RECTANGULAR SPREAD FOOTING - PRELIMINARY

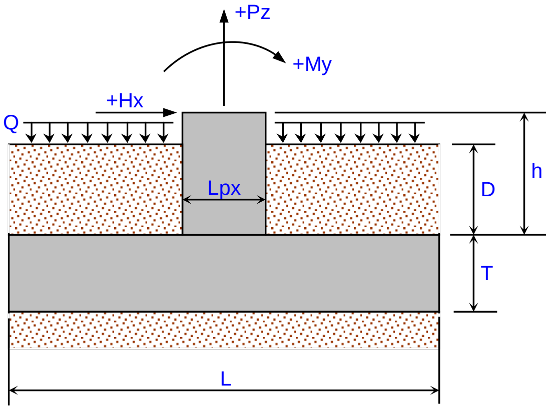
For Assumed Rigid Footing with from 1 To 8 Piers
Subjected to Uniaxial or Biaxial Eccentricity

Job Name:		Subject:			
Job Number:		Originator:		Checker:	

Input Data:

Footing Data:

Footing Length, L =	12,500	ft.
Footing Width, B =	9,000	ft.
Footing Thickness, T =	1,300	ft.
Concrete Unit Wt., γc =	0,150	kcf
Soil Depth, D =	2,500	ft.
Soil Unit Wt., γs =	0,110	kcf
Pass. Press. Coef., Kp =	2,050	
Coef. of Base Friction, μ =	0,280	
Uniform Surcharge, Q =	0,000	ksf

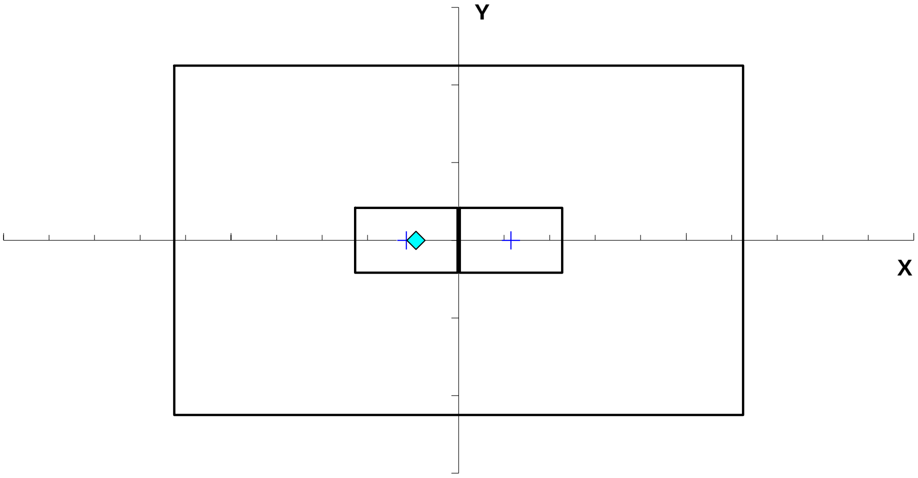


Nomenclature

Pier/Loading Data:

Number of Piers = 2

	Pier #1	Pier #2						
Xp (ft.) =	-1,150	1,150						
Yp (ft.) =	0,000	0,000						
Lpx (ft.) =	2,250	2,250						
Lpy (ft.) =	1,670	1,670						
h (ft.) =	2,500	2,500						
Pz (k) =	-88,50	-50,00						
Hx (k) =	-20,70	-15,00						
Hy (k) =	0,00	0,00						
Mx (ft-k) =	0,00	0,00						
My (ft-k) =	0,00	0,00						



FOOTING PLAN

(continued)

Results:

Total Resultant Load and Eccentricities:

ΣPz =	-192,13	kips
ex =	-0,94	ft. (<= L/6)
ey =	0,00	

Overturning Check:

ΣMrx =	N.A.	ft-kips
ΣMox =	N.A.	ft-kips
FS(ot)x =	N.A.	
ΣMry =	1156,52	ft-kips
ΣMoy =	-135,66	ft-kips
FS(ot)y =	8,525	(>= 1.5)

Sliding Check:

Pass(x) =	8,31	kips
Frict(x) =	53,80	kips
FS(slid)x =	1,740	(>= 1.5)
Passive(y) =	11,54	kips
Frict(y) =	53,80	kips
FS(slid)y =	N.A.	

Uplift Check:

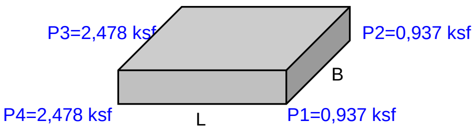
ΣPz(down) =	-192,13	kips
ΣPz(uplift) =	0,00	kips
FS(uplift) =	N.A.	

Bearing Length and % Bearing Area:

Dist. x =	N.A.	ft.
Dist. y =	N.A.	ft.
Brg. Lx =	12,500	ft.
Brg. Ly =	9,000	ft.
%Brg. Area =	100,00	%
Biaxial Case =	N.A.	

Gross Soil Bearing Corner Pressures:

P1 =	0,937	ksf
P2 =	0,937	ksf
P3 =	2,478	ksf
P4 =	2,478	ksf



CORNER PRESSURES

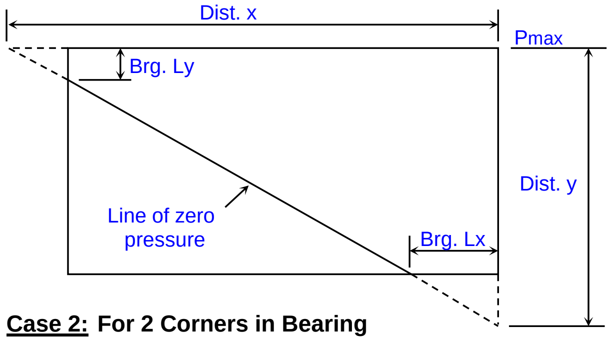
Maximum Net Soil Pressure:

Pmax(net) = Pmax(gross)-(D+T)*γs

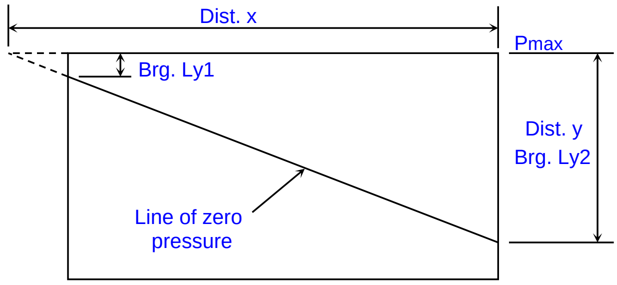
Pmax(net) =	2,060	ksf

Nomenclature for Biaxial Eccentricity:

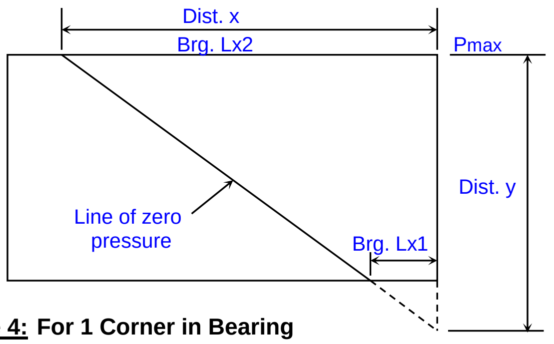
Case 1: For 3 Corners in Bearing
(Dist. x > L and Dist. y > B)



Case 2: For 2 Corners in Bearing
(Dist. x > L and Dist. y <= B)



Case 3: For 2 Corners in Bearing
(Dist. x <= L and Dist. y > B)



Case 4: For 1 Corner in Bearing
(Dist. x <= L and Dist. y <= B)