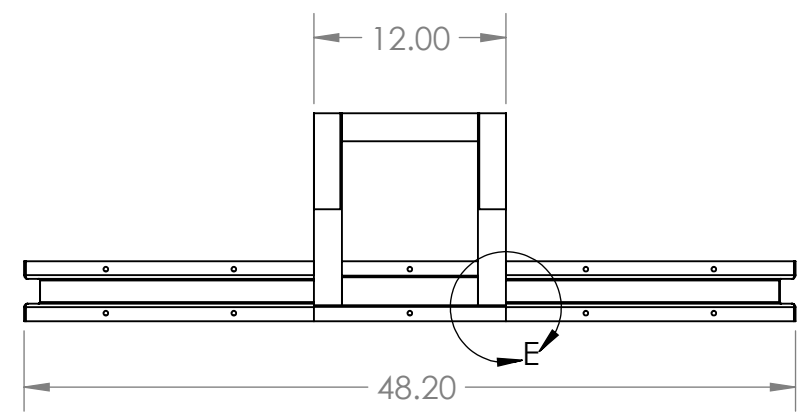
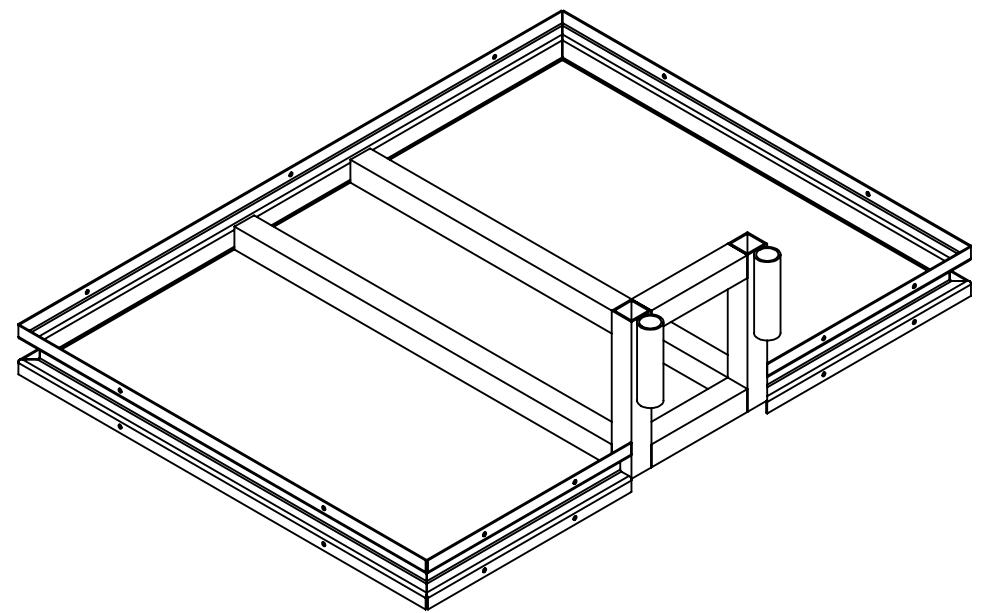
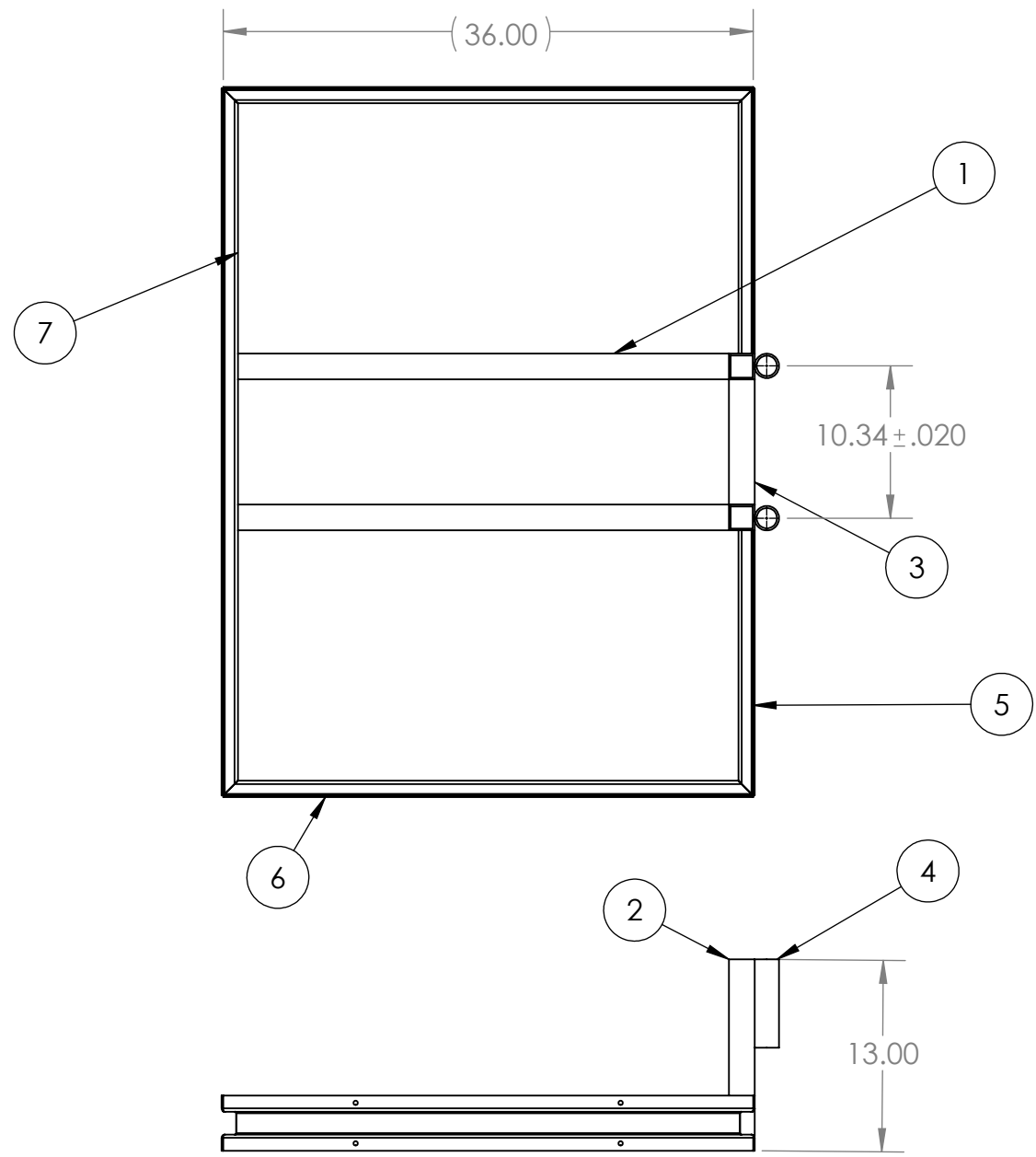
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
2-B1	A	Weld note added	12/7/2017	CPO



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18007-1	1.75" x .125" thk. Square Tube, 6063 Aluminum	2
2	GE-18007-2	1.75" x .125" thk. Square Tube, 6063 Aluminum	2
3	GE-18007-3	1.75" x .125" Thk. Square Tube, 6063 Aluminum	2
4	GE-18007-4	1.25" Schedule 40 Pipe, 6061 Aluminum	2
5	GE-18007-5	10 Gauge 5052 Aluminum Sheet	2
6	GE-18007-6	10 Gauge 5052 Aluminum Sheet	2
7	GE-18007-7	10 Gauge 5052 Aluminum Sheet	1

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

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

TITLE: **Scale Plate**

SIZE **B** DWG. NO. **GE-18007** REV **A**

SCALE: 1:12 WEIGHT: SHEET 1 OF 7

4

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B

B

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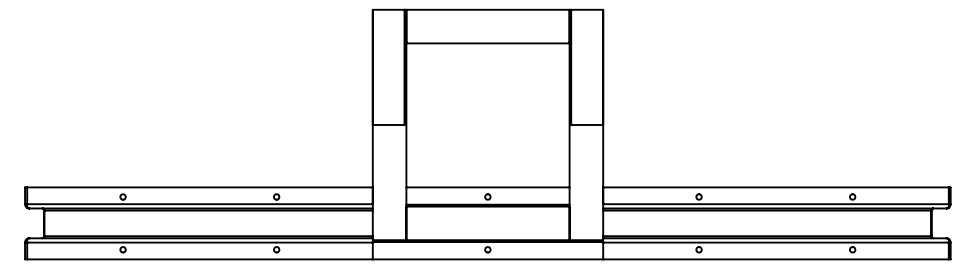
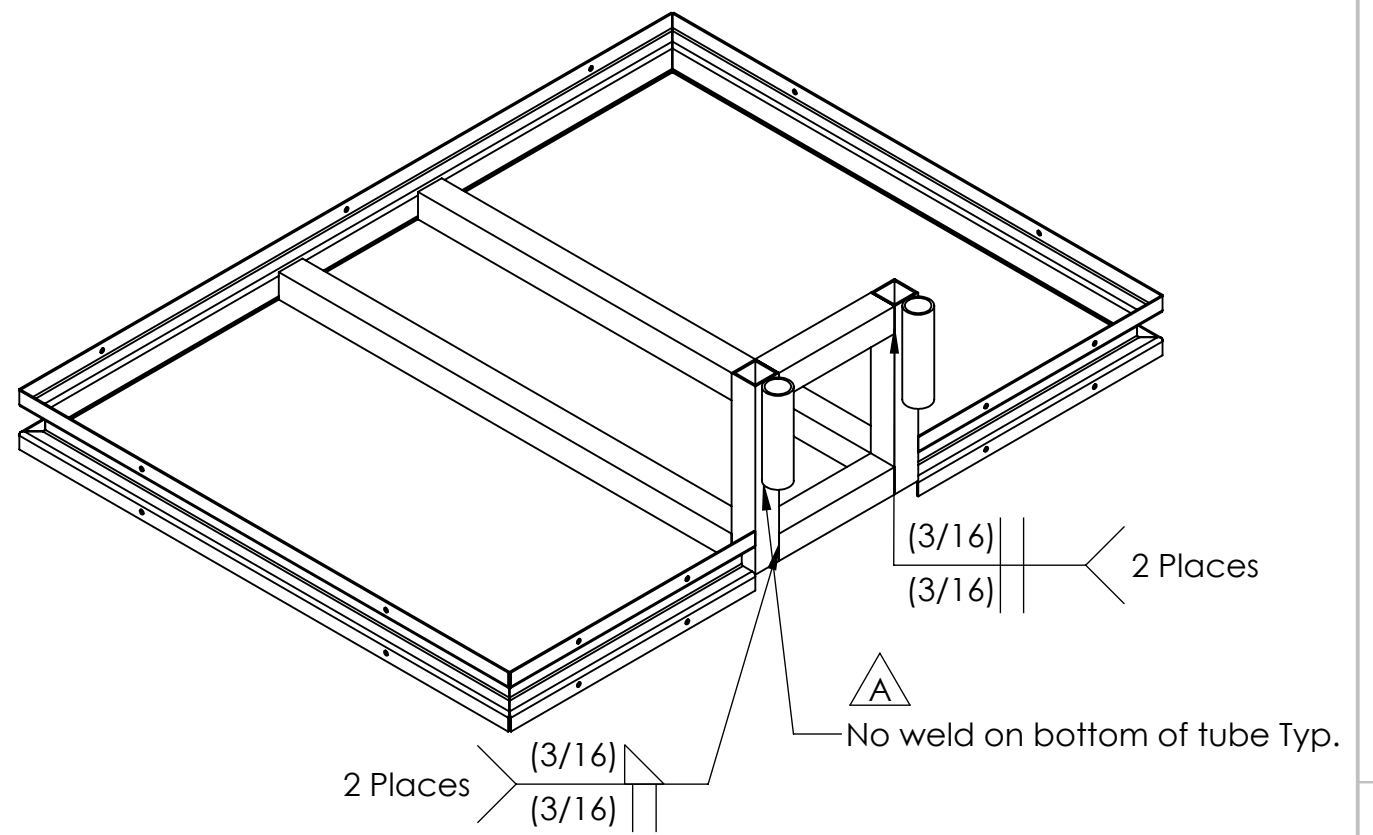
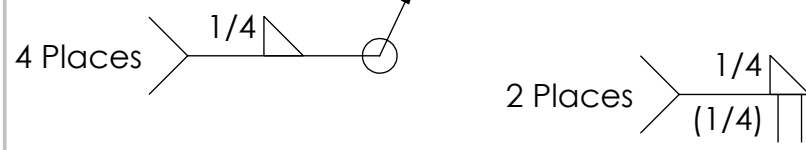
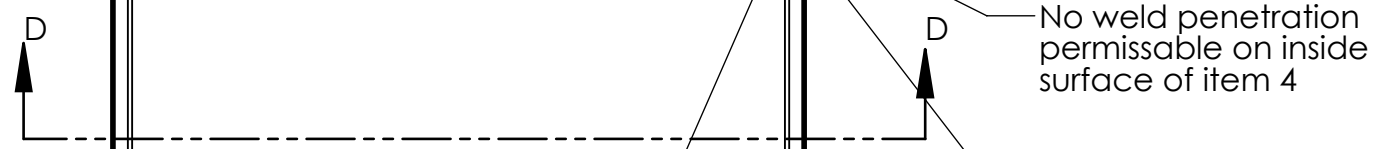
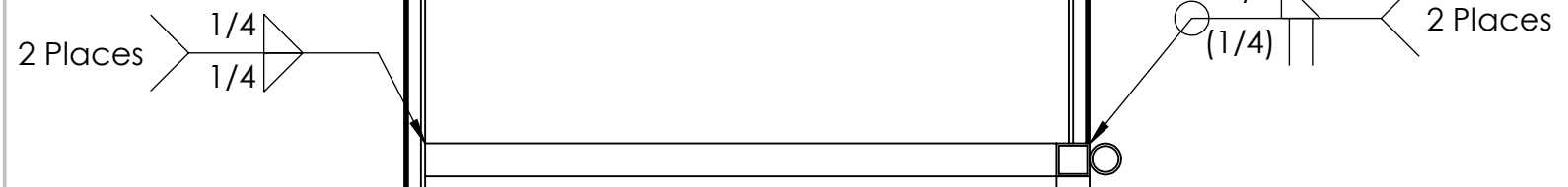
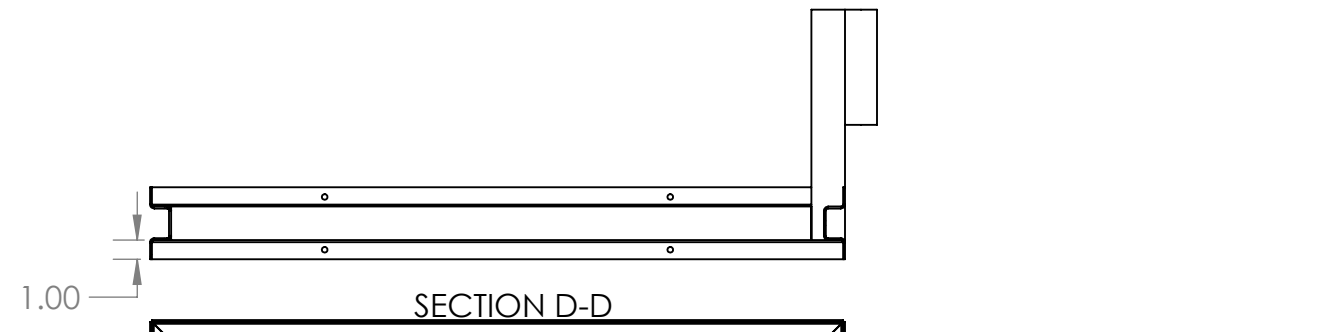
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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES		DRAWN	
		TOLERANCES:		CHECKED	
		FRACTIONAL ± 1/16		ENG APPR.	
		ANGULAR: MACH ± 1° BEND ± 1°		MFG APPR.	
		TWO PLACE DECIMAL ± .01		Q.A.	
		THREE PLACE DECIMAL ± .001		COMMENTS: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

TITLE:		<b>FIRST ROBOTICS COMPETITION</b>		<b>SOLIDWORKS</b> Modeling Solutions Partner	
<h1>Scale Plate</h1>					
SIZE	DWG. NO.	REV			
<b>B</b>	<b>GE-18007</b>	<b>A</b>			
SCALE: 1:10 WEIGHT:			SHEET 2 OF 7		

4

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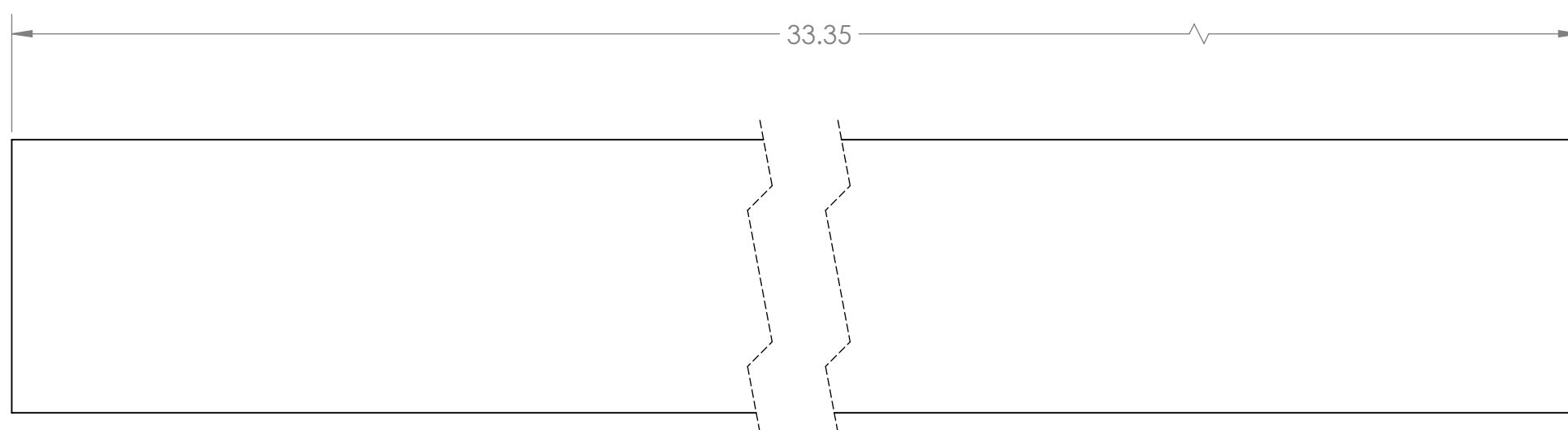
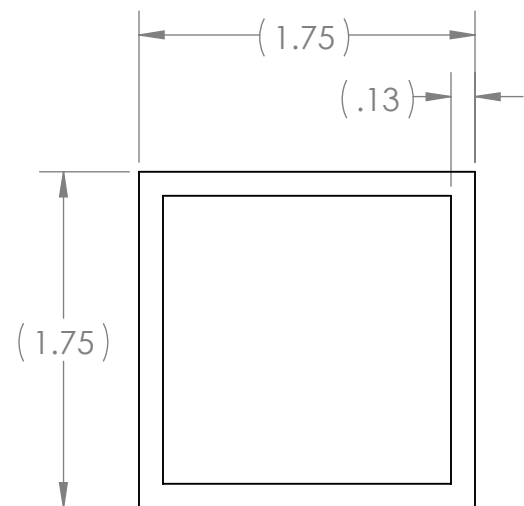
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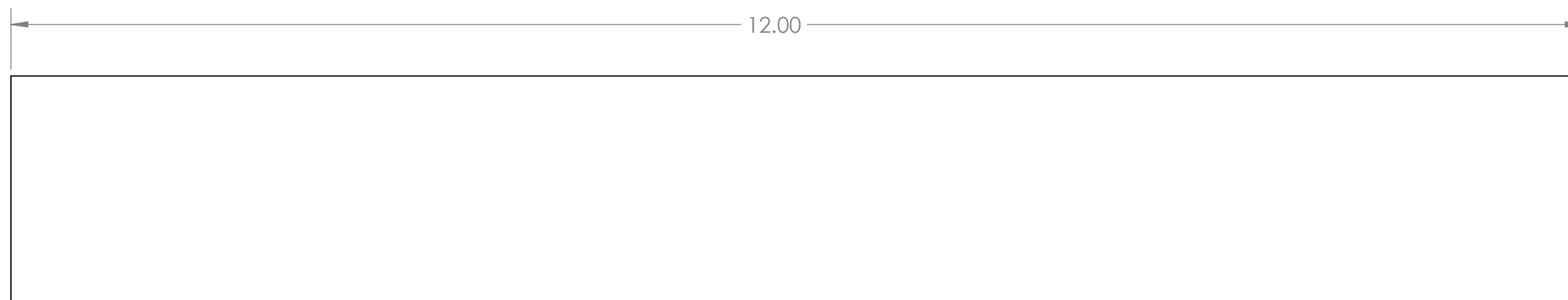
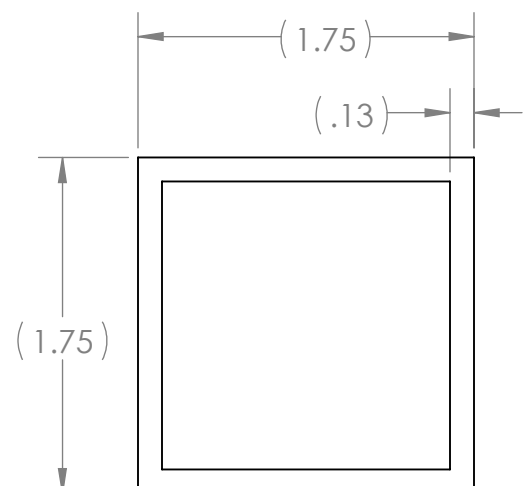
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 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 Scale 1:1  
 QTY: 2

B

B



A

A



Item: GE-18007-02  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 Scale 1:1  
 QTY: 2

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		TITLE:
		FRACTIONAL ±1/16	ENG APPR.		Scale Plate
		ANGULAR: MACH ±1° BEND ±1°	MFG APPR.		SIZE DWG. NO. REV
		TWO PLACE DECIMAL ±.01	Q.A.		B GE-18007 A
		THREE PLACE DECIMAL ±.001	COMMENTS:		SCALE: 1:1 WEIGHT: SHEET 3 OF 7
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			

4

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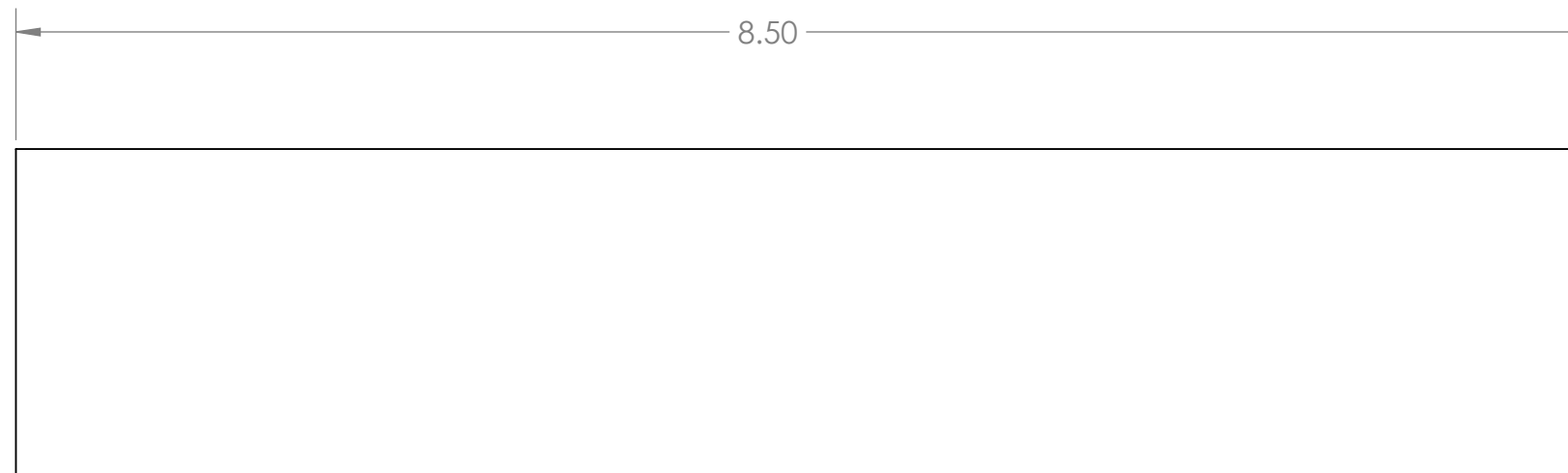
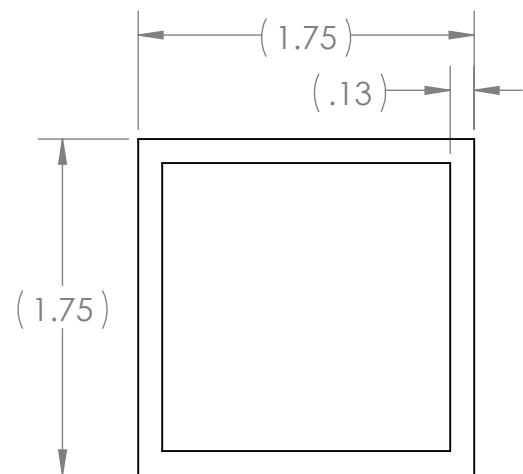
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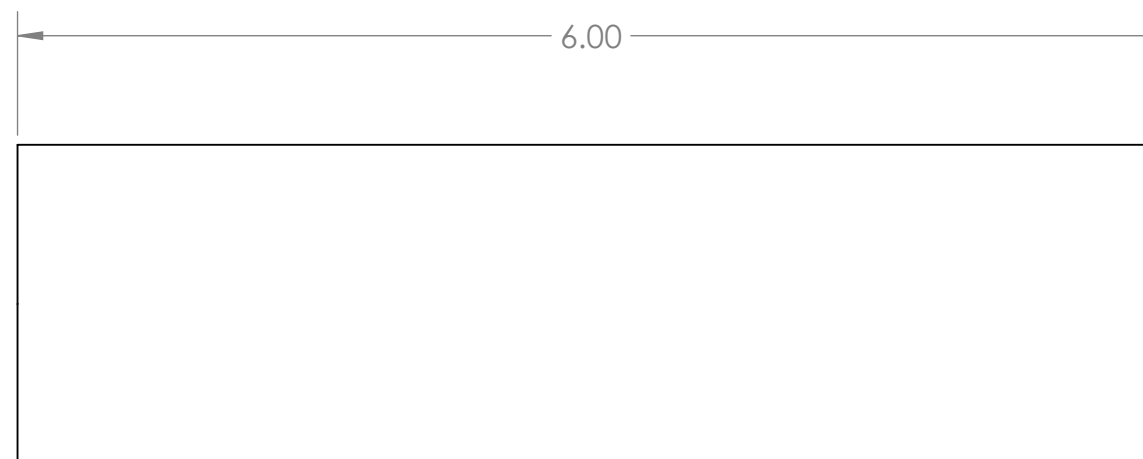
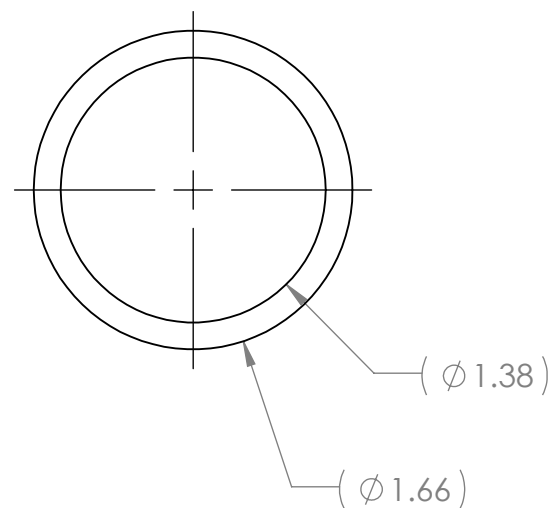
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2

1





Item: GE-18007-03  
 Material 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 Scale 1:1  
 QTY: 2



Item: GE-18007-04  
 Material: 1.25" Schedule 40 Pipe, 6061 Aluminum  
 Scale 1:1  
 QTY: 2

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		SIZE <b>B</b> DWG. NO. <b>GE-18007</b> REV <b>A</b> SCALE: 1:1 WEIGHT: SHEET 4 OF 7
		MATERIAL	ENG APPR.		
NEXT ASSY	USED ON	FINISH	MFG APPR.		
APPLICATION		DO NOT SCALE DRAWING	Q.A.		
			COMMENTS:		

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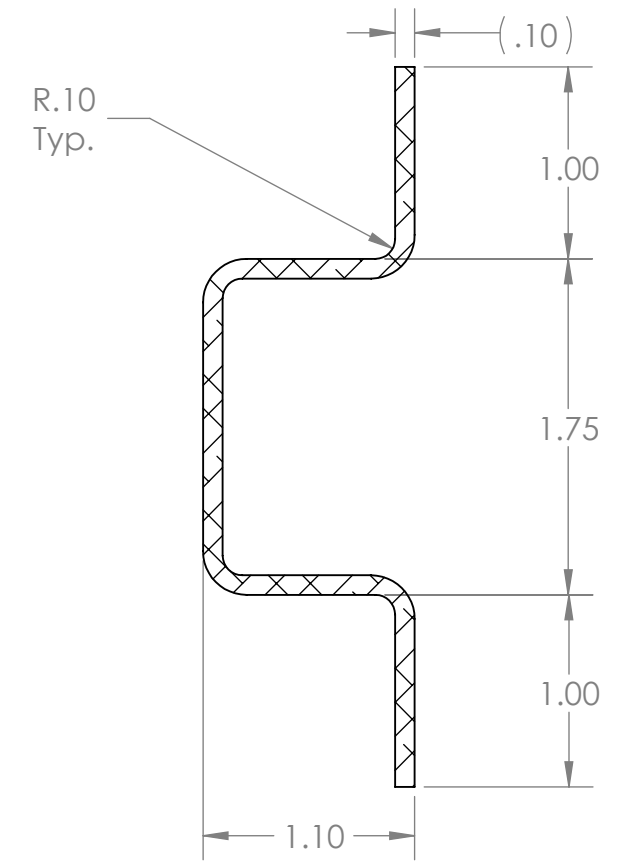
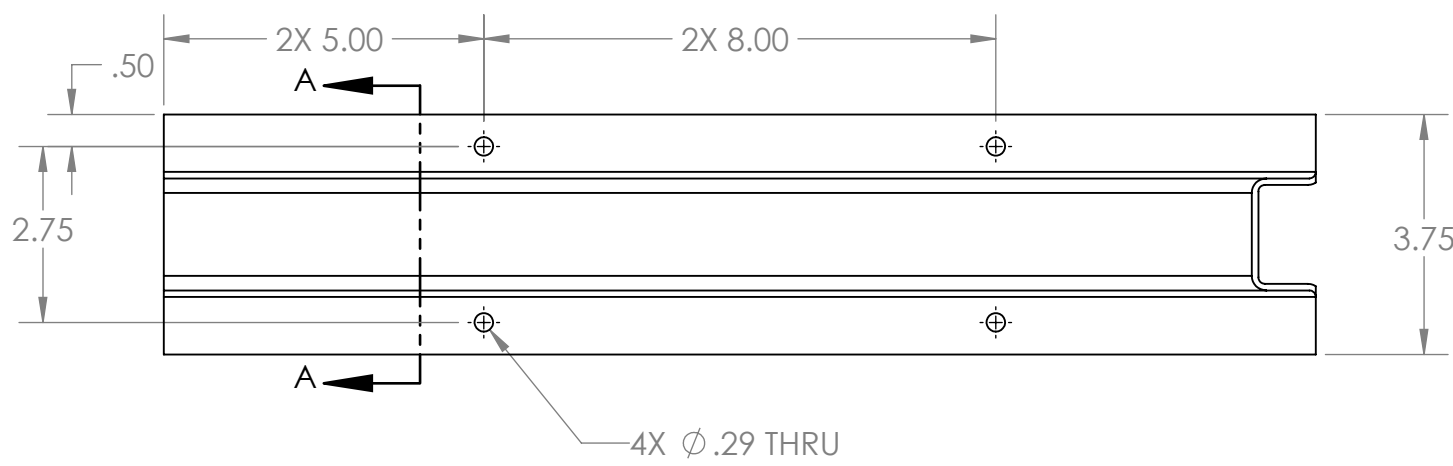
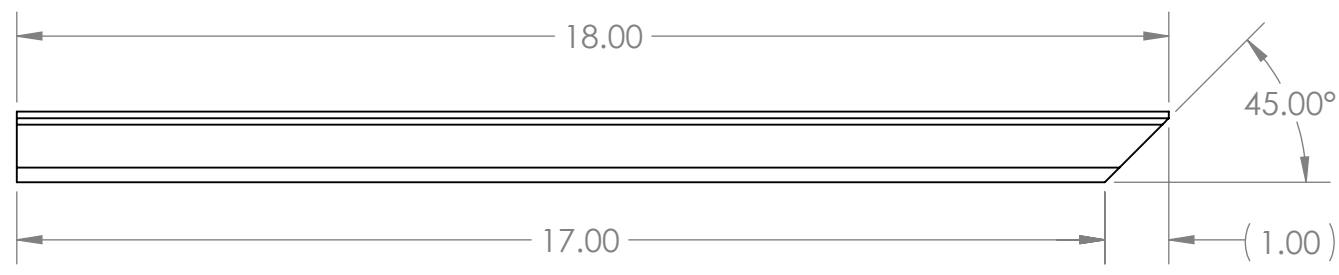
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B





SECTION A-A  
SCALE 1:1

Item: GE-18007-05  
 Material: 10 Gauge 5052 Aluminum Sheet  
 Scale 1:3  
 Qty: 2

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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			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			

TITLE:

# Scale Plate

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18007</b>	<b>A</b>
SCALE: 1:3	WEIGHT:	SHEET 5 OF 7

4

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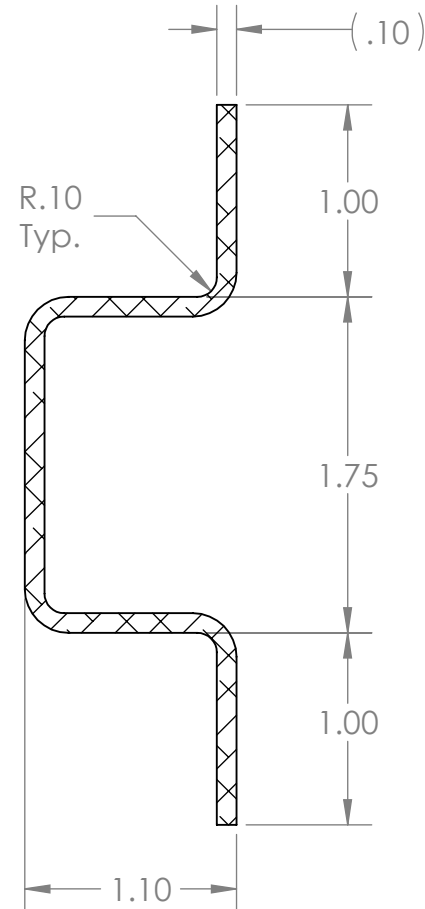
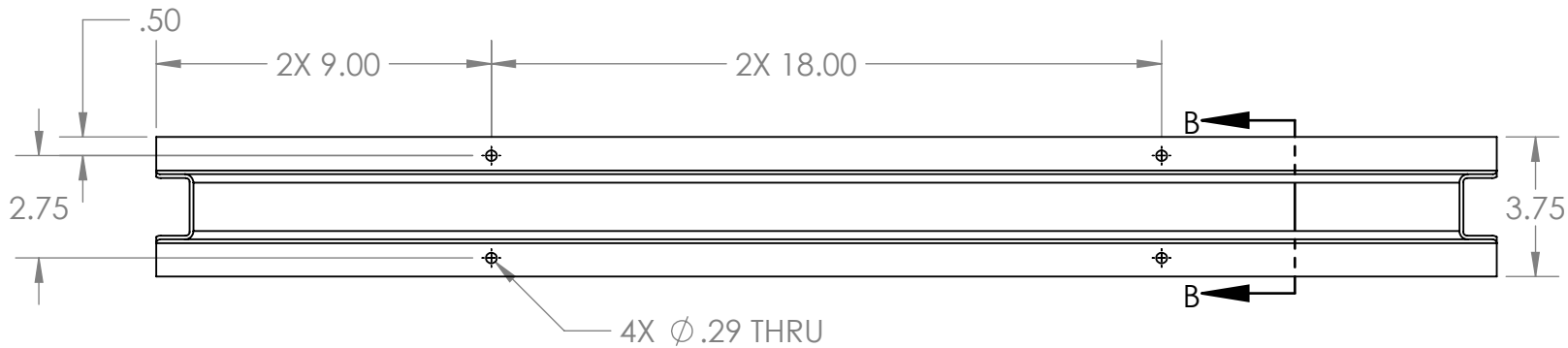
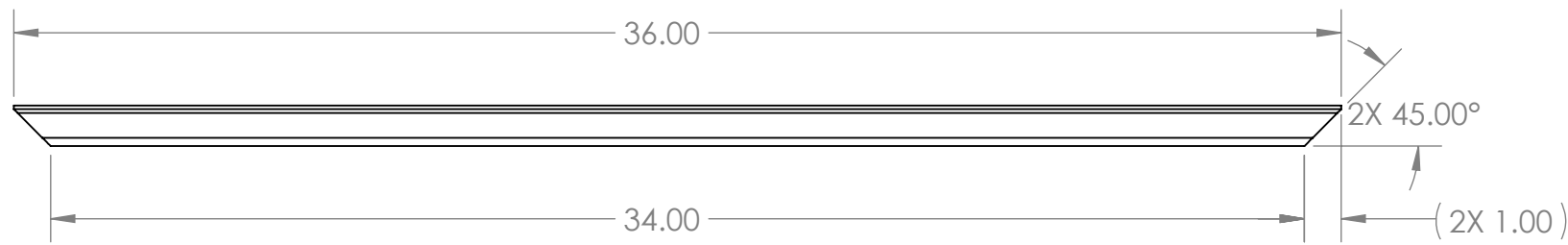
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2

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B

B



Item: GE-18007-06  
 Material: 10 Gauge 5052 Aluminum Sheet  
 Scale 1:5  
 Qty: 2

A

A

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



TITLE: <b>Scale Plate</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18007</b>	REV <b>A</b>
SCALE: 1:5	WEIGHT:	SHEET 6 OF 7

4

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2

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4

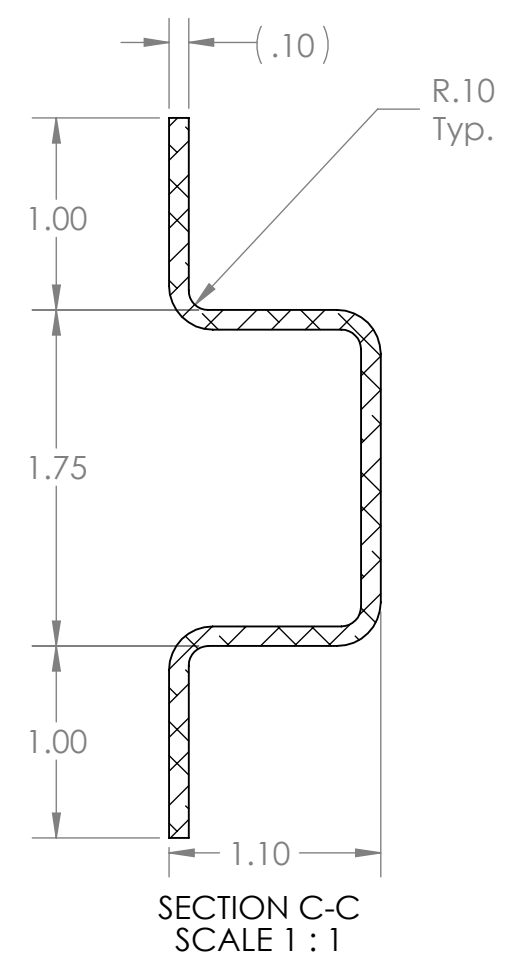
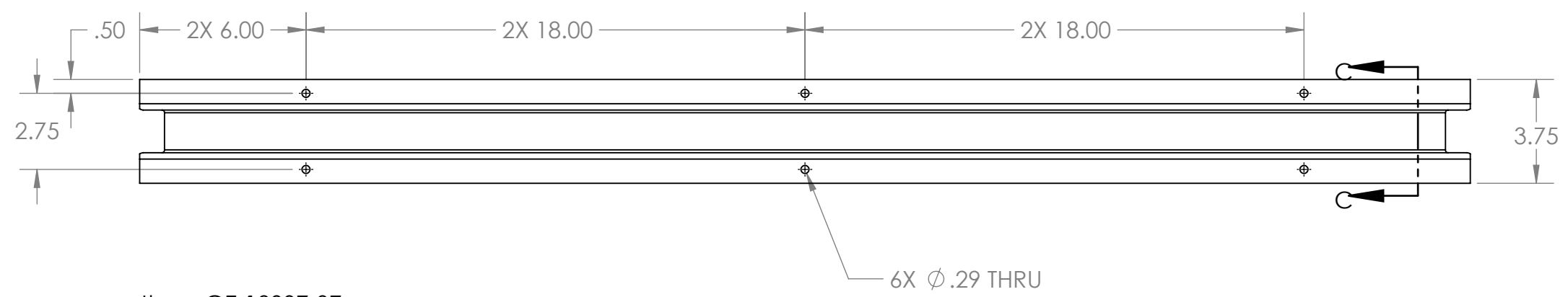
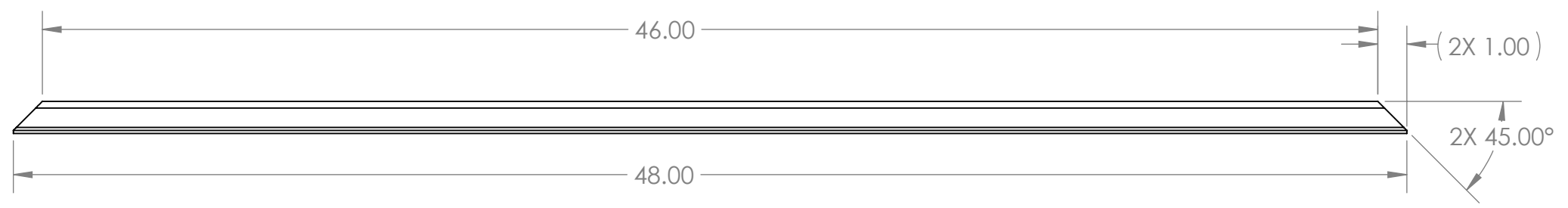
3

2

1

B

B



Item: GE-18007-07  
 Material: 10 Gauge 5052 Aluminum Sheet  
 Scale 1:5  
 Qty: 1

A

A

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



TITLE: <b>Scale Plate</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18007</b>	REV <b>A</b>
SCALE: 1:5	WEIGHT:	SHEET 7 OF 7

4

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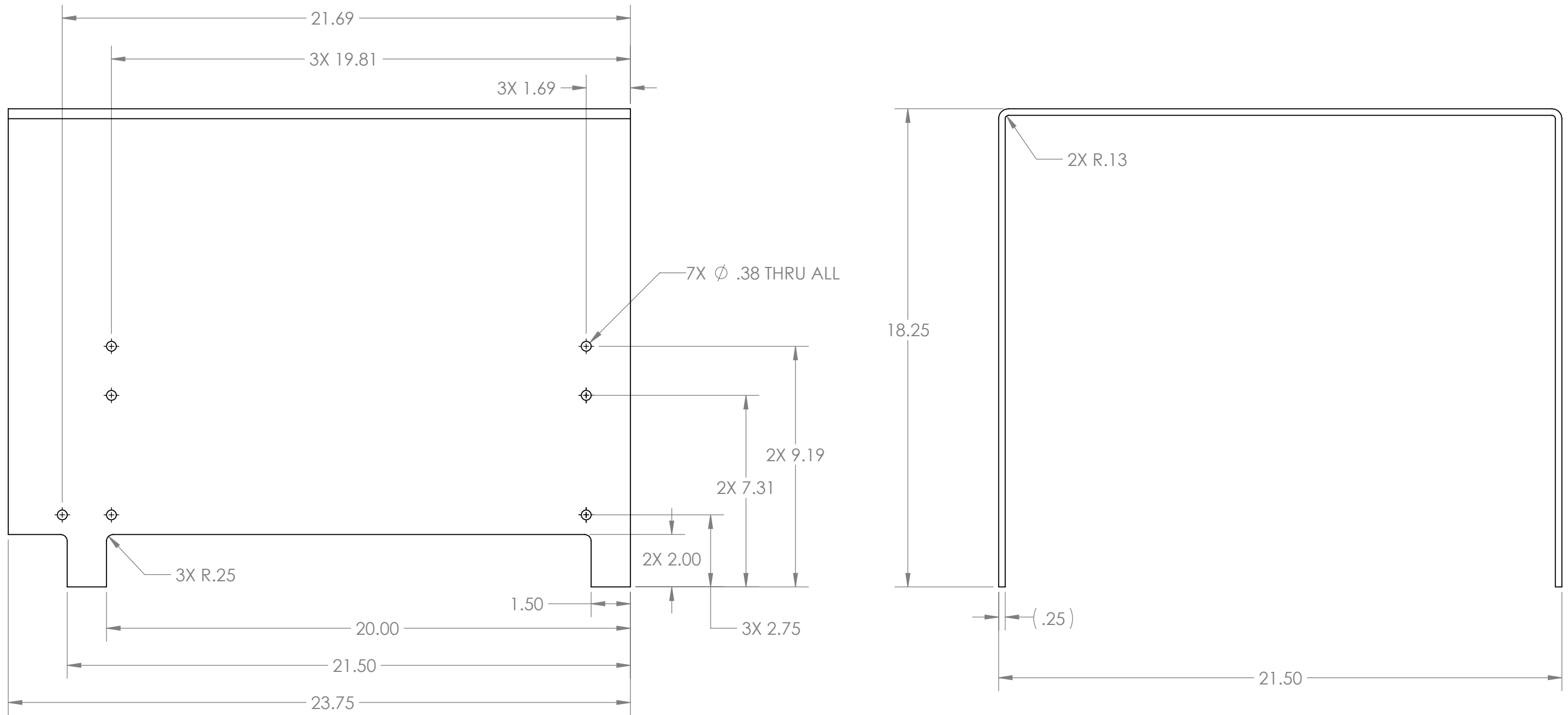
1

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- Notes:
1. Material: 1/4" thk. clear polycarbonate
  2. Remove all burrs and sharp edges

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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			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			

 		
TITLE: <b>Roller Tunnel</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18008</b>	REV
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

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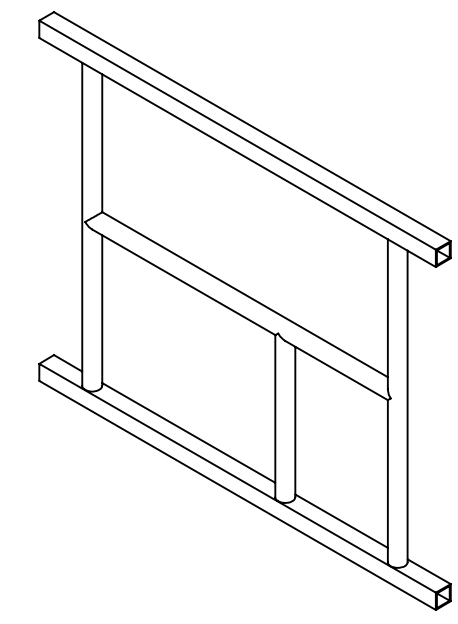
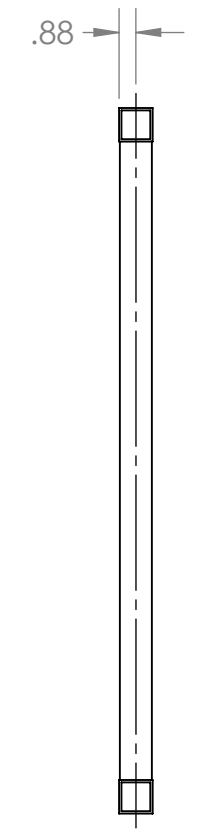
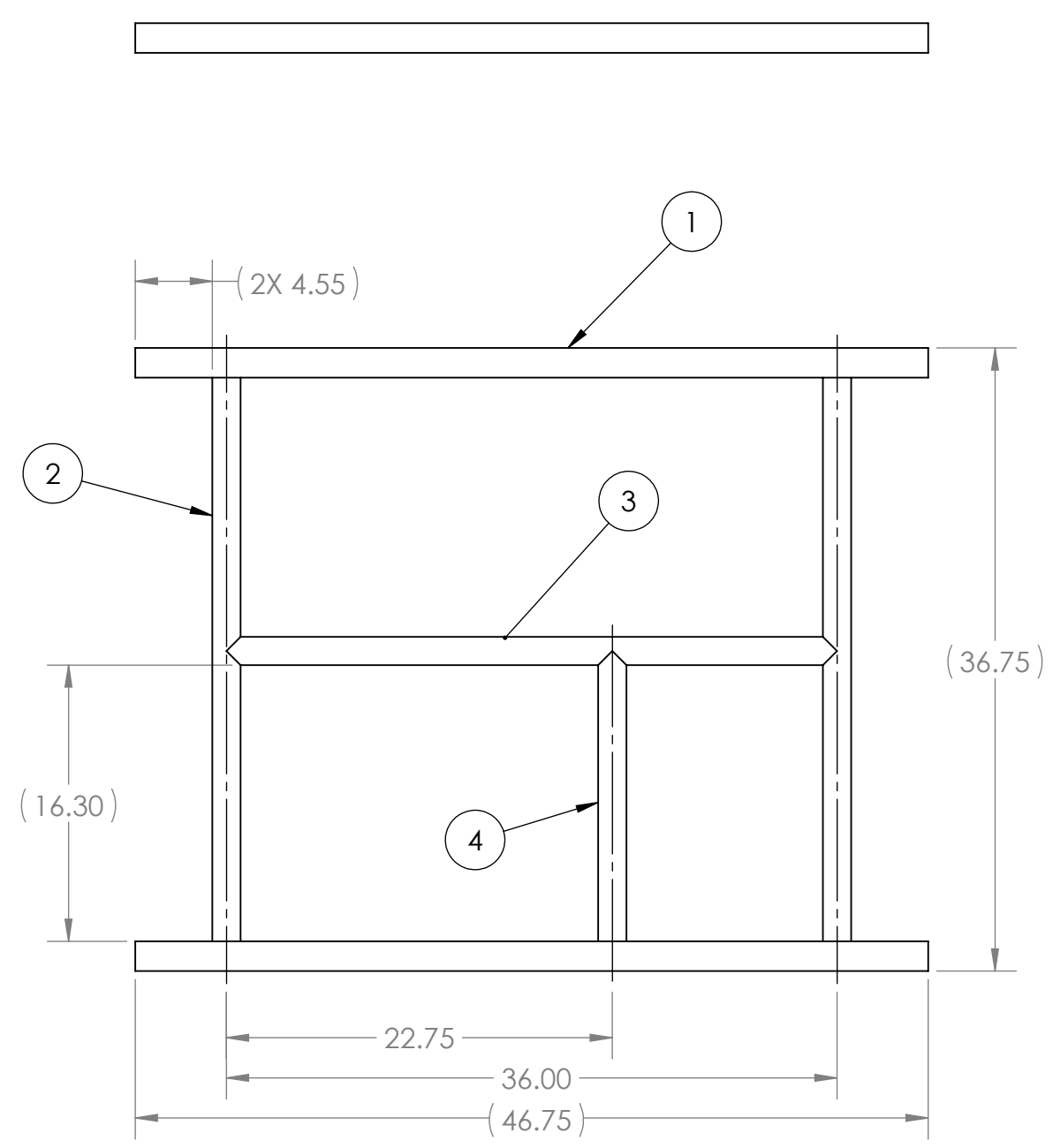
1

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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18009-01	1.75" x .125" thk. Square Tube, 6063 Aluminum	2
2	GE-18009-02	1-1/4" Schedule 40 Pipe, 6061 Aluminum	2
3	GE-18009-03	1-1/4" Schedule 40 Pipe, 6061 Aluminum	1
4	GE-18009-04	1-1/4" Schedule 40 Pipe, 6061 Aluminum	1

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



TITLE:  
**Exchange Frame**

SIZE DWG. NO. REV  
**B** **GE-18009**

SCALE: 1:10 WEIGHT: SHEET 1 OF 3

4

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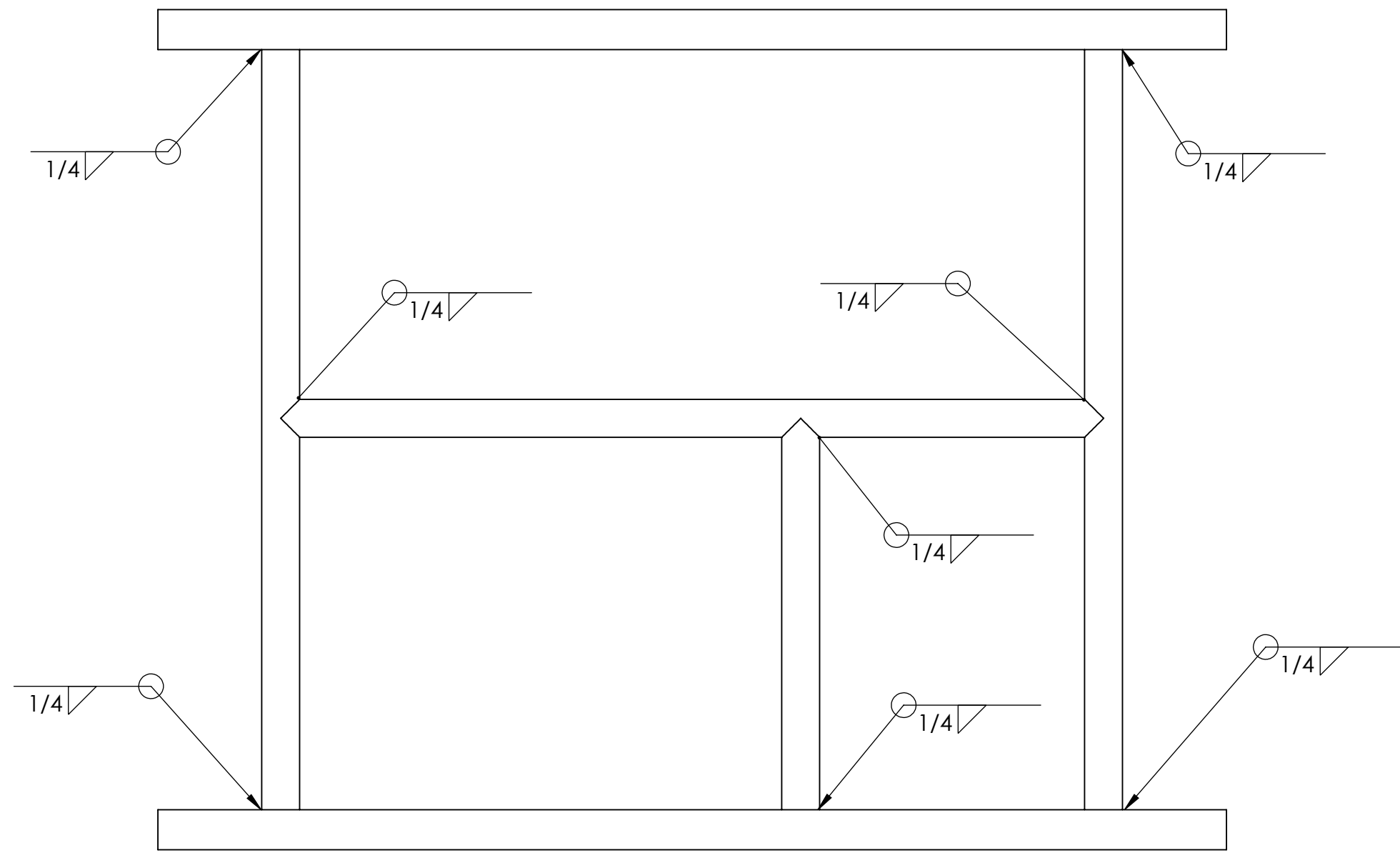
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UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES		DRAWN	
TOLERANCES:		CHECKED	
FRACTIONAL ±1/16		ENG APPR.	
ANGULAR: MACH ±1° BEND ±1°		MFG APPR.	
TWO PLACE DECIMAL ±.01		Q.A.	
THREE PLACE DECIMAL ±.001		COMMENTS:	
INTERPRET GEOMETRIC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

TITLE: **Exchange Frame**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18009</b>	

SCALE: 1:10 WEIGHT: SHEET 2 OF 3

4

3

2

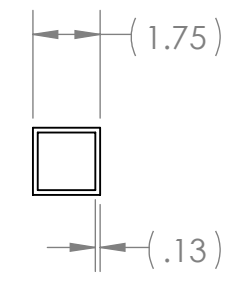
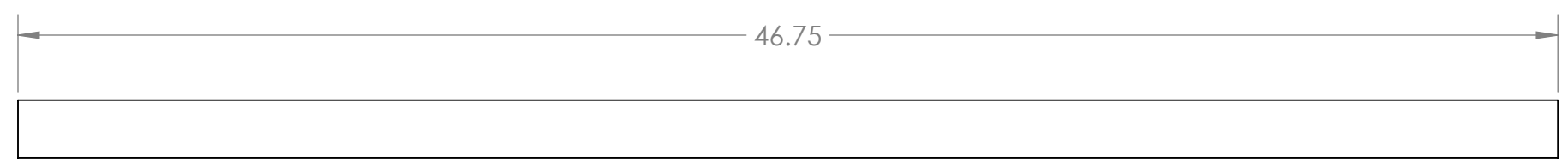
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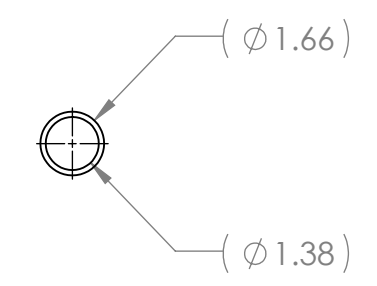
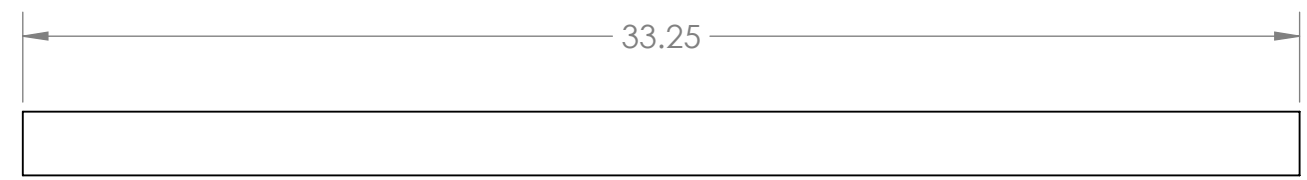
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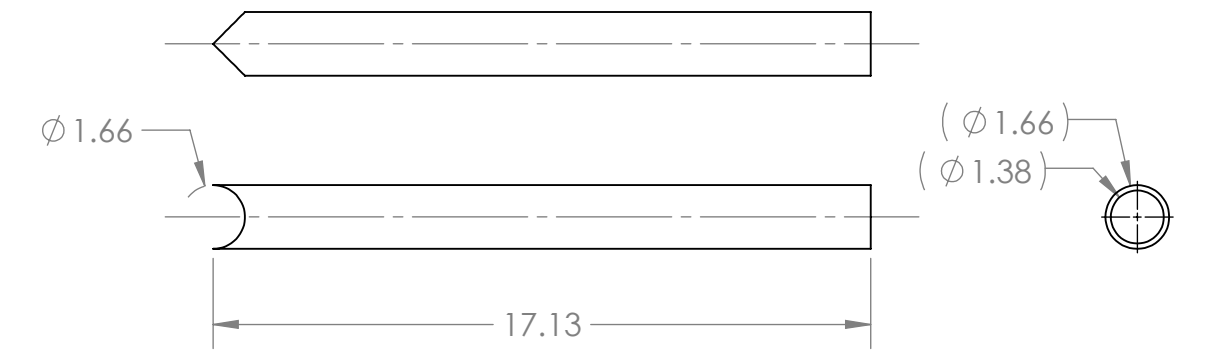
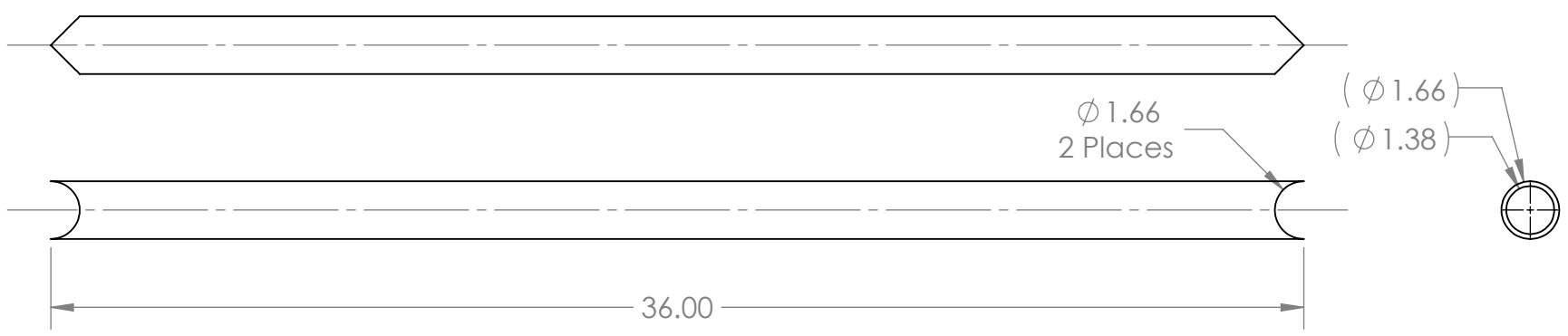
Item: GE-18009-01  
 Quantity: 2  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum

B

B



Item: GE-18009-02  
 Quantity: 2  
 Material: 1-1/4" Schedule 40 Pipe, 6061 Aluminum



Item: GE-18009-03  
 Quantity: 1  
 Material: 1-1/4" Schedule 40 Pipe, 6061 Aluminum

Item: GE-18009-04  
 Quantity: 1  
 Material: 1-1/4" Schedule 40 Pipe, 6061 Aluminum

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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: <b>Exchange Frame</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18009</b>	REV
SCALE: 1:5	WEIGHT:	SHEET 3 OF 3

4

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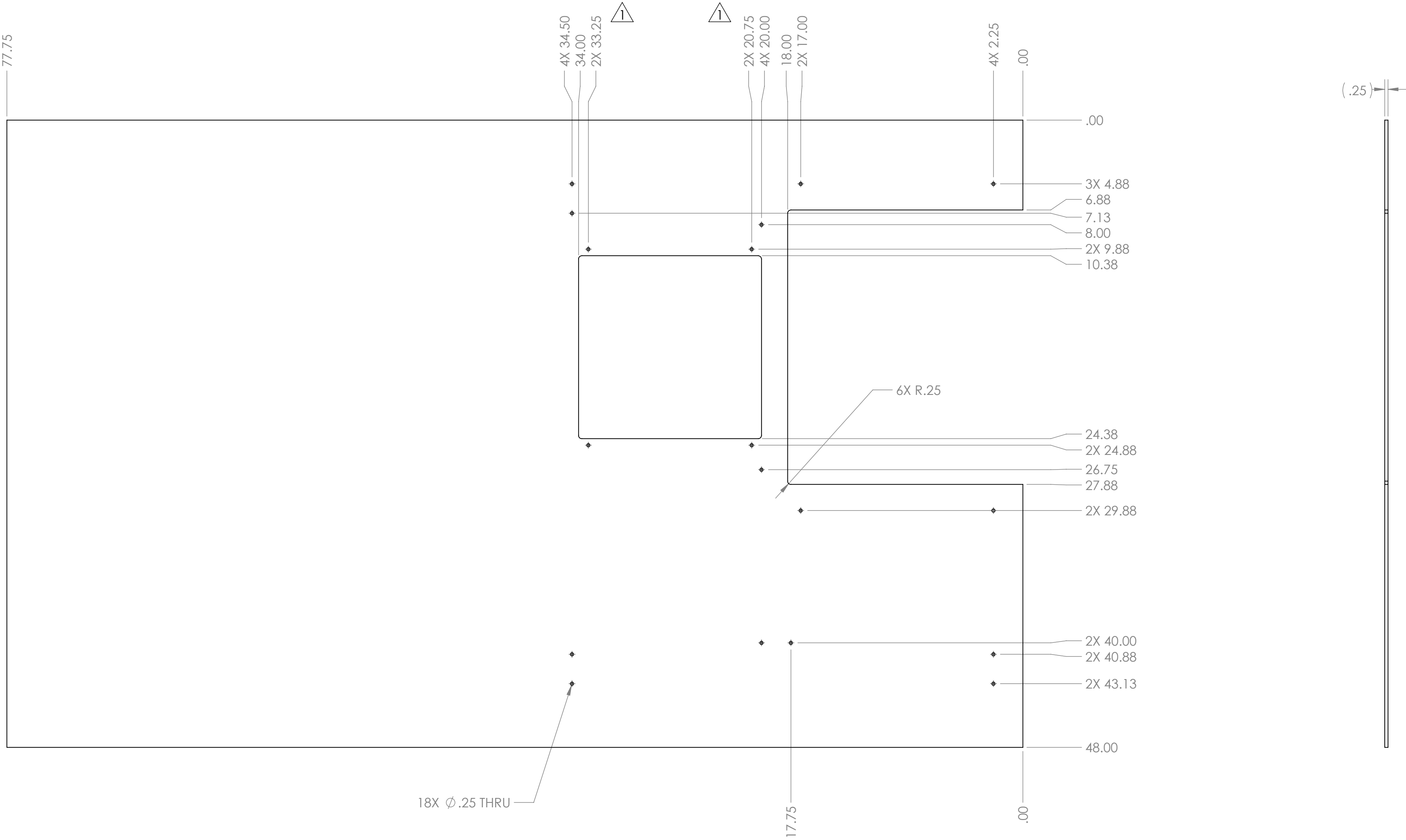
4

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REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
D2, D3	1	33.25 was 33.75, 20.75 was 20.25	10/30/17	DAF



- Notes:
1. Material: 1/4" thk. clear polycarbonate
  2. Remove all burrs and sharp edges

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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			

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

TITLE: **Exchange Plastic**

SIZE	DWG. NO.	REV
<b>C</b>	<b>GE-18010</b>	<b>1</b>
SCALE: 1:6	WEIGHT:	SHEET 1 OF 1

4

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C

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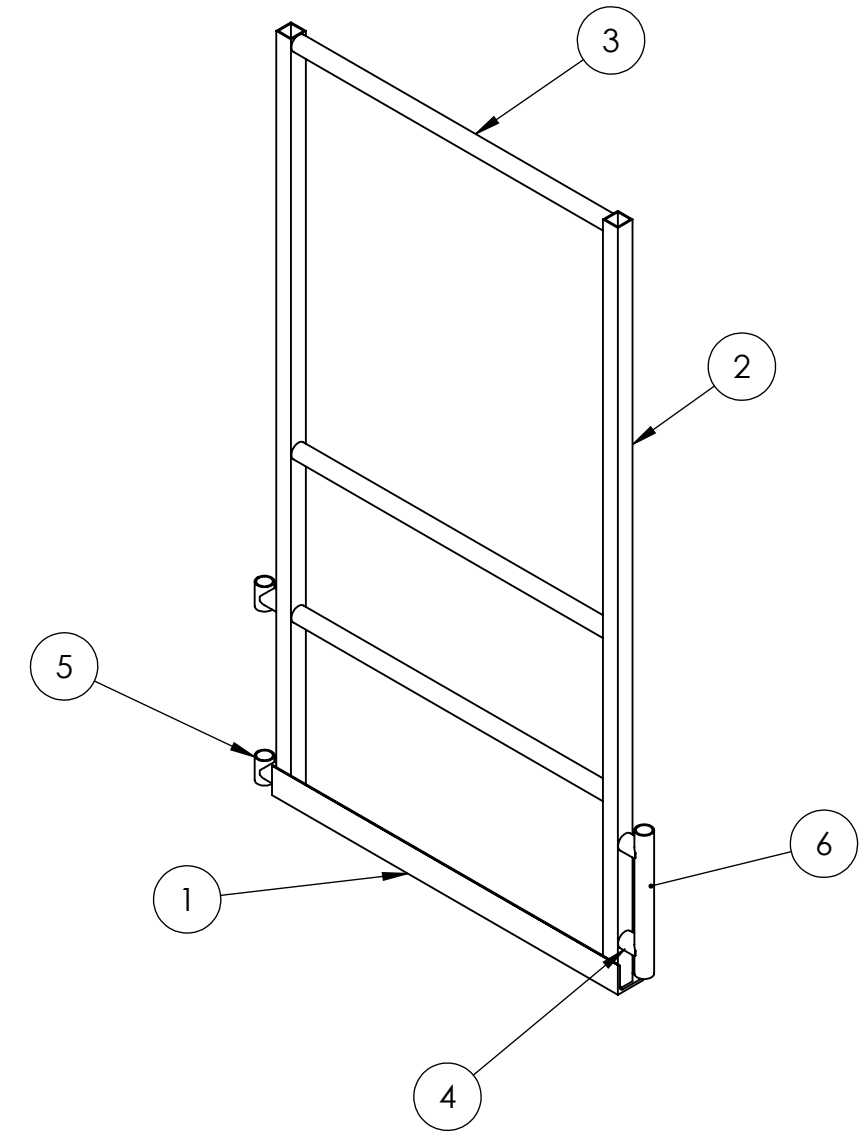
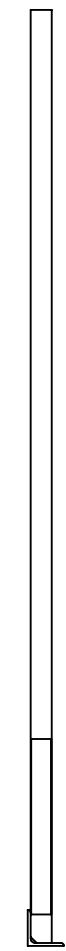
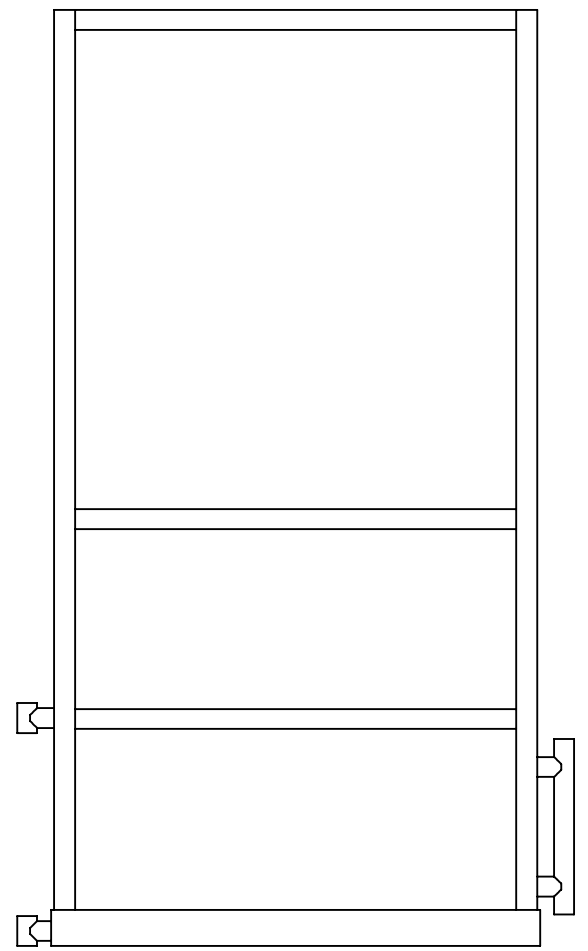
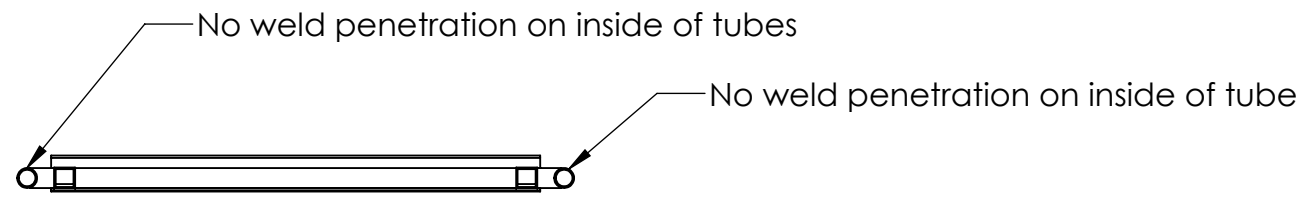


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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18011-01	3" x .25" thk. Angle, 6061 Aluminum	1
2	GE-18011-02	1.75" x .125" thk. Square Tube, 6061 Aluminum	2
3	GE-18011-03	1-1/4" Schedule 40 Pipe, 6061 Aluminum	3
4	GE-18011-04	1-1/4" Schedule 40 Pipe, 6061 Aluminum	4
5	GE-18011-05	1-1/4" Schedule 40 Pipe, 6061 Aluminum	2
6	GE-18011-06	1-1/4" Schedule 40 Pipe, 6061 Aluminum	1

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE
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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		
NEXT ASSY	USED ON	FINISH		
APPLICATION		DO NOT SCALE DRAWING		

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

TITLE:  
**Portal Frame - Left**

SIZE **B** DWG. NO. **GE-18011** REV

SCALE: 1:16 WEIGHT: SHEET 1 OF 3

4

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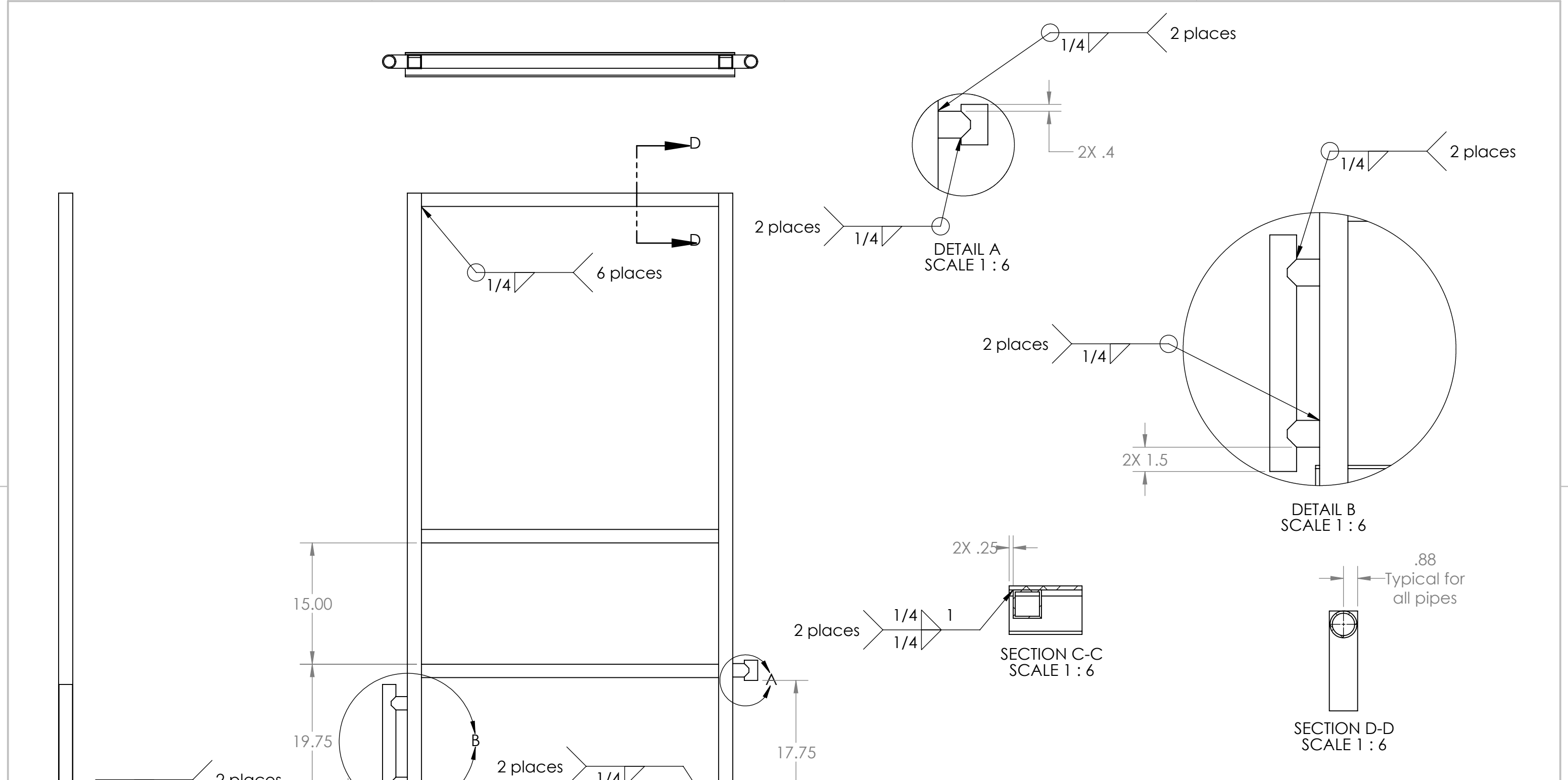
1

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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			

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

TITLE:  
**Portal Frame - Left**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18011</b>	

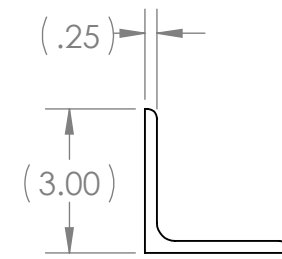
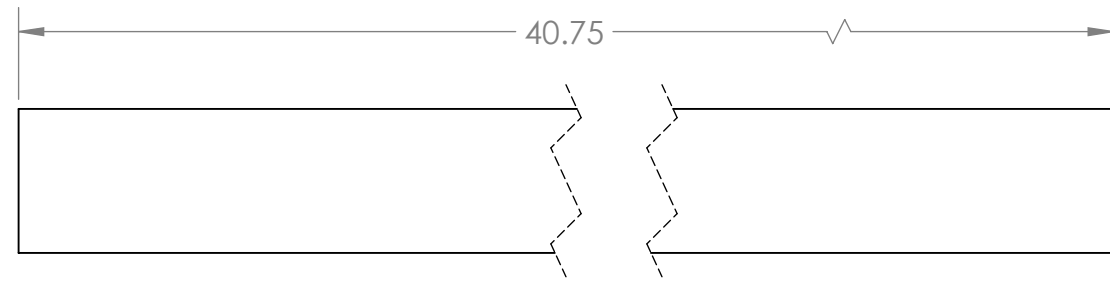
SCALE: 1:12 WEIGHT: SHEET 2 OF 3

4

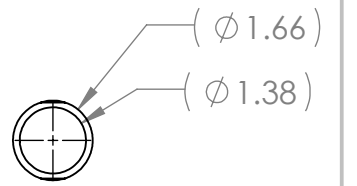
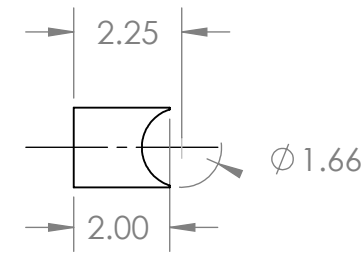
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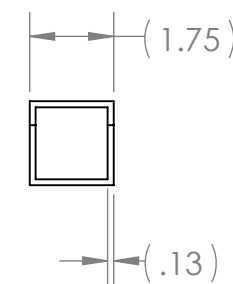
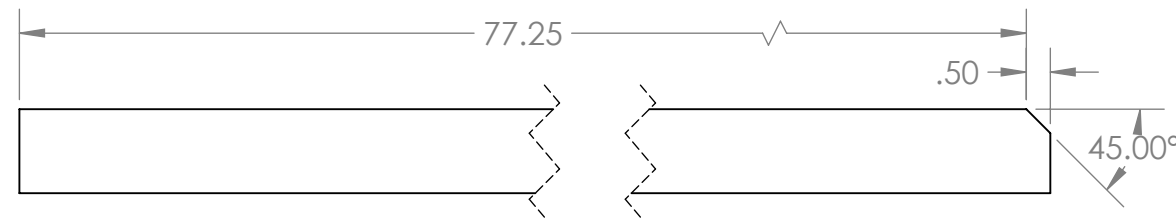
Item 1: GE-18011-01  
 Qty: 1  
 Material: 3" x .25" thk. Angle, 6061 Aluminum



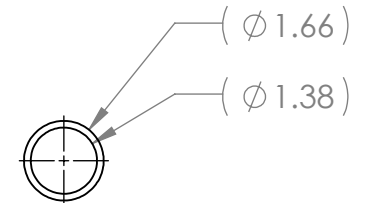
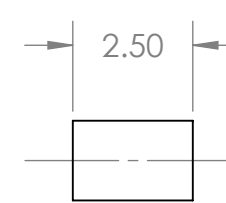
Item 1: GE-18011-04  
 Qty: 4  
 Material: 1-1/4" Schedule 40 Pipe, 6061 Aluminum

B

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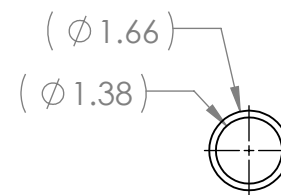
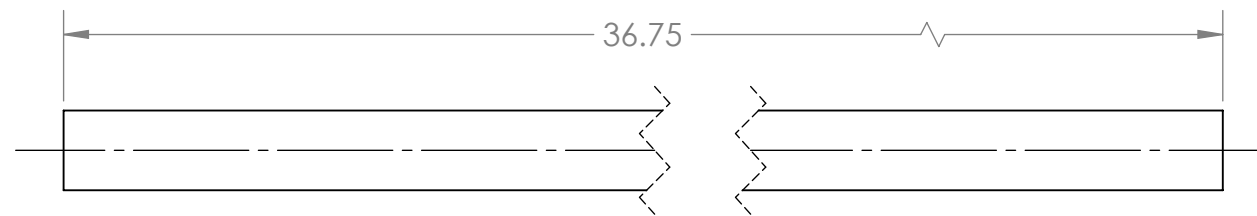
Item 1: GE-18011-02  
 Qty: 2  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum



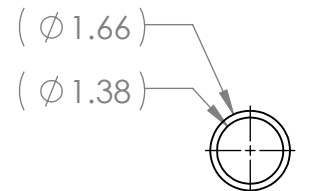
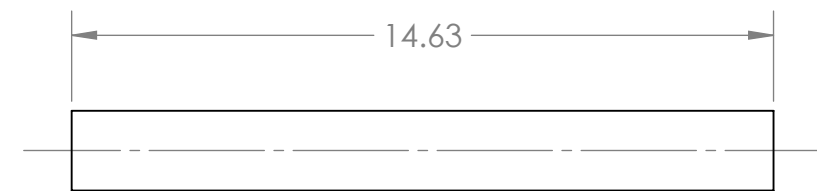
Item 1: GE-18011-05  
 Qty: 2  
 Material: 1-1/4" Schedule 40 Pipe, 6061 Aluminum

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Item 1: GE-18011-03  
 Qty: 3  
 Material: 1-1/4" Schedule 40 Pipe, 6061 Aluminum



Item 1: GE-18011-06  
 Qty: 1  
 Material: 1-1/4" Schedule 40 Pipe, 6061 Aluminum

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		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
		MATERIAL		ENG APPR.	
NEXT ASSY	USED ON	FINISH		MFG APPR.	
APPLICATION		DO NOT SCALE DRAWING		Q.A.	
				COMMENTS:	
				 	
				TITLE:	
				Portal Frame - Left	
SIZE	DWG. NO.			REV	
<b>B</b>	GE-18011				
SCALE: 1:4		WEIGHT:		SHEET 3 OF 3	

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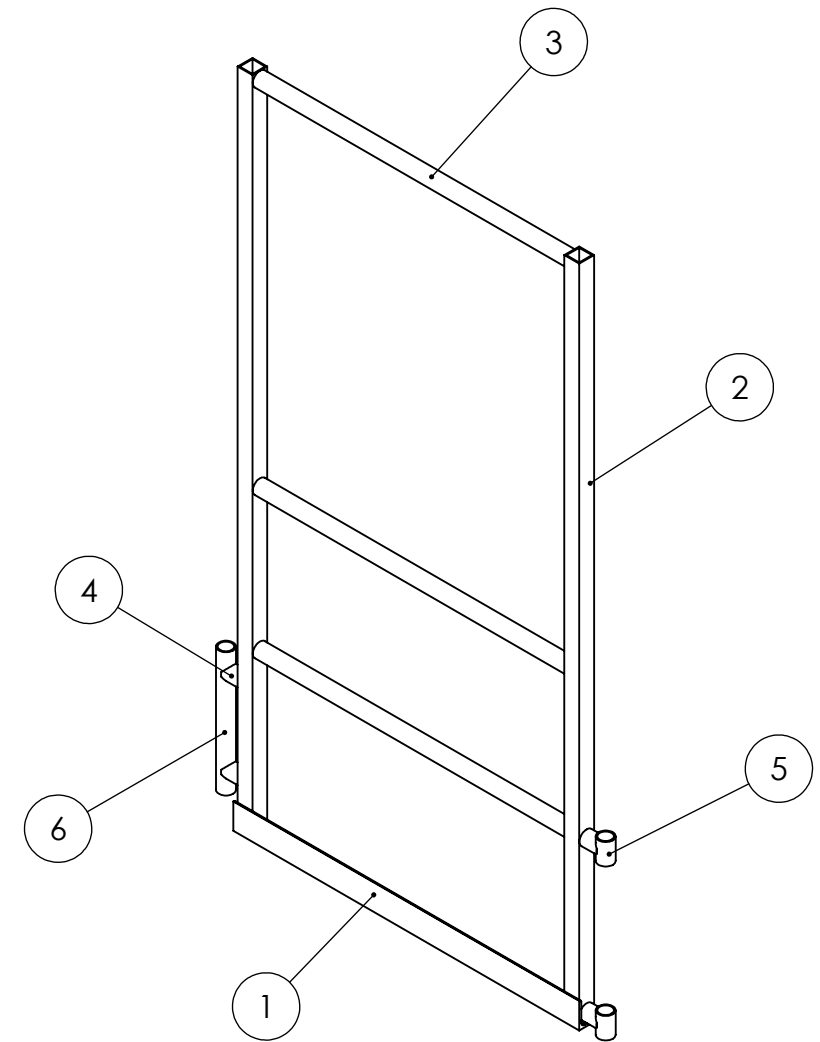
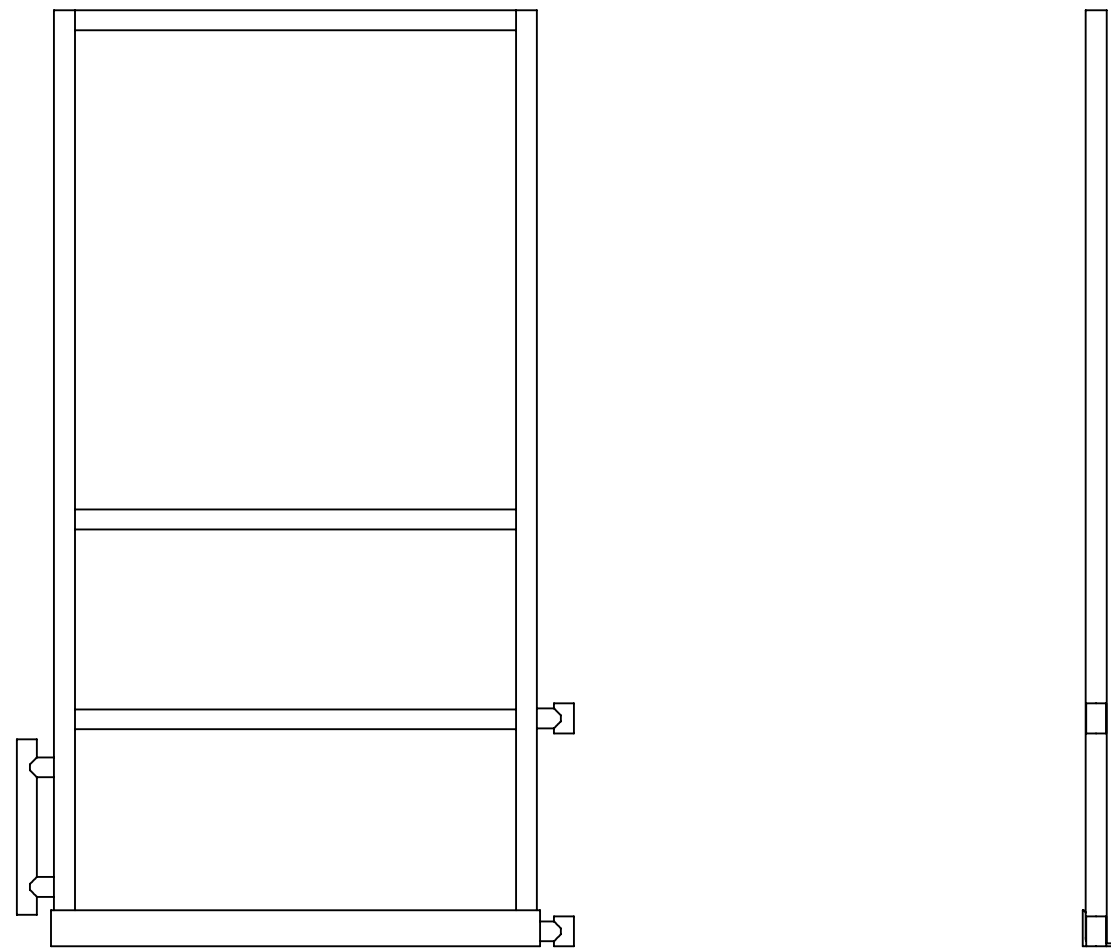
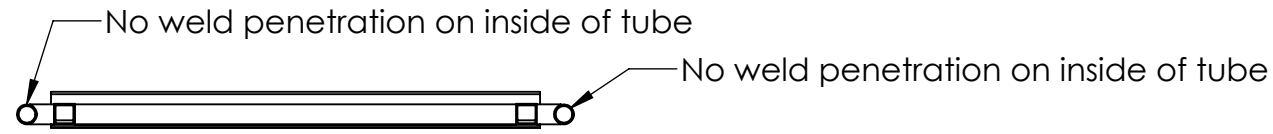
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18012-01	3" x .25" thk. Angle, 6061 Aluminum	1
2	GE-18012-02	1.75" x .125 thk. Square Tubing, 6061 Aluminum	2
3	GE-18012-03	1-1/4" Schedule 40 Pipe, 6061 Aluminum	3
4	GE-18012-04	1-1/4" Schedule 40 Pipe, 6061 Aluminum	4
5	GE-18012-05	1-1/4" Schedule 40 Pipe, 6061 Aluminum	2
6	GE-18012-06	1-1/4" Schedule 40 Pipe, 6061 Aluminum	1

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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	
		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
		MATERIAL		ENG APPR.	
		FINISH		MFG APPR.	
NEXT ASSY	USED ON			Q.A.	
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:	

TITLE:  
**Portal Frame - Right**

SIZE DWG. NO. REV  
**B GE-18012**

SCALE: 1:16 WEIGHT: SHEET 1 OF 3

4

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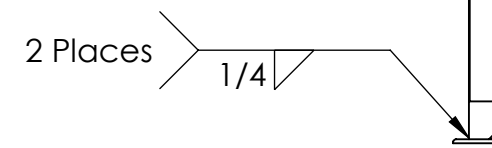
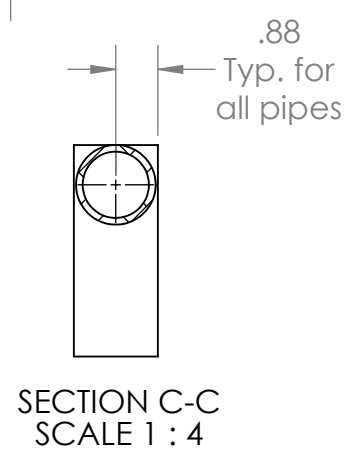
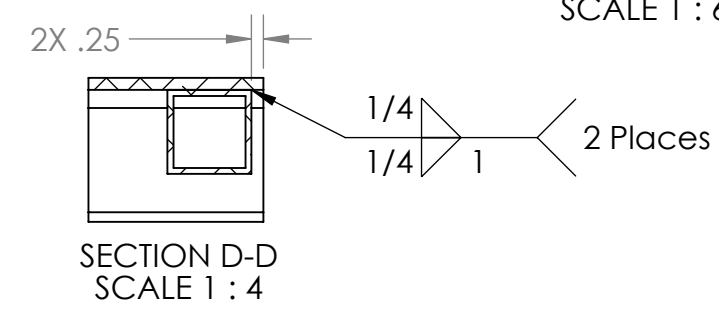
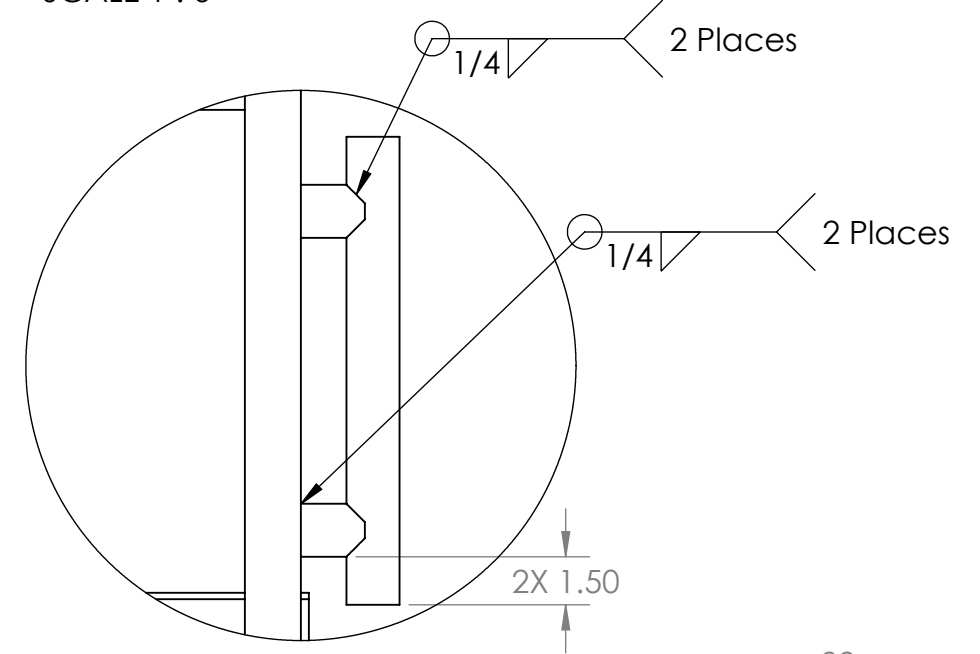
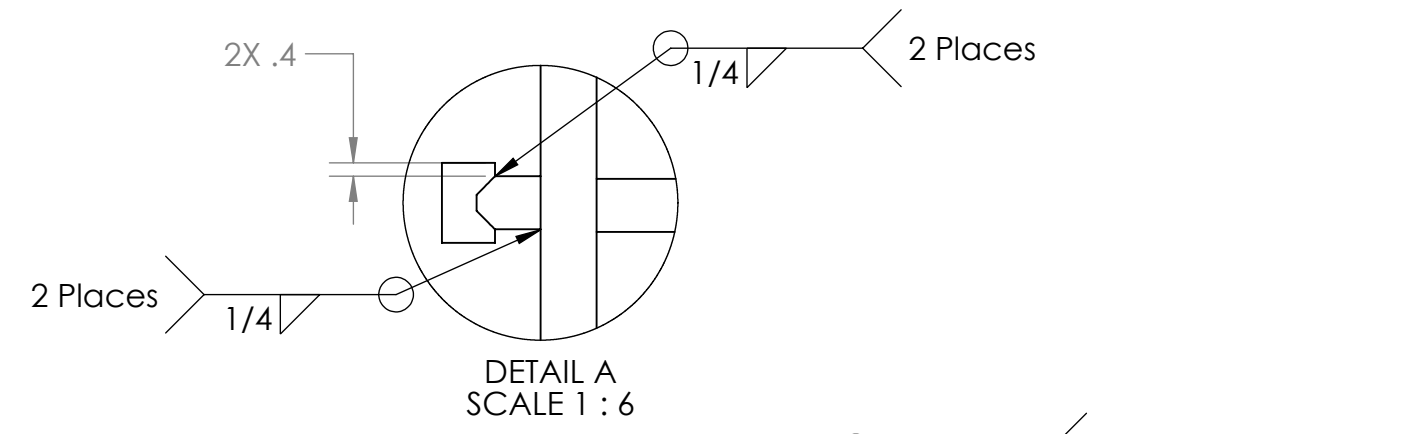
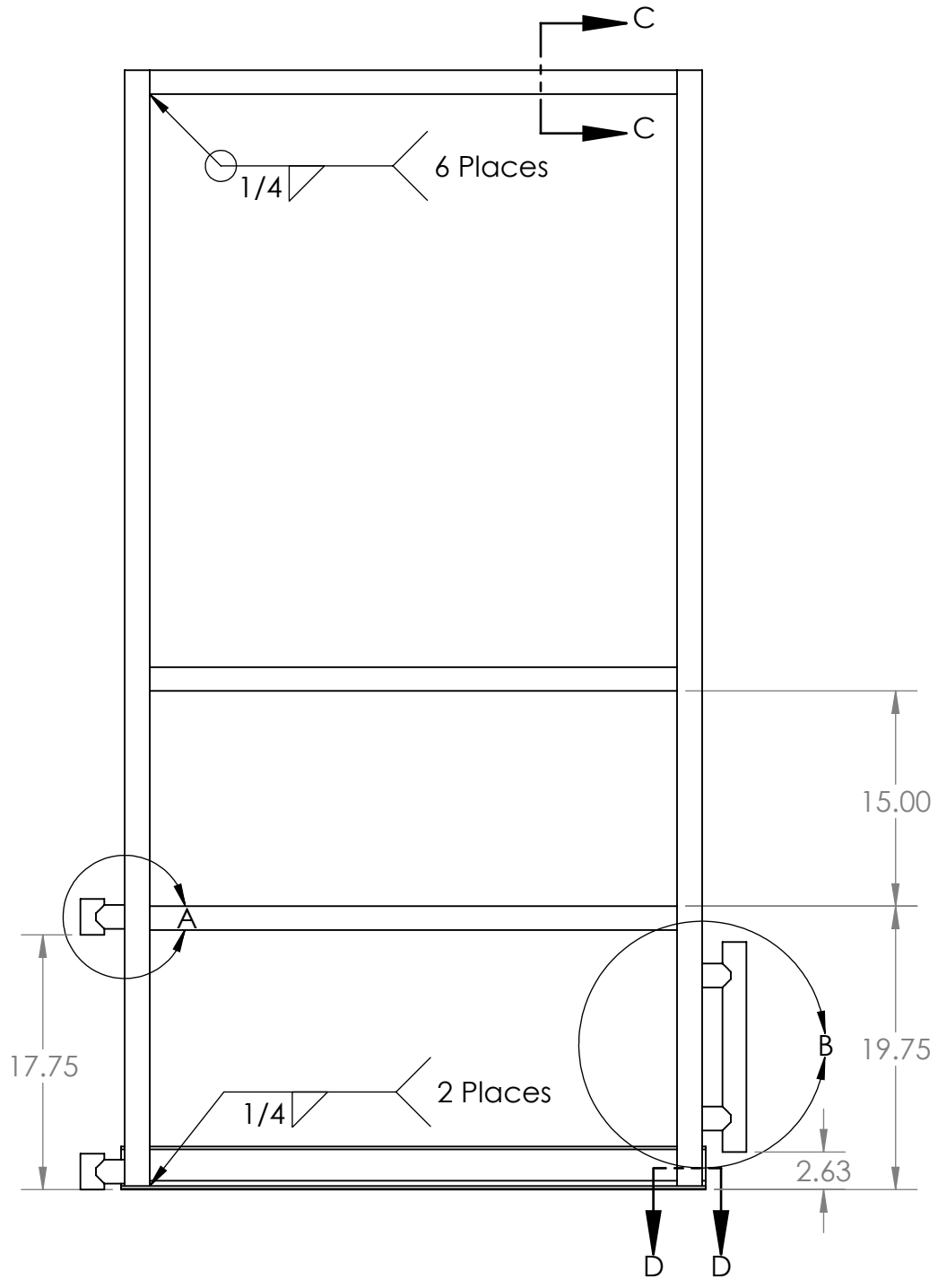
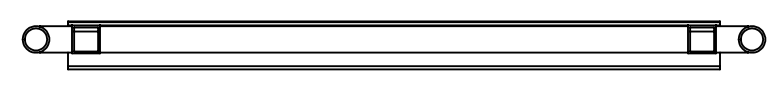
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		TOLERANCES:		CHECKED	
		FRACTIONAL ±1/16		ENG APPR.	
		ANGULAR: MACH ±1° BEND ±1°		MFG APPR.	
		TWO PLACE DECIMAL ±.01		Q.A.	
		THREE PLACE DECIMAL ±.001		COMMENTS:	
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
		FINISH			
NEXT ASSY	USED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

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

TITLE:  
**Portal Frame - Right**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18012</b>	

SCALE: 1:12 WEIGHT: SHEET 2 OF 3

4

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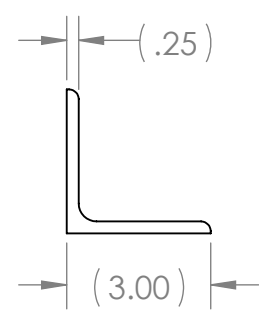
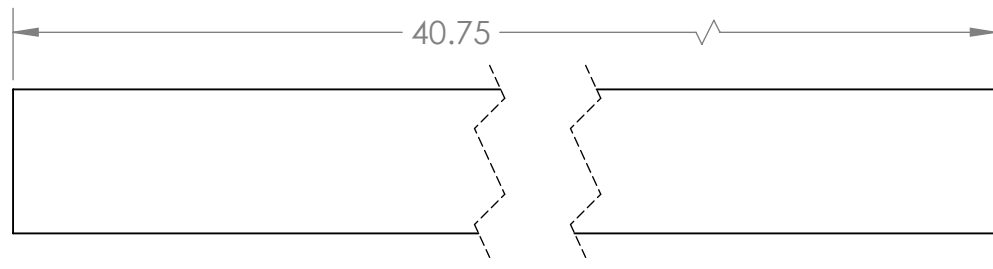
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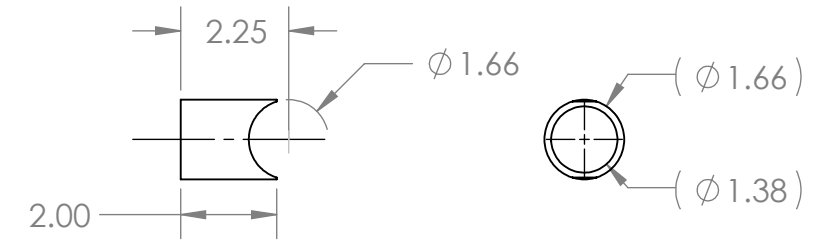
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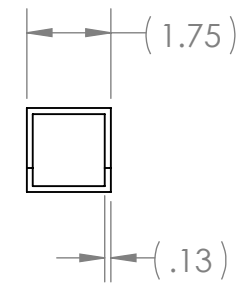
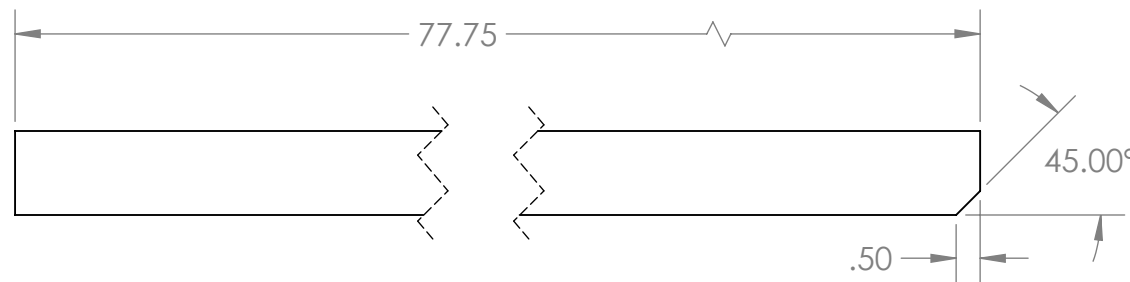
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Item: GE18012-01  
 Qty: 1  
 Material 3" x .25" thick Angle, 6061 Aluminum



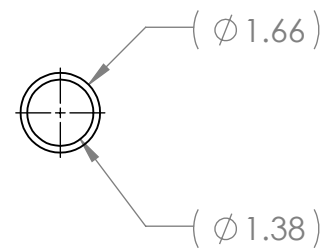
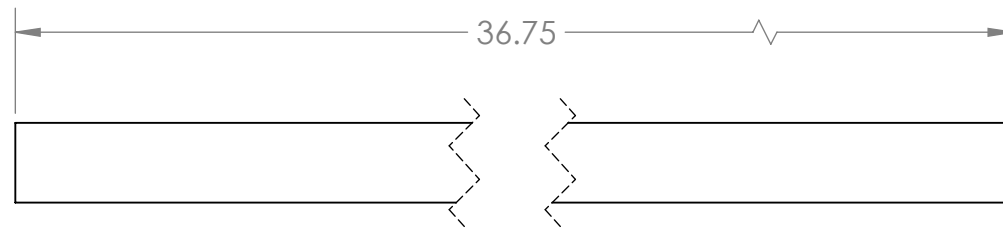
Item: GE18012-04  
 Qty: 4  
 Material 1-1/4" Schedule 40 Pipe, 6061 Aluminum



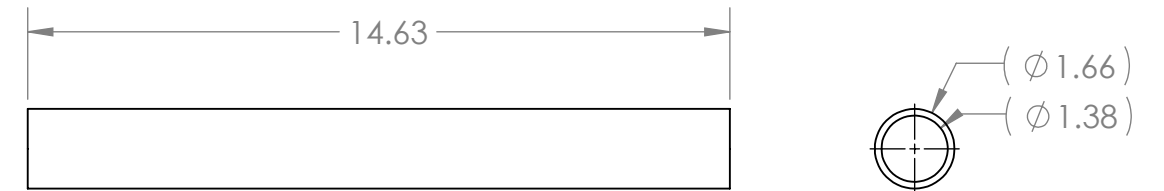
Item: GE18012-02  
 Qty: 2  
 Material 1.75" x .125" thick Square Tubing, 6061 Aluminum



Item: GE18012-05  
 Qty: 2  
 Material 1-1/4" Schedule 40 Pipe, 6061 Aluminum



Item: GE18012-03  
 Qty: 3  
 Material 1-1/4" Schedule 40 Pipe, 6061 Aluminum



Item: GE18012-06  
 Qty: 1  
 Material 1-1/4" Schedule 40 Pipe, 6061 Aluminum

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



TITLE: <b>Portal Frame - Right</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18012</b>	REV
SCALE: 1:4	WEIGHT:	SHEET 3 OF 3

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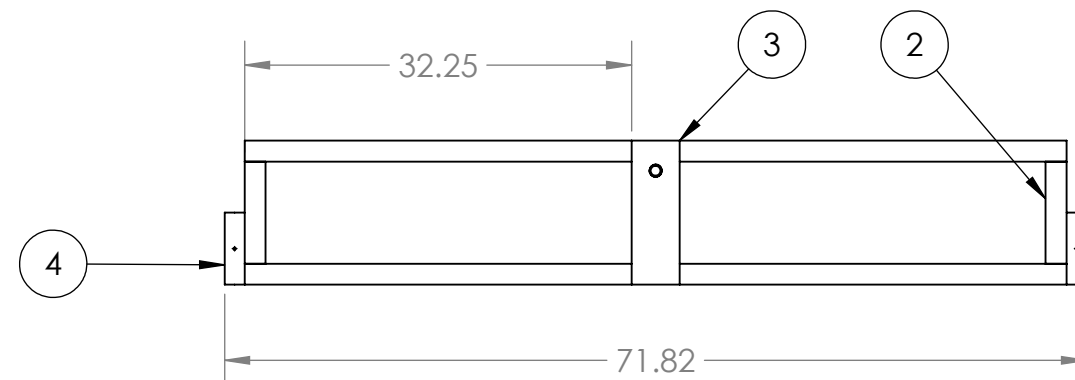
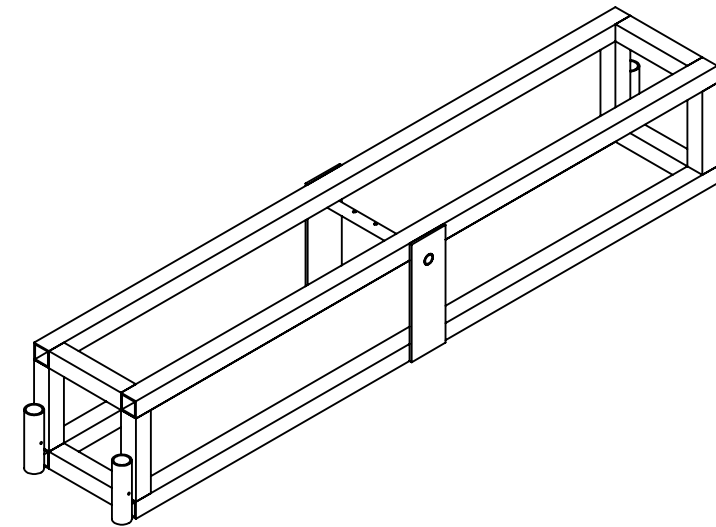
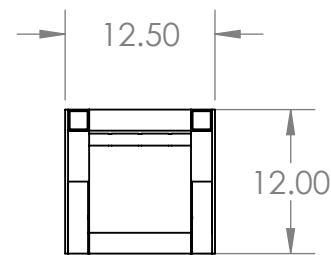
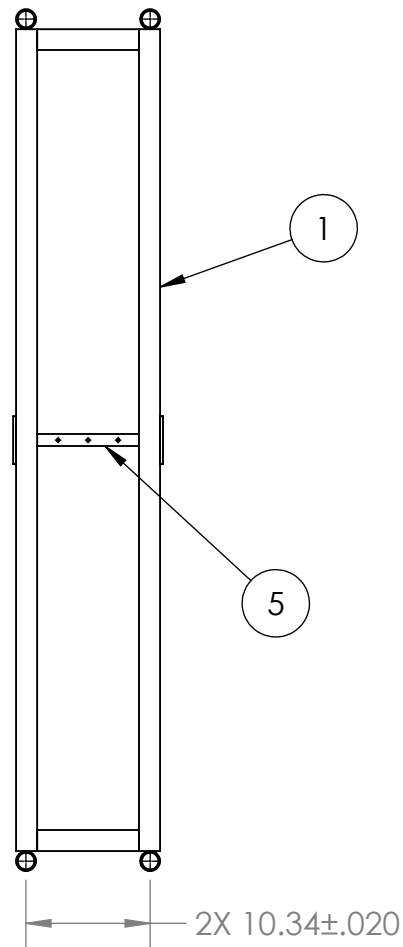
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1

## REVISIONS


ZONE	REV.	DESCRIPTION	DATE	APPROVED
2-B3	2	Added weld note	11/17/17	CPO




ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18013-1	1.75" x .125" thk. Square Tube, 6063 Aluminum	4
2	GE-18013-2	1.75" x .125" thk. Square Tube, 6063 Aluminum	8
3	GE-18013-3	.25" thk. Plate, 6061 Aluminum	2
4	GE-18013-4	1.25" Schedule 40 Pipe, 6061 Aluminum	4
5	GE-18013-5	1" OD x 0.095" thk. Tube, 6061 Aluminum	1

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



**FIRST**  
ROBOTICS  
COMPETITION



**SOLIDWORKS**  
Modeling Solutions Partner

TITLE: **Switch Arm**

SIZE <b>B</b>	DWG. NO. <b>GE-18013</b>	REV <b>2</b>
SCALE: 1:16 WEIGHT:		SHEET 1 OF 5

4

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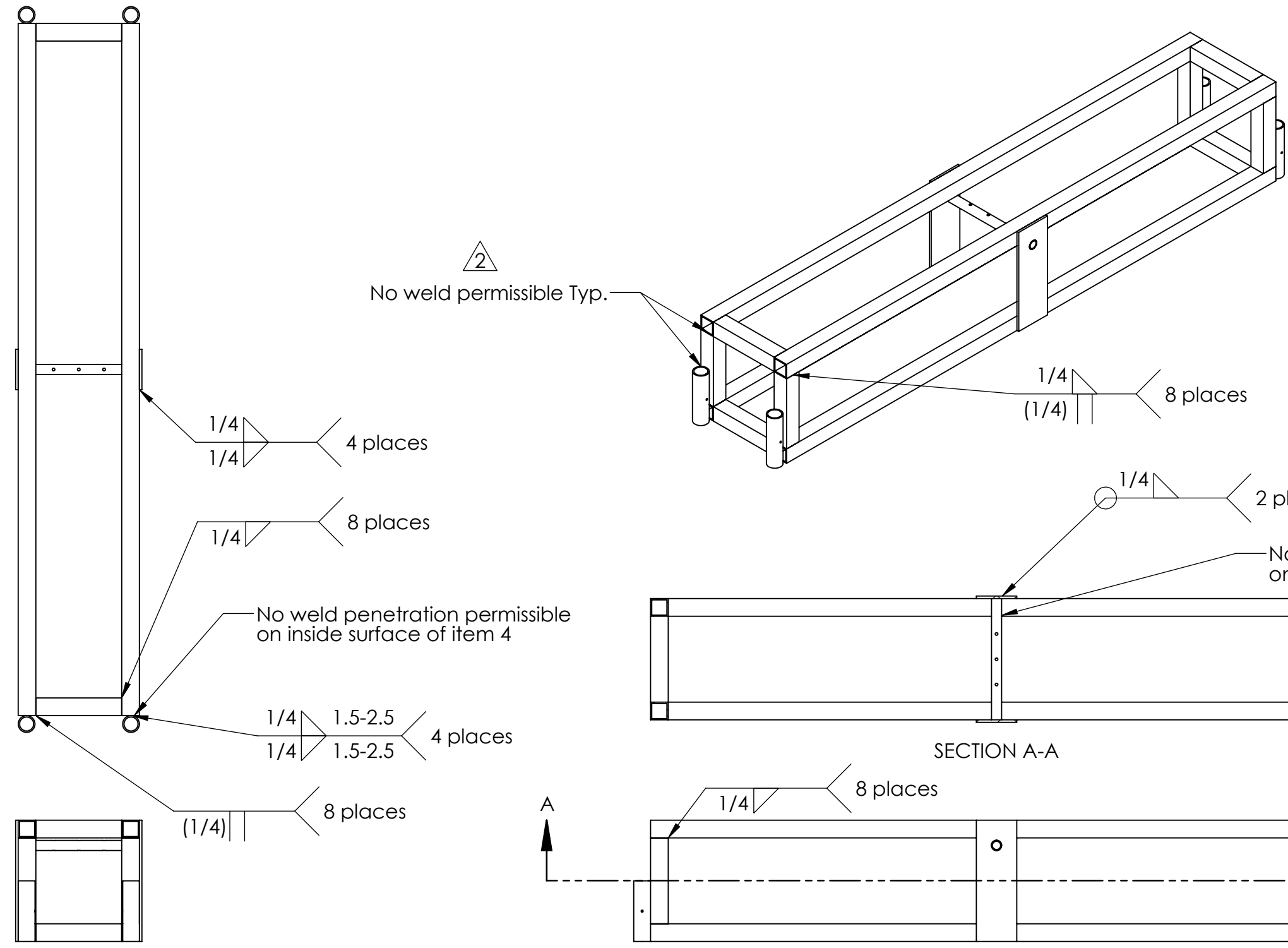
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UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES		DRAWN	
TOLERANCES:		CHECKED	
FRACTIONAL: $\pm 1/16$		ENG APPR.	
ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$		MFG APPR.	
TWO PLACE DECIMAL $\pm .01$		Q.A.	
THREE PLACE DECIMAL $\pm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



TITLE:		
<h1>Switch Arm</h1>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18013</b>	<b>2</b>
SCALE: 1:12 WEIGHT:		SHEET 2 OF 5

4

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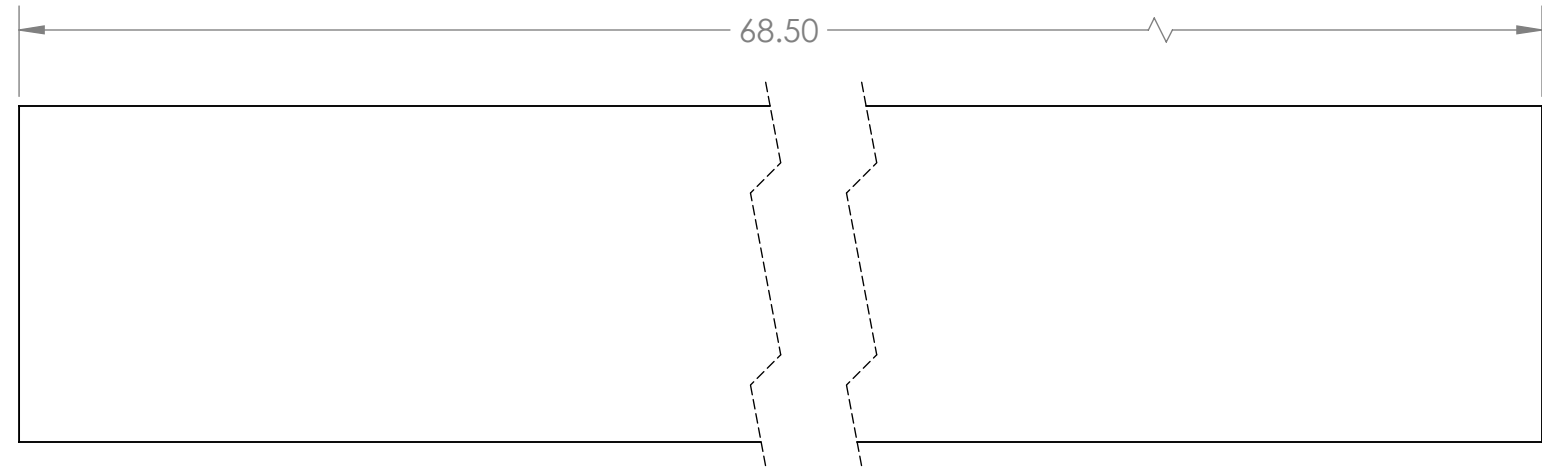
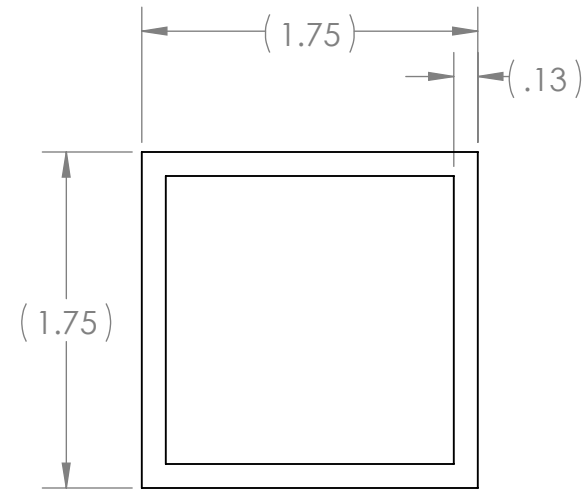


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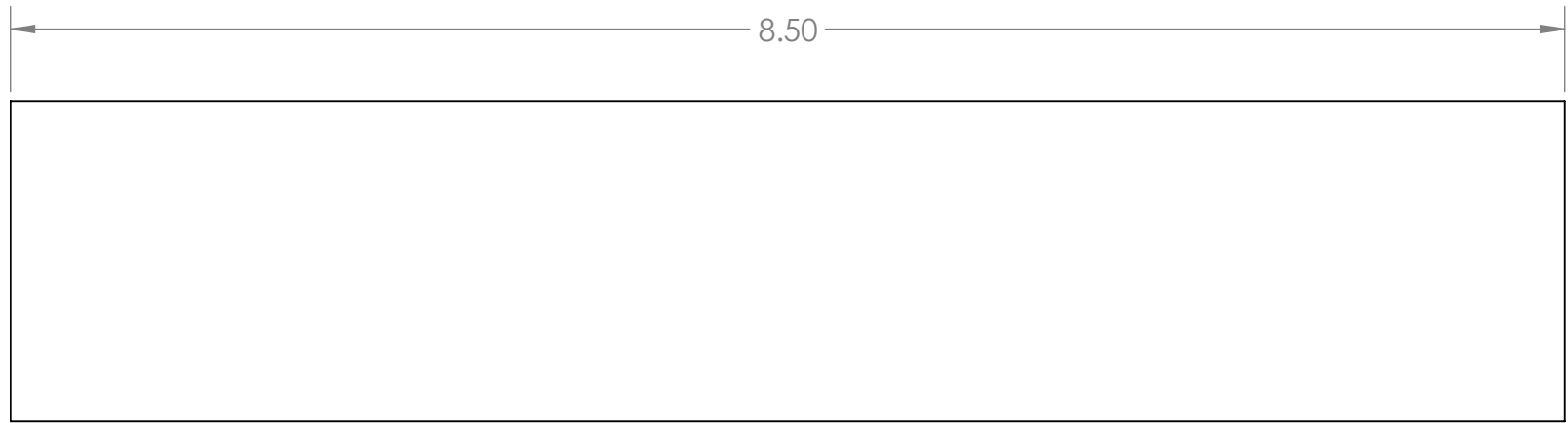
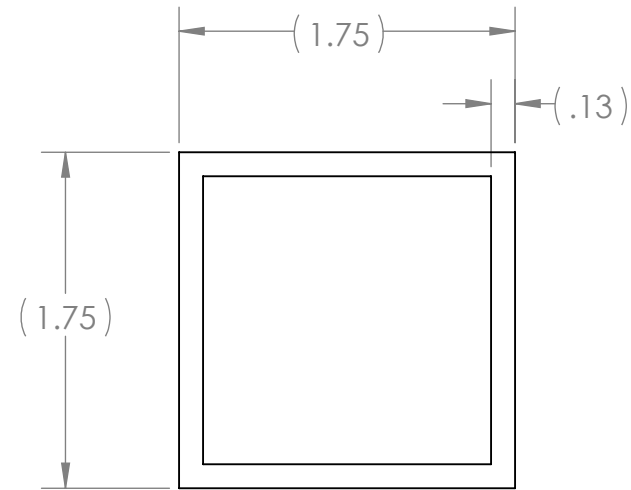
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Item: GE-18013-1  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 QTY: 4

B

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Item: GE-18013-2  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 QTY: 8

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



TITLE:  
**Switch Arm**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18013</b>	<b>2</b>
SCALE: 1:1	WEIGHT:	SHEET 3 OF 5

4

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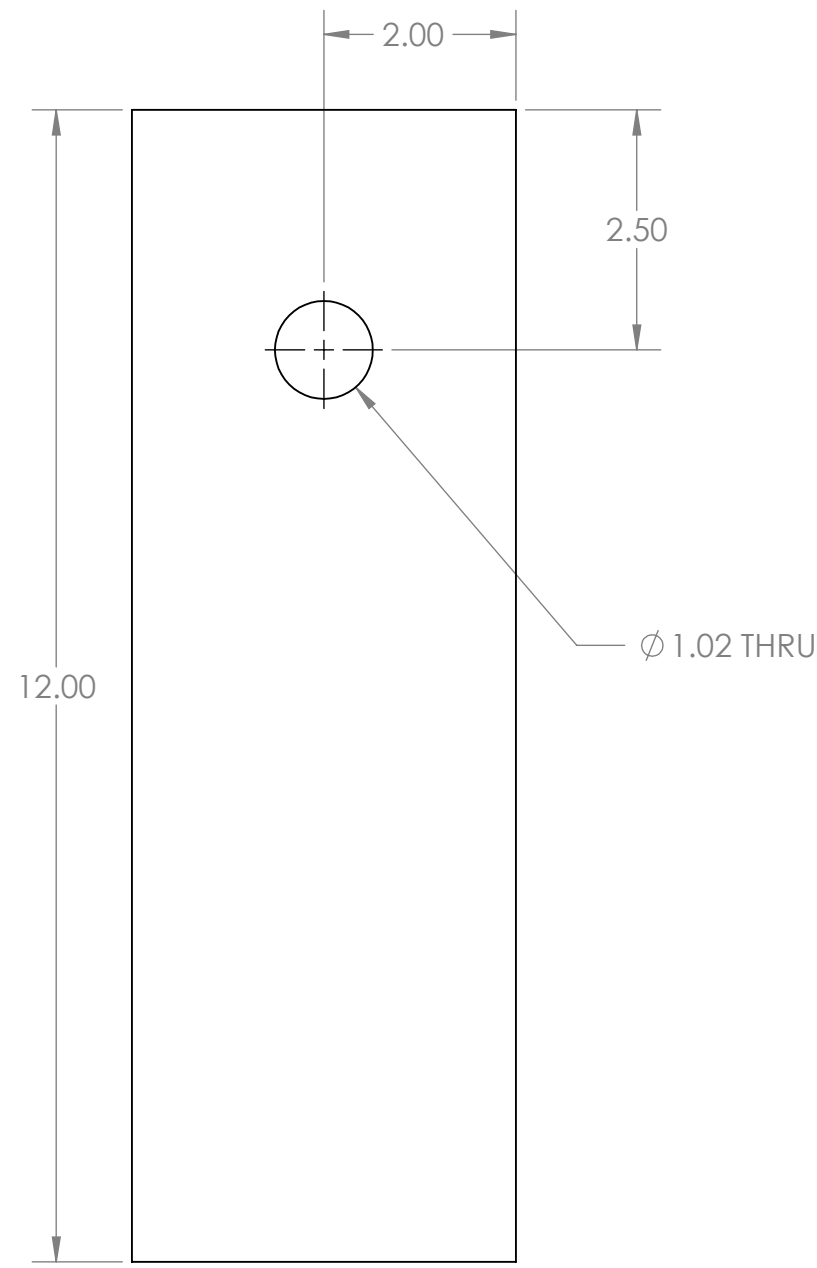
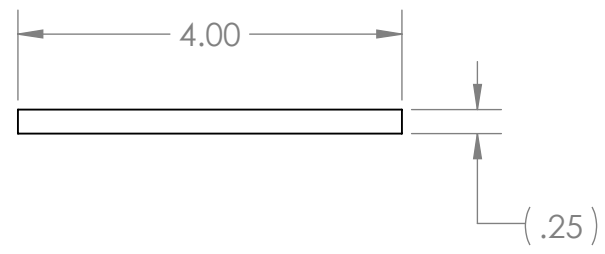
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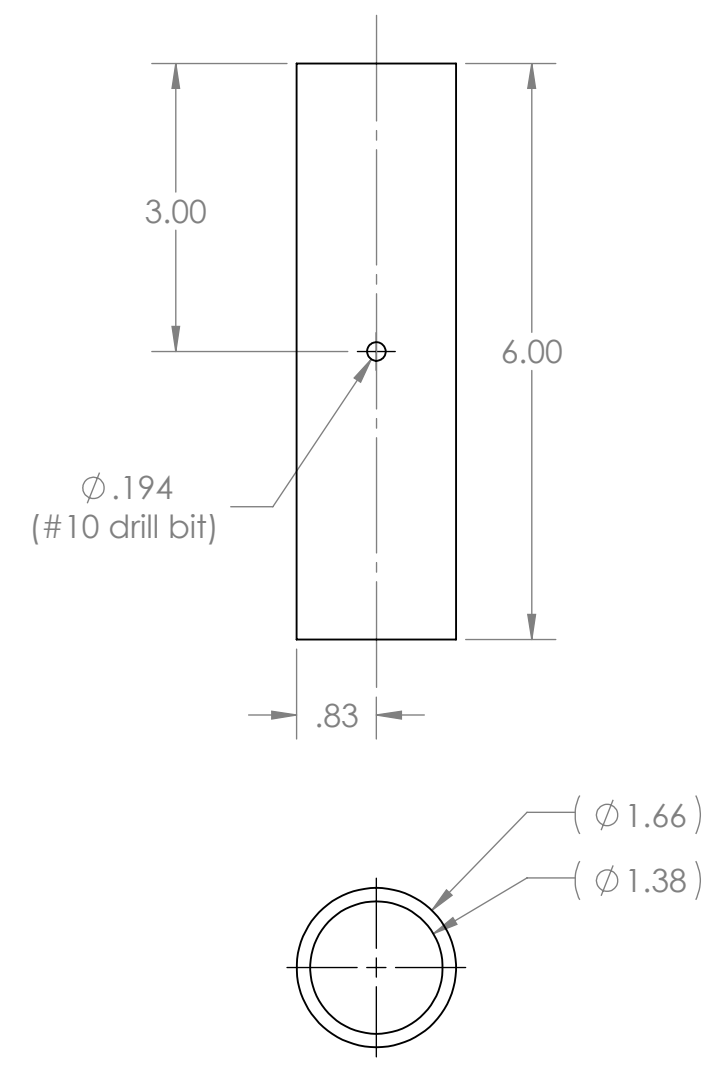
2

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Item: GE-18013-3  
 Material: 0.25" thk. Plate, 6061 Aluminum  
 QTY: 2

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Item: GE-18013-4  
 Material: 1.25" Schedule 40 Pipe, 6061 Aluminum  
 QTY: 4

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 
		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		SIZE <b>B</b> DWG. NO. <b>GE-18013</b> REV <b>2</b>
		MATERIAL		ENG APPR.		
NEXT ASSY	USED ON	FINISH		MFG APPR.		
APPLICATION		DO NOT SCALE DRAWING		Q.A.		
				COMMENTS:		

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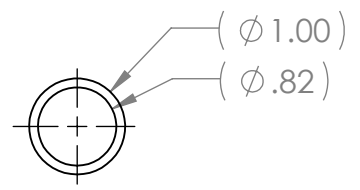
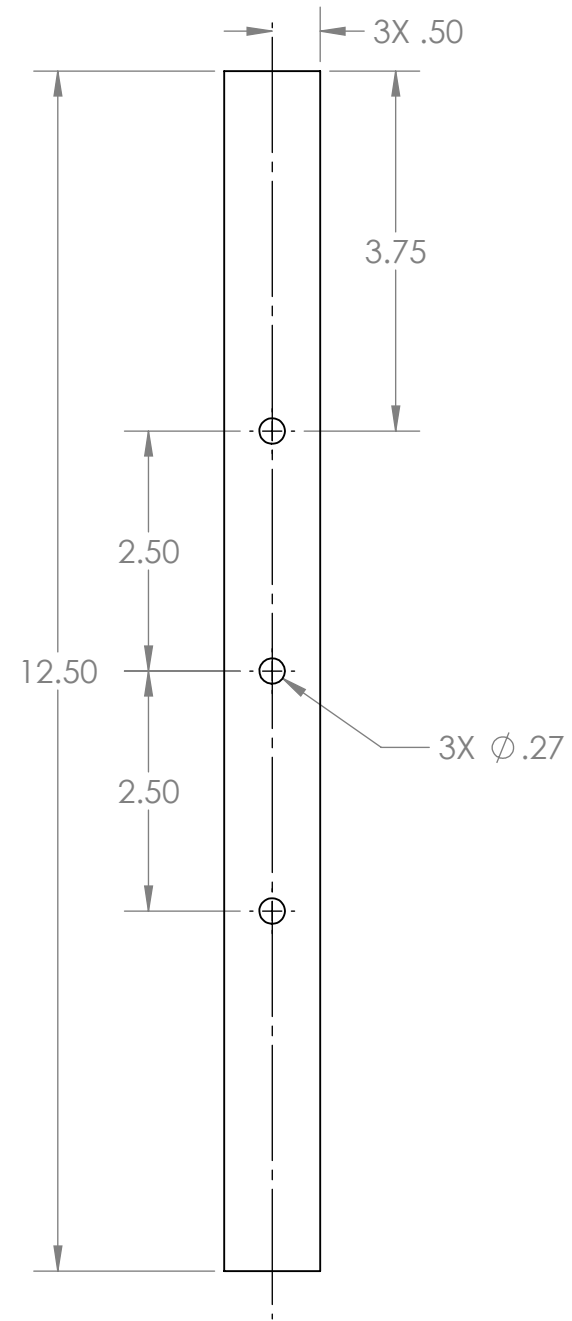
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Item: GE-18013-5  
 Material: 1" OD x 0.095" thk. tube, 6061 Aluminum  
 QTY: 1

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		SIZE <b>B</b> DWG. NO. <b>GE-18013</b> REV <b>2</b> SCALE: 1:2 WEIGHT: SHEET 5 OF 5
		MATERIAL	ENG APPR.		
NEXT ASSY	USED ON	FINISH	MFG APPR.		
APPLICATION		DO NOT SCALE DRAWING	Q.A.		
			COMMENTS:		

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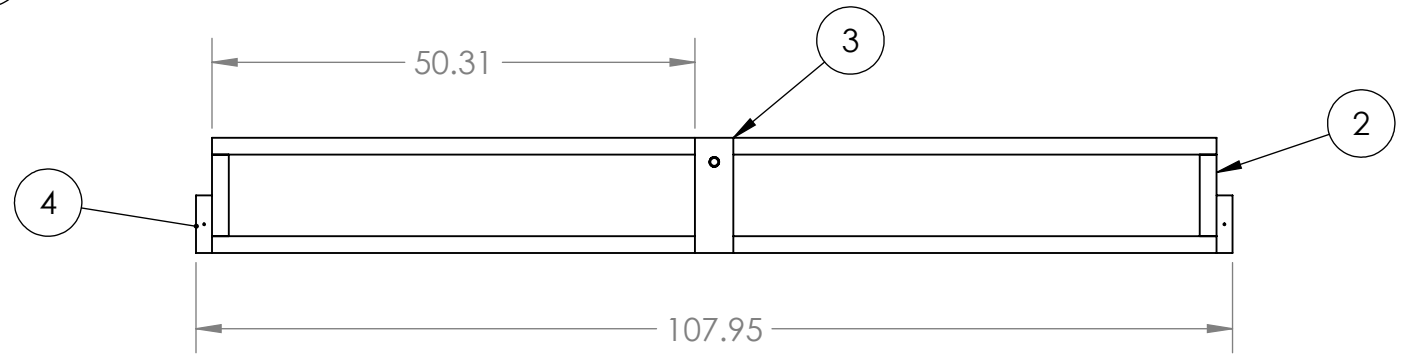
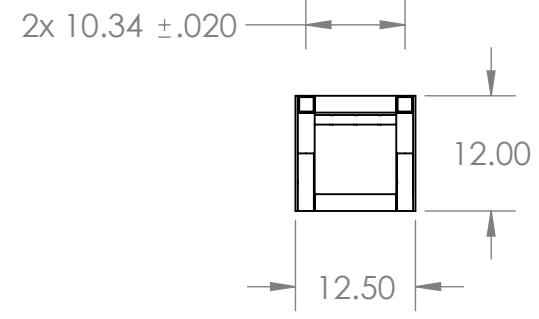
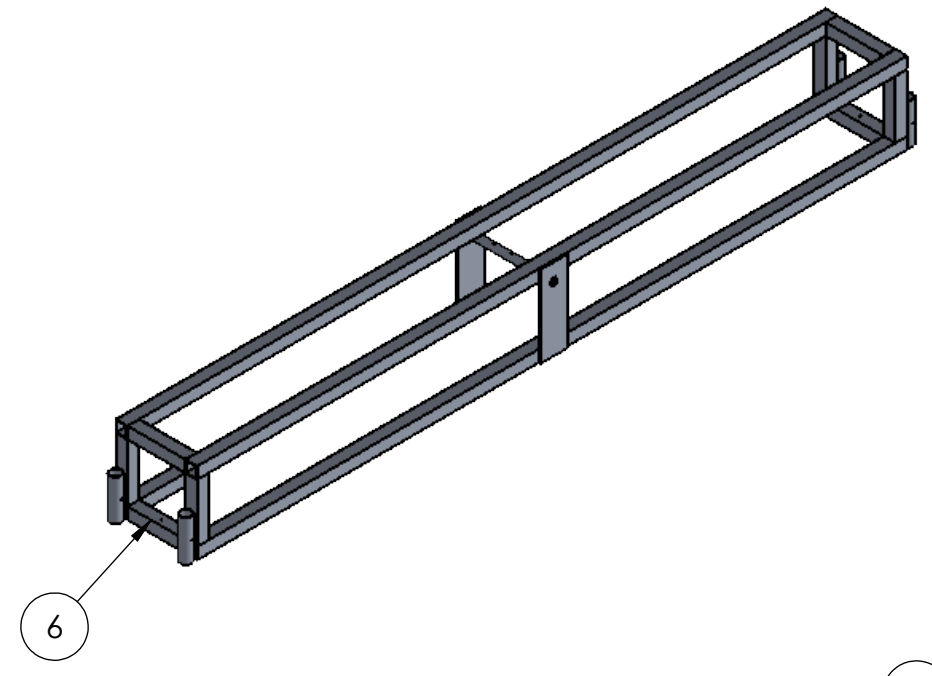
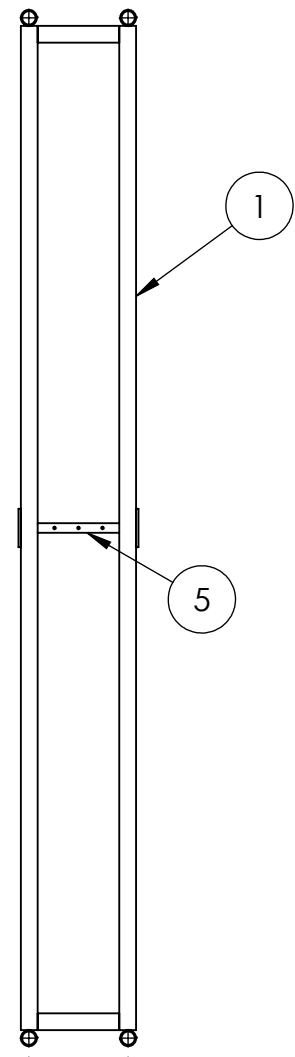
4

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REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
5-B3, 5-B4	2	Added locating dimensions for holes on GE-18014-5	11/9/2017	CPO
2-B3	3	Added weld note	11/17/2017	CPO



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18014-1	1.75" x .125" thk. Square Tube, 6063 Aluminum	4
2	GE-18014-2	1.75" x .125" thk. Square Tube, 6063 Aluminum	6
3	GE-18014-3	0.25" thk. plate, 6061 Aluminum	2
4	GE-18014-4	1.25" Schedule 40 Pipe, 6061 Aluminum	4
5	GE-18014-5	1" OD x 0.095" thk. Tube, 6061 Aluminum	1
6	GE-18014-6	1.75" x .125" thk. Square Tube, 6063 Aluminum	2

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

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

TITLE: **Scale Arm**

SIZE **B** DWG. NO. **GE-18014** REV **3**

SCALE: 1:20 WEIGHT: SHEET 1 OF 5

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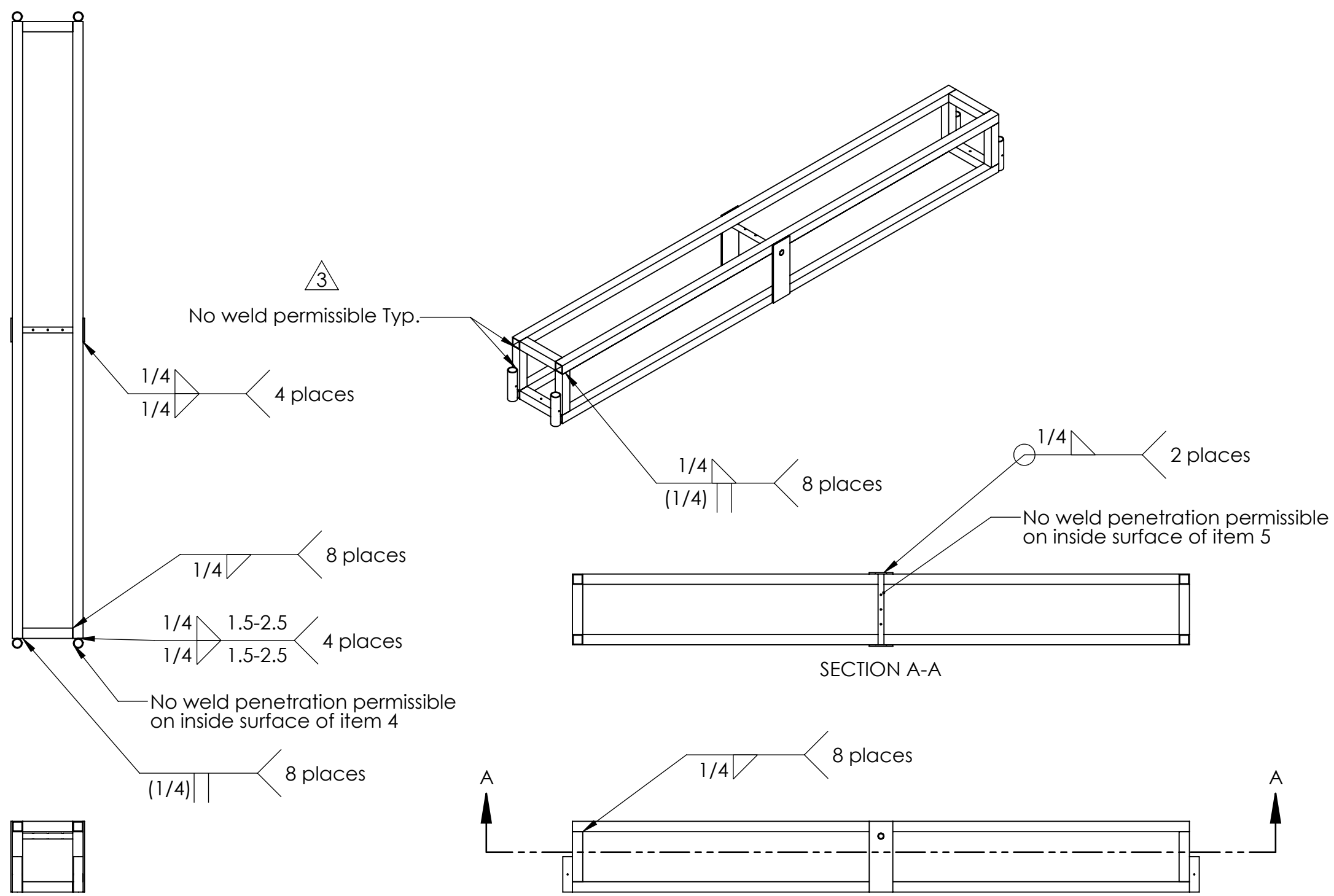
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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN	
		TOLERANCES:	CHECKED	
		FRACTIONAL: ±1/16	ENG APPR.	
		ANGULAR: MACH ±1° BEND ±1°	MFG APPR.	
		TWO PLACE DECIMAL ±.01	Q.A.	
		THREE PLACE DECIMAL ±.001	COMMENTS:	
		INTERPRET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



TITLE:		
<h1>Scale Arm</h1>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18014</b>	<b>3</b>
SCALE: 1:20 WEIGHT:		SHEET 2 OF 5

4

3

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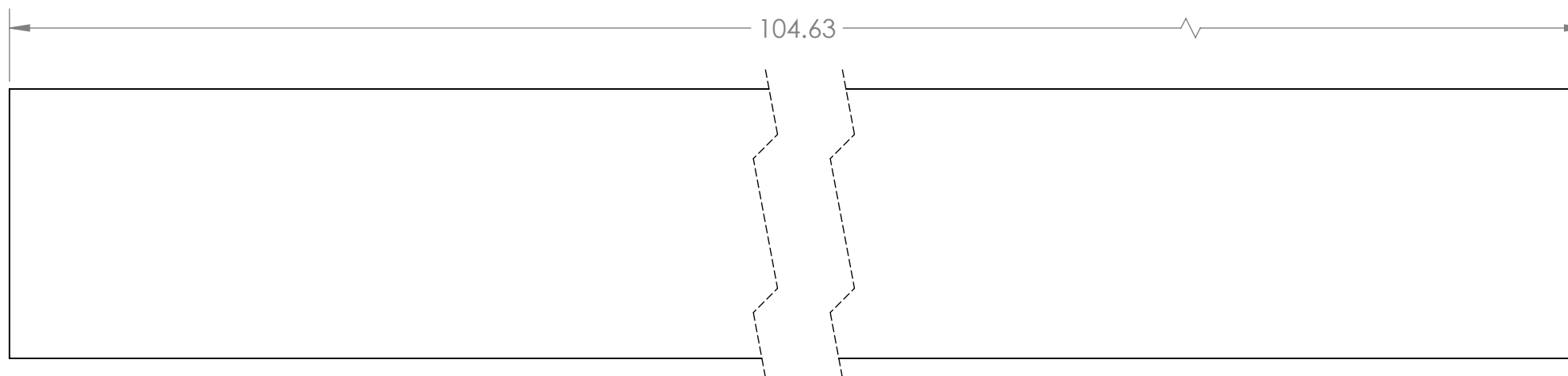
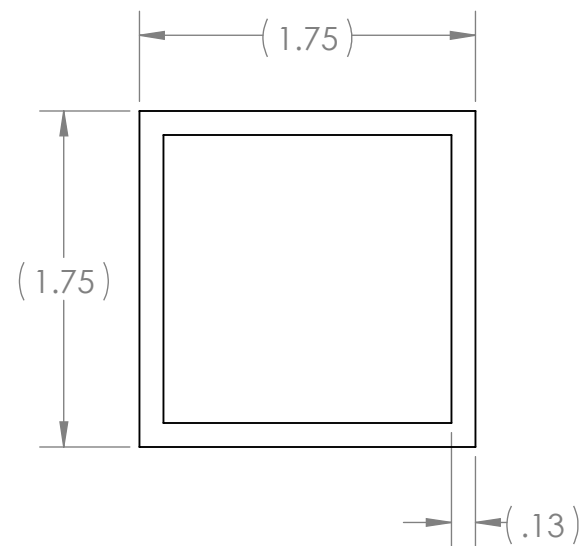
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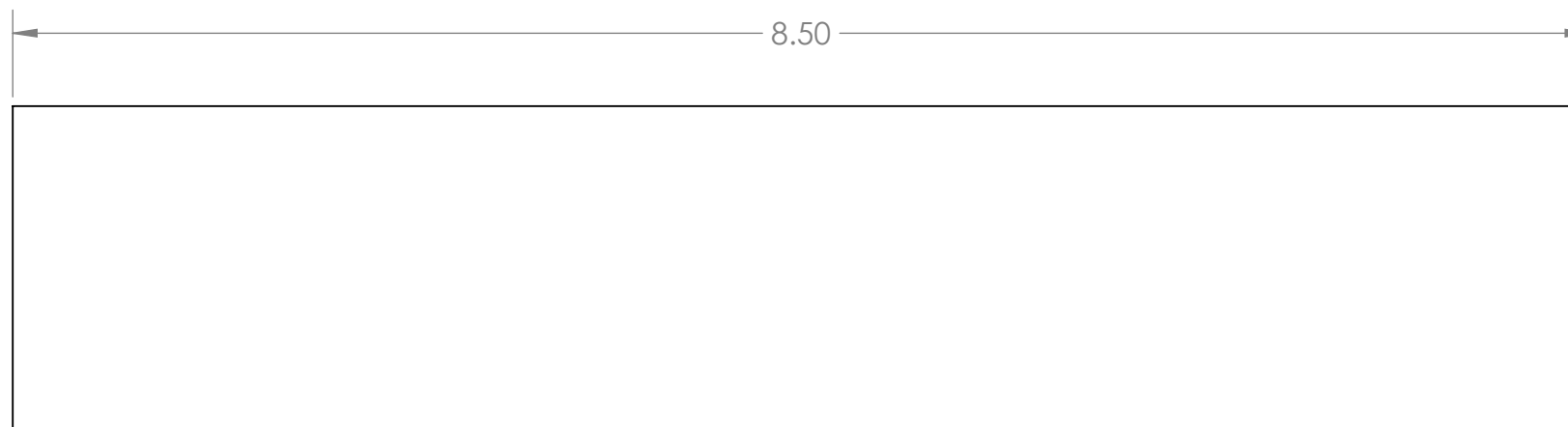
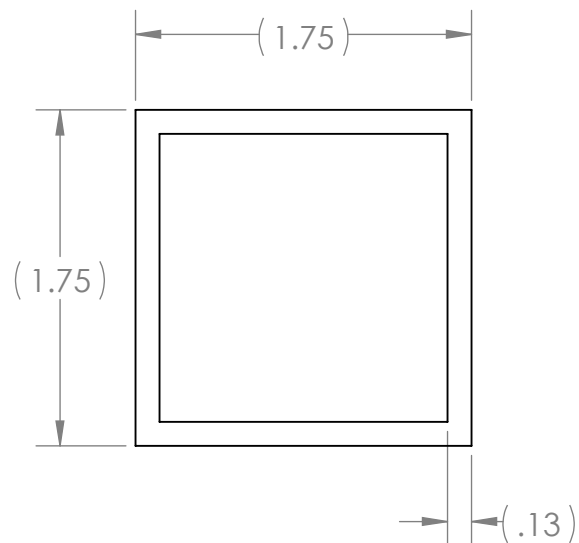
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Item: GE-18014-1  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 Scale: 1:1  
 QTY: 4

B

B





Item: GE-18014-2  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 Scale: 1:1  
 QTY: 6

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

 		
TITLE: Scale Arm		
SIZE	DWG. NO.	REV
<b>B</b>	GE-18014	3
SCALE: 1:1	WEIGHT:	SHEET 3 OF 5

4

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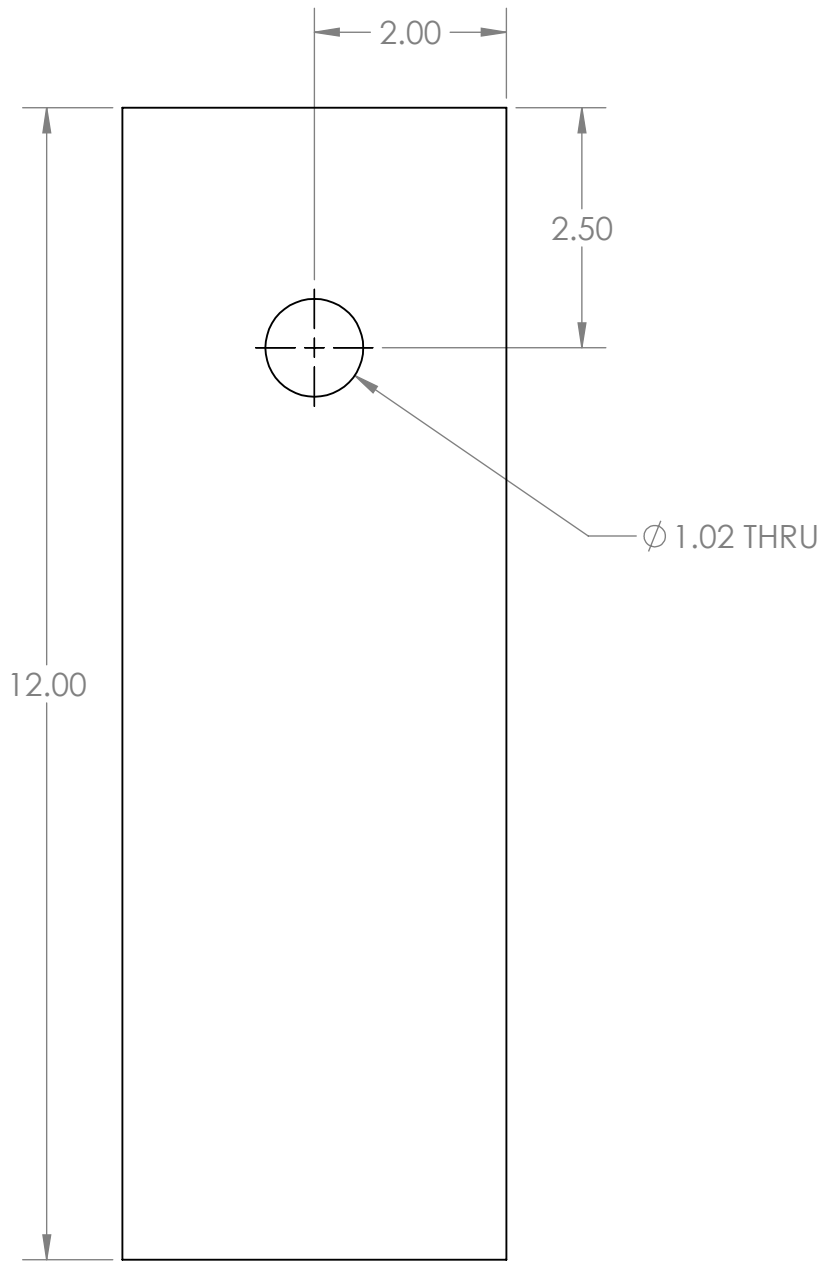
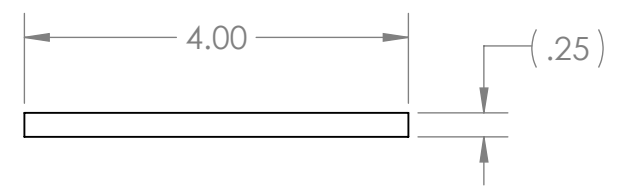
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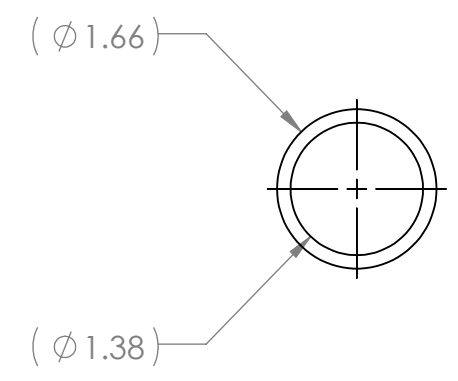
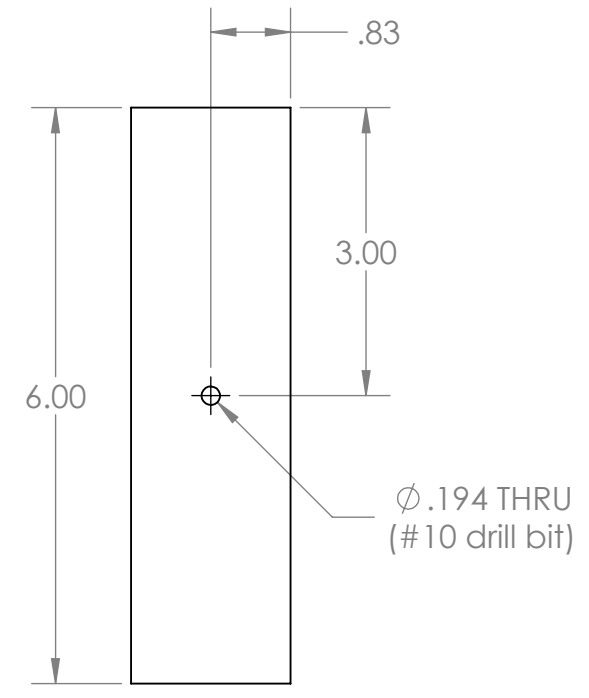
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1



Item: GE-18014-3  
Material: 0.25" thk. Plate, 6061 Aluminum  
Scale: 1:2  
QTY: 2

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Item: GE-18014-4  
Material: 1.25" Schedule 40 Pipe, 6061 Aluminum  
Scale: 1:2  
QTY: 4

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001		DRAWN	
		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
		MATERIAL		ENG APPR.	
NEXT ASSY	USED ON	FINISH		MFG APPR.	
APPLICATION		DO NOT SCALE DRAWING		Q.A.	
				COMMENTS:	
				TITLE: <b>Scale Arm</b>	
SIZE	DWG. NO.	REV			
<b>B</b>	<b>GE-18014</b>	<b>3</b>			
SCALE: 1:2		WEIGHT:		SHEET 4 OF 5	



4

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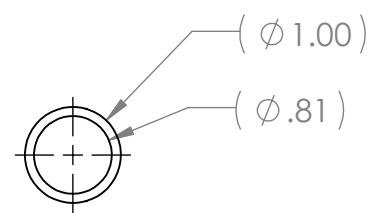
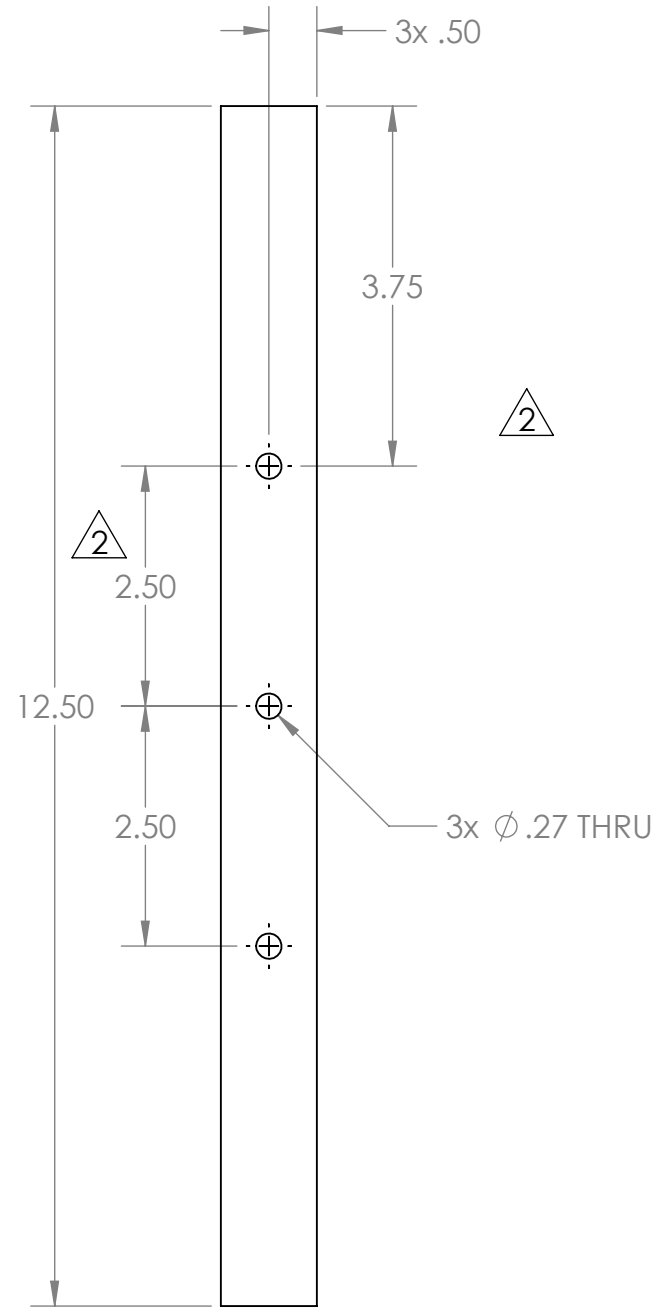
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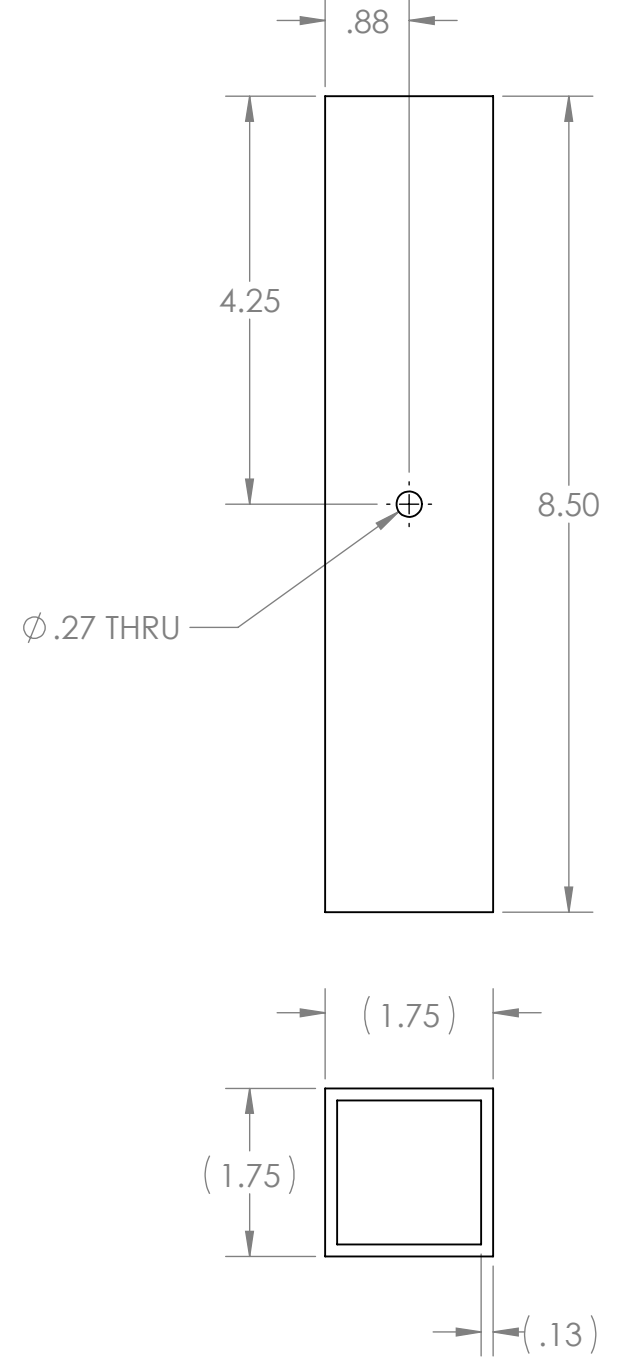
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1



Item: GE-18014-5  
 Material: 1" OD x 0.095" thk. Tube, 6061 Aluminum  
 Scale: 1:2  
 QTY: 4

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Item: GE-18014-6  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 Scale: 1:2  
 QTY: 2

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

TITLE: Scale Arm		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18014</b>	<b>3</b>
SCALE: 1:2	WEIGHT:	SHEET 5 OF 5

4

3

2

1

B

B

A

A



4

3

2

1

4X Ø.313 THRU

5 places

4X .38

8.00

16.00

32.00

40.00

4.00

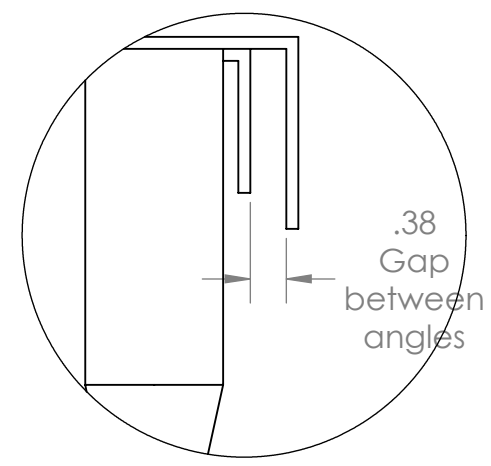
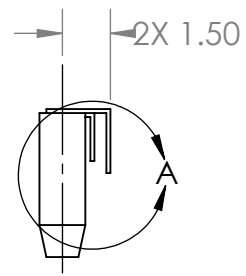
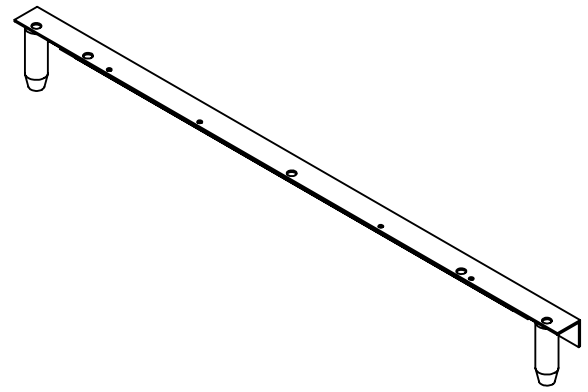
1.44

45.13

2X 1.50

.38 Gap between angles

DETAIL A SCALE 1 : 2



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18015-01	2" x .125" thk. Angle, 6063 Aluminum	1
2	GE-18015-02	1-7/16" Round Bar, 6061 Aluminum	2
3	GE-18015-03	1-1/2" x .125" thk. Angle, 6063 Aluminum	1

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

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

TITLE: **Top Rail, Exchange**

SIZE **B** DWG. NO. **GE-18015** REV

SCALE: 1:6 WEIGHT: SHEET 1 OF 2

4

3

2

1

B

B

A

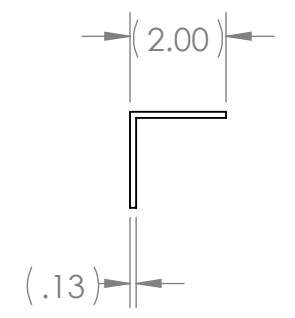
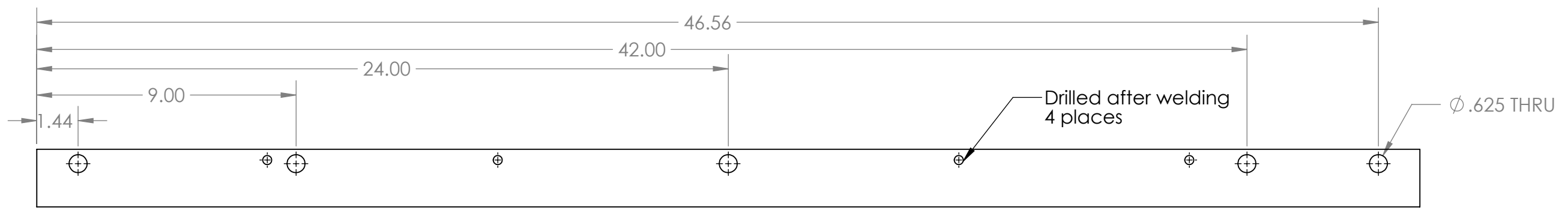
A

4

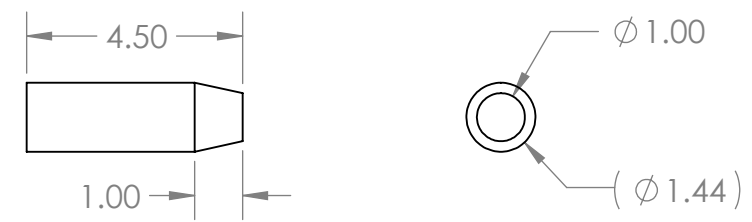
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2

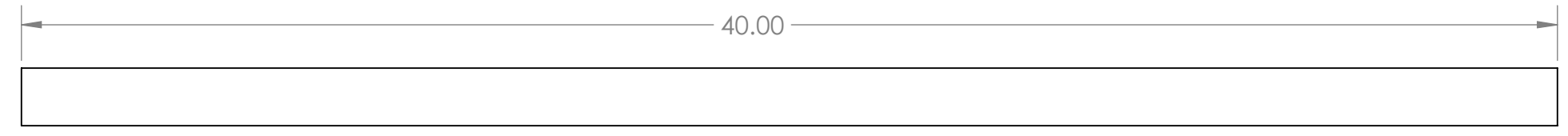
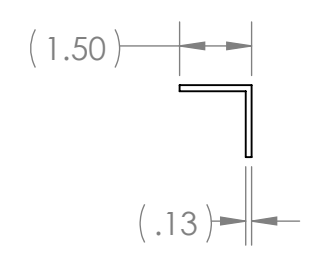
1



Item: GE-18015-01  
 Qty: 1  
 Material: 2" x .125" thk. Angle, 6063 Aluminum



Item: GE-18015-02  
 Qty: 2  
 Material: 1-7/16" Round Bar, 6061 Aluminum



Item: GE-18015-03  
 Qty: 1  
 Material: 1-1/2" x .125" thk. Angle, 6063 Aluminum

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



TITLE:		
<b>Top Rail, Exchange</b>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18015</b>	
SCALE: 1:4	WEIGHT:	SHEET 2 OF 2

4

3

2

1

B

B

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A

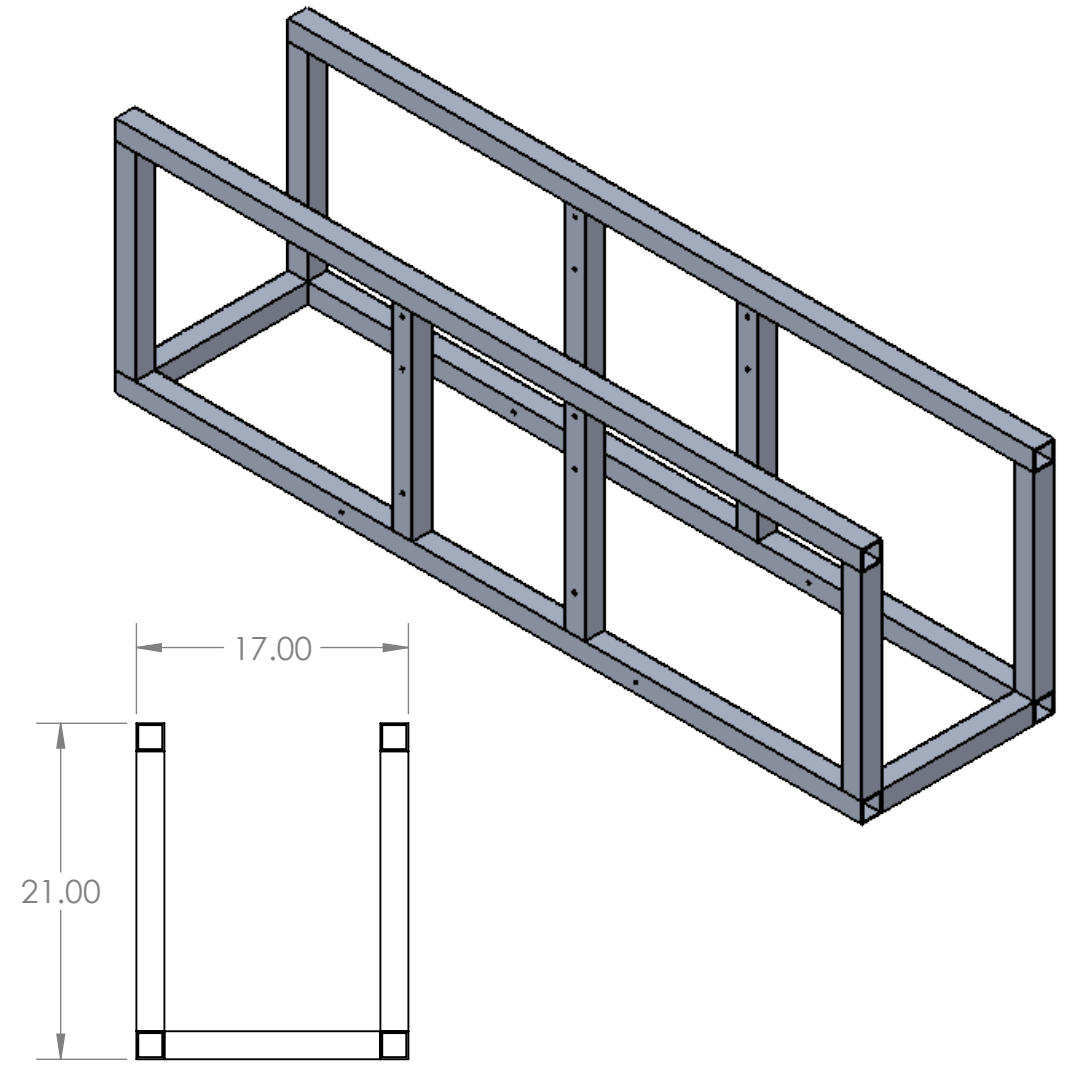
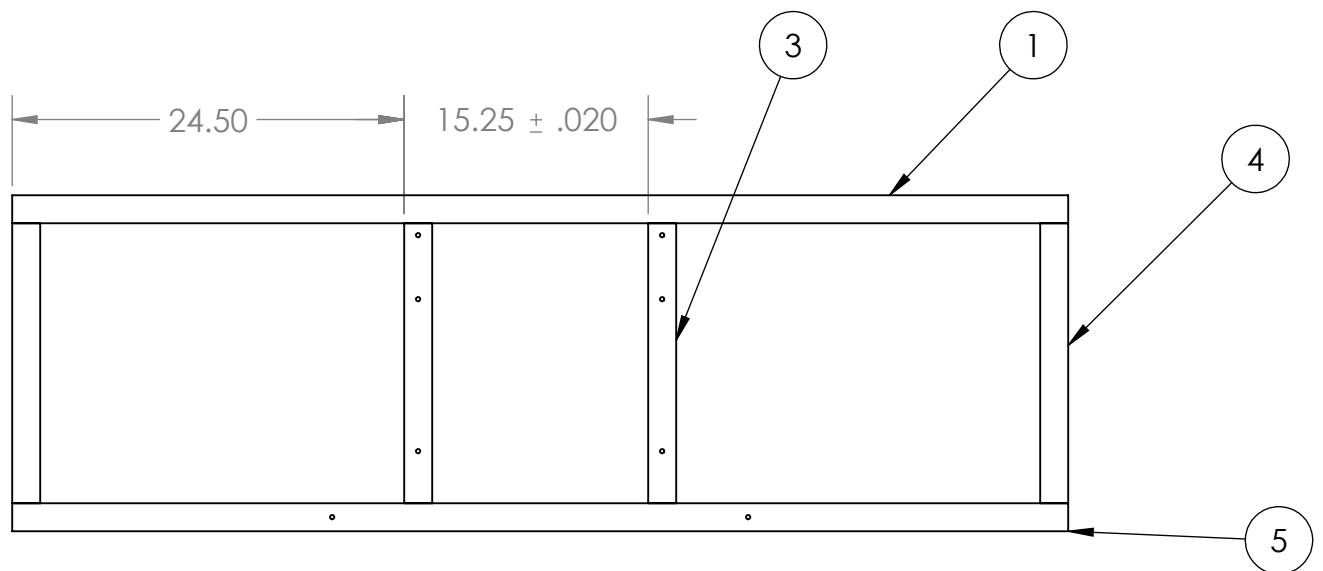
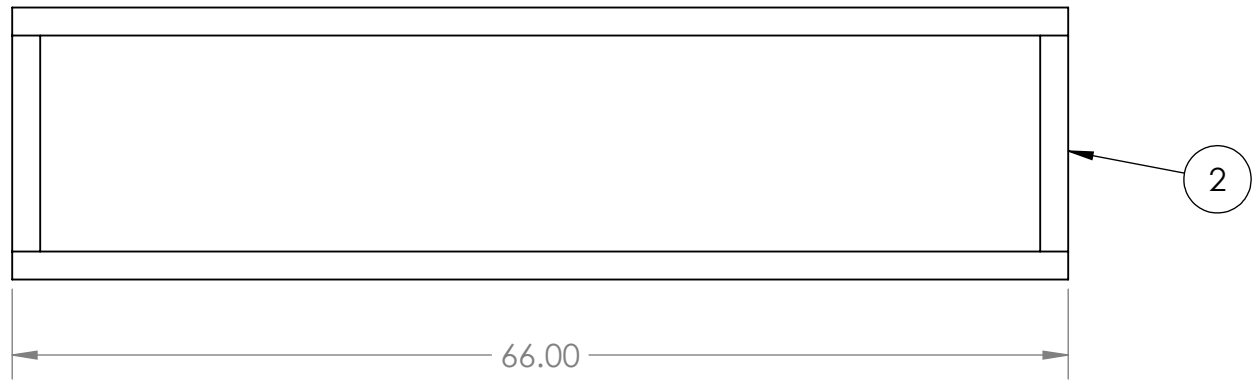
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
4-B3	2	Added hole to GE-18016-3	11/6/2017	CPO
A4, 3-B4, 5-B3	3	Added two of part GE-18016-5 to replace two GE-18016-1	11/21/2017	CPO





A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18016-1	1.75" x .125" thk. Square Tube, 6063 Aluminum	2
2	GE-18016-2	1.75" x .125" thk. Square Tube, 6063 Aluminum	2
3	GE-18016-3	1.75" x .125" thk. Square Tube, 6063 Aluminum	4
4	GE-18016-4	1.75" x .125" thk. Square Tube, 6063 Aluminum	4
③ 5	GE-18016-5	1.75" x .125" thk. Square Tube, 6063 Aluminum	2

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

TITLE: **Switch Frame**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18016</b>	<b>3</b>

SCALE: 1:12 WEIGHT: SHEET 1 OF 5

4

3

2

1

B

A

4

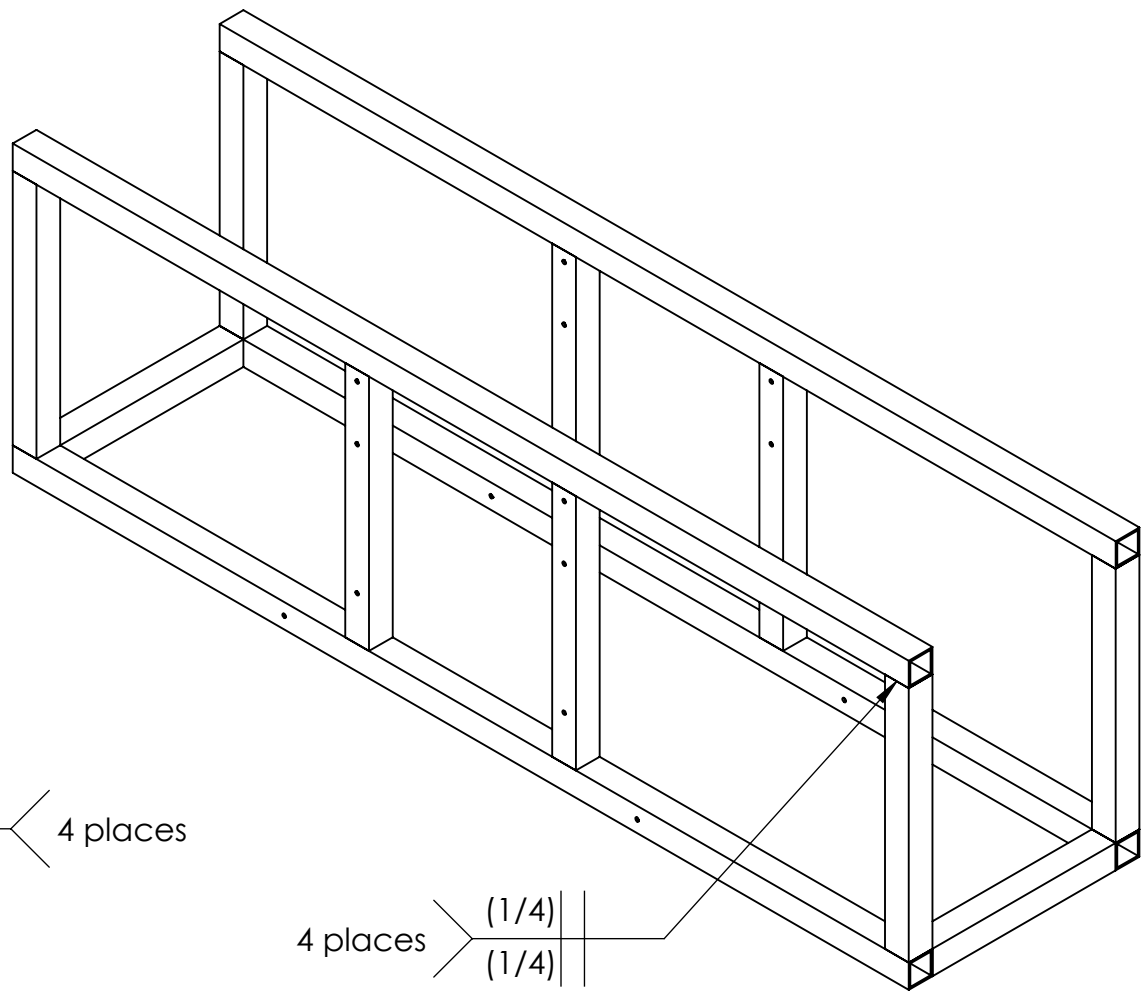
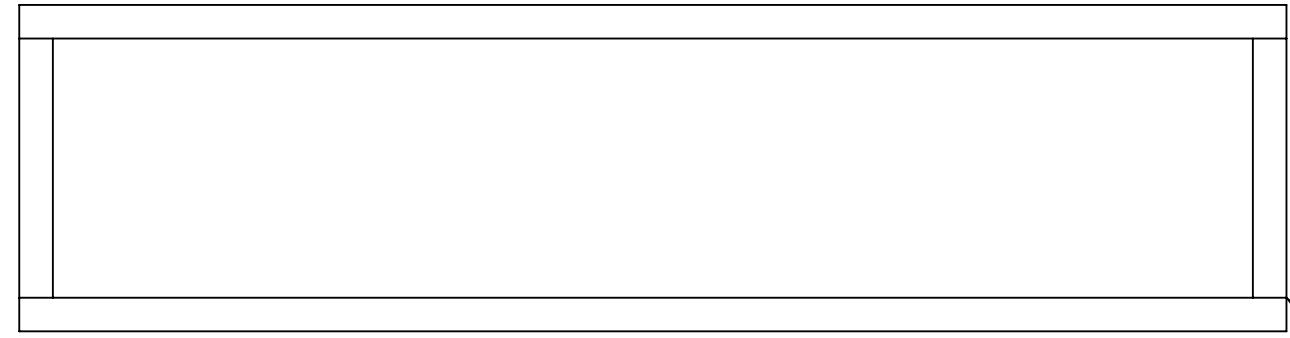
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2

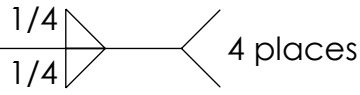
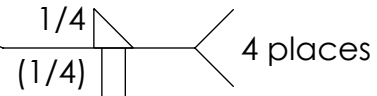
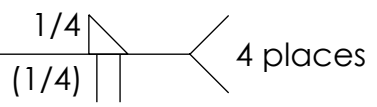
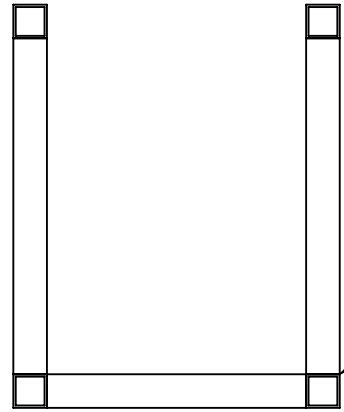
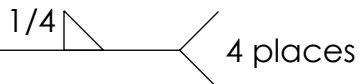
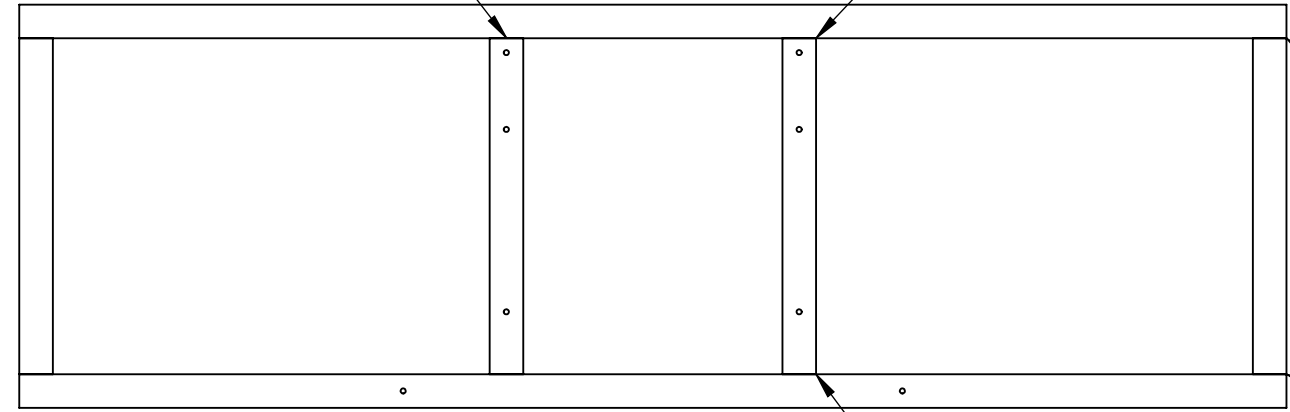
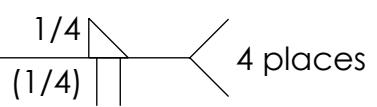
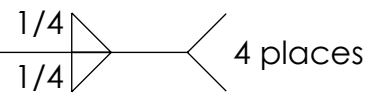
1

B

B



No weld permissible  
on face of item 3 (4x)



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



TITLE:  
**Switch Frame**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18016</b>	<b>3</b>

SCALE: 1:10 WEIGHT: SHEET 2 OF 5

4

3

2

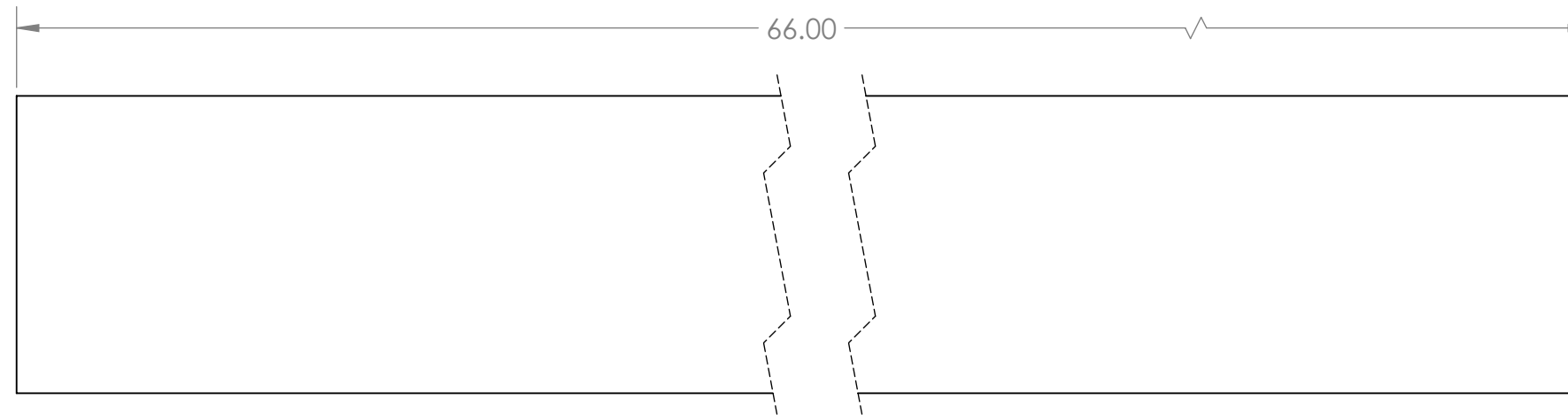
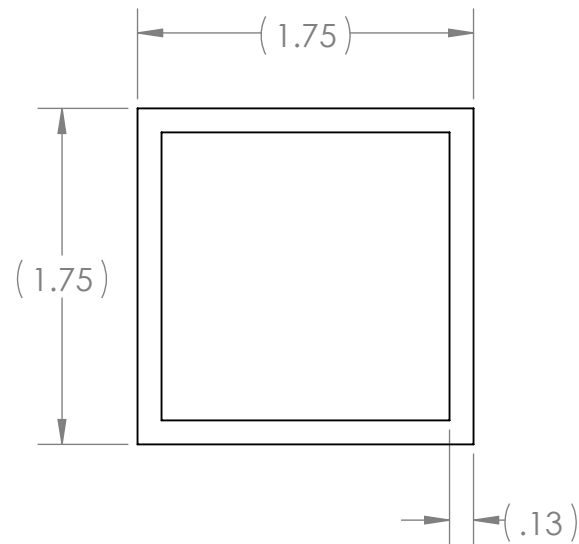
1

4

3

2

1



Item: GE-18016-1  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 Scale: 1:1  
 QTY: 2

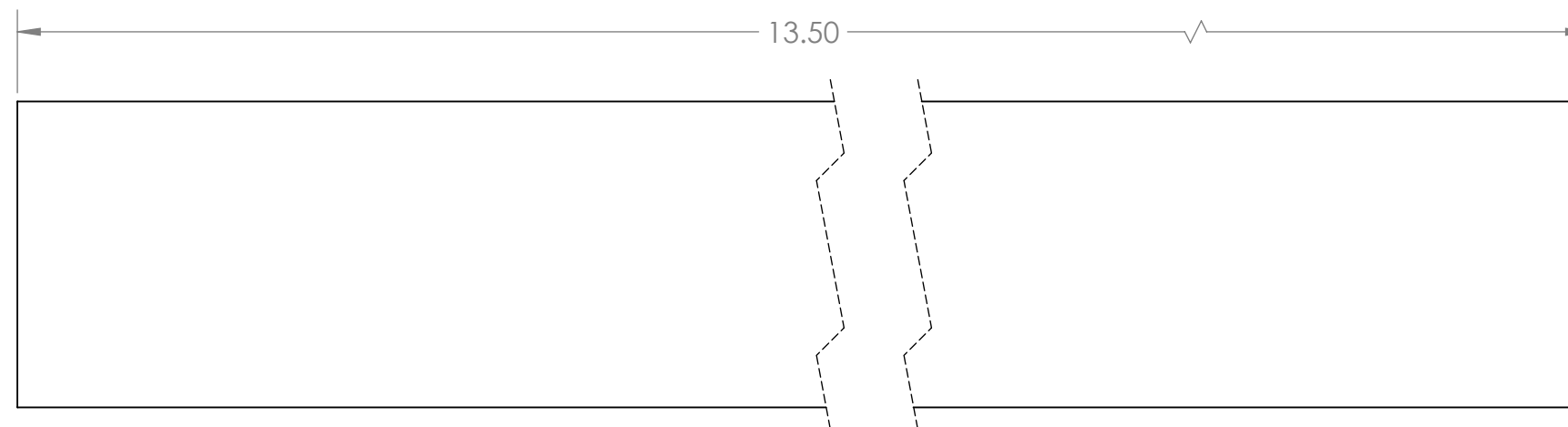
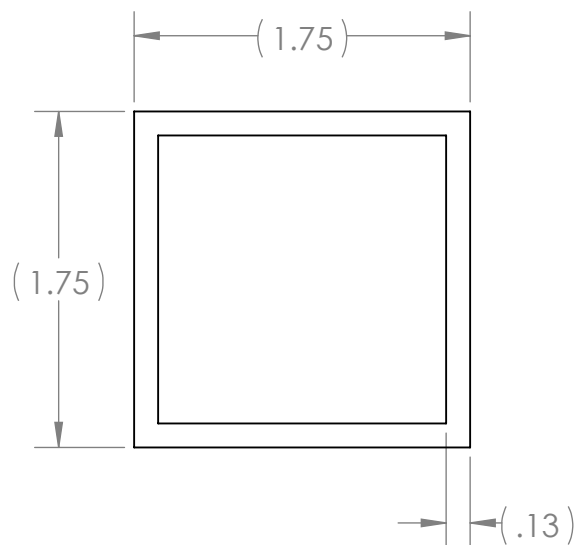


B

B



A

A



Item: GE-18016-2  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 Scale: 1:1  
 QTY: 2

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		SIZE <b>B</b> DWG. NO. <b>GE-18016</b> REV <b>3</b> SCALE: 1:1 WEIGHT: SHEET 3 OF 5
		MATERIAL	ENG APPR.		
NEXT ASSY	USED ON	FINISH	MFG APPR.		
APPLICATION		DO NOT SCALE DRAWING	Q.A.		
			COMMENTS:		

4

3

2

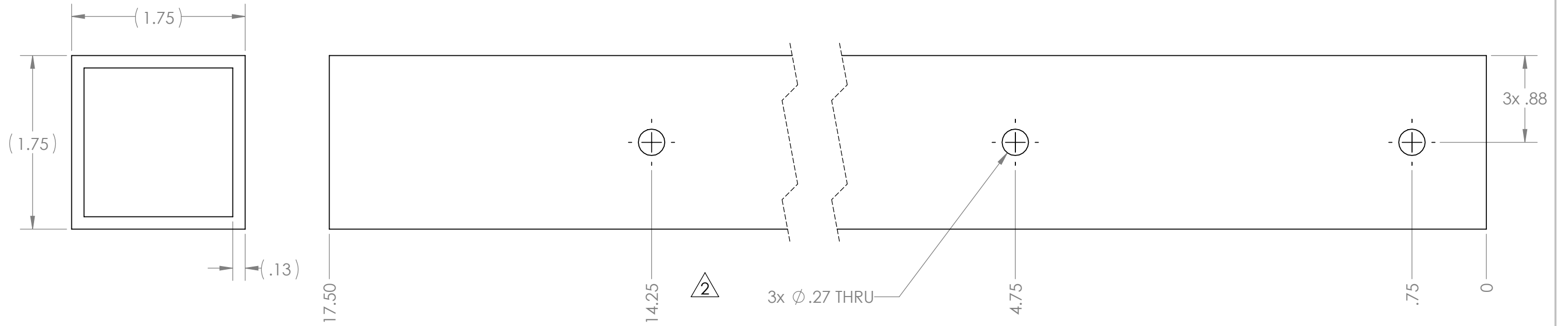
1

4

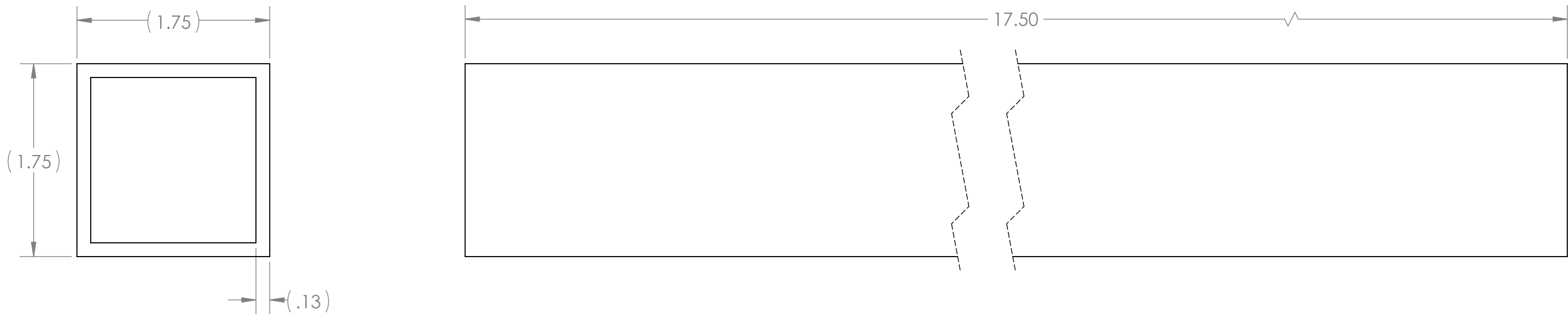
3

2

1





Item: GE-18016-3  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 Scale: 1:1  
 QTY: 4



Item: GE-18016-4  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 Scale: 1:1  
 QTY: 4

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		SIZE DWG. NO. REV
		MATERIAL	ENG APPR.		<b>B</b> <b>GE-18016</b> <b>3</b>
NEXT ASSY	USED ON	FINISH	MFG APPR.		SCALE: 1:1 WEIGHT: SHEET 4 OF 5
APPLICATION		DO NOT SCALE DRAWING	Q.A.		
			COMMENTS:		

4

3

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1

B

B

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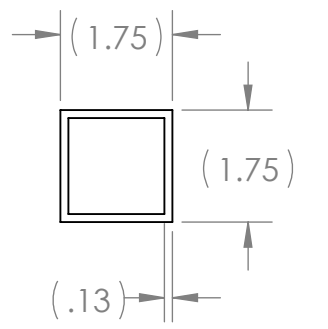
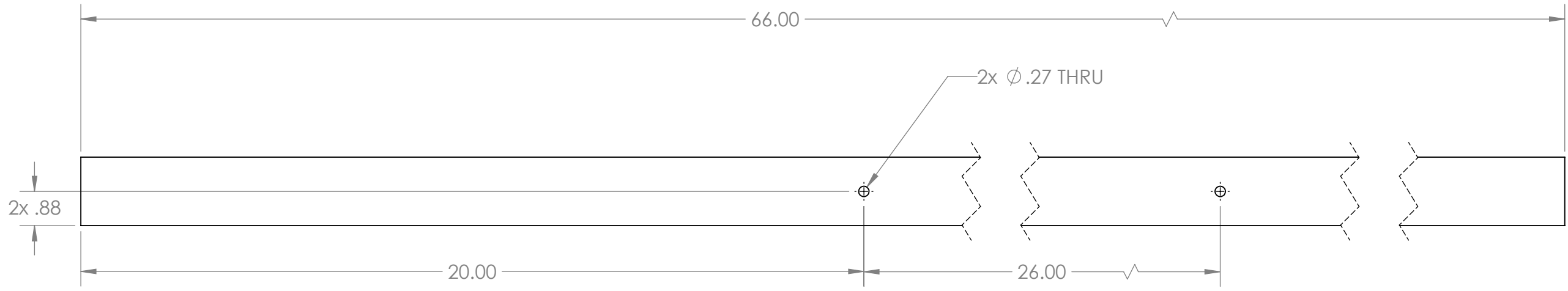
A

4

3

2

1



Item: GE-18016-5  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 Scale: 1:3  
 QTY: 2



B

B

A

A

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



TITLE:  
**Switch Frame**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18016</b>	<b>3</b>
SCALE: 1:3	WEIGHT:	SHEET 5 OF 5

4

3

2

1

4

3

2

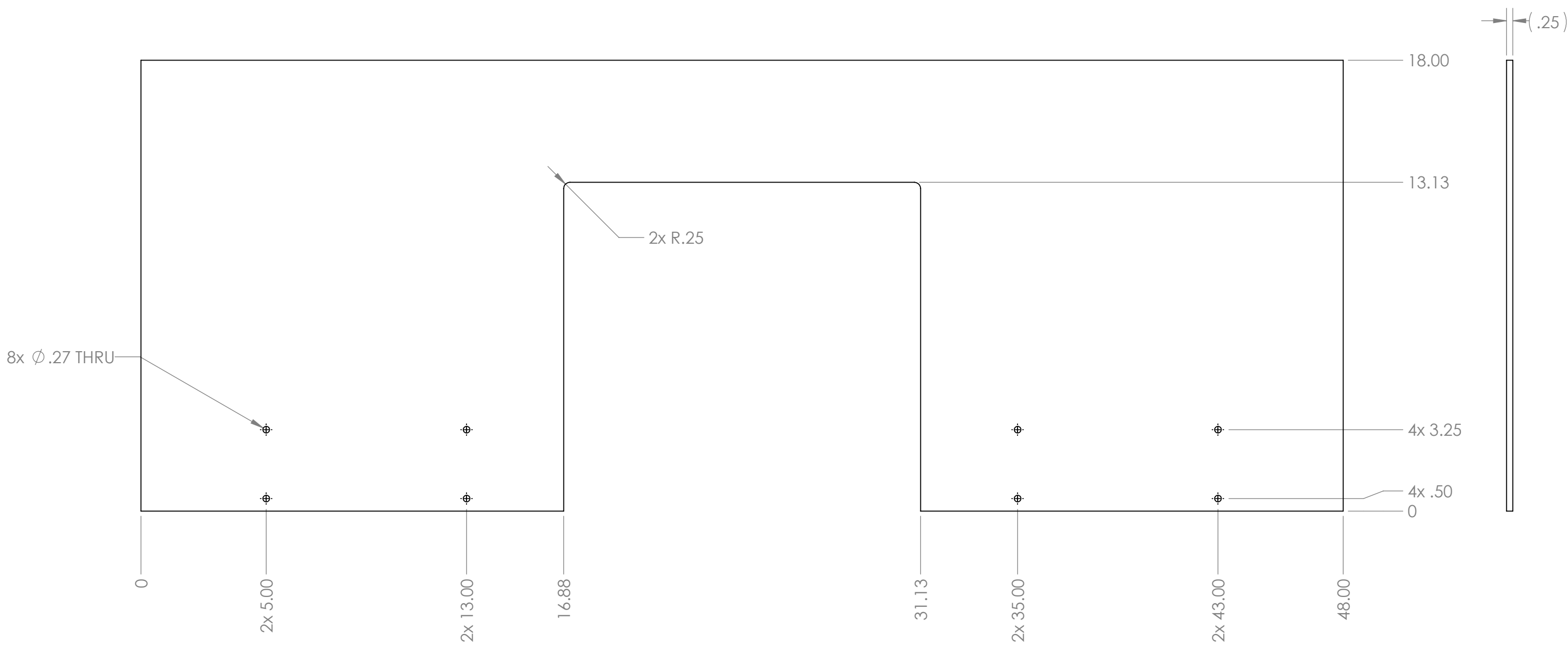
1

B

B

A



A



Notes:

- 1. Material: 1/4" thick, clear polycarbonate.
- 2. Remove all burrs and sharp edges.

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		SIZE DWG. NO. REV
		MATERIAL	ENG APPR.		<b>B</b> <b>GE-18017</b>
NEXT ASSY	USED ON	FINISH	MFG APPR.		SCALE: 1:4 WEIGHT: SHEET 1 OF 1
APPLICATION		DO NOT SCALE DRAWING	Q.A.		
			COMMENTS:		



4

3

2

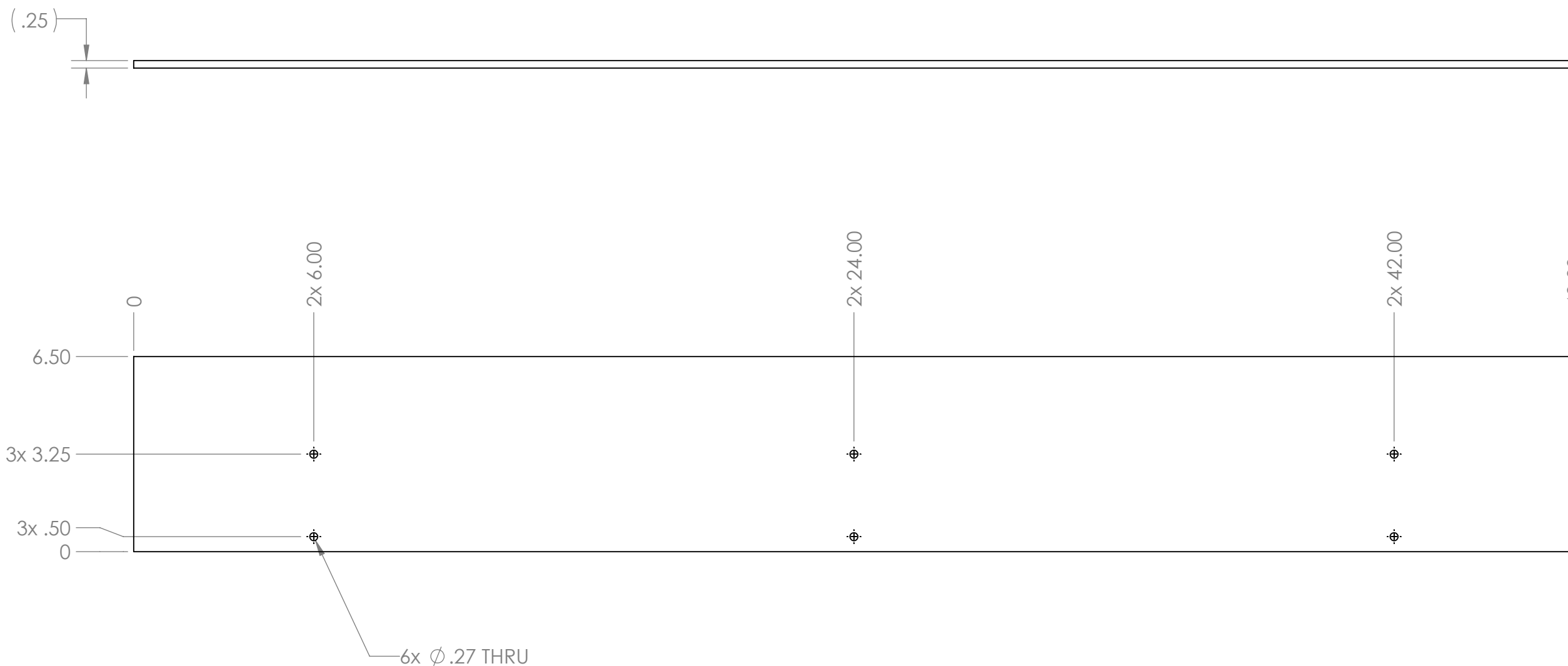
1

B

B

A

A



Notes:

1. Material: 1/4" thick, clear polycarbonate.
2. Remove all burrs and sharp edges.

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001		DRAWN	
		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
		MATERIAL		ENG APPR.	
		FINISH		MFG APPR.	
NEXT ASSY	USED ON			Q.A.	
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:	
				TITLE:	
				Plate Front Wall	
SIZE	DWG. NO.			REV	
<b>B</b>	GE-18018				
SCALE: 1:4		WEIGHT:		SHEET 1 OF 1	



4

3

2

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2

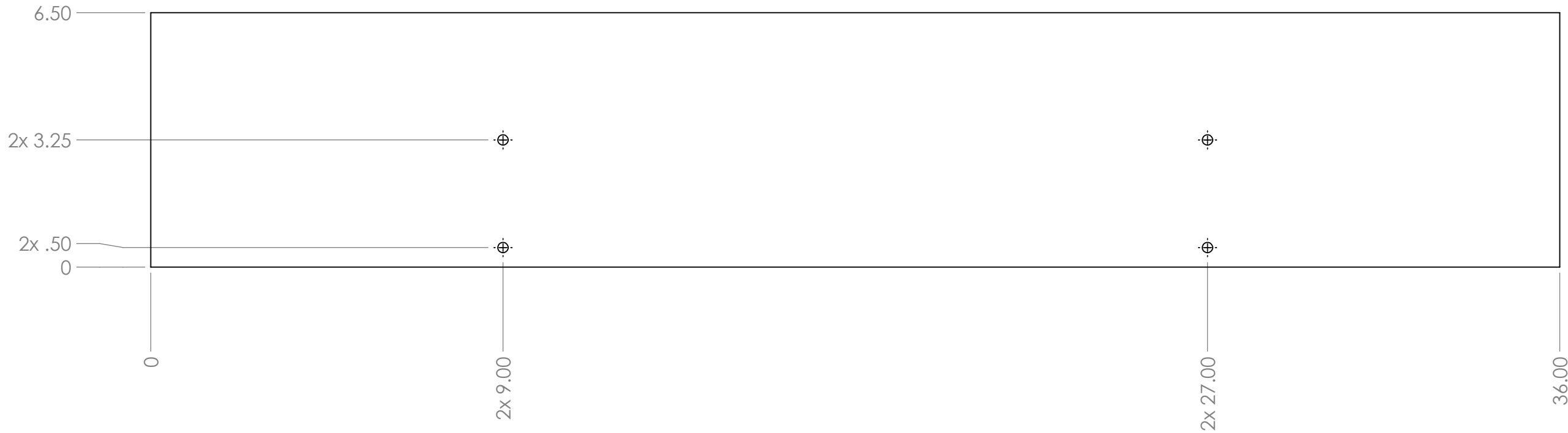
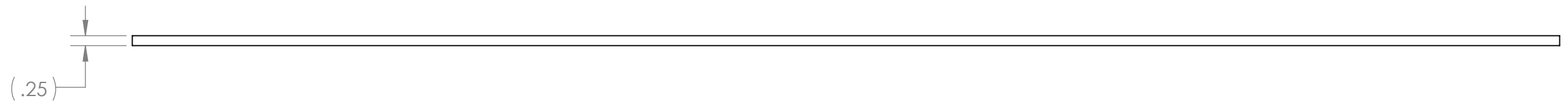
1

B

B

A

A



- Notes:
1. Material: 1/4" thick, clear polycarbonate.
  2. Remove all burrs and sharp edges.

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



TITLE:		
Plate Side Wall		
SIZE	DWG. NO.	REV
<b>B</b>	GE-18019	
SCALE: 1:3	WEIGHT:	SHEET 1 OF 1

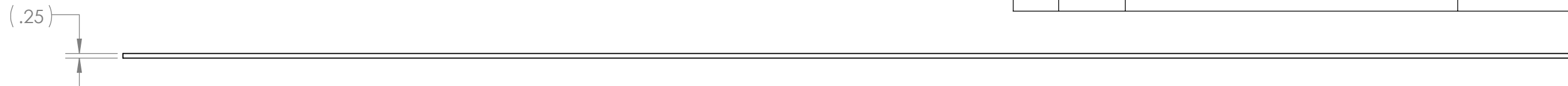
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A1, B1	2	Moved location of 4 countersunk holes. Removed 8 holes.	11/17/2017	CPO
A1	3	Added missing dimension.	1/12/2018	CPO



- Notes:
- Material: 1/4" thick, clear polycarbonate.
  - Remove all burrs and sharp edges.

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



TITLE:  
**Scale Side Cover Polycarbonate**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18020</b>	<b>3</b>
SCALE: 1:6	WEIGHT:	SHEET 1 OF 1

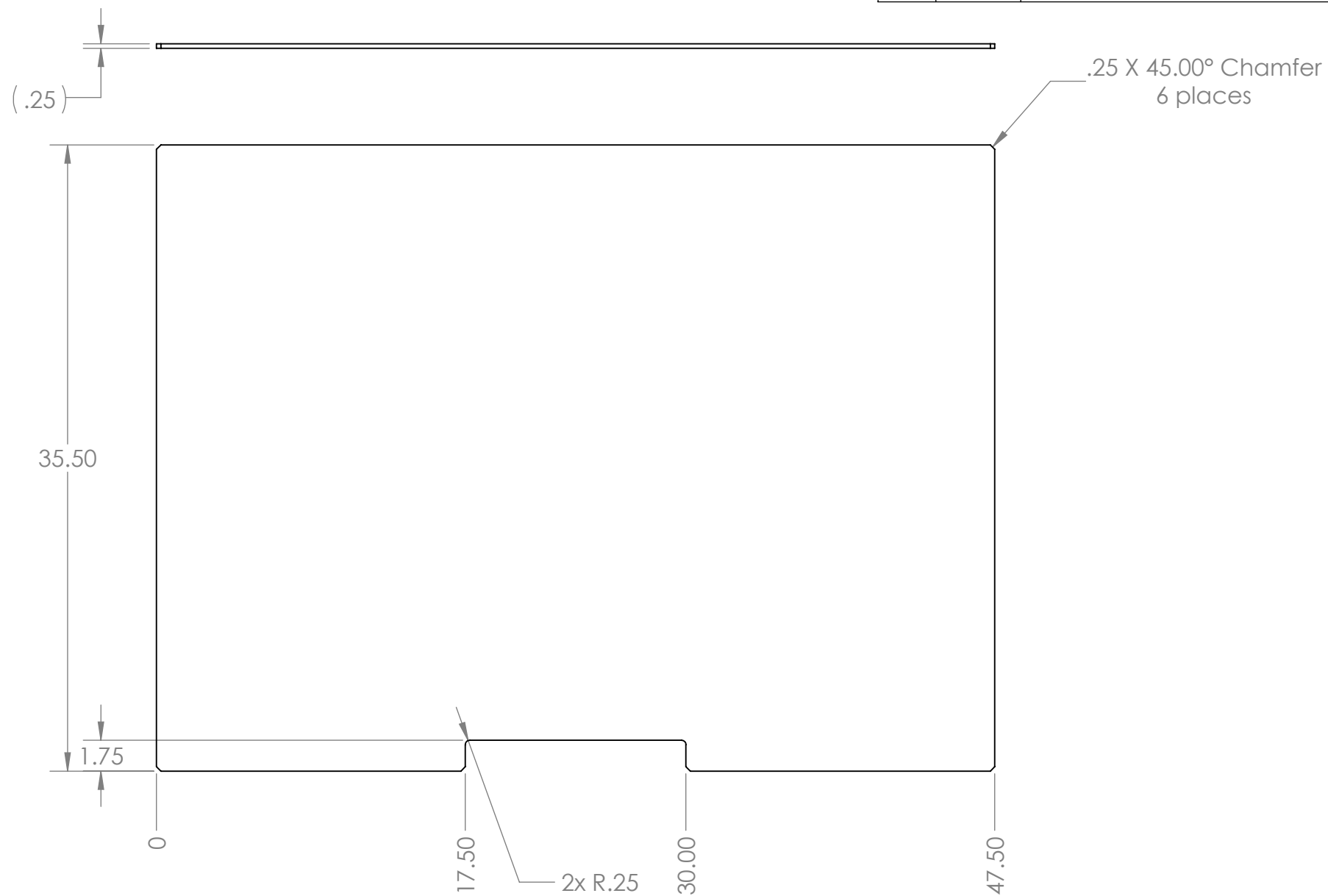
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A4	2	Changed material thickness in note to match part dimension	12/7/2017	CPO



B

B

A

A

- Notes:
1. Material: 1/4" thick, black HDPE
  2. Surface: Textured, Orange Peel
  3. Remove all burrs and sharp edges

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



TITLE:  
**Scale and Switch Basket, Plate**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18021</b>	<b>2</b>
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

4

3

2

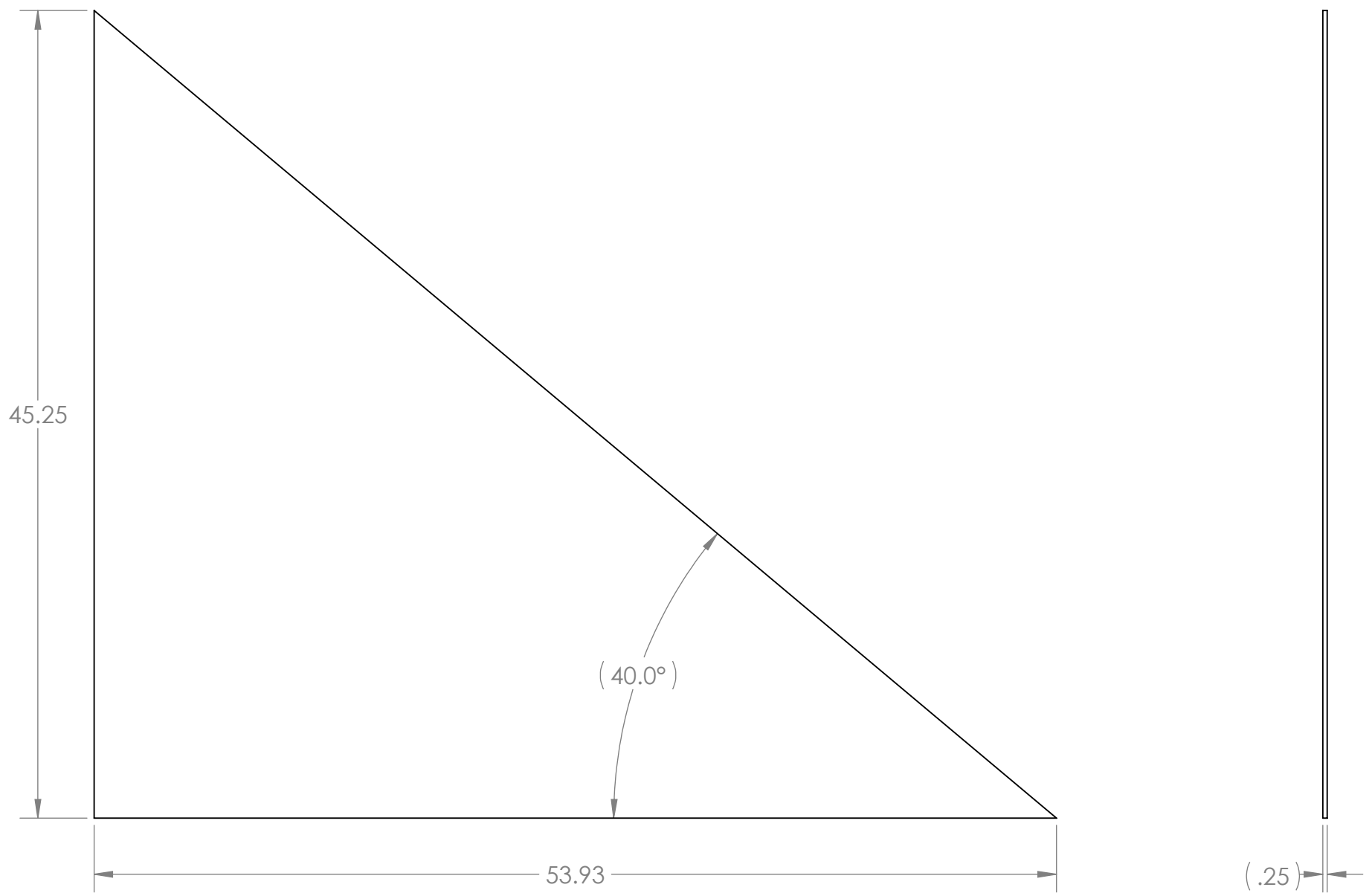
1

4

3

2

1



Notes:

- 1. Material: 1/4" thick, clear polycarbonate.
- 2. Remove all burrs and sharp edges.

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



TITLE: Scale Outrigger Side Cover Polycarbonate		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18022</b>	
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

4

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B

B

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A

4

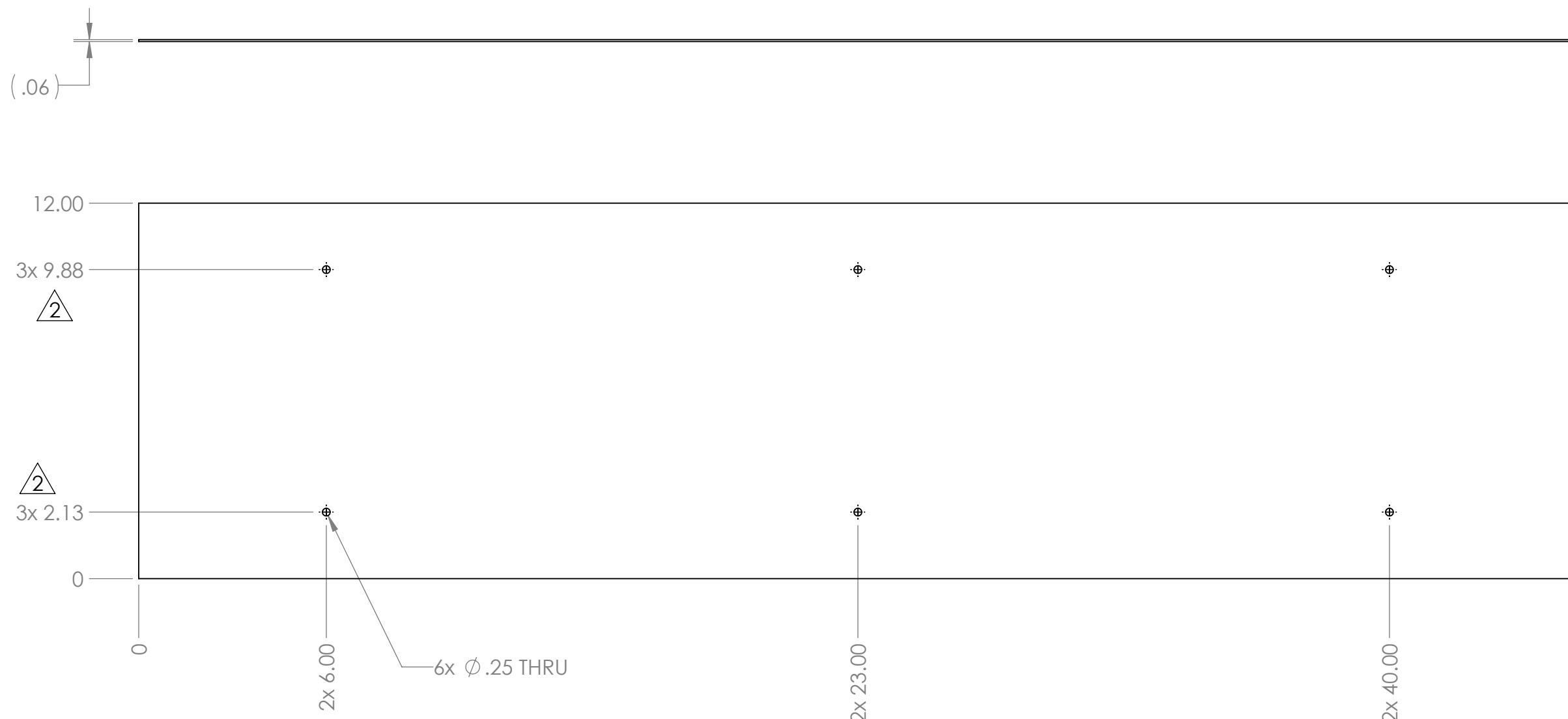
3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A4, B4	2	Hole location of 6 holes changed.	11/17/2017	CPO

B



B

A

Notes:

1. Material: 1/16" thick, clear polycarbonate.
2. Remove all burrs and sharp edges.

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



TITLE:  
**Scale Arm Cover**  
**Polycarbonate**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18023</b>	<b>2</b>
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1

4

3

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1

A

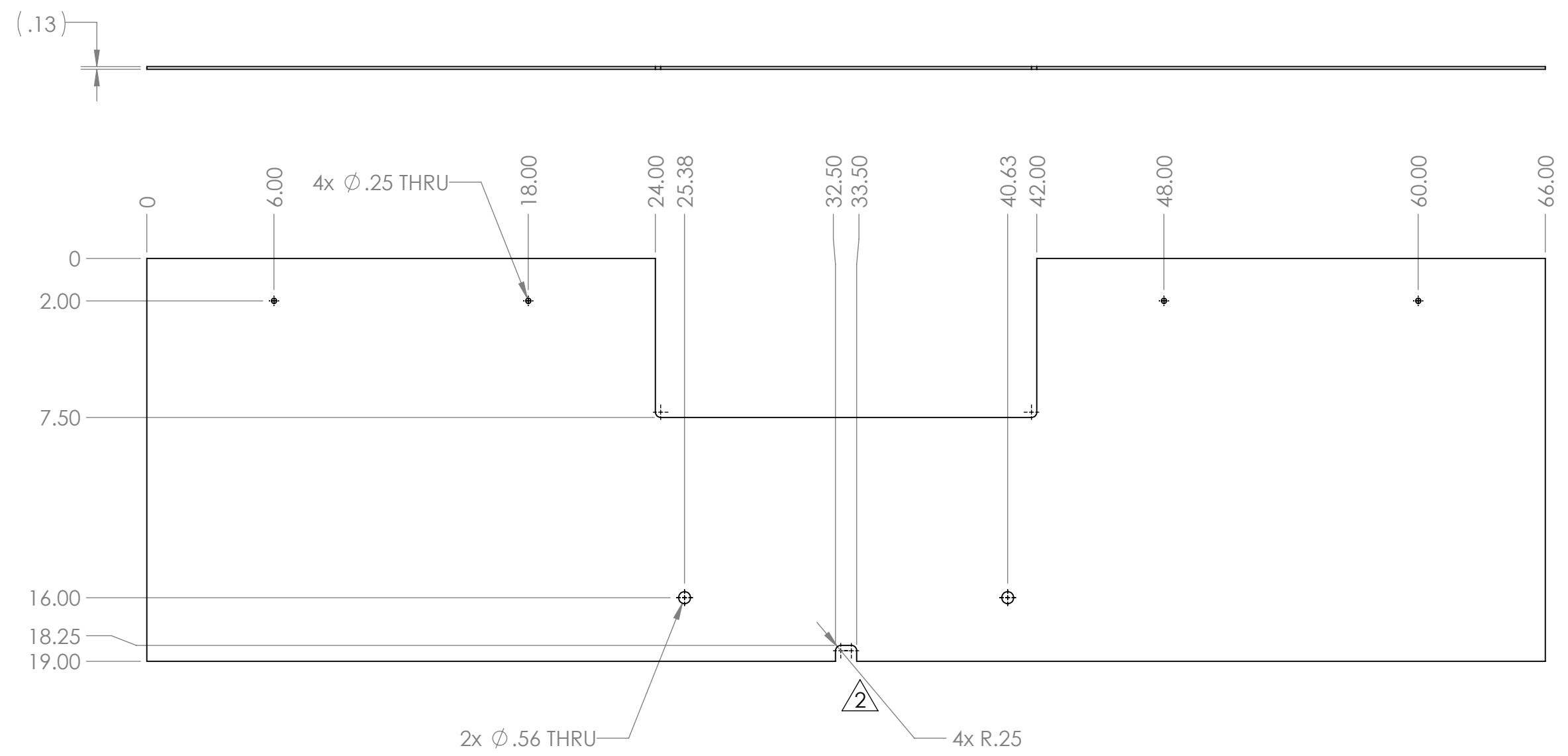
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A2	2	Added cutout	11/17/2017	CPO



- Notes:
1. Material: 1/8" thick, clear polycarbonate.
  2. Remove all burrs and sharp edges.

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

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

TITLE:  
**Switch Base Cover Polycarbonate**

SIZE **B** DWG. NO. **GE-18024** REV **2**

SCALE: 1:6 WEIGHT: SHEET 1 OF 1

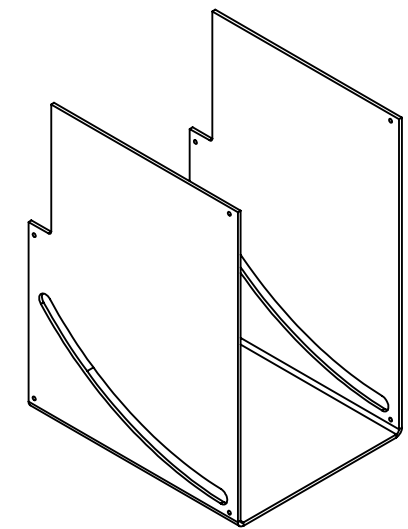
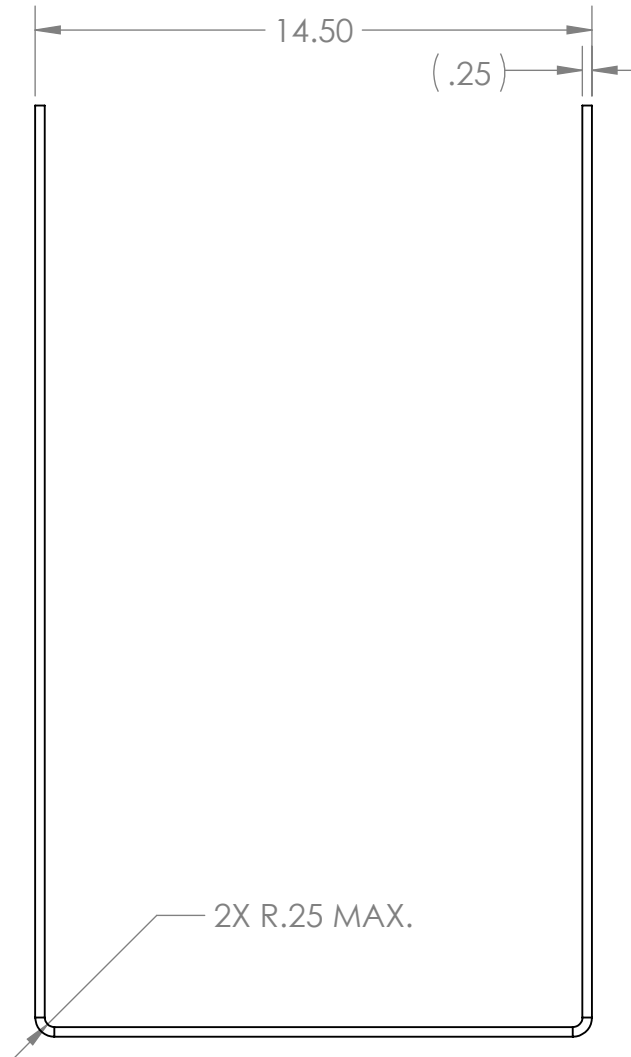
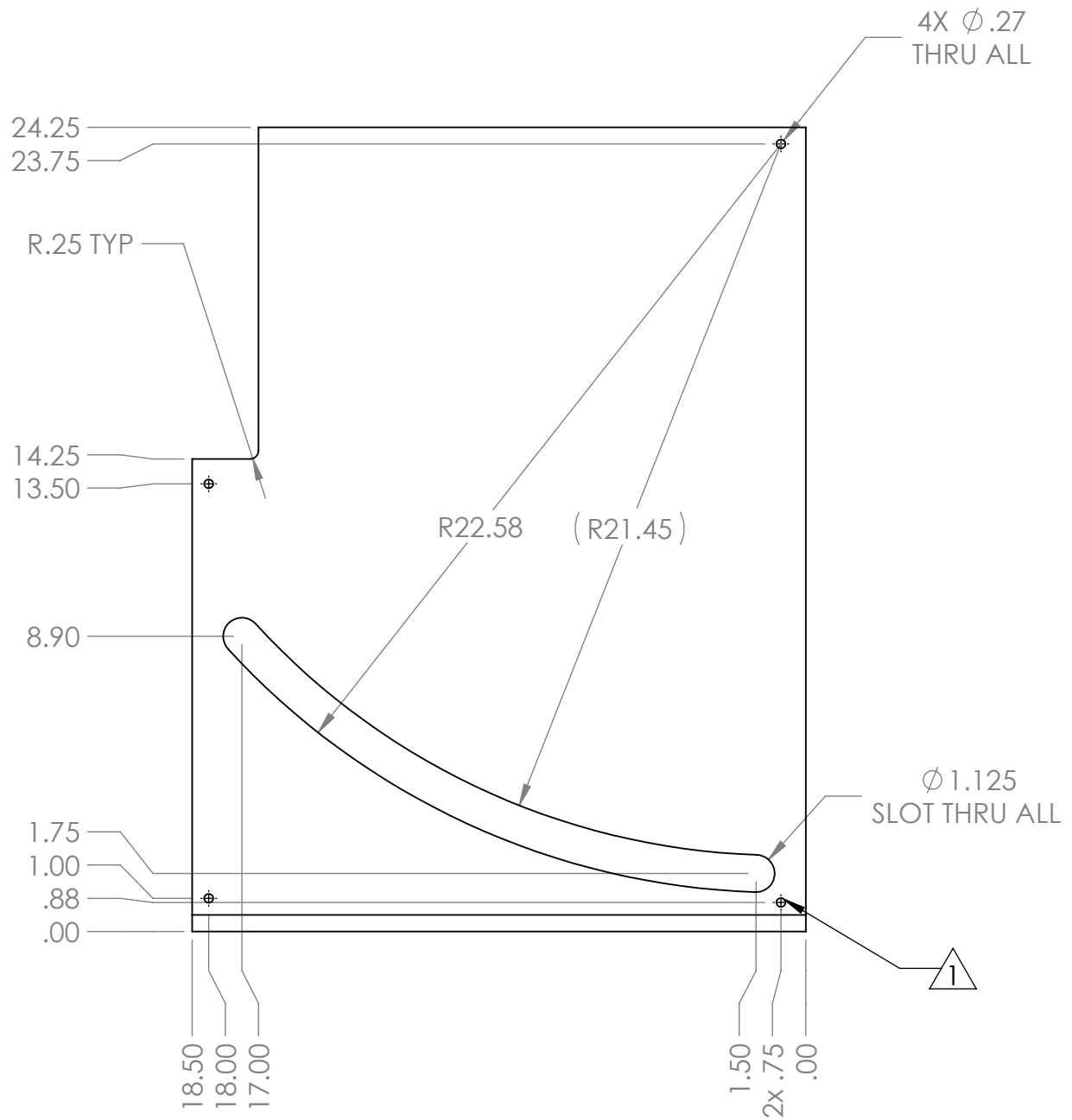
4

3

2

1



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A3	1	Added additional 0.27" diameter hole.	1/8/2018	CPO



- Notes:
1. Material: 1/4" thick, clear polycarbonate
  2. Remove all burrs and sharp edges

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

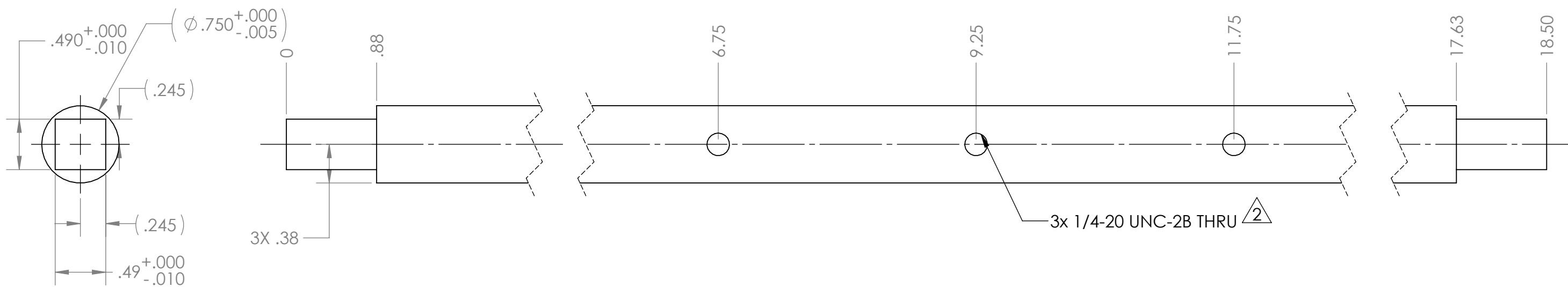
TITLE: **Chute Body**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18025</b>	<b>1</b>

SCALE: 1:5 WEIGHT: SHEET 1 OF 1





REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A1, A4	2	Material Changed. 3 Clearance holes changed to 1/4-20 tapped holes	11/17/2017	CPO



- Notes:
- Material: 3/4" Rotary Shaft, 1045 Steel
  - Finish: Clear Zinc

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

TITLE:

## Switch/Scale Arm Shaft

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18026</b>	<b>2</b>
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

4

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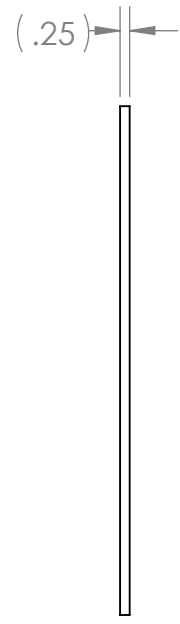
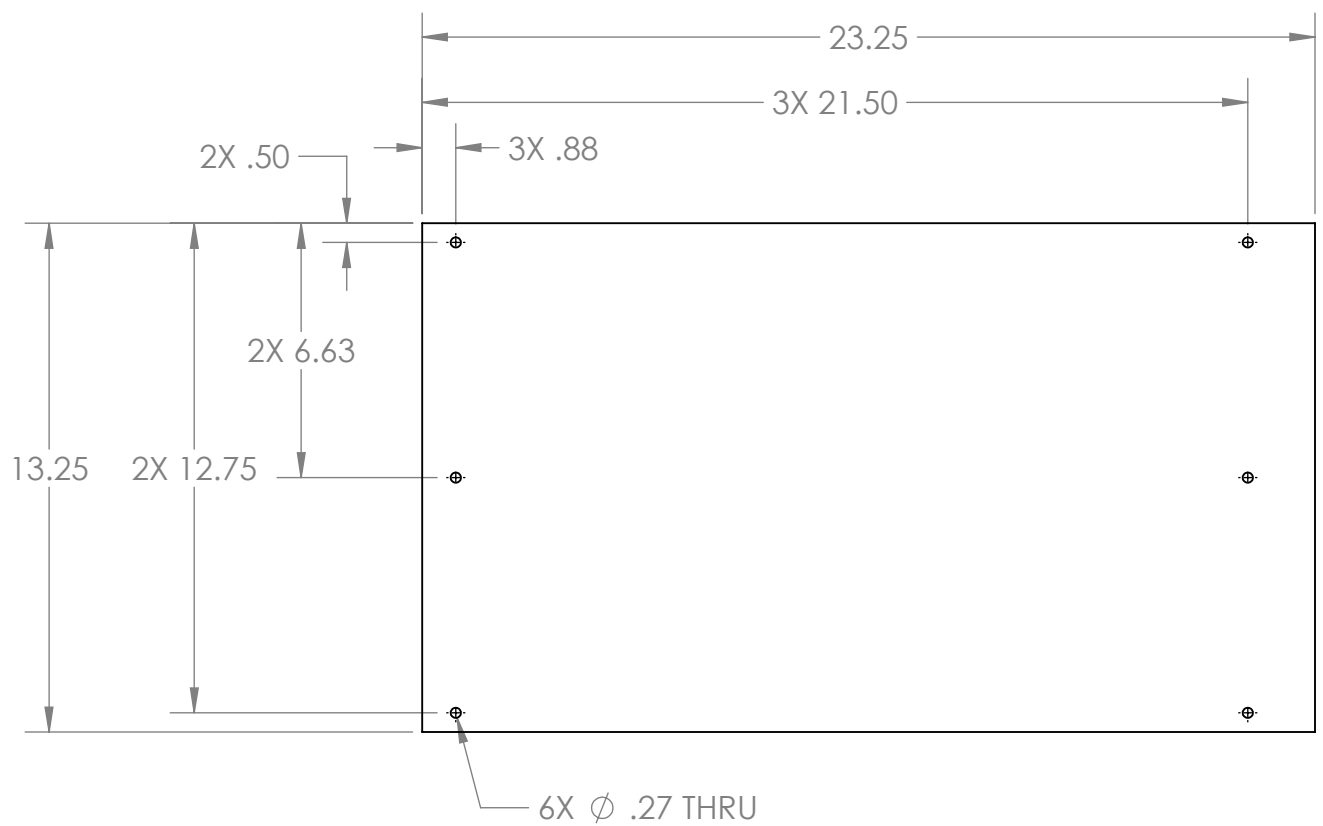
1

B

B

A

A



- Notes:
1. Material: 1/4" thick, clear polycarbonate
  2. Remove all burrs and sharp edges

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		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	
		MATERIAL		ENG APPR.	
NEXT ASSY	USED ON	FINISH		MFG APPR.	
APPLICATION		DO NOT SCALE DRAWING		Q.A.	
				COMMENTS:	
				TITLE:	
				FIRST ROBOTICS COMPETITION	
				3D SOLIDWORKS Modeling Solutions Partner	
				Pusher Panel	
SIZE	DWG. NO.	REV			
<b>B</b>	GE-18027				
SCALE: 1:5		WEIGHT:		SHEET 1 OF 1	

4

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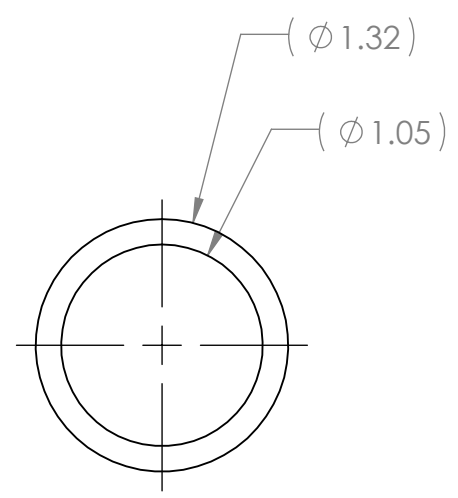
1

4

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1



- Notes:
1. Material: 1" Schedule 40 Pipe, 6061 Aluminum
  2. Remove all burrs and sharp edges

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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			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



TITLE:  
**Plate Mount Pin**

SIZE DWG. NO. REV  
**B** **GE-18028**

SCALE: 1:1 WEIGHT: SHEET 1 OF 1

4

3

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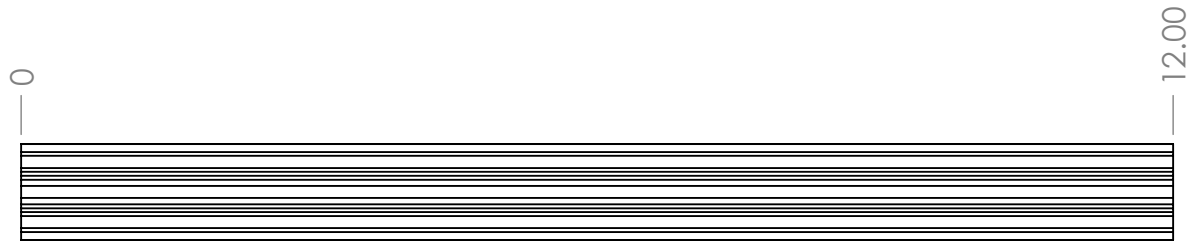
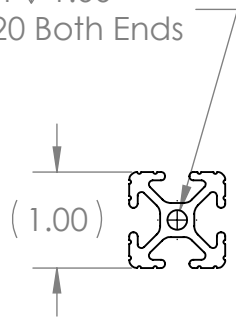
2

1

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Ø .21  $\nabla$  1.00  
Tap 1/4-20 Both Ends



Note:

1. 80-20 aluminum extrusion
2. Remove all burrs and sharp edges

A

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



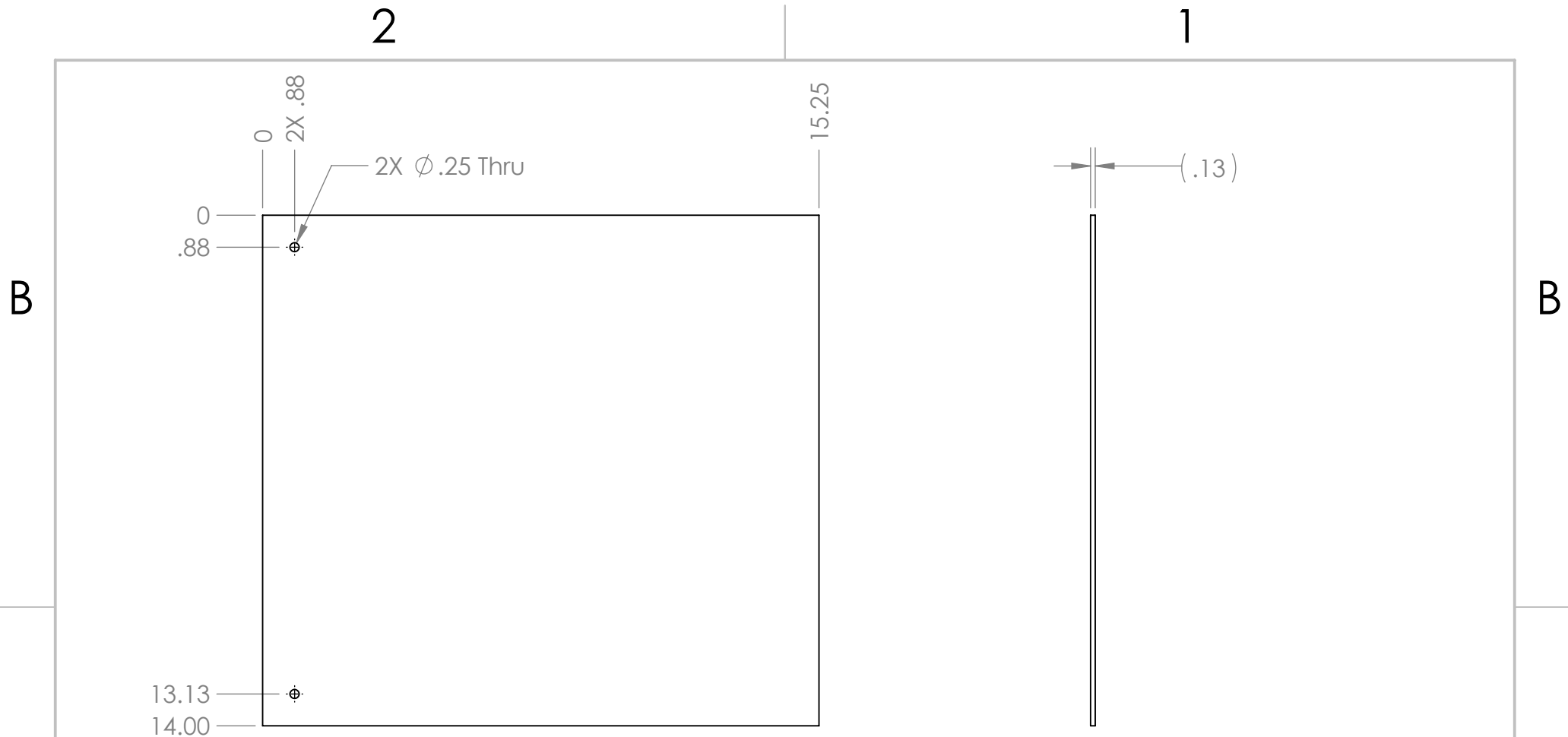
TITLE:  
**80-20 Extrusion**

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SIZE	DWG. NO.	REV
<b>A</b>	<b>GE-18030</b>	
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1

2

1



Notes:

- 1/8" smooth HDPE, red or blue
- Remove burrs and sharp edges

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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			



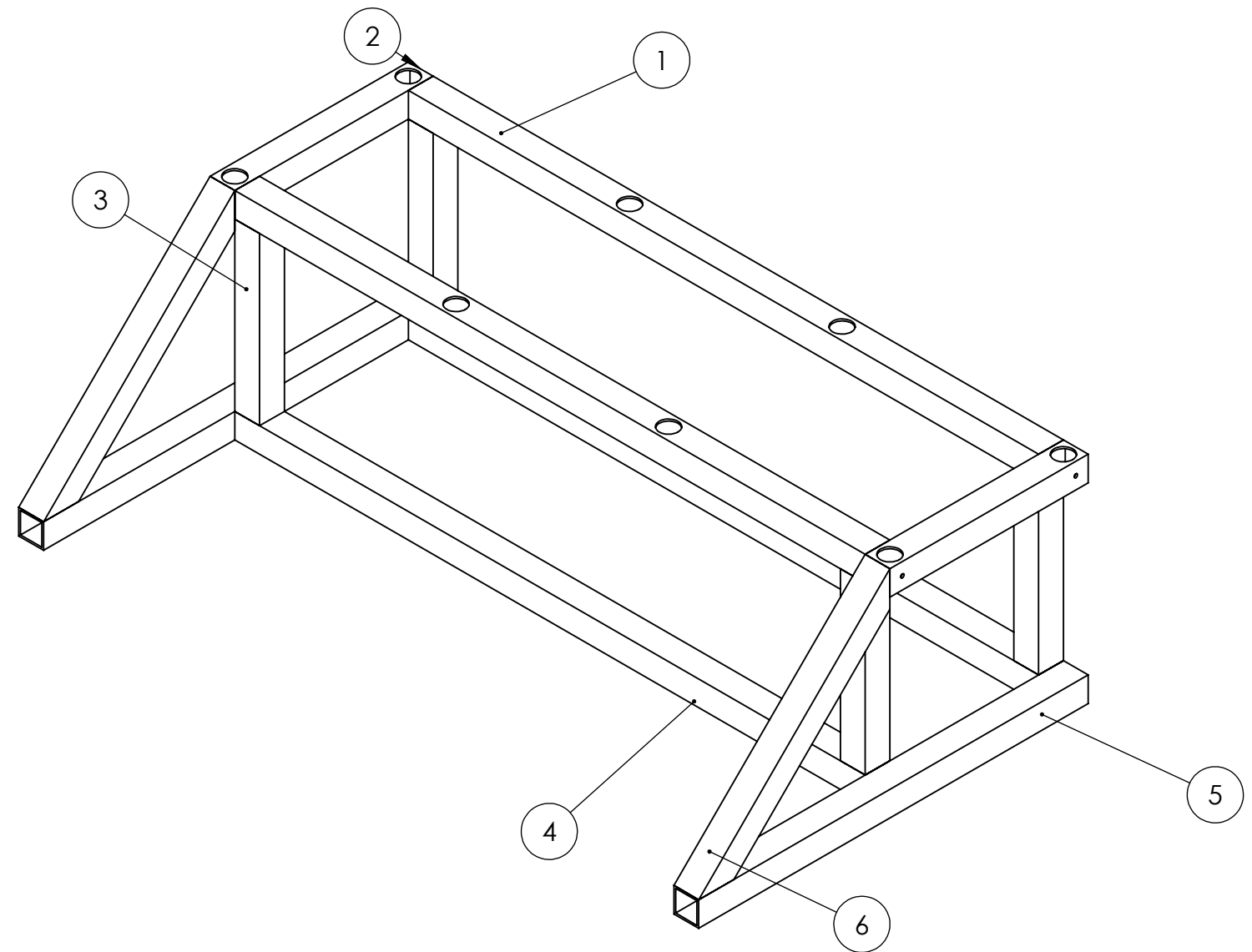
TITLE:		
Vault HDPE Bottom Side		
SIZE	DWG. NO.	REV
<b>A</b>	<b>GE-18031</b>	
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1

4

3

2



1



**Bill of Material**

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18032-01	1 3/4", 1/8" Thick Square Tube 6063 Aluminum	2
2	GE-18032-02	1 3/4", 1/8" Thick Square Tube 6063 Aluminum	2
3	GE-18032-03	1 3/4", 1/8" Thick Square Tube 6063 Aluminum	4
4	GE-18032-05	1 3/4", 1/8" Thick Square Tube 6063 Aluminum	2
5	GE-18032-04	1 3/4", 1/8" Thick Square Tube 6063 Aluminum	2
6	GE-18032-06	1 3/4", 1/8" Thick Square Tube 6063 Aluminum	2

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		SIZE DWG. NO. REV
		MATERIAL	ENG APPR.		<b>B</b> <b>GE-18032</b>
		FINISH	MFG APPR.		SCALE: 1:8 WEIGHT: SHEET 1 OF 7
NEXT ASSY	USED ON		Q.A.		
APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		

4

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2

1

B

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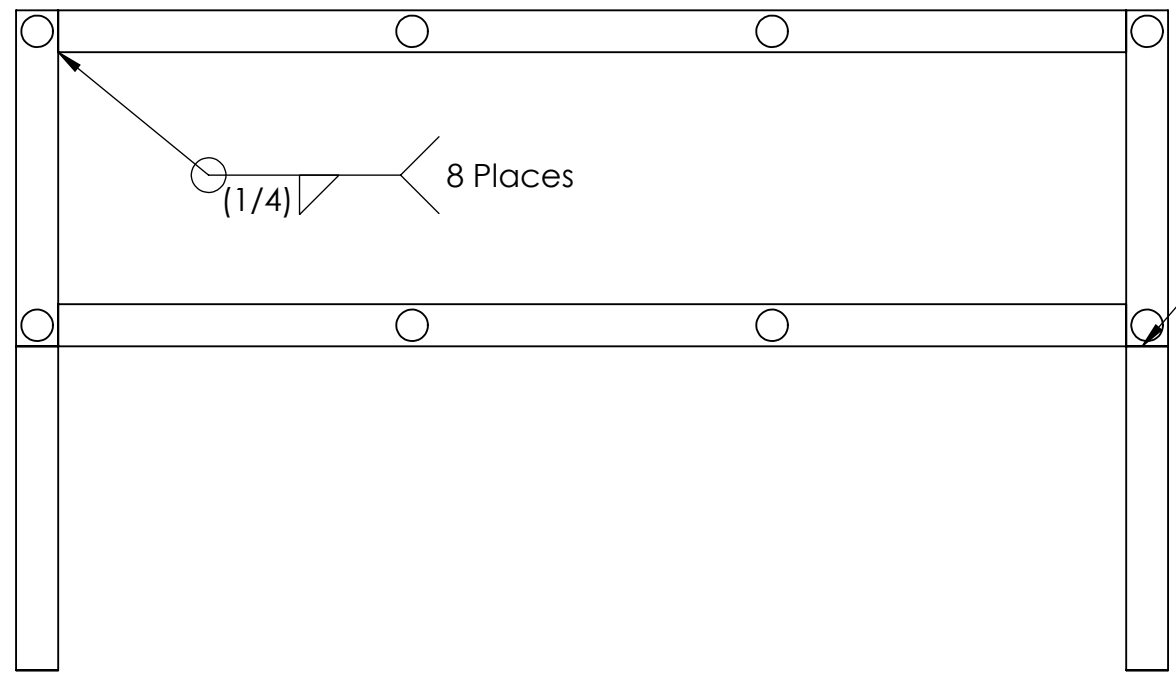
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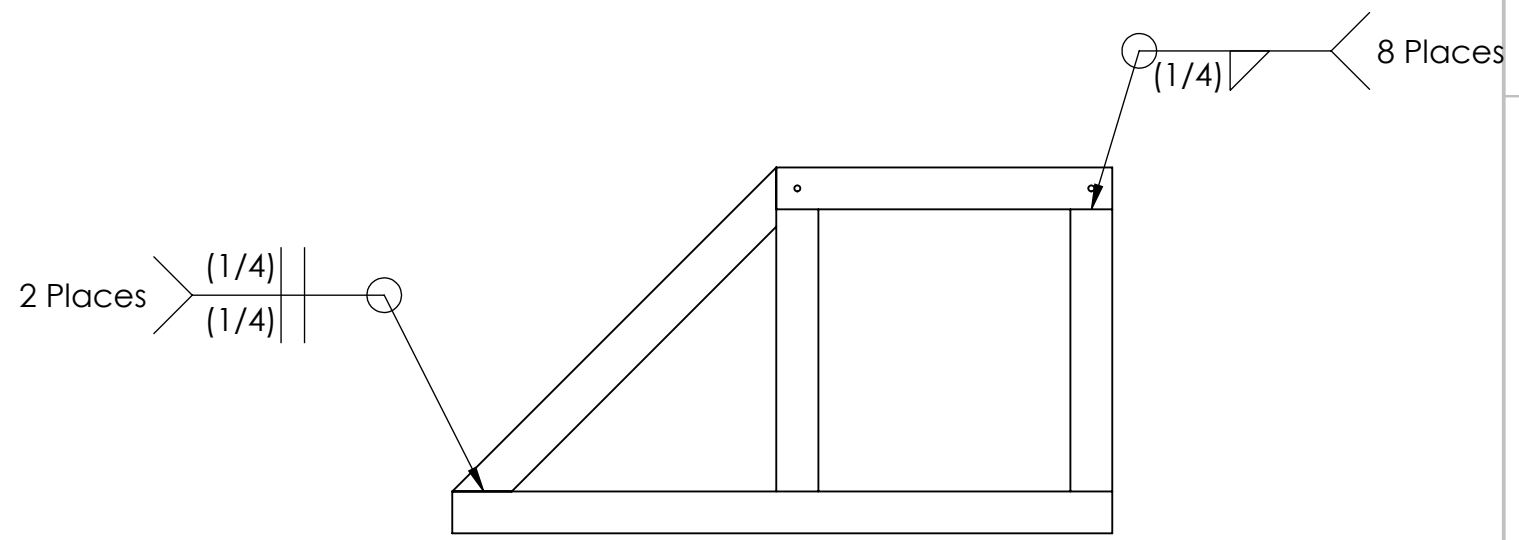
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2

1



Top View



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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			
FINISH				
NEXT ASSY	USED ON			
APPLICATION	DO NOT SCALE DRAWING			



TITLE:		
<h1>Vault Base</h1>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18032</b>	
SCALE: 1:8	WEIGHT:	SHEET 2 OF 7

4

3

2

1

B

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4

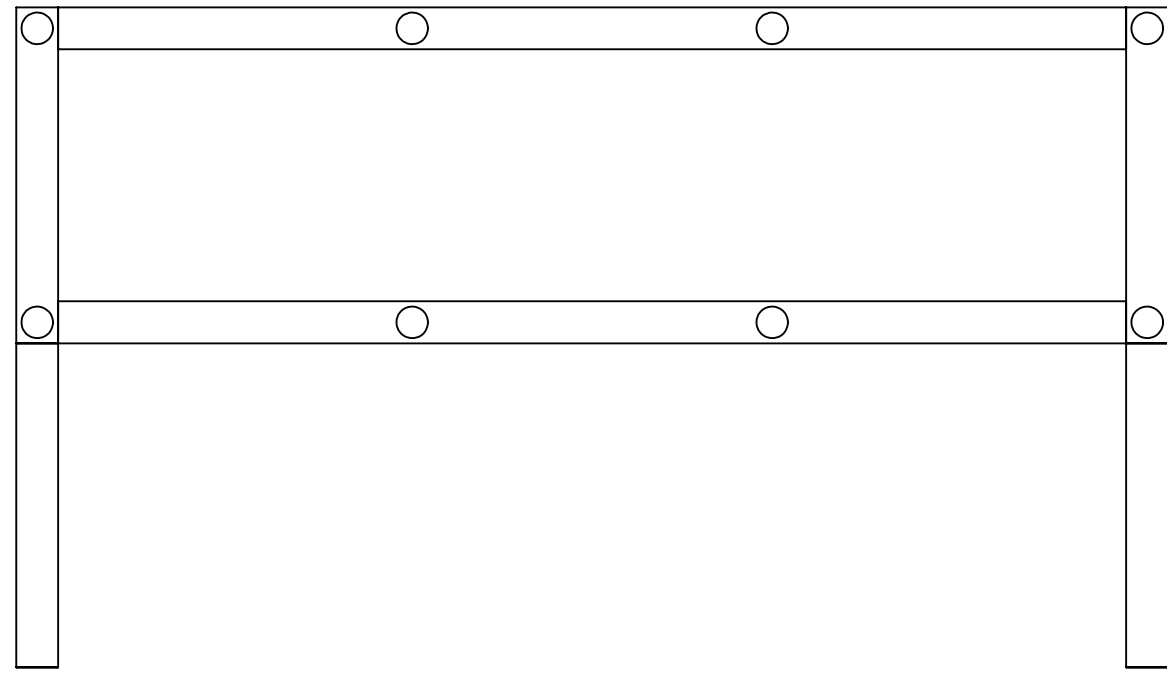
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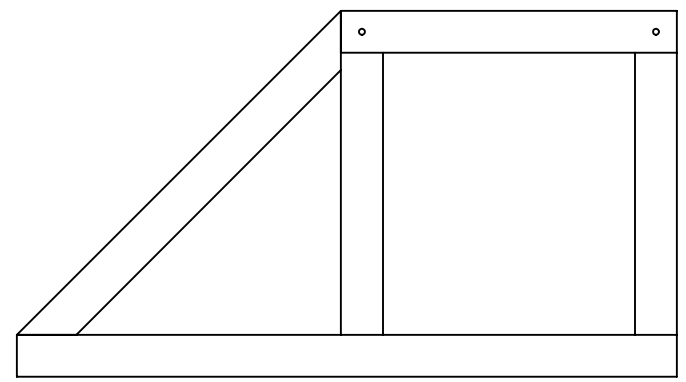
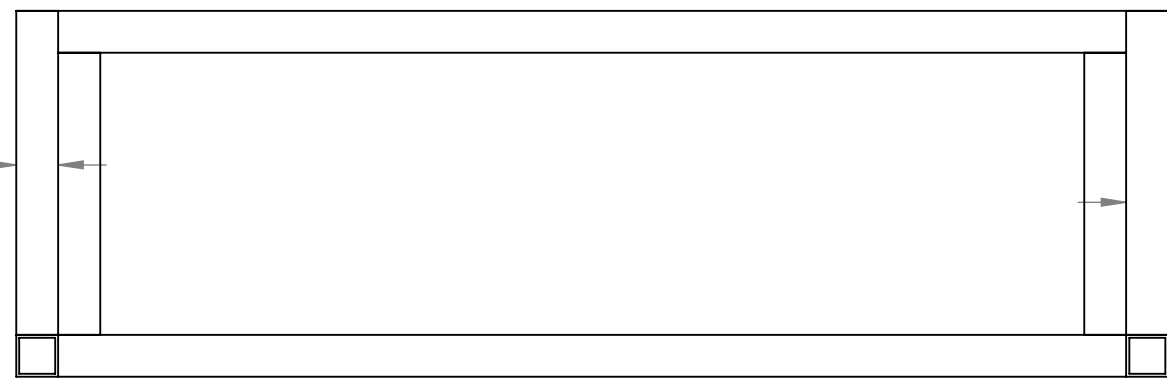
1

B

B



1.75 → ← 1.75



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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: <b>Vault Base</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18032</b>	REV
SCALE: 1:8	WEIGHT:	SHEET 3 OF 7

4

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1



4

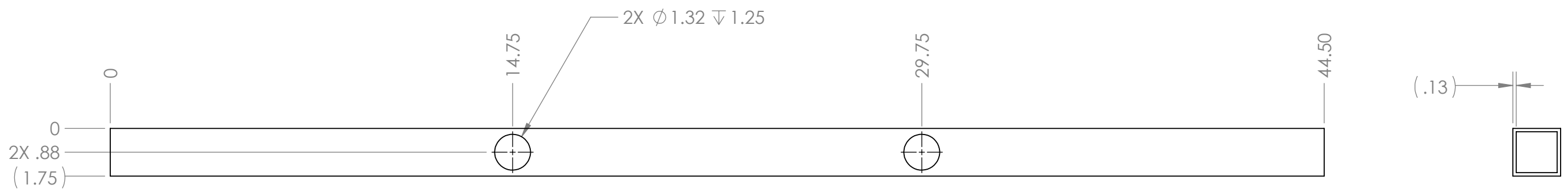
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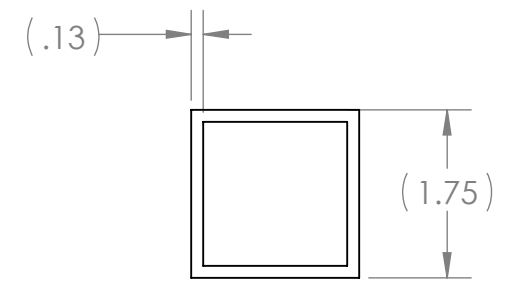
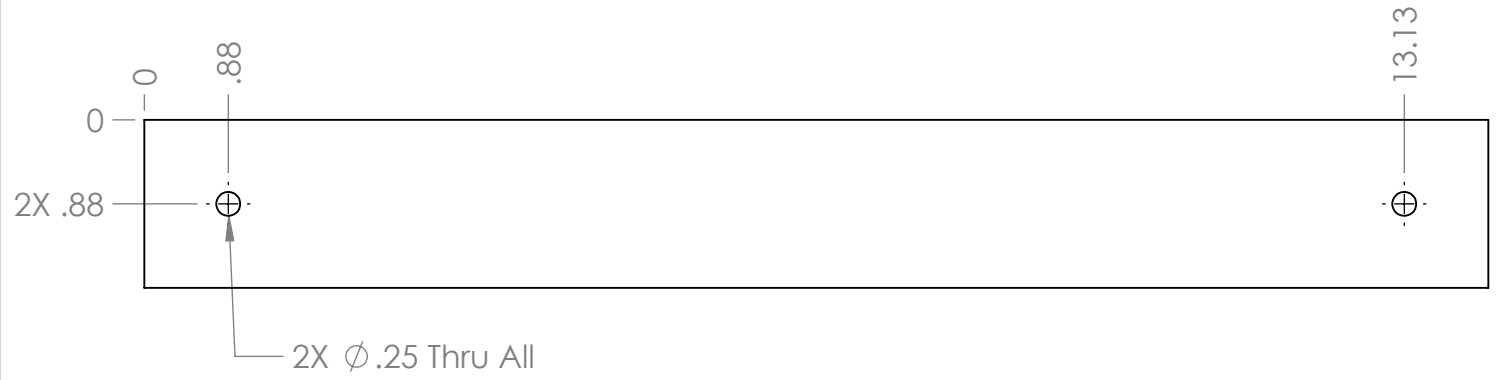
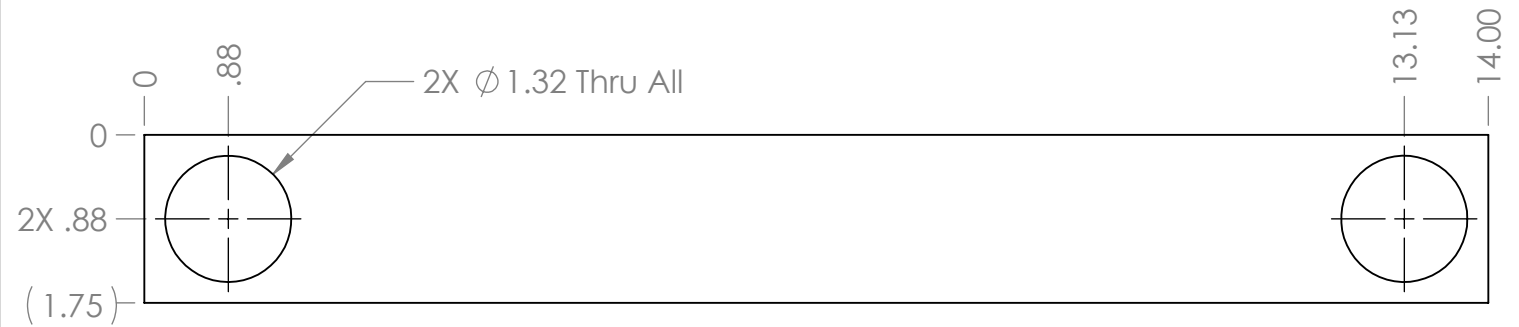
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B

B



Item Number: GE-18032-01  
 Material: 1 3/4", 1/8" Thick Square Tube 6063 Aluminum  
 Remove Sharp Edges and Burrs  
 QTY:2



Item Number: GE-18032-02  
 Material: 1 3/4", 1/8" Thick Square Tube 6063 Aluminum  
 Remove Sharp Edges and Burrs  
 QTY:2

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		DIMENSIONS ARE IN INCHES	DRAWN	
		TOLERANCES:	CHECKED	
		FRACTIONAL $\pm$ 1/16	ENG APPR.	
		ANGULAR: MACH $\pm$ 1° BEND $\pm$ 1°	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: <b>Vault Base</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18032</b>	REV
SCALE: 1:2	WEIGHT:	SHEET 4 OF 7

4

3

2

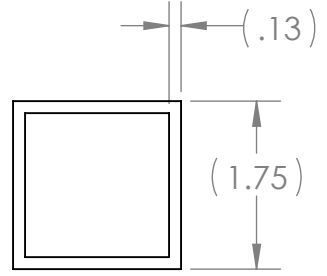
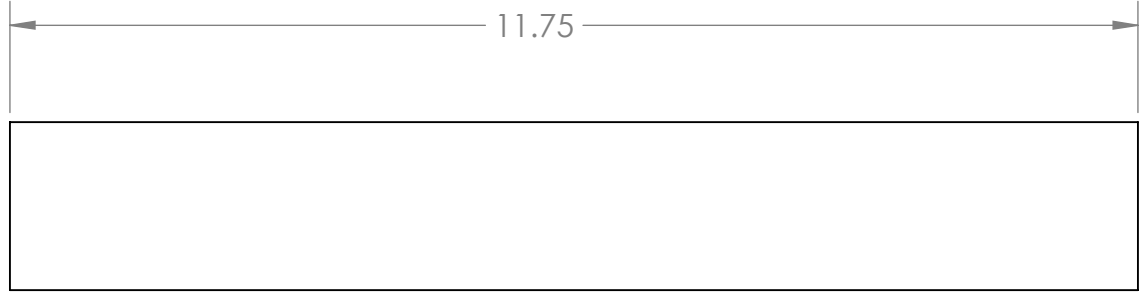
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4

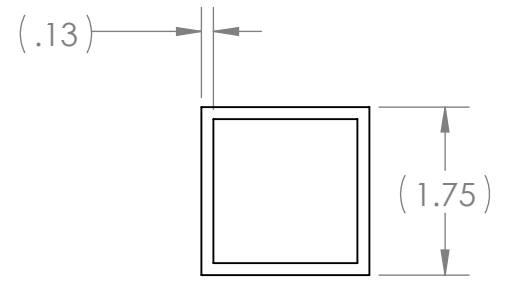
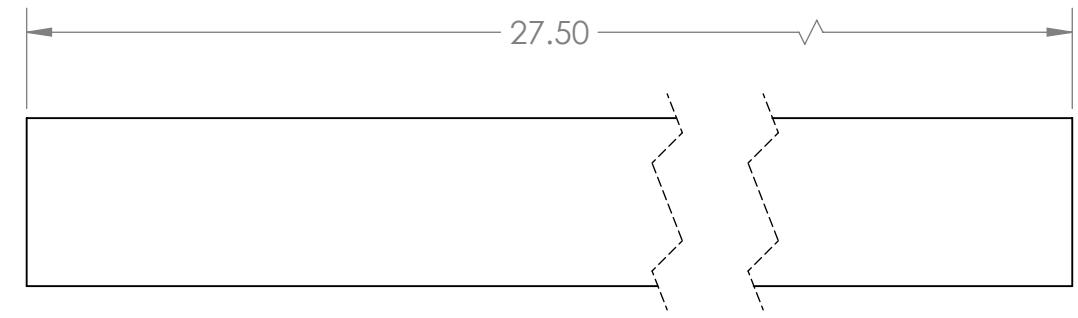
3

2

1



Item Number: GE-18032-03  
 Material: 1 3/4" 6063 Alumium Square Tube  
 Remove Sharp Edges and Burrs  
 QTY:4



Item Number: GE-18032-04  
 Material: 1 3/4" 6063 Alumium Square Tube  
 Remove Sharp Edges and Burrs  
 QTY: 2

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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			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



TITLE:		
Vault Base		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18032</b>	
SCALE: 1:2	WEIGHT:	SHEET 5 OF 7

4

3

2

1

B

B

A

A

4

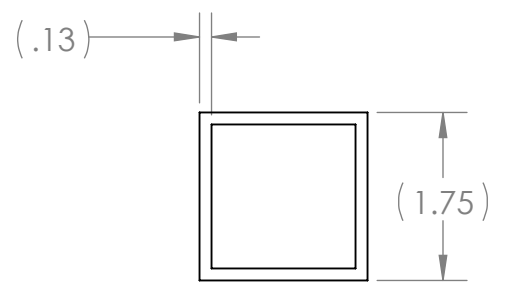
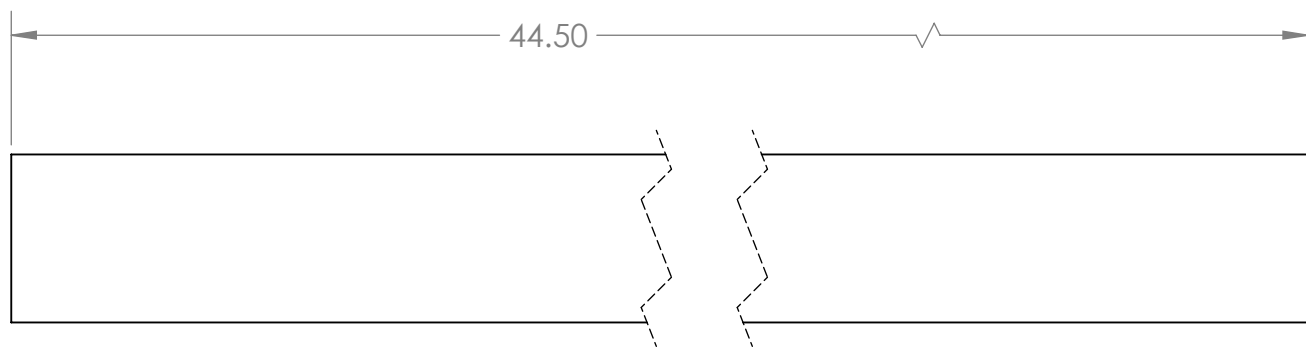
3

2

1

B

B



Item Number: GE-18032-05  
 Material: 1 3/4" 6063 Alumium Square Tube  
 Remove Sharp Edges and Burs  
 QTY:2

A

A

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



TITLE: <b>Vault Base</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18032</b>	REV
SCALE: 1:2	WEIGHT:	SHEET 6 OF 7

4

3

2

1

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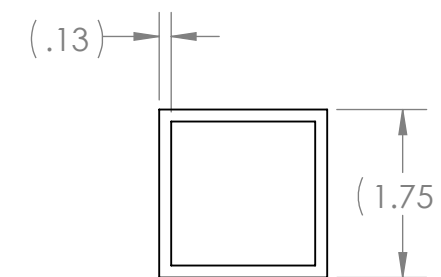
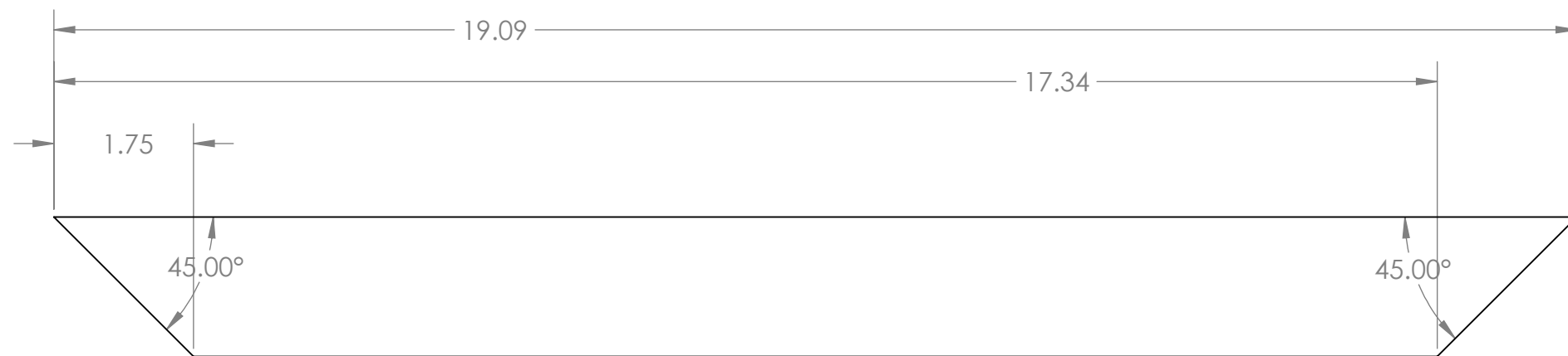
3

2

1

B

B





Item Number: GE-18032-06  
 Material: 1 3/4" 6063 Alumium Square Tube  
 Remove Sharp Edges and Burs  
 QTY:2

A

A

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		SIZE DWG. NO. REV <b>B</b> <b>GE-18032</b>
		MATERIAL	ENG APPR.		
NEXT ASSY	USED ON	FINISH	MFG APPR.		
APPLICATION		DO NOT SCALE DRAWING	Q.A.		
			COMMENTS:		

4

3

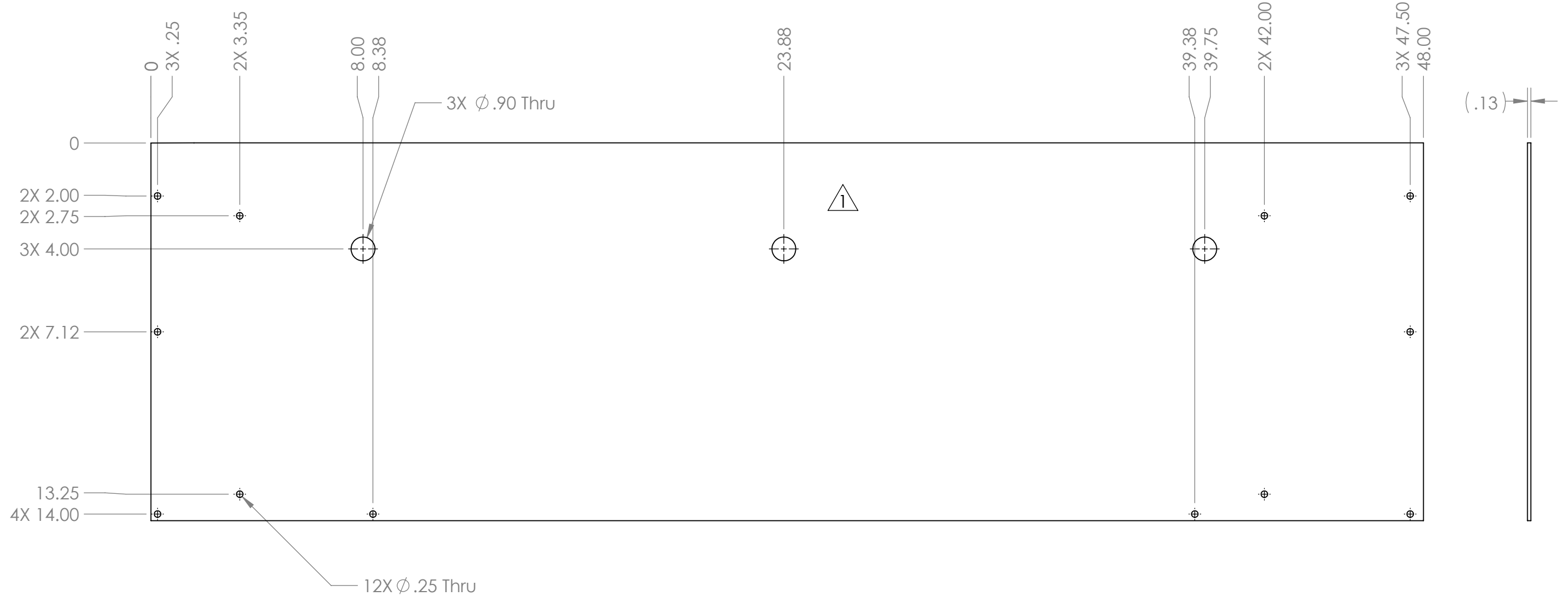
2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2	1	Removed holes and added holes at 3.35 and 42.00	11/20/2017	MXS

B

B



A

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- Note
- 1/8" thk. clear Polycarbonate
  - Remove sharp edges and burrs

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

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

TITLE: **Vault polycarbonate Top Front Face**

SIZE **B** DWG. NO. **GE-18033** REV **1**

SCALE: 1:8 WEIGHT: SHEET 1 OF 1

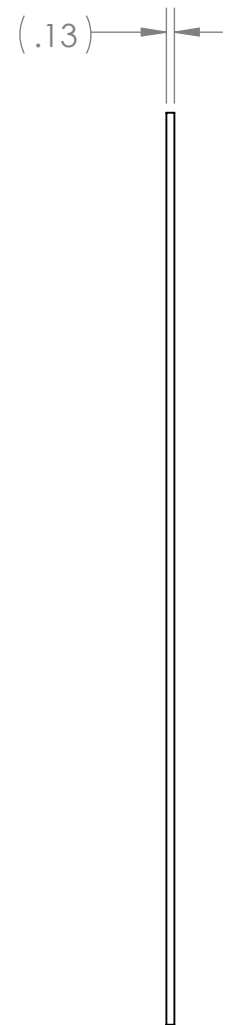
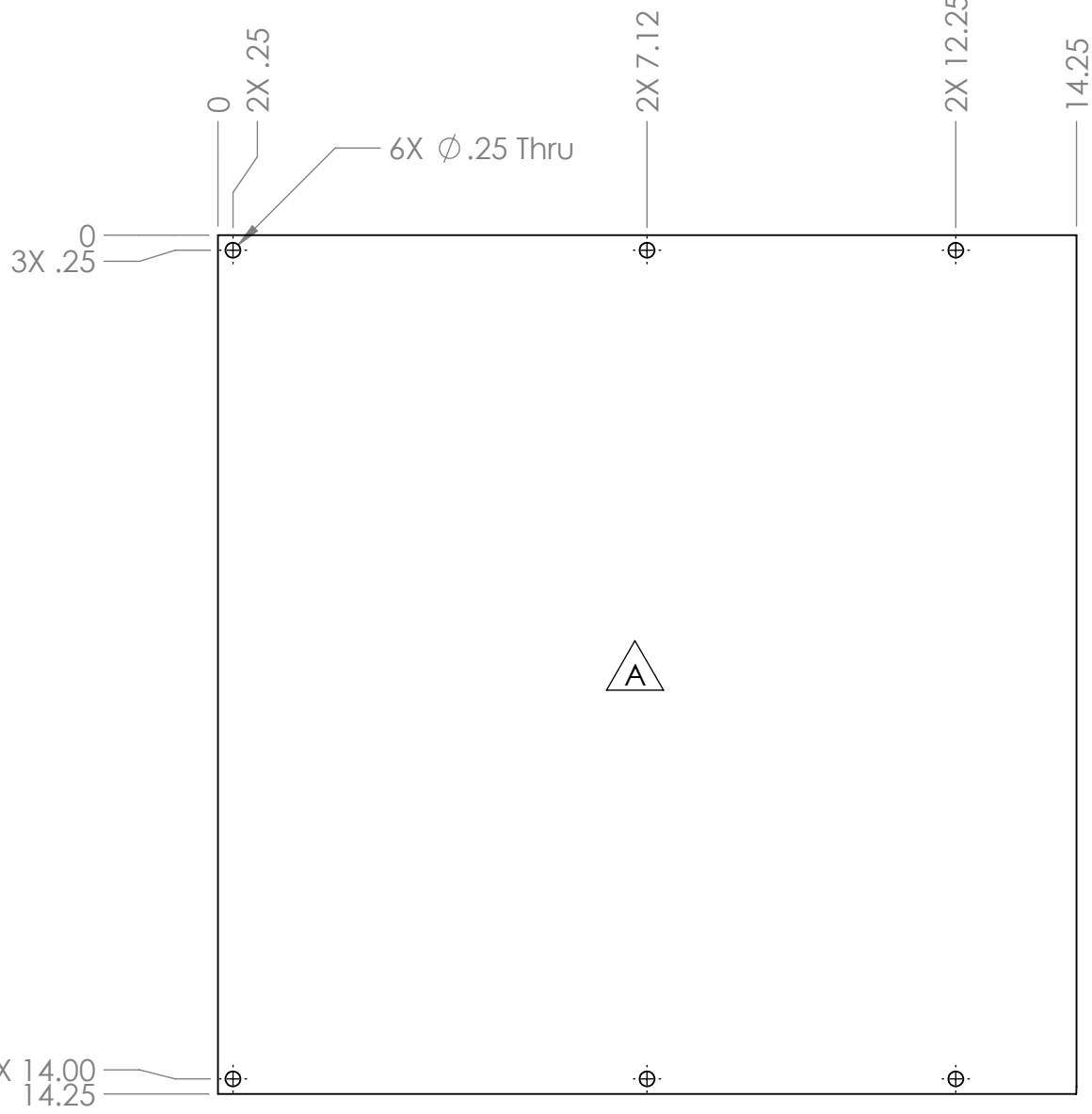
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	A	Removed holes	11/20/2017	MXS



Note  
 1. 1/8" thk. smooth HDPE, blue or red  
 2. Remove sharp edges and burrs

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



TITLE:  
**Vault HDPE Top Side**

SIZE **B** DWG. NO. **GE-18034** REV **A**

SCALE: 1:3 WEIGHT: SHEET 1 OF 1

4

3

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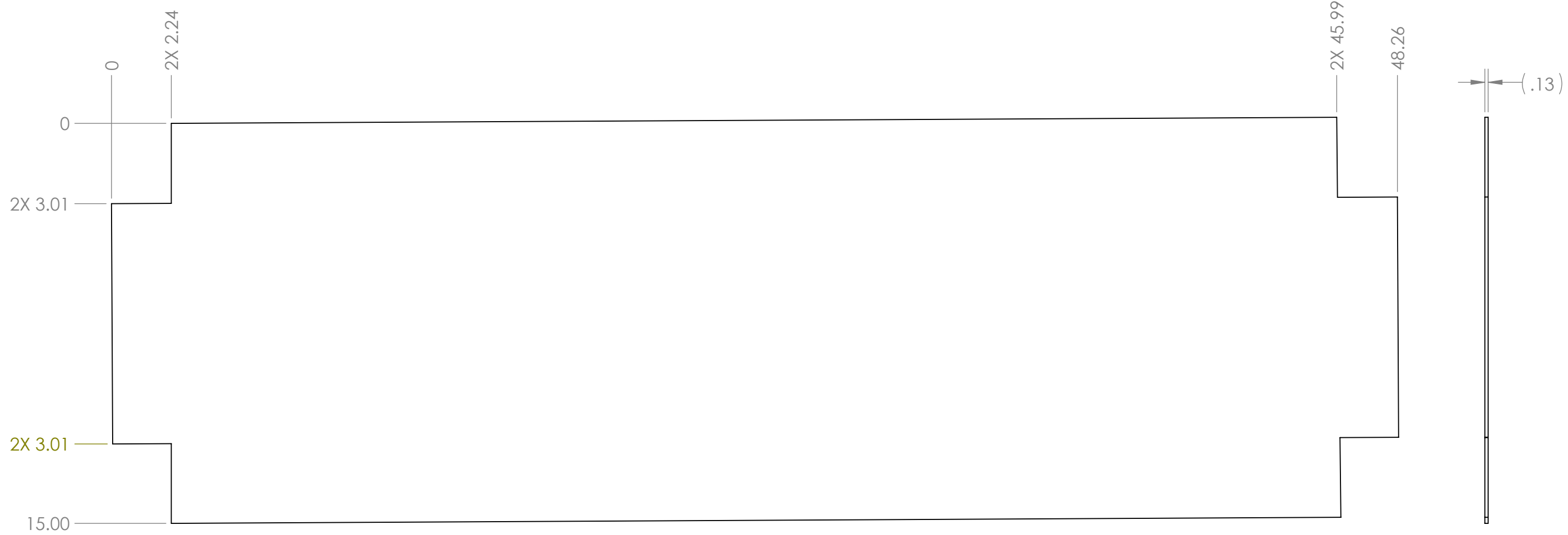
3

2

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B

B



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Notes:

- 1. 1/8" thk. smooth HDPE, red or blue
- 2. Remove sharp edges and burrs

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



TITLE: <b>Vault HDPE Bottom Back</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18035</b>	REV
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1

4

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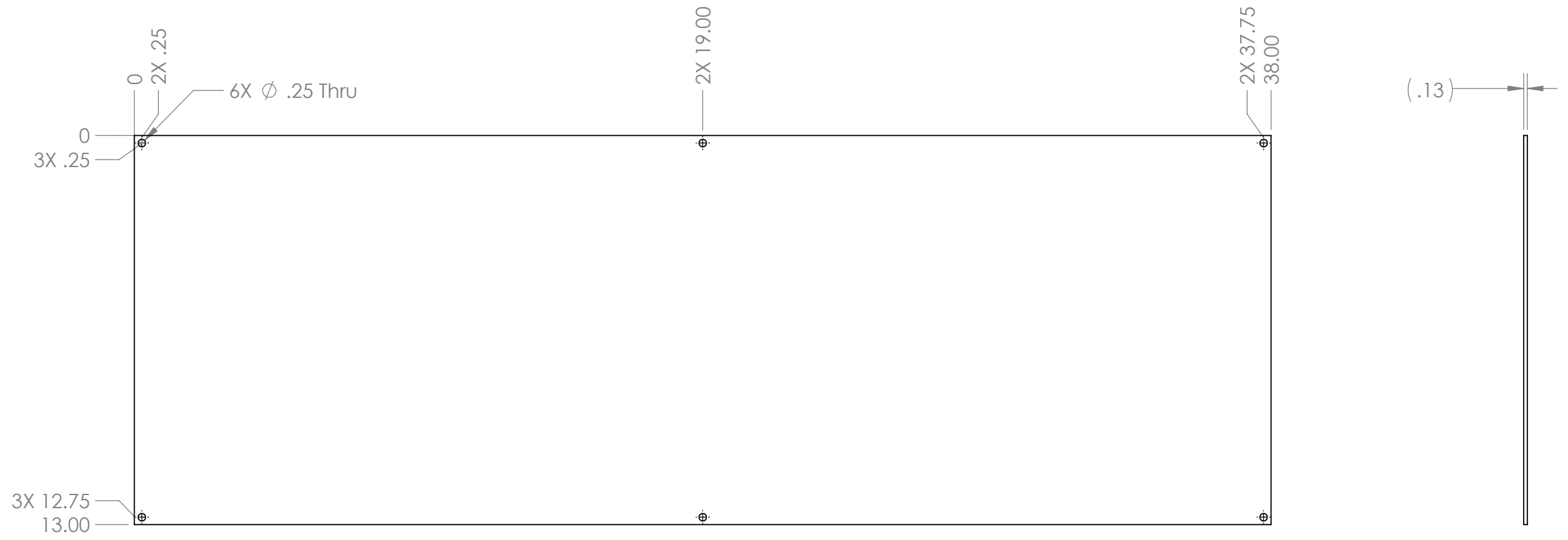
1

B

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Notes:  
 1. 1/8" thk. clear polycarbonate  
 2. Remove all sharp edges and burrs

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

TITLE: **Vault Polycarbonate Middle Insert**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18036</b>	

SCALE: 1:4 WEIGHT: SHEET 1 OF 1



4

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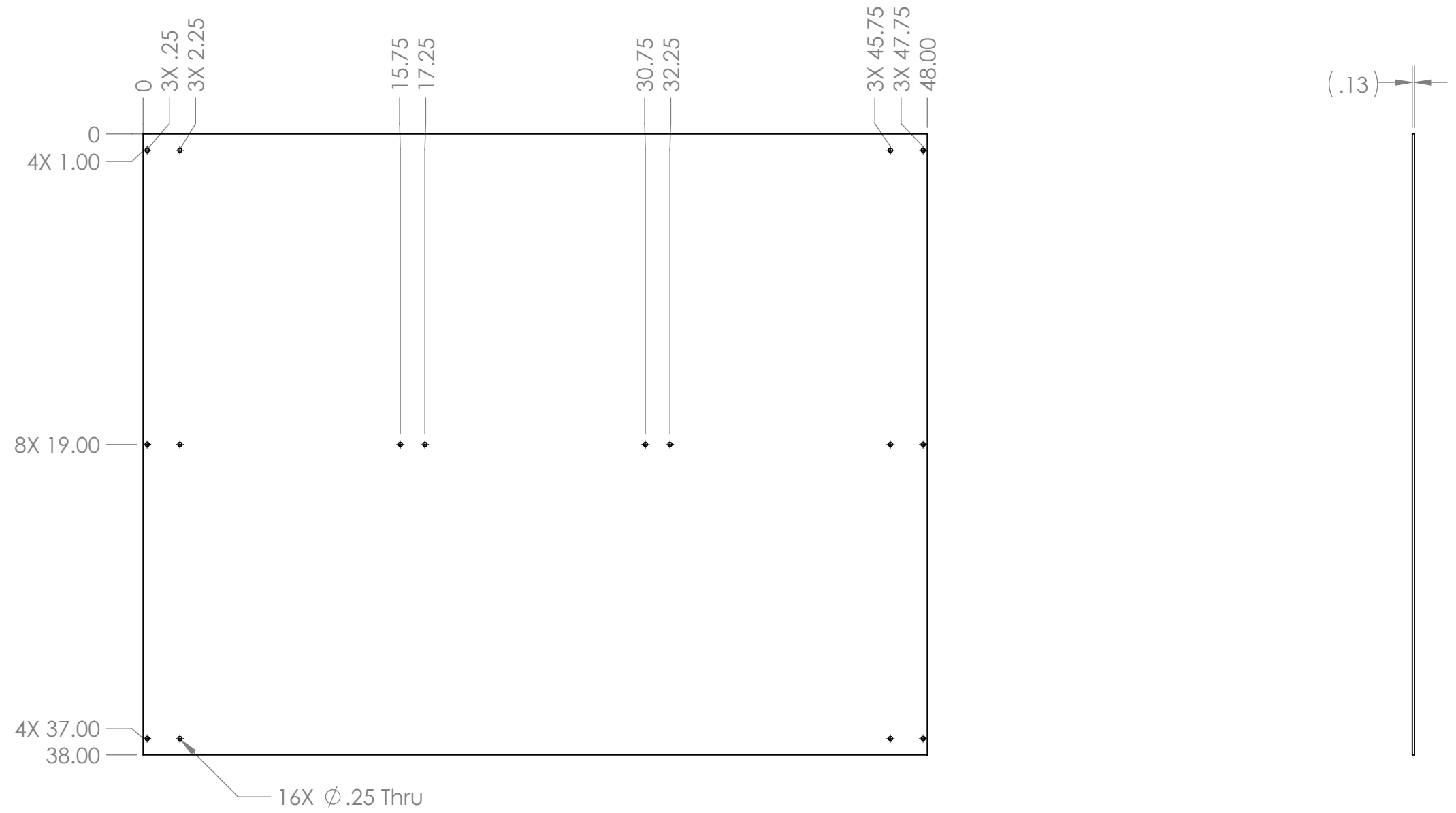
1

B

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Notes  
 1. 1/8" thk. clear polycarbonate  
 2. Remove all sharp edges and burrs

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001		DRAWN	
		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
		MATERIAL		ENG APPR.	
		FINISH		MFG APPR.	
NEXT ASSY	USED ON			Q.A.	
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:	
				 	
				TITLE:	
				Vault Polycarbonate Backstop	
SIZE	DWG. NO.			REV	
<b>B</b>	GE-18037				
SCALE: 1:8		WEIGHT:		SHEET 1 OF 1	

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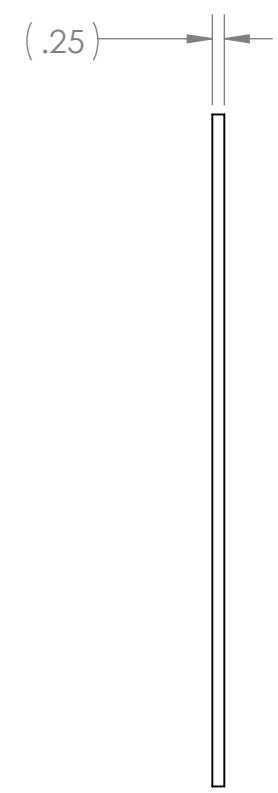
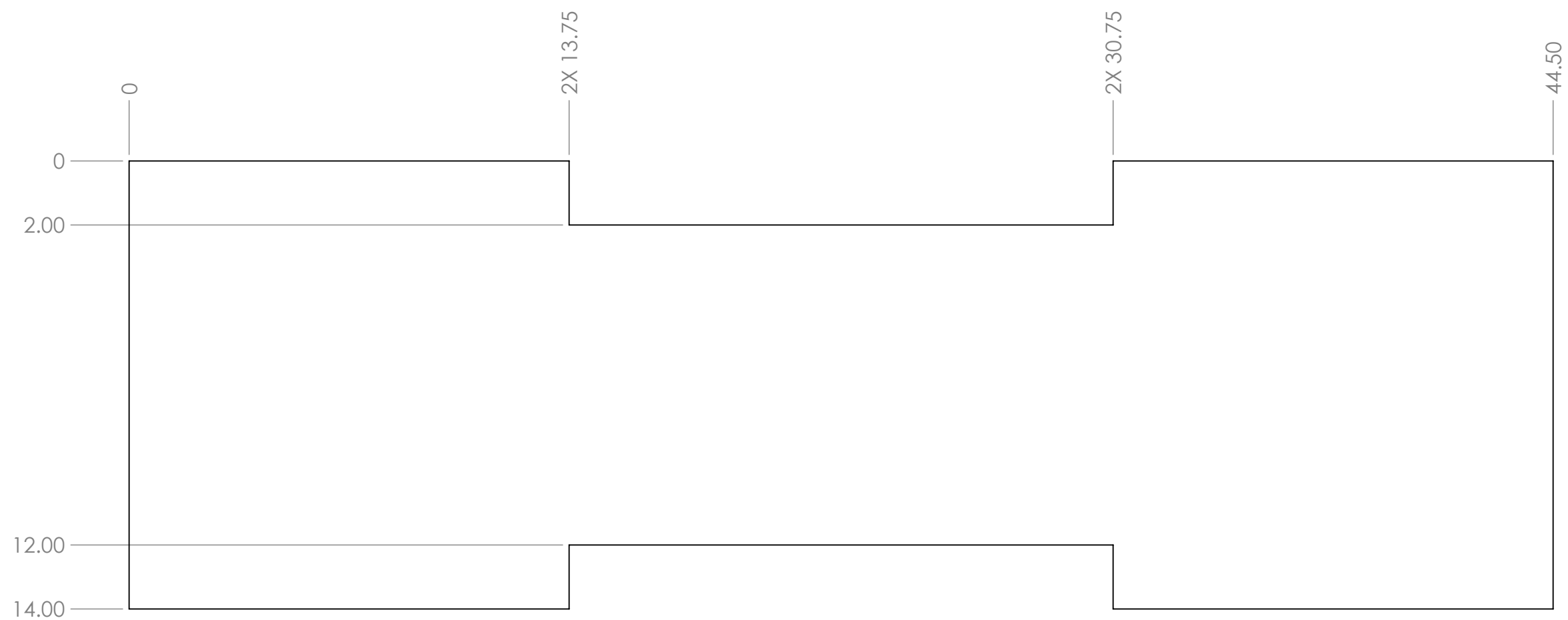
1

B

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Notes:  
 1. 1/4" thk. clear polycarbonate  
 2. Remove all sharp edges and burrs

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



TITLE: Vault Polycarbonate Bottom Floor		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18038</b>	
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1

4

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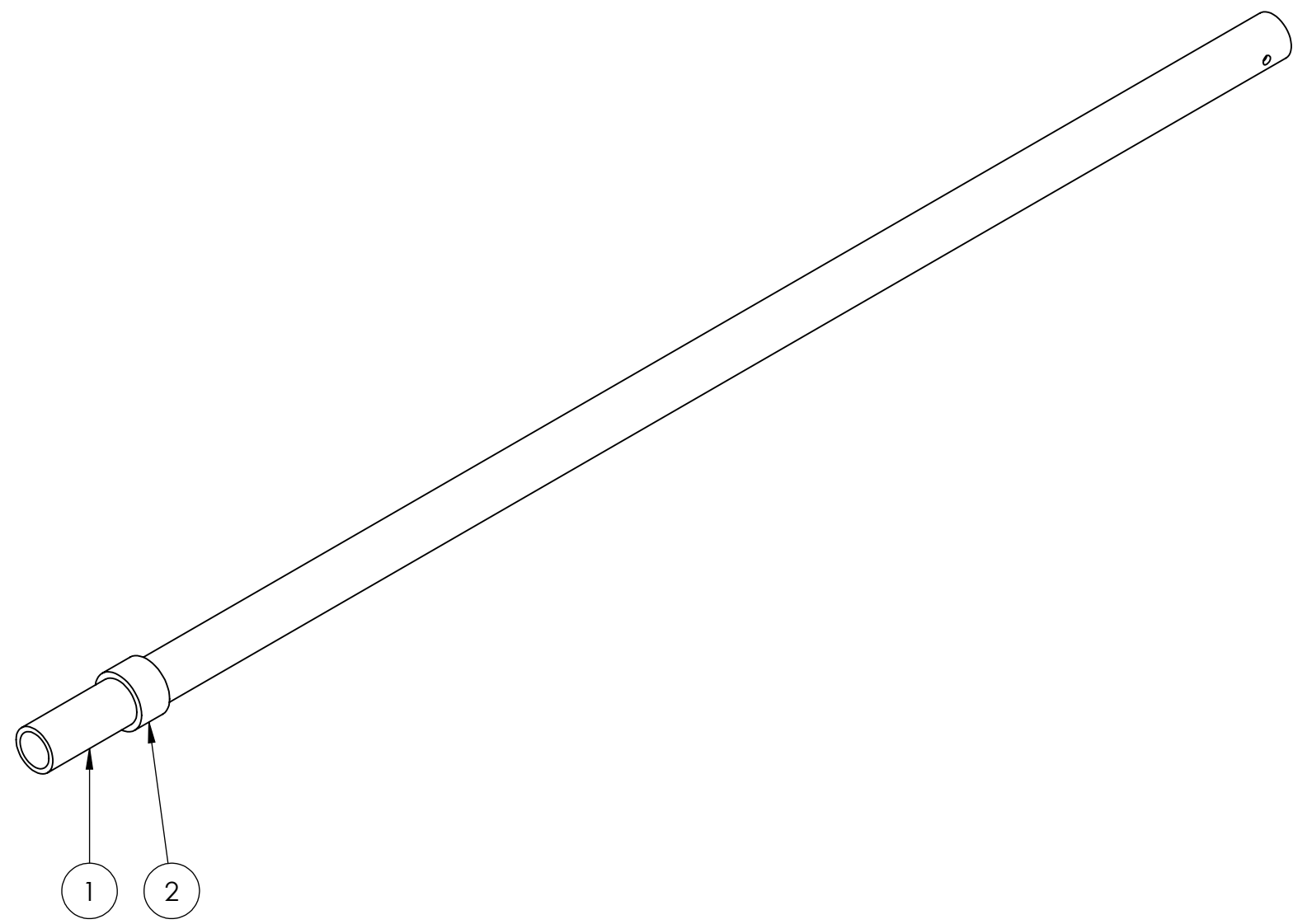
1

B

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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18039-01	1" Schedule 40 Aluminum Pipe	1
2	GE-18039-02	1 1/4" Schedule 40 Aluminum Pipe	1

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		
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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			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



TITLE: <b>Vault Support Pipes</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18039</b>	REV
SCALE: 1:4	WEIGHT:	SHEET 1 OF 5

4

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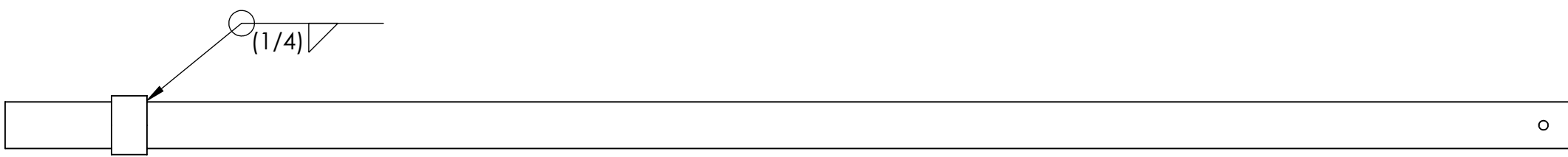
3

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



TITLE:		
Vault Support Pipes		
SIZE	DWG. NO.	REV
<b>B</b>	GE-18039	
SCALE: 1:8	WEIGHT:	SHEET 2 OF 5

4

3

2

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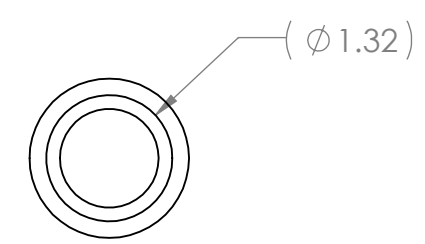
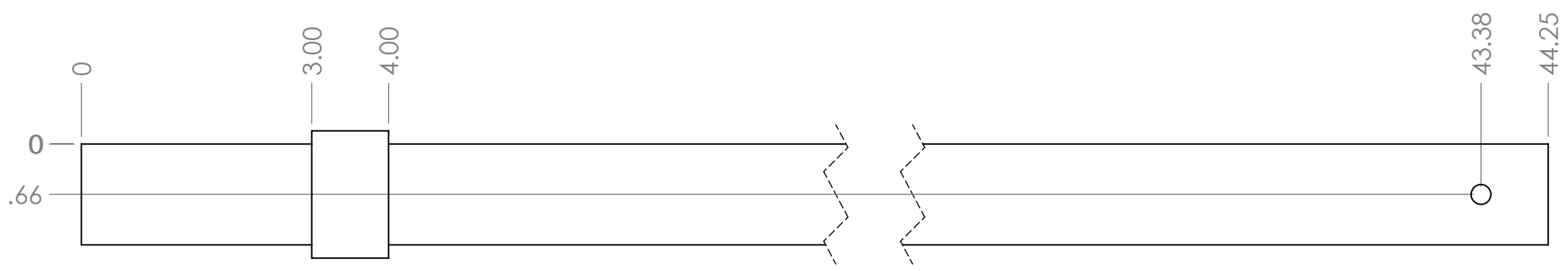
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2

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



TITLE: <b>Vault Support Pipes</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18039</b>	REV
SCALE: 1:8	WEIGHT:	SHEET 3 OF 5

4

3

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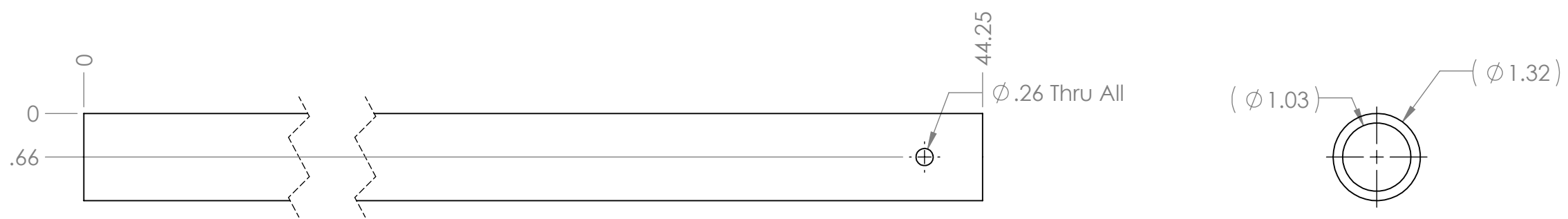
3

2

1

B

B



- Notes:  
 1. GE-18039-01  
 2. 1" Schedule 40 Aluminumn Pipe

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



TITLE: <b>Vault Support Pipes</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18039</b>	REV
SCALE: 1:8	WEIGHT:	SHEET 4 OF 5

4

3

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1

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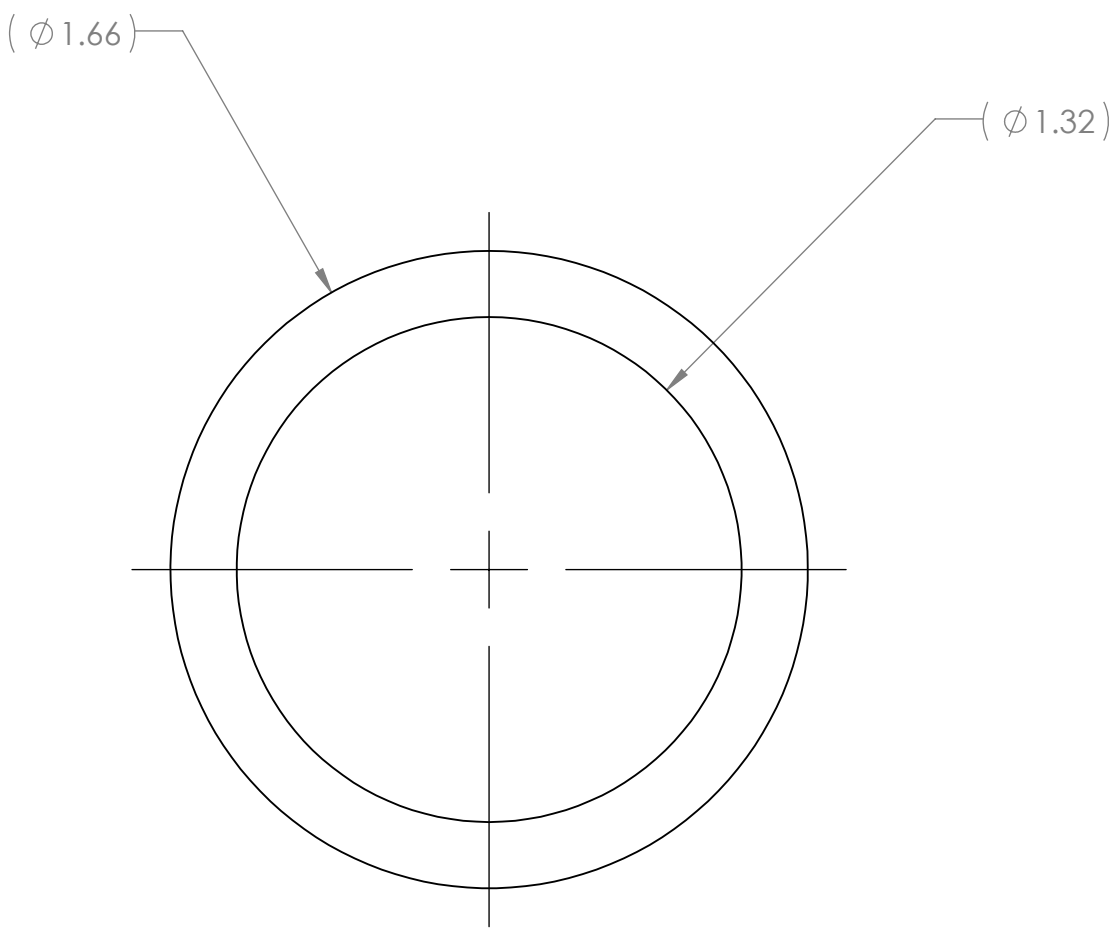
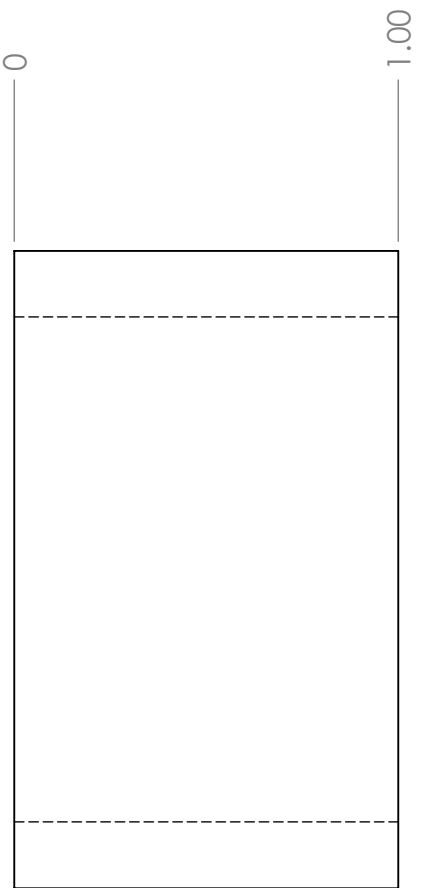
A

4

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1



- Notes:
1. GE-18039-01
  2. 1 1/4" Schedule 40 Aluminumn Pipe

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



TITLE:		
<b>Vault Support Pipes</b>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18039</b>	
SCALE: 1:8	WEIGHT:	SHEET 5 OF 5

4

3

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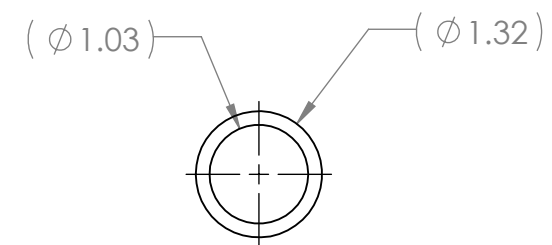
A

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2

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Notes:  
 1. 1" Schedule 40 Aluminum Pipe  
 2. Remove all sharp edges and burrs

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		SIZE DWG. NO. REV
		MATERIAL	ENG APPR.		<b>B</b> <b>GE-18040</b>
NEXT ASSY	USED ON	FINISH	MFG APPR.		SCALE: 1:2 WEIGHT: SHEET 1 OF 1
APPLICATION		DO NOT SCALE DRAWING	Q.A.		
			COMMENTS:		

4

3

2

1

B

B

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4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2, B4	1	Added holes are 3.35 and 42	11/20/2017	MXS

B

B



A

A

- Notes:
- 1/8" thk. clear polycarbonate
  - Remove all sharp edges and burrs

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



TITLE: **Vault Polycarbonate Top Backside**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18041</b>	<b>1</b>
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1

4

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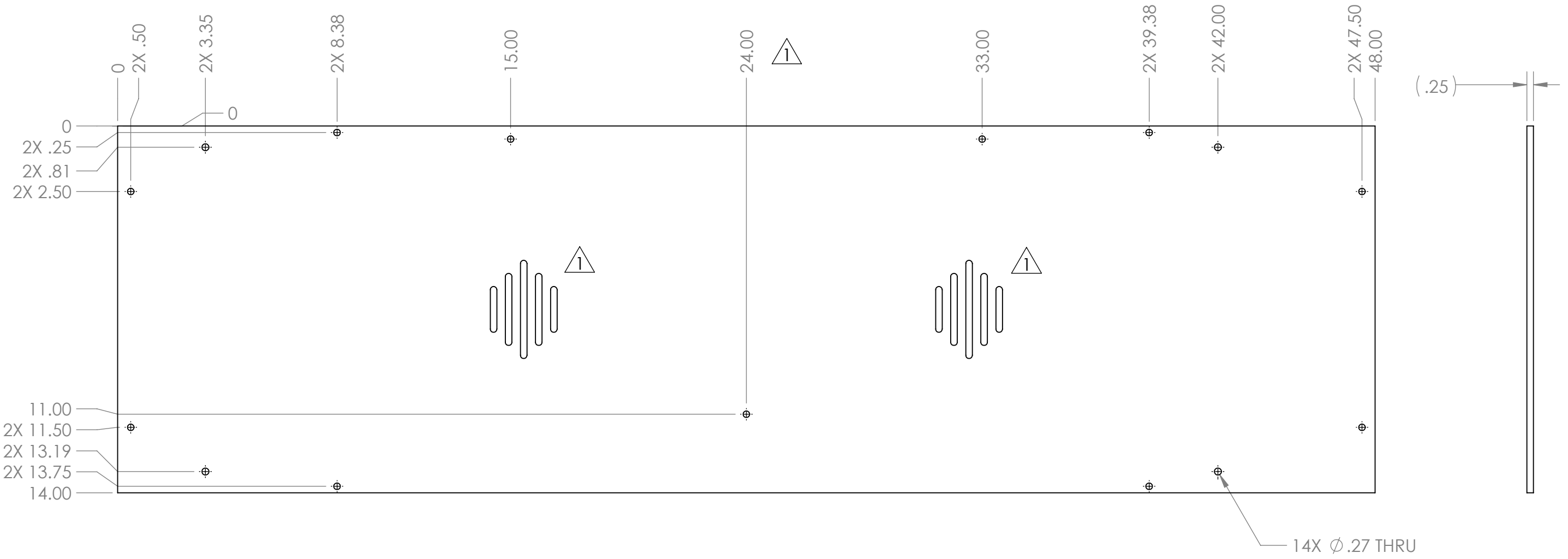
3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B2, B3	1	Moved hole at 23.53 to center, added vent holes	11/16/2017	MXS

B



B

A

A

Notes:  
 1. 1/4" thk. smooth HDPE, red or blue  
 2. Remove all sharp edges and burrs

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



TITLE:  
**Vault HDPE Top**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18044</b>	<b>1</b>
SCALE: 1:4	WEIGHT:	SHEET 1 OF 2

4

3

2

1

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3

2

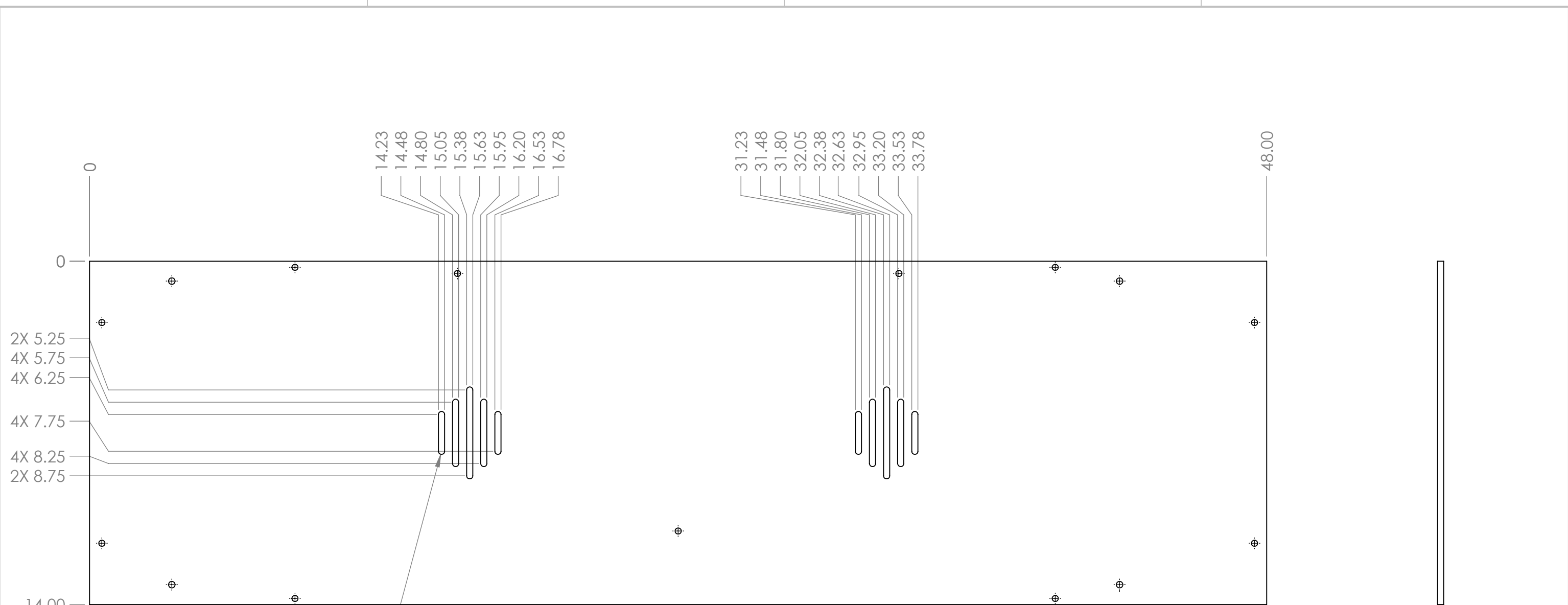
1

B

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



TITLE:  
**Vault HDPE Top**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18044</b>	<b>1</b>

SCALE: 1:4 WEIGHT: SHEET 2 OF 2

4

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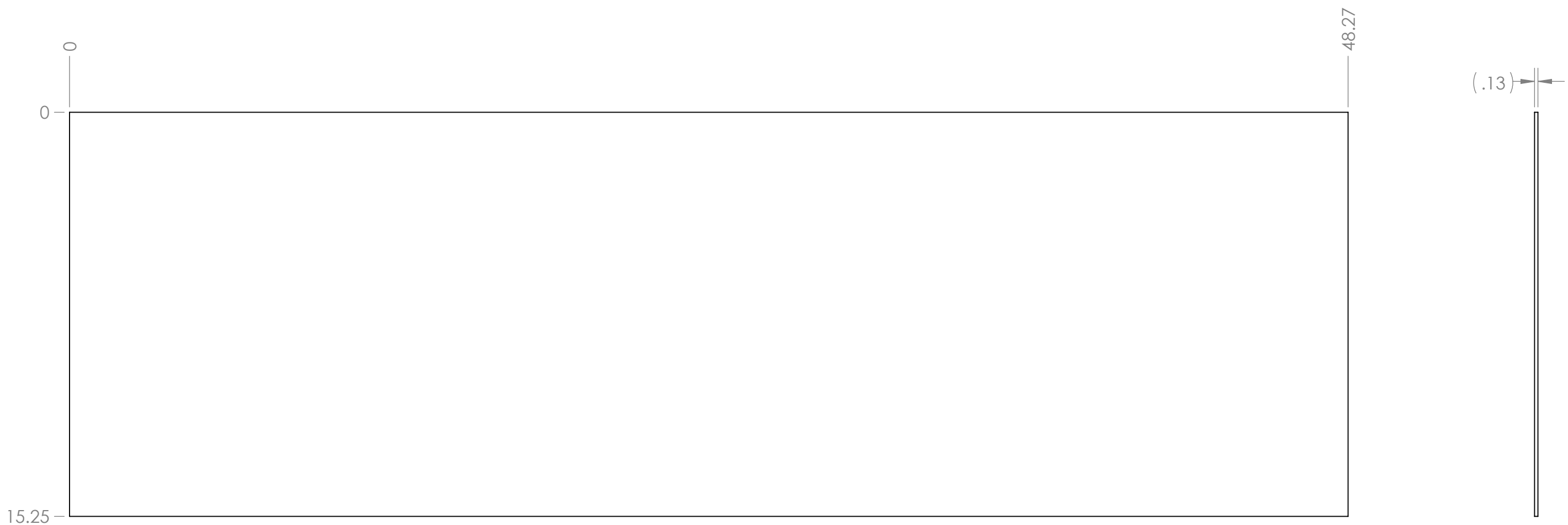
1

B

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Notes:

- 1. 1/8" thk. clear polycarbonate
- 2. Remove all sharp edges and burrs

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN			
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED			SIZE DWG. NO. REV
		MATERIAL	ENG APPR.			<b>B</b> GE-18045
NEXT ASSY	USED ON	FINISH	MFG APPR.			SCALE: 1:4 WEIGHT: SHEET 1 OF 1
APPLICATION		DO NOT SCALE DRAWING	Q.A.			
			COMMENTS:			

4

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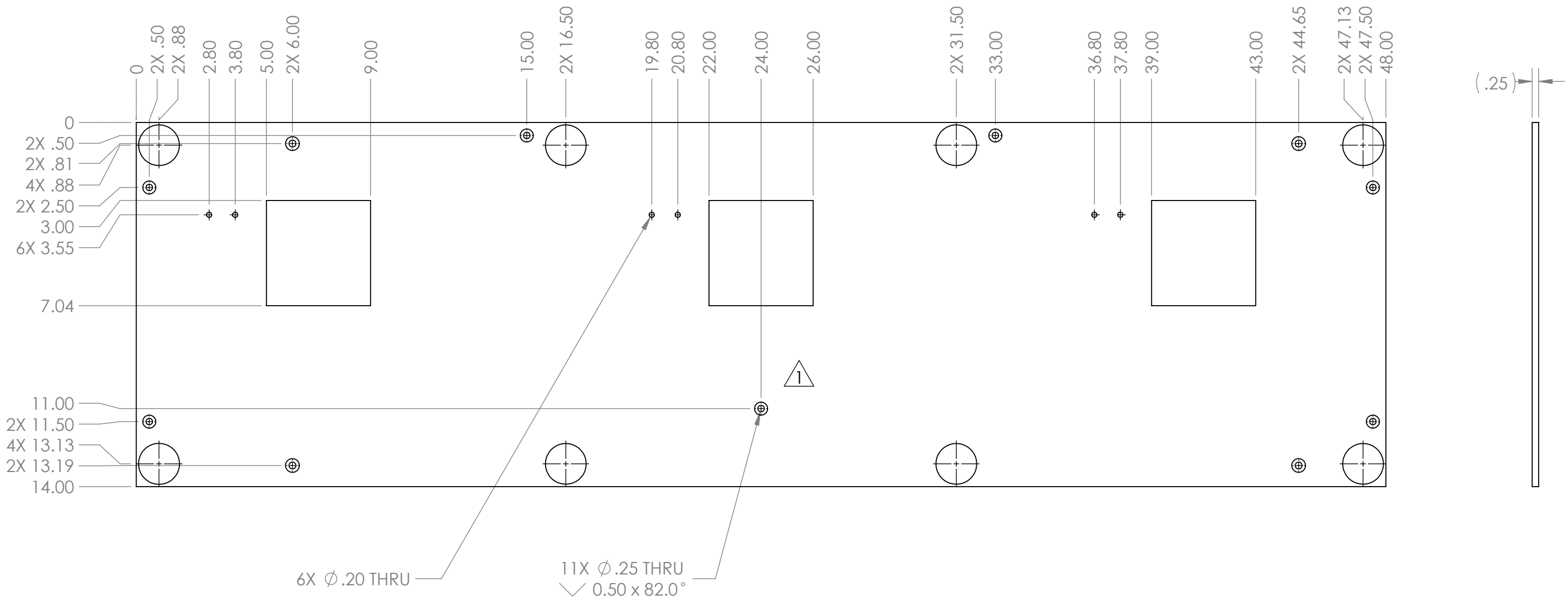
2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A3	1	Hole moved to 24" (centered); countersunk all .25" holes	11/16/2017	MXS

B

B



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Notes:  
 1. 1/4" thk. clear polycarbonete  
 2. Remove all sharp edges and burrs

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN	
		TOLERANCES:	CHECKED	
		FRACTIONAL $\pm$ 1/16	ENG APPR.	
		ANGULAR: MACH $\pm$ 1° BEND $\pm$ 1°	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: Vault Polycarbonete Top Base		FIRST ROBOTICS COMPETITION		3D SOLIDWORKS Modeling Solutions Partner	
SIZE	DWG. NO.	REV			
<b>B</b>	GE-18046	1			
SCALE: 1:4	WEIGHT:	SHEET 1 OF 2			

4

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1

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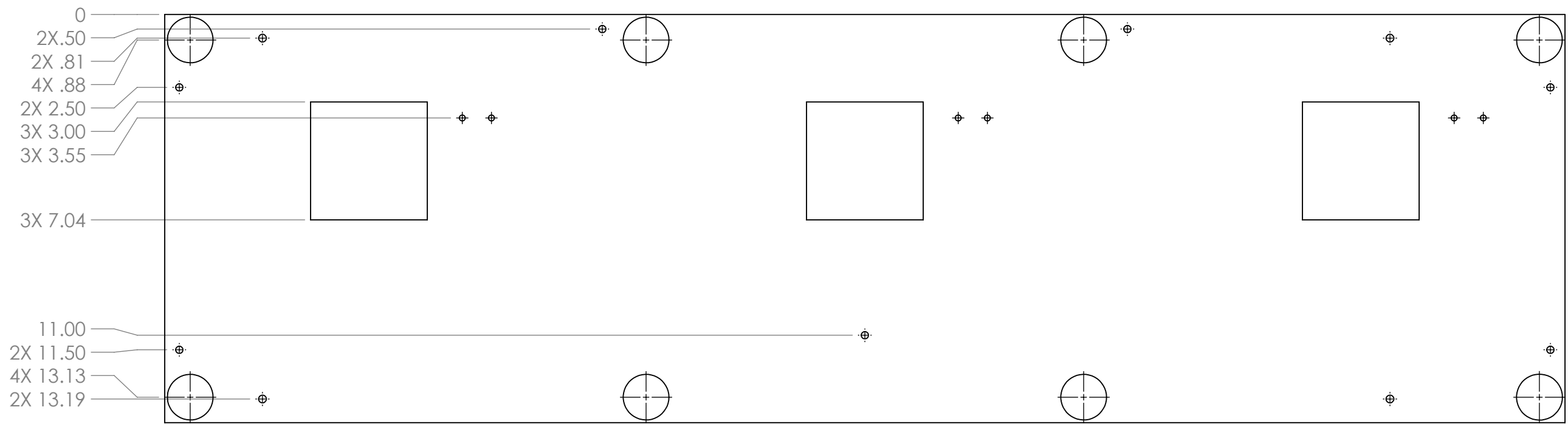
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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		
		FRACTIONAL $\pm 1/16$	ENG APPR.		
		ANGULAR: MACH $\pm 1^\circ$ BEND $\pm 1^\circ$	MFG APPR.		
		TWO PLACE DECIMAL $\pm .01$	Q.A.		
		THREE PLACE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



TITLE: **Vault Polycarbonate Top Base**

SIZE **B** DWG. NO. **GE-18046** REV **1**

SCALE: 1:4 WEIGHT: SHEET 2 OF 2

4

3

2

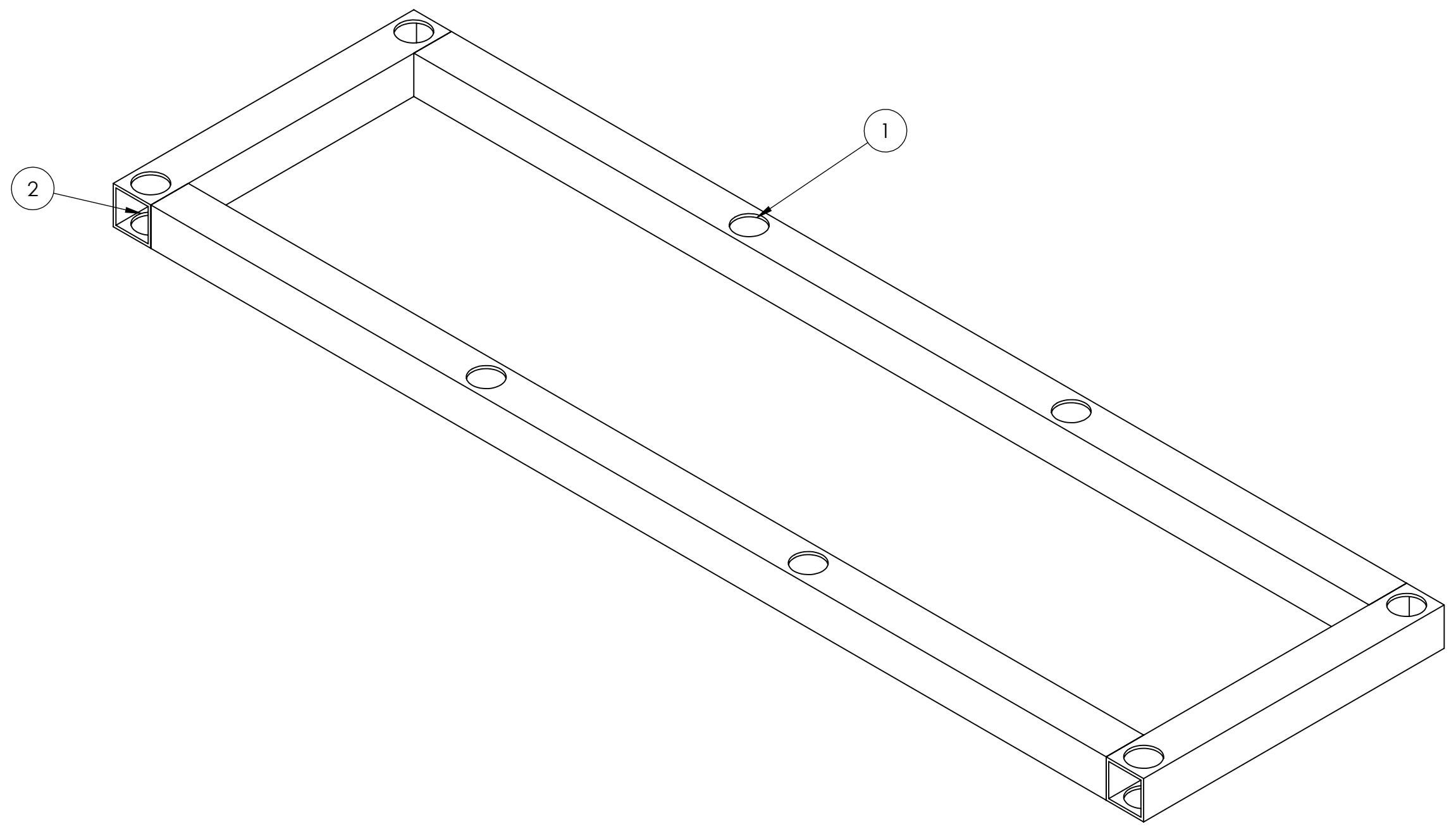
1

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1



B

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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18047-01	1 3/4", 1/8" Thick Square Tube, 6063 Aluminum	2
2	GE-18047-02	1 3/4", 1/8" Thick Square Tube, 6063 Aluminum	2

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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			
FINISH			
NEXT ASSY	USED ON		
APPLICATION			
DO NOT SCALE DRAWING			



TITLE:  
**Vault Top Frame**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18047</b>	
SCALE: 1:4	WEIGHT:	SHEET 1 OF 3

4

3

2

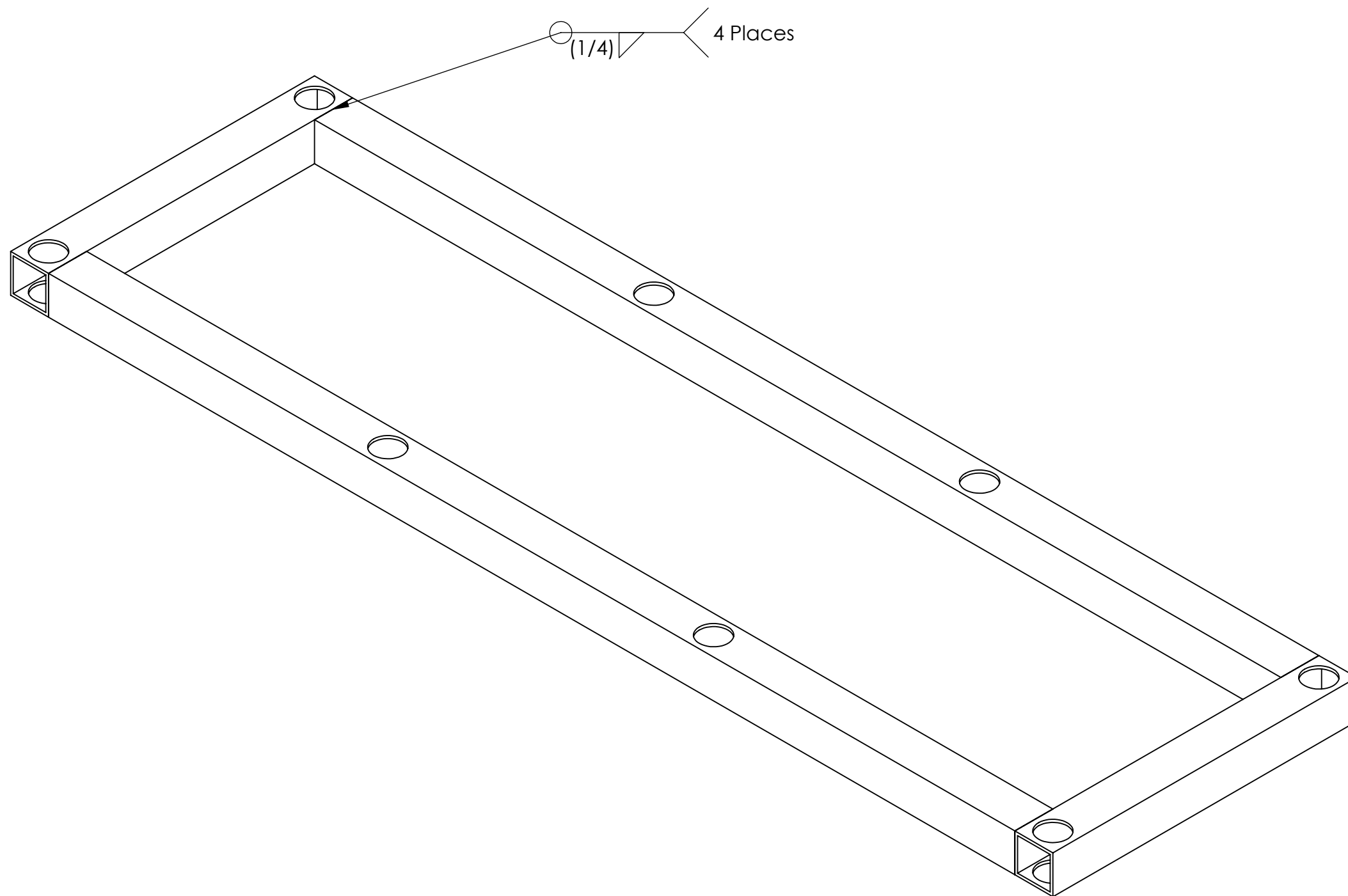
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4

3

2

1



B

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A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18047-01	1 3/4", 1/8" Thick Square Tube, 6063 Aluminum	2
2	GE-18047-02	1 3/4", 1/8" Thick Square Tube, 6063 Aluminum	2

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



TITLE:  
**Vault Top Frame**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18047</b>	
SCALE: 1:8	WEIGHT:	SHEET 2 OF 3

4

3

2

1



4

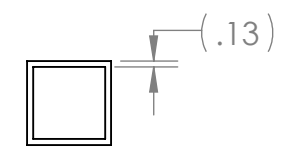
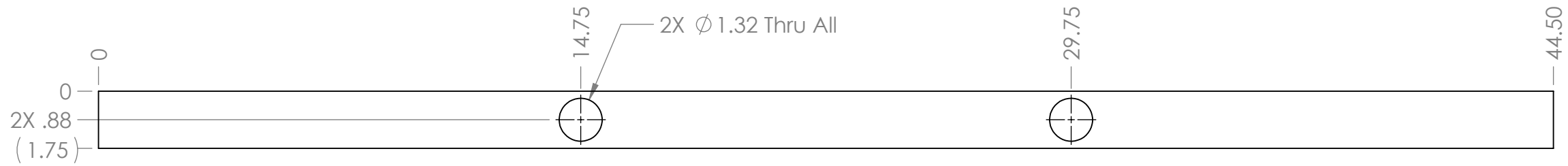
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2

1

B

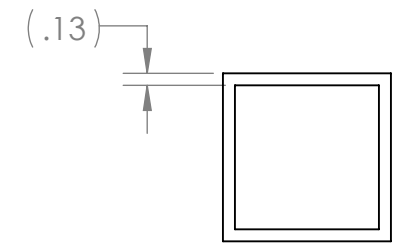
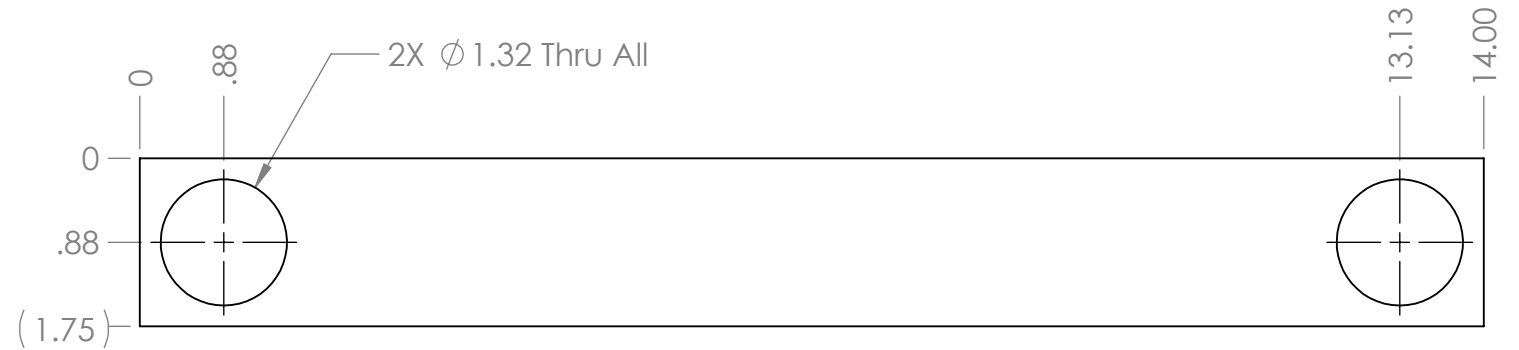
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Item Number: GE-18047-01  
 Material: 1 3/4", 1/8" Thick Square Tube, 6063 Aluminum  
 Qty: 2

A

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Item Number: GE-18047-02  
 Material: 1 3/4", 1/8" Thick Square Tube, 6063 Aluminum  
 Qty: 2

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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		
		FINISH		
NEXT ASSY	USED ON			
APPLICATION		DO NOT SCALE DRAWING		



TITLE:  
**Vault Top Frame**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18047</b>	
SCALE: 1:8	WEIGHT:	SHEET 3 OF 3

4

3

2

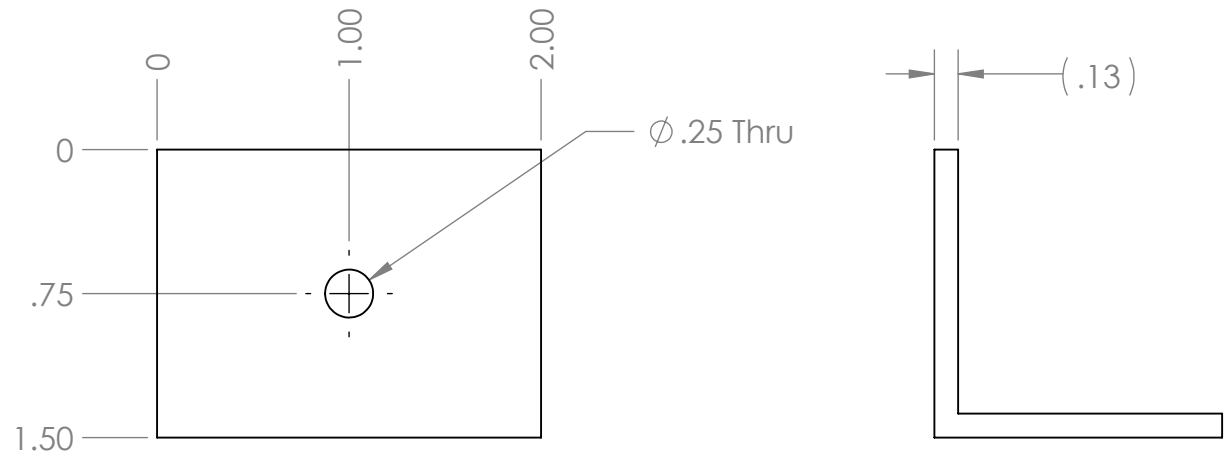
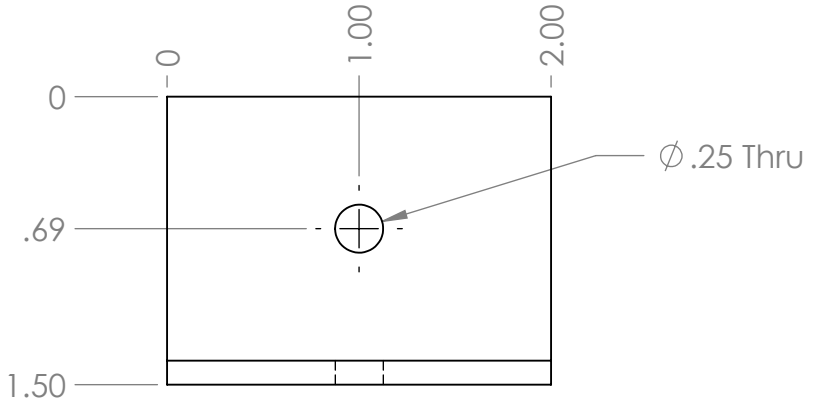
1

2

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Notes:  
 1. Material: 1-1/2" 1/8" Thick Aluminum Angle  
 2. Remove all burrs and sharp edges

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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:  
**Vault Bracket**

SIZE	DWG. NO.	REV
<b>A</b>	<b>GE-18048</b>	
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

2

1

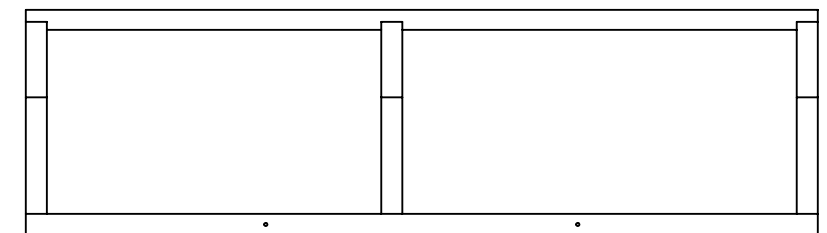
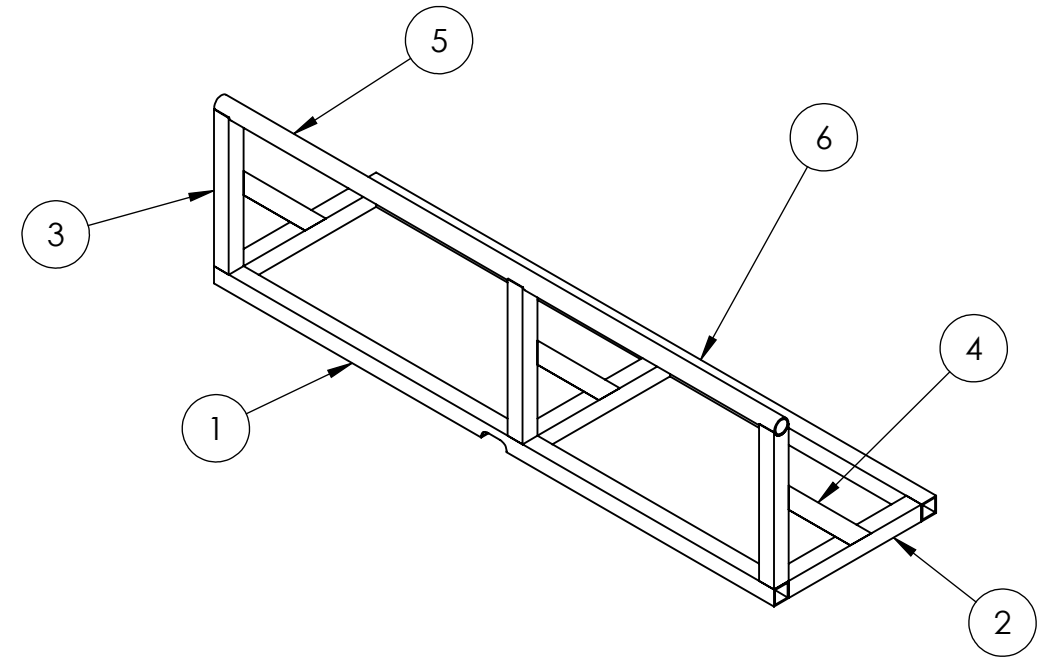
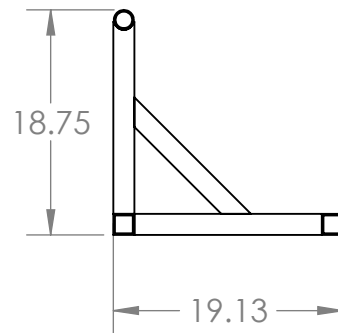
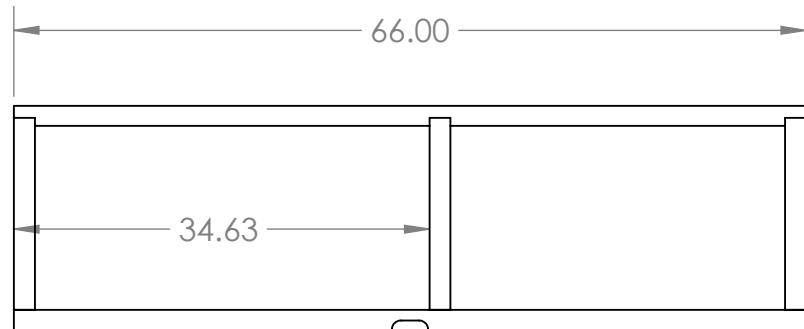
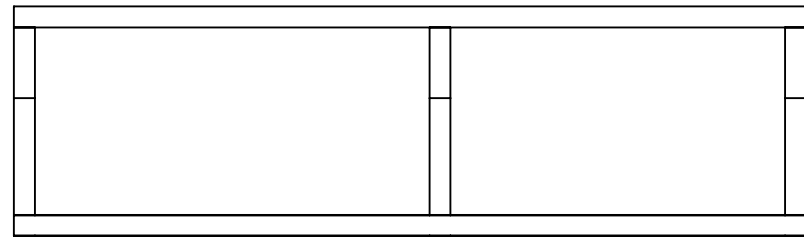
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A1, 3-A2	1	Added two holes to GE-18051-06	11/21/17	CPO



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18051-01	1.75" x .125" thk. Square Tube, 6061 Aluminum	1
2	GE-18051-02	1.75" x .125" thk. Square Tube, 6061 Aluminum	3
3	GE-18051-03	1.75" x .125" thk. Square Tube, 6061 Aluminum	3
4	GE-18051-04	1.75" x .125" thk. Square Tube, 6061 Aluminum	3
5	GE-18051-05	1-1/4" Schedule 40 Pipe, 6061 Aluminum	1
6	GE-18051-06	1.75" x .125" thk. Square Tube, 6061 Aluminum	1

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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		
FINISH			
NEXT ASSY	USED ON		
APPLICATION	DO NOT SCALE DRAWING		

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

TITLE: **Side Frame, Fence**

SIZE **B** DWG. NO. **GE-18051** REV **1**

SCALE: 1:16 WEIGHT: SHEET 1 OF 3

4

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1

B

B

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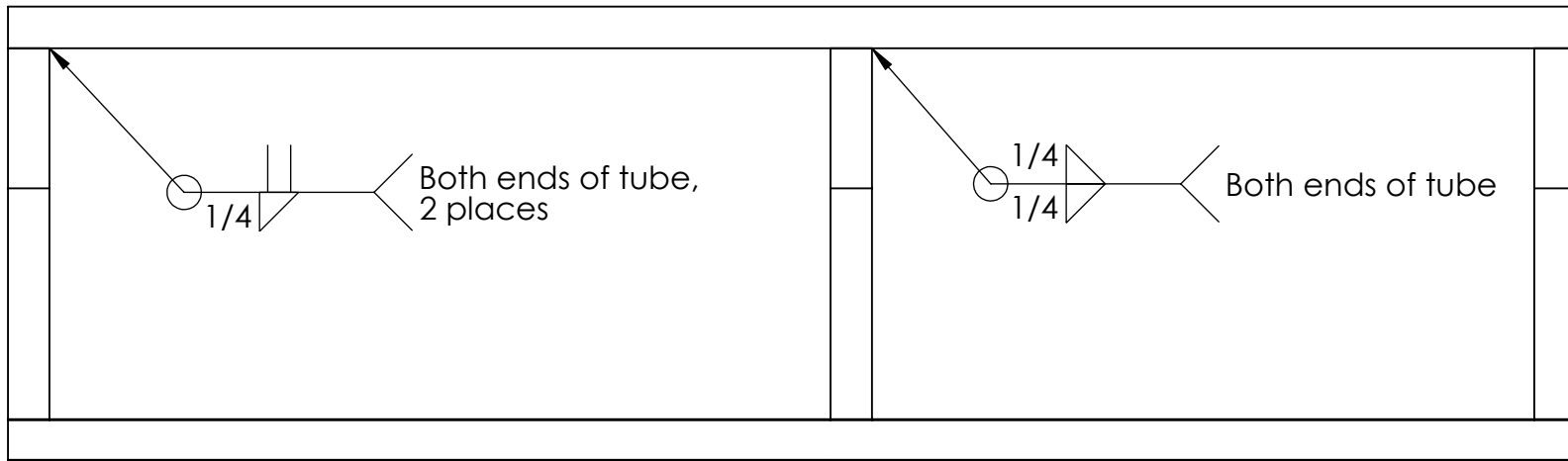
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2

1

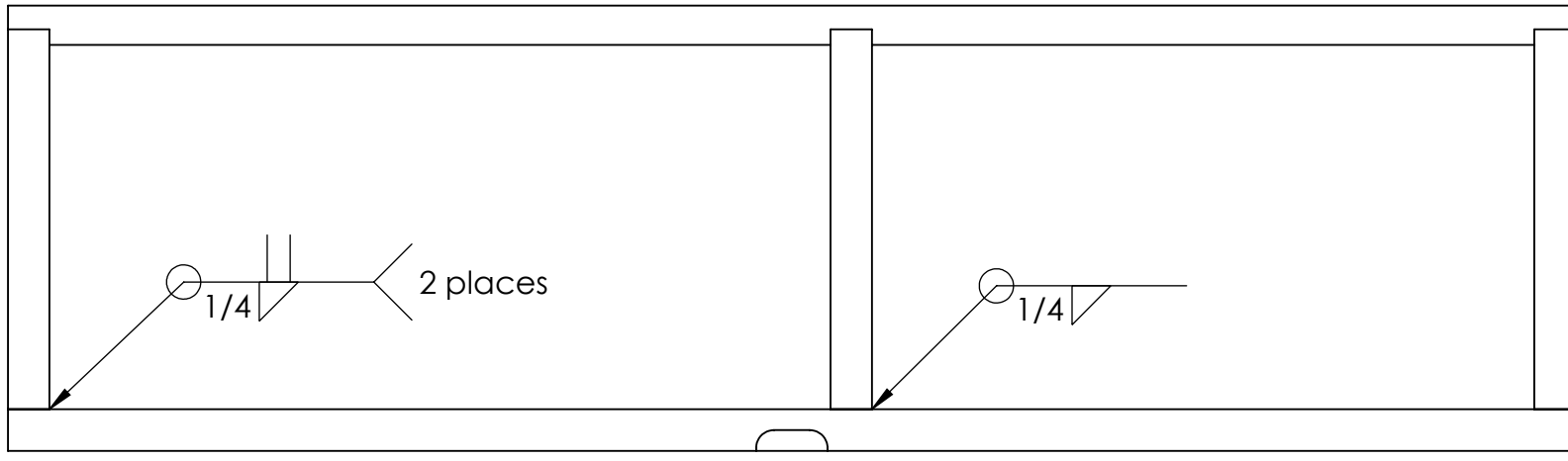
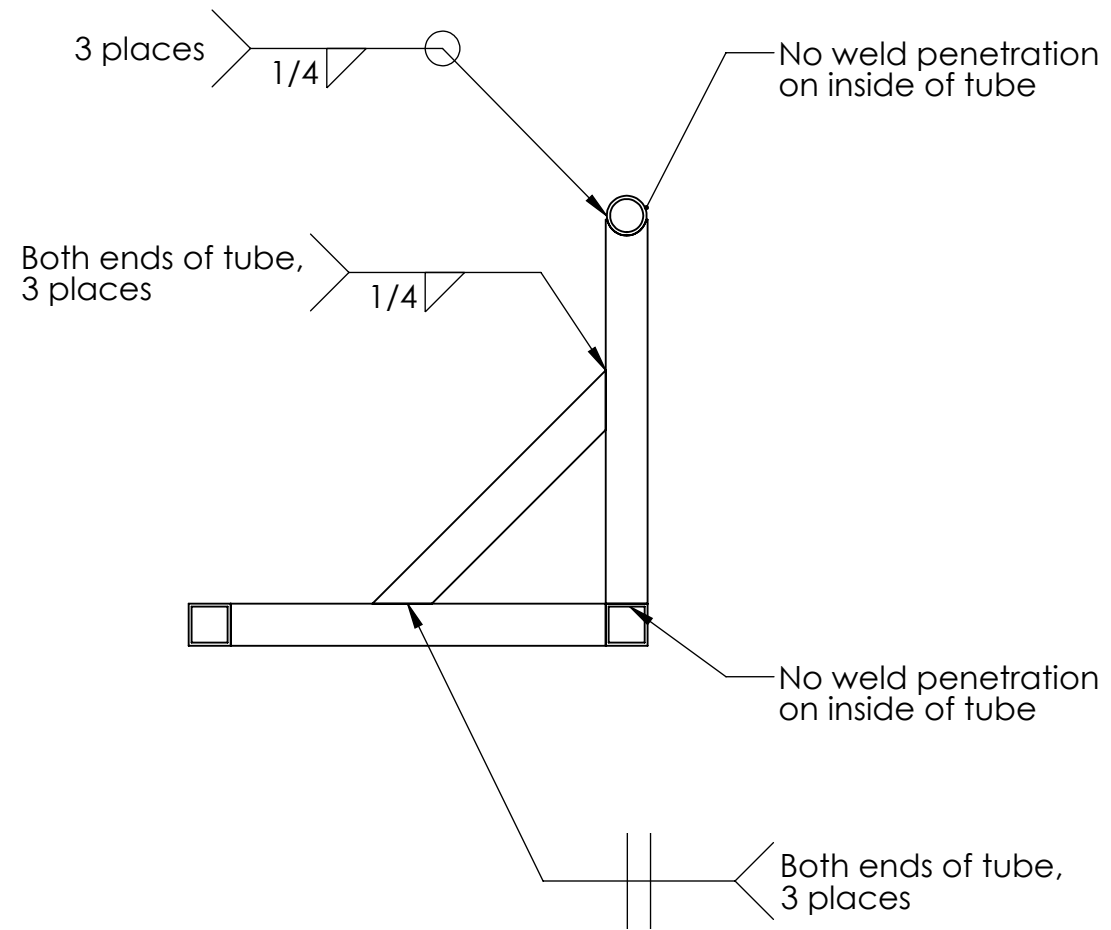
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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN	
		TOLERANCES:	CHECKED	
		FRACTIONAL: ±1/16	ENG APPR.	
		ANGULAR: MACH ±1° BEND ±1°	MFG APPR.	
		TWO PLACE DECIMAL ±.01	Q.A.	
		THREE PLACE DECIMAL ±.001	COMMENTS:	
		INTERPRET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



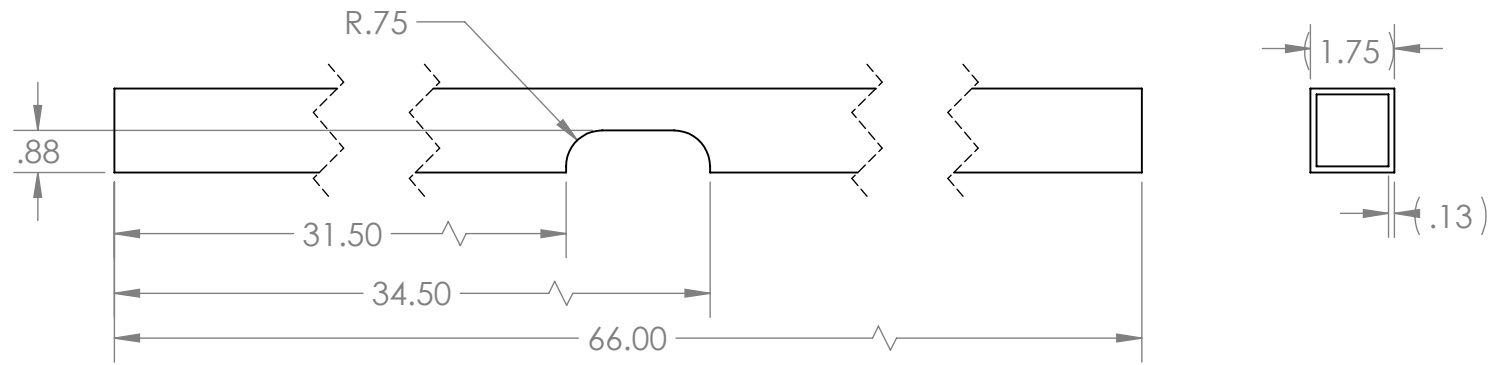
TITLE:		
<b>Side Frame, Fence</b>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18051</b>	<b>1</b>
SCALE: 1:8	WEIGHT:	SHEET 2 OF 3

4

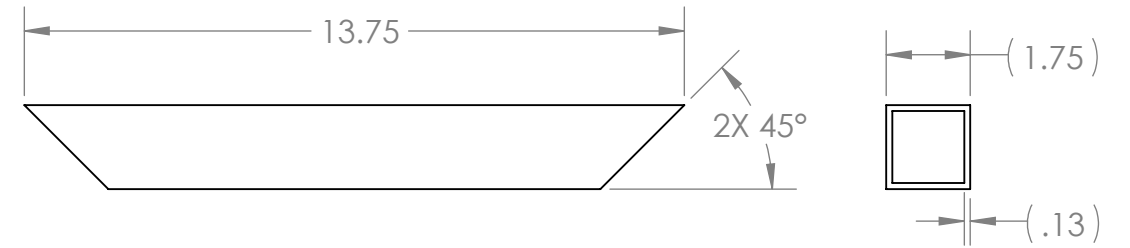
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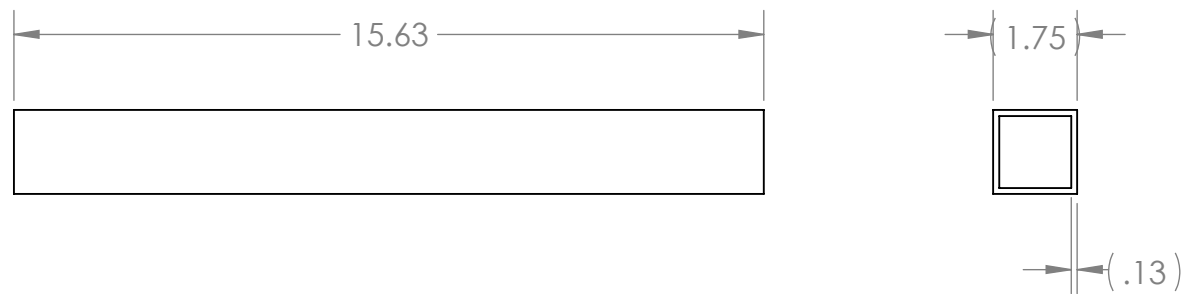
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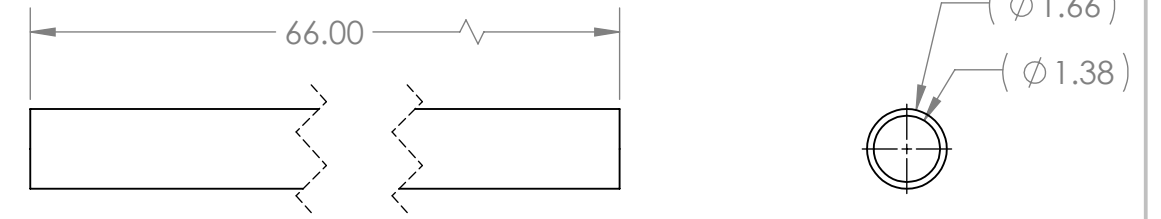
Item: GE-18051-01  
 Qty: 1  
 Material: 1.75" x .125" thk. Square Tube, 6061 Aluminum



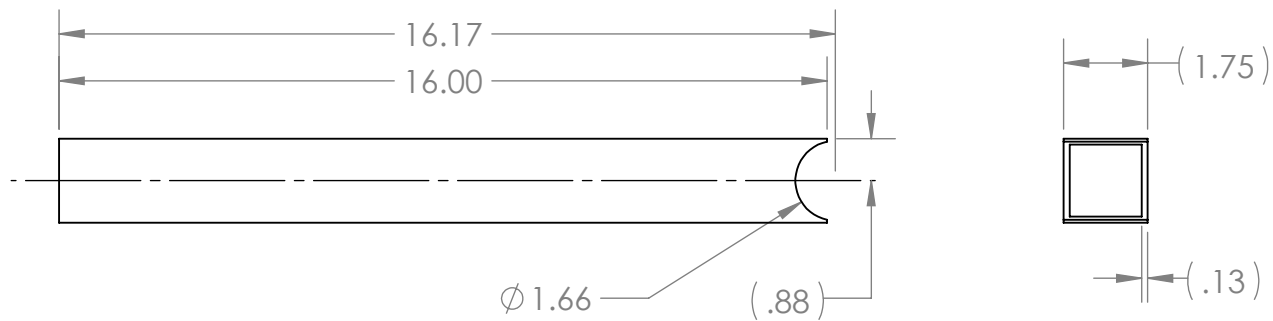
Item: GE-18051-04  
 Qty: 3  
 Material: 1.75" x .125" thk. Square Tube, 6061 Aluminum



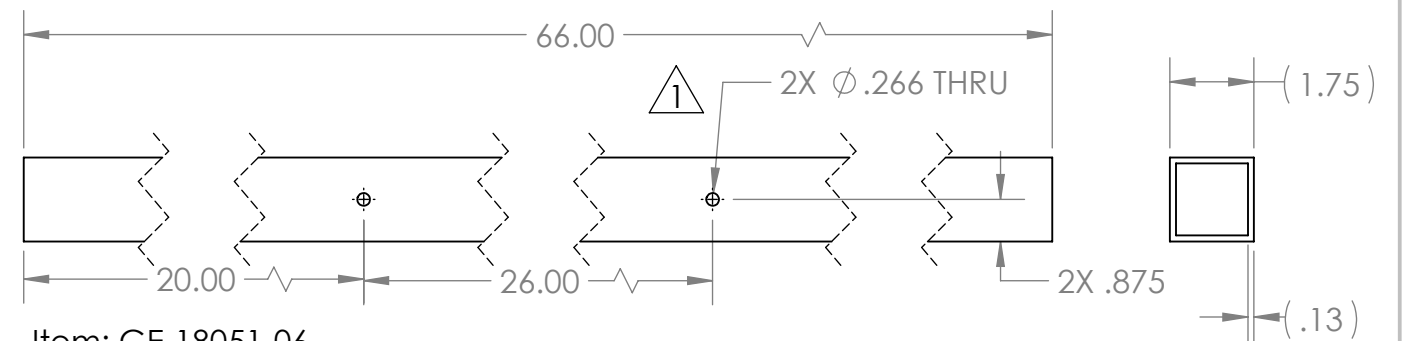
Item: GE-18051-02  
 Qty: 3  
 Material: 1.75" x .125" thk. Square Tube, 6061 Aluminum



Item: GE-18051-05  
 Qty: 1  
 Material: 1-1/4" Schedule 40 Pipe, 6061 Aluminum





Item: GE-18051-03  
 Qty: 3  
 Material: 1.75" x .125" thk. Square Tube, 6061 Aluminum



Item: GE-18051-06  
 Qty: 1  
 Material: 1.75" x .125" thk. Square Tube, 6061 Aluminum

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UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 
DIMENSIONS ARE IN INCHES		DRAWN		
TOLERANCES:		CHECKED		TITLE:
FRACTIONAL: ±1/16		ENG APPR.		Side Frame, Fence
ANGULAR: MACH ±1° BEND ±1°		MFG APPR.		SIZE DWG. NO. REV
TWO PLACE DECIMAL ±.01		Q.A.		B GE-18051 1
THREE PLACE DECIMAL ±.001		COMMENTS:		SCALE: 1:4 WEIGHT: SHEET 3 OF 3
INTERPRET GEOMETRIC TOLERANCING PER:	MATERIAL			
FINISH				
NEXT ASSY	USED ON			
APPLICATION	DO NOT SCALE DRAWING			

4

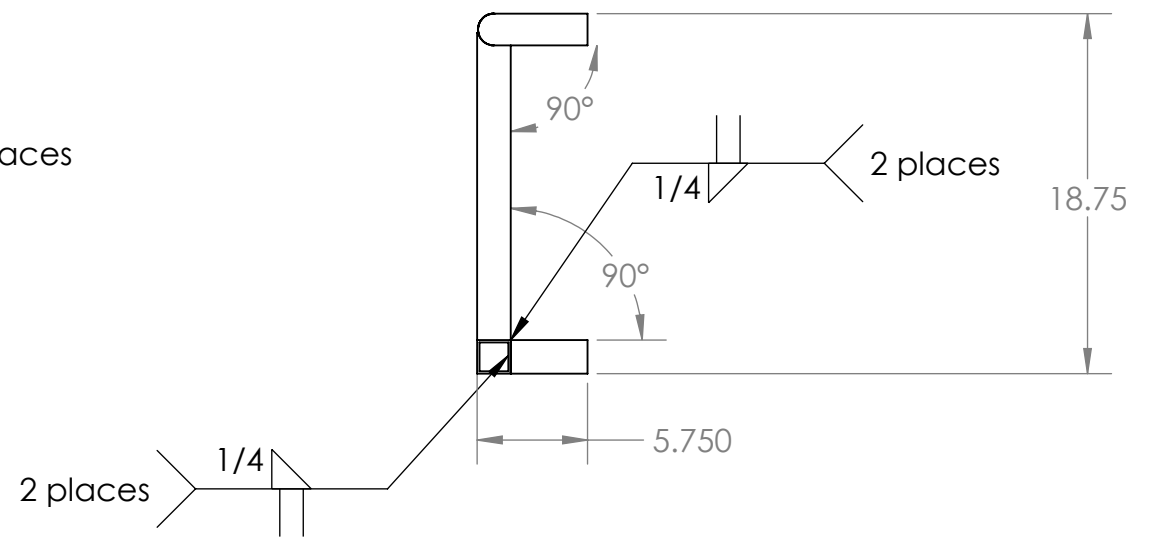
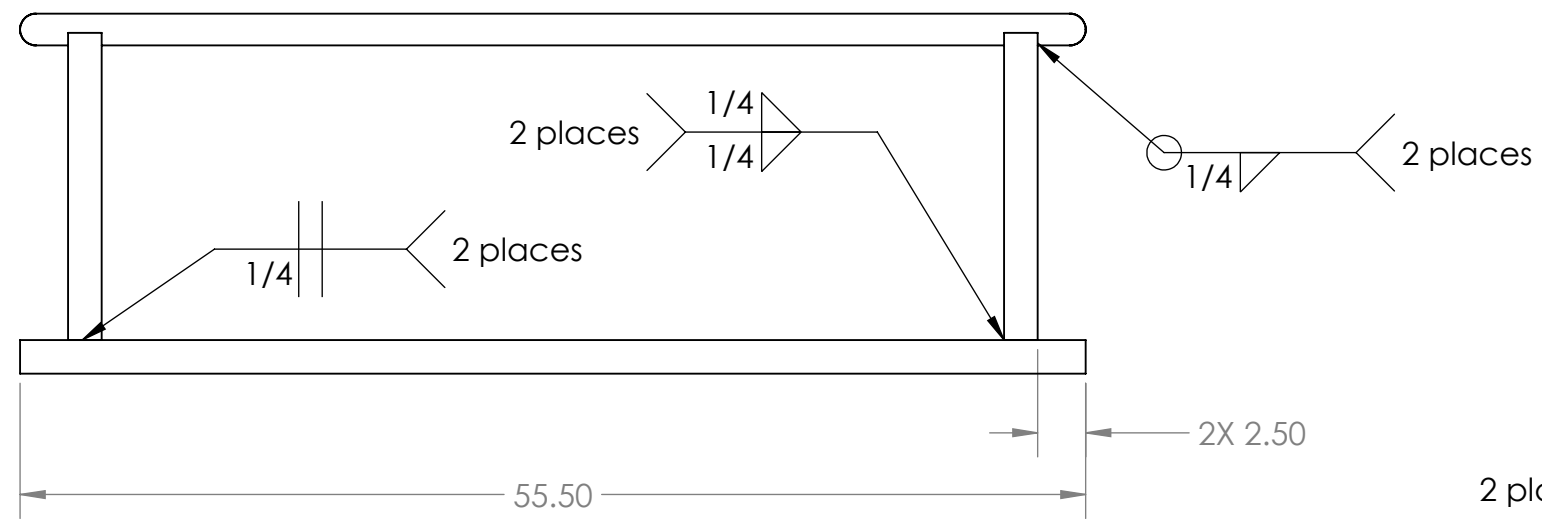
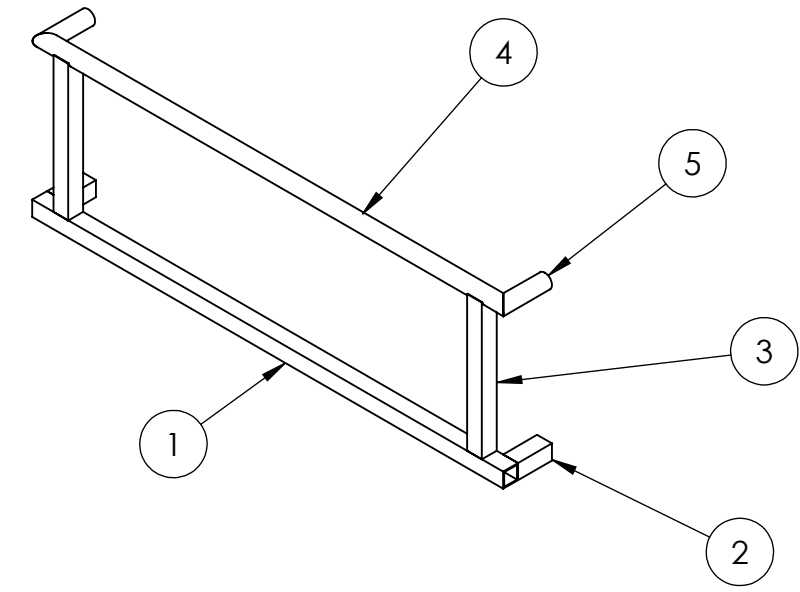
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18052-01	1.75" x .125" thk. Square Tube, 6061 Aluminum	1
2	GE-18052-02	1.75" x .125" thk. Square Tube, 6061 Aluminum	2
3	GE-18052-03	1.75" x .125" thk. Square Tube, 6061 Aluminum	2
4	GE-18052-04	1-1/4" Schedule 40 Pipe, 6061 Aluminum	1
5	GE-18052-05	1-1/4" Schedule 40 Pipe, 6061 Aluminum	2

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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			
FINISH			
NEXT ASSY	USED ON		
APPLICATION	DO NOT SCALE DRAWING		

TITLE: **End Frame, Fence**

SIZE **B** DWG. NO. **GE-18052** REV  
 SCALE: 1:10 WEIGHT: SHEET 1 OF 2

4

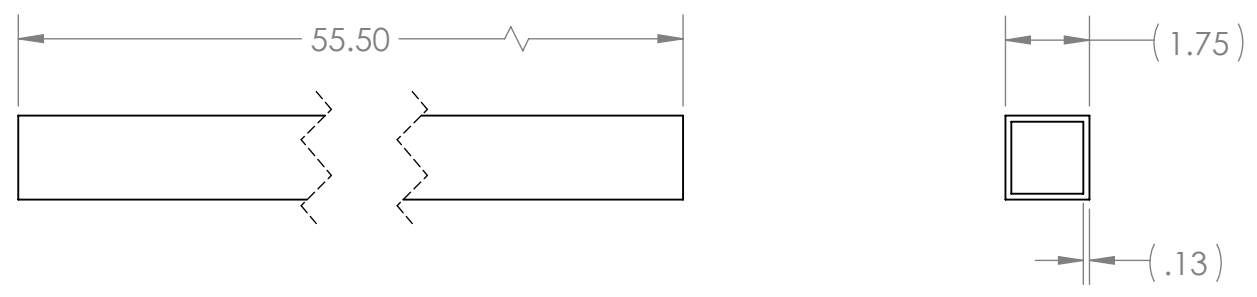
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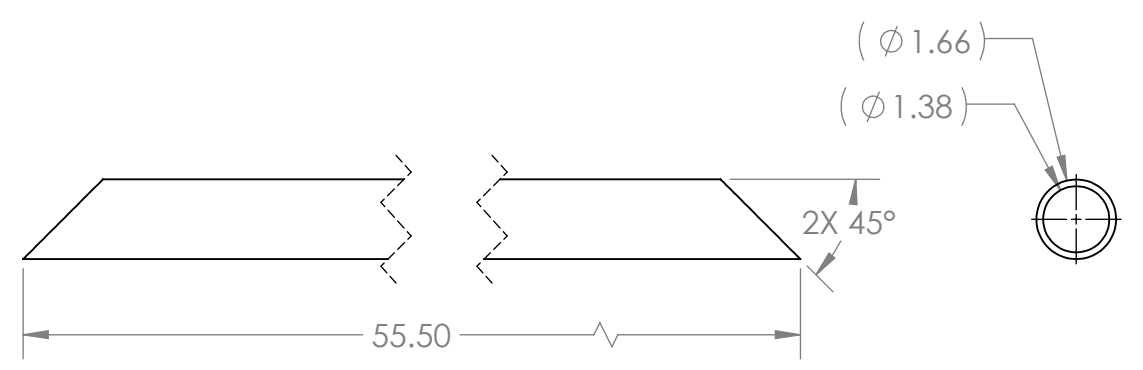
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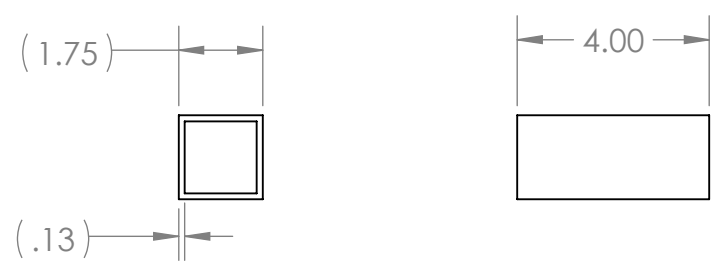
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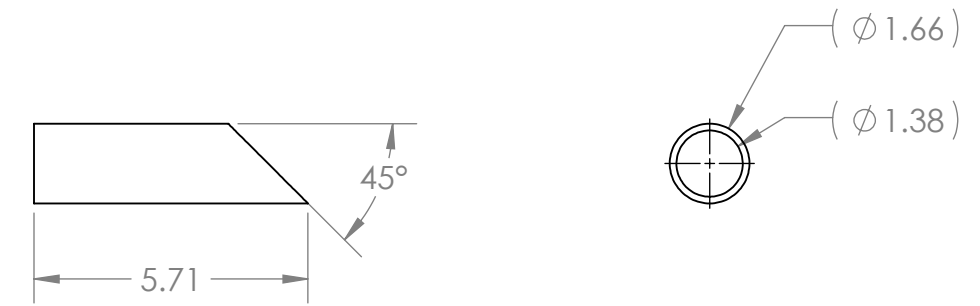
Item: GE-18052-01  
 Qty: 1  
 Material: 1.75" x .125" thk. Square Tube, 6061 Aluminum



Item: GE-18052-04  
 Qty: 1  
 Material: 1-1/4" Schedule 40 Pipe, 6061 Aluminum

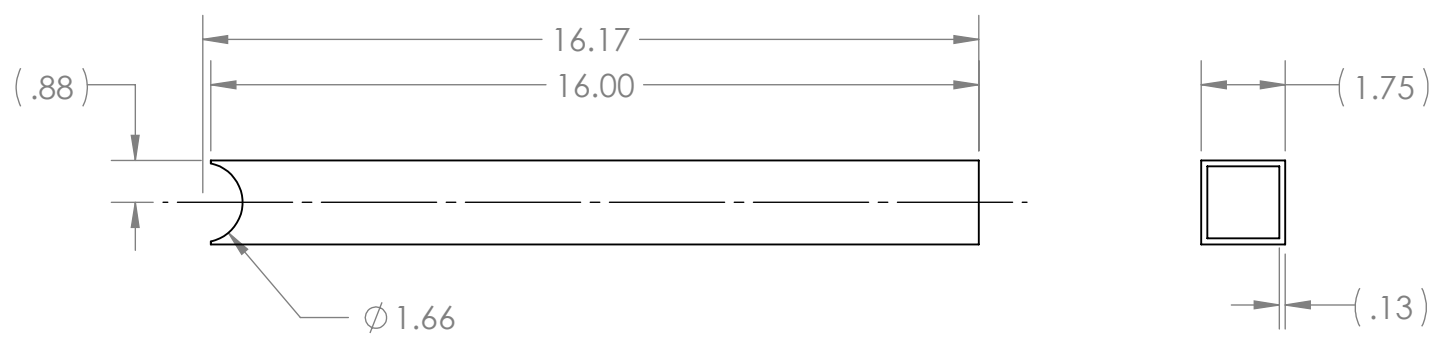


Item: GE-18052-02  
 Qty: 2  
 Material: 1.75" x .125" thk. Square Tube, 6061 Aluminum



Item: GE-18052-05  
 Qty: 2  
 Material: 1-1/4" Schedule 40 Pipe, 6061 Aluminum

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Item: GE-18052-03  
 Qty: 2  
 Material: 1.75" x .125" thk. Square Tube, 6061 Aluminum

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

TITLE: End Frame, Fence		
SIZE: <b>B</b>	DWG. NO.: <b>GE-18052</b>	REV:
SCALE: 1:4	WEIGHT:	SHEET 2 OF 2

4 3 2 1

B

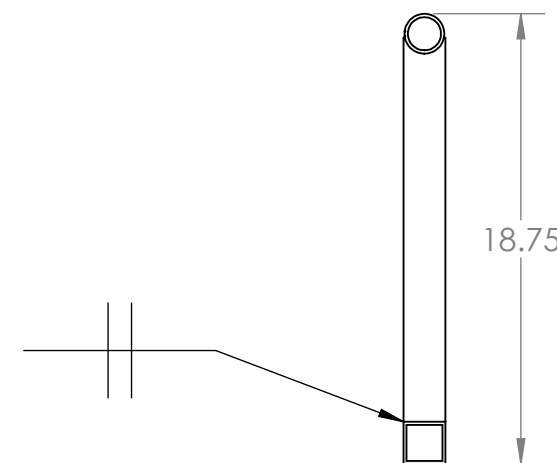
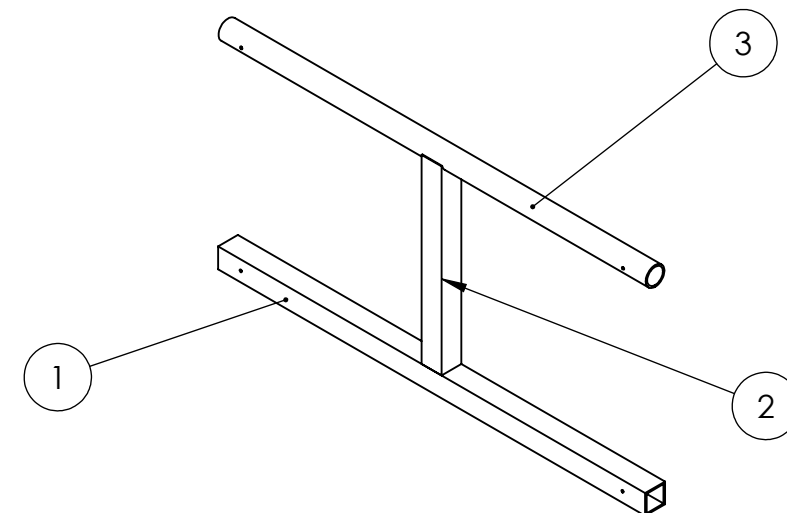
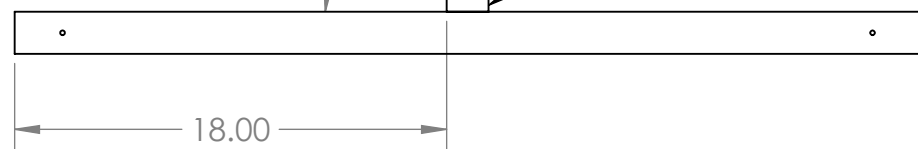
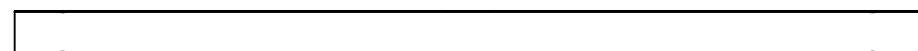
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18053-01	1.75" x .125" thk. Square Tube, 6061 Aluminum	1
2	GE-18053-02	1.75" x .125" thk. Square Tube, 6061 Aluminum	1
3	GE-18053-03	1-1/4" Schedule 40 Pipe, 6061 Aluminum	1

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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		
FINISH			
NEXT ASSY	USED ON		
APPLICATION	DO NOT SCALE DRAWING		



TITLE:		
<h1>Connecting Frame, Fence</h1>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18053</b>	
SCALE: 1:8	WEIGHT:	SHEET 1 OF 2

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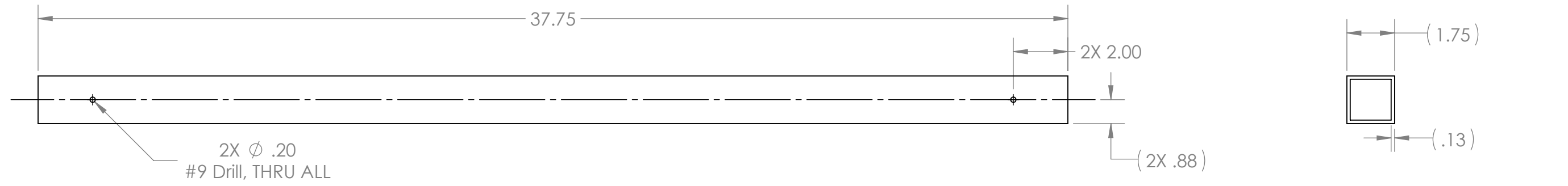


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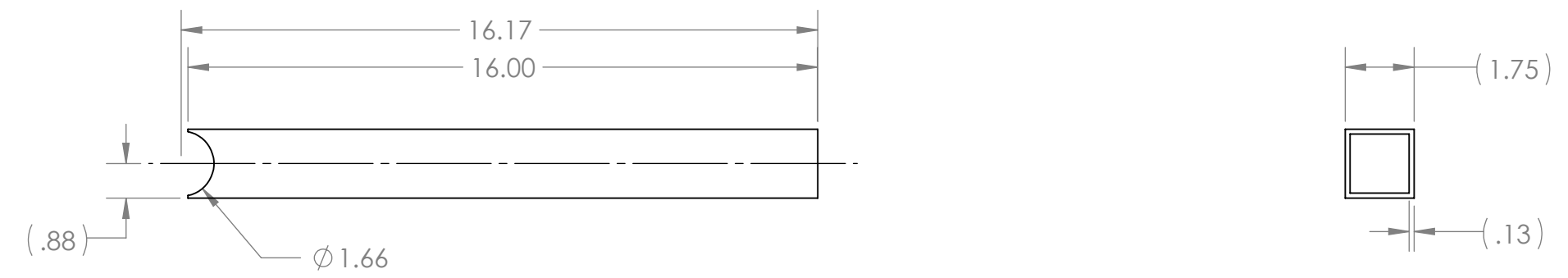
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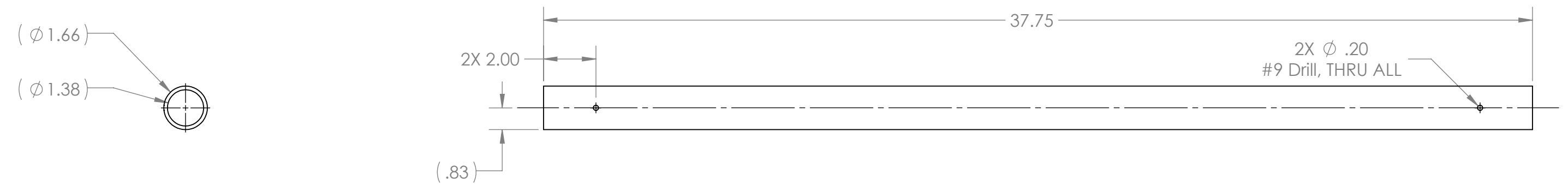
1



Item: GE-18053-01  
 Qty: 1  
 Material: 1.75" x .125" thk. Square Tube, 6061 Aluminum



Item: GE-18053-02  
 Qty: 1  
 Material: 1.75" x .125" thk. Square Tube, 6061 Aluminum



Item: GE-18053-03  
 Qty: 1  
 Material: 1-1/4" Schedule 40 Pipe, 6061 Aluminum

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



TITLE:  
**Connecting Frame, Fence**

SIZE DWG. NO. REV  
**B GE-18053**

SCALE: 1:4 WEIGHT: SHEET 2 OF 2

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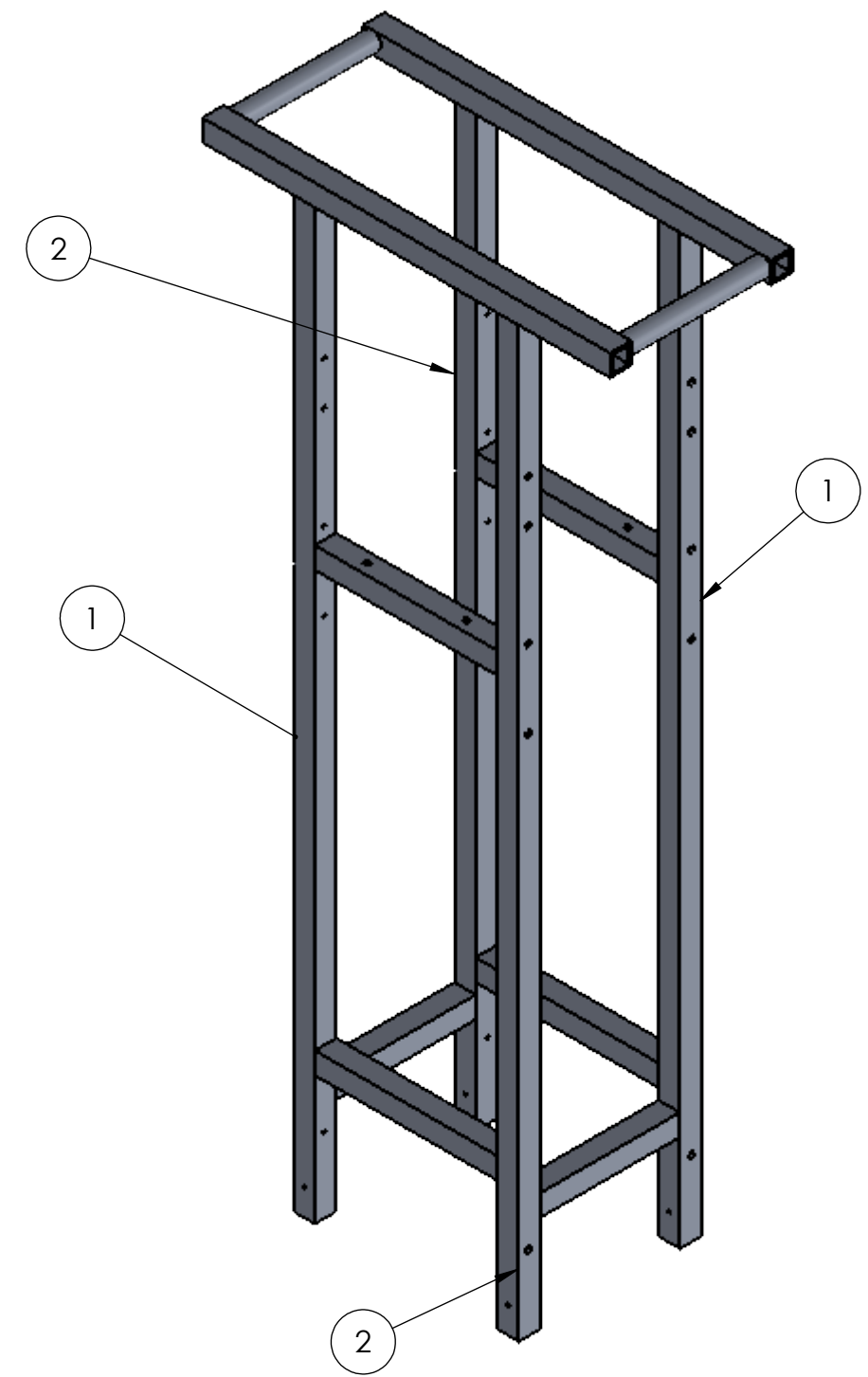
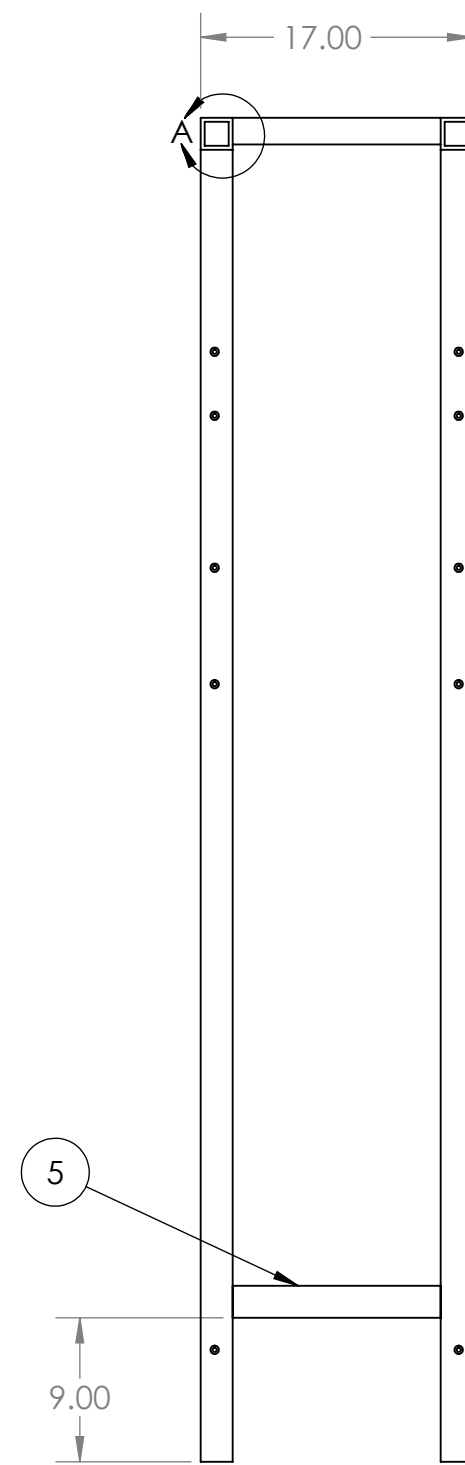
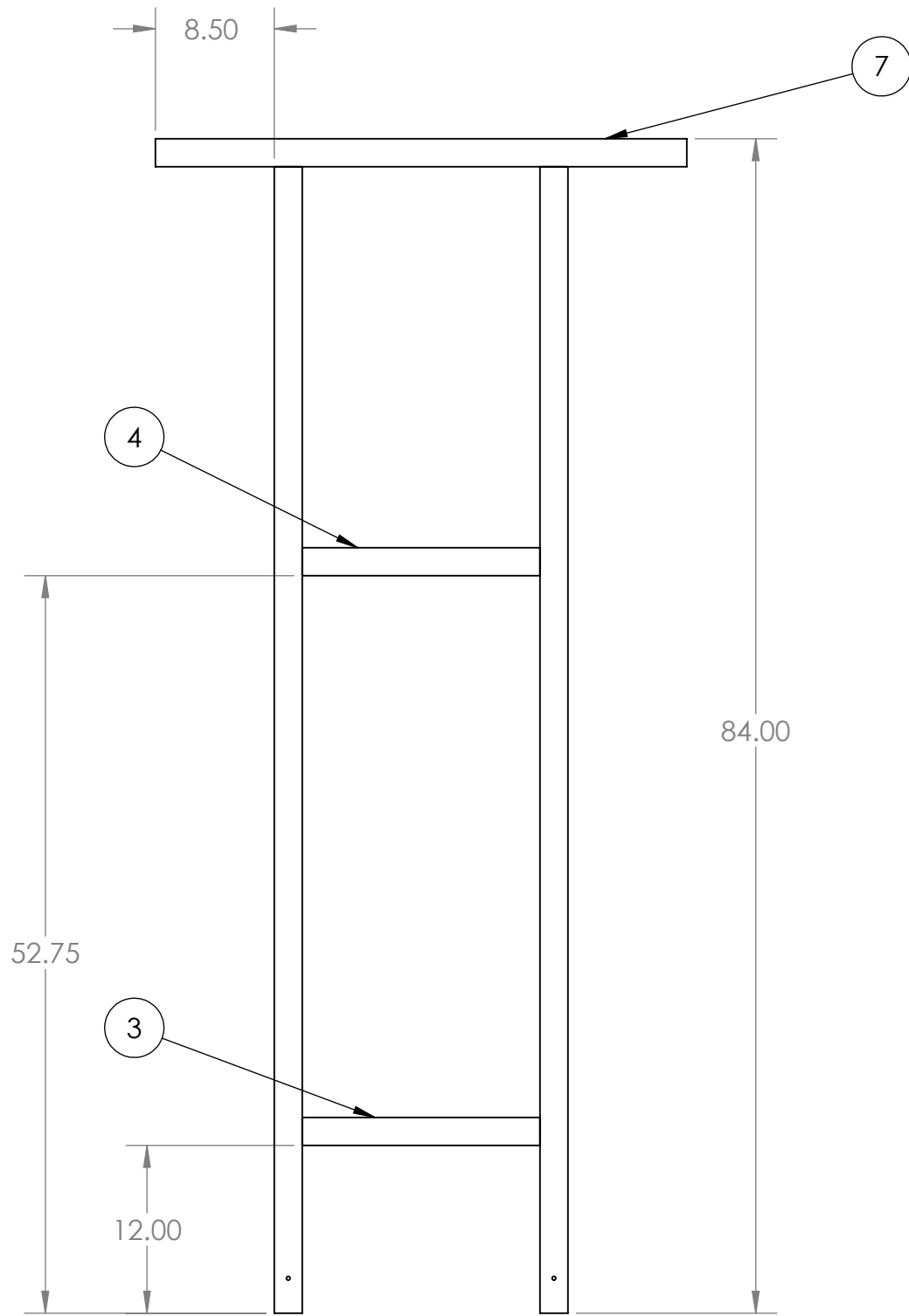
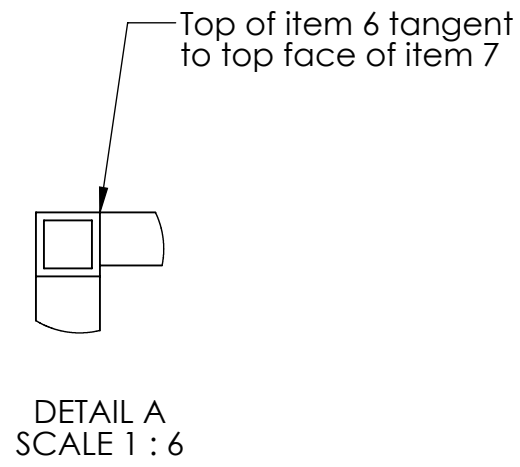
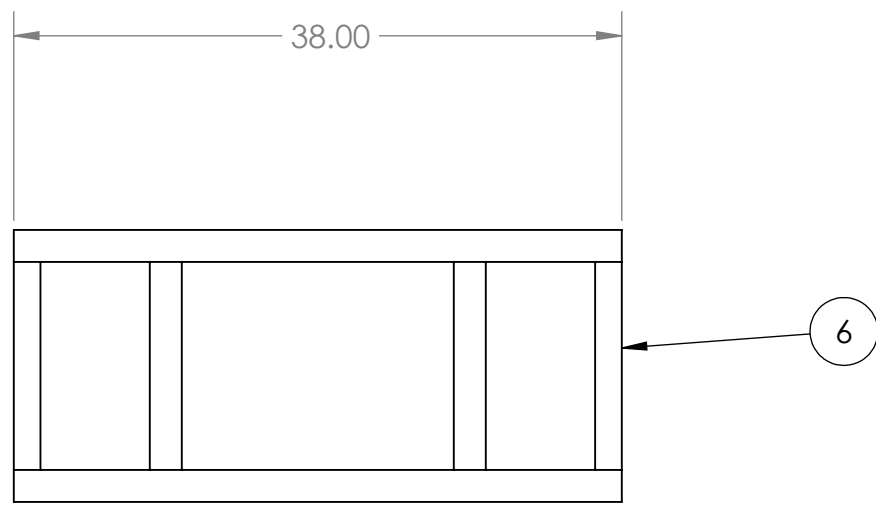
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18054-1	2" x .25" thk. Square Tube, 6061 Aluminum	2
2	GE-18054-2	2" x .25" thk. Square Tube, 6061 Aluminum	2
3	GE-18054-3	2" x .25" thk. Square Tube, 6061 Aluminum	2
4	GE-18054-4	2" x .25" thk. Square Tube, 6061 Aluminum	2
5	GE-18054-5	2" x .25" thk. Square Tube, 6061 Aluminum	2
6	GE-18054-6	1-1/4" Schedule 40 Pipe, 6061 Aluminum	2
7	GE-18054-7	2" x .25" thk. Square Tube, 6061 Aluminum	2

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

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

TITLE: **Scale Frame**

SIZE DWG. NO. REV  
**C GE-18054**

SCALE: 1:12 WEIGHT: SHEET 1 OF 6

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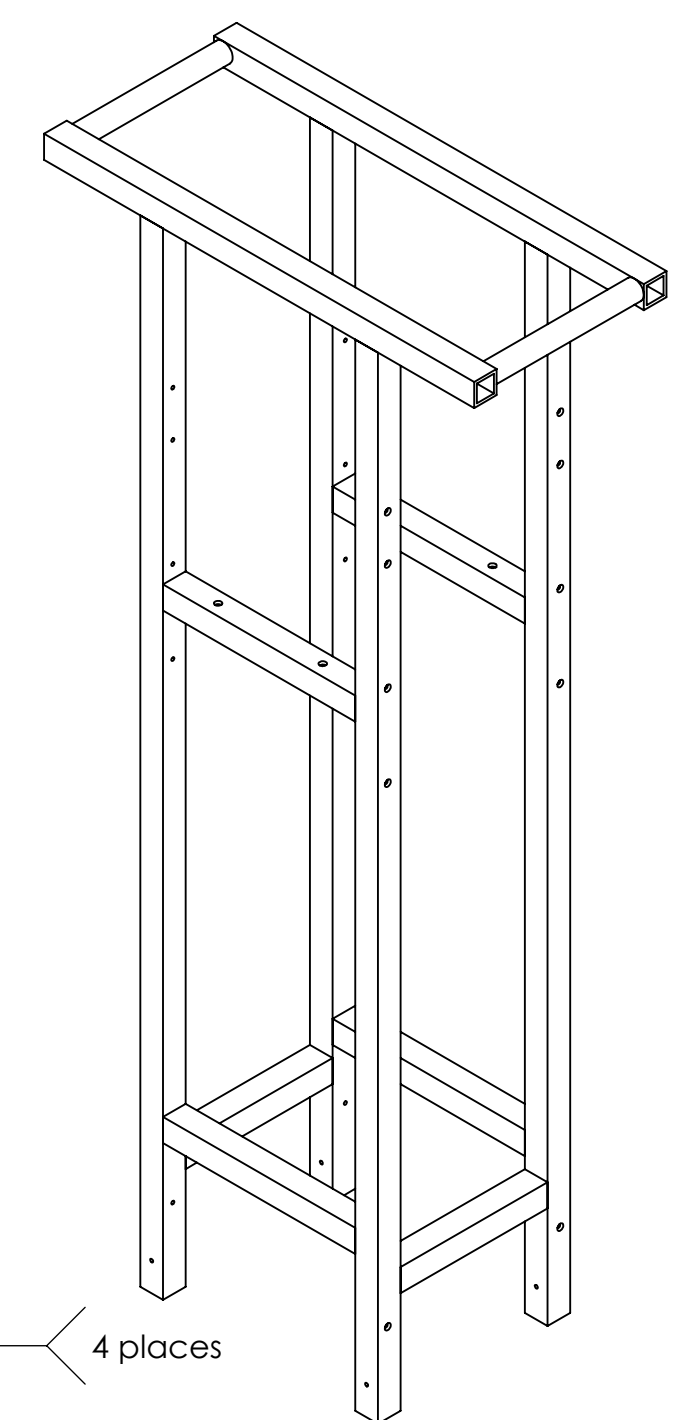
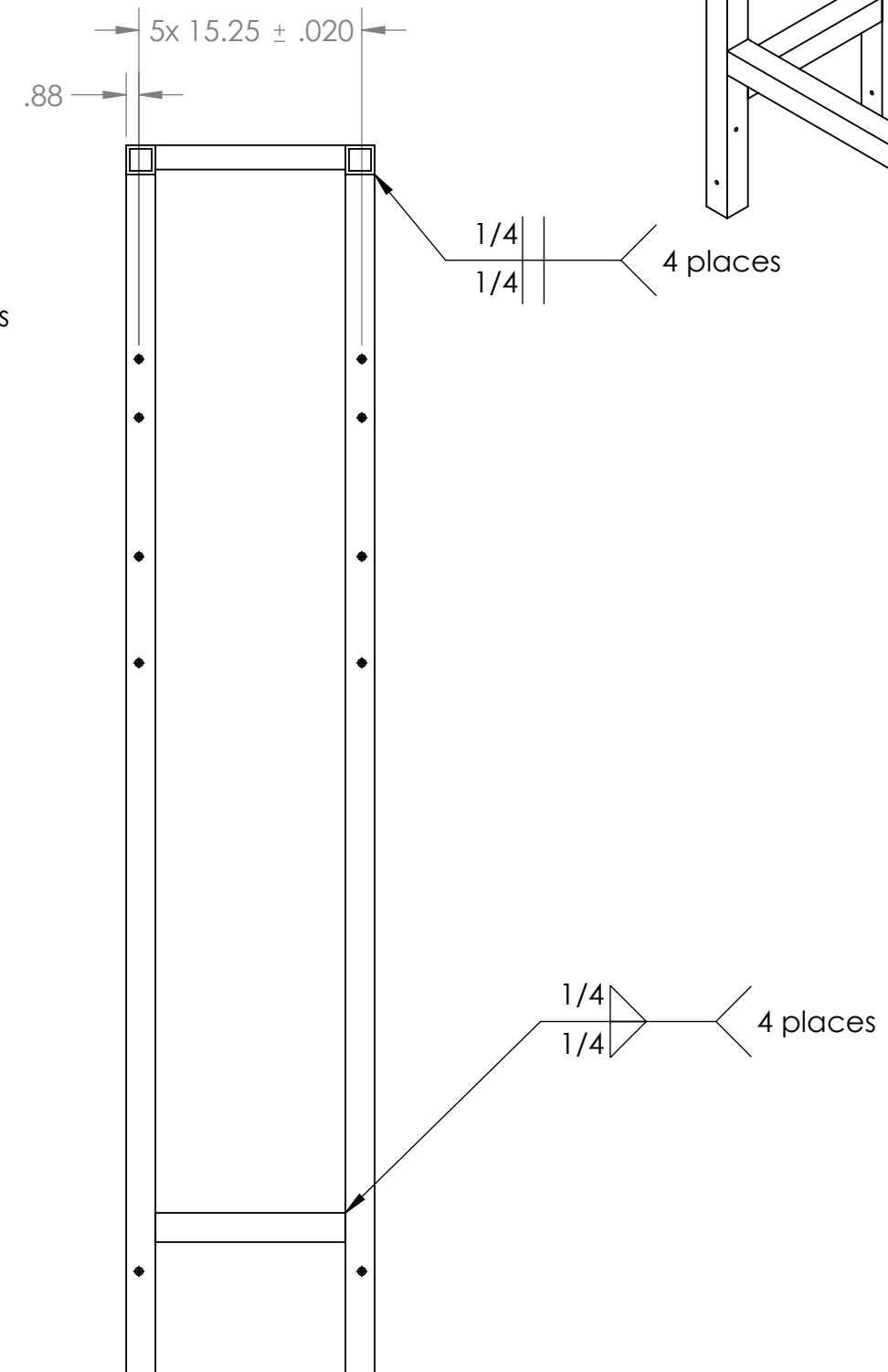
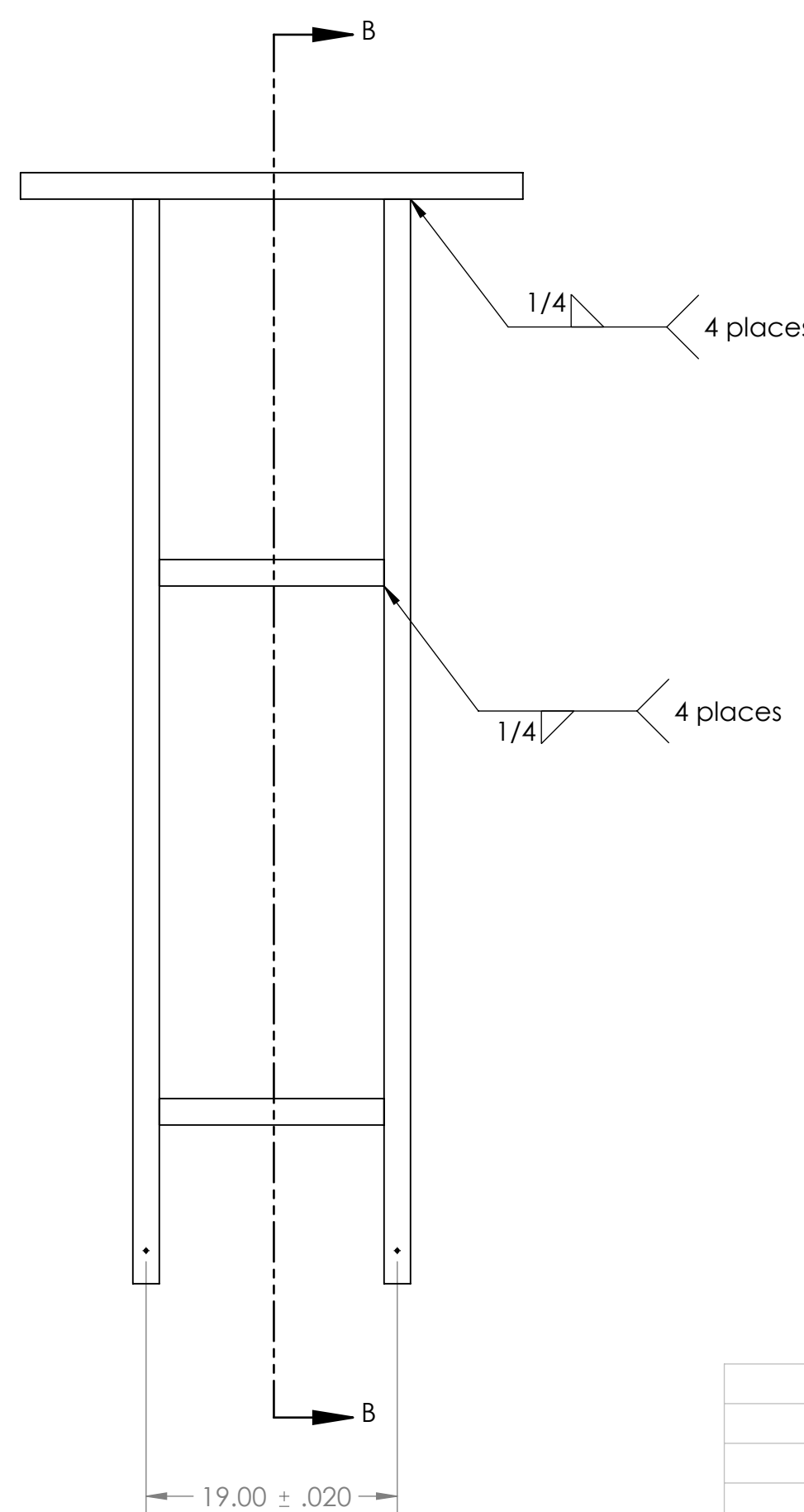
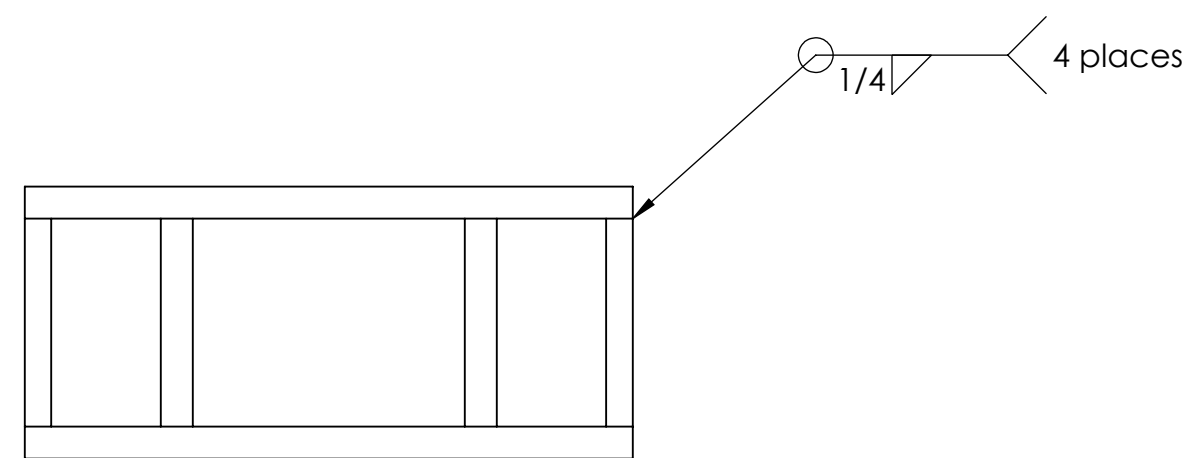
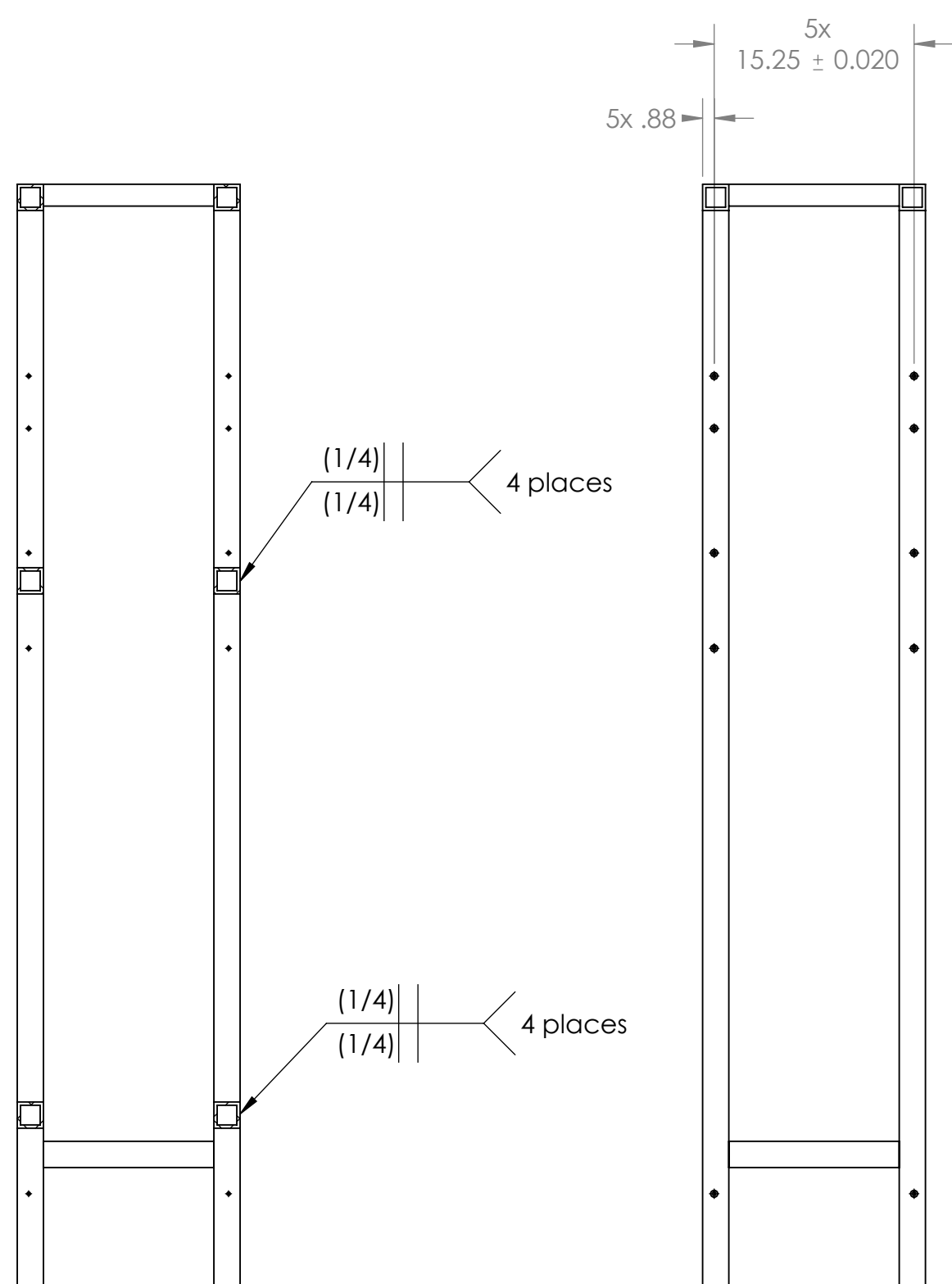
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SECTION B-B

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

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

TITLE: **Scale Frame**

SIZE	DWG. NO.	REV
<b>C</b>	<b>GE-18054</b>	
SCALE: 1:12	WEIGHT:	SHEET 2 OF 6

4

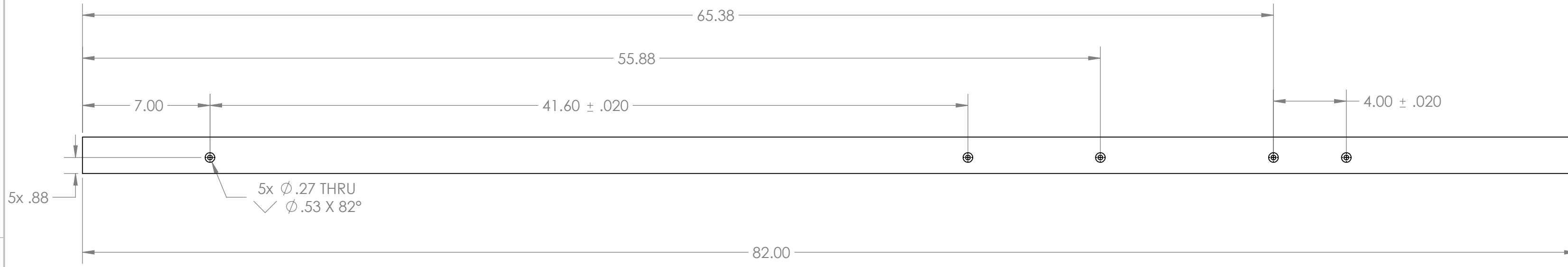
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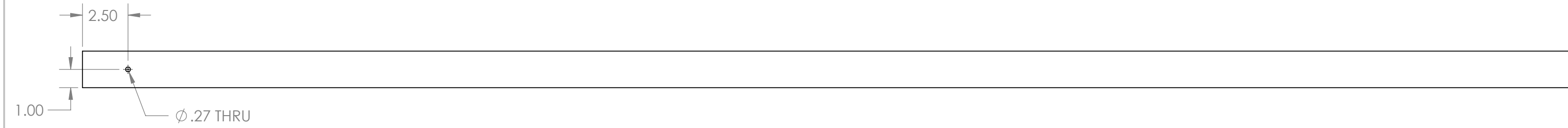
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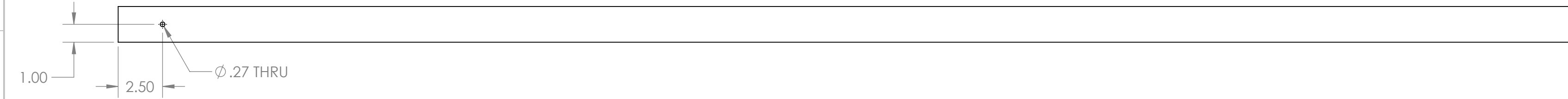
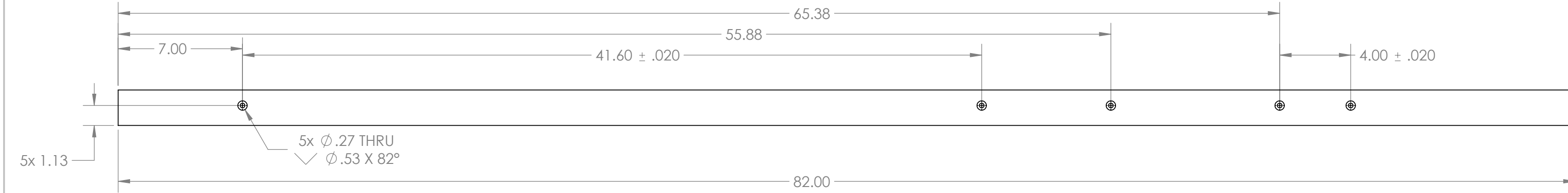
C



Item: GE-18054-1  
Material: 2" x .25" thk. Square Tube, 6061 Aluminum  
Scale: 1:5  
QTY: 2

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Item: GE-18054-2  
Material: 2" x .25" thk. Square Tube, 6061 Aluminum  
Scale: 1:6  
QTY: 2

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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			
FINISH			
NEXT ASSY	USED ON		
APPLICATION			
DO NOT SCALE DRAWING			



TITLE: <b>Scale Frame</b>		
SIZE	DWG. NO.	REV
<b>C</b>	<b>GE-18054</b>	
SCALE: 1:5	WEIGHT:	SHEET 3 OF 6

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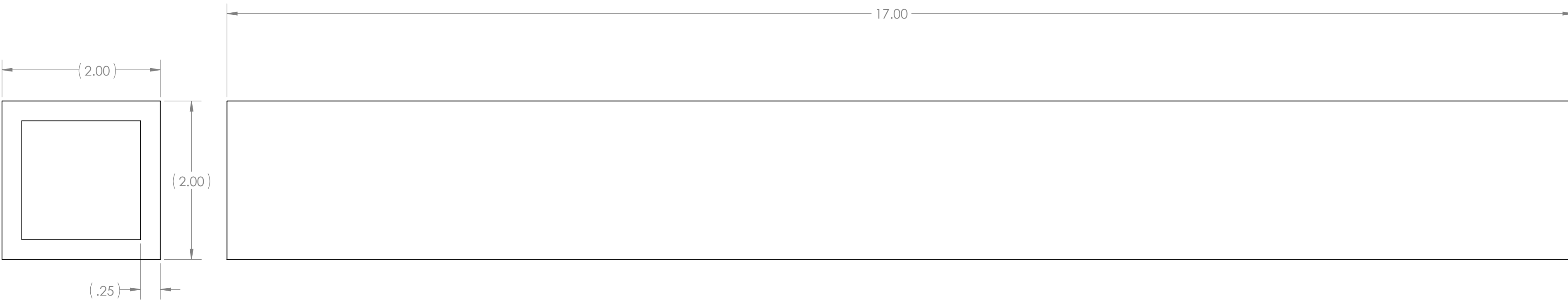
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Item: GE-18054-3  
 Material: 2" x .25" thk. Square Tube, 6061 Aluminum  
 Scale: 1:1  
 QTY: 2

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Item: GE-18054-4  
 Material: 2" x .25" thk. Square Tube, 6061 Aluminum  
 Scale: 1:1  
 QTY: 2

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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			
FINISH			
NEXT ASSY	USED ON		
APPLICATION			
DO NOT SCALE DRAWING			

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

TITLE: **Scale Frame**

SIZE	DWG. NO.	REV
<b>C</b>	<b>GE-18054</b>	
SCALE: 1:1	WEIGHT:	SHEET 4 OF 6

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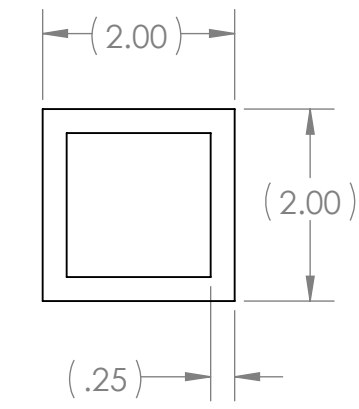
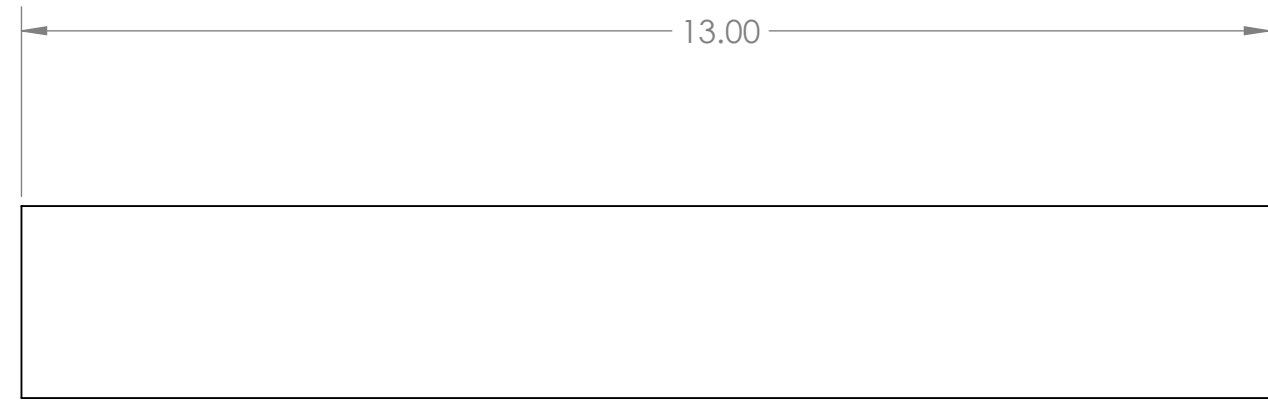
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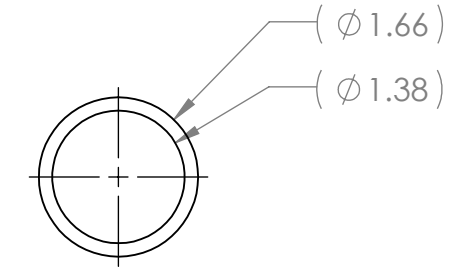
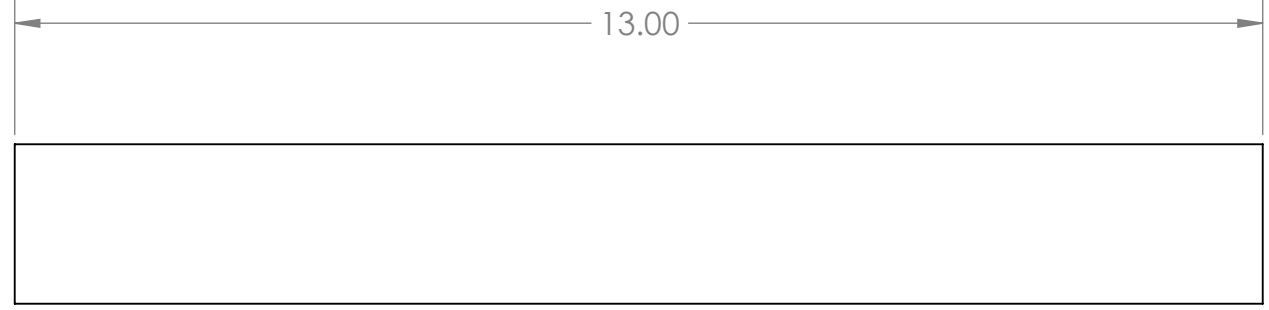
Item: GE-18054-5  
 Material: 2" x .25" thk. Square Tube, 6061 Aluminum  
 Scale: 1:1  
 QTY: 2

C

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Item: GE-18054-6  
 Material: 1-1/4" Schedule 40 Pipe, 6061 Aluminum  
 Scale: 1:1  
 QTY: 2

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

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

TITLE: **Scale Frame**

SIZE	DWG. NO.	REV
<b>C</b>	<b>GE-18054</b>	
SCALE: 1:2	WEIGHT:	SHEET 5 OF 6

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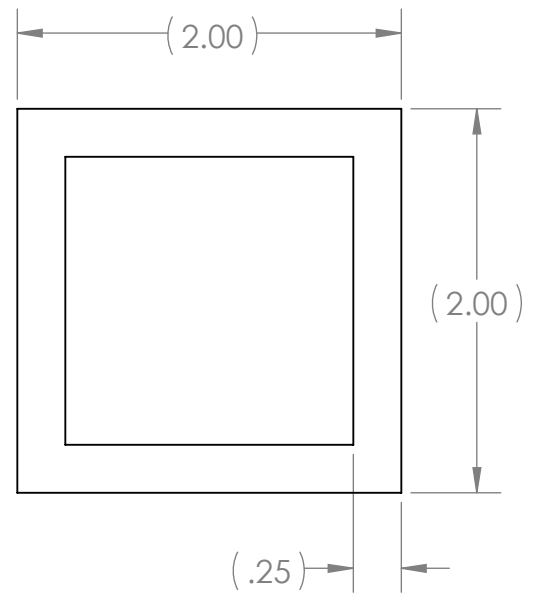
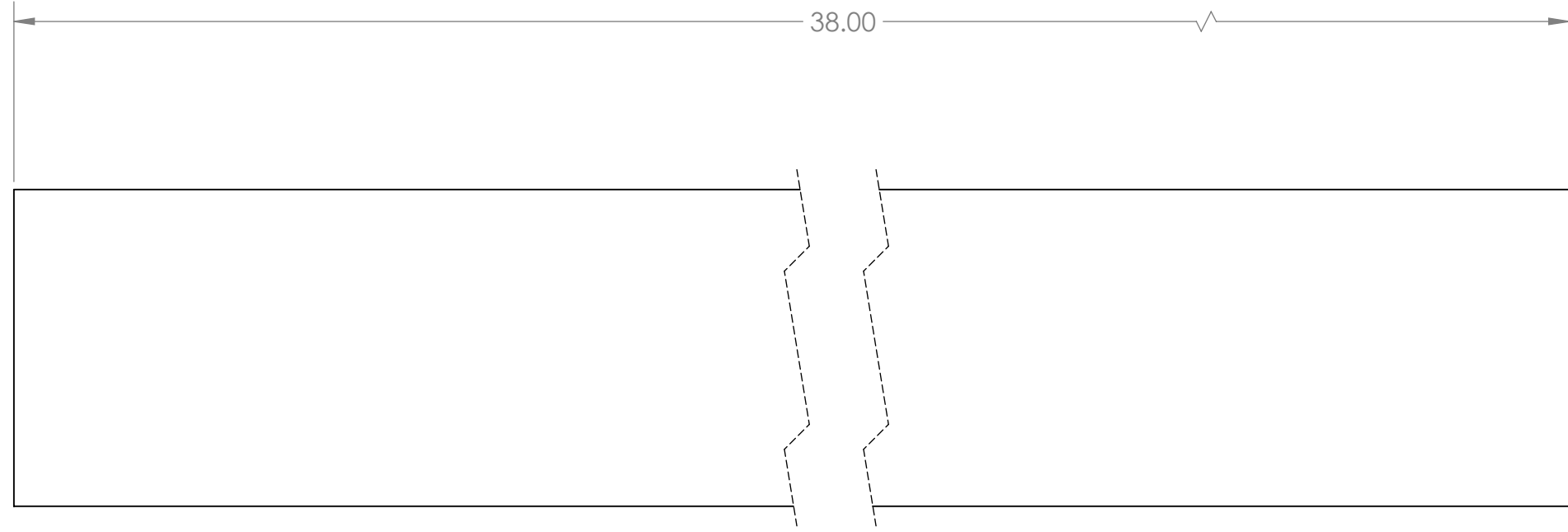
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Item: GE-18054-7  
 Material: 2" x .25" thk. Square Tube, 6061 Aluminum  
 Scale: 1:1  
 QTY: 2

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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			
FINISH			
NEXT ASSY	USED ON		
APPLICATION			
DO NOT SCALE DRAWING			

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

TITLE: **Scale Frame**

SIZE	DWG. NO.	REV
<b>C</b>	<b>GE-18054</b>	
SCALE: 1:1	WEIGHT:	SHEET 6 OF 6

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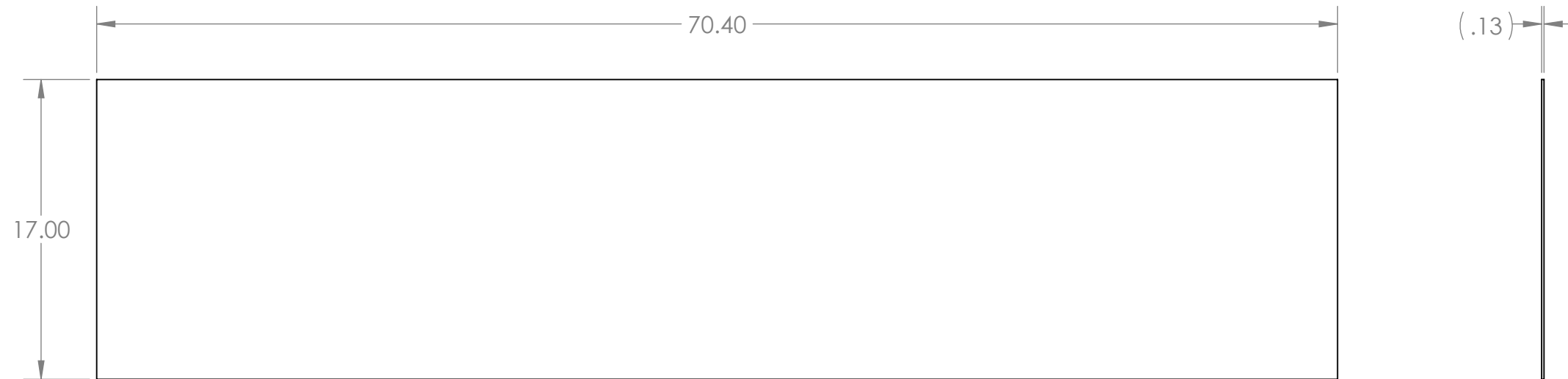
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Notes:

- 1. Material: 1/8" thick, clear polycarbonate.
- 2. Remove all burrs and sharp edges.

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		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		<b>Outrigger Top Polycarbonate</b>
		MATERIAL	ENG APPR.		
		FINISH	MFG APPR.		SIZE DWG. NO. REV
NEXT ASSY	USED ON	DO NOT SCALE DRAWING	Q.A.		<b>B</b> <b>GE-18055</b>
APPLICATION			COMMENTS:		SCALE: 1:8 WEIGHT: SHEET 1 OF 1

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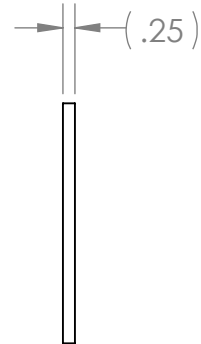
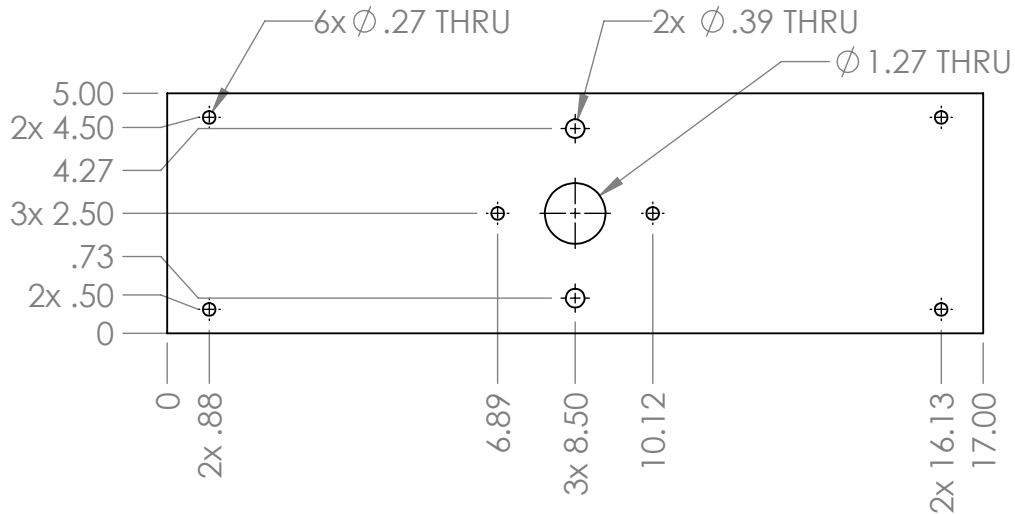


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- Notes:
1. Material: 1/4" thick, clear polycarbonate.
  2. Remove all burrs and sharp edges.

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



TITLE:  
**Bearing Damper  
 Polycarbonate**

SIZE	DWG. NO.	REV
<b>A</b>	<b>GE-18056</b>	
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1

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Notes:

- 1. Material: 1/8" thick, black HDPE.
- 2. Surface: Smooth texture.
- 3. Remove all burrs and sharp edges.

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		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		SIZE DWG. NO. REV <b>B GE-18057</b>
		MATERIAL	ENG APPR.		
NEXT ASSY	USED ON	FINISH	MFG APPR.		SCALE: 1:3 WEIGHT: SHEET 1 OF 1
APPLICATION		DO NOT SCALE DRAWING	Q.A.	COMMENTS:	

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Notes:

- 1. Material: 1/8" thick, black HDPE.
- 2. Surface: Smooth texture.
- 3. Remove all burrs and sharp edges

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



TITLE:  
**Scale Top HDPE**

SIZE DWG. NO. REV  
**B GE-18058**

SCALE: 1:3 WEIGHT: SHEET 1 OF 1

4

3

2

1

4

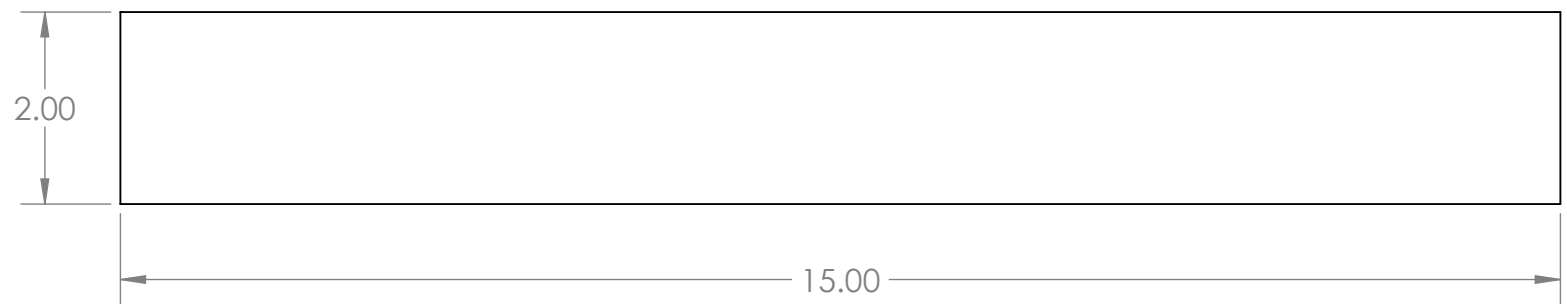
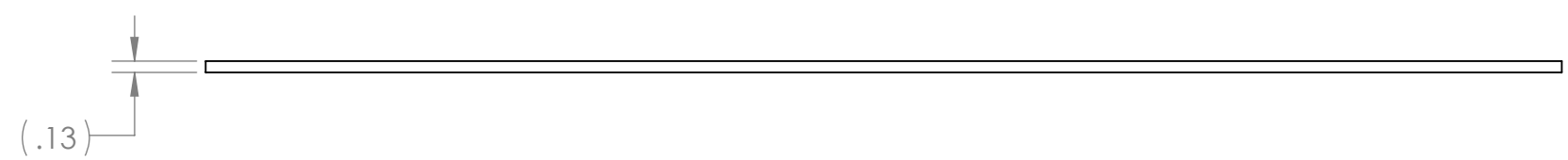
3

2

1

B

B



A

A

Notes:

- 1. Material: 1/8" thick, black HDPE.
- 2. Surface: Smooth texture.
- 3. Remove all burrs and sharp edges.

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



TITLE:  
**Sensor Curtain**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18059</b>	

SCALE: 1:2 WEIGHT: SHEET 1 OF 1

4

3

2

1

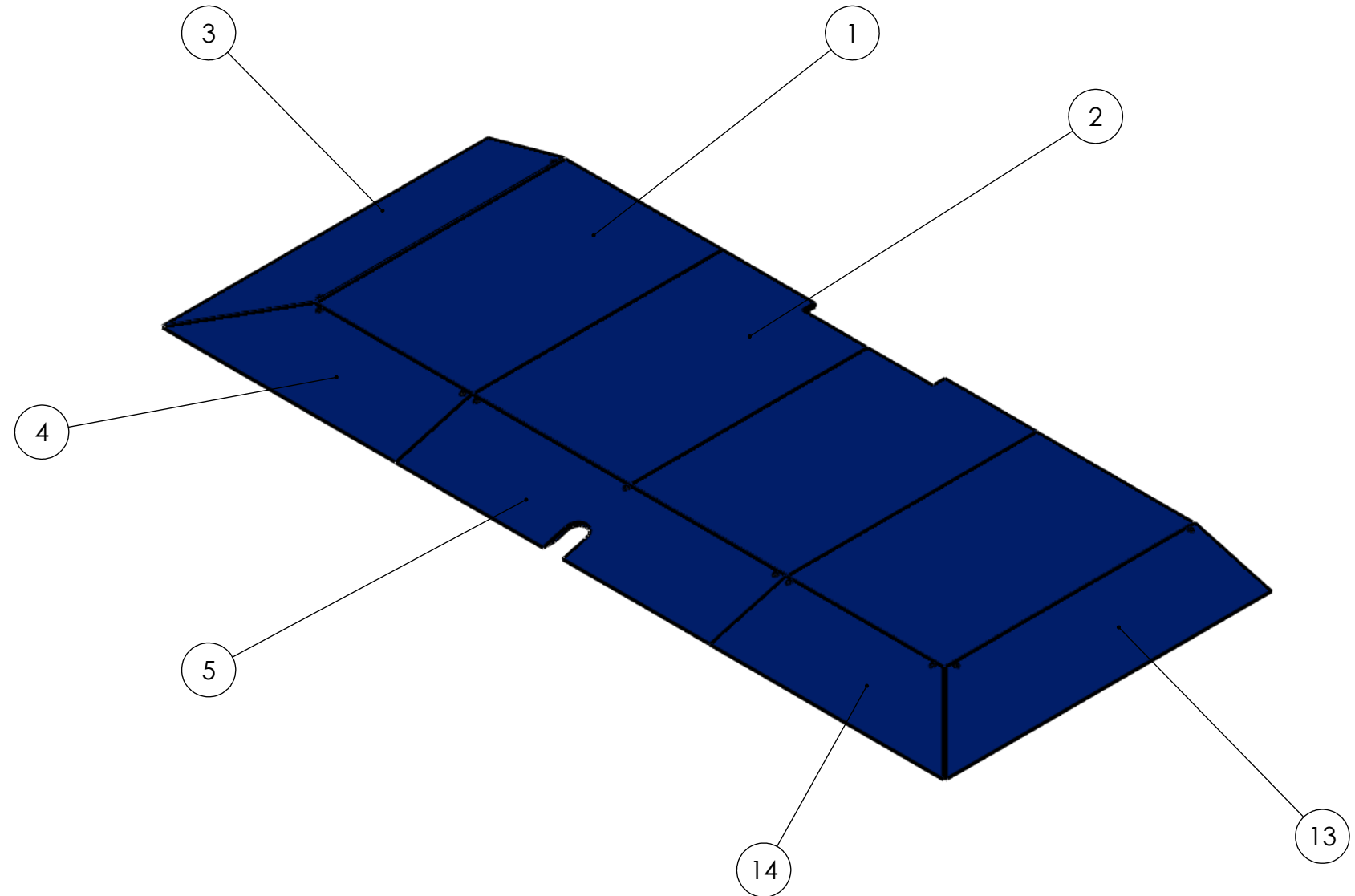
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
2-A4	1	Changed part number called out in note to match displayed part.	1/12/2018	CPO



ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.
1	GE-18061	Platform Top	2
2	GE-18062	Platform Top Notch	2
3	GE-18063	Platform Short Side	1
4	GE-18064	Platform Long Side	1
5	GE-18065	Platform Long Side Middle	1
6	GE-18066	Platform Brace, Long Side 1	4
7	GE-18067	Platform Brace, Long Side 2	2
8	GE-18068	Platform Brace, Short Side 1	6
9	GE-18069	Platform Brace, Mid Section	2
10	GE-18070	Platform Angle, Short Side	2
11	GE-18071	Platform Angle, Long Side	2
12	GE-18072	Platform Angle, Long Side Middle	1
13	GE-18073	Platform Short Side Mirrored	1
14	GE-18074	Platform Long Side Mirrored	1
15	GE-18105	Platform Brace, Short Side 2	2
16	flat_hex_.25_20_1	Steel Hex Flat Head Screw, 1/4"-20 x 1" long, fully threaded	11
17	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	11

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

		TITLE: Platform	
SIZE	DWG. NO.	REV	
<b>B</b>	<b>GE-18060</b>	<b>1</b>	
SCALE: 1:32 WEIGHT:		SHEET 1 OF 3	

4

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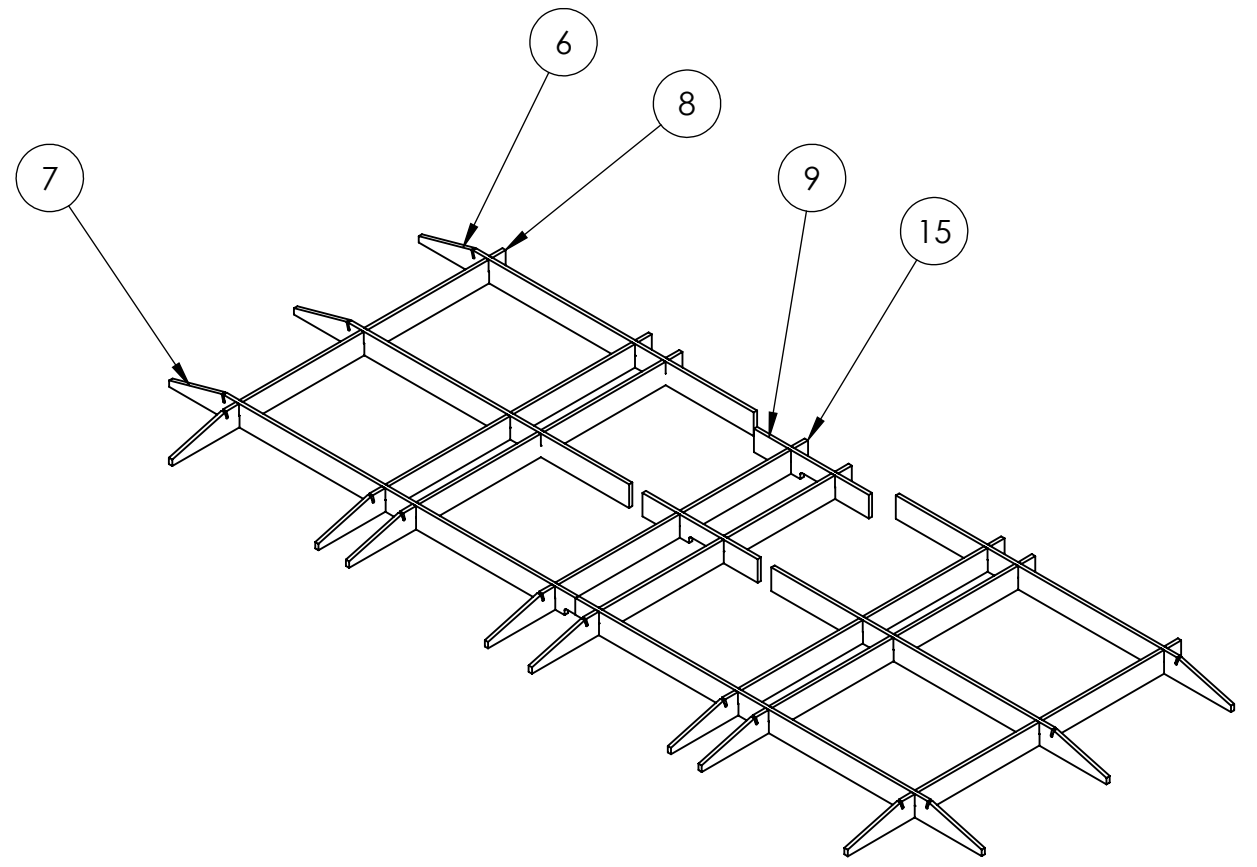
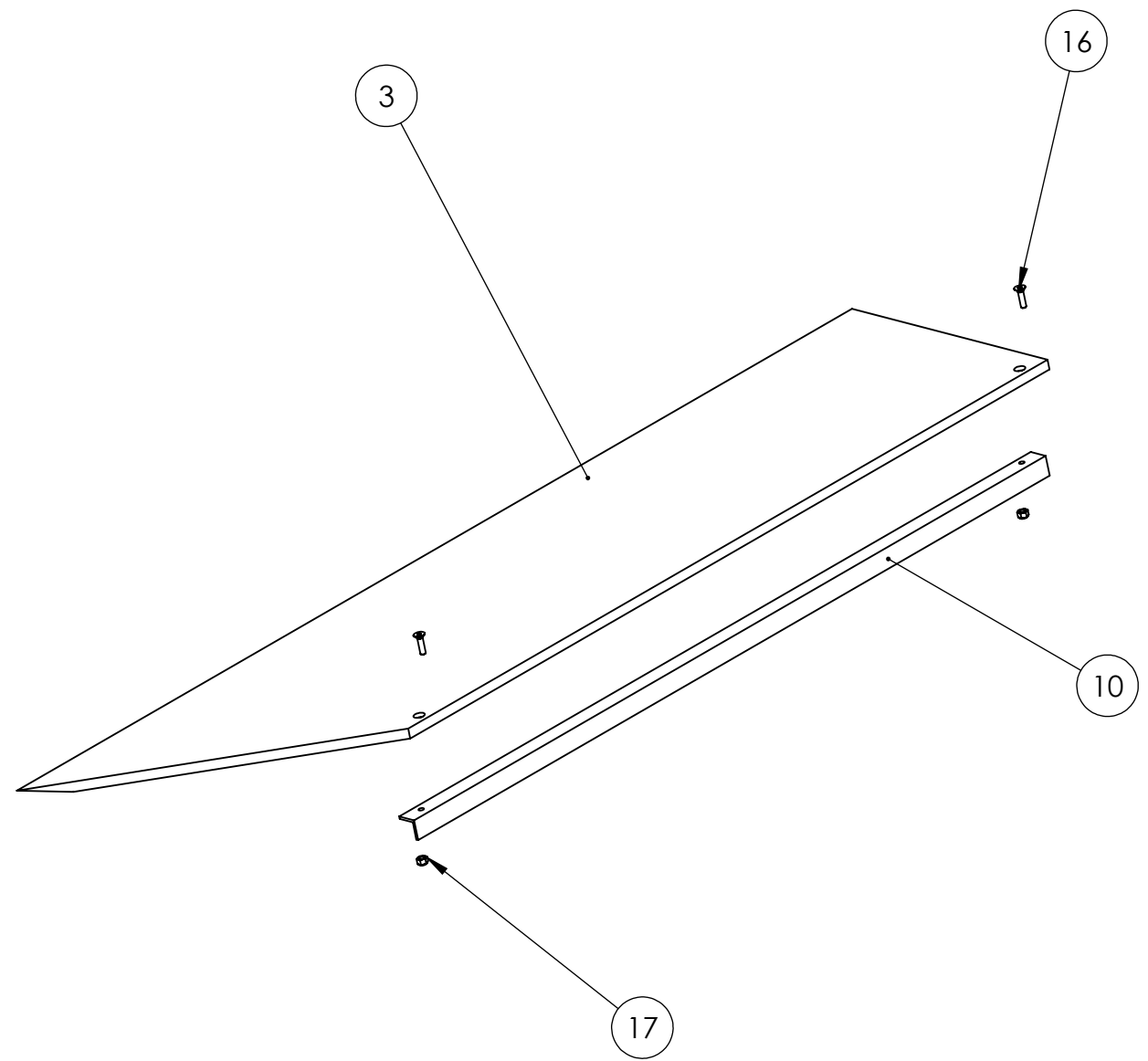
1

4

3

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1





Notes: 1  
 Bolt Item 10 to Item 3 using Items 16 and 17. Repeat steps for the following Items, using Items 16 and 17 to fasten:

HDPE	Aluminum Angle
Item 4	Item 11
Item 5	Item 12
Item 13	Item 10
Item 14	Item 11

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Notes:  
 Slot Items 6, 7, 8, 9, 15 together.

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

TITLE:

# Platform

SIZE **B**

SCALE: 1:32 WEIGHT:

DWG. NO. **GE-18060**

REV **1**

SHEET 2 OF 3

4

3

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B

B

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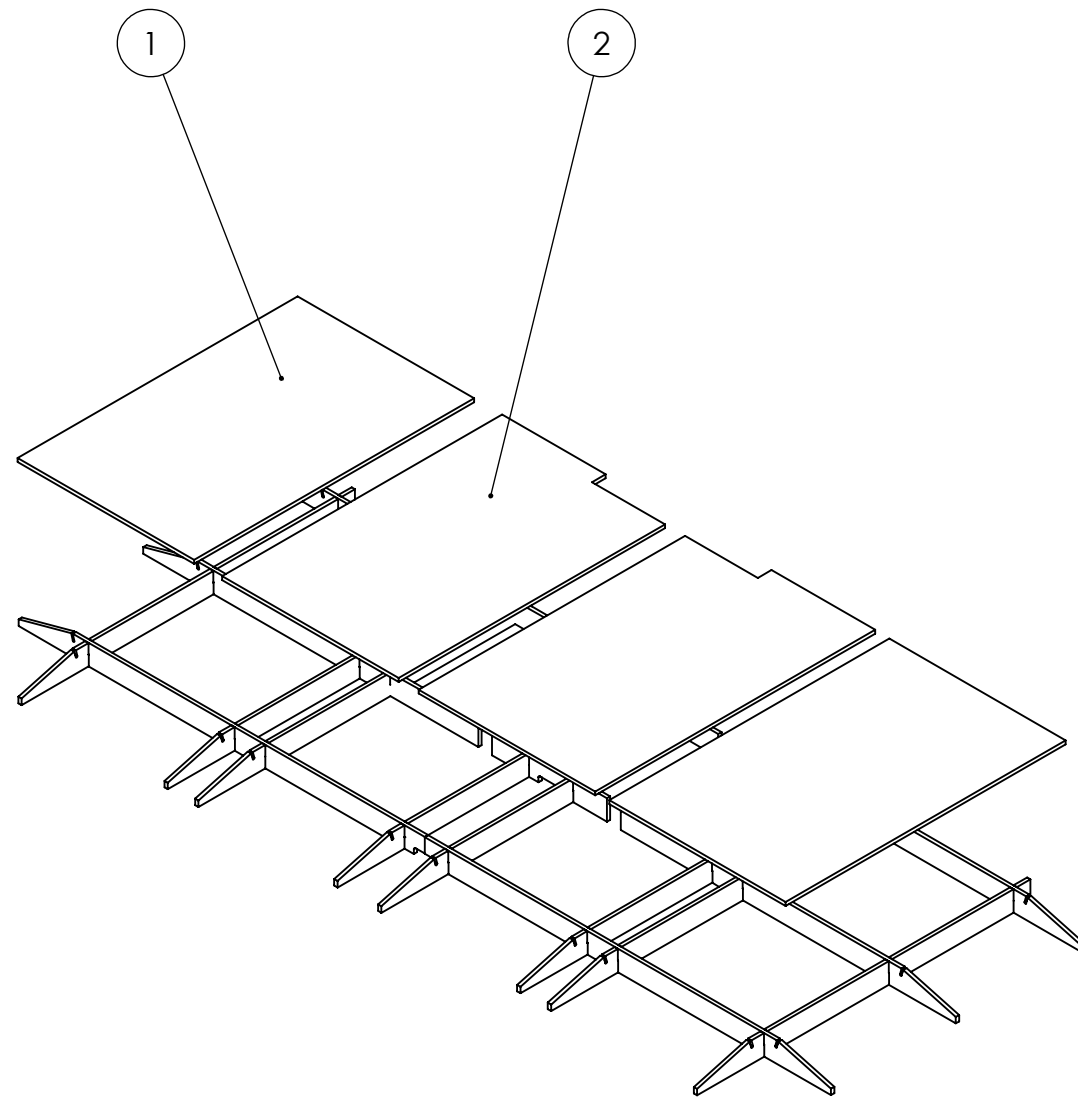
1

B

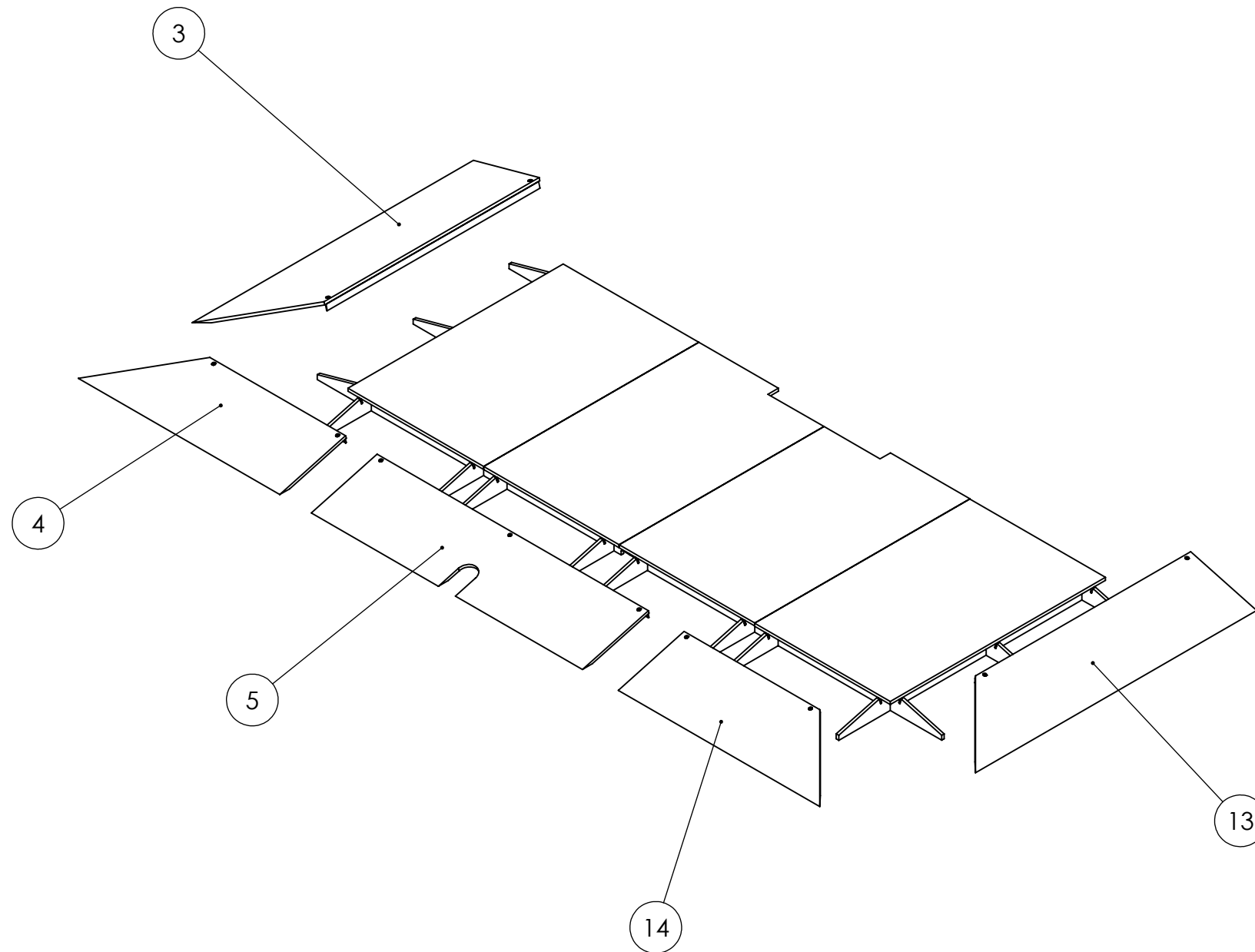
B

A

A





Notes:  
Attach Items 1 and 2 using hook and loop.



Notes:  
Attach Items 3, 4, 5, 13, and 14 by sliding the aluminum angles into the slots on Items 6, 7, 8, 9, 15.

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 
		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		SIZE DWG. NO. REV <b>B</b> <b>GE-18060</b> <b>1</b>
		MATERIAL		ENG APPR.		
		FINISH		MFG APPR.		SHEET 3 OF 3
NEXT ASSY	USED ON			Q.A.		
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:		

4

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2

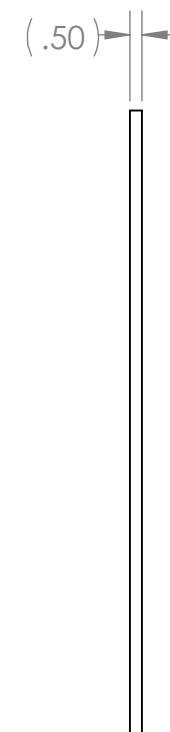
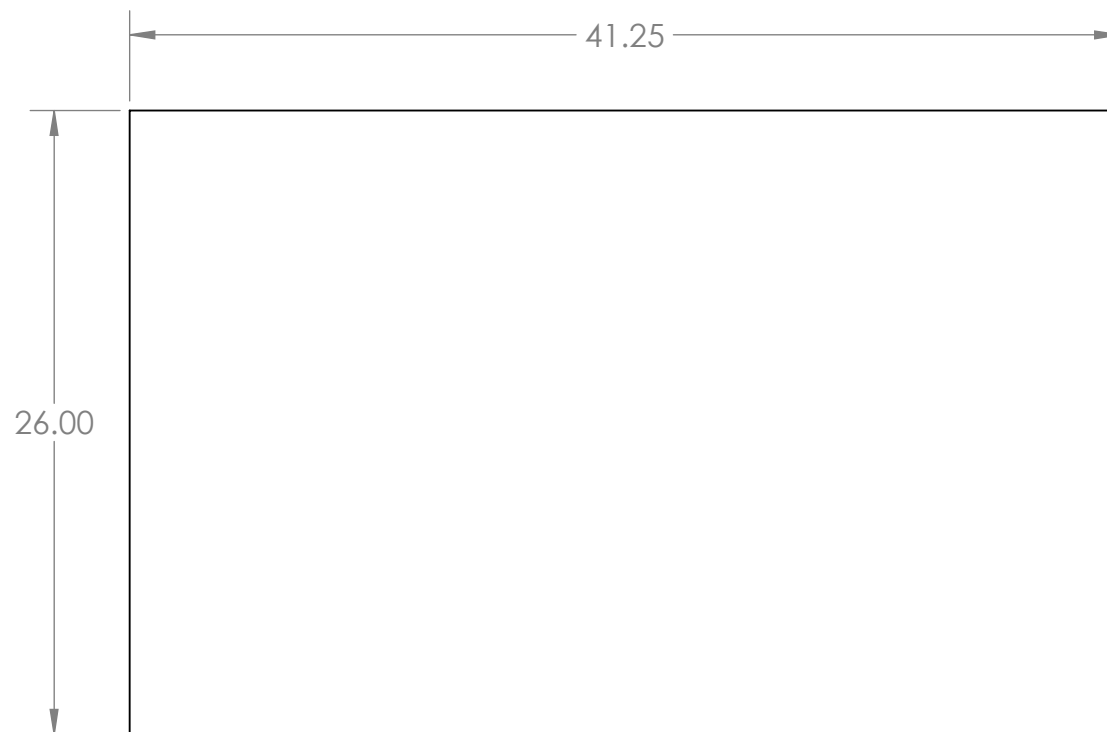
1

4

3

2

1



B

B



A

A

Notes:

- 1. Material: 1/2" thk. HDPE, red or blue
- 2. Surface: Matte texture
- 3. Remove all burrs and sharp edges

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001		DRAWN	
		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
		MATERIAL		ENG APPR.	
		FINISH		MFG APPR.	
NEXT ASSY	USED ON			Q.A.	
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:	
				 	
				TITLE: Platform Top	
SIZE	DWG. NO.			REV	
<b>B</b>	GE-18061				
SCALE: 1:8		WEIGHT:		SHEET 1 OF 1	

4

3

2

1

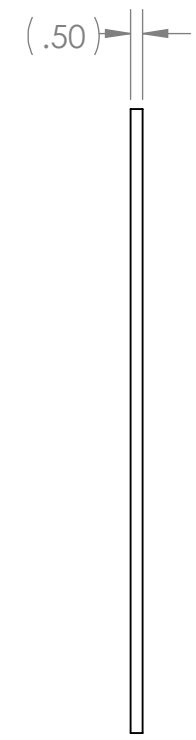


4

3

2

1



B

B

A

A

- Notes:
1. Material: 1/2" thk. textured HDPE, red or blue
  2. Surface: Matte texture
  3. Remove all burrs and sharp edges

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



TITLE:		
Platform Top Notch		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18062</b>	
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

4

3

2

1

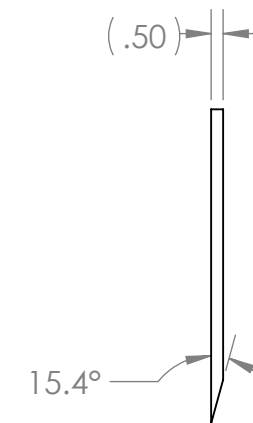
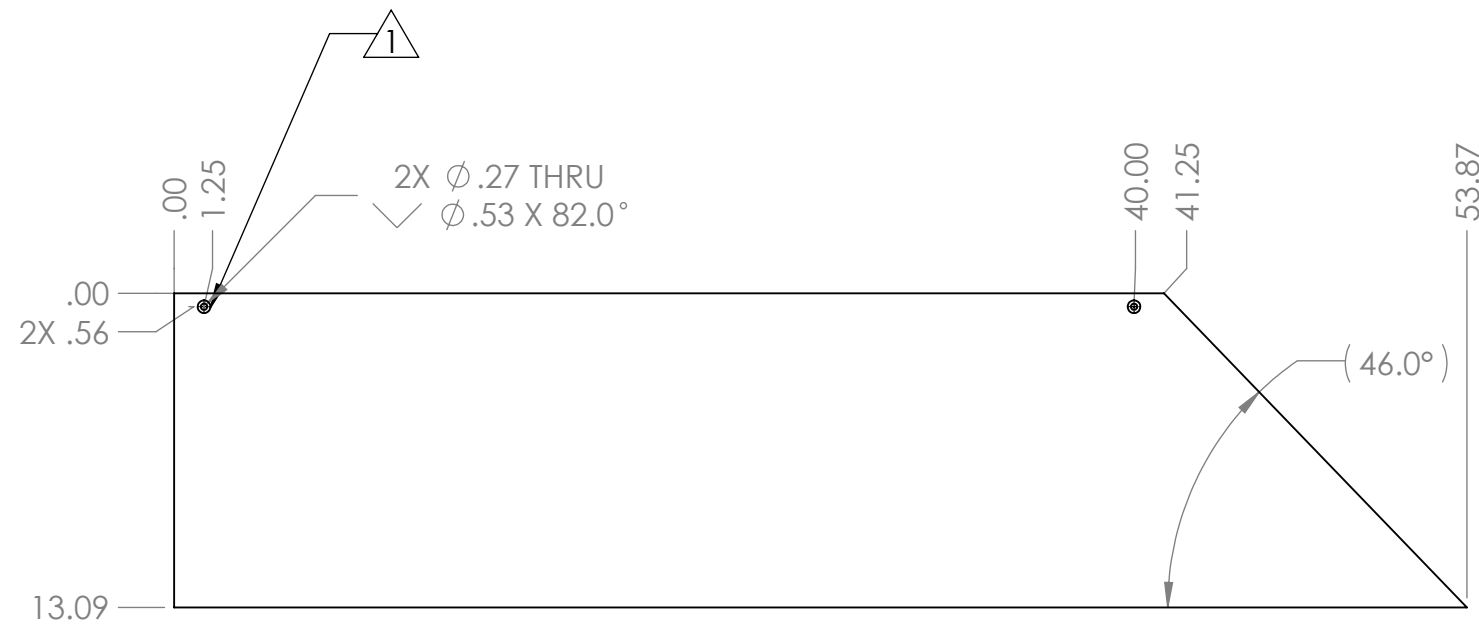
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	1	Changed number and location of holes	11/30/2017	JRF



B

B



A

A

Notes:

1. Material: 1/2" thk. HDPE, red or blue
2. Surface: Matte texture
3. Remove all burrs and sharp edges

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		TITLE:
		MATERIAL	ENG APPR.		Platform Short Side
		FINISH	MFG APPR.		SIZE DWG. NO. REV
NEXT ASSY	USED ON		Q.A.		<b>B</b> GE-18063 1
APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		SCALE: 1:8 WEIGHT: SHEET 1 OF 1

4

3

2

1

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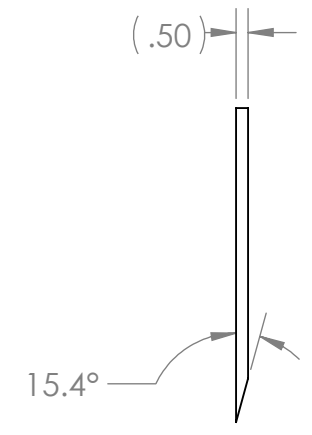
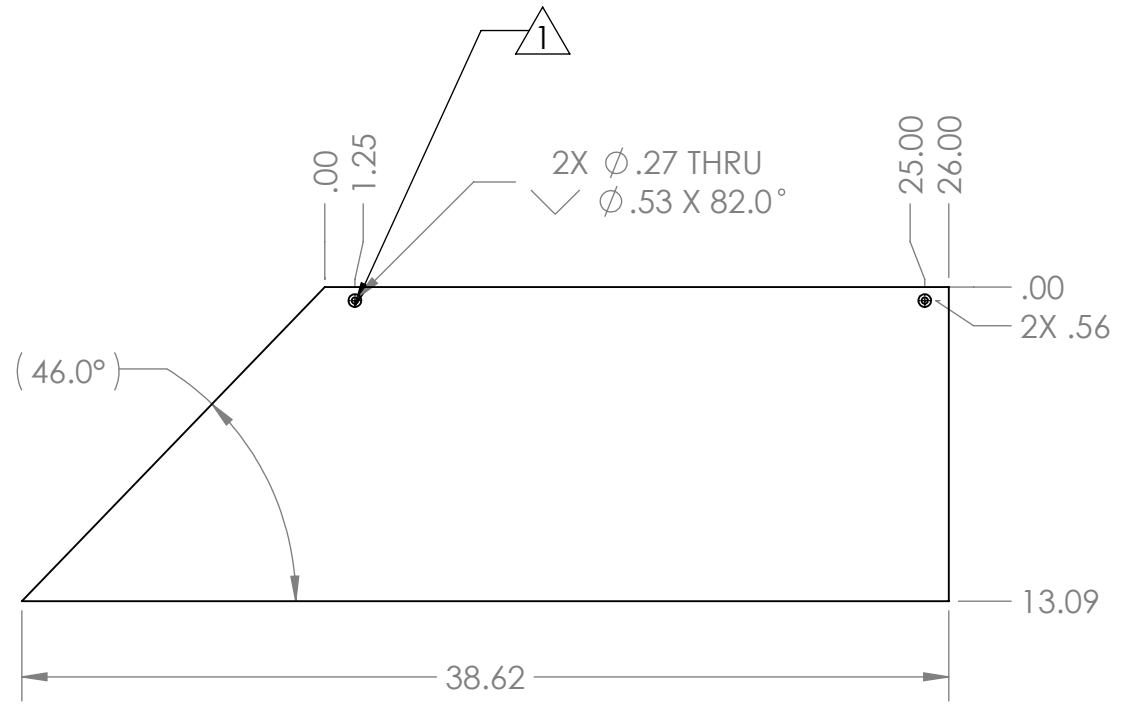
2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	1	Changed number and location of holes; decreased length of part	11/30/17	JRF

B

B



A

A

- Notes:
1. Material: 1/2" thk. HDPE, red or blue
  2. Surface: Matte texture
  3. Remove all burrs and sharp edges

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

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

TITLE:  
**Platform Long Side**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18064</b>	<b>1</b>

SCALE: 1:8 WEIGHT: SHEET 1 OF 1

4

3

2

1

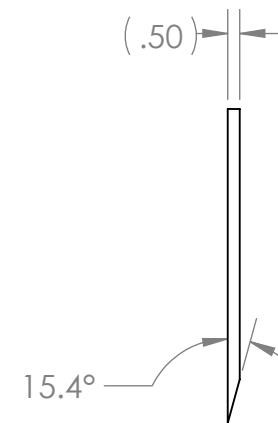
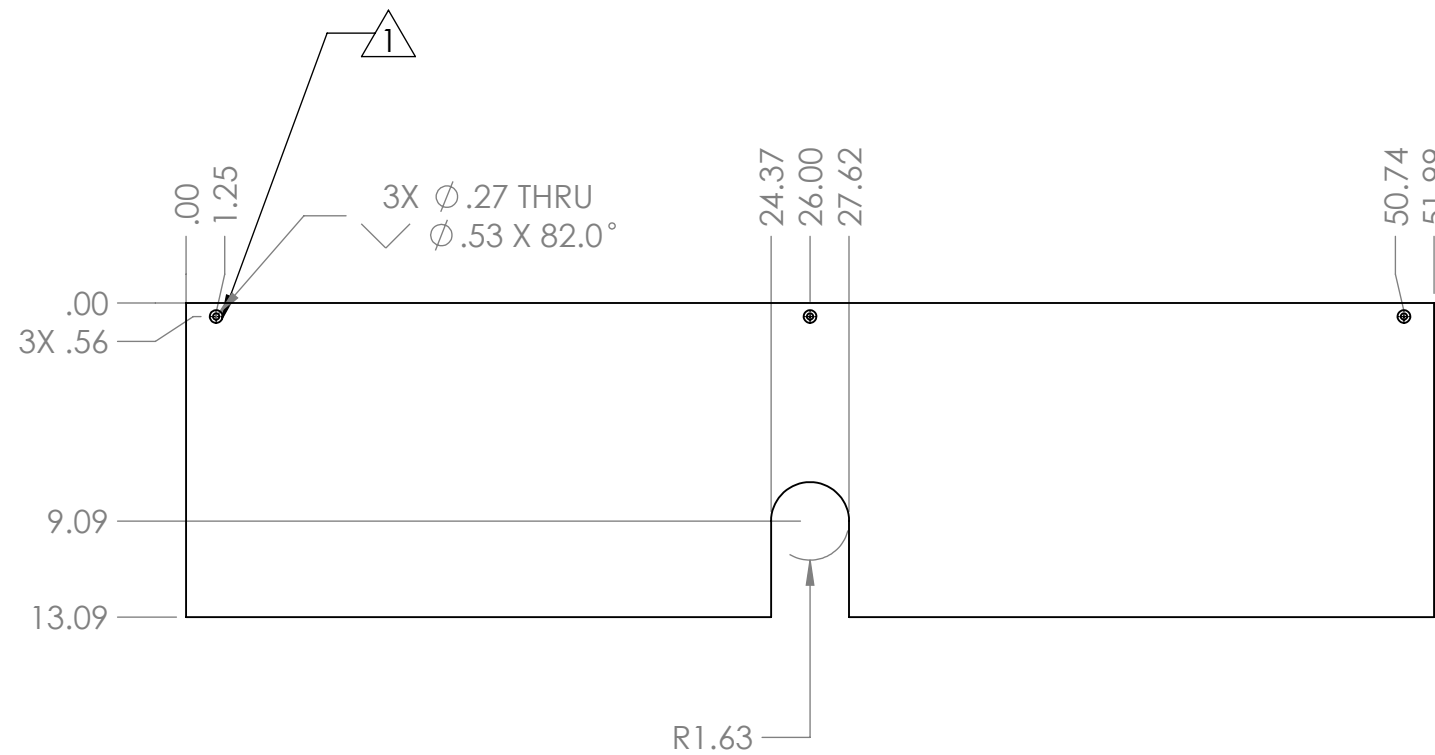
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	1	Changed numbered and location of holes; increased length of part	11/30/17	JRF



B



B

A

A

- Notes:
1. Material: 1/2" thk. textured HDPE, red or blue
  2. Surface: Matte texture
  3. Remove all burrs and sharp edges

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		TITLE:
		MATERIAL	ENG APPR.		<b>Platform Long Side Middle</b>
		FINISH	MFG APPR.		SIZE DWG. NO. REV
NEXT ASSY	USED ON		Q.A.		<b>B GE-18065 1</b>
APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		SCALE: 1:8 WEIGHT: SHEET 1 OF 1

4

3

2

1

4

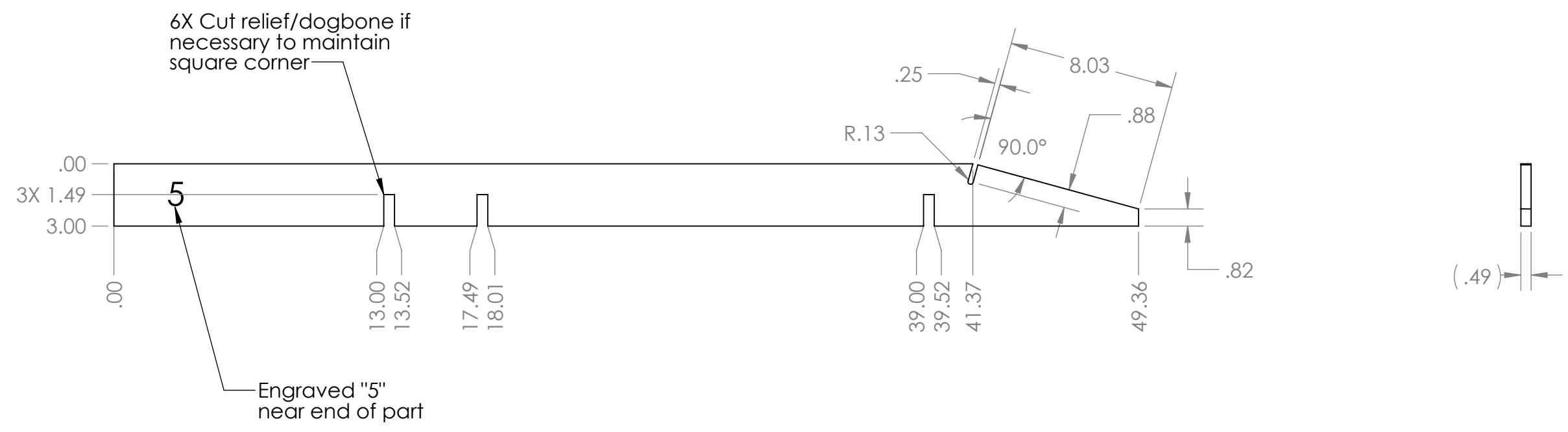
3

2

1

B

B



A

A

- Notes:
1. Material: 1/2" thk. textured HDPE, any color
  2. Surface: Smooth texture
  3. Remove all burrs and sharp edges

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



TITLE:		
Platform Brace, Long Side 1		
SIZE	DWG. NO.	REV
<b>B</b>	GE-18066	
SCALE: 1:6	WEIGHT:	SHEET 1 OF 1

4

3

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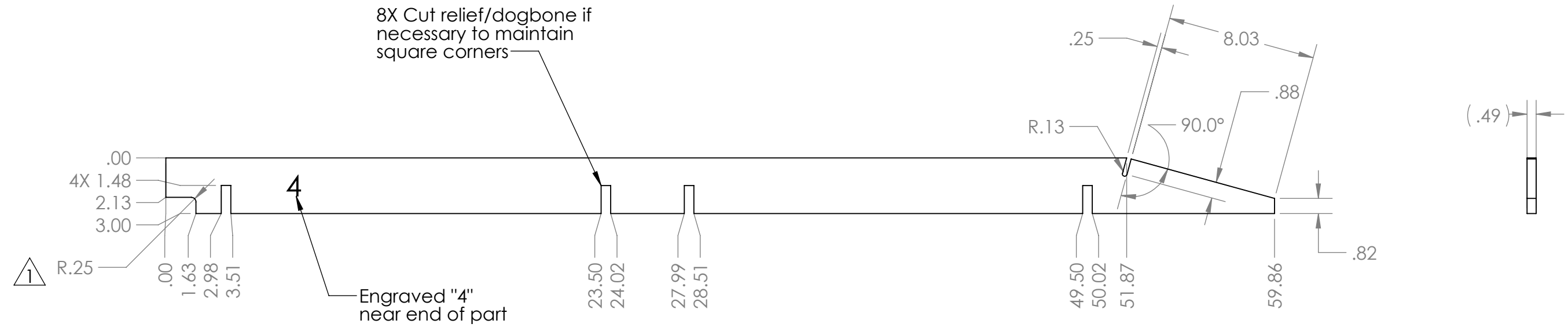
2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B4	1	Added dimension to specify fillet radius.	1/3/2018	CPO

B

B



A

A

- Notes:
1. Material: 1/2" thk. HDPE, any color
  2. Surface: Smooth texture
  3. Remove all burrs and sharp edges

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

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

TITLE:  
**Platform Brace, Long Side 2**

SIZE **B** DWG. NO. **GE-18067** REV **1**

SCALE: 1:6 WEIGHT: SHEET 1 OF 1

4

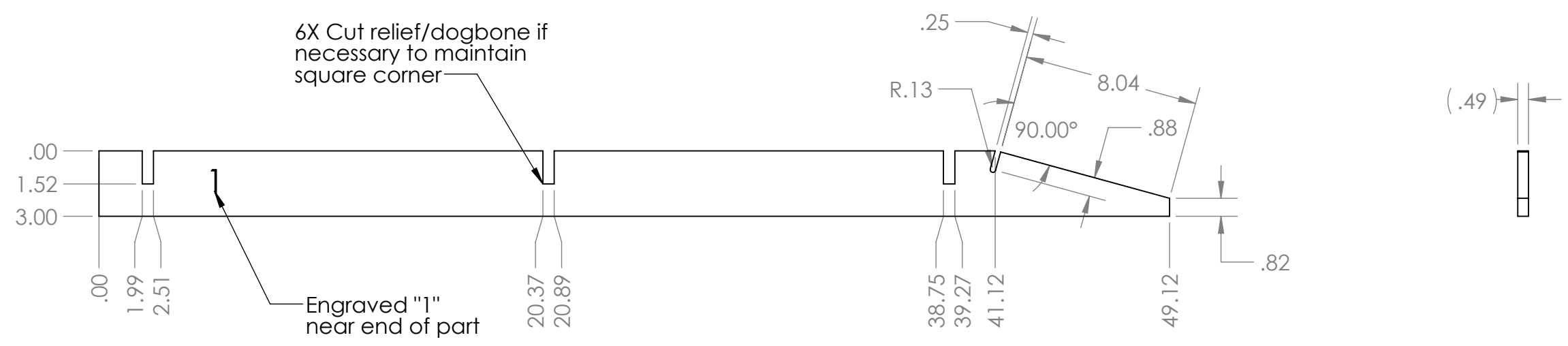
3

2

1

B

B



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A

- Notes:
1. Material: 1/2" thk. HDPE, any color
  2. Surface: Smooth texture
  3. Remove all burrs and sharp edges

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



TITLE:		
Platform Brace, Short Side 1		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18068</b>	
SCALE: 1:6	WEIGHT:	SHEET 1 OF 1

4

3

2

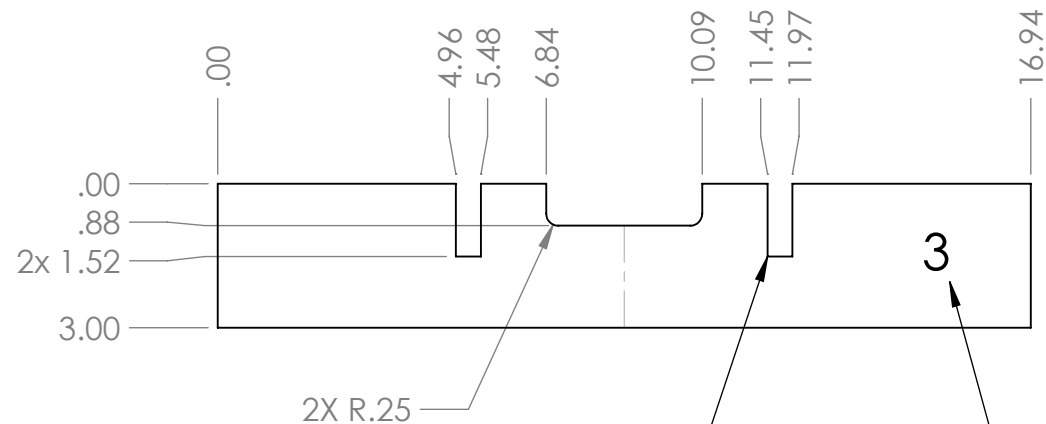
1

4

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1



4X Cut relief/dogbone if necessary to maintain square corner

2X R.25

Engrave "3" near end of part

- Notes:
1. Material: 1/2" thk. HDPE, any color
  2. Surface: Smooth texture
  3. Remove all burrs and sharp edges

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

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

TITLE:  
**Platform Brace, Mid Section**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18069</b>	

SCALE: 1:4 WEIGHT: SHEET 1 OF 1

4

3

2

1

B

B

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A



4

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2

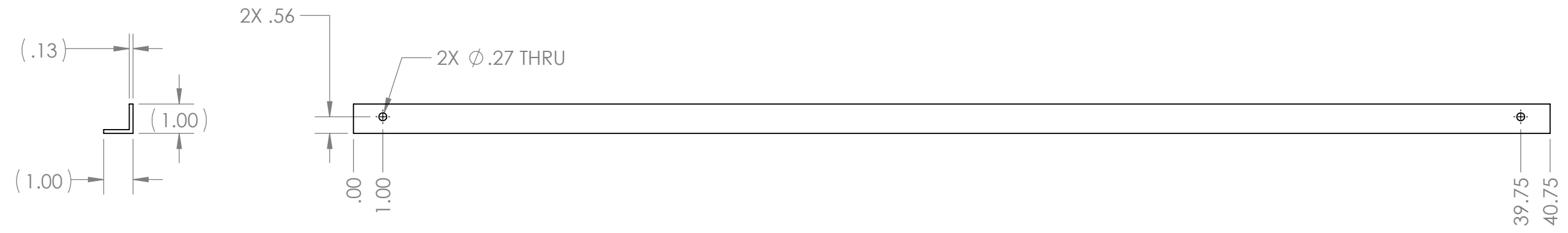
1

B

B

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A



- Notes:
1. Material: 1" x 1" x .125" thick angle, 6061 aluminum
  2. Remove all burrs and sharp edges

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



TITLE:		
Platform Angle, Short Side		
SIZE	DWG. NO.	REV
<b>B</b>	GE-18070	
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1

4

3

2

1

4

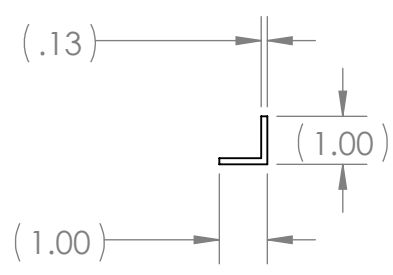
3

2

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B

B



A

A

- Notes:
1. Material: 1" x 1" x .125" thick angle, 6061 aluminum
  2. Remove all burrs and sharp edges

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



TITLE:		
Platform Angle, Long Side		
SIZE	DWG. NO.	REV
<b>B</b>	GE-18071	
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1

4

3

2

1

4

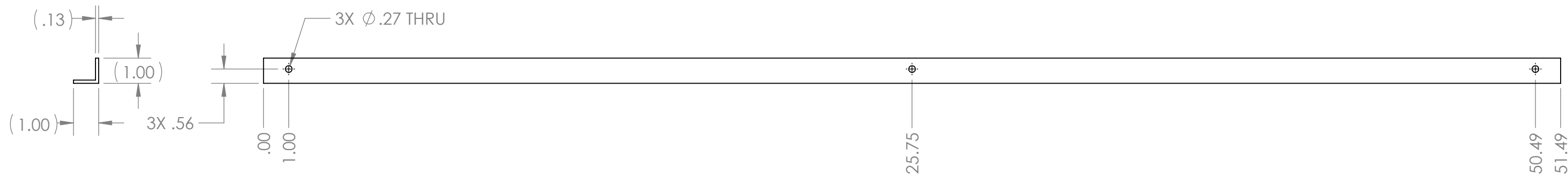
3

2

1

B

B





A

A

Notes:

- 1. Material: 1" x 1" x .125" thick angle, 6061 aluminum
- 2. Remove all burrs and sharp edges

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		<b>Platform Angle, Long Side Middle</b>
		MATERIAL	ENG APPR.		
		FINISH	MFG APPR.		SIZE DWG. NO. REV
NEXT ASSY	USED ON		Q.A.		<b>B GE-18072</b>
APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		SCALE: 1:4 WEIGHT: SHEET 1 OF 1

4

3

2

1

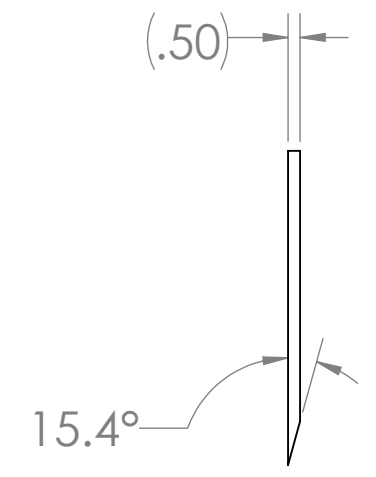
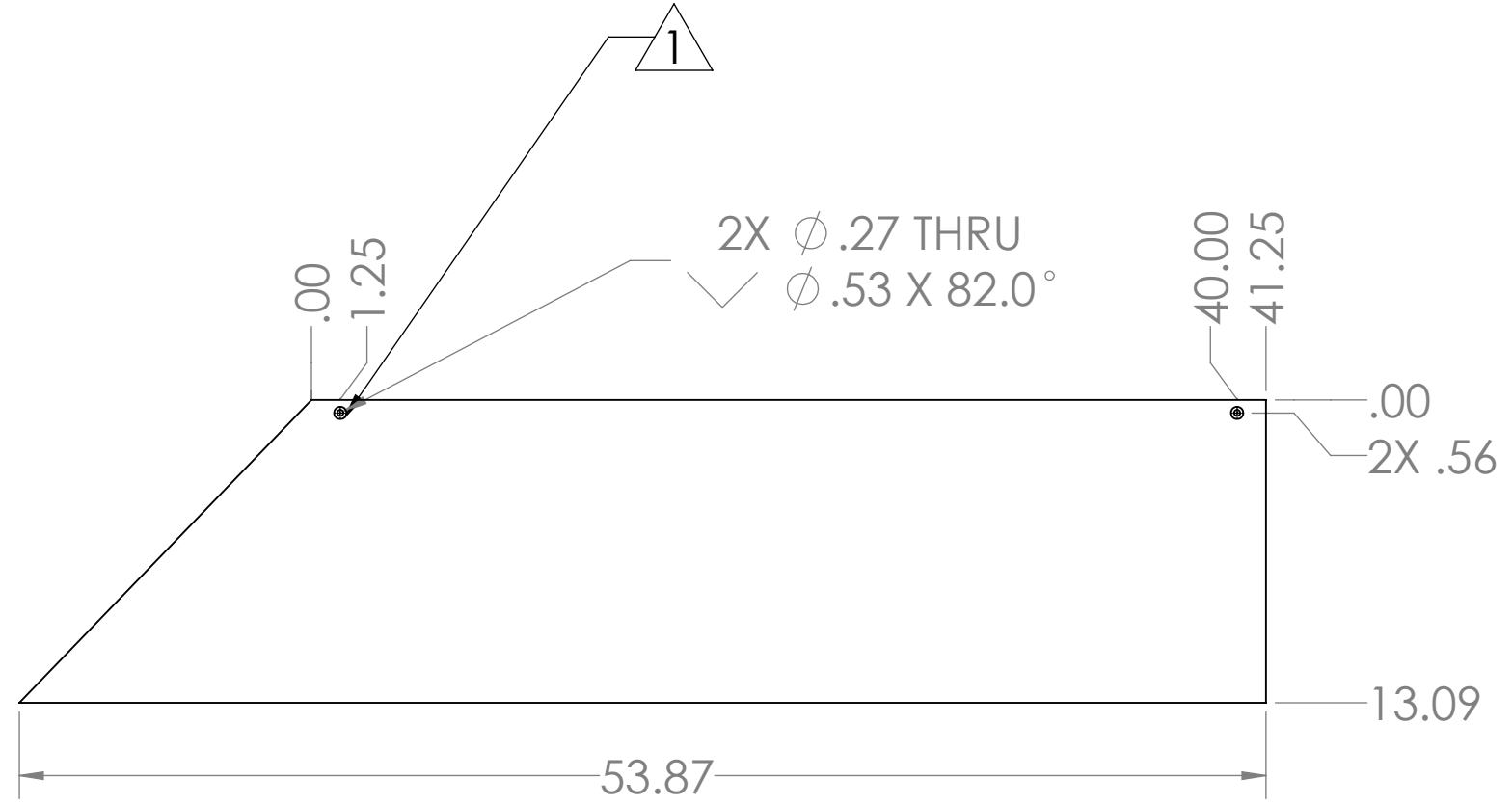
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	1	Changed number and location of holes	11/30/17	JRF



- Notes:
1. Material: 1/2" thk. HDPE, red or blue
  2. Surface: Matte texture
  3. Remove all burrs and sharp edges

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

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

TITLE:  
**Platform Short Side Mirrored**

SIZE **B** DWG. NO. **GE-18073** REV **1**

SCALE: 1:8 WEIGHT: SHEET 1 OF 1

4

3

2

1

B

B

A

A

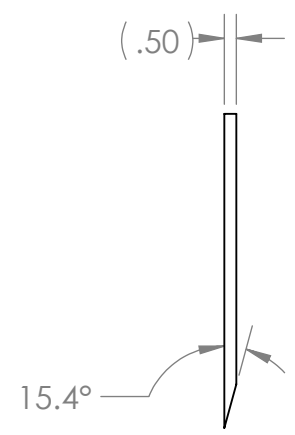
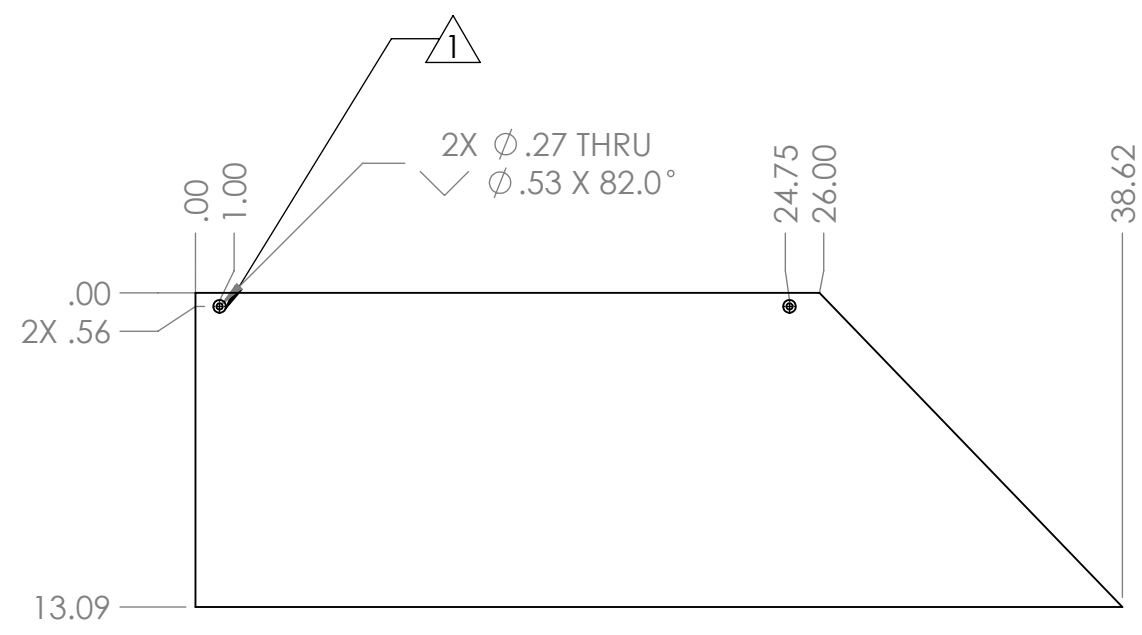
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3	1	Changed number and location of holes; decreased length of part	11/30/17	JRF



- Notes:
1. Material: 1/2" thk. HDPE, red or blue
  2. Surface: Matte texture
  3. Remove all burrs and sharp edges

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UNLESS OTHERWISE SPECIFIED:		NAME	DATE
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	
MATERIAL		ENG APPR.	
FINISH		MFG APPR.	
NEXT ASSY	USED ON	Q.A.	
APPLICATION		COMMENTS:	
DO NOT SCALE DRAWING			

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

TITLE:  
**Platform Long Side Mirrored**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18074</b>	<b>1</b>

SCALE: 1:8 WEIGHT: SHEET 1 OF 1

4

3

2

1

B

B

A

A

4

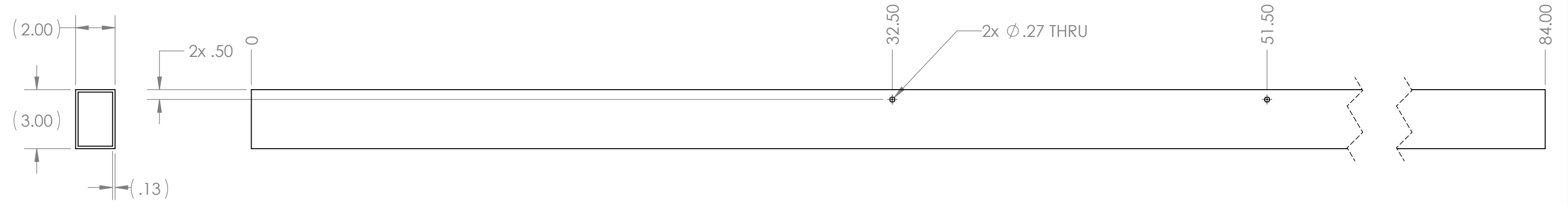
3

2

1

B

B





Notes:

- 1. Material: 3" x 2" x 1/8" thk. Rectangular Tube, 6061 Aluminum.
- 2. Remove all burrs and sharp edges.

A

A

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001		DRAWN	
		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
		MATERIAL		ENG APPR.	
		FINISH		MFG APPR.	
NEXT ASSY	USED ON			Q.A.	
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:	
 					
TITLE: Scale Base Outrigger					
SIZE	DWG. NO.	REV			
<b>B</b>	GE-18075				
SCALE: 1:5		WEIGHT:		SHEET 1 OF 1	

4

3

2

1

4

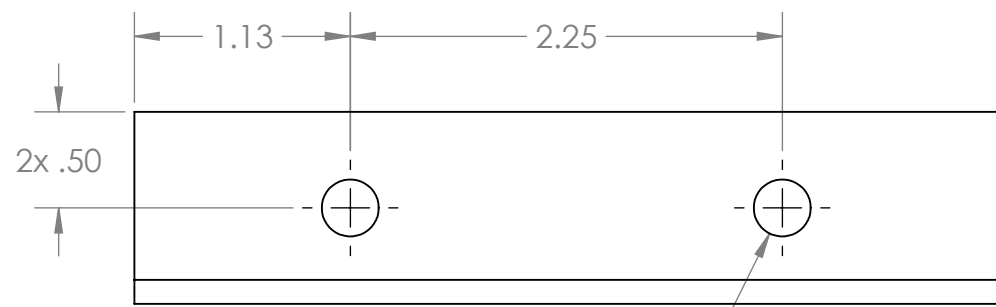
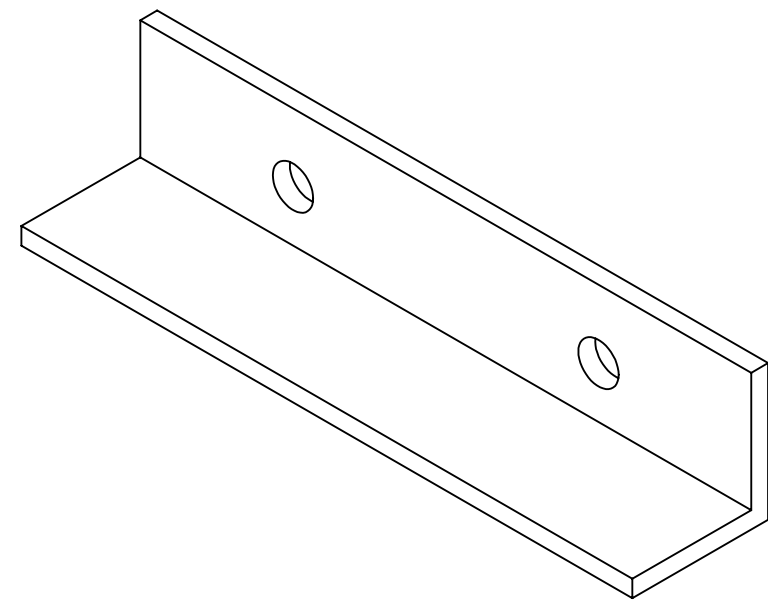
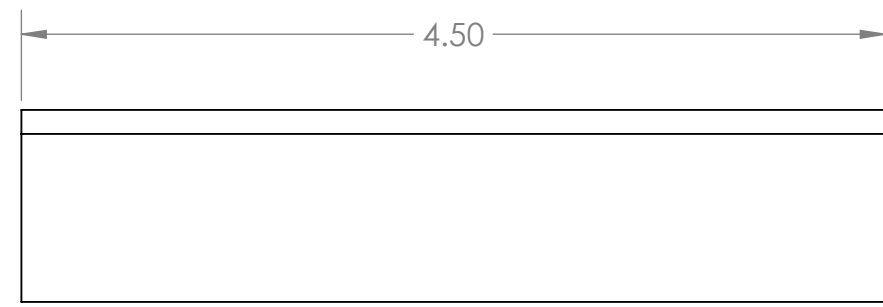
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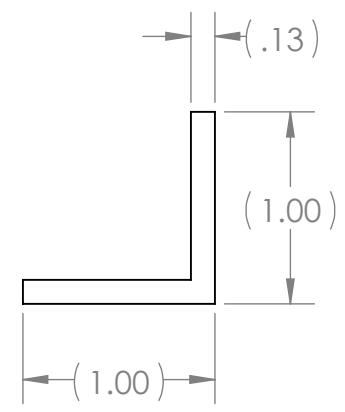
1

B

B



2x  $\phi$  .30 THRU



- Notes:
1. Material: 1" x 1" x 1/8" thk. 90 degree angle, 6061 Aluminum.
  2. Remove all burrs and sharp edges.

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



TITLE:		
<b>Scale Angle Brace</b>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18076</b>	
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

4

3

2

1

A

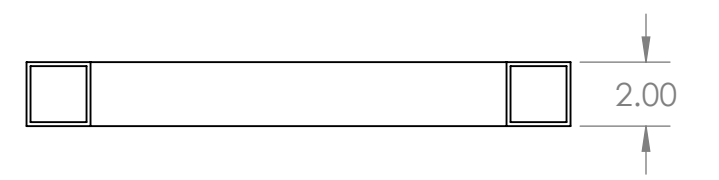
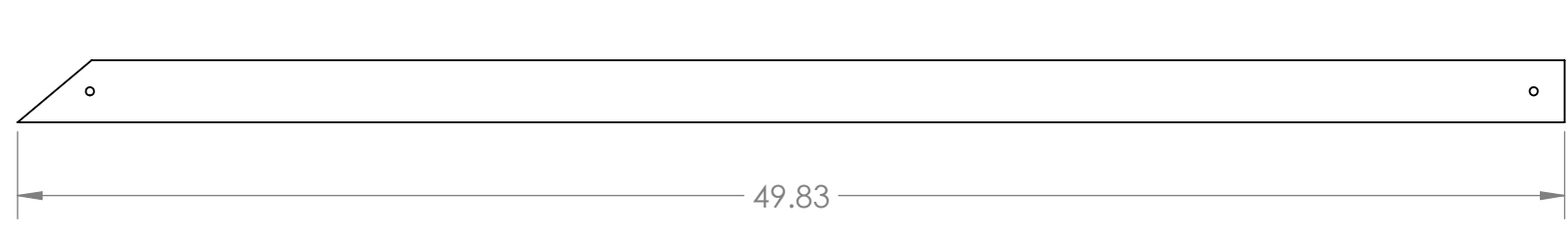
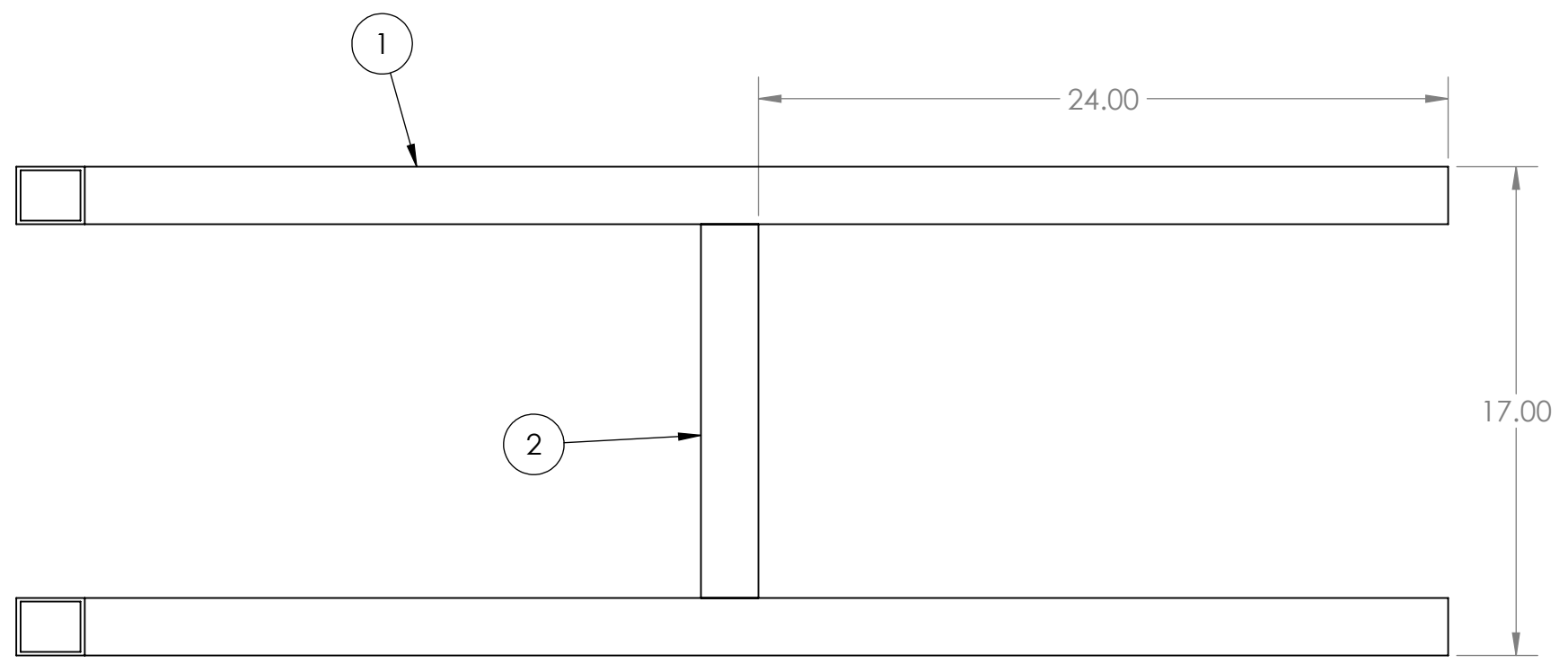
A

4

3

2

1



B

B

A

A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18077-1	2" x .125" thk. Square Tube, 6061 Aluminum	2
2	GE-18077-2	2" x .125" thk. Square Tube, 6061 Aluminum	1

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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			
FINISH			
NEXT ASSY	USED ON		
APPLICATION			
DO NOT SCALE DRAWING			

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

TITLE:  
**Outrigger Wing Horizontal**

SIZE **B** DWG. NO. **GE-18077** REV

SCALE: 1:6 WEIGHT: SHEET 1 OF 3

4

3

2

1



4

3

2

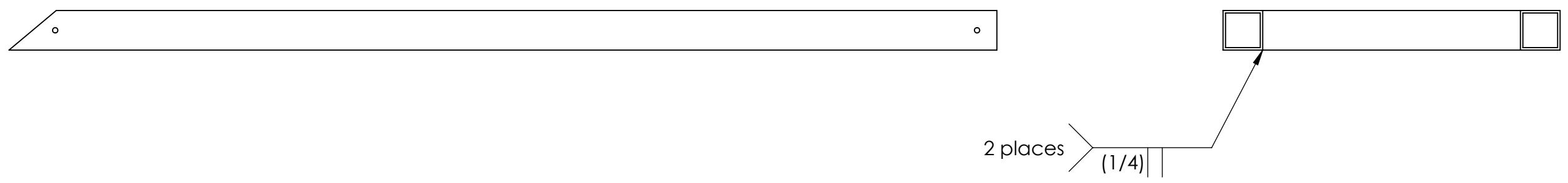
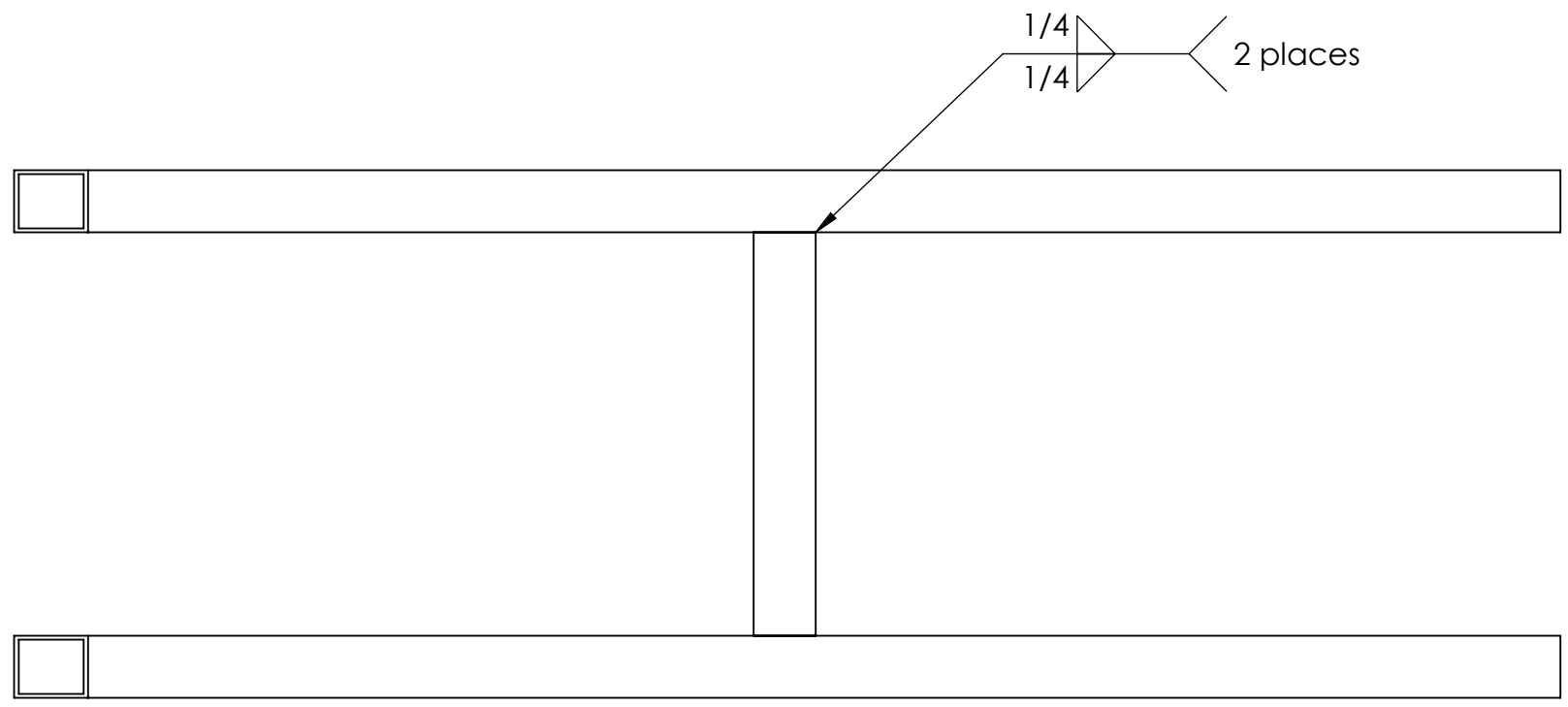
1

B

B

A

A



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



TITLE: <b>Outrigger Wing Horizontal</b>		
SIZE <b>B</b>	DWG. NO. <b>GE-18077</b>	REV
SCALE: 1:6	WEIGHT:	SHEET 2 OF 3

4

3

2

1

4

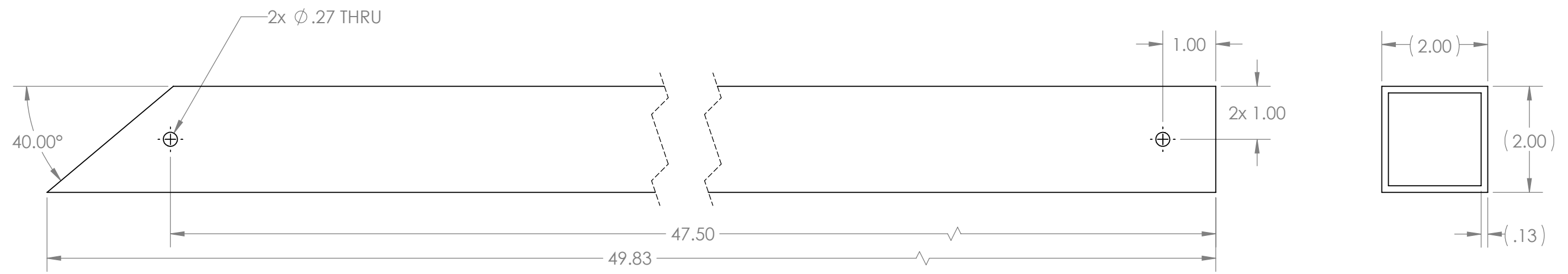
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2

1

B

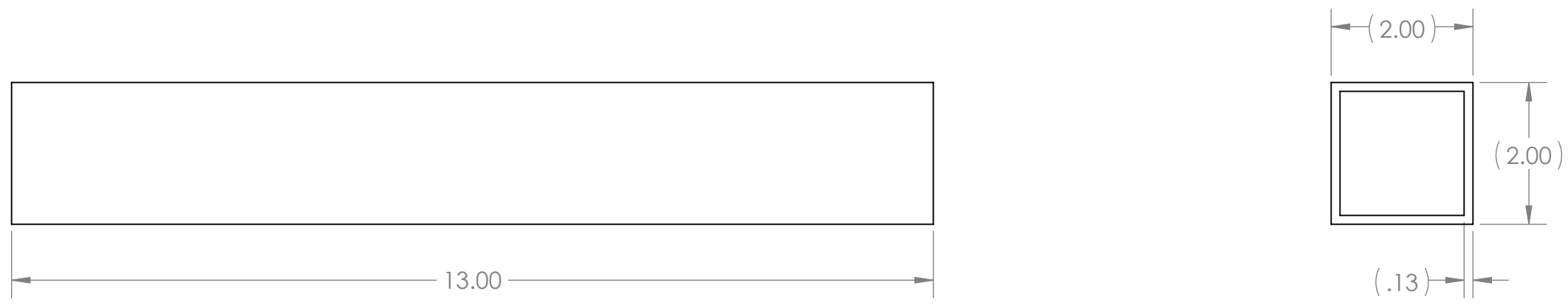
B



ITEM: GE-18077-1  
 Material: 2" x .125" thk. Square Tube, 6061 Aluminum  
 Scale: 1:2  
 QTY: 2

A

A



ITEM: GE-18077-2  
 Material: 2" x .125" thk. Square Tube, 6061 Aluminum  
 Scale: 1:2  
 QTY: 1

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

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

TITLE:  
**Outrigger Wing Horizontal**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18077</b>	

SCALE: 1:2 WEIGHT: SHEET 3 OF 3

4

3

2

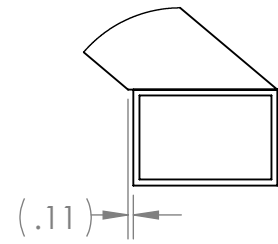
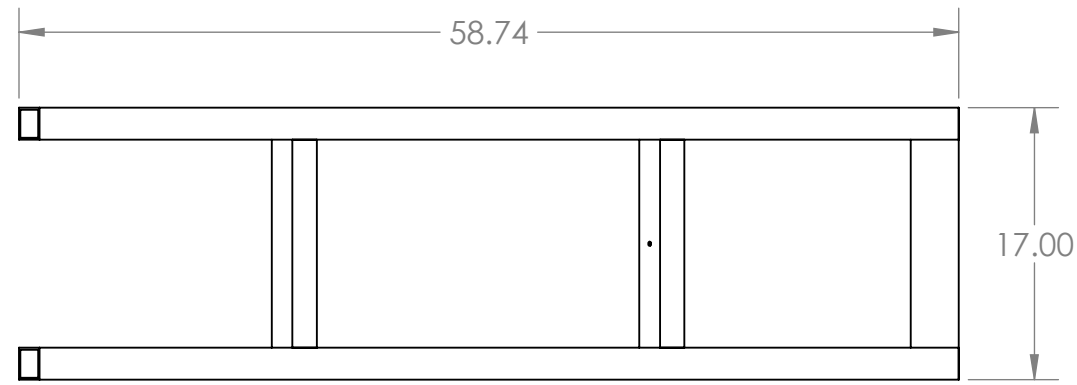
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4

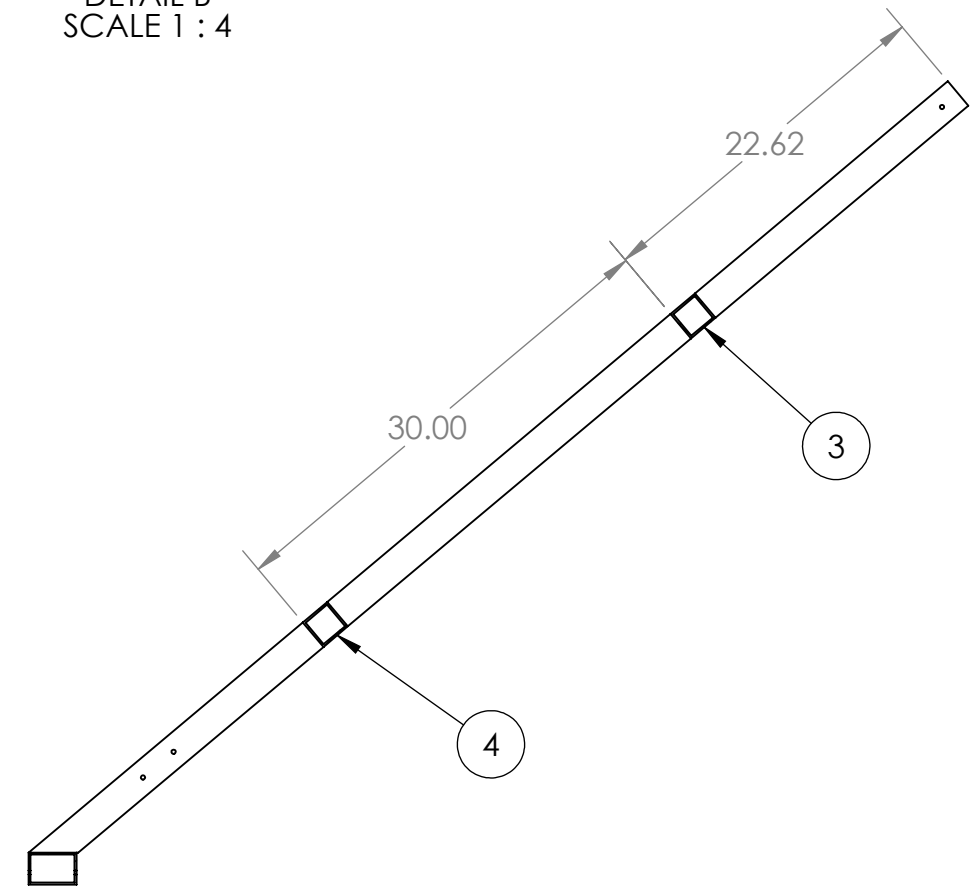
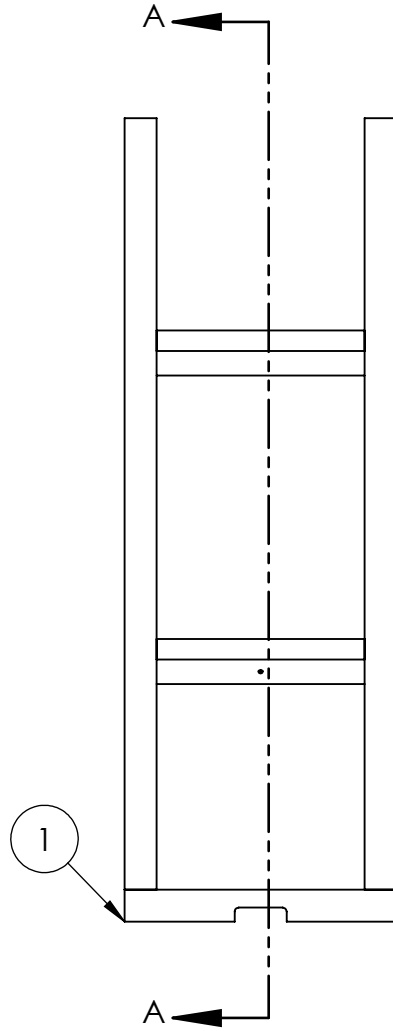
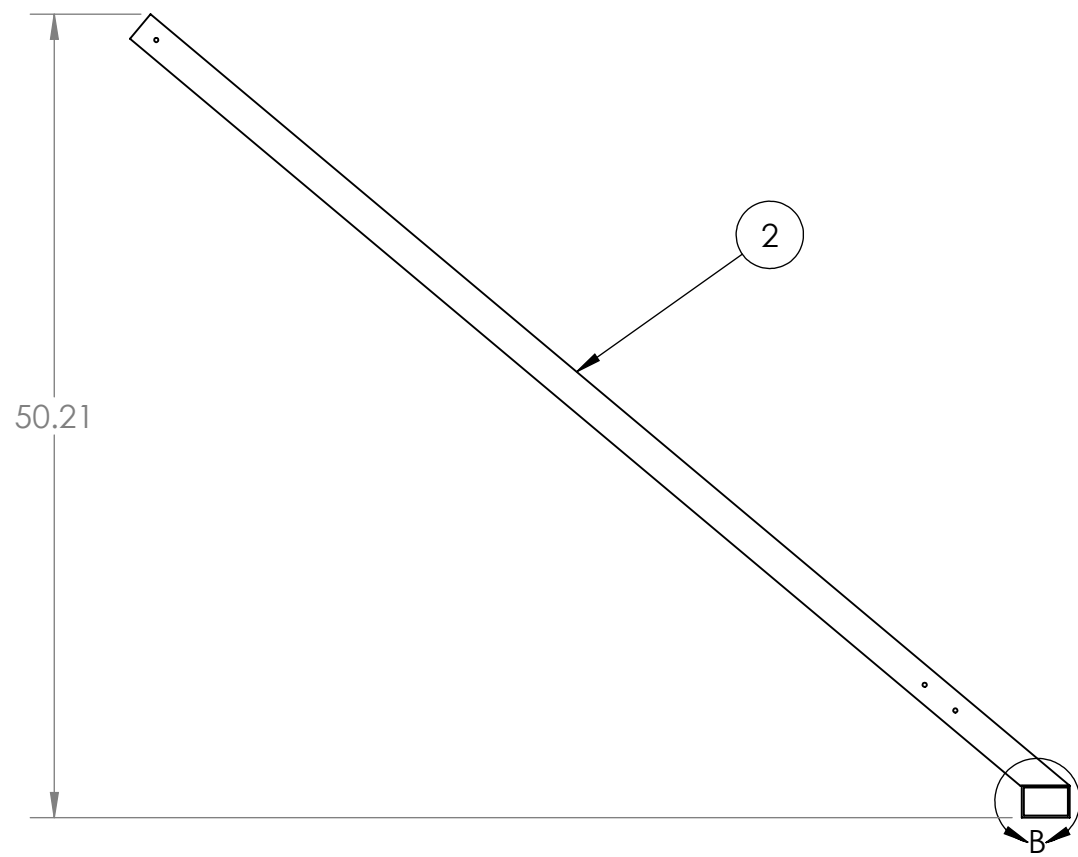
3

2

1



DETAIL B  
SCALE 1 : 4



SECTION A-A

B

B

A

A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18078-1	3" x 2" x .125" thk. Rectangular Tube, 6061 Aluminum	1
2	GE-18078-2	2" x .125" thk. Square Tube, 6061 Aluminum	2
3	GE-18078-3	2" x .125" thk. Square Tube, 6061 Aluminum	1
4	GE-18078-4	2" x .125" thk. Square Tube, 6061 Aluminum	1

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

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

TITLE:  
**Outrigger Wing Diagonal**

SIZE **B** DWG. NO. **GE-18078** REV

SCALE: 1:12 WEIGHT: SHEET 1 OF 4

4

3

2

1

4

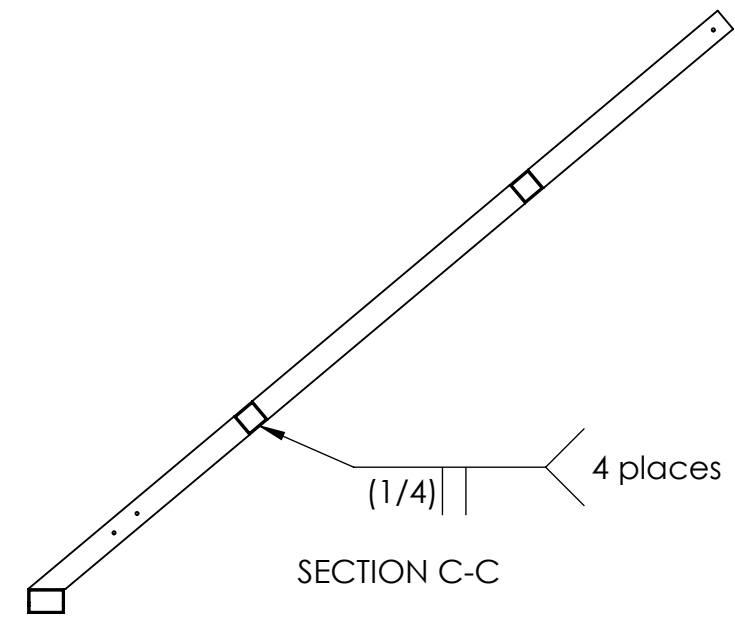
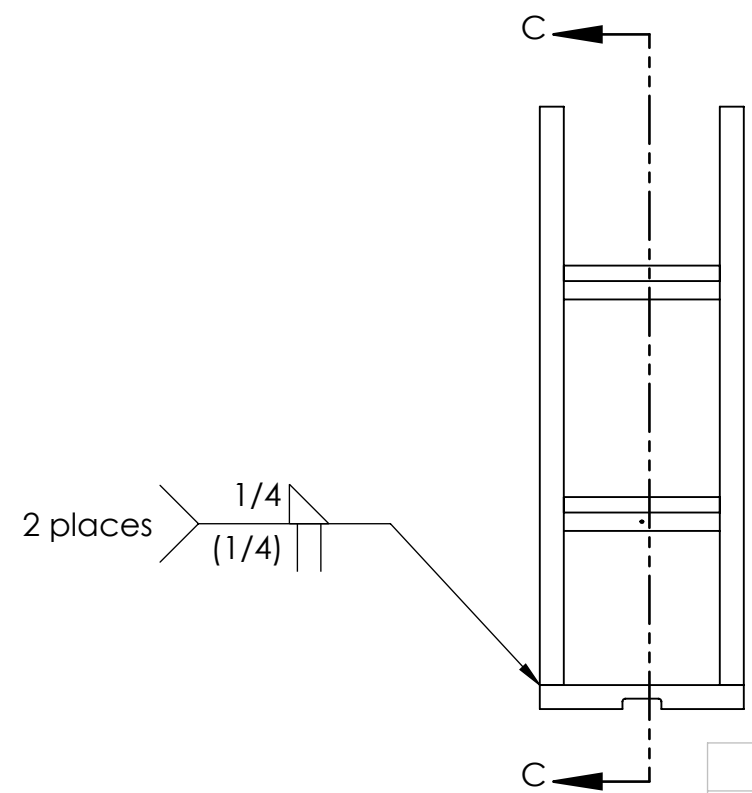
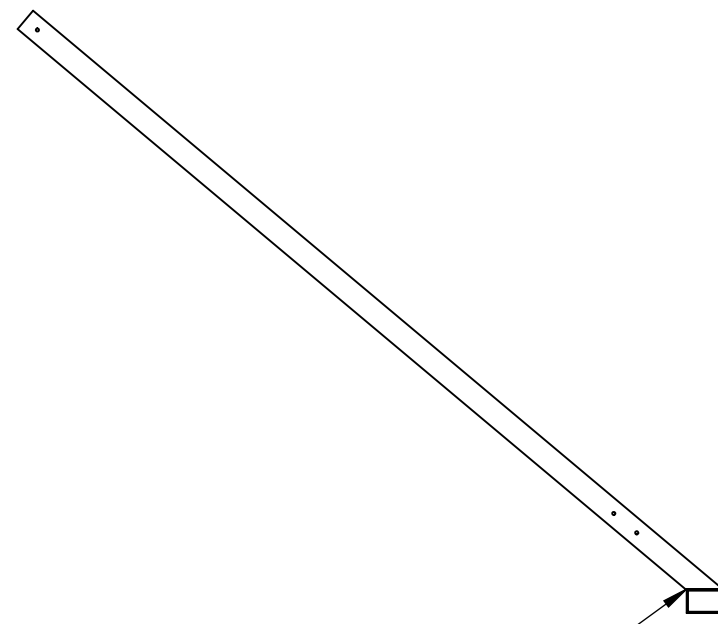
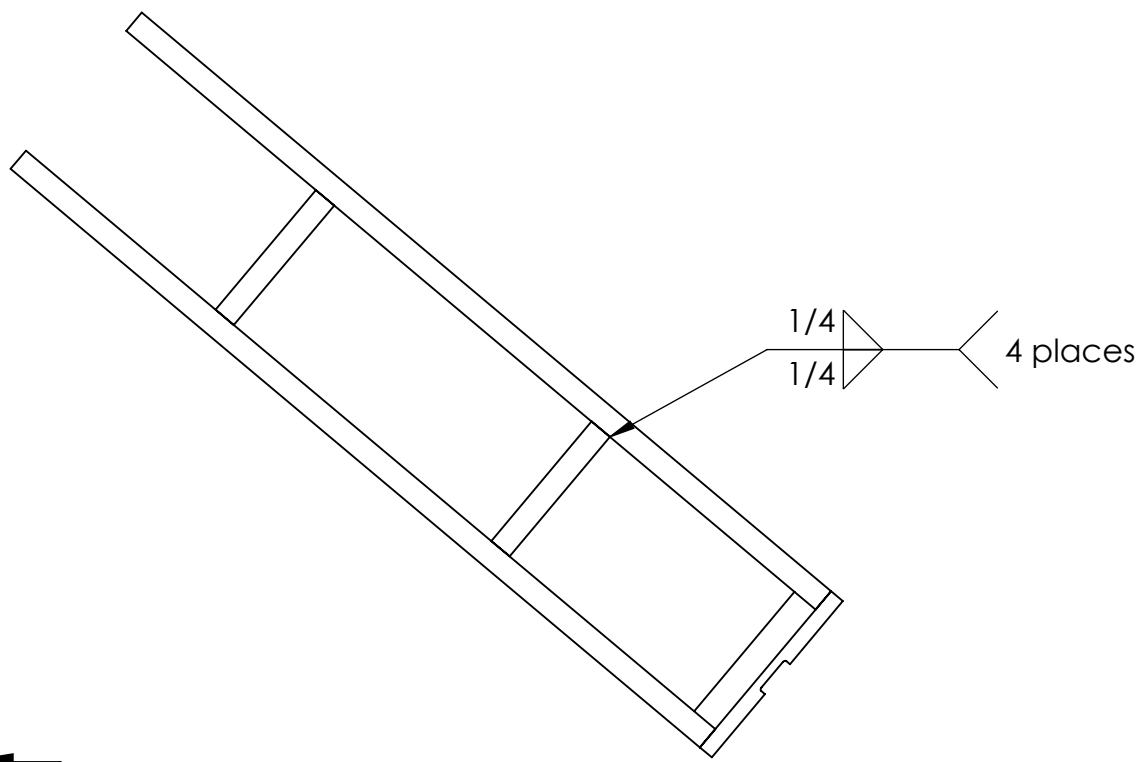
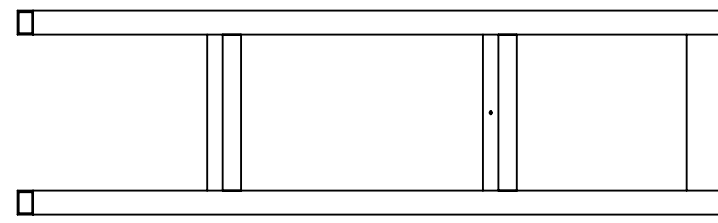
3

2

1

B

B



A

A

2 places  
1/4  
(1/4)

2 places  
1/4  
(1/4)

(1/4)  
4 places

SECTION C-C

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



TITLE:  
**Outrigger Wing Diagonal**

SIZE DWG. NO. REV  
**B** GE-18078

SCALE: 1:16 WEIGHT: SHEET 2 OF 4

4

3

2

1

4

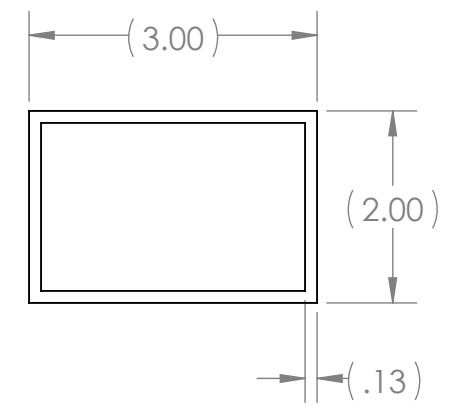
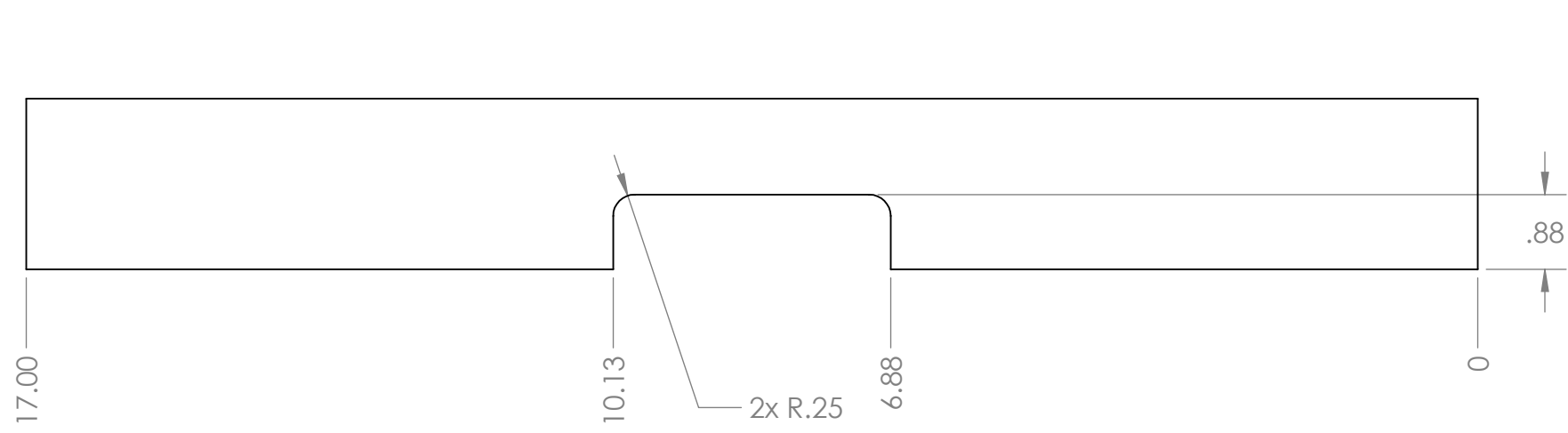
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2

1

B

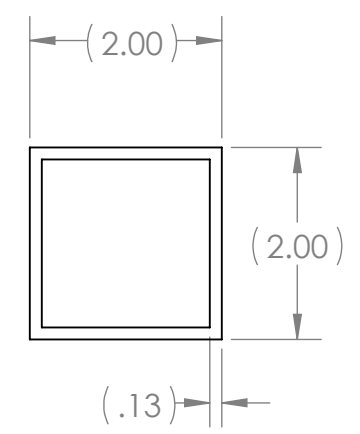
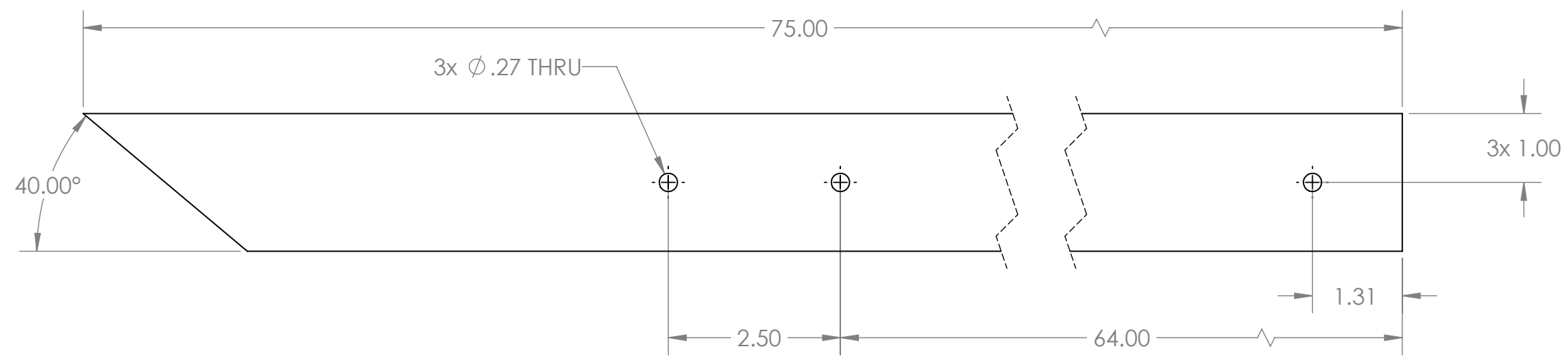
B



Item: GE-18078-1  
 Material: 3" x 2" x .125" thk. Rectangular Tube, 6061 Aluminum  
 Scale: 1:2  
 QTY: 1

A



A



Item: GE-18078-2  
 Material: 2" x .125" thk. Square Tube, 6061 Aluminum  
 Scale: 1:2  
 QTY: 2

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

TITLE:

# Outrigger Wing Diagonal

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18078</b>	
SCALE: 1:2	WEIGHT:	SHEET 3 OF 4

4

3

2

1

4

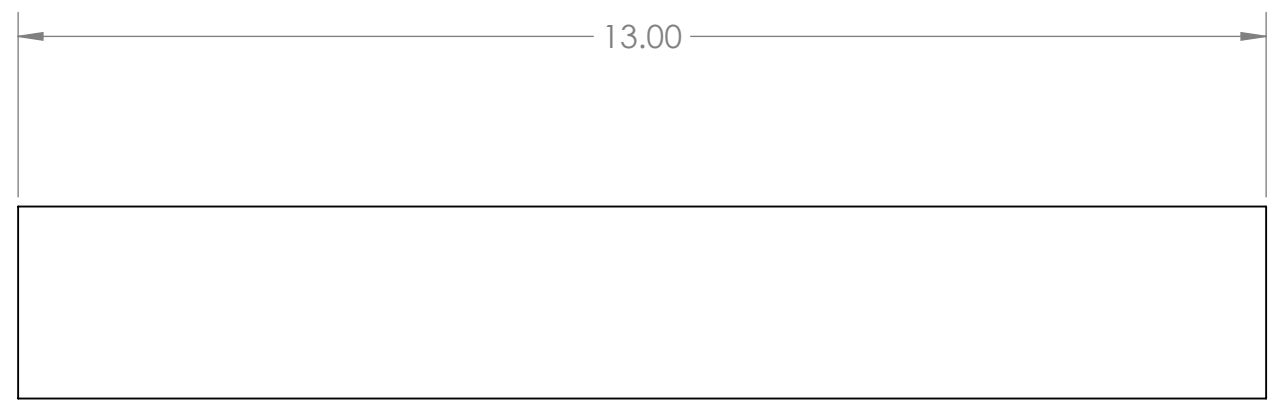
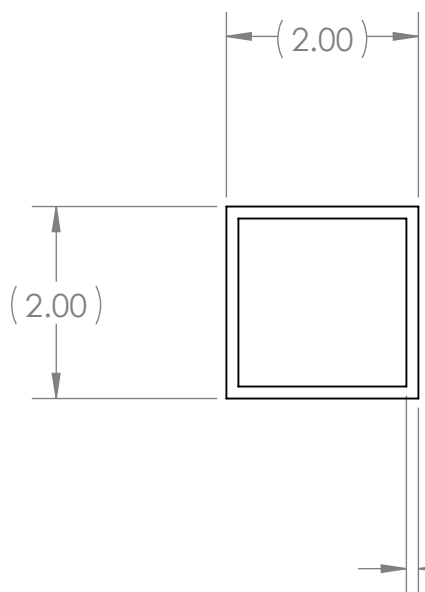
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2

1

B

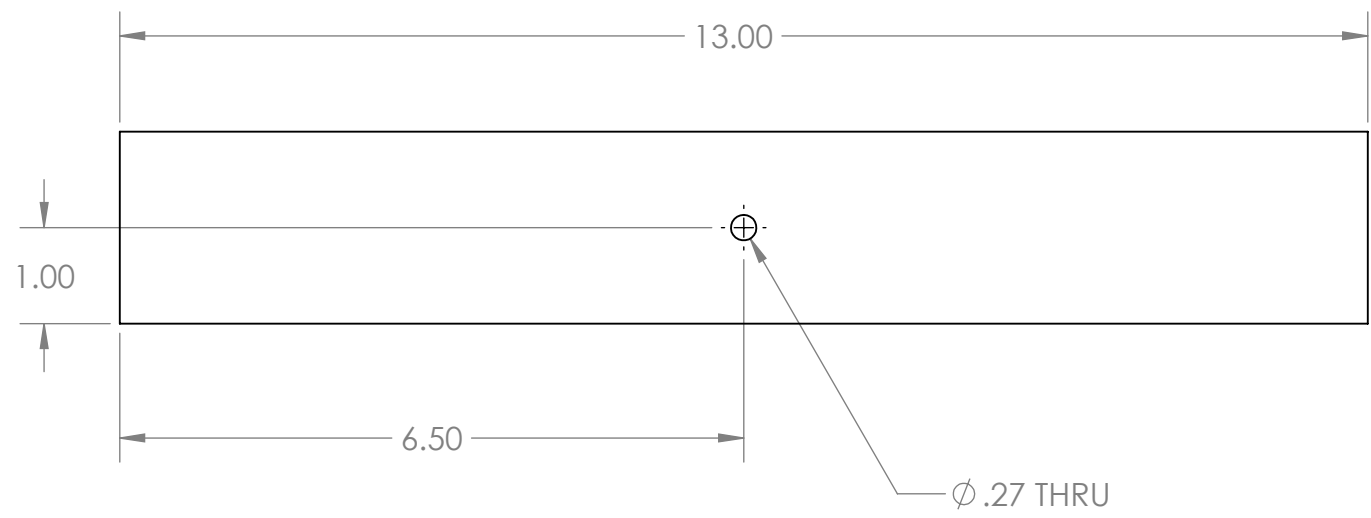
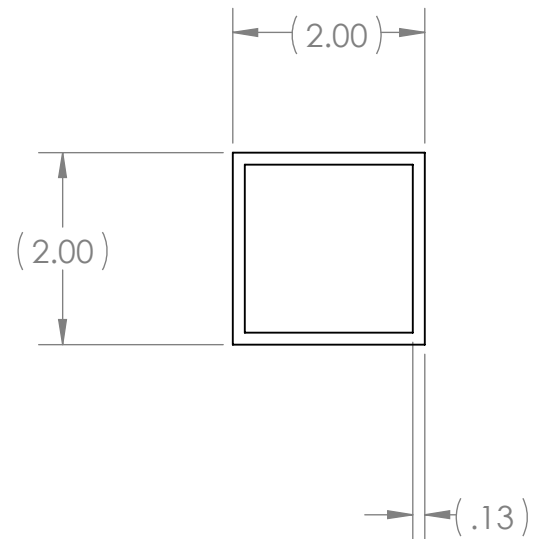
B



Item: GE-18078-3  
 Material: 2" x .125" thk. Square Tube, 6061 Aluminum  
 Scale: 1:2  
 QTY: 1

A

A



Item: GE-18078-4  
 Material: 2" x .125" thk. Square Tube, 6061 Aluminum  
 Scale: 1:2  
 QTY: 1

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



TITLE:		
Outrigger Wing Diagonal		
SIZE	DWG. NO.	REV
<b>B</b>	GE-18078	
SCALE: 1:2	WEIGHT:	SHEET 4 OF 4

4

3

2

1

4

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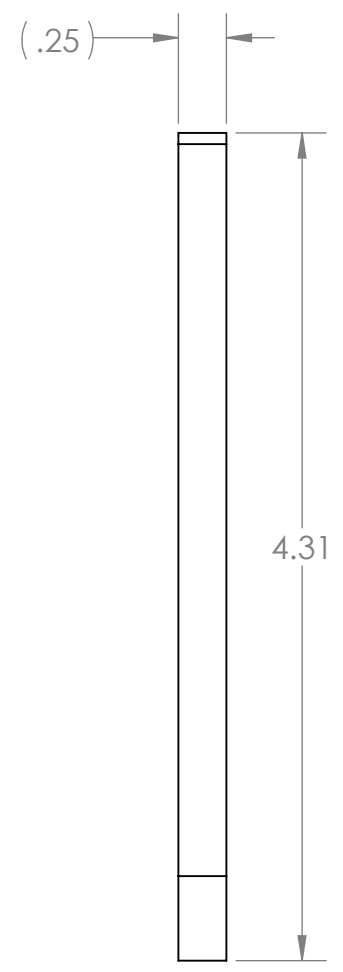
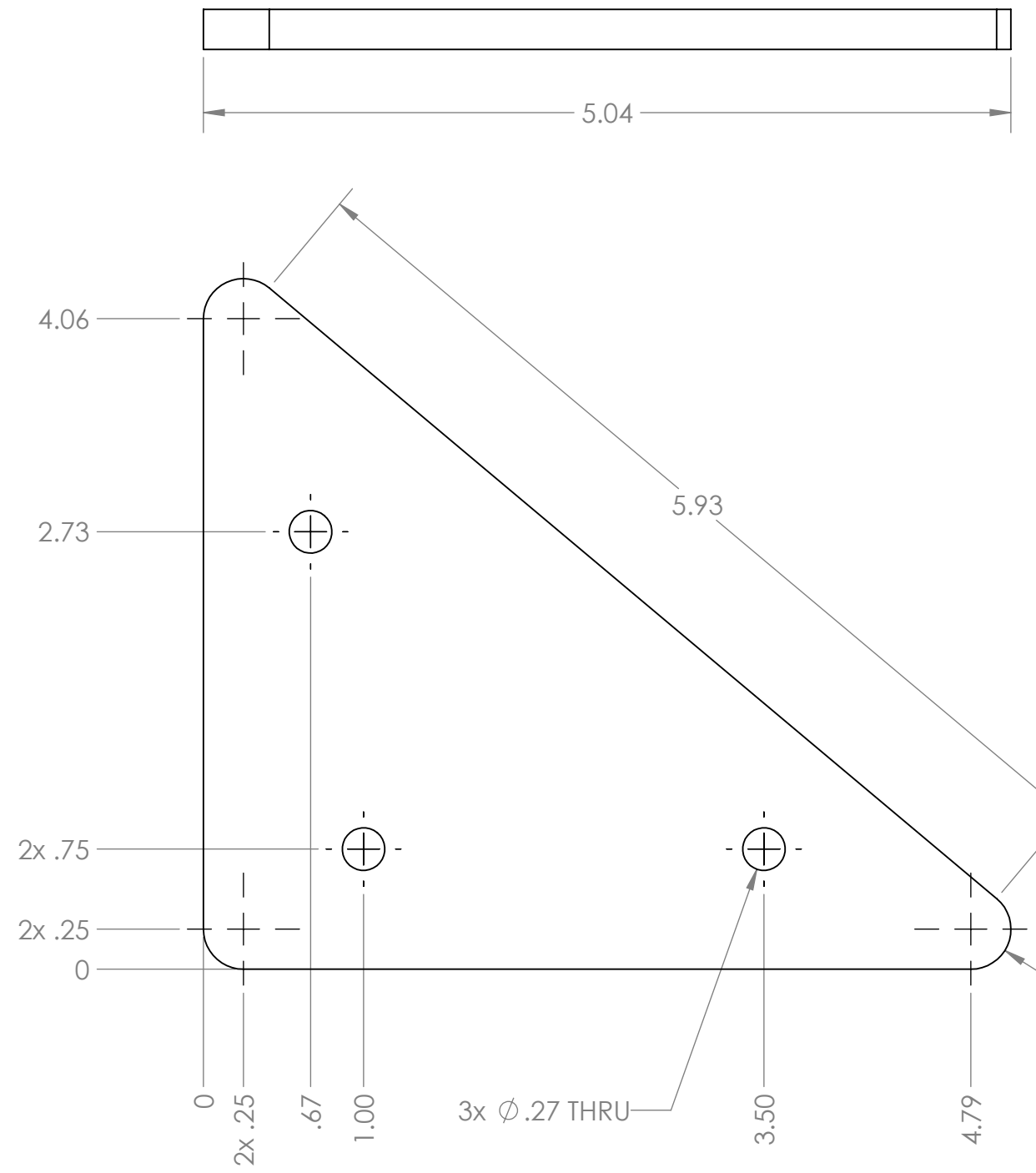
1

B

B

A

A



- Notes:
1. Material: 1/4" thick, 6061 Aluminum
  2. Remove all burrs and sharp edges.

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



TITLE:		
Outrigger Wing Plate		
SIZE	DWG. NO.	REV
<b>B</b>	GE-18079	
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

4

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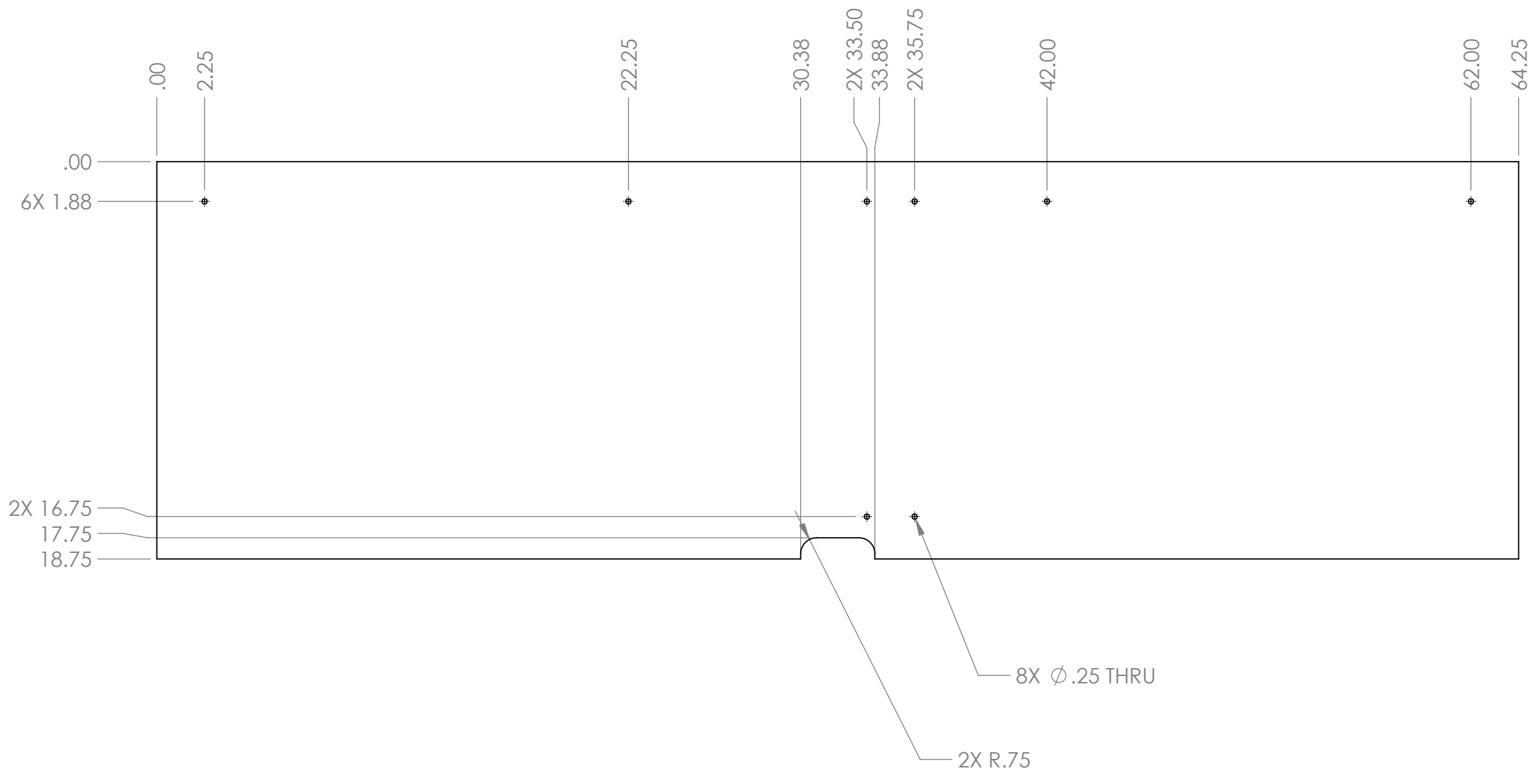
1

B

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A



- Notes:
1. Material: 1/4" thick, clear polycarbonate
  2. Remove all burrs and sharp edges

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

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

TITLE:  
**Fence Polycarb, Middle**

SIZE **B** DWG. NO. **GE-18080** REV

SCALE: 1:6 WEIGHT: SHEET 1 OF 1

4

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2

1



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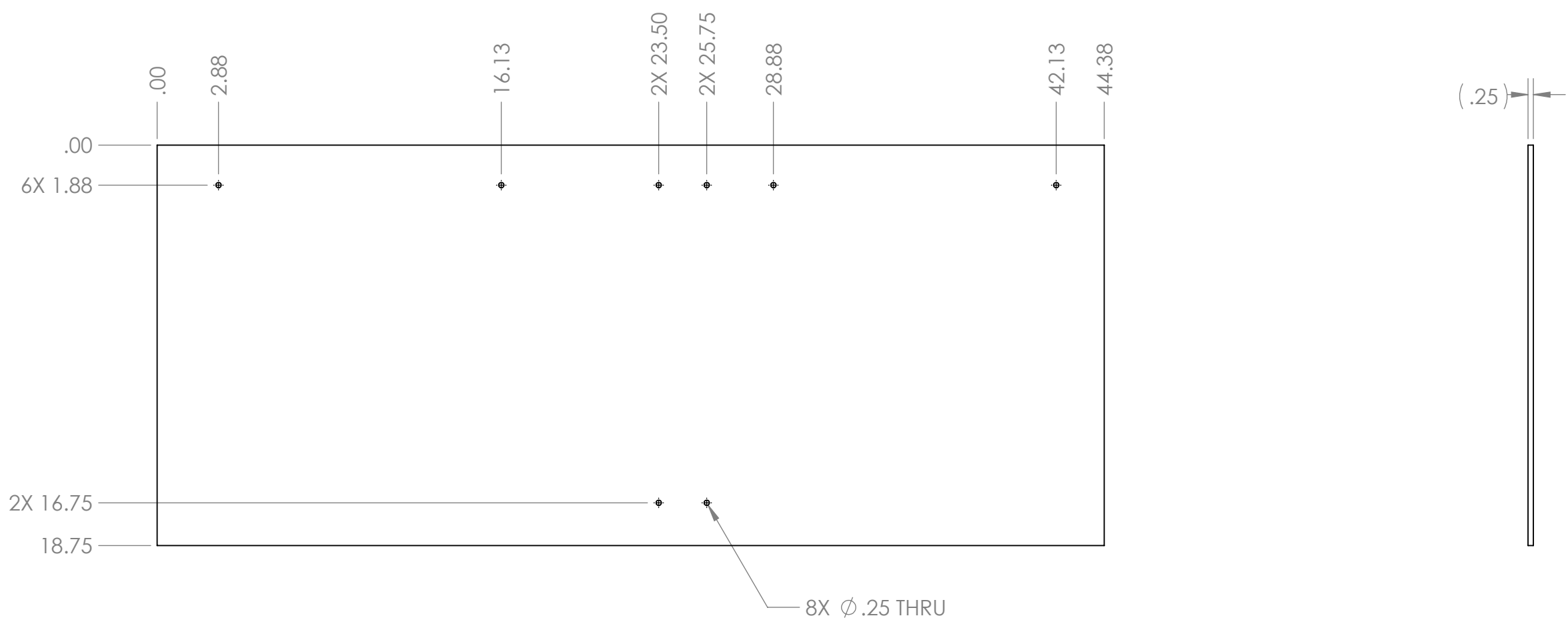
1

B

B

A

A



- Notes:
1. Material: 1/4" thick, clear polycarbonate
  2. Remove all burrs and sharp edges

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



TITLE:  
**Fence Polycarb, Outer Side**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18081</b>	

SCALE: 1:6 WEIGHT: SHEET 1 OF 1

4

3

2

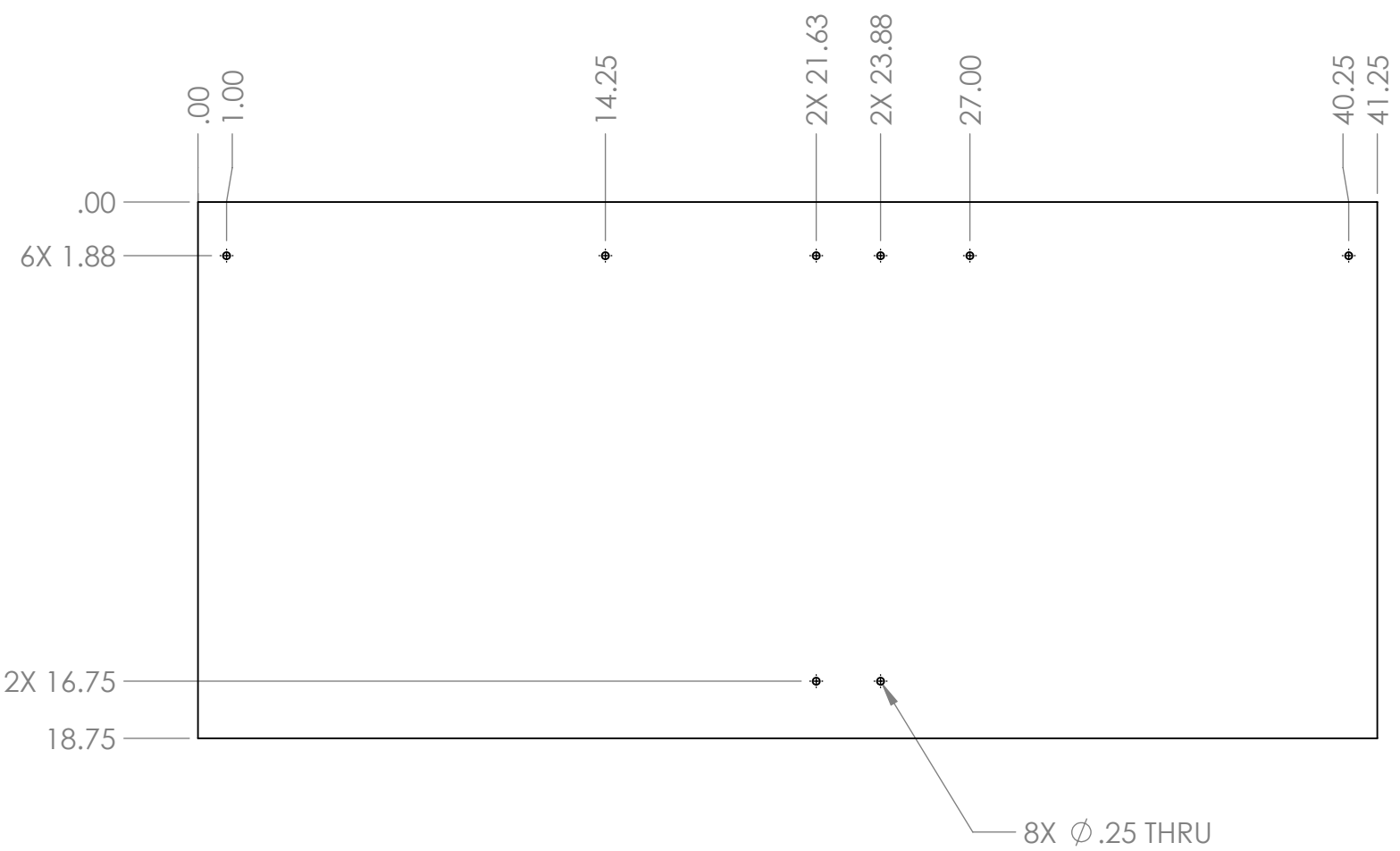
1

B

B

A

A



Notes:

- 1. Material: 1/8" thick, clear polycarbonate
- 2. Remove all burrs and sharp edges

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



TITLE:  
**Fence Polycarb, Inner Side**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18082</b>	
SCALE: 1:6	WEIGHT:	SHEET 1 OF 1

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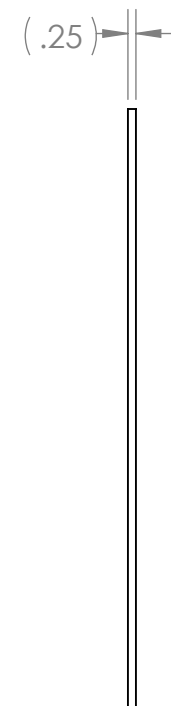
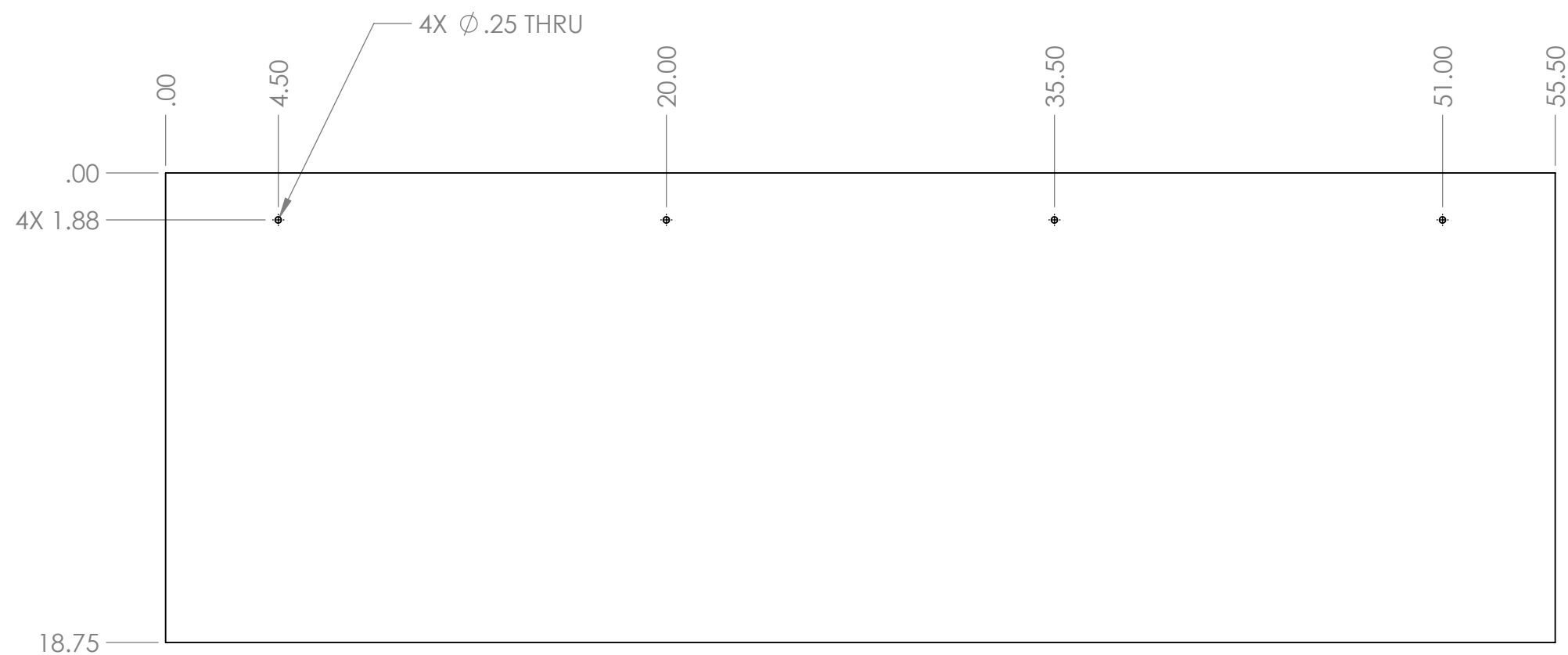
3

2

1

B



B



Notes:

- 1. Material: 1/4" thick, clear polycarbonate
- 2. Remove all burrs and sharp edges

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		<b>Fence Polycarb, Outer End</b>
		MATERIAL	ENG APPR.		
		FINISH	MFG APPR.		
NEXT ASSY	USED ON		Q.A.		SIZE <b>B</b> DWG. NO. <b>GE-18083</b> REV
APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		SCALE: 1:6 WEIGHT: SHEET 1 OF 1

4

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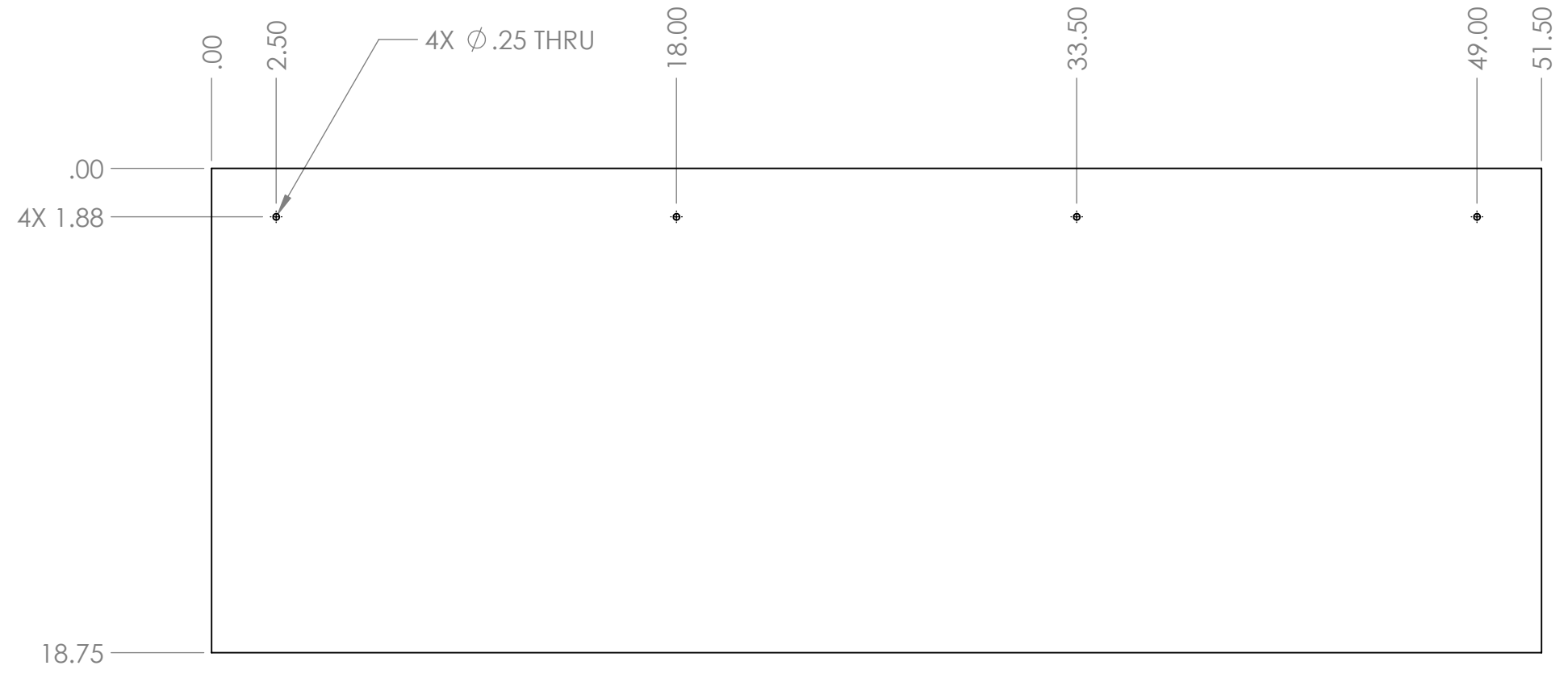
1

B

B

A

A



Notes:

- 1. Material: 1/8" thick, clear polycarbonate
- 2. Remove all burrs and sharp edges

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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		



TITLE:		
Fence Polycarb, Inner End		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18084</b>	
SCALE: 1:6	WEIGHT:	SHEET 1 OF 1

4

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1

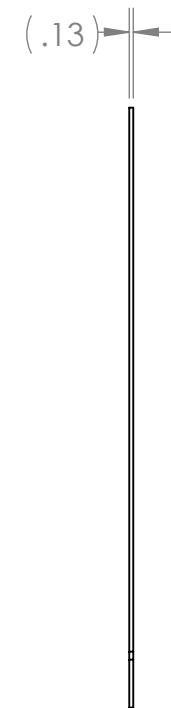
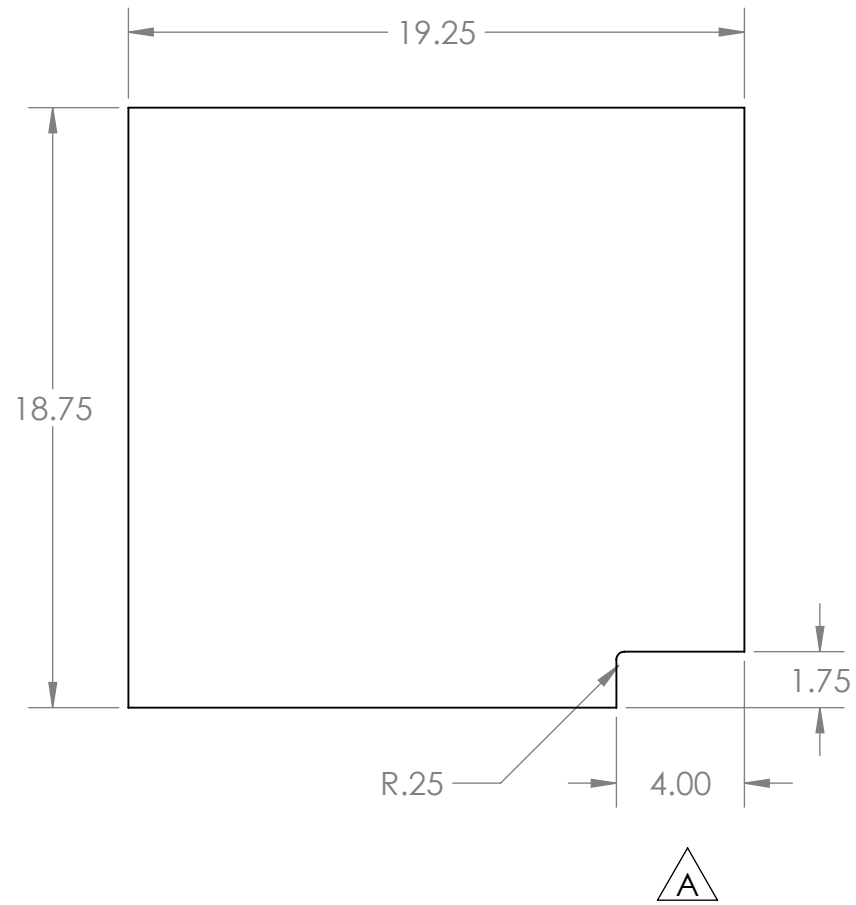
4

3

2

1

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
A3	A	Added notch	12/2/2017	DAF



Notes:

1. Material: 1/8" thick, clear polycarbonate
2. Remove all burrs and sharp edges

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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			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



TITLE:  
**Fence Polycarb, Guard**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18085</b>	<b>A</b>
SCALE: 1:6	WEIGHT:	SHEET 1 OF 1

4

3

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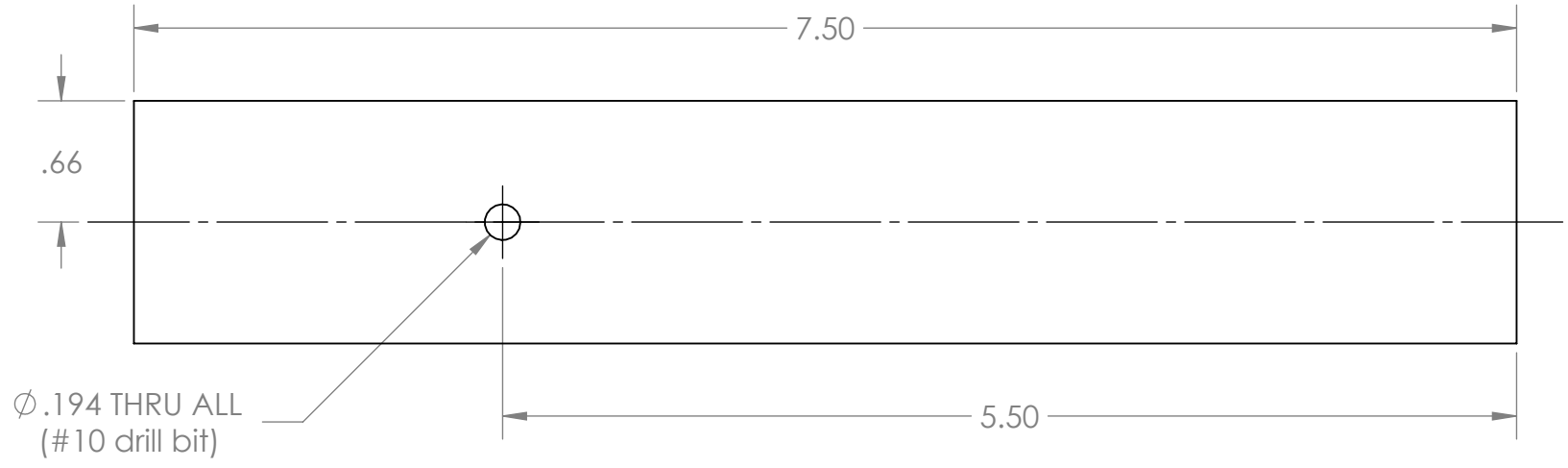
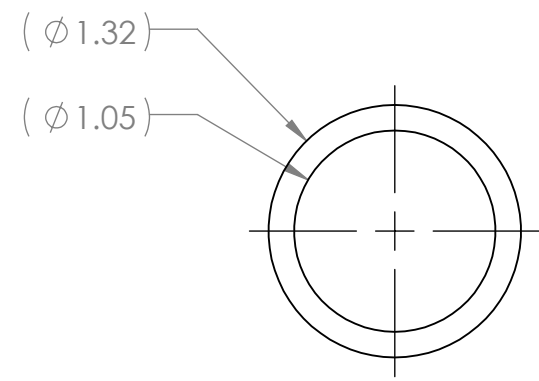
3

2

1

B

B



Notes:

1. Material: 1" Schedule 40 Pipe, 6061 Aluminum
2. Remove all burrs and sharp edges

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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:		
<h1>Fence Pin</h1>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18086</b>	<b>A</b>
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

4

3

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1

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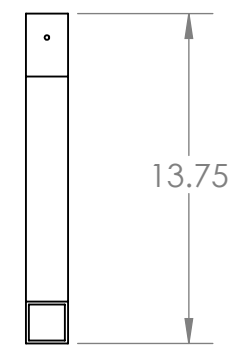
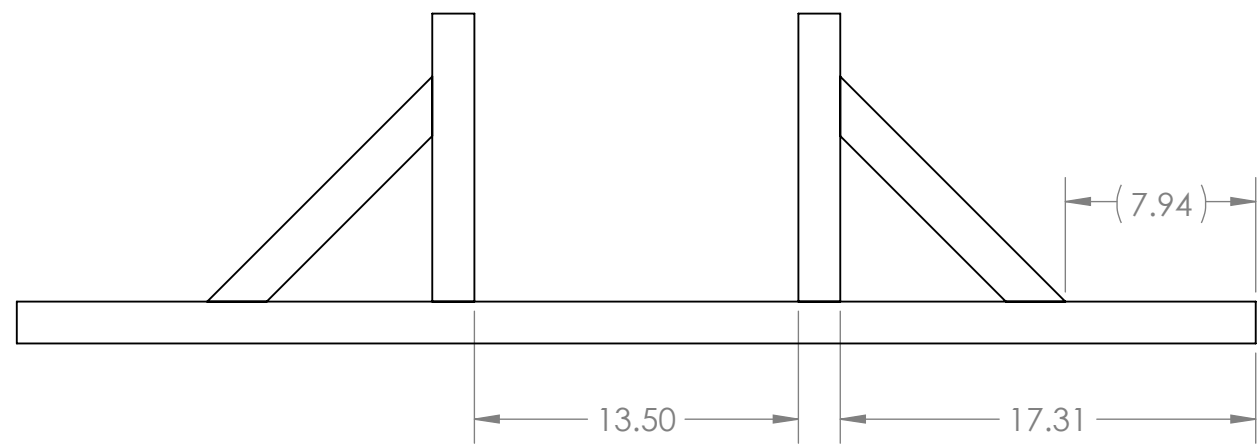
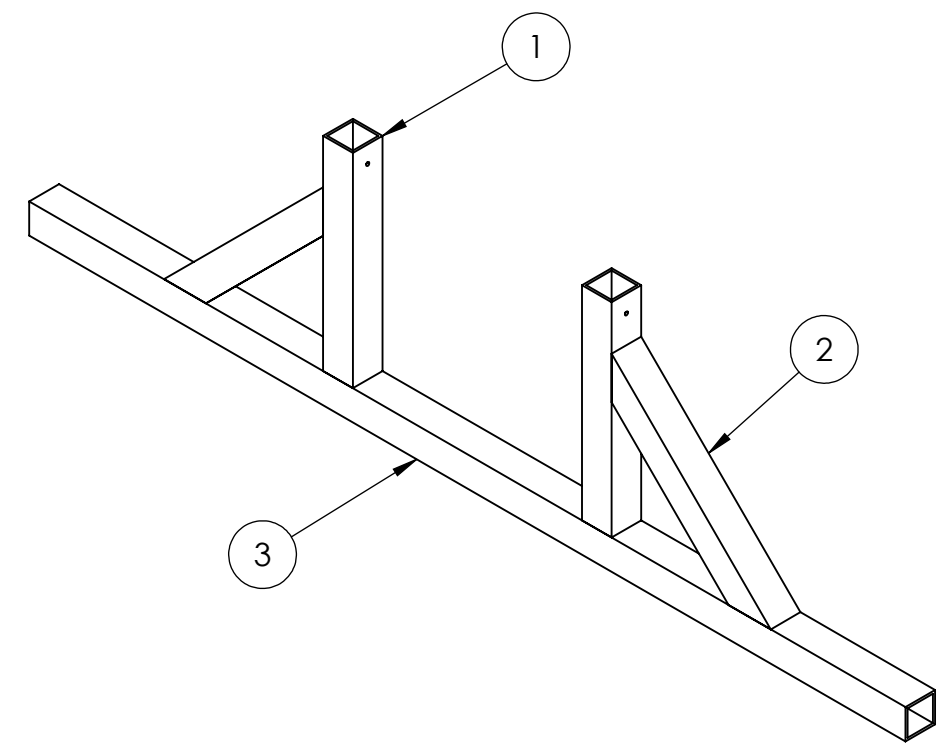
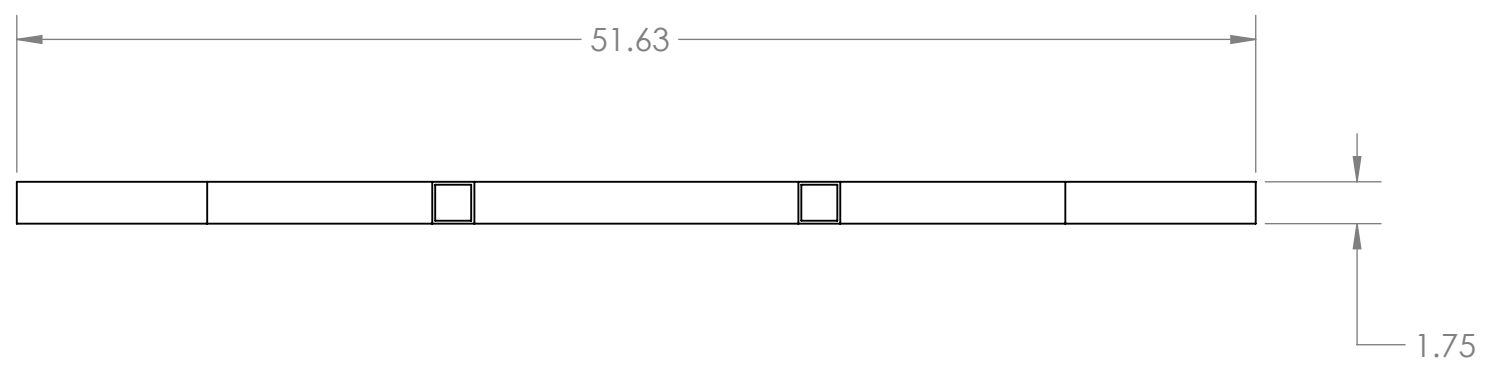
3

2

1

B

B



A

A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18087-1	1.75" x .125" thk. Square Tube, 6063 Aluminum	2
2	GE-18087-2	1.75" x .125" thk. Square Tube, 6063 Aluminum	2
3	GE-18087-3	1.75" x .125" thk. Square Tube, 6063 Aluminum	1

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

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

TITLE:  
**Switch Fence Brace**

SIZE **B** DWG. NO. **GE-18087** REV

SCALE: 1:8 WEIGHT: SHEET 1 OF 3

4

3

2

1

4

3

2

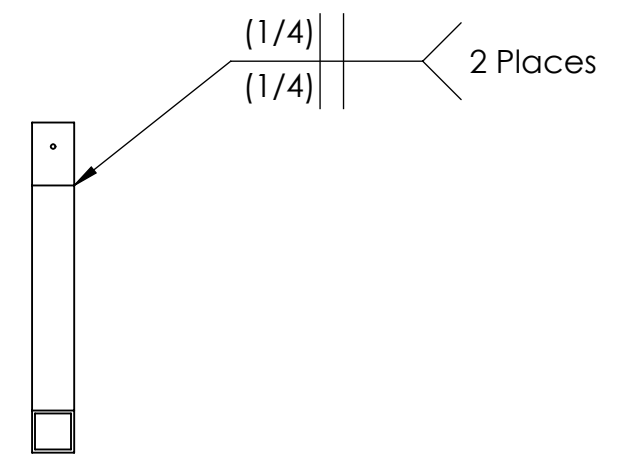
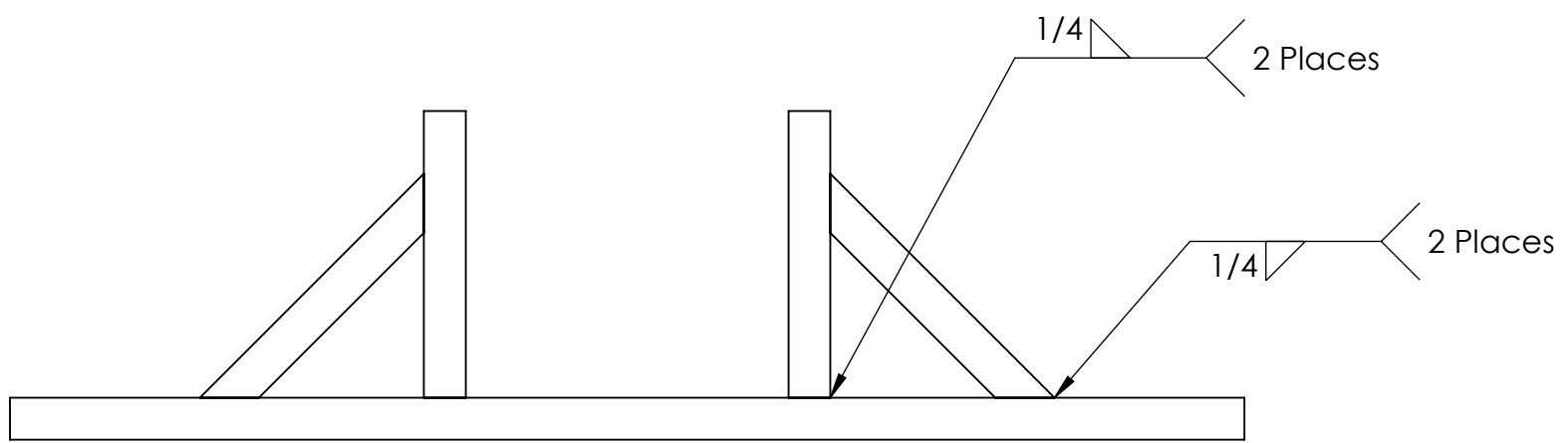
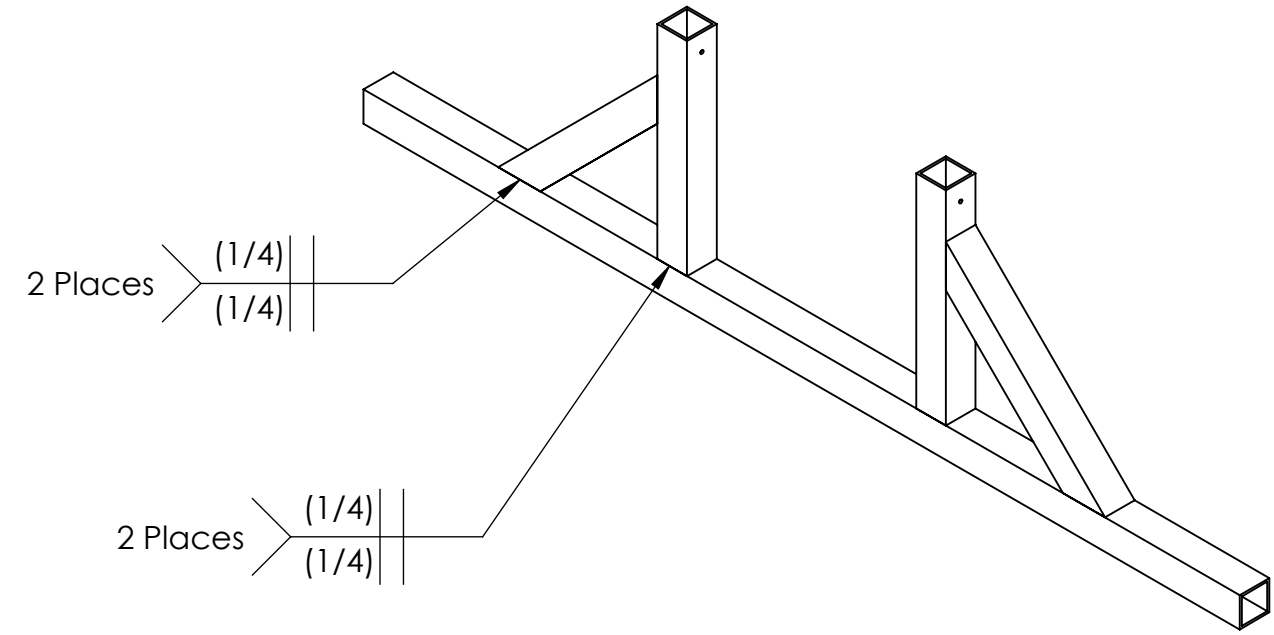
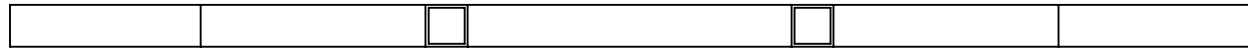
1

B



B

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001		DRAWN	
		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
		MATERIAL		ENG APPR.	
		FINISH		MFG APPR.	
NEXT ASSY	USED ON			Q.A.	
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:	
 					
TITLE: <b>Switch Fence Brace</b>					
SIZE	DWG. NO.			REV	
<b>B</b>	<b>GE-18087</b>				
SCALE: 1:8		WEIGHT:		SHEET 2 OF 3	

4

3

2

1



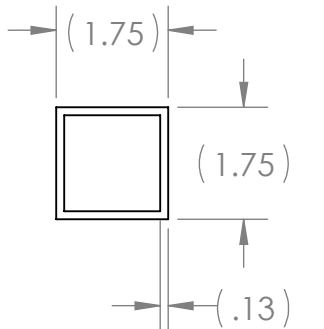
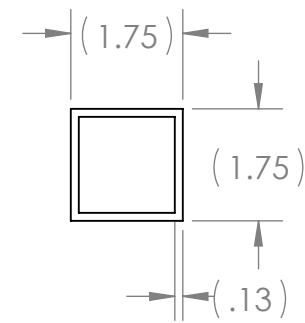
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3

2

1

B

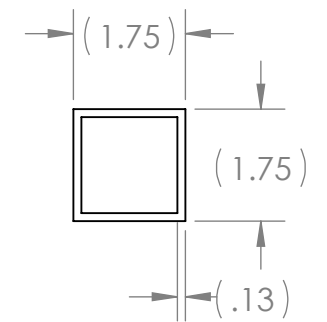
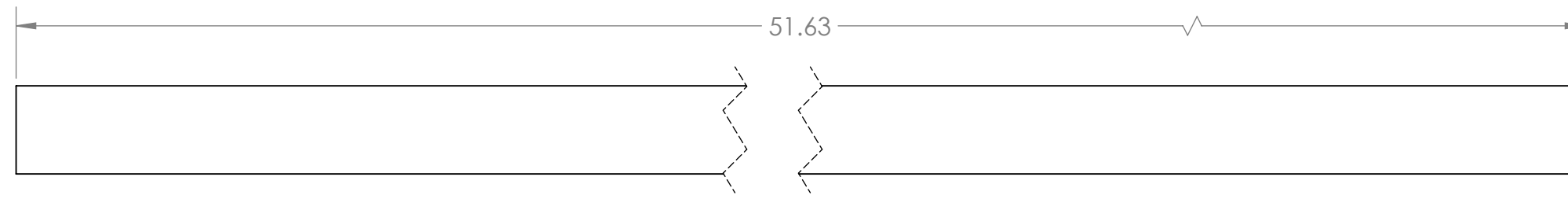


B

Item: GE-18087-1  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 QTY: 2

Item: GE-18087-2  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 QTY: 2



A



A

Item: GE-18087-3  
 Material: 1.75" x .125" thk. Square Tube, 6063 Aluminum  
 QTY: 1

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001		DRAWN	
		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
		MATERIAL		ENG APPR.	
		FINISH		MFG APPR.	
NEXT ASSY	USED ON			Q.A.	
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:	
				 	
TITLE: <b>Switch Fence Brace</b>					
SIZE	DWG. NO.			REV	
<b>B</b>	<b>GE-18087</b>				
SCALE: 1:3		WEIGHT:		SHEET 3 OF 3	

4

3

2

1

4

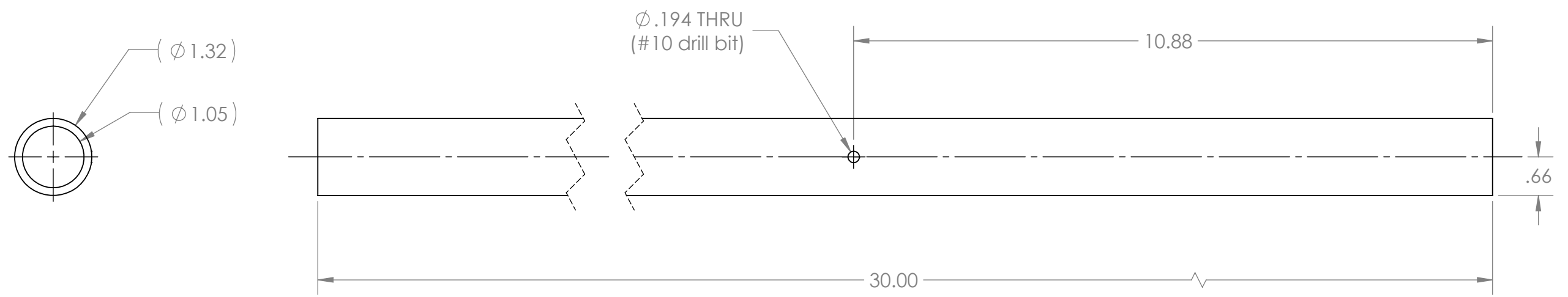
3

2

1

B

B





Notes:

- 1. Material: 1" Schedule 40 Pipe, 6061 Aluminum
- 2. Remove all burrs and sharp edges

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

 		
TITLE:		
<h1>Switch Fence Brace Pin</h1>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18088</b>	
SCALE: 1:2	WEIGHT:	SHEET 1 OF 1

4

3

2

1

A

A

4

3

2

1

B

B





A

A

Notes:

- 1. Description: 1-3/8 Dia. Conveyor Roller, for 30" frame width
- 2. Material: Galvanized Steel
- 3. Source: McMaster-Carr
- 4. Item#: 2282T25

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 	
		DIMENSIONS ARE IN INCHES		DRAWN	daf	11/26/17	TITLE:
		TOLERANCES:		CHECKED			Roller, Conveyor
		FRACTIONAL ±1/16		ENG APPR.			SIZE DWG. NO. REV
		ANGULAR: MACH ±1° BEND ±1°		MFG APPR.			<b>B</b> GE-18090
		TWO PLACE DECIMAL ±.01		Q.A.			SCALE: 1:4 WEIGHT: SHEET 1 OF 1
		THREE PLACE DECIMAL ±.001		COMMENTS:			
		INTERPRET GEOMETRIC TOLERANCING PER:					
		MATERIAL					
NEXT ASSY		USED ON					
		FINISH					
APPLICATION		DO NOT SCALE DRAWING					

4

3

2

1

4

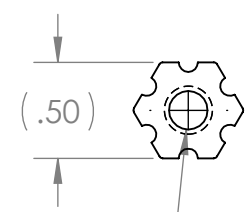
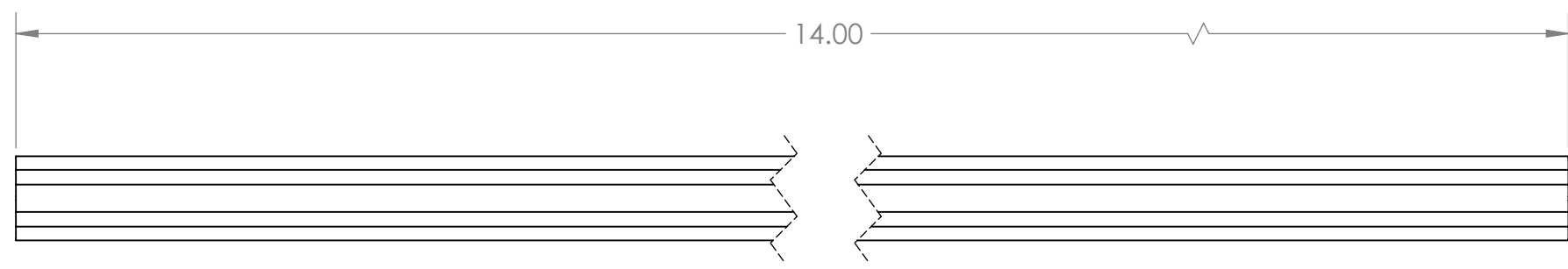
3

2

1

B

B





2X 1/4-20 UNC  $\nabla$  .50 Both Ends

A

A

- Notes:
1. Material: Aluminum
  2. Vendor: AndyMark
  3. Remove all burrs or sharp edges

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		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	DAF	
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		
		MATERIAL	ENG APPR.		
		FINISH	MFG APPR.		
NEXT ASSY	USED ON		Q.A.		
APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		
			TITLE:		<h1>Churro, 14"</h1>
SIZE	DWG. NO.	REV			
<b>B</b>	<b>GE-18091</b>				
SCALE: 1:1		WEIGHT:	SHEET 1 OF 1		

4

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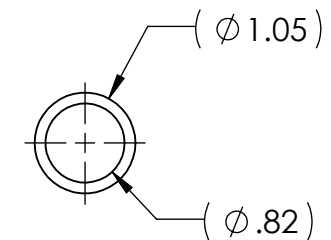
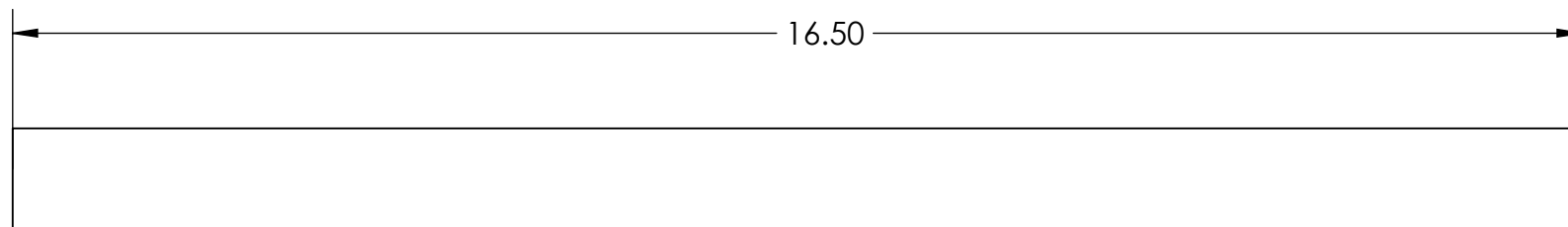
1

4

3

2



1



Notes:

- 1. Material: 3/4" Schedule 40 Pipe, White PVC
- 2. Remove all burrs and sharp edges

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 
		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	DAF	
				CHECKED		
				ENG APPR.		
				MFG APPR.		
				Q.A.		
				COMMENTS:		
						TITLE:
						<b>Handle, Chute</b>
				SIZE	DWG. NO.	REV
				<b>B</b>	<b>GE-18092</b>	
				SCALE: 1:2	WEIGHT:	SHEET 1 OF 1

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B

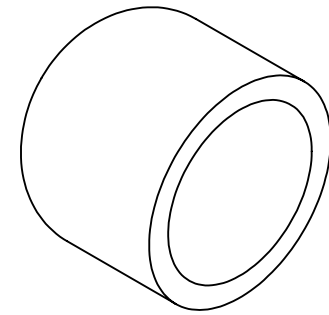
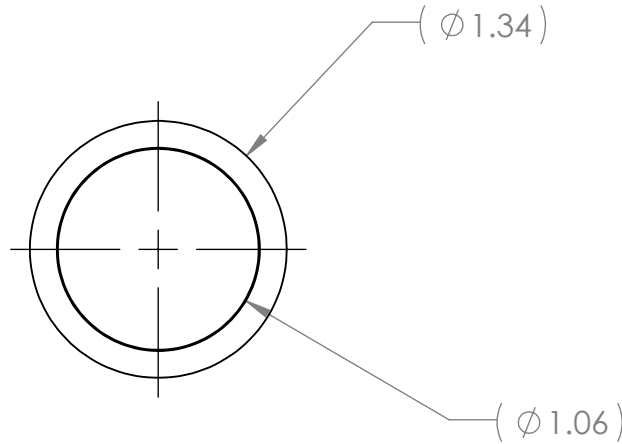
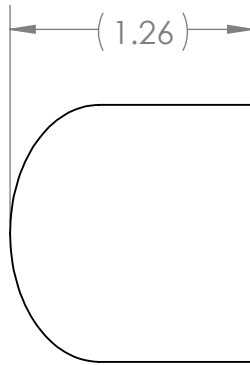
B

A

A

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1



B

B

Notes:

- 1. Description: End Cap for 3/4" Schedule 40 Pipe
- 2. Material: White PVC

A

A

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



TITLE:  
**End Cap, PVC**

SIZE	DWG. NO.	REV
<b>A</b>	<b>GE-18093</b>	
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

2

1

4

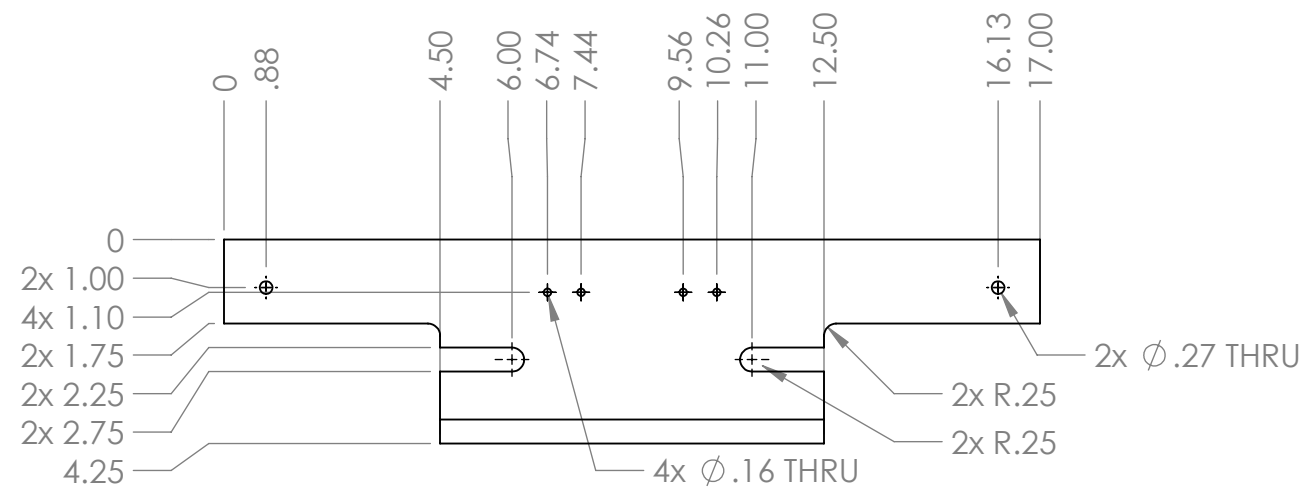
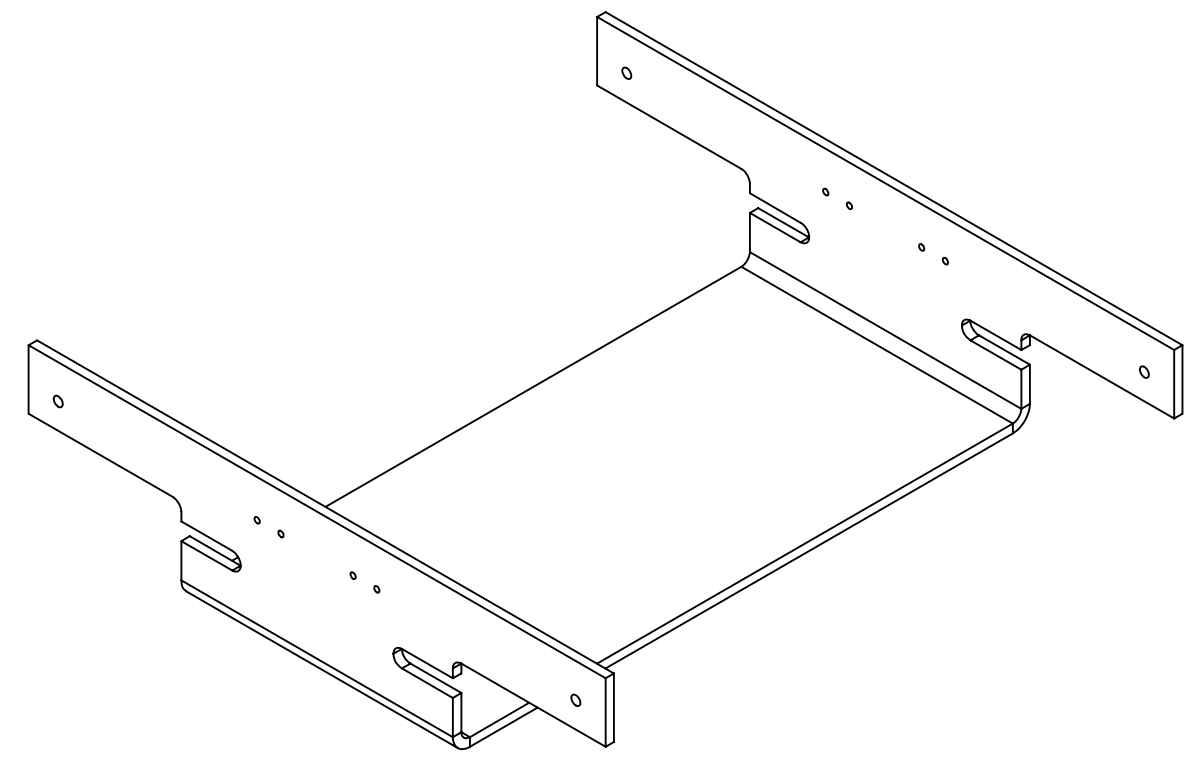
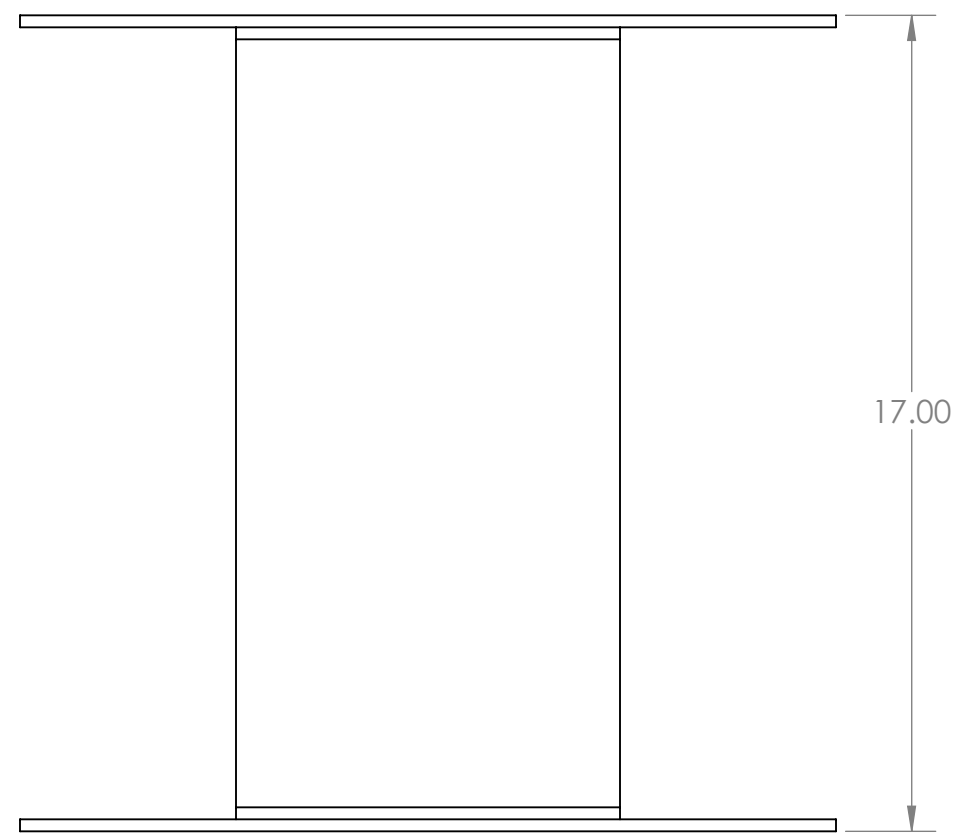
3

2

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B

B



- Notes:
1. Material: 1/4" thick, clear polycarbonate
  2. Remove all burrs and sharp edges.

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001		DRAWN	Casey O'Connor	
		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED		
		MATERIAL		ENG APPR.		
		FINISH		MFG APPR.		
NEXT ASSY	USED ON			Q.A.		
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:		
			TITLE:		Scale Sensor Mount	
SIZE	DWG. NO.	REV				
<b>B</b>	GE-18094					
SCALE: 1:4		WEIGHT:		SHEET 1 OF 1		

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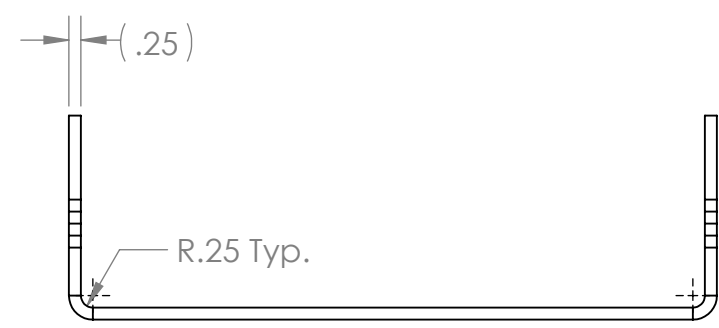
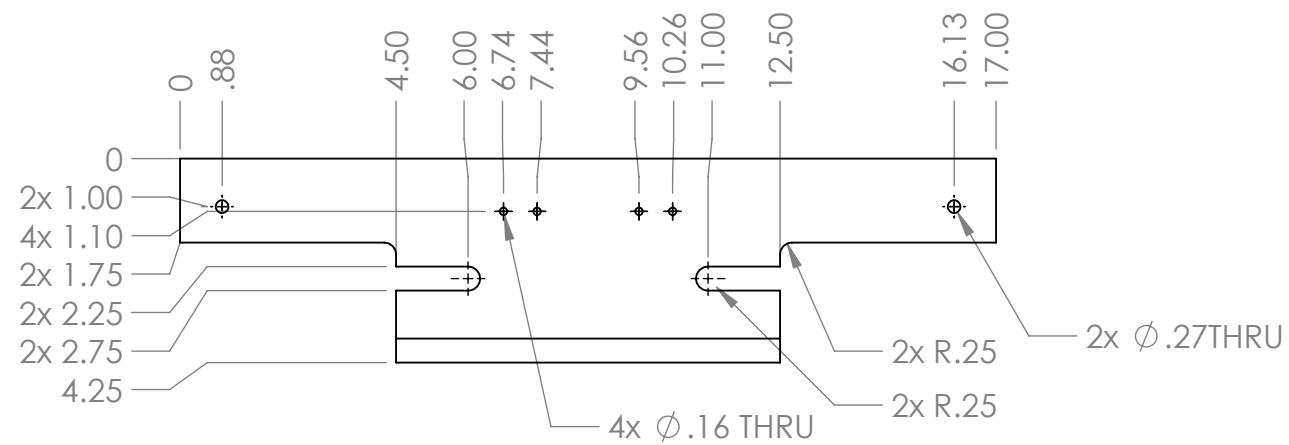
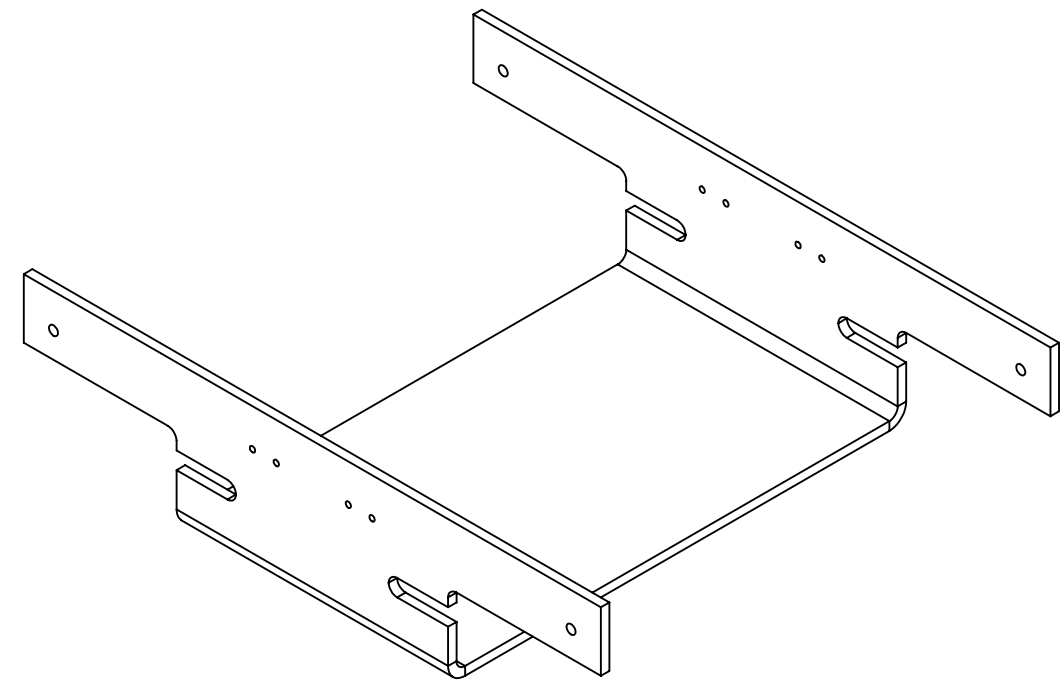
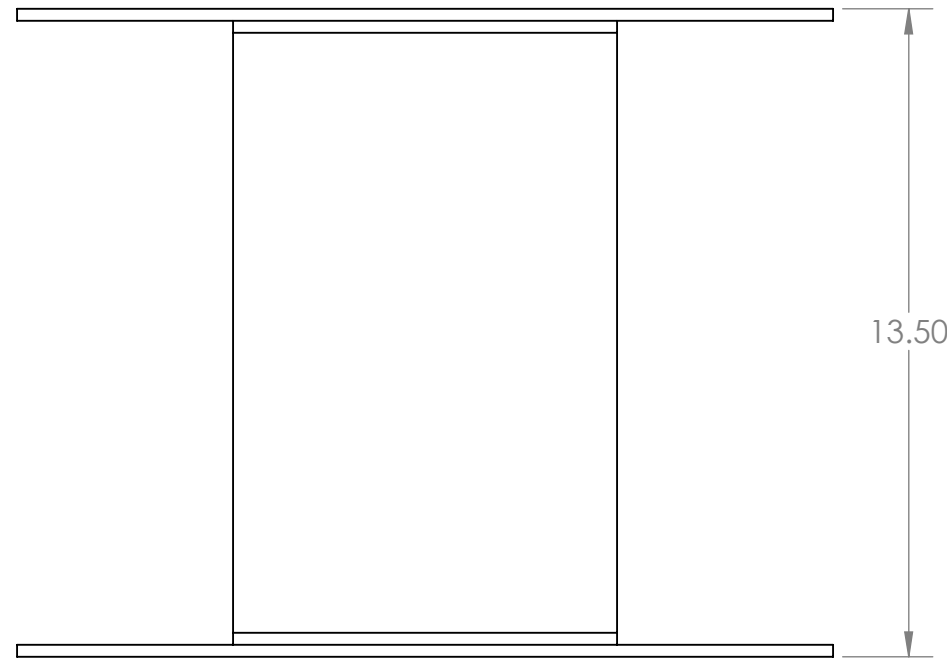
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- Notes:
1. Material: 1/4" thick, clear polycarbonate
  2. Remove all burrs and sharp edges.

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES		DRAWN	Casey O'Connor
		TOLERANCES:		CHECKED	11/28/2017
		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:		
Switch Sensor Mount		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18095</b>	
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1

4

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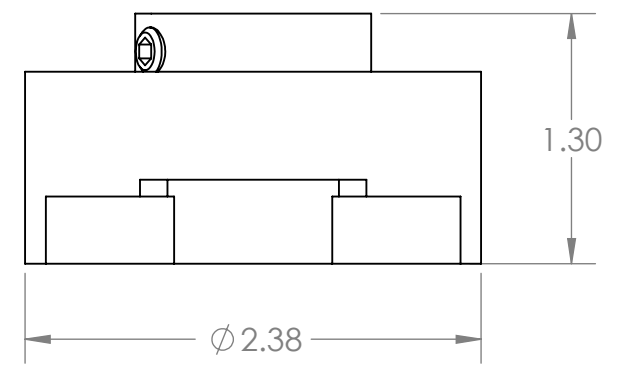
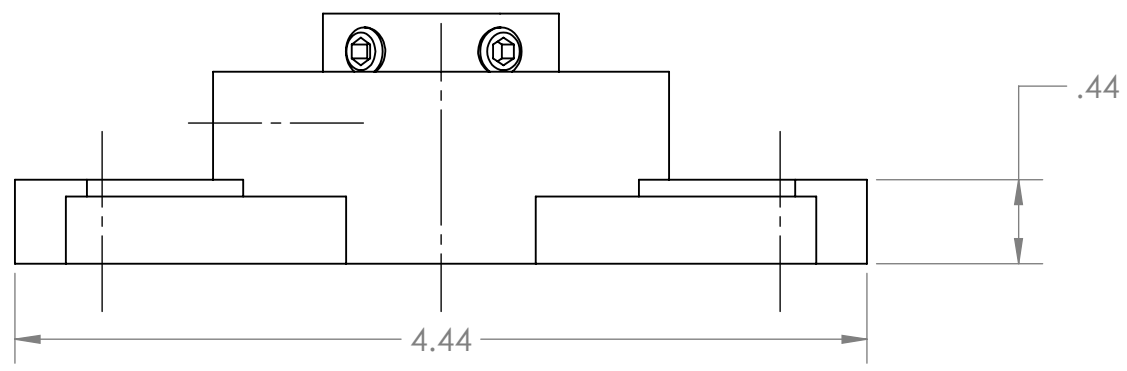
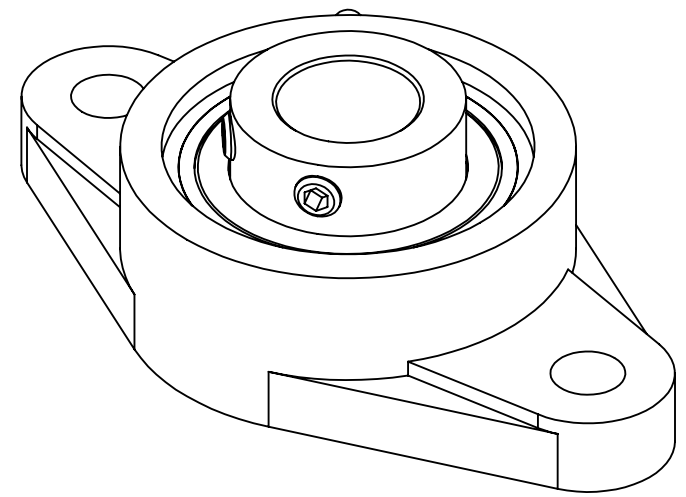
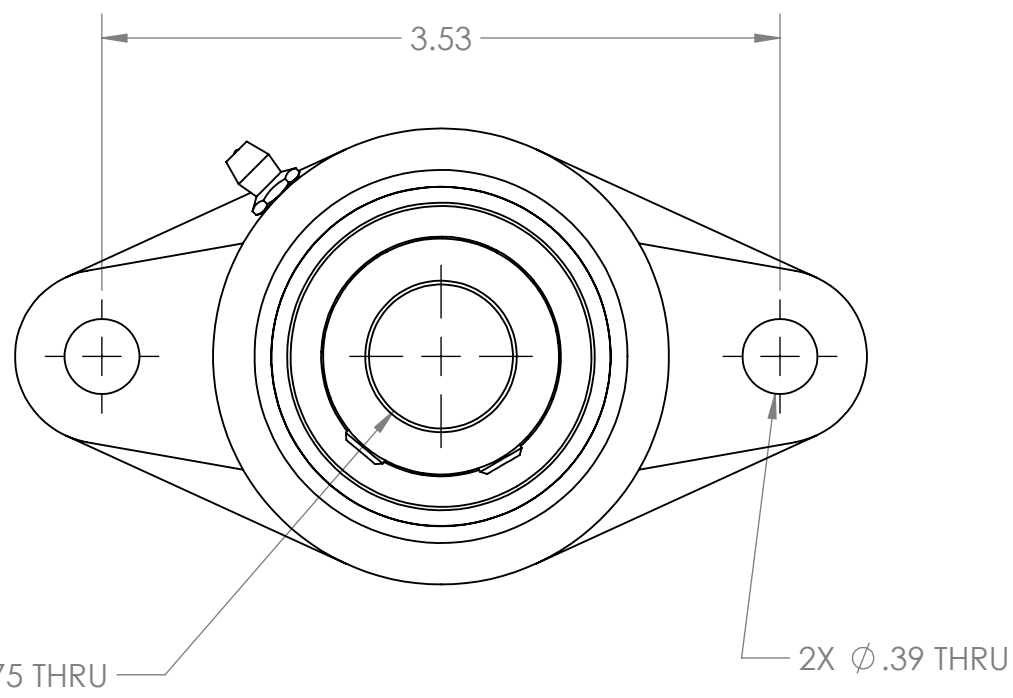


4

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- Notes:
1. Description: 2-Bolt Flange Bearing 3/4" Bore Dia.
  2. Source: Grainger
  3. Item #: 36UX95
  4. Equivalent substitutions allowed

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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			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



**FIRST**  
ROBOTICS  
COMPETITION



**SOLIDWORKS**  
Modeling Solutions Partner

TITLE:		
<b>Scale/Switch Bearing</b>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18096</b>	
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

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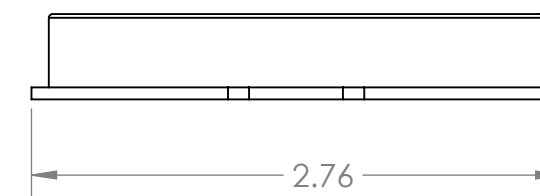
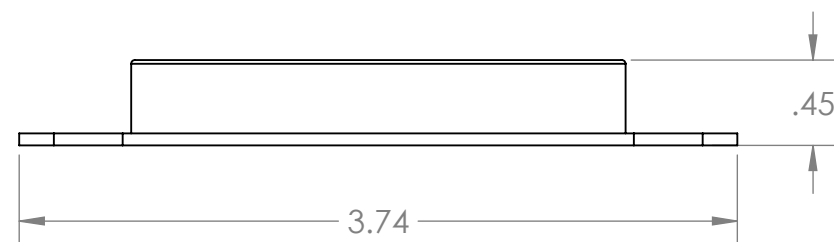
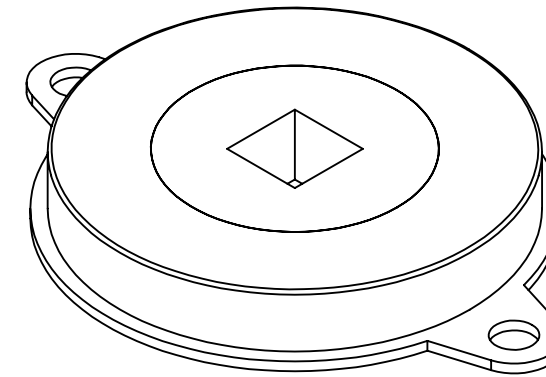
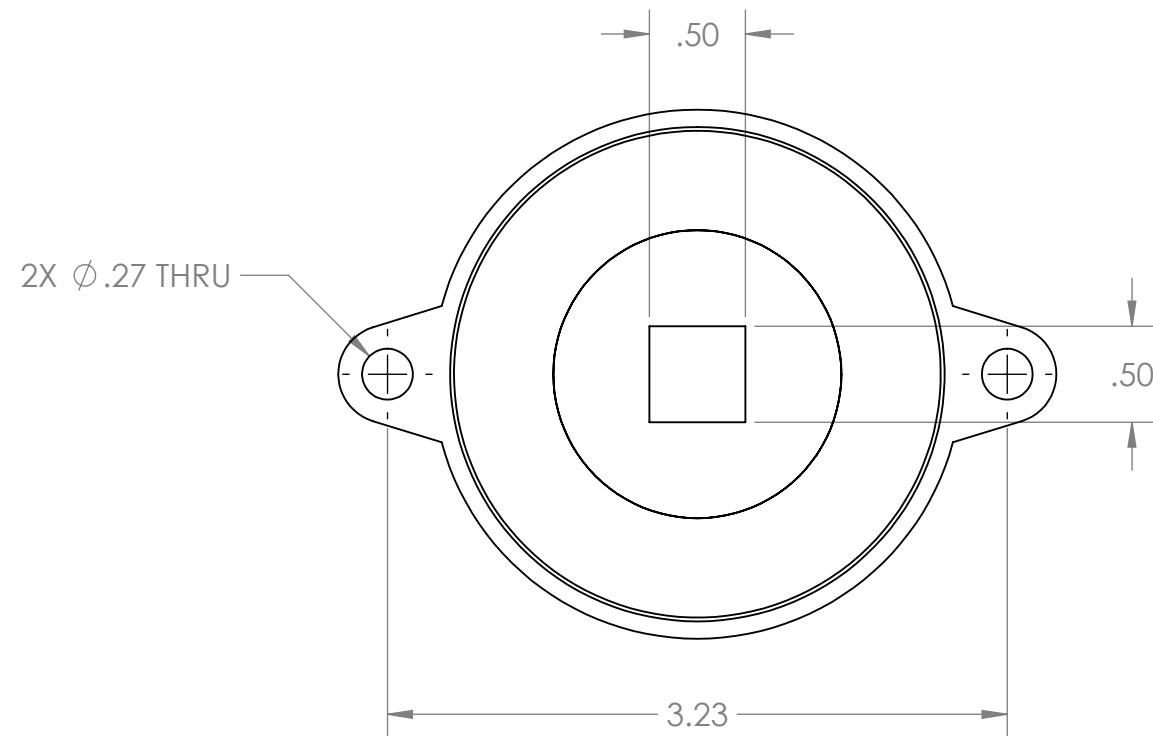
A

4

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2



1



Notes:

1. Description: Rotary Speed Limiter, Opening for Square shaft, 1437 in.-oz Maximum Torque
2. Source: McMaster-Carr
3. Item #: 6597K24
4. Equivalent substitutions allowed

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001		DRAWN	
		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
		MATERIAL		ENG APPR.	
		FINISH		MFG APPR.	
NEXT ASSY	USED ON			Q.A.	
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:	
				 	
				TITLE: <b>Scale/Switch Damper</b>	
SIZE	DWG. NO.			REV	
<b>B</b>	<b>GE-18097</b>				
SCALE: 1:1		WEIGHT:		SHEET 1 OF 1	

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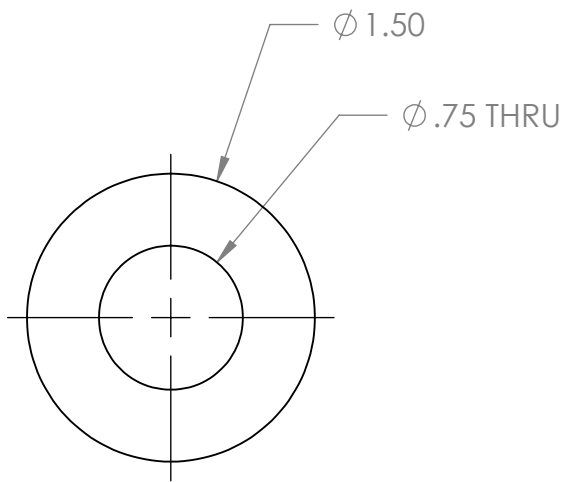
A

2

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B

B



Notes:

1. Description: Nylon Unthreaded Spacer
2. Source: McMaster-Carr
3. Item#: 94639A891
4. Equivalent substitutions allowed

A

A

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		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		
		MATERIAL	ENG APPR.		
		FINISH	MFG APPR.		
NEXT ASSY	USED ON		Q.A.		
APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		



TITLE: <b>Switch Shaft Spacer</b>		
SIZE <b>A</b>	DWG. NO. <b>GE-18098</b>	REV
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

2

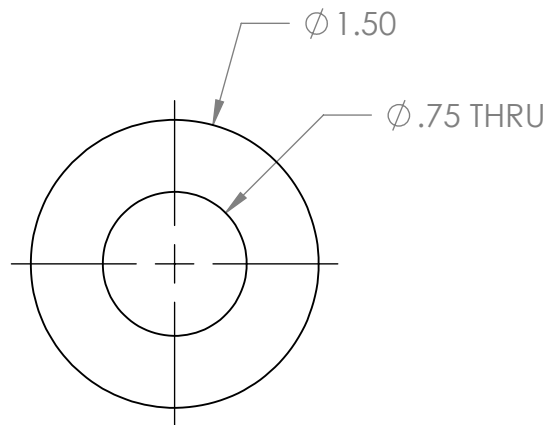
1

2

1

B

B



Notes:

- 1. Description: Nylon Unthreaded Spacer
- 2. Source: McMaster-Carr
- 3. Item#: 94639A889
- 4. Equivalent substitutions allowed

A

A

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



TITLE: <b>Scale Shaft Spacer</b>		
SIZE <b>A</b>	DWG. NO. <b>GE-18099</b>	REV
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

2

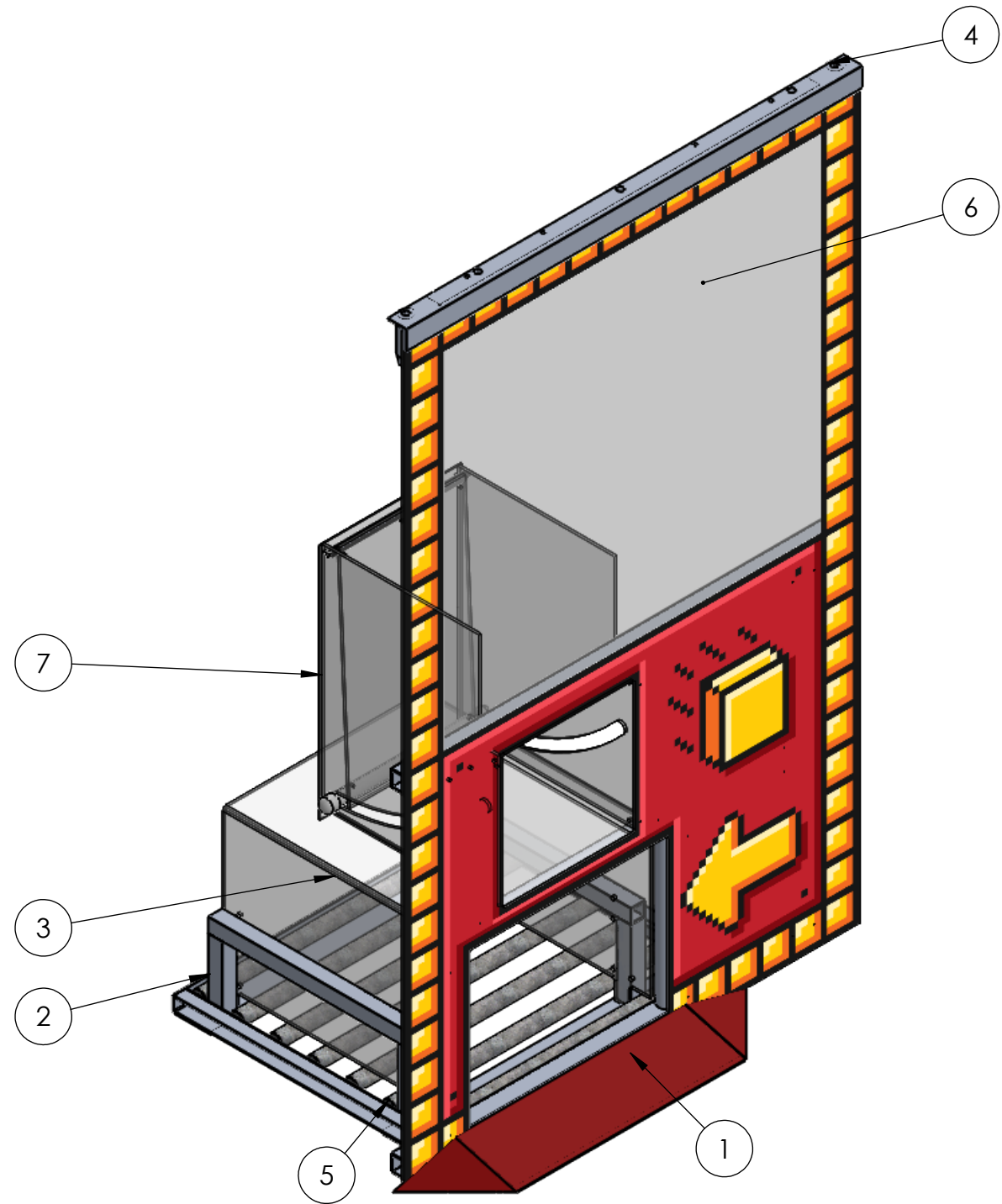
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ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.
1	GE-18009	Exchange Frame	1
2	GE-18006	Roller Base	1
3	GE-18008	Roller Tunnel	1
4	GE-18015	Top Rail, Exchange	1
5	2282T25	Roller, Conveyor	7
6	GE-18010	Exchange Plastic	1
7	GE-18101	Assembly, Chute	1
8	GE-18127	Ramp, Exchange	1

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		TITLE:
		MATERIAL	ENG APPR.		Assembly, Exchange
		FINISH	MFG APPR.		SIZE DWG. NO. REV
NEXT ASSY	USED ON		Q.A.		<b>B</b> GE-18100
APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		SCALE: 1:12 WEIGHT: SHEET 1 OF 2

4

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1

B

B

A

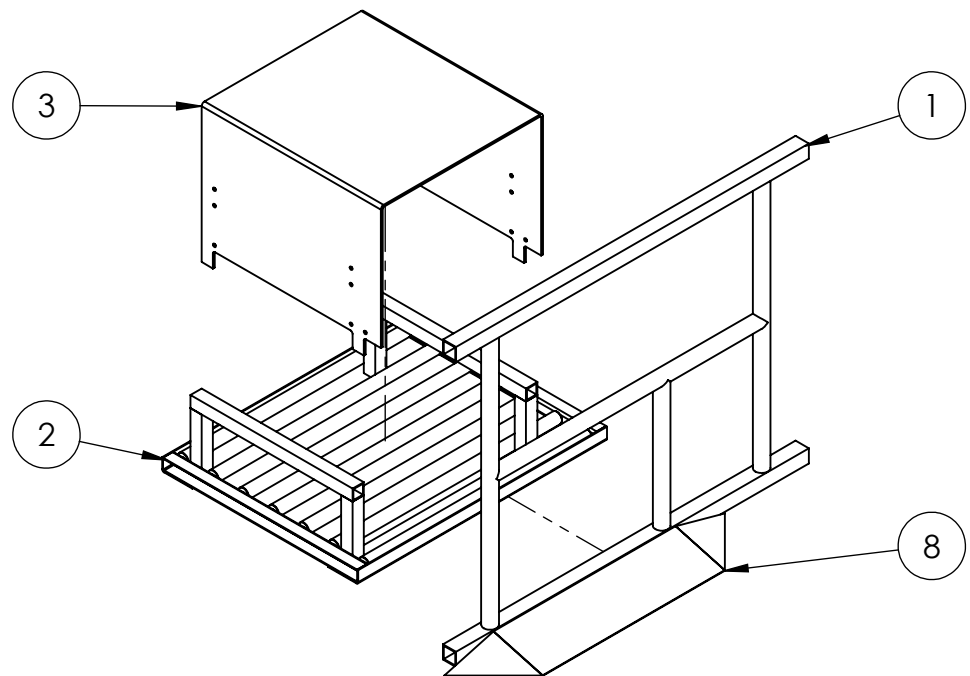
A

4

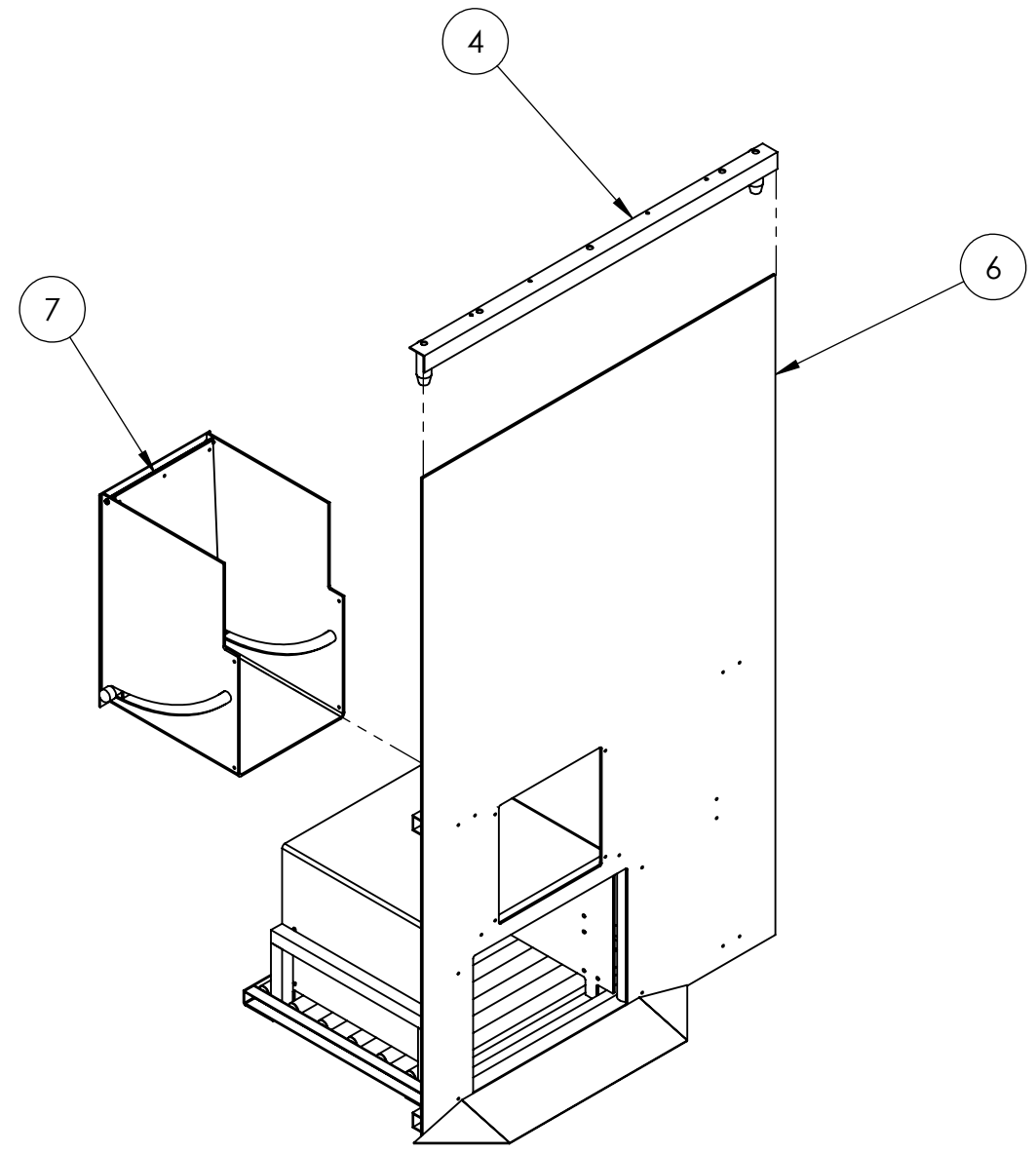
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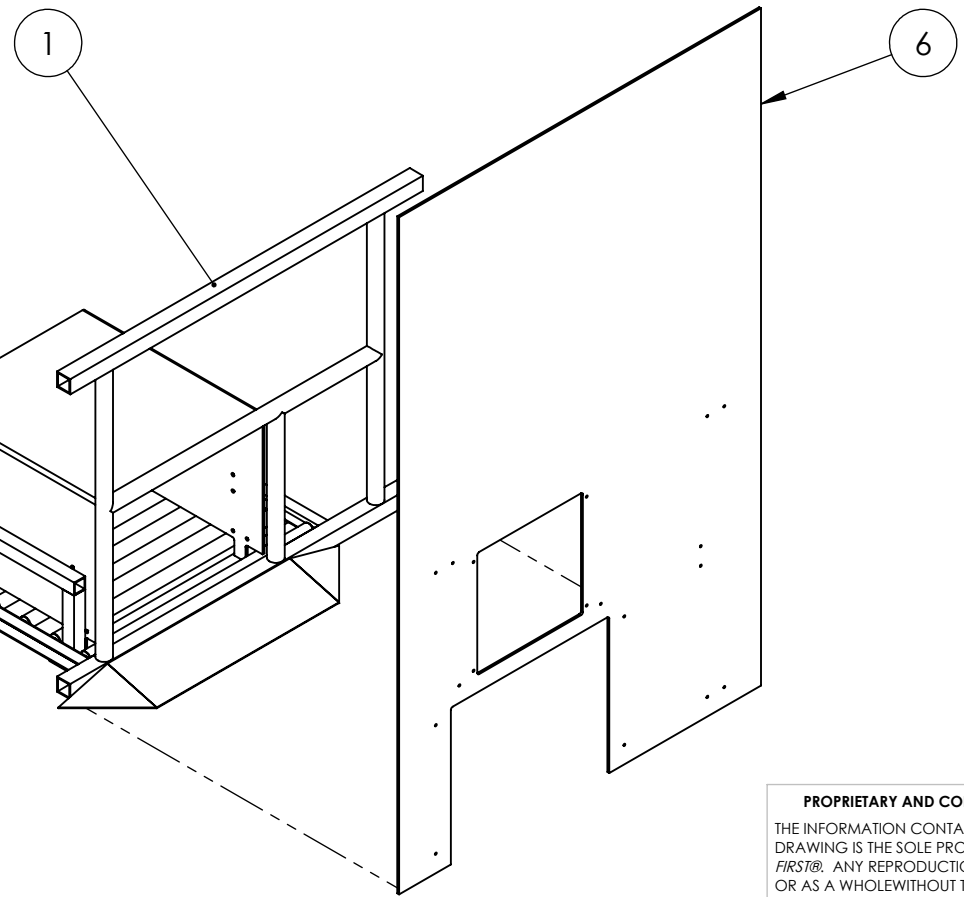
1



- Notes:
1. Attach Item 1 to field perimeter.
  2. Place Item 8 in front of Item 1.
  3. Place Item 2 behind Item 1, with rails centered on the opening.
  4. Center item 3 on rollers, flush with edges of guard and rail.





- Notes:
1. Attach Item 7 to Item 6 using cable ties.
  2. Add Item 4.



- Notes:
1. Attach Item 6 to Item 1 using cable ties.

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001		DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED		SIZE DWG. NO. REV
		MATERIAL		ENG APPR.		<b>B</b> <b>GE-18100</b>
		FINISH		MFG APPR.		SCALE: 1:18 WEIGHT: SHEET 2 OF 2
NEXT ASSY	USED ON			Q.A.		
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:		

4

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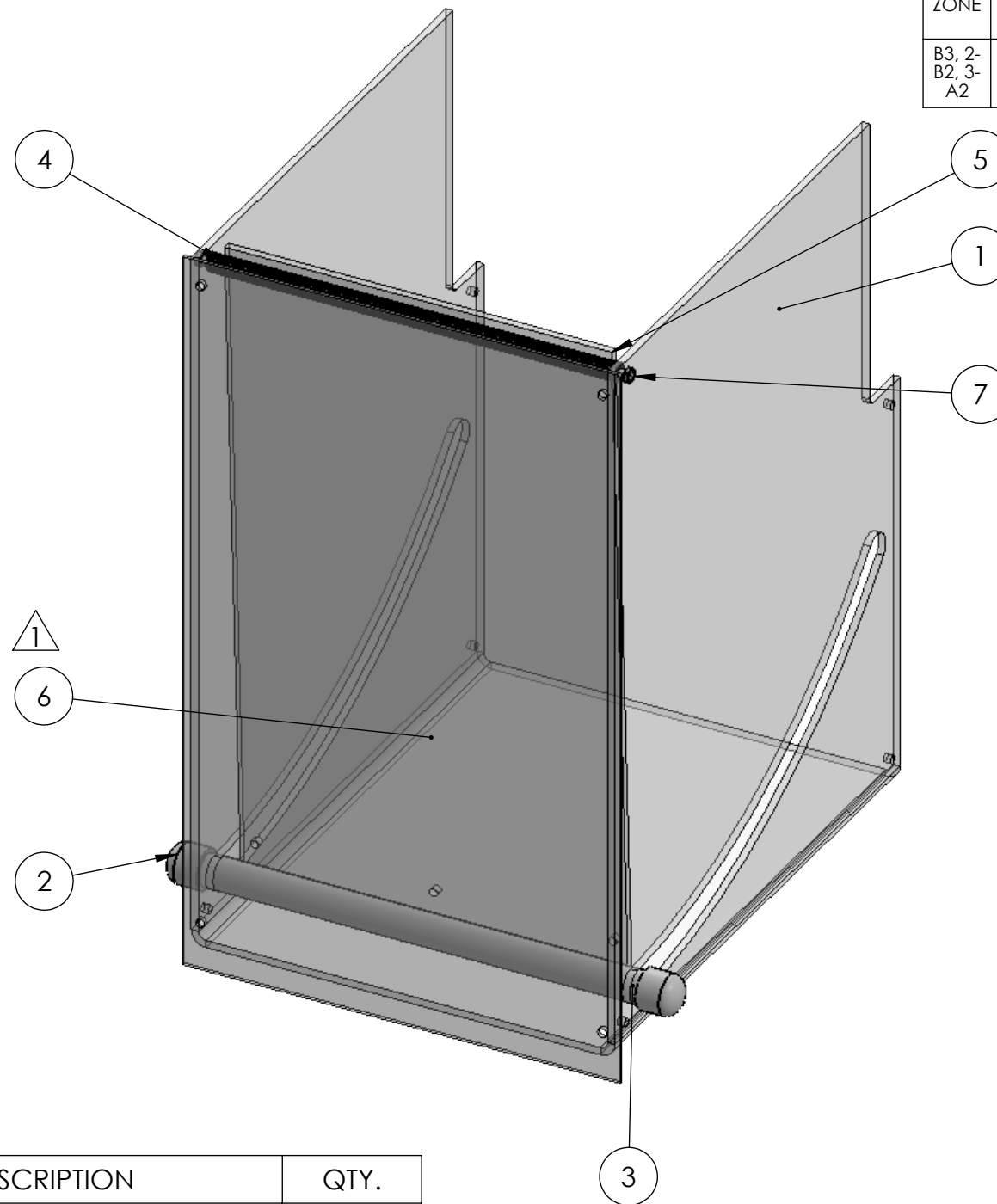
3

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## REVISIONS



ZONE	REV.	DESCRIPTION	DATE	APPROVED
B3, 2- B2, 3- A2	1	Added ite GE-18130 Chute Back Wall. Updated fastener used.	1/8/2018	CPO



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18025	Chute Body	1
2	GE-18093	End Cap, PVC	2
3	GE-18092	Handle, Chute	1
4	GE-18091	Churro, 14"	1
5	GE-18027	Pusher Panel	1
6	GE-18130	Chute Back Wall	1
7	hex_.25_20_.75	Steel Hex Head Screw, 1/4"-20 x 3/4" long, fully threaded	2

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

TITLE:

# Assembly, Chute

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18101</b>	<b>1</b>
SCALE: 1:5	WEIGHT:	SHEET 1 OF 3

4

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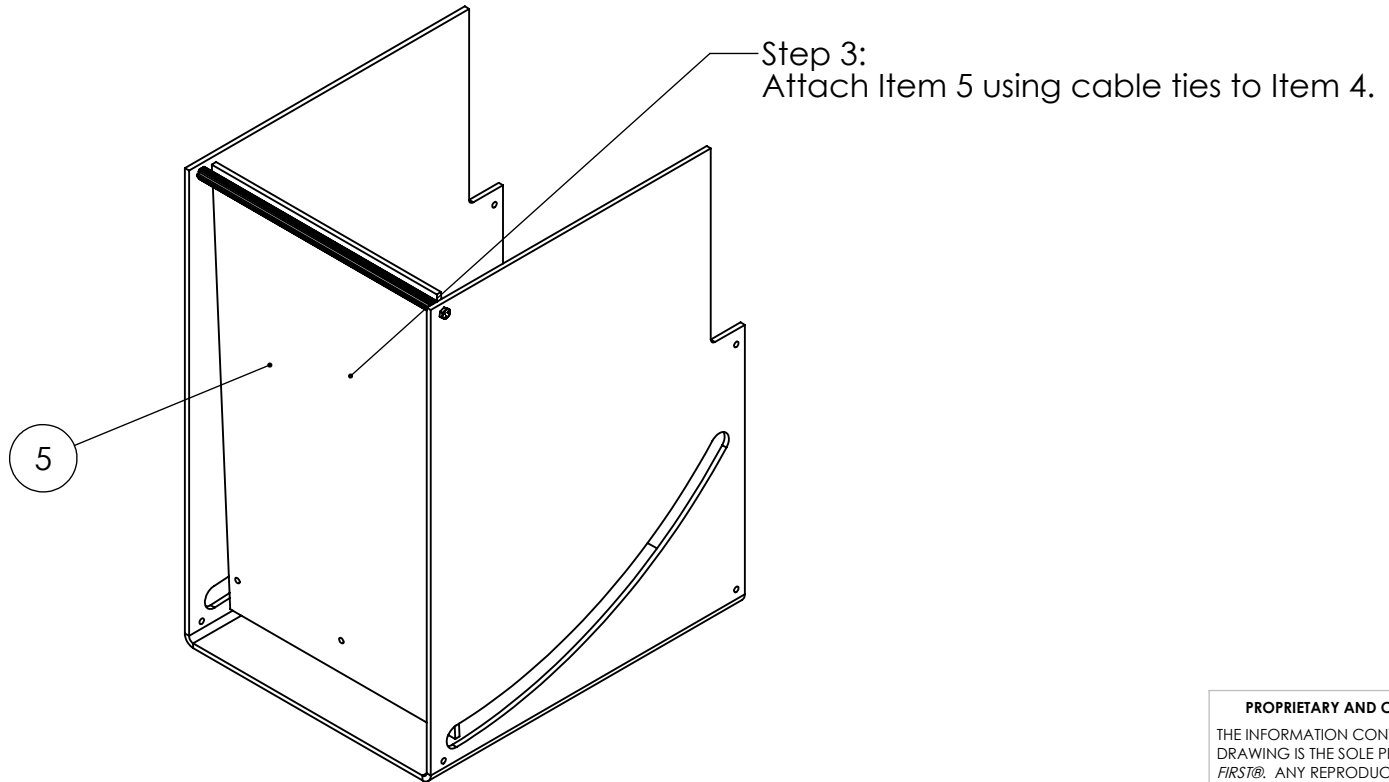
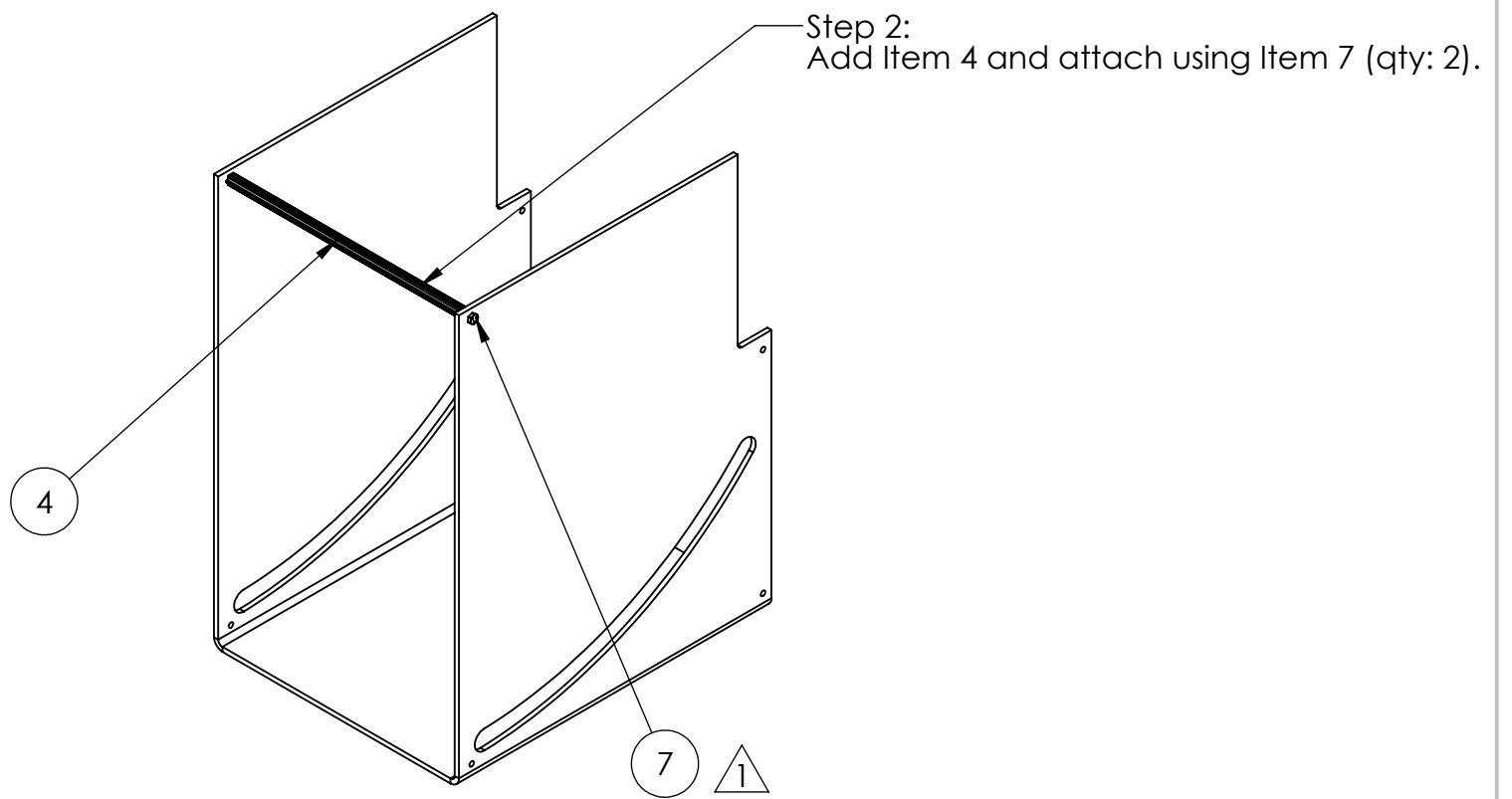
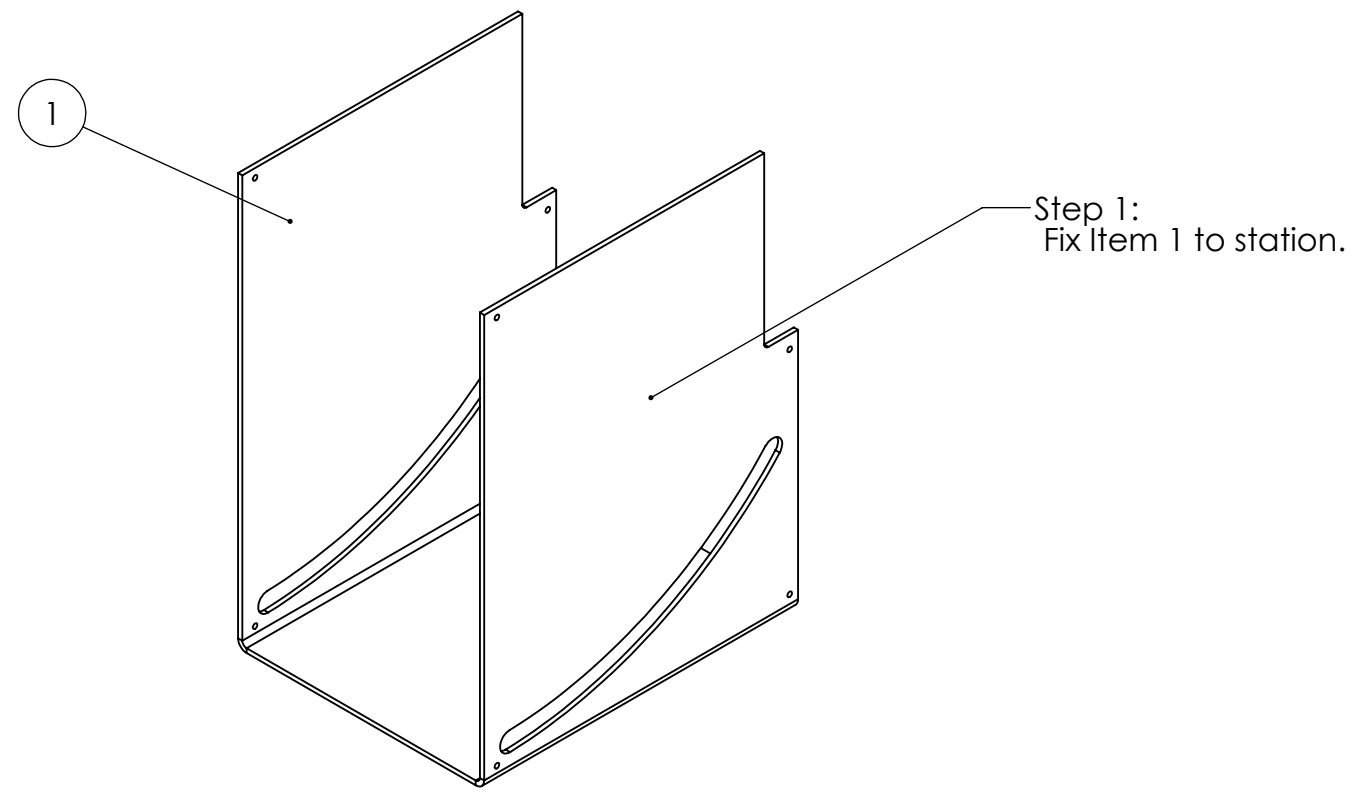
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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		SIZE DWG. NO. REV
		MATERIAL	ENG APPR.		<b>B</b> <b>GE-18101</b> <b>1</b>
NEXT ASSY	USED ON	FINISH	MFG APPR.		SCALE: 1:8 WEIGHT: SHEET 2 OF 3
APPLICATION		DO NOT SCALE DRAWING	Q.A.	COMMENTS:	

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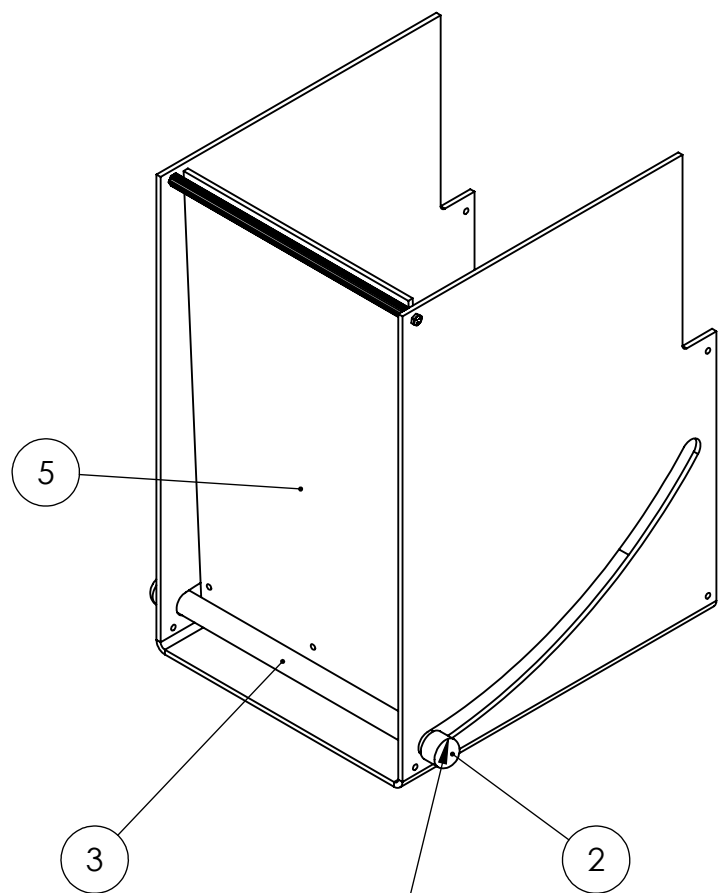


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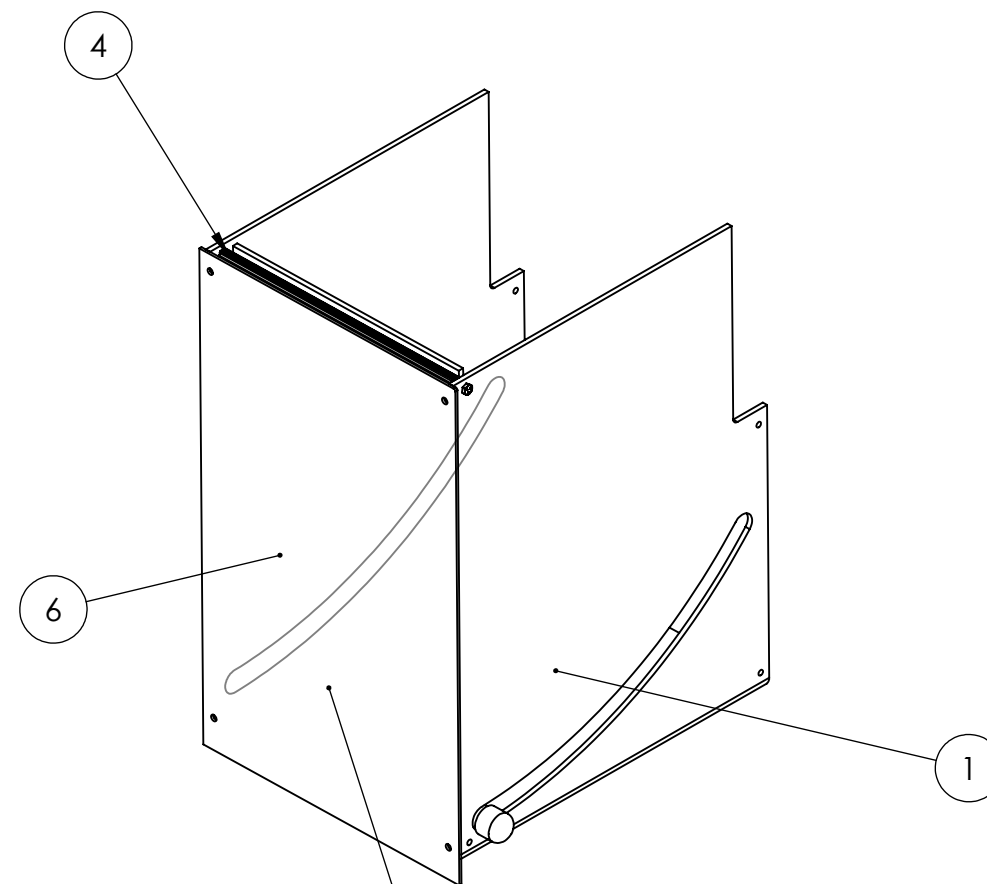
3

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Step 4:  
Attach Item 3 with Item 2 (endcaps). Use  
cable ties to secure to Item 5.



Attach Item 7 using cable ties  
around Item 1 and Item 4.



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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 
		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		<b>Assembly, Chute</b>
		MATERIAL		ENG APPR.		
		FINISH		MFG APPR.		SIZE <b>B</b> DWG. NO. <b>GE-18101</b> REV <b>1</b>
NEXT ASSY	USED ON			Q.A.		SCALE: 1:8 WEIGHT:
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:		SHEET 3 OF 3

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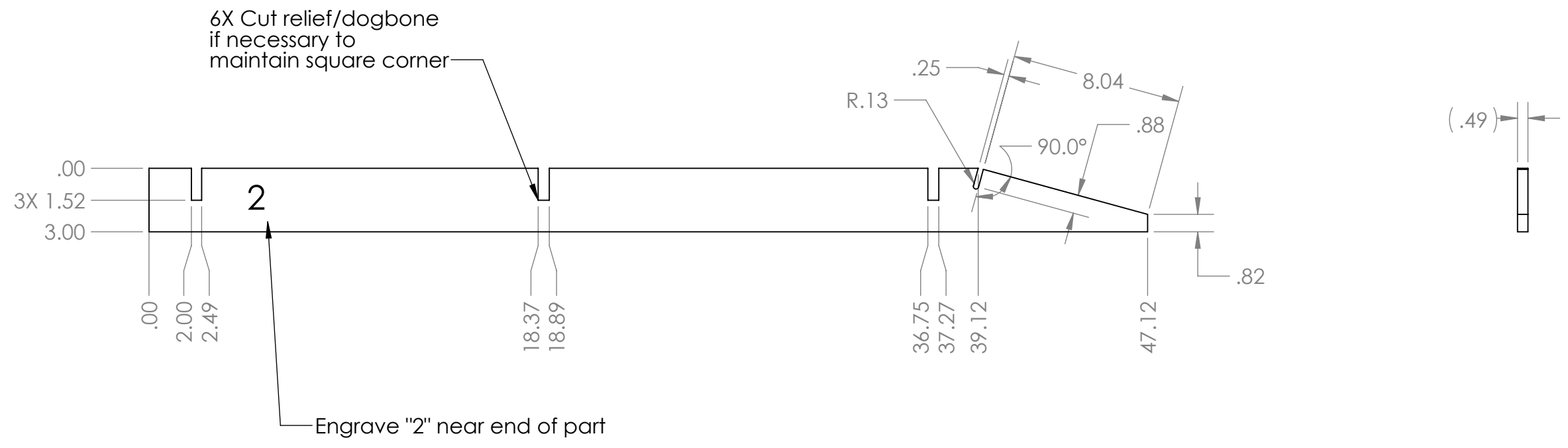
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- Notes:
1. Material: 1/2" HDPE, any color
  2. Surface: Smooth texture
  3. Remove all burrs and sharp edges

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

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

TITLE:  
**Platform Brace, Short Side 2**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18105</b>	

SCALE: 1:6 WEIGHT: SHEET 1 OF 1

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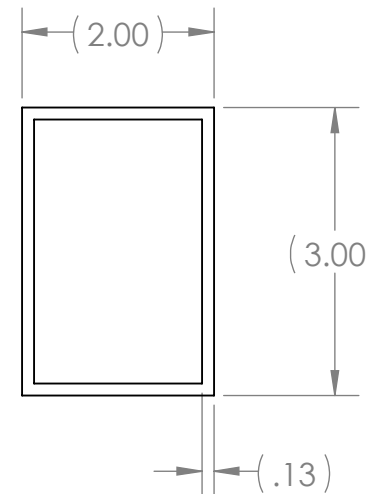
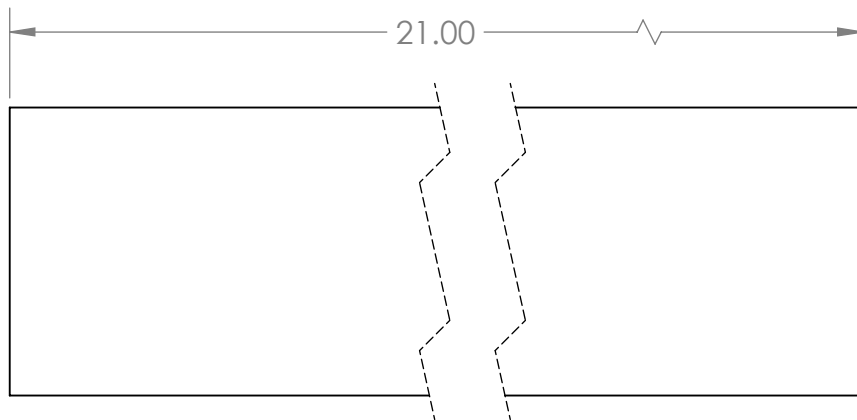
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Notes:

1. Materials: 3" x 2" x 1/8" thk. Rectangular Tube, 6063 Aluminum
2. Remove all burrs and sharp edges

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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			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



TITLE:  
**Scale Lockout Bar**

SIZE DWG. NO. REV  
**A GE-18106**

SCALE: 1:2 WEIGHT: SHEET 1 OF 1

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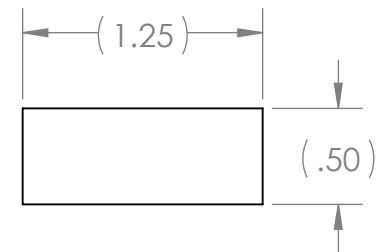
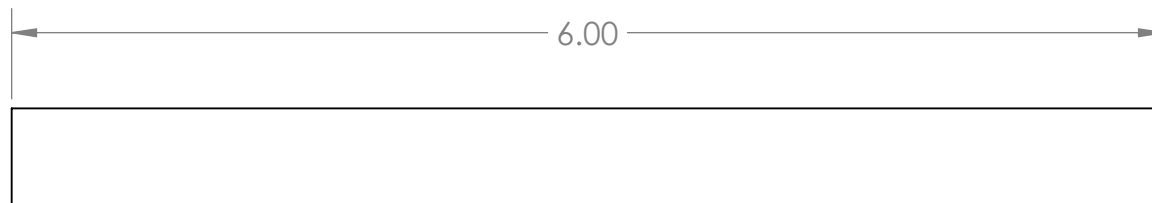
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Notes:

1. Material: 1.25" x .5" Low-carbon Steel Bar
2. Remove all burrs and sharp edges

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		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		
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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			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



TITLE:  
**Scale/Switch Counterweight**

SIZE	DWG. NO.	REV
<b>A</b>	<b>GE-18107</b>	
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

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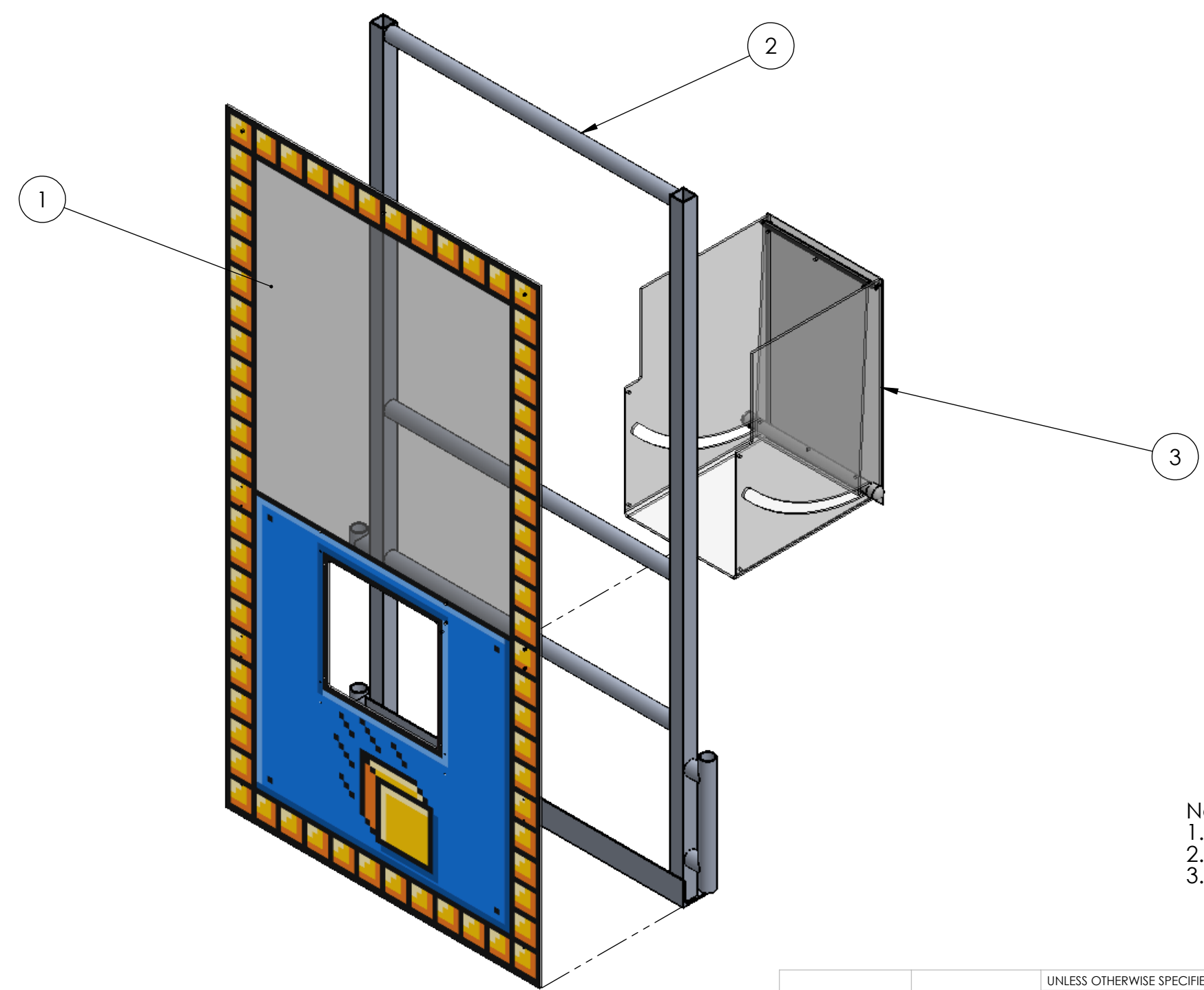
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Notes:

- 1. Attach Item 2 to field perimeter.
- 2. Attach Item 1 to Item 2 using cable ties.
- 3. Attach Item 3 to Item 1 using cable ties.

ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.
1	GE-18004	Panel, Portal	1
2	GE-18011	Portal Frame - Left	1
3	GE-18101	Assembly, Chute	1

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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		
FINISH			
NEXT ASSY	USED ON		
APPLICATION	DO NOT SCALE DRAWING		



TITLE:		
<h1>Portal - Left</h1>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18108</b>	
SCALE: 1:12 WEIGHT:		SHEET 1 OF 1

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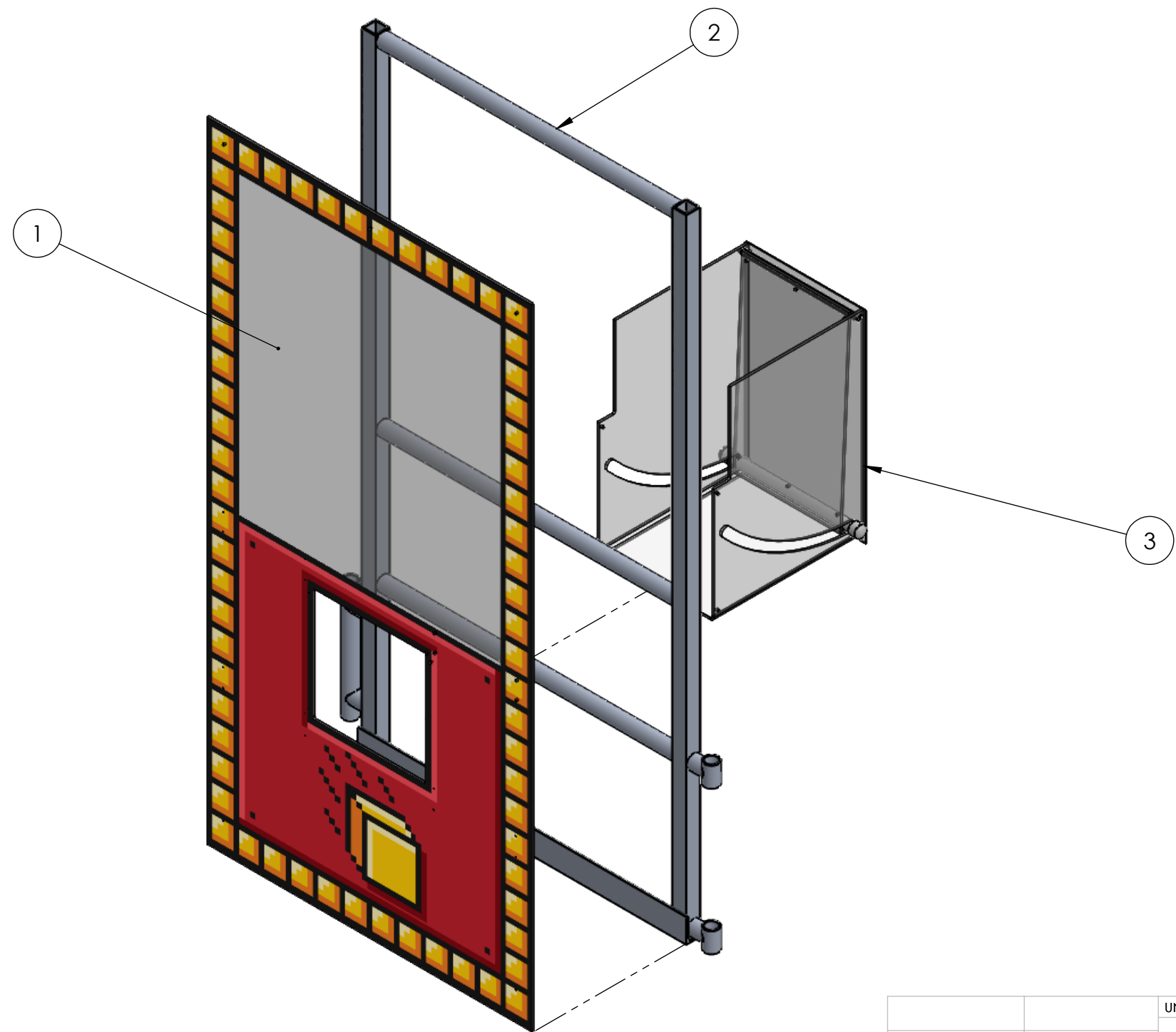
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Notes:

- 1. Attach Item 2 to field perimeter.
- 2. Attach Item 1 to Item 2 using cable ties.
- 3. Attach Item 3 to Item 1 using cable ties.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18004	Panel, Portal	1
2	GE-18012	Portal Frame - Right	1
3	GE-18101	Assembly, Chute	1

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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		
INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED		TITLE:
MATERIAL		ENG APPR.		Portal - Right
FINISH		MFG APPR.		SIZE DWG. NO. REV
NEXT ASSY	USED ON	Q.A.		<b>B</b> GE-18109
APPLICATION		COMMENTS:		SCALE: 1:12 WEIGHT: SHEET 1 OF 1
DO NOT SCALE DRAWING				

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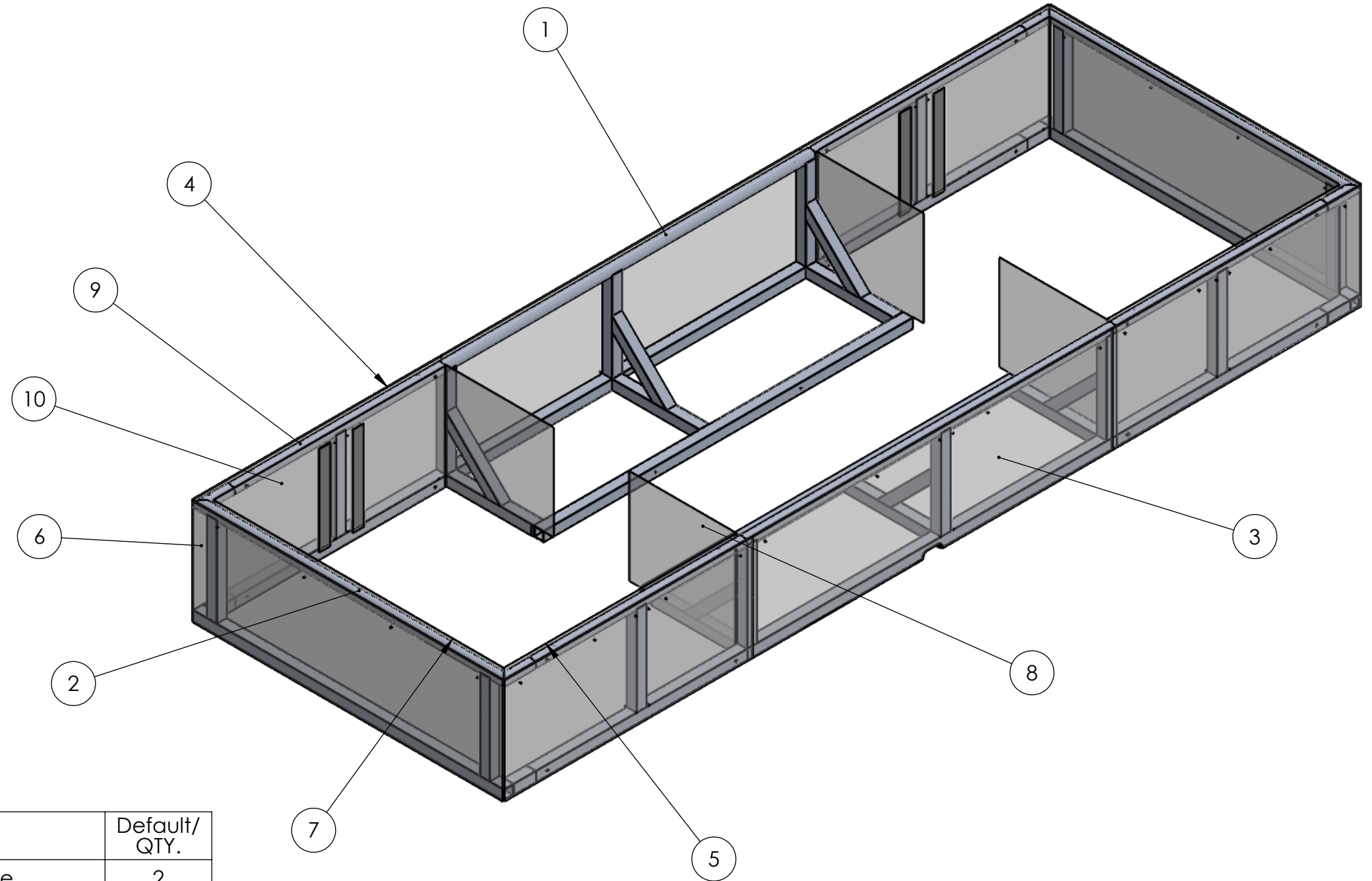
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ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.
1	GE-18051	Side Frame, Fence	2
2	GE-18052	End Frame, Fence	2
3	GE-18080	Fence Polycarb, Middle	2
4	GE-18081	Fence Polycarb, Outer Side	4
5	GE-18082	Fence Polycarb, Inner Side	2
6	GE-18083	Fence Polycarb, Outer End	2
7	GE-18084	Fence Polycarb, Inner End	2
8	GE-18085	Fence Polycarb, Guard	4
9	GE-18111	Connecting Frame Assembly	4
10	GE-18115	Vision Fence Polycarbonate	2

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		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		TITLE:
		MATERIAL	ENG APPR.		<b>Fence Assembly</b>
		FINISH	MFG APPR.		SIZE DWG. NO. REV
NEXT ASSY	USED ON		Q.A.		<b>B GE-18110</b>
APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		SCALE: 1:32 WEIGHT: SHEET 1 OF 3

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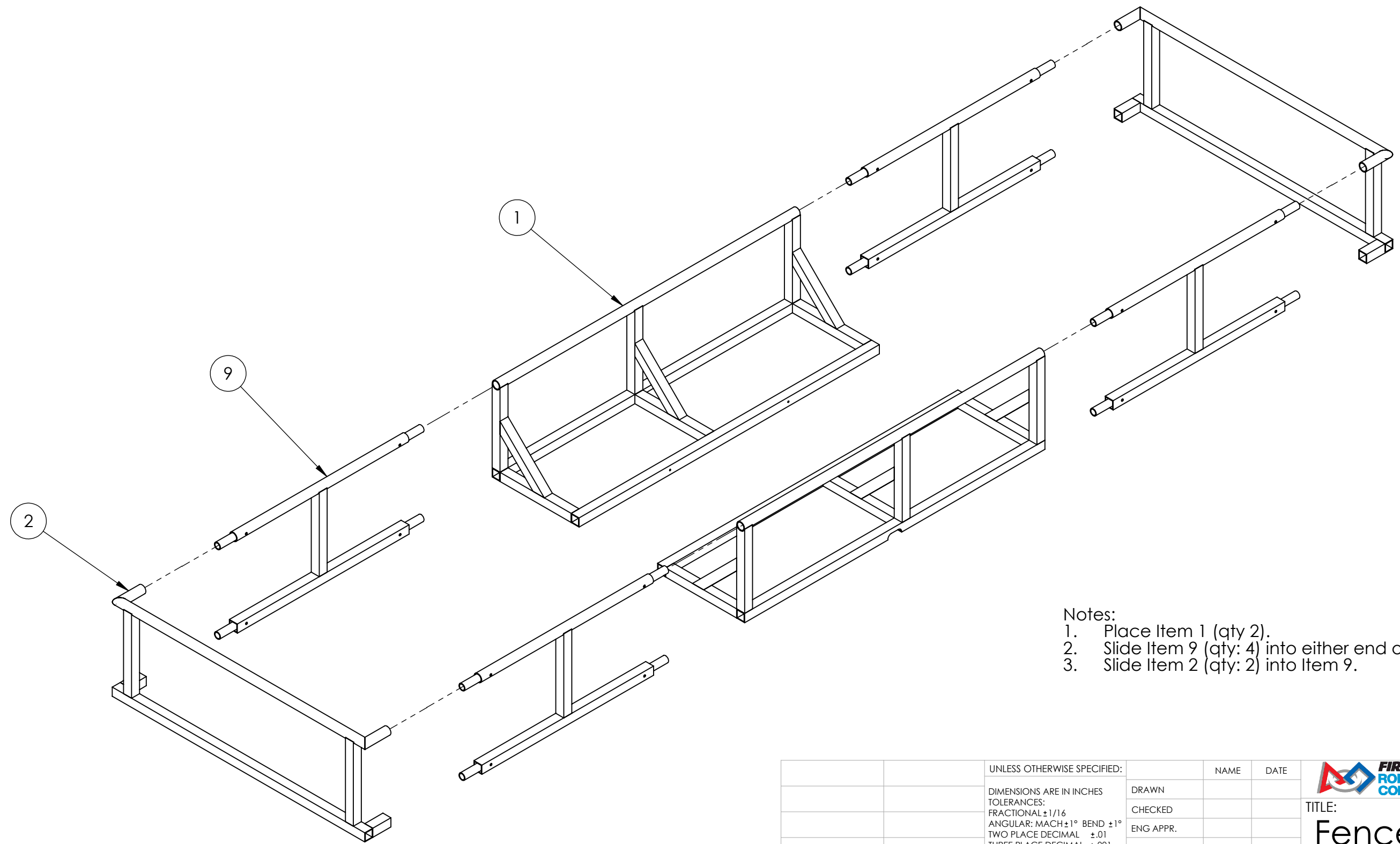
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Notes:

- 1. Place Item 1 (qty 2).
- 2. Slide Item 9 (qty: 4) into either end of Item 1.
- 3. Slide Item 2 (qty: 2) into Item 9.

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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			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			

 		
TITLE:		
Fence Assembly		
SIZE	DWG. NO.	REV
<b>B</b>	GE-18110	
SCALE: 1:32 WEIGHT:		SHEET 2 OF 3

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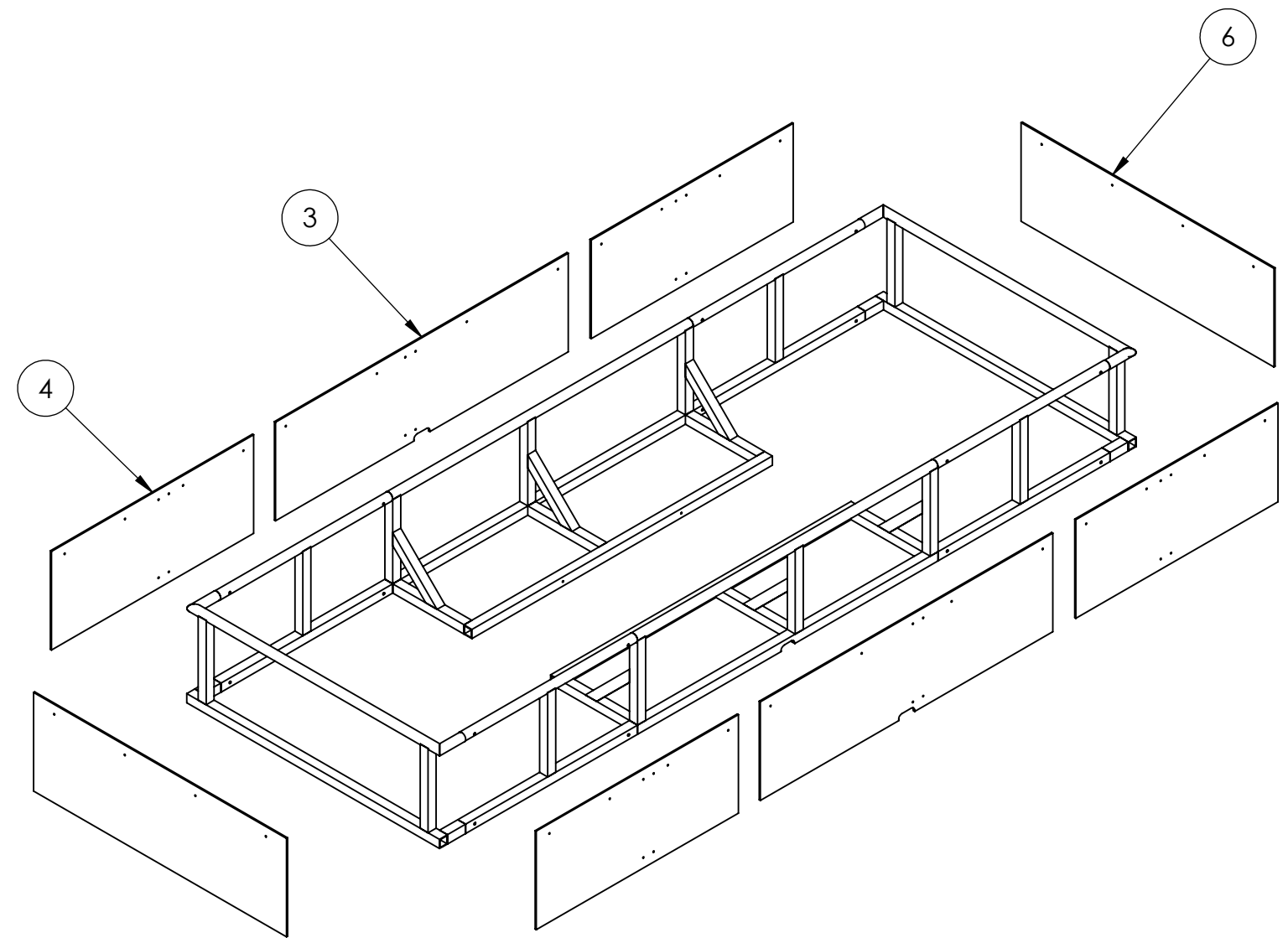
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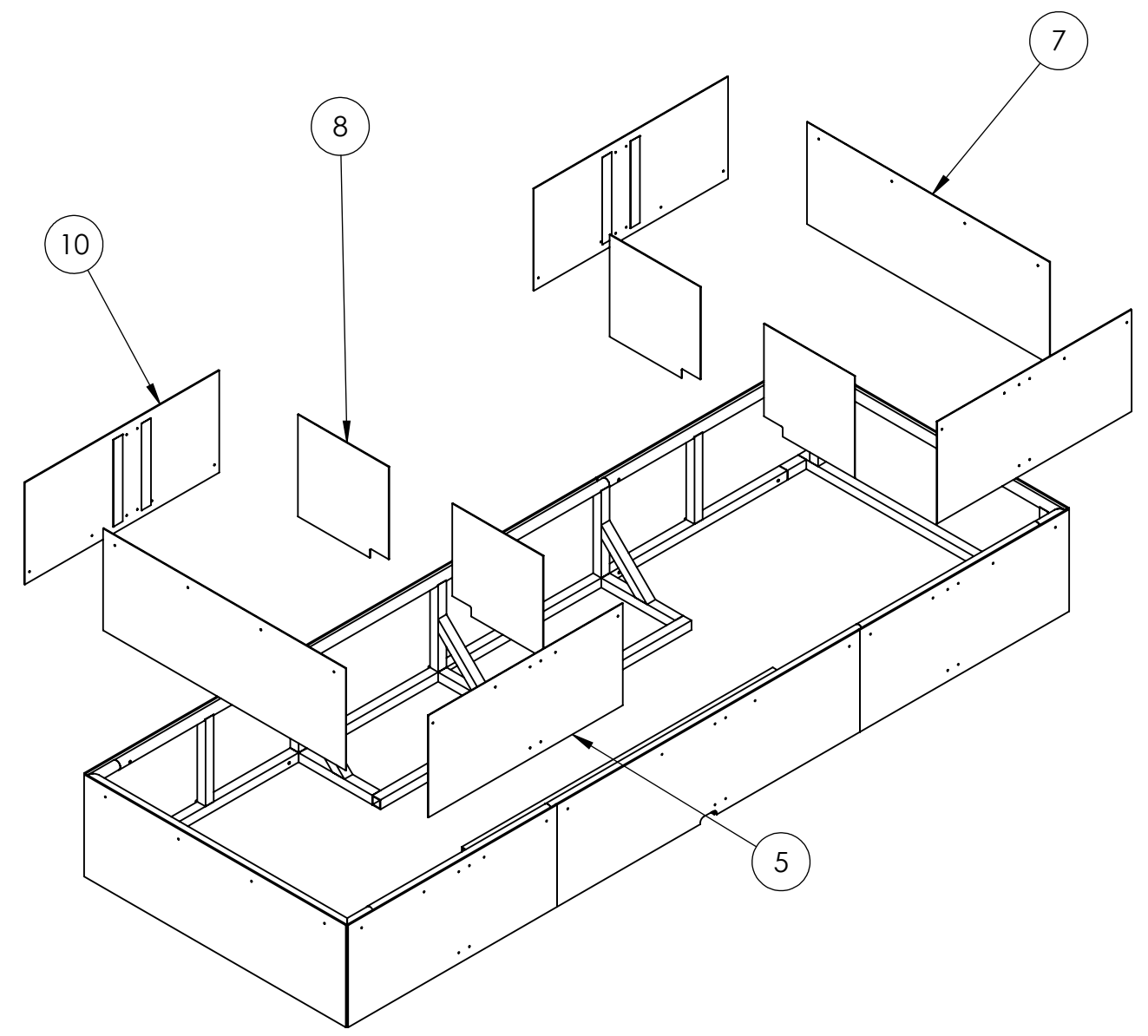
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Notes:



1. Attach Items 3 (qty: 2), 4 (qty: 4), 6 (qty: 2) with cable ties on top of panel and through vertical supports, and hook and loop on bottom.



Notes:

1. Attach Items 5 (qty: 2), 7 (qty: 2), 10 (qty: 2) with cable ties through top holes and around vertical supports.
2. Attach Item 8 (qty: 4) with hook and loop.

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		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
		MATERIAL		ENG APPR.	
		FINISH		MFG APPR.	
NEXT ASSY	USED ON			Q.A.	
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:	
				 	
TITLE: <b>Fence Assembly</b>					
SIZE	DWG. NO.			REV	
<b>B</b>	<b>GE-18110</b>				
SCALE: 1:32 WEIGHT:				SHEET 3 OF 3	

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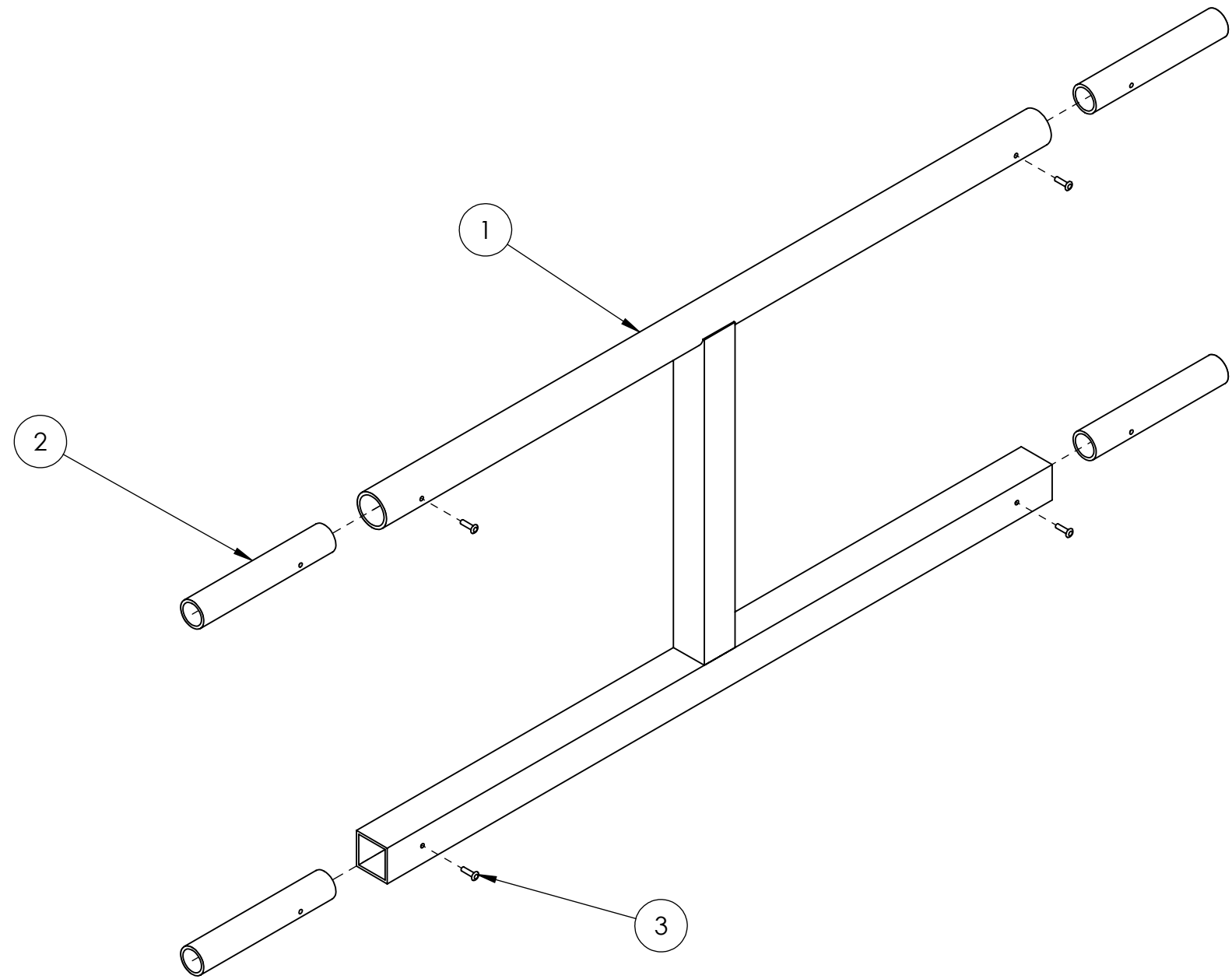
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ITEM NO.	PART NUMBER	DESCRIPTION	Default/Qty
1	GE-18053	Connecting Frame, Fence	1
2	GE-18086	Fence Pin	4
3	rivet_.1875_.376-.5	3/16" Aluminum Rivet, .376-.5 Grip Range	4

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INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
MATERIAL		ENG APPR.	
FINISH		MFG APPR.	
NEXT ASSY	USED ON	Q.A.	
APPLICATION		COMMENTS:	
DO NOT SCALE DRAWING			



TITLE:  
**Connecting Frame Assembly**

SIZE DWG. NO. REV  
**B GE-18111**

SCALE: 1:16 WEIGHT: SHEET 1 OF 1

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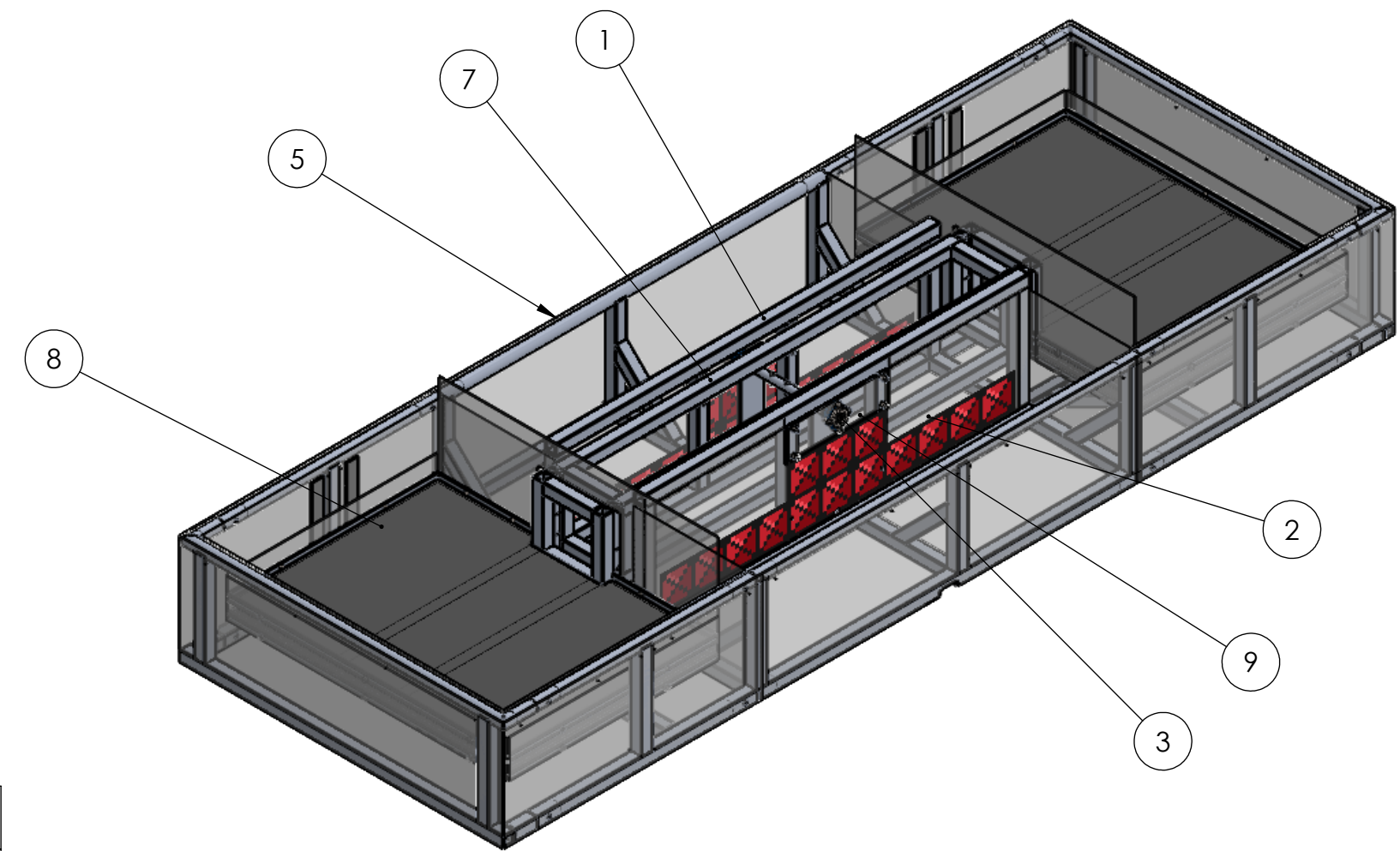
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ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.
1	GE-18016	Switch Frame	1
2	GE-18024	Switch Base Cover Polycarbonate	2
3	GE-18026	Switch/Scale Arm Shaft	1
4	GE-18098	Switch Shaft Spacer	2
5	GE-18110	Fence Assembly	1
6	GE-18113	Switch Fence Brace Assembly	2
7	GE-18114	Switch Arm Assembly	1
8	GE-18121	Basket Assembly	2
9	GE-18122	Bearing/Damper Assembly	2
10	hex_.25_20_2.75_partial	Steel Hex Head Screw, 1/4"-20 x 2-3/4" long, partially threaded	9
11	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	12
12	hex_.25_20_1.5	Steel Hex Head Screw, 1/4"-20 x 1-1/2" long, fully threaded	3

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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			
FINISH			
NEXT ASSY	USED ON		
APPLICATION			
DO NOT SCALE DRAWING			

TITLE: **Switch Assembly**

SIZE **B** DWG. NO. **GE-18112** REV  
 SCALE: 1:32 WEIGHT: SHEET 1 OF 3

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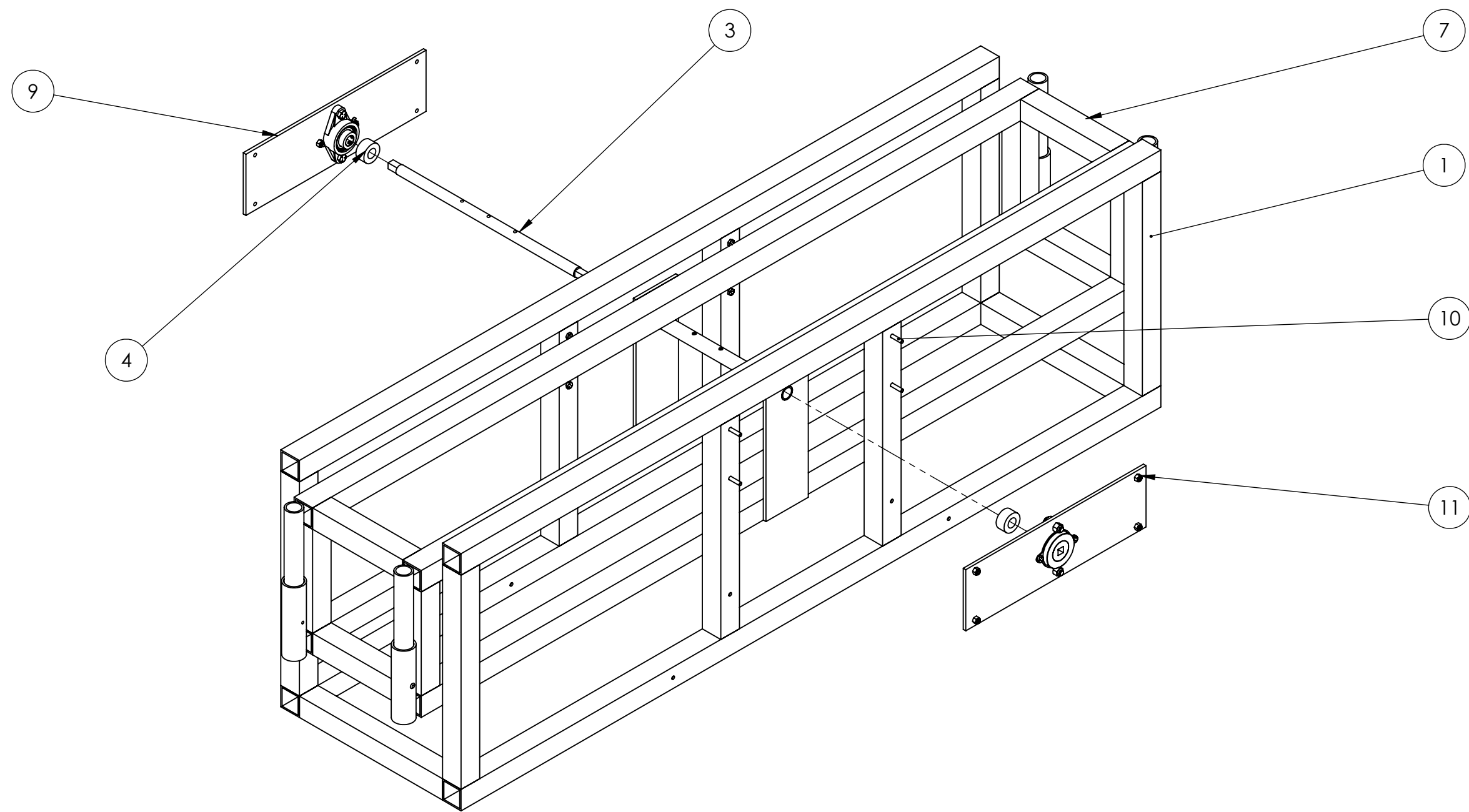
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Notes:

- 1. Slide Item 3 (the shaft) through tube on Item 7. Slide Item 4 (qty: 2) to either end of Item 3.
- 2. Align the shaft to the bearing and dampers of Item 9. Bolt Item 9 (qty: 2) to Item 1 using Items 10 (qty: 8) and 11 (qty: 8).

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		MATERIAL	ENG APPR.		<b>B</b> <b>GE-18112</b>
NEXT ASSY	USED ON	FINISH	MFG APPR.		SCALE: 1:32 WEIGHT: SHEET 2 OF 3
APPLICATION		DO NOT SCALE DRAWING	Q.A.		
			COMMENTS:		

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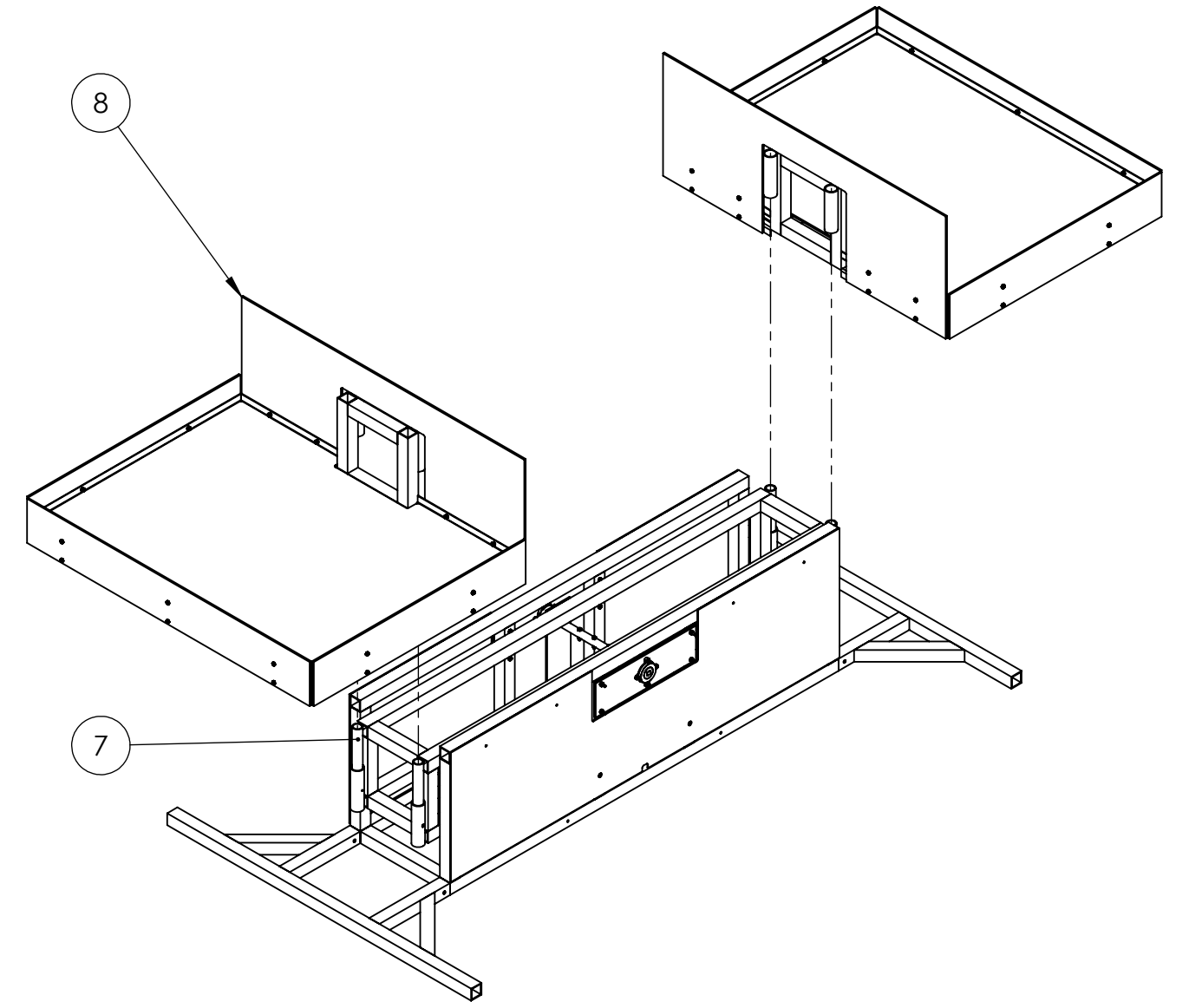
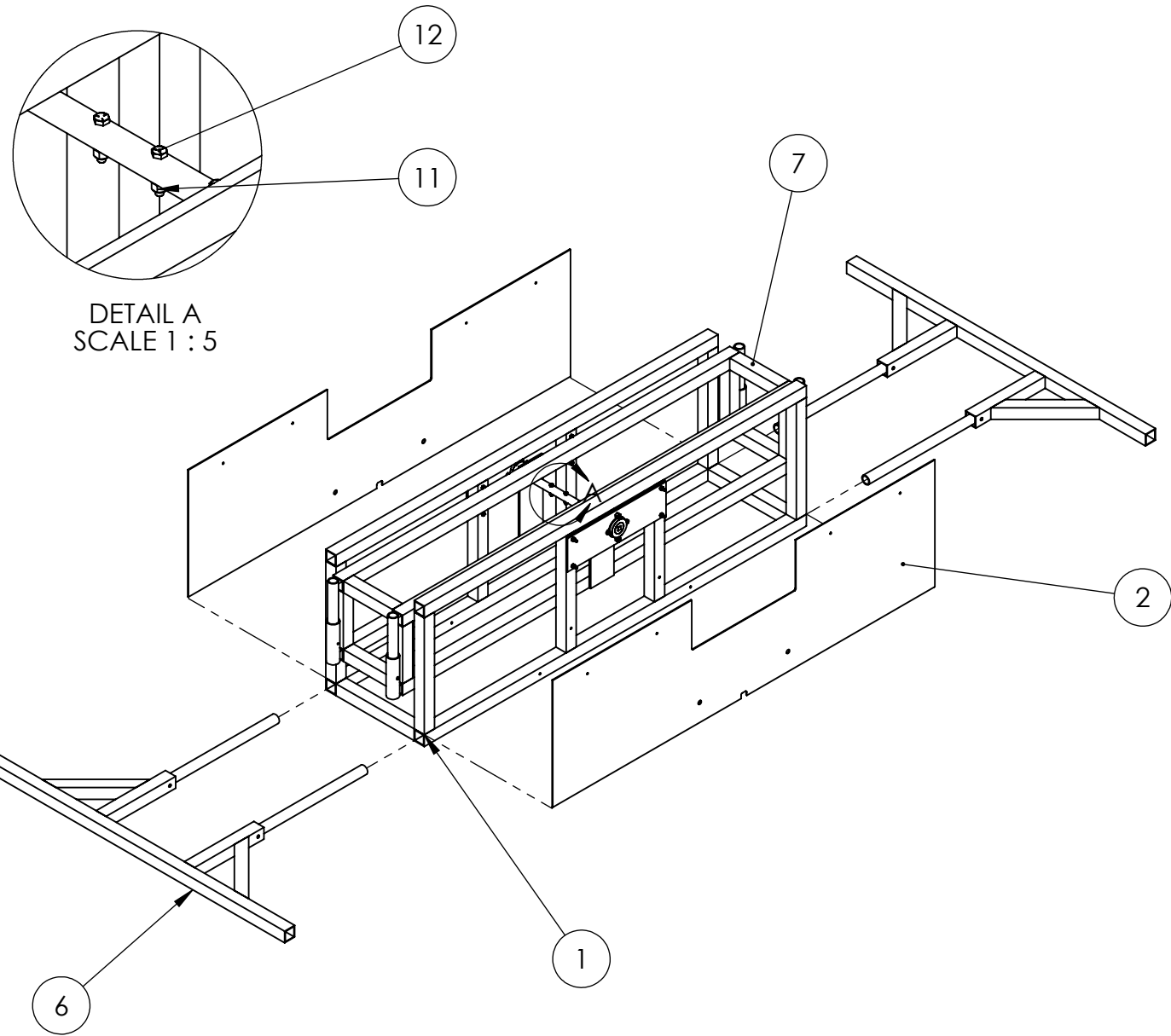
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- Notes:
1. Slide Item 8 (qty: 2) onto the pins on Item 7.
  2. (Not pictured) Build Item 5 around the assembly, following assembly drawings for GE-18110.

- Notes:
1. Align Item 3 (the shaft) through the tube of Item 7 and secure alignment using Items 11 (qty: 3) and 12 (qty: 3).
  2. Slide Item 6 (qty: 2) into Item 1.
  3. Attach Items 2 to Item 1 using cable ties.

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		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
		MATERIAL		ENG APPR.	
		FINISH		MFG APPR.	
NEXT ASSY	USED ON			Q.A.	
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:	
				 	
				TITLE:	
				Switch Assembly	
SIZE	DWG. NO.			REV	
<b>B</b>	GE-18112				
SCALE: 1:32 WEIGHT:			SHEET 3 OF 3		

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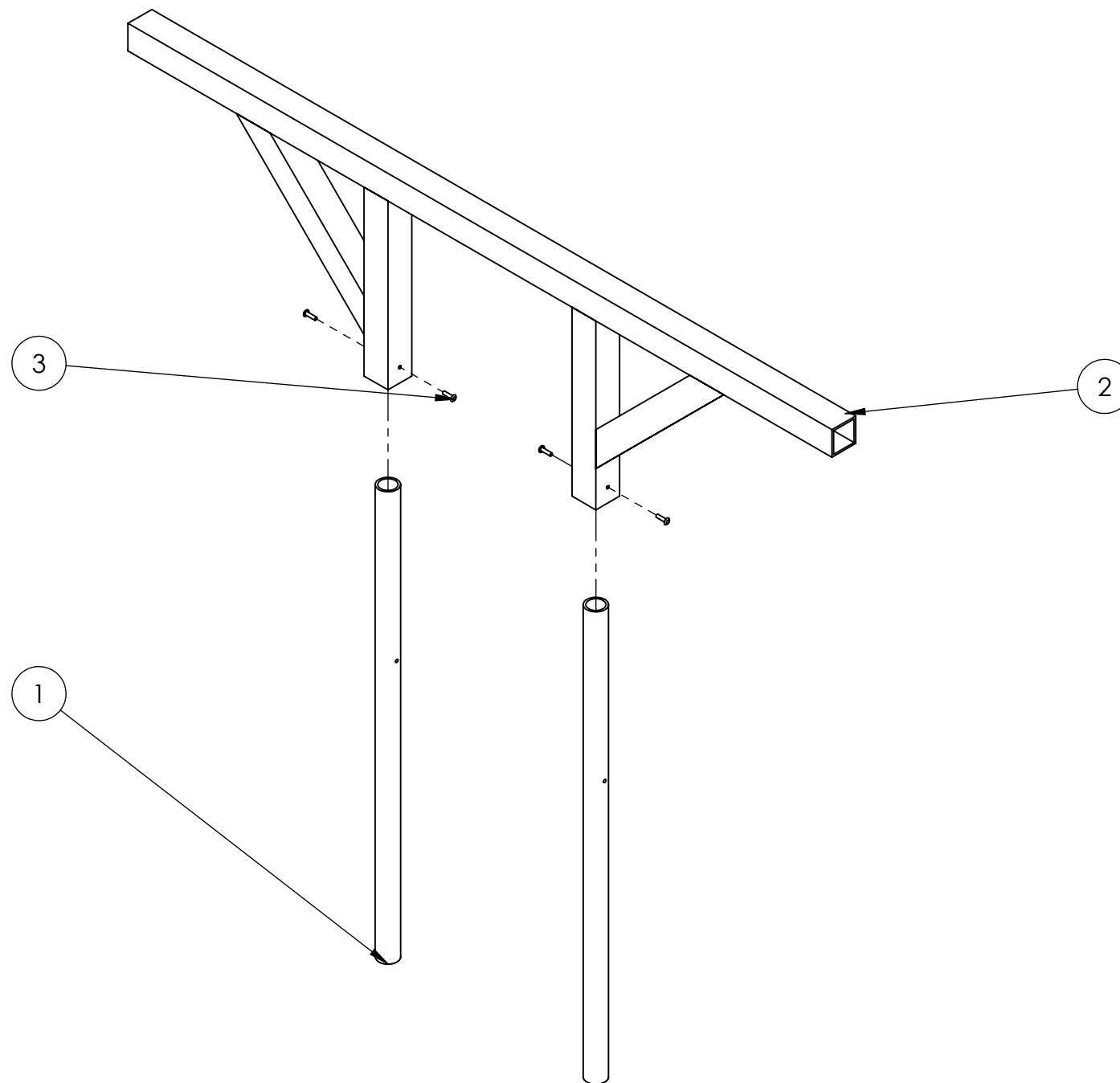
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ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.
1	GE-18088	Switch Fence Brace Pin	2
2	GE-18087	Switch Fence Brace	1
3	rivet_.1875_.376-.5	3/16" Aluminum Rivet, .376-.5 Grip Range	4

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INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
MATERIAL		ENG APPR.	
FINISH		MFG APPR.	
NEXT ASSY	USED ON	Q.A.	
APPLICATION		COMMENTS:	
DO NOT SCALE DRAWING			



TITLE:  
**Switch Fence  
 Brace Assembly**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18113</b>	
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

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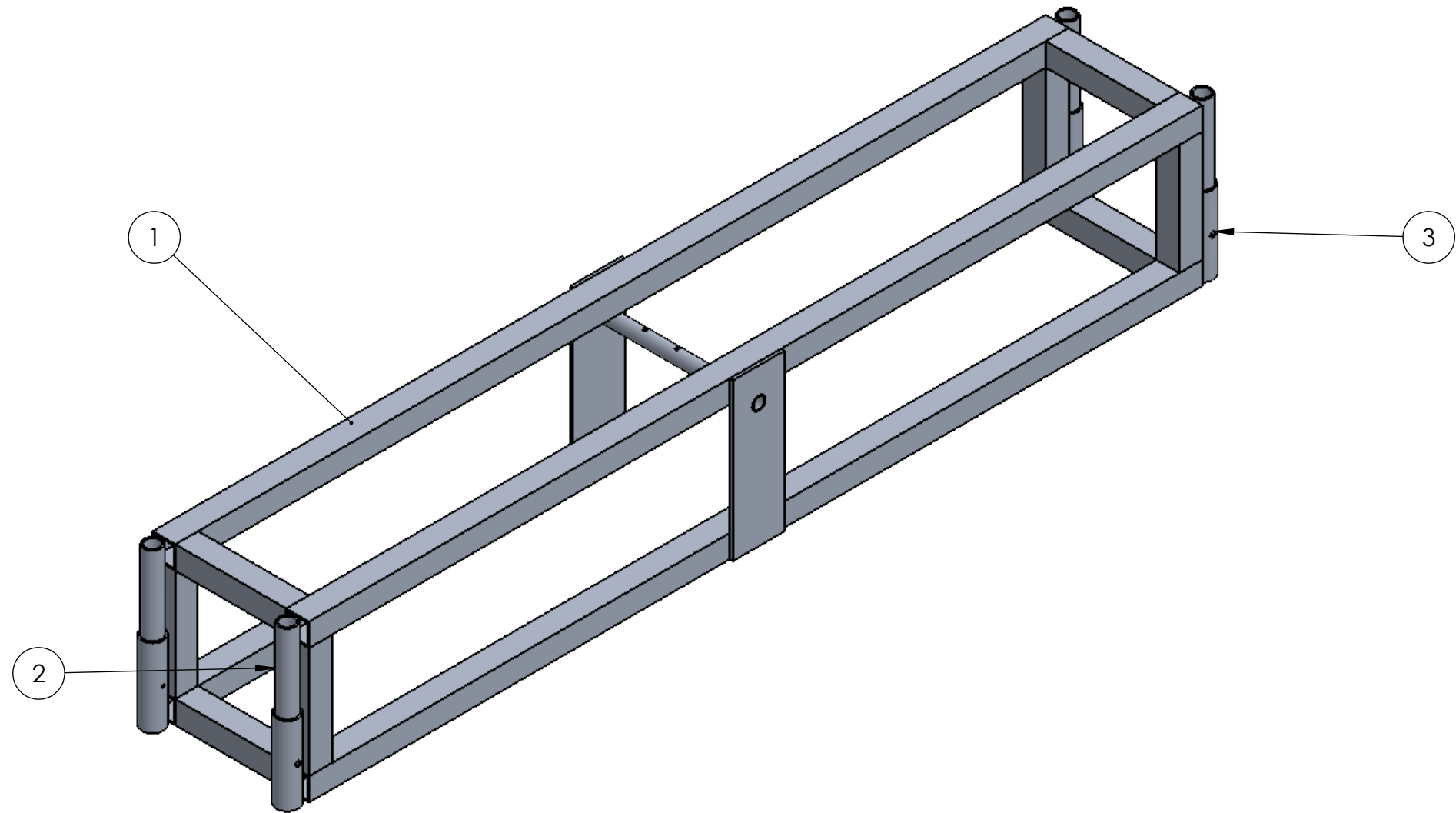
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ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.
1	GE-18013	Switch Arm	1
2	GE-18028	Plate Mount Pin	4
3	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	4

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INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
MATERIAL		ENG APPR.	
FINISH		MFG APPR.	
NEXT ASSY	USED ON	Q.A.	
APPLICATION		COMMENTS:	
DO NOT SCALE DRAWING			

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

TITLE:  
**Switch Arm Assembly**

SIZE **B** DWG. NO. **GE-18114** REV

SCALE: 1:8 WEIGHT: SHEET 1 OF 2

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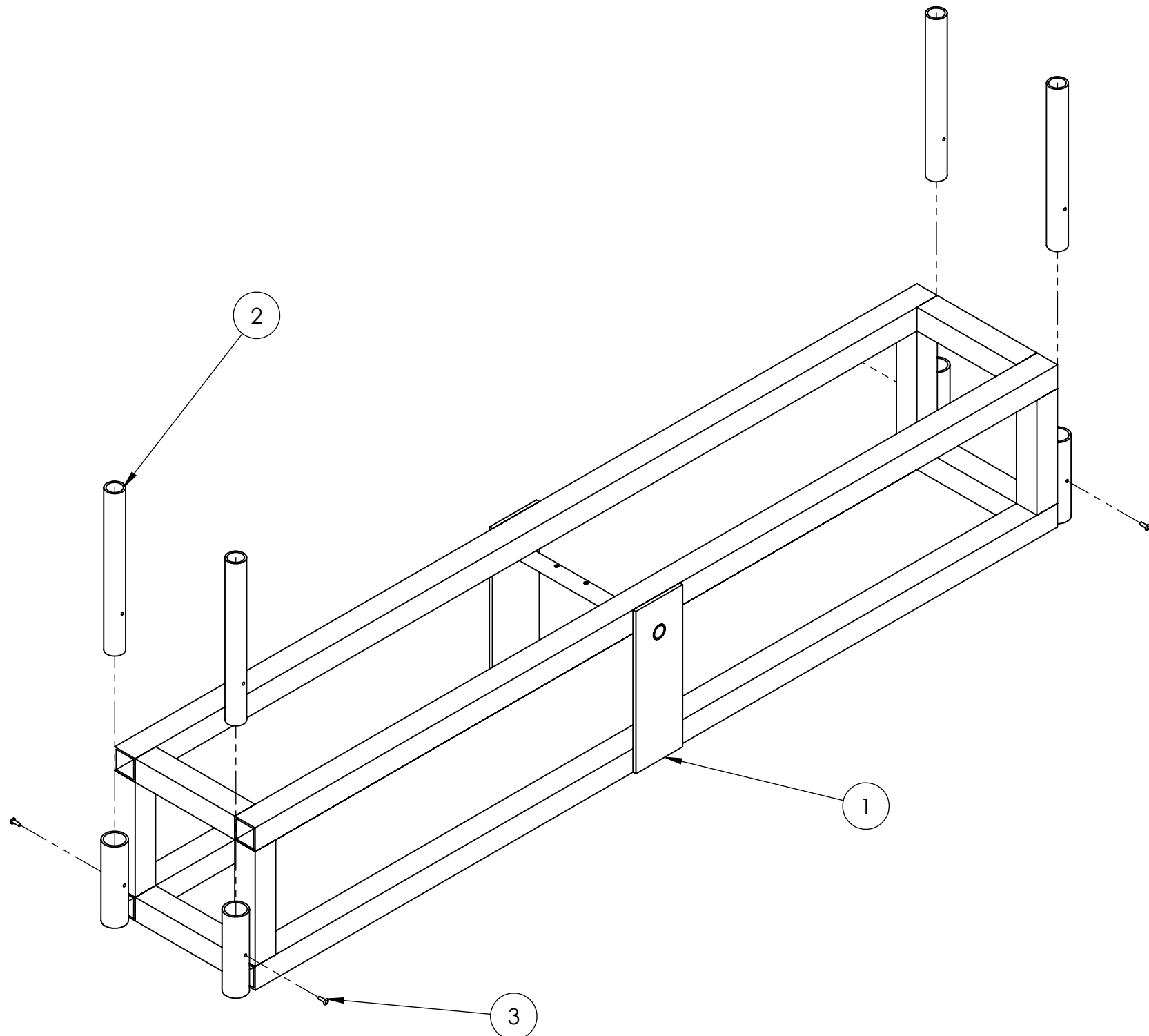
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Notes:  
 1. Fasten Item 2 (qty: 4) to Item 1, using Item 3 (qty: 4).

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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		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		TITLE:
		MATERIAL	ENG APPR.		<h1>Switch Arm Assembly</h1>
		FINISH	MFG APPR.		
NEXT ASSY	USED ON	APPLICATION	COMMENTS:		<b>B</b> GE-18114
		DO NOT SCALE DRAWING			SCALE: 1:12 WEIGHT: SHEET 2 OF 2

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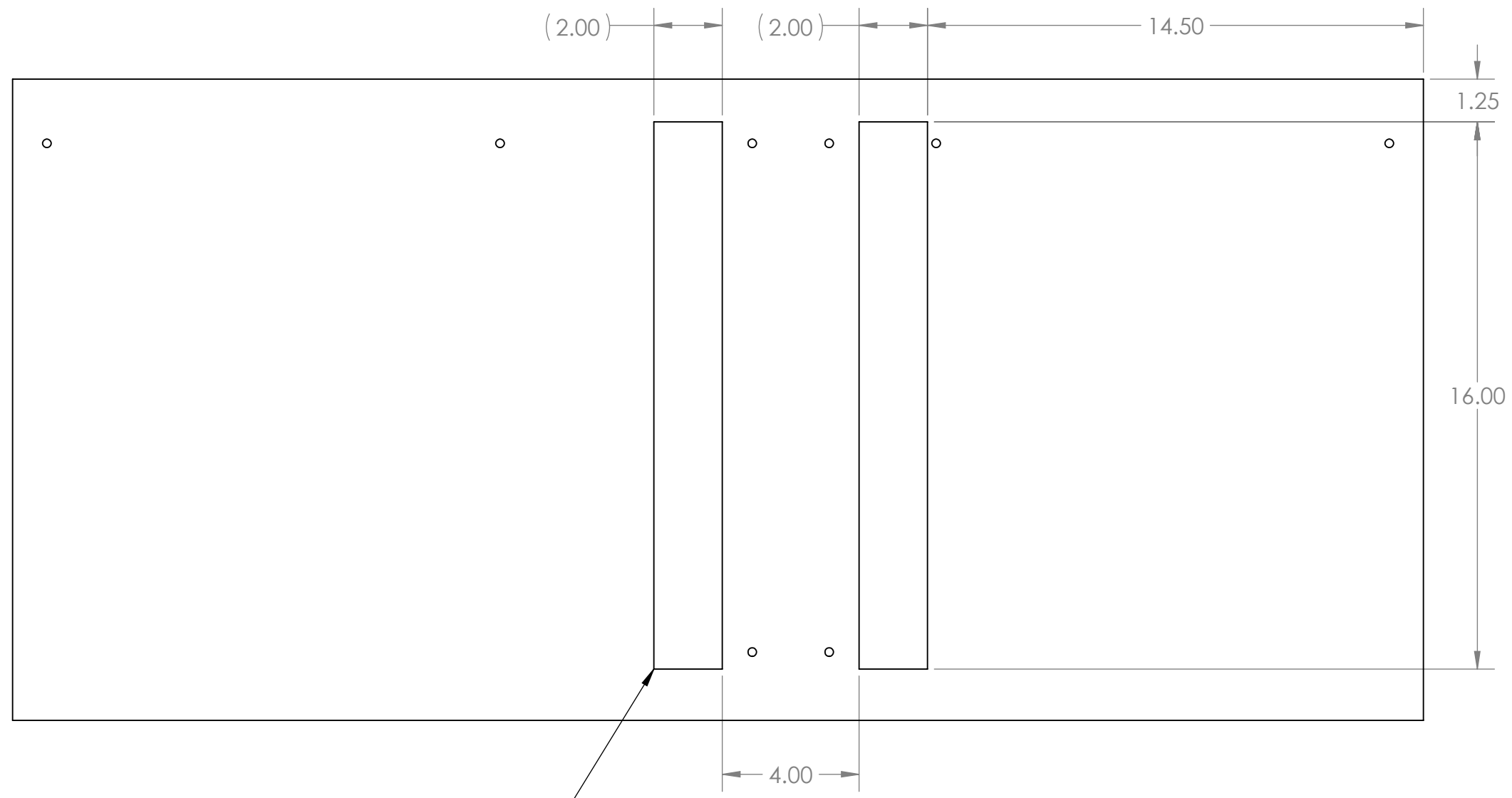


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- Notes:
1. Retroreflective tape to be applied to both sides of GE-18082.
  2. It is expected that the top and bottom of the tape will be partially obscured during assembly. The amount of tape visible may also vary with viewing angle.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18082	Fence Polycarb, Inner Side	1
2	VisionTape	2" wide Retroreflective tape	4

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

TITLE:  
**Vision Fence Polycarbonate**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18115</b>	

SCALE: 1:4 WEIGHT: SHEET 1 OF 1

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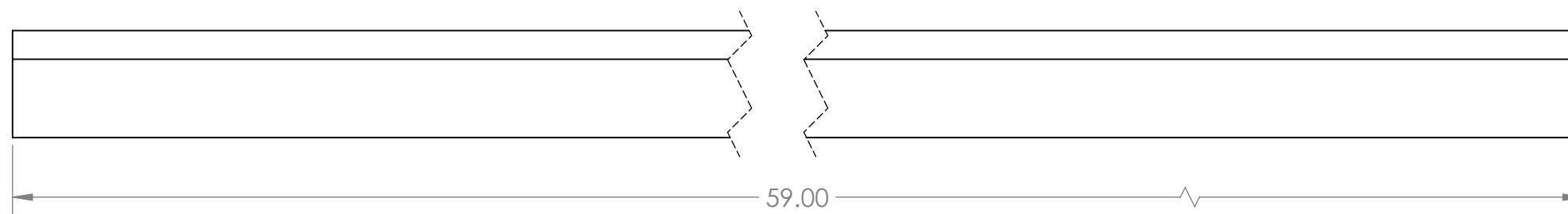
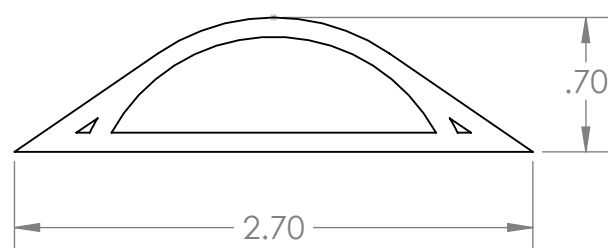
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Notes:

- 1. Description: Cable Shield Cord Cover
- 2. Source: Electriduct
- 3. Item #: CSX-3 Black
- 4. Equivalent substitutions allowed

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		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	
		MATERIAL		ENG APPR.	
		FINISH		MFG APPR.	
NEXT ASSY	USED ON			Q.A.	
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:	
			 		
TITLE: Long Wire Protector					
SIZE	DWG. NO.			REV	
<b>B</b>	GE-18116				
SCALE: 1:1		WEIGHT:		SHEET 1 OF 1	

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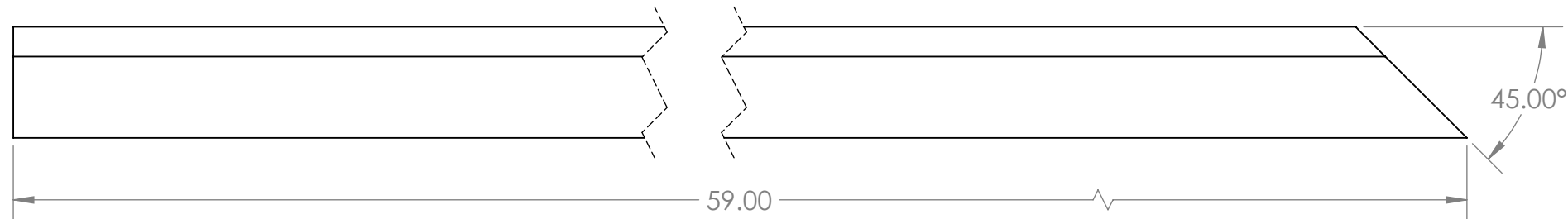
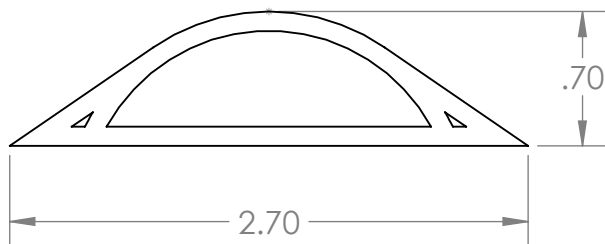
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- Notes:
1. Description: Cable Shield Cord Cover
  2. Source: Electriduct
  3. Item #: CSX-3 Black
  4. Equivalent substitutions allowed

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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		
		FINISH		
NEXT ASSY	USED ON			
APPLICATION		DO NOT SCALE DRAWING		



TITLE:		
Long Mitered Wire Protector		
SIZE	DWG. NO.	REV
<b>B</b>	GE-18117	
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

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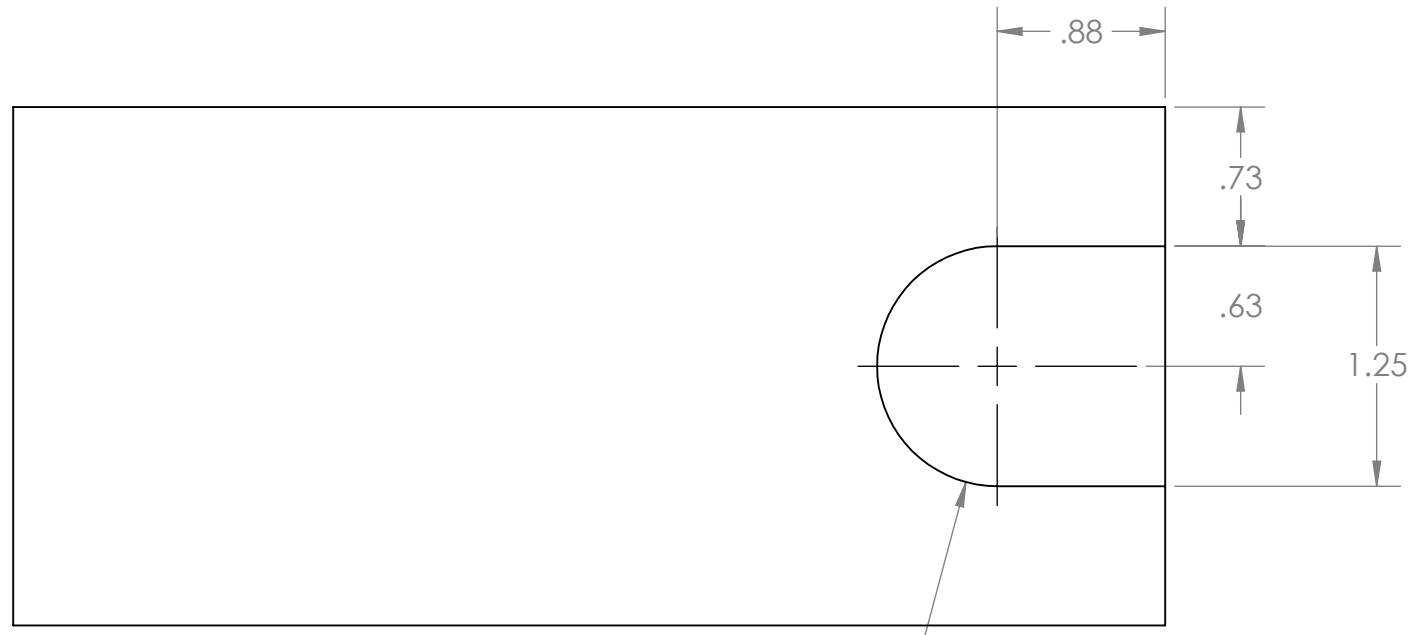
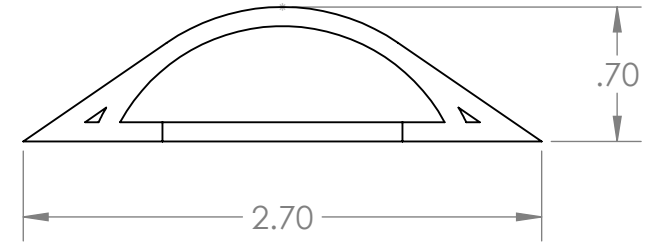
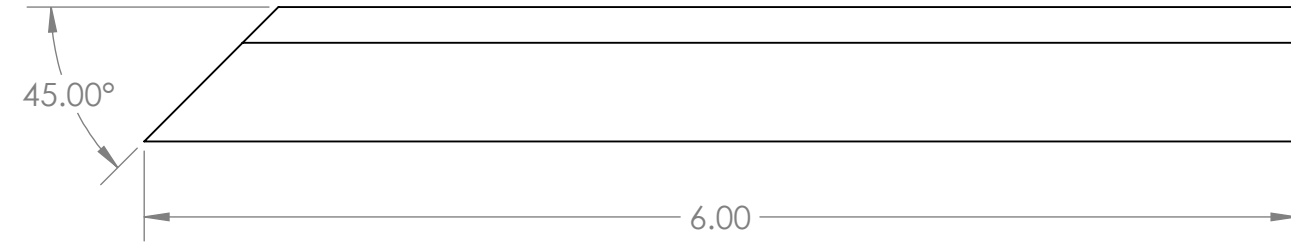
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- Notes:
1. Description: Cable Shield Cord Cover
  2. Source: Electriduct
  3. Item #: CSX-3 Black
  4. Equivalent substitutions allowed

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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		



TITLE:		
Short Mitered Wire Protector		
SIZE	DWG. NO.	REV
<b>B</b>	GE-18118	
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

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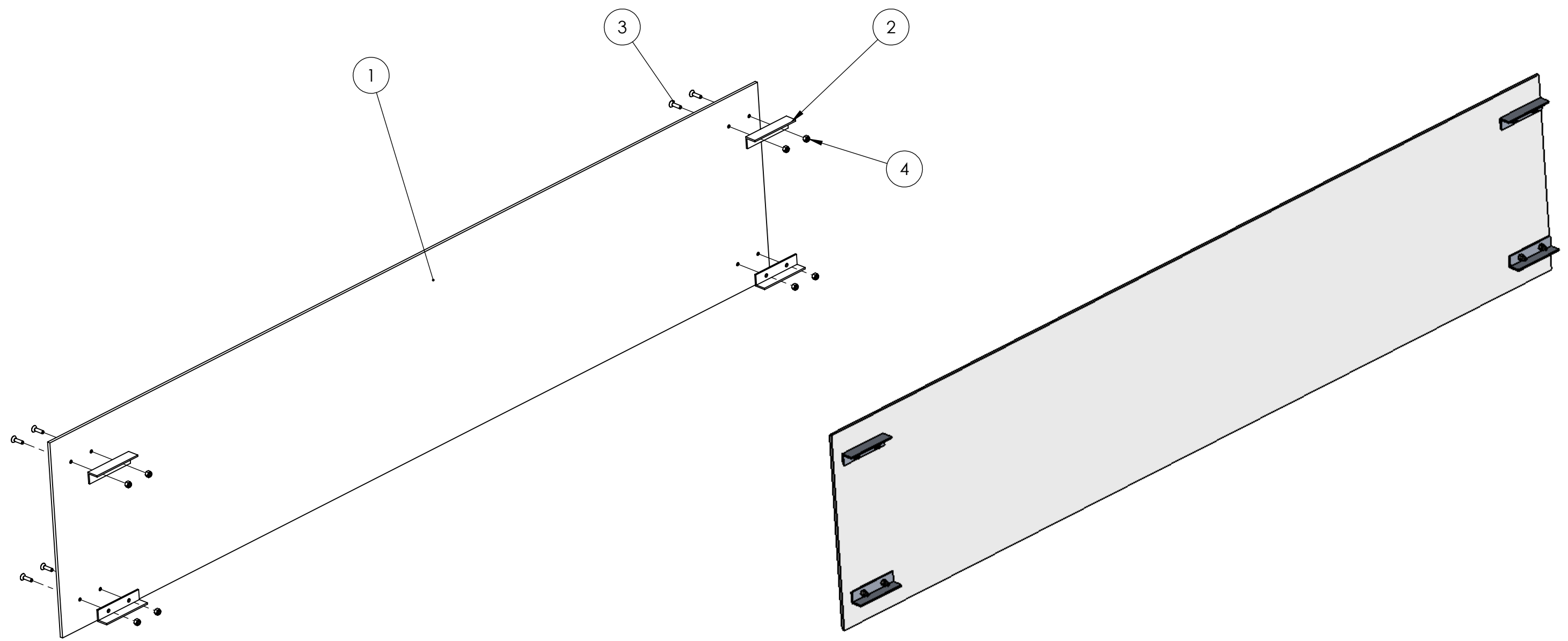
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18020	Scale Side Cover Polycarbonate	1
2	GE-18076	Scale Angle Brace	4
3	flat_hex_.25_20_1	Steel Hex Flat Head Screw, 1/4"-20 x 1" long, fully threaded	8
4	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	8

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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		

TITLE: **Scale Side Cover Polycarbonate Sub Assembly**

SIZE **B** DWG. NO. **GE-18119** REV  
 SCALE: 1:8 WEIGHT: SHEET 1 OF 1

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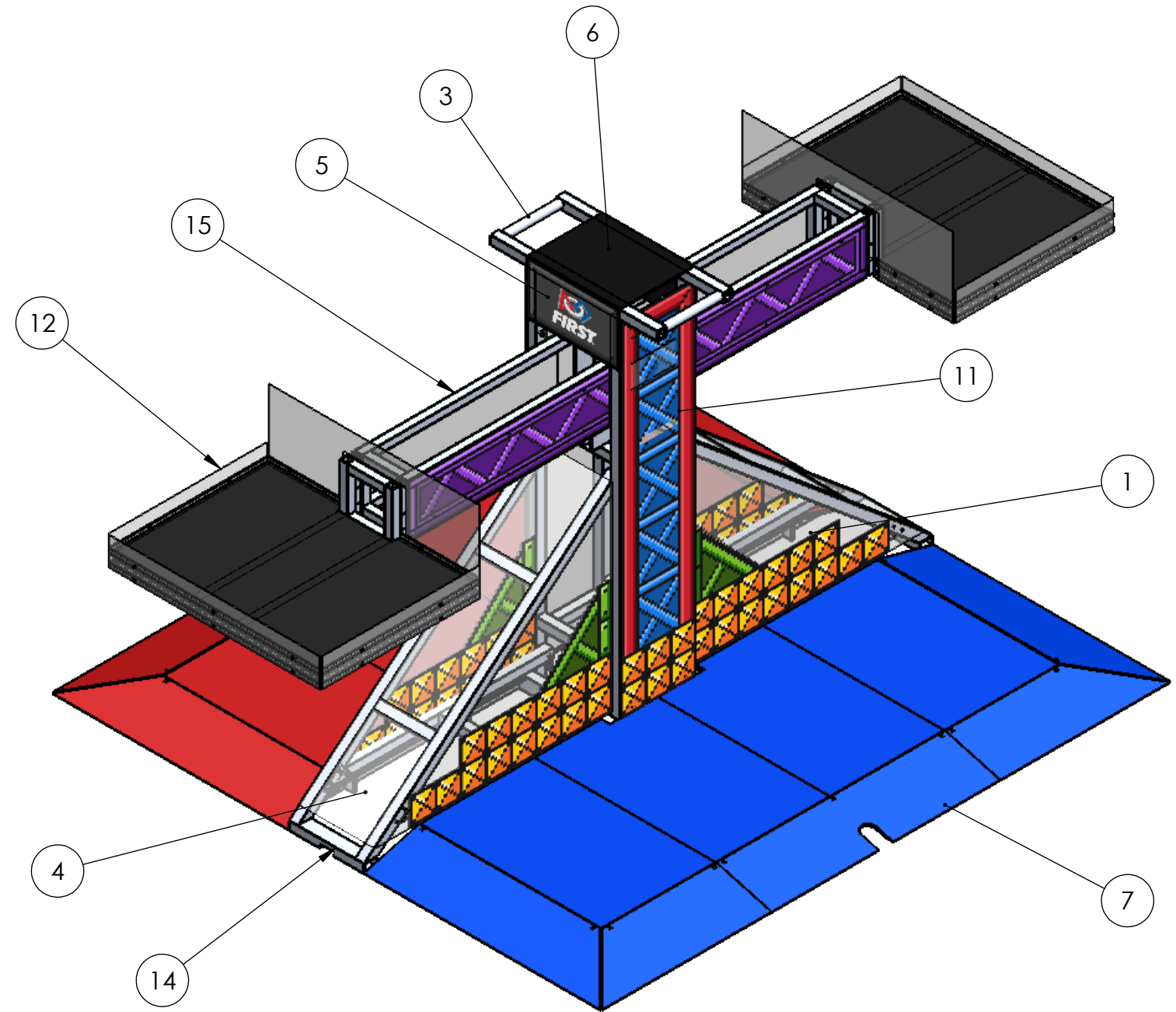
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ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.
1	GE-18022	Scale Outrigger Side Cover Polycarbonate	4
2	GE-18026	Switch/Scale Arm Shaft	1
3	GE-18054	Scale Frame	1
4	GE-18055	Outrigger Top Polycarbonate	2
5	GE-18057	Scale Side HDPE	2
6	GE-18058	Scale Top HDPE	1
7	GE-18060	Platform	2
8	GE-18075	Scale Base Outrigger	2
9	GE-18099	Scale Shaft Spacer	2
10	GE-18106	Scale Lockout Bar	2
11	GE-18119	Scale Side Cover Polycarbonate Sub Assembly	2
12	GE-18121	Basket Assembly	2
13	GE-18122	Bearing/Damper Assembly	2
14	GE-18123	Outrigger Assembly	2
15	GE-18125	Scale Arm Assembly	1
16	hex_.5_13_5	Steel Hex Head Screw, 1/2"-13 x 5" long, fully threaded	4
17	hexnut_.5_13	Steel Hex Nut, 1/2"-13	8
18	hex_.25_20_1.5	Steel Hex Head Screw, 1/4"-20 x 1-1/2" long, fully threaded	3
19	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	15
20	hex_.25_20_4.5_partial	Steel Hex Head Screw, 1/4"-20 x 4-1/2" long, partially threaded	4
21	flat_phil_.25_20_2.75	Steel Phillips Flat Head Screw, 1/4"-20 x 2-3/4" long, fully threaded	8
22	flat_phil_.25_20_5	Steel Phillips Flat Head Screw, 1/4"-20 x 5" long, fully threaded	8
23	wing_.25_20	Steel Wing Nut, 1/4"-20, 31/64" Base Diameter	8
24	washer_split_.26_.487	Steel Split Lock Washer for 1/4" Screw	8



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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:

# Scale Assembly

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18120</b>	
SCALE: 1:48	WEIGHT:	SHEET 1 OF 5

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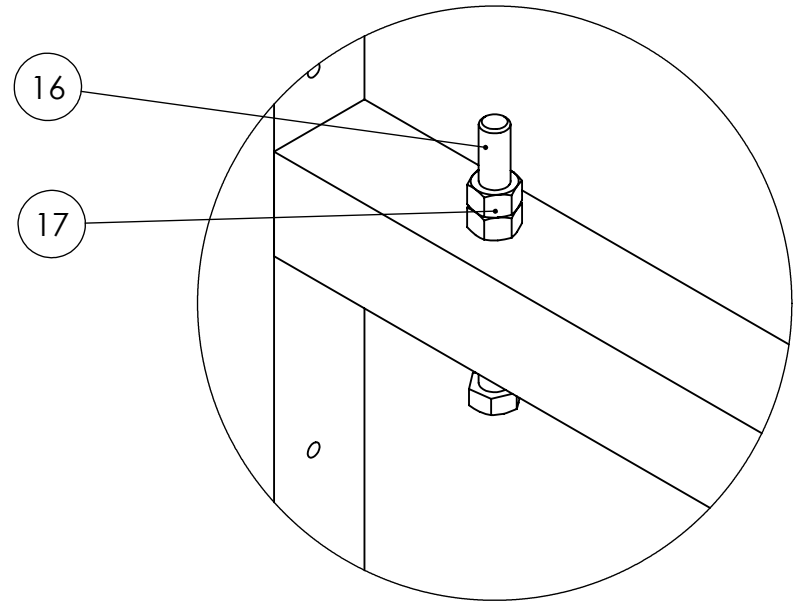
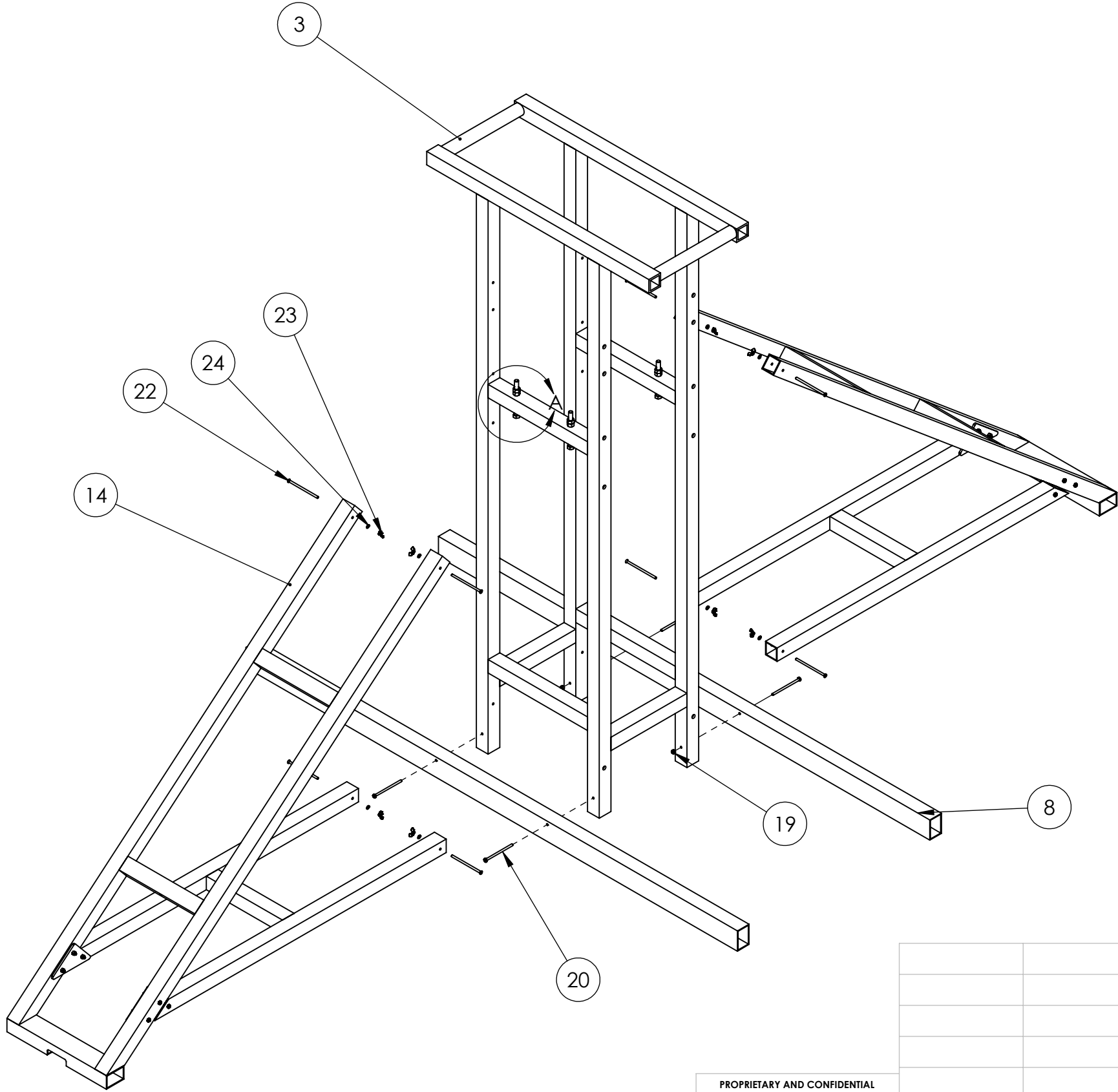
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DETAIL A  
SCALE 1 : 3

Notes:

1. Attach Items 8 (qty: 2) to Item 3 using Items 19 and 20.
2. Attach Items 14 (qty: 2) to Item 3 using Items 22, 23 and 24.
3. Bolt Items 16 (qty: 4) and 17 (qty: 8) through Item 3.

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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		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		TITLE:
		MATERIAL	ENG APPR.		Scale Assembly
		FINISH	MFG APPR.		SIZE DWG. NO. REV
NEXT ASSY	USED ON		Q.A.		B GE-18120
APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		SCALE: 1:48 WEIGHT: SHEET 2 OF 5

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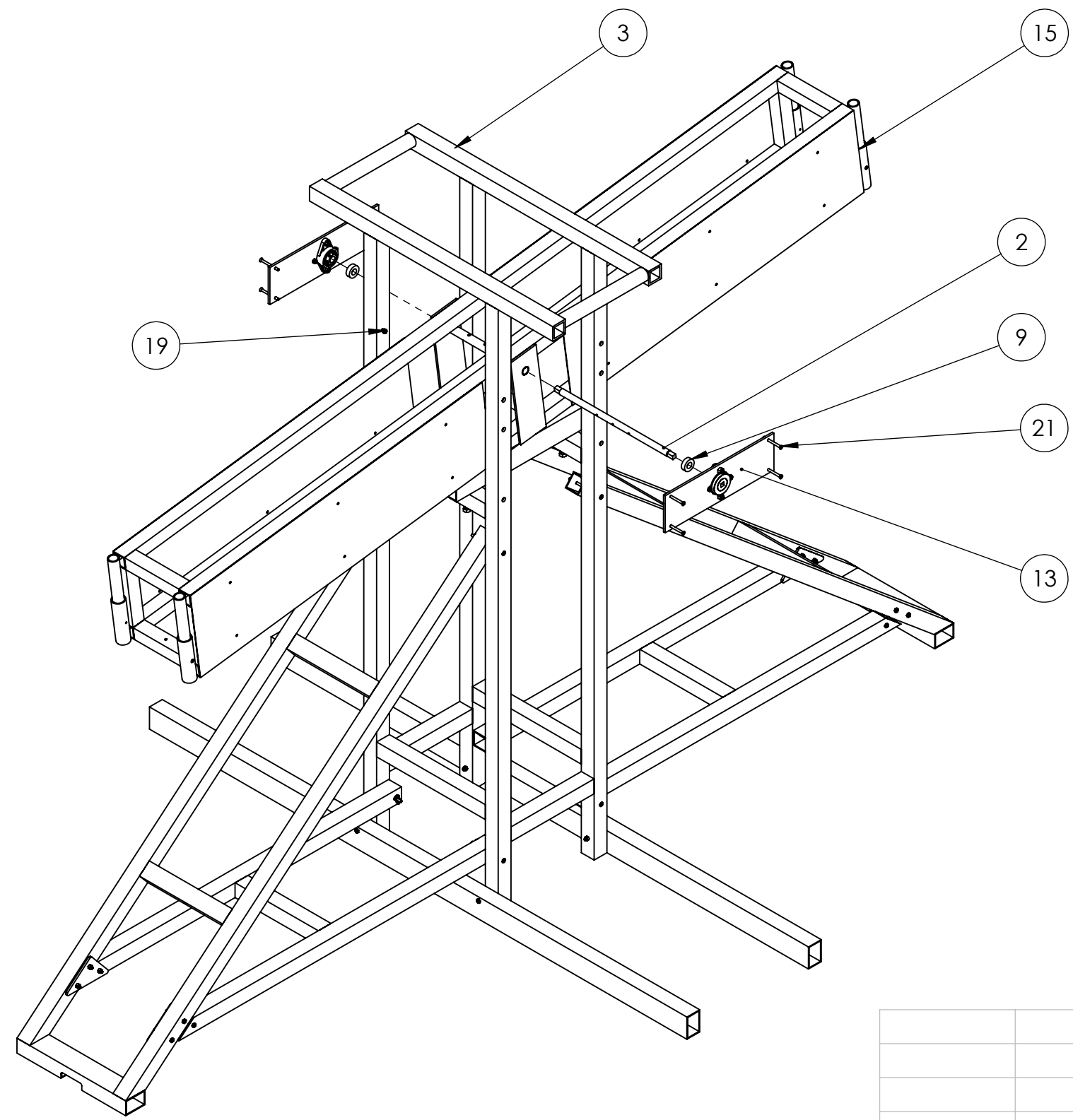
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- Notes:
- Slide item 2 (the shaft) through the tube on Item 15. Slide Items 9 (qty: 2) to either side of Item 2.
  - Align the shaft to the bearings and dampers of Item 13 (qty: 2). Bolt Items 13 to Item 3 using Items 21 and 23. Please note that Items 13 go to the inside of the frame of Item 3.

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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		
INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED		TITLE:
MATERIAL		ENG APPR.		<b>Scale Assembly</b>
FINISH		MFG APPR.		SIZE DWG. NO. REV
NEXT ASSY	USED ON	Q.A.		<b>B GE-18120</b>
APPLICATION		COMMENTS:		SCALE: 1:48 WEIGHT: SHEET 3 OF 5
DO NOT SCALE DRAWING				

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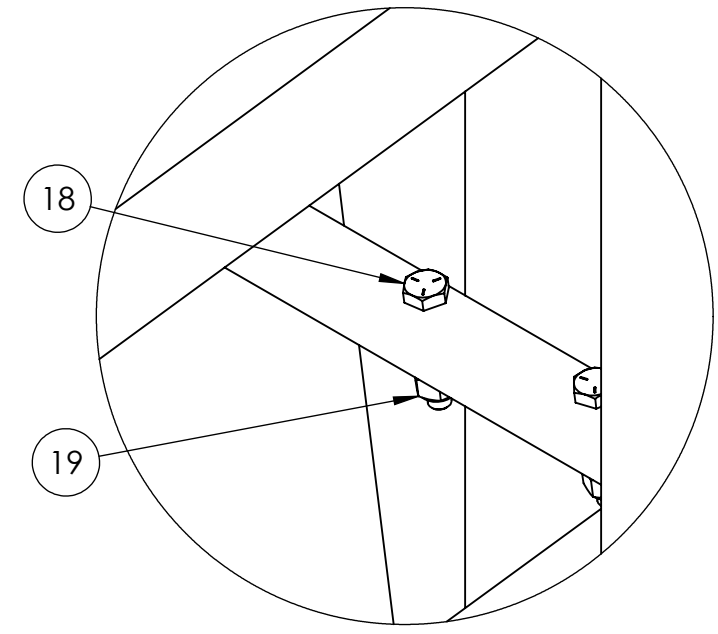
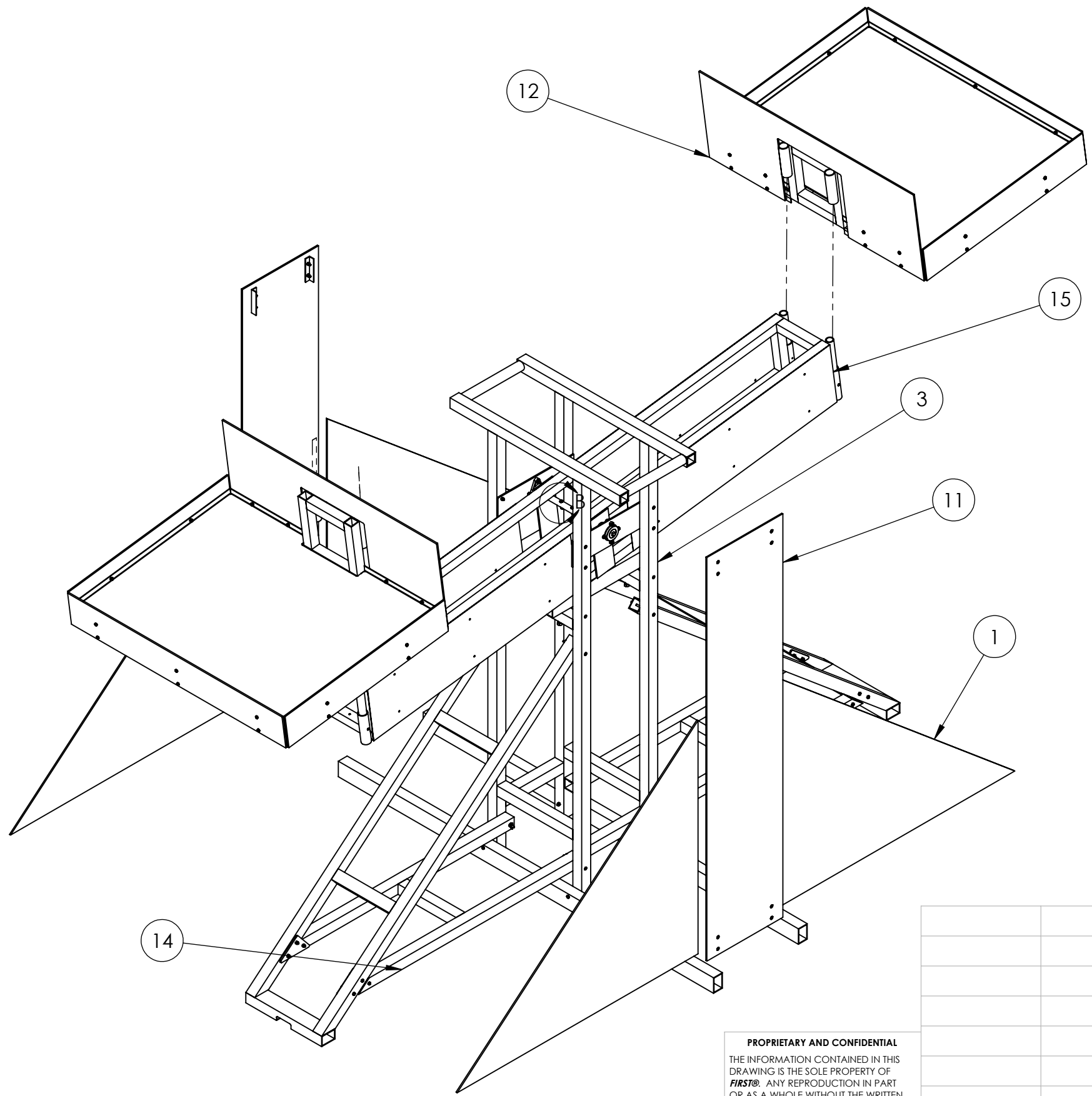
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DETAIL B  
SCALE 1 : 2



Notes:

1. Align Item 2 (the shaft) through the tube of Item 17 and secure alignment using Items 18 (qty: 3) and 19 (qty: 3).
2. Slide Items 12 (qty: 2) onto the pins of Item 15.
3. Attach Items 11 to Item 3 using hook and loop.
4. Attach Items 1 to Items 14 using hook and loop.

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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:		
Scale Assembly		
SIZE	DWG. NO.	REV
<b>B</b>	GE-18120	
SCALE: 1:48	WEIGHT:	SHEET 4 OF 5

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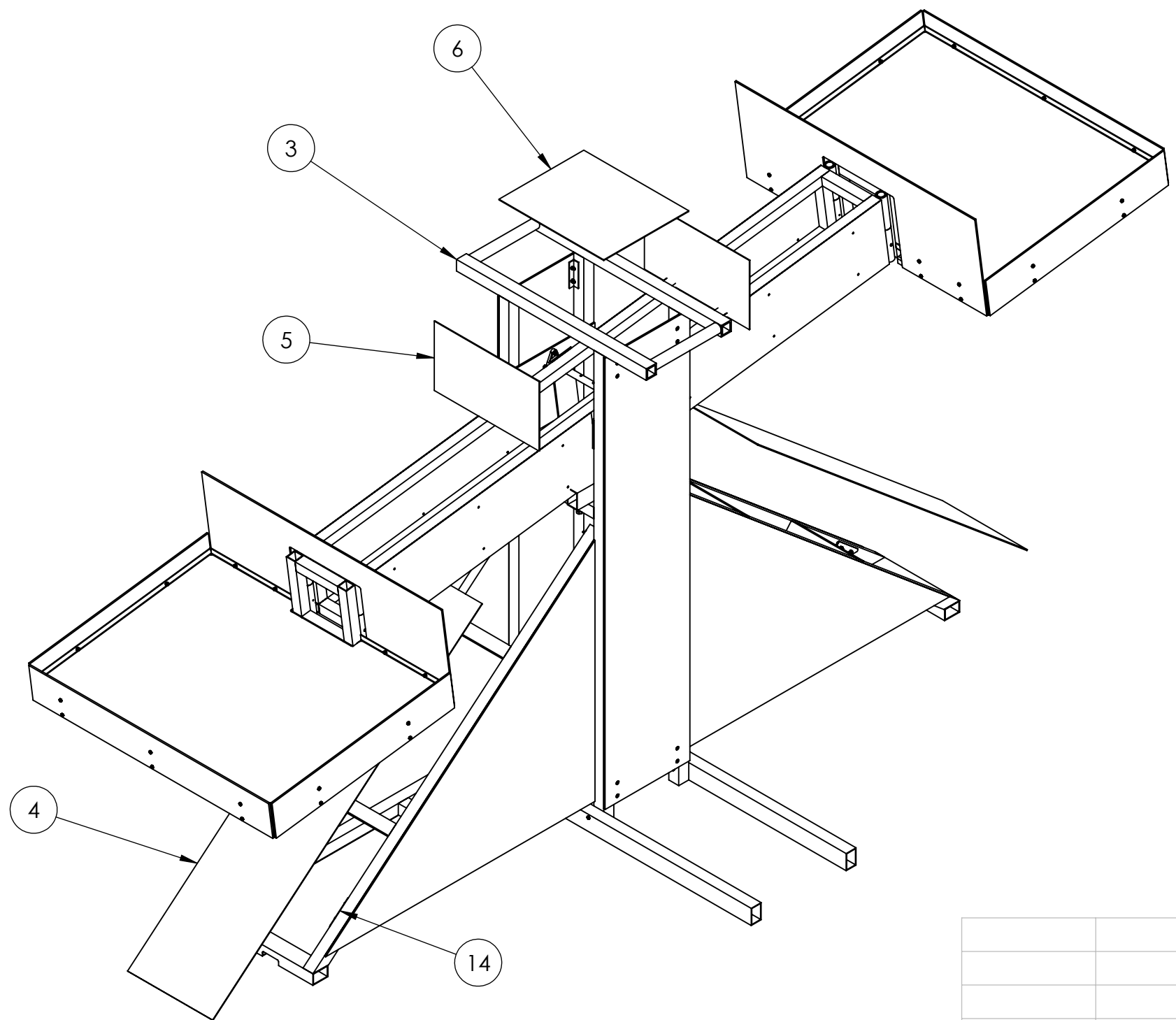
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Notes:

- 1. Attach Items 5 and 6 to Item 3 using hook and loop.
- 2. Attach items 4 to Items 16 using hook and loop.
- 3. Build Items 7 (not shown) around the base of the Scale Assembly. See Assembly Drawing GE-18060 for details.

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



TITLE:  
**Scale Assembly**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18120</b>	

SCALE: 1:48 WEIGHT: SHEET 5 OF 5

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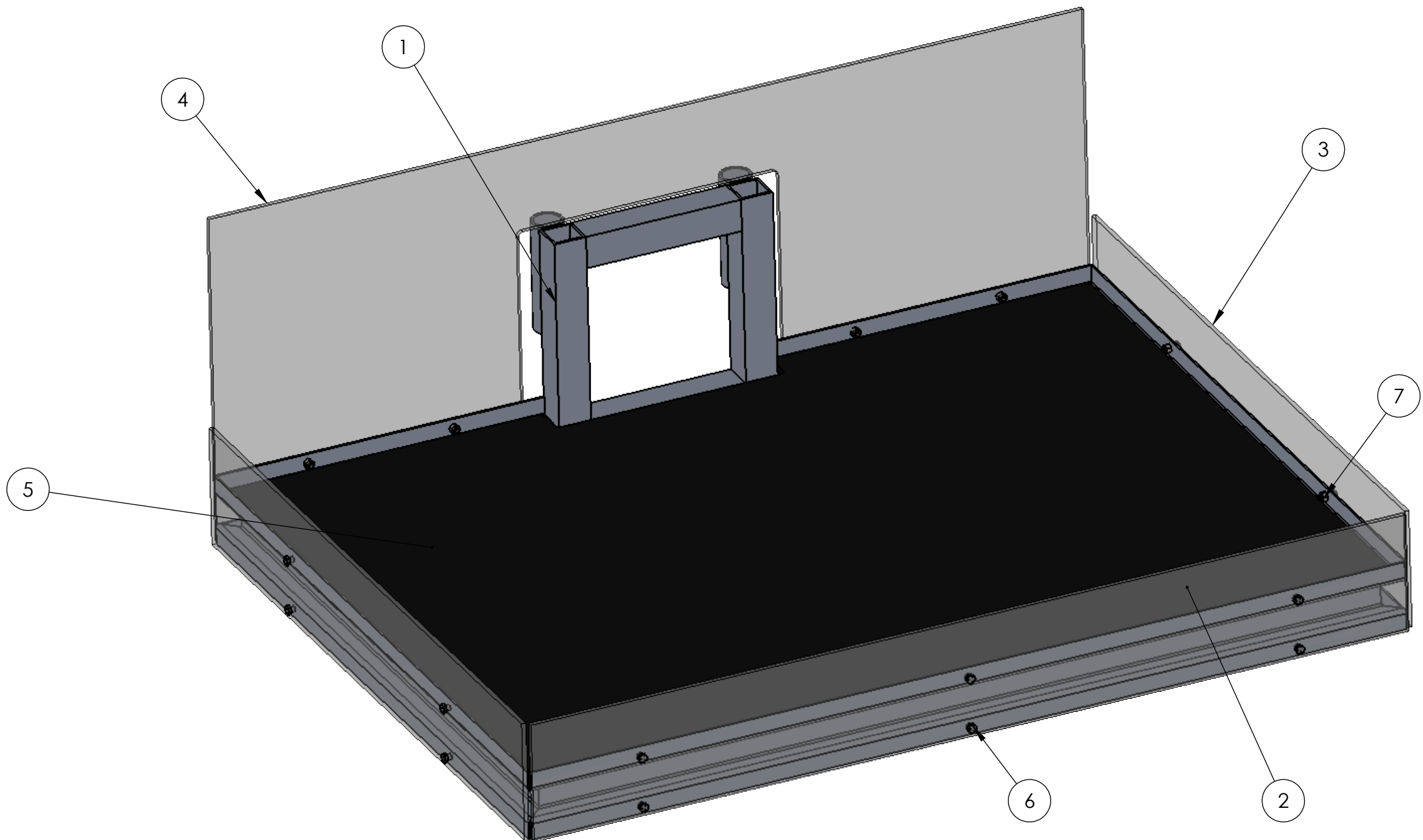
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18007	Scale Plate	1
2	GE-18018	Plate Front Wall	1
3	GE-18019	Plate Side Wall	2
4	GE-18017	Plate Back Wall	1
5	GE-18021	Scale and Switch Basket, Plate	1
6	hex_.25_20_.75	Steel Hex Head Screw, 1/4"-20 x 3/4" long, fully threaded	22
7	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	22

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		TOLERANCES:	CHECKED	
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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		
		FINISH		
NEXT ASSY	USED ON			
APPLICATION		DO NOT SCALE DRAWING		

TITLE: **Basket Assembly**

SIZE **B** DWG. NO. **GE-18121** REV  
 SCALE: 1:6 WEIGHT: SHEET 1 OF 2

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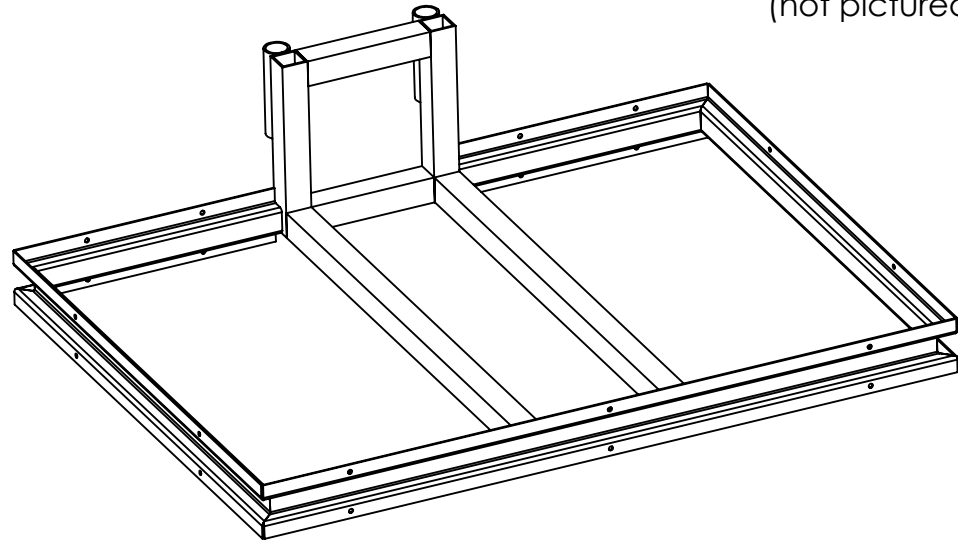
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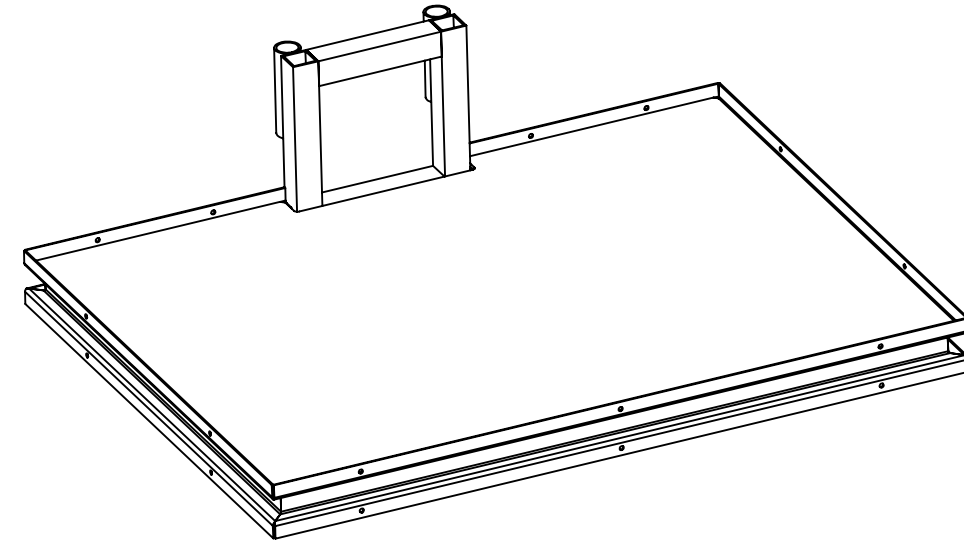
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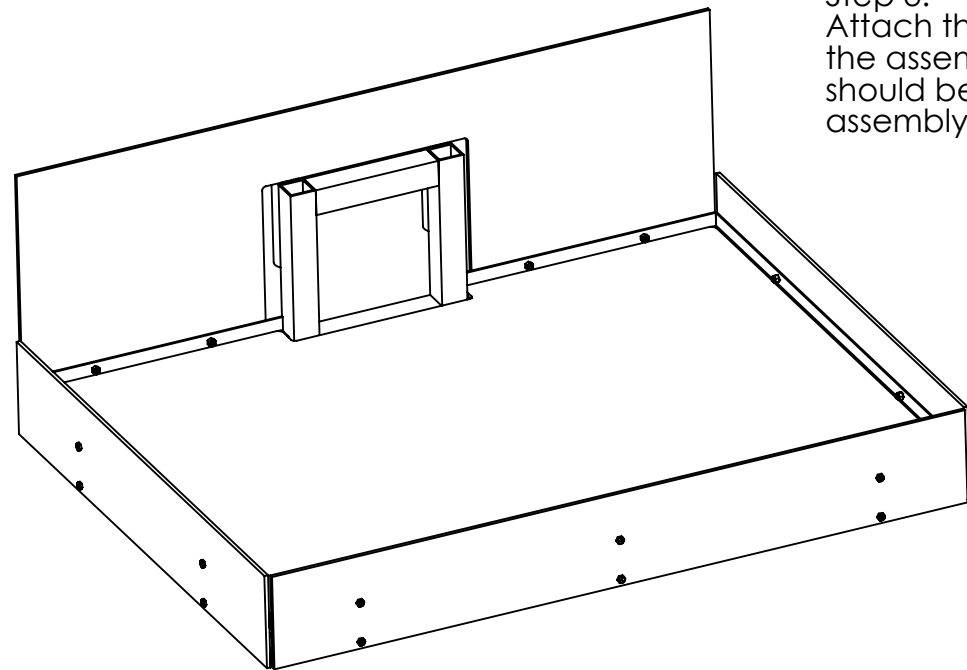
Step 1:  
 Acquire GE-18007 part.  
 Confirm all lights are mounted properly  
 (not pictured).



Step 2:  
 Place GE-18021 onto the  
 assembly, textured side up.





Step 3:  
 Attach the four plate walls to  
 the assembly. The bolt heads  
 should be on the outside of the  
 assembly.



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		TOLERANCES:		CHECKED	
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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			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			

 		TITLE:	
		Basket Assembly	
SIZE	DWG. NO.	REV	
<b>B</b>	GE-18121		
SCALE: 1:12 WEIGHT:		SHEET 2 OF 2	

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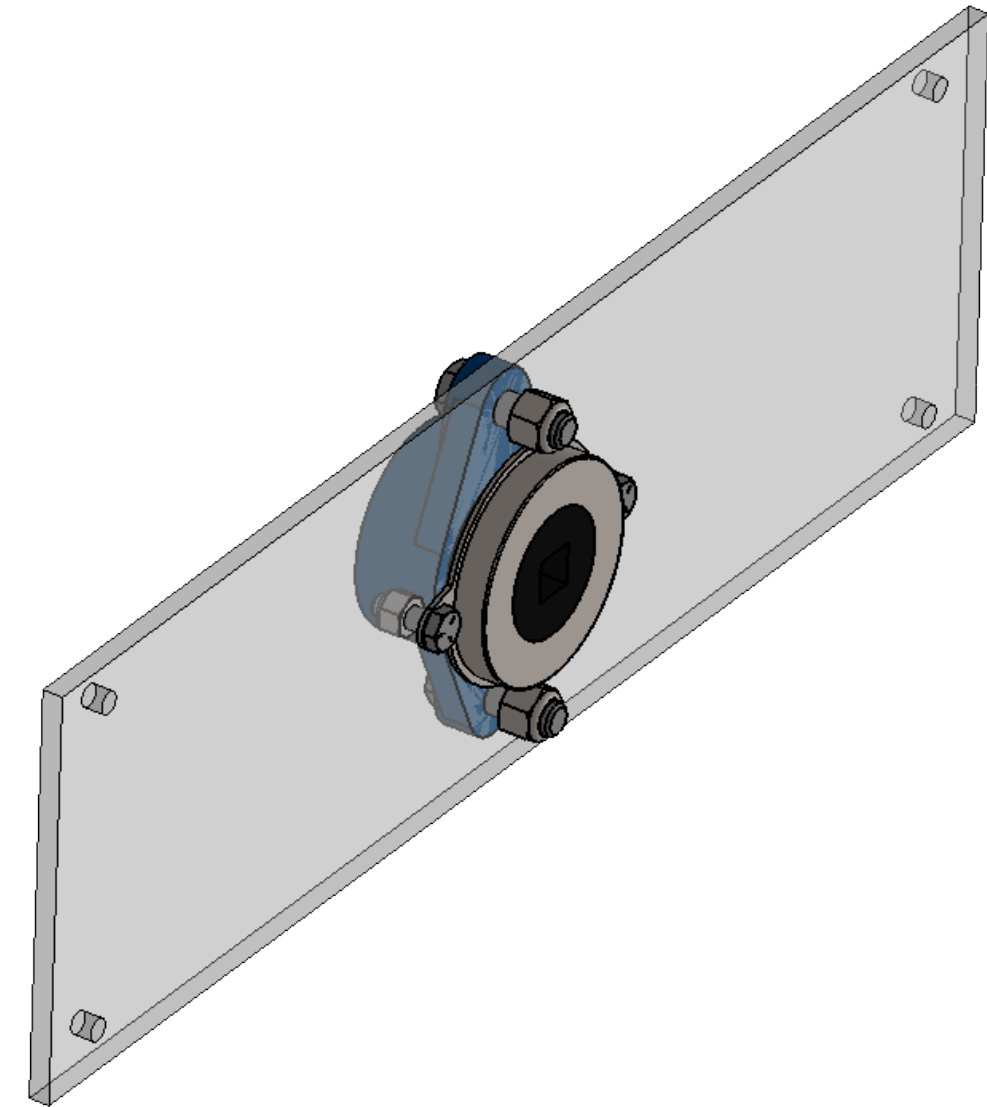
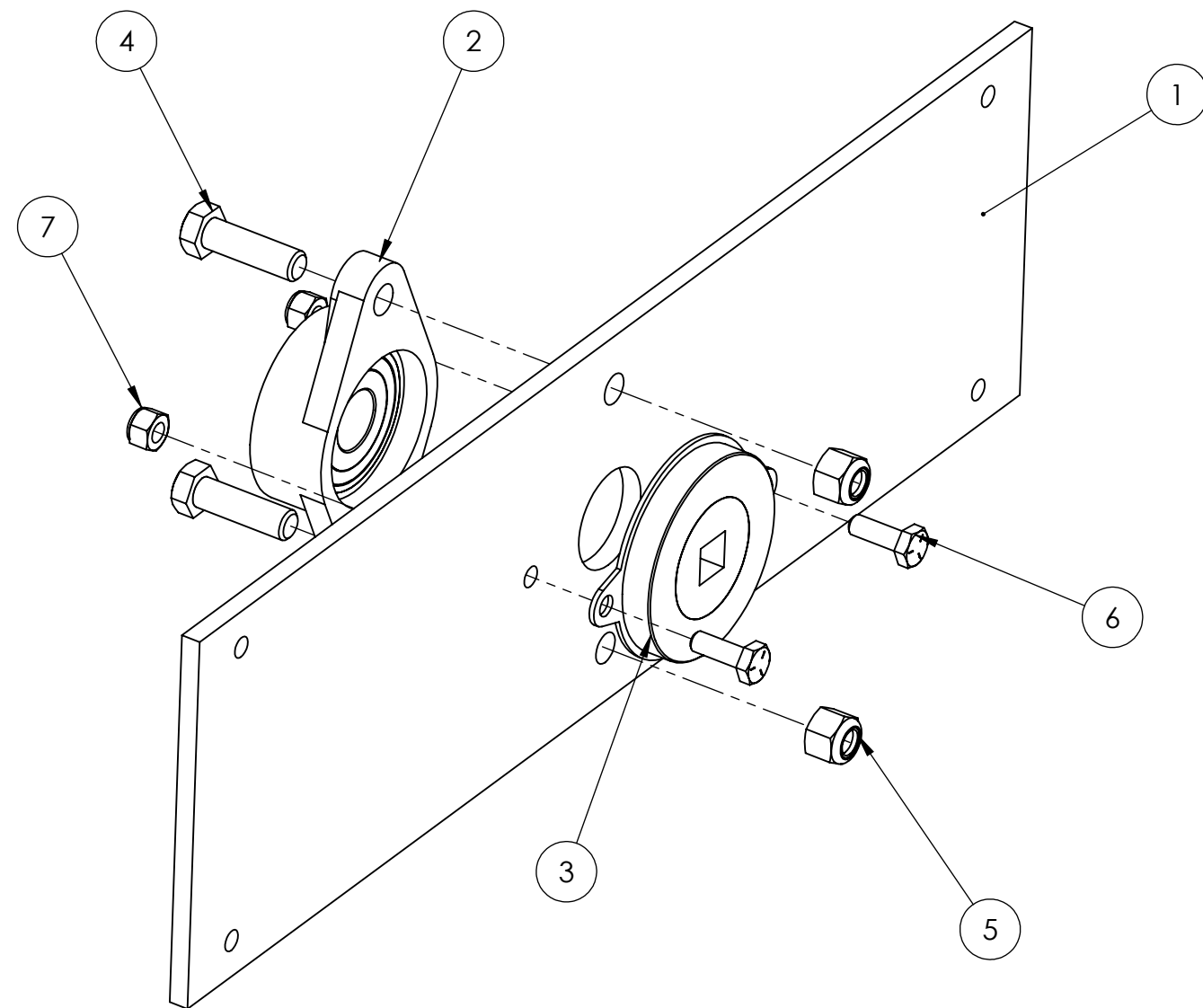
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Notes:  
 1. Bolts should not be fully tightened until mounted with a Switch/Scale Arm Shaft (GE-18026).

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18056	Bearing Damper Polycarbonate	1
2	GE-18096	Scale/Switch Bearing	1
3	GE-18097	Scale/Switch Damper	1
4	hex_.375_16_1.25	Steel Hex Head Screw, 3/8"-16 x 1-1/4" long, fully threaded	2
5	nylock_.375_16	Steel Nylong-Inster Locknut, 3/8"-16	2
6	hex_.25_20_.75	Steel Hex Head Screw, 1/4"-20 x 3/4" long, fully threaded	2
7	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	2

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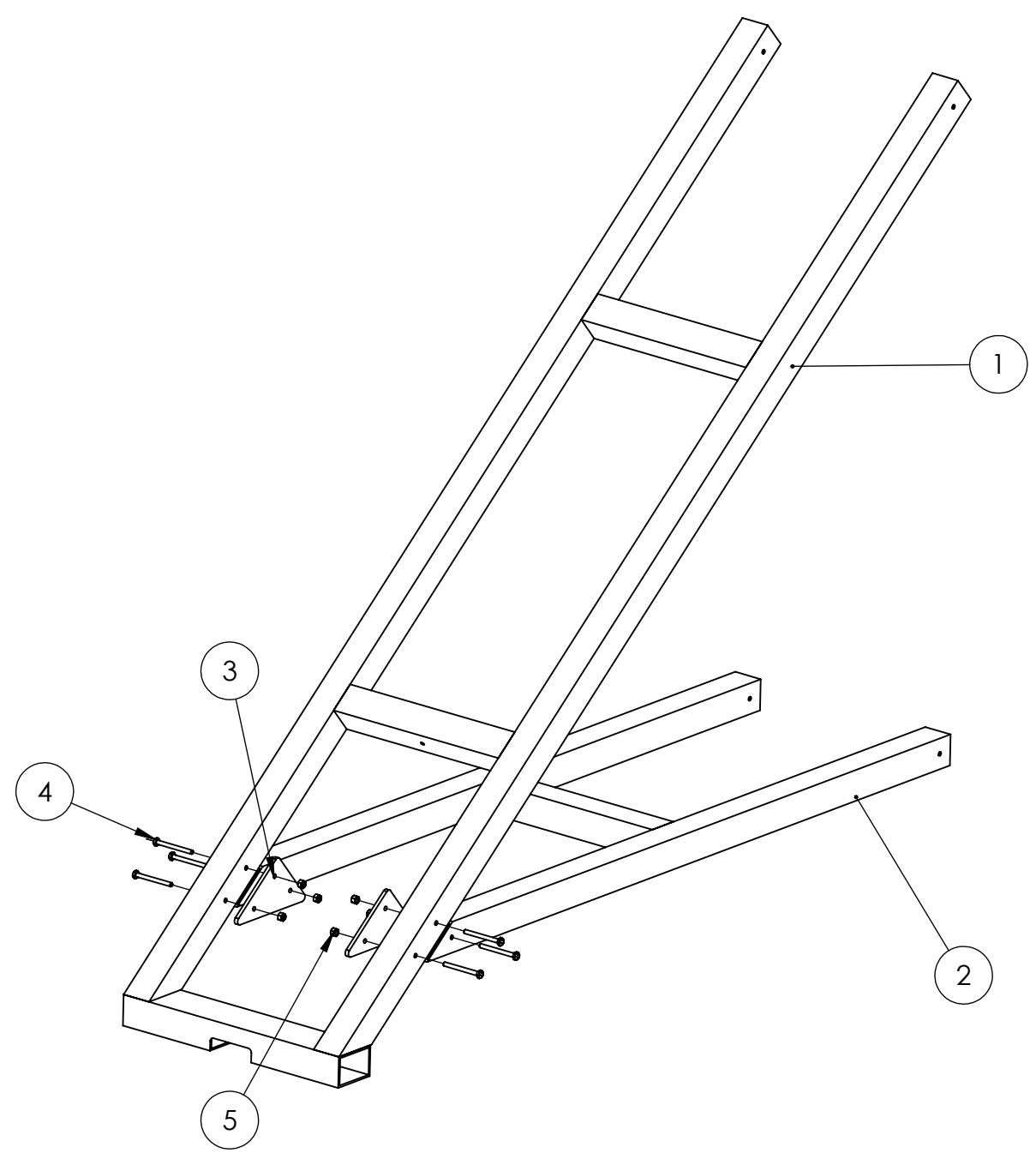
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		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		SIZE DWG. NO. REV
		MATERIAL	ENG APPR.		<b>B</b> <b>GE-18122</b>
		FINISH	MFG APPR.		SCALE: 1:2 WEIGHT: SHEET 1 OF 1
NEXT ASSY	USED ON		Q.A.		
APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		

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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18078	Outrigger Wing Diagonal	1
2	GE-18077	Outrigger Wing Horizontal	1
3	GE-18079	Outrigger Wing Plate	2
4	hex_.25_20_2.75_part ial	Steel Hex Head Screw, 1/4"-20 x 2-3/4" long, partially threaded	6
5	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	6

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

TITLE: **Outrigger Assembly**

SIZE <b>B</b>	DWG. NO. <b>GE-18123</b>	REV
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SCALE: 1:10 WEIGHT: SHEET 1 OF 1

4

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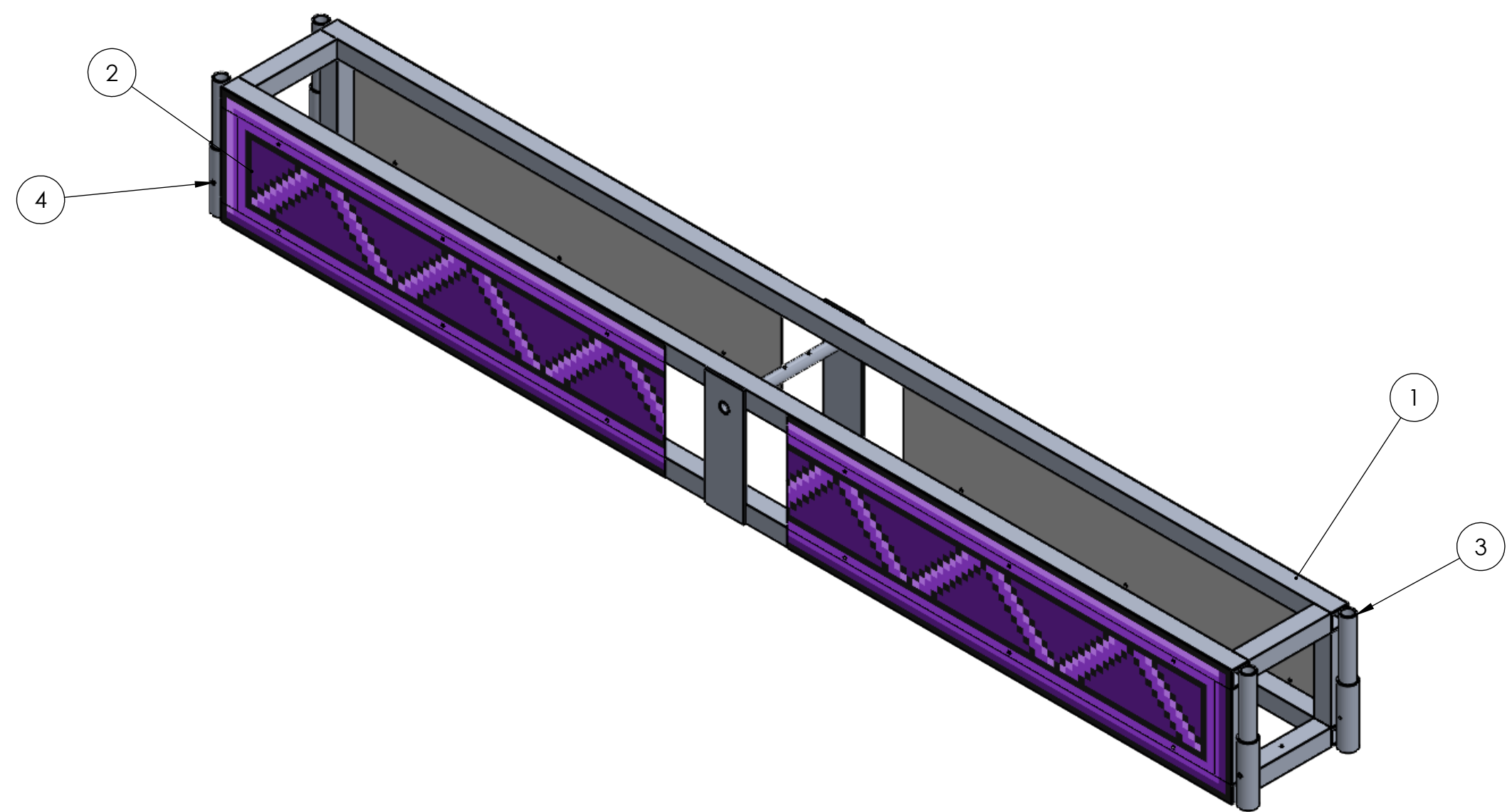
3

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B





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ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.
1	GE-18014	Scale Arm	1
2	GE-18023	Scale Arm Cover Polycarbonate	4
3	GE-18028	Plate Mount Pin	4
4	rivet_.1875_.251-.375	3/16" Aluminum Rivet, .251-.375 Grip Range	4

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN	
		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		
		FINISH		
NEXT ASSY	USED ON			
APPLICATION		DO NOT SCALE DRAWING		

TITLE: **Scale Arm Assembly**

SIZE **B** DWG. NO. **GE-18125** REV  
 SCALE: 1:24 WEIGHT: SHEET 1 OF 2

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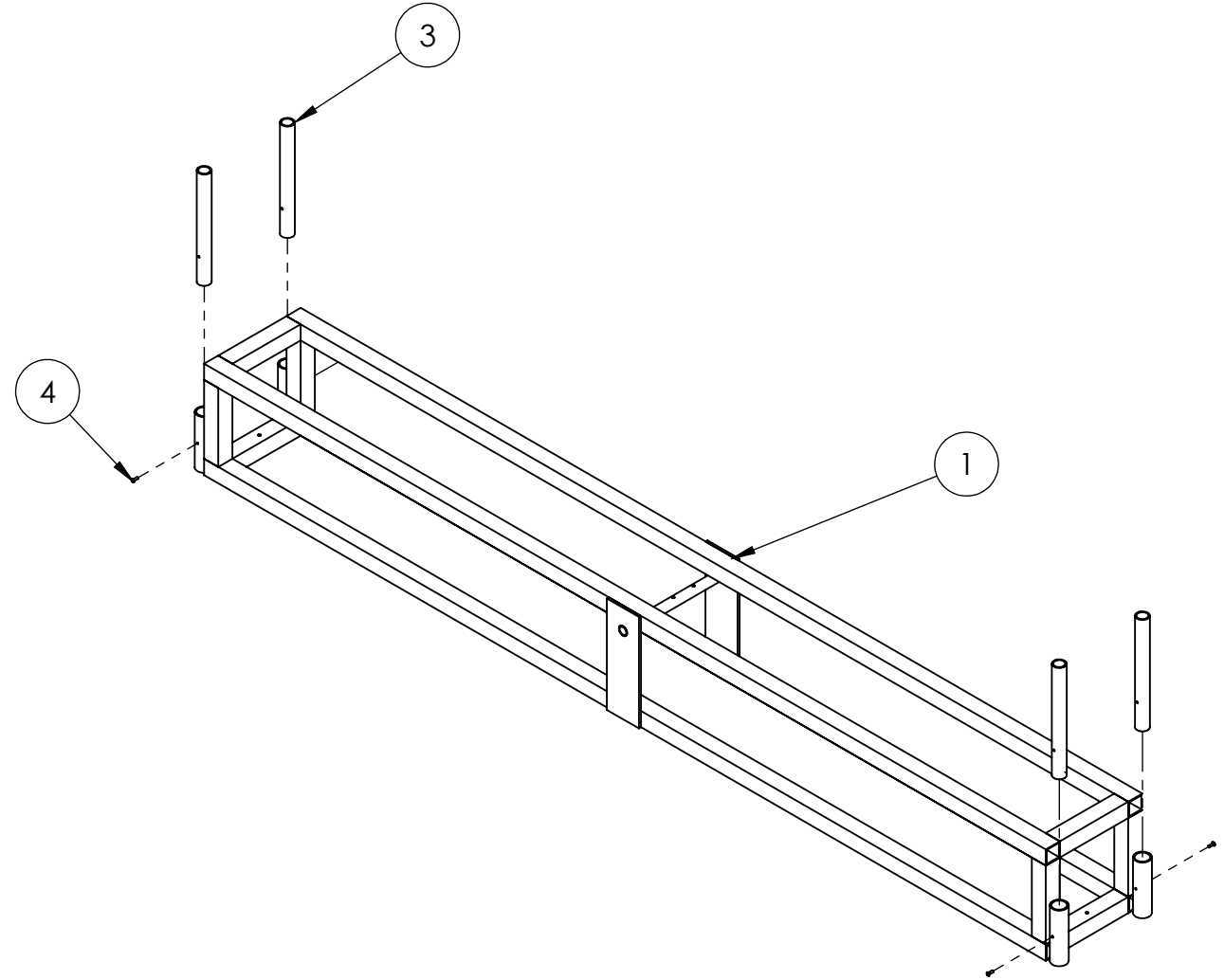
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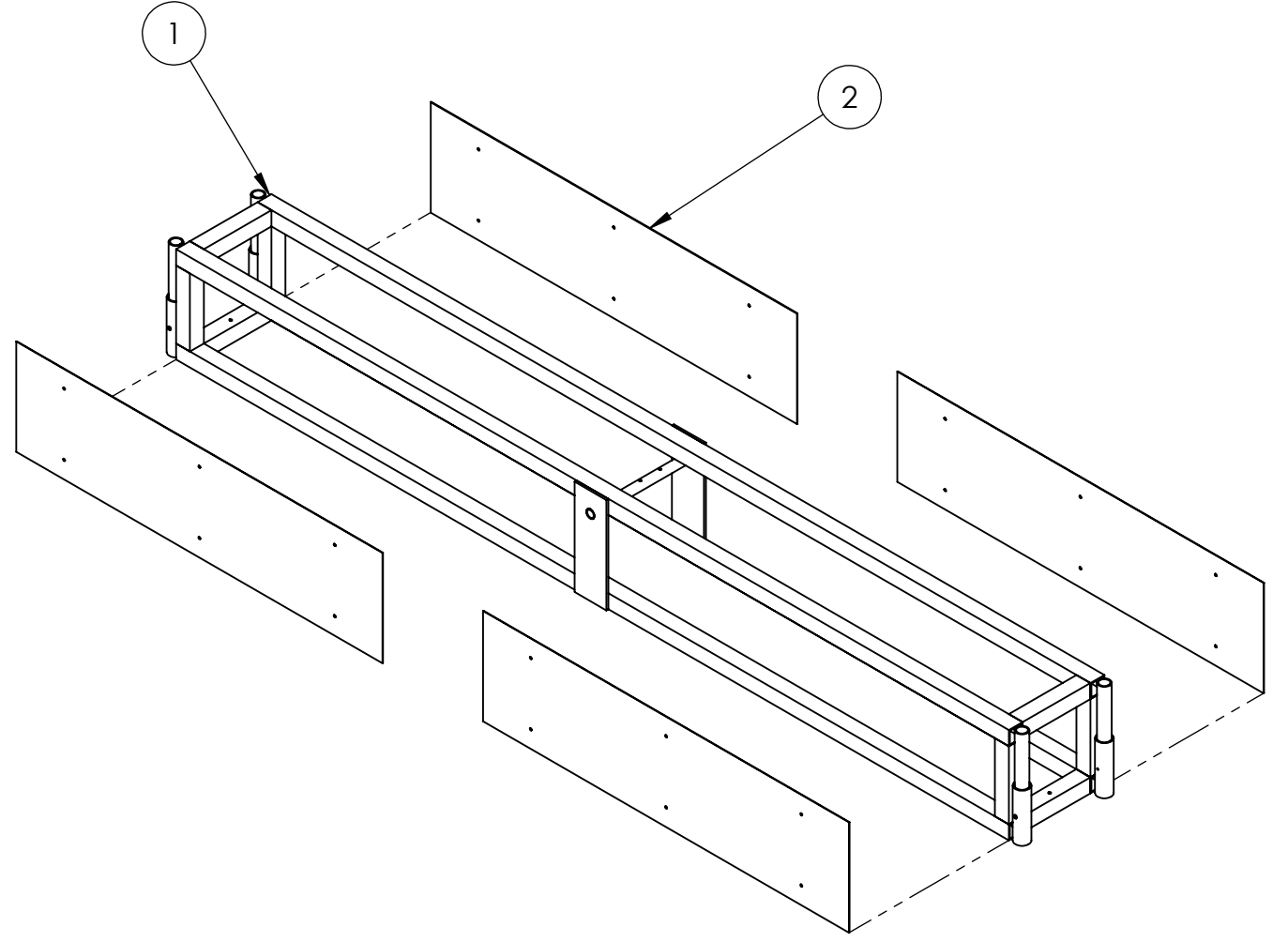
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Note:  
 1. Attach Item 3 (qty: 4) to Item 1 using Item 4 (qty: 4).



Note:  
 1. Attach Item 2 (qty: 4) to Item 1 with cable ties after the rest of GE-18120 is assembled.

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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	
		INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED	
		MATERIAL		ENG APPR.	
		FINISH		MFG APPR.	
NEXT ASSY	USED ON			Q.A.	
APPLICATION		DO NOT SCALE DRAWING		COMMENTS:	
				 	
TITLE: Scale Arm Assembly					
SIZE	DWG. NO.			REV	
<b>B</b>	GE-18125				
SCALE: 1:24 WEIGHT:				SHEET 2 OF 2	

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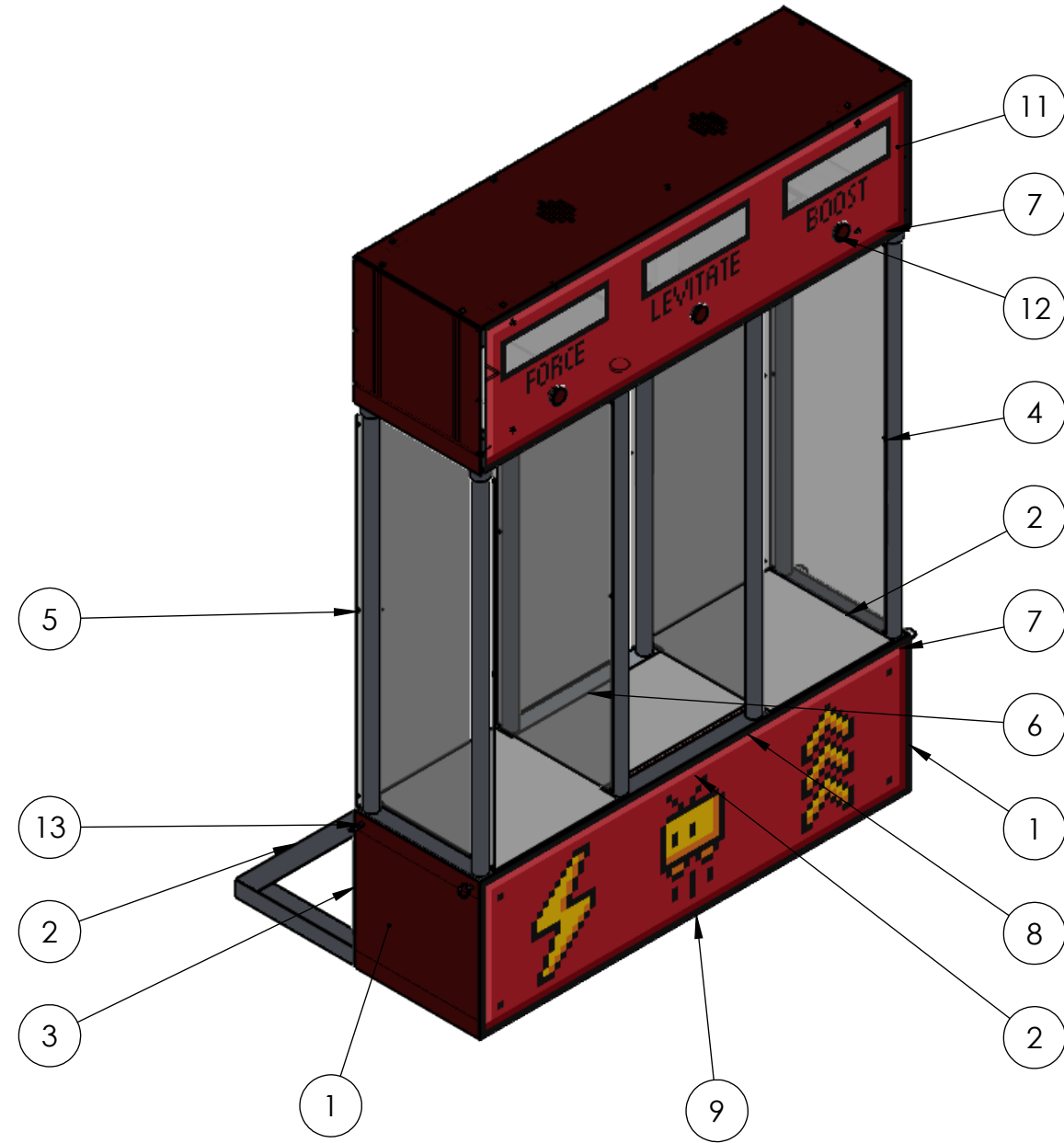
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REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
2-A3	1	Revised note to refer to correct ITEM NO.	1/12/2018	CPO



ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.
1	GE-18031	Vault HDPE Bottom Side	2
2	GE-18032	Vault Base	1
3	GE-18035	Vault HDPE Bottom Back	1
4	GE-18036	Vault Polycarbonate Middle Insert	4
5	GE-18037	Vault Polycarbonate Backstop	1
6	GE-18038	Vault Polycarbonate Bottom Floor	1
7	GE-18039	Vault Support Pipes	4
8	GE-18040	Vault Middle Support Pipes	4
9	GE-18045	Vault Polycarbonate Bottom Front	1
10	GE-18047	Vault Top Frame	1
11	GE-18129	Vault Top Assembly	1
12	Vault_Button		3
13	pin_quick_ring_.25_2	SS Ring-Grip Quick-Release Pin, 1/4" diameter, 2" long	4
14	hex_.25_20_.75	Steel Hex Head Screw, 1/4"-20 x 3/4" long, fully threaded	12
15	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	12

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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		
INTERPRET GEOMETRIC TOLERANCING PER:		CHECKED		TITLE:
MATERIAL		ENG APPR.		Vault Assembly
FINISH		MFG APPR.		SIZE DWG. NO. REV
NEXT ASSY	USED ON	Q.A.		B GE-18126 1
APPLICATION		COMMENTS:		SCALE: 1:14 WEIGHT: SHEET 1 OF 3
DO NOT SCALE DRAWING				

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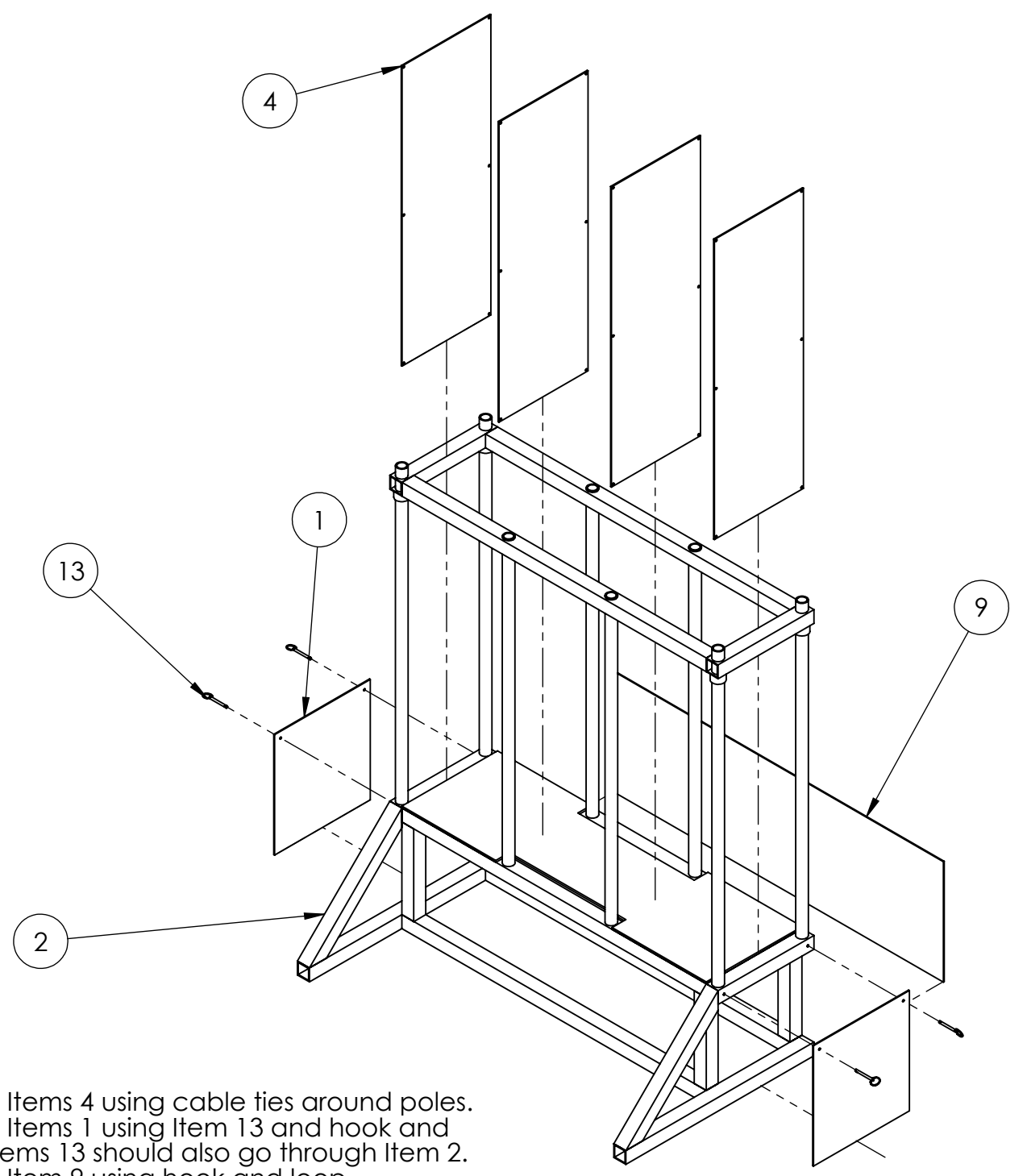
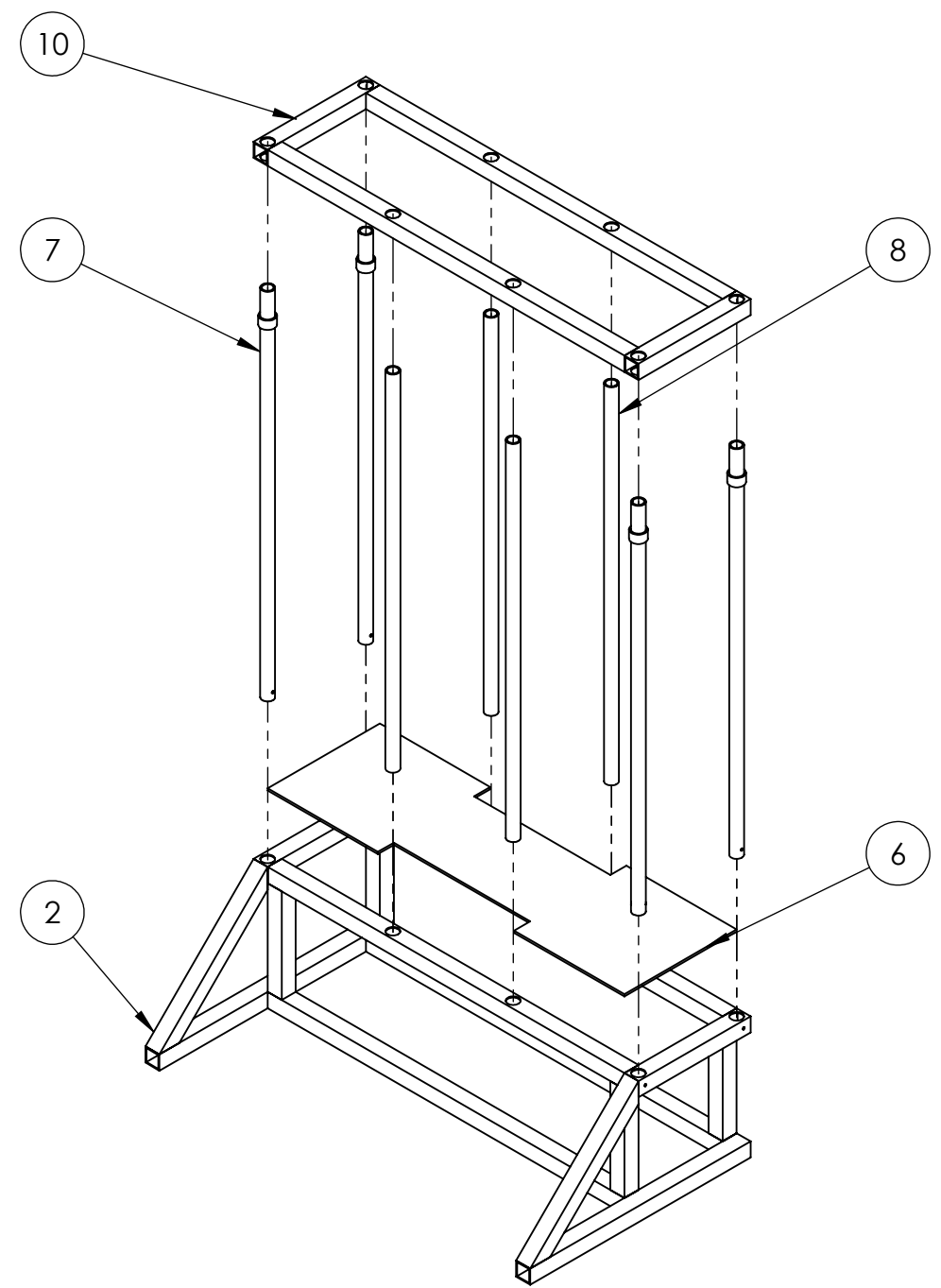
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- Notes:
1. Attach Items 4 using cable ties around poles.
  2. Attach Items 1 using Item 13 and hook and loop. Items 13 should also go through Item 2.
  3. Attach Item 9 using hook and loop.



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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		



TITLE:		
<b>Vault Assembly</b>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18126</b>	<b>1</b>
SCALE: 1:12 WEIGHT:		SHEET 2 OF 3

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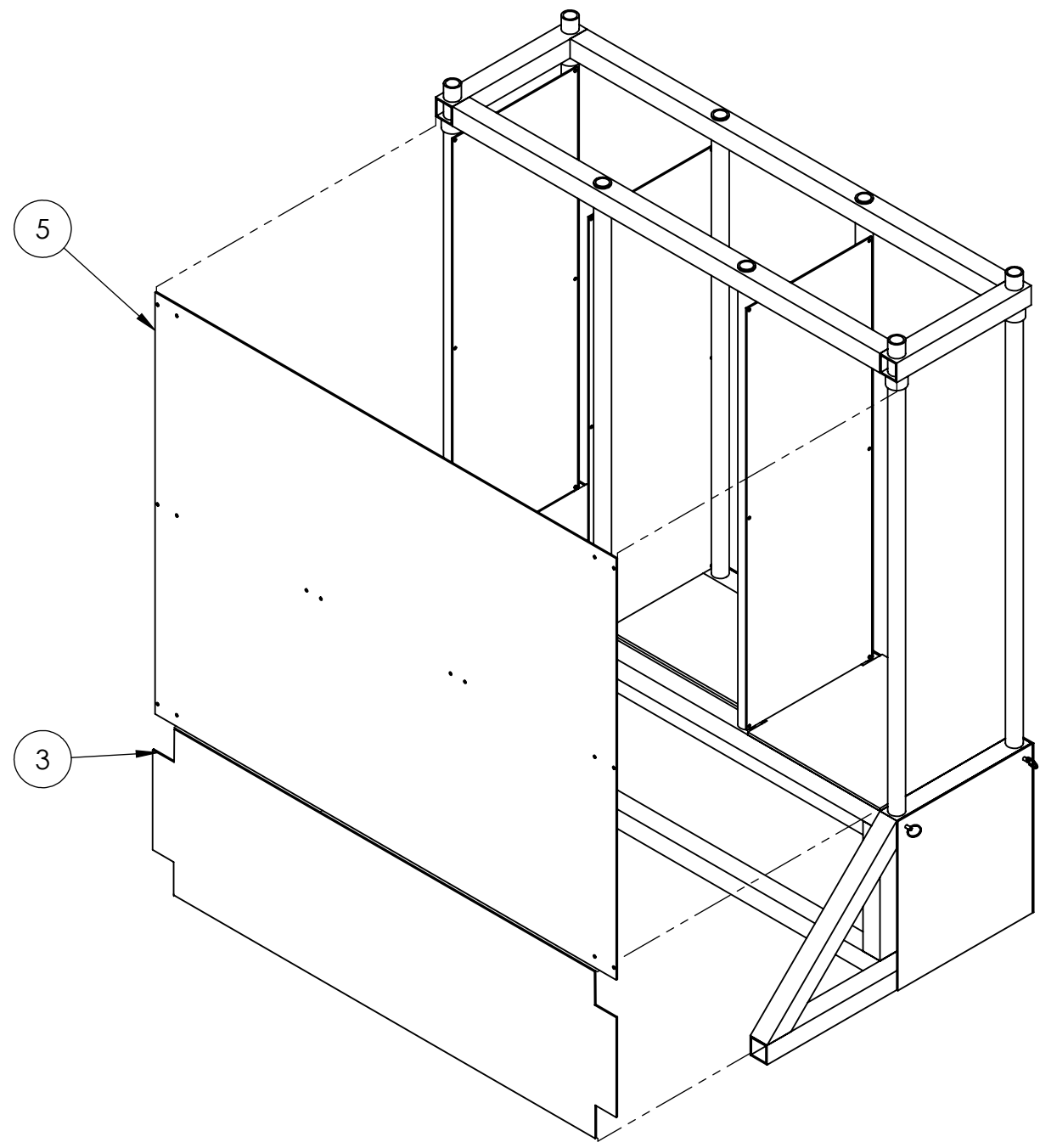
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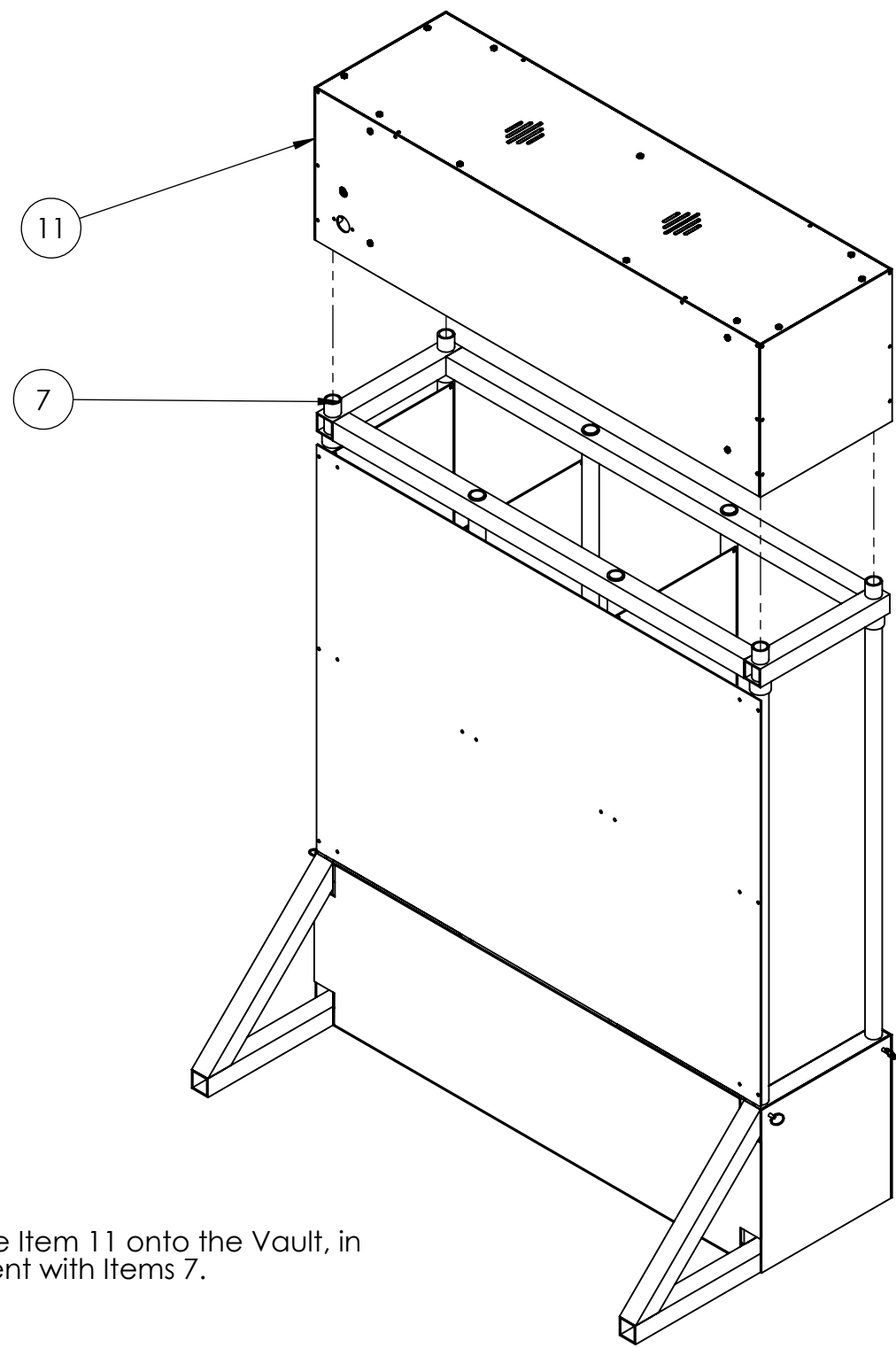
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- Notes:
1. Attach Item 5 using cable ties around poles.
  2. Attach Item 3 using hook and loop.

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- Notes:
1. Place Item 11 onto the Vault, in alignment with Items 7.

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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		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		SIZE DWG. NO. REV
		MATERIAL	ENG APPR.		<b>B</b> <b>GE-18126</b> <b>1</b>
NEXT ASSY	USED ON	FINISH	MFG APPR.		SCALE: 1:12 WEIGHT: SHEET 3 OF 3
APPLICATION		DO NOT SCALE DRAWING	Q.A.	COMMENTS:	

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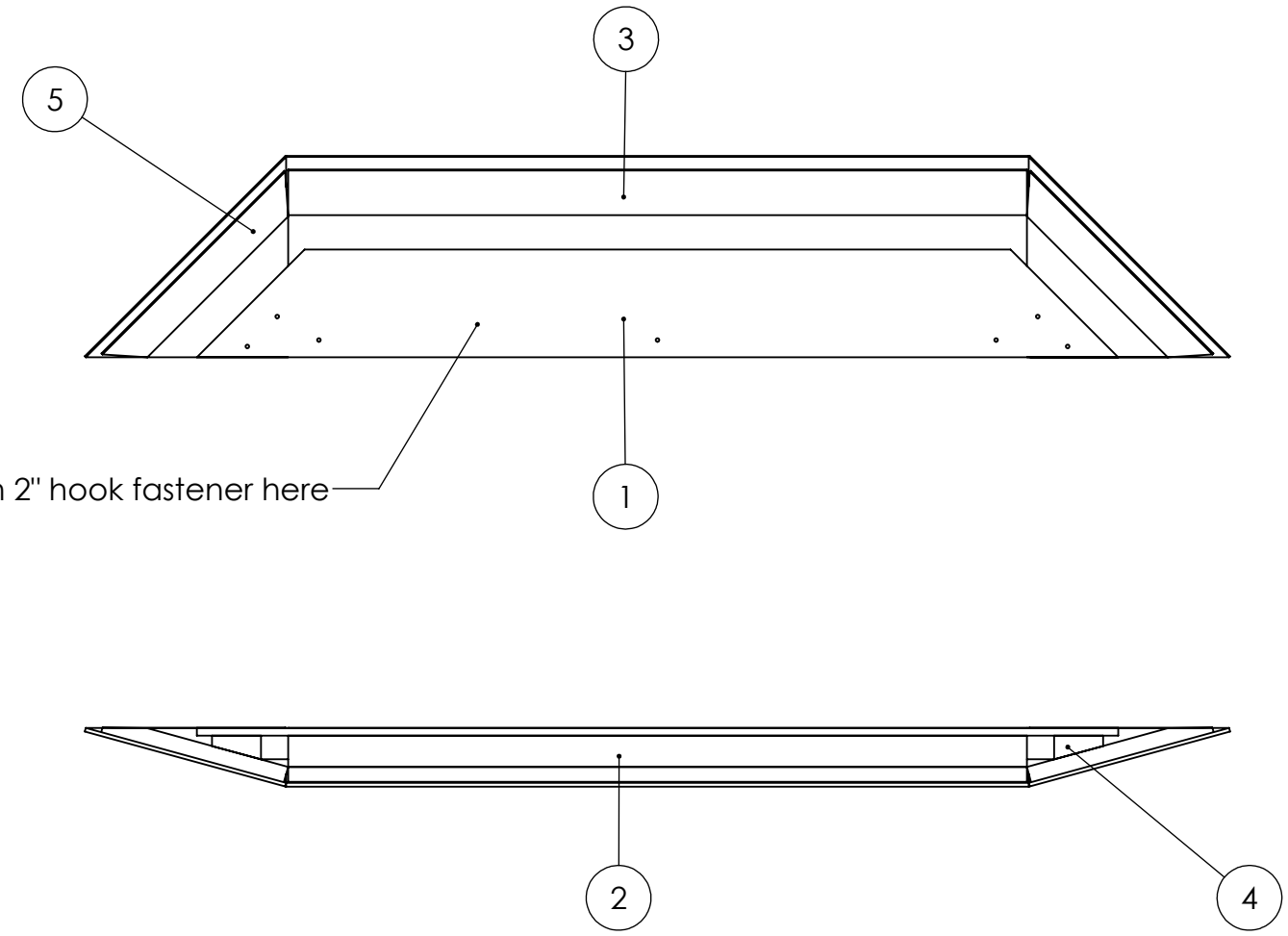
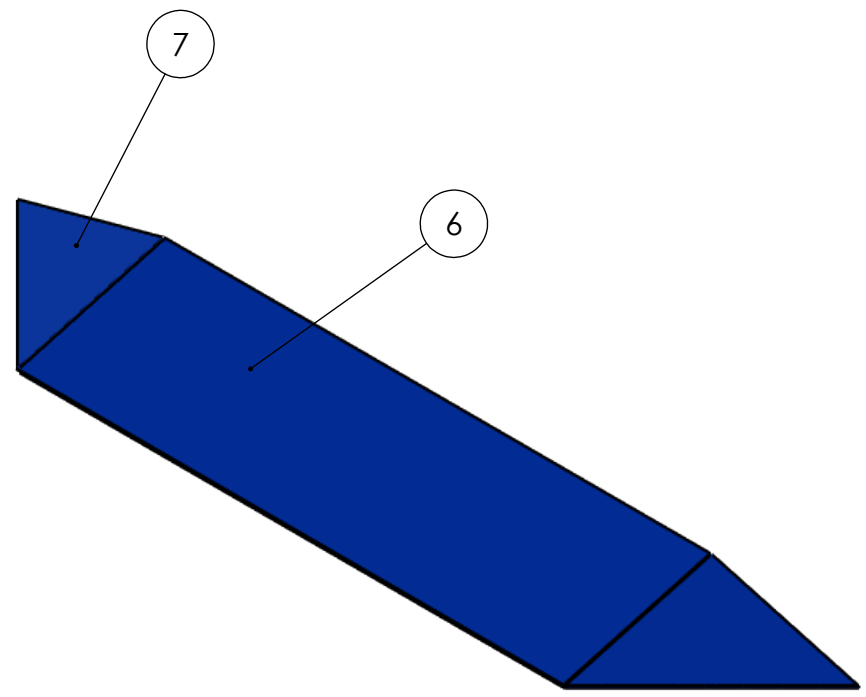
3

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B



Note: Attach 2" hook fastener here

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ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.
1	GE-18127-01	1/4" thk. Polycarb, clear	1
2	GE-18127-02	2"x4" Pine	1
3	GE-18127-03	1/2" AC Plywood	1
4	GE-18127-04	2"x4" Pine	2
5	GE-18127-05	1/2" AC Plywood	2
6	GE-18127-06	1/8" thk. HDPE, red or blue	1
7	GE-18127-07	1/8" thk. HDPE, red or blue	2

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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			
FINISH			
NEXT ASSY	USED ON		
APPLICATION			
DO NOT SCALE DRAWING			

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

TITLE: **Ramp, Exchange**

SIZE **B** DWG. NO. **GE-18127** REV

SCALE: 1:6 WEIGHT: SHEET 1 OF 6

4

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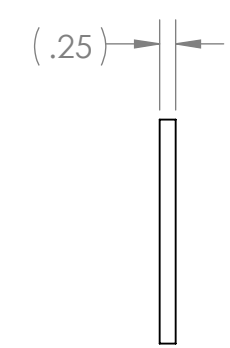
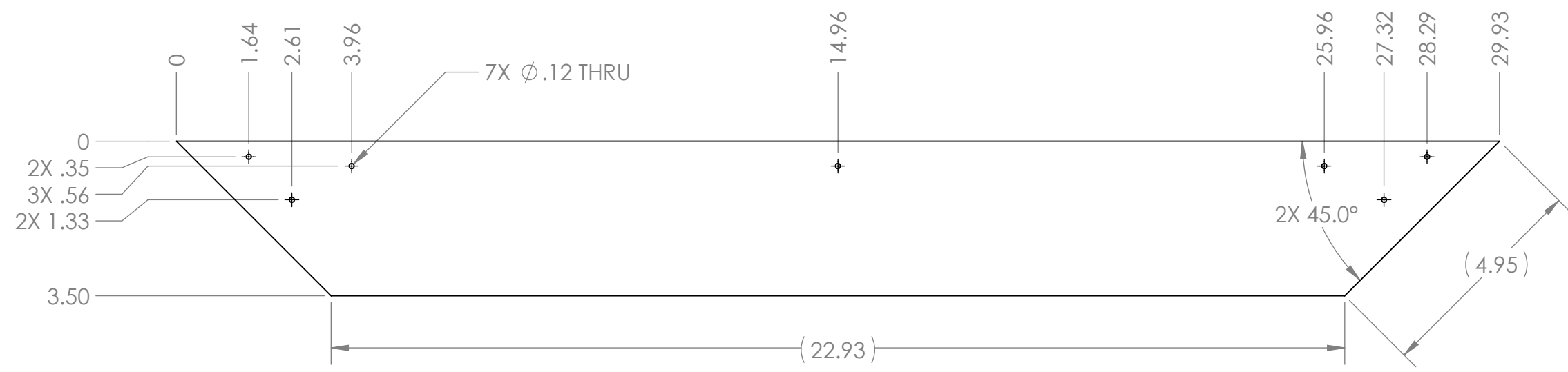
3

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Item: GE-18127-01  
 Material: 1/4" thk. clear polycarbonate  
 QTY: 1

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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		



TITLE:		
<b>Ramp, Exchange</b>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18127</b>	
SCALE: 1:4	WEIGHT:	SHEET 2 OF 6

4

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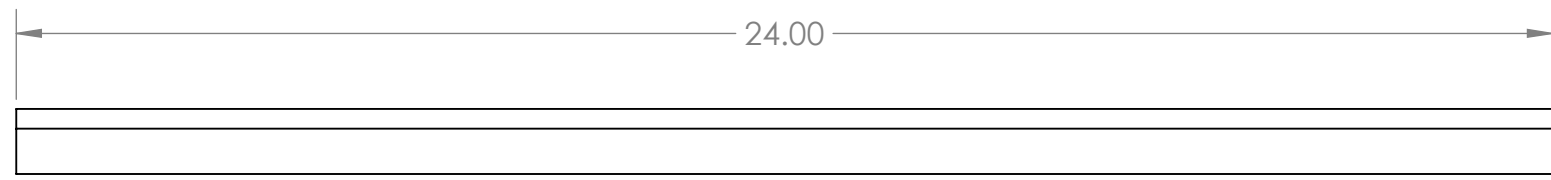
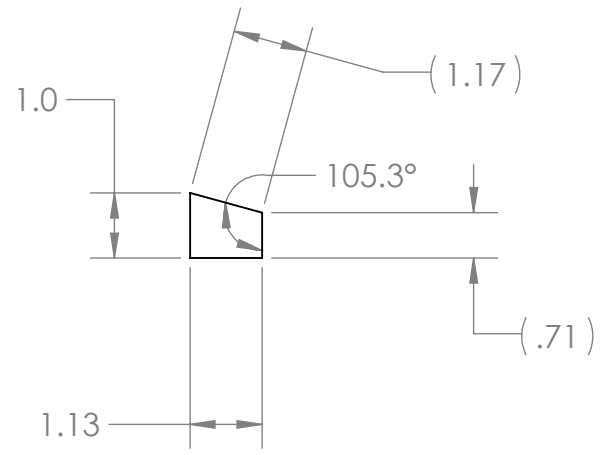
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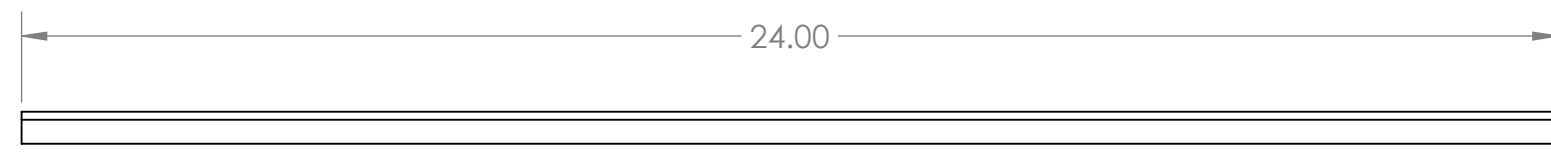
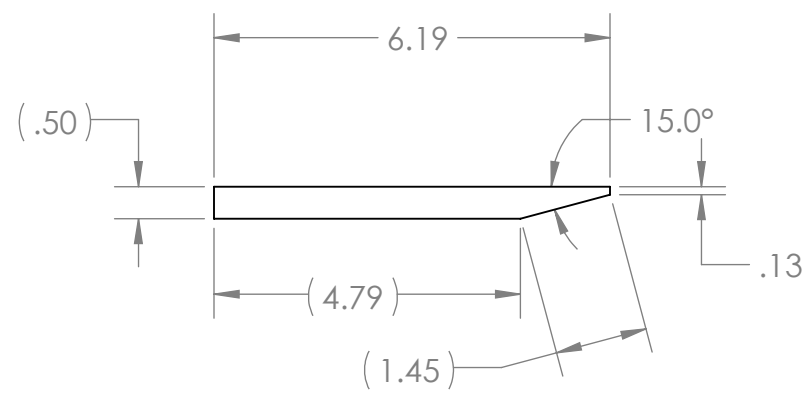
Item: GE-18127-02  
 Material: 2"x4" Pine  
 QTY: 1

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Item: GE-18127-03  
 Material: 1/2" AC Plywood  
 QTY: 1

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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		



TITLE:		
<h1>Ramp, Exchange</h1>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18127</b>	
SCALE: 1:3	WEIGHT:	SHEET 3 OF 6

4

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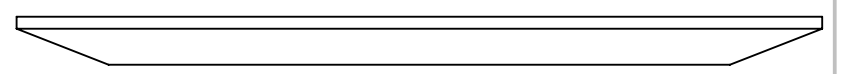
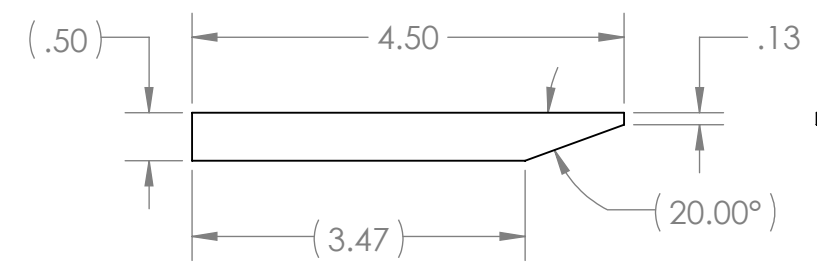
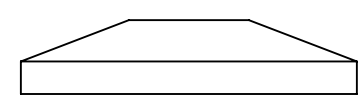
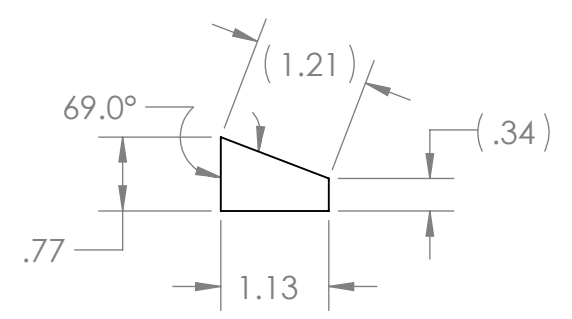
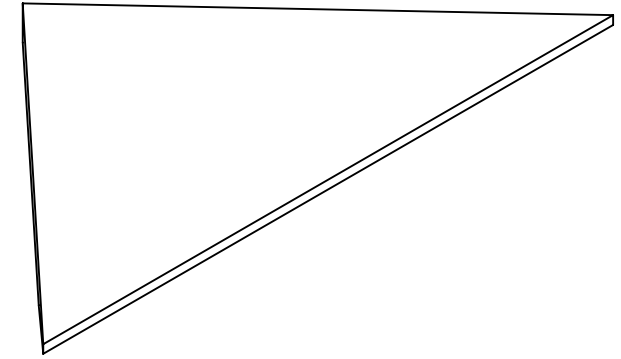
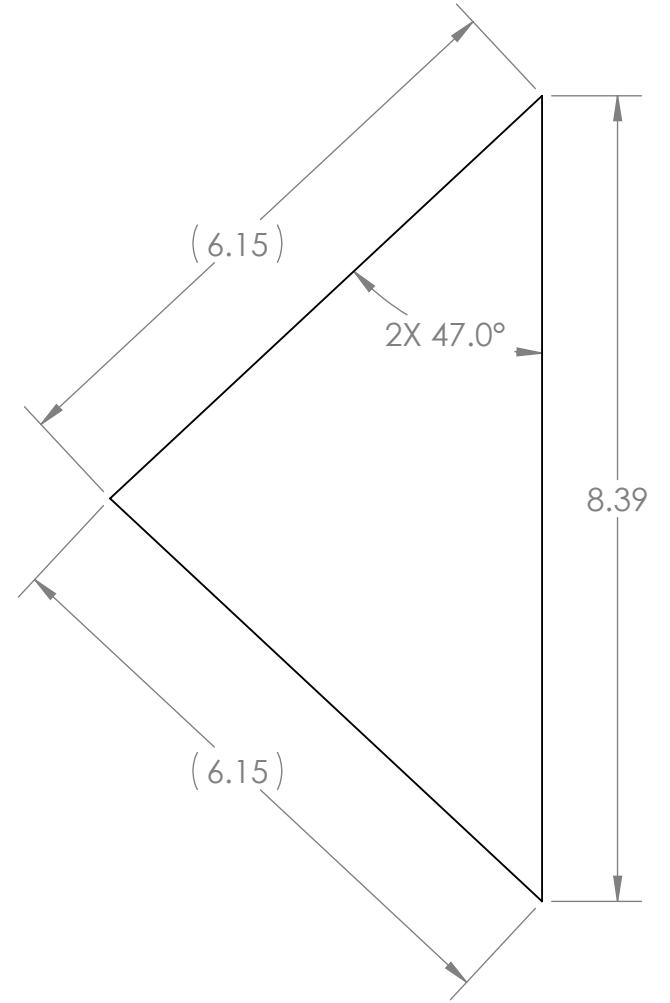
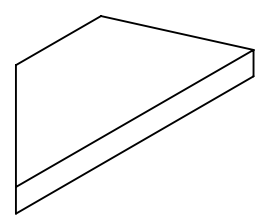
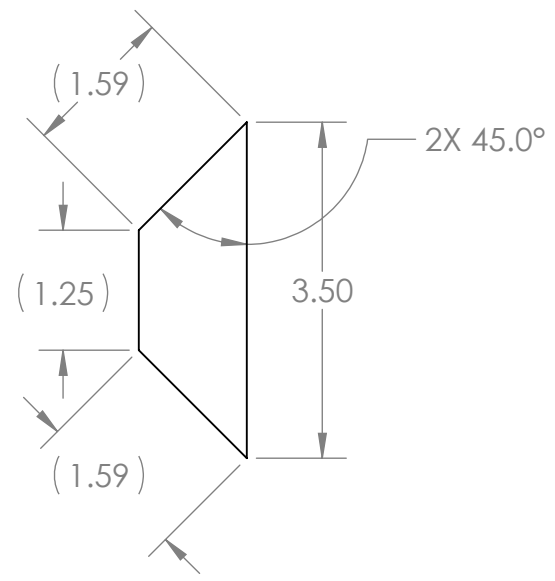
1

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Item: GE-18127-04  
 Material: 2"x4" Pine  
 QTY: 2

Item: GE-18127-05  
 Material: 1/2" AC Plywood  
 QTY: 2

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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:	
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		MATERIAL			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			



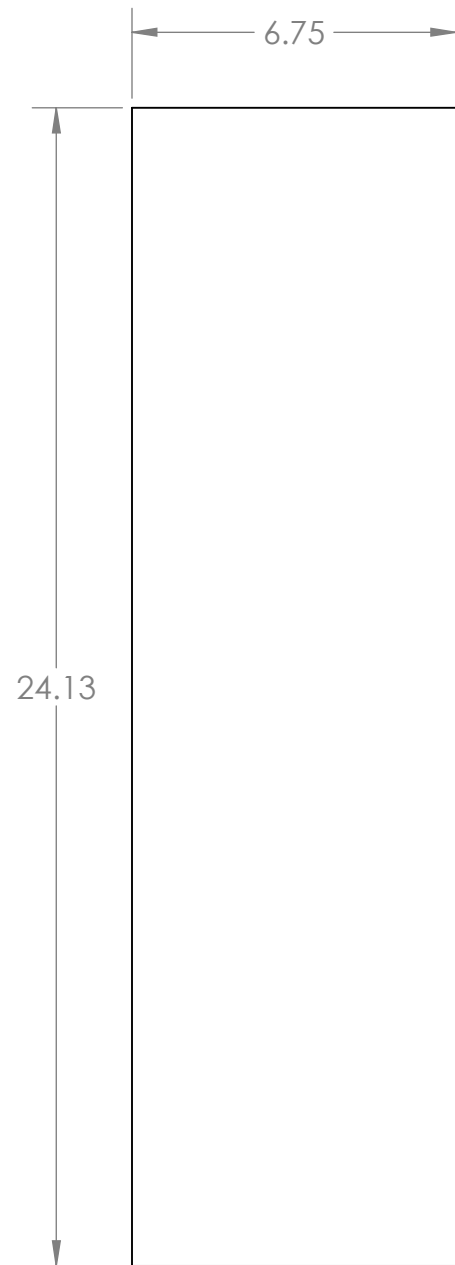
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<h1>Ramp, Exchange</h1>		
SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18127</b>	
SCALE: 1:2	WEIGHT:	SHEET 4 OF 6

4

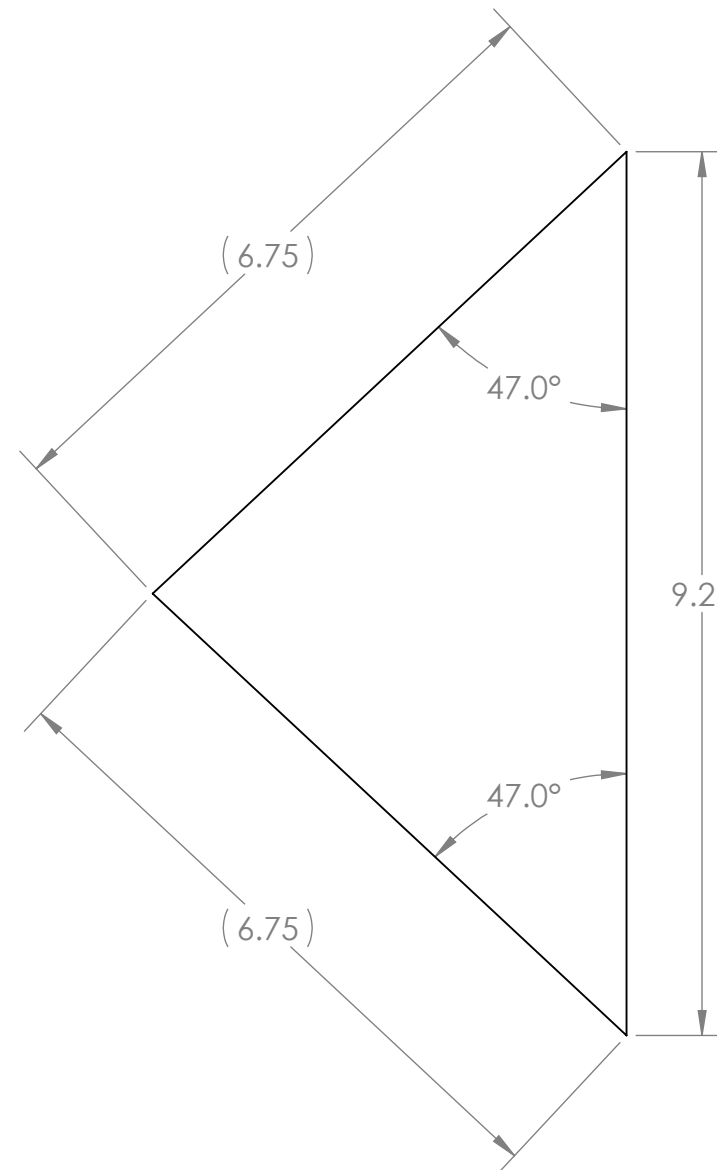
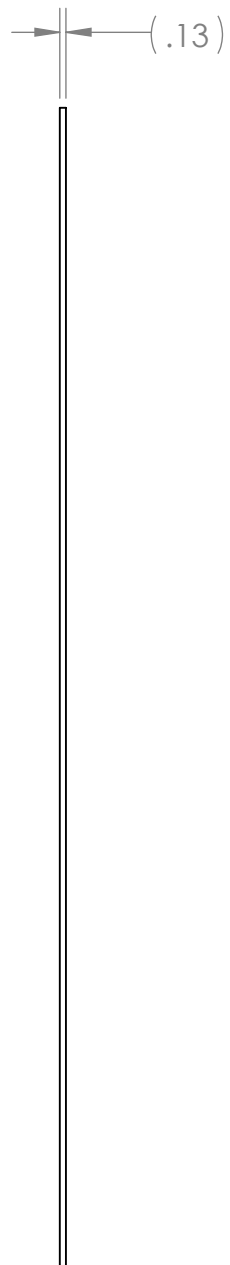
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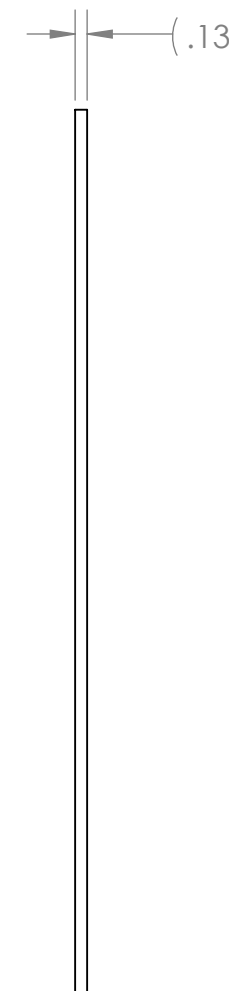
1





Item: GE-18127-06  
 Material: 1/8" thk. smooth HDPE, red or blue  
 QTY: 1



Item: GE-18127-07  
 Material: 1/8" thk. smooth HDPE, red or blue  
 QTY: 2



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		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		SIZE DWG. NO. REV
		MATERIAL	ENG APPR.		<b>B</b> <b>GE-18127</b>
NEXT ASSY	USED ON	FINISH	MFG APPR.		SCALE: 1:2 WEIGHT: SHEET 5 OF 6
APPLICATION		DO NOT SCALE DRAWING	Q.A.		
			COMMENTS:		

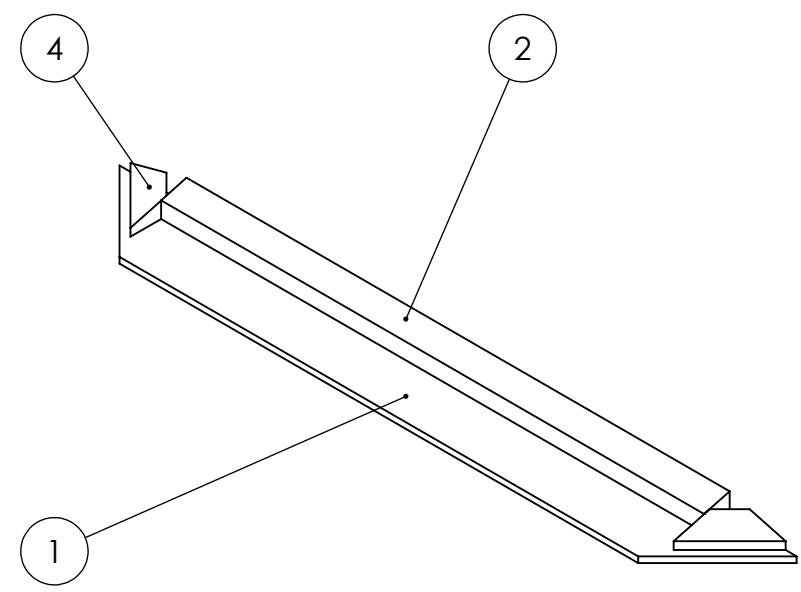


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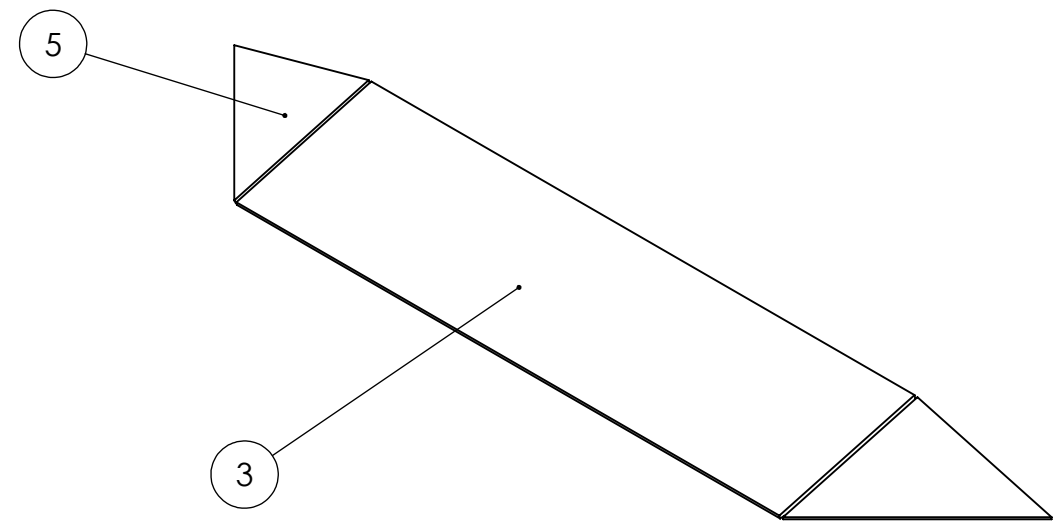
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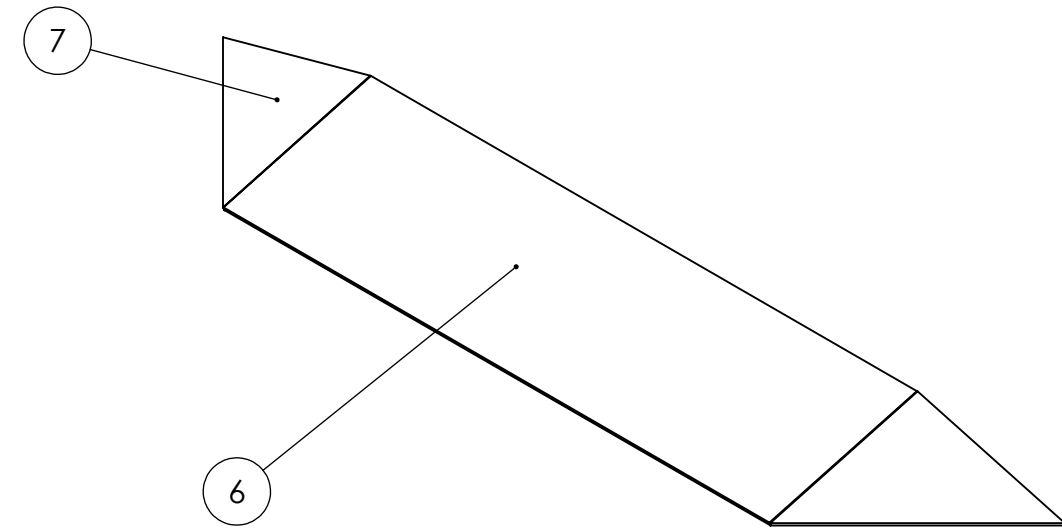
1



Step 1: Attach Item 2 and Item 4 (qty: 2) to Item 1 using wood screws through the holes in Item 1.





Step 2: Attach Item 3 and Item 5 (qty: 2) to Item 4 and Item 2 using wood screws.



Step 3: Attach Item 6 and Item 7 (qty: 2) to Item 5 and Item 6 using double stick tape.

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		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		<h1 style="text-align: center;">Ramp, Exchange</h1>
		MATERIAL	ENG APPR.		
NEXT ASSY	USED ON	FINISH	MFG APPR.		SIZE <b>B</b> DWG. NO. <b>GE-18127</b> REV
APPLICATION		DO NOT SCALE DRAWING	Q.A.		SCALE: 1:6 WEIGHT: SHEET 6 OF 6
			COMMENTS:		

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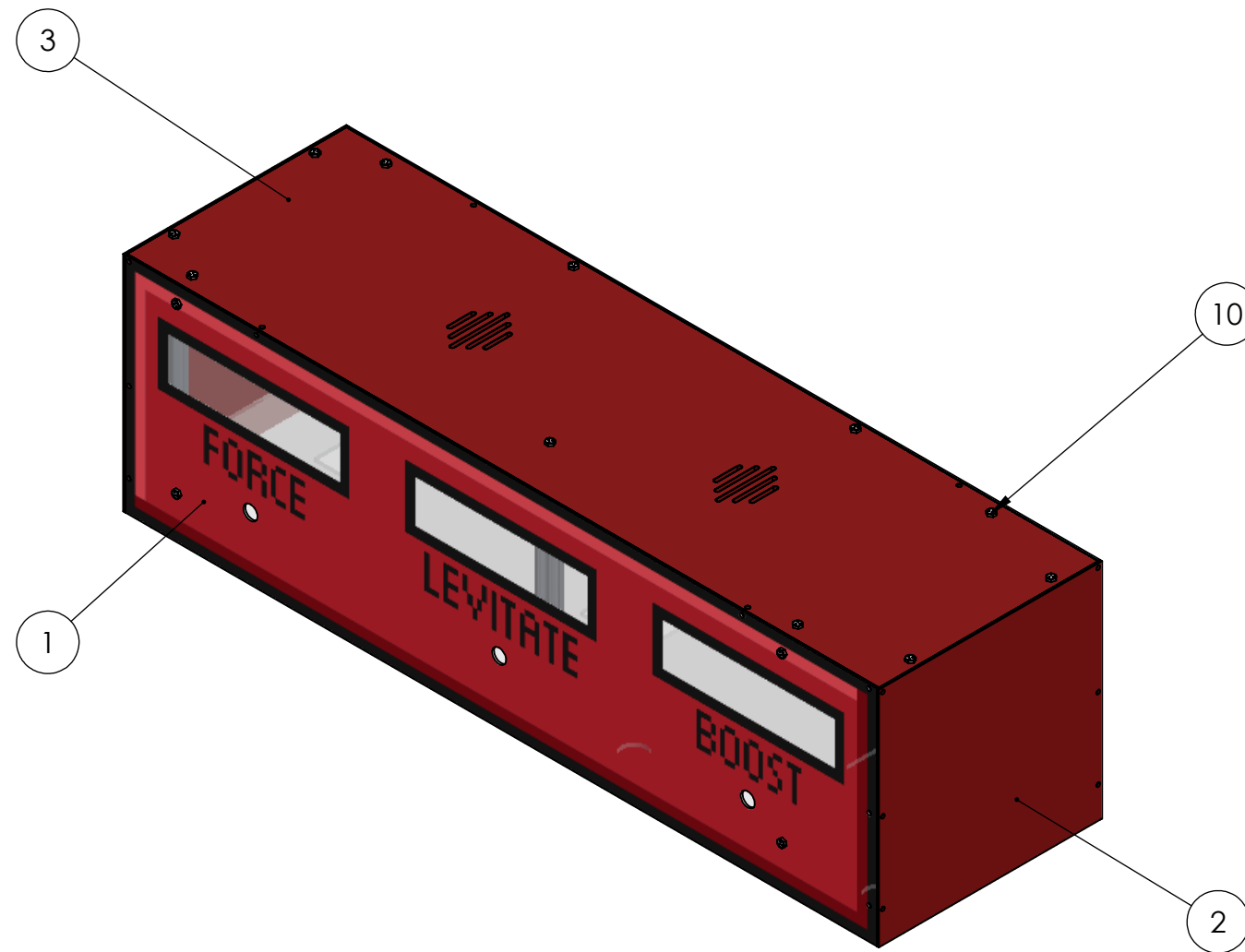
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GE-18033	Vault polycarbonate Top Front Face	1
2	GE-18034	Vault HDPE Top Side	2
3	GE-18044	Vault HDPE Top	1
4	GE-18041	Vault Polycarbonate Top Backside	1
5	GE-18046	Vault Polycarbonate Top Base	1
6	GE-18030	80-20 Extrusion	7
7	GE-18048	Vault Bracket	8
8	flat_hex_.25_20_1	Steel Hex Flat Head Screw, 1/4"-20 x 1" long, fully threaded	11
9	nylock_.25_20	Steel Nylon-Insert Locknut, 1/4"-20	16
10	hex_.25_20_.75	Steel Hex Head Screw, 1/4"-20 x 3/4" long, fully threaded	19

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		UNLESS OTHERWISE SPECIFIED:	NAME	DATE	 
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: ±1/16 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.001	DRAWN		
		INTERPRET GEOMETRIC TOLERANCING PER:	CHECKED		<h1>Vault Top Assembly</h1>
		MATERIAL	ENG APPR.		
		FINISH	MFG APPR.		SIZE DWG. NO. REV
NEXT ASSY	USED ON		Q.A.		<b>B</b> GE-18129
APPLICATION		DO NOT SCALE DRAWING	COMMENTS:		SCALE: 1:8 WEIGHT: SHEET 1 OF 3

4

3

2

1

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2

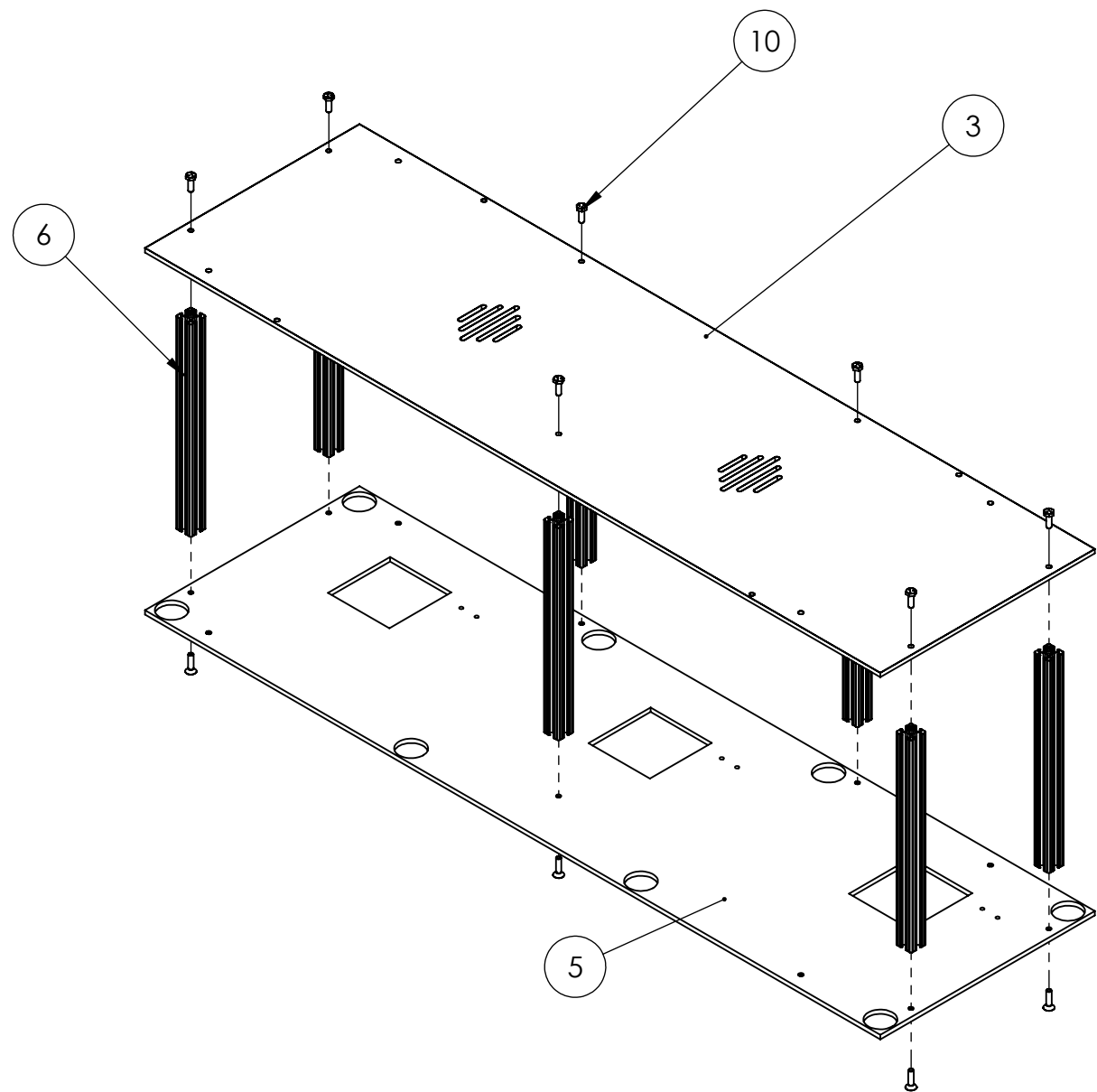
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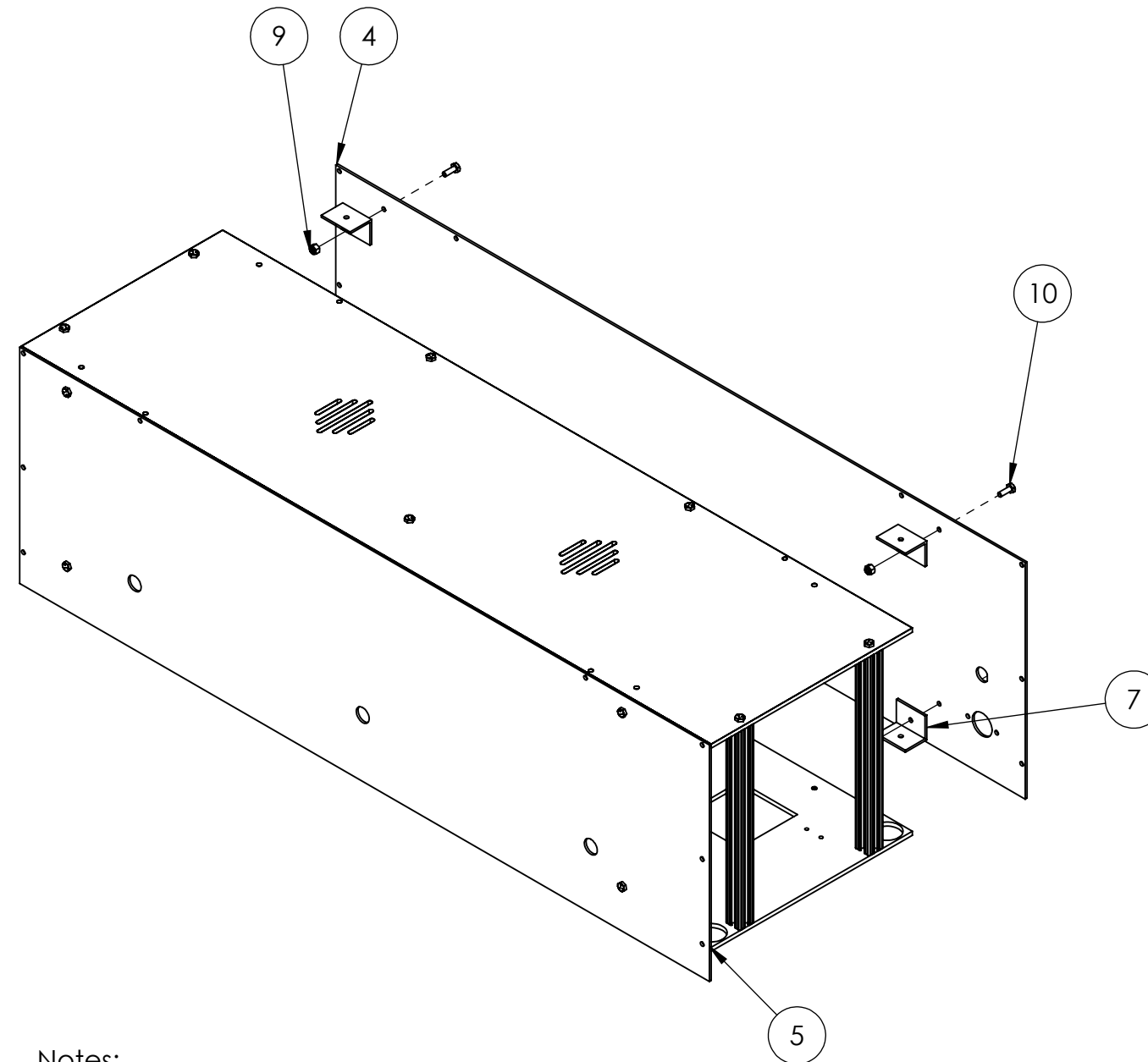
B

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- Notes:  
 1. Use Item 10 to fasten Item 3 and Item 5 to Item 6 (qty. 7)



- Notes:  
 1. Use Item 10 and 9 to fasten item 7 bracket with 4  
 2. Repeat with Item 5 face

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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			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			

TITLE:

# Vault Top Assembly

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18129</b>	
SCALE: 1:8	WEIGHT:	SHEET 2 OF 3

4

3

2

1

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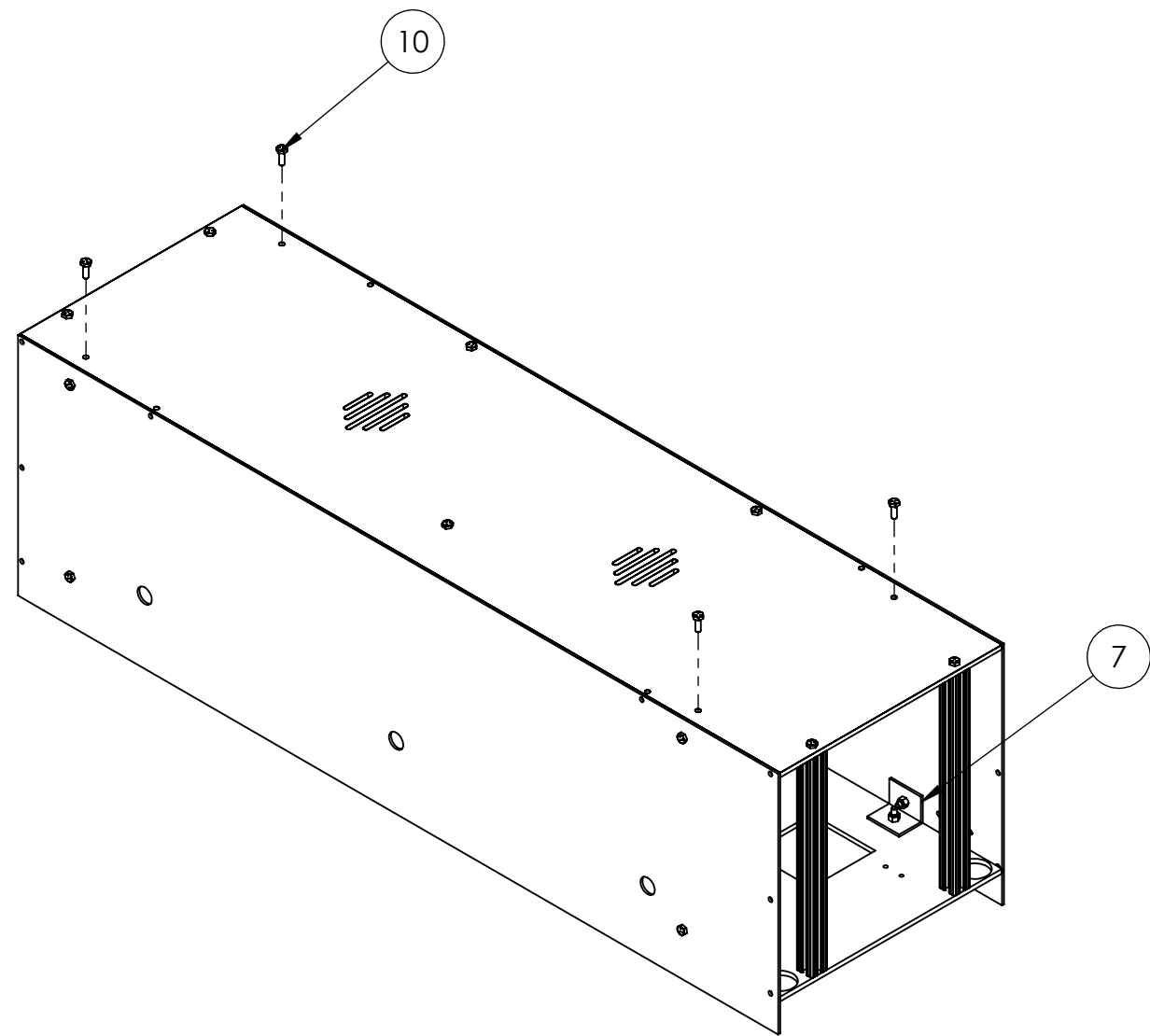
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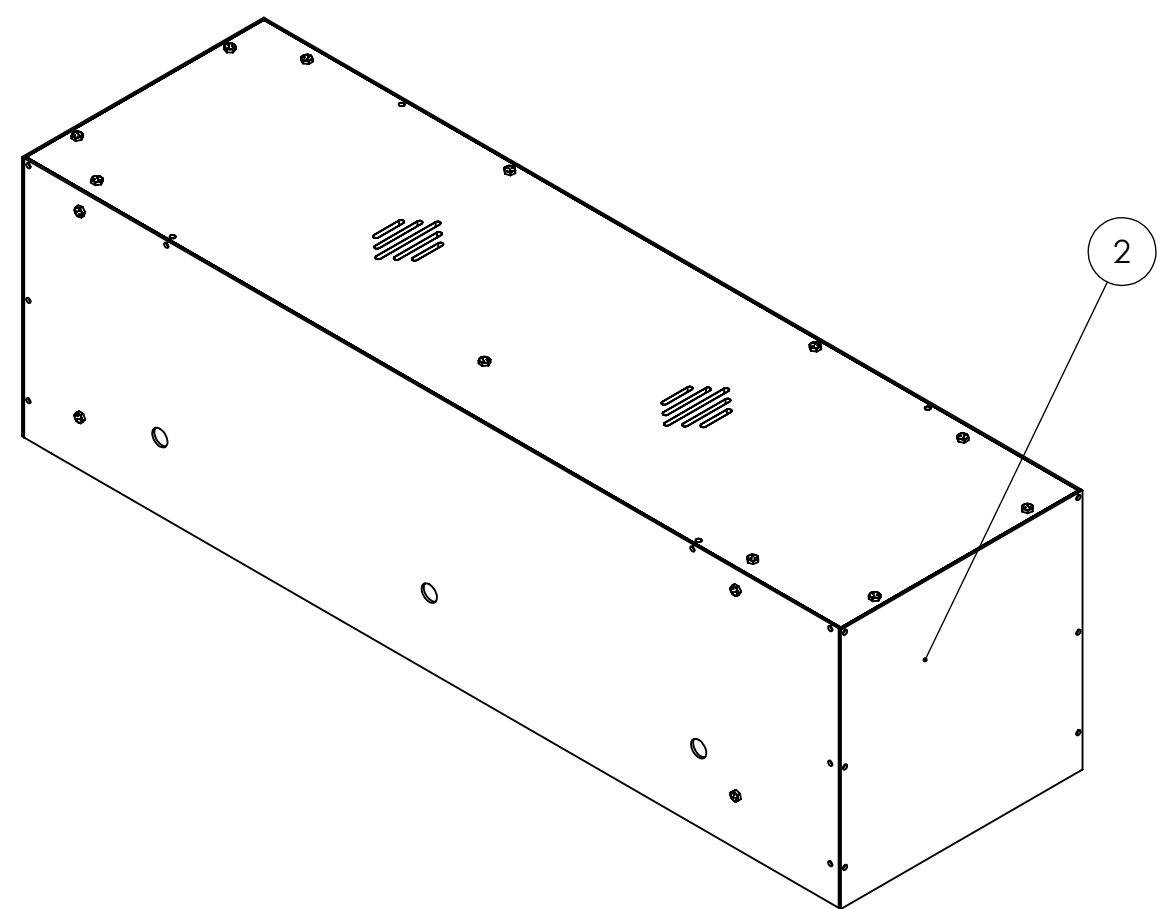
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Notes:  
1. Finish attaching top and faces using Items 10 and 7



Notes:  
1. Attach Item 2 using cable ties  
2. Repeat on opposite side

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		TOLERANCES:		CHECKED	
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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			
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			

TITLE:

# Vault Top Assembly

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18129</b>	
SCALE: 1:8	WEIGHT:	SHEET 3 OF 3

4

3

2

1

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2

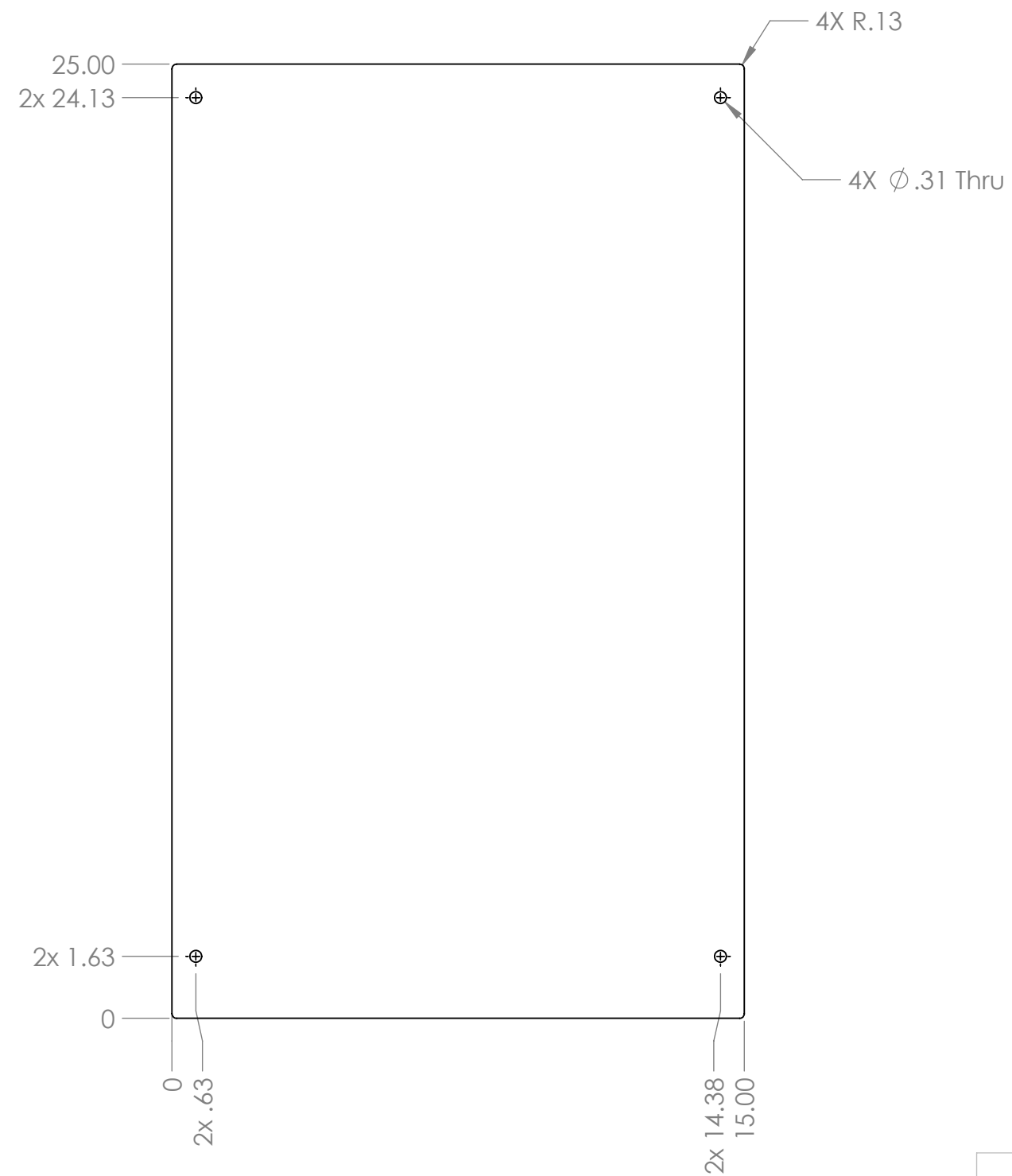
1

B

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- Notes:
1. Material: 1/8" thk. clear polycarbonate
  2. Remove all burrs and sharp edges

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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:  
**Chute Back Wall**

SIZE	DWG. NO.	REV
<b>B</b>	<b>GE-18130</b>	
SCALE: 1:4	WEIGHT:	SHEET 1 OF 1

4

3

2

1