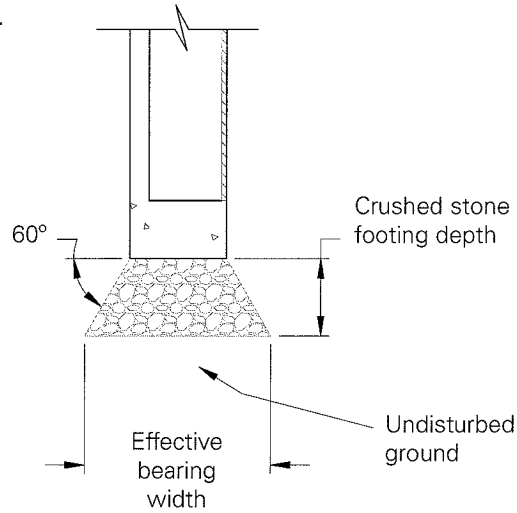


Effective Bearing Width

- Downward load is carried thru the stone to the soil beneath.
- The load distributes thru the stone at a distribution angle of 60 degrees from horizontal.
- Effective bearing width of the soil increases with the depth of stone.

See Table below for footing widths for various stone depths.

Figure 4



CALCULATED STONE FOOTING WIDTH

Stone Footing Depth	Effective Bearing Width
6"	16.9"
8"	19.2"
10"	21.5"
12"	23.9"
14"	26.2"
18"	30.8"
24"	37.7"



Engineering Principles

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Horizontal Forces (figure 1)

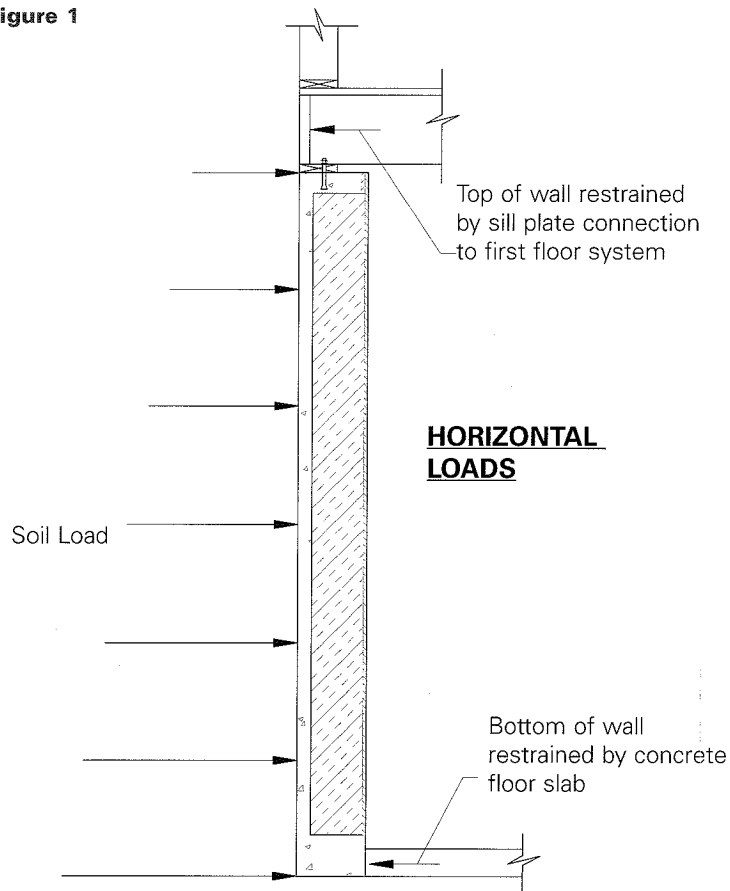
External Soil Pressure

- Lateral earth pressure, 60 lbs/sf/ft of depth.
- Precast foundations are assumed not to be subject to hydrostatic pressure from ground water.
- Backfill with a well drained soil. Expansive soil or topsoil is not to be used.

Horizontal Reactions

- Top edge is restrained by the mechanical connection of the sill plate to the first floor structure system.
- Bottom edge is restrained by the compressive force of the concrete floor slab.

Figure 1



Vertical Forces (figure 2)

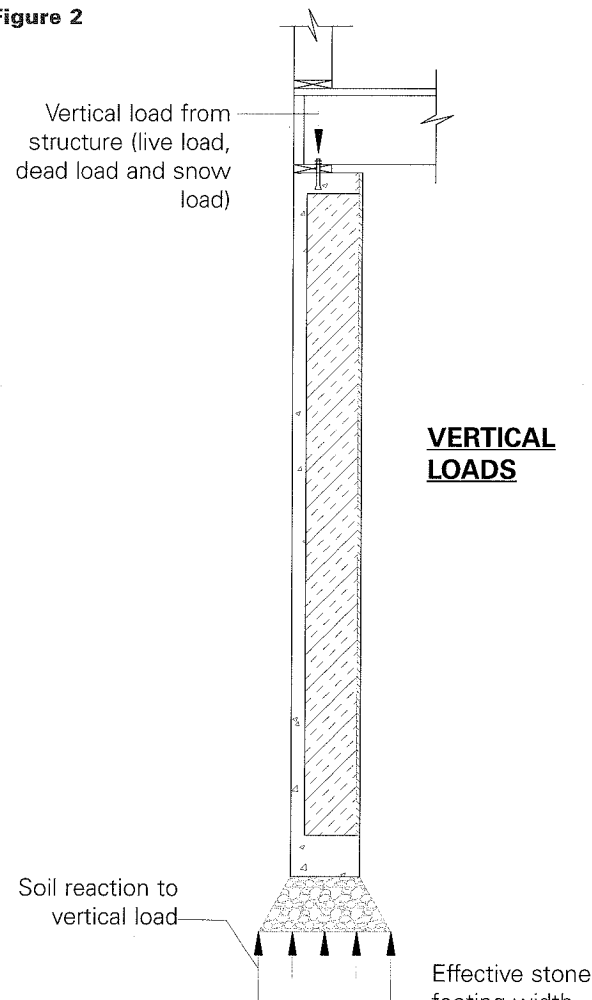
Downward Forces

- Live Load from Structure.
- Dead Load of structure.
- Snow Load.
- Dead Load of Foundation Wall.

Soil Bearing Reaction

- Total Load is transferred to the stone by the bottom of the foundation wall.
- Forces act thru the stone and are carried by the soil at the effective width.

Figure 2



Stone Footing Mechanics (figure 3 & 4)

Stone Footing Configuration

- Depth of stone to be as shown on approved shop drawings.
- Stone footing to extend 24" horizontal from outside face of wall.
- Drainage pipe to be 12" horizontal from outside face of wall.
- Stone to rest on undisturbed natural soil or engineered fill.

Figure 3

