

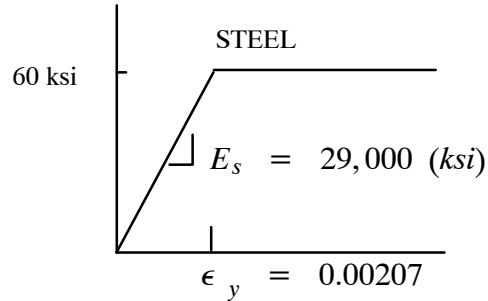
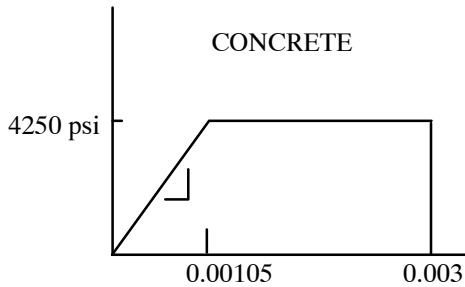
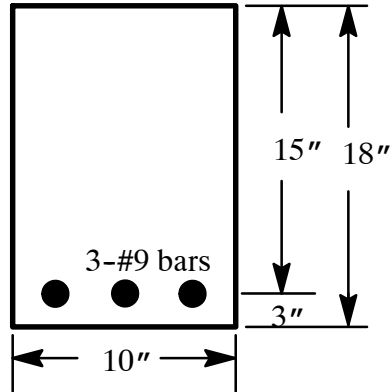
**CIVL 4135
HOMEWORK SET 5C**

- I. Calculate the resisting moment of the section shown below when the maximum concrete strain is 0.003. Use the stress strain curves given below.

$$f'_c = 5,000 \text{ psi}$$

$$f_y = 60,000 \text{ psi}$$

$$f_r = 530 \text{ psi}$$



Answer: 2314 in-kips

- II. Use the provisions of ACI 318 to calculate the moment capacity of each beam if it satisfies ACI Code requirements.

- (1) $f'_c = 3,000 \text{ psi}$
 $f_y = 60,000 \text{ psi}$
 $A_s = 3\#9$
- (2) $f'_c = 3,000 \text{ psi}$
 $f_y = 60,000 \text{ psi}$
 $A_s = 4\#9$
- (3) $f'_c = 4,000 \text{ psi}$
 $f_y = 60,000 \text{ psi}$
 $A_s = 3\#9$
- (4) $f'_c = 4,000 \text{ psi}$
 $f_y = 60,000 \text{ psi}$
 $A_s = 4\#9$

