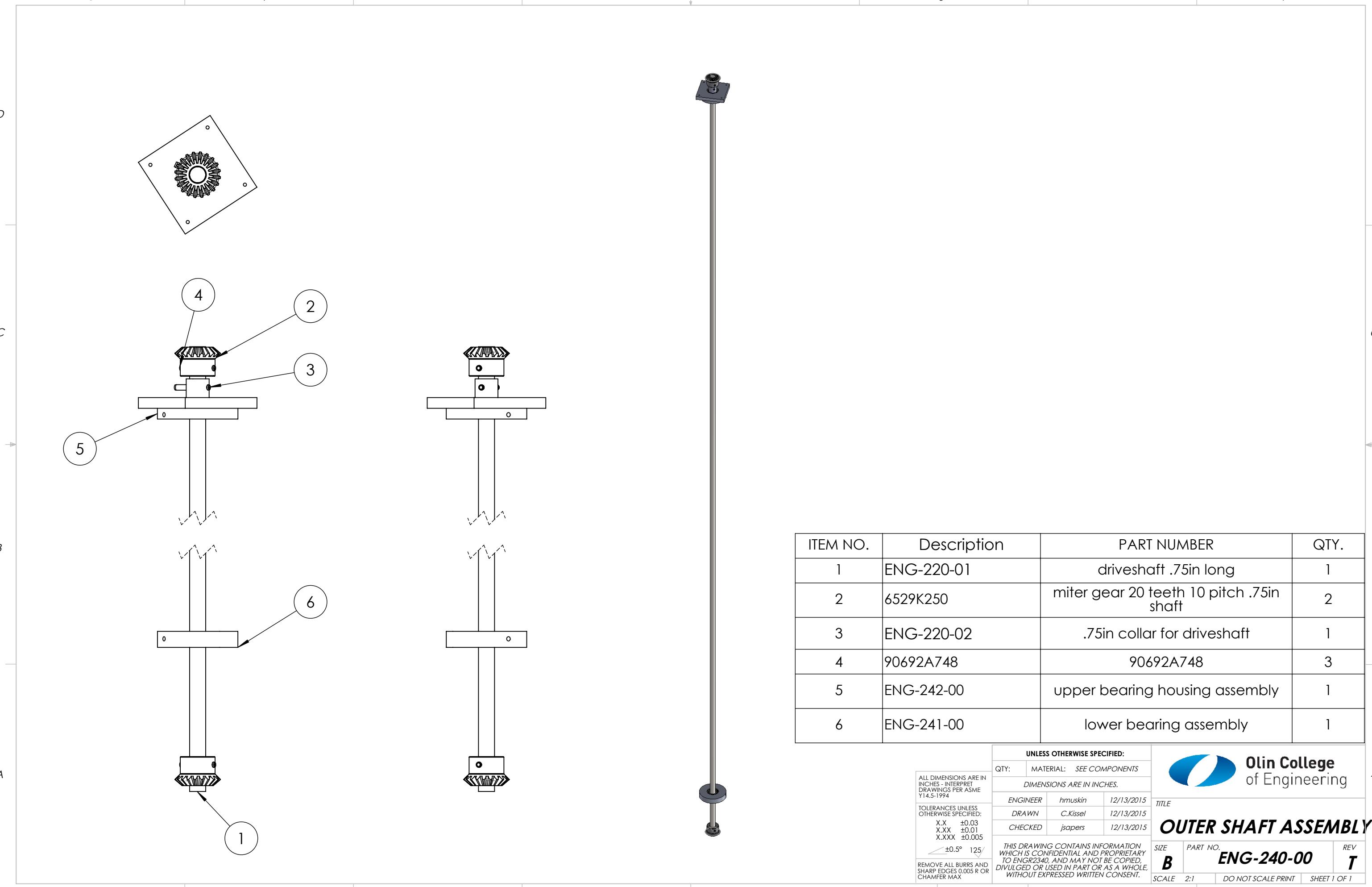


ITEM NO.	Number	DESCRIPTION	QTY.
1	ENG-400-02	GEARBOX OUTPUT SHAFT	1
2	6383K234	McMaster Part 6383K234	4
3	6325K4	McMaster Part 6325K4	1
4	6325K2	McMaster Part 6325K2	1
5	6867K59	McMaster Part 6867K59	1
6	6867K65	McMaster Part 6867K65	1
7	ENG-400-01	GEARBOX INPUT SHAFT	1
8	ENG-400-03	SHIFTER SLIDE	1
9	ENG-400-04	SHIFTER LINK	1
10	6383KS57	MCMMASTER CARR PART 6383KS57	2
11	98535A130	3/16 KEY 0.43"	2
12	ENG-400-06	SHIFTER FRICTION PAD	2
13	ENG-400-05	FRICTION SHOE	2
14	91590A133	MCMMASTER CARR PART 91590A133 1" RETAINING RING	2
15	97633A200	97633A200	6
16	98535A140	3/16 KEY 0.43"	1
17	98535A140	3/16 KEY 0.43"	1
18	98633A230	MCMMASTER CARR PART 98633A230 5/8 RETAINING RING	4
19	ENG-400-07	CAM SHAFT TIMING PULLEY	1
20		.125 KEY	1
21	61005K122	MCMMASTER PART 61005K122 SHAFT COUPLER	1
22	ENG-400-02	GEARBOX OUTPUT SHAFT	1

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: SEE COMPONENTS
DIMENSIONS ARE IN INCHES.
ALL DIMENSIONS ARE IN INCHES - INTERPRET DRAWINGS PER ASME Y14.5-1994
TOLERANCES UNLESS OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
ANGLE: ±0.5° 125°
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REMOVE ALL BURRS AND SHARP EDGES .005 R OR CHAMFER MAX

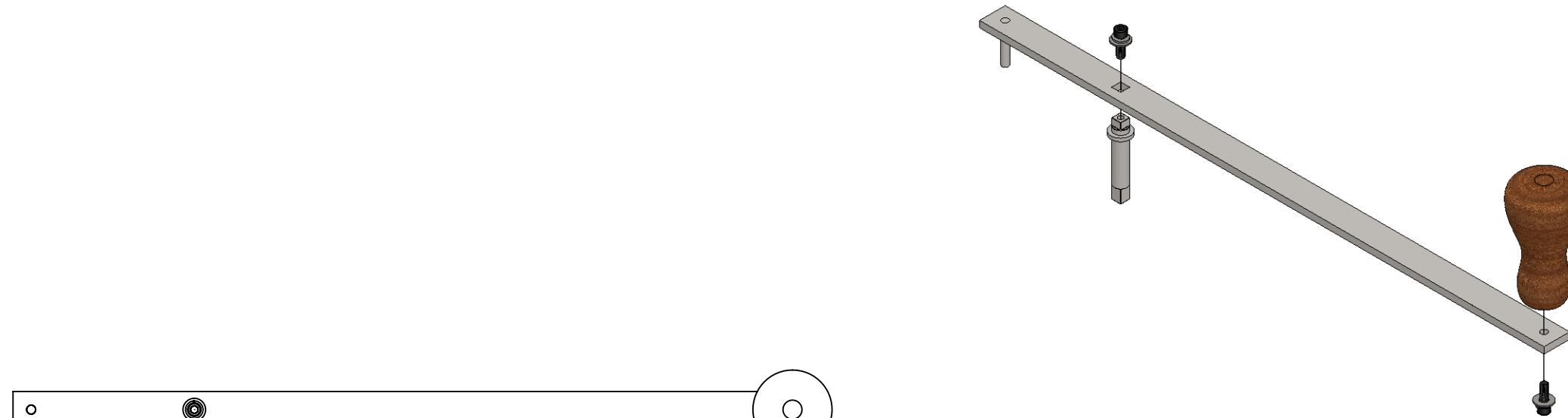
Olin College
of Engineering
TITLE
GEARBOX
ENG-400-00
SIZE B PART NO. REV G
SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1



8 7 6 5 4 3 2 1

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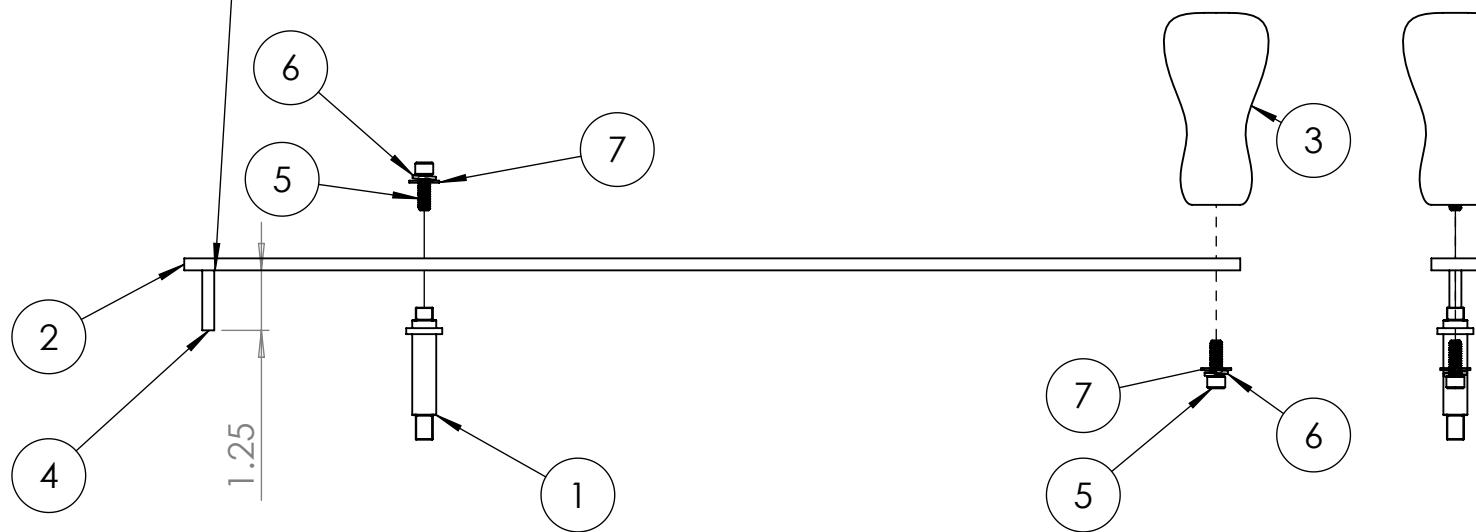
C

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.25 △ ALL AROUND PIN



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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ENG-800-04	SHIFTER PIVOT	1
2	ENG-800-01	GEARSHIFT ARM	1
3	ENG-800-02	SHIFTER HANDLE	1
4	ENG-800-03	SHIFTER PIN	1
5	91251A540	1/4-20 SCREW	2
6	92147A029	1/4" SPLIT WASHER	2
7	90107A029	1/4" WASHER	2

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: SEE COMPONENTS
DIMENSIONS ARE IN INCHES.
ALL DIMENSIONS ARE IN INCHES - INTERPRET DRAWINGS PER ASME Y14.5-1994
TOLERANCES UNLESS OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
ANGLE: ±0.5° 125°
THIS DRAWING CONTAINS INFORMATION WHICH IS CONFIDENTIAL AND PROPRIETARY TO ENGR2340, AND MAY NOT BE COPIED, DIVULGED OR USED IN PART OR AS A WHOLE, WITHOUT EXPRESSED WRITTEN CONSENT.
REMOVE ALL BURRS AND SHARP EDGES 0.005 R OR CHAMFER MAX



SHIFTER

ENG-800-00

REV C

SIZE B PART NO. ENG-800-00 REV C
SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1

8 7 6 5 4 3 2 1

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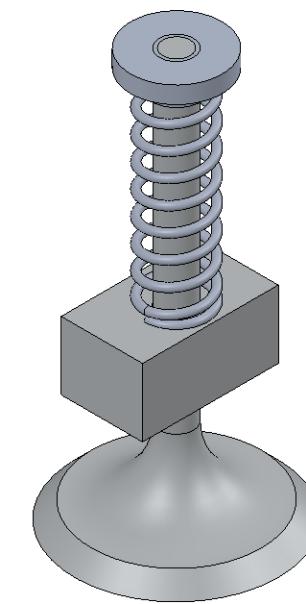
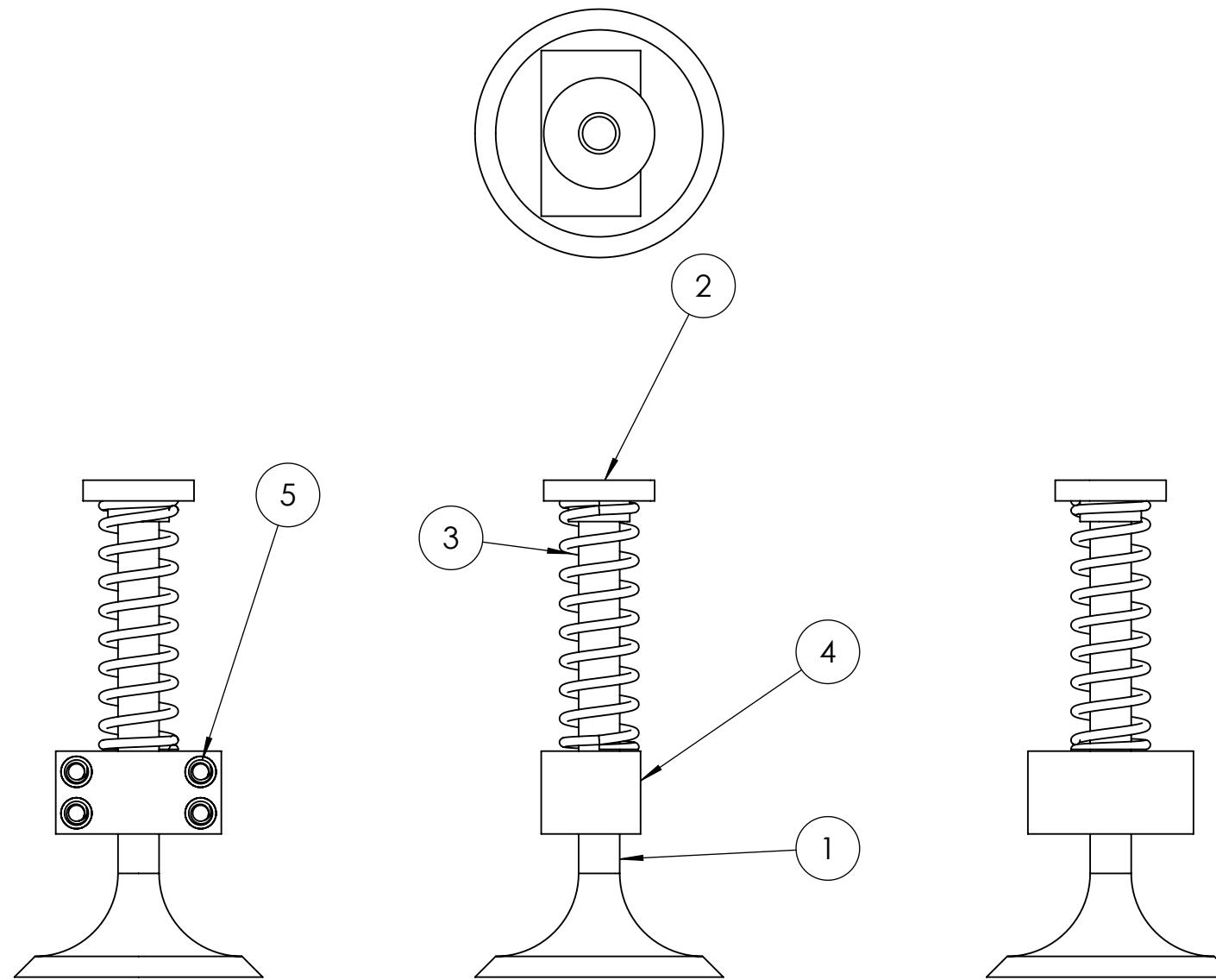
C

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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ENG-700-03	Valve Stem	1
2	ENG-700-02	Valve Spring Cap	1
3	9434K118	9434K118 SPRING	1
4	ENG-700-01	Valve Linear Bearing	1
5	92394A113	92394A113 #6 SCREW	4

ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994

TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005

±0.5° 125°

REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:
QTY: 12 MATERIAL:
DIMENSIONS ARE IN INCHES.
ENGINEER L.Andrade 12/14/2015
DRAWN C.Kissel 12/14/2015
CHECKED jsapers 12/14/2015

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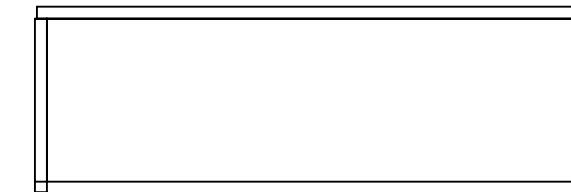
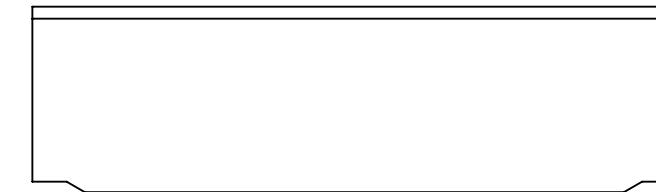
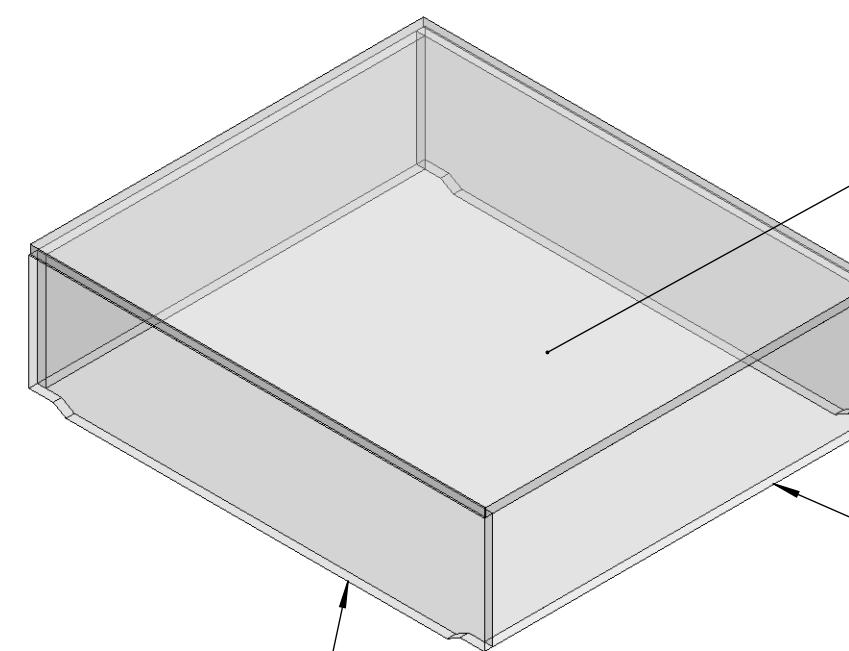
Olin College
of Engineering

VALVE ASSEMBLY
ENG-700-00
SIZE **B** PART NO. **ENG-700-00** REV **E**
SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1

8 7 6 5 4 3 2 1

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NOTE: EPOXY GLASS PANELS TOGETHER

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ENG-320-01	GLASS FRONT	2
2	ENG-320-02	GLASS SIDE	2
3	ENG-320-03	GLASS TOP	1

ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994
TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
±0.5° 125/

REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: SEE COMPONENTS

DIMENSIONS ARE IN INCHES.

ENGINEER jsapers 12/13/2015

DRAWN C.Kissel 12/13/2015

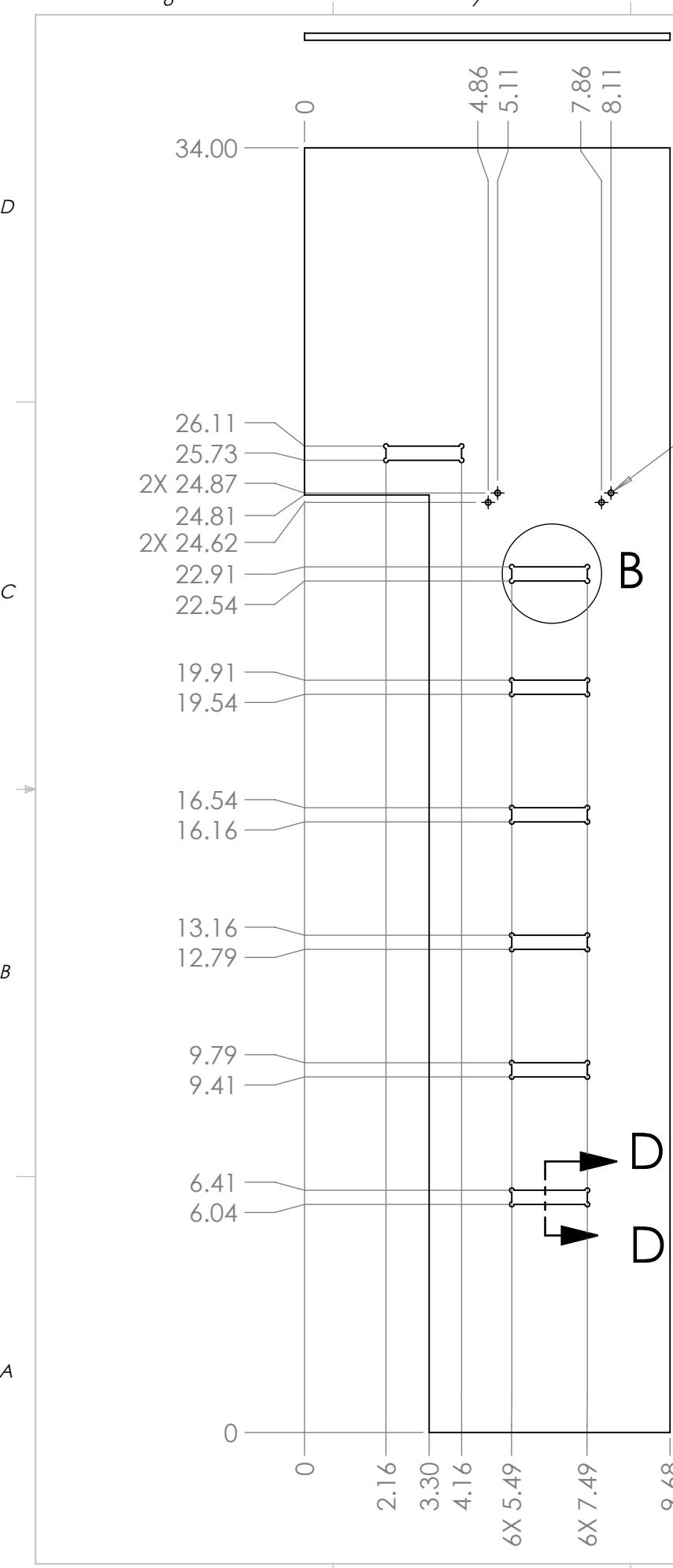
CHECKED jsapers 12/13/2015

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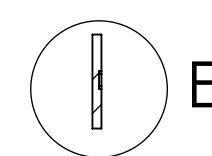
 Olin College
of Engineering

GLASS FRAME

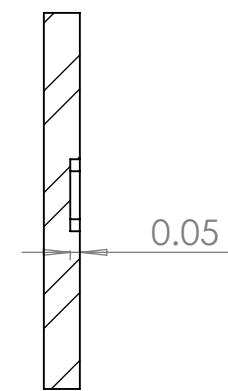
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SCALE 2:1	DO NOT SCALE PRINT	SHEET 1 OF 1



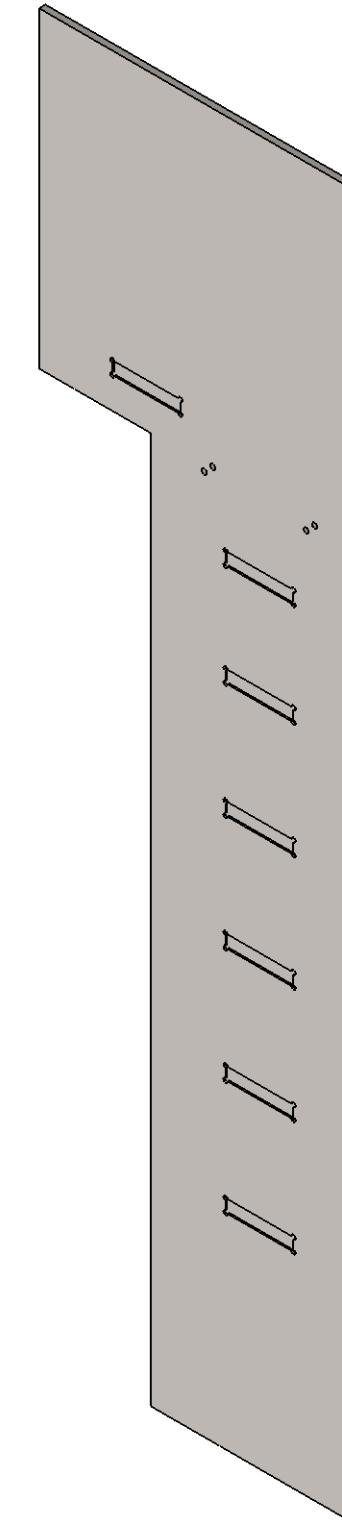
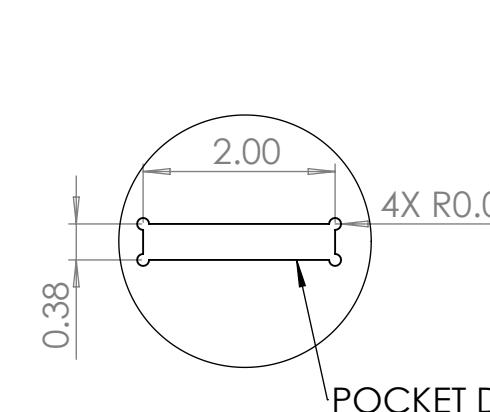
SECTION D-D



DETAIL ■
SCALE 1 : 1



DETAIL



ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994

TOLERANCES UNLESS
OTHERWISE SPECIFIED:

X.X	± 0.03
X.XX	± 0.01
X.XXX	± 0.005

 $\pm 0.5^\circ$ 125

REMOVE ALL BURRS AND
SHARP EDGES 0.005 R C
CHAMFER MAX

$\pm 0.5^\circ$ 125°
REMOVE ALL BURRS AND SHARP EDGES 0.005 R C
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:		
QTY: 1	MATERIAL:	4130 STEEL
DIMENSIONS ARE IN INCHES.		
ENGINEER	jsapers	12/13/2015
DRAWN	C.Kissel	12/13/2015
CHECKED	jsapers	12/13/2015
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		Olin College of Engineering	
TITLE			
BLOCK BASE			
SIZE	PART NO.	REV	
B	ENG-310-10	D	
SCALE	2:1	DO NOT SCALE PRINT	SHEET 1 OF 1

8 7 6 5 4 3 2 1

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UNLESS OTHERWISE SPECIFIED:			
QTY: 1	MATERIAL: CARBON STEEL		
DIMENSIONS ARE IN INCHES.			
ENGINEER	jsapers	12/13/2015	
DRAWN	C.Kissel	12/13/2015	
CHECKED	jsapers	12/13/2015	
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SIZE	PART NO.		
B	ENG-310-07	REV A	
SCALE	2:1	DO NOT SCALE PRINT	SHEET 1 OF 1



BLOCK GEAR BACK

8 7 6 5 4 3 2 1

1

8 7 6 5 4 3 2 1

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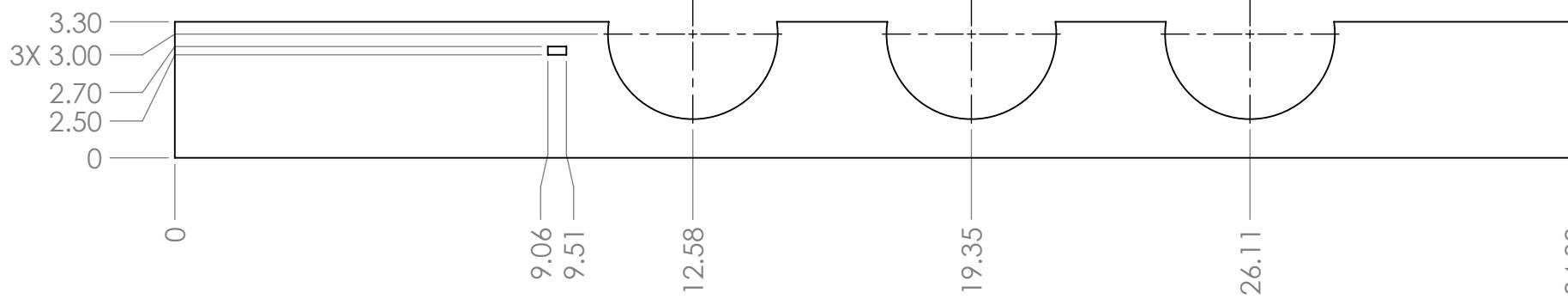
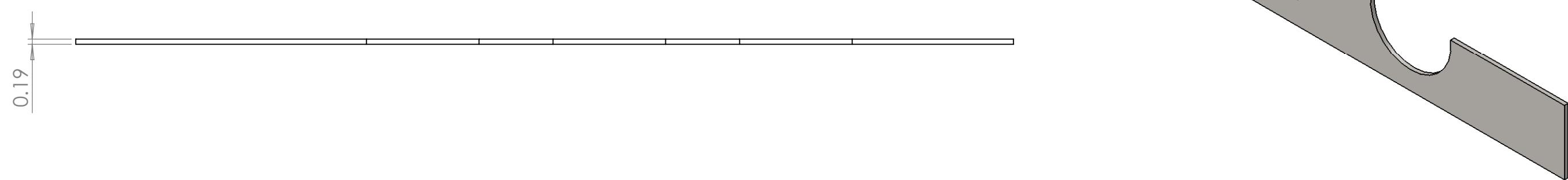
C

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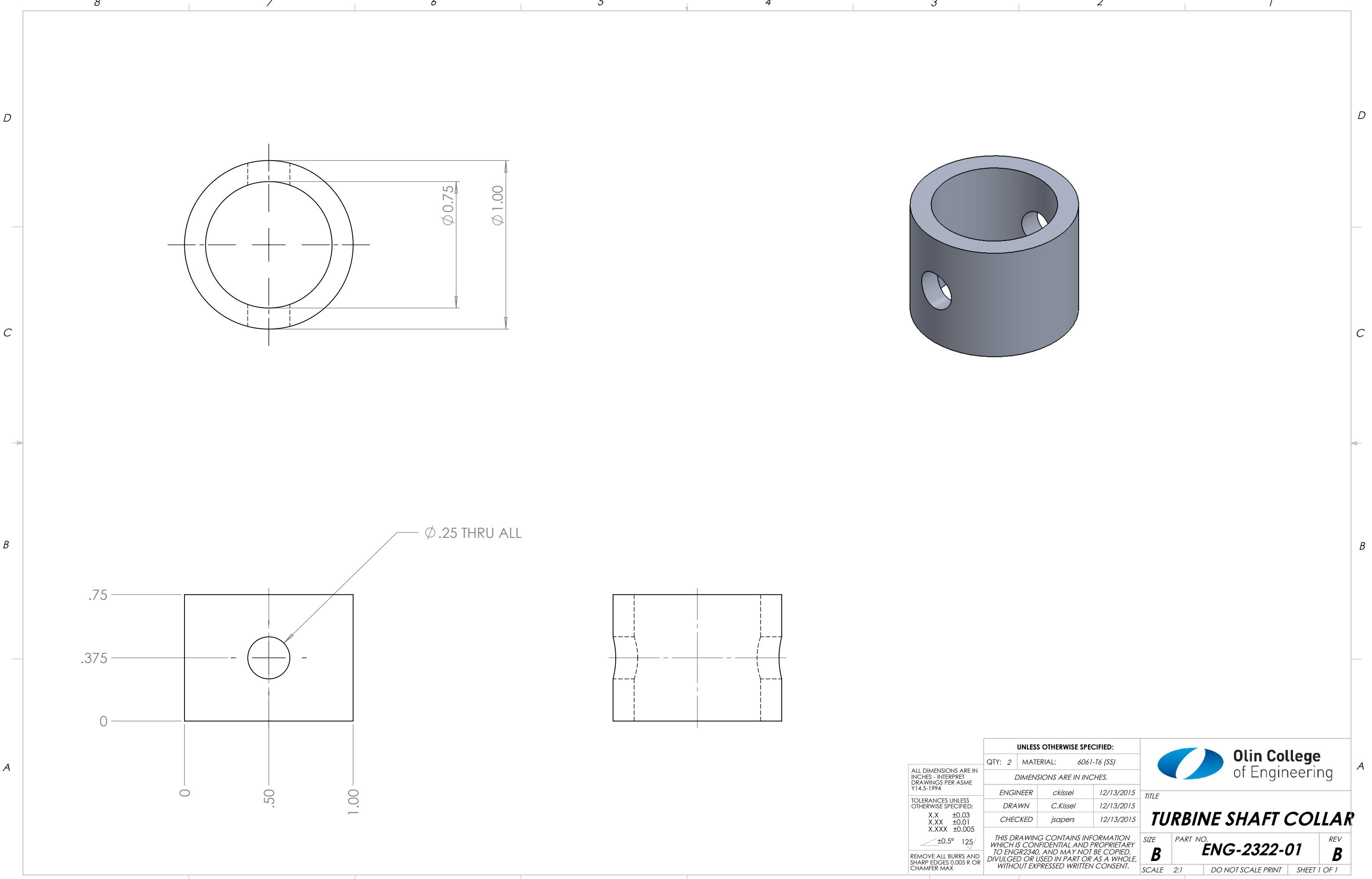
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QTY: 1	MATERIAL: CARBON STEEL
DIMENSIONS ARE IN INCHES.	
ENGINEER	jsapers
DRAWN	C.Kissel
CHECKED	jsapers
12/13/2015	
TITLE	
ENG-310-11	
SIZE	PART NO.
B	BLOCK RIGHT SIDE
REV	B
SCALE	2:1
DO NOT SCALE PRINT	SHEET 1 OF 1



ENG-310-11

8 7 6 5 4 3 2 1

1



ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994

TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005

UNLESS OTHERWISE SPECIFIED:
QTY: 2 MATERIAL: 6061-T6 (SS)

DIMENSIONS ARE IN INCHES.

ENGINEER	c.kissel	12/13/2015
DRAWN	C.Kissel	12/13/2015
CHECKED	jaspers	12/13/2015

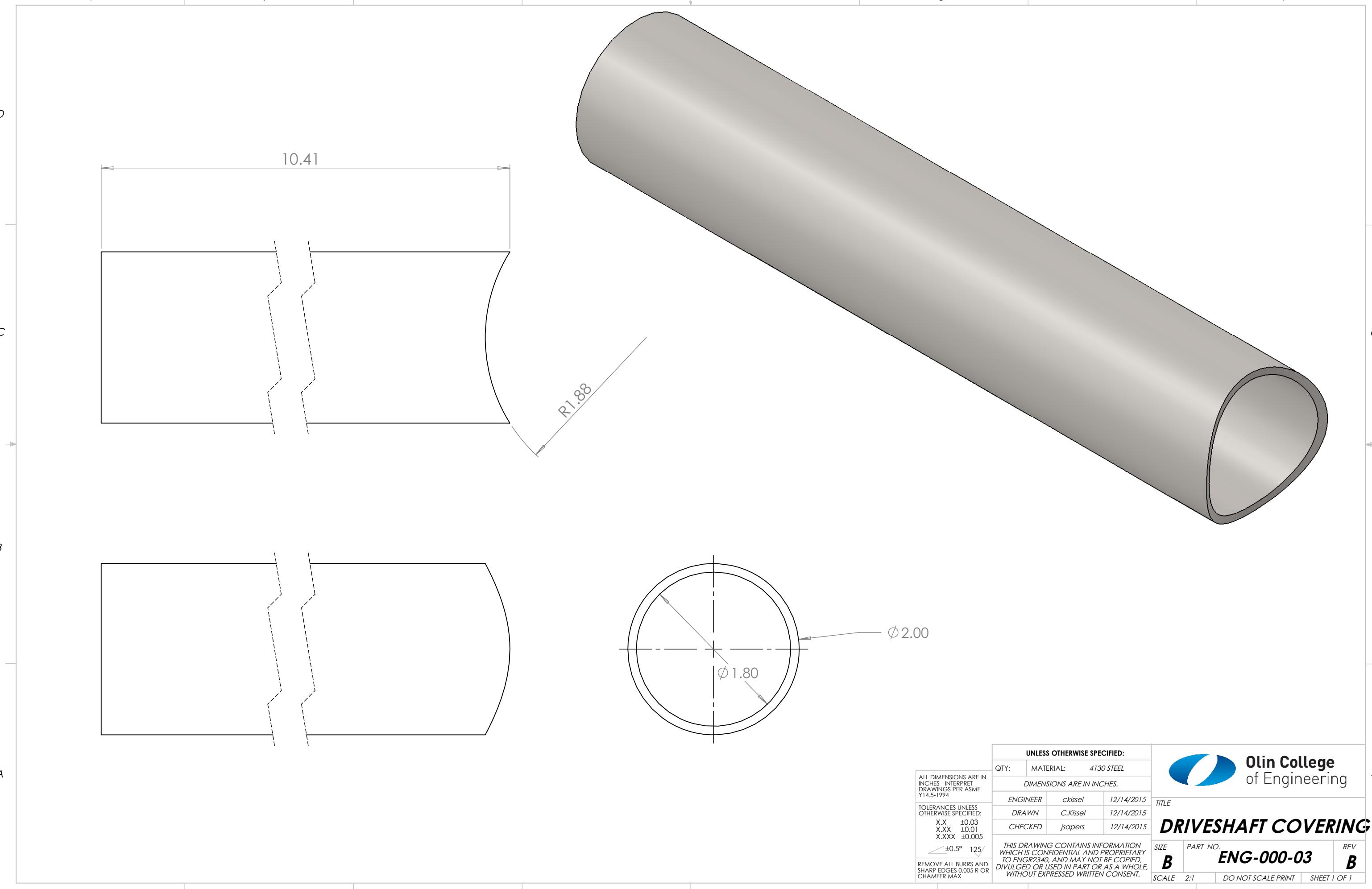
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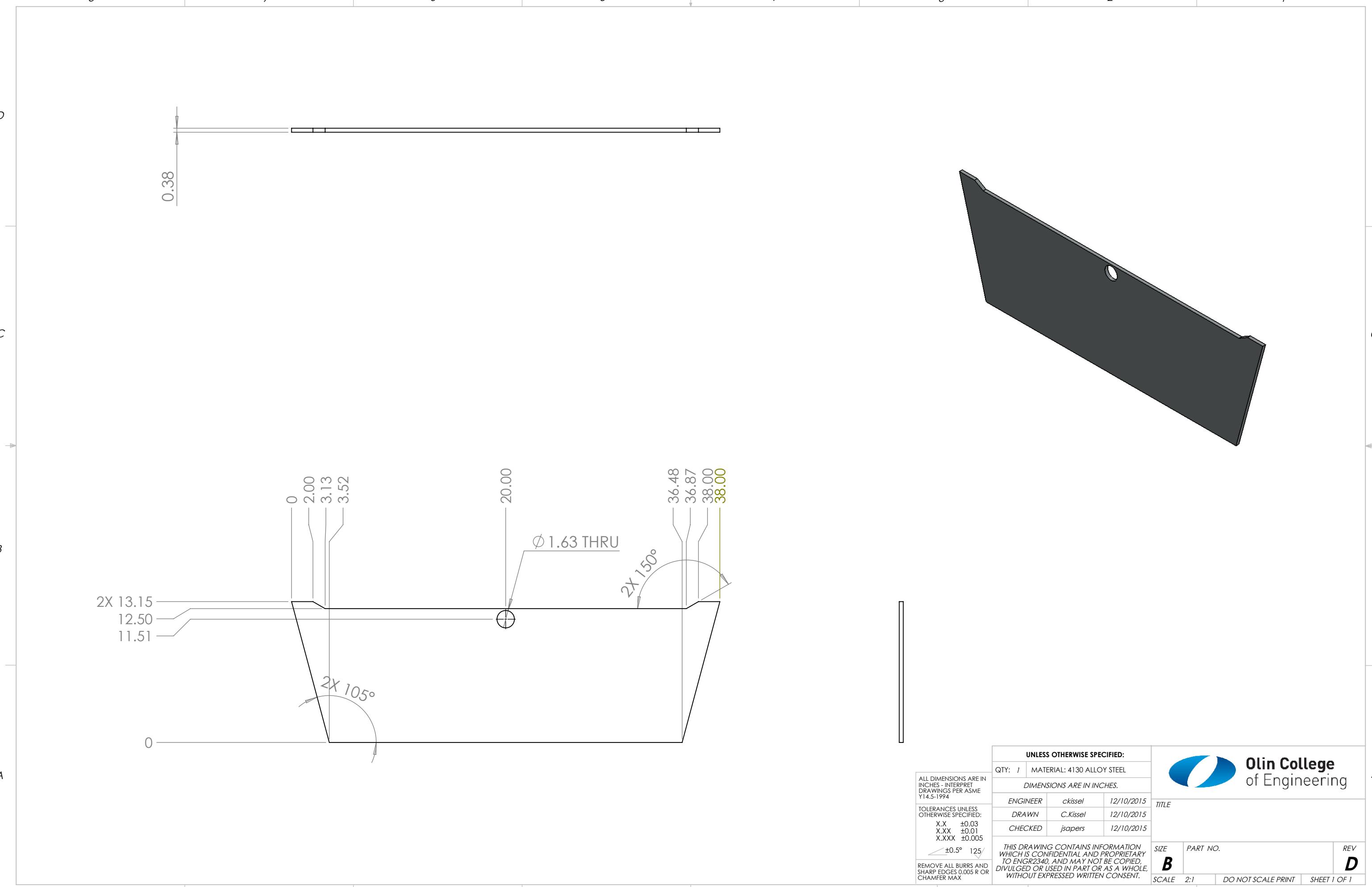
REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

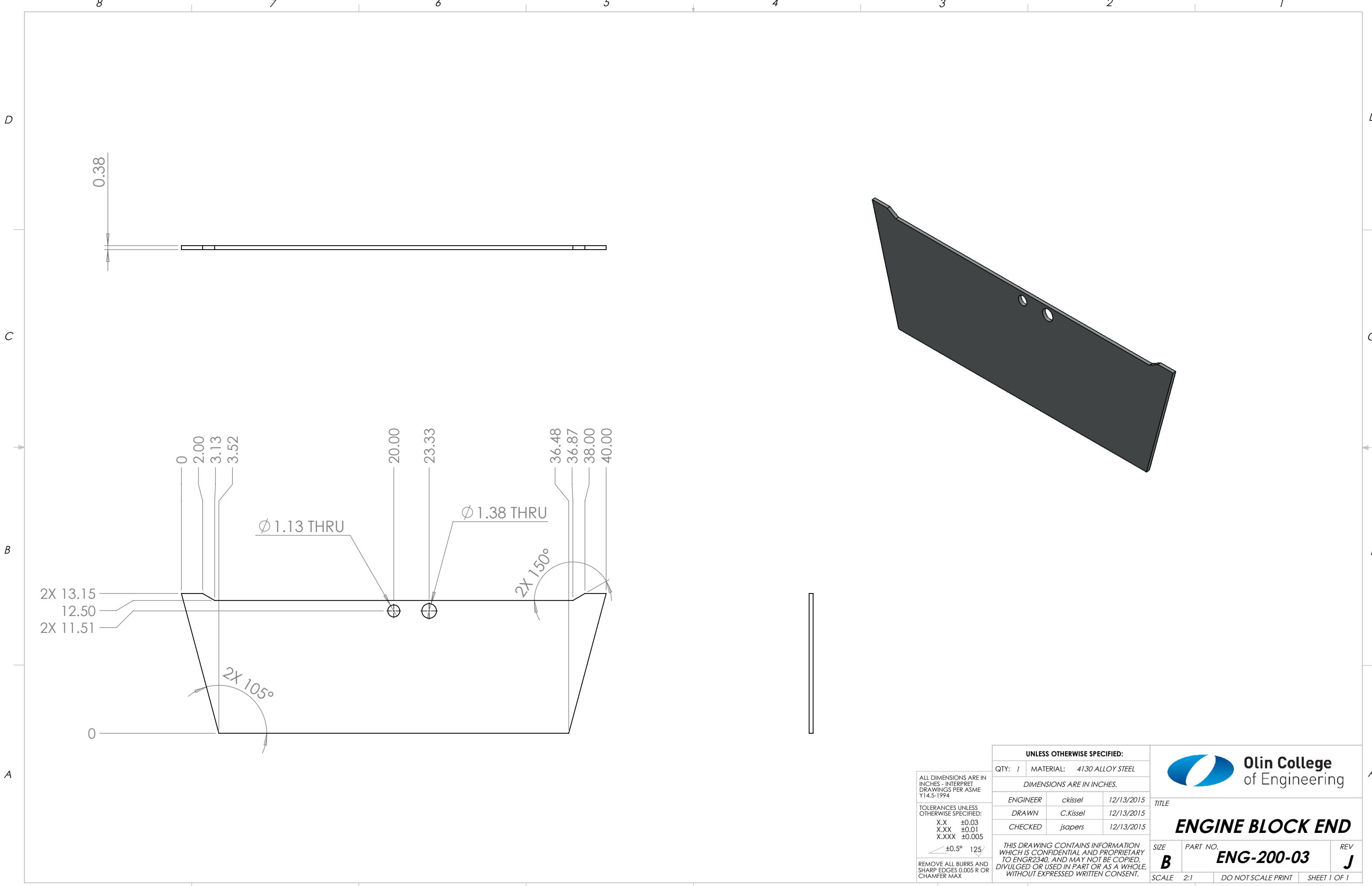
Olin College
of Engineering

TURBINE SHAFT COLLAR

SIZE	PART NO.	REV
B	ENG-2322-01	B
SCALE	2:1	DO NOT SCALE PRINT
SHEET 1 OF 1		







ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994

TOLERANCES UNLESS
OTHERWISE SPECIFIED:
XX ± 0.03
XXX ± 0.01
XXXX ± 0.005

$\pm 0.5^\circ$ 125/
REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: 4130 ALLOY STEEL
DIMENSIONS ARE IN INCHES.

ENGINEER ckissel 12/13/2015
DRAWN C.Kissel 12/13/2015
CHECKED jsapers 12/13/2015

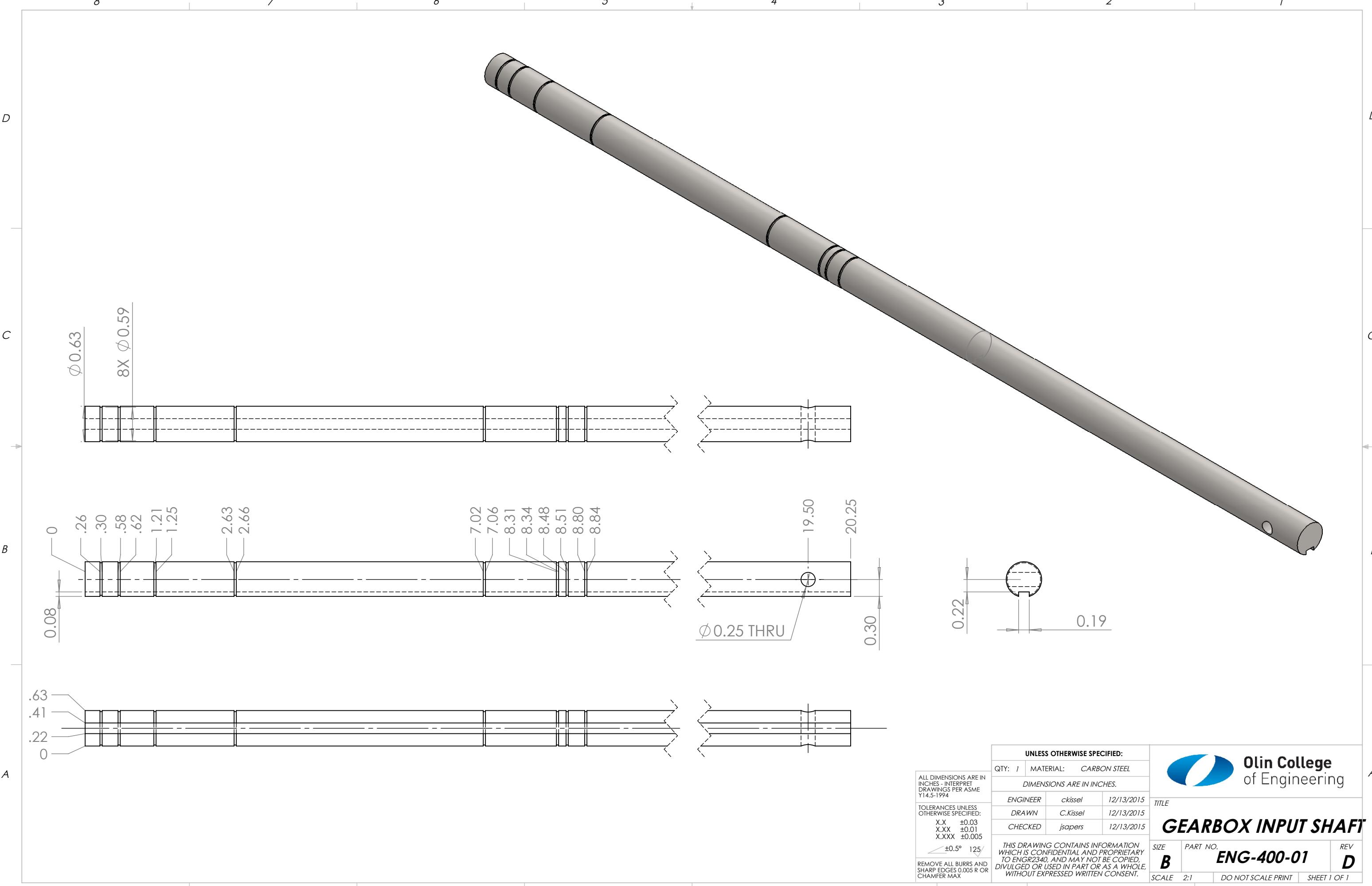
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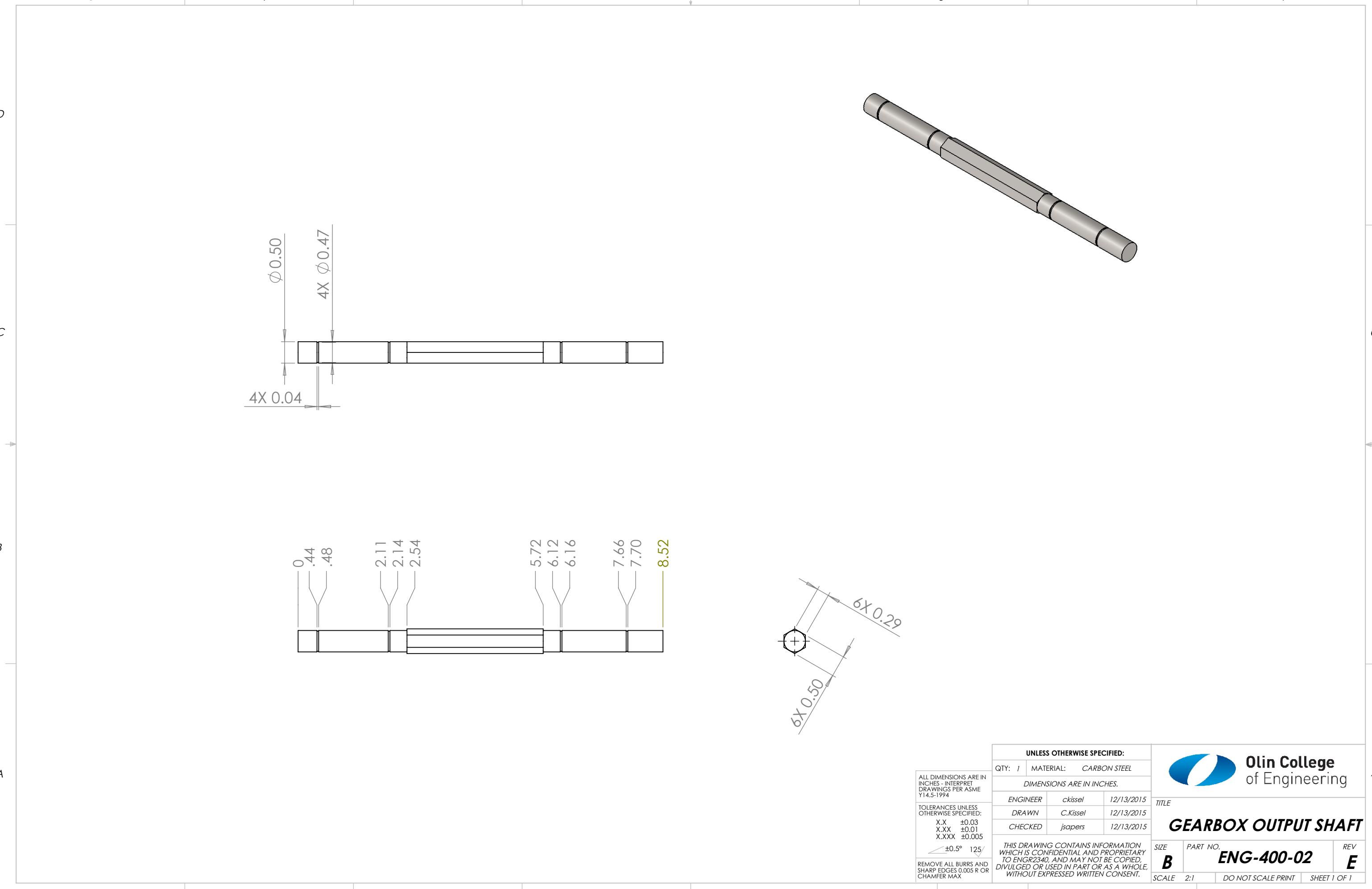
Olin College
of Engineering

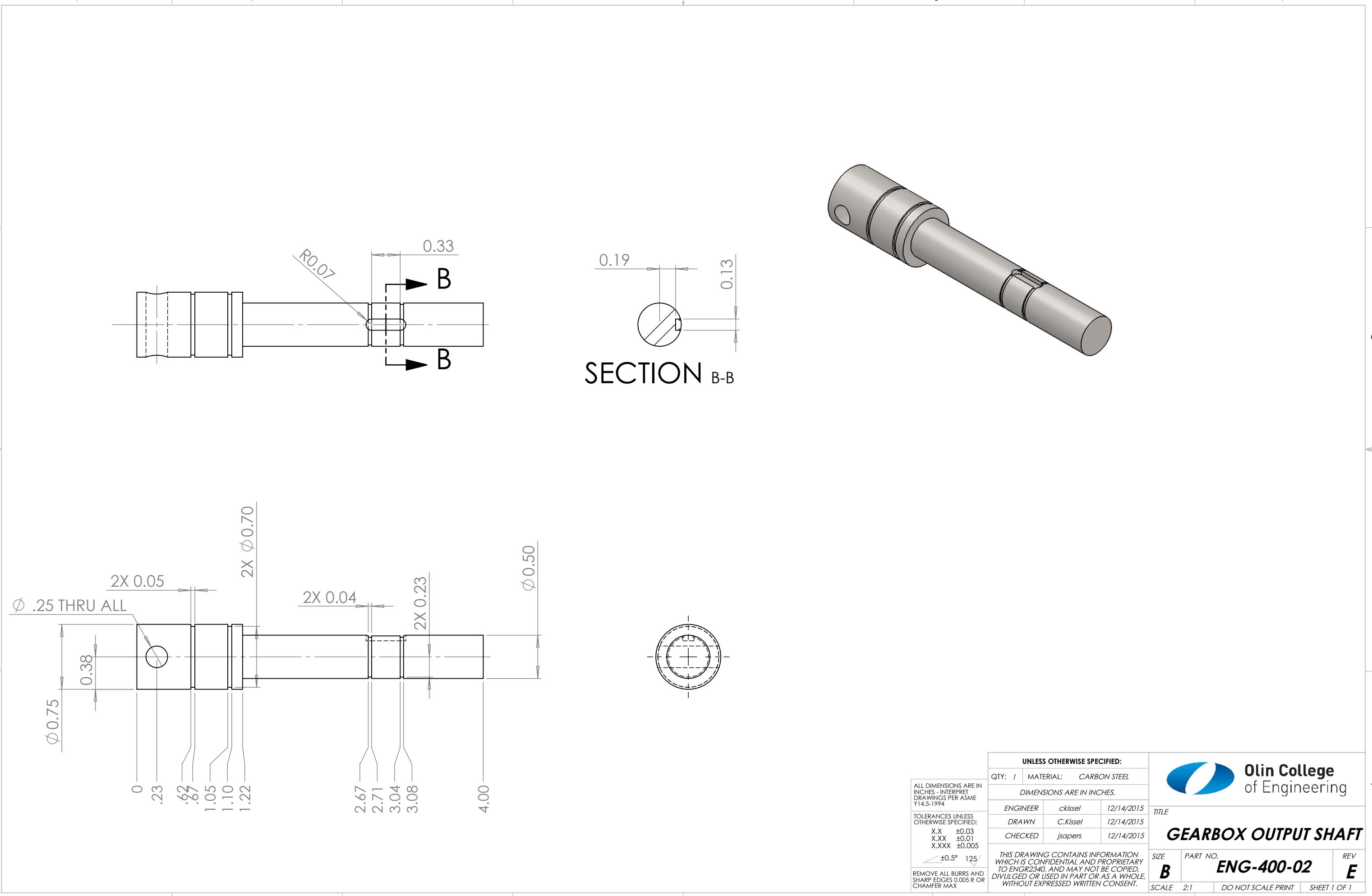
TITLE
ENGINE BLOCK END

SIZE **B** PART NO.
ENG-200-03 REV
J

SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1



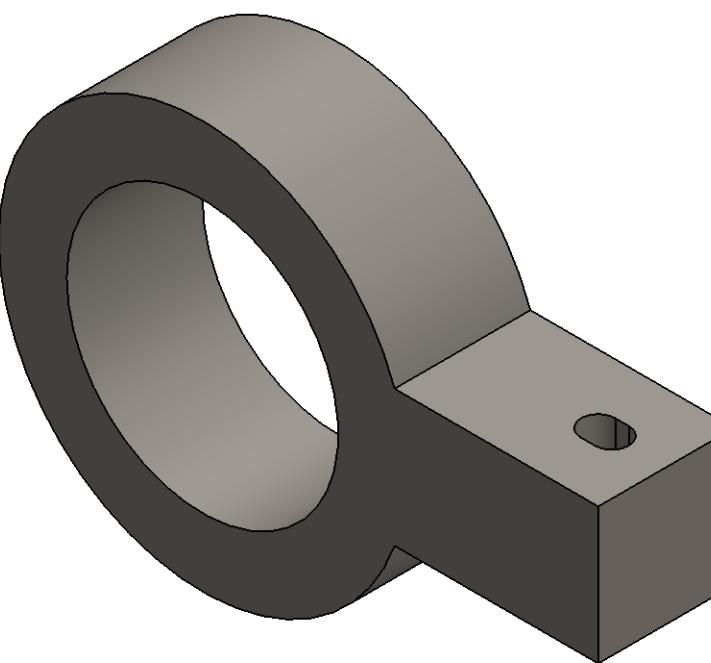
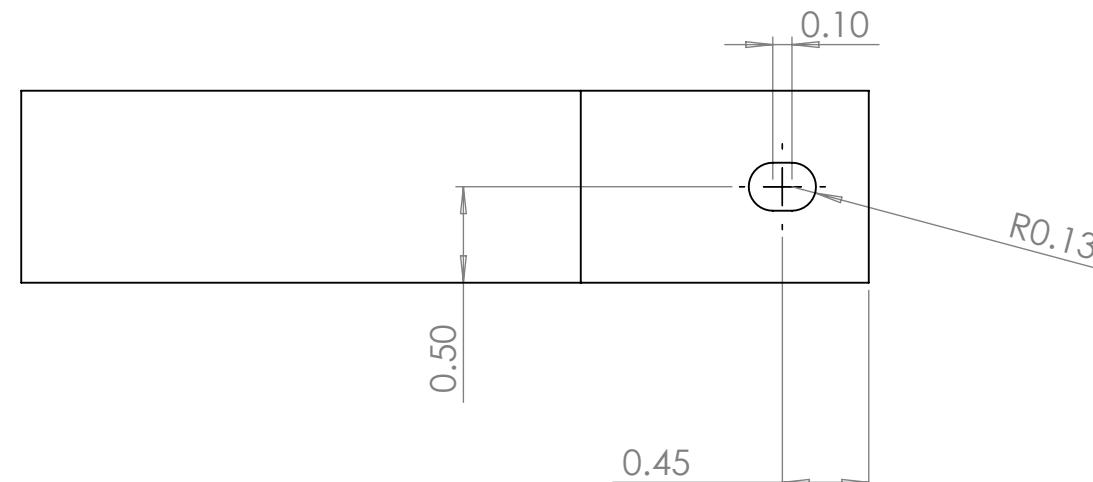




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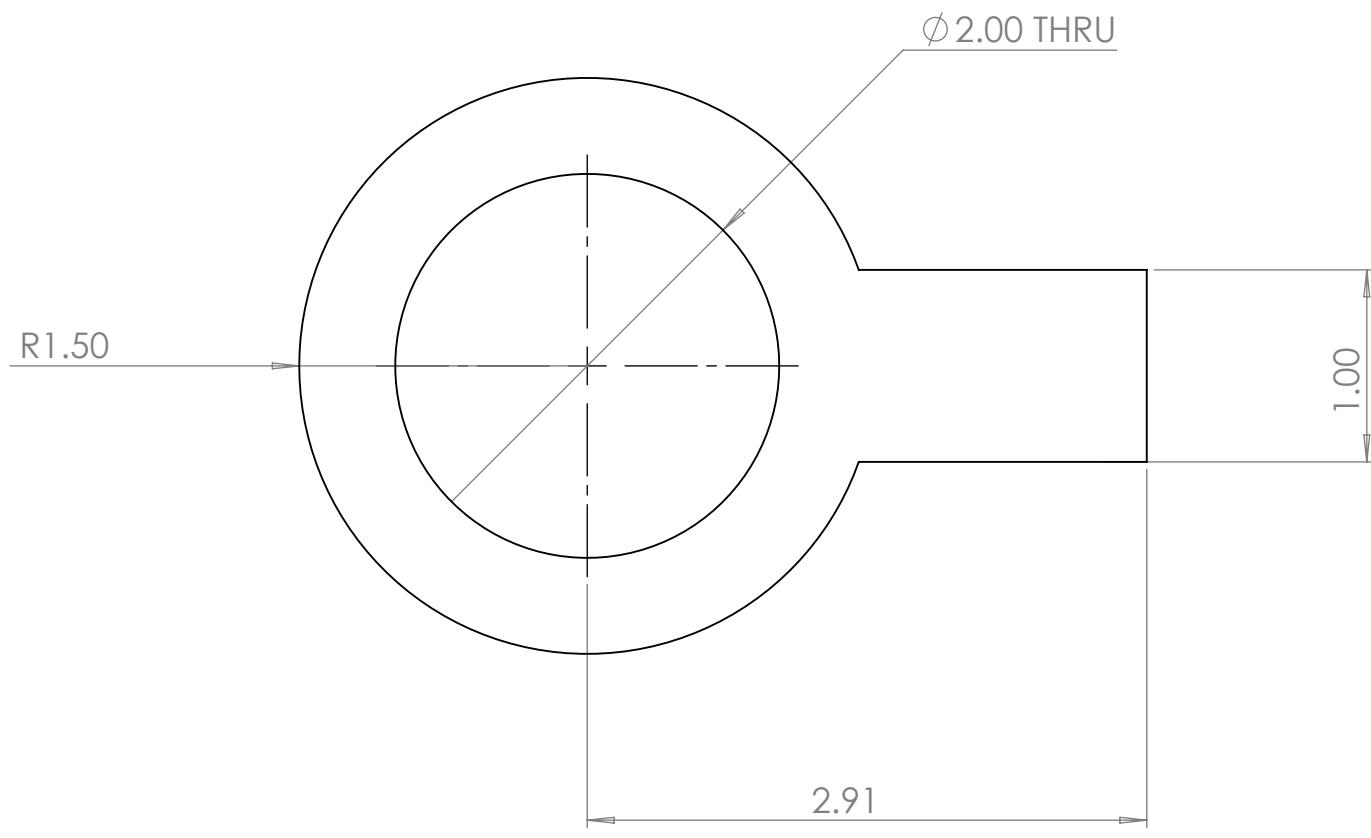
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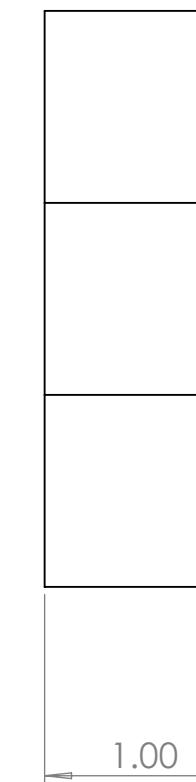
C

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UNLESS OTHERWISE SPECIFIED:	
QTY: 1	MATERIAL: 6061 STEEL
DIMENSIONS ARE IN INCHES.	
ENGINEER	c.kissel
DRAWN	C.Kissel
CHECKED	jaspers
12/13/2015	
TITLE	
SHIFTER LINK	
SIZE	PART NO.
B	ENG-400-04
REV	C
SCALE	2:1
DO NOT SCALE PRINT	
SHEET 1 OF 1	

Olin College
of Engineering

SHIFTER LINK

ENG-400-04

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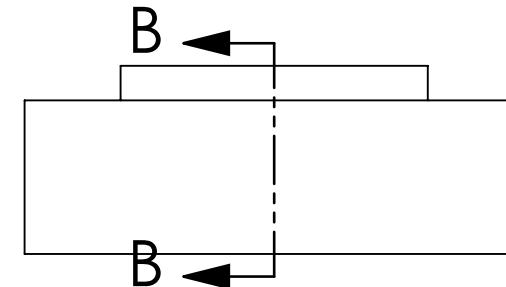
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8 7 6 5 4 3 2 1

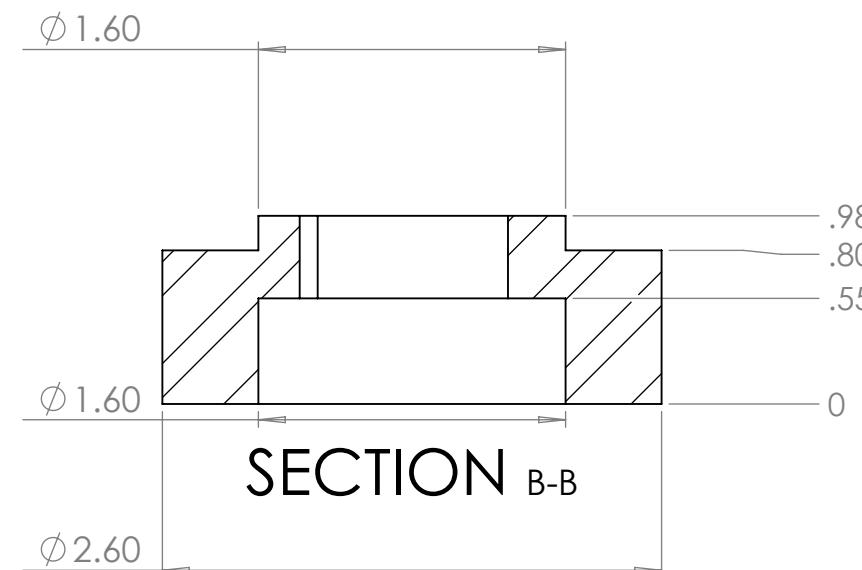
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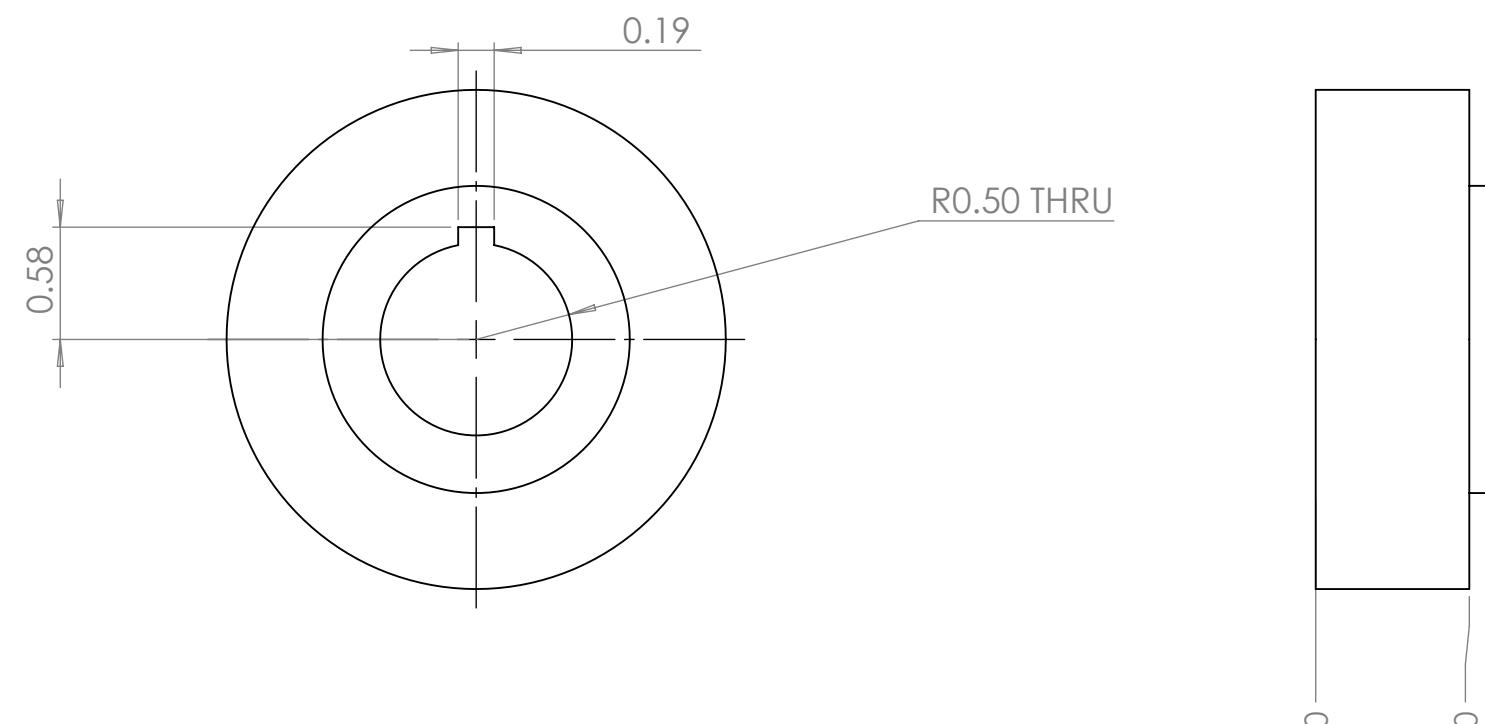
C

C



B

B



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A

UNLESS OTHERWISE SPECIFIED:		
QTY: 2	MATERIAL: CARBON STEEL	
DIMENSIONS ARE IN INCHES.		
ENGINEER	c.kissel	12/13/2015
DRAWN	C.Kissel	12/13/2015
CHECKED	jaspers	12/13/2015
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SIZE	PART NO.	REV
B	ENG-400-05	B
SCALE	2:1	DO NOT SCALE PRINT
SHEET 1 OF 1		

 Olin College
of Engineering

FRICITION SHOE

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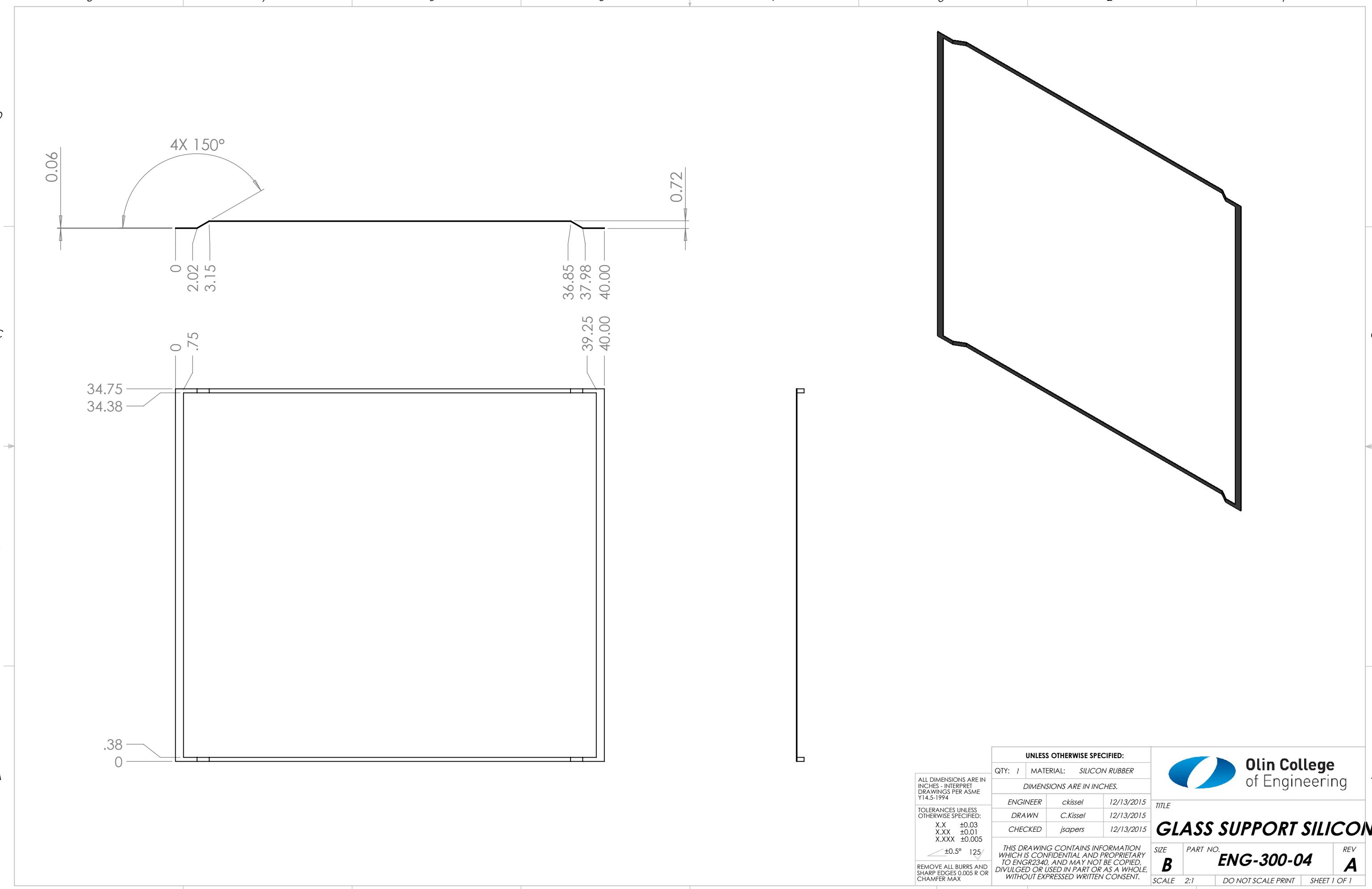
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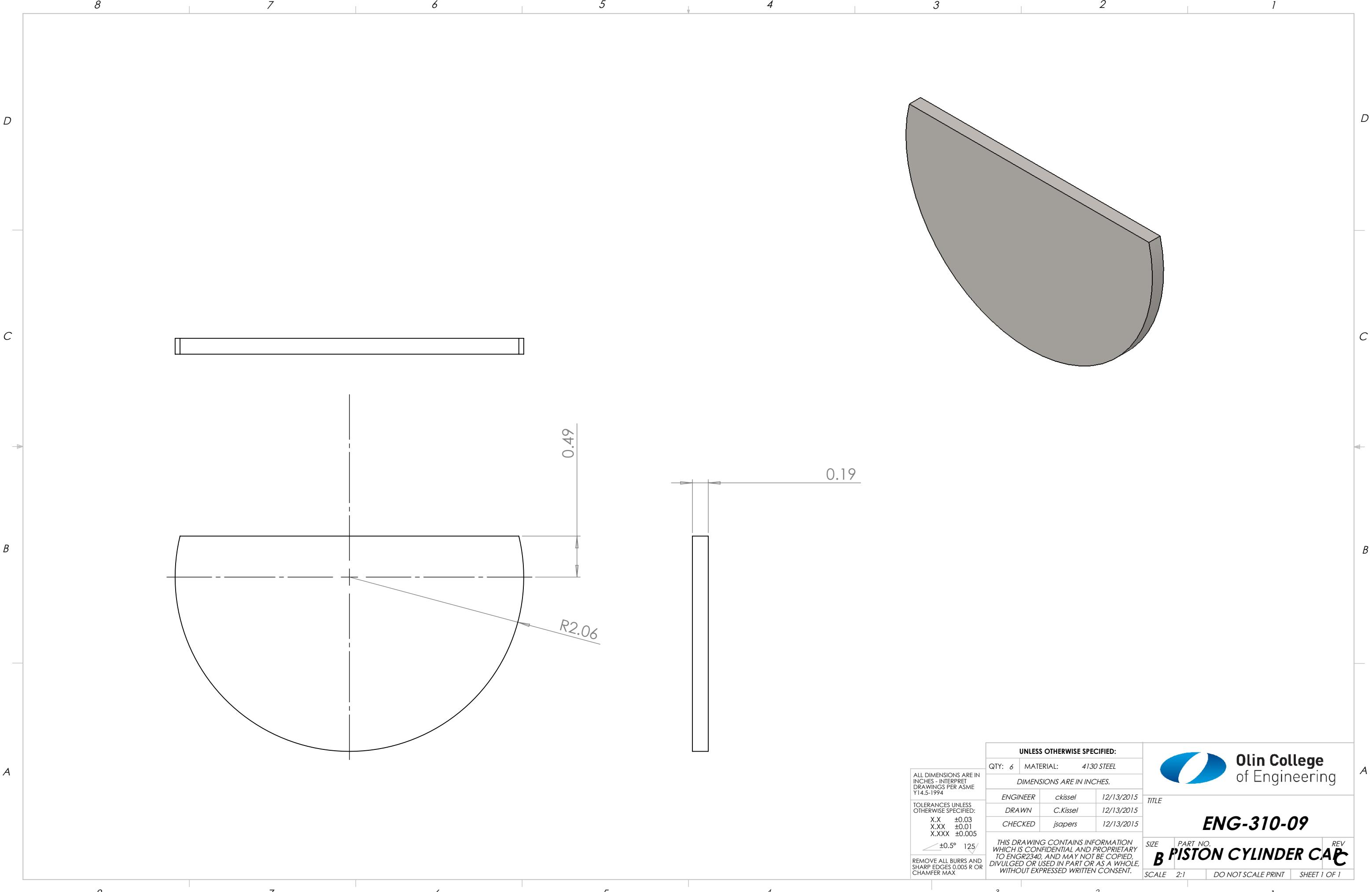
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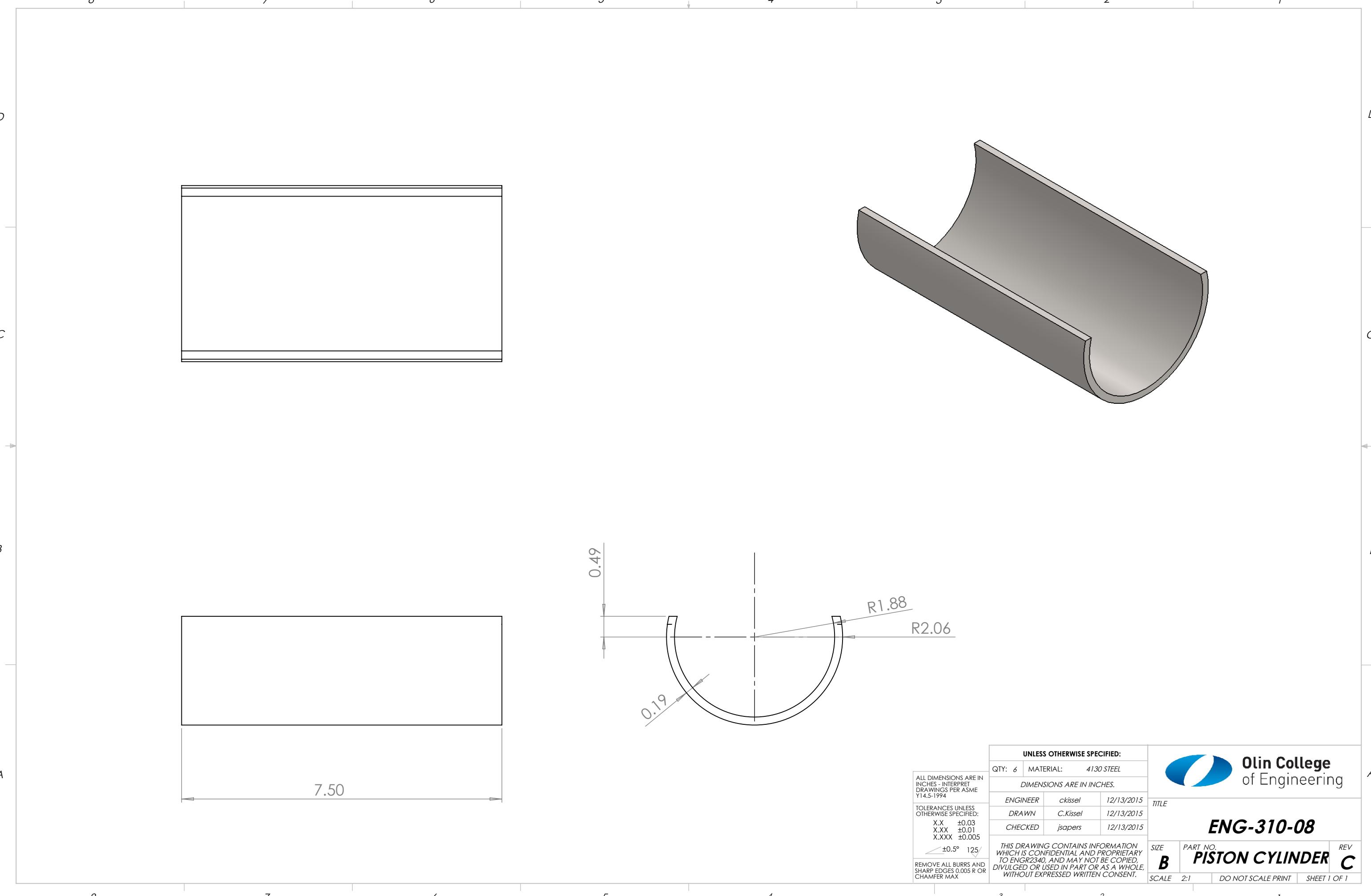
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8 7 6 5 4 3 2 1

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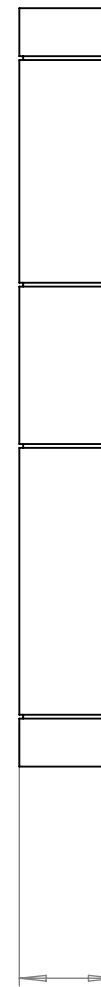
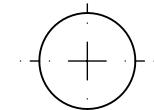
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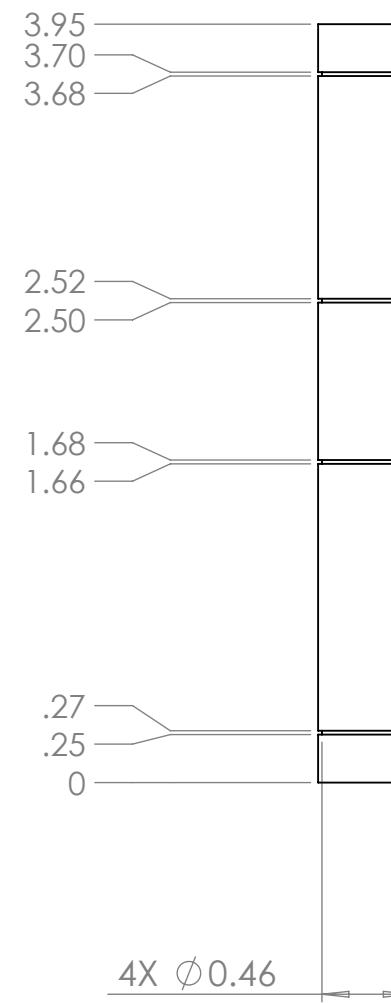
B

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$\phi 0.50$



ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994

TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005

$\pm 0.5^\circ$ 125°

REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: 4130 STEEL

DIMENSIONS ARE IN INCHES.

ENGINEER ckissel 12/13/2015

DRAWN C.Kissel 12/13/2015

CHECKED jsapers 12/13/2015

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TITLE FURLING ROD SUPPORT

SIZE B PART NO. ENG 231-01 REV C

SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1

8 7 6 5 4 3 2 1

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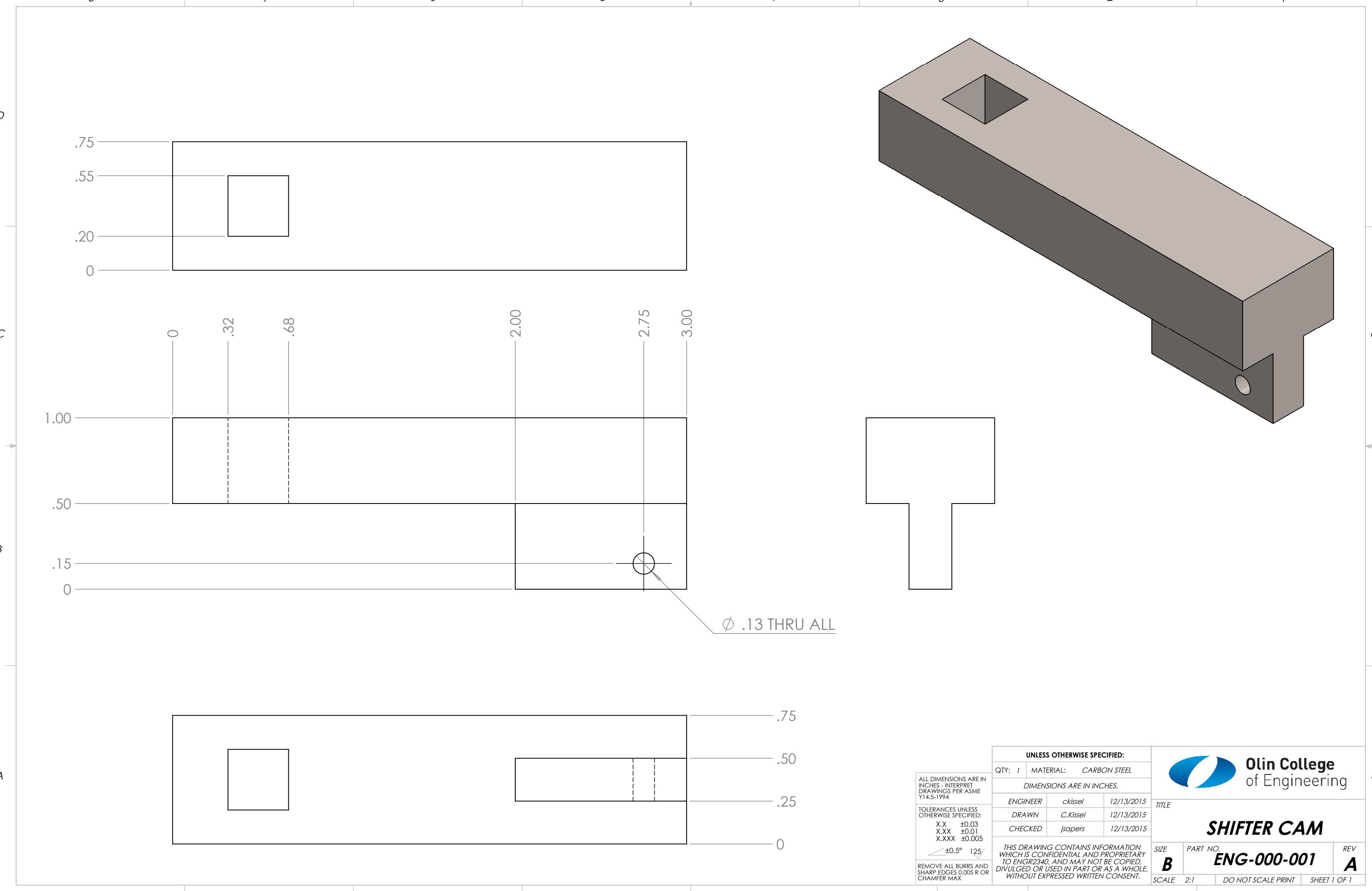
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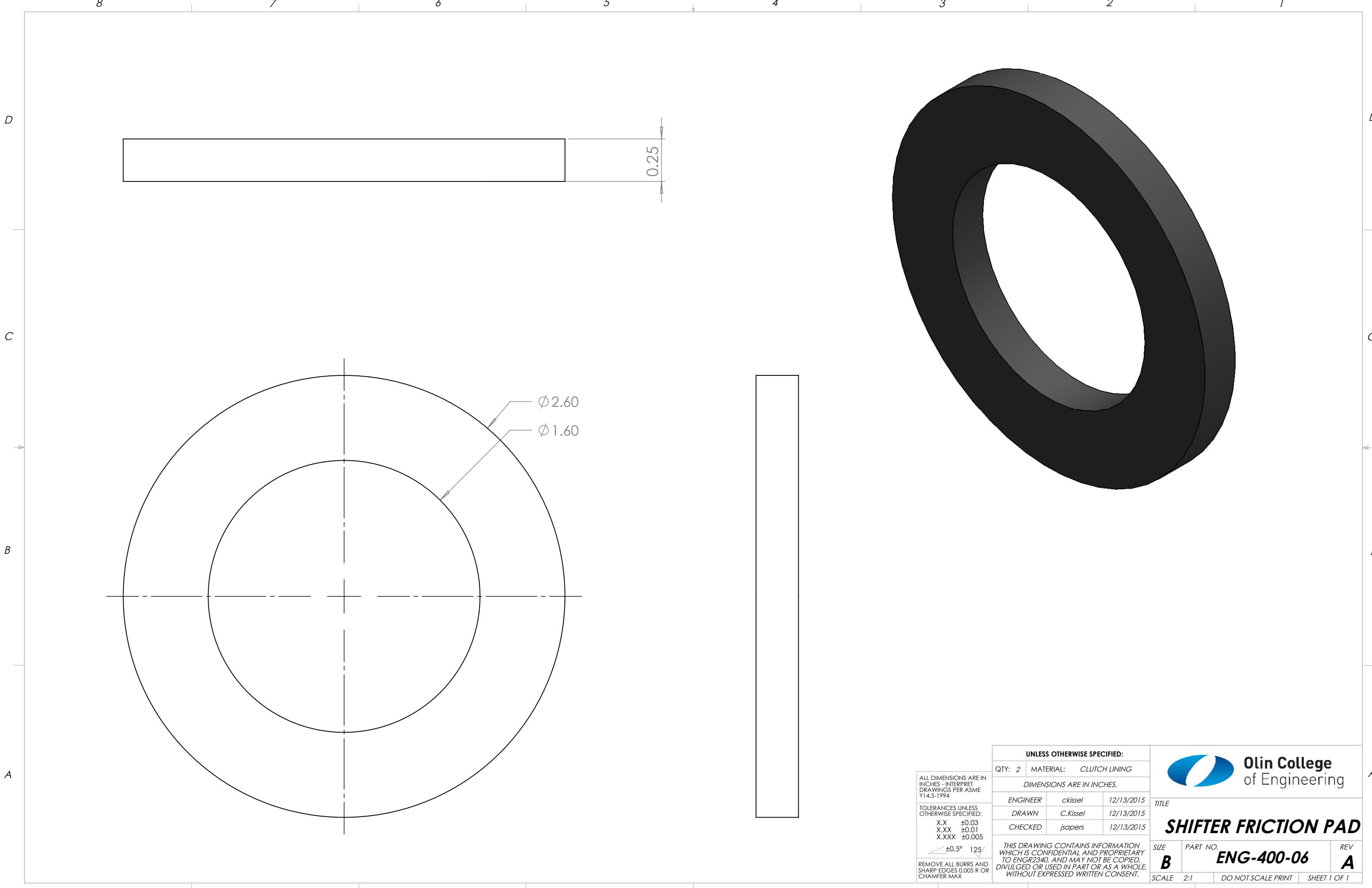
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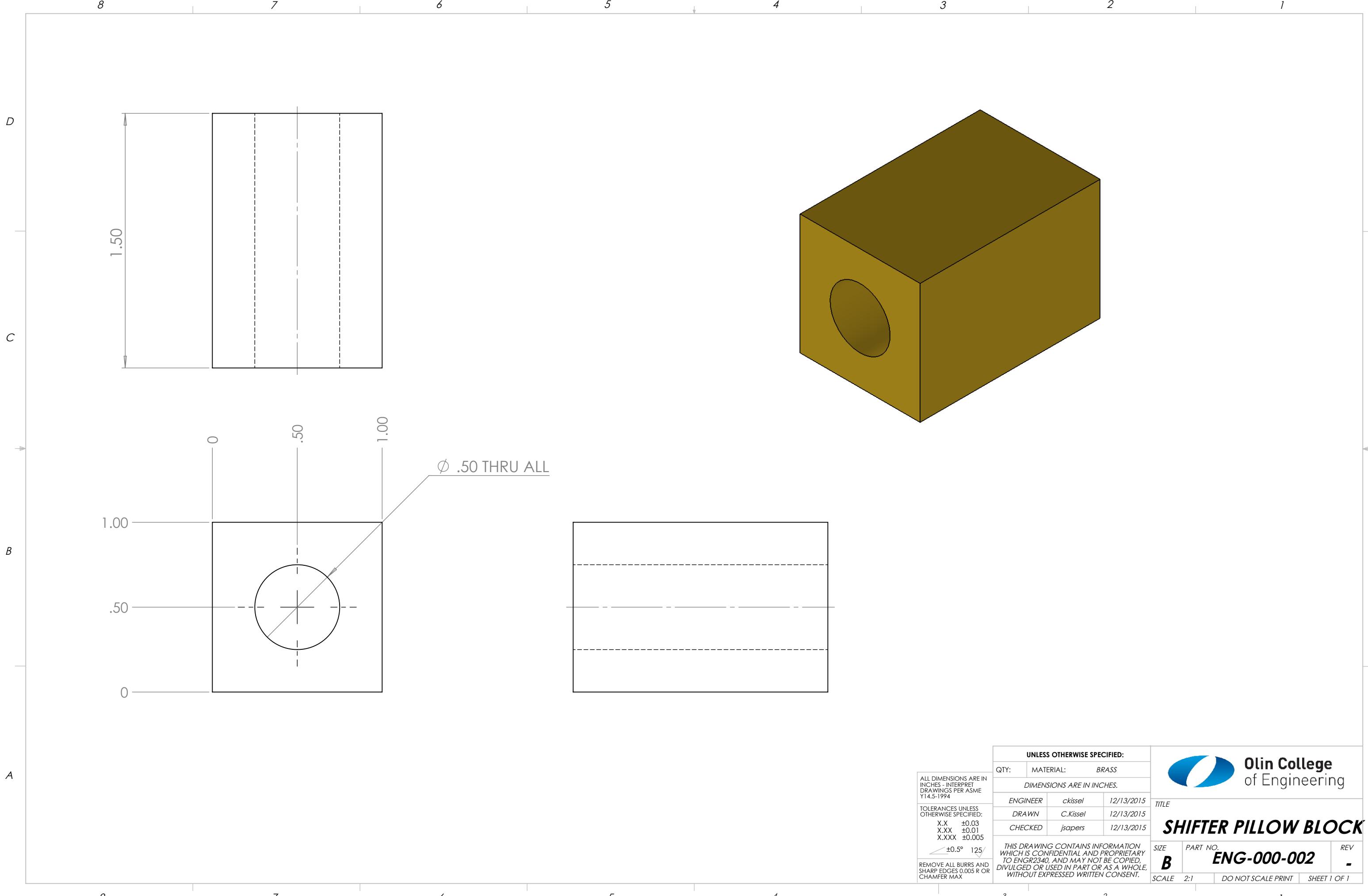
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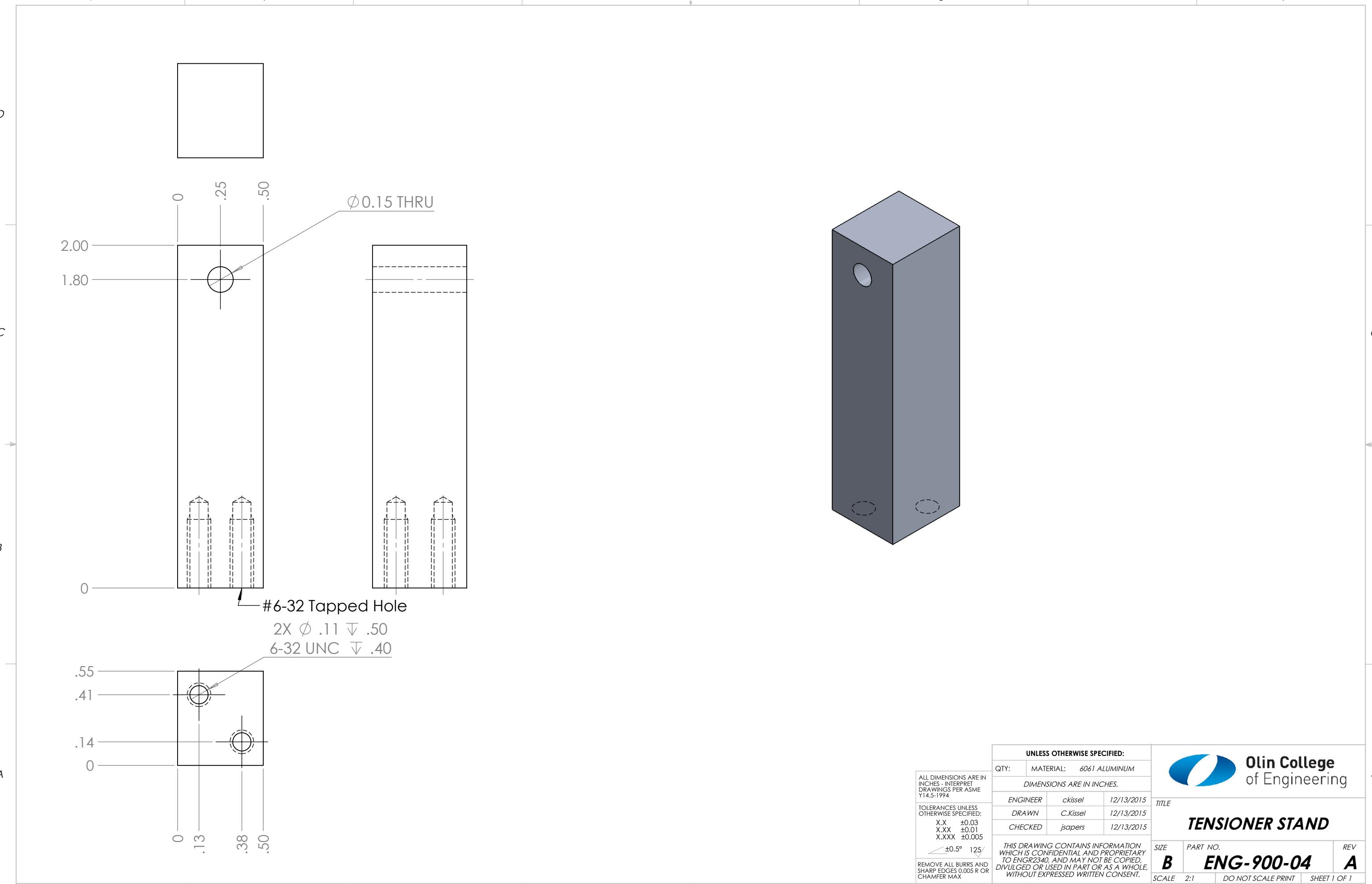
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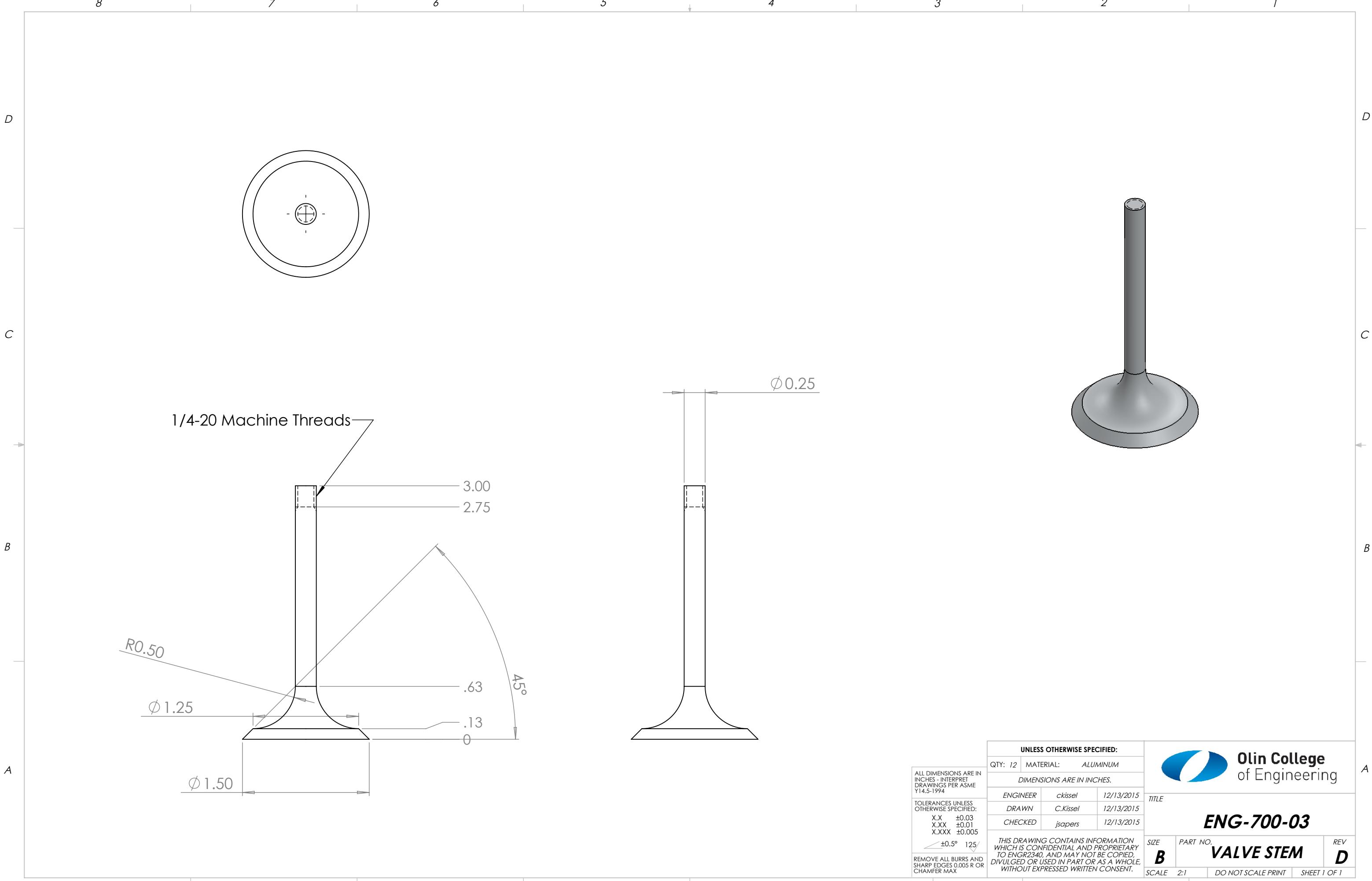
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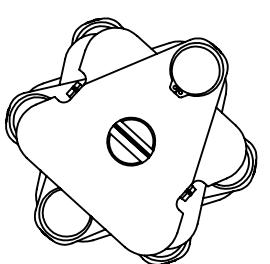
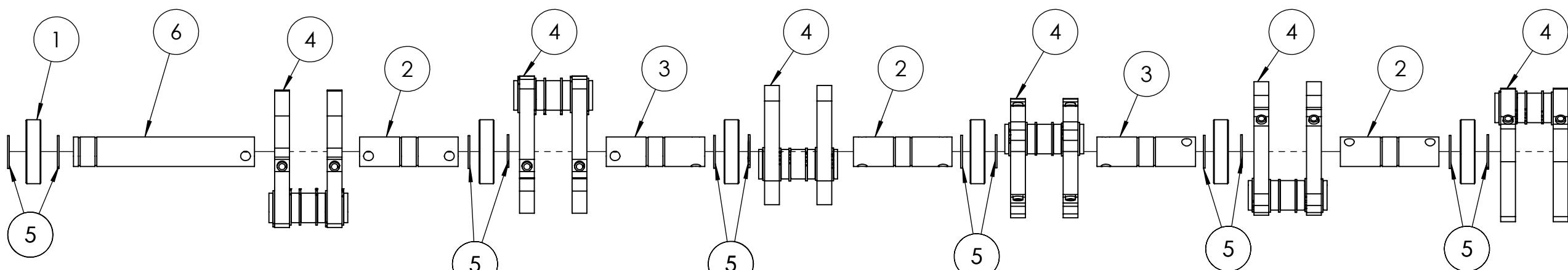




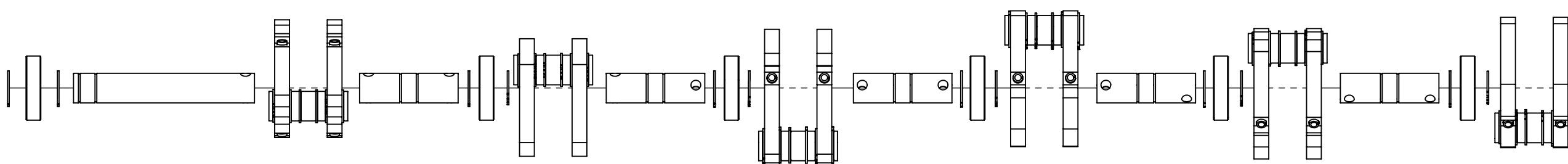


8 7 6 5 4 3 2 1

D



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ITEM NO.	DESCRIPTION	PART NUMBER	QTY.
1	0.75in Bearing	McMaster 6383K490	6
2	Intermediate Journal	ENG-120-01	3
3	Main Journal	ENG-120-02	2
4	Counterweight Assembly	ENG-121-00	6
5	0.75in Retaining Ring	McMaster 91590A128	12
6	Final End Shaft Engine	ENG-120-03	1

ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994

TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005

±0.5° 125/
REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: Assorted
DIMENSIONS ARE IN INCHES.
ENGINEER landrade 12/14/2015
DRAWN landrade 12/14/2015
CHECKED hmuskin 12/14/2015
THIS DRAWING CONTAINS INFORMATION
WHICH IS CONFIDENTIAL AND PROPRIETARY
TO ENGR2340, AND MAY NOT BE COPIED,
DIVULGED OR USED IN PART OR AS A WHOLE
WITHOUT EXPRESSED WRITTEN CONSENT.

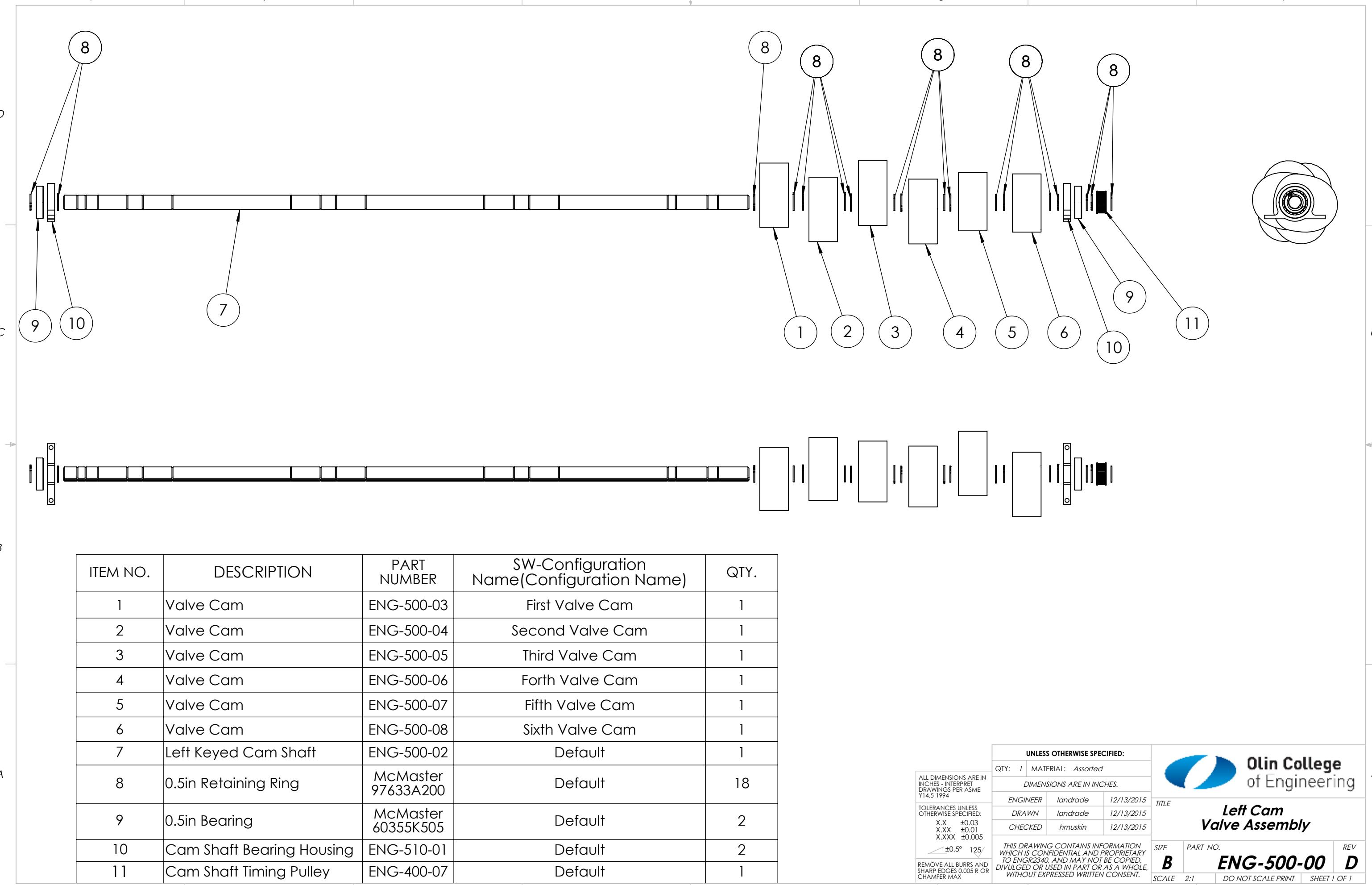
Olin College
of Engineering

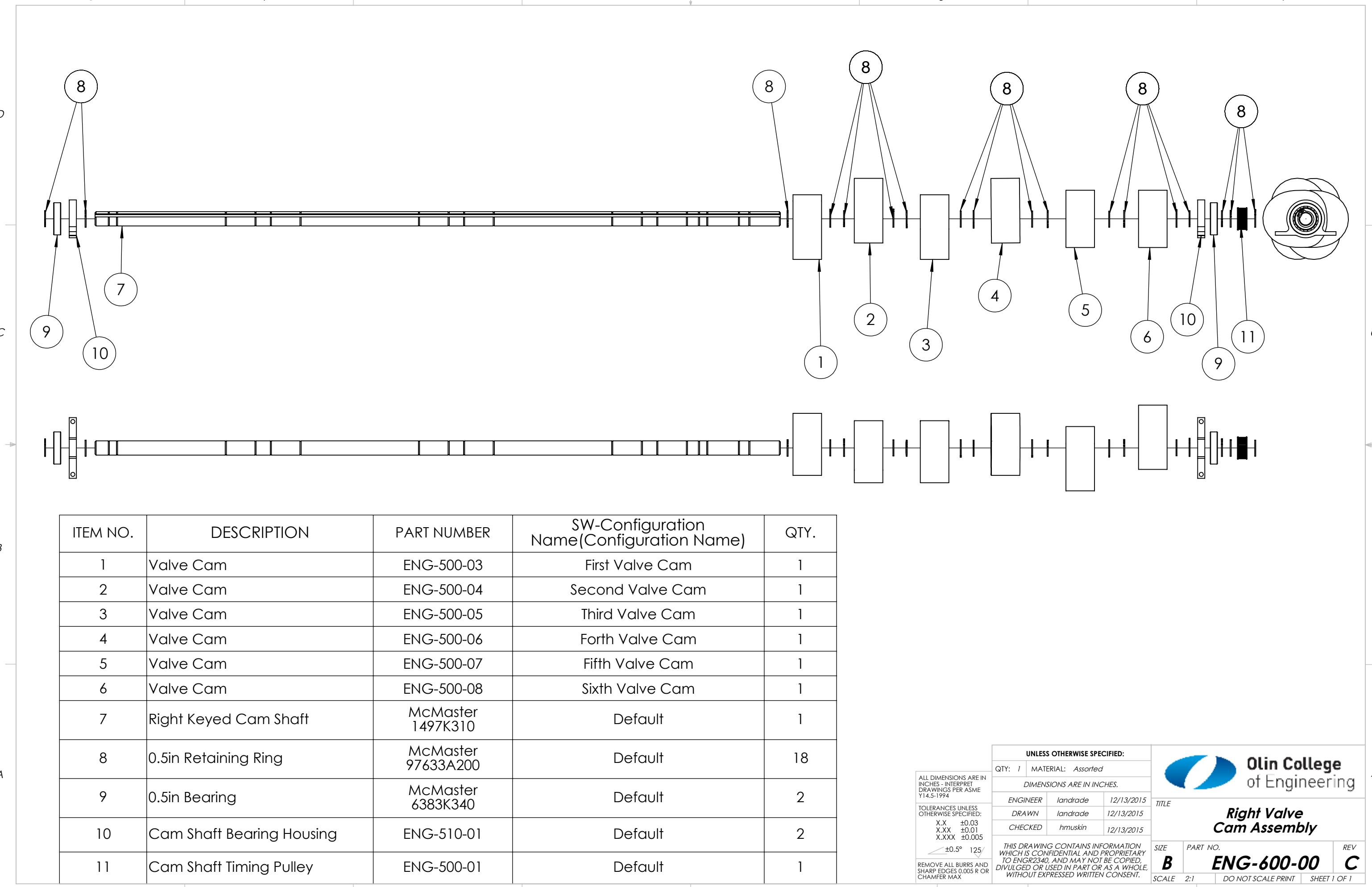
Crack Shaft Assembly

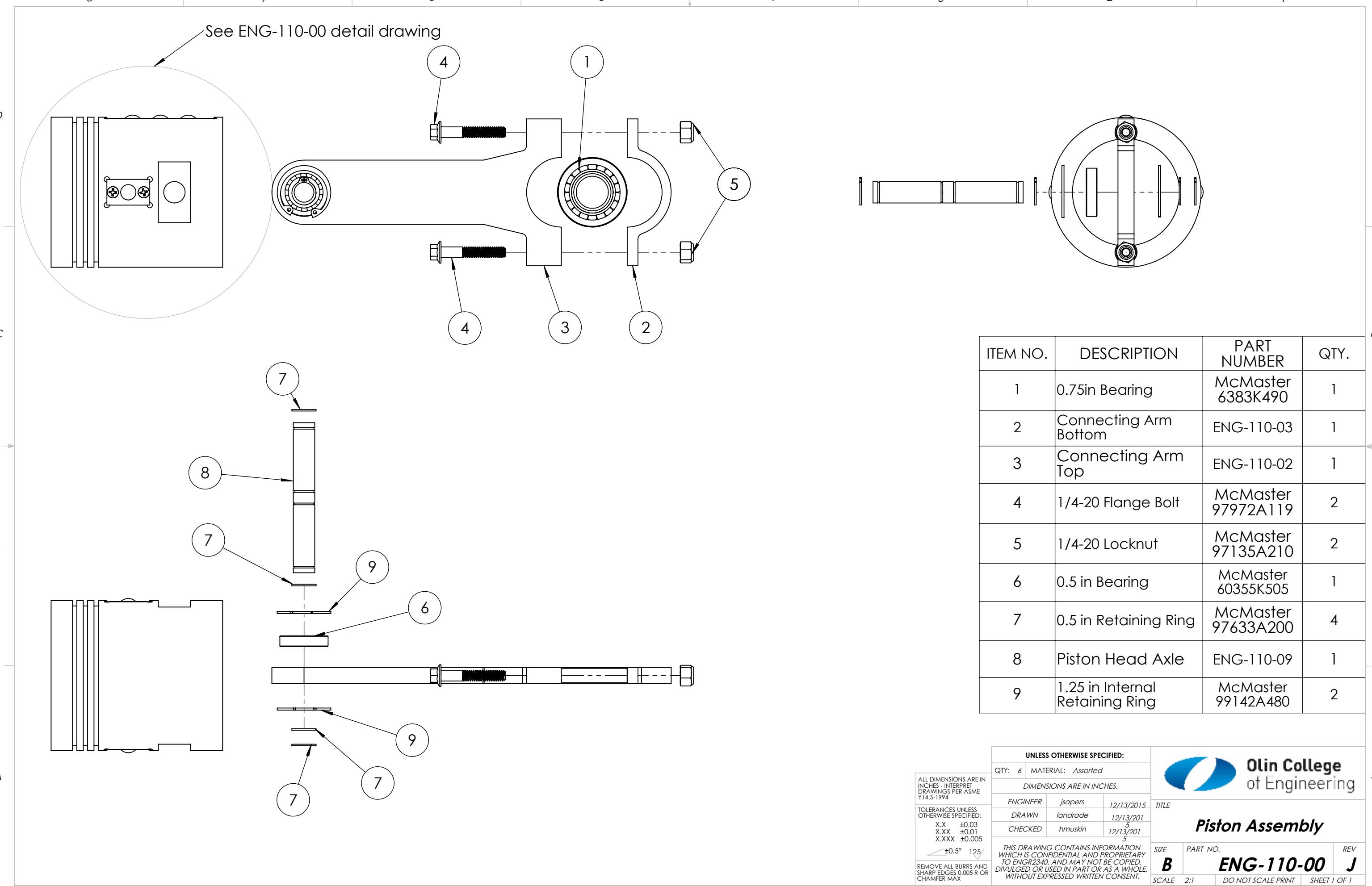
SIZE B PART NO. ENG-120-00 REV N
SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1

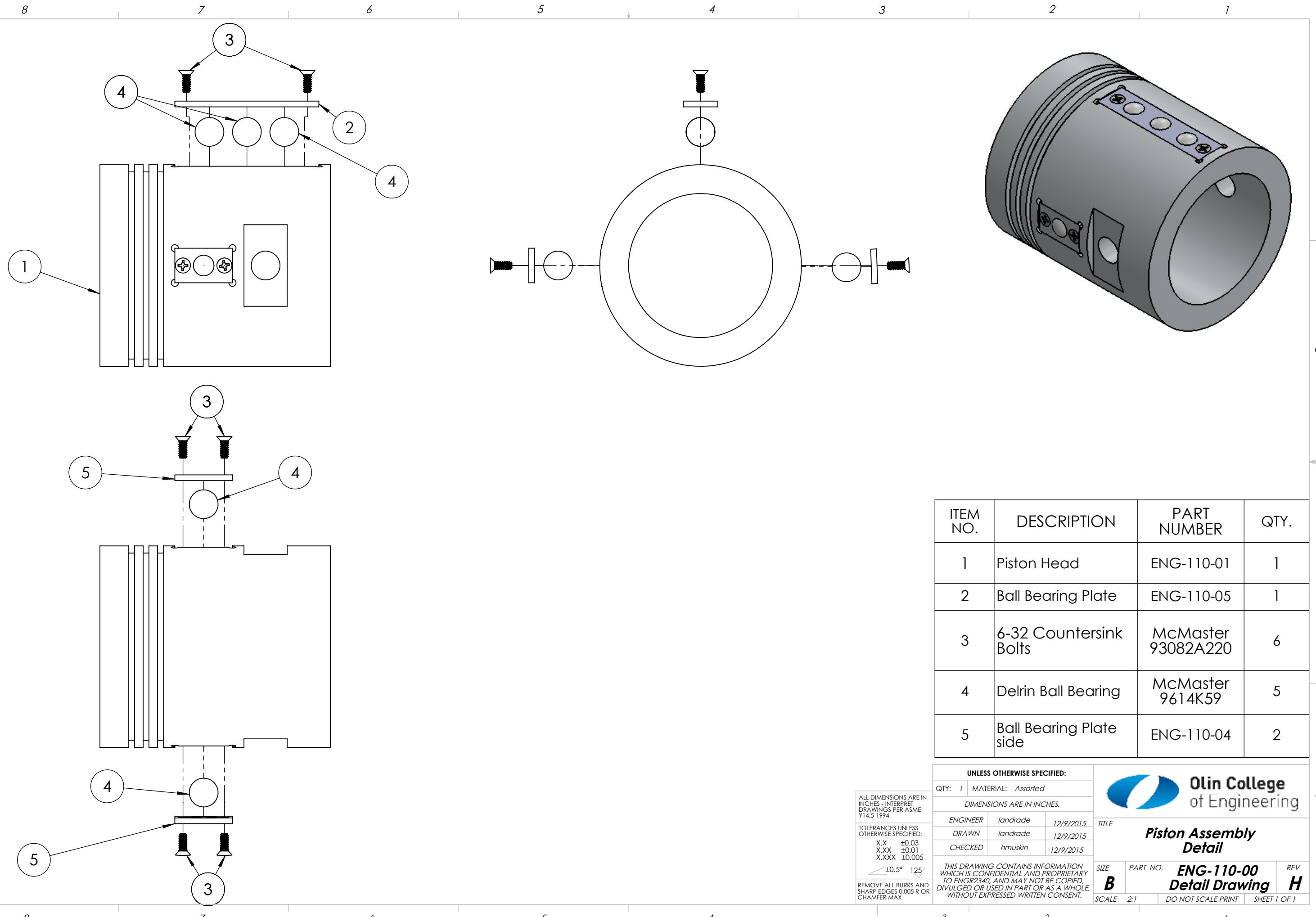
8 7 6 5 4 3 2 1

1







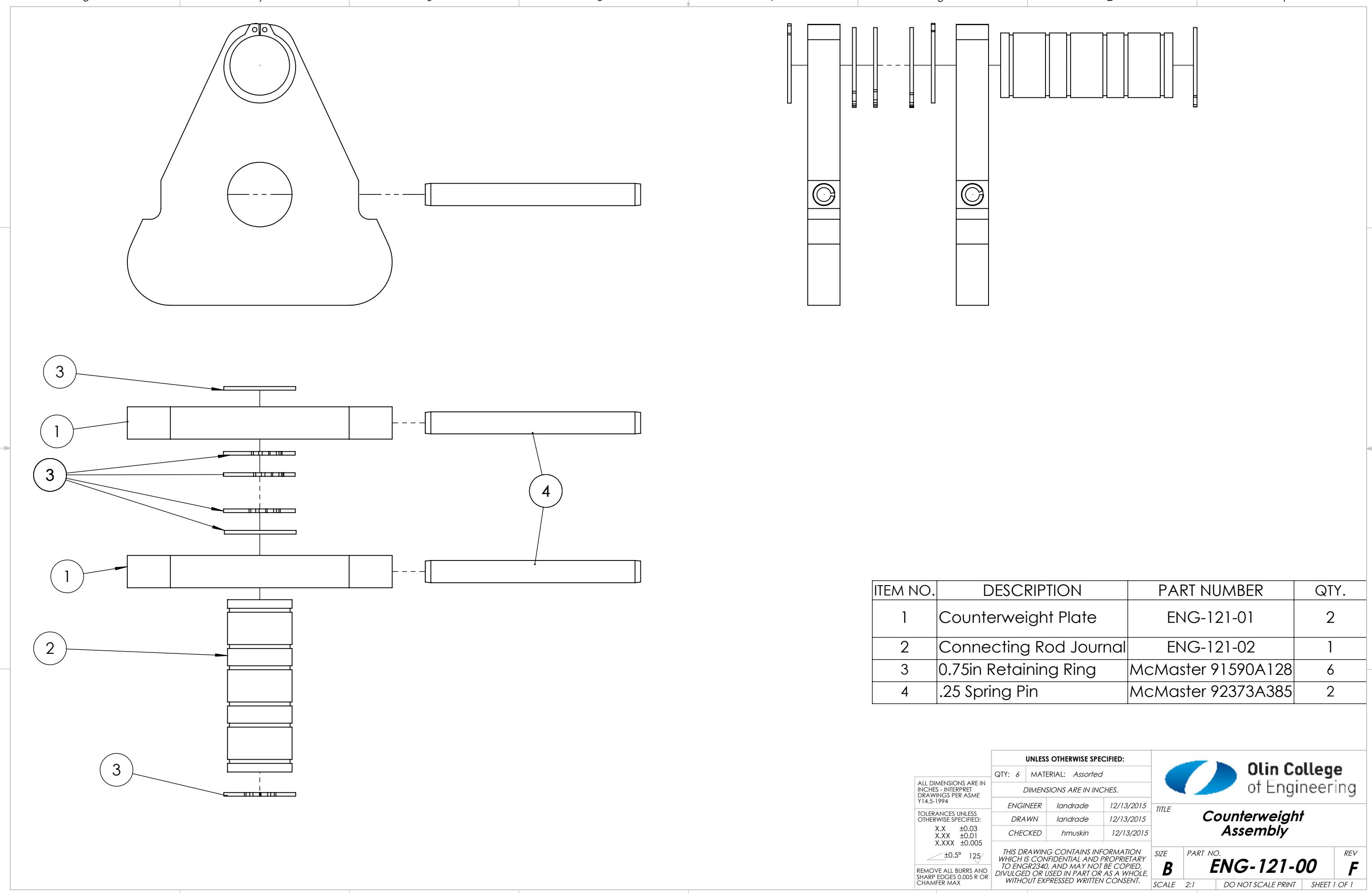


ITEM NO.	DESCRIPTION	PART NUMBER	QTY.
1	Piston Head	ENG-110-01	1
2	Ball Bearing Plate	ENG-110-05	1
3	6-32 Countersink Bolts	McMaster 93082A220	6
4	Delrin Ball Bearing	McMaster 9614K59	5
5	Ball Bearing Plate Side	ENG-110-04	2

ALL DIMENSIONS ARE IN INCHES - INTERPRET DRAWINGS PER ASME Y14.5-1994
TOLERANCES UNLESS OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
∠0.5° 125/
REMOVE ALL BURRS AND SHARP EDGES 0.005 R OR CHAMFER MAX

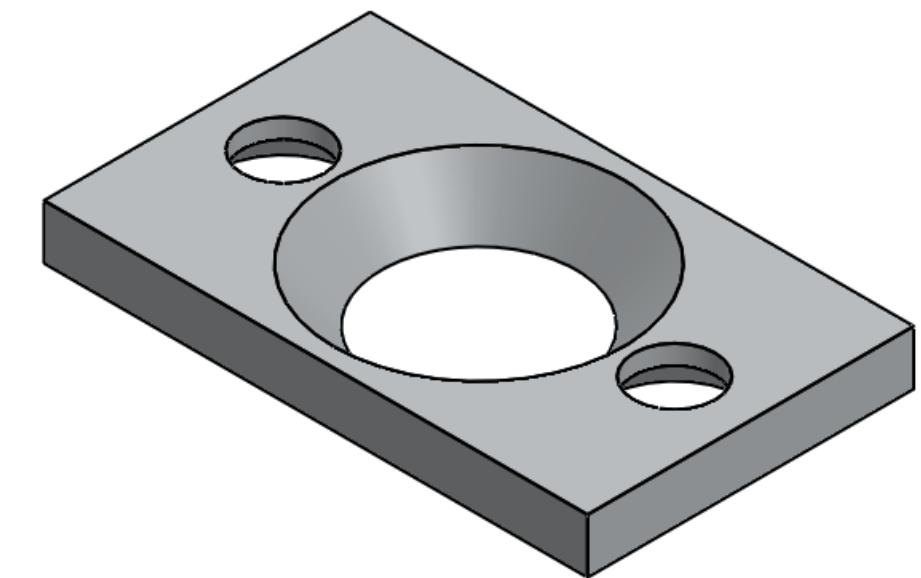
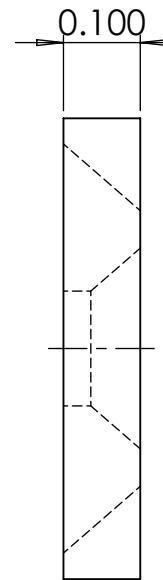
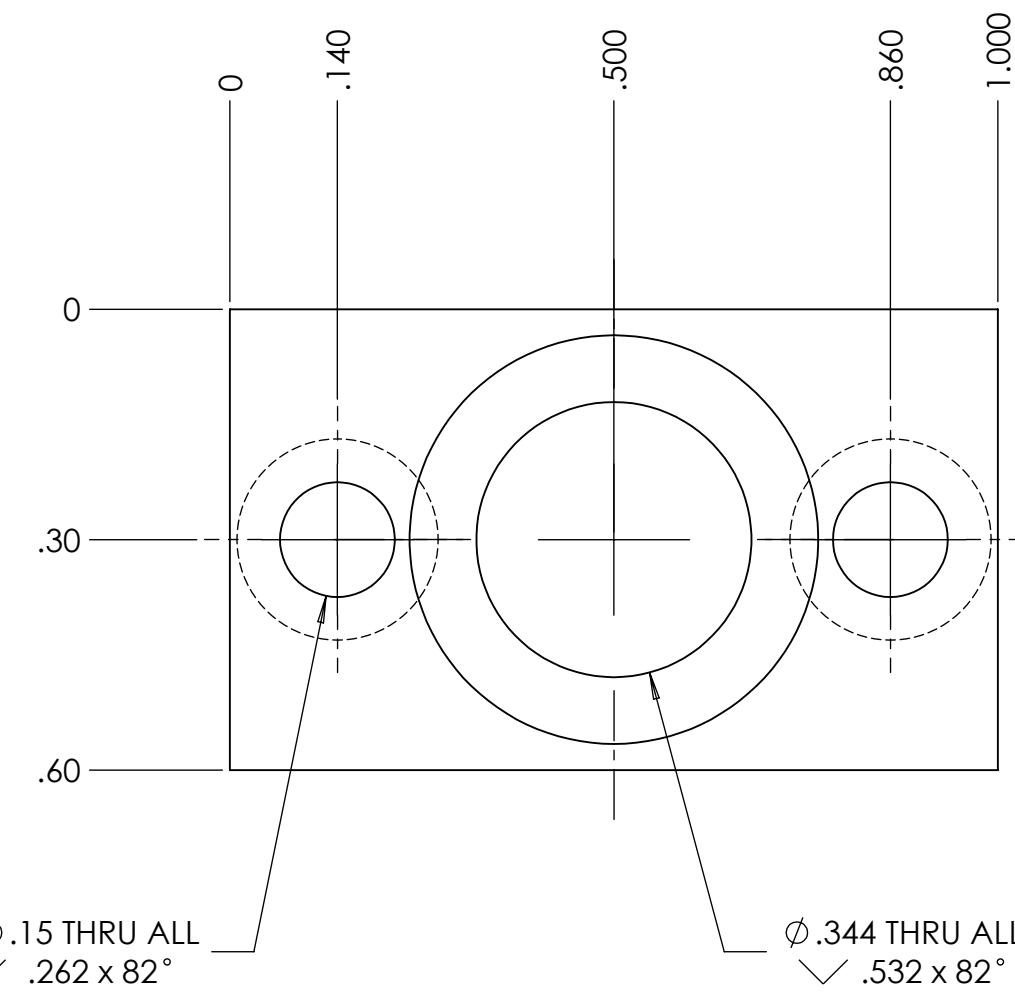
UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: Assorted
DIMENSIONS ARE IN INCHES.
ENGINEER landrade 12/9/2015
DRAWN landrade 12/9/2015
CHECKED hmuskin 12/9/2015
THIS DRAWING CONTAINS INFORMATION WHICH IS CONFIDENTIAL AND PROPRIETARY TO ENGR2340, AND MAY NOT BE COPIED, DIVULGED OR USED IN PART OR AS A WHOLE WITHOUT EXPRESSED WRITTEN CONSENT.

Olin College of Engineering
Piston Assembly Detail
SIZE **B** PART NO. **ENG-110-00** REV **H**
SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1

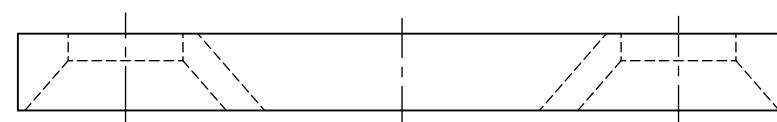


8 7 6 5 4 3 2 1

D



C



B

A

UNLESS OTHERWISE SPECIFIED:			
QTY: 12	MATERIAL: 6061 ALUMINUM		
DIMENSIONS ARE IN INCHES.			
ENGINEER	landrade	12/10/2015	
DRAWN	landrade	12/10/2011	
CHECKED	hmuskin	5 12/10/2011	
THIS DRAWING CONTAINS INFORMATION WHICH IS CONFIDENTIAL AND PROPRIETARY TO ENGR2340, AND MAY NOT BE COPIED, DIVULGED OR USED IN PART OR AS A WHOLE WITHOUT EXPRESSED WRITTEN CONSENT.			
SIZE	PART NO.	REV	
B	ENG-110-04	B	
SCALE	4:1	DO NOT SCALE PRINT	SHEET 1 OF 1

Olin College
of Engineering

Ball Bearing
Plate Side

8

7

6

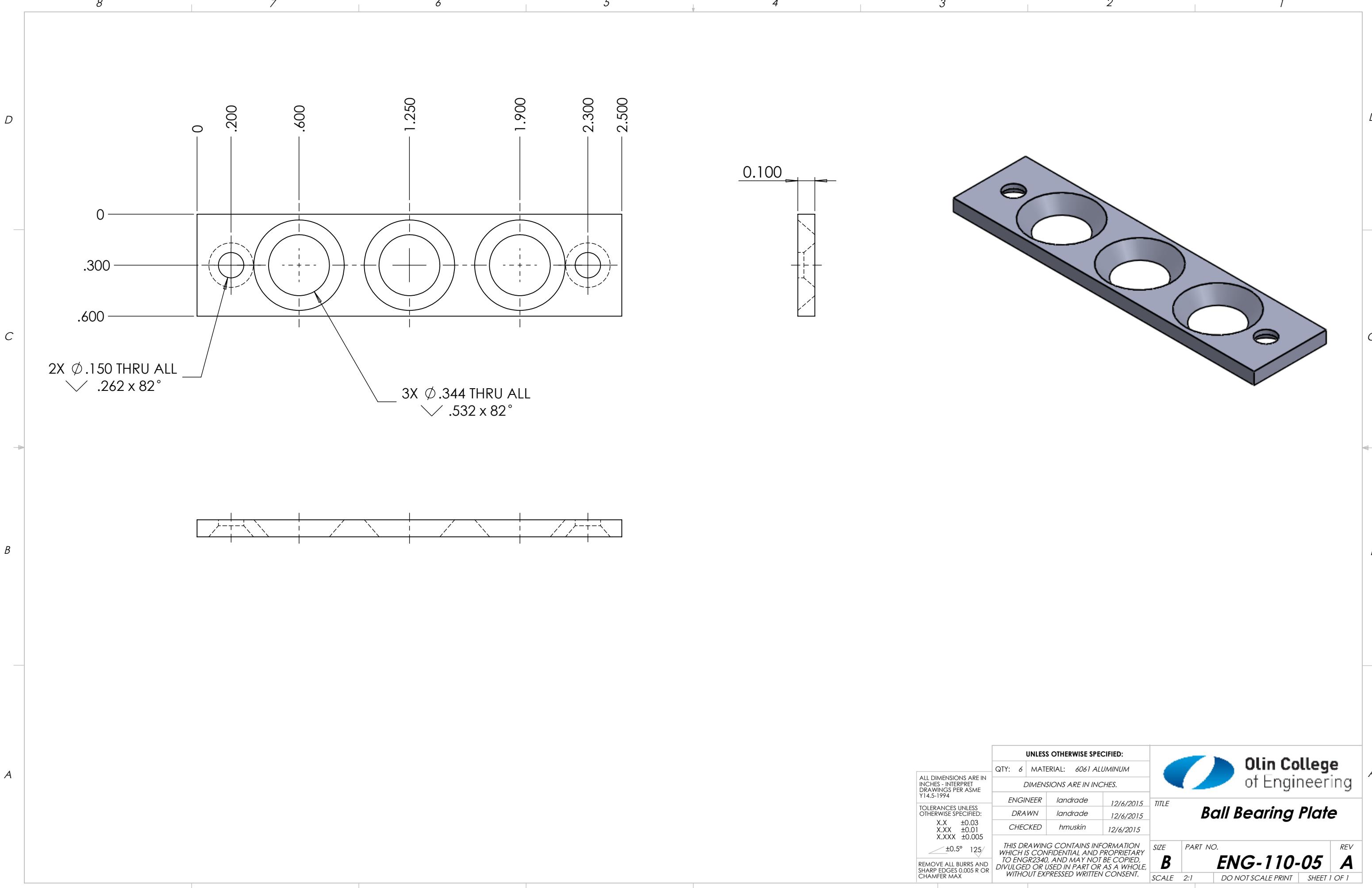
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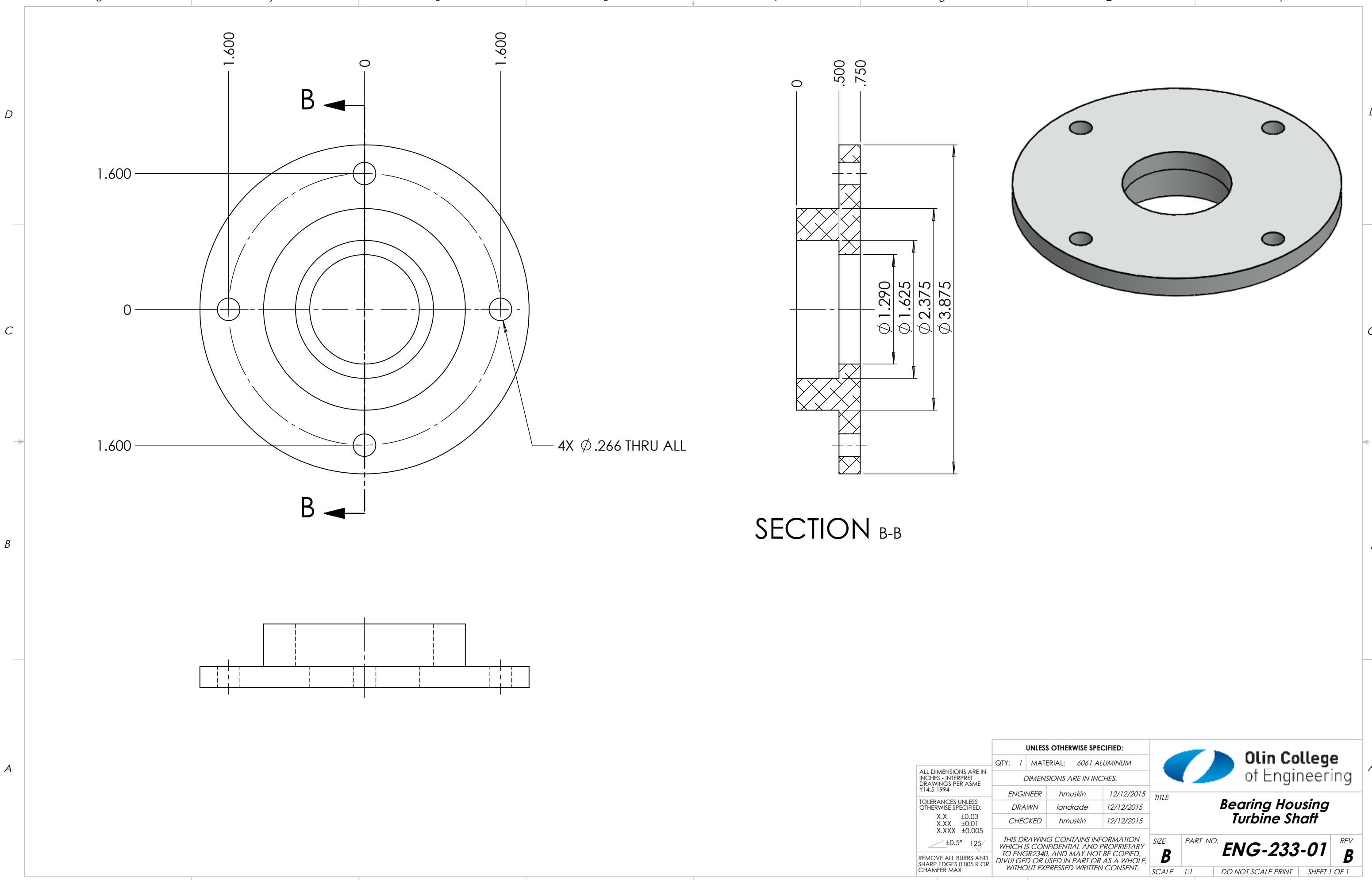
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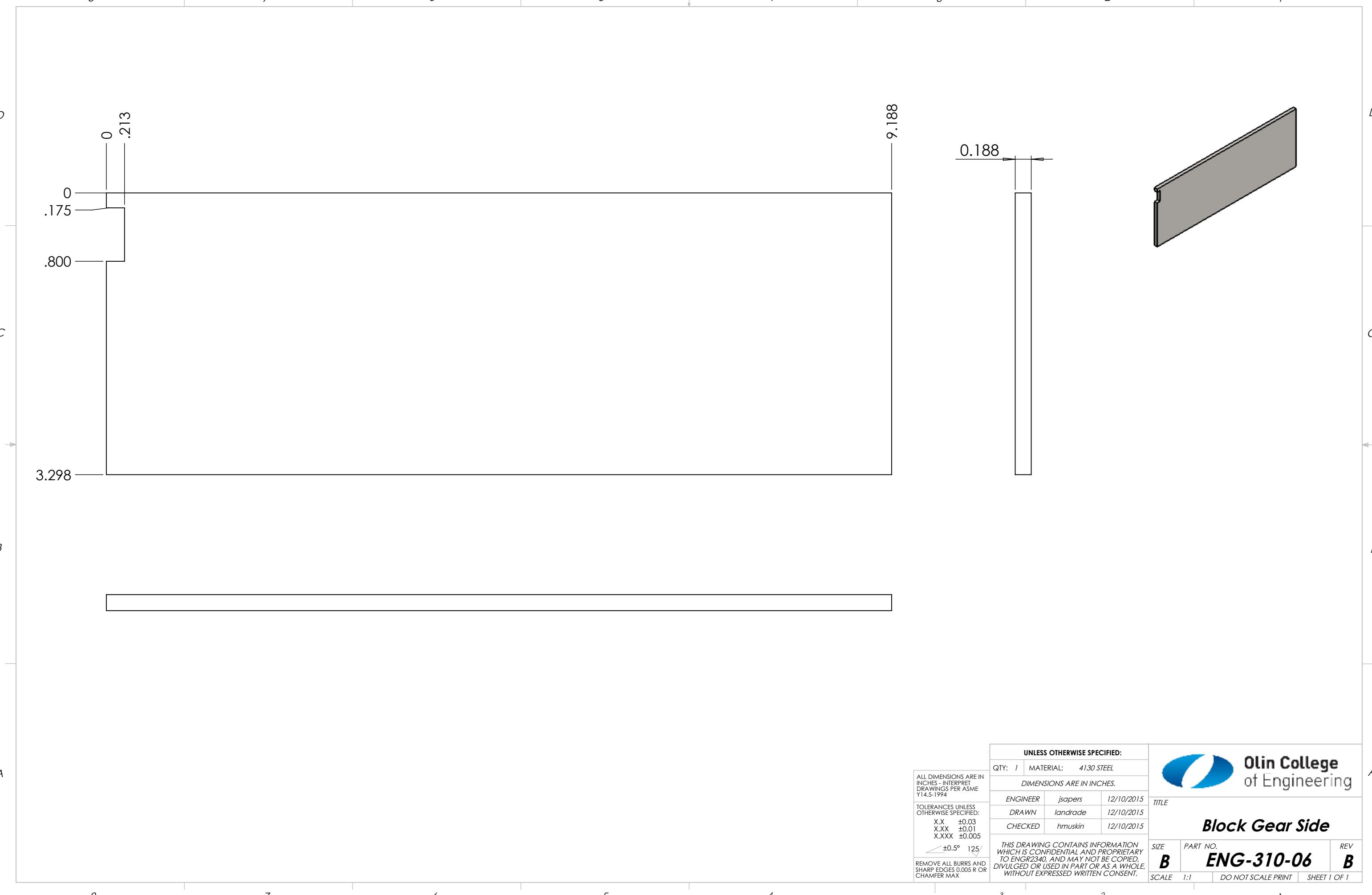
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2

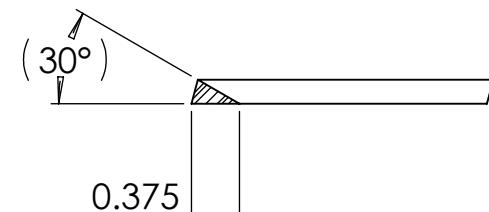
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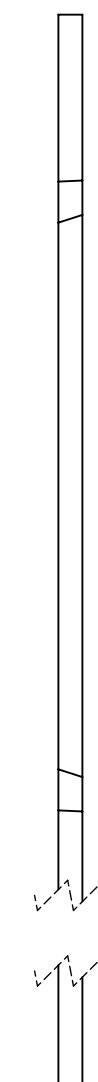
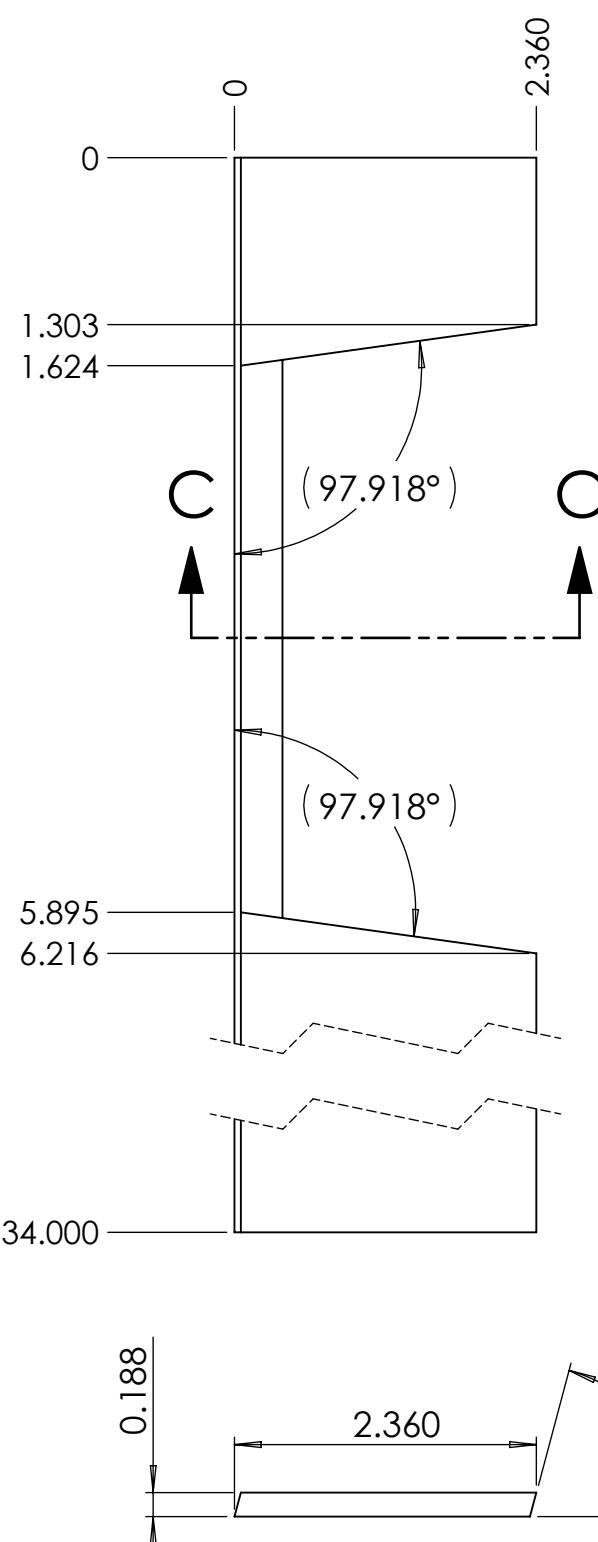


8 7 6 5 4 3 2 1



SECTION C-C

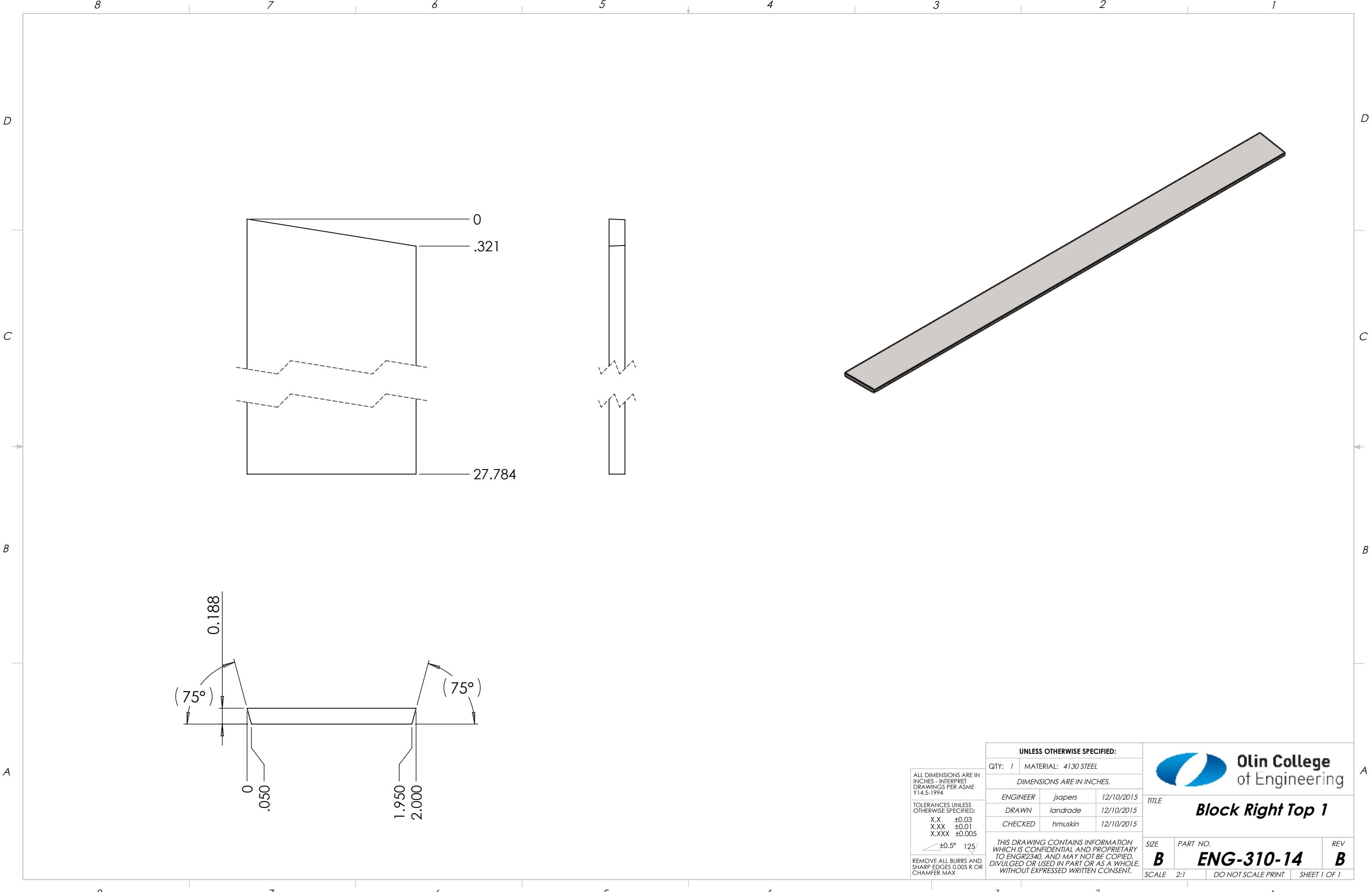
SCALE 1:1.5

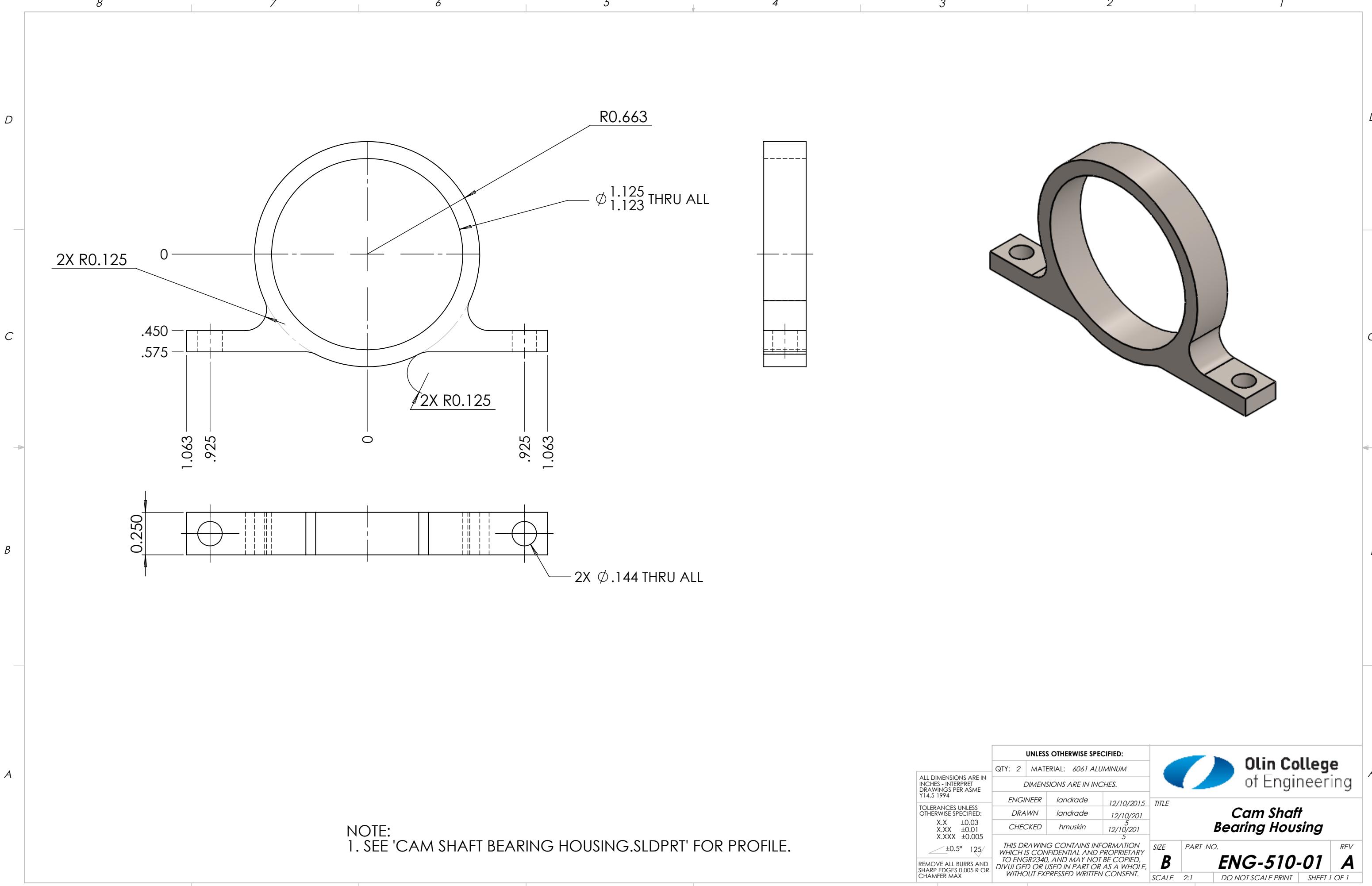


ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994
TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
±0.5° 125°
REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: 4130 STEEL
DIMENSIONS ARE IN INCHES.
ENGINEER jsapers 12/13/2015
DRAWN landrade 12/13/2015
CHECKED hmuskin 12/13/2015
THIS DRAWING CONTAINS INFORMATION
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Olin College
of Engineering
TITLE
Block Right Angle
SIZE B PART NO. ENG-310-13 REV A
SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1

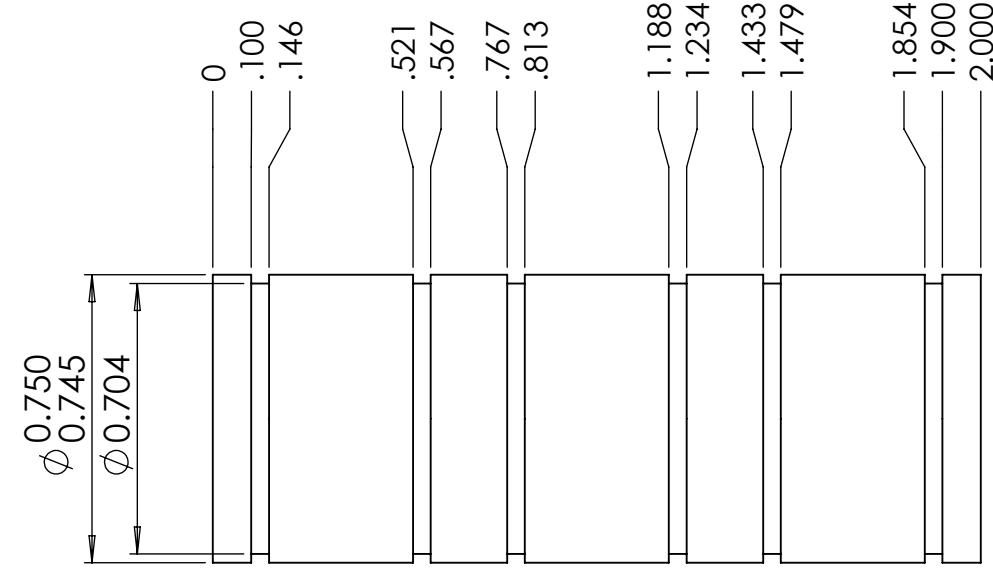




8 7 6 5 4 3 2 1

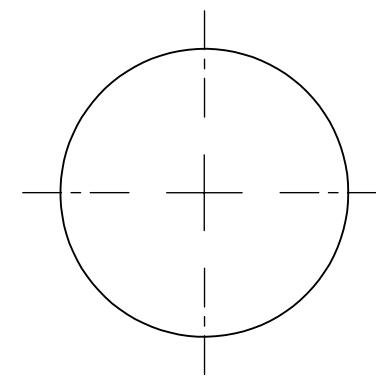
D

D



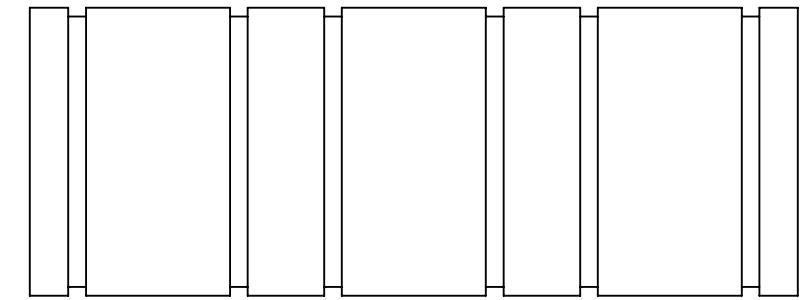
C

C



B

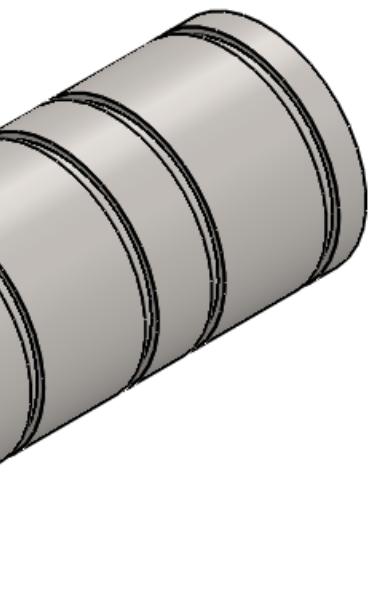
B



A

A

UNLESS OTHERWISE SPECIFIED:			
QTY: 6 MATERIAL: 6061 ALUMINUM			
DIMENSIONS ARE IN INCHES.			
ENGINEER	landrade	12/6/2015	
DRAWN	landrade	12/6/2015	
CHECKED	hmuskin	12/6/2015	
TITLE			
Connecting Rod Journal			
SIZE	PART NO.	REV	
B	ENG-121-02	B	
SCALE	2:1	DO NOT SCALE PRINT	SHEET 1 OF 1



8

7

6

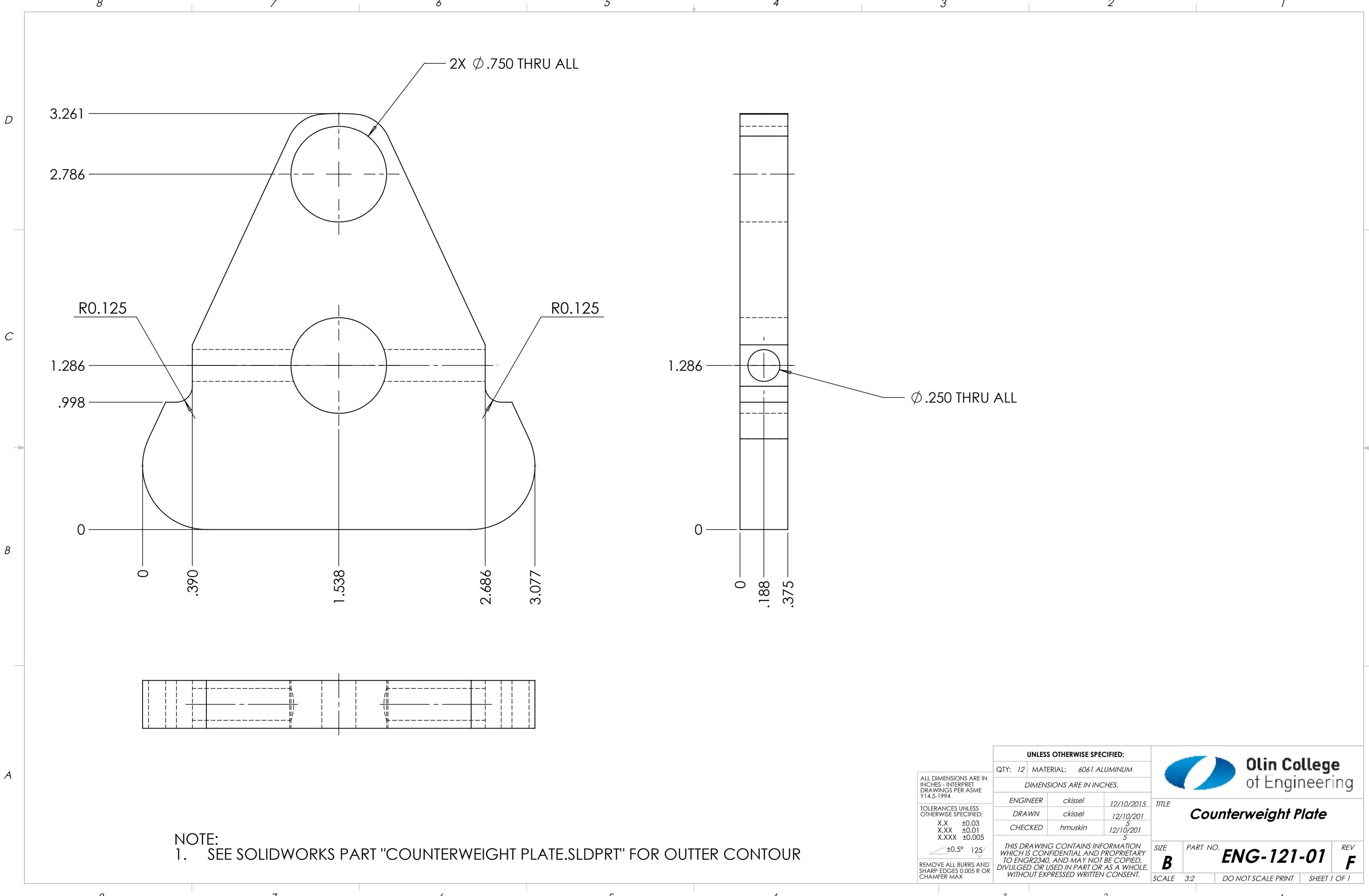
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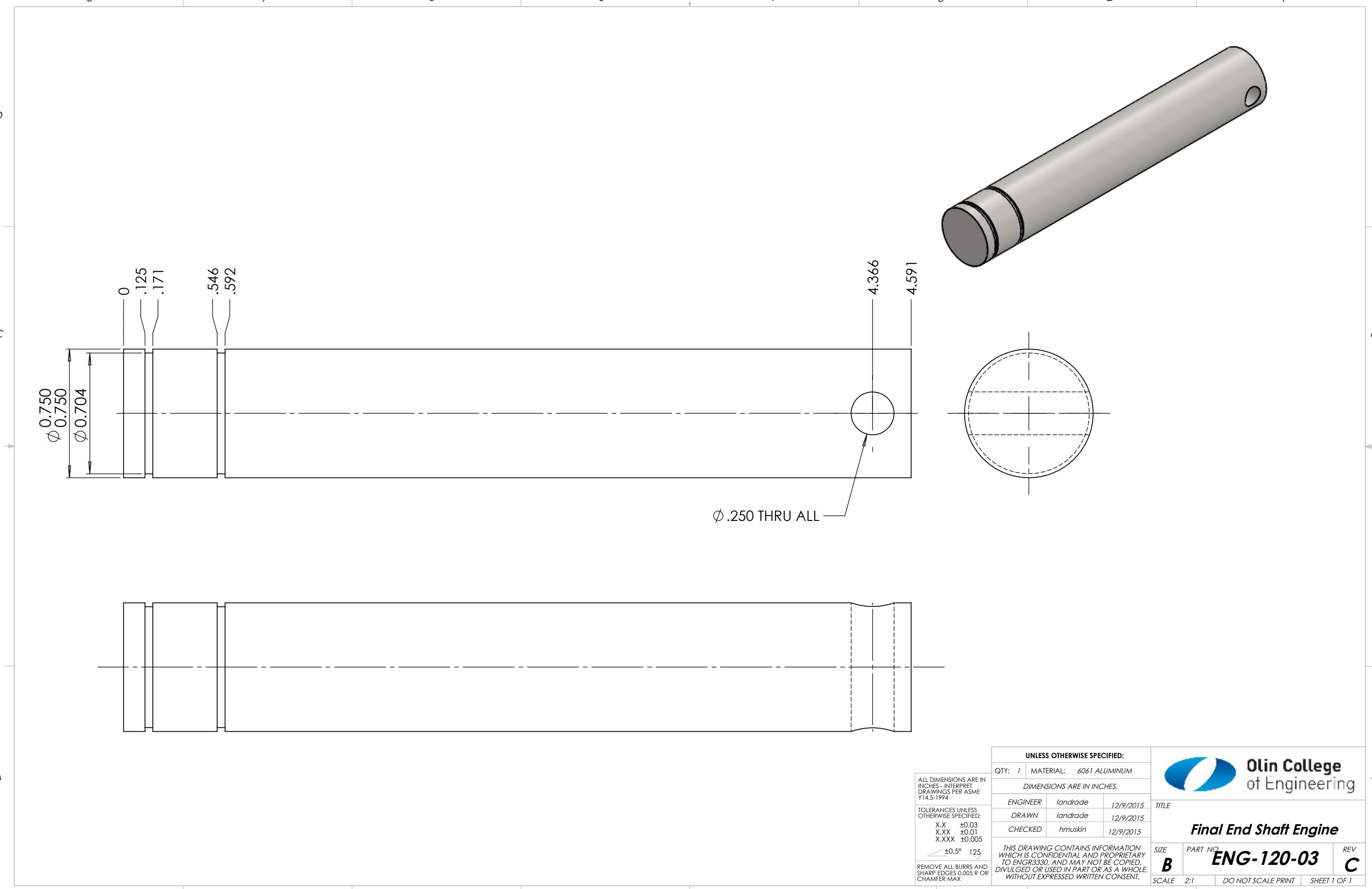
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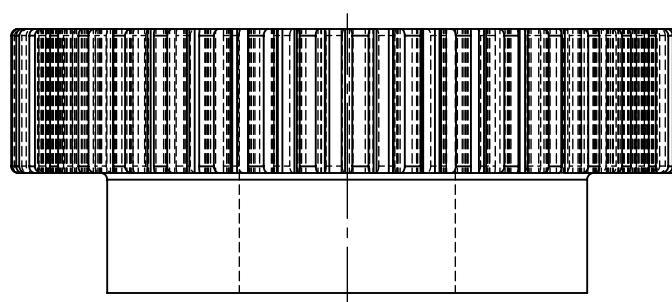
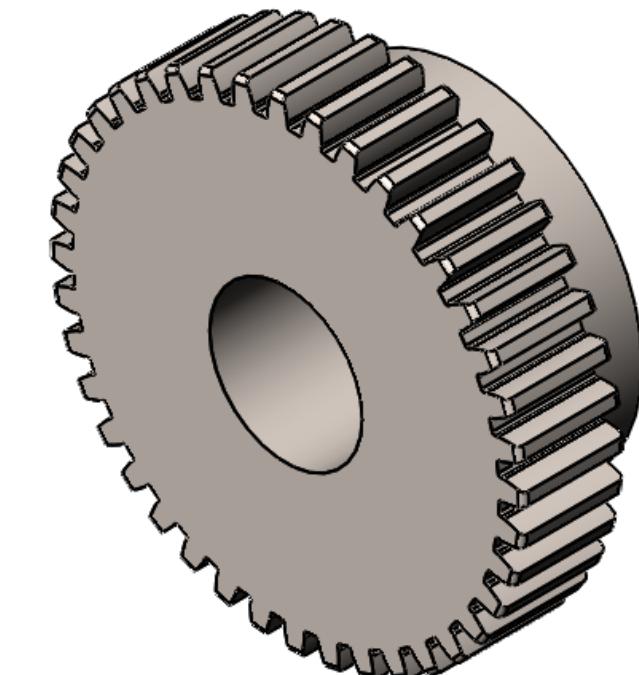
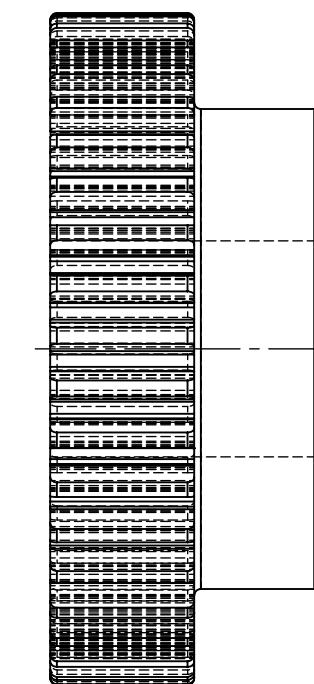
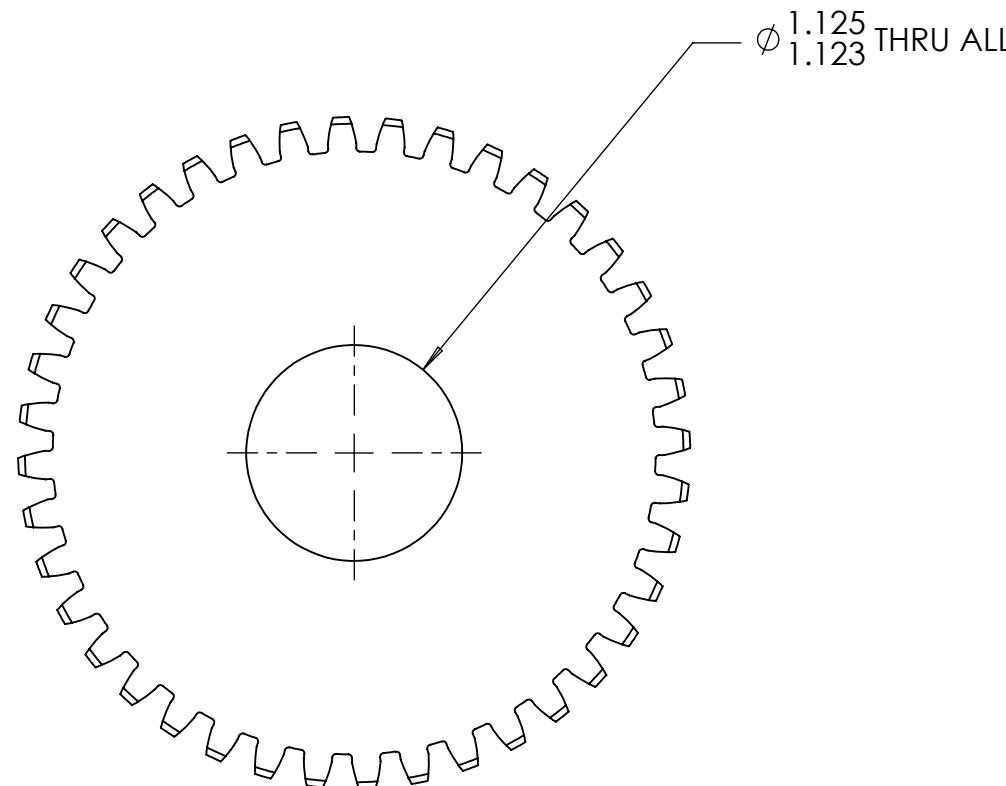
2

1





8 7 6 5 4 3 2 1



NOTE:
1. THIS PART IS MODIFIED FROM MCMASTER PART 6325K2

UNLESS OTHERWISE SPECIFIED:		TITLE
QTY: 1	MATERIAL: STEEL	
DIMENSIONS ARE IN INCHES.		
ENGINEER	ckissel	12/13/2015
DRAWN	landrade	12/13/201
CHECKED	hmuskin	12/13/201
		5
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SIZE	PART NO.	REV
B	6325K2	A
SCALE	2:1	DO NOT SCALE PRINT
		SHEET 1 OF 1

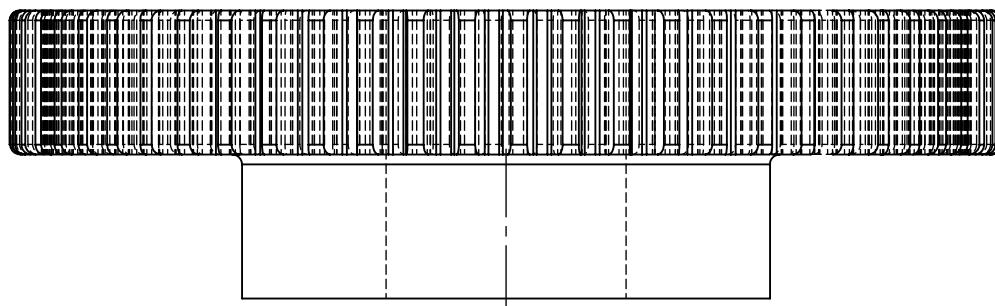
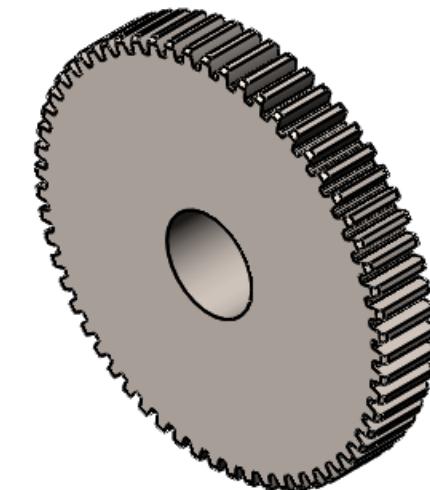
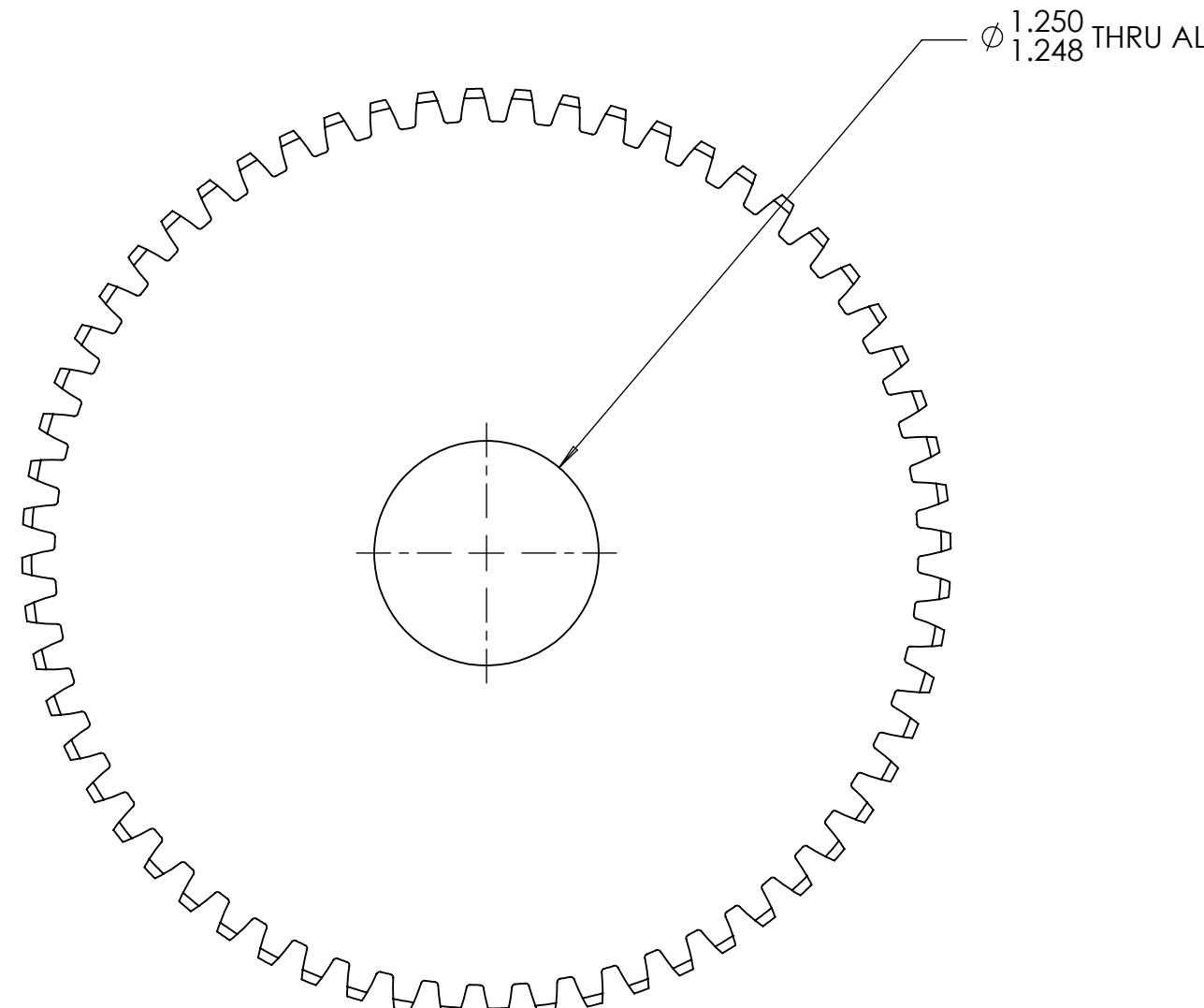


40 tooth

8 7 6 5 4 3 2 1

1

8 7 6 5 4 3 2 1

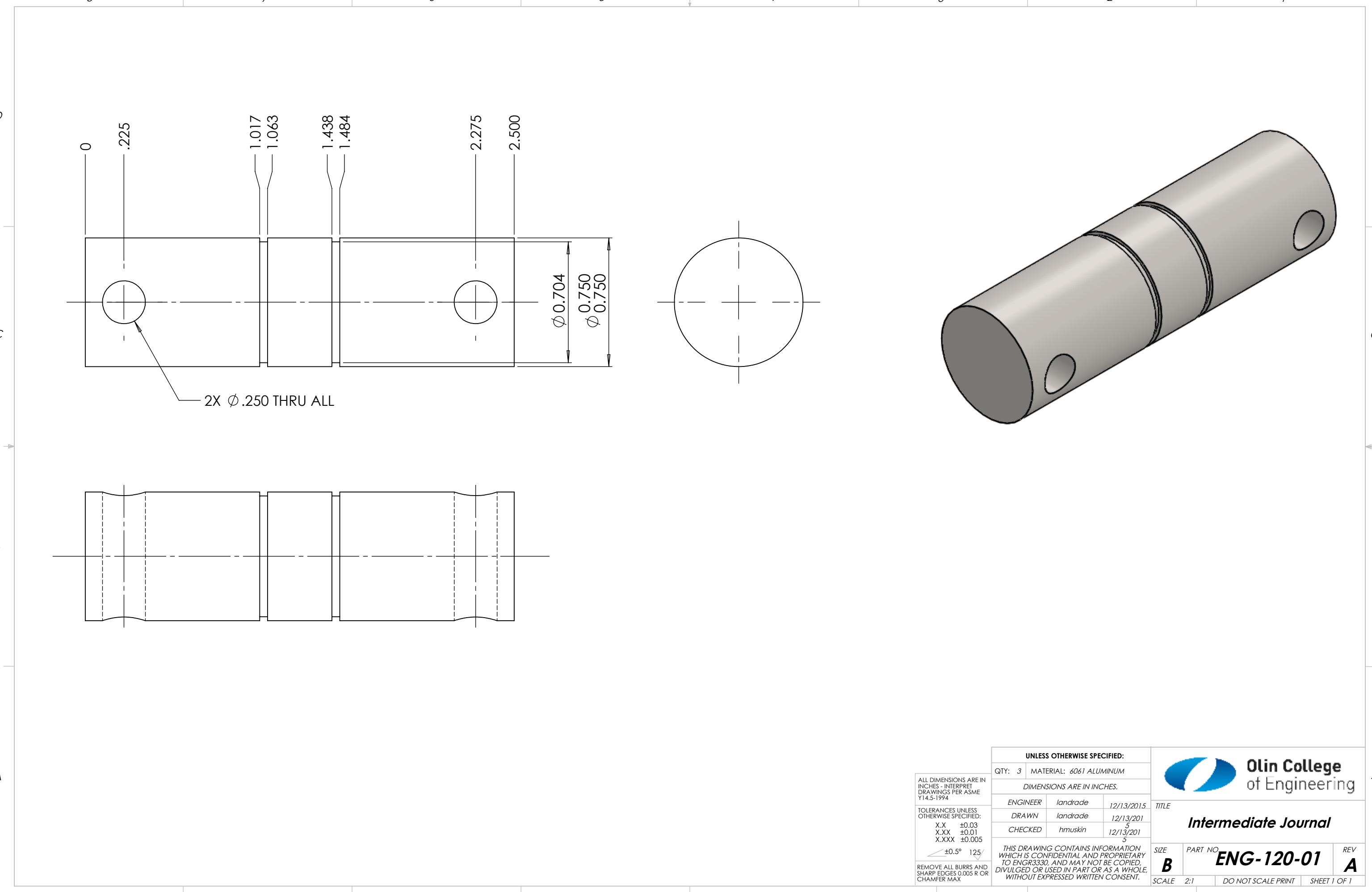


NOTE:
1. THIS PART IS MODIFIED FROM MCMASTER PART 6325K4

ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994
TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
∠0.5° 125°
REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: STEEL
DIMENSIONS ARE IN INCHES.
ENGINEER ckissel 12/13/2015
DRAWN landrade 12/13/2011
CHECKED hmuskin 12/13/2011
5
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WITHOUT EXPRESSED WRITTEN CONSENT.

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of Engineering
60 Tooth
SIZE B PART NO. 6325K4 REV A
SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1



8 7 6 5 4 3 2 1

D

D

C

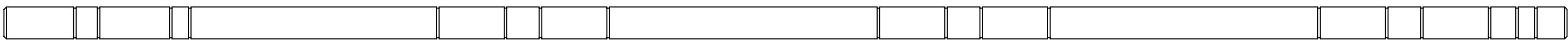
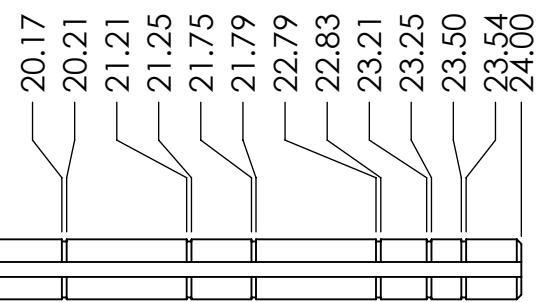
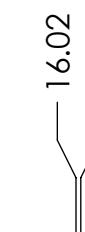
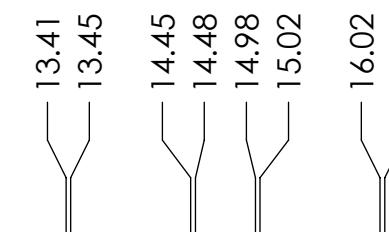
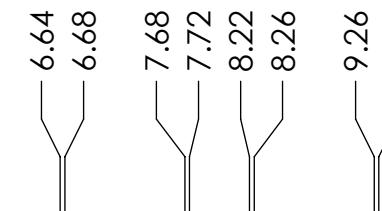
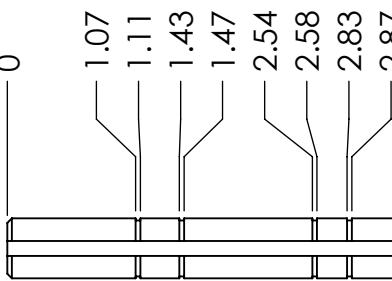
C

B

B

A

A



NOTE:

1. MODIFIED SHAFT FROM MCMASTER PART 1497K310

ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994

TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005

±0.5° 125°

REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: 1045 STEEL
DIMENSIONS ARE IN INCHES.
ENGINEER landrade 12/10/2015
DRAWN landrade 12/10/2011
CHECKED hmuskin 12/10/2011
THIS DRAWING CONTAINS INFORMATION
WHICH IS CONFIDENTIAL AND PROPRIETARY
TO ENGR2340, AND MAY NOT BE COPIED,
DIVULGED OR USED IN PART OR AS A WHOLE
WITHOUT EXPRESSED WRITTEN CONSENT.

Olin College
of Engineering

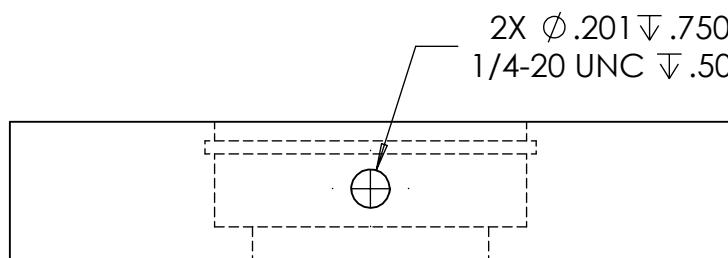
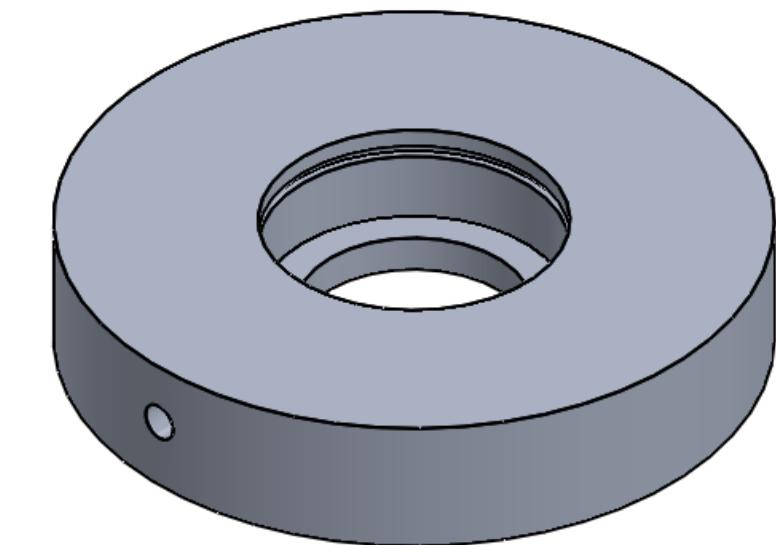
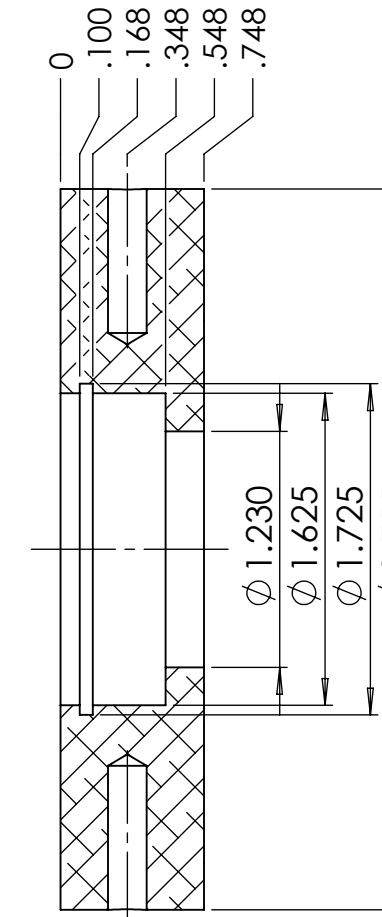
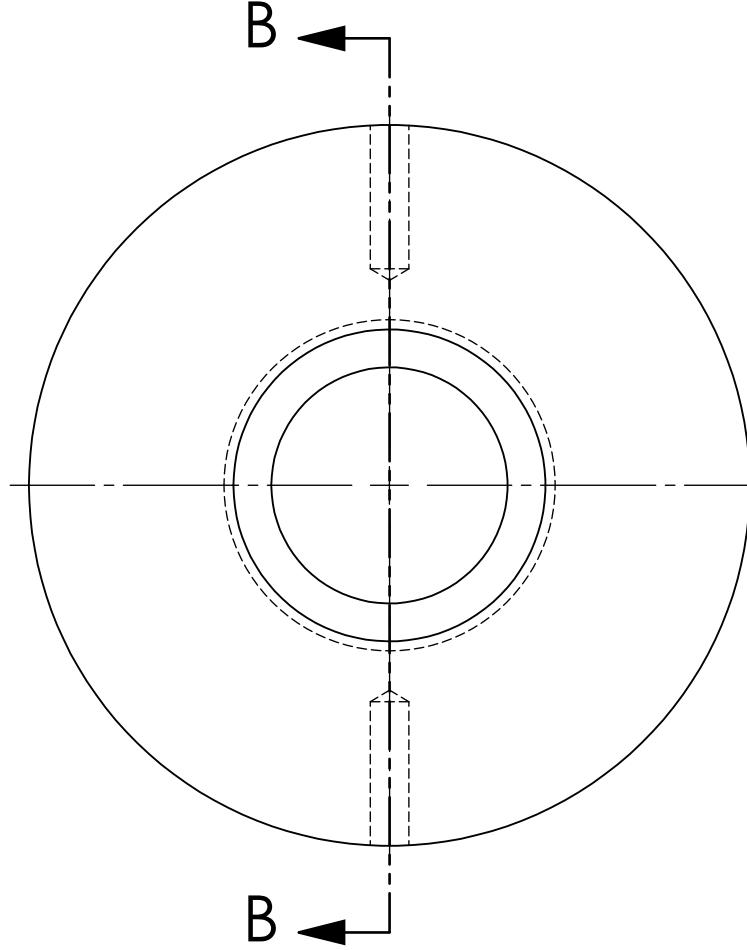
Left Keyed Cam Shaft

SIZE B PART NO. 1497K310 REV B

SCALE 1:1.6 DO NOT SCALE PRINT SHEET 1 OF 1

8 7 6 5 4 3 2 1

D



UNLESS OTHERWISE SPECIFIED:		
QTY: 1	MATERIAL: 6061 ALUMINUM	
DIMENSIONS ARE IN INCHES.		
ENGINEER	hmuskin	12/12/2015
DRAWN	landrade	12/12/2015
CHECKED	hmuskin	12/12/2015
$\pm 0.5^\circ$ 125		
ALL DIMENSIONS ARE IN INCHES - INTERPRET DRAWINGS PER ASME Y14.5-1994		
TOLERANCES UNLESS OTHERWISE SPECIFIED:		
X.X ± 0.03		
X.XX ± 0.01		
X.XXX ± 0.005		
THIS DRAWING CONTAINS INFORMATION WHICH IS CONFIDENTIAL AND PROPRIETARY TO ENGR3330, AND MAY NOT BE COPIED, DIVULGED OR USED IN PART OR AS A WHOLE WITHOUT EXPRESSED WRITTEN CONSENT.		
REMOVE ALL BURRS AND SHARP EDGES 0.005 R OR CHAMFER MAX		
SIZE	PART NO.	REV
B	ENG-221-01	B
SCALE 2:1	DO NOT SCALE PRINT	SHEET 1 OF 1

Olin College
of Engineering

Lower Driveshaft
Bearing Holder

8

7

6

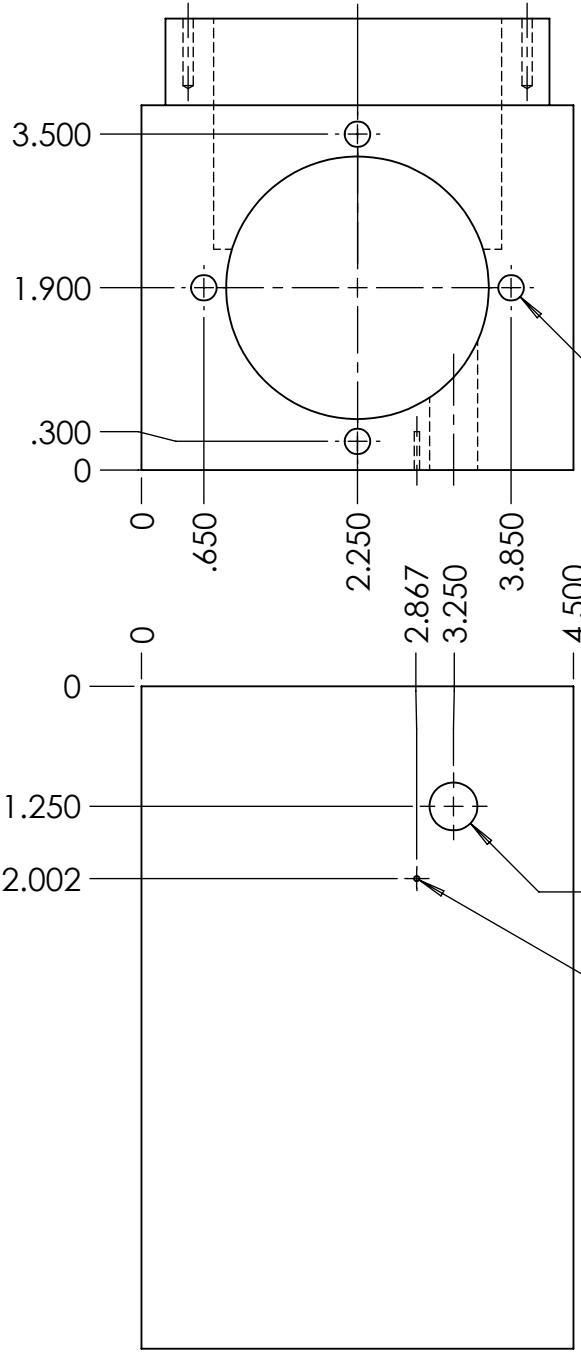
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4

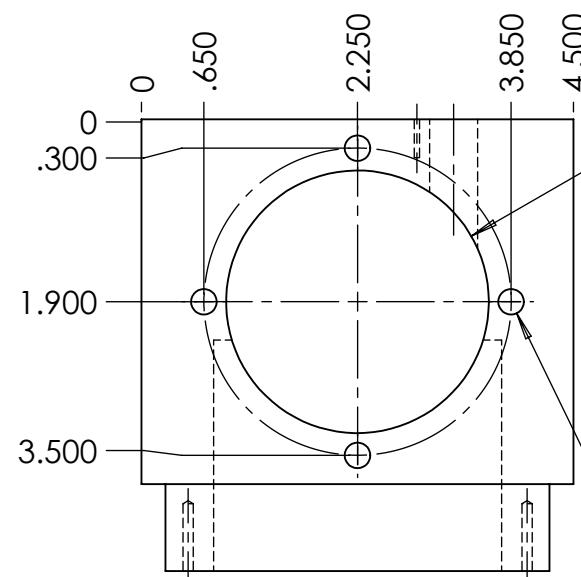
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2

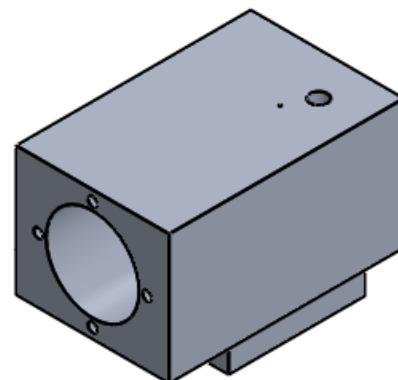
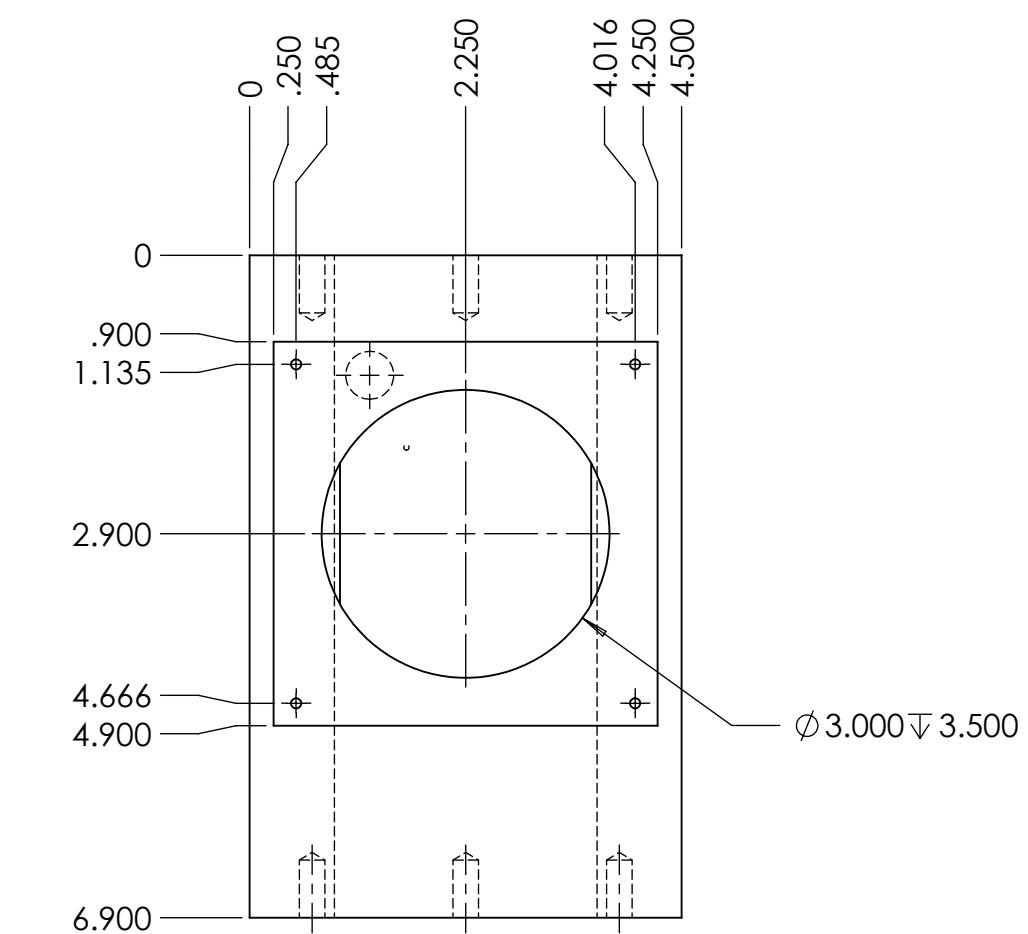
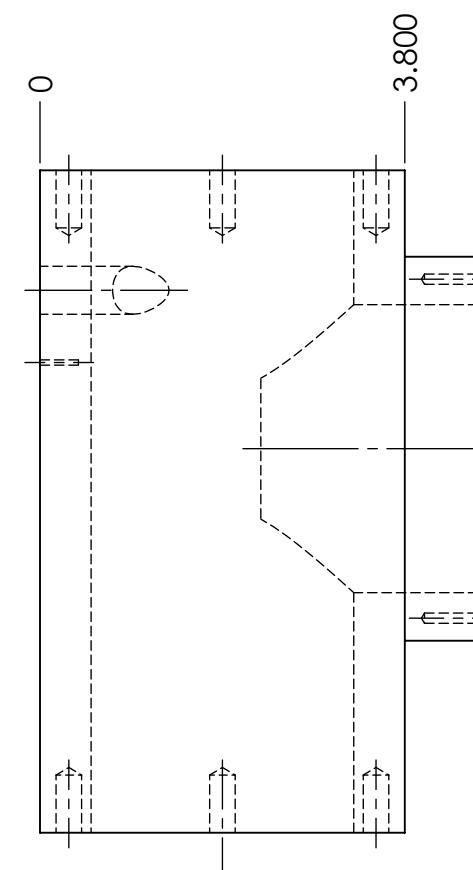
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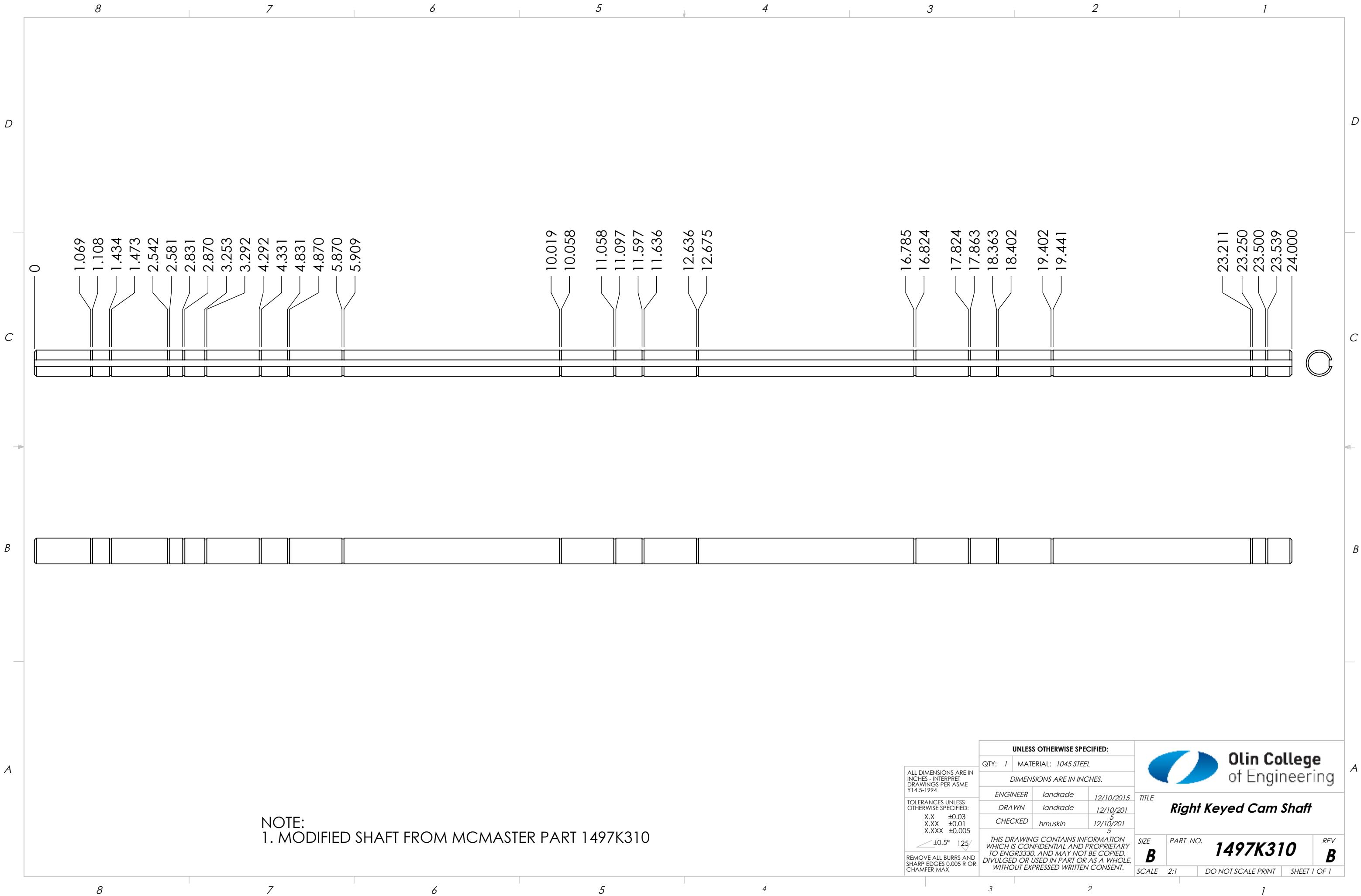
— 4X Ø.266 ↓.700
1/4-20 UNC ↓ .500



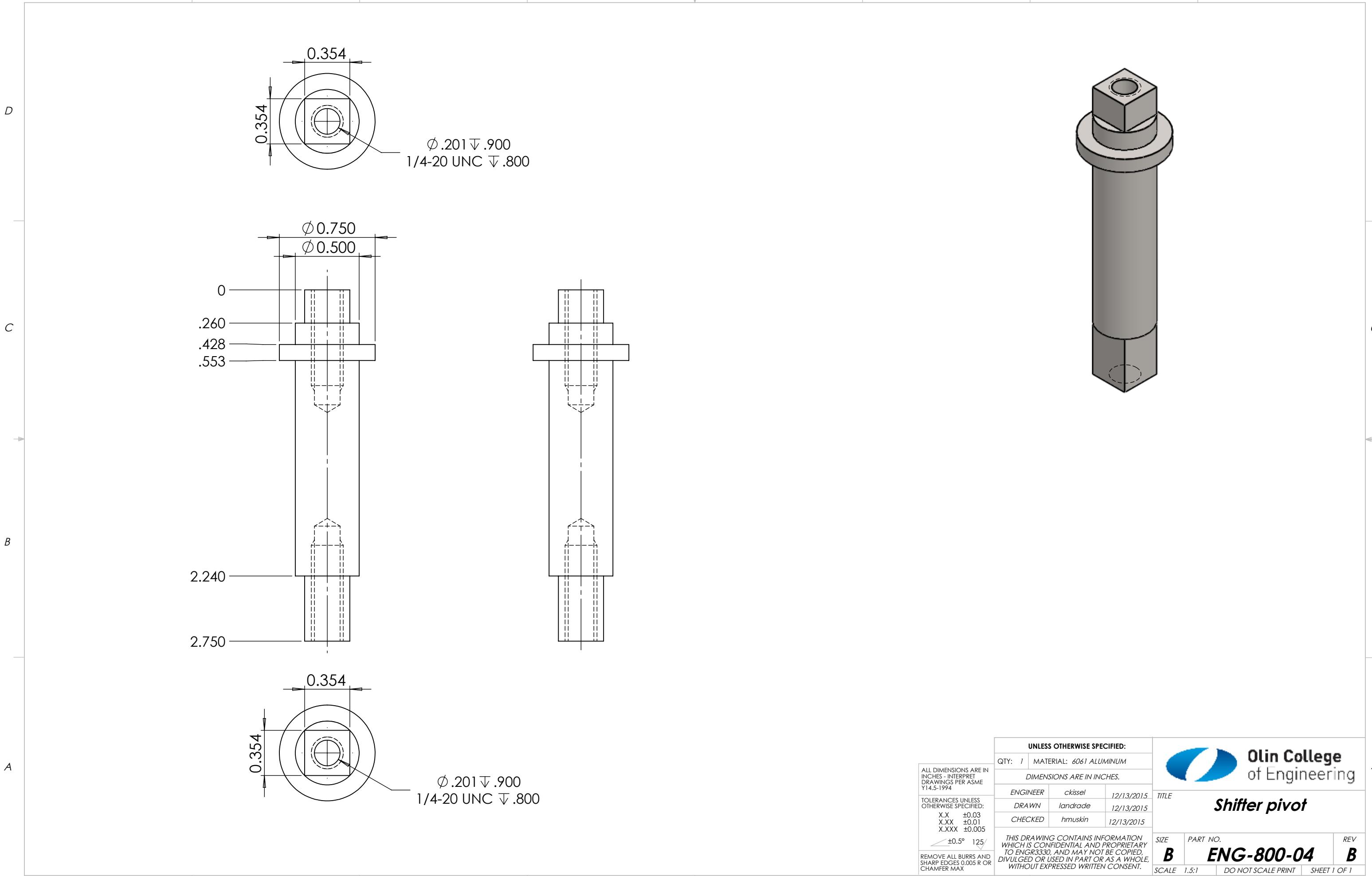
— 4X Ø.266 ↓.700
1/4-20 UNC ↓.500

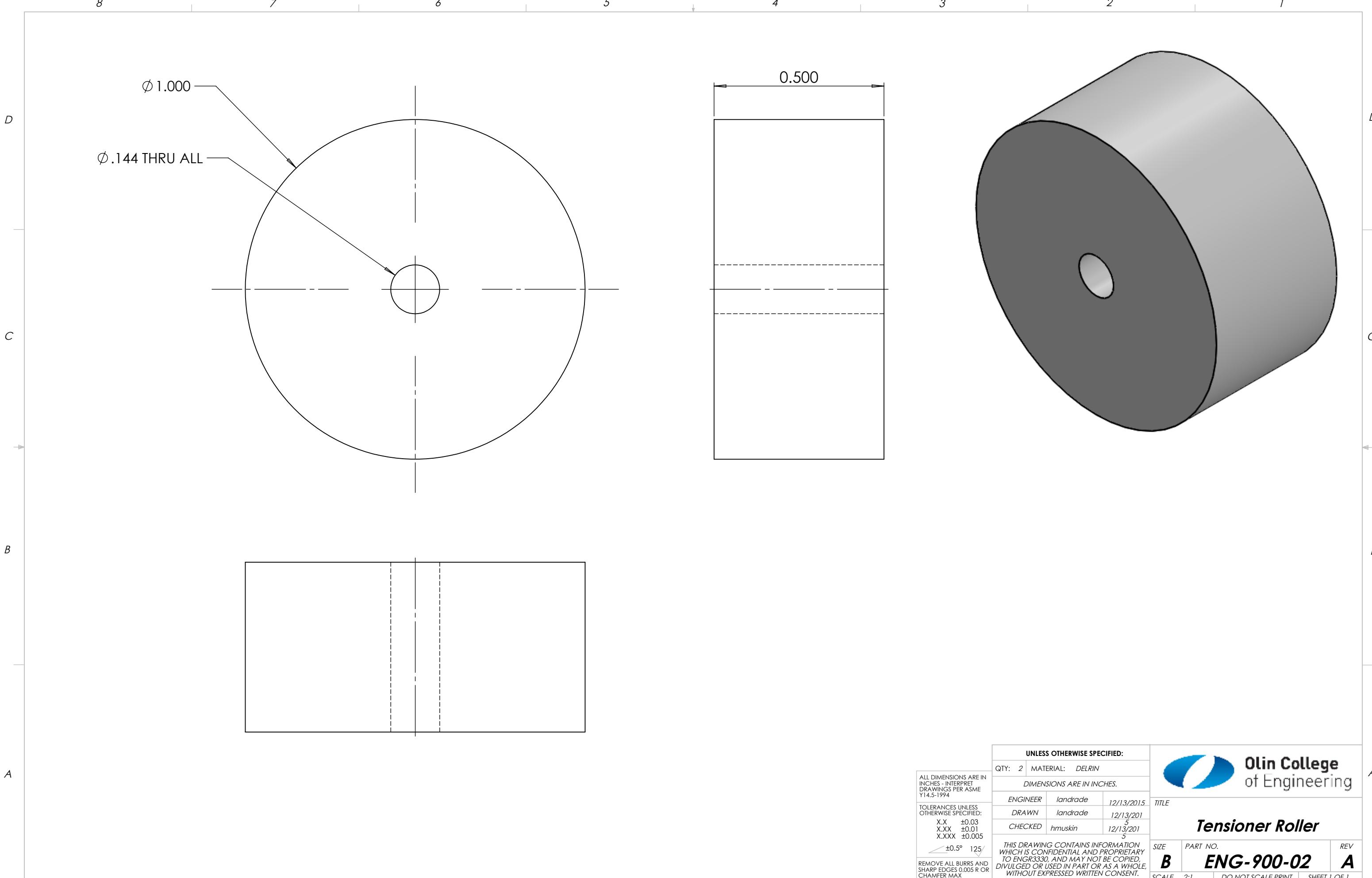


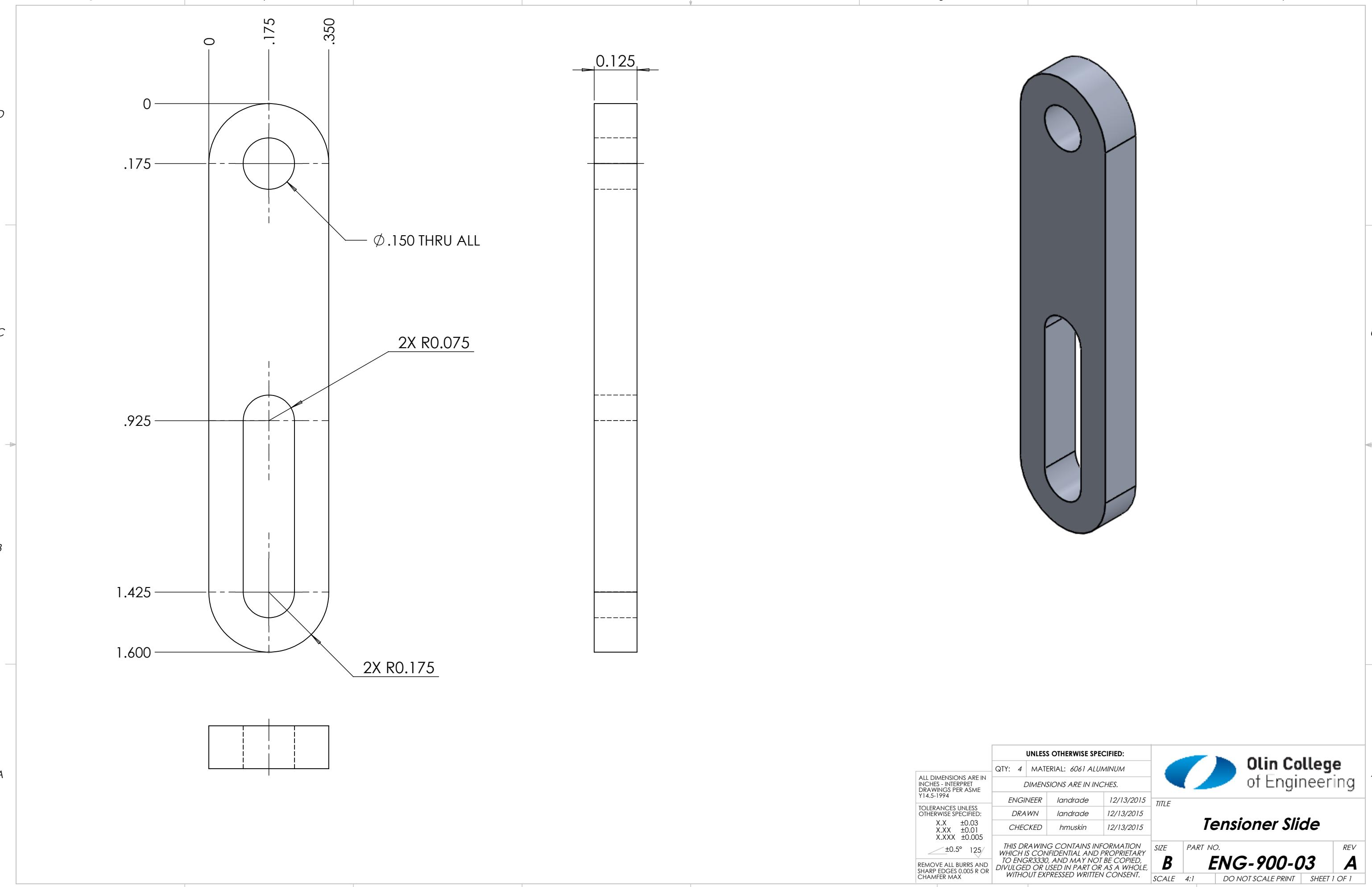
UNLESS OTHERWISE SPECIFIED:		
ALL DIMENSIONS ARE IN INCHES - INTERPRET DRAWINGS PER ASME Y14.5-1994	QTY: 1	MATERIAL: 6061 ALUMINUM
DIMENSIONS ARE IN INCHES.		
TOLERANCES UNLESS OTHERWISE SPECIFIED: X.X ±0.03 X.XX ±0.01 XXXX ±0.005 \triangle ±0.5° 125/	ENGINEER DRAWN CHECKED	hmuskin landrade hmuskin 5
12/12/2015 12/12/201 12/12/201		
<p><i>THIS DRAWING CONTAINS INFORMATION WHICH IS CONFIDENTIAL AND PROPRIETARY TO ENGR330, AND MAY NOT BE COPIED, DIVULGED OR USED IN PART OR AS A WHOLE, WITHOUT EXPRESSED WRITTEN CONSENT.</i></p>		
TITLE Nacelle		SIZE B
PART NO. ENG-230-01		REV F
SCALE 2:1		DO NOT SCALE PRINT
SHEET 1 OF 1		

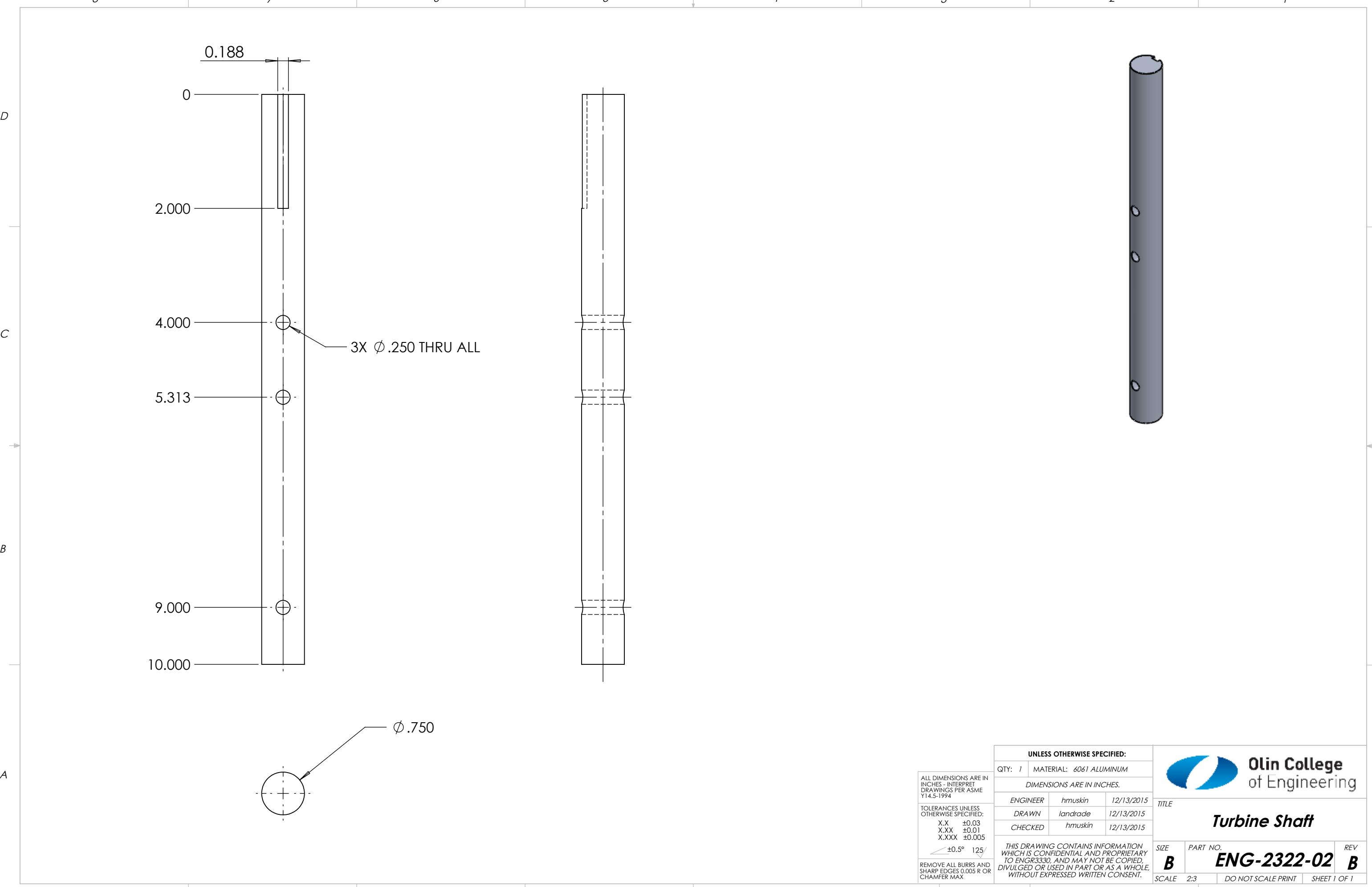


8 7 6 5 4 3 2 1





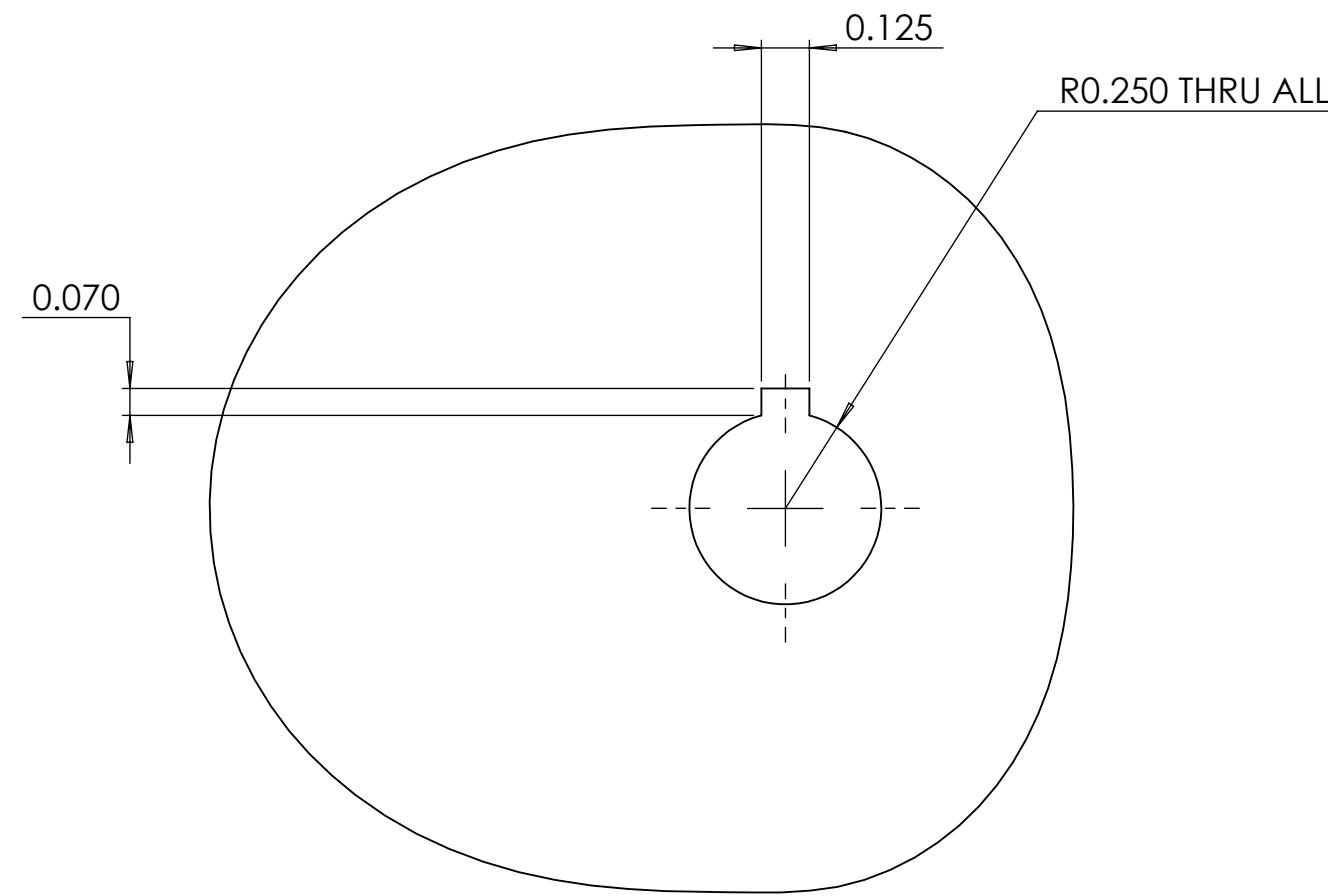




8 7 6 5 4 3 2 1

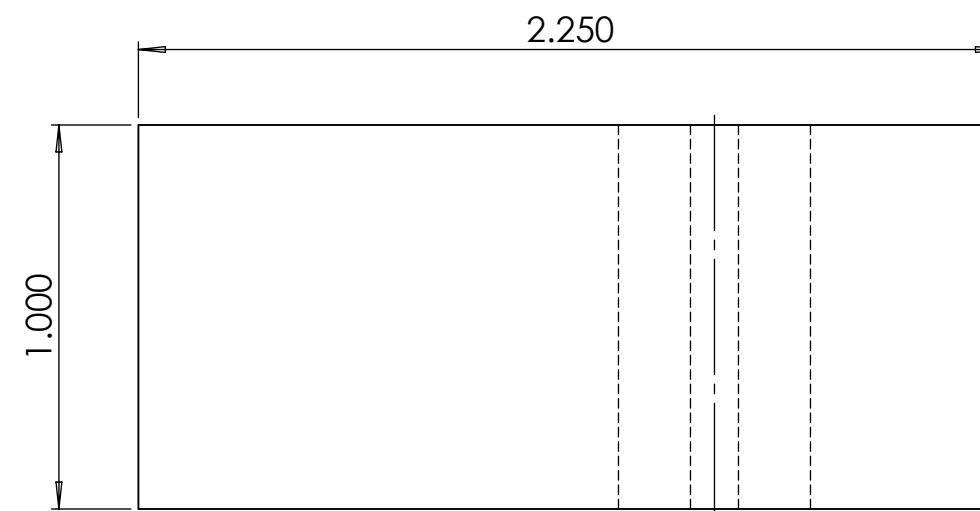
D

D



C

C



B

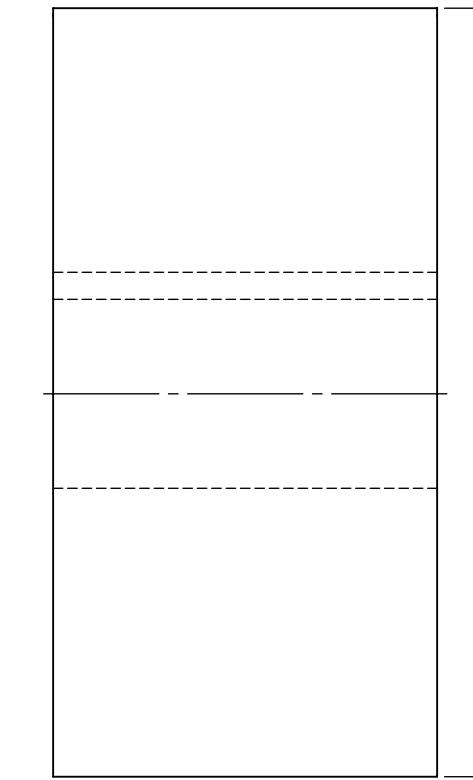
B

A

A

NOTE:

1. SEE SOLIDWORKS PART "VALVE CAM.SLDprt", CONFIGURATION "FIRST VALVE CAM" FOR PROFILE.
2. PART SHOULD BE 3D PRINTED



ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994

TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005

±0.5° 125°

REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:

QTY: 2 MATERIAL: ABS

DIMENSIONS ARE IN INCHES.

ENGINEER landrade 12/10/2015

DRAWN landrade 12/10/2015

CHECKED hmuskin 12/10/2015

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of Engineering

Valve Cam 1

SIZE B PART NO.
ENG-500-03 REV B

SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1

8 7 6 5 4 3 2 1

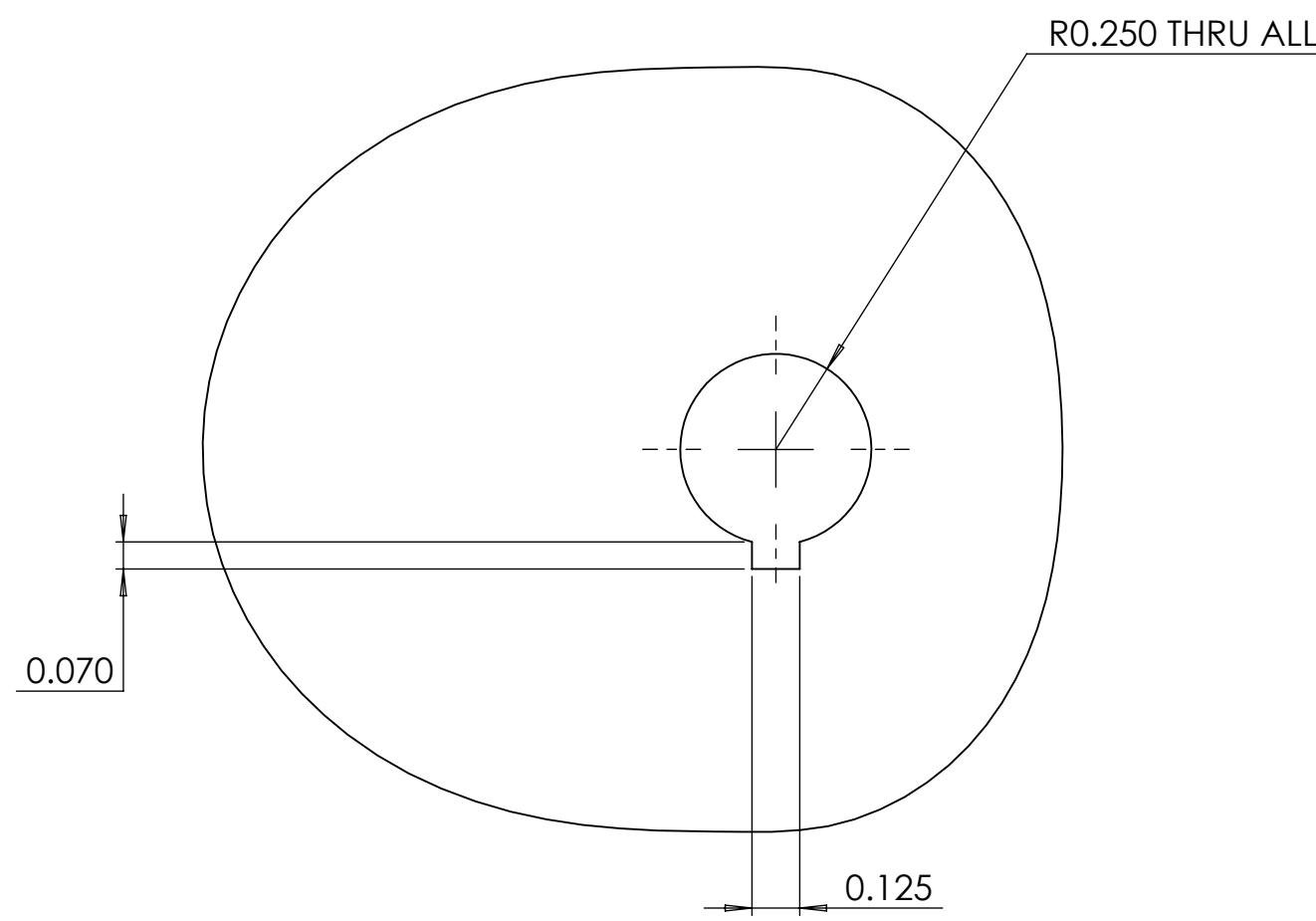
8 7 6 5 4 3 2 1

1

8 7 6 5 4 3 2 1

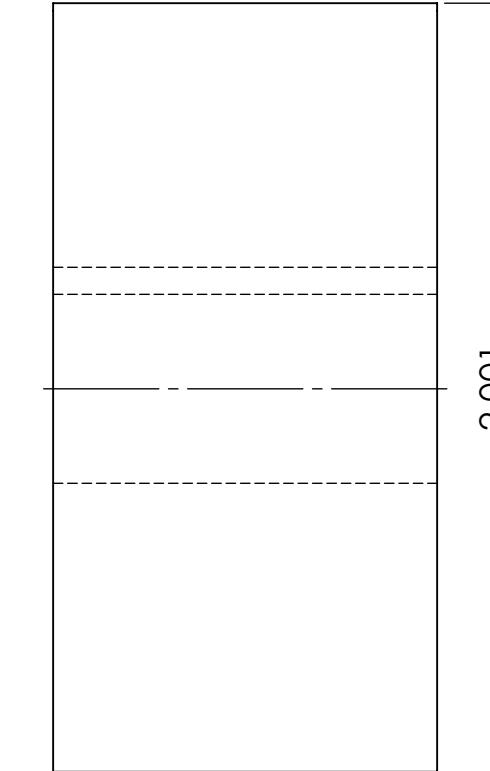
D

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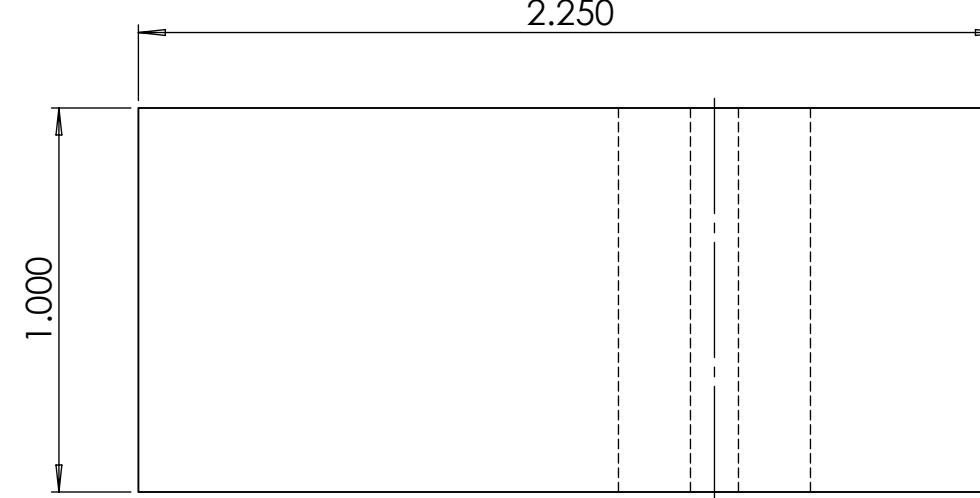
C

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NOTE:

1. SEE SOLIDWORKS PART "VALVE CAM.SLDprt", CONFIGURATION "SECOND VALVE CAM" FOR PROFILE.
2. PART SHOULD BE 3D PRINTED

ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994
TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
∠±0.5° 125°
REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:
QTY: 2 MATERIAL: ABS
DIMENSIONS ARE IN INCHES.
ENGINEER landrade 12/10/2015
DRAWN landrade 12/10/2015
CHECKED hmuskin 12/10/2015
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WHICH IS CONFIDENTIAL AND PROPRIETARY
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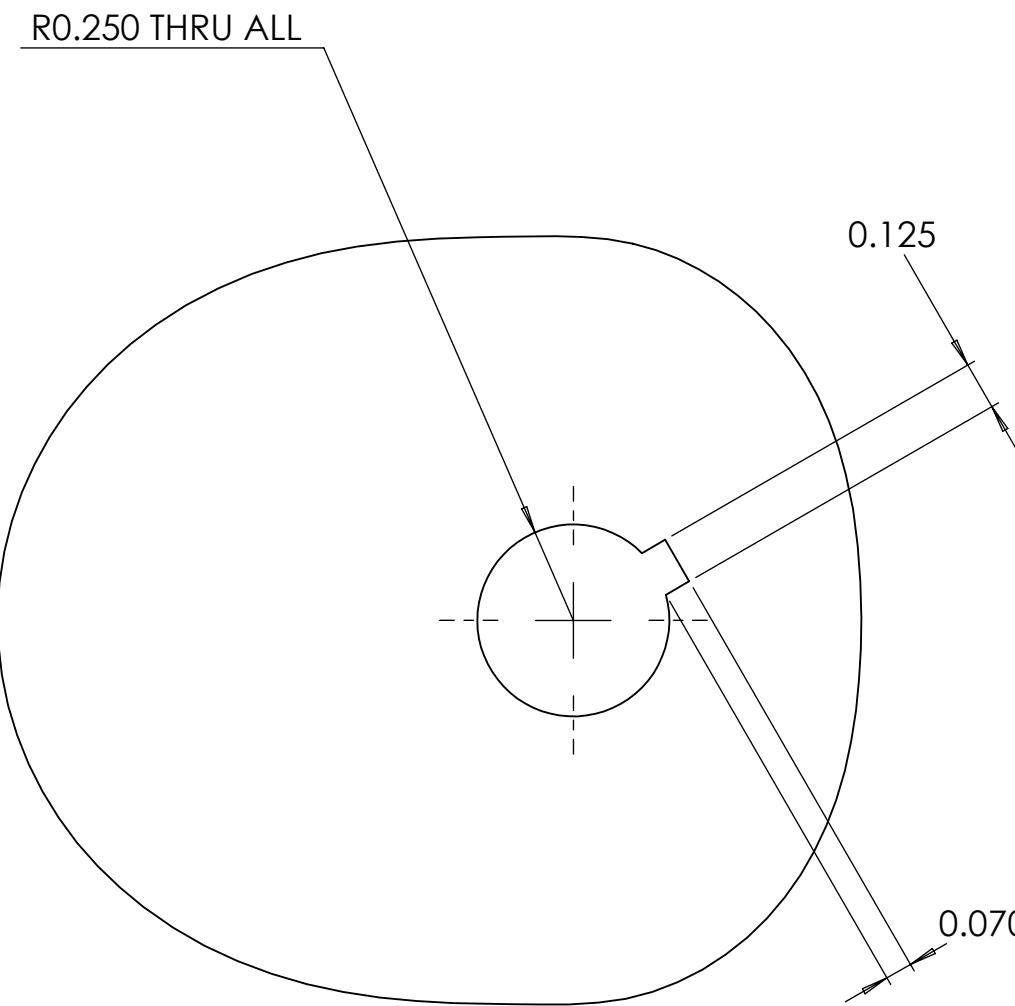
Valve Cam 2

SIZE B PART NO. ENG-500-04 REV B
SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1

8 7 6 5 4 3 2 1

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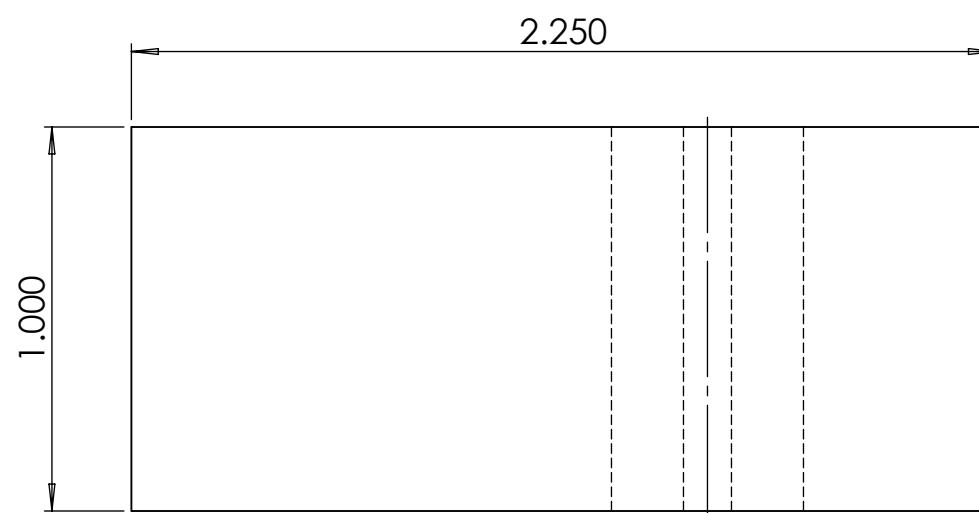


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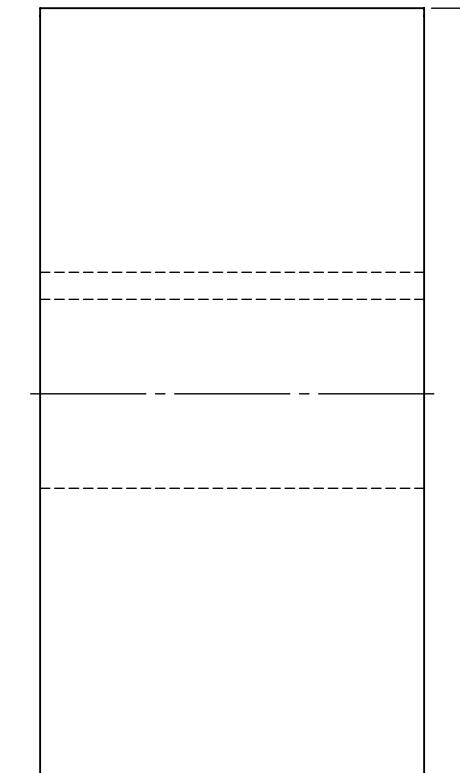


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NOTE:

1. SEE SOLIDWORKS PART "VALVE CAM.SLDprt", CONFIGURATION "THIRD VALVE CAM" FOR PROFILE.
2. PART SHOULD BE 3D PRINTED



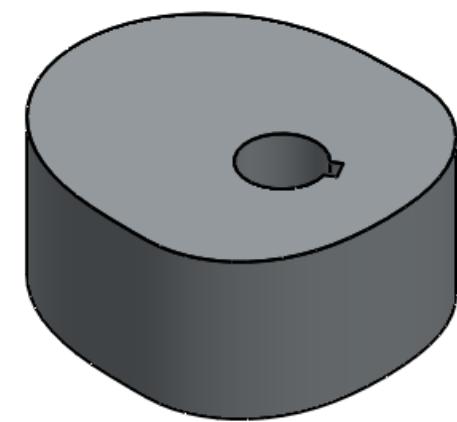
ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994
TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
∠±0.5° 125°
REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:
QTY: 2 MATERIAL: ABS
DIMENSIONS ARE IN INCHES.
ENGINEER landrade 12/10/2015
DRAWN landrade 12/10/2015
CHECKED hmuskin 12/10/2015
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Valve Cam 3

SIZE B PART NO. ENG-500-05 REV B
SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1



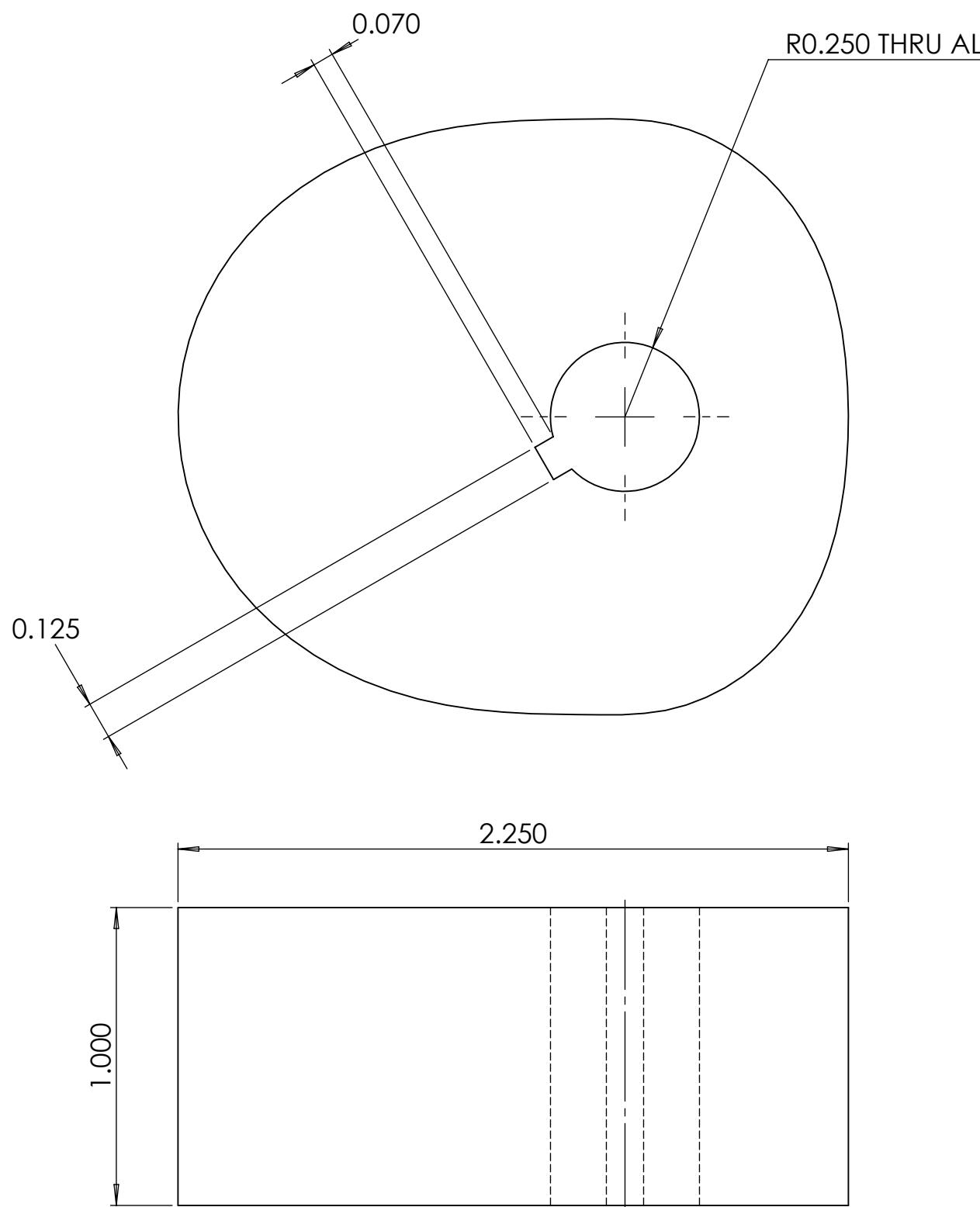
8 7 6 5 4 3 2 1

1

8 7 6 5 4 3 2 1

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NOTE:

1. SEE SOLIDWORKS PART "VALVE CAM.SLDprt", CONFIGURATION "FORTH VALVE CAM" FOR PROFILE.
2. PART SHOULD BE 3D PRINTED

ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994
TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
∠±0.5° 125°
REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:
QTY: 2 MATERIAL: ABS
DIMENSIONS ARE IN INCHES.
ENGINEER landrade 12/10/2015
DRAWN landrade 12/10/2015
CHECKED hmuskin 12/10/2015
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Olin College
of Engineering
TITLE Valve Cam 4
SIZE B PART NO. ENG-500-06 REV B
SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1

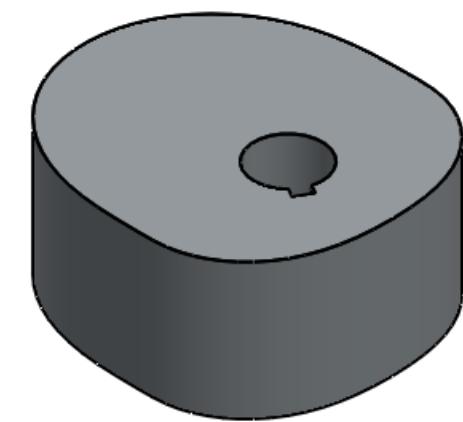
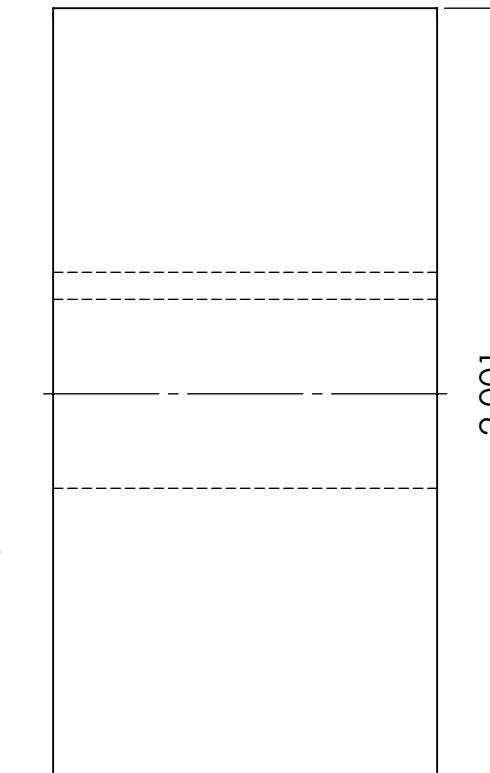
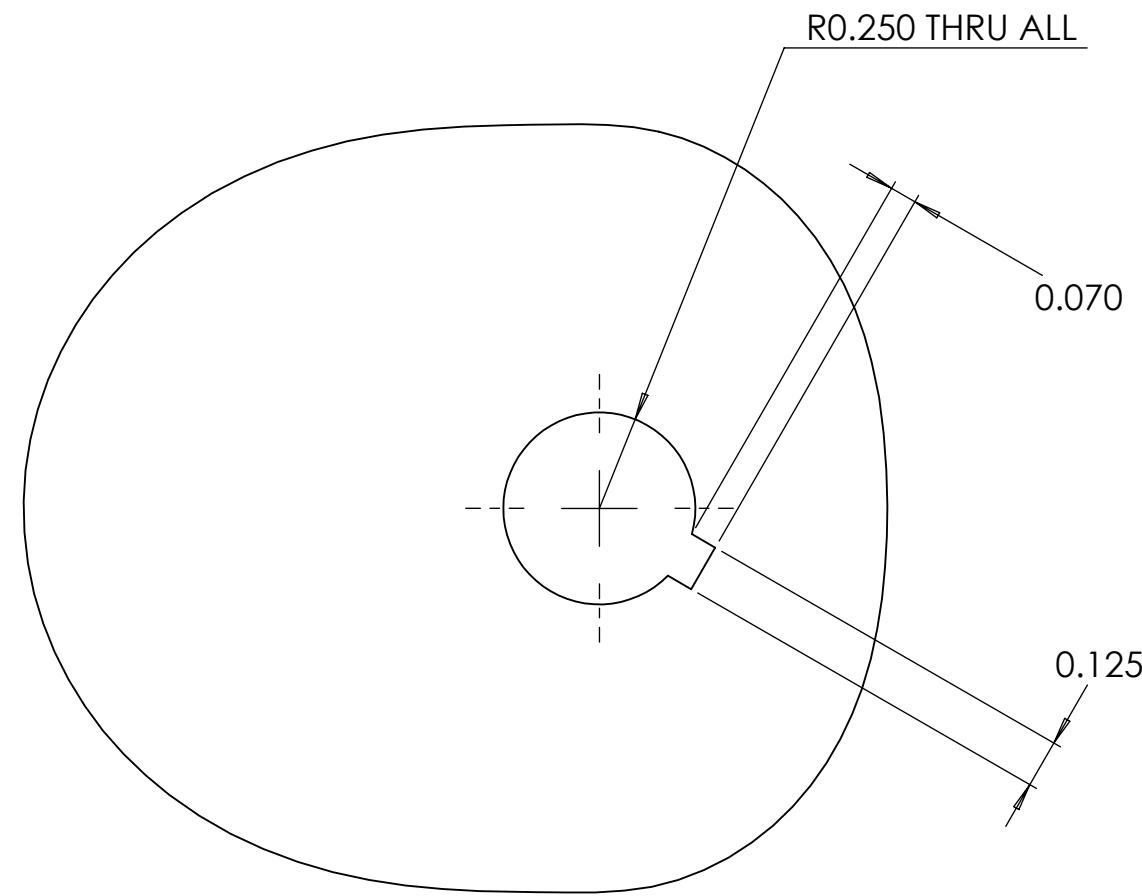
8 7 6 5 4 3 2 1

1

8 7 6 5 4 3 2 1

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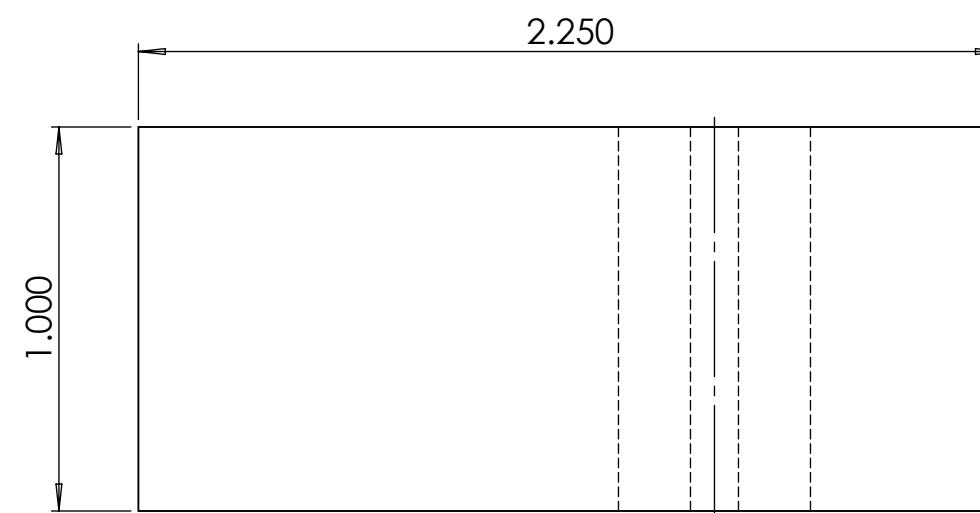


C

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NOTE:

1. SEE SOLIDWORKS PART "VALVE CAM.SLDprt", CONFIGURATION "FIFTH VALVE CAM" FOR PROFILE.
2. PART SHOULD BE 3D PRINTED

ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994

TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005

±0.5° 125°

REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:

QTY: 2 MATERIAL: ABS

DIMENSIONS ARE IN INCHES.

ENGINEER landrade 12/10/2015

DRAWN landrade 12/10/2015

CHECKED hmuskin 12/10/2015

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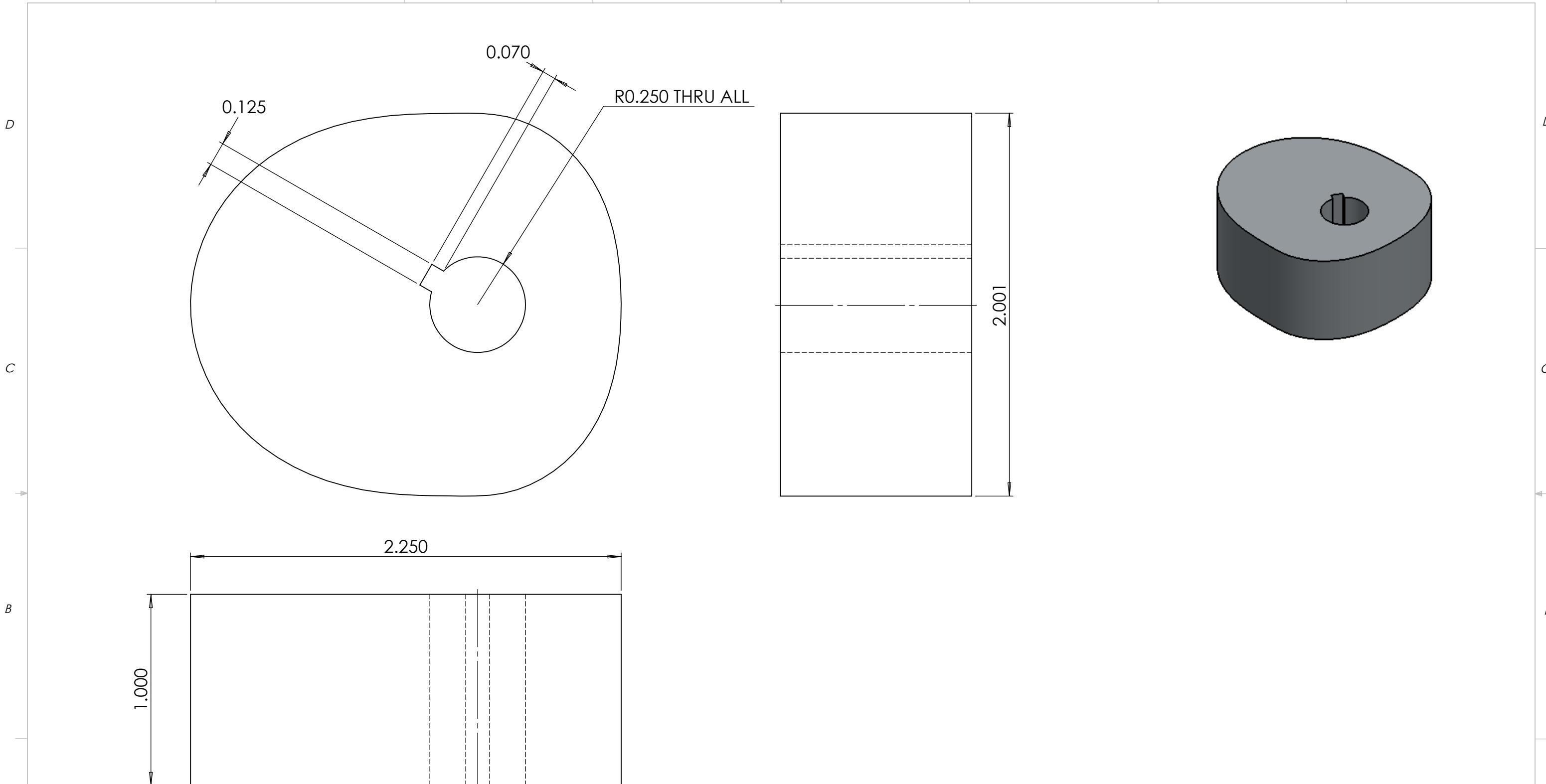
Valve Cam 5

SIZE B PART NO. ENG-500-07 REV B
SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1

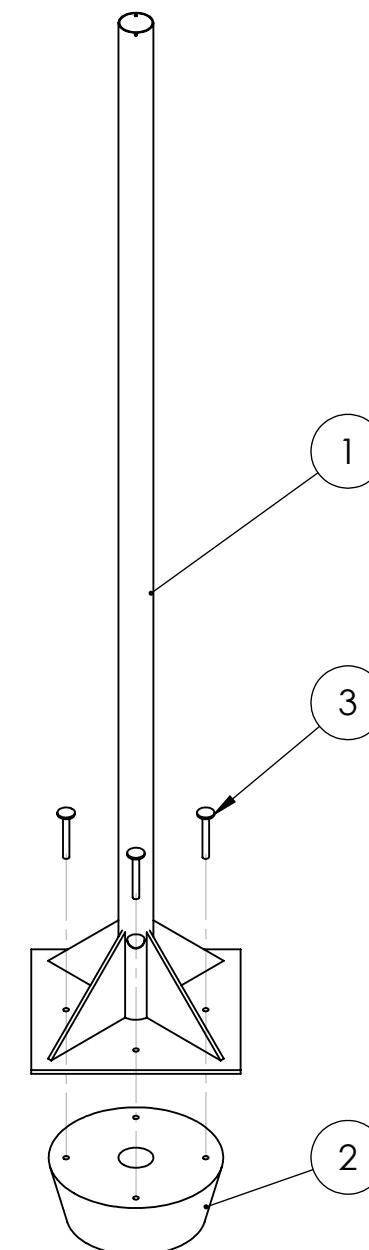
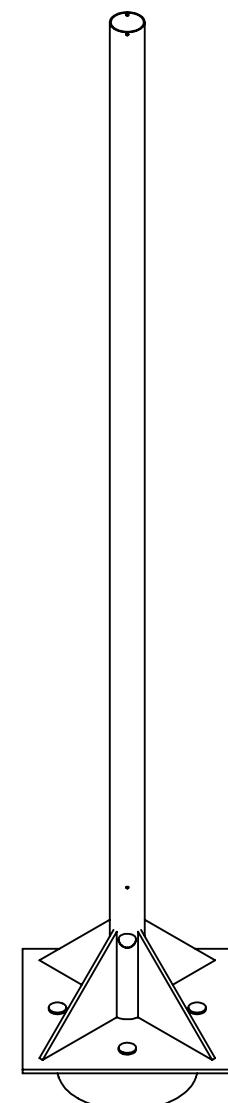
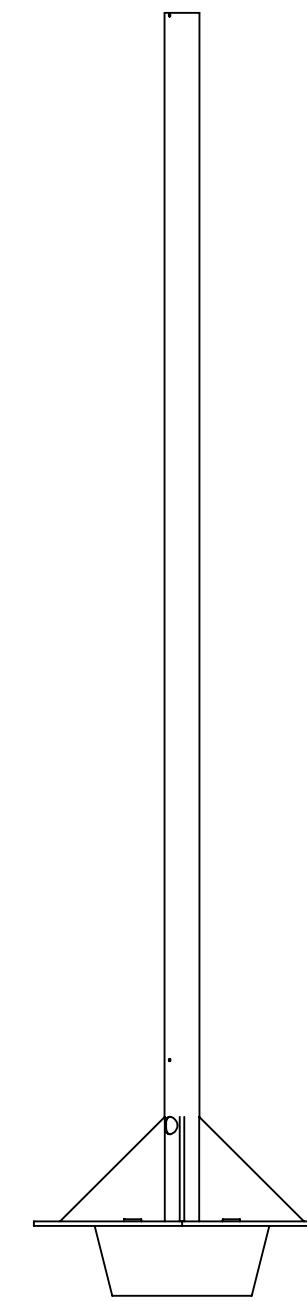
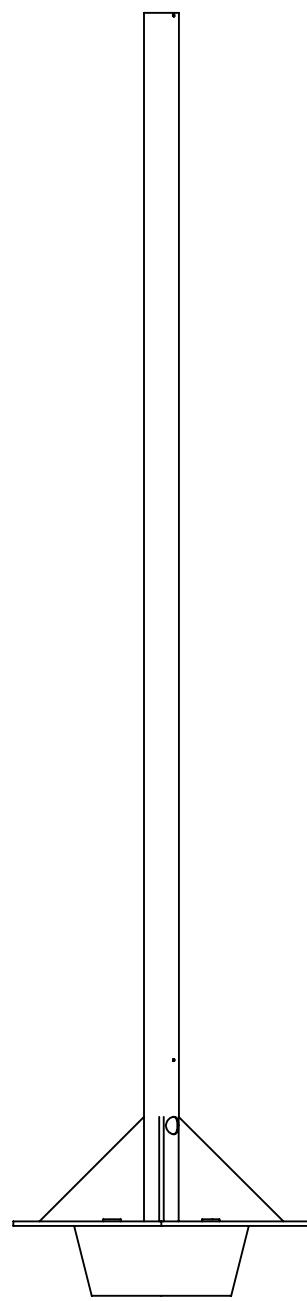
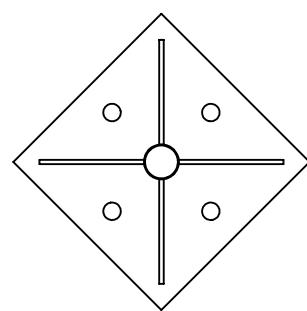
8 7 6 5 4 3 2 1

1

8 7 6 5 4 3 2 1



UNLESS OTHERWISE SPECIFIED:		TITLE
QTY: 2	MATERIAL: ABS	
DIMENSIONS ARE IN INCHES.		Valve Cam 6
ENGINEER	Iandrade	12/10/2015
DRAWN	Iandrade	12/10/2015
CHECKED	hmuskin	12/10/2015
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B		PART NO.
ENG-500-08		REV
SCALE 2:1	DO NOT SCALE PRINT	SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ENG-211-00	Gusset Assembly	1
2	ENG-210-01	CONCRETE BASE	1
3	92188A555	Concrete Screw	4

ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994

TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005

±0.5° 125°

REMOVE ALL BURRS AND
SHARP EDGES 0.05 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: N/A
DIMENSIONS ARE IN INCHES.

ENGINEER hmuskin 12/14/2015
DRAWN hmuskin 12/14/2015
CHECKED landrade 12/14/2015

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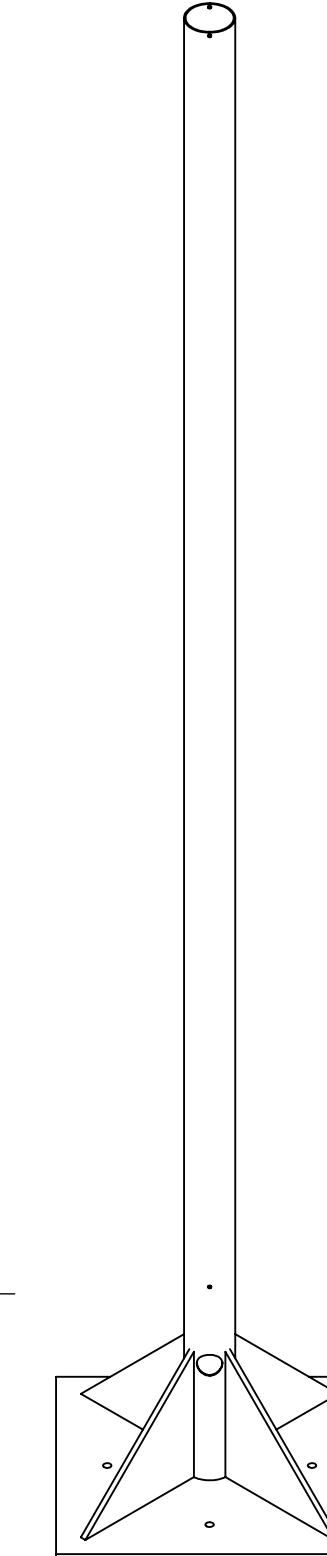
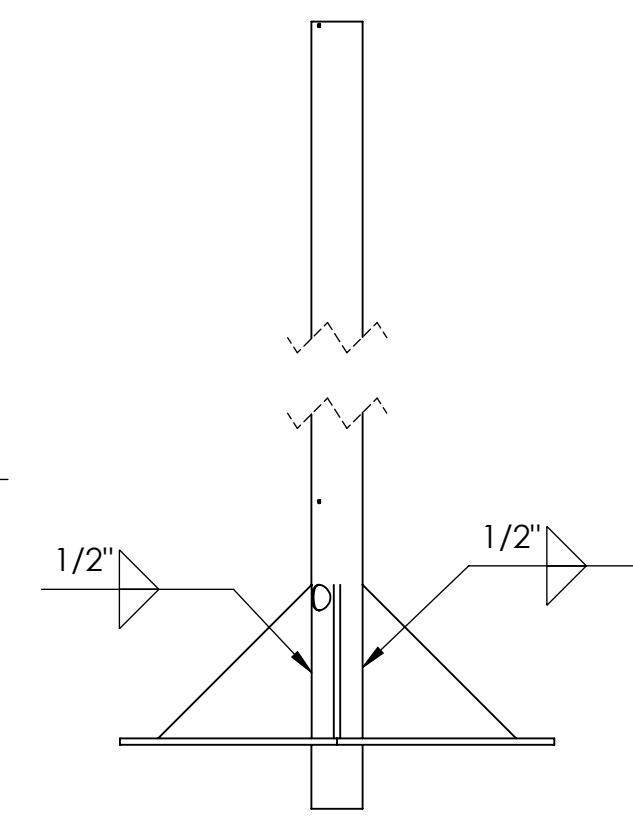
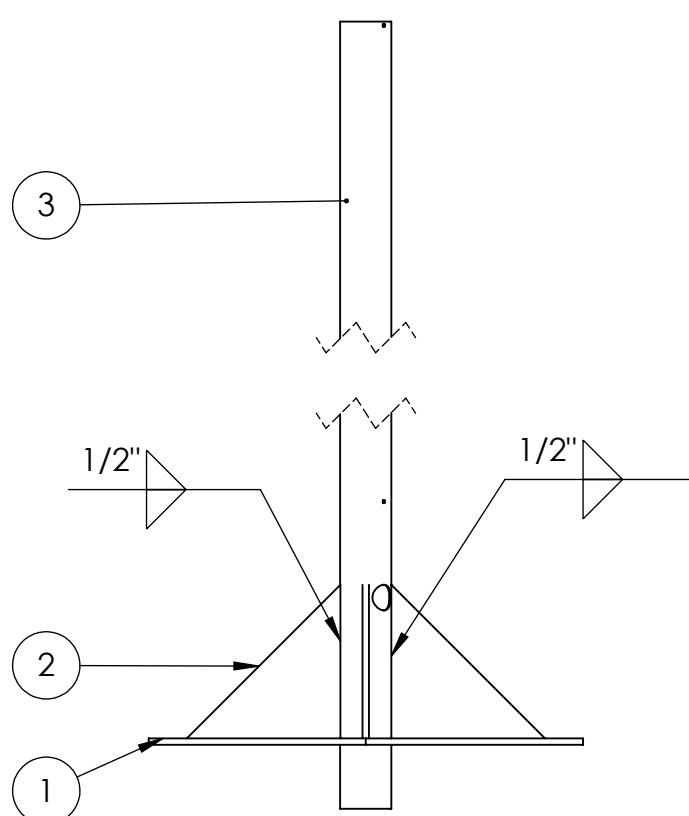
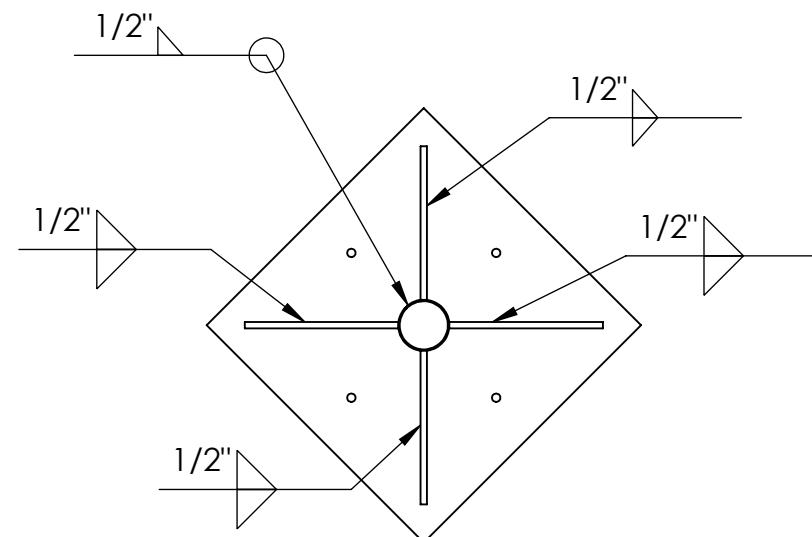
SIZE B	PART NO. ENG-210-00	REV J
SCALE 2:1	DO NOT SCALE PRINT	SHEET 1 OF 1



Olin College
of Engineering

base assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ENG-211-01	BASEPLATE TURBINE	1
2	ENG-211-02	GUSSET TURBINE	4
3	ENG-211-03	OUTER SHAFT FOR DRIVETRAIN	1



NOTES:

1. FIRST WELD FOUR GUSSETS TO BASEPLATE
2. NEXT WELD OUTER SHAFT TO BASEPLATE
3. FINALLY WELD OUTERSHAFT TO FOUR GUSSETS
4. QUESTIONS? EMAIL HALLEY.POLLOCK-MUSKIN@STUDENTS.OLIN.EDU

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: PLAIN CARBON STEEL
DIMENSIONS ARE IN INCHES.

TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
±0.5° 125°

REMOVE ALL BURRS AND
SHARP EDGES 0.05 R OR
CHAMFER MAX

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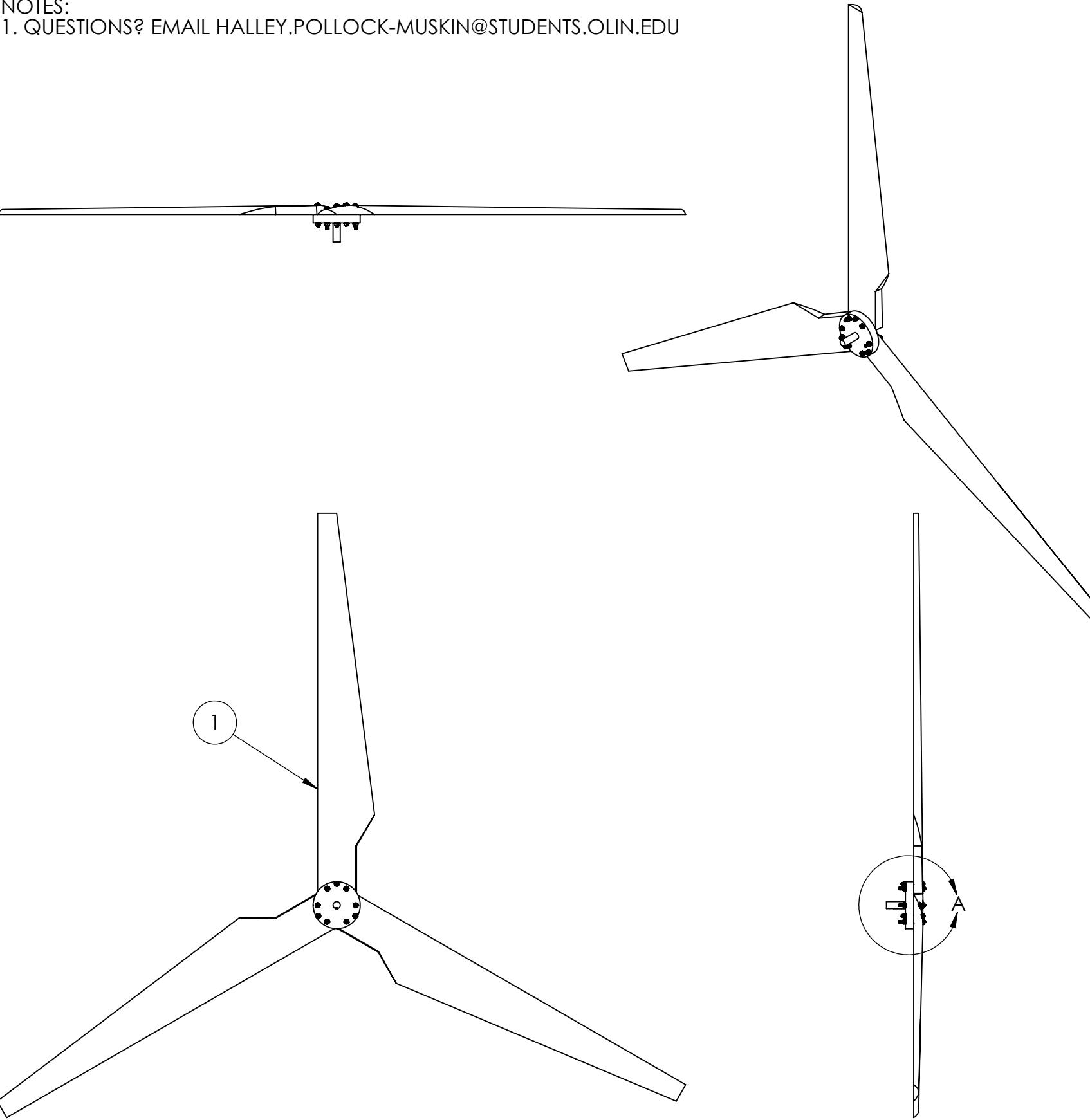
Olin College
of Engineering

TITLE
**BASEPLATE GUSSET
ASSEMBLY**

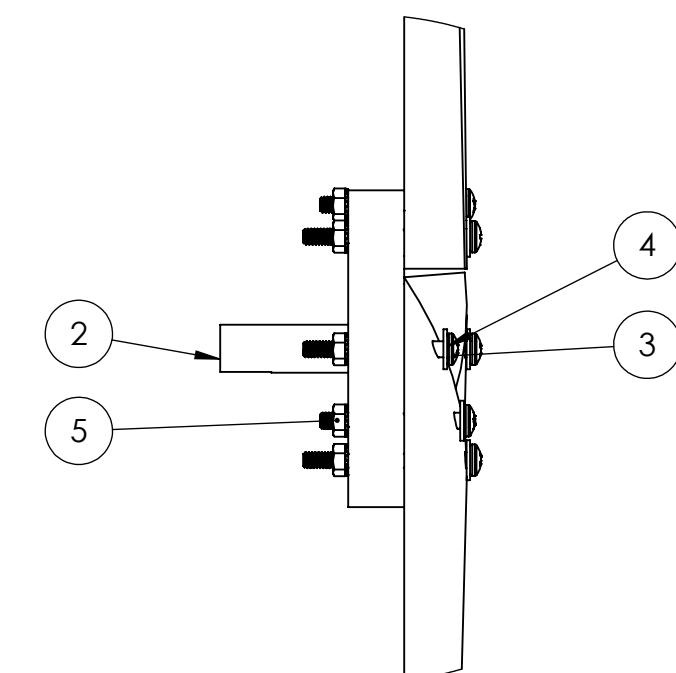
SIZE **B** PART NO.
ENG-211-00 REV **J**
SCALE 1:15 DO NOT SCALE PRINT SHEET 1 OF 1

8 7 6 5 4 3 2 1

NOTES:
1. QUESTIONS? EMAIL HALLEY.POLLOCK-MUSKIN@STUDENTS.OLIN.EDU



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ENG-2321-01	ENGINE TURBINE BLADE	3
2	ENG-2321-02	ENGINE TURBINE CENTER	1
3	91772A551	1/4-20 SCREW	9
4	92141A029	1/4 WASHER	9
5	90675A029	1/4-2 LOCKNUT	9



DETAIL A
SCALE 1 : 3

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: N/A
DIMENSIONS ARE IN INCHES.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
±0.5° 125°
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REMOVE ALL BURRS AND SHARP EDGES 0.005 R OR CHAMFER MAX

ENGINEER	hmuskin	12/14/2015
DRAWN	hmuskin	12/14/2015
CHECKED	landrade	12/14/2015

Olin College
of Engineering
TITLE
**Engine Turbine Blades
and Center Assembly**
SIZE PART NO.
B ENG-2321-00 G
REV
SCALE 1:13 DO NOT SCALE PRINT SHEET 1 OF 2

8 7 6 5 4 3 2 1

8 7 6 5 4 3 2 1

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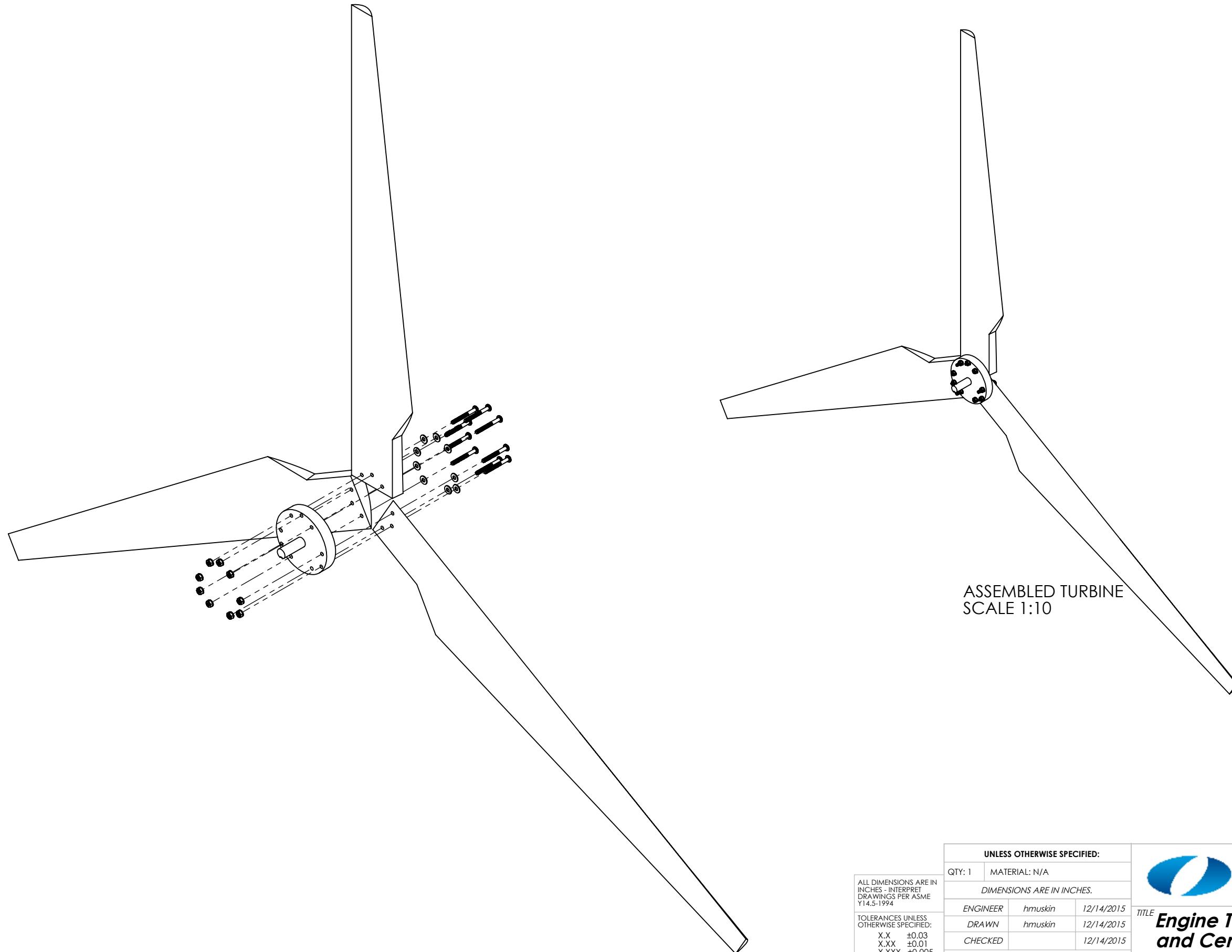
C

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UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: N/A
DIMENSIONS ARE IN INCHES.

TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005

±0.5° 125°

REMOVE ALL BURRS AND
SHARP EDGES 0.05 R OR
CHAMFER MAX

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Olin College
of Engineering

TITLE Engine Turbine Blades
and Center Assembly

SIZE B PART NO.
ENG-2321-00 REV G

SCALE 1:7 DO NOT SCALE PRINT SHEET 2 OF 2

8 7 6 5 4 3 2 1

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8 7 6 5 4 3 2 1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ENG-2311-01	TAIL ROD	1
2	ENG-2311-02	TAIL STOCK	1

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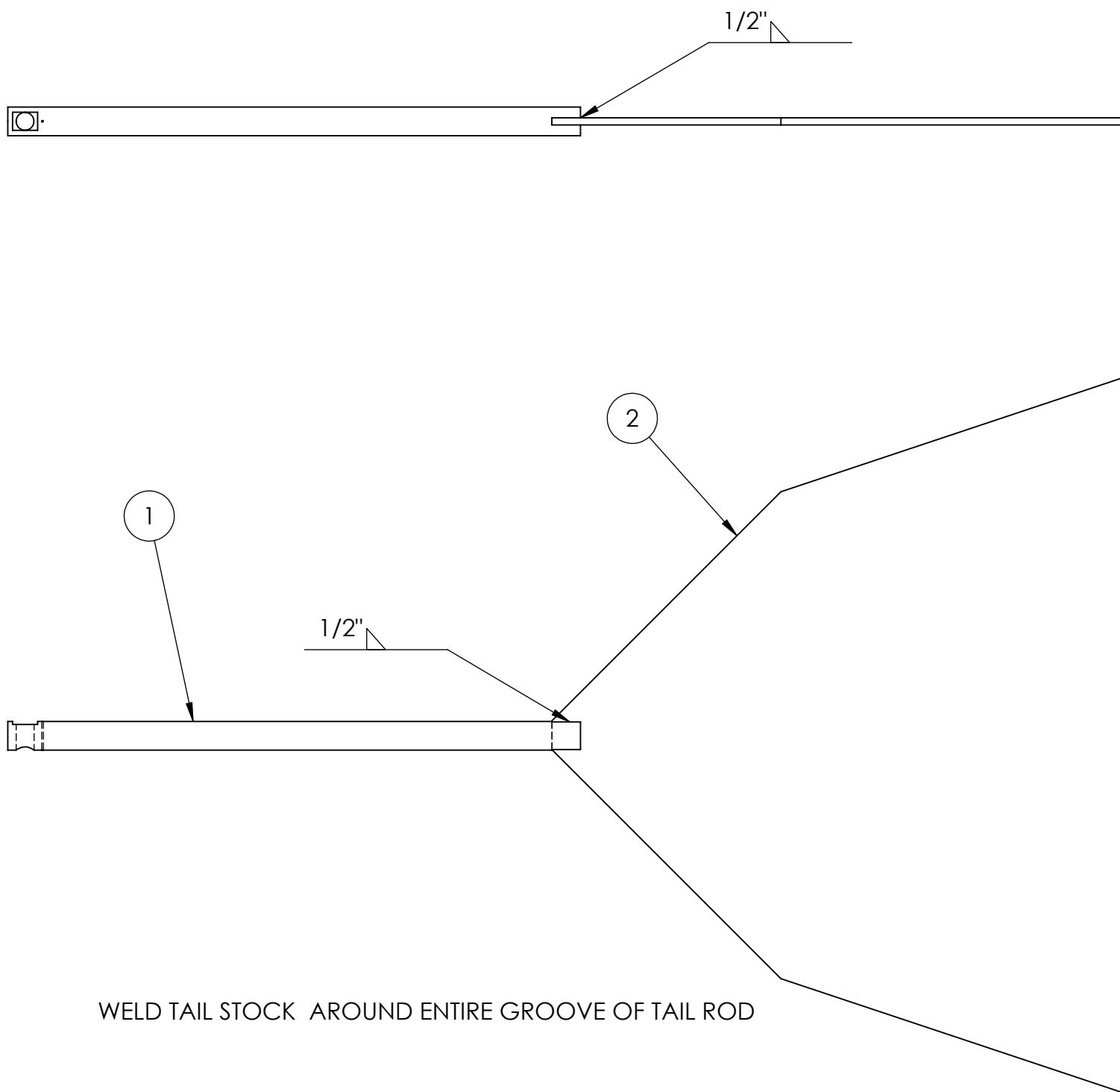
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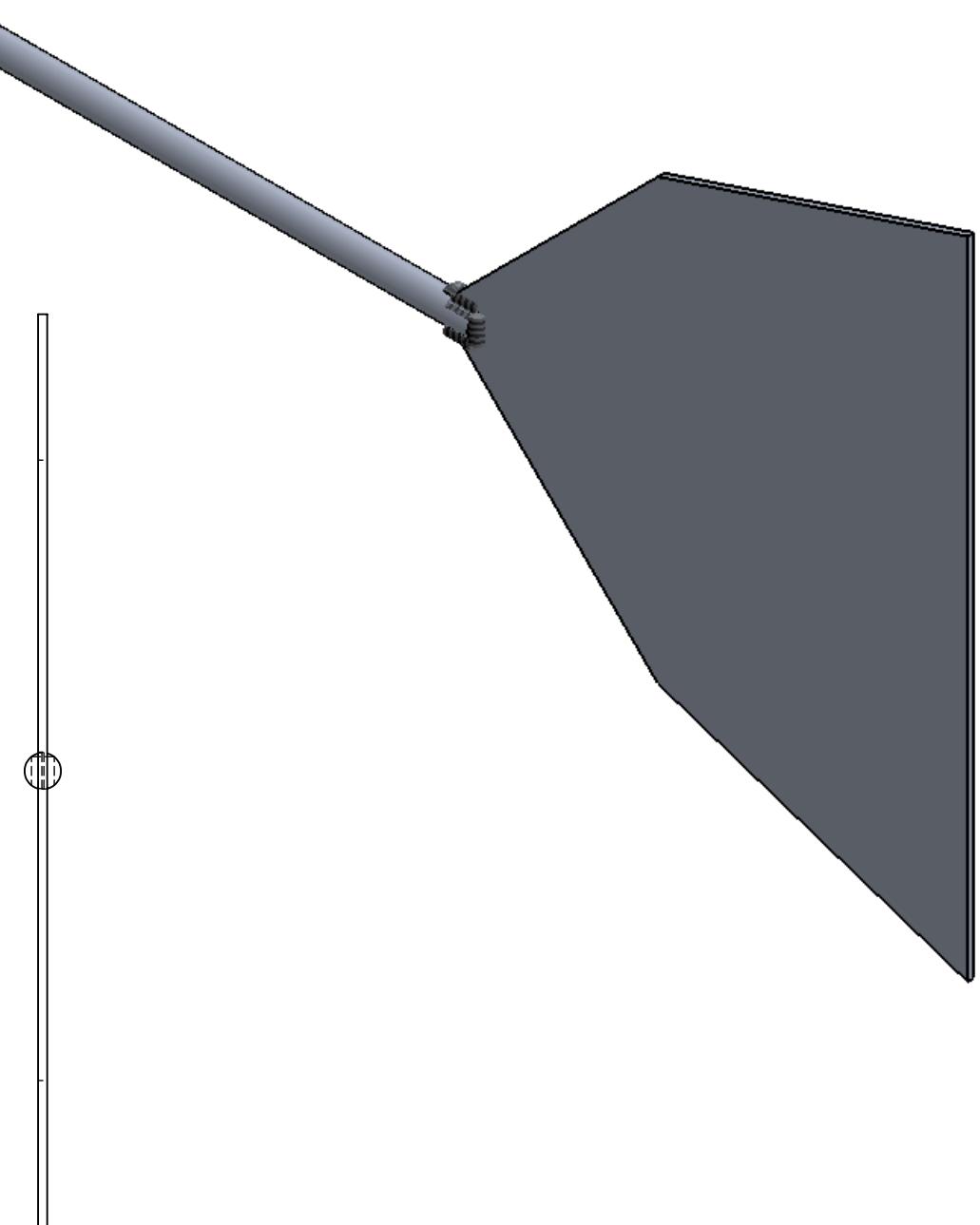
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NOTES:

1. QUESTIONS? EMAIL HALLEY.POLLOCK-MUSKIN@STUDENTS.OLIN.EDU



ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994
TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
∠0.5° 125°
REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: 3003 ALUMINUM
DIMENSIONS ARE IN INCHES.
ENGINEER hmuskin 12/14/2015
DRAWN hmuskin 12/14/2015
CHECKED landrade 12/14/2015
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Olin College
of Engineering
Tail Weld
SIZE B PART NO. ENG-2311-00 REV C
SCALE 1:5 DO NOT SCALE PRINT SHEET 1 OF 1

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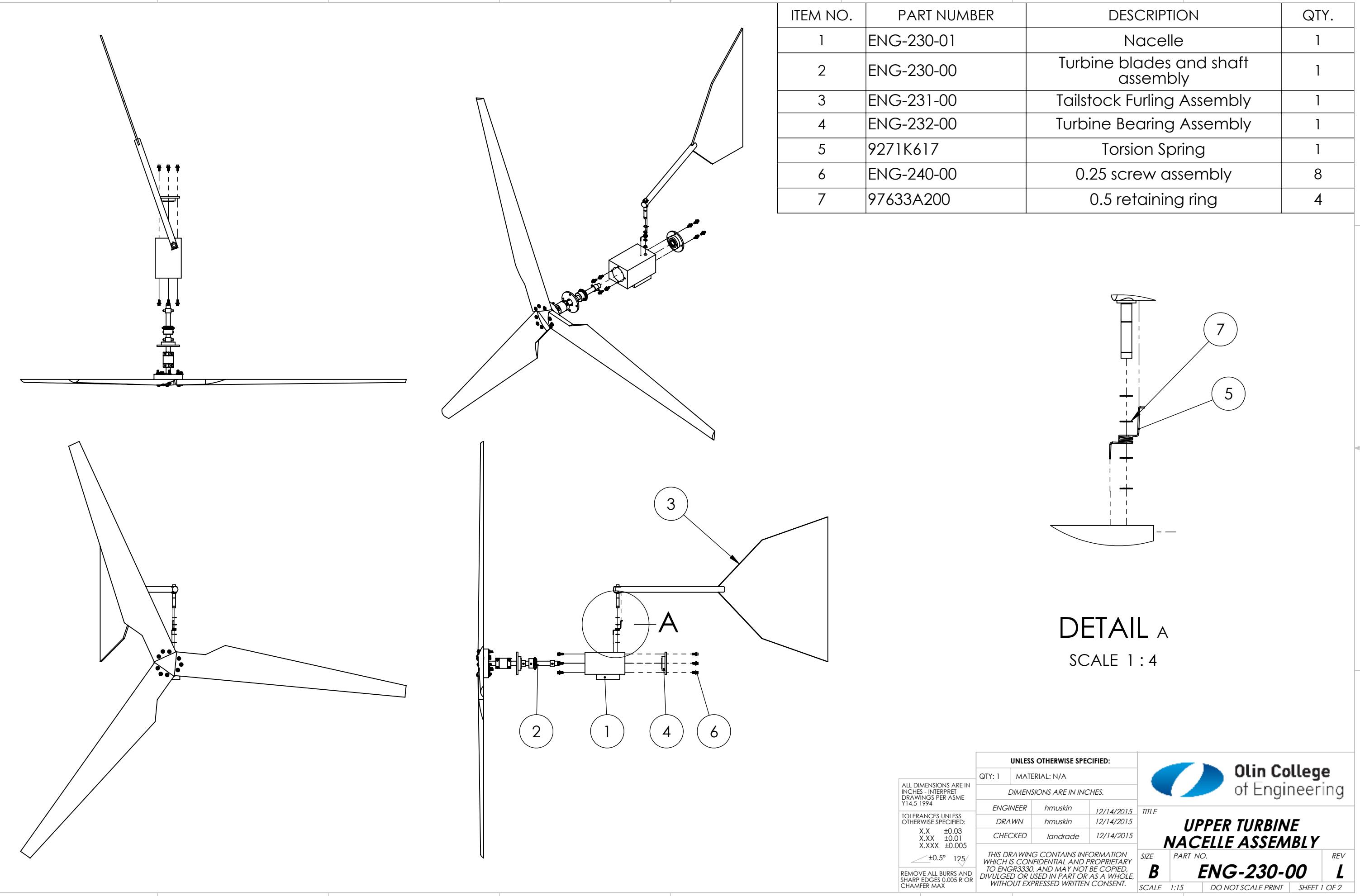
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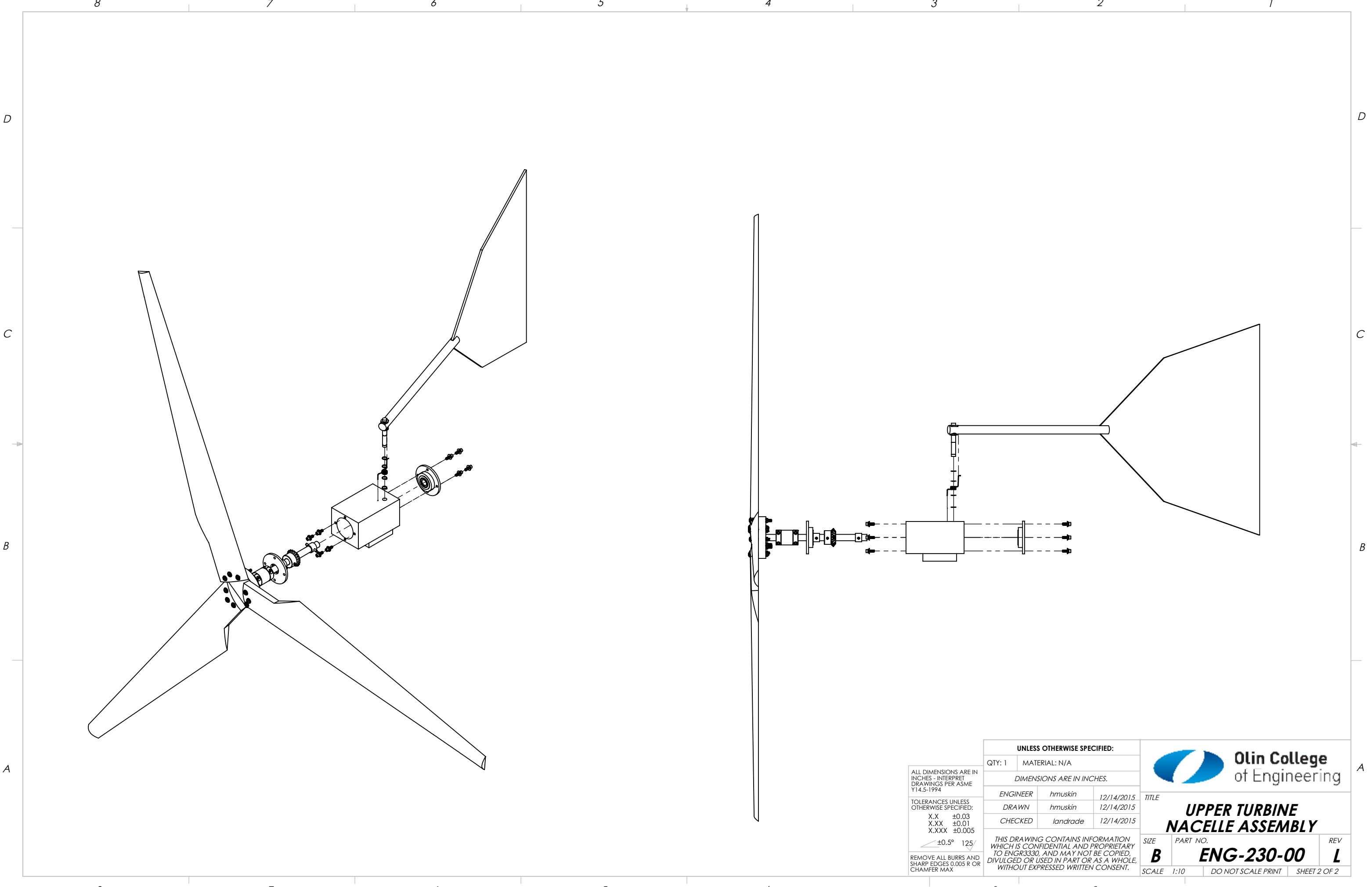
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2

1

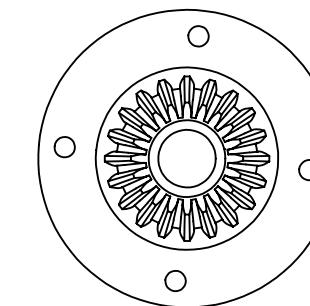
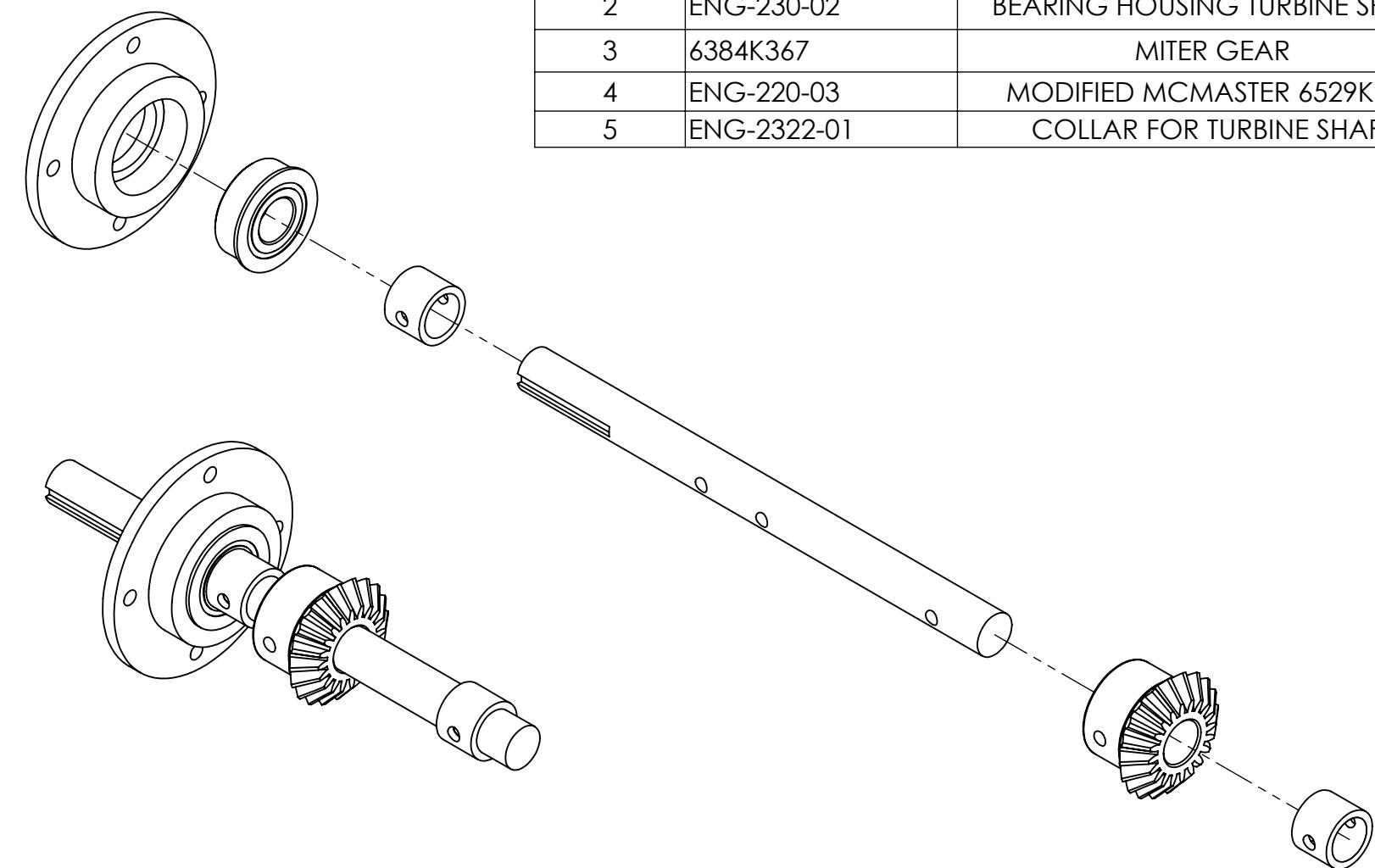
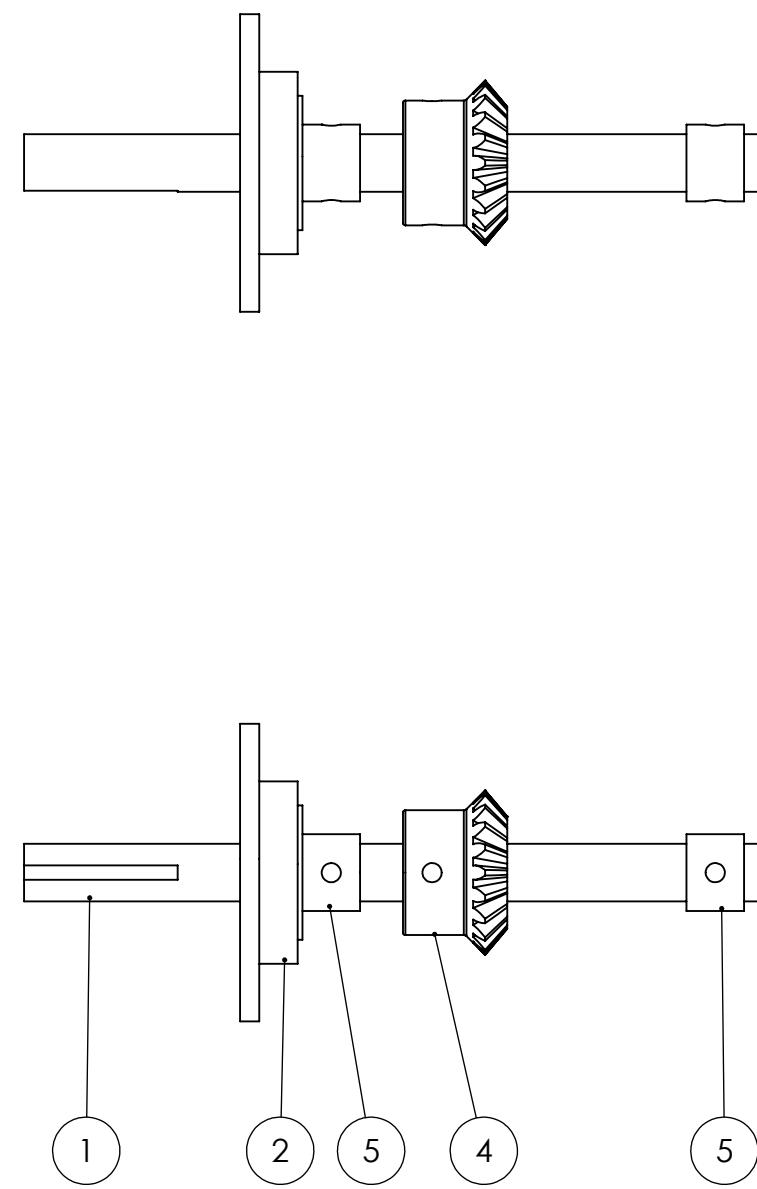
1





8 7 6 5 4 3 2 1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ENG-2322-02	TURBINE SHAFT	1
2	ENG-230-02	BEARING HOUSING TURBINE SHAFT	1
3	6384K367	MITER GEAR	1
4	ENG-220-03	MODIFIED MCMASTER 6529K250	1
5	ENG-2322-01	COLLAR FOR TURBINE SHAFT	2

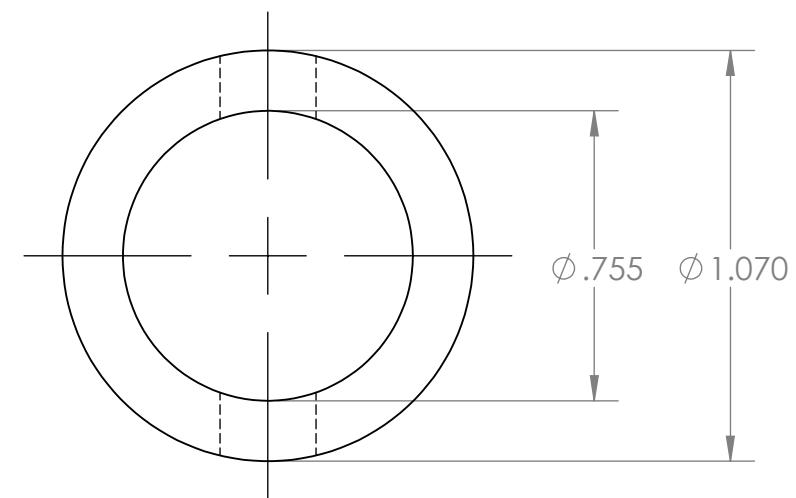


UNLESS OTHERWISE SPECIFIED: QTY: 1 MATERIAL: N/A DIMENSIONS ARE IN INCHES.		Olin College of Engineering
ALL DIMENSIONS ARE IN INCHES - INTERPRET DRAWINGS PER ASME Y14.5-1994		
TOLERANCES UNLESS OTHERWISE SPECIFIED: X.X ±0.03 X.XX ±0.01 X.XXX ±0.005 ±0.5° 125°	ENGINEER hmuskin DRAWN hmuskin CHECKED landrade	12/14/2015 12/14/2015 12/14/2015
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REMOVE ALL BURRS AND SHARP EDGES 0.005 R OR CHAMFER MAX	SIZE B PART NO. ENG-2322-00 REV F	SCALE 2:5 DO NOT SCALE PRINT SHEET 1 OF 1

8 7 6 5 4 3 2 1

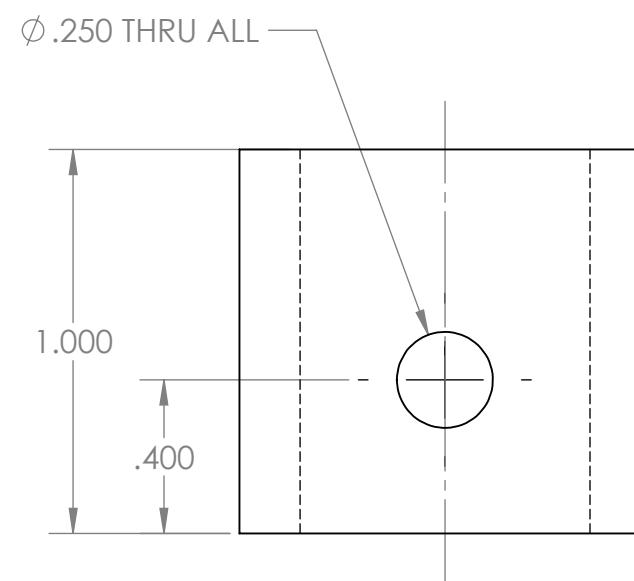
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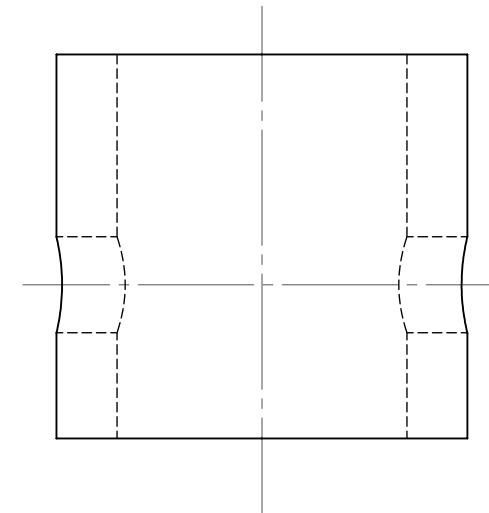
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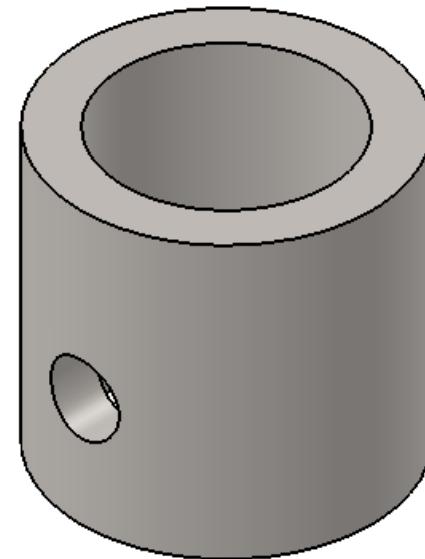
B

B



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NOTES:
1. QUESTIONS? EMAIL HALLEY.POLLOCK-MUSKIN@STUDENTS.OLIN.EDU

UNLESS OTHERWISE SPECIFIED:
QTY: 1 MATERIAL: DELRIN
DIMENSIONS ARE IN INCHES.

TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
±0.5° 125°

ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994
REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

ENGINEER hmuskin 12/13/2015
DRAWN hmuskin 12/13/2015
CHECKED landrade 12/13/2015

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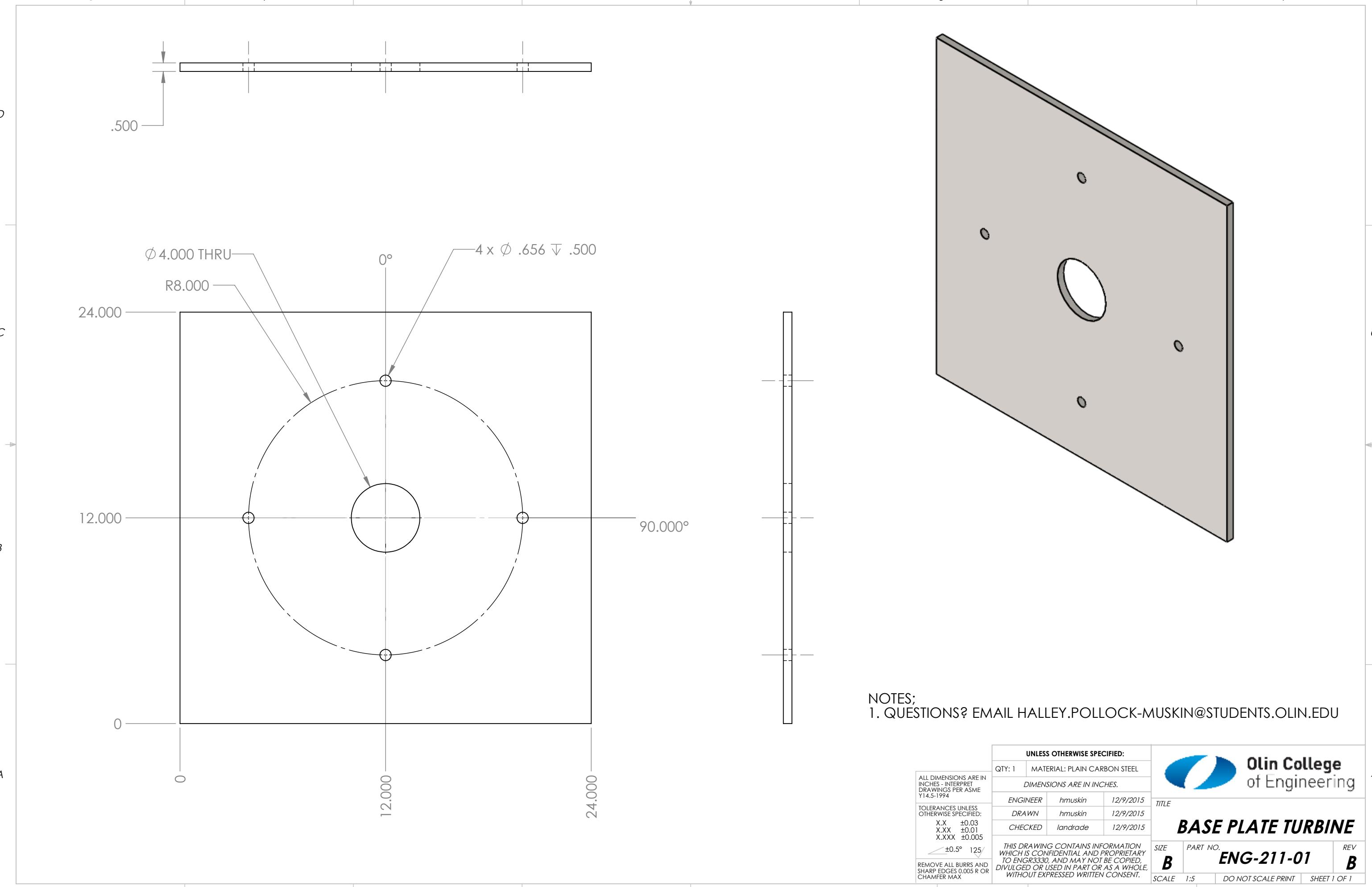
Olin College
of Engineering

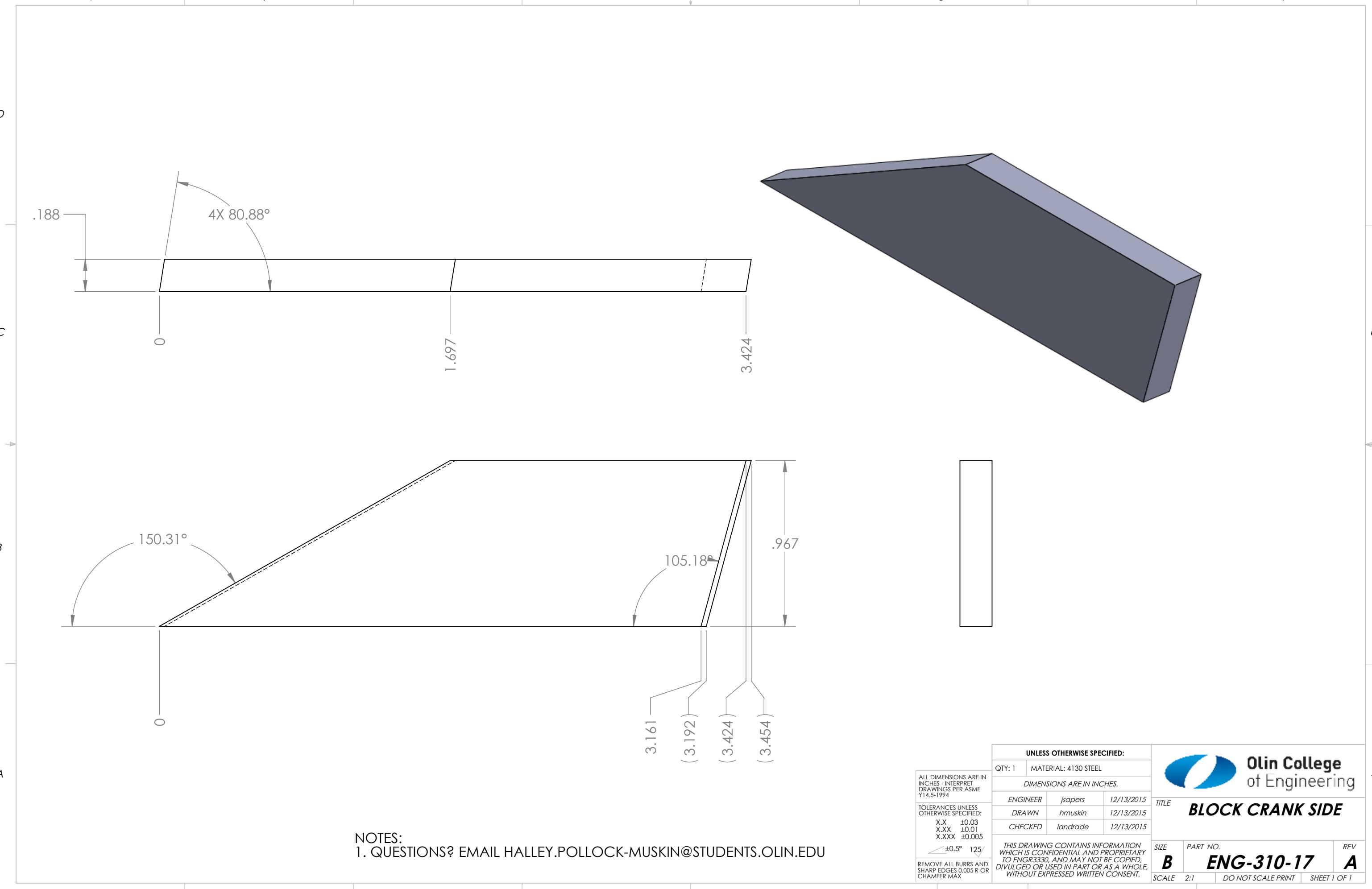
COLLAR FOR DRIVESHAFT

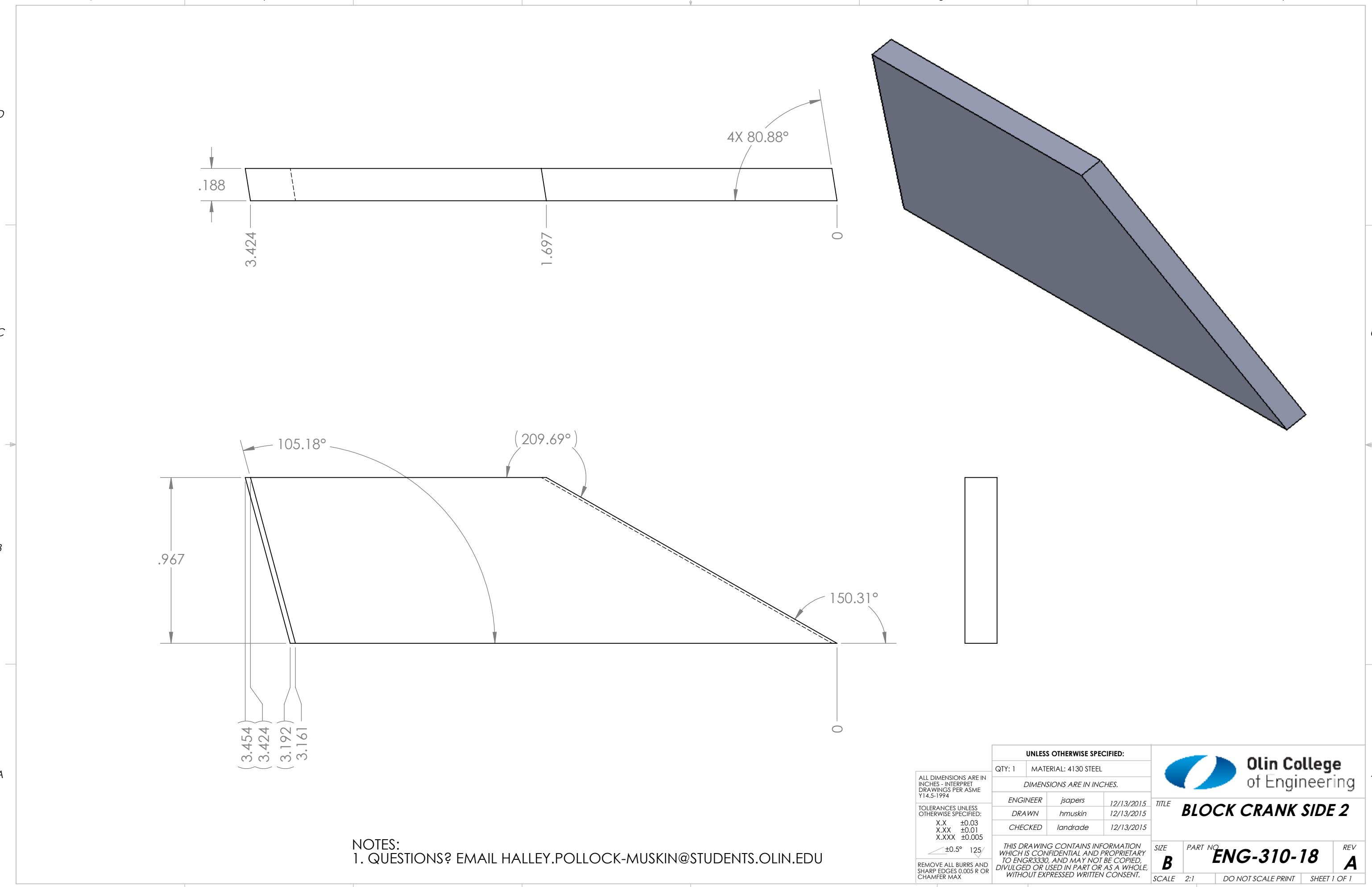
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SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1

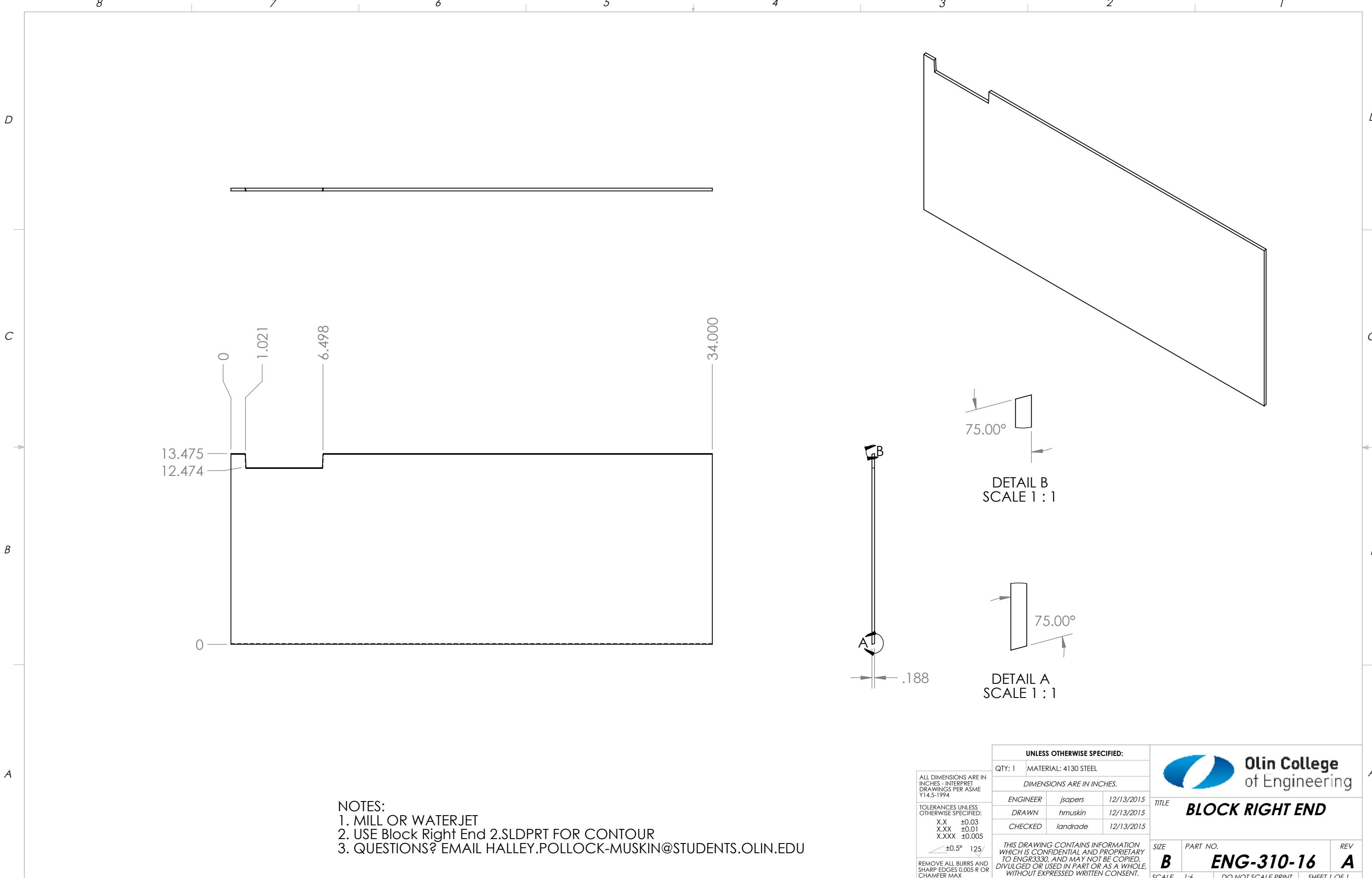
8 7 6 5 4 3 2 1

1



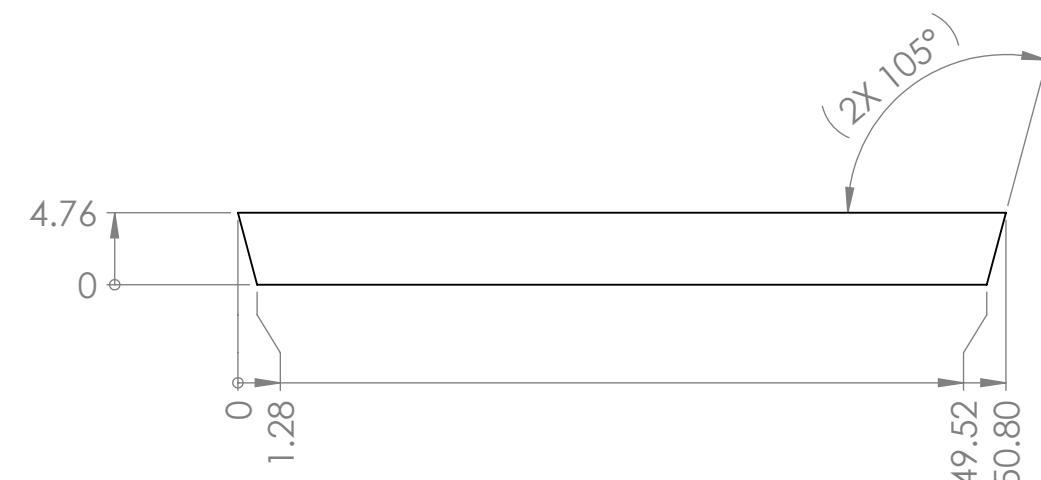




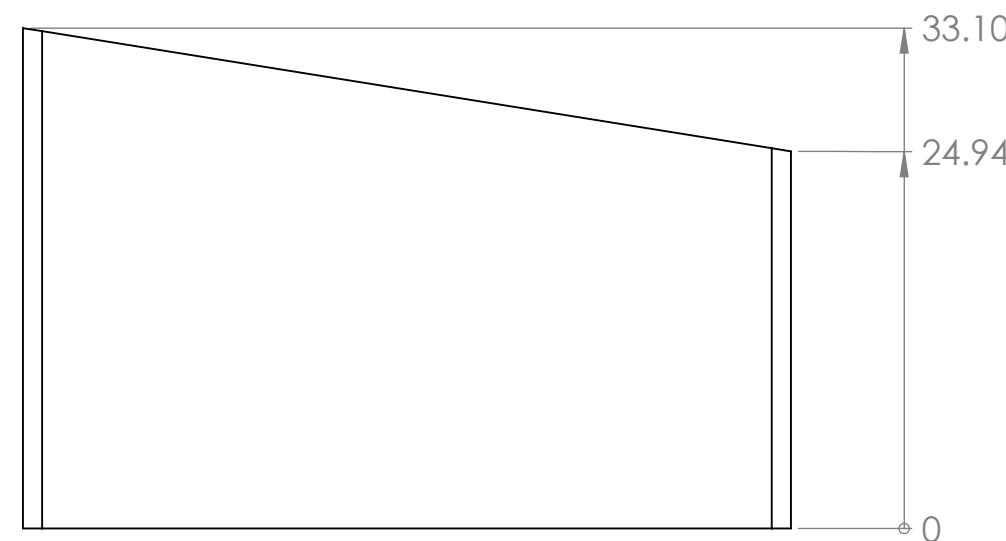


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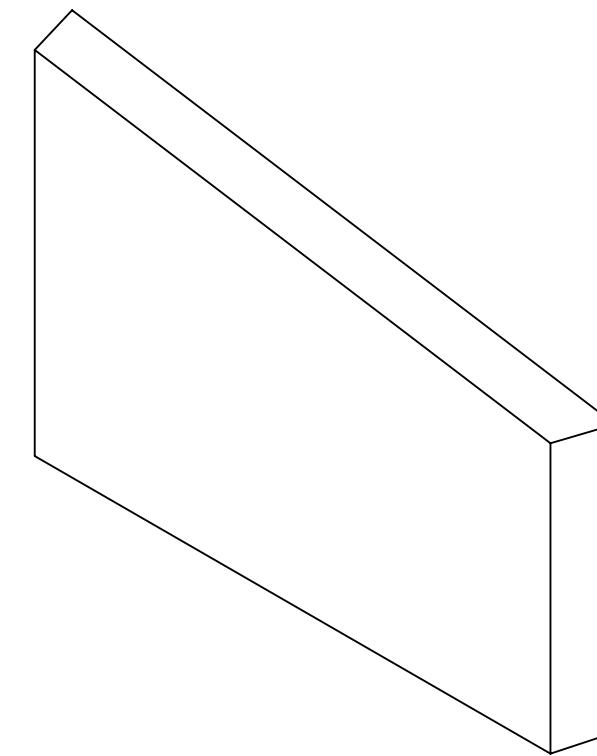
D



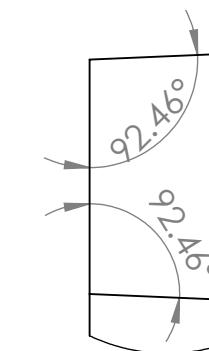
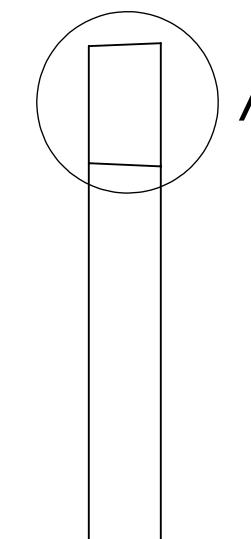
C



B



D



DETAIL A
SCALE 4 : 1

NOTES:
1. QUESTIONS? EMAIL HALLEY.POLLOCK-MUSKIN@STUDENTS.OLIN.EDU

UNLESS OTHERWISE SPECIFIED:		TITLE
QTY: 1	MATERIAL: 4130 STEEL	
DIMENSIONS ARE IN INCHES.		
ENGINEER	jaspers	12/9/2015
DRAWN	hmuskin	12/9/2015
CHECKED	landrade	12/9/2015
THIS DRAWING CONTAINS INFORMATION WHICH IS CONFIDENTIAL AND PROPRIETARY TO ENGR3330, AND MAY NOT BE COPIED, DIVULGED OR USED IN PART OR AS A WHOLE WITHOUT EXPRESSED WRITTEN CONSENT.		
ALL DIMENSIONS ARE IN INCHES - INTERPRET DRAWINGS PER ASME Y14.5-1994		
TOLERANCES UNLESS OTHERWISE SPECIFIED:		
X.X ±0.03		
X.XX ±0.01		
X.XXX ±0.005		
±0.5° 125°		
REMOVE ALL BURRS AND SHARP EDGES 0.005 R OR CHAMFER MAX		
SIZE	PART NO.	REV
B	ENG-310-15	A
SCALE 2:1	DO NOT SCALE PRINT	SHEET 1 OF 1

Olin College
of Engineering

BLOCK RIGHT TOP 2

8

7

6

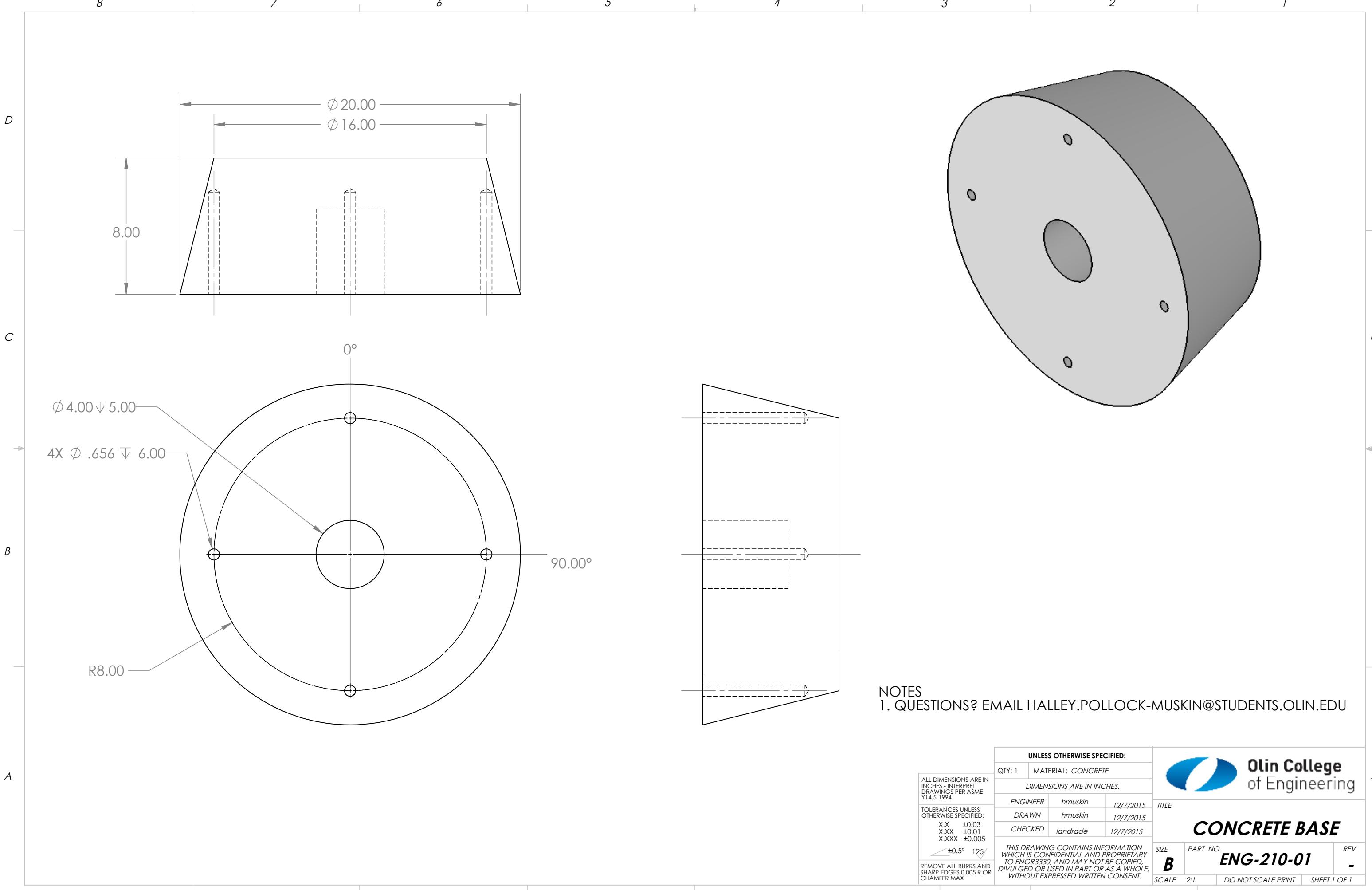
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4

3

2

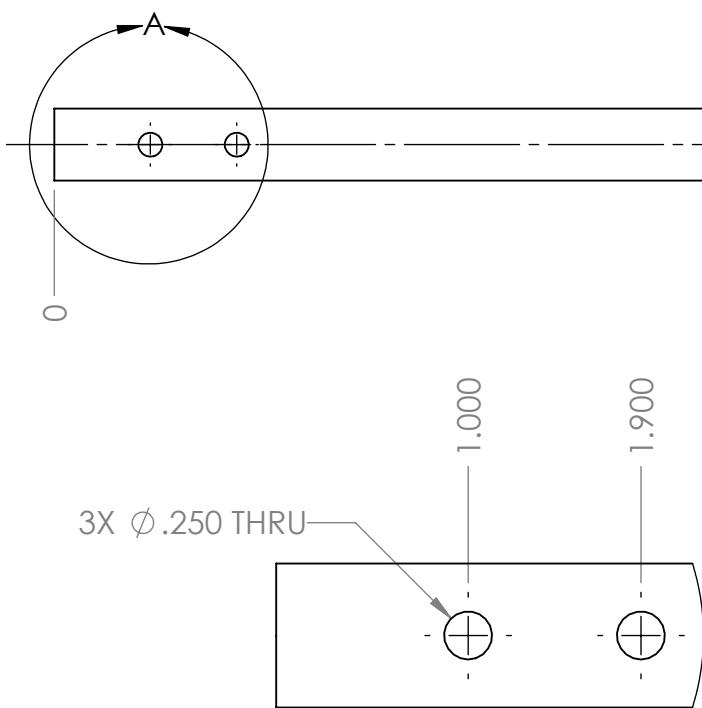
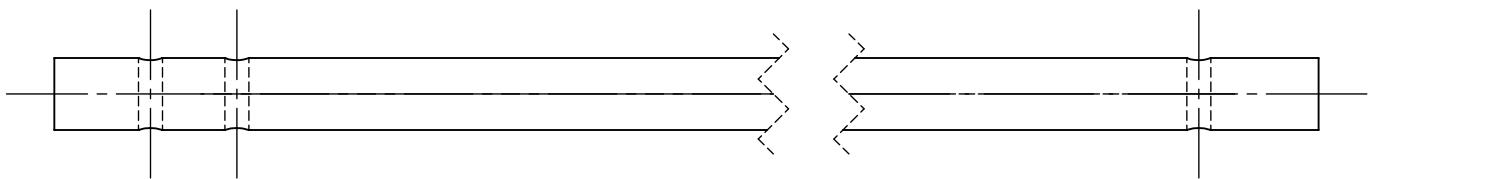
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8 7 6 5 4 3 2 1

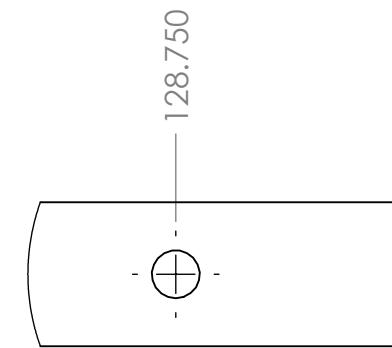
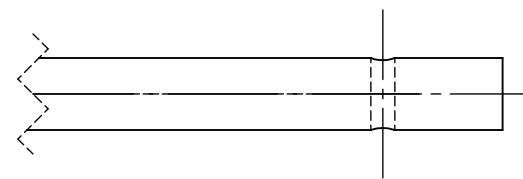
D

D



DETAIL A

SCALE 1:1

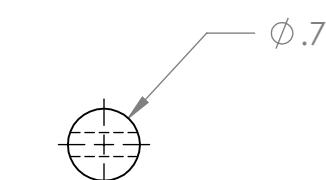


DETAIL B

SCALE 1:1

NOTES:
1. QUESTIONS? EMAIL HALLEY.POLLOCK-MUSKIN@STUDENTS.OLIN.EDU

ISOMETRIC VIEW
SCALE IS 1:12



.750

ALL DIMENSIONS ARE IN
INCHES - INTERPRET
DRAWINGS PER ASME
Y14.5-1994

TOLERANCES UNLESS
OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005

∠0.5° 125/

REMOVE ALL BURRS AND
SHARP EDGES 0.005 R OR
CHAMFER MAX

UNLESS OTHERWISE SPECIFIED:

QTY: 1 MATERIAL: PLAIN CARBON STEEL

DIMENSIONS ARE IN INCHES.

ENGINEER hmuskin 12/10/2015

DRAWN hmuskin 12/10/2015

CHECKED landrade 12/10/2015

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DIVULGED OR USED IN PART OR AS A WHOLE
WITHOUT EXPRESSED WRITTEN CONSENT.



DRIVESHAFT

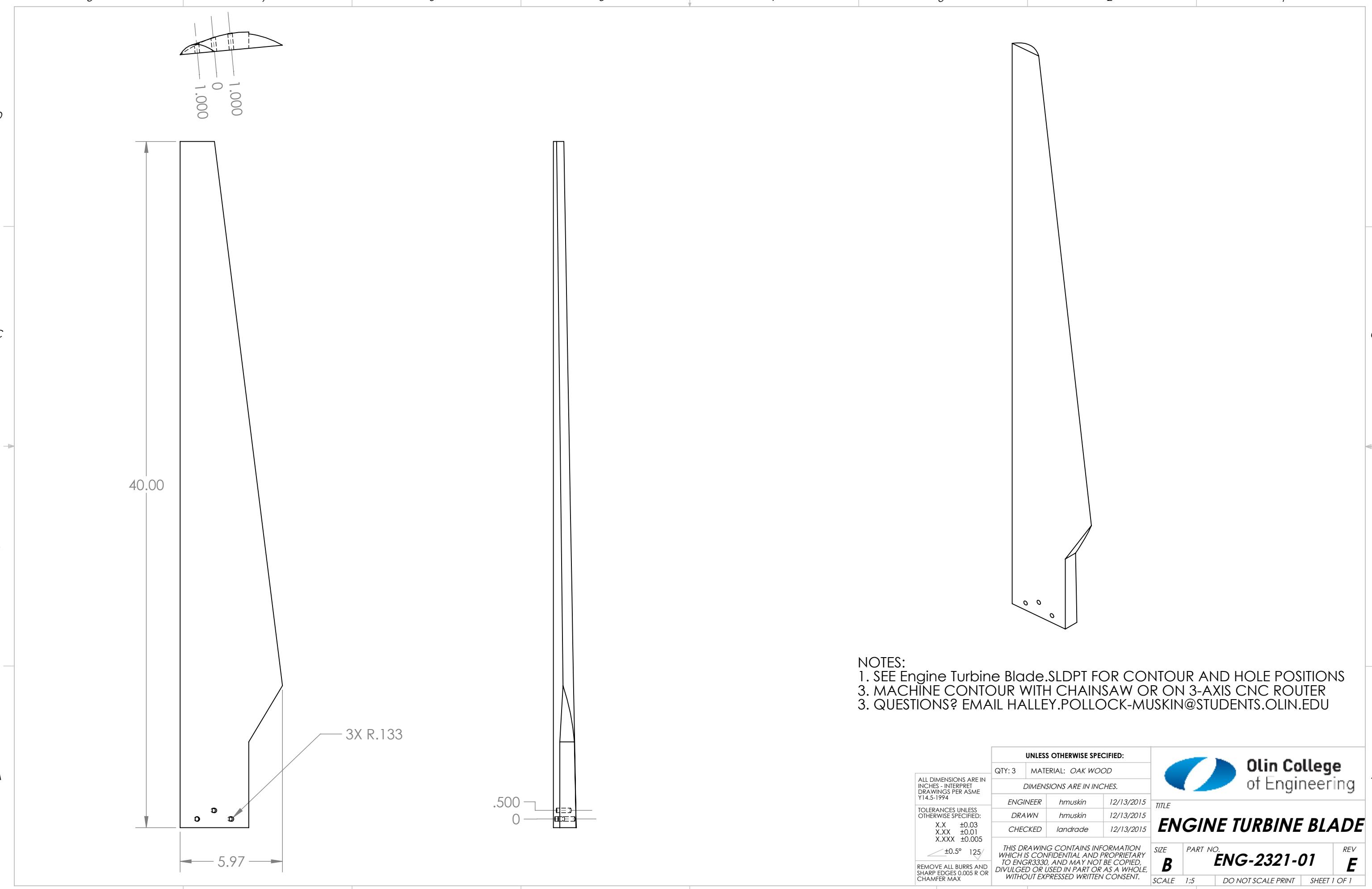
ENG-220-02

E

SIZE	PART NO.	REV
B		
SCALE 1:2	DO NOT SCALE PRINT	SHEET 1 OF 1

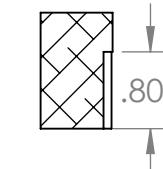
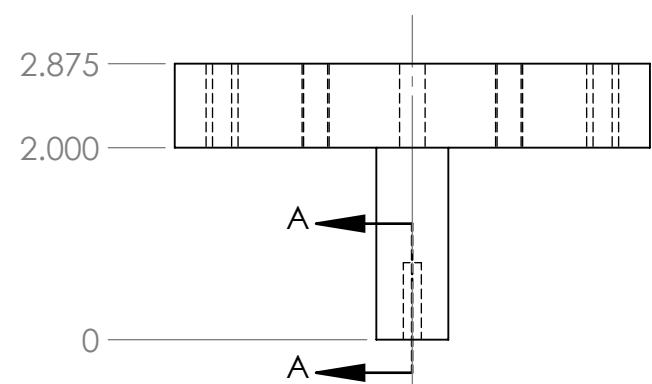
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1

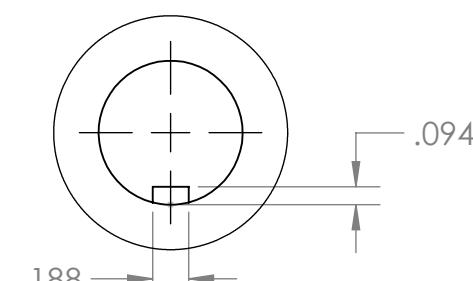
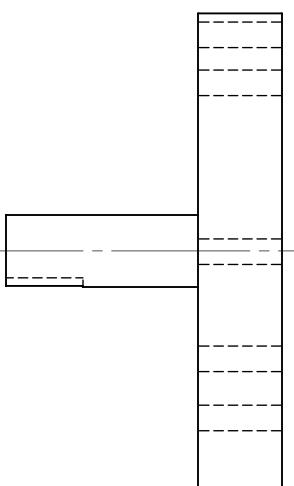
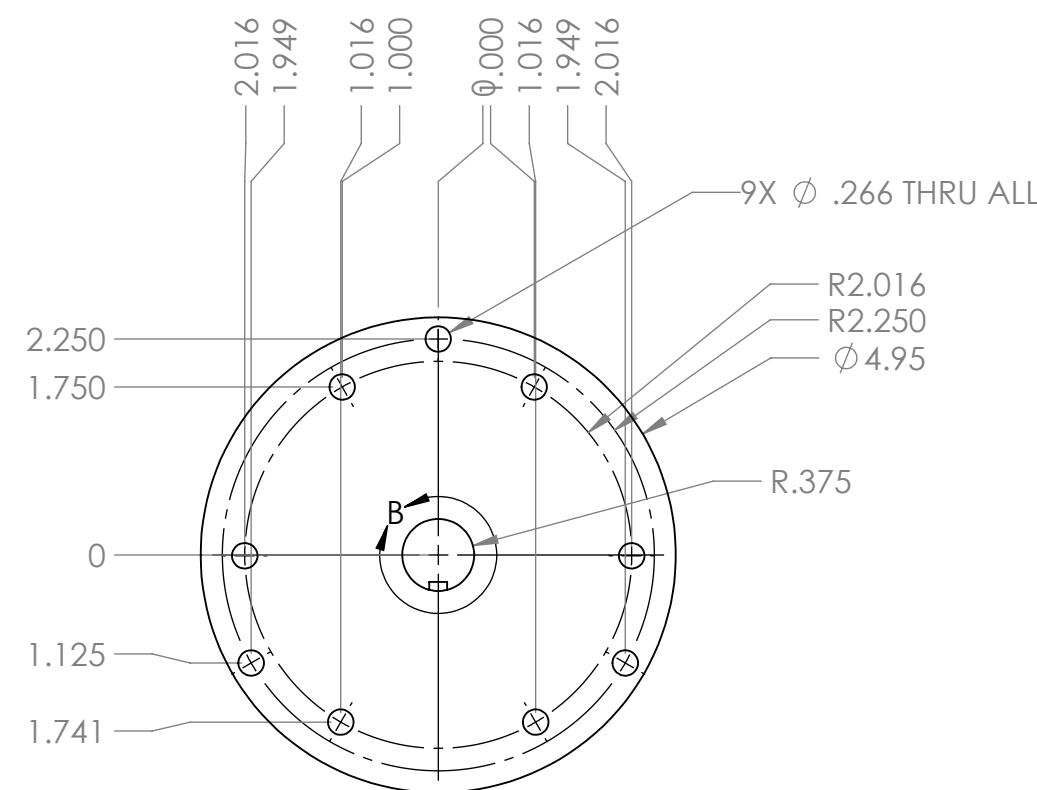


8 7 6 5 4 3 2 1

NOTES;
1. QUESTIONS? EMAIL HALLEY.POLLOCK-MUSKIN@STUDENTS.OLIN.EDU



SECTION A-A



DETAIL B
SCALE 1 : 1

UNLESS OTHERWISE SPECIFIED:	
QTY: 1	MATERIAL: 6061-T6 ALUMINUM
DIMENSIONS ARE IN INCHES.	
ENGINEER	hmuskin
DRAWN	hmuskin
CHECKED	landrade
12/14/2015	
12/14/2015	
12/14/2015	

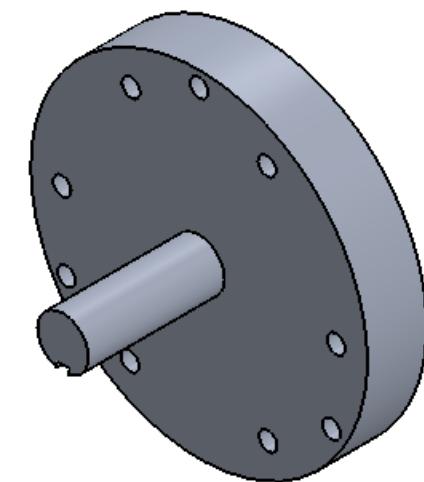


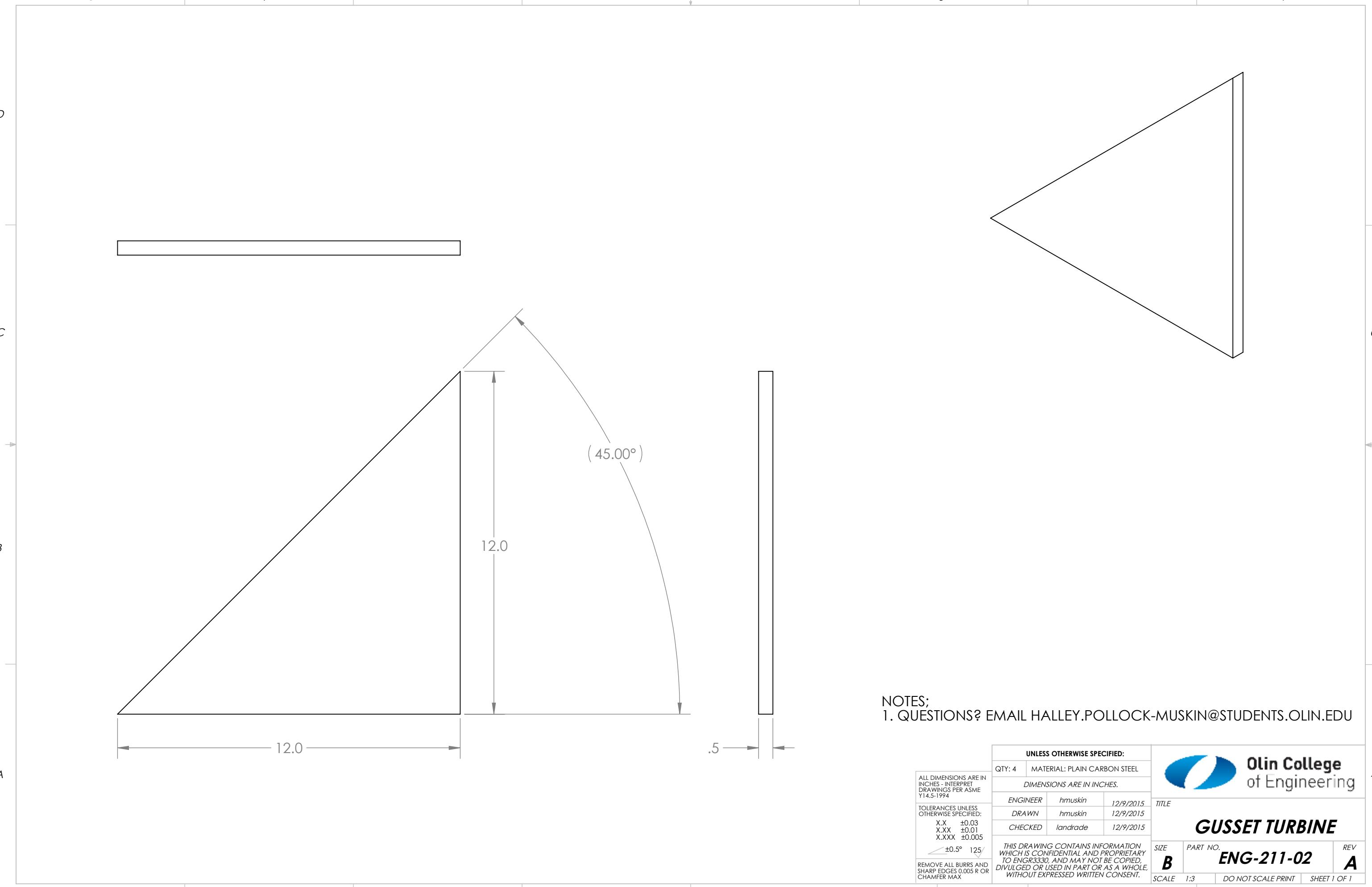
ENGINE TURBINE CENTER

SIZE	PART NO.	REV
B	ENG-2321-02	C
SCALE 1:2	DO NOT SCALE PRINT	SHEET 1 OF 1

8 7 6 5 4 3 2 1

D D C C B B A A

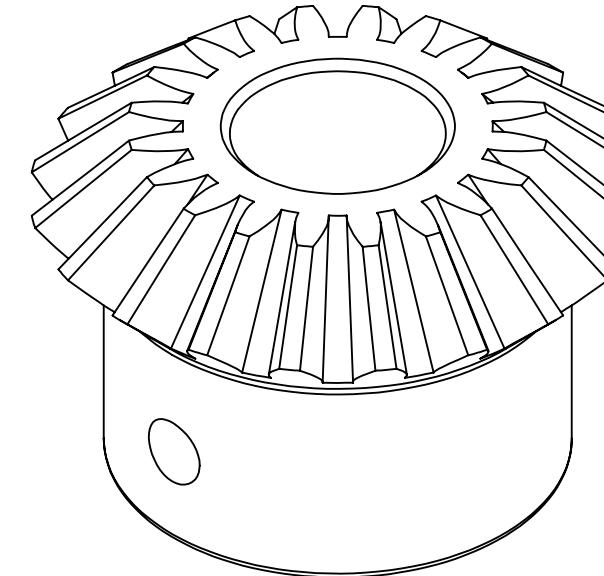
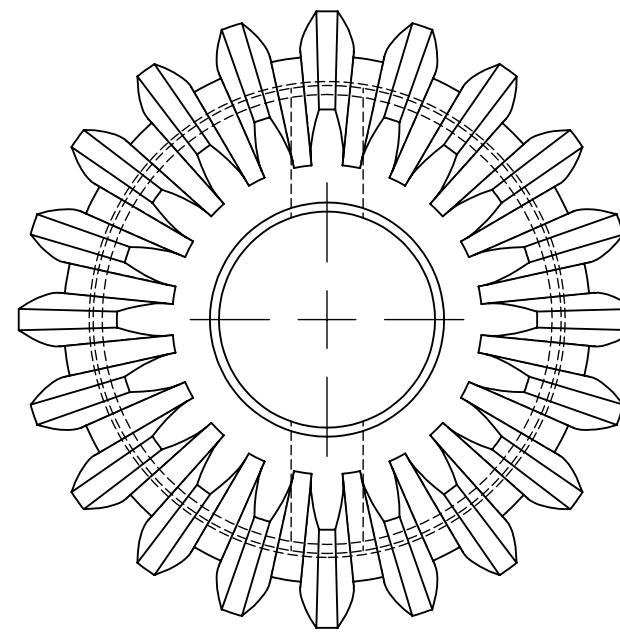




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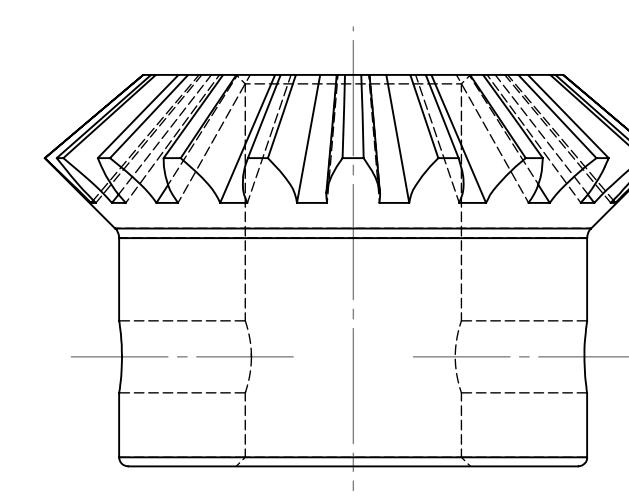
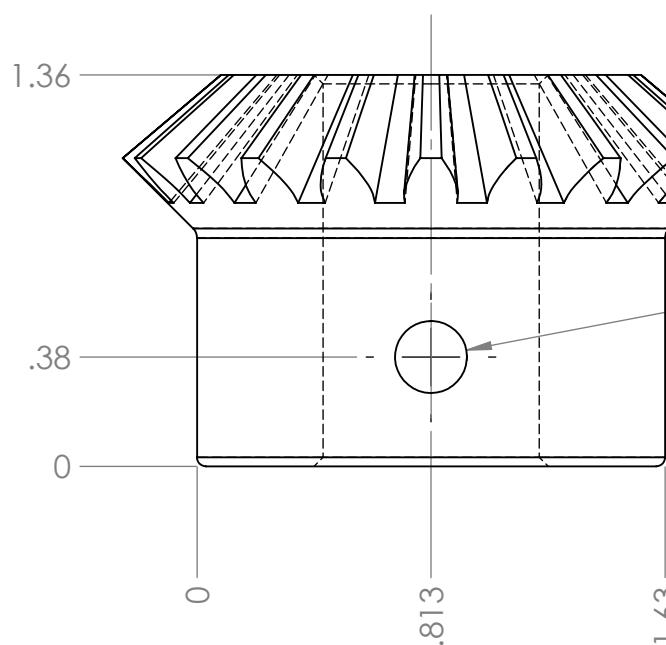
D

D



C

C



NOTES:

1. MODIFIED MCMASTER STOCK - PART 6529K250
2. IF NECESSARY, FACE PART BEFORE DRILLING HOLE
3. QUESTIONS? EMAIL HALLEY.POLLOCK-MUSKIN@STUDENTS.OLIN.EDU

UNLESS OTHERWISE SPECIFIED: QTY: 4 MATERIAL: ALLOY STEEL		TITLE
DIMENSIONS ARE IN INCHES.		
ENGINEER	hmuskin	12/13/2015
DRAWN	hmuskin	12/13/2015
CHECKED	landrade	12/13/2015
$\pm 0.5^\circ$	125	
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SIZE	PART NO.	REV
B	6529K250	D
SCALE	3:2	DO NOT SCALE PRINT
		SHEET 1 OF 1

Olin College
of Engineering

MITER GEAR

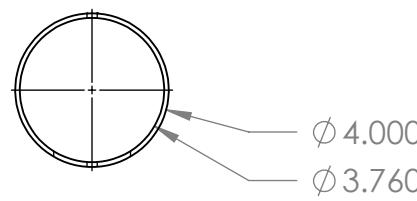
8 7 6 5 4 3 2 1

I

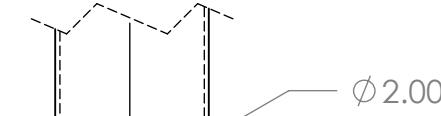
8 7 6 5 4 3 2 1

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16.500

2X Φ .266 THRU ALL

24.000



143.700

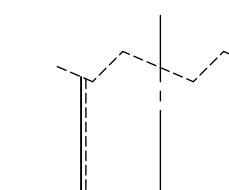
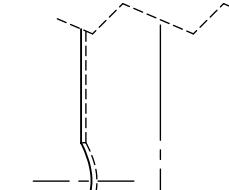
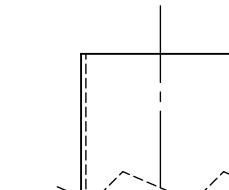
144.000

B

B

C

C



NOTES;
1. USE HOLE SAW WITH CENTER DRILL TO MACHINE LARGE HOLE
2. QUESTIONS? EMAIL HALLEY.POLLOCK-MUSKIN@STUDENTS.OLIN.EDU



UNLESS OTHERWISE SPECIFIED:		
QTY: 1	MATERIAL: PLAIN CARBON STEEL	
DIMENSIONS ARE IN INCHES.		
ENGINEER	hmuskin	12/13/2015
DRAWN	hmuskin	12/13/2015
CHECKED	landrade	12/13/2015
THIS DRAWING CONTAINS INFORMATION WHICH IS CONFIDENTIAL AND PROPRIETARY TO ENGR3330, AND MAY NOT BE COPIED, DIVULGED OR USED IN PART OR AS A WHOLE WITHOUT EXPRESSED WRITTEN CONSENT.		
ALL DIMENSIONS ARE IN INCHES - INTERPRET DRAWINGS PER ASME Y14.5-1994		
TOLERANCES UNLESS OTHERWISE SPECIFIED:		
X.X ±0.03		
X.XX ±0.01		
X.XXX ±0.005		
∠0.5° 125/		
REMOVE ALL BURRS AND SHARP EDGES 0.005 R OR CHAMFER MAX		
SIZE	PART NO.	REV
B	ENG-211-03	H
SCALE 1:5	DO NOT SCALE PRINT	SHEET 1 OF 1

Olin College
of Engineering

**OUTER SHAFT FOR
DRIVETRAIN**

8

7

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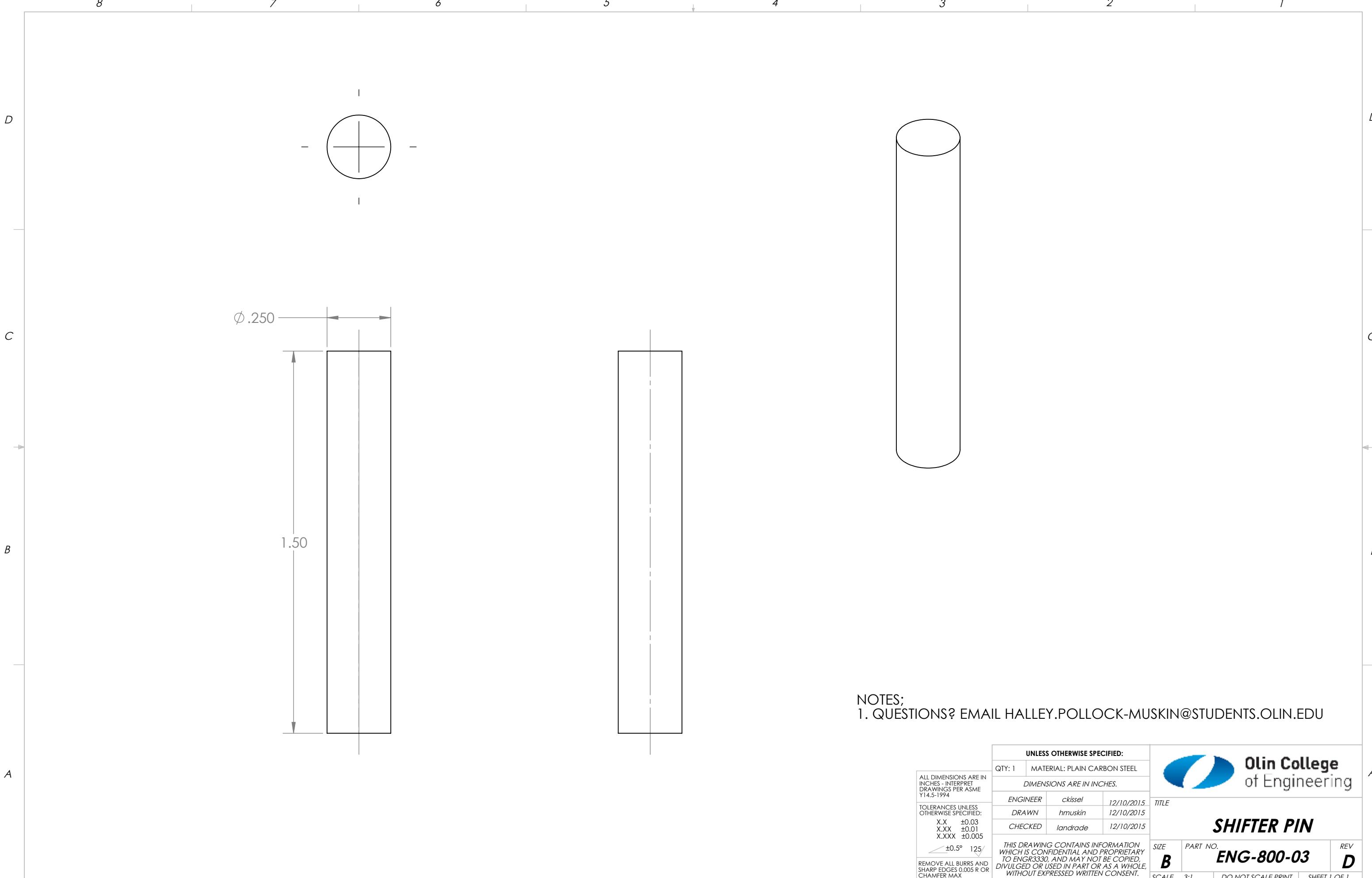
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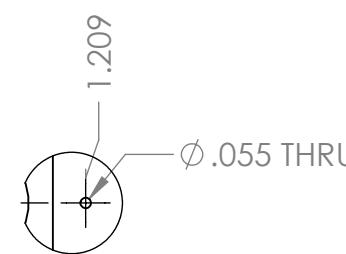
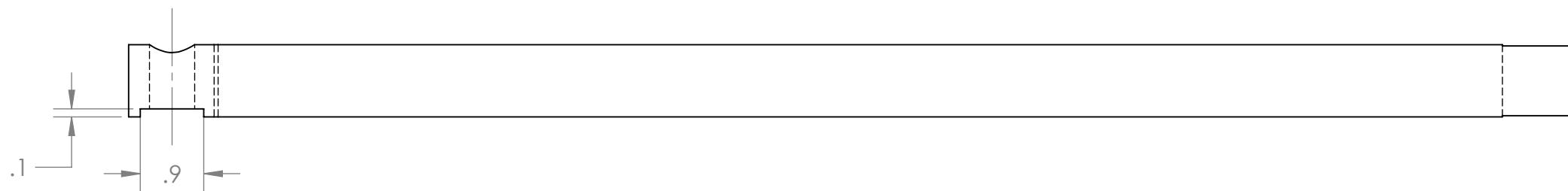
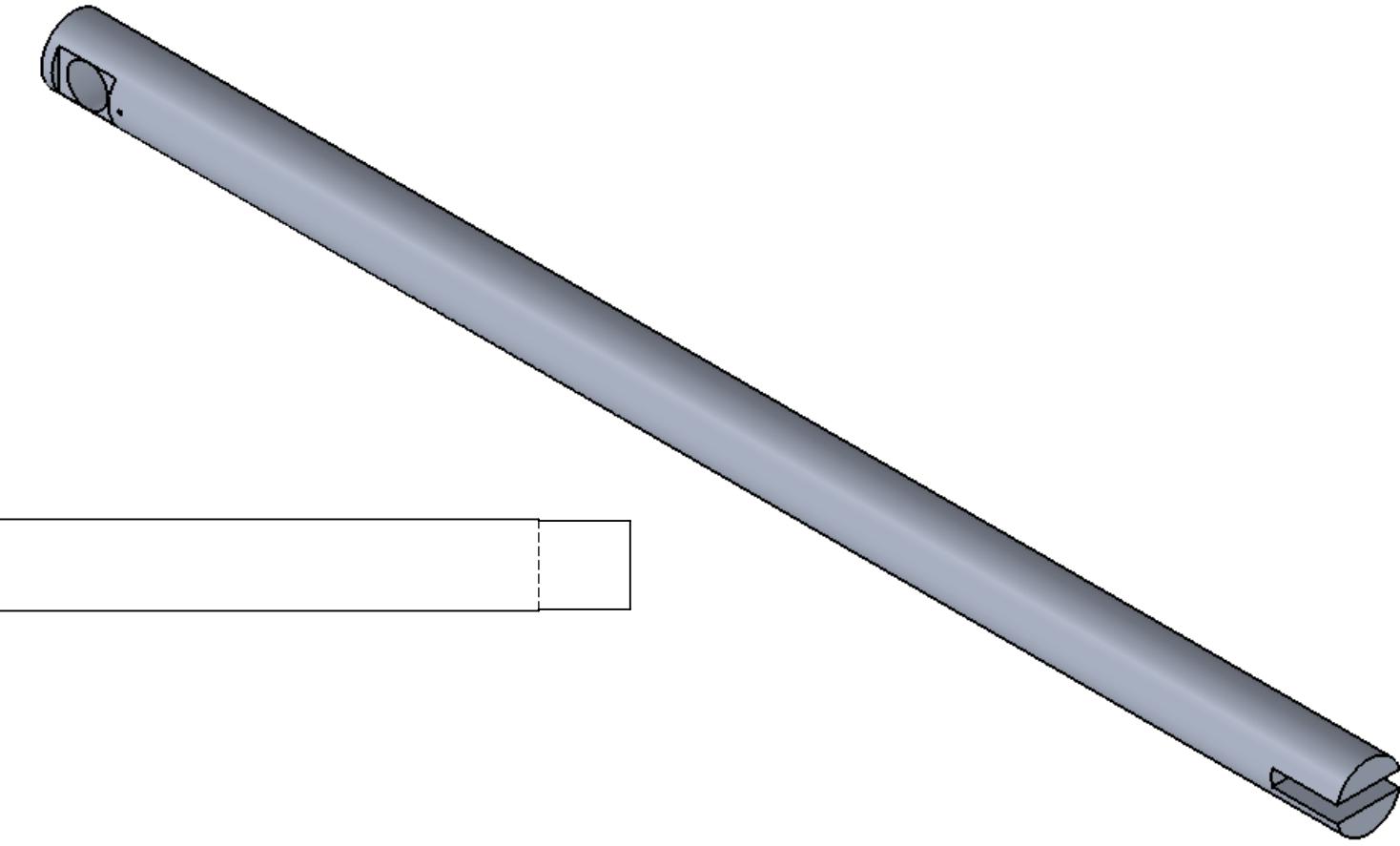
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1

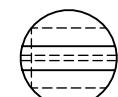
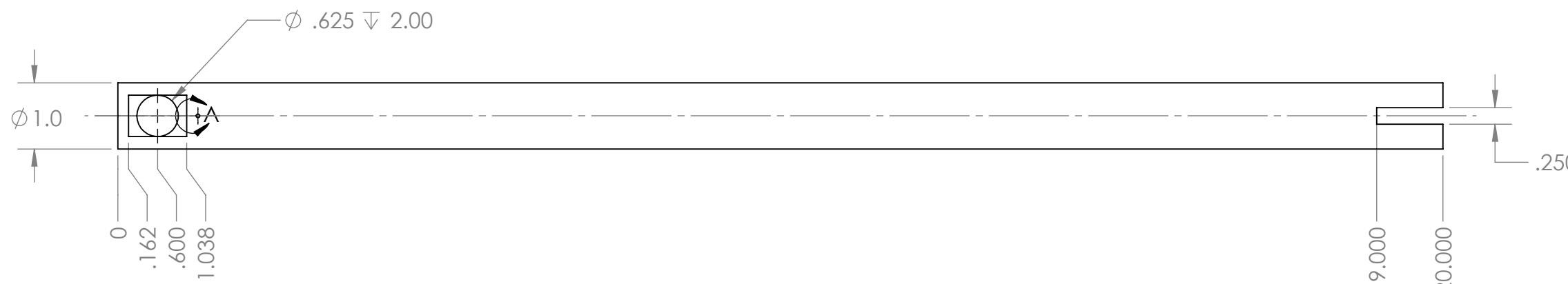


8 7 6 5 4 3 2 1

NOTES:
1. FACING CUT IS FOR EASE OF MANUFACTURE
2. QUESTIONS? EMAIL HALLEY.POLLOCK-MUSKIN@STUDENTS.OLIN.EDU



DETAIL A
SCALE 1 : 1

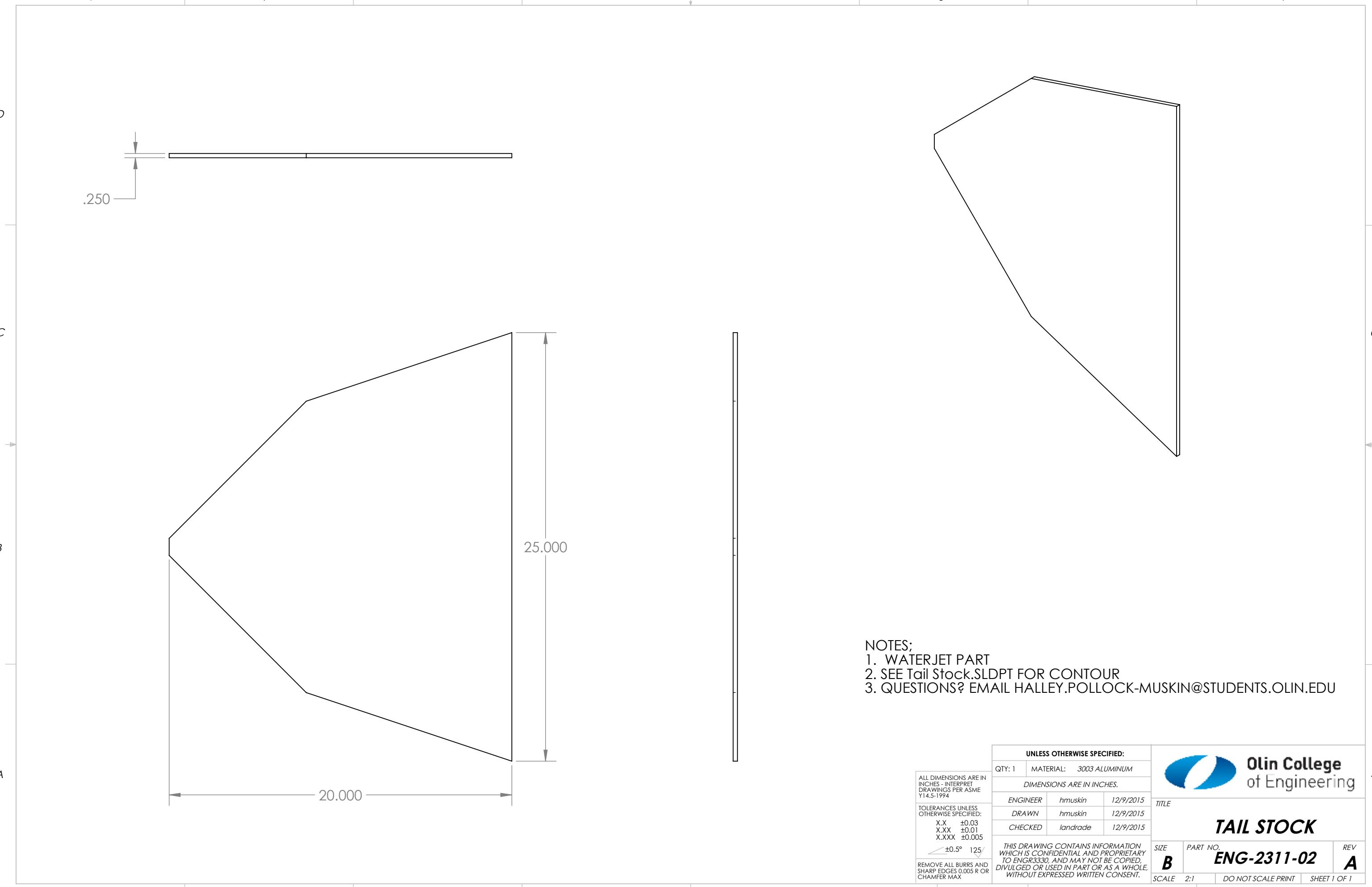


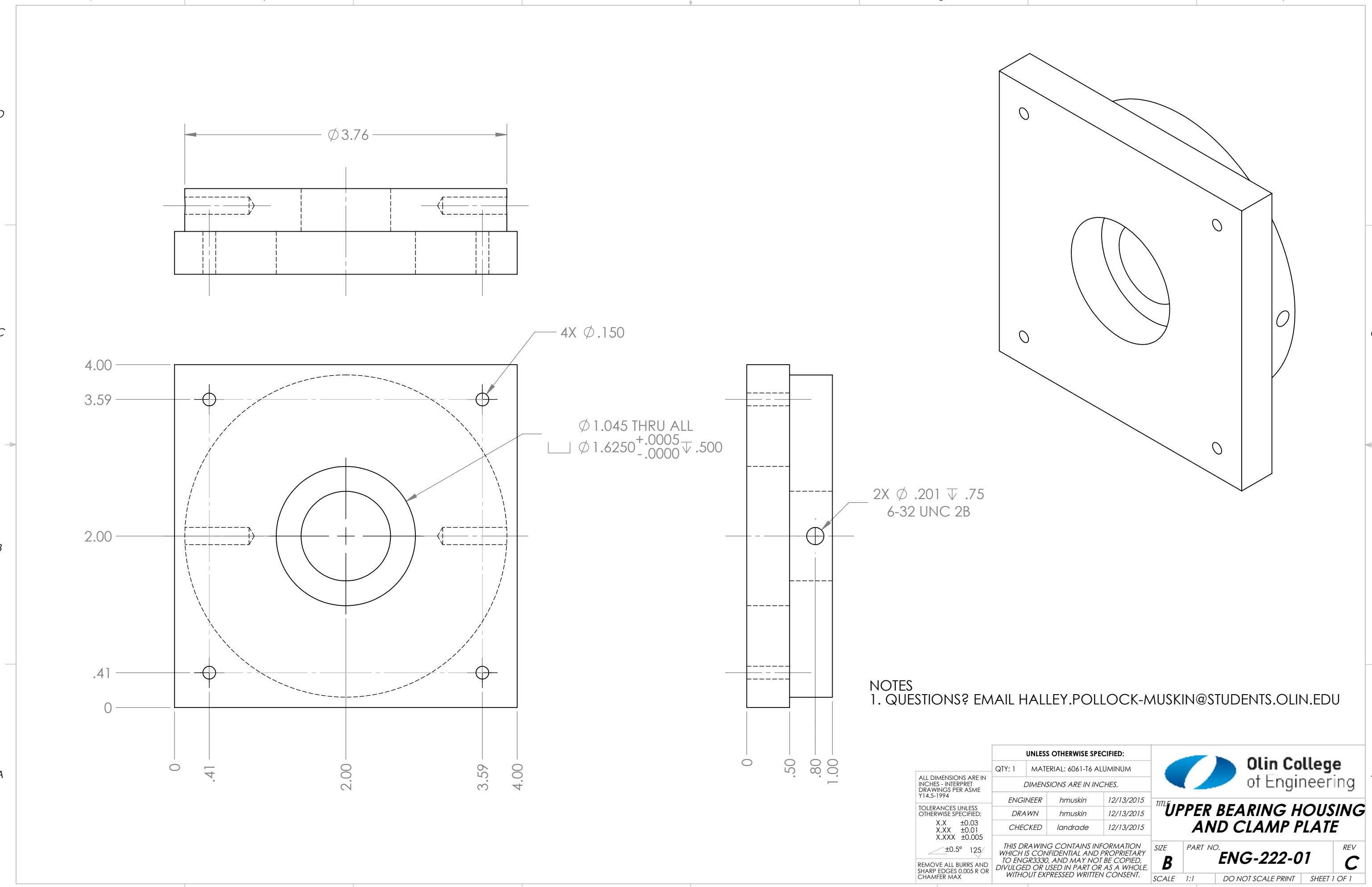
UNLESS OTHERWISE SPECIFIED:		TITLE
QTY: 1	MATERIAL: 3003 ALUMINUM	
DIMENSIONS ARE IN INCHES.		
ENGINEER	hmuskin	12/10/2015
DRAWN	hmuskin	12/10/2015
CHECKED	landrade	12/10/2015
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SIZE	PART NO.	REV
B	ENG-2311-01	C
SCALE	2:1	DO NOT SCALE PRINT
		SHEET 1 OF 1

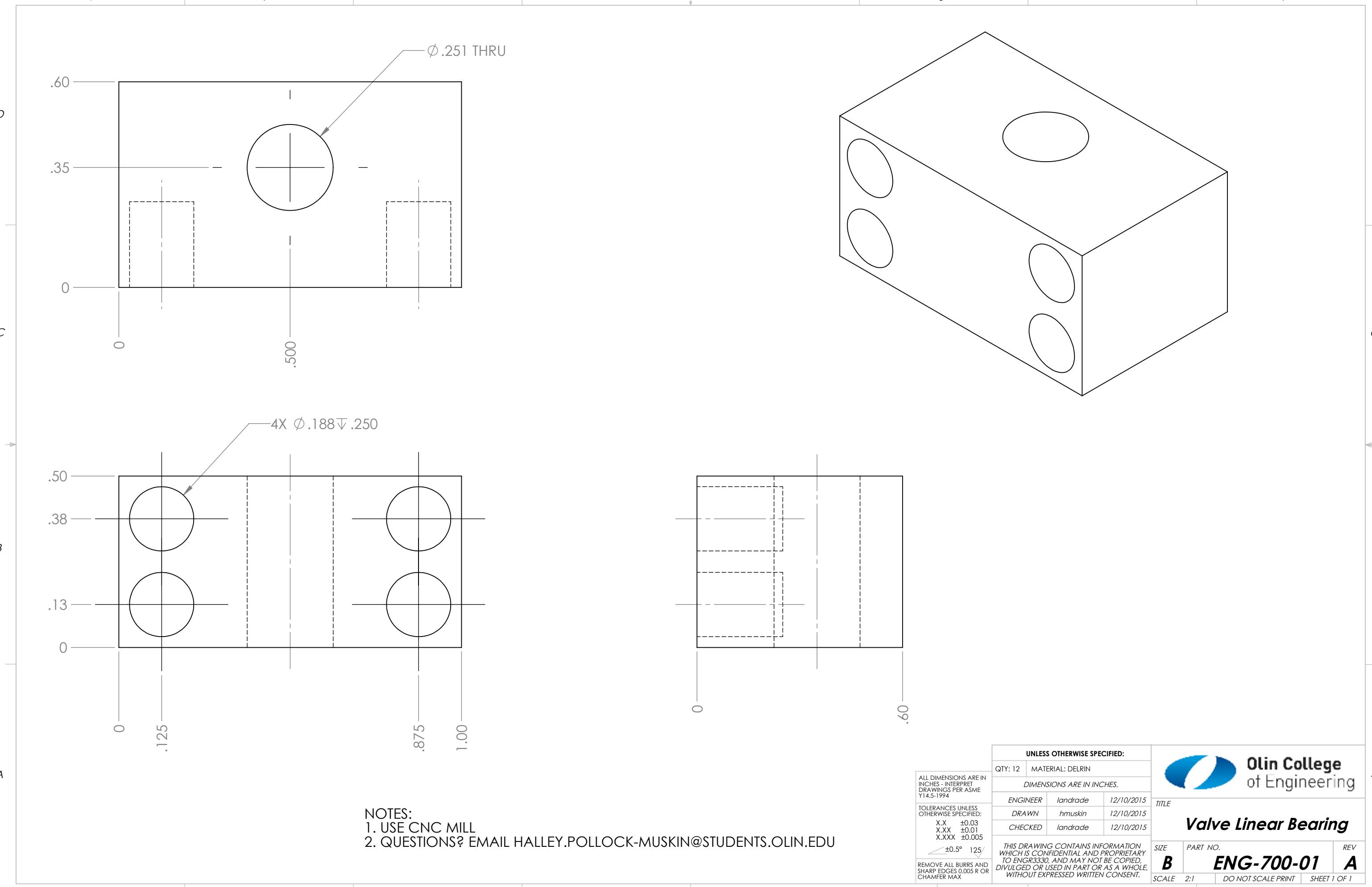


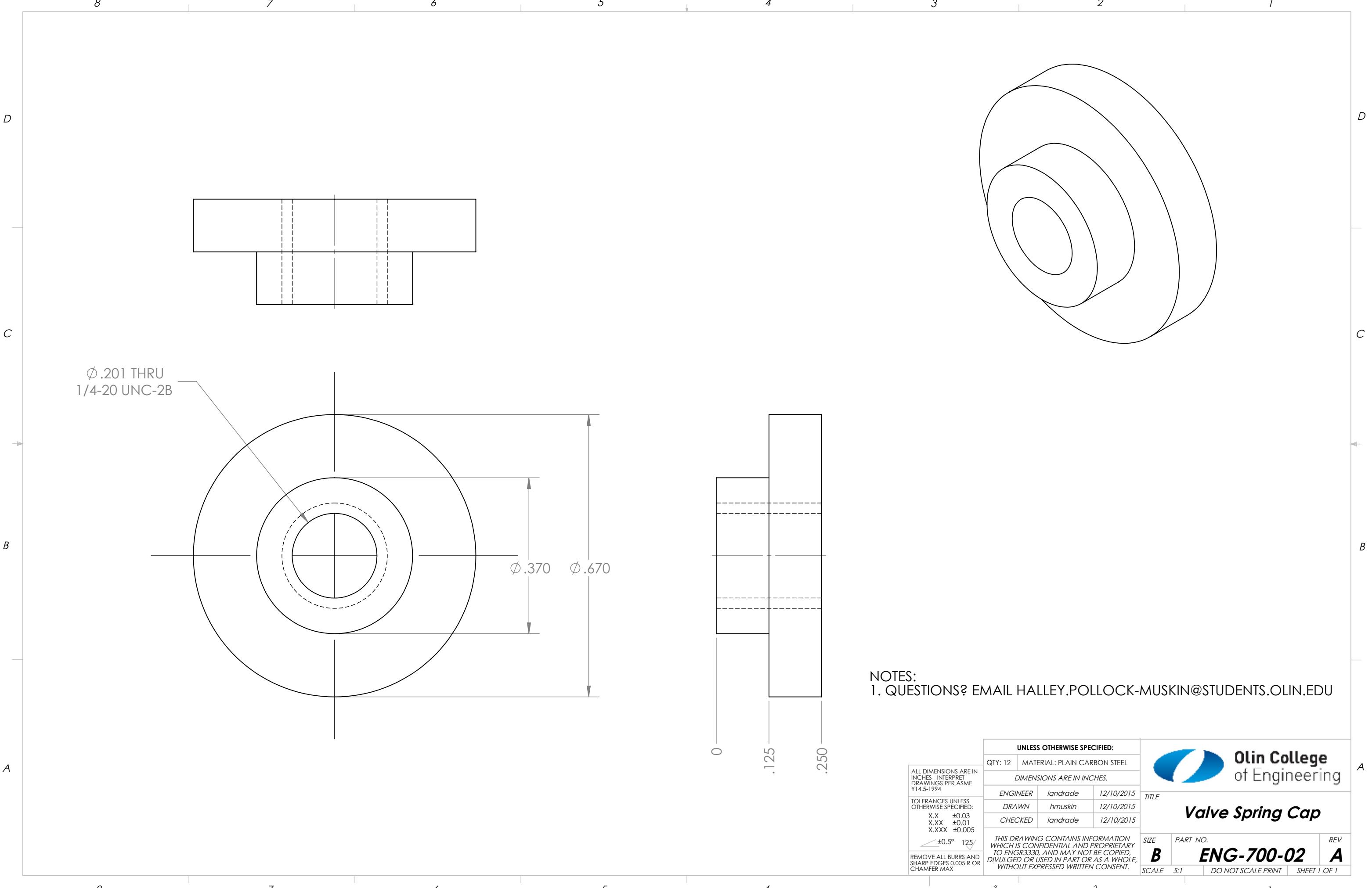
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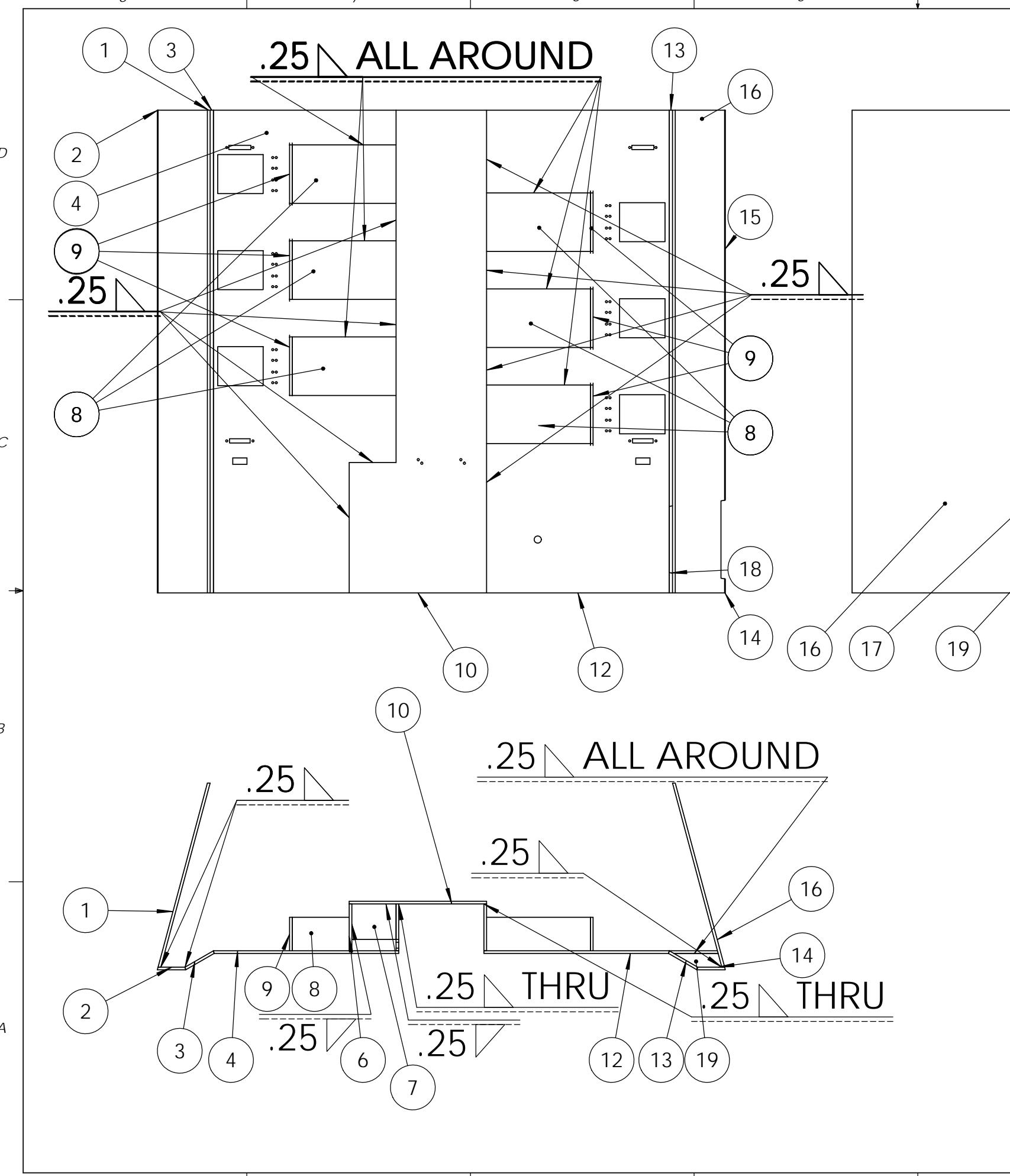
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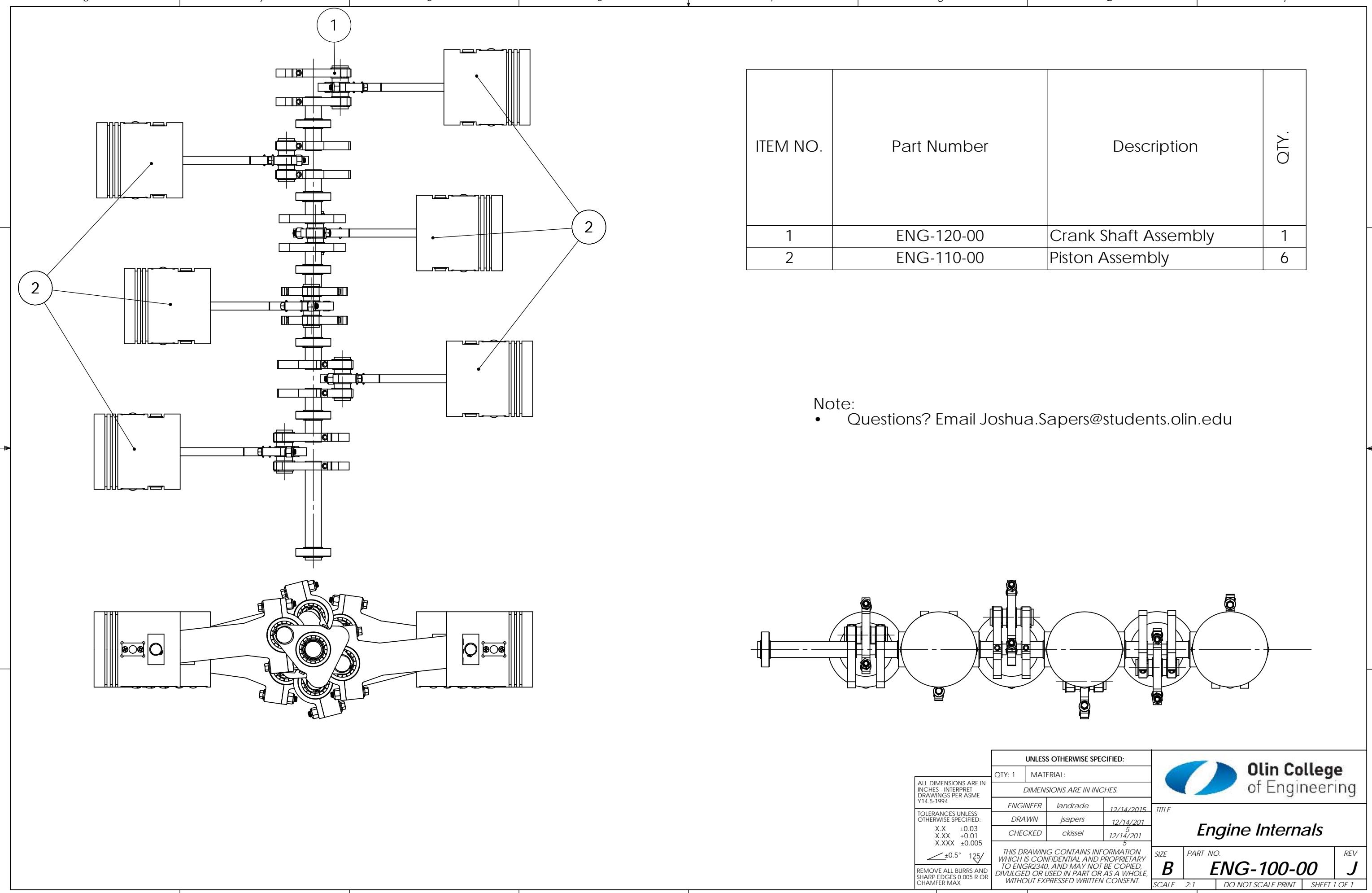


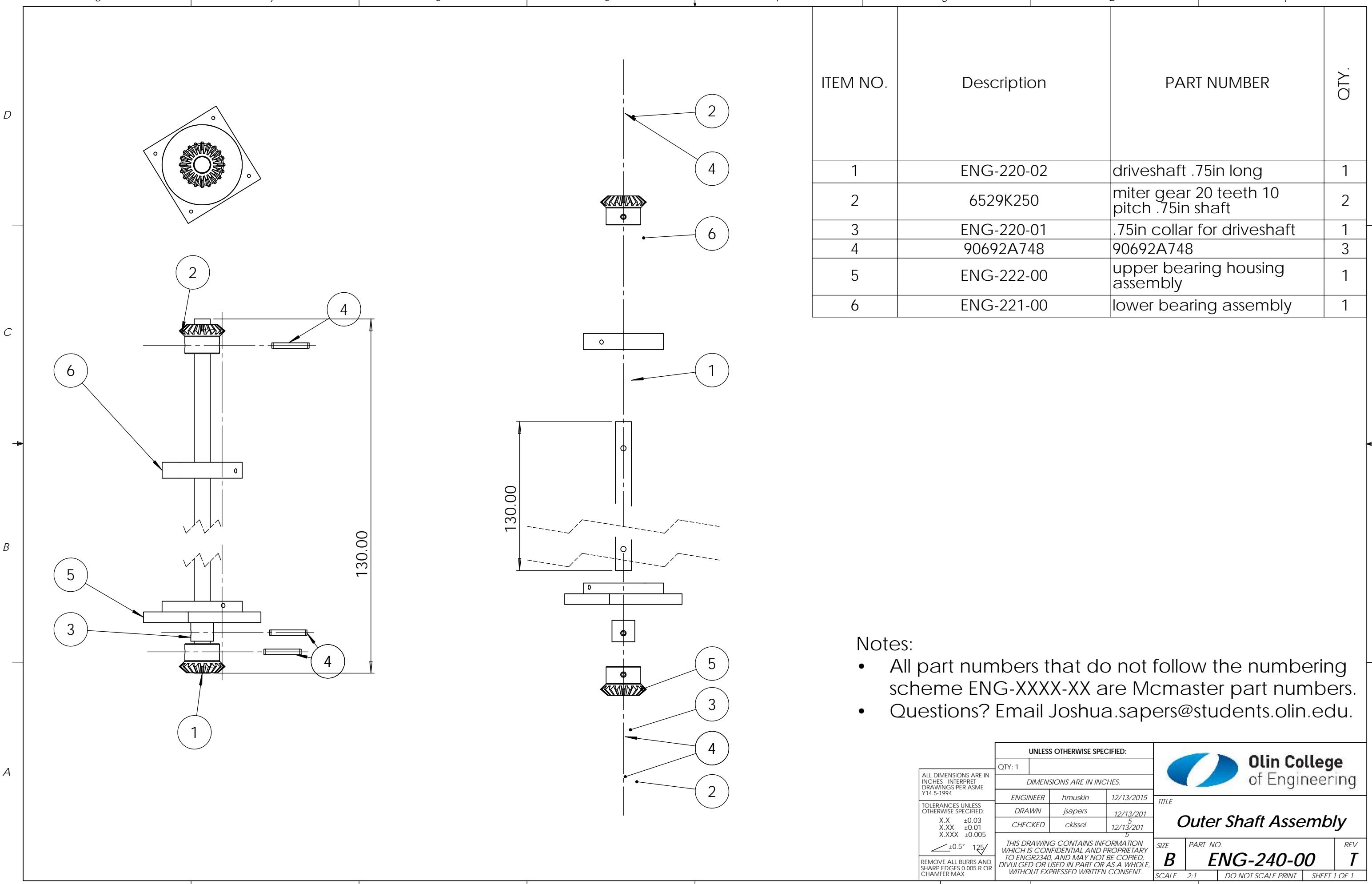
ITEM NO.	Description	PART NUMBER	QTY.
1	ENG-310-01	Block Left End	1
2	ENG-310-02	Block Left Top	1
3	ENG-310-03	Block Left Angle	1
4	ENG-310-04	Block Left Piston Top	1
5	ENG-310-05	Block left Side	1
6	ENG-310-06	Block Gear Side	1
7	ENG-310-07	Block Gear Back	1
8	ENG-310-08	Pyston Cylinder	6
9	ENG-310-09	Piston Cylinder Cap	6
10	ENG-310-10	Block Base	1
11	ENG-310-11	Block Right Side	1
12	ENG-310-12	Block Right Piston Top	1
13	ENG-310-13	Block Right Angle	1
14	ENG-310-014	Block Right Top 2	1
15	ENG-310-15	Block Right Top 1	1
16	ENG-310-16	Block Right End 2	1
17	ENG-310-17	Block Crank Side 2	1
18	ENG-310-18	Block Crank Bottom	1
19	ENG-310-19	Block Crank Side	1

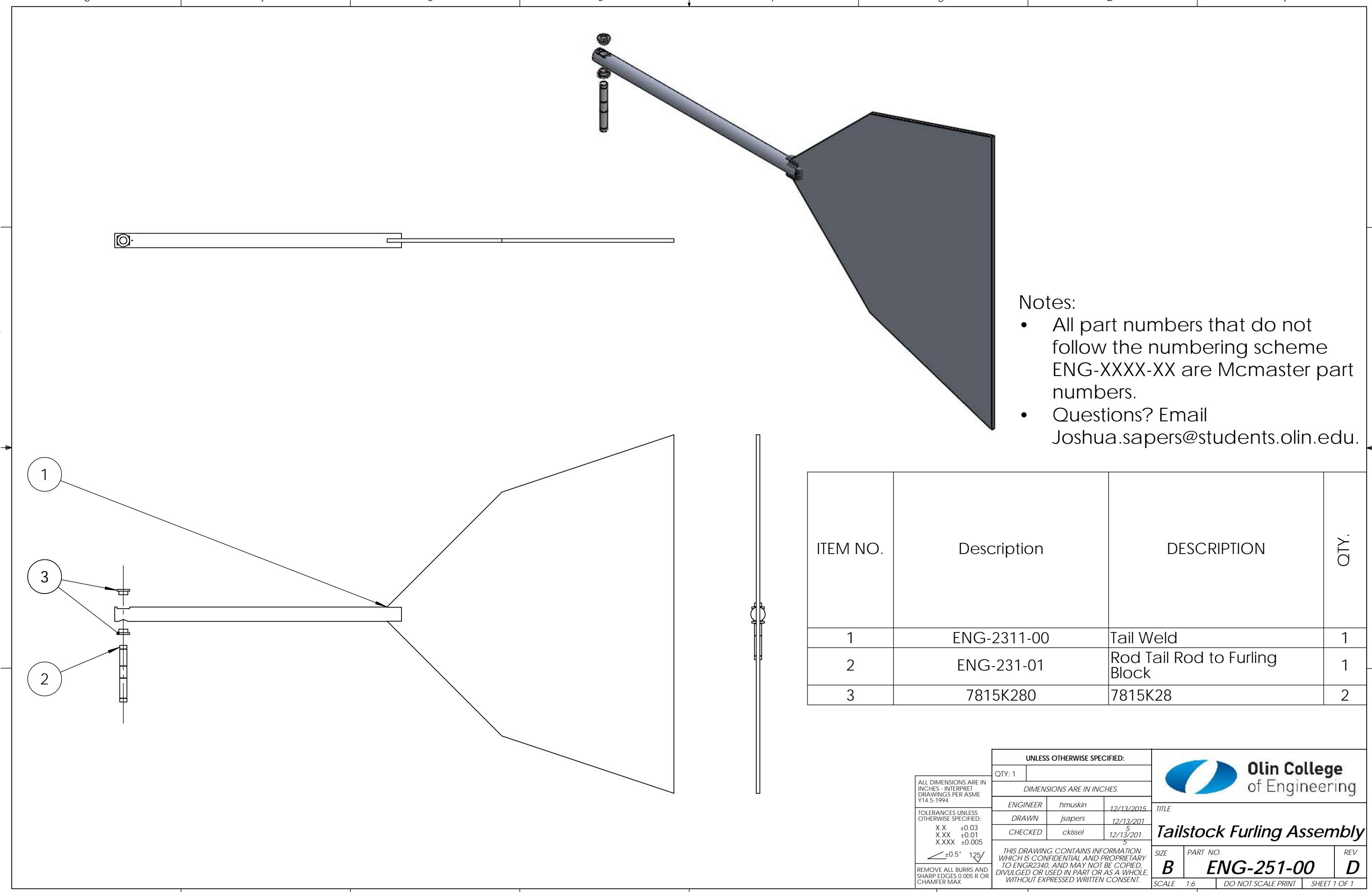
No

- Questions? Email Joshua.Sapers@students.olin.edu

<p>ALL DIMENSIONS ARE IN INCHES - INTERPRET DRAWINGS PER ASME Y14.5-1994</p> <p>TOLERANCES UNLESS OTHERWISE SPECIFIED:</p> <table border="1"> <tr><td>X.X</td><td>±0.03</td></tr> <tr><td>X.XX</td><td>±0.01</td></tr> <tr><td>X.XXX</td><td>±0.005</td></tr> <tr><td colspan="2">$\angle \pm 0.5^\circ$ 125°</td></tr> <tr><td colspan="2">REMOVE ALL BURRS AND SHARP EDGES 0.005 R OR CHAMFER MAX</td></tr> </table>	X.X	±0.03	X.XX	±0.01	X.XXX	±0.005	$\angle \pm 0.5^\circ$ 125°		REMOVE ALL BURRS AND SHARP EDGES 0.005 R OR CHAMFER MAX		UNLESS OTHERWISE SPECIFIED:		
	X.X	±0.03											
	X.XX	±0.01											
	X.XXX	±0.005											
	$\angle \pm 0.5^\circ$ 125°												
	REMOVE ALL BURRS AND SHARP EDGES 0.005 R OR CHAMFER MAX												
	QTY: 1												
	DIMENSIONS ARE IN INCHES.												
	ENGINEER	jsapers	12/14/2015										
	DRAWN	jsapers	12/14/201										
CHECKED	ckissel	12/14/201											
5													
<p>THIS DRAWING CONTAINS INFORMATION WHICH IS CONFIDENTIAL AND PROPRIETARY TO ENGR2340, AND MAY NOT BE COPIED, DIVULGED OR USED IN PART OR AS A WHOLE, WITHOUT EXPRESSED WRITTEN CONSENT.</p>													
TITLE													
 Olin College of Engineering													
SIZE	PART NO.	REV											
	B	ENG-310-00	A										
SCALE	2:1	DO NOT SCALE PRINT											
SHEET 1 OF 1													







ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ENG-900-02	Tensioner Roller	1
2	ENG-900-01	Tensioner Pivot	1
3	ENG-900-03	Tensioner Slide	2
4	90633A007	90633A007	3
5	ENG-900-04	Tensioner Stand	1
6	91274A028	91274A028	1
7	92141A008	92141A008	1
8	ENG-220-00	6-32 screw assembly	2

Notes:

- All part numbers that do not follow the numbering scheme ENG-XXXX-XX are McMaster part numbers.
- Questions? Email Joshua.sapers@students.olin.edu.

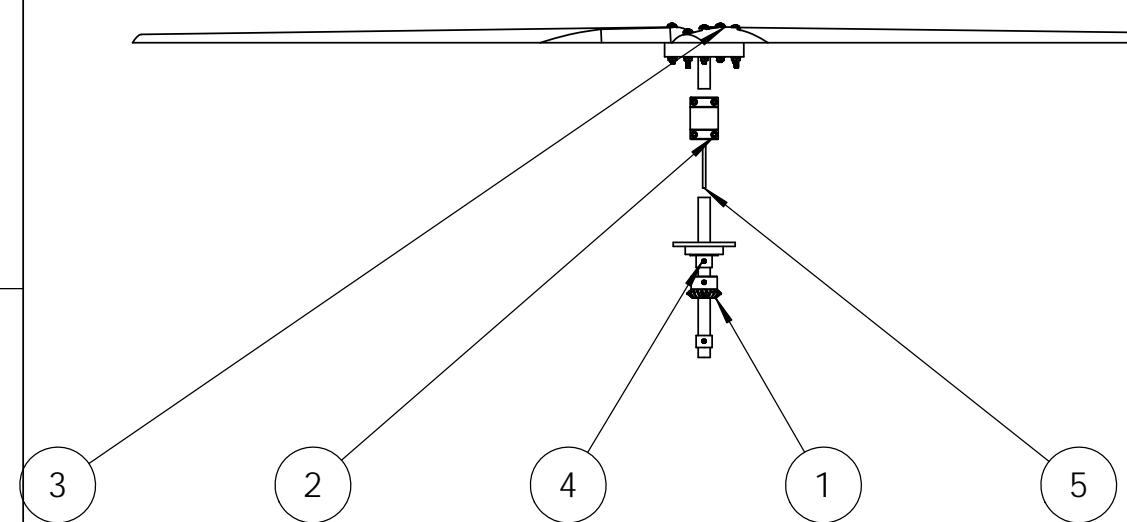
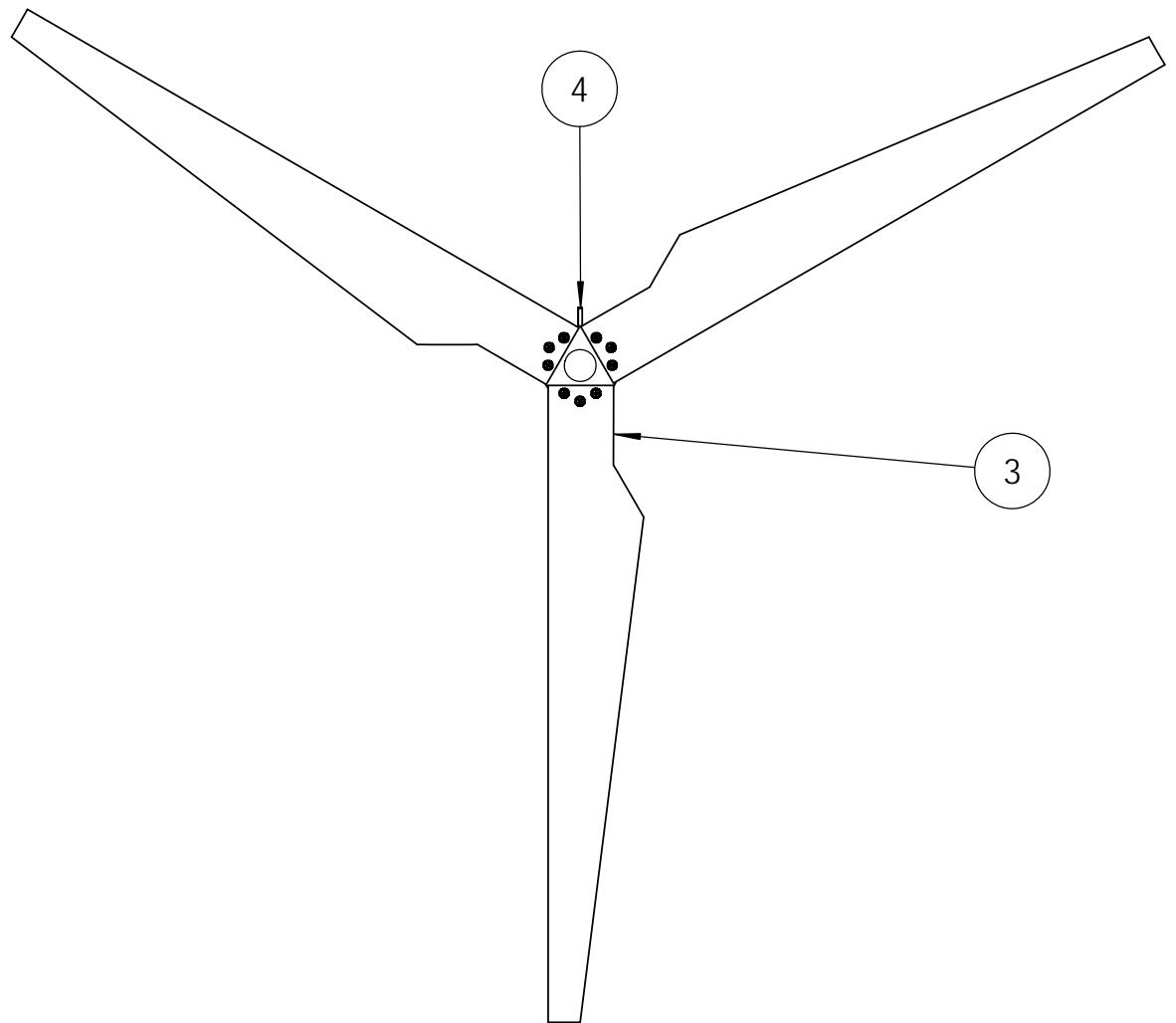
UNLESS OTHERWISE SPECIFIED:		
QTY: 1		
DIMENSIONS ARE IN INCHES		
ENGINEER	landrade	12/13/2015
DRAWN	jaspers	12/13/201
CHECKED	ckissel	12/13/201
$\angle \pm 0.5^\circ$ 125/5		
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REMOVE ALL BURRS AND SHARP EDGES .005 R OR CHAMFER MAX		

Olin College
of Engineering

Timing Belt Tensioner

SIZE **B** PART NO. **ENG-900-00** REV **A**

SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ENG-2532-00	Turbine Power Shaft Assembly	1
2	9800T300	9800T3	1
3	ENG-2531-00	Engine Turbine Blades and Center Assembly	1
4	90692A748	90692A748	3
5	ENG-253-01	key for coupler turbine	1

Notes:

- All part numbers that do not follow the numbering scheme ENG-XXXX-XX are McMaster part numbers.
- Questions? Email Joshua.sapers@students.olin.edu.

UNLESS OTHERWISE SPECIFIED:		Olin College of Engineering	
ALL DIMENSIONS ARE IN INCHES - INTERPRET DRAWINGS PER ASME Y14.5-1994	DIMENSIONS ARE IN INCHES		
TOLERANCES UNLESS OTHERWISE SPECIFIED: X.X ±0.03 X.XX ±0.01 X.XXX ±0.005 ∠±0.5° 125°		ENGINEER	hmuskin
		DRAWN	jsapers
		CHECKED	ckissel
		12/13/2015 12/13/201 5 5	
THIS DRAWING CONTAINS INFORMATION WHICH IS CONFIDENTIAL AND PROPRIETARY TO ENGR2340, AND MAY NOT BE COPIED, DIVULGED OR USED IN PART OR AS A WHOLE, WITHOUT EXPRESSED WRITTEN CONSENT.			
SIZE	PART NO.	REV	
B	ENG-253-00	H	
SCALE	1:12	DO NOT SCALE PRINT	SHEET 1 OF 1

ITEM NO.	PART NUMBER	QTY.
1	94836A259	1
2	95584A201	1
3	92141A008	1

Notes:

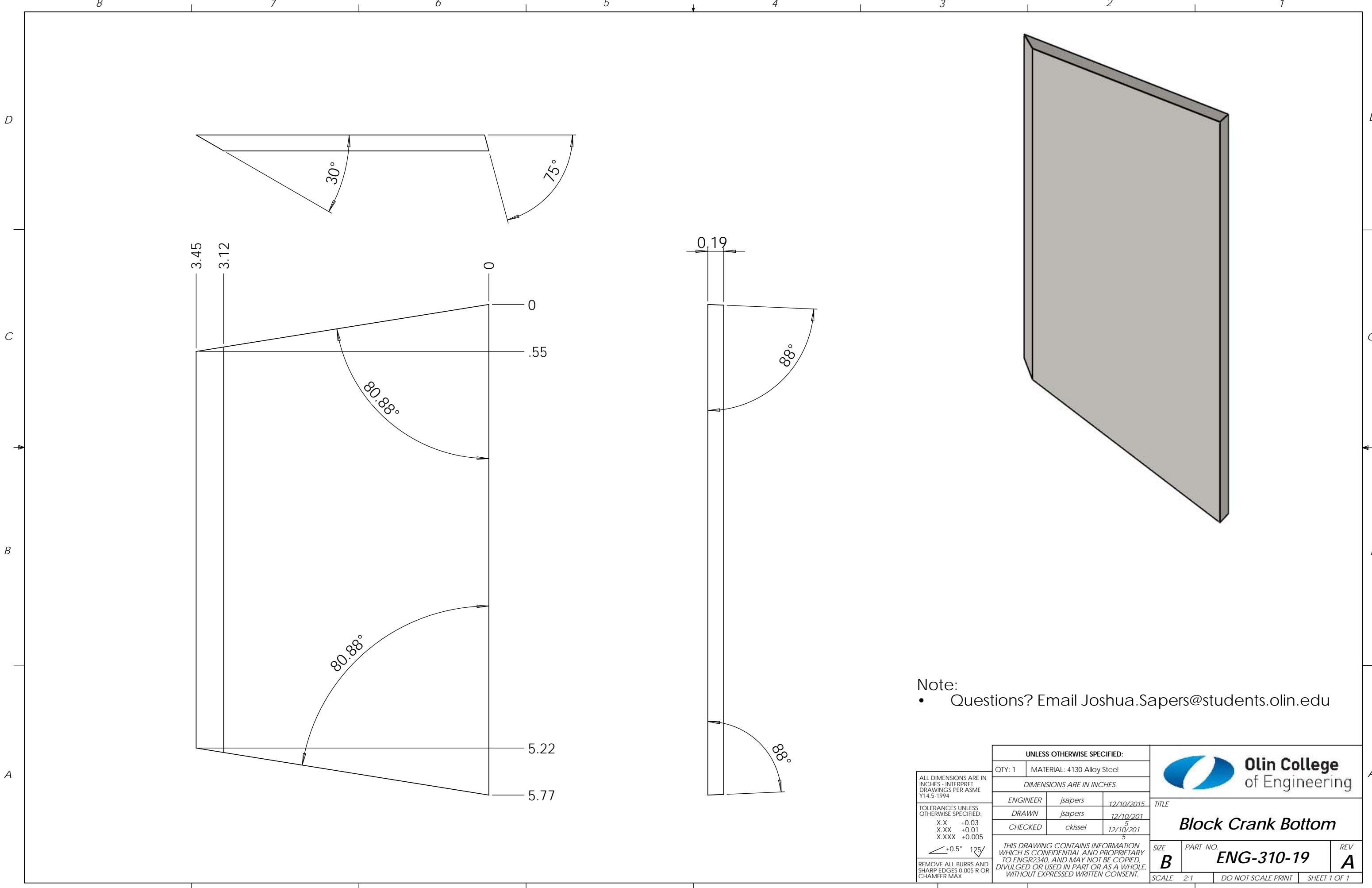
- All part numbers that do not follow the numbering scheme ENG-XXXX-XX are McMaster part numbers.
- Questions? Email Joshua.sapers@students.olin.edu.

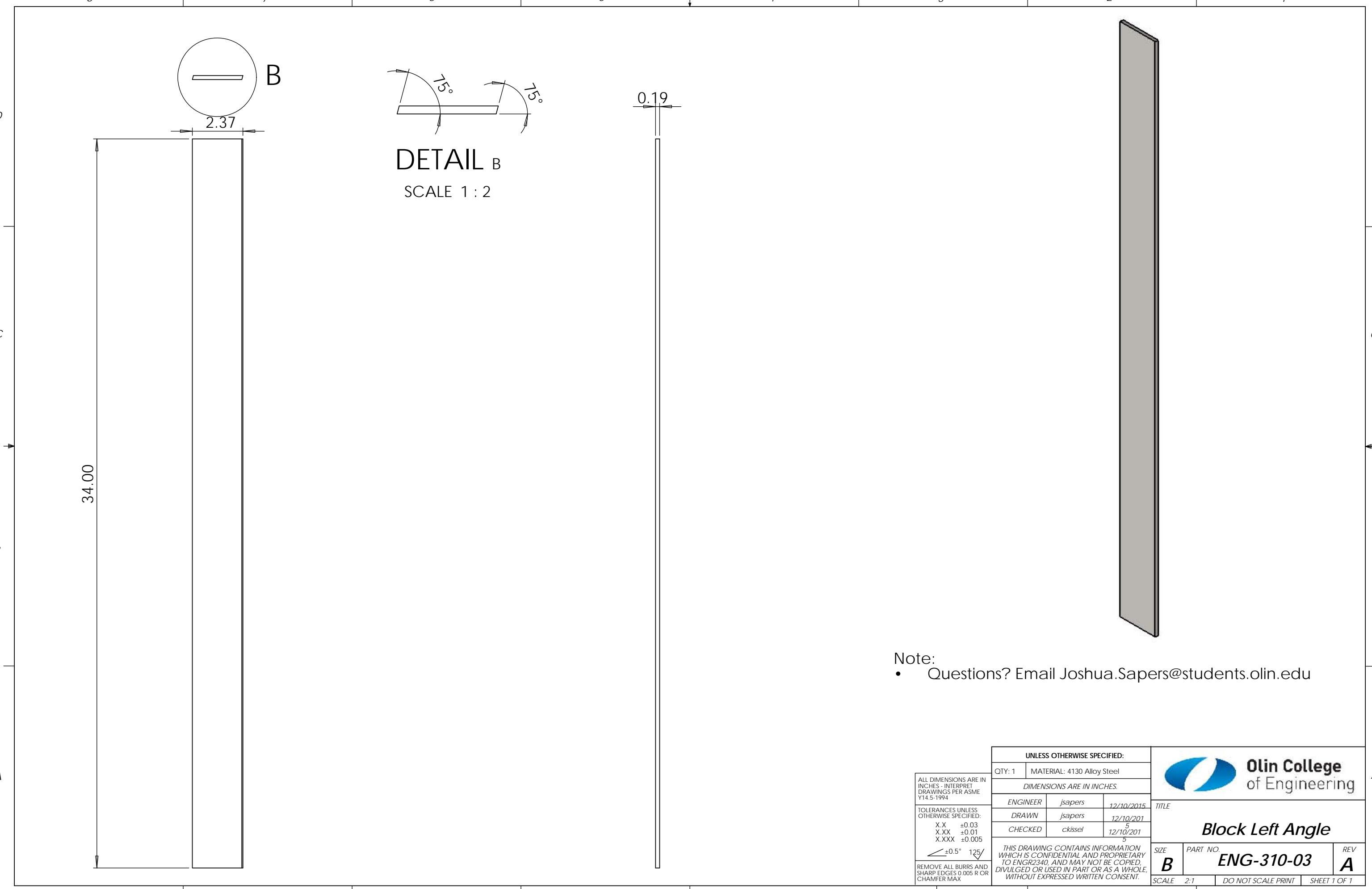
UNLESS OTHERWISE SPECIFIED:
QTY: MATERIAL:
DIMENSIONS ARE IN INCHES.
ENGINEER: hmuskin 12/13/2015
DRAWN: jsapers 12/13/2015
CHECKED: ckissel 12/13/2015
TOLERANCES UNLESS OTHERWISE SPECIFIED:
X.X ±0.03
X.XX ±0.01
X.XXX ±0.005
∠±0.5° 125°
ALL DIMENSIONS ARE IN INCHES - INTERPRET DRAWINGS PER ASME Y14.5-1994
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REMOVE ALL BURRS AND SHARP EDGES 0.005 R OR CHAMFER MAX

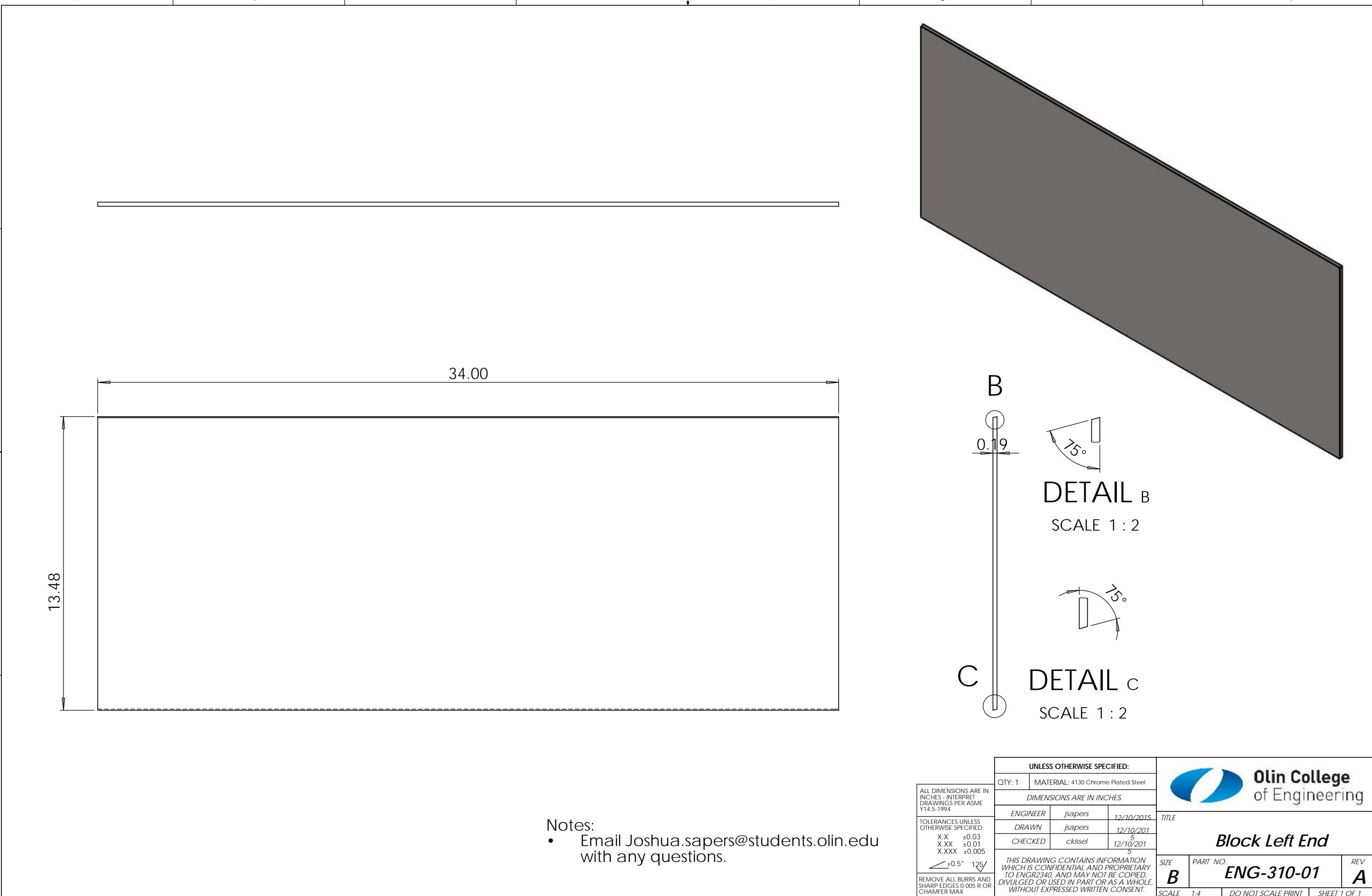
Olin College of Engineering

6-32 screw assembly

SIZE B PART NO. ENG-220-00 REV B
SCALE 2:1 DO NOT SCALE PRINT SHEET 1 OF 1



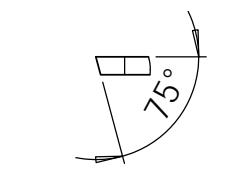




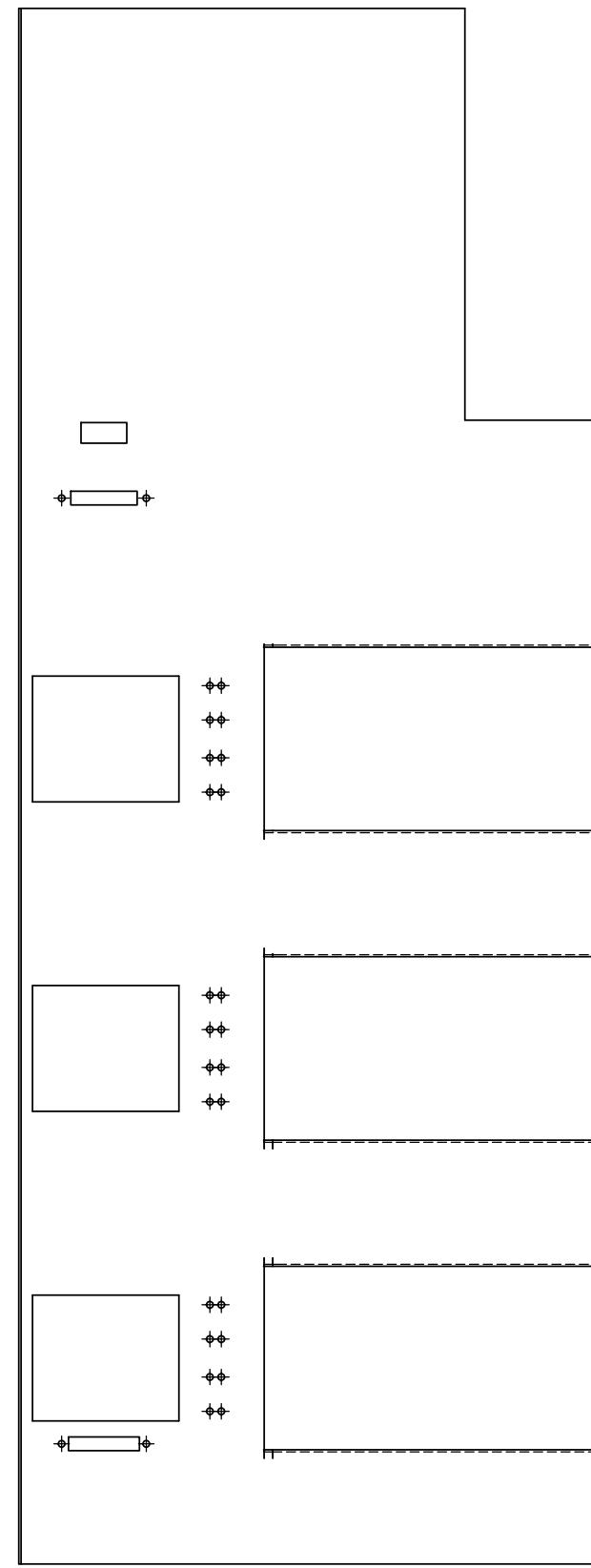
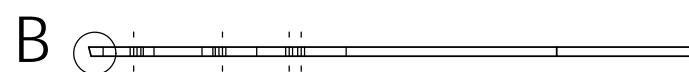
8 7 6 5 4 3 2 1

Note:

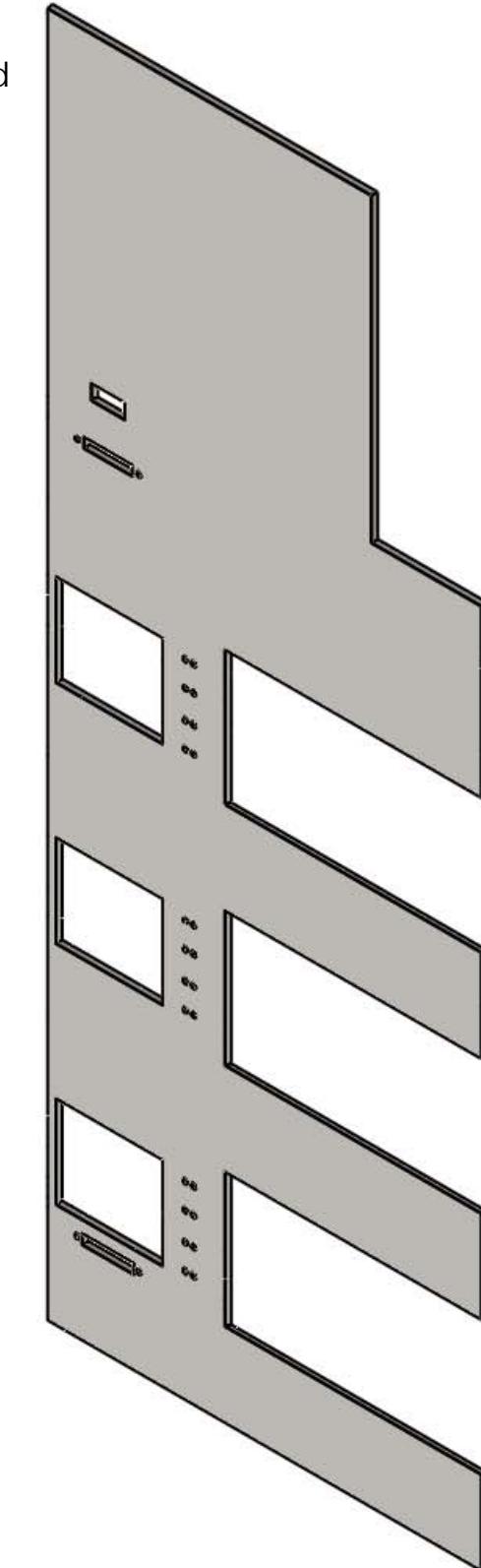
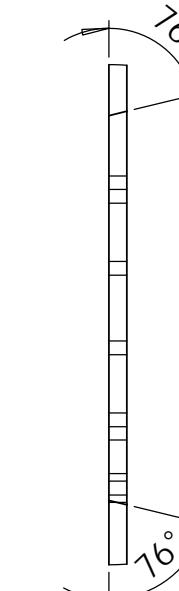
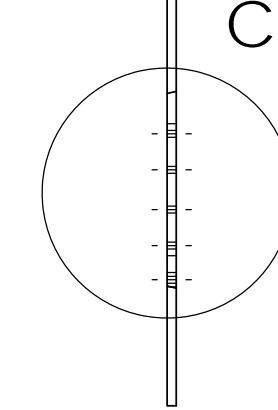
- See Block Right Piston Top.sldprt for hole locations and profiles for waterjet
- Questions? Email Joshua.Sapers@students.olin.edu



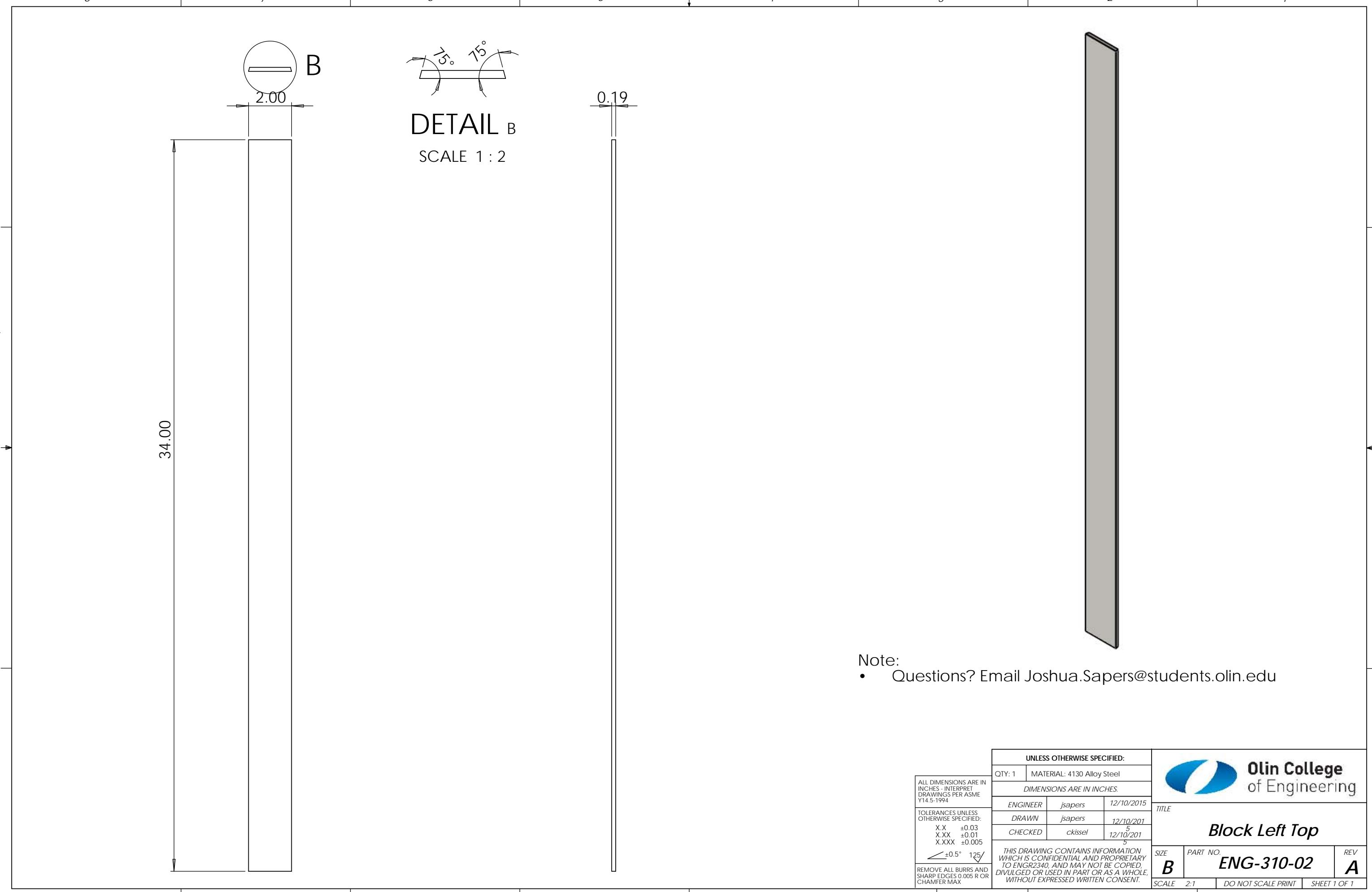
DETAIL B
SCALE 1 : 2

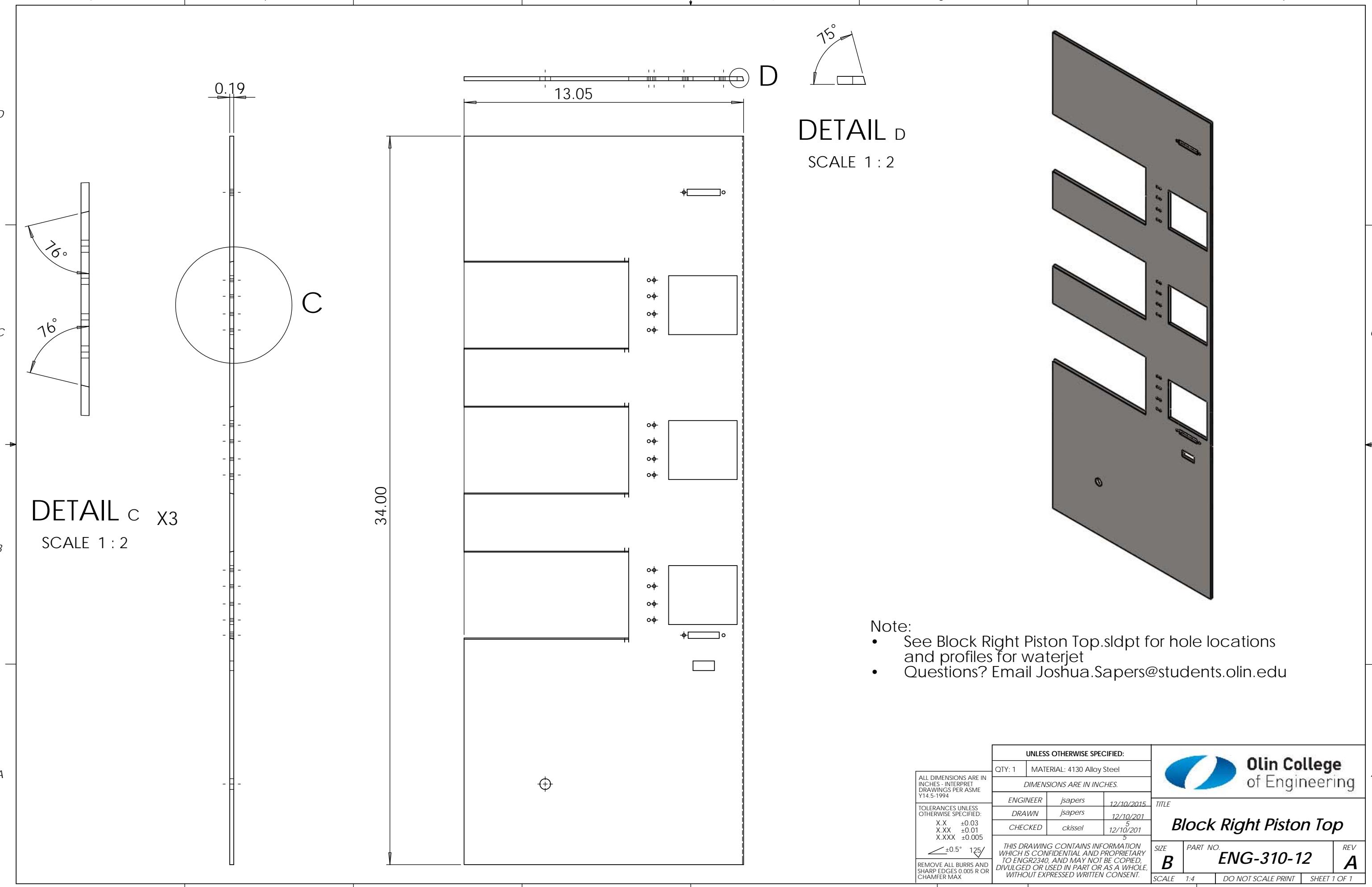


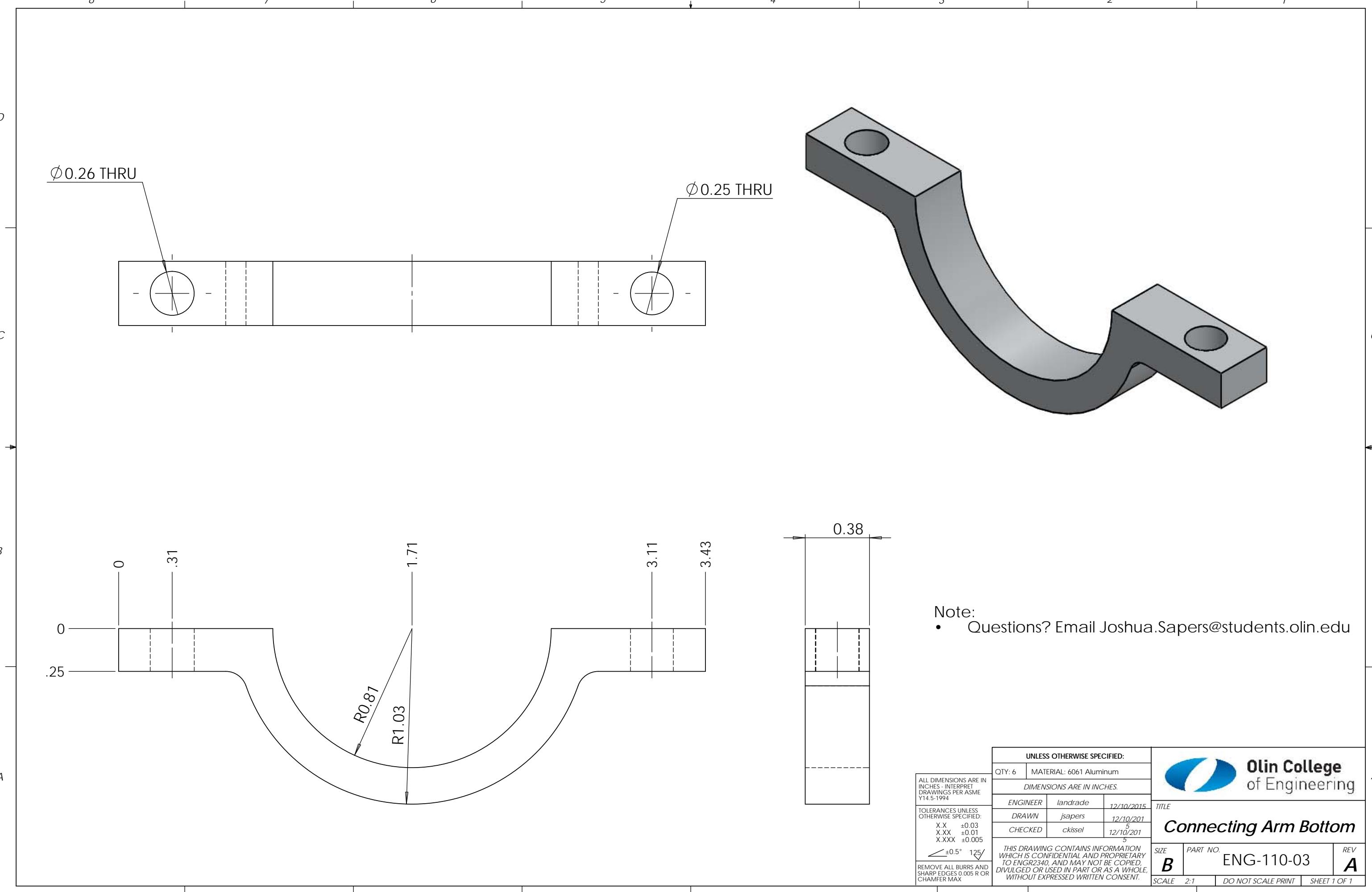
DETAIL C
SCALE 1 : 2

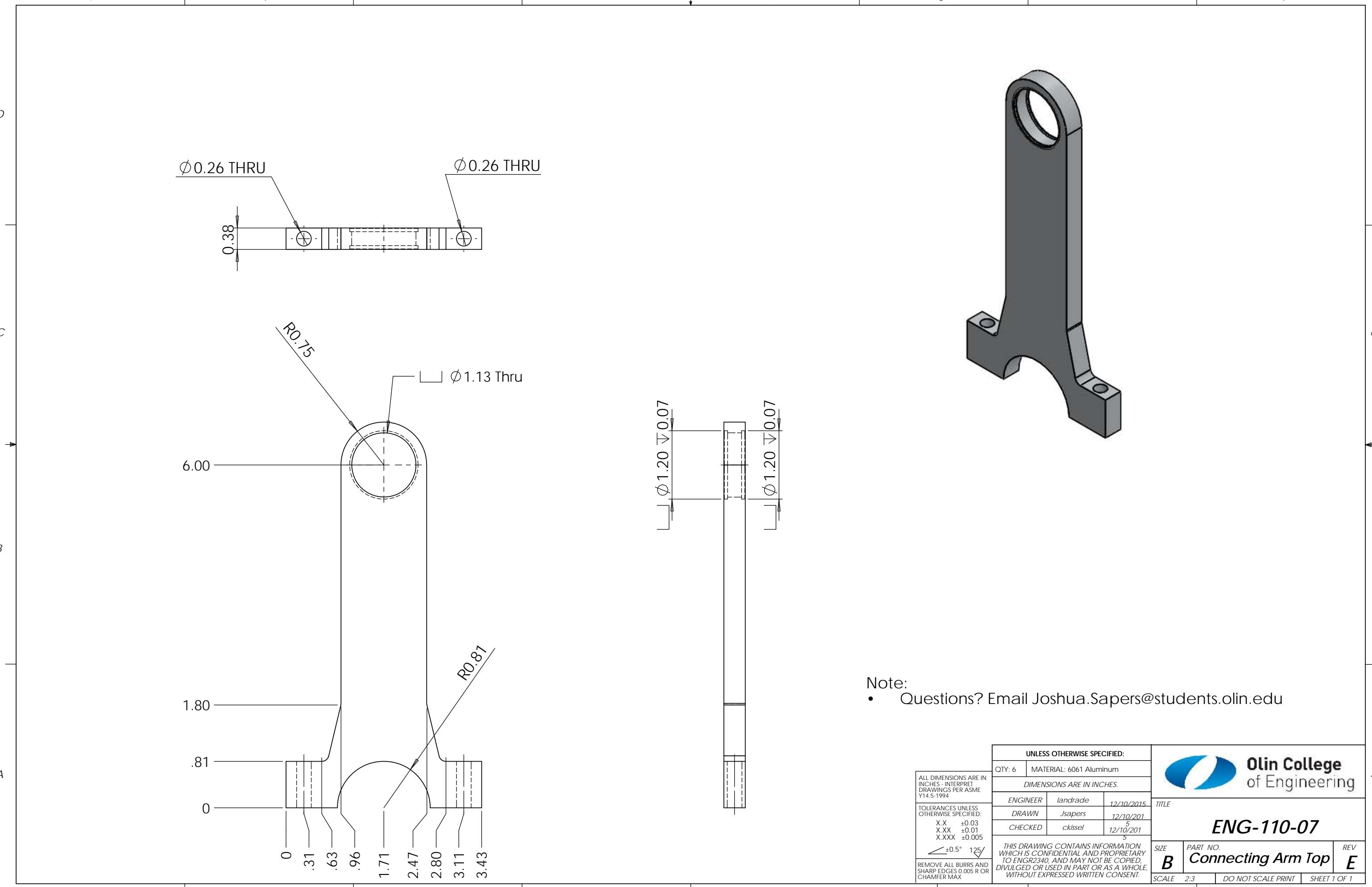


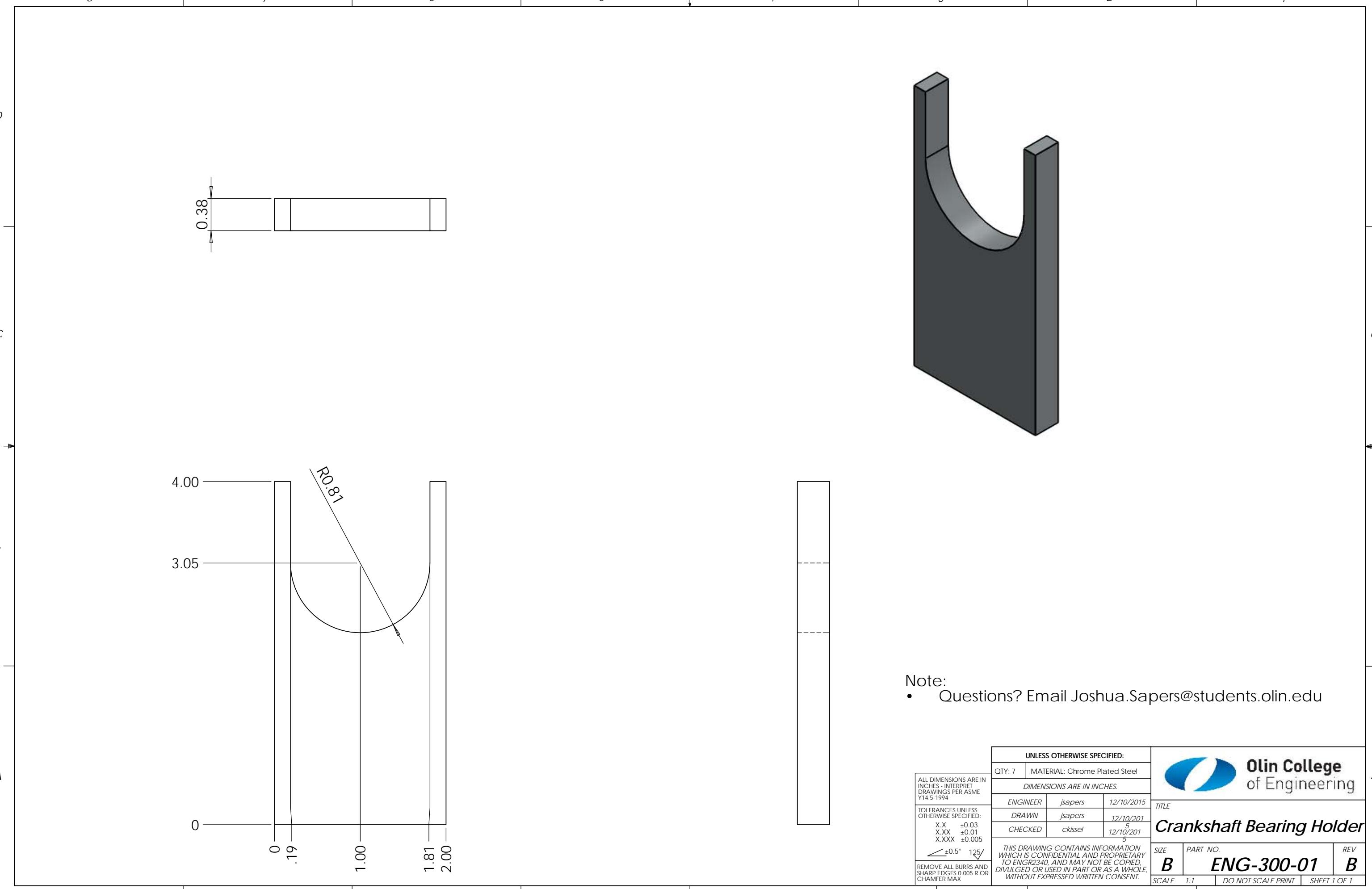
UNLESS OTHERWISE SPECIFIED: QTY: 1 MATERIAL: 4130 Alloy Steel	Dimensions are in inches.	Olin College of Engineering
		TITLE
DRAWN	jsapers	12/10/2015
CHECKED	ckissel	12/10/2015
		Block Left Piston Top
SIZE B	PART NO. ENG-310-02	REV A
SCALE 2:1	DO NOT SCALE PRINT	SHEET 1 OF 1

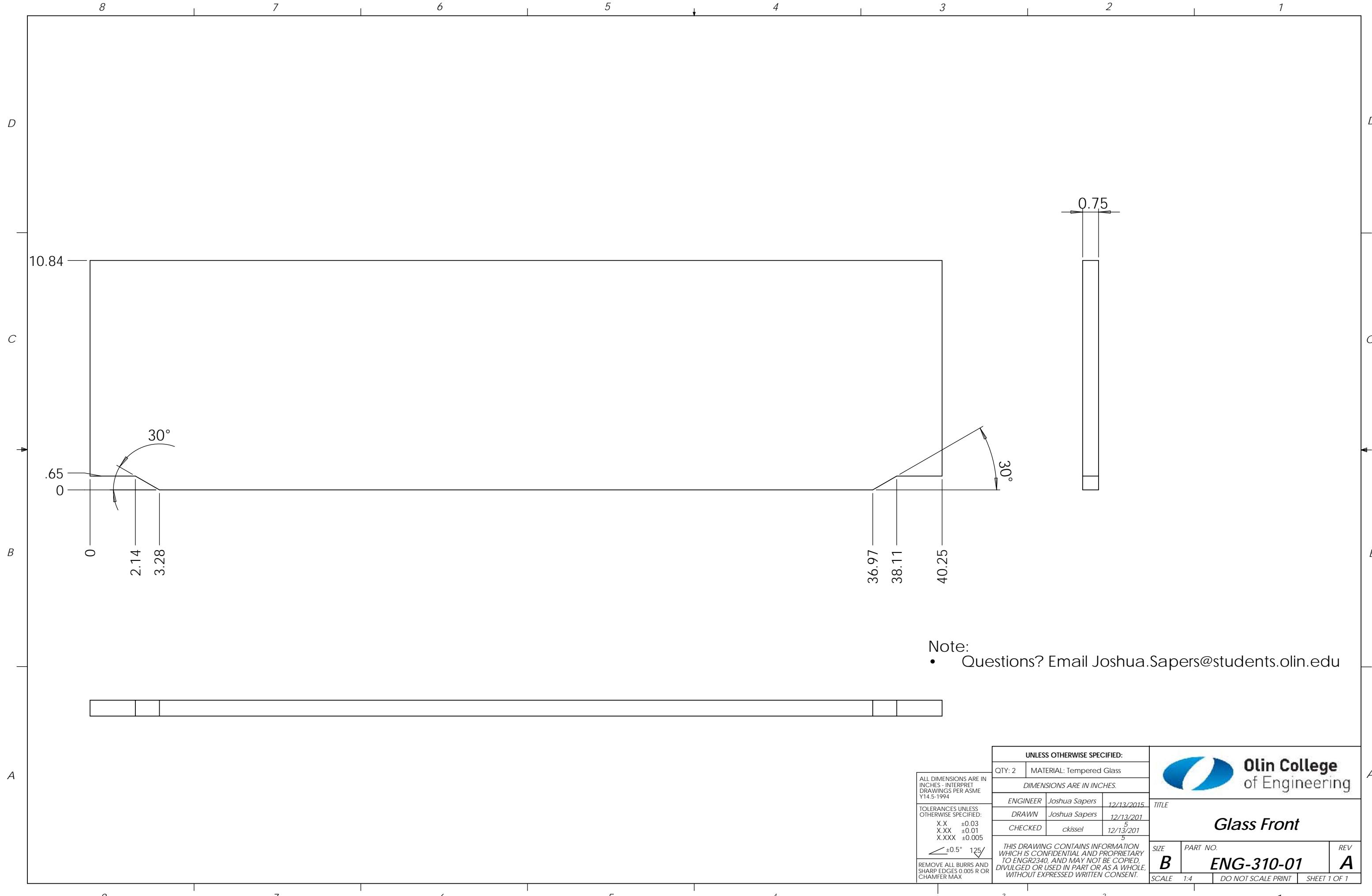












8 7 6 5 4 3 2 1

D

D

C

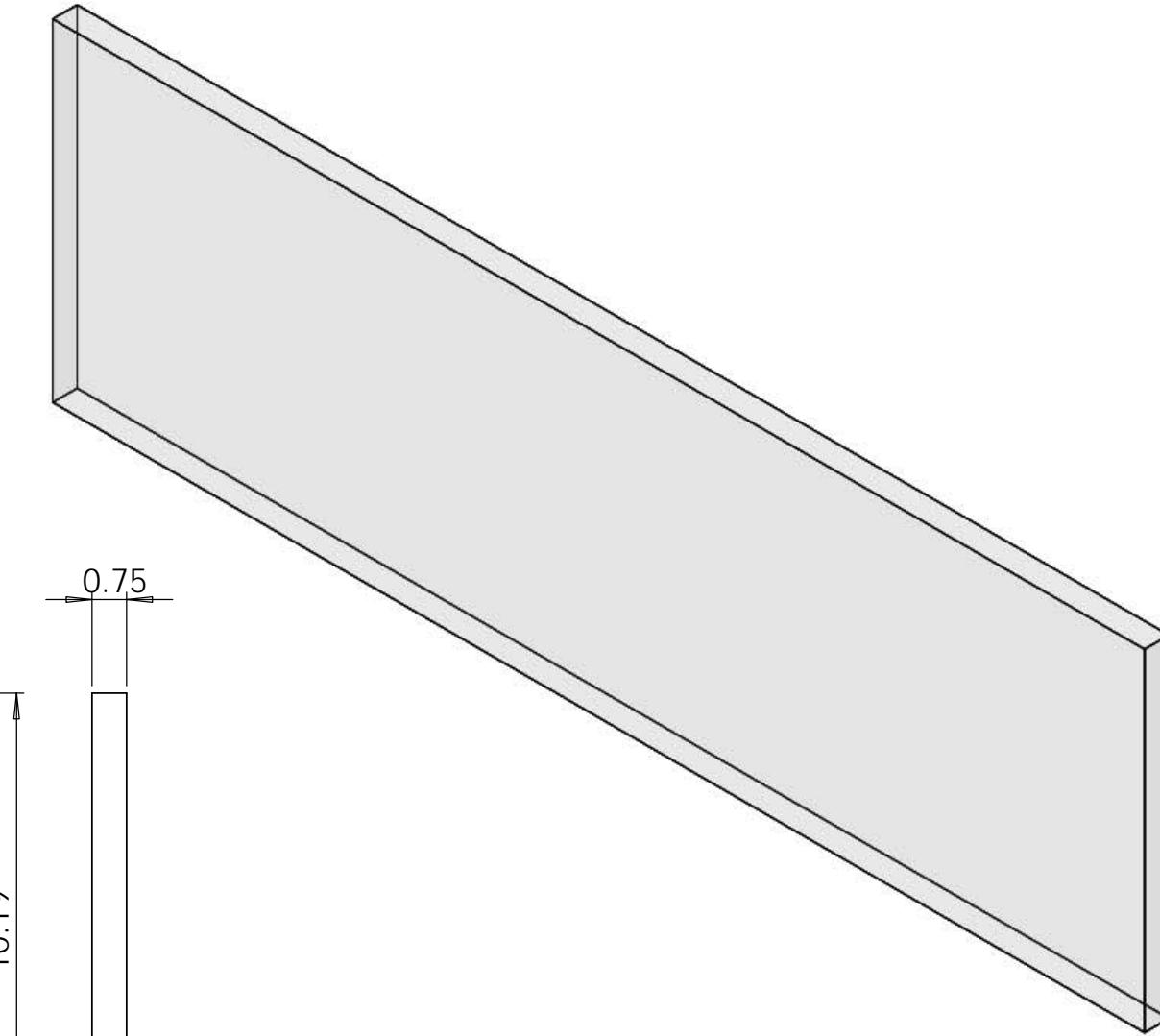
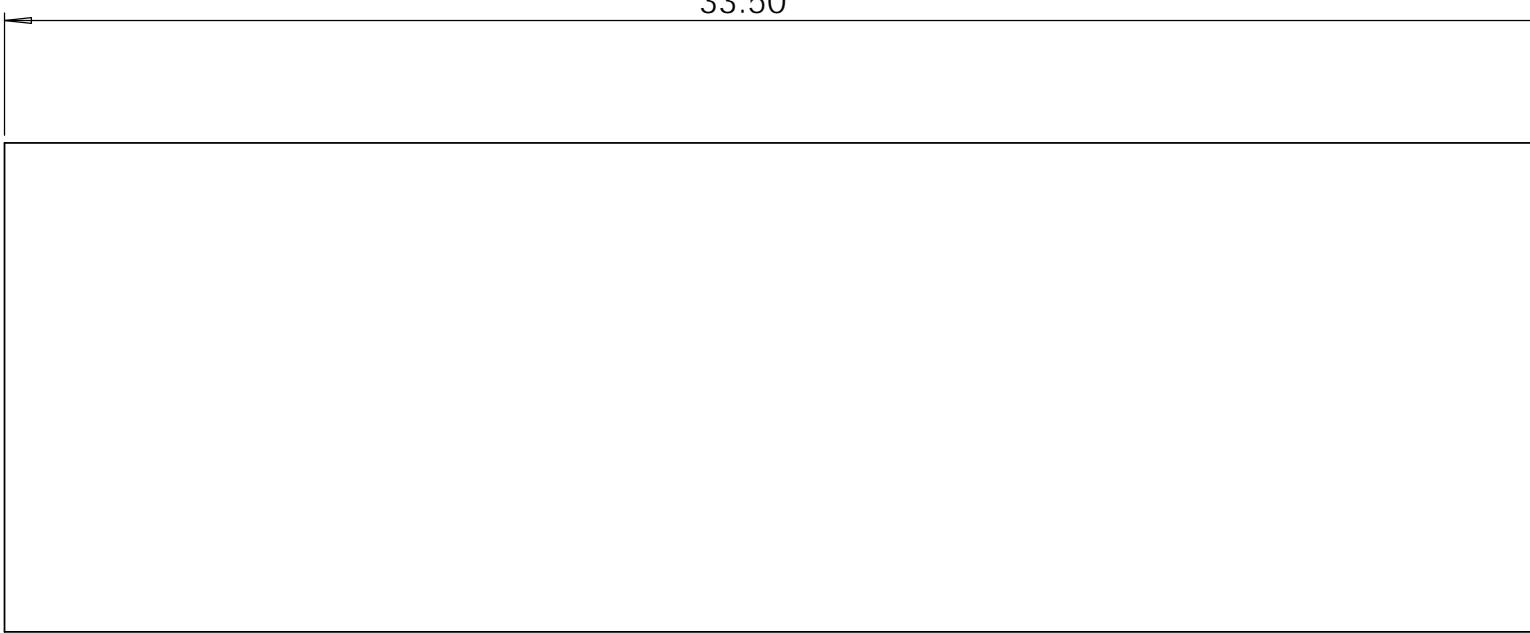
C

B

B

A

A



Note:

- Questions? Email Joshua.Sapers@students.olin.edu

UNLESS OTHERWISE SPECIFIED:	
QTY: 2	MATERIAL: Tempered Glass
DIMENSIONS ARE IN INCHES.	
ENGINEER	Joshua Sapers
DRAWN	Joshua Sapers
CHECKED	ckissel
THIS DRAWING CONTAINS INFORMATION WHICH IS CONFIDENTIAL AND PROPRIETARY TO ENGR2340, AND MAY NOT BE COPIED, DIVULGED OR USED IN PART OR AS A WHOLE, WITHOUT EXPRESSED WRITTEN CONSENT.	
REMOVE ALL BURRS AND SHARP EDGES 0.005 R OR CHAMFER MAX	

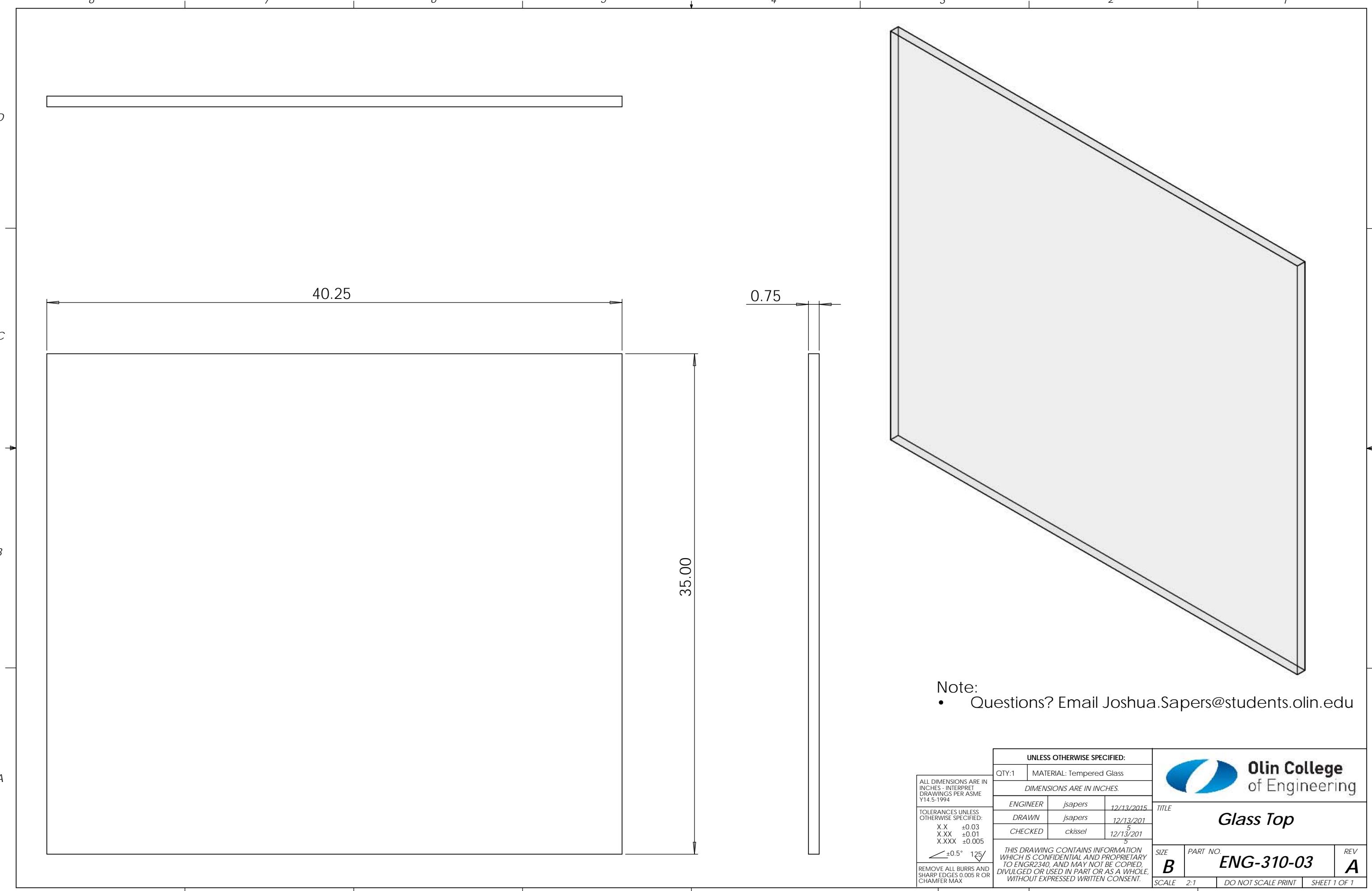


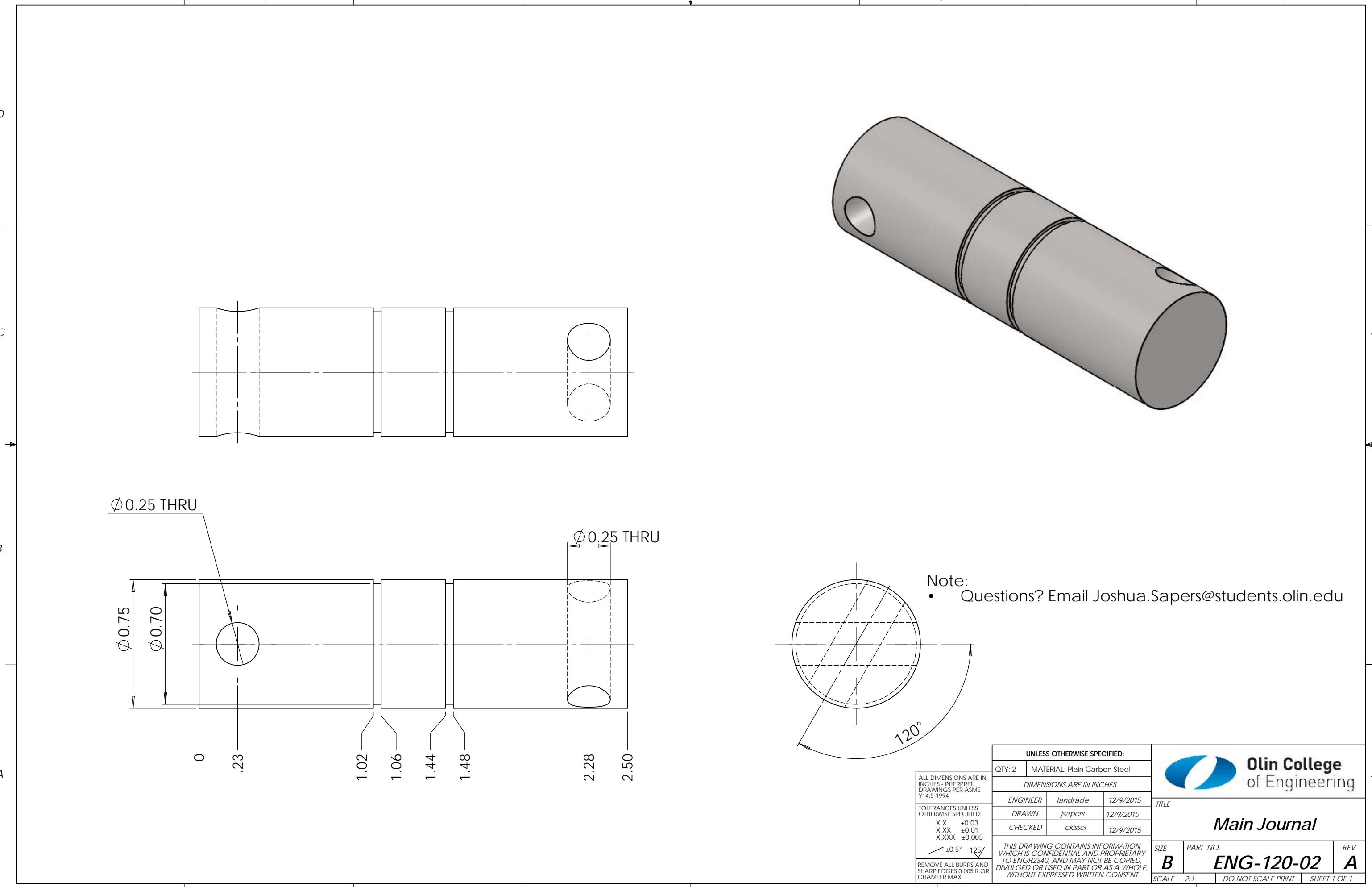
Glass Side

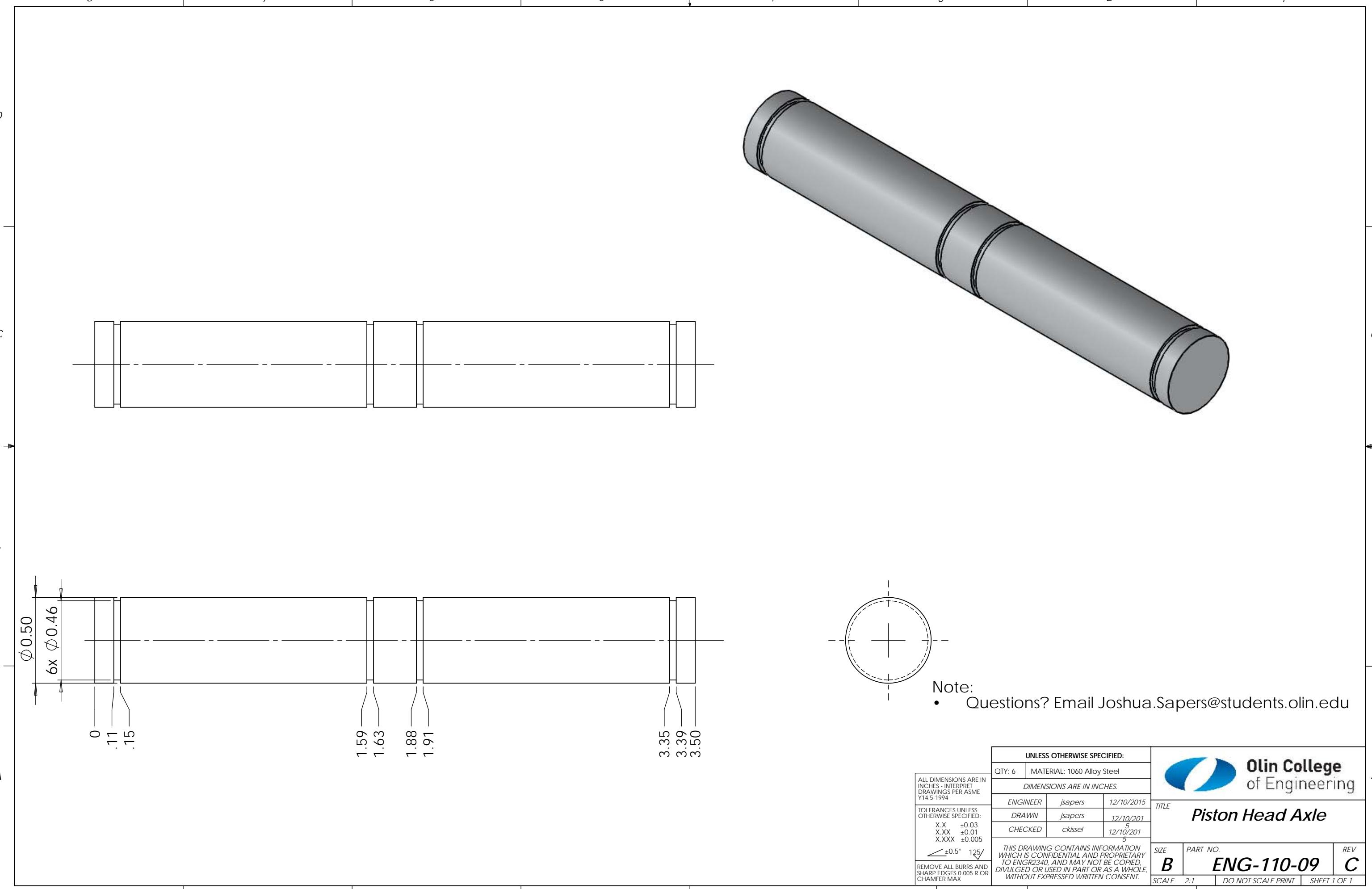
SIZE	PART NO.	REV
B	ENG-310-02	A
SCALE 1:4	DO NOT SCALE PRINT	SHEET 1 OF 1

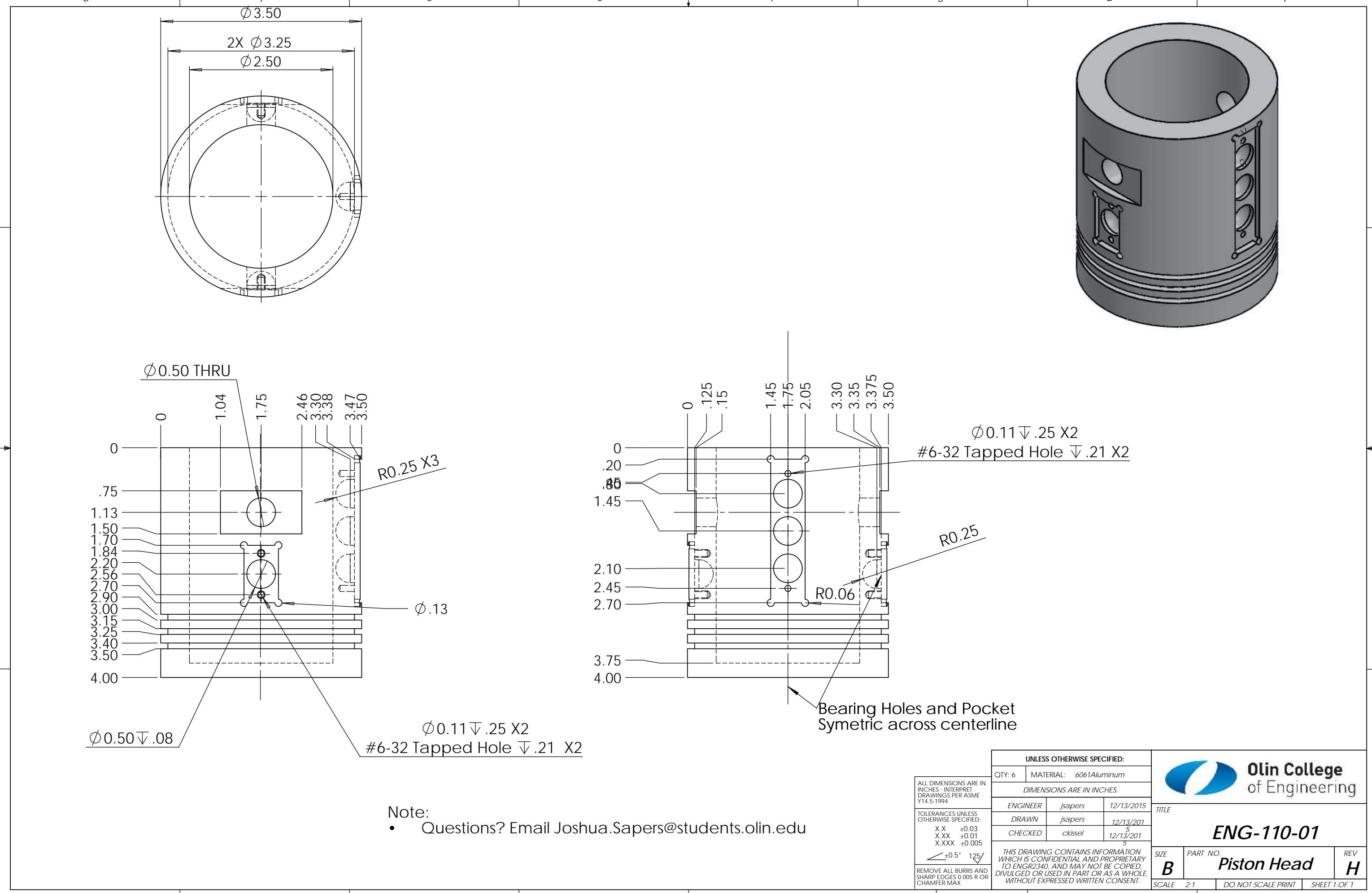
8 7 6 5 4 3 2 1

1









8 7 6 5 4 3 2 1

D

D

C

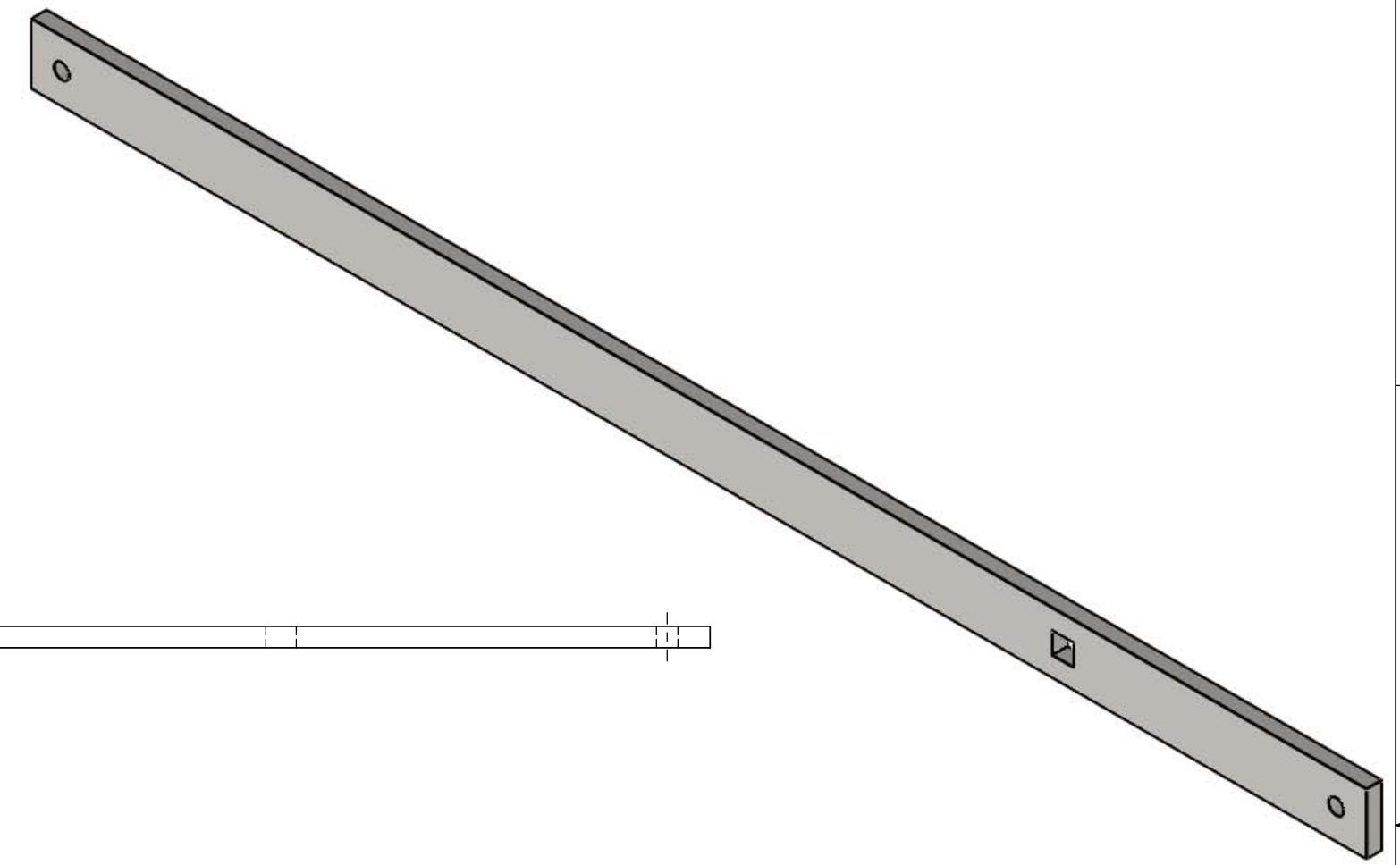
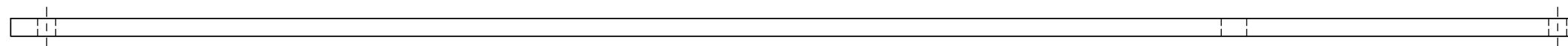
C

B

B

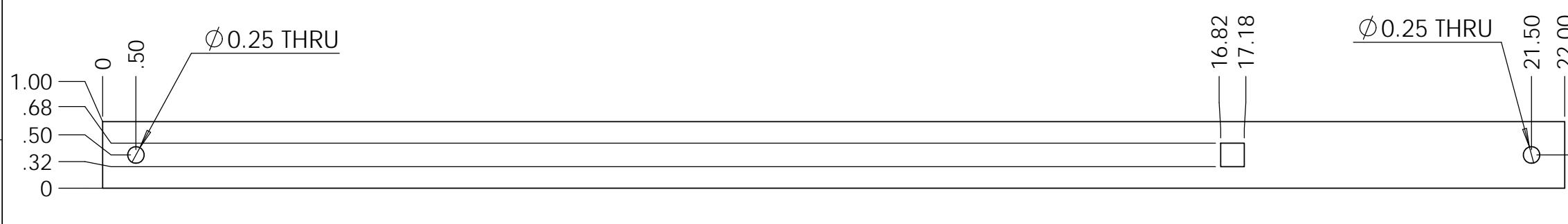
A

A



Note:

- Questions? Email Joshua.Sapers@students.olin.edu



UNLESS OTHERWISE SPECIFIED:			
QTY: 1	MATERIAL: STEEL		
DIMENSIONS ARE IN INCHES.			
ENGINEER	ckissel	12/12/2015	
DRAWN	jsapers	12/12/2015	
CHECKED	ckissel	12/12/2015	
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SIZE	PART NO.	REV	
B	ENG-800-01	A	
SCALE 2:1	DO NOT SCALE PRINT	SHEET 1 OF 1	



ENG-800-01

8 7 6 5 4 3 2 1

1

