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Job No.	Sheet No.	Rev.
4811	P1	
Member/Location		
Drg. Ref. RETAINING WALL CALC'S		
Made by PT	Date APRIL 2019	Chd.

Job Title  
 9 NASSINGTON ROAD

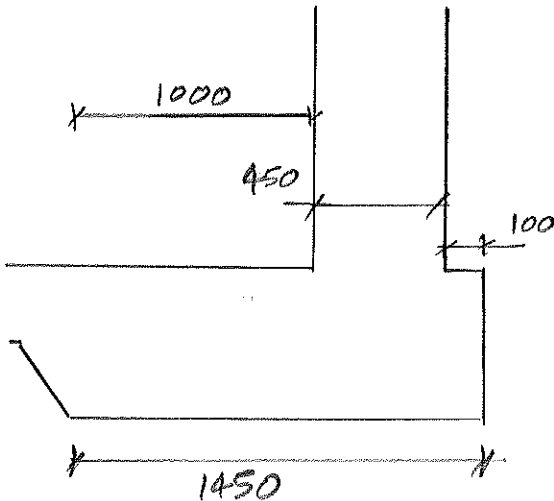
RETAINING / UNDER PIN DESIGN

BEARING PRESSURE CHECK

ATTACHES 9m OF 215 WALL, 3.5m OF 327 WALL, 4.5 450 R.C. WALL  
 2m BASEMENT SLAB, 2m GROUND, 1st, 2nd, 3rd & LOOF :

∴ DEAD	KN/m	LIVE	KN/m <sup>2</sup>
9 x 5 =	45		
3.5 x 7.5 =	26		
4.5 x 0.45 x 24.5 =	49		
2 x 0.2 x 24.5 =	10	2 x 2.5 =	5
2 x 0.6 x 4 =	5	2 x 2.5 x 4 =	20
2 x 1.6 =	3	2 x 0.75 =	2
	<u>138 KN/m</u>		<u>27 KN/m<sup>2</sup></u>

TOTAL = 165 KN/m (CHAR)



$$\sigma = \frac{165 \text{ KN/m}}{1450} = 113 \text{ KN/m}^2$$

SAFE BEARING CAP = 120 KN/m<sup>2</sup> (REFER TO LBH SOILS REPORT)

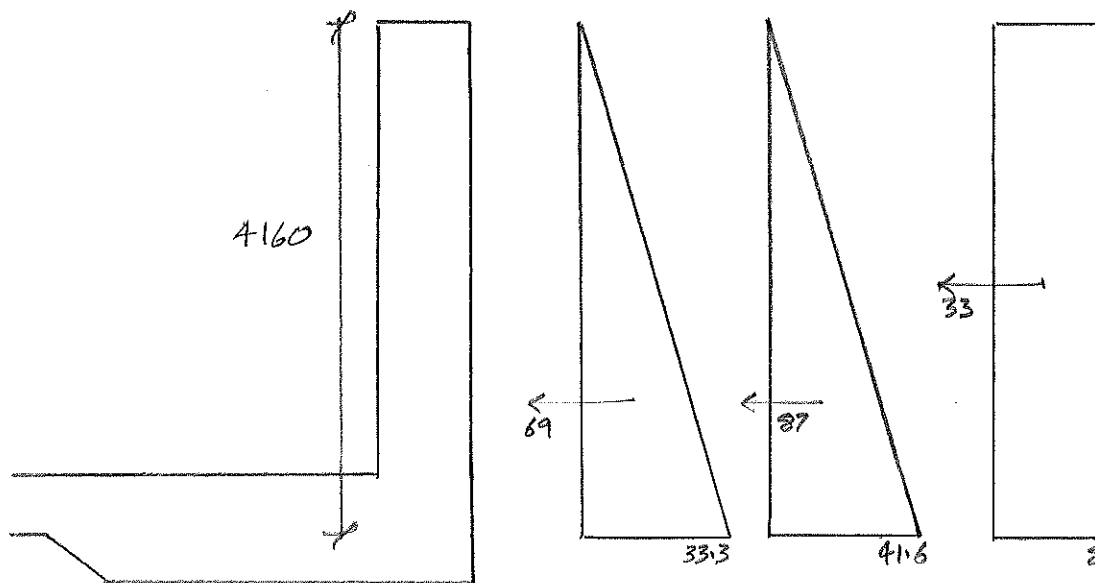
∴ BEARING STRESS O.K. ✓



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4811	P2	
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Drg. Ref.	RETAINING WALL CALCS	
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RT	APRIL 2019	

Job Title  
 9 NASSINGTON ROAD



$K_0 = 0.8$   
 ACTIVE/REST

SOIL =  $4.16 \times 10 \times 0.8 = 33.3 \text{ kN/m}^2$   
 WATER =  $4.16 \times 10 = 41.6 \text{ kN/m}^2$   
 SURCHARGE =  $10 \times 0.8 = 8 \text{ kN/m}^2$

$\therefore$  MAX CASE B.M. =  $(69+87) \times 1.38 + 33 \times 2.1 = 285 \text{ kNm/m CURR}$   
 $\times 1.5 = 427 \text{ kNm/m ULT}$

$K = \frac{427}{1000 \times 387^2 \times 40} = 0.07$

$A_s = \frac{427}{0.95 \times 460 \times 0.89 \times 387} = 2837 \text{ mm}^2/\text{m}$      B25-100 =  $4910 \text{ mm}^2/\text{m}$

$\text{SPAN}/d = \frac{3935}{387} = 10.2$      M.F. PER = 1.45

$M/bd^2 = 2.8$       $f_s = 193$      M.F. = 1.17      $\therefore$  M.F. PER = 1.24

B25-100 =  $4910 \text{ mm}^2/\text{m}$      M.F. COMP = 1.29      $\therefore$  O.K. ✓

PROVIDE B25-100 BOTH FACES.