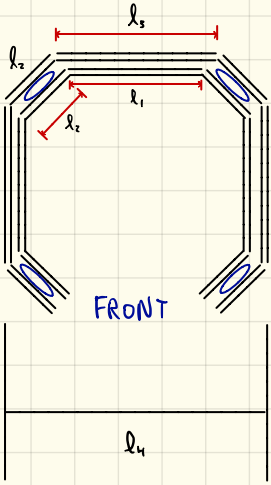


Note that by symmetry, rotating chassis will have l_1, l_2, and l_3 same for all corners.

Parts for 17.5in^3 design: Each C channel has depth = 0.55 in, width = 2.45 in, length = $\frac{7.5\text{in}}{5 \text{ squares}} * \text{num\_squares}$

(8) l_2 = 1x8 C channel = 4in

(3) l_1 = 1x20 C channel = 10in

(3) l_3 = 1x25 C channel = 12.5in

(2) l_4 = 1x35 Chassis bracket = 17.5in $\quad l_4'$ = 1x30 chassis bracket = 15 in

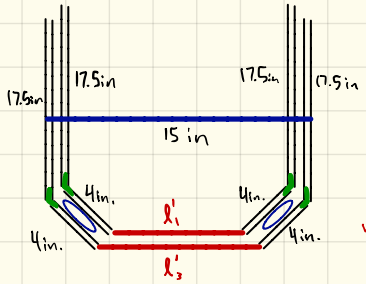
$l_2' = l_2 = 4$in.

l_4' = 1x30 chassis bracket = 15 in.

X l_2 is fixed, so can't scale

Make wheels first! Need $2 \cdot l_2 \cos(45°) + l_3' = l_4' \Rightarrow l_3' = 15\text{in} - \sqrt{2} \cdot 4\text{in} \approx 9.343$ in.

$\frac{l_3}{l_3'} = \frac{l_1}{l_1'} \Rightarrow l_1' = l_1 \frac{l_3'}{l_3} = 7.474$ in



l_1' = (1x20 C ch.)

l_3' = (1x25 C ch.)

need to measure l_1' & l_3'

Wheel:

- (2) 1x8 C-channel
- (1) Omni wheel
- (1) shaft (3in.)
- (2) flat bearings
- (1) Motor
- (1) 0.5x0.5 plastic spacer
- (1) 0.5x0.25 plastic spacer
- (1) shaft collar
- (2) Motor screws
- (3) Nylock nuts
- (3) 8/32 ½ inch screws

X 4 wheels, so 4 of all this stuff

16 for angle bracket = 16

16 · 3 sides = 48

8 · 4 wheels = 32

(24) 45° Angle Gusset

(96) 8/32 $\frac{3}{8}$ in. screws

(80) Keps nuts

(16) Nylock nuts