DEVELOPMENT PROPOSAL FOR PUBLIC COMMENT

The following development proposal has been submitted to the Council and although not designated under the Environmental Planning & Assessment Act, 1979, is notified for public comment:

Portal Application Number	DA No.	Location	Proposal
PAN-401134	228/2023	LOT: 8151 DP: 1217311, 580 Woerdens Road CLARENCE TOWN Applicant: Perception Planning PTY LTD Owners: Thixotropic Pty Ltd Consent Authority: Dungog Shire Council	RESIDENTIAL DWELLING, SWIMMING POOL, AND USE OF EXISTING STRUCTURE AS DWELLING, CREATING DUAL OCCUPANCY (DETACHED)

Details of the above proposal are available for inspection on the NSW Planning Portal website from **Thursday 14 March 2024.**

https://www.dungog.nsw.gov.au/Council/Council-Advertisements/Development-Applications

Submissions can be made via the NSW Planning Portal until **Thursday 28 March 2024**. If you require assistance making a submission via the Planning Portal, please contact Council.

In accordance with *Section 10.4* of the *Environmental Planning & Assessment Act 1979*, a person who makes a public submission to Council in relation to this application is required to disclose all reportable political donations within two years prior to the submission being made and ending when the application is determined.

If the submission includes an objection to the proposal, the grounds of objection must be given. Council may also be obliged to release your submission as required by the *Government Information (Public Access) Act 2009* and the *Environmental Planning and Assessment Act 1979.*

Further, as stipulated in Council's Public Submissions Policy C1.19, Council will not place any weight on anonymous submissions when determining the respective development application.

DUNGOG SHIRE COUNCIL
EXHIBITED COPY

Commencement Date 14 March 2024

Closing Date 28 March 2024

Development Application Form

Portal Application number: PAN-401134

Council Application number: DA228/2023

Applicant contact details

Title	
First given name	Jordan
Other given name/s	
Family name	Long
Contact number	0475713934
Email	lodgement@perceptionplanning.com.au
Address	PO BOX 107 Clarence Town NSW 2321
Application on behalf of a company, business or body corporate	Yes
ABN	97163109064
ACN	163109064
Name	PERCEPTION PLANNING PTY LTD
Trading name	PERCEPTION PLANNING PTY LTD
Is the nominated company the applicant for this application	Yes

Owner/s of the development site

Owner/s of the development site	A company, business, government entity or other similar body owns the development site
Owner #	1
Company, business or body corporate name	Thixotropic Pty Ltd ATF Thixotropic Trust
ABN / ACN	17 117 472 284

I declare that I have shown this document, including all attached drawings, to the owner(s) of the land, and that I have obtained their consent to submit this application. - Yes

Note: It is an offence under Section 10.6 of the Environmental Planning and Assessment Act 1979 to provide false or misleading information in relation to this application.

Site access details

Are there any security or site conditions which may impact the person undertaking the inspection? For example, locked gates, animals etc.	No

Developer details

ABN	
ACN	
Name	
Trading name	
Address	
Email Address	

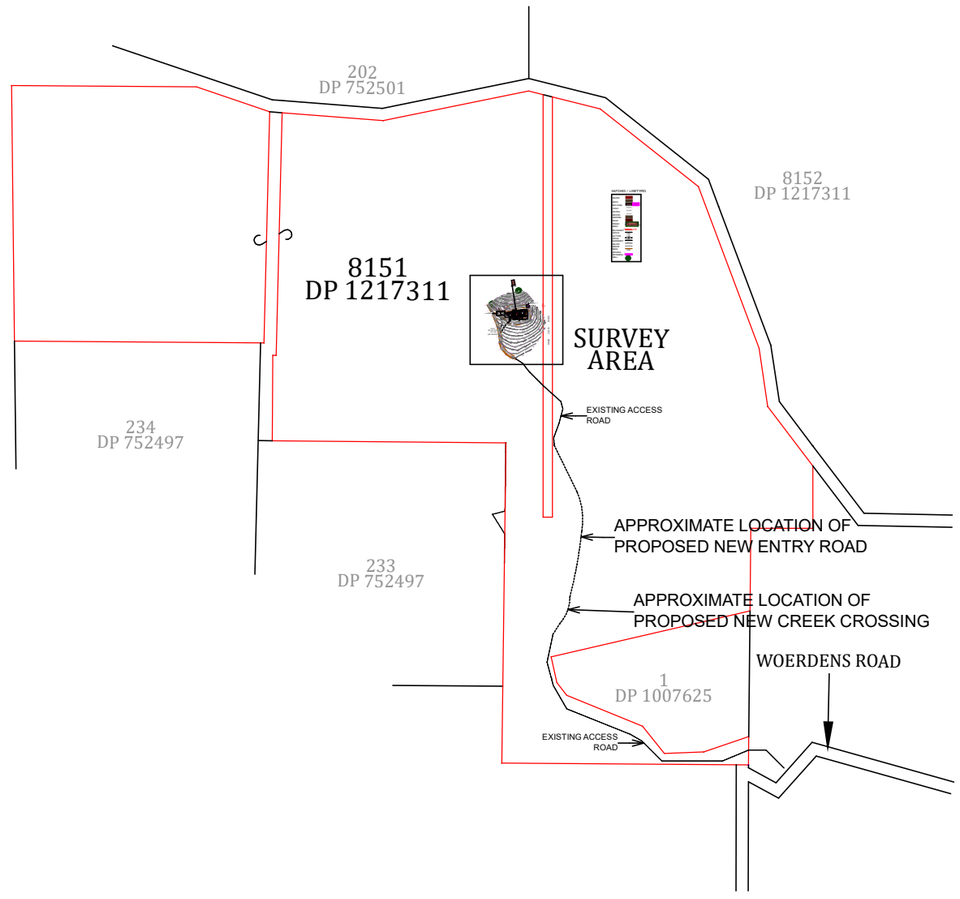
Development details

Application type	Development Application
Site address #	1
Street address	580 WOERDENS ROAD CLARENCE TOWN 2321
Local government area	DUNGOG

Lot / Section Number / Plan	8152/-/DP1217311 ☐ 8151/-/DP1217311 ☑
Primary address?	Yes
Planning controls affecting property	Land Application LEP Dungog Local Environmental Plan 2014 Land Zoning RU1: Primary Production Height of Building NA Floor Space Ratio (n:1) NA Minimum Lot Size 60 ha Heritage NA Land Reservation Acquisition NA Foreshore Building Line NA Drinking Water Catchment Special Area - Williams * Local Provisions Williams River Catchment Map Riparian Lands and Watercourses Riparian Lands and Watercourses

Proposed development

Selected common application types	Erection of a new structure
Selected development types	Dwelling House Dual occupancy (detached) Swimming pool
A pool or spa of 40,000 litres or greater proposed	Yes
Description of development	RESIDENTIAL DWELLING, SWIMMING POOL, AND USE OF EXISTING STRUCTURE AS DWELLING, CREATING DUAL OCCUPANCY (DETACHED)
Is the development proposed to be build-to-rent housing?	No
Does the development include affordable housing?	No
Dwelling count details	
Number of dwellings / units proposed	2
Number of storeys proposed	
Number of pre-existing dwellings on site	
Number of dwellings to be demolished	
Number of proposed occupants	0
Existing gross floor area (m2)	0
Proposed gross floor area (m2)	0
Total site area (m2)	0
Total net lettable area (m2)	0
Cost of development	
Estimated cost of work / development (including GST)	$600,000.00
Capital Investment Value (CIV)	$600,000.00
Do you have one or more BASIX certificates?	Yes
BASIX Certificate Number	1374637S



N

LOCATION PLAN

1:5000

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PROJECT: **PROPOSED NEW DWELLING AT 580 WOERDENS ROAD, CLARENCE TOWN 2321**

CLIENT: **DAHL**

TITLE: **LOCATION PLAN**

FILE: **2303468** DATE: **08/02/2024** SHEET: **1** OF **10**

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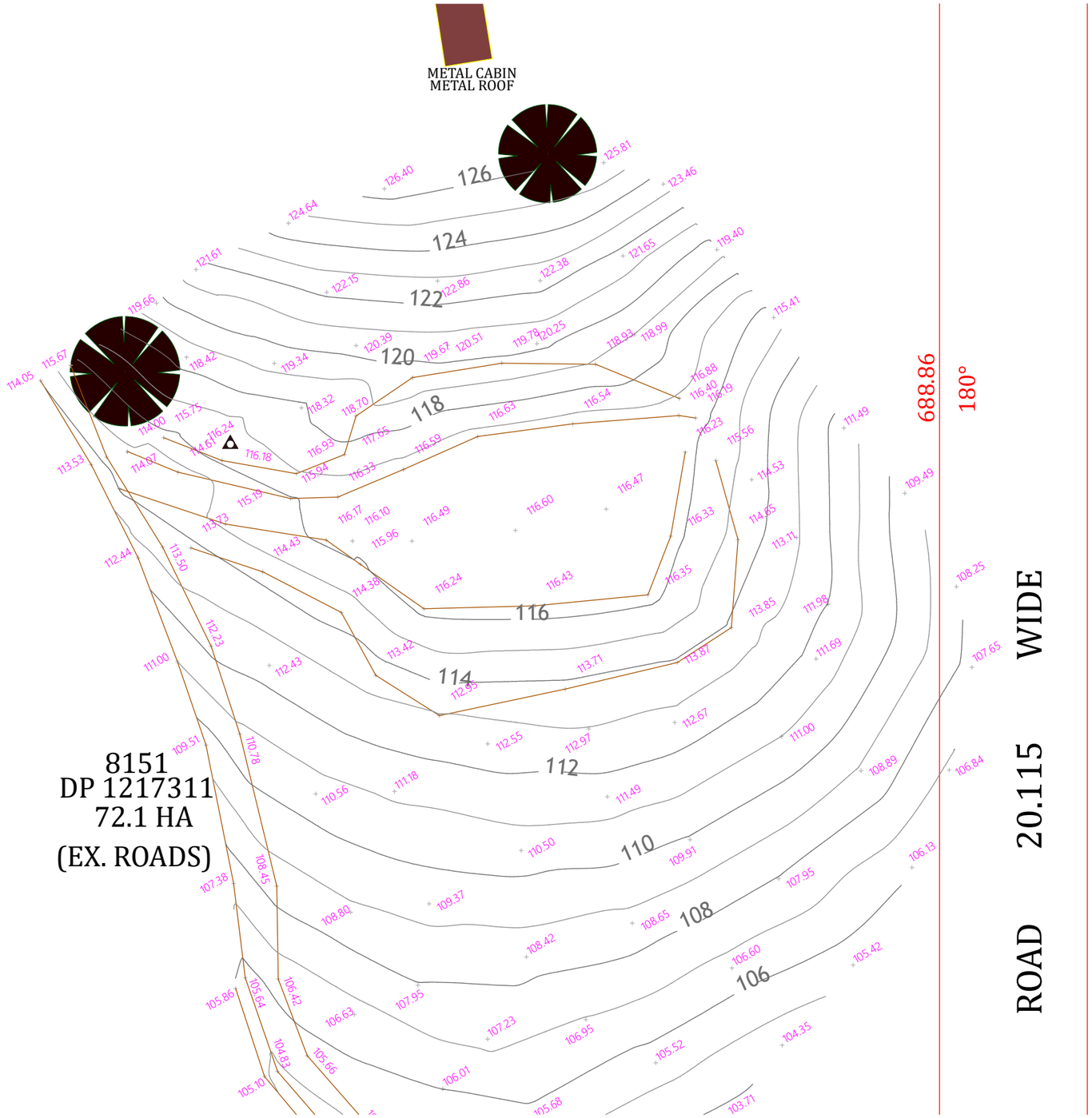

N

EXISTING SITE PLAN

1:500

ISSUE	DETAILS
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CLIENT: **DAHL**

TITLE: **EXISTING SITE**

FILE: **2303468** DATE: **08/02/2024** SHEET: **2** OF **10**

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GENERAL NOTES

1 ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF COUNCIL, THE BUILDING CODE OF AUSTRALIA AND CURRENT AUSTRALIAN STANDARDS.

2 ALL DIMENSIONS AND LEVELS TO BE CONFIRMED PRIOR TO CONSTRUCTION.

3 REPORT ANY DISCREPANCIES TO THE DESIGNER.

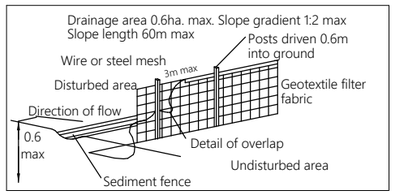
4 DO NOT SCALE OFF THESE DRAWINGS.

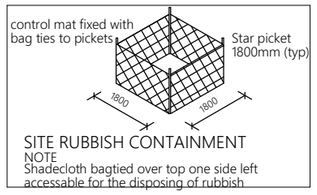
5 THESE PLANS ARE TO BE READ TOGETHER WITH THE ENGINEERS DRAWINGS AND SPECIFICATIONS.

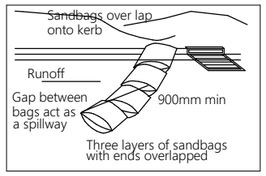
6 SCALES APPLY TO SHEET SIZE SHOWN IN THE TITLE.

7 THE BUILDER IS TO CHECK ALL FLOOR, CEILING AND ROOF LEVELS TO ENSURE THAT THE FINISHED ROOF HEIGHT DOES NOT EXCEED THE DA APPROVED RL & HEIGHT LIMIT.

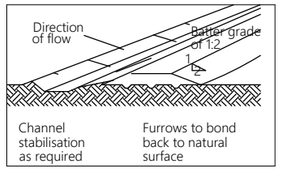
8 A REGISTERED SURVEYOR IS TO SET OUT THE BUILDINGS, & CONFIRM ALL LEVELS.







NOTE
1 No vehicle crossing or stockpiling of material on vegetation buffer.
2 All sedimentation control structures to be inspected & maintained by site manager daily.
3 All sediment retaining structures to be cleaned on reaching 50% storage capacity.
4 All existing vegetation will be retained outside the construction site.
5 Clean sediments from footpaths, driveways & roads daily.
6 Roof drainage via sealed pipieline to street gutter on roof completion.

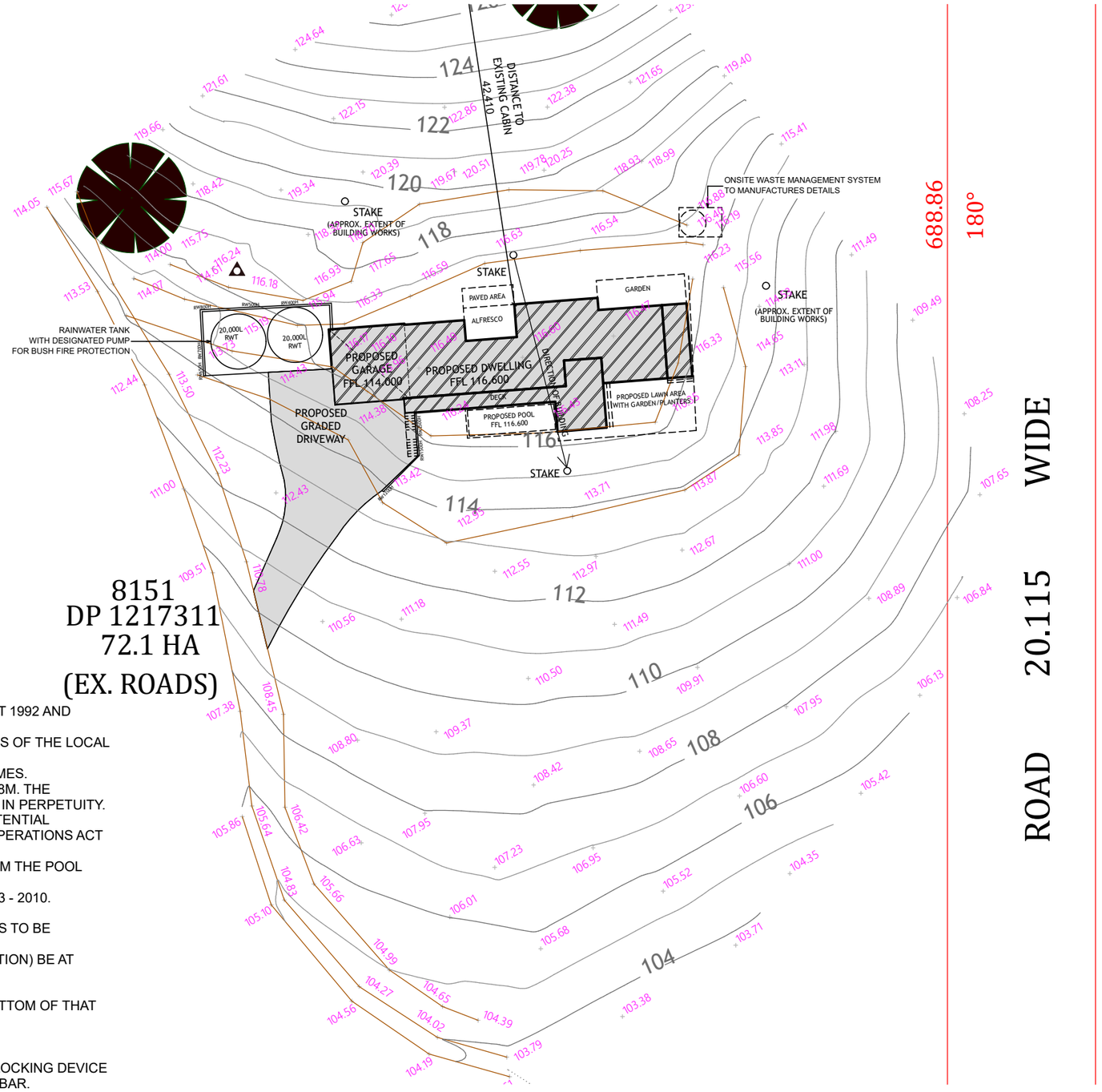


Diversion Bank & Channel

POOL NOTES

1) THE SWIMMING POOL IS TO BE FULLY ENCLOSED WITH FENCING AND GATES TO COMPLY WITH THE SWIMMING POOL ACT 1992 AND REGULATIONS.
2) ALL BACKWASH/POOL WASTE WATER IS TO BE PIPED/DRAINED TO THE SEWER IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL WATER AUTHORITY.
3) A DURABLE RESUSCITATION INSTRUCTION CHART IS TO BE DISPLAYED IN A PROMINENT POSITION IN THE POOL AT ALL TIMES.
4) WHERE A COMMON BOUNDARY FENCE FORMS PART OF THE POOL ENCLOSURE, IT SHALL BE INCREASED IN HEIGHT TO 1.8M. THE EFFECTIVENESS OF THE FENCE AS A CHILD SAFE BARRIER SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE POOL IN PERPETUITY.
5) POOL PLANT AND EQUIPMENT SHALL BE SITED OR ENCLOSED IN A SOUND ABSORBING ENCLOSURE TO MINIMISE ANY POTENTIAL OFFENSIVE NOISE IMPACTS TO ADJOINING NEIGHBOURS AS DEFINED UNDER THE PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997.
6) THE SWIMMING POOL SURROUNDS AND/OR PAVING IS TO BE CONSTRUCTED IN A MANNER SO AS TO ENSURE WATER FROM THE POOL OVERFLOW DOES NOT DISCHARGE ONTO THE NEIGHBOURING PROPERTIES.
7) THE SWIMMING POOL/SPA WATER RECIRCULATION AND FILTRATION SYSTEM INSTALLATION SHALL COMPLY WITH AS 1926.3 - 2010. INCORPORATING THIS SAFETY MEASURE MAY ASSIST IN AVOIDING ENTRAPMENT OF/OR INJURY TO YOUNG CHILDREN.
8) WHERE THERE IS POSSIBLE ACCESS FROM A WINDOW IN ANY RESIDENTIAL BUILDING TO THE SWIMMING POOL, ACCESS IS TO BE RESTRICTED BY
   A) THE BOTTOM OF THE LOWEST OPENING PANEL OF THE WINDOW MUST (WHEN MEASURED IN THE CLOSED POSITION) BE AT LEAST 1.2 METRES ABOVE FINISHED FLOOR LEVEL; AND
   B) THERE MUST NOT BE ANY FOOTHOLDS WIDER THAN TEN (10) MILLIMETRES BETWEEN THE BOTTOM OF THE LOWEST OPENING PANEL OF THE WINDOW AND ANY POINT WITHIN 1.1 METRES BELOW THE BOTTOM OF THAT PANEL.
   **THIS DOES NOT APPLY TO A CHILD SAFE WINDOW OR TO A WINDOW THAT IS TOTALLY ENCLOSED BY A CHILD-SAFE GRILL.

NOTE: CHILD SAFE MEANS A WINDOW BEING OF SUBSTANTIAL CONSTRUCTION AND BEING SO FIXED (BY MEANS OF A KEYED LOCKING DEVICE OR OTHER CHILD RESISTANT DEVICE) THAT IT HAS NO OPENING THROUGH WHICH IT IS POSSIBLE TO PASS A STANDARD TEST BAR.



N

PROPOSED SITE PLAN

1:500

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CLIENT: **DAHL**

TITLE: **PROPOSED SITE**

FILE: **2303468** DATE: **08/02/2024** SHEET: **3** OF **10**

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CLIENT: **DAHL**

TITLE: **PERSPECTIVES**

FILE: **2303468** DATE: **08/02/2024** SHEET: **4** OF **10**

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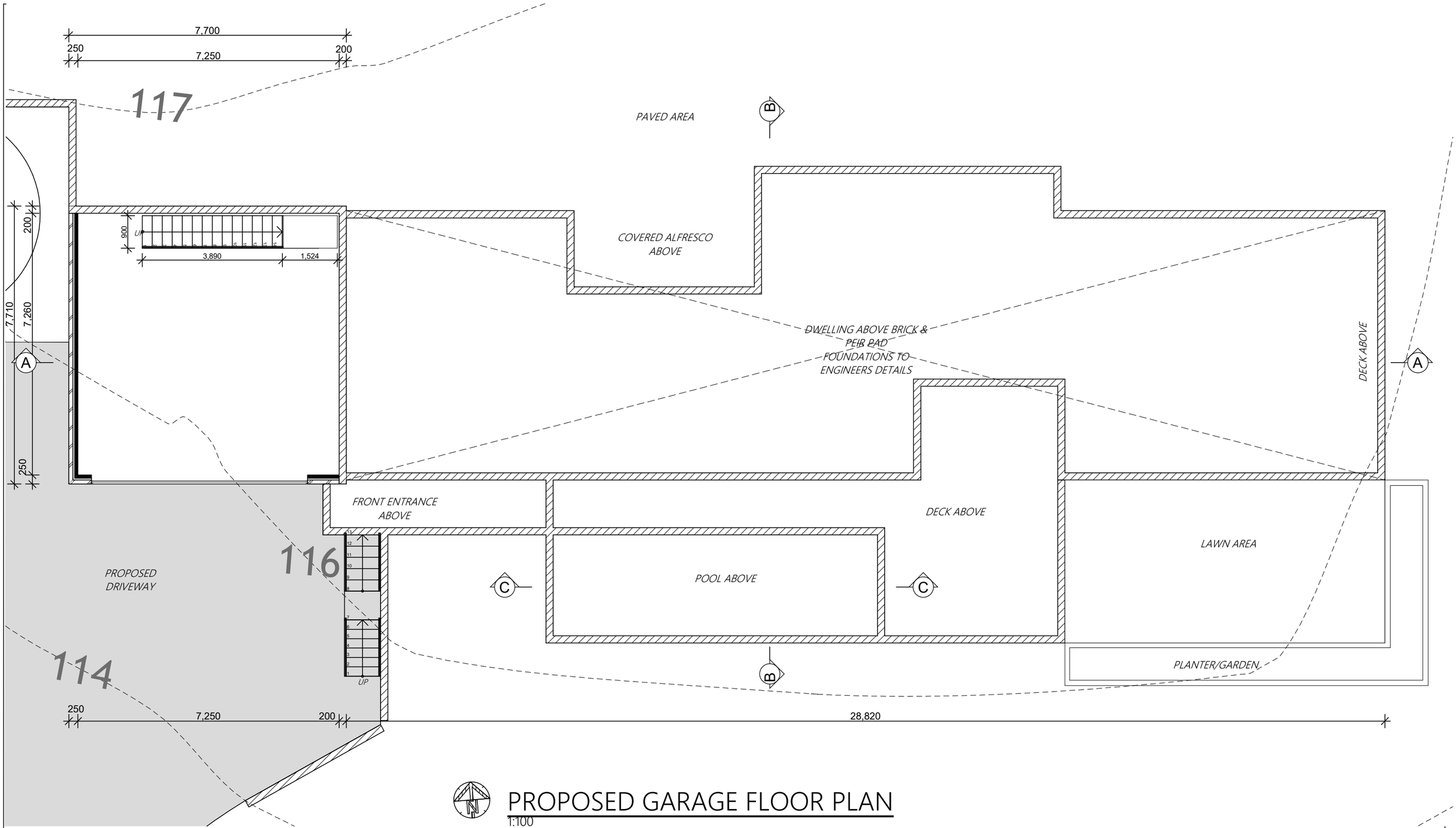

PROPOSED GARAGE FLOOR PLAN

1:100

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CLIENT: **DAHL**

TITLE: **PROPOSED GARAGE FLOOR PLAN**

FILE: **2303468** DATE: **08/02/2024** SHEET: **5** OF **10**

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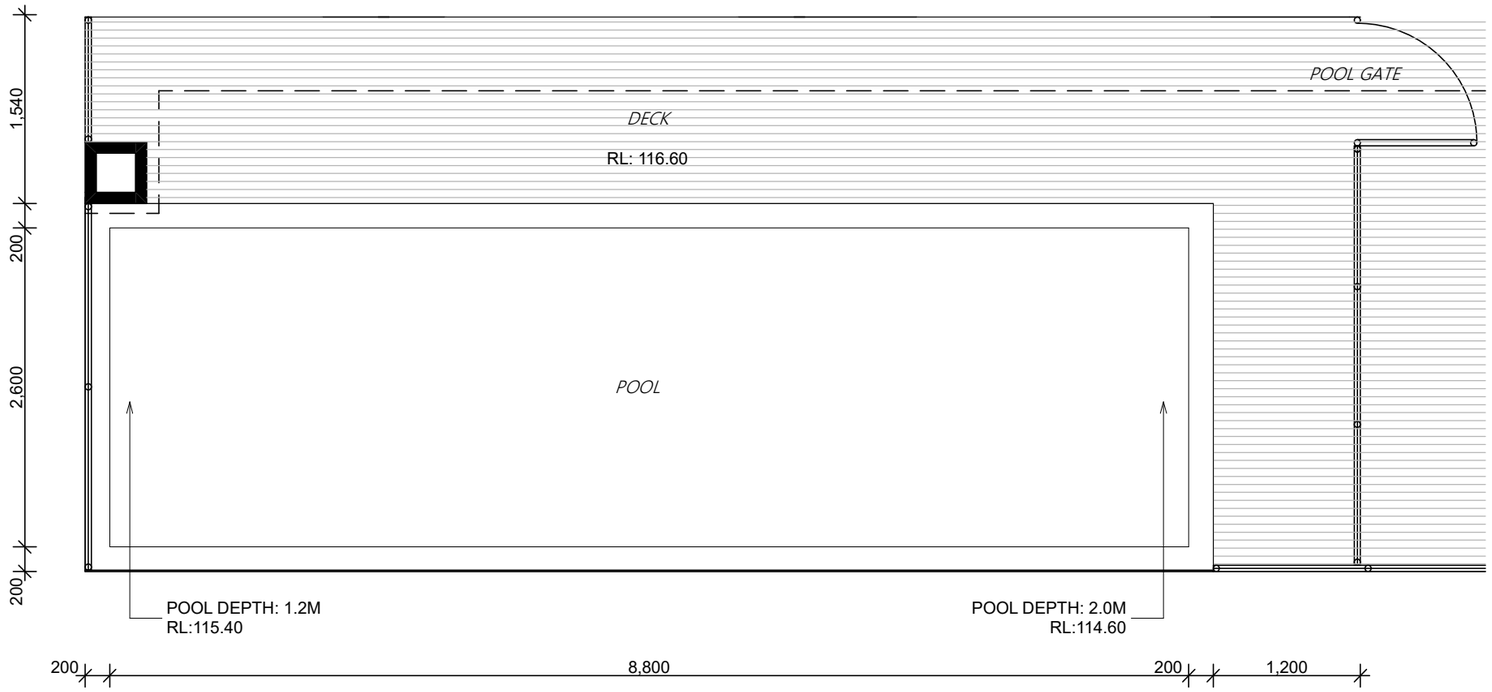
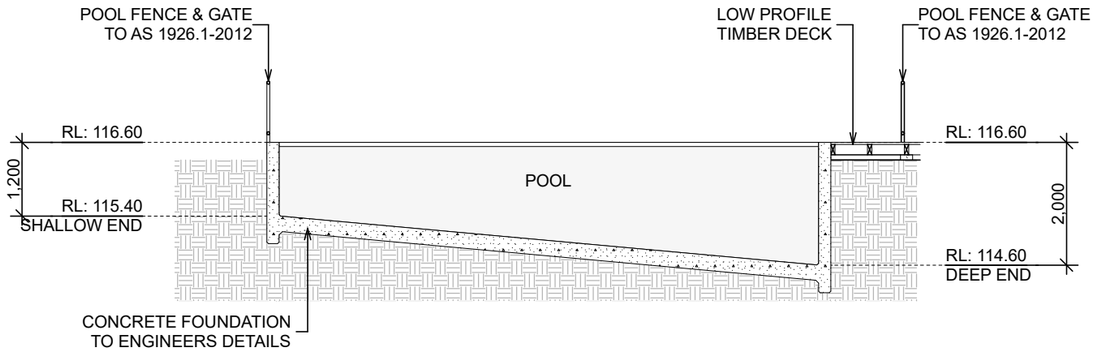


PROPOSED GROUND FLOOR PLAN

1:100



PROPOSED POOL PLAN

1:100

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TITLE: **PROPOSED POOL PLAN**

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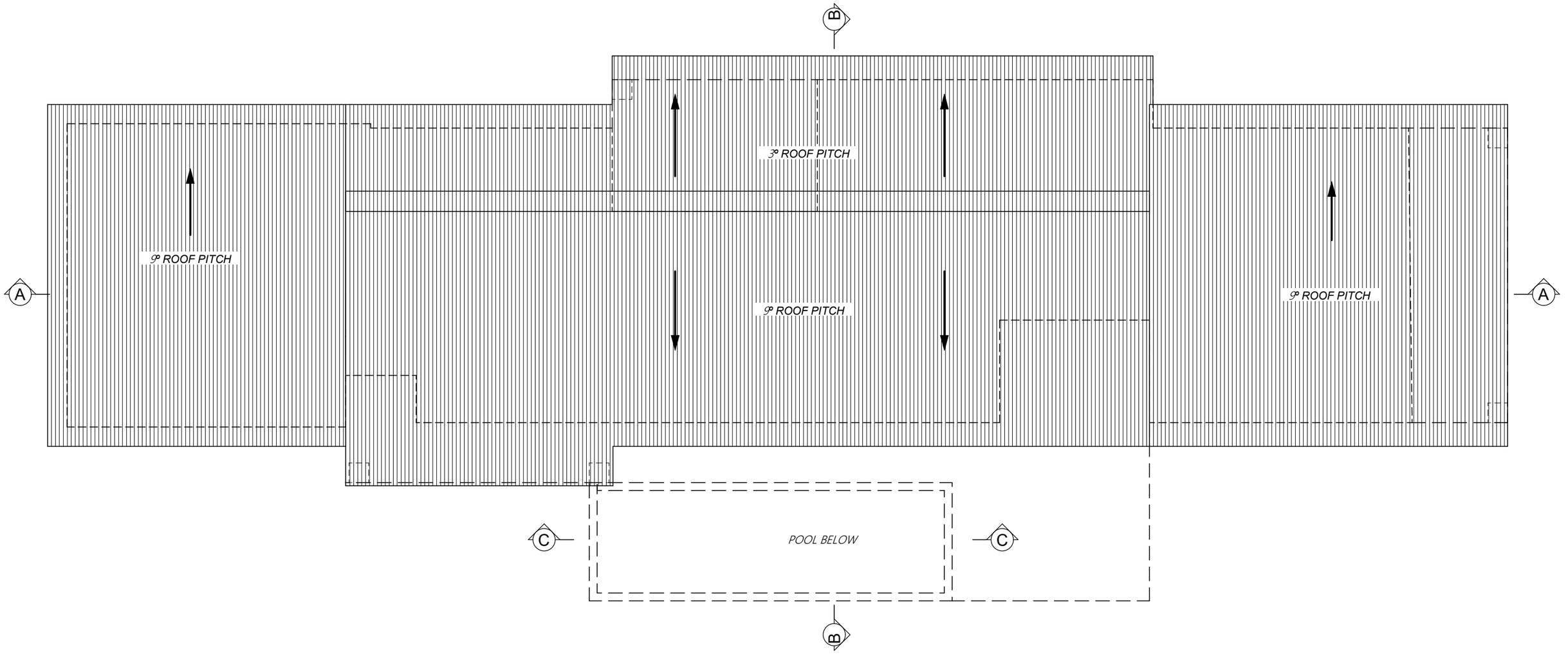

PROPOSED ROOF PLAN

1:100

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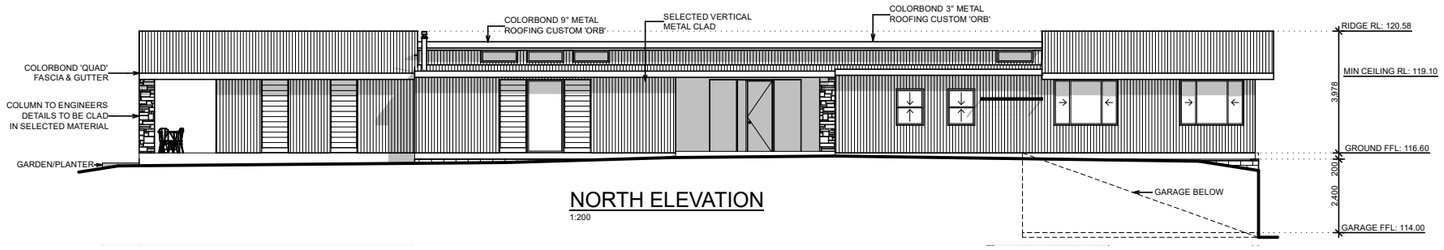

NORTH ELEVATION
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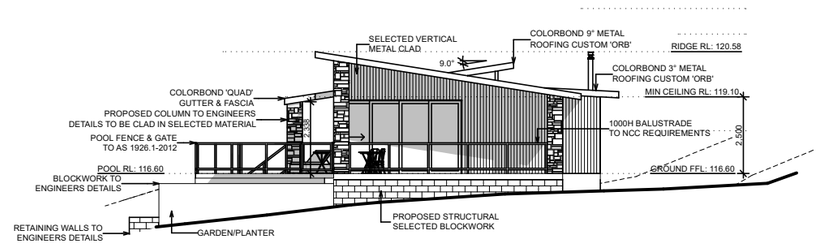

EAST ELEVATION
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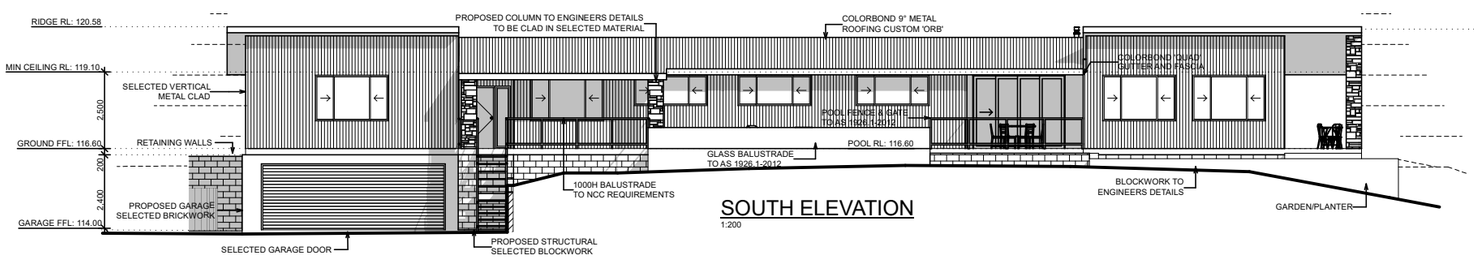

SOUTH ELEVATION
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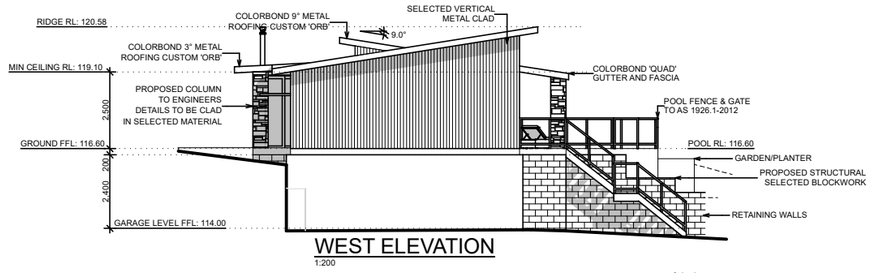

WEST ELEVATION
1:200

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CLIENT: **DAHL**

TITLE: **ELEVATIONS**

FILE: **2303468** DATE: **08/02/2024** SHEET: **9** OF **10**

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AEP

BIODIVERSITY | BUSHFIRE | ARBORICULTURE

NEWCASTLE SYDNEY

Bushfire Threat Assessment

Proposed Residential Infill Development

580 Woerdens Road, Clarence Town NSW

Prepared for: Perception Planning

AEP Ref: 3394

Revision: 01

December 2023

Newcastle | Sydney

10 Darvall St Carrington NSW 2294 | 275 Stanmore Rd Petersham NSW 2049

ABN: 57 659 651 537 | +61 420 624 707 | info@andersonep.com.au | www.andersonep.com.au

Contents

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Figures

Appendices

1.0 Introduction

A residential infill development is proposed within land identified as 580 Woerdens Road, Clarence Town, NSW, Lot 8151 DP1217311 (the Subject Site). At the request of Perception Planning (the client), Anderson Environment & Planning (AEP) have undertaken the necessary investigations to inform the production of a Bushfire Threat Assessment (BTA) report addressing the proposed development.

This report is specifically intended to assess the bushfire protection measures required by the NSW Rural Fire Service's "Planning for Bushfire Protection 2019" (The PBP) and the construction requirements of the proposed development in accordance with the provisions of the Building Code of Australia – Volume 2, Edition 2022 and Australian Standard 3959-2018 (AS 3959) – "Construction of buildings in bushfire-prone areas".

As per PBP 2019,

> *Under EP&A Act s4.14, all development on BFPL must comply with PBP. The consent authority must be satisfied that the development conforms to PBP, if not it must consult with the Commissioner of the NSW RFS. Infill developments will be considered in accordance with the acceptable solutions and performance criteria specified in section 7.4.*

As such, this BTA includes an assessment of the proposed development against applicable acceptable solutions and performance criteria.

For the purposes of referencing, this document should be referred to as:

Anderson Environment & Planning (2023). *Bushfire Threat Assessment for Proposed Residential Infill Development at 580 Woerdens Road, Clarence Town, NSW*. Unpublished report for Perception Planning, December 2023.

2.0 Site Particulars

The proposed residential infill development is described as follows.

Table 1 – Site Particulars

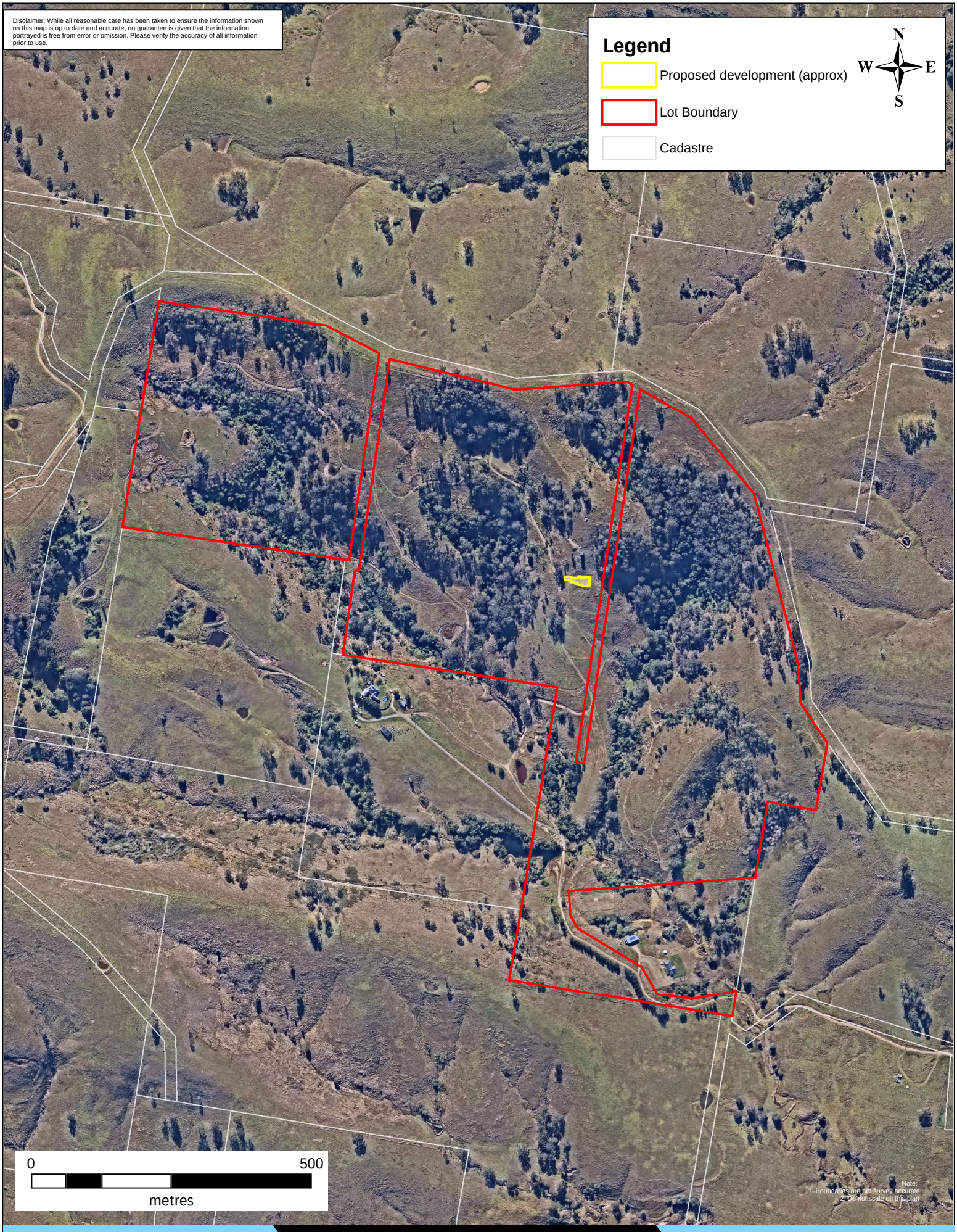
Item	Comments
Client	Perception planning
Address	508 Woerdens Road, Clarence Town NSW
Title(s)	8151/-/DP1217311 and 8152/-/DP1217311
Study Area	The study area consists of managed cattle grazing paddocks, coupled with various remanent native vegetation and isolated housing properties.
Subject Site	The subject site is constructed within a natural grassland hillslope, centred between remanent forest and woodland native vegetation, paired with historical clearing. It contains a man-made driveway onto the site.
LGA	Dungog Shire Council
Zoning	RU1 - Primary Production
Current Land Use	Currently the land is being used as rural residential, currently a farm building getaway dwelling exists directly north if the proposal. This area is looking towards rural living in clarence town.
Surrounding Land Use	Located north is the Barrington tops and Chichester state forest. The surrounding landscape has features of the National parks' foothills and river systems. Clarence Town is the closet township located to the south east, with Columbey National Park and State Conservation Area to the south. Small townships such as Martins Creek and Hilldale are situated west.

Figure 1 depicts the extent of the Subject Site overlain on an aerial photograph of the locality.

3.0 Proposed Development

The development is a new dwelling and associated infrastructure.

Figure 2 depicts the plan of proposed development within the Subject Site.



AEP

Figure 1 - Site Location

Date: November 2023

Location: Woerdens Road, Clarence Town

Client: Perception Planning

Our Ref: 3394

GENERAL NOTES

1 ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF COUNCIL, THE BUILDING CODE OF AUSTRALIA AND CURRENT AUSTRALIAN STANDARDS.

2 ALL DIMENSIONS AND LEVELS TO BE CONFIRMED PRIOR TO CONSTRUCTION.

3 REPORT ANY DISCREPANCIES TO THE DESIGNER.

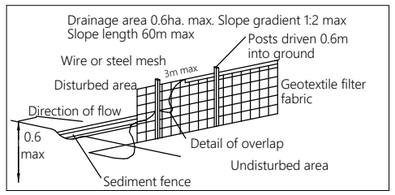
4 DO NOT SCALE OFF THESE DRAWINGS.

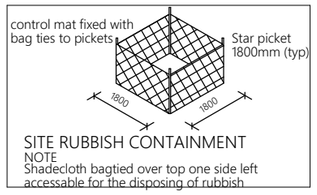
5 THESE PLANS ARE TO BE READ TOGETHER WITH THE ENGINEERS DRAWINGS AND SPECIFICATIONS.

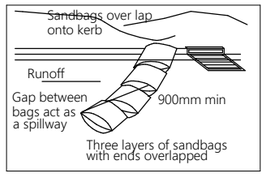
6 SCALES APPLY TO SHEET SIZE SHOWN IN THE TITLE.

7 THE BUILDER IS TO CHECK ALL FLOOR, CEILING AND ROOF LEVELS TO ENSURE THAT THE FINISHED ROOF HEIGHT DOES NOT EXCEED THE DA APPROVED RL & HEIGHT LIMIT.

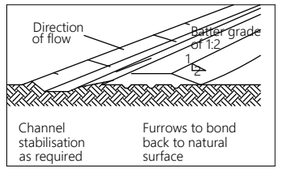
8 A REGISTERED SURVEYOR IS TO SET OUT THE BUILDINGS, & CONFIRM ALL LEVELS.







NOTE
1 No vehicle crossing or stockpiling of material on vegetation buffer.
2 All sedimentation control structures to be inspected & maintained by site manager daily.
3 All sediment retaining structures to be cleaned on reaching 50% storage capacity.
4 All existing vegetation will be retained outside the construction site.
5 Clean sediments from footpaths, driveways & roads daily.
6 Roof drainage via sealed pipieline to street gutter on roof completion.

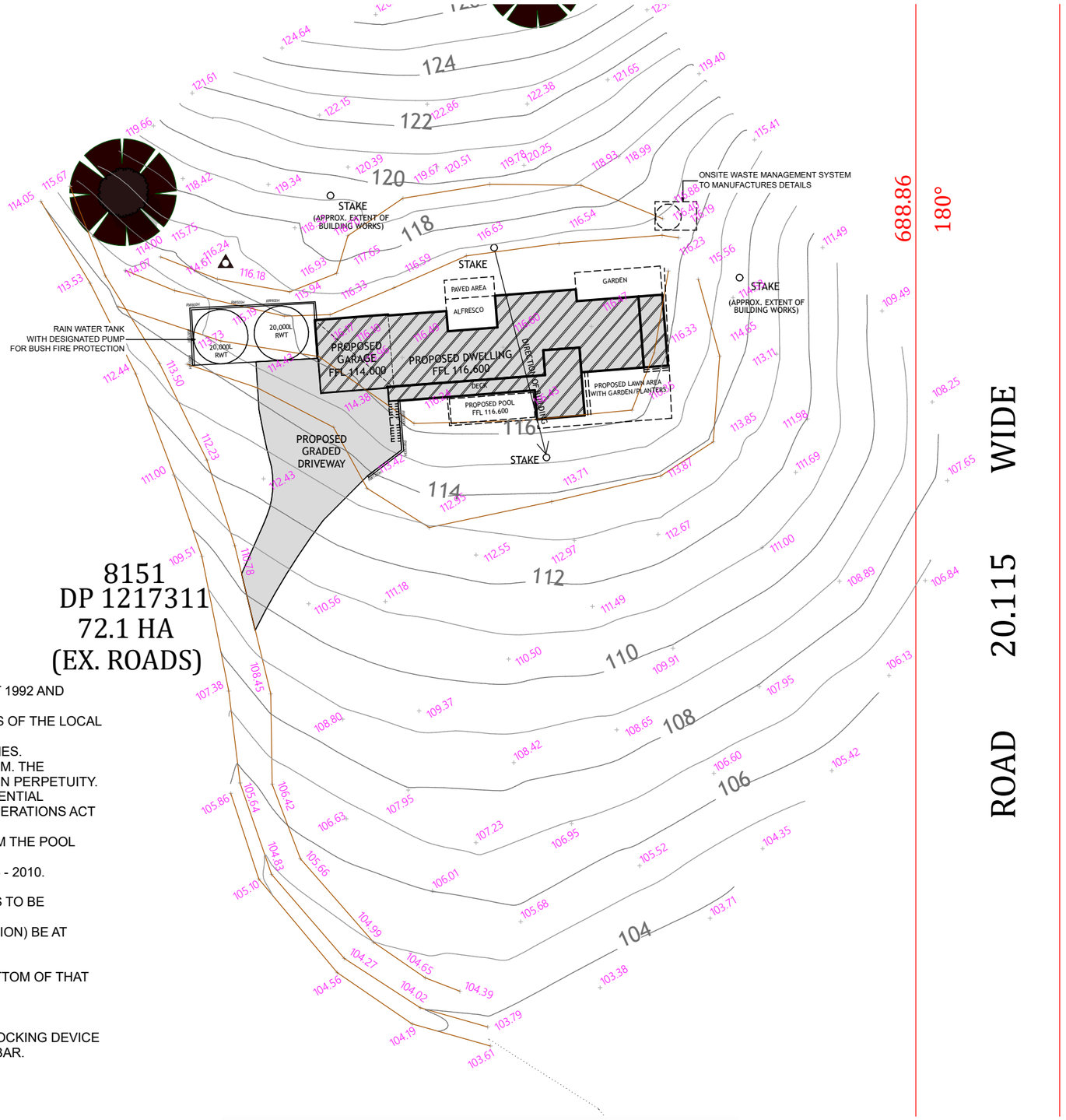


Diversion Bank & Channel

POOL NOTES

1) THE SWIMMING POOL IS TO BE FULLY ENCLOSED WITH FENCING AND GATES TO COMPLY WITH THE SWIMMING POOL ACT 1992 AND REGULATIONS.
2) ALL BACKWASH/POOL WASTE WATER IS TO BE PIPED/DRAINED TO THE SEWER IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL WATER AUTHORITY.
3) A DURABLE RESUSCITATION INSTRUCTION CHART IS TO BE DISPLAYED IN A PROMINENT POSITION IN THE POOL AT ALL TIMES.
4) WHERE A COMMON BOUNDARY FENCE FORMS PART OF THE POOL ENCLOSURE, IT SHALL BE INCREASED IN HEIGHT TO 1.8M. THE EFFECTIVENESS OF THE FENCE AS A CHILD SAFE BARRIER SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE POOL IN PERPETUITY.
5) POOL PLANT AND EQUIPMENT SHALL BE SITED OR ENCLOSED IN A SOUND ABSORBING ENCLOSURE TO MINIMISE ANY POTENTIAL OFFENSIVE NOISE IMPACTS TO ADJOINING NEIGHBOURS AS DEFINED UNDER THE PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997.
6) THE SWIMMING POOL SURROUNDS AND/OR PAVING IS TO BE CONSTRUCTED IN A MANNER SO AS TO ENSURE WATER FROM THE POOL OVERFLOW DOES NOT DISCHARGE ONTO THE NEIGHBOURING PROPERTIES.
7) THE SWIMMING POOL/SPA WATER RECIRCULATION AND FILTRATION SYSTEM INSTALLATION SHALL COMPLY WITH AS 1926.3 - 2010. INCORPORATING THIS SAFETY MEASURE MAY ASSIST IN AVOIDING ENTRAPMENT OF/OR INJURY TO YOUNG CHILDREN.
8) WHERE THERE IS POSSIBLE ACCESS FROM A WINDOW IN ANY RESIDENTIAL BUILDING TO THE SWIMMING POOL, ACCESS IS TO BE RESTRICTED BY
   A) THE BOTTOM OF THE LOWEST OPENING PANEL OF THE WINDOW MUST (WHEN MEASURED IN THE CLOSED POSITION) BE AT LEAST 1.2 METRES ABOVE FINISHED FLOOR LEVEL; AND
   B) THERE MUST NOT BE ANY FOOTHOLDS WIDER THAN TEN (10) MILLIMETRES BETWEEN THE BOTTOM OF THE LOWEST OPENING PANEL OF THE WINDOW AND ANY POINT WITHIN 1.1 METRES BELOW THE BOTTOM OF THAT PANEL.
   **THIS DOES NOT APPLY TO A CHILD SAFE WINDOW OR TO A WINDOW THAT IS TOTALLY ENCLOSED BY A CHILD-SAFE GRILL.

NOTE: CHILD SAFE MEANS A WINDOW BEING OF SUBSTANTIAL CONSTRUCTION AND BEING SO FIXED (BY MEANS OF A KEYED LOCKING DEVICE OR OTHER CHILD RESISTANT DEVICE) THAT IT HAS NO OPENING THROUGH WHICH IT IS POSSIBLE TO PASS A STANDARD TEST BAR.



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PROPOSED SITE PLAN

1:500

HIA

ACCREDITED CHARTERED BUILDING DESIGNER

bdaa BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

NATIONAL DESIGN AWARDS 2019 WINNER

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A	28.06.2023_ISSUE FOR: COMMENT
B	29.06.2023_ISSUE FOR: COMMENT
C	03.07.2023_ISSUE FOR: COMMENT
D	05.07.2023_ISSUE FOR: COMMENT
E	04.10.2023_ISSUE FOR: COMMENT
F	04.10.2023_ISSUE FOR: COMMENT

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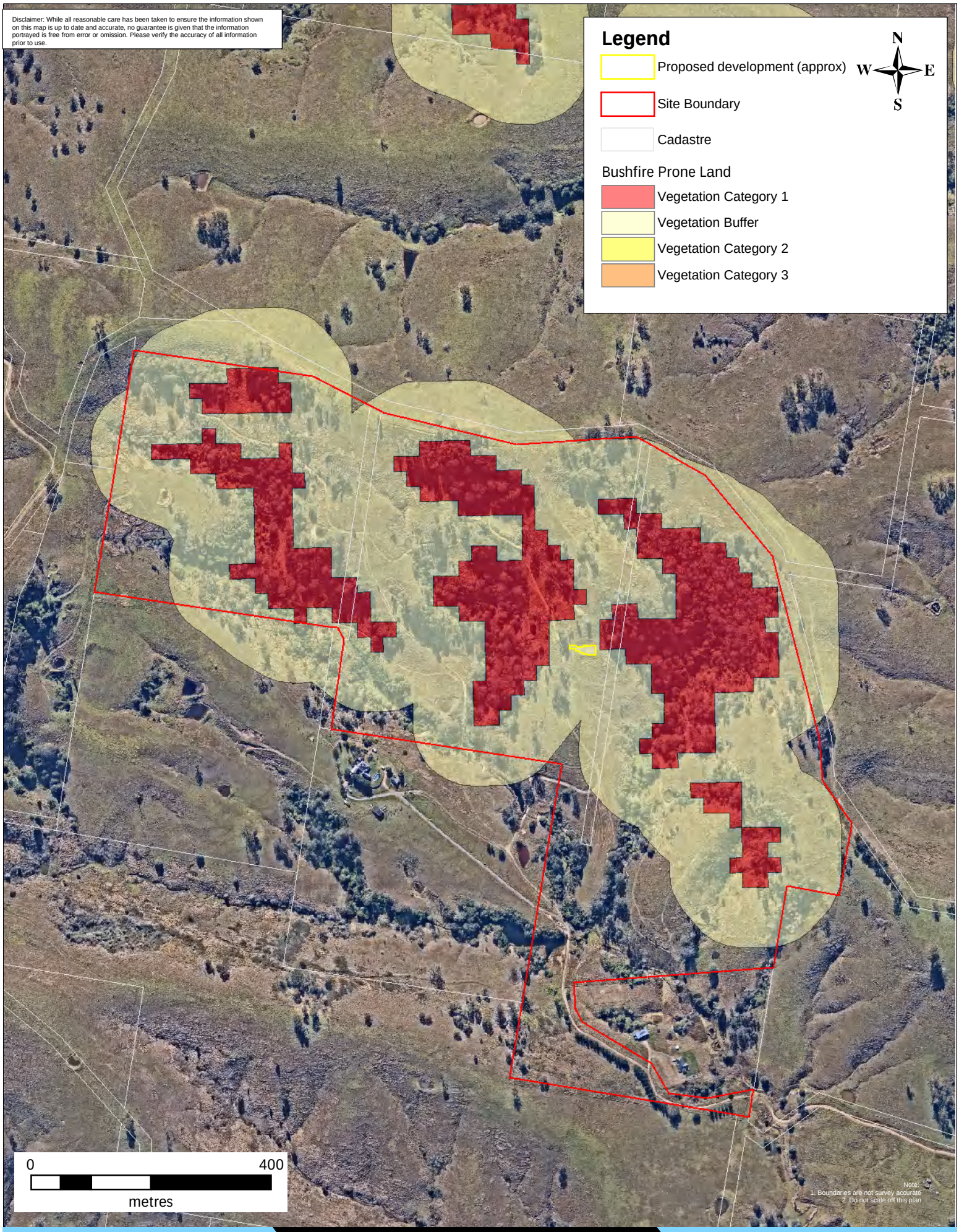
PROJECT: **PROPOSED NEW DWELLING AT 580 WOERDENS ROAD, CLARENCE TOWN 2321**

CLIENT: **DAHL**

TITLE: **PROPOSED SITE**

FILE: **2303468** DATE: **05/07/2023** SHEET: **3** OF **9**

A3



AEP

Figure 3 - Bushfire Prone Land

Date: November 2023

Location: Woerdens Road, Clarence Town

Client: Perception Planning

Our Ref: 3394

4.0 Bushfire Hazard Assessment

4.1 Bushfire Prone Land Mapping

Examination of the NSW Planning Portal (2021) Bushfire Prone Land Mapping confirmed that the Subject Site is mapped as “Vegetation Buffer” and “Vegetation Category 1”. This designation triggers the need for the assessment in this report. **Figure 3** depicts the Bushfire Prone Land Mapping.

Appendix 1 of the PBP provides the steps required to determine the level of bushfire hazard that applies to the Subject Site. Factors influencing the hazard level include:

- The formation of vegetation surrounding the Subject Site (as defined by Keith 2004);
- The distance between vegetation and the Subject Site (or proposed buildings therein);
- The effective slope for each patch of vegetation; and
- The Fire Danger Index (FDI) of the council area within which the development occurs.

These factors together provide an indication of the level of threat posed to the development from any vegetation retained within the Subject Site and surrounding vegetation in the event of a bushfire, and the required mitigation measures to be taken in the form of Asset Protection Zones (APZs) and building construction standards. These measures are detailed further in **Section 5** below.

4.2 Vegetation and Slope Analysis

The Subject Site and surrounds occur within the Greater Hunter Region, with existing vegetation subsequently classified with a Fire Danger Index (FDI) of 100 as per NSW Rural Fire Service (2017) NSW Local Government Areas FDI.

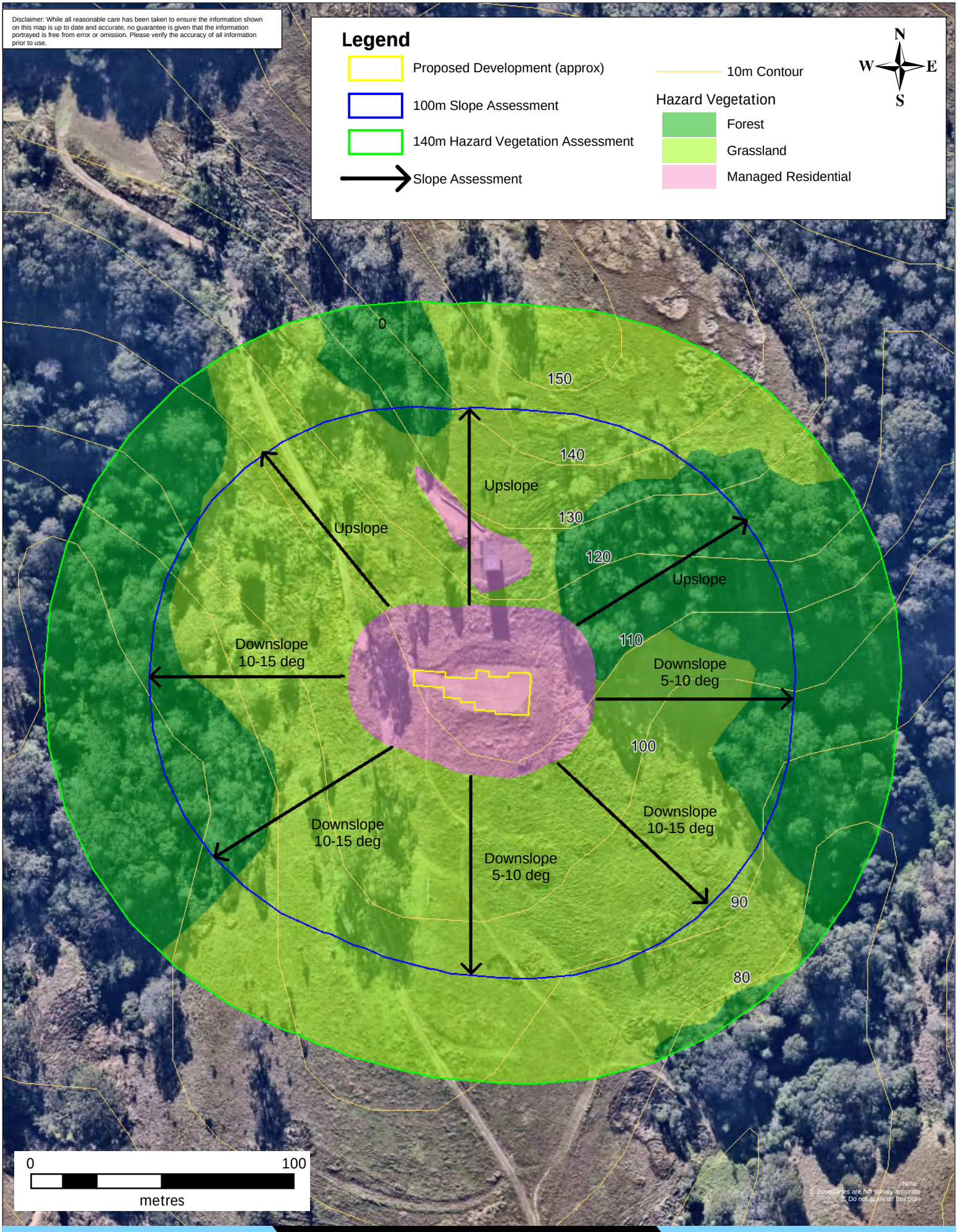
Vegetation communities present within the 140m surrounding the development and slope assessment within 100m from hazard vegetation are shown in **Table 2** and **Figure 4.**

Table 2 – Hazard Vegetation and Slope Assessment

Aspect	Hazard Vegetation (140m)	Slope (100m)	Asset Protection Zone (m)
North	Grassland / Forest	Upslope	10 / 24
North East	Forest	Upslope	24
East	Grassland / Forest	Downslope 5-10	13 / 36
South East	Grassland	Downslope 10-15	15
South	Grassland	Downslope 5-10	13
South West	Grassland / Forest	Downslope 10-15	15 / 45
West	Grassland / Forest	Downslope 10-15	15 / 45
North West	Grassland / Forest	Upslope	10 / 24

Appendix A contains photos showing the vegetation types within the 140m vegetation assessment buffer around the Subject Site.

Figure 5 shows the required APZs surrounding the development and accounts for the distance between the hazard vegetation and the proposed dwelling.



AEP

Figure 4 - Hazard Vegetation and Slope

Date: November 2023

Location: Woerdens Road, Clarence Town

Client: Perception Planning

Our Ref: 3394

4.3 PBP Performance Criteria Assessment – Infill Development

The PBP, 2019 refer to residential infill development as development of land by the erection of, alteration or addition to, a dwelling which does not require the spatial extension of services including public roads, electricity, water or sewerage and is within an existing lot. Under EP&A Act s4.14, all development on BFPL must comply with PBP. The consent authority must be satisfied that the development conforms to PBP, if not it must consult with the Commissioner of the NSW RFS. Infill developments will be considered in accordance with the acceptable solutions and performance criteria specified in section 7.4 (refer to **Tables 2**).

Table 3 – Performance Criteria Measures for Infill Development

Performance Criteria	Acceptable Solutions	Assessment
Asset Protection Zones		
APZs are provided commensurate with the construction of the building;	an APZ is provided in accordance with Table A1.12.2 or A1.12.3 in PBP Appendix 1.	An APZ in accordance with Table A1.12.2 is provided off forest and grassland hazard vegetation. An area of 25m surrounding the proposed dwelling will be managed as part of the curtilage of the dwelling (which will also form parts of the APZ).
APZs are managed and maintained to prevent the spread of a fire to the building	APZs are managed in accordance with the requirements of Appendix 4 of PBP	APZs are to be managed in accordance with the requirements of Appendix 4 of PBP.
The APZ is provided in perpetuity	APZs are wholly within the boundaries of the development site.	APZs are located within the boundaries of the development site.
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	APZ are located on lands with a slope less than 18 degrees	APZ are located on lands with a slope less than 18 degrees. The steep gradient being 15 degrees downslope to the west.
Home-based child care: the building must not be exposed to radiant heat levels exceeding 29kW/m² (1090K).		N/A
Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.	Property access roads are two-wheel drive, all weather roads.	Property access is to be provided by roads that are two-wheel drive, all weather roads.
The capacity of access roads is adequate for firefighting vehicles.	The capacity of road surfaces and any bridges/ causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes), bridges and causeways are to clearly indicate load rating.	The capacity of road surfaces and any bridges/ causeways is to be sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes), bridges and causeways are to clearly indicate load rating.

Performance Criteria	Acceptable Solutions	Assessment
There is appropriate access to water supply.	Hydrants are provided in accordance with the relevant clauses of AS 2419.1:2021.	Hose reels will be provided on either north and south side of the designated firefighting water tank.
	There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	20,000L rainwater tank for firefighting purposes with designated pump will be provided to the west of the proposed dwelling, accessed from the main proposed graded driveway.
Firefighting vehicles can access the dwelling and exit the property safely.	At least one alternative property access road is provided for individual dwellings or groups of dwellings that are located more than 200 metres from a public through road.	As there is currently only one property access road a secondary access is to be constructed prior to construction of the dwelling. If a second access road cannot be constructed due to site constraints then the dwelling is to be built to BAL 40 (one construction level higher than BAL mapping requires) as a performance solution.
	There are no specific access requirements in an urban area where an unobstructed path (no greater than 70m) is provided between the most distant external part of the proposed dwelling and the nearest part of the public access road (where the road speed limit is not greater than 70kph) that supports the operational use of emergency firefighting vehicles.	N/A – this proposal is in a rural area.
	In circumstances where this cannot occur, the following requirements apply: minimum 4m carriageway width; in forest, woodland and heath situations, rural property roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m, at the passing bay; a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches; property access must provide a suitable turning area in accordance with PBP Appendix 3; curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress; the minimum distance between inner and outer curves is 6m; the crossfall is not more than	The access road is to be a minimum of 4m in width with a passing bay approximately every 200m that is an additional 2m in width and approx. 20m long. Vertical clearance is to be a minimum of 4m. At the dwelling a turning area with a minimum 6m inner radius is to be provided. Crossfall of the road is not to be more than 10 degrees. The maximum grade of the road is not to exceed 15 degrees for sealed roads or 10 degrees for gravel/unsealed roads. The access road is to meet the requirements of the PBP.

Performance Criteria	Acceptable Solutions	Assessment
	10 degrees; maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads; and a development comprising more than three dwellings has formalised access by dedication of a road and not by right of way.	
	Note: Some short constrictions in the access may be accepted where they are not less than 3.5m wide, extend for no more than 30m and where the obstruction cannot be reasonably avoided or removed. The gradients applicable to public roads also apply to community style development property access roads in addition to the above.	
Water Supplies		
An adequate water supply is provided for firefighting purposes.	Reticulated water is to be provided to the development, where available.	N/A
	A static water supply is provided where no reticulated water is available.	The development will be serviced by a static water system. The development will utilise one 20,000L water tank (for residence) with an additional 20,000L water tank specifically for firefighting purposes. Tanks are to be constructed to ensure usability and access for firefighting purposes.
Water supplies are located at regular intervals; and	Fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2021.	Hose reels will be located on north and south side of designated water tank to allow hoses to adequately provide protection for both sides of the house.
The water supply is accessible and reliable for firefighting operations.	Hydrants are not located within any road carriageway.	Hose reels are not located within any road carriageway.
	Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.	N/A
Flows and pressure are appropriate.	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2021.	Pump and Hose reels will comply with the relevant clauses of AS 2419.1:2021.
The integrity of the water supply is maintained.	All above-ground water service pipes external to the building are metal, including and up to any taps.	All above-ground water service pipes external to the building will be metal, including and up to any taps.
A static water supply is provided for firefighting purposes in areas where	Where no reticulated water supply is available, water for firefighting	Water for firefighting purposes is provided by a 20,000L water tank and pump in accordance with Table 5.3d.

Performance Criteria	Acceptable Solutions	Assessment
reticulated water is not available.	purposes is provided in accordance with Table 5.3d.	
	A connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure; 65mm Storz outlet with a ball valve is fitted to the outlet;	A connection for firefighting purposes is located within the IPA away from the structure; 65mm Storz outlet with a ball valve will be fitted to the outlet. Shielding is to be provided for the outlet and hose on the southern side of the tank.
	Ball valve and pipes are adequate for water flow and are metal;	Metal Ball valve and pipes adequate for water flow are to be provided.
	Supply pipes from tank to ball valve have the same bore size to ensure flow volume;	Supply pipes from tank to ball valve are to have the same bore size to ensure flow volume.
	Underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank;	N/A - Tanks are above ground.
	A hardened ground surface for truck access is supplied within 4m;	A proposed graded driveway for truck access is located next to the firefighting tank.
	Above-ground tanks are manufactured from concrete or metal;	The tanks are to be manufactured from concrete or metal.
	Raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F of AS 3959)	N/A - Tanks will be ground based.
	Unobstructed access can be provided at all times;	Unobstructed access will be provided at all times.
	Underground tanks are clearly marked;	N/A - All proposed tanks are above ground.
	Tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters;	Tanks on the hazard side of a building will be located approx. 25m from hazard grassland vegetation; Shielding will be provided on the southern side of the tank for firefighting purposes.
	All exposed water pipes external to the building are metal, including any fittings;	All exposed water pipes external to the building are to be made of metal, including any fittings;
	Where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bush fire attack;	Any pump installed for firefighting purposes is to be a minimum 5hp or 3kW petrol or diesel-powered pump, and is to be shielded against bush fire attack; any

Performance Criteria	Acceptable Solutions	Assessment
	any hose and reel for firefighting connected to the pump shall be 19mm internal diameter;	hose and reel for firefighting connected to the pump shall be 19mm internal diameter;
	Fire hose reels are constructed in accordance with AS/NZS 1221:1997, and installed in accordance with the relevant clauses of AS 2441:2021	A designated pump for firefighting will be provided at the 20,000L water tank with two hose reels. Fire hose reels are to be constructed in accordance with AS/NZS 1221:1997, and installed in accordance with the relevant clauses of AS 2441:2021
Electricity Services		
Location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	Where practicable, electrical transmission lines are underground;	Electrical transmission lines will be underground where practicable
	Where overhead, electrical transmission lines are proposed as follows: lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines.	Where overhead, electrical transmission lines will be installed with short pole spacing (30m) and no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines.
Gas Services		
Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	Reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used.	Any bottled gas installed will be maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping will be used.
	All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side.	All fixed gas cylinders will be kept clear of all flammable materials to a distance of 10m and are to be shielded on the hazard side – in this case it is recommended that they are enclosed on at least three sides by a concrete structure with a roof.
	Connections to and from gas cylinders are metal.	All connections to and from gas cylinders are to be metal.
	Polymer-sheathed flexible gas supply lines are not used.	Polymer-sheathed flexible gas supply lines is not to be used

Performance Criteria	Acceptable Solutions	Assessment
	Above-ground gas service pipes are metal, including and up to any outlets.	All above-ground gas service pipes are to be metal, including and up to any outlets.
Construction Standards		
The proposed building can withstand bush fire attack in the form of embers, radiant heat and flame contact.	BAL is determined in accordance with PBP Tables A1.12.5 to A1.12.7;	BALs have been determined in accordance with PBP Tables A1.12.5 to A1.12.7; No part of the development footprint is within BAL FZ or 40.
	Construction provided in accordance with the NCC and as modified by section 7.5 (please see advice on construction in the flame zone).	While the structure is located within BAL – 29, if a secondary access road is not going to be built or cannot be built then an alternate solution will be required. If a secondary access road cannot or is not provided then it is proposed to raise the building construction level to BAL - 40 to compensate for the lack of a secondary access.
Proposed fences and gates are designed to minimise the spread of bush fire.	Fencing and gates are constructed in accordance with PBP section 7.6.	Fencing and gates are to be constructed in accordance with PBP section 7.6.
Proposed Class 10a buildings are designed to minimise the spread of bush fire.	Class 10a buildings are constructed in accordance with section 8.3.2.	As the garage is attached to the dwelling it is required to be built to the same construction standards as the dwelling, BAL 29 if a secondary access is created or BAL – 40 if no secondary access is constructed..
Home-based child care: the proposed building can withstand bush fire attack in the form of wind, localised smoke, embers and expected levels of radiant heat.	APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1 of this document around the entire building or structure; and	N/A
	The existing dwelling is required to be upgraded to improve ember protection. This is to be achieved by enclosing or covering openings with a corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture of 2mm. Where applicable this includes the openable portion of the windows, vents, weepholes and eaves, but does not include roof tile spaces. Weather strips, draught excluders or draught seals shall be installed at the base of side hung external doors as per AS 3959. The subfloor space must be enclosed.	

Performance Criteria	Acceptable Solutions	Assessment
Landscaping		
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	Compliance with the NSW RFS 'Asset protection zone standards' (see Appendix 4);	Landscaping is to comply with the NSW RFS 'Asset protection zone standards' (see Appendix 4) for an IPA (Inner Protection Zone). Canopy will not exceed 15% cover. A 25m area around the proposed dwelling will be managed as an inner protection area.
	A clear area of low-cut lawn or pavement is maintained adjacent to the house.	A clear area of low-cut lawn or pavement or swimming pool is to be maintained directly adjacent (the first meter) to the house.
	Fencing is constructed in accordance with section 7.6.	All Fencing is to be constructed in accordance with section 7.6.
	Trees and shrubs are located so that: the branches will not overhang the roof; the tree canopy is not continuous; and any proposed windbreak is located on the elevation from which fires are likely to approach.	Branches are not to overhang any part of the dwelling or attached garage. Shrubs should be kept away from windows to a distance of at least 2x the height of the shrub at maturity.
Home-based child care: a bush fire emergency and evacuation management plan is prepared.	Bush Fire Emergency Management and Evacuation Plan is prepared by the operator consistent with the NSW RFS publication: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan, and AS 3745:2010.	N/A

5.0 Bushfire Hazard Determination

5.1 Construction Standards – AS 3959-2018

As outlined above, the identification of proximate hazards post development has resulted in the need for an APZ, and hence consideration of related construction standards. APZs are not wholly achievable in the proposed development. Therefore, the proposed development must conform to the construction standards as detailed further in this section.

The Australian Standard 3959-2018 Construction of buildings in bushfire prone areas, details six (6) levels of construction standards that are required for buildings, depending upon the expected impact of a bushfire from adjacent areas. These Bushfire Attack Levels (BALs) are measured from the edge of the hazard and incorporate vegetation type and slopes (see above) to determine the relevant distance for each BAL rating (and associated construction standard).

The relationship between the expected impact of a bushfire and the BAL rating is provided in **Table 1** below.

The relationship between the expected impact of a bushfire and the BAL rating is provided in **Table 4** below.

Table 4 – BAL Construction Standard

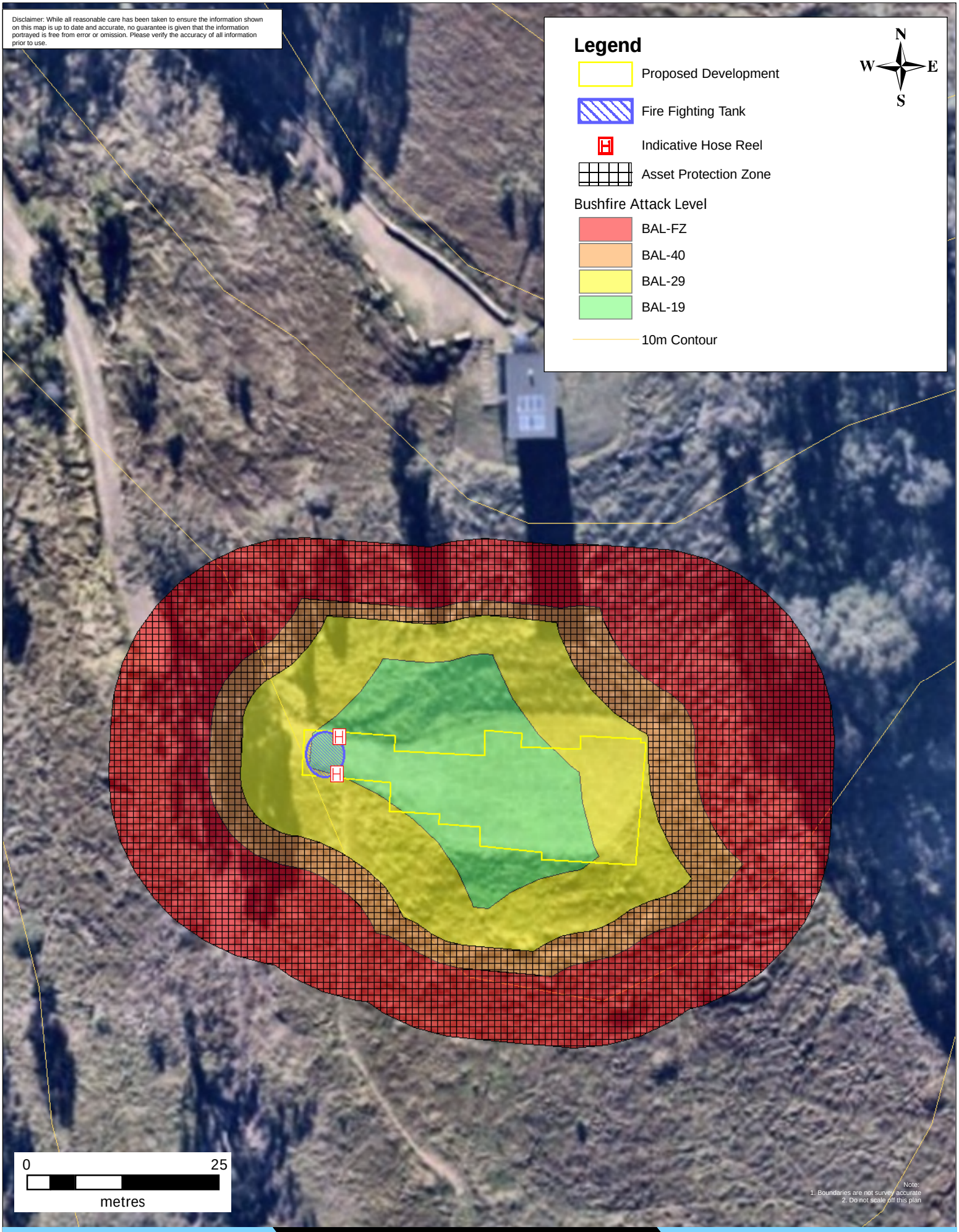
Bushfire Attack Level	Maximum radiant heat impact (kW/m^2)	Level of construction standard under AS 3959-2018
Low		No special construction requirements
12.5	≤12.5	BAL – 12.5
19	12.6 to 19.0	BAL – 19
29	19.1 to 29	BAL - 29
40	29 to 40	BAL – 40
Flame Zone	≥40	BAL – FZ (Not deemed to satisfy provisions)

The BAL construction standards that apply to the Subject Site are presented in **Table 5**

Table 5 – Hazard Vegetation and Slope Assessment

Aspect	Hazard Vegetation (140m)	Slope (100m)	Flame Zone	BAL - 40	BAL - 29	BAL - 19	BAL - ≤12.5
North	Grassland	Upslope	< 8	8-< 10	10-< 15	15-< 22	22-< 50
North East	Forest	Upslope	< 18	18 -< 24	24 -< 33	33 -< 45	45 -< 100
East	Forest	Downslope 5-10	< 28	28 -< 36	36 -< 49	49 -< 65	65 -< 100
	Grassland		< 10	10 -< 13	13 -< 20	20 -< 28	28 -< 50
South East	Grassland	Downslope 10-15	< 11	11 -< 15	15 -< 23	23 -< 32	32 -< 50
South	Grassland	Downslope 5-10	< 10	10 -< 13	13 -< 20	20 -< 28	28 -< 50
South West	Forest	Downslope 10-15	< 36	36 -< 45	45 -< 60	60 -< 77	77 -< 100
	Grassland		< 13	13 -< 17	17 -< 26	26 -< 36	36-< 50
West	Forest	Downslope 10-15	< 36	36 -< 45	45 -< 60	60 -< 77	77 -< 100
	Grassland		< 13	13 -< 17	17 -< 26	26 -< 36	36-< 50
North West	Forest	Upslope	< 18	18 -< 24	24 -< 33	33 -< 45	45 -< 100
	Grassland		< 8	8-< 10	10-< 15	15-< 22	22-< 50

Figure 5 depicts the BAL construction standards applicable for the proposed development. Where there are two hazard types indicated in **Table 5**, while the grassland is closest to the proposed development, at times, the BAL distances for Forest Hazard indicate a higher BAL Level than the Grassland hazard BALs. In this instance the BAL distance requirements of both hazards have been assessed and, based on the distance of the development from the particular hazard vegetation, the highest level applied and shown in **Figure 5**.



AEP

Figure 5 - BALs and APZ

Date: November 2023

Location: 580 Woerdens Road, Clarence Town

Client: Perception Planning

Our Ref: 3394

6.0 Other Considerations

The following analysis applied to the Subject Site in reference to environmental features present.

Table 6 – Other Site Constraints

Item	Comments
Riparian Corridors	No riparian corridors within the development footprint
State Environmental Planning Policy (Resilience and Hazards) 2021	None within development footprint
State Environmental Planning Policy (Biodiversity Conservation) 2021	None within development footprint
Areas of geological interest	None within development footprint
Environmental protection zones or steep lands (>18º)	Lands not greater than 18 degrees slope
Land slip or flood prone areas	Not in landslip or flood prone area
National Parks estate or various other reserves	Closest reserve is 1.2km to the south west
Threatened species matters	None within development footprint
Aboriginal Heritage	None known to be present within development footprint

7.0 Conclusion

Investigations undertaken for this Bushfire Threat Assessment report have revealed that the proposed infill development (new dwelling and associated landscaping) will be affected by hazard vegetation surrounding the proposed dwelling. A managed area of 25m will be maintained around the dwelling and will contain the required APZs for proximate hazard vegetation.

The location of the Subject Site is in an existing rural residential area with required APZs able to be achieved within the property boundary.

As the current access to a public road system is more 200m and through Forest hazard vegetation a suitable secondary access is required. As this secondary access is not currently present a performance solution is proposed such that the dwelling be built to a higher BAL construction standard. The current BAL construction requirements are BAL 29, if a secondary access road is not provided then the proposed development will need to be built to BAL 40 standards as a performance solution to compensate. If a secondary access is provided then the dwelling and garage can be built to BAL 29. The above requirement is to be added as a condition of consent.

The proposed static water supply system is sufficient to service the proposed dwelling development in accordance with AS2419.1 – 2021. A designated 20,000L firefighting tank and pump with two hose heels is proposed, along with associated pump, shielding and fittings appropriate to firefighting connections.

When applied, these measures should provide adequate protection to life and property within the proposed development in the event of a bushfire occurring in the immediate locality. However, it can never be guaranteed that the site and residents and property therein will not at some stage be affected by a bushfire event.

8.0 References

Parsons Brinckerhoff (2013). *Lower Hunter Vegetation Mapping.*

NSW Government (1979). *Environmental Planning & Assessment Act 1979*. NSW Government. Sydney.

NSW Government (2021). *Planning Portal*. www.planningportal.nsw.gov.au. Accessed November 2023

NSW Rural Fire Service (2019). *Planning for Bushfire Protection - November 2019*. NSW RFS, November 2019.

DPIE (2021). *Threatened Species, Populations and Ecological Communities website*. (https://www.environment.nsw.gov.au/threatenedSpeciesApp/)

NSW Government (1997). *Rural Fires Act 1997*. NSW Government. Sydney.

NSW Government (2008). *Rural Fires Act Regulation 2008*. NSW Government. Sydney

Standards Australia (2018). *AS-3959 Construction of Buildings in Bushfire-Prone Areas*. Council of Standards Australia, September 2018.

Standards Australia (2021). *AS-2419.1 Fire Hydrant System Design, Installation and Commissioning*. Council of Standards Australia, 2021.

Appendix A – Study Area Photos

Above: Looking north upslope towards grassland hazard vegetation.

Below: Looking north east upslope forest towards hazard vegetation .

Above: Looking east – towards forest hazard vegetation

Below: Looking south east

Above: Looking south downslope towards hazard vegetation grassland

Below: Looking south west downslope towards forest hazard vegetation

Above: Looking west downslope towards forest hazard vegetation

Below: Road edge and indicative landscape.

PERCEPTION PLANNING

STATEMENT OF ENVIRONMENTAL EFFECTS

RESIDENTIAL DWELLING, SWIMMING POOL, AND USE OF EXISTING STRUCTURE AS DWELLING, CREATING DUAL OCCUPANCY (DETACHED)

580 WOERDENS ROAD, CLARENCE TOWN, NSW 2321 (LOT 8151, DP1217311)

Jordan Long Town Planner PO Box 107 Clarence Town, NSW, 2321	**Phone:** 0475 713 934 **Email:** jordan@perceptionplanning.com.au

PP Reference	J001992
Prepared for (client)	Kurt Dahl

Document Versions and Control

Statement of Environmental Effects, 580 Woerdens Road, Clarence Town, NSW, 2321

Version	Date	PP ref	Author	Reviewed by
1 (draft)	12/12/2023	SEE_580 Woerdens Rd Rd_V1	JL	ED
2 (final)	20/12/2023	SEE_580 Woerdens Rd Rd_V2	JL	Client

EXECUTIVE SUMMARY

Perception Planning Pty Ltd has been engaged by Kurt Dahl (**the client**) to prepare a Statement of Environmental Effects (SEE) for the construction of a residential dwelling, swimming pool, and use of existing structure as dwelling, creating dual occupancy (detached)at 580 Woerdens Road, Clarence Town, NSW, 2321 (LOT: 8151 DP1217311 (**'the site'**).

The characteristic of the proposed development includes:

- **Dwelling**

A new dwelling is proposed in the northern portion of the site and will consist of the following components:

  - Double garage
  - Sitting/Rumpus room
  - Study
  - Bathroom
  - Laundry
  - Two bedrooms with wardrobes
  - Master bedroom with walk in wardrobe, ensuite, and deck
  - Kitchen
  - Living and Dining Areas
  - Alfresco
  - Deck
  - Swimming Pool

- **Swimming Pool**

- **Use of existing structure as dwelling, creating dual occupancy (detached)**

The existing structure on-site is proposed to be used as a dwelling. In conjunction with the new proposed dwelling, this will create a detached dual occupancy. A BIC process will be following to seek certification of the structure.

The key reasons why the proposed development is appropriate are as follows.

- Dwelling houses and dual occupancies are permissible within the zone RU1 Primary Production.
- No adverse impact on the existing character or amenity of the area will result.
- No adverse impact on the ecological values of the site is attributable to the proposed development.
- The proposed development is consistent with the prevailing land use of the area, without burdening the essential services supply.

- The residential development proposed by this application has been found to be consistent with the relevant LEP and DCP controls.

The SEE will expand on those matters that have been summarised above to assist Council in completing a detailed assessment of the proposed development.

TERMS AND ABBREVIATIONS

AHIMS	Aboriginal Heritage Information Management System
BDAR	Biodiversity Development Assessment Report
EMA	Effluent Management Area
EPA	Environment Protection Authority
EP&A Act	Environmental Planning & Assessment Act 1979
EPI	Environmental Planning Instrument
DA	Development Application
DCP	Development Control Plan
LGA	Local Government Area
SEPP	State Environmental Planning Policy
SEE	Statement of Environmental Effects

LIST OF FIGURES

LIST OF TABLES

PLANS AND SUPPORTING DOCUMENTATION

This SEE is supported by the following plans and documentation:

Table 1 - Attachments

Attachment	Document	Prepared by	Reference
1	EP&A Regulation Compliance Table	Perception Planning	J001992 20/12/2023
2	DCP Compliance Table	Perception Planning	J001992 V2 20/12/2023
3	Certificate of Title	NSW Land Registry	8151/1217311 02/09/2018
4	Deposited Plan	NSW Land Registry	DP1217311 23/02/2016
5	AHIMS Search Results	OEH	06/12/2023
6	BYDA Search Results	BYDA	06/12/2023
7	Survey	Delfs Lascelles	23/04/2023 Ref: 16854 Rev: 2
8	Identification Survey Report	Delfs Lascelles	19/04/2023 Ref: 16854
9	Existing Structure Plans	N/A	Ref: 1836 17/12/2018 Rev: 01
10	Existing Structure Photos	N/A	N/A
11	Existing Structure BCA Assessment	Perception Planning	J001994 V2 04/07/2021
12	Architectural Plans	Sorensen Design	Ref: 2303468
13	BASIX Certificate	Sorensen Design	1374637S 02/11/2023
14	Bushfire Threat Assessment	AEP	Ref: 3394 12/2023 Rev: 01
15	On-Site Wastewater Report	GSL Environmental	Ref: 102323-A1 17/11/2023
16	Owners Consent	Owners	12/12/2023
17	Site Waste Management Plan	Perception Planning	J001992 20/12/2023
18	Cost Estimate Report	Perception Planning	J001992 20/12/2023

TABLE OF CONTENTS

1 BACKGROUND

1.1 PURPOSE

The purpose of this Statement of Environmental Effects (SEE) is to assist Council in their assessment and determination and to assist the community in understanding the proposed development.

This SEE has been prepared in coordination with Kurt Dahl (**'the client**') and other sub-consultants to demonstrate the relevant matters associated with in the proposed development. The SEE examines the existing development and site location, how the proposed development relates to the location and the environment, as well as the planning merits of the development with respect to the relevant legislation, regulation and other requirements. The SEE examines the applicable site attributes and the specifics of the development proposal that are appropriate to the development application stage. The SEE seeks to provide all the relevant data to give a suitable level of certainty to the consent authority that the proposal has a positive impact on the immediate area and the wider surrounds.

This SEE has been prepared in accordance with best practice principles, applicable aspects of the Development Assessment Framework and the Department of Planning and Infrastructure's (now the Department of Planning, Infrastructure and Environment) guide to the *Environmental Planning and Assessment Act* (EP&A Act) 1979 (s4.15).

The objectives of this SEE are as follows:

- To provide a description of the site, existing development and the surrounding locality;
- To provide a description of the proposal and the key issues;
- To provide a discussion of the relevant Environmental Planning Instruments (EPI)s; and
- To provide an assessment of the potential environmental impacts, having regard to the matters for consideration pursuant to the EP&A Act (s4.15) and other State, Regional and Local environmental planning policies and guidelines.

1.2 SITE DETAILS

Property Address	580 Woerdens Road, Clarence Town, NSW, 2321
Lot and DP	Lot 8151 DP1217311
Current Use	Vacant with existing structure
Zoning	RU1: Primary Production
Size	72.1ha
Site Constraints	• Minimum lot size – 60ha • Drinking Water Catchment – Williams River • Riparian Lands and Watercourses • Bushfire Prone Land - Vegetation Buffer and Category 1
Owner	Owner's consent has been provided on the Application Form for the DA.
DP and 88B Instrument	Nothing on the DP or 88B instrument prohibits the proposed development. The subject site is identified within the Certificate of Title and Deposited Plan provided at **ATTACHMENT 3 and ATTACHMENT 4.**

1.3 SITE DESCRIPTION

The site is located at 580 Woerdens Road, Clarence Town, NSW, 2321 shown in **FIGURE 1** (**'the site'**) and has an area of 72.1ha. The surrounding locality consists of RU1 zoned primary production land with scattered vegetation located throughout the site. The property is within the Dungog Local Government Area (LGA).

The site currently consists of an existing structure located within the centre of the site. The site is bound by RU1 zoned land to all sides. The site has varied and steep terrain with survey of the proposed location of the dwelling provided within **ATTACHMENT 7**.

Access to the site will be via an existing gravel road from Woerdens Rd, which will be extended to service the proposed dwelling. Refer to **ATTACHMENT 12 – Sheet 1**.

Figure 1 - Locality Map (NSW Planning Portal 2023)

1.4 CURRENT USE AND EXISTING DEVELOPMENT DETERMINATIONS

The Dungog Council Development Application Tracker website does not identify any recent applications made on the site. The site contains an existing structure, which is proposed to be utilised as a dwelling, with plans and photos of the structure provided at **ATTACHMENT 9 and ATTACHMENT 10**. A BCA Assessment is also provided as **ATTACHMENT 11**, demonstrating compliance with the BCA.

2 DESCRIPTION OF THE DEVELOPMENT

2.1 PROPOSED DEVELOPMENT

The characteristics of the development include:

- **Dwelling**

A new dwelling is proposed in the northern portion of the site and will consist of the following components:

  - Double garage
  - Sitting/Rumpus room
  - Study
  - Bathroom
  - Laundry
  - Two bedrooms with wardrobes
  - Master bedroom with walk in wardrobe, ensuite, and deck
  - Kitchen
  - Living and Dining Areas
  - Alfresco
  - Deck
  - Swimming Pool

- **Swimming Pool**

- **Use of existing structure as dwelling, creating dual occupancy (detached)**

  The existing structure on-site is proposed to be used as a dwelling. In conjunction with the new proposed dwelling, this will create a detached dual occupancy. A BIC process will be following to seek certification of the structure.

Architectural Plans and Site Photos of the existing structure are provided as **ATTACHMENT 9** and **ATTACHMENT 10.** A BCA Assessment is also provided as **ATTACHMENT 11**, demonstrating compliance with the BCA.

The proposed development plans are provided below in **FIGURES 2 - 4** and attached as **ATTACHMENT 12**.

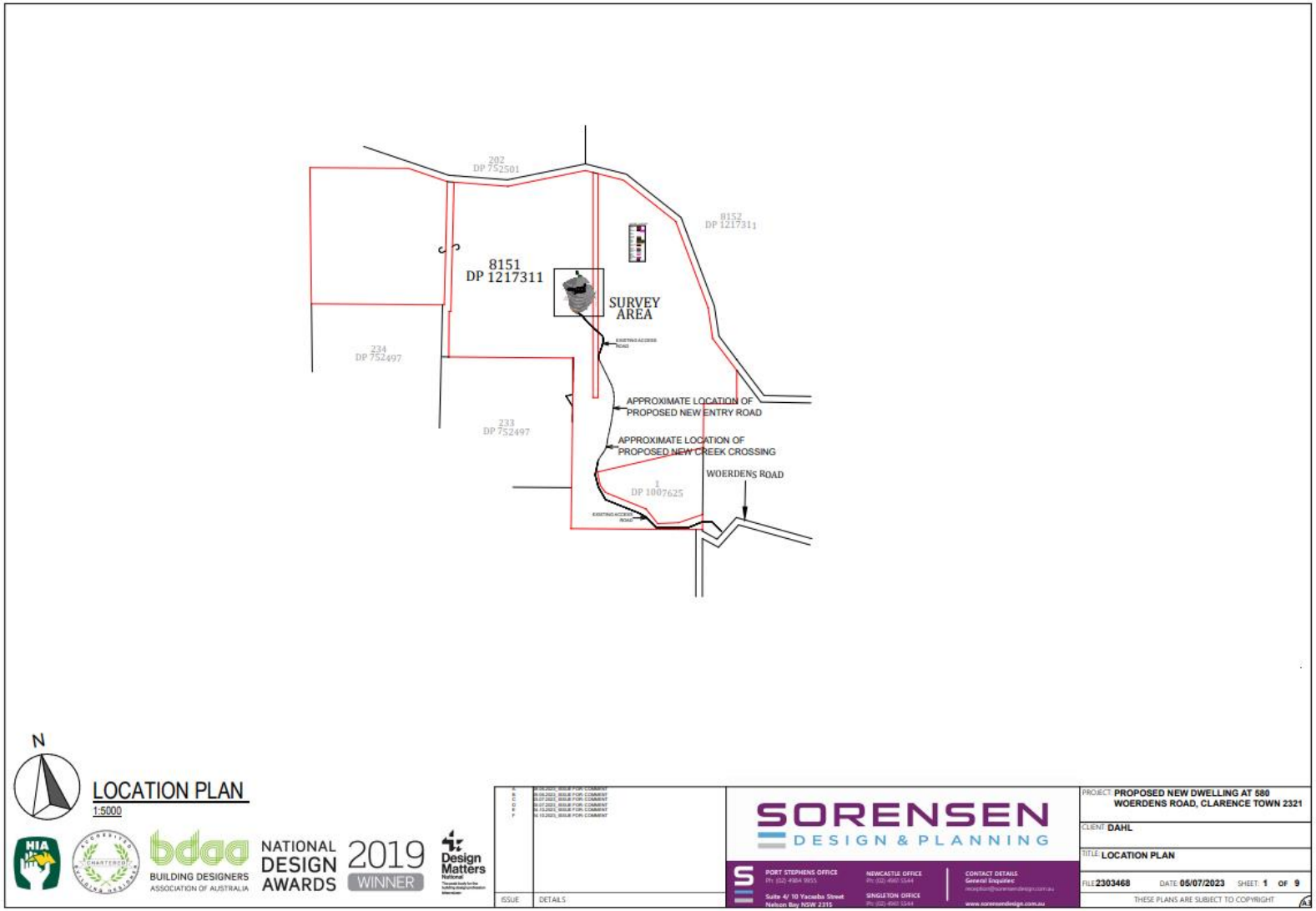


Figure 2 – Site Plan (Sorensen Design 2023)

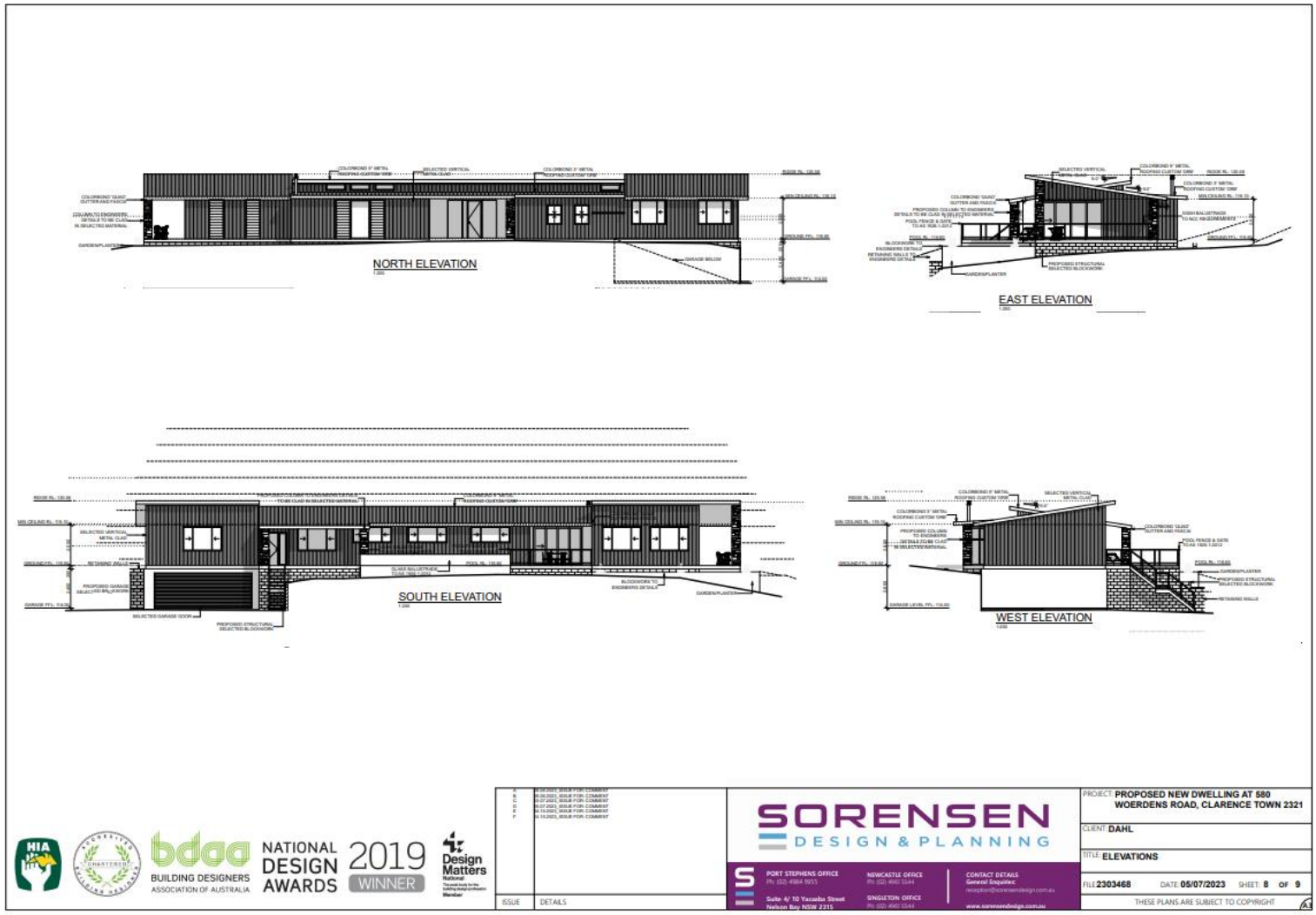


Figure 4 – Elevation Plans (Sorensen Design 2023)

3 PLANNING CONTROLS

3.1 ACTS

The following Acts are considered relevant to the proposed development:

- *Environmental Planning and Assessment Act*
- *Rural Fires Act 1997*
- *Biodiversity Conservation Act 2016*
- *Roads Act 1993*
- *Water Management Act 2000*
- *Hunter Water Act 1991*

3.1.1 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) is the principal planning and development legislation in NSW and is applicable to the proposed development. Section 4.15 of the EP&A Act specifies the matters which a consent authority must consider when determining a DA. The relevant matters for consideration under Section 4.15 are addressed in further detail in separate sections of this SoEE below.

- ***Section 4.46 – What is integrated development?***

Integrated development is development (not being State significant development or complying development) that, in order for it to be carried out, requires development consent and one or more of the approvals listed within **Table 2** below. The proposed development is not classified as integrated development.

Table 2 - Integrated Development

Integrated development	**Proposed Development**	
Fisheries Management Act 1994	▪ s 144 ▪ s 201 ▪ s 205 ▪ s 219	N/A
Heritage Act 1977	▪ s 58	N/A – an interim heritage order or listing on the State Heritage Register does not affect the site (comprising a place, building, work, relic, moveable object, precinct, or land).
Coal Mine Subsidence Compensation Act 2017	▪ s 22	N/A – The site is not located within a Mine Subsidence Area.

Mining Act 1992	▪ s 63, 64	N/A
National Parks & Wildlife Act 1974 (as amended)	▪ s 90	N/A – The site is not identified as a heritage item, nor within a heritage conservation area. An AHIMS search, contained in **ATTACHMENT 5** was conducted on 06 December 2023. The search did not identify any Aboriginal sites or places within a 50m buffer of the site. Given the disturbed nature of the locality is unlikely that the development would uncover any Aboriginal artifacts or relics. In the event that an item is unearthed, all works are to cease, and the appropriate authority notified.
Protection of the Environment Operations Act 1997	▪ ss 43(a), 47, 55 ▪ ss 43(b), 48, 55 ▪ ss 43(d), 55, 122	N/A
Roads Act 1993	▪ s 138	N/A
Rural Fires Act 1997	▪ s 100B	Yes – The site is identified as Bushfire Prone – Vegetation Buffer and Category 1. A Bushfire Threat Assessment is attached as **ATTACHMENT 14.**
Water Management Act 2000	▪ ss 89, 90, 91	N/A – The subject site is identified as containing a watercourse (Tuckers Creek), however no works are proposed within 40m of this.

- ***Section 7.11 – Development Contributions***

Development contributions will be calculated and charged in accordance with the Dungog Shire Council City Wide Infrastructure Contributions Plan.

3.1.2 RURAL FIRES ACT 1997

The property is identified as bushfire prone land (**FIGURE 5**). As such referral to the Rural Fires Service is triggered under Section 100B of the Rural Fires Act 1997. A Bushfire Threat Assessment is provided as **ATTACHMENT 14.**

Figure 5 - Bushfire Mapping (NSW Planning Portal 2023)

3.1.3 BIODIVERSITY CONSERVATION ACT 2016

The purpose of this Act is to maintain a healthy, productive, and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

Applicants are to supply evidence relating to the triggers for the Biodiversity Offsets Scheme (BOS) Threshold and the test of significance when submitting a development application to the consent authority.

The subject site does not contain any areas of biodiversity value (**FIGURE 6**), however does contain a mapped watercourse within the Southern portion of the site (**FIGURE 7**).

No vegetation removal is required as part of this development; therefore, the proposed development does not trigger the threshold to require a BDAR. It is not anticipated that the proposed development would have significant ecological impacts. To this extent, an ecologist report has not been commissioned.

Figure 6 - Biodiversity Value Map (NSW Planning Portal 2023)

Figure 7 - Riparian Lands and Watercourses (NSW Planning Portal 2023)

3.1.4 ROADS ACT 1993

Woerdens Road is identified as a local government road (**FIGURE 8**), accordingly, referral to Transport for NSW is not required under Section 138 of the Roads Act 1993. Access to the site will be via an existing gravel road from Woerdens Rd, which will be extended to service the proposed dwelling. Refer to **ATTACHMENT 12 – Sheet 1**.

As such the development is not anticipated to compromise road safety. Furthermore, there are sufficient sightlines available to allow safe egress from the site in a low trafficked environment.

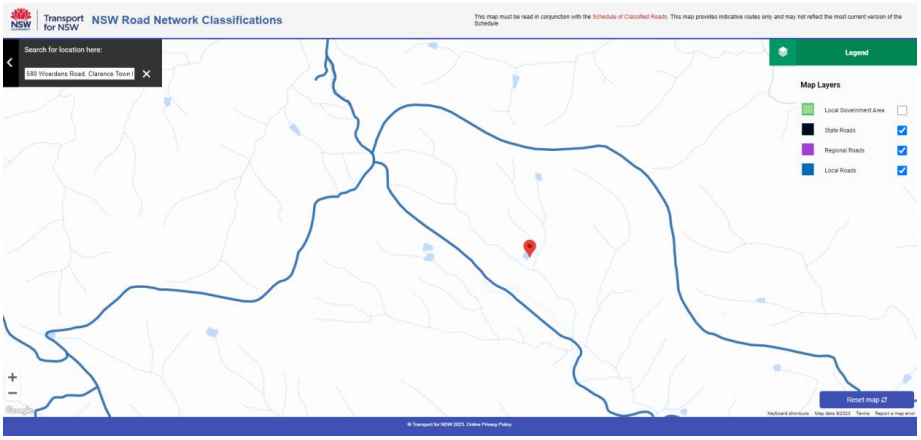


Figure 8 - NSW Road Network Classifications (Transport for NSW 2023)

3.1.5 WATER MANAGEMENT ACT 2000

The subject site is located within the Williams River Drinking Water Catchment pursuant to the LEP. While the site does contain a mapped watercourse within the Southern portion of the site, no physical works will take place within 40m of any body of water, nor will the development have a lasting impact on any watercourses or waterbodies on site. No further assessment of the Water Management Act is required.

3.2 STATE ENVIRONMENTAL PLANNING POLICIES (SEPPS)

The following SEPPs are considered relevant to the proposed development:

- *State Environmental Planning Policy (Resilience and Hazards) 2021*
  - *Chapter 4 – Remediation of Land*
- *State Environmental Planning Policy (Biodiversity and Conservation) 2021*
  - *Chapter 4 – Koala Habitat Protection 2021*
- *State Environmental Planning Policy (Transport and Infrastructure) 2021*
  - *Chapter 2 – Infrastructure*
- *State Environmental Planning Policy (Sustainable Buildings) 2022*

3.2.1 SEPP (RESILIENCE AND HAZARDS) 2021 –

CHAPTER 4 – REMEDIATION OF LAND

This Chapter applies to the whole state. Under Section 4.6, a consent authority must not grant consent to the carrying out of any development unless they have considered whether the land is contaminated.

The site is currently zoned for rural and residential purposes. Considering the site is currently vacant and has no historic use, it is not expected or known that surrounding locality has the potential to be contaminated. To this extent, the future allotments of land are considered suitable for the proposed development.

3.2.2 SEPP (BIODIVERSITY AND CONSERVATION) 2021 –

CHAPTER 4 – KOALA HABITAT PROTECTION 2021

This Policy aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline. Section 4.4 and Schedule 2 of the SEPP identify the Dungog Local Government Area as land to which the policy applies and subject to the Central Coast Koala Management Area.

The key threats within the Central Coast Koala Management Area have been identified as:

- Habitat clearing and fragmentation;
- Vehicle strike and dog attack;
- Bushfire;
- Invasive plant species;
- Disease;
- Reduction in feed trees; and
- Sea level rise.

Considering no vegetation removal is proposed, the proposed development is considered to have minimal impact on koala habitat and their ability to forage.

To this extent, no impact is identified on koala habitat and the free-living population.

3.2.3 SEPP (TRANSPORT AND INFRASTRUCTURE) 2021

CHAPTER 2 – INFRASTRUCTURE

The purpose of this Chapter is to facilitate the effective delivery of infrastructure across the state and identifying matters to be considered in the assessment of developments adjacent to particular types of development.

Division 5, Subdivision 2 Development likely to affect an electricity transmission or distribution network

Section 2.48 – Determination of development applications – Other development

Penetration of the ground within 2m of underground electrical infrastructure triggers referral to electricity supply authority pursuant to Section 2.48(1)(a). Referral to the Electricity Supply Authority is not triggered for the proposed dwelling and swimming pool as there is no electrical infrastructure located on the site.

Division 12A, Subdivision 2 Development adjacent to pipeline corridors

Section 2.76 – Determination of development applications

The proposed development is not in the vicinity of a 'licenced' pipeline corridor as defined under Section 2.76 (2). Accordingly, the proposed development does not trigger referral to any pipeline operator pursuant to Section 2.76.

Division 17, Subdivision 2 Development in or adjacent to road corridors and road reservations

Woerdens Road is identified as a local public road dedicated to Dungog Shire Council (**FIGURE 9** below).

As such, referral or Transport for NSW (TfNSW) for development on or adjacent to a classified road is not triggered under Sections 2.117, 2.118 and 2.119.

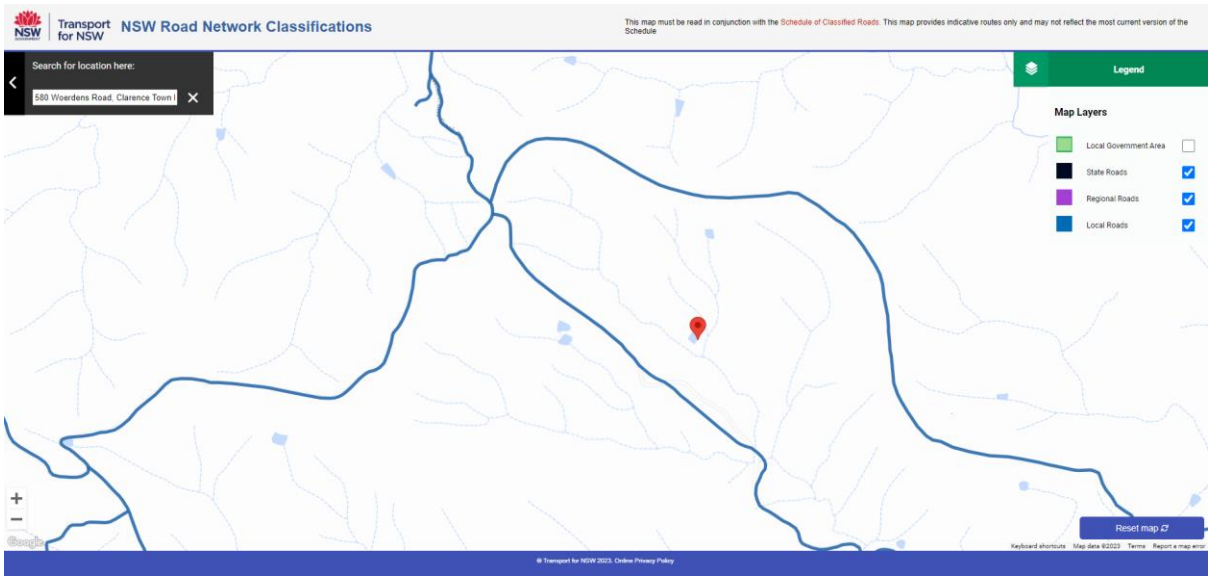


Figure 9 – NSW Road Network Classifications (Transport for NSW 2023)

3.2.4 SEPP (SUSTAINABLE BUILDINGS) 2022

The SEPP (Sustainable Buildings) 2022 commenced on 1 October 2023, and repealed the SEPP (Building Sustainability Index: BASIX) 2004.

The SEPP (Sustainable Buildings) 2022 incorporates the BASIX commitments relating to thermal performance and energy efficiency standards and applies to all residential developments (excluding alterations and additions less than $50,000) and all non-residential developments, except those excluded in Chapter 3.1 of the policy.

Accordingly, the Policy applies to the proposed development and is supported by a BASIX Certificate, provided at **ATTACHMENT 13**.

3.3 LOCAL ENVIRONMENTAL PLAN (LEP)

The following parts of the Dungog LEP 2014 apply to the proposed development:

- **Clause 2.3 – Zone Objectives and Land Use Table**

The subject site is zoned RU1 Primary Production. The proposed development includes the construction of a residential dwelling and swimming pool, and use of existing structure as dwelling, creating dual occupancy (detached) which are permissible with consent in the RU1 zone.

The Dungog LEP identifies the following objectives for the RU1 zone:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To encourage diversity in primary industry enterprises and systems appropriate for the area.*
- *To minimise the fragmentation and alienation of resource lands.*
- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*
- *To provide for recreational and tourist activities that are compatible with the agricultural, environmental and conservation value of the land.*
- *To promote the rural amenity and scenic landscape values of the area and prevent the silhouetting of unsympathetic development on ridgelines.*

RU1 Land Use Table
Permitted without Consent Environmental protection works; Extensive agriculture; Home occupations; Horticulture; Markets; Roads; Roadside stalls
Permitted with Consent Agritourism; Airstrips; Animal boarding or training establishments; Aquaculture; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cellar door premises; Cemeteries; Charter and tourism boating facilities; Community facilities; Correctional centres; Crematoria; **Dual occupancies**; **Dwelling houses**; Eco-tourist facilities; Educational establishments; Environmental facilities; Extractive industries; Farm buildings; Flood mitigation works; Forestry; Freight transport facilities; Function centres; Group homes; Health services facilities; Helipads; Heliports; Highway service centres; Home-based child care; Home businesses; Home industries; Industrial training facilities; Information and education facilities; Intensive livestock agriculture; Intensive plant agriculture; Jetties; Kiosks; Landscaping material supplies; Marinas; Moorings; Open cut mining; Places of public worship; Plant nurseries; Recreation areas; Recreation facilities (outdoor); Restaurants or cafes; Rural industries;

Rural supplies; Rural workers' dwellings; Signage; Timber yards; Tourist and visitor accommodation; Transport depots; Truck depots; Veterinary hospitals; Water recreation structures
Prohibited Any development not specified in item 2 or 3

Permissibility: The proposed residential dwelling and swimming pool, and use of existing structure as a dwelling, creating dual occupancy (detached) are permissible in the RU1 zone as per the RU1 Land use table above. Additionally, the site is compliant with the minimum lot size specified in the LEP.

The proposed development will provide an additional dwelling on the site within the rural setting, creating a detached dual occupancy The proposed development will not cause substantial increase in the demand for public services and will not contribute to land use conflicts of the region. There are no anticipated negative amenity or scenic impacts because of the proposed development. The proposed development has been designed and located on the site to prevent silhouetting on the ridgeline, noting that the nearest ridgeline sits behind the development and the development has been placed below. As such the proposed development is expected to meet the objectives of the RU1 Zone.

- **Clause 4.1 – Minimum Lot Size**

The objective of this clause is to ensure that subdivision reflects and reinforces the predominant subdivision pattern of the area. The site has a minimum lot size of 60ha under the DLEP 2014. The site has an area of 72.1ha which is greater than the minimum lot size of 60ha. No further subdivision of the site is proposed as part of this development.

- **Clause 4.2A – Erection of dwelling houses and dual occupancies on land in certain rural and conservation zones.**

The objective of this clause is to minimise unplanned rural residential development. The site is identified as a zone to which this clause applies, being RU1 Primary Production. The proposed dwelling creating dual occupancy is permitted under Clause 3 (a), as the site meets the minimum lot size of 60ha. As such the proposed development is considered to be appropriate on the site.

- **Clause 5.10 – Heritage conservation**

A search of the Aboriginal Heritage Information Services (AHIMS) database (06 December 2023) did not identify the subject site as containing any Aboriginal sites or places as shown in **ATTACHMENT 5**. The site is also not identified within Schedule 5 of the LEP as containing any items or places of heritage significance.

Should any Aboriginal objects be uncovered during works, all works will cease in that location and contact shall be made with the appropriate person. In this regard, no further assessment against the requirements of clause 5.10 is required.

- **Clause 5.16 – Subdivision of, or dwellings on, land in certain rural, residential or conservation zones**

As per clause (4) in part 5.16 of the Dungog LEP 2014, the following matters are to be taken into account:

(a) the existing uses and approved uses of land in the vicinity of the development,
(b) whether or not the development is likely to have a significant impact on land uses that, in the opinion of the consent authority, are likely to be preferred and the predominant land uses in the vicinity of the development,
(c) whether or not the development is likely to be incompatible with a use referred to in paragraph (a) or (b),
(d) any measures proposed by the applicant to avoid or minimise any incompatibility referred to in paragraph (c).

The proposed development involves the erection of a new dwelling, creating a detached dual occupancy on the site when considering the proposed use of the existing structure on-site as a dwelling (also forming part of this application). The consent authority must consider the existing uses of the site and within the vicinity of the site. The proposed dwelling will encourage the active management of primary production land. It is not anticipated that the proposed development is likely to have a significant impact on the land use within the locality. Scattered residential development is identified on primary production land within the locality.

- **Clause 5.21 – Flood Planning**

The site is not identified as being flood prone in accordance with Dungog LEP 2014. As such no further assessment of this clause is required.

- **Clause 5.22 – Special flood considerations**

The site is not identified as being flood prone in accordance with Dungog LEP 2014. As such no further assessment of this clause is required.

- **Clause 6.1 - Acid Sulfate Soils**

The objective of Clause 6.1 is to ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage. The site is not identified as containing any Acid Sulfate Soils.

- **Clause 6.2 – Earthworks**

The objective of this clause is to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land. The earthworks proposed by this application specifically relate to the construction of the dwelling and swimming pool. There is no substantial cut and fill required as part of the proposed development.

Any material that is proposed to be imported or exported from the subject site will consist of Virgin Excavated Natural Materials (VENM), Excavated Natural Materials (ENM) or other certified material. Accordingly, the development complies with the requirements of this clause.

- **Clause 6.4 – Stormwater Management**

The objective of this clause is to minimise the impacts of urban stormwater on land to which this clause applies and on adjoining properties, native bushland and receiving waters.

Stormwater generated as a result of the proposed development will be collected and stored in two proposed 20,000L rainwater tanks, one of which will be dedicated to fire fighting purposed only. The site is considered large enough to them manage overflow downslope away from the proposed dwelling.

Stormwater from the existing structure to be utilised as a dwelling is managed via an existing rainwater tank, as shown in the photos provided at **ATTACHMENT 10.**

- **Clause 6.5 – Drinking water catchments**

The objective of this clause is to protect drinking water catchment by minimising the adverse impacts of development on the quality and quantity of water entering the drinking water storages. The proposed development is located within the Williams River Drinking Water Catchment.

No works are proposed within 40m of the existing watercourse at the Southern portion of the site.

Erosion and sediment provisions will be put in place during construction of the proposed dwelling and pool to ensure that no adverse impacts affect the drinking water catchment.

- **Clause 6.6 – Riparian land and watercourses**

The objective of this clause is to protect any riparian land or watercourses located on or near the site. The subject site is identified as containing a watercourse within the southern portion of the site (**FIGURE 10**).

As no works are proposed within 40m of this watercourse, the requirements of Clause 6.6 do not apply.

Figure 10 - Riparian Lands and Watercourses (NSW Planning Portal 2023)

- **Clause 6.8 – Essential Services**

This clause specifies that development consent must not be granted to development unless the consent authority is satisfied that any of the following services that are essential for the development are available or that adequate arrangements have been made to make them available when required.

(a) The subject site is not serviced by Hunter Water, as such the proposed dwelling will rely on two proposed 20,000L rainwater tanks for potable water supply, one of which will be dedicated to fire fighting purposes only. The existing structure is supplied with potable water via an existing rainwater tank.

(b) Electricity services are not available to the site. The proposed dwelling will be supported by solar panels thus reducing the demand on power supply. The existing structure is powered by existing solar panels.

(c) The telecommunications services are not available to the site and will be provided via wireless methods.

(d) The site is not serviced by reticulated sewerage. As such, an S68 application will be submitted for an on-site waste management system which will be implemented to support the proposed development. Refer to the On-site Wastewater Report provided as **ATTACHMENT 15**, demonstrating the capacity for the site to facilitate an on-site waste management system. The existing structure is serviced by an existing septic system.

(e) Stormwater generated as a result of the proposed development will be collected and stored in two proposed 20,000L rainwater tanks, one of which will be dedicated to fire fighting purposed only. The site is considered large enough to them manage overflow downslope away from

the proposed dwelling. There will be no adverse impact on receiving environments, waterways, or adjoining properties attributable to the proposal. The existing structure manages stormwater via an existing rainwater tank.

(f) Access to the site will be via an existing gravel road from Woerdens Rd, which will be extended to service the proposed dwelling. Refer to **ATTACHMENT 12 – Sheet 1**.

The Before You Dig Australia (BYDA) search results are provided at **ATTACHMENT 6**.

- **Clause 6.10 – Williams River Catchment**

The subject site is located within the Williams River Drinking Water Catchment (**FIGURE 11**). Provisions will be put in place during construction of the dwelling to ensure that no adverse impacts affect the drinking water catchment. To this effect, the requirements of Clause 6.10 have been met.

Figure 11 - Williams River Drinking Water Catchment (NSW Planning Portal 2023)

- **Clause 6.12 – Protection of rural landscapes in rural and conservation zones**

In accordance with this clause, development consent must not be granted unless the consent authority is satisfied that:

(a) any buildings that form part of the development will blend into the landscape and not become silhouetted on a ridgeline, and
(b) the design, bulk and colours of any such buildings will be compatible with the surrounding landscape.

The objective of this clause is to protect the rural amenity and character of the land to which this clause applies by managing visual impact. The site is identified as land to which this clause applies being RU1 Primary Production. The proposed location of the dwelling is understood to be located on a high elevation point on site (**ATTACHMENT 12**). However, the development is appropriately sited and will blend into the landscape to reduce any

potential silhouette. The bulk and colour of the proposed dwelling will respond to the surrounding landscape and minimise visual impact of the dwelling on the site.

3.4 DEVELOPMENT CONTROL PLAN (DCP)

3.4.1 DUNGOG DCP

Consideration of compliance and/or consistency with the relevant provisions of the Dungog DCP is provided in the Table of Compliance provided at **ATTACHMENT 2**. The Table of Compliance identifies that the proposed development demonstrates general compliance with the relevant provisions of the DCP controls and overarching objectives.

3.5 DRAFT ENVIRONMENTAL PLANNING INSTRUMENTS

Section 4.15(1)(a)(ii) requires the consent authority to consider:

> *Any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved).*

At the time of lodgement of this development application there were no draft environmental planning instruments that are relevant to the proposed development or subject site; that should be considered as part of this development application.

4 LIKELY IMPACTS OF THE DEVELOPMENT

The likely impacts of the proposed development and constraints affecting the subject site have been explored throughout this SEE. The following sections detail the major potential impacts and constraints in greater detail, in accordance with Section 4.15(1) of the EP&A Act 1979.

4.1 BUILT ENVIRONMENT

4.1.1 CONTEXT, SETTING AND VISUAL IMPACT

The proposed development achieves a compliant dwelling design that is consistent with the prevailing rural nature of the locality and is characteristic of other developments in both the local and wider community. There are no anticipated adverse impacts on the rural amenity or built environment as a result of the proposed development. The proposed dwelling is found to have minimal adverse visual impact on the site and is consistent with surrounding development type.

4.1.2 ACCESS, TRANSPORT AND TRAFFIC

Access to the site will be via an existing gravel road from Woerdens Rd, which will be extended to service the proposed dwelling. Refer to **ATTACHMENT 12 – Sheet 1**.

4.1.3 PUBLIC DOMAIN

The proposed development will not have any adverse impact on any public domain.

4.1.4 SERVICES

Physical, legal, and emergency service are available to the site. The proposed dwelling will not unreasonably increase demand for these services as potable water will be provided through two proposed 20,000L rainwater tanks and the installation of an onsite wastewater management system. Furthermore, the proposed dwelling will be serviced by solar panels as the site is not connected to the local power supply. The existing structure is currently connected to all essential services.

4.1.5 NOISE AND VIBRATION

No incompatible or adverse noise impacts have been identified as unacceptable in this location. Adverse vibrational impacts are not anticipated.

Construction noise associated with the development will be as per normal construction times and processes and will cease once construction is completed.

4.2 NATURAL ENVIRONMENT

4.2.1 ECOLOGICAL

The proposed development does not involve vegetation removal as part of the application. The site is identified as a bushfire prone land – Vegetation Buffer and Vegetation Category 1. A Bushfire Threat Assessment has been prepared to address this rating (**ATTACHMENT 14**).

4.2.2 ARCHAEOLOGY

A search of the Aboriginal Heritage Information Services (AHIMS) database (06 December 2023) did not identify the subject site as containing any Aboriginal sites or places as shown in **ATTACHMENT 5**. The site is also not identified within Schedule 5 of the LEP as containing any items or places of heritage significance.

Should any Aboriginal objects be uncovered during works, all works will cease in that location and contact shall be made with the appropriate person.

4.2.3 STORMWATER

Stormwater generated as a result of the proposed development will be collected and stored in two proposed 20,000L rainwater tanks, one of which will be dedicated to fire fighting purposed only. The site is considered large enough to them manage overflow downslope away from the proposed dwelling. There will be no adverse impact on receiving environments, waterways, or adjoining properties attributable to the proposal. The existing structure manages stormwater via an existing rainwater tank.

4.3 SOCIAL AND ECONOMIC

Social

Social impact is best defined by (Armour 1992) that describes changes that occur in:

- People's way of life (how they live, work, play and interact with one another on a day to day basis),
- Their culture (shared beliefs, customs and values), and
- Their community (its cohesion, stability, character, services and facilities).

The proposed development is for a residential dwelling, swimming pool, and use of existing structure as dwelling, creating dual occupancy (detached) with minimal social impacts. The development will be serviced by suitable facilities and services without burdening the existing supply available within the area. The proposed development provides positive economic and social impacts by facilitating construction activity and active management of the site.

The proposed development will service the needs of the property owners without impacting on the surrounding area and furthermore will not disadvantage or benefit any particular social group.

The proposed development:

- Will increase the number of residents within the locality, consistent with the general objectives of the zone;

- Will not disadvantage or benefit any particular social group, rather will provide an additional residential lot to achieve the objectives and requirements of the Hunter Regional Plan 2036 and associated population and dwelling projection;

- Will enhance the cultural life of the community through increasing the number of residents within the Eccleston area who will in turn contribute to cultural and community activities when available;

- Will not create areas of insecurity or risk for occupants;

- Will provide the opportunity to increase housing diversity within the wider area and provides for greater housing choice; and

- Provides enhanced social and built infrastructure to positively benefit the new and existing population within the locality and adjoining areas.

There are no anticipated adverse social impacts as a result of the proposed development, rather it is considered the proposal will contribute positively to the social elements of the locality through an increase in residents. The proposed development is not out of character with the existing rural context, will not involve an increased risk to public safety and will not

threaten the existing sense of community, identity, or cohesiveness, rather will contribute to the increase of these aspects in the locality.

Economic

There are no anticipated adverse economic impacts as a result of the proposed development as the property is not currently utilised for any sort of intensive agricultural use. The proposed development is not out of character with the existing development context, will not involve an increased risk to public safety and will not threaten the existing sense of community, identity or cohesiveness, rather will contribute to the increase of these aspects in the locality.

The proposed development will provide employment opportunities in the locality and support the local building and development industries. This will have direct monetary input to the local economy, and the increased number of residents in the locality will provide ongoing economic input through daily living activities.

The increase in housing within the area will directly influence and enhance business and employment opportunities in and around the area.

There are no anticipated adverse economic impacts as a result of the proposed development.

4.3.1 SAFETY, SECURITY AND CRIME PREVENTION

No safety or security measures for crime prevention measures are required as a result of the proposed development. The proposed development will not create any safety, security or crime concerns on or around the site. The residential development and subsequent permanent habitation of the site will help to further enhance the passive surveillance of the site and may contribute to increased safety and security in the area.

4.4 SUITABILITY OF THE SITE

The subject site is located within an existing residential area and is clear of vegetation. The site has access to all relevant services and the proposed development makes good use of the available land within the Dungog LGA.

The application design includes all elements required under the relevant planning instruments, policies, and the Dungog DCP, and there are no anticipated negative impacts on the locality as a result of the development.

To this extent, the site is suitable for development.

4.5 ANY SUBMISSIONS AND CONSULTATION

As part of the DA consideration process it is envisaged Council may place the proposal on public exhibition and send neighbor notification letters to adjoining or adjacent properties.

4.6 PUBLIC INTEREST

The proposed development seeks to utilise an existing allotment with a dwelling entitlement. The site has access to all relevant services and the proposed development makes good use of the available land. The application design includes all elements required under the relevant planning instruments and policies and there are no anticipated negative impacts on the locality as a result of the development.

There are no tangible cumulative impacts arising from the proposal, given the small scale nature and appropriateness of the development in conjunction with the existing lot. Cumulative impacts are positive in that the dwelling will ensure that the site can be utilized to its full potential whilst ensuring the impacts on the site and the surrounding area are minimal in nature. To this extent, the site is suitable for development.

5 CONCLUSION

This SEE has shown that the development is within the public interest, from a social, economic and environmental perspective. The proposed residential dwelling, swimming pool, and use of existing structure as dwelling, creating dual occupancy (detached) are a suitable option for the development of the site. Any relevant matters have been addressed through this SEE.

The key reasons why the proposed development is appropriate are as follows;

- Dwelling houses and dual occupancies are permissible within the zone RU1 Primary Production.
- No adverse impact on the existing character or amenity of the area will result.
- No adverse impact on the ecological values of the site is attributable to the proposed development.
- The proposed development is consistent with the prevailing land use of the area, without burdening the essential services supply.
- The residential development proposed by this application has been found to be consistent with the relevant LEP and DCP controls, where possible.

It is considered that the proposal will have no impacts on the surrounding properties to that it is likely to adversely affect their enjoyment or amenity. We look forward to Councils determination of this matter. If we can provide any further information or clarity, please do not hesitate to contact us.

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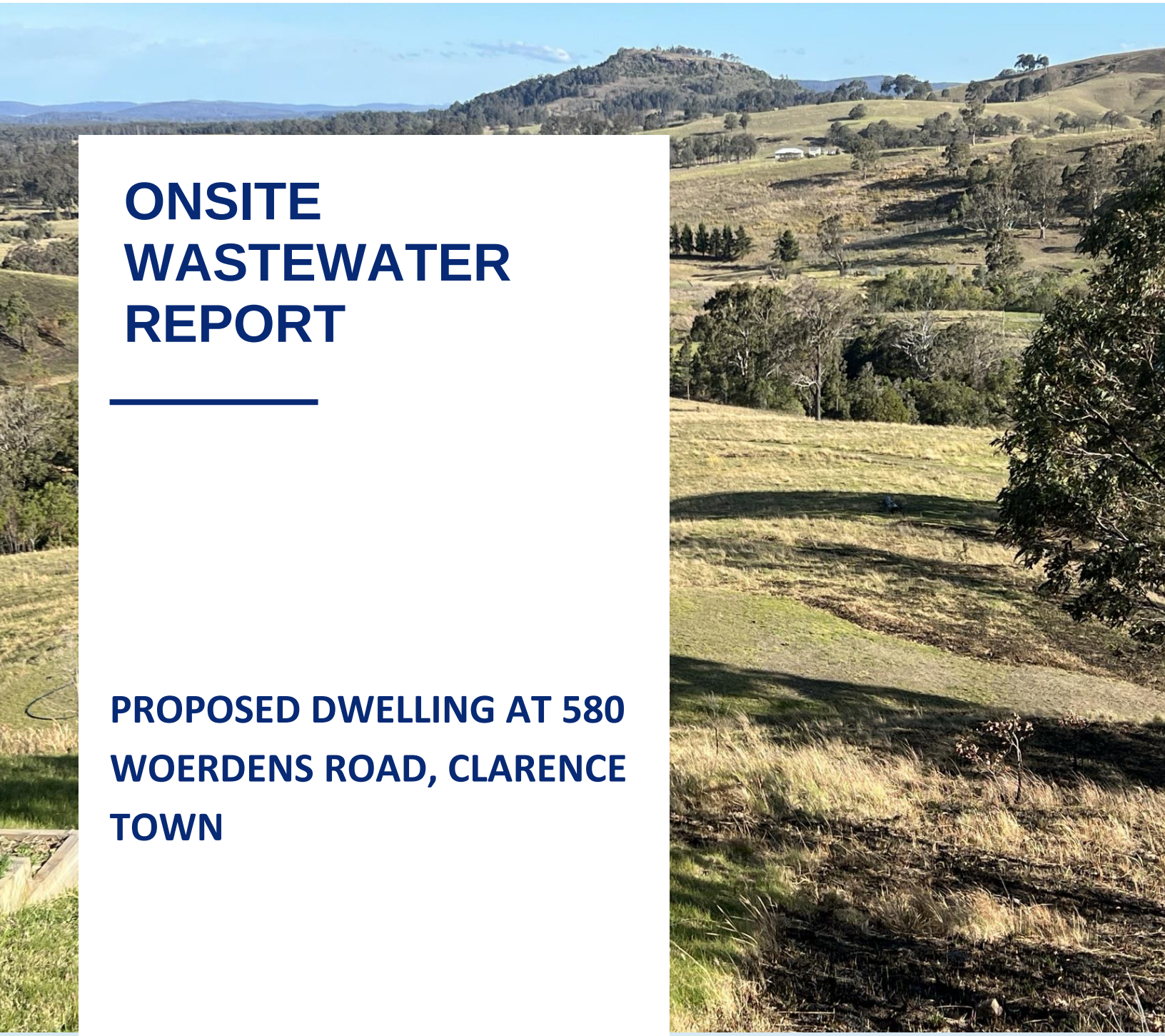

ONSITE WASTEWATER REPORT

PROPOSED DWELLING AT 580 WOERDENS ROAD, CLARENCE TOWN

GSL Environmental
Authored by: Simon Doberer B.Sc. (ENV)
Job Reference #: 102323 – A1
Date: 17th October 2023

GSL Environmental
Environmental Consultants

Limitations

This report has been developed based on agreed requirements between the client and GSL Environmental as understood by GSL Environmental at the time of investigation. This report only applies to the subject scope of works undertaken at the subject site. Other interpretations should not be made, including changes of scope or application to other projects. The contents of this report are based on a professional appraisal of the conditions that existed onsite at the time of this investigation. Where a subsurface soil investigation has been undertaken the results are only applicable to the specific sampling locations and the depths undertaken. Because of natural geological variability and possible anthropogenic influences, the subsurface conditions reported can change abruptly. Such changes can also occur after the site investigation has been undertaken. The accuracy of the results provided in this assessment is limited by these possible variations along with limitations by budget constraints imposed by others and by inadequate site accessibility.

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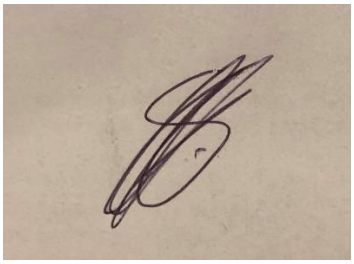


Simon Doberer
Principle Environmental Scientist
B.Sc. (ENV)

Contents

1. Introduction

GSL Environmental has been commissioned by Kurt Dahl to assess the suitability of an on-site sewage management system for the proposed dwelling at 580 Woerdens Road, CLARENCE TOWN NSW. This report will be submitted to Dungog Council in accordance with the relevant details in the 'Dungog Council Onsite Sewage DAF 2015'. Other guiding documents include,

- Australian Standard AS1547: 2012"On-site Domestic Wastewater Management"
- Dept. Local Government 1998, On-site Sewage Management for Single Households
- Water NSW, "Designing and Installing Onsite Wastewater Systems", 2019

This assessment is required to show that treated wastewater generated by the proposed dwelling can be sustainably managed on the site.

2. Site Description

The subject allotment is irregular in shape and approximately 72 Ha in size. The proposed development area is located within the middle portion of the site. The proposed EDA is within a gently inclined waxing mid slope area. The closest significant water body, Wallaroo Creek flows throw the southern half of the site in a south easterly direction. There is a number of farm dams and overland flowpath traversing the large site.

According to the Dungog 1:100 000 Soil Map the proposed dispersal area onsite is underlain by "Welshman's Creek" residual soils. The Welshman's Creek Soil Landscape areas generally consists of rolling hills on Carboniferous sandstone and ignimbrites, predominantly in the Clarencetown Hills region. Slope gradients are generally between 10 - 25%. Underlying soils mostly consist of brown sandy loams traversing to brown clays.

The proposed dwelling is a four habitable room dwelling, plans within appendix B.

Figure 1: Subject Site, care of six maps showing property boundaries and associated landmarks.

3. Site Information

Site Address: 580 Woerdens Road, CLARENCE TOWN

Water Supply: Tank

Proposed Development: proposed dwelling

Equivalent Population: Up to 6 persons/day – 4 habitable room dwelling

Wastewater Flow Allowance: 120L per person per day

Design Flowrate: 720L per day

Proposed Effluent Dispersal Type: Absorption Bed

System Design: Septic Tank

Most restrictive Soil Texture: brown clays

Minimum Dispersal Area: 144m2

Buffer Distances: All required buffer distances with AS1547:2012 can be achieved.

4. Physical Site Assessment

A site inspection was undertaken on the 8th September 2023. The fieldwork included an assessment of the site's physical parameters as well as hand excavation of boreholes to determine the underlying soil structures. This was undertaken to delineate the most suitable location for the proposed dispersal area. Potential onsite limitations have been investigated and are discussed below.

4.1 Landform

Varying landforms pose differing potential limitations to an effluent dispersal area. Risk of run-on and runoff may be enhanced dependent on the site's landform.

The proposed EDA is within a gently inclined waxing mid slope area. An upslope diversion drain is to be installed around the EDA. To limit any potential runoff, spray irrigation has been ruled out.

Limitation: **LOW**

4.2 Slope Gradient

Excessive slope within an EDA can potentially lead to effluent leaching away from the EDA.

The proposed EDA is within a gently inclined waxing mid slope area. Slope percentage within the proposed EDAs is approximately 10%. An upslope diversion drain is to be installed around the EDA. To limit any potential runoff, spray irrigation has been ruled out.

Limitation: **LOW**

4.3 Exposure

Providing the EDA with maximum wind and sun exposure is preferable. This will enhance the evapotranspiration properties of the EDA and should add to the life of the EDA.

The proposed EDA is within an open area with very high levels of exposure.

Limitation: **LOW**

4.4 Flood Potential

All effluent dispersal areas are to be above the 1:20 flood level. In addition all electrical components, vents and inspection holes form the treatment system should be located above the 1:100-year flood

level. Effluent dispersal areas being inundated via flood waters can become a public health issue during times of high rain.

Limitation: **LOW**

4.5 Vegetation

All effluent dispersal areas should be covered with vegetation or mulch-based covers. A vegetated EDA provides the possibility of that area in enhancing nutrient uptake and evapotranspiration. Low vegetation cover can cause effluent runoff and low nutrient and evapotranspiration uptake rates.

A dense cover of grassland vegetation is currently within the proposed EDA. The proposed EDA should be regularly mowed.

Limitation: **LOW**

4.6 Stormwater Run-on

Stormwater runoff through the EDA has the potential to transport effluent away from the EDA to more sensitive receivers.

There were no visible signs of stormwater entering the proposed EDA. The proposed EDA is within a gently inclined waxing mid slope area. Slope percentage within the proposed EDAs is approximately 10%. An upslope diversion drain is to be installed around the EDA. To limit any potential runoff, spray irrigation has been ruled out.

Limitation: **LOW**

4.7 Site Drainage

Damp and wet areas should be avoided for EDAs. These areas indicate seepage of waters and could become a transport option for effluent if placed in these areas.

Site appears to be well drained with semi-permeable soils. No visible signs of wet/damp areas in the proposed EDA. The soil profile did not show evidence of water logging.

Limitation: **LOW**

4.8 Erosion Potential

Areas of visible soil movement and erosion should be avoided.

No visible signs of erosion within the EDA. Proposed EDA area is a gently inclined landform and well vegetated.

Limitation: **LOW**

4.9 Evidence of Fill

No evidence of fill was seen onsite or in the excavated boreholes. Soil logs are consistent of the description for underlying soils within the Welshman's Creek Soil Areas.

Limitation: **LOW**

4.10 Groundwater Depth

Groundwater not observed in bore holes.

Limitation: **LOW**

4.11 Surface Rock

No surface boulders or rock outcrops were observed within the proposed EDA. Whilst depth was found in boreholes excavated within the proposed EDA, if during installation a "floater" is found it is to be removed from the proposed EDA.

Limitation: **LOW**

4.12 Groundwater Bores

A search of Water's all groundwater mapping was undertaken to determine the proximity of any bores to the EDA. There are no domestic registered bores within 250m of the proposed EDA

Limitation: **LOW**

4.13 Watercourse Proximity

The closest significant water body, Wallaroo Creek flows throw the southern half of the site in a south easterly direction. There is a number of farm dams and overland flowpath traversing the large site. All recommended setbacks will be adhered to.

Limitation: **LOW**

4.14 Stock Present

Stock can cause damage to irrigation systems and must be kept out of the EDA by fencing or other physical barrier.

4.15 Buffer Distances

All required buffer distances within AS1547:2012 can be achieved. All required buffer distances within the Dungog Council Onsite Sewage DAF 2015 can be met.

Table 6-8 Minimum Buffer Distances for On-site System Land Application Systems

System / Land Application Type	Limiting Factor	Minimum Buffer Distance (m)
All Land Application Systems	Permanent surface waters such as: Lakes, rivers, creeks and streams	➢ 100m
	Domestic groundwater wells and bores	➢ 250m
	Other waters such as: Farm dams, intermittent waterways and drainage channels	➢ 40m
	Retaining wall, embankments, escarpments and cuttings.	➢ 15
Surface Spray Irrigation (Standard Spray Heads)	Driveways and property boundaries	➢ 6m if area up gradient ➢ 3m if area down gradient
	Dwellings and buildings	➢ 15m
	Paths and walkways	➢ 3m
	Swimming pools	➢ 6m
	Retaining wall, embankments, escarpments and cuttings.	➢ 12m if area up gradient ➢ 3m if down gradient
Surface Drip and Trickle Irrigation	Dwellings and buildings, swimming pools, property boundaries and driveways. Retaining wall, embankments, escarpments and cuttings.	➢ 6m if area up gradient ➢ 3m if area down gradient
Subsurface Irrigation	Dwellings and buildings, swimming pools, property boundaries and driveways Retaining wall, embankments, escarpments and cuttings.	➢ 6m if area up gradient[1] ➢ 3m if area down gradient[1]
	Depth to Hardpan or Bedrock	➢ 0.6m below level of pipework[2]
Absorption System	*Property boundary* *Retaining wall, embankments, escarpments and cuttings.*	➢ 12m if area up gradient ➢ 6m if area down gradient
	Dwellings and buildings, swimming pools and driveways	➢ 6m if area up gradient ➢ 3m if area down gradient
	Depth to Hardpan or Bedrock	➢ 0.6m below base of trench/bed

Permanent Watercourse: *Any river, creek, stream or chain of ponds, whether artificially modified or not, in which water usually flows, either continuously or intermittently, in a defined bed or channel*
Intermittent Watercourse: *A low point with no or little defined bed or channel that carries water during rainfall events, but dries out quickly when rainfall stops. A gully or incised drainage depression is considered to be an intermittent watercourse.*

Limitation: **LOW**

Figure 2: Proposed EDA

5. Onsite Soil Assessment

During the site inspection 2 boreholes were hand excavated with a 100mm auger within the proposed EDA. The following are the results from the excavation. The auger holes were used to determine the underlying soil properties. No groundwater was observed in the excavated boreholes.

According to the Dungog 1:100 000 Soil Map the proposed dispersal area onsite is underlain by "Welshman's Creek" residual soils. The Welshman's Creek Soil Landscape areas generally consists of rolling hills on Carboniferous sandstone and ignimbrites, predominantly in the Clarencetown Hills region. Slope gradients are generally between 10 - 25%. Underlying soils mostly consist of brown sandy loams traversing to brown clays.

Borehole 1

0 – 250mm – brown sandy loams
250 – 550mm – brown sandy clay loams
550 – 1200mm - brown clays

Figure 3: Borehole 1 excavated onsite

Borehole 2

0 – 200mm – brown sandy loams
200 – 600mm – brown sandy clay loams
600 – 1200mm - brown clays

An insitu probe, tested the soil layers for pH and EC, results as below.

Ph and EC

Borehole 1

Depth	pH	EC_e (µS/cm)
0 – 250mm	6.0	255
250 – 550mm	5.8	687
550 – 1200mm	5.5	1187

Borehole 2

Depth	pH	EC_e (µS/cm)
0 – 200mm	5.9	394
200 – 600mm	5.7	527
600 – 1200mm	5.5	816

The pH of a soil influences its ability to supply nutrients to vegetation. If the soil is too acidic vegetative growth is inhibited. The electrical conductivity of the soil relates to the amount of salts present. A high salt concentration inhibits vegetative growth.

The electrical conductivity of the soils is less than 4 dS/m. This will not inhibit vegetative growth. The pH of the soil is between 5.5 and 6.0. A regular application of lime and gypsum is recommended to maintain healthy vegetation growth.

A Sample was sent to ALS Australia, a NATA accredited laboratory to determine the insitu reliability as well as the testing of further parameters. Results below and in appendix.

The sample tested at the laboratory was from borehole 1, 0-250mm.

Coarse fragments

Coarse fragments are those over 2 mm in diameter. They can pose limitations to vegetative growth by lowering the soil's ability to supply water and nutrients.

<5% course fragment was observed within the excavated soils onsite. There were some peds which could be crushed easily using fingers.

Limitation: **LOW**

Exchangeable Sodium Percentage

The exchangeable sodium percentage (ESP) measures the proportion of cation exchange sites occupied by sodium. Soils are considered sodic when the ESP is greater than 6, and highly sodic when the ESP is greater than 15.

ESP 4.7%, suggesting non sodic soils within the proposed EDA.

Cation Exchange Capacity

Cation exchange capacity (CEC) is a measure of the soil's ability to hold positively charged ions. It is a very important soil property influencing soil structure stability, nutrient availability, soil pH and the soil's reaction to fertilisers and other ameliorants. A figure above 10 meq/100g is preferred for plant production. You can improve CEC in weathered soils by adding lime and raising the pH.

CEC = 5.8 meq/100g

Once EDA is installed an annual maintenance application rate of the following is to be implemented.

Lime 0.5kg/m2 – Subject site calculation = A minimum 72kg across the proposed 144m2 EDAs.
Gypsum 0.5kg/m2 – Subject site calculation = A Minimum 72kg across the proposed 144m2 EDAs.

Phosphorus Sorption Index

The capacity of a soil to adsorb phosphorus is expressed as its phosphorus sorption capacity.

P sorb = 1000 mg P sorbed/kg – Lab measured
P sorb = 400mg P sorbed/kg – given figure within literature for clay loam soils

For nutrient balance calculations the lesser of value above is to be utilized

Emerson Aggregate Test

The combination of slaking and dispersion caused a reduction in macroporosity and, therefore, lower infiltration rates and hydraulic conductivities as well as an increase in soil strength and other undesirable soil physical properties. This test classifies the behavior of soil aggregates, when

immersed, on their coherence in water. This test was competed inhouse. Soils are divided into seven classes on the basis of their coherence in water, with one further class being distinguished by the presence of calcium-rich minerals.

EAT Class = 2(2). Some slight dispersion potential within underlying soils.

6. System Design/Selection

Proposed Treatment Node

The proposal is to install a NSW Health accredited septic tank. Allowing for a three-year sludge allowance and the capability to service the calculated daily flowrate of 720L/day, a septic tank with a minimum capacity of 3500L is to be utilized. This will provide enough volume to treat the daily flowrate and provide enough volume for the sludge allowance.

A correctly sized septic tank can remove approximately 25 to 35% of the Biochemical Oxygen Demand (BOD5) load and more than 60% of the suspended solids load from raw wastewater. Solids are stored in the base of the primary tank and liquids are discharged for further treatment and/or disposal. Floating material (scum) typically accumulates on the surface providing an airtight seal creating anaerobic conditions.

Proposed Effluent Dispersal

The proposal is to disperse the effluent via an absorption bed. The effluent is typically distributed along the length of the trench or bed through slotted or drilled 100 millimetre distribution pipes, and then filtered through the gravel and sand to the underlying soil. A clogging layer or biomat develops along the bottom and sides of the trench and acts as a further filter. This filtering process helps remove pathogens, toxins and other pollutants. Nutrients in the effluent are taken up by vegetation (normally grass) planted across the absorption trench area, incorporated in the biomat, and, in the case of phosphorus, adsorbed onto clay particles in the soil.

The following calculation was undertaken to determine the minimize sizing required for effluent dispersal.

<u>Minimum Dispersal Size Calculation</u>

Silty clays: Loading rate of 5mm/day. (AS1547:2012 – Table L1)

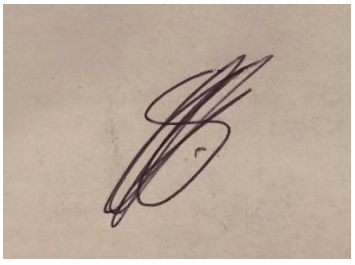
Total flowrate dispersing into adsorption beds 720L/day.

Area of bed(s): 720/5 = 144m2

The proposed is to install two conventional beds as per AS1547:2012 and the Water NSW schematic within appendix E.

7. Recommendations

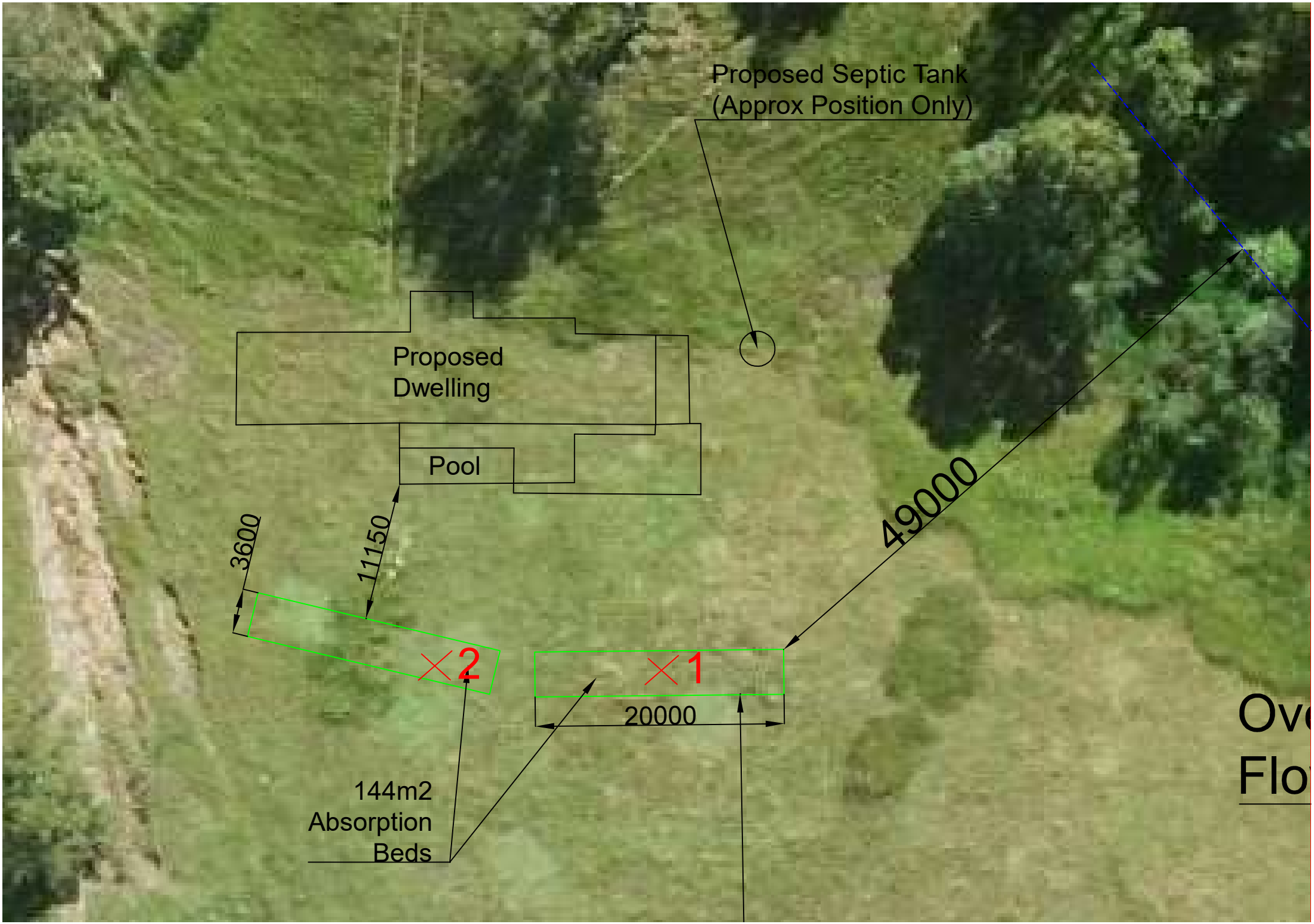
- Installation of NSW Health Accredited Septic Tank onsite to treat the calculated flowrate of 720L/day of a minimum 3500L.
- The proposed effluent dispersal is to be absorption beds of a minimum 144m2 as per AS1547:2012 and the Water NSW schematic within appendix E.
- An upslope diversion drain is to be installed around the proposed EDAs.
- Stock must be kept out of the EDAs by fencing or other physical barrier.
- This design assumes at least three-star rated plumbing fixtures are used in any new development.



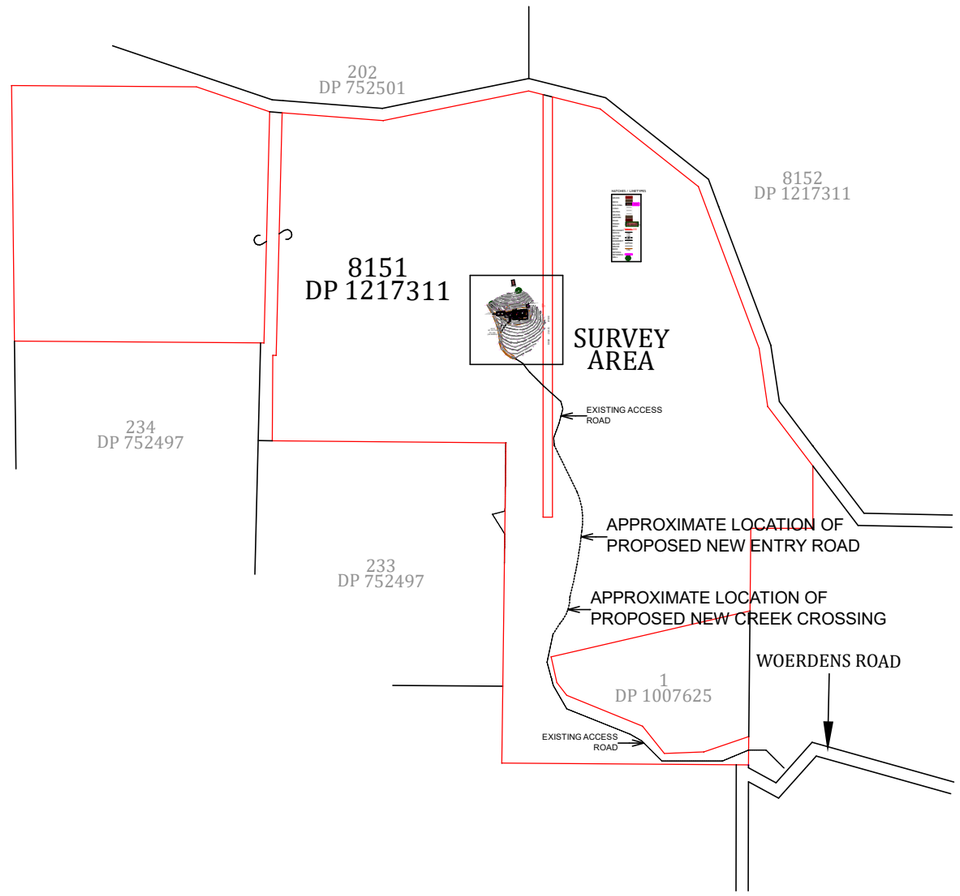
Simon Doberer
Principle Environmental Scientist
B.Sc. (ENV)

Appendix A – Site Plans


Proposed Septic Tank
(Approx Position Only)
Proposed
Dwelling
Pool
3600
11150
49000
X2
X1
20000
144m2
Absorption
Beds
76000
Overland
Flowpath
Drainage
Channel


Proposed Septic Tank
(Approx Position Only)
Proposed
Dwelling
Pool
3600
11150
49000
×2
×1
20000
144m2
Absorption
Beds

Appendix B – Proposed Plans



N

LOCATION PLAN

1:5000

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TITLE: **LOCATION PLAN**

FILE: **2303468** DATE: **05/07/2023** SHEET: **1** OF **9**

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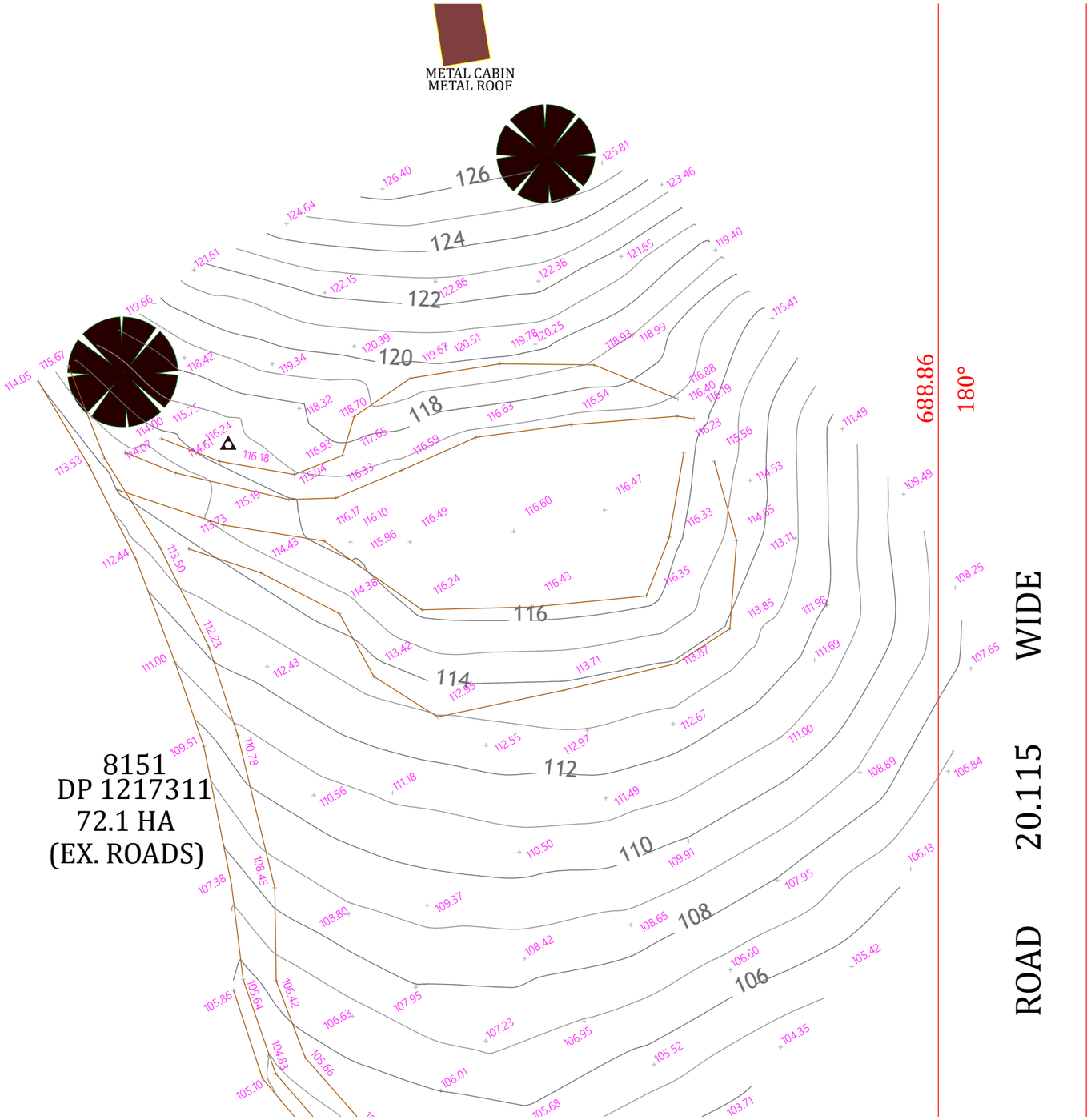

N

EXISTING SITE PLAN

1:500

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GENERAL NOTES

1 ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF COUNCIL, THE BUILDING CODE OF AUSTRALIA AND CURRENT AUSTRALIAN STANDARDS.

2 ALL DIMENSIONS AND LEVELS TO BE CONFIRMED PRIOR TO CONSTRUCTION.

3 REPORT ANY DISCREPANCIES TO THE DESIGNER.

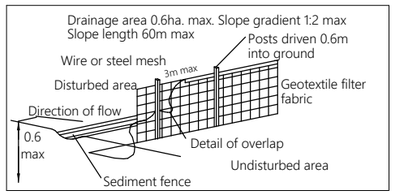
4 DO NOT SCALE OFF THESE DRAWINGS.

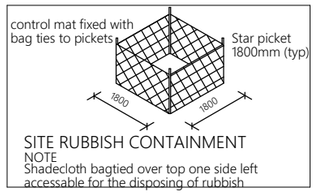
5 THESE PLANS ARE TO BE READ TOGETHER WITH THE ENGINEERS DRAWINGS AND SPECIFICATIONS.

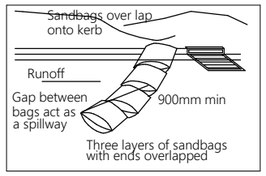
6 SCALES APPLY TO SHEET SIZE SHOWN IN THE TITLE.

7 THE BUILDER IS TO CHECK ALL FLOOR, CEILING AND ROOF LEVELS TO ENSURE THAT THE FINISHED ROOF HEIGHT DOES NOT EXCEED THE DA APPROVED RL & HEIGHT LIMIT.

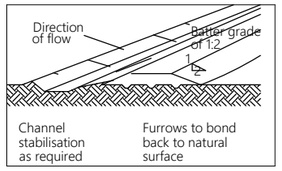
8 A REGISTERED SURVEYOR IS TO SET OUT THE BUILDINGS, & CONFIRM ALL LEVELS.







NOTE
1 No vehicle crossing or stockpiling of material on vegetation buffer.
2 All sedimentation control structures to be inspected & maintained by site manager daily.
3 All sediment retaining structures to be cleaned on reaching 50% storage capacity.
4 All existing vegetation will be retained outside the construction site.
5 Clean sediments from footpaths, driveways & roads daily.
6 Roof drainage via sealed pipieline to street gutter on roof completion.

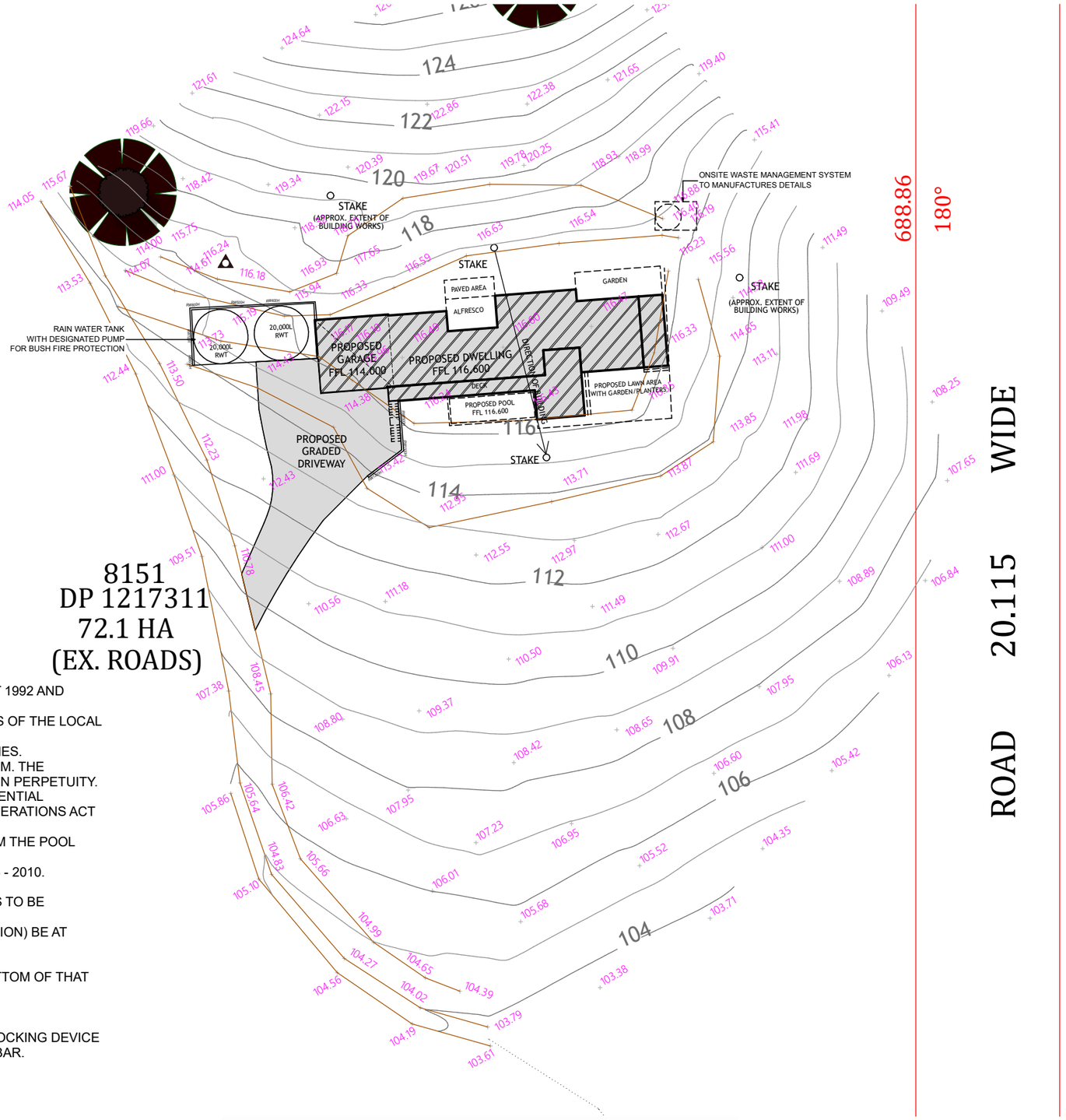


Diversion Bank & Channel

POOL NOTES

1) THE SWIMMING POOL IS TO BE FULLY ENCLOSED WITH FENCING AND GATES TO COMPLY WITH THE SWIMMING POOL ACT 1992 AND REGULATIONS.
2) ALL BACKWASH/POOL WASTE WATER IS TO BE PIPED/DRAINED TO THE SEWER IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL WATER AUTHORITY.
3) A DURABLE RESUSCITATION INSTRUCTION CHART IS TO BE DISPLAYED IN A PROMINENT POSITION IN THE POOL AT ALL TIMES.
4) WHERE A COMMON BOUNDARY FENCE FORMS PART OF THE POOL ENCLOSURE, IT SHALL BE INCREASED IN HEIGHT TO 1.8M. THE EFFECTIVENESS OF THE FENCE AS A CHILD SAFE BARRIER SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE POOL IN PERPETUITY.
5) POOL PLANT AND EQUIPMENT SHALL BE SITED OR ENCLOSED IN A SOUND ABSORBING ENCLOSURE TO MINIMISE ANY POTENTIAL OFFENSIVE NOISE IMPACTS TO ADJOINING NEIGHBOURS AS DEFINED UNDER THE PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997.
6) THE SWIMMING POOL SURROUNDS AND/OR PAVING IS TO BE CONSTRUCTED IN A MANNER SO AS TO ENSURE WATER FROM THE POOL OVERFLOW DOES NOT DISCHARGE ONTO THE NEIGHBOURING PROPERTIES.
7) THE SWIMMING POOL/SPA WATER RECIRCULATION AND FILTRATION SYSTEM INSTALLATION SHALL COMPLY WITH AS 1926.3 - 2010. INCORPORATING THIS SAFETY MEASURE MAY ASSIST IN AVOIDING ENTRAPMENT OF/OR INJURY TO YOUNG CHILDREN.
8) WHERE THERE IS POSSIBLE ACCESS FROM A WINDOW IN ANY RESIDENTIAL BUILDING TO THE SWIMMING POOL, ACCESS IS TO BE RESTRICTED BY
   A) THE BOTTOM OF THE LOWEST OPENING PANEL OF THE WINDOW MUST (WHEN MEASURED IN THE CLOSED POSITION) BE AT LEAST 1.2 METRES ABOVE FINISHED FLOOR LEVEL; AND
   B) THERE MUST NOT BE ANY FOOTHOLDS WIDER THAN TEN (10) MILLIMETRES BETWEEN THE BOTTOM OF THE LOWEST OPENING PANEL OF THE WINDOW AND ANY POINT WITHIN 1.1 METRES BELOW THE BOTTOM OF THAT PANEL.
   **THIS DOES NOT APPLY TO A CHILD SAFE WINDOW OR TO A WINDOW THAT IS TOTALLY ENCLOSED BY A CHILD-SAFE GRILL.

NOTE: CHILD SAFE MEANS A WINDOW BEING OF SUBSTANTIAL CONSTRUCTION AND BEING SO FIXED (BY MEANS OF A KEYED LOCKING DEVICE OR OTHER CHILD RESISTANT DEVICE) THAT IT HAS NO OPENING THROUGH WHICH IT IS POSSIBLE TO PASS A STANDARD TEST BAR.



N

PROPOSED SITE PLAN

1:500

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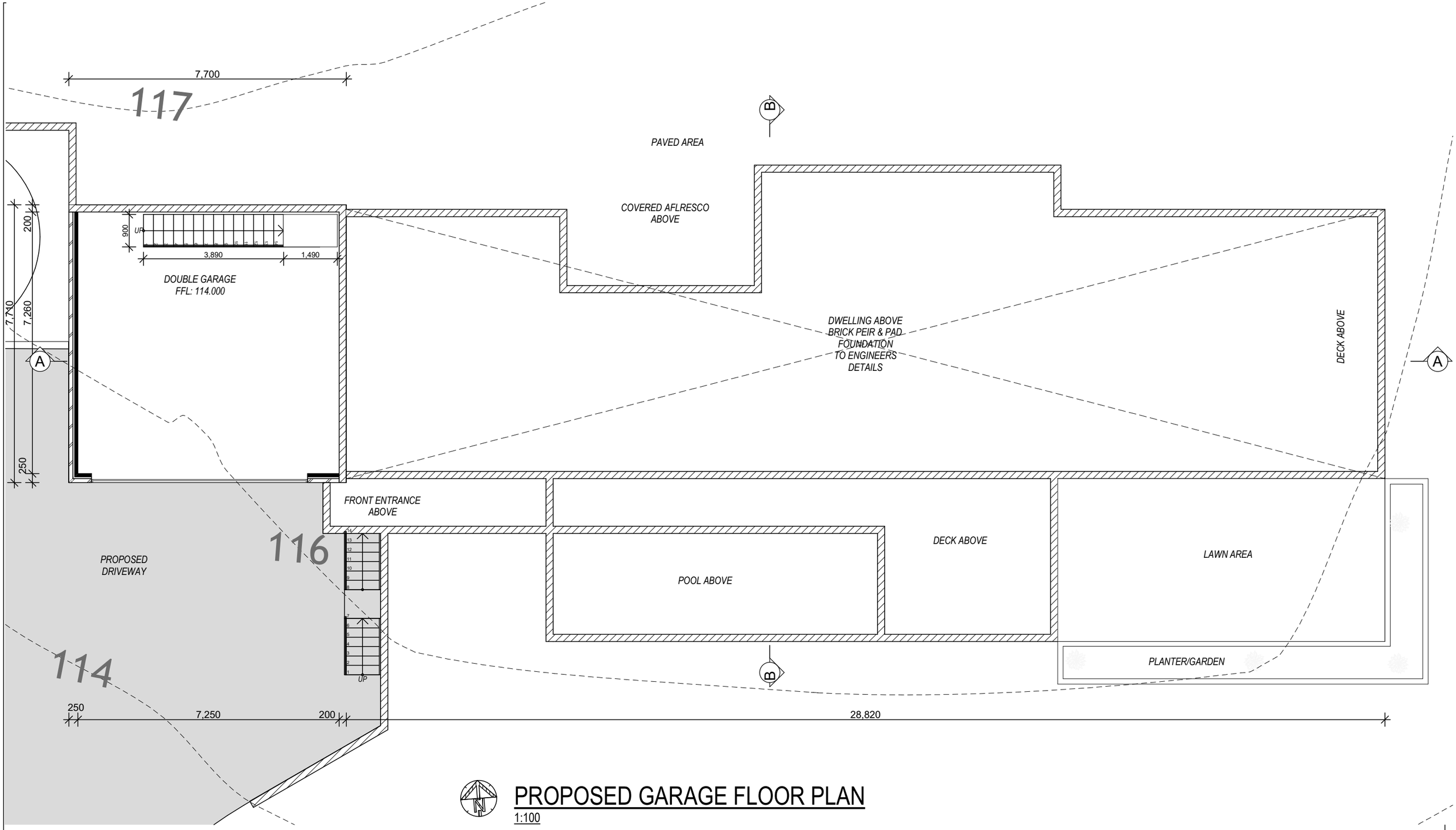

PROPOSED GARAGE FLOOR PLAN

1:100

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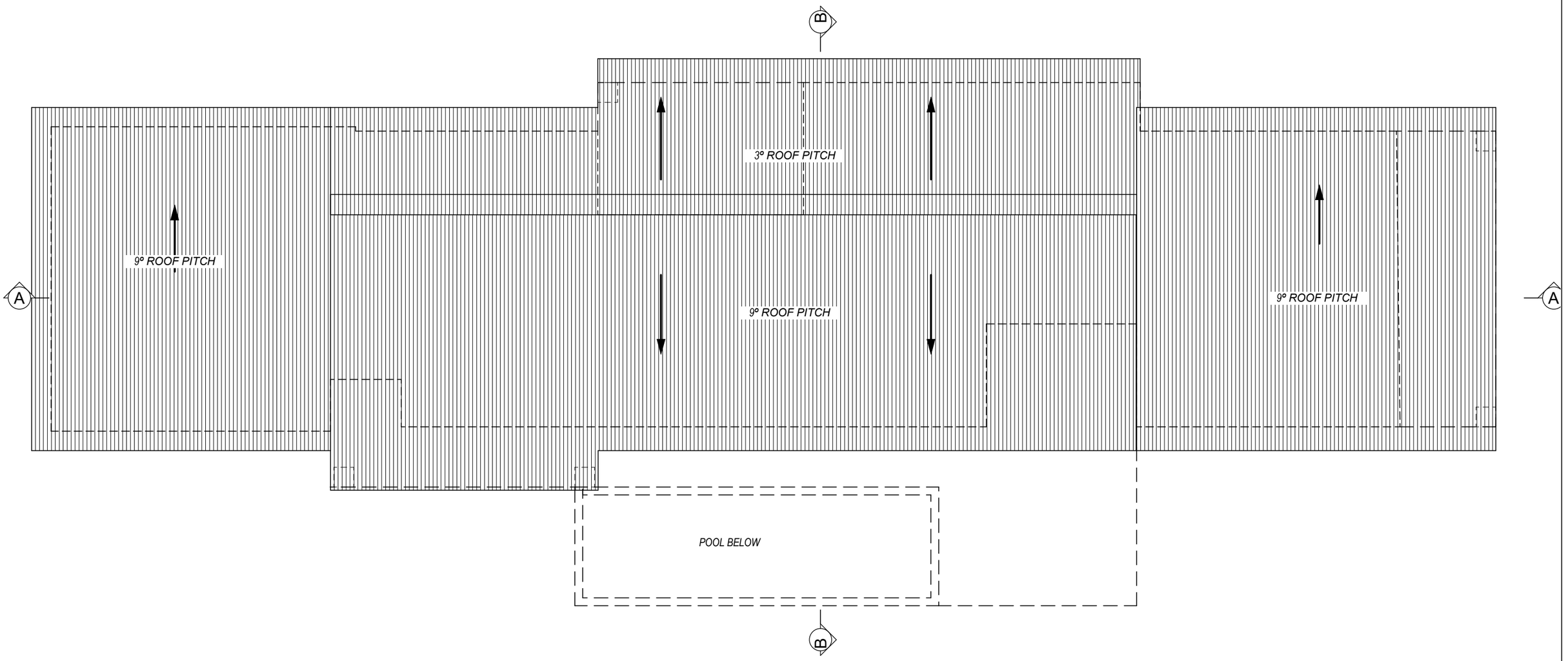

PROPOSED ROOF PLAN

1:100

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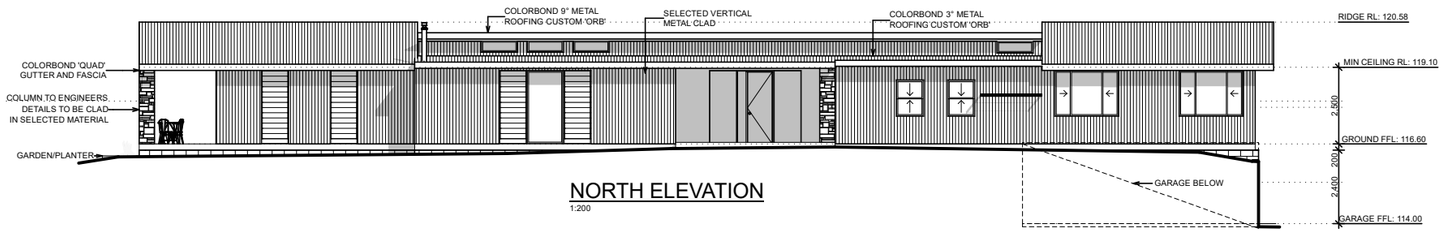
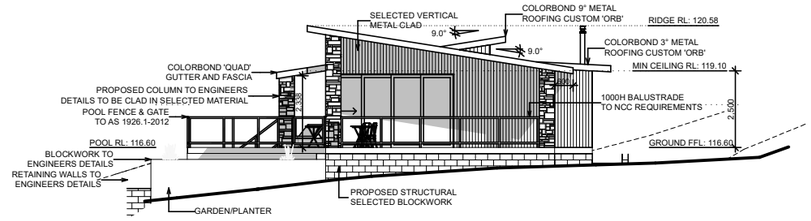
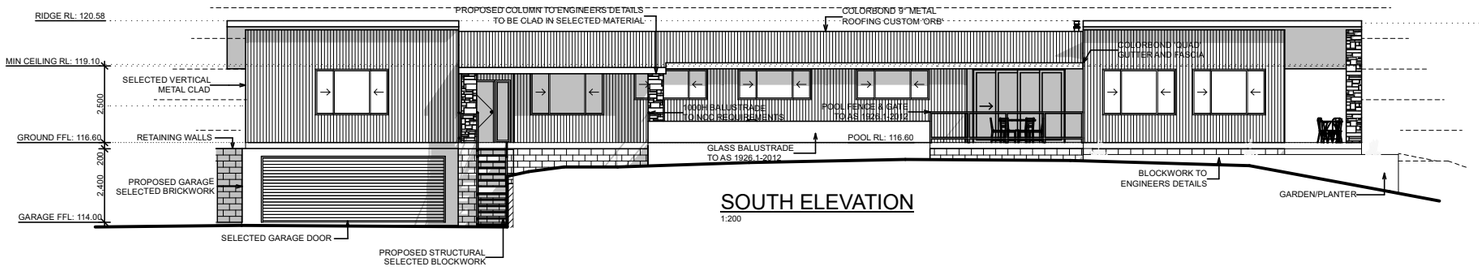


NORTH ELEVATION
1:200



EAST ELEVATION
1:200



SOUTH ELEVATION
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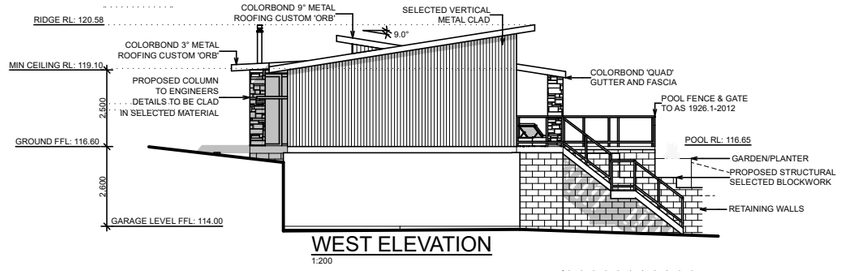

WEST ELEVATION
1:200

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Appendix C – Operation and Maintenance Guideline

ON-SITE SEWAGE MANAGEMENT SYSTEMS

If you live in or rent a house that is not connected to the main sewer then chances are that your yard contains an on-site sewage management system. If this is the case then you have a special responsibility to ensure that it is working as well as it can.

The aim of this pamphlet is to introduce you to some of the most popular types of on-site sewage management systems and provide some general information to help you maintain your system effectively. You should find out what type of system you have and how it works.

More information can be obtained from the pamphlets:

Your Septic System
Your Aerated Wastewater Treatment System
Your Composting Toilet
Your Land Application Area

You can get a copy of these pamphlets from your local council or the address marked on the back of this pamphlet.

It is important to keep in mind that maintenance needs to be performed properly and regularly. Poorly maintained on-site sewage management systems can significantly affect you and your family's health as well as the local environment.

What is an on-site sewage management system?

A domestic on-site sewage management system is made up of various components which - if properly designed, installed and maintained - allow the treatment and utilisation of wastewater from a house, completely within the boundary of the property.

Wastewater may be blackwater (toilet waste), or greywater (water from showers, sinks, and washing machines), or a combination of both.

Partial on-site systems - eg. pump out and common effluent systems (CES) - also exist. These usually involve the preliminary on-site treatment of wastewater in a septic tank, followed by collection and transport of the treated wastewater to an off-site management facility. Pump out systems use road tankers to transport the effluent, and CES use a network of small diameter pipes.

How does an on-site sewage management system work?

For complete on-site systems there are two main processes:

1. treatment of wastewater to a certain standard
2. its application to a dedicated area of land.

The type of application permitted depends on the quality of treatment, although you should try to avoid contact with all treated and untreated wastewater, and thoroughly wash affected areas if contact does occur.

Treatment and application can be carried out using various methods:

Septic Tank
Septic tanks treat both greywater and blackwater, but they provide only limited treatment through the settling of solids and the flotation of fats and greases. Bacteria in the tank break down the solids over a period of time. Wastewater that has been treated in a septic tank can only be applied to land through a covered soil absorption system, as the effluent is still too contaminated for above ground or near surface irrigation.

AWTS
Aerated wastewater treatment systems (AWTS) treat all household wastewater and have several treatment compartments. The first is like a septic tank, but in the second compartment air is mixed with the wastewater to assist bacteria to break down solids. A third compartment allows settling of more solids and a final chlorination contact chamber allows disinfection. Some AWTS are constructed with all the compartments inside a single tank. The effluent produced may be surface or sub-surface irrigated in a dedicated area.

Composting Toilets
Composting toilets collect and treat toilet waste only. Water from the shower, sinks and the washing machine needs to be treated separately (for example in a septic tank or AWTS as above). The compost produced by a composting toilet has special requirements but is usually buried on-site.

These are just some of the treatment and application methods available, and there are many other types such as sand filter beds, wetlands, and amended earth mounds. Your local council or the NSW Department of Health have more information on these systems if you need it.

Regulations and recommendations

The NSW Department of Health determines the design and structural requirements for treatment systems for single households. Local councils are primarily responsible for approving the installation of smaller domestic septic tank systems, composting toilets and AWTSs in their area, and are also responsible for approving land application areas. The NSW Environment Protection Authority approves larger systems.

The design and installation of on-site sewage management systems, including plumbing and drainage, should only be carried out by suitably qualified or experienced people. Care is needed to ensure correct sizing of the treatment system and application area.

Heavy fines may be imposed under the Clean Waters Act if wastewater is not managed properly.

Keeping your on-site sewage management system operating well

What you put down your drains and toilets has a lot to do with how well your system performs. Maintenance of your sewage management system also needs to be done well and on-time. The following is a guide to the types of things you should and should not do with your system.

DO

- ✓ Learn how your sewage management system works and its operational and maintenance requirements.
- ✓ Learn the location and layout of your sewage management system.
- ✓ Have your AWTS (if installed) inspected and serviced four times per year by an approved contractor. Other systems should be inspected at least once every year. Assessment should be applicable to the system design.
- ✓ Keep a record of desludgings, inspections, and other maintenance.
- ✓ Have your septic tank or AWTS desludged every three years to prevent sludge build up, which may 'clog' the pipes.
- ✓ Conserve water. Conservative water use around the house will reduce the amount of wastewater which is produced and needs to be treated.
- ✓ Discuss with your local council the adequacy of your existing sewage management system if you are considering house extensions for increased occupancy.

DON'T

- ✗ Don't let children or pets play on land application areas.
- ✗ Don't water fruit and vegetables with effluent.
- ✗ Don't extract untreated groundwater for cooking and drinking.
- ✗ Don't put large quantities of bleaches, disinfectants, whiteners, nappy soakers and spot removers into your system via the sink, washing machine or toilet.
- ✗ Don't allow any foreign materials such as nappies, sanitary napkins, condoms and other hygiene products to enter the system.
- ✗ Don't put fats and oils down the drain and keep food waste out of your system.
- ✗ Don't install or use a garbage grinder or spa bath if your system is not designed for it.

Reducing water usage

Reducing water usage will lessen the likelihood of problems such as overloading with your septic system. Overloading may result in wastewater backing up into your house, contamination of your yard with improperly treated effluent, and effluent from your system contaminating groundwater or a nearby waterway.

Your sewage management system is also unable to cope with large volumes of water such as several showers or loads of washing over a short period of time. You should try to avoid these 'shock loads' by ensuring water use is spread more evenly throughout the day and week.

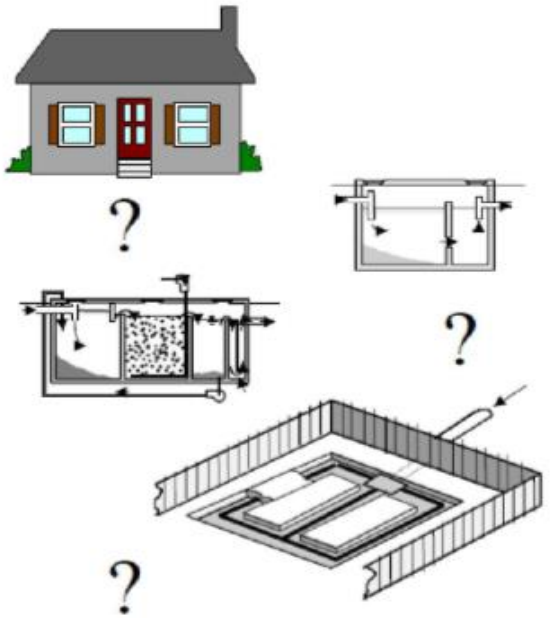
HELP PROTECT YOUR HEALTH AND THE ENVIRONMENT

Poorly maintained sewage management systems are a serious source of water pollution and may present health risks, cause odours and attract vermin and insects.

By looking after your management system you can do your part in helping to protect the environment and the health of you and your community.

For more information please contact:

Managing Wastewater In Your Backyard



Aerated Wastewater Treatment Systems (AWTS)

In unsewered areas, the proper treatment and utilisation of household wastewater on-site is critical in preserving the health of the public and the environment. AWTS have been developed as a way of achieving this.

What is an AWTS?

An AWTS is a purpose built system used for the treatment of sewage and liquid wastes from a single household or multiple dwellings.

It consists of a series of treatment chambers combined with an irrigation system. An AWTS enables people living in unsewered areas to treat and utilise their wastewater.

How does an AWTS work?

Wastewater from a household is treated in stages in several separate chambers. The first chamber is similar to a conventional septic tank. The wastewater enters the chamber where the solids settle to the bottom and are retained in the tank forming a sludge layer. Scum collects at the top, and the partially clarified wastewater flows into a second chamber. Here the wastewater is mixed with air to assist bacteria to further treat it. A third chamber allows additional clarification through the settling of solids, which are returned for further treatment to either the septic chamber (as shown) or to the aeration chamber. The clarified effluent is disinfected in another chamber (usually by chlorination) before irrigation can take place.

Bacteria in the first chamber break down the solid matter in the sludge and scum layers. Material that cannot be fully broken down gradually builds up in the chamber and must be pumped out periodically.

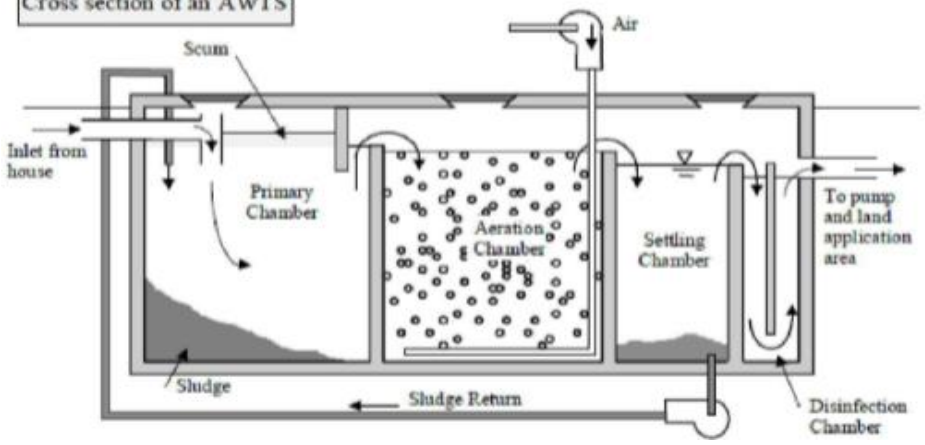
Regulations and recommendations

Local councils are primarily responsible for approving the smaller, domestic AWTSs in their area. The Environment Protection Authority (EPA) approves larger units, whilst the NSW Department of Health determines the design and structural requirements for all AWTSs.

At present AWTSs need to be serviced quarterly by an approved contractor at a cost to the owner. Local councils should also maintain a register of the servicing of each system within their area.

AWTSs should be fitted with an alarm having visual and audible components to indicate mechanical and electrical equipment malfunctions. The alarm should provide a signal adjacent to the alarm and at a relevant position inside the house. The alarm should incorporate a warning lamp which may only be reset by the service agent.

Cross section of an AWTS



Maintaining your AWTS

The effectiveness of the system will, in part, depend on how it is used and maintained. The following is a guide on good maintenance procedures that you should follow:

DO

- ✓ Have your AWTS inspected and serviced four times per year by an approved contractor. Assessment should be applicable to the system design.
- ✓ Have your system service include assessment of sludge and scum levels in all tanks, and performance of irrigation areas.
- ✓ Have all your tanks desludged at least every three years.
- ✓ Have your disinfection chamber inspected and tested quarterly to ensure correct disinfectant levels.
- ✓ Have your grease trap (if installed) cleaned out at least every two months.
- ✓ Keep a record of pumping, inspections, and other maintenance.
- ✓ Learn the location and layout of your AWTS and land application area.
- ✓ Use biodegradable liquid detergents such as concentrates with low sodium and phosphorous levels.
- ✓ Conserve water.

DON'T

- ✗ Don't put bleaches, disinfectants, whiteners, nappy soakers and spot removers in large quantities into your AWTS via the sink, washing machine or toilet.
- ✗ Don't allow any foreign materials such as nappies, sanitary napkins, condoms and other hygiene products to enter the system.
- ✗ Don't use more than the recommended amounts of detergents.
- ✗ Don't put fats and oils down the drain and keep food waste out of your system.
- ✗ Don't switch off power to the AWTS, even if you are going on holidays

Reducing water usage

Reducing water usage will lessen the likelihood of problems such as overloading with your AWTS. Overloading may result in wastewater backing up into your house, contamination of your yard with improperly treated effluent, and effluent from your system entering a nearby river, creek or dam.

Conservative water use around the house will reduce the amount of wastewater which is produced and needs to be treated.

Your AWTS is also unable to cope with large volumes of water such as several showers or loads of washing over a short period of time. You should try to avoid these 'shock loads' by ensuring water use is spread more evenly throughout the day and week.

Warning signs

You can look out for a few warning signs that signal to you that there are troubles with your AWTS. Ensure that these problems are attended to immediately to protect your health and the environment.

Look out for the following warning signs:

- Water that drains too slowly.
- Drain pipes that gurgle or make noises when air bubbles are forced back through the system.
- Sewage smells, this indicates a serious problem.
- Water backing up into your sink which may indicate that your system is already failing.
- Wastewater pooling over the land application area.
- Black coloured effluent in the aerated tank.
- Excess noise from the blower or pumping equipment.
- Poor vegetation growth in irrigated area.

Odour problems from a vent on the AWTS can be a result of slow or inadequate breakdown of solids. Call a technician to service the system.

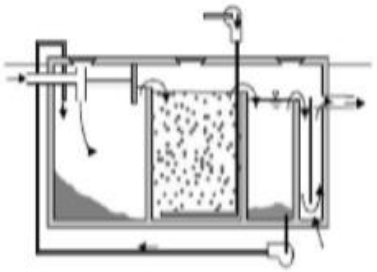
HELP PROTECT YOUR HEALTH AND THE ENVIRONMENT

Poorly maintained AWTSs are a serious source of water pollution and may present health risks, cause odours and attract vermin and insects.

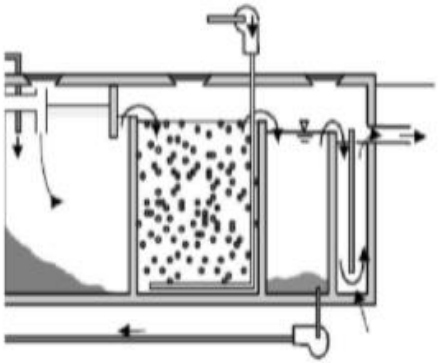
By looking after your treatment system you can do your part in helping to protect the environment and the health of you and your family.

If you would like more information please contact:

Your Aerated Wastewater Treatment System



Your Aerated /astewater Treatment System



- Black coloured effluent in the aerated tank.
- Excess noise from the blower or pumping equipment
- Poor vegetation growth in irrigated area.

LAND APPLICATION AREAS

The reuse of domestic wastewater on-site can be an economical and environmentally sound use of resources.

What are land application areas?

These are areas that allow treated domestic wastewater to be managed entirely on-site.

The area must be able to utilise the wastewater and treat any organic matter and wastes it may contain. The wastewater is rich in nutrients, and can provide excellent nourishment for flower gardens, lawns, certain shrubs and trees. The vegetation should be suitably tolerant of high water and nutrient loads.

How does a land application area work?

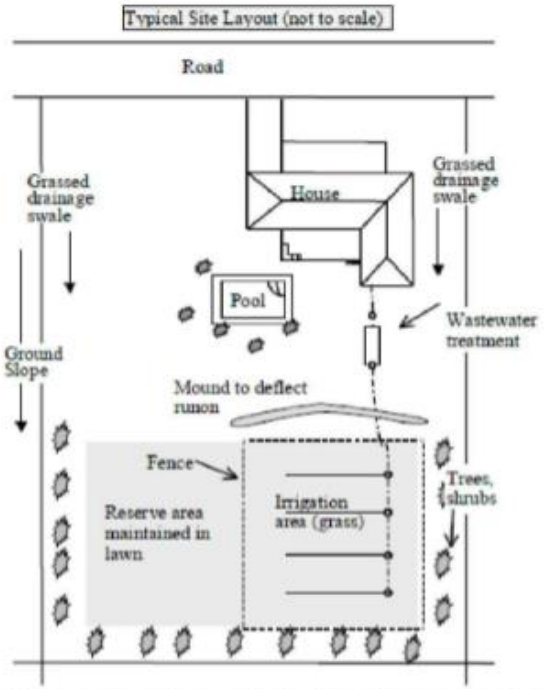
Treated wastewater applied to a land application area may be utilised or simply disposed, depending on the type of application system that is used. The application of the wastewater can be through a soil absorption system (based on disposal) or through an irrigation system (based on utilisation).

Soil absorption systems do not require highly treated effluent, and wastewater treated by a septic tank is reasonable as the solids content in the effluent has been reduced. Absorption systems release the effluent into the soil at a depth that cannot be reached by the roots of most small shrubs and grasses. They rely mainly on the processes of soil treatment and then transmission to the water table, with minimal evaporation and up-take by plants. **These systems are not recommended in sensitive areas as they may lead to contamination of surface water and groundwater.**

Irrigation systems may be classed as either subsurface or surface irrigation. If an irrigation system is to be used, wastewater needs to be pre-treated to at least the quality produced by an aerated wastewater treatment system (AWTS).

Subsurface irrigation requires highly treated effluent that is introduced into the soil close to the surface. The effluent is utilised mainly by plants and evaporation.

Surface irrigation requires highly treated effluent that has undergone aeration and disinfection treatments, so as to reduce the possibility of bacteria and virus contamination.



The effluent is then applied to the land area through a series of drip, trickle, or spray points which are designed to eliminate airborne drift and run-off into neighbouring properties.

There are some public health and environmental concerns about surface irrigation. There is the risk of contact with treated effluent and the potential for surface run-off. Given these problems, subsurface irrigation is arguably the safest, most efficient and effective method of effluent utilisation.

Regulations and recommendations

The design and installation of land application areas should only be carried out by suitably qualified or experienced people, and only after a site and soil evaluation is done by a soil scientist. Care should be taken to ensure correct buffer distances are left between the application area and bores, waterways, buildings, and neighbouring properties.

Heavy fines may be imposed under the Clean Waters Act if effluent is managed improperly.

At least two warning signs should be installed along the boundary of a land application area. The signs should comprise of 20mm high Series C lettering in black or white on a green background with the words:

RECLAIMED EFFLUENT
NOT FOR DRINKING
AVOID CONTACT

Depending on the requirements of your local council, wet weather storage and soil moisture sensors may need to be installed to ensure that effluent is only irrigated when the soil is not saturated.

Regular checks should be undertaken of any mechanical equipment to ensure that it is operating correctly. Local councils may require periodic analysis of soil or groundwater characteristics

Humans and animals should be excluded from land application areas during and immediately after the application of treated wastewater. The longer the period of exclusion from an area, the lower the risk to public health.

The householder is required to enter into a service contract with the installation company, its agent or the manufacturer of their sewage management system, this will ensure that the system operates efficiently.

Location of the application area

Treated wastewater has the potential to have negative impacts on public health and the environment. For this reason the application area must be located in accordance with the results of a site evaluation, and approved landscaping must be completed prior to occupation of the building. Sandy soil and clayey soils may present special problems.

The system must allow even distribution of treated wastewater over the land application area.

Maintaining your land application area

The effectiveness of the application area is governed by the activities of the owner.

DO

- ✓ Construct and maintain diversion drains around the top side of the application area to divert surface water.
- ✓ Ensure that your application area is kept level by filling any depressions with good quality top soil (not clay).
- ✓ Keep the grass regularly mowed and plant small trees around the perimeter to aid absorption and transpiration of the effluent.
- ✓ Ensure that any run off from the roof, driveway and other impermeable surfaces is directed away from the application area.
- ✓ Fence irrigation areas.
- ✓ Ensure appropriate warning signs are visible at all times in the vicinity of a spray irrigation area.
- ✓ Have your irrigation system checked by the service agent when they are carrying out service on the treatment system.

DON'T

- ✗ Don't erect any structures, construct paths, graze animals or drive over the land application area.
- ✗ Don't plant large trees that shade the land application area, as the area needs sunlight to aid in the evaporation and transpiration of the effluent.
- ✗ Don't plant trees or shrubs near or on house drains.
- ✗ Don't alter stormwater lines to discharge into or near the land application area.
- ✗ Don't flood the land application area through the use of hoses or sprinklers.
- ✗ Don't let children or pets play on land application areas.
- ✗ Don't water fruit and vegetables with the effluent.
- ✗ Don't extract untreated groundwater for potable use.

Warning signs

Regular visual checking of the system will ensure that problems are located and fixed early.

The visual signs of system failure include:

- ⚠ surface ponding and run-off of treated wastewater
- ⚠ soil quality deterioration
- ⚠ poor vegetation growth
- ⚠ unusual odours

Volume of water

Land application areas and systems for on-site application are designed and constructed in anticipation of the volume of waste to be discharged. Uncontrolled use of water may lead to poorly treated effluent being released from the system.

If the land application area is waterlogged and soggy the following are possible reasons:

- Λ Overloading the treatment system with wastewater.
- Λ The clogging of the trench with solids not trapped by the septic tank. The tank may require desludging.
- Λ The application area has been poorly designed.
- Λ Stormwater is running onto the area.

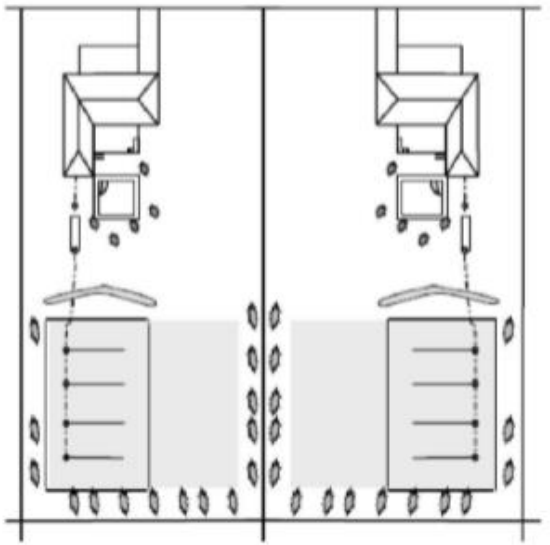
HELP PROTECT YOUR HEALTH AND THE ENVIRONMENT

Poorly maintained land application areas are a serious source of water pollution and may present health risks, cause odours and attract vermin and insects.

By looking after your sewage management system you can do your part in helping to protect the environment and the health of you and your family.

For more information please contact:

Your Land Application Area



Appendix D – Laboratory Results

CERTIFICATE OF ANALYSIS

Work Order	: **EW2304064**	Page	: 1 of 3
Client	: **GSL Environmental**	Laboratory	: Environmental Division NSW South Coast
Contact	: Simon Doberer	Contact	: Aneta Prosaroski
Address	: 71 Moona Creek Road Vincentia	Address	: 1/19 Ralph Black Dr, North Wollongong 2500 NSW Australia
Telephone	: ----	Telephone	: 02 42253125
Project	: Woerdens Road, CLARENCE TOWN	Date Samples Received	: 11-Sep-2023 15:00
Order number	: 102323	Date Analysis Commenced	: 15-Sep-2023
C-O-C number	: ----	Issue Date	: 21-Sep-2023 11:36
Sampler	: Client - Simon Doberer		
Site	: ----		
Quote number	: SY/175/20		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- **Analytical work for this work order will be conducted at ALS Sydney.**
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP1	----	----	----	----
				Sampling date / time	08-Sep-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EW2304064-001	--------	--------	--------	--------
					Result	----	----	----	----
EA002: pH 1:5 (Soils)									
pH Value	----	0.1	pH Unit		**6.0**	----	----	----	----
EA010: Conductivity (1:5)									
Electrical Conductivity @ 25°C	----	1	µS/cm		**15**	----	----	----	----
ED007: Exchangeable Cations									
Exchangeable Calcium	----	0.1	meq/100g		**3.5**	----	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g		**1.7**	----	----	----	----
Exchangeable Potassium	----	0.1	meq/100g		**0.2**	----	----	----	----
Exchangeable Sodium	----	0.1	meq/100g		**0.3**	----	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g		**5.8**	----	----	----	----
Exchangeable Sodium Percent	----	0.1	%		**4.7**	----	----	----	----
EK072: Phosphate Sorption Capacity									
Phosphate Sorption Capacity	----	250	mg P sorbed/kg		**1000**	----	----	----	----

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(SOIL) EA010: Conductivity (1:5)

(SOIL) EA002: pH 1:5 (Soils)

(SOIL) EK072: Phosphate Sorption Capacity

(SOIL) ED007: Exchangeable Cations

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 2a Sydney Road Mt Chalmers QLD 4680 Ph: 07 [illegible] E: [illegible]@alsglobal.com
MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
NEWCASTLE 5/585 Maitland Road Mayfield West Ph: 02 [illegible] E: samples.[illegible]@alsglobal.com
NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com
TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
WOLLONGONG 99 Kenny Street Wollongong NSW 2 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: GSL Environmental	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics) ☐ Standard TAT **(List due date):** ☐ Non Standard or urgent TAT **(List due date):**	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: 71 Moona Creek Road, VINCENTIA		Custody Seal Intact? Yes No N/A
PROJECT: Woerdens Road, CLARENCE TOWN	**ALS QUOTE NO.:** SY/175/20	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER: 102323	**COC SEQUENCE NUMBER (Circle)** COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: 19.9 °C
PROJECT MANAGER: Simon Doberer	**CONTACT PH:** 0416935868	Other comment:
SAMPLER: Simon Doberer	**SAMPLER MOBILE:** 0416935868	
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):**	
Email Reports to (will default to PM if no other addresses are listed): **gslenvironmental@outlook.com**		
Email Invoice to (will default to PM if no other addresses are listed): **gslenvironmental@outlook.com**		

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Simon Doberer			
DATE/TIME: 11/09/2023	DATE/TIME: 11/9/23 1500	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL CONTAINERS	IN-4S	ED007	EK072 (P Sorption Capacity)							Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	TP1	8/09/2023	s		1	1	1	1							
				TOTAL	1	1	1	1							

Environmental Division Wollongong
Work Order Reference
EW2304064

Telephone : 02 42253125

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Pl[illegible]; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric [illegible]; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Appendix E – Absorption Bed Schematics