Square Footing Calculator

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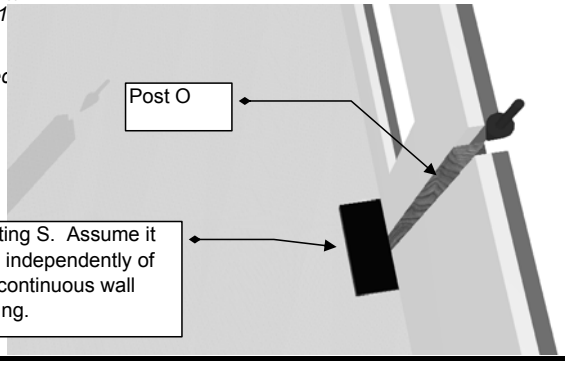
Assumptions: *1. Load is applied to the center of footing. 2. No uplift or moment (bending) loads are applied. 3. Soil over the footing is the only surcharge load applied. 4. Design based on 1 Code. 5. All rebar is properly spaced and not epoxy-coated*

Disclaimer: *All users of this software shall comply with State Engineering Law; which spec perform engineering, and defines the practice of engineering.*



Job Name	2-story example
Footing I.D.	Footing S
Other Info	Load from post O

Applied Footing Loads

Input load table is hidden.

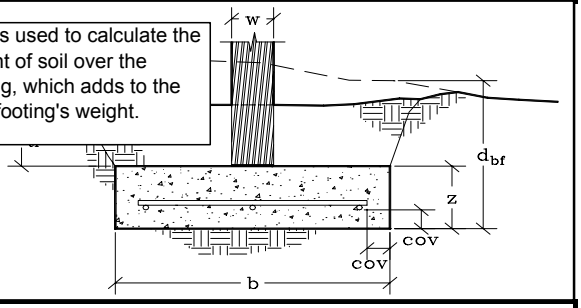
	Live, psf	Dead, psf	Tributary Length, ft	Tributary Width, ft.	Live Load, lbs	Reduced Live Load, lbs.	Dead Load, lbs
Other point load: all Live, all Dead, or some of each, lbs.		Descrip'n, opt'l:	From Post O		5,950 lb		3,817 lb
				Total service load:	Pserv=	9,767 lb	

Soil and Footing Input

Soil Bearing Capacity	q_s=	1,500 psf
Permit Soil Bearing Capacity Increase For Size and Depth?		(•) Yes ( ) No
Depth to bottom of footing, ft.	D_{bf}=	3.00 ft
Depth of soil over top of footing, ft.	D_{tf}=	2.00 ft
Square Footing Width, ft.	b =	2.50 ft
Footing Depth, inches	z =	8.00 in
Post or Bearing Plate Narrowest Dimension, inches	w =	5.50 in

Design Now

This is used to calculate the weight of soil over the footing, which adds to the total footing's weight.



Concrete and Rebar Input

Concrete Strength, psi	f'_c =	2,500 psi
Steel Yield Strength, psi	F_y =	40,000 psi
Rebar Cover, inches	cov =	3.00 in
Rebar Size		# 4
No. of Bars (Each Direction)	n =	4

RESULTS

Footing size based on allowable soil pressure:	**Footing Size Okay; 13% oversized for s**
Temp. & Shrinkage Rebar:	**Ok**
Rebar check for bending:	**Ok** **230% extra flexural rebar provided**
One-Way Shear Check:	**Footing Thickness Ok**
Punching Shear:	**Footing Thickness Ok**
Rebar Development Length:	**Ok**
	Satisfactory Design

More rebar than is actually needed for strength, but this much is required for minimum temperature and shrinkage rebar.

FINAL DESIGN

Use 2.5 ft. x 2.5 ft. x 8 in. footing, with 2500 psi min. concrete strength, 3 in. min. concrete cover, and (4) #4 GR 40 rebar each way.

This design was arrived at by clicking 'Design Now'. You could arrive at a different

Miscellaneous Report Detail

Maximum applied soil pressure:	1,856 psf	Allowable soil pressure used for design:	2,100 psf
Weight of footing only:	625 lb	Weight of footing plus surcharge:	1,833 lb
Ultimate applied moment in footing:	3,222 ft-lb	Allowable moment in footing (phi*Mn):	10,198 ft-lb
Ultimate applied one-way shear in footing:	3,994 lb	Allowable one-way shear (phi*Vn):	11,475 lb