



Stage 1 Yarrimbah Heights, Bullsbrook

Qube Property Group

Bushfire Management Plan Compliance & Condition Clearance Report

164,014 | 67693

12 December 2024



We acknowledge the Traditional Custodians of Country throughout Australia and their connections to land, sea and community.

We pay respect to Elders past and present and in the spirit of reconciliation, we commit to working together for our shared future.



Table of Contents

1. Introduction	4
1.1 Site/development summary	4
1.2 Purpose of report	4
1.3 Subdivision conditions	6
2. Bushfire Management Plan compliance audit.....	14
3. Bushfire assessment results	29
3.1 Assessment inputs	29
3.1.1 Vegetation classification.....	29
3.1.2 Effective slope.....	30
3.1.3 Summary of inputs.....	30
3.2 Assessment outputs.....	58
3.2.1 BAL contour assessment results	58
4. Conclusion and recommendations	88
5. Limitations	89
6. References	90

List of Tables

Table 1: Site/development summary	4
Table 2: Relevant subdivision conditions.....	6
Table 3: Relevant subdivision condition advice notes	9
Table 4: Relevant subdivision reconsideration of conditions	11
Table 5: Relevant subdivision reconsideration of conditions advice notes.....	13
Table 6: Strategen JBS&G BMP compliance audit table	14
Table 7: Emerge Associates peer review	19
Table 8:Ecosystem Solutions peer review	23
Table 9: Summary of vegetation classifications, exclusions and effective slope.....	31
Table 10: BAL contour assessment results	59
Table 11: Range of potential BAL ratings that could be achieved within each proposed building envelope	69

List of Figures

Figure 1: Vegetation classification and site photos (overall site map)	39
Figure 2: Vegetation classification and effective slope (Lot 33)	40
Figure 3: Vegetation classification and effective slope (Lot 34)	41
Figure 4: Vegetation classification and effective slope (Lot 35)	42
Figure 5: Vegetation classification and effective slope (Lot 36)	43
Figure 6: Vegetation classification and effective slope (Lot 37)	44
Figure 7: Vegetation classification and effective slope (Lot 38)	45
Figure 8: Vegetation classification and effective slope (Lot 39)	46
Figure 9: Vegetation classification and effective slope (Lot 40)	47

Figure 10: Vegetation classification and effective slope (Lot 41)	48
Figure 11: Vegetation classification and effective slope (Lot 42)	49
Figure 12: Vegetation classification and effective slope (Lot 43)	50
Figure 13: Vegetation classification and effective slope (Lot 44)	51
Figure 14: Vegetation classification and effective slope (Lot 45)	52
Figure 15: Vegetation classification and effective slope (Lot 46)	53
Figure 16: Vegetation classification and effective slope (Lot 47)	54
Figure 17: Vegetation classification and effective slope (Lot 48)	55
Figure 18: Vegetation classification and effective slope (Lot 49)	56
Figure 19: Vegetation classification and effective slope (Lot 50)	57
Figure 27: BAL contour map (Lot 33)	70
Figure 28: BAL contour map (Lot 34)	71
Figure 29: BAL contour map (Lot 35)	72
Figure 30: BAL contour map (Lot 36)	73
Figure 31: BAL contour map (Lot 37)	74
Figure 32: BAL contour map (Lot 38)	75
Figure 33: BAL contour map (Lot 39)	76
Figure 34: BAL contour map (Lot 40)	77
Figure 35: BAL contour map (Lot 41)	78
Figure 36: BAL contour map (Lot 42)	79
Figure 37: BAL contour map (Lot 43)	80
Figure 38: BAL contour map (Lot 44)	81
Figure 39: BAL contour map (Lot 45)	82
Figure 40: BAL contour map (Lot 46)	83
Figure 41: BAL contour map (Lot 47)	84
Figure 42: BAL contour map (Lot 48)	85
Figure 43: BAL contour map (Lot 49)	86
Figure 44: BAL contour map (Lot 50)	87

Appendices

Appendix A	Vegetation plot photos and descriptions (as per Figure 1)
Appendix B	Stage 1 roadworks plan
Appendix C	Stage 1 water tank specifications
Appendix D	Approved firebreak variations for Lots 37 and 46

1. Introduction

1.1 Site/development summary

Table 1 provides a summary of the site and proposed development. The development layout and subject lots are shown in Figure 1.

Table 1: Site/development summary

Site details	
Address details	18 proposed rural residential lots within Stage 1 Yarrimbah Heights, Bullsbrook, WA 6084
Local government area	City of Swan
Description of building works	Construction of a single residential dwelling (Class 1a building) and associated Class 10a structure/s within each proposed lot

1.2 Purpose of report

This Bushfire Management Plan (BMP) compliance and condition clearance report has been prepared for 18 proposed rural residential lots within Stage 1 Yarrimbah Heights, Bullsbrook (the project area). The project area is subject to WAPC subdivision approval (Ref. 160314), including bushfire-related Conditions 1 (excluding 1b and 1j) and 21–23, Advice Notes 1–2 and 6, as well as subsequent reconsideration of conditions/advice notes under WAPC Ref. 160314 (Conditions A–E), as outlined in Table 2, Table 3, Table 4 and Table 5.

This report provides documentational evidence to address the relevant conditions/advice notes under WAPC Ref. 160314 and subsequent reconsideration, including information to demonstrate that the relevant management actions from the approved subdivision stage BMP have been implemented throughout the duration of subdivisional works to facilitate subdivision clearances and creation of title for proposed lots. This report also provides a post-subdivisional works update of the Bushfire Attack Level (BAL) ratings for individual building envelopes within each proposed lot for the benefit of the developer, future lot purchasers and decision makers.

All proposed lots within the project area are designated bushfire prone (refer to Plate 1; DFES 2024) and will therefore require bushfire management consideration and BAL assessment as part of the ongoing planning (i.e. Development Application; DA) and building approvals process. BAL contour assessments have been undertaken for each proposed lot to depict the current BAL impacts to proposed building envelopes and any Asset Protection Zone (APZ) setbacks that will need to be considered as part of the future DA planning and building approvals stage. BAL certificates cannot be issued until the location of proposed buildings within each building envelope is known (i.e. at the DA or building approval stage).

The BAL assessment outlined in this report is the most up to date assessment from JBS&G relating to the project area and has been prepared in consideration of the previous BAL contour assessment documented in the subdivision stage BMP (Strategen-JBS&G 2021). The approach for preparation of this BMP compliance and condition clearance report is consistent with Section 4.2 and Appendix 3 of *Guidelines for Planning in Bushfire Prone Areas* (the Guidelines; WAPC 2021), under which the BMP was prepared and this compliance audit is being measured.

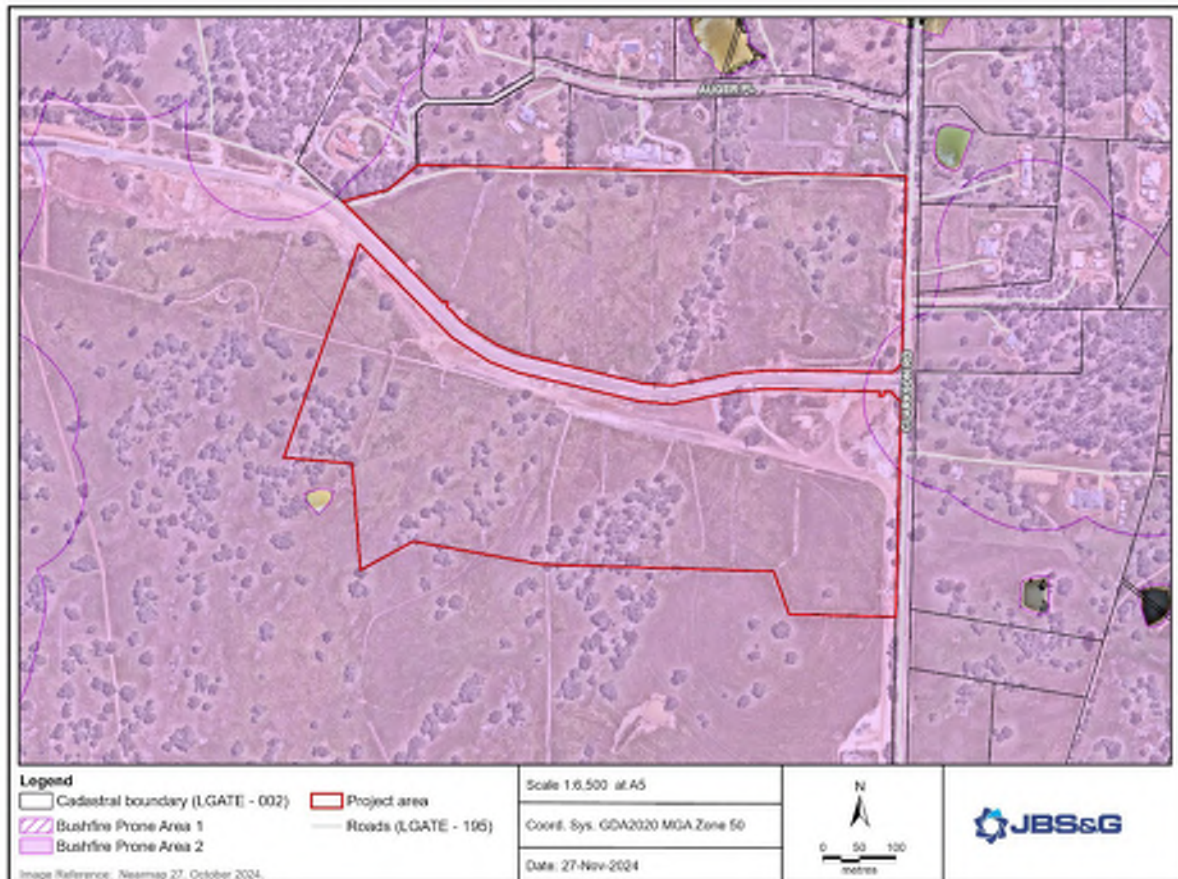


Plate 1: Designated bushfire prone status of the project area (DFES 2024)

1.3 Subdivision conditions

The bushfire-related subdivision conditions, advice notes and reconsideration conditions relevant to the project area, as documented in the WAPC subdivision approval and subsequent reconsideration (Ref. 160314) are outlined in Table 2, Table 3, Table 4 and Table 5.

Table 2: Bushfire conditions under WAPC Ref. 160314

Condition	Condition description	Clearance comments
1a	Proposed Lots 117 to 125 and 175 to 190 being excluded.	N/A Modified under WAPC reconsideration Condition A (see Table 4).
1c	Proposed Lots 19, 20 and 21 being amalgamated into one lot given the topography, extent of clearing combined with the interface with the 59 ha lot	N/A Modified under WAPC reconsideration Condition A (see Table 4).
1d	Proposed Lots 14, 16,18 and 22 being amalgamated as it has not been suitably demonstrated that the gradient of future driveways can be provided in accordance with the requirements of the Guidelines for Planning in Bushfire Prone Areas and the extent of the asset protection zones over these lots	N/A Modified under WAPC reconsideration Condition A (see Table 4).
1e	Proposed Lots 55, 56, 57, 59, 61, 63, 65, 67, 69 and 71 being excluded given the topography, extent of clearing combined with the interface with the 59 ha lot	N/A Modified under WAPC reconsideration Condition A (see Table 4).
1f	Proposed Lots 31 and 32, Lots 149 to 151 and Lots 156 and 157 being amalgamated given the extent of clearing to achieve asset protection zones	N/A Modified under WAPC reconsideration Condition A (see Table 4).
1g	Modify lot boundaries and/or building envelopes, where necessary, to ensure all asset protection zones are contained within individual lot boundaries	N/A Modified under WAPC reconsideration Condition A (see Table 4).
1h	The battle-axe access leg to the telecommunication infrastructure lot being increased to a minimum width of 6 m and the size of the lot being increased to accommodate the necessary asset protection zone	N/A Modified under WAPC reconsideration Condition A (see Table 4).
1i	Identify land for the provision of water tanks in accordance with the approved Bushfire Management Plan	N/A Modified under WAPC reconsideration Condition A (see Table 4).

Condition	Condition description	Clearance comments
21	An updated Bushfire Management Plan is to be provided to the City of Swan for approval for each stage of subdivision which includes a Bushfire Attack Level contour map for each individual lot for which a certification of title is being sought. It shall be demonstrated that the building envelope for each lot can be accommodated within an area of BAL-29 or below.	This report and the BAL contour assessments documented in Section 3 provide the updated Bushfire Management Plan documentation and assessments to demonstrate delivery of BAL-29 or lower for all proposed building envelopes. The final building stage BAL assessment and certification for each lot will be undertaken at the future DA/building stage.
22	Information is to be provided to demonstrate that the relevant measures contained in the updated Implementation Table of the Bushfire Management Plan have been implemented during subdivisional works. This information should include a completed "Certification by Bushfire Consultant" from the bushfire management plan.	This report provides the necessary evidence to demonstrate that the bushfire management measures documented within the subdivision stage BMP have been suitably implemented on site throughout the duration of subdivisional works.
23	Engineering drawings and specifications are to be submitted, approved, and works undertaken in accordance with the approved plan of subdivision, engineering drawings and specifications, for the siting of 5 x 100 kL water tanks to be provided within the road reserve locations depicted in the Bushfire Management Plan and to the following specifications: • 2 outlets with a 100 mm gate and a 50 mm butterfly protected by a mesh cage • concrete slash apron • inlet at the top of tank with BIC coupling • overflow outlet; and • a water level gauge.	The civil engineering plan and specifications for 1 x 100 kL fire water tank located within the Stage 1 Yarrimbah Drive road reserve, as per the BMP, is provided within this report (see Appendix C), along with site photos demonstrating construction (Plate 2).

Condition	Condition description	Clearance comments
24	A notification, pursuant to Section 165 of the <i>Planning and Development Act 2005</i> , is to be placed on the certificate(s) of title of the proposed lot(s) with a Bushfire Attack Level (BAL) rating of 12.5 or above, advising of the existence of a hazard or other factor. Notice of this notification is to be included on the diagram or plan survey (deposited plan). The notification is to state as follows: "This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and is subject to a Bushfire Management Plan. Additional planning and building requirements may apply to development on this land."	As per the Stage 1 Deposited Plan (DP).

Table 3: Bushfire advice notes under WAPC Ref. 160314

Advice note	Advice note description	Clearance comments
1(i)–(v)	Relative to Conditions 1a), 1c), 1d), 1e) and 1f), the Commission is prepared to consider a further, separate subdivision application(s) for the creation of the proposed lots referenced in those conditions, subject to the proponent demonstrating that: (i) For the proposed lots excluded by condition 1a), Fire Service Access Routes shown on the approved plan of subdivision will comply with the criteria for Fire Service Access Routes set out in Acceptable Solution A3.7 of the Guidelines for Planning in Bushfire Prone Areas and will be protected via an appropriate easement specifying access rights for emergency fire purposes in favour of the local government. (ii) For the proposed lots referenced in condition 1c), Asset Protection Zones will be sufficient to achieve BAL-29 or lower for the respective building envelopes, to comply with the guidelines for Planning in Bushfire Prone Areas. (iii) For the proposed lots referenced in condition 1d), the gradient of future driveways will accord with Acceptable Solution A3.5 of the Guidelines for Planning in Bushfire Prone Areas; and Asset Protection Zones will be sufficient to achieve BAL-29 or lower for the respective building envelopes, to comply with those Guidelines. (iv) For the proposed lots excluded by condition 1e), Asset Protection Zones will be sufficient to achieve BAL-29 or lower for the respective building envelopes, to comply with the Guidelines for Planning in Bushfire Prone Areas. (v) For the proposed lots referenced in condition 1f), Asset Protection Zones will be sufficient to achieve BAL-29 or lower for the respective building envelopes, to comply with the Guidelines for Planning in Bushfire Prone Areas.	N/A Deleted under WAPC reconsideration Condition C (see Table 4).

Advice note	Advice note description	Clearance comments
2	In relation to Condition 1g), lot boundaries and/or building envelopes will need to be modified to ensure Asset Protection Zones are contained within individual lot boundaries. Asset Protection Zones straddling firebreaks on adjoining properties may be acceptable.	N/A Modified under WAPC reconsideration Condition E (see Table 5).
6	In regard to Condition 21, particular attention be given to the recommendations listed in table 2 of the Peer Review prepared by Emerge Associates, dated June 2021.	N/A Modified under WAPC reconsideration Condition E (see Table 5).

Table 4: Bushfire conditions under WAPC subdivision reconsideration Ref. 160314

Condition	Condition description	Clearance comments
A	Condition 1 to be modified to read in full as follows: 1. The subdivision plan dated 8 January 2021 being modified as follows:	
	a) The indicative fire service access routes for proposed Lots 117 to 125 and 175 to 190 being shown on the subdivision plan	N/A The Fire Service Access Route (FSAR) is not applicable to the project area.
	c) Modify lot boundaries and/or building envelopes, where necessary, to ensure all asset protection zones are contained within individual lot boundaries	All Asset Protection Zones (APZs) have been contained within individual lot boundaries, as depicted in Figure 1.
	d) The battle-axe access leg to the telecommunication infrastructure lot being increased to a minimum width of 6m and the size of the lot being increased to accommodate the necessary asset protection zone	N/A The telecommunications infrastructure lot and associated battle-axe access leg is not applicable to the project area.
	e) Identify land for the provision of water tanks in accordance with the approved Bushfire Management Plan	The civil engineering plan and specifications for 1 x 100 kL fire water tank located within the Stage 1 Yarrimbah Drive road reserve, as per the BMP, is provided within this report (see Appendix C), along with site photos demonstrating construction (Plate 2).
B	Add new Conditions as follows:	

Condition	Condition description	Clearance comments
	31. Easement(s) in accordance with Section 195 of the <i>Land Administration Act 1997</i> specifying access rights for emergency fire purposes in favour of the Local Government are to be placed on the certificate(s) of title of proposed Lots 117 to 125 and 175 to 190 and the deed(s) of easement to specify care and management of the easement area is by the Local Government. Notice of this easement(s) is to be included on the diagram or plan of survey (deposited plan). The easement(s) are to state as follows: "6 metre wide permanent emergency access way for vehicles is to be provided as per the indicative Fire Service Access Routes depicted on the approved plan of subdivision."	N/A The FSAR and associated easement is not applicable to the project area.
	32. Engineering drawings and specifications are to be submitted, approved and subdivisional works undertaken in accordance with the approved plan of subdivision, engineering drawings and specifications, for the provision of Fire Service Access Routes compliant with the criteria for Fire Service Access Routes set out within the Guidelines for Planning in Bushfire Prone Areas. Fire Service Access Routes shall have a maximum grade of 1:10, unless sections with grades greater than 1:10 are sealed. Turn around areas for type 3.4 fire appliances shall be provided every 500 m, if applicable.	N/A The FSAR is not applicable to the project area.
	33. The internal driveways for Lots 14, 16, 18 and 22 being constructed and drained at the landowner/applicants cost to the specifications of the local government. The driveways shall be constructed between the street boundary and the proposed building envelope.	N/A The specified lots are not applicable to the project area.

Table 5: Bushfire advice notes under WAPC subdivision reconsideration Ref. 160314

Condition	Advice Note description	Clearance comments
C	Delete advice note 1.	N/A
D	Add new advice notes as follows	
	9. In regard to Condition 1a, the fire service access route may need to be greater than 6 m in width to accommodate engineering requirements such as batters and drainage.	N/A The FSAR is not applicable to the project area.
	10. Reduced building envelope sizes may be required for the proposed Lots 19 to 21 to accommodate the necessary asset protection zones.	N/A The specified lots are not applicable to the project area.
	11. Building envelopes for proposed Lots 14, 19, 20, 21, 55, 56, 57, 59, 61, 63, 65, 67, 69 and 71 should be located as close as possible to the street boundary.	N/A The specified lots are not applicable to the project area.
	12. The fire service access routes shall be designed and constructed to avoid habitat trees where possible.	N/A The FSAR is not applicable to the project area.
	13. In regard to Condition 21, details of the strategic firebreak for proposed Lots 19, 20, 21, 55, 56, 57, 59, 61, 63, 65, 67, 69 and 71 should be included in the Bushfire Management Plan. The strategic firebreak to be 6 m in width or lessor amount as agreed by the local government.	N/A The specified lots and associated strategic firebreak are not applicable to the project area.
E	Modify advice note 2 to reference Condition 1c and modify advice note 6 to read in full as follows:	All Asset Protection Zones (APZs) have been contained within individual lot boundaries, as depicted in Figure 1.
	In regard to Condition 21, particular attention be given to the recommendations listed in table 2 of the peer review prepared by Emerge Associates, dated June 2021 and the summary table within the level 3 peer review report prepared by Ecosystem Solutions, dated 7 September 2022.	This report addresses the relevant recommendations of both peer reviews undertaken by Emerge Associates (2021) and Ecosystem Solutions (2022), as outlined in Table 7 and Table 8 respectively.

2. Bushfire Management Plan compliance audit

The subdivision stage BMP (Strategen-JBS&G 2021) and two peer reviews (Emerge Associates 2021 and Ecosystem Solutions 2022) list the bushfire management measures and recommendations required to be implemented by the developer prior to issue of titles. An on-site audit was undertaken on 31 July 2024 to confirm that all relevant works from the subdivision stage BMP and subsequent peer reviews have been implemented in relation to Stage 1. The relevant bushfire management requirements, associated evidence of compliance and certification by bushfire consultant are documented in Table 6 for the Strategen-JBS&G (2021) BMP, Table 7 for the Emerge Associates (2021) peer review and Table 8 for the Ecosystem Solutions (2022) peer review.

Table 6: Audit against requirements of the Strategen-JBS&G (2021) BMP

BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 4 (No. 1)	Construct (or have works bonded) the public roads to the standards stated in this BMP, including provision of the rural link road between Clarkson Road and Lage Road as part of Stage 1 development.	Construction of the rural link road between Clarkson Road and Lage Road (i.e. Yarrimbah Drive) as part of Stage 1 works is nearing completion and is bonded to the City in accordance with the civil roadworks plan (see Appendix B), which aligns with the technical provisions stated within the BMP and the Guidelines. In this regard, the public road is not required to be fully constructed prior to issue of titles and will be compliant once constructed. All proposed lots within the project area have frontage to Yarrimbah Drive. Yarrimbah Drive provides public through access to Great Northern Highway to the west via Lage Road, which in turn provides broader access to suitable destinations in Bullsbrook to the north and Upper Swan to the south. Yarrimbah Drive also provides public through access to Chittering Road to the east/northeast via Clarkson Road, Taylor Road and Smith Road, which in turn provides broader access to suitable destinations in Bullsbrook to the west and Muchea to the northwest. On this basis, the project area is compliant with vehicular access provisions of the Guidelines and the BMP.	Zac Cockerill (Level 2 BPAD37803) 

BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 4 (No. 2)	Construct (or have works bonded) any temporary cul-de-sacs/EAWs as required during staging to the dimensions and standards stated in this BMP.	N/A No temporary cul-de-sacs or EAWs are required for the project area.	N/A
Table 4 (No. 3)	Install 50 kL tanks and associated infrastructure as specified in this BMP for the relevant stages of development, or on advice/consultation from City of Swan.	The civil engineering plan and specifications for 1 x 100 kL fire water tank located within the Stage 1 Yarrimbah Drive road reserve, as per the BMP, is provided in Appendix C, along with site photo evidence of construction in Plate 2. 100 kL tanks were preferred by the City instead of 2x 50 kL tanks, as reflected in WAPC conditions.	Zac Cockerill (Level 2 BPAD37803) 
Table 4 (No. 4)	Establish proposed building envelopes and APZs for each relevant stage in a low threat state to achieve exclusion Clause 2.2.3.2 (f) of AS 3959 and Schedule 1 APZ standard of the Guidelines, including slashing/mowing of grassland and weeds to height of less than 10 cm.	The building envelopes and associated APZs within the project area have been established to achieve exclusion under Clauses 2.2.3.2 (e) and (f) through grazing and site slashing, as evidenced in on-ground site photos in Appendix A, with photo locations depicted in Figure 1 (refer to Plot 4 site photos).	Zac Cockerill (Level 2 BPAD37803) 
Table 4 (No. 5)	Establish road verges for each relevant stage to achieve no greater than a Class G grassland vegetation classification (not including Stock Road reserve), or to a state that incurs no material change in the compliance of BALs/APZs for individual lots.	The Yarrimbah Drive road reserve and verges have been established to achieve exclusion under Clauses 2.2.3.2 (e) and (f) through clearing and construction, as depicted by aerial imagery in Figure 1 and on-ground site photos in Appendix A (refer to site photos 4c, 4q, 4r and 4v).	Zac Cockerill (Level 2 BPAD37803) 

BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 4 (No. 6)	Comply with the City of Swan annual firebreak notice as amended and apply firebreak variations as required and where practical in consultation with the City.	All relevant requirements from the City of Swan annual firebreak notice have been implemented for the project area. This includes: • installation of 20 m wide APZs, as per Figure 1 • installation of 3 m wide lot boundary firebreaks, incorporating minor adjustments to navigate around trees, rocky outcrops and water courses where required, as per Figure 1 and on-ground site photos in Appendix A (refer to Plot 4 site photos) • firebreak variations for Lots 37 and 46 to account for more significant deviations to avoid native vegetation and water courses (see Appendix D) • maintenance of grass to a height of less than 10 cm for Lots 33–35, 37 and 39–48 (i.e. on land between 0.5–2.5 ha), as per on-ground site photos in Appendix A, with photo locations depicted in Figure 1 (refer to Plot 4 site photos) • provision of 3 m wide slashed buffers adjacent to lot boundary firebreaks comprising grassland less than 10 cm in height for Lots 36, 38 and 49–50 (i.e. on land greater than 2.5 ha), as per Figure 1 and on-ground site photos in Appendix A, with photo locations depicted in Figure 1 (refer to Plot 4 site photos) • compliance with BMP requirements (as outlined in this report).	Zac Cockerill (Level 2 BPAD37803) 
Table 4 (No. 7)	Place a notification on title of all lots subject to BAL-12.5 or higher to ensure landowners/proponents and prospective purchasers are aware that their lot is subject to an approved AMP and BAL assessment.	N/A Bushfire notification on title will be applied by others, as per the DP.	N/A
Table 4 (No. 8)	Cede the proposed fire station site to the relevant authority at the relevant stage of development.	N/A The proposed fire station lot is not applicable to the project area.	N/A

BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 4 (No. 9)	Add restrictive covenant on the title of all proposed lots, stating the following: • maintain all APZs as per detailed Design Guides • maintain background vegetation conditions across the site as per detailed Design Guide • maintain a reserve of 10 kL of water dedicated for firefighting purposes within domestic water supply tanks • comply with all other provisions of the individual lot detailed Design Guides • maintain 50 m and 100 m development setbacks for relevant lots.	The restrictive covenants have been applied as per the DP.	Zac Cockerill (Level 2 BPAD37803) 
Table 4 (No. 10)	Construct the FRASs at the relevant stages of development to the standards stated in this BMP.	N/A The FSAR is not applicable to the project area.	N/A
Table 4 (No. 11)	Undertake BMP compliance audit and reporting to confirm relevant requirements of the BMP have been implemented as intended to achieve compliance with all relevant bushfire protection criteria and BMP provisions (to be undertaken by bushfire practitioner).	This report provides the required compliance assessment against relevant requirements of the BMP and bushfire protection criteria of the Guidelines.	Zac Cockerill (Level 2 BPAD37803) 

BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 4 (No. 12)	Prepare detailed design Guides on staged basis for each individual lot, as per specifications of this BMP.	Detailed Bushfire Design Guides have been prepared for all Stage 1 lots as per specifications of the BMP and provided to prospective landowners by the developer.	Zac Cockerill (Level 2 BPAD37803) 

Table 7: Audit against requirements of the Emerge Associates (2021) peer review

Item	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 2 (No. 1)	The standards provision of the rural link road between Clarkson Road and Lage Road as part of Stage 1. (Acknowledged)	As previously stated under Table 6 Item 1.	Zac Cockerill (Level 2 BPAD37803) 
Table 2 (No. 2)	Construct (or have works bonded) any temporary cul-de-sacs/EAWs as required during staging to the dimensions and standards stated in this BMP. (Should address the turn around provided not to exceed 200 m for the north links)	N/A No temporary cul-de-sacs or EAWs are required for the project area.	N/A
Table 2 (No. 3)	Install 50kL water tanks as specified in this BMP for the relevant stages of development, or on advice/consultation from City of Swan. (Ensure clearance to avoid obstruction to the through road when the tank is being used. Tanks to be ceded to the City of Swan)	As previously stated under Table 6 Item 3. Sufficient clearance and turnaround capacity has been provided to avoid obstruction to Yarrimbah Drive. The water tank will be ceded to the City.	Zac Cockerill (Level 2 BPAD37803) 
Table 2 (No. 4)	Establish all proposed building envelopes and APZs in a low threat state to achieve exclusion Clause 2.2.3.2 (f) of AS3959 and Schedule 1 APZ standards of the Guidelines, including slashing/mowing of grassland and weeds to height of less than 10cm (Define building envelope location and determine individual APZ extent and BAL prior to clearance)	As previously stated under Table 6 Item 4. All building envelopes, APZ extents and BALs have been defined prior to clearance, as per Figure 1 and the BAL assessment results contained in Section 3.2.	Zac Cockerill (Level 2 BPAD37803) 

Item	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 2 (No. 5)	Establish road verges for each relevant stage to achieve no greater than a Class G grassland vegetation classification (not including Stock Road reserve), or to a state that incurs no material change in the compliance of BALs/APZs for individual lots. (Acknowledged)	As previously stated under Table 6 Item 5.	Zac Cockerill (Level 2 BPAD37803) 
Table 2 (No. 6)	Comply with the City of Swan annual firebreak notice as amended and apply firebreak variations as required and where practical in consultation with the City. (Acknowledged)	As previously stated under Table 6 Item 6.	Zac Cockerill (Level 2 BPAD37803) 
Table 2 (No. 7)	Place a notification on title of all lots subject to BAL-12.5 of higher to ensure landowners/proponents and prospective purchasers are aware that their lot is subject to an approved BMP and BAL assessment. (Include WAPC model condition F2)	N/A Bushfire notification on title will be applied by others, as per the DP.	N/A
Table 2 (No. 8)	Cede the proposed fire station site to the relevant authority at the relevant stage of development. (Acknowledged)	N/A The proposed fire station lot is not applicable to the project area.	N/A

Item	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 2 (No. 9)	Add a restrictive covenant on the title of all proposed lots, stating the following: • maintain all APZs as per detailed Design Guides (Include WAPC model condition F3 restricting habitable buildings from placement in areas greater than BAL 29) • maintain background vegetation conditions across the site as per detailed Design Guides (Include a landscape plan guidance to clarify expectations for the landowner, Exclude the retained forest at lots, outside of their APZ extent) • maintain a reserve of 10kL of water dedicated for firefighting purposes within domestic water supply tanks (To be provided within 3 m of the driveway, signposted and couplings to the City's specifications) • comply with all other provisions of the individual lot detailed Design Guides (Acknowledged) • maintain 50m and 100m development setbacks for relevant lots (Acknowledged to apply to relevant lots)	As previously stated under Table 6 Item 9.	Zac Cockerill (Level 2 BPAD37803) 

Item	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 2 (No. 10)	Construct the FSARs at the relevant stages of development to the standards stated in this BMP (Include WAPC model condition F4 provision of easement, to be maintained by the landowner)	N/A The FSAR is not applicable to the project area.	N/A
Table 2 (No. 11)	Undertake BMP compliance audit and reporting to confirm relevant requirements of the BMP have been implemented as intended to achieve compliance with all relevant bushfire protection criteria and BMP provisions (to be undertaken by the bushfire practitioner) (As per WAPC model condition F1)	As previously stated under Table 6 Item 11.	Zac Cockerill (Level 2 BPAD37803) 
Table 2 (No. 12)	Prepare detailed Design Guides on a staged basis for each individual lot, as per specifications of this BMP (To be reference to the restrictive covenant)	As previously stated under Table 6 Item 12.	Zac Cockerill (Level 2 BPAD37803) 
Table 2 (No. 13)	Prepare detailed BAL contour assessment reports for the 160 low and moderate risk lots on a staged basis (To be prepared prior to title clearance link with condition 11)	This report contains the required detailed BAL contour assessments for individual lots (as per BAL assessment results contained in Section 3.2).	Zac Cockerill (Level 2 BPAD37803) 

Table 8: Audit against requirements of the Ecosystem Solutions (2022) peer review

BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 6 (Condition 1a Advice Note 1 (i) Lot 117-125 and 175-190)	Engineering advice confirms that the grade is within the limits prescribed in the policy (SPP3.7). The local government has requested areas to be sealed and developer accepts these conditions. Ecosystem Solutions would consider these elements are compliant with SPP 3.7 Element 3 Access requirements.	N/A The specified lots are not applicable to the project area.	N/A
Table 6 (Condition 1c Advice Note 1 (ii) Lot 19,20,21)	Habitable structures can only achieve BAL-29 if centrally located within the proposed Building Envelope. The Building Envelope should be reduced or other legal/planning instruments to specify the exact location of the footprint of a proposed structure should be implemented to ensure houses are built in this location.	N/A The specified lots are not applicable to the project area.	N/A
Table 6 (Condition 1d Advice Not 1 (iii) Lot 14)	Relocate the building envelope to the southwest of the Lot, with a separation distance of 12m to the lot boundaries, to ensure BAL-29 can be achieved from the Class G Grassland within the road reserve. This will reduce the amount of vegetation modification required to implement an APZ to achieve BAL-29, should a habitable building occur in the north eastern corner of the Building Envelope.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1d Advice Note 1 (iii) Lot 16)	Habitable structures can only achieve BAL-29 if specifically located within the proposed Building Envelope. The Building Envelope should be reduced or other legal/planning instruments to specify the exact location of the footprint of a proposed structure should be implemented to ensure houses are built in this location	N/A The specified lot is not applicable to the project area.	N/A

BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 6 (Condition 1d Advice Note 1 (iii) Lot 18)	Habitable structures can only achieve BAL-29 if centrally located within the proposed Building Envelope. The Building Envelope should be reduced or other legal/planning instruments to specify the exact location of the footprint of a proposed structure should be implemented to ensure houses are built in this location	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1d Advice Note 1 (iii) Lot 22)	No recommendations - The amended building envelope is in a suitable location for the entire Building Envelope to achieve a BAL-29 or lower rating, with no vegetation modification required.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1e Advice Note 1 (iv) Lot 55)	Relocate the building envelope to the north eastern of the Lot, with a separation distance of 9m to the northern lot boundary and 8m from the eastern lot boundary. This will result the entire Building Envelope being able to achieve a Bal-29 or lower rating, with no modification of remnant vegetation required.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1e Advice Note 1 (iv) Lot 56)	Slightly relocate the Building Envelope to the west, to have separation of 8m from the eastern lot boundary. This will result the entire Building Envelope being able to achieve a BAL-29 or lower rating, with no modification of remnant vegetation required.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1e Advice Note 1 (iv) Lot 57)	Slightly relocate the Building Envelope to the west, to have separation of 8m from the eastern lot boundary. This will result the entire Building Envelope being able to achieve a BAL-29 or lower rating, with no modification of remnant vegetation required.	N/A The specified lot is not applicable to the project area.	N/A

BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 6 (Condition 1e Advice Note 1 (iv) Lot 59)	Slightly relocate the Building Envelope to the west, to have separation of 8m from the eastern lot boundary. This will result the entire Building Envelope being able to achieve a BAL-29 or lower rating, with no modification of remnant vegetation required.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1e Advice Note 1 (iv) Lot 61)	Slightly relocate the Building Envelope to the west, to have separation of 8m from the eastern lot boundary to ensure BAL-40 or BAL-FZ ratings do not encroach into the eastern portion of the building envelope. It is also recommended that the building envelope be rotated to a north south orientation, to further reduce the vegetation modification that would be required to achieve BAL-29.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1e Advice Note 1 (iv) Lot 63)	Slightly relocate the Building Envelope to the west, to have separation of 8m from the eastern lot boundary. This will result the entire Building Envelope being able to achieve a BAL-29 or lower rating, with no modification of remnant vegetation required.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1e Advice Note 1 (iv) Lot 65)	Slightly relocate the Building Envelope to the west, to have separation of 8m from the eastern lot boundary. This will result the entire Building Envelope being able to achieve a BAL-29 or lower rating, with no modification of remnant vegetation required.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1e Advice Note 1 (iv) Lot 67)	No recommendations - The amended building envelope is in a suitable location.	N/A The specified lot is not applicable to the project area.	N/A

BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 6 (Condition 1e Advice Note 1 (iv) Lot 69)	No recommendations - The amended building envelope is in a suitable location.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1e Advice Note 1 (iv) Lot 71)	No recommendations - The amended building envelope is in a suitable location.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Strategic Fire Break)	The BMP outlines a 3m wide break, the City of Swan prescribes a 6m break, this needs to be addressed. Ideally this Strategic Fire Break would connect or continue onto public roads within the development, however if this cannot be achieved due to engineering constrained, then the terminating point for the Strategic Fire Break should be engineered with a turning circle or turning tee suitable for a 3.4 fire appliance.	N/A The nominated strategic firebreaks are not applicable to the project area.	N/A
Table 6 (Condition 1f Advice Note 1 (v) Lot 31)	Relocate the Building Envelope to the north west, to achieve separation of 8m from the eastern lot boundary and 10m from the southern lot boundary. This will result the entire Building Envelope being able to achieve a Bal-29 or lower rating, with minor modification of remnant vegetation required to implement the APZ	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1f Advice Note 1 (v) Lot 32)	Relocate the Building Envelope to the north east, to achieve a separation of 8m from the western lot boundary and 10m from the southern lot boundary. The building envelope should be reduced in size, to ensure a BAL-29 rating is achievable in its entirety.	N/A The specified lot is not applicable to the project area.	N/A

BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 6 (Condition 1f Advice Note 1 (v) Lot 149)	Relocate the Building Envelope to the east, to achieve a separation of 8m from the western lot boundary. This will result the entire Building Envelope being able to achieve a BAL-29 or lower rating, with modification to remnant vegetation. It is also recommended that the Building Envelope be reduced in size to avoid any impact to the water course from an APZ, should a habitable building occur in the north eastern corner of the Building Envelope.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1f Advice Note 1 (v) Lot 150)	Relocate the Building Envelope to the east, to achieve a separation of 10m from the western lot boundary. It is also recommended that the Building Envelope be reduced in size to ensure an APZ to achieve BAL-29 can be achieved within the Lot boundaries.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1f Advice Note 1 (v) Lot 151)	No modification required.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1f Advice Note 1 (v) Lot 156)	Relocate the Building Envelope to the west, to have separation of 10m from the eastern lot boundary, the size and/or shape of the building envelope should also be adjusted to ensure at the entire building envelope can achieve a BAL-29 or lower rating, without vegetation modification within Plot 1.	N/A The specified lot is not applicable to the project area.	N/A
Table 6 (Condition 1f Advice Note 1 (v) Lot 157)	Relocate the Building Envelope to the west, to achieve separation of 10m from the eastern lot boundary, the size and/or shape of the building envelope should also be adjusted to ensure at the entire building envelope can achieve a BAL-29 or lower rating, without vegetation modification within Plot 1.	N/A The specified lot is not applicable to the project area.	N/A



Plate 2: 100 kL fire water tank with appropriate clearance and turnaround within Yarrimbah Drive road reserve

3. Bushfire assessment results

3.1 Assessment inputs

A Bushfire Attack Level (BAL) contour assessment has been undertaken for each proposed lot within the project area in accordance with Method 1 of AS3959—2018 *Construction of Buildings in Bushfire-Prone Areas* (AS3959; SA 2018). The Method 1 procedure incorporates the following factors:

- state-adopted FDI 80 rating
- vegetation classification
- effective slope
- distance maintained between proposed development areas and the classified vegetation.

The BAL contours are based on the current on-ground site conditions and take into consideration the bushfire management measures that have been implemented on site, as listed in Section 2.

3.1.1 Vegetation classification

Classified vegetation and exclusions were assessed for each proposed lot within the project area and the adjoining 150 m (the assessment area) through on-ground verification on 31 July 2024 in accordance with AS3959 and the *Visual Guide for Bushfire Risk Assessment in Western Australia* (DoP 2016). Georeferenced site photos and a description of the vegetation classifications and exclusions for the overall project area are contained in Appendix A and depicted in Figure 1. Detailed vegetation classification mapping has also been undertaken on an individual lot basis, as depicted in Figure 2 to Figure 19. A summary of the vegetation classifications and exclusions is contained in Table 9.

Site observations indicate that the vegetation classifications and exclusions align with the post-development vegetation classifications determined by the endorsed subdivision stage BMP (Strategen-JBS&G 2021), including:

- Class A forest situated to the northwest of the project area comprising eucalypts over mid and understorey vegetation
- Class B woodland situated throughout isolated pockets across the landscape comprising a sparse eucalyptus canopy over unmanaged grass
- Class G grassland situated throughout cleared, unmanaged areas of the landscape comprising pasture grass and weeds greater than 100 mm in height.

Exclusions within the project area and adjacent 150 m are in accordance with Clauses 2.2.3.2 (e) and (f), as follows:

- non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and land cleared/earthworked for construction
- low threat managed vegetation such as established APZs and grazed/slashed grasslands less than 100 mm in height, with ongoing enforcement via the City's annual firebreak notice.

3.1.2 Effective slope

Effective slope under classified vegetation was assessed within the assessment area through on-ground verification on 31 July 2024 in accordance with AS3959. Results were cross-referenced with DPIRD 2m and are depicted for individual lots in Figure 2 to Figure 19. A summary of effective slope results is contained in Table 9.

Site observations indicate that effective slope under classified vegetation aligns with the effective slopes identified within the endorsed subdivision stage BMP (Strategen-JBS&G 2021), which identifies slopes ranging from flat/up-slope (i.e. 0 degrees) to downslope (>5–10 degrees) across the undulating landscape. Where effective slope under the same vegetation plot influences adjacent building envelopes differently, this has created the need to prepare individual vegetation classification and effective slope maps for individual lots.

3.1.3 Summary of inputs

Figure 2 to Figure 19 illustrate the current vegetation classifications, exclusions and effective slopes observed during site inspection for each individual lot within the project area. The vegetation classifications, exclusions and effective slope are summarised in Table 9.

Table 9: Summary of vegetation classifications, exclusions and effective slope

Lot	Vegetation plot	Vegetation classification	Effective slope	Comments	Figure ref.
33	1	Class A Forest	Downslope >5–10°	Trees 10–30 m high at maturity, dominated by eucalypts with a multi-tiered structure comprising a tall canopy layer, shrubby middle layer and grass/herb/sedge understorey	Figure 2
	2	Class A Forest	Flat/upslope (0°)		
	3	Class B Woodland	Downslope >5–10°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	
	4	Class B Woodland	Flat/upslope (0°)		
	5	Class G Grassland	Downslope >5–10°	Grassland greater than 100 mm in height	
	6	Class G Grassland	Downslope >0–5°		
	7	Class G Grassland	Flat/upslope (0°)		
	8	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
34	1	Class B Woodland	Downslope >5–10°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 3
	2	Class B Woodland	Flat/upslope (0°)		
	3	Class G Grassland	Downslope >5–10°	Grassland greater than 100 mm in height	
	4	Class G Grassland	Downslope >0–5°		
	5	Class G Grassland	Flat/upslope (0°)		
	6	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	

Lot	Vegetation plot	Vegetation classification	Effective slope	Comments	Figure ref.
35	1	Class B Woodland	Downslope >0–5°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 4
	2	Class G Grassland	Downslope >5–10°	Grassland greater than 100 mm in height	
	3	Class G Grassland	Downslope >0–5°		
	4	Class G Grassland	Flat/upslope (0°)		
	5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
36	1	Class B Woodland	Downslope >0–5°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 5
	2	Class B Woodland	Flat/upslope (0°)		
	3	Class G Grassland	Downslope >0–5°	Grassland greater than 100 mm in height	
	4	Class G Grassland	Flat/upslope (0°)		
	5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
37	1	Class B Woodland	Downslope >0–5°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 6
	2	Class B Woodland	Flat/upslope (0°)		
	3	Class G Grassland	Downslope >0–5°	Grassland greater than 100 mm in height	
	4	Class G Grassland	Flat/upslope (0°)		

Lot	Vegetation plot	Vegetation classification	Effective slope	Comments	Figure ref.
	5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
38	1	Class B Woodland	Downslope >0–5°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 7
	2	Class B Woodland	Flat/upslope (0°)		
	3	Class G Grassland	Downslope >0–5°	Grassland greater than 100 mm in height	
	4	Class G Grassland	Flat/upslope (0°)		
	5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
39	1	Class B Woodland	Downslope >0–5°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 8
	2	Class B Woodland	Flat/upslope (0°)		
	3	Class G Grassland	Downslope >0–5°	Grassland greater than 100 mm in height	
	4	Class G Grassland	Flat/upslope (0°)		
	5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
40	1	Class B Woodland	Downslope >0–5°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 9
	2	Class B Woodland	Flat/upslope (0°)		

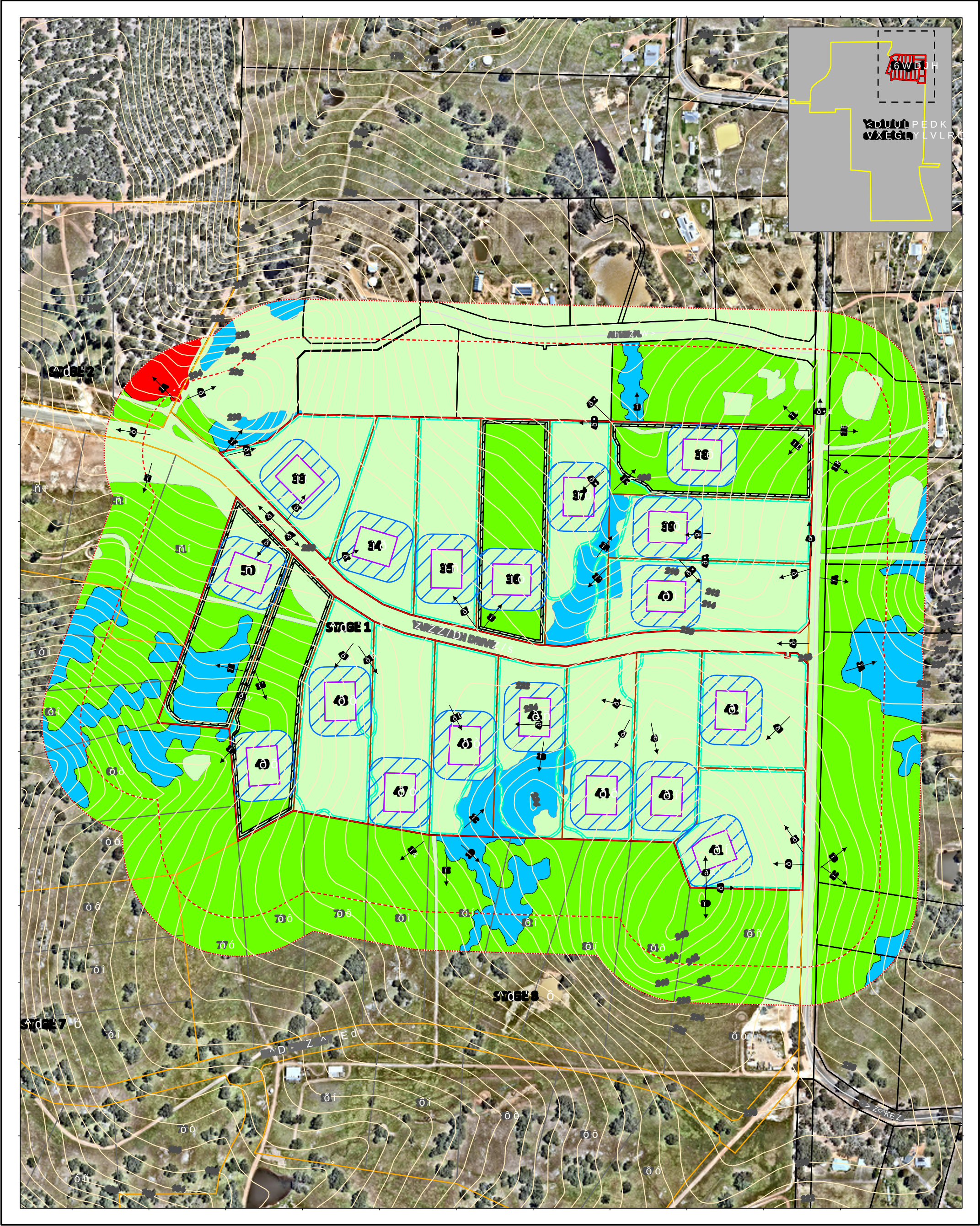
Lot	Vegetation plot	Vegetation classification	Effective slope	Comments	Figure ref.
	3	Class G Grassland	Downslope >0–5°	Grassland greater than 100 mm in height	
	4	Class G Grassland	Flat/upslope (0°)		
	5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
41	1	Class B Woodland	Downslope >5–10°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 10
	2	Class B Woodland	Flat/upslope (0°)		
	3	Class G Grassland	Downslope >5–10°	Grassland greater than 100 mm in height	
	4	Class G Grassland	Flat/upslope (0°)		
	5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
42	1	Class B Woodland	Downslope >0–5°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 11
	2	Class B Woodland	Flat/upslope (0°)		
	3	Class G Grassland	Downslope >5–10°	Grassland greater than 100 mm in height	
	4	Class G Grassland	Flat/upslope (0°)		
	5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	

Lot	Vegetation plot	Vegetation classification	Effective slope	Comments	Figure ref.
43	1	Class B Woodland	Downslope >5–10°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 12
	2	Class B Woodland	Downslope >0–5°		
	3	Class G Grassland	Downslope >5–10°	Grassland greater than 100 mm in height	
	4	Class G Grassland	Flat/upslope (0°)		
	5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
44	1	Class B Woodland	Downslope >5–10°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 13
	2	Class B Woodland	Downslope >0–5°		
	3	Class G Grassland	Downslope >5–10°	Grassland greater than 100 mm in height	
	4	Class G Grassland	Flat/upslope (0°)		
	5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
45	1	Class B Woodland	Downslope >5–10°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 14
	2	Class B Woodland	Downslope >0–5°		
	3	Class B Woodland	Flat/upslope (0°)		
	4	Class G Grassland	Downslope >5–10°	Grassland greater than 100 mm in height	
	5	Class G Grassland	Flat/upslope (0°)		

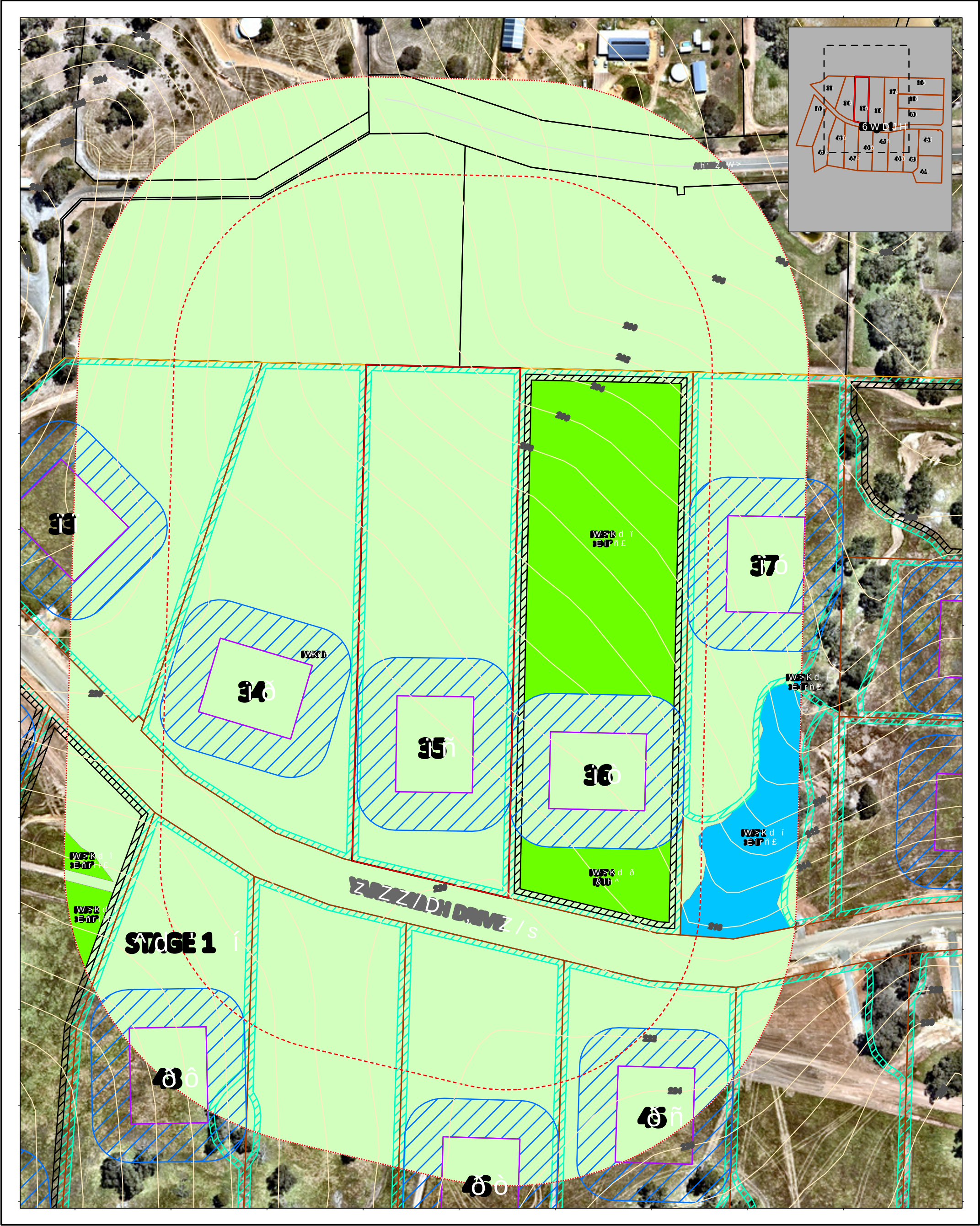
Lot	Vegetation plot	Vegetation classification	Effective slope	Comments	Figure ref.
	6	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
46	1	Class B Woodland	Downslope >5–10°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 15
	2	Class B Woodland	Downslope >0–5°		
	3	Class B Woodland	Flat/upslope (0°)		
	4	Class G Grassland	Downslope >5–10°	Grassland greater than 100 mm in height	
	5	Class G Grassland	Downslope >0–5°		
	6	Class G Grassland	Flat/upslope (0°)		
	7	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
47	1	Class B Woodland	Downslope >0–5°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 16
	2	Class B Woodland	Flat/upslope (0°)		
	3	Class G Grassland	Downslope >5–10°	Grassland greater than 100 mm in height	
	4	Class G Grassland	Downslope >0–5°		
	5	Class G Grassland	Flat/upslope (0°)		
	6	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	

Lot	Vegetation plot	Vegetation classification	Effective slope	Comments	Figure ref.
48	1	Class B Woodland	Downslope >5–10°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 17
	2	Class B Woodland	Flat/upslope (0°)		
	3	Class G Grassland	Downslope >5–10°	Grassland greater than 100 mm in height	
	4	Class G Grassland	Downslope >0–5°		
	5	Class G Grassland	Flat/upslope (0°)		
	6	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
49	1	Class B Woodland	Downslope >5–10°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	Figure 18
	2	Class B Woodland	Flat/upslope (0°)		
	3	Class G Grassland	Downslope >5–10°	Grassland greater than 100 mm in height	
	4	Class G Grassland	Flat/upslope (0°)		
	5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	
50	1	Class A Forest	Flat/upslope (0°)	Trees 10–30 m high at maturity, dominated by eucalypts with a multi-tiered structure comprising a tall canopy layer, shrubby middle layer and grass/herb/sedge understorey	Figure 19
	2	Class B Woodland	Downslope >5–10°	Trees 2–30 m high at maturity, dominated by sparse eucalypts with a grassy understorey (lacks shrubby middle layer and deep surface litter)	
	3	Class B Woodland	Flat/upslope (0°)		

Lot	Vegetation plot	Vegetation classification	Effective slope	Comments	Figure ref.
	4	Class G Grassland	Downslope >5–10°	Grassland greater than 100 mm in height	
	5	Class G Grassland	Flat/upslope (0°)		
	6	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated areas such as rocky outcrops, watercourses, buildings, roads, tracks, firebreaks and earthworked land; and low threat managed vegetation such as established APZs and managed grassland	

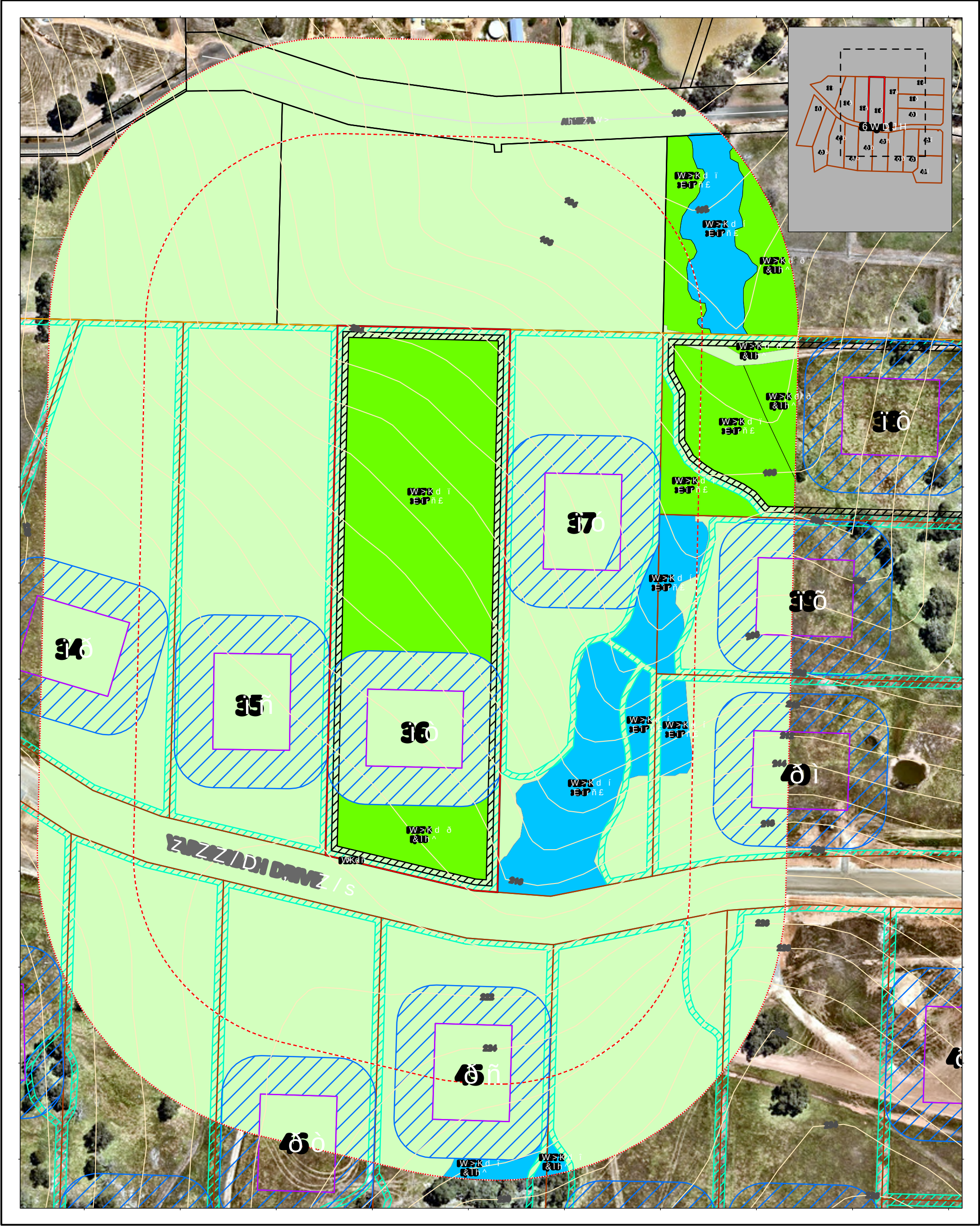


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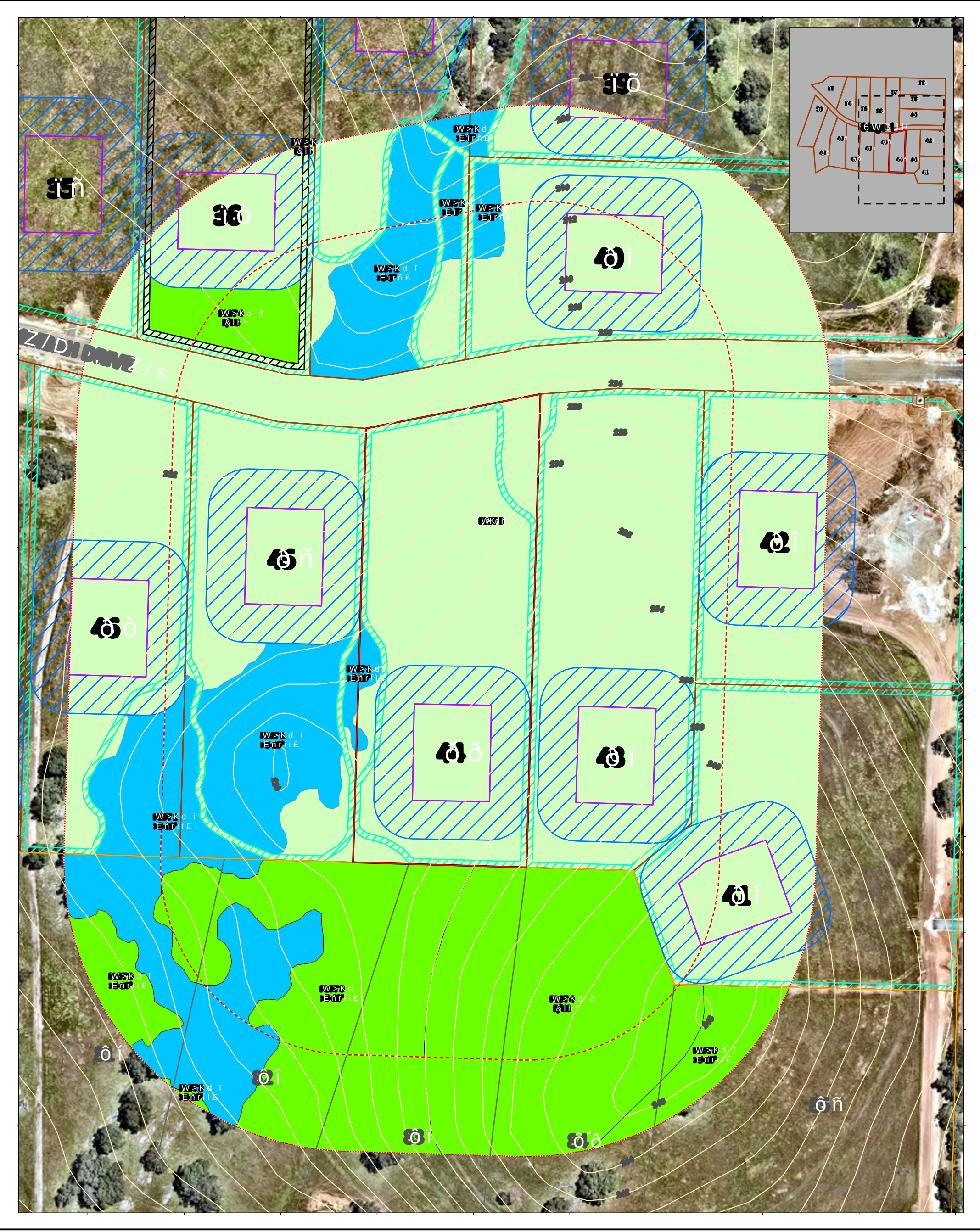
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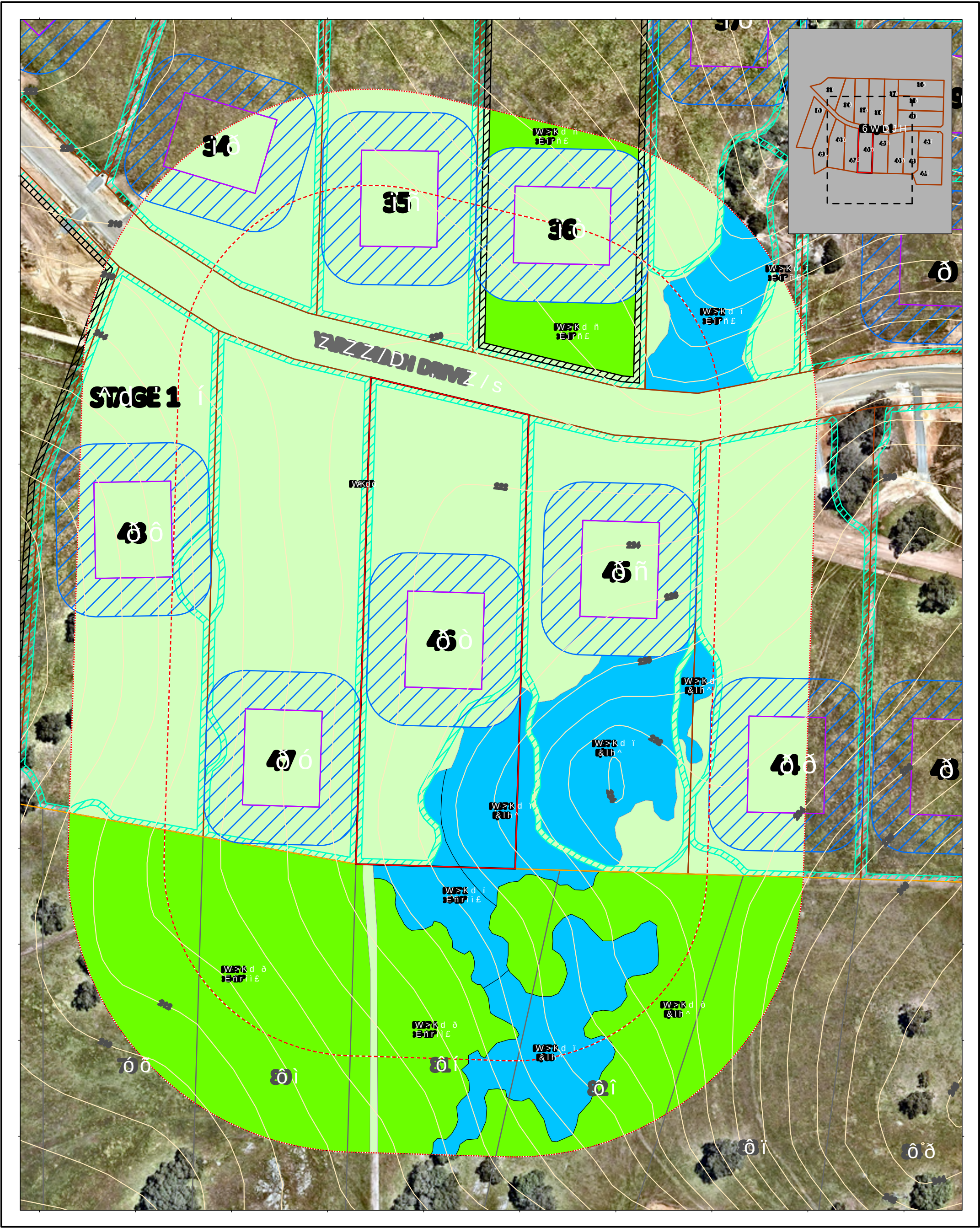
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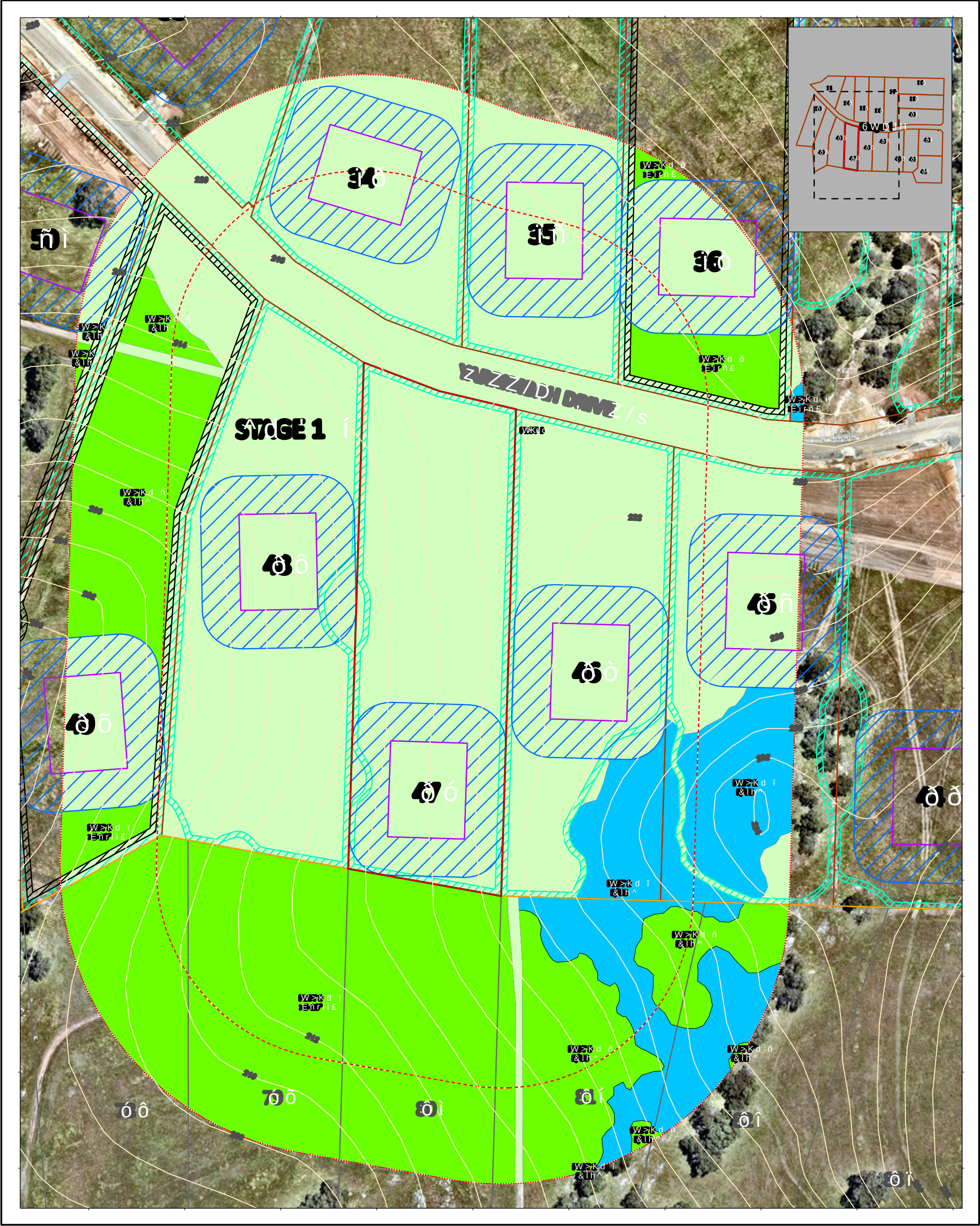
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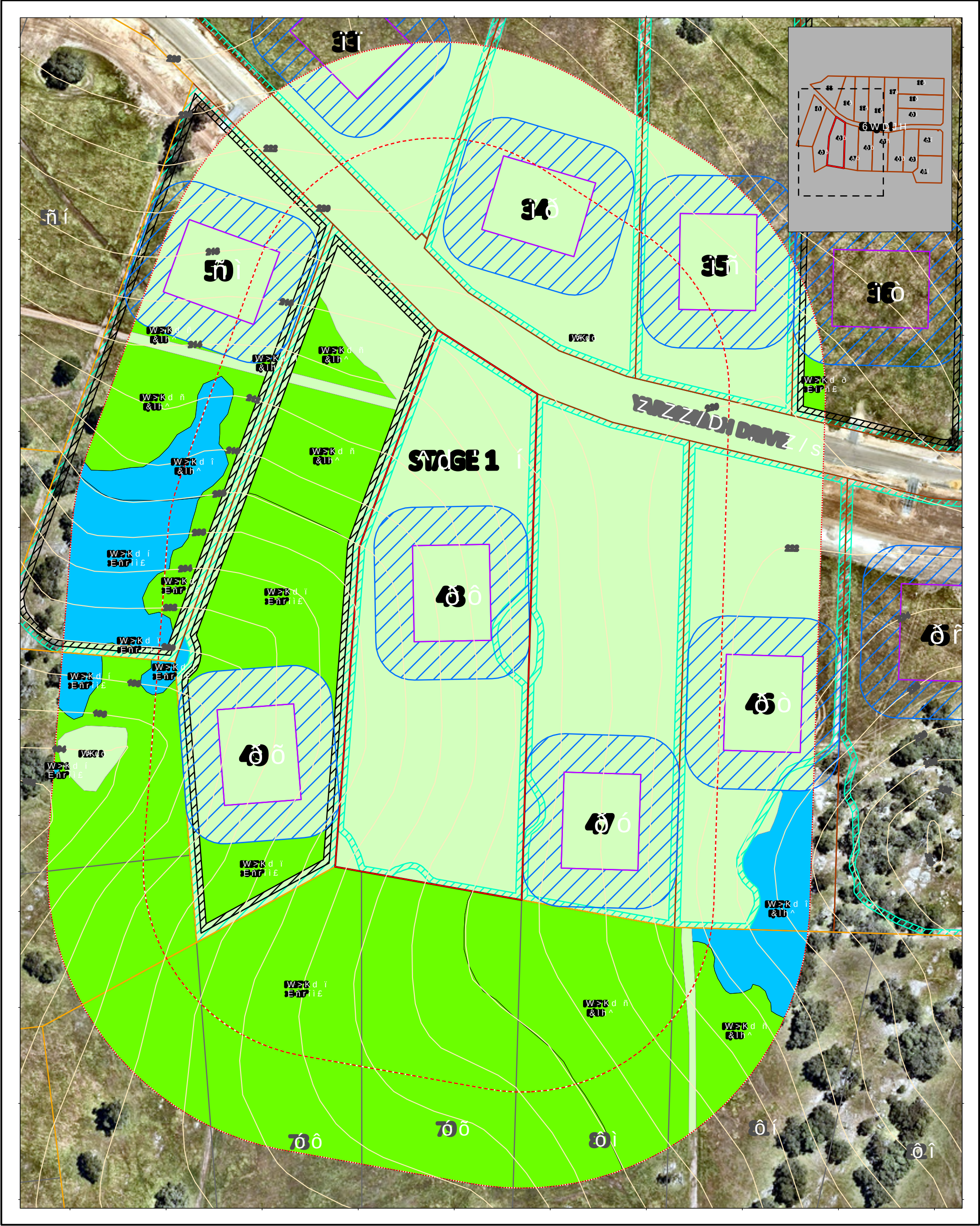
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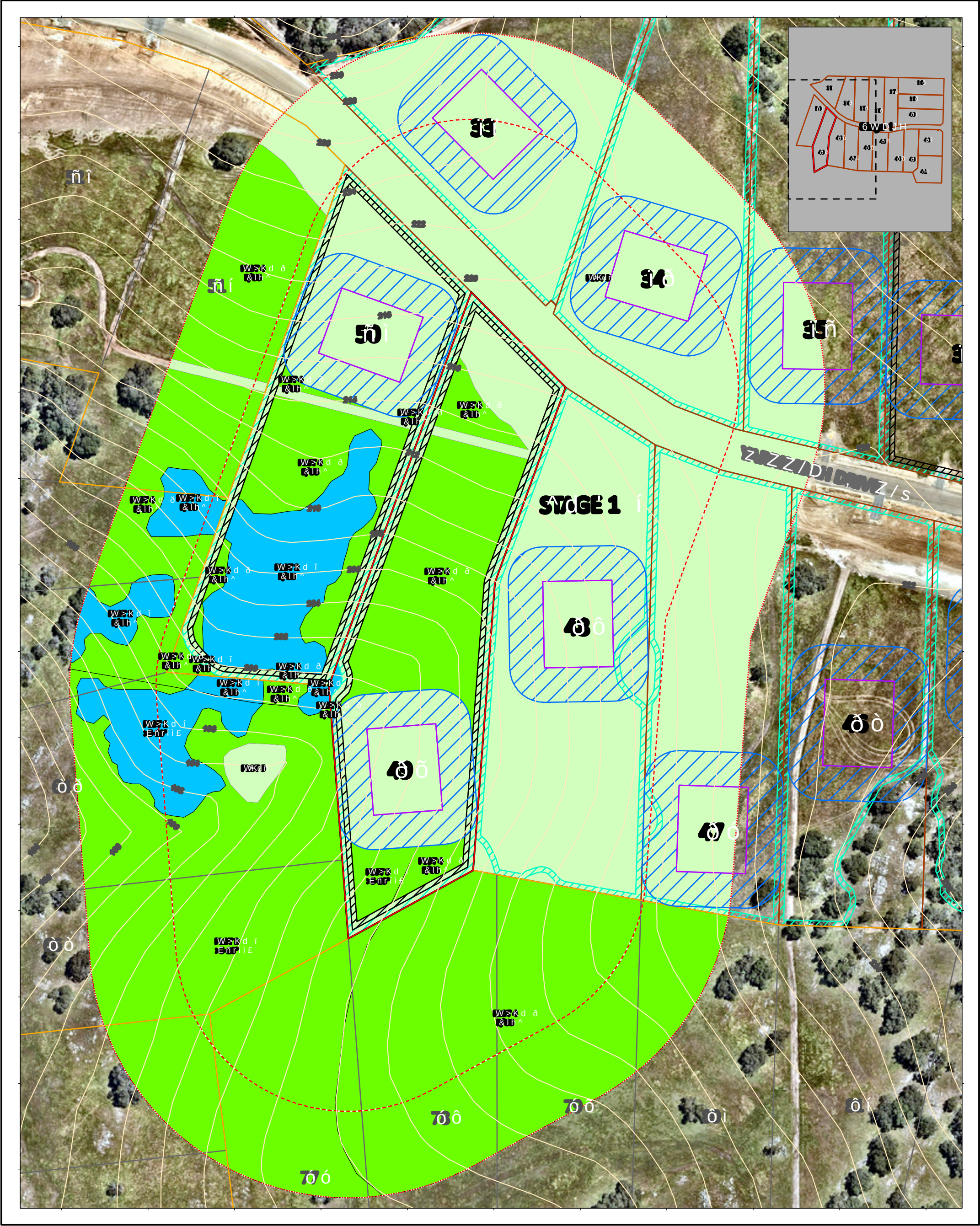
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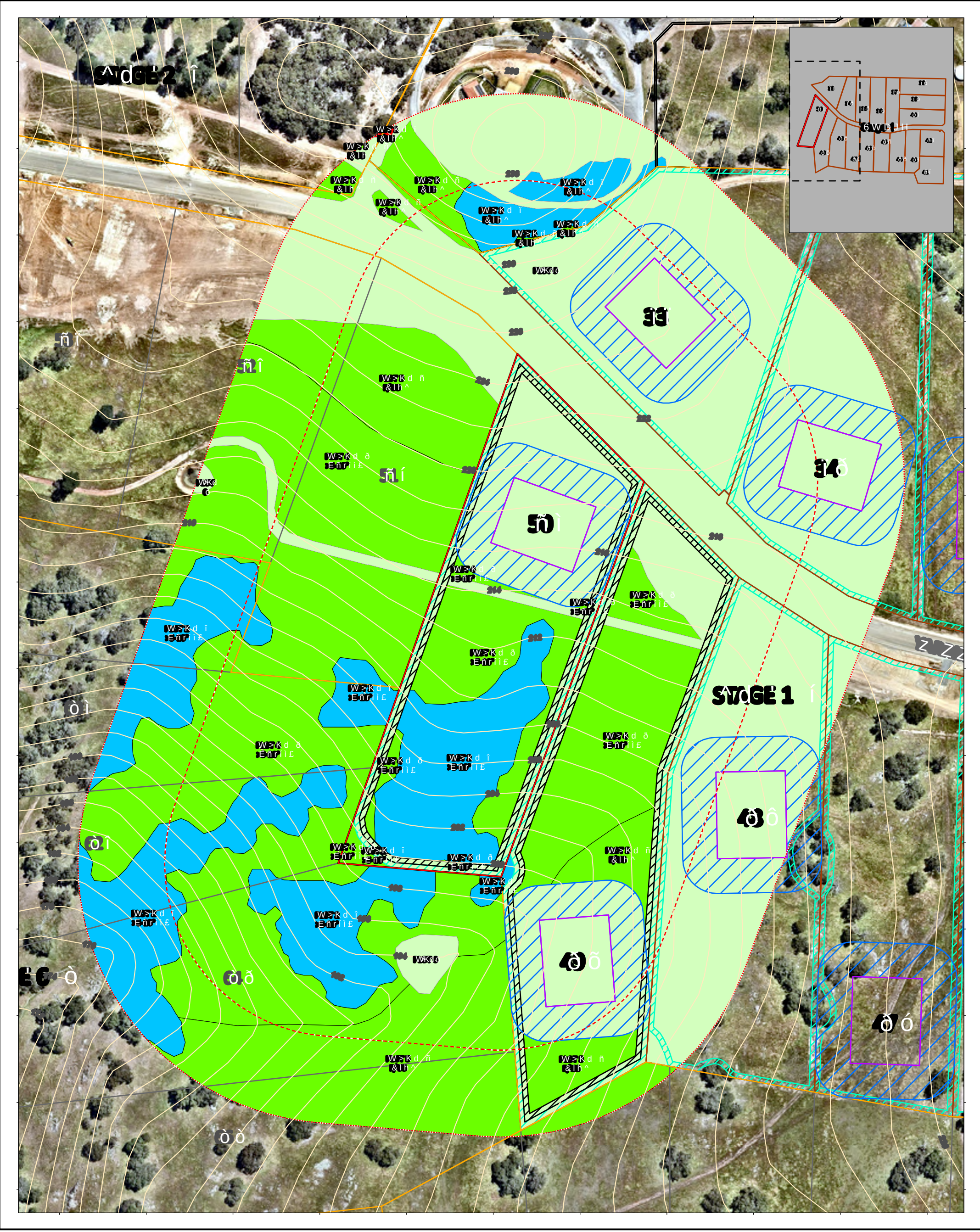
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3.2 Assessment outputs

3.2.1 BAL contour assessment results

As previously stated, all 18 proposed lots within the project area are situated within a designated bushfire prone area and therefore require a BAL assessment to inform future planning and building approvals. JBS&G has undertaken a BAL contour assessment for each proposed lot based on current site conditions (i.e. post-subdivisional works) to demonstrate that each proposed building envelope can sufficiently cater for a dwelling rated at BAL-29 or lower, as required to address BMP/Guideline requirements and subdivision conditions to facilitate creation of title and inform future DA planning and building approvals.

Results of the BAL contour assessment for each proposed lot are illustrated in Figure 20 to Figure 37, with a detailed summary of assessment inputs and outputs provided in Table 10 demonstrating that all proposed building envelopes within each lot are able to contain a future dwelling rated at BAL-29 or lower, subject to provision of 20 m wide APZs around each building envelope. Future BAL assessment will need to be undertaken at the DA planning/building approval stage to support final BAL certification for individual dwellings once siting of buildings within each building envelope has been determined. The range of potential BAL ratings that could be achieved within each proposed building envelope is summarised in Table 11 to inform final siting of habitable buildings.

The highest BAL rating that impacts each proposed building envelope is shown in bold in Table 10 and Table 11.

Table 10: BAL contour assessment results

Lot	Designated bushfire prone area	Plot	Vegetation classification	Effective slope	Separation (m) to building envelope boundary	BAL rating to building envelope boundary	APZ setback into building envelope*	New BAL with APZ setback*	Figure ref.
33	Yes	1	Class A Forest	Downslope >5–10°	>100 m	BAL–Low	N/A	N/A	Figure 20
		2	Class A Forest	Flat/upslope (0°)	>100 m	BAL–Low	N/A	N/A	
		3	Class B Woodland	Downslope >5–10°	>100 m	BAL–Low	N/A	N/A	
		4	Class B Woodland	Flat/upslope (0°)	40 m	BAL–12.5	N/A	N/A	
		5	Class G Grassland	Downslope >5–10°	>50 m	BAL–Low	N/A	N/A	
		6	Class G Grassland	Downslope >0–5°	>50 m	BAL–Low	N/A	N/A	
		7	Class G Grassland	Flat/upslope (0°)	44 m	BAL–12.5	N/A	N/A	
		8	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	
34	Yes	1	Class B Woodland	Downslope >5–10°	>100 m	BAL–Low	N/A	N/A	Figure 21
		2	Class B Woodland	Flat/upslope (0°)	>100 m	BAL–Low	N/A	N/A	
		3	Class G Grassland	Downslope >5–10°	>50 m	BAL–Low	N/A	N/A	

Lot	Designated bushfire prone area	Plot	Vegetation classification	Effective slope	Separation (m) to building envelope boundary	BAL rating to building envelope boundary	APZ setback into building envelope*	New BAL with APZ setback*	Figure ref.
		4	Class G Grassland	Downslope >0–5°	>50 m	BAL–Low	N/A	N/A	
		5	Class G Grassland	Flat/upslope (0°)	>50 m	BAL–Low	N/A	N/A	
		6	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	
35	Yes	1	Class B Woodland	Downslope >0–5°	>100 m	BAL–Low	N/A	N/A	Figure 22
		2	Class G Grassland	Downslope >5–10°	>50 m	BAL–Low	N/A	N/A	
		3	Class G Grassland	Downslope >0–5°	26 m	BAL–12.5	N/A	N/A	
		4	Class G Grassland	Flat/upslope (0°)	34 m	BAL–12.5	N/A	N/A	
		5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	

Lot	Designated bushfire prone area	Plot	Vegetation classification	Effective slope	Separation (m) to building envelope boundary	BAL rating to building envelope boundary	APZ setback into building envelope*	New BAL with APZ setback*	Figure ref.
36	Yes	1	Class B Woodland	Downslope >0–5°	31 m	BAL–19	N/A	N/A	Figure 23
		2	Class B Woodland	Flat/upslope (0°)	>100 m	BAL–Low	N/A	N/A	
		3	Class G Grassland	Downslope >0–5°	20 m	BAL–12.5	N/A	N/A	
		4	Class G Grassland	Flat/upslope (0°)	20 m	BAL–12.5	N/A	N/A	
		5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	
37	Yes	1	Class B Woodland	Downslope >0–5°	13 m	BAL–40	7 m setback into southeast corner as per 20 m wide APZ requirement	BAL–29	Figure 24
		2	Class B Woodland	Flat/upslope (0°)	17 m	BAL–29	N/A	N/A	
		3	Class G Grassland	Downslope >0–5°	20 m	BAL–12.5	N/A	N/A	
		4	Class G Grassland	Flat/upslope (0°)	26 m	BAL–12.5	N/A	N/A	
		5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	

Lot	Designated bushfire prone area	Plot	Vegetation classification	Effective slope	Separation (m) to building envelope boundary	BAL rating to building envelope boundary	APZ setback into building envelope*	New BAL with APZ setback*	Figure ref.
38	Yes	1	Class B Woodland	Downslope >0–5°	55 m	BAL–12.5	N/A	N/A	Figure 25
		2	Class B Woodland	Flat/upslope (0°)	80 m	BAL–12.5	N/A	N/A	
		3	Class G Grassland	Downslope >0–5°	20 m	BAL–12.5	N/A	N/A	
		4	Class G Grassland	Flat/upslope (0°)	20 m	BAL–12.5	N/A	N/A	
		5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	
39	Yes	1	Class B Woodland	Downslope >0–5°	>100 m	BAL–Low	N/A	N/A	Figure 26
		2	Class B Woodland	Flat/upslope (0°)	27 m	BAL–19	N/A	N/A	
		3	Class G Grassland	Downslope >0–5°	20 m	BAL–12.5	N/A	N/A	
		4	Class G Grassland	Flat/upslope (0°)	27 m	BAL–12.5	N/A	N/A	
		5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	

Lot	Designated bushfire prone area	Plot	Vegetation classification	Effective slope	Separation (m) to building envelope boundary	BAL rating to building envelope boundary	APZ setback into building envelope*	New BAL with APZ setback*	Figure ref.
40	Yes	1	Class B Woodland	Downslope >0–5°	32 m	BAL–19	N/A	N/A	Figure 27
		2	Class B Woodland	Flat/upslope (0°)	66 m	BAL–12.5	N/A	N/A	
		3	Class G Grassland	Downslope >0–5°	>50 m	BAL–Low	N/A	N/A	
		4	Class G Grassland	Flat/upslope (0°)	>50 m	BAL–Low	N/A	N/A	
		5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	
41	Yes	1	Class B Woodland	Downslope >5–10°	>100 m	BAL–Low	N/A	N/A	Figure 28
		2	Class B Woodland	Flat/upslope (0°)	>100 m	BAL–Low	N/A	N/A	
		3	Class G Grassland	Downslope >5–10°	20 m	BAL–19	N/A	N/A	
		4	Class G Grassland	Flat/upslope (0°)	>50 m	BAL–Low	N/A	N/A	
		5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	

Lot	Designated bushfire prone area	Plot	Vegetation classification	Effective slope	Separation (m) to building envelope boundary	BAL rating to building envelope boundary	APZ setback into building envelope*	New BAL with APZ setback*	Figure ref.
42	Yes	1	Class B Woodland	Downslope >0–5°	>100 m	BAL–Low	N/A	N/A	Figure 29
		2	Class B Woodland	Flat/upslope (0°)	>100 m	BAL–Low	N/A	N/A	
		3	Class G Grassland	Downslope >5–10°	>50 m	BAL–Low	N/A	N/A	
		4	Class G Grassland	Flat/upslope (0°)	>50 m	BAL–Low	N/A	N/A	
		5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	>50 m	BAL–Low	N/A	N/A	
43	Yes	1	Class B Woodland	Downslope >5–10°	>100 m	BAL–Low	N/A	N/A	Figure 30
		2	Class B Woodland	Downslope >0–5°	>100 m	BAL–Low	N/A	N/A	
		3	Class G Grassland	Downslope >5–10°	34 m	BAL–12.5	N/A	N/A	
		4	Class G Grassland	Flat/upslope (0°)	34 m	BAL–12.5	N/A	N/A	
		5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	

Lot	Designated bushfire prone area	Plot	Vegetation classification	Effective slope	Separation (m) to building envelope boundary	BAL rating to building envelope boundary	APZ setback into building envelope*	New BAL with APZ setback*	Figure ref.
44	Yes	1	Class B Woodland	Downslope >5–10°	22 m	BAL–29	N/A	N/A	Figure 31
		2	Class B Woodland	Downslope >0–5°	>100 m	BAL–Low	N/A	N/A	
		3	Class G Grassland	Downslope >5–10°	33 m	BAL–12.5	N/A	N/A	
		4	Class G Grassland	Flat/upslope (0°)	33 m	BAL–12.5	N/A	N/A	
		5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	BAL–12.5	N/A	N/A	
45	Yes	1	Class B Woodland	Downslope >5–10°	79 m	BAL–12.5	N/A	N/A	Figure 32
		2	Class B Woodland	Downslope >0–5°	68 m	BAL–12.5	N/A	N/A	
		3	Class B Woodland	Flat/upslope (0°)	20 m	BAL–19	N/A	N/A	
		4	Class G Grassland	Downslope >5–10°	>50 m	BAL–Low	N/A	N/A	
		5	Class G Grassland	Downslope >0–5°	>50 m	BAL–Low	N/A	N/A	
		6	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	

Lot	Designated bushfire prone area	Plot	Vegetation classification	Effective slope	Separation (m) to building envelope boundary	BAL rating to building envelope boundary	APZ setback into building envelope*	New BAL with APZ setback*	Figure ref.
46	Yes	1	Class B Woodland	Downslope >5–10°	42 m	BAL–19	N/A	N/A	Figure 33
		2	Class B Woodland	Downslope >0–5°	>100 m	BAL–Low	N/A	N/A	
		3	Class B Woodland	Flat/upslope (0°)	20 m	BAL–19	N/A	N/A	
		4	Class G Grassland	Downslope >5–10°	>50 m	BAL–Low	N/A	N/A	
		5	Class G Grassland	Downslope >0–5°	>50 m	BAL–Low	N/A	N/A	
		6	Class G Grassland	Flat/upslope (0°)	>50 m	BAL–Low	N/A	N/A	
		7	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	
47	Yes	1	Class B Woodland	Downslope >0–5°	>100 m	BAL–Low	N/A	N/A	Figure 34
		2	Class B Woodland	Flat/upslope (0°)	41 m	BAL–12.5	N/A	N/A	
		3	Class G Grassland	Downslope >5–10°	20 m	BAL–19	N/A	N/A	
		4	Class G Grassland	Downslope >0–5°	>50 m	BAL–Low	N/A	N/A	
		5	Class G Grassland	Flat/upslope (0°)	47 m	BAL–12.5	N/A	N/A	

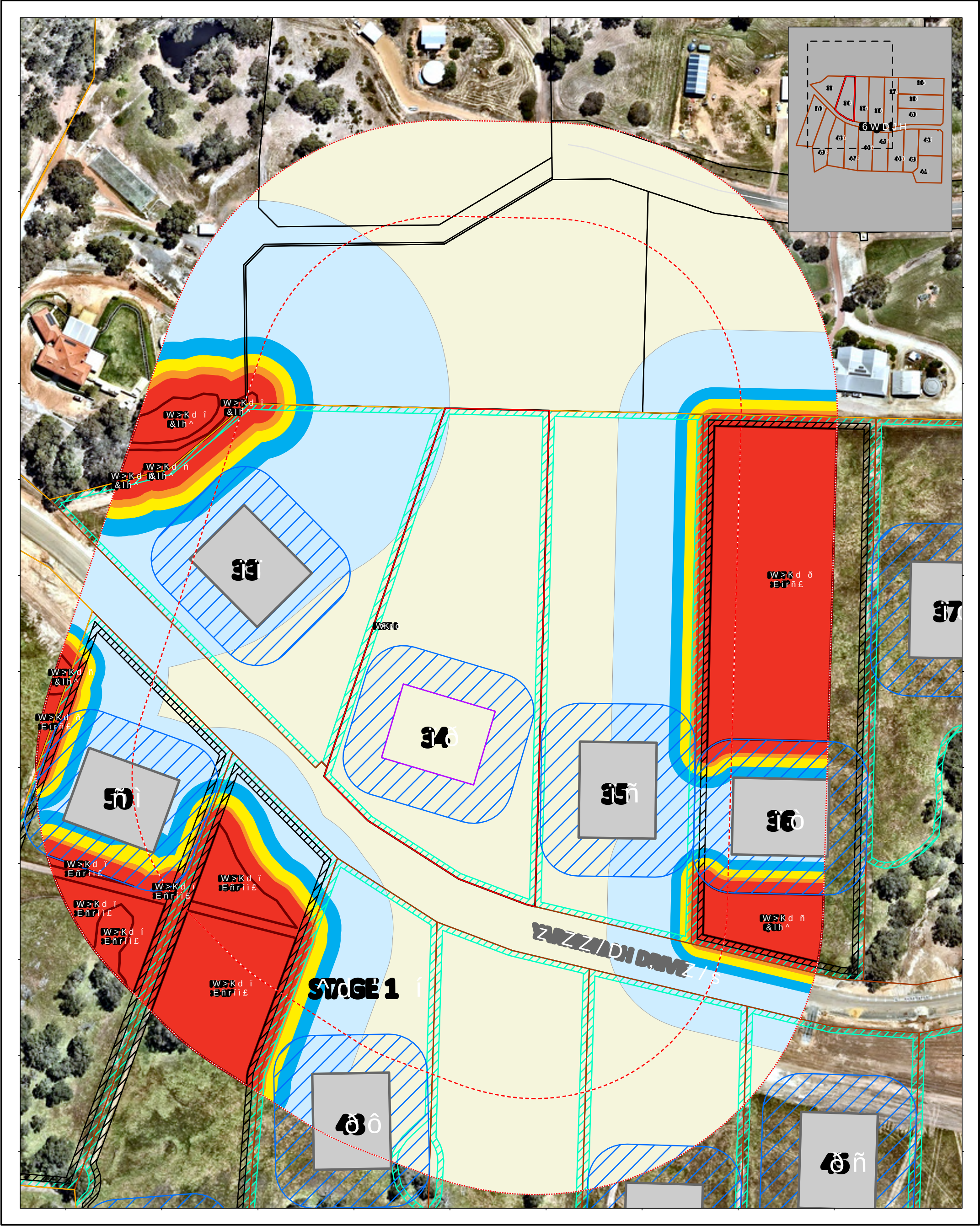
Lot	Designated bushfire prone area	Plot	Vegetation classification	Effective slope	Separation (m) to building envelope boundary	BAL rating to building envelope boundary	APZ setback into building envelope*	New BAL with APZ setback*	Figure ref.
		6	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	
48	Yes	1	Class B Woodland	Downslope >5–10°	>100 m	BAL–Low	N/A	N/A	Figure 35
		2	Class B Woodland	Flat/upslope (0°)	>100 m	BAL–Low	N/A	N/A	
		3	Class G Grassland	Downslope >5–10°	33 m	BAL–12.5	N/A	N/A	
		4	Class G Grassland	Downslope >0–5°	>50 m	BAL–Low	N/A	N/A	
		5	Class G Grassland	Flat/upslope (0°)	33 m	BAL–12.5	Yes	N/A	
		6	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	
49	Yes	1	Class B Woodland	Downslope >5–10°	62 m	BAL–12.5	N/A	N/A	Figure 36
		2	Class B Woodland	Flat/upslope (0°)	26 m	BAL–19	N/A	N/A	
		3	Class G Grassland	Downslope >5–10°	20 m	BAL–19	N/A	N/A	
		4	Class G Grassland	Flat/upslope (0°)	20 m	BAL–12.5	N/A	N/A	

Lot	Designated bushfire prone area	Plot	Vegetation classification	Effective slope	Separation (m) to building envelope boundary	BAL rating to building envelope boundary	APZ setback into building envelope*	New BAL with APZ setback*	Figure ref.
		5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	
50	Yes	1	Class A Forest	Flat/upslope (0°)	>100 m	BAL–Low	N/A	N/A	Figure 37
		2	Class B Woodland	Downslope >5–10°	31 m	BAL–19	N/A	N/A	
		3	Class B Woodland	Flat/upslope (0°)	>100 m	BAL–Low	N/A	N/A	
		4	Class G Grassland	Downslope >5–10°	20 m	BAL–19	N/A	N/A	
		5	Class G Grassland	Flat/upslope (0°)	22 m	BAL–12.5	N/A	N/A	
		6	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	N/A	N/A	N/A	N/A	

*APZ setbacks for relevant lots (i.e. Lot 37) will need to be considered at the DA/building stages to ensure BAL-29 or lower is delivered for all proposed habitable buildings within these lots

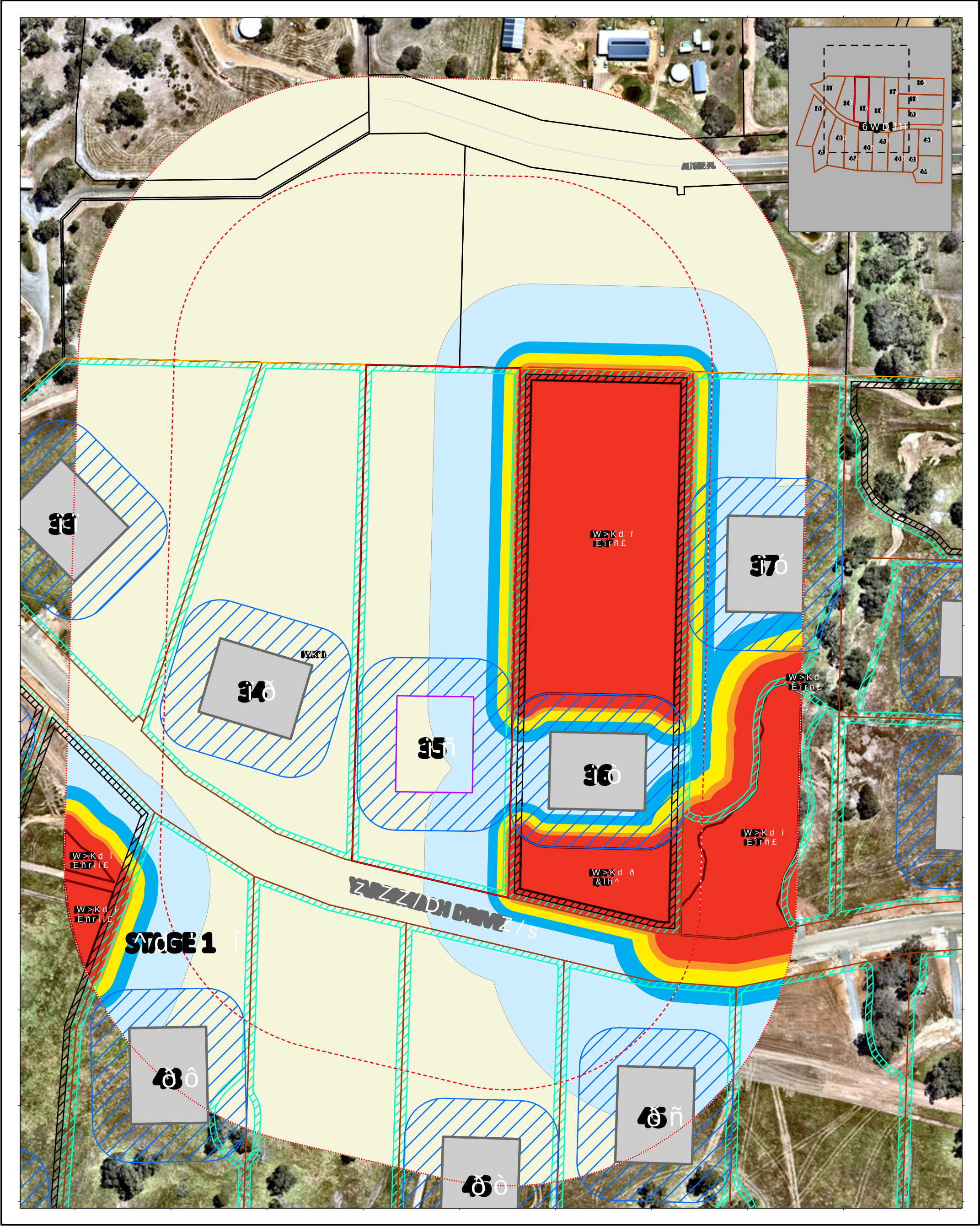
Table 11: Range of potential BAL ratings that could be achieved within each proposed building envelope

Lot	Potential BAL ratings that could be achieved subject to final siting of buildings	Maximum APZ setback requirement to achieve BAL-29
33	BAL-12.5	N/A
34	BAL-Low	N/A
35	BAL-12.5, BAL-Low	N/A
36	BAL-19, BAL-12.5	N/A
37	BAL-29, BAL-19, BAL-12.5	7 m setback into southeast corner as per 20 m wide APZ requirement (4 m required for BAL-29)
38	BAL-12.5	N/A
39	BAL-19, BAL-12.5	N/A
40	BAL-19, BAL-12.5	N/A
41	BAL-19, BAL-12.5, BAL-Low	N/A
42	BAL-Low	N/A
43	BAL-12.5, BAL-Low	N/A
44	BAL-29, BAL-19, BAL-12.5	N/A
45	BAL-19, BAL-12.5	N/A
46	BAL-19, BAL-12.5	N/A
47	BAL-19, BAL-12.5	N/A
48	BAL-12.5, BAL-Low	N/A
49	BAL-19, BAL-12.5	N/A
50	BAL-19, BAL-12.5	N/A



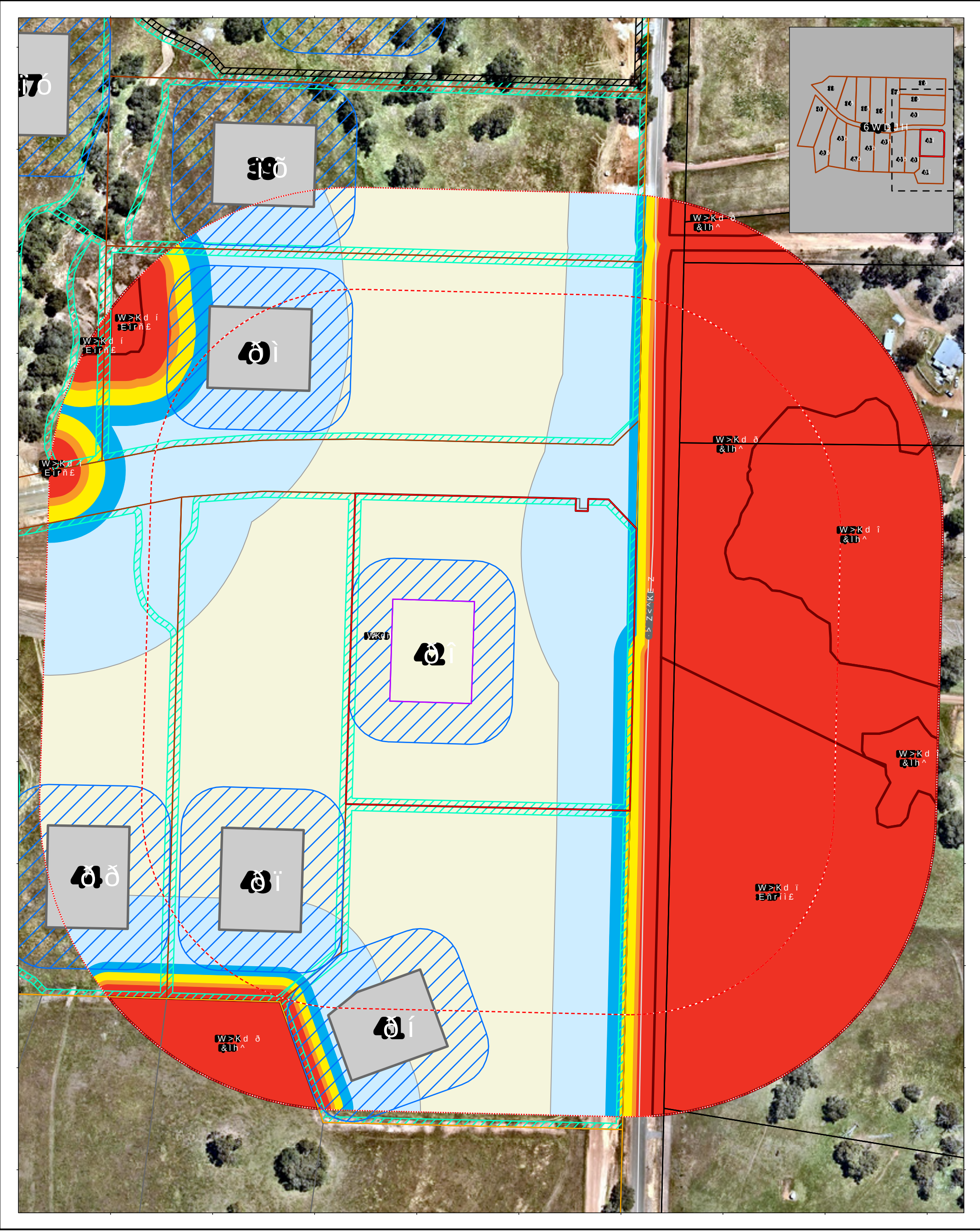
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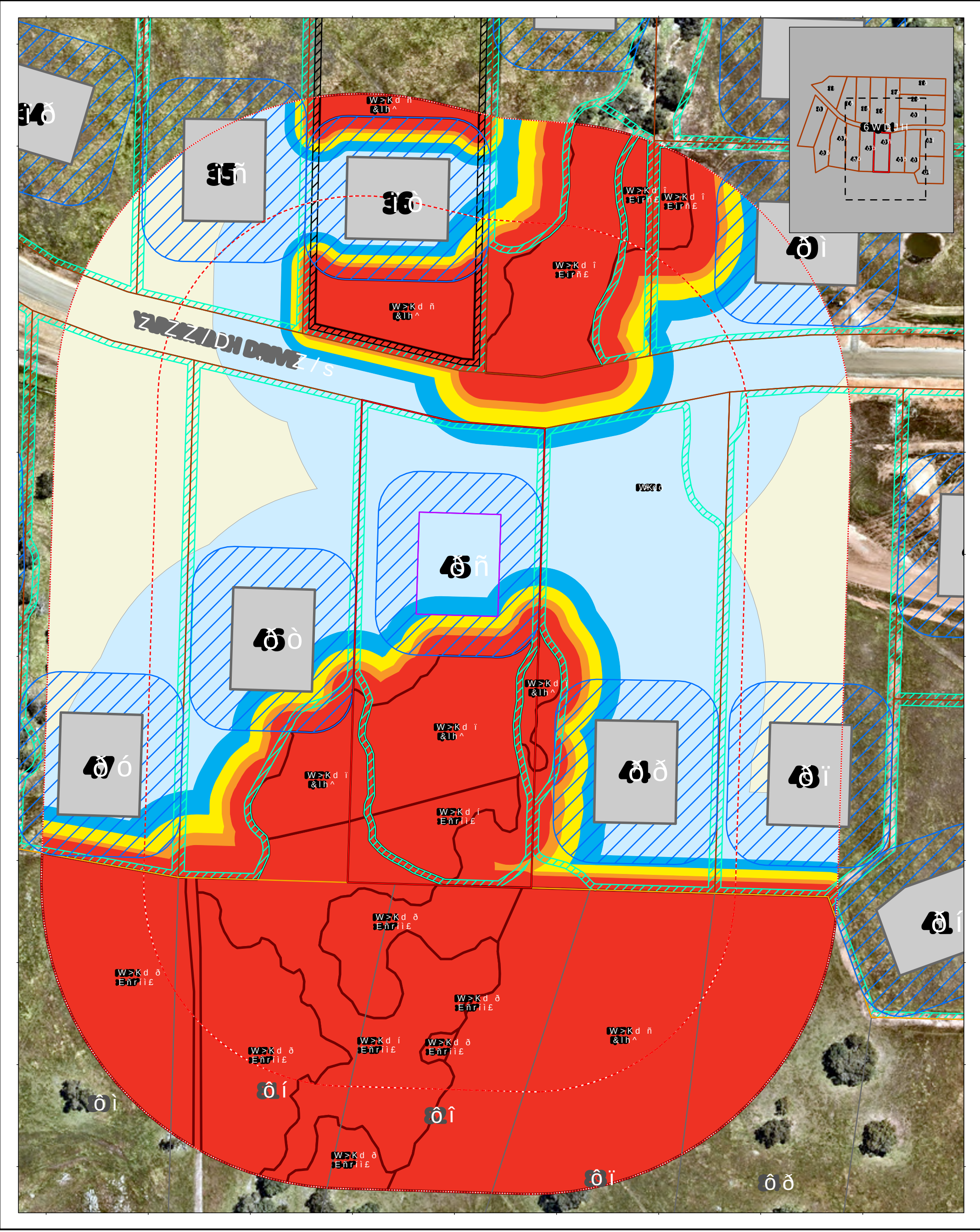
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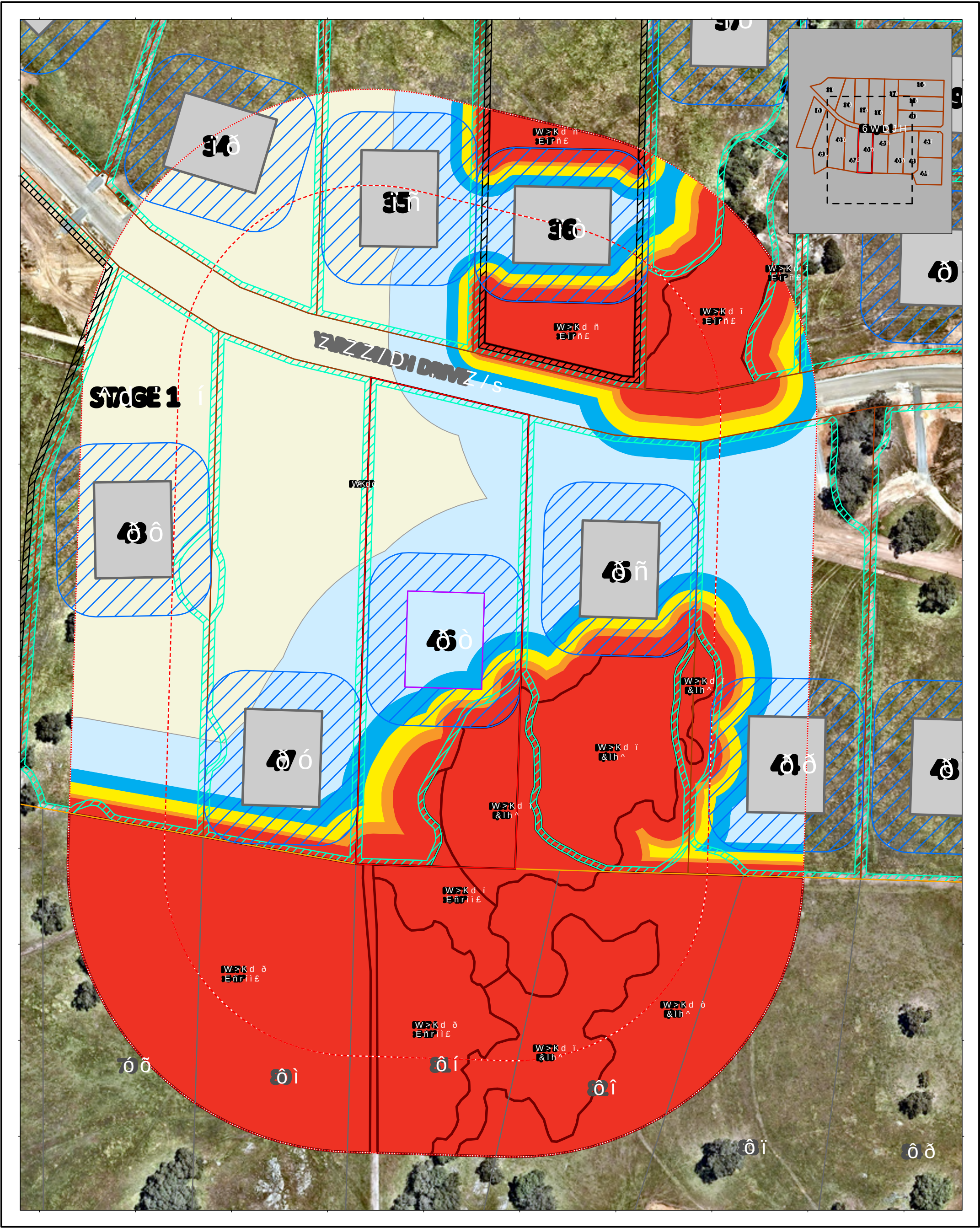
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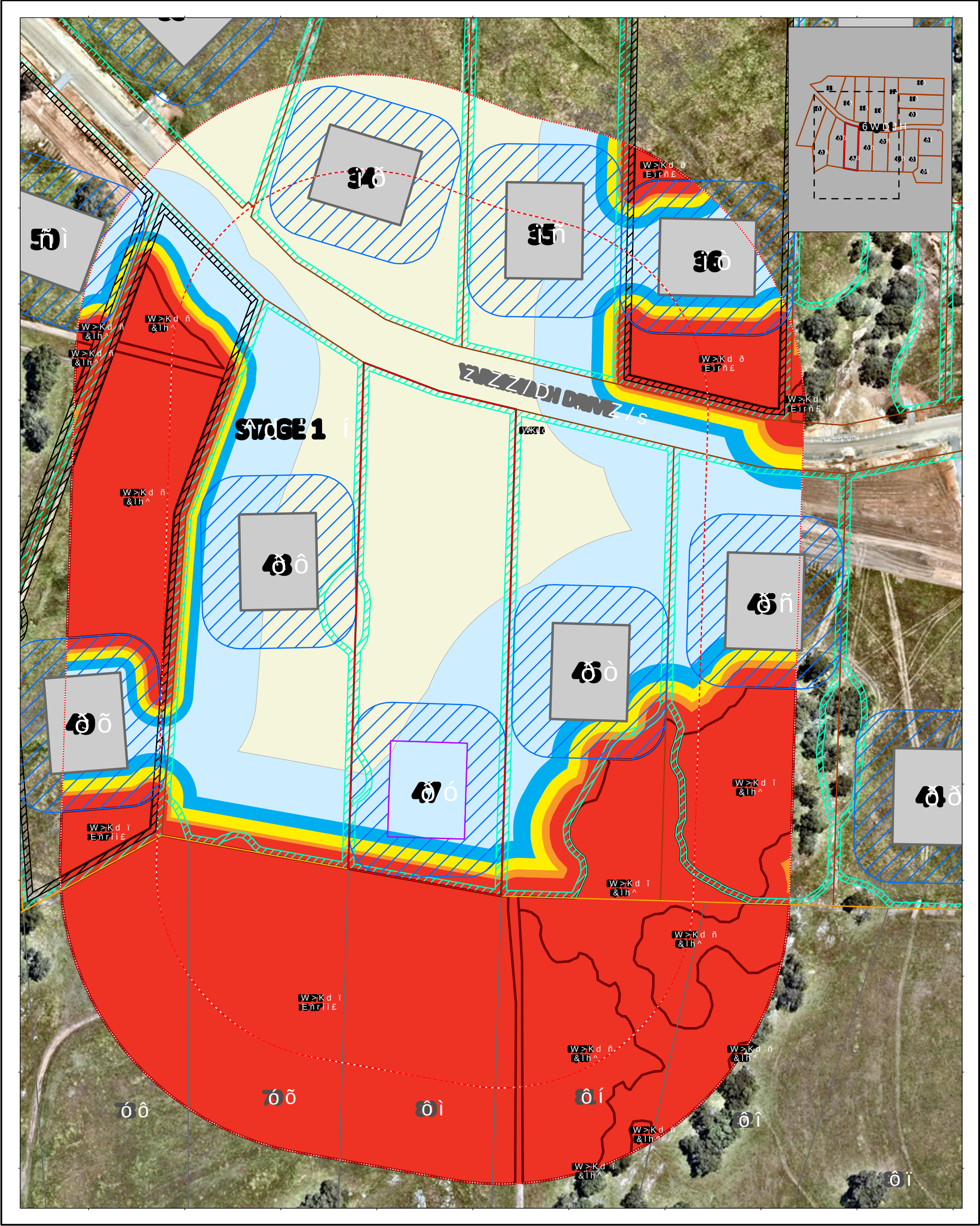
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/HJHQG 3URMHEW DUHD P DVVHVPHQW P DVVHVPHQW &DGDVWUDO ERXQGLQJ HGYHOF P ZLGH ILUHEUHDN DV P ZLGH ILUHEUHDN QRWLF P ZLGH VODVKHG JUDVGLFDWLYH IXWX EXIIHU DV SHU ILUHEUHDN QRWLF SURYLVLRQV		%XLOGLOJ HGYHOF BURSRVHG ORWV DP ZLGH \$3= XLOGLOJ HGYHOF WR WKLF YHJH GLFDWLYH IXWX QRWLF RQ MDFHQW ERXQGDULHV		FRQWRXUV %) %) QRW VPHQW Q RZ W		JBS&G		1 n u s e .		^s P i z e e j u Z , j P z s . u m o o . e j j i u t > K e d K h z D W -> K d d o . n i s e . j j v w z A s w i i r r i i t & / h z W i d	
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} mu vs W \$ZW Wph• e•pi eµs p: ^" µ•s e o j p: ^" r ^ r /vs e v o r } mu vs•pW e j i s•pYµ p o d d i z e e j u z ^ s P i p / ^ p i z d %W e j i s•p o d d i z e e j u z ^ s P i z z i x % e e
/u P Z (e v W A A X v e u % X } u z r /u P e c s W i o x K s } e i i d x

4. Conclusion and recommendations

This BMP compliance and condition clearance report has been prepared for 18 proposed rural residential lots within Stage 1 Yarrimbah Heights to address bushfire-related conditions and advice notes of WAPC Ref. 160314 and subsequent reconsideration, including requirements of the subdivision stage BMP (Strategen-JBS&G 2021), Emerge Associates (2021) peer review, Ecosystem Solutions (2022) peer review and the City of Swan annual firebreak notice.

Assessment results are consistent with current on-ground conditions assessed on 31 July 2024. JBS&G can confirm that the existing BMP over the site has been implemented throughout the duration of subdivisional works for the relevant Stage 1 area and adjacent land to achieve compliance with the intended BAL outcomes and requirements of the subdivision stage BMP, peer reviews and City firebreak notice. On this basis, bushfire-related conditions and advice notes of subdivision approval under WAPC Ref. 160314 and the subsequent reconsideration, as outlined in Table 2, Table 3, Table 4 and Table 5, have been suitably addressed to facilitate creation of title for the proposed lots.

This report also provides a BAL contour assessment for each proposed lot based on current, post-subdivisional work conditions to inform siting of future dwellings within nominated building envelopes. The assessment demonstrates that a rating of BAL-29 or lower is achievable for all proposed habitable development within each building envelope (as depicted in Figure 20 to Figure 37 and summarised in Table 10). The range of potential BAL ratings that could be achieved within each proposed building envelope is summarised in Table 11 to inform final siting of development, with the worst case BAL highlighted in bold. The APZ setback within the building envelope of Lot 37 (as summarised in Table 11) will need to be considered at the DA/building stage to ensure BAL-29 or lower is delivered for all proposed habitable buildings within this lot.

All 18 proposed lots are situated within a designated bushfire prone area and will require assessment and certification of the final BAL rating to support future DA planning approval and/or building approval once final siting of proposed buildings is known.

Ongoing requirements of the current City of Swan annual firebreak notice (as amended) should continue to be implemented as required, particularly with regards to maintenance of lot boundary firebreaks and ongoing management of grassland fuels where required.

5. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

6. References

- Department of Fire and Emergency Services (DFES) 2024, *Map of Bush Fire Prone Areas*, [Online], Government of Western Australia, available from: <https://maps.slip.wa.gov.au/landgate/bushfireprone/>, [27/11/2024].
- Department of Planning (DoP) 2016, *Visual guide for bushfire risk assessment in Western Australia*, Department of Planning, Perth.
- Standards Australia (SA) 2018, *Australian Standard AS 3959–2018 Construction of Buildings in Bushfire-prone Areas*, Standards Australia, Sydney.
- Strategen JBS&G 2021, *Bushfire Management Plan Lot 301 Stock Road and Lot 302 Lage Road Bullsbrook*, report prepared for McRae Investments Pty Ltd, September 2021.
- Emerge Associates 2021, *Bushfire Management Plan Review - Subdivision Application for Lot 301 Stock Road and Lot 302 Lage Road Bullsbrook*, report prepared for McRae Investments, June 2021.
- Ecosystem Solutions 2022, *Level 3 Bushfire Practitioner BMP Review - Lot 302 Lage Road and 301 Stock Road Bullsbrook*, report prepared for Western Australian Planning Commission C/- Dept of Planning, Lands and Heritage, September 2022.
- Western Australian Planning Commission (WAPC) 2021, *Guidelines for Planning in Bushfire Prone Areas*, Version 1.4 December 2021, Western Australian Planning Commission, Perth.

Appendix A Vegetation plot photos and descriptions (as per Figure 1)

Plot 1

Vegetation classification	Class A Forest
Description / justification	Trees 10-30 m high at maturity, dominated by Eucalypts, multi-tiered structure comprising tall canopy layer, shrubby middle layer and grass/herb/sedge understorey

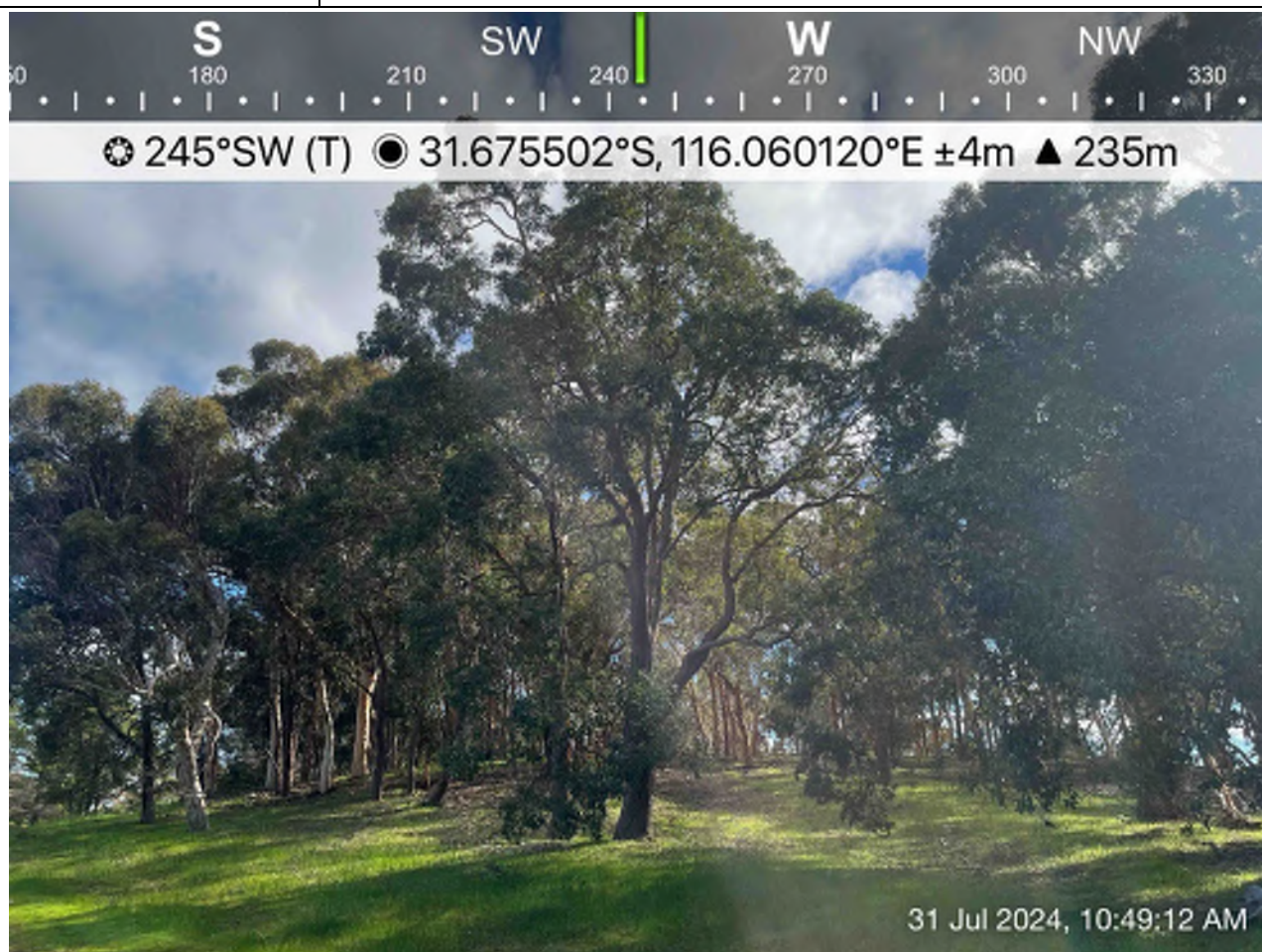


Photo ID: 1a

Plot 2

Vegetation classification	Class B Woodland
Description / justification	Trees 2-30 m at maturity, dominated by trees with a grassy understorey (lacks shrubby middle layer and deep surface litter)



Photo ID: 2a



Photo ID: 2b



Photo ID: 2c



Photo ID: 2d



Photo ID: 2e



Photo ID: 2f

Plot 2



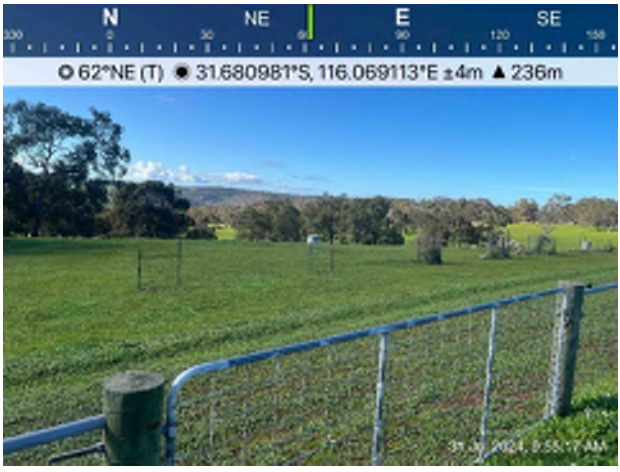
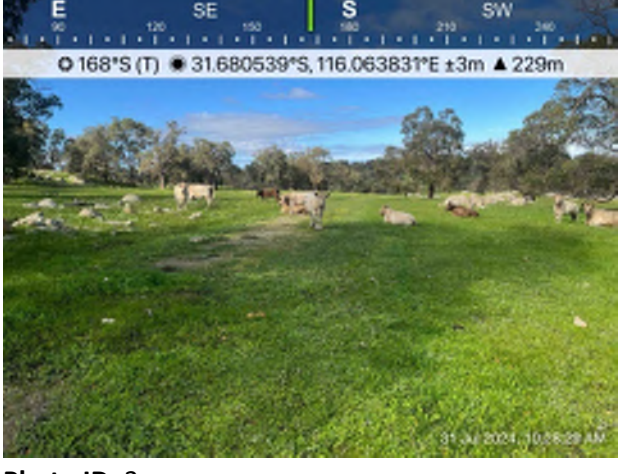
Photo ID: 2g



Photo ID: 2h



Photo ID: 2i

Plot 3	
Vegetation classification	Class G Grassland
Description / justification	Grassland at maturity, greater than 100 mm in height
 Photo ID: 3a	 Photo ID: 3b
 Photo ID: 3c	 Photo ID: 3d
 Photo ID: 3e	 Photo ID: 3f

Plot 3



Photo ID: 3g



Photo ID: 3h



Photo ID: 3i (background)



Photo ID: 3j



Photo ID: 3k



Photo ID: 3l

Plot 3



Photo ID: 3m



Photo ID: 3n



Photo ID: 3o

Plot 4	
Vegetation classification	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])
Description / justification	Low threat cultivated gardens and maintained lawns within surrounding properties and non-vegetated areas including roads, footpaths, driveways and building footprints
 Photo ID: 4a	 Photo ID: 4b
 Photo ID: 4c	 Photo ID: 4d
 Photo ID: 4e	 Photo ID: 4f

Plot 4



Photo ID: 4g



Photo ID: 4h



Photo ID: 4i



Photo ID: 4j



Photo ID: 4k



Photo ID: 4l

Plot 4



Photo ID: 4m



Photo ID: 4n



Photo ID: 4o



Photo ID: 4p



Photo ID: 4q



Photo ID: 4r

Plot 4



Photo ID: 4s



Photo ID: 4t



Photo ID: 4u



Photo ID: 4v



Photo ID: 4w



Photo ID: 4x

Plot 4



Photo ID: 4y



Photo ID: 4z



Photo ID: 4za



Photo ID: 4zb



Photo ID: 4zc



Photo ID: 4zd

Plot 4

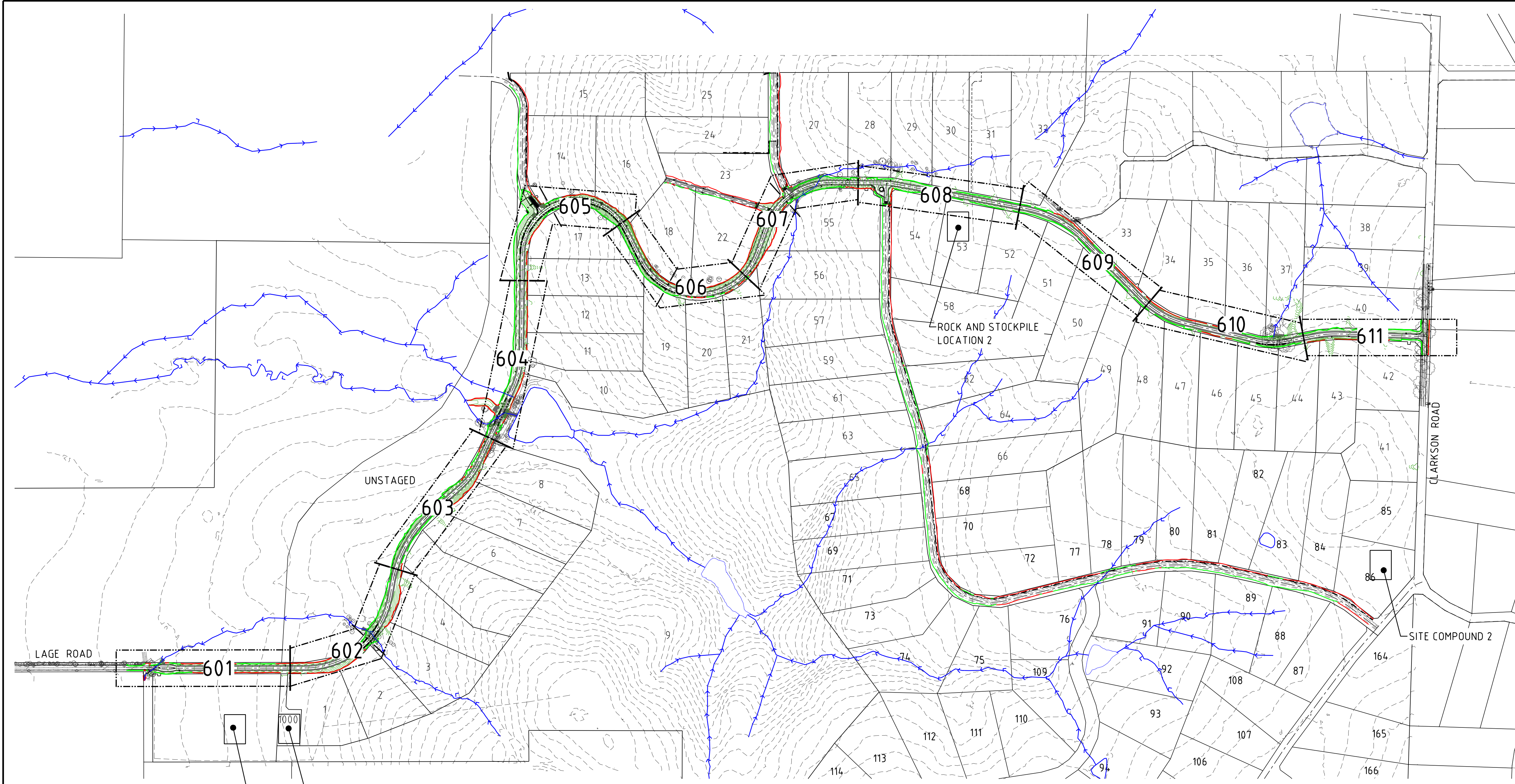


Photo ID: 4ze



Photo ID: 4zf

Appendix B Stage 1 roadworks plan

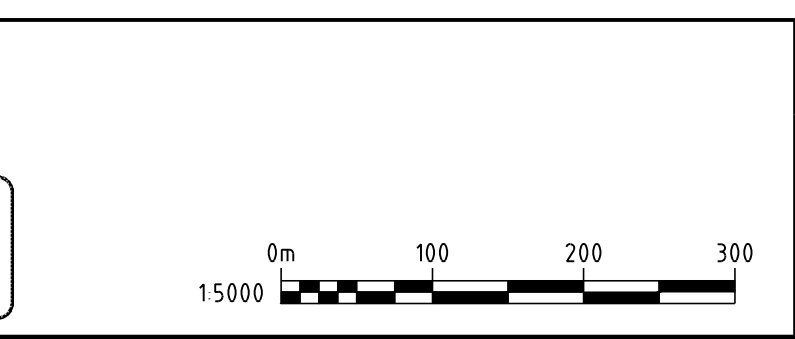
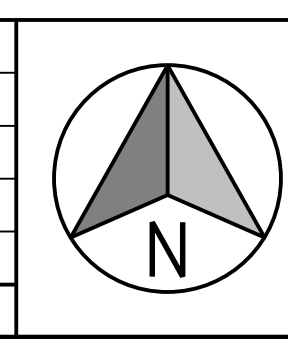


LEGEND	
DESCRIPTION	SYMBOL
LIMIT OF WORKS BOUNDARY	---
PROPOSED ROAD	==
EXISTING ROAD	- - - - -
FUTURE ROAD	---+---
PROPOSED DRAINAGE PIPE	---
EXISTING DRAINAGE PIPE	- - - - -
FUTURE DRAINAGE PIPE	---+---
PROPOSED DRAINAGE PIPE WITH JUNCTION PIT (JP), SIDE ENTRY PIT (SEP), GRATED PIT (GP) AND CIRCULAR GRATED PIT (IGP)	●
DRAINAGE PIT LABEL	PIT TYPE PIT ID CHAINAGE OR CO-ORD
DRAINAGE PIT LID NOTATION	* PROVIDE TEMPORARY LID ● CONVERT EXISTING LID
UPSTREAM INVERT LEVEL	PROPOSED U/S 20.50 300/100.0 50.0 D/S 20.00
PIPE DIAMETER / GRADE	EXISTING U/S 20.50 300/100.0 50.0 D/S 20.00
DISTANCE BETWEEN PITS	FUTURE U/S 20.50 300/100.0 50.0 D/S 20.00
DOWNSTREAM INVERT LEVEL	
TABLE DRAIN	→
BLACK ASPHALT WEARING COURSE	
EXTEND ROAD PAVEMENT 3.0m PAST LIMIT OF ASPHALT AND INSTALL D4-5 CHEVRON BOARD	
EXTEND ROAD PAVEMENT 3.0m PAST LIMIT OF ASPHALT, CONSTRUCT TEMPORARY TURNAROUND AND INSTALL 2 No. D4-5 HAZARD MARKERS	
PROPOSED KERB TRANSITION	
POST WITH STREET NAME PLATES	
CHEVRON BOARD	
PROPOSED STREET LIGHTS	
PROPOSED UNDERGROUND POWER	
PROPOSED COMMUNICATION CONDUIT	
FILL BATTER	
CUT BATTER	
EXISTING CREEK	
"W" BEAM BARRIER	

- ### STANDARD NOTES
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATION AND REQUIREMENTS OF THE LOCAL AUTHORITY.
 - THE CONTRACTOR SHALL LIAISE WITH ALL PUBLIC UTILITIES PRIOR TO COMMENCING WORK TO LOCATE ALL SERVICES WITHIN THE CONTRACT SITE.
 - ALL LEVELS SHALL BE LOCATED FROM ESTABLISHED BENCHMARKS AS ESTABLISHED BY THE PROJECT SURVEYOR.
 - ALL CONNECTIONS TO EXISTING WORK SHALL BE SMOOTH AND OF NEAT APPEARANCE.
 - REFER INTERSECTION DETAIL DRAWINGS FOR CORNER RADII AT INTERSECTIONS AND CUL-DE-SACS.
 - ALL KERBING TO BE SEMI MOUNTABLE TYPE UNLESS NOTED OTHERWISE.
 - TRANSITION BETWEEN DIFFERENT KERB TYPES SHALL BE MADE OVER A LENGTH OF 2m.
 - WHERE POSSIBLE, STREET SIGNS TO BE STRAPPED TO STREET LIGHT POLES.
 - ALL CUTS THROUGH LIMESTONE SHALL BE EXCAVATED TO A DEPTH OF 100mm BELOW SUB-GRADE LEVEL AND 200mm BELOW THE FINISHED LEVEL OF VERGES.
 - REFER TO GUARDRAIL DRAWINGS FOR EXTENT AND DETAILS.

- ### STAGE NOTES
- LOCAL AUTHORITY - CITY OF SWAN
 - PROJECT SURVEYOR - MNG
 - REFERENCE DRAWINGS:
TRANSFORMER SITE EARTHWORKS 6480-01-250
INTERSECTION DETAILS 6480-01-620-621
DRIVEWAY DETAILS 6480-01-660-671
 - STORMWATER PIPES SHALL BE REINFORCED CONCRETE (CLASS 4) R.R.J. MINIMUM Ø375 UNLESS NOTED OTHERWISE.
 - CROSSOVERS TO BE IN ACCORDANCE WITH THE LOCAL AUTHORITY DRAWING STD-47-1s FOR RURAL CROSSOVERS. DRAINAGE CROSSING PIPE AND HEADWALL SIZES TO BE DN375 UNLESS INDICATED OTHERWISE.
 - TYPICAL BATTERS ARE 1 IN 3 UNLESS OTHERWISE STATED.

0	09.11.23	ARH	AA		ISSUED FOR CONSTRUCTION
B	22.08.23	ARH	AA	M. WALLIS	RE-ISSUED FOR APPROVAL
A	09.06.23	ARH		M. WALLIS	ISSUED FOR APPROVAL
REV	DATE	DRN	CKD	APP	AMENDMENT



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Subiaco WA 6008

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CLIENT

APPROVED

DESIGNED
ARH

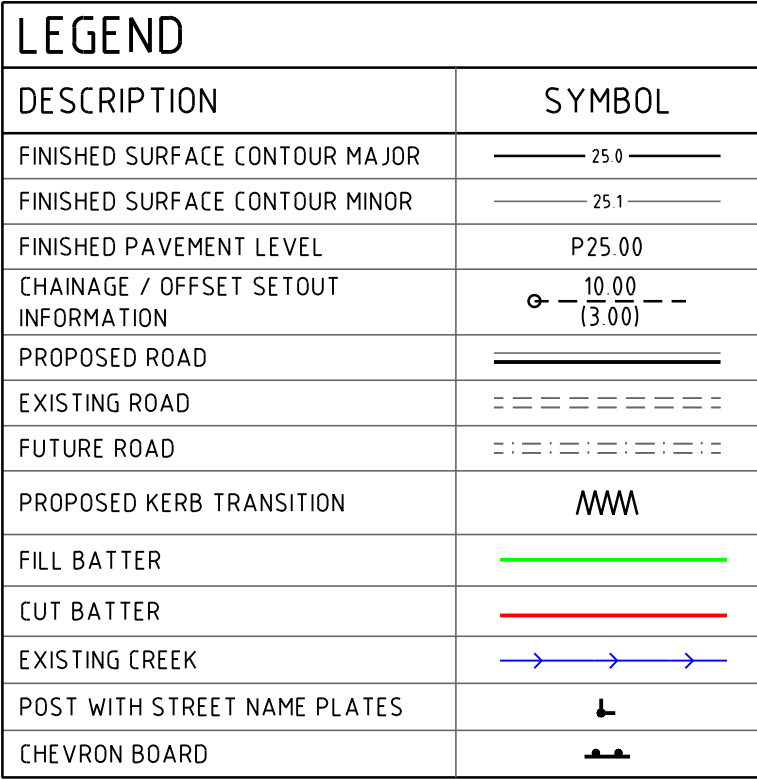
SCALE
1:5000

PROJECT	YARRIMBAH HEIGHTS - STAGE 01		
TITLE	ROADWORKS PLAN AND PROFILE		
	SHEET 1 OF 14		
WAPC No.	160314	DRAWING No.	6480-01-600
		REVISION	0

ORIGINAL SIZE
A1

P:\6480 Bulbin Brook Sewer Pipeline\6480-01\6480-01-600-613.dwg, 24/10/2023 7:05:59 AM, Alisath, Digital Signing PDF, pc3, 11, - CW Reference

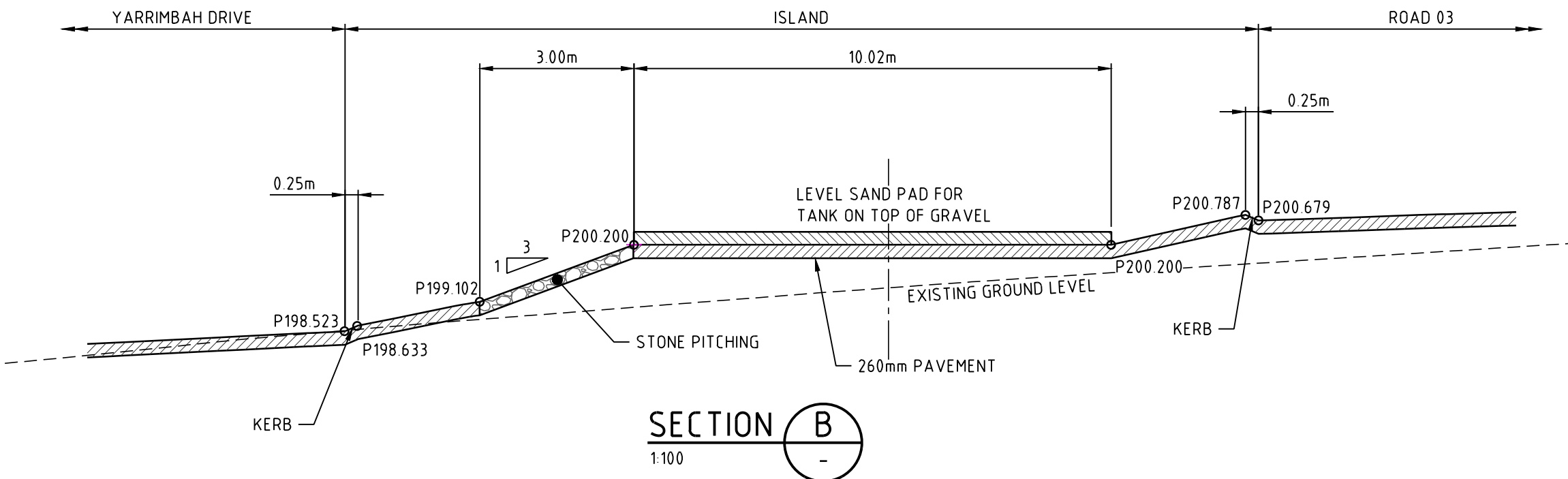
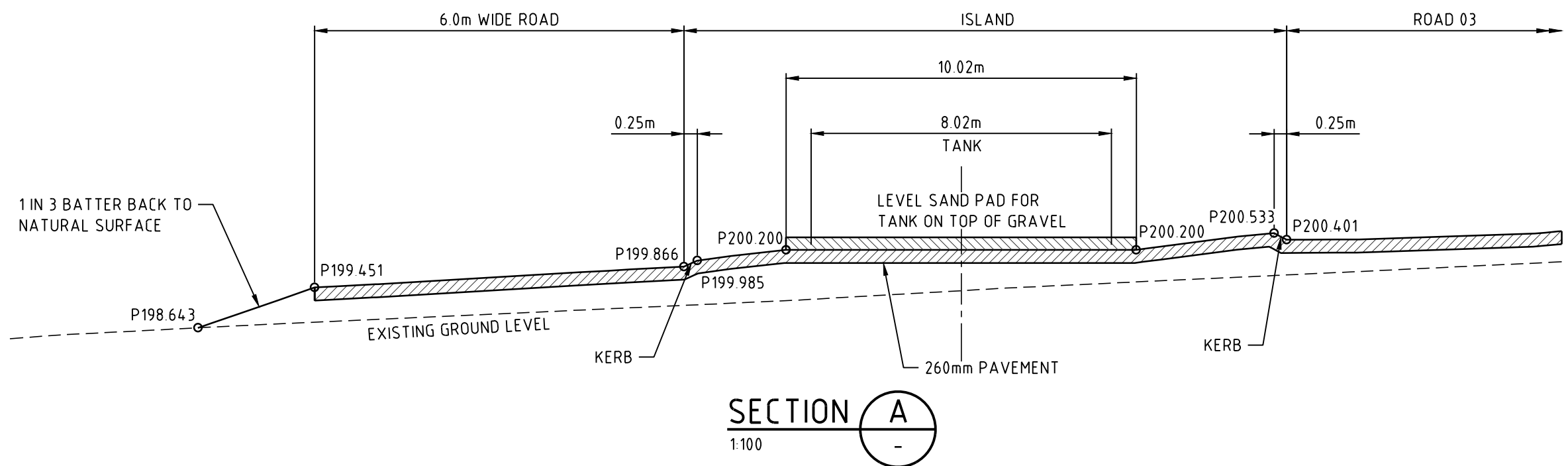
Appendix C Stage 1 water tank specifications



NUMBER	EASTING	NORTHING
1	33202 517	4 94013 694
2	33216 278	4 94010 182
3	33218 93	4 94005 798
4	33228 734	4 93991 816
5	33237 531	4 93987 261
6	33239 691	4 93983 435
7	33237 552	4 93997 649
8	33239 345	4 94000 362
9	33239 351	4 94000 993
10	33229 465	4 94012 936
11	33227 737	4 94012 418

NOTE: ALL COORDINATES ARE IN PCG94

FIRE TANK ACCESS INFORMATION		
COURSE	MATERIAL	THICKNESS (mm)
SUB-BASE	CRUSHED LIMESTONE / FERRICRETE / ROCK	260
BASE COURSE	CRUSHED ROCK / GRAVEL	100
SEAL PRIMER	-	0
ASPHALT	-	30
TOTAL THICKNESS		390



1 ALL CO-ORDINATES AND LEVELS SHOWN ON THIS DRAWING SHALL BE VERIFIED BY
2 CONTRACTOR PRIOR TO COMMENCEMENT OF WORKS ANY DISCREPANCIES SHALL BE
3 REPORTED TO THE SUPERINTENDENT IMMEDIATELY.

4 ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE SPECIFICATION AND ALSO THE
5 REQUIREMENTS OF THE CITY OF SWAN AND THE TANK MANUFACTURER.

6 THE CONTRACTOR SHALL LIAISE WITH ALL RELEVANT AUTHORITIES TO LOCATE ALL
7 EXISTING SERVICES WITHIN THE CONTRACT AREA PRIOR TO THE COMMENCEMENT OF
8 WORK. SERVICES INFORMATION SHOWN ON THE DRAWINGS IS INDICATIVE ONLY AND
9 MAY NOT BE COMPLETE. WHERE EXISTING AND PROPOSED WORKS CONFLICT, LEVELS
10 ARE TO BE TAKEN AND SUPPLIED TO THE SUPERINTENDENT IMMEDIATELY.

11 ALL HEIGHTS ARE TO A HD AND ALL LEVELS SHALL BE DERIVED FROM ESTABLISHED
12 BENCHMARKS.

13 ALL BENCHMARKS ARE TO BE PROTECTED AND PRESERVED.

14 ALL KERBING TO BE SEMI MOUNTABLE U.S.O (ALL KERBING ON A RADIUS OF 40m OR
15 LESS MUST BE KEYS).

16 ALL SETOUT POINTS AND RADII ARE TO FACE OF KERB.

17 ALL CONSTRUCTION SHALL MAKE SMOOTH CONNECTION TO EXISTING WORK.

18 GUIDE POSTS TO BE INSTALLED ALONG ROADSIDE IN ACCORDANCE WITH
19 AS1742.2-2009

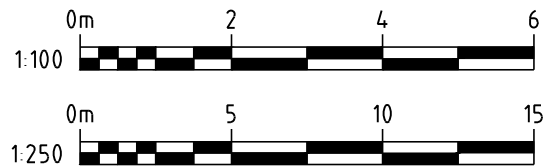
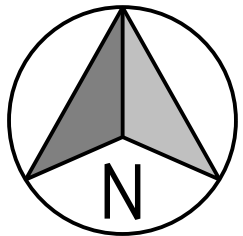
20 ALL PAVEMENT TO BE CONSTRUCTED USING BLACK ASPHALT U.S.O

21 THE CONTRACTOR SHALL CONTACT THE SUPERINTENDENT WHEN ALL CONCRETE
22 FORMWORK IS IN POSITION FOR INSPECTION AND APPROVAL, PRIOR TO THE POURING
23 OF ANY CONCRETE

24 'AS CONSTRUCTED' DRAWINGS ARE TO BE PREPARED TO THE REQUIREMENT OF THE
25 CITY OF SWAN.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO INVESTIGATE THE NATURE AND LOCATION OF ALL SERVICES WHICH MAY BE ENCOUNTERED AND TO CONSULT WITH THE RELEVANT SERVICE AUTHORITIES PRIOR TO COMMENCEMENT OF EXCAVATIONS. FAILURE TO DO SO OR TO TAKE DUE CARE SHALL NOT LIMIT THE CONTRACTOR'S LIABILITY FOR REPAIR OF ALL SERVICES DAMAGED BY HIM DURING CONSTRUCTION WORKS. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY FOR THE PROTECTION OF ALL EXISTING SERVICES.

1	19.11.24	HVD	AA	<i>myself</i>	FIRE TANK ISLAND GRADING AMENDED
0	24.10.23	ARH	AA	M WALLIS	ISSUED FOR CONSTRUCTION
B	23.08.23	YH	AA	M WALLIS	ISSUED FOR APPROVAL
A	09.06.23	ARH	MW	M WALLIS	ISSUED FOR APPROVAL
REV	DATE	DRN	CKD	APP	AMENDMENT



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CLIENT

QUBE

APPROVED

myWall

DESIGNED

ARH

SCALE

1:100 1:250

PROJECT YARRIMBAH HEIGHTS - STAGE 01

TITLE
INTERSECTION DETAILS FIRE FIGHTING TANK SHEET 2 OF 2

WAPC No.

DRAWING No.

6480-01-621

ORIGINAL
SIZE

Appendix D Approved firebreak variations for Lots 37 and 46

Your Ref: Alternative Firebreak Plan Application
Enquiries: Community Fire Management Officer
Email: Commsafe-fem@swan.wa.gov.au
Tel: 9267 9022

17 June 2024

Michael Mignacca
QUBE – Assistant Development Manager
Suite 3, Level 1, 437 Roberts Road
SUBIACO WA 6008

Dear Michael,

RE: Alternative Firebreak Plan for Lot 37 Lage Rd, Yarrimbah Heights, Bullsbrook

Please be advised that the above application has been approved on **17/06/2024**.

Find enclosed the approved alternative firebreak map for your property. This map details where your firebreaks must be installed and any other approved deviations from the City's Fire Hazard Reduction Notice (Firebreak Notice). Be advised that any requirements of the Fire Hazard Reduction Notice not modified in this approved alternate firebreak plan must still be complied with. If your property is subject to an approved Bushfire Management Plan, it remains the responsibility of the property owner to ensure all other requirements of that plan are also fulfilled.

This alternative firebreak approval is valid until 17/06/2029. The encumbrance is on you, the landowner, to lodge a renewal application. The City will endeavour to issue a notice of expiry at the appropriate time, to aid landowners in this process. At expiry, all generic requirements of the Fire Hazard Reduction Notice (Firebreak Notice) will apply. A City officer may cancel or amend this approval at any time.

All fire hazard reduction requirements, unless specified otherwise in this document, must be completed by 1 November and maintained through to 30 April annually. If you opt to not comply with the alternative firebreak requirements, all generic requirements of the Fire Hazard Reduction Notice will apply.

This approved alternative firebreak plan applies to all future owners of this property. Should you sell your property, please advise the new owners of the alternative firebreak plan.

Should you have any queries please contact the City of Swan using the above contact information.

Yours sincerely,

Richard Daniel
Community Fire Management Officer
Community Safety

Legend:

	Lot boundary	
	Standard	F/Bk
	Alternative	F/Bk

Notes & Site Constraints

Other Notes (eg. pipelines, telecoms)

Blue 'Standard firebreak' refers to the firebreak being a minimum 3m wide mineral earth with 4m vertical clearance. Locations as marked on the adjacent map.

Yellow 'Alternative firebreak' refers to the firebreak being a minimum 3m wide mineral earth with 4m vertical clearance that deviates around outcropping in the South-East corner of the property.

Any tributary crossovers must have:

- minimum 15 tonne weight capacity.
- no more than 1 in 8 entry and exit angle.

Note: This property in its entirety must be managed in accordance with the City of Swan's Fire Hazard Reduction Notice (Firebreak Notice) under the Bush Fires Act 1954.



Alternative Firebreak Plan - Valid Until 17/06/2029

Lot 37 Lage Rd, Yarrimbah Heights, Bullsbrook

Approved by R. Daniel

Date: 17/06/2024

Your Ref: Alternative Firebreak Plan Application
Enquiries: Community Fire Management Officer
Email: Commsafe-fem@swan.wa.gov.au
Tel: 9267 9022

17 June 2024

Michael Mignacca
QUBE – Assistant Development Manager
Suite 3, Level 1, 437 Roberts Road
SUBIACO WA 6008

Dear Michael,

RE: Alternative Firebreak Plan for Lot 46 Lage Rd, Yarrimbah Heights, Bullsbrook

Please be advised that the above application has been approved on **17/06/2024**.

Find enclosed the approved alternative firebreak map for your property. This map details where your firebreaks must be installed and any other approved deviations from the City's Fire Hazard Reduction Notice (Firebreak Notice). Be advised that any requirements of the Fire Hazard Reduction Notice not modified in this approved alternate firebreak plan must still be complied with. If your property is subject to an approved Bushfire Management Plan, it remains the responsibility of the property owner to ensure all other requirements of that plan are also fulfilled.

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Should you have any queries please contact the City of Swan using the above contact information.

Yours sincerely,

Richard Daniel
Community Fire Management Officer
Community Safety

Legend:

	Lot boundary	
	Standard	F/Bk
	Alternative	F/Bk

Notes & Site Constraints

Other Notes (eg. pipelines, telecoms)

Blue 'Standard firebreak' refers to the firebreak being a minimum 3m wide mineral earth with 4m vertical clearance. Locations as marked on the adjacent map.

Yellow 'Alternative firebreak' refers to the firebreak being a minimum 3m wide mineral earth with 4m vertical clearance that deviates around outcropping in the South-East corner of the property.

Note: This property in its entirety must be managed in accordance with the City of Swan's Fire Hazard Reduction Notice (Firebreak Notice) under the Bush Fires Act 1954.



Alternative Firebreak Plan - Valid Until 17/06/2029

Lot 46 Lage Rd, Yarrimbah Heights, Bullsbrook

Approved by R. Daniel



Date: 17/06/2024

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Document Status

Rev No.	Purpose	Author	Reviewed and approved for Issue	
			Name	Date
Rev 0	Issued for use: to facilitate subdivision clearances and creation of title for Stage 1 lots	Kaitlin Southgate (BPAD 57034, Level 1)	Zac Cockerill (BPAD 37803, Level 2)	12 December 2024



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Bunbury

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Spencer Street Bunbury, WA 6230
T: 08 9792 4797

Canberra

Ngunnawal Country | Level 1, The Realm
18 National Circuit Barton, ACT 2600
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Darwin

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