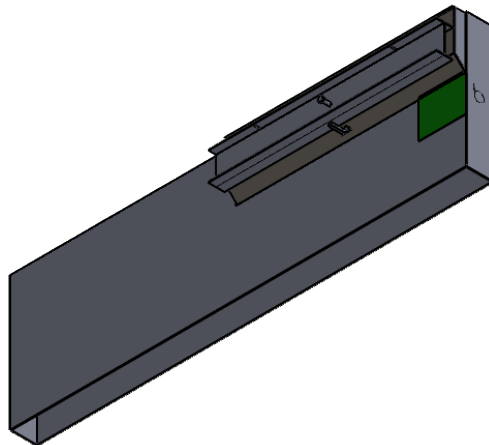
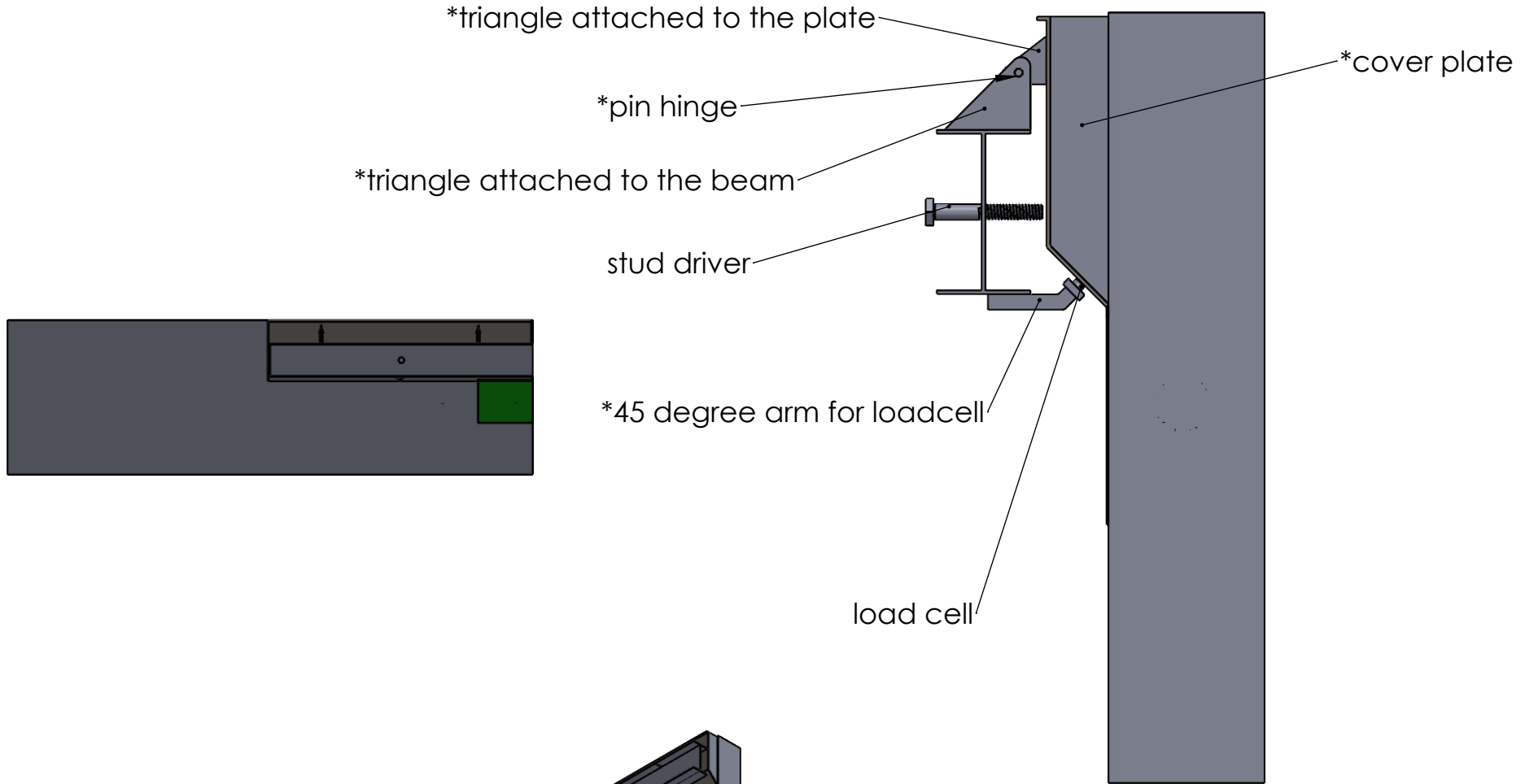



\* need to manufacture


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DEFAULT TOLERANCES:		DESCRIPTION:		UNIVERSITY OF IDAHO ME DEPARTMENT	
LINEAR: X. ± .25 X.X ± .1 X.XX ± .01 X.XXX ± .002	ANGULAR: X. ± 2 X.X ± 1 X.XX ± 0 30'	CHECKED BY: XXXXXXXXXX	DATE: XX/XX/XX	PART #:	QTY:
DRAWN BY:		DATE: 9/13/2018	SCALE: 1:50		SHEET: 1 OF 15
FILE NAME: model.SLDPRT					



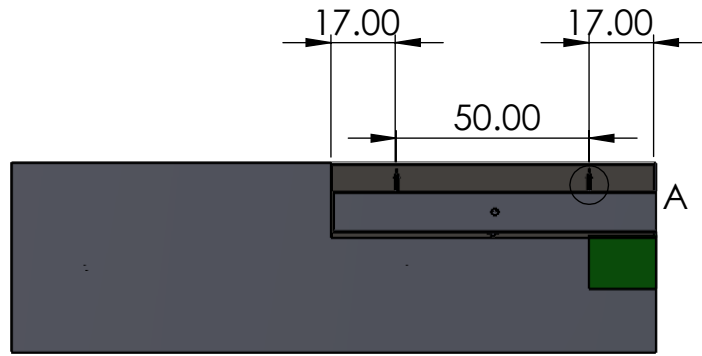
\* need to manufacture

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DEFAULT TOLERANCES:		DESCRIPTION:		UNIVERSITY OF IDAHO ME DEPARTMENT	
LINEAR:	ANGULAR:	CHECKED BY: XXXXXXXXXXXX	DATE: XX/XX/XX	PART #:	QTY:
X. ± .25	X. ± 2	DRAWN BY:	DATE: 9/13/2018	SCALE: 1:50	SHEET: 2 OF 15
X.X ± .1	X.X ± 1	FILE NAME: model.SLDPRT			
X.XX ± .01	X.XX ± 0.30				
X.XXX ± .002					

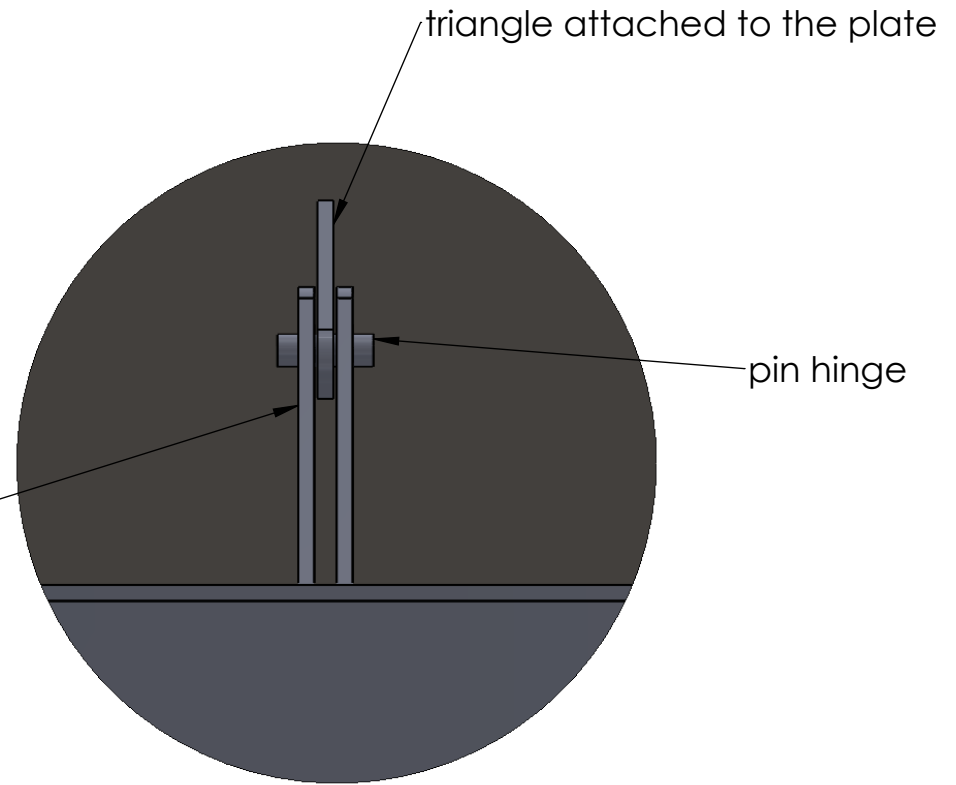
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	page #
1	I-beam	part of the structure	1	5 - 6
2	measurment plate		1	7
3	new throat	the new dimention fot the throat	1	8 - 9
4	triangle attached to the beam	for support	4	10
5	trinagle attached to the plate		2	11
6	45 degree arm for loadcell		1	12
7	load cell		1	X
8	stud driver	control the movment for the maintenance	1	13
9	hinge pin		2	14
10	cover plate	side wall cover plate	2	15

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DEFAULT TOLERANCES: LINEAR: X. ± .25 X.X ± .1 X.XX ± .01 X.XXX ± .002		MATERIAL:			
ANGULAR: X. ± 2 X.X ± 1 X.XX ± 0 30'		DESCRIPTION:		<b>UNIVERSITY OF IDAHO ME DEPARTMENT</b>	
CHECKED BY: XXXXXXXXXXXX		DATE: XX/XX/XX			
DRAWN BY:		DATE: 9/13/2018		PART #:	
FILE NAME: model.SLDPRT		SCALE: 1:50		QTY:	
				SHEET: 3 OF 15	

# Location of the supports

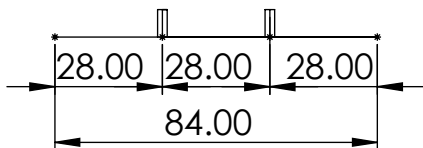


x2  
triangle attached to the beam



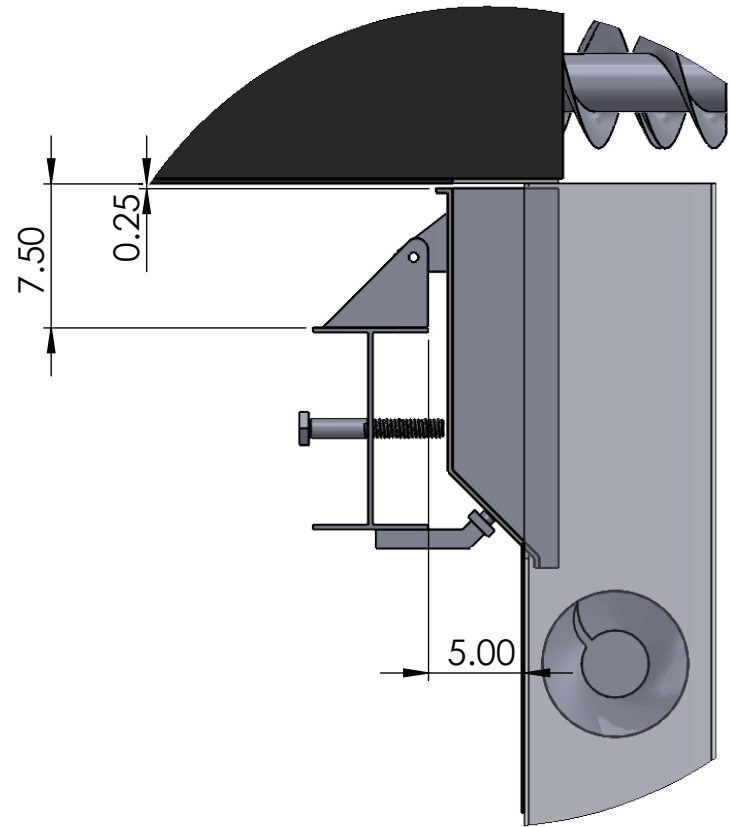
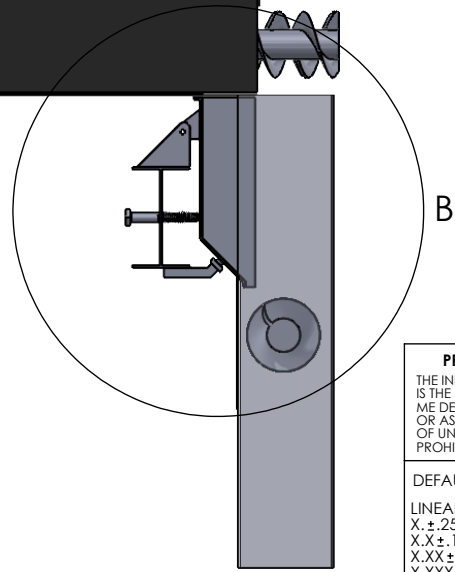
DETAIL A  
SCALE 1 : 3

Distance showing above was chosen based on Shigley book page 87 5th edition. The supports act better than having the distance between the supports similar to the distance from the edge to the support.




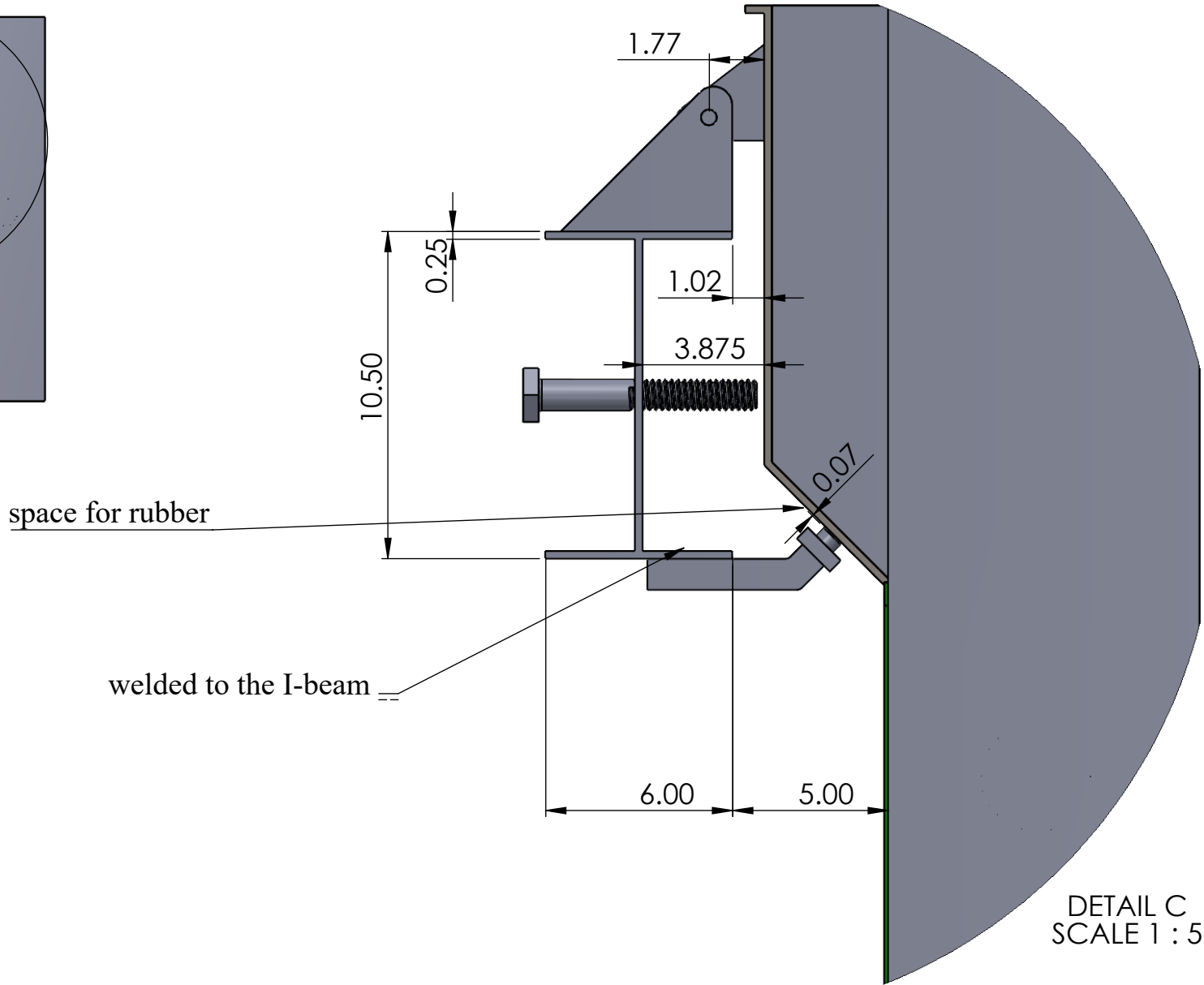
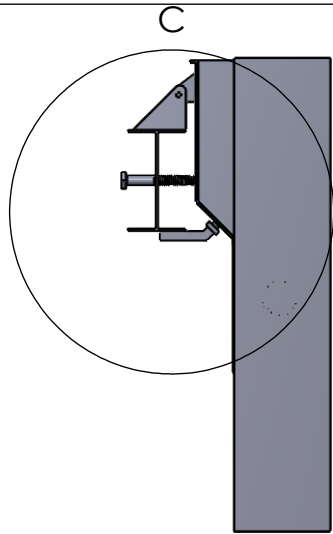
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DEFAULT TOLERANCES:		DESCRIPTION:		<b>UNIVERSITY OF IDAHO ME DEPARTMENT</b>	
LINEAR: X. ± .25 X.X ± .1 X.XX ± .01 X.XXX ± .002	ANGULAR: X. ± 2 X.X ± 1 X.XX ± 0 30'	CHECKED BY: XXXXXXXXXXXX	DATE: XX/XX/XX	PART #:	QTY:
DRAWN BY:		DATE: 9/13/2018	SCALE: 1:50		SHEET: 4 OF 15
FILE NAME: model.SLDPRT					

# location of the mesurment plate and I- Beam



DETAIL B  
SCALE 1 : 10

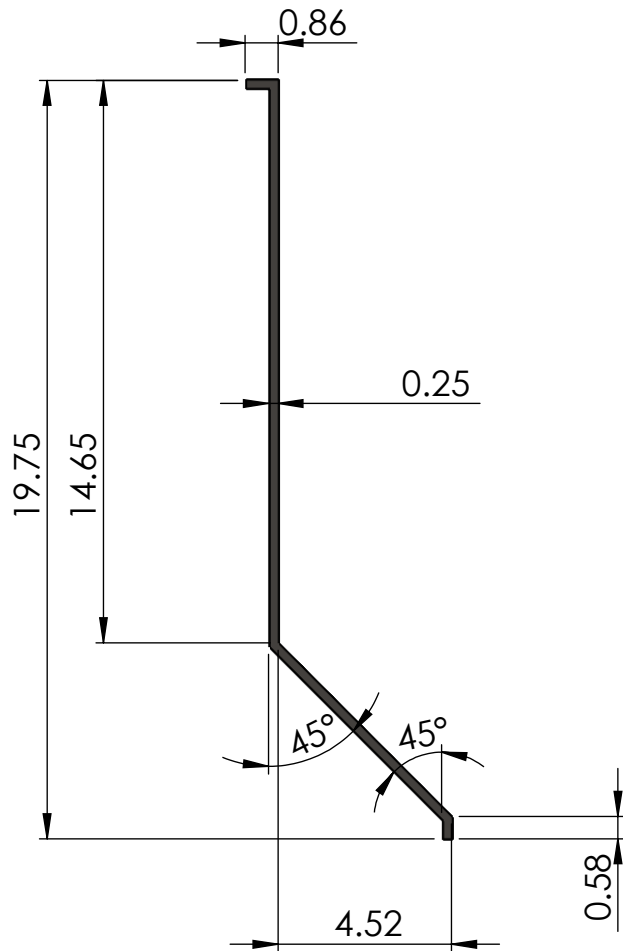
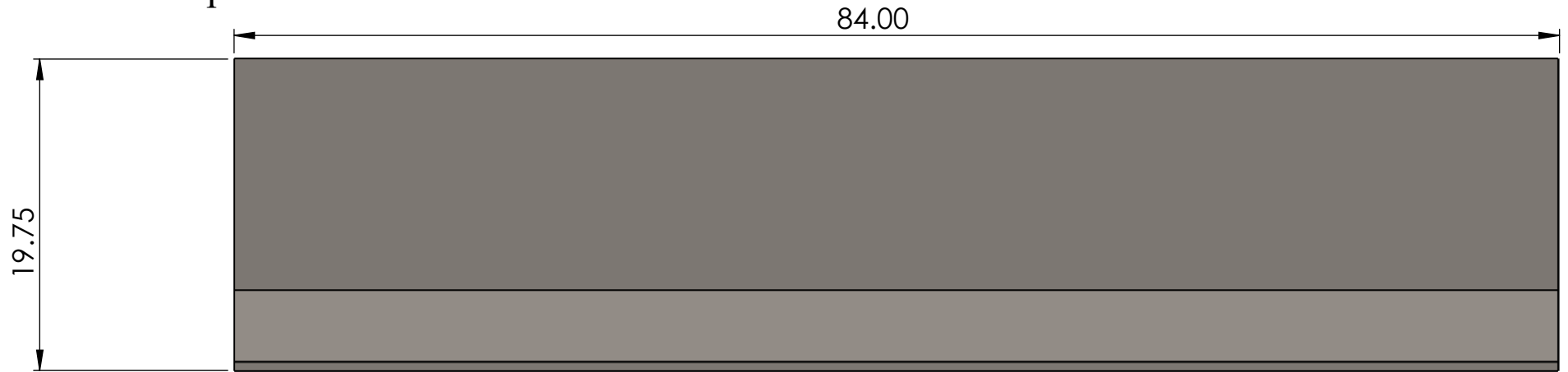
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DEFAULT TOLERANCES:		MATERIAL:		UNIVERSITY OF IDAHO ME DEPARTMENT	
LINEAR:	ANGULAR:	DESCRIPTION:	CHECKED BY: XXXXXXXXXXXX	DATE: XX/XX/XX	PART #:
X. ± .25	X. ± 2		DRAWN BY:	DATE: 9/13/2018	QTY:
X.X ± .1	X.X ± 1		FILE NAME: model.SLDPRT	SCALE: 1:20	SHEET: 5 OF 15
X.XX ± .01	X.XX ± 0.30				
X.XXX ± .002					



DETAIL C  
SCALE 1 : 5

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DEFAULT TOLERANCES:		DESCRIPTION:		UNIVERSITY OF IDAHO ME DEPARTMENT	
LINER: X. ± .25 X.X ± .1 X.XX ± .01 X.XXX ± .002	ANGULAR: X. ± 2 X.X ± 1 X.XX ± 0 30'	CHECKED BY: XXXXXXXXXXXX	DATE: XX/XX/XX	PART #:	QTY:
DRAWN BY:		DATE: 9/13/2018	SCALE: 1:50		
FILE NAME: model.SLDPRT		SHEET: 6 OF 15			

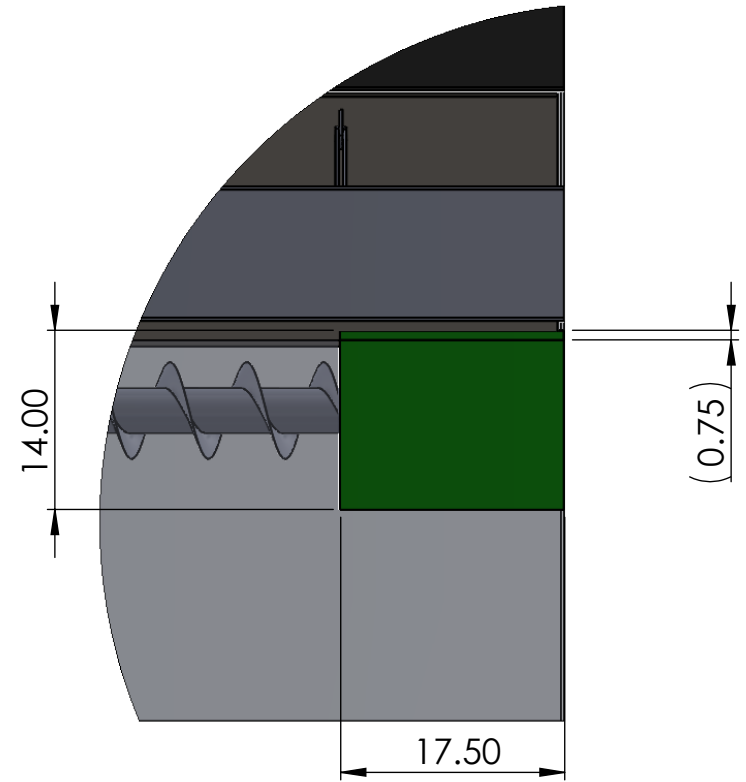
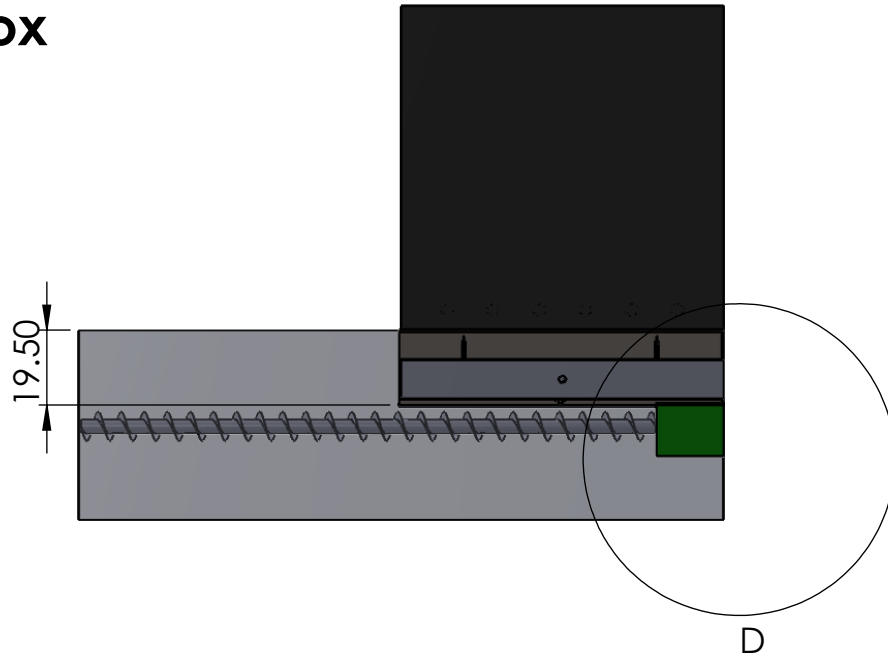
measurement plate



\*stiffing(web) needed to avoid bending

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DEFAULT TOLERANCES: LINEAR: X.±.25 X.X±.1 X.XX±.01 X.XXX±.002		MATERIAL:			
ANGULAR: X.± 2 X.X± 1 X.XX± 0.30'		DESCRIPTION:	CHECKED BY: XXXXXXXXXXXX	DATE: XX/XX/XX	SCALE: 1:50
		DRAWN BY:	DATE: 9/13/2018	FILE NAME: model.SLDPRT	SHEET: 7 OF 15

# Box

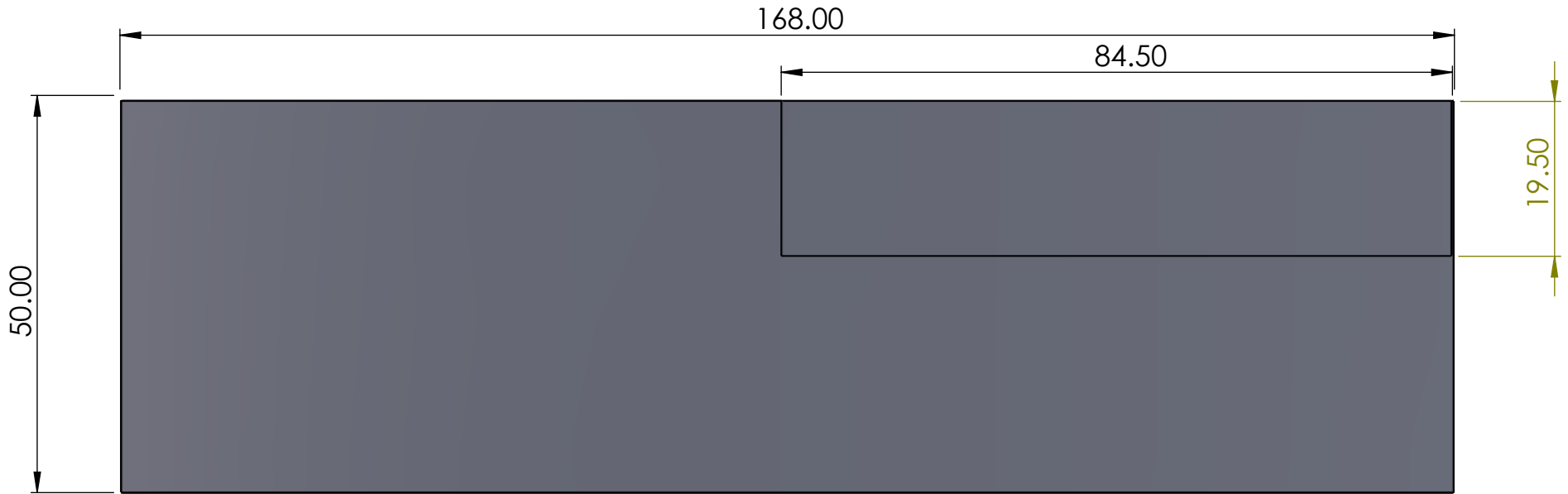
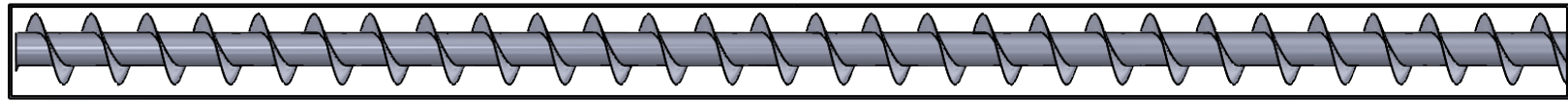
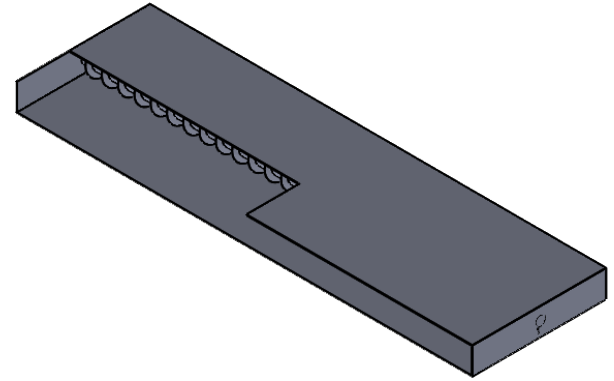


DETAIL D  
SCALE 1 : 15

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DEFAULT TOLERANCES:		DESCRIPTION:		UNIVERSITY OF IDAHO ME DEPARTMENT	
LINEAR: X. ± .25 X.X ± .1 X.XX ± .01 X.XXX ± .002	ANGULAR: X. ± 2 X.X ± 1 X.XX ± 0 30'	CHECKED BY: XXXXXXXXXXXX	DATE: XX/XX/XX	PART #:	QTY:
DRAWN BY:		DATE: 9/13/2018	SCALE: 1:50		SHEET: 8 OF 15
FILE NAME: model.SLDPRT					

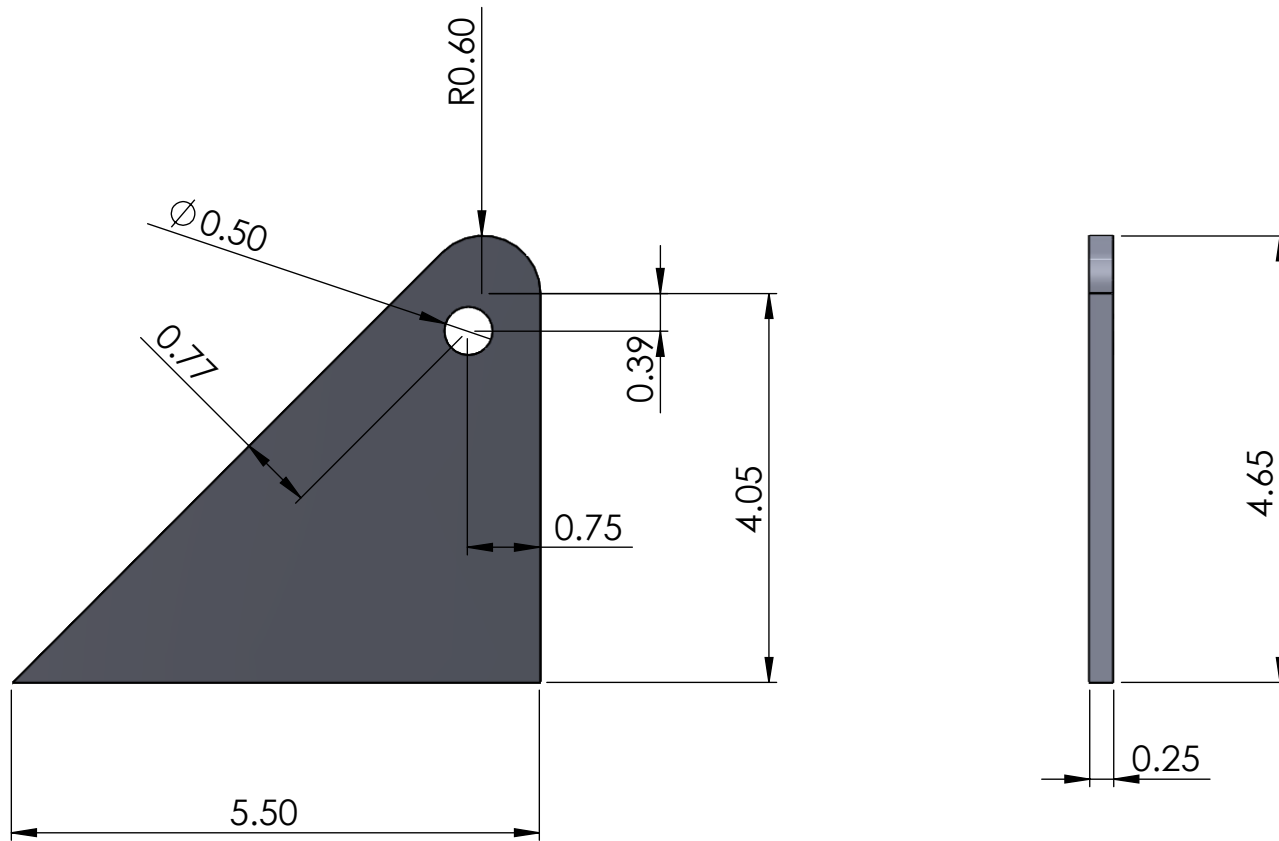



Throat from the back



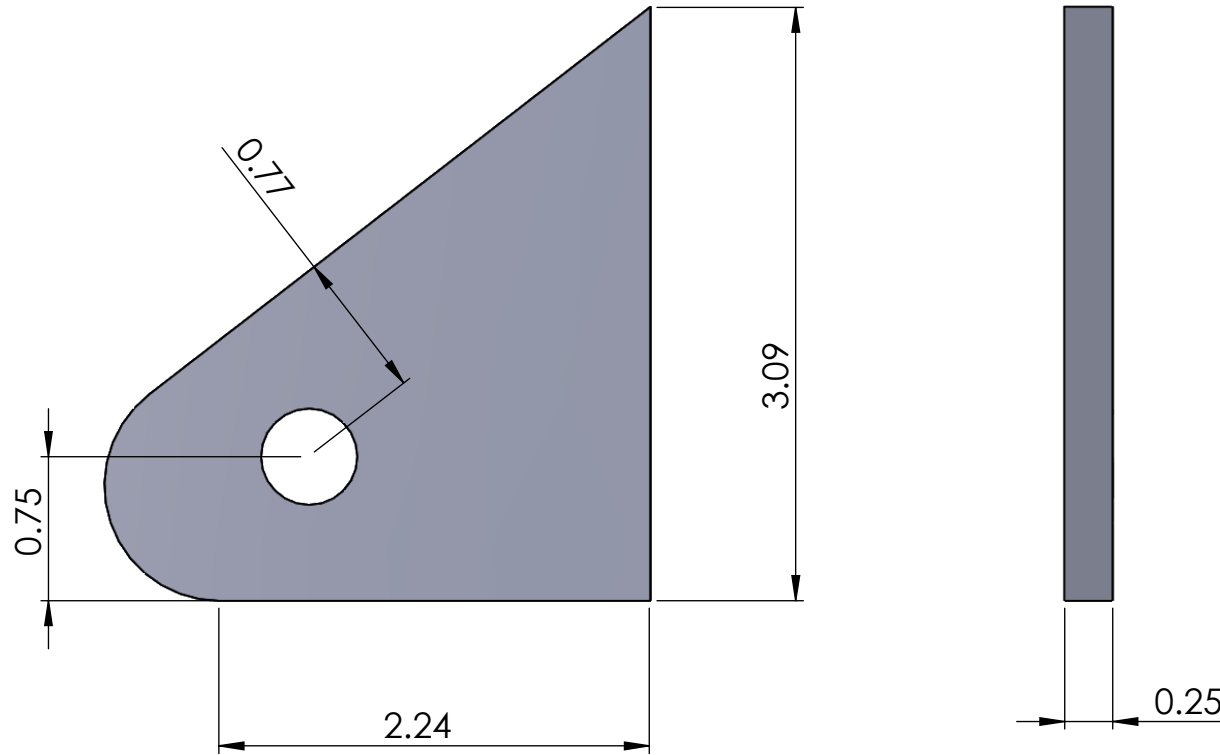
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DEFAULT TOLERANCES:		DESCRIPTION:		<b>UNIVERSITY OF IDAHO ME DEPARTMENT</b>	
LINEAR: X. ± .25 X.X ± .1 X.XX ± .01 X.XXX ± .002	ANGULAR: X. ± 2 X.X ± 1 X.XX ± 0 30'	CHECKED BY: XXXXXXXXXX	DATE: XX/XX/XX	PART #:	QTY:
		DRAWN BY:	DATE: 9/13/2018	SCALE: 1:50	SHEET: 9 OF 15
		FILE NAME: model.SLDPRT			


triangles attached to the beam



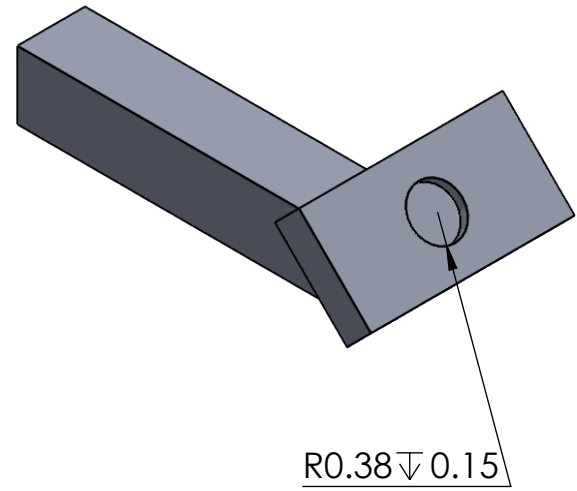
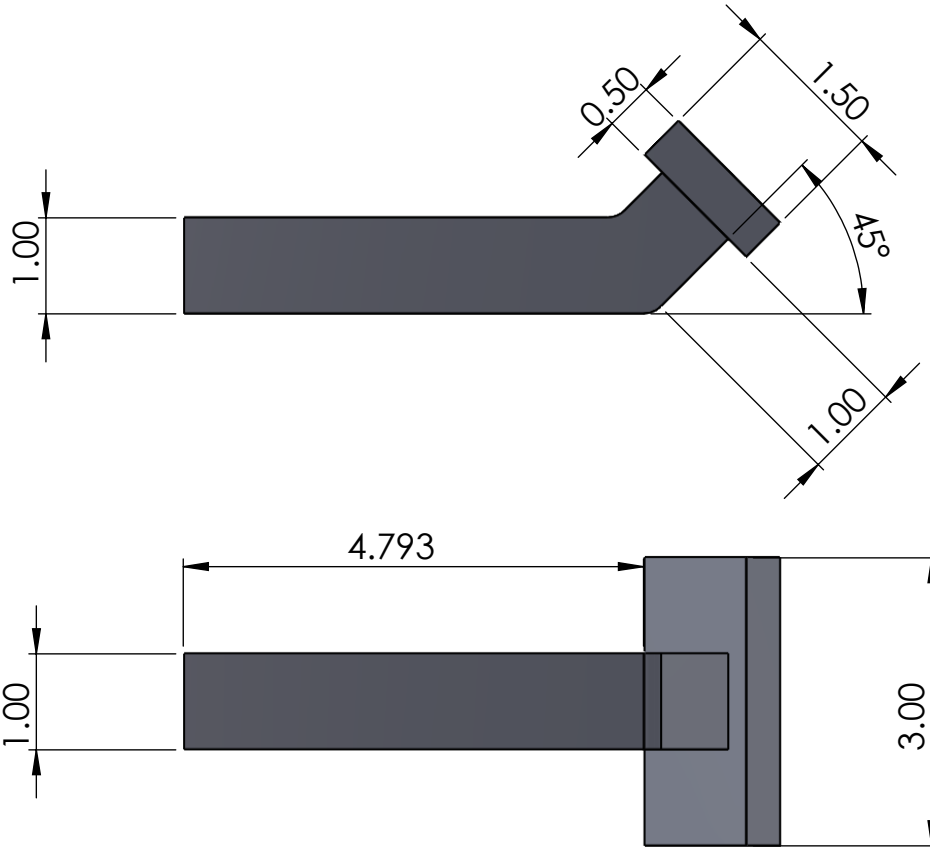
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DEFAULT TOLERANCES:		MATERIAL:		UNIVERSITY OF IDAHO ME DEPARTMENT	
LINEAR: X. ± .25 X.X ± .1 X.XX ± .01 X.XXX ± .002	ANGULAR: X. ± 2 X.X ± 1 X.XX ± 0.30'	DESCRIPTION:	CHECKED BY: XXXXXXXXXXXX	DATE: XX/XX/XX	PART #:
		DRAWN BY:	DATE: 9/13/2018	QTY:	
		FILE NAME: model.SLDPRT	SCALE: 1:2	SHEET: 10 OF 15	

triangles attached to the plate



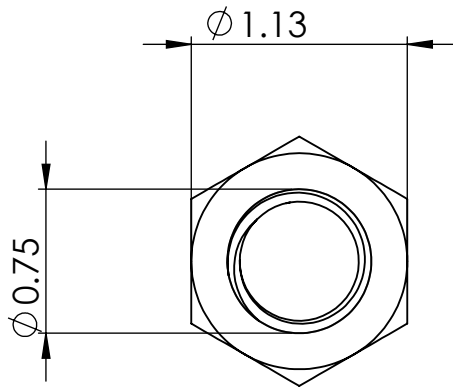
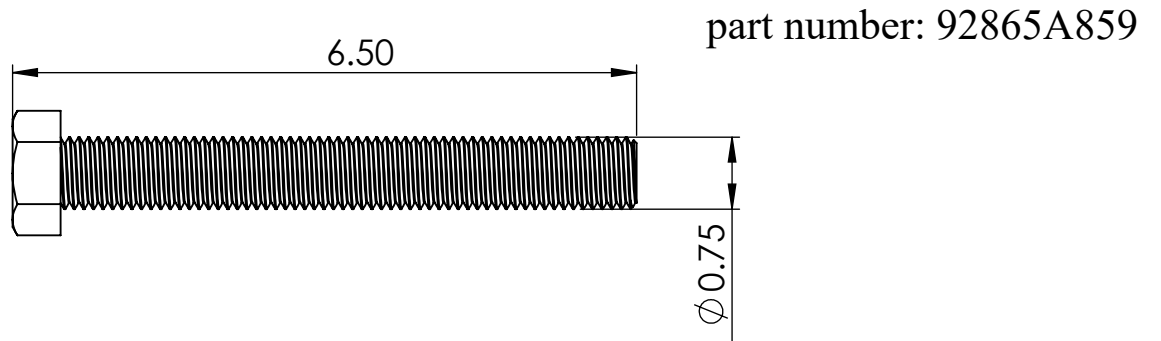
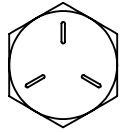
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DEFAULT TOLERANCES:		MATERIAL:			
LINER: X. ± .25 X.X ± .1 X.XX ± .01 X.XXX ± .002	ANGULAR: X. ± 2 X.X ± 1 X.XX ± 0 30'	DESCRIPTION:	CHECKED BY: XXXXXXXXXXXX	DATE: XX/XX/XX	<b>UNIVERSITY OF IDAHO ME DEPARTMENT</b>
		DRAWN BY:	DATE: 9/13/2018	PART #:	
		FILE NAME: model.SLDPRT	SCALE: 1:1	SHEET: 11 OF 15	

# 45 degree arm for loadcell

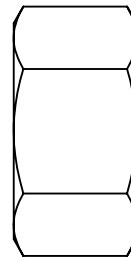


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DEFAULT TOLERANCES:		DESCRIPTION:		UNIVERSITY OF IDAHO ME DEPARTMENT	
LINEAR:	ANGULAR:	CHECKED BY: XXXXXXXXXXXX	DATE: XX/XX/XX	PART #:	QTY:
X. ± .25	X. ± 2	DRAWN BY:	DATE: 9/13/2018	SCALE: 1:2	SHEET: 12 OF 15
X.X ± .1	X.X ± 1	FILE NAME: model.SLDPRT			
X.XX ± .01	X.XX ± 0.30				
X.XXX ± .002					

# Stud bolt and a nut



part number: 95462A538



Use McMaster for the nearest dimension to givrn dimension

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DEFAULT TOLERANCES: LINEAR: X. ± .25 X.X ± .1 X.XX ± .01 X.XXX ± .002		MATERIAL:			
ANGULAR: X. ± 2 X.X ± 1 X.XX ± 0 30'		DESCRIPTION:	DATE: XX/XX/XX	PART #:	QTY:
CHECKED BY: XXXXXXXXXXXX		DRAWN BY:	DATE: 9/13/2018	SCALE: 1:2	SHEET: 13 OF 15
FILE NAME: model.SLDPRT					

pin connect the two tringles support

Pin size

Rules Sheet

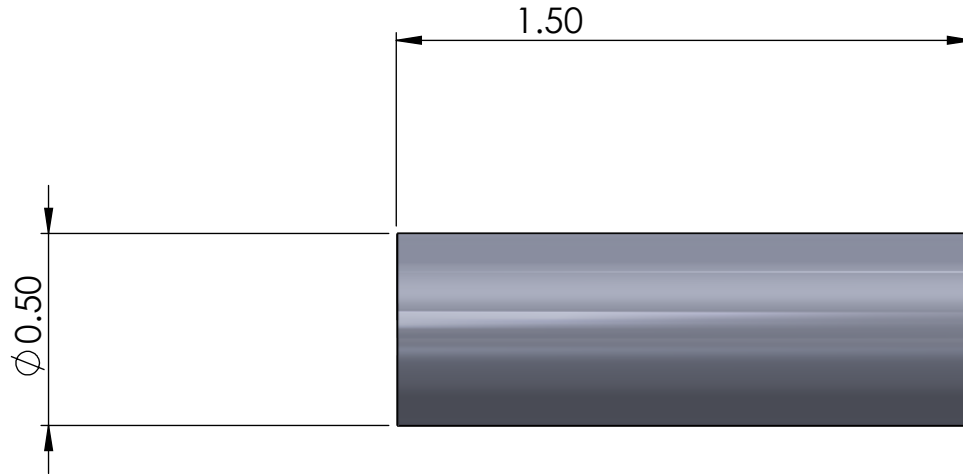
Rules

$$\tau = \frac{F}{2 \cdot \pi \cdot r^2}$$

$$D = r \cdot 2$$

Variables Sheet

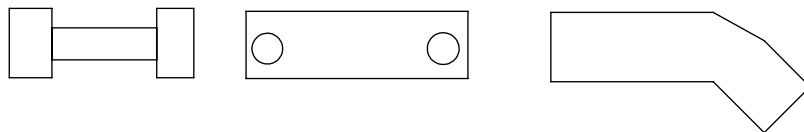
Input	Name	Output	Unit
50000	$\tau$		
135	F		
	r	0.010365	
	D	0.020730	




according to the calculation above the diameter can be any dimension bigger or equal to 0.25in. we choose 0.5 in diameter.

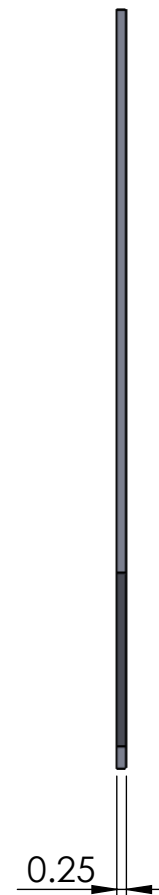
ideas of making it fix.

- 1- adding nuts to the edges.
- 2- create holes in the ends and stick rod into it
- 3-make the pin curved from one end



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DEFAULT TOLERANCES:		DESCRIPTION:		<b>UNIVERSITY OF IDAHO ME DEPARTMENT</b>	
LINEAR: X. ± .25 X.X ± .1 X.XX ± .01 X.XXX ± .002	ANGULAR: X. ± 2 X.X ± 1 X.XX ± 0.30'	CHECKED BY: XXXXXXXXXXXX	DATE: XX/XX/XX	PART #:	QTY:
DRAWN BY:		DATE: 9/13/2018		SCALE: 2:1	
FILE NAME: model.SLDPRТ				SHEET: 14 OF 15	

# Covering Plate



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DEFAULT TOLERANCES:		DESCRIPTION:		<b>UNIVERSITY OF IDAHO ME DEPARTMENT</b>	
LINEAR:	ANGULAR:	CHECKED BY: XXXXXXXXXXXX	DATE: XX/XX/XX	PART #:	QTY:
X. ± .25	X. ± 2	DRAWN BY:	DATE: 9/13/2018		
X.X ± .1	X.X ± 1	FILE NAME: model.SLDPRT	SCALE: 1:5	SHEET: 15 OF 15	
X.XX ± .01	X.XX ± 0.30				
X.XXX ± .002					