



**WHINBARROW DESIGN
SERVICES LIMITED
CIVIL & STRUCTURAL
ENGINEERS**

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STRUCTURAL CALCULATIONS

FOR

PROPOSED CELLAR ALTERATIONS, BEAM REQUIREMENT

AT

**9 OAKBANK
WHITEHAVEN**

FOR

MS HOLMES

MOD A JUNE 2020

WDS/05/6457CALC01



WHINBARROW DESIGN
SERVICES LIMITED
CIVIL & STRUCTURAL
ENGINEERS

Project

9 OAK BANK WY REMOVED

Job No.

05-6457.

Ref

Calculations By

T. SHUTT

Checked By

Calc sheet No.

1 of 2

Date

June 20

CALCULATIONS FOR REMOVAL

Ref

Calculations

Foundation

$f_d = 0.9 \text{ kg}$

$L = 1.5 \text{ L}$

$W_{all} = 0.15 \times 18 \times 5 = 13.5 \text{ kN}$

Beam B1 $sp = 4.6$

$f_d = 3 \times 0.9 = 2.7$

$L = 3 \times 1.5 = 4.5$

$W_{all} =$

13.5

$W_{all} = 18.9 \text{ kN}$

$L = 4.5$

$W_{all} =$

7.5 kN

$P_{all} = 90 \text{ kN}$ $L = 4.6$

$J_f = 78 \text{ kN}$ $J_{all} =$

WALL 203 VC 46 (120)

Beam B2 $sp = 5.1$

$W_{all} =$

$on B1$

$R = 18 \text{ kN}$



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Project

Job No.

07-6717

Ref

Calculations By

Checked By

Calc sheet No. 2 of 2

Date

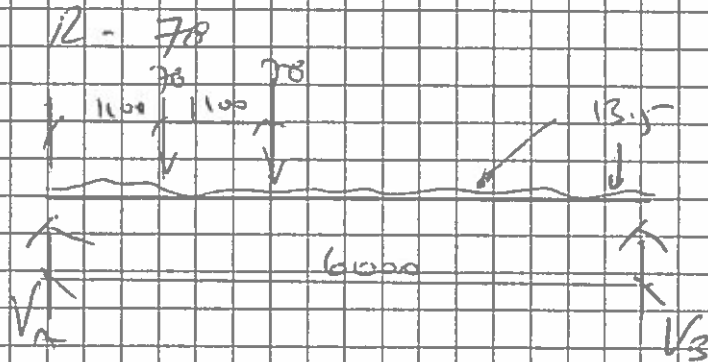
Jan 20

Ref

Calculations

Beam R3 - span 6.0

$$\text{Wash} = 175 \times 1.4 = 194 \text{ kN}$$



$$V_3 = 92.4$$

$$V_A = 14.4 \text{ kN}$$

$$\text{RM} = 253 \text{ kNm}$$

$$L = 3.8 \text{ m}$$

$$(1.4 \times 7.0)$$

Span Reduce to 5.4

$$\frac{410 \times 200 \text{ mm}^2}{1}$$

$$\text{PULL} = 325 \times 325$$

$$F_{11} = \left(\frac{100}{100} \right)^2 \times 1.0 \times 1.0$$

$$F = 1.5 \times 1.0 \times 0$$

$$\rightarrow 1.25 \times 0.8 \times 0.45$$

See sketch

AJAS M.

