

Project No. 108-20-21

Date: 08-Oct-21

To:



ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

19 October 2021

DATE

From:

These plans are approved subject to the current conditions of approval associated with

Development Permit No. : D/70-2021

Dated: 22 July 2021

Lachlan McMurtrie
Director

McMurtrie Consulting Engineers

lmcengineers.com

244 Talford Street, Allenstown – Flood Statement

Introduction

McMurtrie Consulting Engineers (MCE) has been engaged by [REDACTED] to undertake a Flood Statement to support the proposed development of a shed on his property at 244 Talford St, Allenstown (described as Lot 29 and 28 on RP600988).

The proposed development includes:

- Construction of a 13m by 9m panel shed in the rear of the lots, as shown in the attached Appendix A

Site Description

Existing Conditions

The site is located on Talford Street, approximately 1700 meters from the Rockhampton CBD, as shown on Figure 1. The existing site is relatively flat and ground elevation varies between 6.98m to 7.41m.

The site includes a single 'Queenslander' type dwelling, with the lower level predominantly open. The remainder of the site is generally grassed.

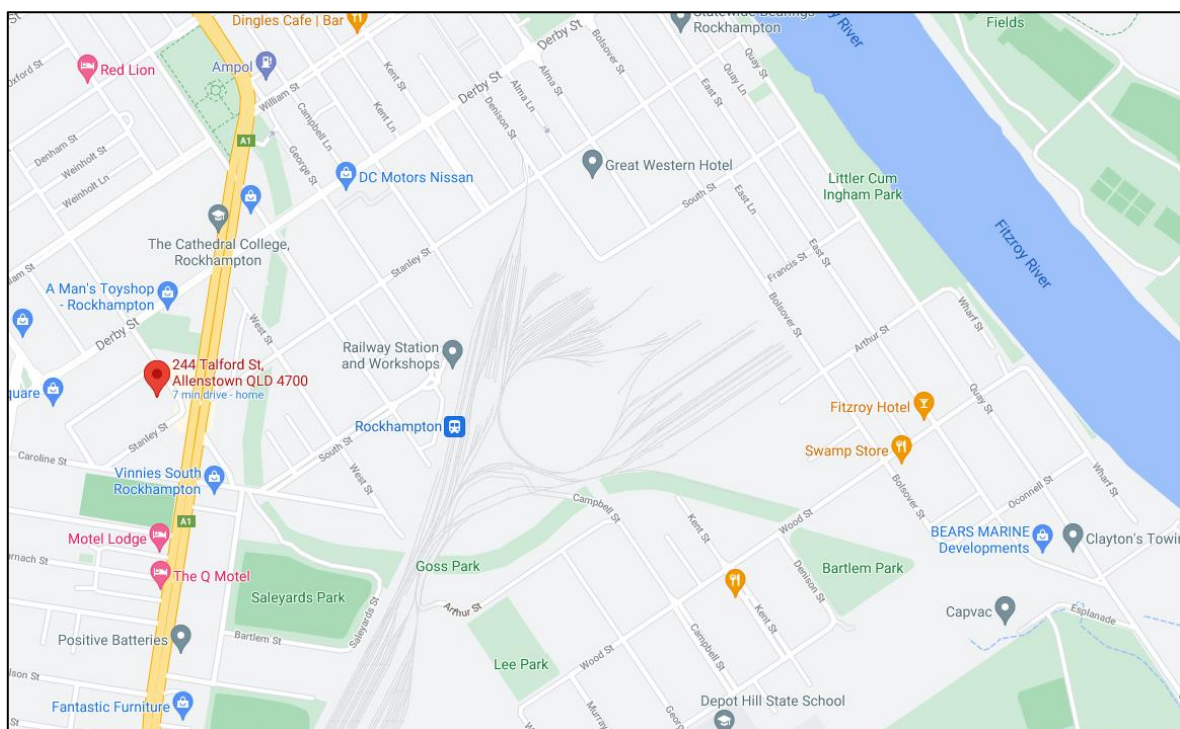


Figure 1 – Site Location (Source: Google Maps)



Proposed Conditions

The proposed development to the site includes the construction of a single non-habitable 13m by 9m shed at the rear of the lots. The shed will be constructed of cyclone rated materials with a slab on ground foundation. The construction will require negligible earthworks to the existing ground levels within the site. The proposed shed will include two roller doors on the North East side, one access door on the South East side and a window on the North East side.

No other changes to the existing natural terrain within the site are proposed.

Flood Hazard

The property is identified as being at risk of flooding from the Fitzroy River. Site flooding from the Fitzroy River generally occurs as backwater flooding from flood waters. Peak flood levels, depths and velocities for the site are detailed in Table 1, with Rockhampton Regional Council's (Council) Flood Report included in Appendix A. The site exhibits a H3 flood hazard category, primarily because of Fitzroy River flood depths, rather than velocity.

Table 1: Peak Riverine Flood Levels - 244 Talford St, Allenstown

AEP %	Peak Flood Level (mAHD)	Peak Flood Depth (m)	Peak Flood Velocity (m/s)
1%	7.87m	0.5m to 1m	0.03m/s

The site is also identified as being affected by local creek and overland flow flooding. Peak flood levels, depths and velocities for the site are summarised in Table 2, with Council's Flood Report included in Appendix A. The site exhibits a H3 flood hazard category, primarily because of flood depths, rather than velocity.

Table 2: Peak Local Storm Event Flood Levels - 244 Talford St, Allenstown

AEP %	Peak Flood Level (mAHD)	Peak Flood Depth (m)	Peak Flood Velocity (m/s)
1%	7.81m	0.5m to 1m	0.64m/s

Flood Impact

The site is not situated within a flood conveyance area of the Fitzroy River, demonstrated by maximum velocities between 0m/s and 0.5m/s within the site and surrounding areas, as such the proposed shed will result in negligible impact to flood characteristics within and external to the site.

A simple velocity head calculation has been undertaken to determine the afflux associated with the proposed shed. The shed blocks approximately 9m of the lot width and results in an estimated increase in velocity from 0.64m/s to 0.82m/s with a velocity head difference of 12mm. The afflux increase is minimal and the proposed shed will have negligible impact on flood characteristics of surrounding properties and infrastructure.

By the nature of the design of the proposed non-habitable shed, flood waters will be able to enter the shed from voids and joins between the panels, as such the proposed shed results in no loss of flood plain storage.

Conclusion

The proposed development, being a non-habitable shed, will have negligible impact on the Fitzroy River flood characteristics and will not result in an adverse flood impact external to the site.

It is recommended during times of flood, where time permits, to remove all loose debris from the shed and raise them to level higher than the forecasted flood level. To minimise damage and recovery post flood, the side door should be left in an open position, to allow free flow and balance of hydrostatic forces inside and outside of the shed



during the rising and falling water level of the flood event.

Data Sources

- Council Planning Scheme 2015 (v2.1)
- Flood Search Property Report (Rockhampton Region Council, 12 March 2021)
- Queensland Globe

Qualifications

This flood statement has been prepared by MCE to support the DA of 244 Talford Street, Allenstown, Rockhampton described as Lot 29 and 28 on RP600988.

The analysis and overall approach was specifically catered for the particular project requirements and may not be applicable beyond this scope. For this reason, any other third parties are not authorised to utilise this report without further input and advice from MCE.

This statement has been prepared by a Registered Professional Engineer Queensland (RPEQ). The accuracy of the report is dependent upon the accuracy of the above mentioned data sources.

Limitations:

1. MCE has relied upon third party sources of information to prepare the document which may not have been able to be fully verified. MCE has taken reasonable endeavours to inform itself of the parameters and project and has taken reasonable steps to ensure that the works and document is as accurate as possible given the information upon which it has been based including information that may have been provided or obtained by any third party or external sources which has not been independently verified.
2. MCE reserves the right to review and amend any aspect of the works performed including any opinions and recommendations from the works included or referred to in the works if:
 - a. Additional sources of information not presently available (for whatever reason) are provided or becomes known to MCE; or
 - b. MCE considers it prudent to revise any aspect of the works in light of any information which becomes known to it after the date of submission.
 - c. MCE does not give any warranty nor accept any liability in relation to the completeness or accuracy of the works. If any warranty would be implied whether by law, custom or otherwise, that warranty is to the full extent permitted by law excluded. All limitations of liability shall apply for the benefit of the employees, agents and representatives of MCE to the same extent that they apply for the benefit of MCE.
3. MCE take no responsibility for the structural integrity of the shed, or the final placement (vertical or horizontal) of the structure. The shed should be built on or at a maximum of 100mm above natural ground level, so the development does not materially impede the flow of floodwaters through the site or worsen flood flows external to the site.
4. It is the landowner's responsibility to implement appropriate flood management strategies. The above noted advice is indicative of a development of this nature. It is the land owner's responsibility to implement, maintain and operate the site specific strategy.

Lachlan McMurtrie
Director
RPEQ 15243



APPENDIX A – FLOOD SEARCH REPORT

Flood Report for 244 Talford Street Allenstown QLD 4700

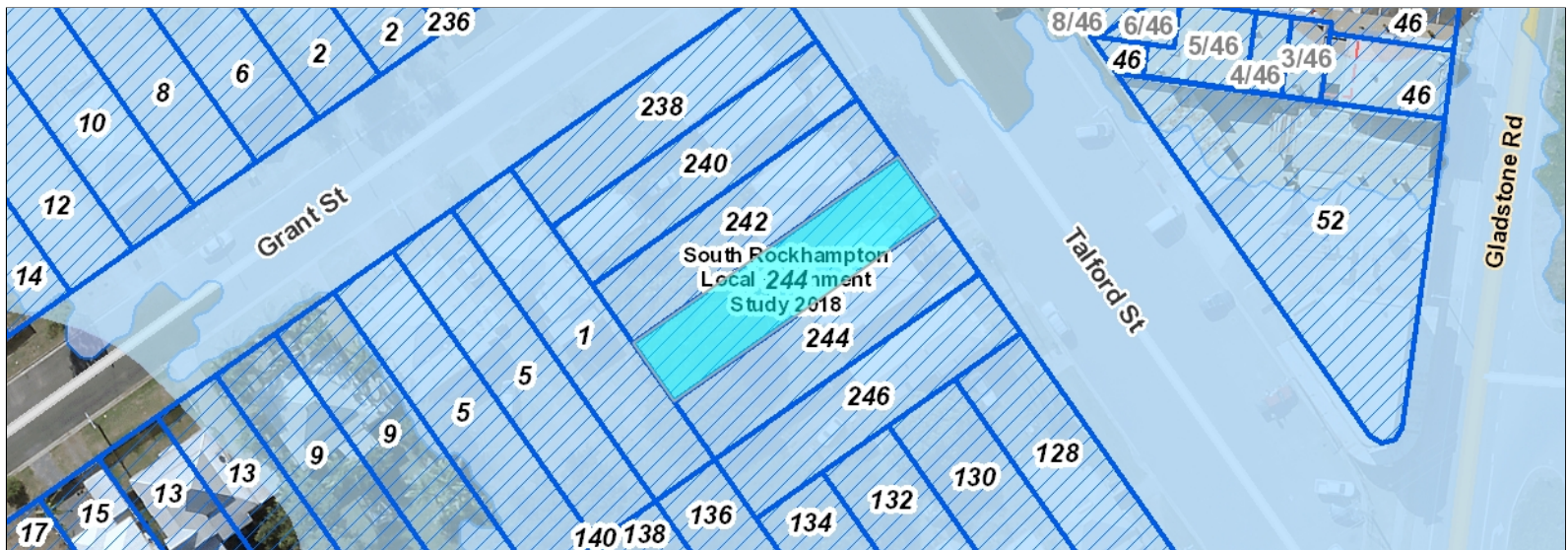
Printed from
GeoCortex on
10/03/2021

Owners: G R Turner PR

Ratepayer Address: C/- Evans Edwards & Associates 7
Archer St ROCKHAMPTON CITY
QLD 4700 ROCKHAMPTON CITY
QLD 4700

Parcel ID: RP600988/29

Land use: Single Dwelling



Riverine Catchment: Fitzroy River 2014 Flood Study

Creek Catchment: South Rockhampton Local Catchment Study 2018

Mitigation Area: N/A

Horizontal Datum: MGA Z56, GDA2020

Elevation / WSL: mAHD Velocity: m/sec

Comments

N/A

Riverine

AEP 1% WSL Min:	7.87
AEP 1% WSL Max:	7.87
AEP 1% Velocity Min:	0.01
AEP 1% Velocity Max:	0.03
AEP 2% WSL Min:	7.50
AEP 2% WSL Max:	7.50
AEP 2% Velocity Min:	0.01
AEP 2% Velocity Max:	0.02
AEP 5% WSL Min:	N/A
AEP 5% WSL Max:	N/A
AEP 5% Velocity Min:	N/A
AEP 5% Velocity Max:	N/A
AEP 10% WSL Min:	N/A
AEP 10% WSL Max:	N/A
AEP 10% Velocity Min:	N/A
AEP 10% Velocity Max:	N/A

Local Storm Event

PMF WSL Min:	8.84	AEP 5% WSL Min:	7.63
PMF WSL Max:	8.86	AEP 5% WSL Max:	7.68
PMF Velocity Min:	0.19	AEP 5% Velocity Min:	0.16
PMF Velocity Max:	0.61	AEP 5% Velocity Max:	0.64
AEP 0.05% WSL Min:	7.98	AEP 10% WSL Min:	7.61
AEP 0.05% WSL Max:	8.01	AEP 10% WSL Max:	7.66
AEP 0.05% Velocity Min:	0.18	AEP 10% Velocity Min:	0.16
AEP 0.05% Velocity Max:	0.62	AEP 10% Velocity Max:	0.64
AEP 0.2% WSL Min:	7.85	AEP 18% WSL Min:	7.56
AEP 0.2% WSL Max:	7.93	AEP 18% WSL Max:	7.60
AEP 0.2% Velocity Min:	0.17	AEP 18% Velocity Min:	0.15
AEP 0.2% Velocity Max:	0.63	AEP 18% Velocity Max:	0.63
AEP 1% WSL Min:	7.75	AEP 39% WSL Min:	7.35
AEP 1% WSL Max:	7.82	AEP 39% WSL Max:	7.35
AEP 1% Velocity Min:	0.17	AEP 39% Velocity Min:	0.04
AEP 1% Velocity Max:	0.64	AEP 39% Velocity Max:	0.62
AEP 2% WSL Min:	7.70	AEP 63% WSL Min:	7.23
AEP 2% WSL Max:	7.76	AEP 63% WSL Max:	7.27
AEP 2% Velocity Min:	0.17	AEP 63% Velocity Min:	0.01
AEP 2% Velocity Max:	0.63	AEP 63% Velocity Max:	0.18

Property Elevation

Ground Elevation (Min): 6.98
Ground Elevation (Max): 7.30

Flood Report for 244 Talford Street Allenstown QLD 4700

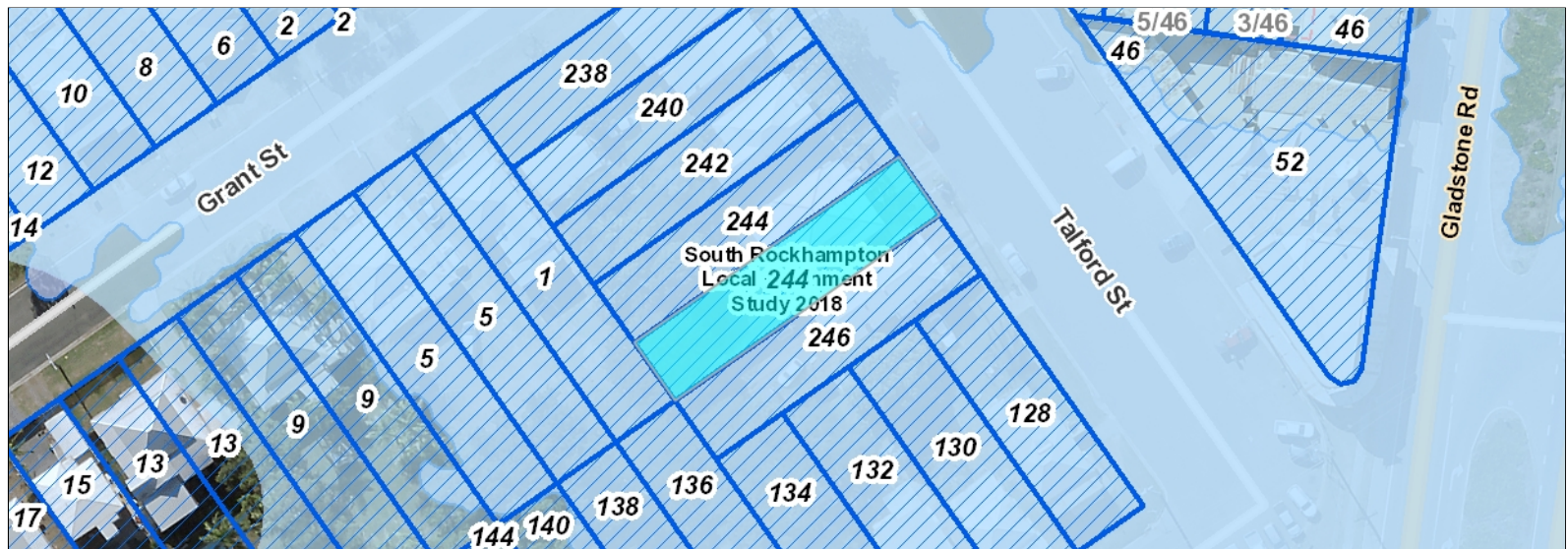
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QLD 4700 ROCKHAMPTON CITY
QLD 4700

Parcel ID: RP600988/28

Land use: Single Dwelling



Riverine Catchment: Fitzroy River 2014 Flood Study

Creek Catchment: South Rockhampton Local Catchment Study 2018

Mitigation Area: N/A

Horizontal Datum: MGA Z56, GDA2020

Elevation / WSL: mAHD Velocity: m/sec

Comments

N/A

Riverine

AEP 1% WSL Min:	7.87
AEP 1% WSL Max:	7.87
AEP 1% Velocity Min:	0.02
AEP 1% Velocity Max:	0.03
AEP 2% WSL Min:	7.50
AEP 2% WSL Max:	7.50
AEP 2% Velocity Min:	0.01
AEP 2% Velocity Max:	0.02
AEP 5% WSL Min:	N/A
AEP 5% WSL Max:	N/A
AEP 5% Velocity Min:	N/A
AEP 5% Velocity Max:	N/A
AEP 10% WSL Min:	N/A
AEP 10% WSL Max:	N/A
AEP 10% Velocity Min:	N/A
AEP 10% Velocity Max:	N/A

Local Storm Event

PMF WSL Min:	8.84	AEP 5% WSL Min:	7.63
PMF WSL Max:	8.85	AEP 5% WSL Max:	7.67
PMF Velocity Min:	0.17	AEP 5% Velocity Min:	0.16
PMF Velocity Max:	0.70	AEP 5% Velocity Max:	0.72
AEP 0.05% WSL Min:	7.97	AEP 10% WSL Min:	7.61
AEP 0.05% WSL Max:	8.00	AEP 10% WSL Max:	7.65
AEP 0.05% Velocity Min:	0.18	AEP 10% Velocity Min:	0.16
AEP 0.05% Velocity Max:	0.71	AEP 10% Velocity Max:	0.72
AEP 0.2% WSL Min:	7.84	AEP 18% WSL Min:	7.56
AEP 0.2% WSL Max:	7.91	AEP 18% WSL Max:	7.59
AEP 0.2% Velocity Min:	0.18	AEP 18% Velocity Min:	0.16
AEP 0.2% Velocity Max:	0.71	AEP 18% Velocity Max:	0.72
AEP 1% WSL Min:	7.74	AEP 39% WSL Min:	7.34
AEP 1% WSL Max:	7.81	AEP 39% WSL Max:	7.35
AEP 1% Velocity Min:	0.16	AEP 39% Velocity Min:	0.03
AEP 1% Velocity Max:	0.72	AEP 39% Velocity Max:	0.47
AEP 2% WSL Min:	7.69	AEP 63% WSL Min:	7.24
AEP 2% WSL Max:	7.75	AEP 63% WSL Max:	7.26
AEP 2% Velocity Min:	0.16	AEP 63% Velocity Min:	0.01
AEP 2% Velocity Max:	0.72	AEP 63% Velocity Max:	0.10

Property Elevation

Ground Elevation (Min):	7.00
Ground Elevation (Max):	7.41



APPENDIX B – PROPOSED SHED LAYOUTS

Elevations

TRM Fabrications Pty Ltd

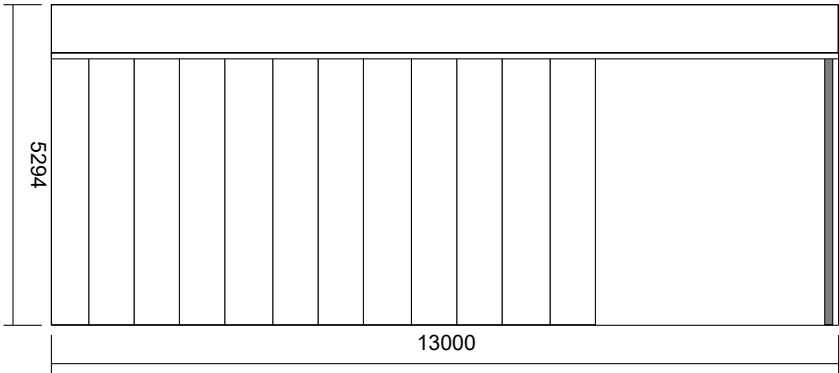
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Quote#: DNGROK0111

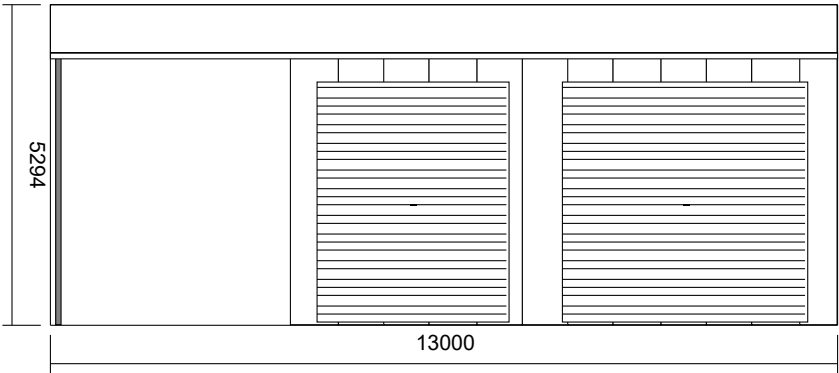
Client Address: 244 Tallford Street, Allenstown QLD, 4700

Building Type: Shed

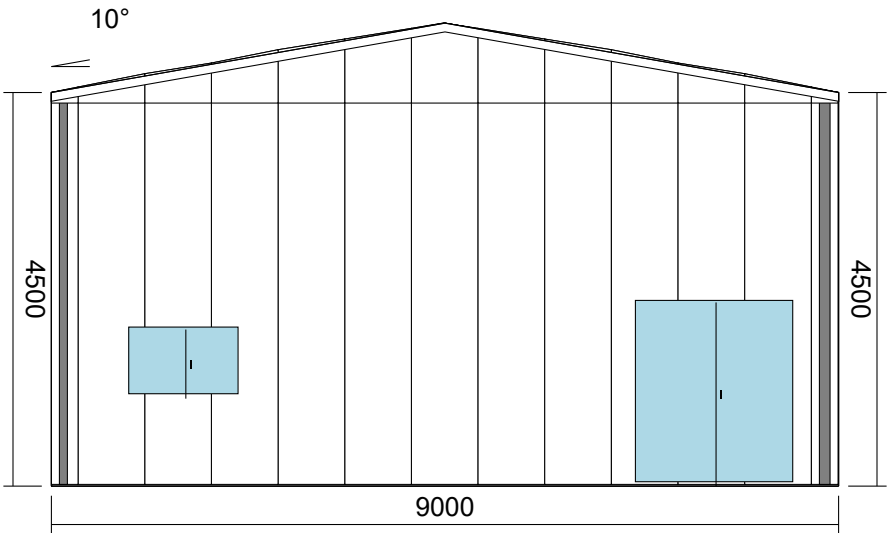
(copyright © 2012-2021 ConXsteel, Building Created: 31/08/2021 Printing Date: 15/09/2021 Version 2.7.22.0) All designs and or intellectual material on this page is the property of D&G Steel Sheds Network (www.dngsteelshedsnetwork.com.au)



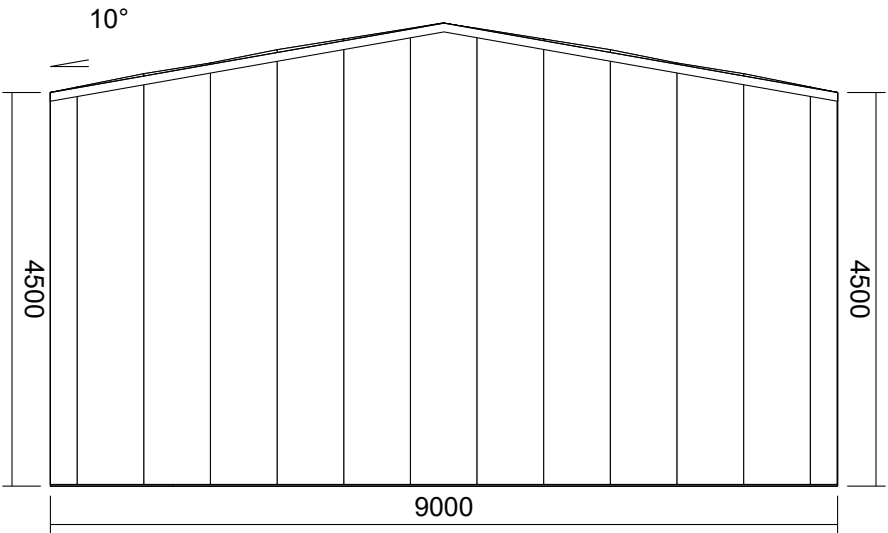
Left Elevation



Right Elevation



Front Elevation



Rear Elevation

Customer Signed

Date

Management Signed

Date



APPENDIX C– AFFLUX CALCULATION

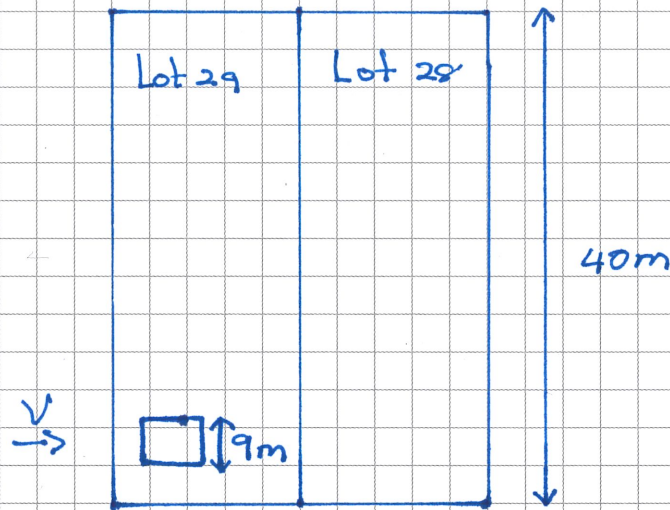
- ☐ Note to File ☐ Calc / Sketch Sheet
☐ Communication Record ☐ Other

63 Charles Street
 North Rockhampton Q 4701
 PO Box 2149
 Wandal Q 4700

P (07) 4921 1780
 F (07) 4921 1790
 E mail@mcmengineers.com
 ABN 69 958 286 371

Job Title: 244 Talford Street, Allenstown Job/File No: 108-20-21

Subject: Afflux Calculation



$$Q = AV$$

Assuming Q is constant,

$$d \times l_1 \times v_1 = d \times l_2 \times v_2$$

$$v_2 = \frac{l_1 \times v_1}{l_2} = \frac{40 \times 0.64}{(40-9)} = 0.82 \text{ m/s}$$

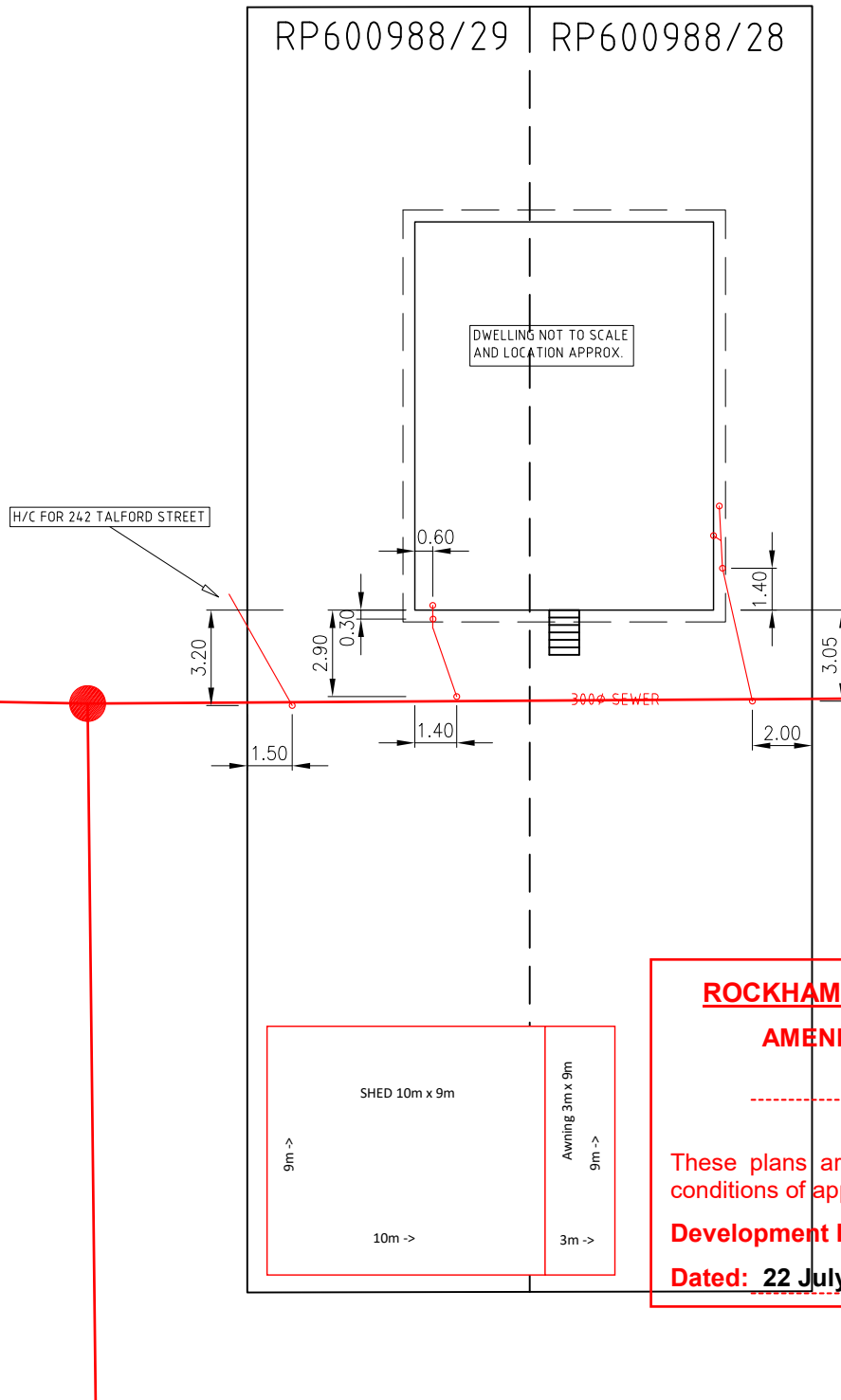
$$\text{Velocity Head} = \frac{v_1^2}{2g} = \frac{0.64^2}{2 \times 9.81} = 0.021 \text{ m}$$

$$\text{Velocity Head} = \frac{v_2^2}{2g} = \frac{0.82^2}{2 \times 9.81} = 0.033 \text{ m}$$

$$\begin{aligned}
 \text{Change in Velocity Head} &= 0.033 - 0.021 \\
 &= 0.012 \text{ m} \\
 &= 12 \text{ mm}
 \end{aligned}$$

Site Plan - 15 October 2021 v2

244 TALFORD STREET



ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

19 October 2021

DATE

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/70-2021

Dated: 22 July 2021

REFERENCE

AAV	AIR ADMITTANCE VALVE	O.R.G.	OVERFLOW RELIEF GULLY
C.O.	CLEAR OUT	P.B.	PLAIN BEND
D.T.	DISCONNECTOR TRAP	S.P.	SOIL PIPE
F.W.G.	FLOOR WASTE GULLY	S.V.P.	SOIL VENT PIPE
G.T.	GULLY TRAP	V.P.	VENT PIPE
I.O.	INSPECTION OPENING	EXP.	EXPANSION JOINT
I.O.B.	INSPECTION OPENING BEND	REF.	REFLUX VALVE
I.O.J.	INSPECTION OPENING JUNCTION	SW.	SWIVEL JOINT
I.O.P.	INSPECTION OPENING PIPE	W.I.P.	WATER INLET POINT
I.O.S.	INSPECTION OPENING TO SURFACE	W.M.	WATER METER
J.U.	JUMP UP		

LAST AMENDMENT

LAST PLOTTED : 14/07/2020
LAST SAVED BY: GLENNR

WARNING: IMAGE NOT AT ORIGINAL SCALE

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