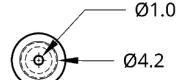


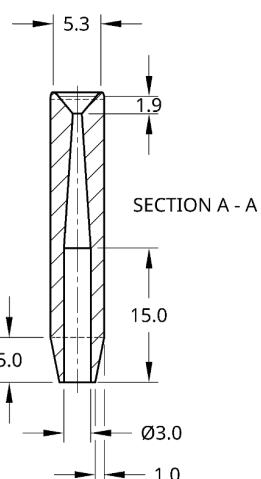
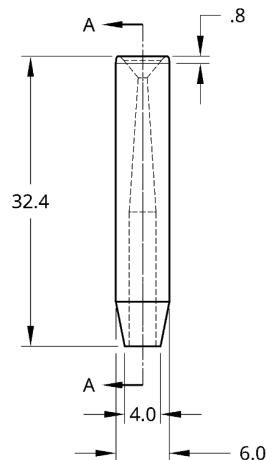
2

1

Crucial that the one mm diameter hole is not clogged.



B



B

A

A

ENGINEER:	Clare Kowalczyk	 Michigan Technological University Engineering Fundamentals 1880
DATE:	3/27/25	MIST NOZZLE FOR PD6
UNITS:	mm	SCALE 2:1   WEIGHT   SHEET 4 of 6

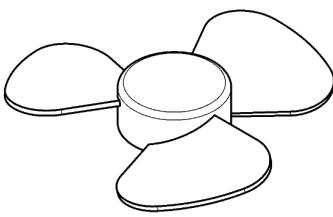
2

1

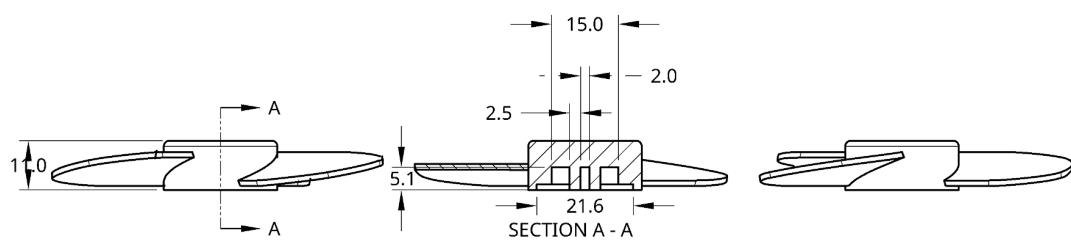
2

1

B



B



A

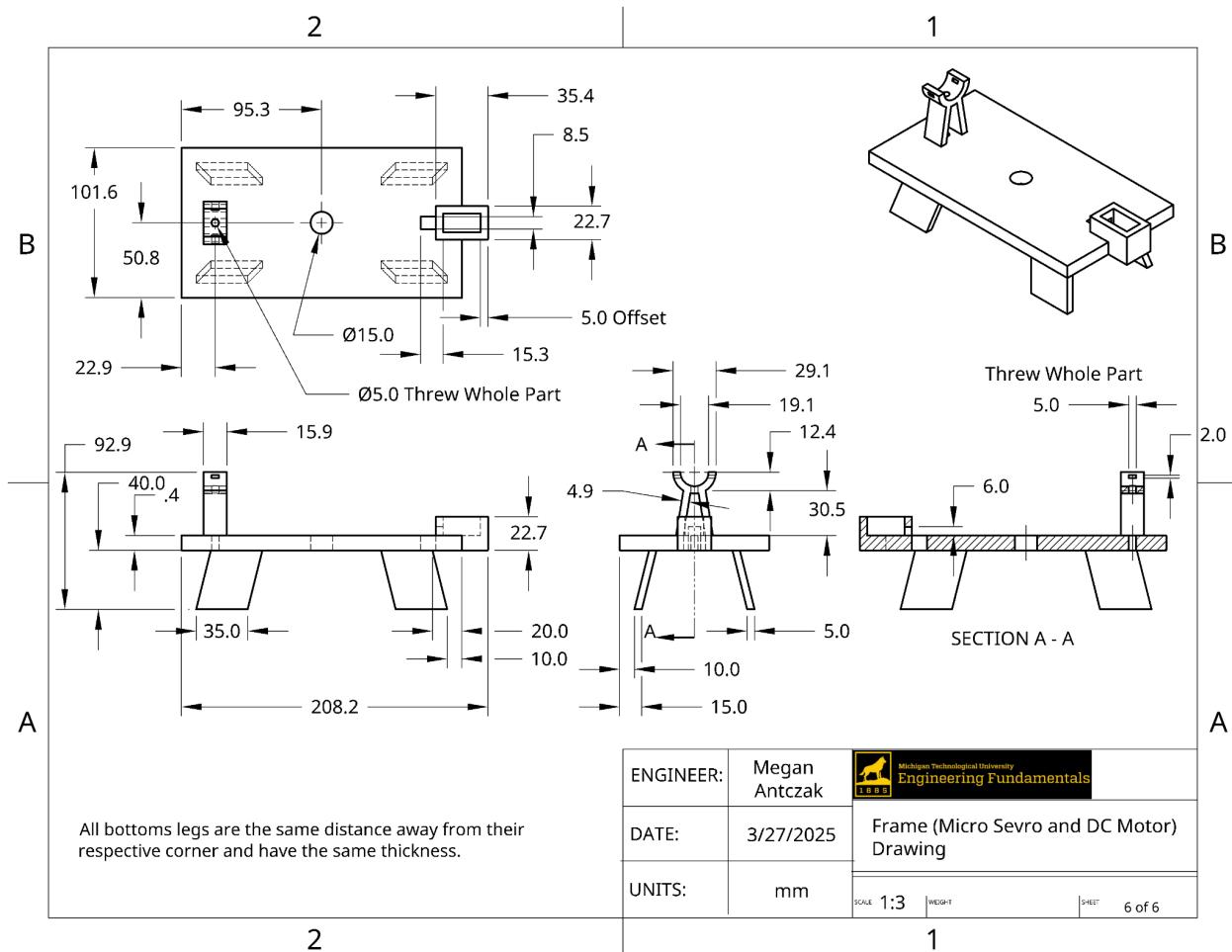
A

My fan has three equal blades with a slight curve to propel the wind forward. It has some "indents" in the back just like the weaker plastic fan included in our Arduino kits

ENGINEER:	Noah Walters	 Michigan Technological University Engineering Fundamentals 1880
DATE:	3/27/2025	Fan Blade Engineering Drawing
UNITS:	mm	SCALE 1:1 WEIGHT SHEET 5 of 6

2

1



## **Introduction**

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For our project, we are designing an autonomous snow machine. The desired intent of our machine is to create more ideal skiing conditions, as well as make the jobs of the workers easier by not making them scale the ski hill to adjust the machine. The 3D model will play a significant role in helping us visualize what we want our machine to look like when it is fully built. It also allows us to create each individual part to the scale that we need them to be, making it possible to 3D print them.

## **Progress**

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Over the weekend, we assigned each team member to design on Onshape some of the different parts that need to be 3D printed. We have each made progress on our assigned parts and some parts have been completed, while others still have a little bit left to do. Grayson has taken the task of creating our pump, which is the most complex and intricate piece we will be 3D printing. Megan has completed the frame for the micro servo and the DC motor. Clare has completed the mist nozzle. Noah made the fan. Everyone has taken responsibility for different complex parts and has excelled. Overall, we are still deciding who needs to do some of the other minor parts on OnShape but we are rather close to being able to print everything.

## **Challenges**

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Our team encountered many challenges in the modeling and drawing process. A big struggle was communication after we divided up all the parts. Each person had to work individually but there were still strict guidelines and restrictions that needed to be followed to ensure that our device would run smoothly. Our team had to maintain very effective communication to execute unity for this assembly. Some forms of this communication included drawings on whiteboards, comments on parts, and repeating dimensions multiple times.

It was also challenging to finalize the design of this model. Up until this point, our project was very conceptual and did not have a concrete vision. This project deliverable forced us to begin to bring our ideas to life. Some of the drafting did not go very smoothly but as a team, we worked it out ensuring everyone's ideas were heard and accounted for. The difficulties and challenges we faced were beneficial and necessary for the production of this project.

## **Next Steps**

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The next step of our project includes going to the Fab Lab. Here, we will 3D print many aspects of our project. Such parts include the nozzle, the fan and servo frame, fan blades, and many parts for the pump. After completion of the 3D printing we will thoroughly inspect products to make sure they are up to par and redesign and reprint as needed. After the perfection of our parts, we will put our assembly together. With our project all put together, testing will commence to find any possible flaws with our design. As seen in our FMEA table, each part has its own major or minor potential breaking points. After we have worked out all the flaws, we will have a working machine ready for the final test.