

Bush Fire Assessment Report

Proposed Subdivision

Oxley Street, Nyngan

Prepared for:
Bogan Shire Council

October 2024

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Disclaimer

This report is prepared solely for Bogan Shire Council (the 'client') and any future landowners (or their delegated representatives) of the subject lot(s) and is not for the benefit of any other person and may not be relied upon by any other person.

Executive Summary

Table 1: Executive Summary

Item	Response
Street Address	Oxley Street, Nyngan
Real Property Description	Lots 4 & 5 Section 11 DP 758803
Local Government Area	Bogan Shire
Proposed Development	Residential Subdivision
Planning for Bushfire Protection (PBP) Classification of Development	Subdivision
Referral to RFS required	Yes <input checked="" type="checkbox"/> (Integrated Development for s.100B BFSA) No <input type="checkbox"/> (clause 4.14 EP&A Act Council assessment for development that complies with PBP)
Compliance with PBP	Acceptable Solutions Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Performance Solution Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

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1 Introduction

1.1 Purpose

This Bush Fire Assessment Report (BFAR) has been prepared to support a Development Application (DA) for the subdivision of Lots 4 & 5 Section 11 DP 758803, known as Oxley Street, Nyngan.

The DA is to be lodged with Bogan Shire Council and will require referral to the NSW Rural Fire Service for a Bush Fire Safety Authority (BFSA) as part of the DA assessment process. This report has been prepared in accordance with *Planning for Bush Fire Protection 2019* (PBP) to provide sufficient information for both approval authorities.

1.2 The Development

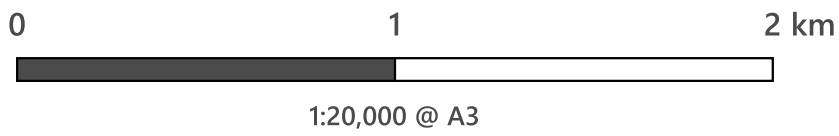
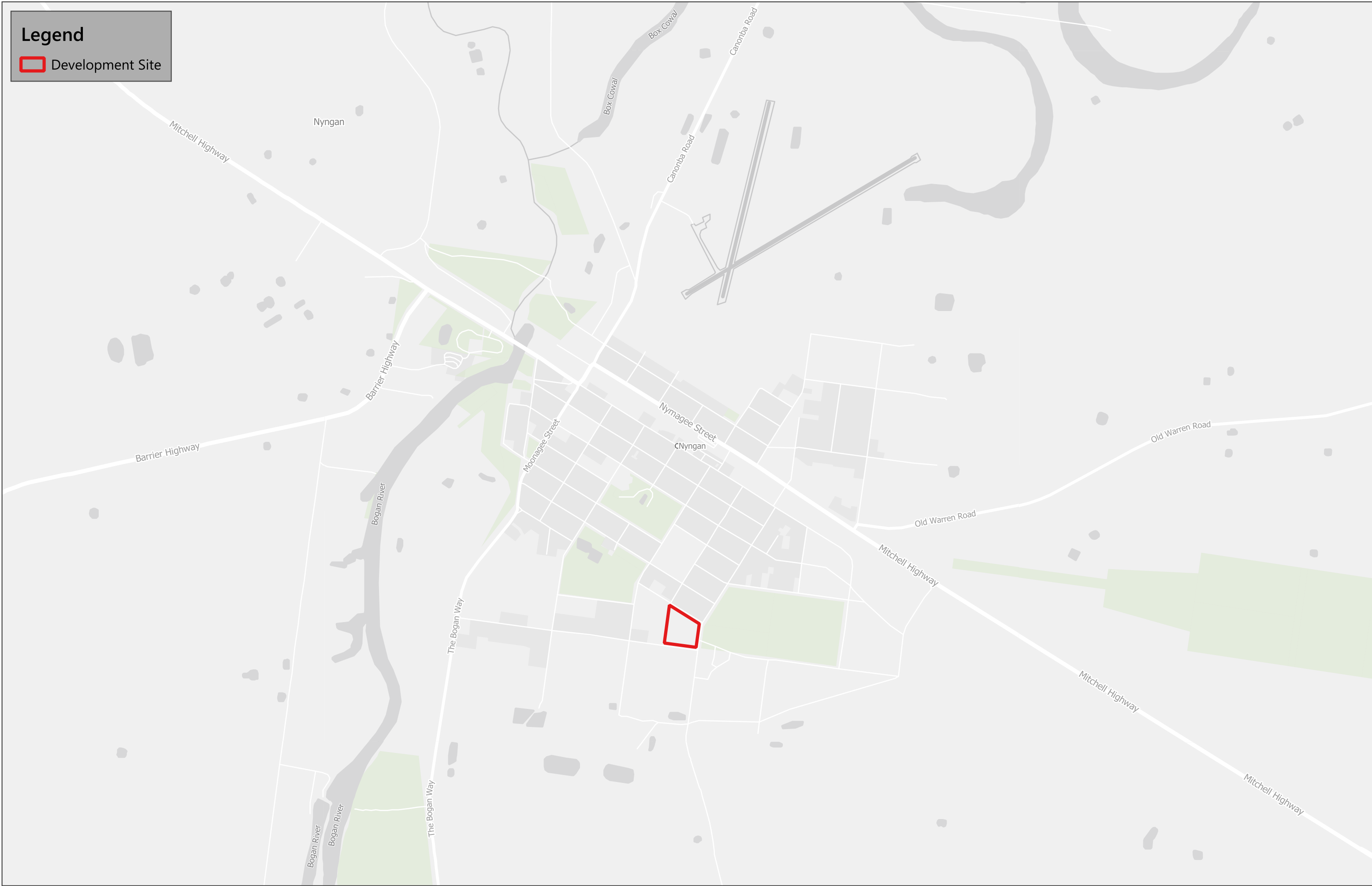
The proposed development involves the subdivision of the site into 33 lots for the purpose of residential development. The lots have a minimum lot size of 660m². Plans of the development are provided in **Appendix A**.

1.3 The Site

1.3.1 Location

The subject site is comprised of Lots 4 & 5 Section 11 DP 758803 which are located on the south western corner of the intersection of Oxley and Hoskins Streets in Nyngan. The location of the site is shown in **Figure 1** and an aerial image in **Figure 2**.

Legend
Development Site



Source: NSW Spatial Services
Ref: 24093

Figure 1: Site Location

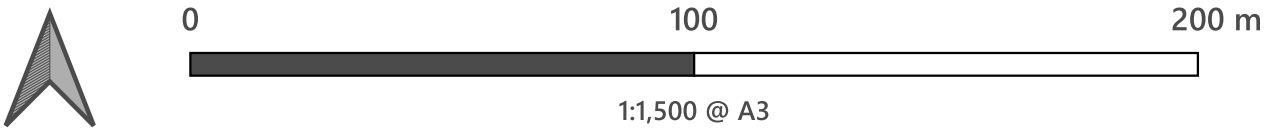


Legend

- Cadastre
- ▭ Development Site

Source: Google Satellite; NSW Spatial Services
Ref: 24093

Figure 2: Site Aerial



1.3.2 Site Details

Lot 4 has an area of 4 acres 2 roods and 37 perches by title (converts to 1.914 hectares). It is predominantly grassland vegetation with areas of remnant trees.

Lot 5 has an area of 4 acres 0 roods and 19 perches by title (converts to 1.666 hectares). It is predominantly grassland vegetation with areas of remnant trees.

The site is zoned R1 General Residential under *Bogan Local Environmental Plan 2011* as shown in **Figure 3**. The land surrounding the site to the north, west and south is R1. To the east of the site is zoned RE2 Private Recreation.

1.3.3 Environmental Significance

There are no environmentally significant features on the site mapped by the LEP. None of the site is mapped as being of biodiversity value under the Biodiversity Values Map (refer **Figure 4**).

1.3.4 Threatened Species

No known assessments flora and fauna assessments have been undertaken for the site.

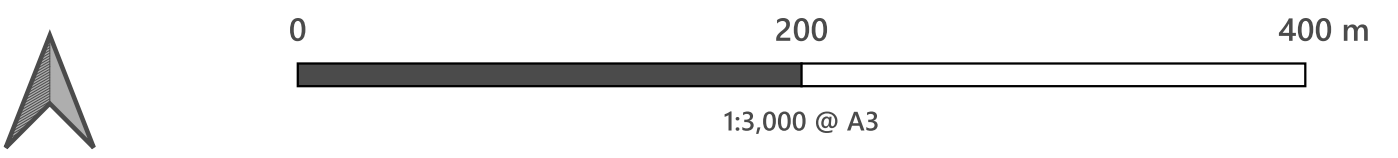
1.3.5 Indigenous Heritage

An Aboriginal Heritage Information Management System (AHIMS) Search was undertaken for the site. No items of indigenous heritage have been recorded or identified on the site (refer **Appendix B**).



Legend

- Development Site
- Land Zoning**
- R1 General Residential
- R5 Large Lot Residential
- RE1 Public Recreation
- RE2 Private Recreation



Source: NSW Spatial Services; SEED Ref: 24093

Figure 3: LEP Zoning



Source: NSW Spatial Services
Ref: 24093

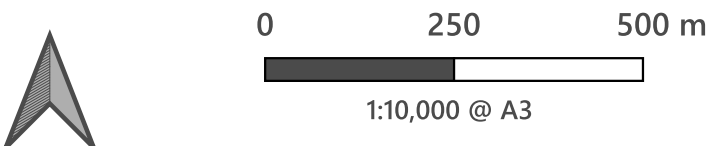


Figure 4: Biodiversity Values Map

1.4 Legislative Framework

1.4.1 Bush Fire Safety Authority

Subdivision of land, that could lawfully permit residential purposes, within a bush fire prone area requires a Bush Fire Safety Authority (BFSA) to be obtained under section 100B of the *Rural Fires Act 1997* (RF Act).

Clause 45 of the *Rural Fires Regulation 2022* specifies the requirements for any application for a BFSA. These requirements have been addressed within this report and a checklist provided in **Appendix C** outlining where each requirement has been specifically addressed.

1.4.2 Bush Fire Prone Land

The site is designated as bush fire prone land in accordance with Section 10.3 of the *Environmental Planning & Assessment Act 1979* (EP&A Act). As shown in **Figure 5** the site is mapped as being within the Category 3 Vegetation.

1.4.3 Integrated Development

As the development requires both development consent and authorisation under Section 100B (Bushfire Safety Authority) of the RF Act in order for it to be carried out, the development becomes Integrated Development pursuant to Section 4.46 of the EP&A Act.

In this regard, Council is required to refer the DA to the NSW Rural Fire Service to obtain the BFSA before it can determine the application in accordance with Section 4.46 of the EP&A Act.

1.4.4 Planning for Bush Fire Protection

PBP applies to all DAs on bush fire prone land. As required by Section 1.4 of PBP, this report has been prepared to address the requirements of the PBP as a subdivision that could lawfully contain residential development. Specifically, the following has been addressed in this report:

- The objectives of PBP, as outlined in Section 1.1 of PBP; and
- The performance criteria of the relevant Bush Fire Protection Measures (BFPM) which are outlined in Section 5.2 of PBP.



Legend

- Development Site
- Bush Fire Prone Land**
- Buffer
- Vegetation Category 1
- Vegetation Category 2
- Vegetation Category 3

0 100 200 m



1:3,000 @ A3

Source: NSW Spatial Services; NSW Rural Fire Service; Google Satellite
Ref: 24093

Figure 5: Bush Fire Prone Land Map

2 Bush Fire Assessment

2.1 Methodology

The methodology utilised for this bush fire assessment is consistent with Appendix 1 of PBP. The following provides the required information in accordance with the methodology.



2.2 Vegetation Formations

A site inspection was carried out on 6 September 2024 of the site and land within 140m of the site (assessment area). All vegetation within the assessment area has been classified in accordance with *Ocean Shores to Desert Dunes* (Keith 2004) as required by A1.2 of PBP.



The classified vegetation within the assessment area has been mapped and is shown in **Figure 6**. Photographs of the classified vegetation from the site inspection are provided in the following plates for each of the assessment plots.

Plot 1	
Vegetation Description	Unmanaged grassland with scattered trees
Existing Classification	Grassland
Post Development Classification	APZ/ A1.10 Low threat vegetation – exclusions
	
Plate 1: Plot 1	Plate 2: Plot 1

Plot 1	
Vegetation Description	Unmanaged grassland with scattered trees
Existing Classification	Grassland
Post Development Classification	APZ/ A1.10 Low threat vegetation – exclusions
Plate 3: Plot 1	Plate 4: Plot 1
Plate 5: Plot 1	Plate 6: Plot 1
Plate 7: Plot 1	Plate 8: Plot 1

Plot 2	
Vegetation Description	Stand of remnant eucalypts on site with semi managed grassy/shrubby understorey.
Existing Classification	Woodland
Post Development Classification	APZ
	
Plate 9: Plot 2	Plate 10: Plot 2


Plot 3	
Vegetation Description	Unmanaged grassland and scattered trees on adjacent site.
Existing Classification	Grassland
Post Development Classification	Grassland
	
Plate 11: Plot 3	Plate 12: Plot 3



Plot 3	
Vegetation Description	Unmanaged grassland and scattered trees on adjacent site.
Existing Classification	Grassland
Post Development Classification	Grassland
	
Plate 13: Plot 3	Plate 14: Plot 3

Plot 4	
Vegetation Description	Managed vegetation and non-vegetated areas in existing built out urban area
Existing Classification	A1.10 Low threat vegetation – exclusions
Post Development Classification	A1.10 Low threat vegetation – exclusions
	
Plate 15: Plot 4	Plate 16: Plot 4



Plot 4	
Vegetation Description	Managed vegetation and non-vegetated areas in existing built out urban area
Existing Classification	A1.10 Low threat vegetation – exclusions
Post Development Classification	A1.10 Low threat vegetation – exclusions
	
Plate 17: Plot 4	Plate 18: Plot 4

Plot 5	
Vegetation Description	Hard paved areas of roads
Existing Classification	A1.10 Low threat vegetation – exclusions
Post Development Classification	A1.10 Low threat vegetation – exclusions
	
Plate 19: Plot 5	Plate 20: Plot 5

Plot 5	
Vegetation Description	Hard paved areas of roads
Existing Classification	A1.10 Low threat vegetation – exclusions
Post Development Classification	A1.10 Low threat vegetation – exclusions
	
Plate 21: Plot 5	Plate 22: Plot 5

Plot 6	
Vegetation Description	Unmanaged/semi managed grassland vegetation with scattered trees
Existing Classification	Grassland
Post Development Classification	Grassland
	
Plate 23: Plot 6	Plate 24: Plot 6

Plot 7	
Vegetation Description	Managed vegetation and non-vegetated areas within showground
Existing Classification	A1.10 Low threat vegetation – exclusions
Post Development Classification	A1.10 Low threat vegetation – exclusions
	
Plate 25: Plot 7	Plate 26: Plot 7
	
Plate 27: Plot 7	Plate 28: Plot 7

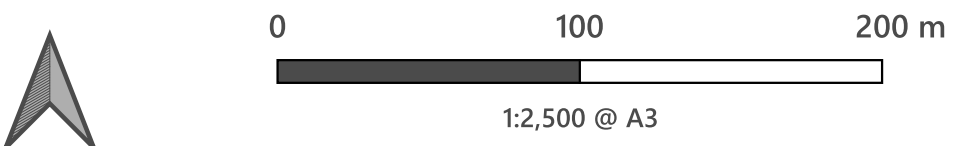
Plot 8	
Vegetation Description	Unmanaged grassland/cropped areas within adjacent site with scattered trees
Existing Classification	Grassland
Post Development Classification	Grassland
	
Plate 29: Plot 8	Plate 30: Plot 8

Plot 9	
Vegetation Description	Managed vegetation and non-vegetated areas around existing dwellings to the west of then site.
Existing Classification	A1.10 Low threat vegetation – exclusions
Post Development Classification	A1.10 Low threat vegetation – exclusions
	
Plate 31: Plot 9	Plate 32: Plot 9

Plot 9	
Vegetation Description	Managed vegetation and non-vegetated areas around existing dwellings to the west of then site.
Existing Classification	A1.10 Low threat vegetation – exclusions
Post Development Classification	A1.10 Low threat vegetation – exclusions
	
Plate 33: Plot 9	Plate 34: Plot 9

2.3 Effective Slope

The topography for the site is shown in **Figure 7**. To determine the effective slope, 2m contour data has been sourced from the NSW Elevation Data Service (NSW Government n.d.). The contour data was verified by ground truthing during the site inspection.



Source: Google Satellite; DCS Spatial Services
Ref: 24093

Figure 6: Vegetation Classification Plan

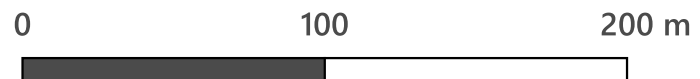


Legend

- Lot
- Development Site
- Assessment Area (140m)
- Contours (2m interval)
- Slope (degrees; fire direction)

Vegetation Classification

- Exclusion
- Forest
- Grassland
- Woodland



1:2,500 @ A3

Source: Google Satellite; DCS Spatial Services
Ref: 24092

Figure 7: Slope

2.4 Fire Weather

The subject site is located within the Bogan Shire Council LGA. Pursuant to A1.6 of the PBP and the RFS' NSW Local Government Areas FDI (NSW Rural Fire Service 2017), the relevant Fire Danger Index (FDI) for the site is 80.

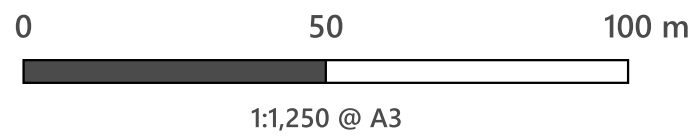
2.5 Asset Protection Zone Determination

Asset Protection Zones (APZ) have been determined for the proposed dwellings on each of the vacant lots. The APZs have been determined based on Table A1.12.3 of PBP.

The detailed APZ calculations for each lot are provided in **Table 2**. The actual size of the APZ to be provided is also outlined in **Table 2** and shown on **Figure 8**. From this it can be seen that the APZ exceeds the minimum required.

Table 2: APZ Determination

Plot	Vegetation Classification	Effective Slope	APZ Required	APZ Provided
1a	Exclusion (APZ)	N/A	N/A	N/A
1b	Grassland	Upslope	10m	13m
2	Exclusion (APZ)	N/A	N/A	N/A
3	Grassland	Upslope	10m	13m
4	Exclusion	N/A	N/A	N/A
5	Exclusion	N/A	N/A	N/A
6	Grassland	Upslope	10m	16m
7	Exclusion	N/A	N/A	N/A
8	Grassland	Downslope >0°-5°	11m	16m
9	Exclusion	N/A	N/A	N/A



Source: Google Satellite; DCS Spatial Services
Ref: 24093

Figure 8: APZ & Separation Distances

3 Bush Fire Protection Measures

3.1 Introduction

Subdivisions that will accommodate residential land uses is required to comply with the Bush Fire Protection Measures (BFPM) outlined in Section 5.3 of PBP. There are six key BFPs outlined by PBP:

- Asset Protection Zones;
- Construction Standards and Design;
- Access Standards (public roads, private access and fire trails);
- Water Supply and Utility Services;
- Emergency Management Arrangements; and
- Landscaping

The BFPs relevant to the development have been considered in **Section 3.4**. **Figure 9** illustrates the BFPM as applied to the development.

PBP requires consideration of the development in relation to the aims and objectives of PBP and also the objectives for subdivision. These matters have been considered respectively in **Sections 3.2** and **3.3**.

3.2 PBP Aims & Objectives

The aim of PBP is:

... to provide for the protection of human life and minimise impacts on property from the threat of bush fire, while having due regard to development potential, site characteristics and protection of the environment.

The objectives of PBP are to:

- *afford buildings and their occupants protection from exposure to a bush fire;*
- *provide for a defensible space to be located around buildings;*
- *provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;*
- *ensure that appropriate operational access and egress for emergency service personnel and occupants is available;*
- *provide for ongoing management and maintenance of BFPs; and*
- *ensure that utility services are adequate to meet the needs of firefighters.*

The subdivision has been designed to provide for developable areas within each of the lots that will have radiant heat levels of less than 29kW/m² and avoid flame contact, thus providing for appropriate separation to the hazards. The subject lot layout in conjunction with the bush fire protection measures will provide for safe operational access and egress for emergency services personnel and possible residents within the subdivision, as well as sufficient water supply. Therefore, the proposed development is considered to be consistent with the objectives of PBP.

3.3 PBP Objectives for Subdivisions

Section 4.1.2 of PBP contains the specific objectives for subdivisions:

- *minimise perimeters of the subdivision exposed to the bush fire hazard (hourglass shapes, which maximise perimeters and create bottlenecks should be avoided);*
- *minimise vegetated corridors that permit the passage of bush fire towards buildings;*
- *provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests;*
- *ensure that APZs between a bush fire hazard and future dwellings are effectively designed to address the relevant bush fire attack mechanisms;*
- *ensure the ongoing maintenance of APZs;*
- *provide adequate access from all properties to the wider road network for residents and emergency services;*
- *provide access to hazard vegetation to facilitate bush fire mitigation works and fire suppression; and*

- ensure the provision of an adequate supply of water and other services to facilitate effective firefighting.

In complying with the BFPM, the proposed development complies with objectives for subdivisions outlined above.

3.4 Bush Fire Protection Measures

3.4.1 Asset Protection Zones & Defendable Space

The intent of measures for the Asset Protection Zone (APZ) BFPM is:

To provide sufficient space and maintain reduced fuel loads to ensure radiant heat levels at the buildings are below critical limits and prevent direct flame contact.

The following table outlines the Performance Criteria and associated Acceptable Solutions for the APZ BFPM, and how the development responds.

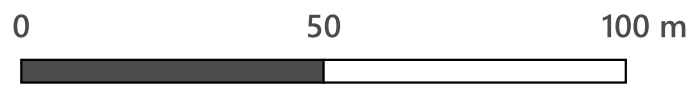


Legend

- Development Site
- Proposed Subdivision
- APZ Provided
- Edge of proposed formed road

Access

- Non-Perimeter Road
- Perimeter Road



1:1,250 @ A3

Source: Google Satellite; NSW Spatial Services
Ref: 24093

Figure 9: Bush Fire Protection Measures

Table 3: Asset Protection Zone (APZ) Bush Fire Protection Measures

Performance Criteria	Acceptable Solution	Development Solution			Comments
		Means of achieving Performance Criteria			
		Acceptable Solution	Performance Solution	Not Applicable	
The intent may be achieved where:					
Asset Protection Zones					
Potential building footprints must not be exposed to radiant heat levels exceeding 29 kW/m ² on each proposed lot.	APZs are provided in accordance with Tables A1.12.2 and A1.12.3 based on the FFDI.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	As outlined in Section 2.5 and shown on Figure 8 and Figure 9 the future dwellings will be, provided with an APZ that achieves the minimum size required by Table A1.12.3 of PBP. Noting the entire site and adjacent road reserves are to be managed as APZs. The perimeter road forms part of the APZ, consistent with Section 3.2 of PBP.
APZs are managed and maintained to prevent the spread of a fire towards the building.	APZs are managed in accordance with the requirements of Appendix 4.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The APZ is to be managed in accordance with the requirements of Appendix 4 of PBP (and contained in Appendix D of this report).
The APZs is provided in perpetuity	APZs are wholly within the boundaries of the development site	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	APZ is wholly within the subject site and adjacent road reserves managed by the occupant.
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised	APZs are located on lands with a slope less than 18 degrees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The APZ will be located on land with a slope of less than 18 degrees.
Landscaping					
landscaping is designed and managed to minimise flame contact and radiant heat to	Landscaping is in accordance with Appendix 4; and	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Any future landscaping of the lots is to be in accordance with the requirements of Appendix 4 of PBP (and contained in Appendix H of this report).

Table 3: Asset Protection Zone (APZ) Bush Fire Protection Measures

Performance Criteria	Acceptable Solution	Means of achieving Performance Criteria			Development Solution	Comments
		Acceptable Solution	Performance Solution	Not Applicable		
The intent may be achieved where:						
buildings, and the potential for wind-driven embers to cause ignitions.	Fencing is constructed in accordance with section 7.6.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Any future fencing is to be constructed in accordance with section 7.6 of PBP.

3.4.2 Construction Standards & Design

No buildings are proposed as part of this subdivision.

3.4.3 Access

The intent of measures for the Access BFPM is:

to provide safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area.

The following table outlines the Performance Criteria and associated Acceptable Solutions for the Access BFPM, and how the development responds.

Table 4: Access Bush Fire Protection Measures

Performance Criteria	Acceptable Solution	Development Solution			Comments
		Means of achieving Performance Criteria			
The intent may be achieved where:		Acceptable Solution	Performance Solution	Not Applicable	
Access (General Requirements)					
Firefighting vehicles are provided with safe, all-weather access to structures.	Property access roads are two-wheel drive, all-weather roads;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All roads are two wheeled drive, all weather roads.
	Perimeter roads are provided for residential subdivisions of three or more allotments;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Perimeter roads are provided as shown in Figure 9 .
	Subdivisions of three or more allotments have more than one access in and out of the development;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The subdivision provides for more than one way in and out of the development.
	Traffic management devices are constructed to not prohibit access by emergency services vehicles;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All traffic management devices will be constructed to facilitate access by emergency services vehicles.
	Maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Grades are to not exceed 15 degrees sealed road.
	All roads are through roads;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All roads will be through roads.

Table 4: Access Bush Fire Protection Measures

Performance Criteria	Acceptable Solution	Development Solution			Comments
		Means of achieving Performance Criteria			
The intent may be achieved where:		Acceptable Solution	Performance Solution	Not Applicable	
	Dead end roads are not recommended, but if unavoidable, are not more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No dead-end roads proposed.
	Where kerb and guttering is provided on perimeter roads, roll top kerbing should be used to the hazard side of the road;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Roll top kerb and guttering is to be provided on the hazard side of the perimeter roads if kerb and guttering is proposed.
	Where access/egress can only be achieved through forest, woodland and heath vegetation, secondary access shall be provided to an alternate point on the existing public road system; and	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No access through forest, woodland or heath vegetation.
	One way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No one way only public access roads.

Table 4: Access Bush Fire Protection Measures

Performance Criteria	Acceptable Solution	Development Solution			
		Means of achieving Performance Criteria			Comments
The intent may be achieved where:		Acceptable Solution	Performance Solution	Not Applicable	
The capacity of access roads is adequate for firefighting vehicles.	The capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/causeways are to clearly indicate load rating	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The capacity of the road surfaces will be sufficient to carry a fully laden fire fighting vehicle.
There is appropriate access to water supply.	Hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hydrants are to be located outside of parking reserves and road carriageways.
	Hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005 - Fire hydrant installations System design, installation and commissioning; and	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hydrants to be provided in accordance with AS 2419.1:2005 where required.
	There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Reticulated water supply is provided.
Perimeter Roads					
Access roads are designed to allow safe access and egress for firefighting vehicles while	Are two-way sealed roads;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Perimeter roads are to be two way sealed roads.
	Minimum 8m carriageway width kerb to kerb;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Perimeter roads are to have an 8m wide carriageway kerb to kerb.

Table 4: Access Bush Fire Protection Measures

Performance Criteria	Acceptable Solution	Means of achieving Performance Criteria			Development Solution	Comments
		Acceptable Solution	Performance Solution	Not Applicable		
The intent may be achieved where:						
residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface.	Parking is provided outside of the carriageway width;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Parking is to be provided outside of the carriageway width.	
	Hydrants are located clear of parking areas;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hydrants are to be located clearing of parking areas.	
	Are through roads, and these are linked to the internal road system at an interval of no greater than 500m;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The perimeter roads are through roads and linked to the internal road system at an interval of less than 500m	
	Curves of roads have a minimum inner radius of 6m;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Perimeter roads are to have curves with a minimum inner radius of 6m	
	The maximum grade road is 15 degrees and average grade of not more than 10 degrees;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The maximum grade of the perimeter road is 15 degrees and average grade of not more than 10 degrees.	
	The road crossfall does not exceed 3 degrees; and	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The perimeter road crossfall does not exceed 3 degrees.	
	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches is provided to perimeter roads.	

Table 4: Access Bush Fire Protection Measures

Performance Criteria	Acceptable Solution	Development Solution			Comments
		Means of achieving Performance Criteria			
The intent may be achieved where:		Acceptable Solution	Performance Solution	Not Applicable	
Non-Perimeter Roads					
Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating.	Minimum 5.5m carriageway width kerb to kerb;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The non perimeter public road will provide a minimum width of 5.5m carriageway.
	Parking is provided outside of the carriageway width;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Parking is to be provided outside of the carriageway width.
	Hydrants are located clear of parking areas;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hydrants are to be located clearing of parking areas.
	Roads are through roads, and these are linked to the internal road system at an interval of no greater than 500m;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The non-perimeter roads are through roads and linked to the internal road system at an interval of less than 500m.
	Curves of roads have a minimum inner radius of 6m;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Non-perimeter roads are to have curves with a minimum inner radius of 6m
	The road crossfall does not exceed 3 degrees; and	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The non-perimeter road crossfall does not exceed 3 degrees.
	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches is provided to non-perimeter roads.

Table 4: Access Bush Fire Protection Measures

Performance Criteria	Acceptable Solution	Development Solution			Comments
		Means of achieving Performance Criteria			
The intent may be achieved where:		Acceptable Solution	Performance Solution	Not Applicable	
Property Access					
Firefighting vehicles can access the dwelling and exit the property safely	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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All future dwellings will be able to comply with this requirement.
	In circumstances where this cannot occur, the following requirements apply:				
	• minimum 4m carriageway width;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Not applicable as complies with urban requirements.
	• in forest, woodland and heath situations, rural property access roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Not applicable as complies with urban requirements.
	• a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Not applicable as complies with urban requirements.

Table 4: Access Bush Fire Protection Measures

Performance Criteria	Acceptable Solution	Development Solution			Comments
		Means of achieving Performance Criteria			
The intent may be achieved where:		Acceptable Solution	Performance Solution	Not Applicable	
	<ul style="list-style-type: none"> provide a suitable turning area in accordance with Appendix 3; 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Not applicable as complies with urban requirements.
	<ul style="list-style-type: none"> curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress; 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Not applicable as complies with urban requirements.
	<ul style="list-style-type: none"> the minimum distance between inner and outer curves is 6m; 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Not applicable as complies with urban requirements.
	<ul style="list-style-type: none"> the crossfall is not more than 10 degrees; 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Not applicable as complies with urban requirements.
	<ul style="list-style-type: none"> maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads; and 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Not applicable as complies with urban requirements.
	<ul style="list-style-type: none"> a development comprising more than three dwellings has access by dedication of a road and not by right of way. 	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Not applicable as complies with urban requirements.

3.4.4 Services – Water, Electricity & Gas

The intent of measures for the Services – Water, Electricity & Gas BFPM is:

To provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building.

The following table outlines the Performance Criteria and associated Acceptable Solutions for the Services – Water, Electricity and Gas BFPM, and how the development responds.

Table 5: Services – Water, Electricity & Gas Bush Fire Protection Measures

Performance Criteria	Acceptable Solution	Development Solution			Comments
		Means of achieving Performance Criteria			
		Acceptable Solution	Performance Solution	Not Applicable	
The intent may be achieved where:					
Water Supply					
Adequate water supplies is provided for firefighting purposes.	Reticulated water is to be provided to the development where available;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reticulated water supply to be provided.
	A static water and hydrant supply is provided for non-reticulated developments or where reticulated water supply cannot be guaranteed; and	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Reticulated water supply to be provided.
	Static water supplies shall comply with Table 5.3d.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No static water supply to be provided as reticulated water provided.
<ul style="list-style-type: none"> Water supplies are located at regular intervals; and The water supply is accessible and reliable for firefighting operations. 	fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard AS 2419.1:2005;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	To comply with Australian Standard AS 2419.1:2005 where applicable.
	Hydrants are not located within any road carriageway; and	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hydrants are not to be located within road carriageways.

Table 5: Services – Water, Electricity & Gas Bush Fire Protection Measures

Performance Criteria	Acceptable Solution	Means of achieving Performance Criteria			Development Solution	Comments
		Acceptable Solution	Performance Solution	Not Applicable		
The intent may be achieved where:						
	Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ring main systems are to be used within perimeter roads.
Flows and pressure are appropriate.	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		To comply with Australian Standard AS 2419.1:2005 where applicable.
The integrity of the water supply is maintained.	All above-ground water service pipes are metal, including and up to any taps; and	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		All above ground pipes and taps are to be metal.
	Above-ground water storage tanks shall be of concrete or metal.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		No static water supply proposed.
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;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Where practicable, electrical transmission lines are underground.

Table 5: Services – Water, Electricity & Gas Bush Fire Protection Measures

Performance Criteria	Acceptable Solution	Means of achieving Performance Criteria			Development Solution	Comments
		Acceptable Solution	Performance Solution	Not Applicable		
The intent may be achieved where:						
	Where overhead, electrical transmission lines are proposed as follows: <ul style="list-style-type: none"> lines are installed with short pole spacing of 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 ISSC3 Guideline for Managing Vegetation Near Power Lines. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Where electricity transmission lines are above ground, short pole spacings are to be providing (i.e. less than 30m) and no part of a tree is closer to a power line than the distance set out 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 - The storage and handling of LP Gas, the requirements of relevant authorities, and metal piping is used;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Any reticulated gas is to be installed and maintained in accordance with AS 1596. Metal piping is to be used for connections.	
	All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No fixed gas cylinders as part of the subdivision development.	
	Connections to and from gas cylinders are metal;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No fixed gas cylinders as part of the subdivision development.	

Table 5: Services – Water, Electricity & Gas Bush Fire Protection Measures

Performance Criteria	Acceptable Solution	Means of achieving Performance Criteria			Comments
		Acceptable Solution	Performance Solution	Not Applicable	
The intent may be achieved where:					
	Polymer-sheathed flexible gas supply lines are not used; and	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No Polymer sheathed flexible gas supply lines are to be used.
	Above-ground gas service pipes are metal, including and up to any outlets.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Above-ground gas service pipes are to be metal, including and up to any outlets.

3.4.5 Emergency Management Arrangements

It is strongly recommended that a Bush Fire Survival Plan be prepared by the future residents of the property in accordance with the NSW RFS' guidelines located on the following webpage <http://www.rfs.nsw.gov.au/resources/bush-fire-survival-plan>

4 Recommendations

4.1 Summary of Bush Fire Protection Measures

This BFAR has demonstrated that the site is suitable for future residential development as it can achieve the requirements of PBP. Whilst this report has demonstrated compliance with PBP many of the Bush Fire Protection Measures (BFPM) are not appropriate to be applied to this subdivision consent as the specific location of the future dwellings are not known. Therefore, the BFPM outlined below are those required to facilitate a compliant subdivision. Any future dwellings will be separately required to demonstrate compliance with PBP at the time the DA is lodged for the dwelling.

The following table provides a summary of the BFMP that must be incorporated into the development to ensure it best protects the development from the effects of bushfire in accordance with the requirements of PBP and other best practice guidelines. The BFPM are also shown on **Figure 9**.

Table 6: Summary of Recommendations

Provision	Measures
Asset Protection Zone	<ul style="list-style-type: none"> Prior to the issue of a Subdivision Certificate, an Asset Protection Zone (APZ) is to be provided on the site for the location and extent as shown on Figure 9 of the Bush Fire Assessment Report prepared by Integrated Consulting. The APZ is to be established and maintained in perpetuity in accordance with the requirements outlined in Appendix 4 of <i>Planning for Bush Fire Protection 2019</i>.
Landscaping	<ul style="list-style-type: none"> Any future landscaping of the lots is to be established and maintained in perpetuity in accordance with the requirements outlined in Appendix 4 of <i>Planning for Bush Fire Protection 2019</i>.
	<ul style="list-style-type: none"> Any future fencing is to be made of either hardwood or non-combustible material. Where the fence is within 6m of a building or in areas of BAL-29 or greater, all fencing is to be made of non-combustible material only.
Access	<ul style="list-style-type: none"> Prior to the issue of a Subdivision Works Certificate, the certifier is to be satisfied that the perimeter roads, as identified on Figure 9 of the Bush Fire Assessment Report prepared by Integrated Consulting are designed in accordance with the following standards: <ul style="list-style-type: none"> A minimum sealed trafficable width of 8m kerb to kerb, Parking is provided outside of the carriageway width, Curves of roads have a minimum inner radius of 6m, A minimum clearance height of 4m above the road, Crossfall not to exceed 3 degrees, Maximum gradient 15 degrees for sealed roads, Roll top kerbing is used on the hazard side of the perimeter road where kerbing is provided, Hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression, Capacity is sufficient to carry a fully loaded fire fighting vehicle (23 tonnes), and Traffic management devices are to be designed and constructed to facilitate access by emergency service vehicles.

Table 6: Summary of Recommendations

Provision	Measures
	<ul style="list-style-type: none"> • Prior to the issue of a Subdivision Works Certificate, the certifier is to be satisfied that the non-perimeter road, as identified on Figure 9 of the Bush Fire Assessment Report prepared by Integrated Consulting are designed in accordance with the following standards: <ul style="list-style-type: none"> • A minimum sealed trafficable width of 5.5m kerb to kerb, • Parking is provided outside of the carriageway width, • Curves of roads have a minimum inner radius of 6m, • A minimum clearance height of 4m above the road, • Crossfall not to exceed 3 degrees, • Hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression, • Capacity is sufficient to carry a fully loaded fire fighting vehicle (23 tonnes), and • Traffic management devices are to be designed and constructed to facilitate access by emergency service vehicles. • Prior to the issue of a Subdivision Certificate, the certifier must be satisfied that the: <ul style="list-style-type: none"> • Perimeter Roads, and • Non-Perimeter Road, have been constructed and are operational in accordance with the approved plans, documents and any relevant conditions of this consent.
Water Supply (Reticulated)	<ul style="list-style-type: none"> • Prior to the issue of a Subdivision Works Certificate, the certifier is to be satisfied that the reticulated water supply system has been designed in accordance with the following: <ul style="list-style-type: none"> • Fire hydrant spacing, design and sizing must comply with the relevant clauses of AS 2419.1: 2021 Fire hydrant installations – System design, installation and commissioning, • Fire hydrant flows and pressures must comply with the relevant clauses of AS 2419.1: 2021 Fire hydrant installations – System design, installation and commissioning, • Hydrants are located outside of parking reserves and road carriageways, • Ring main systems are provided within the perimeter roads, and • All above-ground water service pipes are metal. • Prior to the issue of a Subdivision Certificate, the certifier must be satisfied that the reticulated water supply has been constructed and is operational in accordance with the approved plans, documents and any relevant conditions of this consent.
Electricity	<ul style="list-style-type: none"> • Prior to the issue of a Subdivision Works Certificate, the certifier is to be satisfied that where practicable electrical transmission lines are underground. Where electrical transmission lines cannot be practicably provided underground, any above ground electrical transmission lines are provided with short pole spacings (i.e. less than 30m) and no part of a tree is closer to a power line than the distance set out in ISSC3 Guideline for Managing Vegetation Near Power Lines. • Prior to the issue of a Subdivision Certificate, the certifier must be satisfied that the reticulated electricity system has been constructed and is operational in accordance with the approved plans, documents and any relevant conditions of this consent.

Table 6: Summary of Recommendations

Provision	Measures
Gas Supplies	<ul style="list-style-type: none"><li data-bbox="513 387 1390 533">• Prior to the issue of a Subdivision Works Certificate, evidence is to be provided to the certifier that any reticulated gas supply has been designed in accordance with AS/NZS 1596:2014 - The storage and handling of LP Gas, metal piping is used, and polymer-sheathed flexible gas supply lines to gas meters adjacent to buildings is not to be used.<li data-bbox="513 544 1390 663">• Prior to the issue of a Subdivision Certificate, the certifier must be satisfied that any reticulated gas system has been constructed and is operational in accordance with the approved plans, documents and any relevant conditions of this consent.

5 Conclusion

On completion, the proposed subdivision will ensure that all habitable development is located in an area that has an acceptable bushfire hazard level (i.e. \leq BAL-29). With the implementation of the recommendations, as outlined in **Section 4** and as shown on **Figure 9**, the proposed development is considered to be appropriately protected from bushfire and complies with the requirements of PBP. The proposed development is not expected to increase the bushfire risk.

6 References

- Keith. 2004. *Ocean Shores to Desert Dunes: The Native Vegetation of New South Wales and the ACT*. Hurstville: NSW Department of Environment and Conservation.
- NSW Government. n.d. *NSW Elevation Data Service*. Accessed February 10, 2023.
<https://portal.spatial.nsw.gov.au/portal/apps/webappviewer/index.html?id=437c0697e6524d8ebf10ad0d915bc219>.
- NSW Rural Fire Service. 2019. *Planning for Bush Fire Protection: A guide for councils, planners, fire authorities and developers*. Granville: NSW Rural Fire Service.
- NSW Rural Fire Service. 2022. *Planning For Bush Fire Protection: A Guide for Councils, Planners, Fire Authorities and Developers Addendum November 2022*. Sydney: NSW Rural Fire Service.

Appendix A

Development Plans

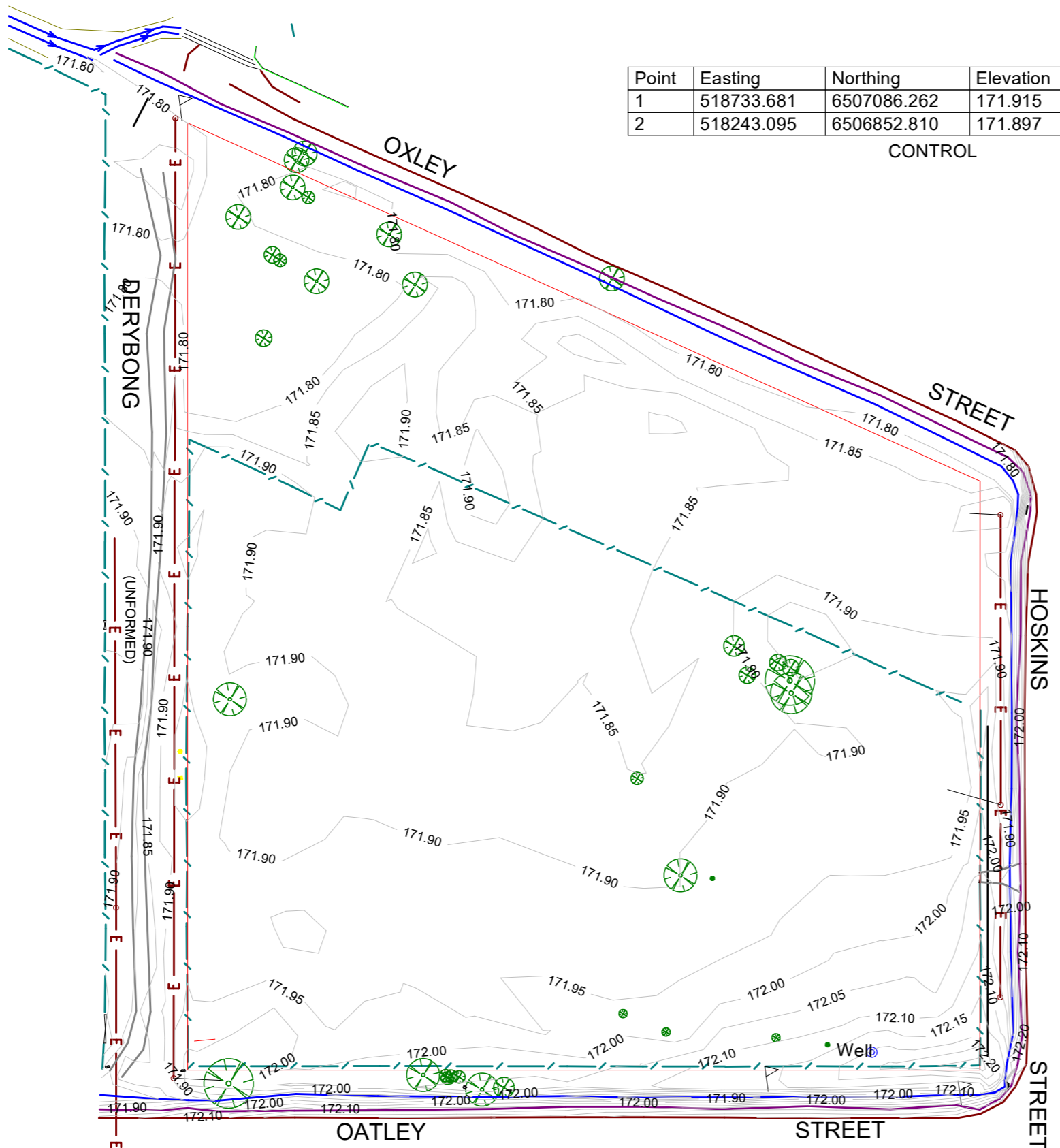
- Index:
Sheet No.
1. Cover
 2. Plan: Detail Survey
 3. Plan: Lot Layout
 4. Plan: Earthworks with volumes
 5. LS and XS of Road
 6. LS and XS of Preimeter drain
 7. Plan: Services
 - 8 to 10 LS of Sewer



**BOGAN SHIRE COUNCIL.
PROPOSED SUBDIVISION OF LOTS 4 & 5 SECTION 11 IN DP 758803**

Scale Horizontal 1:200 Vertical 1:200

ISSUE STATUS	COORD SYSTEM	SURVEY	DESIGN	DUNCAN PRIESTLEY CIVIL ENGINEERING	DRAWING	Total Sheets: 10
	MGA Zone 55	DUNCAN PRIESTLEY CIVIL ENGINEERING	DUNCAN PRIESTLEY CIVIL ENGINEERING	BOGAN SHIRE COUNCIL	HOSKINS ST SUBDIVISION V2 - MP	
30/09/2024	HEIGHT DATUM			PROPOSED SUBDIVISION OF	PLAN NUMBER	Sheet Number: 1
SCALE: \$SCALE	AHD	SURVEYED: D Priestley	DESIGNED: D Priestley	LOTS 4 & 5, SECTION 11, IN DP 758803	HOSKINS STREET NYNGAN	



Point	Easting	Northing	Elevation	Code
1	518733.681	6507086.262	171.915	PM 36374
2	518243.095	6506852.810	171.897	PM 73007

CONTROL



Symbol	Description
LineStyle	Description
	Fence
	Drain(Existing)
	Powerline
	Sewer Main
	Water Main

Symbol	Description
	Culvert /DishDrain
	Water Meter
	Well
	CTRL
	GATE
	HYD
	LPOLE
	PM
	SIGN
	SMH
	SSM
	SV
	Telstra Pit

SCALE 1:1250

ISSUE STATUS	COORD SYSTEM	SURVEY	DESIGN	DUNCAN PRIESTLEY CIVIL ENGINEERING BOGAN SHIRE COUNCIL PROPOSED SUBDIVISION OF LOTS 4 & 5, SECTION 11, IN DP 758803	DRAWING	Total Sheets: 10 Sheet Number: 2
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SCALE: \$SCALE	AHD	SURVEYED: D Priestley	DESIGNED: D Priestley		PLAN NUMBER HOSKINS STREET NYNGAN	





ISSUE STATUS	COORD SYSTEM	SURVEY	DESIGN	DUNCAN PRIESTLEY CIVIL ENGINEERING BOGAN SHIRE COUNCIL PROPOSED SUBDIVISION OF LOTS 4 & 5, SECTION 11, IN DP 758803	DRAWING	Total Sheets: 10
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30/09/2024	HEIGHT DATUM				PLAN NUMBER	Sheet Number: 3
SCALE: \$SCALE	AHD	SURVEYED: D Priestley	DESIGNED: D Priestley		HOSKINS STREET NYNGAN	

PERIMETER DRAIN - Volumes Report
 Sep 29, 2024 04:39PM

ALIGNMENT: ALIGN3
 DESIGN SURFACE: DESIGN
 NATURAL SURFACE: NATURAL

Stripping Volume 0.000

Total Cut 28.014
 Total Fill 31.048
 Net Volume 3.034 Fill

ROAD - Volumes Report
 Sep 29, 2024 04:41PM

ALIGNMENT: ALIGN1
 DESIGN SURFACE: DESIGN
 NATURAL SURFACE: NATURAL

Note: Excludes connections to road
 outside Lot area

Stripping Volume 0.000
 Pavement Volume 320.400

Total Cut 141.630
 Total Fill 45.351
 Net Volume 96.279 Cut

VOLUMES WEST LOTS:
 =====

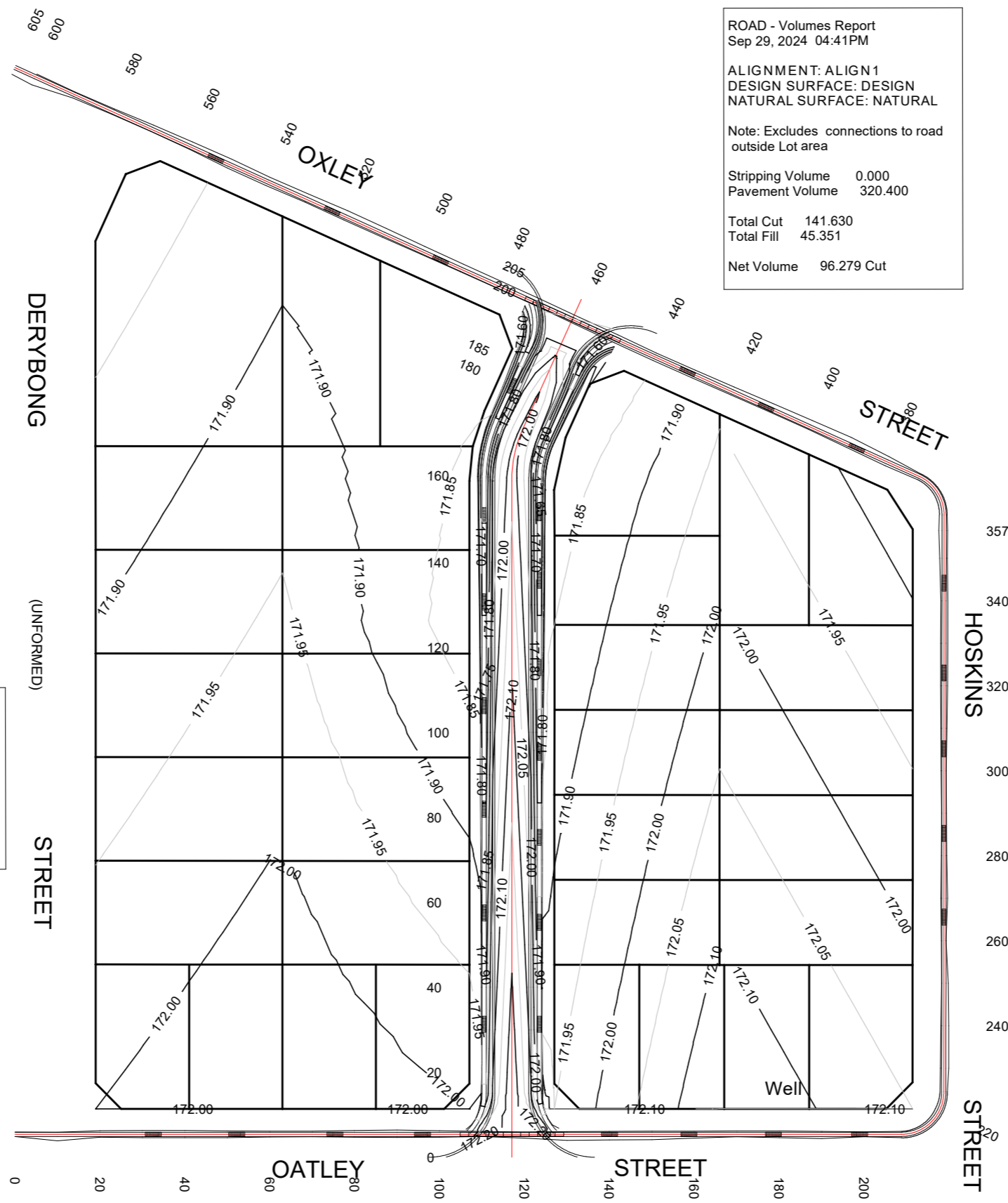
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 Fill: 1026.830 (cubic meters)
 Net: 983.758 (cubic meters) [fill]

Average Cut Depth: 0.022 (m)
 Maximum Cut Depth: 0.070 (m)
 Average Fill Depth: 0.062 (m)
 Maximum Fill Depth: 0.463 (m)

VOLUMES EAST LOTS:
 =====

Cut: 78.108 (cubic meters)
 Fill: 825.588 (cubic meters)
 Net: 747.480 (cubic meters) [fill]

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 Maximum Cut Depth: 0.258 (m)
 Average Fill Depth: 0.069 (m)
 Maximum Fill Depth: 0.157 (m)



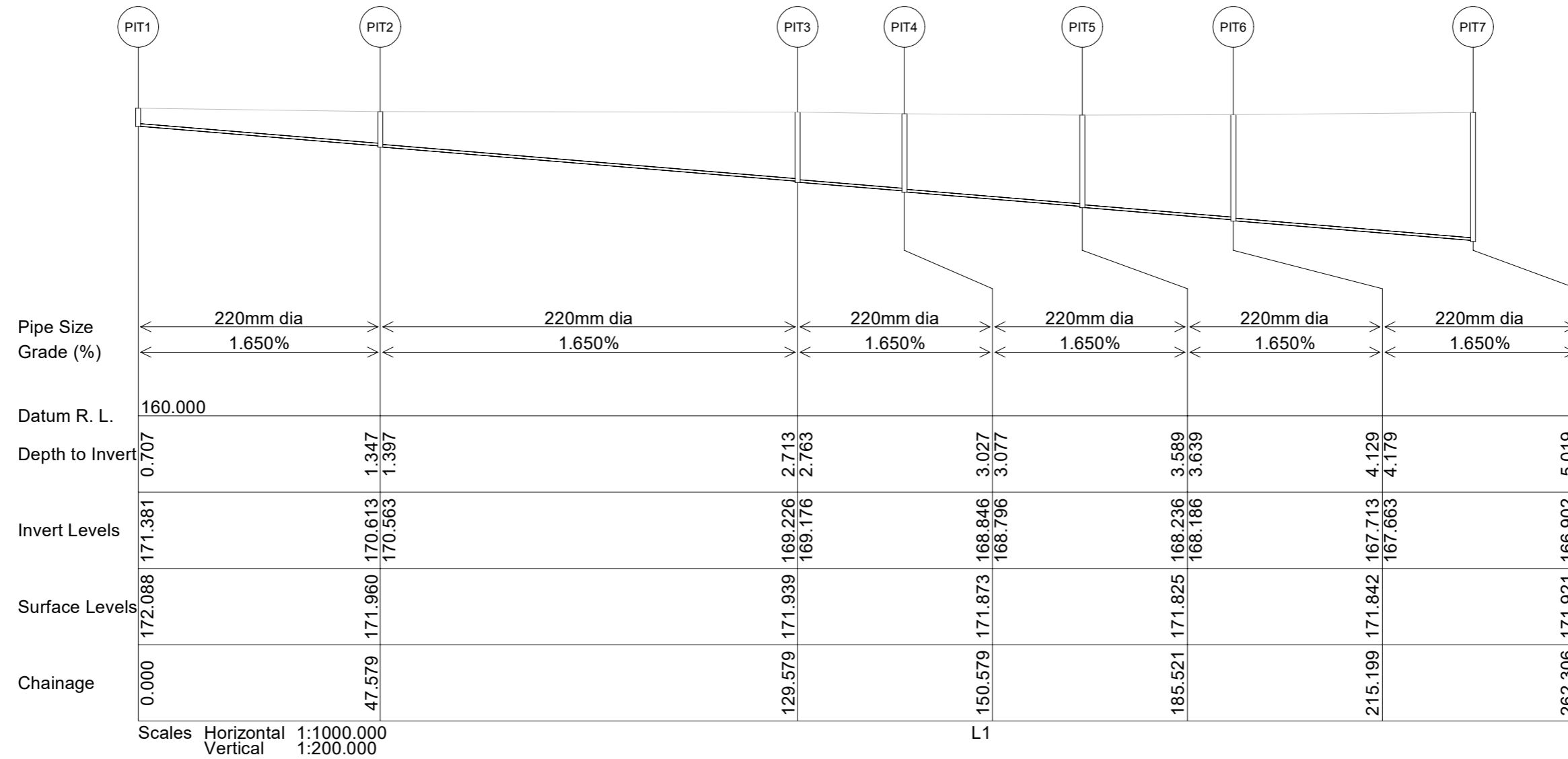
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30/09/2024	HEIGHT DATUM				PLAN NUMBER	Sheet Number: 4
SCALE: \$SCALE	AHD	SURVEYED: D Priestley	DESIGNED: D Priestley		HOSKINS STREET NYNGAN	

Symbol	Description
LineStyle	Description
	Fence
	Drain(Existing)
	Powerline
	Sewer Main
	Water Main

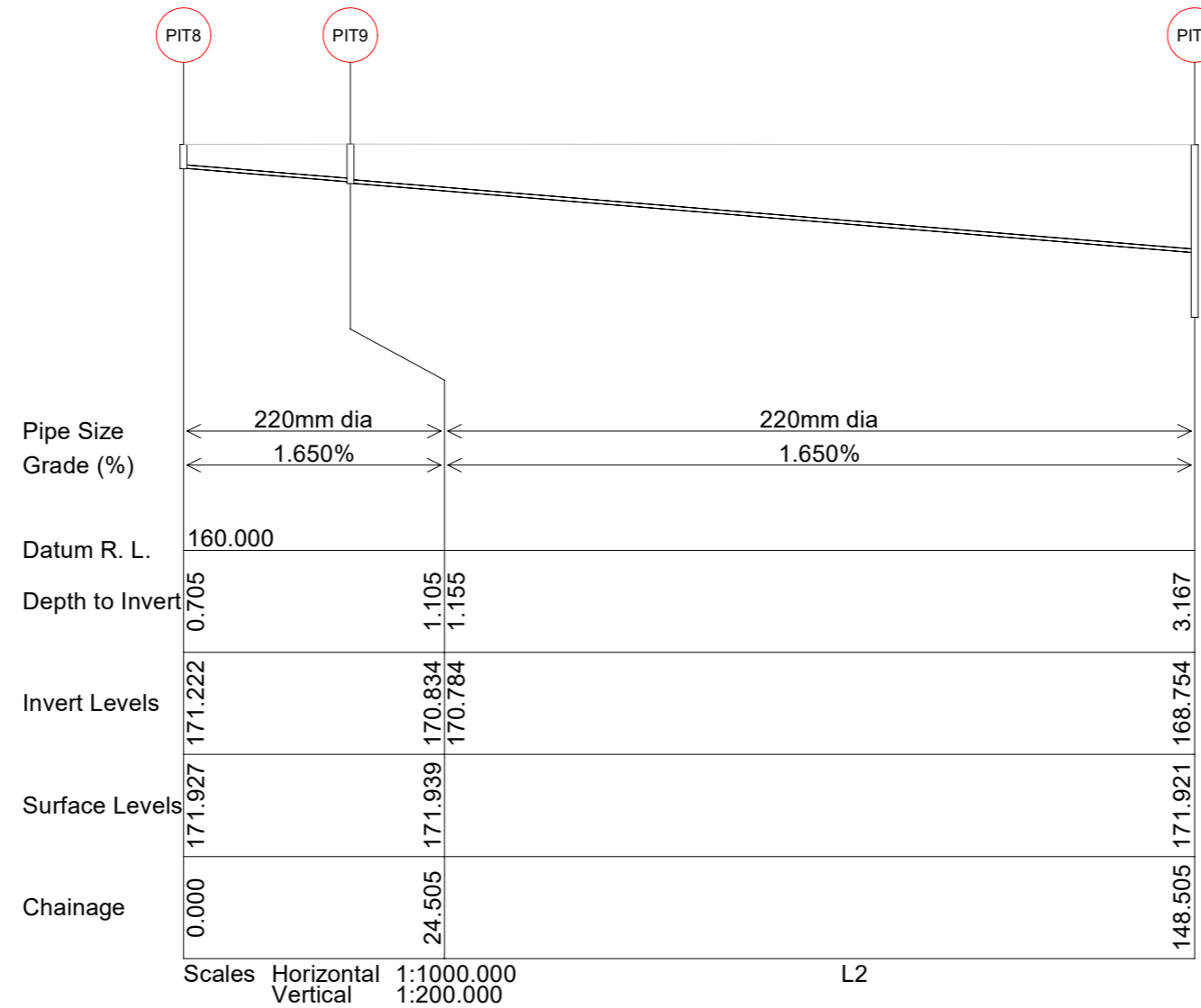
Symbol	Description
	Culvert / Dish Drain
	Water Meter
	Well
	Control
	Gate
	HYD
	Lamp
	PM
	Sign
	SMH
	SSM
	SV
	Telstra Pit



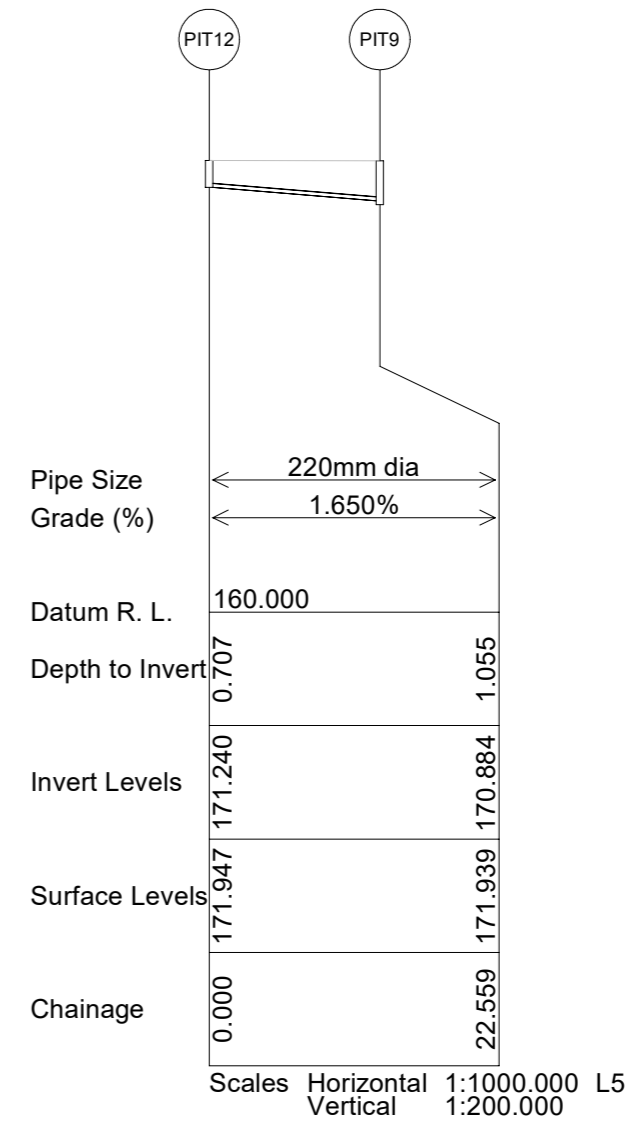
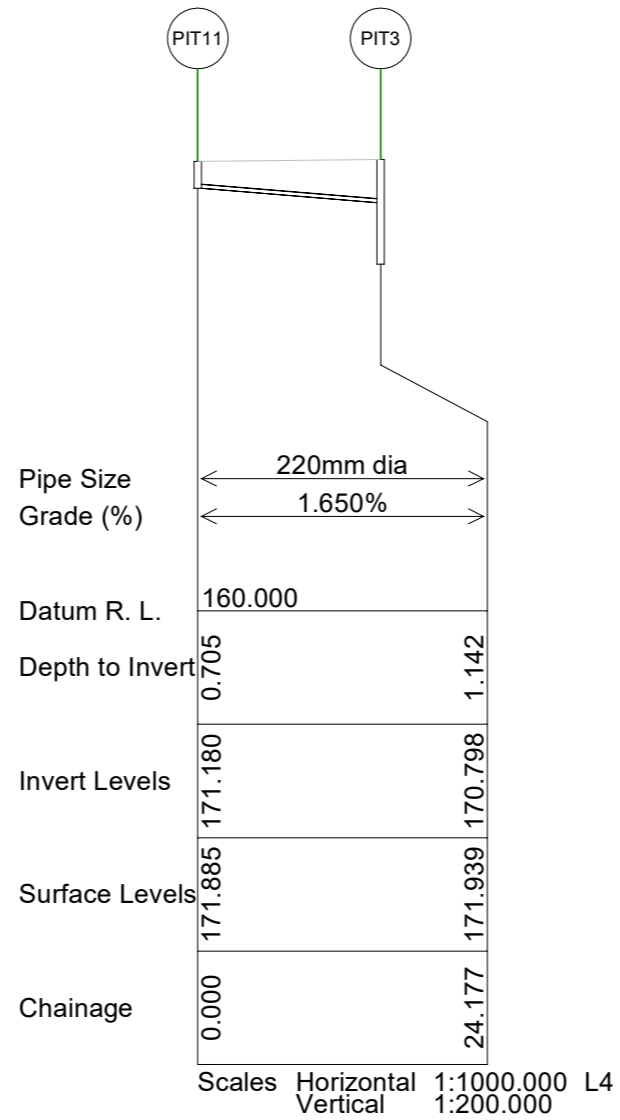
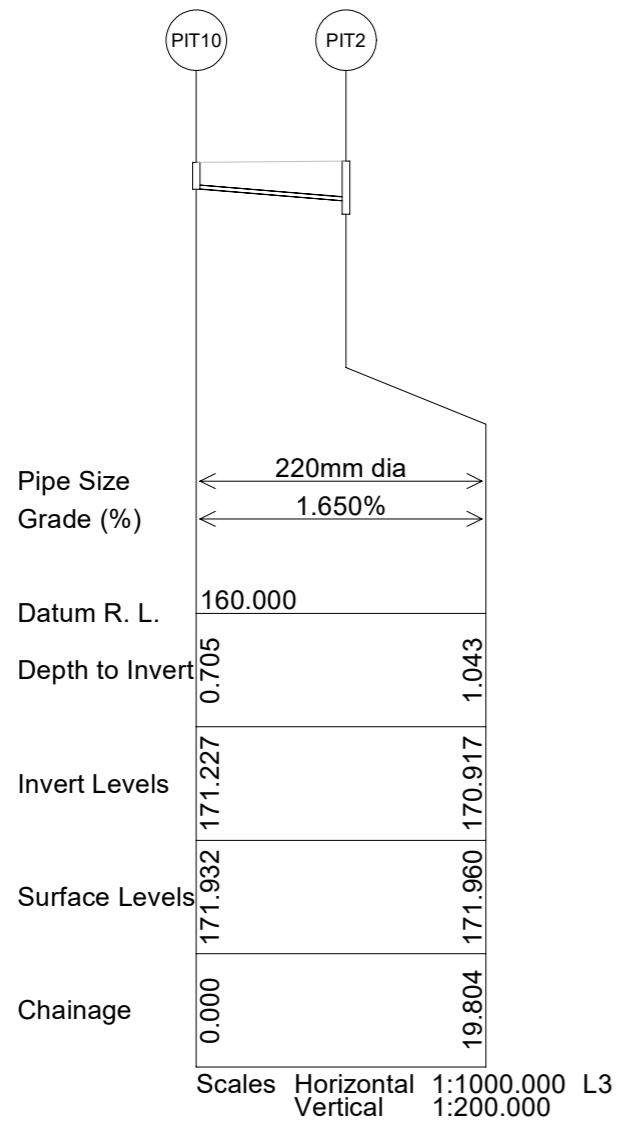
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	AHD				HOSKINS STREET NYNGAN	



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ISSUE STATUS	COORD SYSTEM	SURVEY	DESIGN	DUNCAN PRIESTLEY CIVIL ENGINEERING	DRAWING	Total Sheets: 10
	MGA Zone 55	DUNCAN PRIESTLEY CIVIL ENGINEERING	DUNCAN PRIESTLEY CIVIL ENGINEERING	BOGAN SHIRE COUNCIL	HOSKINS ST SUBDIVISION V2 - MP	
30/09/2024	HEIGHT DATUM			PROPOSED SUBDIVISION OF	PLAN NUMBER	Sheet Number: 9
SCALE: \$SCALE	AHD	SURVEYED: D Priestley	DESIGNED: D Priestley	LOTS 4 & 5, SECTION 11, IN DP 758803	HOSKINS STREET NYNGAN	



ISSUE STATUS	COORD SYSTEM	SURVEY	DESIGN	DUNCAN PRIESTLEY CIVIL ENGINEERING	DRAWING	Total Sheets: 10
	MGA Zone 55	DUNCAN PRIESTLEY CIVIL ENGINEERING	DUNCAN PRIESTLEY CIVIL ENGINEERING	BOGAN SHIRE COUNCIL	HOSKINS ST SUBDIVISION V2 - MP	
30/09/2024	HEIGHT DATUM			PROPOSED SUBDIVISION OF	PLAN NUMBER	Sheet Number: 10
SCALE: \$SCALE	AHD	SURVEYED: D Priestley	DESIGNED: D Priestley	LOTS 4 & 5, SECTION 11, IN DP 758803	HOSKINS STREET NYNGAN	

Appendix B

AHIMS Search

Integrated Consulting

Date: 07 October 2024

PO Box 9026

Bathurst West New South Wales 2795

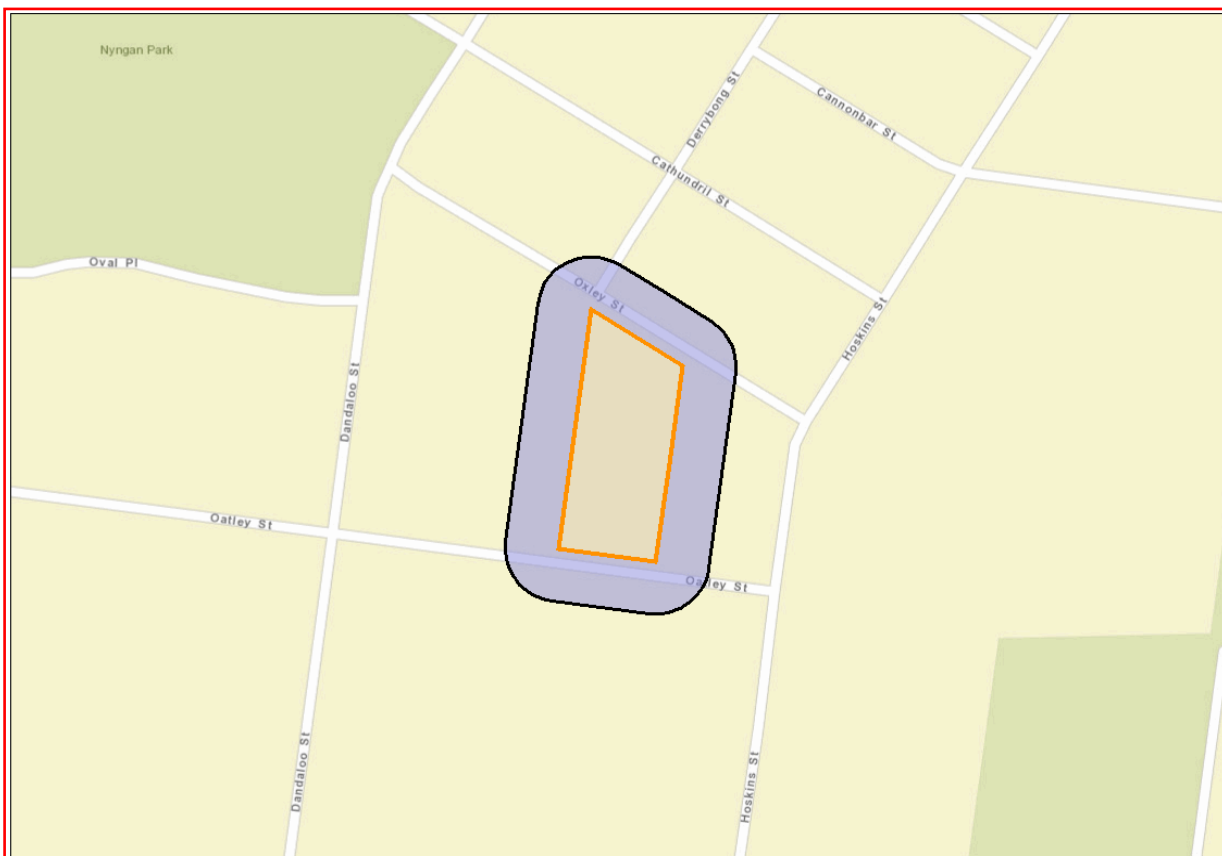
Attention: Erika Dawson

Email: erika@integratedconsulting.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 4, DP:DP758803, Section : 11 with a Buffer of 50 meters, conducted by Erika Dawson on 07 October 2024.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(https://www.legislation.nsw.gov.au/gazette\)](https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Integrated Consulting

Date: 07 October 2024

PO Box 9026

Bathurst West New South Wales 2795

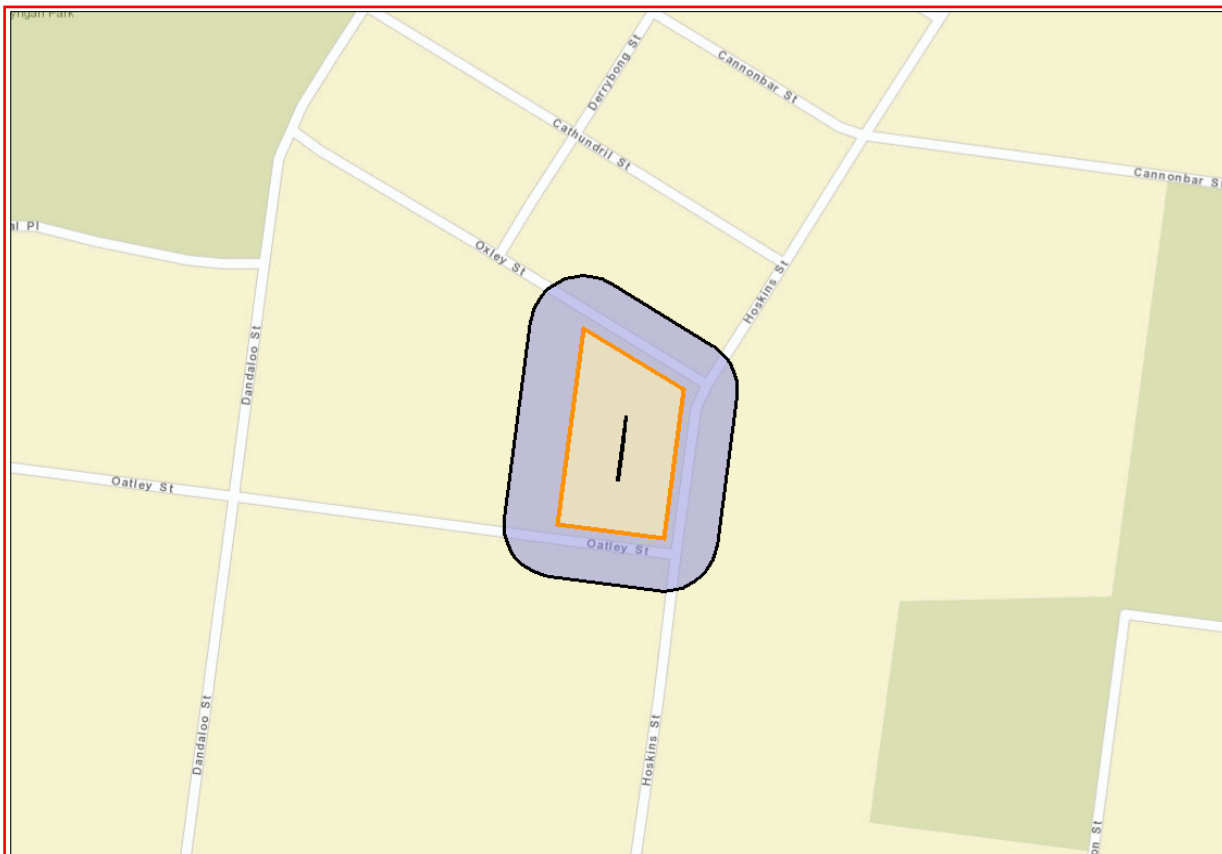
Attention: Erika Dawson

Email: erika@integratedconsulting.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 5, DP:DP758803, Section : 11 with a Buffer of 50 meters, conducted by Erika Dawson on 07 October 2024.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
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- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Appendix C

Bush Fire Safety Authority Checklist

Table 7: Clause 45 Rural Fires Regulations 2022 Considerations

Requirement	Section of Report where addressed	Compliance		
		Yes	No	N/A
(1) For the purposes of the Act, section 100B(4), an application for a bush fire safety authority must be made in writing.	This report provides the application in writing.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) An application for a bush fire safety authority must include the following—				
(a) a description, including the address, of the property on which the development the subject of the application is proposed to be carried out,	Section 1.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b) a classification of the vegetation on and surrounding the property, out to a distance of 140 metres from the boundaries of the property, in accordance with the system for classification of vegetation contained in Planning for Bush Fire Protection,	Section 2.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) an assessment of the slope of the land on and surrounding the property, out to a distance of 100 metres from the boundaries of the property,	Section 2.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d) identification of significant environmental features on the property,	Section 1.3.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e) the details of a threatened species or threatened ecological community under the Biodiversity Conservation Act 2016 that the applicant knows to exist on the property,	Section 1.3.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) the details and location of an Aboriginal object or place, within the meaning of the National Parks and Wildlife Act 1974, that the applicant knows to be situated on the property,	Section 1.3.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(g) a bush fire assessment for the proposed development, including the methodology used in the assessment, that addresses the following matters—	Section 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(i) the extent to which the development is to provide for setbacks, including asset protection zones,	Section 2.5 and 3.4.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(ii) the siting and adequacy of water supplies for fire fighting,	Section 3.4.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(iii) the capacity of nearby public roads to handle increased volumes of traffic when a bush fire emergency occurs,	Section 3.4.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(iv) whether or not nearby public roads that link with the fire trail network have two-way access,	No fire trails	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Table 7: Clause 45 Rural Fires Regulations 2022 Considerations

Requirement	Section of Report where addressed	Compliance		
		Yes	No	N/A
(v) the adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response,	Section 3.4.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(vi) the adequacy of bush fire maintenance plans and fire emergency procedures for the development site,	Section 3.4.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(vii) the construction standards to be used for building elements in the development,	Nil proposed.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(viii) the adequacy of sprinkler systems and other fire protection measures to be incorporated into the development,	Nil proposed.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(ix) registered fire trails on the property,	Nil	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(h) an assessment of the extent to which the proposed development conforms with or deviates from Planning for Bush Fire Protection.	Section 3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) An application for a bush fire safety authority must also be accompanied by the prescribed information if—	Not applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(a) the proposed development is subdivision for the purposes of dwelling houses, dual occupancies or secondary dwellings on property in an urban release area, and				
(b) the application includes a request by the applicant that the Commissioner, when deciding the application, considers whether it would be appropriate for the erection of the dwelling houses, dual occupancies or secondary dwellings concerned to be excluded from the application of the Environmental Planning and Assessment Act 1979, section 4.14.				

Table 7: Clause 45 Rural Fires Regulations 2022 Considerations

Requirement	Section of Report where addressed	Compliance		
		Yes	No	N/A
<p>(4) In this section—</p> <p>prescribed information means the following—</p> <p>(a) a plan of subdivision that shows—</p> <p>(i) the bush fire attack levels that will apply to the property on completion of clearing of vegetation proposed to be carried out as part of subdivision work, within the meaning of the Environmental Planning and Assessment Act 1979, and</p> <p>(ii) proposed setbacks of buildings that may in future be erected on the property, including asset protection zones, and</p> <p>(b) other information about the proposed development that the Commissioner may require.</p> <p>Note—</p> <p>More information about bush fire attack levels, including the flame zone, can be found in Planning for Bush Fire Protection, ISBN 978 0 646 99126 9, Table A1.7, published by the NSW Rural Fire Service in November 2019.</p> <p>urban release area has the same meaning as in the Environmental Planning and Assessment Regulation 2021, section 270.</p> <p>dual occupancy, dwelling house and secondary dwelling have the same meanings as in the standard instrument prescribed by the Standard Instrument (Local Environmental Plans) Order 2006.</p>				

Appendix D

APZ & Landscaping Measures

APPENDIX 4

ASSET PROTECTION ZONE REQUIREMENTS

In combination with other BPMS, a bush fire hazard can be reduced by implementing simple steps to reduce vegetation levels. This can be done by designing and managing landscaping to implement an APZ around the property.

Careful attention should be paid to species selection, their location relative to their flammability, minimising continuity of vegetation (horizontally and vertically), and ongoing maintenance to remove flammable fuels (leaf litter, twigs and debris).

This Appendix sets the standards which need to be met within an APZ.

A4.1 Asset Protection Zones

An APZ is a fuel-reduced area surrounding a building or structure. It is located between the building or structure and the bush fire hazard.

For a complete guide to APZs and landscaping, download the NSW RFS document *Standards for Asset Protection Zones* at the NSW RFS Website www.rfs.nsw.gov.au.

An APZ provides:

- a buffer zone between a bush fire hazard and an asset;
- an area of reduced bush fire fuel that allows for suppression of fire;
- an area from which backburning or hazard reduction can be conducted; and
- an area which allows emergency services access and provides a relatively safe area for firefighters and home owners to defend their property.

Bush fire fuels should be minimised within an APZ. This is so that the vegetation within the zone does not provide a path for the spread of fire to the building, either from the ground level or through the tree canopy.

An APZ, if designed correctly and maintained regularly, will reduce the risk of:

- direct flame contact on the building;
- damage to the building asset from intense radiant heat; and
- ember attack.

The methodology for calculating the required APZ distance is contained within Appendix 1. The width of the APZ required will depend upon the development type and bush fire threat. APZs for new development are set out within Chapters 5, 6 and 7 of this document.

In forest vegetation, the APZ can be made up of an Inner Protection Area (IPA) and an Outer Protection Area (OPA).

A4.1.1 Inner Protection Areas (IPAs)

The IPA is the area closest to the building and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and act as a defensible space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 1cm 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 an IPA the following requirements apply:

Trees

- tree canopy cover should be less than 15% at maturity;
- trees at maturity should not touch or overhang the building;
- lower limbs should be removed up to a height of 2m above the ground;
- tree canopies should be separated by 2 to 5m; and
- preference should be given to smooth barked and evergreen trees.

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- 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 a 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 and vegetation debris should be removed.

A4.1.2 Outer Protection Areas (OPAs)

An OPA is located between the IPA and the unmanaged vegetation. It is an area where there is maintenance of the understorey and some separation in the canopy. The reduction of fuel in this area aims to decrease the intensity of an approaching fire and restricts the potential for fire spread from crowns; reducing the level of direct flame, radiant heat and ember attack on the IPA.

Because of the nature of an OPA, they are only applicable in forest vegetation.

When establishing and maintaining an OPA the following requirements apply:

Trees

- tree canopy cover should be less than 30%; and
- canopies should be separated by 2 to 5m.

Shrubs

- shrubs should not form a continuous canopy; and
- shrubs should form no more than 20% of ground cover.

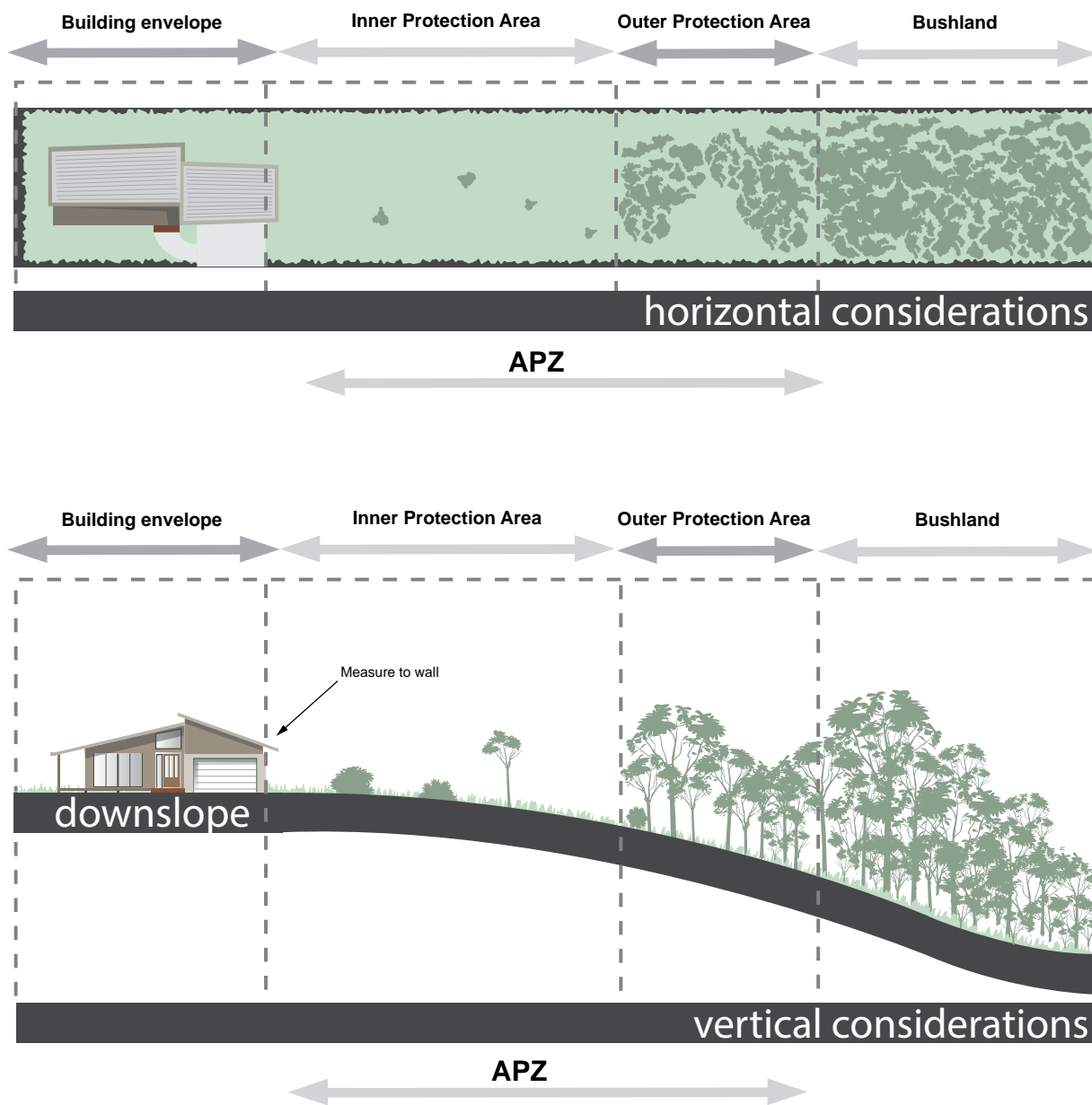
Grass

- grass should be kept mown to a height of less than 100mm; and
- leaf and other debris should be removed.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bush fires. Maintenance of the IPA and OPA as described above should be undertaken regularly, particularly in advance of the bush fire season.

Figure A4.1

Typical Inner and Outer Protection Areas.



Appendix E

Access Requirements

APPENDIX 3

ACCESS

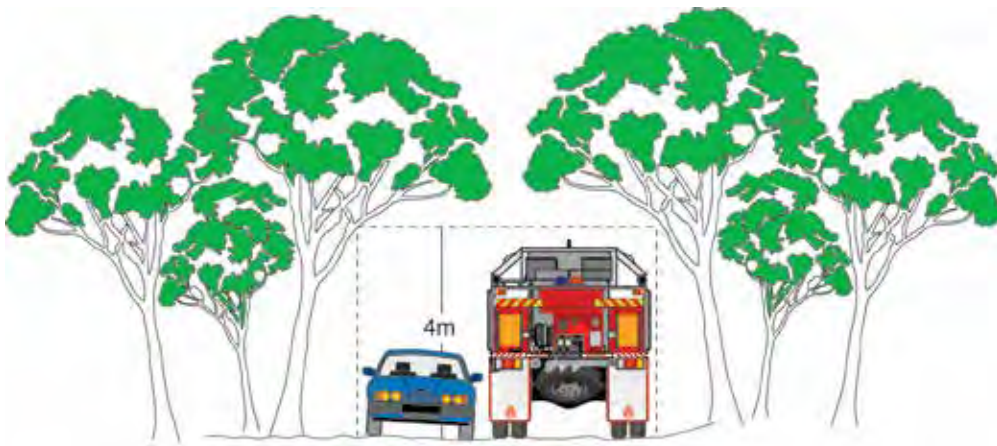
This appendix provides design principles for emergency service vehicle access.

A3.1 Vertical clearance

An unobstructed clearance height of 4 metres should be maintained above all access ways including clearance from building construction, archways, gateways and overhanging structures (e.g. ducts, pipes, sprinklers, walkways, signs and beams). This also applies to vegetation overhanging roads.

Figure A3.1

Vertical clearance.



A3.2 Vehicle turning requirements

Curved carriageways should be constructed using the minimum swept path as outlined in Table A3.2.

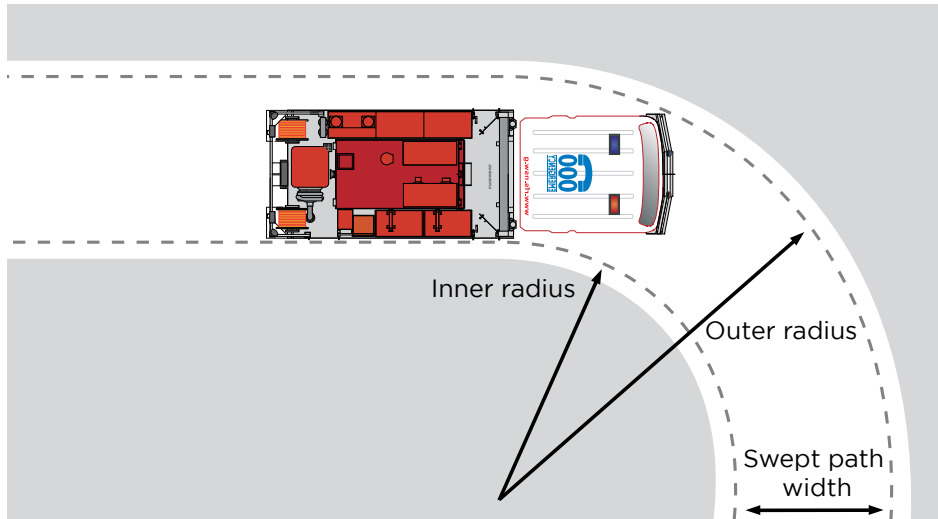
Table A3.2

Minimum curve radius for turning vehicles.

Curve radius (inside edge in metres)	Swept path (metres width)
< 40	4.0
40 - 69	3.0
70 - 100	2.7
> 100	2.5

Figure A3.2a

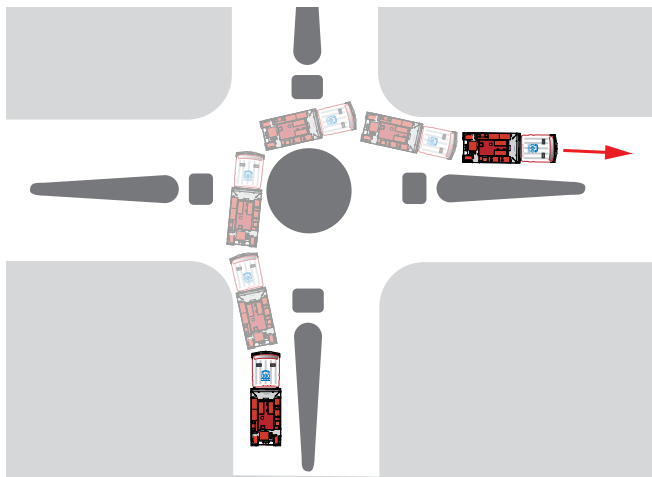
Swept path width for turning vehicles.



The radius dimensions given are for wall to wall clearance where body overhangs travel a wider arc than the wheel tracks (vehicle swept path). The swept path shall include an additional 500mm clearance either side of the vehicle.

Figure A3.2b

Roundabout swept path.



Example of a swept path as applied to a roundabout. The distance between inner and outer turning arcs allows for expected vehicle body swing of front and rear overhanging sections (the swept path).

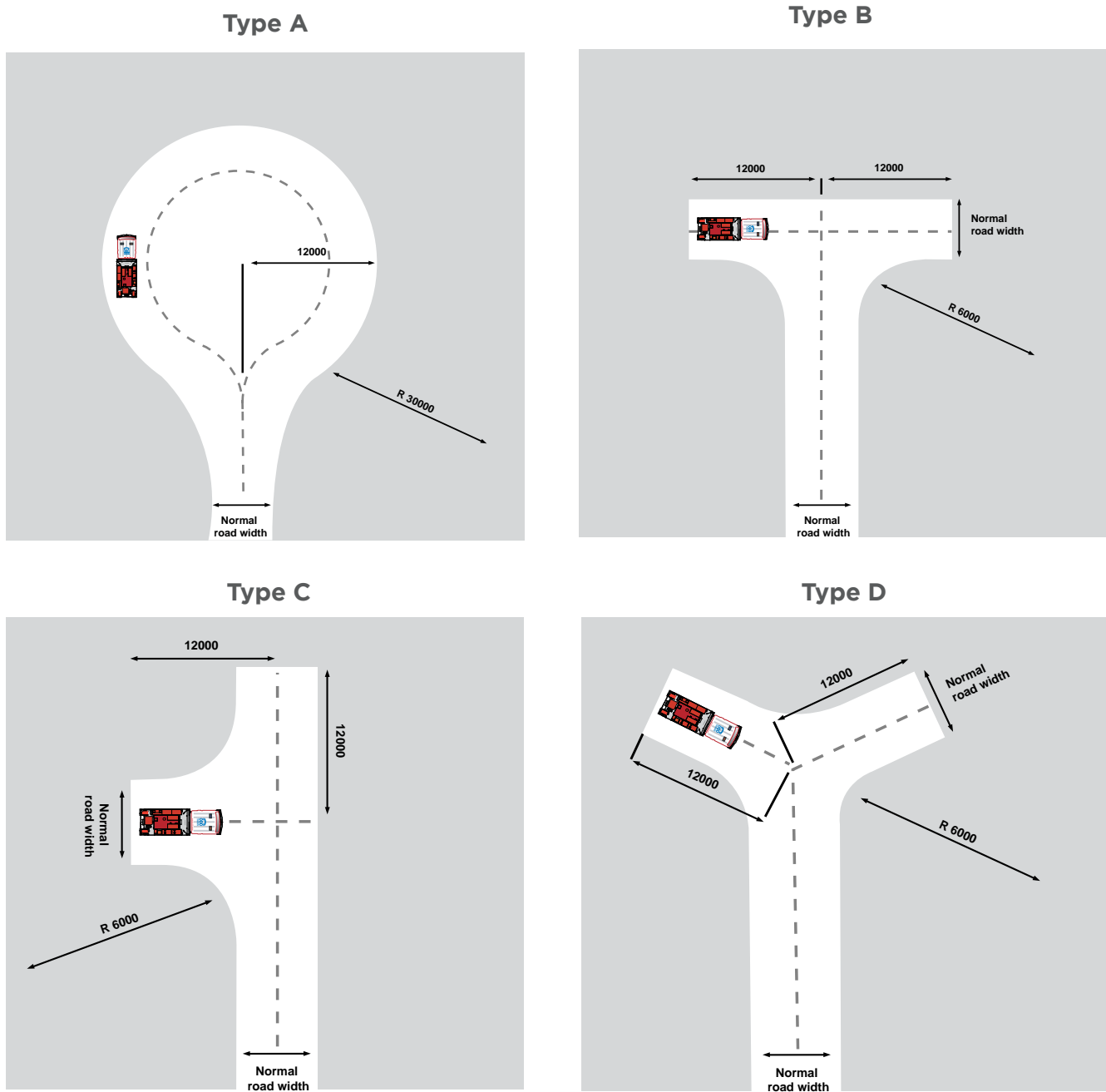
A3.3 Vehicle turning head requirements

Dead ends that are longer than 200m must be provided with a turning head area that avoids multipoint turns. "No parking" signs are to be erected within the turning head.

The minimum turning radius shall be in accordance with Table A3.2. Where multipoint turning is proposed the NSW RFS will consider the following options:

Figure A3.3

Multipoint turning options.



A3.4 Passing bays

The construction of passing bays, where required, shall be 20m in length and provide a minimum trafficable width at the passing point of 6m.

Figure A3.4

Passing bays can provide advantages when designed correctly. Poor design can and does severely impede access.



A3.5 Parking

Parking can create a pinch point in required access. The location of parking should be carefully considered to ensure fire appliance access is unimpeded. Hydrants shall be located outside of access ways and any parking areas to ensure that access is available at all times.

Figure A3.5

Hydrants and parking bays.

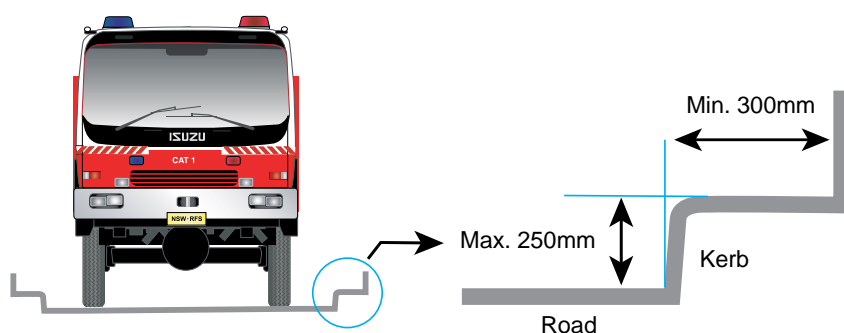


A3.6 Kerb dimensions

All kerbs constructed around access roads should be no higher than 250mm and free of vertical obstructions at least 300mm back from the kerb face to allow clearance for front and rear body overhang.

Figure A3.6

Carriageway kerb clearance dimensions.



A3.7 Services

Hydrant services should be located outside the carriageway and parking bays to permit traffic flow and access. Setup of standpipes within the carriageway may stop traffic flow. Hydrant services shall be located on the side of the road away from the bush fire threat where possible.

A3.8 Local Area Traffic Management (LATM)

The objective of LATM is to regulate traffic an acceptable level of speed and traffic volume within a local area.

Traffic engineers and planners should consider LATM devices when planning for local traffic control and their likely impact on emergency services. LATM devices by their nature are designed to restrict and impede the movement of traffic, especially large vehicles.

Where LATM devices are provided they are to be designed so that they do not impede fire vehicle access.

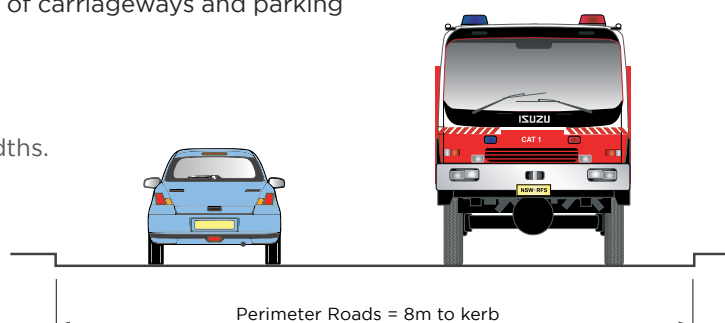
A3.9 Road types

A3.9.1 Perimeter Roads

Perimeter roads are to be provided with a minimum clear width of 8m. Parking and hydrants are to be provided outside of carriageways. Hydrants are to be located outside of carriageways and parking areas.

Figure A3.9a

Perimeter road widths.

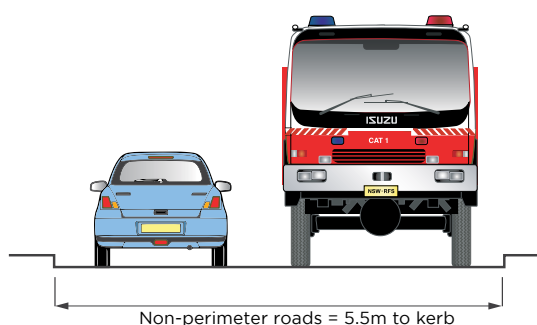


A3.9.2 Non-perimeter Roads

Non-perimeter roads shall be provided with a minimum clear width of 5.5m. Parking is to be provided outside of the carriageway and hydrants are not to be located in carriageways or parking areas.

Figure A3.9b

Non-perimeter road widths.



A3.9.3 Property access

Property access roads are to be a minimum of 4m wide.

Figure A3.9c

Property access road widths.

