BUSHFIRE THREAT ASSESSMENT

FOR A PROPOSED BOUNDARY ADJUSTMENT OF

LOT 212 DP 1119828 SUGARLOAF AND LOT 11 DP1141481, LOSTOCK NSW

Prepared by:

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Site Details:	Lot 212 DP 1119828 Sugarloaf and Lot 11 DP1141481 Lostock NSW
Prepared by:	***Sarah Jones B.Env.Sc.,G.Dip.DBPA (Design in Bushfire Prone Areas)*** ***Firebird ecoSultants Pty Ltd*** **A**BN – 16 105 985 993 PO Box 354, Newcastle NSW 2300 M: 0414 465 990 Email: sarah@firebirdeco.com.au T: 02 4910 3939 Fax: 02 4929 2727
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1st Reviewer:	Liv Page
2nd Reviewer:	Sarah Jones

Disclaimer

Not withstanding the precautions adopted within this report, it should always be remembered that bushfires burn under a wide range of conditions. An element of risk, no matter how small always remains, and 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.

Executive Summary

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of Perception Planning for a proposed boundary adjustment at Lot 212 DP1119828 (No. 335 Bingleburra Road) Sugarloaf and Lot 11 DP1141481 (No. 3041 Paterson River Road) Lostock, NSW. The report forms part of the supporting documentation for a DA to be submitted to Dungog Shire Council (DSC). For the purposes of this report, No. 335 Bingleburra Road will be referred to as proposed lot 201 and No. 3041 Paterson River Road will be referred to as proposed lot 202.

In order for Council to grant consent to this Development Application, it requires a Bush Fire Safety Authority (BFSA) to be issued by the NSW Rural Fire Service (RFS) under the Rural Fires Act 1997 (s100B – Bush Fire Safety Authority). This means that Council must refer this Development Application to the NSW RFS, who are then provided with 40 days to respond.

The report demonstrates compliance with Planning for Bushfire Protection 2019 (NSW RFS, 2019) and AS3959-2018 Construction of Buildings in Bush Fire Prone Areas.

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to the proposal. Recommendations are provided with regard to fuel management, access, provision of emergency services, building protection and construction standards to facilitate an acceptable level of bushfire protection.

In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements:

1. **Asset Protection Zone (APZ) - The APZ provides space and reduced fuel loads to ensure radiant heat levels at the buildings are below critical limits and to prevent direct flame contact.**

   The proposal is for a boundary adjustment of proposed lot 201 and proposed lot 202. No new dwellings are proposed on this site however, the recommended APZs in accordance with Planning for Bushfire Protection 2019 are as follows:

   - Proposed lot 201 – North and East for a distance of 15m, West for a distance of 10m, and South for a distance of 45m.
   - Proposed lot 202 – North and East for a distance of 10m, South for a distance of 36m and West for a distance of 15m.

   These distances are to be managed as described under 'Planning for Bushfire Protection (Appendix 4 – Asset Protect Zone Requirements)' and the document titled 'Standards for Asset Protection Zones'.

2. **Property Access Roads – Access standards provide for emergency evacuation and firefighting operations.**

Any future access road will be able to comply with the following criteria for property access roads in accordance with Table 5.3b in PBP 2019:

- two-wheel drive, all weather access,
- Minimum of 4m carriageway width,
- Passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay,
- Minimum vertical clearance of 4m to any overhanding obstructions, such as tree branches,
- Minimum distance between inner and outer curves is 6m,
- Crossfall is not more than 10 degrees,
- Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads

3. Construction Standards – Construction standards seek to increase the protection of the habitable buildings from bushfire. The shorter the APZ (distance between the external wall of the habitable building and the unmanaged vegetation), then the higher the construction standard, which is referred to as the BAL

N/A – No new dwellings are proposed. Indicative building envelopes are identified as being able to achieve BAL-29 with the implementation of an appropriate APZ.

Any future dwelling on the proposed lots will be assessed under s4.14 of the EP&A Act 1979 to show compliance with Planning for Bushfire Protection 2019.

4. Water supply – a water supply is required for fighting purposes on the lot.

It is not expected that reticulated water and associated fire hydrants are available at the proposed lots therefore a minimum 20,000L static water supply is required for firefighting purposes that complies with the following requirements from Table 7.4a in PBP 2019:

- a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure; a 65mm Storz outlet with a ball valve is fitted to the outlet;
- ball valve and pipes are adequate for water flow and are metal;
- supply pipes from tank to ball valve have the same bore size to ensure flow volume;
- underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank;
- a hardened ground surface for truck access is supplied within 4m of the access hole;
- above-ground tanks are manufactured from concrete or metal;
- raised tanks have their stands constructed from non-combustible material or bushfire resisting timber (see Appendix F AS3959);
- unobstructed access is provided at all times;
- tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters; and

- underground tanks are clearly marked;
- all exposed water pipes external to the building are metal, including any fittings;
- where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bushfire attack; any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and
- fire hose reels are constructed in accordance with AS/NZS 1221:1991 fire hose reels, and installed in accordance with the relevant clauses of AS2441:2005 installation of fire hose reels.

I certify the development conforms to the relevant specifications and requirements of Planning for Bushfire Protection 2019

Sarah Jones 

B.Env.Sc., G.Dip.DBPA (Design for Bushfire Prone Areas)
FPA BPAD-A Certified Practitioner (Certification Number BPD-PA-26512)
Ecologist / Bushfire Planner

Terms & Abbreviations

Abbreviation	Meaning
APZ	Asset Protection Zone
AS2419 -2017	Australian Standard – Fire Hydrant Installations
AS3959-2018	Australian Standard – Construction of Buildings in Bush Fire Prone Areas
BCA	Building Code of Australia
BPA	Bush Fire Prone Area (Also Bushfire Prone Land)
BFPL Map	Bush Fire Prone Land Map
BPMs	Bush Fire Protection Measures
BFSA	Bush Fire Safety Authority
CC	Construction Certificate
DSC	Dungog Shire Council
EPA Act	*NSW Environmental Planning and Assessment Act 1979*
FFDI	Forest Fire Danger Index
FMP	Fuel Management Plan
ha	hectare
IPA	Inner Protection Area
LGA	Local Government Area
OPA	Outer Protection Area
PBP	Planning for Bushfire Protection 2019
PoM	Plan of Management
RF Act	Rural Fires Act 1997
RF Regulation	Rural Fires Regulation

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TABLES

FIGURES

1 INTRODUCTION

A Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of Perception Planning for a proposed boundary adjustment between proposed lot 201 and proposed lot 202, (refer to Figure 1-1 for site locality). Refer to Appendix A for Proposed Site Plans.

This BTA is suitable for submission with a Development Application (DA) and provides information on measures that will enable the development to comply with 'Planning for Bushfire Protection' (NSW RFS, 2019), hereafter referred to as PBP (RFS, 2019).

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to such a proposal, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the Environmental Planning and Assessment Amendment (Planning for Bushfire Protection) Regulation 2007 and the Rural Fires Amendment Regulation 2007 (RF Amendment Regulation 2007).

1.1 Site Particulars

Locality:	Lot 212 DP1119828 Sugarloaf, and Lot 11 DP1141481 Lostock NSW
LGA:	Dungog Shire Council
Current Land Use:	Vacant land
Forest Danger Index:	100 FFDI

Legend

Subject Site

BINGLEBURRA ROAD

PT.201

BINGLEBURRA ROAD

PT.201

202

Note:
Boundaries are not survey accurate.
Although all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

Google
Nearmap

FIGURE 1-1: PROPOSED SUBDIVISION

Ref No 3382

CLIENT	Client
SITE DETAILS	335 Bingleburra Road Sugarloaf
DATE	27 September 2024

NORTH

0 250 500 750

SCALE 15 000 @ A3

PIXELDRAFTING

Firebird ecoSultants Pty Ltd
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Level 1, 146 Hunter Street, Newcastle NSW 2300
P O Box 354 Newcastle NSW 2300

firebird

1.2 Description of the Proposal

This DA relates to the proposal for a boundary adjustment. Refer to Appendix A for proposed plans.

1.3 Legislative Requirements

The Site has been mapped as Bush Fire Prone Land Map (BFPLM) by DSC.

This report forms part of the supporting documentation for a Development Application (DA) to be submitted to DSC.

This BTA has been prepared using current legislative requirements and associated guidelines for assessment of bushfire protection, these being:

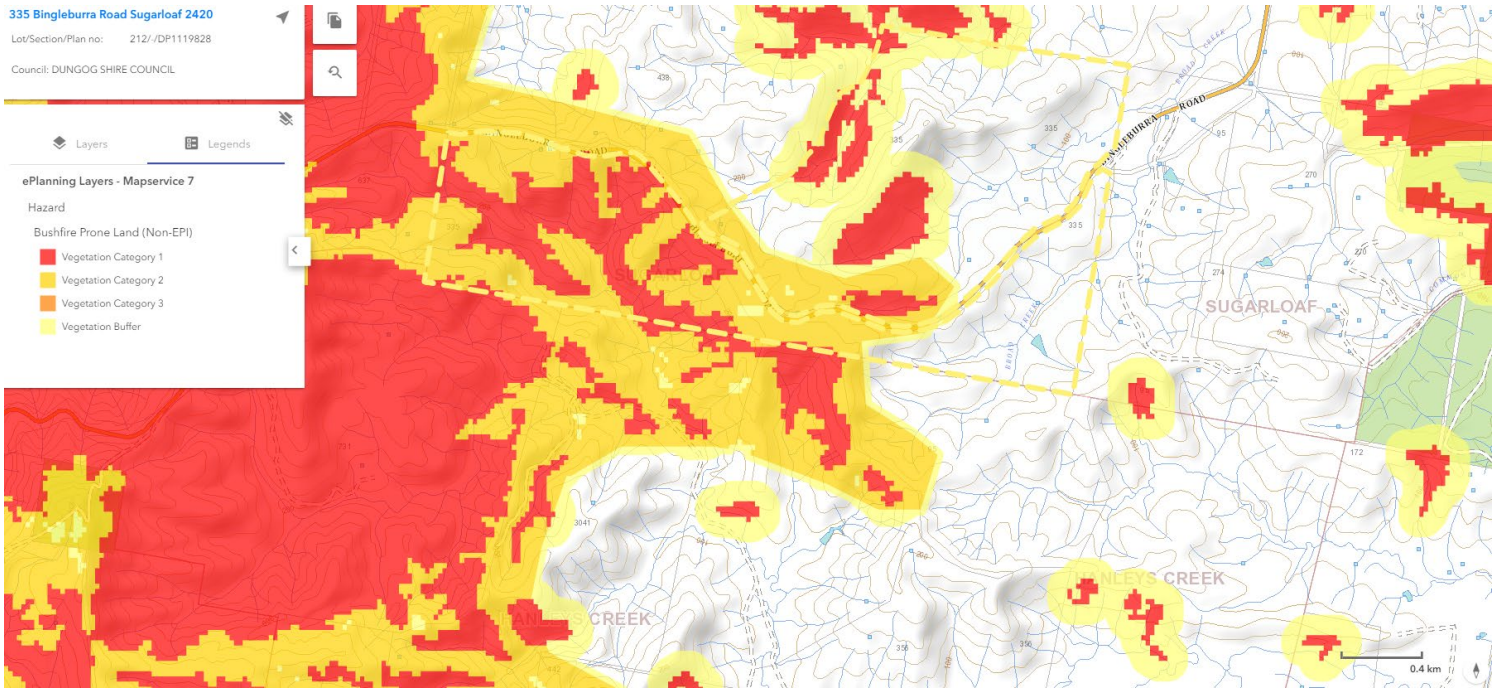
- PBP (RFS, 2019); and
- AS3959-2018 Construction of Buildings in Bushfire Prone Area; and

1.4 Objectives of Assessment

This report has been prepared to address the requirements of Clause 44 of the Rural Fires Regulation. This BTA also addresses the six key Bush Fire Protection Measures (BFRMs) in a development assessment context being:

- The provision of clear separation of buildings and bush fire hazards, in the form of fuel-reduced APZ and their components being Inner Protection Areas (IPA's) and Outer Protection Areas (OPA's);
- Sitting and design of the proposal;
- Construction standards;
- Appropriate access standards for residents, fire-fighters, emergency workers and those involved in evacuation;
- Adequate water supply and pressure, and utility services; and
- Suitable landscaping, to limit fire spreading to a building.

Figure 1-2: Bushfire Prone Land Map



2 METHODOLOGY

2.1 Vegetation Assessment

Vegetation surveys and vegetation mapping carried out on the site has been undertaken as follows:

- Aerial Photograph Interpretation to map vegetation cover and extent
- Confirmation of the vegetation assemblage typology present.

2.2 Slope Assessment

Slope assessment has been undertaken as follows:

- Aerial Photograph Interpretation in conjunction with analysis of electronic contour maps with a contour interval of 10m.

3 SITE ASSESSMENT

The following assessment has been undertaken in accordance with the requirements of PBP (RFS, 2019).

3.1 Vegetation & Slope Assessment

In accordance with PBP (RFS 2019), an assessment of the vegetation over a distance of 140m in all directions from the site was undertaken. Vegetation that may be considered a bushfire hazard was identified in all directions from the site. This assessment is depicted in Tables 3-1 & 3-2 and Figure 3-1 that shows the vegetation.

Table 3-1: Vegetation Classification of Indicative Building Envelope at Proposed Lot 201

Direction	Vegetation Type	Slope under vegetation
North	Grassland vegetation	Downslope 10-15°
South	Forest vegetation	Downslope 10-15°
East	Grassland vegetation	Downslope 10-15°
West	Grassland vegetation	Upslope

Table 3-2: Vegetation Classification of Indicative Building Envelope at Proposed Lot 202

Direction	Vegetation Type	Slope
North	Grassland vegetation	Upslope
South	Forest vegetation	Downslope 5-10°
East	Grassland vegetation	Upslope
West	Grassland vegetation	Downslope 10-15°

FIGURE 3-1: VEGETATION MAP

Ref No 3382

CLIENT	Client
SITE DETAILS	335 Bingleburra Road Sugarloaf
DATE	2 October 2024

NORTH

0 50 100 200

SCALE 4000 @ A3

PIXELDRAFTING

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P O Box 354 Newcastle NSW 2300

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4 BUSHFIRE PROTECTION ASSESSMENT

4.1 Asset Protection Zones (APZ)

The PBP (RFS, 2019) guidelines has been used to determine the widths of the APZs required for habitable buildings within the site using the vegetation and slope data identified in Section 3-1 of this report.

The site lies within Dungog Local Government Area and therefore is assessed under a FDI rating of 100. Using the results from the Site Assessment (section 3-1 of this report) the deemed to satisfy APZ requirements for the proposed buildings within the site was determined using Table A1.12.2 in PBP (RFS, 2019). Refer to Table 4-1 and Figure 4-1 for required APZs for indicative building envelopes.

Table 4-1: Recommended APZs for Indicative Building Envelope at Proposed Lot 201

Direction from Building Envelope	Vegetation Classification within 140m	Effective Slope (within 100m)	APZ to be Provided	Comment
North	Grassland	Downslope 10-15°	**BAL-29** = 15m	Acceptable solution in accordance with PBP (RFS, 2019)
East	Grassland	Downslope 10-15°	**BAL-29** = 15m	Acceptable solution in accordance with PBP (RFS, 2019)
South	Forest	Downslope 10-15°	**BAL-29** = 45m	Acceptable solution in accordance with PBP (RFS, 2019)
West	Grassland	Upslope	**BAL-29** = 10m	Acceptable solution in accordance with PBP (RFS, 2019)

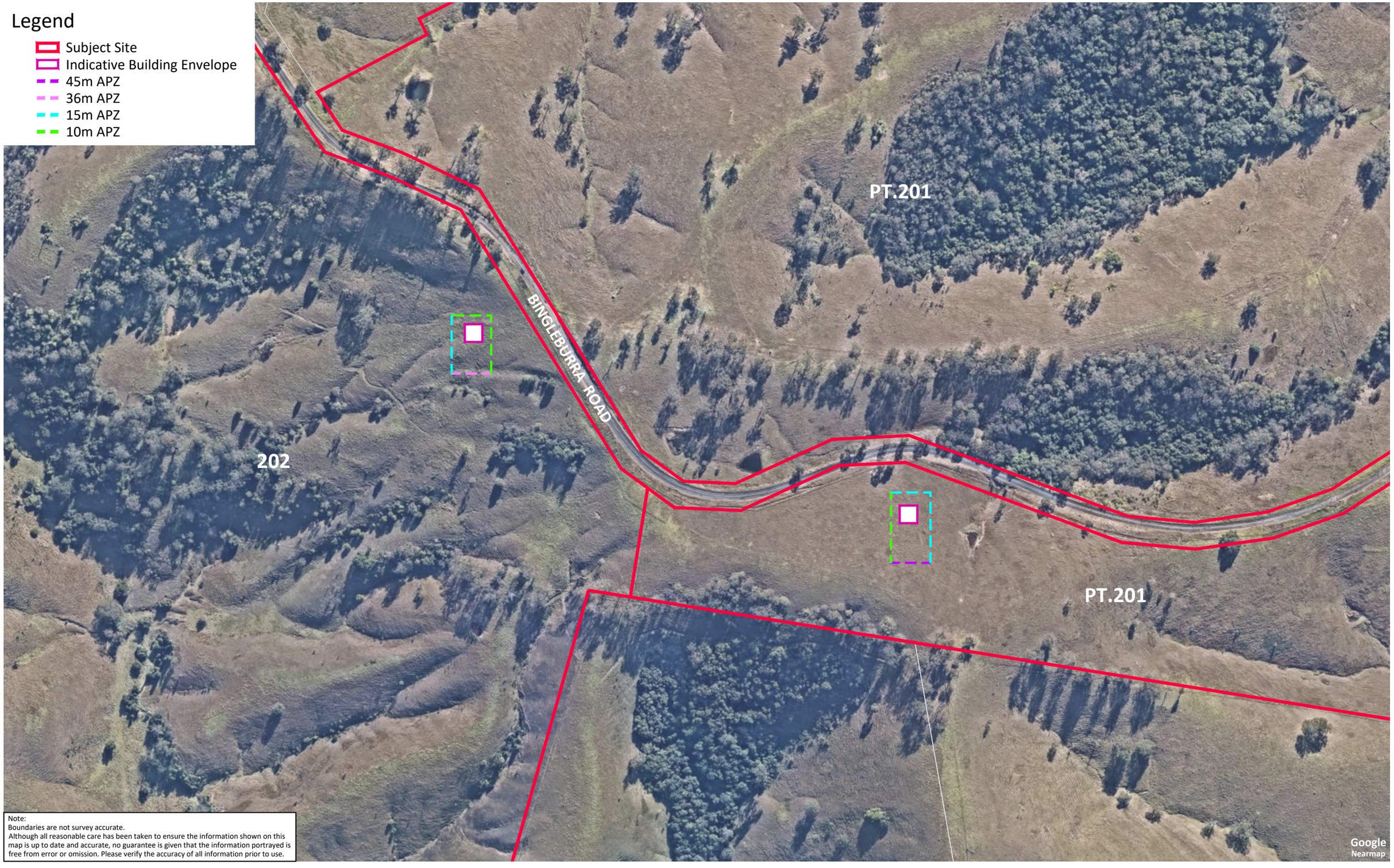
Table 4-2: Recommended APZs for Indicative Building Envelope at Proposed Lot 202

Direction from Building Envelope	Vegetation Classification within 140m	Effective Slope (within 100m)	APZ to be Provided	Comment
North	Grassland	Upslope	**BAL-29** = 10m	Acceptable solution in accordance with PBP (RFS, 2019)

Direction from Building Envelope	Vegetation Classification within 140m	Effective Slope (within 100m)	APZ to be Provided	Comment
East	Grassland	Upslope	**BAL-29** = 10m	Acceptable solution in accordance with PBP (RFS, 2019)
South	Forest	Downslope 5-10°	**BAL-29** = 36m	Acceptable solution in accordance with PBP (RFS, 2019)
West	Grassland	Downslope 10-15°	**BAL-29** = 15m	Acceptable solution in accordance with PBP (RFS, 2019)

NOTE: No new dwellings are proposed on this site. APZs have been provided to indicative building envelopes to achieve BAL-29 in accordance with PBP 2019.

Any future dwelling on the proposed lots will be assessed under s4.14 of the EP&A Act 1979 to show compliance with PBP 2019.



Note:
Boundaries are not survey accurate.
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FIGURE 4-1: ASSET PROTECTION ZONES

Ref No 3382

CLIENT	Client
SITE DETAILS	335 Bingleburra Road Sugarloaf
DATE	4 October 2024

NORTH

0 50 100 200

SCALE 4000 @ A3

PIXELDRAFTING

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5 COMPLIANCE

The proposal is for a boundary adjustment and therefore development standards apply. Table 6-1 details the proposed compliance with Development Standards for Residential and Rural Residential Subdivisions.

Table 6-1: Proposed Boundary Adjustment Compliance with Development Standards

Acceptable Solutions	Performance Criteria	Compliance with Performance Criteria
Asset Protection Zones		
〉 APZs are provided in accordance with Tables A1.12.2 and A1.12.3 based on the FFDI.	potential building footprints must not be exposed to radiant heat levels exceeding 29 kW/m² on each proposed lot.	**Can comply with Acceptable Solution –** The proposal is for a boundary adjustment only. APZs have been provided for indicative building envelopes in accordance with A1.12.2 of PBP 2019.
〉 APZs are managed in accordance with the requirements of Appendix 4.	APZs are managed and maintained to prevent the spread of a fire towards the building.	**Complies with Acceptable Solution –** APZs will be managed in accordance with the requirements of Appendix 4.
〉 APZs are wholly within the boundaries of the development site	the APZs is provided in perpetuity	**Can comply with Acceptable Solution –** APZs on site occur entirely within the boundaries of the site.
〉 APZs are located on lands with a slope less than 18 degrees.	APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	**Complies with Acceptable Solution –** APZs on site will not occur over slopes <18°.
Landscaping		
〉 landscaping is in accordance with Appendix 4; and fencing is constructed in accordance with section 7.6.	landscaping is designed and managed to minimise flame contact and radiant heat to	**N/A –** No landscaping is proposed.

	buildings, and the potential for wind-driven embers to cause ignitions.	
Access (General Requirements)		
〉 property access roads are two-wheel drive, all-weather roads; 〉 perimeter roads are provided for residential subdivisions of three or more allotments; 〉 subdivisions of three or more allotments have more than one access in and out of the development; 〉 traffic management devices are constructed to not prohibit 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; 〉 all roads are through roads; 〉 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;	firefighting vehicles are provided with safe, all-weather access to structures.	**N/A -** The proposal is for a boundary adjustment only however future property access roads can comply with the following; **-** two-wheel drive, all weather access, - Minimum of 4m carriageway width, - Passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay, - Minimum vertical clearance of 4m to any overhanding obstructions, such as tree branches, - Suitable turning head, being a loop around the dwelling, - Minimum distance between inner and outer curves is 6m, - Crossfall is not more than 10 degrees

〉 where kerb and guttering is provided on perimeter roads, roll top kerbing should be used to the hazard side of the road; 〉 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 〉 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.		
〉 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.	the capacity of access roads is adequate for firefighting vehicles.	**N/A –** The public road is existing.
〉 hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression; 〉 hydrants are provided in accordance with the relevant clauses of AS 2419.1:2017 - Fire hydrant installations System design, installation and commissioning; and	there is appropriate access to water supply.	**N/A –** The proposal is for a boundary adjustment only. Static water supply has been recommended for both lots.

〉 there is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.		
Perimeter Roads		
〉 are two-way sealed roads; 〉 minimum 8m carriageway width kerb to kerb; 〉 parking is provided outside of the carriageway width; 〉 hydrants are located clear of parking areas; 〉 are through roads, and these are linked to the internal road system at an interval of no greater than 500m; 〉 curves of roads have a minimum inner radius of 6m; 〉 the maximum grade road is 15 degrees and average grade of not more than 10 degrees; 〉 the road crossfall does not exceed 3 degrees; and 〉 a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface.	**N/A –** The proposal is for a boundary adjustment only**.** The public road is existing.

Non-Perimeter Roads		
〉 minimum 5.5m carriageway width kerb to kerb; 〉 parking is provided outside of the carriageway width; 〉 hydrants are located clear of parking areas; 〉 roads are through roads, and these are linked to the internal road system at an interval of no greater than 500m; 〉 curves of roads have a minimum inner radius of 6m; 〉 the road crossfall does not exceed 3 degrees; and 〉 a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating.	**N/A –** The proposal is for a boundary adjustment only. The public road is existing.
Property Access		
〉 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	firefighting vehicles can access the dwelling and exit the property safely.	**N/A** – The proposal is for a boundary adjustment only however future access roads can comply with the following; - two-wheel drive, all weather access, - Minimum of 4m carriageway width, - Passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay,

supports the operational use of emergency firefighting vehicles. **In circumstances where this cannot occur, the following requirements apply:** 〉 minimum 4m carriageway width; 〉 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; 〉 a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches; 〉 provide a suitable turning area in accordance with Appendix 3; 〉 curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress; 〉 the minimum distance between inner and outer curves is 6m; 〉 the crossfall is not more than 10 degrees; 〉 maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads; and		- Minimum vertical clearance of 4m to any overhanding obstructions, such as tree branches, - Suitable turning head, being a loop around the dwelling, - Minimum distance between inner and outer curves is 6m, - Crossfall is not more than 10 degrees

〉 a development comprising more than three dwellings has access by dedication of a road and not by right of way. **Note: Some short constrictions in the access may be accepted where they are not less than 3.5m wide, extend for no more than 30m and where the obstruction cannot be reasonably avoided or removed. The gradients applicable to public roads also apply to community style development property access roads in addition to the above.**		
Water Supplies		
〉 reticulated water is to be provided to the development where available; 〉 a static water and hydrant supply is provided for non-reticulated developments or where reticulated water supply cannot be guaranteed; and 〉 static water supplies shall comply with Table 5.3d.	adequate water supplies are provided for firefighting purposes.	**N/A –** The proposal is for a boundary adjustment only. Static water supply has been recommended for both lots.
〉 fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard AS 2419.1:2017; 〉 hydrants are not located within any road carriageway; and 〉 reticulated water supply to urban	Water supplies are located at regular intervals; and the water supply is accessible and reliable for firefighting operations.	**N/A –** The proposal is for a boundary adjustment only. Static water supply has been recommended for both lots.

subdivisions uses a ring main system for areas with perimeter roads.		
〉 fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2017.	flows and pressure are appropriate.	**N/A –** The proposal is for a boundary adjustment only. Static water supply has been recommended for both lots.
〉 all above-ground water service pipes are metal, including and up to any taps; and 〉 above-ground water storage tanks shall be of concrete or metal.	the integrity of the water supply is maintained.	**N/A –** The proposal is for a boundary adjustment only. Static water supply has been recommended for both lots.
Electricity Services		
〉 where practicable, electrical transmission lines are underground; 〉 where overhead, electrical transmission 〉 lines are proposed as follows: 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.	location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	**N/A –** The proposal is for a boundary adjustment only and electricity supply is already connected to the site.
Gas Services		
〉 reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - The storage and handling of	location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	**N/A –** The proposal is for a boundary adjustment only and gas services are already connected to the site.

LP Gas, the requirements of relevant authorities, and metal piping is used; 〉 all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side; 〉 connections to and from gas cylinders are metal; 〉 polymer-sheathed flexible gas supply lines are not used; and 〉 above-ground gas service pipes are metal, including and up to any outlets.		

6 CONCLUSION & RECOMMENDATIONS

In summary, a Bushfire Threat Assessment Report (BTA) has been prepared by Firebird ecoSultants Pty Ltd at the request of Perception Planning for a proposed boundary adjustment at Lot 212 DP1119828 (No. 335 Bingleburra Road) Sugarloaf and Lot 11 DP1141481 (No. 3041 Paterson River Road) Lostock, NSW. The report forms part of the supporting documentation for a DA to be submitted to Dungog Shire Council (DSC).

In order for Council to grant consent to this Development Application, it requires a Bush Fire Safety Authority (BFSA) to be issued by the NSW Rural Fire Service (RFS) under the Rural Fires Act 1997 (s100B – Bush Fire Safety Authority). This means that Council must refer this Development Application to the NSW RFS, who are then provided with 40 days to respond.

If the recommendations contained within this report are duly considered and incorporated, it is considered that the fire hazard present is containable to a level necessary to provide an adequate level of protection to life and property on the subdivision. In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements for the proposed subdivision:

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to the proposal. Recommendations are provided with regard to fuel management, access, provision of emergency services, building protection and construction standards, to facilitate an acceptable level of bushfire protection.

In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements:

1. **Asset Protection Zone (APZ) - The APZ provides space and reduced fuel loads to ensure radiant heat levels at the buildings are below critical limits and to prevent direct flame contact.**

   The proposal is for a boundary adjustment of proposed lot 201 and proposed lot 202. No new dwellings are proposed on this site however, the recommended APZs in accordance with Planning for Bushfire Protection 2019 are as follows:

   - Proposed lot 201 – North and East for a distance of 15m, West for a distance of 10m, and South for a distance of 45m.
   - Proposed lot 202 – North and East for a distance of 10m, South for a distance of 36m and West for a distance of 15m.

   These distances are to be managed as described under 'Planning for Bushfire Protection (Appendix 4 – Asset Protect Zone Requirements)' and the document titled 'Standards for Asset Protection Zones'.

2. **Property Access Roads – Access standards provide for emergency evacuation and firefighting operations.**

Any future access road will be able to comply with the following criteria for property access roads in accordance with Table 5.3b in PBP 2019:

- two-wheel drive, all weather access,
- Minimum of 4m carriageway width,
- Passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay,
- Minimum vertical clearance of 4m to any overhanding obstructions, such as tree branches,
- Minimum distance between inner and outer curves is 6m,
- Crossfall is not more than 10 degrees,
- Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads

3. Construction Standards – Construction standards seek to increase the protection of the habitable buildings from bushfire. The shorter the APZ (distance between the external wall of the habitable building and the unmanaged vegetation), then the higher the construction standard, which is referred to as the BAL.

N/A – No new dwellings are proposed. Indicative building envelopes are identified as being able to achieve BAL-29 with the implementation of an appropriate APZ.

Any future dwelling on the proposed lots will be assessed under s4.14 of the EP&A Act 1979 to show compliance with Planning for Bushfire Protection 2019.

5. Water supply – a water supply is required for fighting purposes on the lot.

It is not expected that reticulated water and associated fire hydrants are available at the proposed lots therefore a minimum 20,000L static water supply is required for firefighting purposes that complies with the following requirements from Table 7.4a in PBP 2019:

- a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure; a 65mm Storz outlet with a ball valve is fitted to the outlet;
- ball valve and pipes are adequate for water flow and are metal;
- supply pipes from tank to ball valve have the same bore size to ensure flow volume;
- underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank;
- a hardened ground surface for truck access is supplied within 4m of the access hole;
- above-ground tanks are manufactured from concrete or metal;
- raised tanks have their stands constructed from non-combustible material or bushfire resisting timber (see Appendix F AS3959);
- unobstructed access is provided at all times;

- tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters; and
- underground tanks are clearly marked;
- all exposed water pipes external to the building are metal, including any fittings;
- where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bushfire attack; any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and
- fire hose reels are constructed in accordance with AS/NZS 1221:1991 fire hose reels, and installed in accordance with the relevant clauses of AS2441:2005 installation of fire hose reels.

Provided the recommendations stated above are implemented in full Firebird ecoSultants Pty Ltd is of the opinion that the proposed boundary adjustment is able to meet the aims and objectives of PBP (RFS, 2019).

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APPENDIX A PROPOSED SITE PLANS

M.G.A. (SCIMS)

1 DP1188739

6 DP578662

5 DP1161605

801 DP1255417

802 DP1255417

B DP420654

101 UNREG'D DP

102 UNREG'D DP

154 DP752457

BINGLEBURRA

SEE SHEET 2

SEE SHEET 3

SEE SHEET 4

ROAD

Pt. 201
(176.8 Ha)
238.2 Ha

58° 25' 55" - 2230.75 (DP195654)
67° 58' 55" - 2230.27 (SURVEY)

14 DP29270

8°49'30" 734.285

280°36'10" 50.25
279°17'30" 390.105
278°47'50" 120.74
280°03'50" 80.61
282°38'10" 25.185
15°19'55" 369.42
285°16'10" 36.955
15°30'10" 21.165
105°15'10" 36.935
15°10'10" 316.64

13 DP456332

13 DP1063366

202
269.8 Ha

14°28'30" 763.995

12 DP456332

12 DP1063366

89°34'10" 116.96
52°14'40" 182.015
69°52'10" 140.495

94 DP752457

279°06'10" 697.61

11 DP661000

182°42'10" 22.01
279°38'40" 167.05
278°50'10" 175.72
280°19'10" 199.7
278°59'10" 5.35

91 DP752457

Pt. 201
(61.45 Ha)

8°31'59" 1116.23

3 DP596869

99°34'10" 355.51
98°54'50" 341.04
99°04'40" 795.96

197°28'40" 322.775
191°44'30" 299.115
228°03'40" 140.615
206°15'50" 135.81
119°41'10" 15.89
206°32'10" 25.67
200°24'40" 74.995
300°28'10" 24.38
190°32'50" 451.56
192°16'10" 81.27
193°23'10" 120.7
216°57'10" 68.095

9 DP29270

10 DP29270

7 DP1149622

PRELIMINARY ONLY

THIS PLAN IS PRELIMINARY ONLY AND IS SUBJECT TO COUNCIL APPROVAL, FINAL DESIGN, CONSTRUCTION, FINAL SURVEY AND REGISTRATION AT THE LAND AND PROPERTY INFORMATION, SYDNEY.

SURVEYOR Name: THOMAS F CAMPBELL Date: Reference: 24195	PLAN OF SUBDIVISION OF LOT 11 DP1141481 & LOT 212 DP1119828	LGA: DUNGOG Locality: SUGARLOAF & HANLEYS CREEK Reduction Ratio 1:10,000 Lengths are in metres.	REGISTERED DP

24195_DP(Draft)_R2_240417

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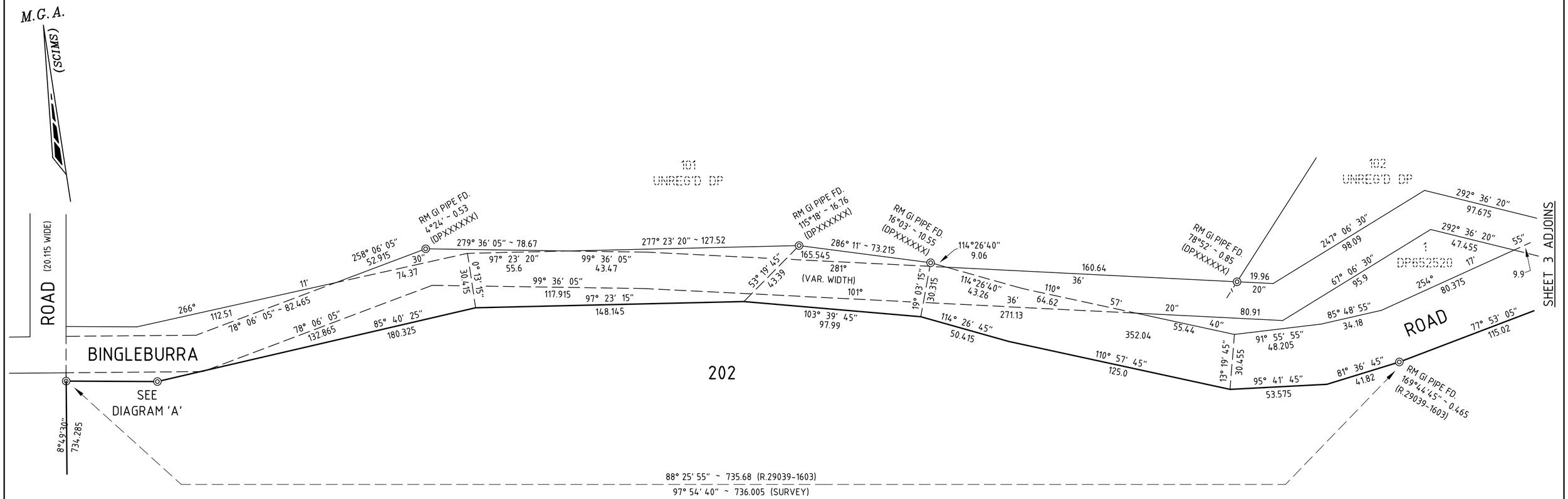

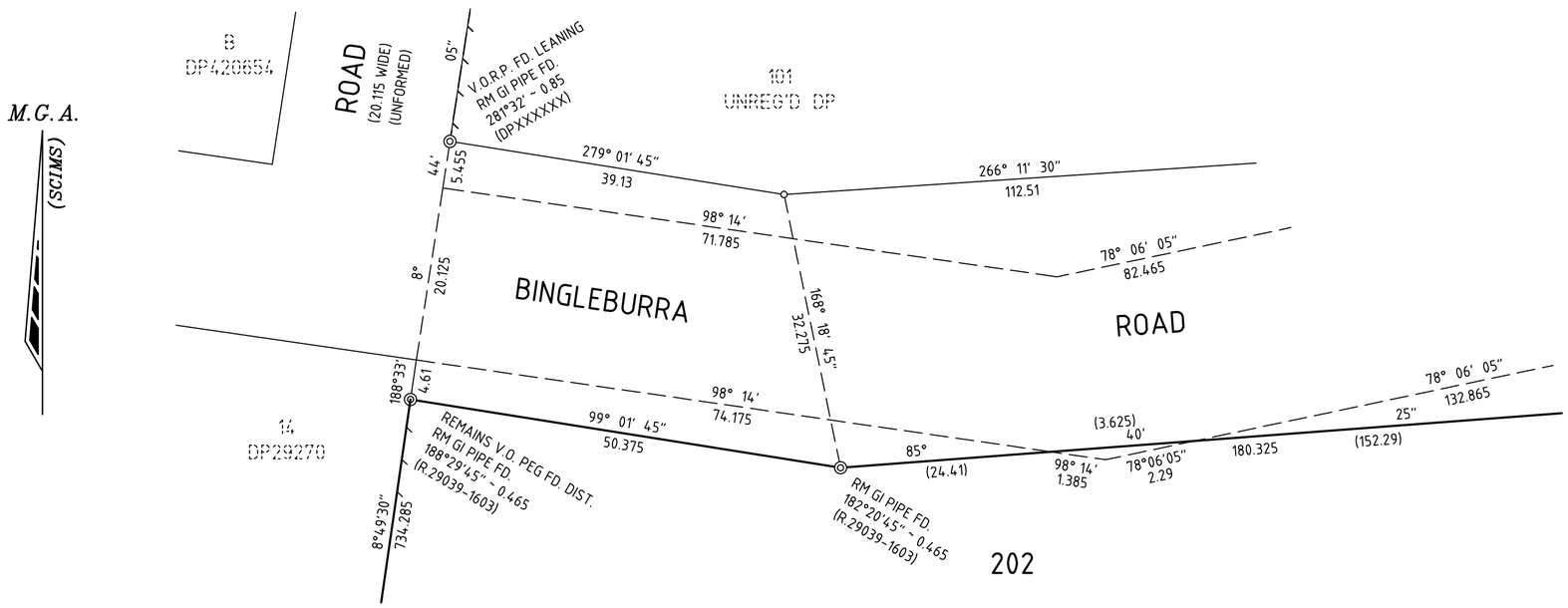

DIAGRAM 'A'
RR 1:500

PRELIMINARY ONLY

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SURVEYOR	PLAN OF SUBDIVISION OF LOT 11 DP1141481 & LOT 212 DP1119828	LGA: DUNGOG Locality: SUGARLOAF & HANLEYS CREEK Reduction Ratio 1:10,000 Lengths are in metres.	REGISTERED	DP
Name: THOMAS F CAMPBELL Date: Reference: 24195				

24195_DP(Draft)_R2_240417

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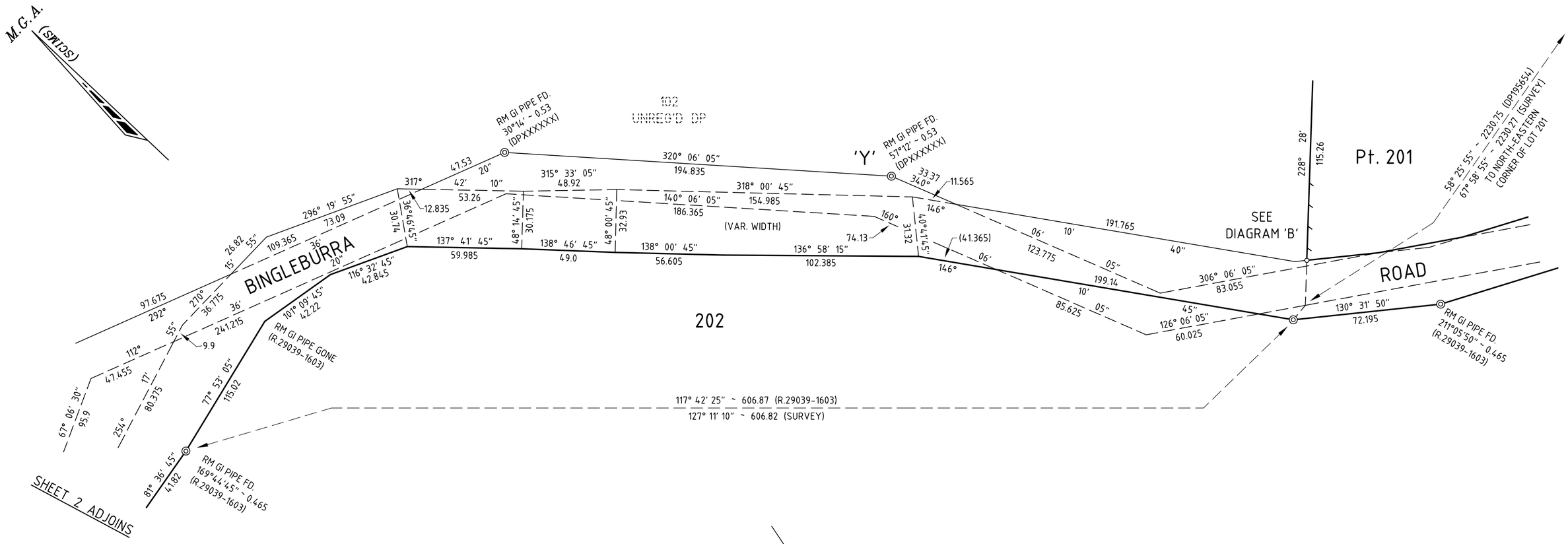

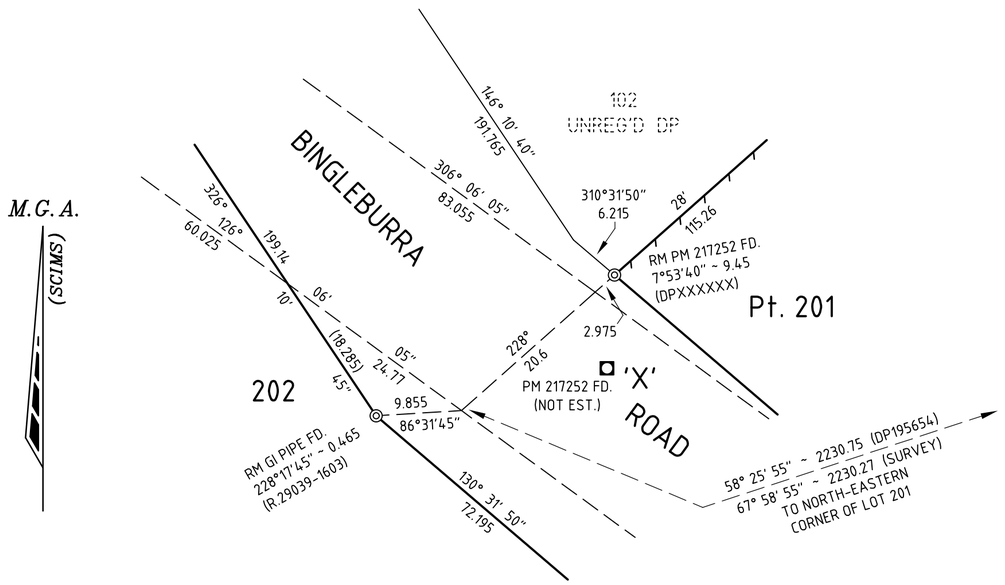

DIAGRAM 'B'
RR 1:500

PRELIMINARY ONLY

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SURVEYOR Name: THOMAS F CAMPBELL Date: Reference: 24195	PLAN OF SUBDIVISION OF LOT 11 DP1141481 & LOT 212 DP1119828	LGA: DUNGOG Locality: SUGARLOAF & HANLEYS CREEK Reduction Ratio 1:10,000 Lengths are in metres.	REGISTERED	DP

24195_DP(Draft)_R2_240417

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 Table of mm

M.G.A. (SCIMS)

PRELIMINARY ONLY

THIS PLAN IS PRELIMINARY ONLY AND IS SUBJECT TO COUNCIL APPROVAL, FINAL DESIGN, CONSTRUCTION, FINAL SURVEY AND REGISTRATION AT THE LAND AND PROPERTY INFORMATION, SYDNEY.

5 DP1161605

601 DP1255417

602 DP1255417

154 DP752457

102 UNREG'D DP

202

Pt. 201

ROAD

BINGLEBURRA

SEE DIAGRAM 'C'

3 DP596869

10 DP29270

9 DP29270

RM DH & WING IN ROCK FD. 336°41' ~ 0.985 (DP1013706)

RM GI PIPE FD. 188°10' ~ 1.36 (DP1013706)

99°44'50" 626.67

97°57'15" 589.99

8°21' 92.195

18°49' 74.9

21°56' 61.605

27°51' 77.29

69°24' 75.745

49°19' 55.73

20°02' 165.905

12°40' 65.385

42°41' 95.295

34°09' 31.88

43°47' 88.855

62°12' 350.48

61°21' 41.15

48°28' 115.26

56.87

130°31'50" 72.195

111°33'05" 118.85

117.22

124°42'45" 47.735

136°16'45" 46.695

124°42'45" 41.2

136°16'45" 39.91

263.28

150°21'45" 267.25

332°12' 20.11

7°29'35" 400.175

154.47

46°02'05" 109.84

8°27'50" 62.355

211.54

25°43'45" 211.61

68.125

46°16'45" 78.455

158.015

64°35'15" 159.145

99.51

50°28'45" 93.465

273.41

41°42'45" 273.025

180.105

49°01'05" 185.495

81.31

62°06'45" 87.61

81.15

72°50'45" 87.365

90.01

85°37'45" 95.595

273°58'45" 43.27

273°58'45" 47.655

282°15'45" 43.43

282°15'45" 47.84

290°40'45" 28.495

290°40'45" 31.38

113°12'45" 68.92

69.305

109°13'25" 118.59

127.605

79°38'45" 54.92

65.525

69°38'45" 136.875

133.595

91°50'45" 81.415

67.44

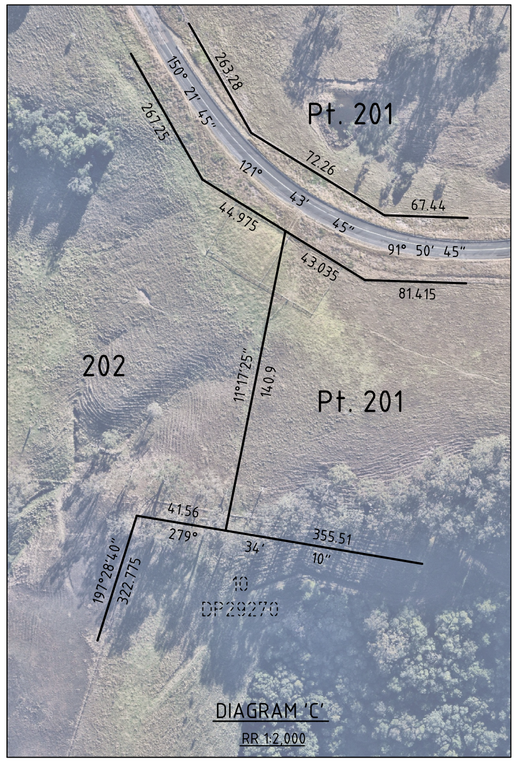
8°31'59" 1116.23

99°34'10" 355.51

98°54'50" 341.04

197°28'40" 322.775

99°04'40" 795.96



SURVEYOR Name: THOMAS F CAMPBELL Date: Reference: 24195	PLAN OF SUBDIVISION OF LOT 11 DP1141481 & LOT 212 DP1119828	LGA: DUNGOG Locality: SUGARLOAF & HANLEYS CREEK Reduction Ratio 1:10,000 Lengths are in metres.	REGISTERED	DP

24195_DP(Draft)_R2_240417

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 Table of mm

APPENDIX B ASSET PROTECTION ZONES

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:

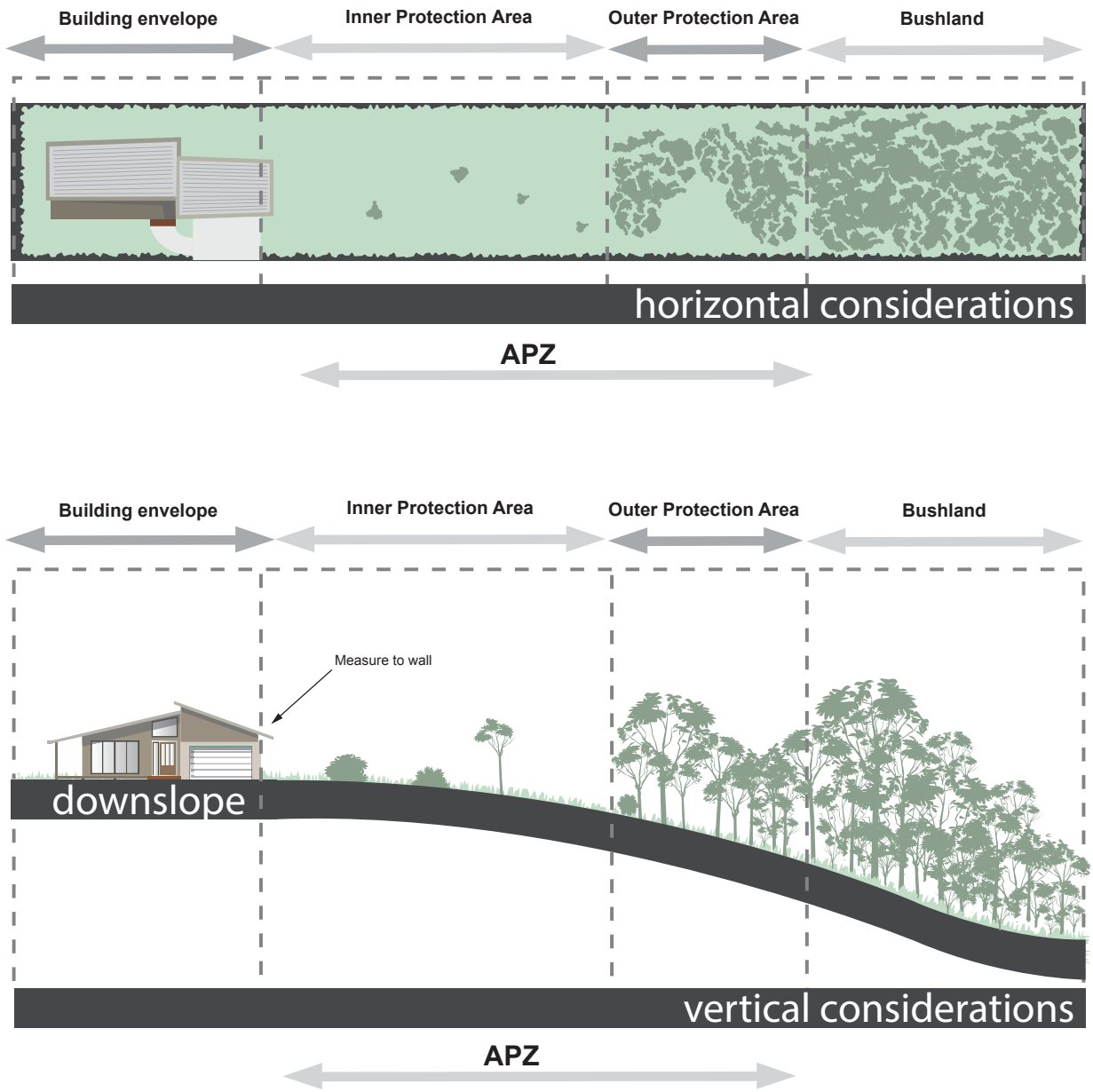
- direct flame contact on the building;
- damage to the building asset from intense radiant heat; and
- ember attack.

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).

Figure A4.1

Typical Inner and Outer Protection Areas.



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 defendable 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.