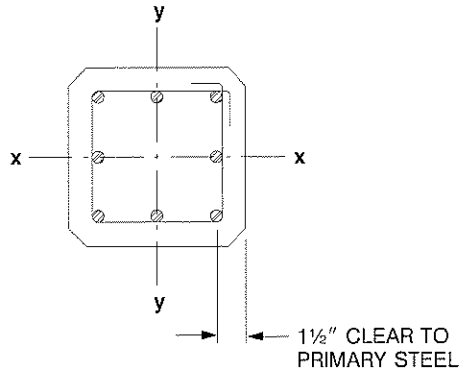


# PRECAST, REINFORCED COLUMNS

Figure 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.  $\phi$  VARIES LINEARLY FROM 0.9 FOR TENSION-CONTROLLED SECTIONS TO 0.7 FOR COMPRESSION-CONTROLLED SECTIONS IN ACCORDANCE WITH ACI 318-95 SECT. B.9.3.2.



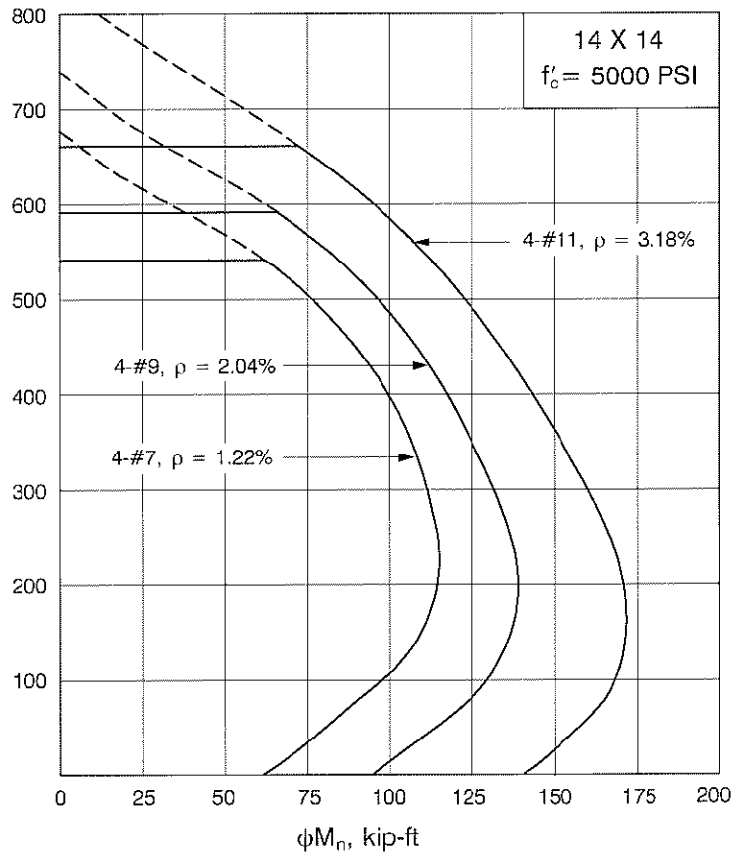
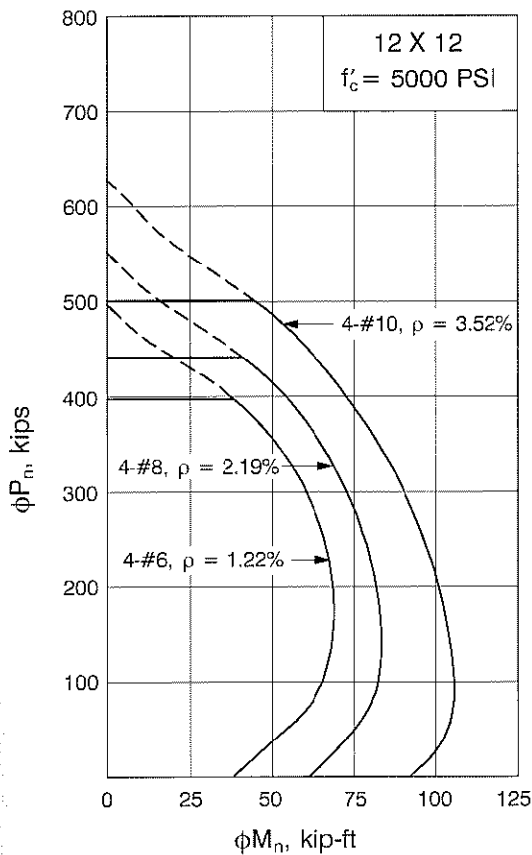
### USE OF CURVES

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. 10.11-10.13, ACI 318-95)

THE INTERACTION CURVES HAVE BEEN SMOOTHED FOR PLOTTING PURPOSES. EXACT CALCULATED VALUES MAY BE SLIGHTLY DIFFERENT.



# PRECAST, REINFORCED COLUMNS

Figure 2.6.2 Design strength interaction curves for precast, reinforced concrete columns (continued)

