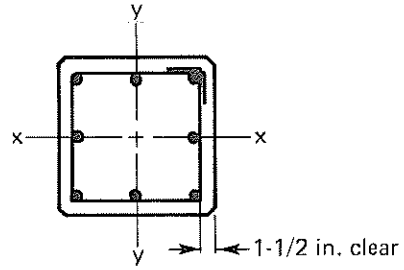


# PRECAST, REINFORCED COLUMNS

Fig. 2.6.2 Design strength interaction curves for precast, reinforced concrete columns

**Criteria**

1. Concrete  $f'_c = 5000$  psi
2. Reinforcement  $f_y = 60,000$  psi
3. Curves shown for full development of reinforcement
4. Horizontal portion of curve is the maximum for tied columns =  $0.80\phi P_o$ .
5.  $\phi = 0.9$  for  $\phi P_n = 0$   
 $= 0.7$  for  $\phi P_n \geq 0.10 f'_c A_g$   
 Varies from 0.9 to 0.7 for points between

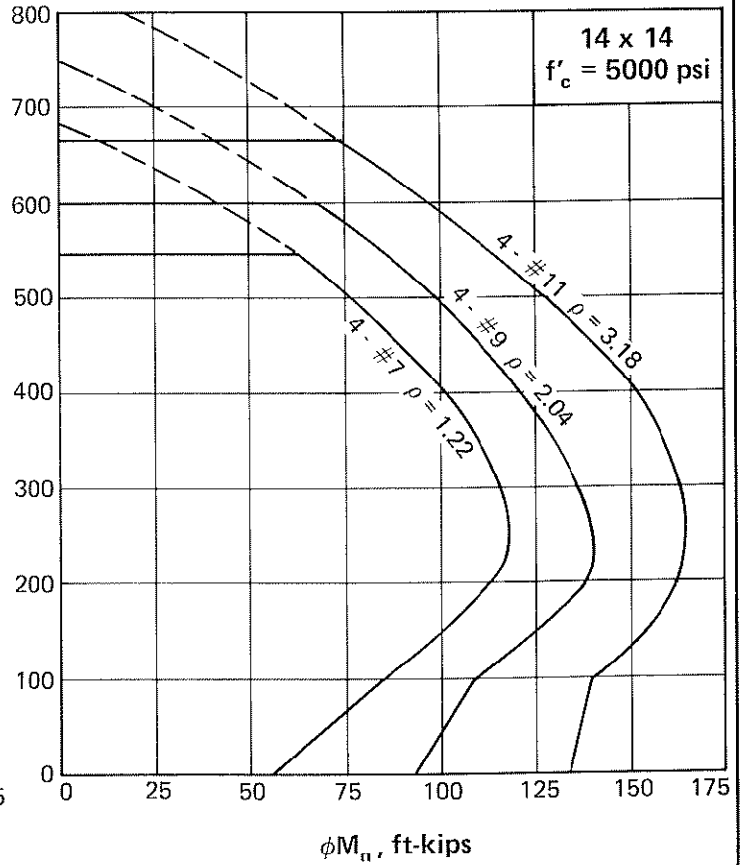
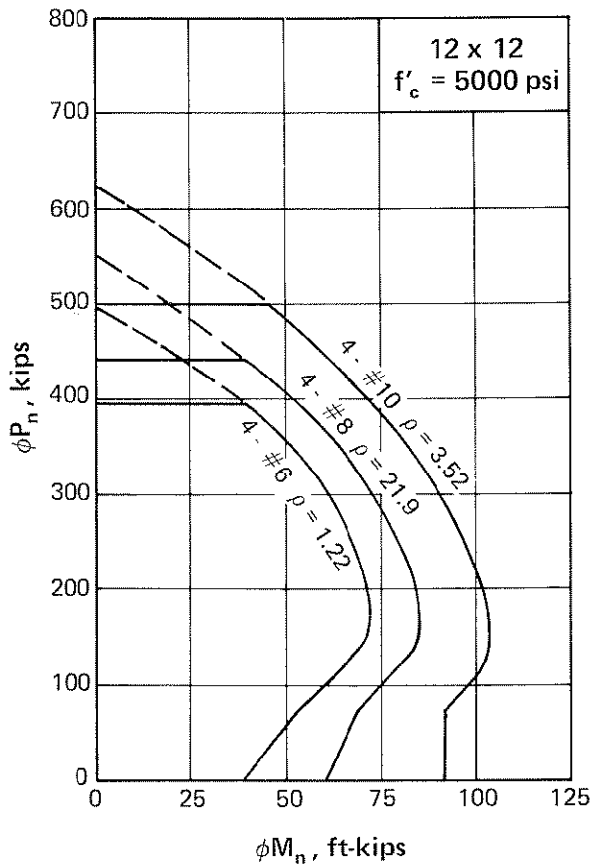


**Use of curves**

1. Enter at left with applied factored axial load,  $P_u$
2. Enter at bottom with applied magnified factored moment,  $\delta M_u$
3. Intersection point must be to the left of curve indicating required reinforcement.

**Notation**

- $\phi P_n$  = Design axial strength
- $\phi M_n$  = Design flexural strength
- $\phi P_o$  = Design axial strength at zero eccentricity
- $A_g$  = Gross area of the column
- $\delta$  = Moment magnifier (Sect. 10.11, ACI 318-77)



# PRECAST, REINFORCED COLUMNS

Fig. 2.6.2 (Cont.) Design strength interaction curves for precast, reinforced concrete columns

