

Engineering Design Note

Stormwater Management

Stormwater Management Plan
Lot 161 Tuckerroo Avenue
Mullumbimby, NSW

Our Reference: 220324

Date: July 2022

Introduction / Background

Newton Denny Chapelle has been engaged to prepare a stormwater management plan for the proposed multi-unit development at Lot 161 Tuckerroo Avenue, Mullumbimby. The proposed allotment forms part of Stage 7 of the Tallowood Estate (refer Figure 1) with the lot yet to be registered.

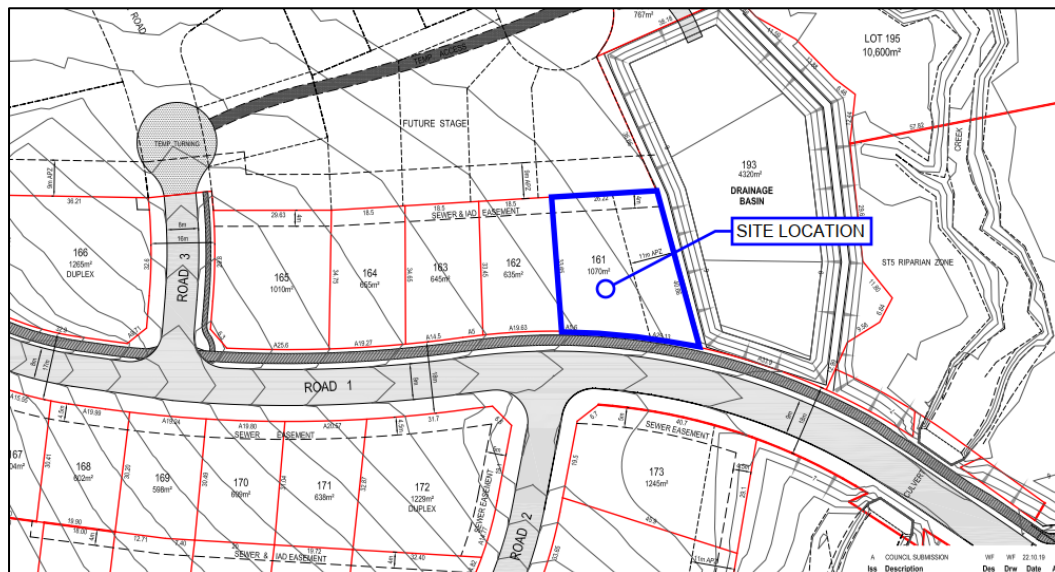


Figure 1 - Site Location (Source: CivilTech Drawing 1002-SP7 A)

The site is approximately 1,070m² in size and generally drains to the North East corner of the site.

Proposed Development

The proposed development involves the construction of three freestanding dwellings with access from a common driveway along the eastern side of the site (refer Figure 2).

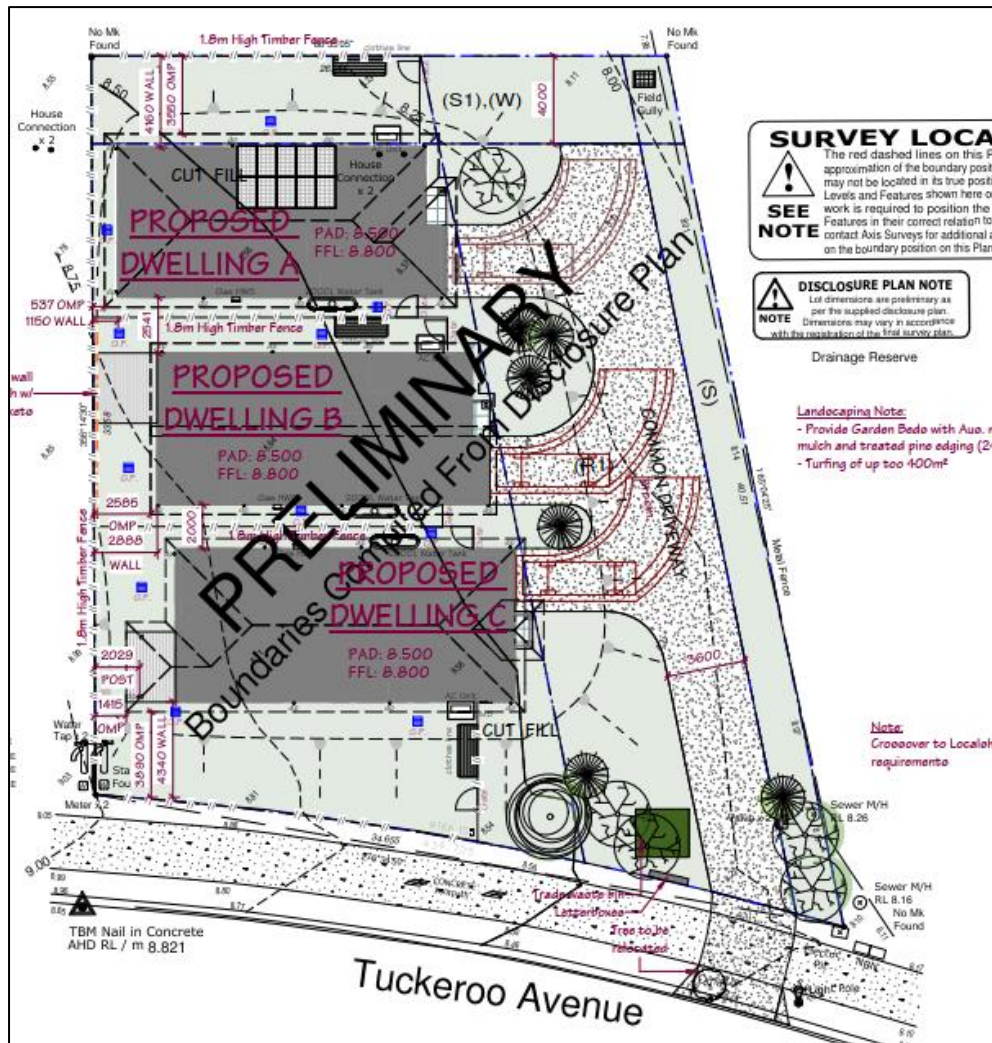


Figure 2 - Proposed Development Layout (Source: Stroud Homes Site Plan 2102773)

Lawful Point of Discharge

The lawful point of discharge has been identified as the IAD pit located in the north east corner of the site.

Tallowood Ridge

A review of the Stormwater Management Plan prepared by CivilTech Engineers (dated 22 February 2020) has been undertaken to determine what allowance has been made for developing the site as part of the underlying subdivision. The subject site forms part of the southern catchment draining to Basin 1, refer Figure 3:

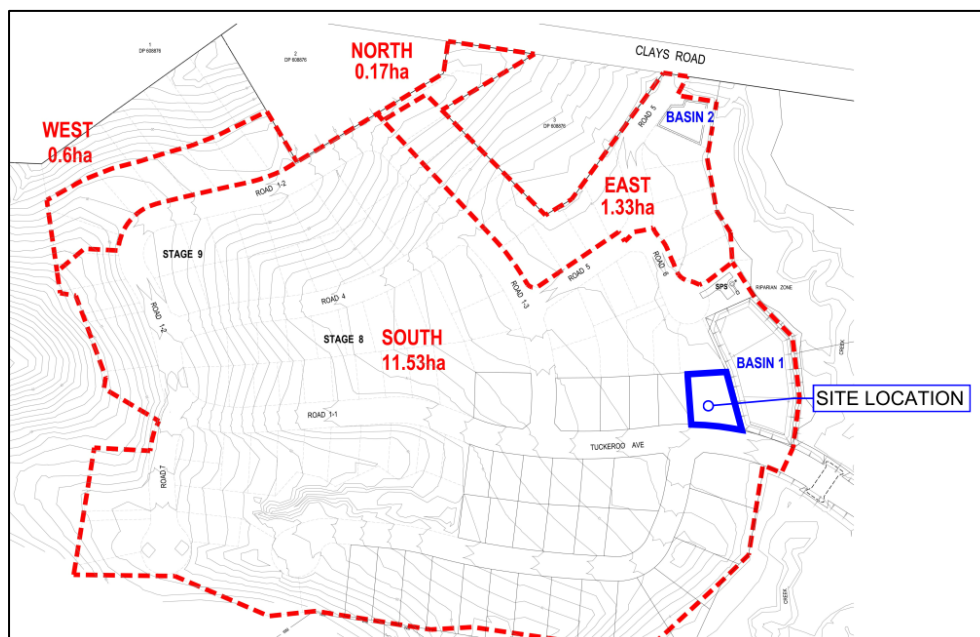


Figure 3 - Tallowood Ridge Catchment (Source: Fig 3 CivilTech SWMP)

The SWMP outlines that an allowance of 55% Pervious and 45% Impervious has been made for the MUSIC and Drains modelling of the southern Catchment.

Stormwater Catchments

The following catchment areas have been calculated for the site:

Catchment Type	Area (m ²)
Roof – Impervious	385
Driveway – Impervious	195
Pervious	490
Total:	1070

Based on the above catchment areas the site is considered to be 46% Pervious and 56% Impervious. This is an increase of 11% or 118m² above what has been allowed for in the underlying subdivision.

Stormwater Attenuation

Section 6.1 of the *Byron Shire Comprehensive Guidelines for Stormwater Management* states that OSD is not required where:

- The site is located within a catchment within which a regional detention structure has been provided for the ultimate development of the catchment
- Where the total increase in impervious area is less than 150m²

As the site drains to a regional detention basin (immediately adjacent to the eastern boundary) and the proposed development results in an increase less than 150m² (above that already allowed for the site), it is not proposed to provide additional attenuation for the site.

Stormwater Quality

The stormwater quality modelling (MUSIC) for the underlying subdivision requires a 2,000l BASIX tank for each site. The *Byron Shire Development Control Plan 2014, Chapter B3-Services* requires that key pollutants (TSS, TP and TN) are addressed for low density residential development. As the site is under 2,500m² no prescriptive reduction measures are required.

It is proposed to capture and treat the first 'first flush' (25% of the 1 year ARI storm events) in accordance with the recommendations of the DCP. The first flush volume calculations are attached and are summarised below:

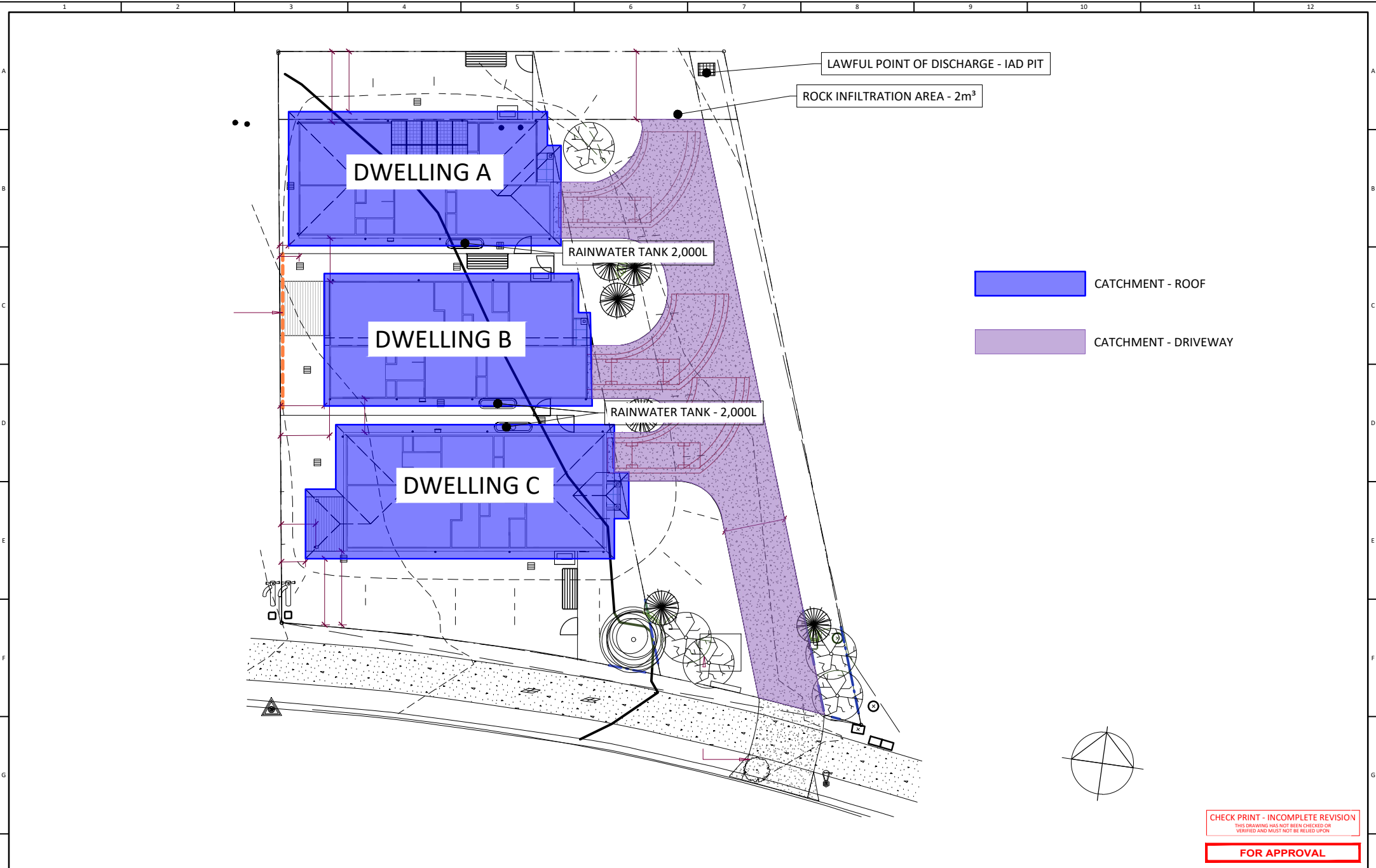
Area	Storage Volume Required
Roof (per unit)	0.375m ³
Driveway	0.55m ³

In addition to the 2,000l BASIX tank required by the CivilTech SWMP a total of 6,000l (2,000l per dwelling) of BASIX storage will be provided for the site. These tanks will provide first flush storage for the dwelling roof areas. Runoff from the driveway will also be directed to a rock infiltration area sufficient to capture the first flush flows.

Attachments:

Stormwater Catchment Plan – 220324-00-DA-SW-01

Plot Date: 13 Jul 2022 CAD File Name: K:\Jobs\2023\202324-00-DA-SW-01.dwg



CHECK PRINT - INCOMPLETE REVISION
THIS DRAWING HAS NOT BEEN CHECKED OR
VERIFIED AND MUST NOT BE RELIED UPON

FOR APPROVAL

REV	DESCRIPTION	BY	APP.	DATE
A	FIRST ISSUE			

A3 SIZE ORIGINAL DRAWING
0 2 4 6
1:200
SCALE (m) A3

HORIZ. DATUM	ARCH DRG	DRAWN
PROJECTION	CHECKED	
MERIDIAN	DESIGN	
VERT. DATUM	CHECKED	
VERT. ORIGIN		
SURVEYED BY	ARCH DRG	APPROVED
SURVEYED DATE		CERTIFICATION
		DATE



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APPROVALS

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STORMWATER CATCHMENT PLAN		
Reference No. 220324	DRAWING No. 220324-00-DA-SW-01	REVISION A