

**Example B1(c)—Four-bolt surface-mounted plate, tension only, close spacing, close to a corner**

Design an embedment with four post-installed undercut anchors and a surface-mounted plate for a 3 x 3 x 3/16 in. A501 structural tube attachment.

Given:

Concrete edges  
 $c_{a1} = c_{a2} = 12$  in.

Base plate  
 8 x 8 in.

Spacing  
 $s = 6$  in.

Concrete  
 $f'_c = 4000$  psi

Anchor material (F 1554 Gr. 36)\*  
 $f_{ya} = 36$  ksi  
 $f_{uta} = 58$  ksi

Anchor type  
 Threaded, undercut  
 $k_c = 24$  from product-specific tests

Plate  
 $F_y = 36$  ksi

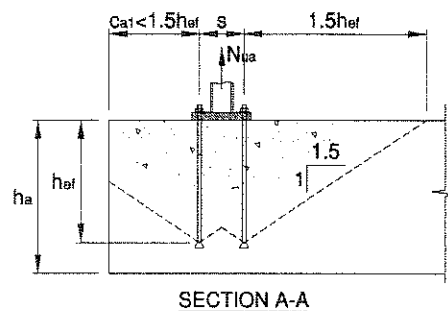
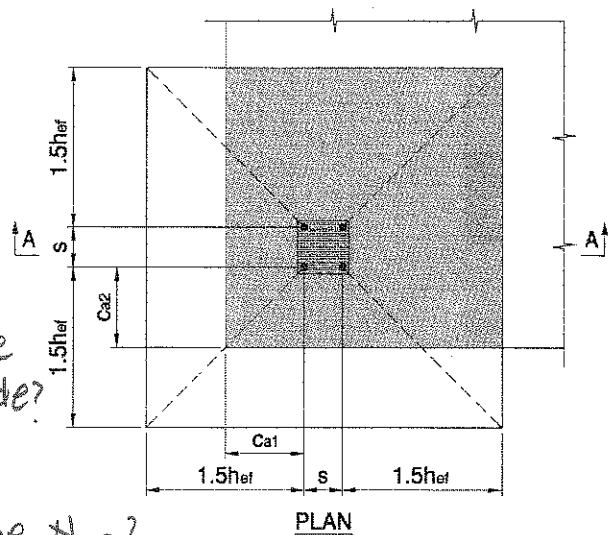
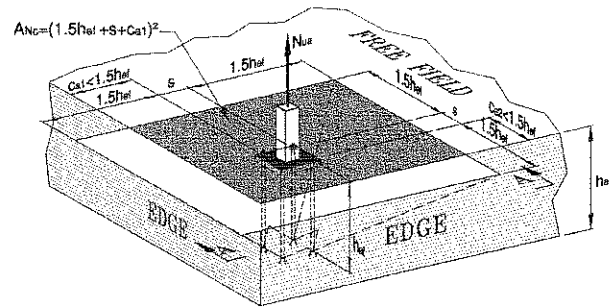
Load  
 $N_{ua} = 28$  kips

Where  $N_{ua}$  is the applied factored external loads using load factors from Appendix C of the Code.

Assumptions:

- Concrete is cracked.
- $\phi$ -factors are based on Condition B in D.4.5 of the Code (no supplementary reinforcement).
- Ductile embedment design in accordance with D.3.6.1.

\*Anchor material is ASTM F 1554 Gr. 36. It has elongation of 23% and reduction in area of 2 in., and meets the definition of a ductile steel element given in D.1 ( $f_{uta} = 58$  ksi <  $1.9f_{ya} = 1.9 \times 36 = 64$  ksi).



Where can I find the  
 Appendix C of the code?

and how to calculate the  $N_{ua}$ ?