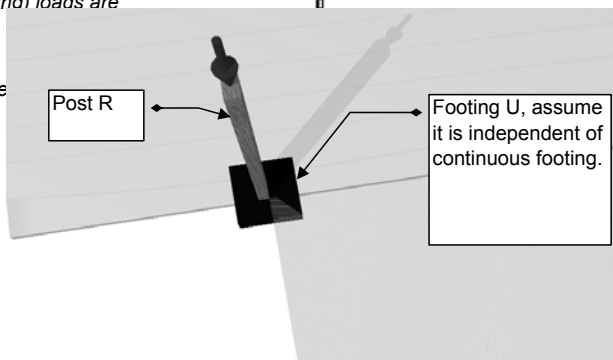


# Square Footing Calculator



**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 Code. 5. All rebar is properly spaced and not epoxy-coated

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



Job Name	2-story example
Footing I.D.	Footing U
Other Info	Load from post R1 and R2

## Applied Footing Loads

Other point load: all Live, all Dead, or some of each, lbs.	Live, psf	Dead, psf	Tributary Length, ft	Tributary Width, ft.	Live Load, lbs	Reduced Live Load, lbs.	Dead Load, lbs
		Descrip'n, opt'l:	From Post R1 and R2		3,458 lb		2,269 lb
Total service load:					Pserv=	5,727 lb	

## Soil and Footing Input

Soil Bearing Capacity	$q_s =$ 1,500 psf
Permit Soil Bearing Capacity Increase For Size and Depth?	<input checked="" type="radio"/> Yes <input type="radio"/> No
Depth to bottom of footing, ft.	$D_{br} =$ 1.00 ft
Depth of soil over top of footing, ft.	$D_{tr} =$ 1.00 ft
Square Footing Width, ft.	$b =$ 2.25 ft
Footing Depth, inches	$z =$ 8.00 in
Post or Bearing Plate Narrowest Dimension, inches	$w =$ 7.25 in

Design Now

There will be a 4" slab over most of this footing. The equivalent soil weight can be approximated by multiplying the concrete thickness by 3.

## 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:	<b>Footing Size Okay, 36% oversized for soil bearing</b>
Temp. & Shrinkage Rebar:	<b>Ok</b>
Rebar check for bending:	<b>Ok</b> <b>686% extra flexural rebar provided</b>
One-Way Shear Check:	<b>Footing Thickness Ok</b>
Punching Shear:	<b>Footing Thickness Ok</b>
Rebar Development Length:	<b>Ok</b>
<b>Satisfactory Design</b>	

**FINAL DESIGN**

Use 2.25 ft. x 2.25 ft. x 8 in. footing, with 2500 psi min. concrete strength, 3 in. min. concrete cover, and (4) #4 GR 40 rebar each way.

## Miscellaneous Report Detail

Maximum applied soil pressure: 1,324 psf	Allowable soil pressure used for design: 1,800 psf
Weight of footing only: 506 lb	Weight of footing plus surcharge: 976 lb
Ultimate applied moment in footing: 1,363 ft-lb	Allowable moment in footing ( $\phi M_n$ ): 10,131 ft-lb
Ultimate applied one-way shear in footing: 1,803 lb	Allowable one-way shear ( $\phi V_n$ ): 10,328 lb