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Job No.	Sheet No.	Rev.
3561	P1	

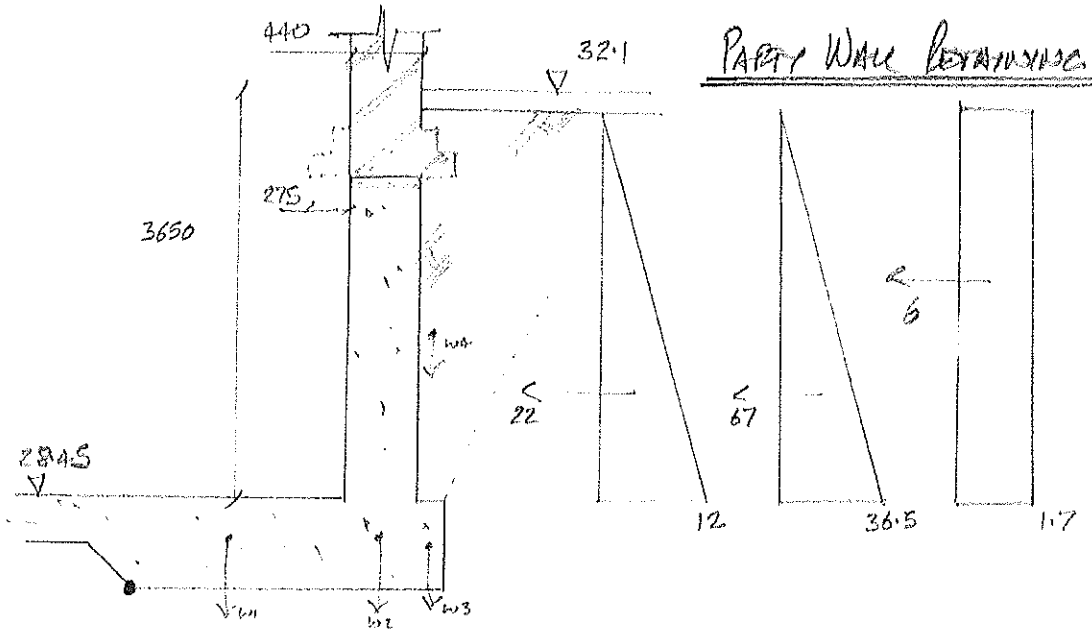
Member/Location

Job Title: 13 PRINCE ALBERT ROAD

Drg. Ref.

Made by PT Date 4/12. Chd.

PARTY WALL RETAINING WALL



VERTICAL LOAD DOWN PARTY WALL : DL = 157kN/m
LL = 20 kN/m

R.C. WALL P.C. : $0.44 \times 24.5 \times 3.5 = 38 kN/m$

$K_A = 0.33$

SATURATED SOIL : $(3.65 \times 10) 0.33 = 12 kN/m^2$

WATER : $3.65 \times 10 = 36.5 kN/m^2$

SURCHARGE : $5 \times 0.33 = 1.7 kN/m^2$

$\therefore BM = (22 \times 1.2) + (67 \times 1.2) + (6 \times 1.8)$

$= 118 kNm/m$

$d = 440 - 50 - 390$

$K = 118 \times 10^6 / 1000 . 390^2 . 35$

$A_s = 118 \times 10^6 / 0.95 . 460 . 0.94 . 390 = 737 mm^2/m$

PROVIDE : H16 - 150 VERTICAL BARS 1340 mm^2/m ✓

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BEARING PRESSURES

NOTE IN THE PERMANENT STATE THE BASEMENT R.C. SLAB WILL RESIST ROTATION AND PROVIDE HORIZONTAL SUPPORT. HOWEVER CHECK BEARING PRESSURES IN TEMP CONDITION. PROPPING WILL BE PROVIDED FOR SLIDING.

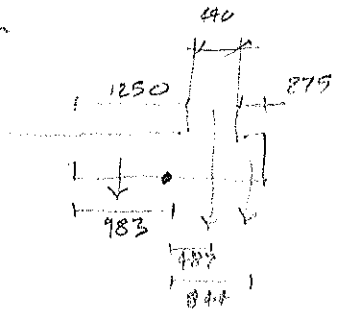
$\curvearrowleft M$ = 118 kNm/m

$\curvearrowright M$: $w_1 = (24 \times 0.75 \times 1.965)0.98 = 35$

$w_2 = (157+38)\,1.47 = 287$

$w_3 = (0.275 \times 0.75 \times 24)\,1.83 = 9$

Σ 331 kNm/m



∴ F.O.S = 2.8 ∴ O.K. ✓

MOMENTS ABOUT CENTRE OF BASE:

$\curvearrowright M$ = (157+38)0.49 + (0.275×0.75×24)0.84

= 99.7 kNm

$\curvearrowleft M$ = 118 kNm/m + (0.98×0.75×24)0.49

= 127 kNm

∴ NET $\curvearrowleft M$ = 27 kNm/m

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TOTAL VERTICAL LOAD DOWN SLAB = 157+20+38

= 215 kN (CHAR)

D = 1.97m

$p_{toe} = N/D + 6M/D^2 = 215/1.97 + 6.27/1.97^2 = 151\ kN/m^2$

$p_{heel} = N/D - 6M/D^2 = 67\ kN/m^2$

FROM SOILS REPORT SAFE BEARING CAPACITY = 160 kN/m²

∴ O.K. IN TEMP CASE AND PERMANENT.