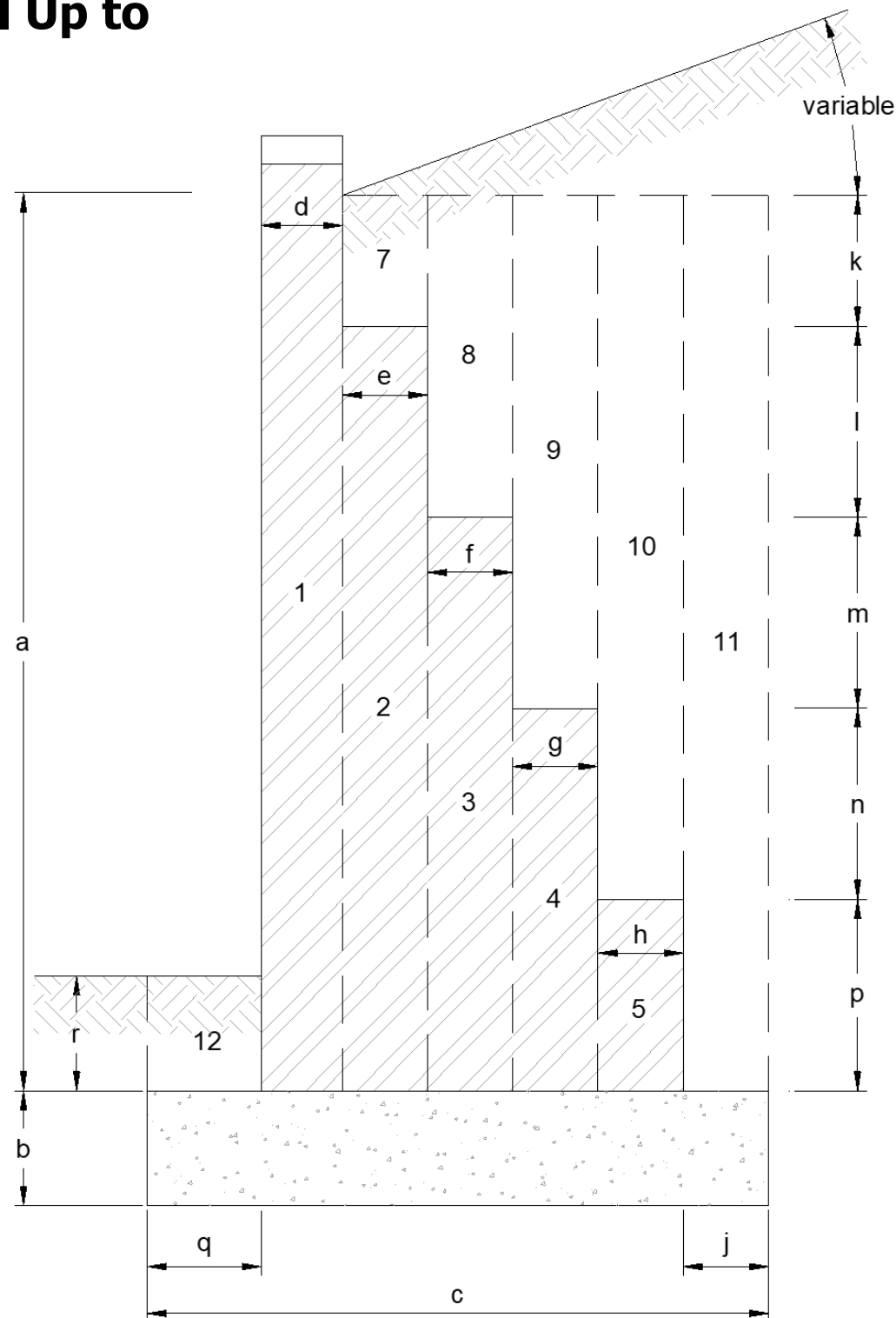


Client: Jehu Projects	Date Prepared: April 2020
Project Title: Coed Darcy, Phase 2	Prepared By: GMcE
Project No: 2432	Date Revised:
Sheet No: 1	Revision:

Note parapet loading

Surcharge	=	10.00
Parapet	=	0.50
ka	=	0.27
Soil Int. Friction	=	35
Concrete	=	24
Brick/Block	=	16
Fill	=	18
Brick/Block - Fkx	=	0.25
Mat. Str. Factor	=	3.10

a	=	0.900	m
b	=	0.300	m
c	=	1.000	m
d	=	0.215	m
e	=	0.250	m
f	=	0.000	m
g	=	0.000	m
h	=	0.000	m
j	=	0.235	m
k	=	0.250	m
l	=	0.650	m
m	=	0.000	m
n	=	0.000	m
p	=	0.000	m
q	=	0.300	m
r	=	0.300	m



1	16	x	0.900	x	0.215	=	3.096	Kn	x	0.408	=	1.262	Knm
2	16	x	0.650	x	0.250	=	2.600	Kn	x	0.64	=	1.664	Knm
3	16	x	0.000	x	0.000	=	0.000	Kn	x	0.765	=	0.000	Knm
4	16	x	0.000	x	0.000	=	0	Kn	x	0.765	=	0.000	Knm
5	16	x	0.000	x	0.000	=	0.000	Kn	x	0.765	=	0.000	Knm
6	24	x	0.300	x	1.000	=	7.200	Kn	x	0.500	=	3.600	Knm
7	18	x	0.250	x	0.250	=	1.125	Kn	x	0.64	=	0.720	Knm
8	18	x	0.900	x	0.000	=	0.000	Kn	x	0.765	=	0.000	Knm
9	18	x	0.900	x	0.000	=	0	Kn	x	0.765	=	0.000	Knm
10	18	x	0.900	x	0.000	=	0.000	Kn	x	0.765	=	0.000	Knm
11	18	x	0.900	x	0.235	=	3.807	Kn	x	0.8825	=	3.3597	Knm
12	18	x	0.300	x	0.300		1.62	Kn	x	0.15	=	0.243	Knm

Wall Mass = 19.448 Kn **Rest' Mom** = 10.848 Knm

Disturbing Forces

Pa	0.27	x	18	x	1.20	x	0.60	=	3.499	Kn	x	0.400	=	1.400	Knm
Ps	0.27	x	10.0	x	1.20			=	3.240	Kn	x	0.600	=	1.944	Knm
ph	0.50							=	0.500	Kn	x	1.700	=	0.850	Knm

Sliding = $\overline{7.239}$ Kn **O/T Mom** = $\overline{4.194}$ Knm

Check Overturning	10.848	/	4.194	=	<u>2.587</u>	O.K
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Check Sliding (tan 35° = 0.7)	13.614	/	7.239	=	<u><u>1.881</u></u>	O.K
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Client:

Jehu Projects

Date Prepared:

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Project Title:

Coed Darcy, Phase 2

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Sheet No:

2

Revision:

Check Bearing Pressures

$$\begin{array}{lcl} \text{Centre of Gravity} & = & \text{Restoring Moment} / \text{Mass} \\ & & 10.848 / 19.448 = \mathbf{0.558 \text{ m}} \end{array}$$

$$\begin{array}{lcl} \text{Distance 'X'} & = & \text{Disturbing Moment} / \text{Mass} \\ & & 4.194 / 19.448 = \mathbf{0.216 \text{ m}} \end{array}$$

$$\mathbf{F.La = 4.194}$$

$$\mathbf{e = 0.216 - 0.058 = 0.158 \text{ m}}$$

$$\mathbf{L/6 = 0.167 \text{ m} \quad \text{Within Middle Third, O.K}}$$

Bearing Stress

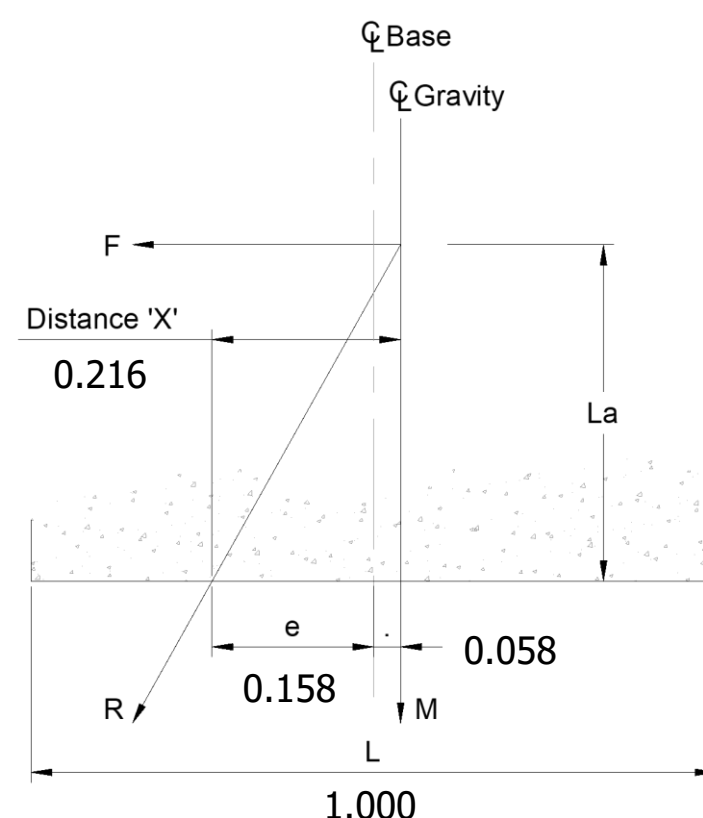
$$\mathbf{f = k.F / bl}$$

$$\mathbf{k = 1.947 \text{ or } 0.053}$$

$$\mathbf{F = 19.448}$$

$$\mathbf{b . L = 1.000}$$

$$\begin{array}{lcl} \text{Bearing Stress, } \mathbf{f} & = & \frac{37.864 \text{ kn/m}^2}{\text{or } 1.032 \text{ kn/m}^2} \quad \begin{array}{l} \text{(max)} \\ \text{(min)} \end{array} \end{array}$$



Check Section at Top of Base

Distubing Forces

$$\begin{array}{lcl} \mathbf{Pa} & 0.270 & \times 18.000 \times 0.900 \times 0.450 = 1.968 \times 0.300 = \mathbf{0.590 \text{ Knm}} \\ \mathbf{Ps} & 0.270 & \times 10.000 \times 0.900 = 2.430 \times 0.450 = \mathbf{1.094 \text{ Knm}} \\ \mathbf{Ph} & 0.500 & = 0.500 \times 1.400 = \mathbf{0.700 \text{ Knm}} \end{array}$$

$$\mathbf{Horizontal \text{ Force} = 4.898 \quad O/T \text{ Mom} = 2.384 \text{ Knm}}$$

$$\mathbf{Applied \text{ design Moment} = 2.384 \times 1.400 = 3.338 \text{ Knm}}$$

Moment of Resistance of Masonry section (BS5628)

$$\text{For Brickwork, } \mathbf{Fkx = 0.250}$$

$$\text{Quality Factor, } \mathbf{\delta m = 3.100}$$

$$\mathbf{Gd = \frac{Design \text{ Vertical load}}{Area} = \frac{6.821}{0.465} = 0.015 \text{ n/mm}^2}$$

$$\mathbf{Section \text{ Modulus} = 1000 \times 0.465 \times 0.078 = 36.04 \times 10^6 \text{ mm}^2}$$

$$\mathbf{Moment \text{ of Resistance} = 3.382 \text{ Knm} \quad \text{O.K}}$$