

Bearing Capacity Analysis Report (Strip / Pad footing)

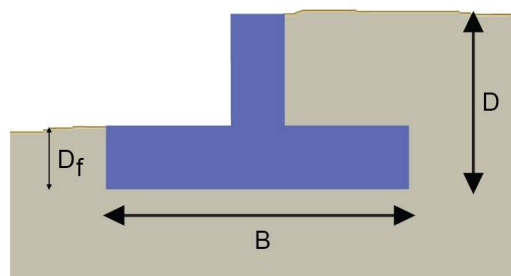
**Peysanj
Geotechnical Engineering Software**

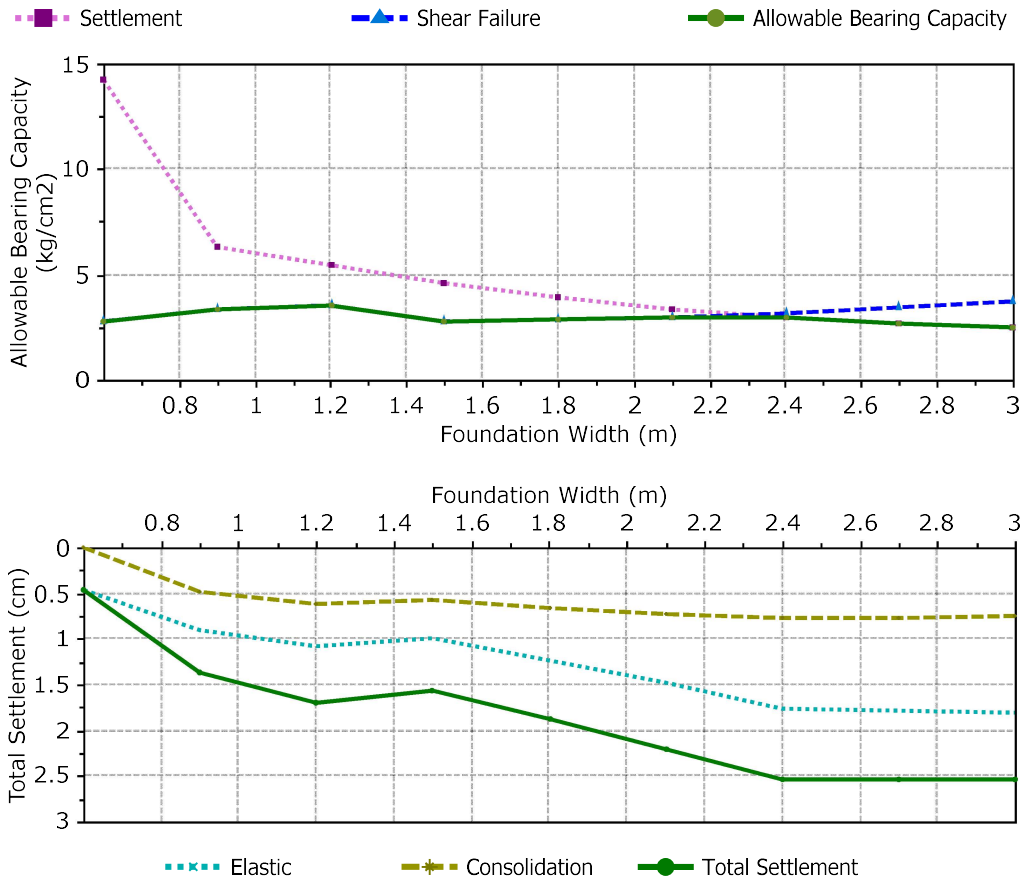
Soil Layer	Thickness (m)	Bottom (m)	Density (gr/cm3)	C (kg/cm2)	F (o)	Es (kg/cm2)	Poisson Ratio	Void Ratio	Cc	Cs	Pc (kg/cm2)	Pre-consolidated
Silt	0.9	0.9	2	0.42	0	70	0.45	0.7	0.15	0.06	0	False
Sand	1.2	2.1	1.8	0.05	36	200	0.35	0.5	0	0	0	False
Clay	0.6	2.7	1.75	0.33	0	150	0.45	0.68	0.12	0.03	2.5	False
Silty Sand	0.9	3.6	1.85	0	33	250	0.35	0.55	0	0	0	False
Gravel	10	13.6	1.9	0	38	450	0.35	0.5	0	0	0	False

Parameter	Value	Units
Ave. Unit Weight of Soil Above the Footing	1.8	gr/cm3
Groundwater Level (below footing)	2.4	m
Factor of Safety	2	-
Allowable Settlement	2.54	cm
Reloading Factor (Er/Es)	2	-
Rigidity Factor	1	-
Unsaturated Cons. Settl. Factor	0	-

Parameter	Value	Units
L / B	10	-
Df	0.9	m
Excavation Depth	3	m
Horizontal Load (B direction)	0	kgf
Horizontal Load (L direction)	0	kgf
Vertical Load	0	kgf
Moment (around B)	0	kgf.m
Moment (around L)	0	kgf.m

$$q_{ult} = C \cdot N_c \cdot S_c \cdot d_c \cdot i_c \cdot g_c \cdot b_c + q \cdot N_q \cdot S_q \cdot d_q \cdot i_q \cdot g_q \cdot b_q + \frac{1}{2} \gamma \cdot B' \cdot N_\gamma \cdot S_\gamma \cdot d_\gamma \cdot i_\gamma \cdot g_\gamma \cdot b_\gamma$$





Project Title: Yi Chu School - Metric
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Job Code: 75-AF-925

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∴Notes:

Hs: shear wedge depth

Gamma: Soil unit weight

eB, eL : Load eccentricity

Af : Effective area of the footing= $B \cdot L'$

q' : Overburden stress at the level of foundation= $\gamma \cdot D_f$

B (m)	L (m)	Hs (m)	C_ave (kg/cm ²)	Phi_ave (deg)	Gamma_ave (gr/cm ³)	eB	eL	B' (m)	L' (m)	Af (m ²)	Nc	Nq	Ng	Sc	Sq	Sg	Df/B	K	dc	dq	dg	Ca ^{0.8C} (kg/cm ²)	q' (kg/cm ²)	Qu shear (kg/cm ²)
0.6	6	1.49	0.27	16	1.92	0	0	0.6	6	3.6	11.6 5	4.35	1.44	1.04	1.03	0.96	1.5	0.98	1.39	1.3	1	0.22	0.16	5.63
0.9	9	1.78	0.24	19.8	1.9	0	0	0.9	9	8.1	14.6 4	6.27	2.84	1.04	1.03	0.96	1	1	1.4	1.31	1	0.19	0.16	6.67
1.2	12	2.08	0.21	22.4	1.89	0	0	1.2	12	14.4	17.3 2	8.13	4.4	1.05	1.04	0.96	0.75	0.75	1.3	1.24	1	0.17	0.16	7.13
1.5	15	2.96	0.22	19.3	1.86	0	0	1.5	15	22.5	14.2 4	6	2.63	1.04	1.03	0.96	0.6	0.6	1.24	1.19	1	0.17	0.16	5.5
1.8	18	3.23	0.2	20.6	1.85	0	0	1.8	18	32.4	15.4 5	6.82	3.29	1.04	1.04	0.96	0.5	0.5	1.2	1.16	1	0.16	0.16	5.64
2.1	21	3.51	0.18	21.7	1.85	0	0	2.1	21	44.1	16.5 6	7.59	3.94	1.05	1.04	0.96	0.43	0.43	1.17	1.14	1	0.15	0.16	5.83
2.4	24	3.8	0.17	23	1.86	0	0	2.4	24	57.6	18.0 7	8.68	4.89	1.05	1.04	0.96	0.38	0.38	1.15	1.12	1	0.13	0.16	6.26
2.7	27	4.11	0.15	24.3	1.86	0	0	2.7	27	72.9	19.7 3	9.91	6.03	1.05	1.04	0.96	0.33	0.33	1.13	1.1	1	0.12	0.16	6.82
3	30	4.42	0.14	25.4	1.86	0	0	3	30	90	21.2 9	11.1	7.19	1.05	1.04	0.96	0.3	0.3	1.12	1.09	1	0.12	0.16	7.41