

Design of Structure-2

Prepared by: Bikash Debnath

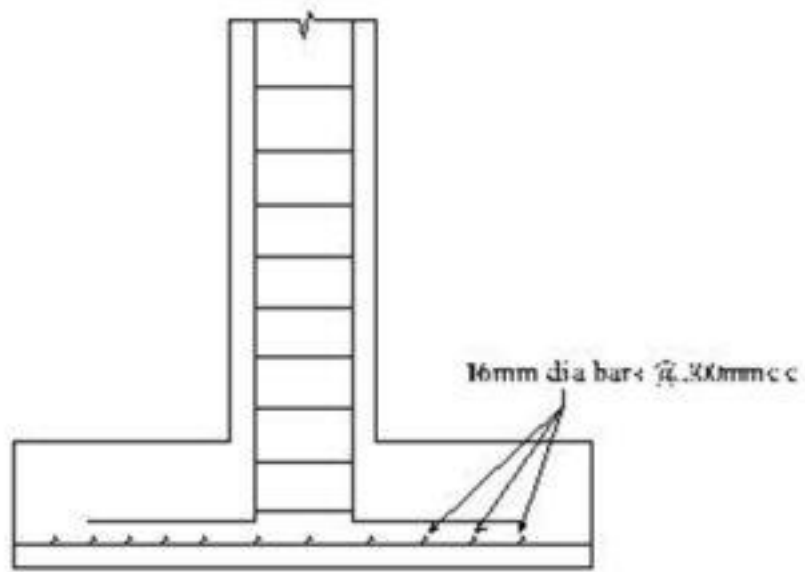
Civil Technology

Footing

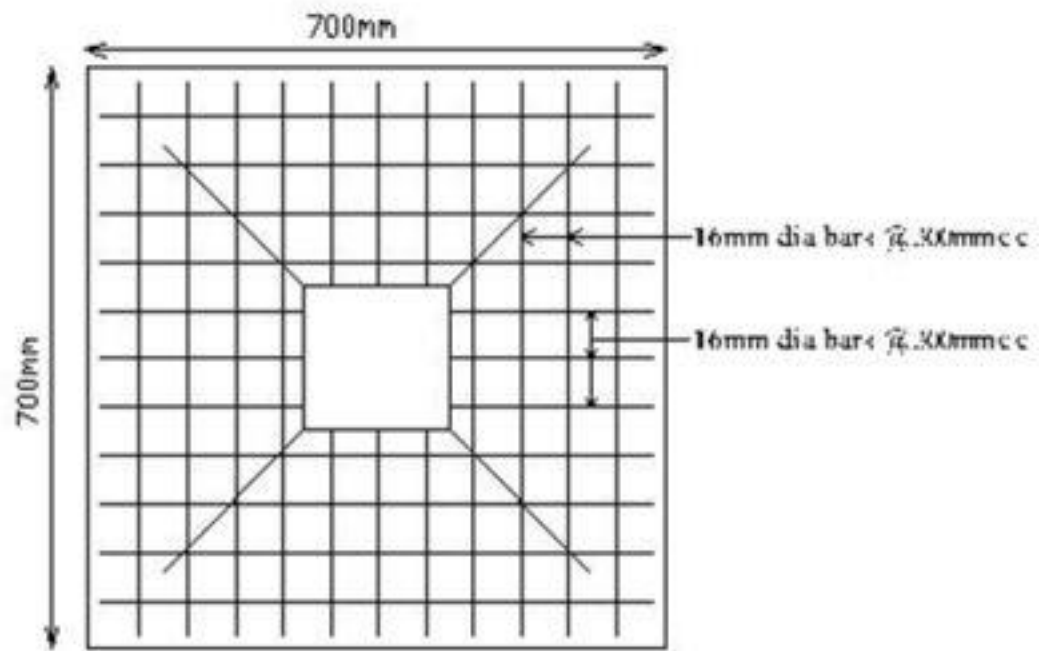
Square column footing

Rectangular column footing

Sloped footing



Section



Plan



Example#1 cont Given: - $q_a = 6$ ksf 5' below the grade

f'_c for footing = 3 Ksi $F_y = 60$ Ksi Column = 14" x 14"

f'_c for column = 4 Ksi sD.L = 390 K and sL.L = 260 K

Design solution:- check for beam shear

$$\phi V_{c_b} > V_{u_b}$$

$$0.75 \times 4 \sqrt{f'_c} b d > 7.3 \times 11 \times b$$

$$0.75 \times 4 \sqrt{3000} b \cdot 30 > 80.3 b$$

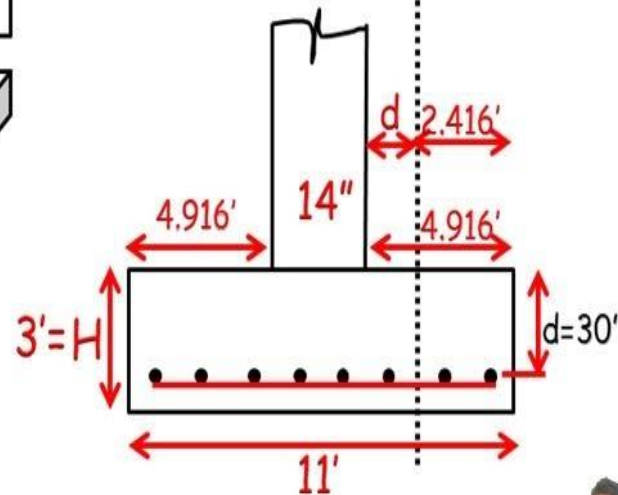
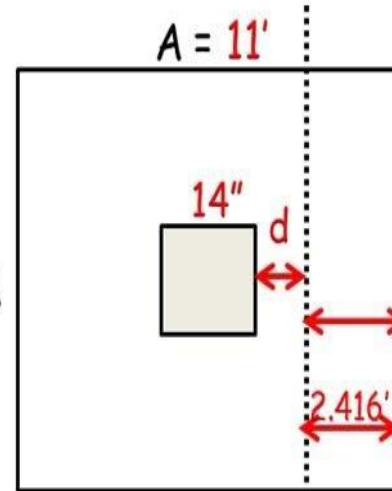
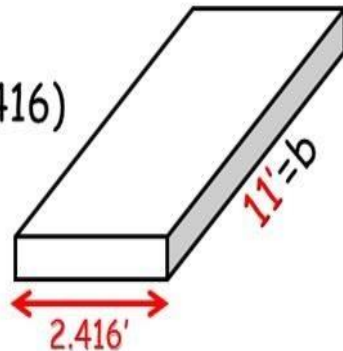
$$0.75 \times 4 \sqrt{3000} (132) 30 > 80.3 (2.416)$$

$$650 \text{ k} > 193 \text{ k}$$

$$d = 30'' + 2'' + 1''$$

$$H = 33''$$

$$H = 36'' = 3 \text{ ft}$$



Depth "d" = 30" is okay for beam shear.....

