45mm

Funnel for
Ammo launcher

Track wire

Tape
sensor

Sp" motor
Motor

motor
mount

Funnel
placement

11"

11"

beacon          h-bridge

Front 3 brick   Motor

Side motor

Side    View

tin can

Funneling  system  to  prevent
over flooding

Funnel  will  have  a  goal  limit  of
20  ammo  with  3  in  the  tube.

Launching   System

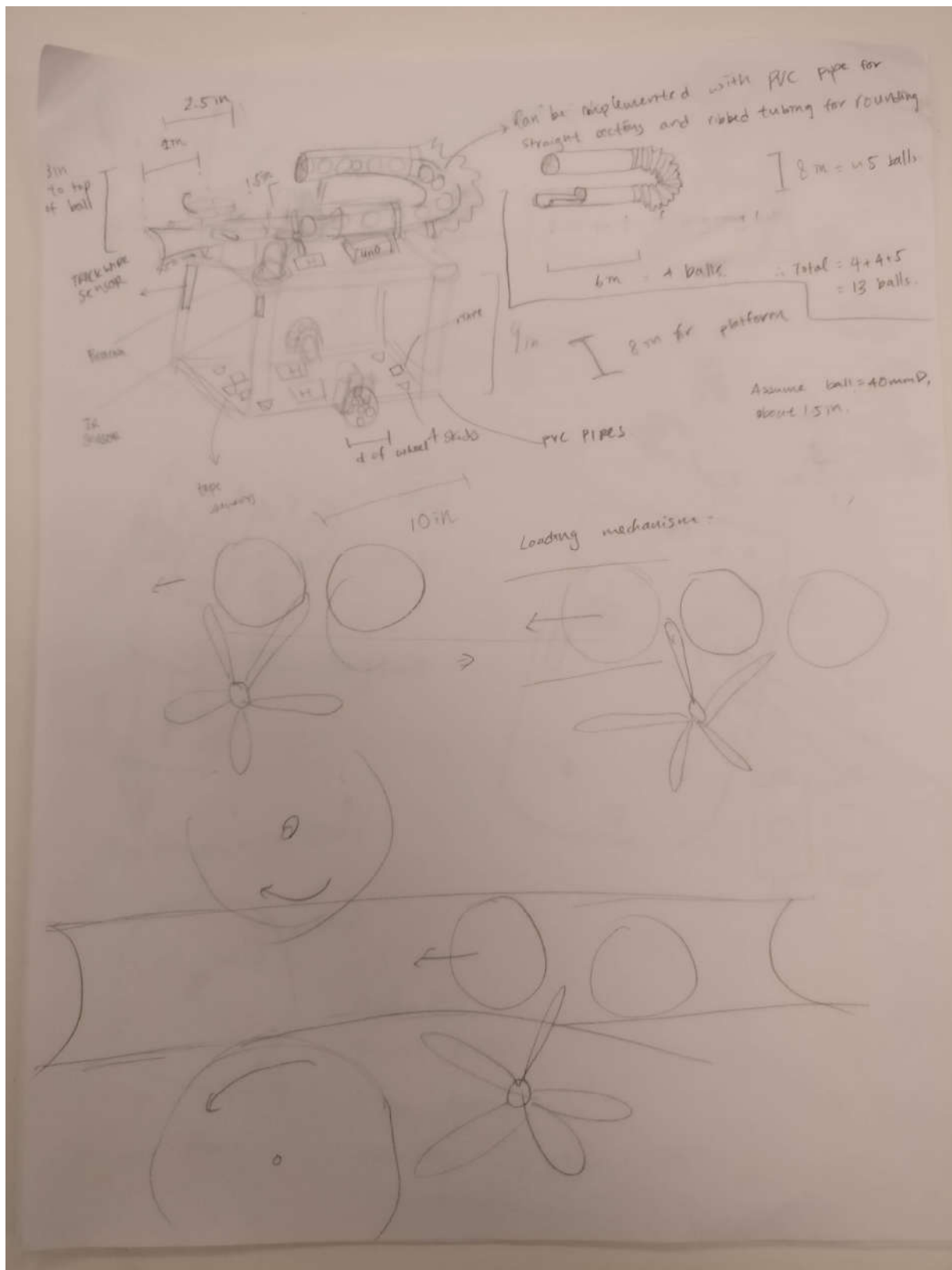Motor  will  press  spring  against  a  gate.
Gate  removed  for  launch.

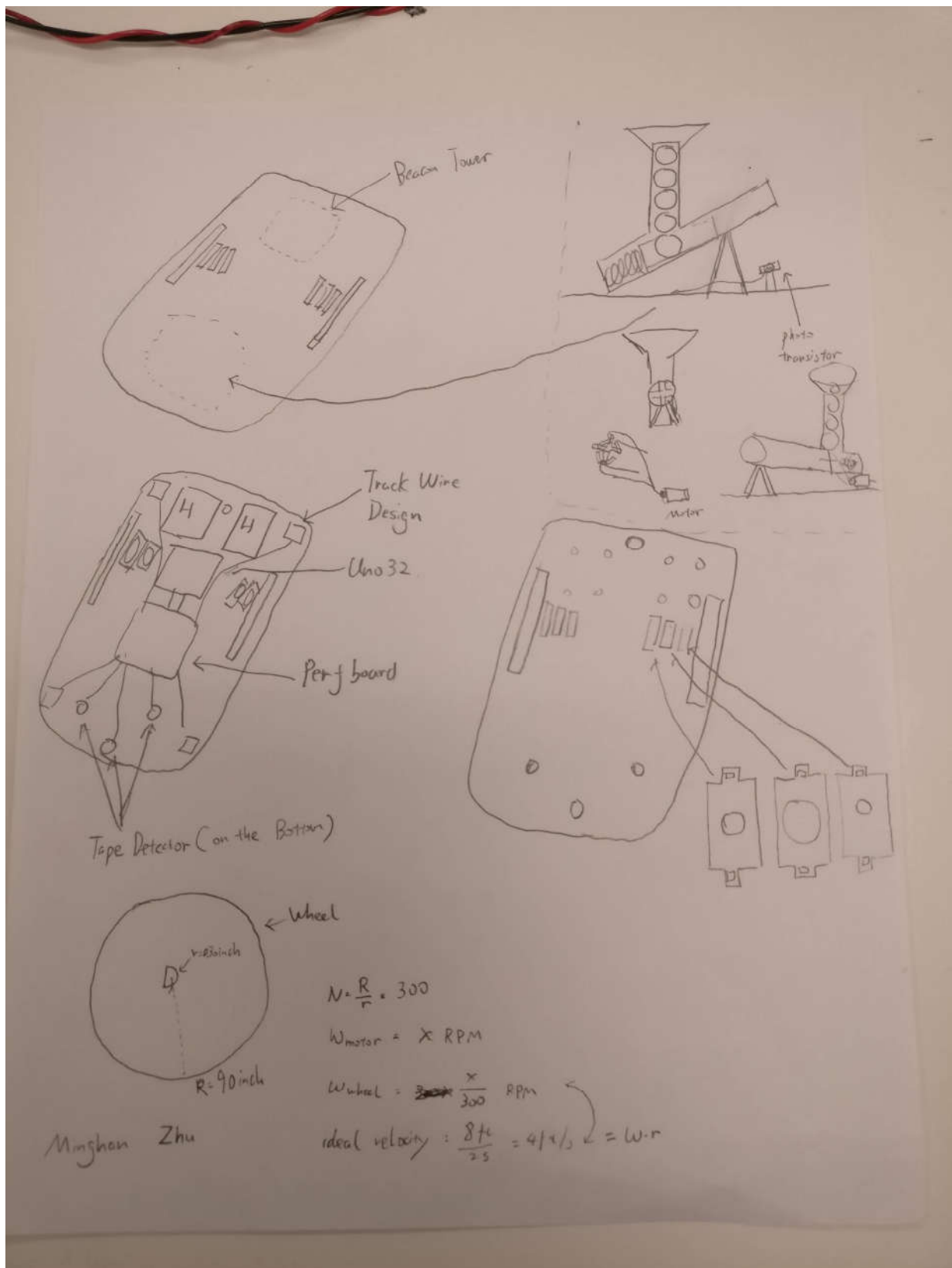*Figure 1: Johnson's Design*

Figure 2: Jacqueline's Design

Beacon Tower

Track Wire Design

Uno 32

Perf board

photo transistor

motor

Tape Detector (on the Bottom)

Wheel

r=0.30inch

R=90inch

$N = \frac{R}{r} \cdot 300$

$W_{motor} = X \ RPM$

$W_{wheel} = \frac{x}{300} \ RPM$

ideal velocity : $\frac{8ft}{2s} = 4ft/s = W \cdot r$

Minghan Zhu

Figure 3: Minghan's Design

Side view    Top View

Funnel →

PVC pipes →

Stepper motor

2.5m

← funnel

10"

Track wire

Amazon Funnel

2KHz beacon

14"

used for mounting two bases together

tape detector

uno 32

Motor Mount

H-bridge

$r = 0.0 in$

$R = 9.0 inch$

$IV = \dfrac{R}{r} = 300$

$\omega_{motor} = X \ RPM$

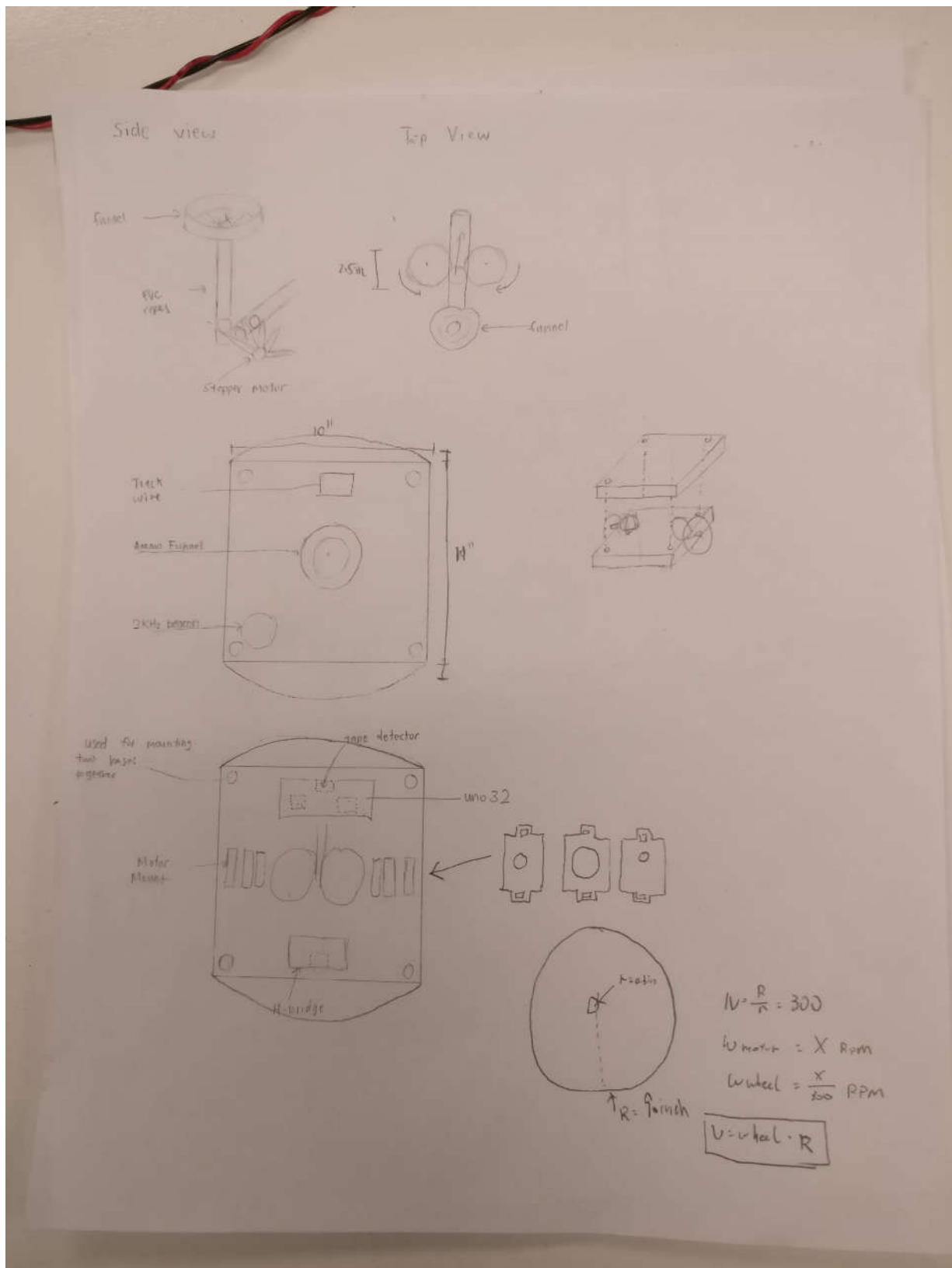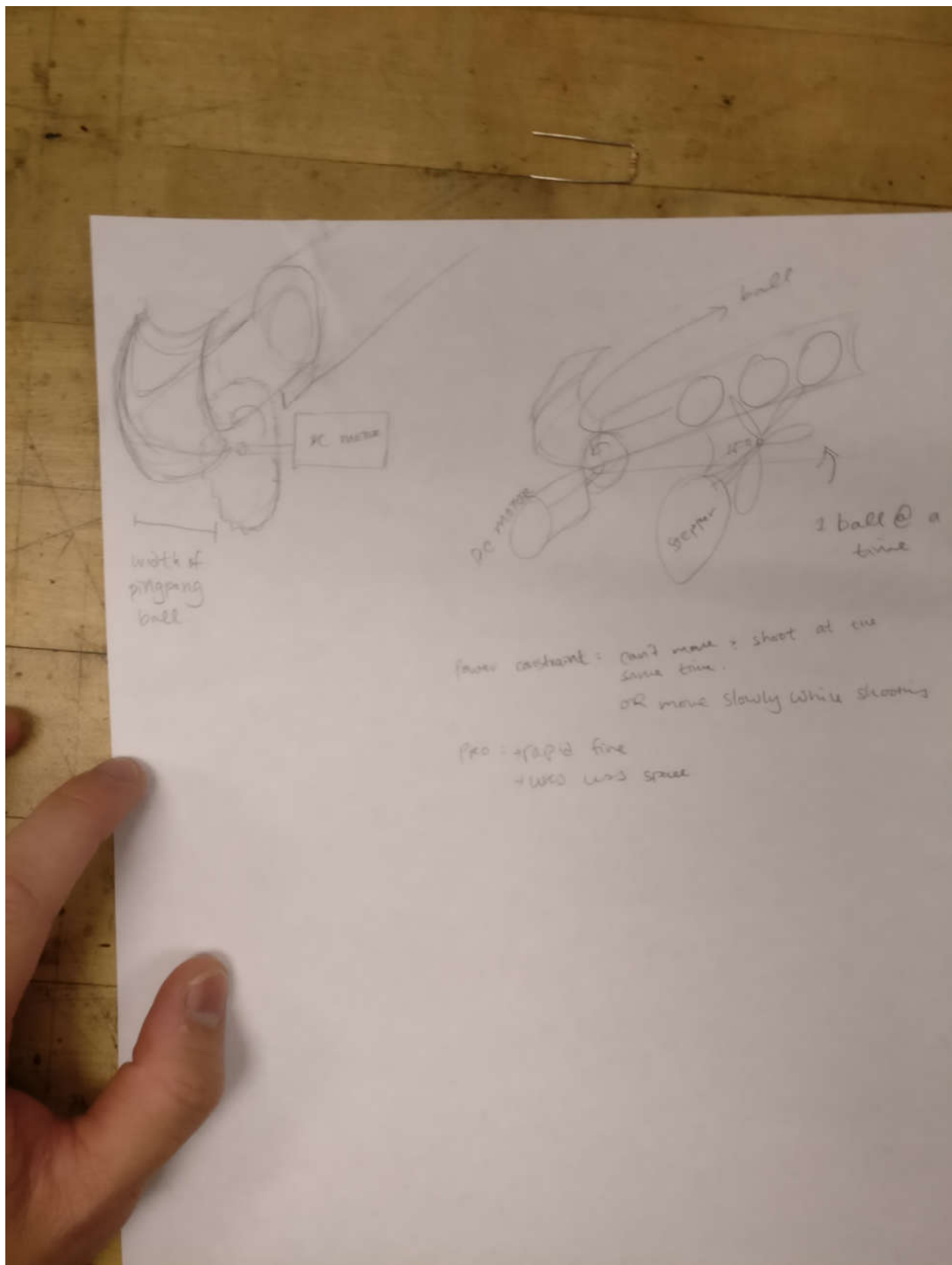$\omega_{wheel} = \dfrac{x}{300} \ RPM$

$V = v_{wheel} \cdot R$

Figure 4: Merged Team Design

*Figure 5: Improved Launcher Design*