

Lateral Breach

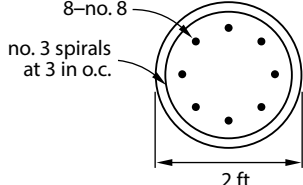
PROBLEM 13

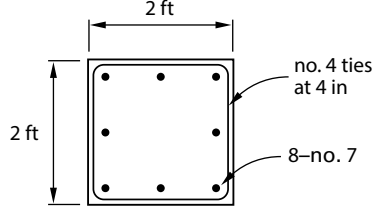
Reinforcement is needed for the column end zone in seismic zone 2. Use the following assumptions.

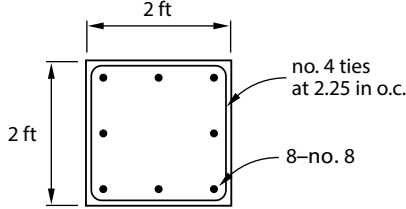
- $f'_c = 4$ ksi
- $f_y = 60$ ksi
- cover = 2 in

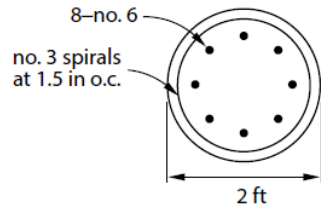
Which figure shows the correct reinforcement detailing for the column end zone in seismic zone 2?

(A) See answer option (A) below.

(B) 

(C) 

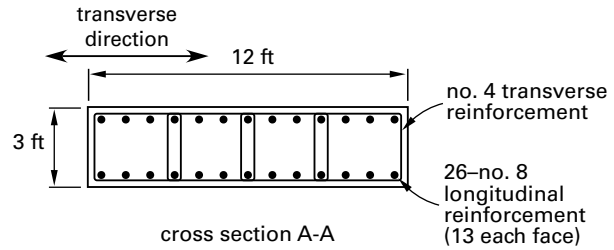
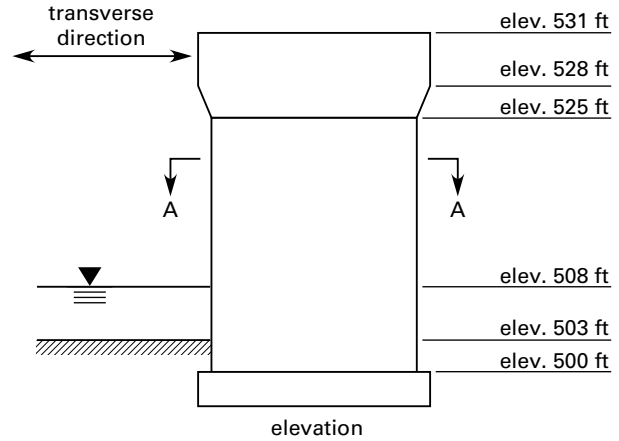
(D) 



PROBLEM 14

A concrete pier is to be used for a bridge in seismic zone 4. An elevation view of the pier is shown in the figure. Use the following assumptions.

- $f'_c = 4$ ksi, $f_y = 60$ ksi, cover = 2 in
- ignore detailing requirements in the transverse direction



For a factored Extreme Event I shear load of 1500 kips in the longitudinal direction and axial compression load of 1000 kips, what is the maximum allowable spacing of ties in the plastic hinge zones?

- (A) 2.0 in
- (B) 2.5 in
- (C) 3.0 in
- (D) 4.0 in

2-6 PE STRUCTURAL BRIDGES PRACTICE PROBLEMS WITH SOLUTIONS

Lateral Breechh

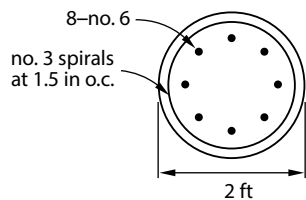
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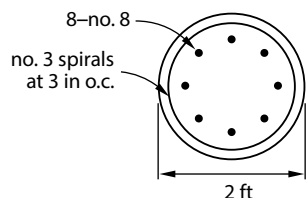
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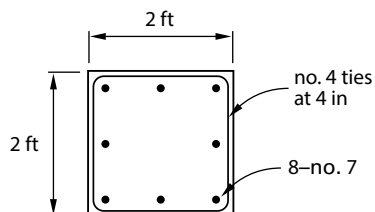
(A)



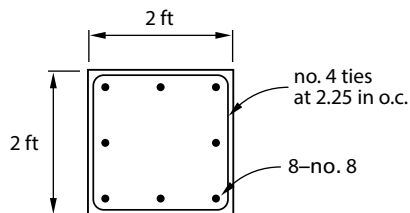
(B)



(C)



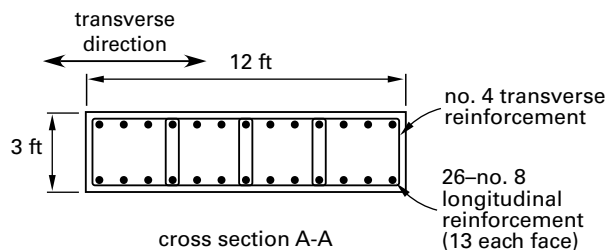
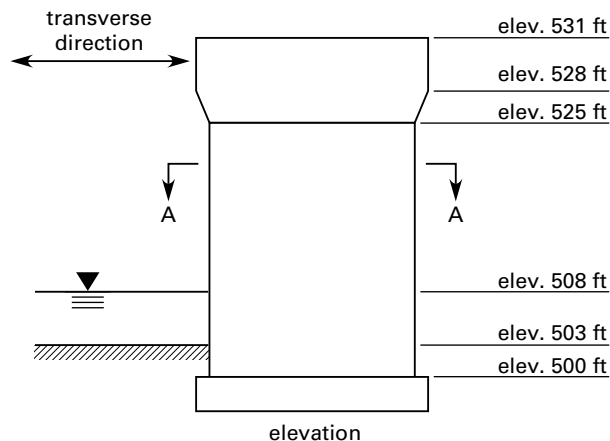
(D)



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