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Design:	Exterior Stair Area D - Landing BP	Date:	1/12/2024
Fastening point:			

1.1 Load combination and design results

Case	Description	Forces [lb] / Moments [in.lb]	Seismic	Max. Util. Anchor [%]
1	Max Shear X	N = 13,833; V _x = 3,600; V _y = 470; M _x = 0; M _y = 0; M _z = 0;	yes	18
2	Max Shear Y	N = -8,880; V _x = 33; V _y = 4,969; M _x = 478,272; M _y = 0; M _z = 0;	no	41
3	Max Moment X	N = -8,880; V _x = 465; V _y = 8,478; M _x = -478,272; M _y = 19,656; M _z = 264;	yes	60
4	Max Moment Y	N = -200; V_x = 8,125; V_y = 3,989; M_x = -233,520; M_y = 469,008; M_z = 300;	yes	84

2 Load case/Resulting anchor forces

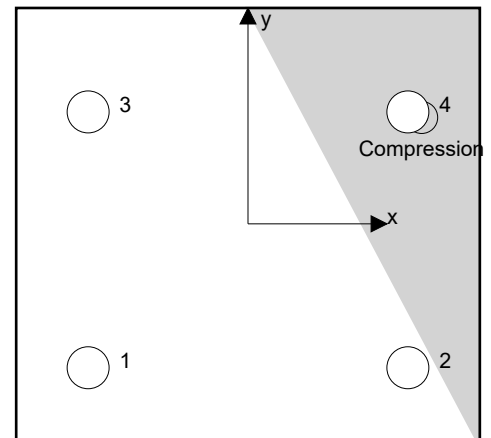
Controlling load case: 4 Max Moment Y

Anchor reactions [lb]

Tension force: (+Tension, -Compression)

Anchor	Tension force	Shear force	Shear force x	Shear force y
1	27,760	2,213	1,642	1,484
2	2,411	1,720	1,642	511
3	16,994	2,839	2,420	1,484
4	0	2,474	2,420	511

max. concrete compressive strain: 0.66 [‰]
 max. concrete compressive stress: 2,853 [psi]
 resulting tension force in (x/y)=(0.000/0.000): 0 [lb]
 resulting compression force in (x/y)=(12.682/10.076): 47,365 [lb]



Anchor forces are calculated based on the assumption of a rigid anchor plate.

3 Tension load

	Load N _{ua} [lb]	Capacity ϕ N _n [lb]	Utilization β _N = N _{ua} /ϕ N _n	Status
Steel Strength*	27,760	90,844	31	OK
Pullout Strength*	27,760	42,279	66	OK
Concrete Breakout Failure** ¹	N/A	N/A	N/A	N/A
Concrete Side-Face Blowout, direction **	N/A	N/A	N/A	N/A

* highest loaded anchor **anchor group (anchors in tension)

¹ Tension Anchor Reinforcement has been selected!