

Senior Design Proposal

P.A.L.M.

Personal Automated Lawn Mower

Preliminary Mower Design Breakdown and Measurements

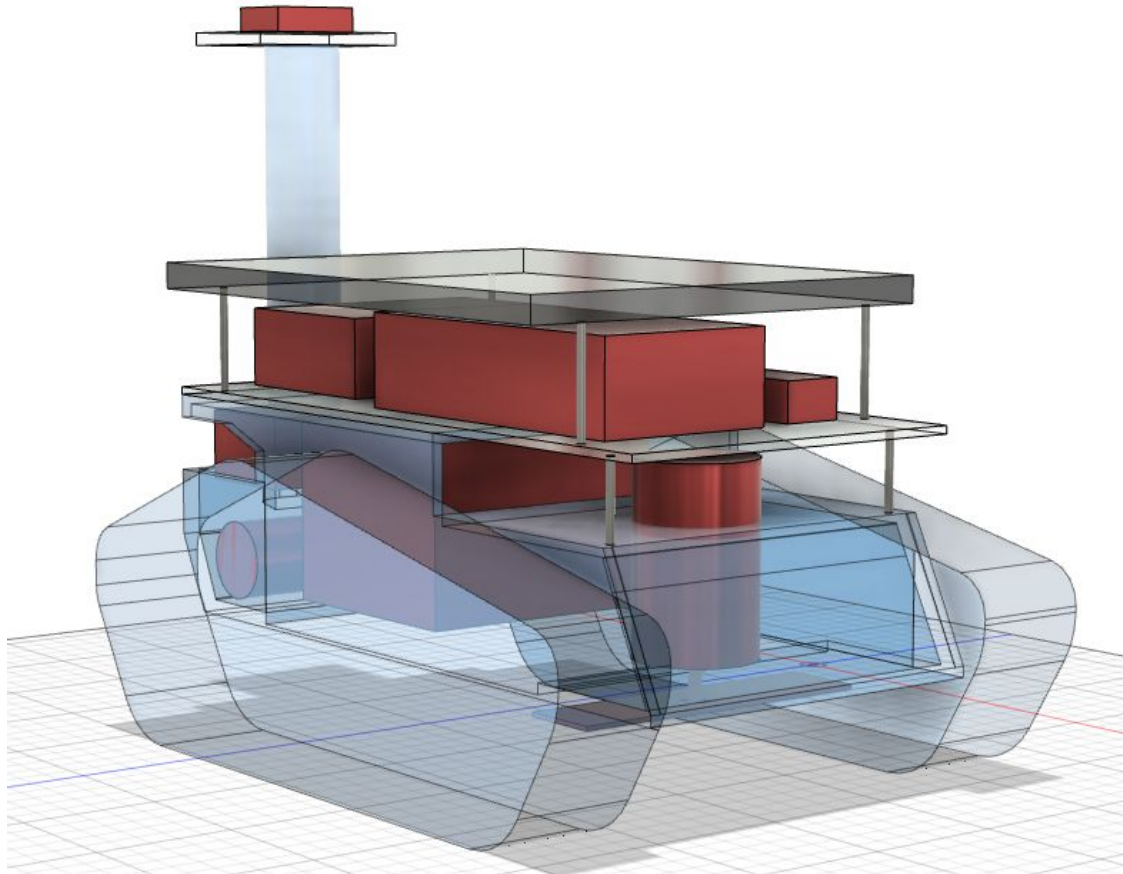
BRIAN DARLING AND GABRIEL DE LA TORRE

SPRING 2021

[HTTPS://PALMMOWER.COM/](https://PALMMOWER.COM/)

Fully Automated Lawn Mower

Outer Measurements



Length - 342 mm (13.5 in)

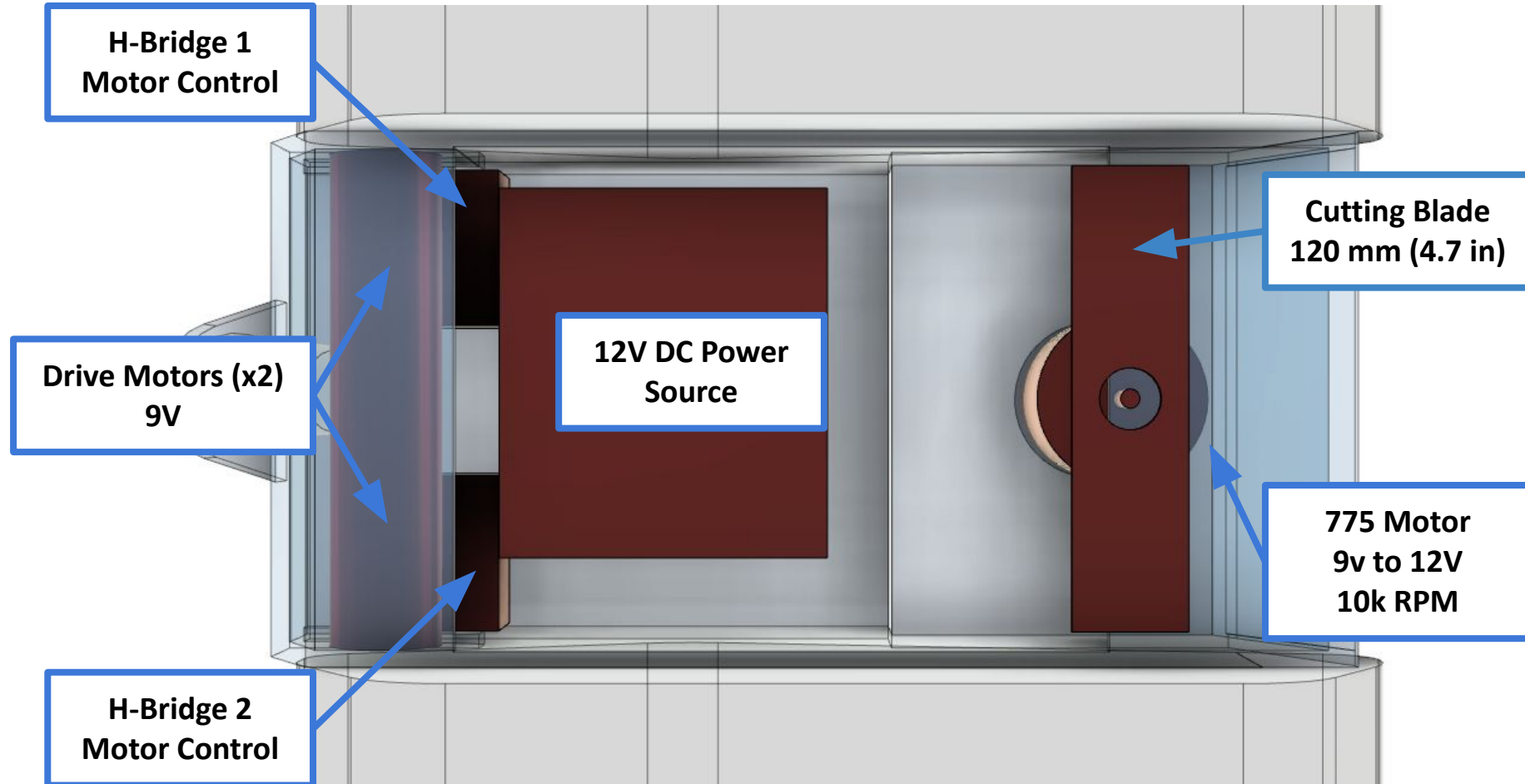
Width - 230 mm (9 in)

Height (Solar Panel) - 177 mm (7 in)

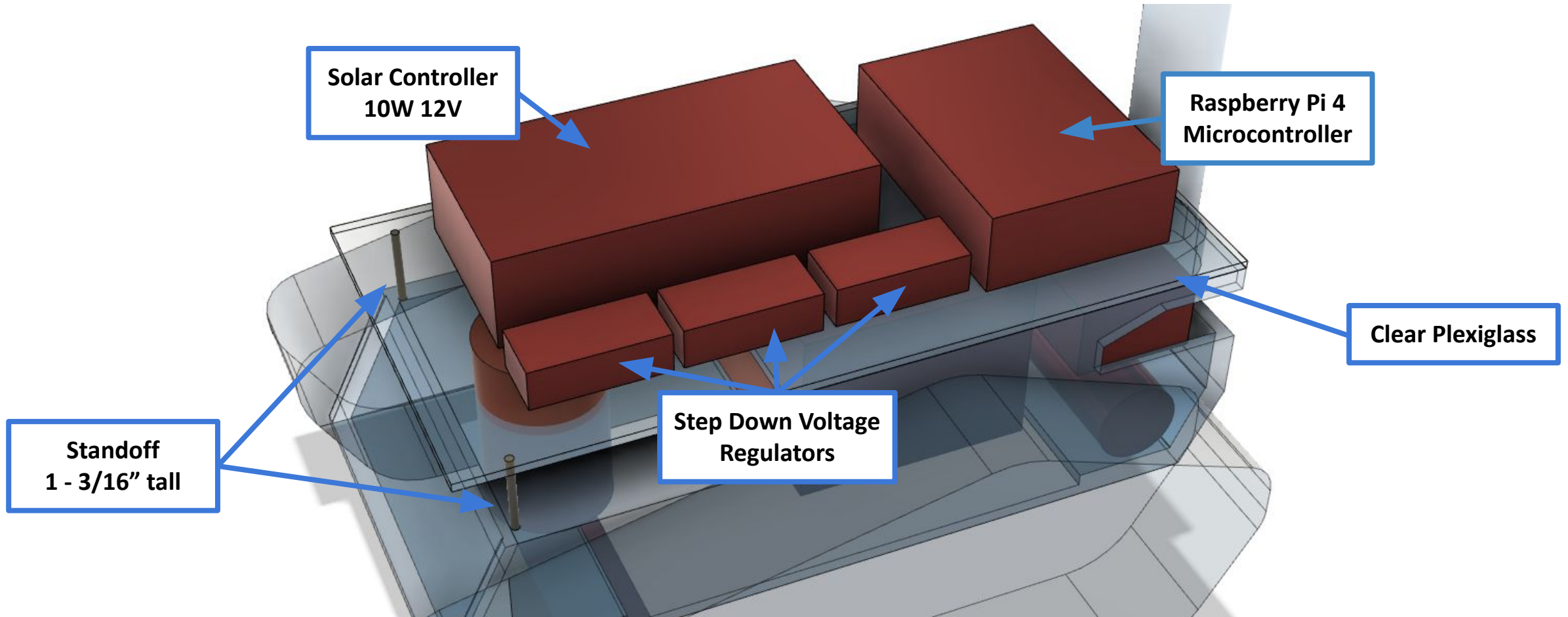
Overall Height - 275 mm (10.9 in)

Fully Automated Lawn Mower

Bottom View

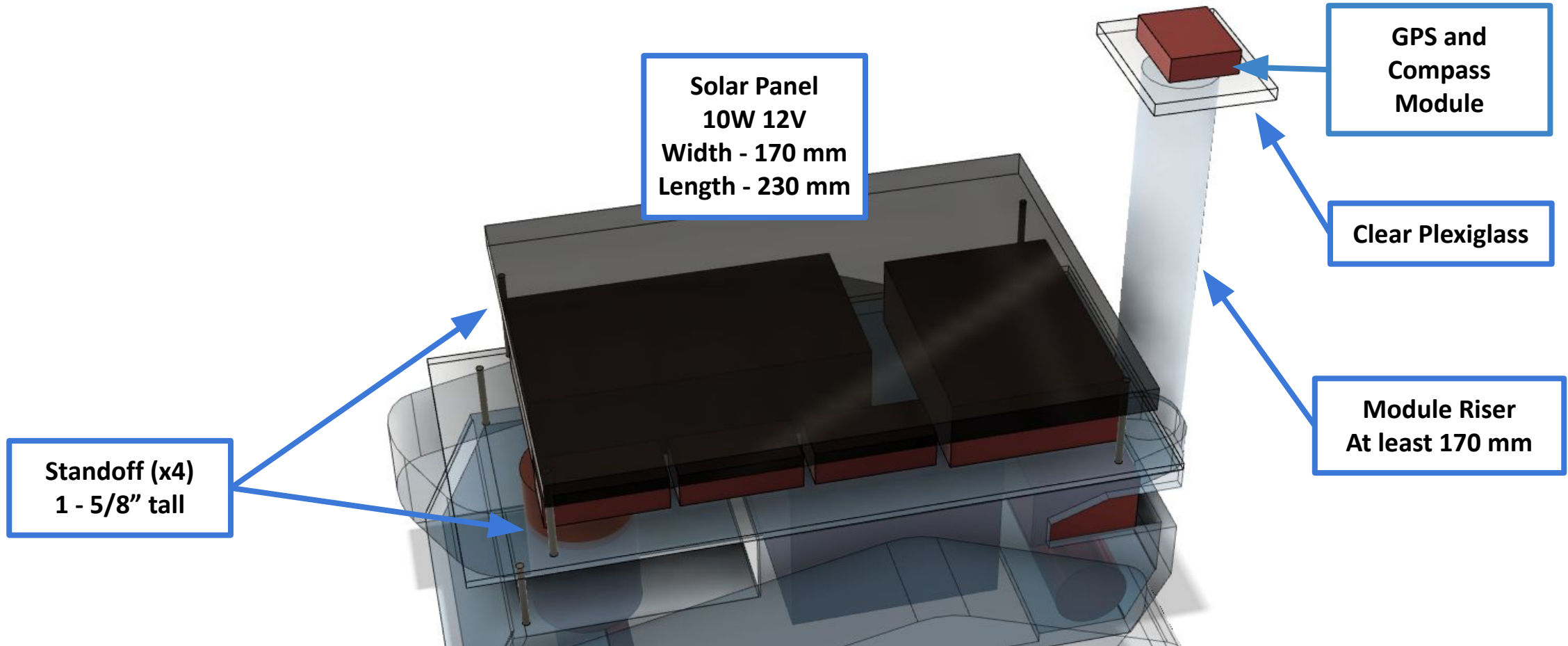


Fully Automated Lawn Mower Electronics Enclosure



Fully Automated Lawn Mower

Top View



Idea to include larger blade

We can increase the width of the mower so we can use a bigger cutting blade. The sides of the unit that house the tracks, gears and drive motors are bolted on to the center plates. If we were to just add spacers between the plates and sides, we can create more cutting area.

Only downside would be if we were to use too long of a spacer it could increase the chance of it twisting. But by adding cross braces in key locations that chance can be eliminated and possibly increase overall strength.

Mower Controller

- Uses the included bluetooth of the raspberry pi to send commands to the mower.
- A simple GUI will be created using python which will be displayed on the controller for the user to interact with.
- Would allow any user to control the mower without requiring them to own any other devices like smartphones or computers.
- Could possibly be used to steer the mower manually if the user wanted to.

Controller Touch Screen



Controller Case



Controller Part List

Part	Price
Touch Screen	\$69.99
Case	\$11.99
Raspberry Pi	\$56.99

Total: \$138.97