



Building Construction in Bush Fire Prone Areas

Bushfire Hazard Assessment Report

Ref No. 24.05.173

Address Lot 1 DP 611738
171-187 Warral Road
West Tamworth
NSW 2560

For Stimson Advisory

The site was inspected on 2nd August 2024

Report Preparation

Craig Burley AFSM

Grad Dip Design for Bushfire Prone Areas
FPAA Certified BPAD -Level 3 Practitioner



1.0 Introduction

We have been engaged by Stimson Advisory on behalf of the owner of the subject land to prepare a Bushfire Hazard Assessment Report to be a supplement for inclusion in a development application to Tamworth City Council for the proposed development being the establishment of a Manufactured Home Estate on the subject allotment.

The site has been identified as being bushfire prone land and therefore the legislative requirements for the proposed development are applicable.

The NSW Guideline document *Planning for Bush Fire Protection (PBP)* 2019 details that this style of development shall be treated as a Special Fire Protection Purpose (SFPP) development which then requires the issuance of a Bush Fire Safety Authority (BFSA) from the NSW RFS and states the following;

Manufactured home estates can be built to achieve all levels of construction under the National Construction Code. However, SEPP 36 - Manufactured Home Estates does not require a separate development consent for each manufactured home after development consent is given for the estate.

Due to the nature of manufactured home estates there is no mechanism that within the development consent process to ensure that dwellings will be constructed to the standards applied within AS 3959 or NASH Standard. Therefore, the acceptable solutions for manufactured housing is the provision of an Asset Protection Zone (APZ) which achieves 10 kW/m² commensurate with SFPP development in line with Table A1.12.1 of PBP 2019.

Where evidence can be provided which conforms that dwellings within the manufactured home estate will be constructed to the appropriate construction standards under AS 3959 or NASH Standard, an APZ can be provided which meets 29kW/m² in line with Tables A1.12.2 – A1.12.3.

Therefore, *Planning for Bush Fire Protection* 2019 offers two pathways of acceptable solutions to achieve compliance for this style of development. In this instance the development pathway chosen has been to provide asset protection zones in accordance with Table A1.12.3 and also determine that all dwellings within the manufactured home estate shall be constructed to comply with BAL 29 of AS3959 2018 *Construction of buildings in bushfire prone areas*.

Each of the other PBP 2019 heads of consideration for Access and Egress, Service Supplies and Emergency Management will achieve compliance to *Planning for Bush Fire Protection* 2019 by the incorporation of the current layout and design as shown the supplied plans and the recommendations as contained within this report.

Therefore this assessment concludes that the proposal will fully comply with the requirements of *Planning for Bush Fire Protection* 2019.

1.1 Purpose of Report

- To determine the vegetation type, the expected fire behaviour and the threat to the proposal
- To assess the proposal with reference to *Planning for Bush Fire Protection* 2019 and AS 3959-2018 *Construction of buildings in bushfire prone areas*
- To identify any other such measures as to improve the chances of building and occupant survival during a bushfire event
- To provide information with respect to bushfire related matters for the development that will assist the Commissioner of the NSW Rural Fire Service for the issuance of a Bushfire Safety Authority
- To assist the consent authority Tamworth City Council in the determination of the development application subject to this proposal.

1.2 Scope of Report

The scope of this report is limited to the Bushfire Hazard Assessment for the proposed development and only contains comments for the subject property. Where reference is made to adjacent or adjoining lands, this report does not purport to assess those lands; rather it may discuss bushfire progression on and through those lands with the possible bushfire impact to the subject property and the proposed development.

1.3 Methodology

A site inspection for the purpose of assessing bushfire related matters affecting this site was conducted on the 2nd August 2024 and a review of the proposed development plans as prepared by High Definition West Pty Ltd has taken place.

An assessment of slope was conducted out to a distance of 100 metres and assessment of vegetation to a distance of 140 metres from the proposed development.

The findings were related and assessed with reference to *Planning for Bush Fire Protection* 2019 for the formulation of the Bushfire Hazard Assessment together with AS 3959-2018 *Construction of buildings in bushfire prone areas*.

This report has been prepared in accordance with the requirements of Clause 45 of the *Rural Fire Service Regulation 2008* for the purpose of satisfying the requirements of section 100b of the *Rural Fires Act 1997*.

The proposal being an integrated development will require the issuance of a Bushfire Safety Authority by the Commissioner of the NSW Rural Fire Service under the provisions of section 100b *Rural Fire Act 1997*.

1.4 The Proposal

The proposal as indicated by consultation with Stimson Advisory and perusal of the plans supplied is for the establishment and construction of the Manufactured Home Estate on the subject allotment.

The Estate will provide for 158 lots for residential dwellings with an internal road system and service supplies for electricity and potable water.

Additionally, the Estate will provide a Community Facilities building.

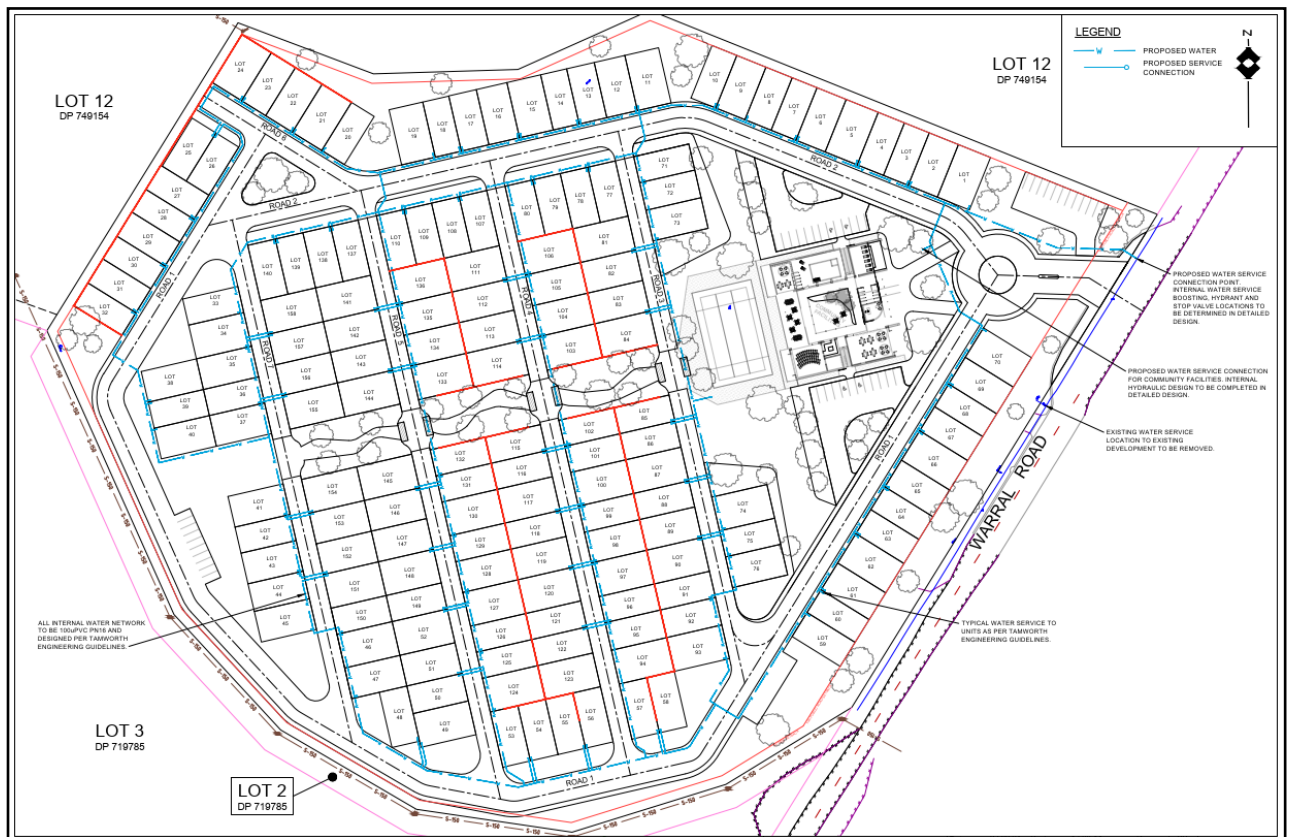


Figure 1; Extract of proposed development plans ex High Definition West Pty Ltd

2.0 Site and Adjacent Developments

The following seeks to describe the site, the adjoining lands and land uses effective upon the development proposal.

2.1 Site Description

The site is identified as; Lot 1 DP 611738

171-187 Warral Road

West Tamworth NSW 2340

LGA Tamworth City Council

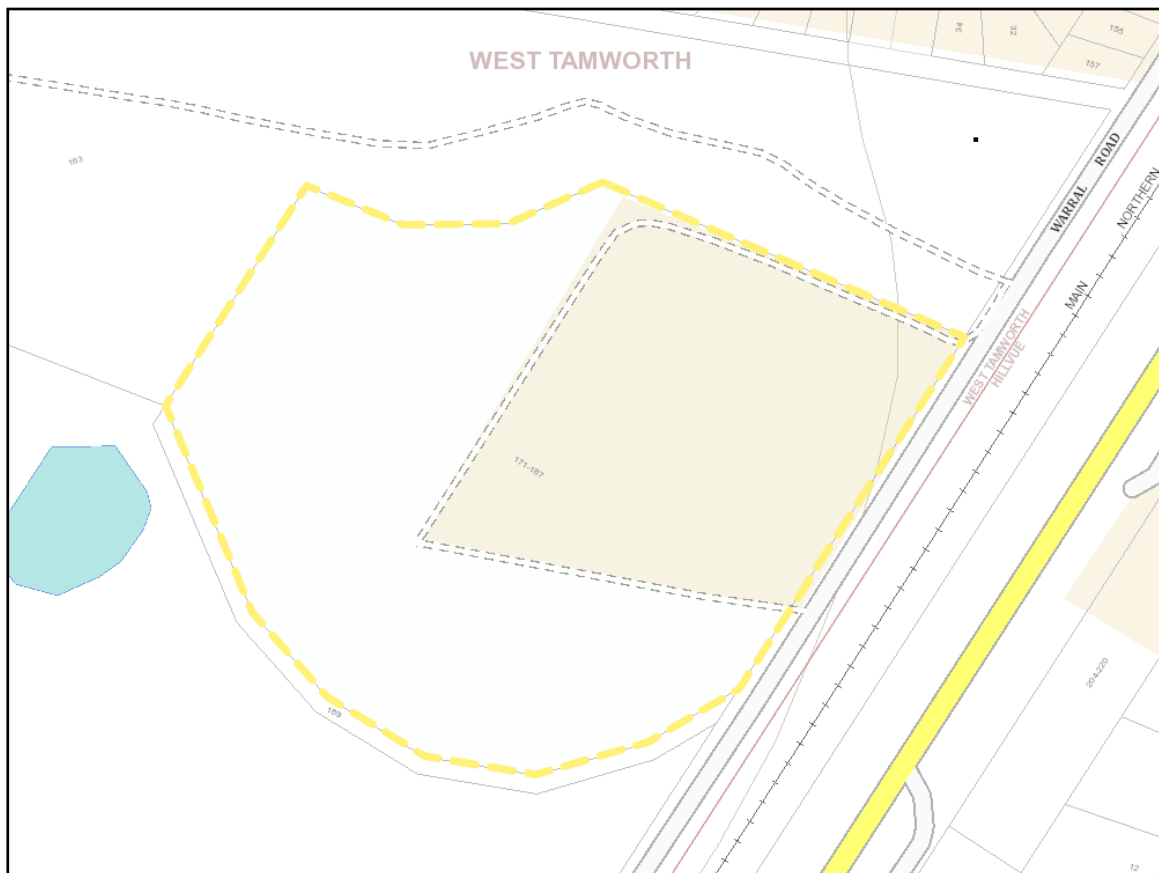


Figure 1: Address validation ex NSW Planning Portal

The subject allotment was created prior to the subdivisional requirements contained within *Planning for Bush Fire Protection* 2019 and was previously used for education purposes.

The site is an allotment of approximately 6.17 hectares located on the north western side of Warral Road. The area in which the proposal is located is just beyond the current extent of residential development associated with the south western section of the city of Tamworth.

The subject allotment is located within an area that should be considered as having a limited interface to a section of grassfire hazardous vegetation adjacent to the south western area of the development site.

The subject allotment is positioned upon the very slight westerly aspect slopes over the near level terrain typical for this area of West Tamworth.

The parcel of land is slightly irregular in shape with the south eastern boundary forming road frontage and vehicle access for the development site.

At present the site has no structural improvements and the previous use education facility buildings appear to be currently being dismantled and removed.

In terms of vegetation the subject allotment presently does contain an area of grassfire hazardous vegetation across the western and southern sections of the site although this will be removed as a consequence of the proposed development.

The site is shown upon the Tamworth Bushfire Prone Land Map (Figure 2) to be only very marginally within category 3 vegetation buffer zone (shown yellow). The site inspection and interpretation of aerial photography for the site and having consideration for previous and future site management confirms that the subject allotment is reasonably depicted upon this image.

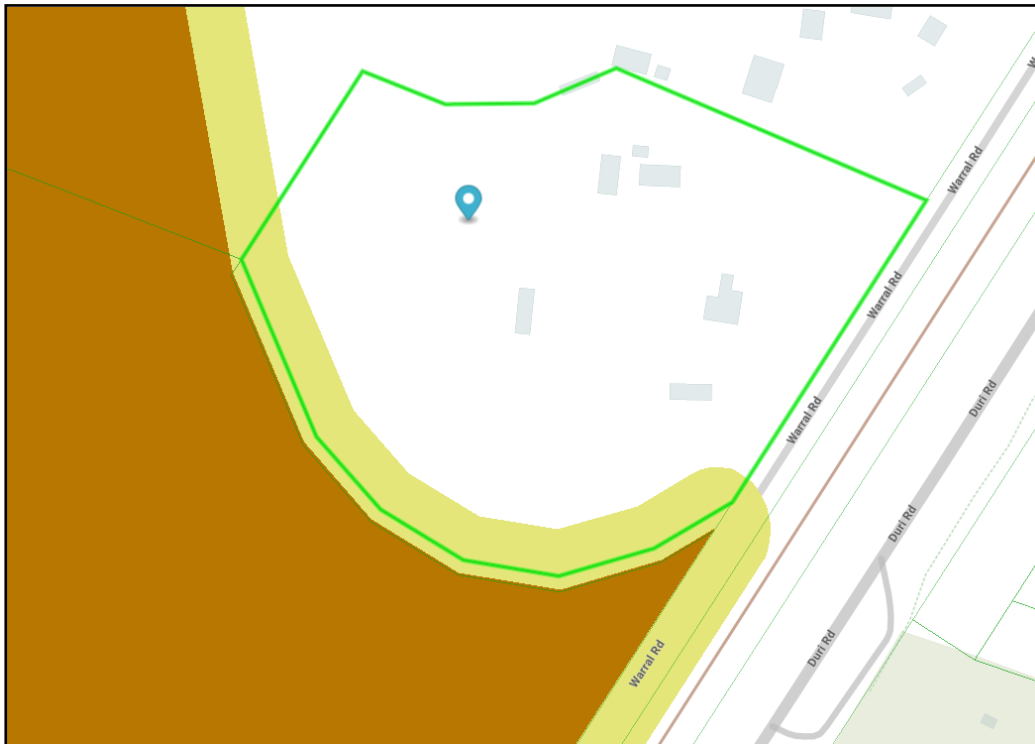


Figure 2; Section Tamworth LGA Bushfire Prone Land Map ex Mosaic by Mecone

Provision of mains reticulated water supply, electricity and phone is available to the proposal by existing infrastructure.

2.2 Description of Adjoining Lands

To the north of the subject allotment is a section of land which appears to be used for a truck depot. This land is well maintained and perusal of current and historical aerial imagery shows regular mowing of the entire area of the site adjacent to the northern and north western boundaries of the development site. It is worth noting that the Tamworth Bush Fire Prone Land Map also confirms that these lands should be considered to be managed lands.

To the east of the subject allotment are the parallel carriageways of Warral Road and Duri Road. Beyond these roadways are managed lands associated with existing residential development.

To the south and southwest of the development site is a large and expansive area of open grasslands which represents the only area of grassfire hazardous vegetation effective on the proposed development.

There are no areas of bushfire hazardous vegetation effective on the proposed development.



Figure 4; Subject allotment and adjoining lands ex Nearmap

2.3 Classification of Vegetation and Separation Distance from Proposed Development

The bushfire hazard assessment was conducted for the proposed development, using the procedures as outlined in *Planning for Bush Fire Protection* 2019 to determine the bushfire attack level (BAL) likely upon the development.

The assessment was conducted on the assumption of the building footprints being positioned as described in section 1.4 The Proposal of this report and the site plan.



Figure 5; Vegetation study area  140 metre radius - Image ex Nearmap

Grassland 

To the south and southwest of the subject allotment (Area A) is an area of effective grassfire hazardous vegetation and this area should be classified as being a vegetation formation of Grassland with a minimum separation distance of 11 metres to be provided to any proposed residential lot.

2.4 Slope assessment

The slope was assessed for a distance of 100 meters within the bushfire hazardous vegetation and reference to slope classifications has been undertaken considering the procedure specified within *Planning for Bush Fire Protection 2019*.

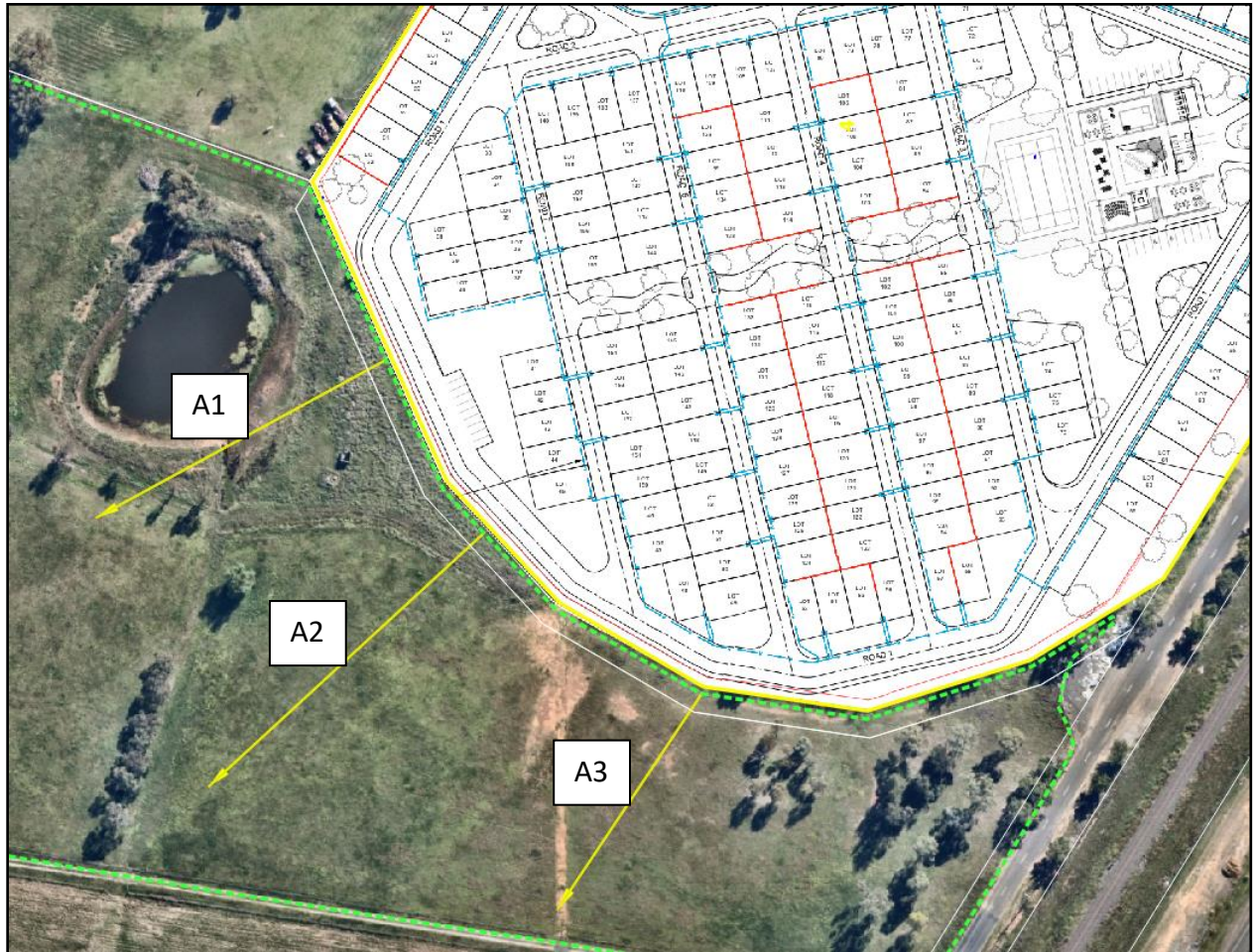


Figure 6; Slope assessment study area contour data ex Geoscience Australia

- Area A1 – Grassland - > 0 to 5 degrees downslope (assumed) (elevation 0.88 met / dist. 99.93 met = 0.51 degrees)
- Area A2 – Grassland - > 0 to 5 degrees downslope (assumed) (elevation 0.34 met / dist. 112.69 met = 0.17 degrees)
- Area A3 – Grassland - > 0 to 5 degrees downslope (assumed) (elevation 0.21 met / dist. 78.29 met = 0.15 degrees)

2.5 Bushfire Attack Summary

The basis of the previously noted vegetation hazard being a section of Grassland with an effective downslope of > 0 to 5 degrees to achieve a maximum exposure of Bushfire Attack Level (BAL) 29 as per Table A1.12.3 (Fire Danger Index 80) of *Planning for Bush Fire Protection* 2019 a separation distance of 11 metres or greater is required to achieve compliance to the relative acceptable solution of that document.

As is shown within Figure 7 below this is easily achieved for the entire development site.

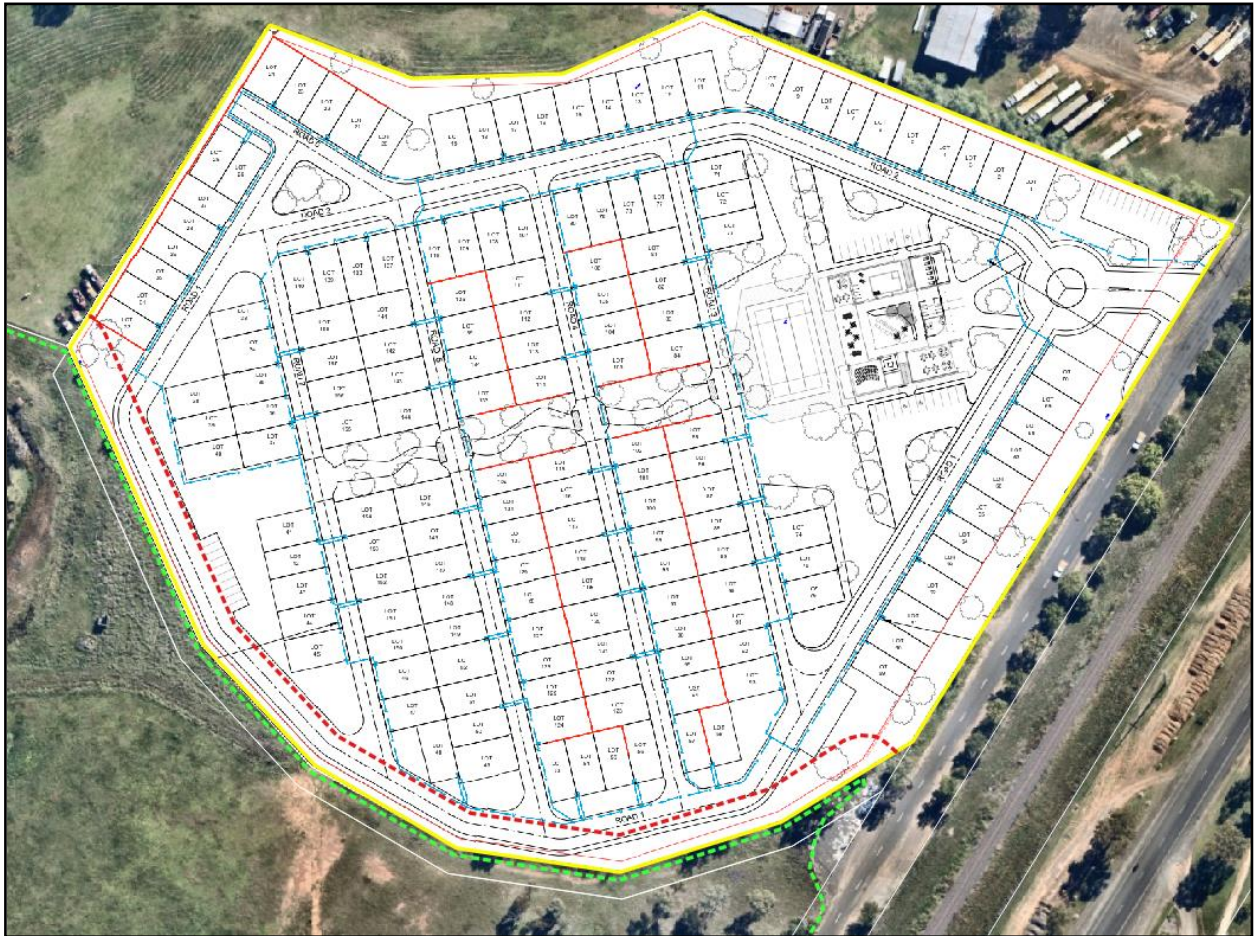


Figure 7; Bushfire Attack Level (BAL) 29 Threshold

2.6 Environmental Considerations

Consultation with the project management team has indicated that there are no significant environmental features, threatened species or aboriginal sites known to exist on the subject site.

This allotment has been previously completely developed for educational purposes and it is assumed that any environmental constraints have been already suitably assessed. It is also my opinion that the bushfire protection measures as recommended within this report will have little or no adverse environmental effect.

3.0 Bushfire Assessment

3.1 The extent to which the development is to provide for setbacks, including Asset Protection Zones

The proposed development can fully provide suitable asset protection zones within the site boundaries and by consideration of clearly managed lands within the adjoining roads.

The site is located within the Tamworth local government area, in the Northern Slopes Fire Weather area, and is subject to an FDI rating of 80.

Based upon the provisions of *Planning for Bush Fire Protection* 2019 Table A12.3 the asset protection zone required to be provided between the vegetation hazard and a potential dwelling building footprints of the Manufactured Home Estate is 11 metres.

This is based upon the classification of the vegetation formation on the land to the east and south within previously identified area as being a Woodland.

The objective of *Planning for Bush Fire Protection* 2019 asset protection zones is to not have any potential building envelop exposed to greater than 29kW/m^2 of radiant heat and this threshold as previously determined and within illustrated within Figure 7 of this report demonstrates compliance with this objective.

To ensure that future vegetation hazard is not able to occur this report will recommend that the entire area of the development site should be in accordance with the requirements of the NSW Rural Fire Service document entitled *Standards for Asset Protection Zones* (2005) for an inner protection area. This will satisfy the relevant acceptable solutions of *Planning for Bush Fire Protection* 2019.

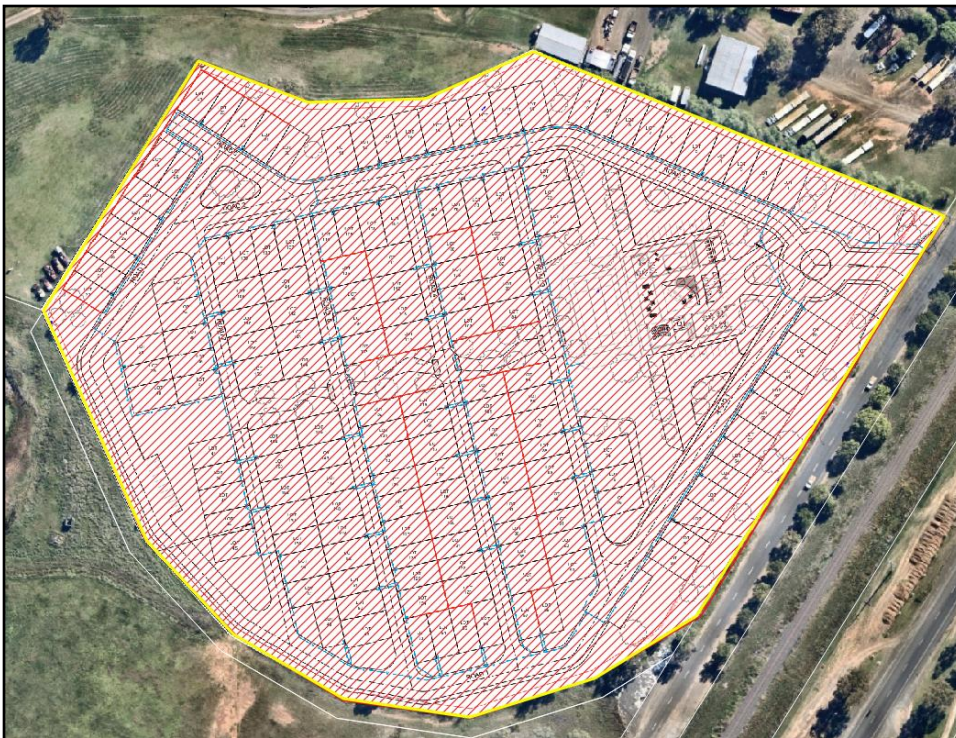


Figure 8; Recommended Asset Protection Zone



The following are the requirements for asset protection zone inner protection areas as described within the documents *Planning for Bush Fire Protection* 2019 and NSW RFS Standards for Asset Protection Zones.

Inner Protection Area (IPA)

The IPA is the area closest to the building and creates a fuel management area which can minimise the impact of direct flame contact and radiant heat on the development and act as a defendable space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 10cm in height and be discontinuous.

In practical terms the IPA is typically the curtilage around the building consisting of a mown lawn and well-maintained gardens.

When establishing and maintaining in IPA the following requirements apply;

Trees

- tree canopy cover should be listed 15% at maturity;
- trees at maturity should not touch your overhang the building;
- lower limbs should be removed to a height of two metres above the ground;
- preference should be given to smooth bark and Evergreen trees

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards the buildings;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover; and
- clumps of shrubs should be separated from exposed windows and doors by distance of at least twice the height of the vegetation.

Grass

- grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
- leaves vegetation debris should be removed

The creation and continued maintenance of the full asset protection zone is one of the primary factors in bushfire protection measures for developments in bushfire prone areas.

3.2 Fire Fighting Water Supply and other Services

3.2.1 Water

The objective of *Planning for Bush Fire Protection* 2019 with regards to the supply of water is to ensure provision of adequate water supplies for the protection of buildings during and after the passage of a bushfire.

In particular for reticulated water supply areas such is the case of this proposed development section 6.3.3 of *Planning for Bush fire Protection* 2019 sets out the performance criteria and acceptable solutions.

The performance criteria for reticulated water supply areas are that water supplies are easily accessible and located at regular intervals.

The acceptable solutions are as follows:

- Reticulated water supply to SFPPs uses a ring main system for areas with a perimeter road.
- Fire hydrant spacing, sizing and pressures comply with AS 2419.1-2005.
- Hydrants are not located within any road carriageway.
- All above ground water and gas service pipes external to the building are metal, including and up to any taps.
- The provisions of parking on public roads area met.

This section of West Tamworth is serviced by a mains reticulated water system and the site inspection observed a system of road side hydrants within the footpath area directly adjacent to the south eastern boundary of Warral Road.

The plans supplied for the proposed development indicate that water supply will be provided with internal water service boosting, hydrants and stop valve locations to be determined by future detailed design to each of the lots and located adjacent to each of the internal roads.

This report will recommend that the water supply is installed in accordance with section 6.3.3 of Planning for Bush Fire Protection 2019

3.2.2 Electricity

The objective of *Planning for Bush Fire Protection* 2019 with regards to the supply of electricity is to ensure that the infrastructure for this service does not contribute to the risk of fire to buildings.

With respect of SFPPs section 6.3.3 of *Planning for Bush Fire Protection* 2019 sets out the performance criteria and acceptable solutions.

The performance criteria for the supply of electricity is that *location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings.*

The following outlines the acceptable solutions so as to satisfy the performance criteria:

- *Where practical, electrical transmission Lines are underground.*
- *Where overhead electrical transmission lines are proposed:*
 - *lines are installed with a short pole spacing (30 metres)*
 - *no part of a tree is closer to a power line than the distance set out in accordance with the specifications in "Vegetation Safety Clearances" issued by Energy Australia (NS 179, April 2002).*

This report recommends that the supply of electricity is by underground cabling, and this satisfies the requirements of *Planning for Bush Fire Protection* 2019.

3.2.3 Gas

The objective of *Planning for Bush Fire Protection* 2019 with regards to the supply of gas is to ensure that the infrastructure for this service does not contribute to the risk of fire to buildings.

With respect of SFPPs section 6.3.3 of *Planning for Bush Fire Protection* 2019 sets out the performance criteria and acceptable solutions.

The performance criteria for the supply of gas is that *the location of gas services will not lead to ignition of surrounding bush land or the fabric of the buildings.*

The following outlines the acceptable solutions so as to satisfy the performance criteria:

- *Reticulated or bottled gas is installed and maintained in accordance with AS 1596-2014 and the requirements of relevant authorities. Metal piping is to be used.*
- *All fixed LPG tanks are kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side of the installation.*
- *Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used.*
- *Above ground gas service pipes are metal, including and up to any outlets*

The detail of any gas supply installation was not available at the time of formulating this report however this document will recommend that any gas supply installation to the proposed development must be such as to satisfy the performance criteria of section 6.3.3 of *Planning for Bush Fire Protection* 2019.

3.3 Public Road Capacity to Handle Increased Traffic Volume

The objective of *Planning for Bush Fire Protection* 2019 with regards the provision of public roads is to ensure safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area.

Perusal of the development plans indicates that no construction of public roads is proposed. A study of the existing road system within the general area of the development indicates that compliance to the above noted criteria of *Planning for Bush Fire Protection* 2019 is achieved.

However, a system of internal roads is proposed to service the Estate and perusal of the layout and design indicates that compliance to section 6.8.2 Access is achievable and broadly demonstrated on the supplied plans although ultimately detailed engineering plans will be required.

This report will recommend that the access roads within the development must comply with section 6.8.3 of *Planning for Bush Fire Protection* 2019.

3.4 Public Road Links to Fire Trail Network and Two Way Access

The objective of a dedicated fire trail system is to assist fire fighters in either offensive or defensive fire fighting. In addition, a fire trail may be incorporated into a development to define the asset protection zone and to provide access for maintenance.

In this instance there is no system of fire trails shown on the development plans.

Given that the internal roads access is achievable to all perimeters of the bushfire hazardous vegetation area, a dedicated fire trail is not required.

3.5 Adequacy of Access and Egress from the Development Site for Emergency Response

The proposed development is located approximately 5.7 kilometres to the northwest of the South Tamworth Fire and Rescue NSW Brigade Station.

The system of public roads to the site should be adequate under most conditions to allow for access and egress for the site for emergency service vehicles.

3.6 Adequacy of Bushfire Maintenance Plans and Fire Emergency Procedures for the Development Site

No detail of any bushfire maintenance plan or fire emergency procedures has been provided by the proponents with respect of these matters.

Intent of measures ex PBP 2019; to provide suitable emergency and evacuation arrangements for occupants of such developments.

- Bushfire Emergency Management and evacuation plan is prepared consistent with the following;
- The New South Wales RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan;
- The Bushfire Emergency Management and Evacuation Plan should include planning for the early relocation of occupants; and
- A copy of the Bush Fire Emergency Management and evacuation plan should be provided to the Local Emergency Management Committee (LEMC) for its information prior to occupation of the development.

This report will recommend that to achieve compliance to the above the proposed development prior to occupation will satisfy section of 6.8.4 of Planning for Bush Fire Protection 2019

3.7 Construction Standards for Building Elements in the Development

Given that the proposed development approval pathway as discussed previously all dwellings and estate facility buildings should therefore be designed and constructed to the requirements of AS 3959-2018 and must be constructed to comply with section 3 Construction General and section 7 BAL 29 of such standard apart from as varied to comply with section 7.5.2 Additional Construction Requirements of *Planning for Bushfire Protection* 2019.

3.8 Adequacy of Sprinkler Systems and other Fire Protection Measures to be Incorporated

No additional bushfire protection measures or external bushfire sprinkler systems are recommended for this development apart from those previously nominated in this report and listed within the recommendations section of this report.

4.0 Assessment of the extent to which the development conforms or deviates from Chapter 5 of *Planning for Bush Fire Protection* 2019

The details provided in Section 4 of this assessment outline the relationship between the proposed new subdivision and the specifications set out in Chapter 6 of *Planning for Bush Fire Protection* 2019.

4.1 Asset Protection Zones

The asset protection zones will satisfy the acceptable solutions of *Planning for Bush Fire Protection* 2019 with the incorporation of the recommendations of this report.

4.2 Access

The access to the subject development site is by a system of internal roads and this report contains recommendations to satisfy the acceptable solutions of *Planning for Bush Fire Protection* 2019.

4.3 Water supply, electricity and gas

The supply of water, electricity and gas will satisfy the acceptable solutions of *Planning for Bush Fire Protection* 2019 with the incorporation of the recommendations of this report.

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4.4 Emergency Management

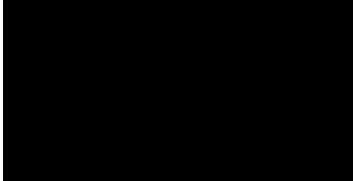
The proposed development will need to develop Emergency Management procedures that will satisfy the acceptable solutions of *Planning for Bush Fire Protection* 2019 and this is a recommendations of this report.

5.0 Recommendations

1. That the entire site of the development site where not built upon shall have the vegetation reduced where or if necessary to satisfy the requirements of *Planning for Bush Fire Protection* 2019 and the NSW Rural Fire Service document “Standards for Asset Protection Zones” for an inner protection area of an asset protection zone and this area shall be maintained at this vegetation level for the lifetime of the development.
2. That the proposed dwellings and estate buildings shall be constructed to a minimum standard of section 3 Construction General and section 7 BAL 29 of AS3959-2018 *Construction of buildings in bushfire prone areas* with the exception that the construction requirements shall be varied to comply with the requirements of section 7.5.2 of *Planning for Bush Fire Protection* 2019.
3. That the supply of water, electricity and gas to the proposed development is undertaken in accordance with section 6.8.3 of *Planning for Bush Fire Protection* 2019.
4. That the construction of all internal roads to the proposed development is undertaken in accordance with section 6.8.2 of *Planning for Bush Fire Protection* 2019.
5. That Emergency Management arrangements for the proposed development is undertaken in accordance with section 6.8.4 of *Planning for Bush Fire Protection* 2019.

6.0 Conclusion

Based upon the Bushfire Hazard Assessment Report for the proposed development of the subject allotment, this report concludes that scope of works as described by the development plans prepared by High Definition West Pty Ltd and by consultation with the project management team, this development can comply to the requirements of *Planning for Bush Fire Protection 2019* as required under section 100b of the *Rural Fires Act 1997* with the inclusion of the 5 recommendations contained within this report.



Craig Burley AFSM

Grad.Dip. Building in Bushfire Prone Areas (UWS)

FPA Australia Certified Level 3 - Practitioner Bushfire Planning and Design

Caveat

Quote from Planning for Bushfire Protection 2001, *'not withstanding the precautions adopted, it should always be remembered that bushfire burn under a wide range of conditions and an element of risk, no matter how small always remains.'*

Quote from Standards Australia, *'Although the standard is designed to improve the performance of such buildings, there can be no guarantee, because of the variable nature of bushfires, that any one building will withstand bushfire attack on every occasion.'*

References

Planning for Bushfire Protection 2019 Planning NSW in conjunction with NSW Rural Fire Service

Building Code of Australia Volume 2 2005 Australian Building Codes Board

AS 3959 – 1999 Construction of buildings in bushfire prone areas Standards Australia & Australian Building Codes Board

Landscape and building Design for Bushfire Areas Ramsay C. & Rudolph L. CSIRO 2003

Quantifying bushfire penetration into urban areas in Australia Keping Chan & McAneny J. Geophysical Research Letters, Volume 31, L12212, doi:10.1029/2004GL020244,2004

Bushfires in Australia Luke R.H. & McArthur CSIRO 1978

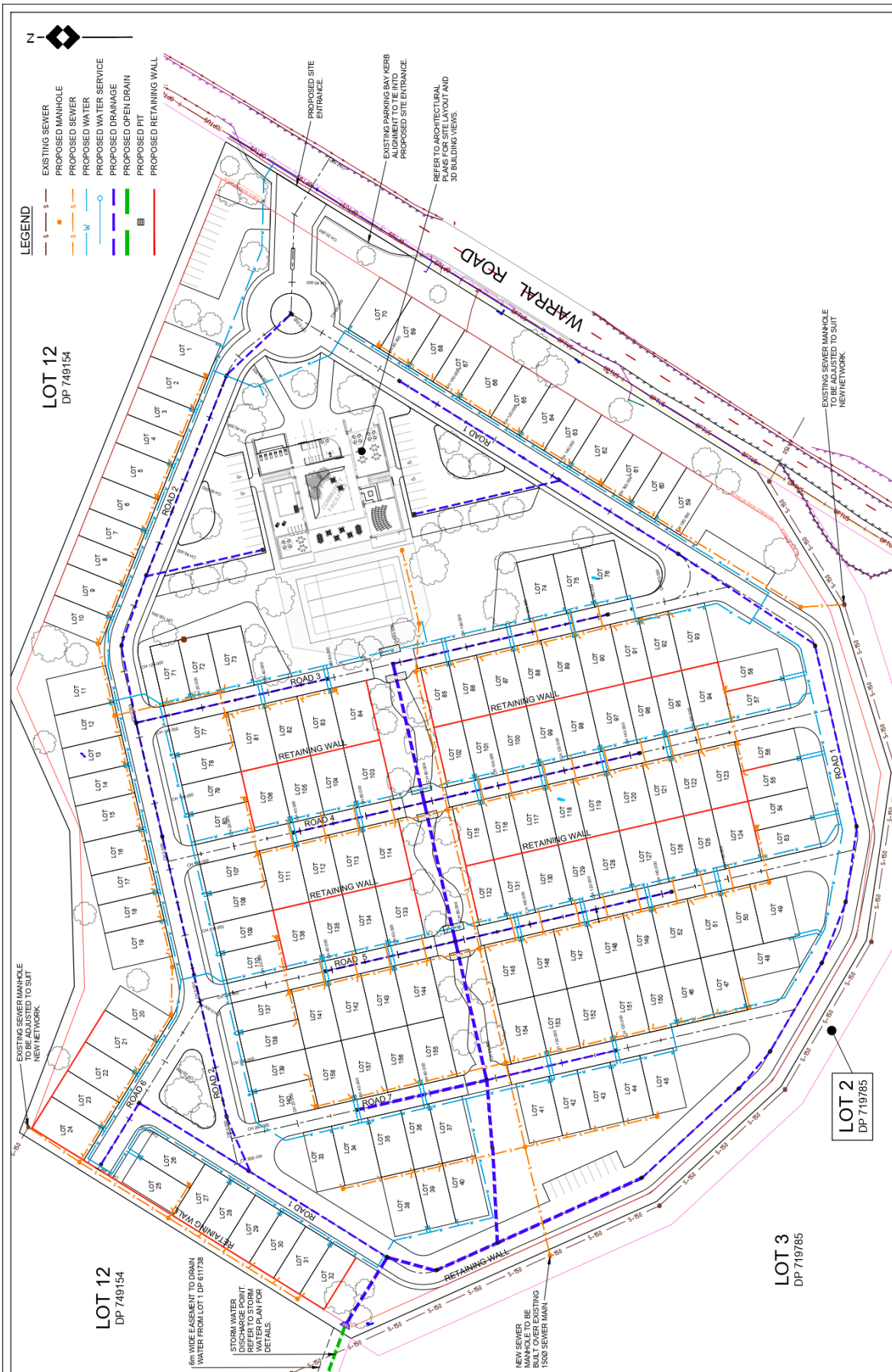
Performance of Building Elements in Bushfire Prone Areas Poon S.L. & England J.P. Warrington Fire Research Australia

Address Validation Search Department of Lands www.maps.nsw.gov.au

Standards for Asset Protection Zones NSW Rural Fire Service 2005

Ocean Shores to Dessert Dunes Keith D. Department of Environment and Conservation Sydney 2004

Appendix 1- Proposed Development Plans ex High Definition West Pty Ltd



LEGEND

- EXISTING SEWER
- PROPOSED SEWER
- PROPOSED MANHOLE
- PROPOSED WATER
- PROPOSED WATER SERVICE
- PROPOSED DRAINAGE
- PROPOSED OPEN DRAIN
- PROPOSED PIT
- PROPOSED RETAINING WALL

LOT 12
DP 749154

LOT 12
DP 749154

LOT 3
DP 719785

LOT 2
DP 719785

WARRAL ROAD

ROAD 1

ROAD 2

ROAD 3

ROAD 4

ROAD 5

ROAD 6

RETAINING WALL

PROPOSED SITE ENTRANCE

EXISTING PARKING BAY KERB

REFER TO ARCHITECTURAL

REFER TO ARCHITECTURAL

EXISTING SEWER MANHOLE

TO BE ADJUSTED TO SUIT

NEW SEWER

MANHOLE TO BE

1500 SEWER MAN.

STORM WATER

REFER TO STORM

WATER PLAN FOR

DETAILS.

6m WIDE EASEMENT TO DRAIN

WATER FROM LOT DP 61738

NOTE:

ALL EXISTING UNDERGROUND SERVICES MUST BE

LOCATED AND DELETED FROM THE PLAN BY THE

ENGINEER USING THIS PLAN TO CONFIRM BOTH

THE LOCATION AND DEPTH OF THE SERVICES

CONFORMING TO THE APPROPRIATE AUTHORITY.

Scale: 1:500 A1

Date: 27/02/24

Designed: SB

Drawn: DA-02

Revision: 1

Amendment: 1

Client: STIMSON URBAN AND REGIONAL PLANNING

Simon Bugeja 0433 263 645

High Definition

West

Ply Ltd

171-187 WARRAL ROAD, WEST TAMWORTH

PROPOSED LAYOUT PLAN

TITLE: MANUFACTURED HOUSING ESTATE

LOT 1 DP 611738

LOT 2 DP 719785

LOT 3 DP 719785

LOT 4 DP 719785

LOT 5 DP 719785

LOT 6 DP 719785

LOT 7 DP 719785

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LOT 126 DP 719785

LOT 127 DP 719785

LOT 128 DP 719785

LOT 129 DP 719785

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LOT 135 DP 719785

LOT 136 DP 719785

LOT 137 DP 719785

LOT 138 DP 719785

LOT 139 DP 719785

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LOT 141 DP 719785

LOT 142 DP 719785

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LOT 165 DP 719785

LOT 166 DP 719785

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LOT 176 DP 719785

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LOT 178 DP 719785

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LOT 192 DP 719785

LOT 193 DP 719785

LOT 194 DP 719785

LOT 195 DP 719785

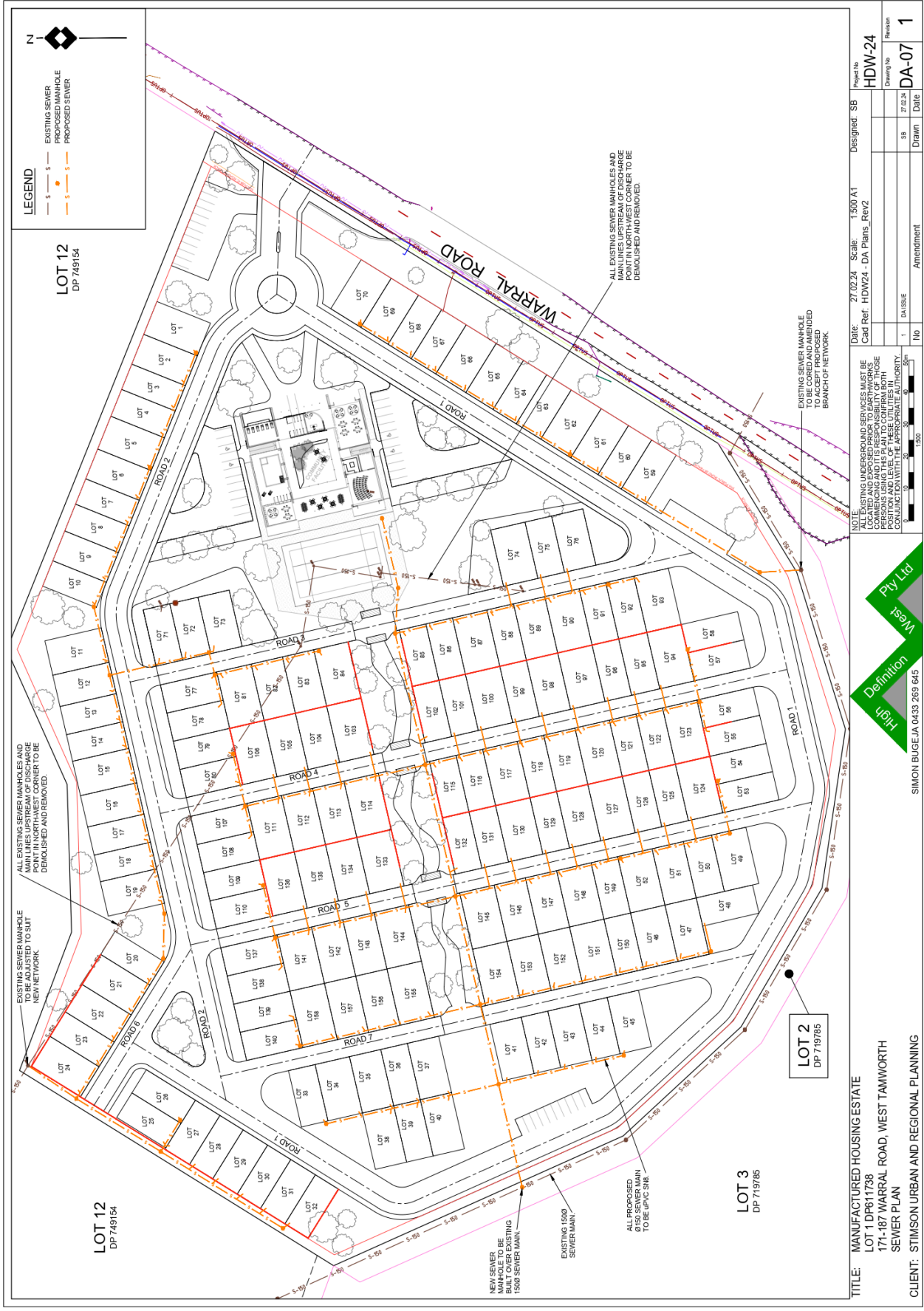
LOT 196 DP 719785

LOT 197 DP 719785

LOT 198 DP 719785

LOT 199 DP 719785

LOT 200 DP 719785



Project No

HDW-24

Designated

SB

Scale

1:300 A1

Rev

Rev2

Client Ref

HDW24 - DA Plans

Revision

1

DA Issue

1

Drawn

1

Date

27/02/24

Amendment

NOTE:

ALL SEWER MANHOLES AND SERVICES MUST BE LOCATED AND EXPOSED PRIOR TO EARTHWORKS COMMENCING AND IT IS THE RESPONSIBILITY OF THOSE COMMENCING WORKS TO VERIFY THE POSITION AND LEVEL OF THESE UTILITIES IN CONJUNCTION WITH THE APPROPRIATE UTILITY.

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High

Definition

West

Priv Ltd

SIMON BUGE JA 0433 269 645

TITLE:

MANUFACTURED HOUSING ESTATE

LOT 1 DP 719785

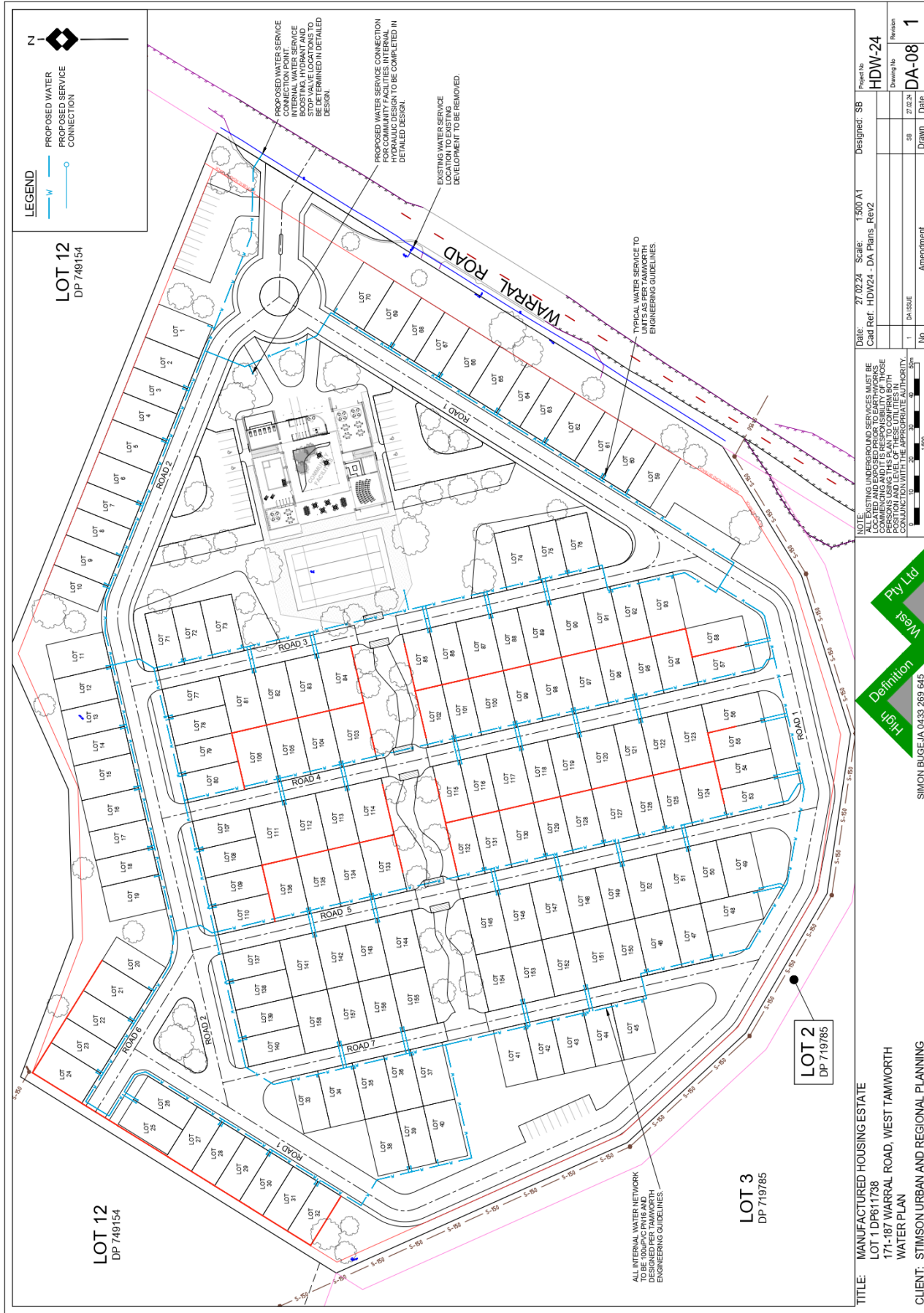
LOT 1 DP 719785

171-187 WARRAL ROAD, WEST TAMWORTH

SEWER PLAN

CLIENT:

STIMSON URBAN AND REGIONAL PLANNING



LEGEND

PROPOSED WATER
CONNECTION

LOT 12
DP 749154

LOT 12
DP 749154

LOT 3
DP 719785

LOT 2
DP 719785

TITLE: MANUFACTURED HOUSING ESTATE
LOT 1 DP81738
171-187 WARRAL ROAD, WEST TAMWORTH
WATER PLAN

CLIENT: STIMSON URBAN AND REGIONAL PLANNING

Date: 27/02/24 Scale: 1:500 A1
Cad Ref: HDW24 - DA Plans, Rev2

Project No: HDW-24

Revision: 1

Date: 27/02/24

Drawn: SB

Amendment: No

1

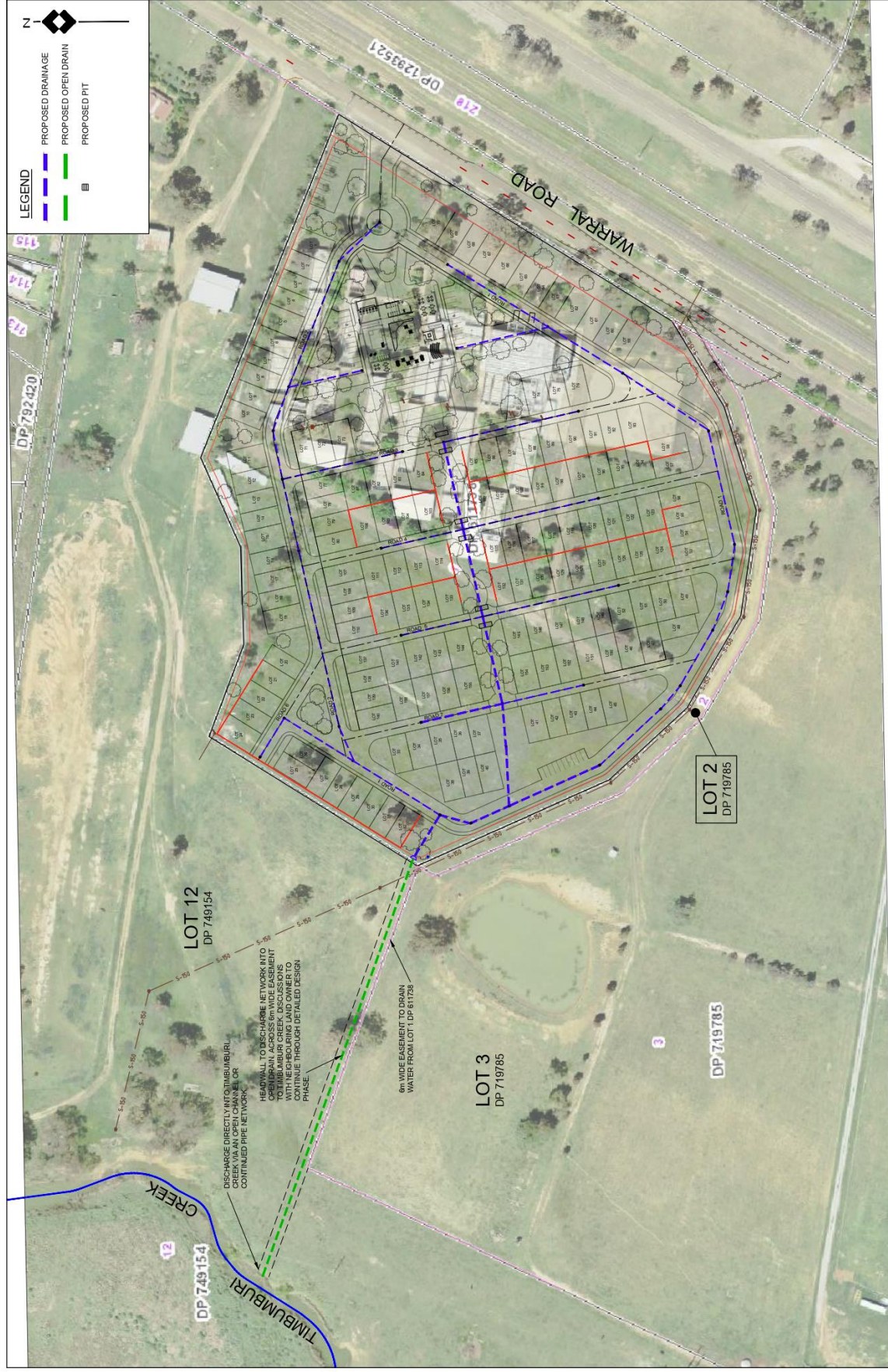
NOTE:
ALL EXISTING UNDERGROUND SERVICES MUST BE
IDENTIFIED AND RECORDED BY THE
ENGINEER AND IT IS THE RESPONSIBILITY OF THOSE
PROFESSIONALS TO IDENTIFY AND RECORD THE
POSITION AND LEVEL OF THESE UTILITIES IN
CONJUNCTION WITH THE APPROPRIATE AUTHORITY.

1:500

0 5m 10m 15m 20m 25m 30m 35m 40m 45m 50m

High Definition
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TITLE: MANUFACTURED HOUSING ESTATE
LOT 1 DP611738
171-187 WARRAL ROAD, WEST TAMMOWORTH
STORMWATER LAYOUT CONCEPT

CLIENT: STIMSON URBAN AND REGIONAL PLANNING

NOTE: ALL EXISTING UNDERGROUND SERVICES MUST BE LOCATED AND EXPOSED PRIOR TO EARTHWORKS. THE DESIGNER HAS ASSUMED THAT ALL EXISTING SERVICES ARE SHOWN ON THE PLAN. PERSONS USING THIS PLAN TO CONFIRM BOTH EXISTING AND PROPOSED SERVICES MUST CONSULT WITH THE APPROPRIATE AUTHORITY.

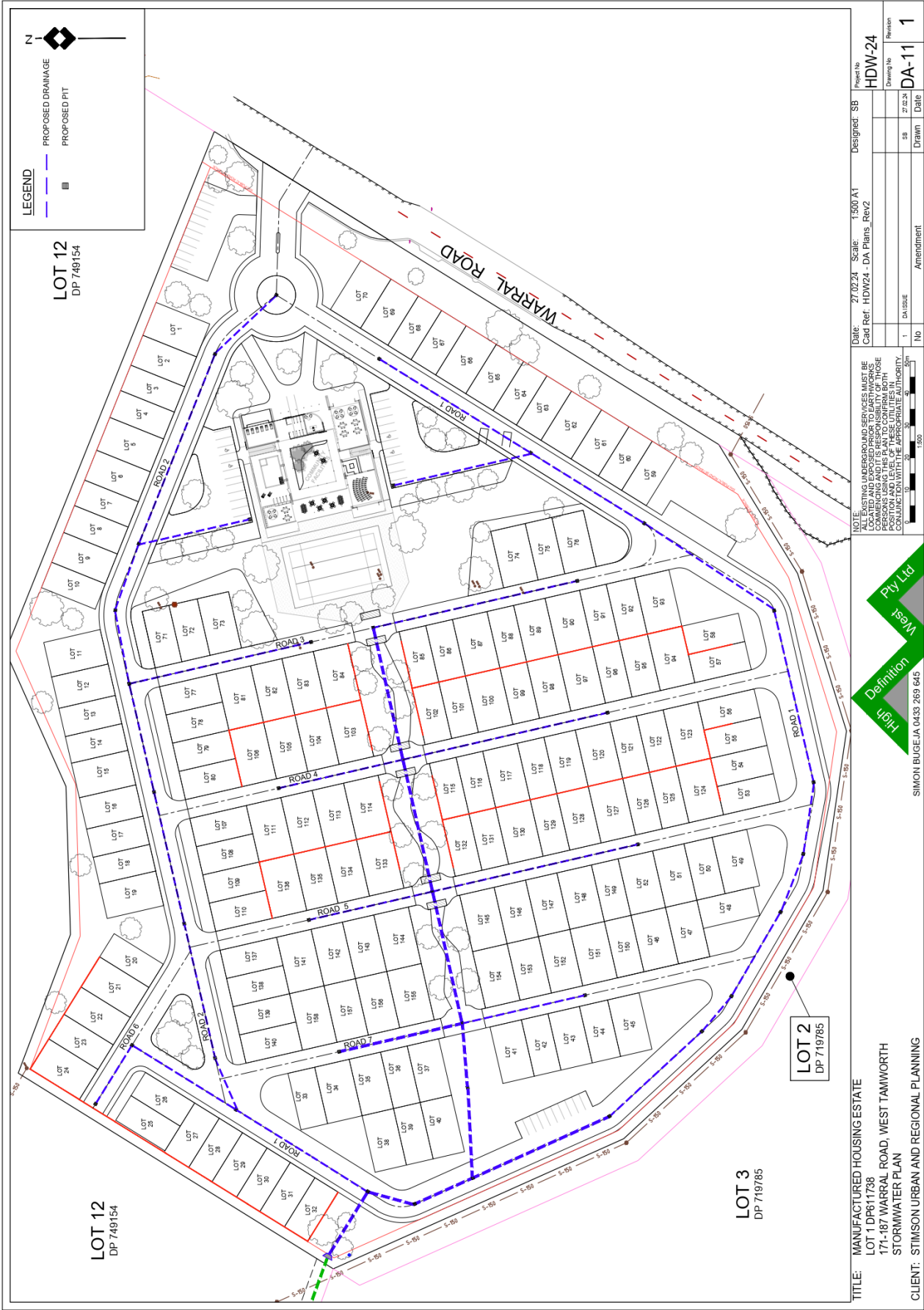
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Legend:
PROPOSED DRAINAGE
PROPOSED OPEN DRAIN
PROPOSED PIT

DATE: 27.02.24
SCALE: 1:500 A1
CAD REF: HDW24 - DA Plans Rev2

No	Amendment	Date	Drawn	Design
1	DA ISSUE	27.02.24	SB	SB

Project No: HDW-24
Drawing No: DA-09
Revision: 1



TITLE: MANUFACTURED HOUSING ESTATE
LOT 1 DP611738
171-187 WARRAL ROAD, WEST TAMWORTH
STORMWATER PLAN

CLIENT: STIMSON URBAN AND REGIONAL PLANNING

LOT 12
DP 749154

LOT 3
DP 719785

LOT 2
DP 719785

LEGEND

- PROPOSED DRAINAGE
- PROPOSED PIT

NOTE: ALL EXISTING UNDERGROUND SERVICES MUST BE LOCATED AND EXPOSED PRIOR TO EARTHWORKS BEING COMMENCED. THE PERSONS USING THIS PLAN TO CONFIRM BOTH THE LOCATION AND DEPTH OF EXISTING SERVICES MUST CONSULT WITH THE APPROPRIATE AUTHORITY.

Scale: 1:500 A1

Revision: 1

Date: 27/02/24

Cad Ref: HDW24 - DA Plans Rev2

Project No: HDW-24

Drawn: 28

Check: 28

Date: 27/02/24

Revision: 1

DA Issue

Amendment

No

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