

**Richard Tant Associates**

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Job No.

Sheet No.

Rev.

4591

P1

Member/Location

Job Title

53 PLATTS LANE

Org. Ref.

RETAINING WALL CALCS

Made by

PT

Date

DEC 2017

Chd.

JM

RETAINING / UNDERPIN DESIGNBEARING PRESSURE CRQATTRACTS 3m OF 350 R.C. WALL & SAT 1m OF 400 SLAB
+ RAILINGS

∴ DEAD LOAD kN/m

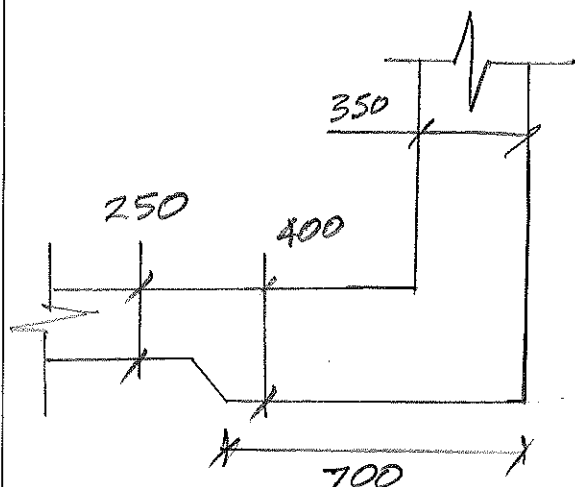
$$\begin{aligned}
 24.5 \times 0.35 \times 3 &= 26 \\
 1 \times 0.4 \times 24.5 &= 9.8 \\
 1.5 &= 1.5
 \end{aligned}$$

$$\underline{38 \text{ kN/m}}$$

LIVE LOAD kN/m

$$1 \times 2.5 = 2.5$$

$$\underline{2.5 \text{ kN/m}}$$



$$\sigma = 41 / 0.7 = 60 \text{ kN/m}^2$$

FROM LBM REPORT SAFE BEARING CAP. = 120 kN/m^2

∴ BEARING STRESS O.K. ✓

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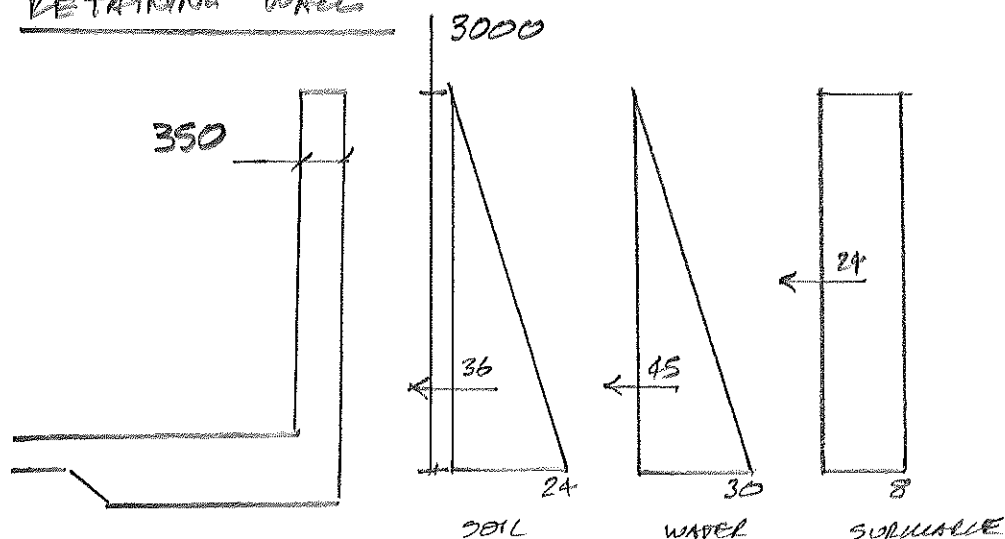
AT

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DM

RETAINING WALL

$$\lambda_0 = 0.8 \quad \text{ACTIVE/REST}$$

$$\begin{aligned} \text{SOIL} &= 3 \times 10 \times 0.8 = 24 \text{ kN/m}^2 \\ \text{WATER} &= 3 \times 10 = 30 \text{ kN/m}^2 \\ \text{SURMARLE} &= 10 \times 0.8 = 8 \text{ kN/m}^2 \end{aligned}$$

$$\begin{aligned} \therefore \text{Max CANV B.M.} &= (36 + 45) \times 1 + (24 \times 1.5) = 117 \text{ kNm/m} \quad \text{CHAR} \\ &\times 1.5 = 176 \text{ kNm/m} \quad \text{ULS} \end{aligned}$$

$$L = \frac{176 \times 10^6}{1000 \times 286^2 \times 40} = 0.05$$

$$A_s = \frac{176 \times 10^6}{0.95 \times 460 \times 0.94 \times 286} = 1499 \text{ mm}^2/\text{m}$$

$$\frac{\text{SPAN}}{d} = 10.5 \quad \text{PROVIDE B25-150 BOTH FACES} \quad \frac{3270 \text{ mm}^2}{\text{m}} \quad f_s = 141 \text{ N/mm}^2$$

$$\therefore \text{M.F.} = 1.25 \neq 1.37$$

$$\therefore 7 \times 1.25 \times 1.37 = 12$$

$$\therefore 0.12 \quad \checkmark$$

PROVIDE B25-150 BOTH FACES $\checkmark$