

# Stage 4 Malvern Springs Hillside, Ellenbrook

**LWP Property Group** 

**Bushfire Management Plan Compliance & Condition Clearance Report** 

151,121 | 64758





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.





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# 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 and Figure 2.

Table 1: Site/development summary

Site details	
Address details	23 proposed residential lots within Stage 4 Malvern Springs Hillside, Ellenbrook WA 6069
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 lot

### 1.2 Purpose of report

This Bushfire Management Plan (BMP) compliance and condition clearance report has been prepared for 23 proposed residential lots within Stage 4 Malvern Springs Hillside (the project area). Lots within the project area are subject to WAPC subdivision approval (Ref. 158386), issued on 26 November 2019.

This report has been prepared to address Condition 14 of WAPC subdivision approval (refer to Table 2) to facilitate subdivision clearances and creation of title for Stage 4 lots. This report also provides a post-subdivisional works update of the Bushfire Attack Level (BAL) ratings for individual lots within the project area for the benefit of the developer, future lot purchasers and decision makers.

All proposed lots except for Lot 8668 are situated within a designated bushfire prone area as per the Map of Bush Fire Prone Areas (DFES 2021, see Plate 1). BAL certificates have been prepared for all proposed lots situated within a designated bushfire prone area based on the final site compliance check and are appended to this report to facilitate future lot sales and building approvals (refer to Appendix A).

The BAL assessment outlined in this report is the most up to date assessment by JBS&G relating to the project area and has been prepared in consideration of the previous BAL contour assessment detailed in the BMP prepared to support the subdivision application (Strategen 2019, Ref: RDP16083\_01 R001 Rev 5).

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).



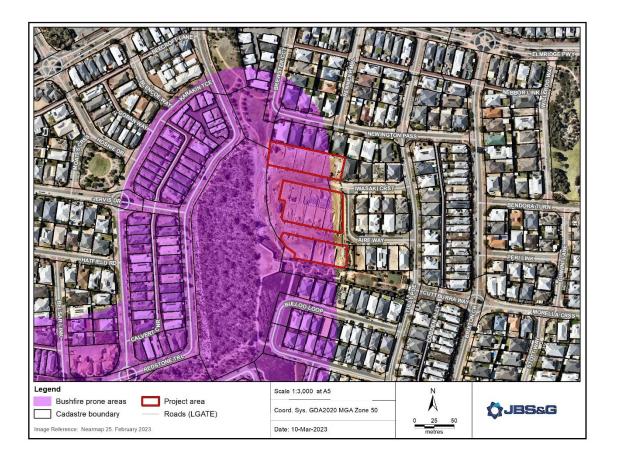


Plate 1: Designated bushfire prone status of the project area (DFES 2021)

### 1.3 Subdivision conditions

The bushfire related subdivision condition documented the WAPC subdivision approval (Ref. 158386) relevant to the project area is documented in Table 2.

**Table 2: Relevant subdivision conditions** 

Condition	Condition description	Clearance comments
14	Information is to be provided to demonstrate that the measures contained in the bushfire management plan prepared by Strategen Environmental 21 August 2019 have been completed during subdivision works. This information should include a notice of 'Certification by Bushfire Consultant'.	This BMP compliance and condition clearance report provides the necessary evidence to demonstrate that the bushfire management measures documented within the subdivision stage BMP have been suitably implemented on site, as required under Condition 14 of subdivision approval.



# 2. Bushfire Management Plan compliance audit

The BMP prepared to support the subdivision application (Strategen 2019) lists the bushfire management measures required to be implemented by the developer prior to issue of titles. A site audit was undertaken on 15 March 2023 to confirm that all relevant works from the subdivision stage BMP have been implemented in relation to the project area. The relevant BMP requirements and associated evidence of compliance are documented in Table 3, along with the required certification by bushfire consultant.

Table 3: Bushfire compliance audit table

BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 4 (Item 1)	Creation and ongoing maintenance of 22 m wide APZ	The 22 m wide APZ documented in the subdivision stage BMP has been refined based on detailed site inspection on 15 March 2023, which confirmed that the vegetation retained within the adjacent west Reserve 53610 (Lot 8744) is consistent with a Class D scrub classification with effective downslopes ranging from >0–5 degrees to >5–10 degrees (refer to Site Photos 1A–1C and 2A–2B in Appendix B). The minimum separation distance to achieve BAL-29 compliance has subsequently been adjusted from 22 m down to 15–17 m (depending on effective slope) to reflect the latest detailed assessment. The reduced distances are adequately catered for through the low threat POS interface between the project area and the adjacent bushland. This is validated in the latest vegetation and BAL contour mapping outputs for the project area, as contained in Figure 1 and Figure 2 and summarised in Table 5.	Zac Cockerill (Level 2 BPAD37803)



BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 4 (Item 2)	Enforce 1.5 m APZ building setback for the northwestern-most lot	The requirement for a 1.5 m APZ building setback for the north-western-most lot (Lot 11578), as documented in the subdivision stage BMP, has been reassessed following subdivisional works. It has been determined based on detailed site inspection on 15 March 2023 that the impacting vegetation retained within the adjacent west Reserve 53610 (Lot 8744) is consistent with a Class D scrub classification with an effective downslope of >0–5 degrees (refer to Site Photos 2A and 2B in Appendix B). On this basis, a 17 m wide separation distance is required to deliver a compliant BAL-29 rating for Lot 11578, which is adequately provided for through the low threat POS interface between Lot 11578 and the adjacent bushland such that no APZ setbacks are required. This is validated in the latest vegetation and BAL contour mapping outputs for the project area, as contained in Figure 1 and Figure 2 and summarised in Table 5.	Zac Cockerill (Level 2 BPAD37803)
Table 4 (Item 3)	Maintenance to a low threat state within POS/vacant lots	Existing POS and vacant lots have been established to a low threat state and site inspection on 15 March 2023 confirmed that a low threat state had been maintained throughout these areas. This includes the east-west POS spine (refer to Photo Point 3D in Appendix B), southern POS cell (refer to Photo Points 3B, 3C and 3E in Appendix B) and northern POS cell (refer to Photo Point 3I in Appendix B), all of which comprise a combination of managed gardens, low threat landscape planting, turf areas and footpaths.  The three remaining vacant lots adjacent to the project area are in a cleared and earthworked state and comply with a non-vegetated/low threat condition (refer to aerial imagery in Figure 1).	Zac Cockerill (Level 2 BPAD37803)
Table 4 (Item 4)	Ensure all relevant landscape plans for low threat POS are consistent with the requirements and standards of this BMP	The western POS cell (immediately abutting the project area to the west), has been cleared/earthworked and established to a low threat state in advance of formal POS construction (refer to Photo Point 3F and 3G in Appendix B). A consistent low threat landscaping theme will be applied to the western POS cell, similar to the other low threat POS cells already constructed and discussed above. The Stage 4 Landscape Concept provided in Appendix E is consistent with the low threat requirements of the BMP.	Zac Cockerill (Level 2 BPAD37803)



BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 4 (Item 5)	Implementation of increased building construction standards where required	N/A To be undertaken at the building stage.	N/A
Table 4 (Item 6)	Construction of public roads to the standards stated in this BMP	Construction of Stage 4 public roads is bonded to the City in accordance with the civil Roadworks Plan (Appendix C), which complies with the technical requirements of the BMP and the Guidelines.  Stage 4 lots will be serviced by a through road (Iwasaki Crest) with two access routes for	Zac Cockerill (Level 2 BPAD37803)
		all proposed lots. Connections are provided to Tully Parade and broader access to the northeast; and Aire Way/Tully Parade and broader access to the southeast. No permanent or temporary no-through roads are proposed/required and JBS&G confirms the proposed vehicular access network complies with all necessary bushfire compliance requirements stated in the BMP.	
Table 4 (Item 7)	Provision of reticulated water supply and network of hydrants to the standards stated in this BMP	Construction of Stage 4 reticulated water supply is bonded to the City in accordance with the civil Water Reticulation Plan (Appendix D), which demonstrates that firefighting hydrants will be installed in accordance with requirements of Water Corporation Design Standard 63, as required under the BMP.	Zac Cockerill (Level 2 BPAD37803)
Table 4 (Item 8)	Notification on Title	N/A To be completed by others at creation of Title, as per the Deposited Plan.	N/A
Table 4 (Item 9)	Provision of BAL compliance assessment	Section 3 of this report provides the required BAL compliance assessment, supported by the BAL certificates contained in Appendix A.	Zac Cockerill (Level 2 BPAD37803)



BMP Reference	Action	Evidence of completion/clearance comments	Certification by bushfire consultant
Table 4 (Item 10)	Compliance with current City of Swan annual firebreak notice (refer to Section 3.6)	The project area is in a completely cleared and earthworked state and complies with the requirements of the approved BMP, which meets the City's firebreak notice requirements for the proposed residential lots (refer to aerial imagery in Figure 1 and Photo Points 3F, 3G, 3H and 3J in Appendix B).	Zac Cockerill (Level 2 BPAD37803)
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# 3. Bushfire assessment results

### 3.1 Assessment inputs

A Bushfire Attack Level (BAL) contour assessment has been undertaken for the project area in accordance with Method 1 of AS 3959—2018 *Construction of Buildings in Bushfire-Prone Areas* (AS 3959; 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 within the project area and adjoining 150 m (the assessment area) through on-ground verification on 15 March 2023 in accordance with AS 3959 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 are contained in Appendix B and depicted in Figure 1. A summary of the vegetation classification/exclusion outputs is contained in Table 4.

### 3.1.2 Effective slope

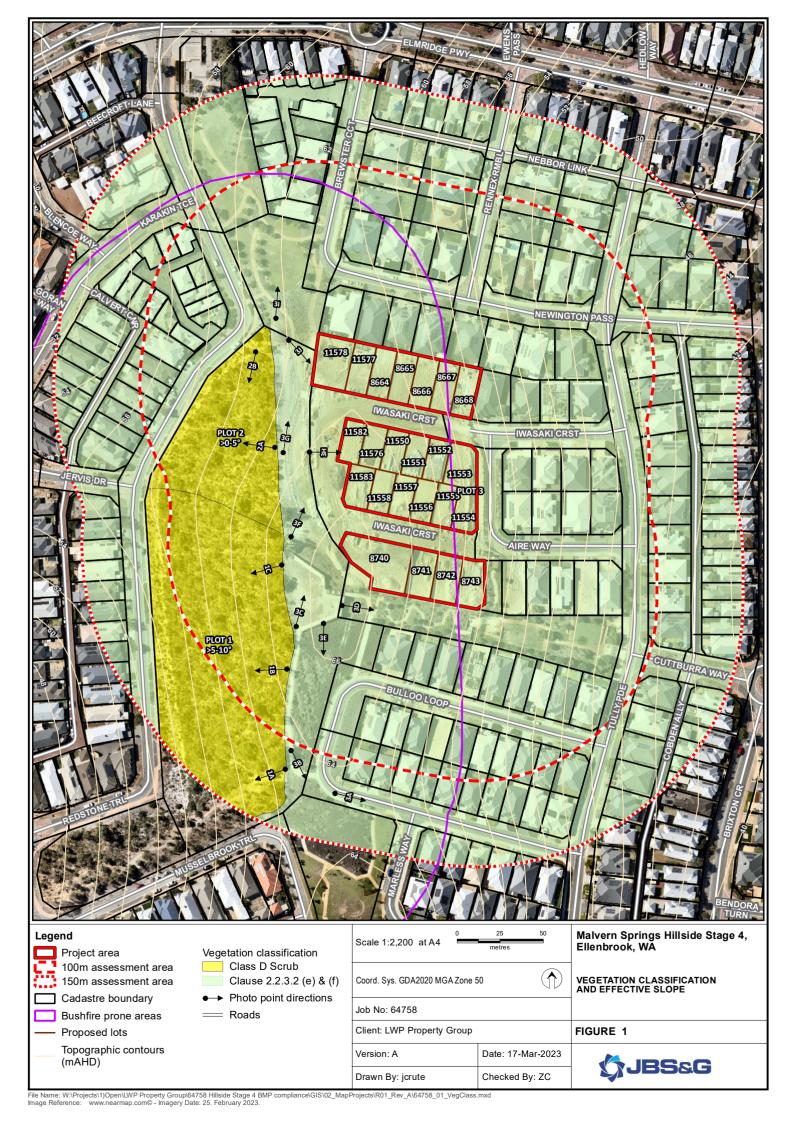
Effective slope under classified vegetation was assessed within the assessment area through onground verification on 15 March 2023 in accordance with AS 3959. Results were cross-referenced with DPIRD 2m contours and are depicted in Figure 1.

### 3.1.3 Summary of inputs

Figure 1 illustrates the current vegetation classifications and exclusions observed during site inspection. The vegetation classifications/exclusions and effective slope are summarised in Table 4.

Table 4: Summary of vegetation classifications, exclusions and effective slope

Vegetation plot	Vegetation classification	Effective slope	Comments
1	Class D Scrub	Downslope >5–10°	Scrub vegetation to the west within Reserve 53610 (Lot 8744). Vegetation with a continuous horizontal and vertical structure, greater than 2 m high at maturity
2	Class D Scrub	Downslope >0–5°	Scrub vegetation to the west within Reserve 53610 (Lot 8744). Vegetation with a continuous horizontal and vertical structure, greater than 2 m high at maturity
3	Excluded – Non- vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Existing non-vegetated areas (i.e. buildings, roads, footpaths, earthworked land) and low threat managed areas (i.e. managed turf and gardens, landscaped POS, road verges, etc).





## 3.2 Assessment outputs

### 3.2.1 BAL contour assessment results

As previously stated, 22 of the 23 proposed lots within the project area are situated within a designated Bush Fire Prone Area and therefore require a BAL assessment. Results of the BAL contour assessment are illustrated in Figure 2 with a detailed summary of the assessment provided in Table 5.

### 3.2.2 BAL certificates

BAL certificates for the 22 proposed lots situated within a designated bushfire prone area are provided in Appendix A in accordance with the BAL contour assessment results detailed in Table 5. Should a lower BAL rating be realistically achievable through an appropriate building setback, then the landowner can refer to the recommended setbacks listed in Table 5. The lower BAL rating may be achieved if the recommended building setback is reflected on the building plan for that lot and a revised BAL certificate can be issued at that time.



**Table 5: BAL contour assessment results** 

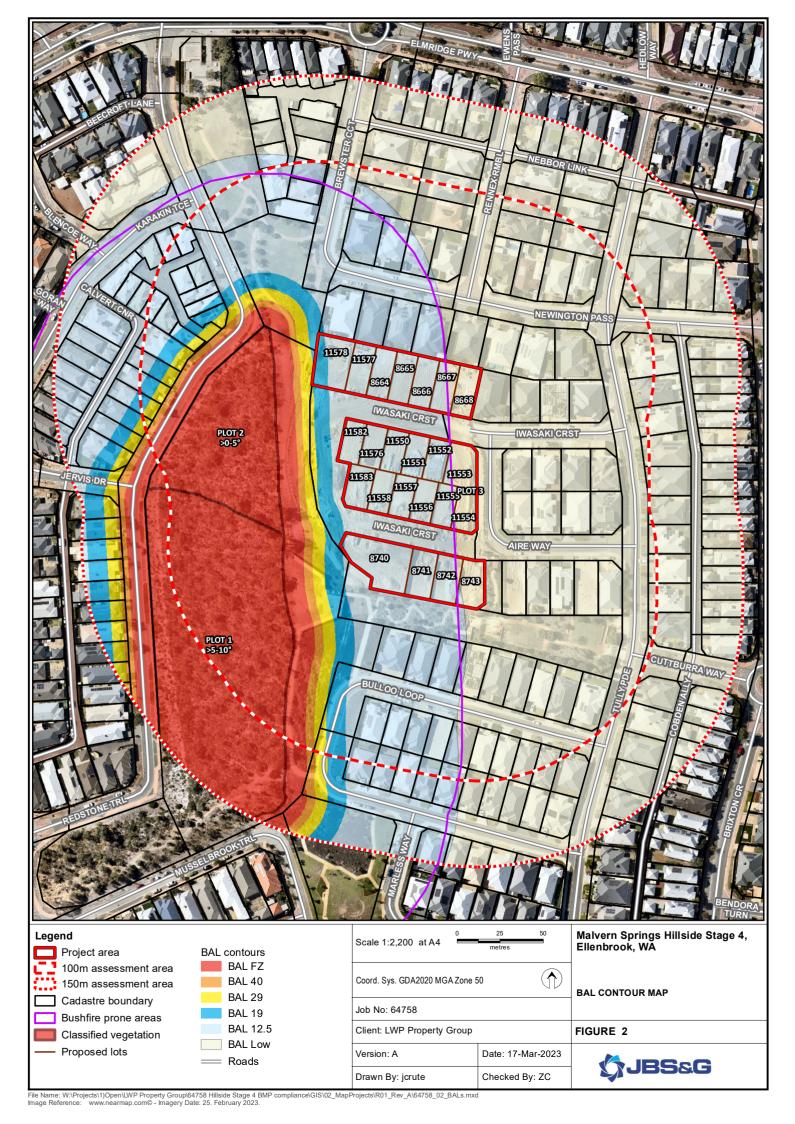
Lot	Designated bushfire prone area	Plot	Vegetation classification	Effective slope	Separation to lot boundary (m)	Highest BAL to lot boundary	Setback required to achieve lower BAL	Potential new BAL with setback*
8664		2	Class D Scrub	Downslope >0–5°	52m	BAL-12.5	N/A	N/A
8665	V	2	Class D Scrub	Downslope >0–5°	64m	BAL-12.5	N/A	N/A
8666	Yes	2	Class D Scrub	Downslope >0–5°	76m	BAL-12.5	N/A	N/A
8667		2	Class D Scrub	Downslope >0–5°	89m	BAL-12.5	N/A	N/A
8668	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8740		1	Class D Scrub	Downslope >5–10°	32.5m	BAL-19	2.5m truncated side setback (western boundary)	BAL-12.5
8741		1	Class D Scrub	Downslope >5–10°	68m	BAL-12.5	N/A	N/A
8742		1	Class D Scrub	Downslope >5–10°	81m	BAL-12.5	N/A	N/A
8743	Yes	1	Class D Scrub	Downslope >5–10°	95m	BAL-12.5	5m truncated side setback (western boundary)	BAL-Low
11550		2	Class D Scrub	Downslope >0–5°	58m	BAL-12.5	N/A	N/A
11551		2	Class D Scrub	Downslope >0–5°	70m	BAL-12.5	N/A	N/A
11552		2	Class D Scrub	Downslope >0–5°	83m	BAL-12.5	N/A	N/A
11553		2	Class D Scrub	Downslope >0–5°	95m	BAL-12.5	5m truncated side setback (western boundary)	BAL-Low

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Lot	Designated bushfire prone area	Plot	Vegetation classification	Effective slope	Separation to lot boundary (m)	Highest BAL to lot boundary	Setback required to achieve lower BAL	Potential new BAL with setback*
11554		1	Class D Scrub	Downslope >5–10°	97m	BAL-12.5	3m truncated side setback (western boundary)	BAL-Low
11555		1	Class D Scrub	Downslope >5–10°	85m	BAL-12.5	N/A	N/A
11556		1	Class D Scrub	Downslope >5–10°	73m	BAL-12.5	N/A	N/A
11557	Yes	1	Class D Scrub	Downslope >5–10°	61m	BAL-12.5	N/A	N/A
11558		2	Class D Scrub	Downslope >0–5°	49m	BAL-12.5	N/A	N/A
11576		2	Class D Scrub	Downslope >0–5°	46m	BAL-12.5	N/A	N/A
11577		2	Class D Scrub	Downslope >0–5°	40m	BAL-12.5	N/A	N/A
11578		2	Class D Scrub	Downslope >0–5°	22m	BAL-19	N/A	N/A
11582		2	Class D Scrub	Downslope >0–5°	34m	BAL-12.5	N/A	N/A
11583		2	Class D Scrub	Downslope >0–5°	36m	BAL-12.5	N/A	N/A

<sup>\*</sup>The new BAL rating can only be confirmed once the building plan for the relevant lot has been prepared to demonstrate compliance with the recommended setback. An updated BAL certificate can be prepared at that time.





# 4. Conclusion and recommendations

This BMP compliance and condition clearance report has been prepared for 23 proposed residential lots within Stage 4 Malvern Springs Hillside, Ellenbrook.

Assessment results are consistent with current on-ground conditions assessed on 15 March 2023. JBS&G can confirm that the existing BMP over the site has been implemented throughout the duration of subdivisional works for the relevant Stage 4 area and adjacent land to achieve the intended BAL outcomes and compliance with the BMP and associated bushfire protection criteria of the Guidelines. This sufficiently addresses the requirements of Condition 14 of WAPC subdivision approval (Ref. 158386).

This report provides a final BAL check for individual lots for use at the building permit stage. Of the 23 proposed lots, 22 are situated within a designated Bush Fire Prone Area and require a BAL assessment, as per Figure 2 and Table 5, with the associated BAL certificates provided in Appendix A.

JBS&G considers that the BAL contour assessment and BAL certificates outlined in this report are accurate to inform individual lot building permit applications.

Should it be determined through demonstration on individual building plans that compliance with the recommended building setbacks has been achieved and subsequently a lower BAL rating has been attained (as per Table 5), then the lower BAL rating should apply and be reflected in an updated BAL certificate prepared at that time.



# 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) 2021, *Map of Bush Fire Prone Areas*, [Online], Government of Western Australia, available from: https://maps.slip.wa.gov.au/landgate/bushfireprone/, [10/03/2023].
- 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 Environmental 2019, Bushfire Management Plan Lot 9327 The Broadway, Ellenbrook (Malvern Springs Hillside), report prepared for Roberts Day, August 2019.
- 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 BAL Certificates**





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and	Property Details and Description of Works						
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference			
Address Details			8664	Iwasaki Crest			
	Suburb				State	Postcode	
	Ellenbrook WA 6069						
Local government area	City of Swan						
Main BCA class of the building	Class 1a	Use(s) buildir		Residential dwelling			
Description of the building or works	Construct	tion of a Class	1a buildi	ng and associated Class 10a build	dings.		

Determination of Highest Bushfire Attack Level							
AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL			
Method 1	Class D Scrub	Downslope >0–5 degrees	52m	BAL – 12.5			

### **BPAD Accredited Practitioner Details** Name Zac Cockerill **Company Details** I hereby declare that I am a BPAD JBS&G accredited bushfire practitioner. Accreditation No. I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in Date accordance with the requirements of AS 3959-2018. **Authorised Practitioner Stamp**





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and Description of Works								
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference				
Address Details			8665	Iwasaki Crest				
	Suburb State					Postcoo	de	
	Ellenbroo	k			WA	6069		
Local government	City of Sw	/an						
area	City of 5V							
Main BCA class of	Class 1a	Use(s)	of the	Residential dwelling				
the building	Class 1a	buildir	ng	nesidential dwelling				
Description of the building or works	Construction of a Class 1a building and associated Class 10a buildings.							

Determination of Highest Bushfire Attack Level								
AS 3959 Assessment Procedure  Vegetation Classification		Effective Separation Slope Distance		BAL				
Method 1	Class D Scrub	Downslope >0–5 degrees	64m	BAL - 12.5				

# Name Zac Cockerill Company Details JBS&G I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018. I hereby declare that I am a BPAD accredited bushfire practitioner. Accreditation No. 3 7883 Signature Date Date Authorised Practitioner Stamp





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and Description of Works								
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference				
Address Details			8666	Iwasaki Crest				
	Suburb				State	Postcode		
	Ellenbroo	k			WA	6069		
Local government area	City of Sw	City of Swan						
Main BCA class of the building	Class 1a	Use(s) buildir		Residential dwelling				
Description of the building or works	the Construction of a Class 1a building and associated Class 10a buildings.							

Determination of Highest Bushfire Attack Level								
AS 3959 Assessment Vegetation Classification		Effective Slope	Separation Distance	BAL				
Method 1	Class D Scrub	Downslope >0–5 degrees	76m	BAL – 12.5				

### **BPAD Accredited Practitioner Details** Name Zac Cockerill **Company Details** I hereby declare that I am a BPAD JBS&G accredited bushfire practitioner. Accreditation No. 37803 I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in accordance with the requirements of Date AS 3959-2018. **Authorised Practitioner Stamp**





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and Description of Works								
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference				
			8667	Iwasaki Crest				
	Suburb				State	Postcode		
	Ellenbroo	k			WA	6069		
Local government area	City of Sw	City of Swan						
Main BCA class of the building	Class 1a	Use(s) buildi	of the	Residential dwelling				
Description of the building or works	Construc	tion of a Clas	s 1a buildi	ng and associated Class 10a buil	dings.			

Determination of Highest Bushfire Attack Level								
AS 3959 Assessment Procedure  Vegetation Classification		Effective Slope	Separation Distance	BAL				
Method 1	Class D Scrub	Downslope >0–5 degrees	89m	BAL - 12.5				

### **BPAD Accredited Practitioner Details** Name Zac Cockerill **Company Details** I hereby declare that I am a BPAD accredited bushfire practitioner. JBS&G Accreditation No. 37803 I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in 29/3/23 Date accordance with the requirements of AS 3959-2018. **Authorised Practitioner Stamp**





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and Description of Works								
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference				
Address Details			8740	Iwasaki Crest				
	Suburb				State	Postcode		
	Ellenbroo	k			WA	6069		
Local government area	City of Sw	City of Swan						
Main BCA class of the building	Class 1a	Use(s) buildir	of the	Residential dwelling				
Description of the building or works	Construct	onstruction of a Class 1a building and associated Class 10a buildings.						

Determination of Highest Bushfire Attack Level								
AS 3959 Assessment Vegetation Classification		Effective Slope	Separation Distance	BAL				
Method 1	Class D Scrub	Downslope >5–10 degrees	32.5m (lower BAL achievable with setback)	BAL – 19				

BPAD Accredited Practitioner Details	
Name Zac Cockerill	
Company Details JBS&G	I hereby declare that I am a BPAD accredited bushfire practitioner.
I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018.	Accreditation No. 37803 Signature Date 29/3/23
	Authorised Practitioner Stamp





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and Description of Works									
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference					
Address Details			8741	lwasaki Crest					
	Suburb	<del></del> -			State	Postcode			
	Ellenbroo	k			WA	6069			
Local government area	City of Sw	City of Swan							
Main BCA class of the building	Class 1a	Use(s) buildir		Residential dwelling					
Description of the building or works	Construction of a Class 1a building and associated Class 10a buildings.								

Determination of High	est Bushfire Attack Level			
AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class D Scrub	Downslope >5–10 degrees	68m	BAL – 12.5

### **BPAD Accredited Practitioner Details** Name Zac Cockerill **Company Details** I hereby declare that I am a BPAD JBS&G accredited bushfire practitioner. Accreditation No. I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in Date accordance with the requirements of AS 3959-2018. **Authorised Practitioner Stamp**





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and Description of Works								
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference				
Address Details			8742	Iwasaki Crest				
	Suburb				State	Postcode		
	Ellenbroo	k			WA	6069		
Local government area	City of Sw	City of Swan						
Main BCA class of the building	Class 1a	Use(s) buildir		Residential dwelling				
Description of the building or works	Construct	tion of a Class	1a buildi	ng and associated Class 10a buil	dings.			

Determination of Highest Bushfire Attack Level							
AS 3959 Assessment Procedure  Vegetation Classification		Effective Slope	Separation Distance	BAL			
Method 1	Class D Scrub	Downslope >5–10 degrees	81m	BAL – 12.5			

## **BPAD Accredited Practitioner Details** Name Zac Cockerill **Company Details** I hereby declare that I am a BPAD JBS&G accredited bushfire practitioner. Accreditation No. I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in Date accordance with the requirements of AS 3959-2018. Authorised Practitioner Stamp





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and Description of Works								
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference				
			8743	Iwasaki Crest				
	Suburb State Pos					Postcode		
	Ellenbroc	k			WA	6069		
Local government	City of Su	City of Swan						
area	City of 3v	vaii						
Main BCA class of	Class 1a	Use(s)	of the	Decidential devalling				
the building	Class 1a	buildii	ng	Residential dwelling				
Description of the	Construc	Construction of a Class 1a building and associated Class 10a buildings.						
building or works	Construc	LION OF a Class	s ta bullu	ing and associated class tod buil	ungs.			

Determination of Highest Bushfire Attack Level							
AS 3959 Assessment Procedure  Vegetation Classification		Effective Slope	Separation Distance	BAL			
Method 1	Class D Scrub	Downslope >5–10 degrees	95m (lower BAL achievable with setback)	BAL – 12.5			

BPAD Accredited Practitioner Details	
Name Zac Cockerill	
Company Details JBS&G I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018.	I hereby declare that I am a BPAD accredited bushfire practitioner.  Accreditation No. 37803  Signature  Date  25   3   23
	Authorised Practitioner Stamp





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and	l Descriptio	on of Works						
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference				
Address Details			11550	Iwasaki Crest				
	Suburb State I					Postcode		
	Ellenbrook					6069		
Local government area	City of Sw	City of Swan						
Main BCA class of the building	Class 1a Residential dwelling							
Description of the building or works	Construction of a Class 1a building and associated Class 10a buildings.							

Determination of Highest Bushfire Attack Level							
AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL			
Method 1	Class D Scrub	Downslope >0–5 degrees	58m	BAL - 12.5			

### **BPAD Accredited Practitioner Details** Name Zac Cockerill I hereby declare that I am a BPAD **Company Details** accredited bushfire practitioner. JBS&G 37803 Accreditation No. I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in Date accordance with the requirements of AS 3959-2018. **Authorised Practitioner Stamp**





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and Description of Works							
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference			
Address Details			11551	Iwasaki Crest			
	Suburb State				Postcode		
	Ellenbroo	Ellenbrook			WA	6069	
Local government area	City of Sv	van					
Main BCA class of the building	Class 1a	Use(s) buildir	of the	Residential dwelling			
Description of the building or works  Construction of a Class 1a building and associated Class 10a buildings.							

Determination of Highest Bushfire Attack Level							
AS 3959 Assessment Procedure  Vegetation Classification		Effective Slope	Separation Distance	BAL			
Method 1	Class D Scrub	Downslope >0-5 degrees	70m	BAL – 12.5			

## **BPAD Accredited Practitioner Details** Name Zac Cockerill **Company Details** I hereby declare that I am a BPAD JBS&G accredited bushfire practitioner. Accreditation No. I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in Date accordance with the requirements of AS 3959-2018. Authorised Practitioner Stamp





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and Description of Works								
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference				
Address Details			11552	Iwasaki Crest				
	Suburb State					Postcode		
	Ellenbroo	k			WA	6069		
Local government	City of Sw	City of Coop						
area	City of Sw	/aii						
Main BCA class of	Class 1a	Use(s)	of the	Residential dyselling				
the building	Class 1a	buildir	ng	Residential dwelling				
Description of the	Construct	Construction of a Class 1a building and associated Class 10a buildings.						
building or works	Constituti	lion of a Class		ing and associated Class 10a bull	uirigs.			

Determination of Highest Bushfire Attack Level							
AS 3959 Assessment Procedure  Vegetation Classification		Effective Slope	Separation Distance	BAL			
Method 1	Class D Scrub	Downslope >0–5 degrees	83m	BAL – 12.5			

# **BPAD Accredited Practitioner Details** Name Zac Cockerill **Company Details** I hereby declare that I am a BPAD JBS&G accredited bushfire practitioner. Accreditation No. I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in Date accordance with the requirements of AS 3959-2018. Authorised Practitioner Stamp





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and	l Descriptio	on of Works						
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference				
Address Details			11553	Iwasaki Crest				
	Suburb				State	Postcode		
	Ellenbroo	k			WA	6069		
Local government area	City of Sw	City of Swan						
Main BCA class of the building	Class 1a	Use(s) buildir	of the	Residential dwelling				
Description of the building or works	ion of the Construction of a Class 1a building and associated Class 10a buildings.							

Determination of Highest Bushfire Attack Level							
AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL			
Method 1	Class D Scrub	Downslope >0–5 degrees	95m (lower BAL achievable with setback)	BAL – 12.5			

Name Cac Cockerill	
Company Details BS&G	I hereby declare that I am a BPAD accredited bushfire practitioner.
hereby certify that I have undertaken the assessment of the above site and determined he Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018.	Accreditation No. 37863  Signature 29/3/23





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Addres - Details	Unit no	Street no	Lot no	Street name / Plan Reference				
Address Details	11554   Iwasaki Crest							
	Suburb State P							
	Ellenbrook					6069		
Local government area	City of Sv	City of Swan						
Main BCA class of the building	Class 1a	Use(s) buildi	of the	Residential dwelling				
Description of the building or works	Construc	onstruction of a Class 1a building and associated Class 10a buildings.						

Determination of Highest Bushfire Attack Level							
AS 3959 Assessment Procedure  Vegetation Classification		Effective Slope	Separation Distance	BAL			
Method 1	Class D Scrub	Downslope >5–10 degrees	97m (lower BAL achievable with setback)	BAL – 12.5			

### **BPAD Accredited Practitioner Details** Zac Cockerill I hereby declare that I am a BPAD **Company Details** accredited bushfire practitioner. JBS&G Accreditation No. 37803 I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in 23 Date accordance with the requirements of AS 3959-2018. **Authorised Practitioner Stamp**





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and Description of Works								
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference				
Address Details			11555	Iwasaki Crest				
	Suburb State Post							
	Ellenbroo	k			WA	6069		
Local government area	City of Sw	City of Swan						
Main BCA class of the building	Class 1a	' '	se(s) of the uilding Residential dwelling					
Description of the building or works	Construction of a Class 1a building and associated Class 10a buildings.							

Determination of Highest Bushfire Attack Level							
AS 3959 Assessment Vegetation Classification		Effective Slope	Separation Distance	BAL			
Method 1	Class D Scrub	Downslope >5–10 degrees	85m	BAL – 12.5			

### **BPAD Accredited Practitioner Details** Name Zac Cockerill **Company Details** I hereby declare that I am a BPAD accredited bushfire practitioner. JBS&G Accreditation No. I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in Date accordance with the requirements of AS 3959-2018. **Authorised Practitioner Stamp**





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and Description of Works								
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference				
Address Details			11556	Iwasaki Crest				
	Suburb State Post						Postcode	
	Ellenbrook						6069	
Local government area	City of Sw	City of Swan						
Main BCA class of the building	Class 1a	Use(s) buildir		Residential dwelling				
Description of the building or works	Construct	Construction of a Class 1a building and associated Class 10a buildings.						

Determination of Highest Bushfire Attack Level							
AS 3959 Assessment Procedure  Vegetation Classification		Effective Slope	Separation Distance	BAL			
Method 1	Class D Scrub	Downslope >5–10 degrees	73m	BAL – 12.5			

## **BPAD Accredited Practitioner Details** Name Zac Cockerill **Company Details** I hereby declare that I am a BPAD accredited bushfire practitioner. JBS&G Accreditation No. I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in Date accordance with the requirements of AS 3959-2018. Authorised Practitioner Stamp





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Address Details	Unit no	Street no	Lot no	Street name / Plan Referen	ice		
Address Details		11557 Iwasaki Crest					
	Suburb	•			State	Postcode	
	Ellenbroo	WA	6069				
Local government	City of Sy	City of Swan					
area	City of 5v	van					
Main BCA class of	Cl 1-	Use(s	) of the	Desidential desalling			
the building	Class 1a building			Residential dwelling			
Description of the	C	Construction of a Class 1a building and associated Class 10a buildings.					
building or works	Construc						

Determination of Highest Bushfire Attack Level							
AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL			
Method 1	Class D Scrub	Downslope >5–10 degrees	61m	BAL – 12.5			

# Name Zac Cockerill Company Details JBS&G I hereby certify that I have undertaken the assessment of the above site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018. I hereby declare that I am a BPAD accredited bushfire practitioner. Accreditation No. 3703 Signature Date Date Authorised Practitioner Stamp





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and Description of Works								
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference Iwasaki Crest				
Address Details			11558					
	Suburb State Posto							
	Ellenbroo	Ellenbrook				6069		
Local government	City of Sw	City of Swan						
area	City of 5w	a 11						
Main BCA class of	Class 1a	Use(s)	of the	Residential dwelling				
the building	building							
Description of the building or works	Construct	onstruction of a Class 1a building and associated Class 10a buildings.						

Determination of Highest Bushfire Attack Level							
AS 3959 Assessment Vegetation Classification		Effective Slope	Separation Distance	BAL			
Method 1	Class D Scrub	Downslope >0–5 degrees	49m	BAL – 12.5			

## **BPAD Accredited Practitioner Details** Name Zac Cockerill **Company Details** I hereby declare that I am a BPAD accredited bushfire practitioner. JBS&G Accreditation No. 27643 I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in Date accordance with the requirements of AS 3959-2018. Authorised Practitioner Stamp





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and	Description	on of Works				
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference		
Address Details			11576	Iwasaki Crest		
	Suburb				State	Postcode
	Ellenbroo	k			WA	6069
Local government	City of Sw	ıan.			<u> </u>	
area	City Of 3W	<i>r</i> an				
Main BCA class of	Class 1a	Use(s)	of the	Residential dwelling		
the building	Class 1a	buildir	ng	Residential dwelling		
Description of the building or works	Construc	tion of a Class	s 1a buildi	ng and associated Class 10a buil	ldings.	

Determination of High	est Bushfire Attack Level			
AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class D Scrub	Downslope >0–5 degrees	46m	BAL – 12.5

## **BPAD Accredited Practitioner Details** Name Zac Cockerill **Company Details** I hereby declare that I am a BPAD JBS&G accredited bushfire practitioner. Accreditation No. I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in Date accordance with the requirements of AS 3959-2018. **Authorised Practitioner Stamp**





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and	l Descriptio	on of Works				
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference		
Address Details	:		11577	Iwasaki Crest		
	Suburb				State	Postcode
	Ellenbroo	k			WA	6069
Local government area	City of Sw	an				
Main BCA class of the building	Class 1a	Use(s) buildir		Residential dwelling		
Description of the building or works	Construct	ion of a Class	1a buildi	ng and associated Class 10a build	ings.	_

Determination of Highe	st Bushfire Attack Level			
AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class D Scrub	Downslope >0–5 degrees	40m	BAL – 12.5

## **BPAD Accredited Practitioner Details** Name Zac Cockerill **Company Details** I hereby declare that I am a BPAD JBS&G accredited bushfire practitioner. Accreditation No. I hereby certify that I have undertaken the assessment of the above site and determined Signature the Bushfire Attack Level stated above in accordance with the requirements of Date AS 3959-2018. **Authorised Practitioner Stamp**





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and	Description	on of Works				
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference		
Address Details			11578	Iwasaki Crest		
	Suburb				State	Postcode
	Ellenbroo	k			WA	6069
Local government	City of Sw	/an				
area	City of 3w	vali				
Main BCA class of	Class 1a	Use(s)	of the	Residential dwelling		
the building	Class 1a	buildir	ng	Nesideritial dwelling		
Description of the	Construct	tion of a Class	: 1a huildi	ng and associated Class 10a buil	dings	
building or works	Constitue	a class	. Ta bullul	ing and associated class to a buil	uiiigs.	

Determination of High	est Bushfire Attack Level			
AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class D Scrub	Downslope >0–5 degrees	22m	BAL – 19

## **BPAD Accredited Practitioner Details** Name Zac Cockerill **Company Details** I hereby declare that I am a BPAD JBS&G accredited bushfire practitioner. I hereby certify that I have undertaken the Accreditation No. assessment of the above site and determined Signature the Bushfire Attack Level stated above in accordance with the requirements of Date AS 3959-2018. **Authorised Practitioner Stamp**





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Address Details	Unit no	Street no	Lot no	Street name / Plan Reference	2	
Address Details			11582	Iwasaki Crest		
	Suburb		-	<u></u>	State	Postcode
	Ellenbroc	ok			WA	6069
Local government	6 6.6				•	
area	City of Sv	van				
area Main BCA class of	,		) of the	Desidential devalling		
Main BCA class of	Clty of Sv		•	Residential dwelling		
	Class 1a	Use(s buildi	ng	Residential dwelling	14	

Determination of High	est Bushfire Attack Level			
AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class D Scrub	Downslope >0–5 degrees	34m	BAL – 12.5

Name Zac Cockerill	
Company Details JBS&G	I hereby declare that I am a BPAD accredited bushfire practitioner.
I hereby certify that I have undertaken the assessment of the above site and determined	Accreditation No. 37803 Signature
the Bushfire Attack Level stated above in accordance with the requirements of AS 3959-2018.	Date 29/3/23





Determined in accordance with AS 3959-2018

This Certificate has been issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme. The certificate details the conclusions of the full Bushfire Attack Level Assessment Report (full report) prepared by the Accredited Practitioner.

Property Details and	d Description	on of Works				
Address Details	Unit no	Street no	Lot no	Street name / Plan Reference		
Address Details			11583	Iwasaki Crest		
	Suburb				State	Postcode
	Ellenbroo	k			WA	6069
Local government	City of Sw	/an				
area	City of 3v	vasi				
Main BCA class of	Class 1a	Use(s)	of the	Residential dwelling		
the building	Class 1a	buildi	ng	Residential dwelling		
Description of the	Construct	tion of a Class	c 1a buildi	ng and associated Class 10a buil	dings	
building or works	Construct	cion or a Class	s ta builui	ing and associated Class 10a bull	uiligs.	

Determination of High	est Bushfire Attack Level			
AS 3959 Assessment Procedure	Vegetation Classification	Effective Slope	Separation Distance	BAL
Method 1	Class D Scrub	Downslope >0–5 degrees	36m	BAL – 12.5

I hereby declare that I am a BPAD accredited bushfire practitioner.  Accreditation No. 37863  Signature
reby certify that I have undertaken the
Bushfire Attack Level stated above in
ordance with the requirements of Date / 29/3/23



# **Appendix B** Vegetation plot photos and descriptions



Plot 1	
Vegetation classification	Class D Scrub (Downslope >5–10 degrees)
Description / justification	Vegetation with a continuous horizontal and vertical structure, greater than 2 m high at maturity



Photo ID: 1a



Photo ID: 1c



Photo ID: 1b



Plot 2		
Vegetation classification	Class D Scrub	
	(Downslope >0–5 degrees)	
Description / justification	Vegetation with a continuous horizontal and vertical structure, greater than 2 m high at maturity	



Photo ID: 2a



Photo ID: 2b



Plot 3		
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: 3a



Photo ID: 3c



Photo ID: 3e



Photo ID: 3b



Photo ID: 3d



Photo ID: 3f



# Plot 3 NW 330 NE E © 26°NE (T) © 31.760820°S, 115.982081°E ±4m ▲ 65m Photo ID: 3g NW N N NE E 900 NE



**③** 84°E (T) **⑤** 31.760820°S, 115.982079°E ±4m ▲ 65m

Photo ID: 3j



# Appendix C Civil Roadworks Plan



## ROADWORKS AND DRAINAGE - REFER DRG 5843-HS4-610

## NOTES

- 1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATION AND REQUIREMENTS OF THE CITY OF SWAN.
- 2. THE CONTRACTOR SHALL LIAISE WITH ALL PUBLIC UTILITIES PRIOR TO COMMENCING WORK TO LOCATE ALL SERVICES WITHIN THE CONTRACT SITE
- 3. ALL LEVELS SHALL BE LOCATED FROM ESTABLISHED BENCHMARKS AS ESTABLISHED BY VERIS SURVEYORS
- 4. ALL CONNECTIONS TO EXISTING WORK SHALL BE SMOOTH AND OF NEAT APPEARANCE
- 5. TRANSITION BETWEEN DIFFERENT KERB TYPES SHALL BE MADE OVER A LENGTH OF 2m
- 6. THE CONTRACTOR SHALL LIAISE WITH TELSTRA, ATCO GAS, WESTERN POWER, NBN AND THE WATER CORPORATION TO PERMIT INSTALLATION OF ROAD CROSSINGS PRIOR TO PLACEMENT OF SUB-BASE
- 7. STORMWATER PIPES SHALL BE REINFORCED CONCRETE (CLASS 2) R.R.J. UNLESS NOTED OTHERWISE
- 8. DRAINAGE ACCESS CHAMBERS WITHIN ROAD RESERVES TO BE ON A 3.5m ALIGNMENT UNLESS OTHERWISE SHOWN. MINIMUM COVER TO ALL DRAINAGE PIPES TO BE 600mm, UNLESS NOTED OTHERWISE.
- 9. ACCESS CHAMBERS AND DRAINAGE PITS SHALL BE LOCATED IN POSITIONS SHOWN IRRESPECTIVE OF THE
- INDICATED PIPE LENGTHS AND WHERE APPLICABLE TO PITS SHALL BE LOCATED AT THE ACTUAL LOW POINT
- 10. WHERE A SEWER LINE INTERSECTS WITH STORMWATER DRAINAGE LINE AND THE SEWER PASSES OVER THE DRAIN THEN THE SEWER SHALL HAVE A TIMBER PILE AND KEEL PROVIDED FOR THE FULL EXTENT NECESSARY TO SUPPORT THE SEWER DURING EXCAVATION FOR THE DRAIN
- 11. THE CONTRACTOR SHALL PLACE EXCESS SPOIL FROM EARTHWORKS ON SITES AS DIRECTED BY THE SUPERINTENDENT
- 12. UNLESS INSTRUCTED OTHERWISE THE CONTRACTOR SHALL NOT DISTURB ANY EXISTING TREES OR VEGETATION. CLEARING OUTSIDE OF ROAD RESERVES SHALL NOT BE DONE WITHOUT THE APPROVAL OF THE SUPERINTENDENT
- 13. ALL ROAD VERGES SHALL BE SURFACED WITH 75mm OF TOPSOIL, EXCEPT IN HARD PAVED AREAS. THE CONTRACTOR TO HYDRO MULCH WITH SEED ALL VERGES AND LOT AREAS. NO HYDRO MULCH TO P.O.S.
- 14. STORMWATER ACCESS CHAMBER LIDS IN VERGES ARE TO BE SET ON +2.0% STANDARD VERGE GRADE
- 15. SHORT CONNECTIONS BETWEEN DRAINAGE PITS TO BE 300 DIA AT 1:150 UNLESS NOTED OTHERWISE
- 16. ALL KERBING TO BE MOUNTABLE KERB TYPE UNLESS NOTED OTHERWISE
- 17. CONTRACTOR SHALL PROVIDE AS-CONSTRUCED CO-ORDINATES OF IRRIGATION CONDUITS.
- 18. EXISTING ROADS AND VERGES AFFECTED BY THE CONSTRUCTION WORKS SHALL BE FULLY REINSTATED TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
- 19. a) DUP's ADJACENT TO RETAINING WALLS TO BE 2.3m WIDE
- b) FOOTPATHS ADJACENT TO RETAINING WALLS TO BE 1.8m WIDE 20. ALL CUTS THROUGH LIMESTONE SHALL BE EXCAVATED TO A DEPTH OF 100mm BELOW
- SUB-GRADE LEVEL AND 200mm BELOW THE FINISHED LEVEL OF VERGES.
- 21. CHAINAGES SPECIFIED ON DOUBLE SIDE ENTRY PITS ARE AT DOWN STREAM PIT CENTRE.
- 22. ALL TRAFFIC ISLANDS TO HAVE SEMI-MOUNTABLE KERB UNLESS NOTED OTHERWISE.
- 23. WHERE APPLICABLE, STREET NAMEPLATE SIGNS TO BE AFFIXED TO STREETLIGHT POLES.

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 (GP)	<b>→ 5</b> • •
DRAINAGE PIT LABEL	* OR ® LINER Ø LID LEVEL EXISTING FUTU  PIT TYPE JP  PIT ID 01  CHAINAGE OR CO-ORD
DRAINAGE PIT LID NOTATION	* PROVIDE TEMPORARY LID  * CONVERT EXISTING LID
UPSTREAM INVERT LEVEL	PROPOSED EXISTING FUTURE
PIPE DIAMETER / GRADE	U/S 20.50
DISTANCE BETWEEN PITS	- 300/100.0 300/100.0 300/100.0 50.0 50.0
DOWNSTREAM INVERT LEVEL	D/S 20.00 D/S 20.00 D/S 20.0
TABLE DRAIN	
PROPOSED SUBSOIL DRAINAGE PIPE	SD
EXISTING SUBSOIL DRAINAGE PIPE	
FUTURE SUBSOIL DRAINAGE PIPE	——————————————————————————————————————
PROPOSED CONCRETE PATH AND PRAM RAMP	H-12-12-12-12-12-12-12-12-12-12-12-12-12-
BRICK PAVING (REFER BRICK PAVING TABLE)	
BLACK ASPHALT WEARING COURSE	
RED 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 Ø18 TURNAROUND AND INSTALL 2 No. D4-5 CHEVRON BOARDS	
PROPOSED 2.0m KERB TRANSITION	AMA
POST WITH STREET NAME PLATES	<b>↓</b>
CHEVRON BOARD	
SEWER INVERT LEVEL	SIL

LEGEND	
DESCRIPTION	SYMBOL
CONCRETE PATH - STANDARD GREY COLOUR	
DUAL USE PATH 2.0m WIDE (2.3m ADJACENT TO RETAINING WALLS)	DUP
PATH 1.5m WIDE (1.8m ADJACENT TO RETAINING WALLS, LOT BOUNDARY & BEHIND KERB)	<del>PATH</del>
3.0m WIDE ASPHALT BIKE PATH WITH BROKEN CENTRELINE AND LINEMARKING (CONFIRM SPEC.) (3.3m ADJACENT TO RETAINING WALLS & KERB.)	BIKE PATH
FIXED GARAGE LOCATIONS	
KERB TYPES	
DESCRIPTION	SYMBOL
MOUNTABLE KERB	MK
SPECIAL MOUNTABLE KERB	MK(S)
SEMI MOUNTABLE KERB	SMK
REINFORCED SEMI-MOUNTABLE KERB	SMK(R)
BARRIER KERB	ВК
SPECIAL BARRIER KERB	BK(S)
FLUSH KERB	FK
REINFORCED FLUSH KERB	RFK
600mm CONCRETE RAMP	CR
1200mm CONCRETE RAMP	1.2CR

BRICK PAVING TABLE					
No.	TYPE	COLOUR	PATTERN		
	BGC DEKOPAVE 80	CHARCOAL	HERRINGBONE		
1	(225×135×80)	CHARCUAL	HERRINGBONE		
	BGC EASIPAVE 80	CHARCOAL	HEADER COURSE		
	(220×110×80)	CHARCUAL			

5843-HS4-600

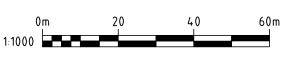
BRICK PAVING IN INTERSECTIONS TO BE CONSTRUCTED OVER 250mm THICK COMPACTED LIMESTONE

0	30.09.22 29.06.22	HVD	MH MH	M. WALLIS M. WALLIS	ISSUED FOR CONSTRUCTION ISSUED FOR TENDER	
0 1	30.09.22	I HVD	I MH	I M. WALLIS	I ISSUED FOR CONSTRUCTION	
_						
1	16.12.22	HVD	МН	M. WALLIS	ADDITIONAL PATH SPECIFIED AIRE WAY	
2	22.12.22	HVD	MH	mjubll	FUTURE PATH NETWORK SHOWN IWASAKI CRESCENT	
1	<u>2</u> 1	1 16.12.22	1 16.12.22 HVD	1 16.12.22 HVD MH	1 16.12.22 HVD MH M. WALLIS	1 16.12.22 HVD MH M. WALLIS ADDITIONAL PATH SPECIFIED AIRE WAY













PO Box 680

Street Address B12 (Level 2) 431 Roberts Road Subiaco WA 6904 Subiaco WA 6008

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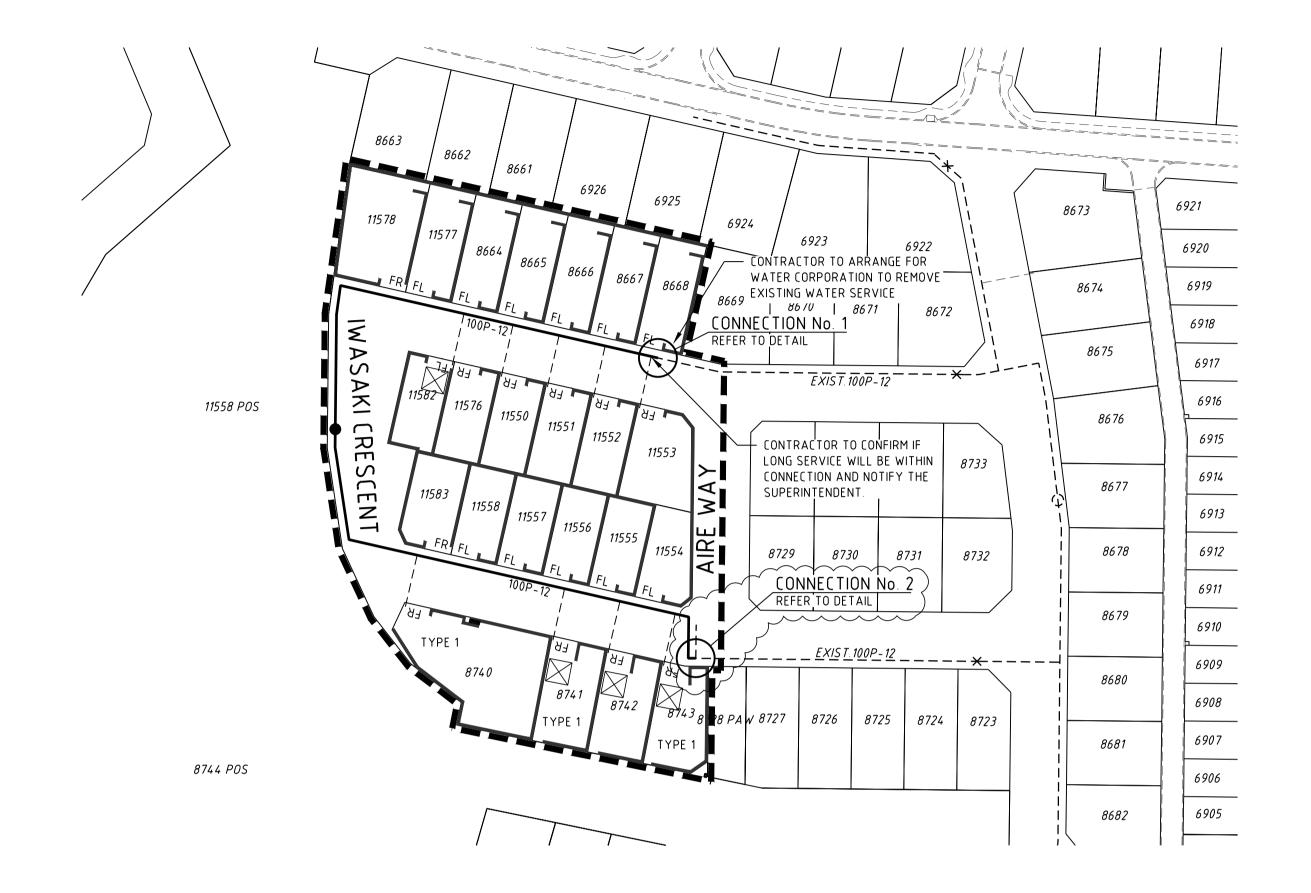
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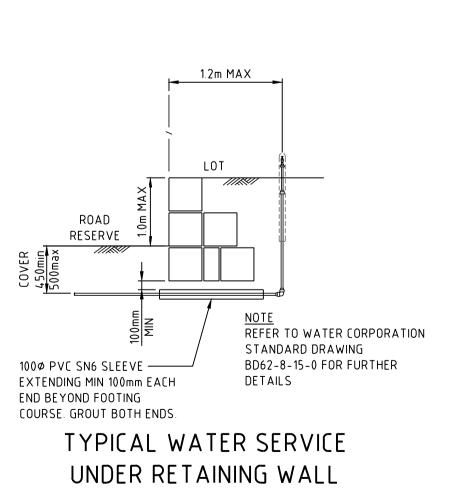
MALVERN SPRINGS - HILLSIDE - STAGE 4 ROADWORKS GENERAL ARRANGEMENT

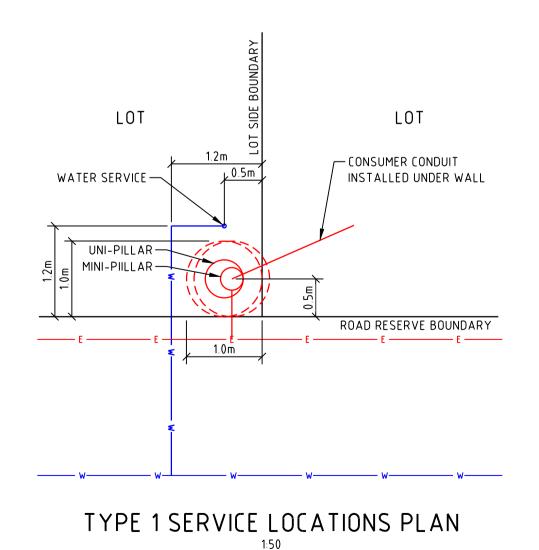
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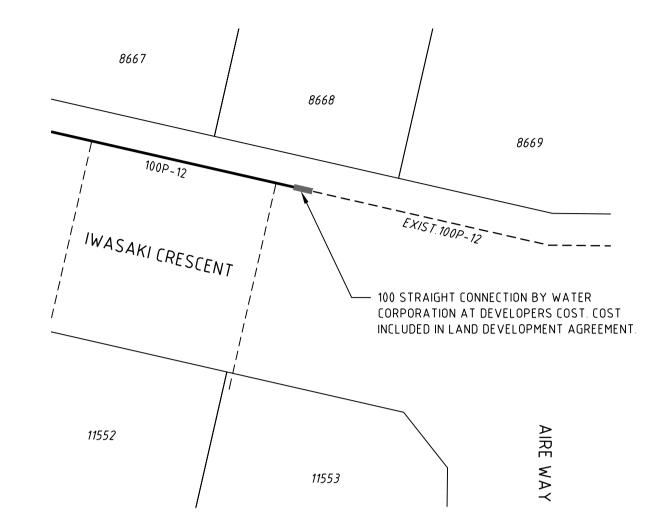


# Appendix D Civil Water Reticulation Plan



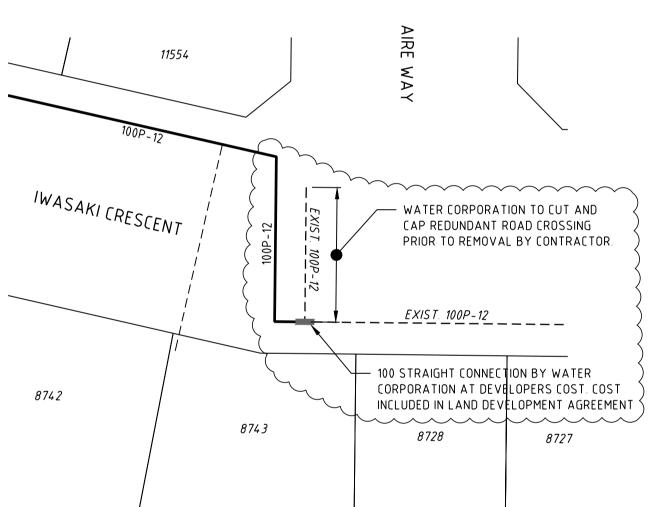






# CONNECTION DETAIL No.1

SCALE 1:250



CONNECTION DETAIL No.2 SCALE 1:250

## NOTICE TO CONTRACTOR

IT IS THE CONTRACTORS 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 CONTRACTORS 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.

## CONTRACTOR'S RESPONSIBILITY

IT IS THE CONTRACTOR'S RESPONSIBILITY TO CO-ORDINATE THE INSTALLATION OF ALL SERVICES WITHIN THE SUBDIVISION. THE CONSULTANT SHOULD ENSURE THAT THERE IS NO CONFLICT BETWEEN THE POSITIONING OF FULLY PRE-LAID WATER SERVICES WITHIN THE LOT AND AND WESTERN POWER UNDERGROUND POWER CONNECTION PILLARS. THE SUPERINTENDENT SHOULD BE CONSULTED IF AMENDMENTS TO FULLY PRE-LAID SERVICES ARE REQUIRED.

## SERVICES

- 1. ALL WATER MAINS SHALL BE INSTALLED ON 2.1m ALIGNMENT EXCEPT AS OTHERWISE AGREED.
- 2. FULLY PRE-LAID WATER SERVICES TO BE INSTALLED IN ACCORDANCE WITH W.C. WATER RETICULATION DESIGN STANDARD DS 63 VERSION 3 REVISION 15, DECEMBER 2021 AND READ IN CONJUNCTION WITH W.C. STANDARD ARRANGEMENT DRG.No.'s BD 62-8-15 AND BD62-8-24
- 3. WATER SERVICE LOCATIONS SHALL BE IN ACCORDANCE WITH THE GUIDELINES FOR POSITIONING CONTAINED IN DRG.No. BD62-8-14.
- 4. WHERE POSSIBLE LOTS ARE ARRANGED IN PAIRS WITH A DUAL SERVICE PIPE ENTERING THE RIGHT HAND SIDE OF THE PAIR OF LOTS AND SPLITTING LEFT AND RIGHT TO SUPPLY EACH
- WHERE SHORT AND LONG SINGLE SERVICES ARE INDICATED THE SERVICE PIPE AND METER SHOULD, IF POSSIBLE, BE LOCATED AT THE LEFT HAND SIDE BOUNDARY OF LOTS.
- 6. FOR A STRAIGHT ROAD RESERVE, SERVICE PIPES SHALL BE ALIGNED AT RIGHT ANGLES TO FRONT BOUNDARIES, RATHER THAN TO THE SUPPLY WATER MAINS.
- 7. WHERE THERE IS A BEND IN THE ROAD RESERVE AT THE SIDE BOUNDARY, THE SERVICE PIPE SHALL BE POSITIONED PARALLEL TO THE LINE BISECTING THE ANGLE.
- 8. FL AND FR (FULLY PRELAID LEFT & RIGHT) INDICATES THE SIDE OF THE LOT WHEN VIEWED FROM THE ROAD FRONTAGE WHICH IS SELECTED FOR ITS METER LOCATION.

ACCORDANCE WITH STANDARD WATER CORPORATION DRG.No. BD62-2-9.

9. FULLY PRE-LAID WATER SERVICES INSTALLED IN STAIR LANDINGS ARE TO BE INSTALLED IN

SERVICES	QTY (No.)
PRELAID SHORT DUAL	2
PRELAID LONG DUAL	1
PRELAID SHORT SINGLE	9
PRELAID LONG SINGLE	8
TOTAL	20
TOTAL NUMBER OF LOTS SERVED	23
NUMBER OF DEFERRED SERVICES	0
EXTENSION	QTY (m)
63mm MDPE	0.0
100 P-16	(258.7)
150 P-16	0.0
200 P-16	0.0
250 P_16	0.0

LEGEND	
DESCRIPTION	SYMBOL
RETICULATION AREA BOUNDARY	
PROPOSED MAINS	
PROPOSED VALVE (No. =)	<del></del>
PROPOSED HYDRANT (No. = 1)	<del></del>
PROPOSED PRELAID LONG SERVICE	
CHANGE IN PIPE SIZE	
FLUSHING POINT (No. =)	FP
TEMPORARY BLANK END AND FLUSHING POINT (No. =)	TBE
CONNECTION BY WATER CORPORATION (No. =)	
EXISTING MAIN, HYDRANT AND VALVE	
FUTURE MAIN, HYDRANT AND VALVE	-٠-٠- اخزع -٠
FUTURE DISTRIBUTION MAINS	Wf
PROPOSED RETAINING WALL	
EXISTING RETAINING WALL	
FUTURE RETAINING WALL	
DEFERRED SERVICE	'D'
SERVICE LAID IN THIS STAGE FOR RELEASE IN FUTURE STAGE	*
SERVICE LAID IN PREVIOUS STAGE TO BE RELEASED IN THIS STAGE	₩
SERVICE UNDER RETAINING WALL	#1
SERVICE IN PIT AT BASE OF STAIRS	#2

This plan is accepted as complying with overall scheme planning. Compliance with the relevant design standards and manuals remains the responsibility of the Design Engineer.

No works are to commence on site until start-up meeting requirements have been made with the relevant Asset Inspector. Refer to the Developers' Manual for contact details.

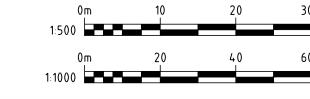
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FILE: 138413606 RETICULATION AREA:

22.11.22 HVD MH CONNECTION 2 AMENDED AS SHOWN 30.09.22 | HVD | MH | M. WALLIS | WATER HYDRANT SHOWN IWASAKI CRESCENT 27.07.22 | HVD | MH | M. WALLIS | LOT 11576/11582 SERVICE ARRANGEMENT AMENDED 19.07.22 | HVD | MH | M. WALLIS | ISSUED FOR WATER CORPORATION APPROVAL AND CONSTRUCTION \ | 29.06.22 | HVD | MH | M. WALLIS | ISSUED FOR TENDER DATE DRN CKD APP AMENDMENT







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ELLENBROOK MANAGEMENT PTY. LTD. DESIGNED

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MALVERN SPRINGS - HILLSIDE - STAGE 4 WATER RETICULATION PLAN 5843-HS4-500 158386



# **Appendix E** Stage 4 Landscape Concept











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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 future lot sales/building approvals	Zac Cockerill (BPAD 37803, Level 2)	Zac Cockerill (BPAD 37803, Level 2)	29 March 2023



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