Problem 4.20, 4.12, 4.21
Due 3/16

Load Combos: LAD
3/8" gusset plate
L - 1.0, 0.1, 0.8, 0.6
L0 = 0.2, 0.12

Concrete
1-1/2, 2, 3

Same size 2L - -
For a square section, assuming a creep of 1/2 in. (0.5 mm), the stress must be calculated to ensure it can't fail. The equation is:

\[ \sigma = \frac{F}{A} \]

Where:
- \( \sigma \) is the stress
- \( F \) is the force
- \( A \) is the area

Given:
- \( F = 0.8 \) kN
- \( A = 0.10 \) m²

The minimum force per unit area (shear) is 0.8 kN/m².
Problem 9.13

Design Round Column

\( P_u = 300k, \quad R_c = 350k \)

1. Assume \( 0.02A_g \)

2. \( f_c = 4ksi, \quad f_y = 60 ksi \)

3. \( h = 3, 1/2'(0.02) = 6.82 in \)

4. \( A_g = 3.1/2'(0.02) = 6.82 in^2 \)

5. \( A_g = 3.1/2'(0.02) = 6.82 in^2 \)

6. \( f_e = \frac{0.02A_g}{(0.02A_g)} + f_y (0.02A_g) \)

7. \( f_e = 0.02A_g \)

8. \( P_u = 1.2(300) + 1.6(350) \)

9. \( P_u = 1.2P + 1.6(350) \)

10. \( P = \frac{1}{2}P_b - \frac{1}{2}P_h \)

11. \( P = 1 \)

12. \( P = 2000 \)

13. \( f_e = 0.02A_g \)
\[ \phi_n = 936 v > 920 v \]

\[ \phi = (85 (c, 70)) \cdot \psi (346 - \phi) + 60 (\phi) \]

\[ 85 \% \]

\[ 11.52 \]

\[ \phi \]

\[ P \]

\[ 0.05 \]

\[ 1.08 \]

\[ 20 = 936 v \]

\[ 346 - \phi \]

\[ 0.01 = 1.11 \]

\[ 1.11 \]

\[ 6.53 \text{ in}^2 \]

\[ 20 = x \cdot (85 C, 70) (346 - \phi) + 60 (\phi) \]

\[ (\phi) \]