Figure 1-1 Flow Chart for Environmental Classification of Structures

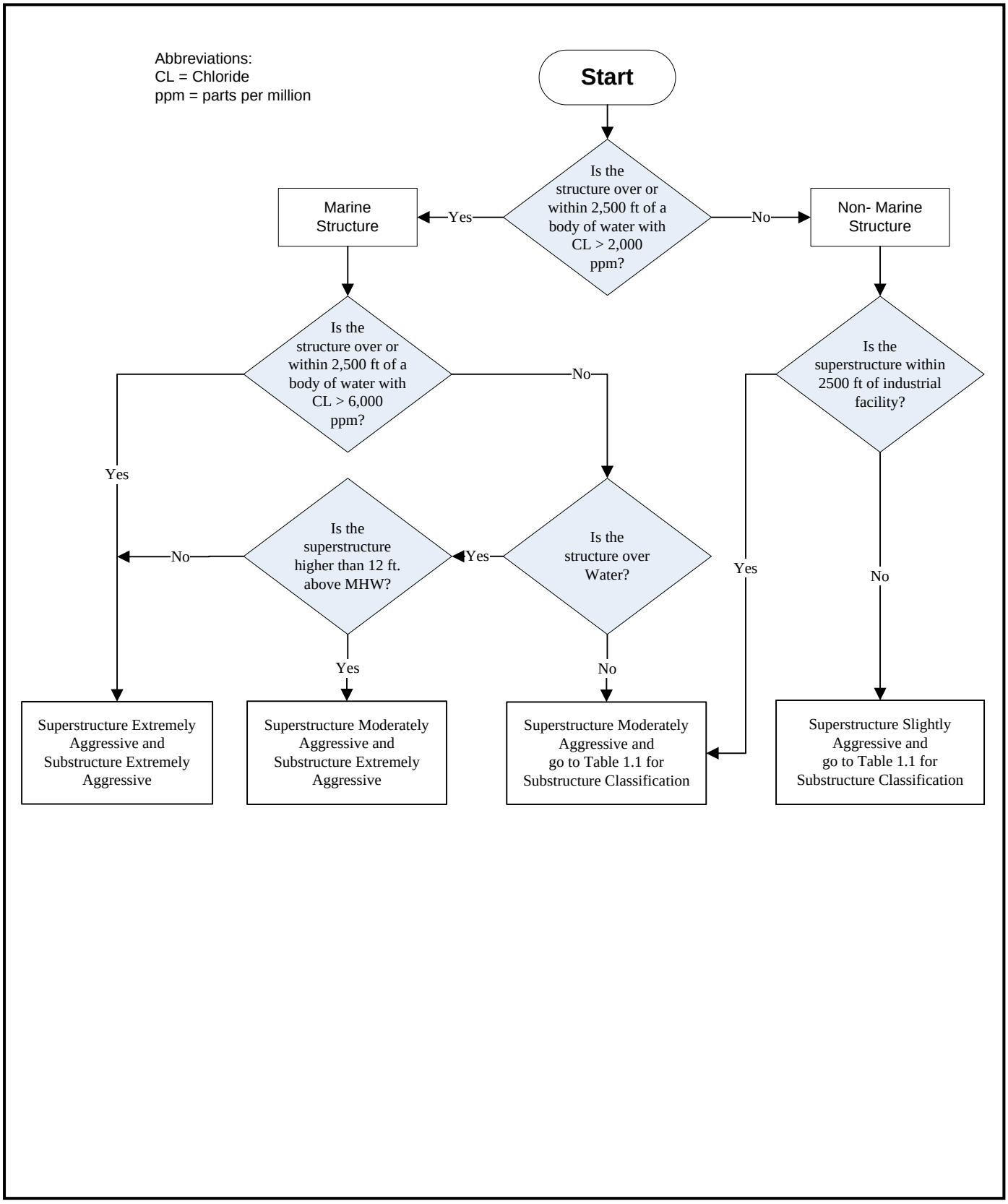
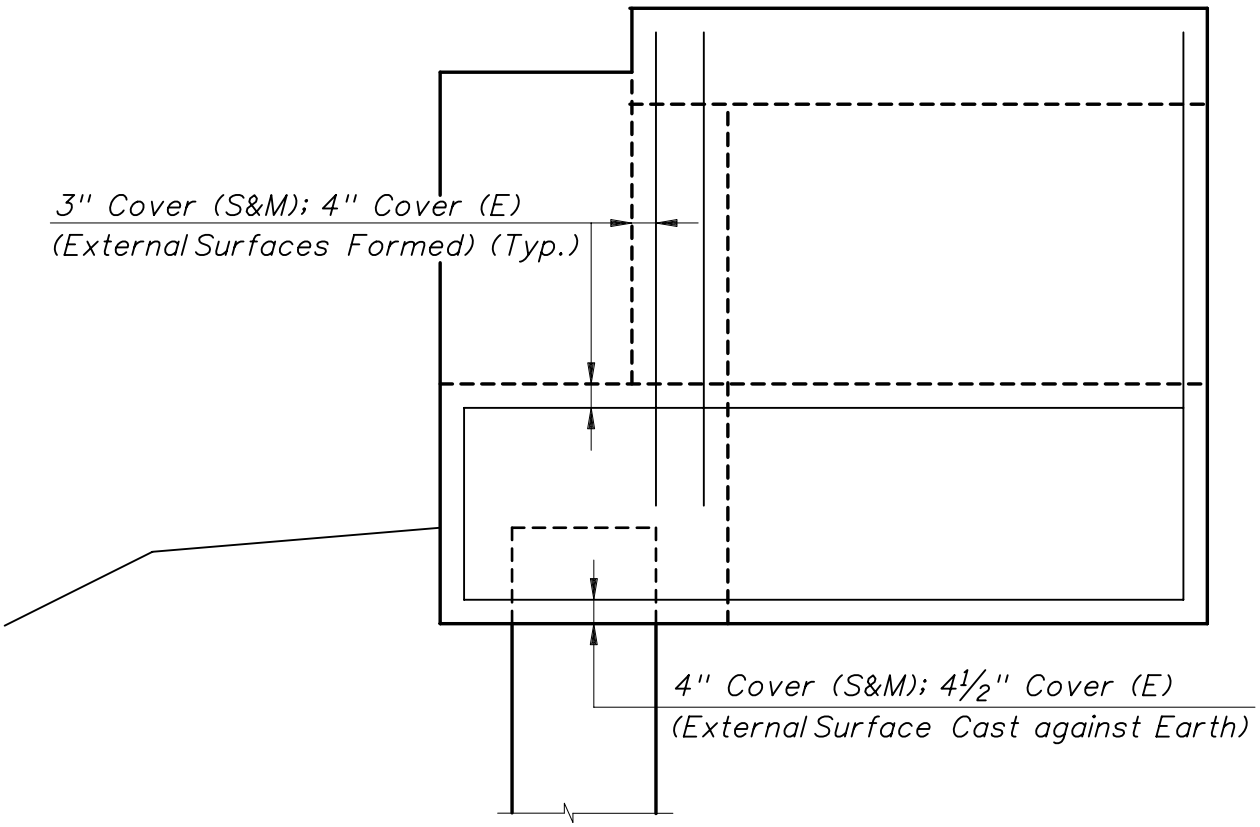


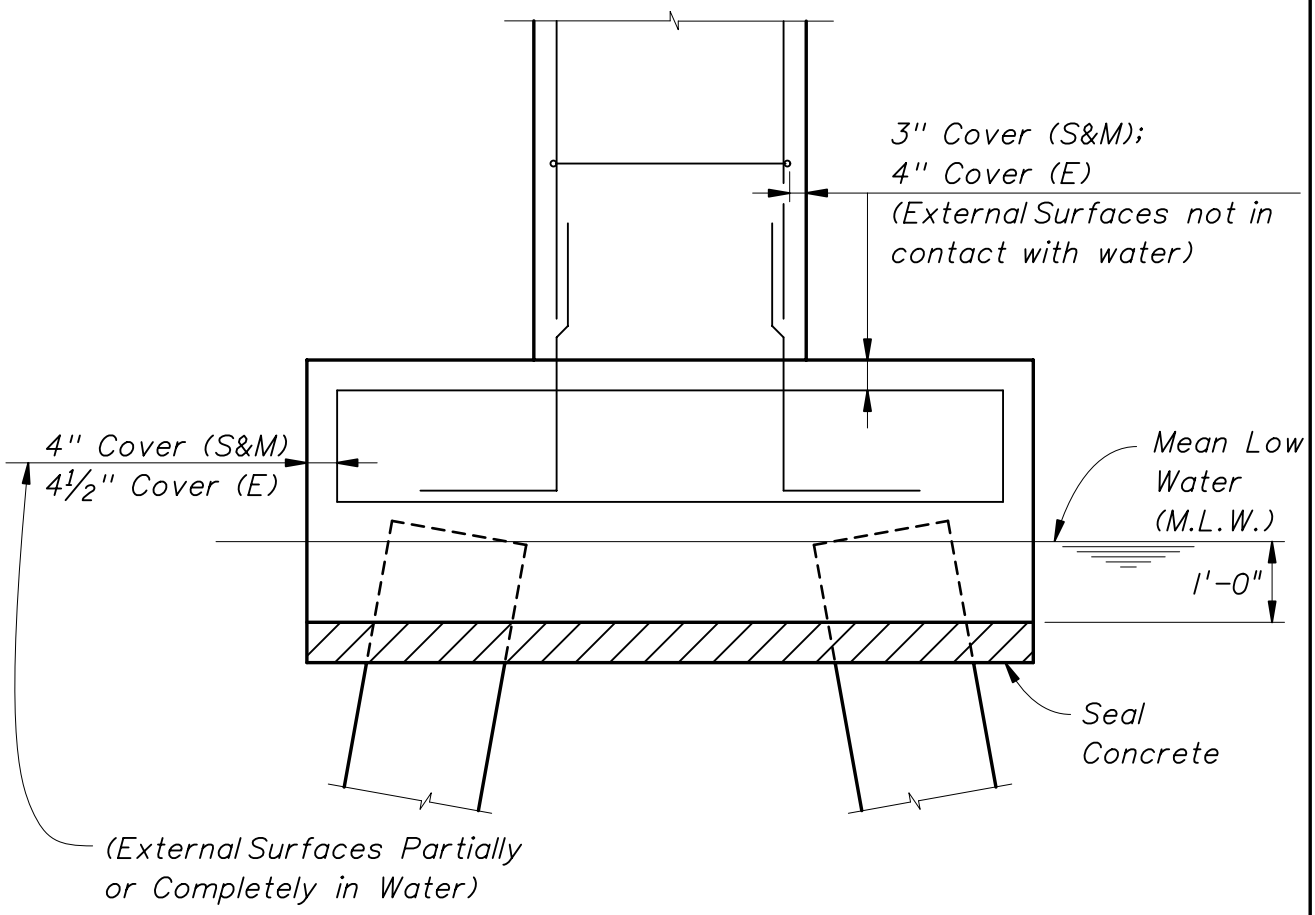
Figure 1-2, End Bent (All Environments)



NOTE:
S = Slightly Aggressive Environment
M = Moderately Aggressive Environment
E = Extremely Aggressive Environment

END BENT
(ALL ENVIRONMENTS)

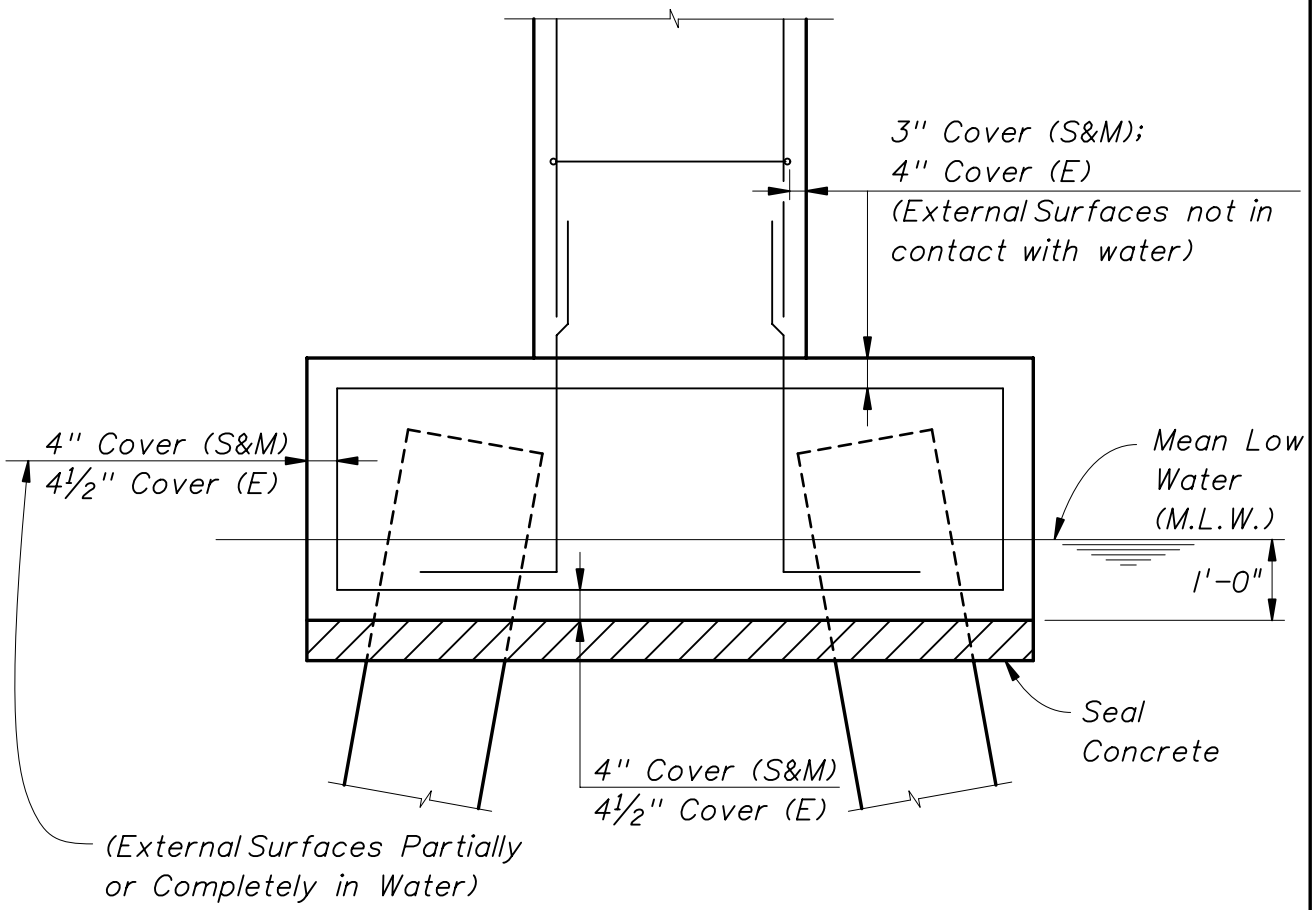
Figure 1-3a Piers (All Environments) (1 of 3)



NOTE:
S = Slightly Aggressive Environment
M = Moderately Aggressive Environment
E = Extremely Aggressive Environment

PIER IN WATER
(ALL ENVIRONMENTS)

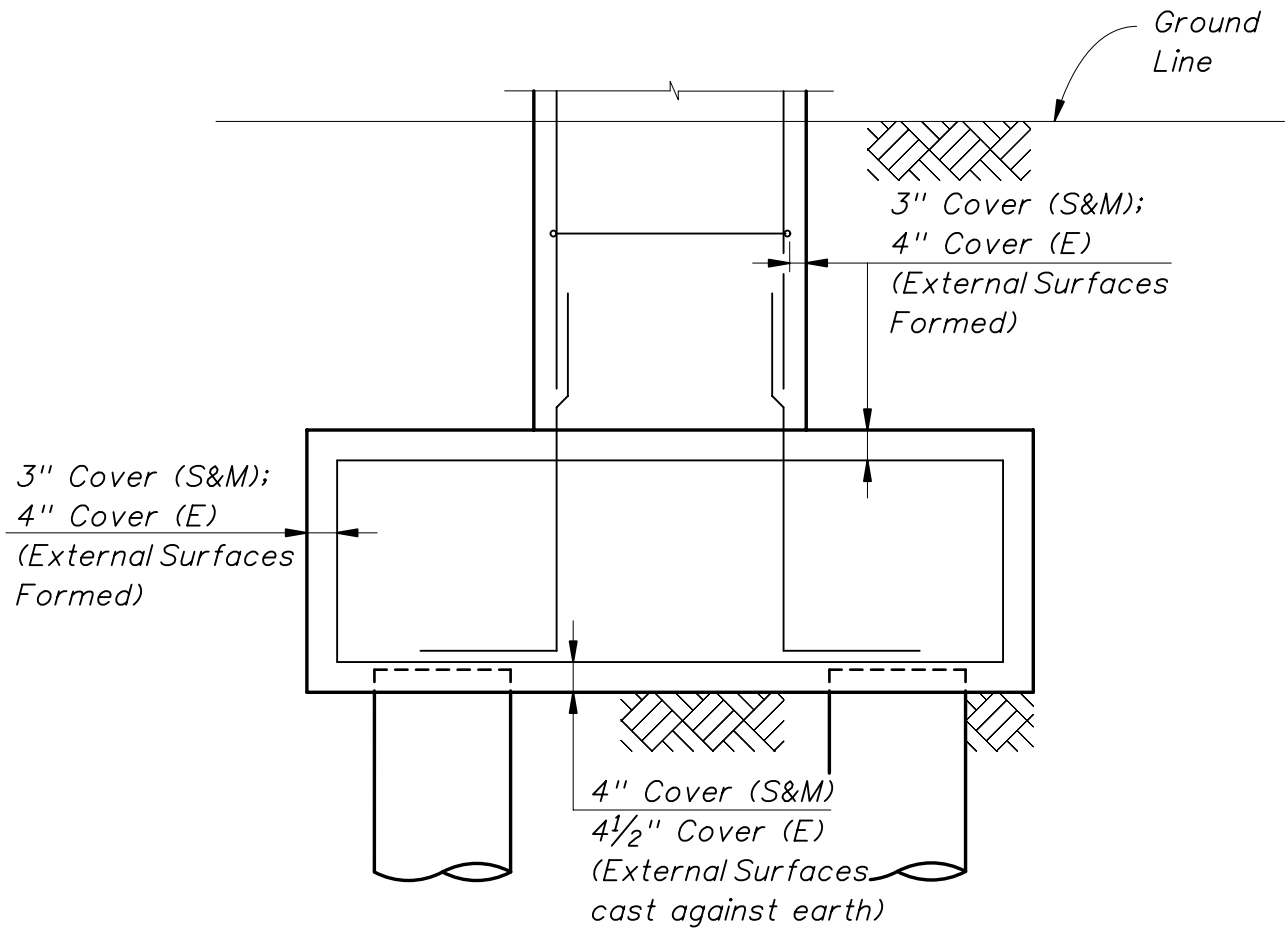
Figure 1-3b Piers (All Environments) (2 of 3)



NOTE:
S = Slightly Aggressive Environment
M = Moderately Aggressive Environment
E = Extremely Aggressive Environment

PIER SUBJECT TO VESSEL COLLISION IN WATER
(ALL ENVIRONMENTS)

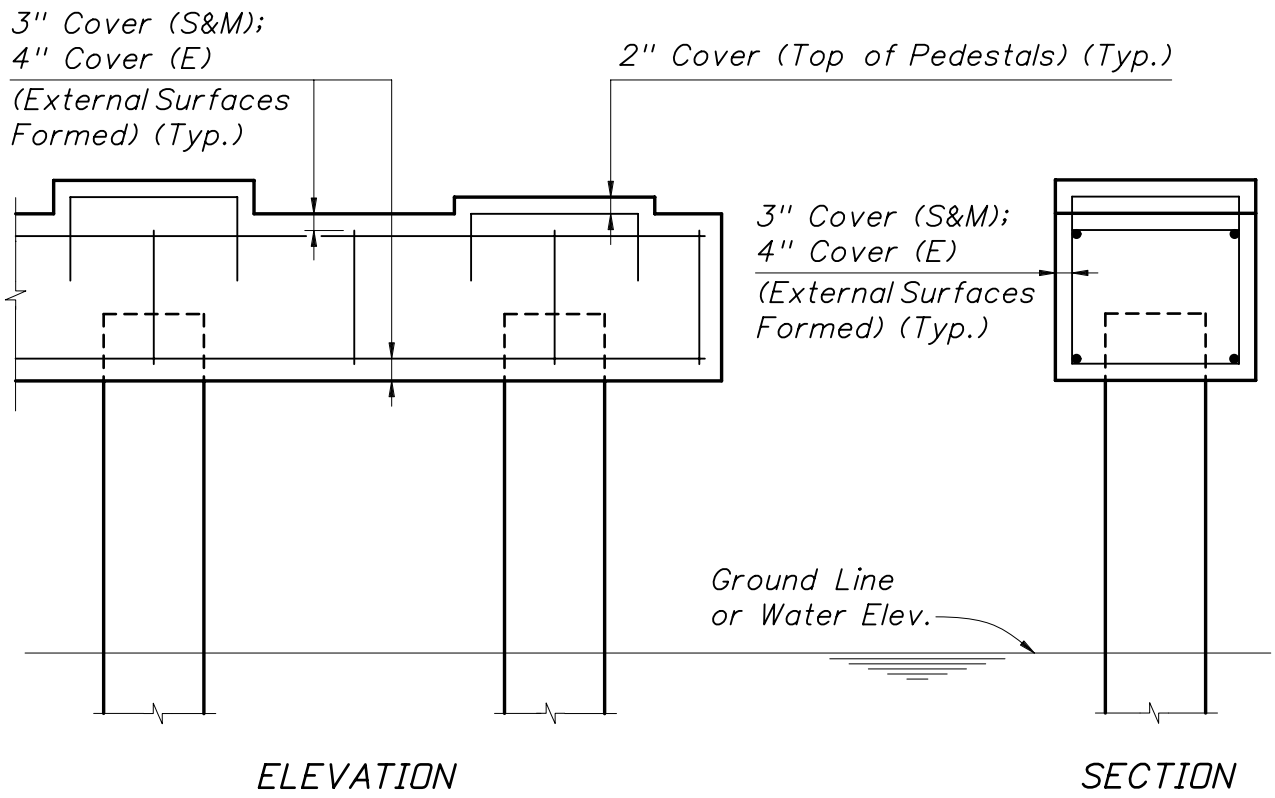
Figure 1-3c Piers (All Environments) (3 of 3)



NOTE:
S = Slightly Aggressive Environment
M = Moderately Aggressive Environment
E = Extremely Aggressive Environment

PIER ON LAND
(ALL ENVIRONMENTS)

Figure 1-4 Intermediate Bent (All Environments)



NOTE:
S = Slightly Aggressive Environment
M = Moderately Aggressive Environment
E = Extremely Aggressive Environment

INTERMEDIATE BENT
(ALL ENVIRONMENTS)

Figure 1-5 Cast -in-Place slab beam supported superstructure (All environments)

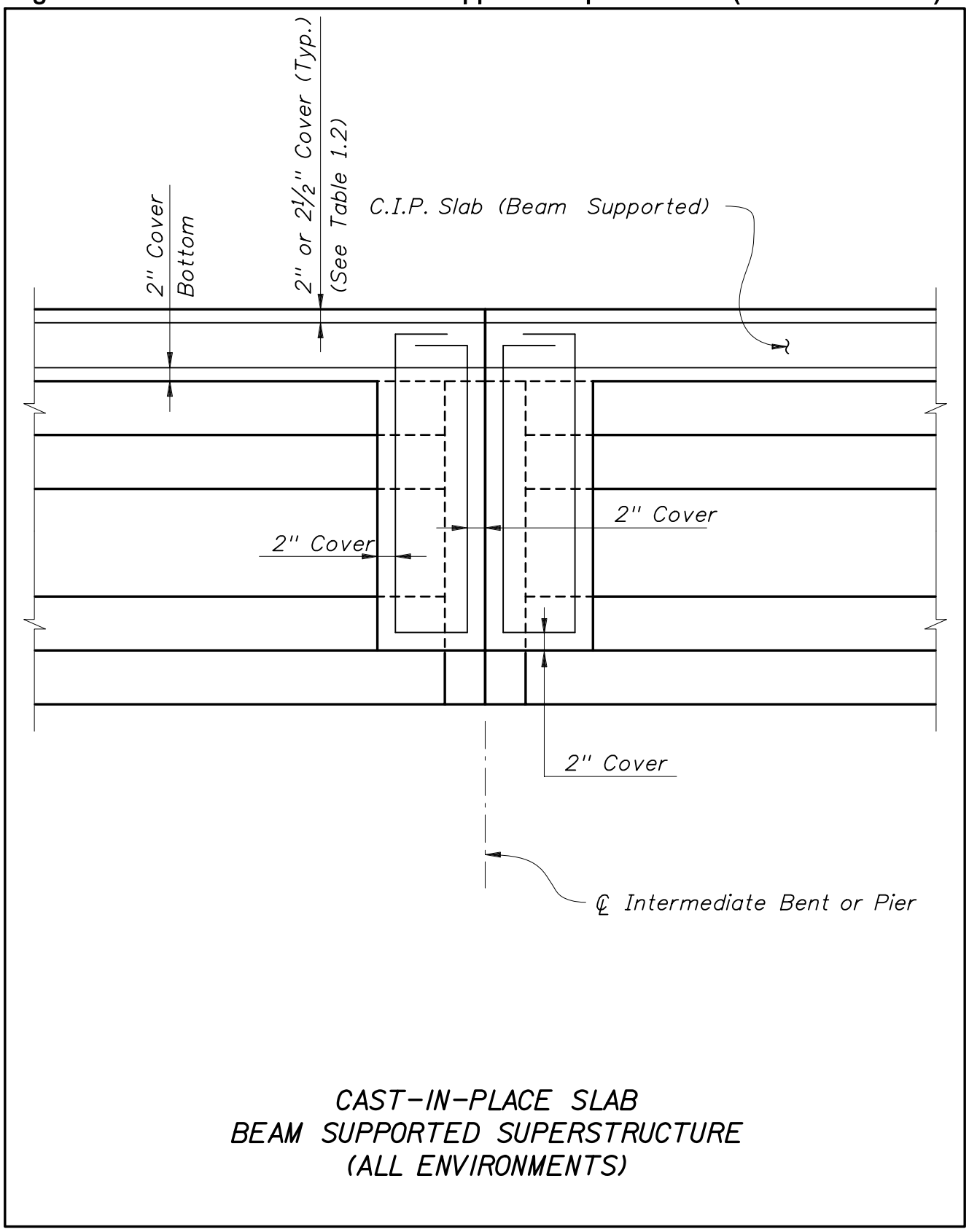
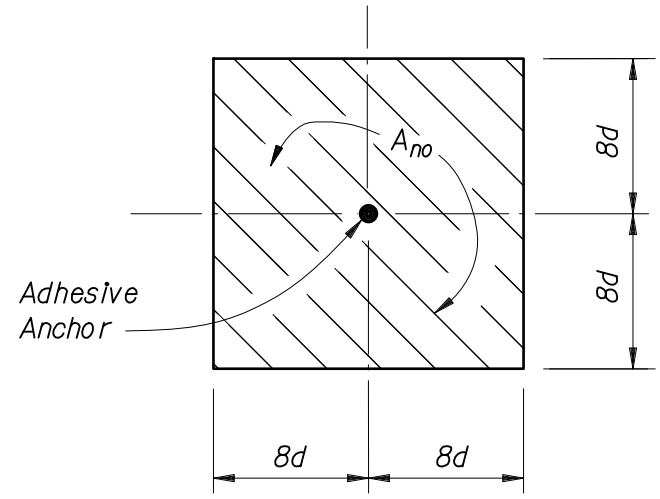
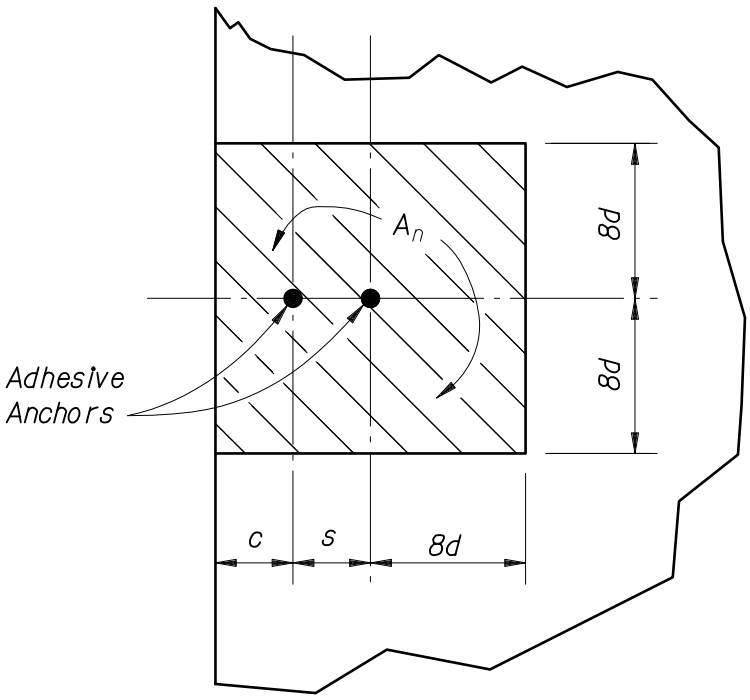


Figure 1-6 Effective Tensile Stress Areas of Adhesive Anchors



PLAN
FOR CALCULATION of A_{no}



PLAN
FOR CALCULATION of A_n

EFFECTIVE TENSILE STRESS AREAS
OF ADHESIVE ANCHORS

Figure 1-7 Effective Shear Stress Areas of Adhesive Anchors

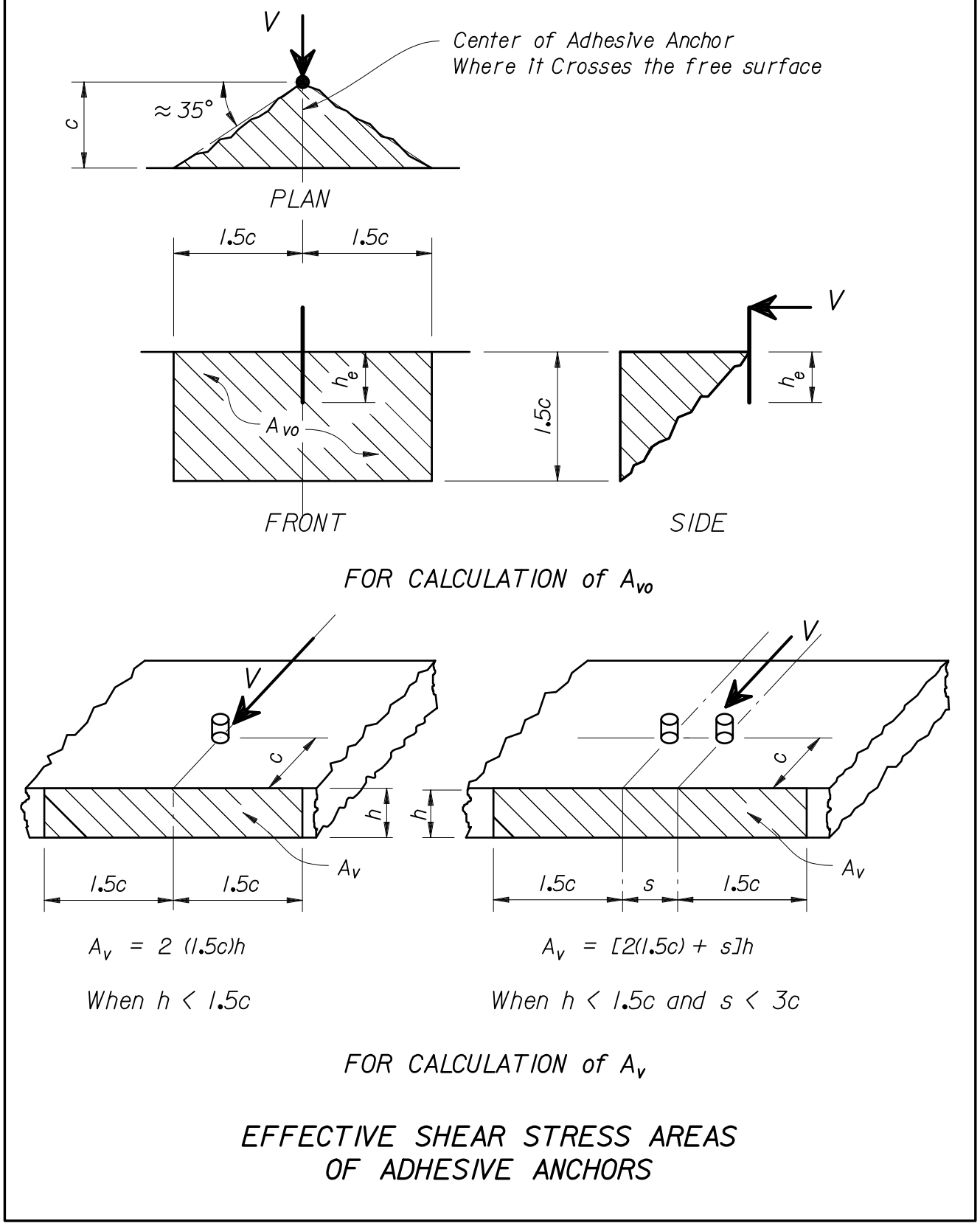


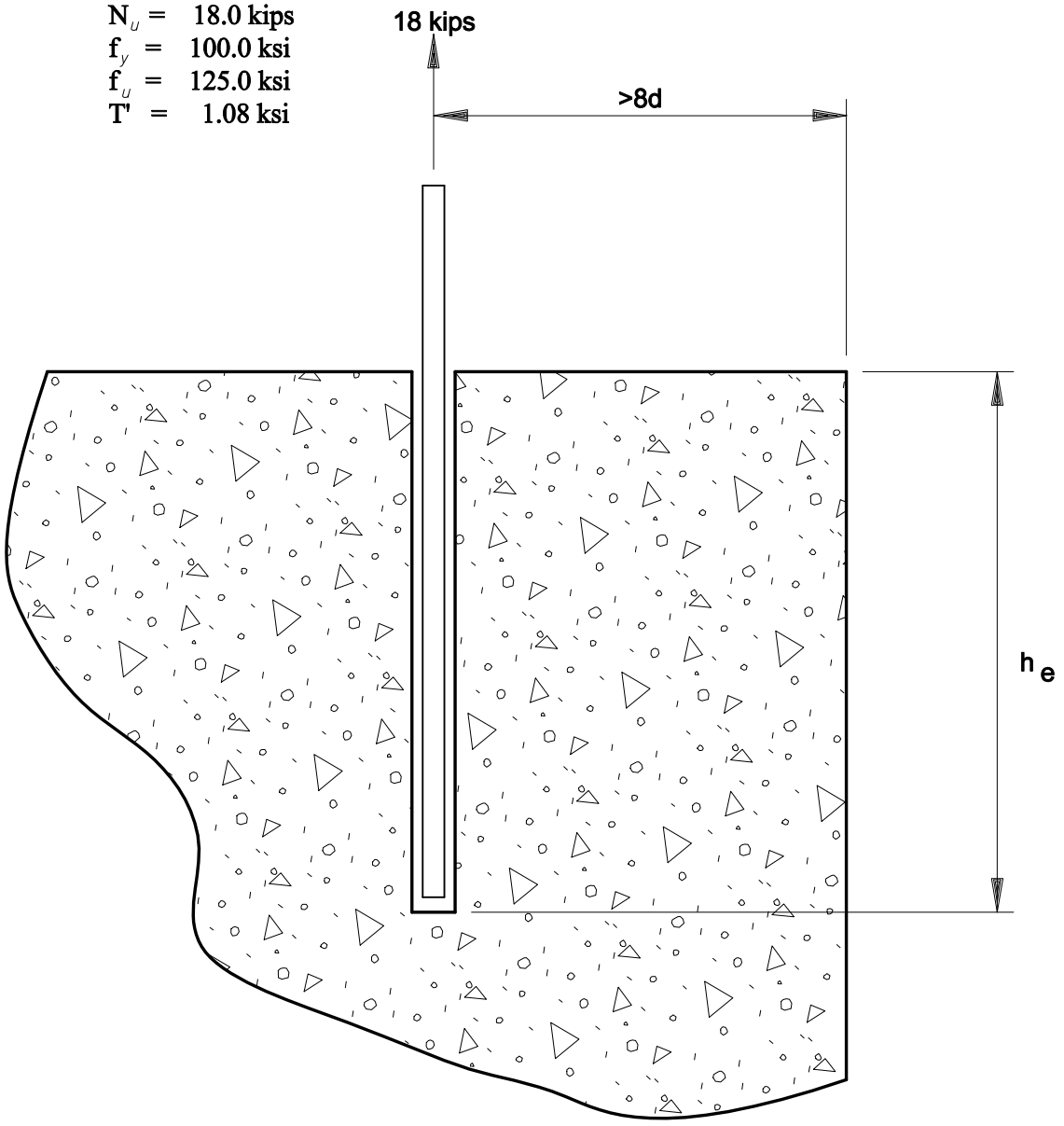
Figure 1-8 Adhesive Anchors Design Example 1

1.6. Adhesive Anchors Design Example 1 - Single Anchor Away from Edges and Other Anchors

Design an adhesive anchor using threaded rod (ASTM A193, Grade B7) for a factored tension load of 18 kips. The anchor is located more than 8 anchor diameters from edges and is isolated from other anchors. The anchor embedment length is to be sufficient to ensure steel failure.

Given:

N_u = 18.0 kips
f_y = 100.0 ksi
f_u = 125.0 ksi
T' = 1.08 ksi



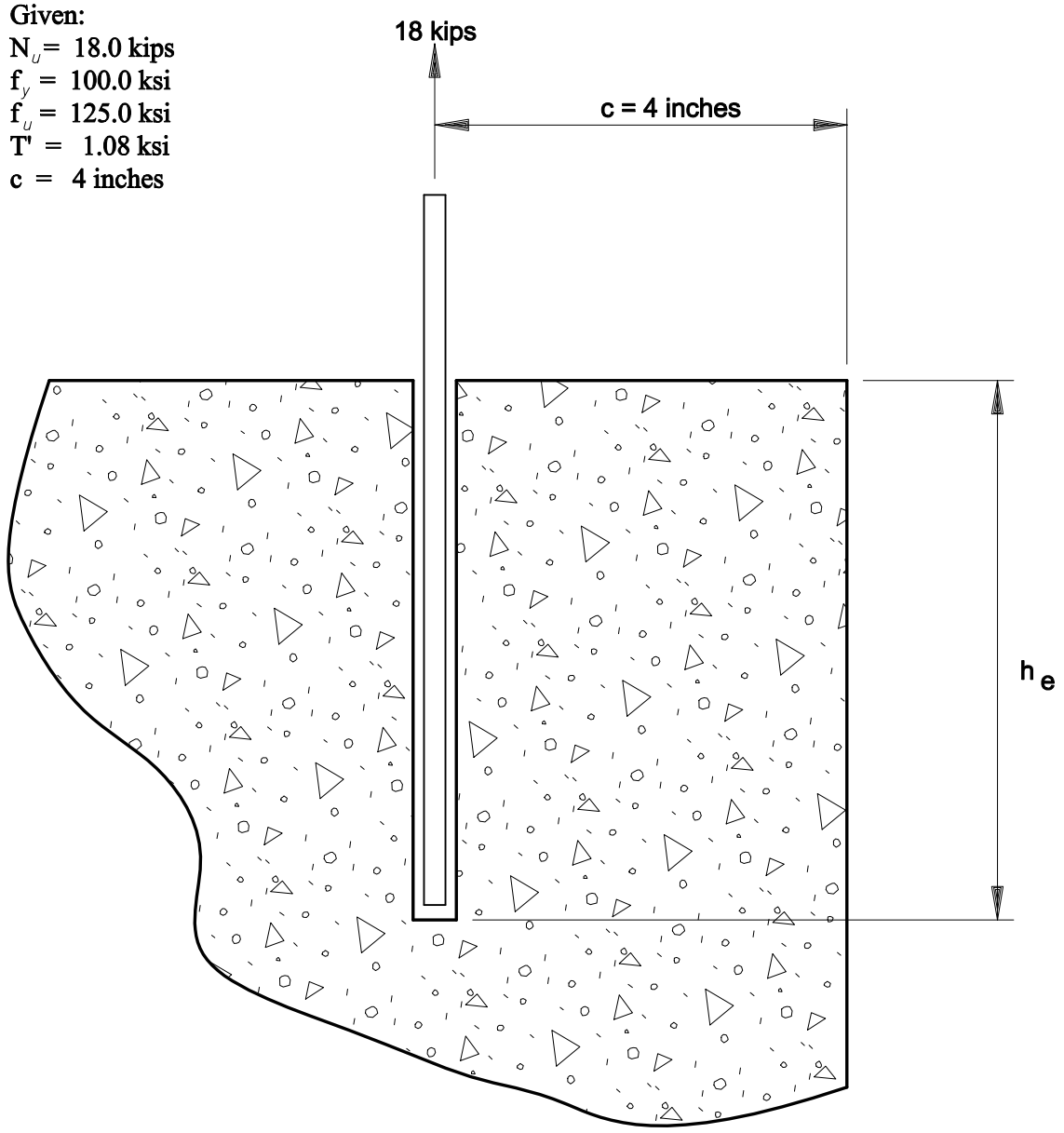
Section View

Figure 1-9 Adhesive Anchors Design Example 2

1.6. Adhesive Anchors Design Example 2 - Single Anchor Away from Other Anchors but Near Edge

Design an adhesive anchor using threaded rod (ASTM A193, Grade B7) for a factored tension load of 18 kips. The anchor is located 4 inches from an edge but is isolated from other anchors. The anchor embedment length is to be sufficient to ensure steel failure.

Given:
N_u = 18.0 kips
f_y = 100.0 ksi
f_u = 125.0 ksi
T' = 1.08 ksi
c = 4 inches



Section View

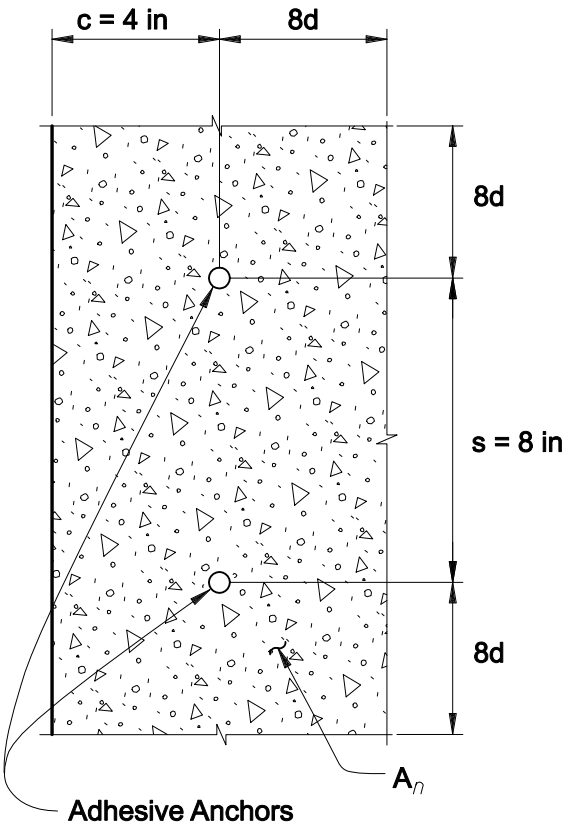
Figure 1-10 Adhesive Anchors Design Example 3

1.6 Adhesive Anchors Design Example 3 - Two Anchors Spaced at 8 inches, 4 inches from Edge

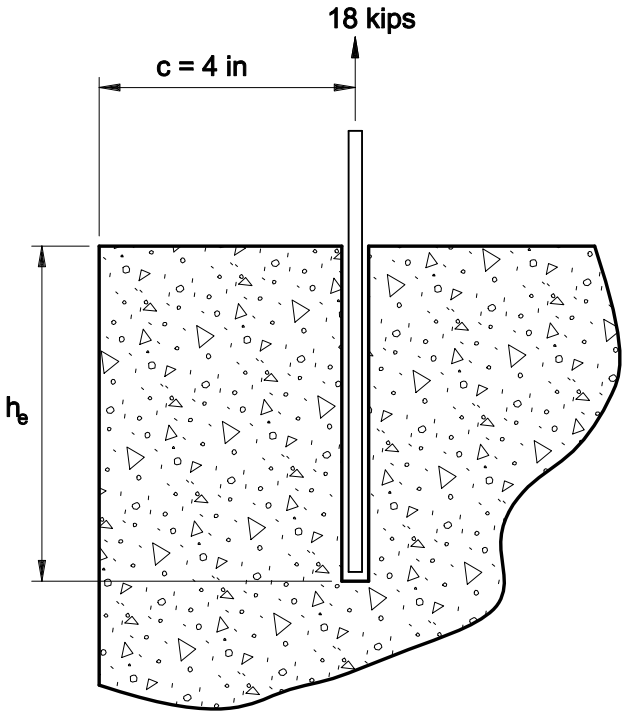
Design a group of two adhesive anchors using threaded rod (ASTM A193, Grade B7) for a factored tension load of 18 kips. The anchors are located 4 inches from an edge and are spaced 8 inches apart. Steel failure is not required.

Given:

N_u = 18.0 kips
f_y = 100.0 ksi
f_u = 125.0 ksi
T' = 1.08 ksi
c = 4 inches
s = 8 inches



Plan View



Section View