ADW JOHNSON PTY LIMITED
ABN 62 129 445 398

Sydney
Level 35 One International Towers
100 Barangaroo Avenue
Sydney NSW 2000
Ph. 02 8046 7411
sydney@adwjohnson.com.au

Central Coast
5 Pioneer Avenue
Tuggerah NSW 2259
Ph. 02 4305 4300
Fax. 02 4305 4399
coast@adwjohnson.com.au

Hunter Region
7/335 Hillsborough Road,
Warners Bay NSW 2282
Ph. 02 4978 5100
Fax. 02 4978 5199
hunter@adwjohnson.com.au

Engineering

Stormwater Management Plan

Proposed Childcare Facility

Property:
2 Collinson Street, Tenambit

Applicant:
SS Estate Pty Ltd

Date:
June 2025

Working Beyond Expectations

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Project Management • Town Planning • Engineering • Surveying
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Document Control Sheet

Issue No.	Amendment	Date	Prepared By	Checked By
A	Initial Issue	20/06/2025	Mitchell Knox	Melissa Paige-Cooper
B	Client Comments	24/06/2025	Mitchell Knox	Mitchell Knox

Executive Summary

ADW Johnson has been engaged by SS Estate Pty Ltd to prepare a Stormwater Management Plan addressing the stormwater management requirements for a proposed childcare facility at 2 Collinson Street, Tenambit. This report accompanies a development application for the proposed childcare centre which will accommodate 132 children. It will be supported by enabling infrastructure including an off-street parking facility and new stormwater drainage system.

A focal point of this stormwater management plan was to formalise site runoff whilst satisfying runoff quality and peak flow objectives. Under existing conditions, the site falls southwards with moderate grades. A portion of the existing catchment drains into David Avenue (the site's second frontage), with the remainder draining over adjoining property Lot 4 DP513051 in an uncontrolled manner.

Proposed site regrading will redirect catchment from the adjoining property into David Avenue, providing a legal point of discharge. A below-ground On-Site Detention (OSD) tank has been sized to ensure that peak flows into David Avenue do not exceed their predeveloped magnitudes for all design storms ranging from 1EY to 1% AEP. As the nearest piped drainage in David Avenue is some 75m downstream of the site, a series of kerb adapters is proposed to discharge attenuated runoff. Modelling has confirmed that flow widths in David Avenue remain acceptable.

A stormwater quality treatment train has been developed comprising of pit inserts, filter cartridges and a below-ground detention tank. MUSIC modelling has confirmed that the proposed treatment train meets Council's objectives in relation to runoff quality improvement.

To ensure downstream waters and adjacent properties are protected, appropriate erosion and sediment controls are to be undertaken during construction. Controls are to be implemented and monitored in accordance with Landcom's 'Blue Book' and Council's engineering guidelines.

The details and information presented in this Stormwater Management Plan confirm that the proposed development can satisfy Council's requirements in relation to peak flow management, runoff quality improvement and soil and water management.

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LIST OF FIGURES

LIST OF TABLES

1.0 Introduction

ADW Johnson has been engaged by SS Estate Pty Ltd to prepare a Stormwater Management Plan addressing the stormwater management requirements for a proposed childcare facility at 2 Collinson Street Tenambit.

The site comprises three land parcels, being 151-153 DP561830. It is bounded by existing residential properties to the east and west, with vacant and unimproved land to the north. The site's primary frontage is to Collinson Street to the south, with a secondary frontage to David Avenue to the northwest. Site locality is presented in ***Figure 1.***

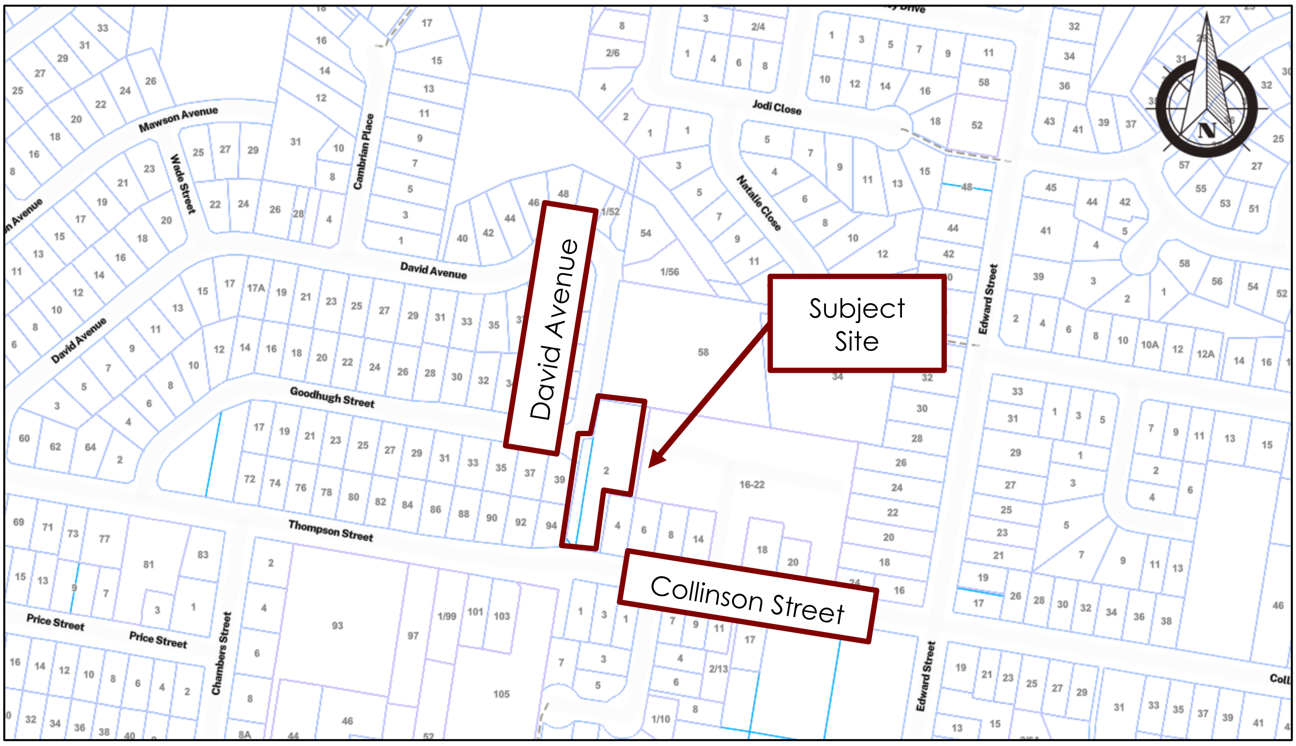


Figure 1 - Site Locality.
(Source: NSW SDT Explorer)

2.0 Site Description

2.1 EXISTING SITE

The site is located on Collinson Street Tenambit and comprises approximately 3,267m² over its three land parcels. It presently incorporates a single residential dwelling and a large shed, with no existing vegetation of significance. Topography is moderate-to-steep, with grades in the order of 6-10% to the north.

A gentle ridgeline runs north-south across the site, splitting its catchment eastwards and westwards. The Eastern catchment drains across the site's southern boundary in an uncontrolled manner. Runoff is conveyed over the adjoining Lot 4 DP513051 before entering a tributary of the Hunter River between David Avenue and Natalie Close. It is understood there is no easement for drainage over Lot 4 DP513051 benefiting the subject site.

The site's western catchment drains into David Avenue, which grades steeply to the north. There is no existing piped drainage in David Avenue at the site's frontage, with the most upstream stormwater pit being located approximately 75m north of the site. Piped drainage from David Avenue is discharged into the aforementioned tributary of the Hunter River to the northwest of the site.

Figure 2 presents an aerial photograph of the site.

Figure 2 – Existing Site.
(Source: Google Maps)

2.2 EXISTING GEOLOGY

A report on geotechnical investigation was forthcoming at the time of writing. Desktop review using the NSW DPIE's *eSPADE* confirms that the site is situated within the Beresfield (be) soil landscape. The Beresfield soil landscape is associated with deep reactive clays and high runoff characteristics. These characteristics would limit opportunities for infiltration-centric stormwater management strategies for the site.

2.3 PROPOSED DEVELOPMENT

The site is intended for a childcare facility catering for 132 children. It will include a 2-storey childcare centre building and is supported by an off-street parking facility and outdoor play area. ***Figure 3*** presents a site plan for the proposed development.

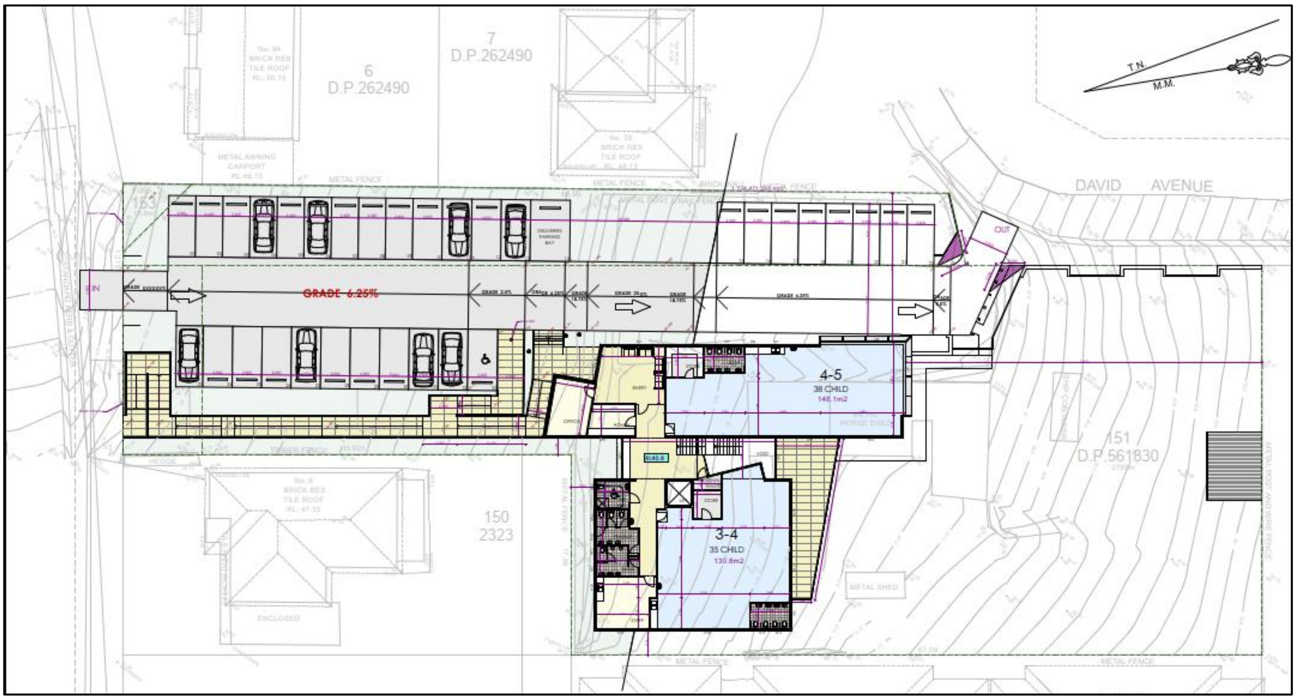


Figure 3 – Proposed Development.
(Source: Brad Inwood Architects)

3.0 Council Requirements

Maitland City Council outlines the engineering requirements for stormwater management within their Manual of Engineering Standards. Specifically, Section 6 of their standards outline the relevant requirements for stormwater drainage.

3.1 ONSITE DETENTION

Council requires that the proposed development will not exceed the predevelopment runoff for all storm durations for all return periods ranging from the 1EY to 1% AEP. This requirement must be met at the site's legal points of discharge. DRAINS modelling of peak flows under existing and developed conditions is presented in ***Section 5***.

3.2 STORMWATER QUALITY

The proposed development is to include water quality treatment devices within the site to reduce pollutant loads prior to discharging downstream. Council's stormwater quality targets for urban areas are shown in ***Table 1.***

Table 1 - Water Quality Targets (Maitland City Council, 2014)

Pollutant	Targets
Total Suspended Solids (TSS)	80% of average annual load
Total Phosphorus (TP)	45% of average annual load
Total Nitrogen (TN)	45% of average annual load
Litter	Retention of all litter greater than ϕ50mm for flow up to the 3-month ARI peak flow
Oil and Grease	90% of average annual load

Runoff quality improvement is addressed in ***Section 6*** of this report.

3.4 SOIL AND WATER MANAGEMENT

Soil and Water Management (SWM) is to be undertaken according to Landcom's *Blue Book* (2004) and Council's Manual of Engineering Standards, specifically Appendix B. The intent of this requirement is to mitigate erosion and prevent sediment-laden run-off from leaving the site during site preparation and construction. SWM is addressed in ***Section 7*** of this report.

4.0 Stormwater Strategy

As discussed in ***Section 2***, the existing hydrology is characterised by moderate slopes and high runoff potential. A focal point of the proposed stormwater strategy was to drain the site to legal points of discharge whilst respecting the site's existing drainage regime.

As noted in ***Section 2***, the eastern portion of the site drains onto adjacent property in an uncontrolled manner. Site regrading is proposed to redirect this catchment east towards David Avenue, being the site's legal point of discharge.

A piped drainage network is proposed beneath the car park, with the car park driveway serving as the primary overland flowpath. An On-Site Detention (OSD) tank will be located under the northern end of the car park near the David Avenue/Goodhugh Street intersection. The tank will be oversized to compensate for the minor redirection of catchment away from adjoining property.

Outflows from the OSD tank will be conveyed to the northern end of the site which is at significantly lower elevation than the car park (owing to steep existing grades). This enables piped drainage to connect into David Street by way of multiple kerb adapters at the northern end of the site. DRAINS modelling has confirmed that flow-widths downstream of the site will remain compliant with Council's requirements.

A water quality treatment train has been developed incorporating pit insert baskets and filter cartridges located in a separate chamber within the OSD tank. Location of these devices within the car park ensures that access for maintenance is readily available. The proponents of the childcare facility would be responsible for operation and maintenance of WSUD controls in perpetuity.

Stormwater modelling has confirmed there is no requirement for separate OSD and WSUD facilities to service the outdoor play area, which is mostly pervious. Modelling has ensured that the outdoor play area is compensated for by the proposed OSD tank within the car park. Piped drainage will be provided on the low side of the outdoor play area to direct drainage to David Avenue.

Appropriate erosion and sediment controls are to be implemented during construction in accordance with Landcom's 'Blue Book' and Council's DCP.

Stormwater management outcomes in relation to peak flow management, runoff quality, flooding, erosion and sediment control are provided from ***Sections 5*** to ***7***.

5.0 Peak Flow Management

The proposed development will increase the catchment's impervious area and therefore contribute to additional stormwater runoff. DRAINS was used to compare peak flow magnitudes under existing and developed conditions to establish detention warrants for the proposed development in the context of Council's requirements.

5.1 MODELLING PARAMETERS

5.1.1 Rainfall Intensity

The Rainfall Intensity Frequency Duration (IFD) data adopted was sourced from the Bureau of Meteorology website (IFD 2019 application).

5.1.2 ILSAX Parameters

A DRAINS model was developed using an ILSAX model. Key ILSAX parameters used within the model are summarised in ***Table 2*** below.

Table 2 - ILSAX Modelling Parameters

Parameter	Value
Paved area depression storage	1mm
Grassed area depression storage	5mm
Soil Type	3 (Type C/slow infiltration rate)

5.2 CATCHMENTS

Catchments and subcatchments were delineated by analysis of the field survey undertaken as well as the topographical survey information and concept engineering plans. Predeveloped and developed catchment plans are provided in ***Appendix A***. Detailed catchment parameters are provided in ***Appendix B***.

5.2.1 Predeveloped Catchments

The western predeveloped catchment was calculated based on 3rd party detail survey and LiDAR imagery. The existing impervious fraction was estimated based on aerial photography of the site. There was no requirement to model the eastern predeveloped catchment since its outlet will receive no runoff under developed conditions.

Table 3 summarises the predeveloped catchment parameters.

Table 3- Predeveloped Catchment Parameters

Subcatchment	Area (ha)	% Impervious
PRE E	0.115	0%
PRE W	0.218	10%
TOTAL	**0.333**	**10%**

5.2.2 Developed Catchment

Developed catchments were delineated utilising the proposed site grading plan and concept stormwater layout. Maitland City Council's Manual of Engineering Standards includes standard impervious fractions for different land uses; however, these are not applicable to a childcare development. Impervious fractions were therefore calculated from engineering and architectural plans based on actual land use.

A summary of developed catchment parameters is provided in ***Table 4.***

Table 4 - Developed Catchment Parameters

Catchment	Area (ha)	% Impervious
A	0.0228	90%
B	0.05	90%
C	0.0264	70%
D	0.0185	90%
E	0.0084	90%
F	0.0187	70%
G	0.0706	100%
H	0.0043	100%
I	0.1129	30%
TOTAL	**0.333**	**69%**

Comparing Tables 4 and 5 it is seen that approximately 0.115ha of additional catchment is directed towards David Street under existing conditions. This is required to rectify uncontrolled discharge onto the downstream 4 DP513051. OSD facilities, described in ***Section 3*** will compensate for this redirection of catchment.

5.3 STORMWATER DETENTION

An On-Site Detention (OSD) tank is proposed beneath the northern end of the car park, where it can receive a majority of roofwater and car park surface water. Assumed parameters are presented in ***Table 5.***

Table 5 – OSD Parameters

Basin Parameter	Detail
Levels	35.4m AHD - Invert Level
	37.4m AHD – Top of Tank
	37.9 – Approx. FSL
Dimensions	8m (L) x 5m (W) x 2m (D)[1]
Stored 1% AEP volume	$70m^3$ [2]
Outlet 1	50mm orifice IL 35.4m AHD
Outlet 2	DN150 orifice IL 36.3m AHD
Outlet 3	600mm wide cutout weir IL 37.1

1. *Includes $2m^2$ water quality filter chamber (Section 6)*
2. *Excludes $2m^2$ water quality filter chamber (Section 6). Modelling assumed the water quality chamber was full prior to the start of each design storm.*

It is noted that the proposed outlet configuration is conceptual. Alternate configurations are acceptable provided an equivalent stage-discharge relationship is adhered to.

5.4 PEAK FLOW RESULTS

The predeveloped and developed peak flows were estimated using DRAINS all design events up to and including the 1% AEP. Note DRAINS is not capable of simulating a 63.2% AEP (1-year ARI) design storm using ARR 2019 methods.

Peak flows at the eastern discharge point are presented in ***Table 6***.

Table 6 - Eastern Modelling Results

Design AEP	Peak Flowrate (m^3/s)	
	Predeveloped	Developed
1EY	0.009	0.000
0.5EY	0.015	0.000
20%	0.026	0.000
10%	0.034	0.000
5%	0.042	0.000
2%	0.054	0.000
1%	0.064	0.000

From ***Table 6*** it is seen that there is no runoff to the east of the site under developed conditions. This is an expected result given redirection of the eastern catchment. Pre-to-post stormwater objectives are therefore satisfied.

Peak flows at the western discharge point are presented in ***Table 7***.

Table 7 - Western Modelling Results

AEP	Peak Flowrate (m^3/s)		
	Predeveloped	Developed Un-detained	Developed Detained
1EY	0.018	0.047	0.017
0.5EY	0.032	0.069	0.028
20%	0.051	0.093	0.042
10%	0.066	0.125	0.058
5%	0.082	0.152	0.071
2%	0.104	0.187	0.091
1%	0.123	0.227	0.116

Peak stages within the tank are presented in ***Figure 4***.

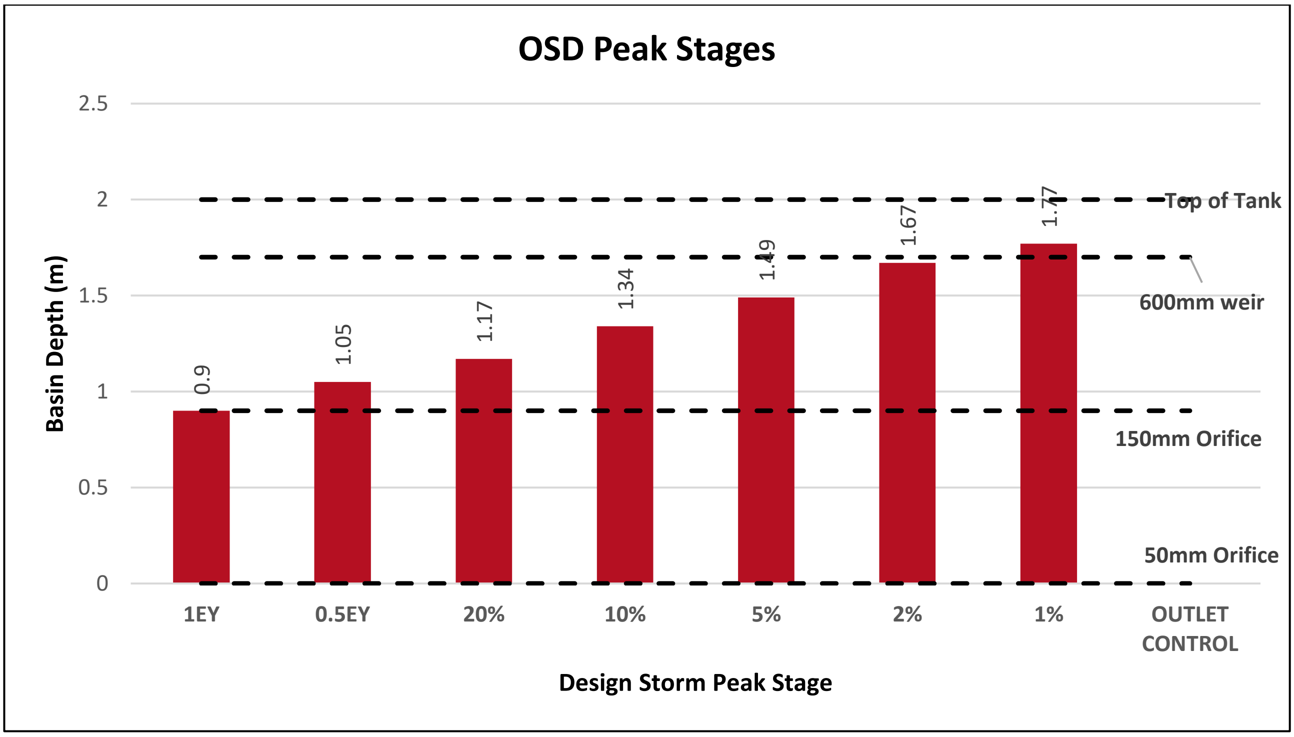


Figure 4 – OSD Tank Peak Stages.

From ***Figure 4*** it is seen that the proposed basin provides approx. 230mm of freeboard to the top of the OSD Tank. There is no requirement to meet MOES' requirement of limiting the peak 5% AEP stage to 1.2m as the tank will be inaccessible to the public.

5.5 DAVID STREET FLOW WIDTHS

As noted in ***Section 3***, the site's drainage system must utilise kerb adapters given a lack of piped drainage in David Avenue. DRAINS modelling has confirmed that an outlet comprising of four kerb adapters can accept the peak 10% AEP flow without any surcharge of internal stormwater pits. Flows exceeding the 10% AEP design event would report to the David Avenue kerb via kerb adapters and some bypass from the stormwater pit in the southwest corner of the site.

The nearest stormwater pit is located in David Avenue some 75m north of the site (***Figure 5***). DRAINS modelling has been undertaken to assess flow widths in the David Avenue kerb immediately upstream of this pit. Allowance was made for an additional 0.18Ha of catchment (100% pervious) from Lot 4 DP513051 which also drains into David Avenue. Modelling assumed a longitudinal grade of 10% in David Avenue with a standard kerb and 3% crossfall.

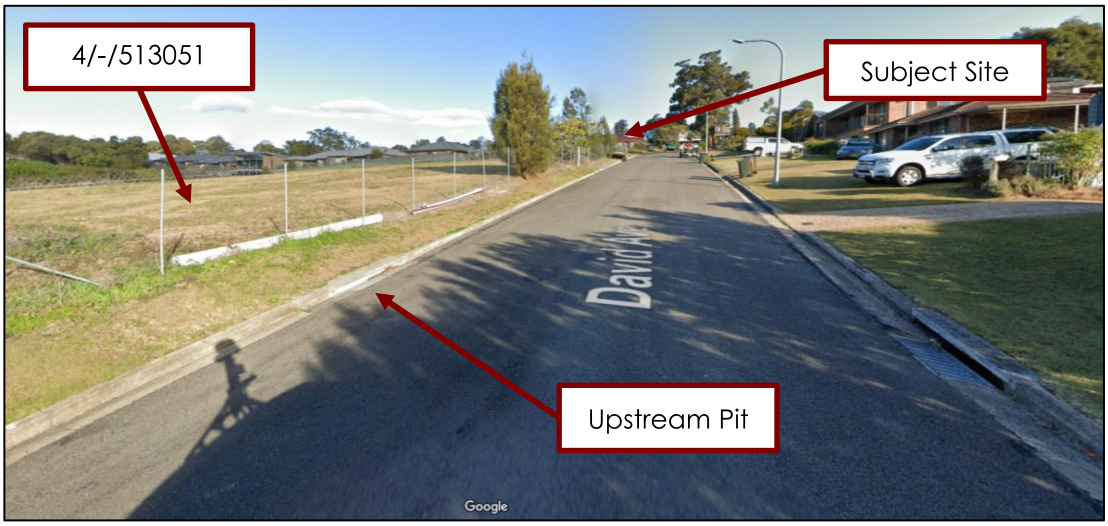


Figure 5 – David Avenue Looking South.
(Source: Google Maps)

Peak flow widths upstream of the existing pit are compared with Maitland's *Manual of Engineering Standards (MOES) 2014* in ***Table 8*** below.

Table 8 – David Avenue Flow Widths

Design AEP	Calculated Flow Width	Max. Flow Width (MOES 2014)
10%	1.50m	2.0m
1%	2.02m	Contained within road reserve

From ***Table 8*** it is evident that flow widths within David Avenue remain acceptable post-development. This is an expected result given the development does not increase peak flows into David Avenue, and given the steep approach grade in David Avenue.

6.0 Water Quality

The quality of the stormwater discharging from the development was determined using the Model for Urban Stormwater Improvement Conceptualisation (MUSIC). The MUSIC model was used to simulate pollutant source elements for the proposed development and the treatment of the pollutant loading using treatment devices.

6.1 MUSIC MODELLING PARAMETERS

6.1.1 Rainfall and Evapotranspiration

Rainfall data from Tocal, Paterson weather station was input into the MUSIC model. Paterson is situated 30km west of the subject site and suitably reflects local conditions. Six-minute rainfall information for the year of 1989 was analysed and deemed to be a reasonable representation of the average yearly rainfall and rainfall event distribution. A comparison of Paterson's 1989 rainfall with the long-term averages for Tenambit is presented in ***Table 9***.

Table 9 – Comparison of Paterson Rainfall Data

Data suite	Paterson 1989	Tenambit Long-term Average
Annual rainfall (mm)	904.6	942.3
Annual days of rainfall	89	89.9

It can be seen from ***Table 9*** that the rainfall and number of rainfall days for Paterson in 1989 are representative of the Tenambit long-term average. The annual rainfall and evapotranspiration time series graph for Paterson in 1989 is shown in ***Figure 6***.

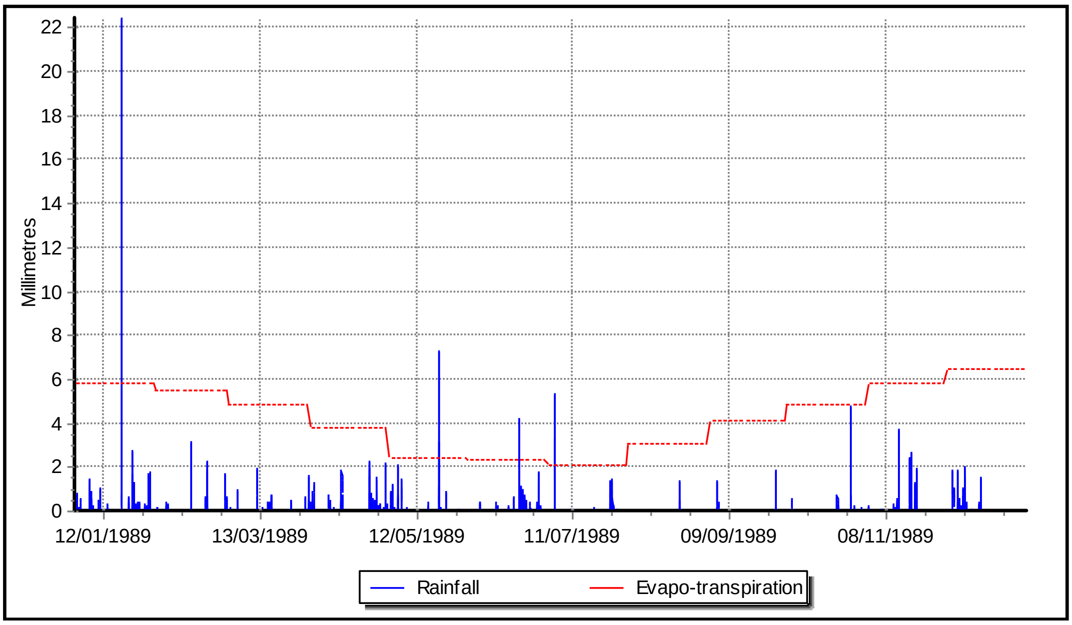


Figure 6 – Rainfall and Evapotranspiration Graph.

6.1.2 Catchments and Land Use

The developed catchment was delineated according to their treatment trains and points of discharge. Catchments were generally consistent with those used for peak flow estimation, noting there is no obligation to consider upstream catchments which bypass treatment.

Each catchment was broken down according to surface type as identified from the site masterplan. The MUSIC model incorporated the following surface types:

The MUSIC model defined the following land uses:

- Roof (Urban) – This land use defines the childcare centre's roof area and was considered 100% impervious;

- Sealed Road (Urban) – This land use defines the extent of car park pavement; It was considered to be 100% impervious as landscaped areas were considered separately;

- Landscape Area (Urban) – This land use defines the landscaped areas and footpaths surrounding the building and car park. It was modelled as a 'mixed' source node and was estimated to be 70% impervious.

- Play Area (Urban) – This land use defines the outdoor play area located at the rear of the site. The play area was modelled as 30% impervious residential land.

Table 10 summarises the area and composition of each MUSIC subcatchment. A MUSIC catchment plan is provided as ***Appendix E***.

Table 10 - MUSIC Catchment Areas

Catchment	Roof	Carpark	Landscaping	Play Area	Total
Area (Ha)	0.054	0.093	0.066	0.116	**0.330**

A network diagram of the constructed MUSIC model, showing catchments and treatment devices, is provided as an appendix to this report (***Appendix F***).

6.1.3 Rainfall-Runoff Parameters

Surface parameter inputs and pollutant concentrations were obtained from the '*NSW MUSIC Modelling Guidelines*' (BMT WBM, 2020).

Rainfall-runoff parameters are summarised in ***Table 11***.

Table 11 – Rainfall-Runoff Parameters

Parameter	Roof	Carpark	Landscaping	Play Area
Rainfall Threshold (mm/day)	0.3	1.5	1.0	1.0
Soil Storage Capacity (mm)	120			
Initial Storage (% of Capacity)	25			
Field Capacity (mm)	80			
Infiltration Capacity Coefficient - a	200			
Infiltration Capacity Exponent - b	1.0			
Initial Depth (mm)	10			
Daily Recharge Rate (%)	25			
Daily Baseflow Rate (%)	5			
Daily Deep Seepage Rate (%)	0			

6.2 TREATMENT DEVICES

A treatment train has been developed comprising of pit inserts and filter cartridges.

These treatment devices are described in detail in ***Sections 6.2.1*** to ***6.2.2***.

6.2.1 Pit Inserts

Pit insert baskets are inline controls which filter runoff via direct screening as it enters the stormwater drainage system. The baskets include a liner which retains gross pollutants and sediment.

Modelling has assumed three Ocean Protect *OceanGuard* baskets to be installed surface inlet pits within the car park. Each basket has a treatable flowrate of 20L/s. Pollutant removal efficiencies were obtained from MUSIC nodes supplied by Ocean Protect.

A schematic of the Ocean Protect *OceanGuard* is provided in ***Figure 7.***

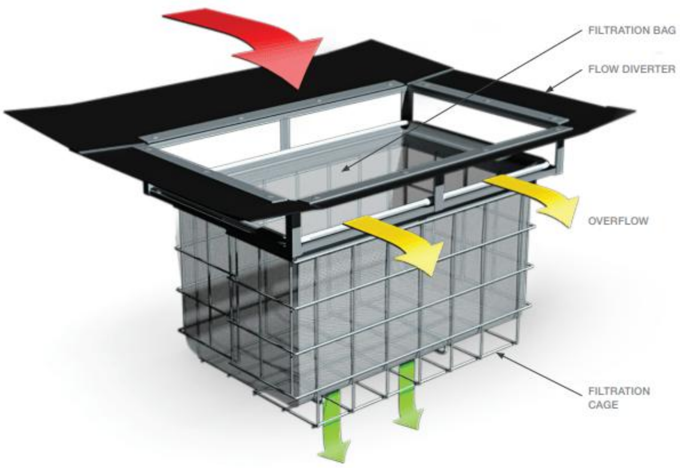


Figure 7 - *OceanGuard* Pit Insert.
(Source: Ocean Protect)

It is noted that an alternative pit insert product may be considered at detailed design stage provided an equivalent level of overall pollutant removal is demonstrated.

6.2.2 Filter Cartridge

Filter cartridges comprise of self-cleaning specialised media to absorb and retain fine particles and nutrients. Filters are to be located in a separate chamber within the OSD tank allowing for efficient bypass.

Modelling has assumed two Ocean Protect *PSorb 690 StormFilter* cartridges to be installed within the OSD tank. PhosphoSorb (PSorb) is a proprietary perlite-based media which is a default choice for small commercial applications given its balance between removal efficiency and cost-effectiveness.

A schematic of the Ocean Protect *StormFilter* is provided in ***Figure 8.***

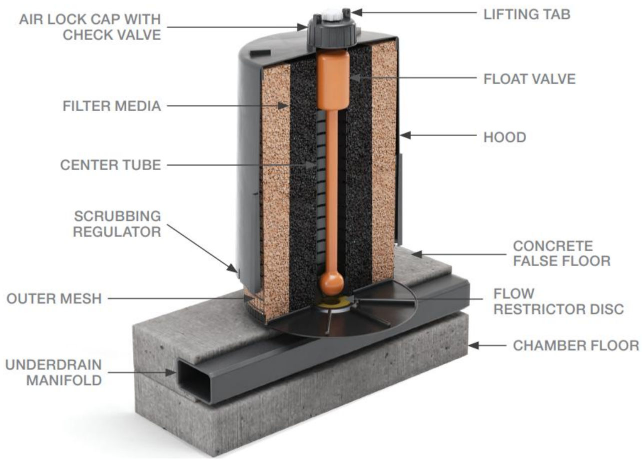


Figure 8 – *StormFilter* Filter Cartridge.
(Source: Ocean Protect)

Pollutant removal efficiencies were obtained from MUSIC nodes supplied by Ocean Protect. Each cartridge has a treatable flowrate of 0.9L/s. As recommended by the manufacturer, the *StormFilter* was modelled using a sediment basin and generic treatment node in series, with input parameters provided in ***Tables 12*** and ***13*** below.

Table 12 – Sediment Basin Parameters

Parameter	Value
High Flow Bypass	100 m^3/s
Surface Area	2.2 m^2
Extended Detention Depth	0.77m
Exfiltration Rate	0 mm/hour
Evaporative Loss	0% of PET
Equivalent Pipe Diameter	33mm

Source: Ocean Protect 2024

Table 13 - StormFilter Pollutant Removal Efficiencies

Pollutant	% Removal Efficiency
Total Suspended Solids	34.0%
Total Phosphorus	86.1%
Total Nitrogen	55.9%
Gross Pollutants	100%

Source: Ocean Protect 2024

It is noted that an alternative filter product may be considered at detailed design stage provided an equivalent level of overall pollutant removal is demonstrated.

6.3 WATER QUALITY RESULTS

The residual and source pollutant loading for the site is reported in ***Table 14***.

Table 14 - Treatment Train Effectiveness

Pollutant	Developed Untreated Load (kg/yr)	Developed Treated Load (kg/yr)	Reduction (%)
TSS	377	40.6	89.2
TP	0.742	0.244	67.2
TN	4.5	2.39	46.9
GP	65.2	0.0	100

From ***Table 14*** it can be seen that the proposed treatment train satisfies Council's runoff quality improvement targets.

7.0 Soil and Water Management

Council requires the use of erosion and sediment controls to manage and contain pollutant runoff during construction. All erosion and sediment controls and practices are to be in accordance with Council's Manual of Engineering Standards Appendix B and Landcom's *Managing Urban Stormwater: Soils and Construction* (2004) ('the Blue Book').

Treatment devices will be utilised to contain the generated pollutants from the site during construction. These include but are not limited to:

- Silt Fencing;
- Strawbale and Geotextile Fencing;
- Kerb Inlet Controls;
- Sandbag Kerb Inlet Sediment Traps; and
- Shaker Ramps.

A preliminary Soil and Water Management Plan is presented within the associated concept engineering plans (240819-CENG) by ADW Johnson. The Soil and Water Management Plan is indicative only as another Soil and Water Management Plan will be provided as part of the construction certificate drawings and a further plan will be provided by the contractor to evolve during construction.

8.0 Conclusion

ADW Johnson has been engaged by SS Estate Pty Ltd to prepare a Stormwater Management Plan addressing the stormwater management requirements for a proposed childcare facility at 2 Collinson Street, Tenambit. This report accompanies a development application for the proposed childcare centre which will accommodate 132 children.

The existing hydrology is characterised by moderate slopes and high runoff potential. A focal point of the proposed stormwater strategy was to drain the site to legal points of discharge whilst respecting the site's existing drainage regime. An On-Site Detention (OSD) tank will be located under the northern end of the car park. The tank will be oversized to compensate for the minor redirection of a catchment which, under existing conditions, drains onto neighbouring properties in an uncontrolled fashion.

Hyrdologic modelling has been undertaken to compare peak runoff under existing and proposed conditions under existing and proposed conditions. DRAINS modelling confirmed that the OSD tank is sufficiently attenuate peak flows to below their predeveloped magnitudes. Analysis has also confirmed that maximum flow widths in David Street remain acceptable in accordance with MOES provisions.

A Water Sensitive Urban Design (WSUD) treatment train was developed comprising of pit insert baskets and filter cartridges within the OSD tank. MUSIC modelling confirmed that the proposed treatment train meets Council's runoff quality objectives at each of the site's legal points of discharge.

To ensure downstream waters and adjacent properties are protected, appropriate erosion and sediment controls are to be implemented during construction. Controls are to be implemented and monitored in accordance with Landcom's 'Blue Book' and Council's Manual of Engineering Standards.

The details and information presented in this Stormwater Management Plan confirm that the proposed stormwater management system is well suited to the site and satisfies Council's requirements in relation to peak flow management, flow widths, runoff quality and erosion and sediment control.

9.0 References

BMT WBM. (2015). *NSW MUSIC Modelling Guidelines*.

Geoscience Australia. (2019). *Australian Rainfall and Runoff: A guide to Flood Estimation*.

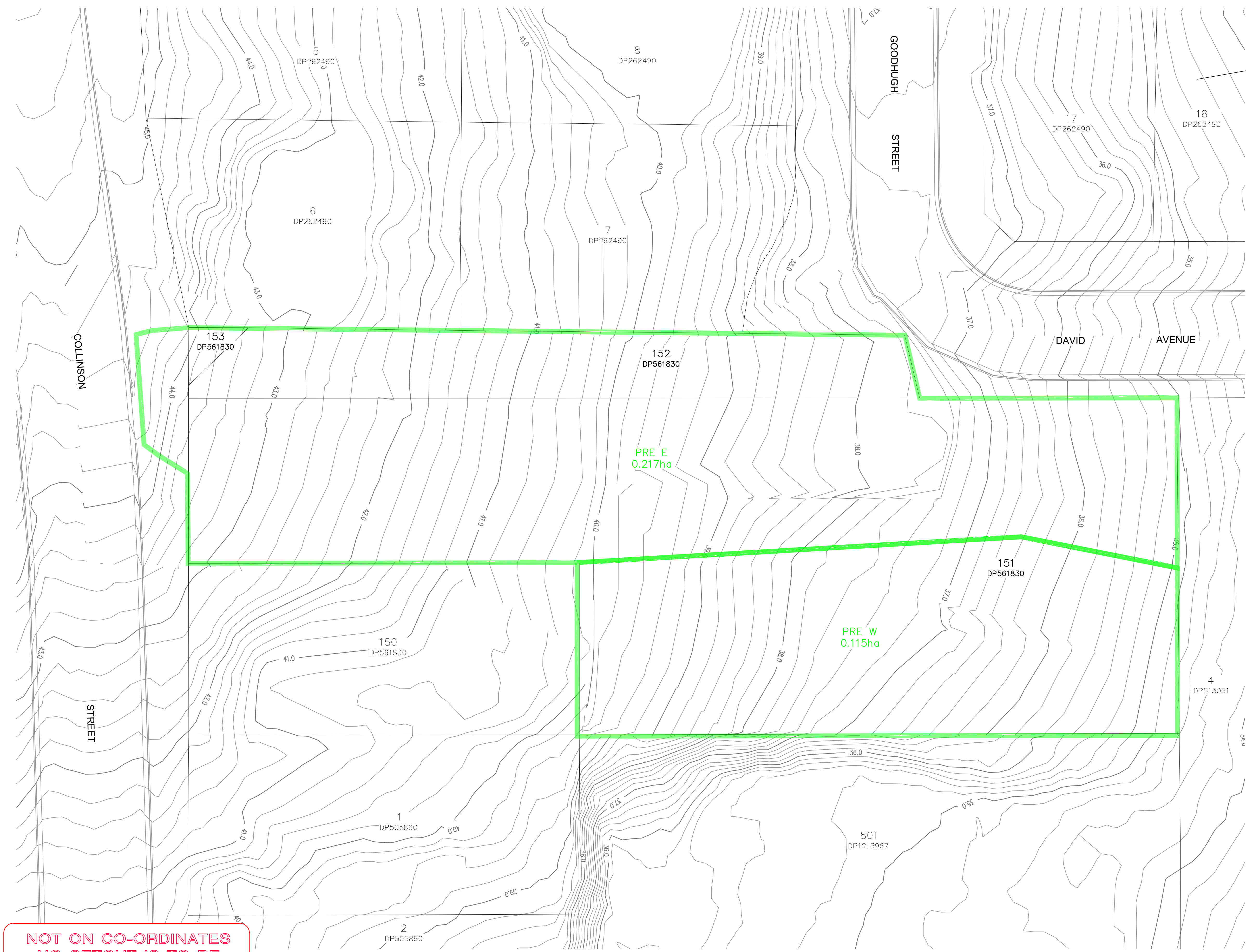
Landcom. (2010). *Water Sensitive Urban Design Book 1: Policy*.

Maitland City Council. (2011). *Urban Release Areas – Lochinvar Urban Release Area.*

Appendix A

CATCHMENT PLANS

240819-ESK-004-005(B)



M.G.A.

LEGEND

EXISTING LOT BOUNDARY
NATURAL CONTOURS
PREDEVELOPED CATCHMENTS

CONTOUR INTERVAL = 0.2m

NOTE: EXISTING STRUCTURES ON LOT 151 DP 561830 ARE NOT SHOWN

NOT ON CO-ORDINATES
NO SETOUT IS TO BE
BASED OFF CENG PLANS

DETAIL PLAN
SCALE 1:200

BEFORE YOU DIG
www.byda.com.au

NOT FOR CONSTRUCTION

100mm AT FULL SIZE

This plan includes coloured information. If you have a black and white copy you do not have all of the information. This note is coloured RED.

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	18.06.2025	INITIAL ISSUE	M.K.	D.N.	M.K.	M.K.
B	24.06.2025	CLIENT COMMENTS	M.K.	D.N.	M.K.	M.K.

SCALES
A1 1:200 — 0 — 5.0 — 10.0m — A3 1:400
ALL DIMENSIONS ARE IN METRES. DO NOT SCALE

adw johnson
Hunter
Warners Bay N.S.W. 2282
Ph. 02 4978 5100
Central Coast
Tuggerah N.S.W. 2259
Ph. 02 4305 4300
Sydney
Sydney N.S.W. 2000
Ph. 02 8046 7411
www.adwjohnson.com.au

CLIENT
SS ESTATE PTY LTD

PROPERTY DESCRIPTION
CONCEPT ENGINEERING PLANS FOR
PROPOSED CHILDCARE FACILITY
LOT 151, 152 & 153, D.P.561830
COLLINSON STREET, TENAMBIT

SURVEYED
EVERITT & EVERITT
CONSULTING SURVEYORS

DATUM
NOT ON CO-ORDINATES A.H.D.

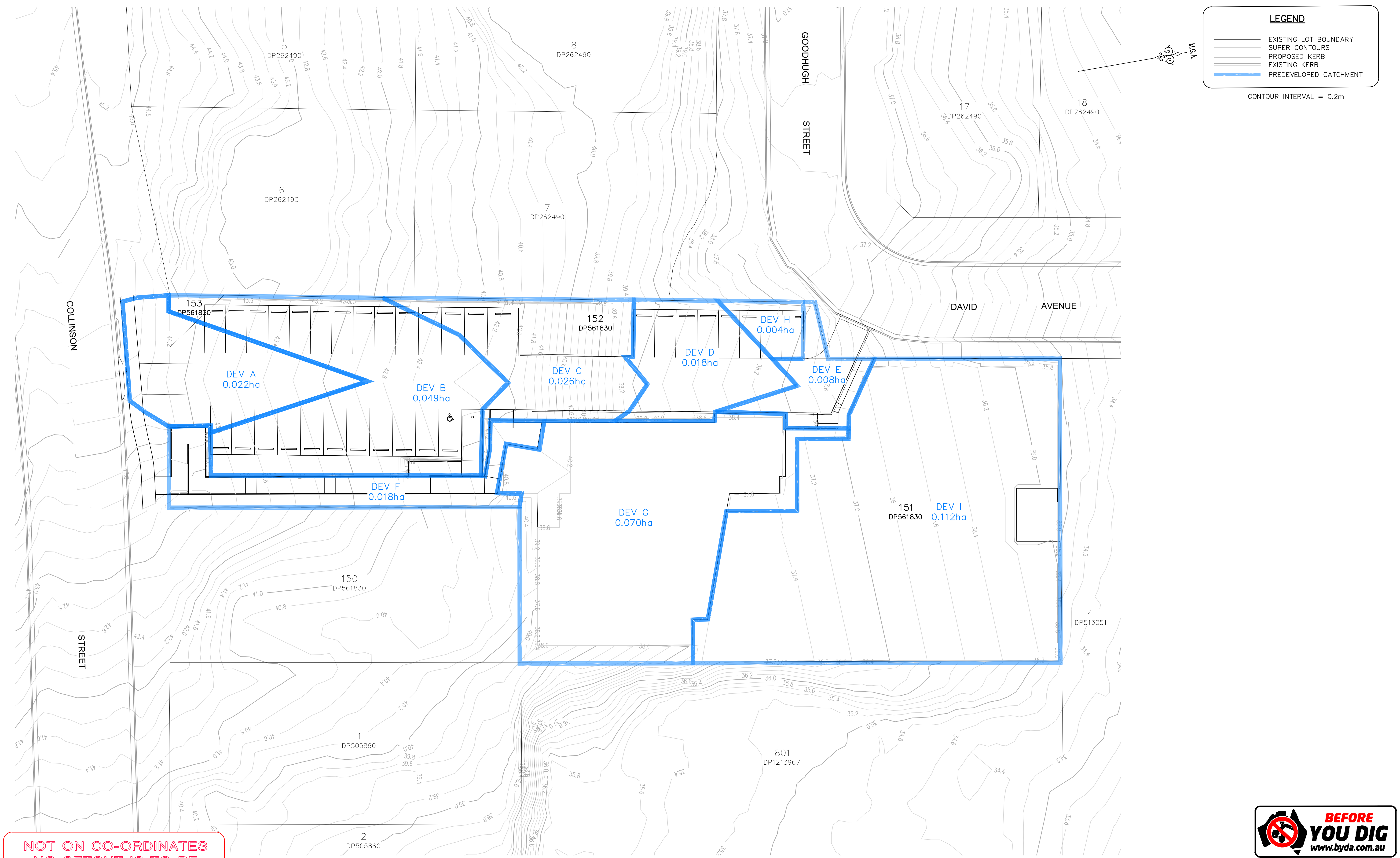
PROJECT
PROPOSED CHILDCARE FACILITY

PLAN TITLE
PREDEVELOPED CATCHMENT PLAN

PROJECT No.		DISCIPLINE		NUMBER	REV.
240819	-	ESK	-	004	B

Plotted By: Dipendra Neupane Plot Date: 24/06/25 12:59:21PM Cad File: N:\240819\DWG\ENGINEERING\ESK\240819-ESK-004-005(B).DWG

240819-ESK-004-005(B)



NOT ON CO-ORDINATES
NO SETOUT IS TO BE
BASED OFF CENG PLANS

BEFORE YOU DIG www.byda.com.au

NOT FOR CONSTRUCTION

DETAIL PLAN

SCALE 1:200

REV.	DATE	AMENDMENT	DESIGN	DRAWN	CHECKED	APPROVED
A	18.06.2025	INITIAL ISSUE	M.K.	D.N.	M.K.	M.K.
B	24.06.2025	CLIENT COMMENTS	M.K.	D.N.	M.K.	M.K.

SCALES: A1 1:200 — 0 — 5.0 — 10.0m — A3 1:400

ALL DIMENSIONS ARE IN METRES. DO NOT SCALE

adw johnson

Hunter
Warners Bay N.S.W. 2282
Ph. 02 4978 5100
Central Coast
Tuggerah N.S.W. 2259
Ph. 02 4305 4300
Sydney
Sydney N.S.W. 2000
Ph. 02 8046 7411
www.adwjohnson.com.au

CLIENT: SS ESTATE PTY LTD

PROPERTY DESCRIPTION: CONCEPT ENGINEERING PLANS FOR PROPOSED CHILDCARE FACILITY LOT 151, 152 & 153, D.P.561830 COLLINSON STREET, TENAMBIT

SURVEYED: EVERITT & EVERITT CONSULTING SURVEYORS

DATUM: NOT ON CO-ORDINATES A.H.D.

PROJECT: PROPOSED CHILDCARE FACILITY

PLAN TITLE: DEVELOPED CATCHMETN PLAN

PROJECT No.	DISCIPLINE	NUMBER	REV.
240819	ESK	005	B

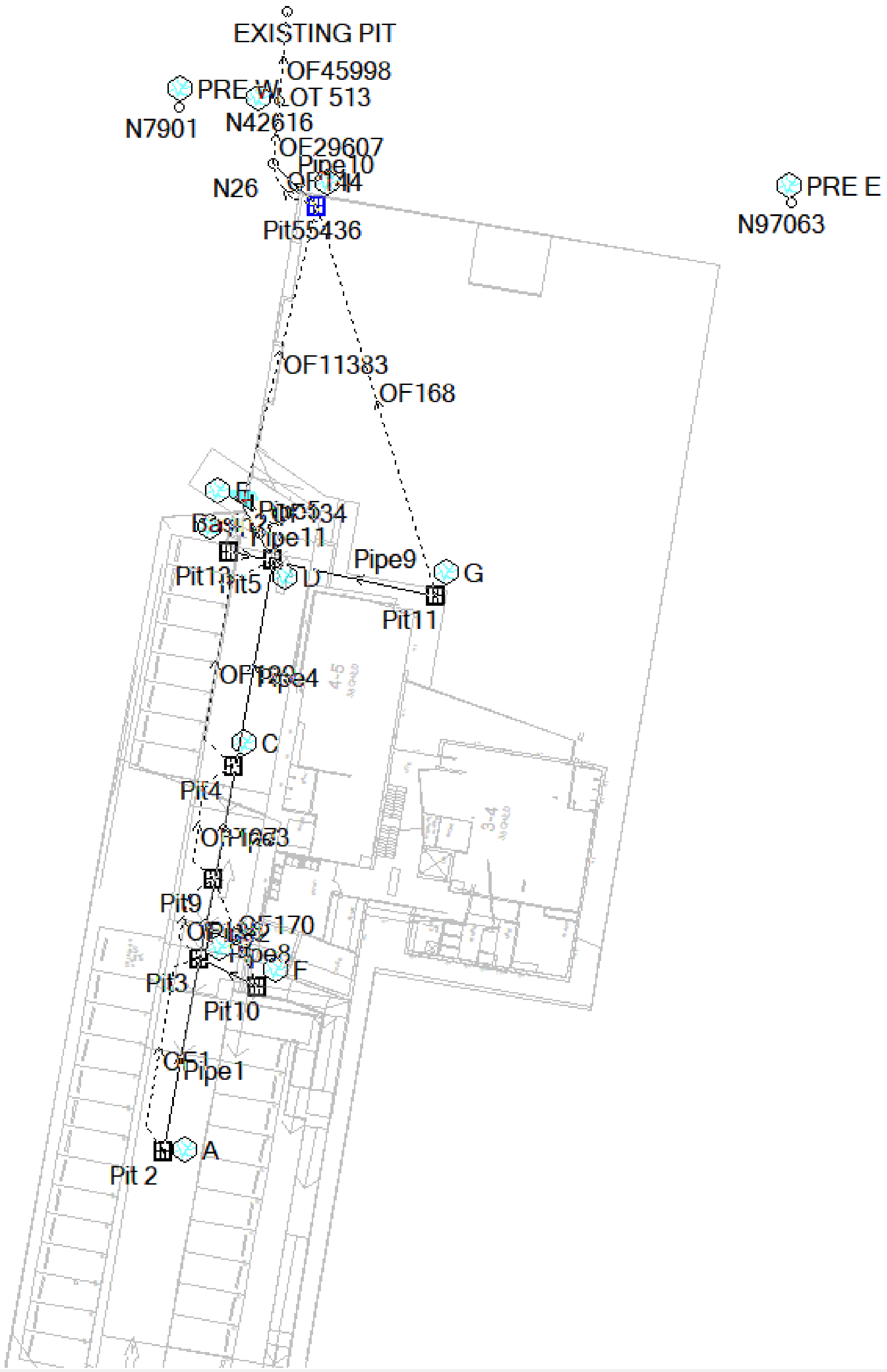
100mm AT FULL SIZE

This plan includes coloured information. If you have a black and white copy you do not have all of the information. This note is coloured RED.

Plotted By: Dipendra Neupane Plot Date: 24/06/25 12:59:22PM Cad File: N:\240819\DWG\ENGINEERING\ESK\240819-ESK-004-005(B).DWG

Appendix B

DRAINS NETWORK DIAGRAM



DRAINS Network Diagram.

Appendix C

MUSIC NETWORK DIAGRAM