ADOPT #5 @ 12" ON CENTER (A_S = 0.31 SQ.IN/FT).

MAX SPACING: MIN(3 X 12, 18) = 18 IN. 12" O.C. IS SATISFACTORY.

STEP 4: SHEAR CHECKS
A) ONE-WAY SHEAR
AT D = 8.69 IN = 0.724 FT FROM COLUMN FACE:

V_U = 1084.8 X (1 X 0.734) ~ 796.6 LB/FT

PHI V_C = 0.75 X 2 X SQRT(3000) X 12 X 8.69 ~ 8560.5 LB

8560.5 > 796.6 (SATISFACTORY)

B) PUNCHING SHEAR
AT D/2 = 4.345 IN, PERIMETER B_O = 2 X (7 + 8.69) + 2 X (3.5 + 8.69) = 55.76 IN:

V_U = 1084.8 X (12.25 - 1.328) ~ 11,847.6 LB

PHI V_C = 0.75 X 4 X SQRT(3000) X 55.76 X 8.69 ~ 79,614.7 LB

79,614.7 > 11,847.6 (SATISFACTORY)

STEP 5: REINFORCEMENT
REINFORCEMENT: 5 #5 BARS @ 12" ON CENTER EACH WAY (BOTTOM MAT, TOTAL 10 BARS)
COVER: 3" CLEAR AT BOTTOM
CONCLUSION: THE 42"X42"X12" FOOTING IS ADEQUATE FOR THE 7" X 3.5" COLUMN.
PROVIDE 5 #5 BARS @ 12" ON CENTER IN BOTH DIRECTIONS.