MORTONS urbansolutions

Our Reference: 37502-NORTH [ID 1066670]
EDQ Reference: DEV2019/1013/35

Civil Engineering
Project Coordination

mortons@urbansolutions.net.au
www.urbansolutions.net.au

MUS Pty Ltd t/as:
Mortons - Urban Solutions
ABN: 39 116 375 065

29 May 2025

Economic Development Queensland
GPO Box 2202
Brisbane QLD 4001

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL
Approval no: DEV2019/1013/35
Date: 25 July 2025
Queensland Government

Attention: To Whom It May Concern

Dear Sir/Madam,

Re: PDA Development Permit for Reconfiguring a Lot (1 lot into 513 lots, new roads, drainage reserve, and park), Operational Works (advertising devices) and Material Change of Use – Residential and other uses (display home, home based business, house, park, and sales office) in accordance with a Plan of Development and Context Plan at 176 – 228 Mountain Ridge Road, South Maclean, described as Lot 30 on SP309195

On behalf of our client, *Daleford Property Pty Ltd*, we provide a response to Item 3 of the RFI dated 16 April 2025, EDQ reference DEV2019/1013/35, associated with the Flourish development at 176 – 228 Mountain Ridge Road, South Maclean.

Item 3

Demonstrate appropriate separation safety measures for two inter-lot swale drains and provide compliant depth-velocity product calculations per QUDM Table 12.1.1 – Flow hazard regimes for infants, children, and adults.

Response:

We include with this correspondence calculations for each of the overland stormwater flow channels in Stages 1 – 4. We confirm that the depth by velocity for both the stormwater overland flow channels is less than 0.4. The maximum depth of flow in the channels is 0.213m and the maximum velocity of flow within the channels is 1.81m/s.

We confirm that these stormwater overland flow channels are classified as a low hazard for children and adults.

If you have any further queries regarding this matter, please contact myself at the office on 07 5571 1099.

Yours faithfully,

Matthew Langmack
Mortons – Urban Solutions

Encl.

1. Stormwater calculations

APPENDIX A

Stormwater Calculations for the Overland Flow Channel between Lots 246 & 247

CALCULATE THE FLOW IN AN OPEN CHANNEL

This is not linked to the design table! use it to quickly calc channel characteristics.

Job Number

CHANNEL PROPERTIES

Manning's roughness n	0.045
LEFT hand side slope (horiz / vert)	4.5
RIGHT hand side slope (horiz / vert)	2
BED SLOPE (longitudinal grade)	7.28%
Design BED WIDTH (metres)	2.2
Design flow	1.010
THE RESULTANT DEPTH	0.200
LENGTH of the Channel (m)	30
Velocity (m/sec)	1.77
Vel * Depth	0.35
Time of Flow (minutes)	0.28

CALCS

mannings	0.045
trial depth	0.20
l.h.side slope	4.50
r.h. side slope	2.00
bed slope	0.073
bed width	2.20
left batter horizontal lengt	0.90
left surface length	0.92
right batter horizontal len	0.40
right surface length	0.45
wetted perimeter	3.57
area	0.57
hydraulic radius	0.16
flow capacity	1.01

Uses Chan_d function

Total width	3.50

O:\glens stuff\[OPENCHAN.xls]Open Channel

APPENDIX B

Stormwater Calculations for the Overland Flow Channel between Lots 237/219 & 450/428 – Steep Section of Channel

CALCULATE THE FLOW IN AN OPEN CHANNEL

This is not linked to the design table! use it to quickly calc channel characteristics.

Job Number

CHANNEL PROPERTIES

Manning's roughness n	0.045
LEFT hand side slope (horiz / vert)	4
RIGHT hand side slope (horiz / vert)	4
BED SLOPE (longitudinal grade)	7.78%
Design BED WIDTH (metres)	3.5
Design flow	1.447
THE RESULTANT DEPTH	0.188
LENGTH of the Channel (m)	30
Velocity (m/sec)	1.81
Vel * Depth	0.34
Time of Flow (minutes)	0.28

CALCS

mannings	0.045
trial depth	0.19
l.h.side slope	4.00
r.h. side slope	4.00
bed slope	0.078
bed width	3.50
left batter horizontal lengt	0.75
left surface length	0.77
right batter horizontal len	0.75
right surface length	0.77
wetted perimeter	5.05
area	0.80
hydraulic radius	0.16
flow capacity	1.45

Uses Chan_d function

Total width	5.00

O:\glens stuff\[OPENCHAN.xls]Open Channel

APPENDIX C

Stormwater Calculations for the Overland Flow Channel between Lots 237/219 & 450/428 – Flat Section of Channel

CALCULATE THE FLOW IN AN OPEN CHANNEL

This is not linked to the design table! use it to quickly calc channel characteristics.

Job Number

CHANNEL PROPERTIES

Manning's roughness n	0.045
LEFT hand side slope (horiz / vert)	4
RIGHT hand side slope (horiz / vert)	4
BED SLOPE (longitudinal grade)	5.00%
Design BED WIDTH (metres)	3.5
Design flow	1.447
THE RESULTANT DEPTH	0.213
LENGTH of the Channel (m)	30
Velocity (m/sec)	1.56
Vel * Depth	0.33
Time of Flow (minutes)	0.32

CALCS

mannings	0.045
trial depth	0.21
l.h.side slope	4.00
r.h. side slope	4.00
bed slope	0.050
bed width	3.50
left batter horizontal lengt	0.85
left surface length	0.88
right batter horizontal len	0.85
right surface length	0.88
wetted perimeter	5.26
area	0.93
hydraulic radius	0.18
flow capacity	1.45

Uses Chan_d function

Total width	5.20

O:\glens stuff\[OPENCHAN.xls]Open Channel