

Bush Fire Assessment Report

for

M Cohen

at

**880 Londonderry Road
Londonderry**

Lot 3 DP 539282

October 2018

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EXECUTIVE SUMMARY

The applicant proposes to build a single-family dwelling and associated farm sheds on bush fire prone land, to be assessed under s4.14 of the *Environmental Protection & Assessment Act 1979* (EP&A Act). All of the specified bush fire safety provisions are met.

Vegetation:	Forest	Grassland
Slope:	Downslope 4°	Downslope 1°
BAL-12.5 setbacks:	57-<100m	22-<100m
Actual setbacks:	>140m	>28m
Construction standard:	BAL-LOW	BAL-12.5

Construction standard required: BAL-12.5

checklist

APZs comply with PBP 2006 Appendix 2?	Yes
APZs comply with AS 3959-2009 Table 2.4.2?	Yes
Proposed works comply with Addendum to PBP Appendix 3 2010?	Yes
Appropriately sited?	Yes
Construction standard complies with AS 3959-2009?	Yes
Property access road complies with PBP 4.1.3 (2)?	Yes
Water supply complies with PBP 4.1.3?	Yes
Mains electricity connection complies?	Yes
Reticulated gas is properly installed and maintained?	N/A
(Bottled) gas cylinders are correctly installed?	N/A
Landscaping complies with Appendix 5 & will maintain APZs?	Yes

Bushfire Attack Level Risk Assessment Certificate

I certify that the assessment and recommendations within this report comply with the relevant bushfire legislation and related codes.




Roger Fenwick

B Sc (For)
Grad. Cert. Design for Bushfire Prone Areas

BPAD-Level 2 Certified Practitioner BPD-PA-9797
Corporate Member No. 28974 Fire Protection Association Australia

INTRODUCTION

A summary of my *curriculum vitae* is attached as Annexure 1.

I have been asked to report on construction of a single-family dwelling and associated farm sheds on bush fire prone land in Londonderry. The proposal was assessed with respect to compliance according to s4.14 of the EP&A Act as non-integrated (infill) development. That in turn requires observance of the provisions of '*Planning for bush fire protection 2006*' (as amended in 2010) publication by the NSW Rural Fire Service (RFS) and AS 3959 - 2009, *Construction of buildings in bushfire-prone areas*.

LOCATION

This 3.16ha battleaxe block is defined as Lot 3 DP 539282 in the Penrith Local Government Area. The address is 880 Londonderry Rd, Londonderry. This is in the Greater Sydney Fire Weather Area, for which FDI 100 conditions apply.

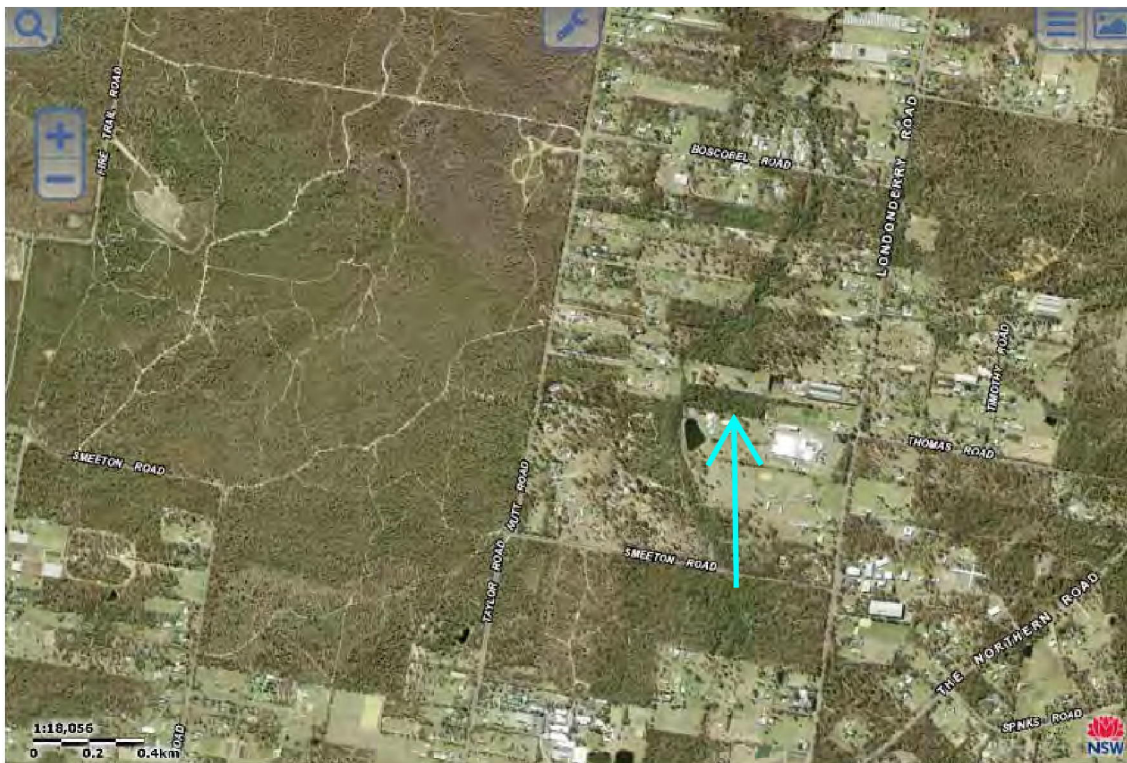


Photo 1 General site location, Sixmaps, printed 3 August 2018

The maps, plans and aerial image at Annexure 3 show the site and its surrounds.

TOPOGRAPHY

All slopes and distances were determined by me during an on-site inspection on 4 August 2018, using a Suunto clinometer and Bushnell 450 laser rangefinder. Some distance measurements were verified by reference to Sixmaps.

The site itself slopes gently down to the west from Londonderry Rd to the property boundary at Rickabys Ck. The majority of the site has a 1° downslope relative to the proposed building site, and then a 4° downslope for about 20m to Rickabys Ck. Vegetated land on the western side of Rickabys Ck is upslope.

The gradient to the east and to each side (N-S) is level.

VEGETATION

Forested wetland (Keith 2004) equivalent to Forest (Specht 1970 in Auslig 1990, in AS 3959) is currently present on the majority of the western end of the property. This is proposed to be modified by the removal of most of the understorey vegetation, retaining only scattered mature eucalypts as shade trees, and will become grazed pasture grassland.

Adjoining lots on both sides (N & S) and to the east are managed agricultural land for at least 90m, with a substantial dam immediately to the east.

SIGNIFICANT ENVIRONMENTAL FEATURES

A narrow (10-30m wide) strip of land adjoining Rickabys Ck is zoned E2, and has been fenced off to protect that vegetation from the stock (cattle and goats) that graze the property. The proposed vegetation removal for development of the buildings, associated Asset Protection Zones and stock grazing predates the local application of the *BCA 2016*, and is addressed in a separate report by Fraser Ecological.

CURRENT DEVELOPMENT

The site is currently largely vegetated vacant land, with some perimeter clearing to allow construction of fencing, and a completely cleared access handle.

PROPOSED DEVELOPMENT

The development proposed consists of building a one-storey brick veneer and metal roofed, single-family, dwelling with a swimming pool, a detached garage, a substantial farm shed, and associated landscaping. In addition, most of the remaining non-E2 zoned land will be cleared of undergrowth to improve its suitability for stock grazing.

POTENTIAL FIRE EXPOSURE

Within this report, references to guidelines or PBP means the '*Planning for bush fire protection 2006*' and *Addendum Appendix 3 2010* publications by the NSW Rural Fire Service (RFS). References to Standards are to AS 3959 - 2009, *Construction of buildings in bushfire-prone areas*, as amended by *Addendum Appendix 3 2010*. References to Bushfire Attack Level (BAL)-xx construction standards are derived from AS 3959-2009, where xx refers to the radiant heat load in kWm⁻². An extract of some of the relevant parts of those documents is at Annexure 2.

Asset protection zones

Unmanaged E2 vegetation to be retained on the property will be on a downslope of less than 5° and at a setback distance of not less than 140m from the general house development site. Assuming the nearby unmanaged (grazed, not mown) vegetation would become grassland, it would be at least 28m from the nearest building works.

Construction standards

The proposed setback from unmanaged Forest vegetation to the west on the site complies with BAL-LOW settings under Table 2.4.2 of AS 3959-2009. The setback of not less than 22m from the grazing land created on site would require BAL-12.5 construction. Note that *Addendum: Appendix 3 2010* to PBP modifies some of the standard construction specifications of AS 3959.

Water

Reticulated water and hydrants are available, with the closest hydrant about 400m away from the building site on the path near the corner of Londonderry & Thomas Rds. The applicant proposes to install a reticulated (domestic) water supply pipeline to the house site. A 20kl on-site metal water storage tank with appropriate fittings and near accessible hardstanding will be constructed, in addition to the proposed swimming pool. The proposed water supply capacity exceeds the provisions of 4.1.3 of PBP.

Access

Access to the site is directly off a sealed public through road locally 9m wide. The handle of the battle-axe lot is 21m wide, and 335m long. Large trucks can pass anywhere along the length of the driveway. Access meets the requirements of PBP.

Services

Mains electricity is connected by overhead supply from overhead roadside cables. If bottled gas is connected, bottles must be correctly sited and protected, and all above-ground components must be all-metal. Services satisfy the provisions of PBP.

Maintenance

Once vegetation clearing to create suitable grazing land has been completed on the site outside the E2 zone, the grounds within 22m of the house or to the property boundary must be managed to APZ specifications.

CONCLUSION

The proposal meets the requirements of PBP with construction at BAL-12.5 under AS 3959-2009, provided that the grounds are maintained as specified.

RECOMMENDATION

Approval of the proposal is recommended, with the following conditions:

1. The grounds of the property within 22m of the house or to the property boundary, whichever is the lesser, shall in perpetuity be managed as an Inner Protection Area as outlined in S 4.1.3 and Appendix 5 of PBP and the RFS document 'Standards for asset protection zones'.
2. All construction shall comply with Sections 3 & 5 of AS 3959-2009, as modified by *Planning for bush fire protection Addendum: Appendix 3 2010*.

Under s4.14(1)(b) of the EP&A Act, referral of the proposed works to the RFS is not necessary.

REFERENCES

Keith D. (2004) *Ocean Shores to Desert Dunes*. Department of Environment and Conservation, Sydney

Rural Fire Service NSW (2005) *Standards for Asset Protection Zones*

Rural Fire Service NSW (2006) *Planning for bush fire protection*

Rural Fire Service NSW (2010) *Planning for bush fire protection Addendum: Appendix 3*

Standards Australia (2009) AS3959 *Construction of buildings in bushfire-prone areas*.

Annexure 1 – extracts

Extract of parts of AS 3959 and PBP Specifications

Approved hardwood species – Appendix F (Fire Resistant Timber, FRT)

Standard trade name	Botanical name
Ash, silvertop	<i>Eucalyptus sieberi</i>
Blackbutt	<i>Eucalyptus pilularis</i>
Gum, spotted	<i>Corymbia maculata</i>
	<i>Corymbia henryi</i>
	<i>Corymbia citriodora</i>
Gum, red, river	<i>Eucalyptus camaldulensis</i>
Ironbark, red	<i>Eucalyptus sideroxylon</i>
Kwila (Merbau)	<i>Intsia bijuga</i>
Turpentine	<i>Syncarpia glomulifera</i>

This is a **summary** of the **minimum** specifications in 'Planning for Bushfire Protection 2006' as amended in 2010 and 'AS 3959 2009 – Construction of buildings in bushfire-prone areas' which are recommended in this report. It is included as a courtesy, is a guide only, and may not be complete. In addition, the contents of the documents from which this information was extracted may have changed between the dates of preparation of this report, and its use or application. Specifications in other documents such as the Building Code of Australia (BCA) may apply. It is the user's responsibility to comply with all statutory conditions as well as those specified by the approving authority with particular reference to this report. The appropriate source documents should be consulted to determine the full specifications abbreviated in this table.

		BAL-12.5	BAL-19	BAL-29	BAL-40				
Floor	Slab	OK							
	Timber <400mm ag	FRT or lined or enclosed			Non-combustible or FRT or enclosed				
	Timber >400mm ag	OK							
Floor posts		FRT or enclosed			Enclosed or non-combustible				
External walls		400mm FRT or non-combustible		FRT or non-combustible	Non-combustible				
Windows	Frame	FRT or metal			Metal				
	Screens	Al, Fe or Br mesh on all openable		Fe or Br mesh on all openable, 5mm toughened glass, or shutters	Fe or Br mesh on all, 6mm toughened glass, or shutters				
External doors	Sliding	Safety glass	5mm toughened glass	6mm toughened glass or full mesh	6mm toughened glass plus full mesh or shutter				
	Screens	Al, Fe or Br, if fitted			Fe or Br				
	Timber frames	FRT			Metal only				
	Garage	Lower 400mm FRT or non-combustible		FRT or non-combustible	Non-combustible				
Vents etc	Mesh	Al, Fe or Br mesh 2mm			Fe or Br mesh 2mm				
Roofs	Tiled	Fully sarked (Flammability Index <5)							
	Sheeted	Non-combustible, fully sarked (Flammability Index <5)							
	Rooflights	Non-combustible sleeve/lining, 4mm safety glass			FRL -/30/-				
Verandahs, decks etc	Enclosed	Any supports, <3mm spaced deck, FRT or non-combustible			Any supports, unspaced deck, non-combustible				
	Unenclosed	FRT or non-combustible, <3mm spaced deck			All non-combustible, unspaced deck				
	<300mm to glass	300mm wide FRT or non-combustible		FRT or non-combustible	Non-combustible				
Services		Exposed water & gas pipes to metal							
Ag	Above ground	FRT	Fire Resistant Timber	Al	Aluminium	Fe	Stainless steel	Br	Bronze

Annexure 2 – cv

Curriculum vitae

Roger Fenwick

CURRICULUM VITAE

Name: **Roger FENWICK**

Born: 1946

Qualifications: B Sc (For), Australian National University, 1969.
Grad Cert Bushfire Protection, UWS, 2013
BPAD-Level 2 Accredited & Corporate Member,
Fire Protection Association of Australia.

Language: English

Positions Held:

1988-Present	Consultant
1986-87	Chief Fire Control Officer, (CFCO) ACT Bush Fire Council
1985	Secretary, ACT Bush Fire Council
1982-1984	Experimental Officer, CSIRO, Project Aquarius
1979-1981	Field Service Representative for Chemonics Industries, USA
1976-1978	CFCO of the ACT Bush Fire Council
1972-1975	Deputy CFCO, including one year of acting CFCO, ACT Bush Fire Council
1971	Assistant Forester at Pierces Creek Forest, and assistant to the CFCO
1970	Assessment Section, ACT Forests, and assistant to the CFCO of the ACT Bush Fire Council

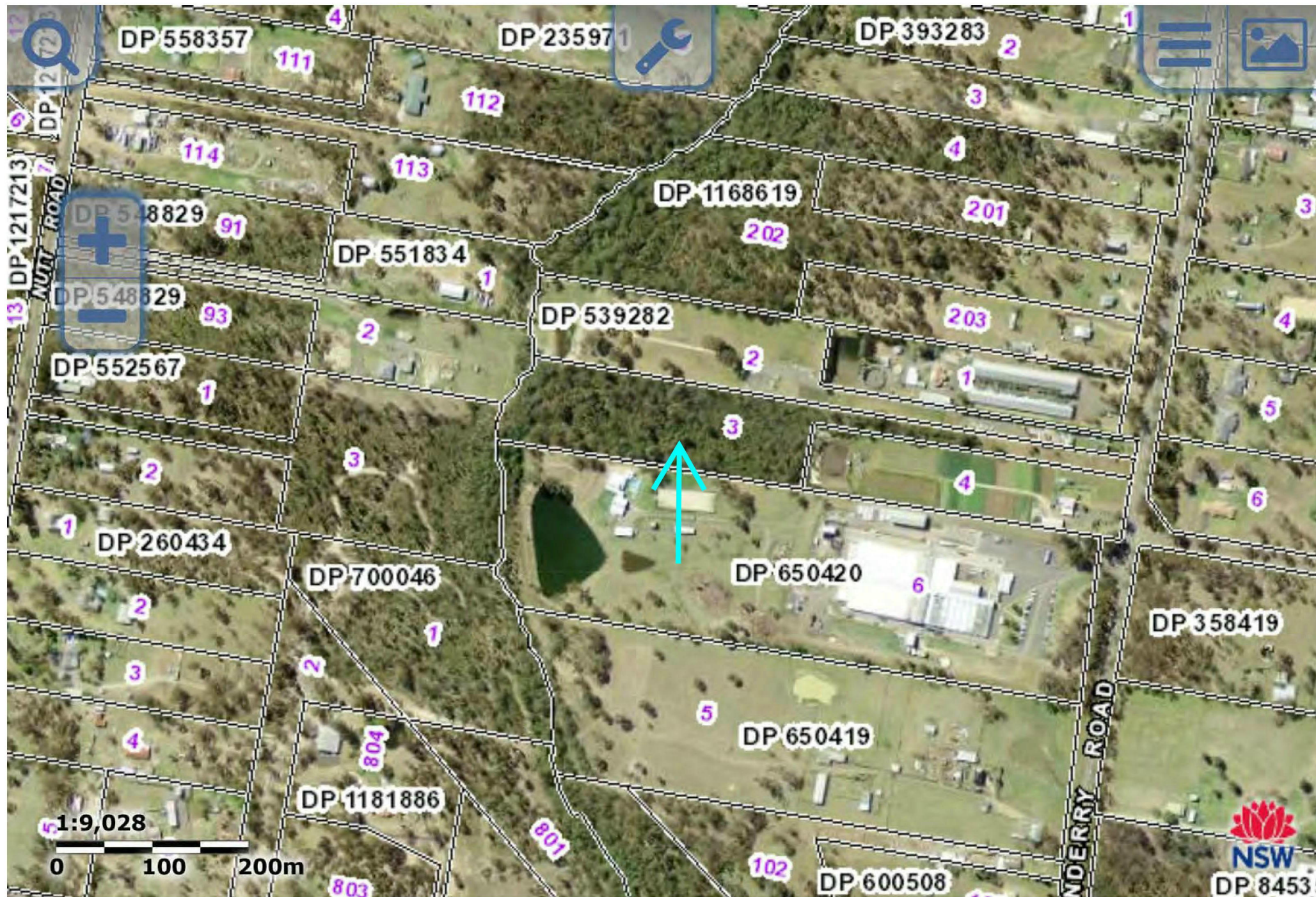
Fields of Special Competence:

Fire risk assessment and control measures to minimise fire risk, fire control and organisation and management of rural fire fighting services, fire forensic investigations, training in bush fire fighting, fire fighting equipment selection and maintenance, and chemical fire retardant use.

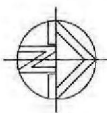
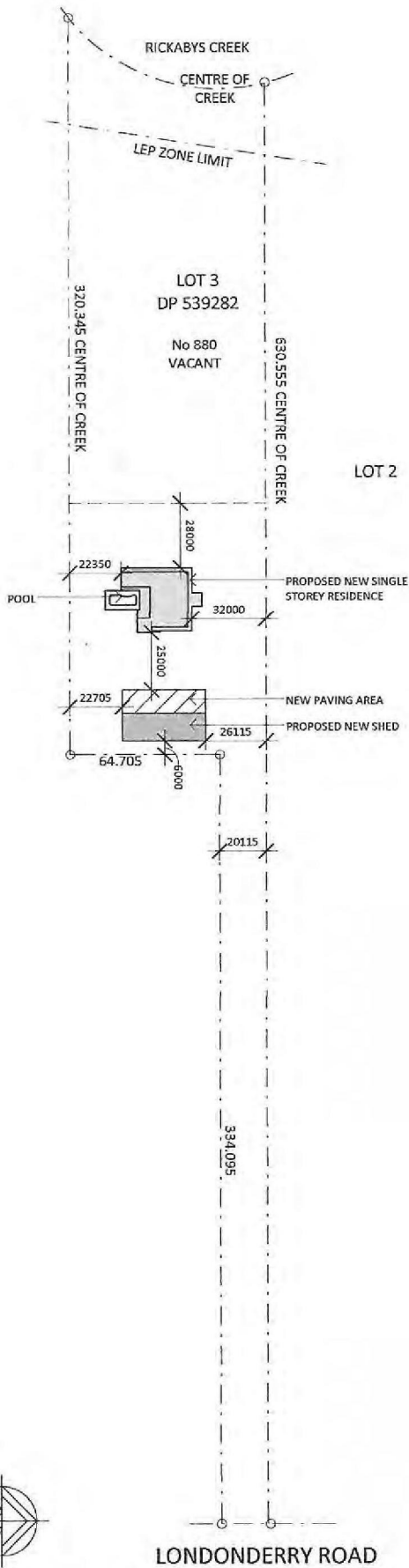
Annexure 3 – maps

Maps and Plans

Aerial images
Fire Prone Land map
Site plans







Master Site Plan

Scale 1:2000

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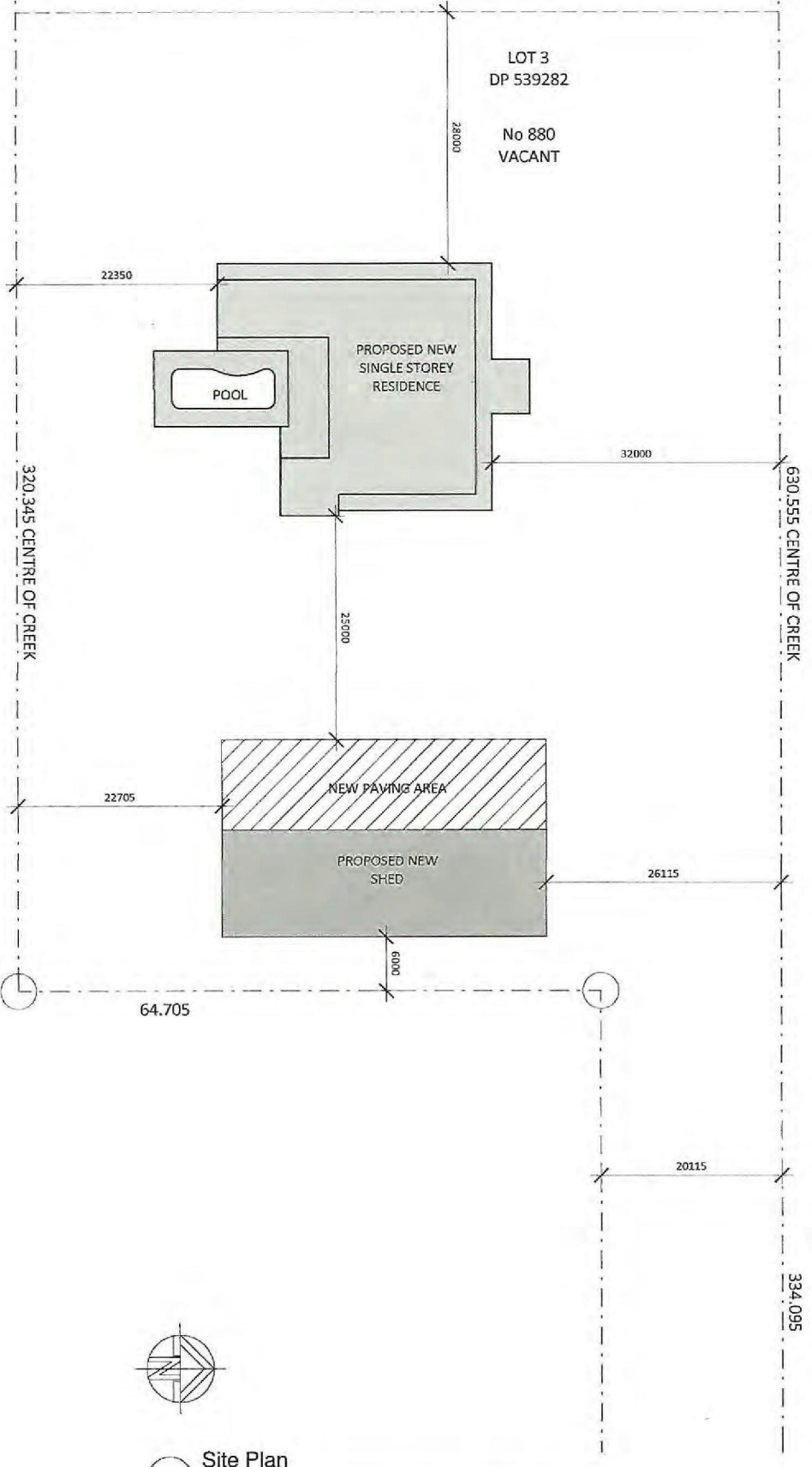
Proposed New Single Storey Dwelling, Inground
 Pool & Storage Shed
 Location: 880 Londonderry Road, Londonderry
 For: Mark Cohen
 Council: Penrith
 Job No: 180803A2
 Sketch Plans

Date:	11.10.2018
Page:	1 of 5
Scale:	1:2000
Issue:	A

LOT 2

LOT 3
DP 539282

No 880
VACANT



Scale 1 : 500

Site Plan

Scale of drawings:
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Proposed New Single Storey Dwelling, Inground
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 Location: 880 Londonderry Road, Londonderry
 For: Mark Cohen
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 Sketch Plans

Job No:
180803A2

Date: 11.10.2018
 Page: 2 of 2
 Scale: 1 : 500
 Issue: A

SKETCH PLANS 'STAGE 1'
5-10-18

BUILDING CALCULATIONS

- TOTAL LIVING AREAS INCLUDING ROOFS
GARAGE = 508.8m² = 54.8 SQUARES
- TOTAL ALL UP UNDER THE ROOF
= 735.3m² = 79.2 SQUARES

