

Continuous wall footing
24" wide x 12" deep, reinforced
nominally with 3 - 1/2" phi rods,
and made wider at piers.

Underpinning: if required by nature of
foundation material (to be evaluated
on site when ground opened up)
carry existing footings down to bottom
of new excavations in brick or
concrete underpinning, by standard
methods, including caulk with
dry-pack grout, etc.

Wherever brickwork is built
on top of suspended slab,
provide effective top reinf.
in slab to prevent cracks,
e.g. mesh strip or 1/2" chain
bars @ 12" cts., supported
on approved chairs.

Note: at outer edge of slab
provide additional stiffening,
e.g. down-turned rib, or
additional 2 N° 1/2" bars,
preferably both.

3/4" phi x 4" cts. and
3/4" phi x 8" cts.

Reinforce cavity of all
retaining walls 3/4" phi x 9" cts.
running vertically, as
detailed.

GROUND FLOOR PLAN
Showing walls under 1/8" = 1'-0"

Concrete: 3,000 p.s.i. @ 28 days.

Reinf: standard mesh and
structural grade rounds
($f_r = 20,000$ p.s.i.).

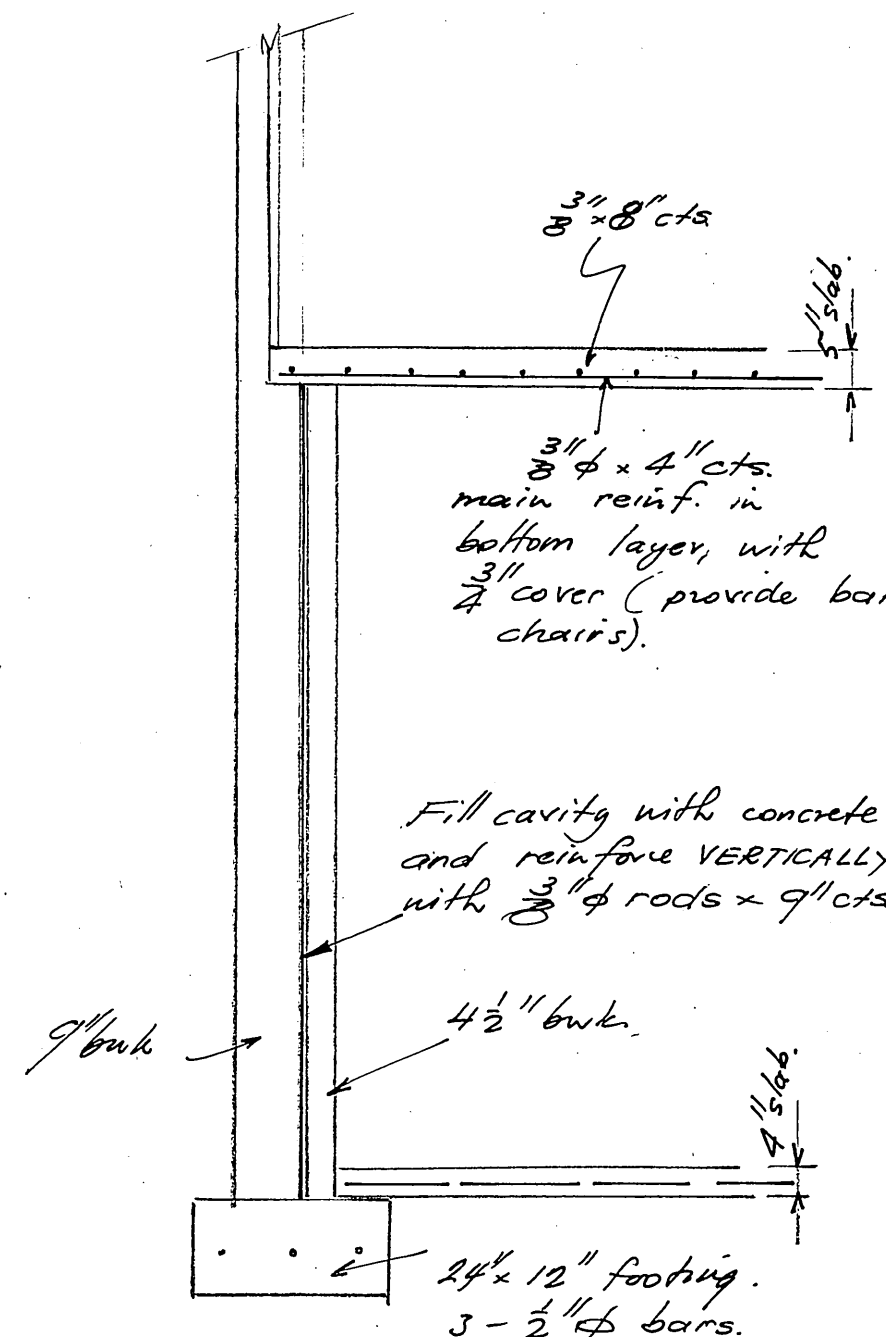
All concrete work to be in
accordance with SAA
Concrete Code.

ADDITIONS TO HARVEY HOUSE, HIGHTON

ALISTAIR KNOX — DESIGNER

STRUCTURAL DETAILS — *Judith Downey*

B.C.E.
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SECTION 1-1 (SIDE WALL)
1/8" = 1'-0"

STRUCTURAL COMPUTATIONS

1. Suspended floor slab. span 11'

L.L.	50 #/sq. ft.
Finish	10
Self	60
	120 #/sq. ft.

$$\text{single span } M = \frac{wL^2}{8}$$

$$= \frac{120 \times 11^2}{8} = 1815 \text{ in.-lb./ft.}$$

using structural grade rounds at $f_r = 20,000$ p.s.i., and 5" slab, $d = 4$ ".

$$A_s = \frac{21,800}{20,000 \times 36 \times 4}$$

$$= 0.315 \text{ sq. in. per ft.}$$

5" slab, 3/4" x 4", 3/4" x 8"

2. Wall Footing

max. loads (side walls).

$$\text{roof } \frac{24 \times 15}{36} \times 8' \times 35' = 280 \text{ #/ft. run.}$$

$$\text{upper wall: } 60 \# \times 9' \times 60' = 540$$

$$\text{scop. floor: } 120 \# \times 5.5' = 660$$

$$\text{lower wall: } 150 \# \times 9' = 1350$$

$$\frac{2,820}{1} \text{ #/ft. run.}$$

check pressure under footing if 24" wide:

$$w = \frac{2,820}{2240} \times \frac{1}{2} = 0.66 \text{ TON PER S. FT.}$$

This permissible on reasonably stiff clay
or on compacted sand. O.K.

3. Rear Retaining Wall.

Assuming existing foundation or underpinning
take all horizontal thrust, no special provision
necessary.

4. Side Retaining Wall.

Pressure is relieved by break-away of bank, but
assuming a 6' wall, $p_{max} = 6 \times 30 = 180$ p.s.f.
and B.M. in vertically spanning wall could be about
equiv. of 100 p.s.f. loading over 8' span.

$$\therefore M = 100 \times 8^2 \times 1.5 = 10,000 \text{ in.-lb./ft.}$$

If cavity filled and reinforced, $d = 9.5$ ".

and assume $j_d = 4$ ".

$$A_s = \frac{10,000}{20,000 \times 4} = .125 \text{ sq. in./ft. run.}$$

\therefore Fill cavity and provide
vertical reinf. of 3/4" phi x 9" cts.

Judith Downey