

Urban Quarter  
Bushfire Management Plan (BMP) Compliance  
and Condition Clearance Report  
Stage 7 East of the Beach,  
Eglington

19 August 2022

62434/ 146,941 (Rev 0)

JBS&G Australia Pty Ltd T/A Strategen-JBS&G



## Table of Contents

1.	Introduction .....	1
1.1	Site/development summary.....	1
1.2	Purpose of report .....	1
2.	Implementation of relevant bushfire management measures .....	3
3.	Bushfire assessment results .....	6
3.1	Assessment inputs.....	6
3.1.1	Vegetation classification .....	6
3.1.2	Effective slope .....	6
3.1.3	Summary of inputs.....	6
3.2	Assessment outputs .....	8
3.2.1	Bushfire Attack Level (BAL) contour assessment.....	8
3.2.2	BAL certificates.....	9
4.	Conclusion and recommendations .....	11
5.	References .....	12

## List of Tables

Table 1:	Site/development summary.....	1
Table 2:	BMP implementation actions.....	3
Table 3:	Summary of vegetation classifications, exclusions and effective slope.....	6
Table 4:	BAL contour assessment results .....	8

## List of Figures

Figure 1:	Vegetation classification and effective slope .....	7
Figure 2:	BAL contour map.....	10

## Appendices

Appendix A	BAL certificates
Appendix B	Stage 7 Civil Roadworks plan
Appendix C	Stage 7 Civil Water Reticulation plan
Appendix D	Vegetation plot photos and description

# 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	37 proposed residential lots within Stage 7 East of the Beach, Eglinton, WA, 6034
Local government area	City of Wanneroo
Description of building works	Construction of a single residential dwelling (Class 1a building and associated Class 10a structure) within each lot

## 1.2 Purpose of report

This Bushfire Management Plan (BMP) compliance report has been prepared for 37 proposed residential lots within Stage 7 East of the Beach (hereafter referred to as the project area). Lots within Stage 7 are subject to WAPC subdivision approval (WAPC Ref. 155700, issued on 22 December 2017). Conditions 21 and 22 of the subdivision approval state the following in relation to bushfire management requirements:

*Condition 21. Information is to be provided to demonstrate that the measures contained in the bushfire management plan for Lot 6 Taronga Place, Eglinton (dated September 2017) that address the following:*

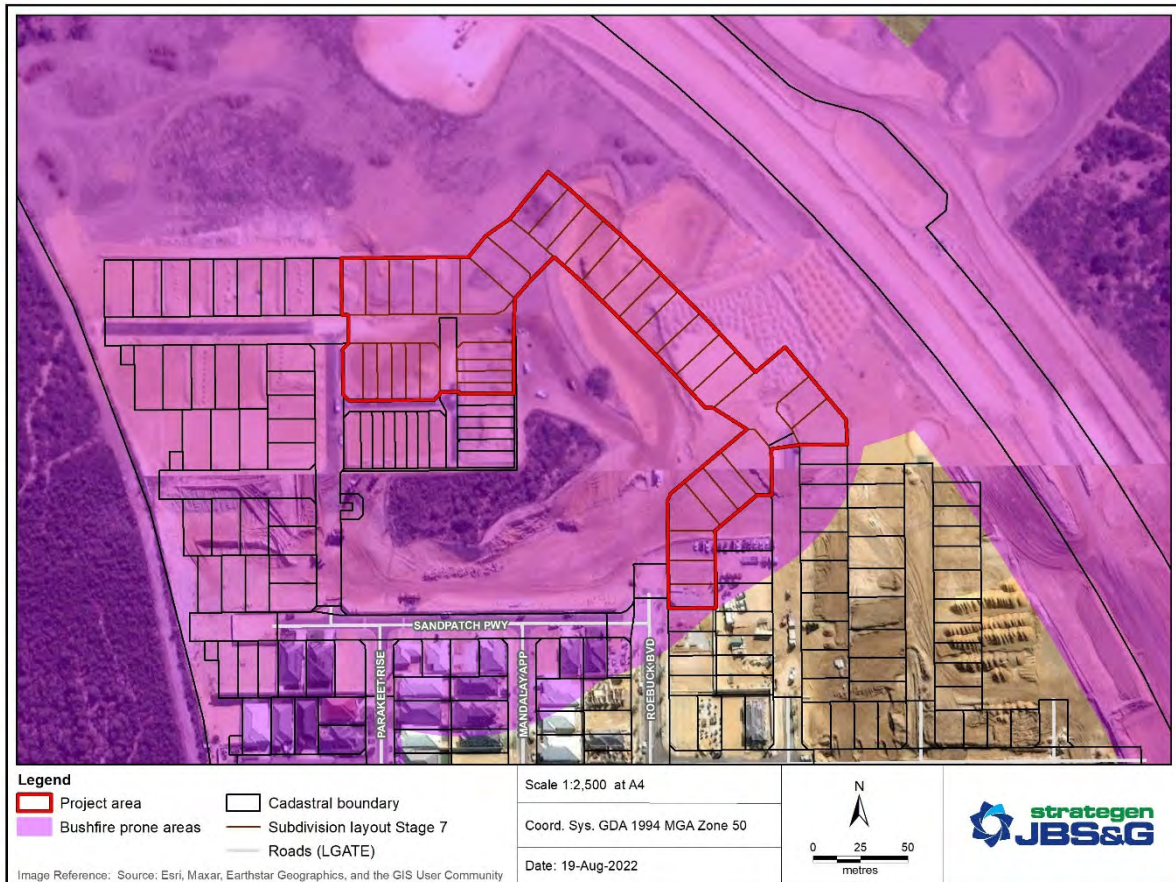
- a) *Clearing and maintenance of an Asset Protection Zone (APZ) within the rail reserve to the east of the site until such time that the rail reserve is developed.*
- b) *Maintenance of retained vegetation within Public Open Space areas on a regular and ongoing basis at a low fuel load.*
- c) *Maintenance of cleared vacant land in a low fuel state through slashing of grasses and weeds to a height of less than 100 mm.*
- d) *Construction and maintenance of firebreaks to the specification of the local government have been implemented during subdivisional works. (Local Government)*

*Condition 22. A compliance certificate/report for the BAL Contour Map relating to the approved subdivision shall be completed prior to the issuing of titles to the satisfaction of the Western Australian Planning Commission. (Local Government)*

This report provides the evidence and documentation required to address the abovementioned conditions of subdivision to facilitate clearances for proposed lots within the project area and has been prepared for the benefit of the developer, future lot purchasers and decision makers.

Since all proposed lots are situated in a designated bushfire prone area (as per Plate 1), this report also provides a post-subdivisional works update of the Bushfire Attack Level (BAL) ratings for individual lots within the project area. BAL certificates for each individual lot (contained in Appendix A) have been prepared based on the final site compliance check and are appended to this report for use at the building permit stage. It is noted that all lots are located within an area where the BAL has been assessed as BAL-Low.

The BAL assessment outlined in this report is the most up to date assessment from Strategen-JBS&G relating to the project area and has been prepared in consideration of the previous BAL contour assessment documented in the Bushfire Management Plan (BMP) prepared to accompany the subdivision application stage of the development (Strategen Environmental [now Strategen-JBS&G], Rev 0, September 2017). The approach for preparation of this BMP compliance report is consistent with Section 4.2 and Appendix 3 of *Guidelines for Planning in Bushfire Prone Areas Version 1.4* (the Guidelines; WAPC 2021).



**Plate 1: Map of Bushfire Prone Areas (DFES 2021)**

## 2. Implementation of relevant bushfire management measures


The endorsed subdivision stage BMP includes bushfire management strategies that are inherent to the ability for Stage 7 residential lots to achieve the BAL ratings shown indicatively on the original BAL Contour Map.

Strategen-JBS&G can confirm that the following relevant bushfire management strategies detailed in the endorsed BMP have been implemented as intended throughout the duration of subdivisional works

**Table 2: BMP implementation actions**

BMP reference (as per Table 5)	Bushfire management measure	Status	Evidence	Certification by bushfire consultant
1a	Provide (and maintain to APZ standard) temporary setbacks to quarantine affected lots and ensure development is not subject to a rating of BAL-40 or higher	N/A	Not applicable to Stage 7. All lots are able to achieve BAL-29 or lower.	Louisa Robertson (Level 3 BPAD36748) <i>UM Robertson</i>
1b	Clear and maintain an APZ within the rail reserve to the east of the site until such time that the rail reserve is developed	N/A	As per the endorsed Structure Plan BMP for the Central Precinct (Strategen-JBS&G 2021), future revegetation within the currently cleared rail corridor is considered to be low threat under Clause 2.2.3.2 (f), based on the narrow extent of vegetation, cleared nature of the Western and Central Precincts, and resultant limited potential to support significant bushfire behaviour. In this regard, the rail corridor is not required to be maintained as an APZ.	Louisa Robertson (Level 3 BPAD36748) <i>UM Robertson</i>
2a	Maintain areas of retained vegetation within Public Open Space on a regular and ongoing basis at a low fuel load	Complete	Retained vegetation within the adjoining Stage 2 POS has been established to be excludable under Clauses 2.2.3.2 (b) and (c) of AS 3959 such that the retained vegetation has no BAL impact on proposed Stage 7 lots. Future landscaping within the adjoining POS will continue the low threat vegetation status.	Louisa Robertson (Level 3 BPAD36748) <i>UM Robertson</i>
2b	Maintain all cleared vacant land in a low fuel state through slashing of grasses and weeds to a height of less than 100 mm	Complete	A 100 m wide low threat staging buffer has been established where required around Stage 7 and is currently being maintained in a low threat state in accordance with AS 3959 Clause 2.2.3.2 (f). Surrounding stages of development are completely cleared and/or built out.	Louisa Robertson (Level 3 BPAD36748) <i>UM Robertson</i>
2c	Maintain road reserves in a low fuel state	Complete	All road reserves either have been, or will be constructed and maintained in a low fuel state consistent with standard high density urban street verges.	Louisa Robertson (Level 3 BPAD36748) <i>UM Robertson</i>

BMP reference (as per Table 5)	Bushfire management measure	Status	Evidence	Certification by bushfire consultant
2d	Ensure compliance with the City of Wanneroo firebreak notice	Ongoing	Firebreaks are not required for proposed Stage 7 lots; however, ongoing slashing of regrowth grassland and weeds to less than 50 mm in height on vacant residential lots less than 4000 m <sup>2</sup> will continue to be undertaken as per the City's firebreak notice.	Louisa Robertson (Level 3 BPAD36748) <i>UM Robertson</i>
3a	BAL compliance check	Complete	This report provides the appropriate BAL compliance check for Stage 7 lots (refer to Figure 1 and Figure 2, as well as BAL certificates contained in Appendix A).	Louisa Robertson (Level 3 BPAD36748) <i>UM Robertson</i>
4a	Construct all new internal roads and temporary cul-de-sacs in accordance with subdivision approval and technical requirements of the Guidelines	Complete, with works bonded	As depicted on the Civil Roadworks plan (Appendix B), Barren Rise, Roebuck Boulevard, Pender Lane and Sandpatch Parkway will be extended into Stage 7 area from the adjoining constructed stages to service the proposed Stage 7 lots. This will create a continuous road network and resolve several temporary no-through roads within Stages 3, 5 and 6. A compliant temporary turn-around will be established at the northern end of Tarcoola Grove and the eastern end of Roebuck Boulevard. These minor temporary no-through roads are compliant with Guidelines requirements under A3.3 (e.g. <200 m in length) and will be resolved on construction of Stage 9. Two access routes are provided to Bluewater Drive in the south, being via Parakeet Drive and Roebuck Boulevard. Bluewater Drive connects to Marmion Avenue in the southwest which provides access to two different suitable destinations in the north and south. All proposed public roads will meet technical requirements of the Guidelines, as per the Civil Roadworks plan (Appendix B). These works, although not fully constructed on ground at the time of audit, are bonded to ensure delivery of works prior to site occupancy.	Louisa Robertson (Level 3 BPAD36748) <i>UM Robertson</i>
4b	Construction and maintenance of firebreaks to the specification of the local government	Compliance to be met during bushfire season	The developer is to ensure that a compliant firebreak is established/maintained within the balance landholding, during the firebreak notice compliance period (1 November to 30 April).	Louisa Robertson (Level 3 BPAD36748) <i>UM Robertson</i>
5a	Provision of reticulated water supply	Complete, with works bonded	A compliant reticulated water and street hydrant network will be delivered for Stage 7 lots in accordance with technical requirements of the Guidelines, as per the Civil Water Reticulation plan contained in Appendix C. These works, although not fully constructed on ground at the time of audit, are bonded to ensure delivery of works prior to site occupancy.	Louisa Robertson (Level 3 BPAD36748) <i>UM Robertson</i>

BMP reference (as per Table 5)	Bushfire management measure	Status	Evidence	Certification by bushfire consultant
6a	Certification of BAL ratings	Complete	Appendix A of this report provides the required BAL certification for individual Stage 7 lots.	Louisa Robertson (Level 3 BPAD36748) 

### 3. Bushfire assessment results

#### 3.1 Assessment inputs

##### 3.1.1 Vegetation classification

Strategen-JBS&G assessed classified vegetation and exclusions within the 150 m assessment area through on-ground verification on 25 August 2021 and 21 January 2022 and a via a desktop assessment on 16 August 2022 in accordance with AS 3959—2018 *Construction of Buildings in Bushfire-Prone Areas* (AS 3959; SA 2018) 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 D and depicted in Figure 1.

Site observations show that the vegetation classifications have been slightly amended from the post-development vegetation classifications determined by the endorsed BMP (Strategen Environmental [now Strategen-JBS&G] 2017), in that areas of previously classified Class B Woodland west of the project area (Plot 2) have been amended to Class D Scrub, which presents a more appropriate classification based on the latest site assessment and amended to vegetation classification criteria based on publication of AS 3959 2018. Vegetation to the east of the rail corridor (Plot 1) has been reclassified from Class C Shrubland to Class D Scrub which is a more precautionary classification. Both plots of vegetation are greater than 100 m from Stage 7; therefore the amended classifications have no bearing on the BALs for this stage.

##### 3.1.2 Effective slope

Strategen-JBS&G assessed effective slope under classified vegetation within the 150 m assessment area through on-ground verification on 25 August 2021 and 21 January 2022 and a desktop assessment on 16 August 2022 in accordance with AS 3959. Results were cross-referenced with DPIRD 2 m contour data and are depicted in Figure 1.

Site observations show that effective slope under the classified vegetation aligns with the slopes identified within the endorsed BMP (Strategen Environmental [now Strategen-JBS&G] 2017), this being flat/upslope or down-slope 0–5 degrees beneath the Class D Scrub identified west and east of the project area (Plots 1 and 2).

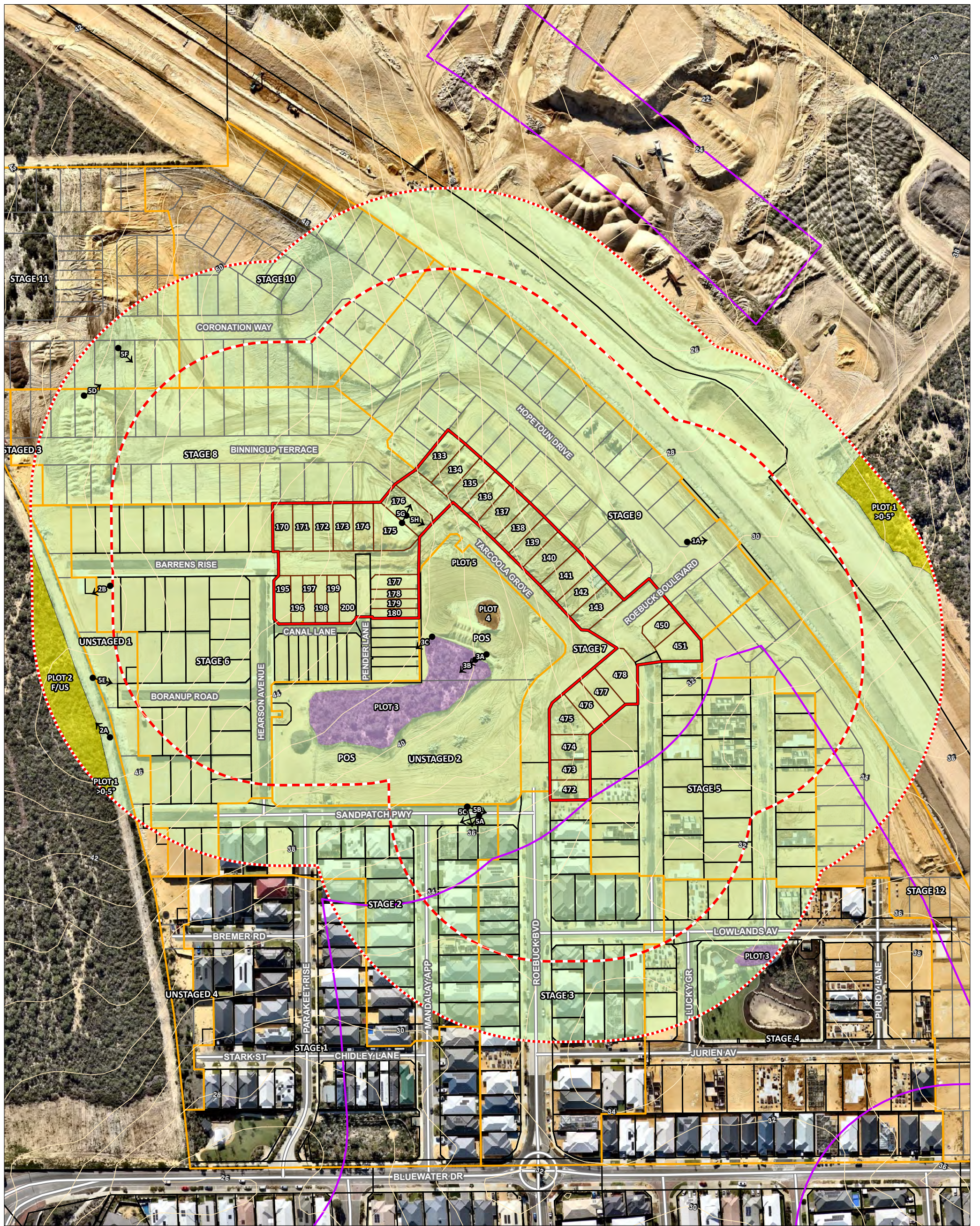
##### 3.1.3 Summary of inputs

Figure 1 illustrates the current vegetation classifications and exclusions observed during the site inspections. The vegetation classifications/exclusions and effective slope are summarised in Table 3.

**Table 3: Summary of vegetation classifications, exclusions and effective slope**

Vegetation plot	Vegetation classification	Effective slope	Comments
1	Class D Scrub	Downslope >0–5°	Scrub vegetation with a continuous horizontal fuel profile between 2–6 m in height east of the project area and rail corridor.
2	Class D Scrub	Flat/upslope (0°)	Scrub vegetation with a continuous horizontal fuel profile between 2–6 m in height west of the project area.
3	Excluded – Clause 2.2.3.2 [b]	N/A	Pocket of retained vegetation within Stage 2 future POS that is < 1 ha in area and not within 100 m of any other vegetation being classified vegetation.
4	Excluded – Clause 2.2.3.2 [c]	N/A	Single vegetated area within Stage 2 future POS that is <0.25 ha in area and not within 20 m of the site or other classifiable vegetation.
5	Excluded – Non-vegetated & Low threat (Clauses 2.2.3.2 [e] and [f])	N/A	Existing areas of non-vegetated land or low threat managed vegetation, including a large proportion of future development areas being (Western Precinct, Central Precinct and rail corridor) managed out to at least 100 m from the Stage 7 project area.





<b>Legend</b> Project area 100m assessment area 150m assessment area Cadastral boundary Bushfire prone areas Stage boundaries Proposed lots Future indicative lot layout on adjacent stages  <b>Vegetation classification</b> Class D Scrub Clause 2.2.3.2 (b) Clause 2.2.3.2 (c) Clause 2.2.3.2 (e) & (f) Photo point directions Topographic contours (mAHD) Roads	 Job No: 63567 Client: Urban Quarter Drawn By: jcrute Checked By: CT		 Scale 1:2,200 at A3 Coord. Sys. GDA 1994 MGA Zone 50 Version: A Date: 16-Aug-2022	Stage 7 East of the Beach Eglinton, WA  <b>VEGETATION CLASSIFICATION          AND EFFECTIVE SLOPE</b>  <b>FIGURE 1</b>
	Document Path: W:\Projects\1\Open\Urban Quarter\63567 EOTB Stage 7 BMP compliance\GIS\Maps\R01_Rev_A\63567_01_A3_VegClass.mxd Image Reference: www.nearmap.com © - Imagery Date: 28. May 2022.			

### 3.2 Assessment outputs

#### 3.2.1 Bushfire Attack Level (BAL) contour assessment

Strategen-JBS&G has undertaken a BAL contour assessment for the project area in accordance with Method 1 of AS 3959 (Figure 2). 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.

Results of the BAL contour assessment are detailed in Table 4 and illustrated in Figure 2.

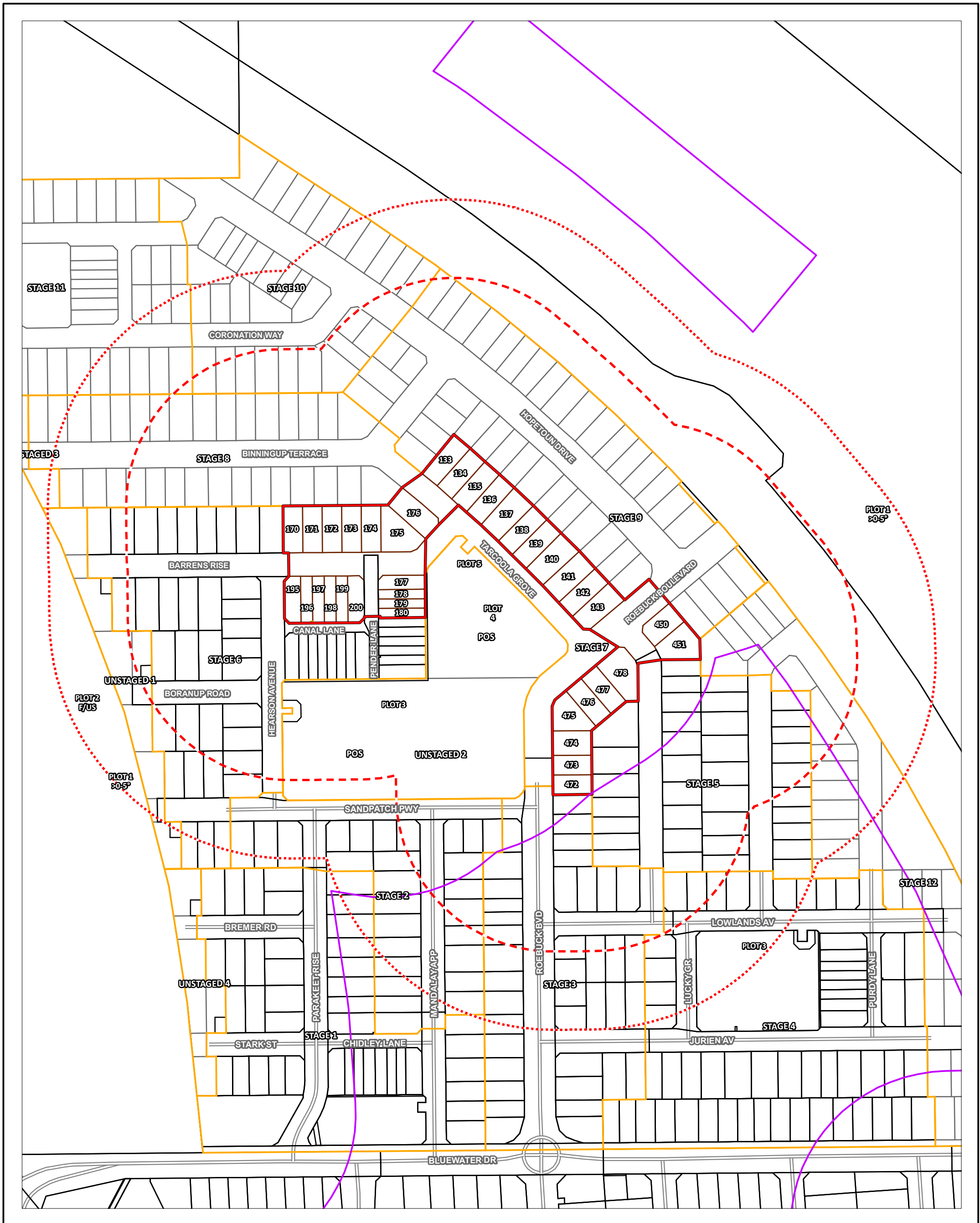
**Table 4: BAL contour assessment results**

Method 1 BAL determination						
Lot	Vegetation plot	Vegetation classification	Effective slope	Separation distance	Highest BAL	Building setback to achieve lower BAL
133	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
134	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
135	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
136	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
137	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
138	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
139	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
140	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
141	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
142	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
143	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
170	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
171	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
172	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
173	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
174	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
175	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
176	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
177	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
178	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
179	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
180	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
195	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
196	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
197	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
198	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
199	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
200	2	Class D Scrub	Flat/upslope (0°)	>100m	BAL–Low	N/A
450	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
451	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
472	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
473	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
474	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
475	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
476	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A
477	1	Class D Scrub	Downslope >0–5°	>100m	BAL–Low	N/A

Method 1 BAL determination						
Lot	Vegetation plot	Vegetation classification	Effective slope	Separation distance	Highest BAL	Building setback to achieve lower BAL
478	1	Class D Scrub	Downslope >0-5°	>100m	BAL-Low	N/A

### 3.2.2 BAL certificates

BAL certificates for the subject lots are provided in Appendix A in accordance with the BAL contour assessment results detailed in Table 4.



<b>Legend</b> Project area 100m assessment area 150m assessment area Cadastral boundary Bushfire prone areas Classified vegetation Stage boundaries Proposed lots		<b>BAL contours</b> BAL FZ BAL 40 BAL 29 BAL 19 BAL 12.5 BAL Low Future indicative lot layout on adjacent stages Roads		  Scale 1:2,200 at A3 Coord. Sys. GDA 1994 MGA Zone 50		Stage 7 East of the Beach Eglinton, WA <b>BAL CONTOUR MAP</b>	
Job No: 63567 Client: Urban Quarter Drawn By: jcrute		Checked By: CT Version: A Date: 12-Aug-2022		<b>FIGURE: 2</b>			

#### **4. Conclusion and recommendations**

This BMP compliance and condition clearance report has been prepared for 37 proposed residential lots within Stage 7 East of the Beach to address Conditions 21 and 22 of the WAPC subdivision approval (Ref. 155700) and provide a final BAL check for individual lots for use at the building permit stage. Assessment results are consistent with current on-ground conditions. Strategen-JBS&G can confirm that the existing BMP over the site has been implemented as intended throughout the duration of subdivisional works for the relevant Stage 7 area and adjacent land to achieve the planned BAL outcomes and comply with bushfire protection criteria of the Guidelines. Strategen-JBS&G considers that the BAL contour assessment and BAL certificates outlined in this report are accurate to inform individual lot building permit applications.

Ongoing requirements of the current City of Wanneroo annual firebreak notice are to continue to be implemented as required, particularly with regards to ongoing fuel management of cleared vacant lots and firebreak maintenance requirements on balance land.

## 5. 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/>, [16/08/2022].

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 (now Strategen-JBS&G) 2017, *Bushfire Management Plan – Western Precinct, Lot 6 Taronga Place, Eglinton (Subdivision application)*, Strategen Environmental, Perth, Bunbury.

Strategen-JBS&G 2021, *Bushfire Management Plan Addendum – Central Precinct, Eglinton (Structure Plan application)*, Strategen-JBS&G, Perth, Bunbury.

Western Australian Planning Commission (WAPC) 2017, *Guidelines for Planning in Bushfire Prone Areas*, Version 1.4 December 2022, Western Australian Planning Commission, Perth.

## **Limitations**

### **Scope of services**

This report ("the report") has been prepared by Strategen-JBS&G in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Strategen-JBS&G. In some circumstances, a range of factors such as time, budget, access and/or site disturbance constraints may have limited the scope of services. This report is strictly limited to the matters stated in it and is not to be read as extending, by implication, to any other matter in connection with the matters addressed in it.

### **Reliance on data**

In preparing the report, Strategen-JBS&G has relied upon data and other information provided by the Client and other individuals and organisations, most of which are referred to in the report ("the data"). Except as otherwise expressly stated in the report, Strategen-JBS&G has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. Strategen-JBS&G has also not attempted to determine whether any material matter has been omitted from the data. Strategen-JBS&G will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to Strategen-JBS&G. The making of any assumption does not imply that Strategen-JBS&G has made any enquiry to verify the correctness of that assumption.

The report is based on conditions encountered and information received at the time of preparation of this report or the time that site investigations were carried out. Strategen-JBS&G disclaims responsibility for any changes that may have occurred after this time. This report and any legal issues arising from it are governed by and construed in accordance with the law of Western Australia as at the date of this report.

### **Environmental conclusions**

Within the limitations imposed by the scope of services, the preparation of this report has been undertaken and performed in a professional manner, in accordance with generally accepted environmental consulting practices. No other warranty, whether express or implied, is made.

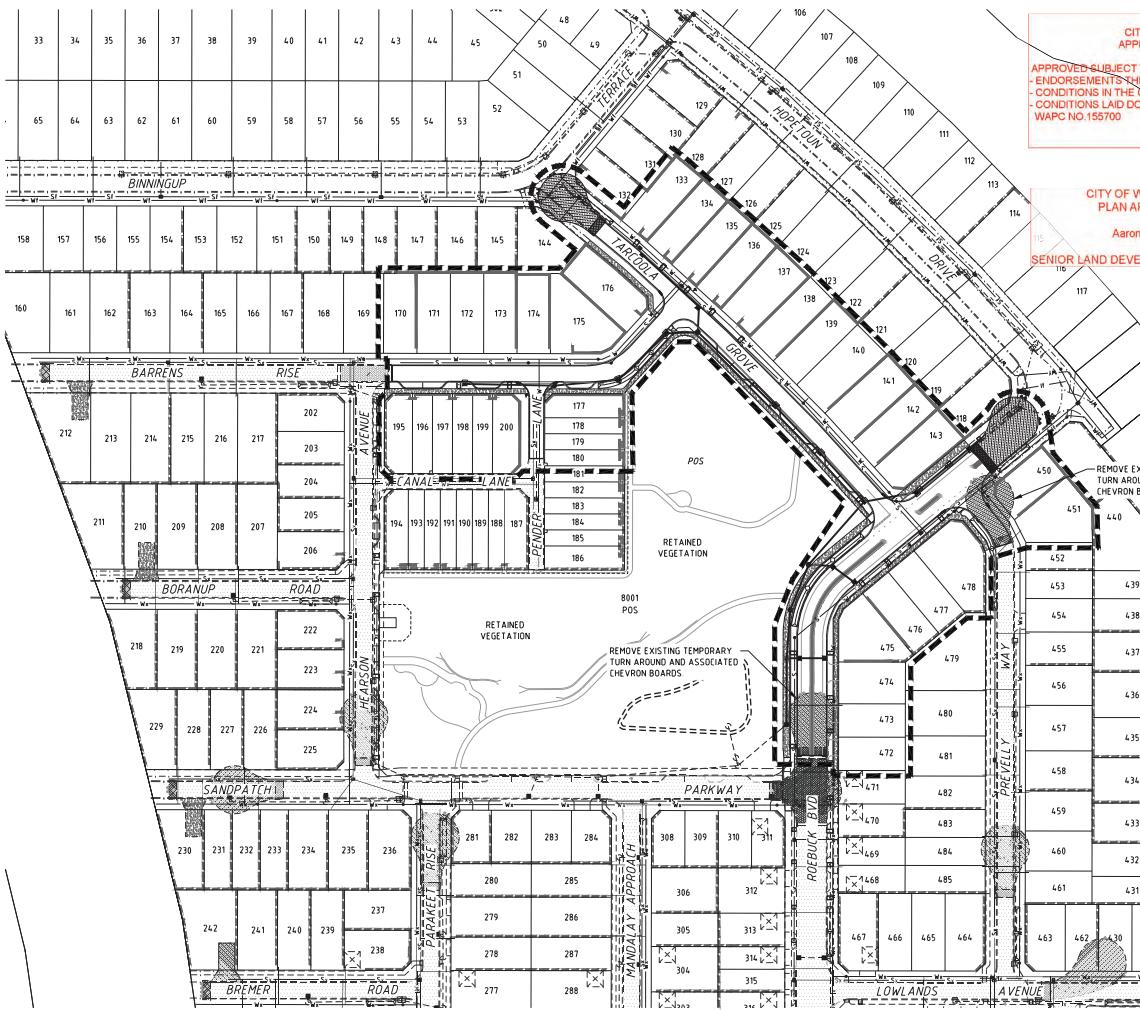
The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

Strategen-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 Strategen-JBS&G, and should not be relied upon by other parties, who should make their own enquiries.

## Appendix A BAL certificates



## Appendix B Stage 7 Civil Roadworks plan



**CITY OF WANNEROO APPROVAL CONDITIONS**

APPROVED SUBJECT TO STRICT ADHERENCE TO THE ENDORSEMENTS HERON CONDITIONS IN THE CITY OF WANNEROO APPROVAL LETTER - CONDITIONS LAID DOWN IN THE WAPC SUBDIVISION APPROVAL WAPC NO.157500

**CITY OF WANNEROO PLAN APPROVAL**

Aaron Baxter  
SENIOR LAND DEVELOPMENT ENGINEER

**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 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
- STORMWATER PIPES SHALL BE REINFORCED CONCRETE (CLASS 2) R.R.J UNLESS NOTED OTHERWISE
- DRAINAGE PIPES TO BE INSTALLED IN ACCORDANCE WITH AS3725 CONTRACTOR TO CONSIDER GROUND CONDITIONS, HAUNCHING, TRENCH CONDITIONS, LOAD PARAMETERS AND COMPACTION METHODS TO ENSURE INTEGRITY OF PIPE
- MANHOLES AND SIDE ENTRY PITS SHALL BE LOCATED IN POSITIONS SHOWN IRRESPECTIVE OF THE INDICATED PIPE LENGTHS AND WHERE APPLICABLE THE PITS SHALL BE LOCATED AT THE ACTUAL LOW POINT
- MINIMUM COVER TO DRAINAGE PIPES TO BE 600mm UNLESS NOTED OTHERWISE CLEARANCE WITH ALL OTHER SERVICES TO BE 150mm CONTRACTOR TO ADVISE OF ANY DISCREPANCIES
- WHERE A SEWER LINE INTERSECTS WITH A 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
- THE ROADWORKS AND DRAINAGE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SEWERAGE RETICULATION PLAN(S) AND THE STANDARD DRAWING(S)
- STORMWATER ACCESS CHAMBER LIDS IN VERGES ARE TO BE SET TO MATCH VERGE CROSSFALLS AND LEVELS
- REFER TO DRAWING 5826-STD-007 FOR TREE PITS AND VERGE SWALE DETAILS

**STAGE NOTES**

- LOCAL AUTHORITY - CITY OF WANNEROO
- PROJECT SURVEYOR - HMG
- LANDSCAPE ARCHITECT - PLAN E
- REFERENCE DRAWINGS:  
SEWERAGE RETICULATION PLAN 5826-07-400  
INTERSECTION DETAILS 5826-07-620  
WATER RETICULATION PLAN 5826-07-500
- DRAINAGE PIPES TO BE LAID ON 30m ALIGNMENT IN ROAD RESERVES UNLESS NOTED OTHERWISE

**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

**WARNING TO CONTRACTOR UXO**

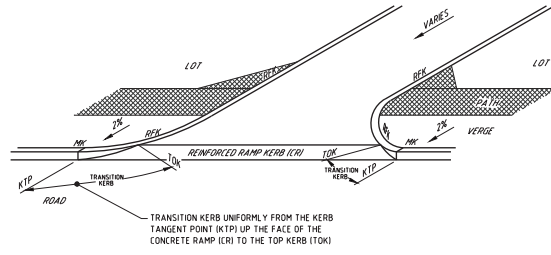
THE SITE IS IDENTIFIED AS HAVING RISK OF UNEXPLODED ORDNANCE.

"NO EXCAVATION OR OTHER DISTURBANCE OF THE SOIL ON THIS SITE SHOULD BE CARRIED OUT WITHOUT FIRST OBTAINING CLEARANCE FROM THE UNEXPLODED ORDNANCE BRANCH OF THE W.A POLICE DEPARTMENT."

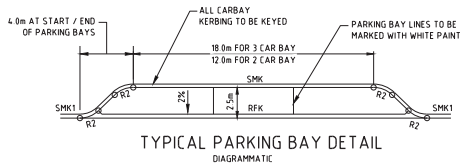
DESCRIPTION	SYMBOL															
LIMIT OF WORKS BOUNDARY	---															
PROPOSED ROAD	=====															
EXISTING ROAD	=====															
FUTURE ROAD	-----															
PROPOSED DRAINAGE PIPE	=====															
EXISTING DRAINAGE PIPE	=====															
FUTURE DRAINAGE PIPE	-----															
PROPOSED DRAINAGE PIPE WITH JUNCTION PIT (JP), SIDE ENTRY PIT (SEP), GRATED PIT (GP) AND CIRCULAR GRATED PIT (IGP)																
DRAINAGE PIT LID NOTATION	<table border="1"> <tr> <td>PROVIDE TEMPORARY LID</td> <td>○</td> </tr> <tr> <td>CONVERT EXISTING LID</td> <td>●</td> </tr> </table>	PROVIDE TEMPORARY LID	○	CONVERT EXISTING LID	●											
PROVIDE TEMPORARY LID	○															
CONVERT EXISTING LID	●															
UPSTREAM INVERT LEVEL	<table border="1"> <tr> <th>PROPOSED</th> <th>EXISTING</th> <th>FUTURE</th> </tr> <tr> <td>U/S 20.50</td> <td>U/S 20.50</td> <td>U/S 20.50</td> </tr> <tr> <td>300/100.0</td> <td>300/100.0</td> <td>300/100.0</td> </tr> <tr> <td>50.0</td> <td>50.0</td> <td>50.0</td> </tr> <tr> <td>D/S 20.00</td> <td>D/S 20.00</td> <td>D/S 20.00</td> </tr> </table>	PROPOSED	EXISTING	FUTURE	U/S 20.50	U/S 20.50	U/S 20.50	300/100.0	300/100.0	300/100.0	50.0	50.0	50.0	D/S 20.00	D/S 20.00	D/S 20.00
PROPOSED	EXISTING	FUTURE														
U/S 20.50	U/S 20.50	U/S 20.50														
300/100.0	300/100.0	300/100.0														
50.0	50.0	50.0														
D/S 20.00	D/S 20.00	D/S 20.00														
PROPOSED SEWER MAIN	S															
EXISTING SEWER MAIN	S															
FUTURE SEWER MAIN	S															
PROPOSED WATER MAIN	W															
EXISTING WATER MAIN	W															
FUTURE WATER MAIN	W															
PROPOSED CONCRETE PATH AND PRAM RAMP																
BRICK PAVING (REFER BRICK PAVING TABLE)																
BLACK ASPHALT WEARING COURSE																
RED ASPHALT WEARING COURSE																
DESIGNATED GARAGE LOCATION																
PROPOSED TREE PIT - TYPE '2'																
PROPOSED TREE PIT - TYPE '3'																
VERGE SWALE - LENGTH VARIES																
EXTEND ROAD PAVEMENT 30m PAST LIMIT OF ASPHALT AND INSTALL D4-5 CHEVRON BOARD																
EXTEND ROAD PAVEMENT 30m PAST LIMIT OF ASPHALT, CONSTRUCT TEMPORARY #18 TURNAROUND AND INSTALL 2 No D4-5 HAZARD MARKERS																
PROPOSED KERB TRANSITION																
POST WITH STREET NAME PLATES																
CHEVRON BOARD																
PROPOSED RETAINING WALL																
EXISTING RETAINING WALL																
FUTURE RETAINING WALL																
EXISTING TREES TO BE RETAINED																

DESCRIPTION	SYMBOL
MOUNTABLE KERB	MK
SEMI MOUNTABLE KERB	SMK
FLUSH KERB	FK
REINFORCED FLUSH KERB	RFK
600mm CONCRETE RAMP	CR
1200mm CONCRETE RAMP	12CR
SWEEP TRANSITION KERB	ST

SYMBOL	TYPE	ELEMENT	THICKNESS (mm)
	EXISTING	N/A	N/A
	EXISTING	N/A	N/A
	BLACK ASPHALT	LIMESTONE SUB-BASE HIGH FATIGUE RESISTANT BASE COURSE ASPHALT FINAL COURSE ASPHALT	200 40 25



**SWEEP TRANSITION DETAIL (ST) LANEWAYS ONLY (TYP)**  
DIAGRAMMATIC



**TYPICAL PARKING BAY DETAIL**  
DIAGRAMMATIC

REV	DATE	DRN	CHKD	APP	AMENDMENT
B	09.11.21	AC	ASB	JMA	ISSUED FOR APPROVAL
A	17.08.21	WBR			ISSUED FOR APPROVAL



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This plan is to be taken as valid for construction unless issued as a revision 0 or higher

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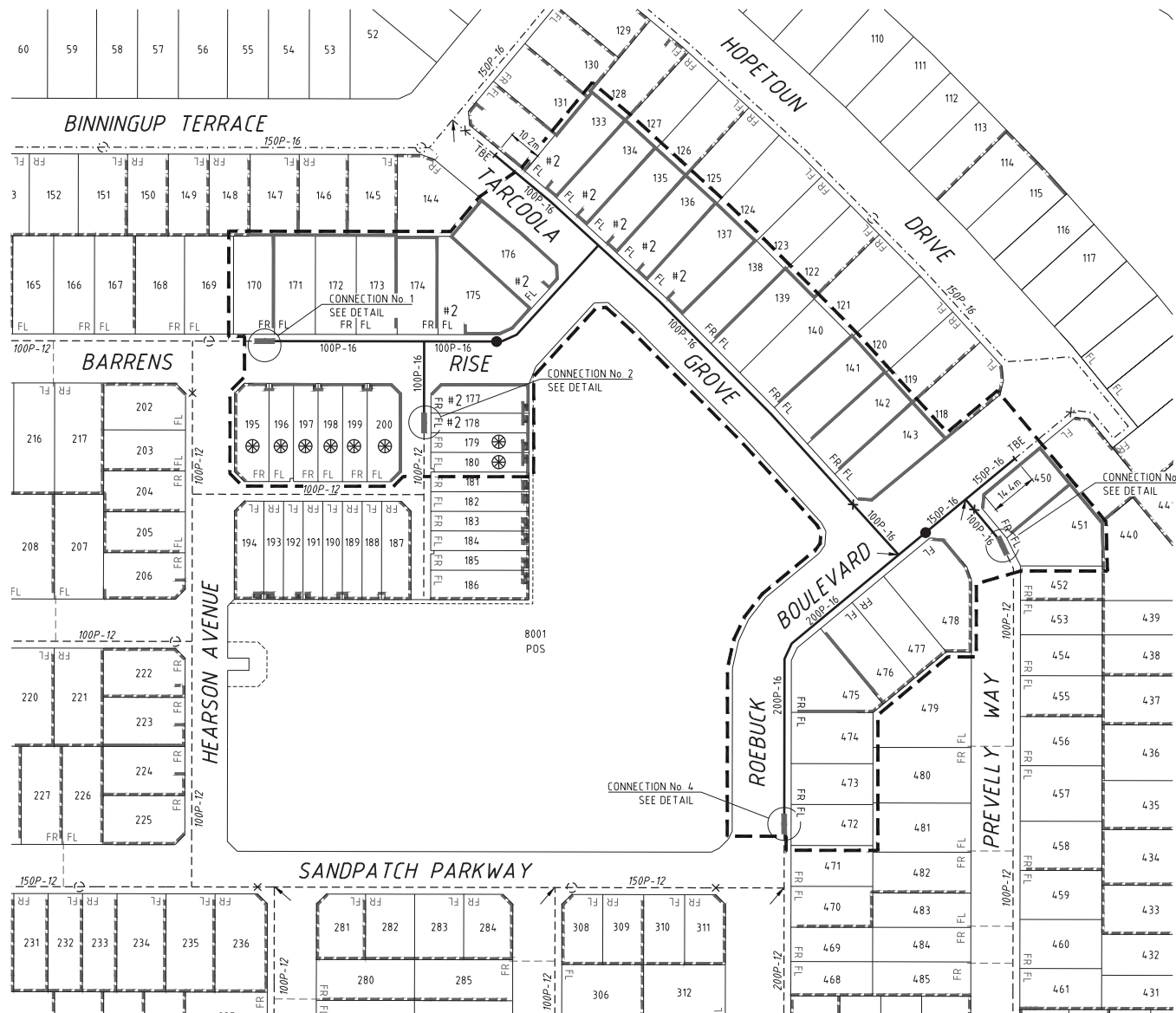
CLIENT	PRIME EGLINTON
PROJECT	EAST OF THE BEACH - STAGE 07
TITLE	ROADWORKS GENERAL ARRANGEMENT
APPROVED	09.11.21
DESIGNED	M.S.
SCALE	1:1000

WAPC NO.	155700	DRAWING No.	5826-07-600	REVISION	B
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ORIGINAL SIZE A1

## Appendix C Stage 7 Civil Water Reticulation plan

**FOR INFORMATION ONLY**



DESCRIPTION	SYMBOL
RETICULATION AREA BOUNDARY	
PROPOSED MAINS	
PROPOSED VALVE (No = 2)	
PROPOSED HYDRANT (No = 2)	
PROPOSED PRELAID LONG SERVICE	
CHANGE IN PIPE SIZE	
FLUSHING POINT (No = 0)	
TEMPORARY BLANK END AND FLUSHING POINT (No = 2)	
CONNECTION BY WATER CORPORATION (No = 4)	
EXISTING MAIN, HYDRANT AND VALVE	
FUTURE MAIN, HYDRANT AND VALVE	
FUTURE DISTRIBUTION MAINS	
PROPOSED RETAINING WALL	
EXISTING RETAINING WALL	
FUTURE RETAINING WALL	
DEFERRED SERVICE	
SERVICE LAID IN THIS STAGE FOR RELEASE IN FUTURE STAGE	
SERVICE LAID IN PREVIOUS STAGE TO BE RELEASED IN THIS STAGE	
SERVICE IN BELOW GROUND PIT (REFER WC DWG BD62-2-9)	#2 symbol"/>

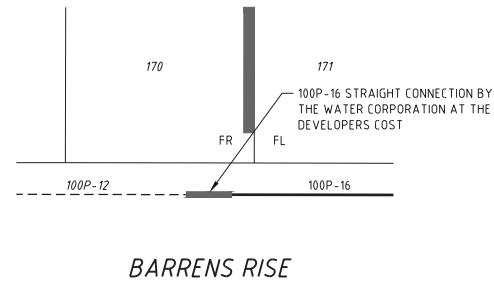
**CONTRACTOR'S RESPONSIBILITY**  
 IT IS THE CONTRACTOR'S RESPONSIBILITY TO CO-ORDINATE THE INSTALLATION OF ALL SERVICES WITHIN THE SUBDIVISION. THE CONSULTANT SHOULD ENSURE THAT THERE IS NO CONFLICT BETWEEN THE POSITIONING OF FULLY PRE-LAID WATER SERVICES WITHIN THE LOT AND AND WESTERN POWER UNDERGROUND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

- SERVICES**
- ALL WATER MAINS SHALL BE INSTALLED ON 2.1m ALIGNMENT EXCEPT AS OTHERWISE AGREED.
  - FULLY PRE-LAID WATER SERVICES TO BE INSTALLED IN ACCORDANCE WITH W.C. WATER RETICULATION DESIGN STANDARD DS 63 VERSION 3 REVISION 14, SEPTEMBER 2018 AND READ IN CONJUNCTION WITH W.C. STANDARD ARRANGEMENT DRG No's BD 62-8-15 AND BD62-8-24.
  - WATER SERVICE LOCATIONS SHALL BE IN ACCORDANCE WITH THE GUIDELINES FOR POSITIONING CONTAINED IN DRG No. BD62-8-14.
  - 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 PAIR OF METERS.
  - 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.
  - FOR A STRAIGHT ROAD RESERVE, SERVICE PIPES SHALL BE ALIGNED AT RIGHT ANGLES TO FRONT BOUNDARIES, RATHER THAN TO THE SUPPLY WATER MAINS.
  - 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.
  - 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.
  - FULLY PRE-LAID WATER SERVICES INSTALLED IN STAIR LANDINGS ARE TO BE INSTALLED IN ACCORDANCE WITH STANDARD WATER CORPORATION DRG No. BD62-2-9.

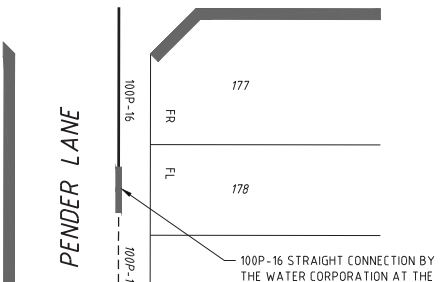
SERVICES	QTY (No.)
PRELAID SHORT DUAL	11
PRELAID LONG DUAL	0
PRELAID SHORT SINGLE	7
PRELAID LONG SINGLE	0
TOTAL	18
TOTAL NUMBER OF LOTS SERVED	29
NUMBER OF DEFERRED SERVICES	0

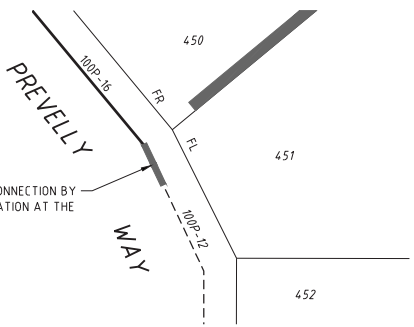
EXTENSION	QTY (m)
100 P-12	331.3
150 P-12	46.1
200 P-12	98.1



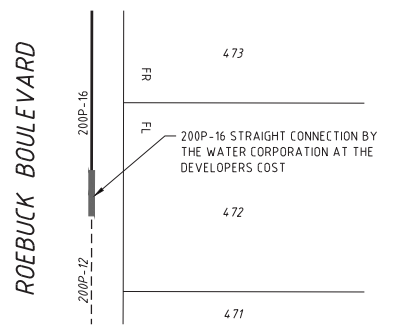
CONNECTION DETAIL No. 1  
1:250



CONNECTION DETAIL No. 2  
1:250



CONNECTION DETAIL No. 3  
1:250



CONNECTION DETAIL No. 4  
1:250

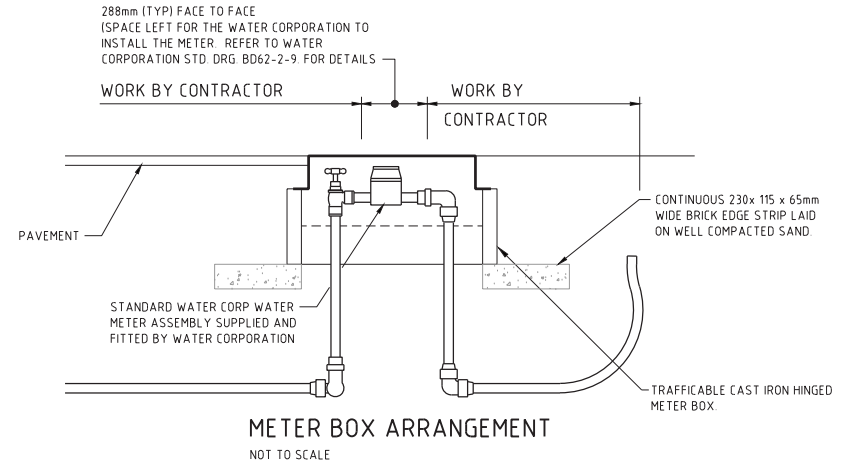
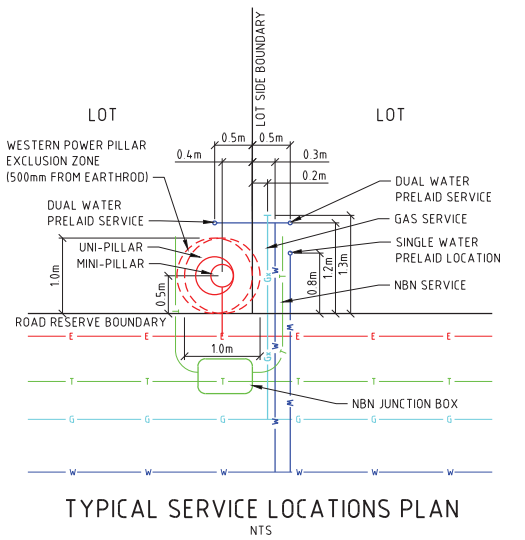
**WARNING TO CONTRACTOR UXO**  
 THE SITE IS IDENTIFIED AS HAVING RISK OF UNEXPLODED ORDNANCE.  
 "NO EXCAVATION OR OTHER DISTURBANCE OF THE SOIL ON THIS SITE SHOULD BE CARRIED OUT WITHOUT FIRST OBTAINING CLEARANCE FROM THE UNEXPLODED ORDNANCE BRANCH OF THE W.A. POLICE DEPARTMENT."

**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.

**MSWA RETICULATION SUBMISSION**  
 This plan is accepted as being in accordance with the endorsed Concept Plan: MU53-100-001-01A  
 Compliance with 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.

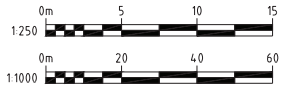
**\*\*\*\*-103-001-01A**

FILE: JT1 2\*\*\* \*\*\*\*\* V01



P:\5826-Lot 6 Services\5826-07-500.dwg, 8/11/2021 7:38:48 PM, anthony.digitalsigning.pdf, rev. 1.1, -CW Reference

REV	DATE	DRN	CKD	APP	AMENDMENT
B	09.11.21	AC			ISSUED FOR APPROVAL
A	17.08.21	WBR			ISSUED FOR WATER CORPORATION APPROVAL



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**CLIENT**  
 PRIME EGLINTON

APPROVED: 09.11.21  
 DESIGNED: M.S.  
 SCALE: 1:250 1:1000

**PROJECT**  
 EAST OF THE BEACH - STAGE 07

**TITLE**  
 WATER RETICULATION PLAN

WAPC No: 155700  
 DRAWING No: 5826-07-500  
 REVISION: B

ORIGINAL SIZE A1

## Appendix D Vegetation plot photos and description



**Photo ID: 1a**

<b>Plot number</b>	Plot 1
<b>Vegetation classification</b>	Class D Scrub
<b>Description / justification</b>	Scrub vegetation with a horizontal fuel profile between 2–6 m high. Located east of the railway reserve.



Photo ID: 2a



Photo ID: 2b

Plot number	Plot 2
Vegetation classification	Class D Scrub
Description / justification	Scrub vegetation with a horizontal fuel profile between 2–6 m high. To the west of the project area.



**Photo ID: 3a**



**Photo ID: 3b**



**Photo ID: 3c**

<b>Plot number</b>	Plot 3
<b>Vegetation classification</b>	Excluded – Clause 2.2.3.2 [b]
<b>Description / justification</b>	Area of retained vegetation within Stage 2 future POS which is less than 1 ha in area and not within 100 m of any other areas of vegetation being classified vegetation.





Photo ID: 4a (Nearmap imagery dated 28 May 2022)

<b>Plot number</b>	Plot 4
<b>Vegetation classification</b>	Excluded – Clause 2.2.3.2 [b]
<b>Description / justification</b>	Retained vegetation with Stage 2 future POS which is <0.25 ha in area and not within 20 m of the site or other classifiable vegetation.



Photo ID: 5a



Photo ID: 5b



Photo ID: 5c



Photo ID: 5d



Photo ID: 5e



Photo ID: 5f



Photo ID: 5g



Photo ID: 5h

Plot number

Plot 4

Vegetation classification

Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])

Description / justification

Existing areas of non-vegetated land or low threat managed vegetation.

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**Document Status**

Report version	Rev No.	Purpose	Author	Reviewed and Approved for Issue	
				Name	Date
Final Report	Rev 0	Issued for use: to facilitate subdivision clearances and accompany future building permit applications	Kaitlin Southgate (BPAD 57034, Level 1)	Louisa Robertson (BPAD 36748, Level 3)	19 August 2022

