



Bushfire Attack Level (BAL) Assessment Report

Site details

Address:

Lot 102 Arabian Court

Suburb:

Champion Lakes

State:

Western Australia

Local Government Area:

City of Armadale

Description of Building Works:

Construction of Class 1 dwellings

Report details

Project number	A24.187	Report version	3
Assessment date	29/08/2024	Report date	3/06/2025
Author	Bridie Farrar Bushfire Consultant	Review	Dylan Wray Associate Bushfire Consultant BPAD L2 44656  BPAD Bushfire Planning & Design Accredited Practitioner Level 2

Site Assessment and Site Plan

The assessment of the 54 lots was undertaken on 29/08/2024 for the purpose of determining the Bushfire Attack Level (BAL) in accordance with *Australian Standard AS 3959: 2018 Construction of Buildings in Bushfire Prone Areas* (AS 3959: 2018; SA 2018) Simplified Procedure (Method 1). An overview of the site is presented in Figure 1.

Vegetation Classification

All vegetation within 100 m of the 54 lots was classified in accordance with Clause 2.2.3 of AS 3959: 2018. Each distinguishable vegetation class with the potential to determine the BAL is identified in Table 1 and presented in Figure 2. The BAL assessment is based on the Deposited Plan (Appendix A) and the landscape concept plan for the public open space (POS) (Appendix A). The POS design and associated vegetation classifications have been developed in consultation with the project team and the City of Armadale.

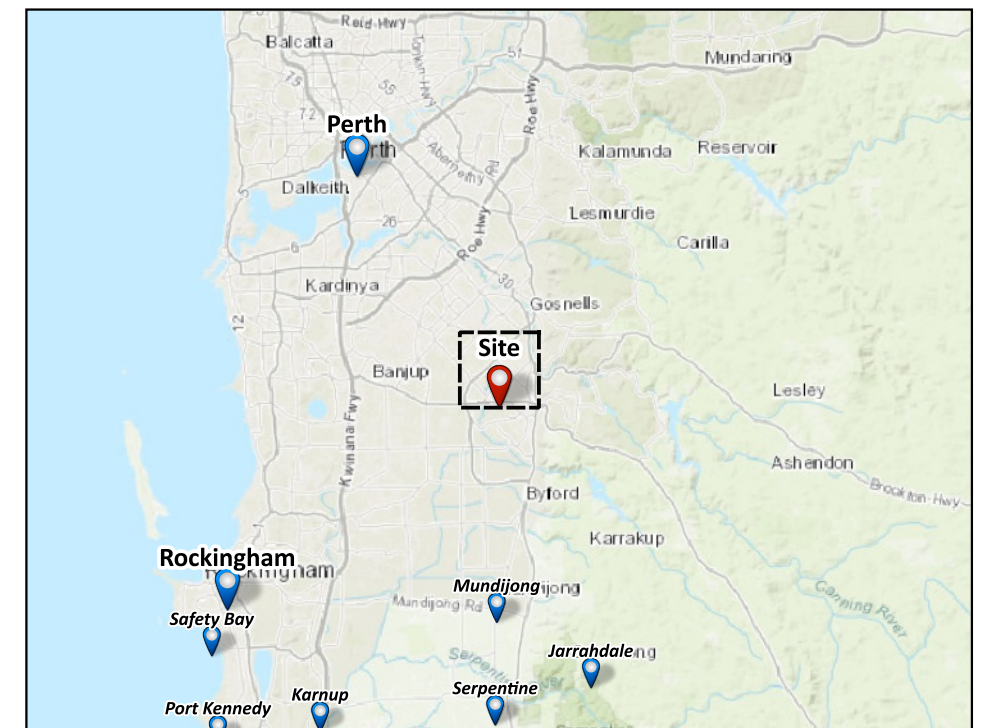
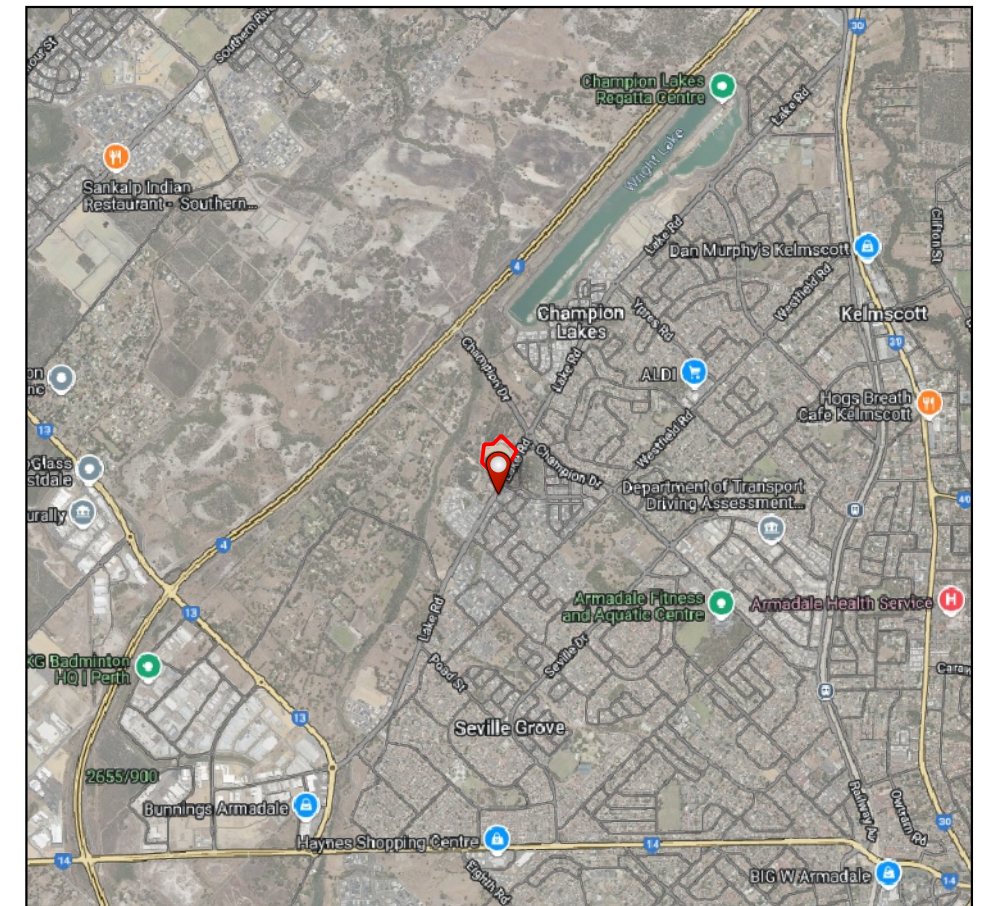
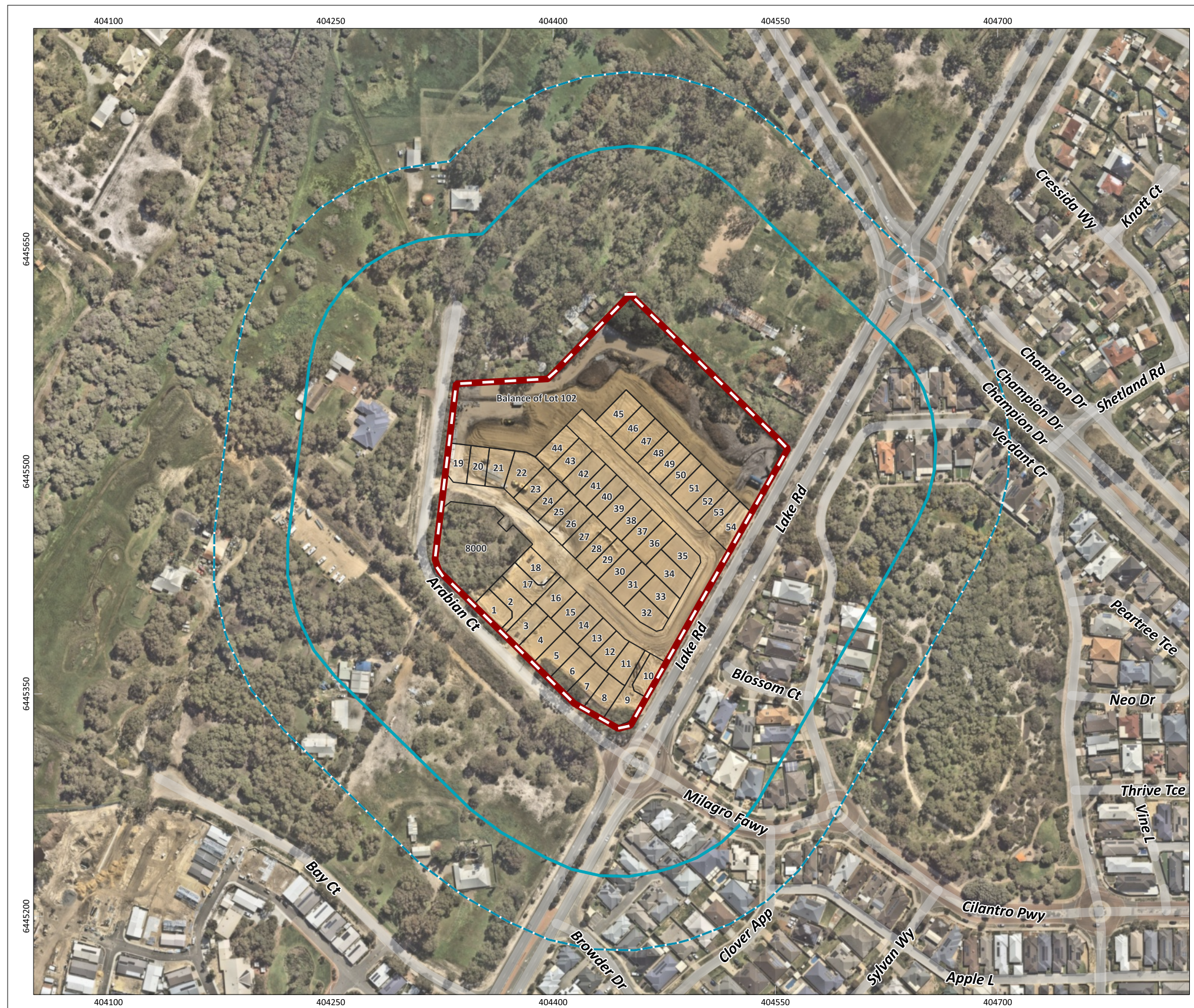
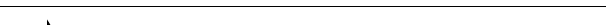


Figure 1: Site Overview

		PROJECT/REPORT NAME Bushfire Attack Level Report Lot 102 Arabian Court, Champion Lakes	
SCALE 1:3,000	SHEET SIZE A3 COLOUR	CLIENT Celsius Land	
COORDINATE REFERENCE SYSTEM GDA2020 / MGA zone 50		PROJECT NUMBER A24.187	VERSION 0
DATA SOURCE LANDGATE AERIAL IMAGERY NOW		DRAWN BY / REVIEWED BY BF/SM	DATE 5/6/2025

Legend

-  Subject Site
-  Buffer 100m
-  Buffer 150m
-  Lots
-  Balance of Lot 102

No	Description	Drawn	Approved	Date
A	Original issue	BF	SM	5/6/2025

NOTES:

Cadastral boundary (LGATE-002). Base map ESR!
Topo. Townsites (LGATE-248).



WESTERN
ENVIRONMENTAL

Western Environmental Pty Ltd
08 6244 2310 | enquiries@westernv.com.au
Level 3/25 Prowse St, West Perth WA 6005
westernv.com.au

Table 1: Vegetation Classification

Plot 1 Photo 1 This plot consists of trees reaching up to 30 m in height and is dominated by Eucalypts in the overstorey. The canopy cover exceeds 30% and the vegetation structure throughout the plot is multi-tiered, with grasses and shrubs throughout the understorey. The slope under this vegetation was assessed to be upslope/flat land.	Class A Forest Aug 29, 2024 7:53:00 AM 32°7'22.44612"S 115°59'19.1174"E ±4.59m 168° S 
Plot 1 Photo 2 This plot consists of trees reaching up to 30 m in height and is dominated by Eucalypts in the overstorey. The canopy cover exceeds 30% and the vegetation structure throughout the plot is multi-tiered, with grasses and shrubs throughout the understorey. The slope under this vegetation was assessed to be upslope/flat land.	Class A Forest Aug 29, 2024 7:51:12 AM 32°7'24.55923"S 115°59'18.58779"E ±4.58m 112° E 
Plot 2 Photo 3 This plot consists of Eucalypts reaching up to 30 m in height, over a grassy understorey. Tree canopy cover is between 10 and 30% and the vegetation structure is open. The slope under this vegetation was assessed to be upslope/flat land.	Class B Woodland Aug 29, 2024 8:19:45 AM 32°7'17.05636"S 115°59'14.63056"E ±4.08m 296° NW 



Plot 2

Class B Woodland

Photo 4

This plot consists of Eucalypts reaching up to 30 m in height, over a grassy understorey. Tree canopy cover is between 10 and 30% and the vegetation structure is open.

The slope under this vegetation was assessed to be upslope/flat land.



Plot 2

Class B Woodland

Photo 5

This plot consists of Eucalypts reaching up to 30 m in height, over a grassy understorey. Tree canopy cover is between 10 and 30% and the vegetation structure is open.

The slope under this vegetation was assessed to be upslope/flat land.



Plot 3

Class G Grassland

Photo 6

This plot is dominated by grasses in the understorey. Some sparse trees are present throughout the plot, with tree canopy cover not exceeding 10%.

The slope under this vegetation was assessed to be upslope/flat land.



Plot 3	Class G Grassland
Photo 7 This plot is dominated by grasses in the understorey. Some sparse trees are present throughout the plot, with tree canopy cover not exceeding 10%. The slope under this vegetation was assessed to be upslope/flat land.	
Plot 4	Excluded - clause 2.2.3.2 (e)
Photo 8 The subject site, which has been cleared for development, is devoid of vegetation.	
Plot 4	Excluded - clause 2.2.3.2 (e)
Photo 9 Roads surrounding the subject site which are devoid of vegetation.	



Plot 4	Excluded - clause 2.2.3.2 (e)
Photo 10 Houses, roads and low-threat gardens and nature strips in the areas surrounding the subject site.	
Plot 5	Excluded - clause 2.2.3.2 (f)
Photo 11 Vegetation within large rural lots which is maintained to a low-threat state.	
Plot 5	Excluded - clause 2.2.3.2 (f)
Photo 12 Vegetation within large rural lots which is maintained to a low-threat state.	



Relevant Fire Danger Index

The Fire Danger Index for this site has been determined in accordance with Table 2.1 of AS 3959: 2018 and is presented in Table 2.

Table 2: Fire Danger Index (FDI)

Relevant Fire Danger Index			
FDI 40 ☐ <i>Table 2.4.5</i>	FDI 50 ☐ <i>Table 2.4.4</i>	FDI 80 ✓ <i>Table 2.4.3</i>	FDI 100 ☐ <i>Table 2.4.2</i>

Potential Bushfire Impacts

The potential bushfire impact to the site / proposed development from each of the identified vegetation plots are identified below in Table 3.

Table 3: Method 1 BAL Calculation (BAL Contours)

Plot	Vegetation classification	Effective slope	Separation distances required (m)				
			BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
1	Class A Forest	All upslopes and flat land (0 degrees)	<16	16 - <21	21 - <31	31 - <42	42 - <100
2	Class B Woodland	All upslopes and flat land (0 degrees)	<10	10 - <14	14 - <20	20 - <29	29 - <100
3	Class G Grassland	All upslopes and flat land (0 degrees)	<6	6 - <8	8 - <12	12 - <17	17 - <50
4	Excluded - clause 2.2.3.2 (e)	-	No separation distances required - BAL-LOW				
5	Excluded - clause 2.2.3.2 (f)	-	No separation distances required - BAL-LOW				

Determined Bushfire Attack Level (BAL)

The determined Bushfire Attack Level (highest BAL) for the proposed works has been determined in accordance with Clause 2.2.6 of AS 3959: 2018 relevant data from the site assessment shown in Figure 3 and Table 4.



Table 4: BAL Assessment Summary

Affected lot	BAL Rating	Construction sections to be consulted in AS 3959: 2018
1	BAL-29	3 and 7
2	BAL-29	3 and 7
3	BAL-12.5	3 and 5
4	BAL-12.5	3 and 5
5	BAL-12.5	3 and 5
6	BAL-12.5	3 and 5
7	BAL-12.5	3 and 5
8	BAL-12.5	3 and 5
9	BAL-12.5	3 and 5
10	BAL-LOW	4
11	BAL-12.5	3 and 5
12	BAL-12.5	3 and 5
13	BAL-12.5	3 and 5
14	BAL-12.5	3 and 5
15	BAL-12.5	3 and 5
16	BAL-12.5	3 and 5
17	BAL-29	3 and 7
18	BAL-29	3 and 7
19	BAL-29	3 and 7
20	BAL-29	3 and 7
21	BAL-29	3 and 7



Affected lot	BAL Rating	Construction sections to be consulted in AS 3959: 2018
22	BAL-29	3 and 7
23	BAL-29	3 and 7
24	BAL-19	3 and 6
25	BAL-19	3 and 6
26	BAL-12.5	3 and 5
27	BAL-12.5	3 and 5
28	BAL-12.5	3 and 5
29	BAL-12.5	3 and 5
30	BAL-12.5	3 and 5
31	BAL-12.5	3 and 5
32	BAL-LOW	4
33	BAL-LOW	4
34	BAL-12.5	3 and 5
35	BAL-12.5	3 and 5
36	BAL-LOW	4
37	BAL-12.5	3 and 5
38	BAL-12.5	3 and 5
39	BAL-12.5	3 and 5
40	BAL-12.5	3 and 5
41	BAL-12.5	3 and 5
42	BAL-12.5	3 and 5
43	BAL-12.5	3 and 5



Affected lot	BAL Rating	Construction sections to be consulted in AS 3959: 2018
44	BAL-12.5	3 and 5
45	BAL-12.5	3 and 5
46	BAL-12.5	3 and 5
47	BAL-12.5	3 and 5
48	BAL-12.5	3 and 5
49	BAL-12.5	3 and 5
50	BAL-12.5	3 and 5
51	BAL-12.5	3 and 5
52	BAL-12.5	3 and 5
53	BAL-12.5	3 and 5
54	BAL-12.5	3 and 5

Note: This BAL rating is based on the information current at the date of this document and is valid for 12 months.



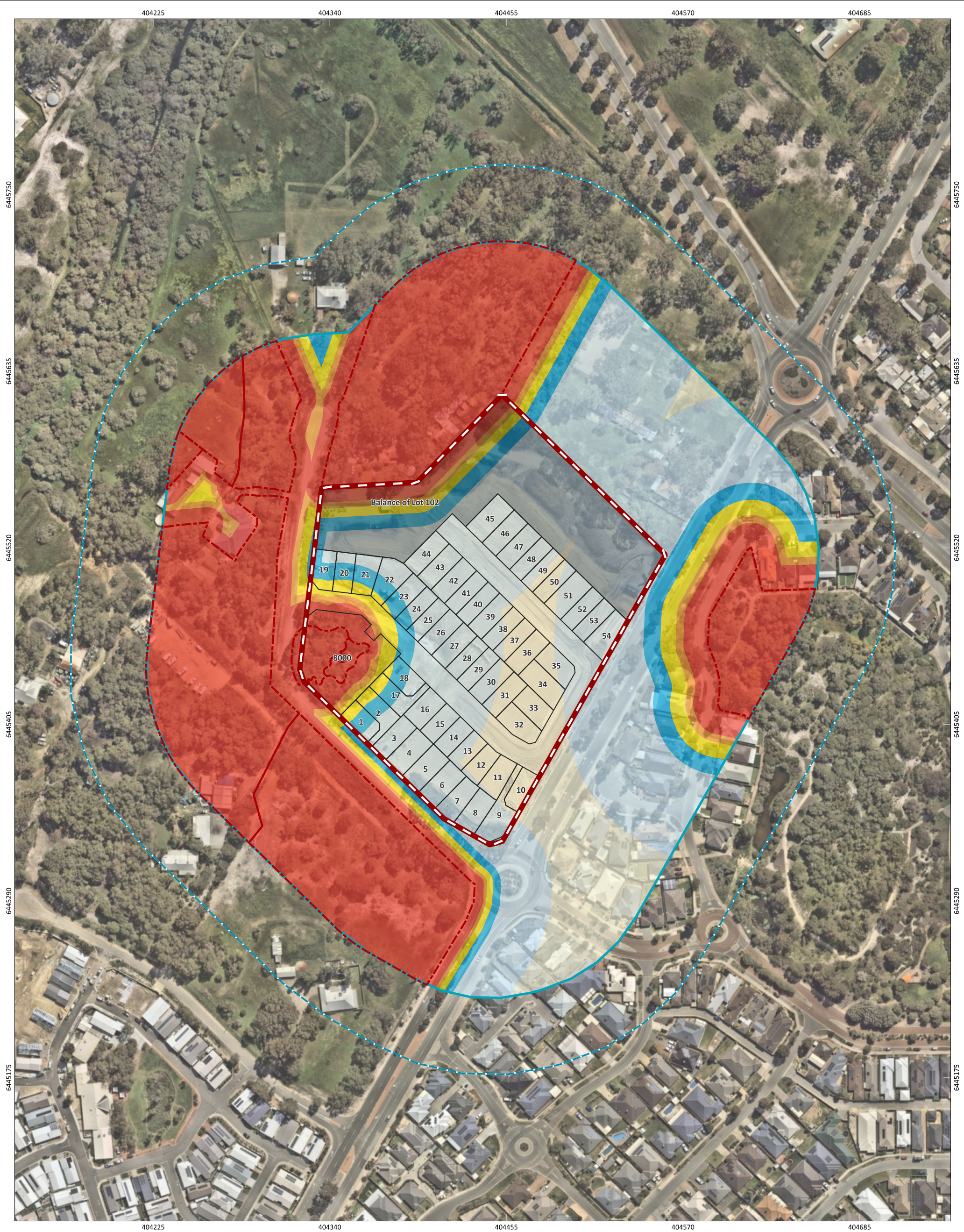


Figure 3: Bushfire Attack Level (BAL) Contours

		PROJECT/REPORT NAME Bushfire Attack Level Report Lot 102 Arabian Court, Champion Lakes	
SCALE 1:2,300	SHEET SIZE A3 COLOUR	CLIENT Celsius Land	
COORDINATE REFERENCE SYSTEM GDA2020 / MGA zone 50		PROJECT NUMBER A24.187	VERSION 0
DATA SOURCE LANDGATE AERIAL IMAGERY NOW		DRAWN BY / REVIEWED BY BF/SM	DATE 5/6/2025

Legend

- Subject Site
- Buffer 100m
- Buffer 150m
- Bushfire hazard Interface
- Lots
- Balance of Lot 102

Bushfire Attack Level (BAL)

- BAL-FZ
- BAL-40
- BAL-29
- BAL-19
- BAL-12.5
- BAL-LOW

No	Description	Drawn	Approved	Date
A	Original issue	BF	SM	5/6/2025

NOTES:

Cadastral boundary (LGATE-002). Label corresponds to the vegetation association number.

**WESTERN
ENVIRONMENTAL**

Western Environmental Pty Ltd
 08 6244 2310 | enquiries@western.com.au
 Level 3/25 Prowse St. West Perth WA 6005
 western.com.au

Appendix A

Deposited Plan



Plan Information

Tenure Type	Freehold
Plan Type	Deposited Plan
Plan Purpose	Subdivision

Plan Heading

Lots 1-54, 8000, 9000, Roads, Road Widening, Easement, Covenant and Restrictive Covenant

Locality & Local Government

Locality	Champion Lakes
Local Government	City of Armadale

Department of Planning, Lands and Heritage

File Number	
-------------	--

Examination

Examined	Date
----------	------

Planning Approval

Planning Authority	Western Australian Planning Commission
Reference	162858 & 164566

In Order For Dealings

Subject To	
------------	--

Plan Approved

Inspector of Plans and Surveys / Authorised Land Officer	Reg. 26A (1),(4)	Date
--	------------------	------

Survey Details

Field Records	158535
Declared as Special Survey Area	Yes

Survey Method Regulatory Statement

Survey carried out under Reg. 26A Special Survey Area Guidelines. See survey sheet(s) to determine the true final position and type of all survey marks placed for this plan.

Survey Method and Plan Content Variations

Approved Variation Type	Reference
REG 26A(1) FINAL MARKING DEFERRED	(Approved ID D137-24 Dated 16 September 2024, Landgate File 00151-2024)

Survey Certificate - Regulation 54

I, Kenny R. SELLERS
hereby certify that this plan is accurate and is a correct representation of the -
(a) survey; and
(b) calculations from measurements recorded in the field records,
undertaken for the purposes of this plan and that it complies with the relevant
written law(s) in relation to which it is lodged.

FINAL

Licensed Surveyor	Date
-------------------	------

Amendments

Version	Lodgement Type	Amendment Description	Authorised By	Date
2	Amendment Plan	Plan Examination Requirement	Kenny R. SELLERS	06/01/2025

Former Tenure

New Lot / Land	Parent Plan Number	Parent Lot Number	Title Reference	Subject Land Description
1-54, 8000, 9000	P 13615	Pt LOT 102	1607-326	

Former Tenure Interests and Notifications

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments

New Interests

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
	EASEMENT (Water Supply)	SEC 167 OF THE P & D ACT 2005 REG 33 (b)	THIS PLAN	LOT 9000	WATER CORPORATION	
 1	EASEMENT (Sewerage)	SEC 167 OF THE P & D ACT 2005 REG 33 (b)	THIS PLAN	LOT 9000	WATER CORPORATION	
	RESTRICTIVE COVENANT	SEC 136D OF THE TLA 1893	THIS PLAN & DOC	LOTS 1-54	LOTS 1-54	
	RESTRICTIVE COVENANT	SEC 129BA OF THE TLA 1893	DOC	LOT 8000	ELECTRICITY NETWORK CORPORATION	FIRE SEPARATION
	COVENANT	SEC 150 OF THE P & D ACT 2005	THIS PLAN	LOTS 9 & 10	CITY OF ARMADALE	RESTRICTION OF ACCESS (No road vehicle access to and from Lake Road)
	COVENANT	SEC 150 OF THE P & D ACT 2005	THIS PLAN	LOT 54	CITY OF ARMADALE	RESTRICTION OF ACCESS (No road vehicle access to and from Lake Road)
	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC	LOT 9000	CITY OF ARMADALE AND THE PUBLIC AT LARGE	PUBLIC ACCESS

New Notifications and Memorials

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
	NOTIFICATION (Hazards or other Factors)	SEC 165 OF THE P & D ACT 2005	DOC	LOTS 1-9, 11-31, 34, 35 & 37-54		BUSHFIRE MANAGEMENT PLAN

Vesting Lots

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
LOT 8000	RESERVE FOR RECREATION AND DRAINAGE	VESTS IN THE CROWN UNDER SEC 152 OF THE P & D ACT 2005	THIS PLAN			







MNG Ref : 105055dp-008f - Stage 1 - DP428931.CSD

MC MULLEN NOLAN GROUP
PO Box 124, Bull Creek W.A. 6149
Tel: (08) 6436 1599
Fax: (08) 6436 1500
Email: info@mngsurvey.com.au

ADDITIONAL SHEETS
SURVEY SHEET

SHEET

1

OF

3

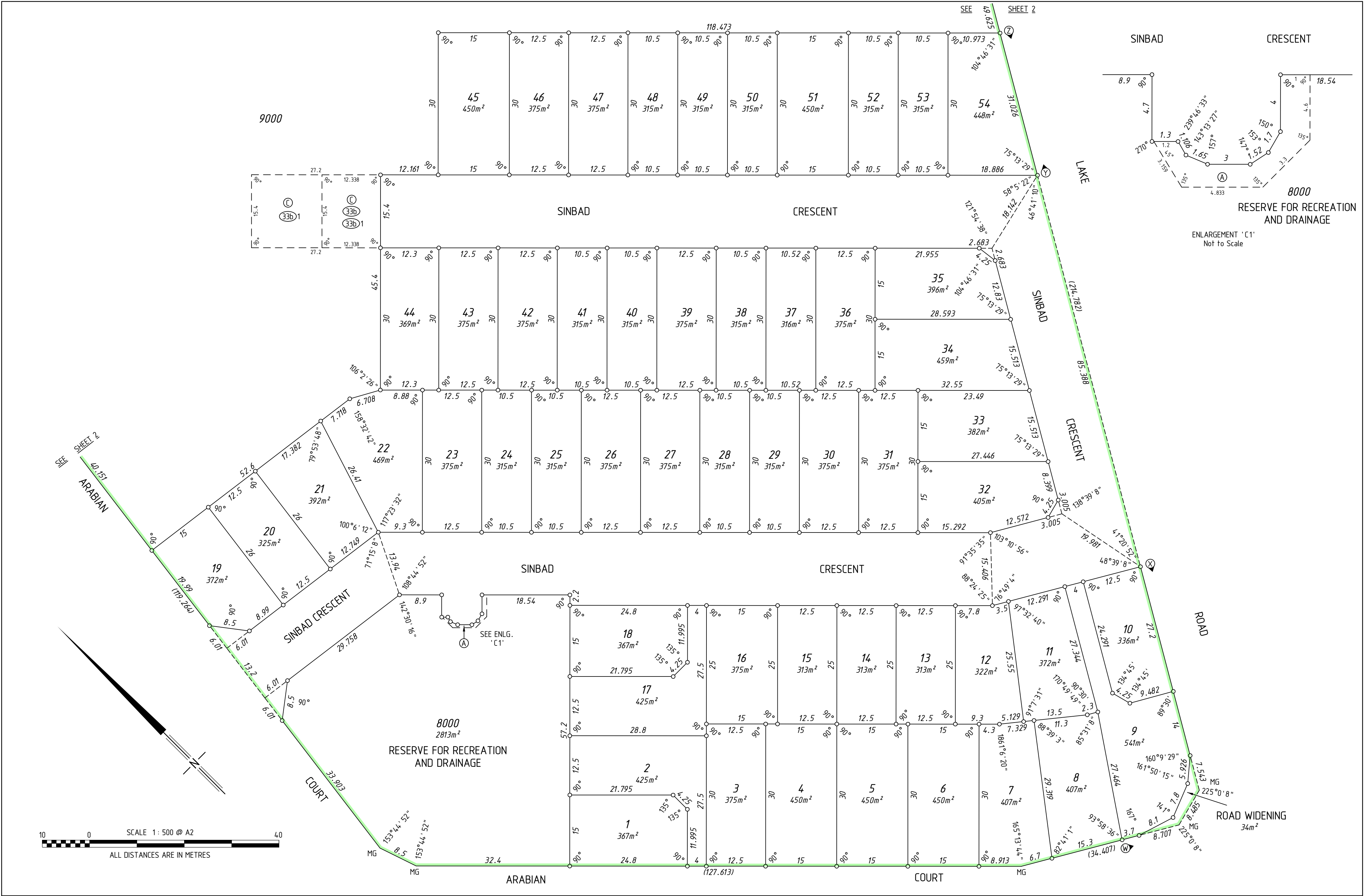
SHEETS

VERSION NUMBER

2

DEPOSITED PLAN

428931



THIS SURVEY SHEET WILL BE
REPLACED BY THE SURVEY DATA



MC MULLEN NOLAN GROUP
PO Box 124, Bull Creek W.A. 6149
Tel: (08) 6436 1299
Fax: (08) 6436 1500
Email: info@mngsurvey.com.au

MNG Ref : 105055dp-008f

VERSION NUMBER

2

DEPOSITED PLAN

428931

Appendix B:

Landscape Concept Plan





CERTIFICATION: This drawing shall not be used for construction purposes unless Revised 0 issued for Construction and signed and approved by the Certifying Landscape Architect. Verify all dimensions on site before commencing work or ordering materials. Refer any discrepancy to Landscape Architect before proceeding with the works.				
DO NOT SCALE FROM THE DRAWING				
DATE	REV	DESCRIPTION	BY	AP
18.10.23	A	ISSUED FOR INFORMATION	PB	KD
02.08.24	B	ISSUED FOR CLIENT REVIEW	PB	RB
13.08.24	C	ISSUED FOR CLIENT REVIEW	PB	RB
26.08.24	D	ISSUED FOR CLIENT REVIEW	PB	RB
13.09.24	E	ISSUED FOR CLIENT REVIEW	PB	RB
30.09.24	F	ISSUED FOR CLIENT REVIEW	PB	RB
10.10.24	G	INTEGRATION OF BUSHFIRE COMMENTS	PB	RB
25.11.24	H	ISSUE FOR APPROVAL	PB	RB
09.05.25	I	ISSUED FOR TENDER	PB	RB
04.06.25	J	ISSUED FOR BUSHFIRE APPROVAL	PB	RB

TREE PLANTING

Key	Botanic Name	Spacing	Pot	Qty.
ERU	EUCALYPTUS RUDIS	AS SHOWN	100LT	8

NON-IRRIGATED TUBE MIX

Key	Botanic Name	Spacing	Pot	Qty.
ASC	ASTARTEA SCOPARIA	600 mm	TUBE	119
AHU	ANIGOZANTHOS HUMILIS	600 mm	TUBE	119
BAE	BEAUFORTIA AESTIVA	600 mm	TUBE	119
CCA	CONOSYLIS CANDICANS	600 mm	TUBE	119
DCB	DIANELLA CAERULEA 'CASSA BLUE'	600 mm	TUBE	119
EGL	EREMPOHILA GLABRA PROSTRATE	600 mm	TUBE	119
HPU	HEMIANDRA PUNGENS	600 mm	TUBE	119
LSN	LEUCOPHYTA BROWNII 'SILVER NUGGET'	600 mm	TUBE	119
LLL	LOMANDRA 'LITTLE LIME'	600 mm	TUBE	119
MSY	MELALEUCA SYSTEMA PROSTRATE	600 mm	TUBE	119

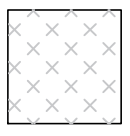
NON-IRRIGATED BASIN MIX A

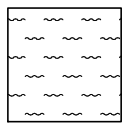
Key	Botanic Name	Spacing	Pot	Qty.
ASP	ACACIA SALIGNA PROSTRATE	600 mm	TUBE	87
BJU	BAUMEA JUNCEA	600 mm	TUBE	87
BPR	BAUMEA PREISSII	600 mm	TUBE	87
BVA	BAUMEA VAGINALIS	600 mm	TUBE	87
BRU	BAUMEA RUBIGINOSA	600 mm	TUBE	87
FIN	FICINIA NODOSA	600 mm	TUBE	87
GTP	GREVILLEA THELEMANNIANA PROSTRATE	600 mm	TUBE	87
HEM	HEMIANDRA PUNGENS	600 mm	TUBE	87
CAP	CAREX APPRESSA	600 mm	TUBE	87
JKR	JUNCUS KRAUSSII	600 mm	TUBE	87
JPA	JUNCUS PALLIDUS	600 mm	TUBE	87
JFU	JACKSONIA FURCELLATA	600 mm	TUBE	87
JUS	JUNCUS SUBSECUNDUS	600 mm	TUBE	87
LEG	LEPIDOSPERMA GLATIATUM	600 mm	TUBE	87
LEL	LEPIDOSPERMA LONGITUDINALE	600 mm	TUBE	87
MES	MEEBOLDINA SCARIOSA	600 mm	TUBE	87
HST	HIBBERTIA STELLARIS	600 mm	TUBE	87

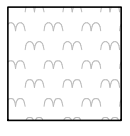
NON-IRRIGATED BASIN MIX B

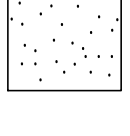
Key	Botanic Name	Spacing	Pot	Qty.
BRU	BAUMEA RUBIGINOSA	400 mm	TUBE	208
BJU	BAUMEA JUNCEA	400 mm	TUBE	208
BPR	BAUMEA PREISSII	400 mm	TUBE	208
BVA	BAUMEA VAGINALIS	400 mm	TUBE	208
FIN	FICINIA NODOSA	400 mm	TUBE	208
JKR	JUNCUS KRAUSSII	400 mm	TUBE	208
JPA	JUNCUS PALLIDUS	400 mm	TUBE	208
JUS	JUNCUS SUBSECUNDUS	400 mm	TUBE	208
LEG	LEPIDOSPERMA GLATIATUM	400 mm	TUBE	208
LEL	LEPIDOSPERMA LONGITUDINALE	400 mm	TUBE	208

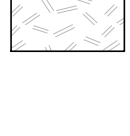
LEGEND: SOFT WORKS

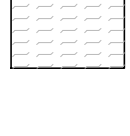
- 

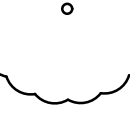
TUBESTOCK PLANTING:
NON IRRIGATED
MULCH:100MM PINE BARK MULCH AS PER CITY OF ARMADALE STANDARDS
SOIL CONDITIONER: :50MM C-WISE HORTICULTURE
- 

BASIN PLANTING: TUBESTOCK
NON-IRRIGATED
MULCH:100MM PINE BARK MULCH AS PER CITY OF ARMADALE STANDARDS
NO SOIL CONDITIONER
- 

BASIN PLANTING: TUBESTOCK
NON-IRRIGATED
NO MULCH
NO SOIL CONDITIONER
- 

TURF GRASSING:
SPECIES: KIKUYU
IRRIGATED
- 

MULCH ONLY
PINE BARK MULCH AS PER CITY OF ARMADALE STANDARDS
DEPTH: 100MM
SUPPLY & INSTALL
- 

PINE BARK IMPACT SURFACE
TYPE: CERTIFIED PINE BARK
DEPTH: 400mm MIN
REFER DETAIL 02-03/L7.101
- 

ERU NEW TREE PLANTING
- 

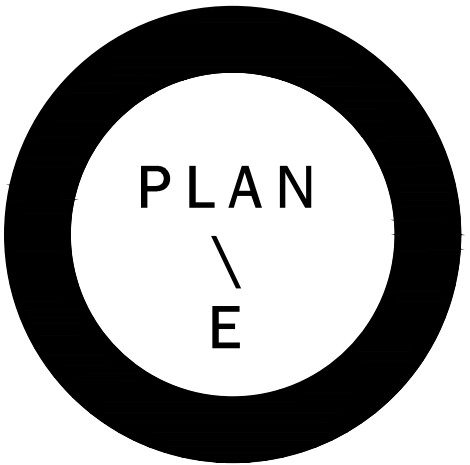
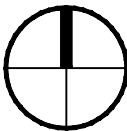
TREE TRUNKS OF RETAINED TREES
- 

PROPOSED STREET LIGHTS (BY CIVIL)

NOTE:

CONTRACTOR MANAGEMENT AROUND EXISTING TREES TO BE CARRIED OUT CAREFULLY. ALL WORKS TO FOLLOW GENERAL SPECIFICATION AND ARBORICULTURAL METHOD STATEMENT PREPARED BY AROBORIBUS CONSULTING. ENSURE ARBORIST IS ON SITE DURING WORKS WITHIN TPZ, PARTICULARLY WHILE DIGGING FOOTINGS FOR BOARDWALKS WITHIN TPZ.

MULCH BOWL TO BE INSTALLED TO THE BASES OF ALL EXISTING TREES.



Appendix C

Additional Information / Advisory Notes



This assessment was undertaken as per AS 3959: 2018. It is important that the current version of AS 3959, is consulted for construction purposes.

This BAL rating is based on the information current at the date of this letter and is valid for 12 months from the date of this letter.

Bushfire Attack Level (BAL) as set out in the Australian Standard 3959 Construction of Buildings in Bushfire-Prone Areas (AS 3959), as referenced in the Building Code of Australia.

Bushfire Attack Level (BAL)	Classified vegetation within 100 m of the site and radiant heat flux exposure thresholds	Description of predicted bush fire attack and levels of exposure	Construction Section as per AS 3959
BAL-LOW		There is insufficient risk to warrant specific construction requirements.	4
BAL-12.5	$\leq 12.5 \text{ kW/m}^2$	Ember attack	3 and 5
BAL-19	$> 12.5 \text{ kW/m}^2 \leq 19 \text{ kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux.	3 and 6
BAL-29	$> 19 \text{ kW/m}^2 \leq 29 \text{ kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux	3 and 7
BAL-40	$> 29 \text{ kW/m}^2 \leq 40 \text{ kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux with the increased likelihood of exposure to flames.	3 and 8
BAL-FZ	$> 40 \text{ kW/m}^2$	Direct exposure to flames from fire front in addition to radiant heat flux and ember attack	3 and 9

Source: "AS 3959: 2018 Construction of buildings in bushfire-prone areas" published by Standards Australia, Sydney.

