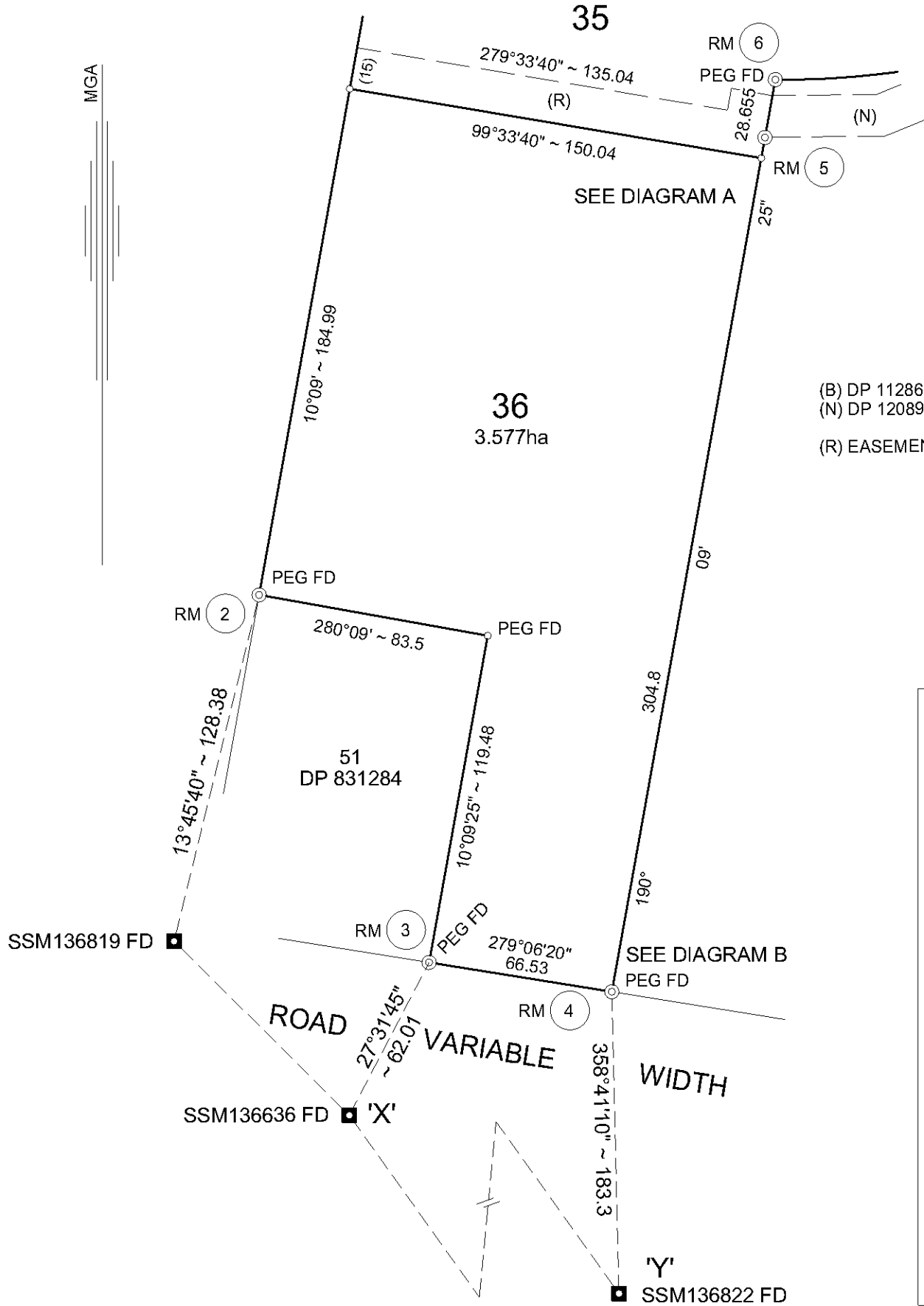


A

DEPOSITED PLAN



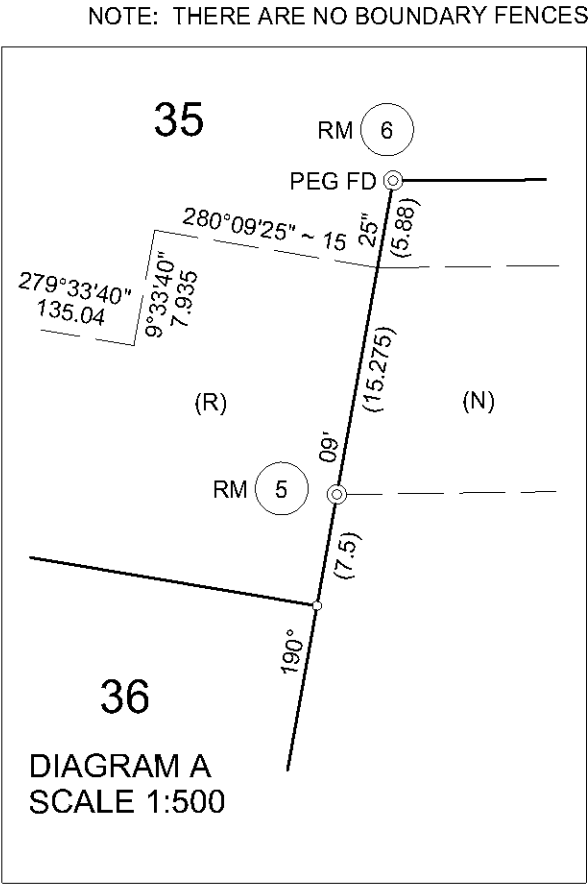
(B) DP 1128633 - RIGHT OF ACCESS 5 WIDE
(N) DP 1208962 - EASEMENT TO DRAIN WATER 15 WIDE
(R) EASEMENT FOR DRAINAGE OF WATER 15 WIDE & VARIABLE WIDTH

SURVEYING & SPATIAL INFORMATION REGULATION 2012:CLAUSES 35(1)(B) & 61(2)					
MARK	M.G.A. CO-ORDINATES		CLASS	ORDER	ORIGIN
	EASTING	NORTHING			
SSM 136636	504537.860	6581085.294	C	3	SCIMS
SSM 136822	504636.365	6580946.572	C	3	SCIMS
SSM 136819	504474.884	6581147.876	C	3	SCIMS
M.G.A. CO-ORDINATES ADOPTED FROM S.C.I.M.S. 26/02/2016 COMBINED SCALE FACTOR = 0.999594 ZONE 56					

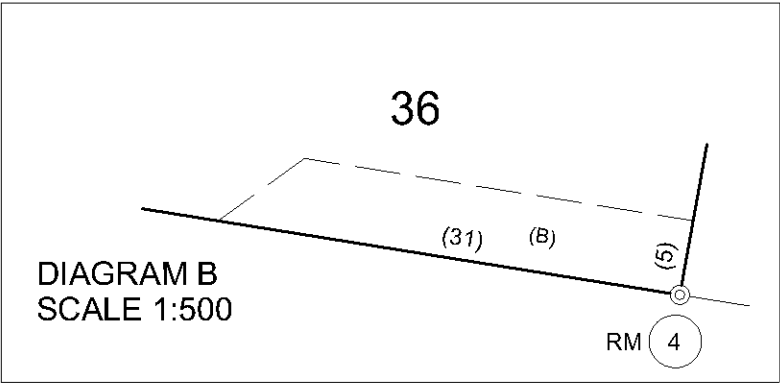
SSM 136636 - SSM 136822 144°37'19" ~ 170.207 MGA GROUND
~ 170.219 SURVEY

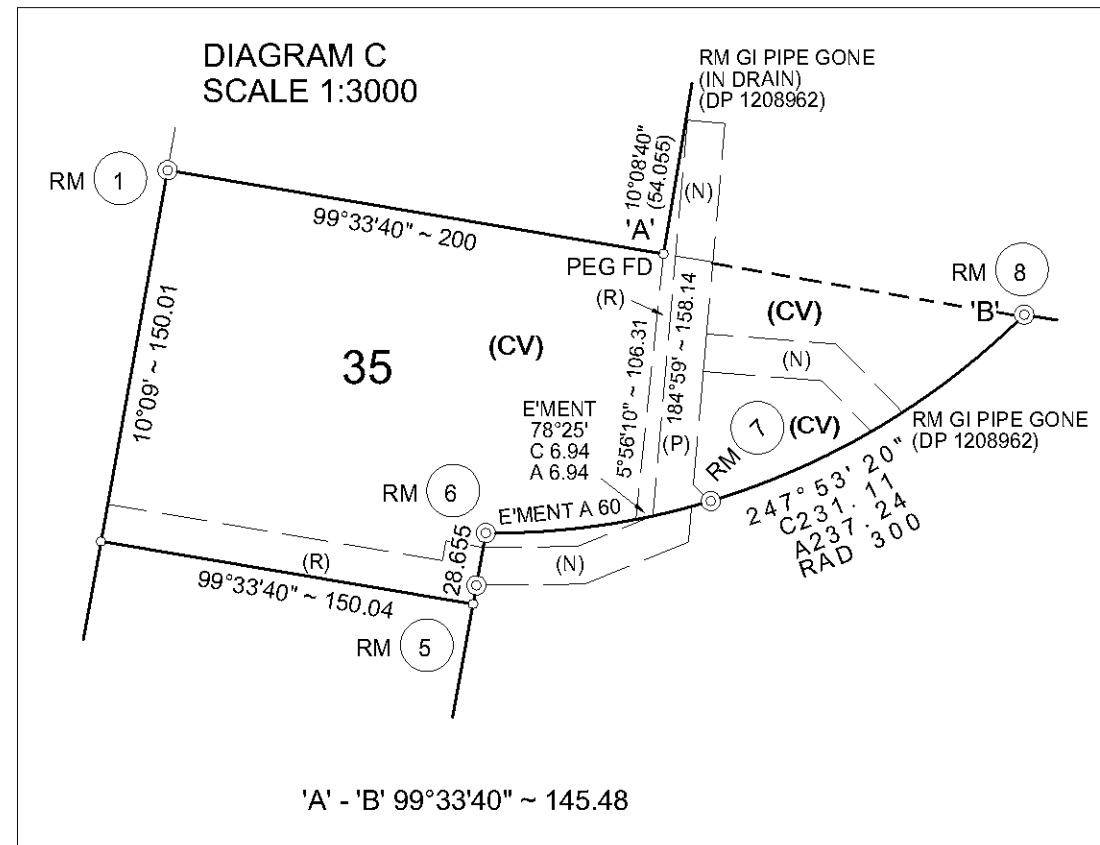
SSM 136636 - SSM 136819 314°49'13" ~ 88.819 MGA GROUND
314°49'27" ~ 88.823 SURVEY

SSM 136819 - SSM 136822 141°15'51" ~ 258.173 MGA GROUND
141°15'57" ~ 258.189 SURVEY



REFERENCE MARK TABLE				
REF	BEARING	FROM	DISTANCE	PLAN
2	113°01'	GI PIPE FD	0.495	DP 1128633
3	329°06'	GI PIPE FD	7.02	DP 1092458
4	12°03'	GI PIPE FD	0.495	DP 1128633
5	89°17'	GI PIPE FD	0.5	DP 1208962
6	190°09'	GI PIPE FD	0.5	DP 1208962





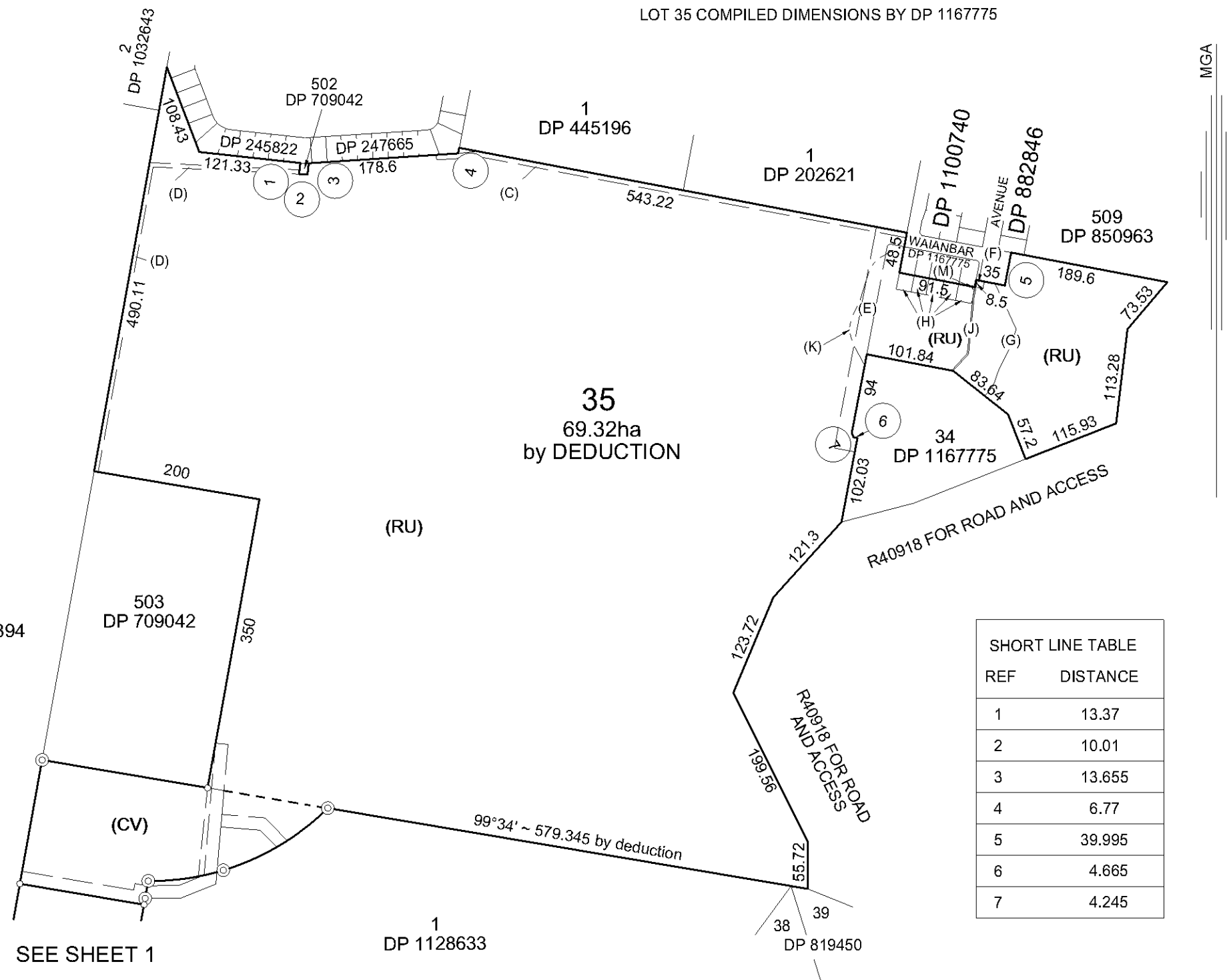
REFERENCE MARK TABLE				
REF	BEARING	FROM	DISTANCE	PLAN
1	346°17'	TREE FD	21.085	DP 709042
5	89°17'	GI PIPE FD	0.5	DP 1208962
6	190°09'	GI PIPE FD	0.5	DP 1208962
7	312°00'	GI PIPE FD	0.5	DP 1208962
8	174°36'	CONC BLOCK FD	0.44	DP 1128633

(CV) - E707257 COVENANT

- BENEFITED BY

- DP1208962 EASEMENT TO DRAIN WATER 15 WIDE
- DP792945 RIGHT OF CARRIAGEWAY

(RU) -DP882846 RESTRICTION(S) ON THE USE OF LAND
- DP882846 POSITIVE COVENANT



SHORT LINE TABLE	
REF	DISTANCE
1	13.37
2	10.01
3	13.655
4	6.77
5	39.995
6	4.665
7	4.245

(C) DP 882846 - EASEMENT FOR DRAINAGE OF SEWAGE 6 & 8 WIDE
(D) X133237 - EASEMENT TO DRAIN SEWAGE 5 WIDE
(E) DP 1167775 - RIGHT OF ACCESS AND EASEMENT FOR SERVICES 17 WIDE
(F) DP 1167775 - RIGHT OF ACCESS 10 WIDE
(G) DP 1167775 - EASEMENT FOR SERVICES OVER EXISTING LINE OF PIPES (APPROXIMATE POSITION)
(H) DP 1167775 - EASEMENT FOR ASSET PROTECTION ZONE 20 WIDE
(J) DP 1167775 - EASEMENT FOR UNDERGROUND POWERLINES 1.5 WIDE
(K) DP 1167775 - RIGHT OF ACCESS OVER TRACK IN USE
(M) DP 1167775 - EASEMENT FOR DRAINAGE OF SEWAGE 3 WIDE, 2.35 WIDE AND VARIABLE WIDTH
(N) DP 1208962 - EASEMENT TO DRAIN WATER 15 WIDE
(P) DP 1208962 - EASEMENT TO DRAIN WATER 15 WIDE & VARIABLE
(R) EASEMENT FOR DRAINAGE OF WATER 15 WIDE & VARIABLE WIDTH

Surveyor: MARK WILLIAM ROGERS
Date of Survey: 01/03/2016
Surveyor's Ref: 16778DP03

PLAN OF SUBDIVISION OF
LOT 35 DP 1167775 &
LOT 36 DP 1167775

LGA: KEMPSEY

Locality: SOUTH WEST ROCKS

Subdivision No. 2641/16

Lengths are in metres. Reduction Ratio 1 : 6000

Registered






13.4.2016

DP1214499

00	10	20	30	40	50	Table of mm	90	100	110	120	130	140
----	----	----	----	----	----	-------------	----	-----	-----	-----	-----	-----

DEPOSITED PLAN ADMINISTRATION SHEET

Registered:  13.4.2016 Title System: TORRENS Purpose: SUBDIVISION	Office Use Only	Office Use Only
PLAN OF SUBDIVISION OF LOT 35 DP 1167775 & LOT 36 DP 1167775	LGA: KEMPSEY Locality: SOUTH WEST ROCKS Parish: ARAKOON County: MACQUARIE	DP1214499
<p>Crown Lands NSW/Western Lands Office Approval</p> <p>I, Les Pawlak (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given</p> <p>Signature: Date: File Number: Office:</p>	<p>Survey Certificate</p> <p>I, MARK WILLIAM ROGERS of 3A/72 ELBOW STREET, WEST KEMPSEY NSW 2440 a surveyor registered under the Surveying and Spatial Information Act 2002, certify that:</p> <p>*(a) The land shown in the plan was surveyed in accordance with the Surveying and Spatial Information Regulation, 2012, is accurate and the survey was completed on:</p> <p>*(b) The part of the land shown in the plan ("being" ^ LOT 36 & PT LOT 35 & CONNECTIONS) was surveyed in accordance with the Surveying and Spatial Information Regulation, 2012, is accurate and the survey was completed on 01/03/2016, the part not surveyed was compiled in accordance with that Regulation.</p> <p>*(c) The land shown in this plan was compiled in accordance with the Surveying and Spatial Information Regulation, 2012.</p> <p>Signature:  Dated: 7/3/2016 Surveyor ID # 1928 Datum Line: 'X' - 'Y' Type: *Urban/*Rural The terrain is *Level-Undulating / *Steep-Mountainous *Strike through if inapplicable ^Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey. #Enter the surveyor identification number.</p>	
<p>Subdivision Certificate</p> <p>I, Les Pawlak *Authorised Person/*General Manager/*Accredited Certifier, certify that the provisions of s.109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.</p> <p>Signature:  Accreditation no: N/A Consent Authority: KEMPSEY SHIRE COUNCIL Date of Endorsement: 11/3/2016 Subdivision Certificate no: 2641/16 File no: T6-15-223 *Strike through if Inapplicable</p>	Plans used in the preparation of survey/compilation DP 709042 DP 11286633 DP 831284 DP 1167775 DP 1092458 DP 1208962	
STATEMENTS of intention to dedicate public roads, public reserves and drainage reserves		
Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A	If space is insufficient use PLAN FORM 6A Surveyor's Reference: 16778DP03	

DEPOSITED PLAN ADMINISTRATION SHEET		Sheet 2 of 2 sheet(s)		
Office Use Only		Office Use Only		
Registered: 13.4.2016				
PLAN OF SUBDIVISION OF		DP1214499		
LOT 35 DP 1167775 &				
LOT 36 DP 1167775				
Subdivision Certificate No.: 2641/16		This sheet is for the provision of the following information as required: <ul style="list-style-type: none">• A schedule of lots and addresses- See 60(c) SSI Regulation 2012• Statements of intention to create and release affecting interests in accordance with section 88B Conveyancing Act 1919• Signatures and seals- see 195D Conveyancing Act 1919• Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.		
Date of Endorsement: 11/3/2016				
Lot	Street Number	Street Name	Street type	Locality
35	30	Waiabar	Avenue	South West Rocks
36	48	Belle O'Connor	Street	South West Rocks
PURSUANT TO SECTION 88(B) OF THE CONVEYANCING ACT 1919, IT IS INTENDED TO CREATE:				
1. EASEMENT FOR DRAINAGE OF WATER 15 WIDE & VARIABLE WIDTH				
Executed by TEEBEE HOLDINGS PTY LIMITED ABN 32 107 172 618 By the authorised persons whose signatures appear below pursuant to s127 of the Corporations Act, 2001				
<div><div>Sandra Tall</div><div>SANDRA JOAN TALL Director</div></div> <div><div>Alexander Tall</div><div>ALEXANDER BRADSTOCK TALL Secretary</div></div>				
(If space is insufficient use additional annexure sheet)				
Surveyor's Reference: 16778DP03				

B

APPROVED SUBDIVISION LAYOUT



MALBEC
PROPERTIES

JOB NO : 4972
ISSUE: A
DATE: 09.07.2013



NSW GOVERNMENT
Planning

Issued under the Environmental Planning and Assessment Act 1979

Approved Section 75W Modification Application

No. 1 granted on the 6 August 2013

in respect to MP 08-D167

Signed [Signature]

Sheet No. 1 of 3

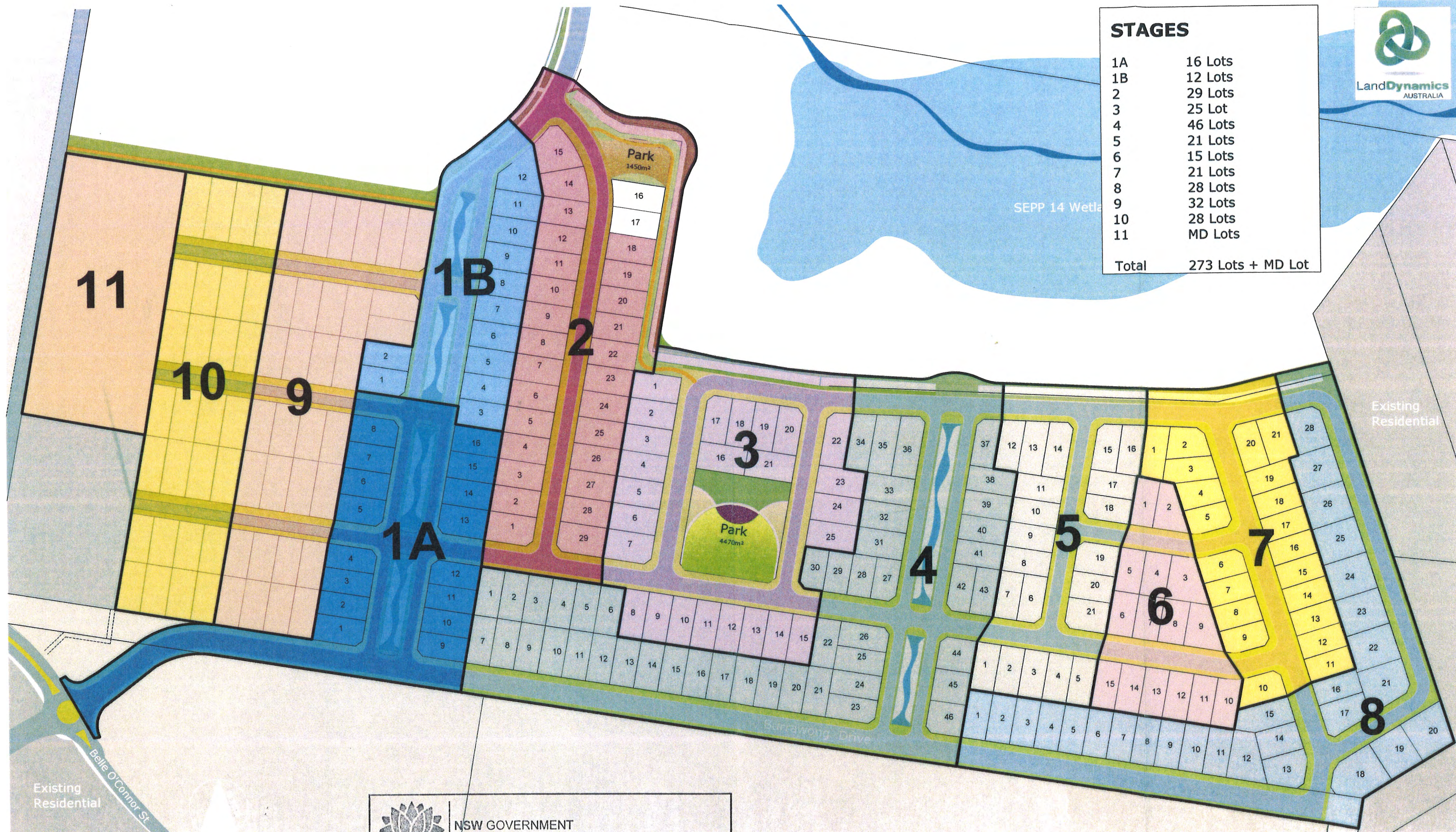
COAST
APZ PLAN


COAST
South West Rocks



STAGES

1A	16 Lots
1B	12 Lots
2	29 Lots
3	25 Lot
4	46 Lots
5	21 Lots
6	15 Lots
7	21 Lots
8	28 Lots
9	32 Lots
10	28 Lots
11	MD Lots
Total	273 Lots + MD Lot



NSW GOVERNMENT
Planning

Issued under the Environmental Planning and Assessment Act 1979

JOB NO : 4972 Approved Section 75W Modification Application
ISSUE: E
DATE: 26/08/2013 granted on the 6 August 2013

in respect to MP 08-0167

Signed *[Signature]*

Sheet No. 2 of 3

MALBEC
PROPERTIES

COAST STAGING PLAN


COAST
South West Rocks



MALBEC
PROPERTIES

JOB NO : 4972_N_SHT 02
ISSUE: E
DATE: 26.06.2013

Issued under the Environmental Planning and Assessment Act 1979
Approved Section 75W Modification Application
No. 1 granted on the 6 August 2013
in respect to MP 08-0167
Signed [Signature]
Sheet No. 3 of 3

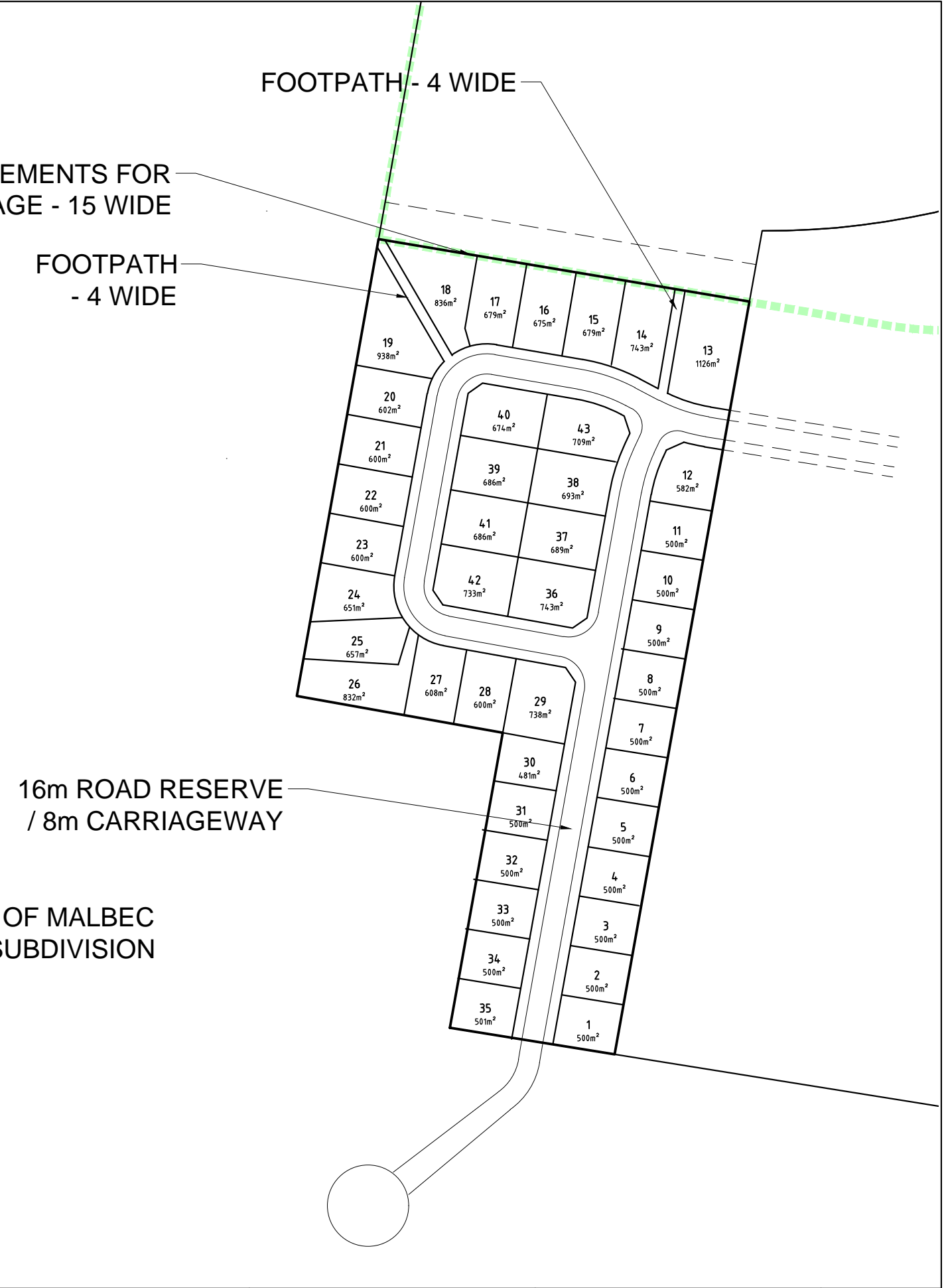
COAST

SUBDIVISION PLAN


COAST
South West Rocks

C

AMENDED SUBDIVISION LAYOUT



DA6					12/7/16					POST JRPP ADDITIONS					APR					RDG				
P2					28/10/14					MINOR AMENDMENTS					APR					RDG				
REV.					DATE					REVISION					DR.BY					AP.BY				

de Groot & Benson		Consulting Engineers & Planners		A.C.N. 052 300 571 236 Harbour Drive, Coffs Harbour NSW 2450		Phone (02) 6652 1700 Fax (02) 6652 7418 Email email@dgb.com.au		Scale AS SHOWN		Cad File No. 13056_Civil - August 2016.dwg		Project: SALTWATER DEVELOPMENT SOUTH WEST ROCKS, NSW		Title: MP 08-0167 DA MODIFICATION		Project No. 13056	
Surveyed		MR		Datum		AHD		Drawn		Designed		Approved		RDG		Drawing No. L36-MP1	
Checked		RDG		Date		2013		No. of dwgs		---		Client: S W R Developments Pty Ltd		© COPYRIGHT 2014 The design and details shown on these drawings are applicable to this project only and may not be reproduced in whole or in part or be used for any other project or purpose without the written consent of DE GROOT & BENSON Pty Ltd with whom copyright resides.		Amendment No. DA6	

D

BUSHFIRE RISK ASSESSMENT



PO Box 3212 West Kempsey NSW 2440

Phone: (02) 6561 5263 Mobile: 0429 727 010
mail@florafauna.com.au www.florafauna.com.au
ABN: 22 167 601 074

Bushfire Risk Assessment

BA-2016-0706-100B

In relation to

Proposed Residential Subdivision

Lot 36 DP 1214499

Belle O'Connor Street South West Rocks

July-August 2016

Prepared for

South West Rocks Developments Pty Ltd

Report Title	Bushfire Risk Assessment Report
Project	Proposed Residential Subdivision
Client	South West Rocks Developments Pty Ltd
Report Number	BA-2016-0706-100B
Draft/Final	Final – 23 August 2016

The preparation of this report has been undertaken in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

All information contained within this report are prepared for the exclusive use of the client and with respect to the land described herein and are not to be used for any other purpose or by any other person or entity. No reliance should be placed on the information contained in this report for any purposes other than those stated herein.

Prepared by:

Steve Britt

Bachelor of Science (Botany)

Graduate Dip. In Design for Bushfire Prone Areas

Master of Wildlife Management. (Habitat)

Signed:



Date:

23 August 2016

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1. Executive Summary – Certificate

The assessment relates to a proposed residential subdivision of land at Belle O'Connor Street South West Rocks. This is to certify that the proposed development conforms to the relevant specifications and requirements of *Planning for Bush Fire Protection 2006*, subject to recommendations 1-4 of this assessment. The details relevant to the assessment are:

Real Property Description	36//1214499
Property Address	Belle O'Connor Street South West Rocks
Date of Assessment	8 July 2016
FDI	80 (North Coast)
Zoning	R1 – General Residential
Local EPI	Kempsey Local Environmental Plan 2013
Proposed Development	Residential subdivision
Existing Dwelling	No
Assessment based on plans by	de Groot and Benson
Plan Title	Project: Saltwater Developments Pty Ltd South West Rocks NSW Client: SWR Developments Pty Ltd
Plan date/issue	August 2016 Project No: 13056
Any amendments to plan?	Yes
What is the highest assessed BAL as per AS 3959-2009?	BAL-29
Can this development comply with the acceptable solution provisions of PBP?	Yes
Assessment by	Steve Britt BPD-PA-9334 Accredited Practitioner Bushfire Planning and Design, FPAA

The preparation of this report has been undertaken in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

All information contained within this report are prepared for the exclusive use of the client and with respect to the land described herein and are not to be used for any other purpose or by any other person or entity. No reliance should be placed on the information contained in this report for any purposes other than those stated herein.

2. Introduction

2.1 Background

FloraFauna Consulting has been engaged by South West Rocks Developments Pty Ltd to prepare a bushfire risk assessment report in relation to a proposed residential subdivision on land at Belle O'Connor Street South West Rocks. The subject site comprises land identified as Lot 36 in DP 1214499, Belle O'Connor Street South West Rocks, which is currently zoned R1 – General Residential under the *Kempsey Local Environmental Plan 2013* (LEP). The proposed development involves a residential subdivision development of the land within the subject site, which has an area of approximately 3.58 hectares. The subdivision plan prepared by de Groot and Benson Consulting Engineers and Surveyors is appended to this report as Appendix A.

2.3 Legislative Context

The land is mapped as bushfire prone under the Kempsey Shire Council bushfire prone land mapping. Section 100B of the *Rural Fires Act 1997* (RF Act) provides that a person must obtain a Bushfire Safety Authority before developing land where the development involves a subdivision of bush fire prone land that could lawfully be used for residential or rural residential purposes, or development of bush fire prone land for a special fire protection purpose. As a Bushfire Safety Authority must be obtained before consent can be granted for subdivision of bush fire prone land, such development constitutes integrated development for the purposes of Section 91 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Clause 44 of the *Rural Fires Regulation 2013* contains the matters that must be included in an application for a Bushfire Safety Authority.

2.2 Locality

The locality is defined as the area within a five (5) kilometre radius around the subject site and extends from Trial Bay in the north to the Hat Head National Park in the south and the Smoky Cape Range and coastline in the east to Jerseyville and the Macleay River in the west. The township of South West Rocks lies at the centre of the locality. Extensive areas of wetland, coastline, the Macleay River and associated floodplain are significant features of the locality. The subject site adjoins an existing residential subdivision development adjacent to Belle O'Connor Street and the South West Rocks Golf Course located on the land to the west. Other existing residential development is located on the surrounding land within the South West Rocks urban area. Outside of the residential areas there are large expanses of rural zoned land in which agricultural activities are carried out. Significant areas of land within the locality are reserved in Hat Head National Park in the south and east. The locality is strongly influenced by its proximity to the Pacific Ocean and associated coastal environments, which is exhibited in many of the plant communities present such as mangroves, seagrass meadows, saltmarshes, sedgeland, heathland, coastal dune dry sclerophyll forest, coastal swamp forest, coastal floodplain wetland and littoral rainforest. In addition, significant areas of land within the locality contain various dry sclerophyll forest and wet sclerophyll forest communities. The location of the subject site is indicated on the locality map provided at Figure 2.1.



Figure 2.1: Locality map

3. Rural Fires Regulation Assessment

Clause 44 of the *Rural Fires Regulation 2013* contains the matters that must be included in an application for a Bushfire Safety Authority. This assessment addresses the relevant points for consideration as listed in the Regulation.

A. Site Description

The subject site comprises an allotment of land identified as Lot 36 in DP 1214499, Belle O'Connor Street South West Rocks and is approximately 3.58 hectares in size. The subject site adjoins an existing residential subdivision development adjacent to Belle O'Connor Street and the South West Rocks Golf Course located on the land to the west. The land is zoned R1 – General Residential under the *Kempsey Local Environmental Plan 2013* (LEP).

The southern part of the site adjoins Belle O'Connor Street and lies on the lower slopes of a small ridgeline that generally runs in an east-west direction. Further to the south the land contains existing residential development associated with Belle O'Connor Street. From the ridgeline the land falls to the north until it reaches relatively low lying, flat land that extends across the site and continues further to the north and east. The northern boundary adjoins remnant native forest. The eastern boundary adjoins flat land that has been extensively cleared of native vegetation to form a derived grassland dominated by grasses and sedges with scattered remnant trees. This land is also zoned R1 – General Residential under the LEP and is the subject of an approved development proposal that will be subdivided in due course. In the meantime, the current conditions are maintained through regular slashing and extend for a considerable distance to the east until the land becomes slightly more elevated and dry open forest and large lot residential development occurs. The western boundary of the site adjoins a small sealed road that provides access to the sewage treatment works situated to the north of the site. Managed land associated with the South West Rocks golf course is situated further to the west, adjacent to the sewage treatment works access road.

The land within the site and adjacent allotment to the east has been modified in conjunction with its past agricultural use by removal of the larger proportion of the canopy and understorey and introduction of exotic grasses to form pasture for grazing stock. Remnants of the native vegetation observed during the field survey included some retained trees, small patches of the understorey and groundcover comprising an assemblage of native and introduced species. The vegetation within the site is managed through regular grazing of livestock and slashing to prevent any significant regeneration of native vegetation from occurring. The relative position of the subject site and the surrounding landscape are shown in Figure 3.1.



Figure 3.1: Aerial photo of the subject site and surrounding land

The following images show the general condition of the land within the vicinity of the subject site.



Figure 3.2: View looking northeast across the subject site



Figure 3.3: View of the land to the north of the subject site



Figure 3.4: View of the land to the east of the subject site



Figure 3.5: View of the developed land to the south of the subject site



Figure 3.8: View of the managed land within the golf course to the west



Figure 3.9: View of the existing Belle O'Connor Street road reserve

B. Classification of Vegetation

The vegetation on and surrounding the subject site was classified in accordance with the methodology prescribed under Addendum Appendix 3 of *Planning for Bushfire Protection 2006* (PBP). The vegetation within 140 metres of the site was identified based on Keith (2004) and classified under Table A2.1 in Appendix 2 of PBP. This was then converted to Specht classifications by applying Table A3.5.1 in line with AS 3959-2009 *Construction of buildings in bushfire-prone areas* (AS 3959) and the *Building Code of Australia 2010* (BCA).

The vegetation within the subject site and on the adjacent land to the east comprised highly disturbed coastal (tall) heath having the characteristics of a (derived) grassland with isolated trees and small disjunct patches of remnant native vegetation, which is maintained in this condition by an ongoing slashing regime that prevents any significant regeneration of vegetation. For the purposes of bushfire risk assessment, the derived grassland within the subject site and on the adjacent land to the east was classified as grassland. It is noted that the adjacent land to the east is the subject of a previously approved residential subdivision. A copy of the approved subdivision layout plan in relation to the adjacent land to the east is appended to this report as Appendix B. An image of the classified grassland is shown at Figure 3.10.



Figure 3.10: Grassland within the site and on adjacent land to the east

The vegetation on the land adjacent to the northern boundary of the subject site comprised remnant coastal swamp forest dominated by *Melaleuca quinquenervia* (Broad-leaved Paperbark) in the lower lying areas and dry sclerophyll (open) forest dominated by *Eucalyptus signata* (Scribbly Gum) in the more elevated areas. For the purposes of bushfire risk assessment, the coastal swamp forest and dry sclerophyll forest on the land adjacent to the northern boundary of the subject site was classified as forest. An image of the classified forest on the adjacent land to the north is shown at Figure 3.11.



Figure 3.11: Sclerophyll forest on the adjacent land to the north of the site

The adjacent land to the south contained the Belle O'Connor Street road reserve, associated managed open space, and developed residential allotments. The adjacent land to the west contained a sealed road providing access to the sewage treatment works located to the north of the site and the South West Rocks golf course. For the purposes of bushfire risk assessment, the vegetation situated on the land within 140 metres to the south and west of the site was assessed as managed.

C. Assessment of Effective Slope

For the purposes of PBP and AS 3959-2009 the effective slope of land is the slope of the land under the classified vegetation as this is the slope that directly influences bushfire behaviour including the rate of spread, the severity of the fire and the level of radiant heat.

The effective slope was determined by review of the South West Rocks 9536-3S 1:25,000 topographic map and validated by field survey utilising a Suunto Tandem 360PC/360R clinometer. With respect to the classified vegetation on the land situated to the north and east of the proposed development within the subject site the effective slope was assessed as flat. An extract of the South West Rocks 9536-3S 1:25,000 topographic map is provided at Figure 3.12 below.



Figure 3.12: Extract of the South West Rocks 9536-3S 1: 25,000 topographic map

D. Significant Environmental Features

The habitat within the subject site comprised the remnants of Broad-leaved Paperbark – Wallum Bottlebrush – sedge wet heath community as described under the NSW Vegetation Information System classification. The majority of the land within the site has been modified by land clearing and introduction of exotic grasses in conjunction with its past agricultural use. Currently, the majority of the habitat within the site has the characteristics of a grassland community. Remnants of the plant communities observed during the field survey included some retained trees from the canopy, and small patches of the understorey and groundcover that is managed through a regular ongoing slashing regime. As a result of these modifications to the habitat significant environmental features are generally absent as detailed in the ecological assessment undertaken by Whelans InSites in August 2009.

E. Threatened Species

The subject site contains potential habitat for species of threatened flora and fauna, which was assessed separately by Whelans InSites in August 2009. Matters pertaining to the impact on threatened species and the mitigation measures proposed are contained in that document.

F. Indigenous Sites

For the purposes of determining the details and location of any Aboriginal object or Aboriginal place that may be situated on the subject site a search of the Aboriginal Heritage Information Management System (AHIMS) on the NSW Office of Environment and Heritage (OEH) website was undertaken on 3 August 2016. The basic search indicated that no Aboriginal sites are recorded in or near the subject site and that no Aboriginal places have been declared in or near the subject site. The AHIMS basic search report is appended to this report as Appendix C.

G. Bushfire Assessment

i. The extent to which the development is to provide for setbacks including Asset Protection Zones:

The site is located within the Kempsey Shire Local Government Area, in the North Coast Fire Weather Area, and is subject to an FDI rating of 80 according to Table A2.3 of *Planning for Bush Fire Protection 2006*. Based upon the provisions of Table A2.5 of *Planning for Bush Fire Protection 2006*, with respect to vegetation classified as forest for the purposes of determining Asset Protection Zones (APZs), the minimum specification for APZs applicable to residential subdivision purposes is 20 metres for upslope/flat. With respect to vegetation classified as grassland (east direction) for the purposes of determining APZs, the minimum specification for APZs applicable to residential subdivision purposes is ten (10) metres based on RFS advice provided in Appendix 2 of PBP and Table 2.4.3 of AS 3959-2009 for upslope/flat.

ii. The siting and adequacy of water supplies for firefighting:

Reticulated mains water supply is available to the subject site. Fire hydrant spacing, sizing and pressures that comply with *AS 2419.1 – 2005 Fire hydrant installations – System design, installation and commissioning* can be provided.

iii. The capacity of public roads to handle increased volumes of traffic in the event of a bushfire emergency:

The existing road network and in particular, Belle O'Connor Street satisfies the acceptable solutions of PBP for public road access for road widths and design and therefore has the capacity to handle increased volumes of traffic in the event of a bushfire emergency. The public road network within the proposed subdivision will also be able to satisfy the acceptable solutions of PBP for public road access for road widths and design and therefore has the capacity to handle increased volumes of traffic in the event of a bushfire emergency.

iv. Whether or not public roads in the vicinity have two-way access:

The existing public road network providing access to the proposed development (Belle O'Connor Street) is bitumen-sealed two-wheel drive all weather road. The roadway provides two-way access, meaning that it comprises at least two (2) traffic lane widths to allow traffic to pass in opposite directions. The proposed development access road network will be comprised of bitumen-sealed two-wheel drive all weather roads. The roadway provides two-way access, meaning that it comprises at least two (2) traffic lane widths to allow traffic to pass in opposite directions.

v. The adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response:

Currently, Belle O'Connor Street is not a through road and the distance from the beginning of the road (being the intersection with Gregory Street) to the subject site (the roundabout where construction of new roads is proposed) is approximately 650 metres. This exceeds the recommended maximum length of 200 metres as prescribed under the acceptable solutions of PBP for public road access. It appears that this situation has arisen due to the incomplete state of the residential development in the vicinity of the subject site, which is likely to be addressed as the development of the area proceeds. However, given the adequacy of the road (bitumen-sealed and two-way access) together with the relatively small number of residential properties located on bushfire prone land that are currently served by the road, it is considered that the intent of the acceptable solutions is achieved by satisfying the performance criteria for public road which states;

“Public road widths and design that allow safe access for firefighters while residents are evacuating an area.”

The proposed residential subdivision development within the subject site will be provided with two (2) access points, including one road from Belle O'Connor Street and another road providing connection directly to Stage 9 of Malbec Properties approved subdivision on the adjacent land to the east, which will effectively provide a through

road network. Therefore, the proposed public road access arrangements within the proposed residential subdivision are able to satisfy the acceptable solutions of PBP.

With the exception of the aforementioned issue in relation to road length of Belle O'Connor Street, the arrangements for access to and egress from the subject site for the purposes of an emergency response are considered adequate.

vi. The adequacy of any bushfire maintenance plans and fire emergency procedures for the development site:

There is no bushfire maintenance plan currently in place for the subject site and, in the context of the most likely development of the site (residential subdivision) it is considered that such a maintenance plan will not be necessary.

vii. The construction requirements to be used for building elements in the development:

The maximum Bushfire Attack Level (BAL) that a Class 1 or 2 residential building as defined under the *Building Code of Australia 2012* (BCA) can be subjected to is BAL-29. The minimum separation distances between the proposed buildings and the vegetation are prescribed in Table 2.4.3 of AS 3959-2009. Where a greater separation distance between a residential building and a bushfire hazard can be achieved a lower BAL may be applied. The relevant BAL with respect to the proposed development based on the minimum separation distance between the areas of unmanaged vegetation (bushfire hazard) and any residential building is summarised in Table 3.1.

Table 3.1: Summary of relevant BAL based on minimum separation distances

Hazard	Direction	Effective Slope	BAL-29	BAL-19	BAL-12.5
			Minimum Separation Distance (metres)		
Forest	North	Upslope/flat	21	31	42
Grassland	East	Upslope/flat	8	12	17

viii. The adequacy of sprinkler systems and other fire protection measures to be incorporated into the development:

It is not proposed to install a sprinkler system to the proposed buildings on the subject site for the purposes of bushfire protection.

H. Compliance: Planning for Bushfire Protection

The details provided in Section G of this assessment outline the relationship between the proposed subdivision development and the specifications set out in Chapter 4 (acceptable solutions) of PBP. This section provides an assessment of the extent to which the proposed development conforms with or deviates from the standards, specific objectives and performance criteria set out in Chapter 4 (performance-based controls) of PBP. The following tables assess the proposed residential subdivision development against the relevant performance criteria.

i. Asset Protection Zones

In relation to the provision of Asset Protection Zones, the proposed development can comply with the relevant provisions of Section 4.1.3 of *Planning for Bush Fire Protection 2006* as detailed in Table 3.2.

Table 3.2: Asset Protection Zones

Performance Criteria	Relationship of Proposed Subdivision to Performance Criteria	Meets performance criteria?
<i>Radiant heat levels at any point on a proposed building will not exceed 29kW/m².</i>	<ul style="list-style-type: none"> APZs are achievable in accordance with Appendix 2 of <i>Planning for Bush Fire Protection 2006</i> or with Table 2.4.3 of AS 3959-2009. 	Yes
<i>APZs are managed and maintained to prevent the spread of a fire towards the building.</i>	<ul style="list-style-type: none"> APZs to the proposed buildings can satisfy <i>Standards for Asset Protection Zones</i> (RFS, 2005). 	Yes
<i>APZ maintenance is practical, soil stability is not compromised and potential for crown fires is negated.</i>	<ul style="list-style-type: none"> Any future APZ is able to be located on lands with a slope of <18°. 	Yes

ii. Access (1) – Public Access

In relation to the provision of access, the proposed residential subdivision development can comply with the relevant provisions of Section 4.1.3 of *Planning for Bush Fire Protection* 2006 as detailed in Table 3.3.

Table 3.3: Access (1) – Public Access

Performance Criteria	Relationship of Proposed Subdivision to Performance Criteria	Meets performance criteria?
<i>Firefighters are provided with safe all weather access to structures (thus allowing more efficient use of firefighting resources).</i>	<ul style="list-style-type: none"> All roads to be used to access the proposed development are two-wheel drive, all weather roads. 	Yes
<i>Public road widths and design that allow safe access for firefighters while residents are evacuating an area.</i>	<ul style="list-style-type: none"> All roads used to access the proposed development provide two-way access meaning that they comprise at least two (2) traffic lane widths which allows traffic to pass in opposite directions. 	Yes
<i>The capacity of road surfaces and bridges is sufficient to carry fully loaded firefighting vehicles.</i>	<ul style="list-style-type: none"> The capacity of the existing road surfaces and bridges are capable of carrying a load of 15 tonnes 	Yes
<i>Roads that are clearly sign-posted (with easily distinguishable names) and buildings/properties that are clearly numbered.</i>	<ul style="list-style-type: none"> South West Rocks is provided with standard addressing which is easily identifiable. 	Yes
<i>Parking does not obstruct the minimum paved width.</i>	<ul style="list-style-type: none"> The roads will be provided with roll top kerbing, allowing vehicles to park without obstructing the paved width. All allotments are provided with off-street parking. 	Yes

iii. Access (2) – Property Access

In relation to the provision of property access, the proposed residential subdivision development can comply with the relevant provisions of Section 4.1.3 of *Planning for Bush Fire Protection* 2006 as detailed in Table 3.4.

Table 3.4: Access (2) – Property Access

Performance Criteria	Relationship of Proposed Subdivision to Performance Criteria	Meets performance criteria?
<i>Access to properties is provided in recognition of the risk to fire fighters and / or evacuating occupants.</i>	<ul style="list-style-type: none"> Property access greater than 200m from a public road is not required 	Yes
<i>The capacity of road surfaces and bridges is sufficient to carry fully loaded firefighting vehicles. All weather access is provided.</i>	<ul style="list-style-type: none"> The proposed property access road network will be sufficient to carry fully loaded firefighting vehicles. All weather access can be provided. 	Yes
<i>Road widths and design enable safe access for vehicles.</i>	<ul style="list-style-type: none"> The proposed property access roads will allow vehicles to pass each other. 	Yes

iv. Water Supply, Electricity and Gas

Reticulated water is available to the subject site. Table 3.5 below assesses the proposed residential subdivision development against the relevant performance criteria for water supply, electricity and gas.

Table 3.5: Water Supply, Electricity and Gas

Performance Criteria	Relationship of Proposed Subdivision to Performance Criteria	Meets performance criteria?
Reticulated Water Supply <i>Water supplies are easily accessible and located at regular intervals.</i>	<ul style="list-style-type: none"> Reticulated water is available to the proposed development. Fire hydrants can be provided in accordance with AS 2419.1-2005. 	Yes
Electricity Services <i>Location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings.</i>	<ul style="list-style-type: none"> Electricity provision is able to be provided away from native vegetation and is also able to be provided underground. 	Yes
Gas services <i>Location of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.</i>	<ul style="list-style-type: none"> Reticulated gas can be installed in accordance with AS 1596. 	Yes

4. Discussion

The proposed development involves a residential subdivision on land identified as Lot 36 DP 1214499, Belle O'Connor Street South West Rocks. The bushfire assessment demonstrates that bushfire protection of the proposed development of the land within the subject site can generally satisfy the requirements of *Planning for Bushfire Protection 2006* when assessed in accordance with Section 44 of the *Rural Fires Regulation 2013* for the purpose of applying for a Bushfire Safety Authority under Section 100B of the *Rural Fires Act 1997*. The proposed development enables the provision of required Asset Protection Zones for the proposed residential buildings on the subject site as indicated on the subdivision plan prepared by de Groot and Benson Consulting Engineers and Surveyors appended to this report as Appendix B.

It is acknowledged that Belle O'Connor Street is effectively a dead end road and therefore is not a through road for the purposes of clause 4.1.3 of PBP with respect to public road access. In relation to dead end roads, the acceptable solutions for public road access state;

"All roads are through roads. Dead end roads are not recommended, but if unavoidable, dead ends 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 and direct traffic away from the hazard."

As the length of Belle O'Connor Street to the subject site exceeds 200 metres the aforementioned acceptable solution cannot be achieved. However, given the adequacy of the road (bitumen-sealed and two-way access) and provision of an adequate turning circle together the relatively small number of bushfire prone residential properties the road currently serves, it is considered that the relevant acceptable solutions are achieved by satisfying the performance criteria for public road access which states;

"Public road widths and design that allow safe access for firefighters while residents are evacuating an area."

It is noted that there are other recently developed residential subdivisions that were assessed under PBP 2006 and issued with a Bushfire Safety Authority in the local area. These residential developments also were unable to achieve the acceptable solutions in relation to the maximum road length permitted for a dead end road. Therefore, a precedent has been set and public road access is considered to be adequate on the basis that the performance criteria has been satisfied.

This report demonstrates that bushfire risks can be satisfactorily managed for the proposed development of the land for residential purposes as shown on the development application plan. Moreover, subject to the recommendations detailed below, there are no significant impediments to the proposed development of the land from a bushfire hazard perspective

4. Conclusion and Recommendations

The bushfire assessment demonstrates that bushfire protection of the proposed development of the land within the subject site can generally satisfy the requirements of *Planning for Bushfire Protection 2006* when assessed in accordance with Section 44 of the *Rural Fires Regulation 2013* for the purpose of applying for a Bushfire Safety Authority under Section 100B of the *Rural Fires Act 1997*. Moreover, subject to the recommendations detailed below, there are no significant impediments to the proposed development of the land from a bushfire hazard perspective.

The following recommendations are made in relation to bushfire protection measures for the proposed subdivision of the land at Lot 36 DP 1214499, Belle O'Connor Street South West Rocks for residential purposes and are based on the relevant provisions of the NSW Rural Fire Service guideline entitled *Planning for Bush Fire Protection 2006* and *Australian Standard AS 3959-2009 Construction of buildings in bushfire-prone areas*:

1. Any future building erected on the land within the proposed residential allotments shall be provided with an Asset Protection Zone (APZ) in perpetuity as prescribed under Section 4.1.3 and Appendix 5 of *Planning for Bush Fire Protection 2006* and as detailed below;

Hazard	Direction & Lot Affected	Effective Slope	BAL-29	BAL-19	BAL-12.5
			Minimum Separation Distance (m)		
Forest	North	Upslope/flat	21	31	42
Grassland	East	Upslope/flat	8	12	17

2. As outlined under Section A2.2 of *Planning for Bush Fire Protection 2006*, and in relation to the requirements of recommendation 1 above, the IPA should provide a tree canopy cover of less than 15 % which should be located greater than two (2) metres from any part of the roofline of a dwelling. Garden beds of flammable shrubs are not to be located under trees and should be no closer than ten (10) metres from an exposed window or door. Trees should have lower limbs removed up to a height of two (2) metres above the ground;
3. Public road access (within the proposed residential subdivision development) shall comply with Section 4.1.3 (1) of *Planning for Bush Fire Protection 2006*; and
4. Water, electricity and gas are to comply with Section 4.1.3 of *Planning for Bush Fire Protection 2006*. Any new electricity supply lines are to be installed underground;

NOTE AND DISCLAIMER:

1. *This assessment relates to a proposed residential subdivision of the subject land and only the plans referenced in this Assessment have been considered.*
2. *This Assessment has been based on bushfire protection guidelines as outlined in the document entitled Planning for Bush Fire Protection 2006 (PBP).*
3. *As noted by PBP and notwithstanding the precautions recommended, it should always be borne in mind that bushfires burn under a range of conditions and an element of risk always remains.*
4. *This assessment does not imply or infer any approval for the removal of vegetation for asset protection or other purposes. It is the responsibility of the client/land owner to obtain any and all necessary approvals in this regard.*



Steve Britt 23 August 2016



5. References

Keith, D., 2004, *Ocean Shores to Desert Dunes: The Native Vegetation of New South Wales and the ACT*, Department of Environment and Conservation, Hurstville, NSW Australia

NSW Rural Fire Service, 2005, *Standards for Asset Protection Zones*, NSW Rural Fire Service, Sydney

NSW Rural Fire Service, 2006, *Planning for Bushfire Protection 2006*, NSW Rural Fire Service, Sydney

Standards Australia, 2009, *AS3959-2009 Construction of buildings in bushfire-prone Areas*, Standards Australia, Sydney

6. Appendix A: Subdivision Plan



7. Appendix B: Adjacent Subdivision



8. Appendix C: AHIMS Basic Search Results



Office of
Environment
& Heritage

**AHIMS Web Services (AWS)
Search Result**

Purchase Order/Reference : BA-2016-0706
Client Service ID : 237151

Steve Britt
PO Box 3212
West Kempsey New South Wales 2440
Attention: Steve Britt
Email: steve@florafauna.com.au
Dear Sir or Madam:

Date: 03 August 2016

AHIMS Web Service search for the following area at Lat, Long From : -30.9035, 153.0451 - Lat, Long To : -30.8998, 153.0511 with a Buffer of 50 meters, conducted by Steve Britt on 03 August 2016.

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 the Office of the Environment and Heritage 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. *