

FOOTING DESIGN CALCULATION SUMMARY FOR BEAM FB-3
PERMIT NUMBER: SFD2504-0023

PROJECT: CL3034 SINGLE-FAMILY DWELLING

DATE: APRIL 21, 2025

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LOAD AND SOIL BEARING CAPACITY

PROJECT DATA

BEAM: FB-3

LOAD PER FOOTING: 9492 LBS (COMBINED LIVE AND DEAD LOAD)

FOOTING SIZE: 42" X 42" X 12" DEEP

CONCRETE STRENGTH: 3000 PSI

SOIL BEARING CAPACITY: 1500 PSF (ASSUMED)

COLUMN SIZE: 7" X 3.5" (GANGED SPF #2 LUMBER, CENTERED)

CODE: ACI 318-19

STEP 1: SOIL BEARING CAPACITY CHECK

FOOTING AREA:

$$(42 / 12) \times (42 / 12) = 3.5 \text{ FT} \times 3.5 \text{ FT} = 12.25 \text{ SQ.FT}$$

ALLOWABLE LOAD:

$$1500 \text{ PSF} \times 12.25 \text{ SQ.FT} = 18,375 \text{ LBS}$$

APPLIED LOAD: 9492 LBS

$$9492 \text{ LBS} < 18,375 \text{ LBS} \text{ (SATISFACTORY)}$$

SOIL PRESSURE FOR DESIGN:

$$Q = 9492 / 12.25 \sim 774.9 \text{ PSF}$$

