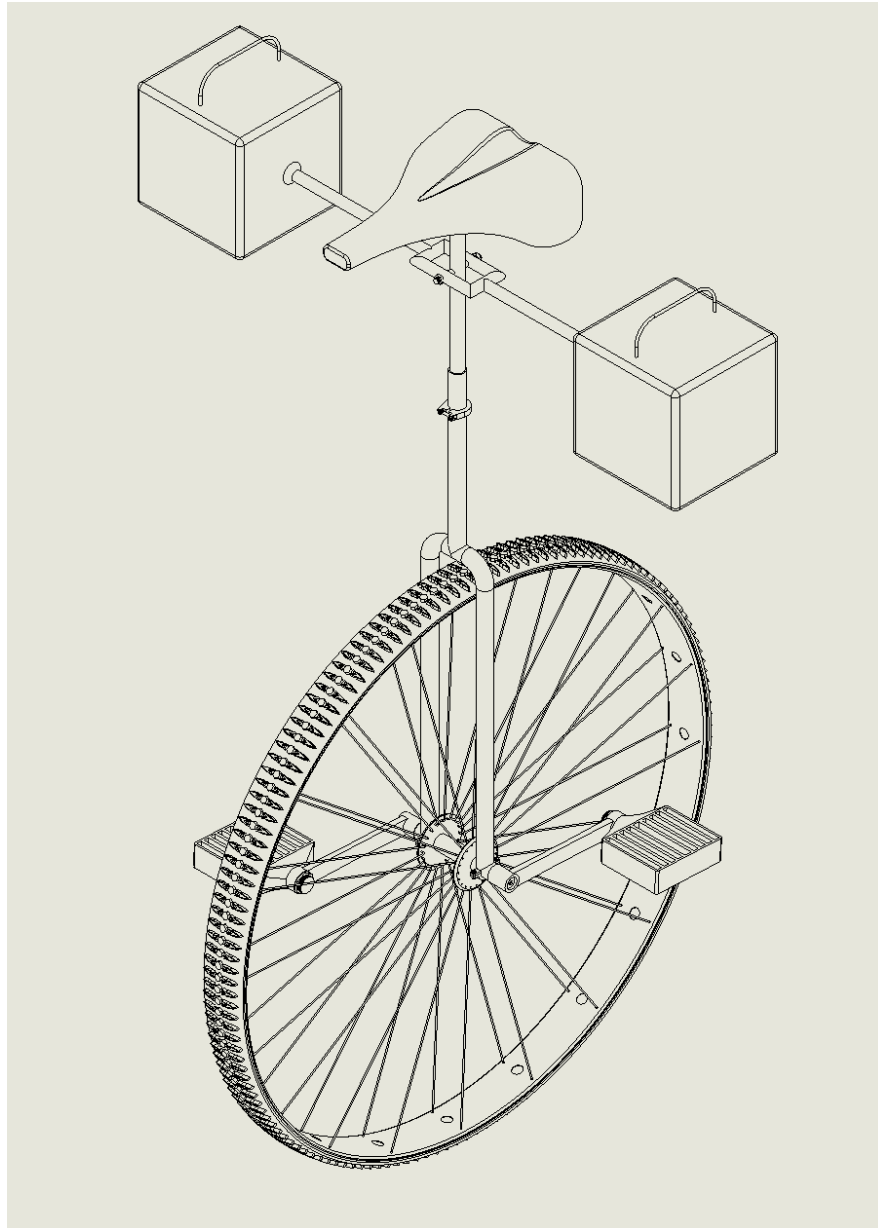


The “Steer-able” Unicycle



ENGR 114 B
Michael Beske-Somers
5/6/22

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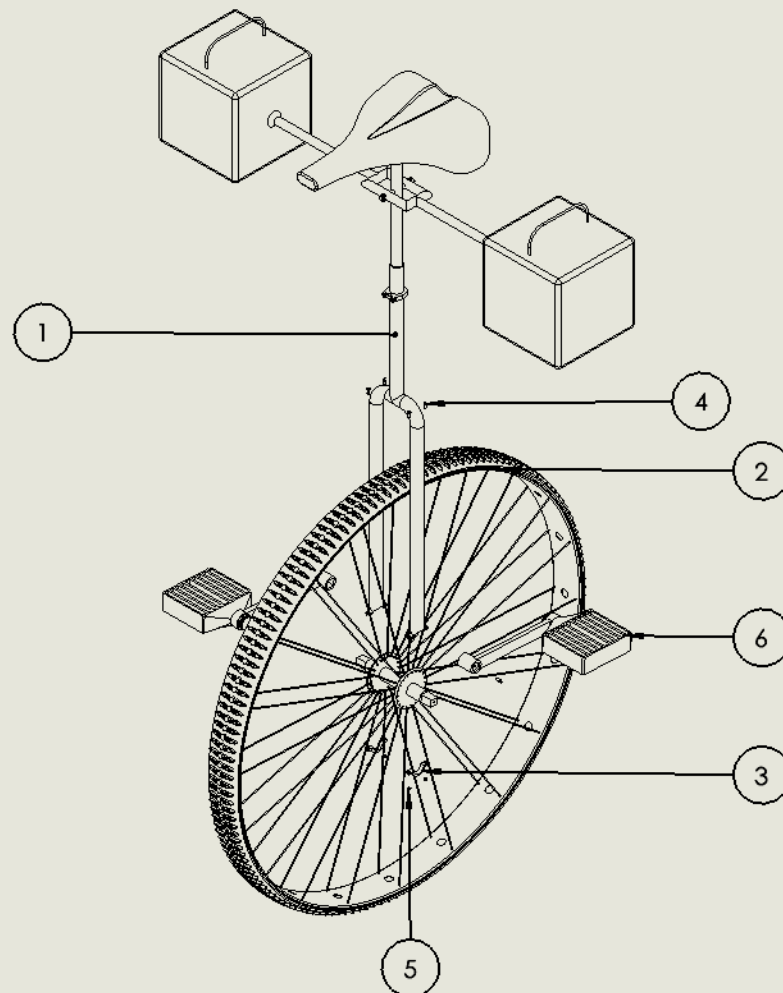
Introduction

The device used for transportation I chose for this project was a unicycle. While a typical unicycle lacks a steering mechanism, the user utilizes shifts in weight to turn. My design applies that concept to a system of weights on either side of the seat that the user can raise and lower around an axle to manufacture the shifting of weight without leaning. The unit standard in this project was ISO.

Unicycle Assembly

Exploded

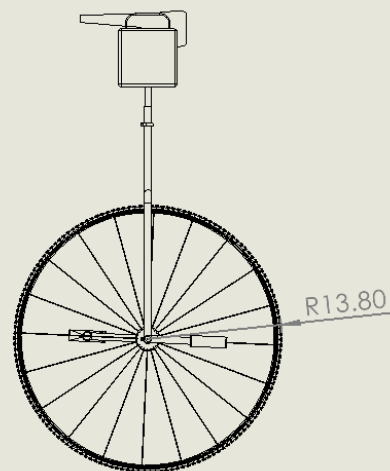
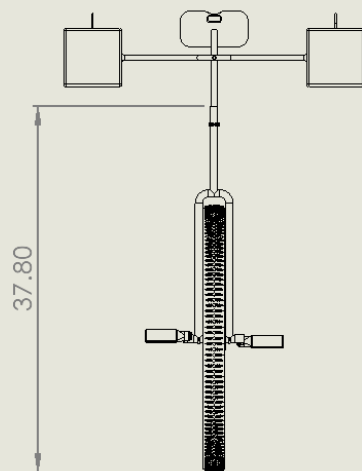
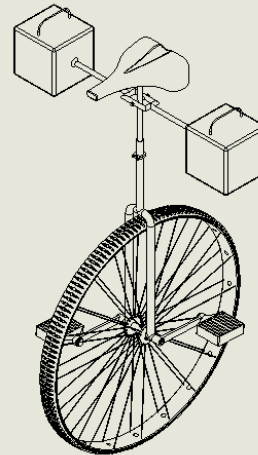
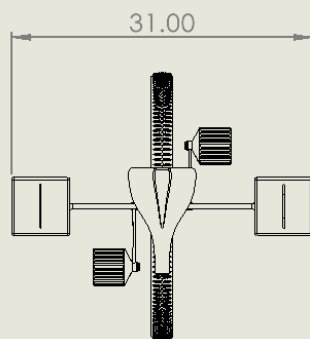
ITEM NO.	PART NUMBER	QTY.
1	Framing Assembly	1
2	Wheel Assembly	1
3	Frame Clip	2
4	Frame Screws	6
5	Nut	4
6	Crank and Pedal	2



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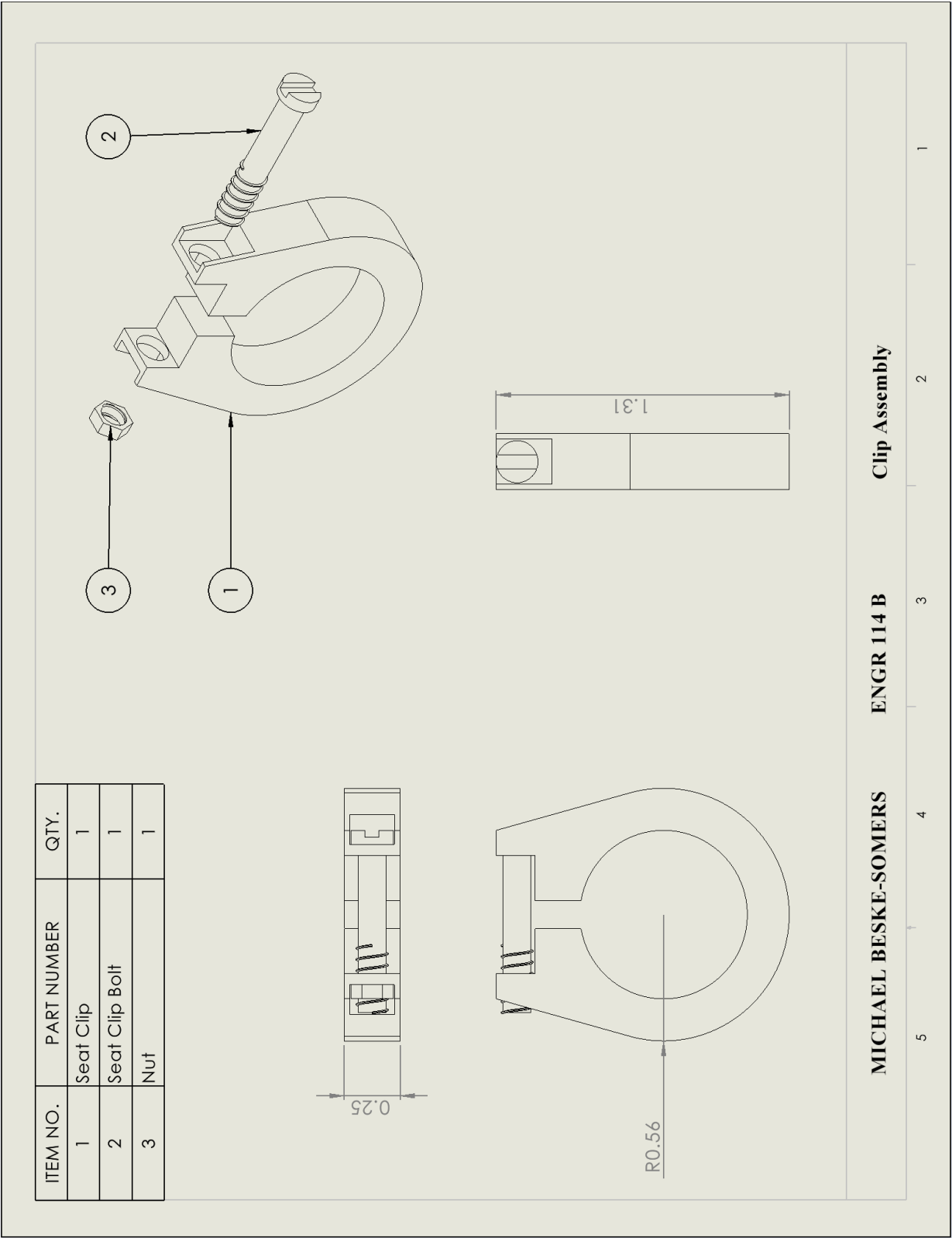
ENGR 114 B Unicycle Exploded View

Orthographic



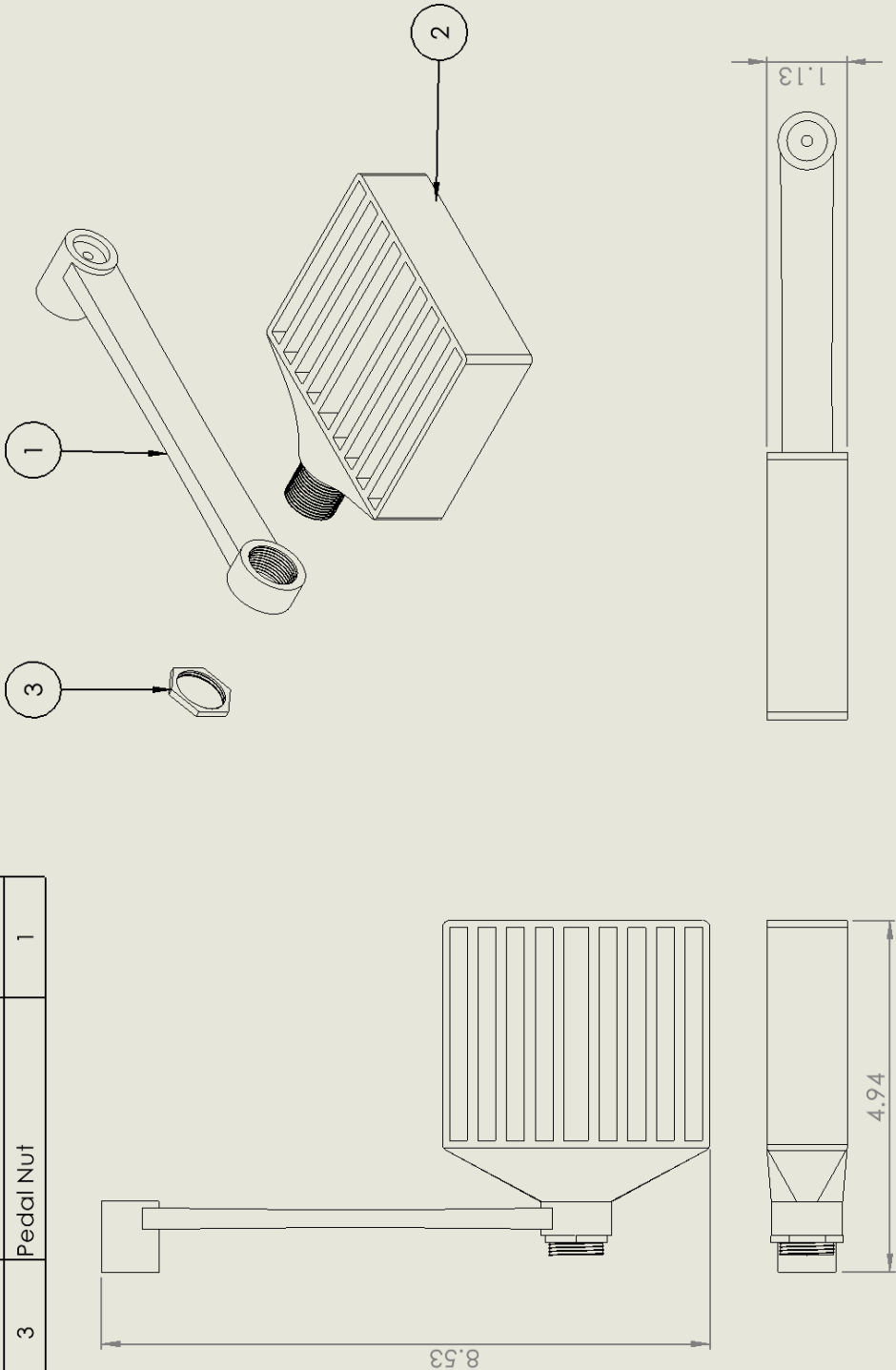
SEAT HEIGHT IS
VARIABLE.
DIMENSIONED
TO TOP OF
FRAME.

Subassemblies
Clip Assembly



Crank and Pedal

ITEM NO.	PART NUMBER	QTY.
1	Crank	1
2	Pedal	1
3	Pedal Nut	1



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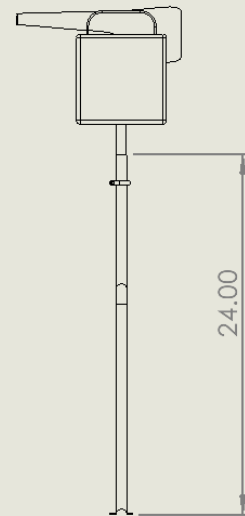
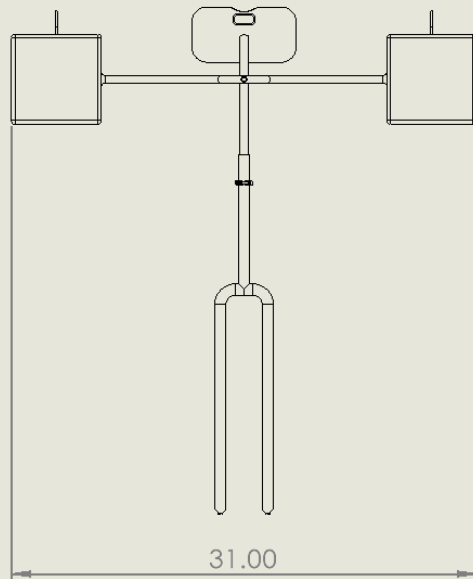
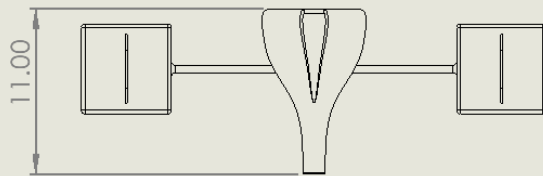
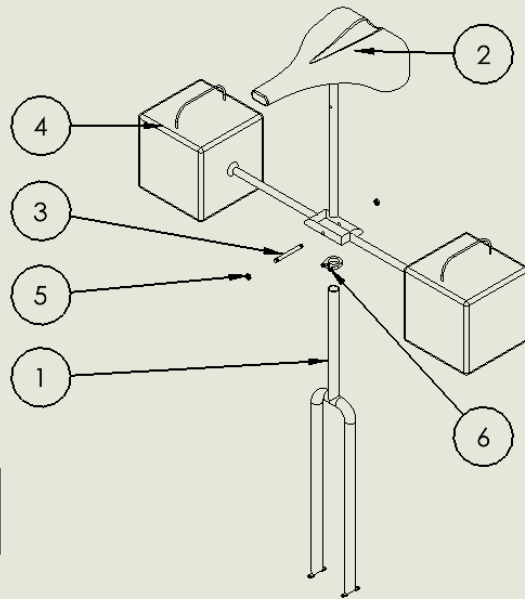
ENGR 114 B

Crank and Pedal

5 4 3 2 1

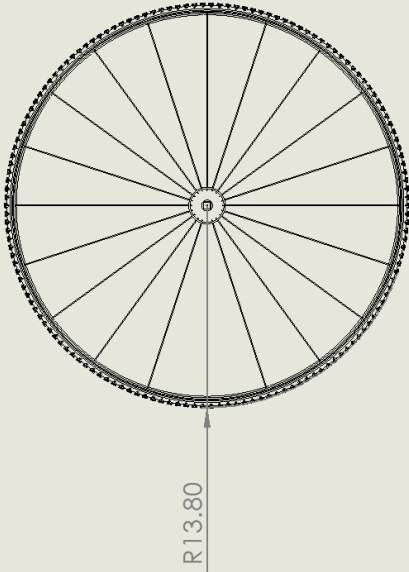
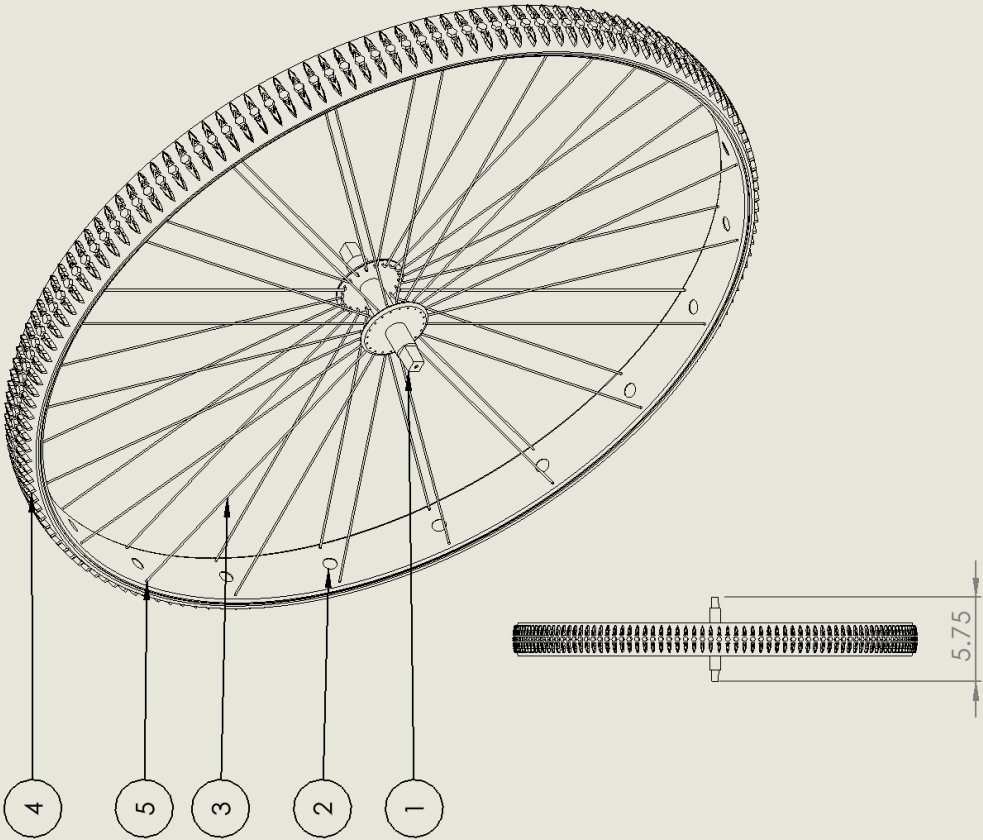
Frame Assembly

ITEM NO.	PART NUMBER	QTY.
1	Frame	1
2	Seat	1
3	Steering Axle	1
4	Steering Mechanism	1
5	Steering Nut	2
6	Clip Assembly	1



Wheel Assembly

ITEM NO.	PART NUMBER	QTY.
1	Axle	1
2	Rim	1
3	Spoke	40
4	Tire	1
5	Spoke Connector	40



WHEEL ASSEMBLY

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1

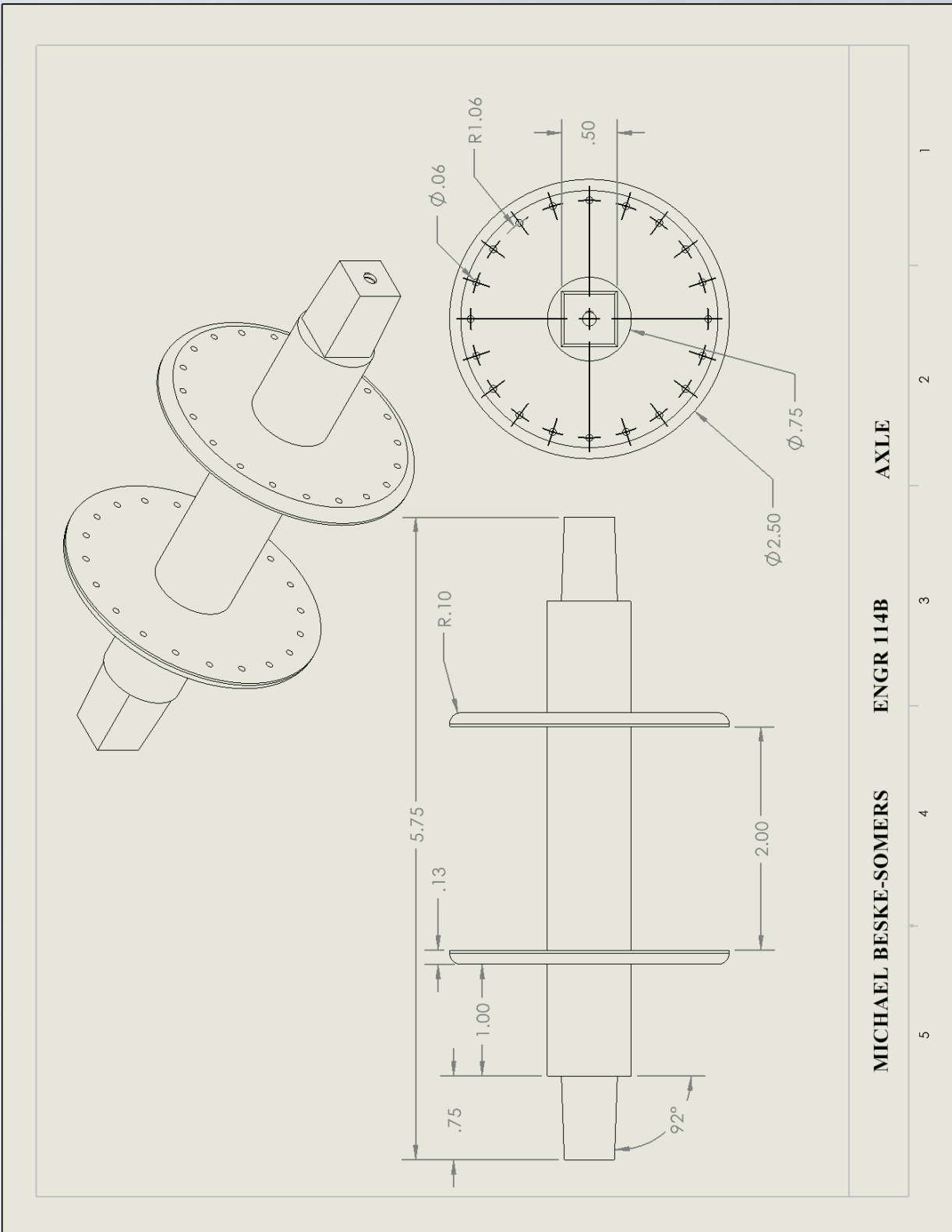
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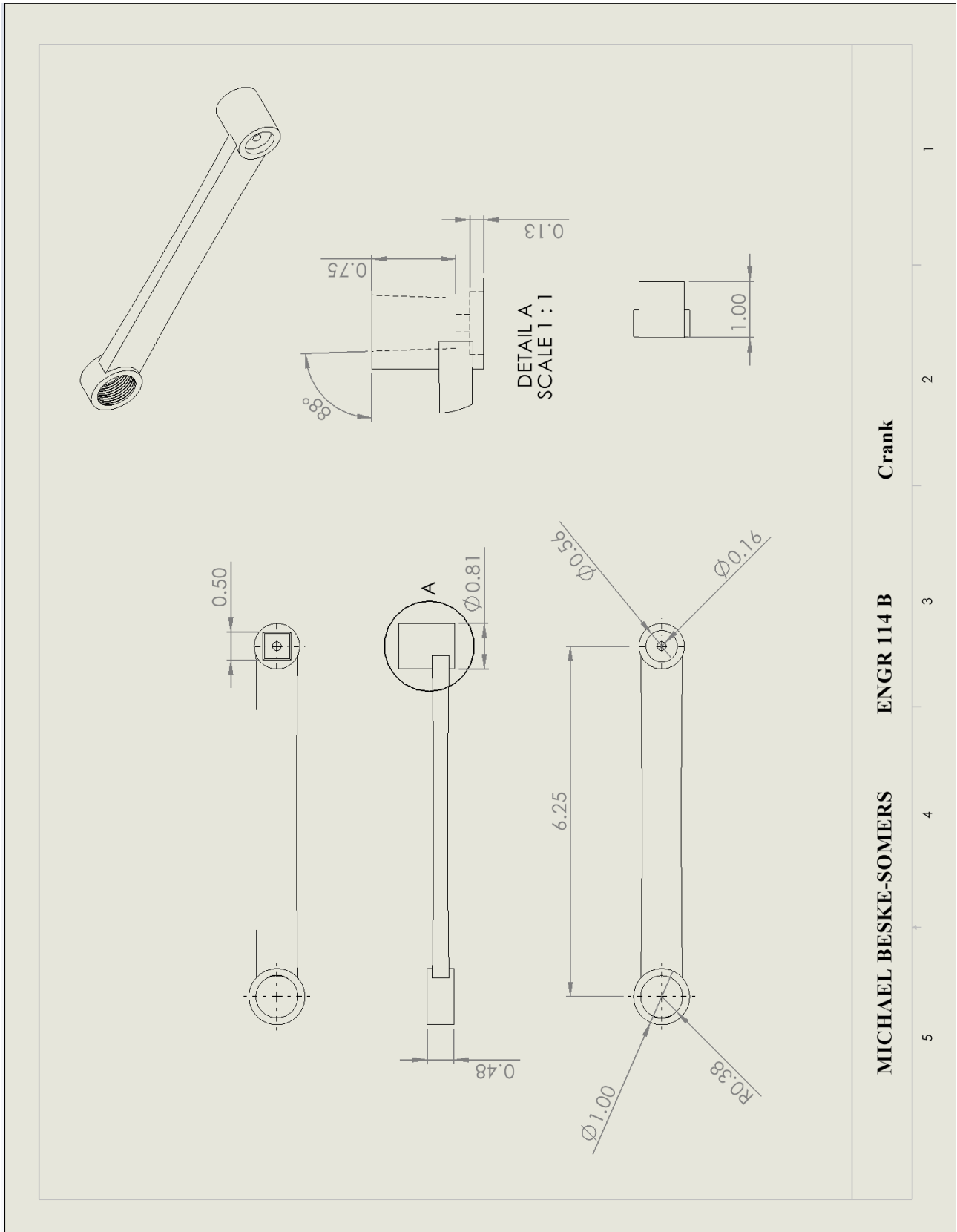
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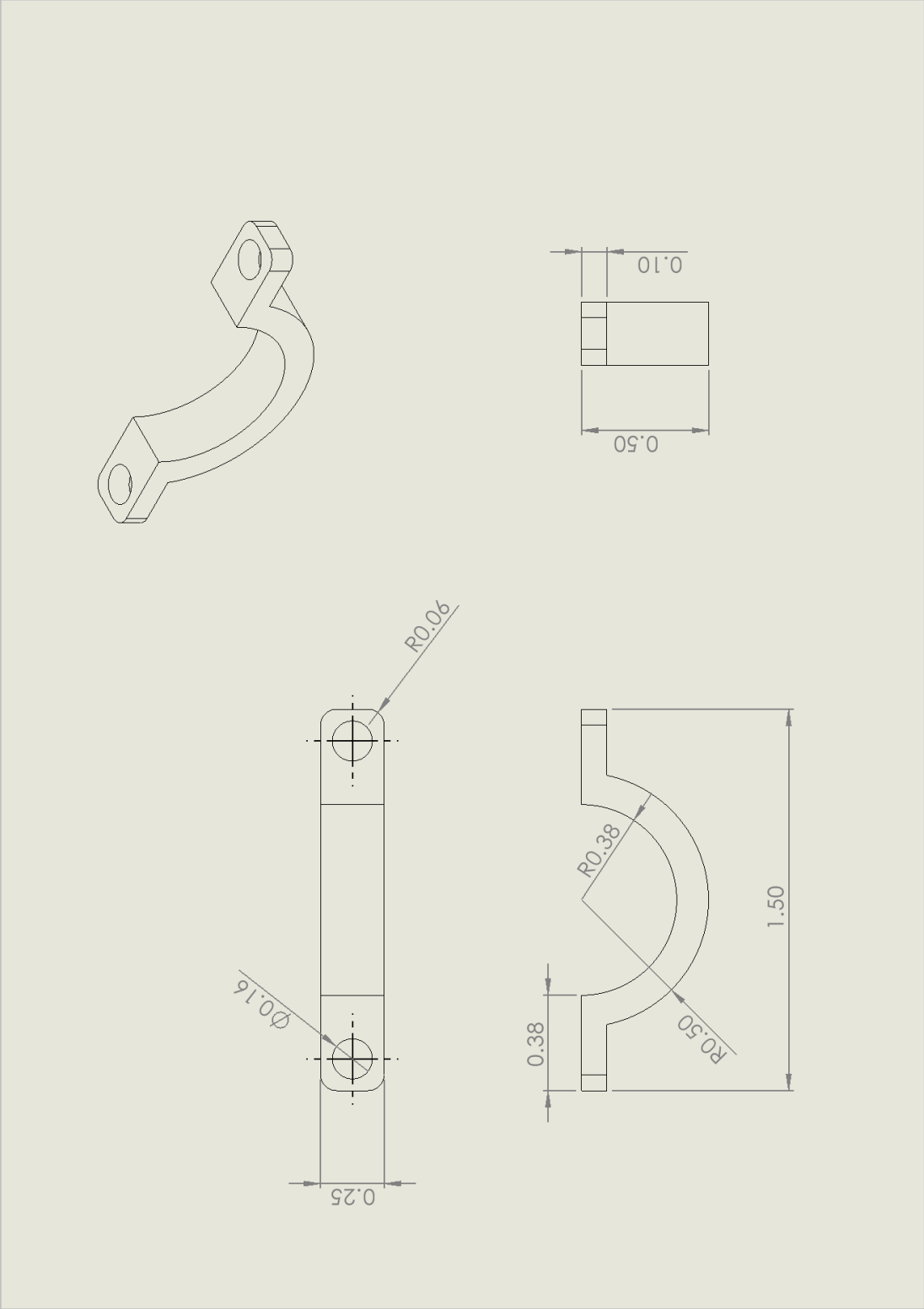
Parts
Axle



Crank



Frame Clip



Frame Clip

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1

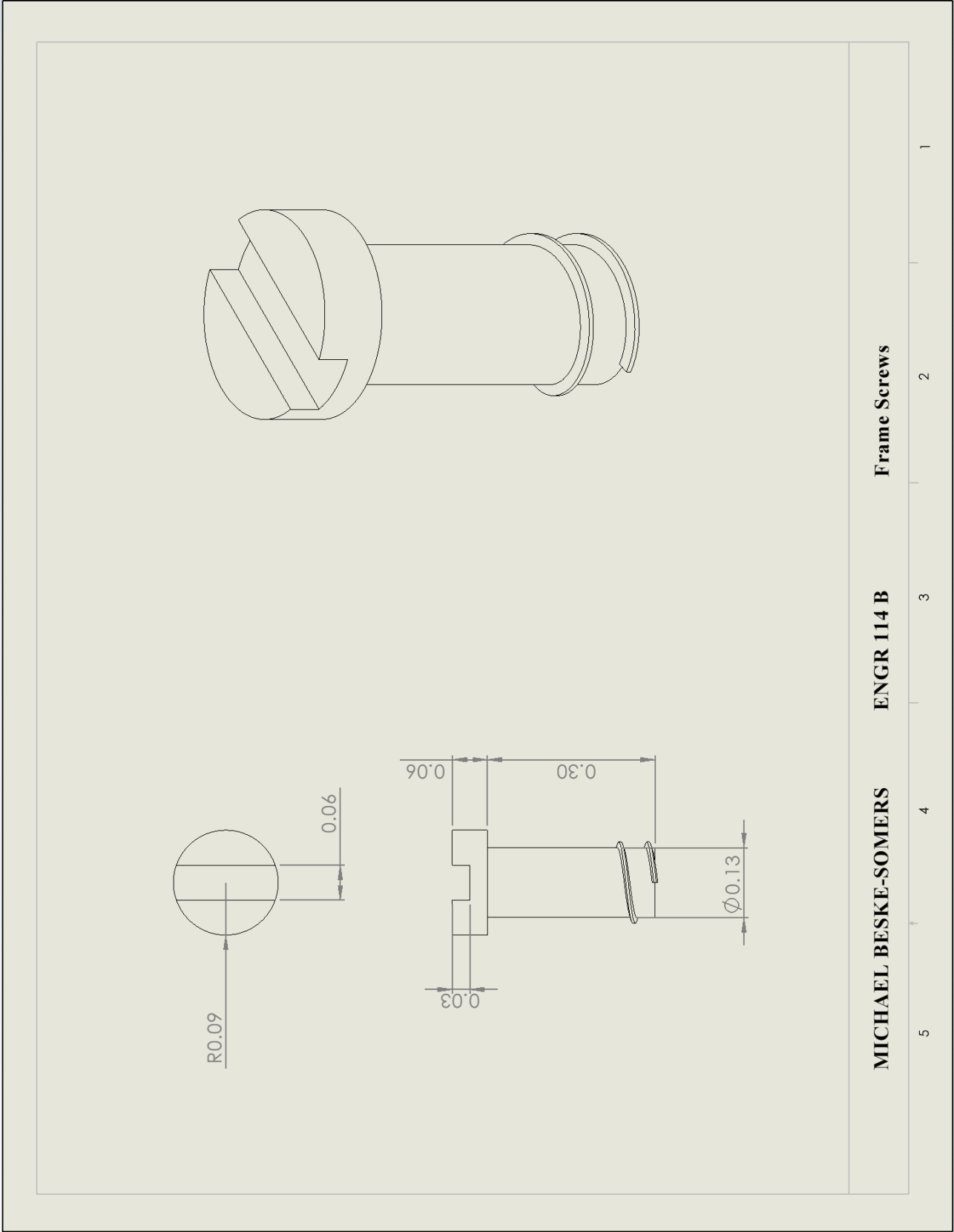
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3

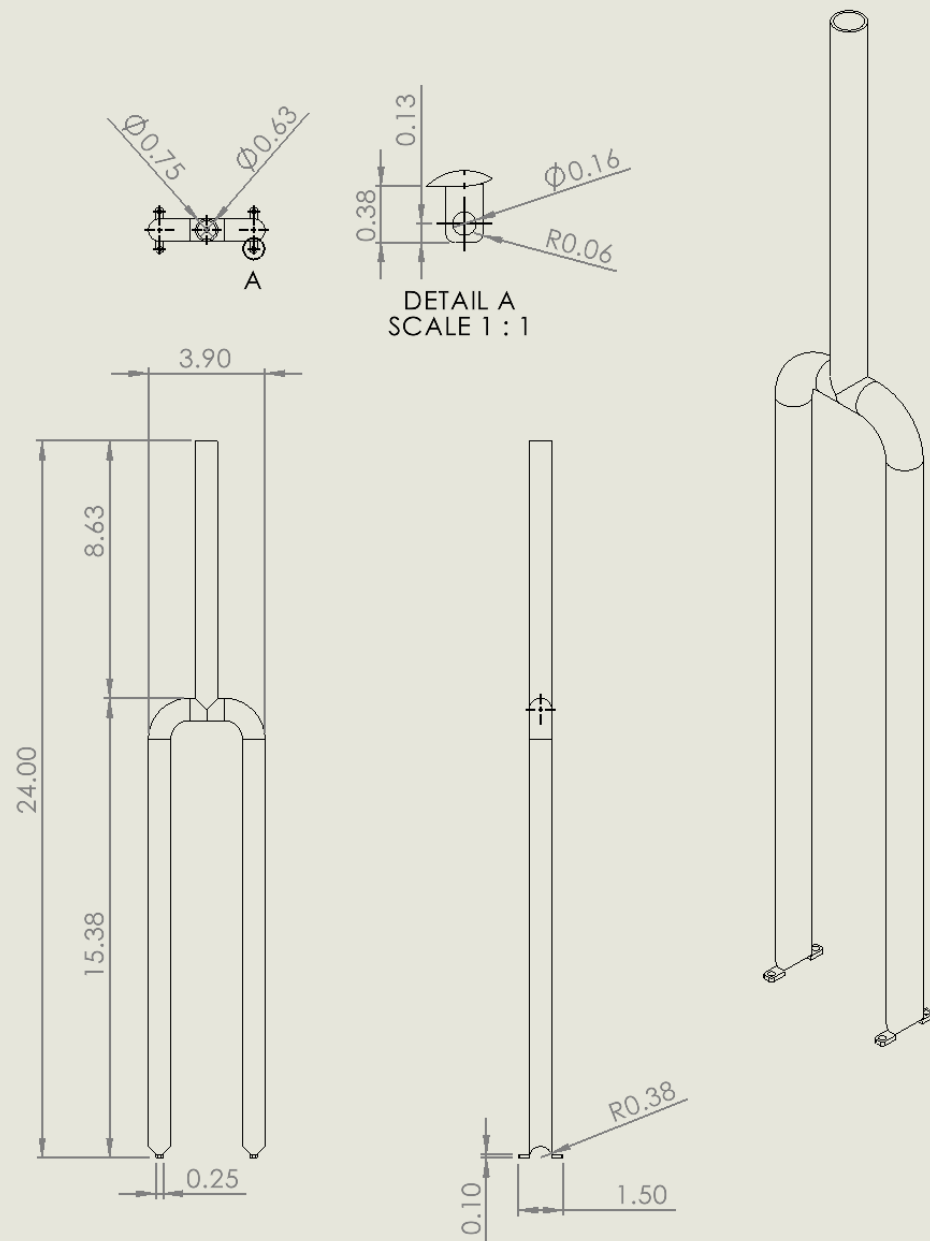
4

5

Frame Screw



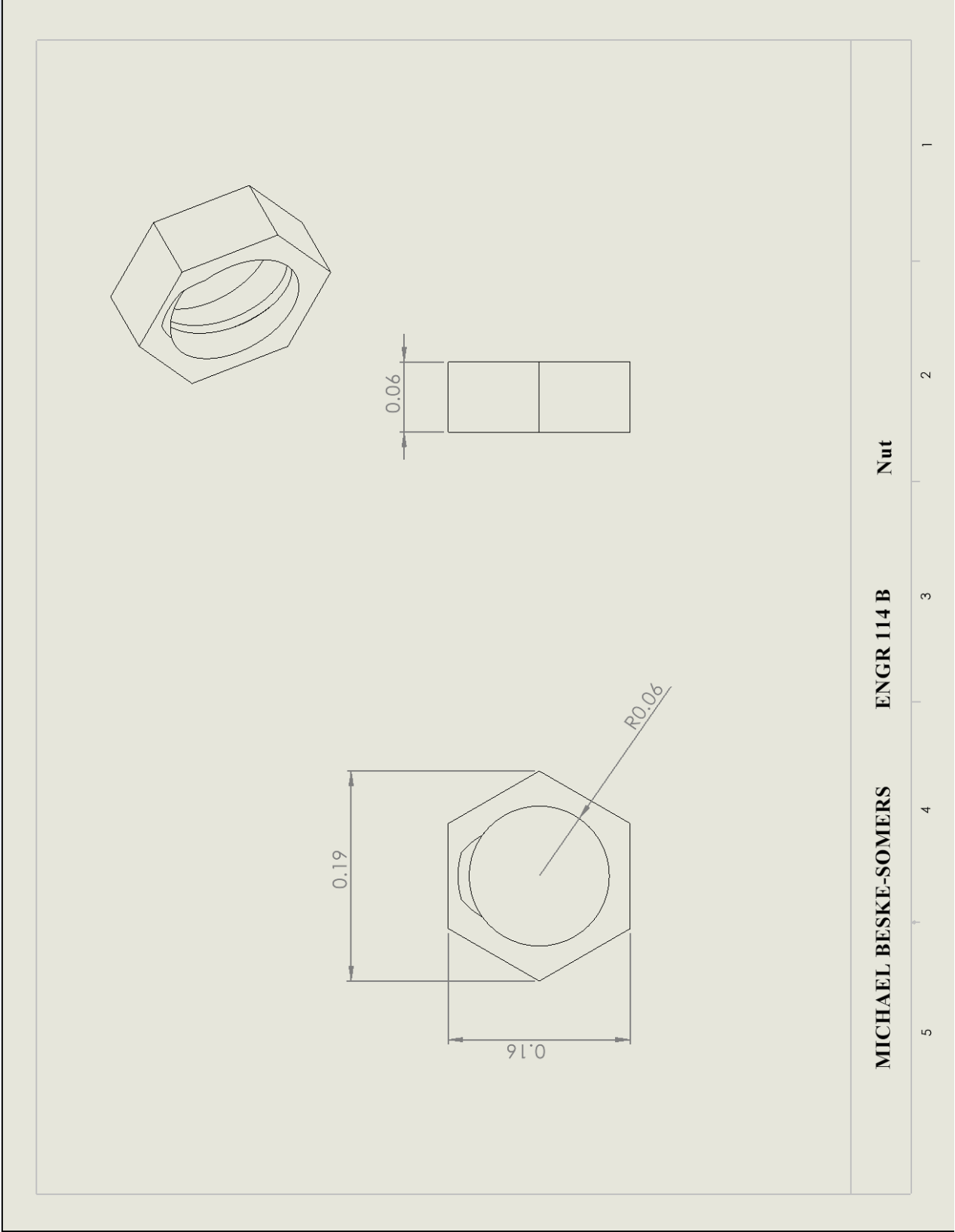
Frame



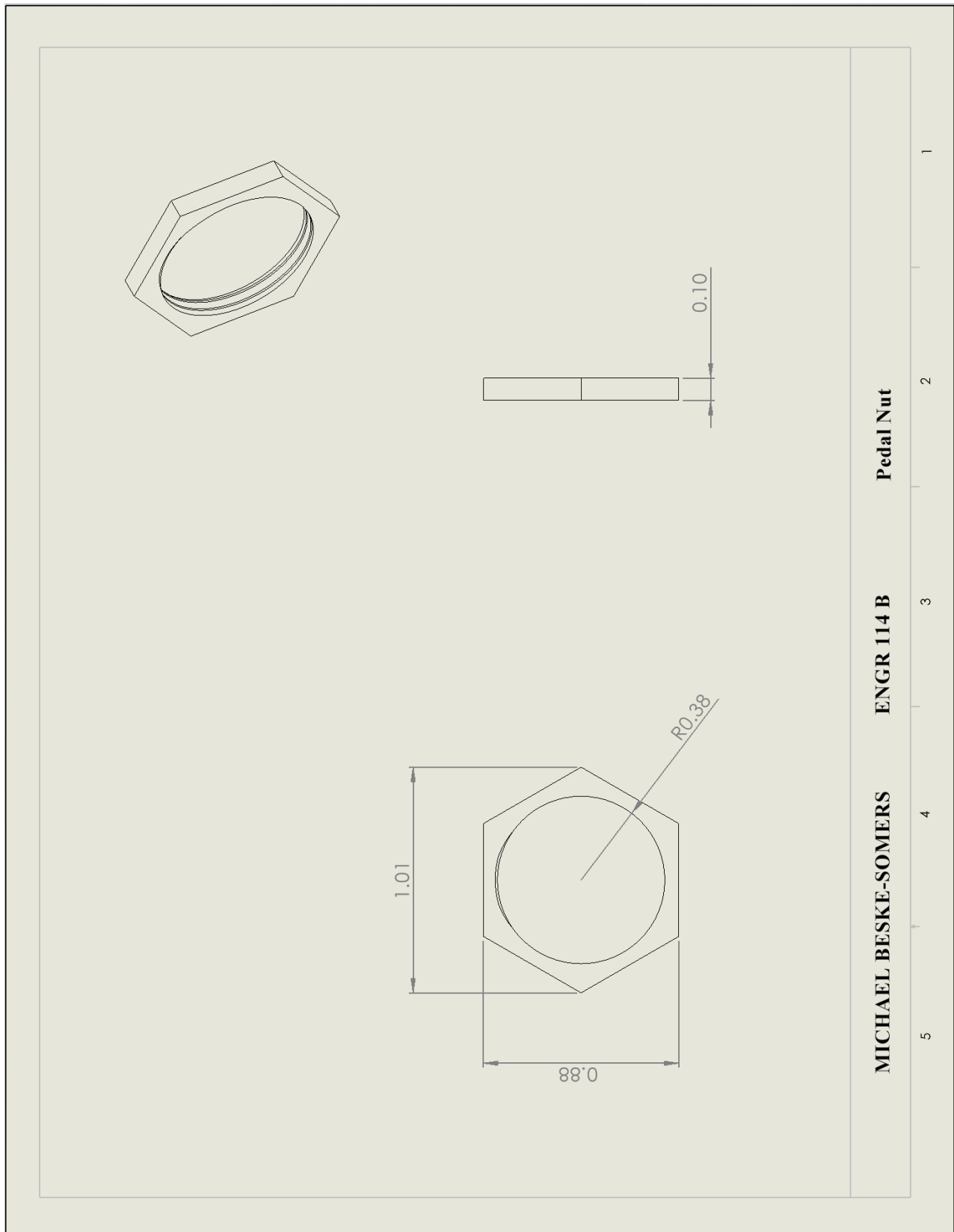
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ENGR 114 B Frame

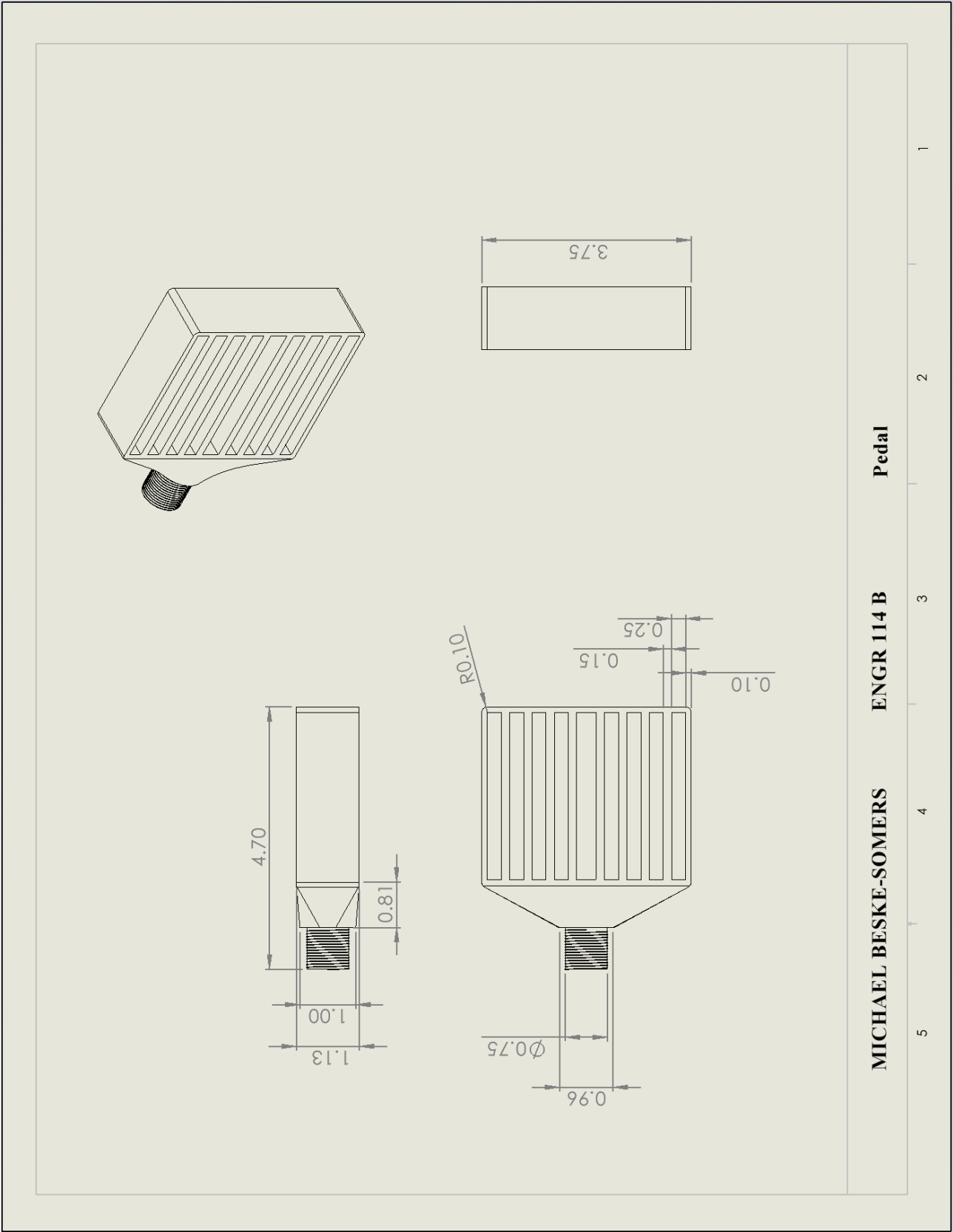
Nut



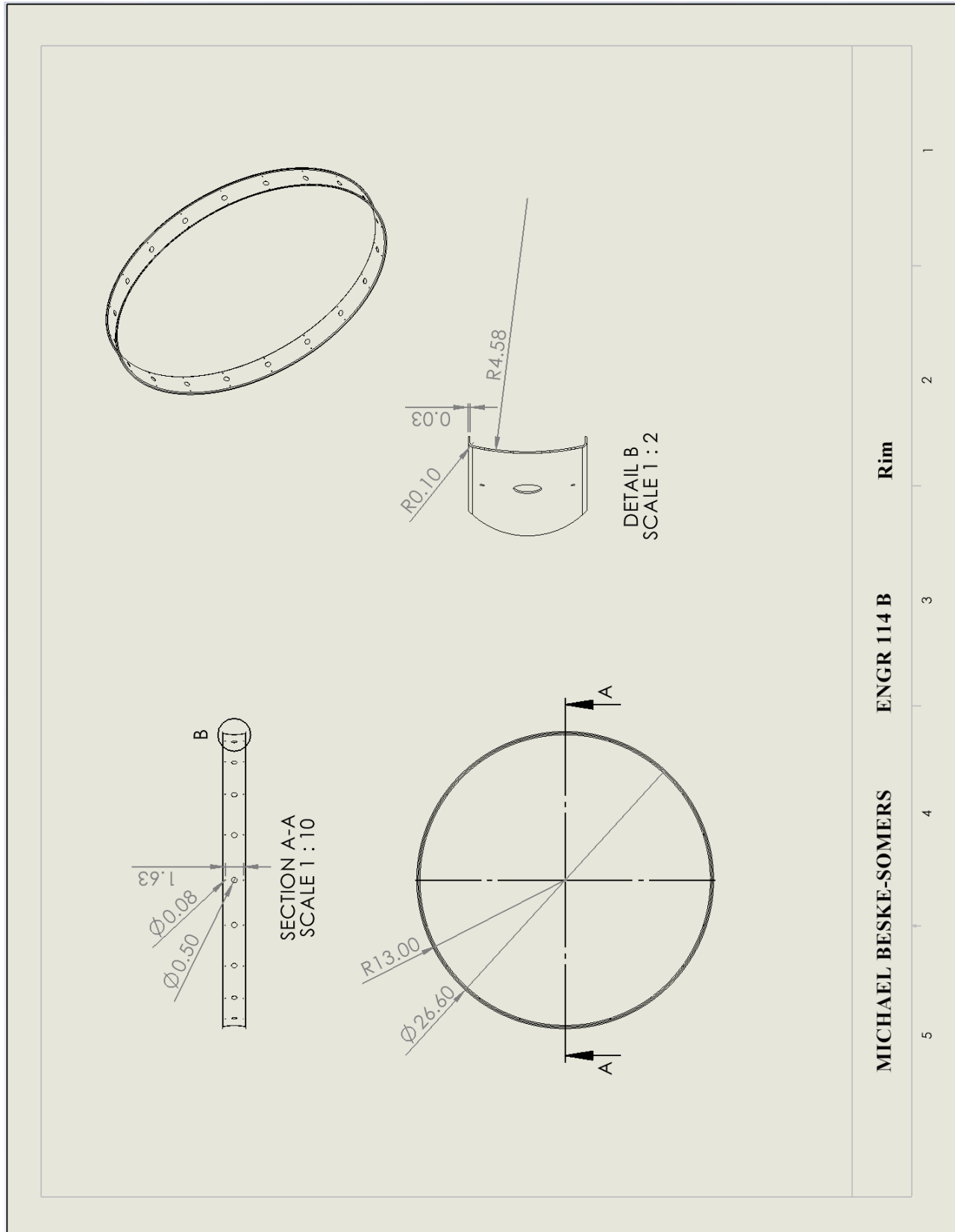
Pedal Nut



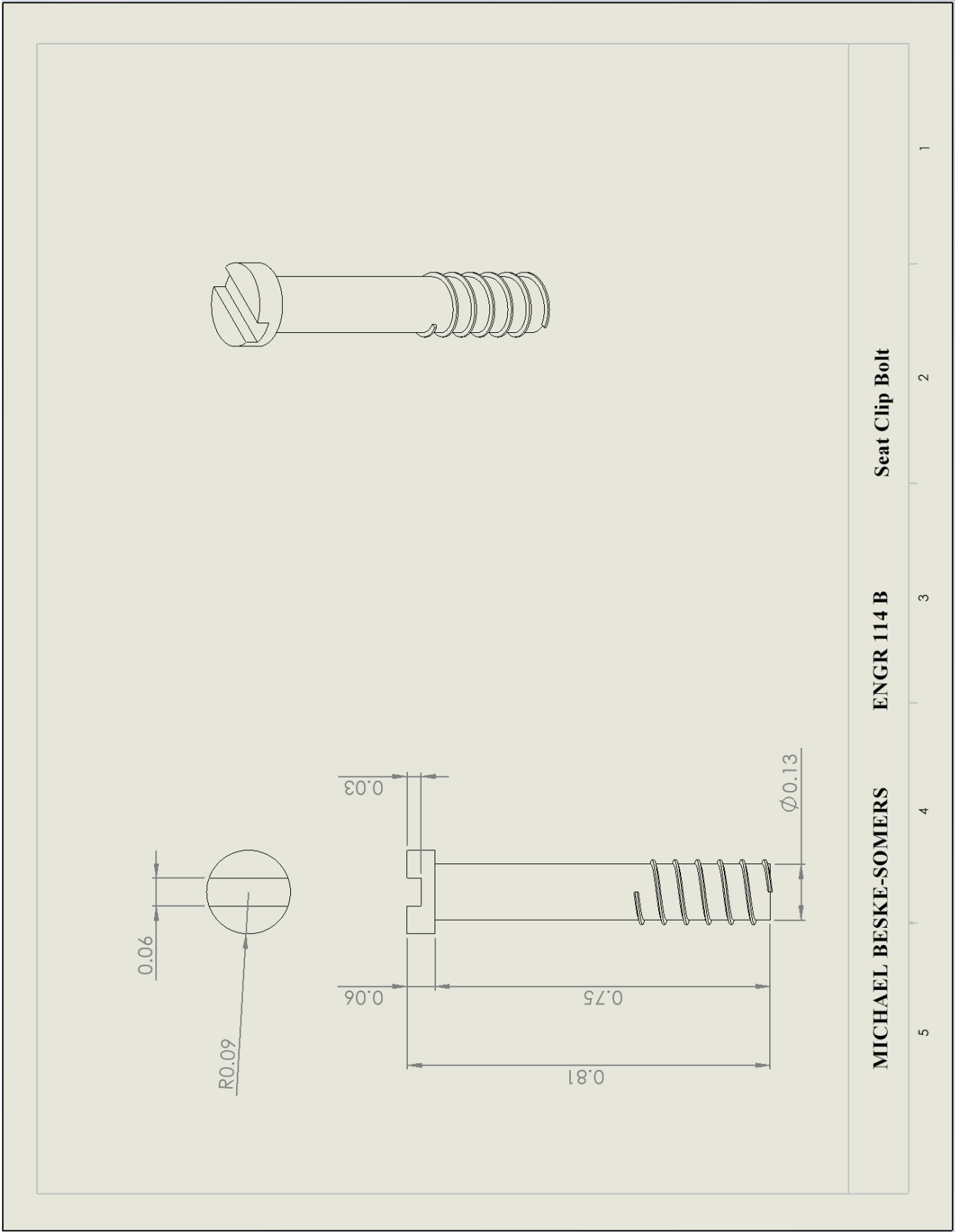
Pedal



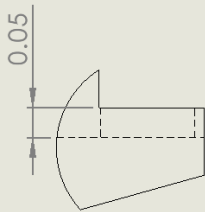
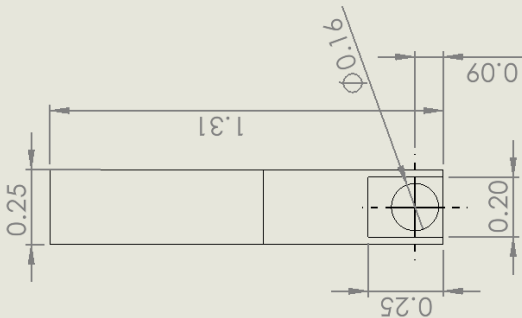
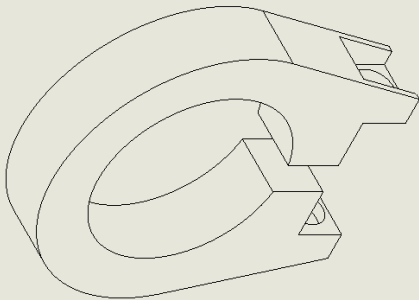
Rim



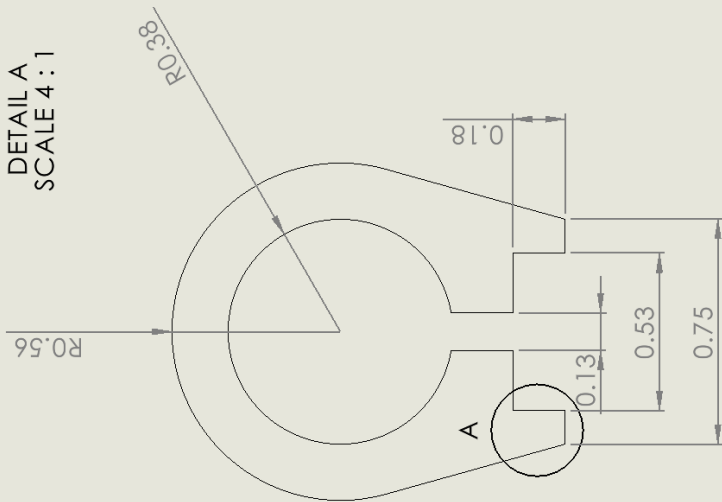
Seat Clip Bolt



Seat Clip



DETAIL A
SCALE 4 : 1



Seat Clip

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1

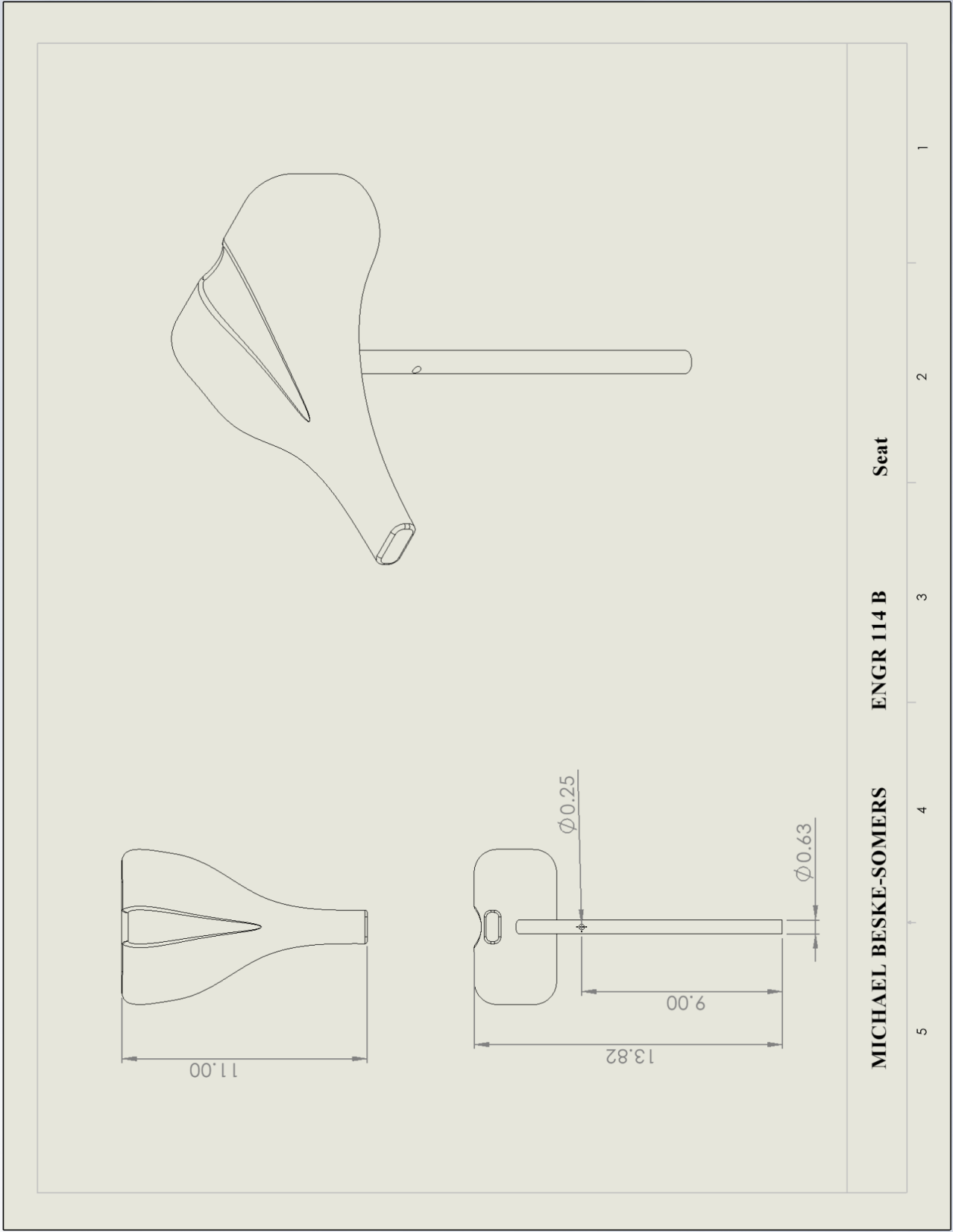
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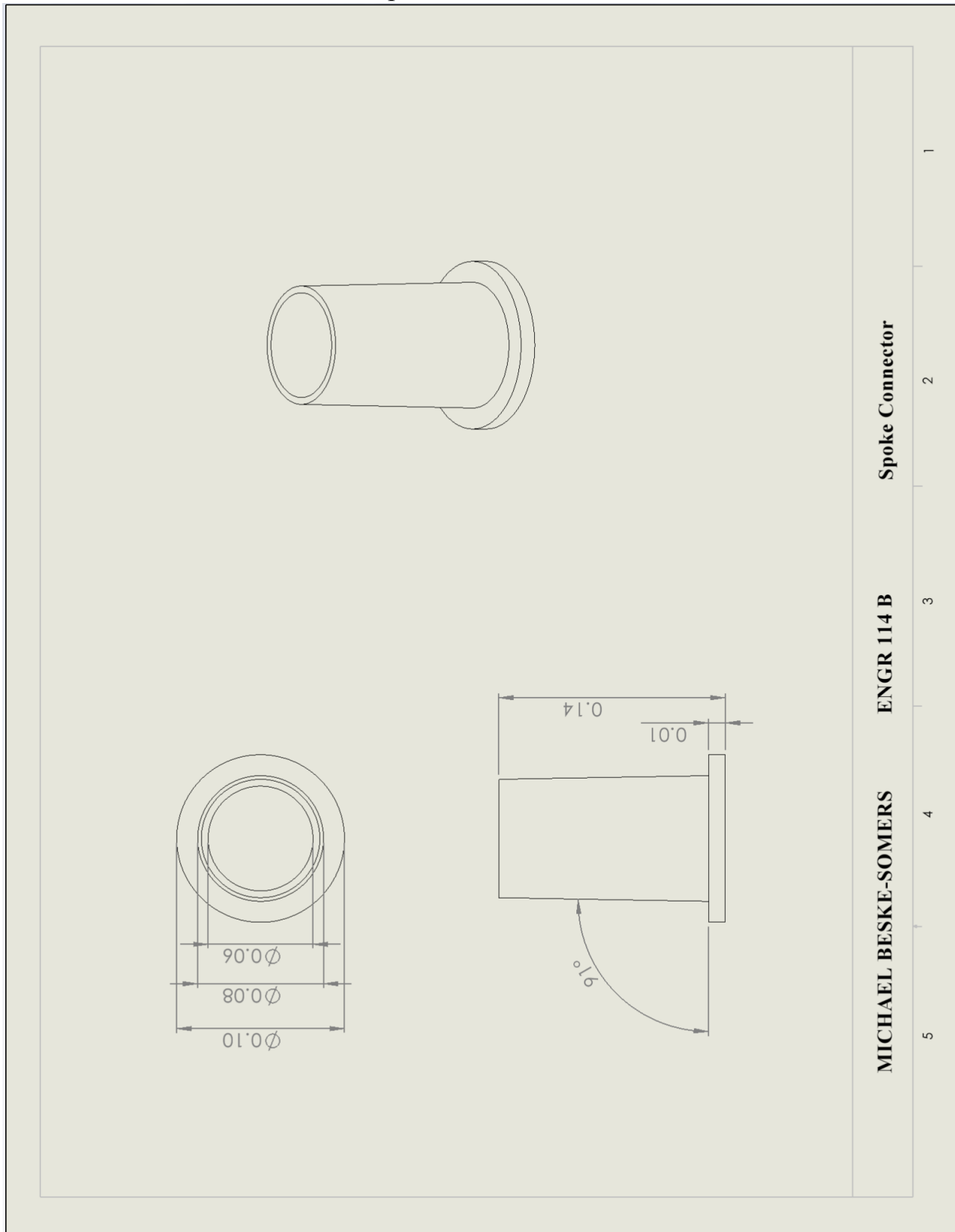
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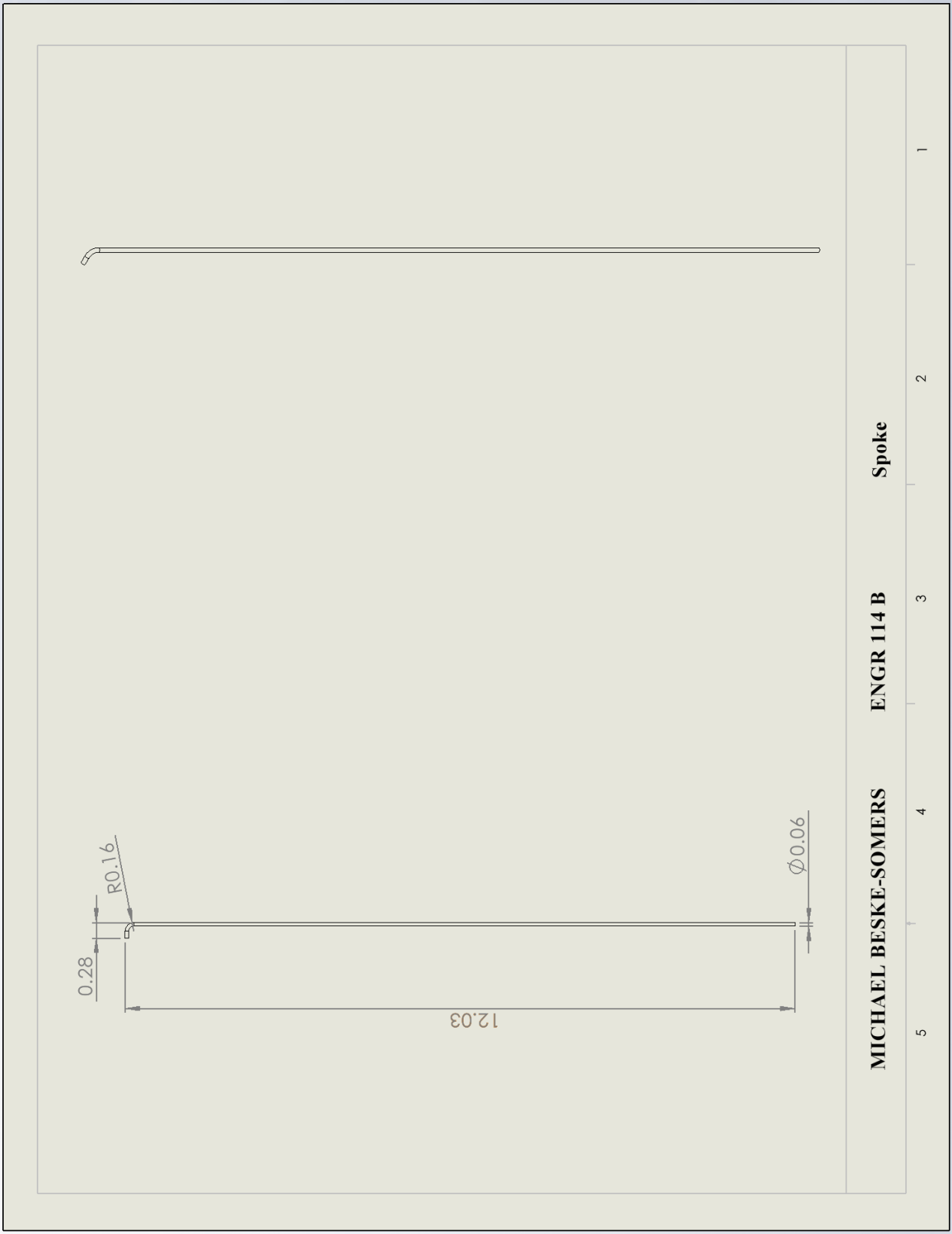
Seat



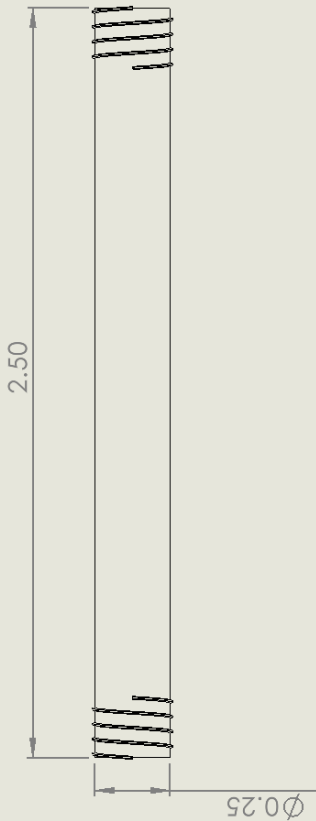
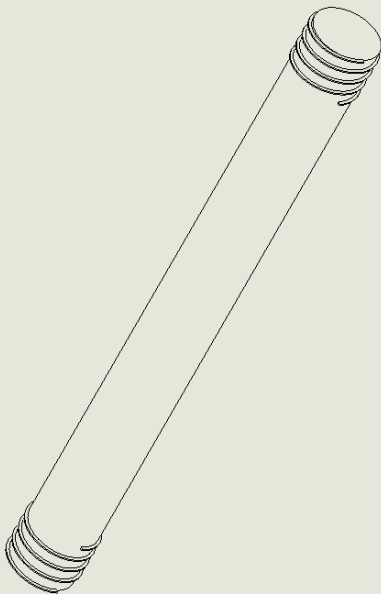
Spoke Connector



Spoke



Steering Axle



Steering Axle

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1

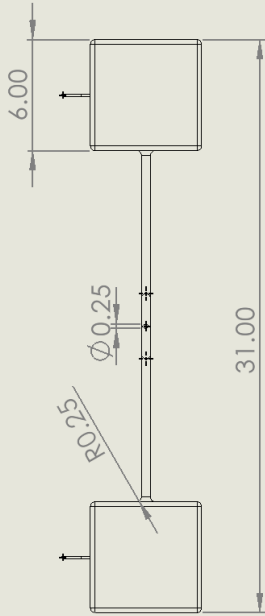
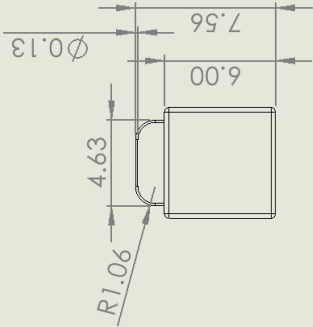
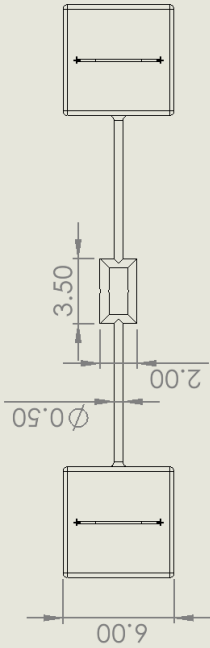
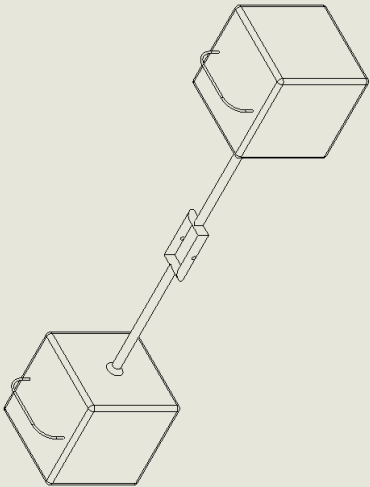
2

3

4

5

Steering Mechanism



Steering Mechanism

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1

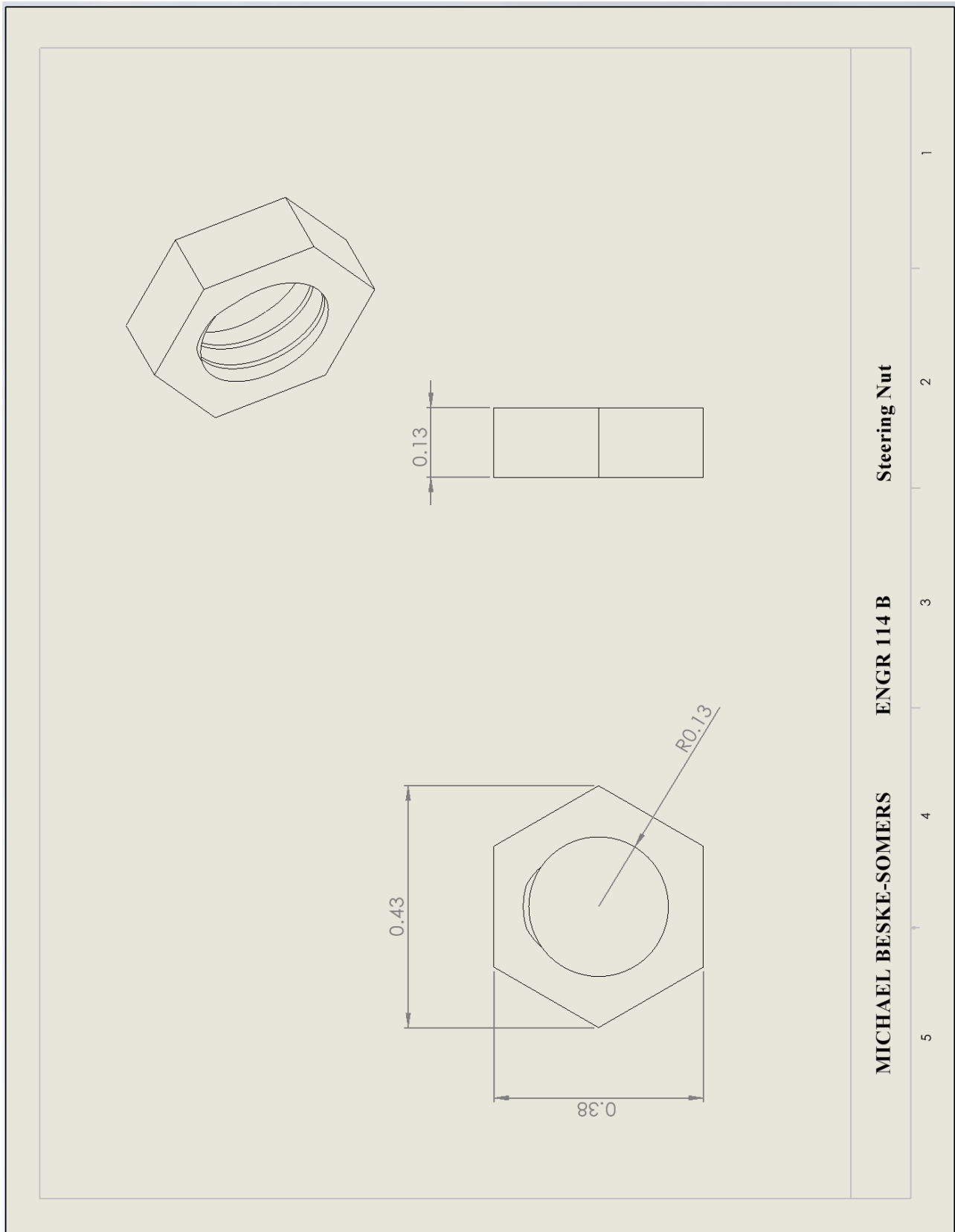
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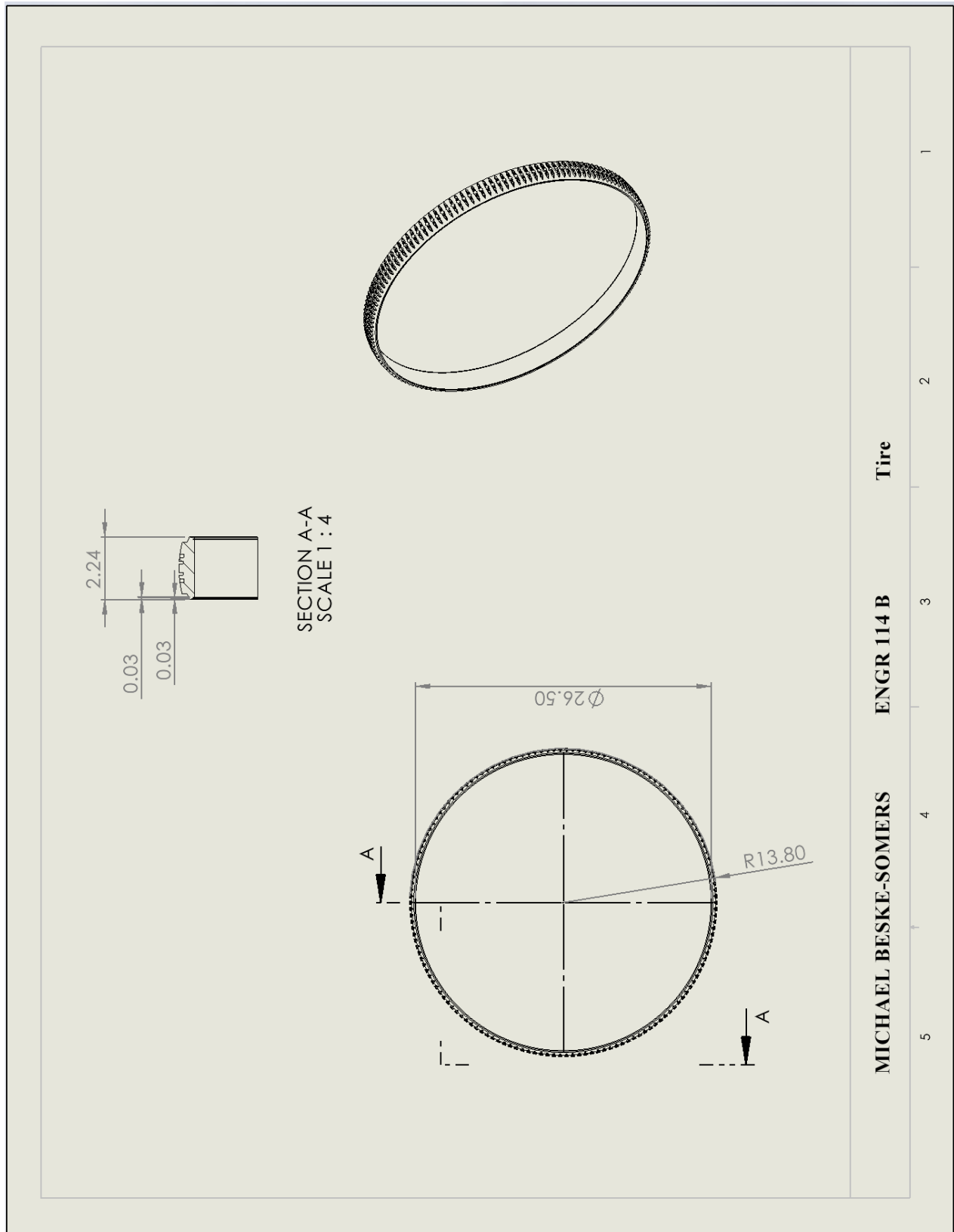
4

5

Steering Nut



Tire



Bill of Materials and Cost Analysis

Part No.	Part Name	Material	Quantity	Unit Cost	Total Cost	Supplier
1	Axle	Steel	1	\$30	\$30	unicycle.com
2	Crank	Aluminum	2	\$47.50	\$95	unicycle.com
3	Frame Clip	Aluminum	2	\$2.50	\$5	unicycle.com
4	Frame Screw	Steel	6	\$1.25	\$7.50	unicycle.com
5	Frame	Aluminum	1	\$150	\$150	unicycle.com
6	Nut	Steel	5	\$0.50	\$2.50	unicycle.com
7	Pedal Nut	Steel	2	\$11.89	\$23.78	McMaster-Carr
8	Pedal	Plastic	2	\$15	\$30	unicycle.com
9	Rim	Aluminum	1	\$90	\$90	unicycle.com
10	Seat Clip Bolt	Steel	1	\$5	\$5	unicycle.com
11	Seat Clip	Aluminum	1	\$5	\$5	unicycle.com
12	Seat	Varies	1	\$115	\$115	unicycle.com
13	Spoke Connector	Brass	40	\$0.30	\$12	unicycle.com
14	Spoke	Steel	40	\$1.45	\$58	unicycle.com
15	Steering Axle	Steel	1	\$21.57	\$21.57	McMaster-Carr
16	Steering Mechanism	Steel	1	\$105	\$105	McMaster-Carr
17	Steering Nut	Steel	2	\$15.79	\$31.58	McMaster-Carr
18	Tire	Rubber	1	\$55	\$55	unicycle.com
				Total:	\$841.93	