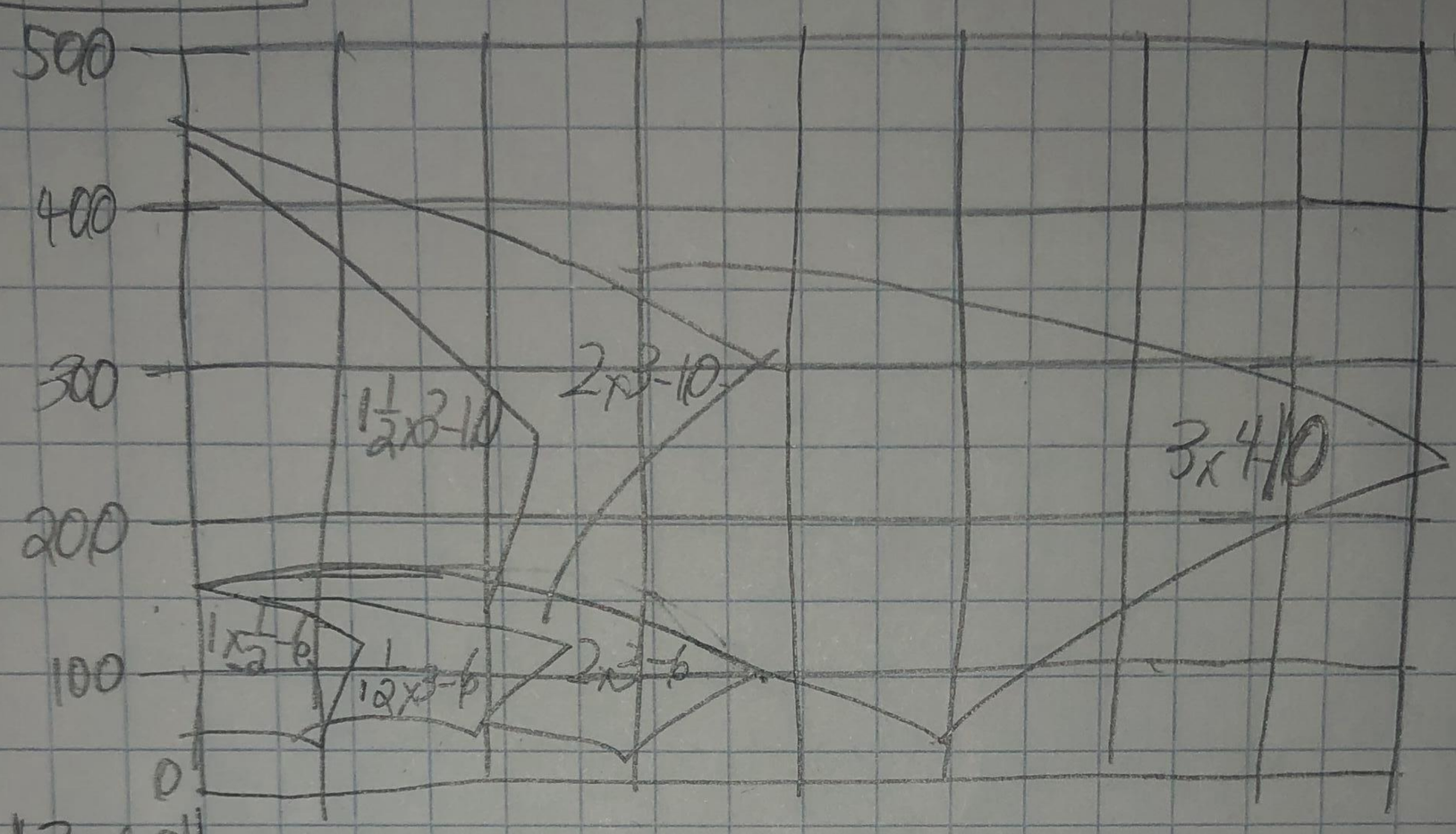
13.23 Given $Q = 100 gal/min$
$H = 300 ft$

1.5 discharge connection
3 Section size
10 casing class

$1\frac{1}{2} \times 3 - 10$



13.65

Given

$sg = 0.48$
$T = 45°C = 318 m$
$h_s = 1.84 m$
$h_f = 0.92 m$
$p_{atm} = 98.4 kPa$
$NPSH_A = 1.50 m$

$h_{sp} = \frac{P_{abs}}{\gamma} + \frac{v^2}{2g}$

$P_{abs} = P_{atm} + P_{tank}$

$h_{sp} = \frac{P_{atm} + P_{tank}}{\gamma} / \gamma$

$NPSH_A = h_{sp} \pm h_s - h_f - h_{sp}$

$NPSH_A = \left(\frac{P_{atm} + P_{tank}}{\gamma}\right) < h_s - h_f - h_{sp}$

$p_{tank} = [\gamma (NPSH_A + h_s + h_f + h_{vp})] - p_{atm}$

$\gamma = (sg)(\gamma)$
$\gamma = (0.48)(9.81)$
$\gamma = 4.7088 kN/m^3$

$p_{tank} = [4.7088(1.5 + 1.84 + 0.92 + 340)] - 98.4$

$p_{tank} = 1522.651 kN/m^2$