

## Footing Design Calculation Section

In designing a column footing for a deck, the following steps should be utilized:

- 1) Calculate the tributary area for floor and any roof area that the column carries.
- 2) Multiply the floor area by the code required live load and actual dead load. Do the same for any roof area.
- 3) Divide the total load from 2) by the allowable soil bearing value as listed to find the minimum footing size in square feet.
- 4) To provide adequate spread of the load through the concrete or gravel footer, its thickness should be at least one-half of the diameter, but in no case less than 8 inches.

Acceptable soil-bearing values for the types of soils listed:

<u>Types of soil</u>	<u>PSF</u>
1. <u>Wet, soft clay; very loose silt; silty clay</u>	<u>2,000</u>
2. <u>Loose, fine sand; medium clay; loose sandy clay soils</u>	<u>2,000</u>
3. <u>Stiff clay; firm inorganic silt</u>	<u>3,000</u>
4. <u>Medium (firm) sand; loose sandy gravel; firm sandy clay soils; hard clay</u>	<u>4,000</u>
5. <u>Dense sand and gravel; very compact mixture of clay, sand and gravel</u>	<u>6,000</u>
6. <u>Rock</u>	<u>12,000</u>

*Note: The acceptable soil-bearing values for most of the soil types found in Adams County generally run at the minimum of 2,000 pounds per square foot. As an example a minimum 10 inches round by 8 inches thick poured concrete footing placed on 2,000 pounds per square foot soils could carry a concentrated deck load of 1090.7 pounds, or one support footing per every 27 square feet of open deck surface area or one support footing per every 15.5 square feet of roofed deck surface area.*