



**2023 COMPLIANCE REPORT FOR EPBC  
APPROVAL 2008/4250**

**AVON RIDGE ESTATE, BRIGADOON**

**August 2023**

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## Document Control

Version	Date	Author	Reviewer
V1	12/08/2023	KMT	RC
V2	25/08/2023	KMT	RC
Filename	2369_Annual Report 2023_V2		

## Limitations

This report has been prepared by Accendo Australia Pty Ltd in accordance with the scope limitations provided in this report, or as otherwise agreed, between the Client and Accendo.

This report is strictly limited to the matters stated in it and is not to be read as extending, by implication, to any other matter in connection with the matters addressed in it.

This report has been prepared based upon data and other information provided by the Client and other individuals and organisations, most of which are referred to in the report, which Accendo has not independently verified or checked beyond the agreed scope of work. Accendo does not accept liability in connection with such unverified information.

The conclusions and recommendations in this report are based on assumptions made by Accendo described in this report where and as they are required. Accendo disclaims liability arising from any of the assumptions being incorrect.

The report is based on site specific conditions encountered and information received at the time of preparation of this report or the time that site investigations were undertaken. Accendo disclaims responsibility for any changes that may have occurred after this time.

The preparation of this report has been undertaken and performed in a professional manner, in consideration of the scope of services and in accordance with environmental consulting practices. No other warranty is made.

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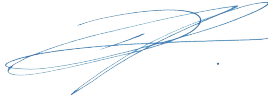
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# 1 DECLARATION OF ACCURACY

In making this declaration, I am aware that sections 490 and 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

**Signed:**



**Full Name:** Rebecca Cooper

**Position:** Development Manager

**Organisation (include ABN/ACN)** Corrib Developments Pty Ltd ABN 37 110 795 597

**Date:** 28 August 2023

## 2 INTRODUCTION

### 2.1 Background

Avon Ridge Estate (the development) is located in Brigadoon, approximately 12 kilometres north of the Midland Regional Centre and 30 kilometres northeast of the Perth Central Business District. The development is located on the Darling Scarp, bound to the north by Walyunga National Park, and is in proximity to the Swan River to the west.

The development consists of a special rural subdivision of 220 Lots over 450 hectares (ha), with Lot sizes ranging from 1.2 ha to 5.1 ha. An additional area of 411 ha adjacent to the development is reserved as Parks and Recreation under the Metropolitan Region Scheme (MRS).

### 2.2 Purpose of this Report

Commonwealth approval pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was granted for the proposed action on the 8<sup>th</sup> October 2009. Subject to Condition 12 of the Approval (EPBC 2008/4250) the proponent is required to submit to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) an annual report addressing compliance with the Conditions of the Approval. Specifically, Condition 12 stipulates the following:

12. *The approval holder must prepare a compliance report for each 12 month period following the date of commencement of the action, or as otherwise agreed to in writing by the Minister. The approval holder must:*
  - a) *publish each compliance report on the website within 60 business days following the relevant 12 month period;*
  - b) *notify the Department by email that a compliance report has been published on the website within five business days of the date of publication;*
  - c) *keep all compliance reports publicly available on the website until this approval expires;*
  - d) *exclude or redact sensitive ecological data from compliance reports published on the website; and*
  - e) *where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department within 5 business days of publication.*

This report addresses the status and compliance of construction of the project with the conditions in the EPBC Act Approval 2008/4250 for the period 5<sup>th</sup> July 2022 to 4<sup>th</sup> July 2023. This report has been prepared for the purpose of meeting the requirements of Condition 12 of the Approval, which requires the proponent to submit annual compliance reports.

## 3 PROJECT STATUS AND COMPLIANCE

### 3.1 Project Status

A total of 28 Lots were sold during this reporting period, as detailed in **Table 1**. Three of these Lots contain black cockatoo nesting trees that have been identified for retention, with:

- One habitat tree identified on Lot 286
- One habitat tree identified on Lot 296
- One habitat tree identified on Lot 301

A total of 22 Lots were settled during this reporting period. The total number of Lots settled to date is 155.

**Table 1. Summary of lot settlement.**

Stage	Lot Number	Status	Sold	Cancelled	Settlement Date
12	124	Settled	May-22		Feb-23
8	293	Cancelled	May-22	Feb-23	
8	276	Settled	Jun-22		Jan-23
9	302	Cancelled	Jun-22	Sep-22	
9	303	Settled	Jun-22		Jan-23
9	304	Cancelled	Jun-22	Sep-22	
8	294	Settled	Jun-22		Jan-23
9	298	Settled	Jun-22		Jan-23
8	279	Cancelled	Jun-22	Nov-22	
9	305	Settled	Jun-22		Jan-23
9	309	Cancelled	Jun-22	Oct-22	
9	297	Cancelled	Jun-22	Aug-22	
9	301	Settled	Jun-22		Feb-23
8	280	Cancelled	Jun-22	Sep-22	
8	296	Settled	Jul-22		Jan-23
8	277	Settled	Jul-22		Jan-23
9	317	Settled	Jul-22		Jan-23
8	282	Settled	Jul-22		Jan-23
9	318	Settled	Aug-22		Jan-23
9	319	Settled	Aug-22		Jan-23
8	286	Settled	Aug-22		Jan-23
9	307	Settled	Aug-22		Jan-23
9	308	Settled	Aug-22		Jan-23
9	299	Settled	Aug-22		Jan-23
8	288	Cancelled	Sep-22	Oct-22	
9	302	Settled	Sep-22		Jan-23
9	304	Cancelled	Oct-22	Nov-22	
8	281	Cancelled	Oct-22	Nov-22	
8	295	Settled	Nov-22		Jan-23
8	289	Cancelled	Nov-22	Mar-23	
9	304	Cancelled	Feb-23	Apr-23	
8	293	Cancelled	Mar-23	May-23	

Stage	Lot Number	Status	Sold	Cancelled	Settlement Date
9	306	Settled	Mar-23		Apr-23
9	297	Settled	Mar-23		Jun-23
9	300	Unconditional	Mar-23		
8	280	Settled	Mar-23		Jun-23
9	304	Unconditional	May-23		
8	293	Conditional	May-23		
5A	219	Conditional	Jun-23		
5A	220	Conditional	Jun-23		
5A	332	Conditional	Jun-23		
5A	218	Conditional	Jun-23		
8	288	Unconditional	Jun-23		
8	279	Unconditional	Jul-23		

Clearing activities undertaken during this reporting period involved civil construction within Stages 5A, 5B, 6 and 12 of the development (refer to **Appendix A**). Stage 12 is only comprised of one Lot, Lot 124. This Lot was constructed at the same time as Stage 8 and 9 except for the boundary clearing which was completed in October 2022.

Clearing works commenced on the 2/05/2023 and a pre-clearance fauna inspection was undertaken on the 30/04/2023 (refer to **Appendix B**). Civil construction works comprised vegetation clearing for road reserves, strategic firebreaks and for site access and minor earthworks for boundary fences, road alignments and the installation of services in trenches (including power and water) within road reserves.

The total extent of vegetation clearing associated with civil construction works is discussed further in **Table 3** in relation to requirements of condition 1 of the approval.

### 3.2 Compliance Status

This report addresses the status and compliance of the action against the prescribed Conditions provided within the EPBC Act Approval 2008/4250 for the period 5<sup>th</sup> July 2022 to 4<sup>th</sup> July 2023.

Details on the status of compliance have been tabulated separately for conditions under EPBC Act Approval 2008/4250 and the related Revegetation and Fire Management Plan (RFMP) and the Construction and Environmental Management Plan (CEMP) as follows:

- Table 3. - EPBC Act Approval 2008/4250 Conditions - Compliance Assessment Table;
- Table 4. - *Revegetation and Fire Management Plan* - Compliance Assessment Table; and
- Table 5. - Construction and Environmental Management Plan- Compliance Assessment Table.

For each Table mentioned above, the approval condition or management measure is provided with a note on its status of compliance, a general comment and related source of evidence. The DCCEEW have prepared updated guidance (2014) related to the preparation of compliance audits, including generic expressions that are used to identify the status of each item (refer to **Table 2**).

**Table 2. Compliance status terminology.**

Status	Description
Compliant	'Compliance' is achieved when all the requirements of a condition have been met, including the implementation of management plans or other measures required by those conditions.

Status	Description
Non-compliant	A designation of 'non-compliance' should be given where the requirements of a condition or elements of a condition, including the implementation of management plans and other measures, have not been met.
Completed	Where a requirement with a finite period of application has been satisfactorily completed.
Not applicable	A designation of 'not applicable' should be given where the requirements of a condition or elements of a condition fall outside of the scope of the current reporting period.

The assessment revealed that of the 25 Conditions referenced in the EPBC Act Approval 2008/4250, the following was achieved during the annual reporting period:

- 12 compliances;
- 5 conditions have been completed; and
- 7 conditions were not applicable.

The assessment of compliance for the Revegetation and Fire Management Plan for the reporting period revealed:

- 13 compliances; and
- 12 conditions were not applicable.

The assessment of compliance for the Construction and Environmental Management Plan for the reporting period revealed:

- 36 compliances; and
- 1 condition was not applicable.

No incidents or non-compliances occurred during this report period.



**Table 3. EPBC Act Approval 2008/4250 Conditions and Compliance Assessment.**

Condition Number	Condition	Compliance Status	Evidence/Comments																																								
1.	<p>The person taking the action must not clear more than 83.2 hectares of native vegetation within the project area (Attachment 1) comprising:</p> <p>a) up to 30 hectares for constructing roads;</p> <p>b) up to 45 hectares for constructing boundary firebreaks on individual lots as identified in Attachment 2; and</p> <p>c) up to 8.2 hectares for the purposes of constructing strategic firebreaks and dams.</p>	Compliant	<p>Clearing for civil construction works within the development occurred during the reporting period as summarised in the tables below.</p> <table border="1"> <thead> <tr> <th>Stage 12</th> <th>Clearing</th> </tr> </thead> <tbody> <tr> <td>Roads</td> <td>0.0ha</td> </tr> <tr> <td>Boundary firebreaks</td> <td>0.150261ha</td> </tr> <tr> <td>Strategic firebreaks &amp; Dams</td> <td>0.0ha</td> </tr> <tr> <td><b>TOTALS</b></td> <td><b>0.074541ha</b></td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Stage 5A</th> <th>Clearing</th> </tr> </thead> <tbody> <tr> <td>Roads</td> <td>1.393342ha</td> </tr> <tr> <td>Boundary firebreaks</td> <td>0.987339ha</td> </tr> <tr> <td>Strategic firebreaks &amp; Dams</td> <td>0.27045ha</td> </tr> <tr> <td><b>TOTALS</b></td> <td><b>2.651131.ha</b></td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Stage 5B</th> <th>Clearing</th> </tr> </thead> <tbody> <tr> <td>Roads</td> <td>1.45154ha</td> </tr> <tr> <td>Boundary firebreaks</td> <td>0.43407ha</td> </tr> <tr> <td>Strategic firebreaks &amp; Dams</td> <td>0.0ha</td> </tr> <tr> <td><b>TOTALS</b></td> <td><b>1.886147.ha</b></td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Stage 6</th> <th>Clearing</th> </tr> </thead> <tbody> <tr> <td>Roads</td> <td>1.7687025ha</td> </tr> <tr> <td>Boundary firebreaks</td> <td>0.526239ha</td> </tr> <tr> <td>Strategic firebreaks &amp; Dams</td> <td>0.0ha</td> </tr> <tr> <td><b>TOTALS</b></td> <td><b>2.2949415.ha</b></td> </tr> </tbody> </table> <p>A total of 68.05 hectares (ha) of native vegetation has been cleared for civil construction to date.</p> <p>A total of 26.89 ha of native vegetation has been cleared for the purposes of constructing roads.</p> <p>A total of 33.36 ha of native vegetation has been cleared for the purposes of constructing boundary firebreaks on individual lots.</p> <p>A total of 7.85 ha of native vegetation has been cleared for the purposes of constructing strategic firebreaks and dams.</p>	Stage 12	Clearing	Roads	0.0ha	Boundary firebreaks	0.150261ha	Strategic firebreaks & Dams	0.0ha	<b>TOTALS</b>	<b>0.074541ha</b>	Stage 5A	Clearing	Roads	1.393342ha	Boundary firebreaks	0.987339ha	Strategic firebreaks & Dams	0.27045ha	<b>TOTALS</b>	<b>2.651131.ha</b>	Stage 5B	Clearing	Roads	1.45154ha	Boundary firebreaks	0.43407ha	Strategic firebreaks & Dams	0.0ha	<b>TOTALS</b>	<b>1.886147.ha</b>	Stage 6	Clearing	Roads	1.7687025ha	Boundary firebreaks	0.526239ha	Strategic firebreaks & Dams	0.0ha	<b>TOTALS</b>	<b>2.2949415.ha</b>
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2	<p>The person taking the action must put in place measures to ensure that clearing of native vegetation undertaken by future landowners within the project area (Attachment 1) will not exceed 70.4 hectares, comprising:</p> <p>a) 42.1 hectares to construct dwellings, infiltration areas, driveways and buffers around the dwellings; and</p>	Compliant	<p>Clearing is managed through the Structure Plan and Protective (restrictive) Covenants. Protective (restrictive) Covenants will be placed on titles within Stages 5A, 5B and 6 of the development. Clearing restrictions regarding building envelopes for lots are outlined in the approved Structure Plan.</p>																																								

Condition Number	Condition	Compliance Status	Evidence/Comments
	b) 28.3 hectares in accordance with the approved Revegetation and Fire Management Plan.		
3	<p><b>Revegetation and Fire Management Plan</b></p> <p>The person taking the action must prepare a Revegetation and Fire Management Plan that applies to the 100 ha within the Parks and Recreation Reserve and 450 ha of the subdivision (as identified at Attachment 5) including all 214 individual lots. The proponent must obtain written approval from DFES prior to submission to the Department for approval. The person taking the action must not commence clearing or construction within the project area until the Department has approved the Revegetation and Fire Management Plan in writing. Once approved, this plan must be implemented.</p> <p>The person taking the action must ensure that the Revegetation and Fire Management Plan includes (but is not restricted to):</p>	Compliant	The implementation of the RFMP is ongoing throughout the development, however some components have been completed. Refer to Table 4 detailing conformance with the RFMP.
	a) fuel reduction measures (including cool burn measures) specifying the timing and frequency of fuel reduction measures to minimise impacts on Black Cockatoo habitat.	NA	No prescribed burns were undertaken within the reporting period as vegetation is still recovering from the Wooroloo fire which occurred in 2021.
	<p>b) revegetation measure to create additional Black Cockatoo habitat across the project site, including in the Parks and Recreation Reserve, specifically:</p> <p>i. revegetation for all condition classes (excluding pristine and excellent classes) and vegetation complexes (including maps);</p> <p>ii. mix, numbers and density of species to be planted;</p> <p>iii. timing of proposed planting (must be during or following the annual winter rain period and generally between 1 June and 30 November);</p> <p>iv. weed management measures;</p> <p>v. the survivorship rate of all revegetation measures must be at least 90% after three years. If after three years of the date of the planting, a survival rate of 90% of the planted trees is not achieved, all dead trees must be replaced with other Black Cockatoo habitat species within 12 months and maintained for at least an additional two years;</p> <p>vi. annual monitoring measures within the project area undertaken by an appropriately qualified and experienced ecologist and must commence within 12 months of the completion of revegetation and continue for at least three years after the initial revegetation planting in any particular area (given that revegetation will be staged across the development);</p> <p>vii. annual monitoring measures undertaken by an appropriately qualified and experienced specialist must commence in the Parks and Recreation Reserve within 12 months of completion of revegetation and continue for at least three years after the initial revegetation planting in the Parks and Recreation Reserve for the purposes of establishing the survivorship rates and replanting efforts within the project area;</p> <p>viii. mapping of all potential Black Cockatoo habitat trees of 500 mm DBH or greater on individual lots and information on how these will be retained for permanent conservation.</p>	Completed	<p>All revegetation and monitoring requirements associated with this Condition were completed by the previous proponent.</p> <p>Known potential habitat trees of 500 mm DBH or greater are flagged with white tape prior to clearing events and construction for each stage of development. Potential habitat trees within the lot are identified in the Restrictive Covenant which only allows for clearing of these trees within the Building Protection Zone or for fire management purposes (refer to <b>Appendix A</b>).</p>
4	<p><b>Building Protection Zone</b></p> <p>The person taking the action may thin native vegetation within the Building Protection Zone (Attachment 2) on each housing lot (Attachment 3). The thinning process must be in accordance with the approved Revegetation and Fire Management Plan, and be personally supervised (pre and post thinning inspections for individual lots) by a qualified Fire Management Consultant. The person taking the action must obtain written approval from DFES of the first appointed Fire Management Consultant(s) prior to the provision of any Building Protection Zone thinning advice. Any subsequent appointment of Fire Management Consultant(s) must be based upon the consultant(s) having similar qualifications as the first appointed consultant.</p> <p>The location of each Building Protection Zone and house site must be chosen in consultation with the Fire Management Consultant for the purpose of retention of trees specified in Condition 5.</p>	Compliant	<p>Protective (restrictive) Covenants addressing Building Protection Zone requirements, in accordance with the RFMP, will be implemented throughout the development.</p> <p>The Fire Management Consultant will prepare a Bushfire Attack Level Assessment Report and Management Statement for each lot.</p> <p>The Fire Management Consultant has provided consultation with Buyers:</p> <ul style="list-style-type: none"> <li>o Stage 8: Lots 282 and 294</li> <li>o Stage 9: Lots 303 and 317</li> </ul> <p>The Developer has continued to engage with the existing Fire Management Consultant who was appointed in August 2016 for their level of expertise on the project. This has been undertaken to ensure continuity and compliance.</p> <p>A Bushfire Management Plan was prepared on the 13/10/2022 and approved by the City of Swan (refer to <b>Appendix D</b>).</p> <p>A new Bushfire Management Plan will be prepared for the updated Stage 5A lot layout.</p>

Condition Number	Condition	Compliance Status	Evidence/Comments
	The person taking the action must ensure that all native vegetation that provides habitat for Black Cockatoos is retained outside the Building Protection Zones within the 214 housing lots. This excludes native vegetation that is specifically managed under the Revegetation and Fire Management Plan.		An updated Annexure I has been prepared for Stage 5A sales as it incorporates the updated Fire documents from the City of Swan that are provided to the Buyers.
5	The person taking the action must ensure that all potential breeding habitat trees for Black Cockatoos (as designated at Attachment 4 and 4A) are protected in perpetuity via a Notification on Title. The person taking the action must ensure that all other trees within the lot area (Attachment 1) with a diameter by breast height (DBH) of 500 mm or greater are retained unless: a) they are located within the house site; b) they are located within the Building Protection Zone; and c) they are required to be removed for Fire Management purposes as advised by a qualified Fire Management Consultant(s).	Compliant	<p>Notifications of Titles and Protective (restrictive) Covenants addressing these requirements will continue to be implemented throughout the development.</p> <p>Section 70A Notification advising the existence of 'Environmental Concerns' for Lots that have been identified as containing black cockatoo nesting trees for retention have been prepared, signed and noted on the Deposited Plans for completed stages (refer to <b>Appendix C</b>).</p> <p>Stage 8: DP424723 Stage 9: DP424724 Stage 12: DP424900</p> <p>These Notification will automatically transfer onto the Title of each of the Lots as identified on the Structure Plan, specifically: Stage 8: Lots 279, 280, 281, 286 and 296 Stage 9: Lots 300 and 301</p>
6	The person taking the action must ensure that the 411 ha Park and Recreation Reserve, as highlighted in green at Attachment 5, be ceded to the WA State Government. The Department must be notified in writing once this has occurred.	Completed	The Reserve was ceded to the WA State Government in 2012 by the previous proponent.
7	The person taking the action must ensure that a minimum of 88,000 seedlings suitable for foraging and breeding habitat for Black Cockatoos are planted within the Parks and Recreation Reserve as identified in Attachment 7.	Completed	Revegetation and reporting was completed in 2017 by the previous proponent.
7A	The person taking the action must ensure that all purchasers of lots within the project area, prior to sale and settlement: a) are aware of the existence of potential and actual breeding habitat trees over 500 mm dbh on the individual lots, Notifications on Title and the requirements that these must be protected in perpetuity and not be cleared; b) are aware of the Restrictive Covenant; c) are aware of restriction relating to clearing of i. potential breeding habitat trees over 500 mm DBH; and ii. areas within and outside of the Building Protection Zone. d) are aware of proposed revegetation measures for their individual lot by person(s) as outlined in Condition 3; e) are provided with species related information on all Black Cockatoos, their presence in the area, ecology, species range and details on habitat.	Compliant	Information regarding the Notifications of Titles, Protective (restrictive) Covenants and the Lot owner clearing requirements continues to be provided in the purchaser information pack.
8	The person taking the action must submit a Restrictive Covenant for approval by the Department. The sale and settlement of any lot must not proceed unless the Restrictive Covenant has been approved in writing by the Department and the approved Restrictive Covenant is an annexure to the sale contract. If the person taking the action wishes to vary the approved Restrictive Covenant, a revised Restrictive Covenant must be submitted to the Department for approval. The subsequent sale and settlement of any lot must not proceed unless the currently approved Restrictive Covenant is an annexure to the sale contract.	Compliant	The DCCEEW confirmed that the proposed Restrictive Covenant to be placed on settled lots is approved. This occurred on 3 <sup>rd</sup> May 2022 (refer to <b>Appendix C</b> ).

Condition Number	Condition	Compliance Status	Evidence/Comments
9	All elements specified in Attachment 6 must be incorporated in either the Structure Plan, approved subdivision conditions or approved Restrictive Covenants. These must be complied with. The Department must be notified in writing on how all the elements in Attachment 6 have been incorporated and complied with. If any of the elements in Attachment 6 are not incorporated, to the Department's satisfaction, the person taking the action must negotiate an outcome to the Department's satisfaction, prior to commencing construction.	Compliant	The Structure Plan was endorsed by the WAPC on 27 March 2014. Subdivision of all lots within the development has been approved, through various subdivision approvals. Protective (restrictive) Covenants are currently applied to all new lots within the site. The Protective (restrictive) Covenants is documented on the Deposited Plan, and it is created under Section 136D of the <i>Transfer of Land Act 1893</i> . These mechanisms collectively incorporate all elements outlined in Attachment 6.
10	The person taking the action must prepare and implement a Construction Management Plan. This plan must be submitted and approved by the Department prior to and clearing taking place. The Construction Management Plan must clearly demonstrate that: a) all habitat trees at Attachment 4 and 4A are to be retained in perpetuity; and b) all trees to remain that are greater than 500 mm DBH within the subdivision area (as at Attachment 3) and within 10 meters of an area to be proposed to be cleared (excluding those in the Building Protection Zone) are clearly marked and retained. c) areas of vegetation that are Black Cockatoo habitat and not for clearance (including roadside vegetation, streamline vegetation and Public Open Space areas) are clearly marked and retained; d) if clearing outside of stipulated areas occurs by other contracted parties, then the person taking the action must notify the Department in writing and will ensure that these areas will be revegetated to the same density (following the annual winter rain period and between 1 September –30 November); and e) all contracted parties will undergo an induction programme prior to commencement of construction and/or clearing. This programme will include information on EPBC listed species and measures employed within the project area to protect Black cockatoo habitat.	Compliant	A portion of the Avon Ridge Estate was impacted by the Wooroloo Bushfire in January – February 2021. A survey of the 35 habitat trees was undertaken in April and June 2021, which identified 15 trees which were no longer considered to be habitat trees. Therefore, a variation to the EPBC approval Attachment 4 and 4A was submitted to the DCCEEW, with a Variation of Condition to Approval received from the DCCEEW on the 24/03/2023, which reflects the updated habitat tree plan. The civil contractor manages the implementation of the CEMP (Cardno 2010), including the completion of required onsite forms and registers. All completed forms are recorded and stored, and demonstrate compliance with Condition 10.
11	Within 30 days of commencement of construction, the person taking the action must advise the Department in writing the actual date of commencement.	Completed	Provided by the previous proponent in 2011.
12	The approval holder must prepare a compliance report for each 12 month the date of period following the date of commencement of the action, or as otherwise this notice agreed to in writing by the Minister. The approval holder must: a) publish each compliance report on the website within 60 business days following the relevant 12-month period; b) notify the Department by email that a compliance report has been published on the website within five business days of the date of publication; c) keep all compliance reports publicly available on the website until this approval expires; d) exclude or redact sensitive ecological data from compliance reports published on the website; and e) where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department within 5 business days of publication.	Compliant	The Avon Ridge 2023 Compliance Report (for EPBC Approval 2008/4250) will be published on the Avon Ridge Estate website by 27 September 2023. The Department will be notified via email when the Avon Ridge 2023 Compliance Report will be published on the Avon Ridge Estate website.
12A	The approval holder must notify the Department in writing of any: incident; non-compliance with the conditions; or non-compliance with the commitments made in plans. The notification must be given as soon as practicable and no later than two business days after becoming aware of the incident or non-compliance. The notification must specify: a) the condition which is or may be in breach; and b) a short description of the incident and/or noncompliance.	Compliant	No known non-compliances with the EPBC Approval conditions occurred during this reporting period.
12B	The approval holder must provide to the Department the details of any incident or non-compliance with the conditions or commitments made in plans as soon as practicable and no later than 10 business days after becoming aware of the incident or non-compliance, specifying: a) any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future;	Compliant	No known non-compliances with the EPBC Approval conditions or management plans occurred during this reporting period.

Condition Number	Condition	Compliance Status	Evidence/Comments
	b) the potential impacts of the incident or noncompliance; and c) the method and timing of any remedial action that will be undertaken by the approval holder.		
13	If, at any time after five (5) years from the date of this approval, the Minister notifies the person taking the action in writing that the Minister is not satisfied that there has been substantial commencement of the construction of the rural residential development at Brigadoon, Western Australia, the action must not thereafter be commenced without the written agreement of the Minister.	NA	The action has substantially commenced.
14	The person taking the action may choose to revise a plan approved by the Department under conditions 3 and 10 without submitting the revised plan for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plan would not be likely to have a new or increased impact. If the person taking the actions makes this choice they must: a) Notify the Department in writing that the approved plan has been revised and provide the Department with: <ul style="list-style-type: none"> <li>An electronic copy of the revised plan;</li> <li>An explanation of the differences between the revised plan and the approved plan; and</li> <li>The reasons the person taking the action considers that taking the action in accordance with the revised plan would not be likely to have a new or increased impact.</li> </ul> b) Advise the Department in writing of an earliest date on which the revised plan will be implemented by the person taking the action. The earliest date of first implementation must be at least 28 days after condition 14a) is satisfied.	NA	No revised plans were submitted to the Department for approval during the reporting period.
15	The person taking the action may revoke their choice under condition 14 at any time by notice to the Department. If the approval holder revokes the choice to implement a revised plan without approval under section 143A of the EPBC Act, the approval holder must implement the version of the plan most recently approved by the Department.	NA	Refer to Condition 14, no update required.
15A	If the Department gives a notice to the person taking the action that the Department is satisfied that the taking of the action in accordance with the revised plan would be likely to have a new or increased impact, then: a) Condition 14 does not apply, or ceases to apply, in relation to the revised plan; and b) The person taking the action must implement the version of the plan most recently approved by the Department. To avoid any doubt, this condition does not affect any operation of conditions 14 and 15 in the period before the day after the notice is given. At the time of giving a notice under Condition 15, the Department may also notify that for a specified period of time Condition 15 does not apply for one or more specified plans required under the approval.	NA	Refer to Condition 14, no update required.
15B	Conditions 14, 15 and 15A are not intended to limit the operation of section 143A of the EPBC Act which allows the person taking the action to submit a revised plan to the Department for approval.	NA	Refer to Condition 14, no update required.
15C	If the Department considers that it is necessary or convenient for the protection of threatened species of threatened ecological (s18 & s18A) to do so, the Department may request that the person taking the action make specific revisions to the plans approved under conditions 3 and 10 and submit the revised plan for the Department's approval. The person taking the action must comply with any such request. The revised plan must be implemented in place of the plan originally approved.	NA	Refer to Condition 14, no update required.
16	The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement management plans required under Conditions 3 and 10 of this approval, and make them available on request by the Department. Such records may be subject to audit by the Department and or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits may be posted on the Department website. The results of audits may also be publicised through the general media.	Compliant	Records of activities undertaken within the site which are associated with these approval conditions are maintained by the proponent and its project team. These records are updated as required and have been used to inform this annual compliance report. Copies of specific records can be made available upon request.

Condition Number	Condition	Compliance Status	Evidence/Comments
17	In order to offset the impact of clearing of Black Cockatoo habitat, before 1 September 2017, the person taking the action must: <ul style="list-style-type: none"> <li>a) provide funds to DPAW for the acquisition and management of one or more properties that contain at least 490 hectares of high quality foraging habitat for Black Cockatoos to be protected in perpetuity. The offset property must be approved in writing by the Department.</li> <li>b) provide documentary evidence to the Department that funds have been provided to the DPAW as required by approval condition 17a.</li> </ul>	Completed	The requirements of this condition were completed by the former proponent in 2017.

**Table 4. Revegetation and Fire Management Plan Compliance Assessment.**

Reference Code	Action	Compliance Status	Evidence/Comments	
RFMP 1	Undertake revegetation and monitoring activities in alignment with condition 3 of the EPBC Act approval	Compliant	Revegetation and reporting was completed in 2017 by the previous proponent.	
RFMP 2	Implement the Fire Management Plan (FMP) across the development site.	Compliant	Refer to RFMP 3.	
RFMP 3	<p>Planning for prescribed burning will involve determining and arranging the following:</p> <ul style="list-style-type: none"> <li>• Fuel loadings</li> <li>• Forecast weather conditions (taking into consideration smoke management)</li> <li>• Fire management resources</li> <li>• Traffic control and access</li> <li>• Notification of nearby lot owners and residents</li> </ul>	NA	No prescribed burns were undertaken within the reporting period as vegetation is still recovering from the Wooroloo fire which occurred in 2021.	
RFMP 4	Experienced fire fighters and fire appliances will be used to carry out all hazard reduction burns. The Brigades will be coordinated by an experienced fire manager acting on behalf of the proponent.	NA	As above, no burns were undertaken during this reporting period.	
RFMP 5	<p>The timing for hazard reduction burning within the development site will need to comply with the requirements of the <i>Bush Fires Act 1954</i> (BF Act);</p> <ul style="list-style-type: none"> <li>• Any future hazard reduction burning across the site will be prohibited during “Prohibited Burning Times” and on days when the Fire Danger Index reaches “Very High” to “Catastrophic”.</li> <li>• During “Restricted Burning Time” permits are required from the local Fire Control Officer for any burning under the BF Act.</li> </ul>	NA		
RFMP 6	Any hazard reduction burn will be carried out in the September to October period to achieve a low intensity burn and low scorch height.	NA		
RFMP 7	Any future hazard reduction burning will comply with smoke management guidelines as contained in the City of Swan firebreak and hazard reduction notice, Your Guide to the 2014/15 Fire Season.	NA		
RFMP 8	The hazard reduction burn will aim to reduce fuel loads by 60% across 80% of the proposed burn area.	NA		
RFMP 9	Should the undertaking of the prescribed burn be delayed due to unforeseen circumstances such as unsuitable weather conditions and the unavailability of personnel to conduct, DFES will be informed and the proposed prescribed burn be planned for the following year.	NA		
RFMP 10	DFES and the City of Swan will be informed by the proponent’s appointed Fire Management Consultant (FMC) of the completion of prescribed burns.	NA		
RFMP 11	Should prescribed burns be delayed or not undertaken as proposed a revised prescribed burn plan will be forwarded to DFES.	NA		A revised burn plan will be considered in the subsequent reporting periods in consultation with DFES.
RFMP 12	The FMP will be supplied to all lot owners and there will be a notification on the title that the FMP must be adhered to and complied with.	NA		<p>The Fire Management Consultant will prepare a Bushfire Attack Level Assessment Report and Management Statement for each lot.</p> <p>The Fire Management Consultant has provided consultation with Buyers:</p> <ul style="list-style-type: none"> <li>o Stage 8: Lots 282 and 294</li> <li>o Stage 9: Lots 303 and 317</li> </ul> <p>The Developer has continued to engage with the existing Fire Management Consultant who was appointed in August 2016 for their level of expertise on the project. This has been undertaken to ensure continuity and compliance.</p> <p>A Bushfire Management Plan was prepared on the 13/10/2022 and approved by the City of Swan.</p> <p>A new Bushfire Management Plan will be prepared for the updated Stage 5A lot layout.</p>

Reference Code	Action	Compliance Status	Evidence/Comments
			An updated Annexure I has been prepared for Stage 5A sales as it incorporates the updated Fire documents from the City of Swan that are provided to the Buyers.
RFMP 13	Private lot firebreaks will be installed by the developer prior to the clearance of lot titles and maintained by developer until the lot is sold to the standards outlined in the City of Swan Fire Hazard Reduction Notice. Following sale, the lot purchaser will be responsible for the maintenance of this firebreak in perpetuity.	Compliant	The internal lot firebreaks installed by the developer have been built to a minimum width of 3 m in accordance with the City of Swan <i>Firebreak Notice</i> and the Avon Ridge Estate Bushfire Management Plan (BMP) and established immediately inside and adjacent to all external property boundaries.
RFMP 14	A strategic firebreak will be installed by the developer as development progresses within the site to ensure perimeter access for firefighting purposes is in place around all developed areas. The Strategic fire break will follow the standard outlined below: <ul style="list-style-type: none"> <li>• Minimum 6 m wide with a 4 m trafficable surface</li> <li>• Minimum 4 m vertical clearance over the full 6 m width</li> <li>• Where the strategic firebreak is within private lots, no fencing/gates or any form of obstruction is to cross the strategic firebreak.</li> <li>• At regular intervals (every 4 to 6 lots, approximately), a linking firebreak to the public road network will be provided. This link is to be located within a single lot and can be a part of the lot access (i.e. driveway) within each lot, or adjacent to the lot boundary as part of the internal firebreak. These links do not necessarily have to be located on the lot boundary, but must be accessible at all times.</li> <li>• A minimum 60 m-wide setback between the strategic firebreak and any future dwellings, which is facilitated through the designation of BEAs.</li> </ul>	Compliant	The strategic firebreak continues to be installed around the perimeter of Avon Ridge as development progresses to the minimum standard outlined in the City of Swan <i>Firebreak Notice</i> and the Avon Ridge Estate Bushfire Management Plan (BMP). The strategic firebreak will continue to be maintained to the satisfaction of the City of Swan prior to the clearance of Lot titles and maintained until all affected Lots are sold.
RFMP 15	Rural gates (minimum width 4.1 metres) will be installed to provide access from the strategic firebreak to the linking firebreak with a standard City of Swan key system (to prevent unauthorised vehicle access). These gates will be installed by developer prior to the clearance of lot titles. Rural gates (minimum width 4.1 metres) will be erected where the strategic firebreak interfaces with a public road, with a standard City of Swan key system to prevent unauthorised vehicle access. These gates will be installed by developer prior to the clearance of lot titles. Signage will be provided where strategic firebreak meet public roads, indicating the FSARs are for "Fire Access Only."	Compliant	FSAR gates were installed where a FSAR intersects with a public road: <ul style="list-style-type: none"> <li>o Stage 8: Cul-de-sac head of Ochre Cove, Lots 276, 285 and 289</li> <li>o Stage 9: Lots 305 and 318</li> </ul>
RFMP 16	The Developer will provide lot owners purchaser information as part of the contract of sale which explains the requirement of BPZ's and HSZ's, the role of the FMC and other fire management information, including the City of Swan maintenance of firebreaks under Section 33 of the <i>Bush Fires Act 1954</i> .	Compliant	A Bushfire Management Plan was prepared on the 13/10/2022 and approved by the City of Swan. A new Bushfire Management Plan will be prepared for the updated Stage 5A lot layout.
RFMP 17	The Developer will organise and fund annual information sessions for Avon Ridge Estate residents attended by the FMC and representatives from DFES, the East Swan Volunteer Bushfire Brigade and City of Swan over three years. Information on how to form the Avon Ridge Estate BRG as well as fuel hazard reduction and bushfire readiness training and support by the agencies will be provided.	Compliant	A bushfire aware information session is being prepared and will be held in conjunction with the City of Swan. Two previous workshops have been completed, on 8 April 2017 and 14 December 2017 by the former proponent. It was advised that attendance was poor and therefore workshops workshops have not been progressed. The developer provides each Buyer, at the time of signing their purchase contract with a set of additional documents which form part of their Contract. This includes: <ol style="list-style-type: none"> <li>1. Locality Plan</li> <li>2. Strategic Firebreak Plan</li> <li>3. Bushfire Management Plan prepared March 2019 (NOTE: this will be updated once the new version is provided)</li> </ol>



Reference Code	Action	Compliance Status	Evidence/Comments
			<ol style="list-style-type: none"> <li>4. 'The Homeowners Bushfire Survival Manual' (2014) sixth edition published by Department of Fire and Emergency Services (formerly known as The Fire and Emergency Services Authority of WA)</li> <li>5. 'Prepare. Act. Survive.' (2014) version 5 published by Department of Fire and Emergency Services (formerly known as The Fire and Emergency Services Authority of WA)</li> <li>6. City of Swan Fire Hazard Reduction Notice (Firebreak Notice) 2021/2022</li> <li>7. 'Fire Season Guide 2021/22' published by the City of Swan</li> <li>8. Vegetation Conditions within Avon Ridge Estate</li> <li>9. Plant Communities within Avon Ridge Estate</li> <li>10. Habitat Tree Locations</li> <li>11. Trees over 500mm Diameter at Breast Height (DBH) Plan</li> <li>12. Aboriginal Heritage Site Plan</li> <li>13. Wetland and Creek Locations within Avon Ridge Estate</li> <li>14. Seller's Fire Management Consultant Bonus Application Form</li> </ol> <p>An updated Annexure I has been prepared for Stage 5A sales as it incorporates the updated Fire documents from the City of Swan that are provided to the Buyers.</p>
RFMP 18	A Building Protection Zone of minimum of 20 metres is to be constructed around all buildings and must be within the Lot boundaries. BPZs are to be installed prior to any dwelling construction commencing and are to be part of the Building Licence approval. Bushfire fuel loadings must be maintained to a maximum of 2 tonnes/ha.	Compliant	Restrictive Covenants addressing Building Protection Zone and Hazard separation zone requirements, in accordance with the RFMP, will be implemented throughout the development. Lot owners are required to maintain their BPZ's and HSZ's in accordance with the Protective (restrictive) Covenants.
RFMP 19	The Hazard Separation Zone will be built to a width determined at the stage of building site assessment (at least a further 30 m beyond the BPZ). HSZs are to be installed by the landowner prior to construction of a dwelling on the site. Bushfire fuel loadings must be maintained to a maximum of 4-6 tonnes/ha.	Compliant	Lot owners are informed of their obligations through the purchaser information pack provided at the time of the lot settlement. The Fire Management Consultant will inspect the quality of the BPZ and HSZ establishment after initial vegetation thinning has occurred within the Lot.
RFMP 20	The developer will provide a service to purchasers to have the building envelope, BPZ and HSZ within their lot inspected by a qualified FMC to ensure compliance prior to the commencement of any in lot clearing. The FMC will undertake the following assessments: <ul style="list-style-type: none"> <li>• BAL (Bushfire Attack Level) rating assessment in accordance with AS3959.</li> <li>• Pre-clearing checklist to identify trees and shrubs requiring vegetation modification.</li> <li>• Post-clearing checklist to confirm vegetation modification has been undertaken.</li> </ul>	Compliant	The developer provides purchasers with a service for Bushfire Safety Consulting to undertake a BAL Assessment pre and post construction.
RFMP 21	Lot owners will need to maintain their fuel loadings within lots as follows: <ul style="list-style-type: none"> <li>• Within the BPZ at less than or equal to (<math>\leq</math>) 2 tonnes per hectare (t/ha).</li> <li>• Within the HSZ at <math>\leq</math> 4 to 6 t/ha.</li> <li>• Beyond the HSZ at <math>\leq</math> 6 to 8 t/ha.</li> </ul>	Compliant	Restrictive Covenants addressing Building Protection Zone and Hazard separation zone requirements, in accordance with the RFMP, will be implemented throughout the development. Lot owners are required to maintain their BPZ's and HSZ's in accordance with the Protective (restrictive) Covenants. Lot owners are informed of their obligations through the purchaser information pack provided at the time of the lot settlement. The Fire Management Consultant will inspect the quality of the BPZ and HSZ establishment after initial vegetation thinning has occurred within the lot.

Reference Code	Action	Compliance Status	Evidence/Comments
RFMP 22	Lot owners will be required to reduce their fire hazards prior to the summer fire season and will need to undertake their fuel reduction in conjunction with the maintenance of firebreaks, which are required to be cleared under Section 33 of the <i>Bush Fires Act 1954</i> .	Compliant	Lot owners are required to maintain their BPZ's, HSZ's, and firebreaks in accordance with the restrictive covenants and City of Swan <i>Firebreak Order</i> . Information regarding the clearing requirements for fuel reduction continues to be provided in the purchaser information pack.
RFMP 23	All habitable buildings will be setback a minimum of 30 m from the edge of the Wetland and Creek Line Conservation area boundary.	Compliant	Building envelopes are set back 60 m from the edge of the Wetland and Creek Line Conservation as set out in the Avon Ridge Estate Structure Plan.
RFMP 24	All habitable buildings located adjacent to the Wetland and Creek Line Conservation Area are to be constructed to BAL 29 (BAL 29 has a heat Flux of less than 19 Kw/m <sup>2</sup> to 29 Kw/m <sup>2</sup> ).	Compliant	Refer to RFMP 21.
RFMP 25	All habitable buildings in lots that are located adjacent to the PR Reserve to the west and north and the Southern POS area to the south are to be setback a minimum of 60 metres from the strategic Firebreaks or fire service access ways.	Compliant	Building envelope areas are set back 60 m from the PR Reserve to the west and north and the Southern POS area to the south as set out in the Avon Ridge Estate Structure plan.

**Table 5. Construction an Environmental Management Plan Compliance Assessment.**

Reference Code	Action	Compliance Status	Evidence/Comments
CEMP 1	The CEMP will be implemented during the construction phase of the Development.	Compliant	Refer to CEMP 1 – 37.
CEMP 2	The Developer and individual members of the management team will be aware of the management framework detailed in Table 1 of the CEMP.	Compliant	The Management Framework is incorporated in contractor site inductions and developer/contractor site meetings.
CEMP 3	Any "Pristine" and "Excellent" vegetation condition as illustrated in Figure 3 of the CEMP will require the following protection measures: <ul style="list-style-type: none"> <li>• No clearing, other than for strategic firebreaks will be permitted in "Pristine" or "Excellent" condition areas;</li> <li>• Access to "Pristine" and "Excellent" condition vegetation will only be permissible on foot or on designated tracks, such as existing tracks, constructed strategic firebreaks or lot firebreaks; and</li> <li>• Areas identified as having "Pristine" or "Excellent" vegetation condition are to be clearly demarcated (with orange coloured flagging tape).</li> </ul>	Compliant	No areas of Pristine or Excellent condition vegetation are present within Stages 12, 5A, 5B or 6.
CEMP 4	A land clearing form and register is to be completed and approved by the Proponent and Environmental Consultant prior to any vegetation clearing or ground disturbing activities occurring.	Compliant	Prior to the commencement of vegetation clearing within the Stages 12, 5A, 5B and 6, a land clearing form and register was signed by the construction contractor.
CEMP 5	Site Supervisor/Civil Engineer and Contractors are required to complete a site access form and induction prior to the commencement of construction activities.	Compliant	A site access register has been maintained for all supervisor/civil engineers and contractors. A site induction was completed for relevant personnel prior to the commencement of construction activities.
CEMP 6	Vegetation clearing is to be limited to only the areas required for construction activities and cleared areas should be utilised for equipment lay down and machinery parking areas.	Compliant	Vegetation clearing was limited to the areas associated with Stage 12, 5A, 5B or 6 civil works area.
CEMP 7	No clearing during early evening and night.	Compliant	No clearing was permitted to occur during early evening and night, as detailed in the site induction.
CEMP 8	Topsoil is to be salvaged and stockpiled on site to use for future rehabilitation and placed within an area proposed for revegetation. Cleared vegetation and topsoil is to be stockpiled away from drainage lines and stored down slope wherever practicable to reduce the potential for it to spread downhill.	Compliant	Cleared vegetation and topsoil was stockpiled as specified. Vegetation stockpiling requirements were communicated to contractors during the site induction.
CEMP 9	Road speeds around the Development site will be limited to 20 km/h to reduce the risk of fauna injury. Road kills of native fauna are to be reported to the Site Supervisor/Civil Engineer immediately.	Compliant	No road kills of native fauna were reported to the Site Supervisor/Civil Engineer during the construction activities. Restricted road speeds (10km/hr) were implemented in all areas of the construction site. This requirement was communicated to construction contractors during the site induction.

Reference Code	Action	Compliance Status	Evidence/Comments
CEMP 10	No domestic animals will be allowed onto the Development site during construction.	Compliant	The site induction details the requirement to restrict domestic animals.
CEMP 11	Vegetation should be inspected for fauna by Contractors prior to clearing (including tree hollows and bird nests). If fauna are found they should be released 50 metres from the construction site.	Compliant	Greg Harewood visited the site on 30/04/2023 prior to the Stage 5A, 5B or 6 clearing works (refer to <b>Appendix B</b> ). No breeding trees were disturbed as a result of the construction activities, and therefore no displaced fauna were found within the development site. No fauna were required to be relocated 50 m from the construction site.
CEMP 12	Any open trenches constructed during civil works are to be provided with a fauna escape ramp.	Compliant	Open trenches constructed during civil works were provided with a fauna escape ramp at the end of each excavation.
CEMP 13	Excavated areas are to be regularly inspected for trapped fauna and trapped fauna are to be released by an appropriate Wildlife Carer (a list is to be developed by the Site Superintendent/Civil Engineer prior to construction activities commencing).	Compliant	Excavated areas were inspected for trapped fauna by the Site Superintendent/Civil Engineer prior to and during the construction activities. No trapped fauna was noted by the Superintendent/Civil Engineer during site walkovers/inspections.
CEMP 14	A fauna incident reporting form and fauna incident register will be used to record any incident of fauna interaction.	Compliant	No fauna incidents or interactions occurred.
CEMP 15	Black cockatoo habitat trees identified in Figure 5 of the CMP will be provided with specific protection methods through: <ul style="list-style-type: none"> <li>• Clear marking (with yellow spray paint) of Habitat trees to identify these trees during the construction period;</li> <li>• The requirement that these habitat trees must not be cleared; and</li> <li>• Notifications on Title and Protective Covenants of the requirement to protect Habitat Trees on private lots.</li> </ul>	Compliant	Greg Harewood visited the site prior to clearing works commencing (refer to <b>Appendix B</b> ). No breeding trees were disturbed as a result of the construction activities, and therefore no displaced fauna were found within the development site. No fauna were required to be relocated 50 m from the construction site. Notifications pursuant to section 70A of the <i>Transfer of Land Act 1983</i> are to be registered on the 'certificates of title' of any lots that contain remnant nesting trees identified on the structure plan.
CEMP 16	In accordance with the EPBC Approval, all trees over 500 mm Diameter Breast Height (DBH) will be retained unless within a: <ul style="list-style-type: none"> <li>• building envelope;</li> <li>• Building Protection Zone (BPZ);</li> <li>• roads;</li> <li>• strategic firebreak; or</li> <li>• lot firebreak.</li> </ul>	Compliant	Protective (restrictive) Covenants will be placed on titles to restrict the clearing of vegetation that provides for black cockatoos in accordance with condition 2 of the approval.
CEMP 17	All trees over 500 mm DBH and within 10 metres of any area proposed to be cleared (which are not currently marked as "habitat trees") will be marked with white flagging tape to notify contractors and construction personnel that these trees cannot be cleared unless located in an area listed above.	Compliant	Greg Harewood visited the site on 30/04/2023 prior to clearing works commencing (refer to <b>Appendix B</b> ). No breeding trees were disturbed as a result of the construction activities, and therefore no displaced fauna were found within the development site.
CEMP 18	There will be no construction or water discharge within the Wetland and Creekline Conservation Area mapped in Figure 6 of the CMP. Clearing in waterways will be restricted for service, roads and strategic firebreaks.	Compliant	Waste was disposed of appropriately and therefore there was no water runoff discharged into the wetland/creekline areas during construction.
CEMP 19	Access within the Wetland and Creekline Conservation Area will be limited to designated tracks only (existing tracks, lot firebreaks and strategic firebreaks).	Compliant	Prior to construction commencing, the developer installed flagging tape around the boundary of this area to ensure any unauthorised access or clearing was prevented.
CEMP 20	Temporary sediment control measures will be employed to reduce runoff into waterways.	Compliant	Cleared vegetation and topsoil was stockpiled away from drainage lines and stored down slope wherever practicable to reduce the potential for spread into waterways.
CEMP 21	Speed limits will be implemented and all vehicle access within the development will be restricted to created roads and existing tracks only.	Compliant	Restricted road speeds (10km/hr) were implemented in all areas of the construction site. Access was restricted to created roads only. These requirements were communicated to construction contractors during the Site Induction

Reference Code	Action	Compliance Status	Evidence/Comments
CEMP 22	Access to site will be controlled with signage at all entry points to the site. Access must be granted by the Proponent and a subsequent site environmental induction conducted.	Compliant	Temporary fencing was erected around the boundary of the works area to prohibit unauthorized access and all personnel attended a site induction. Signage was provided on the fences prior to accessing the site regarding restricted access.
CEMP 23	Prior to the construction of the Development weed control measures are to be implemented, including spot spraying of weed species.	Compliant	No weed infestations were reported to the site supervisor/civil engineer and therefore no weed control measures were required.
CEMP 24	Control measures are to be implemented for the spread of feral animal populations during construction of the Development in accordance with the Brigadoon Estate Pest Management Strategy.	Compliant	No pest sightings were reported to the site supervisor/civil engineer within the development and therefore no pest management measures were required.
CEMP 25	A hygiene station should be set up at the entry to the site to ensure no soil is transported in or out of the site. A vehicle hygiene form and register should be completed following vehicle washdown.	Compliant	Machinery, vehicles and plant were inspected regularly by the Site Supervisor/Civil Engineer to ensure no soil was transported into or out of the site. The vehicle hygiene register has been completed for this reporting period.
CEMP 26	The following dust control measures will be undertaken during construction: <ul style="list-style-type: none"> <li>• Management measures to limit dust generation from construction material and equipment.</li> <li>• Dust generation managed using industry current best practice dust suppression measures.</li> <li>• Instances of excessive dust are to be reported immediately to the Site Supervisor/Civil Engineer and managed accordingly.</li> </ul>	Compliant	All dust management measures were implemented which resulted in there being no dust incidents or complaints reported.
CEMP 27	The following noise management measures will be undertaken during construction: <ul style="list-style-type: none"> <li>• The vehicles and power generating machinery will be regularly serviced to ensure they are operating efficiently.</li> <li>• Noise minimising equipment will be used where possible.</li> </ul>	Compliant	All noise management measures were implemented which resulted in there being no noise incidents or complaints reported.
CEMP 28	The following waste management measures will be undertaken during construction will include: <ul style="list-style-type: none"> <li>• All waste material is to be appropriately disposed of to prevent habitation by feral animals.</li> <li>• A location for the collection of recyclable material for off-site recycling is to be established.</li> <li>• All waste disposal will be recorded on a Waste disposal form and Register.</li> <li>• Hydrocarbon spills are to be reported to the Site Supervisor/Civil Engineer and cleaned up immediately and recorded on the Spill Form and Register.</li> <li>• Hydrocarbon contaminated soil is to be collected and disposed to an approved off-site facility.</li> </ul>	Compliant	All waste management measures were implemented which resulted in there being no waste/spill incidents reported.
CEMP 29	Any works completed in summer or during a total fire ban would require the following: <ul style="list-style-type: none"> <li>• Fire suppression unit comprising a minimum of 400 litres of water, operational pump and 20 m of hose located in close proximity to the worksite.</li> <li>• At least one able bodied person capable of operating the fire suppression unit who is not directly involved in the works being undertaken.</li> <li>• Contact the local government or its representative (e.g. fire control officer) prior to commencing works is to be made;</li> <li>• Contact must be made with the nearest FESA regional office prior to works commencing;</li> <li>• Fire extinguishers will be located in vehicles and all offices;</li> <li>• All site plant and equipment will be regularly maintained and serviced to ensure that it is in good running order and its operation does not pose a fire risk.</li> </ul>	NA	No works were completed during a total fire ban.
CEMP 30	The identified Aboriginal Heritage sites located within the development will be protected and managed as follows: <ul style="list-style-type: none"> <li>• Construct temporary fencing around Aboriginal Heritage sites, based upon the boundaries provided by the DIA.</li> <li>• Erect screens during any blasting works within 20 m of an Aboriginal Heritage site.</li> <li>• Implement the Aboriginal Heritage Management Plan has been prepared for the site.</li> </ul>	Compliant	Aboriginal Heritage management measures were implemented during the works which included the use of monitors during the clearing and removal of topsoil.

Reference Code	Action	Compliance Status	Evidence/Comments
CEMP 31	Aboriginal Heritage monitors are required for any ground disturbing activities over the site, where it is unlikely that the ground has been disturbed in the past (or it appears that the ground has been disturbed in the past). This would comprise approximately 80% of the site and refers to any ground-disturbing activities, such as vegetation clearing and topsoil stripping.	Compliant	Horizon Heritage Management undertook monitoring during the construction activities.
CEMP 32	The discovery of any previously unrecorded Aboriginal Heritage sites or artefacts is to be reported immediately and will result in work ceasing until appropriately managed.	Compliant	During the course of the monitoring debris assemblage was located by the Whadjuk monitors. The Whadjuk monitors chose to relocate the salvaged cultural material to a new place close to where it was found but away from any known disturbance.
CEMP 33	Prior to the commencement of any activities associated with the construction phase of the Development, all members of the Management Team and Contractors are to participate in a Site Environmental Induction.	Compliant	Site environmental inductions were provided for all relevant contractors entering the construction site.
CEMP 34	The Site Environmental Induction includes details relating to: <ul style="list-style-type: none"> <li>• The location of conservation significant species and habitats and Aboriginal Heritage sites;</li> <li>• The requirements for site access;</li> <li>• The requirements for land clearing;</li> <li>• Off road/track driving restrictions</li> <li>• Descriptions of invasive flora and fauna;</li> <li>• Waste management; and</li> <li>• Other management issues.</li> </ul>	Compliant	The site environmental induction was provided to all relevant contractors involved with civil works.
CEMP 35	A site meeting minutes form and register will be used to document the discussions and actions during project meetings involving the Proponent, Site Supervisor/Civil Engineer, Consultants and Contractors.	Compliant	The site meeting minutes have been documented including a record of attendees. These can be provided upon request.
CEMP 36	Monthly monitoring and inspections of the Development are to be undertaken by the Environmental Consultant and Site Supervisor/Civil Engineer to ensure that construction activities are undertaken in accordance with the requirements of the CMP.	Compliant	In consultation with the Environmental Consultant, regular inspections were undertaken by the Site Supervisor/Civil Engineer to ensure that construction activities were undertaken in accordance with the requirements of the CEMP.
CEMP 37	All emergencies and incidents are to be reported to the Site Supervisor/Civil Engineer immediately. These incidents will be recorded on an emergency response and incident reporting form.	Compliant	No incidences were reported during the reporting period.

## 4 SUMMARY

Avon Ridge Estate is located in Brigadoon, approximately 12 kilometres north of the Midland Regional Centre and 30 kilometres northeast of the Perth Central Business District. The development consists of a special rural subdivision of 220 Lots over 450 ha, with Lot sizes ranging from 1.2 ha to 5.1 ha. An additional area of 411 ha adjacent to the development is reserved as Parks and Recreation under the Metropolitan Region Scheme (MRS).

Commonwealth approval pursuant to the EPBC Act was granted for the proposed action on the 8th October 2009.

This report addresses the status and compliance of construction of the project with the conditions in the EPBC Act Approval 2008/4250 for the period 5th July 2022 to 4th July 2023. This report has been prepared for the purpose of meeting the requirements of Condition 12 of the Approval, which requires the proponent to submit annual compliance reports.

The compliance assessment for this reporting period revealed the following:

- EPBC Act Approval 2008/4250:
  - 12 compliances;
  - 5 conditions have been completed; and
  - 7 conditions were not applicable.
- Revegetation and Fire Management Plan:
  - 13 compliances; and
  - 12 conditions were not applicable.
- Construction and Environmental Management Plan:
  - 36 compliances; and
  - 1 condition was not applicable.

No incidents or non-compliances occurred during this report period.

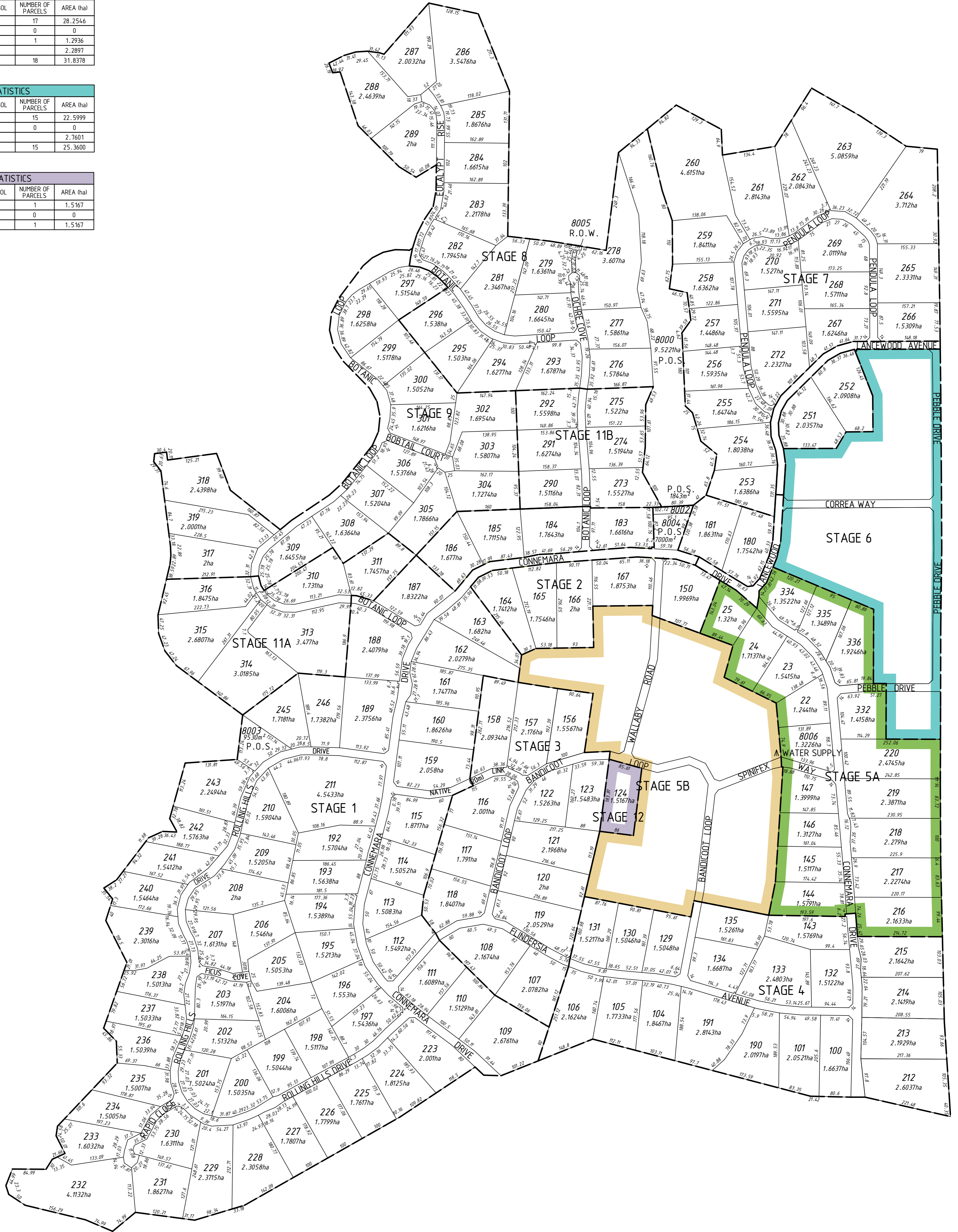
## APPENDIX A – STAGING PLAN

STAGE 5A STATISTICS			
PARCEL TYPE	MAP SYMBOL	NUMBER OF PARCELS	AREA (ha)
Traditional Lots		17	29.1955
Public Open Space	P.O.S.	0	0
Water Supply Reserves	A WATER SUPPLY	1	1.3226
Roads (inc. truncations)			2.5767
STAGE TOTAL		18	33.0948

STAGE 5B STATISTICS			
PARCEL TYPE	MAP SYMBOL	NUMBER OF PARCELS	AREA (ha)
Traditional Lots		17	28.2546
Public Open Space	P.O.S.	0	0
Misc. Land Use Lots	§	1	1.2936
Roads (inc. truncations)			2.2897
STAGE TOTAL		18	31.8378

STAGE 6 STATISTICS			
PARCEL TYPE	MAP SYMBOL	NUMBER OF PARCELS	AREA (ha)
Traditional Lots		15	22.5999
Public Open Space	P.O.S.	0	0
Roads (inc. truncations)			2.7601
STAGE TOTAL		15	25.3600

STAGE 12 STATISTICS			
PARCEL TYPE	MAP SYMBOL	NUMBER OF PARCELS	AREA (ha)
Traditional Lots		1	1.5167
Public Open Space	P.O.S.	0	0
STAGE TOTAL		1	1.5167



Ver.	Description	Drawn	Date	Checked
O	Revise Lots 216-220, 332-334	TAV	11/05/2023	TAV
N	Revise Lots and staging boundaries in Stage 5A, 5B & 6	JIN	17/01/2023	TAV
M	Replace section of Ochre Cove with ROW Lot 8005, Move POS Lot 8000 into Stage 8	WHD	29/08/2022	TAV
L	Revise Stage 8 & 9 Boundary, and replace lot 8005 as road reserve	APD	20/06/2022	TAV
K	Add new stages 8A, 8B, 9, 10, change 11 to 11B. Remove Unstaged #2	JIX	25/10/2018	TAV
J	Remove Stages 8, 9 & 12 - replace with Stages 11, 11A and Unstaged#2, amended Stage colouring	SCL	10/10/2018	TAV
I	Amend to split Stage 9 into Stages 9 & 10	SDW	12/12/2016	SLAT
H	Amend lot 318 and add lot 319 in Stage 9	ER	03/03/2016	SLAT

FILES
mapCOGO - Plan4.07
Control Register - 92090
File Name - 92090pr-407o.dgn


  

PRECAL LEGEND
--- Stage Boundary
--- Vehicle Access Restriction
(15) Potential Dwellings / Lot



GlobalMark.com.au

### BRIGADOON STAGING PLAN



CLIENT:

The contents of this plan are current and correct as of the date stated within the revision panel. All consultants and persons wishing to utilise this data should satisfy themselves of this plan currency by contacting the Mullen Nolan Group.

100 0 SCALE 1: 5000 @ A1 - 1: 10000 @ A3 400

ALL DISTANCES ARE IN METRES

For a true to scale reproduction of this plan, plot it A1 with the Paging Scaling set to None.

PLANNER'S DESIGN SOURCE for Rev N  
 Planner - Creative  
 Received date - 14/12/2022  
 File name - CODAR-3-001 Lot 9006 Subdivision  
 Plan-1221011\_SUBDIVISION DETAIL.dwg

ENGINEER'S DESIGN SOURCE for Rev  
 Engineer -  
 Received date -  
 Data purpose -

All areas and dimensions depicted on this plan are subject to survey and Landgate registration. All cadastral information external to the stage/s which form the subject of this plan are not guaranteed and are supplied as a guide only.



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 Janakot, W.A. 6164  
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 W.A. 6964, Australia  
 Offices in: Broome, Bunbury, Kununurra, Newman, Onslow, Port Hedland

Tel: (08) 6436 1399  
 Fax: (08) 6436 1500  
 info@mngsurvey.com.au  
 www.mngsurvey.com.au  
 ABN 90 059 363 311

Project Mgr - Trevor Veen Datum HUG94

**92090 - 407 - 0**

Job Number Plan Number Version



## APPENDIX B – HAREWOOD REPORT

**Greg Harewood  
Zoologist  
PO Box 755  
BUNBURY WA 6231  
02 July 2023**

**Corrib Developments  
PO BOX 244  
COTTELSON WA 6911**

**Attention: Rebecca Cooper**

**Dear Rebecca**

**RE: Avon Ridge – Stage 5A, 5B & 6 - Pre-Clearing Fauna Inspection**

This letter details a “Pre-Clearing Fauna Inspection” undertaken within the Stage 5A, 5B & 6 areas of Avon Ridge which forms part of the larger Brigadoon Estate.

The pre-clearing fauna inspection was undertaken in accordance with the approved Construction Environmental Management Plan (Cardno 2010) , and specifically section 7.2.2 (Civil Works) - Clearing Protocols, dot point one, which states:

- Vegetation should be inspected for fauna by Contractors prior to clearing (including tree hollows and bird nests). If fauna are found they should be released 50 metres from the construction site.

The inspection of proposed clearing and ground disturbance areas associated with the Stage 5A, 5B & 6 area of Avon Ridge was undertaken by myself on the 30 April 2023.

The inspection was carried out on foot and involved directly inspecting vegetation within the proposed clearing areas (primarily road reserves) for evidence of fauna habitation. Binoculars were used in some cases and where considered necessary and if possible, any hollow bearing trees were also inspected using a drone.

No evidence of the presence of any fauna resident with vegetation to be cleared was observed i.e. no nest sites and no fauna in hollow bearing trees or fallen hollow logs. In general the vegetation was found to be in a state of regeneration after a significant fire event which occurred in the previous year or two. The vast majority of hollow bearing trees and fallen logs appear to have been consumed by the fire thereby reducing the suitability of the area for fauna that rely on hollows for daytime refuge and/or nesting.

Prior to clearing commencing, the contractors involved were briefed on the importance of remaining vigilant for fauna during site works, and if any were encountered to contact myself so that the appropriate action could be implemented.

It is understood that no fauna was detected during any stage of the clearing and the vegetation in question was removed without incident.



If you have any questions or queries relating the information provided here please contact the undersigned on 0402 141 197 / [gharewood@iinet.net.au](mailto:gharewood@iinet.net.au)

*GHarewood*  
Greg Harewood  
Zoologist



## APPENDIX C – DEPOSITED PLANS

**Plan Information**

Tenure Type	Freehold
Plan Type	Deposited Plan
Plan Purpose	Subdivision

**Plan Heading**

Lots 276-289, 293-296, 8000, 8005, 9007, 9500, Roads and Easements

**Locality & Local Government**

Locality	Brigadoon
Local Government	City of Swan

**Department of Planning, Lands and Heritage**

File Number	
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**Examination**

Examined	Date
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**Planning Approval**

Planning Authority	Western Australian Planning Commission
Reference	156399

Delegated under S. 16 P&D Act 2005	Date
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**In Order For Dealings**

Subject To	
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For Registrar of Titles	Date
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**Plan Approved** Reg. 26A (1),(4)

Inspector of Plans and Surveys / Authorised Land Officer	Date
--	------

**Survey Details**

Field Records	107614, 109441
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**

<b>Approved Variation Type</b> REG 26A(1) FINAL MARKING DEFERRED	<b>Reference</b> (Approved ID D129-22 Dated 21 Septemehr 2022, Landgate File 06909-2021/002)
---	---

**Survey Certificate - Regulation 54**

I, Nigel J. SIMPSON 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.

<b>FINAL</b>	
Licensed Surveyor	Date

**Survey Organisation**

Name	MNG MCMULLEN NOLAN GROUP
Address	PO Box 3526, SUCCESS W.A. 6964
Phone	6436 1599
Fax	6436 1500
Email	info @ mngsurvey.com.au
Reference	92090dp-450g

**Amendments**

Version	Lodgement Type	Amendment Description	Authorised By	Date
2	Replacement Plan	Remove s195/196 easement from lot 8000	Nigel J. SIMPSON	17/11/2022

**Former Tenure**

New Lot / Land	Parent Plan Number	Parent Lot Number	Title Reference	Subject Land Description
276-289, 293-296, 8000, 8005, 9007, 9500	DP 4 16540	Pt LOT 9006	2969/985	

**Former Tenure Interests and Notifications**

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
Ⓒ	EASEMENT		DOC E983810	LOT 9007	WATER AUTHORITY OF WESTERN AUSTRALIA	
Ⓐ, Ⓑ	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC N378213	LOT 9007	CITY OF SWAN AND THE PUBLIC AT LARGE	PUBLIC ACCESS
Ⓓ	RESTRICTIVE COVENANT	SEC 129BA OF THE TLA 1893	DOC O196653	LOT 9500	ELECTRICITY NETWORKS CORPORATION	
Ⓕ	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC O196659	LOT 9500	CITY OF SWAN AND THE PUBLIC AT LARGE	PUBLIC ACCESS

**New Interests**

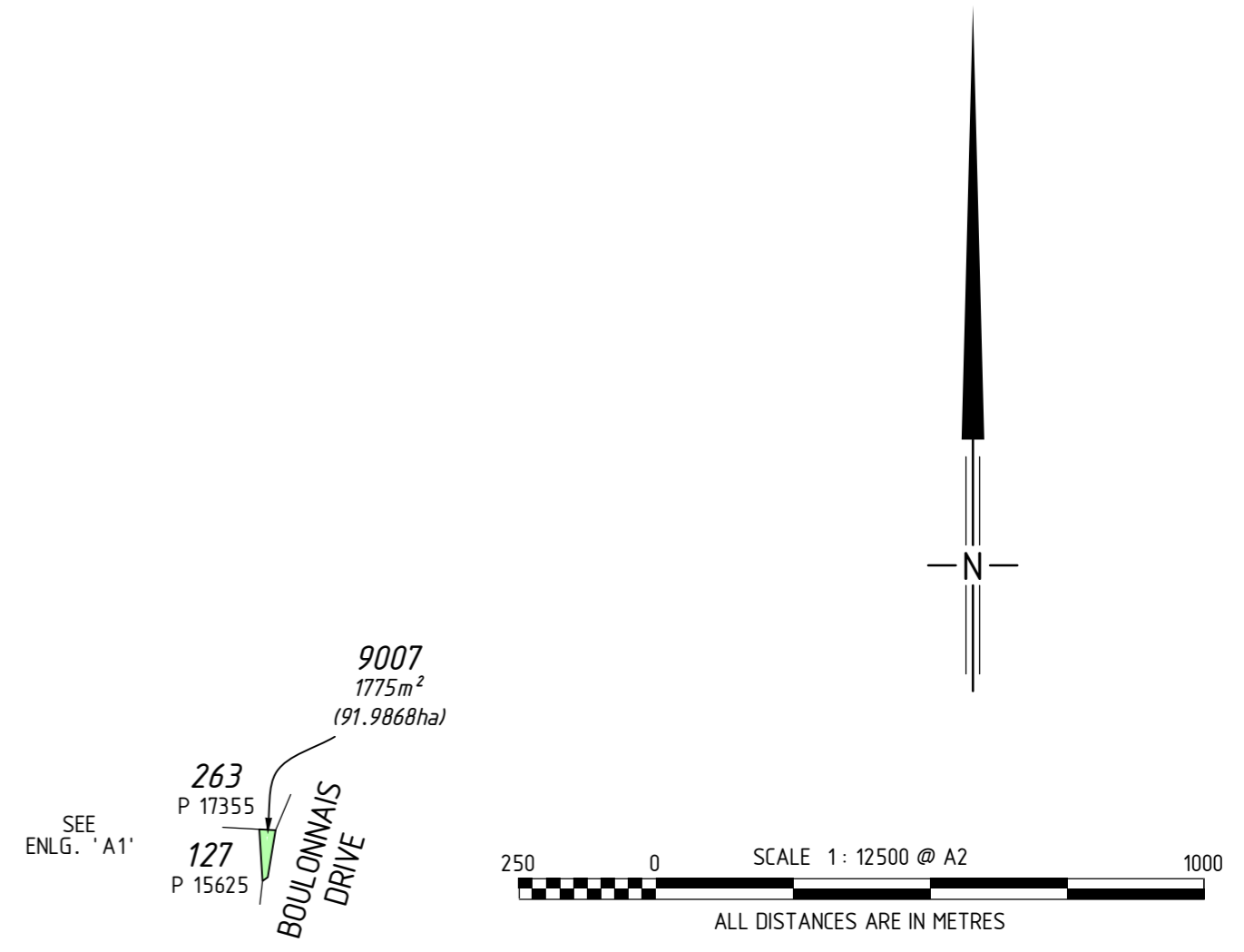
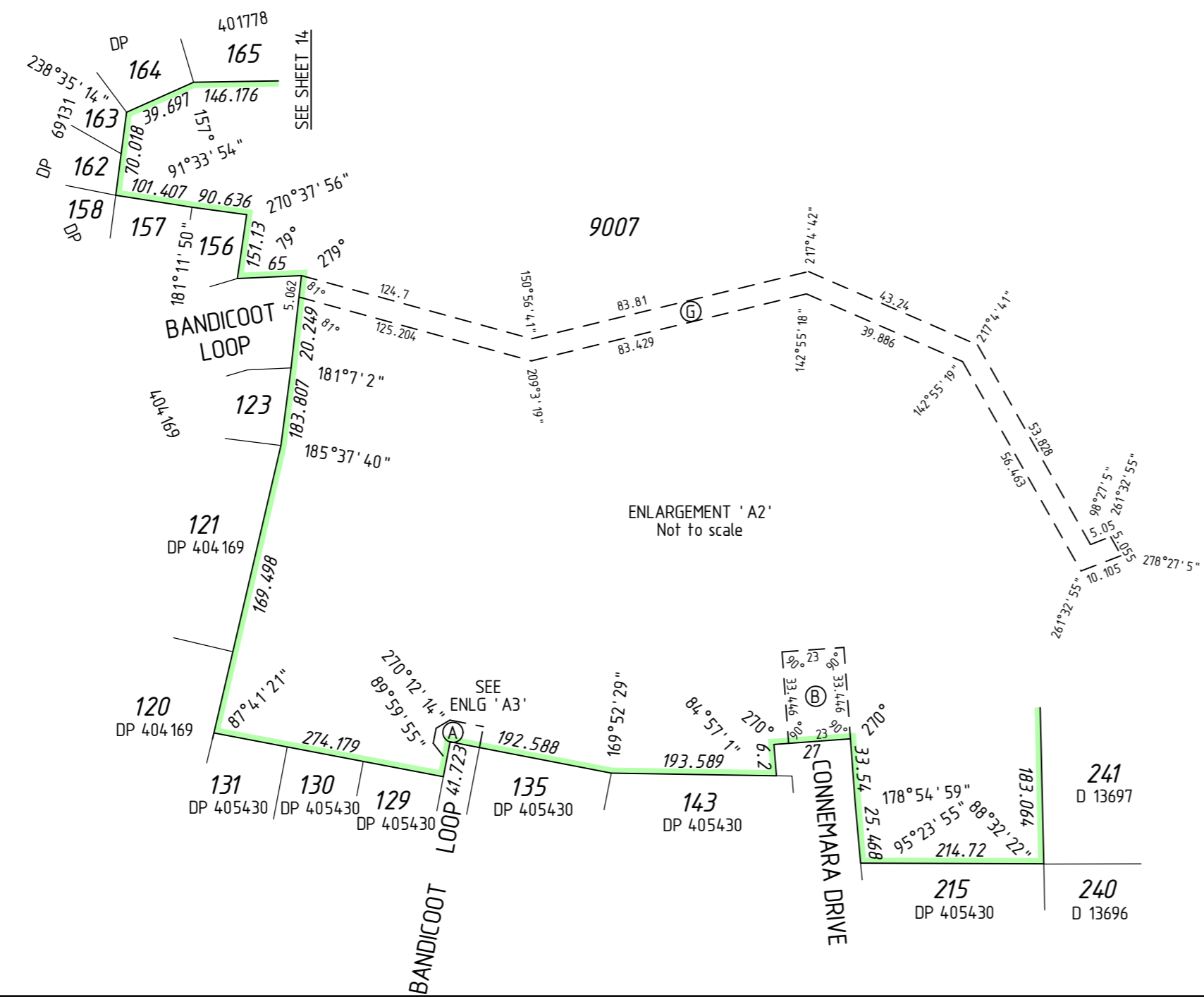
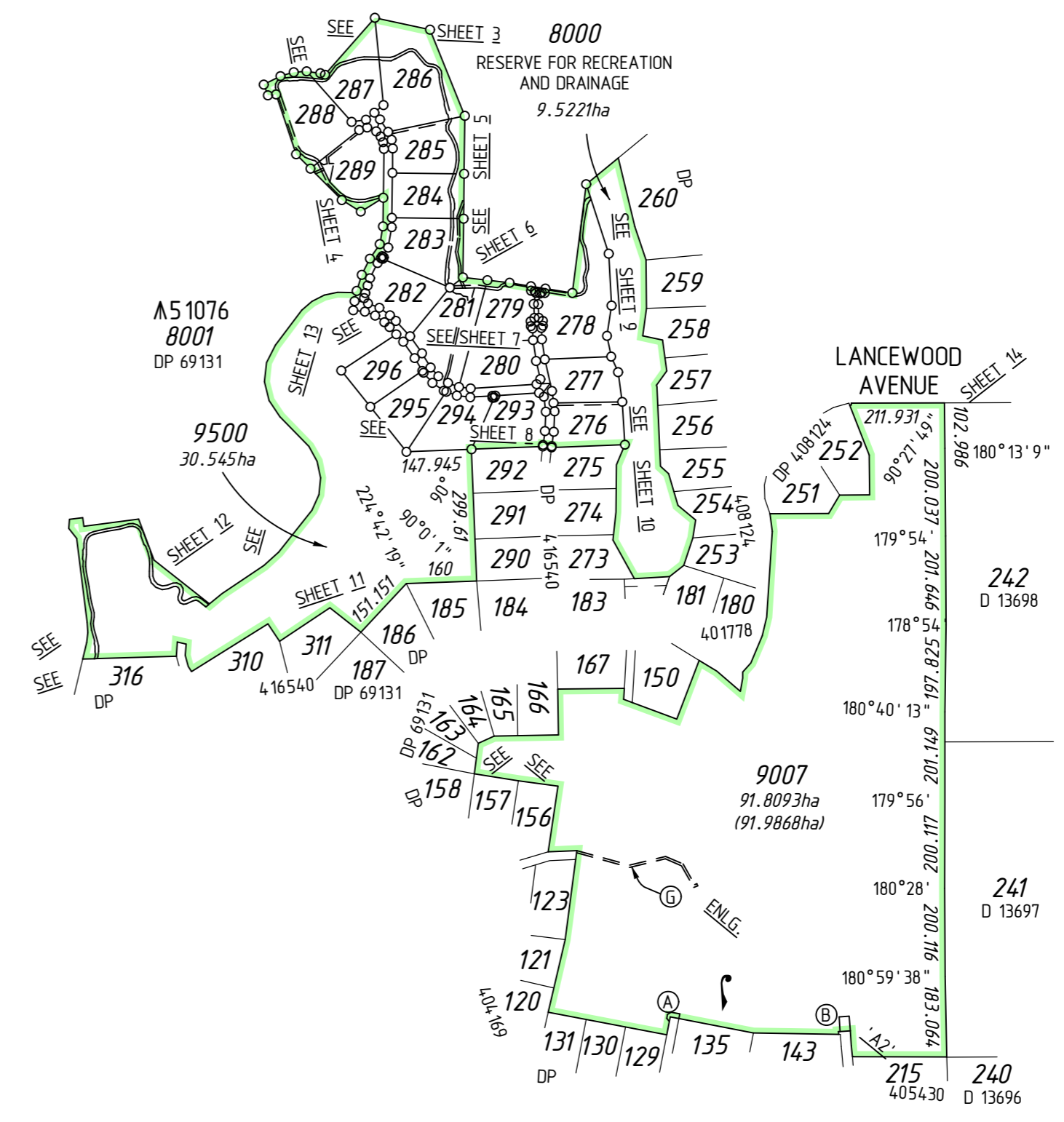
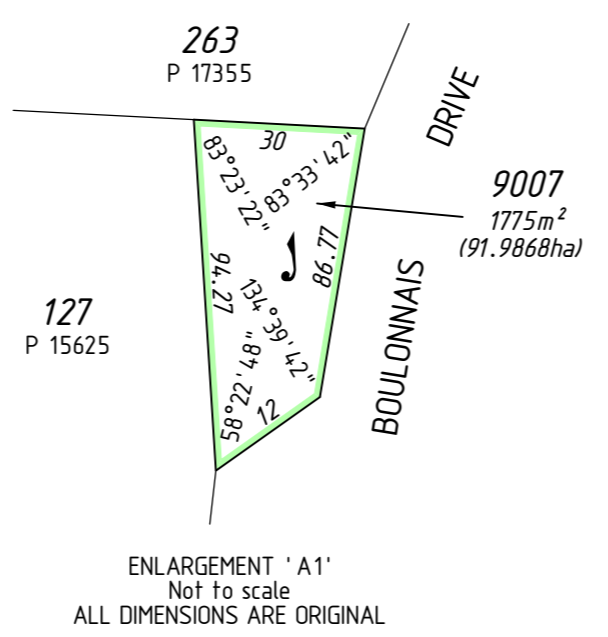
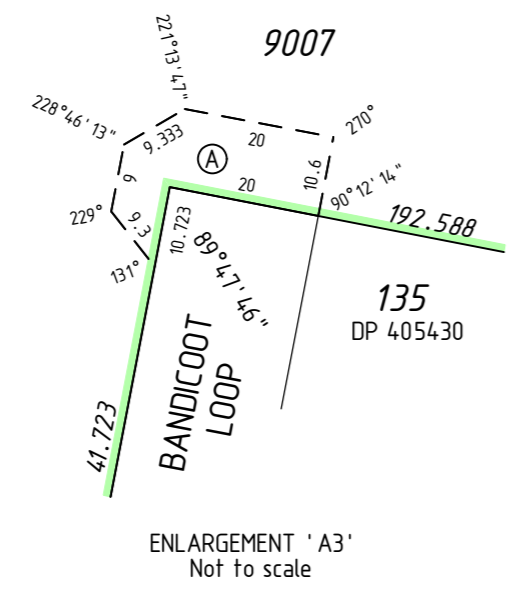
Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
Ⓢ3a	EASEMENT (Drainage)	SEC 167 OF THE P&D ACT 2005 REG 33 (a)	THIS PLAN	LOTS 281, 283-284 & 289	CITY OF SWAN	
Ⓣ	RESTRICTIVE COVENANT	SEC 129BA OF THE TLA 1893	DOC	LOTS 282-283 & 293-294	ELECTRICITY NETWORKS CORPORATION	FIRE RISK ZONE
	RESTRICTIVE COVENANT	SEC 136D OF THE TLA 1893	THIS PLAN & DOC	ALL LOTS EXCEPT 8000, 8005, 9007 & 9500	ALL LOTS EXCEPT 8000, 8005, 9007 & 9500	
Ⓜ	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC	LOTS 276, 278-279, 281 & 283-289	CITY OF SWAN AND THE PUBLIC AT LARGE	PUBLIC ACCESS FOR FIRE EMERGENCY PURPOSES

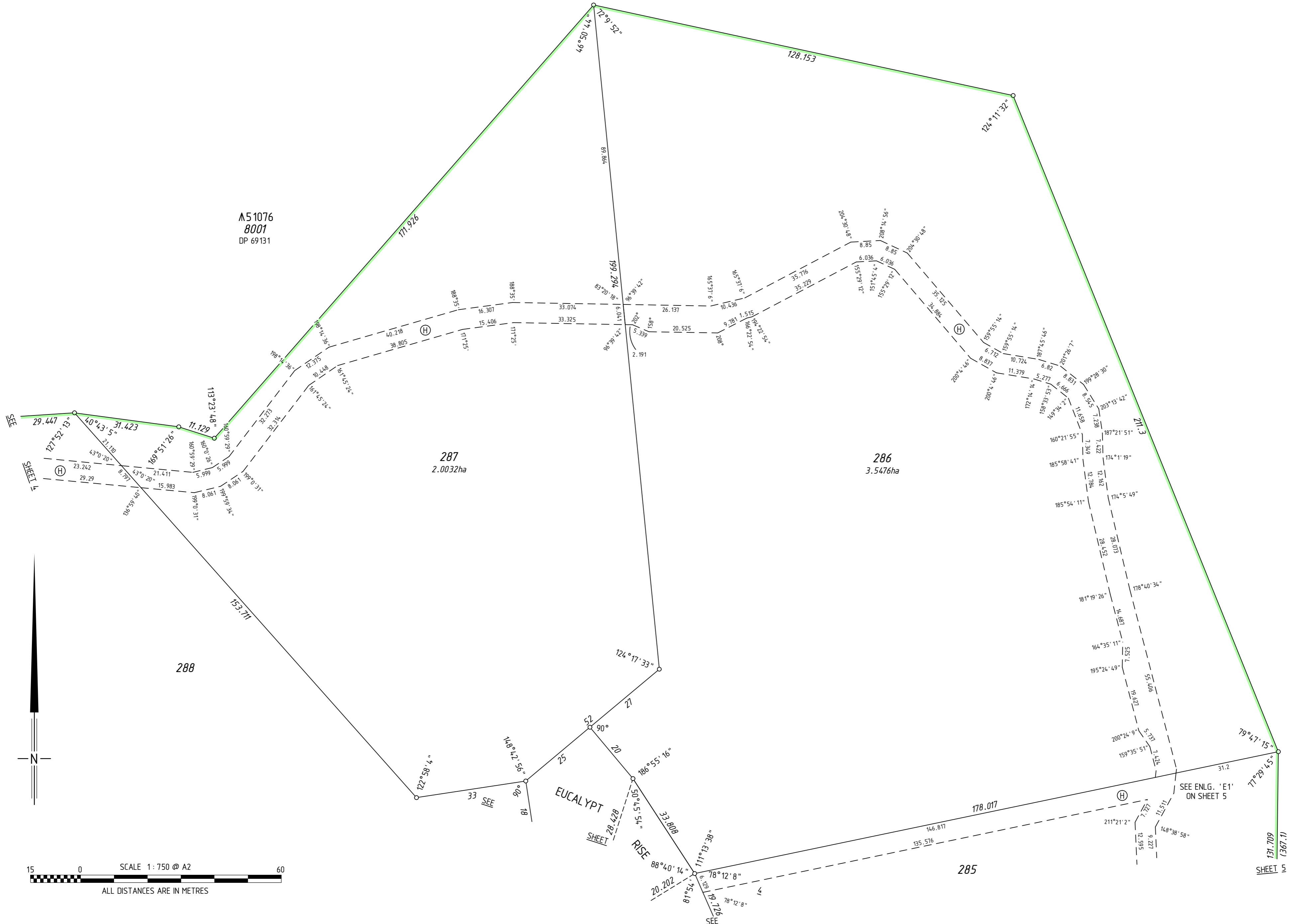
**New Notifications and Memorials**

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
Ⓥ	NOTIFICATION	SEC 70A OF THE TLA 1893	DOC	LOTS 282-283 & 293-294		NOISE BUFFER
	NOTIFICATION	SEC 70A OF THE TLA 1893	DOC	LOTS 279-281, 283, 284, 286, 288, 289 & 296		ENVIRONMENT & CULTURAL CONCERNS
	NOTIFICATION	SEC 70A OF THE TLA 1893	DOC	ALL LOTS EXCEPT 8000, 8005, 9007 & 9500		BRIDGADOON STRUCTURE PLAN
	NOTIFICATION	SEC 70A OF THE TLA 1893	DOC	ALL LOTS EXCEPT 8000, 8005, 9007 & 9500		NO SEWERAGE
	NOTIFICATION	SEC 165 OF THE P. & D. ACT	DOC	ALL LOTS EXCEPT 8000, 8005, 9007 & 9500		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			
LOT 8005	RIGHT OF WAY	VESTS IN THE CROWN UNDER SEC 152 OF THE P & D ACT 2005	THIS PLAN			





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287  
 2.0032ha

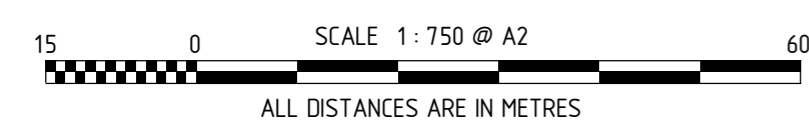
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288

285

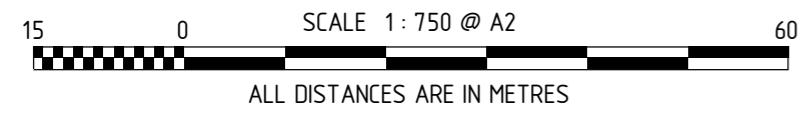
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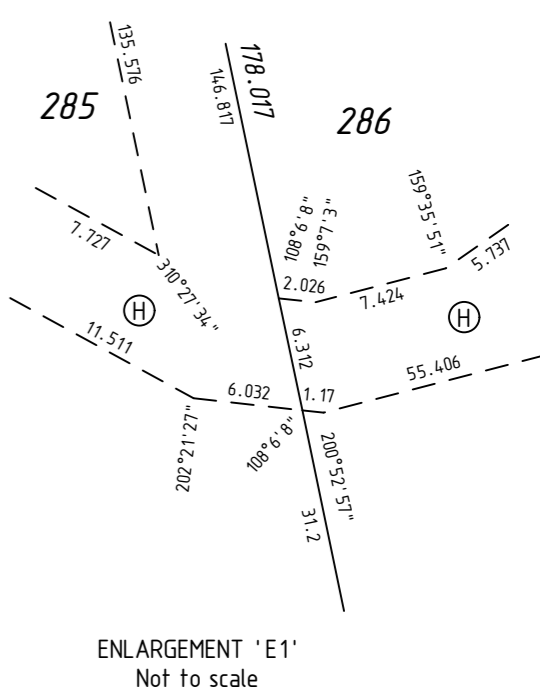
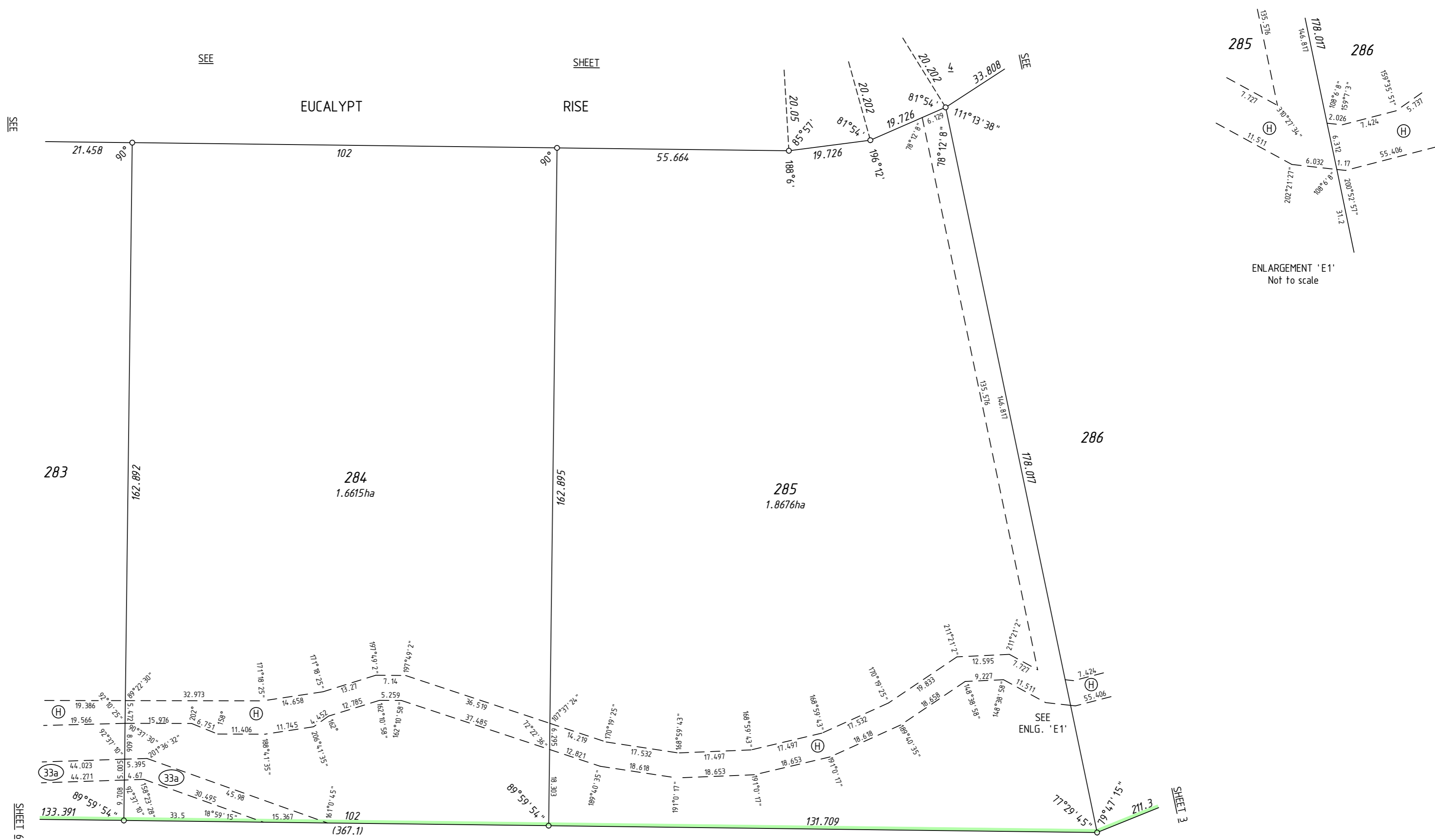




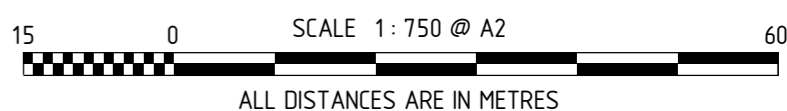
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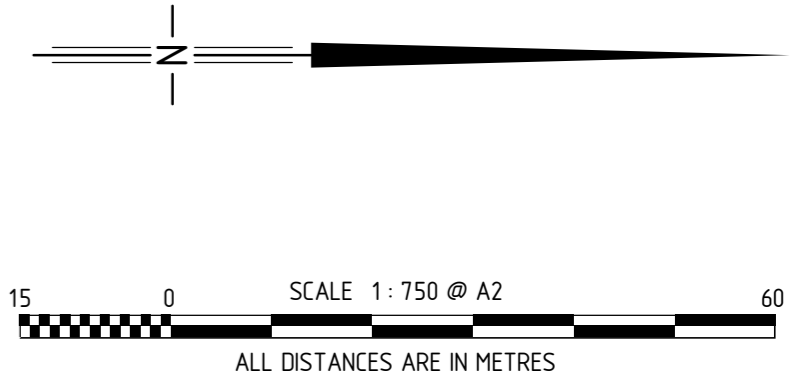
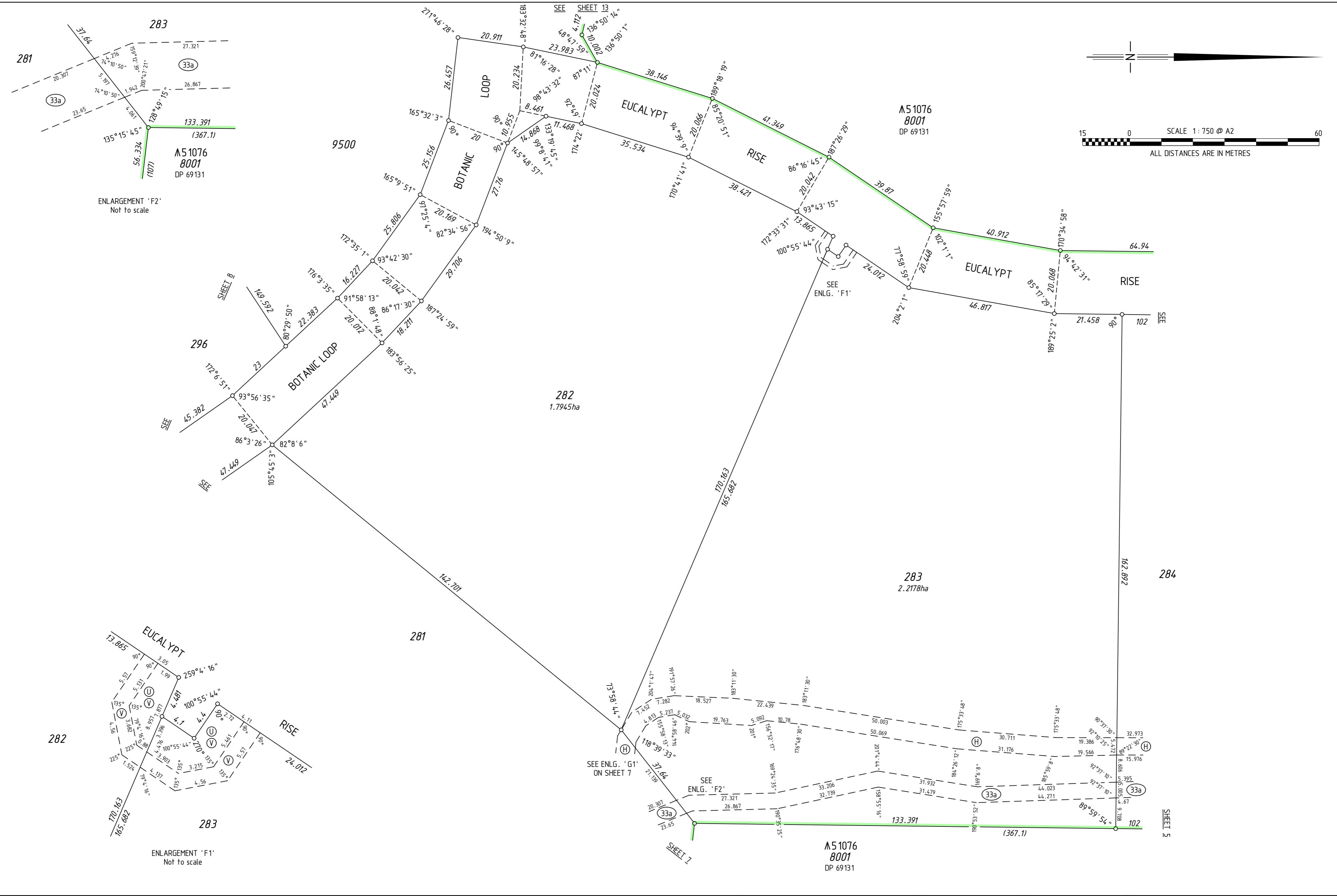






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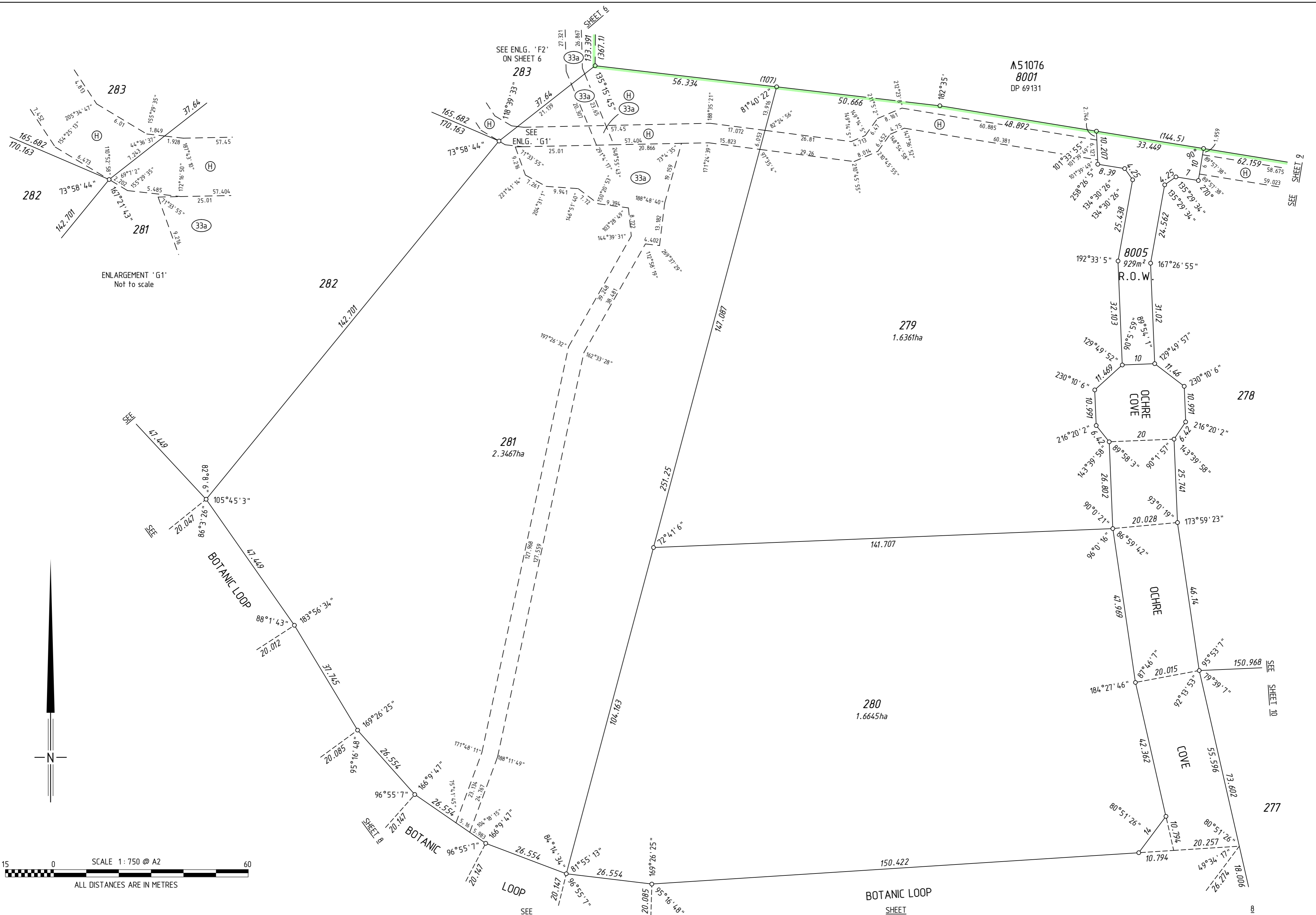




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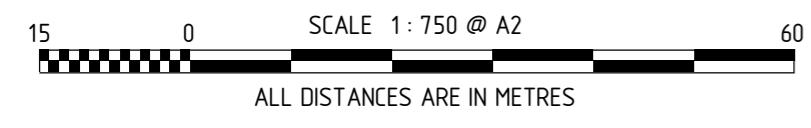
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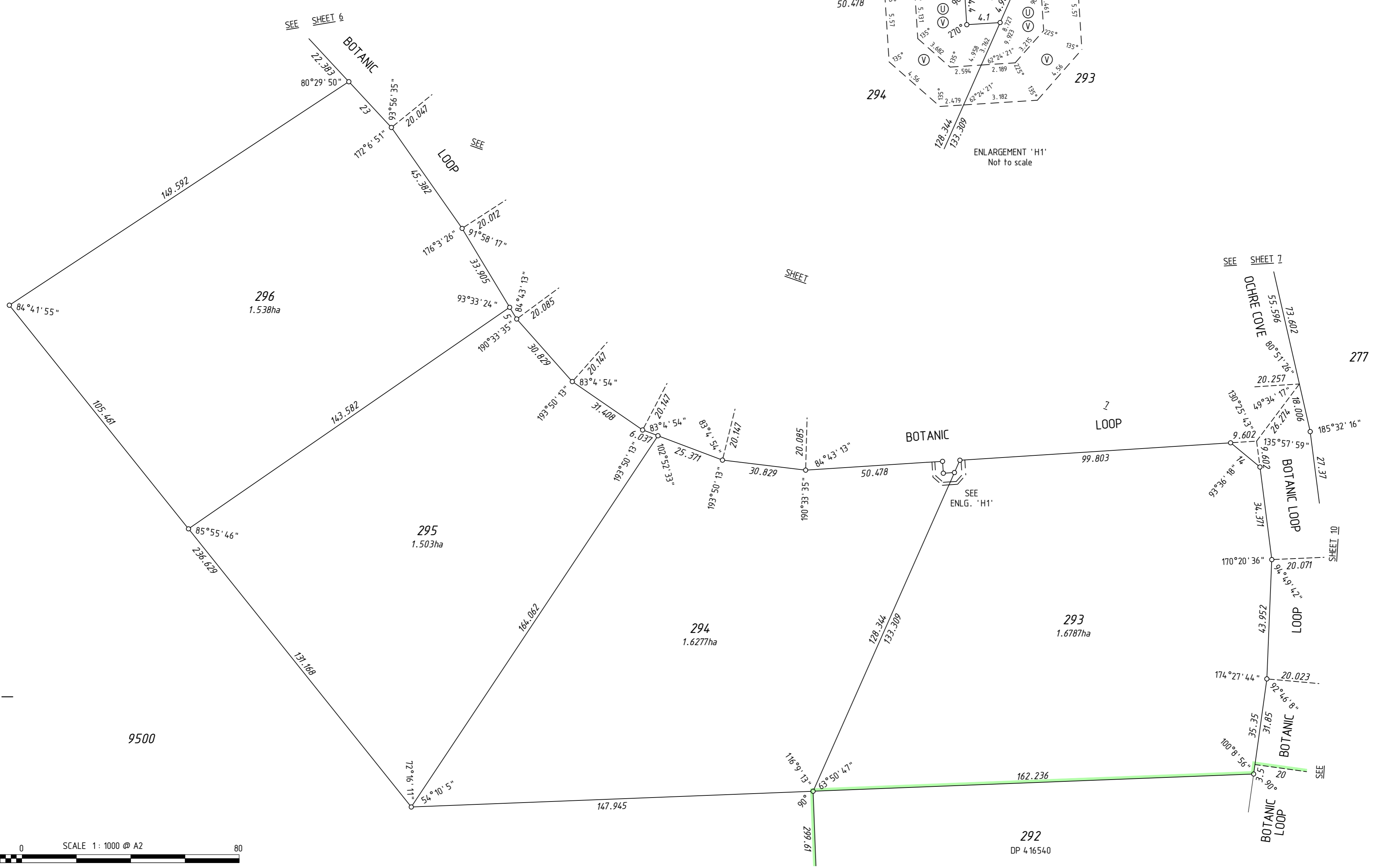
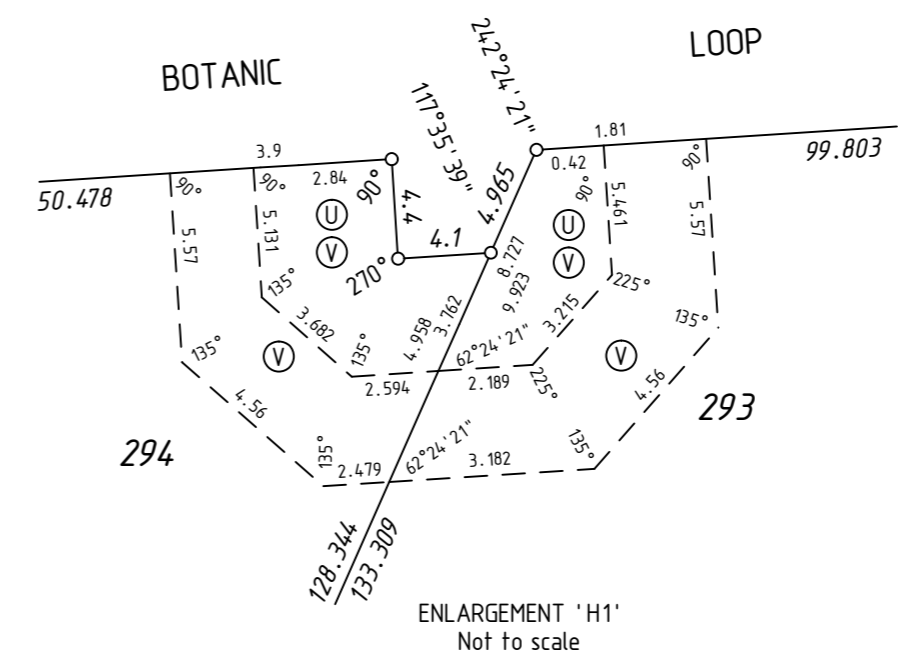
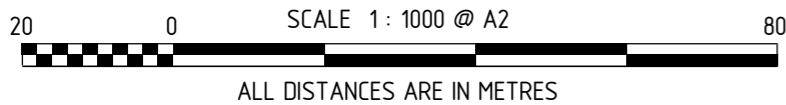
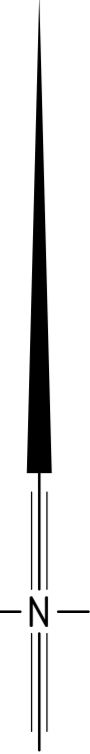
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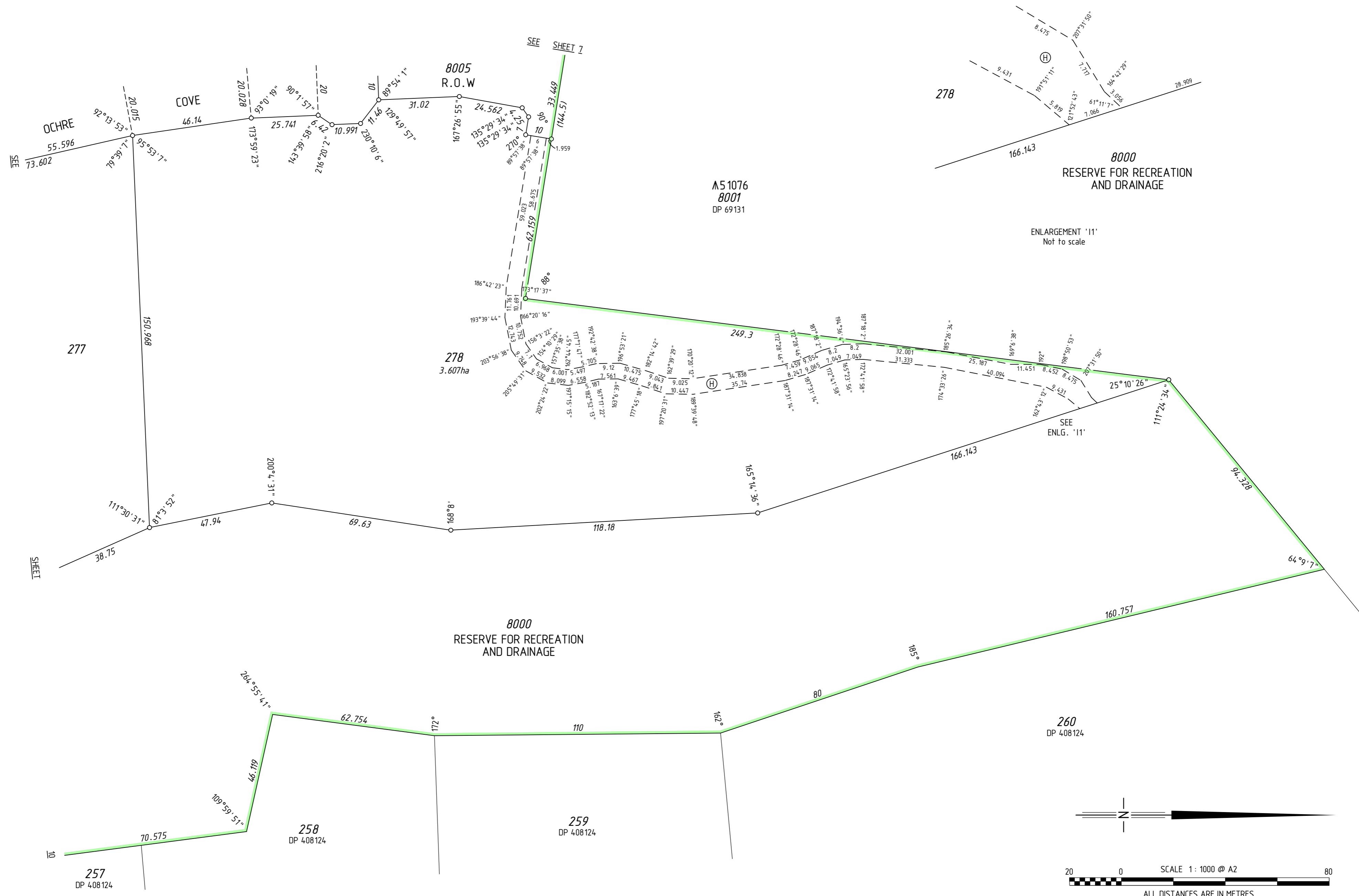


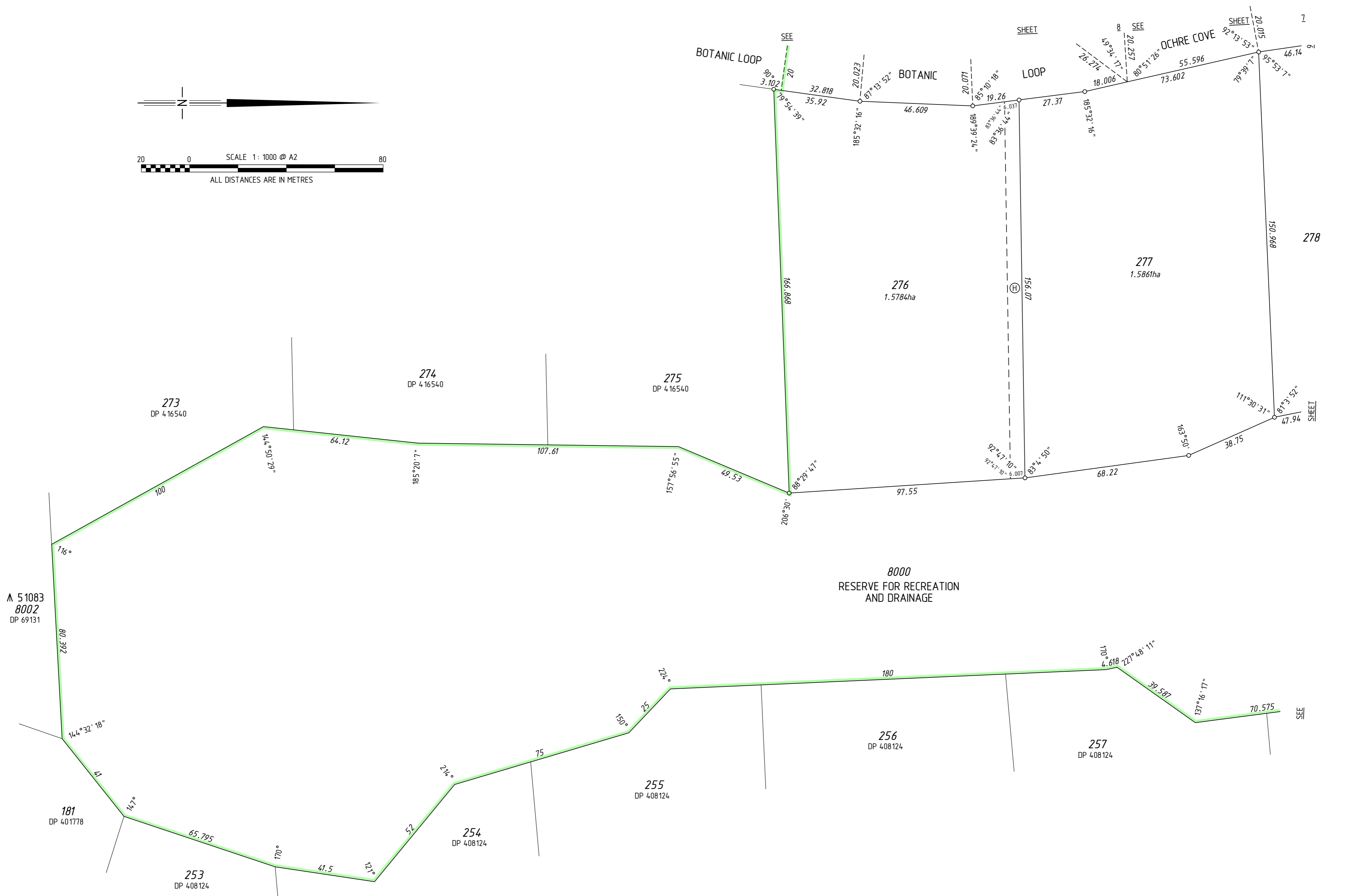
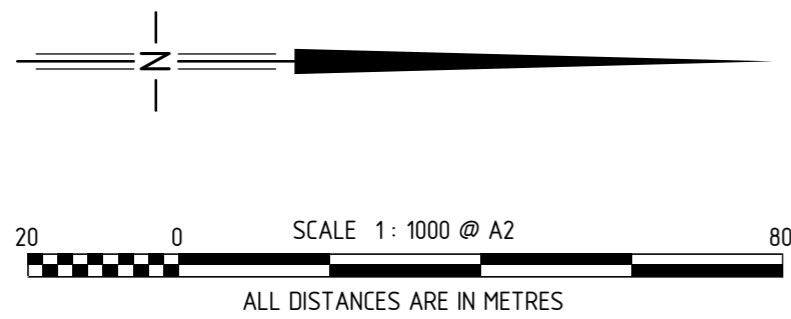
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8002  
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DP 416540

274  
DP 416540

275  
DP 416540

276  
1.5784ha

277  
1.5861ha

278

8000  
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AND DRAINAGE

181  
DP 401778

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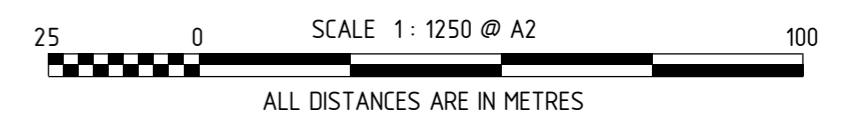
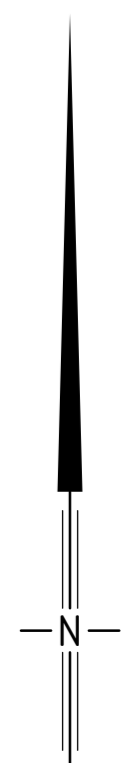
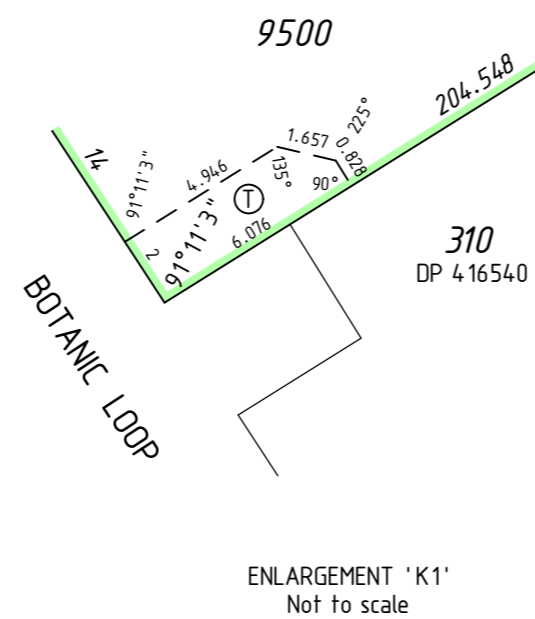
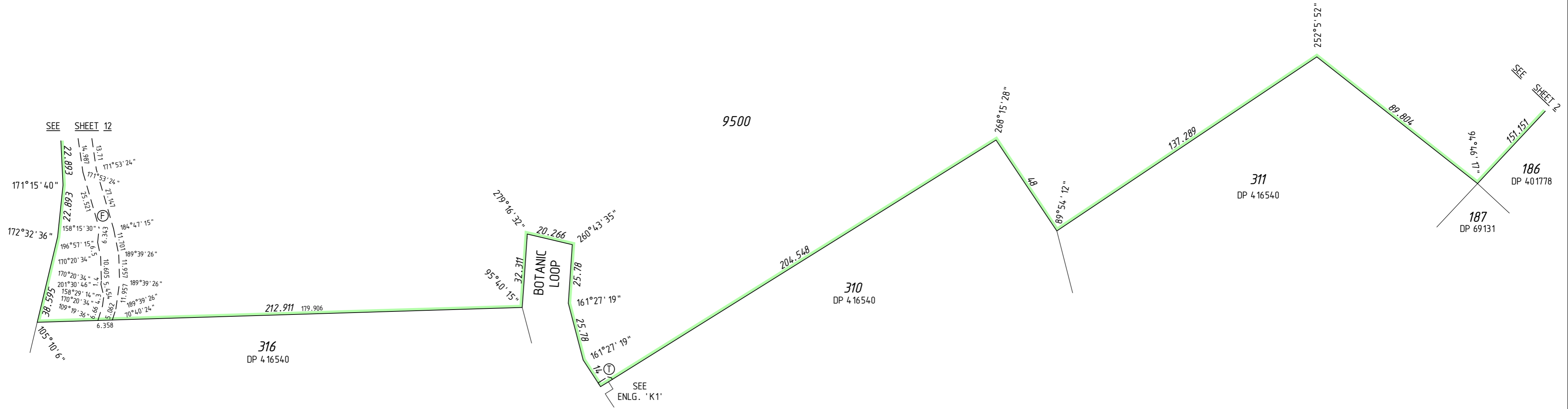
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Email: info@mngsurvey.com.au

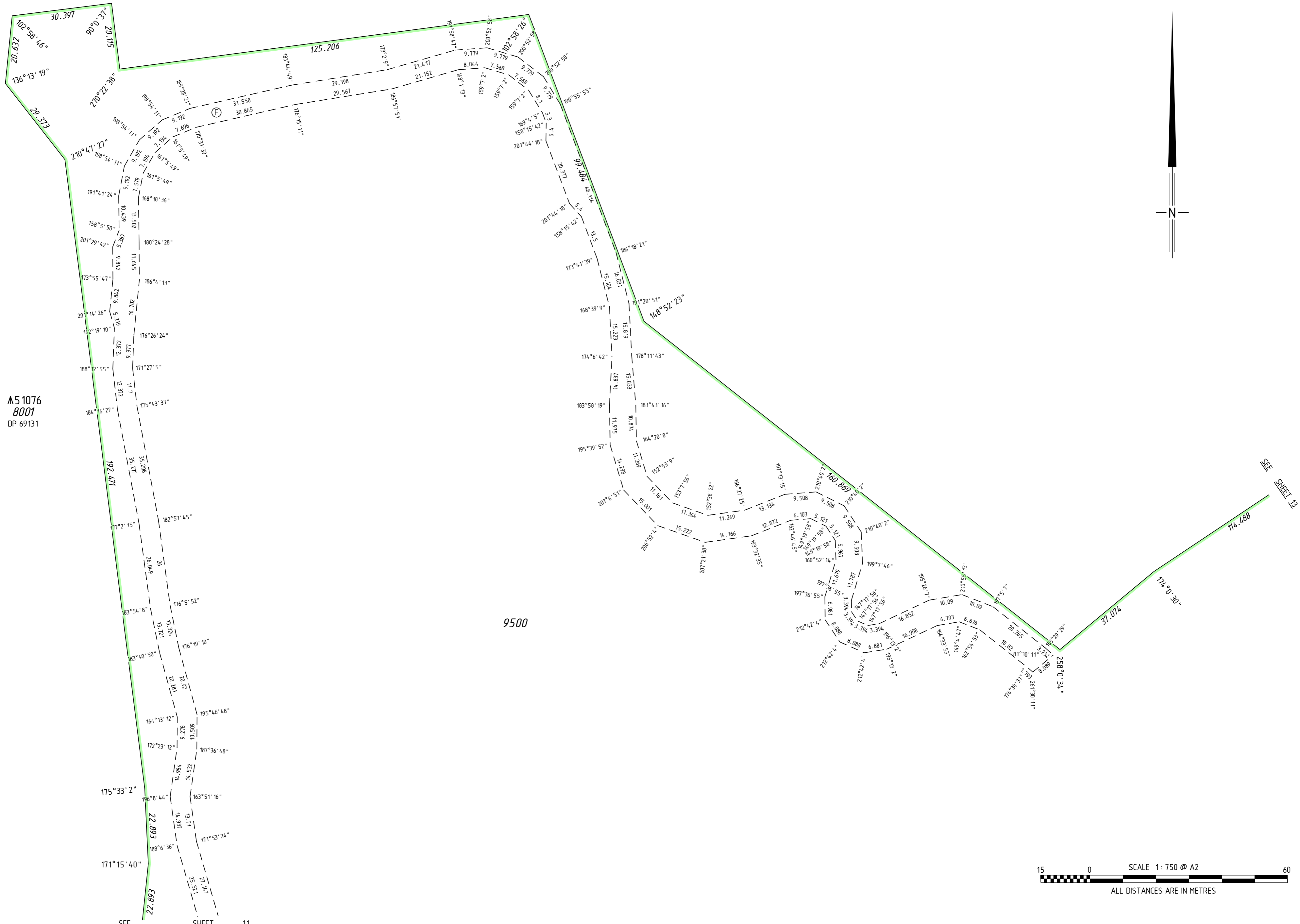
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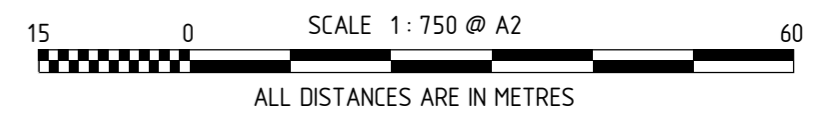
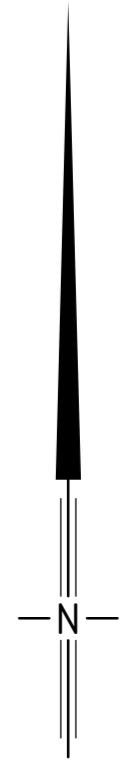
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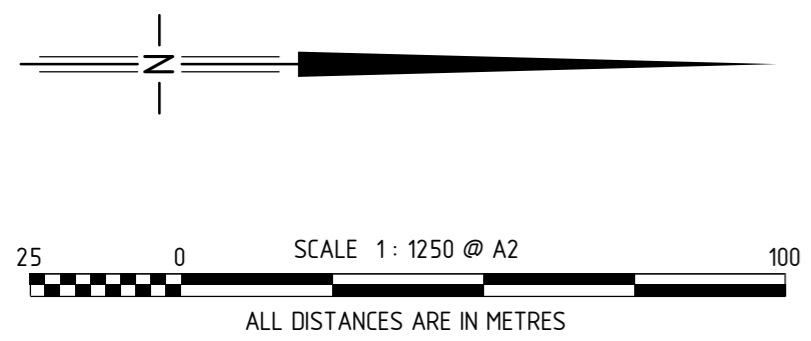
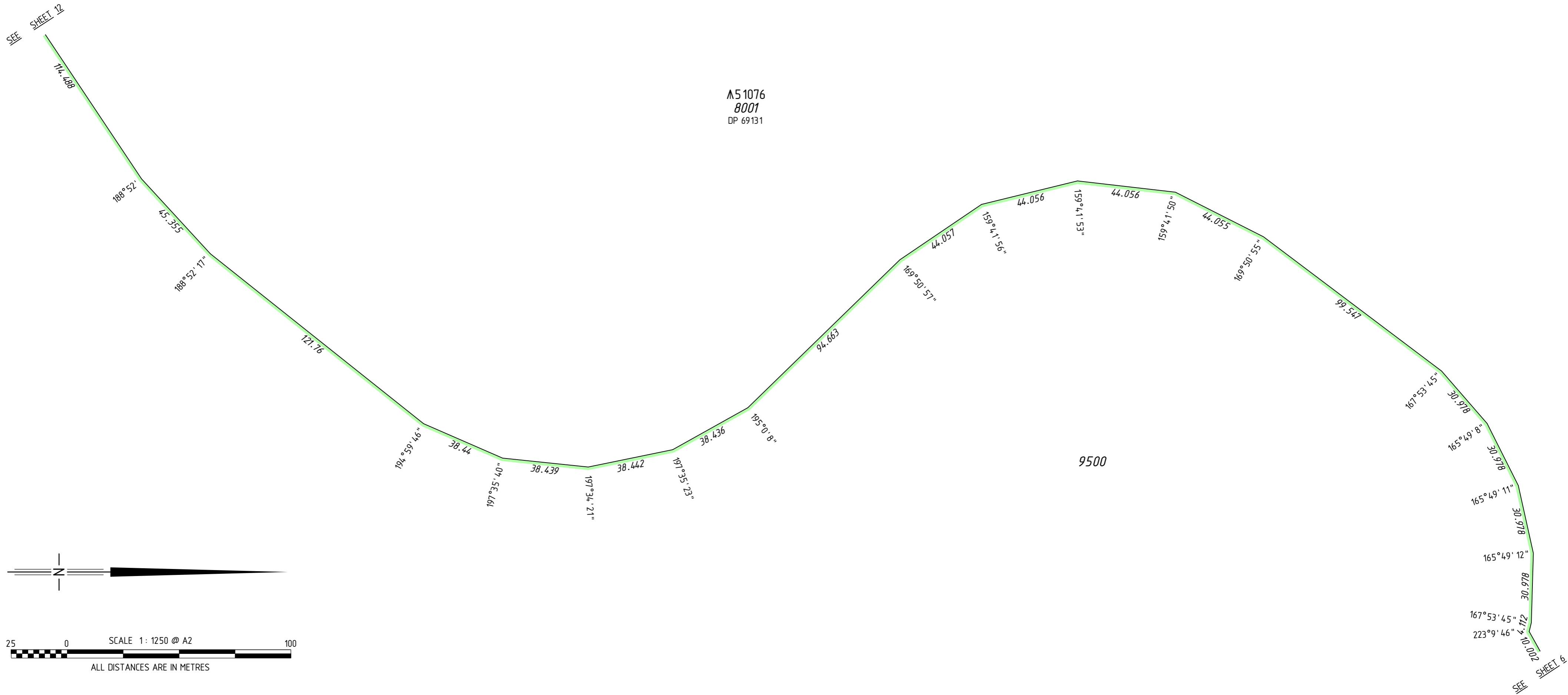
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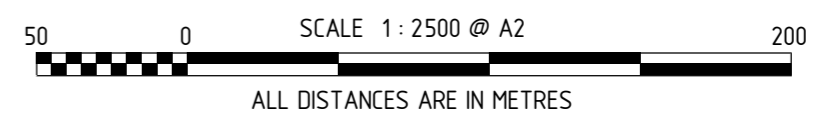
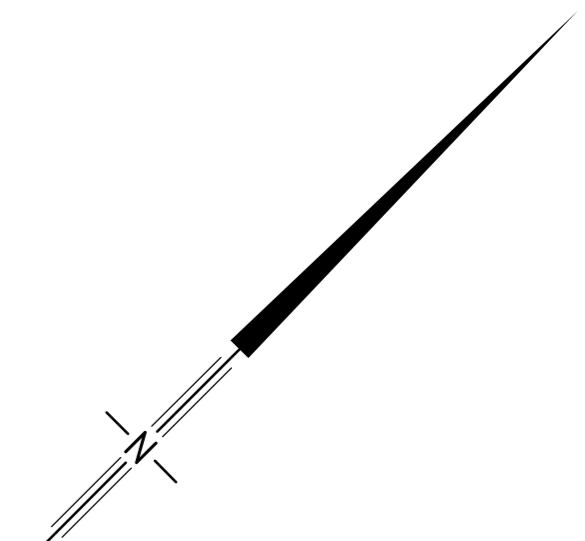
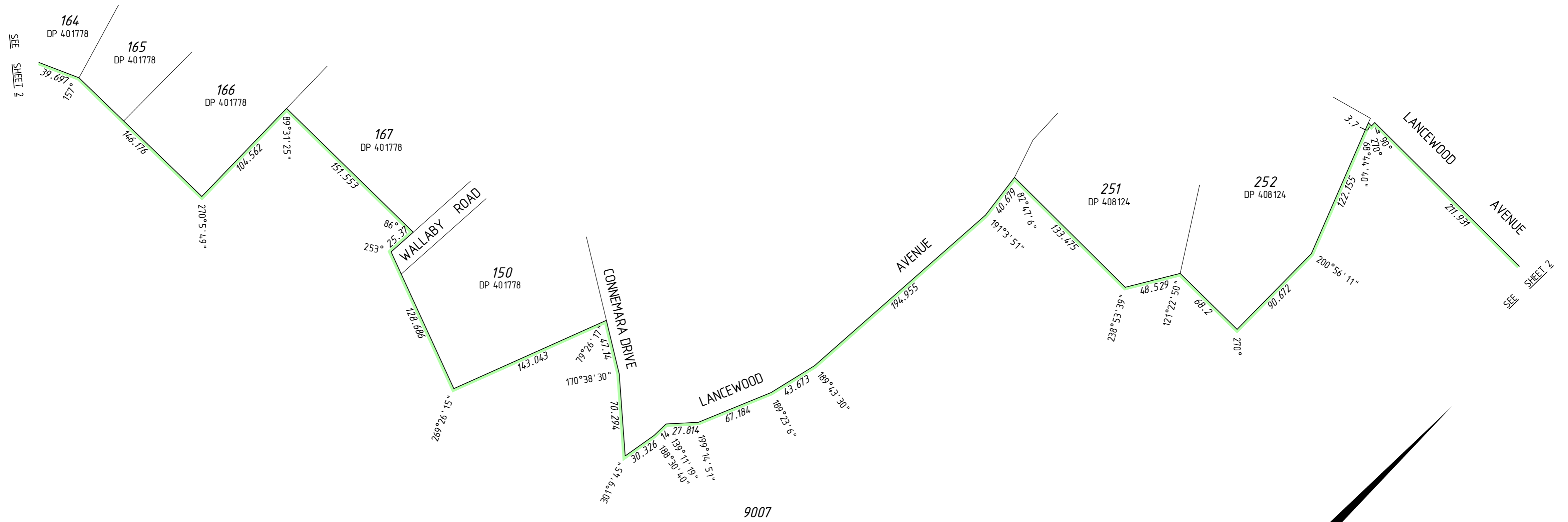


SEE SHEET 11

SEE SHEET 12







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MNG Ref : 92090dp-450g

VERSION NUMBER

2

DEPOSITED PLAN

424723

**Plan Information**

Tenure Type	Freehold
Plan Type	Deposited Plan
Plan Purpose	Subdivision

**Plan Heading**

Lots 297-309, 317-319, Easements, Roads and Restrictive Covenant

**Locality & Local Government**

Locality	Brigadoon
Local Government	City of Swan

**Department of Planning, Lands and Heritage**

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

**Examination**

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

**Planning Approval**

Planning Authority	Western Australian Planning Commission
Reference	156399

Delegated under S. 16 P&D Act 2005	Date
------------------------------------	------

**In Order For Dealings**

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

For Inspector of Plans and Surveys	Date
------------------------------------	------

**Plan Approved** Reg. 26A (1),(4)

Inspector of Plans and Surveys / Authorised Land Officer	Date
--	------

**Survey Details**

Field Records	107614, 109441
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**

<b>Approved Variation Type</b>	<b>Reference</b>
REG 26A(1) FINAL MARKING DEFERRED	(Approved ID D130-22 Dated 21 September 2022, Landgate File 06909-2021/002)

**Survey Certificate - Regulation 54**

I, Nigel J. SIMPSON 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.

<b>FINAL</b>	
Licensed Surveyor	Date

**Survey Organisation**

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Email	info@mngsurvey.com.au
Reference	92090dp-451e

**Amendments**

Version	Lodgement Type	Amendment Description	Authorised By	Date

**Former Tenure**

New Lot / Land	Parent Plan Number	Parent Lot Number	Title Reference	Subject Land Description
297-309, 317-319	DP 424723	PT LOT 9500		

**Former Tenure Interests and Notifications**

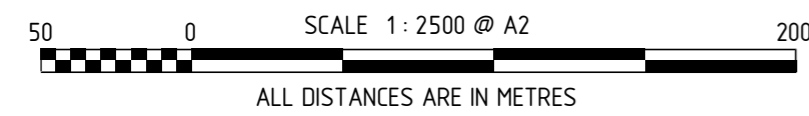
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Ⓡ	RESTRICTIVE COVENANT	SEC 129BA OF THE TLA 1893	DOC 0196653	LOT 309	ELECTRICITY NETWORKS CORPORATION	
Ⓢ	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC 0196659	LOTS 317-319	CITY OF SWAN AND THE PUBLIC AT LARGE	PUBLIC ACCESS FOR FIRE EMERGENCY PURPOSES
Ⓢ1, Ⓢ2	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC 0196659	LOTS 318 & 319	CITY OF SWAN AND THE PUBLIC AT LARGE	PUBLIC ACCESS FOR FIRE EMERGENCY PURPOSES

**New Interests**

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
Ⓢ3a	EASEMENT (Drainage)	SEC 167 OF THE P&D ACT 2005 REG 33 (a)	THIS PLAN	LOTS 298 & 309	CITY OF SWAN	
Ⓢ1, Ⓢ2	RIGHT OF CARRIAGEWAY	SEC 136C OF THE TLA 1893	THIS PLAN	LOT 318	LOT 319	
Ⓢ1, Ⓢ2	RIGHT OF CARRIAGEWAY	SEC 136C OF THE TLA 1893	THIS PLAN	LOT 319	LOT 318	
	RESTRICTIVE COVENANT	SEC 136D OF THE TLA 1893	THIS PLAN & DOC	ALL LOTS	ALL LOTS	
Ⓡ	RESTRICTIVE COVENANT	SEC 129BA OF THE TLA 1893	DOC	LOT 306	ELECTRICITY NETWORKS CORPORATION	FIRE RISK ZONE
Ⓢ	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC	LOT 305	CITY OF SWAN AND THE PUBLIC AT LARGE	PUBLIC ACCESS FOR FIRE EMERGENCY PURPOSES

**New Notifications and Memorials**

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
Ⓡ	NOTIFICATION	SEC 70A OF THE TLA 1893	DOC	LOT 306		NOISE BUFFER
	NOTIFICATION	SEC 70A OF THE TLA 1893	DOC	LOTS 300 & 301		ENVIRONMENT & CULTURAL CONCERNS
	NOTIFICATION	SEC 70A OF THE TLA 1893	DOC	ALL LOTS		BRIDGADOON STRUCTURE PLAN
	NOTIFICATION	SEC 70A OF THE TLA 1893	DOC	ALL LOTS		NO SEWERAGE
	NOTIFICATION	SEC 165 OF THE P. & D. ACT 2005	DOC	ALL LOTS		BUSHFIRE MANAGEMENT PLAN



MNG Ref : 92090dp-451e - Stage 9 - DP424724.CSD

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SURVEY SHEET

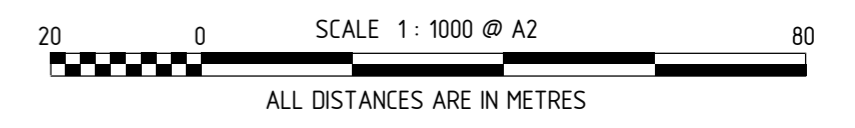
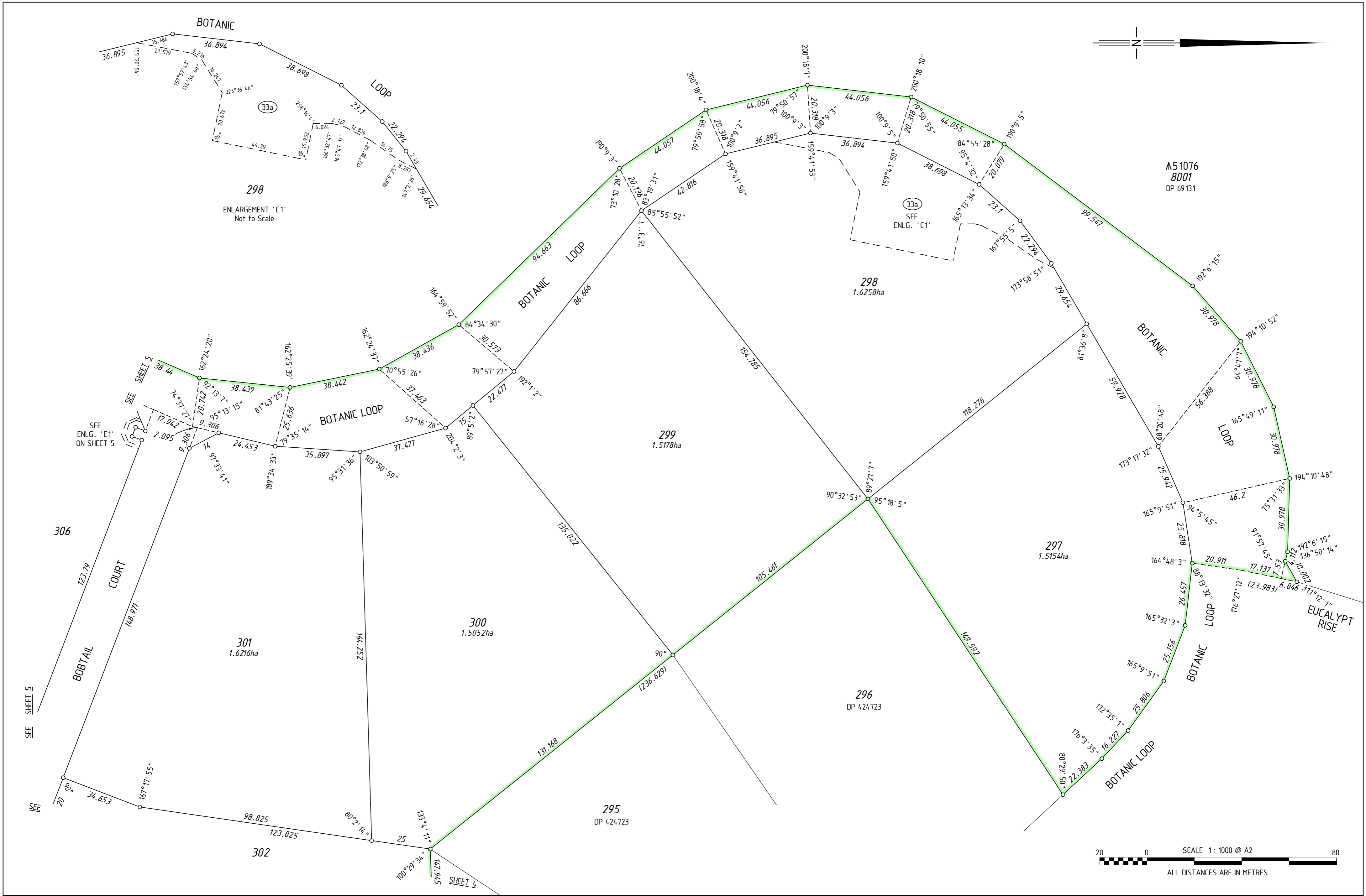
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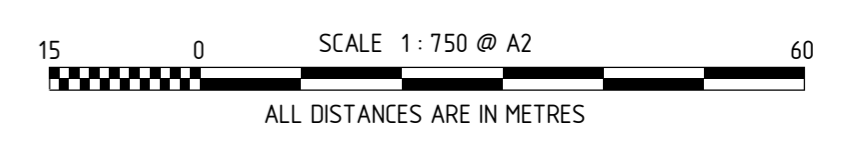
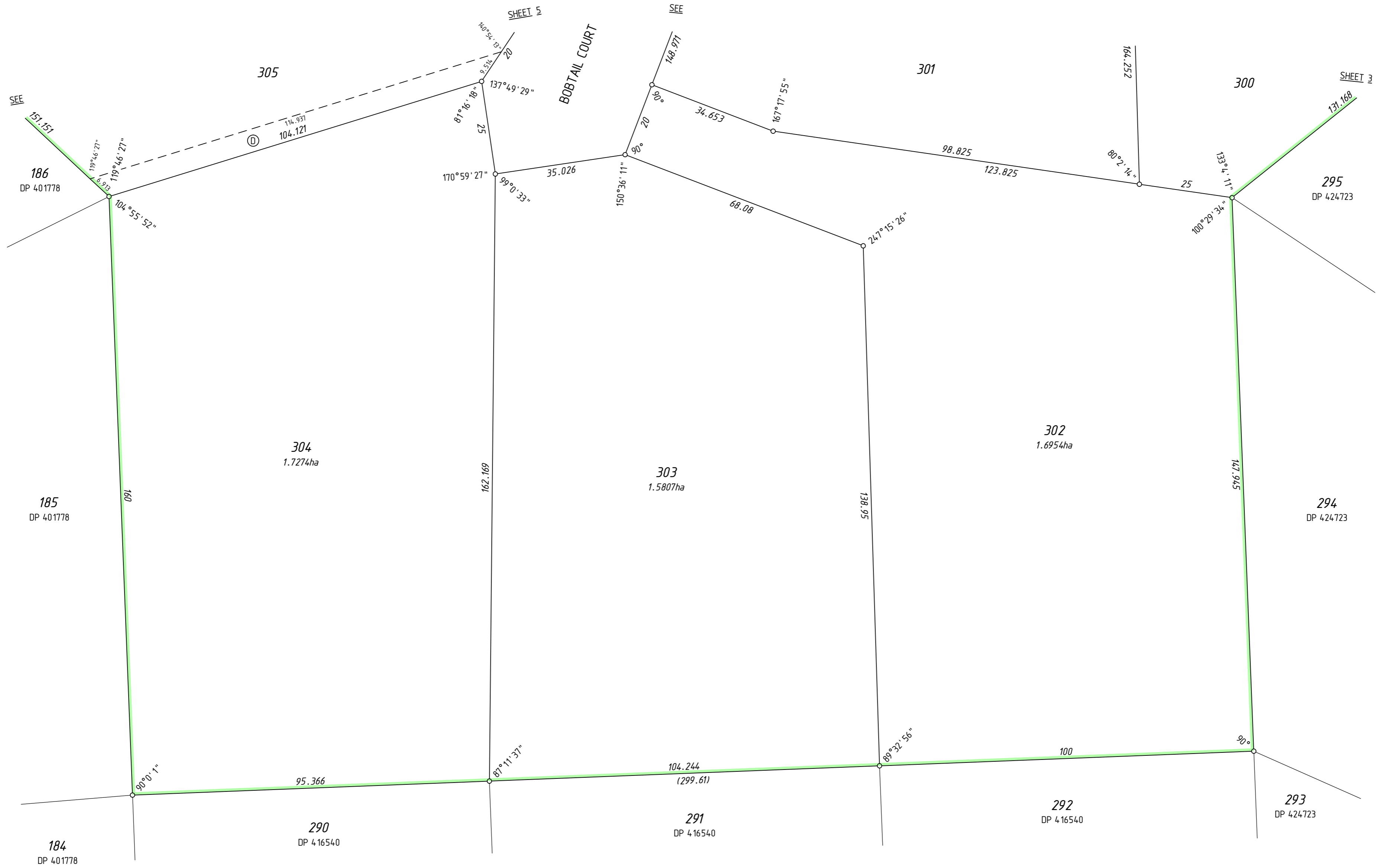
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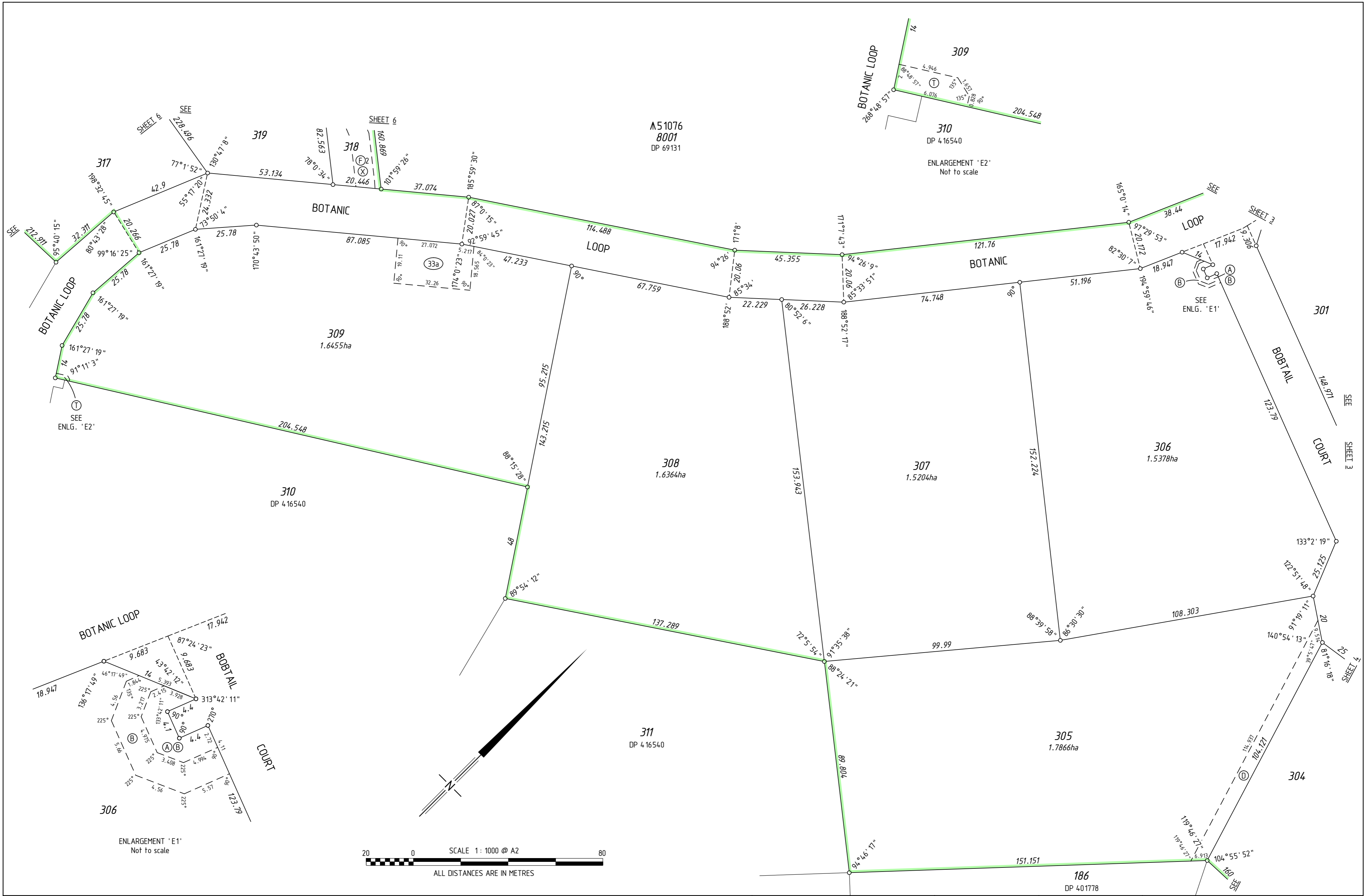
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424724



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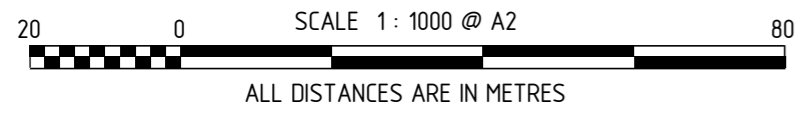


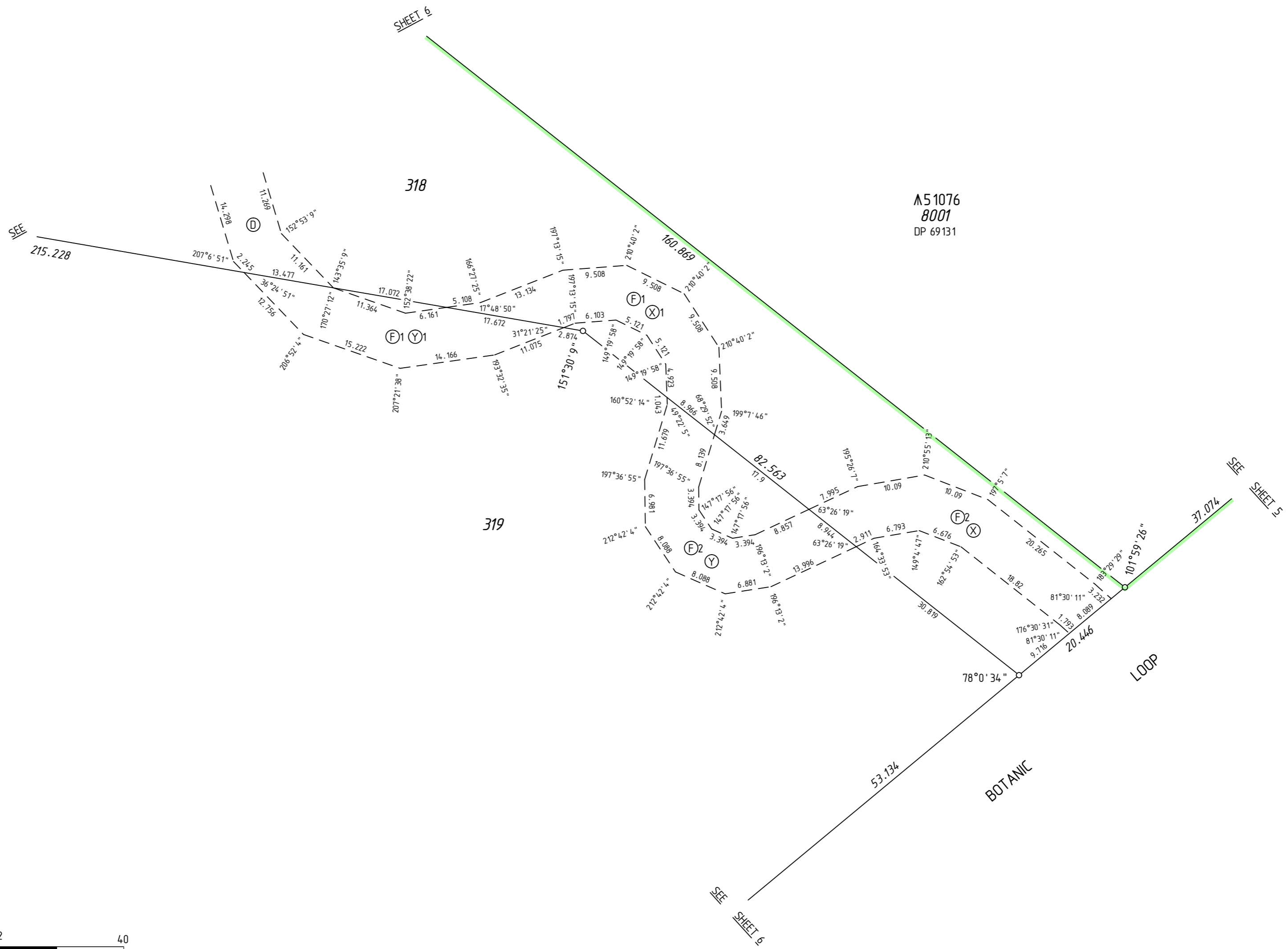




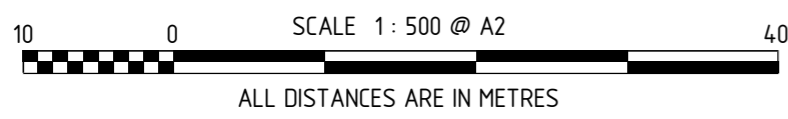


Λ5 1076  
8001  
DP 69131





A51076  
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MNG Ref : 92090dp-451e

VERSION NUMBER

1

DEPOSITED PLAN  
**424724**

**Plan Information**

Tenure Type	Freehold
Plan Type	Deposited Plan
Plan Purpose	Subdivision

**Plan Heading**

Lot 124, 9008, Road and Restrictive Covenant

**Locality & Local Government**

Locality	Brigadoon
Local Government	City of Swan

**Department of Planning, Lands and Heritage**

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

**Examination**

Examined	Date
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**Planning Approval**

Planning Authority	Western Australian Planning Commission
Reference	156399

Delegated under S. 16 P&D Act 2005	Date
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**In Order For Dealings**

Subject To	
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For Inspector of Plans and Surveys	Date
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**Plan Approved** Reg. 26A (1),(4)

Inspector of Plans and Surveys / Authorised Land Officer	Date
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**Survey Details**

Field Records	107614, 109441
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**

<b>Approved Variation Type</b> REG 26A(1) FINAL MARKING DEFERRED	<b>Reference</b> (Approved ID D131-22 Dated 21 September 2022, Landgate File 06909-2021/002)
---	---

**Survey Certificate - Regulation 54**

I, Nigel J. SIMPSON 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
-------------------	------

**Survey Organisation**

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Reference	92090dp-452d

**Amendments**

Version	Lodgement Type	Amendment Description	Authorised By	Date
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**Former Tenure**

New Lot / Land	Parent Plan Number	Parent Lot Number	Title Reference	Subject Land Description
124, 9008	DP 424723	PT LOT 9007		

**Former Tenure Interests and Notifications**

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
Ⓒ	EASEMENT		DOC E983810	LOT 9008	WATER AUTHORITY OF WESTERN AUSTRALIA	
Ⓐ, Ⓑ	EASEMENT	SEC 195 & 196 OF THE LAA 1997	DOC N378213	LOT 9008	CITY OF SWAN AND THE PUBLIC AT LARGE	PUBLIC ACCESS

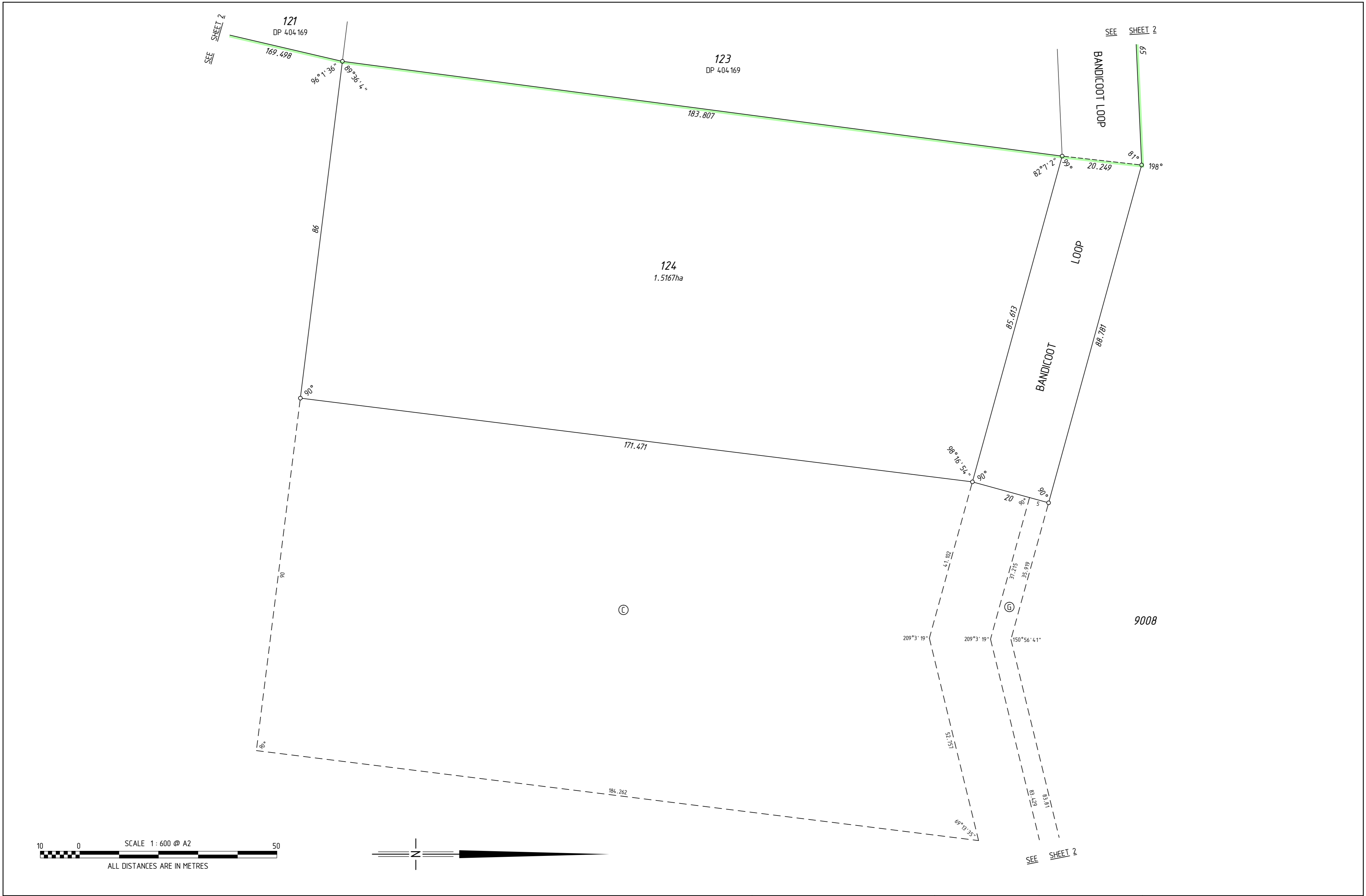
**New Interests**

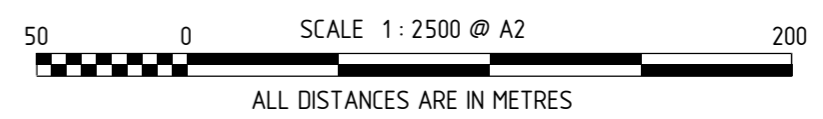
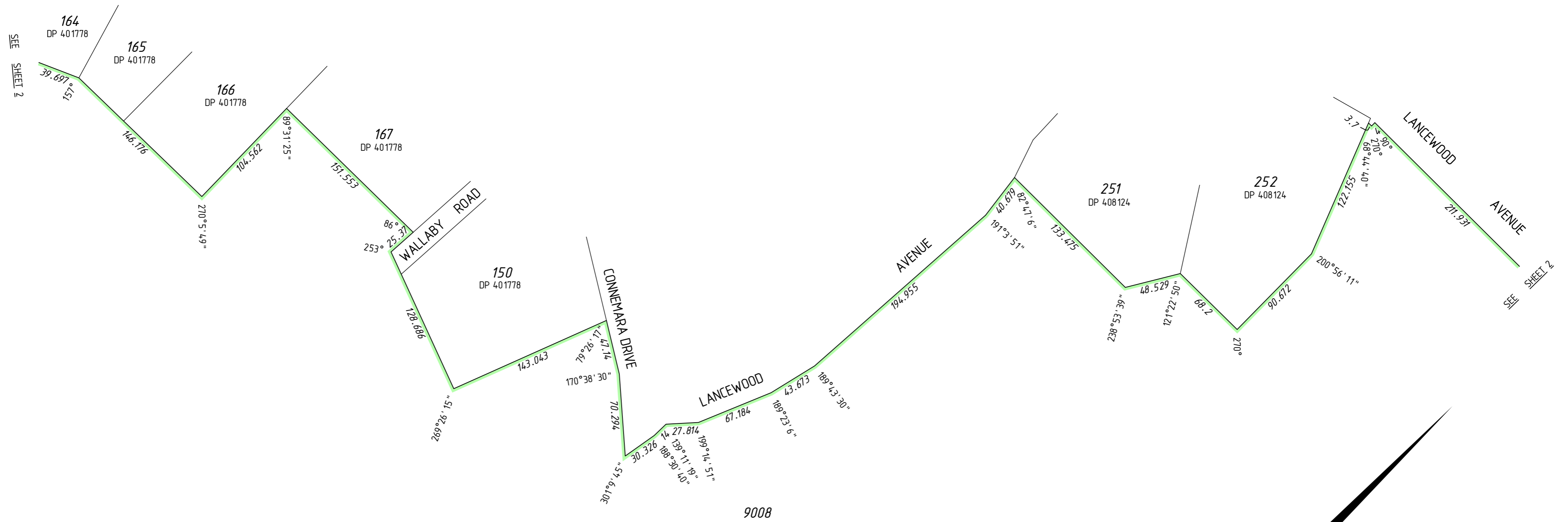
Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
	RESTRICTIVE COVENANT	SEC 136D OF THE TLA 1893	THIS PLAN & DOC	LOT 124 AND THE PORTION OF LOT 9008 LABELLED Ⓒ	LOT 124 AND THE PORTION OF LOT 9008 LABELLED Ⓒ	

**New Notifications and Memorials**

Subject	Purpose	Statutory Reference	Origin	Land Burdened	Benefit To	Comments
	NOTIFICATION	SEC 70A OF THE TLA 1893	DOC	LOT 124		BRIGADOON STRUCTURE PLAN
	NOTIFICATION	SEC 70A OF THE TLA 1893	DOC	LOT 124		NO SEWERAGE
	NOTIFICATION	SEC 165 OF THE P. & D. ACT	DOC	LOT 124		BUSHFIRE MANAGEMENT PLAN







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MNG Ref : 92090dp-452d

VERSION NUMBER

1

DEPOSITED PLAN  
**424900**



## APPENDIX D – BUSHFIRE MANAGEMENT PLAN

# Bushfire Management Plan

## Proposed Subdivision Avon Ridge Estate

Connemarra Drive, Brigadoon  
City of Swan



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Prepared For:  
**Corrib Developments**  
13 October 2022  
Version 2.0

[bushfiresafetyconsulting.com.au](http://bushfiresafetyconsulting.com.au)

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## Document Information

Prepared for: Corrib Developments  
Project Name: Special Rural Subdivision, Avon Ridge Estate, Brigadoon  
Address: Connemara Drive, Brigadoon WA 6069  
Prepared by: Rohan Carboon  
Bushfire Safety Consulting Pty Ltd

I hereby declare that I am a BPAD accredited bushfire practitioner.	
Accreditation No.	23160
Signature	
Date	13/10/2022



## Document Control

Bushfire Management Plan – Avon Ridge Estate, Brigadoon			
REPORT VERSION	PURPOSE	AUTHOR/REVIEWER AND ACCREDITATION DETAILS	DATE SUBMITTED
V1.0	Draft for Review	Rohan Carboon (Level 3 BPAD 32160) Dr Karen Brown (Level 2 BPAD 48364)	26/09/2022
V2.0	Final for subdivision clearance	Rohan Carboon (Level 3 BPAD 32160)	13/10/2022

Front cover photo: Subdivision Plan

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## EXECUTIVE SUMMARY

This revised Bushfire Management Plan (BMP) has been updated to satisfy condition 14 of WAPC Application number: 156399 for the progress of the staged development of the Avon Ridge Estate Special Rural Development (Avon Ridge Estate). The site is located in Brigadoon approximately 12 kilometres north of the Midland Regional Centre and 30 kilometres northeast of the Perth CBD.

This assessment reflects condition 14(a) and confirms building envelopes within each lot can achieve BAL-29 and lower and be a minimum of 1300m<sup>2</sup> in area. The classified vegetation has been re-assessed and classified consistent with adjacent undisturbed vegetation which is usually Class A forest. All road verge vegetation has been re-classified as Class A forest. The strategic firebreak remains in the same position and was used extensively for fire suppression access during the Woorloo bushfire of February 2021. The nature of the terrain is challenging and full compliance with version 1.4 of the Guidelines is achieved where it can be based on previously approved plans.

The Avon Ridge Estate consists of a special rural subdivision of 214 lots over 450 hectares (ha) (referred to as 'the site'), with lot sizes ranging from 1.5 ha to 5.1 ha. The southern portion of Avon Ridge Estate has been subdivided and developed into rural residential lots, however the remaining undeveloped portions of Avon Ridge Estate are currently under construction and this assessment focusses on these undeveloped lots. The site being assessed is shown in Figure 1.

A Fire Management Plan (FirePlan WA 2013) was originally prepared to support the existing subdivision approval, however it was prepared prior to the release of the state government's bushfire management framework in December 2015.

The site is extensively vegetated with eucalypt forest and the overall development has been subject to a number of historic environmental and planning approvals which place restrictions on the amount of clearing that can be undertaken within the development, in particular those pursuant to the federal Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Corrib have developed an offset package to mitigate potential impacts on conservation significant values and accordingly lot owners are permitted to clear vegetation (excluding habitat areas and significant trees identified for retention) within their lot to facilitate development within the designated 'building envelope areas' (BEAs) and the associated Asset Protection Zone (APZ) requirements. At completion, all lots can accommodate a dwelling exposed to BAL-29 or lower and the subdivision can be fully achieved. This is outlined further in Section 5.

While there are restrictions on the location of dwellings and outbuildings (restricted to the BEAs), future lot owners will have an ability to modify vegetation within their lot in order to achieve necessary asset protection zone (APZ) requirements. The specific location of the APZ (and associated vegetation modification) will be determined as part of a lot-specific Bushfire Attack Level (BAL) assessment and will be based on the dwelling location. However, for the purposes of this BMP, and to demonstrate that dwellings can be located within the BEA and that a BAL rating of BAL-29 is not exceeded, it has been assumed that:

- All vegetation within the lot is able to achieve 'low threat' through clearing and/or modification
- Vegetation within the surrounding lots and public open space/parks and recreation reserves is unmodified, providing a worst-case assessment of likely bushfire hazards.

Through this approach, the BMP has been able to demonstrate that no matter where the dwelling is located in the BEA, vegetation can be modified within the lot to achieve the necessary setbacks to ensure a BAL rating of BAL-29 is not exceeded at future dwellings (without relying on vegetation being modified in adjacent lots).

An interconnected public road network is provided within the site and as part of the broader development to facilitate the movement of people and emergency appliances, with access to existing public roads, Campersic Road to the south via Connemara Drive, and O'Brien Road to the east via Lancewood Avenue.

A strategic firebreak is being installed on a staged basis around the perimeter of Avon Ridge Estate, to provide access for firefighters in the event of a bushfire and/or to facilitate controlled burns (which form part of the broader management objectives for the development). The strategic firebreak is upgraded to Fires Service Access route where it can be to comply with the new guidelines.

A permanent reticulated water supply is provided and hydrants are spaced to minimum standards.

The measures to be implemented through the subdivision process have been outlined within this BMP and align with historic measures for the development, which are already in the process of being implemented.

In particular, future dwellings can be located within the designated BEAs and are able to achieve a BAL rating of BAL-29 or less, and is based on vegetation modification and fuel load management only occurring within the lot itself. Specific APZ requirements will be determined through a lot-specific BAL assessment completed to support the building licence process (and will be based on the precise location and design of any proposed dwelling).

The developer is responsible for ensuring requirements for the provision of water and vehicular access are met.

It is expected that the implementation of this BMP will reduce the threat to residents, the public and fire fighters in the area addressed by this BMP. The proposal complies with the *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP 3.7)* and the *Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 V1.4)*.

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## APPENDICES

- Appendix 1: Asset Protection Zone Standards
- Appendix 2: Vehicular Access Technical Requirements
- Appendix 3: City of Swan Fire Control Notice
- Appendix 4: Fire Service Access Signage

## 1 PROPOSAL DETAILS

This Bushfire Management Plan (BMP) has been prepared to revise the proposed subdivision application, in accordance with WAPC application number 156399, condition 14 for Avon Ridge Estate Special Rural Development (Avon Ridge Estate) (herein referred to as ‘the site’). The site is located approximately 12 kilometers north of the Midland Regional Centre and 30 kilometres northeast of the Perth CBD.

The development site assessed is proposed to be subdivided into 77 residential lots, ranging from 1.5ha to 5.1ha in size. The southern portion of Avon Ridge Estate has been subdivided and developed into rural residential lots.

The area of Avon Ridge Estate subject to this revised BMP is shown in Figure 1. During the staging of the subdivision, compliance with SPP 3.7 and the guidelines will be achieved.

The Avon Ridge Estate is located on the Darling Scarp and is bound to the north by Walyunga National Park, and a mix of existing rural and rural residential development to the east and south. The Swan River and a railway reserve are located to the west of the development. A number of public roads exist within the vicinity of the development, including Campersic Road to the south and O’Brien Road to the east (Figure 2).

All lots will have direct driveway access onto a public road that links to Connemara Drive and O’Brien Road where access is provided to the west/east and north/south on the public roads.

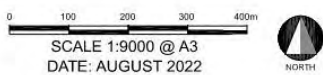
The area will be reticulated, with scheme water provided and fire hydrants within regulated access.

This BMP addresses future subdivision conditions by providing responses to the performance criteria in the *Guidelines for Planning in Bushfire Prone Areas V1.4* (WAPC *et al.* 2021).



Location details: Stages Pt 5, 8 & 9 Avon Ridge  
Brigadoon  
Assessment date: August, 2022  
Prepared by: Bushfire Safety Consulting  
Accreditation level: Level 3 BPAD Practitioner  
Accreditation number: BPAD 23160  
Accreditation expiry date: 31st January, 2023  
Date aerial photo: May 2022

FIGURE 1  
SUBDIVISION PLAN



LEGEND  
SUBJECT LAND

SOURCE OF PHOTOGRAPHY: NEARMAP

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Location details: Stages Pt 5, 8 & 9 Avon Ridge  
 Brigadoon  
 Assessment date: August, 2022  
 Prepared by: Bushfire Safety Consulting  
 Accreditation level: Level 3 BPAD Practitioner  
 Accreditation number: BPAD 23160  
 Accreditation expiry date: 31st January, 2023  
 Date aerial photo: May 2022

**FIGURE 2**  
**SITE LOCATION PLAN**

0 100 200 300 400m  
 SCALE 1:50 000 @ A4  
 DATE: AUGUST 2022

NORTH

**LEGEND**

SUBJECT LAND

Base mapping supplied by Nearmap & Google Maps

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## Policy and Guidelines

### 1.1 Application of SPP 3.7

The *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP 3.7)* provides the foundation for land use planning to address bushfire risk management in Western Australia. It is used to inform and guide decision makers, referral agencies and land owners/ proponents to help achieve acceptable bushfire protection outcomes.

The policy contains objectives and policy measures as well as reference to the bushfire protection criteria, as outlined in the *Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 V1.4; the 'Guidelines')*. The policy applies to this subdivision proposal because the subdivision application is in a designated bushfire prone area on the WA Map of Bushfire Prone Areas (see Figure 3).

The following policy measures will need to comply with SPP 3.7:

*Table 1. Policy measures*

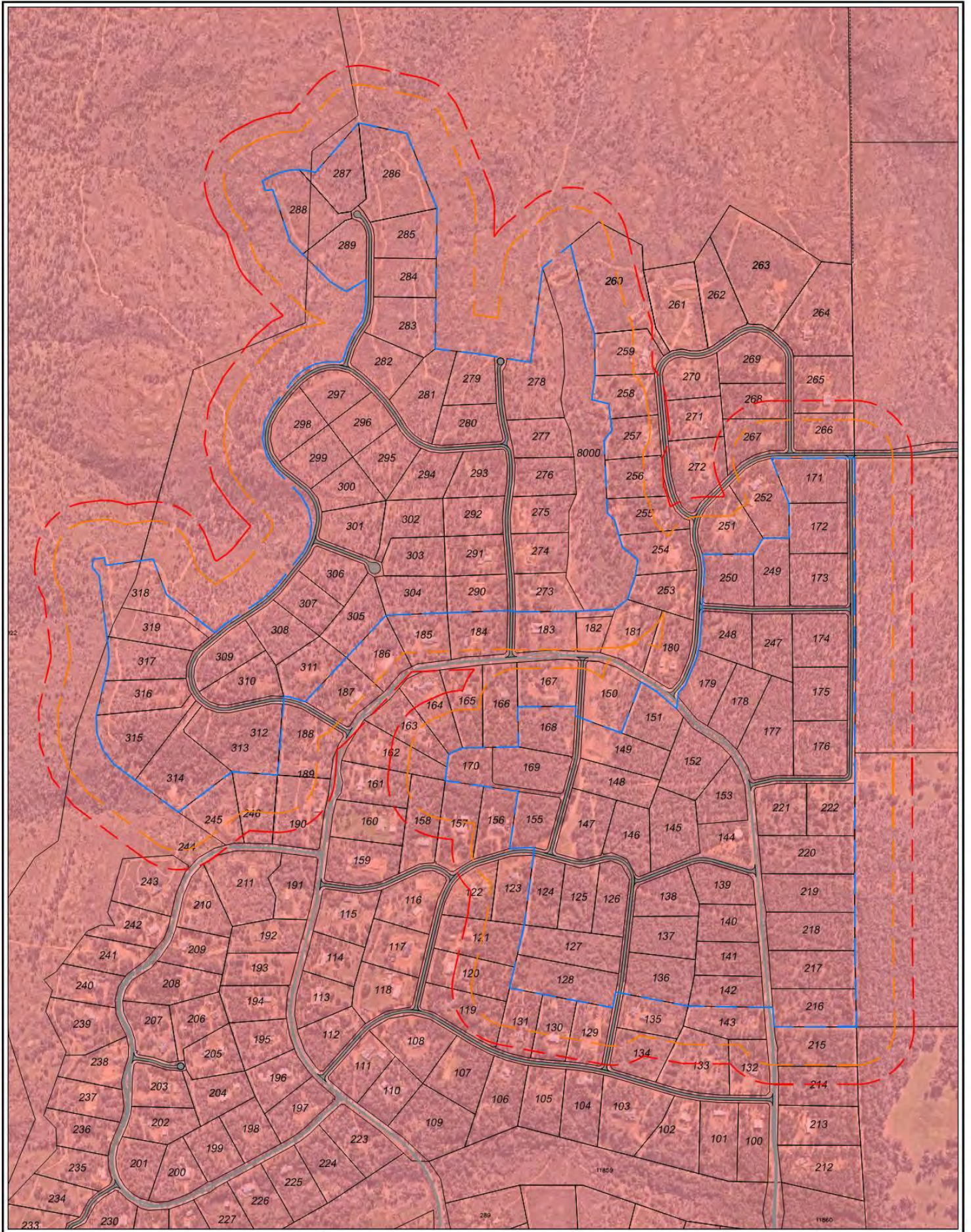
<b>Policy Measure 6.2</b>	The subdivision application is located within a designated bushfire prone area and will have a Bushfire Hazard Level above low and a Bushfire Attack Level rating above BAL-LOW.
<b>Policy Measure 6.4</b>	Policy 6.4 applies meaning the subdivision proposal will be accompanied by: <ul style="list-style-type: none"> <li>- BAL Contour Plan</li> <li>- Lot specific BAL ratings</li> <li>- Identification of relevant issues; and</li> <li>- Demonstration of compliance with the guidelines</li> </ul>

The subdivision proposal does not propose vulnerable or high-risk land use and is not considered as minor or unavoidable development under *SPP 3.7*.

### 1.2 Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)

The requirements of The Department of Planning - *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)* are accommodated within this BMP.

The Guidelines are intended to inform and guide decision makers, referral authorities and proponents to achieve acceptable bushfire protection outcomes, including expectations at the different stages of planning.



Location details: Stages Pt 5, 8 & 9 Avon Ridge  
Brigadoon

Assessment date: August, 2022

Prepared by: Bushfire Safety Consulting

Accreditation level: Level 3 BPAD Practitioner

Accreditation number: BPAD 23160

Accreditation expiry date: 31st January, 2023

Date aerial photo: May 2022

**FIGURE 3**  
**BUSHFIRE PRONE AREAS**

0 100 200 300 400m

SCALE 1:9000 @ A3  
DATE: AUGUST 2022

NORTH

**LEGEND:**

- SUBJECT LAND
- ASSESSMENT AREA (150m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE
- ASSESSMENT AREA (75m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE
- BUSHFIRE PRONE AREAS

SOURCE OF PHOTOGRAPHY: NEARMAP

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## 2 ENVIRONMENTAL CONSIDERATIONS

The site is extensively vegetated and has been identified to contain a number of environmental values that require protection and/or management as part of future development within the site. These values include:

- Remnant native vegetation, the majority of which is in ‘very good’ or ‘good’ condition. Areas of ‘pristine’ and ‘excellent’ vegetation are proposed for retention
- Priority flora, which is proposed for retention
- Foraging and potential breeding habitat for the three federally protected black cockatoo species
- Waterways and associated buffers
- Conservation category wetlands and associated buffers
- Aboriginal heritage sites.

Overall, the site has been subject to a number of historic environmental and planning approvals which dictate vegetation retention and management considerations within the site and relate to the protection or minimisation of impacts on the values identified above. In particular, the development is subject to federal environmental approval pursuant to the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) which relates to the protection of habitat for the federally protected black cockatoo species.

With regard to bushfire management, the following is a key consideration and have been outlined further below:

- Modification and clearing of vegetation within the proposed development (including roads and strategic firebreaks, etc.) and future lots (including building envelopes, driveways, firebreaks, bushfire management measures etc.)
- Retention of vegetation and revegetation within areas of conservation significance.

## **2.1 Native Vegetation – modification and clearing**

Within the site, clearing and vegetation modification is permitted in accordance with the following:

- Clearing undertaken by the proponent for subdivision, which includes clearing for roads, infrastructure (such as power and water), lot boundaries, lot firebreaks and strategic firebreaks.
- Clearing undertaken by the future lot purchaser, which includes clearing for building envelopes (associated with the dwelling and outbuildings, with no more than 10% of the gross lot area to a maximum of 2000m<sup>2</sup> clear felled), driveways and asset protection zones.

Bushfire management requirements have been considered as part of the above, and is detailed below.

### **2.1.1 Clearing undertaken by the proponent**

As part of implementing the subdivision, Corrib will undertake typical subdivision works to support development which includes the clearing of vegetation to support the installation of public roads and public infrastructure (such as power, water and telecommunications). In addition, Corrib will install the internal lot firebreak for future private lots (which will be maintained in perpetuity by the lot purchaser), and a number of strategic perimeter firebreaks throughout the development, which are intended to support firefighting/controlled burn activities.

### **2.1.2 Clearing undertaken by the purchaser**

Overall, construction of dwellings and outbuildings is restricted to the 'building envelope areas' (BEAs), with clearing of vegetation permitted within this area (excluding habitat areas, areas of 'pristine' or 'excellent' condition vegetation and significant trees identified for retention where they occur within the BEA). The BEAs have been designated over all lots in the site to protect environmental values such as creek lines and creek line buffers, areas of 'pristine' and 'excellent' condition vegetation, known and potential priority flora locations and potential black cockatoo breeding habitat. The BEAs are also based on achieving the minimum setbacks from nearby lots, in accordance with the structure plan and City of Swan requirements.

The provisions of the structure plan (as endorsed by the City of Swan) state that final building envelopes (i.e. the footprint for the future dwelling and associated outbuildings within the BEA) are to be 'no more than 10% of the Gross Lot Area to a maximum of 2000m<sup>2</sup>'. Corrib provide a service to purchasers to have the building envelope and asset protection zone (APZ) within their lot inspected by a qualified bushfire consultant (at Corrib's cost) to ensure compliance prior to the commencement of any clearing within the lot. Generally, vegetation within the BEA can be cleared, while outside of this, vegetation modification should be restricted to the minimum necessary to achieve 'low threat' vegetation standards (where it is required to achieve the asset protection zone requirements).

To assist the development to comply with both the environmental approval requirements and bushfire management requirements, Corrib have instigated the following process:

- BEAs are designated within the subdivision and are based on minimising impacts on environmental values.
- Following purchase of a lot, the qualified bushfire consultant (engaged by Corrib on behalf of the purchaser) meets with the purchaser to determine the site-specific requirements of the lot. This is documented in a Bushfire Management Statement to support planning approval and assist the owner to understand their ongoing obligations.
- The dwelling is designed, with the buildings and associated outbuildings (i.e. sheds etc.) to cover no more than 10 % of the Gross Lot Area to a maximum of 2000m<sup>2</sup> (i.e. within the BEA).
- Based on the dwelling design, the asset protection zone (the extent of vegetation modified and/or removed) is determined in consultation with the bushfire consultant. This will be sized to ensure a BAL rating of BAL-29 or less is achieved.
- Vegetation clearing and modification is completed by the purchaser. The lot specific BAL assessment is then certified to support the building licence.
- Purchaser maintains the asset protection zone in perpetuity, with vegetation clearing / modification restricted to this area.

## **2.2 Re-vegetation/ Landscape Plans**

Extensive native vegetation will be retained within private lots, with restrictions on the level of clearing within the site and broader Avon Ridge Estate, as outlined above. Further to this a single large area of public open space is identified in the central portion of the site, which has been located to retain and protect areas of significant vegetation, a waterway (and associated buffer), and Aboriginal heritage values.

In addition to the retention of vegetation values within the site, a total of 88,000 seedlings were planted by the previous landowner / developer as required by the conditional EPBC Act approval. Revegetation will be targeted to within the Parks and Recreation Reserve west of the site to optimise the success of plant establishment and survival.

The revegetation works west of the site does not increase the bushfire risk to future dwellings within the site given these revegetation areas are located more than 100 m from the site, and vegetation within 100 m of the site is not expected to change or be modified. Furthermore, vegetation retained within private lots and vegetation that will regenerate naturally in road reserves have been assumed to pose a long-term bushfire hazard to the site and individual lots. In general, the BAL assessment completed to support this BMP assumes all vegetation outside the individual lot will remain in its existing and regenerated condition (and therefore does not include any consideration of the vegetation clearing or modification that all lots will be subject to, as outlined above) in order to provide a worst-case assessment of bushfire hazard.

### **3 BUSHFIRE ASSESSMENT RESULTS**

Bushfires are common in the City of Swan and a large landscape scale bushfire impacted areas of Avon Ridge Estate in February 2021. This bushfire destroyed 86 homes in the broader Gidgegannup area and all homes in Avon Ridge were saved. The estate will experience more bushfires in the future, hence this BMP plays a critical role in ensuring that the development of the land appropriately mitigates the risk from bushfire from the surrounding vegetation.

#### **3.1 Assessment Inputs**

The methodology used to assess the site is outlined in the *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)*. The lot layout is known, and a strategic level bushfire hazard assessment is not required. A BAL Contour map is provided in accordance with Appendix 3 of the guidelines.

Assessing bushfire threat at the site-specific level requires evaluating the predominant class of vegetation on the site and surrounding area for a minimum of 150 m, as shown in the Vegetation Classification Map (Figure 4).

##### **3.1.1 Vegetation Classification**






An assessment of existing vegetation within and 150 m surrounding the site was undertaken in accordance with AS 3959 and the Guidelines on 7<sup>th</sup> September 2022. Table 1 below outlines the type of vegetation currently within and surrounding the site, and the classification of this vegetation in accordance with Section 2.2.3 and Table 2.3 of AS 3959. The existing vegetation classifications within and surrounding the site are shown in Figure 4.

A number of lots already contain dwellings within the site and Asset Protection Zones and the mapping in Figure 4 reflects the overall assumptions for the BAL assessment in which each lot has been assessed individually, assuming only vegetation within the lot can be modified while the vegetation in the surrounding lots remains unmodified.

Given the scale of the site and in particular the extent of classified vegetation within and surrounding the site, no specific 'effective slope numbers' have been used to identify individual plots because the same area of vegetation can have different effective slopes for different and adjacent dwellings. Plots of classified vegetation is clearly identified on the vegetation classifications in Figure 4. Individual dwelling plots and effective slopes are re-assessed as part of future building licence stage BAL assessments, in order to identify and describe the areas of classified vegetation impacting on each individual dwelling, and will be more relevant to informing the BAL ratings for future dwellings.






Much of the site was impacted by the Wooroloo bushfire and vegetation classifications have been assessed from aerial photography pre-bushfire which provides a more realistic assessment of eucalypt canopy cover.




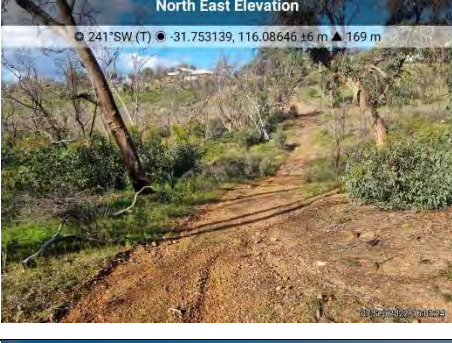

The vegetation plots on and surrounding the site and within 150 metres of the site boundary are found in Figure 4 with plot descriptions below.






<p><b>Photo ID: 1</b></p> <p><b>Plot Number: 1</b></p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b></p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	
<p><b>Photo ID: 2</b></p> <p><b>Plot Number: 1</b></p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b></p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	
<p><b>Photo ID: 3</b></p> <p><b>Plot Number: 1</b></p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b></p> <p>Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	
<p><b>Photo ID: 4</b></p> <p><b>Plot Number: 1</b></p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b></p> <p>Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	
<p><b>Photo ID: 5</b></p> <p><b>Plot Number: 1</b></p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b></p> <p>Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	






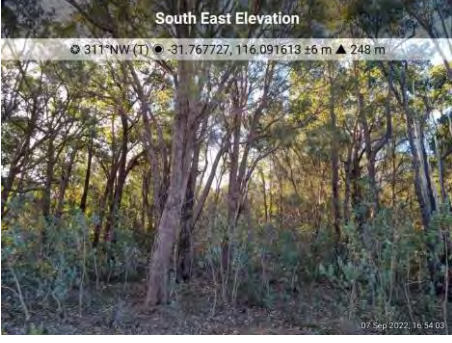
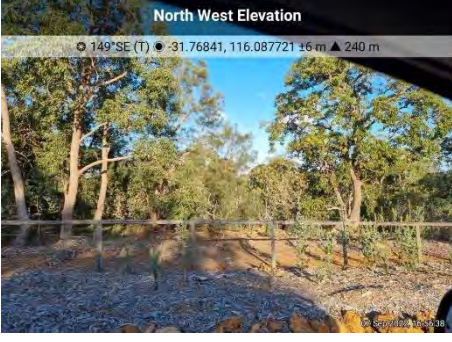

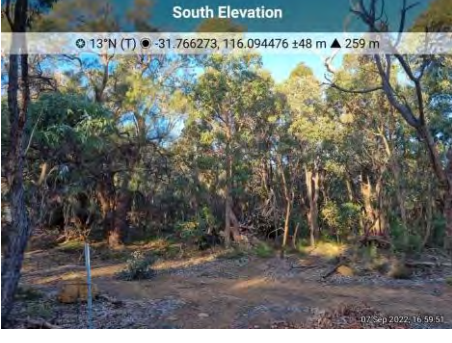

<p><b>Photo ID:</b> 6</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b></p> <p>Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>North East Elevation                  220°SW (T) • -31.754635, 116.078154 ±4 m ▲ 212 m</p>
<p><b>Photo ID:</b> 7</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b></p> <p>Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>North East Elevation                  41°NE (T) • -31.753222, 116.081332 ±4 m ▲ 216 m</p>
<p><b>Photo ID:</b> 8</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b></p> <p>Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>South West Elevation                  70°NE (T) • -31.75454, 116.083361 ±8 m ▲ 216 m</p>
<p><b>Photo ID:</b> 9</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b></p> <p>Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>South West Elevation                  40°NE (T) • -31.753613, 116.084707 ±6 m ▲ 214 m</p>
<p><b>Photo ID:</b> 10</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b></p> <p>Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>North East Elevation                  216°SW (T) • -31.753613, 116.084636 ±6 m ▲ 213 m</p>






<p><b>Photo ID:</b> 11</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b> Class A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>South West Elevation 42°NE (T) • -31.752493, 116.084624 ±6 m ▲ 206 m</p>
<p><b>Photo ID:</b> 12</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b> Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>89°E (T) • -31.753565, 116.081732 ±8 m ▲ 212 m</p>
<p><b>Photo ID:</b> 13</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b> Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>266°W (T) • -31.753351, 116.081137 ±4 m ▲ 217 m</p>
<p><b>Photo ID:</b> 14</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b> Class A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>North East Elevation 230°SW (T) • -31.74913, 116.082489 ±4 m ▲ 164 m</p>
<p><b>Photo ID:</b> 15</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b> Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>North East Elevation 232°SW (T) • -31.74778, 116.080802 ±32 m ▲ 182 m</p>



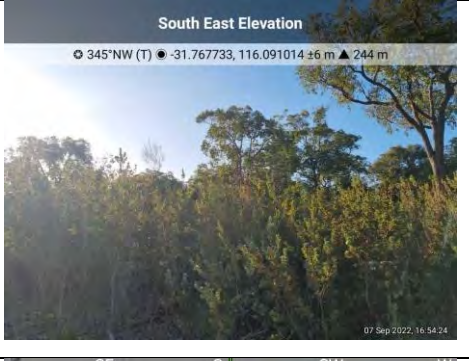

<p><b>Photo ID:</b> 16</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>North Elevation 222°SW (T) • -31.747761, 116.080224 ±6 m ▲ 178 m 07 Sep 2022, 15:40:22</p>
<p><b>Photo ID:</b> 17</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>South East Elevation 326°NW (T) • -31.75241, 116.085853 ±8 m ▲ 186 m 07 Sep 2022, 15:57:51</p>
<p><b>Photo ID:</b> 18</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>South East Elevation 309°NW (T) • -31.754865, 116.086638 ±6 m ▲ 196 m 07 Sep 2022, 15:59:51</p>
<p><b>Photo ID:</b> 19</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>North East Elevation 241°SW (T) • -31.753139, 116.08646 ±6 m ▲ 169 m 07 Sep 2022, 16:01:42</p>
<p><b>Photo ID:</b> 20</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	 <p>South East Elevation 328°NW (T) • -31.754741, 116.084941 ±6 m ▲ 217 m 07 Sep 2022, 16:05:18</p>

<p><b>Photo ID:</b> 21</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p>	
<p><b>Photo ID:</b> 22</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p>	
<p><b>Photo ID:</b> 23</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p>	
<p><b>Photo ID:</b> 24</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p>	
<p><b>Photo ID:</b> 25</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	

<p><b>Photo ID:</b> 26</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	
<p><b>Photo ID:</b> 27</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	
<p><b>Photo ID:</b> 28</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	
<p><b>Photo ID:</b> 29</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	
<p><b>Photo ID:</b> 30</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p>	

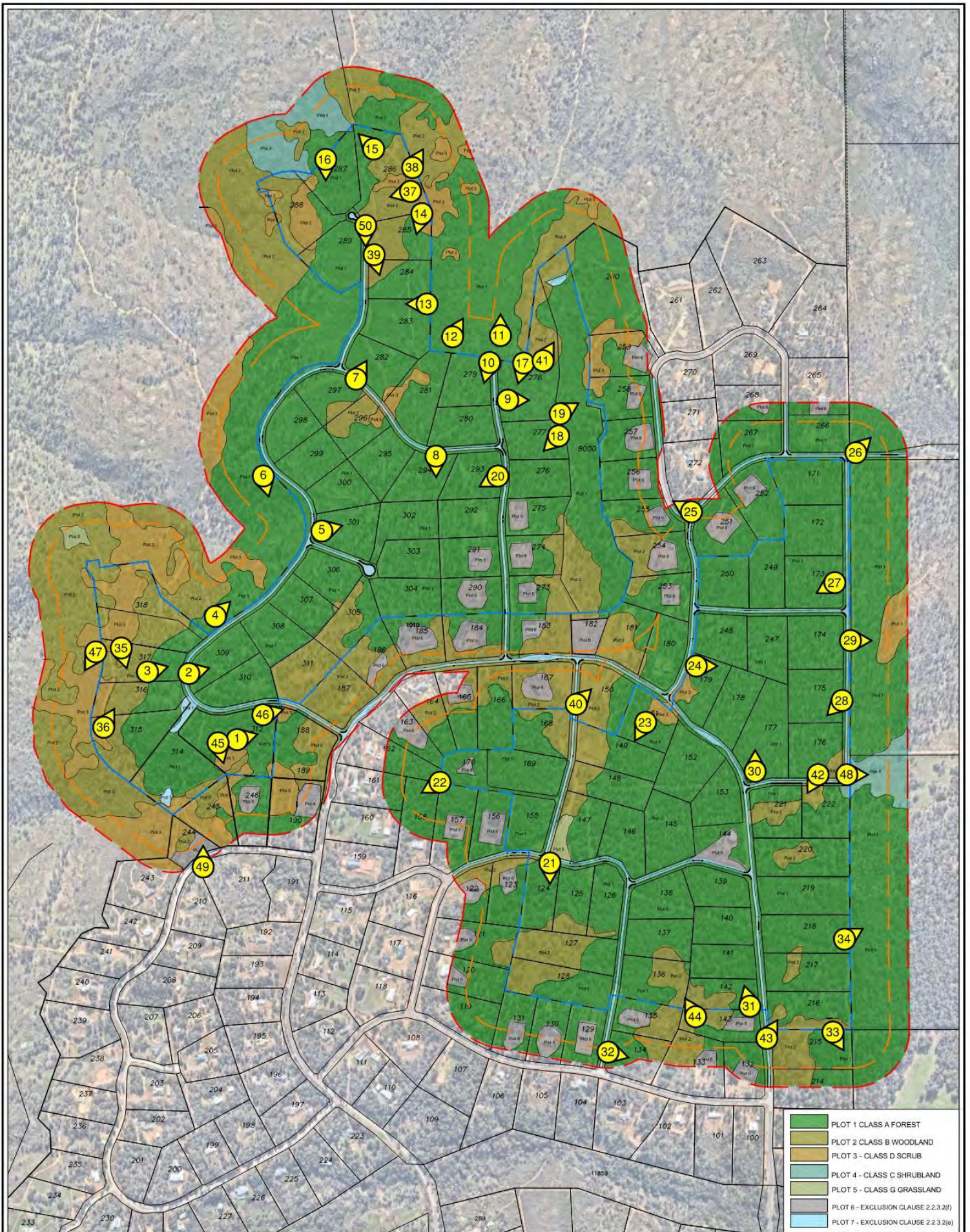
<p><b>Photo ID:</b> 31</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p>	
<p><b>Photo ID:</b> 32</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p>	
<p><b>Photo ID:</b> 33</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p>	
<p><b>Photo ID:</b> 34</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: A Forest</p> <p><b>Description/justification of classification:</b> Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p>	
<p><b>Photo ID:</b> 35</p> <p><b>Plot Number:</b> 2</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: B Woodland</p> <p><b>Description/justification of classification:</b> Wandoo eucalypt trees to 14m high; 10 – 30% foliage cover with grass understorey.</p>	

<p><b>Photo ID:</b> 36</p> <p><b>Plot Number:</b> 2</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: B Woodland</p> <p><b>Description/justification of classification:</b> Wandoo eucalypt trees to 14m high; 10 – 30% foliage cover with grass understorey.</p>	 <p>South Elevation 32°N (T) -31.759677, 116.07407 ±6 m ▲ 183 m</p>
<p><b>Photo ID:</b> 37</p> <p><b>Plot Number:</b> 2</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: B Woodland</p> <p><b>Description/justification of classification:</b> Open eucalypt canopy cover with trees to 10m high; re-growth eucalypt trees from Wooroloo fire, 10 – 30% foliage cover open and post fire.</p>	 <p>South East Elevation 340°NW (T) -31.749038, 116.082418 ±6 m ▲ 165 m</p>
<p><b>Photo ID:</b> 38</p> <p><b>Plot Number:</b> 2</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: B Woodland</p> <p><b>Description/justification of classification:</b> Open eucalypt canopy cover with trees to 10m high; re-growth eucalypt trees from Wooroloo fire, 10 – 30% foliage cover open and post fire.</p>	 <p>South West Elevation 65°NE (T) -31.747989, 116.08205 ±6 m ▲ 170 m</p>
<p><b>Photo ID:</b> 39</p> <p><b>Plot Number:</b> 2</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: B Woodland</p> <p><b>Description/justification of classification:</b> Open eucalypt canopy cover with trees to 10m high; re-growth eucalypt trees from Wooroloo fire, 10 – 30% foliage cover open and post fire.</p>	 <p>North Elevation 200°S (T) -31.747937, 116.079822 ±6 m ▲ 171 m</p>
<p><b>Photo ID:</b> 40</p> <p><b>Plot Number:</b> 2</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: B Woodland</p> <p><b>Description/justification of classification:</b> Eucalypt trees to 10 - 14m high, mostly bare earth but some re-growth eucalypts, expect 10 - 30% foliage cover with grass understorey.</p>	 <p>North Elevation 37°NE (T) -31.760899, 116.086845 ±6 m ▲ 234 m</p>

<p><b>Photo ID:</b> 41</p> <p><b>Plot Number:</b> 2</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: B Woodland</p> <p><b>Description/justification of classification:</b> Eucalypt trees to 10 - 14m and zamia palms, re-growth eucalypt from Wooroloo fire; 10 - 30% foliage cover with grass understorey.</p>	 <p><b>West Elevation</b> 82°E (T) • -31.75313, 116.086463 ±6 m ▲ 170 m 07 Sep 2022, 16:01:57</p>
<p><b>Photo ID:</b> 42</p> <p><b>Plot Number:</b> 2</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: B Woodland</p> <p><b>Description/justification of classification:</b> Eucalypt trees to 10 - 14m high, mostly bare earth but some re-growth eucalypts, expect 10 - 30% foliage cover with grass understorey.</p>	 <p><b>North East Elevation</b> 244°SW (T) • -31.762423, 116.093225 ±6 m ▲ 256 m 07 Sep 2022, 16:54:43</p>
<p><b>Photo ID:</b> 43</p> <p><b>Plot Number:</b> 2</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: B Woodland</p> <p><b>Description/justification of classification:</b> Eucalypt trees 10-14m high, with foliage cover 10-30% and weeds / grass understorey.</p>	 <p><b>South Elevation</b> 15°N (T) • -31.769911, 116.092007 ±6 m ▲ 232 m 07 Sep 2022, 16:55:53</p>
<p><b>Photo ID:</b> 44</p> <p><b>Plot Number:</b> 2</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: B Woodland</p> <p><b>Description/justification of classification:</b> Sparse eucalypt trees 10-15m high, and parrot bush understorey.</p>	 <p><b>South East Elevation</b> 345°NW (T) • -31.767733, 116.091014 ±6 m ▲ 244 m 07 Sep 2022, 16:54:24</p>
<p><b>Photo ID:</b> 45</p> <p><b>Plot Number:</b> 3</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: D Scrub</p> <p><b>Description/justification of classification:</b> Mixed species of shrubs 2-4m high, with &gt;30% foliage cover.</p>	 <p><b>SE S SW W</b> 185°S (T) • -31.761592, 116.077169 ±12 m ▲ 193 m 07 Sep 2022, 09:55:40</p>



<p><b>Photo ID:</b> 46</p> <p><b>Plot Number:</b> 3</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: D Scrub</p> <p><b>Description/justification of classification:</b></p> <p>Mixed species of shrubs 2-4m high, with &gt;30% foliage cover.</p>	
<p><b>Photo ID:</b> 47</p> <p><b>Plot Number:</b> 3</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: D Scrub</p> <p><b>Description/justification of classification:</b></p> <p>Mixed species of shrubs greater than 2m high, with some recovering from Wooroloo fire, &gt;30% foliage cover.</p>	
<p><b>Photo ID:</b> 48</p> <p><b>Plot Number:</b> 4</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class: C Shrubland</p> <p><b>Description/justification of classification:</b></p> <p>Mixed species of low shrubs, generally &lt; 2m high with &gt;30% foliage cover.</p>	
<p><b>Photo ID:</b> 49</p> <p><b>Plot Number:</b> 6</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Exclusion Clause 2.2.3.2 (f)</p> <p><b>Description/justification of classification:</b></p> <p>Low threat vegetation; maintained lawn in Public Open Space neighbouring the site.</p>	
<p><b>Photo ID:</b> 50</p> <p><b>Plot Number:</b> 7</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Exclusion Clause 2.2.3.2 (e)</p> <p><b>Description/justification of classification:</b></p> <p>Future Public road under construction to service lots including lot 286 and 287.</p>	



Location details: Stages Pt 5, 8 & 9 Avon Ridge  
Brigadoon  
Assessment date: August, 2022  
Prepared by: Bushfire Safety Consulting  
Accreditation level: Level 3 BPAD Practitioner  
Accreditation number: BPAD 23160  
Accreditation expiry date: 31st January, 2023  
Date aerial photo: May 2022

**FIGURE 4 - VEGETATION CLASSIFICATION MAP (BAL CONTOUR MAP)**

0 100 200 300 400m  
SCALE 1:9000 @ A3  
DATE: SEPTEMBER 2022



**LEGEND:**  
SUBJECT LAND  
ASSESSMENT AREA (100m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE  
ASSESSMENT AREA (100m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE

SOURCE OF PHOTOGRAPHY: NEARMAP

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## 3.2 Effective Slope

The effective slope under areas of classified vegetation will impact the direction and rate of spread of a bushfire. For the purposes of this BMP, the slope of the land beneath classified vegetation varies for every single lot and an analysis has been undertaken on each individual lot to develop the BAL Contour Plan (Figure 5).

The effective slope has been determined through the analysis of topographic survey contours across the site and surrounding 150m. Slope ranges from effectively flat/upslope, to downslope 15-20°, as shown in Table 2.

It is important to note that multiple lots may be oriented differently in relation to the slope beneath any single area of classified vegetation. This means that while one piece of classified vegetation may be upslope from one lot, the same piece of classified vegetation may be downslope from another nearby lot. Where the effective slope of an area of classified vegetation impacts differently on multiple adjacent lots the highest effective slope has been applied to this area of classified vegetation. This provides a subdivision-scale conservative assessment of the slope within the site and nearby.

The topography and effective slope are outlined in Table 2 and have been used to determine the BAL contour plan in Figure 5.

### 3.2.2 Assessment methodology and assumptions

The BAL assessment for the site has been undertaken in accordance with method 1 of AS 3959 (as outlined in Section 3.1) to determine the maximum heat flux to which future dwellings within the site are likely to be exposed.

As the site is proposed to be developed for rural residential purposes, the exact location of the dwelling and any associated asset protection zone will be determined at the building licence stage. However, to understand whether the lots and designated BEAs are appropriately sized and located to accommodate a BAL rating of BAL-29 or less for future dwellings, each lot within the site has been assessed individually based on the following:

- Classified vegetation within 150 of each lot, assuming all vegetation outside the lot remains in its existing condition. This is considered a worst-case scenario for bushfire hazard and ensures lot owners are only reliant on management within their own property to achieve a BAL rating of BAL-29 or less.
- Effective slope under the classified vegetation within 150 m of each lot. The effective slope is based on topographic contours and aspect of surrounding areas for each lot.
- The entire lot (being assessed) is considered to be managed in accordance with Clause 2.2.3.2(f) of AS 3959. While it is unlikely for the majority of lots that all vegetation within the lot will be cleared or modified, this approach presents a spatial representation of the likely management areas able to be accommodated within each lot.

The individual BAL assessment results for each lot have then been mapped individually before combining each into a single subdivision-wide BAL contour plan, provided in Figure 5.

Overall, the BAL assessment criteria assumed includes:

- Designated FDI: 80
- Flame temperature: 1090
- Vegetation classification: forest (Class A), woodland (Class B), shrubland (Class C), scrub (Class D), grassland (Class G) (see Figure 4), noting each lot has been assessed individually.
- Effective slope: flat/upslope, downslope 0-5°, downslope 5-10°, downslope 10-15°, downslope 15-20° noting each lot has been assessed individually and the effective slope is considered worst-case.
- Setback distances: as per Table 2.4.3 in AS 3959, and outlined in Table 2 and DFigure 4.

In addition to the above, the following key assumptions have informed this assessment:

- Management measures for each lot (i.e. asset protection zone) is assumed to be restricted to within the lot boundary, and is not reliant on management occurring within adjacent rural residential lots.
- A 3 m firebreak will be installed by the developer immediately inside the boundary of each private lot, and will be maintained in the long term by each landowner in accordance with the requirements of the City of Swan's Fire Hazard Reduction Notice.
- The large public open space area within the site will not be landscaped or managed, but is intended to retain remnant vegetation and waterway values.
- A small area of public open space south of the site, within the already developed portions of Avon Ridge Estate, has been landscaped and will continue to be maintained in perpetuity by the developer and/or the City of Swan (following handover) to a low threat standard (in accordance with Clause 2.2.3.2(f) of AS 3959).
- Public roads will be installed by the developer in accordance with the approved subdivision layout, to the minimum standards required under Appendix Four of the Guidelines.

### 3.3 Assessment Outputs

A BAL contour assessment was undertaken according to Appendix 3 of the Guidelines and the results are found in the BAL Contour Map at Figure 5.

A Method 1 BAL Assessment was undertaken to determine the BAL contours impacting the site.

*Table 2. Summary of assessment outputs for all scenarios at the site*

Vegetation Classification	Effective slope	Minimum setback to achieve BAL-29
Class A Forest	Flat / upslope	21m
	Downslope 0-5°	27m
	Downslope 5-10°	33m
	Downslope 10-15°	42m
	Downslope 15-20°	52m
Class B Woodland	Flat / upslope	14m
	Downslope 0-5°	17m
	Downslope 5-10°	22m
	Downslope 10-15°	28m
	Downslope 15-20°	35m
Class C Shrubland	Flat / upslope	9m
	Downslope 0-5°	10m
	Downslope 5-10°	11m
	Downslope 10-15°	13m
	Downslope 15-20°	15m
Class D Scrub	Flat / upslope	13m
	Downslope 0-5°	15m
	Downslope 5-10°	17m
	Downslope 10-15°	19m
	Downslope 15-20°	21m
Class G Grassland	Flat / upslope	8m
	Downslope 0-5°	9m
	Downslope 5-10°	10m
	Downslope 10-15°	12m
	Downslope 15-20°	14m

The results of the BAL assessment indicate that all future dwellings within the site can be located within the designated BEAs without a BAL rating of BAL-29 being exceeded (noting the BEAs are generally significantly larger than the 10% gross lot area that can be developed in accordance with the structure plan, therefore there is opportunity to locate a dwelling in various locations within the BEA). Each lot can accommodate the relevant separation distances internally to ensure BAL-29 is not exceeded without relying on vegetation modification/management within adjacent private landholdings.

Final dwelling locations will be determined through the building licence process in consultation with the bushfire consultant engaged by Corrib on behalf of lot purchasers, who will assist lot owners to locate their dwelling appropriately within the BEA, with the building BAL rating to be based on modification/management of vegetation within the

individual lot only. This managed area will form the basis for the lot-specific asset protection zone, and will be able to accommodate the vegetation protection requirements.

This process may result in classified vegetation being retained within the lot, however the dwelling will be located in such a way that ensures an asset protection zone is completely accommodated within the lot (except where potential to be located outside e.g. within adjacent established firebreak), as assessed by the bushfire consultant.

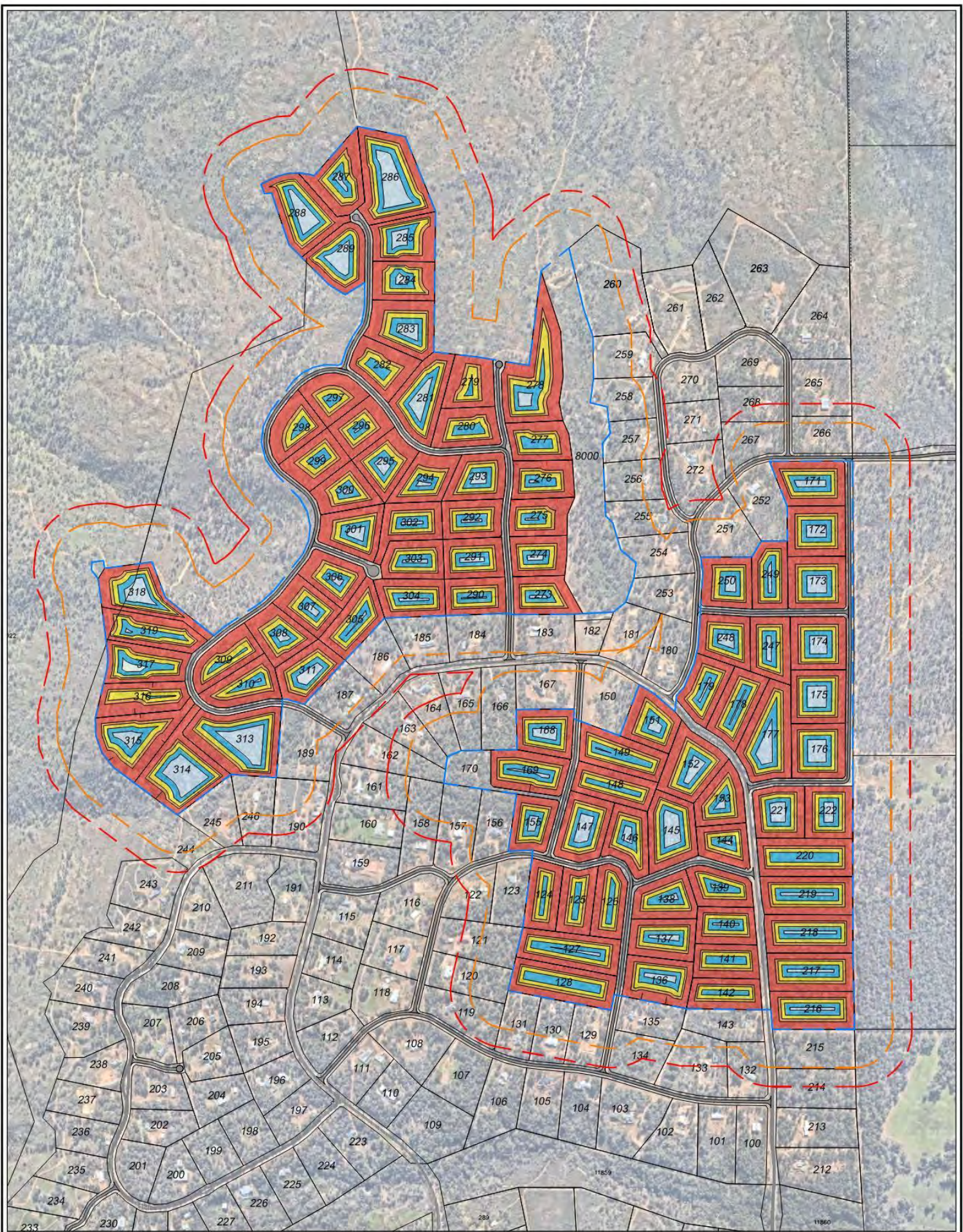
The final developed scenario is outlined in Figure 6 as a spatial representation of the bushfire management strategies.

#### **4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES**

From a bushfire hazard management perspective, the key issues requiring management include:

- Separation distances within individual lots to ensure a BAL rating of BAL-29 or less is achieved at the dwelling. This includes consideration of particular areas of vegetation retention and/or revegetation. Overall, given each lot has been assessed on the basis that all surrounding areas will remain in their existing condition, vegetation retention and revegetation has been accommodated through this assessment. Therefore, the primary ongoing consideration will be ensuring that habitat trees are retained within lots where these are located within BEAs and / or asset protection zones.
- Meeting increased building construction standards through the building licence process.
- Fuel management within future individual lots (in particular each lot ensuring the asset protection zone is implemented and maintained in perpetuity).
- Providing appropriate vehicular access. Given the subdivision will be staged, not all public roads will be constructed at once, and the developer will need to consider the use of temporary emergency access ways or similar to ensure appropriate access and egress for residents and emergency personnel in a bushfire event.
- Provision of appropriate water supply and associated infrastructure.

Predicted ember attack and radiant heat could impact the site as evident in the BAL contour plan (Figure 5).



Location details: Stages Pt 5, 8 & 9 Avon Ridge  
Brigadoon

Assessment date: August, 2022

Prepared by: Bushfire Safety Consulting

Accreditation level: Level 3 BPAD Practitioner

Accreditation number: BPAD 23160

Accreditation expiry date: 31st January, 2023

Date aerial photo: May 2022

**FIGURE 4 - VEGETATION CLASSIFICATION MAP (BAL CONTOUR MAP)**

0 100 200 300 400m

SCALE 1:9000 @ A3  
DATE: AUGUST 2022



**LEGEND:**  
 SUBJECT LAND  
 ASSESSMENT AREA (150m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE  
 ASSESSMENT AREA (100m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE

SOURCE OF PHOTOGRAPHY: NEARMAP



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## 5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA

This report adopts an acceptable solution and performance-based system of control for each bushfire protection criteria. This methodology is consistent with Appendix 4 of the *Guidelines for Planning in Bushfire Prone Areas, Version 1.4 (2021)*. The management issues are:

- Location of the Development.
- Siting and Design of Development.
- Vehicular access.
- Water.

Acceptable solutions can't be achieved for all of the vehicular access bushfire protection criteria due to previous approvals under older guidelines. But compliance is achieved where possible and each illustrates a means of meeting the corresponding performance criteria.

### 5.1 Compliance Table

Land use planning bushfire risk mitigation strategies are comprehensively detailed in the following sections by providing responses to the performance criteria that fulfil the intent of the bushfire hazard management issues outlined in the *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)*. The compliance checklist is attached as Table 4.



<b>Table 3: Compliance Table</b>		
<b>Bushfire Protection Criteria</b>	<b>Method of compliance</b>	<b>Proposed bushfire management strategies</b>
	<b>Acceptable Solutions</b>	
<b>Element 1: Location</b>	A1.1 Development Location	The Method 1 BAL Assessment in this report demonstrates the classified vegetation in the area surrounding the site and each lot does have an impact, but each lot can accommodate a dwelling exposed to BAL-29 or lower.
<b>Element 2: siting and Design</b>	A2.1 Asset Protection Zone (APZ)	<p>The BAL assessment and BAL contour plan (Figure 5) indicates that an appropriate APZ can be accommodated within each lot, based on the surrounding vegetation and effective slope. The BAL assessment assumes that no management or modification of vegetation occurs outside the lot. The specific APZ applicable to a future dwelling will be determined as part of the building licence and construction stage by the bushfire consultant, in consultation with the lot owner and will be based on the proposed dwelling location within the BEA. The APZ is managed in accordance with the requirements of the standards in Appendix 1.</p> <p>The determined APZ will be maintained in perpetuity to ensure fuel load is maintained at two tonnes per hectare or less. It is expected that any identified habitat trees will be retained within APZ areas, with dwellings located to minimise removal of these values (with maintenance of understorey fuels enabling the retention of these trees). Lot specific APZ maintenance requirements will be informed by the bushfire consultant through the building licence stage BAL assessment and Bushfire Management Statement.</p>
<b>Element 3: Vehicular Access</b>	A3.1 Public Roads	The public roads to be created, as well as surrounding existing roads, comply with minimum public road standards outlined in Appendix 2.
	A3.2a Multiple access routes	<p>Public road access is provided in two different directions with access to Campersic Road to the south of Avon Ridge Estate via Connemara Drive and O'Brien Road to the east via Lancewood Avenue.</p> <p>Three cul-de-sacs have been approved at previous planning stages, one is 173 metres in length, another is 210 metres in length and a third cul-de-sac is 415 metres in length and currently under construction. The terrain on the two northern most cul-de-sacs constrain the ability to create compliant loop roads and second access ways. Each of these cul-de-sacs is serviced by a perimeter strategic firebreak and fire service access route which provide access for fire appliances.</p>
	A3.2b Emergency access way	Although A3.2 cannot be fully achieved with the approved design, a complaint EAW is similarly constrained and not applicable.

	A3.3 Through roads	<p>This BMP has been prepared to support the renewal of subdivision for an existing approved subdivision development layout. Three cul-de-sacs are proposed, as shown within Figure 6 with the cul-de sacs not able to comply with all the minimum requirements of the current guidelines.</p> <p>Three cul-de-sacs have been approved at previous planning stages, one is 173 metres in length, another is 210 metres in length and a third cul-de-sac is 415 metres in length and currently under construction. The terrain on the two northern most cul-de-sacs constrain the ability to create compliant loop roads and second access ways. Each of these cul-de-sacs is serviced by a perimeter strategic firebreak and fire service access route which provides access for fire appliances. Each cul-de-sac will be provided with a minimum 18 m diameter head.</p>
	A3.4a Perimeter roads	<p>Not applicable, however where perimeter roads are not achieved, the strategic firebreak and Fires Service Access route is achieved hence perimeter access for fire appliances is achieved.</p>

	<p>A3.4b Fire service access route</p>	<p>Each private lot is required to comply with the requirements of the City of Swan Fire Hazard Reduction Notice (as published), which requires a 3 m internal firebreak to be established and maintained immediately inside and adjacent to all external property boundaries. This will be installed by the developer initially, then maintained by the lot owner.</p> <p>A strategic firebreak has already in places been installed and is being upgraded on a staged basis around the perimeter of the Avon Ridge Estate to provide access for firefighters in the event of a bushfire and/or to facilitate controlled burns, as outlined The strategic firebreak links to the internal public road network at regular intervals, as shown in <b>Figure 6</b>.</p> <p>The strategic firebreak / fire service access route has been an important asset used by fire fighters during the 2021 Woorlooloo <b>bushfire</b>. Where strategic firebreaks are installed, the following is required:</p> <ul style="list-style-type: none"> <li>• Minimum 6 metre wide with a 4m trafficable surface</li> <li>• Minimum 4m vertical clearance over the full 6 m width</li> <li>• Where the FSAR is within private lots, no fencing/gates or any form of obstruction is to cross the FSAR</li> <li>• At regular intervals (every 4 to 6 lots, approximately), a linking firebreak to the public road network will be provided. This link is to be located within a single lot and can be a part of the lot access (i.e. driveway) within each lot, or adjacent to the lot boundary as part of the internal firebreak. These links do not necessarily have to be located on the lot boundary, but must be accessible at all times. Rural gates (minimum width 4.1 metres) will be installed by Peet/the developer in the fence line with a standard City of Swan key system (to prevent unauthorised vehicle access) to provide access from the FSAR to the linking firebreak. The fence is to be truncated to allow fire appliances to turn onto/off of the FSAR.</li> <li>• To prevent unauthorised access through private lots along the FSAR, landowners may fence the side of the FSAR (adjacent the cleared trafficable and shoulder area).</li> <li>• Rural gates (minimum width 4.1 metres) will be erected where the FSARs interfaces with a public road, with a standard City of Swan key system to prevent unauthorised vehicle access. These gates will be installed by Peet/developer prior to the clearance of lot titles.</li> <li>• Signage will be provided where FSARs meet public roads, indicating the FSARs are for “Fire Access Only.” Signage will be installed by Peet/the developer prior to clearance of lot titles (within each applicable clearance stage) and will be to the standards/specifications required by the City of Swan. As a minimum, this is likely to include:             <ul style="list-style-type: none"> <li>▪ Signage should be 225 mm X 150 mm where the FSAR linking firebreak meets a publicroad and/or where the FSAR linking firebreak meets the FSAR.</li> <li>▪ Signage should be 600 mm X 400 mm where the FSAR meets a public road.</li> <li>▪ An example of emergency access signage, as required by the City of Swan, is attached in Appendix 4.</li> </ul> </li> <li>• The City of Swan may install gates across the FSAR in strategic locations throughout the site, at their discretion.</li> </ul>
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		<p>For the FSARs, these will be installed by Corrib/the developer to the satisfaction of the City of Swan prior to the clearance of lot titles and maintained by Corrib/the developer until all affected lots (within each applicable clearance stage) are sold. The FSAR will be placed in an easement in favour of the City of Swan.</p> <p>Following purchase of the lots, maintenance of FSARs occurring within private property is the responsibility of the purchaser. The City of Swan may choose to maintain FSARs where occurring in private lots and may establish a levy system to fund these maintenance works. Where FSARs occur within public open space or the Parks and Recreation Reserve, these will be the responsibility of the City of Swan following handover from the developer.</p> <p>Corrib/the developer will rectify, at its cost and to the reasonable satisfaction of the City, any defect in respect to the FSAR which arises within two (2) years of the subdivision stage clearance dates for the portion of the land in which the defects arises. Defects shall include any fault in the construction and maintenance of the firebreaks by Corrib/the developer or any failure to seal a portion of the firebreaks which were required to be sealed, but does not include general or routine maintenance.</p>
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	A3.5 Battle-axe access legs	This BMP has been prepared to support the renewal of subdivision for an existing approved subdivision development layout. Three battle-axe lots are proposed, as shown in Figure 1, and are able to comply with the minimum requirements of the Guidelines, including having access legs that are no more than 600 m in length.
	A3.6 Private driveways	It is highly likely that a number of lots will have dwellings positioned more than 70 metres from a public road based on the location of the BEA and/or the location of the dwelling within the BEA. Where dwellings are sited 70 m from the road, the following will be complied with: <ul style="list-style-type: none"> <li>• Where dwellings are more than 70 m from a public road, access to the dwelling and turn-around areas will be provided for conventional two-wheel drive vehicles as well as type 3.7 fire appliances.</li> <li>• Turn-around areas are to be provided within 50 m of the dwelling, with a loop driveway potentially considered an acceptable alternative. Minimum 17.5 m wide turn-around area should be provided.</li> <li>• Where driveways are longer than 200 m, passing bays should be provided at 200 m intervals (or the trafficable width of the driveway increased to 6 m). Passing bays need to be a minimum 20 m in length and 6 m wide.</li> </ul>
<b>Element 4: Water</b>	A4.1 Identification of future water supply	Reticulated Water supply provided.
	A4.2 Provision of water for firefighting purposes	<p>The development is located within an Emergency Services Levy (ESL) Category 3 Urban Metropolitan area, which indicates that bushfire events are responded to by volunteer bushfire brigades with the availability of a network of career firefighters and the State Emergency Services (SES) as required. Fire response services require ready access to an adequate water supply during bushfire emergencies.</p> <p>The development will be provided with a reticulated water supply, together with fire hydrants that will be installed by the developer to meet the standard specifications of Water Corporation (Design Standard DS 63) and DFES.</p> <p>An existing Water Corporation regional water tank is located within the site (see Figure 6). The development has access to a reticulated water supply. Hydrants will be spaced according to the Water Corporation's No. 63 Water Reticulation Standard.</p>
<b>Element 5: Vulnerable Tourism Land Uses</b>	A5.1 Siting and Design	Not applicable

## **5.2 Additional Management Strategies**

### **5.2.1 Future site assessment and approval considerations**

As part of the lot sales process, Corrib have appointed Bushfire Safety Consulting as their designated fire management consultant (FMC). The role of the FMC is to undertake individual lot BAL assessments following purchase and to ensure necessary fuel reduction is undertaken within purchased lots whilst retaining identified habitat and significant trees. The lot specific assessment and advice follows the following key steps:

#### **1. Preliminary onsite inspection**

- The lot owner is firstly required to inform Corrib of the proposed house design and building envelope. Corrib then arranges the initial inspection by the FMC to inspect the lot to determine if the building envelope is in a suitable location based on the ability to accommodate an appropriate asset protection zone (APZ) within the lot, surrounding the proposed house.
- The lot owner is encouraged to be present during the inspection to familiarise themselves with and attain knowledge of the BAL assessment process and any fuel hazard reduction requirements.
- If the building envelope is determined to be in a suitable location by the FMC, a bushfire management statement (incorporating the BAL assessment and APZ advice) will be undertaken in accordance with AS 3959 and the lot owner can proceed with an application for a building licence from the City of Swan.
- At the initial inspection by the FMC, should the FMC determine that the building envelope is not in a suitable position, an alternative building envelope will be chosen by the lot owner in consultation with the FMC and the pre-clearing site inspection and bushfire management statement will follow.
- The lot owner can then proceed with the building licence application at the City of Swan as described below.

#### **2. Lot specific BAL assessment and APZ advice**

- The BAL assessment determines the building construction requirements to withstand bushfire attack, based on the specific placement of the house within the lot and the implementation of suitable APZs. The BAL assessment takes into account a number of factors including the Fire Danger Index, the slope of the land, classification of surrounding vegetation and its proximity to any building.
- Specific advice on modification of vegetation within the APZ will be prepared and the information recorded in the bushfire management statement.
- During the pre-clearing site assessment, the FMC identifies and labels individual trees and identifies areas of leaf litter and fuel load to be removed to attain the fuel load requirements in the APZ as well as advising lot owners on ongoing maintenance requirements to maintain low fuel load levels. The FMC will consider the requirements to meet the APZ in accordance with the Guidelines while avoiding extensive clearing.

- The lot owner submits to the City of Swan the position of building envelope, location of vegetation and the bushfire management statement.

### **3. Post clearing site inspection and BAL certification**

- Following the issue of a conditional building licence approval by the City of Swan, the landowner undertakes vegetation modification in accordance with the bushfire management statement.
- Following vegetation modification, the FMC conducts another site inspection prior to the City of Swan issuing final building approval, to confirm that the vegetation modification has been completed in accordance with the advice provided. If implemented properly, the FMC will complete a BAL and APZ certification.
- This BAL and APZ certification can then be lodged by the lot owner with the City of Swan to clear the condition of approval, and the final building licence can be issued.

A summary of management strategies is outlined in Figure 6.

There are no specific Vulnerable or High-Risk Land Uses proposed at the site. Any specific applications will trigger the necessary requirements under State Planning Policy 3.7.

## **5.2.2 Landscape Treatments**

### **5.2.2.1 Within future lots**

As outlined above, the exact location of future dwellings and any associated APZs will be determined at the building licence stage through consultation with the FMC and the City of Swan, and will influence the areas within each lot to be cleared or modified/managed as part of the future development.

The Guidelines (WAPC and DFES 2021) state that an APZ needs to be wide enough to ensure that the maximum BAL rating for buildings adjacent to classified vegetation will not exceed BAL-29. It is the role of the FMC to determine an appropriate APZ width and treatment for each proposed dwelling, based on the ultimate location within the BEA. Typical maintenance standards for APZs are outlined in Appendix 1.

### **5.2.2.2 Within public open space**

The large central public open space area within the site is not intended to be landscaped or form a managed space, and will remain unmanaged with the remnant native vegetation (including waterway/wetland values) to be retained. It has been assumed as a bushfire hazard as part of this assessment.

An existing area of public open space is located south of the site, within the already developed portions of the Avon Ridge Estate, which has been landscaped in accordance with the requirements of the City of Swan and is now maintained to a low threat standard by City of Swan.

### **5.2.2.3 City of Swan firebreak notice**

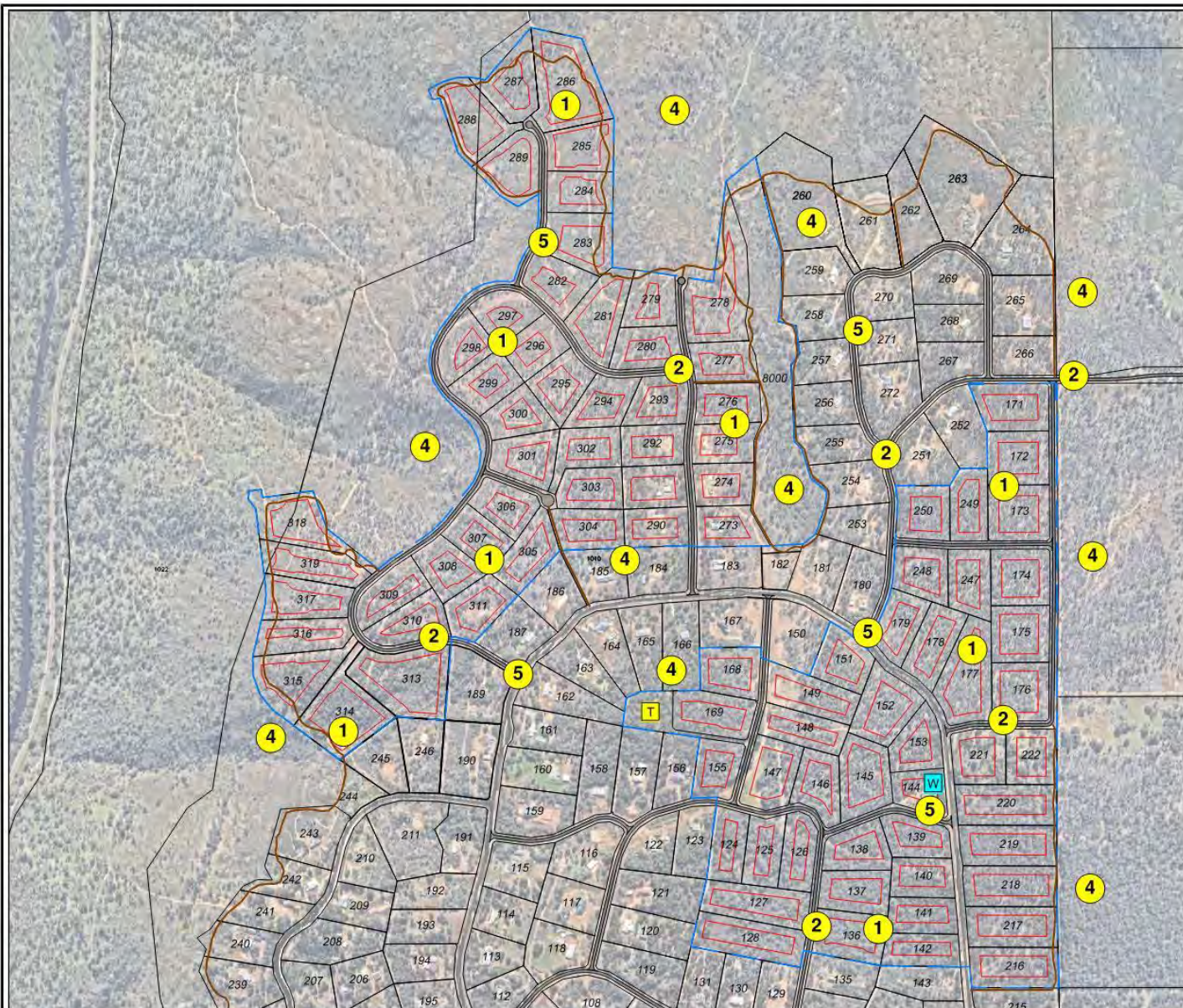
Each private lot is required to comply with the requirements of the City of Swan Fire Hazard Reduction Notice (as published), which requires a 3 m internal firebreak to be established and maintained immediately inside and adjacent to all external property boundaries. Corrib will install this firebreak as part of subdivision, but following the purchase of the lot, the lot purchaser will be responsible for the ongoing maintenance of this area.

For the strategic firebreaks, these will be installed by Corrib as part of subdivision, but following purchase of the lots, lot purchasers will be responsible for the maintenance of strategic firebreaks occurring within their property, while where strategic firebreaks occur within public open space or the Parks and Recreation Reserve, these will be the responsibility of the City of Swan following handover as part of the subdivision process.



# REQUIREMENTS

1. The proposed lots contain building envelope areas that are exposed to BAL-29 and lower with each lot being able to accommodate an APZ within each the lot boundary.
2. The internal roads comply with minimum standards and provides access around the perimeter of the site and throughout the site. Compliant public roads are provided for fire fighting appliances and residents including access onto the surrounding public road system.
3. All residents have access to surrounding public roads and access to the east and south of the estate on the public road network.
4. The Class A forest vegetation in and around the site poses the greatest threat from bushfire.
5. The area is provided with a water supply. Fire hydrants are located throughout the site to minimum standards.








- LEGEND:**
-  SUBJECT LAND
  -  DEVELOPABLE AREAS EXPOSED TO BAL-29 OR LOWER
  -  STRATEGIC FIREBREAK / FIRE SERVICE ACCESS ROUTE
  -  COMMUNICATION TOWER
  -  WATER TANK

FIGURE 6 - SPATIAL PLAN AND LAYOUT



0 100 200 300 400 500m  
 SCALE 1:11 000 @ A3  
 DATE: SEPTEMBER 2022



Location details:	Stages Pt 5, 8 & 9 Avon Ridge Brigadoon
Assessment date:	August, 2022
Prepared by:	Bushfire Safety Consulting
Accreditation level:	Level 3 BPAD Practitioner
Accreditation number:	BPAD 23160
Accreditation expiry date:	31st January, 2023
Date aerial photo:	May 2022

## 6 RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE MEASURES

Table 5 outlines the initial and ongoing responsibilities, actions and associated works that need to be undertaken by the Developer, neighbours, future landowners and the City of Swan. The check boxes for implementation actions will be used for subdivision clearance. A Bushfire Planning Practitioner will certify the BAL ratings are correct and necessary implementation actions have been completed.

Table 4. Responsibility for bushfire measures

DEVELOPER – PRIOR TO ISSUE OF TITLES		
No.	Implementation Action	Subdivision Clearance
1	Install 3m wide firebreaks inside each residential lot boundary compliant with city of Swan firebreak notice.	<input type="checkbox"/>
2	Install the public roads to standards outlined in this report.	<input type="checkbox"/>
3	Install hydrants to the Water Corporation’s No. 63 Water Reticulation Standard.	<input type="checkbox"/>
4	Install the strategic firebreaks (generally shown in Figure 6) as development progresses within the site, to ensure perimeter access for firefighting purposes is in place around all developed areas. Ensure that where the installation of the firebreak is staged, that access (either temporary or permanent) is provided through to the nearest constructed internal public road reserve, to ensure continuous egress.  The firebreak should be installed to the standards outlined in this BMP in table 3.	<input type="checkbox"/>
5	As part of the building license application stage, have the lots/dwelling(s) assessed for the BAL rating by a qualified consultant with BAL rating submitted to support building license stages.	
6	A notification, pursuant to Section 70A of the Transfer of Land Act 1893 is to be placed on the certificate(s) of title of the lots within the Bushfire Prone Area. Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows: 'The lot(s) is/are subject to a Bushfire Management Plan.' (Local Government)".	
DEVELOPER – AT SALE OF LOTS		
7	Make a copy of this BMP available to each lot along with the <i>Homeowners Bush Fire Survival Manual, Prepare, Act, Survive</i> (or similar suitable documentation) and the City of Swan’s Firebreak Notice.	
8	Maintain future development stages in a low threat condition so as not to pose a threat to the development	

<b>LANDOWNER/OCCUPIER – ONGOING MANAGEMENT</b>	
<b>9</b>	<b>Maintain the Asset Protection Zone (APZ) to standards stated in this BMP.</b>
<b>10</b>	<b>Ensure construction of buildings complies with AS 3959:2018.</b>
<b>11</b>	<b>If buildings are subject to additional construction in the future, AS 3959:2018 compliance is required.</b>
<b>CITY OF SWAN – ONGOING MANAGEMENT</b>	
<b>12</b>	<b>Maintain public roads to appropriate standards and ensure compliance with the City of Swan’s Fire Control Notice.</b>
<b>13</b>	<b>Provide fire prevention and preparedness advice to landowners upon request, including the <i>Homeowners Bush Fire Survival Manual, Prepare, Act, Survive</i> (or similar suitable documentation) and the City of Swan’s Fire Control Notice.</b>

**Certification by Bushfire Consultant**

I \_\_\_\_\_ certify that at the time of inspection, the BAL ratings contained within this BMP are correct; and implementation actions 1 - 4 have been undertaken in accordance with the BMP.

Clearance is recommended.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## 7 CONCLUSION

This Plan provides acceptable solutions and responses to the performance criteria that fulfil the intent of the bushfire hazard management issues outlined in the Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 V1.4).

However, community bushfire safety is a shared responsibility between governments, fire agencies, communities and individuals.

The subdivision is located in the bushfire prone area (i.e. within 100 m of classified vegetation) and risk is reduced via compliance with *AS 3959:2018* standards. BAL-29 is not exceeded. Each lot will contain a lot specific APZ to ensure compliance and a site specific BAL assessment will be undertaken each time a purchaser applies for building license.

Perimeter vehicular access is provided and a water supply with hydrants paced to minimum standard is achieved.

A minimum of two access options and fire hydrant spacing requirements for fire-fighting are met. There are some historic planning issues to consider and site constraints that are left over from previous planning decisions. Overall this assessment updates the previously approved plan with roadside vegetation now classified and an updated BAL contour plan that demonstrates BAL-29 and lower can be achieved on all lots.

## REFERENCES

Standards Australia, 2018. *Construction of buildings in bushfire-prone areas (Amendments 1-3)*, AS 3959-2018, Standards Australia International Ltd, Sydney.

Western Australian Planning Commission (WAPC), 2015. *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP3.7)*. December 2015. Western Australian Planning Commission and Department of Planning WA, Government of Western Australia, Perth.

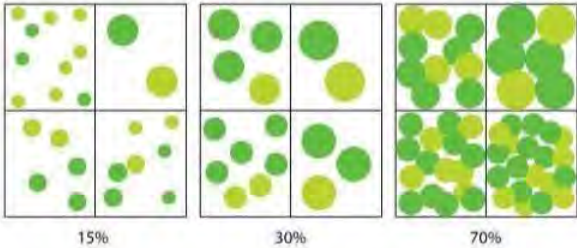
Western Australian Planning Commission (WAPC), 2017. *Guidelines for Planning in Bushfire Prone Areas*. December 2021 V1.4. Western Australian Planning Commission and Department of Planning WA, Government of Western Australia, Perth.



## APPENDICES

- Appendix 1: Asset Protection Zone Standards
- Appendix 2: Vehicular Access Technical Requirements
- Appendix 3: City of Swan Fire Control Notice
- Appendix 4: Fire Service Access Signage

**Appendix 1: Asset Protection Zone Standards**

SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES	
OBJECT	REQUIREMENT
Fences within the APZ	<ul style="list-style-type: none"> <li>Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix F of AS 3959).</li> </ul>
Fine fuel load (Combustible, dead vegetation matter <6 millimetres in thickness)	<ul style="list-style-type: none"> <li>Should be managed and removed on a regular basis to maintain a low threat state.</li> <li>Should be maintained at &lt;2 tonnes per hectare (on average).</li> <li>Mulches should be non-combustible such as stone, gravel or crushed mineral earth or wood mulch &gt;6 millimetres in thickness.</li> </ul>
Trees* (>6 metres in height)	<ul style="list-style-type: none"> <li>Trunks at maturity should be a minimum distance of six metres from all elevations of the building.</li> <li>Branches at maturity should not touch or overhang a building or powerline.</li> <li>Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation.</li> <li>Canopy cover within the APZ should be &lt;15 per cent of the total APZ area.</li> <li>Tree canopies at maturity should be at least five metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15 per cent and are not connected to the tree canopy outside the APZ.</li> </ul> <p><b>Figure 19:</b> Tree canopy cover – ranging from 15 to 70 per cent at maturity</p> 
Shrub* and scrub* (0.5 metres to six metres in height). Shrub and scrub >6 metres in height are to be treated as trees.	<ul style="list-style-type: none"> <li>Should not be located under trees or within three metres of buildings.</li> <li>Should not be planted in clumps &gt;5 square metres in area.</li> <li>Clumps should be separated from each other and any exposed window or door by at least 10 metres.</li> </ul>
Ground covers* (<0.5 metres in height. Ground covers >0.5 metres in height are to be treated as shrubs)	<ul style="list-style-type: none"> <li>Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above.</li> <li>Can be located within two metres of a structure, but three metres from windows or doors if &gt;100 millimetres in height.</li> </ul>
Grass	<ul style="list-style-type: none"> <li>Grass should be maintained at a height of 100 millimetres or less, at all times.</li> <li>Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation.</li> </ul>
Defendable space	<ul style="list-style-type: none"> <li>Within three metres of each wall or supporting post of a habitable building, the area is kept free from vegetation, but can include ground covers, grass and non-combustible mulches as prescribed above.</li> </ul>
LP Gas Cylinders	<ul style="list-style-type: none"> <li>Should be located on the side of a building furthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building.</li> <li>The pressure relief valve should point away from the house.</li> <li>No flammable material within six metres from the front of the valve.</li> <li>Must sit on a firm, level and non-combustible base and be secured to a solid structure.</li> </ul>

## Appendix 2: Vehicle Access Technical Requirements

Table 6: Vehicular access technical requirements

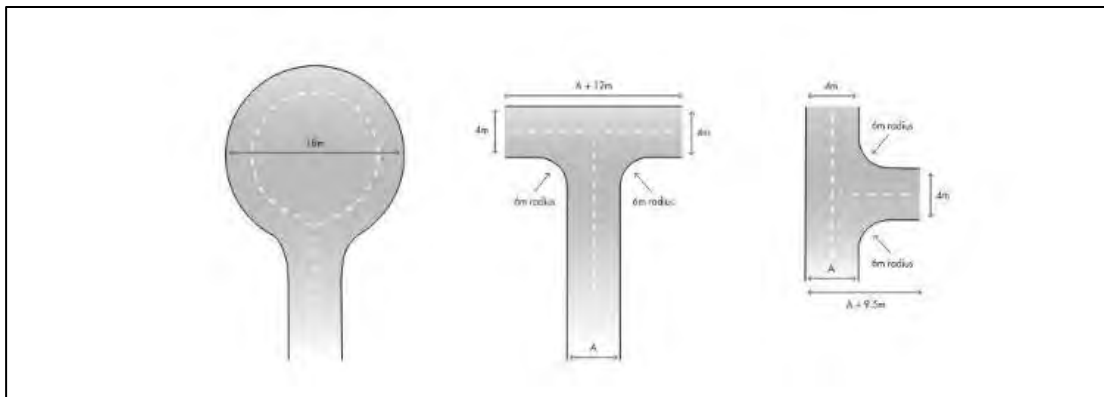
TECHNICAL REQUIREMENTS	1 Public roads	2 Emergency access way <sup>1</sup>	3 Fire service access route <sup>1</sup>	4 Battle-axe and private driveways <sup>2</sup>
Minimum trafficable surface (metres)	In accordance with A3.1	6	6	4
Minimum horizontal clearance (metres)	N/A	6	6	6
Minimum vertical clearance (metres)	4.5			
Minimum weight capacity (tonnes)	1.5			
Maximum grade unsealed road <sup>3</sup>	As outlined in the IPWEA Subdivision Guidelines	1:10 (10%)		
Maximum grade sealed road <sup>3</sup>		1:7 (14.3%)		
Maximum average grade sealed road		1:10 (10%)		
Minimum inner radius of road curves (metres)		8.5		

**Notes:**

<sup>1</sup> To have crossfalls between 3 and 6%.

<sup>2</sup> Where driveways and battle-axe legs are not required to comply with the widths in A3.5 or A3.6, they are to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision.

<sup>3</sup> Dips must have no more than a 1 in 8 (12.5% -7.1 degree) entry and exit angle.





## Appendix 3: City of Swan Fire Control Notice

### Bush Fires Act 1954 City of Swan Fire Hazard Reduction Notice (Firebreak Notice)

Notice to Owners and/or Occupiers of land situated within the City of Swan.

To assist in the control of bush fires, and pursuant to Section 33 of the Bush Fires Act 1954, all owners and occupiers of land within the City of Swan are required on or before the 1st day of November, 2021, or within 14 days of becoming an owner or occupier of land after that date, must meet the fire hazard reduction conditions described in this notice and maintain these conditions up to and including the 30th day of April, 2022.

1. **All land up to 5,000m<sup>2</sup> (0.5 Hectares or 1.2 Acres)**
  - 1) Install and maintain an asset protection zone in accordance with the requirements specified in clause 13 of this notice.
  - 2) Maintain all grass to a height of no greater than 10cm.
  - 3) Areas of natural vegetation to be maintained at or below 8 tonnes per hectare.
  - 4) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.
2. **All land between 5,000m<sup>2</sup> and 25,000m<sup>2</sup> (0.5 - 2.5 Hectares) or (1.2 - 6.2 Acres)**
  - 1) Install and maintain an asset protection zone in accordance with the requirements specified in clause 13 of this notice.
  - 2) Install firebreaks immediately inside and adjacent to all external property boundaries. Firebreaks need to be 3 metres wide with a 4 metre vertical height clearance free from flammable materials and overhanging branches (see section 10 in this notice for further details).
  - 3) Maintain all grass to a height of no greater than 10cm.
    - a) If the land is stocked, the grass must be reduced and maintained to a height of no greater than 10cm by the 1st day of December.
  - 4) Natural vegetation within 100 metres of buildings including attached and adjacent structures and essential infrastructure shall be maintained at or below 8 tonnes per hectare, by passive methods of fuel reduction that does not permanently remove or reduce the quantity or occurrence of the native plants, shrubs and trees within the subject area.
  - 5) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.
3. **All land with an area greater than 25,000m<sup>2</sup> (2.5 Hectares or 6.2 Acres)**
  - 1) Install and maintain an asset protection zone in accordance with the requirements specified in clause 13 of this notice.
  - 2) Install firebreaks immediately inside and adjacent to all external property boundaries. Firebreaks need to be 3 metres wide with a 4 metre vertical height clearance free from flammable materials and overhanging branches (see section 10 in this notice for further details).
    - a) Properties over 100 hectares require additional firebreaks to divide the land into areas not exceeding 100 hectares.
  - 3) Slash or mow grass to a height no greater than 10cm immediately adjacent to firebreaks to a minimum width of 3 metres.
    - a) If the land is stocked, this grass must be reduced and maintained to a height of no greater than 10cm by the 1st day of December.
  - 4) Natural vegetation within 100 metres of buildings including attached and adjacent structures and essential infrastructure shall be maintained at or below 8 tonnes per hectare, by passive methods of fuel reduction that does not permanently remove or reduce the quantity or occurrence of the native plants, shrubs and trees within the subject area.
  - 5) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.

**4. Plantations**

- 1) Install and maintain external and internal firebreaks, firebreaks that form compartments (cells), firebreaks and hazard reduction measures that protect neighbouring communities and essential infrastructure in accordance with the requirements of a fire management plan approved in writing by the City; or
- 2) Where no such approved fire management plan exists,
  - a) Unless the City approves an alternative plan in writing in accordance with clause 4(2)(b), install and maintain external and internal firebreaks and firebreaks that form compartments (cells), and carry out all other firebreaks and hazard reduction measures which are required in accordance with the requirements and specifications within the Department of Fire & Emergency Services 'Guidelines for Plantation Fire Protection' 2011 publication; or
  - b) If it is considered impractical for any reason to carry out the plantation requirements outlined above in clause 4 (2)(a), plantation owners and managers may apply in writing to the City to implement an alternative plan or measures in accordance with clause 4 of this notice.

**5. Application to Vary Firebreak and Hazard Reduction Requirements**

- 1) If it is considered impractical for any reason to clear firebreaks in a manner or location required by this notice, or to carry any fire hazard reduction work or measures required by this notice, you may apply in writing on or before the 1st of October, for approval to provide firebreaks in alternative positions or to take alternative measures to abate fire hazards on the land. Alternative firebreak application forms can be downloaded from the City of Swan website.
- 2) If permission is not granted in writing by the City prior to the 1st day of November, you shall comply with the requirements of this notice.
- 3) When permission for alternative firebreaks or fire hazard reduction measures has been granted, you shall comply with all conditions on the endorsed permit and maintain the land to the required standard throughout the period specified by this notice.
  - a) Where a property is affected by an approved bushfire management plan, property owners must comply with any additional requirements and responsibilities outlined within that plan.

**6. Fuel Dumps and Depots**

Remove all flammable material within 10 metres of fuel dumps, fuel ramps or where fuel drums, whether containing fuel or not, are stored.

**7. Hay Stacks**

Clear and maintain a firebreak completely surrounding any haystack on the land, within 60 metres of the haystack.

**8. Fire Service Access (Strategic Firebreaks)**

- 1) Where under a written agreement with the City, or where depicted on an approved bushfire management plan Fire Service Access (Strategic Firebreaks) are required on the land, you are required to clear and maintain the Fire Service Access (Strategic Firebreaks) a minimum of 6 metres wide along the agreed alignment to provide restricted vehicular access to emergency services and authorised vehicles.
- 2) Fire Service Access (Strategic Firebreaks) must be free from flammable material and unimpeded by obstructions including boundary fences and gates unless approved in writing by the City.
- 3) Gates may only be secured with City of Swan Fire Service padlock.
- 4) Fire Service Access (Strategic Firebreaks) shall be graded to provide a continuous 4 wheel drive trafficable surface a minimum of 4 metres wide with a 1 metre shoulder on either side.
- 5) All branches must be pruned and obstacles removed to maintain a 4 metre vertical height clearance above the full 6 metre width of the trafficable surface.

**9. Emergency Access Ways**

- 1) Where under a written agreement with the City, or where depicted on an approved bushfire management plan, Emergency Access Ways are required on private land, you are required to clear and maintain a vehicular access way to a minimum of 6 metres wide along the agreed alignment.
- 2) Emergency access ways must be free from flammable material and unimpeded by obstructions including boundary fences and gates unless approved in writing by the City.
- 3) Gates on Emergency Access Ways must remain unlocked at all times.
- 4) Emergency Access Ways shall be graded and have suitable drainage to provide a minimum 6 metre wide continuous trafficable surface suitable for all types of 2 wheel drive vehicles.
- 5) All branches must be pruned and obstacles removed to maintain a 4 metre vertical height clearance above the full 6 metre

width of the trafficable surface.

**10. Firebreak Construction**

- 1) Firebreaks are to be developed and maintained clear of all obstacles and flammable materials to create a minimum of 3 metres wide trafficable surface suitable for 4 wheel drive vehicles.
- 2) Overhanging branches must be pruned to provide a 4 metre vertical clearance above the full width of the firebreak surface.
- 3) Boundary firebreaks must be aligned immediately inside and adjacent to the external property boundaries.
- 4) Alternative Firebreaks that are approved in writing by the City, or as depicted within a bushfire management plan approved in writing by the City, are to be constructed to the same standard as general firebreaks and must be constructed along the specified alignment.
- 5) Firebreaks must not terminate in a dead end.
- 6) Firebreaks may be constructed by ploughing, grading, raking, burning, chemical spraying or any other method that achieves the required standard.

**11. Driveways**

Where building sites are situated more than 50 metres from a public road,

- 1) Driveways must be maintained clear of all permanent obstacles and flammable materials to create a minimum 3 metre wide trafficable surface suitable for all types of 2 wheel drive vehicles.
- 2) Overhanging branches must be pruned to provide a 4 metre vertical clearance above the driveway.

**12. Fuel Reduction – Natural Vegetation**

- 1) Available bushfire fuels must be maintained at or below:
  - a) Asset Protection Zones - 2 tonnes per hectare
  - b) Hazard Separation Zones - 8 tonnes per hectare  
\*This requirement only applies where HSZs are depicted within a Fire Management Plan approved in writing by the City.
  - c) Natural Vegetation - 8 tonnes per hectare for areas of natural vegetation within 100 metres of buildings, attached and adjacent structures and essential infrastructure
- 2) Passive Fuel Reduction within natural vegetation may be achieved by burning, raking, pruning, weed management, removal of dead materials and any other approved method.
- 3) Permanent removal or partial clearing of natural vegetation including individual or groups of native grasses, shrubs or trees may only be carried out to meet the minimum requirements of this notice.
- 4) Permanent clearing of natural vegetation structures including individual plants, shrubs or trees, that exceeds the requirements of this notice or the specifications outlined within a bushfire management plan approved in writing by the City, is only permitted in accordance with the provisions and exemptions outlined within the Environmental Protection Act 1986, or with the approval of the Department of Water and Environmental Regulation and the City of Swan.

Note: Advice and resources on how to measure and manage native vegetation fuel loads are available from the Department of Fire and Emergency Services or the City of Swan.

**13. Asset Protection Zones Specification**

Asset protection zones for habitable buildings and other assets must meet the following requirements:

- 1) Extends 20 metres out from any external walls of the building, attached structures, or adjacent structures within 6 metres of the habitable building, unless varied under an approved bushfire management plan.
- 2) On sloping ground the asset protection zone distance shall increase with 1 metre for every degree in slope on the sides of the building/ structure that are exposed to down slope natural vegetation.
- 3) Asset protection zone requirements only apply within the boundaries of the lot on which the asset is located and cannot be enforced across boundaries.
- 4) Recommendation Only - Asset protection zones predominantly consist of non-flammable managed vegetation, reticulated lawns and gardens and other non-flammable features.
- 5) All grass is maintained to or under 10cm.
- 6) Fuel loads must be reduced and maintained at 2 tonnes per hectare or lower.
- 7) The crowns of trees are to be separated where possible to create a clear separation distance between adjoining or nearby tree crowns. The separation distance between tree crowns is not required to exceed 10 metres. Clearing or thinning existing trees to create distances greater than 10 metres separation between tree crowns within an asset protection zone is not required or supported by this notice and requires approval from the Department of Water and Environmental Regulation and the City of Swan.
- 8) A small group of trees within close proximity to one another may be treated as one crown provided the combined

crowns do not exceed the area of a large or mature crown size for that species.

- 9) Trees are to be low pruned (or under pruned) to at least a height of 2 metres from ground.
- 10) No tree, or shrub over 2 metres high is planted within 2 metres of a building, especially adjacent to windows.
- 11) There are no tree crowns or branches hanging over buildings.
- 12) Clear and prune scrub to reduce to a sparse density (able to walk through vegetation with relative ease with minimal deviation around trees and shrubs).
- 13) Install paths or clear flammable or dry vegetation, debris and materials immediately adjacent to the building.
- 14) Wood piles and flammable materials stored a safe distance from buildings.

#### 14. Burning

All burning must be carried out in accordance with the relevant provisions of this notice and the Bush Fires Act 1954, Health Act 1911 and the City's Consolidated Local Laws 2005.

**Prohibited Period:** All burning, including garden refuse and camping fires are prohibited.

**Restricted Period:** All burning requires a permit except for the burning of garden refuse and camping fires which are subject to the following conditions:

- 1) The fire must not be lit if the Fire Danger Rating is Very High or above, or if a Total Fire Ban or a Harvest and Vehicle Movement Ban is declared.
- 2) Only one fire is allowed at any time and it does not exceed 1 cubic metre in size.
- 3) No flammable material within 5 m of the fire.
- 4) The fire is only lit between 6 pm and 11 pm and completely extinguished by midnight.
- 5) At least one person capable of controlling the fire is in attendance at all times with adequate means of extinguishing the fire.

#### 15. Cooking Fires

Fires for the purpose of cooking are exempt from burning period restrictions subject to the following conditions:

- 1) The fire must not be lit if the Fire Danger Rating is Very High or above, or if a Total Fire Ban or a Harvest and Vehicle Movement Ban is declared.
- 2) The fire is contained in a purpose built appliance and
  - a) at a person's home; or
  - b) an area is set aside for that purpose by the State Authority or City of Swan
- 3) No flammable material within 5 m of the fire.
- 4) At least one person capable of controlling the fire is in attendance at all times with adequate means of extinguishing the fire.

#### 16. Compliance

- 1) In addition to the requirements of this notice, further works which are considered necessary by an Authorised Officer of the City may be required as specified in writing in a subsequent notice addressed to the land owner.
- 2) Where the owner or occupier of the land fails or neglects to comply with the requirements of this notice or a subsequent notice addressed to the land owner, the City of Swan may enter onto the land with workmen, contractors, vehicles and machinery to carry out the requisitions of the notice at the expense of the land owner.
- 3) Failure to comply with this notice and subsequent written notices may result in a penalty not exceeding \$5,000, or the issue of a \$250 infringement notice and liability for any costs incurred by the City in relation to works undertaken on behalf of the land owner.
- 4) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.

#### 17. Definitions

'Alternative Firebreak' is a firebreak that is in an alternative position or alignment to the external boundaries of a property.

'Alternative Firebreak Application' is an application that may be made by a land owner to install firebreaks in an alternative position, or to carry out alternative measures in lieu of general firebreaks.

'Available Fuel' is the bush fuel consisting of live and dead vegetation such as stubble, mulch, leaf litter, twigs, trash, scrub and other vegetation less than 6mm in diameter capable of carrying a running fire and will actually burn under prevailing conditions.

'City' means the City of Swan.

**'Buildings, Attached and Adjacent Structures'** means habitable buildings that are used as a dwelling, workplace, place of gathering or assembly, a building that is a car park, or a building used for the storage

or display of goods or produce for sale by whole sale in accordance with classes 1-9 of the Building Code of Australia. The term building includes attached and adjacent structures like garages, carports verandas or similar roofed structure(s) that are attached to, or within 6 metres of the dwelling or primary building.

**'Asset Protection Zone (APZ)'** is a low fuel area that is reduced of flammable vegetation and materials surrounding buildings and essential infrastructure to minimise the likelihood and impact that direct flame contact, radiant heat or ember attack may have on buildings and assets in the event of a bushfire. This area must extend out from the external walls of a building or asset a minimum of 20 metres.

**'Bushfire Management Plan'** or **'Fire Management Plan'** is a comprehensive plan that may be placed on the certificate of title(s) of land that has been developed as a condition of development or subdivision. Bushfire Management Plans may become out dated and it's the responsibility of the property owner to review and keep them current. Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in the Annual Fire Hazard Reduction Notice and with any additional requirements outlined within that plan.

**'Emergency Access Way'** is a two wheel drive trafficable, 6 metre wide access route to provide local residents, general public and emergency services alternative links to road networks at the end of cul-de-sacs or areas where access is limited during an emergency incident.

**'Essential Infrastructure'** or **'Critical Infrastructure'** means assets, infrastructure, systems and networks that provide essential services necessary for social and economic wellbeing and is typically public infrastructure. Assets and infrastructure, usually of a public nature, that generate or distribute electricity, water supply, telecommunications, gas and dams are typical assets that are essential to society and are often located in, or traverse areas that are prone to bushfires.

**'Firebreak'** is an area of land cleared of flammable material (see available fuel above) to minimise the spread of a bushfire and to provide access for firefighting services. For the purpose of this notice the term firebreak is a strip of land at minimum 3 metres with a 4 metres vertical clearance, constructed to provide a 4 wheel drive trafficable surface for access by emergency and authorised vehicles. Boundary firebreaks are installed immediately adjacent the external boundaries of a property.

**'Fire Hazard'** means accumulated fuel (living or dead) such as leaf litter, twigs, trash, bush, dead trees and scrub capable of carrying a running fire, but excludes standing living trees and isolated shrubs.

**'Hazard Separation Zone (HSZ)'** means an area extending out from an asset protection zone a distance of 80 metres unless otherwise specified, to create a graduated fuel reduction and separation from natural vegetation.

**'Natural Vegetation'** means natural areas of forest, woodland, shrubland, scrub, mallee or mulga.

**'Passive Fuel Reduction'** means lowering the amount of available fuel that will burn under prevailing conditions by means that will not permanently reduce or modify the structure or life cycle of plant, shrub, scrub or tree communities within an treated area. This is typically achieved by undertaking a cool, controlled burn of an area during cooler, damper months, or by physical removal of built up leaf litter, dead materials, weeds and slashing long dry grasses without damaging live native plants within the area.

**'Plantation'** is any area of native or exotic planted trees that exceeds three hectares in a gazetted town site, or elsewhere a stand of trees of 10 hectares or larger that has been planted and managed intensively for their commercial and environmental value. A plantation includes roads, firebreaks and small areas of native vegetation.

**'Fire Service Access (Strategic Firebreaks)'** is a firebreak that is 6 metres wide established to provide strategic access and links to road networks whilst providing a wider control/containment line to protect town sites, estates and similar exposures during bushfire operations.

By order of the Council,



Leon van der Linde  
Acting / Chief Executive Officer  
City of Swan

**Appendix 4: Fire Service Access Signage**

