

Connect-EZ Anchor Check- SDC "A"- "F"

Input values in yellow cells.

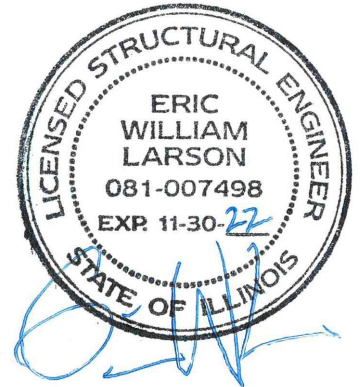
P_n [k] 10,000.00 req'd nominal tensile strength (ACI 318-08 & -11, 16.5.1.3(b); ACI 318-14, 16.2.4.3(b))

Plate Data (see attached diagram)

t [in]	0.75	plate thickness
b [in]	5.00	plate width (transverse)
L [in]	10.00	plate length (longitudinal)
d_{hole} [in]	0.94	diameter of anchor bolt hole
θ [deg]	6.00	inclination of plate (from horizontal)
x_b [in]	3.00	distance from plate edge to bars (along x-axis)
x_a [in]	3.875	distance from plate edge to anchor bolt (along x-axis)
d_b [in]	0.50	diameter of deformed bars
s [in]	6.00	spacing of deformed bars (along z-axis)

Material Properties

f'_c [psi]	3,500.00	compressive strength of tilt-up panel concrete
$f_{y,plate}$ [psi]	50.00	yield strength of plate
$f_{y,bars}$ [psi]	70.00	yield strength of deformed bars
x_c [in]	0.340	length of concrete compression stress block
P_c [lb]	3,031.04	reaction from concrete panel
$P_b \cos \theta$ [lb]	13,031.04	reaction from deformed bars



Check Plate in Bending

$M_{u,zz}$ [lb-in]	8,750.00		factored bending moment about z-z (longit.) axis
$\phi M_{n,zz}$ [lb-in]	63,281.25	OK	design bending moment about z-z axis
$M_{u,xx}$ [lb-in]	19,546.56		factored bending moment about x-x (trans.) axis
$\phi M_{n,xx}$ [lb-in]	25,708.01	OK	design bending moment about x-x axis
biaxial bending	0.90	OK	interaction equation

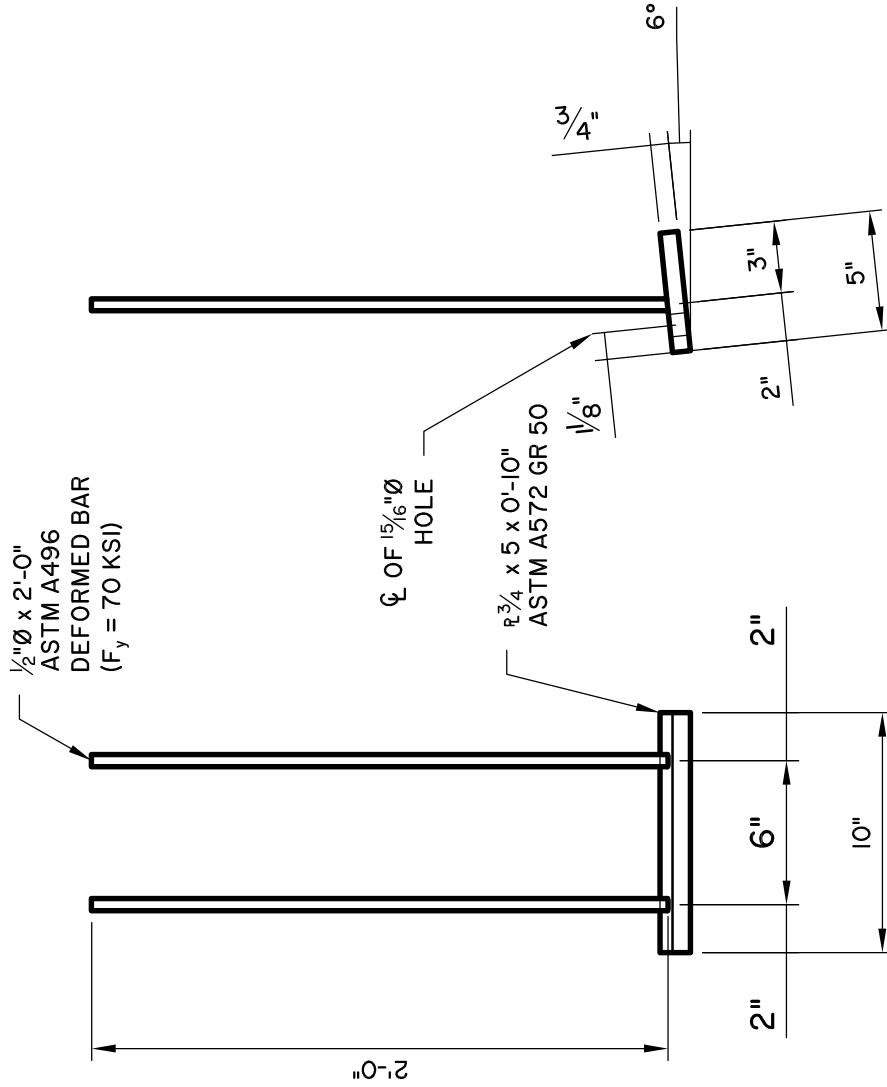
Solving for x_c

A	(2,975.00)
B	26,775.00
C	(8,750.00)
sqrt(B ² -4AC)	24,754.31
$x_{c,1}$ [in]	0.34
$x_{c,2}$ [in]	8.66

Check Bars in Tension

$A_{b,provided}$ [in ²]	0.39		area of deformed bars provided
$A_{b,req'd}$ [in ²]	0.14	OK	area of deformed bars required

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CONNECT-EZ PA-12

SCALE 1-1/2" = 1'-0"