



Environmental Noise Assessment Report

Proposed Residential Development

At 54 George Alexander Way, Coomera

On behalf of Keylin Group Pty Ltd

24GCA0090 R01_1



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Revision Record

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Executive Summary

TTM conducted an environmental noise assessment for the proposed residential development located at 54 George Alexander Way, Coomera.

Noise measurements were undertaken to establish the existing road traffic and ambient noise levels. Road traffic noise levels from the Council-controlled road were predicted at the development and acoustic treatments recommended for compliance with the internal noise criteria. Façade impacts range from QDC MP4.4 Noise Category 0 to Noise Category 3.

Noise generated by the proposed development was assessed and recommendations were made for compliance with the applicable noise criteria.

Compliance with the criteria outlined in Section 5 is predicted to be achieved based on the implementation of the recommendations outlined in Section 8 of this report.

Contents

1	Introduction	6
1.1	Background	6
1.2	References.....	6
1.3	Scope.....	6
2	Site Description	7
2.1	Site Location.....	7
2.2	Description of Surrounding Area	7
3	Proposed Development	8
3.1	Development Description.....	8
4	Noise Measurements.....	9
4.1	Equipment.....	9
4.2	Unattended Noise Monitoring	9
4.3	Noise Source Measurements	10
4.4	Results of Measurements.....	10
4.4.1	Road Traffic Noise Levels.....	10
4.4.2	Ambient Noise Levels	11
5	Noise Criteria.....	12
5.1	Road Traffic Noise	12
5.1.1	City of Gold Coast Council	12
5.1.2	Queensland Development Code MP4.4	12
5.2	Environmental Noise	13
5.2.1	Acoustic Quality Objectives (EPP 2008 and 2019).....	13
5.2.2	Background Creep (EPP 2008).....	14
6	Road Traffic Noise Assessment.....	15
6.1	Assessment Criteria.....	15
6.2	Traffic Volumes	15
6.3	Road Traffic Noise Model	15
6.3.1	Noise Modelling Parameters	15
6.3.2	Noise Model Verification	16
6.4	Predicted Road Traffic Noise Levels	16

6.4.1	Building Façade	16
6.4.2	Outdoor Space (Balconies)	18
7	Assessment of Onsite Noise Impacting Noise Sensitive Receivers	20
7.1	Noise Sensitive Receivers	20
7.2	Noise Source Levels.....	20
7.3	Calculation Assumptions	21
7.4	Predicted Onsite Noise Levels at Receivers	22
7.4.1	Acoustic Quality Objective Predictions.....	22
7.4.2	Background Creep Predictions (15-minute Duration)	23
7.4.3	Background Creep Predictions (Duration of Noise Source)	24
7.5	Preliminary Mechanical Plant Advice	25
8	TTM Recommendations.....	26
8.1	Road Traffic Noise	26
8.1.1	Building Facades.....	26
8.1.2	Balconies	27
8.2	Onsite Noise	28
8.2.1	Management Strategies	28
8.2.2	Mechanical Plant Noise	28
9	Conclusion.....	29
Appendix A	Sample of Development Plans	30
Appendix B	Unattended Noise Monitoring Graphs	36
Appendix C	SoundPLAN Noise Model Outputs.....	41
Appendix D	Onsite Noise Calculation Examples	47
Appendix E	Schedule 1 & 2 of QDC MP4.4.....	49

Table Index

Table 1: Measured Road Traffic Noise Levels	10
Table 2: Measured Ambient Noise Levels	11
Table 3: The City of Gold Coast Council <i>Regional Infrastructure Overlay Code</i> – Road Traffic Noise Criteria ..	12
Table 4: Indoor Design Sound Levels for Residential Dwellings from AS2107	13
Table 5: Road Traffic Noise Category Levels - QDC MP4.4 (Schedule 3)	13

Table 6: Acoustic Quality Objectives at Noise Sensitive Receivers	13
Table 7: Background Creep Noise Limits at Noise Sensitive Properties (EPP2008)	14
Table 8: Traffic Volumes used in the Noise Model	15
Table 9: Road Traffic Noise Modelling Parameters	15
Table 10: Comparison between measured and modelled road traffic noise level	16
Table 11: Typical Onsite Transient Noise Source Levels	21
Table 12: Assumptions Used for Onsite Noise Calculations	21
Table 13: Acoustic Quality Objective Onsite Noise Predictions	22
Table 14: Background Creep Onsite Noise Predictions (15-minute Duration)	23
Table 15: Background Creep Onsite Noise Predictions (Duration of Noise Source)	24
Table 16: Mechanical Plant Noise Limit for Compliance Without Acoustic Treatment	25
Table 17: Recommended QDC Noise Categories – Building 1	26
Table 18: Recommended QDC Noise Categories – Building 2	27
Table 19: Recommended QDC Noise Categories – Building 3	27

Figure Index

Figure 1: Site Locality	7
Figure 2: Development Site Plan	8
Figure 3: Noise Monitoring Location	9
Figure 4: Predicted Road Traffic Noise Levels at Facades – Level 1	17
Figure 5: Predicted Road Traffic Noise Levels at Facades – Level 5	17
Figure 6: Predicted Road Traffic Noise Levels Compared to Outdoor Criteria – Level 1	18
Figure 7: Predicted Road Traffic Noise Levels Compared to Outdoor Criteria – Level 5	19
Figure 8: Noise Sensitive Receivers	20

1 Introduction

1.1 Background

TTM was engaged by Keylin Group Pty Ltd to undertake an environmental noise assessment of a proposed residential development at 54 George Alexander Way, Coomera. This report will form part of the application for consideration by the City of Gold Coast Council.

1.2 References

The assessment is based on the following:

- City of Gold Coast *City Plan, Version 11*;
- Queensland Development Code *MP4.4 Buildings in a Transport Noise Corridor* (August, 2015);
- Environmental *Protection (Noise) Policy*;
- Development plans *Archipelago*, Rev 1 dated 01/08/2024;
- Site inspection, noise measurements, analysis and calculations conducted by TTM.

1.3 Scope

The assessment includes the following:

- Description of the site and proposal;
- Measurement of existing road traffic and ambient noise levels;
- Statement of assessment criteria relating to road traffic noise intrusion and environmental noise emissions;
- Prediction of road traffic noise impacts on the development;
- Assessment of noise generated by the development onto noise sensitive receivers;
- Analysis of predicted noise levels;
- Details of noise control recommendations to be incorporated to achieve predicted compliance.

2 Site Description

2.1 Site Location

The site is described by the following:

- Lot 96 on RP187418
- 54 George Alexander Way, Coomera

The site locality is shown in Figure 1.

Figure 1: Site Locality



2.2 Description of Surrounding Area

The site is bound by George Alexander Way to the west, residential dwellings to the north and east, and currently vacant land to the south expected to be future residential development. The current acoustic environment at the site is primarily comprised of road traffic noise from George Alexander Way and the natural environment such as wind in vegetation and birds chirping.

3 Proposed Development

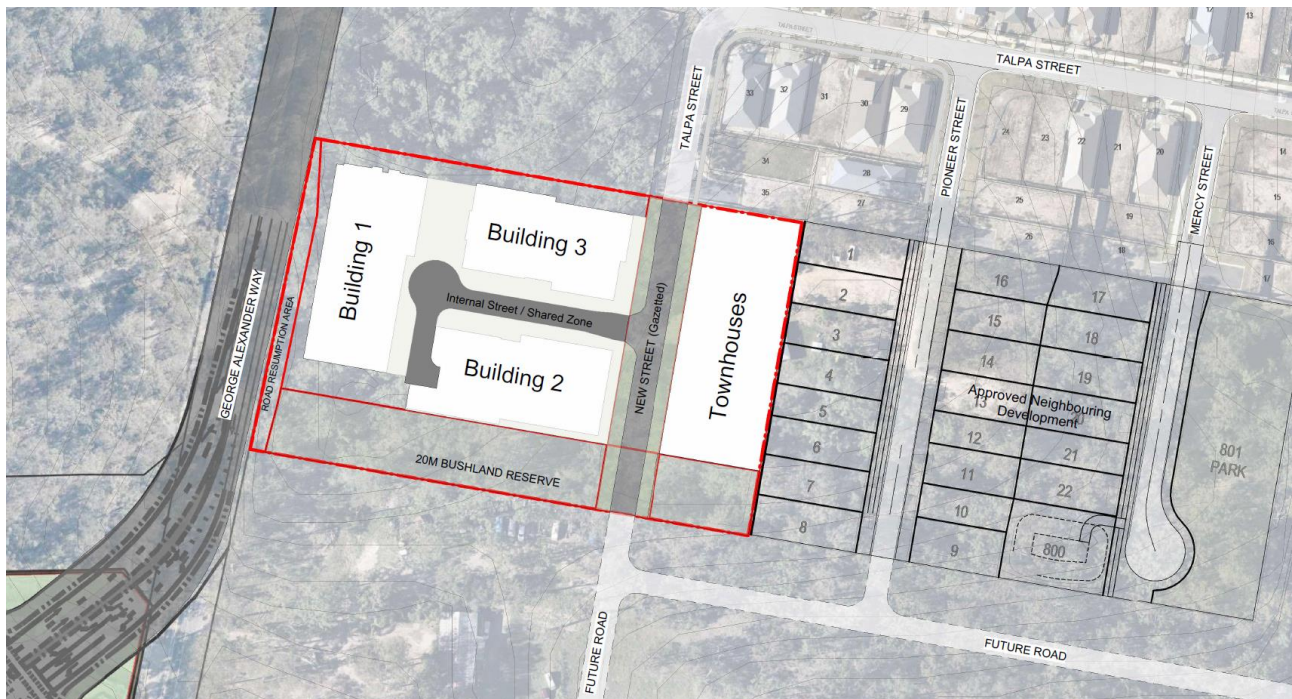
3.1 Development Description

The proposal is for a residential development comprising of 3 apartment buildings and 10 two-storey townhouses.

Access to the site will be via the internal road network to the east of the site. No access is proposed from George Alexander Way.

The assessment is based on the development plans shown in Appendix A. A site plan of the proposed development is shown in Figure 2.

Figure 2: Development Site Plan



4 Noise Measurements

4.1 Equipment

The following equipment was used to measure existing noise levels:

- ARL EL316 environmental noise monitor (Serial number: 16-707-040).
- Norsonic Nor140 sound level meter (Serial number: 1406506).
- Casella Acoustical Calibrator (Serial number: 045246).

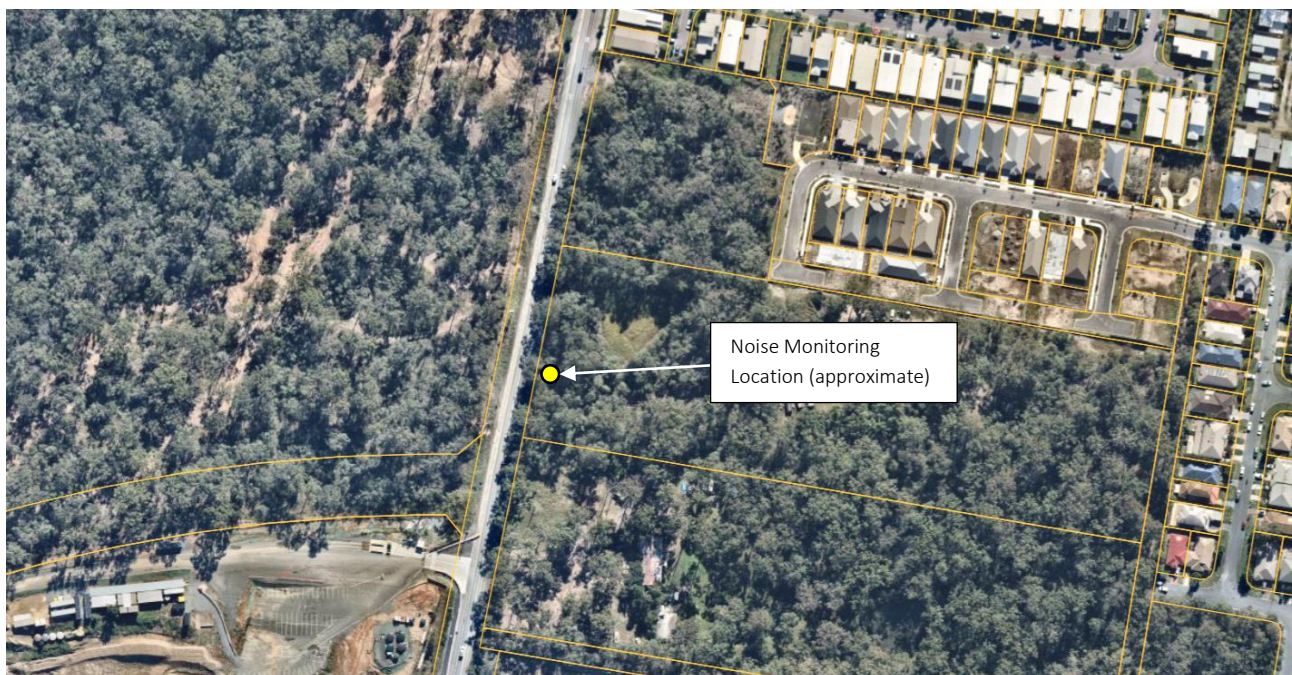
All equipment was calibrated by a National Association of Testing Authorities (NATA) accredited laboratory. The equipment was calibrated before and after the measurement session. No significant drift from the reference signal was recorded.

4.2 Unattended Noise Monitoring

Unattended noise monitoring was conducted to establish the existing road traffic noise and ambient levels between Tuesday 18th June and Wednesday 26th June 2024.

The noise monitor was located near the western boundary of the site, approximately 8m from the nearest lane of George Alexander Way, as shown in Figure 3 below. The noise monitoring location is considered representative of the ambient noise levels experienced at the nearest sensitive receivers.

Figure 3: Noise Monitoring Location



The microphone was in free-field location and 1.5m above ground level. The noise monitor was set to measure statistical noise levels in 'A'-weighting, 'Fast' response, over 60-minute intervals. Road traffic noise levels were measured in accordance with Australian Standard AS2702¹. Ambient noise levels were measured in accordance with Australian Standard AS1055².

Weather during the noise monitoring period was generally fine. The temperature range was between 8-24°C (source: Bureau of Meteorology, Gold Coast Seaway weather station).

4.3 Noise Source Measurements

Noise levels associated with typical onsite activities which may impact noise sensitive receivers were taken from similar investigations conducted by TTM. Measurements were conducted generally in accordance with Australian Standard AS1055.

4.4 Results of Measurements

4.4.1 Road Traffic Noise Levels

Table 1 presents the measured road traffic noise levels from George Alexander Way.

Table 1: Measured Road Traffic Noise Levels

Day and Date	Road Traffic Noise Descriptor	Time Period	Measured Level, dB(A)
Average of measurement days 19 th , 20 th and 21 st June.	L _{A10,18 hour}	6am to midnight	65.3
	Noisiest daytime L _{Aeq,1 hour}	8am to 9am	64.0
	Noisiest night time L _{Aeq,1 hour}	10pm to 11pm	58.7
	L _{Aeq,24 hour}	Midnight to midnight	59.3
	L _{A90,18 hour}	6am to midnight	48.5
	L _{A90,8 hour}	10pm to 6am	40.4

Graphical presentation of the measured levels is shown in Appendix B.

¹ Australian Standard AS2702:1984 *Acoustics – Methods for the Measurement of Road Traffic Noise*

² Australian Standard AS1055:2018 *Acoustics – Description and Measurement of Environmental Noise*

4.4.2 Ambient Noise Levels

Table 2 presents the measured ambient noise levels. The Rating Background Level (RBL) was determined in accordance with the requirements of Council. Graphical presentation of the measured levels is shown in Appendix B.

Table 2: Measured Ambient Noise Levels

Time Period	Measured Noise Levels, dB(A)	
	RBL L ₉₀	L _{eq}
Daytime (7am – 6pm)	46	62
Evening (6pm – 10pm)	45	61
Night-time (10pm – 7am)	38	56

5 Noise Criteria

5.1 Road Traffic Noise

The development site is situated adjacent to George Alexander Way which is a local Council controlled road, and therefore the City of Gold Coast Council *Regional Infrastructure Overlay Code* is applied.

5.1.1 City of Gold Coast Council

Table 8.2.14-3: *Design level – road and rail noise criteria* of the City of Gold Coast Council *Regional Infrastructure Overlay Code* outlines the external and internal noise criteria for residential uses. The noise assessment requirements are summarised in Table 3.

Table 3: The City of Gold Coast Council *Regional Infrastructure Overlay Code* – Road Traffic Noise Criteria

Development Type	Measurement Location	Design Level Road Noise Criteria
Accommodation Activities	External (1m in front of the most exposed part of a proposed sensitive land use)	≤60 dB(A) L ₁₀ (18h) façade corrected (where the measured L ₉₀ (8h) free field between 10pm and 6am ≤40dB(A))
		≤63 dB(A) L ₁₀ (18h) façade corrected (where the measured L ₉₀ (8h) free field between 10pm and 6am >40dB(A))
		Where the above criteria cannot be met, internal maximum design criterion levels specified in Table 1 of AS2107 apply, particularly for buildings greater than 1 storey high.
	External (Balconies and formal external open space)	≤57 dB(A) L ₁₀ (18h) free field (where the measured L ₉₀ (18h) free field between 6am and 12 midnight ≤45dB(A))
		≤60 dB(A) L ₁₀ (18h) free field (where the measured L ₉₀ (18h) free field between 6am and midnight >45dB(A))

5.1.2 Queensland Development Code MP4.4

The *Queensland Development Code Part MP 4.4 - 'Buildings in a Transport Noise Corridor'* August 2015 (QDC) specifies Noise Categories to ensure that habitable rooms of residential buildings are adequately protected from transport noise.

The Noise Categories list the minimum acoustic R_w ratings for each building component to comply with the indoor sound levels of AS2107³. Internal noise levels specified in Table 1 of AS2107 are expressed as L_{Aeq} levels and are reproduced in Table 4 below.

³ Australian Standard AS2107:2016 *Acoustics – Recommended Design Sound Levels and Reverberation Times for Building Interiors*

Table 4: Indoor Design Sound Levels for Residential Dwellings from AS2107

Type of Occupancy	Recommended Design Sound Level $L_{Aeq,t}$, dB(A)
7. Residential Buildings	
Living areas	35 - 45
Sleeping areas (night time)	35 - 40

It is expected that compliance with AS2107 would be achieved through implementation of the Noise Category building treatment recommendations specified by QDC MP4.4.

The triggers for each noise category are summarised in Table 5. Details regarding the noise categories and acceptable forms of construction can be found within Schedule 1 and 2 of the QDC document.

Table 5: Road Traffic Noise Category Levels - QDC MP4.4 (Schedule 3)

Noise Category	Level of Transport Noise* $L_{A10, 18\text{Hour}}$ for State-Controlled Roads and Designated Local Government Roads
Category 4	≥ 73 dB(A)
Category 3	68 – 72 dB(A)
Category 2	63 – 67 dB(A)
Category 1	58 – 62 dB(A)
Category 0	≤ 57 dB(A)

*Measured at 1m from the façade of the proposed or existing building.

5.2 Environmental Noise

PO2 of the *General Development Provisions Code* (City Plan) requires that the proposed development prevents loss of amenity and threats to health and safety, having regard to noise. No specific noise criteria is stated. Therefore, assessment of noise emissions from onsite noise sources is considered to be pursuant to the *Environmental Protection (Noise) Policy* (EPP). Council requires the 2008 version of the Noise Policy to be used to include an assessment using the Background Creep criteria which was removed from the 2019 version. The Acoustic Quality Objectives criteria remains the same in both 2008 and 2019 versions. Details of the criteria and established noise limits are presented below.

5.2.1 Acoustic Quality Objectives (EPP 2008 and 2019)

Table 6 presents the acoustic quality objectives at noise sensitive receivers as detailed in Schedule 1 of the *Environmental Protection (Noise) Policy*.

Table 6: Acoustic Quality Objectives at Noise Sensitive Receivers

Sensitive Receiver	Time of Day	Acoustic Quality Objectives, dB(A)		
		$L_{Aeq,adj,1hr}$	$L_{A10,adj,1hr}$	$L_{A1,adj,1hr}$
Dwelling (Outdoors)	Day and Evening (7am – 10pm)	50	55	65

Sensitive Receiver	Time of Day	Acoustic Quality Objectives, dB(A)		
		$L_{Aeq,adj,1hr}$	$L_{A10,adj,1hr}$	$L_{A1,adj,1hr}$
Dwelling (Indoors)	Day and Evening (7am – 10pm)	35	40	45
	Night (10pm – 7am)	30	35	40

5.2.2 Background Creep (EPP 2008)

The Background Creep criteria forms part of the *Environmental Protection (Noise) Policy 2008* and is included in this report for completeness. This criterion is to prevent background noise progressively increasing or creeping higher over time with the establishment of new developments in a locality. EPP2008 states that:

2. To the extent that it is reasonable to do so, noise from an activity must not be —
 - for noise that is continuous noise measured by $L_{A90,T}$ —more than nil dB(A) greater than the existing acoustic environment measured by $L_{A90,T}$; or
 - for noise that varies over time measured by $L_{Aeq,adj,T}$ —more than 5dB(A) greater than the existing acoustic environment measured by $L_{A90,T}$.

In accordance with the Environmental Protection Regulation 2008, the time period (T) is considered to be a time interval of at least 15 minutes, or if the noise continues for less than 15 minutes, the duration of the noise source.

The Background Creep criteria for steady-state and transient noise sources are stated in Table 7.

Table 7: Background Creep Noise Limits at Noise Sensitive Properties (EPP2008)

Time Period	Steady-State Noise Emission Criteria, dB(A)	Time Varying Noise Emission Criteria, dB(A)
	$L_{A90,T}$	$L_{Aeq,T}$
Day (7am – 6pm)	46	51
Evening (6pm – 10pm)	45	50
Night (10pm – 7am)	38	43

The above steady-state criterion levels are quoted as a measured level, not a component level; hence, for mechanical plant, all plant proposed must be included in the assessment. By designing plant noise to a measured level rather than a component level, the additive effect of multiple plant is taken into account.

6 Road Traffic Noise Assessment

An assessment of road traffic noise from George Alexander Way was conducted to determine the extent of acoustic treatments necessary for compliance with the assessment criteria.

6.1 Assessment Criteria

Based on the measured background noise levels detailed in Table 1 and the criteria outlined in Section 5.1, the following external road traffic noise limits apply to the development:

- Façades: An external noise level of 63 dB(A) $L_{A10(18 \text{ hour})}$ façade corrected.
- Private Open Space: An external noise level of 60 dB(A) $L_{A10(18 \text{ hour})}$ free-field.

6.2 Traffic Volumes

Table 8 presents the existing traffic volumes for George Alexander Way which were obtained from the City of Gold Coast Council (Open Data website). TTM Traffic has advised that George Alexander Way will be upgraded as part of the Coomera Hospital and future development areas west of the site. The new road alignment was considered in this assessment.

Forecast traffic volumes are based a compound growth rate of 2.2% based on indicative design horizon volumes provided by TTM Traffic. A heavy vehicle percentage of 2% was estimated for George Alexander Way for the purposes of noise modelling.

Table 8: Traffic Volumes used in the Noise Model

Road	Traffic Volumes (AADT)			Heavy Vehicles (%)	Avg. Growth Rate (%)
	2021	2024	2035		
George Alexander Way	7,286	7,778	9,881	2.0	2.2

The 18-hour traffic volumes used in the noise model are taken to be 95% of the AADT (Annual Average Daily Traffic).

6.3 Road Traffic Noise Model

6.3.1 Noise Modelling Parameters

Road traffic noise predictions were conducted using 'SoundPLAN v9.0', a CoRTN based modelling program. The basis of the 'SoundPLAN' model is as follows:

Table 9: Road Traffic Noise Modelling Parameters

Description	Value
Noise modelling standard	CoRTN

Description	Value
Angle increment	1°
Grid spacing (noise maps)	2m squares
Road surface type	Impervious (+0dB(A))
Ground contours	Obtained from Elvis - Elevation and Depth - Foundation Spatial Data. Segments: - GoldCoast_2014_LGA_SW_531000_6919000_1K_DEM_1m - GoldCoast_2014_LGA_SW_531000_6920000_1K_DEM_1m
George Alexander Way speed limit	50km/h
Noise source height above grade	0.5m
Residential floor heights	As per development plans
Receiver heights	1.8m above finished floor level
Free-field calibration factor	-0.7 dB(A) adjustment as per Table 4.3.2.1 of TMR Code of Practice
Receiver (façade corrected) calibration factor	-1.7 dB(A) adjustment as per Table 4.3.2.1 of TMR Code of Practice
Façade correction	+2.5dB(A)

6.3.2 Noise Model Verification

To verify the road traffic noise model, the $L_{A10, 18 \text{ Hour}}$ noise level was modelled and compared to the measured levels presented in Table 1. As the noise monitor was in a free-field location, the predicted noise level is also shown as free-field. Details of the noise model verification are shown in Table 10. The SoundPLAN prediction is shown in Appendix C.

Table 10: Comparison between measured and modelled road traffic noise level

Logger Location	Measured $L_{A10, 18 \text{ Hour}}$	Predicted $L_{A10, 18 \text{ Hour}}$	Model Adjustment
8m from George Alexander Way	65.3	65.7	0

The modelled levels are within the allowable tolerance of 2dB(A) of the measured level and no correction is required.

6.4 Predicted Road Traffic Noise Levels

Modelling was conducted to determine the road traffic noise levels at the development in the 10-year planning horizon. A summary of the predicted noise impacts at the façade and balconies of the development are provided below. Detailed receiver point modelling results are shown in Appendix C.

6.4.1 Building Façade

The road traffic noise contours at Level 1 and Level 5 facades of the development are presented in the figures below. The predicted noise levels at these floor levels are representative of the impacts on the whole development.

Figure 4: Predicted Road Traffic Noise Levels at Facades – Level 1

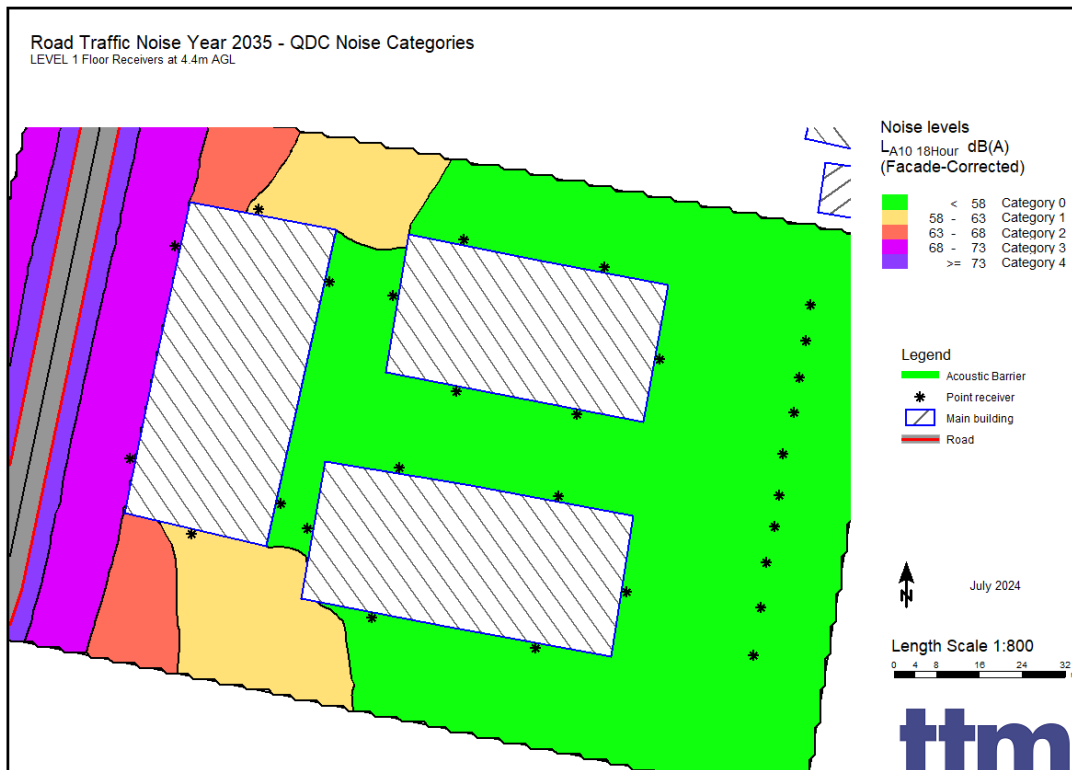
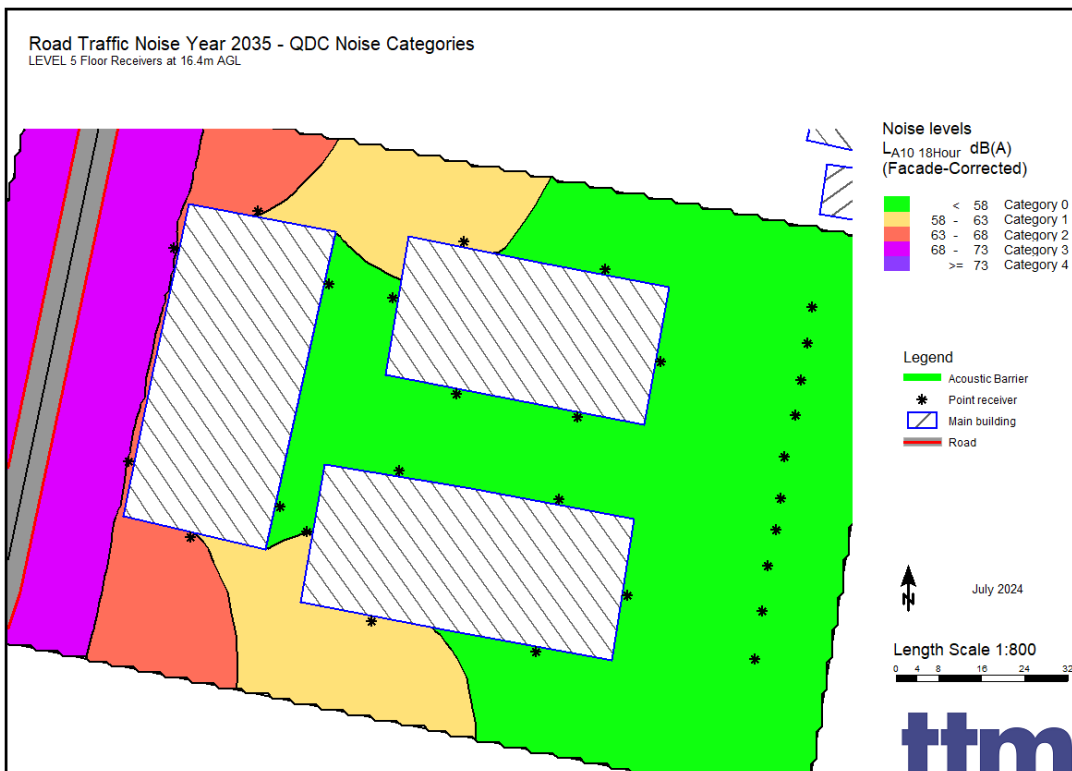


Figure 5: Predicted Road Traffic Noise Levels at Facades – Level 5



Road traffic noise levels at the development range from QDC MP4.4 Noise Category 0 to Noise Category 3. Further acoustic treatment will be required to achieve compliance with recommended internal sound levels. Details of future construction requirements in accordance with QDC MP4.4 are outlined in Section 8.

6.4.2 Outdoor Space (Balconies)

The road traffic noise contours at Level 1 and Level 5 of the development compared to the outdoor space (balcony) criteria of 60dB(A) are presented in Figure 6 and Figure 7 below.

Figure 6: Predicted Road Traffic Noise Levels Compared to Outdoor Criteria – Level 1

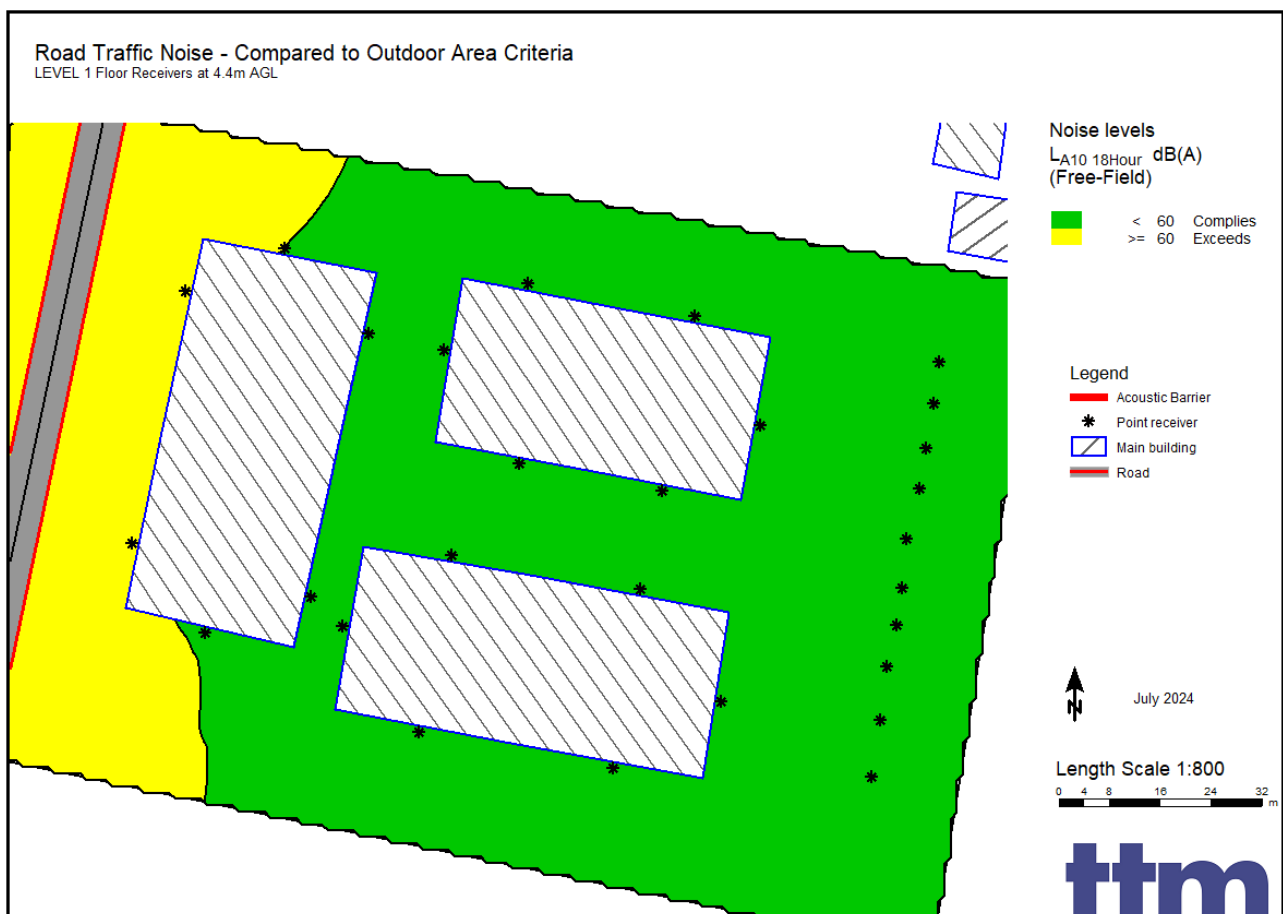
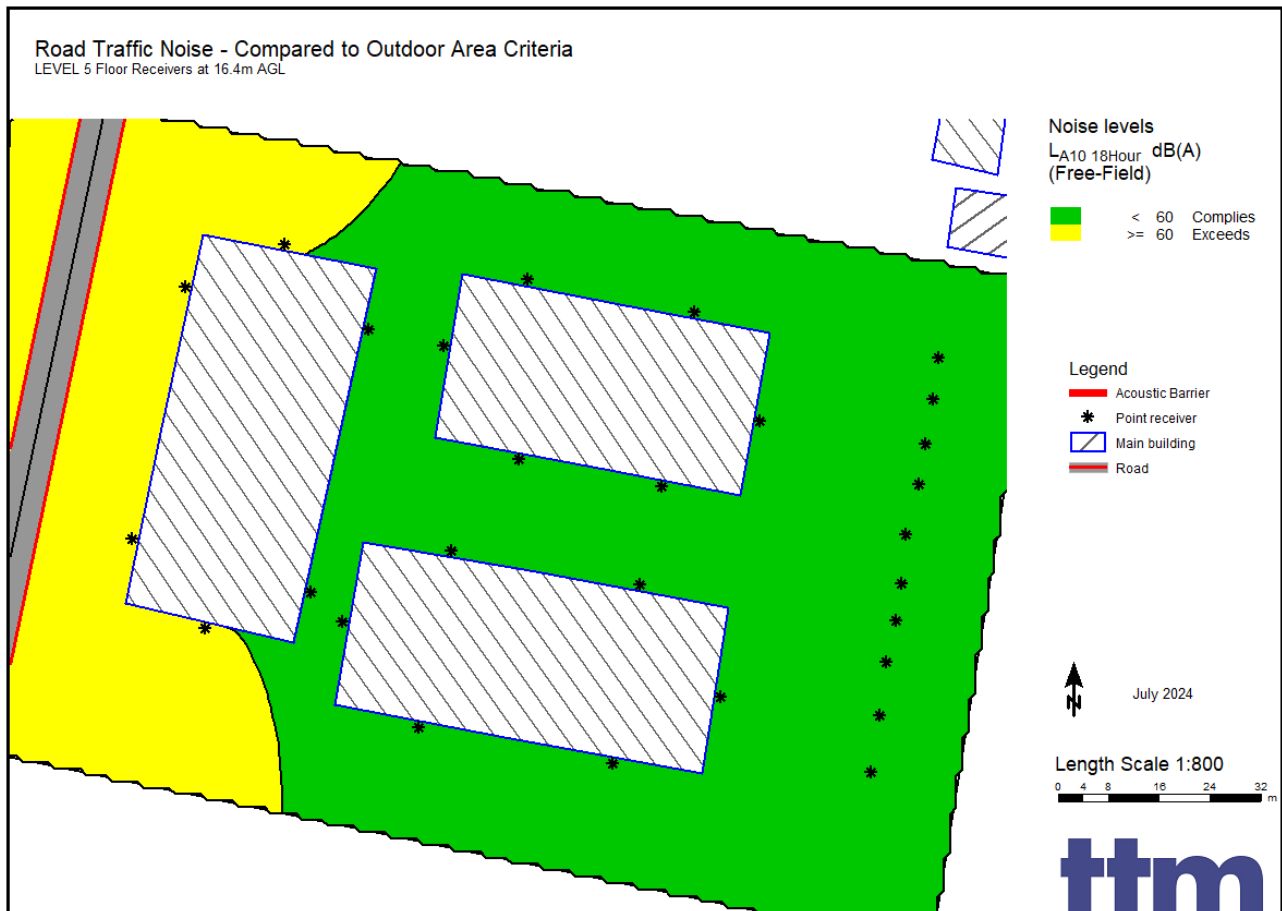


Figure 7: Predicted Road Traffic Noise Levels Compared to Outdoor Criteria – Level 5



Road traffic noise levels are predicted to exceed the outdoor criteria at balconies on the north, west and south facades of Building 1. Therefore, it will be recommended that solid balcony upstands are used for balconies in these locations to reduce noise levels where possible.

7 Assessment of Onsite Noise Impacting Noise Sensitive Receivers

An assessment of activities associated with the proposed development was conducted to determine potential impacts at the nearest noise sensitive receivers. Details of the analysis is presented below.

7.1 Noise Sensitive Receivers

This assessment will focus on the nearest noise sensitive receivers as outlined below and shown in Figure 8. If compliance can be achieved at these nearest receivers, then all remaining noise sensitive locations are expected to comply.

- Receiver 1: Residential properties in Talpa Street
- Receiver 2: Residential property (and future development) at 44 George Alexander Way
- Receiver 3: Nearest onsite apartments within the development

Figure 8: Noise Sensitive Receivers



7.2 Noise Source Levels

Table 11 presents the typical noise sources generated by the development and the respective measured noise levels in $L_{Aeq,T}$, $L_{A10,T}$, and $L_{A1,T}$. The noise source levels were calculated to one metre and include corrections for tonality and impulsiveness as per AS1055.

Table 11: Typical Onsite Transient Noise Source Levels

Noise Source Description	Noise Level at 1m, dB(A)			Measured Duration (sec)
	L _{Aeq,T}	L _{A10,T}	L _{A1,T}	
Car door closure	75*	77*	83*	2
Car bypass @ 5km/h	69	75	75	6
Car engine ignition	72	74	74	3
Conversations	65	68	70	Long term
Unloading a delivery vehicle	80	83	85	60
Waste collection	93*	94*	105*	40

*Includes 2dB(A) adjustment to account for impulsiveness characteristics in accordance with AS1055.

Includes 5dB(A) adjustment to account for tonal noise characteristics in accordance with AS1055. Not applicable.

7.3 Calculation Assumptions

Noise predictive calculations in accordance with *Environmental Protection (Noise) Policy* are based on the number of events occurring within a typical or worst-case period. The following assumptions have been made for noise calculations:

- Site traffic generation rates of 162 events per hour (based on TTM traffic generation rates of 0.53 vph/dwelling).
- Car movements are predicted from ground level roads while car parking is assessed from the basement.
- Noise levels for voice are based on published data contained in Harris, C.M., *Handbook of Acoustical Measurements and Noise Control* – 3rd ed. Ch 16.3, Mc Graw-Hill Inc. The voice level at 1m (long term average) used for the assessment of conversations was taken from the ‘Raised’ category with an associated noise level of 65 dB(A) for an individual male. Conversation is predicted from the nearest balcony, car park or recreation area relative to each noise sensitive receiver.
- Deliveries are predicted from the internal road.
- Waste collection is predicted from waste collection area on the southern side of the site.
- Noise attenuation provided by intervening building structures where applicable.
- Cumulative noise predictions include the commonly occurring sources of car parking and conversations.

Table 12 presents the expected proportion of time / number of noise events for the basis of the calculations. These have then been assumed to be the same across all time periods (day, evening and night).

Table 12: Assumptions Used for Onsite Noise Calculations

Noise Source Description	Prediction Location	Day/Evening/Night Period
		Events/Per hour or % of Assessment Period
Car door closure	Basement parking	324 events (based on 2 events per vehicle)

Noise Source Description	Prediction Location	Day/Evening/Night Period
		Events/Per hour or % of Assessment Period
Car bypass @ 5km/h	Ground level roads	162 events
Car engine ignition	Basement parking	162 events
Conversations	Nearest communal space	100% of the time
Unloading a delivery vehicle	Ground level roads	2 events per hour
Waste collection	Waste collection area	2 events per hour

7.4 Predicted Onsite Noise Levels at Receivers

Predicted noise levels are based on the noise source levels presented in Table 11, calculation assumptions listed in Section 7.3 and Table 12, distance loss to the nearest receiver, and noise reduction from intervening structures where applicable. Sample calculations are shown in Appendix D.

7.4.1 Acoustic Quality Objective Predictions

Table 13 presents the predicted acoustic quality objective noise levels. The criteria for day/evening periods are specified in the table heading, with the night time indoor criteria shown in brackets. Noise level exceedances are shown in bold and underline.

Table 13: Acoustic Quality Objective Onsite Noise Predictions

Receiver	Noise Source	Predicted Noise Level, dB(A)					
		L _{Aeq} , 1hr		L _{A10} , 1 hr		L _{A1} , 1hr	
		Outdoors	Indoors	Outdoors	Indoors	Outdoors	Indoors
	Criteria	50	35 (30)	55	40 (35)	65	45 (40)
1	Car door closure	<10	<10	11	<10	17	<10
	Car bypass	29	19	35	25	35	25
	Car engine	<10	<10	<10	<10	<10	<10
	Conversations	29	19	32	22	34	24
	Unloading delivery vehicle	30	20	33	23	35	25
	Waste collection	14	<10	15	<10	26	16
	<i>Cumulative noise prediction</i>	32	22	37	27	38	28
2	Car door closure	<10	<10	<10	<10	15	<10
	Car bypass	28	18	34	24	34	24
	Car engine	<10	<10	<10	<10	<10	<10
	Conversations	33	23	36	26	38	28
	Unloading delivery vehicle	30	20	33	23	35	25
	Waste collection	47	<u>37</u>	48	<u>38</u>	59	<u>49</u>
	<i>Cumulative noise prediction</i>	34	24	38	28	39	29
3	Car door closure	29	19	31	21	37	27
	Car bypass	43	<u>33</u>	49	<u>38</u>	49	39

Receiver	Noise Source	Predicted Noise Level, dB(A)					
		L _{Aeq} , 1hr		L _{A10} , 1 hr		L _{A1} , 1hr	
		Outdoors	Indoors	Outdoors	Indoors	Outdoors	Indoors
	Criteria	50	35 (30)	55	40 (35)	65	45 (40)
	Car engine	24	14	26	16	26	16
	Conversations	49	<u>39</u>	52	<u>42</u>	54	<u>44</u>
	Unloading delivery vehicle	47	<u>37</u>	50	<u>40</u>	52	<u>42</u>
	Waste collection	58	<u>48</u>	59	<u>49</u>	70	<u>60</u>
	Cumulative noise prediction	50	<u>40</u>	54	<u>44</u>	56	<u>46</u>

Noise levels at offsite receivers are predicted to comply with the criteria, except for waste collection at Receiver 2. Noise impacts from waste collection are unlikely to be a cause of annoyance, given that they are generally an infrequent occurrence and are of short duration. To minimise noise impacts from waste collection, it will be recommended that waste collection occurs during the day time period of 7am to 6pm.

In some cases, noise associated with the development is predicted to slightly exceed the internal criteria at the nearest onsite residential apartments to each noise source. Internal compliance is generally predicted to be achieved with standard building construction and windows/doors closed.

7.4.2 Background Creep Predictions (15-minute Duration)

Table 14 presents the background creep predictions averaged over a 15-minute duration.

Table 14: Background Creep Onsite Noise Predictions (15-minute Duration)

Receiver	Noise Source	Predicted External Noise Level, L _{eq} dB(A)	Complies with Criteria: (Yes/No)		
			Day 51 dB(A)	Evening 50 dB(A)	Night 43 dB(A)
1 NORTH	Car door closure	<10	✓	✓	✓
	Car bypass	29	✓	✓	✓
	Car engine	<10	✓	✓	✓
	Conversations	29	✓	✓	✓
	Unloading delivery vehicle	36	✓	✓	✓
	Waste collection	20	✓	✓	✓
	Cumulative noise prediction	32	✓	✓	✓
2 SOUTH	Car door closure	<10	✓	✓	✓
	Car bypass	28	✓	✓	✓
	Car engine	<10	✓	✓	✓
	Conversations	33	✓	✓	✓
	Unloading delivery vehicle	36	✓	✓	✓
	Waste collection	53	✗	✗	✗
	Cumulative noise prediction	34	✓	✓	✓
	Car door closure	29	✓	✓	✓

Receiver	Noise Source	Predicted External Noise Level, L_{eq} dB(A)	Complies with Criteria: (Yes/No)		
			Day 51 dB(A)	Evening 50 dB(A)	Night 43 dB(A)
3 ONSITE	Car bypass	43	✓	✓	✓
	Car engine	24	✓	✓	✓
	Conversations	49	✓	✓	✗
	Unloading delivery vehicle	53	✗	✗	✗
	Waste collection	64	✗	✗	✗
	Cumulative noise prediction	50	✓	✓	✗

Noise levels at offsite receivers are predicted to comply with the criteria, except for waste collection at Receiver 2. Noise impacts from waste collection are unlikely to be a cause of annoyance, given that they are generally an infrequent occurrence and are of short duration. To minimise noise impacts from waste collection, it will be recommended that waste collection occurs during the day time period of 7am to 6pm.

In some cases, noise associated with the development is predicted to exceed the background creep criteria at the nearest onsite residential apartments. Standard building construction with windows/doors closed is predicted to achieve compliance with the internal AQO criteria which will provide satisfactory acoustic amenity.

7.4.3 Background Creep Predictions (Duration of Noise Source)

Table 15 presents the background creep predictions assessed against the duration of each noise source. The noise levels are provided as a source of additional information showing the maximum expected noise levels at noise sensitive receivers during an onsite noise event.

Table 15: Background Creep Onsite Noise Predictions (Duration of Noise Source)

Receiver	Noise Source	Predicted External Noise Level, L_{eq} dB(A)	Complies with Criteria: (Yes/No)		
			Day 51 dB(A)	Evening 50 dB(A)	Night 43 dB(A)
1 NORTH	Car door closure	16	✓	✓	✓
	Car bypass	35	✓	✓	✓
	Car engine	13	✓	✓	✓
	Conversations	29	✓	✓	✓
	Unloading delivery vehicle	44	✓	✓	✗
	Waste collection	31	✓	✓	✓
2 SOUTH	Car door closure	14	✓	✓	✓
	Car bypass	33	✓	✓	✓
	Car engine	11	✓	✓	✓
	Conversations	33	✓	✓	✓
	Unloading delivery vehicle	45	✓	✓	✗

Receiver	Noise Source	Predicted External Noise Level, L_{eq} dB(A)	Complies with Criteria: (Yes/No)		
			Day 51 dB(A)	Evening 50 dB(A)	Night 43 dB(A)
	Waste collection	63	✗	✗	✗
3 ONSITE	Car door closure	36	✓	✓	✓
	Car bypass	49	✓	✓	✗
	Car engine	33	✓	✓	✓
	Conversations	49	✓	✓	✗
	Unloading delivery vehicle	62	✗	✗	✗
	Waste collection	75	✗	✗	✗

Noise levels at offsite receivers are generally predicted to comply with the criteria, except for deliveries and waste collection in some instances. These activities will be recommended to occur during suitable hours to minimise noise annoyance where possible.

Noise associated with the development is predicted to exceed the criteria at the nearest onsite residential apartments in some instances. Standard building construction with windows/doors closed is predicted to achieve compliance with the internal AQO criteria which will provide satisfactory acoustic amenity.

7.5 Preliminary Mechanical Plant Advice

A reverse calculation was conducted to determine the allowable noise source level of onsite mechanical equipment prior to the inclusion of acoustic treatment. This type of assessment was conducted as plant has not been selected during DA stage and it provides guidance around the design of mechanical equipment.

Based on the steady-state Background Creep criteria and distance attenuation from the nearest potential locations to the nearest residential receiver, the allowable mechanical noise levels are presented in Table 16.

Table 16: Mechanical Plant Noise Limit for Compliance Without Acoustic Treatment

Plant location	Allowable noise level at 1m from the nearest piece of plant to receiver to achieve compliance, L_{eq} dB(A)		
	Day (7am – 6pm)	Evening (6pm – 10pm)	Night (10pm – 7am)
North Façade (Building 3)	76	75	68
South Façade (Building 2)	73	72	65

Acoustic treatment or screening of the plant may allow a higher noise limit. Compliance with the noise limits and design criteria should be checked once plant selections and locations are finalised.

8 TTM Recommendations

The recommended acoustic treatments are presented in the sections below to achieve predicted compliance with the relevant assessment criteria.

8.1 Road Traffic Noise

8.1.1 Building Facades

The QDC MP4.4 requires that habitable rooms in residential buildings located in a transport noise corridor are adequately protected from transport noise to safeguard occupant's health and amenity.

In order to achieve the performance requirements of the QDC MP4.4, the external building envelope of habitable rooms must comply with the minimum R_w for each building component specified in Schedule 1 to achieve a minimum transport noise reduction level for the relevant noise category by either one of the following:

- a. Using materials specified in Schedule 2 of the QDC MP4.4;
- OR
- b. Using materials with manufacturer's specifications that, in combination, achieve the minimum R_w value for the relevant building component and applicable noise category.

For application of Point (b), possible alternative constructions can be determined by the glazier (for glazing) and construction manuals such as 'The Red Book' by CSR (for walls and roof/ceiling).

Noise Categories applicable to Buildings of the development are listed in Table 17 to Table 19. Facades or floors not shown in the tables are predicted to be QDC Noise Category 0 and do not require further acoustic treatment.

Table 17: Recommended QDC Noise Categories – Building 1

Floor Level	QDC MP4.4 Noise Category					
	SW	NW	N	NE	SE	S
Ground	2	2	1	0	0	1
Level 1	2	3	2	0	0	1
Level 2	3	3	2	0	0	2
Level 3	3	3	2	0	0	2
Level 4	2	2	2	0	0	2
Level 5	2	2	2	0	0	2
Level 6	2	2	2	0	0	2

Table 18: Recommended QDC Noise Categories – Building 2

Floor Level	QDC MP4.4 Noise Category					
	W	NW	NE	E	SE	SW
Ground	0	0	0	0	0	0
Level 1	0	0	0	0	0	1
Level 2	0	0	0	0	0	1
Level 3	1	0	0	0	0	1
Level 4	1	0	0	0	0	1
Level 5	1	0	0	0	0	1
Level 6	1	0	0	0	0	1
Level 7	1	0	0	0	0	1
Level 8	1	0	0	0	0	1

Table 19: Recommended QDC Noise Categories – Building 3

Floor Level	QDC MP4.4 Noise Category					
	W	NW	NE	E	SE	SW
Ground	0	1	0	0	0	0
Level 1	0	1	0	0	0	0
Level 2	0	1	0	0	0	0
Level 3	1	1	0	0	0	0
Level 4	1	1	0	0	0	0
Level 5	1	1	0	0	0	0
Level 6	1	1	0	0	0	0
Level 7	1	1	0	0	0	0

The construction requirements for each noise category are outlined in QDC MP4.4. An extract of Schedule 1 and Schedule 2 of the QDC is provided in Appendix E.

Noise affected apartments may be constructed in accordance with the QDC Noise Category construction requirements for the nominated floor/facade, or alternatively a glazing design assessment can be conducted by a suitably qualified acoustic consultant to optimise cost savings.

8.1.2 Balconies

Road traffic noise levels are predicted to exceed the outdoor area criteria on the north, west and south facades of Building 1. Therefore, it is recommended that:

Balconies on the north, west and south facades of Building 1 must have a continuous solid gap-free balustrade (other than gaps required for drainage purposes to comply with the Building Code of Australia).

8.2 Onsite Noise

8.2.1 Management Strategies

The following management strategies are recommended to minimise noise annoyance:

- a. Use of the communal recreation areas is to be between the hours of 7am and 10pm.
- b. Waste collection should be limited to the daytime hours of 7am to 6pm where possible.
- c. Deliveries should be limited to the hours of 7am to 10pm.
- d. Any grates or other protective covers in the handstand and access driveway must be rigidly fixed in position to eliminate clanging and be maintained.

8.2.2 Mechanical Plant Noise

As detailed plant selections are not available at this stage, it is not possible to carry out a detailed examination of the noise control measures that may be required to achieve the noise targets for mechanical plant.

Plant may need to be acoustically treated to achieve the criteria detailed in Section 5.2.2 to prevent noise emissions from adversely impacting the surrounding properties. This may include selecting the quietest plant possible, or treating the plant equipment with enclosures, barriers, duct lining and silencers, etc.

A preliminary assessment of allowable plant noise limits to achieve compliance is conducted in Section 7.5.

A mechanical plant noise assessment should be conducted by a suitably qualified acoustic consultant once plant selections are finalised.

9 Conclusion

An environmental noise assessment was undertaken of the proposed residential development at 54 George Alexander Way, Coomera.

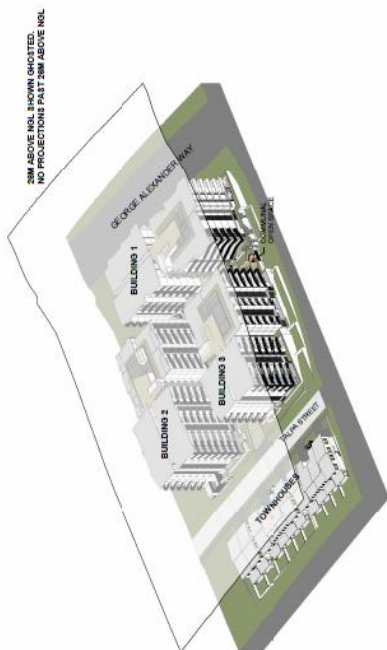
Compliance with the criteria outlined in Section 5 is predicted to be achieved based on the implementation of the recommendations outlined in Section 8 of this report.

Appendix A Sample of Development Plans



Site: 54 George Alexander Way, Coomera
Reference: 24GCA0090 R01_1

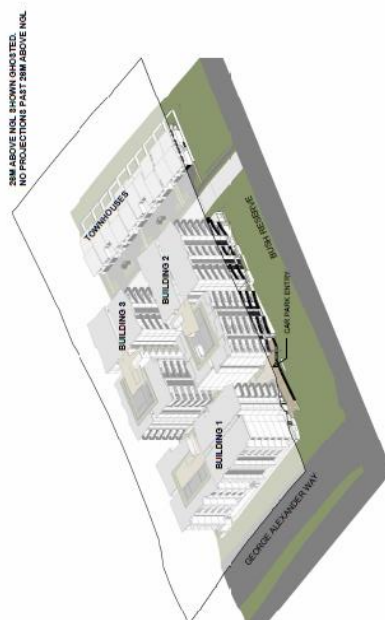
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Archipelago [®]		Coomera GA Pty Ltd ATF The Coomera GA Unit Trust		Rev	Info	Description	Drawn	Date	Scale	Project	24013	24 George Alexander Way 54 George Alexander Way Coomera QLD 4209 Australia	ISSUANCE TITLE	Proposed Stage 2 Site Plan 1:500	DATE PRINTED	1:500	DATE	15/05/2024	SCALE	1:500	PROJECT NO	AR-DA-007	REVISION	1



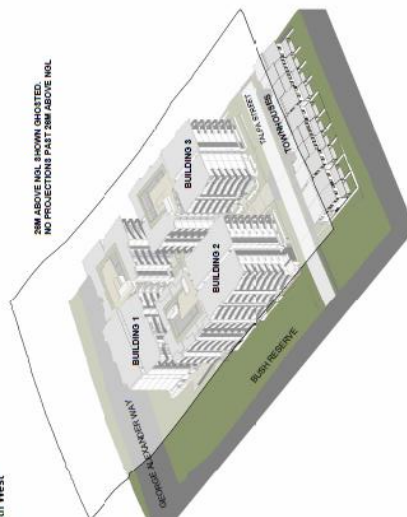
Axo - North East



Axo - North West



Axo - South West



Axo - South East



Archipelago 30 Queen Street, Brisbane QLD 4000 Ph: 07 3258 9955 - www.archipelago.com.au	Coomera GA Pty Ltd ATF The Coomera GA Unit Trust	Rev: 1 Date: 01/08/2024 Description: Manual Change of Use Appointed Date: 01/08/2024 54000001 - unclassified, scale 1:1000 (pdf sheet)	Project: 24013 54 George Alexander Way 54 George Alexander Way Coomera QLD 4205 Australia	Drawing Title: Overall Floor Plan - Level 0	Drawn by: DU Checked by: DU Scale: 1:200 Date: 01/08/2024	Development Approval Issue: 1 Revision: 1 Scale: 1:200 Date: 01/08/2024
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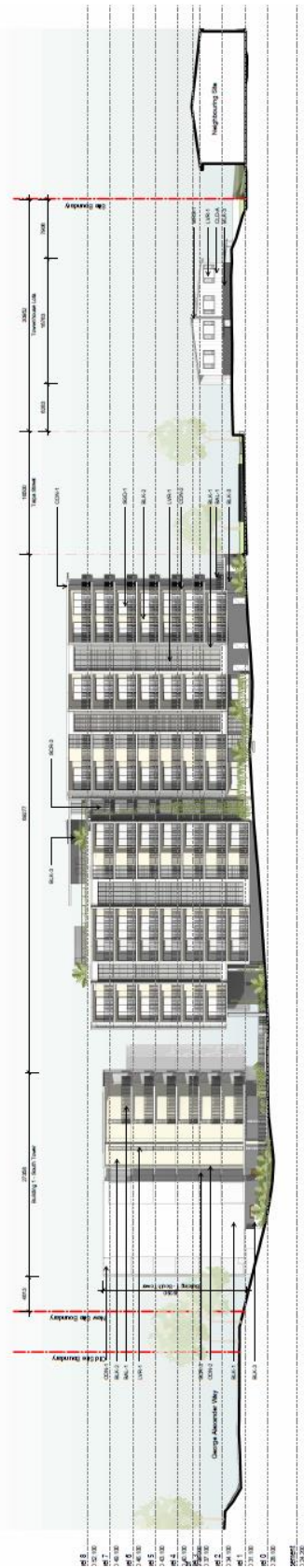


Archipelago				DEVELOPMENT APPROVAL			
Archipelago 20 Dwyer Street, Brisbane QLD 4000 T: 07 3261 4652 www.archipelago.com.au	Coomera GLA Pty Ltd ATF THE COOMERA QLT TRUST	Rev: 1 Date: 01.08.2024 Description: Overall Floor Plan - Level 1 Drawn by: J. Smith Checked by: J. Smith	Project: 24013 54 George Alexander Way Coomera QLD 4000 4000 Australia	Drawing Title: Overall Floor Plan - Level 1	Drawn by: J. Smith Date Printed: 1.08.2024 Scale: 1:200	Project: AR-DA-201 Revision: 1	Scale: 1:200 0 2 4 6 8 10 12 14 16 18 20

- MATERIALS & FINISHES LEGEND**
- BAL-1 Balustrade - Metal (Bronze)
 - BAL-2 Balustrade - Painted (White Coloured)
 - BAL-3 Balustrade - Painted (Dark Coloured)
 - BAL-4 Balustrade - Painted (Light Coloured)
 - BAL-5 Balustrade - Painted (Dark Coloured - Sealed)
 - BAL-6 Balustrade - Painted (Light Coloured)
 - BAL-7 Balustrade - Painted (Dark Coloured)
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 - BAL-100 Balustrade - Painted (Light Coloured)



1 Overall Elevation - North

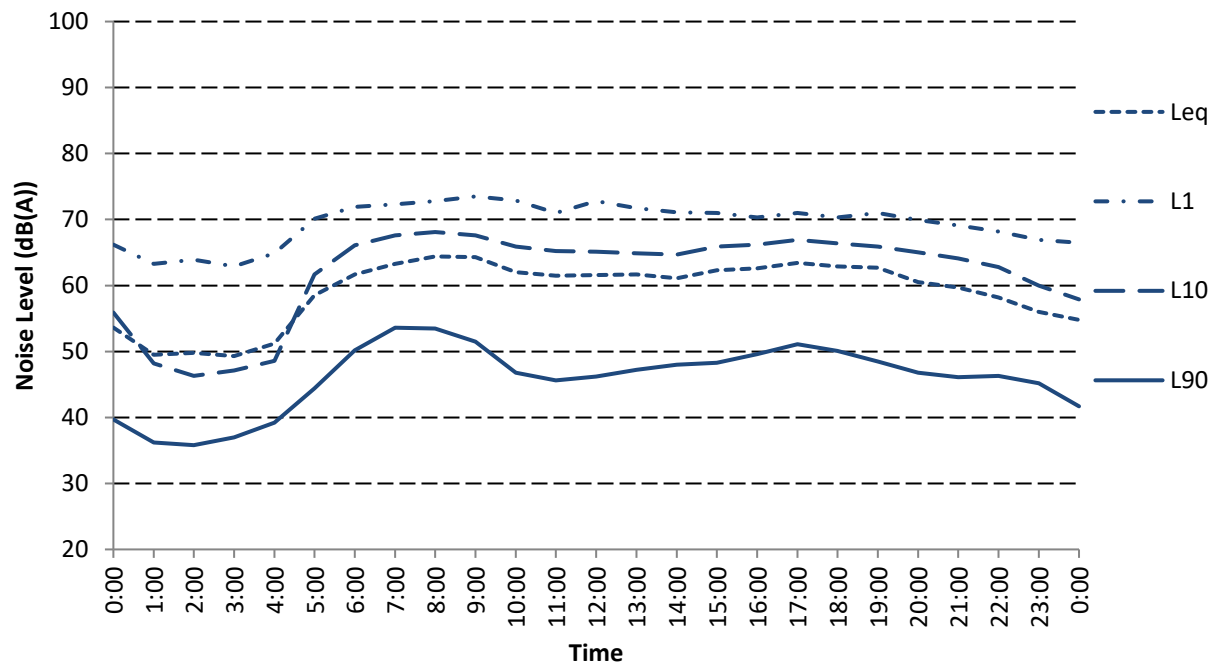


2 Overall Elevation South

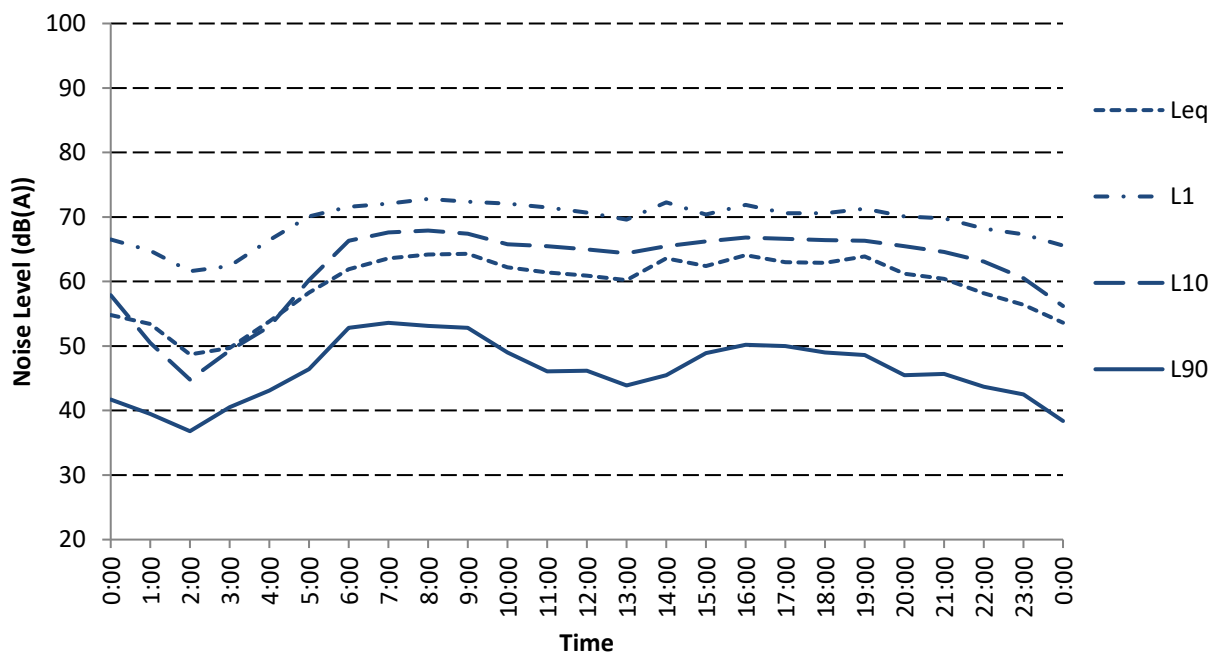
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Archipelago Macquarie Park, 25 Quakers Street, Endeavour QLD 4082 T +61 (0) 7 5236 4000 www.archipelago.com.au		Coomera GIA Pty Ltd ATF The Coomera GIA Unit Trust		1 CU Master Change of Use Application Issue		01.08.2024		24013 54 George Alexander Way 54 George Alexander Way Coomera QLD 4205 Australia		Elevations - Overall Site - North & South		DRAWS SIGNED DATE 15/08/2024 6:11:46 PM SCALE 1:200 BY CU		AR-DA-300		1	
																	
																	

Appendix B Unattended Noise Monitoring Graphs

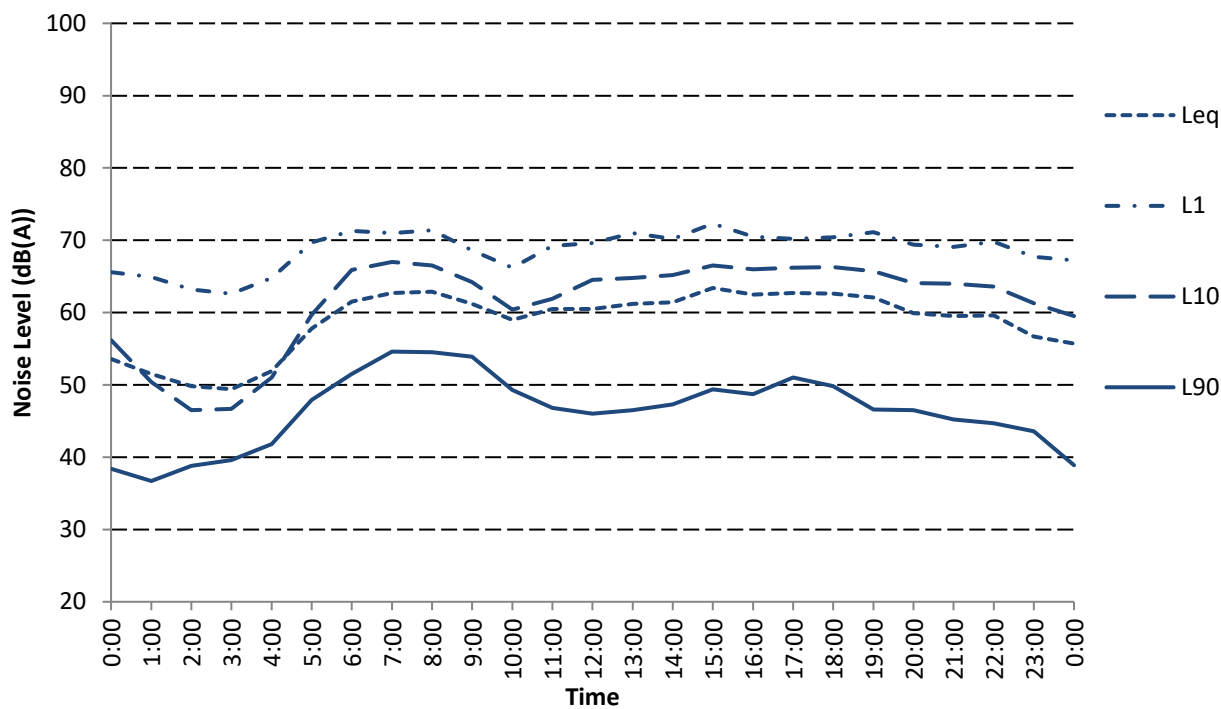
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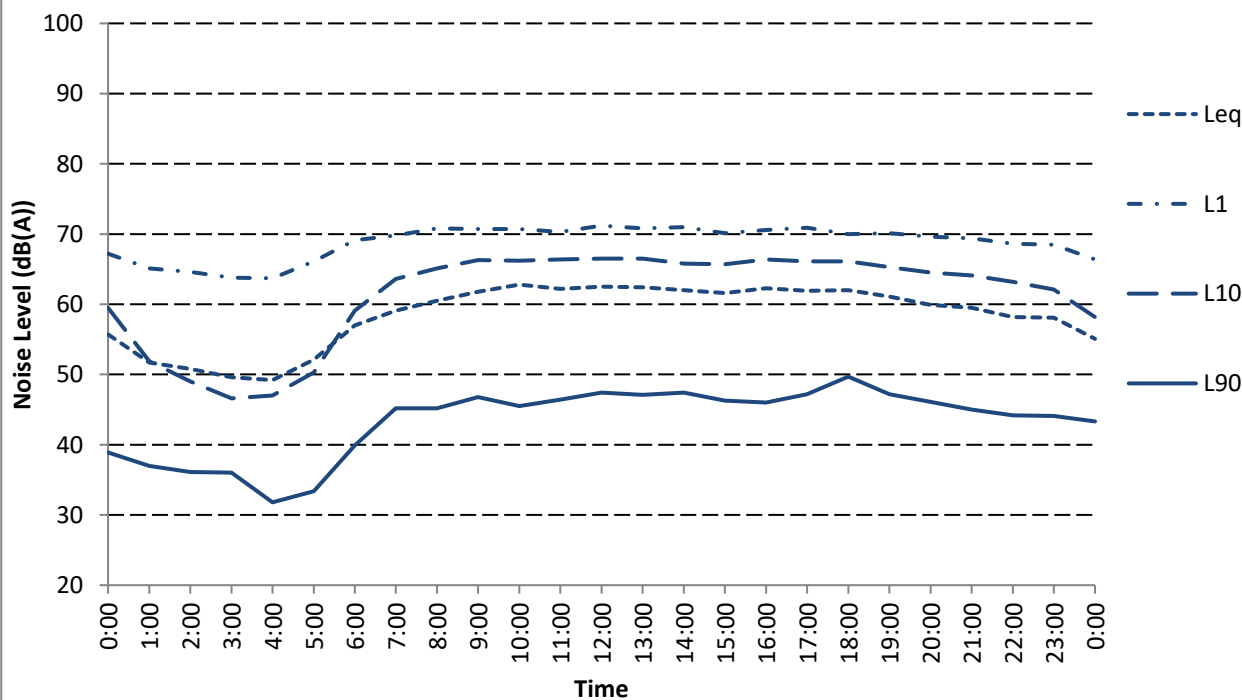
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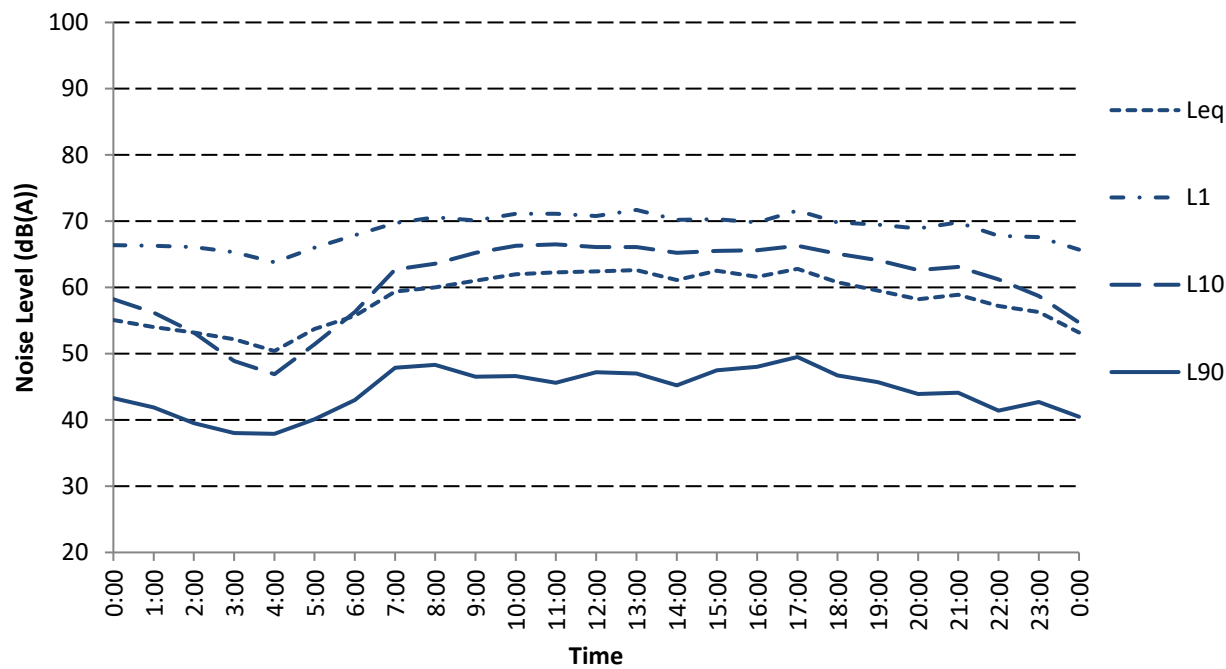
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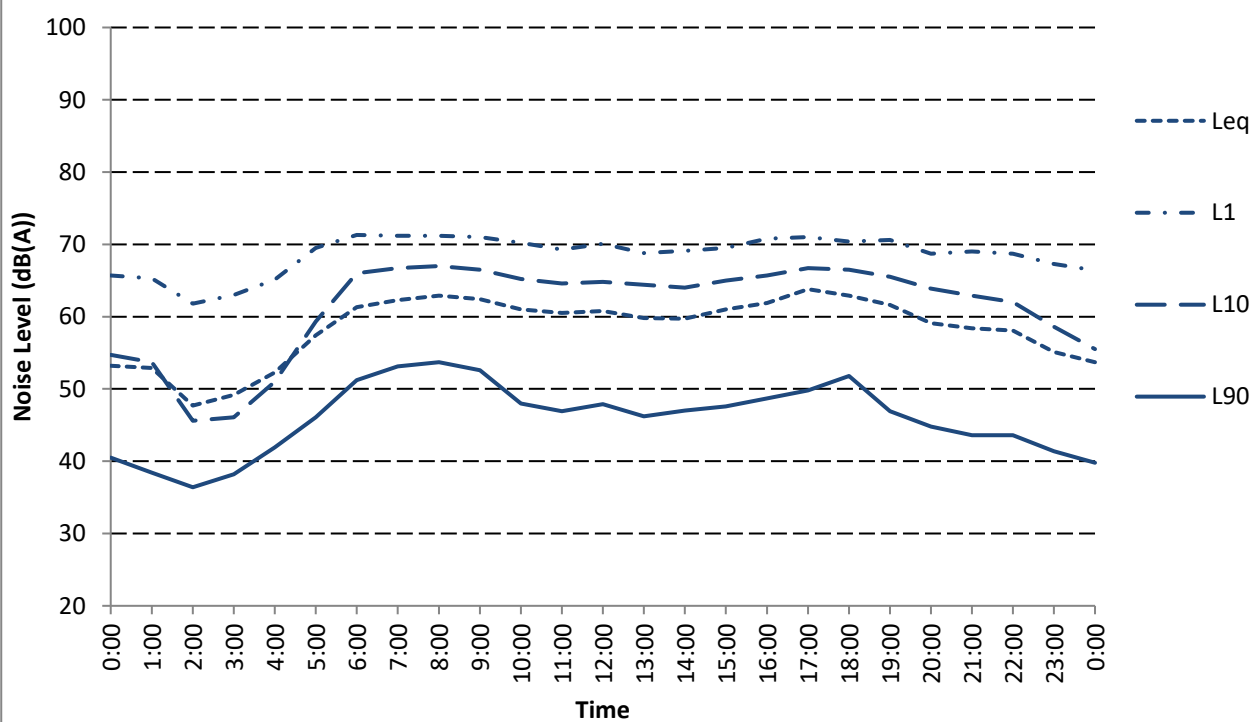
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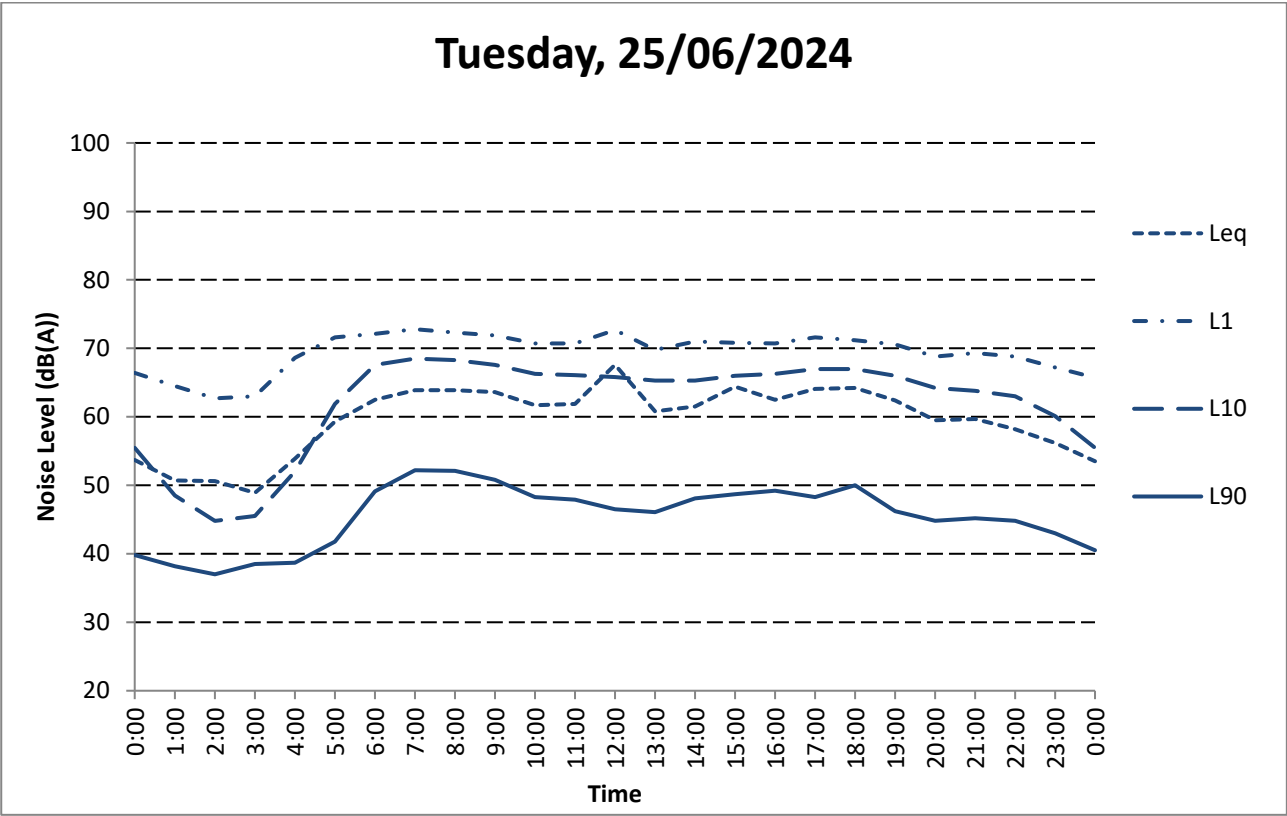


Sunday, 23/06/2024



Monday, 24/06/2024





Appendix C SoundPLAN Noise Model Outputs

54 George Alexander Way, Coomera
M02 - Logger Verification

Receiver	FI	Ground Height m	L10(18h) Free-Field dB(A)	
Logger 65.3dB(A)	GF	29.92	65.7	

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	TTM Consulting Pty Ltd	1
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SoundPLAN 9.0

54 George Alexander Way, Coomera
Assessed receiver levels
M03 - Future Prediction - Receivers

Receiver	Floor	Dir	L10(18h) Facade Corrected dB(A)
Building 1	GF	S	59.7
	F 1		61.8
	F 2		62.8
	F 3		63.3
	F 4		63.3
	F 5		63.3
Building 1	F 6	N	63.2
	GF		62.4
	F 1		63.2
	F 2		63.4
	F 3		63.3
	F 4		63.2
Building 1 - NE	F 5	E	63.0
	F 6		62.8
	GF		34.7
	F 1		35.0
	F 2		35.4
	F 3		36.9
Building 1 - NW	F 4	W	38.9
	F 5		41.7
	F 6		46.1
	GF		67.7
	F 1		68.7
	F 2		68.8
Building 1 - SE	F 3	E	68.6
	F 4		68.3
	F 5		67.9
	F 6		67.5
	GF		36.0
	F 1		36.5
Building 1 - SW	F 2	W	37.1
	F 3		38.6
	F 4		40.5
	F 5		43.0
	F 6		47.2
	GF		65.4
Building 2	F 1	N	68.1
	F 2		68.8
	F 3		68.6
	F 4		68.4
	F 5		68.0
	F 6		67.7
Building 2	GF	N	32.2

54 George Alexander Way, Coomera
Assessed receiver levels
M03 - Future Prediction - Receivers

Receiver	Floor	Dir	L10(18h) Facade Corrected dB(A)
Building 2	F 1	N	32.9
	F 2		33.7
	F 3		34.8
	F 4		36.3
	F 5		38.0
	F 6		40.2
	F 7		43.9
Building 2	GF	W	47.1
	F 1		47.6
	F 2		48.1
	F 3		48.5
	F 4		48.7
	F 5		48.9
	F 6		49.2
Building 2	F 7	S	50.1
	GF		55.8
	F 1		56.8
	F 2		57.4
	F 3		57.7
	F 4		58.0
	F 5		58.2
Building 2	F 6	S	58.5
	F 7		59.3
	GF		56.7
	F 1		57.6
	F 2		58.2
	F 3		58.7
	F 4		59.0
Building 2	F 5	E	59.3
	F 6		59.4
	F 7		59.5
	GF		53.4
	F 1		54.4
	F 2		55.1
	F 3		55.7
Building 2	F 4	E	56.2
	F 5		56.6
	F 6		56.9
	F 7		57.2
	GF		30.0
	F 1		30.0
	F 2		30.0
	F 3		30.6

54 George Alexander Way, Coomera
Assessed receiver levels
M03 - Future Prediction - Receivers

Receiver	Floor	Dir	L10(18h) Facade Corrected dB(A)
	F 4		32.3
	F 5		34.6
	F 6		37.8
	F 7		43.4
Building 3	GF	N	54.0
	F 1		54.7
	F 2		55.3
	F 3		55.7
	F 4		56.0
	F 5		56.3
	F 6		56.6
	F 7		56.8
Building 3	GF	N	56.9
	F 1		57.5
	F 2		58.1
	F 3		58.5
	F 4		58.8
	F 5		59.0
	F 6		59.0
	F 7		59.0
Building 3	GF	W	54.6
	F 1		55.3
	F 2		55.9
	F 3		56.4
	F 4		56.7
	F 5		56.8
	F 6		56.8
	F 7		57.0
Building 3	GF	S	33.0
	F 1		33.4
	F 2		34.0
	F 3		34.8
	F 4		36.0
	F 5		37.6
	F 6		39.7
	F 7		43.1
Building 3	GF	S	31.6
	F 1		31.9
	F 2		32.6
	F 3		33.6
	F 4		34.9
	F 5		36.6
	F 6		38.8

54 George Alexander Way, Coomera
Assessed receiver levels
M03 - Future Prediction - Receivers

Receiver	Floor	Dir	L10(18h) Facade Corrected dB(A)
Building 3	F 7	E	41.9
	F 1		29.9
	F 2		29.9
	F 3		30.6
	F 4		32.3
	F 5		34.5
	F 6		37.6
	F 7		42.2
T1	GF F 1		48.6 49.3
T2	GF F 1		47.6 48.3
T3	GF F 1		46.0 46.7
T4	GF F 1		44.2 44.8
T5	GF F 1		40.6 41.3
T6	GF F 1		36.3 37.1
T7	GF F 1		37.7 38.7
T8	GF F 1		40.5 41.7
T9	GF F 1		44.5 45.5
T10	GF F 1		46.8 47.9

Appendix D Onsite Noise Calculation Examples

Onsite AQO Noise Predictions

Noise Source	Duration	Leq	Leq 1 hour	Distance from Noise Source to Receivers			
				R1	R2	R3	R4
				North	South	Onsite	
Car door closure	2	75	42	50	60	5	
Car bypass	6	69	41	50	60	10	
Car engine	3	72	41	50	60	5	
Conversations	900	65	59	60	40	6	
Unloading a delivery vehicle	60	80	62	60	55	8	
Waste collection	40	93	73	130	30	8	
Noise level after Distance loss							
Car door closure				8	7	28	#NUM!
Car bypass				7	6	21	#NUM!
Car engine				7	6	27	#NUM!
Conversations				23	27	43	#NUM!
Unloading a delivery vehicle				27	27	44	#NUM!
Waste collection				31	44	55	#NUM!
	0			#NUM!	#NUM!	#NUM!	#NUM!
Shielding Losses							
Car door closure				25	25	25	0
Car bypass				0	0	0	0
Car engine				25	25	25	0
Conversations				0	0	0	0
Unloading a delivery vehicle				0	0	0	0
Waste collection				20	0	0	0
	0			0	0	0	0
Noise at Receiver after Shielding							
				R1	R2	R3	R4
Car door closure				-17	-18	3	#NUM!
Car bypass				7	6	21	#NUM!
Car engine				-18	-19	2	#NUM!
Conversations				23	27	43	#NUM!
Unloading a delivery vehicle				27	27	44	#NUM!
Waste collection				11	44	55	#NUM!
	0			#NUM!	#NUM!	#NUM!	#NUM!
CALCULATION for number of events							
Activity	Events	Duration		R1	R2	R3	R4
Car door closure	324	2		7	5	720	#NUM!
Car bypass	162	6		858	596	21447	#NUM!
Car engine	162	3		3	2	271	#NUM!
Conversations	4	900		878	1976	87841	#NUM!
Unloading a delivery vehicle	2	60		926	1102	52083	#NUM!
Waste collection	2	40		26	49266	692799	#NUM!
	0			#NUM!	#NUM!	#NUM!	#NUM!
Noise Level at Receiver							
				R1	R2	R3	R4
Car door closure				9	7	29	#NUM!
Car bypass				29	28	43	#NUM!
Car engine				4	3	24	#NUM!
Conversations				29	33	49	#NUM!
Unloading a delivery vehicle				30	30	47	#NUM!
Waste collection				14	47	58	#NUM!
TOTAL NOISE				32	34	50	#NUM!

Appendix E Schedule 1 & 2 of QDC MP4.4

Schedule 1

Noise category	Minimum transport noise reduction (dB (A)) required for habitable rooms	Component of building's external envelope	Minimum R_w required for each component
Category 4	40	Glazing	43
		External walls	52
		Roof	45
		Floors	51
		Entry doors	35
Category 3	35	Glazing	38 (where total area of glazing for a <i>habitable room</i> is greater than 1.8m ²)
			35 (where total area of glazing for a <i>habitable room</i> is less than or equal to 1.8m ²)
		External walls	47
		Roof	41
		Floors	45
		Entry doors	33

Version 1.1

Page 7

Publication Date: 17 August 2015

Noise category	Minimum transport noise reduction (dB (A)) required for habitable rooms	Component of building's external envelope	Minimum R_w required for each component
Category 2	30	Glazing	35 (where total area of glazing for a <i>habitable room</i> is greater than 1.8m ²)
			32 (where total area of glazing for a <i>habitable room</i> is less than or equal to 1.8m ²)
		External walls	41
		Roof	38
		Floors	45
		Entry doors	33
Category 1	25	Glazing	27 (where total area of glazing for a <i>habitable room</i> is greater than 1.8m ²)
			24 (where total area of glazing for a <i>habitable room</i> is less than or equal to 1.8m ²)
		External walls	35
		Roof	35
		Entry Doors	28
Category 0	No additional acoustic treatment required – standard building assessment provisions apply.		

Version 1.1

Page 8

Publication Date: 17 August 2015

Schedule 2

Component of building's external envelope	Minimum R_w	Acceptable forms of construction
Glazing	43	Double glazing consisting of two panes of minimum 5mm thick glass with at least 100mm air gap and full perimeter <i>acoustically rated seals</i> .
	38	Minimum 14.38mm thick laminated glass, with full perimeter <i>acoustically rated seals</i> ; OR Double glazing consisting of one pane of minimum 5mm thick glass and one pane of minimum 6mm thick glass with at least 44mm air gap, and full perimeter <i>acoustically rated seals</i>
	35	Minimum 10.38mm thick laminated glass, with full perimeter <i>acoustically rated seals</i> .
	32	Minimum 6.38mm thick laminated glass with full perimeter <i>acoustically rated seals</i> .
	27	Minimum 4mm thick glass with full perimeter <i>acoustically rated seals</i>
	24	Minimum 4mm thick glass with standard weather seals

Version 1.1

Page 9

Publication Date: 17 August 2015

Component of building's external envelope	Minimum R_w	Acceptable forms of construction
External walls	52	Two leaves of clay brick masonry, at least 270mm in total, with subfloor vents fitted with noise attenuators.
	47	Two leaves of clay brick masonry at least 110mm thick with: (i) cavity not less than 50mm between leaves; and (ii) 50mm thick mineral insulation or 50mm thick glass wool insulation with a density of 11kg/m ³ or 50mm thick polyester insulation with a density of 20kg/m ³ in the cavity. OR Two leaves of clay brick masonry at least 110mm thick with: (i) cavity not less than 50mm between leaves; and (ii) at least 13mm thick cement render on each face OR Single leaf of clay brick masonry at least 110mm thick with: (i) a row of at least 70mm x 35mm timber studs or 64mm steel studs at 600mm centres, spaced at least 20mm from the masonry wall; and (ii) Mineral insulation or glass wool insulation at least 50mm thick with a density of at least 11 kg/m ³ positioned between studs; and (iii) One layer of plasterboard at least 13mm thick fixed to outside face of studs. OR Single leaf of minimum 150mm thick masonry of hollow, dense concrete blocks, with mortar joints laid to prevent moisture bridging.

Version 1.1

Page 10

Publication Date: 17 August 2015

Component of building's external envelope	Minimum R_w	Acceptable forms of construction
	41	Two leaves of clay brick masonry at least 110mm thick with cavity not less than 50mm between leaves OR Single leaf of clay brick masonry at least 110mm thick with: (i) a row of at least 70mm x 35mm timber studs or 64mm steel studs at 600mm centres, spaced at least 20mm from the masonry wall; and (ii) mineral insulation or glass wool insulation at least 50mm thick with a density of at least 11 kg/m³ positioned between studs; and (iii) One layer of plasterboard at least 10mm thick fixed to outside face of studs OR Single leaf of brick masonry at least 110mm thick with at least 13mm thick render on each face OR Concrete brickwork at least 110mm thick OR In-situ concrete at least 100mm thick OR Precast concrete at least 100mm thick and without joints.

Version 1.1 Page 11 Publication Date: 17 August 2015

Component of building's external envelope	Minimum R_w	Acceptable forms of construction
	35	Single leaf of clay brick masonry at least 110mm thick with: (i) a row of at least 70mm x 35mm timber studs or 64mm steel studs at 600mm centres, spaced at least 20mm from the masonry wall; and (ii) One layer of plasterboard at least 10mm thick fixed to outside face of studs OR Minimum 6mm thick fibre cement sheeting or weatherboards or plank cladding externally, minimum 90mm deep timber stud or 92mm metal stud, standard plasterboard at least 13mm thick internally.
Roof	45	Concrete or terracotta tile or sheet metal roof with sarking, <i>acoustically rated plasterboard</i> ceiling at least 13mm thick fixed to ceiling joists, cellulose fibre insulation at least 100mm thick with a density of at least 45kg/m³ in the cavity. OR Concrete or terracotta tile or sheet metal roof with sarking, 2 layers of <i>acoustically rated plasterboard</i> at least 16mm thick fixed to ceiling joists, glass wool insulation at least 50mm thick with a density of at least 11kg/m³ or polyester insulation at least 50mm thick with a density of at least 20kg/m³ in the cavity.
	41	Concrete or terracotta tile or metal sheet roof with sarking, plasterboard ceiling at least 10mm thick fixed to ceiling joists, glass wool insulation at least 50mm thick with a density of at least 11kg/m³ or polyester insulation at least 50mm thick with a density of at least 20kg/m³ in the cavity. OR Concrete suspended slab at least 100mm thick.
	38	Concrete or terracotta tile or metal sheet roof with sarking, plasterboard ceiling at least 10mm thick fixed to ceiling cavity, mineral insulation or glass wool insulation at least 50mm thick with a density of at least 11 kg/m³.

Version 1.1 Page 12 Publication Date: 17 August 2015

Component of building's external envelope	Minimum R_w	Acceptable forms of construction
	35	Concrete or terracotta tile or metal sheet roof with sarking, plasterboard ceiling at least 10mm thick fixed to ceiling cavity.
Floors	51	Concrete slab at least 150mm thick.
	45	Concrete slab at least 100mm thick OR Tongued and grooved boards at least 19mm thick with: (i) timber joists not less than 175mm x 50mm; and (ii) mineral insulation or glass wool insulation at least 75mm thick with a density of at least 11kg/m ³ positioned between joists and laid on plasterboard at least 10mm thick fixed to underside of joists; and (iii) mineral insulation or glass wool insulation at least 25mm thick with a density of at least 11kg/m ³ laid over entire floor, including tops of joists before flooring is laid; and (iv) secured to battens at least 75mm x 50mm; and (v) the assembled flooring laid over the joists, but not fixed to them, with battens lying between the joists.
Entry Doors	35	Solid core timber not less than 45mm thick, fixed so as to overlap the frame or rebate of the frame by not less than 10mm, with full perimeter <i>acoustically rated seals</i> .
	33	Fixed so as to overlap the frame or rebate of the frame by not less than 10mm, fitted with full perimeter <i>acoustically rated seals</i> and constructed of - (i) solid core, wood, particleboard or blockboard not less than 45mm thick; and/or (ii) acoustically laminated glass not less than 10.38mm thick.

Version 1.1 Page 13 Publication Date: 17 August 2015

Component of building's external envelope	Minimum R_w	Acceptable forms of construction
	28	Fixed so as to overlap the frame or rebate of the frame, constructed of - (i) Wood, particleboard or blockboard not less than 33mm thick; or (ii) Compressed fibre reinforced sheeting not less than 9mm thick; or (iii) Other suitable material with a mass per unit area not less than 24.4kg/m ² ; or (iv) Solid core timber door not less than 35mm thick fitted with full perimeter <i>acoustically rated seals</i> .

Version 1.1 Page 14 Publication Date: 17 August 2015



Transport Engineering Report

54 George Alexander Way, Coomera

Proposed ROL and Multiple Dwelling
Development



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For 40 years, we’ve been at the centre of the Australian development and infrastructure industry. Our unique combination of acoustics, data, traffic and waste services is fundamental to the success of any architectural or development project.

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Revision Record

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Contents

1. Introduction	5
1.1. Purpose	5
1.2. Scope.....	5
2. Site Location.....	6
3. The Proposed Development.....	7
3.1. Development Profile	7
3.2. Internal Road Network	8
3.3. Access Arrangements	8
3.4. Servicing Arrangements	8
3.5. Parking Arrangements.....	8
3.6. Active Transport	9
4. Site Travel Environment.....	10
4.1. The Road Network.....	10
4.2. Transport Planning	10
4.3. Public Transport Facilities and Services.....	10
4.3.1. Train Services	10
4.3.2. Bus Services.....	11
4.4. Active Transport Facilities	11
4.4.1. Bicycles.....	11
4.4.2. Pedestrians.....	12
5. Internal Road Network.....	13
6. Access Arrangements	14
6.1. Lot 1 Site Access	14
6.2. Lot 2 Townhouse Driveway Locations	14
7. Parking Arrangements	15
7.1. Parking Supply	15
7.1.1. Car parking	15
7.2. Parking Layout.....	15
8. Service Vehicle Arrangements.....	18
8.1. Council Requirements	18

8.2.	Proposed Loading Provisions.....	18
8.3.	Turnaround Treatments.....	18
9.	Development Transport Demands	19
9.1.	Traffic generation and distribution.....	19
9.2.	Utilisation of the spare capacity of surrounding road network.....	20
9.3.	Utilisation of Talpa Street as Site Access Point.....	21
10.	Active Transport	22
10.1.	Bicycle Parking.....	22
10.2.	Pedestrians.....	22
11.	Summary and Conclusions	23
11.1.	Parking Arrangements.....	23
11.2.	Service Vehicle Arrangements.....	23
11.3.	Traffic Impact Assessment	23
11.4.	Conclusion	23
Appendix A	Development Plans.....	24
Appendix B	TTM Drawings	1
Appendix C	Code Responses	2

Table Index

Table 3.1: Proposed land uses	8
Table 4.1: Surrounding Road Hierarchy	10
Table 5.1: Geometric details and capacity of each road category	13
Table 6.1: Lot 1 Access Arrangements	14
Table 7.1: Council Car Parking Supply Requirement	15
Table 7.2: Council Parking Design Requirements.....	16
Table 9.1: Traffic generation rate for residential development	19
Table 9.2: Traffic distribution from the existing lots to the surrounding roads	20
Table 9.3: Available Spare capacity of accommodating traffic by each road in the surrounding road network	20
Table 10.1: Council Bicycle Parking Supply Requirement.....	22
Table 10.2: Austroads Bicycle Parking Supply Rates	22

Figure Index

Figure 2.1: Site location (Source: Nearmap)	6
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Figure 3.1: Proposed ROL plans 7

Figure 4.1: DTMR SEQ Principal Cycle Network Plan..... 11

Figure 4.2: DTMR SEQ Principal Cycle Network Plan (addendum) 12

Figure 9.1: Typical Cross Section of the road as per Council’s Standard Drawings 13

Figure 7.1: Tandem bay minor linemarking recommendation..... 16

Figure 9.1: Segment of each road in the surrounding road network considered for assessment. 19

1. Introduction

1.1. Purpose

TTM Consulting Pty Ltd (TTM) has been engaged to prepare a transport assessment report investigating a proposed multiple dwelling and reconfiguring a lot (ROL) development at 54 George Alexander Way, Coomera. It is understood this report will accompany a Development Application to be lodged with City of Gold Coast (CoGC) Council.

1.2. Scope

The scope of the transport aspects investigated includes:

- Reviewing the prevailing traffic and transport conditions surrounding the site.
- Identifying parking supply required to cater for development demands.
- Assessing the parking layout to provide efficient and safe internal circulation and manoeuvring.
- Assessing the access configuration to provide efficient and safe manoeuvring between the site and the public road network for cars, service vehicles, cyclists and pedestrians.
- Identifying the service vehicle needs for the site
- Assessing the internal service vehicle layouts to provide efficiency and safety for on-site service vehicle operation
- Reviewing access to a suitable level of public and active transport provisions.
- Identification of likely traffic volumes and traffic distribution from the development.
- Identification of likely traffic impacts of development on the surrounding road network.

The development plans have been assessed against the following guidelines and planning documents:

- City of Gold Coast Council's City Plan City Plan (2016)
- Queensland State Development and Assessment Provisions (SDAP)
- Australian Standards for Parking Facilities
- Council Standard Drawings
- Department of Transport and Main Roads 'Guide to Traffic Impact Assessment' (GTIA)

2. Site Location

The site is located within the western portion of 54 George Alexander Way, Coomera, as shown in Figure 2.1. The site has road frontages to George Alexander Way and Talpa Street. The property description is Lot 96 on RP187418.



Figure 2.1: Site location (Source: Nearmap)

3. The Proposed Development

3.1. Development Profile

The proposed development is for a 1 in to 2 ROL and multiple dwelling development over Lot 1 that comprises three multi-storey buildings comprising 206 apartments and 10 townhouses over Lot 2. The proposed subdivision is shown in Figure 3.1 below.

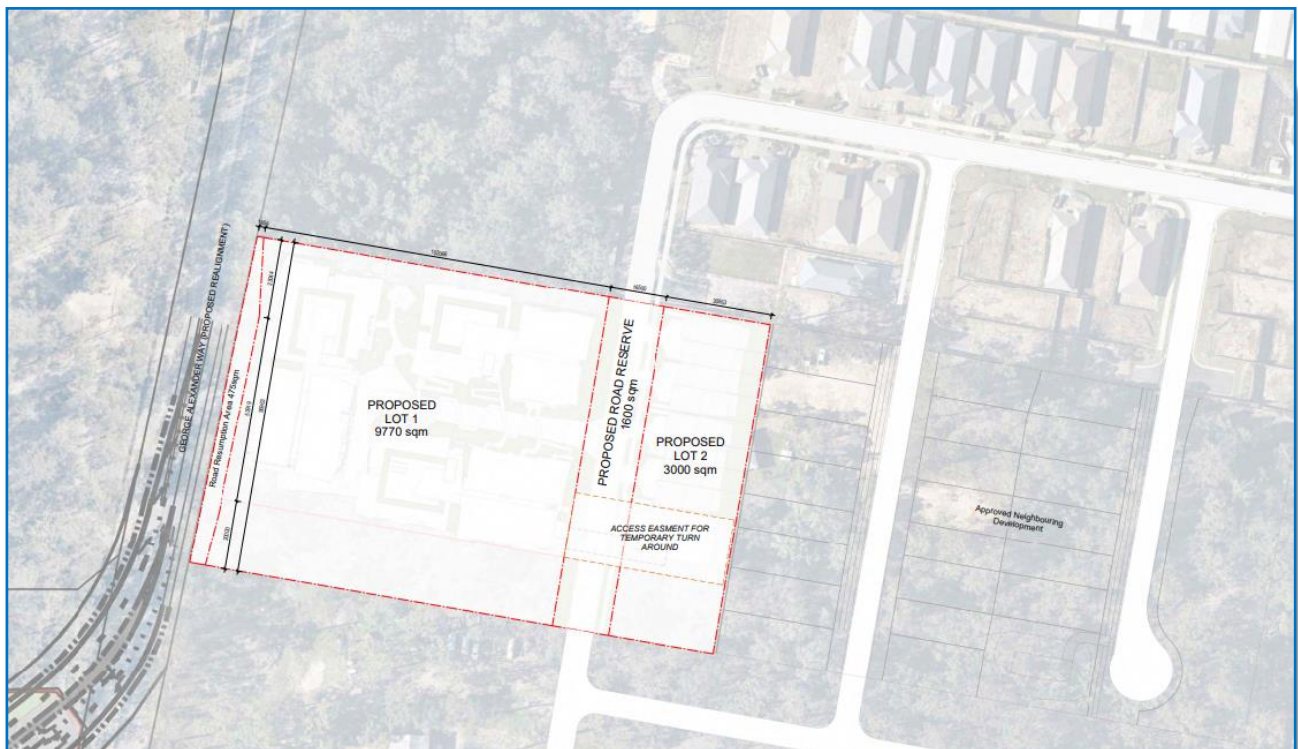


Figure 3.1: Proposed ROL plans

The development is anticipated to be undertaken over two stages, described as follows:

- Stage 1 – development of Lot 1 and Lot 2 except for 2 townhouses. A temporary turnaround on Talpa Street will be provided at the end of the proposed road extension in lieu of these townhouses
- Stage 2 – The final 2 townhouses to be developed and Talpa Street extension continues past the site to the south by others

The proposed land uses and breakdown for the ultimate development are summarised in Table 3.1.

Table 3.1: Proposed land uses

Land Use	Area/Qty
Multiple Dwelling on Lot 1s:	
• 1 Bedroom	27
• 2 Bedroom	159
• 3 Bedroom	20
Townhouses on Lot 2	10

A copy of the development plans is included in **Appendix A**.

3.2. Internal Road Network

The proposed development includes a road network extension to the Talpa Street in the ultimate arrangement. A road reserve width of 16.5m will be provided.

A temporary turnaround for refuse vehicles is to be provided within the site bounds until the future lots are developed to the south.

Further details regarding the proposed road network provisions are included in **Section 5**.

3.3. Access Arrangements

The development plan includes an 8.0m wide General wide flared driveway access to the proposed Talpa Street extension. This access will accommodate all turn movements.

Each townhouse will have direct access and will be provided to Talpa Street extension. Driveway crossovers will be spaced a minimum of 7.0m between each other to accommodate on-street parking.

Further details regarding the proposed access arrangements are included in **Section 6**.

3.4. Servicing Arrangements

The development plan caters for occasional access for vehicles up to the size of an RCV and regular access for vehicles up to the size of a SRV and MRV.

Further details regarding the proposed servicing arrangements are included in **Section 7**.

3.5. Parking Arrangements

The development plan includes the following parking supply:

- Lot 1 Apartments
 - 259 resident spaces located in basement and at-grade
 - 24 visitor spaces located at-grade

- 7 motorcycle spaces located at-grade
- Lot 2 Townhouses
 - 20 resident spaces
 - 10 visitor spaces

Further details regarding the proposed car parking provisions are included in **Section 8**.

3.6. Active Transport

The development plan includes the following bicycle parking supply:

- 70 resident bicycle spaces
- 18 visitor bicycle spaces
- 30 e-bike/scooter spaces

Footpaths on both sides of the Talpa Street extension is to be provided. A shared internal driveway is to be provided within Lot 1.

Further details regarding the proposed active transport arrangements are included in **Section 10**.

4. Site Travel Environment

4.1. The Road Network

The hierarchy and characteristics of roads in the immediate vicinity of the site are shown in Table 4.1.

Table 4.1: Surrounding Road Hierarchy

Road	Speed Limit	Road Configuration	Classification
George Alexander Way	60km/h	2 lanes divided, marked with shared on-street pedestrian/cycle lane	Local road
Talpa Street	50km/h ¹	2 lanes unmarked	Local road
Bailer Street	50km/h ¹	2 lanes unmarked	Local road
Seagreen Drive	50km/h ¹	2 lanes unmarked	Local road
Finnegan Way	60 kph	2 lanes marked with on-street parking and bicycle lanes	Distributor road

¹Default speed limit on unsigned roads in built up areas in Queensland.

The intersection of George Alexander Way and Foxwell Road is signalised, and the intersection of Finnegan Way and Seagreen Drive is a roundabout controlled intersection.

4.2. Transport Planning

A review of the State's Development Assessment Mapping System (DAMS) indicates that there are no planned upgrades within the immediate vicinity of the site.

It is understood that Council has plans to upgrade the George Alexander Way road corridor in the vicinity of the site under the following items:

- LGIP item TRN_RD_0018 described as Coomera Town Centre Road B with an establishment cost of \$67,925,861 and estimated timing of 2036
- LGIP item TRN_RD_0019 described as Coomera Town Centre Road H with an establishment cost of \$6,225,076 and estimated timing of 2031
- LGIP item TRN_RD_0024 described as Coomera Town Centre Road C with an establishment cost of \$3,679,145 and estimated timing of 2026

4.3. Public Transport Facilities and Services

4.3.1. Train Services

The site is located in close proximity to the Coomera train station, which is approximately 1 km walking distance from the site to the west. This station services the Gold Coast – Airport line.

The Gold Coast – Airport line runs between Varsity Lakes and Brisbane Airport via Brisbane. This service runs on all days, with weekday peak hour frequencies of 15 minutes and off-peak frequencies of 30 minutes.

4.3.2. Bus Services

The site is located in close proximity to a pair of local bus stops on Finnegan Way approximately 600m walk from the site to the east. These bus stops services Translink Routes 722.

Route 722 runs between Ormeau Station and Coomera Station. This service runs on all days, with weekday peak hour frequencies of 15 minutes and off-peak frequencies of 30 minutes.

4.4. Active Transport Facilities

4.4.1. Bicycles

Within the vicinity of the site, George Alexander Way provide cycle provisions in the form of shared dedicated on-road treatments. Foxwell Road provides on-road bicycle lanes.

TTM has also reviewed DTMR's SEQ Principal Cycle Network of which Foxwell Road forms part of the SEQ Principal route with route priority level A.

Extracts from DTMR's Principal Cycle Network Plans are provided in Figure 4.2 and Figure 4.2 below.

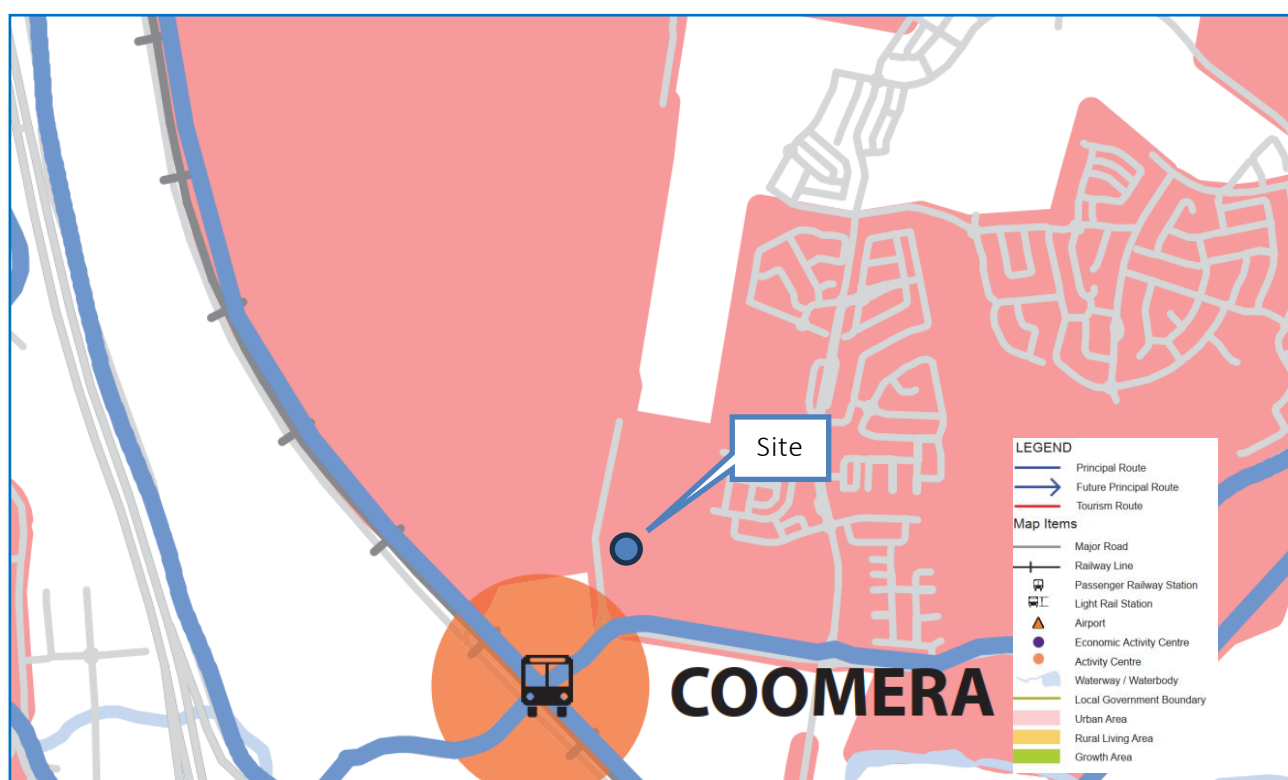


Figure 4.1: DTMR SEQ Principal Cycle Network Plan

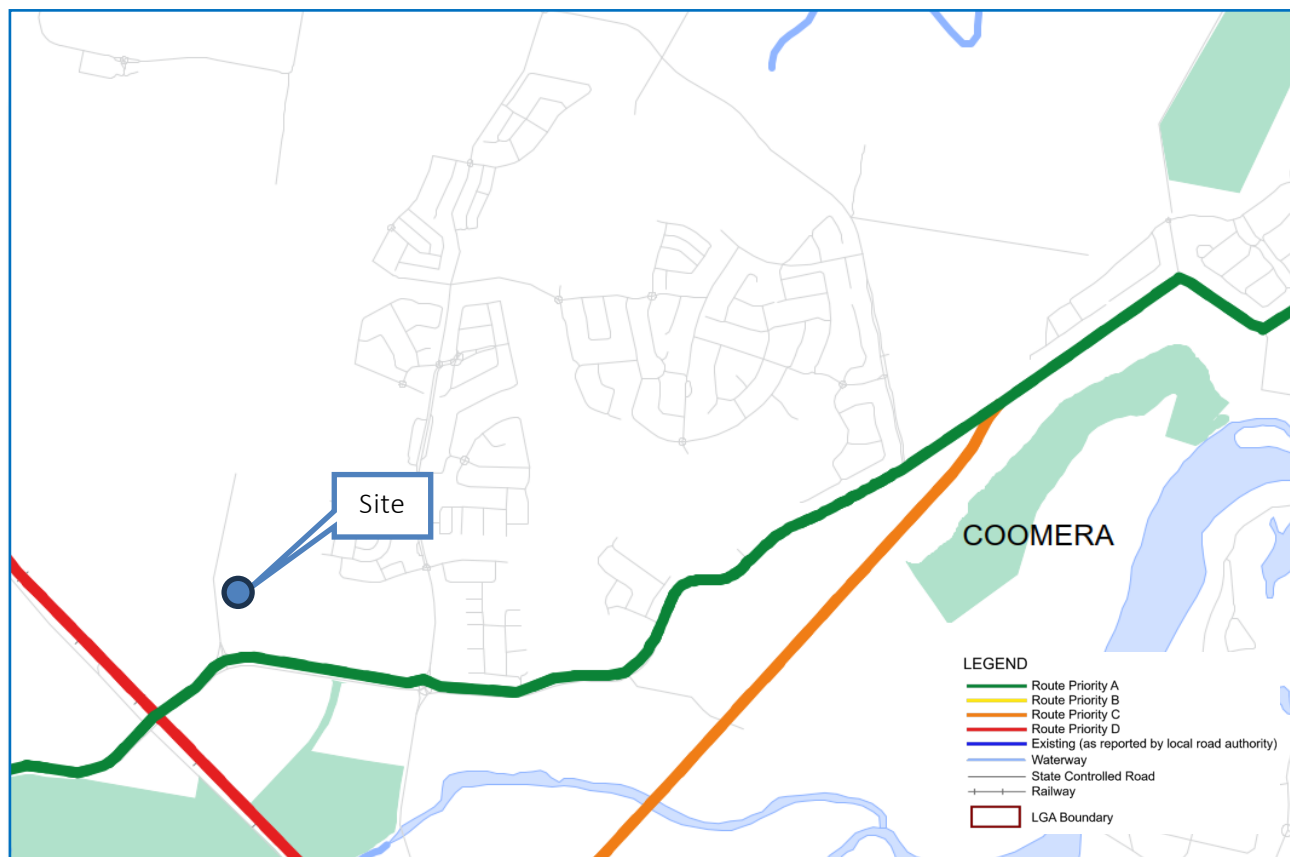


Figure 4.2: DTMR SEQ Principal Cycle Network Plan (addendum)

4.4.2. Pedestrians

Formal pedestrian footpaths are located on the northern and southern side of Talpa Street in certain locations. There are no in off road footpaths on George Alexander Way albeit a shared on-road dedicated bicycle / pedestrian path is provided.

5. Internal Road Network

With respect to the proposed lot configuration and road reserve, the City of Gold Coast Land Development Guidelines and Standard Drawings for Typical Cross Sections provide the geometric details and daily traffic volume capacities for each road category. Table 5.1 provides the details for each road category.

Table 5.1: Geometric details and capacity of each road category

Road	Road Width (m)	Minimum Road Reserve (m)	Minimum verge width on both sides (m)	Capacity (daily traffic volume) (vpd)
Residential Access Street	7.5	16.5	4.5	0 - 750
Residential Collector Street	7.5	16.5	4.5	751 - 3,000

According to the Council's development guidelines, an access road caters to local access for individual dwellings/premises and localised pedestrian and cyclist movements. A collector road provides access to local access streets for localised vehicle, pedestrian, and cyclist movements.

The following figures illustrate the typical cross-sections of the above-mentioned road categories.

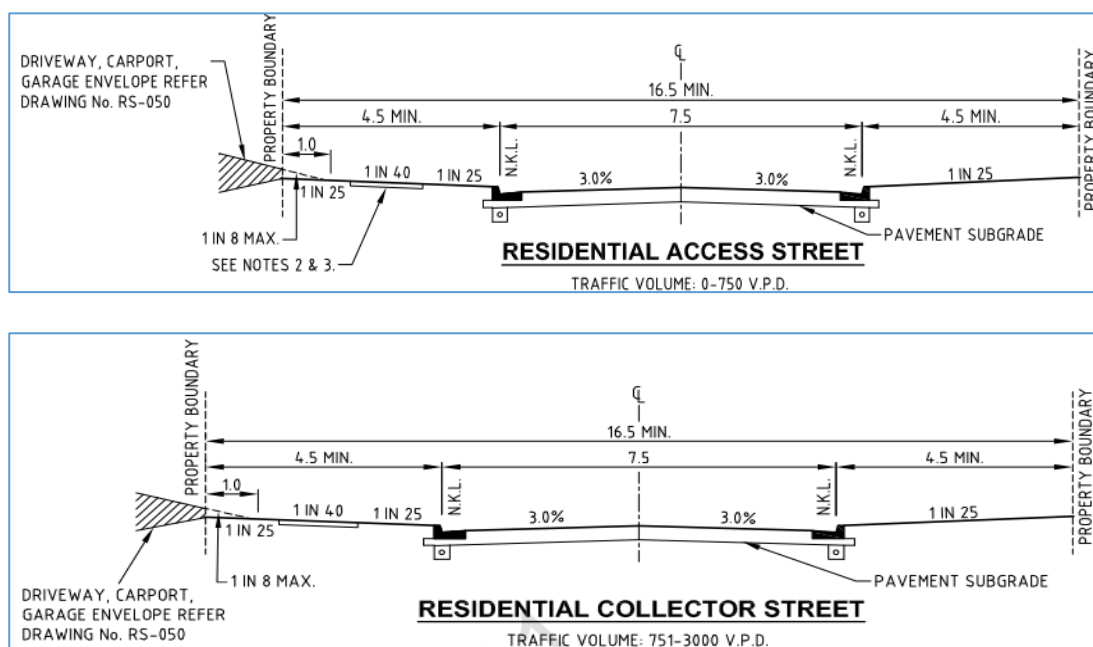


Figure 5.1: Typical Cross Section of the road as per Council's Standard Drawings

The proposed Talpa Street extension will include a 16.5m wide road reserve.

6. Access Arrangements

The development plan includes the following access arrangements:

- Lot 1 will be access via an 8.0m wide general wide flared driveway access from Talpa Street extension on the eastern side of Lot 1.
- Each townhouse will be provided with a shared driveway

Further details in relation to the design provisions of each access is provided as follows.

6.1. Lot 1 Site Access

The design provisions of the Lot 1 access and the respective provisions of the Council requirements are detailed in Table 6.1.

Table 6.1: Lot 1 Access Arrangements

Design Aspect	Council Requirement	Proposed Provision	Compliance
Width / Crossover Type	6.0m – 9.0m wide driveway general wide flared in accordance with IPWEAQ RS-051	8.0m wide driveway general wide flared in accordance with IPWEAQ RS-051	Compliant
Distance from: • minor intersection • adjacent driveway	6m (min) 3m (min)	Approximately 180m Approximately 100m	Compliant Compliant
Driveway Sight Splays	2.0m wide x 2.5m deep	2.0m wide x 2.5m deep	Compliant
Maximum Driveway grade	1:20 (5%) maximum within first 6m	1:20 (5%) maximum within first 6m (min)	Compliant

Overall, the proposed Lot 1 access is designed generally in accordance with Council requirements.

6.2. Lot 2 Townhouse Driveway Locations

The specific locations of driveways will be resolved as required as part of Operations Works to minimise conflicts with adjacent road features. As per Council's requirements, each shared townhouse driveway will be spaced approximately 7.0m apart which will cater for on-street car parking between driveways.

7. Parking Arrangements

7.1. Parking Supply

7.1.1. Car parking

The car parking supply requirements for the proposed development land uses have been determined in line with Australian Standards.

Table 7.1 provides a summary of the parking supply requirements in line with Council requirements, and the proposed provisions, for the development scheme.

Table 7.1: Council Car Parking Supply Requirement

Land Use / Component	Council Requirement	Extent	Requirement	Provision
Lot 1				
Multiple Dwelling (Residents):				
• 1 Bedroom	1 space/unit	27 units	256 resident spaces	259 resident spaces
• 2 Bedrooms	1.25 spaces/unit	159 units		7 motorcycle (MC) spaces
• 3 Bedrooms	1.5 spaces/unit	20 units		24 visitor spaces
Multiple Dwelling (Visitors)	3 spaces plus 0.10 spaces/unit	206 units	24 visitor spaces	
Total			276 spaces	283 spaces + 7 MC Spaces
Lot 2				
Multiple Dwelling (Residents):				
• 3 Bedrooms	1.5 spaces/unit	6	17 spaces	20 resident spaces
• 4 Bedrooms	2 spaces/unit	4		10 visitor spaces
Multiple Dwelling (Visitors)	3 spaces plus 0.10 spaces/unit	10 units	4 spaces	
Total			21 spaces	30 spaces

As seen in the above Table, the development scheme for Lot 1 proposes a total of 283 car parking spaces and 7 motorcycle spaces and Lot 2 proposes a total of 30 spaces which exceeds Council's requirement.

On this basis, the car parking supply is considered acceptable.

7.2. Parking Layout

The proposed car park will be provided across two levels at-grade and within the basement. Visitor parking will be located in front of the security line at-grade with all residential car parking spaces located behind security line.

A minor adjustment to a single tandem parking linemarking adjacent to the basement ramp may be provided to assist with swept path manoeuvres to/from the ramp, shown in Figure 7.1 below. Alternatively, the space can be converted into a single resident bay.

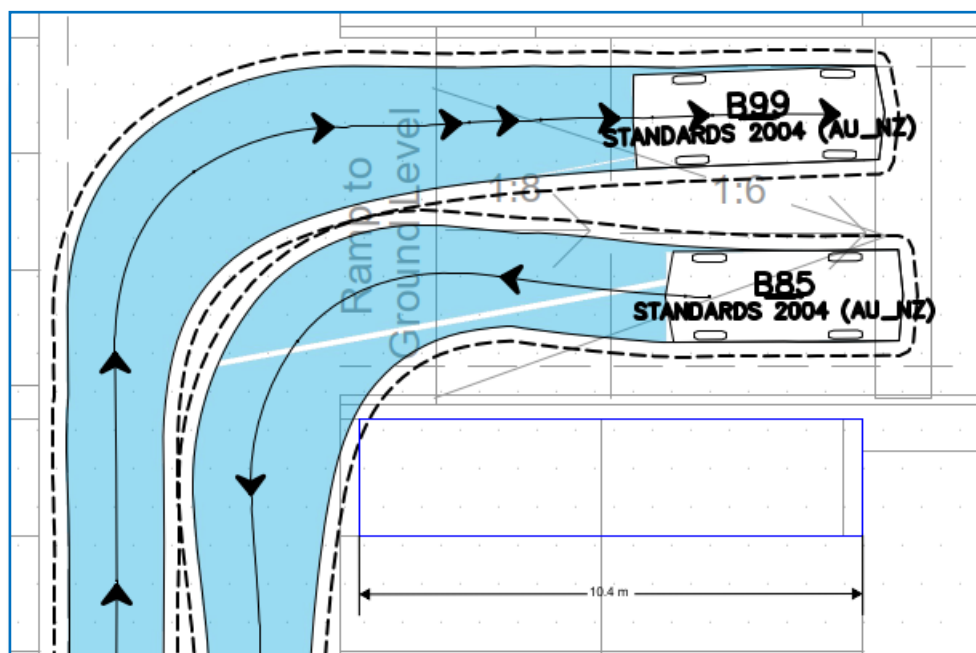


Figure 7.1: Tandem bay minor linemarking recommendation

Swept paths demonstrating the car manoeuvres to/from the ramp are provided in **Appendix B**.

Table 7.2 identifies the characteristics of the proposed parking layouts with respect to the AS2890.1 design provisions.

Table 7.2: Council Parking Design Requirements

Design Aspect	Council Requirements	Proposed Provision	Compliance
Parking space length: - Resident space - Tandem space - Visitor space - Small car space	5.4m (min) 10.4m (min) 5.4m (min) 5.0m (min)	5.4m (min) 10.4m (min) 5.4m (min) 5.0m (min)	Compliant Compliant Compliant Compliant
Parking space width: - Resident space - Visitor space - Small car space	2.4m (min) 2.5m (min) 2.3m (min)	2.4m (min) 2.5m (min) 2.3m (min)	Compliant Compliant Compliant
Aisle Width: - Parking aisle - Circulation road/ramp (two-way)	5.8m (min) 6.2m (min) + clearance to walls	6.2m (min) 7.4m (min)	Compliant Compliant
Maximum Gradient: - PWD parking - Parking aisle - Ramp	1:40 (2.5%) 1:20 (5.0%) 1:6 (16.7%)	Flat Flat 1:6 (16.7%)	Compliant Compliant Compliant

Design Aspect	Council Requirements	Proposed Provision	Compliance
Maximum Gradient Transitions	1:8 (12.5%) summit 1:6.67 (15.0%) sag	1:8 (12.5%) 2.0m long transitions	Compliant
Blind Aisle Extension	1.0m extension to aisle width beyond final space	1.0m extension to aisle width beyond final space	Compliant
Height Clearance: General Minimum	2.3m	2.3m (min)	Compliant
Motorcycle Parking			
Motorcycle space length	2.5m (min)	2.5m (min)	Compliant
Motorcycle space width	1.2m (min)	1.2m (min)	Compliant

Overall, the proposed car parking layout is designed generally in accordance with the Australian Standards.

8. Service Vehicle Arrangements

8.1. Council Requirements

Council's requirements for service vehicle arrangements for a multiple dwelling development is a standing area for an MRV on-site if more than 3 dwellings.

8.2. Proposed Loading Provisions

The proposed service arrangements for a multiple dwelling of this size would include a RCV and furniture moving vehicles (i.e. MRV) as Occasional Access service vehicle and SRVs and vans as a Regular Access vehicle. These vehicles will enter/exit the site in a forward direction and will stand within the internal driveway to undertake loading/unloading or utilise the dedicated waste collection area as required.

A temporary turnaround on Talpa Street for side loader RCVs are to be provided within Stage 1 to cater for RCV turnaround.

Swept paths demonstrating the service vehicle manoeuvres are provided in **Appendix B**. All movements in preceding figures provide a 500 mm clearance from raised obstructions, walls and structures.

8.3. Turnaround Treatments

Temporary turnaround treatments will be needed and provided within Stage 1 to ensure access for design vehicles (i.e. a refuse collection vehicle) for the interim completion of roads (such as at completion of Stage 1).

9. Development Transport Demands

The traffic generation rate for the type of development is adopted from TfNSW's Guide to Traffic Generating Developments (2002) and its Updated traffic surveys (2013). The trip generation rate for the large and standard allotments is considered to be the rate for low-density residential dwellings in a regional area, and similarly for the high-density units. Table 9.1 represents the adopted trip rate for each of the development components.

Table 9.1: Traffic generation rate for residential development

Development	Daily trip rate	AM Peak trip rate	PM Peak trip rate
Low-density residential dwelling (Regional area)	7.4 trips/dwelling	0.71 trips/dwelling	0.78 trips/dwelling
High-density residential units	4.58 trips/unit	0.53 trips/unit	0.32 trips/unit

9.1. Traffic generation and distribution

The surrounding residential lots will all need to exit / enter the area via Finnegan Way and Seagreen Drive, as this is the only road to access with wider road network.

Therefore, the trip generation rate in Table 9.1 is used to estimate the traffic generation from the surrounding developments. The estimated generated traffic is then distributed to the adjacent road network based on assumption noted above (refer to Figure 9.1 for the segments of surrounding roads considered in the trip distribution).



Figure 9.1: Segment of each road in the surrounding road network considered for assessment.

TTM has conducted lot counts for the areas surrounding the proposed development to estimate the total number of lots and the generated/distributed traffic onto the surrounding road network. Table 9.2 shows the lot area coverage and approximate existing daily traffic of the roads surrounding the proposed site.

Table 9.2: Traffic distribution from the existing lots to the surrounding roads

Road	Residential Lot coverage (no. of lots)	Estimated Existing Daily Trips (vpd)
Talpa Street	61	451
Seashell Avenue	57	421
Seagreen Drive	25	185
Gibson Street	7	52
Bailer Street	15	111
Peral Steet Spirula Street Mela Street	28	208

9.2. Utilisation of the spare capacity of surrounding road network

An estimation of the available spare capacity of the surrounding roads is performed to identify the potential utilisation of these roads for further development of the surrounding lots. Table 9.3 shows the spare capacity of each road to accommodate additional daily traffic from future lots.

Table 9.3: Available Spare capacity of accommodating traffic by each road in the surrounding road network

Road	Capacity of daily traffic volume for road category (vpd)	Estimated Existing Daily Trips (vpd)	Spare Capacity for accommodating additional daily traffic volume (vpd)	Capability of accommodating daily traffic from additional residential lots
Talpa Street	3,000	451	2,549	344
Seashell Avenue	3,000	421	2,579	348
Seagreen Drive (all roads lead to this one)	3,000	1,428	1,572	212
Gibson Street	750	52	698	94
Bailer Street	750	111	639	86
Peral Steet Spirula Street Mela Street	750	208	542	73

9.3. Utilisation of Talpa Street as Site Access Point

Talpa Street can accommodate an additional daily traffic volume of 2,549vpd, which converts to 344 additional residential lots, beyond the traffic generated by the existing lots.

The controlling street within this area is Seagreen Avenue, as this is the last street that all traffic will need to use before reaching Finnegan Way. Seagreen Avenue has a spare capacity of 1,572vpd, which equates to 212 additional residential low density lots. This 1,572vpd also equates to 343 high-density residential units.

The proposed development includes 206 high-density residential units and 10 townhouses.

Based on the assessment outlined, it is concluded that Seagreen Drive has the capacity to accommodate additional traffic volume and can serve the proposed residential development at 54 George Alexander Way.

10. Active Transport

10.1. Bicycle Parking

Table 10.1 provides a summary of the parking supply requirements in line with Council requirements, and the proposed provisions, for the development scheme.

Table 10.1: Council Bicycle Parking Supply Requirement

Land Use / Component	Council Requirement	Extent	Bicycle Parking Requirement	Provision
Multiple Dwelling (apartments)	1 per dwelling for residents 1 per 12 dwellings for visitors, to a maximum of 20 spaces	206 units	206 resident bicycle spaces 18 visitor bicycle spaces	70 resident bicycle spaces 30 e-bike/scooter charging 17 visitor bicycle spaces

Based on the above, 206 bicycle spaces for residents and 18 spaces for visitor spaces are required. 100 residential spaces and 17 visitor spaces are provided.

TTM has referred to recommended bicycle parking rates, based on Austroads Guide to Traffic Management Part 11: Parking Management Techniques, to determine the suitability of the proposed bicycle parking supply. The bicycle parking rates are summarised in Table 10.2 below.

Table 10.2: Austroads Bicycle Parking Supply Rates

Land Use / Component	Austroads Requirement	Extent	Bicycle Parking Requirement	Provision
Multiple Dwelling (apartments)	1 per 4 dwellings for residents 1 per 16 dwellings for visitors	206 units	52 resident bicycle spaces 13 visitor bicycle spaces	70 resident bicycle spaces 30 e-bike/scooter charging 17 visitor bicycle spaces

Based on the above, 52 bicycle spaces for residents and 13 spaces for visitor spaces are required. The provision of 70 residential bicycle spaces, 30 e-bike/scooter charging spaces and 17 visitor bicycle spaces which well exceeds that recommended by Austroads.

Overall, the proposed bicycle parking supply is considered 'fit for purpose'.

10.2. Pedestrians

Pedestrian paths will be provided on both sides of Talpa Street. Direct access to Talpa Street will be provided to each building within Lot 1 via a shared driveway.

11. Summary and Conclusions

The proposed development is for a reconfiguration of lot (1 into 2 with road reserve to cater for Talpa Street extension) and multiple dwelling developments comprising three apartment buildings (206 units) and ten townhouses. The development will be undertaken in two stages with a turnaround area provided to cater for RCVs to turnaround and will ultimately connect through to the south.

11.1. Parking Arrangements

The car park layouts and parking supply, as a minimum, comply with Council requirements and relevant Australian Standards. Overall, TTM considers the proposed car parking arrangements for this development are adequate.

11.2. Service Vehicle Arrangements

The proposed development caters for front loader RCV occasional access and manoeuvring on-site within the apartment building hardstand for service vehicles. All service vehicles will be able to enter and exit the site in a forward direction. A temporary turnaround in Stage 1 of the development is provided to cater for side loader RCV turnaround. Talpa Street will ultimately connect through to the south of which the side loader RCV can continue to travel to/from the south.

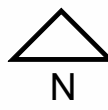
11.3. Traffic Impact Assessment

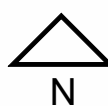
Assessment of the proposed development indicates that the development will not have a significant impact on the existing road network. As such, no further mitigating road works are required.

11.4. Conclusion

Based on the assessment contained within this report, TTM see no traffic engineering reason why the relevant approvals should not be granted.

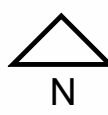
Appendix A Development Plans



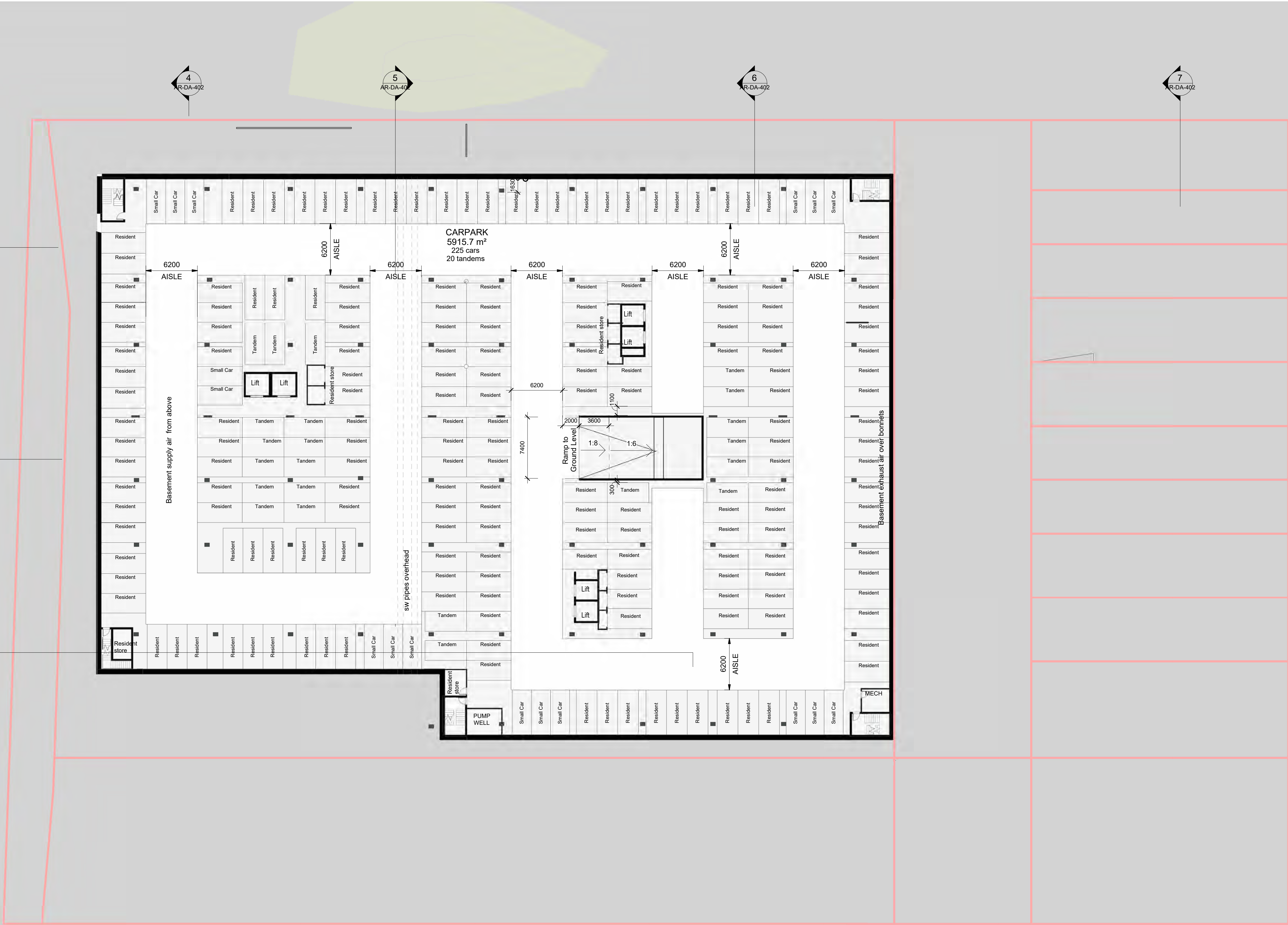






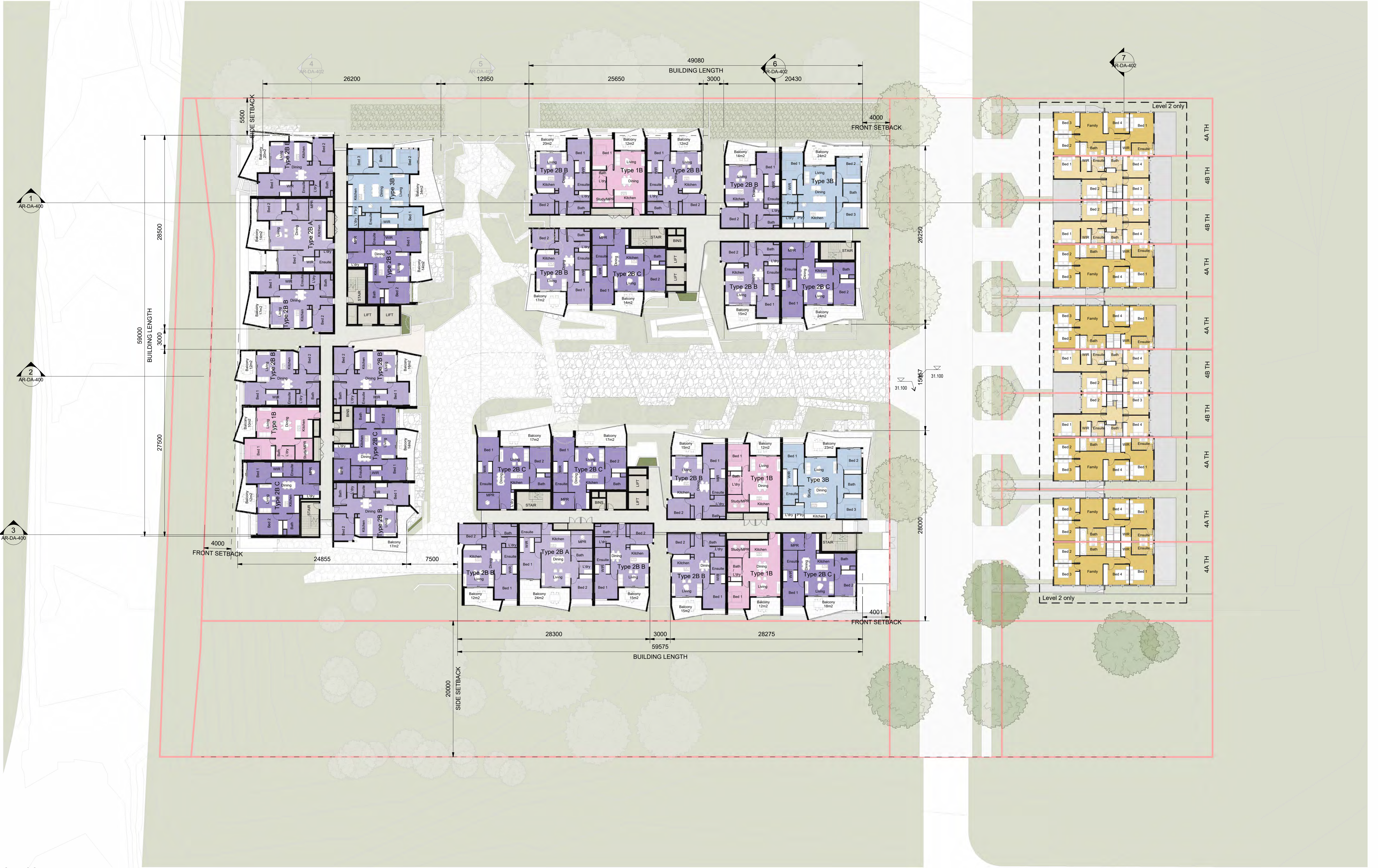










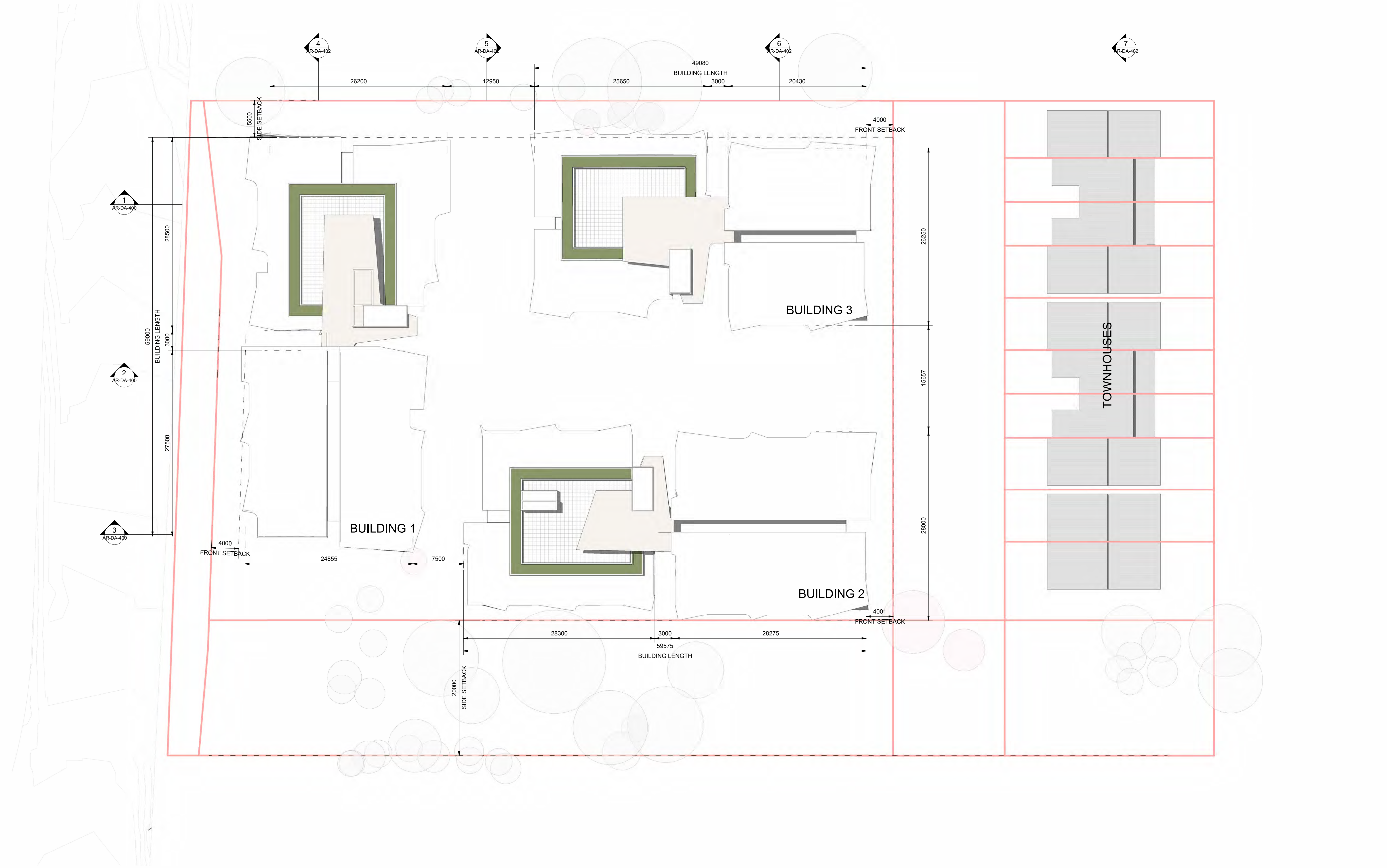


Level 2

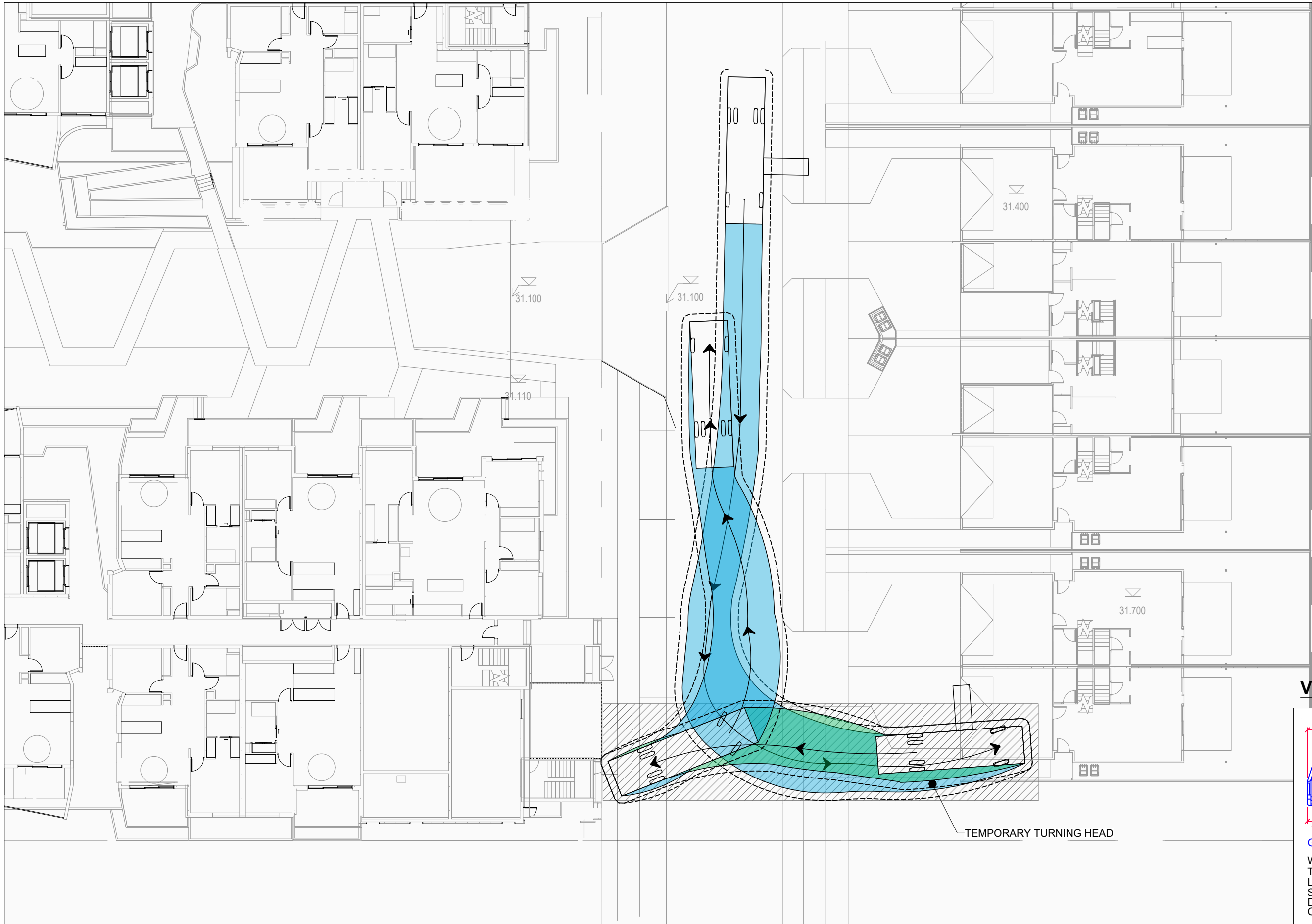




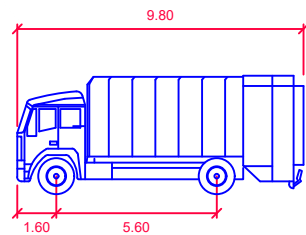




Appendix B TTM Drawings



VEHICLE PROFILES



GCCC Side RCV		metres
Width	2.50	
Track	2.50	
Lock to Lock Time	6.0	
Steering Angle	36.3	
Design Speed Forward	10.0km/h	
Clearance Envelope	0.500m	

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	06-08-24	ORIGINAL ISSUE	AA	RL	RVJ

SCALE 0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT
KEYLIN GROUP PTY LTD

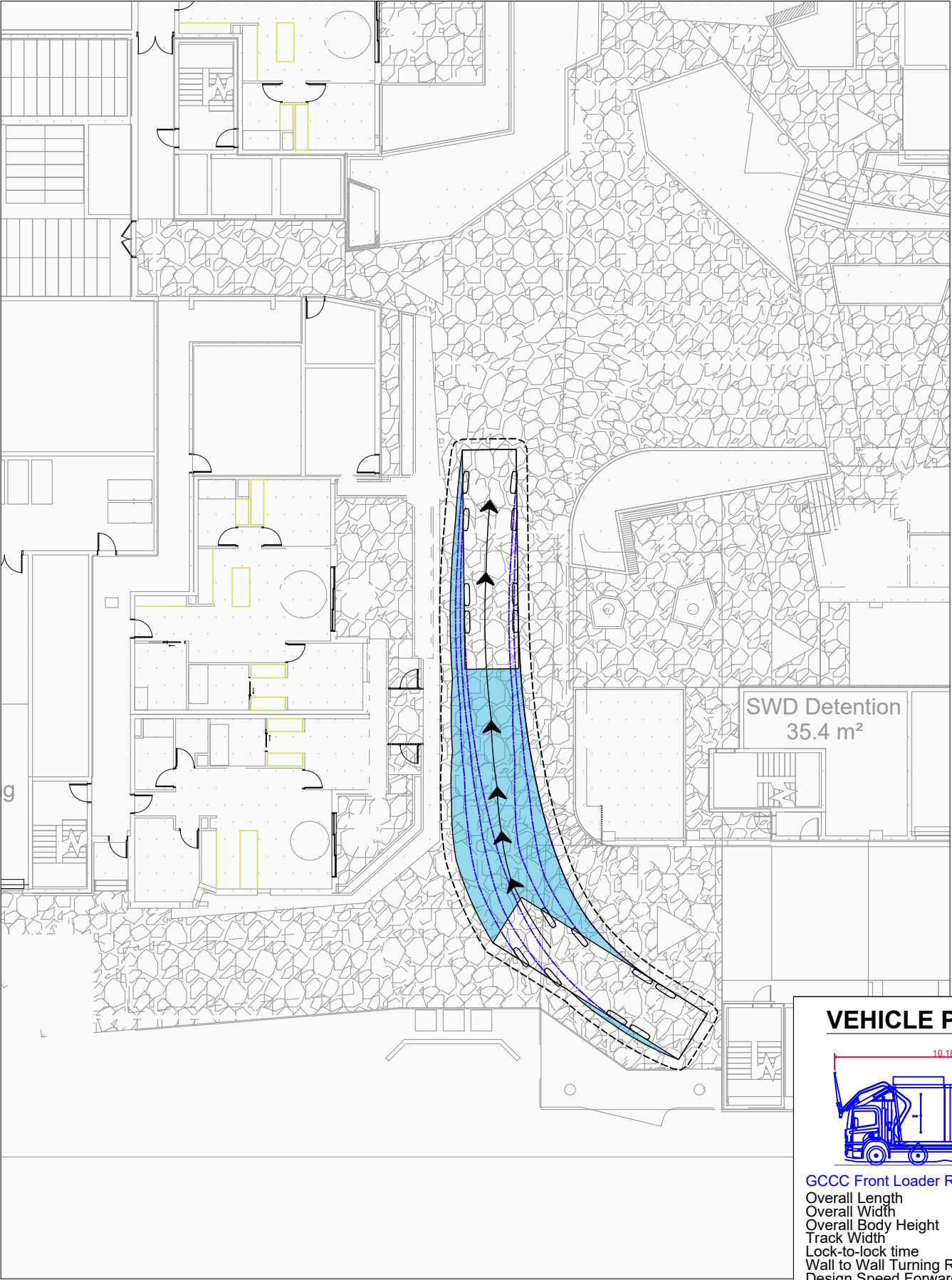


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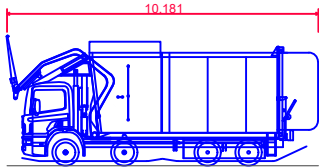
PROJECT
54 GEORGE ALEXANDER WAY, COOMERA QLD

DRAWING TITLE
MCU DEVELOPMENT
SWEPT PATH ANALYSIS - 9.80m GCCC RCV SIDE LIFT
LEVEL 01

PROJECT NUMBER 24GCT0104	ORIGINAL SIZE A3
DRAWING NUMBER 24GCT0104-01	REVISION A
DATE 6 Aug 2024	SHEET 1 OF 1



VEHICLE PROFILES



GCCC Front Loader Refuse Truck

Overall Length	: 10.181m
Overall Width	: 2.490m
Overall Body Height	: 4.300m
Track Width	: 2.490m
Lock-to-lock time	: 5.00s
Wall to Wall Turning Radius	: 13.200m
Design Speed Forward	: 5.0km/h
Clearance Envelope	: 0.500m

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	06-08-24	ORIGINAL ISSUE	AA	RL	RVJ

SCALE



SCALE 1:250 AT ORIGINAL SIZE

NORTH



CLIENT

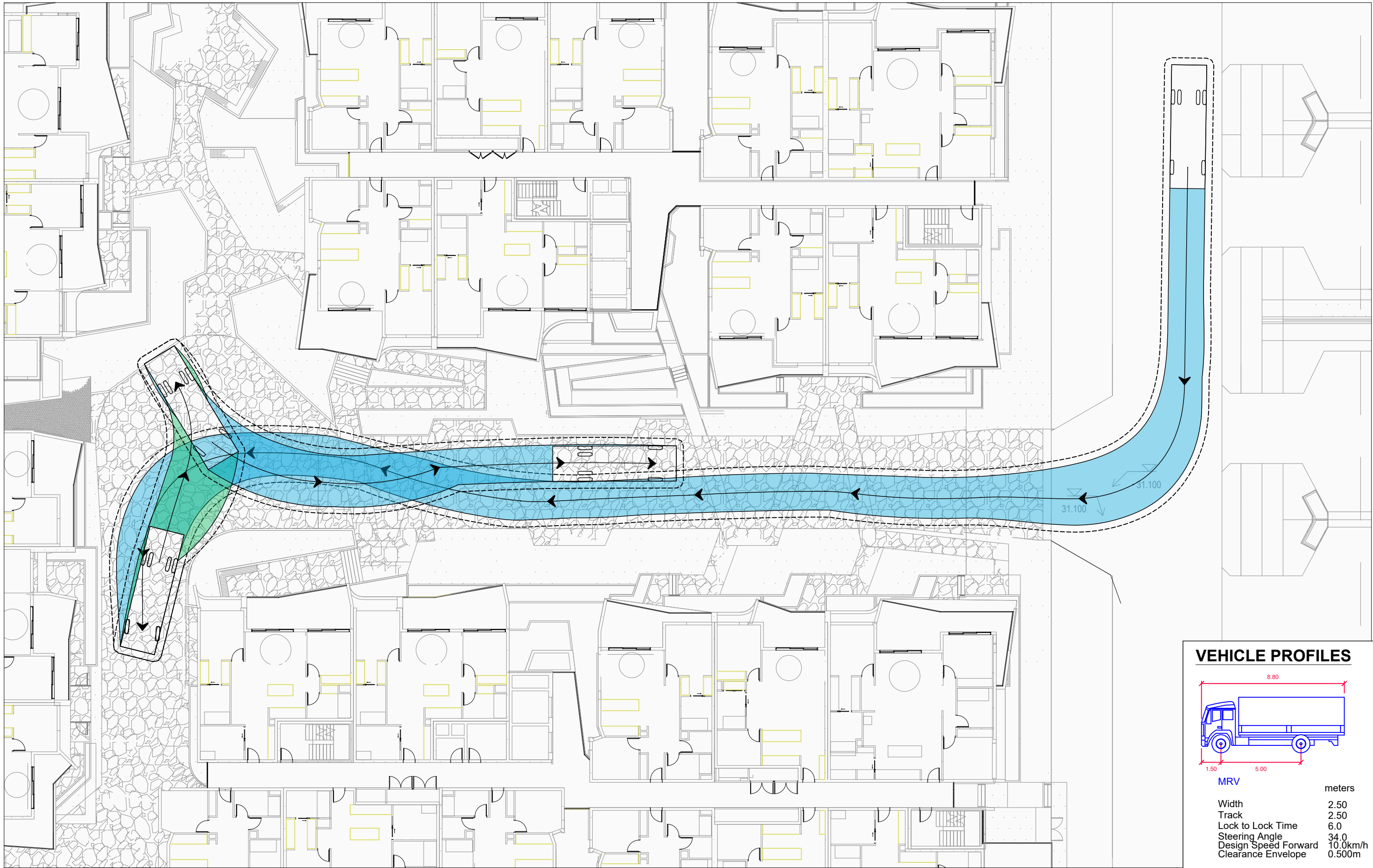
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PROJECT	54 GEORGE ALEXANDER WAY, COOMERA QLD
DRAWING TITLE	MCU DEVELOPMENT SWEPT PATH ANALYSIS - 10.18m GCCC RCV FRONT LIFT LEVEL 00

PROJECT NUMBER	24GCT0104	ORIGINAL SIZE	A3
DRAWING NUMBER	24GCT0104-02	REVISION	A
DATE	6 Aug 2024	SHEET	1 OF 1



VEHICLE PROFILES

MRV

Width	2.50
Track	2.50
Lock to Lock Time	6.0
Steering Angle	34.0
Design Speed Forward	10.0km/h
Clearance Envelope	0.500m

meters

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	06-08-24	ORIGINAL ISSUE	AA	RL	RVJ

SCALE
0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT
KEYLIN GROUP PTY LTD

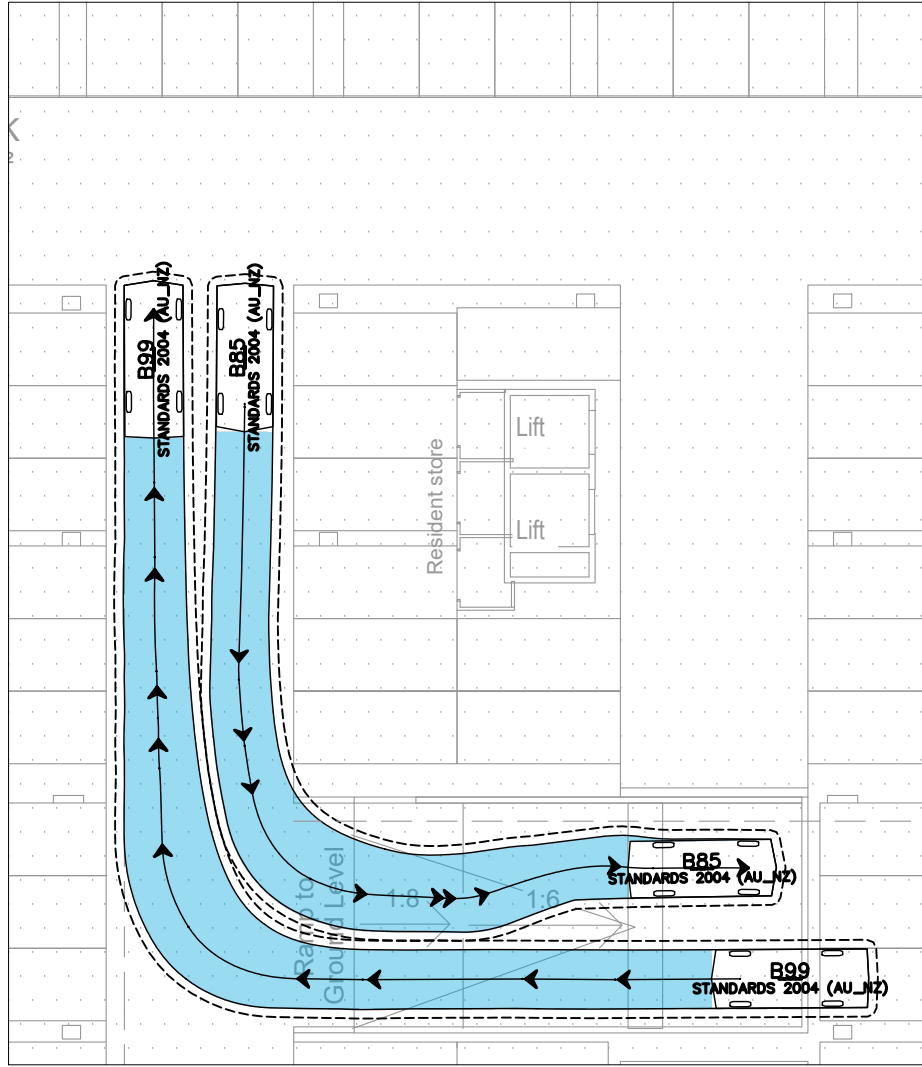
ttm

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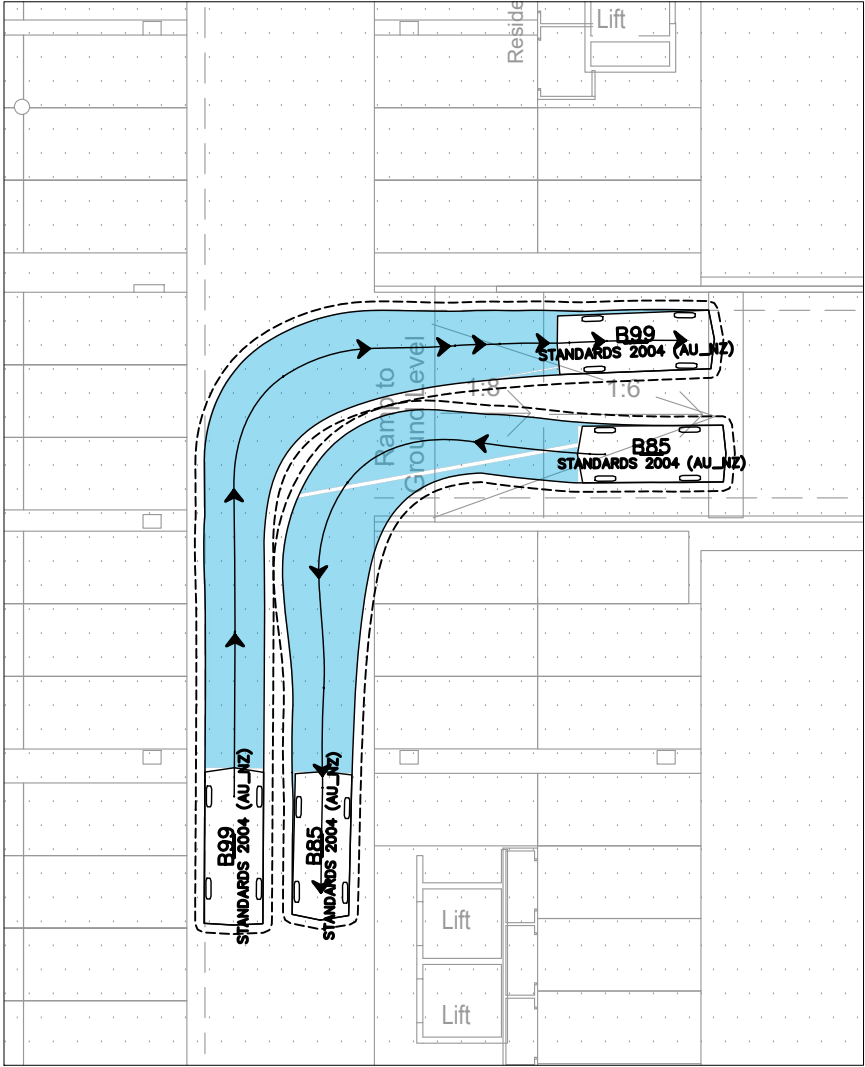
PROJECT
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DRAWING TITLE
MCU DEVELOPMENT
SWEPT PATH ANALYSIS - 8.80m MRV
LEVEL 02

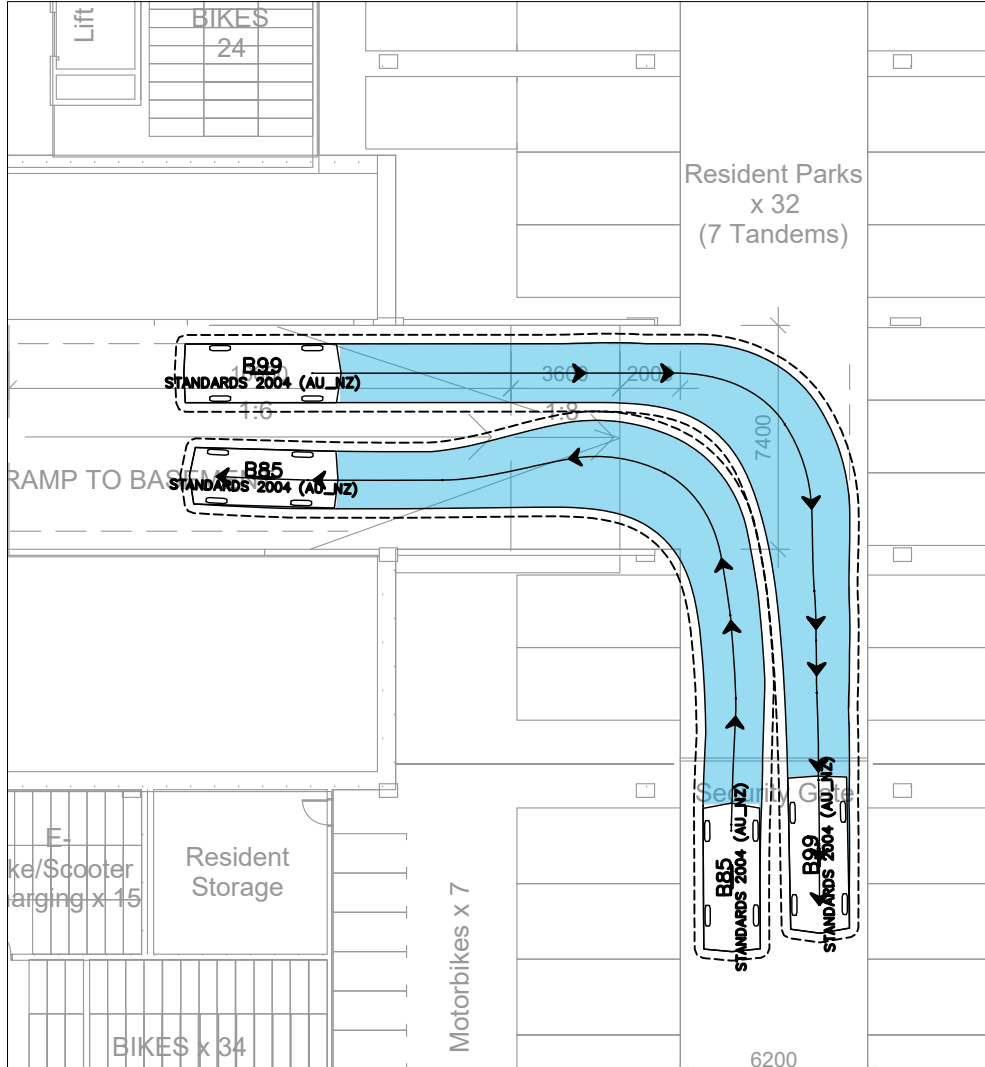
PROJECT NUMBER 24GCT0104	ORIGINAL SIZE A3
DRAWING NUMBER 24GCT0104-03	REVISION A
DATE 6 Aug 2024	SHEET 1 OF 1



5.20m B99 & 4.91m B85 - BASEMENT



5.20m B99 & 4.91m B85 - BASEMENT



5.20m B99 & 4.91m B85 - LEVEL 00

VEHICLE PROFILES

B85 Vehicle (Realistic min radius) (2004)

- Overall Length 4.910m
- Overall Width 1.870m
- Overall Body Height 1.421m
- Min Body Ground Clearance 0.159m
- Track Width 1.770m
- Lock-to-lock time 4.00s
- Curb to Curb Turning Radius 5.750m
- Clearance Envelope 0.300m

B99

- Width 1.94 meters
- Track 1.84
- Lock to Lock Time 6.0
- Steering Angle 33.9
- Clearance Envelope 0.300m

Appendix C Code Responses

State code 6: Protection of state transport networks

Table 6.2 Development in general

Performance outcomes	Acceptable outcomes	Response
Network impacts		
PO1 Development does not compromise the safety of users of the state-controlled road network.	No acceptable outcome is prescribed.	Complies with PO. The development does not result in the worsening of safety of the state-controlled road.
PO2 Development does not adversely impact the structural integrity or physical condition of a state-controlled road or road transport infrastructure .	No acceptable outcome is prescribed.	Complies with PO. The development does not adversely impact the physical conditions of the state-controlled road.
PO3 Development ensures no net worsening of the operating performance the state-controlled road network.	No acceptable outcome is prescribed.	Complies with PO
PO4 Traffic movements are not directed onto a state-controlled road where they can be accommodated on the local road network.	No acceptable outcome is prescribed.	Complies with PO
PO5 Development involving haulage exceeding 10,000 tonnes per year does not damage the pavement of a state-controlled road .	No acceptable outcome is prescribed.	Complies with PO
PO6 Development does not require a new railway level crossing.	No acceptable outcome is prescribed.	Complies with PO6. Railway level crossings are not proposed.
PO7 Development does not adversely impact the operating performance of an existing railway crossing .	No acceptable outcome is prescribed.	N/A. There are no railway crossings within the vicinity of the site
PO8 Development does not adversely impact on the safety of an existing railway crossing .	No acceptable outcome is prescribed.	N/A. There are no railway crossings within the vicinity of the site
PO9 Development is designed and constructed to allow for on-site circulation to ensure vehicles do not queue in a railway crossing .	No acceptable outcome is prescribed.	N/A. There are no railway crossings within the vicinity of the site
PO10 Development does not create a safety hazard within the railway corridor .	No acceptable outcome is prescribed.	N/A. There are no railway crossings within the vicinity of the site
PO11 Development does not adversely impact the operating performance of the railway corridor .	No acceptable outcome is prescribed.	Complies with PO

Performance outcomes	Acceptable outcomes	Response
PO12 Development does not interfere with or obstruct the railway transport infrastructure or other rail infrastructure .	No acceptable outcome is prescribed.	Complies with PO
PO13 Development does not adversely impact the structural integrity or physical condition of a railway corridor or rail transport infrastructure .	No acceptable outcome is prescribed.	Complies with PO
Stormwater and overland flow		
PO14 Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of a state transport corridor or state transport infrastructure .	No acceptable outcome is prescribed.	N/A – non traffic engineering related
PO15 Stormwater run-off or overland flow from the development site does not result in a material worsening of operating performance of a state transport corridor or state transport infrastructure .	No acceptable outcome is prescribed.	N/A – non traffic engineering related
PO16 Stormwater run-off or overland flow from the development site does not interfere with the structural integrity or physical condition of the state transport corridor or state transport infrastructure .	No acceptable outcome is prescribed.	N/A – non traffic engineering related
PO17 Development associated with a state-controlled road or road transport infrastructure ensures that stormwater is lawfully discharged.	AO17.1 Development does not create any new points of discharge to a state transport corridor or state transport infrastructure . AND AO17.2 Development does not concentrate flows to a state transport corridor . AND AO17.3 Stormwater run-off is discharged to a lawful point of discharge . AND	N/A – non traffic engineering related

Performance outcomes	Acceptable outcomes	Response
	AO17.4 Development does not worsen the condition of an existing lawful point of discharge to a state transport corridor or state transport infrastructure .	
Flooding		
PO18 Development does not result in a material worsening of flooding impacts within a state transport corridor or state transport infrastructure	<i>For a state-controlled road or road transport infrastructure, all of the following apply:</i> AO18.1 For all flood events up to 1% annual exceedance probability, development ensures there are negligible impacts (within +/- 10mm) to existing flood levels within a state transport corridor. AND AO18.2 For all flood events up to 1% annual exceedance probability, development ensures there are negligible impacts (up to a 10% increase) to existing peak velocities within a state transport corridor. AND AO18.3 For all flood events up to 1% annual exceedance probability, development ensures there are negligible impacts (up to a 10% increase) to existing time of submergence of a state transport corridor. <i>No acceptable outcome is prescribed for a railway corridor or rail transport infrastructure.</i>	N/A – non traffic engineering related
Drainage infrastructure		
PO19 Drainage infrastructure does not create a safety hazard in a state transport corridor .	<i>For a state-controlled road environment, both of the following apply:</i> AO19.1 Drainage infrastructure associated with, or in a state-controlled road is wholly contained	N/A – non traffic engineering related

Performance outcomes	Acceptable outcomes	Response
	within the development site, except at the lawful point of discharge. AND AO19.2 Drainage infrastructure can be maintained without requiring access to a state transport corridor. <i>For a railway environment both of the following apply:</i> AO19.3 Drainage infrastructure associated with a railway corridor or rail transport infrastructure is wholly contained within the development site. AND AO19.4 Drainage infrastructure can be maintained without requiring access to a state transport corridor.	
PO20 Drainage infrastructure associated with, or in a state-controlled road or road transport infrastructure is constructed and designed to ensure the structural integrity and physical condition of existing drainage infrastructure and the surrounding drainage network is maintained.	No acceptable outcome is prescribed.	N/A – non traffic engineering related
Planned upgrades		
PO21 Development does not impede delivery of planned upgrades of state transport infrastructure .	No acceptable outcome is prescribed.	Complies with PO. Development does not interfere with planned transport infrastructure

Table 6.3 Public passenger transport infrastructure and active transport

Performance outcomes	Acceptable outcomes	Response
PO22 Development does not damage or interfere with public passenger transport infrastructure, active transport infrastructure or public passenger services .	No acceptable outcome is prescribed.	Complies with PO. Development does not interfere with active or public transport infrastructure
PO23 Development does not compromise the safety of public passenger transport infrastructure, public passenger services and active transport infrastructure .	No acceptable outcome is prescribed.	Complies with PO
PO24 Development does not adversely impact the operating performance of public passenger transport infrastructure, public passenger services and active transport infrastructure .	No acceptable outcome is prescribed.	Complies with PO
PO25 Development does not adversely impact the structural integrity or physical condition of public passenger transport infrastructure and active transport infrastructure .	No acceptable outcome is prescribed.	Complies with PO
PO26 Upgraded or new public passenger transport infrastructure and active transport infrastructure is provided to accommodate the demand for public passenger transport and active transport generated by the development.	No acceptable outcome is prescribed.	Complies with PO
PO27 Development is designed to ensure the location of public passenger transport infrastructure prioritises and enables efficient public passenger services .	No acceptable outcome is prescribed.	Complies with PO
PO28 Development enables the provision or extension of public passenger services, public passenger transport infrastructure and active transport infrastructure to the development and avoids creating indirect or inefficient routes for public passenger services .	No acceptable outcome is prescribed.	Complies with PO
PO29 New or modified road networks are designed to enable development to be serviced by public passenger services .	AO29.1 Roads catering for buses are arterial or sub-arterial roads , collector or their equivalent. AND AO29.2 Roads intended to accommodate buses are designed and constructed in accordance with:	N/A. No new or modified road networks are proposed to state-controlled road.

Performance outcomes	Acceptable outcomes	Response
	1. Road Planning and Design Manual, 2nd Edition, Volume 3 – Guide to Road Design; Department of Transport and Main Roads; 2. Supplement to Austroads Guide to Road Design (Parts 3, 4-4C and 6), Department of Transport and Main Roads; 3. Austroads Guide to Road Design (Parts 3, 4-4C and 6); 4. Austroads Design Vehicles and Turning Path Templates; 5. Queensland Manual of Uniform Traffic Control Devices, Part 13: Local Area Traffic Management and AS 1742.13-2009 Manual of Uniform Traffic Control Devices – Local Area Traffic Management; AND AO29.3 Traffic calming devices are not installed on roads used for buses in accordance with section 2.3.2 Bus Route Infrastructure, Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015.	
PO30 Development provides safe, direct and convenient access to existing and future public passenger transport infrastructure and active transport infrastructure .	No acceptable outcome is prescribed.	Complies with PO
PO31 On-site vehicular circulation ensures the safety of both public passenger transport services and pedestrians.	No acceptable outcome is prescribed.	N/A – public passenger transport services not proposed within site
PO32 Taxi facilities are provided to accommodate the demand generated by the development.	No acceptable outcome is prescribed.	N/A – taxi facilities are not proposed within site
PO33 Facilities are provided to accommodate the demand generated by the development for community transport services, courtesy transport services, and booked hire services other than taxis.	No acceptable outcome is prescribed.	N/A – courtesy/community transport services are not proposed

Performance outcomes	Acceptable outcomes	Response
PO34 Taxi facilities are located and designed to provide convenient, safe and equitable access for passengers.	AO34.1 A taxi facility is provided parallel to the kerb and adjacent to the main entrance. AND AO34.2 Taxi facilities are designed in accordance with: 1. AS2890.5–1993 Parking facilities – on-street parking and AS1428.1–2009 Design for access and mobility – general requirements for access – new building work; 2. AS1742.11–1999 Parking controls – manual of uniform traffic control devices 3. AS/NZS 2890.6–2009 Parking facilities –off street parking for people with disabilities; 4. Disability standards for accessible public 5. transport 2002 made under section 31(1) of the Disability Discrimination Act 1992; 6. AS/NZS 1158.3.1 – Lighting for roads and public spaces, Part 3.1: Pedestrian area (category P) lighting – Performance and design requirements; 7. Chapter 7 Taxi Facilities, Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015.	N/A – taxi facilities are not proposed within site
PO35 Educational establishments are designed to ensure the safe and efficient operation of public passenger services, pedestrian and cyclist access and active transport infrastructure.	AO35.1 Educational establishments are designed in accordance with the provisions of the Planning for Safe Transport Infrastructure at Schools, Department of Transport and Main Roads, 2011.	N/A – development is not educational establishment

SITE BASED STORMWATER MANAGEMENT PLAN

54 GEORGE ALEXANDER WAY - WEST

COOMERA GA PTY LTD ATF THE COOMERA GA UNIT TRUST



IMPROVING QUALITY OF LIFE

54 GEORGE ALEXANDER WAY - WEST

SITE BASED STORMWATER MANAGEMENT PLAN

Author Gabby Djelovic

Checker Ashley Shepard

Approver Darlan Castro
RPEQ19918





Project No 30157884-02

Report No GA0004

Revision 01

Date 8/08/2024

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Revision	Date	Description	Prepared by	Approved by
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CONTENTS

1 EXECUTIVE SUMMARY	4
2 SITE CHARACTERISTICS	5
2.1 Location Details	5
2.2 Land Usage	5
2.3 Topography and Features	6
3 PROPOSED DEVELOPMENT	7
4 LAWFUL POINT OF DISCHARGE AND DRAINAGE.....	8
4.1 Existing Stormwater Drainage	8
4.2 Proposed Drainage Characteristics and LPD Test.....	9
5 STORMWATER QUANTITY	11
5.1 Objective	11
5.2 Temporal Patterns	11
5.3 Catchments.....	11
5.4 Objective Discussion	14
6 STORMWATER QUALITY (OPERATION).....	16
6.1 Objectives	16
6.2 Proposed Stormwater Treatment Devices.....	16
6.3 Modelling	17
7 STORMWATER QUALITY (CONSTRUCTION)	21
7.1 Water Quality Objectives	21
7.2 Erosion and Sediment Control Plan Purpose	22
7.3 Specific Activities	22
7.4 Project Personnel Responsibilities	23
7.5 Monitoring and Responsibility.....	24
7.6 Construction Phase Sediment Control Devices	25
8 ASSET MAINTENANCE	26
9 CONCLUSION.....	27

APPENDICES

APPENDIX A

Survey

APPENDIX B

Engineering Drawings

APPENDIX C

Bio Checklist

GLOSSARY OF TERMS

Australia Rainfall and Runoff (ARR) 2019 recommends adaptation of new terminology relating to storm events summarised in Table A below. As recommended, this report documents data with respect to AEP (%).

The following definitions should be noted:

- EY = Number of exceedances per year.
- AEP = Annual Exceedance Probability.
- AEP (1 in x) = 1/AEP.
- ARI = Average Recurrence Interval (years).

The below table should be referred to for a comparison of storm events.

Table A – Adopted Terminology

EY	AEP (%)	AEP (1 in)	ARI
1	63.21	1.58	1
0.69	50	2	1.44
0.5	39.35	2.54	2
0.22	20	5	4.48
0.2	18.13	5.52	5
0.11	10	10	9.49
0.05	5	20	20
0.02	2	50	50
0.01	1	100	100

ASSOCIATED MODELLING FILES

For internal reference, the following modelling file packages are associated with this report.

- 30157884-02- D- DRAINS Model
- 30157884-02-C- MUSIC Model

1 EXECUTIVE SUMMARY

Coomera GA Pty Ltd ATF The Coomera GA Unit Trust has commissioned Arcadis to prepare a Site Based Stormwater Management Plan (SBSMP) for a residential development application for the site located over the following allotment on George Alexander Way, Coomera:

- Lot 96 on RP187418 (54 George Alexander Way, Coomera, 4209).

The proposed development intended for the site is for the creation of 3 residential apartment buildings and 10 townhouses. Supporting infrastructure such as roads, basement parking, utilities, communal spaces and stormwater management areas are also proposed.

This report demonstrates the proposed development will be constructed and operated in accordance with the Water Sensitive Urban Design (WSUD), Requirements of Council, the South-East Queensland State Planning Policy (SPP), the Queensland Development Code, the Queensland Urban Drainage Manual (QUDM), Australian Rainfall and Runoff (2019) and the Environmental Protection (Water) Policy (2009). The primary objectives of this Site Based Stormwater Management Plan are achieved as follows:

Lawful Point of Discharge (LPD)

Stormwater will be discharged to the existing three lawful points of discharge, being Talpa Street to the north of the site, the lot to the south of the site (Lot 95 on RP187418) and the low point on the northern boundary within the site and its downstream drainage corridor. Stormwater is only considered for the western portion of the site as this application does not propose any development within the eastern catchment.

It was determined that external catchments drain through the site, provisions have been made to convey these catchments to the existing LPD.

Stormwater Quantity

The site proposes to mitigate the increase in peak run off, expected to occur at lawful points of discharge, through the use of combined stormwater quantity tanks, a detention basin area and reductions in catchment areas.

The flows from proposed extension of Talpa Street will be directed north to LPD 3. It is understood Talpa Street will drain to an existing detention basin located north of the site (Lot 1 on SP312031). The approved Conceptual Stormwater Management Plan prepared by Biome under application number ROL/2017/439 has accounted for a portion of the development site in their model in an existing condition.

Stormwater Quality

A stormwater quality assessment is provided which demonstrates that a specially tailored treatment system will be required in order to meet the pollutant removal targets of City of Gold Coast (CoGC) during the operational phase of the proposed development. The proposed treatment system features private bio-retention areas. Regular maintenance of the treatment devices must be undertaken to ensure the continuing performance of the stormwater quality treatment train.

Waterway Stability

The development does not trigger the application requirement specified under Table 4.12 of City Plan SC6.11 Part 4. Discharge to the road reserve does not trigger the application requirement.

Erosion and Sediment Control

Erosion and sediment control measures during construction shall be undertaken in accordance with the SPP and Council requirements.

2 SITE CHARACTERISTICS

2.1 Location Details

The subject site is located within George Alexander Way, Coomera, Australia over the following allotment:

- Lot 96 on RP 187418 (54 George Alexander Way, Coomera, QLD, 4209)

The site is bounded by George Alexander Way to the west, a rural residential allotment to the south and residential dwellings to the north and east.

The Gold Coast City Council is the local government authority.

The total area of the site is approximately 30,100m².

An existing approval (OPW/2023/1508) bounds the eastern portion of the site. This approval is for 22 residential lots and supporting infrastructure. This report seeks to support a development application for the balance of the land.

2.2 Land Usage

In its current state, the project site consists of a residential dwelling and its associated driveway. Figure 2-1 below provides a current locality plan of the site.



Figure 2-1 Site Locality Plan (Aerial Imagery Courtesy of Nearmap)

2.3 Topography and Features

The site has slopes ranging from 5 to 12%. The high point is at the centre of the site at RL34m therefore, everything slopes away from the centre of the site. The low point of the site is within the north eastern corner at RL29m. There is also another low point in the north western corner of the site at RL25m and within the south eastern corner RL32m.

There are two existing dams located on the site, one large dam in the north western corner and a smaller dam located in the northeastern corner.

Further catchment and topographic information can be seen on the Engineering Drawings attached in Appendix B.

3 PROPOSED DEVELOPMENT

The proposed development involves the construction of residential units, including:

- 3 x medium-rise residential buildings.
- Townhouses.
- Municipal and private road network.
- Basement parking.
- Open communal space.
- Stormwater management areas.

A rendered plan extract of the proposed development has been provided in Figure 3-1.

A full set of development proposal plans are provided within the development application package and should be referred to for further information.



Figure 3-1 Proposed Development Layout (Courtesy of Archipelago)

4 LAWFUL POINT OF DISCHARGE AND DRAINAGE

4.1 Existing Stormwater Drainage

This report only focuses on the proposed developed areas; therefore, the eastern portion of the site has not been considered in this assessment. Refer to OPW/2023/1508 for details of the eastern side.

In its existing state the site has three LPD, being Talpa Street to the north of the site, the low point along the northern boundary and the lot to the south of the site (Lot 95 on RP187418).

The catchment delineation is derived from Councils lidar data. Based on Councils lidar data and street imagery it was found that a portion of lot 95 on RP187418 and George Alexander Way drains through the site.

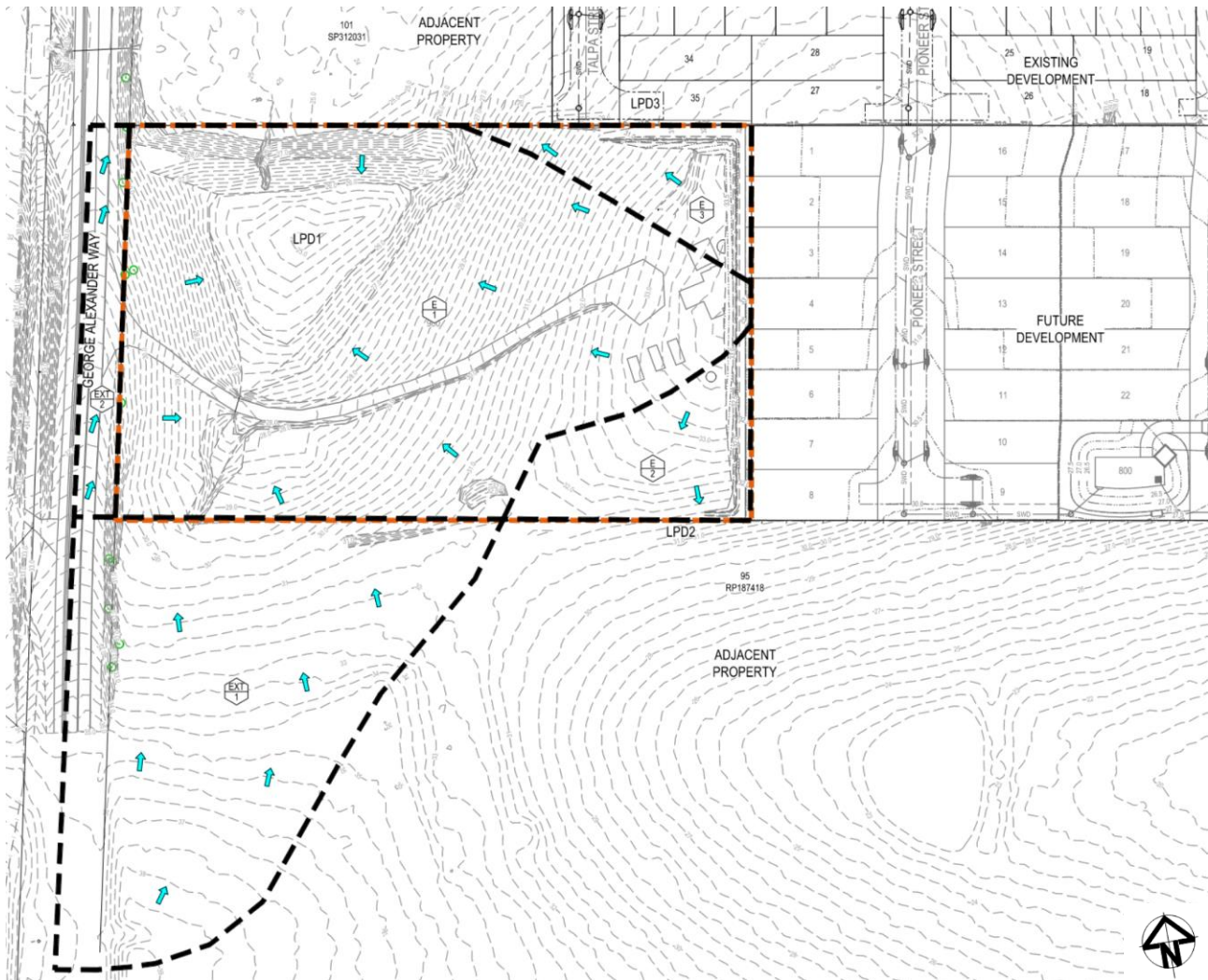


Figure 4-1 Existing Stormwater Catchments

4.2 Proposed Drainage Characteristics and LPD Test

The below diagram illustrates proposed drainage philosophy for the site, which is adopted for the purposes of detailed calculations in subsequent reporting sections.

The site proposes to maintain the three LPD's being Talpa Street, lot 95 on RP187418 and the dam located within the site and its downstream drainage corridor. Through the use of stormwater detention tanks, bio-retention areas, a detention basin area and catchment reductions, flows will be mitigated to predeveloped flow.

The external catchment will continue to discharge to LPD1 without the need for treatment through pipes running through the site. Manning's calculations have confirmed that 3 x DN450 pipes can convey the 1% AEP flows for EXT1 and D5. Refer to the engineering drawings in Appendix B for the pipe details.

Note if the DN450 pipes block the flow will be conveyed through the road. The internal road will need to be designed to convey 1% AEP flows from EXT1 and D5. A 6m wide inverted road with barrier kerb has capacity to convey 1% AEP flows from catchment EXT1 and D5. Refer to the engineering drawings in Appendix B for the road cross-section.

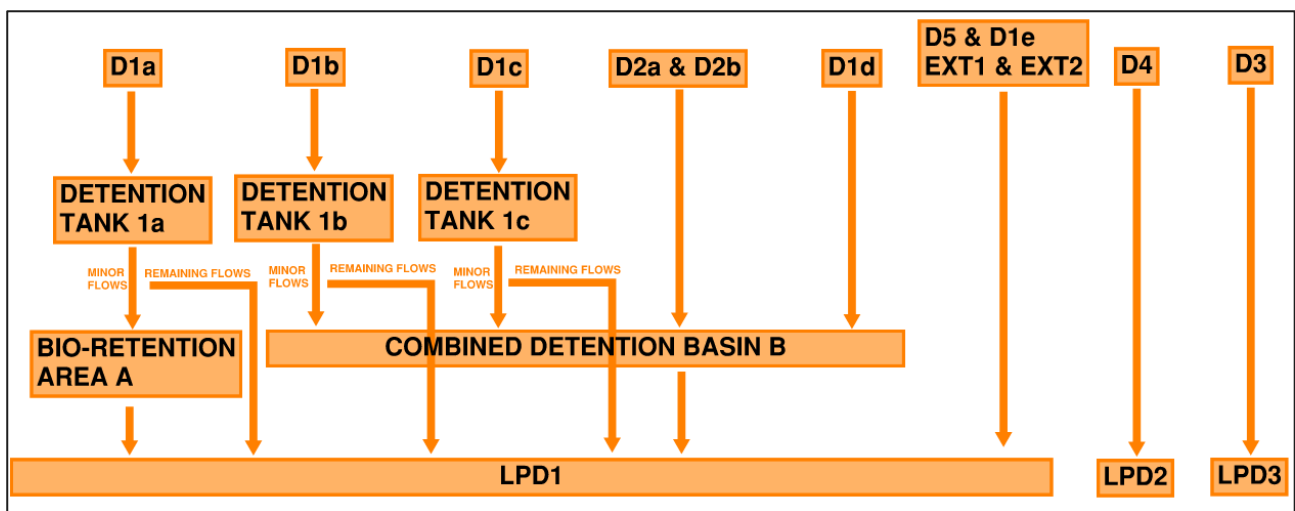


Figure 4-3 Drainage Philosophy

The site proposes to send flows from D3 (Talpa Street) into the existing Basin A in the site to the north (Lot 1 on SP312031). The approved Conceptual Stormwater Management Plan prepared by Biome under application number ROL/2017/439 has accounted for a portion of the development site in their model. Therefore, this quantity assessment has replicated the catchments from ROL/2017/439 to correctly assess stormwater quantity.

Further details can be found on Engineering Drawings in Appendix B.

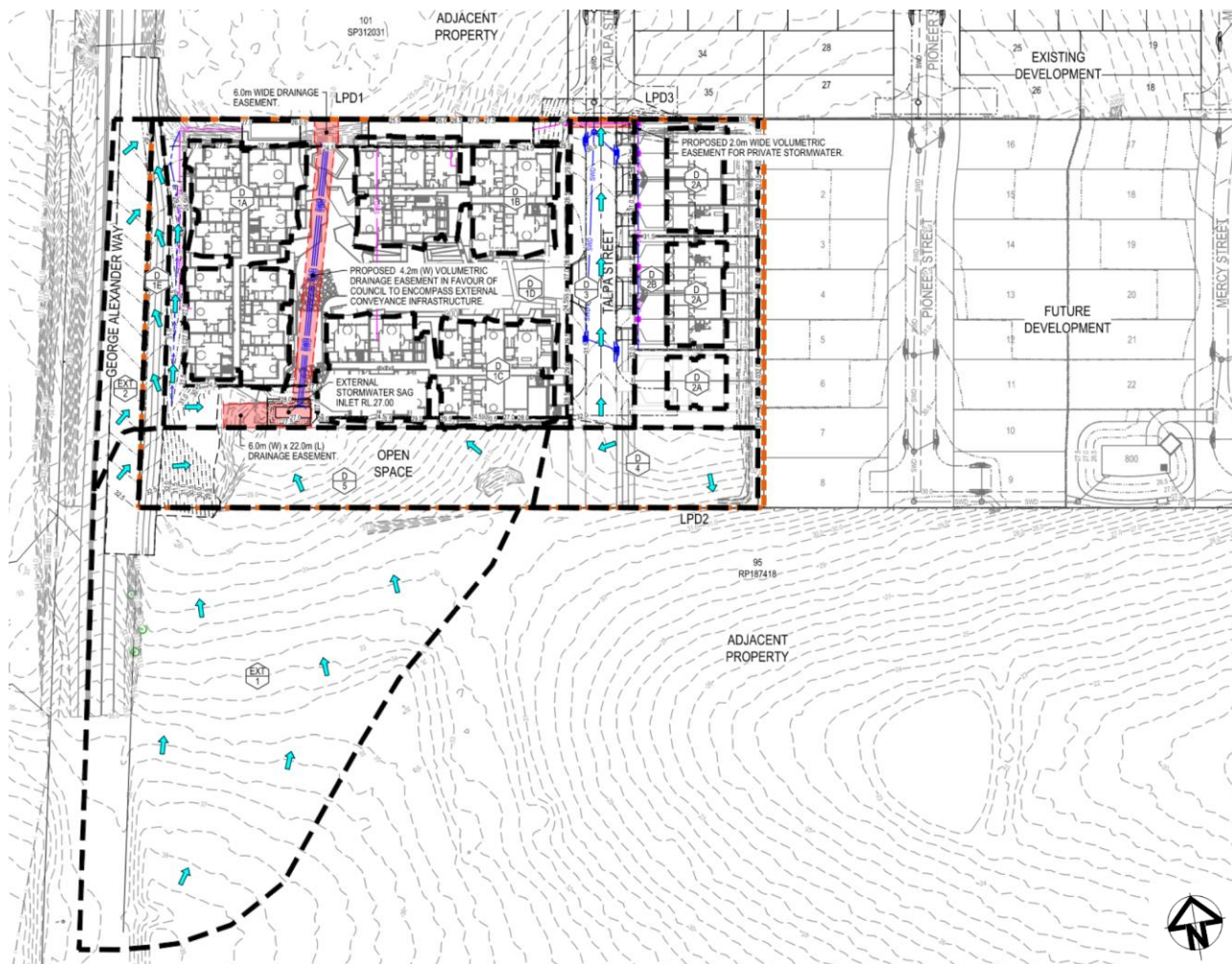


Figure 4-4 Developed Stormwater Catchments

In the developed case, the site demonstrates compliance with the QUDM (2017) as follows:

The location of the discharge is under the lawful control of the local government or other statutory authority from whom permission to discharge has been received. This will include park, drainage or road reserve, stormwater drainage easement.

The site will demonstrate compliance with QUDM (2017) by maintaining as much as practically possible the existing discharge characteristics, by discharging controlled flows to the existing lawful points of discharge.

That in discharging in that location, the discharge will not cause an actionable nuisance. In general terms this implies no worsening as a result of discharge.

Sections 5, 6, 7 and 8 of this report provide detailed calculations and discussions illustrating no actionable nuisance anticipated. It is noted that optimisation of the development sites drainage system will be undertaken during the operational works phase of the development.

Engineering drawings in Appendix B provide further details of the proposed system.

5 STORMWATER QUANTITY

5.1 Objective

The following assessment has been undertaken to demonstrate that the proposed development will not adversely affect the existing drainage conditions adjacent to the site. Existing drainage characteristics are assessed to determine peak flow rates for the median storm event up to and including the 1% AEP.

5.2 Temporal Patterns

In accordance with CoGC's City Plan SC6.11.4.4.3 & ARR2019, Rainfall Intensities Frequency Duration data were obtained from The Bureau of Meteorology (<http://www.bom.gov.au/water/designRainfalls/revised-ifd/?year=2016>). The Latitude and Longitude of used for the site is summarised in Table 5-1 below.

Table 5-1 Site Latitude and Longitude

Parameter	Value
Latitude	-27.8480
Longitude	153.3227

5.3 Catchments

Two hydrologic conditions were modelled to appropriately demonstrate the stormwater quantity objective:

- **Existing Scenario (E)** – The catchment including the site in its existing state.
- **Developed Scenario (D)** – The catchment including the site in its developed state as per the proposal.

The following catchment details in Table 5-2 to Table 5-4 were determined.

Table 5-2 Modelling Existing Catchment Details

Catchment	Area (ha)	Slope (%)	Impervious Area (%)	Manning's (n)
E1	1.23	12.5	17%	0.06
E2	0.17	9.3	0%	0.06
E3	0.10	4.1	3%	0.06
EXT1	0.79	11.0	12%	0.06
EXT2	0.10	4.0	80%	0.015
EXT A*	0.233	6.0	0%	0.045

**EXT A has been taken from the stormwater management plan prepared by Biome (ROL/2017/4395) for 66 George Alexander Way.*

The existing catchment draining to Talpa Street (LPD 3) has been determined by Biome in their stormwater management plan for 66 George Alexander Way (ROL/2017/4395) to be approximately 0.223ha (EXT A). Through the development of the eastern portion of the site (OPW/2023/1508) this external catchment (EXT A) discharging into Talpa Street has reduced in size to 0.10ha (E3).

Table 5-3 Modelling Developed Internal Catchment Details

Catchment	Area (ha)	Time of Concentration (min)	Impervious Area (%)
D1a	0.151	5,7	100%
D1b	0.128	5,7	100%
D1c	0.145	5,7	100%
D1d	0.347	5,7	59%
D2a	0.092	5,7	100%
D2b	0.153	5,7	35%
D3	0.127	5,7	80%
D4	0.108	5,7	0%
D5	0.200	5,7	0%

Table 5-4 Modelling Developed External Catchment Details

Catchment	Area (ha)	Slope (%)	Impervious Area (%)	Manning's (n)
EXT1	0.80	11	14%	0.06
EXT2	0.09	4	80%	0.015

5.3.1 Detention System Design

Table 5-5 to Table 5-8 presents the design details for the proposed onsite detention system for the site which is required to achieve the objective of no post development increase up to the 1% AEP event at the assessment point. The detention system has been iteratively optimised to ensure peak performance.

A detention tank has been designed for each roof area, as well as a detention basin area above the bio-retention for the D2 catchment.

Table 5-9 to Table 5-11 illustrate that there is no worsening at any of the LPD's.

Table 5-5 Summary of Proposed Detention Tank Parameters for D1a

Parameters	Detention System
Min. Required Detention Storage (m ³)	42
Detention Depth (m)*	1.1+ 0.5m freeboard
Min. Required Detention Area (m ²) Including Access & Outlet Control Areas	50
Outlet Orifices	DN100 orifice @ the base of the tank, DN100 orifice @ 0.5m above the base of the tank & 0.2m weir @ 0.8m above the base of the tank
Emergency Overflow Weir (m)	1m weir @ 1m above the base of the tank

*The detention height has been based of the blocked water level.

Table 5-6 Summary of Proposed Detention Tank Parameters for D1b

Parameters	Detention System
Min. Required Detention Storage (m ³)	31
Detention Depth (m)*	1.1+ 0.5m freeboard
Min. Required Detention Area (m ²) Including Access & Outlet Control Areas	40
Outlet Orifices	DN100 orifice @ the base of the tank, DN100 orifice @ 0.5m above the base of the tank & 0.2m weir @ 0.8m above the base of the tank
Emergency Overflow Weir (m)	1m weir @ 1m above the base of the tank

**The detention height has been based of the blocked water level.*

Table 5-7 Summary of Proposed Detention Tank Parameters for D1c

Parameters	Detention System
Min. Required Detention Storage (m ³)	22
Detention Depth (m)*	1.1 + 0.5m freeboard
Min. Required Detention Area (m ²) Including Access & Outlet Control Areas	35
Outlet Orifices	DN150 orifice @ the base of the tank, DN150 orifice @ 0.5m above the base of the tank & 0.5m weir @ 0.9m above the base of the tank
Emergency Overflow Weir (m)	1m weir @ 1m above the base of the tank

**The detention height has been based of the blocked water level.*

Table 5-8 Summary of Proposed Detention Basin Parameters for D2

Parameters	Detention System
Min. Required Detention Storage (m ³)*	125
Min. Required Detention Area (m ²)	150
Detention Depth (m)**	0.60
Extended Detention Depth (m) (Water Quality)	0.3
Freeboard Depth (m)	0.3
Total Basin Depth (m)	1.20
Outlet Orifices	900 by 900 pit with a DN100 orifice @ -1m below the start of detention & 1m weir @ 0.4m above the base of the tank
Emergency Overflow Weir (m)	3.6m weir @ 0.55m above the start of detention

**Volume from extended detention was not considered in the function of the detention basin design.*

***The detention height has been based of the blocked water level.*

5.3.2 Model Results

A DRAINS model has been developed to assess the proposed development site. The following results have been captured from the DRAINS model as a result of implementing the above detention system. Table 5-9 to Table 5-110 below summarises the peak flow rates for each identified critical storm across the assessed AEP range at the LPD.

Table 5-9 Summary of DRAINS Hydrologic/Hydraulic Results Catchment at LPD 1

Scenario	AEP (%)	63.2	50	20	10	5	2	1
Existing	Median Flow (m ³ /s)	0.334	0.438	0.639	0.780	0.933	1.140	1.290
Mitigated	Median Flow (m ³ /s)	0.331	0.386	0.553	0.665	0.781	0.992	1.130
Height Tank A	m	0.45	0.52	0.69	0.79	0.87	0.93	0.99
Height Tank B	m	0.42	0.49	0.66	0.76	0.85	0.91	0.96
Height Tank C	m	0.29	0.34	0.51	0.59	0.66	0.74	0.81
Height Basin 1*	m	0.12	0.15	0.27	0.37	0.44	0.49	0.51

*Height taken from top of extended detention.

Table 5-10 Summary of DRAINS Hydrologic/Hydraulic Results Catchment LPD 2

Scenario	AEP (%)	63.2	50	20	10	5	2	1
Existing	Median Flow (m ³ /s)	0.021	0.027	0.046	0.054	0.067	0.080	0.091
Developed	Median Flow (m ³ /s)	0.017	0.020	0.033	0.042	0.049	0.059	0.066

Table 5-11 Summary of DRAINS Hydrologic/Hydraulic Results Catchment LPD 3

Scenario	AEP (%)	0.5EY	20	10	5	2	1
Existing*	Median Flow (m ³ /s)	0.052	0.074	0.089	0.106	0.130	0.146
Developed	Median Flow (m ³ /s)	0.039	0.051	0.061	0.072	0.086	0.097

*These results have been extracted from the stormwater management plan prepared by Biome (ROL/2017/4395) for 66 George Alexander Way.

5.4 Objective Discussion

5.4.1 Peak Flow Mitigation

The above hydraulic investigation and runoff-routing exercise has demonstrated that suitable measures can be included in the design of the proposed development to ensure that there is no increase in median discharge flow rates being directed off-site to existing infrastructure for 63.2% AEP events to 1% AEP events in accordance with QUDM and ARR2019.

It is clear from Table 5-10 and Table 5-11 that the Biome Report approved under application number ROL/2017/439 allowed for all of D3 to drain into their combined basin.

5.4.2 Tank Access

The proposed detention tanks cannot be accessed from the top of the tank; however, access can be made via the side of the tank. All tanks will need an internal height of at least 2.4m to allow side access. An internal wall of at least 1.5m in height will be required between the door access and the detention area. It is recommended that a secondary pipe outlet be installed just above the blocked water level, which will outlet to an external area should the primary conveyance pipe block. This secondary pipe is to reduce the risk of the tank spilling into the internal building area.

6 STORMWATER QUALITY (OPERATION)

6.1 Objectives

The following operational water quality objectives are set out by Council:

- Gross Pollutants (>5mm) – 90% reduction in mean annual load.
- Total Suspended Solids (TSS) – 80% reduction in mean annual load.
- Total Phosphorous (TP) – 60% reduction in mean annual load.
- Total Nitrogen (TN) – 45% reduction in mean annual load.

6.2 Proposed Stormwater Treatment Devices

WSUD aims to minimise the impact of the development on the natural water cycle by reducing the export of pollutants, sediments and nutrients from the site into the natural watercourse. In order to treat the stormwater runoff from the site, various treatment devices can be used throughout the development area and these concepts can be integrated into the overall design of the road layouts, road cross sections, stormwater layouts and water supply reticulation systems. Stormwater from the development will follow a specially designed stormwater quality treatment train prior to discharge from the site, which will ensure compliance with the water quality objectives.

A treatment train has been proposed for the site comprising of bio-retention areas which collectively contribute to the achievement of whole site water quality objectives.

The site proposes to send flows from D3 (Talpa Street) into the existing Bioretention Basin A in the site to the north (Lot 1 on SP312031). The approved Conceptual Stormwater Management Plan prepared by Biome under application number OPW/2022/155 has accounted for a portion of the development site in their model. Therefore, this quality assessment has replicated the catchments from OPW/2022/155 to correctly assess stormwater quality.

There has been no stormwater quality treatment proposed at LPD2 as the existing surface conditions have not changed.

A copy of the treatment devices information can be seen in Appendix C.

6.2.1 Bio-Retention Areas

A bio-retention area is a vegetated region where runoff is filtered through a filter media layer (e.g. sandy loam) as it percolates downwards to receiving underlying drainage. Specific vegetation is to be incorporated into the landscaping of bio-retention areas which effectively reduces nutrient loads. Appendix A of Healthy Waterways' Water Sensitive Urban Design Technical Guidelines for South East Queensland provides guidance on selecting appropriate plant species for systems where plants have a functional role in stormwater treatment.

A typical example of a bio-retention area in operation with suitable vegetation is presented in Figure 6-1 below. A typical section and further standard details are provided in Appendix C.



Figure 6-1 Example of Urban Bio-Retention Basin (Courtesy Water by Design)

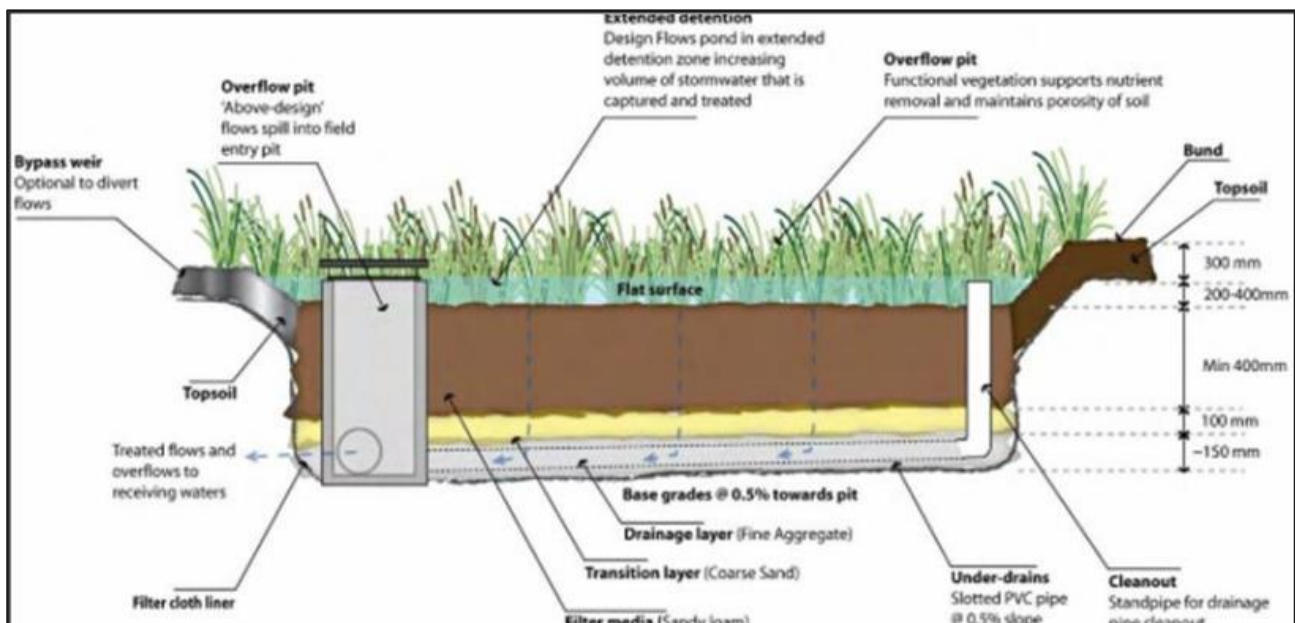


Figure 6-2 Example of Urban Bio-Retention Garden-Bed (Courtesy Water by Design)

6.3 Modelling

Modelling of the site was undertaken using the 'Model for Urban Stormwater Improvement Conceptualisation (MUSIC)' as promoted by LCC and the South East Queensland Healthy Waterways Partnership. The development was modelled using the split catchment approach. An appropriate type of land use was applied to all surface types within the developed catchments; where individual treatment devices were assigned the relevant modelling treatment parameters. Consequently, a treatment train was established for the site, ensuring that water discharging from site adheres to the specified Water Quality Objectives.

Meteorological data for input into MUSIC was obtained from Hinze Dam Station 40584 from the Bureau of Meteorology. Six-minute time step rainfall data was obtained for the climate period from 1/1/1976 to 31/12/1995. The catchment parameters of the MUSIC modelling are specified within the South East Queensland Healthy Waterways Partnerships' Water by Design MUSIC Modelling Guidelines for South East Queensland Version 1 (2010), and have been modelled as such.

6.3.1 Pollutant Source Node Details

The pollutant source node parameters input into the MUSIC model were determined using the South East Queensland Healthy Waterways Partnership's Water by Design MUSIC Modelling Guidelines for South East Queensland version 1 (2010), specifically Tables 3.7 and 3.8 for urban residential surface types. It is noted that all base flow parameters for roof surfaces are adopted as 0.00 or N/A.

The following assumptions were made when modelling stormwater quality, the roof and road area was considered to be 100% impervious. The planter areas were considered 0% impervious with the remaining ground area considered to be 100% impervious.

The road area for Talpa Street was considered to be 80% impervious based on council road design standards.

A summary of these nodes has been provided in Table 6-1 and Table 6-2 below.

Table 6-1 Summary of Source Node Details for 54 George Alexander Way-West

Catchment	MUSIC Source Node	Imperviousness (%)	Area (ha)*
Roof (D1a)	Roof	100%	0.151
Roof (D1b & D1c)	Roof	100%	0.273
Road (D1d)	Road	100%	0.074
Pervious Ground (D1d)	Ground	0%	0.041
Impervious Ground (D1d)	Ground	100%	0.131
Bypass Ground (D1d)	Ground	0%	0.101
Roof (D2a)	Roof	100%	0.092
Road (D2b)	Road	100%	0.033
Pervious Ground (D2b)	Ground	0%	0.100
Impervious Ground (D2b)	Ground	100%	0.020
Talpa Street (D3)	Road	80%	0.127

**This report only focuses on the proposed developed areas; therefore, the eastern portion of the site has not been considered in this assessment nor has any undeveloped area (catchment D4 & D5).*

Table 6-2 Summary of Source Node Details for 66 George Alexander Way (Courtesy of Conceptual Stormwater Management Plan 66 George Alexander Way, Coomera Prepared by Biome)

Catchment	MUSIC Source Node	Imperviousness (%)	Area (ha)*
Roof A	Roof	100%	0.443
Road A	Ground	70%	0.346
Ground A	Ground	30%	0.268

6.3.2 Treatment Device Node Details

The bio-retention area has been designed specifically in accordance with the bio-retention Technical Design Guidelines (2014) and local data testing of soil parameters. Details of the location and standard design of the proposed treatment device areas are presented in the Engineering Drawings in Appendix B of this report.

Once the site is fully developed, the stormwater run-off from sub-catchments will be collected via a drainage system and directed to the relevant areas per Figure 4-2.

General parameters for the bio-retention treatment system have been modelled as per Table 6-3 and Table 6-4 below.

Table 6-3 Sites Bio-Retention Design Parameters

Parameter	Bio-retention Area 1	Bio-retention Area 2
Minimum Filter Media Area (m ²)	50	100
Minimum Ponding Surface Area (m ²)	50	100
Extended Detention Depth Within Ponding Area(m)	0.30	0.30
Minimum Filter Media Depth (m) (excluding transition layer and under drainage)	0.50	0.70
Minimum Underdrainage Layers (m)	0.30	0.30
Minimum Saturated Hydraulic Conductivity (mm/hour)	200	200
Maximum Filter Media Total Nitrogen (mg/kg)	400	400
Maximum Filter Media Orthophosphate (mg/kg)	30	30

Table 6-4 66 George Alexander Way Bio-Retention Design Parameters (Courtesy of Conceptual Stormwater Management Plan 66 George Alexander Way, Coomera Prepared by Biome)

Parameter	Bio-retention Basin A
Minimum Filter Media Area (m ²)	110m ²
Minimum Ponding Surface Area (m ²)	130m ²
Extended Detention Depth Within Ponding Area(m)	0.30
Minimum Filter Media Depth (m) (excluding transition layer and under drainage)	0.60
Underdrainage Layers (m)	0.01
Minimum Saturated Hydraulic Conductivity (mm/hour)	200
Maximum Filter Media Total Nitrogen (mg/kg)	400
Maximum Filter Media Orthophosphate (mg/kg)	30

A diagrammatical view and pollutant reduction results can be found in Figure 6-3 below.

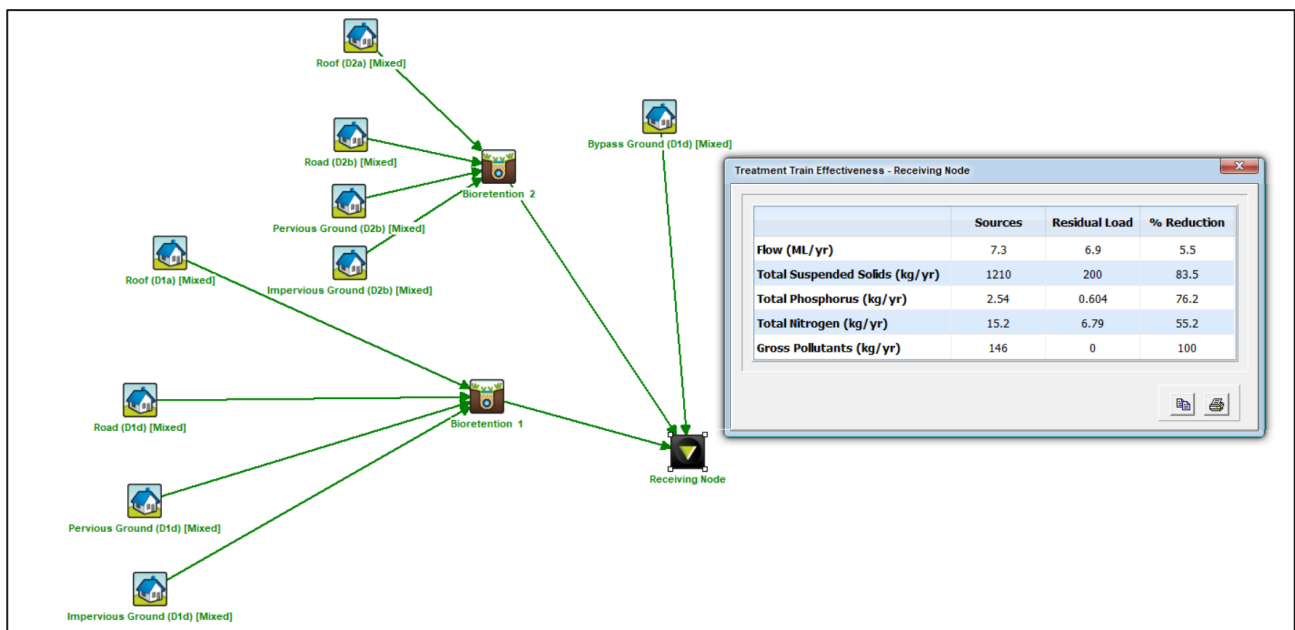


Figure 6-3 MUSIC Model Layout for 54 George Alexander Way

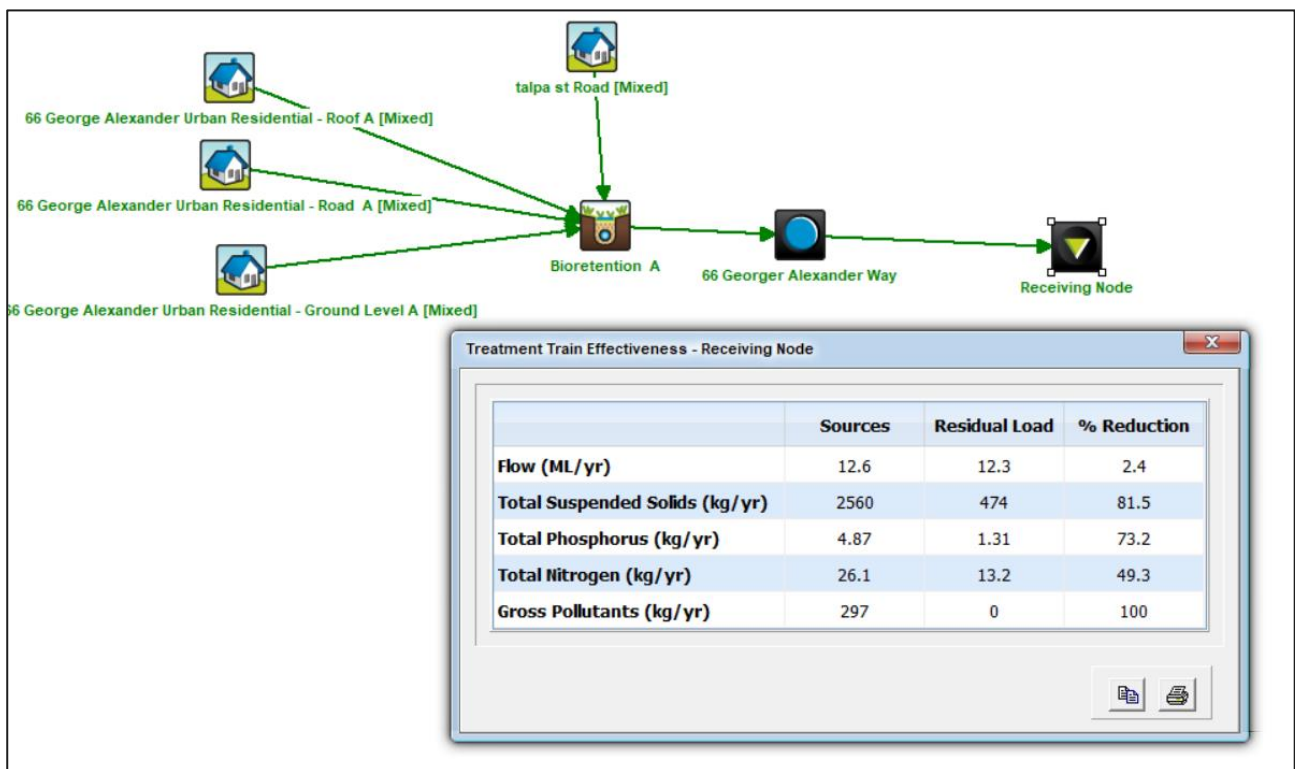


Figure 6-4 MUSIC Model Layout for 66 George Alexander Way

7 STORMWATER QUALITY (CONSTRUCTION)

7.1 Water Quality Objectives

Table 7-1 Construction Phase Quality Objectives (SPP and CoGC LDG)

Pollutant	Criteria
Drainage Control	Design life and design storm of temporary drainage works: - Disturbed area open for <12 months—1 in 2 ARI. - Disturbed area open for 12-24 months—1 in 5 ARI. - Disturbed area open for > 24 months—1 in 10 ARI.
Erosion Control	- Minimise exposure of disturbed soils at any time. - Avoid or minimise large construction activities in the wet season. - Divert water run-off from undisturbed areas around disturbed areas. - Use erosion risk ratings to determine appropriate erosion control measures.
Sediment Control	Use soil loss rates to determine appropriate sediment control measures Design storm for sediment control basins should be based on retaining the maximum sediment quantity for the maximum volume of water run-off Site discharge during sediment basin dewatering should not exceed 50 mg/L TSS and pH between 6.5–8.5
Stormwater Drainage / Flow Management	Hydraulics and hydrology—Take all reasonable and practicable measures to minimise significant changes to the natural waterway hydraulics and hydrology from: - peak flow for the one-year and 100-year ARI event (respectively for aquatic ecosystems and flood protection). - run-off frequency and volumes entering receiving waters. - Uncontrolled release of contaminated stormwater.
Water Quality Outcomes	Stormwater flows from undisturbed and disturbed areas—manage to help protect environmental values Coarse sediment—coarse sediment is retained on site Fine sediment—Site discharge during sediment basin dewatering has a TSS concentration less than 50 mg/L Turbidity—Site discharge during sediment basin dewatering has a turbidity (NTU) less than 10% above receiving waters turbidity— measured immediately upstream of the site Nutrients (N & P)—Nitrogen and phosphorus are managed through sediment control. pH—Site discharge during sediment basin dewatering has a pH range 6.5–8.5 Litter and other waste—Prevent litter/waste entering the site, the stormwater system or watercourses that discharge from the site. Also minimise or sufficiently contain on-site litter and waste production and regularly clear waste bins Hydrocarbons and other contaminants—Hydrocarbons and other contaminants are prevented from entering the stormwater system or internal watercourses that discharge from the site. Wash down water—Wash down water is prevented from entering the stormwater system or internal watercourses that discharge from the site Cations and anions—Cations and anions including aluminium, iron and Sulfate are managed as required under an approved acid Sulfate soil management plan

Table 7-1 provides the construction phase stormwater quality objectives outline by the State Planning Policy. Additional relevant acts, policies and information that may be useful for construction phase planning include:

- Environmental Protection Act (1994).
- Environmental Protection (Water) Policy (2009).
- Queensland Development Code, Sediment and Erosion Control (2010).
- Best Practice Erosion and Sediment Control for Building and Construction Sites Guidelines (2008).

7.2 Erosion and Sediment Control Plan Purpose

During the construction phase it shall be the Principal Contractor's responsibility to ensure the objectives of Table 7-1 are achieved.

The following section of this report provides a suggested framework for an Erosion and Sediment Control Plan. This includes recommended actions and responses for specific activities; monitoring and reporting; and construction of specifically designed site-specific sediment basins.

7.3 Specific Activities

7.3.1 Erosion and Sediment Control of Disturbed Land

During the construction phase it shall be the Principal Contractor's responsibility to ensure the following:

- Diversion of any clean water runoff that may interfere with land disturbance by the use of earth bunds, or other control devices deemed appropriate by a suitable supervisor.
- Reduction of sediment migration from disturbed land parcels by implementing silt fences, sediment basins or other control devices as deemed appropriate by a suitable supervisor.
- Where cut to fill operations produce a spoil it is recommended that the excess material be placed upstream of the excavation location to ensure any sediment runoff is directed back into the trench. Earth bunds or sediment fences may be required to control direction of sediment flow should the spoil be placed on the downstream side of the excavation site.
- Control measures such as a gully pit sediment barrier (see Arcadis drawings attached) shall be installed around inlet pits where required reducing the potential for sediment discharge into the surrounding stormwater system.
- Any sediment deposited from construction vehicles will be swept up and removed.
- Erosion and sediment control devices may only be removed once disturbed lands which they are protecting are rehabilitated and capable of resisting further erosion.

7.3.2 Spoil and Stockpile Management

It shall be the Principal Contractor's responsibility to oversee the following controls during the construction phase unless otherwise specified:

- The placement of spoil and stockpile material shall be kept at a maximum distance from stormwater inlets, gutters and stormwater pipes to reduce unnecessary sediment migration into nearby infrastructure.
- Spoil and stockpile material shall be placed in a way that reduces the likelihood of sedimentation, erosion and slippage. Advice from an appropriate project manager/representative shall be sought in this instance.
- Spoil or stockpile material that is deemed a contaminant shall be placed on a designated zone of either fill material, plastic or concrete with the installation of appropriate containment devices. Advice from an appropriate project manager/representative shall be sought in this instance as the resulting control will be highly dependent on the severity of contamination.
- It shall be the Project Manager's responsibility to foresee and develop appropriate control measures to prevent the impacts of spoil and stockpile material prior to construction activities. Monitoring and reporting shall also be required during the implementation of any given device associated with spoil and stockpile management.

7.3.3 Erosion Control

It shall be the Principal Contractor's responsibility to oversee the following controls during the construction phase:

- Traffic of any type shall be kept away from areas of rehabilitation to promote stabilisation of the zone.
- Where wind and water are acknowledged as potential erosion sources temporary protection shall be installed. Such measures only apply to zones of spoil, stockpile and land disturbance which are unlikely to receive works within a period of 6-8 weeks. Further advice from an appropriate project manager/representative shall be sought in this instance as the resulting control will be highly dependent on the disturbance type and erosion source.
- Once viable, final landscaping shall be undertaken on applicable zones to increase stability.

7.3.4 Personnel Training

It shall be the Principal Contractor's responsibility to oversee the following training protocols during the construction phase:

- Environmental management and incident reporting is to be included on all site induction courses.
- All personnel are to receive adequate training in; workplace health and safety issues, environmental management, best practice erosion and sediment control practices, incident reporting procedures and where applicable site inspection and maintenance procedures.

7.3.5 Miscellaneous

It is the Principal Contractor's responsibility to ensure erosion and sediment controls are operated and maintained in an effective operational condition. These structures are not allowed to accumulate sediment volume in excess of 70% sediment storage design capacity as per Section 6 of the Urban Stormwater Quality Planning Guidelines 2010.

- Sediment removed from control measures must be disposed of in a manner approved by the local Council that does not cause pollution and forms part of the Contractor's obligation.
- Any chemicals, fuel or oil stored on site shall be stored under cover in a bounded area or placed sufficiently above ground level to prevent contamination of surface water.
- A waste concrete receptor (disposal area) must be established if significant concreting is to occur on site. The site must be surrounded by perimeter bunds and be clearly signed.
- A general waste collection area shall be established which is to include appropriate pollutant runoff controls, dependent on the nature of the waste.

7.4 Project Personnel Responsibilities

A description of the key personnel involved with implementing the Erosion and Sediment Control Plan are listed in Table 7-2. It is recommended that all parties involved attend a pre-construction conference to discuss and clarify all issues associated with sediment and erosion control as well as this plan.

Table 7-2 Project Personnel Responsibilities

Project Role	Responsibilities
Superintendent	• Authorisation of this plan; and • Review and monitoring of this plan.
Contractor / Site Manager	• Implementation of this plan; • Monitoring of this plan; • Supervising any activities or requirements required by this plan; and • Ensuring all personnel are aware of the contractual agreements associated with this plan.
All Personnel	• Ensuring they are aware of the contractual agreements associated with this plan; and • Informing appropriate personnel of any issues that may arise with respect to the desired sediment and erosion control measures.

7.5 Monitoring and Responsibility

7.5.1 All Personnel

It is the obligation of all personnel to report any failures in the erosion and sediment control works utilised during the projects life cycle. Any identified errors within the sediment and erosion control system shall be reported in writing to a relevant project manager. A formal inquiry shall be undertaken in accordance with the reported issue as well as the relevant party procedures (i.e. Principal Contractor).

7.5.2 Contractor/Contractor's Foreman

It shall be the responsibility of the Contractor and Contractor's Foreman to monitor and report on the erosion and sediment control measures utilised in the construction phase. Inspections are to be undertaken:

- On a daily basis during earthworks, land disturbance, spoil or stockpile activities and rain events.
- Weekly during site inactivity.
- Within 24 hours prior to expected rainfall and 18 hours prior to intense rainfall events.

The following shall be inspected or reported on:

- Erosion and sediment control devices are in the correct location and are working as defined by this plan.
- Drainage systems both internal and external to the site are operating effectively or to pre-construction efficiencies.
- Spilled material is removed if it can potentially mobilise via stormwater runoff or wind.
- Stabilisation of disturbed land parcels has been undertaken in an effective manner.
- Excess sediment has been removed from erosion and sediment measures appropriately if the device is operation ineffectively or requires decommissioning.
- It is understood that repairs, maintenance or reinstallation may be required if any control measures are operating inadequately, or if infrastructure is damaged due to inefficient operation of the outlined measures.

7.5.3 Environmental Representative

It shall be the responsibility of the environment representative to periodically inspect and report on the effectiveness of the erosion and sediment controls during the construction phase of the project. Technical advice shall be given to personnel outlying any uncertainty with regards to the; applicability, installation, operation, maintenance, removal or rehabilitation of any sediment and erosion control.

7.6 Construction Phase Sediment Control Devices

As the site has been assessed as a single catchment, it is appropriate to approach the assessment of construction phase sediment devices in a similar manner.

In accordance with the Best Practice Erosion and Sediment Control Manual (IECA 2009) the construction phase catchment has been classified to determine the level of sediment and erosion control techniques required. The site is identified as per Table 4.4.6 (IECA 2009) to be closest to the Southport locality and therefore attracts an average monthly rainfall depth of 56mm to 205mm.

As the extent of soil disturbance is widespread, Type 1 techniques will be used in accordance with Table 4.5.3. This will require control techniques such as a vehicle shakedown at the site entry, sediment fences, sediment basins and check dams. Preliminary explanations of the measures can be found in the engineering drawings in Appendix B.

8 ASSET MAINTENANCE

All the stormwater quantity and quality controls detailed in this document are contained within the development site and will remain an asset of the development's property owner, Body Corporate or similar internal authority.

9 CONCLUSION

This SBSMP has been prepared to provide a design proposal and guide to the stormwater quantity and quality management techniques for the site.

The primary objectives of this report are achieved as follows:

Lawful Point of Discharge (LPD)

- Stormwater will be discharged to the 3 existing lawful points of discharge, being Talpa Street to the north of the site, the lot to the south of the site (Lot 95 on RP187418) and the low point on the northern boundary within the site and its downstream drainage corridor.

Stormwater Quantity

- The site proposes to mitigate the increase in peak run off, where expected to occur at lawful Points of Discharge through the use of combined stormwater quantity tanks, a detention basin area and reductions in catchment areas.

Stormwater Quality

- A stormwater quality assessment is provided which demonstrates that a specially tailored treatment system will be required in order to meet the pollutant removal targets of City of Gold Coast during the operational phase of the proposed development. The proposed treatment system features bio-retention areas.

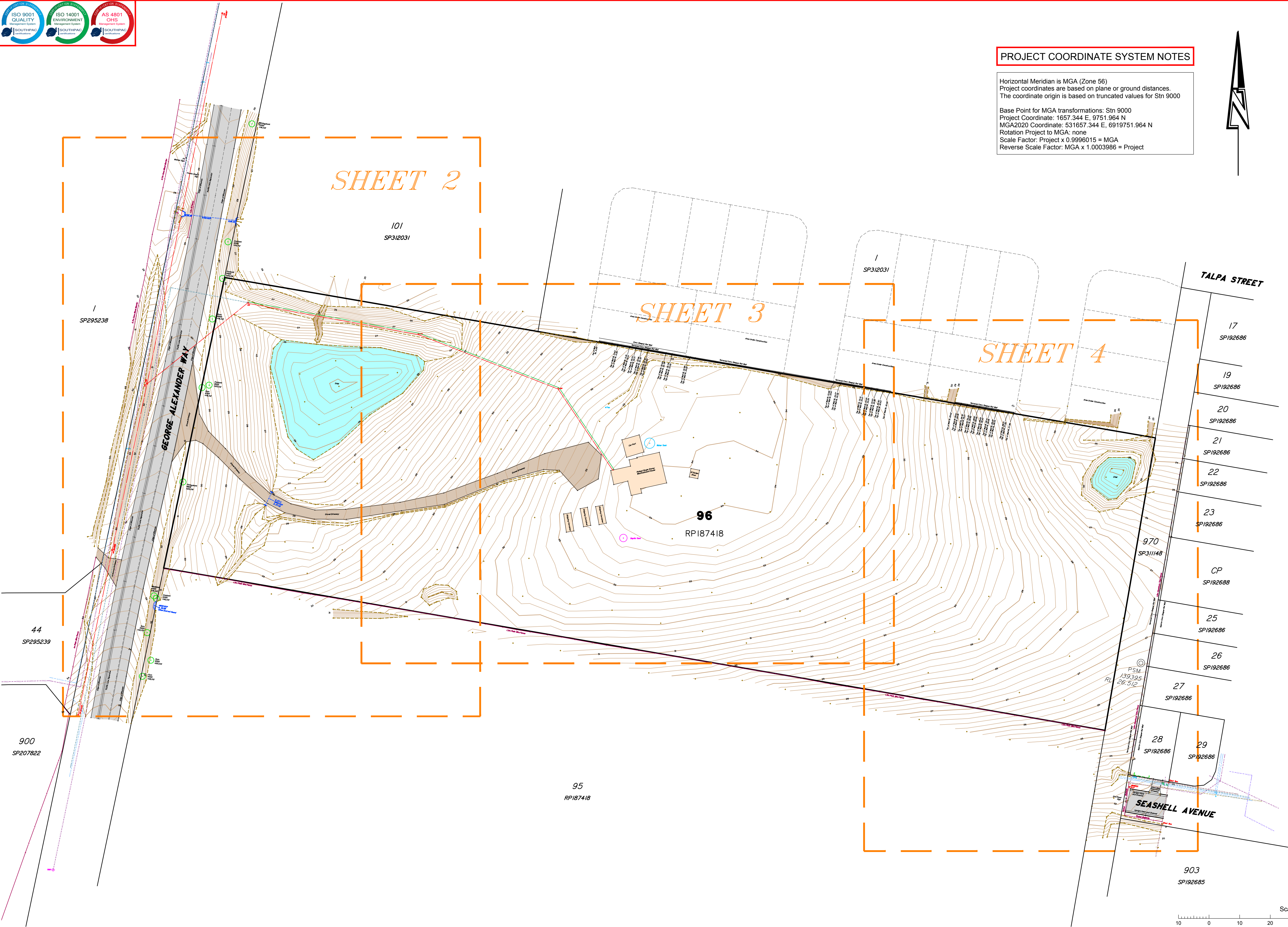
Erosion and Sediment Control

- Erosion and sediment control measures during construction shall be undertaken in accordance with the SPP and Council requirements.



APPENDIX A

Survey



PROJECT COORDINATE SYSTEM NOTES

Horizontal Meridian is MGA (Zone 56)
Project coordinates are based on plane or ground distances.
The coordinate origin is based on truncated values for Stn 9000

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MGA2020 Coordinate: 531657.344 E, 6919751.964 N
Rotation Project to MGA: none
Scale Factor: Project x 0.9996015 = MGA
Reverse Scale Factor: MGA x 1.0003986 = Project

LEGEND

Quality levels are shown on linetypes along with service type eg.
—E(A)— First Letter is the Service (Elec) and the second is Quality Level (A)

	by Survey	by Records
U/G ELECTRICITY	—E(A)—	—E(D)—
O/H ELECTRICITY	—E—	—E—
O/H TELECOMMUNICATIONS	—T—	—T—
U/G TELECOMMUNICATIONS	—T(A)—	—T(D)—
U/G DRAINAGE	—D(A)—	—D(D)—
SEWERAGE	—S(A)—	—S(D)—
WATER	—W(A)—	—W(D)—
GAS	—G(A)—	—G(D)—
FENCE	—F—	—F—

SYMBOLS

Sewer Manhole	○ SMH	MH	Manhole
Gully Trap	○ GT	SL	Surface Level
Stormwater Manhole	○ SWMH	IL	Invert Level
Fire Hydrant	○ FH	BM	Bench Mark
Valve	○ V	Ø	Diameter
Water Meter	○ WM	RCP	Reinforced Concrete Pipe
Electricity Box / Pillar	□ Elect Box	GI	Galvanised Iron
Electric Light Pole	○ ELP	Ø, H, S	Trunk diameter, Height, Spread (canopy diameter)
Power Pole	○ PP		
Electricity Manhole	□ Elect MH		
Electricity Pit	□ Elect PH		
Traffic Signal Pit	□ Traffic PH		
Traffic Light	○ Traffic		
Telecommunications Manhole	□ Tel MH		
Telecommunications Pit	□ Tel PH		
Tree / Shrub	○		

ABBREVIATIONS

NOTES

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QUALITY LEVELS

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Quality Level D - (least accurate level and if used on its own has a high risk of damage) QL-D information is generally obtained from existing records provided by utilities as a result of a Dial Before You Dig enquiry being lodged. In many cases the asset depicted on the plan is in a schematic format only and intended only to indicate its presence.

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Quality Level A - (meets location accuracy standards for minimum risk when excavating) Is the highest Quality Level accuracy and consists of positive identification of the attribute and location of a subsurface utility at a point to an absolute spatial position in three dimensions. It is the only quality level that defines a subsurface utility as 'Validated'.

No.	Drawn	Date	Description	Checked
A	MD	31/10/2022	Original Issue	JC

Plan of

DETAIL PLAN

Sheet 1 of 4

Project

54 George Alexander Way, Coomera

Client

Coomera GA Pty Ltd ATF The Coomera GA Unit Trust

Surveyed

BC

Date

Oct 2022

Level Datum: AHD der.

Origin of Levels: PM139395

RL of Origin: 26.512

Contour Interval: 0.2m

Lot Description

Lot 96 on RP187418

Locality: Coomera

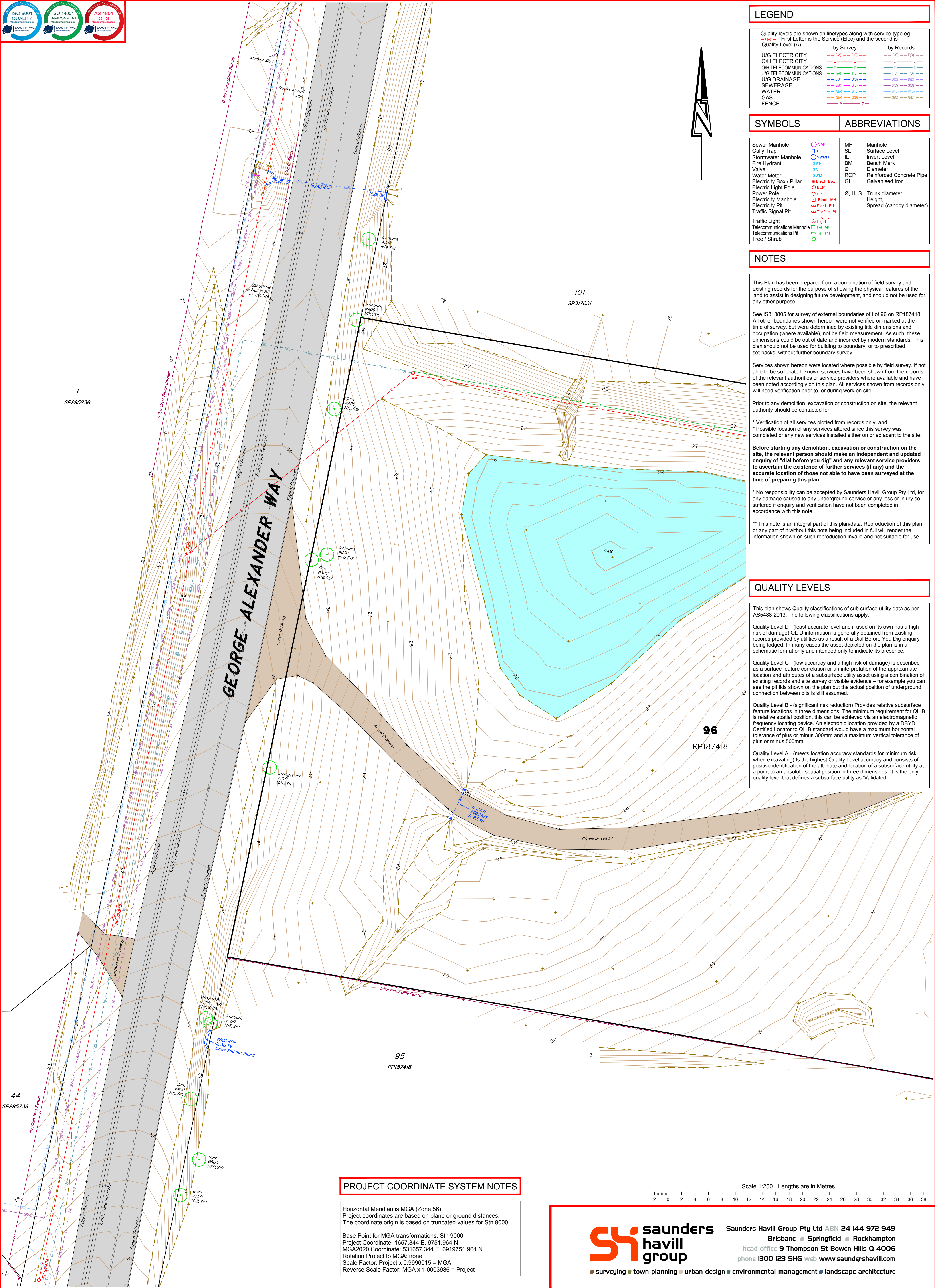
Local Government: Gold Coast City

■ surveying

Scale @A1 1: 600

@A3 1: 1200

Dwg No. 11241 S 03 DT A



LEGEND

Quality levels are shown on linetypes along with service type eg. — E — First Letter is the Service (Elec) and the second is Quality Level (A)			by Survey	by Records
U/G ELECTRICITY	— E —	— E —	— E —	— E —
O/H ELECTRICITY	— E —	— E —	— E —	— E —
O/H TELECOMMUNICATIONS	— T —	— T —	— T —	— T —
U/G TELECOMMUNICATIONS	— T —	— T —	— T —	— T —
U/G DRAINAGE	— D —	— D —	— D —	— D —
SEWERAGE	— S —	— S —	— S —	— S —
WATER	— W —	— W —	— W —	— W —
GAS	— G —	— G —	— G —	— G —
FENCE	— F —	— F —	— F —	— F —

SYMBOLS

Sewer Manhole	SMH	MH	Manhole
Gully Trap	GT	SL	Surface Level
Stormwater Manhole	SWMH	IL	Invert Level
Fire Hydrant	FH	BM	Bench Mark
Valve	V	Ø	Diameter
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Power Pole	PP		
Electricity Manhole	Elect MH		
Electricity Pit	Elect Pit		
Traffic Signal Pit	Traffic Pit		
Traffic Light	Light		
Telecommunications Manhole	Tel MH		
Telecommunications Pit	Tel Pit		
Tree / Shrub			

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Scale 1:250 - Lengths are in Metres.



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■ surveying ■ town planning ■ urban design ■ environmental management ■ landscape architecture

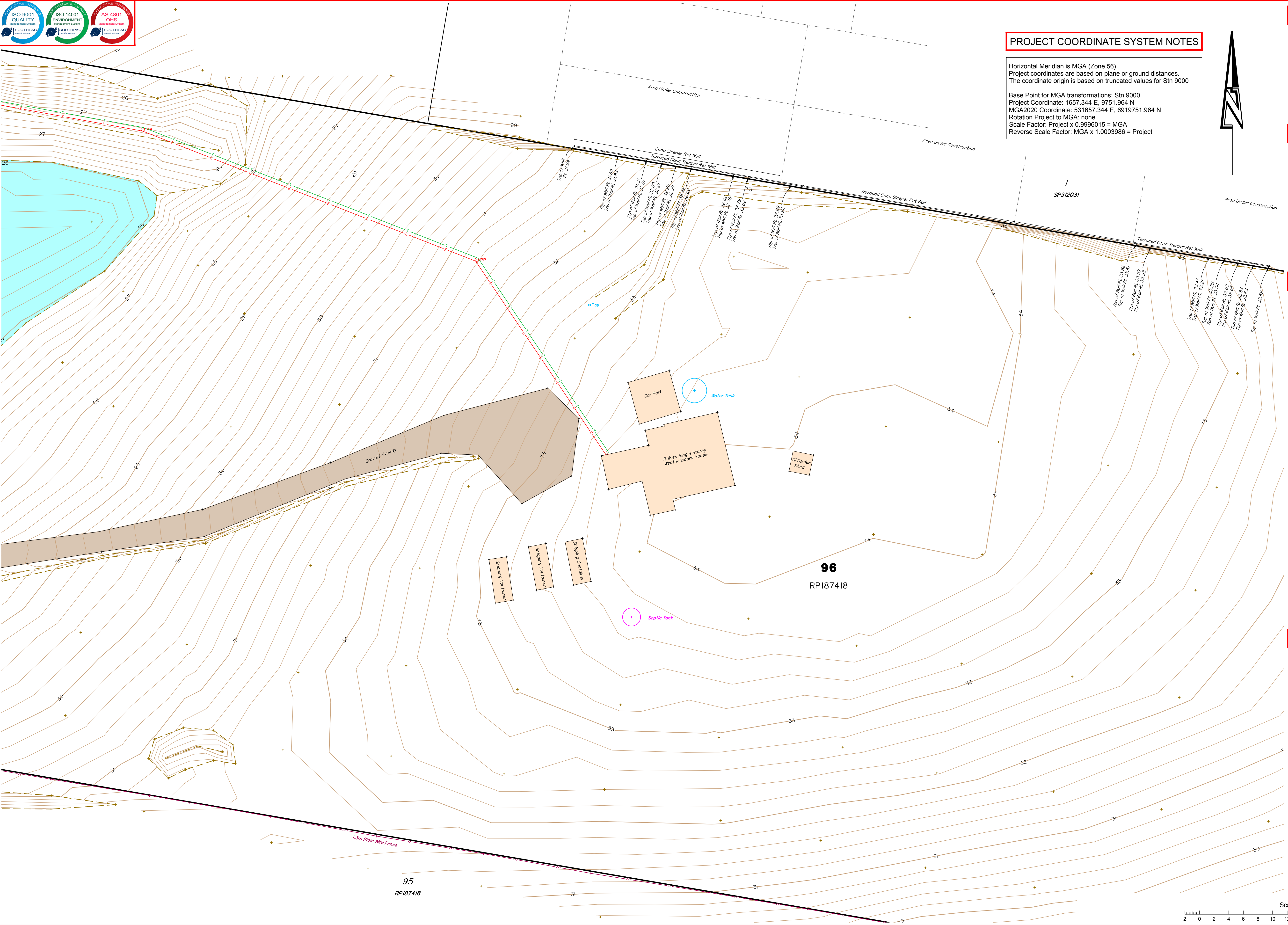
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Issues	No.	Drawn	Date	Description	Checked	Plan of	Surveyed		Date	Lot Description		
	A	MD	31/10/2022	Original Issue	JC		BC	Oct 2022				
	DETAIL PLAN						Level Datum: AHD der.		Lot 96 on RP187418			
	Sheet 2 of 4						Origin of Levels: PM139395					
	Project 54 George Alexander Way, Coomera						RL of Origin: 26.512					
	Client Coomera GA Pty Ltd ATF The Coomera GA Unit Trust						Contour Interval: 0.2m					
									Locality: Coomera			
									Local Government: Gold Coast City			
									Dwg No. 11241 S 03 DT A			



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	by Survey	by Records
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U/G TELECOMMUNICATIONS	---TA)---TB)---	---TC)---TD)---
U/G DRAINAGE	---DA)---DB)---	---DC)---DD)---
SEWERAGE	---SA)---SB)---	---SC)---SD)---
WATER	---WA)---WB)---	---WC)---WD)---
GAS	---GA)---GB)---	---GC)---GD)---
FENCE	---F---	---F---

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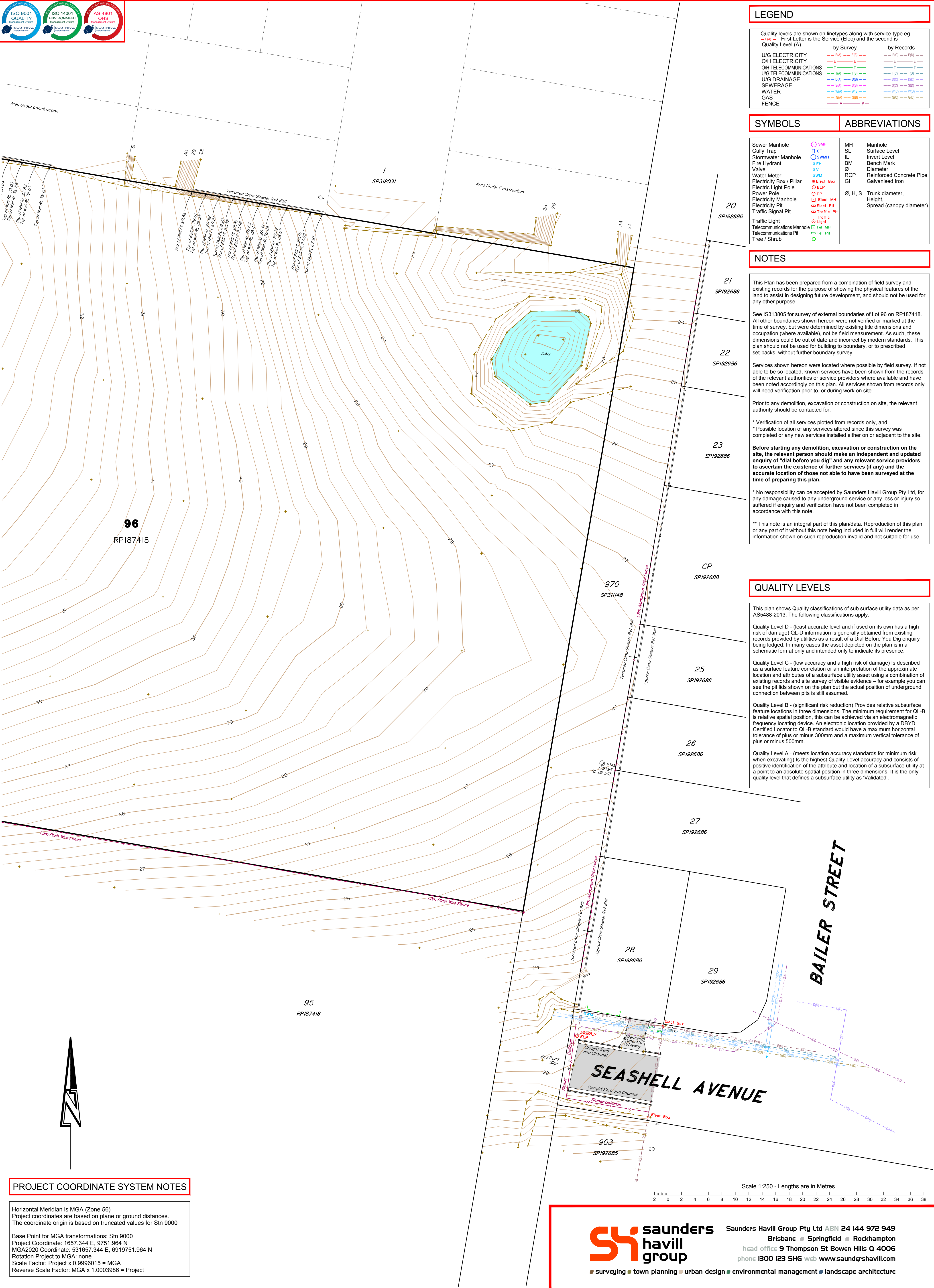
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No.	Drawn	Date	Description	Checked
A	MD	31/10/2022	Original Issue	JC

Plan of	DETAIL PLAN Sheet 3 of 4
Project	54 George Alexander Way, Coomera
Client	Coomera GA Pty Ltd ATF The Coomera GA Unit Trust

Surveyed BC	Date Oct 2022	Lot Description Lot 96 on RP187418
Level Datum: AHD der.		Locality: Coomera Local Government: Gold Coast City
Origin of Levels: PM139395 RL of Origin: 26.512		
Contour Interval: 0.2m		



LEGEND

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	by Survey	by Records
U/G ELECTRICITY	--- 1.4 --- 1.4 ---	--- 1.4 --- 1.4 ---
O/H ELECTRICITY	--- 1.4 --- 1.4 ---	--- 1.4 --- 1.4 ---
O/H TELECOMMUNICATIONS	--- 1.4 --- 1.4 ---	--- 1.4 --- 1.4 ---
U/G TELECOMMUNICATIONS	--- 1.4 --- 1.4 ---	--- 1.4 --- 1.4 ---
U/G DRAINAGE	--- 1.4 --- 1.4 ---	--- 1.4 --- 1.4 ---
SEWERAGE	--- 1.4 --- 1.4 ---	--- 1.4 --- 1.4 ---
WATER	--- 1.4 --- 1.4 ---	--- 1.4 --- 1.4 ---
GAS	--- 1.4 --- 1.4 ---	--- 1.4 --- 1.4 ---
FENCE	--- 1.4 --- 1.4 ---	--- 1.4 --- 1.4 ---

SYMBOLS

Sewer Manhole	○ SMH	MH	Manhole
Gully Trap	□ GT	SL	Surface Level
Stormwater Manhole	○ SWMH	IL	Invert Level
Fire Hydrant	■ FH	BM	Bench Mark
Valve	■ V	Ø	Diameter
Water Meter	■ WM	RCP	Reinforced Concrete Pipe
Electricity Box / Pillar	■ Elect Box	GI	Galvanised Iron
Electric Light Pole	○ ELP	Ø, H, S	Trunk diameter, Height, Spread (canopy diameter)
Power Pole	○ PP		
Electricity Manhole	□ Elect MH		
Electricity Pit	□ Elect PH		
Traffic Signal Pit	□ Traffic PH		
Traffic Light	○ Light		
Telecommunications Manhole	□ Tel MH		
Telecommunications Pit	□ Tel PH		
Tree / Shrub	○ Tree		

NOTES

This Plan has been prepared from a combination of field survey and existing records for the purpose of showing the physical features of the land to assist in designing future development, and should not be used for any other purpose.

See IS313805 for survey of external boundaries of Lot 96 on RP187418. All other boundaries shown hereon were not verified or marked at the time of survey, but were determined by existing title dimensions and occupation (where available), not be field measurement. As such, these dimensions could be out of date and incorrect by modern standards. This plan should not be used for building to boundary, or to prescribed set-backs, without further boundary survey.

Services shown hereon were located where possible by field survey. If not able to be so located, known services have been shown from the records of the relevant authorities or service providers where available and have been noted accordingly on this plan. All services shown from records only will need verification prior to, or during work on site.

Prior to any demolition, excavation or construction on site, the relevant authority should be contacted for:

- * Verification of all services plotted from records only, and
- * Possible location of any services altered since this survey was completed or any new services installed either on or adjacent to the site.

Before starting any demolition, excavation or construction on the site, the relevant person should make an independent and updated enquiry of "dial before you dig" and any relevant service providers to ascertain the existence of further services (if any) and the accurate location of those not able to have been surveyed at the time of preparing this plan.

* No responsibility can be accepted by Saunders Havill Group Pty Ltd, for any damage caused to any underground service or any loss or injury so suffered if enquiry and verification have not been completed in accordance with this note.

** This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

QUALITY LEVELS

This plan shows Quality classifications of sub surface utility data as per AS5488-2013. The following classifications apply.

Quality Level D - (least accurate level and if used on its own has a high risk of damage) QL-D information is generally obtained from existing records provided by utilities as a result of a Dial Before You Dig enquiry being lodged. In many cases the asset depicted on the plan is in a schematic format only and intended only to indicate its presence.

Quality Level C - (low accuracy and a high risk of damage) Is described as a surface feature correlation or an interpretation of the approximate location and attributes of a subsurface utility asset using a combination of existing records and site survey of visible evidence - for example you can see the pit lids shown on the plan but the actual position of underground connection between pits is still assumed.

Quality Level B - (significant risk reduction) Provides relative subsurface feature locations in three dimensions. The minimum requirement for QL-B is relative spatial position, this can be achieved via an electromagnetic frequency locating device. An electronic location provided by a DBYD Certified Locator to QL-B standard would have a maximum horizontal tolerance of plus or minus 300mm and a maximum vertical tolerance of plus or minus 500mm.

Quality Level A - (meets location accuracy standards for minimum risk when excavating) Is the highest Quality Level accuracy and consists of positive identification of the attribute and location of a subsurface utility at a point to an absolute spatial position in three dimensions. It is the only quality level that defines a subsurface utility as 'Validated'.

PROJECT COORDINATE SYSTEM NOTES

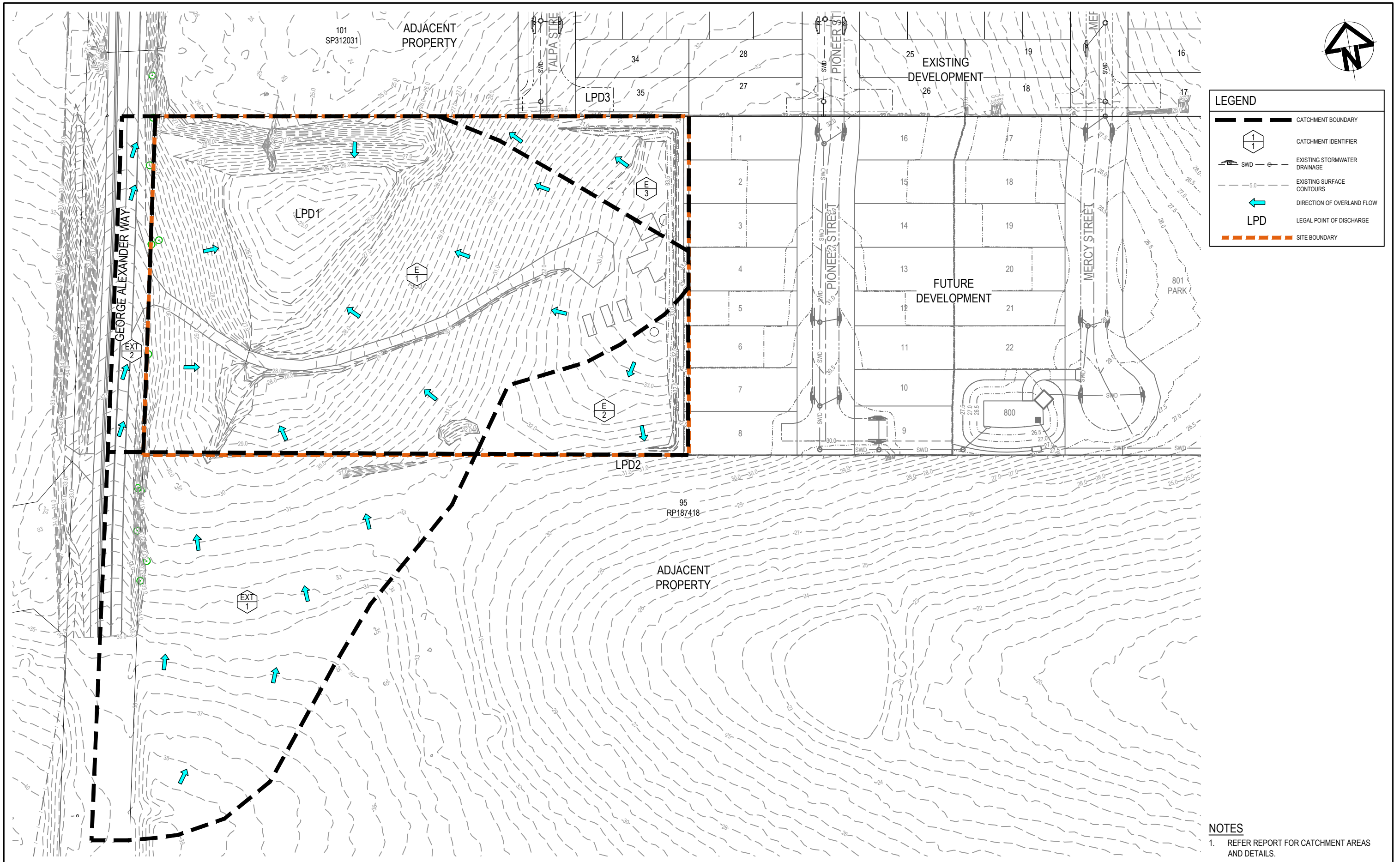
Horizontal Meridian is MGA (Zone 56)
Project coordinates are based on plane or ground distances.
The coordinate origin is based on truncated values for Stn 9000

Base Point for MGA transformations: Stn 9000
Project Coordinate: 1657.344 E, 9751.964 N
MGA2020 Coordinate: 531657.344 E, 6919751.964 N
Rotation Project to MGA: none
Scale Factor: Project x 0.9996015 = MGA
Reverse Scale Factor: MGA x 1.0003986 = Project

Issues	No.	Drawn	Date	Description	Checked	Plan of	Surveyed	Date	Lot Description	surveying
	A	MD	31/10/2022	Original Issue	JC		BC	Oct 2022		
							Level Datum:	AHD der.		
							Origin of Levels:	PM139395		
							RL of Origin:	26.512		
							Contour Interval:	0.2m		
DETAIL PLAN									Scale @A1 1: 250	
Sheet 4 of 4									@A3 1: 500	
Project 54 George Alexander Way, Coomera									Locality: Coomera	
Client Coomera GA Pty Ltd ATF The Coomera GA Unit Trust									Local Government: Gold Coast City	
									Dwg No. 11241 S 03 DT A	

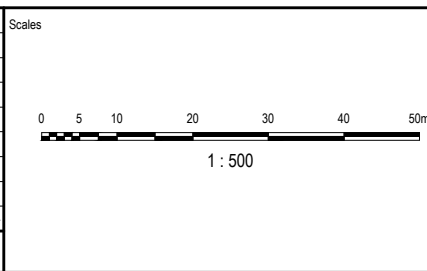
APPENDIX B

Engineering Drawings



- NOTES**
1. REFER REPORT FOR CATCHMENT AREAS AND DETAILS.

01	ORIGINAL ISSUE	DK	AS	RM	08.08.2024
Issue	Description	DR	CH	VE	Date



Client

Coomera GA Pty Ltd
ATF The Coomera
GA Unit Trust
Pty Ltd

Status	PRELIMINARY NOT TO BE USED FOR CONSTRUCTION		
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Original Issue Signatures			
Drawn	D. KEARNEY	Original Size	A1
Designed	T. DINGLE	Height Datum	AHD
Project Manager	A. SHEPHERD	Grid	MGA (ZONE 56)
Verified	R. MULLIGAN		

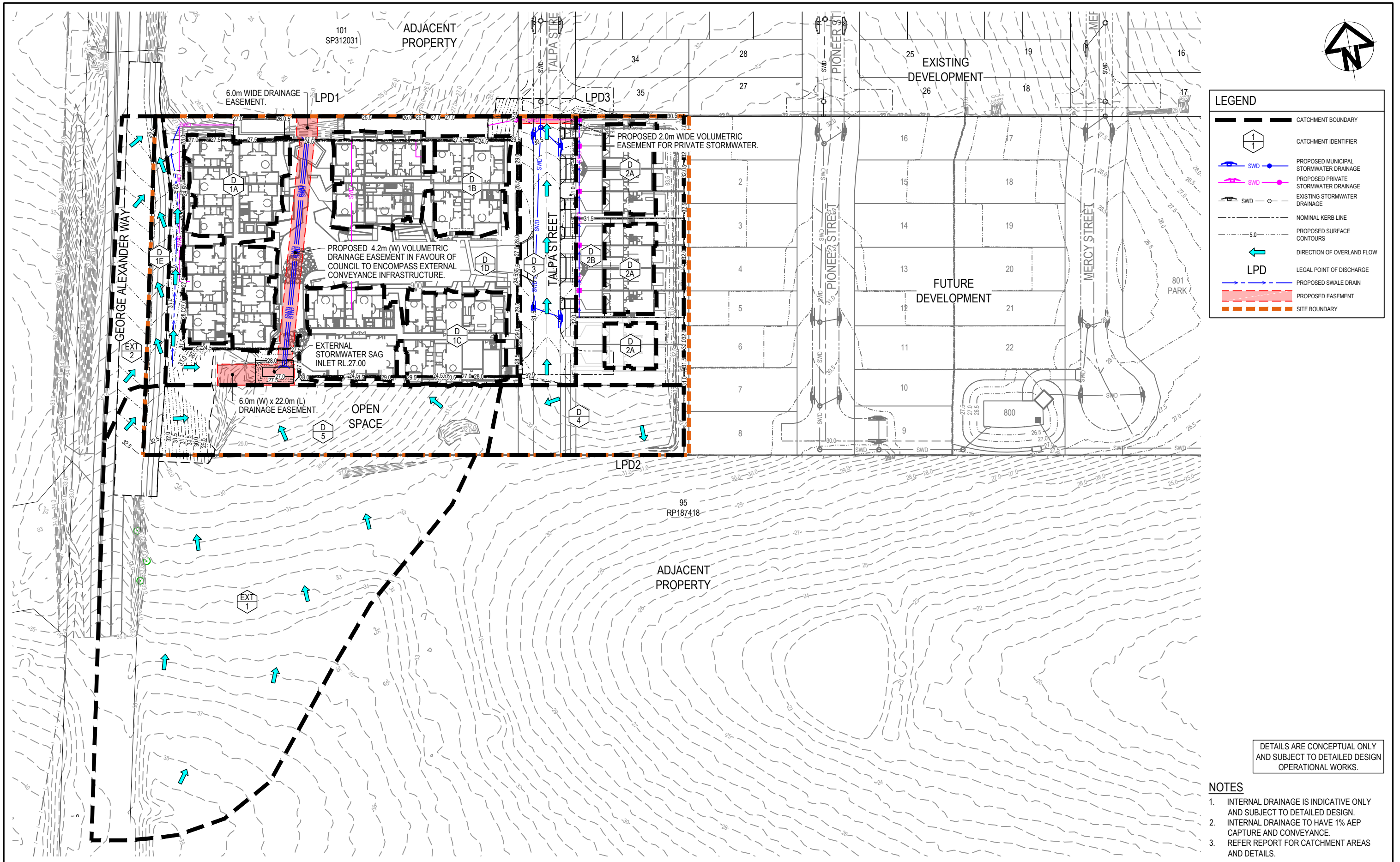
Project	54 GEORGE ALEXANDER WAY, COOMERA	
Title	STORMWATER CATCHMENT PLAN - PRE DEVELOPMENT	

ARCADIS

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SOUTHPORT QLD 4215
ABN 76 104 485 289
Tel No: +61 7 5503 4800
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Project Number	30157884
Issue	01

Drawing No. GAW-AAP-DA-00-DRG-CV-0311

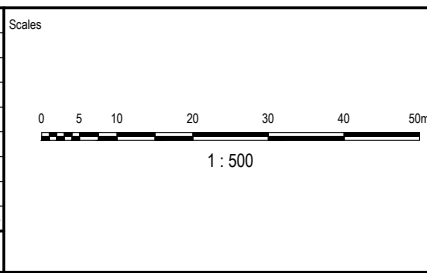


DETAILS ARE CONCEPTUAL ONLY
AND SUBJECT TO DETAILED DESIGN
OPERATIONAL WORKS.

NOTES

- INTERNAL DRAINAGE IS INDICATIVE ONLY
AND SUBJECT TO DETAILED DESIGN.
- INTERNAL DRAINAGE TO HAVE 1% AEP
CAPTURE AND CONVEYANCE.
- REFER REPORT FOR CATCHMENT AREAS
AND DETAILS.

Issue	Description	DR	CH	VE	Date
01	ORIGINAL ISSUE	DK	AS	RM	08.08.2024



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Verified	R. MULLIGAN		

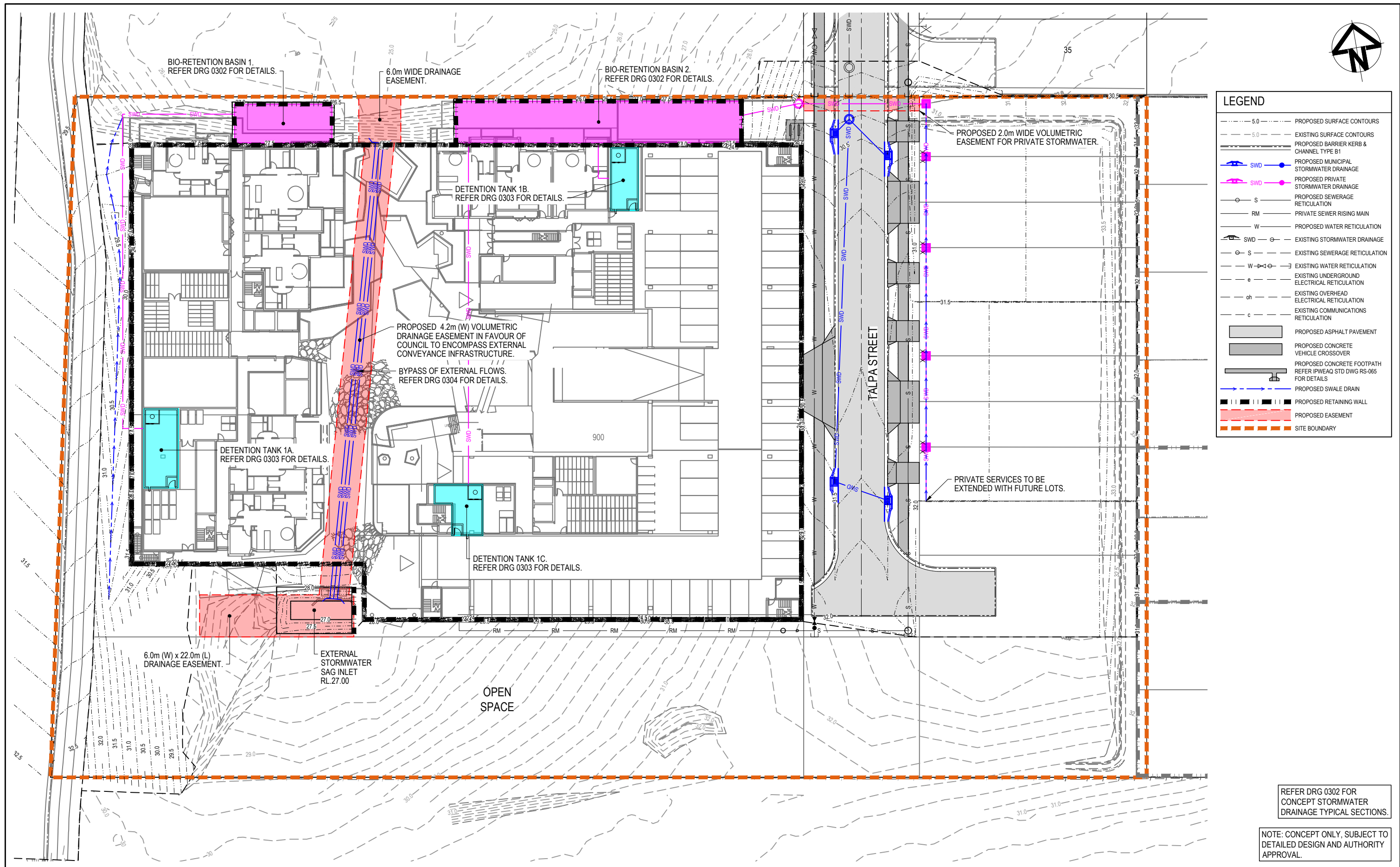
Project	54 GEORGE ALEXANDER WAY, COOMERA	
Title	STORMWATER CATCHMENT PLAN - POST DEVELOPMENT	

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Project Number	30157884
Issue	01

Drawing No.

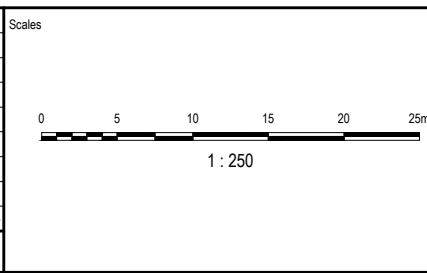
GAW-AAP-DA-00-DRG-CV-0312



REFER DRG 0302 FOR
CONCEPT STORMWATER
DRAINAGE TYPICAL SECTIONS.

NOTE: CONCEPT ONLY, SUBJECT TO
DETAILED DESIGN AND AUTHORITY
APPROVAL.

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Issue	Description	DR	CH	VE	Date



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Verified	R. MULLIGAN		

Project
54 GEORGE ALEXANDER WAY,
COOMERA

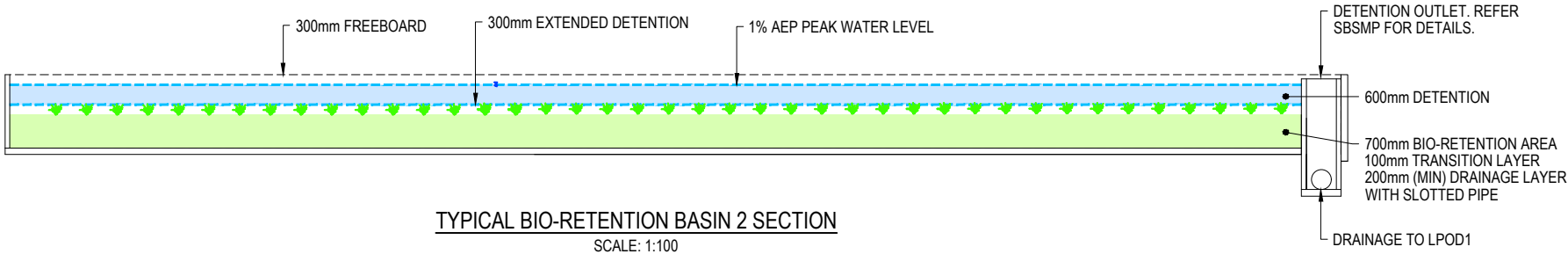
Title
CONCEPT
STORMWATER DRAINAGE
LAYOUT PLAN



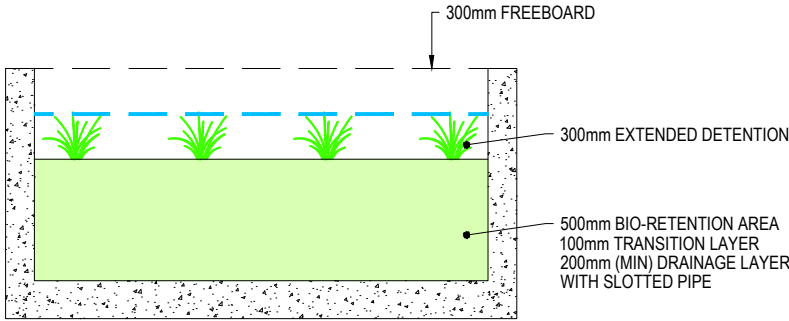
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Project Number	30157884
Issue	01

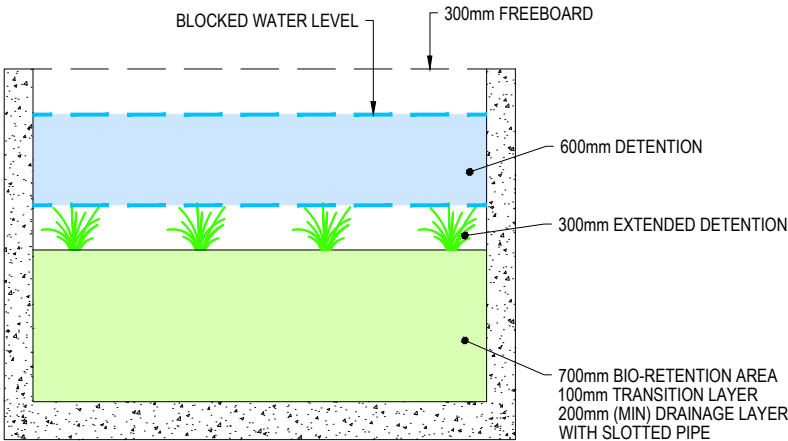
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TYPICAL BIO-RETENTION BASIN 2 SECTION
SCALE: 1:100



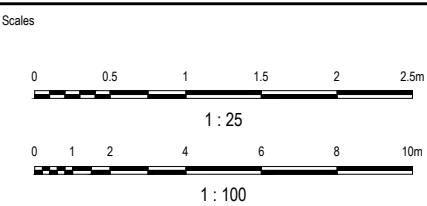
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SCALE: 1:25



TYPICAL BIO-RETENTION BASIN 2 DETAILS
SCALE: 1:25

- NOTES
1. CONCEPT ONLY, SUBJECT TO DETAILED DESIGN AND AUTHORITY APPROVAL.
 2. REFER TO SITE BASED STORMWATER MANAGEMENT PLAN, GA0004-30157884-AAR, FOR TANK AREAS AND OUTLET CONTROL CONFIGURATIONS.
 3. PROVIDE MAXIMESH RH3030 FOR ORIFICE DIAMETERS 150 MM OR LESS WITH A MINIMUM AREA OF 50 TIMES THE ORIFICE AREA.
 4. PROVIDE WELDLOK F40/203 FOR ORIFICES 150 MM DIAMETER OR MORE WITH A MINIMUM AREA OF 20 TIMES THE ORIFICE AREA.

01	ORIGINAL ISSUE	DK	AS	RM	08.08.2024
Issue	Description	DR	CH	VE	Date



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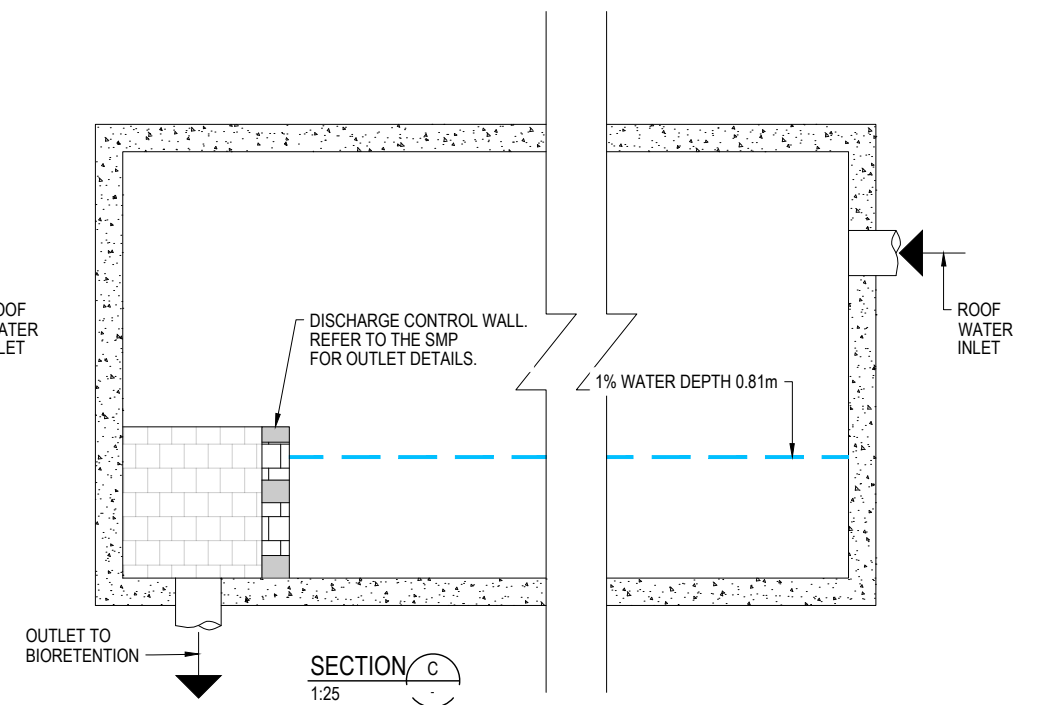
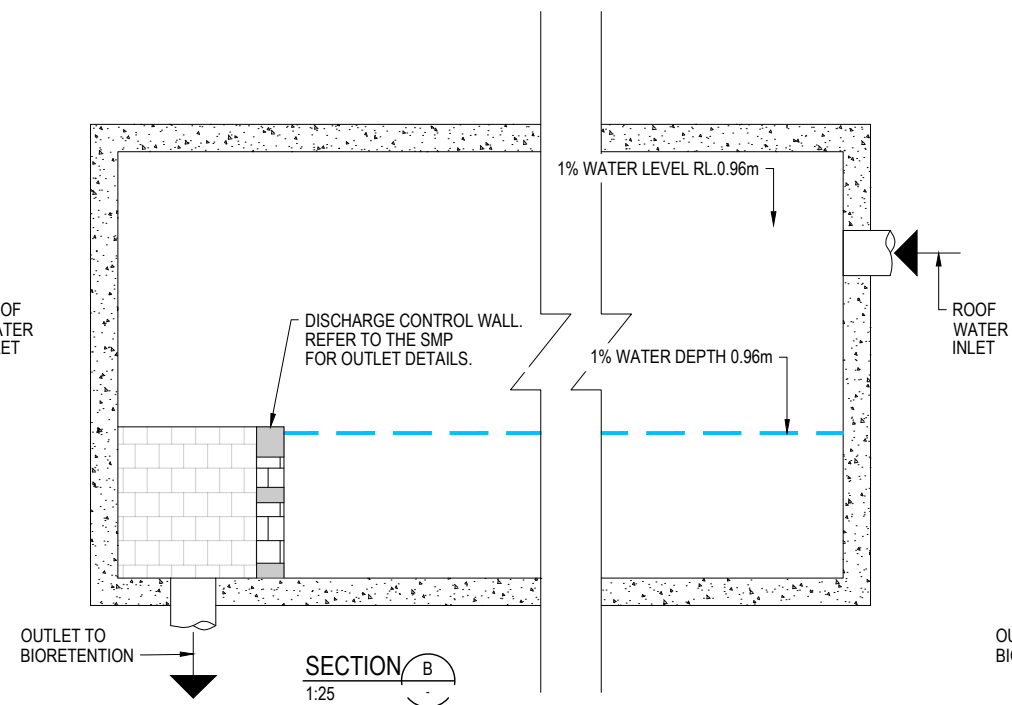
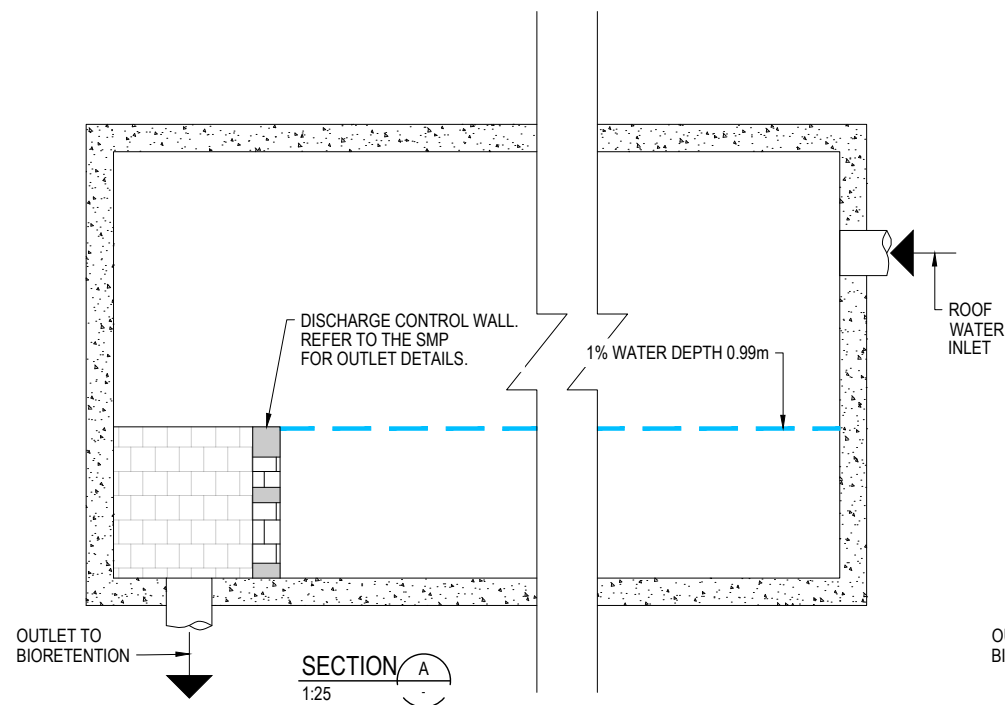
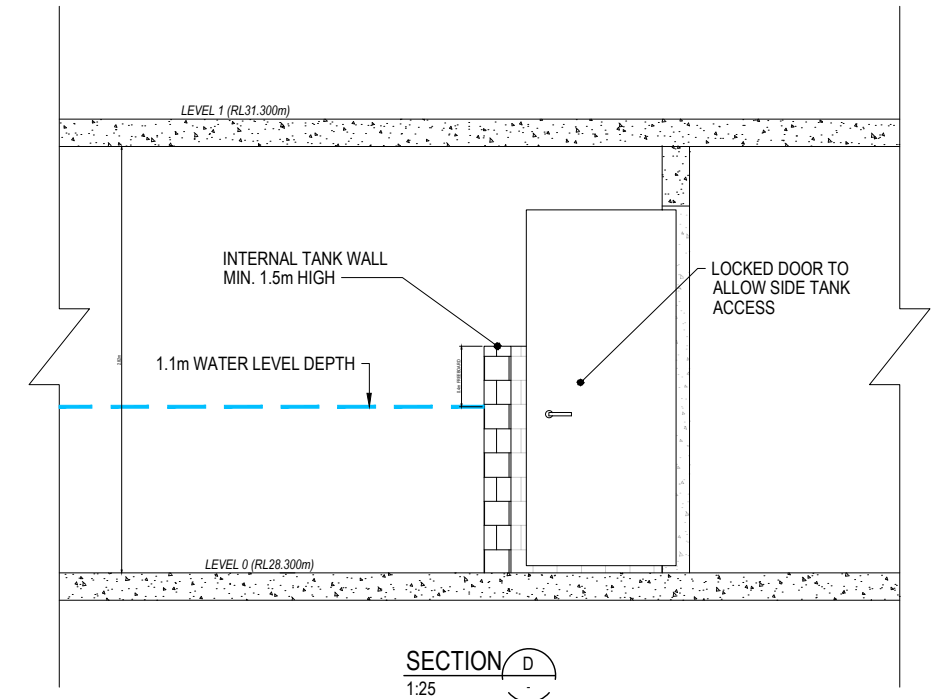
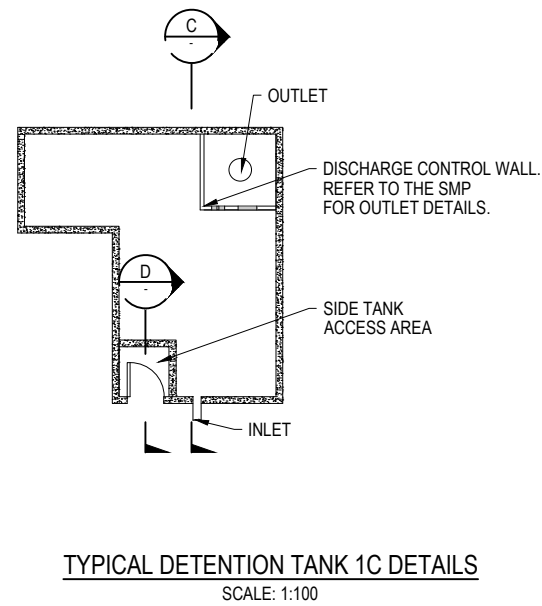
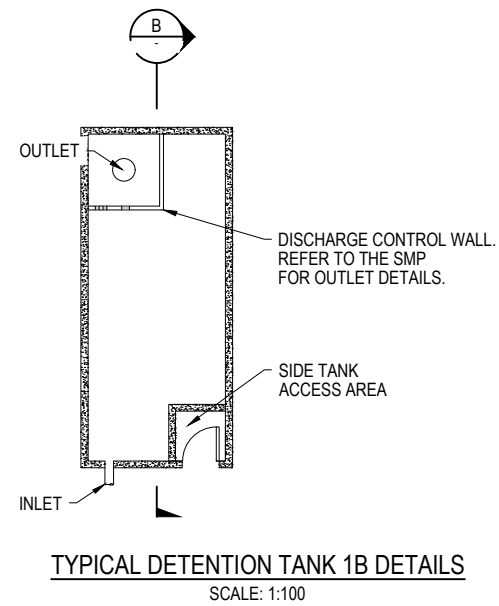
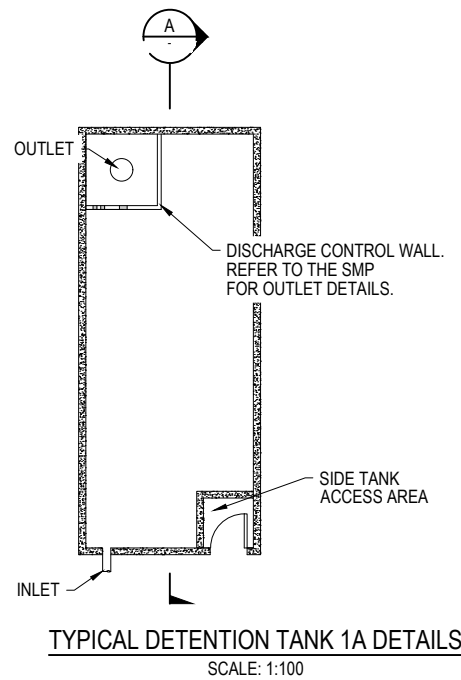
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Original Issue Signatures			
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Designed	T. DINGLE	Height Datum	AHD
Project Manager	A. SHEPHERD	Grid	MGA (ZONE 56)
Verified	R. MULLIGAN		

Project	54 GEORGE ALEXANDER WAY, COOMERA
Title	CONCEPT STORMWATER DRAINAGE SECTIONS & DETAILS SHEET 1



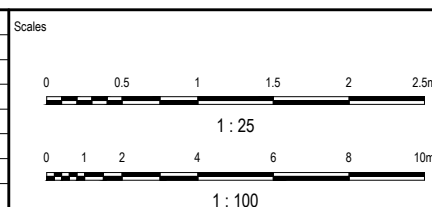
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Project Number	30157884	Issue	01
Drawing No.		GAW-AAP-DA-00-DRG-CV-0302	



- NOTES**
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 2. REFER TO SITE BASED STORMWATER MANAGEMENT PLAN, GA0004-30157884-AAR, FOR TANK AREAS AND OUTLET CONTROL CONFIGURATIONS.
 3. PROVIDE MAXIMESH RH3030 FOR ORIFICE DIAMETERS 150 MM OR LESS WITH A MINIMUM AREA OF 50 TIMES THE ORIFICE AREA.
 4. PROVIDE WELDLK F40/203 FOR ORIFICES 150 MM DIAMETER OR MORE WITH A MINIMUM AREA OF 20 TIMES THE ORIFICE AREA.

01	ORIGINAL ISSUE	DK	AS	RM	08.08.2024
Issue	Description	DR	CH	VE	Date



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Verified	R. MULLIGAN		

Project

54 GEORGE ALEXANDER WAY,
COOMERA

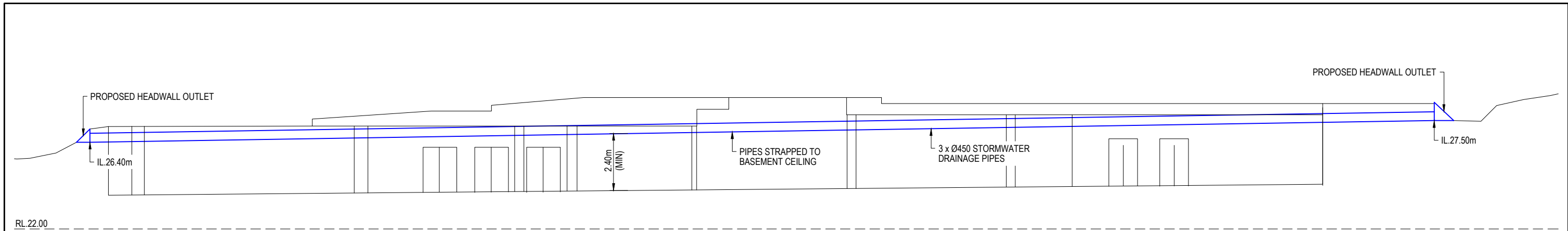
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CONCEPT
STORMWATER DRAINAGE
SECTIONS & DETAILS
SHEET 2

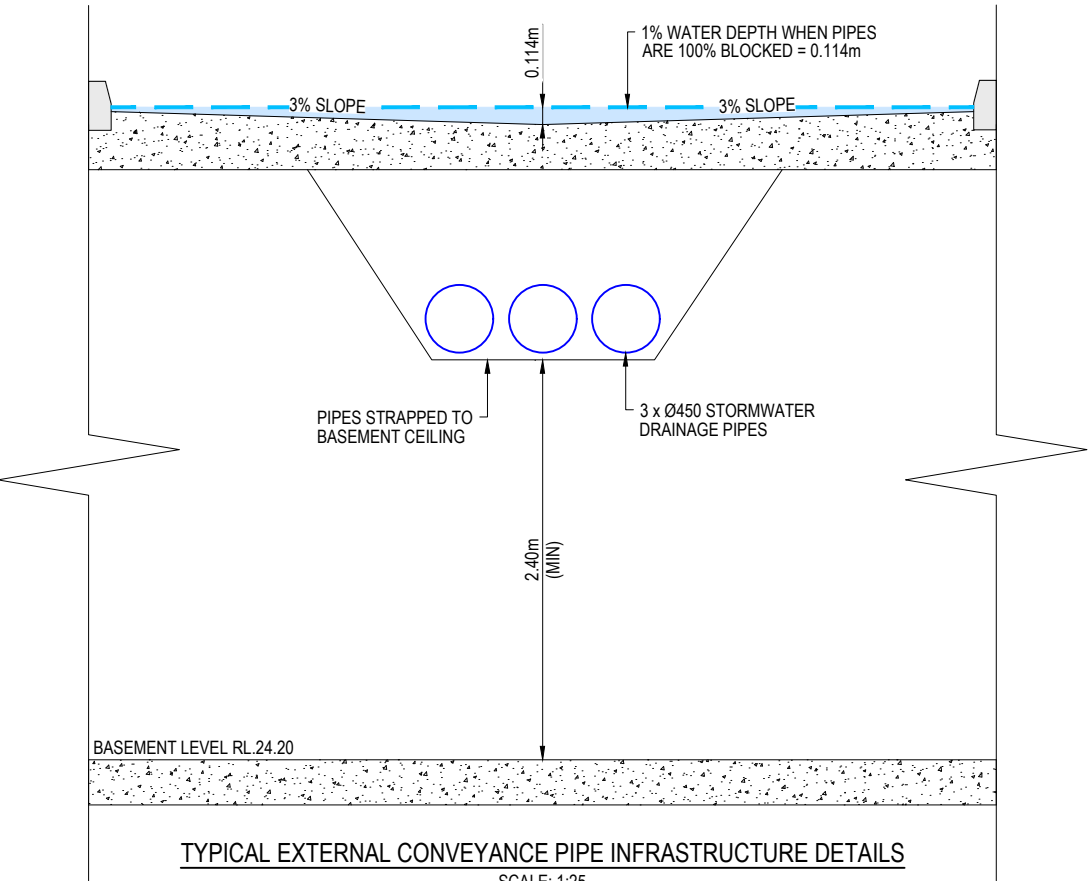
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Project Number	30157884
Issue	01

Drawing No. GAW-AAP-DA-00-DRG-CV-0303



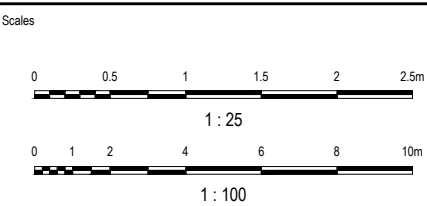
TYPICAL EXTERNAL CONVEYANCE PIPE INFRASTRUCTURE SECTION
SCALE: 1:100



TYPICAL EXTERNAL CONVEYANCE PIPE INFRASTRUCTURE DETAILS
SCALE: 1:25

- NOTES
1. CONCEPT ONLY, SUBJECT TO DETAILED DESIGN AND AUTHORITY APPROVAL.
 2. REFER TO SITE BASED STORMWATER MANAGEMENT PLAN, GA0004-30157884-AAR, FOR TANK AREAS AND OUTLET CONTROL CONFIGURATIONS.
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01	ORIGINAL ISSUE	DK	AS	RM	08.08.2024
Issue	Description	DR	CH	VE	Date



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Verified	R. MULLIGAN		

Project	54 GEORGE ALEXANDER WAY, COOMERA	
Title	CONCEPT EXTERNAL CONVEYANCE PIPE INFRASTRUCTURE	

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Project Number	30157884
Issue	01

Drawing No. GAW-AAP-DA-00-DRG-CV-0304

APPENDIX C

Bio Checklist

BIORETENTION BASIN CONSTRUCTION INSPECTION CHECKLIST									
Asset I.D.					Inspected By:				
Site:					Date:				
					Time:				
Constructed By:					Weather:				
					Contact During Visit:				

Items inspected	Checked		Satisfactory		Items inspected	Checked		Satisfactory	
	Y	N	Y	N		Y	N	Y	N
DURING CONSTRUCTION & ESTABLISHMENT									
A. FUNCTIONAL INSTALLATION					Structural components				
Preliminary Works					15. Location and configuration of inflow systems as designed				
1. Erosion and sediment control plan adopted					16. Location and levels of overflow pits as designed				
2. Temporary traffic/safety control measures					17. Under-drainage connected to overflow pits as designed				
3. Location same as plans					18. Concrete and reinforcement as designed				
4. Site protection from existing flows					19. Set down to correct level for flush kerbs (streetscape applications only)				
Earthworks and Filter Media					20. Kerb opening width as designed				
5. Bed of basin correct shape and slope									
6. Batter slopes as plans					B. SEDIMENT & EROSION CONTROL (IF REQUIRED)				
7. Dimensions of bioretention area as plans					21. Stabilisation immediately following earthworks and planting of terrestrial landscape around basin				
8. Confirm surrounding soil type with design					22. Silt fences and traffic control in place				
9. Confirm filter media specification in accordance with Step 4					23. Temporary protection layers in place				
9. Provision of liner (if required)									
10. Under-drainage installed as designed					C. OPERATIONAL ESTABLISHMENT				
11. Drainage layer media as designed					24. Temporary protection layers and associated silt removed				
12. Transition layer media as designed (if required)					Vegetation				
14. Extended detention depth as designed					25. Planting as designed (species and densities)				
					26. Weed removal and watering as required				

FINAL INSPECTION									
1. Confirm levels of inlets and outlets					6. Check for uneven settling of banks				
2. Confirm structural element sizes					7. Under-drainage working				
3. Check batter slopes					8. Inflow systems working				
4. Vegetation as designed					9. Maintenance access provided				
5. Bioretention filter media surface flat and free of clogging									

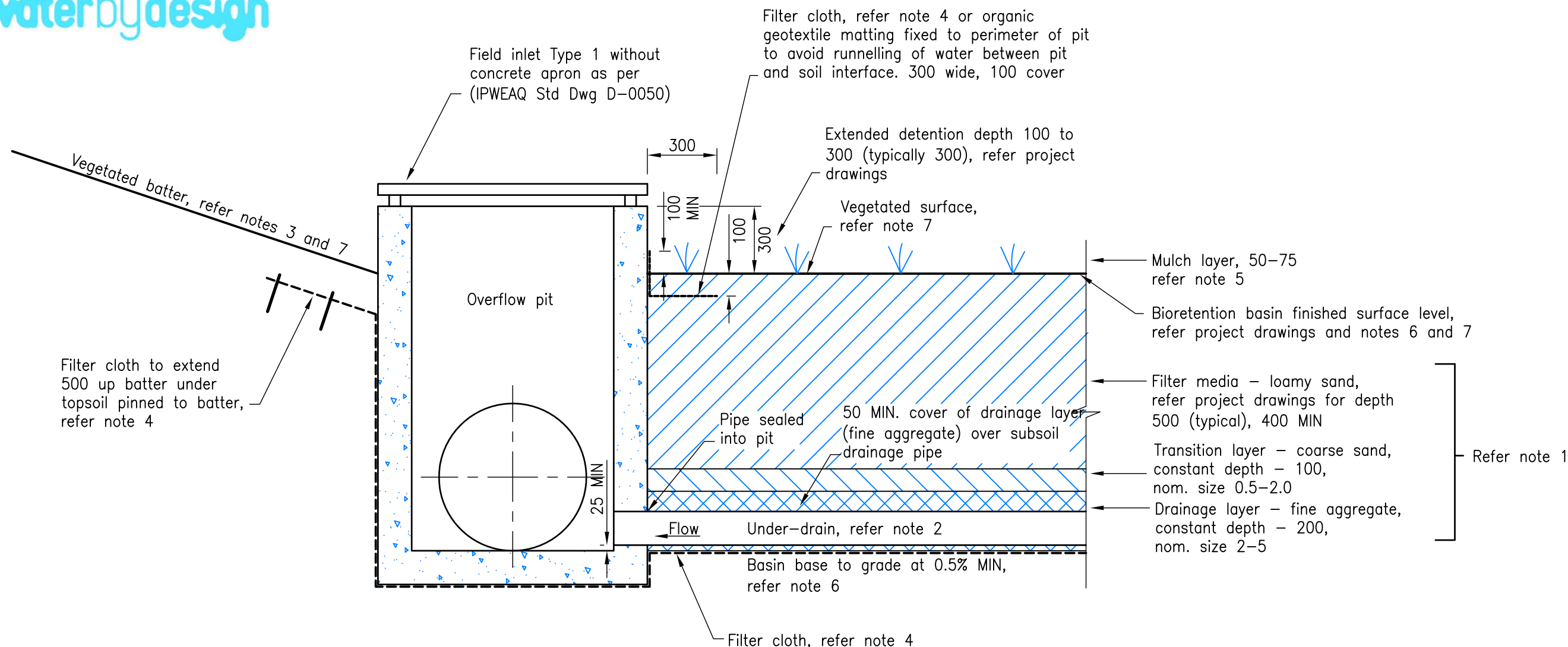
COMMENTS ON INSPECTION									

ACTIONS REQUIRED									

Inspection officer signature:									
-------------------------------	--	--	--	--	--	--	--	--	--

BIORETENTION BASIN MAINTENANCE CHECKLIST			
Inspection Frequency:	1 to 6 monthly	Date of Visit:	
Location:			
Description:			
Asset I.D.			
Site Visit by:			
INSPECTION ITEMS:	Y	N	Action Required (details)
Sediment accumulation at inflow points?			
Litter within basin?			
Erosion at inlet or other key structures?			
Traffic damage present?			
Evidence of dumping (e.g. building waste)?			
Vegetation condition satisfactory (density, weeds etc)?			
Watering of vegetation required?			
Replanting required?			
Mowing/slashing required?			
Clogging of drainage points (sediment or debris)?			
Evidence of ponding?			
Damage/vandalism to structures present?			
Surface clogging visible?			
Drainage system inspected?			
Resetting of system required?			
COMMENTS			

BIORETENTION BASIN ASSET TRANSFER CHECKLIST			
Asset I.D.			
Asset Location:			
Construction by:			
'On-maintenance' Period:			
TREATMENT	Y	N	
System appears to be working as designed visually?			
No obvious signs of under-performance?			
MAINTENANCE	Y	N	
Maintenance plans and indicative maintenance costs provided for each asset?			
Vegetation establishment period completed (2 years)?			
Inspection and maintenance undertaken as per maintenance plan?			
Inspection and maintenance forms provided?			
ASSET INSPECTED FOR DEFECTS AND/OR MAINTENANCE ISSUES AT TIME OF ASSET TRANSFER	Y	N	
Sediment accumulation at inflow points?			
Litter within basin?			
Erosion at inlet or other key structures?			
Traffic damage present?			
Evidence of dumping (e.g. building waste)?			
Vegetation condition satisfactory (density, weeds etc)?			
Watering of vegetation required?			
Replanting required?			
Mowing/slashing required?			
Clogging of drainage points (sediment or debris)?			
Evidence of ponding?			
Damage/vandalism to structures present?			
Surface clogging visible?			
Drainage system inspected?			
COMMENTS/ACTIONS REQUIRED FOR ASSET TRANSFER			
ASSET INFORMATION	Y	N	
Design Assessment Checklist provided?			
As constructed plans provided?			
Copies of all required permits (both construction and operational) submitted?			
Proprietary information provided (if applicable)?			
Digital files (e.g. drawings, survey, models) provided?			
Asset listed on asset register or database?			



BIORETENTION BASIN OVERFLOW PIT DETAIL

NOTES:

1. Bioretention media specification shall be in accordance with the Facility for Advancing Biofiltration "Guidelines for Soil Filter Media in Bioretention Systems". Bioretention hydraulic conductivity shall be in accordance with the Facility for Advancing Biofiltration 'Practice Note 1: In Situ Measurement of Hydraulic Conductivity'. The number of samples to be tested shall be in accordance with the "Water Sensitive Urban Design Construction and Establishment Guidelines – Swales, Bioretention Systems and Wetlands (Water by Design)".
2. Under-drain: slotted rigid pipe (uPVC or similar to AS 2439.1) or approved equivalent, 0.5% MIN. grade. Refer project drawings for diameter and invert level (Typically $\phi 100-150$). Pipe should not be installed with a filter sock surrounding pipe. Under-drainage pipes shall be sealed into pits using grout or other approved watertight seal.
3. Refer to project drawings for vegetated batter slopes (1 in 3 MAX, 1 in 4 typical) and batter topsoil requirements.
4. Filter cloth – non-woven geotextile. Filter cloth not to be placed between any filter layers. Impervious liner may be required subject to soil testing requirements in accordance with the "Water Sensitive Urban Design Technical Design Guidelines" (Water by Design).
5. Basin finished surface level is top of filter media. Surface to be mulched and planted as per landscape drawings.
6. Construction tolerances as documented in the "Water Sensitive Urban Design Construction and Establishment Guidelines – Swales, Bioretention Systems and Wetlands" (Water by Design) must be achieved. Construction tolerances must be noted on project plans. Invert levels of pits, pipes and base levels must be noted on project drawings.
7. Refer landscape drawings for plant specification. Plant specification and density shall be in accordance with the "Water Sensitive Urban Design Technical Design Guidelines" (Water by Design).
8. All dimensions are in millimetres unless otherwise noted.

These drawings have been developed in consultation between the participating councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate council

A	13/01/2010	ORIGINAL ISSUE
Rv.	DATE	REVISIONS



INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALIA
QUEENSLAND DIVISION INC.
STANDARD DRAWINGS

BIORETENTION STANDARD PROFILE
OVERFLOW PIT

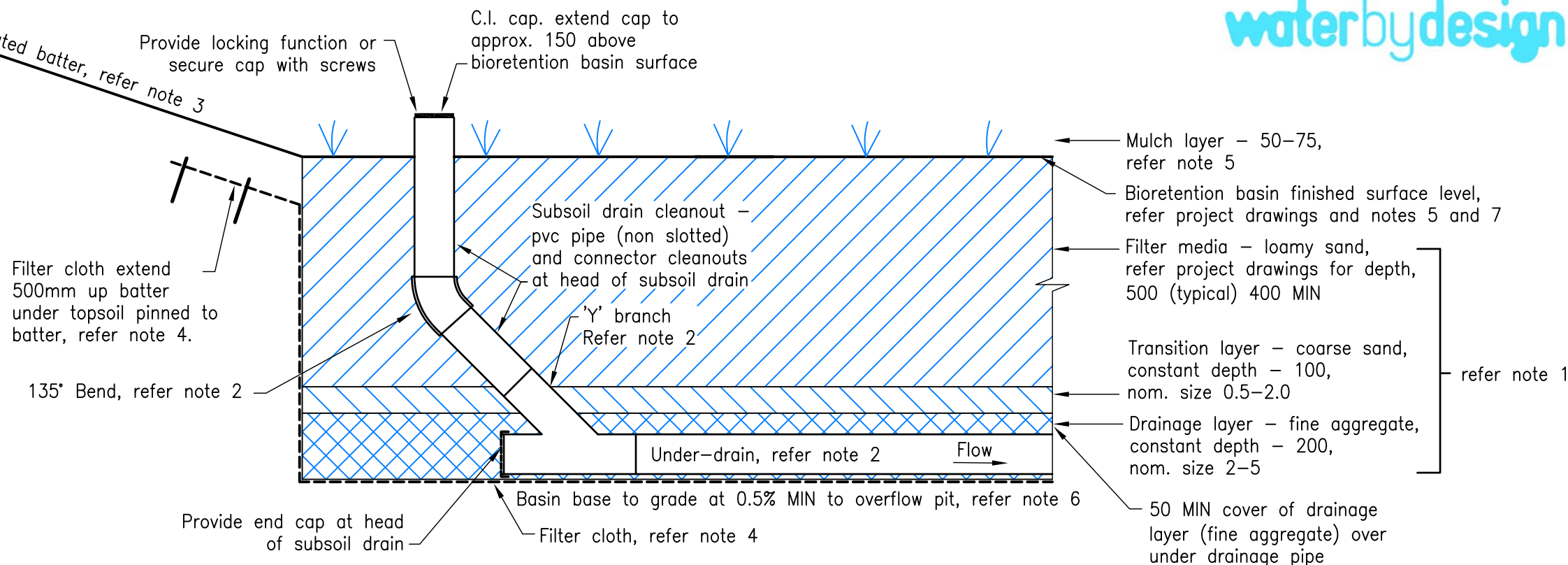
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WSUD-001

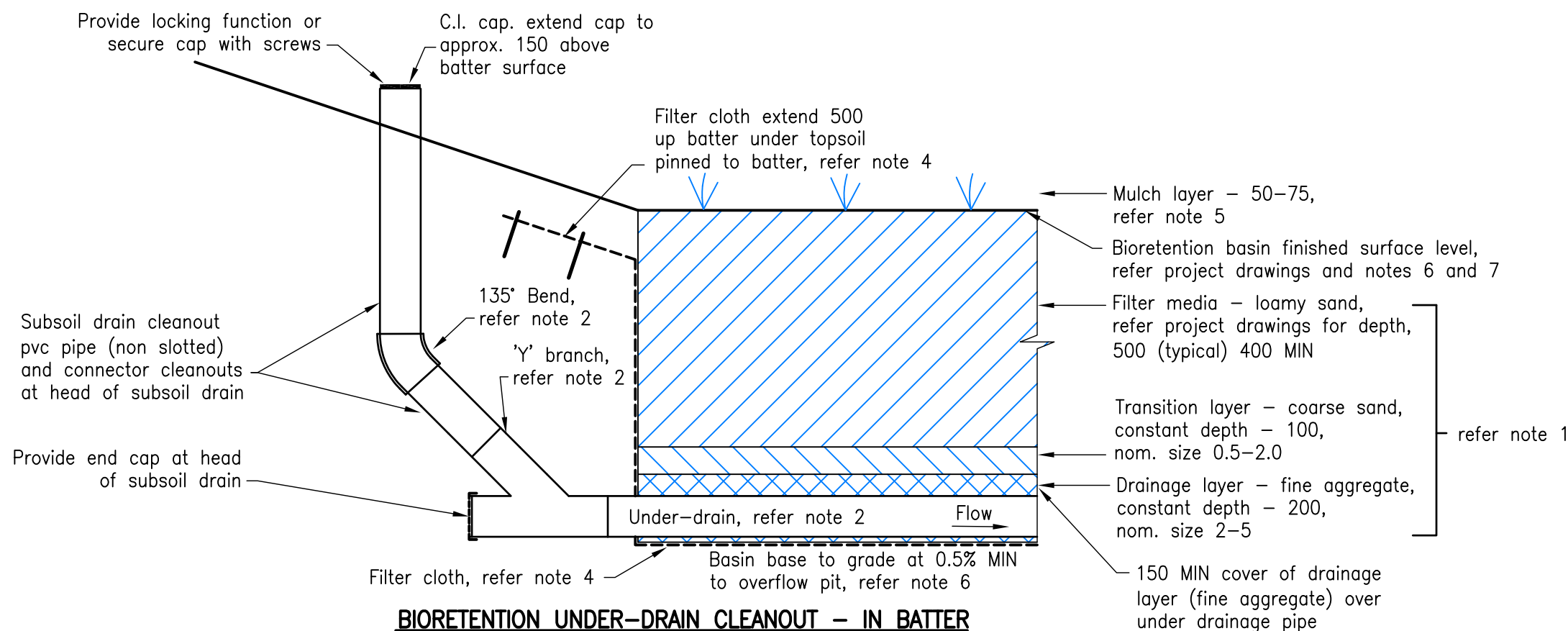
A
Rv.

NOTES:

- Bioretention media specification shall be in accordance with the Facility for Advancing Biofiltration "Guidelines for Soil Filter Media in Bioretention Systems". Bioretention hydraulic conductivity shall be in accordance with the Facility for Advancing Biofiltration "Practice Note 1: In Situ Measurement of Hydraulic Conductivity". The number of samples to be tested shall be in accordance with the "Water Sensitive Urban Design Construction and Establishment Guidelines – Swales, Bioretention Systems and Wetlands" (Water by Design).
- Under-drain: slotted rigid pipe (uPVC or similar to AS 2439.1) or approved equivalent, 0.5% MIN. grade. Refer project drawings for diameter and invert level (typically Ø100–150). Pipe joints should be glued using plumbing cement. Pipe should not be installed with a filter sock surrounding pipe. Under-drainage pipes shall be sealed into pits using grout or other approved watertight seal.
- Refer to project drawings for vegetated batter slopes (1 in 3 MAX, 1 in 4 typical) and batter topsoil requirements.
- Filter cloth – non-woven geotextile. Filter cloth not to be placed between any filter layers. Impervious liner may be required subject to soil testing requirements in accordance with the "Water Sensitive Urban Design Technical Design Guidelines" (Water by Design).
- Basin finished surface level is top of filter media. Surface to be mulched and planted as per landscape drawings.
- Construction tolerances as documented in the "Water Sensitive Urban Design Construction and Establishment Guidelines – Swales, Bioretention Systems and Wetlands" (Water by Design) must be achieved. Construction tolerances must be noted on project plans. Invert levels of pits and pipes and base levels must be shown on project drawings.
- Refer landscape drawings for plant specification. Plant specification and density shall be in accordance with the "Water Sensitive Urban Design Technical Design Guidelines" (Water by Design).
- All dimensions are in millimetres unless otherwise noted.



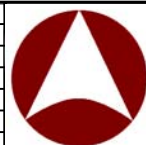
BIORETENTION UNDER-DRAIN CLEANOUT – IN BASIN



BIORETENTION UNDER-DRAIN CLEANOUT – IN BATTER

These drawings have been developed in consultation between the participating councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate council

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INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALIA
QUEENSLAND DIVISION INC.
STANDARD DRAWINGS

BIORETENTION STANDARD PROFILE
UNDERDRAIN CLEANOUT

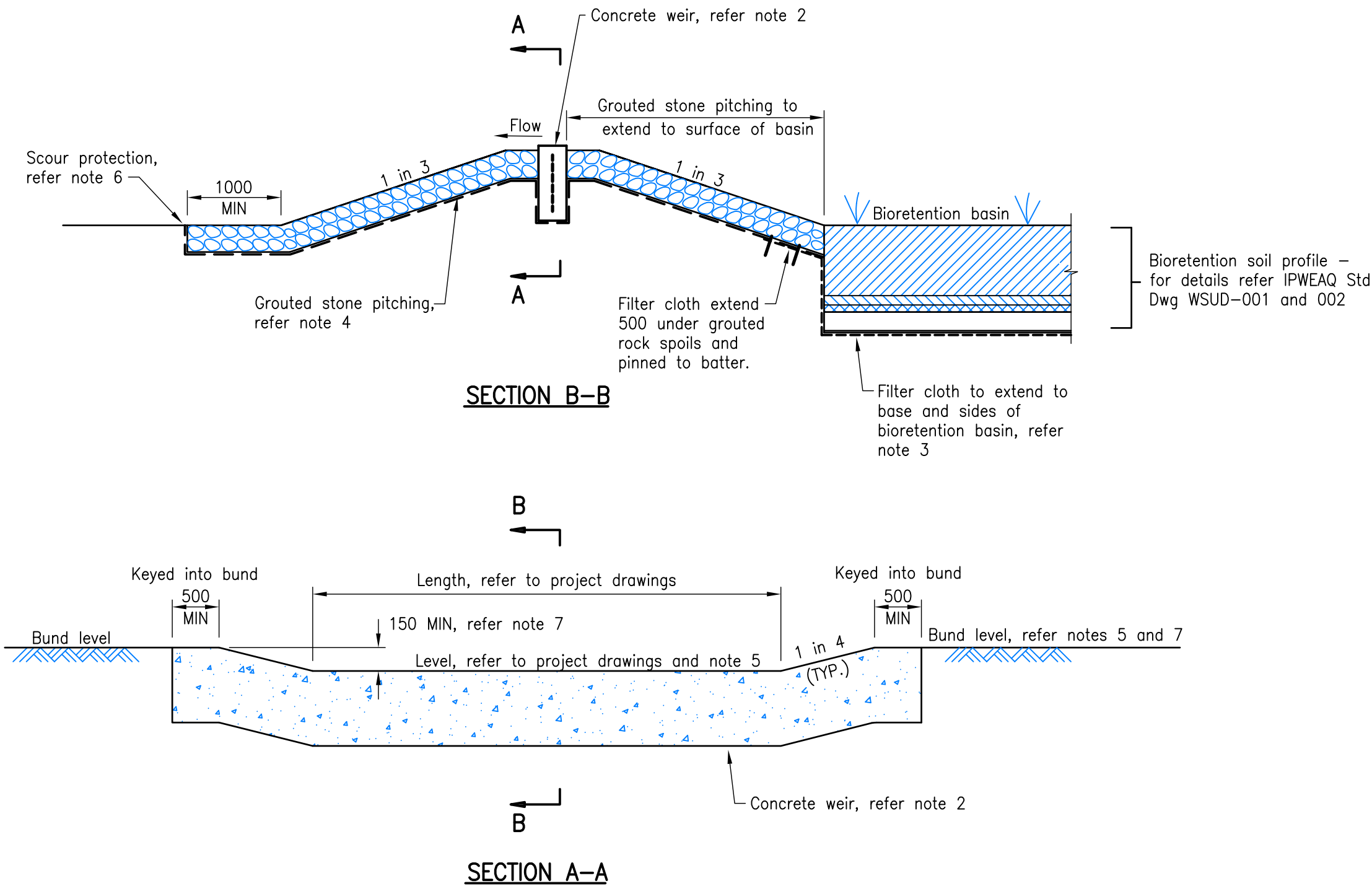
DRAWING No.

WSUD-003

A
Rv.

NOTES:

- 1. Insitu material to be tested and approved by geotechnical engineer prior to weir construction.
- 2. Concrete weir – 300 wide x 800 high concrete (N32) with SL81 mesh placed centrally.
- 3. Filter cloth – non-woven geotextile. Filter cloth not to be placed between any filter layers. Impervious liner may be required subject to soil testing requirements in accordance with the "Water Sensitive Urban Design Technical Design Guidelines" (Water by Design).
- 4. Grouted stone pitching – stones 75–100, 300 thick on filter cloth, refer note 3. Refer landscape drawings and project drawings for plant specification and details. Geotechnical engineer to confirm compaction requirements for bund subsoil. Option to drill 100 cores through to subsoil to provide voids for planting (subject to flow velocities and local government requirements). Refer landscape drawings for planting details.
- 5. Construction tolerances as documented in the "Water Sensitive Urban Design Construction and Establishment Guidelines – Swales, Bioretention Systems and Wetlands" (Water by Design) must be achieved. Construction tolerances and bund levels must be noted on project plans.
- 6. For extent and details of scour protection refer to project drawings.
- 7. Bund level, refer to project drawings for minimum freeboard requirements. Bund levels must be noted on project drawings.
- 8. All dimensions are in millimetres unless otherwise noted.



These drawings have been developed in consultation between the participating councils.
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STANDARD DRAWINGS

BIORETENTION BASIN
WEIR DETAILS

DRAWING No.
WSUD-006

A
Rv.

ENGINEERING SERVICES REPORT

54 GEORGE ALEXANDER WAY - WEST

COOMERA GA PTY LTD ATF THE COOMERA GA UNIT TRUST



IMPROVING QUALITY OF LIFE

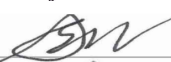
54 GEORGE ALEXANDER WAY - WEST

ENGINEERING SERVICES REPORT

Author Gabby Djelovic



Checker Ashley Shepard



Approver Richard Mulligan
RPEQ7850



Project No 30157884-02

Report No GA0003

Revision 01

Date 8/08/2024

This report has been prepared for Coomera GA Pty Ltd ATF The Coomera GA Unit Trust in accordance with the terms and conditions of appointment. Arcadis Australia Pacific Pty Limited (ABN 76 104 485 289) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

Revision	Date	Description	Prepared by	Approved by
01	8/08/2024	Original Issue	GD	RM

CONTENTS

1 EXECUTIVE SUMMARY1

2 SITE CHARACTERISTICS2

2.1 Location Details2

2.2 Land Usage2

2.3 Topography and Features3

3 PROPOSED DEVELOPMENT4

4 INFRASTRUCTURE SERVICE.....5

4.1 Stormwater Drainage.....5

4.2 Water Network7

4.3 Sewer Network8

4.4 Other Services9

5 ROADS AND ACCESS11

6 EARTHWORKS.....12

6.1 Earthworks Operations12

6.2 Acid Sulfate Soil Assessment.....12

7 CONCLUSION.....13

APPENDICES

APPENDIX A

Engineering Drawings

APPENDIX B

Council Infrastructure Maps

APPENDIX C

Dial Before You Dig Maps

APPENDIX D

Survey

1 EXECUTIVE SUMMARY

Coomera GA Pty Ltd ATF The Coomera GA Unit Trust has commissioned Arcadis to prepare an Engineering Services Report (ESR) for a residential development application for the site located over the following allotment located on George Alexander Way, Coomera:

- Lot 96 on RP187418 (54 George Alexander Way, Coomera, 4209).

The proposed development intended for the site is for the creation of 3 residential apartment buildings and 10 townhouses. Supporting infrastructure such as roads, basement parking, utilities, communal spaces and stormwater management areas are also proposed.

This report addresses the municipal engineering services components of the development and the engineering planning issues associated with the development application. This report demonstrates that the proposed development can connect to the local stormwater, potable water and sewerage reticulation systems as well as transport infrastructure.

Stormwater will be discharged to the existing three lawful points of discharge, being Talpa Street to the north of the site, the lot to the south of the site (Lot 95 on RP187418) and the overland flow path within the site and its downstream drainage corridor.

A pit and pipe network will be required to facilitate tank drainage. The site incorporates detention tanks, a detention basin and bio-retention areas to achieve stormwater management objectives. A Site Based Stormwater Management Plan has been prepared by Arcadis which addresses the stormwater management planning requirements for the development.

Potable water for the proposed development will be connected to Gold Coast Water & Waste's supply network via the DN100 main within Talpa Street.

Connection for the proposed development to the wastewater supply network will be provided via the DN150 gravity sewer mains in the eastern verges of Talpa Street. Private on-site pumping infrastructure will be required to facilitate wastewater transfer from areas lower than the Council infrastructure. No direct pumping to Council infrastructure is proposed.

Vehicular access to the development is proposed via a connection to Talpa Street. Talpa Street will be extended through the development and handed over to Council as municipal asset. This extension will be designed in accordance with Council guidelines.

The proposed development will involve the undertaking of cut and fill earthworks operations to facilitate the construction of roads, surface drainage, basement areas and allotments. Consideration of interfacing with adjoining known development approvals has been made based on current available information; however, it should be reviewed for any further known information during detailed design.

2 SITE CHARACTERISTICS

2.1 Location Details

The subject site is located within George Alexander Way, Coomera, Australia over the following allotment:

- Lot 96 on RP 187418 (54 George Alexander Way, Coomera, QLD, 4209)

The site is bounded by George Alexander Way to the west, a rural residential allotment to the south and residential dwellings to the north and east.

The Gold Coast City Council is the local government authority.

The total area of the site is approximately 30,100m².

An existing approval (OPW/2023/1508) bounds the eastern portion of the site. This approval is for 22 residential lots and supporting infrastructure. This report seeks to support a development application for the balance of the land.

2.2 Land Usage

In its current state, the project site consists of a residential dwelling and its associated driveway. Figure 2-1 below provides a current locality plan of the site.



Figure 2-1 Site Locality Plan (Aerial Imagery Courtesy of NearMap)

2.3 Topography and Features

The site has slopes ranging from 5 to 12%. The high point is at the centre of the site at RL34m therefore, everything slopes away from the centre of the site. The low point of the site is within the north eastern corner at RL29m. There is also another low point in the north western corner of the site at RL25m and within the south eastern corner R32m.

There are two existing dams located on the site, one large dam in the north western corner and a smaller dam located in the northeastern corner.

Further catchment and topographic information can be seen on the Engineering Drawings attached in Appendix A.

3 PROPOSED DEVELOPMENT

The proposed development involves the construction of residential units, including:

- 3 x medium-rise residential buildings.
- Townhouses.
- Municipal and private road network.
- Basement parking.
- Open communal space.
- Stormwater management areas.

A rendered plan extract of the proposed development has been provided in Figure 3-1.

A full set of development proposal plans are provided within the development application package and should be referred to for further information.



Figure 3-1 Proposed Development Render (Courtesy of Archipelago)

4 INFRASTRUCTURE SERVICE

4.1 Stormwater Drainage

A Site based Stormwater Management Plan (SBSMP) has been prepared by Arcadis which addresses the stormwater management planning requirements for the development. The SBSMP should be referred to for a more in-depth analysis of prevailing stormwater constraints and opportunities, however a summary of key engineering requirements is provided herein.

4.1.1 Existing Stormwater Drainage

Stormwater runoff generated by the site generally discharges to three lawful points of discharge illustrated in Figure 4-1.

- Catchment E1 is directed to the dam and its downstream area located within the site (LPD1).
- Catchment E2 is directed to lot 95 on RP187418 (LPD2), south of the site.
- Catchment E3 is directed to Talpa Street, LPD3 (Lot 95 on RP187418), north of the site.

Based on Councils lidar data it was found that a portion of lot 95 on RP187418 drains through the site.

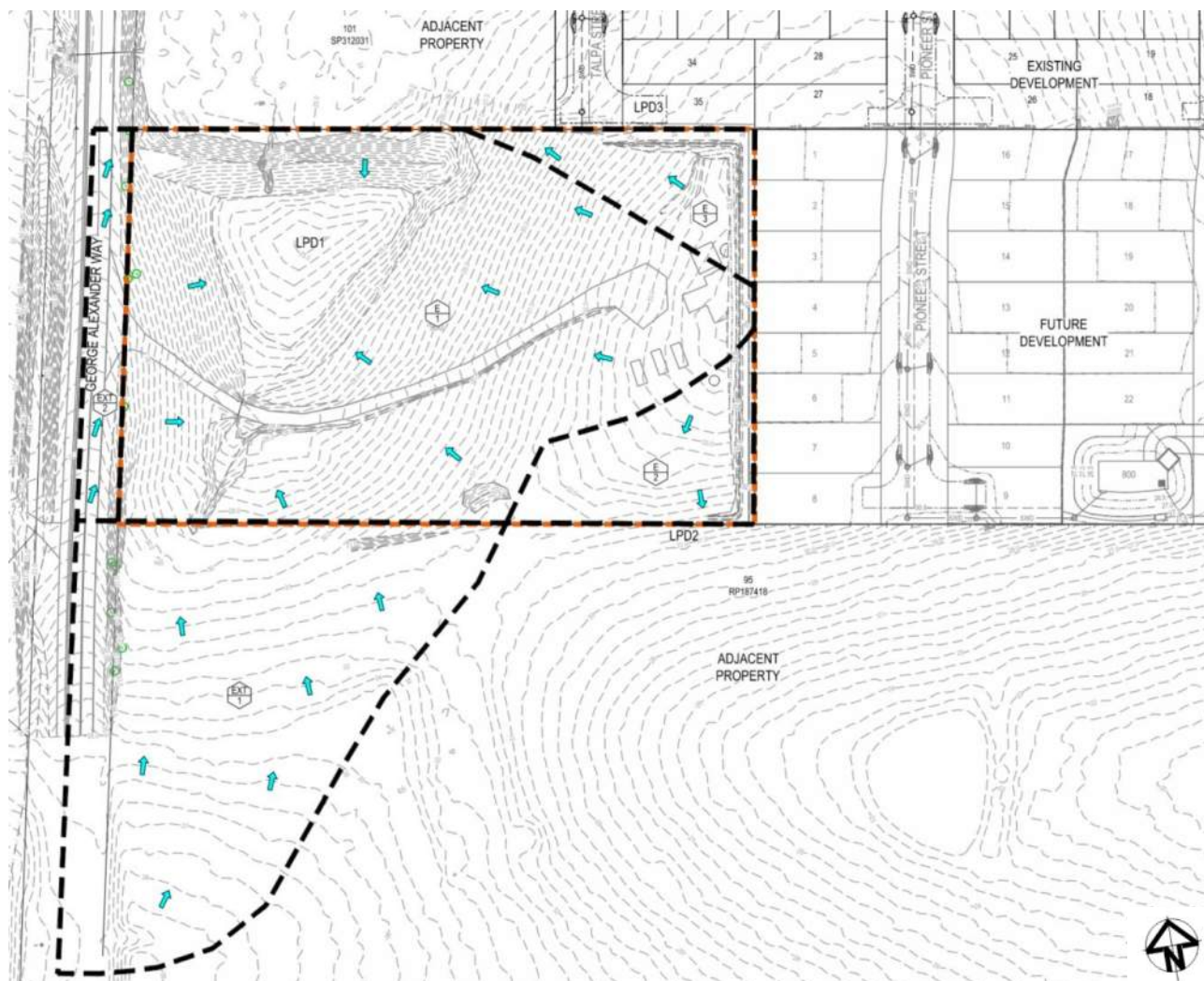


Figure 4-1 Existing Stormwater Catchments (Courtesy: ARCADIS)

4.1.2 Proposed Stormwater Drainage

The proposed development will capture and convey stormwater via the use of a pit and pipe drainage network as well as overland flow. Stormwater quantity tanks/basins and bio-retention areas will provide suitable

management of stormwater prior to release from the site. Stormwater will be discharged to the existing lawful points of discharge being the northern boundary low point and its downstream area located within the site, Talpa Street and lot 95 on RP187418.

Peak discharge mitigation from the site will be managed via over-detaining roof catchments (D1a, D1b, D1c, D2a & D2b) within the development. The flows from the proposed Talpa Street (D3) will be directed north without any stormwater quality or quantity treatment. It is understood this will drain to an existing detention basin located north of the site (Lot 1 on SP312031). The approved Conceptual Stormwater Management Plan prepared by Biome under application number ROL/2017/439 has accounted for a portion of the development site in their model.

No external catchments will be captured by the detention tanks, the external catchment will continue to discharge to LPD1 without the need for treatment through a culvert and pipe system running through the site. An overland relief has been provided should the proposed culvert and pipe system block.

The SBSMP prepared by Arcadis should be referred to for further details on the exact methodology used to achieve Council objectives. Refer to engineering drawings in Appendix A for a conceptual location of the stormwater connection points.



Figure 4-3 Developed Stormwater Catchments

4.2 Water Network

4.2.1 Existing Potable Water

The following water mains were identified within the vicinity of the development site:

- 1 x DN300 potable water main within the western verge of George Alexander Way to the west of the site.
- 3 x DN100 potable water mains in the northern verges of Mercy, Pioneer and Talpa Street, north of the site.

4.2.2 Planned Potable Water

Version 11 of the City Plan, 'Plan for Trunk Water Supply Infrastructure' indicates that there are no planned upgrades for the water main in the immediate vicinity of the site.

4.2.3 Proposed Potable Water

Connection for the proposed development to the GCWW's supply network will be provided via connection to the DN100 water main within Talpa Street.

The developer shall design and construct an internal water reticulation network for the proposed development which will be the subject of future operational works applications.

Fire hydrants shall be placed at appropriate intervals along the internal new water main to ensure coverage of the site.

The fire and potable water meters will be located on site and above ground if larger than or including 50mm in size and will have an easement over the meter. It is recommended that during the detailed design phase the building hydraulic engineer confirm the metering requirements and allowance made on-site if the meter required is larger than 50mm.

Refer to engineering drawings in Appendix A for the proposed water reticulation and connection point.

4.2.4 Projected Development Loadings

The development has been assessed under two loading cases in order to better determine the anticipated impact it will have on the surrounding network. These cases are the:

- **Planned Demand** – A demand assigned to the site via the City of Gold Coast 2018 City Plan which is derived from GCWW 'Water and Sewerage Demand Table' <https://www.goldcoast.qld.gov.au/files/sharedassets/public/pdfs/brochures-amp-factsheets/water-sewage-demand-table.pdf> and the property's net area.
- **Project Development Loading** – The calculated demand for the property based on proposed development yield and conversion rates from GCWW 'Water and Sewerage Demand Table' <https://www.goldcoast.qld.gov.au/files/sharedassets/public/pdfs/brochures-amp-factsheets/water-sewage-demand-table.pdf>

It is noted that this report only considers the western portion of this development therefore, the project loadings has only been based on the proposed development area.

Table 4-1 Planned Demand

Category	Area (ha)	Conversion Rate	Planned Demand (EP)
RD7	1.50	412EP/ha	618
Total			618

Table 4-2 Projected Development Loading

Category	No. of Dwellings	Conversion Rate	Proposed Demand (EP)
1-Bedroom Unit	30	1.31 EP/dwelling	39.30
2-Bedroom Unit	157	1.76 EP/dwelling	276.32
3-Bedroom Unit	21	2.51 EP/dwelling	52.71
3-Bedroom Attached Dwelling	10	2.51 EP/dwelling	25.10
Total			393.43

There is a decrease of approximately 224.57EP between planned and proposed demands. No further network assessment has been undertaken for the purposes of this application submission.

4.3 Sewer Network

4.3.1 Existing Sewer

The following sewer infrastructure was identified adjacent to the development site:

- A DN150 gravity sewer main located at the end of Seashell Avenue, located directly south east of the site.
- A DN225 rising sewer main within the western verge of George Alexander Way to the west of the site.
- A DN710 trunk sewer main within the western verge of George Alexander Way to the west of the site.
- 3 x DN150 gravity sewer mains in the eastern verges of Talpa, Mercy and Pioneers Street, north of the site.

4.3.2 Planned Sewer

Version 11 of the City Plan, 'Plan for Trunk Sewerage Infrastructure' indicates that there are no planned upgrades within the immediate vicinity of the site.

4.3.3 Proposed Sewer

Connection for the proposed development to the GCWW's wastewater supply network will be provided via the DN150 gravity sewer main within Talpa Street. A new internal network will be installed in order to provide each new allotment with a sewer service. Due to areas of the site being lower than the municipal gravity system in Talpa Street, private pumping reticulation will be required. Any pumped wastewater will be discharged to a private structure before gravity discharging to the Council infrastructure.

Connection to this main will require a new pipe under the road and existing telecommunication services. Therefore, potholing may be required in order to accurately determine the location of these services during the operational works phase. Refer to Appendix C and Appendix D for existing services.

Refer to engineering drawings included Appendix A for further details.

4.3.4 Projected Development Loadings

Due to the nature of the development and its location, the wastewater demand is calculated in the same manner as the water supply. Refer to section 4.2 for further details.

There is a decrease of approximately 224.57EP between planned and proposed demands. No further assessment has been undertaken for the purposes of this application.

4.4 Other Services

A Dial Before You Dig (DBYD) search has identified telecommunications services within George Alexander Way to the west of the development site.

Overhead power has been identified fronting the site within the western verge of George Alexander Way. It can be seen in Figure 4-2 there is overhead power in the form of a private property service running east from George Alexander Way through the site. Therefore, provisions must be made to decommission these power lines.



Figure 4-2 Overhead Power Lines in the Site

The proposed development will incorporate low-voltage electricity and telecommunications supply designed by a specialist electrical and telecommunications consultant in accordance with Council and Energex requirements. It is expected that connection to these services shall be provided via extension of services from the development to the north.

The DBYD search results are provided in Appendix C and should be referred to for the locations of the above-mentioned services within the vicinity of the site.

5 ROADS AND ACCESS

An extension of Talpa Street to the north of the site is proposed for primary vehicular access to the development.

The following road profile is proposed for the Talpa Street extension:

- Residential Access Street – 16.50m (min.) road reserve, 7.50m kerb to kerb pavement, and 4.50m verges.

Talpa Street will be handed over to Council as municipal assets with all other roads internal to the site remaining private. All proposed private roads within the site will be constructed in accordance with Australian Standards.

Talpa Street will provide a Cul-de-sac turn around arrangement at its southern end of its extension. Once road connection is made to the south of Talpa Street, the temporary turn around infrastructure will be removed and extended.

Refer to Appendix A for engineering drawings.

6 EARTHWORKS

6.1 Earthworks Operations

The proposed development will involve the undertaking of cut and fill earthworks and retaining operations to facilitate the construction of allotment pads, access driveways, basement areas, surface drainage and utility connections.

It is understood that no geotechnical investigations or assessments have been undertaken at this stage. It is recommended that such works are undertaken to inform the suitability of site material, proposed earthworks intent and overall stability.

6.2 Acid Sulfate Soil Assessment

According to the acid sulfate map the site does not contain acid sulfate soils therefore no further assessment has been undertaken by the applicant at this time.

7 CONCLUSION

This report has concluded that the site can readily connect to the existing engineering services. Future Operational Works applications will be sought to permit the works to be undertaken.

Stormwater

- Stormwater will be discharged to three lawful points of discharge, being;
 - The northern lot (Lot 1 on SP312031) into Talpa Street
 - The lot to the south of the site (Lot 95 on RP187418)
 - The northern boundary low point and its downstream area located within the site

Potable Water

- Proposed connection the GCCC Water's supply network will be via connection into the DN100 water main within Talpa Street.

Sewer

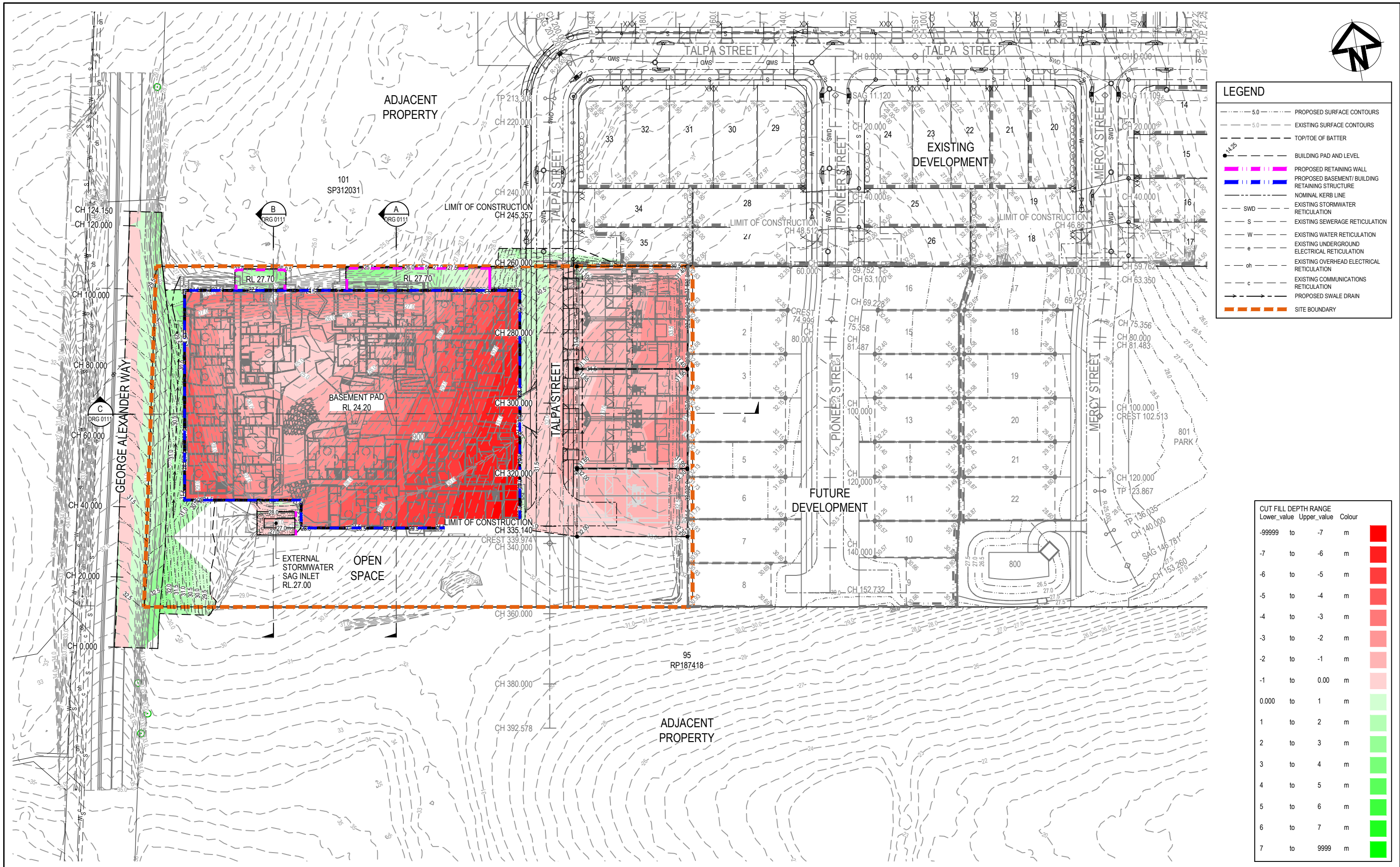
- The site will be connected into the GCCC wastewater supply network via the DN150 gravity sewer main within Talpa Street.

Roads and Footpaths

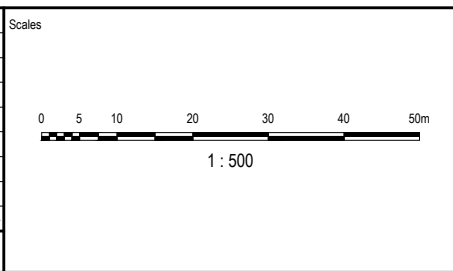
- Vehicular access to the development is proposed via extension of Talpa Street from the adjoining lot to the north.
- New roads will be constructed to provide access for all the lots within the site.

APPENDIX A

ENGINEERING DRAWINGS



01	ORIGINAL ISSUE	DK	AS	RM	08.08.2024
Issue	Description	DR	CH	VE	Date



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ATF The Coomera
GA Unit Trust
Pty Ltd

Status	PRELIMINARY NOT TO BE USED FOR CONSTRUCTION		
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Original Issue Signatures			
Drawn	D. KEARNEY	Original Size	A1
Designed	T. DINGLE	Height Datum	AHD
Project Manager	A. SHEPHERD	Grid	MGA (ZONE 56)
Verified	R. MULLIGAN		

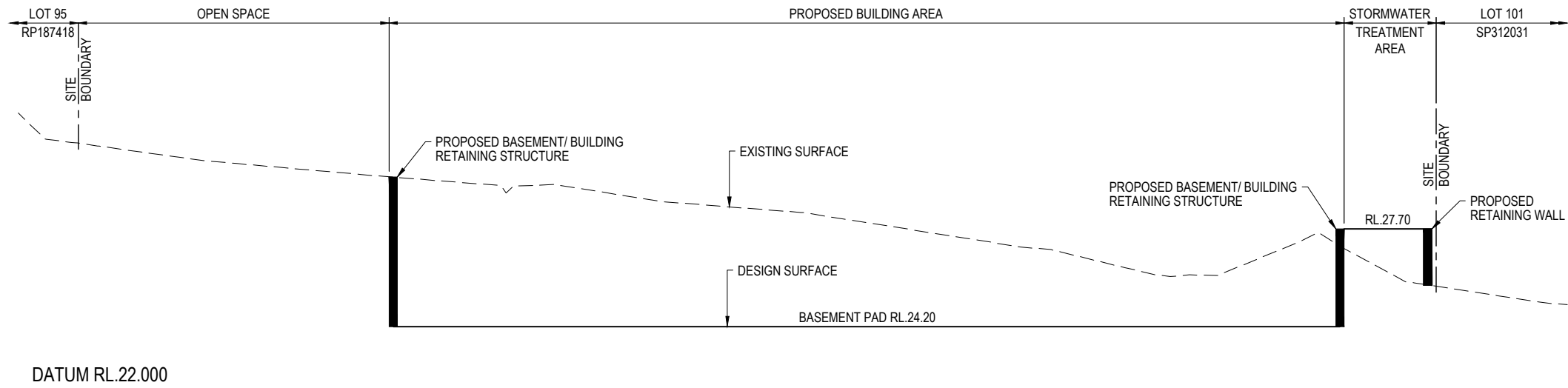
Project
54 GEORGE ALEXANDER WAY,
COOMERA

Title
CONCEPT
BULK EARTHWORKS CUT & FILL
LAYOUT PLAN

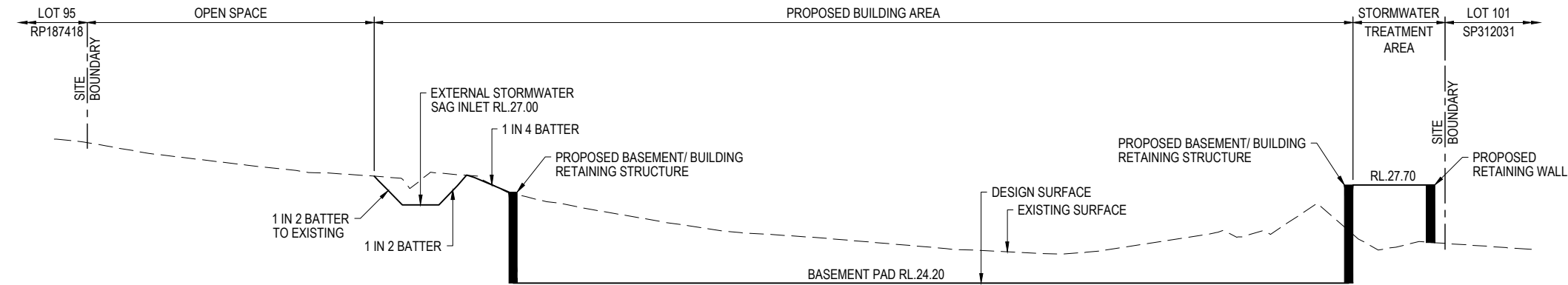
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ABN 76 104 485 289
Tel No: +61 7 5503 4800
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Project Number	30157884
Issue	01

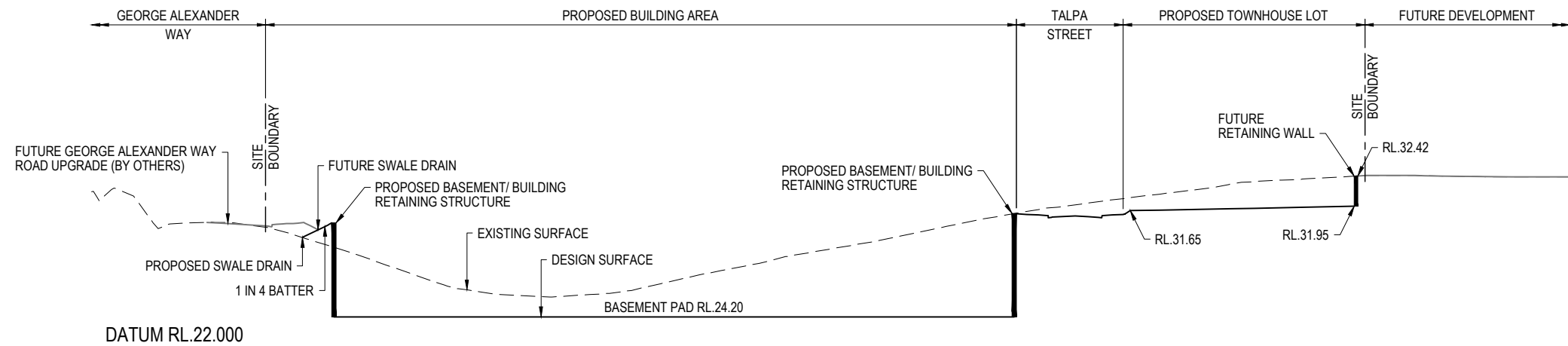
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1:100 VERT

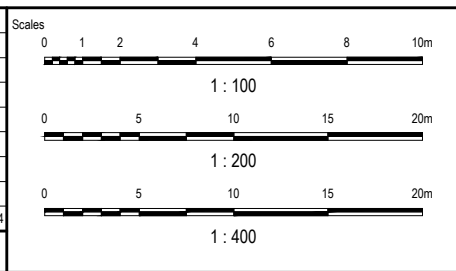


SECTION B
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1:100 VERT



SECTION C
1:400 HORZ
1:200 VERT

01	ORIGINAL ISSUE	DK	AS	RM	08.08.2024
Issue	Description	DR	CH	VE	Date



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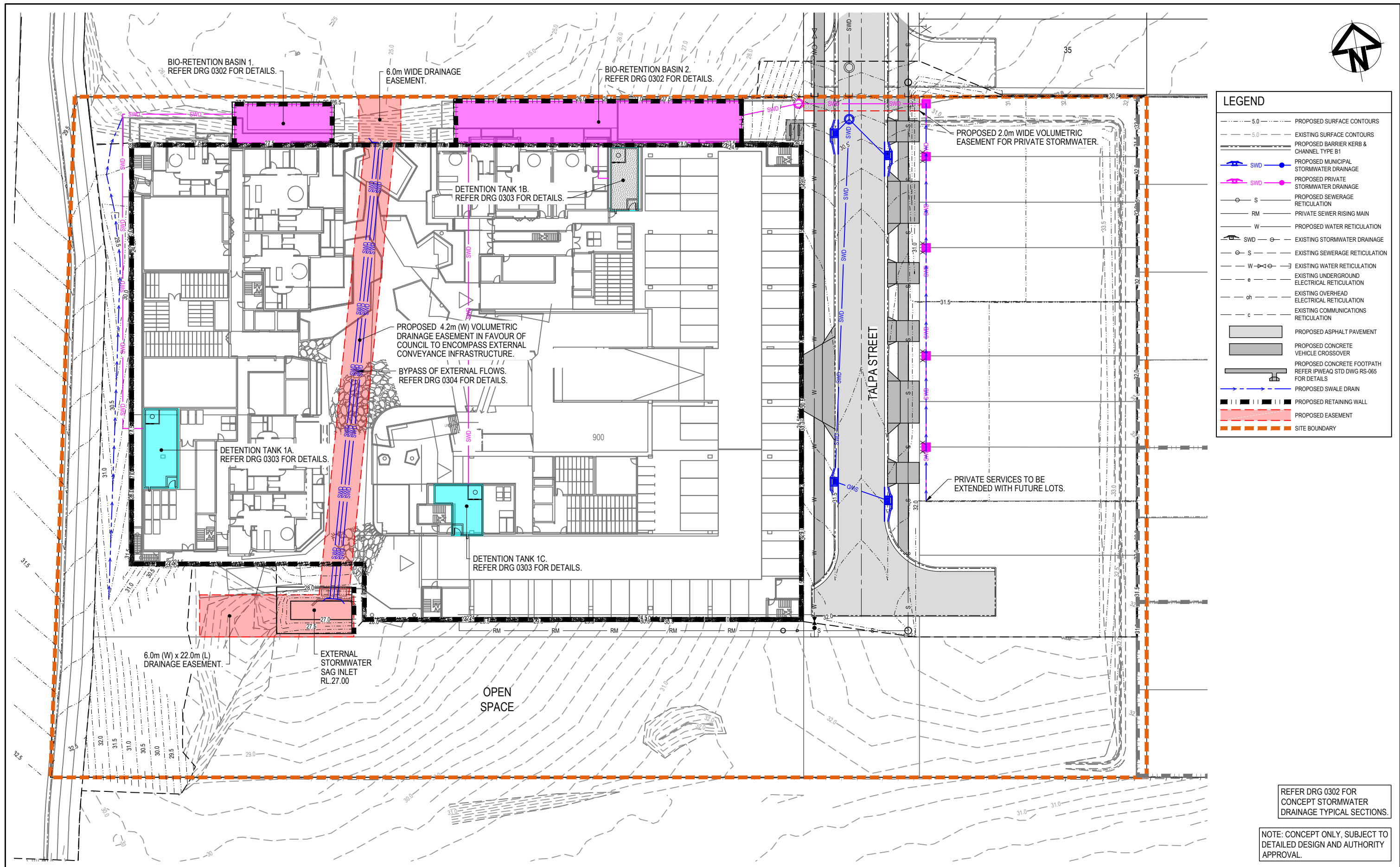
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Designed	T. DINGLE	Height Datum	AHD
Project Manager	A. SHEPHERD	Grid	MGA (ZONE 56)
Verified	R. MULLIGAN		

Project	54 GEORGE ALEXANDER WAY, COOMERA
Title	CONCEPT BULK EARTHWORKS SECTIONS



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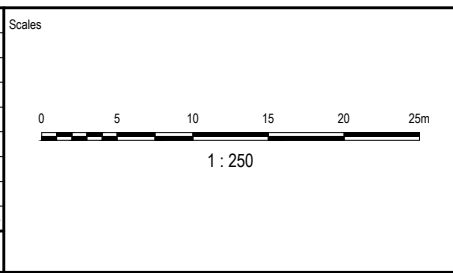
Project Number	30157884	Issue	01
Drawing No.		GAW-AAP-DA-00-DRG-CV-0111	



REFER DRG 0302 FOR
CONCEPT STORMWATER
DRAINAGE TYPICAL SECTIONS.

NOTE: CONCEPT ONLY, SUBJECT TO
DETAILED DESIGN AND AUTHORITY
APPROVAL.

01	ORIGINAL ISSUE	DK	AS	RM	08.08.2024
Issue	Description	DR	CH	VE	Date



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Designed	T. DINGLE	Height Datum	AHD
Project Manager	A. SHEPHERD	Grid	MGA (ZONE 56)
Verified	R. MULLIGAN		

Project

54 GEORGE ALEXANDER WAY,
COOMERA

Title

CONCEPT
STORMWATER DRAINAGE
LAYOUT PLAN

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ABN 76 104 485 289
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Project Number

30157884

Issue

01

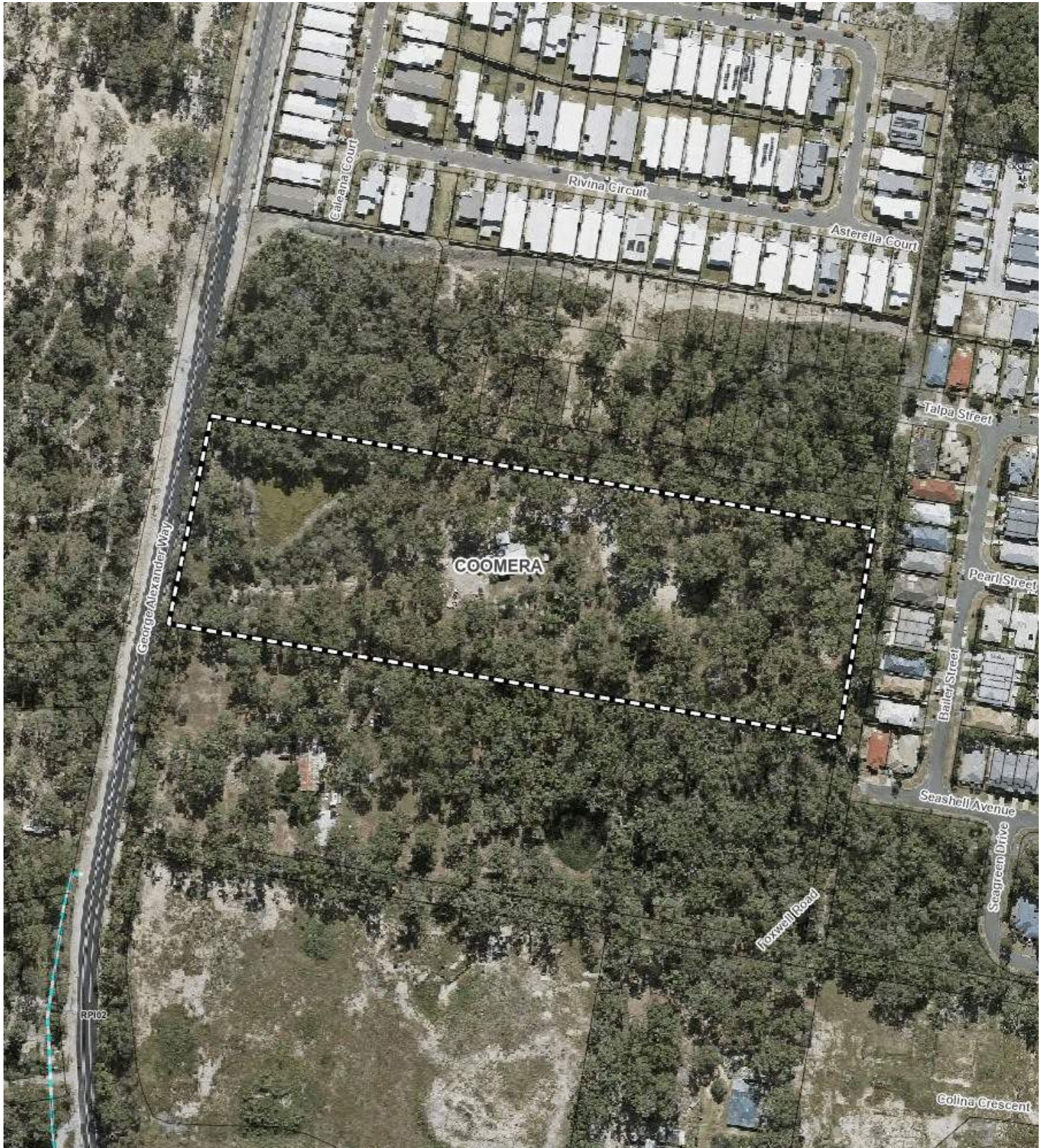
Drawing No.

GAW-AAP-DA-00-DRG-CV-0301



APPENDIX B

COUNCIL INFRASTRUCTURE MAPS



Map Legend

Ocean



Future trunk sewerage treatment plants

- 2021
- 2026
- 2031
- 2036
- 2041
- Ultimate

Future trunk sewerage pumps

- 2021
- 2026
- 2031
- 2036
- 2041
- Ultimate

Future trunk sewerage wetwells

- 2021
- 2026
- 2031
- 2036
- 2041
- Ultimate

Future trunk sewerage odour control units

- 2021
- 2026
- 2031

Future trunk sewerage emergency storages

- 2026
- 2031
- 2036
- 2041
- Ultimate

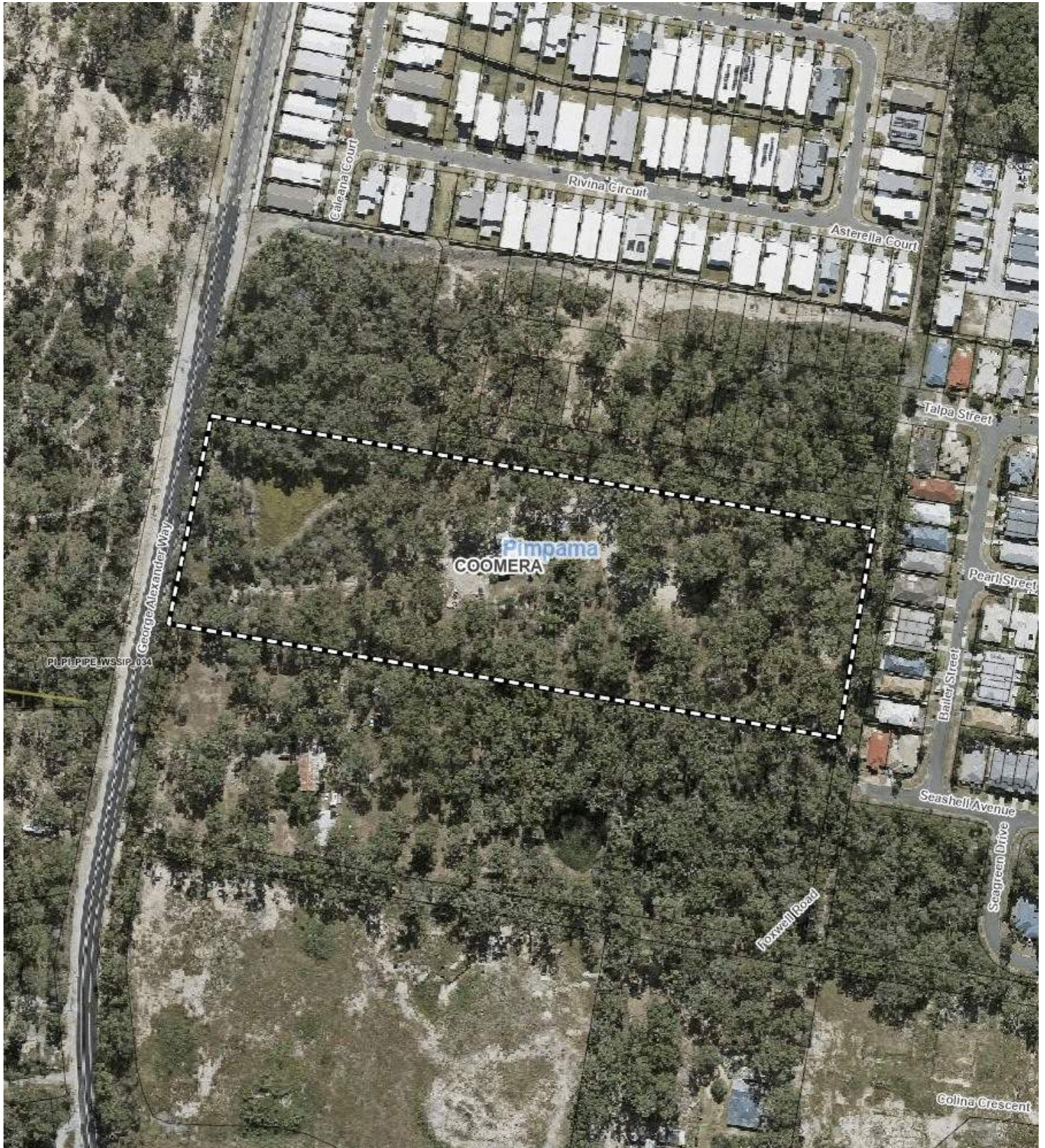
Future trunk sewerage gravity mains

- 2021
- 2026
- 2031
- 2036
- 2041
- Ultimate

Future trunk sewerage pressure pipes

- 2026

- 2031
- 2036
- 2041
- Ultimate



Map Legend

Ocean



Future water supply service catchments



Future trunk water pump stations

- 2026
- 2031
- 2036
- 2041
- Ultimate

Future trunk water flow meters

- 2026
- 2036

Future trunk water PRV or FCV

- 2026
- 2031
- 2036

Future trunk water tanks

- 2021
- 2026
- Ultimate

Future trunk water rechlorination stations

- 2041

Future trunk water mains

- 2021
- 2026
- 2031
- 2036
- 2041
- Ultimate



APPENDIX C

DIAL BEFORE YOU DIG

To: Gabrielle Djelovic
Phone: Not Supplied
Fax: Not Supplied
Email: gabby.djelovic@arcadis.com

Dial before you dig Job #:	37002258	
Sequence #	241140779	
Issue Date:	27/06/2024	
Location:	54 George Alexander Way , Coomera , QLD , 4209	

Indicative Plans are tiled below to demonstrate how to layout and read nbn asset plans

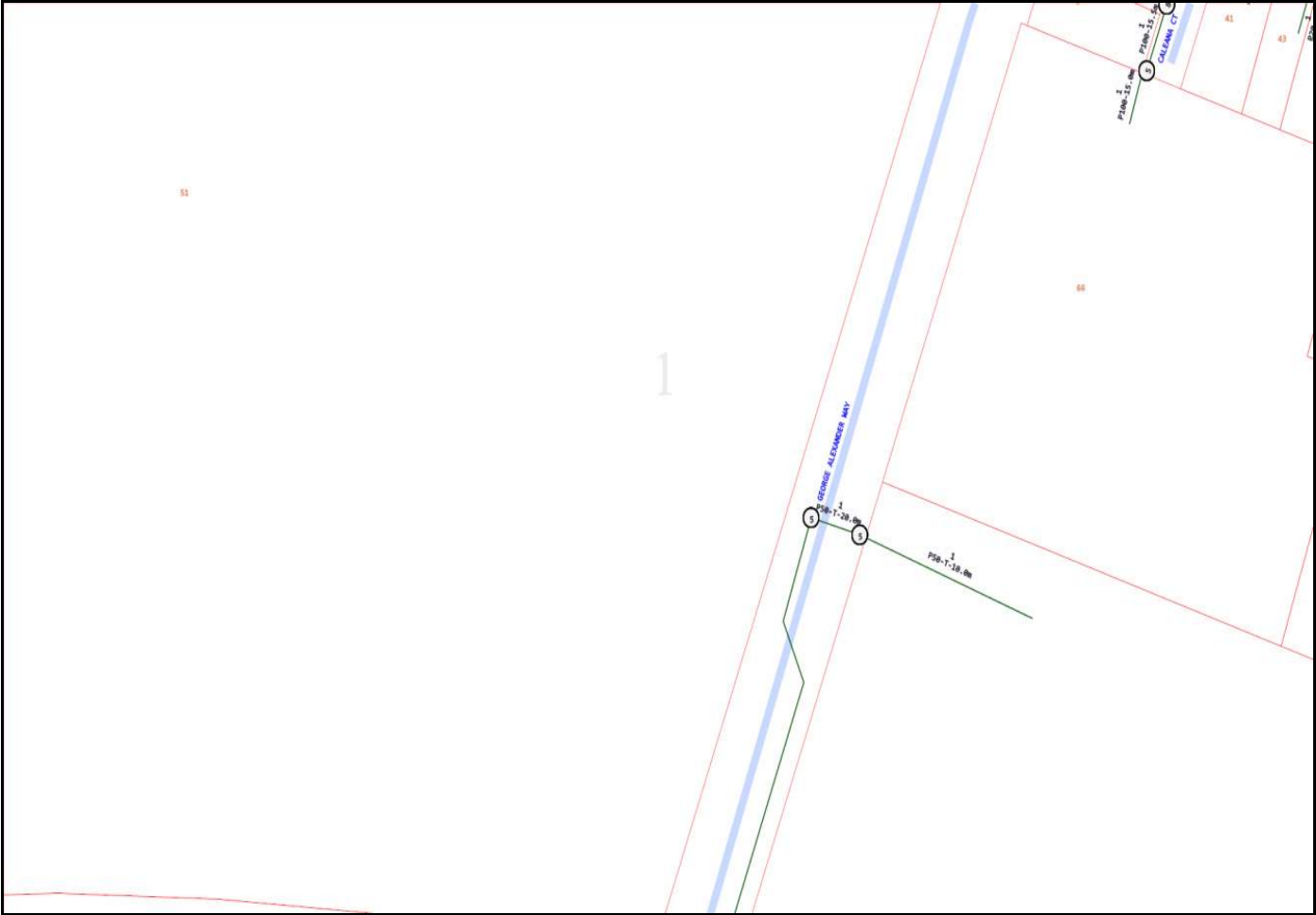
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2	4

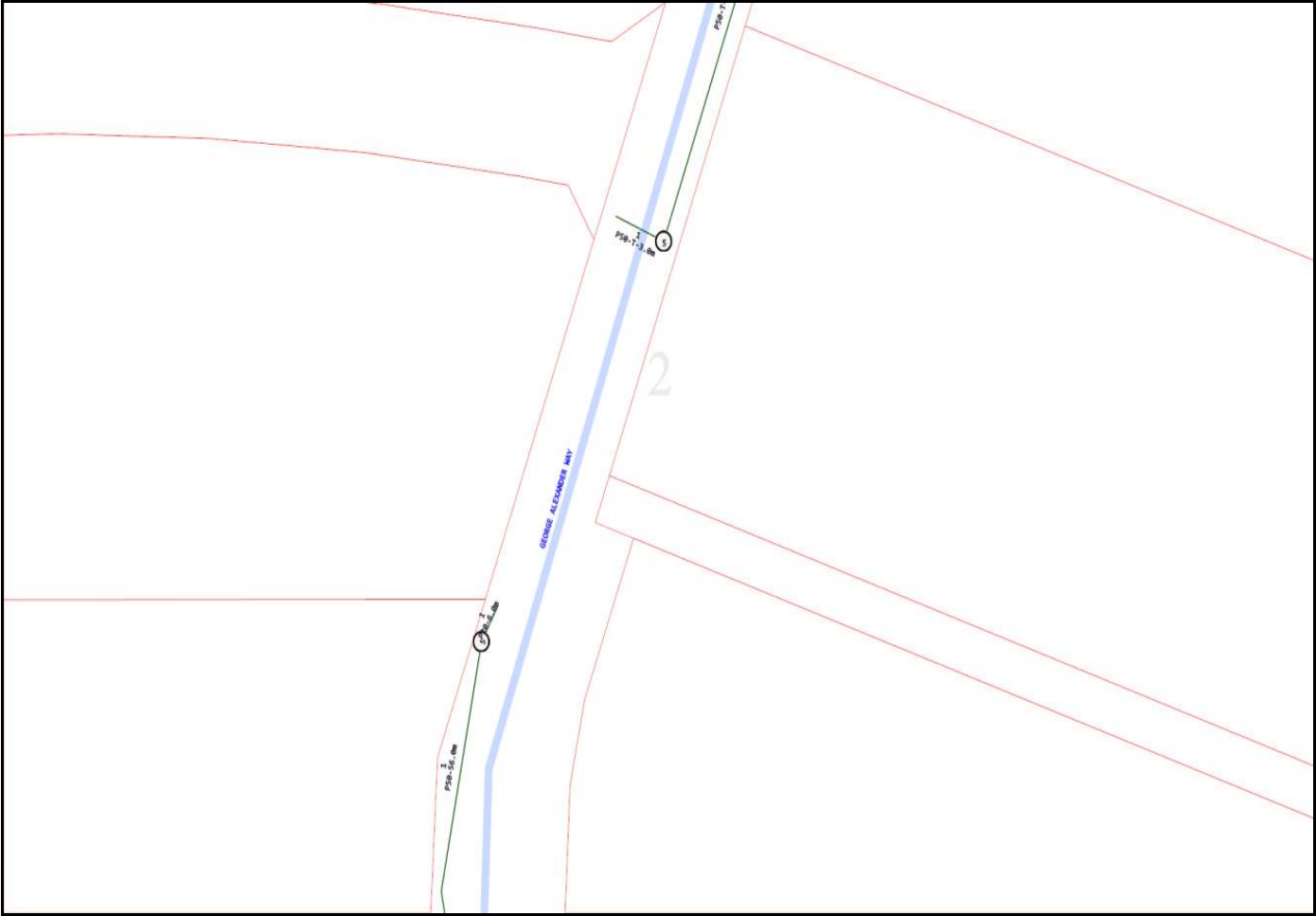


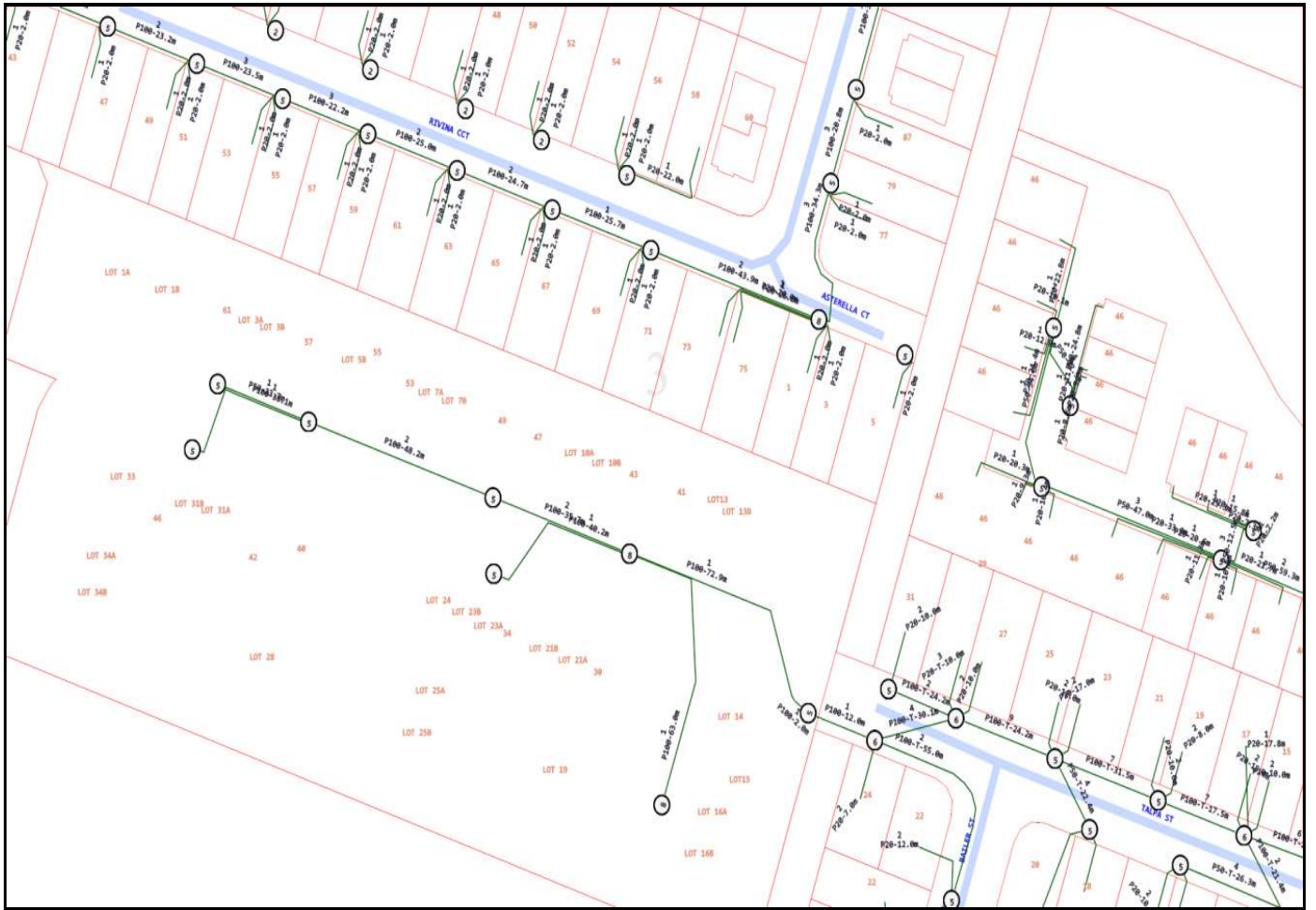
LEGEND

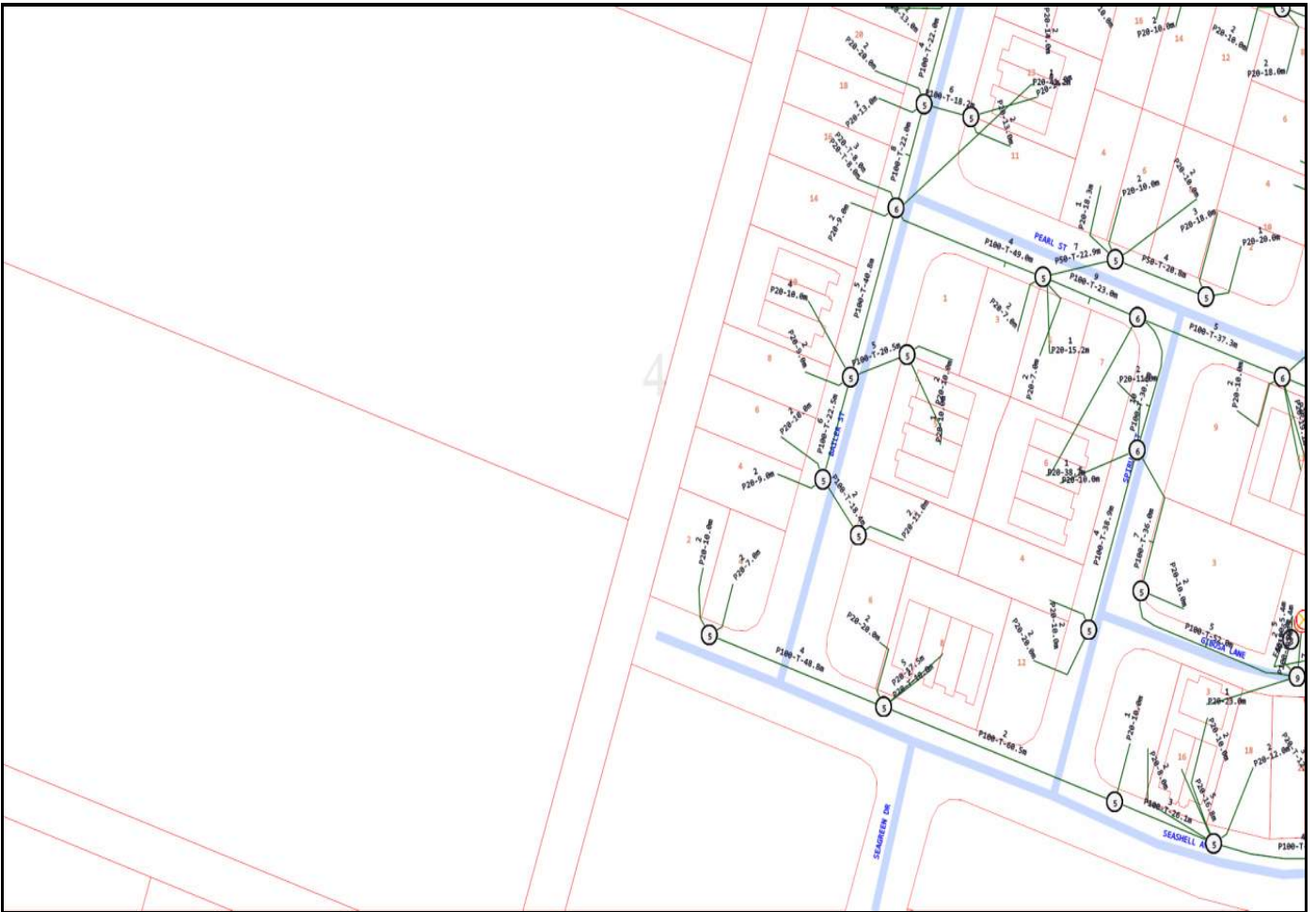


	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
	2 Direct buried cables between pits of sizes, "5" and "9" are 10.0m apart.
	Trench containing any INSERVICE/CONSTRUCTED (Copper/RF/Fibre) cables.
	Trench containing only DESIGNED/PLANNED (Copper/RF/Fibre/Power) cables.
	Trench containing any INSERVICE/CONSTRUCTED (Power) cables.
	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000 1 cm equals 20 m









Emergency Contacts

You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.

To: Gabrielle Djelovic
Phone: Not Supplied
Fax: Not Supplied
Email: gabby.djelovic@arcadis.com

Dial before you dig Job #:	37002258	
Sequence #	241140779	
Issue Date:	27/06/2024	
Location:	54 George Alexander Way , Coomera , QLD , 4209	

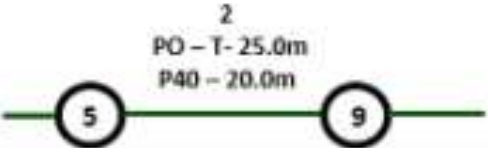
Indicative Plans are tiled below to demonstrate how to layout and read nbn asset plans

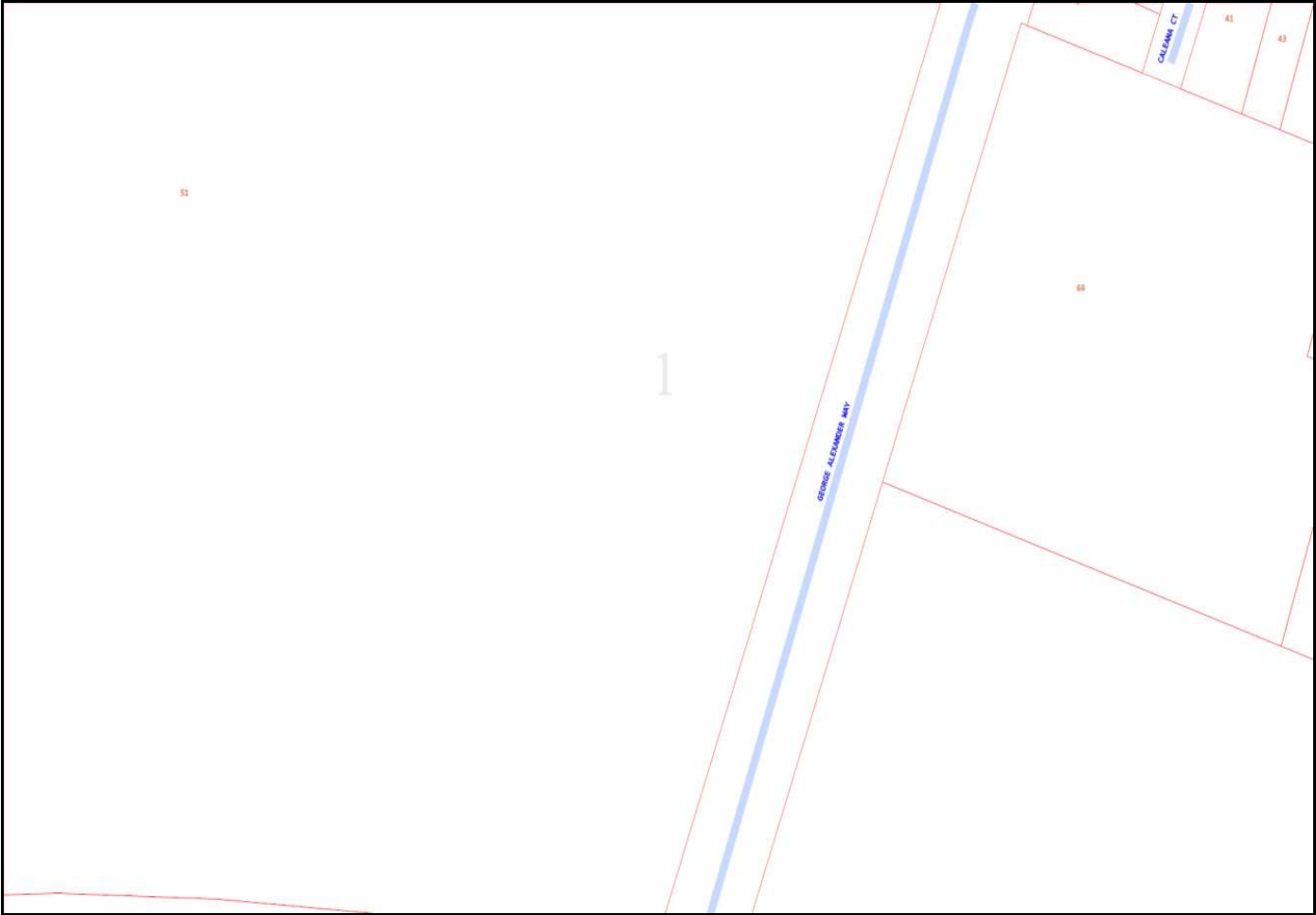
1	3
2	4

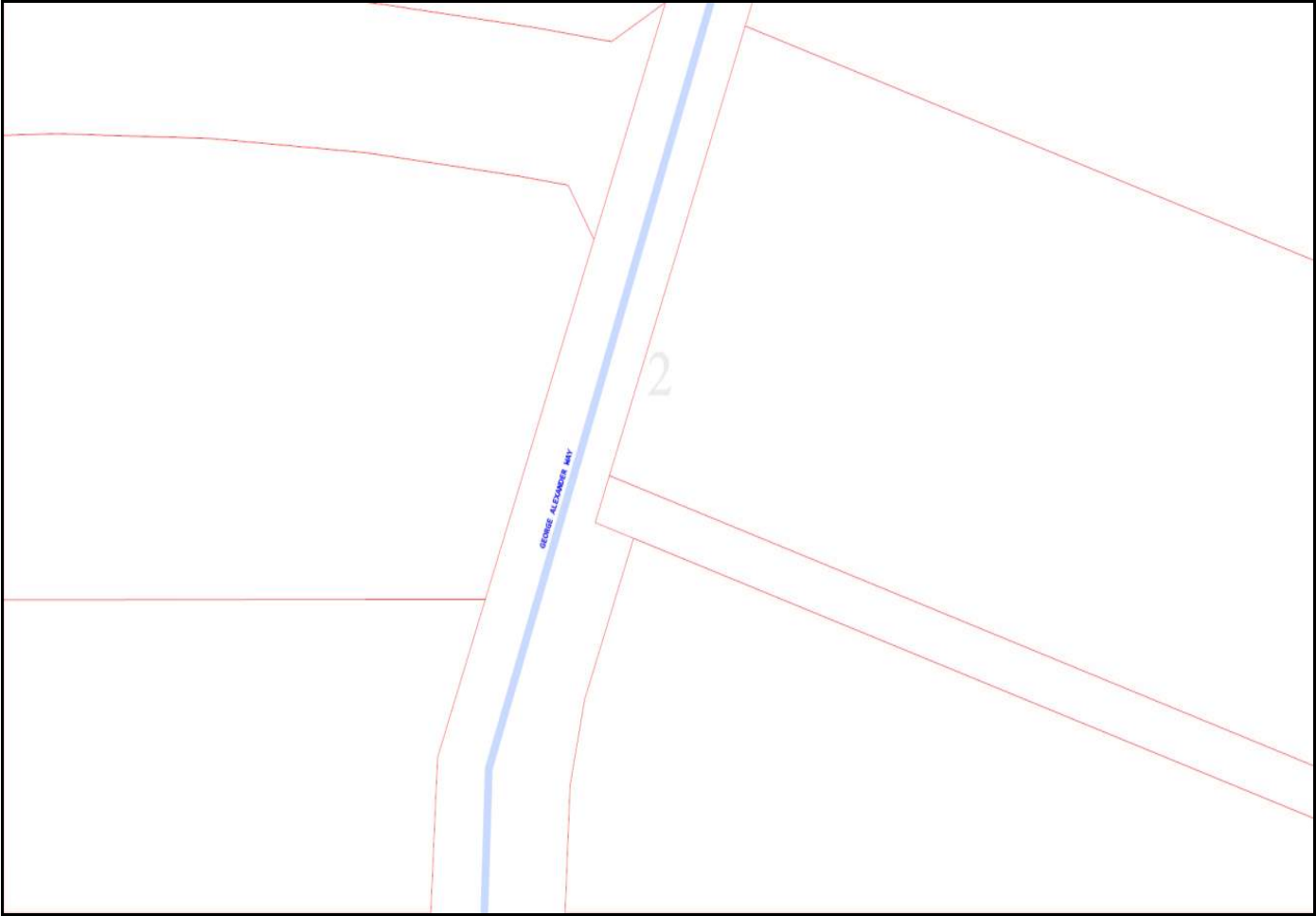


LEGEND

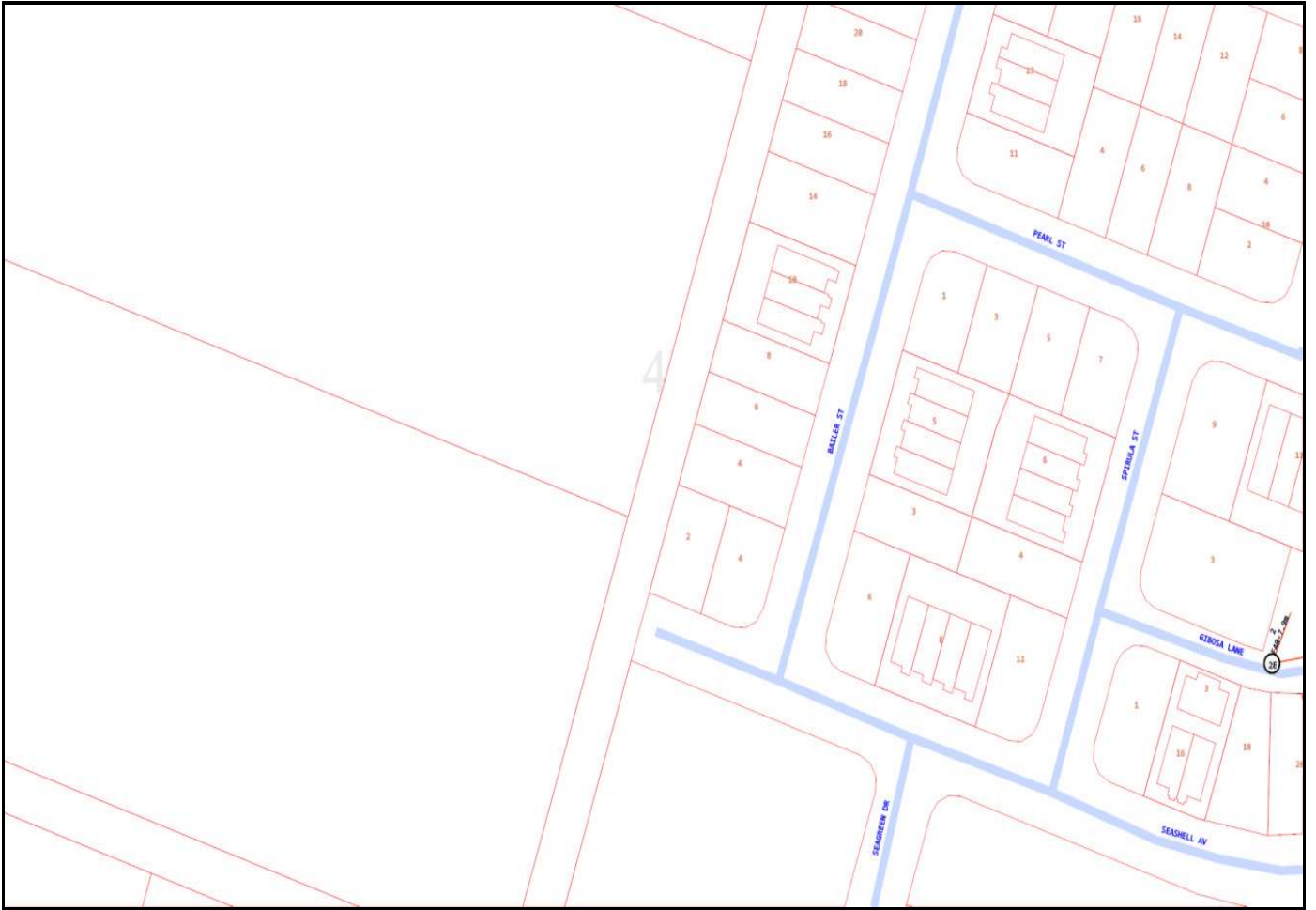


	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
	2 Direct buried cables between pits of sizes, "5" and "9" are 10.0m apart.
	Trench containing any INSERVICE/CONSTRUCTED (Copper/RF/Fibre) cables.
	Trench containing only DESIGNED/PLANNED (Copper/RF/Fibre/Power) cables.
	Trench containing any INSERVICE/CONSTRUCTED (Power) cables.
	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000  1 cm equals 20 m



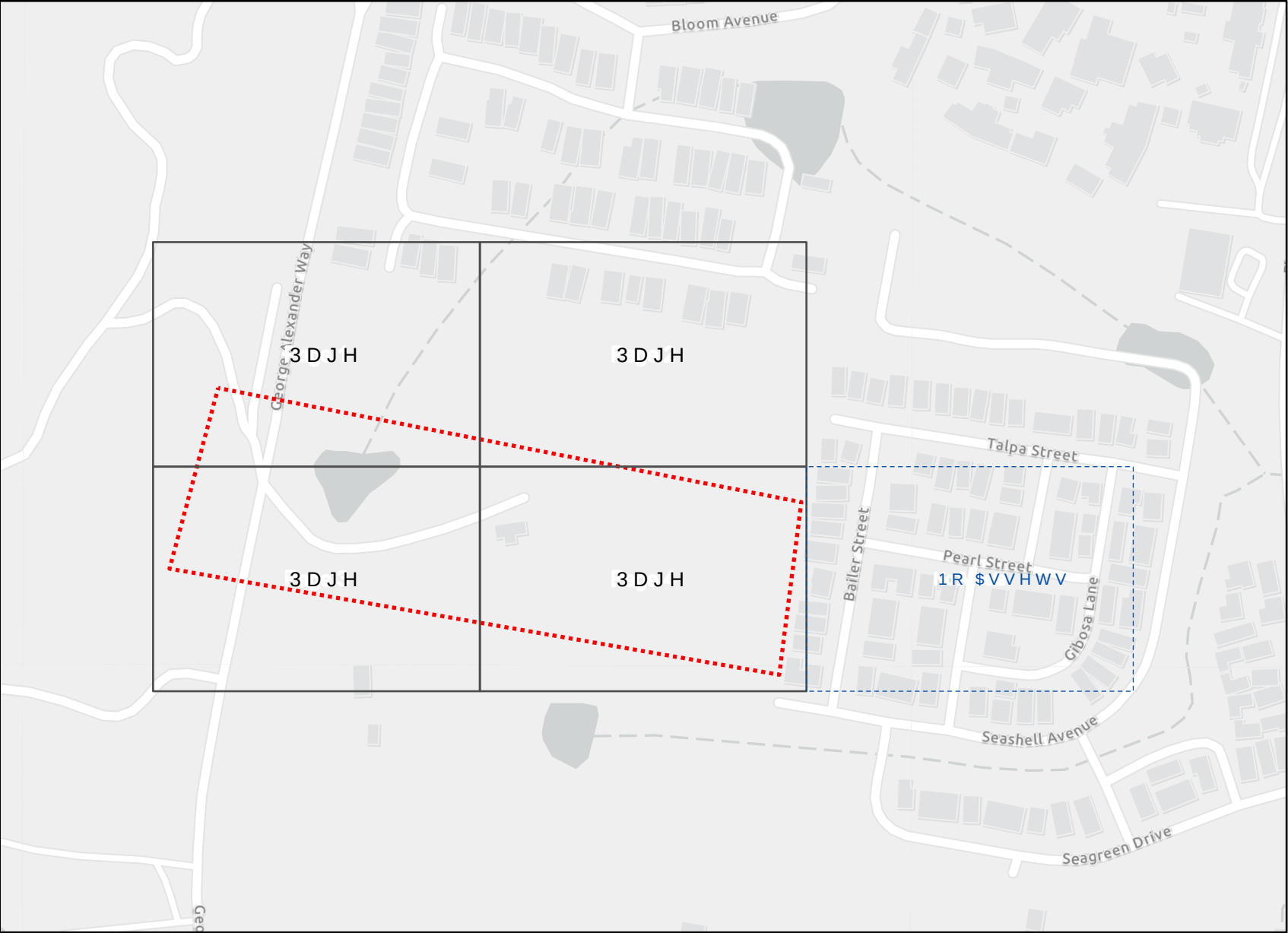






Emergency Contacts

You must immediately report any damage to the **nbn**™ network that you are/become aware of. Notification may be by telephone - 1800 626 329.



/HJHQG

%<'\$ (QTXLU\

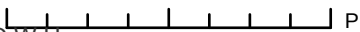
'HWDLOHG PDS SD.

1R GLJ VLWH DVVH

(VUL &RPPXQLW\ ODSV &RQWULEXWRU
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7RP7RP *DUPLQ)RXUVTXDUH 0(7, 1\$

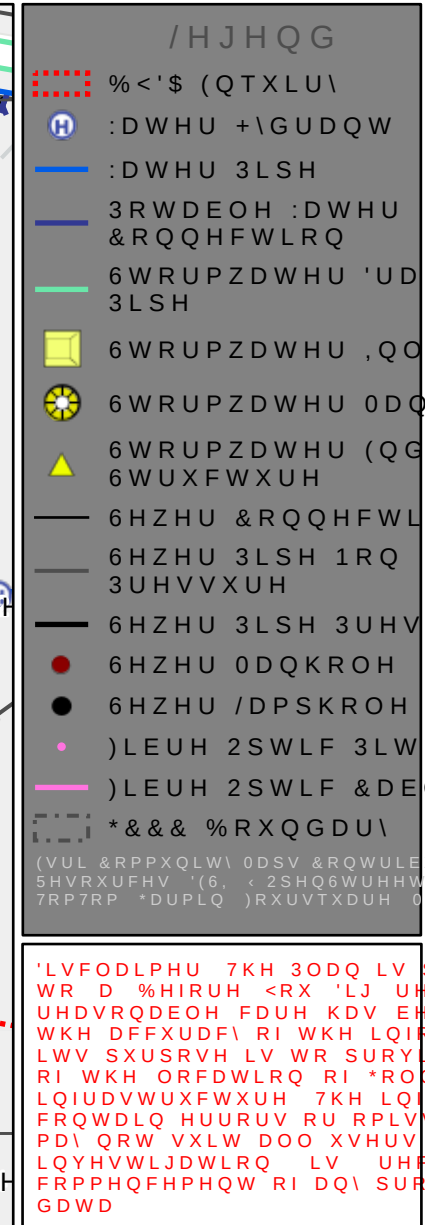
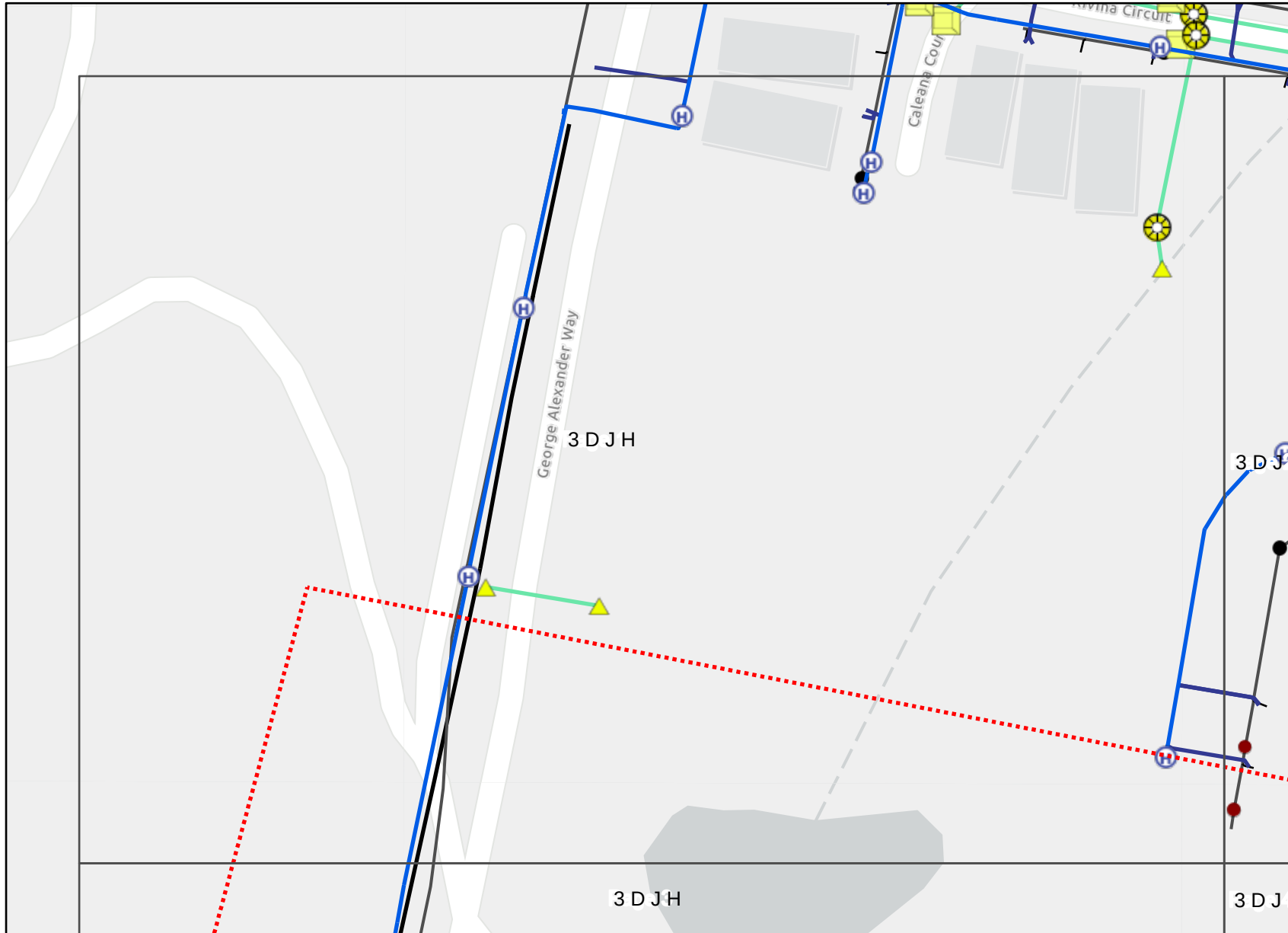
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WR D %HIRUH <RX 'LJ UHTXHV
UHDVRQDEOH FDUH KDV EHHQ V
WKH DFFXUDF\ RI WKH LQIRUPD
LVV SXUSRVH LV WR SURYLG D
RI WKH ORFDWLQJ RI *ROG &RI
LQIUDVWUXFWXUH 7KH LQIRUPD
FRQWDLQ HUURUV RU RPLVVLQJ
PD\ QRW VXLW DOO XVHUV \$ VL
LQYHVWLJDWLQJ LV UHFRPPH
FRPPHQFHPHQW RI DQ\ SURMHFV
GDWD

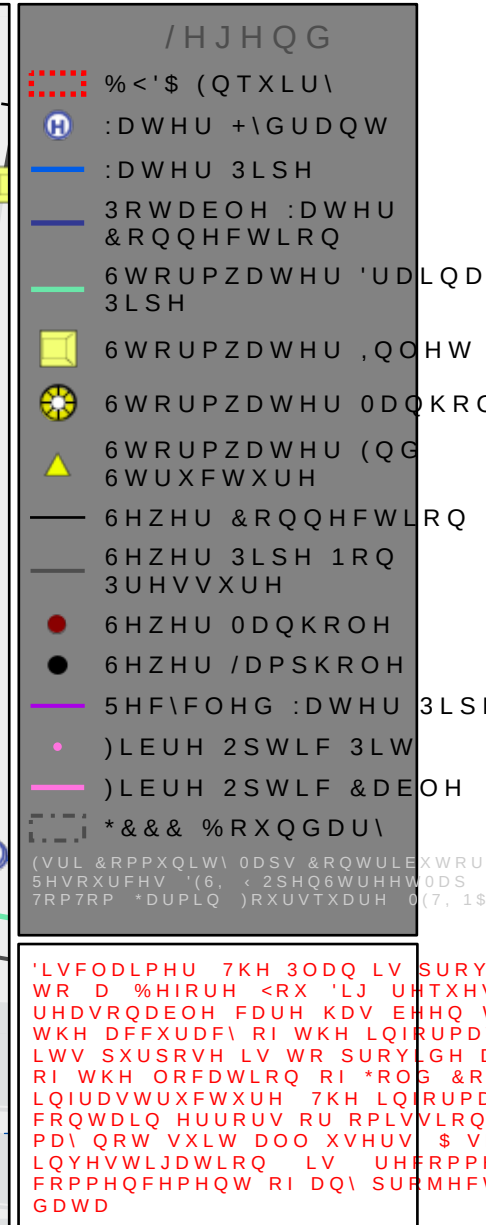
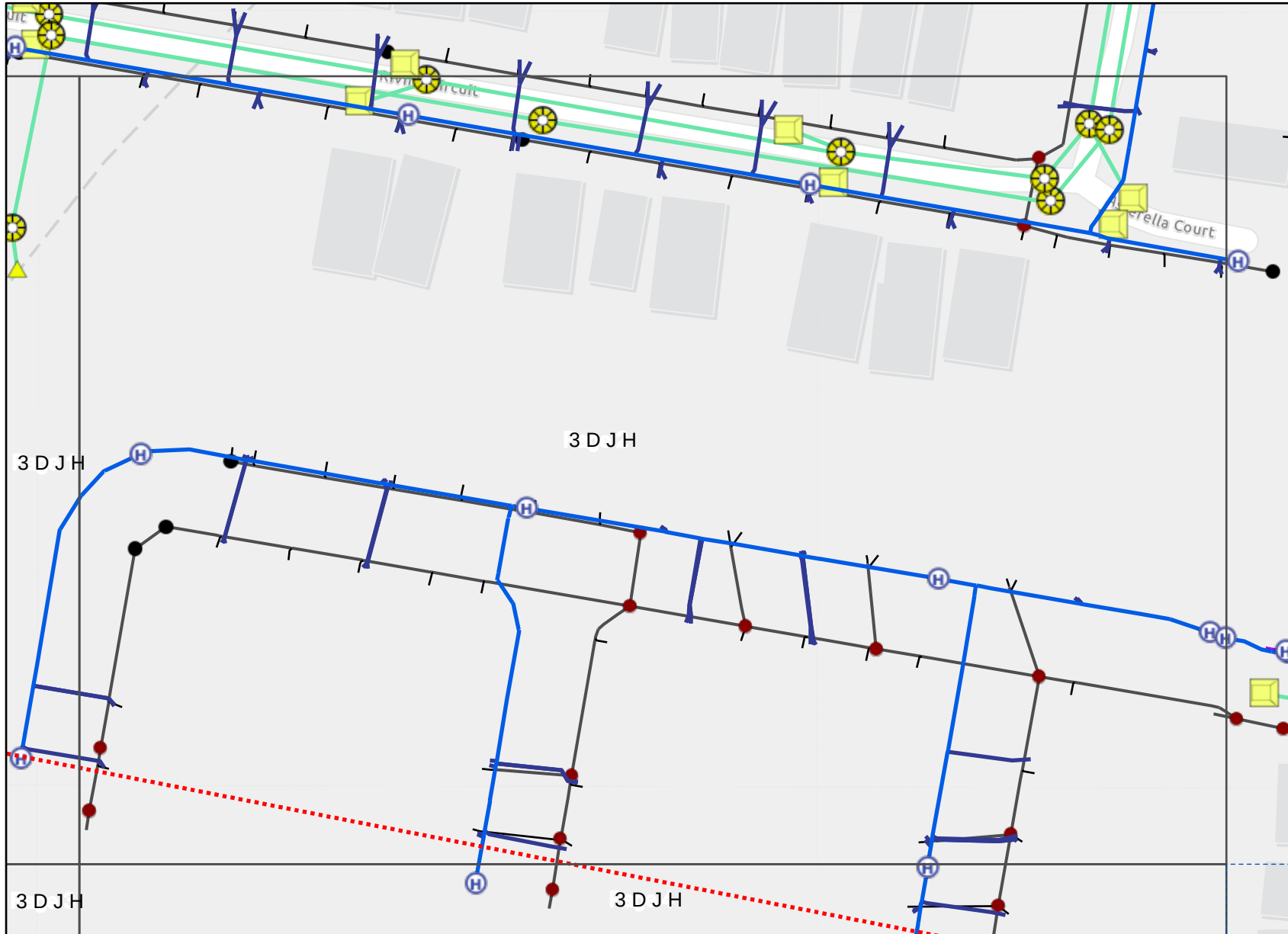
,Q DQ HPHUJHQF\ FRQWDFW &LW\ RI *ROG &RDVW RQ
,QGH[6KHHW
3ODQV JHQHUDWHG E\ 6PDUWHU::E \$XWRPDWH



p

6FDOH





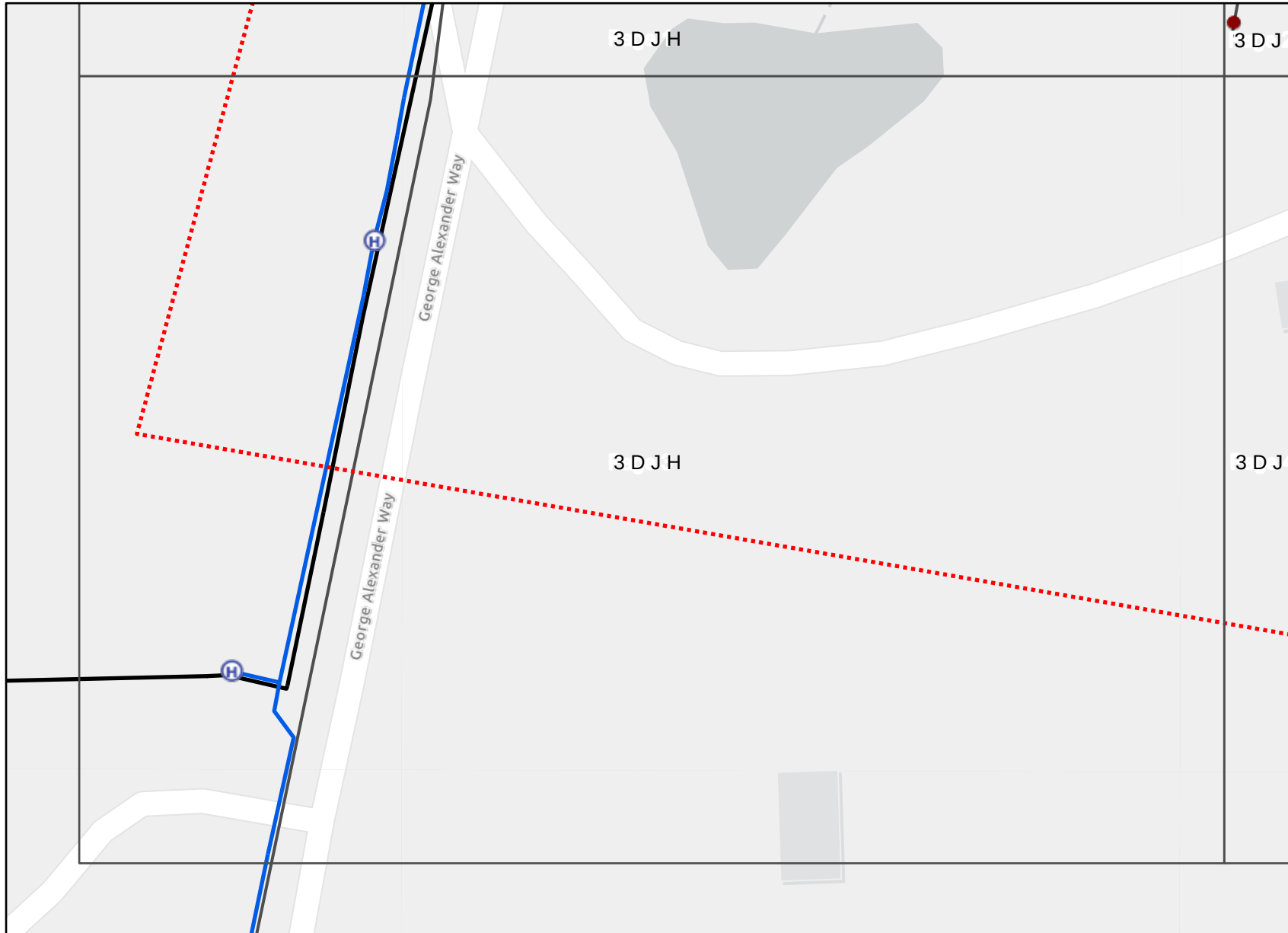
,Q DQ HPHUJHQF\ FRQWDFW &LW\ RI *ROG &RDVW RQ

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30DQV JHQHUDWHG E\ 6PDUWHU::E \$XWRPDWH

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H :DWHU +\GUDQW

 :DWHU 3LSH

 6HZHU 3LSH 1RQ

 3UHVXUH

 6HZHU 3LSH 3UHV

● 6HZHU 0DQKROH

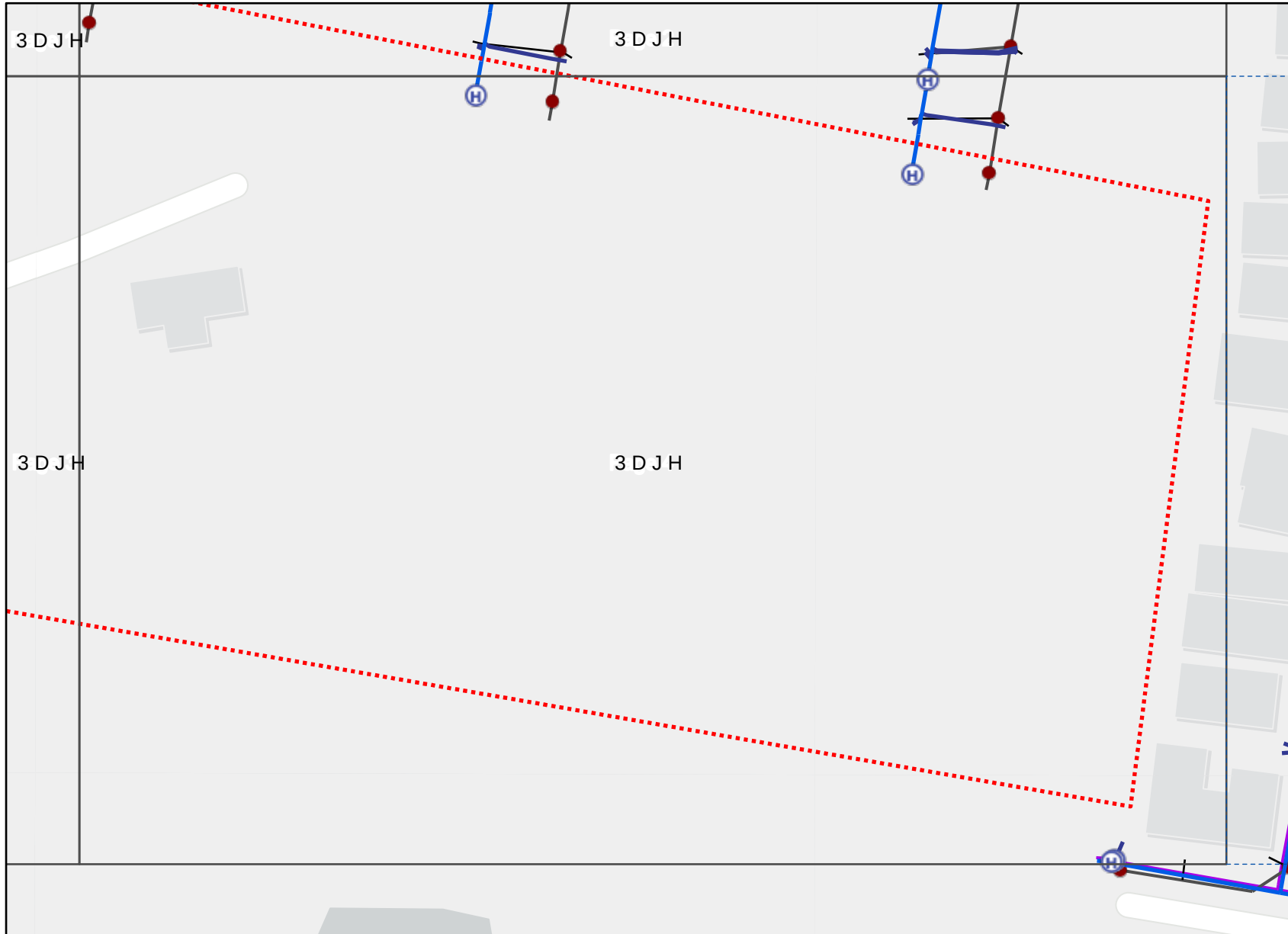
●)LEUH 2SWLF 3LW

—)LEUH 2SWLF &DEO

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(VUL &RPPXQLW\ 0DSV &RQWULEXWRU
5HVRXUFHV '(6, % 2SHQ6WUHHW0DS
7RP7RP *DUPLQ)RXUVTXDUH 0(7, 1\$

'LVFODLPHU, 7KH 30DQ LV SURY
WR D %HIRUH <RX 'LJ UHTXHV
UHDVRQDEOH FDUH KDV EHHQ V
WKH DFFXUDF\ RI WKH LQIRUPD
LVV SXUSRVH LV WR SURYLGH D
RI WKH ORFDWLQJ RI *ROG &RI
LQIUDVWUXFWXUH 7KH LQIRUPD
FRQWDLQ HUURUV RU RPLVLRQ
PD\ QRW VXLW DOO XVHUV \$ VL
LQYHVWLJDWLQJ LV UHFRPPH
FRPPHQFHPHQW RI DQ\ SURMHFV
GDWD



/HJHQG

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(H) :DWHU +\GUDQW

— :DWHU 3LSH

— 3RWDEOH :DWHU &RQQHFWLRQ

■ 6WRUPZDWHU ,QOH

— 6HZHU &RQQHFWLR

— 6HZHU 3LSH 1RQ 3UHVXUH

● 6HZHU 0DQKROH

● 6HZHU /DPSKROH

— 5HF\FOHG :DWHU 3I

●)LEUH 2SWLF 3LW

—)LEUH 2SWLF &DEO

□ *&&& %RXQGDUM

(VUL &RPPXQLW\ 0DSV &RQWULEXWRU
5HVXUHV '6, % 2SHQ6WUHHW0DS
7RP7RP *DUPLQ)RXUVTXDUH 0(7, 1\$

'LVFODLPHU, 7KH 30DQ LV SURY
WR D %HIRUH <RX 'LJ UHTXHV
UHDVRQDEOH FDUH KDV EHHQ V
WKH DFFXUD\ RI WKH LQIRUPD
LVV SXUSRVH LV WR SURYLGH D
RI WKH ORFDWLRQ RI *ROG &RI
LQIUDVWUXFWXUH 7KH LQIRUPD
FRQWDLQ HUURUV RU RPLVLRQ
PD\ QRW VXLW DOO XVHUV \$ VU
LQYHVWLJDWLRQ LV UHFRRPH
FRPPHQFHQW RI DQ\ SURMHFV
GDWD

,Q DQ HPHUJHQF\ FRQWDFW &LW\ RI *ROG &RDVW RQ

YDOLG IRU GD\V

30DQV JHQHUDWHG E\ 6PDUWHU::, \$XWRPDWH

p

6FDOH



APA Group
PO Box 6014 Halifax
Street,
South Australia 5000



For your immediate information THERE IS A CRITICAL GAS PIPELINE OR INFRASTRUCTURE (Gas Assets) located in close vicinity to your works.

27/06/2024

Company:
Gabrielle Djelovic
12-14 Marine Parade
Southport
QLD 4215

gabby.djelovic@arcadis.com

Dear Gabrielle Djelovic

Sequence Number: 241140781
Worksite Address: 54 George Alexander Way
Coomera
QLD 4209

Thank you for your Before You Dig enquiry regarding the location of Gas Assets.

We confirm there are CRITICAL Gas Assets located in close vicinity of the above location. Damage to gas assets may result in explosion, fire and personal injury.

You are hereby notified before you commence any works you are required to complete the Work In The Vicinity Of Critical Gas Assets request form and forward this to APA as soon as practicable.

Any work activity in vicinity of Critical Gas Assets operated by APA requires an **Authority to Work Permit** and may require attendance by an APA Site Watch representative whilst work is in progress. Please ensure you read and comply with all the relevant requirements contained in this response to your enquiry.

Contacts – APA Group

Enquiry	Contact Numbers
General enquiries or feedback regarding this information or gas assets. QLD Only All other States	APA - Before You Dig Officer Phone: 1800 085 628 Email: PermitsQld@apa.com.au Phone: 1800 085 628 Email: DBYDNetworksAPA@apa.com.au
Gas Emergencies	Phone: 1800 GAS LEAK (1800 427 532)



Please find below the following information:

1. **Duty of Care** - If you are unclear of your obligations under these requirements please contact the Before You Dig officer for clarification.
2. **An overview map** highlighting the area of your intended works.
3. **Map(s) showing APA operated Gas Assets** within the area of your intended works.
4. **Work In The Vicinity Of Critical Gas Assets request form** - Please complete and forward to APA as soon as practicable via email DBYDNetworksAPA@apa.com.au or PermitsQld@apa.com.au (QLD only), or the address at the top of this document. **A minimum of three (3) business days in advance of any work commencement** is required to process Authority To Work Request applications and provide a response.
5. **Site Watch** – Following consideration of the information received by APA in the Work In The Vicinity Of Critical Gas Assets request form, we may require an APA Site Watch representative to be present on site whilst some or all of the proposed site works are undertaken. Refer information for Site Watch in the Duty of Care section of this document.

Important Information:

- This information is valid for 30 days from the date of this response.
- This information shall be available on site whilst conducting works.
- This information has been generated by an automated system based on the area highlighted in your BYDA request and has not been independently verified. Please check the maps represent the area you requested. If they do not, please contact the APA - Before You Dig officer.
- For some BYDA enquiries, you may receive two (2) responses from APA. Please read both responses carefully as they relate to different assets.

Yours Faithfully,

APA Group

Duty of Care - Working Around Gas Assets

General Conditions

- BYDA enquiries are valid for 30 days. If your works commence after 30 days from the date of this response a new enquiry is required to validate location information.
- The location information supplied in this document shall be used as a guide only. APA does not guarantee the accuracy or completeness of the map and does not make any warranty about the data. APA is not under any liability to the user for any loss or damage (including consequential loss or damage) which the user may suffer resulting from the use of this information or maps.
- It is the responsibility of the excavator to expose all Gas Assets by hand digging. Gas Asset depths may vary according to ground conditions.
- Gas (inlet) Services connecting Gas Assets in the street to the gas meter on the property are not marked on the map. South Australia Only - If a meter box is installed on the property, a sketch of the gas service location may be found inside the gas meter box. APA does not guarantee the accuracy or completeness of these sketches.
- Road authorities, council's, and their authorised contractors and agents are responsible to pot-hole or use other suitable methods to verify the location and depth of all gas assets, including Gas (inlet) Services, prior to commencing any works.
- The location and depth of underground mains & services, including those in the road corridor and footpath, may vary in alignment and depth of cover, as a result of changes to road, footpath or surface levels subsequent to installation.
- Some Gas Assets may be installed inside a casing. Locations where a Gas Asset changes from being located within, to being located outside a casing may not be marked on the maps provided.
- The use of hydro-vacuum excavation in vicinity to Gas Assets is permitted under the following conditions:
 - Maximum water pressure of 1000psi unless otherwise advised.
 - A minimum distance of 100mm shall be maintained between the end of the pressure wand nozzle and gas assets.
 - Vertical movements of the pressure wand nozzle or inserting the nozzle in vicinity of the gas asset prohibited
 - The use of root cutting heads is prohibited.

Where a gas asset has been exposed via hydro-vacuum excavation a visual check must be undertaken to ensure no damage has occurred to the pipe or it's coating. If any damage has occurred notify the APA Before You Dig Officer.

Critical Gas Assets - Conditions

It is your responsibility to follow these important conditions when working in vicinity of Critical Gas Assets

- A Work In The Vicinity Of Critical Gas Assets request form must be submitted to APA Group prior to any work commencing.
- Prior to any works commencing in the vicinity of Critical Gas Assets the person undertaking the work must receive from APA an Authority to work permit.
- The work in the vicinity of Critical Gas Assets will require attendance by an APA Site Watch representative whilst work is in progress unless stated otherwise on the Authority to work permit.
- Penalties apply to excavators commencing work in the vicinity of Critical Gas Assets prior to receiving an APA Group 'Authority to Work' permit and/or if an APA Site Watch representative is not in attendance where required.

Site Watch / Locate Services

Site Watch - A condition of an APA Authority To Work permit is for an APA Site Watch representative be present on site whilst conducting works. The purpose is to monitor works and protect gas assets in the vicinity from potential damage by the works.

Locate – This service is available on request, where an APA representative will visit your work site before work commencement to electronically locate and mark on the ground surface all gas assets in vicinity of the work site.

These services are provided under the following conditions:

- Contact APA - Before You Dig officer to make a booking. Contact details in the table above.
- The following rates are chargeable for these services:

Item	Rate (excl. gst)
Site Watch – Business Hours	\$143.42 per hour
Site Watch - After Hours	\$175.06 per hour
Electronic Locate – Business Hours	\$143.42 per hour
Electronic Locate – After Hours	\$175.06 per hour
Cancellation Fee	2 hrs Business Hours rate (where cancellations received <u>after</u> 12pm (midday) 1 business day prior to the booking)
Mains Proving	Quoted on request

Notes:

- 1hr minimum charge applies.
- A Cancellation Fee applies where cancellations are received after 12pm (midday) one(1) business day prior to the booked Site Watch / Locate service
- Contact APA - Before You Dig officer for state specific hours of business.

Site Address	54 George Alexander Way Coomera 4209	Sequence No	241140781
Name	Gabrielle Djelovic		
Email	gabby.djelovic@arcadis.com		

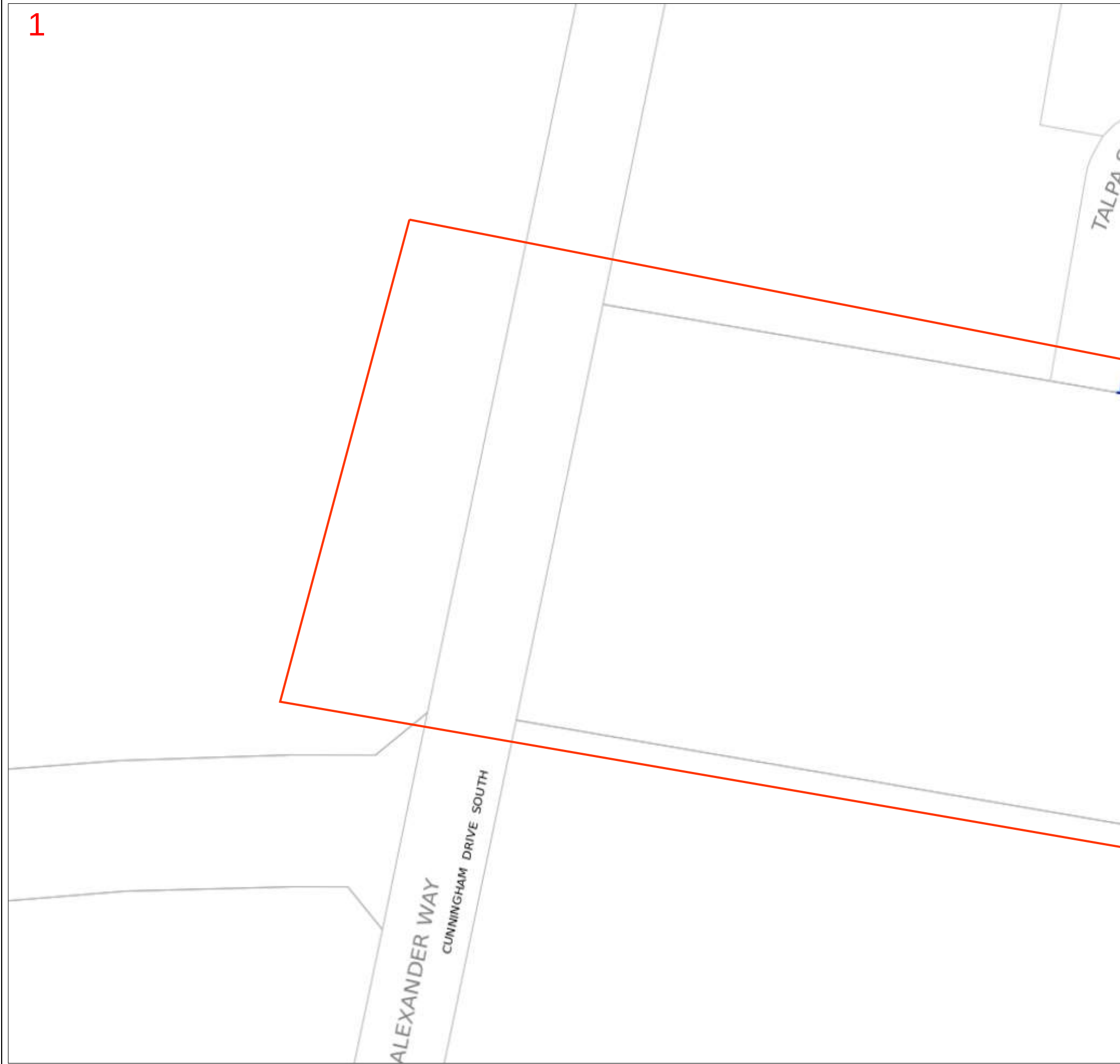


Map Sources: Esri, Garmin, HERE, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Scale 1: 6000		Enquiry Area  Map Key Area 
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Site Address	54 George Alexander Way Coomera 4209	Sequence No	241140781
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Before you commence any works you are required to complete the attached 'Work In The Vicinity Of Critical Gas Assets' request form and forward this to APA as soon as practicable.



LEGEND PIPE AND BOUNDARIES LOW PRESSURES MEDIUM PRESSURES HIGH PRESSURES TRANSMISSION PRESSURES PRIORITY MAIN (BEHIND PIPE) PROPOSED (COLOUR BY PRESSURE) LPG (COLOUR BY PRESSURE) ABANDONED IDLE SLEEVE CASING / SPLIT (BEHIND PIPE) EASEMENT/ JURISDICTION EXAMPLES 40P6 in 80C2 63S8 Line / Polygon Request PIPE CODE / MATERIALS C# (e.g. C2) CU N2 P# (e.g. P6) P6,P7,P9-P12 P2,P4,P8 S# (e.g. S8) W2 W3 Pipe diameter in millimetres is shown before pipe code e.g. 40P6 = 40mm nominal diameter OBJECTS or TERMS VALVES BURIED VALVES REGULATORS GAS SUPPLIED = YES CP RECTIFIER UNIT CP TEST POINT/ ANODE SYPHON TRACE WIRE POINT PIPELINE MARKER NOT TIED IN DEPTH OF COVER BACK / FRONT OF KERB N.T.I. C Bok Fok			Map Key 1 2	
Scale 1:700		0 0.008km		

Site Address	54 George Alexander Way Coomera 4209	Sequence No	241140781
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Before you commence any works you are required to complete the attached 'Work In The Vicinity Of Critical Gas Assets' request form and forward this to APA as soon as practicable.



LEGEND			Map Key
PIPE AND BOUNDARIES	PIPE CODE / MATERIALS	OBJECTS or TERMS	
LOW PRESSURES MEDIUM PRESSURES HIGH PRESSURES TRANSMISSION PRESSURES PRIORITY MAIN (BEHIND PIPE) PROPOSED (COLOUR BY PRESSURE) LPG (COLOUR BY PRESSURE) ABANDONED IDLE SLEEVE CASING / SPLIT (BEHIND PIPE) EASEMENT/ JURISDICTION	C# (e.g. C2) Cast Iron CU Copper N2 Nylon P# (e.g. P6) Polyethylene (PE) P6,P7,P9-P12 Medium Density PE P2,P4,P8 High Density PE S# (e.g. S8) Steel W2 Wrought Galv. Iron W3 Poly Coat Wrought Galv. Iron <i>Pipe diameter in millimetres is shown before pipe code e.g. 40P6 = 40mm nominal diameter</i>	VALVES BURIED VALVES REGULATORS GAS SUPPLIED = YES CP RECTIFIER UNIT CP TEST POINT/ ANODE SYPHON TRACE WIRE POINT PIPELINE MARKER NOT TIED IN DEPTH OF COVER BACK / FRONT OF KERB Bok Fok	
EXAMPLES 40P6 in 80C2 63S8	40mm High Pressure Medium Density Polyethylene in an 80mm Cast Iron Casing 63mm Medium Pressure Steel		
Line / Polygon Request			
Scale 1:700		0 0.008km	

REQUEST TO WORK IN THE VICINITY OF CRITICAL GAS ASSETS CONDITIONS

It is the proponent's* responsibility to read these conditions and complete the request form

1. **A minimum of three (3) business days** in advance of any work commencement is required to process Authority To Work Request applications and provide a response.
2. This request form must be accompanied by a detailed schedule of works.
3. For any gas leak related work this request form must include a detailed sequence of events, outlining all aspects of work. Work is not permitted to proceed until an APA Authority to Work permit has been issued.
4. When an APA Authority to Work permit is issued, the permit will provide any applicable conditions whilst conducting excavation or work in vicinity of the Gas Assets.
5. APA Group Site Watch may be required to be on site during the proposed excavation or work.
6. When an APA Authority to Work permit is issued, the proponent is responsible for complying with all permit conditions.
7. Where applicable, excavation or work must not commence until the requestor has received an APA Authority to Work Permit.
8. Where applicable, penalties apply to excavators commencing work in the vicinity of Critical Gas Assets prior to receiving an APA Group 'Authority to Work Permit'. For further information, as relevant, refer to:
 - NSW Gas Supply Act 1996 – Sec 64 C, Requirements in relation to carrying out of certain excavation work.
 - NSW Gas Supply Act 1996 Sec 50A, Excavation work affecting gas work.
 - Victoria: Pipelines Act 2005 – Section 118, Digging near pipelines and Section 119, Interference with pipeline.
 - South Australia: Gas Act 1997 – Section 83, Notice of work that may affect gas infrastructure.
 - Northern Territory: Energy Pipelines Act as in force at 14 October 2015 Section 66, Threat to pipeline.
 - QLD: Gas Supply Act 2003 – 90, 91 Requirement to consult if gas infrastructure affected.

** Person or company requesting to undertake works in proximity to critical gas assets.*

WORK IN THE VICINITY OF CRITICAL GAS ASSETS REQUEST FORM

Return this form to: DBYDNetworksAPA@apa.com.au or (QLD only) PermitsQld@apa.com.au

Enquiries: Contact APA Before You Dig officer - 1800 085 628

Work / Excavation Site Details

Number:	Street:		
Suburb:		State:	
Sequence Number / 241140781 :			
Requestors Name:			
Company Name:			
Name of Authorised Company Site Representative:			
Email:			
Phone:		Mobile:	
Signature:			

Description of Work / Excavation

<i>Activity/Excavation Details:</i>			
Tick Applicable			
Excavation		Change to surface level	
Service crossing		Boring	
Proving		Other <i>(provide details)</i>	
Earthworks			
Excavator Size, Tooth Type & Tooth Size <i>(provide details)</i>			

Work / Excavation Drawings Attached (circle)

Yes

No

Proposed Work Dates and Times

From			To	
Excavation	Date	Time	Date	Time
	/ /	am/pm	/ /	am/pm
Backfill	Date	Time	Date	Time
	/ /	am/pm	/ /	am/pm

Work Classification Self-Assessment (circle)

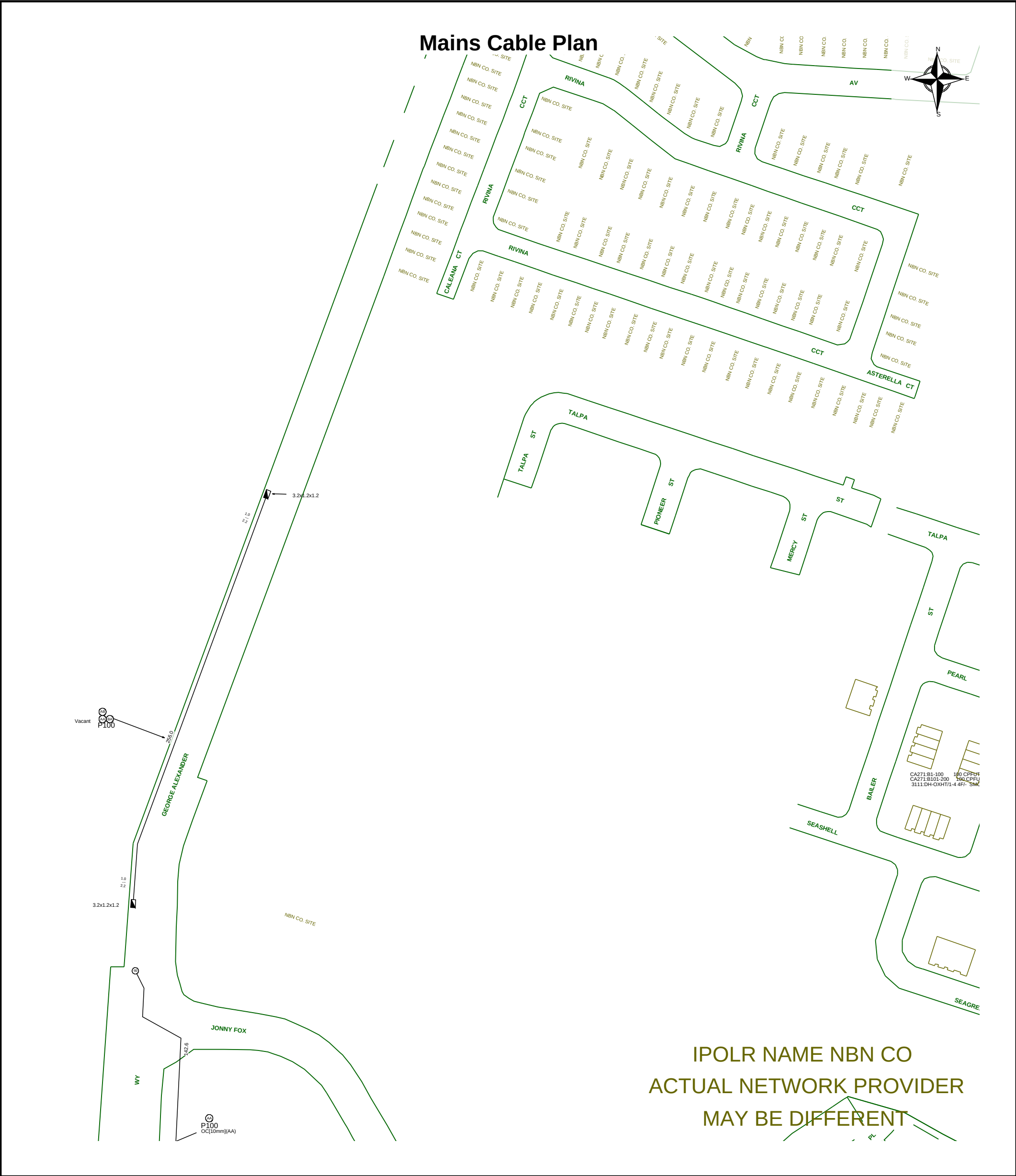
Class 1 Works crossing a critical gas asset	Class 2 Works within 3m of a critical gas asset	Class 3 Works involving large excavations, vibrations or blasting beyond 3m of the critical gas asset
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Insurer and Policy Details

Policy Number		Policy Expiry Date	
Insurance Cover – Current Level (\$)			

*Requestor / Billing Details – **Mandatory Information**

Company / Requestor Name:	
Address:	
Purchase Order:	Email:
Phone:	
Requestor Name:	Requestor Signature:



	Report Damage: https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-equipment Ph - 13 22 03 Email - Telstra.Plans@team.telstra.com Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries	Sequence Number: 241140782
	TELSTRA LIMITED A.C.N. 086 174 781	Please read Duty of Care prior to any excavating
	Generated On 27/06/2024 12:44:06	

WARNING
Telstra plans and location information conform to Quality Level "D" of the Australian Standard AS 5488-Classification of Subsurface Utility Information. As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D. Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing it. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy. Further on site investigation is required to validate the exact location of Telstra plant prior to commencing construction work. A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works.

See the Steps- Telstra Duty of Care that was provided in the email response.

All underground cables shall be treated as being energised. Where a cable is located that is not represented on the ENERGEX BYDA map, then ENERGEX shall be contacted immediately.

For Emergency Situations
please call 13 19 62



BYDA

Sequence: 241140783

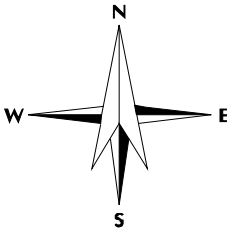
Date: 27/06/2024

Scale: 1:1538

OVERVIEW

For a full list of Map
Symbols, please
refer to the supplied
BYDA Symbology
Legend page

AS5488 Category "D" Plan



DISCLAIMER: While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Energex nor PelicanCorp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information contained in it or the completeness or accuracy of such information. Use of such information is subject to and constitutes acceptance of these terms.

This output provides details of the ENERGEX electrical network. As variations map exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.

All underground cables shall be treated as being energised. Where a cable is located that is not represented on the ENERGEX BYDA map, then ENERGEX shall be contacted immediately.

For Emergency Situations
please call 13 19 62

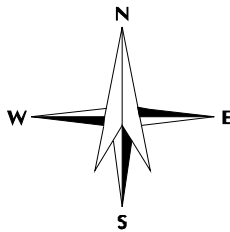


BYDA

Sequence: 241140783
Date: 27/06/2024
Scale: 1:500
Tile No: 1

For a full list of Map
Symbols, please
refer to the supplied
BYDA Symbology
Legend page

AS5488 Category “D” Plan



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For Emergency Situations
please call 13 19 62

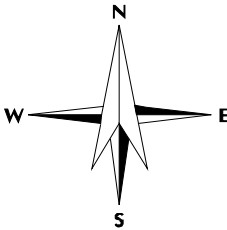


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Date: 27/06/2024
Scale: 1:500
Tile No: 2

For a full list of Map
Symbols, please
refer to the supplied
BYDA Symbology
Legend page

AS5488 Category “D” Plan



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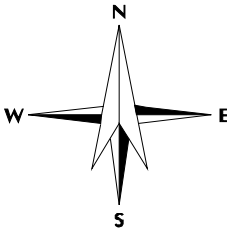


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Date: 27/06/2024
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For a full list of Map
Symbols, please
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AS5488 Category “D” Plan



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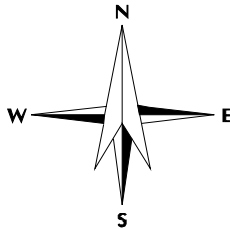


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Date: 27/06/2024
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For a full list of Map
Symbols, please
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AS5488 Category “D” Plan



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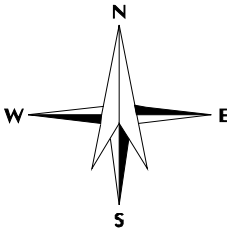


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Date: 27/06/2024
Scale: 1:500
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For a full list of Map
Symbols, please
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BYDA Symbology
Legend page

AS5488 Category “D” Plan



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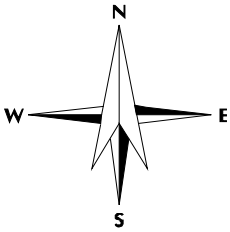


BYDA

Sequence: 241140783
Date: 27/06/2024
Scale: 1:500
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For a full list of Map
Symbols, please
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BYDA Symbology
Legend page

AS5488 Category “D” Plan



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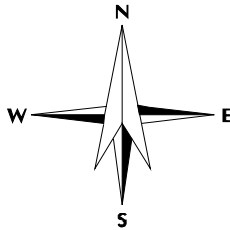


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For a full list of Map
Symbols, please
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BYDA Symbolology
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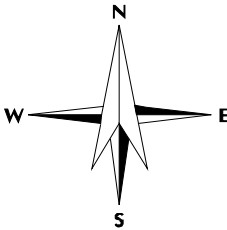


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Date: 27/06/2024
Scale: 1:500
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For a full list of Map
Symbols, please
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BYDA Symbology
Legend page

AS5488 Category “D” Plan



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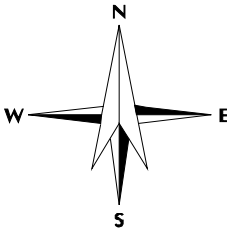


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For a full list of Map
Symbols, please
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BYDA Symbology
Legend page

AS5488 Category “D” Plan

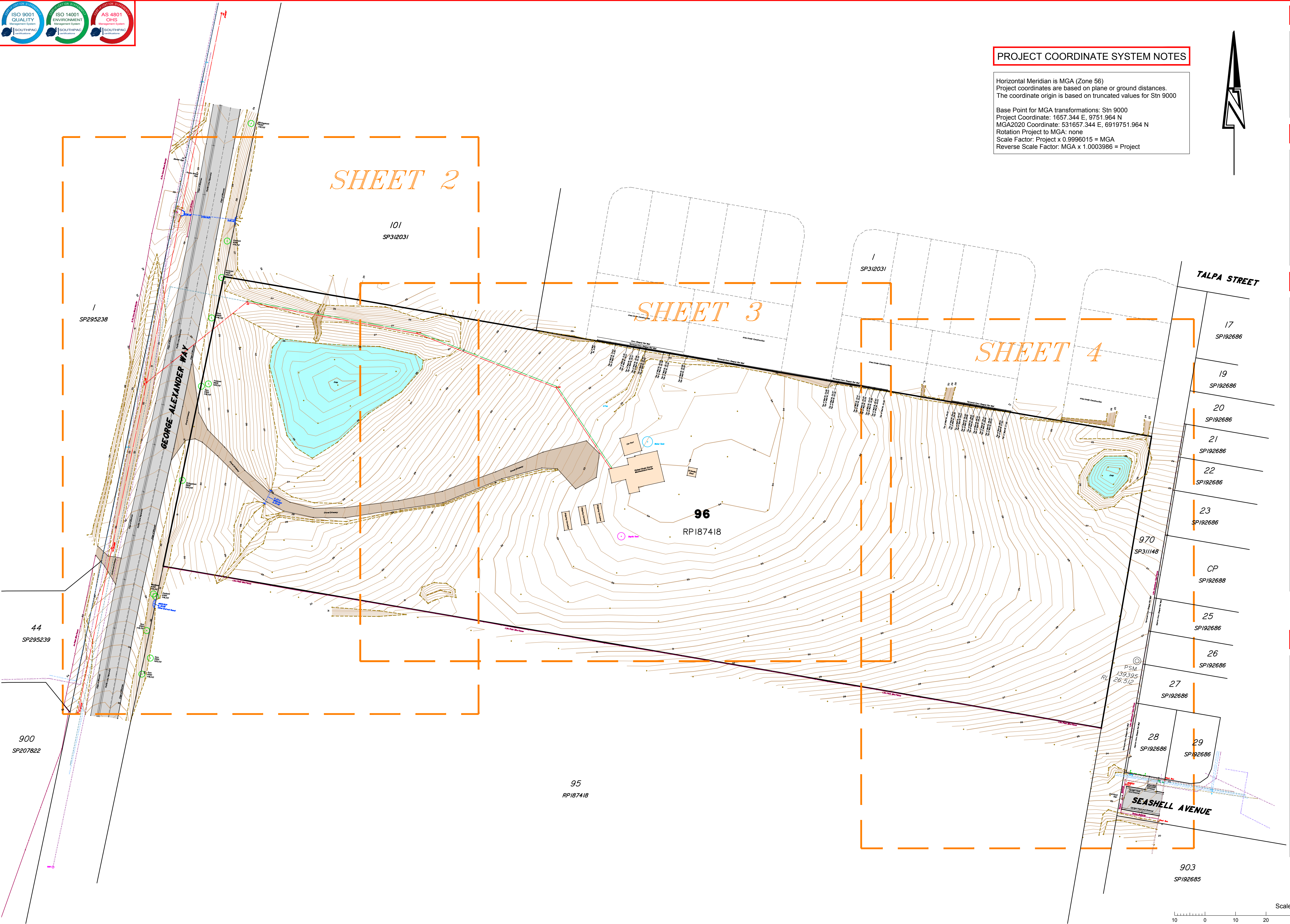


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APPENDIX D

SURVEY



PROJECT COORDINATE SYSTEM NOTES

Horizontal Meridian is MGA (Zone 56)
Project coordinates are based on plane or ground distances.
The coordinate origin is based on truncated values for Stn 9000

Base Point for MGA transformations: Stn 9000
Project Coordinate: 1657.344 E, 9751.964 N
MGA2020 Coordinate: 531657.344 E, 6919751.964 N
Rotation Project to MGA: none
Scale Factor: Project x 0.9996015 = MGA
Reverse Scale Factor: MGA x 1.0003986 = Project

LEGEND

Quality levels are shown on linetypes along with service type eg.
—E(A)— First Letter is the Service (Elec) and the second is Quality Level (A)

	by Survey	by Records
U/G ELECTRICITY	—E(A)—	—E(D)—
O/H ELECTRICITY	—E—	—E—
O/H TELECOMMUNICATIONS	—T—	—T—
U/G TELECOMMUNICATIONS	—TA—	—TD—
U/G DRAINAGE	—DA—	—DD—
SEWERAGE	—SA—	—SD—
WATER	—WA—	—WD—
GAS	—GA—	—GD—
FENCE	—F—	—F—

SYMBOLS

Sewer Manhole	○ SMH	MH	Manhole
Gully Trap	○ GT	SL	Surface Level
Stormwater Manhole	○ SWMH	IL	Invert Level
Fire Hydrant	○ FH	BM	Bench Mark
Valve	○ V	Ø	Diameter
Water Meter	○ WM	RCP	Reinforced Concrete Pipe
Electricity Box / Pillar	□ Elect Box	GI	Galvanised Iron
Electric Light Pole	○ ELP	Ø, H, S	Trunk diameter, Height, Spread (canopy diameter)
Power Pole	○ PP		
Electricity Manhole	□ Elect MH		
Electricity Pit	□ Elect PH		
Traffic Signal Pit	□ Traffic PH		
Traffic Light	○ Traffic		
Telecommunications Manhole	□ Tel MH		
Telecommunications Pit	□ Tel PH		
Tree / Shrub	○		

ABBREVIATIONS

NOTES

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Quality Level B - (significant risk reduction) Provides relative subsurface feature locations in three dimensions. The minimum requirement for QL-B is relative spatial position, this can be achieved via an electromagnetic frequency locating device. An electronic location provided by a DBYD Certified Locator to QL-B standard would have a maximum horizontal tolerance of plus or minus 300mm and a maximum vertical tolerance of plus or minus 500mm.

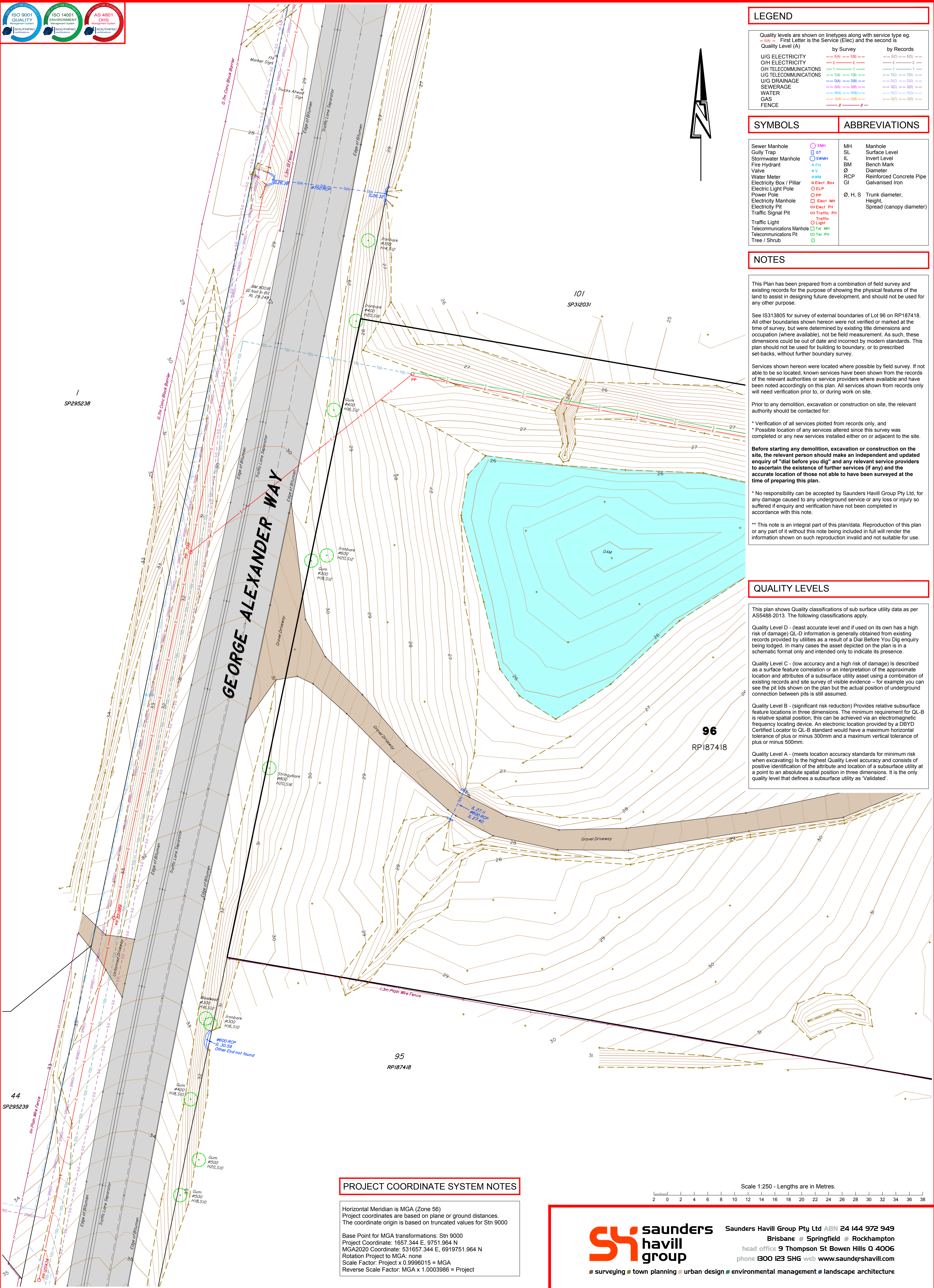
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No.	Drawn	Date	Description	Checked
A	MD	31/10/2022	Original Issue	JC

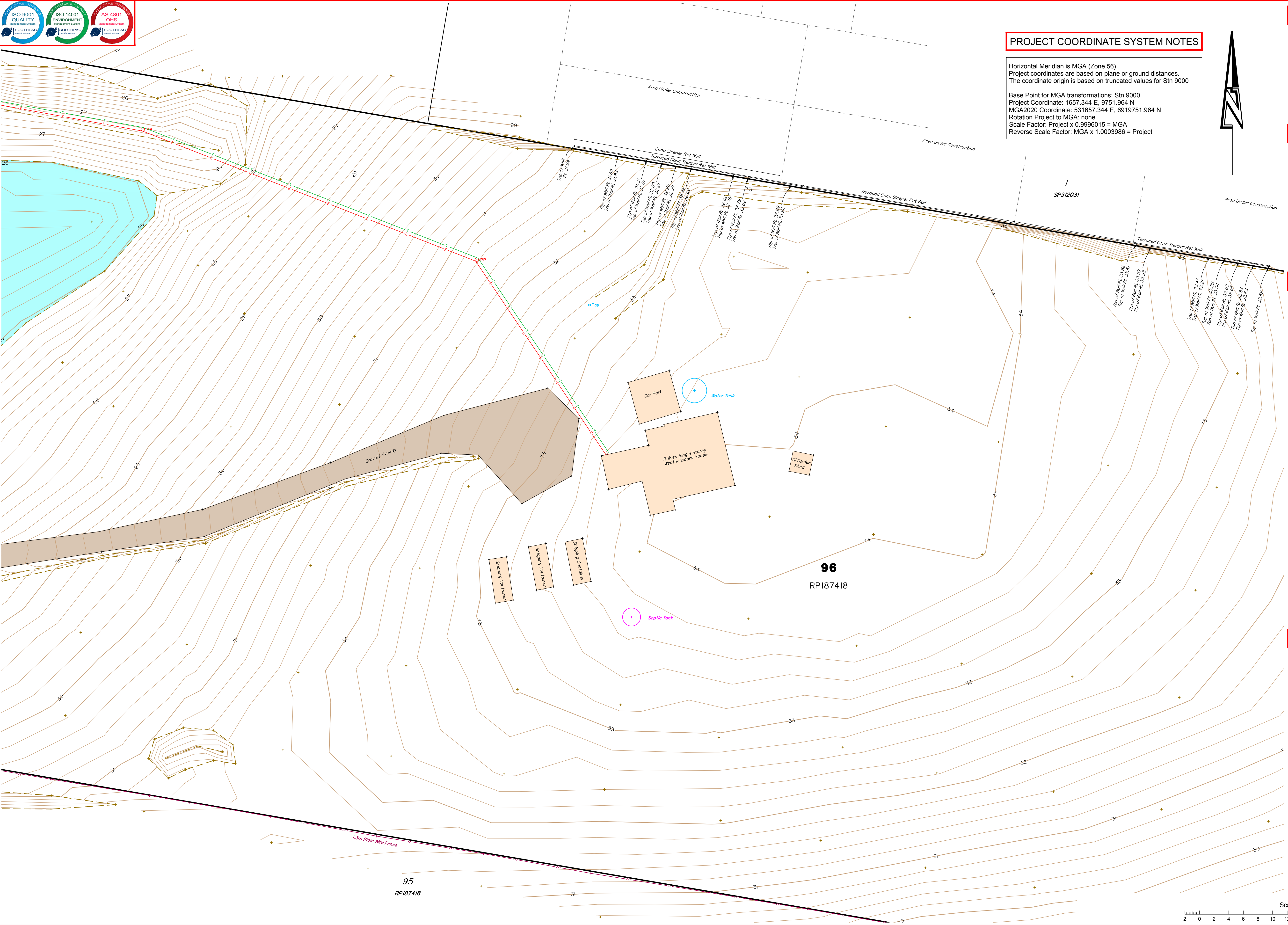
Plan of	DETAIL PLAN Sheet 1 of 4
Project	54 George Alexander Way, Coomera
Client	Coomera GA Pty Ltd ATF The Coomera GA Unit Trust

Surveyed	Date	Lot Description
BC	Oct 2022	Lot 96 on RP187418
Level Datum: AHD der.		Locality: Coomera
Origin of Levels: PM139395		Local Government: Gold Coast City
RL of Origin: 26.512		
Contour Interval: 0.2m		

surveying	Scale @A1 1: 600 @A3 1: 1200
Dwg No. 11241 S 03 DT A	



Issues	No.	Drawn	Date	Description	Checked	Plan of	DETAIL PLAN Sheet 2 of 4	Surveyed	Date	Lot Description Lot 96 on RP187418 Locality: Coomera Local Government: Gold Coast City	surveying Scale @A1 1: 250 @A3 1: 500 Dwg No. 11241 S 03 DT A	
	A	MD	31/10/2022	Original Issue	JC			BC	Oct 2022			
												Level Datum: AHD der.
												Origin of Levels: PM139395
												RL of Origin: 26.512
												Contour Interval: 0.2m
						Project	54 George Alexander Way, Coomera					
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Reverse Scale Factor: MGA x 1.0003986 = Project

LEGEND

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	by Survey	by Records
U/G ELECTRICITY	-E(A) -E(B) -E(C) -E(D) -E	-E(A) -E(B) -E(C) -E(D) -E
O/H ELECTRICITY	-E(A) -E(B) -E(C) -E(D) -E	-E(A) -E(B) -E(C) -E(D) -E
O/H TELECOMMUNICATIONS	-T(A) -T(B) -T(C) -T(D) -T	-T(A) -T(B) -T(C) -T(D) -T
U/G TELECOMMUNICATIONS	-T(A) -T(B) -T(C) -T(D) -T	-T(A) -T(B) -T(C) -T(D) -T
U/G DRAINAGE	-D(A) -D(B) -D(C) -D(D) -D	-D(A) -D(B) -D(C) -D(D) -D
SEWERAGE	-S(A) -S(B) -S(C) -S(D) -S	-S(A) -S(B) -S(C) -S(D) -S
WATER	-W(A) -W(B) -W(C) -W(D) -W	-W(A) -W(B) -W(C) -W(D) -W
GAS	-G(A) -G(B) -G(C) -G(D) -G	-G(A) -G(B) -G(C) -G(D) -G
FENCE	-F(A) -F(B) -F(C) -F(D) -F	-F(A) -F(B) -F(C) -F(D) -F

SYMBOLS

Sewer Manhole	○ SMH	MH	Manhole
Gully Trap	○ GT	SL	Surface Level
Stormwater Manhole	○ SWMH	IL	Invert Level
Fire Hydrant	■ FH	BM	Bench Mark
Valve	■ V	Ø	Diameter
Water Meter	■ WM	RCP	Reinforced Concrete Pipe
Electricity Box / Pillar	■ Elect Box	GI	Galvanised Iron
Electric Light Pole	○ ELP	Ø, H, S	Trunk diameter, Height, Spread (canopy diameter)
Power Pole	○ PP		
Electricity Manhole	■ Elect MH		
Electricity Pit	■ Elect PH		
Traffic Signal Pit	■ Traffic PH		
Traffic Light	○ Light		
Telecommunications Manhole	■ Tel MH		
Telecommunications Pit	■ Tel PH		
Tree / Shrub	○		

ABBREVIATIONS

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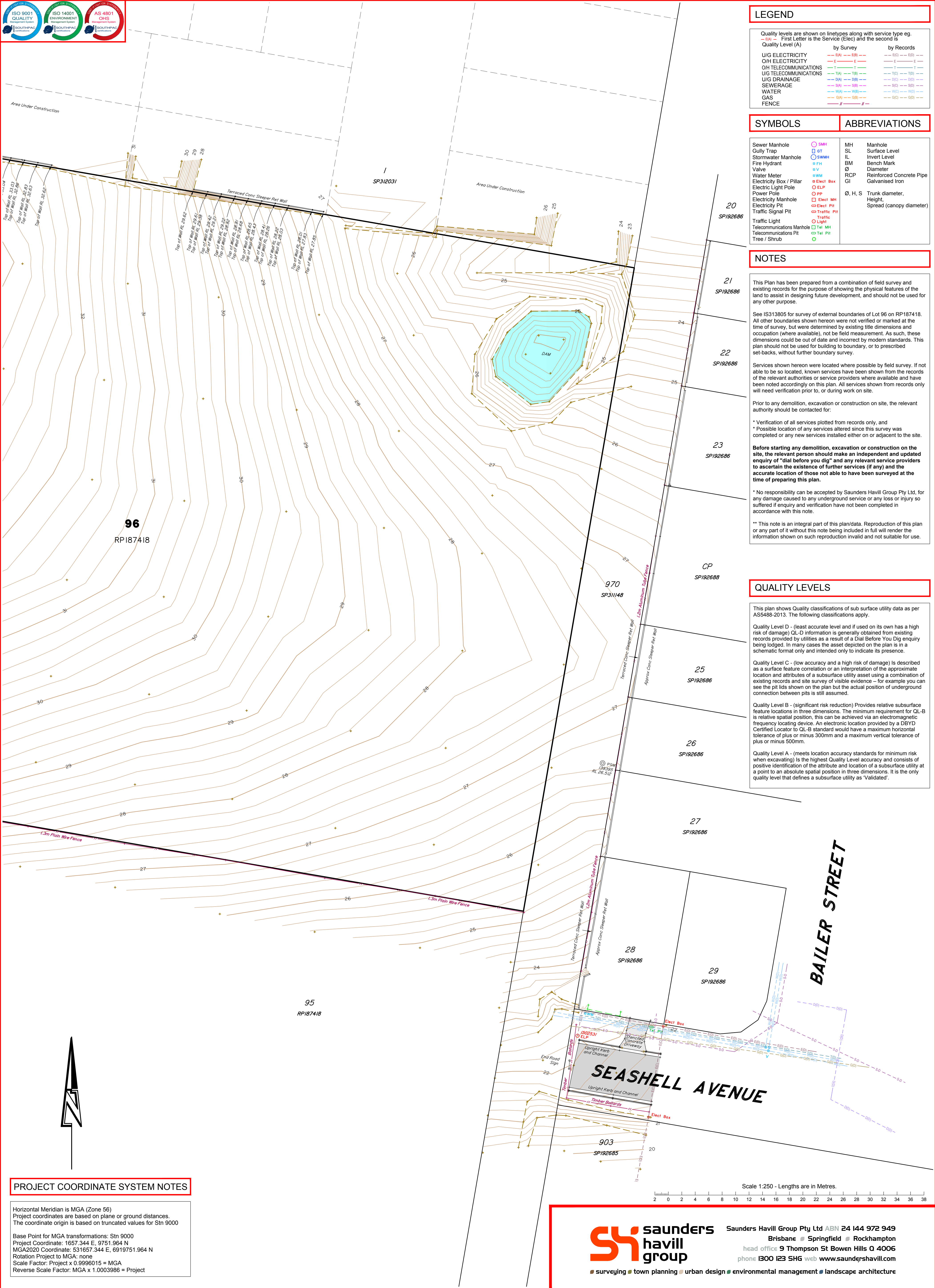
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No.	Drawn	Date	Description	Checked
A	MD	31/10/2022	Original Issue	JC

Plan of	DETAIL PLAN Sheet 3 of 4
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Client	Coomera GA Pty Ltd ATF The Coomera GA Unit Trust

Surveyed BC	Date Oct 2022	Lot Description
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Origin of Levels: PM139395 RL of Origin: 26.512		Locality: Coomera Local Government: Gold Coast City
Contour Interval: 0.2m		

■ surveying	Scale @A1 1: 250 @A3 1: 500
Dwg No. 11241 S 03 DT A	



LEGEND

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	by Survey	by Records
U/G ELECTRICITY	--- E(A) --- E(B) ---	--- E(C) --- E(D) ---
O/H ELECTRICITY	--- E --- E ---	--- E --- E ---
O/H TELECOMMUNICATIONS	--- T --- T ---	--- T --- T ---
U/G TELECOMMUNICATIONS	--- T(A) --- T(B) ---	--- T(C) --- T(D) ---
U/G DRAINAGE	--- D(A) --- D(B) ---	--- D(C) --- D(D) ---
SEWERAGE	--- S(A) --- S(B) ---	--- S(C) --- S(D) ---
WATER	--- W(A) --- W(B) ---	--- W(C) --- W(D) ---
GAS	--- G(A) --- G(B) ---	--- G(C) --- G(D) ---
FENCE	--- F --- F ---	---

SYMBOLS

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Gully Trap	□ GT
Stormwater Manhole	○ SWMH
Fire Hydrant	■ FH
Valve	■ V
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Traffic Light	○ Light
Telecommunications Manhole	□ Tel MH
Telecommunications Pit	□ Tel PH
Tree / Shrub	○

ABBREVIATIONS

MH	Manhole
SL	Surface Level
IL	Invert Level
BM	Bench Mark
Ø	Diameter
RCP	Reinforced Concrete Pipe
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Ø, H, S	Trunk diameter, Height, Spread (canopy diameter)

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Quality Level D - (least accurate level and if used on its own has a high risk of damage) QL-D information is generally obtained from existing records provided by utilities as a result of a Dial Before You Dig enquiry being lodged. In many cases the asset depicted on the plan is in a schematic format only and intended only to indicate its presence.

Quality Level C - (low accuracy and a high risk of damage) Is described as a surface feature correlation or an interpretation of the approximate location and attributes of a subsurface utility asset using a combination of existing records and site survey of visible evidence - for example you can see the pit lids shown on the plan but the actual position of underground connection between pits is still assumed.

Quality Level B - (significant risk reduction) Provides relative subsurface feature locations in three dimensions. The minimum requirement for QL-B is relative spatial position, this can be achieved via an electromagnetic frequency locating device. An electronic location provided by a DBYD Certified Locator to QL-B standard would have a maximum horizontal tolerance of plus or minus 300mm and a maximum vertical tolerance of plus or minus 500mm.

Quality Level A - (meets location accuracy standards for minimum risk when excavating) Is the highest Quality Level accuracy and consists of positive identification of the attribute and location of a subsurface utility at a point to an absolute spatial position in three dimensions. It is the only quality level that defines a subsurface utility as 'Validated'.

PROJECT COORDINATE SYSTEM NOTES

Horizontal Meridian is MGA (Zone 56)
Project coordinates are based on plane or ground distances.
The coordinate origin is based on truncated values for Stn 9000

Base Point for MGA transformations: Stn 9000
Project Coordinate: 1657.344 E, 9751.964 N
MGA2020 Coordinate: 531657.344 E, 6919751.964 N
Rotation Project to MGA: none
Scale Factor: Project x 0.9996015 = MGA
Reverse Scale Factor: MGA x 1.0003986 = Project

Issues	No.	Drawn	Date	Description	Checked
	A	MD	31/10/2022	Original Issue	JC

Plan of	DETAIL PLAN Sheet 4 of 4
Project	54 George Alexander Way, Coomera
Client	Coomera GA Pty Ltd ATF The Coomera GA Unit Trust

Surveyed	Date
BC	Oct 2022
Level Datum:	AHD der.
Origin of Levels:	PM139395
RL of Origin:	26.512
Contour Interval:	0.2m

Lot Description	Lot 96 on RP187418
Locality:	Coomera
Local Government:	Gold Coast City

surveying	Scale @A1 1: 250 @A3 1: 500
Dwg No.	11241 S 03 DT A



Ecological Assessment Report

54 George Alexander Way, Coomera, Queensland 4209
Prepared for Coomera GA Pty Ltd

August 2024

Job 11241



Document Control

Document: 54 George Alexander Way, Coomera, Queensland 4209, Ecological Assessment Report, prepared by Saunders Havill Group for Coomera GA Pty Ltd, dated August 2024.

Document Issue

Issue	Date	Prepared By	Checked By
Issue A	08/08/2024	CM/RM	RM

Prepared by
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Table of Contents

1. Introduction	1
1.1. Property Summary	1
1.2. Purpose of the Report	2
2. Ecological Assessment Methodology and Process	6
2.1. Desktop Analysis Methodology	6
2.1.1 Aerial History	7
2.2. Field Survey Methodology	7
2.2.1 Observational Survey for Significant Flora and Fauna, Habitat Trees and Biodiversity Values	7
2.2.2 GPS Tree Plot	8
2.2.3 Ground-truthing of vegetation communities	8
2.2.4 Scats, tracks and other traces search	8
3. Legislation, Policy and Planning Instruments	10
3.1. <i>Environment Protection and Biodiversity Conservation Act 1999</i>	10
3.2. <i>Nature Conservation Act 1992</i>	13
3.3. <i>Vegetation Management Act 1999</i>	15
3.4. South East Queensland Koala Habitat	16
3.5. <i>Water Act 2000</i>	16
3.6. <i>Fisheries Act 1994</i>	17
3.7. <i>Biosecurity Act 2014</i>	18
3.8. Other Queensland Environmental Legislation	24
3.9. Town Planning Instruments	26
3.9.1 Gold Coast City Plan 2016	26
4. Ecological Survey Results	31
4.1. General Site Observation	31
4.2. Vegetation Communities	35
4.2.1 Category B (remnant) vegetation	35
4.2.2 Category X (non-remnant) vegetation	37
4.3. Flora Survey Results	38
4.3.1 Threatened Flora	38
4.3.2 Native flora species	39
4.3.3 Introduced flora species	40
4.3.4 GPS tree plot	41
4.4. Fauna Observations	43
4.4.1 Threatened Fauna	44
4.5. Waterway	45
4.6. Council Overlays	45

4.6.1	Environmental Significance Area Overlay	45
4.6.2	Waterways and Wetlands Overlay	45
5.	Development Assessment	46
5.1.	Development Assessment	46
5.2.	Potential impacts	50
5.2.1	Vegetation clearing	50
5.2.2	Weeds	50
5.2.3	Vehicle movements	50
5.2.4	Earthworks	51
5.2.5	Light emissions during construction	51
5.2.6	Noise and vibration	52
5.2.7	Waste disposal	52
5.2.8	Hazardous and dangerous goods	52
5.2.9	Increased human presence	52
5.2.10	Bushfire Hazard	53
5.3.	Ongoing disturbances	53
5.3.1	Weed incursion	53
5.3.2	Vehicle strike	53
5.3.3	Noise and light	54
5.3.4	Increased human presence	54
5.4.	Management and compensatory measures	54
5.4.1	Avoidance Measures	54
5.4.2	Vegetation Clearing and Fauna Management Plan	54
5.4.3	Koala Management Plan	55
5.4.4	Fauna Spotter Catcher Supervision	55
5.4.5	Koala Habitat Area Offsets	55
5.5.	Medium Priority Vegetation Offsets	56
6.	Conclusion	57
7.	Appendices	59

Figures

Figure 1:	Site Context	3
Figure 2:	Site Aerial	4
Figure 3:	Protected Plants Trigger Map	19
Figure 4:	Regulated Vegetation Management Map	20
Figure 5:	Regulated Vegetation Supporting Map	21
Figure 6:	Koala Habitat Provision Map	22
Figure 7:	Fisheries Waterway Values Map	23
Figure 8:	State Planning Policy	25
Figure 9:	CGC Zoning	27
Figure 10:	CGC Environmental Significance Priority Areas	28
Figure 11:	CGC Environmental Significance Vegetation Management	29
Figure 12:	CGC Environmental Significance Wetlands and Watercourse	30

Tables

Table 1:	Property Summary	1
Table 2:	EPBC Act PMR Summary	10
Table 3:	NCA Wildlife Online Search Results	13
Table 4:	Site Relevant to Other Queensland Environmental Legislation	24
Table 5:	Observed native flora	39
Table 6:	Observed introduced flora	40
Table 7:	Tree plot summary	42
Table 8:	Tree plot DBH summary	42
Table 9:	Fauna species observed on-site	44
Table 10:	Comparison of Impact to Koala Habitat	47
Table 11:	Summary of Potential Impacts	50

Plans

Plan 1:	Historical Aerial Imagery	9
Plan 2 :	GPS Tree Plot	32
Plan 3:	Development Assessment	49

Acronyms and abbreviations

ADR	Accepted Development Requirements
CGC	City of Gold Coast
CPP	City Plan Policy – Environmental site assessments
cm	centimetres
DAF	Department of Agriculture and Fisheries (Qld)
DBH	Diameter at breast height
EAR	Ecological Assessment Report
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
EVNT	Endangered, Vulnerable or Near Threatened as listed under the NCA
ha	hectares
KHA	Koala Habitat Area
km	kilometres
KMP	Koala Management Plan
KPA	Koala Priority Area
m	metres
mm	millimetres
MLES	Matters of Local Environmental Significance (as mapped by CGC)
MNES	Matters of National Environmental Significance
MSES	Matters of State Environmental Significance
NCA	<i>Nature Conservation Act 1992 (Qld)</i>
NCAR	<i>Nature Conservation (Animals) Regulation 2020 (Qld)</i>
NCPR	<i>Nature Conservation (Plants) Regulation 2020 (Qld)</i>
PA	<i>Planning Act 2016 (Qld)</i>
PMASV	Property Map of Assessable Vegetation
PMR	Protected Matters Report
PMST	Protected Matters Search Tool
PR	<i>Planning Regulation 2017 (Qld)</i>
RE	Regional Ecosystem
RVMM	Regulated Vegetation Management Map
RVSM	Regulated Vegetation Supporting Map
SDAP	State Development Assessment Provisions
SHG	Saunders Havill Group
SPP	<i>State Planning Policy 2017 (Qld)</i>
SRZ	Structural Root Zone
TEC	Threatened Ecological Community
TPZ	Tree Protection Zone
VMA	<i>Vegetation Management Act 1999 (Qld)</i>
WWBW	Waterway Barrier Works

1. Introduction

The *Environmental Management Division* of Saunders Havill Group (SHG) was engaged by Coomera GA Pty Ltd (the client) to prepare an Ecological Assessment Report (EAR) for their site located at 54 George Alexander Way, Coomera, Queensland 4209, described as Lot 96 on RP187418. This EAR is intended to accompany a development application to City of Gold Coast (CGC) and provides a review of the site ecological values in accordance with Commonwealth, State and Local Government legislation. The proposed plan of development affects the western part of the subject lot and is presented in **Appendix A**.

Contextually, the site is located approximately 2.7 kilometres (km) south of Coomera centre and approximately 1.4 km west of the Pacific Motorway. The site is bound by George Alexander Way to the west, an approved development to the north, a similar large residential lot to the south and established residential community to the east. Refer to **Figure 1** and **Figure 1.2** for Site Context for Site Aerial.

The site is mostly mapped as Category B (remnant) vegetation under the *Vegetation Management Act 1999* (VMA) and Koala Habitat Area (KHA). The central and western portion of the site is mapped as Category X (non-remnant) vegetation.

1.1. Property Summary

Key site details are presented in **Table 1**.

Table 1: Property Summary

Address	54 George Alexander Way, Coomera, Queensland 4209
Lot/plan	Lot 96 on RP187418
Area	3.01 ha
Vegetation Management Act 1999	Category B (remnant) Least Concern RE12.11.5 (0.82 ha) Category B (remnant) Least Concern RE12.11.24 (1.19 ha) Category X (non-remnant) vegetation (1.0 ha) Essential habitat for <i>Phascolarctos cinereus</i> (Koala)
Matters of State Environmental Significance (MSES)	MSES – Wildlife habitat (koala habitat areas – core) MSES – Regulated vegetation (essential habitat) MSES – Regulated vegetation (intersecting a watercourse) MSES – Regulated vegetation (category B)
Nature Conservation Act 1992	Partially within high-risk area for protected plants
Fisheries Act 1994	No mapping to site - does not apply
Koala Habitat Provision	Wholly outside Koala Priority Area Partially contains Koala Habitat Area (core)
LGA	City of Gold Coast
Zoning	High density residential

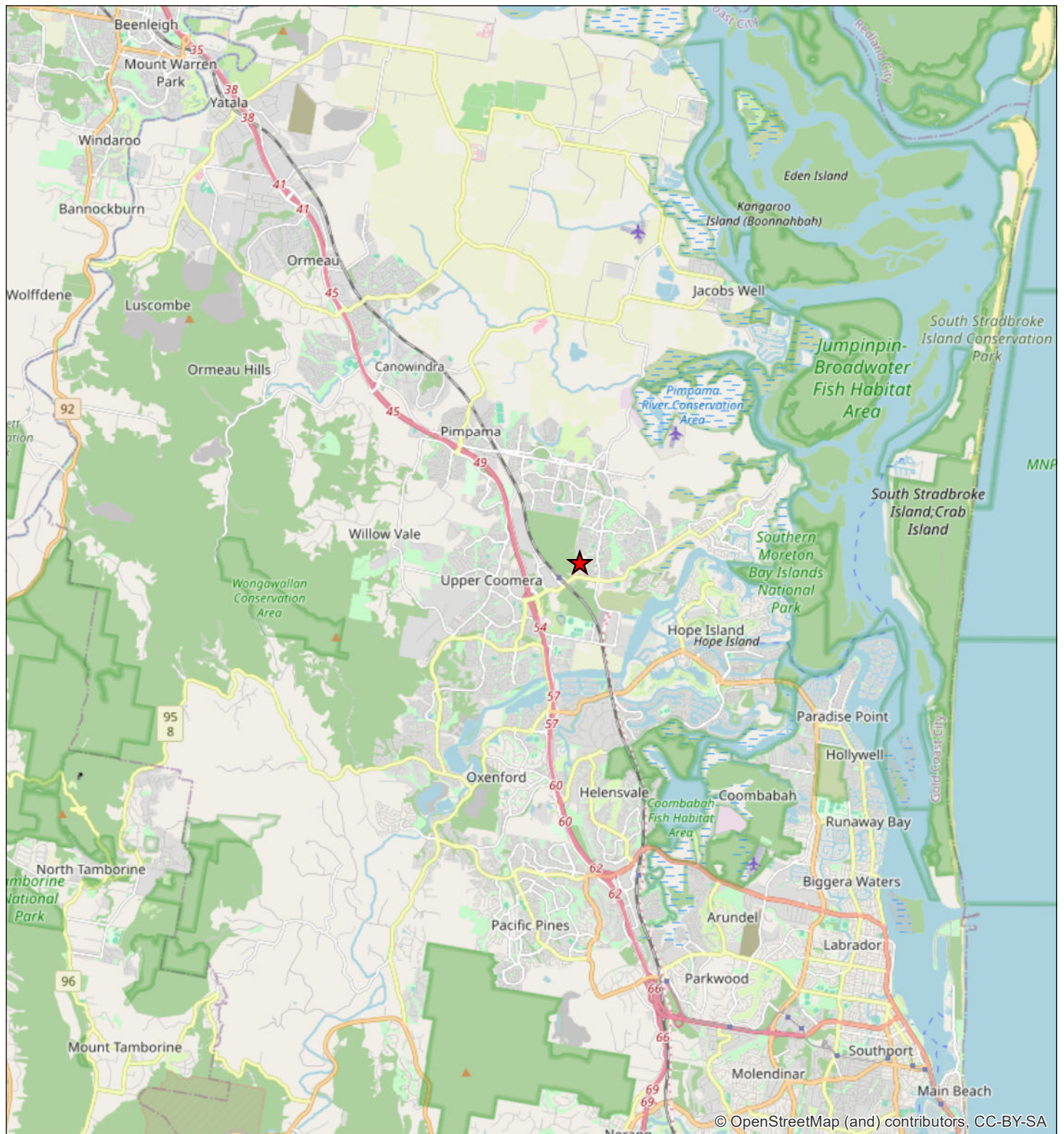
Medium density residential

Environmental Overlays	<u>Priority species:</u> Matters of State Environmental Significance – State significant species and Koala habitat areas <u>Vegetation management:</u> Matters of Local Environmental Significance vegetation management – medium priority vegetation <u>Significance wetlands and watercourse:</u> local significant wetlands buffer area
Existing Land Use	Residential
Proposed Land Use	Residential subdivision
Existing Council Approvals Over Site	An existing approval occurs on-site for higher density residential development in the eastern portion of site (OPW/2024/111, OPW/2023/1508 and COM/2023/16)

1.2. Purpose of the Report

This report provides a review of ecological values on the western portion of the lot with reference to Commonwealth, State and Local Government legislation. The purpose of this EAR is to present the outcomes of field surveys, identify environmental site constraints, and assess the potential of the project to impact on ecological features. This report is intended to accompany a development application to CGC and has been prepared with reference to the *Gold Coast City Plan 2016* City Plan Policy – Ecological site assessments (CPP).

Figure 1: Site Context



Legend

★ Site Location

Figure 1

Site Context

Coomera GA
Pty Ltd

File ref. 11241 E Figure 1 Site Context B
Date 4/07/2024
Project George Alexander Way, Coomera

SH saunders
havill
group

0 1 2 3 4 5 km
Scale (A4): 1:150,000 [GDA 2020 MGA Z56]



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Figure 1.2: Site Context



Legend

 Site DCDB

Figure 1.2
Site Context

Coomera GA
Pty Ltd

File ref. 11241 E Figure 1_2 Site Context C
Date 2/08/2024
Project George Alexander Way, Coomera

SH saunders
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0 1 2 km
Scale (A4): 1:50,000 [GDA 2020 MGA Z56]



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Figure 2: Site Aerial



Legend

-  Site DCDB
-  Qld DCDB
-  Existing High Density Residential Approval
-  Future High Density Residential Approval

Figure 2

Site Aerial

File ref. 11241 E Figure 2 Site Aerial D
Date 5/08/2024
Project George Alexander Way, Coomera

0 10 20 30 40 50 m

Scale (A4): 1:2,000 [GDA 2020 MGA Z56]



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2. Ecological Assessment Methodology and Process

The following steps were undertaken in the preparation of this assessment:

1. Desktop Analysis.
2. Legislation and Policy Review.
3. Field Survey.
4. Assessment of Impacts.
5. Conclusions.

Details of the methodology undertaken for each of the assessment phases is provided in the following sections.

2.1. Desktop Analysis Methodology

Prior to the commencement of field surveys, a desktop analysis was conducted of Commonwealth and State environmental databases and overlay mapping including the following:

- Commonwealth MNES protected under the EPBC Act on and around the site using the Protected Matters Search Tool (PMST);
- *Nature Conservation Act 1992* (NCA) listed threatened species on and around the site using the Wildlife Online Database;
- Public Environmental Databases including Atlas of Living Australia;
- State Government environmental overlay mapping including:
 - Regulated Vegetation Maps under the *Vegetation Management Act 1999* (VMA);
 - Flora Survey Trigger Areas under the NCA;
 - Fish habitat under the *Fisheries Act 1994*;
 - Watercourses under the *Water Act 2000*;
 - Weeds under the *Biosecurity Act 2014*;
 - Matters of State Environmental Significance (MSES) under the State Planning Policy (SPP) (*i.e.*, wetland protection areas, Koala habitat etc.); and
 - *Coastal Protection and Management Act 1995*.
- *Gold Coast City Plan 2016* documents and maps.

2.1.1 Aerial History

Historic aerial imagery shows that the site was entirely treed in the 1980s and was converted into a rural residential property by 1997. Significant clearing has occurred across the broader locality of Coomera by 1997, with the establishment of the Pacific Highway, Coomera train station and Gold Coast trainline. Aerial photography from 2010 show the locality has transitioned from rural residential and primary production use to low density detached housing. The site has retained much of its vegetation cover since initial modification and addition of house and sheds prior to 1997.

In recent times as shown in current aerial photography, land directly to the east has been completely cleared of vegetation and redeveloped for housing, with land directly north, south and further west still containing lower intensity use with vegetation clearing and formation of tracks more evident from aerial mapping. Current day aerial mapping shows land directly and further afield north redeveloped for low and medium density housing causing fragmentation of existing habitat and connectivity within the locality. Further clearing and modification has occurred in the locality to support residential land uses, while higher ecologically significant areas such as waterways and riparian corridors have been retained generally within the area. Refer to **Plan 1** for historical aerial imagery and **Figure 1.2** for current **Site Context**.

2.2. Field Survey Methodology

Field surveys were completed by two (2) Ecologists on 18 October 2022. The methods detailed in the following sub-sections were utilised to evaluate site ecological values.

Fauna surveys are conducted under the following permits held by Saunders Havill Group:

- Scientific Purposes Permit **WA0022007** granted under Section 12(f) of *Nature Conservation (Administration) Regulation 2017*.
- Department of Agriculture and Fisheries (DAF) Ethics clearance **CA 2020/02/1355**.
- Scientific User Registration **SUR000451**.

Additionally, a Protected Plants Survey was conducted by Saunders Havill Group on 13th February 2024. No threatened plants were identified during the timed meander survey therefore a clearing permit under the NCA is not required prior to vegetation removal works..

2.2.1 Observational Survey for Significant Flora and Fauna, Habitat Trees and Biodiversity Values

The project area was walked to observe and record all flora and fauna species. Particular attention was paid to any threatened species listed as possibly occurring within or proximal to the site. Specific micro-assemblages, which may support these threatened species, were also recorded when observed. This survey included observations for vertebrate fauna present within or proximal to the study area, faunal lists and significant species under the Commonwealth EPBC Act and Queensland NCA.

The observational survey included identification of ecological features and values such as broad vegetation communities, fauna habitats, and ecological corridors. Specific attention was paid to significant flora and fauna species listed under CGC City Plan policies.

2.2.2 GPS Tree Plot

A tree plot survey was completed to record all non-juvenile trees within the site. A handheld GPS device (Trimble) was used to record locations (accuracy ± 1 m), and the following parameters of each tree specimen were recorded:

- tree species, via a combination of observations of the gum nuts, buds, leaves, bark and growth form;
- diameter of the trunk of the tree measured using the standard method of Diameter at Breast Height (DBH);
- height of the tree measured using a laser rangefinder with three-point measurement capability (inclinometer);
- canopy spread;
- health assessment (canopy, trunk); and
- habitat values (for example, presence and/or number of hollows, nests, termites, scratches and scats).

The Tree Protection Zone (TPZ) of the tree was calculated using the formula outlined in *Australian Standard AS4970-2009 – Protection of Trees on Development Sites* ($TPZ = DBH \times 12$). A TPZ should not be less than 2 metres (m) and no greater than 15 m (except where crown protection is required). Additionally, the Structural Root Zone (SRZ) was calculated for each plotted specimen using the measured DBH and the following formula:

$$SRZ \text{ radius} = (DBH \times 50)^{0.42} \times 0.64.$$

2.2.3 Ground-truthing of vegetation communities

Vegetation was ground-truthed and assessed against mapping under CGC's Environmental Significance Overlays and current VMA Regional Ecosystem mapping and pre-clear mapping. Survey methodology comprised an initial visual audit, followed by assessment of vegetation associations and communities. The initial visual audit consisted of a random meander over the site to ground-truth desktop investigations and identify the location and extent of any vegetation associations and communities.

2.2.4 Scats, tracks and other traces search

Surveys for scats, tracks and other traces were completed throughout the survey period. Both predator and non-predator scats were sought during all searches. Only those samples definitively identified were included in the survey results. Specific search efforts were made to locate the presence of Koalas or evidence of their occurrence on the subject lands and the local area. In addition, particular notice of potential dens, scats and tracks for invasive species was taken to identify predator-prey interactions and understand existing impacts within the assessment area.

Plan 1: Historical Aerial Imagery

1. Historical Aerial Imagery



Notes:
This plan was prepared as a desktop assessment tool. The information on this plan is not suitable for any other purpose. Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

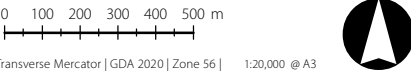
Layer Sources
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Updated data available at
<http://qldspatial.information.qld.gov.au/catalogue/>
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Legend



Issue	Date	Description	Drawn	Checked
A	2/02/2023	Preliminary	TF	AW
B	4/07/2024	Updates	LS	CM



3. Legislation, Policy and Planning Instruments

3.1. Environment Protection and Biodiversity Conservation Act 1999

The Australian Government's key piece of environmental legislation is the EPBC Act. The EPBC Act aims to protect and manage MNES which include nationally and internationally important flora, fauna, ecological communities and heritage places.

An EPBC Act Protected Matters Report (PMR) was obtained using the Commonwealth's PMST. The search provides a list of wetlands of international significance, threatened ecological communities (TECs), threatened species and other MNES which have the potential to be temporarily or permanently located within a 5 km search radius of the site. A summary is provided in **Table 2** and **Appendix B** provides full search results. For the purposes of this report, marine species (*i.e.*, shark, whale and turtle) were omitted from the list due to the absence of marine habitat. The likelihood of on-site occurrence for each matter listed in the PMR was reviewed prior to commencing field surveys and subsequently reviewed post-field surveys.

Table 2: EPBC Act PMR Summary

Wetlands of International Importance		
Moreton Bay (within 10 km of Ramsar site)		
Threatened Ecological Communities		
Coastal Swamp Oak (<i>Casuarina glauca</i>) Forest of New South Wales and South East Queensland Ecological Community – Endangered (community likely to occur)		
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland – Endangered (community likely to occur)		
Lowland Rainforest of Subtropical Australia – Critically Endangered (community may occur)		
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions – Endangered (community likely to occur)		
Subtropical and Temperate Saltmarsh – Vulnerable (community likely to occur)		
Threatened Species		
Scientific Name	Common Name	Status
Birds		
<i>Anthochaera phrygia</i>	Regent Honeyeater	Critically Endangered
<i>Ardenna grisea</i>	Sooty Shearwater	Vulnerable
<i>Arenaria interpres</i>	Ruddy Turnstone	Vulnerable
<i>Botaurus poiciloptilus</i>	Australasian Bittern	Endangered
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Vulnerable
<i>Calidris canutus</i>	Red Knot, Knot	Vulnerable
<i>Calidris ferruginea</i>	Curlew Sandpiper	Critically Endangered

Scientific Name	Common Name	Status
<i>Calidris tenuirostris</i>	Great Knot	Vulnerable
<i>Calyptorhynchus lathami lathami</i>	South-eastern Glossy Black-Cockatoo	Vulnerable
<i>Charadrius leschenaultii</i>	Greater Sand Plover, Large Sand Plover	Vulnerable
<i>Charadrius mongolus</i>	Lesser Sand Plover, Mongolian Plover	Endangered
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (south-eastern)	Vulnerable
<i>Cyclopsitta diophthalma coxeni</i>	Coxen's Fig-Parrot	Critically Endangered
<i>Diomedea antipodensis</i>	Antipodean Albatross	Vulnerable
<i>Diomedea antipodensis gibsoni</i>	Gibson's Albatross	Vulnerable
<i>Diomedea exulans</i>	Wandering Albatross	Vulnerable
<i>Erythrotriorchis radiatus</i>	Red Goshawk	Endangered
<i>Falco hypoleucos</i>	Grey Falcon	Vulnerable
<i>Gallinago hardwickii</i>	Latham's Snipe, Japanese Snipe	Vulnerable
<i>Geophaps scripta scripta</i>	Squatter Pigeon (southern)	Vulnerable
<i>Grantiella picta</i>	Painted Honeyeater	Vulnerable
<i>Hirundapus caudacutus</i>	White-throated Needletail	Vulnerable
<i>Lathamus discolor</i>	Swift Parrot	Critically Endangered
<i>Limnodromus semipalmatus</i>	Asian Dowitcher	Vulnerable
<i>Limosa lapponica baueri</i>	Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit	Endangered
<i>Limosa limosa</i>	Black-tailed Godwit	Endangered
<i>Macronectes giganteus</i>	Southern Giant-Petrel, Southern Giant Petrel	Endangered
<i>Macronectes halli</i>	Northern Giant Petrel	Vulnerable
<i>Numenius madagascariensis</i>	Eastern Curlew, Far Eastern Curlew	Critically Endangered
<i>Pachyptila turtur subantarctica</i>	Fairy Prion (southern)	Vulnerable
<i>Pluvialis squatarola</i>	Grey Plover	Vulnerable
<i>Rostratula australis</i>	Australian Painted Snipe	Endangered
<i>Stagonopleura guttata</i>	Diamond Firetail	Vulnerable
<i>Sternula nereis nereis</i>	Australian Fairy Tern	Vulnerable
<i>Thalassarche cauta</i>	Shy Albatross	Endangered
<i>Thalassarche impavida</i>	Campbell Albatross, Campbell Black-browed Albatross	Vulnerable
<i>Thalassarche melanophris</i>	Black-browed Albatross	Vulnerable
<i>Thalassarche salvini</i>	Salvin's Albatross	Vulnerable
<i>Thalassarche steadi</i>	White-capped Albatross	Vulnerable
<i>Tringa nebularia</i>	Common Greenshank, Greenshank	Endangered
<i>Turnix melanogaster</i>	Black-breasted Button-quail	Vulnerable
<i>Xenus cinereus</i>	Terek Sandpiper	Vulnerable

Scientific Name	Common Name	Status
Frogs		
<i>Litoria longiburensis</i>	Wallum Sedge Frog	Vulnerable
<i>Mixophyes fleayi</i>	Fleay's Frog	Endangered
Insects		
<i>Argynnis hyperbius inconstans</i>	Australian Fritillary	Critically Endangered
Mammals		
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat, Large Pied Bat	Vulnerable
<i>Dasyurus maculatus maculatus</i> (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	Endangered
<i>Macroderma gigas</i>	Ghost Bat	Vulnerable
<i>Petauroides volans</i>	Greater Glider	Endangered
<i>Petaurus australis australis</i>	Yellow-bellied Glider (south eastern)	Vulnerable
<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	Vulnerable
<i>Phascolarctos cinereus</i> (combined populations of Qld, NSW and the ACT)	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)	Endangered
<i>Potorous tridactylus tridactylus</i>	Long-nosed Potoroo (SE mainland)	Vulnerable
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vulnerable
<i>Xeromys myoides</i>	Water Mouse, False Water Rat, Yirrkoo	Vulnerable
Plants		
<i>Acacia attenuata</i>	null	Vulnerable
<i>Acronychia littoralis</i>	Scented Acronychia	Endangered
<i>Arthraxon hispidus</i>	Hairy-joint Grass	Vulnerable
<i>Baloghia marmorata</i>	Marbled Balogia, Jointed Baloghia	Vulnerable
<i>Bosistoa transversa</i>	Three-leaved Bosistoa, Yellow Satinheart	Vulnerable
<i>Coleus habrophyllus</i>	null	Endangered (listed as Plectranthus habrophyllus)
<i>Coleus nitidus</i>	Nightcap Plectranthus, Silver Plectranthus	Endangered (listed as Plectranthus nitidus)
<i>Corchorus cunninghamii</i>	Native Jute	Endangered
<i>Cryptocarya foetida</i>	Stinking Cryptocarya, Stinking Laurel	Vulnerable
<i>Cryptostylis hunteriana</i>	Leafless Tongue-orchid	Vulnerable
<i>Cupaniopsis shirleyana</i>	Wedge-leaf Tuckeroo	Vulnerable
<i>Endiandra floydii</i>	Floyd's Walnut, Crystal Creek Walnut	Endangered
<i>Leichhardtia longiloba</i>	Clear Milkvine	Vulnerable (listed as Marsdenia longiloba)
<i>Lepidium peregrinum</i>	Wandering Pepper-cress	Endangered

Scientific Name	Common Name	Status
<i>Macadamia integrifolia</i>	Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak	Vulnerable
<i>Macadamia tetraphylla</i>	Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut	Vulnerable
<i>Notelaea lloydii</i>	Lloyd's Olive	Vulnerable
<i>Owenia cepiodora</i>	Onionwood, Bog Onion, Onion Cedar	Vulnerable
<i>Persicaria elatior</i>	Knotweed, Tall Knotweed	Vulnerable
<i>Phaius australis</i>	Lesser Swamp-orchid	Endangered
<i>Planchonella eerwah</i>	Shiny-leaved Condoo, Black Plum, Wild Apple	Endangered
<i>Randia moorei</i>	Spiny Gardenia	Endangered
<i>Rhodamnia rubescens</i>	Scrub Turpentine, Brown Malletwood	Critically Endangered
<i>Rhodomirtus psidioides</i>	Native Guava	Critically Endangered
<i>Samadera bidwillii</i>	Quassia	Vulnerable
<i>Sophora fraseri</i>	null	Vulnerable
<i>Syzygium hodgkinsoniae</i>	Smooth-bark Rose Apple, Red Lilly Pilly	Vulnerable
<i>Thesium australe</i>	Austral Toadflax, Toadflax	Vulnerable
<i>Vincetoxicum woollsii</i>	null	Endangered (listed as <i>Tylophora woollsii</i>)
<i>Zieria collina</i>	null	Vulnerable
Reptiles		
<i>Coeranoscincus reticulatus</i>	Three-toed Snake-toot Skink	Vulnerable
<i>Delma torquata</i>	Adorned Delma, Collared Delma	Vulnerable
<i>Hemiaspis damelii</i>	Grey Snake	Endangered

3.2. Nature Conservation Act 1992

The NCA classifies and protects significant areas (Protected Areas) and protects Queensland's native plant and animal species. The *Nature Conservation (Plants) Regulation 2020* (NCPR) and *Nature Conservation (Animals) Regulation 2020* (NCAR) list plant and animal species presumed extinct, endangered, vulnerable, near threatened, least concern, international or prohibited. The schedules of this regulation were considered in this assessment using a wildlife online database extract with a 5 km radius from the central point of the subject site. The list of threatened species under the NCPR and NCAR with the potential to occur on or near the project are presented in **Table 3**. Refer to **Appendix C** for full search results.

Table 3: NCA Wildlife Online Search Results

Scientific Name	Common Name	Status
Amphibians		

Scientific Name	Common Name	Status
<i>Crinia tinnula</i>	Wallum Froglet	Vulnerable
Birds		
<i>Calyptorhynchus lathami</i>	Glossy Black Cockatoo	Vulnerable
<i>Calyptorhynchus lathami lathami</i>	Glossy Black Cockatoo (eastern)	Vulnerable
<i>Erythrorhynchus radiatus</i>	Red Goshawk	Endangered
<i>Hirundapus caudacutus</i>	White-throated Needletail	Vulnerable
<i>Limosa lapponica baueri</i>	Western Alaskan Bar-tailed Godwit	Vulnerable
<i>Ninox strenua</i>	Powerful Owl	Vulnerable
<i>Numenius madagascariensis</i>	Eastern Curlew	Endangered
Mammals		
<i>Petauroides volans volans</i>	Southern Greater Glider	Endangered
<i>Phascolarctos cinereus</i>	Koala	Endangered
<i>Xeromys myoides</i>	Water Mouse	Vulnerable
Plants		
<i>Coleus habrophyllus</i>	-	Endangered
<i>Endiandra wongawallensis</i>		Endangered
<i>Rhodamnia rubescens</i>	Scrub Turpentine	Critically Endangered
<i>Rhodomyrtus psidioides</i>	Native Guava	Critically Endangered
<i>Syzygium moorei</i>	Durobby	Vulnerable
<i>Macadamia integrifolia</i>	Macadamia Nut	Vulnerable
<i>Cupaniopsis newmanii</i>	Long-leaved Tuckeroo	Near Threatened

The protected plants regulatory framework under the NCA, establishing survey and approval triggers, and processes for clearing protected plants. The protected plant definition includes all presumed extinct, critically endangered, endangered, vulnerable and/or near threatened plant species listed by name in Schedules 1 and 2 of the NCPR and least concern wildlife, not listed by name but identified as a plant indigenous to Australia in Schedule 6. Furthermore, the plant must be considered *in the wild* in order to be a protected plant.

The NCA identifies *in the wild* as 'in an independent state of natural liberty'. Several factors influence whether a protected plant is *in the wild*:

- the process by which the plant has become established, *i.e.*, either initiated through human intervention or naturally occurring;
- the natural range of the plant species; and/or
- the ecological situation in which the plant is found.

Typically, planted specimens are not considered *in the wild* and an authority or permission is not necessary for the taking of such specimens. The *Operational Policy Wildlife Management*¹ provides further information on this definition.

If a specimen is confirmed as *in the wild*, the plant must not be ‘taken’—which includes being cleared—unless the taking is under:

- a conservation plan applicable to the plant;
- a license, permit or other authority under a regulation; or
- an exemption under a regulation.

A search of the protected plants flora survey trigger map identified that the assessment area is located partially within a ‘high risk area’ for protected plants (refer **Figure 3**). Consequently, a flora survey and exemption or permit to clear from the administering authority in accordance with the protected plants guidelines may be required prior to the clearing of vegetation. If there are *in the wild* protected plants on-site that are required to be cleared, the person/entity completing the clearing will need a clearing permit unless an exemption applies.

A Protected Plant Survey was conducted for the site on 13th February 2024 using the preferred timed meander survey technique as per the Flora Survey Guidelines – Protected Plants by a Principal Ecologist and Ecologist. Importantly the results show that **no threatened plants were identified within the survey area (i.e., development site and buffer area). No threatened or near threatened flora species that meet the definition of ‘in the wild’ were recorded throughout the survey transect.**

3.3. *Vegetation Management Act 1999*

The VMA is the key mechanism by which the Queensland Government protects the state’s environmental resources pertaining to vegetation. Under the VMA, a series of maps delineate vegetation features across the landscape, which are each assigned a conservation value directly related to the remaining extent of these features in the landscape. The VMA also protects ‘essential habitat’ vegetation where listed threatened species have been or are known to occur.

The Regulated Vegetation Management Map (RVMM) shows vegetation categories used to determine clearing requirements. Areas shown on the map as Category X are not regulated under the VMA, and those shown as Category A, B, C or R are subject to clearing regulations. The latter vegetation categories can only be cleared in accordance with an exemption, accepted development vegetation clearing code, area management plan or development approval. The Regulated Vegetation Supporting Map (RVSM) defining regional ecosystems, wetlands, watercourses and essential habitat, accompanies the RVMM. When approval for clearing native vegetation is required under the *Planning Act 2016*, an assessment against the State Code 16: Native Vegetation Clearing of the State Development Assessment Provisions (SDAP) is required.

¹ Department of Environment and Heritage Protection 2015. *When a protected plant in Queensland is considered to be ‘in the wild’ Operational policy.*

Pre-clear mapping indicates the site was historically mapped entirely as Least Concern Regional Ecosystems 12.11.24 and 12.11.5. A property search of the RVMM identifies the site is mapped mostly as Category B (remnant) vegetation with a portion of Category X (non-remnant) vegetation (1.0 ha) (refer **Figure 4**). The RVSM indicates that the Category B (remnant) vegetation is mapped as Least Concern RE 12.11.24 (1.19 ha) and Least Concern RE 12.11.5 (0.82 ha) (refer **Figure 5**).

The site is mapped as containing one (1) VMA mapped watercourse which enters the site in the north-western portion of the site, flowing off-site to the north (refer **Figure 5**). This flow path is mapped as a drainage feature under the *Water Act 2000* (see Section 3.5 below). Importantly surrounding developments to the north do not incorporate this drainage feature as a natural feature in the development layout (refer recent aerial image shown in **Figure 2**). As such there is a discrepancy between on ground features and mapping data. This identification of a discrepancy is further confirmed through all the new subdivisions to the north where the waterway is not evident.

The development meets the criteria specified under the *Planning Regulation 2017* (PR) 'Schedule 21 Exempt clearing work', and therefore approval for clearing native vegetation protected under the VMA is not required under the *Planning Act 2016*.

3.4. South East Queensland Koala Habitat

South East Queensland Koala habitat protection mechanisms are incorporated into the *Planning Regulation 2017* (PR). Schedule 10 Part 10 of the PR sets out what is and is not prohibited or assessable development in a Koala Habitat Area. Where inside a Koala Priority Area (KPA), the provisions of Schedule 11 of the PR apply unless certain criteria are met (refer Part 10 Division 2 16 A 2). Where outside of a KPA, development that involves interfering with a Koala Habitat Area is assessable unless certain criteria apply (refer Part 10 Division 3 16 B 2). Development for extractive industries in key resource areas is dealt with under Part 10 Division 4.

Development that is assessable outside of a KPA is referable to the State and must address SDAP Code 25: Development in South East Queensland Koala Habitat Areas. The site is not mapped within a KPA; however it does contain mapped KHA (core) (refer **Figure 6**). As the development proposes to impact mapped KHA, referral to the State under SDAP State Code 25 is required and a response is provided within the supplementary Koala Management Plan Report.

3.5. *Water Act 2000*

Interfering with watercourses may be regulated under the *Water Act 2000*, which sets out requirements for Riverine Protection (Part 4 d (1) s218). The Water Act provides a framework for the sustainable management of Queensland's water resources and quarry material. Under the Act, a Riverine Protection Permit is required to be obtained if works within a watercourse result in filling, excavation or clearing unless these works meet an exemption.

A key element of the Water Act is its definition of what constitutes a watercourse. Under the Act (Chapter 1, Part 2, Section 5), a drainage feature is not classified as a watercourse, and the definition of watercourse is as follows;

A watercourse is a river, creek or other stream, including a stream in the form of an anabranch or a tributary, in which water flows permanently or intermittently, regardless of the frequency of flow events—

(a) in a natural channel, whether artificially modified or not;

or

(b) in an artificial channel that has changed the course of the stream

However, a watercourse does not include a drainage feature.

The Act defines the meaning of a drainage feature as;

b) if a feature is identified on the watercourse identification map as a drainage feature—the feature identified on the map; or

(b) otherwise—a natural landscape feature, including a gully, drain, drainage depression or other erosion feature that—

(i) is formed by the concentration of, or operates to confine or concentrate, overland flow water during and immediately after rainfall events; and

(ii) flows for only a short duration after a rainfall event, regardless of the frequency of flow events; and

(iii) commonly, does not have enough continuing flow to create a riverine environment.

Example for paragraph (b)(iii)— There is commonly an absence of water favouring riparian vegetation.

Numerous exemptions exist for activities in a watercourse and a drainage feature is exempt from assessment against the Water Act. The site is mapped as containing one (1) feature (refer **Figure 5**). This flow path is mapped as a drainage feature under the *Water Act 2000*. Importantly surrounding developments to the north do not incorporate this drainage feature within development layout. As such, there is a discrepancy between on ground features and mapping data. As the development aims for the most efficient use of high-density zoning, alongside the need for level building pads, the mapped waterway along the northwest boundary will require removal to facilitate engineering and built form. Due to the mapped waterway on-site classified as a 'drainage feature' under the Water Act, no further assessment is required.

3.6. Fisheries Act 1994

The *Fisheries Act 1994* regulates the use, conservation and improvement of Queensland's fisheries resources and fish habitats. The legislation controls the impact from coastal development on marine fish habitat, including protected marine plants, declared fish habitat areas and waterway barrier works. Development proposals that modify or have a temporary or permanent loss of fish habitat or passage are assessed by the Department of Agriculture and Fisheries (DAF).

No waterway features are mapped as occurring under the *Fisheries Act 1994* (refer **Figure 7**). A response to State Code 18 is therefore not automatically required.

3.7. *Biosecurity Act 2014*

The *Biosecurity Act 2014*, which commenced on 1 July 2016, establishes a framework to regulate and control invasive plants and animals. Under the Act, landowners are responsible for taking all reasonable and practical steps to minimise the risks associated with invasive plants and animals under their control. This responsibility is known as the general biosecurity obligation.

The act categorises restricted matter (restricted plants and animals) into the following:

- Category 1: must be reported to an inspector within 24 hours (includes Red Imported Fire Ants, amongst others).
- Category 2: must be reported within 24 hours Biosecurity Queensland on 13 25 23.
- Category 3: must not be distributed either by sale or gift or released into the environment.
- Category 4: must not be moved.
- Category 5: must not be kept.
- Category 6: must not be fed (animals).
- Category 7: Must be euthanised (animals).

Restricted matters observed in the site area discussed in **Section 4**.

Figure 3: Protected Plants Trigger Map



Legend

- Site DCDB
- Qld DCDB
- High risk area - flora survey trigger

Figure 3

NCA - Protected Plants
Flora Survey Trigger

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File ref. 11241 E Figure 3 NCA B
Date 4/07/2024
Project George Alexander Way, Coomera

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0 10 20 30 40 50 m



Scale (A4): 1:2,000 [GDA 2020 MGA Z56]

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Figure 4: Regulated Vegetation Management Map



Legend

-  Site DCDB
-  Qld DCDB

Regulated Vegetation

-  Category B area -
Remnant vegetation
-  Water

Figure 4

Regulated Vegetation Management Map

File ref. 11241 E Figure 4 RVMM B
Date 4/07/2024
Project George Alexander Way, Coomera

0 10 20 30 40 50 m

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Figure 5: Regulated Vegetation Supporting Map

Figure 6: Koala Habitat Map



Legend



Site DCDB



Qld DCDB

Koala Habitat Areas (KHA)



Core Remnant Koala Habitat Areas



Core Regrowth Koala Habitat Areas



KHA Approved for Removal Under Past Approval



KHA Removed and Land Developed



KHA to be Removed Under Future Approval



KHA Mapped on High Density Approval Site



KHA Mapped on Easements (Exemptions)

Figure 6

Koala Priority Areas and
Koala Habitat Areas

File ref. 11241 E Figure 6 Koala 2019 D

Date 8/08/2024

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0 10 20 30 40 50 m

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Figure 7: Fisheries Waterway Values Map



Legend

-  Site DCDB
-  Qld DCDB

Waterways - Risk of Impact

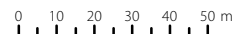
-  1 - Low

Figure 7

Fisheries - Waterways for
Waterway Barrier Works

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File ref. 11241 E Figure 7 Fisheries B
Date 4/07/2024
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3.8. Other Queensland Environmental Legislation

Other State environmental legislation has been reviewed in the context of the proposed development. **Table 4** lists other relevant Queensland legislation, the purpose of the legislation, and its relevance to the proposed development site. Refer to **Appendix D** for detailed Environmental Searches and maps.

Table 4: Site Relevant to Other Queensland Environmental Legislation

Legislation	Mapping	Purpose	Relevance to Development Site
State Planning Policy 2017	Refer Figure 8.	Provides interim development assessment requirements which ensures that state interests are considered by local government when assessing development applications where the local government planning scheme does not yet integrate the State interests in the SPP. MSES include Biodiversity, Coastal Environment, and Water Quality.	The following MSES are mapped within the subject site: - Wildlife Habitat (endangered or vulnerable and Koala habitat areas – core) - Regulated Vegetation (essential habitat, wetland, intersecting a watercourse). MSES mapping overlays and requirements of the SPP are required to be incorporated into the <i>Gold Coast City Plan 2016</i> and are reflected in planning scheme overlays (refer Section 263.9.1). The development's compliance with the SPP is addressed through the provisions of the <i>Gold Coast City Plan 2016</i>.
Coastal Protection and Management Act 1995	Refer Appendix D – Map 14.	Seeks to protect the coastal resources of the coastal zone. It establishes a framework for the protection, conservation, rehabilitation and management of the coastal zone with regard to the core objectives of the national strategy for ecologically sustainable development in the use of the coastal zone.	The site is not mapped within the Coastal Management District, and therefore, a response to State Code 8 is not required.

Figure 8: State Planning Policy



Legend

-  Site DCDB
-  Qld DCDB
-  MSES Wildlife habitat (SEQ koala habitat - core)
-  MSES Regulated vegetation (intersecting a watercourse)
-  MSES Regulated vegetation (essential habitat)
-  MSES Regulated vegetation (category B)

Figure 8

Matters of State Environmental Significance

File ref. 11241 E Figure 8 MSES B
Date 4/07/2024
Project George Alexander Way, Coomera

0 10 20 30 40 50 m

Scale (A4): 1:2,000 [GDA 2020 MGA Z56]



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3.9. Town Planning Instruments

The site is located within the jurisdiction of the CGC and is subject to the provisions of the *Gold Coast City Plan 2016*.

3.9.1 Gold Coast City Plan 2016

Under the *Gold Coast City Plan 2016*, the application area is zoned as both High Density Residential (in the western portion of the site) and Medium Density Residential (in the eastern portion of the site). Refer to **Figure 9 - Zoning**.

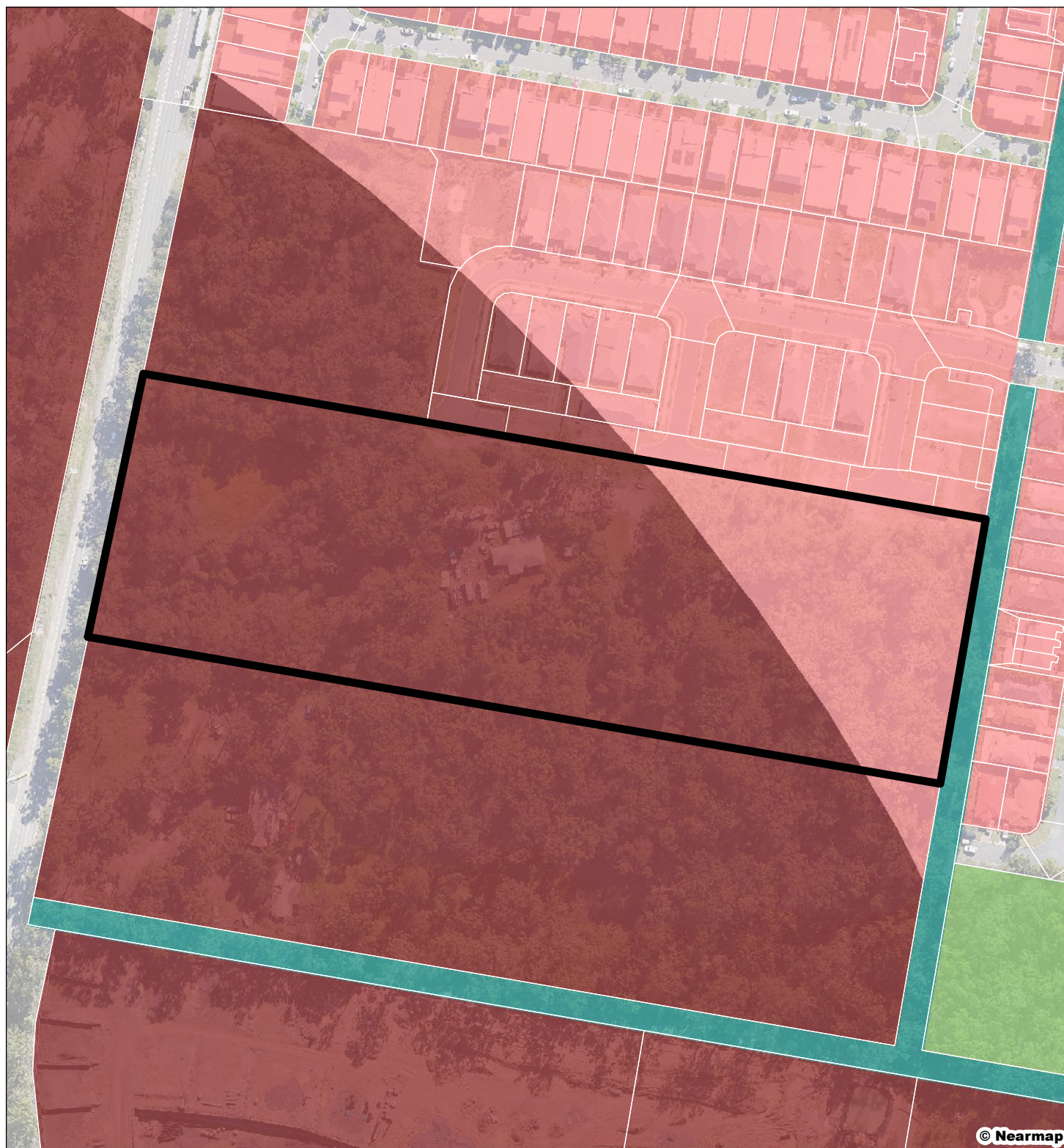
The purpose of the High-Density Residential zone is to provide for higher density multiple dwellings supported by community uses and small-scale services and facilities that cater for local residents while maximising housing yield for efficient and sustainable urban development.

The site is mapped within the following overlays which were ground-truthed as part of field assessment:

- **Environmental Significance:** The site is mapped with the following sublayers:
 - **MSES – Priority Species (State Significant Species and Koala Habitat Area):** The eastern extent of the site is mapped as Matters of state environmental significance (MSES) Priority Species along with a small section to the north of the larger dam in the west. Koala Habitat Areas are mapped in the eastern extent and along some of the southern boundary. Additional Koala Habitat Area is mapped to the north of the larger dam in the west (refer **Figure 10 – Priority Species**).
 - **Vegetation Management – MLES:** Medium priority vegetation is mapped across the site, except for the central portion of the site and western extent where a residential dwelling and constructed dam exists (refer **Figure 11 – Vegetation Management**).
 - **Wetlands and Waterways – MLES (Buffer Area):** The buffer area of a minor waterway mapped to the north of the site, traverses the north-western corner of the subject site (refer **Figure 12 – Wetlands and Waterways**).

A response to *Table 8.2.6-2: Environmental significance overlay code – for assessable development* is provided in **Appendix E**.

Figure 9: CGC Zoning



Legend

-  Site DCDB
-  Qld DCDB

City Plan Zoning

-  Medium density residential
-  High density residential
-  Open space
-  Conservation
-  Unzoned

Figure 9

Gold Coast City Plan 2015
Zoning

File ref. 11241 E Figure 9 Zoning B
Date 4/07/2024
Project George Alexander Way, Coomera

0 10 20 30 40 50 m

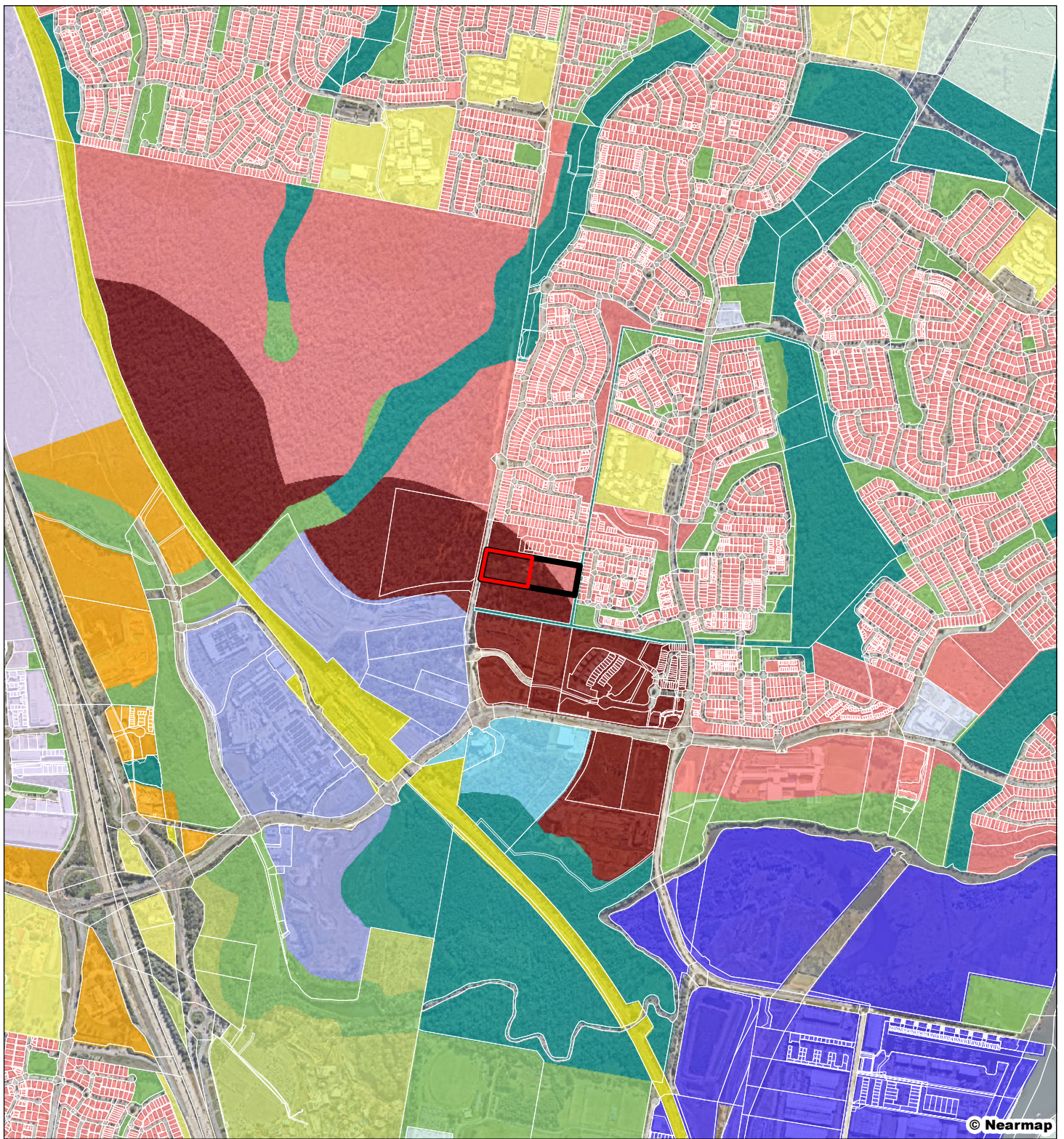
Scale (A4): 1:2,000 [GDA 2020 MGA Z56]



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Legend

	Site DCDB		Open space
	Qld DCDB		Mixed use
	Application Area		Low impact industry
Zoning			Waterfront and marine industry
	Medium density residential		Special purpose
	High density residential		Innovation
	Neighbourhood centre		Major tourism
	Centre		Rural
	Community facilities		Conservation
	Sport and recreation		

Figure 6

Gold Coast City Plan 2015 Zoning

File ref. 11241 E Figure 6 Zoning A
Date 5/08/2024
Project George Alexander Way, Coomera

0 180 360 540 720 m

Scale (A4): 1:18,000 [GDA 2020 MGA Z56]



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Figure 10: CGC Environmental Significance Priority Areas



Legend

-  Site DCDB
-  Qld DCDB

Priority Species

-  Koala habitat areas
-  State significant species
-  Local significant species

Figure 10

Gold Coast City Plan 2015
Environmental Significance
Priority Species

File ref. 11241 E Figure 10 Priority Species B
Date 4/07/2024
Project George Alexander Way, Coomera

0 10 20 30 40 50 m

Scale (A4): 1:2,000 [GDA 2020 MGA Z56]

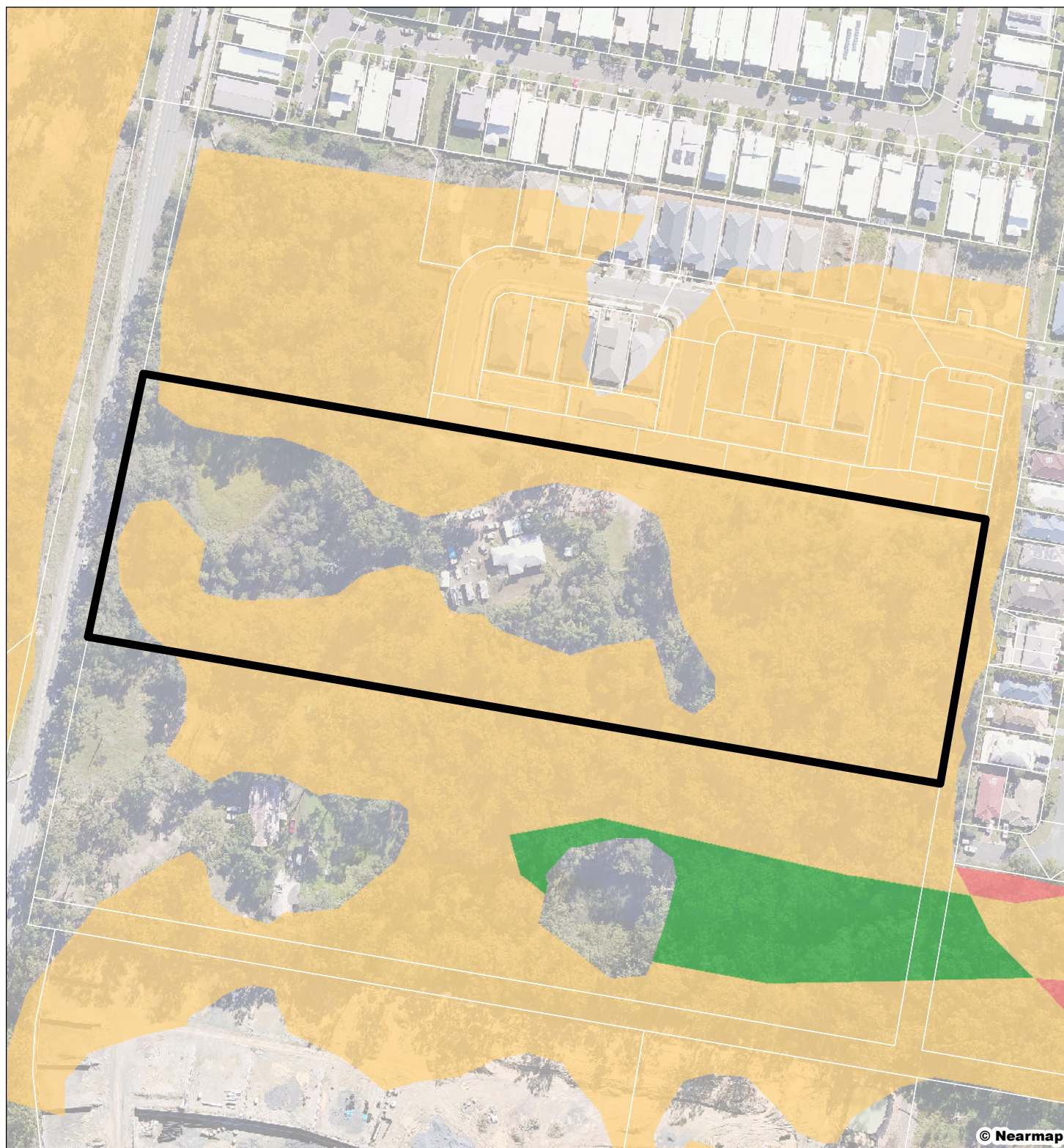


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Figure 11: CGC Environmental Significance Vegetation Management



Legend

- Site DCDB
- Qld DCDB

Vegetation Management

- General priority vegetation
- Medium priority vegetation
- Regulated vegetation

Figure 11

Gold Coast City Plan 2015
Environmental Significance
Vegetation Management

File ref. 11241 E Figure 11 Vegetation Management B
Date 4/07/2024
Project George Alexander Way, Coomera

0 10 20 30 40 50 m

Scale (A4): 1:2,000 [GDA 2020 MGA Z56]



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Figure 12: CGC Environmental Significance Wetlands and Watercourse



© Nearmap

Legend



Site DCDB



Qld DCDB

Wetlands and Waterways



Minor waterway



Wetland and waterways buffer area

Figure 12

Gold Coast City Plan 2015
Waterways and Wetlands

File ref. 11241 E Figure 12 Wetlands and Waterways B

Date 4/07/2024

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0 10 20 30 40 50 m

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4. Ecological Survey Results

Two ecologists from SHG assessed the application site on 18 October 2022, conditions were fine and sunny. The assessment area was walked to ensure all vegetation communities and flora and fauna species were recorded. Attention was also paid to any threatened flora and habitat for any threatened fauna species that were listed as possibly occurring within the assessment area, and specific micro-assemblages which may support these threatened species.

The field data collected during this period is considered to provide sufficient information to effectively understand and assess the existing ecological features and consequently the constraints that would influence the extent of developable land. The identification of ecological features considered to be of significance was facilitated through application of the field survey methodology. Field surveys were conducted in accordance with State Guidelines and the CPP. The tree plot results of the field survey are provided in Error! Reference source not found., **2.01** and **2.2**.

4.1. General Site Observation

The investigation area consists of a large vegetated residential allotment with a single dwelling and associated shed infrastructure in the centre of the property. Access to the site is by George Alexander Way which bounds the site to the west. An access driveway traverses from the west through to the north into the central portion of the site where the residential dwelling exists (refer to **Photo set 1**). The residential property is surrounded by planted ornamental and native species, primarily *Acacia concurrens* (Black Wattle), *Syagrus romanzoffiana* (Cocos Palm), *Eucalyptus microcorys* (Tallowwood) and *Corymbia citriodora* (Spotted Gum).

The property contains two dams, one in the north-western corner of the site and a second smaller dam in the north-eastern corner (refer **Photo set 2**). A large dam is located in the north-western corner of the property, which is surrounded by a mix of vegetation including *C. citriodora*, *Eucalyptus fibrosa* (Broad-leaved Red Ironbark) and *Eucalyptus siderophloia* (Grey Ironbark) with an understorey of *Acacia disparrima* (Hickory Wattle), *Lophostemon sauveolens* (Swamp Box) and *Melaleuca saligna* (White Bottlebrush). Additionally, the larger dam is overgrown with sedge species. A second smaller dam is located in the north-eastern corner surrounded by vegetation including *Allocasuarina littoralis* (Black She-oak), *L. sauveolens* and *C. citriodora*. Both dams will require removal for the proposed development.

Plan 2 : GPS Tree Plot

2.00 GPS Tree Plot



Notes:
This plan was prepared as a desktop assessment tool. The information on this plan is not suitable for any other purpose. Property dimensions, areas, numbers of lots, and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

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Legend

Site DCDB

Qld DCDB

Koala Habitat Areas

Core Remnant Koala Habitat Areas

Core Regrowth Koala Habitat Areas

GPS Tree Plot

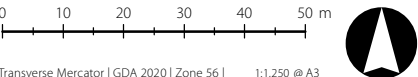
Native Tree

Non-juvenile Koala Habitat Tree

Introduced Species/ Environmental Weed

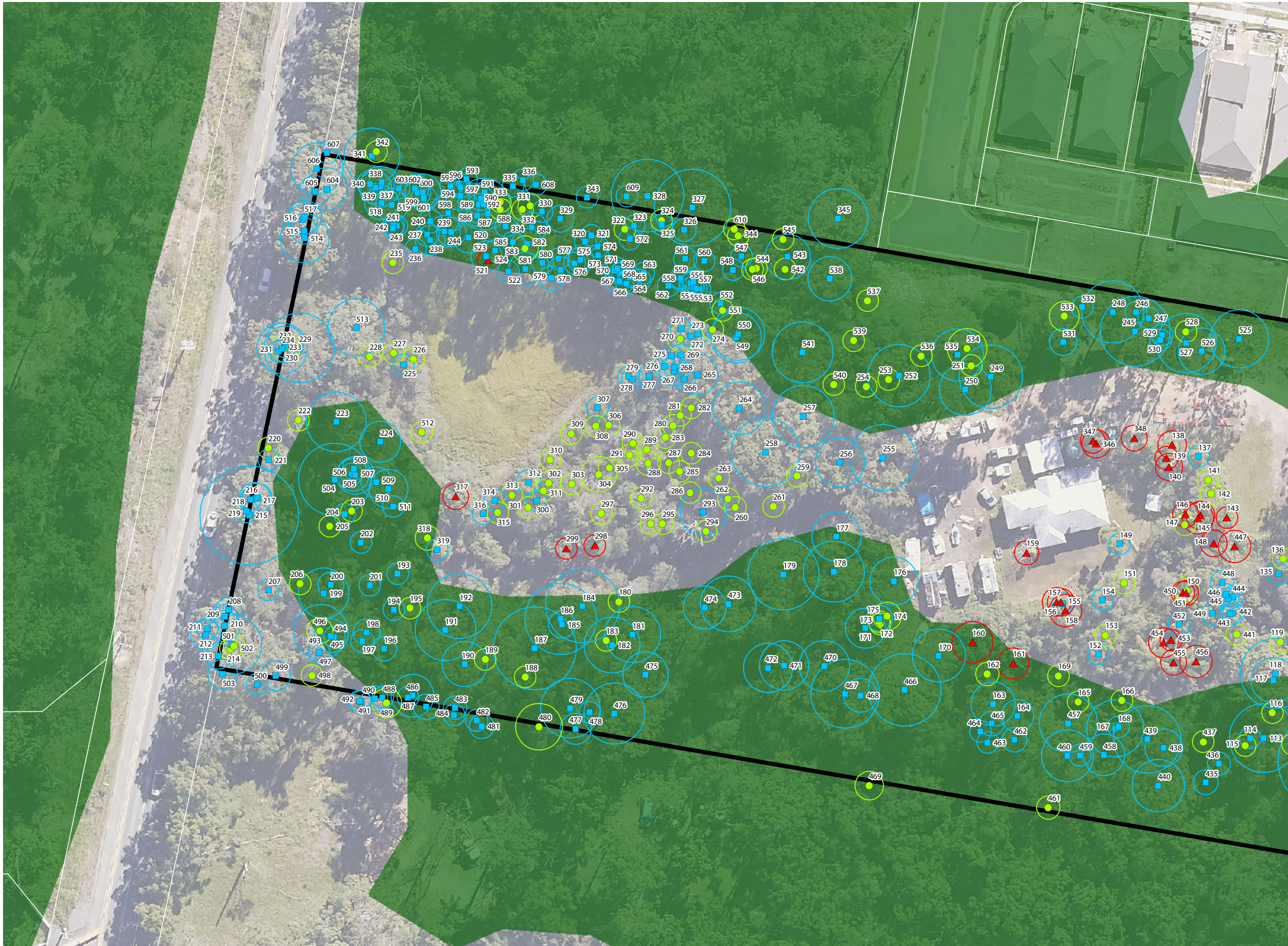
Dead/Stag Tree

Issue	Date	Description	Drawn	Checked
A	2/02/2023	Preliminary	TF	AW
B	4/07/2024	Updates	LS	CM



Transverse Mercator | GDA 2020 | Zone 56 | 1:1,250 @ A3

2.01 GPS Tree Plot



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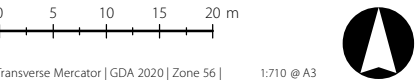
Layer Sources
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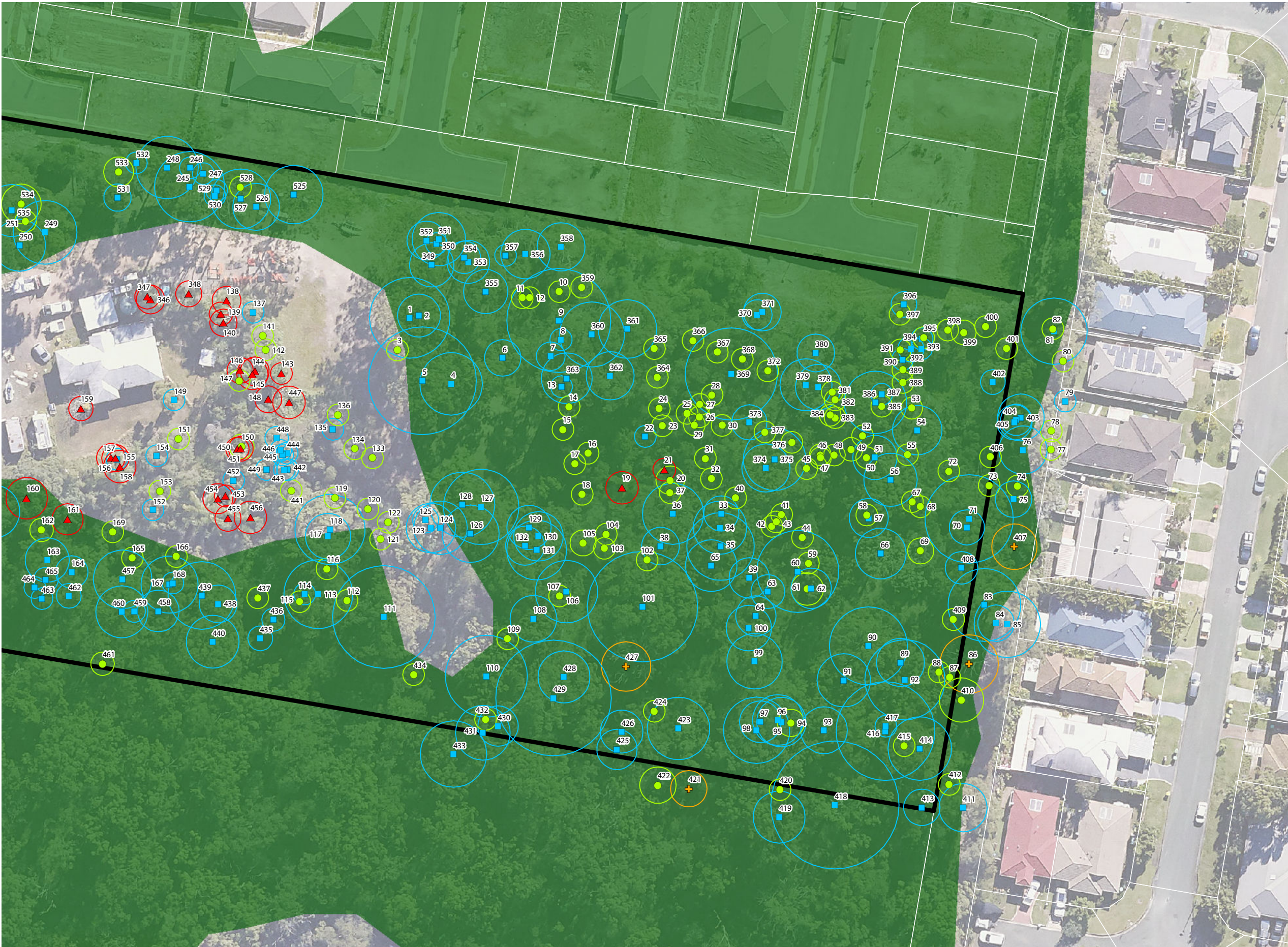
Legend

- Site DCDB
- Qld DCDB
- Koala Habitat Areas**
 - Core Remnant Koala Habitat Areas
 - Core Regrowth Koala Habitat Areas
- GPS Tree Plot (w/ TPZ)**
 - Native Tree
 - Non-juvenile Koala Habitat Tree
 - Introduced Species/ Environmental Weed
 - Dead/Stag Tree

Issue	Date	Description	Drawn	Checked
A	2/02/2023	Preliminary	TF	AW
B	4/07/2024	Updates	LS	CM



2.02 GPS Tree Plot



Notes:
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Legend

Site DCDB

Qld DCDB

Koala Habitat Areas

Core Remnant Koala Habitat Areas

Core Regrowth Koala Habitat Areas

GPS Tree Plot (w/ TPZ)

Native Tree

Non-juvenile Koala Habitat Tree

Introduced Species/ Environmental Weed

Dead/Stag Tree

Issue	Date	Description	Drawn	Checked
A	2/02/2023	Preliminary	TF	AW
B	4/07/2024	Updates	LS	CM

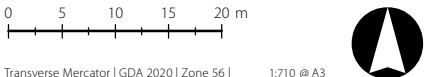




Photo set 1: Access driveway from George Alexandra Way to the west (left) and residential dwelling (right).



Photo set 2: Dam in the north-western corner (left) and smaller dam in the north-eastern corner (right).

4.2. Vegetation Communities

4.2.1 Category B (remnant) vegetation

The site is mapped partially as Category B (remnant) vegetation containing Least Concern RE 12.11.5 along the western section of the northern and southern boundaries (refer **Photo set 3**) and Least Concern RE 12.11.24 in the eastern portion (refer to **Photo set 4**). Descriptions of the REs are provided below:

RE12.11.5: *Corymbia citriodora* subsp. *variegata* open forest to woodland, usually including *Eucalyptus siderophloia*/*E. crebra* (sub coastal ranges), *E. propinqua* and *E. acmenoides* or *E. carnea*. Other species that may be present and abundant locally include *Corymbia intermedia*, *C. trachyphloia* subsp. *trachyphloia*, *Eucalyptus tereticornis*, *E. microcorys*, *E. portuensis*, *E. helidonica*, *E. major*, *E. longirostrata*, *E. biturbinata*, *E. moluccana* and *Angophora leiocarpa*. *Lophostemon confertus* often present in gullies and as a sub-canopy or understorey tree. Mixed understorey of grasses, shrubs and ferns. Occurs on hills and ranges of Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics.

RE12.11.24: *Eucalyptus carnea* or *E. tindaliae*, *Corymbia intermedia* woodland +/- *E. crebra* or *E. siderophloia*, *Eucalyptus resinifera*, *Eucalyptus major*, *E. helidonica*, *Angophora woodsiana*, *C. trachyphloia*, *E. microcorys*, *Corymbia citriodora* subsp. *variegata*, *C. henryi*. Occurs on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics usually at altitudes <300 metres.

Vegetation composition varies throughout the project area typically as a result of historical disturbances. Canopy species are dominated by the indicator species of the mapped RE12.11.5 including *Corymbia citriodora*, *Eucalyptus siderophloia*, *E. propinqua* and *E. acmenoides*. Scattered *E. fibrosa* and *Eucalyptus carnea* (Broad-leaved White Mahogany) are also present. The understorey and sub-canopy consist of *A. disparrima*, *A. concursens*, *L. sauveolens* and *Allocasuarina littoralis*. The ground layer across the site consists of a mix of native and exotic species including *Imperata cylindrica* (Blady Grass), *Dianella caerulea* (Blue Flax-lily), *Heteropogon contortus* (Black Speargrass), *Themeda triandra* (Kangaroo Grass), *Chrysocephalum apiculatum* (Yellow Buttons), *Senecio madagascariensis* (Fireweed), and *Ageratum houstonianum* (Blue Billygoat Weed).



Photo set 3: Vegetation along the southern border reflective of mapped RE12.11.5.



Photo set 4: Vegetation in the eastern portion of the property within mapped RE12.11.24.

4.2.2 Category X, non-remnant vegetation

Category X non-remnant vegetation is mapped within the central portion of the site. Vegetation in this area is limited to scattered eucalypt trees with limited diversity and structural complexity in the understorey, comprised of scattered regrowth eucalypts and *Acacia sp.* (refer **Photo set 5**). This area reflects previous land uses and modifications associated with the constructed dam in the north-west and residential dwelling in the centre of the site.



Photo set 5: Category X areas.



4.3. Flora Survey Results

The EPBC Act PMR listed five (5) TECs considered to have potential to be found within the area (refer **Section 3.1**). These are described as Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland, Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community, Subtropical eucalypt floodplain forest and woodland of New South Wales North Coast and South East Queensland bioregions, Lowland Rainforest of Subtropical Australia and Subtropical and Temperate Coastal Saltmarsh. **No TECs were observed on-site.** In addition, thirty (30) flora species are listed under the EPBC Act as having potential to occur within a 5 km radius (refer **Section 3.1**). **No threatened species were recorded at the time of assessment or have been recorded onsite historically.**

- Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland. In Queensland, this TEC is part of RE communities 12.2.7, 12.3.4/12.3.4a, 12.3.5, 12.3.6 and 12.3.20. None of these REs occur within the site or immediate vicinity.
- The Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland Ecological community occurs in coastal catchments, mostly at elevations of less than 20 m above sea level that are typically found within 30 km of the coast however distance can vary by catchment. The canopy layer is dominated by *C. glauca* (Swamp Oak) and in Queensland is represented by RE12.1.1 or RE12.3.20 (Previously 12.3.5a). No Coastal Swamp Oak (*Casuarina glauca*) individuals were observed on or proximal to site, nor were the regional ecosystems listed as being associated with this TEC.
- Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions. In Queensland, this TEC corresponds with at least 17 Regional Ecosystems. Components of this TEC are recognised within 12.3.2, 12.3.2a, 12.3.3, 12.3.3a, 12.3.3d, 12.3.4a, 12.3.7, 12.3.7c, 12.3.7d, 12.3.10, 12.3.11, 12.3.11a, 12.3.11b, 12.3.12, 12.3.14a, 12.3.15 and 12.3.19. None of these REs occur within the site or immediate vicinity.
- The Lowland Rainforest of Subtropical Australia TEC typically has high species richness. In Queensland, this TEC is part of a number of RE communities including 12.3.1, 12.5.13, 12.8.3, 12.8.4, 12.8.13, 12.11.1, 12.11.10, 12.12.1 and 12.12.16. None of these RE communities occur on-site or within the immediate vicinity of the site.
- The Subtropical and Temperate Coastal Saltmarsh (hereafter Coastal Saltmarsh) ecological community occurs within a relatively narrow margin of the Australian coastline. The physical environment for the ecological community is coastal areas under regular or intermittent tidal influence. This regional ecosystem is confined to land zone 1 (tidal flats and beaches), names RE 12.1.2 which includes saline or brackish sedgeland; and occurs on Quaternary estuarine deposits and marine plains/tidal flats. None of these RE communities occur on-site or within the immediate vicinity of the site.

A search of the NCA Wildlife Online database listed seven (7) threatened flora species as possibly occurring within the area, refer **Section 3.2**. None of these species were recorded during the field survey.

4.3.1 Threatened Flora

For the purposes of this report, a significant flora species was a species:

- Scheduled as Critically Endangered, Endangered, Vulnerable or Conservation Dependent under the Commonwealth EPBC Act; and/or
- Scheduled as Endangered, Vulnerable, or Near Threatened (EVNT) under the Queensland NCA; and/or
- Identified by Council as a locally significant species.

No significant flora species were encountered on-site.

4.3.2 Native flora species

During the field survey, seventy-two (72) flora species were recorded across the site, with forty-three (43) considered native species (refer **Table 5**).

Table 5: Observed native flora

Scientific name	Common name
<i>Acacia concurrens</i>	Black Wattle
<i>Acacia deanei</i>	Green Wattle
<i>Acacia disparrima</i>	Hickory Wattle
<i>Acacia leiocalyx</i>	Early-flowering Black Wattle
<i>Acacia melanoxylon</i>	Australian Blackwood
<i>Acacia podalyriifolia</i>	Silver Wattle
<i>Allocasuarina littoralis</i>	Black She-oak
<i>Alphitonia excelsa</i>	Soap Tree
<i>Centella asiatica</i>	Pennywort
<i>Chrysocephalum apiculatum</i>	Yellow Buttons
<i>Corymbia citriodora</i>	Spotted Gum
<i>Corymbia intermedia</i>	Pink Bloodwood
<i>Cynodon dactylon</i>	Common couch
<i>Cyperus haspan</i>	Flat Sedge
<i>Dianella caerulea</i>	Blue Flax-lily
<i>Eleocharis dulcis</i>	Water Chestnut
<i>Eucalyptus acmenoides</i>	White Mahogany
<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany
<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark
<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark
<i>Eucalyptus microcorys</i>	Tallowwood
<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum
<i>Eucalyptus siderophloia</i>	Grey Ironbark
<i>Eucalyptus tereticornis</i>	Forest Red Gum
<i>Eustrephus latifolius</i>	Wombat Berry
<i>Gahnia aspera</i>	Saw Sedge

Scientific name	Common name
<i>Geitonoplesium cymosum</i>	Scrambling Lily
<i>Goodenia rotundifolia</i>	Star Goodenia
<i>Hardenbergia violacea</i>	native Sarsaparilla
<i>Heteropogon contortus</i>	Black Spear Grass
<i>Hibbertia aspera</i>	Trailing Guinea Flower
<i>Imperata cylindrica</i>	Blady Grass
<i>Lepironia articulata</i>	Grey Rush
<i>Lobelia purpurascens</i>	White Root
<i>Lophostemon suaveolens</i>	Swamp Box
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark
<i>Melaleuca saligna</i>	Willow Bottlebrush
<i>Melicope elleryana</i>	Pink Doughwood
<i>Ottochloa gracillima</i>	Graceful Grass
<i>Ozothamnus cupressoides</i>	Kerosene bush
<i>Parsonsia straminea</i>	Monkey Rope
<i>Pultenaea villosa</i>	Hairy Pea Bush
<i>Themeda triandra</i>	Kangaroo Grass

4.3.3 Introduced flora species

Of the seventy-two (72) species recorded during the field survey across the site, twenty-nine (29) are considered introduced species (refer **Table 6**). It should be noted that five (5) of these species are listed as restricted matters under the *Biosecurity Act 2014* (discussed in **Section 3.7**). Restricted invasive plants under the *Biosecurity Act 2014* are to be managed at the Local Government level through a biosecurity plan that covers invasive plants and animals in its area.

Table 6: Observed introduced flora

Scientific name	Common name	Restricted under <i>Biosecurity Act 2014</i>	GCCC Priority
<i>Ageratina adenophorum</i>	Crofton Weed		
<i>Ageratum houstonianum</i>	Blue Billygoat Weed		
<i>Alternanthera brasiliana</i>	Purple Joyweed		
<i>Asparagus aethiopicus</i>	Ground Asparagus Fern	Category 3	Medium
<i>Convolvulus arvensis</i>	Field blindweed		
<i>Conyza sumatrensis</i>	Tall Fleabane		
<i>Corymbia torelliana</i>	Cadaghi		
<i>Desmodium intortum</i>	Greenleaf Desmodium		
<i>Dypsis lutescens</i>	Golden Cane Palm		

Scientific name	Common name	Restricted under Biosecurity Act 2014	GCCC Priority
<i>Emilia sonchifolia</i>	Emilia		
<i>Hypochaeris glabra</i>	Annual Flatweed		
<i>Lantana camara</i>	Lantana	Category 3	Low
<i>Nephrolepis cordifolia</i>	Fishbone Fern		
<i>Passiflora suberosa</i>	Corky Passion Vine		
<i>Pinus elliotii</i>	Slash Pine		
<i>Ricinus communis</i>	Castor Oil		
<i>Schefflera actinophylla</i>	Umbrella Tree		
<i>Senecio madagascariensis</i>	Fireweed	Category 3	Low
<i>Senna pendula</i>	Easter Cassia		
<i>Setaria sphacelata</i>	South African Pigeon Grass		
<i>Solanum chrysotrichum</i>	Giant Devil's Fig		
<i>Solanum mauritianum</i>	Wild Tobacco		
<i>Solanum seaforthianum</i>	Brazilian Nightshade		
<i>Sphagneticola trilobata</i>	Singapore Daisy	Category 3	Medium
<i>Spiraea prunifolia</i>	Bridalwreath spirea		
<i>Sporobolus pyramidalis</i>	Giant Rat's Tail Grass	Category 3	Low
<i>Syagrus romanzoffiana</i>	Cocos Palm		
<i>Tephrosia purpurea</i>	Ahuhu		
<i>Verbena bonariensis</i>	Purple-top Verbena		

4.3.4 GPS tree plot

A GPS Tree Plot Survey was carried out on-site locating and identifying all trees with a DBH greater than 100 millimetres (mm) (measured at 1.4 m above ground) and CGC habitat trees. Data from the GPS Tree Plot Survey has been extracted and summarised below (refer to **Plan 2** and **Appendix F** for the Tree Schedule).

- The GPS Tree Plot Survey recorded 25 tree species, where 19 of these are native species and 6 are considered to be invasive / weed species. **Table 7** provides a summary of the results of the GPS Tree Plot Survey completed.
- The most abundant species recorded was identified as *Corymbia citriodora* (Spotted Gum) which made up approximately 15% (94 specimens) of the tree plot, followed by *Allocasuarina littoralis* (Black She-oak) with 12.79% (78 specimens) and *Eucalyptus microcorys* (Tallowwood) with 12.62% (77 specimens) (refer **Table 7**).
- **Table 8** provides a summary of the total DBHs of trees recorded during field survey. The vegetation is predominantly comprised of trees with a DBH between 100 and 300 mm with a total of 448 or 73.45% recorded. This indicates that the vegetation within the site is mostly reflective of regrowth status.

Table 7: Tree plot summary

Scientific name	Common name	Native/introduced	Number recorded	Percentage recorded
<i>Acacia concurrens</i>	Black Wattle	Native	70	11.48%
<i>Acacia disparrima</i>	Hickory Wattle	Native	45	7.38%
<i>Acacia leiocalyx</i>	Early Flowering Black Wattle	Native	5	0.82%
<i>Acacia melanoxylon</i>	Australian Blackwood	Native	2	0.33%
<i>Allocasuarina littoralis</i>	Black She-oak	Native	78	12.79%
<i>Alphitonia excelsa</i>	Soap Tree	Native	1	0.16%
<i>Corymbia citriodora</i>	Spotted Gum	Native	94	15.41%
<i>Corymbia intermedia</i>	Pink Bloodwood	Native	48	7.87%
<i>Corymbia torelliana</i>	Cadaghi	Introduced	6	0.98%
<i>Dypsis lutescens</i>	Golden Cane Palm	Introduced	4	0.66%
<i>Eucalyptus acmenoides</i>	White Mahogany	Native	2	0.33%
<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	Native	13	2.13%
<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	Native	26	4.26%
<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	Native	6	0.98%
<i>Eucalyptus microcorys</i>	Tallowwood	Native	77	12.62%
<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	Native	19	3.11%
<i>Eucalyptus siderophloia</i>	Grey Ironbark	Native	44	7.21%
<i>Eucalyptus tereticornis</i>	Forest Red Gum	Native	24	3.93%
<i>Lophostemon suaveolens</i>	Swamp Box	Native	1	0.16%
<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	Native	15	2.46%
<i>Melaleuca saligna</i>	Willow Bottlebrush	Native	1	0.16%
<i>Pinus elliotii</i>	Slash Pine	Introduced	7	1.15%
<i>Schefflera actinophylla</i>	Umbrella Tree	Introduced	1	0.16%
<i>Solanum mauritianum</i>	Wild Tobacco	Introduced	1	0.16%
<i>Syagrus romanzoffiana</i>	Cocos Palm	Introduced	1	0.16%
Total			610	100.00

Table 8: Tree plot DBH summary

DBH (mm)	Number recorded	Percentage Recorded (%)
100-200	345	56.56%
200-300	103	16.89%
300-400	69	11.31%
400-500	52	8.52%
500-600	25	4.10%

DBH (mm)	Number recorded	Percentage Recorded (%)
600-700	7	1.15%
700-800	4	0.66%
800-900	4	0.66%
900-1000	1	0.16%
Total	610	100.00

4.4. Fauna Observations

A detailed fauna assessment was conducted across the subject site to identify and describe on-ground habitat features (e.g., habitat trees, fallen logs, termite mounts or roosting sites), signs of fauna activity (e.g., scats, tracks, scratch marks on trees or nests) and observations of species present within the area. Methodology utilised is listed in **Section 2.2**.

The following observations were made based on the field survey:

- The PMST identified twenty-nine (29) fauna species as possibly occurring on site. A Wildlife Online Search listed twelve (12) protected fauna species as possibly occurring on site.
- Fauna species observed across the site were mostly consistent with that observed in peri-urban environments and rural agistment properties. **No threatened fauna species listed under the EPBC Act or NCA were observed during field survey, nor are they considered likely to occur on-site, attributable to the highly disturbed state of the environmental features on-site.**
- The site contains potential habitat for Koala due to the presence of mature eucalypt trees. Indirect evidence of Koala was observed in the form of scats and scratch marks. Refer to **Section 4.3.1** for an assessment of Koala usage over the site.
- The subject site has undergone some disturbance and general property maintenance, although vegetation values remain relatively intact across the site due to the presence of abundant mature eucalypt canopy species. The subcanopy and ground layer is somewhat modified with a mix of native and exotic species present throughout. The shrub layer is sparse and is dominated by regrowth, with some invasive species present, namely *Lantana camara* (Lantana).
- Notable habitat values within the assessment area are mostly confined to vegetated areas that contain a defined canopy, sub-canopy and shrub layer, larger DBH trees compared to the rest of the site and a higher proportion of woody debris.
- A total of eight (8) fauna species were observed within the assessment area or as fly-over species during the field survey effort in 2022 (refer **Table 9**). This included six (6) bird species, one (1) amphibian and one (1) reptile.

Table 9: Fauna species observed on-site

Scientific name	Common name	Native / introduced	Detection Method
Birds			
<i>Corvus orru</i>	Torresian Crow	Native	Observed
<i>Cracticus nigrogularis</i>	Pied Butcherbird	Native	Observed
<i>Dacelo novaeguineae</i>	Laughing Kookaburra	Native	Observed
<i>Gymnorhina tibicen</i>	Australian Magpie	Native	Observed
<i>Manorina melanocephala</i>	Noisy Minor	Native	Observed
<i>Trichoglossus haematodus</i>	Rainbow Lorikeet	Native	Observed
Amphibian			
<i>Litoria fallax</i>	Eastern Sedgefrog	Native	Observed
Reptiles			
<i>Lampropholis delicata</i>	Grass Skink	Native	Observed

4.4.1 Threatened Fauna

No threatened species listed under the EPBC Act or NCA were directly observed within the site. However, evidence of Koala in the form of scats was recorded (refer **Photo set 6**). It is acknowledged that the site has capacity to support Koala with evidence of Koala detected on-site.



Photo set 6: Koala scats observed on-site.

4.5. Waterway

A drainage feature (mapped under the *Water Act 2000*) intersects the north-western portion of the site. The feature appears to have (prior to development to the north) been an unnamed tributary of McCoy's Creek. The mapped waterway traverses a small segment north of the dam which flows offsite north. A flow path was observed on-ground leading from the dam wall north (refer **Photo 7**) with no flow path evident further downstream. Importantly in recent times surrounding land has been redeveloped for residential subdivision and land mapped to contain drainage features is has now been redeveloped and currently contains residential allotments, roads and hardstand.



Photo 7: Area north of dam wall and waterway flow path.

4.6. Council Overlays

4.6.1 Environmental Significance Area Overlay

Under the Environmental Significance overlay, the site is mapped as 'medium priority vegetation' and 'regulated vegetation' and 'priority species – koala habitat areas' and 'priority species – state significant species.' The areas mapped as 'medium priority vegetation' aligns with the regulated vegetation mapping and is dominated by mature eucalypts namely *E. siderophloia* (Grey Ironbark) and *E. microcorys* (Tallowwood).

Field surveys confirmed on-ground vegetation values to generally reflective the mapped overlays. A response to the Environmental Significance overlay code is provided in **Appendix E**.

4.6.2 Waterways and Wetlands Overlay

A small portion of 'wetland and waterways buffer area' intersects the north-western boundary of the site. The vegetation within this area is low-lying and adjoins the dam wall to the south. *Melaleuca quinquenervia* (Broad-leaved Paperbark) are scattered throughout this area. This area of site has been ground truthed to not contain waterway and wetland features.

5. Development Assessment

5.1. Development Assessment

The proposed development will deliver medium and high-density apartment and townhouse residential development and a retained 20 m bushland reserve along the south of the site as per **Plan 3 – Development Assessment**. The development will help to provide a range of housing types for the urban growth area of Coomera, while also creating a future ecological corridor along the south of the site.

An existing approval exists over the site for townhouse style development in the east, roads and a balance lot in the west (see **Appendix G – Approval Documents**). Due to the increasing demand for housing within the suburb of Coomera (and wider Gold Coast), paired with the high-density zoning of the site, the applicant proposes a more efficient use of the site with a refreshed application including high density residential in the west, and a 20 m ecological corridor to the south (see proposed development in **Appendix A**).

The proposed development is designed to connect to the constructed residential subdivision directly to the north and provide a future road connection north/south at two locations on-site (refer to **Appendix A** for the development layout). Additionally, it is important to note vegetated Lot 101 on SP312031 directly to the north holds an approval for high density development and George Alexander Way is earmarked for widening, resuming an area of land along the western boundary at this site and surrounding properties. This land resumption further limits capacity to deliver a formalised ecological corridor and has been considered with the provision of ecological corridor to the south of the site, helping to provide an east/west future fauna corridor to more established Koala Habitat in the east and north/east (see **Plan 4 - Connectivity Assessment**).

The site is zoned as high-density residential and medium density residential under the *Gold Coast City Plan 2016* and is located within an urban footprint undergoing significant urban development to support the rapid expansion of the Coomera Town Centre. Notably, the lots located to the north and south of the site are similarly zoned as a mix of medium and high-density residential, with residential development already under construction on land to the north. The proposal for a residential subdivision is consistent with the local planning intent for the site. It is worth noting that the eastern side of Lot 96 on RP187418 is currently under clearing approval from Gold Coast City Council (**Appendix G**). Therefore, the state mapped CKHA is not reflective of the true area of potential KH on adjoining land and therefore possible connectivity on-site and through the locality. **Figure 6** graphically displays the actual extent of KHA at this location based on the information available, taking into account land cleared with new housing developments, easements, and existing approvals both prior to introduction of Koala legislation in Planning Act (Lot 101), and the clearing approval over the subject site.

While there is 2 ha of mapped Koala Habitat on-site, 62.5% (1.25 ha) is approved for clearing. The current proposal removes an additional area of 28.5% (0.57 ha) to allow for the increased density and development in the west of the site. The comparison analysis of areas approved for clearing and additional areas proposed to be cleared are shown below in **Table 10**. As the site is located within a zone earmarked for high density residential development, this proposal is seen as an acceptable outcome to achieve orderly and sustainable development while also providing future ecological connections in the south of the site. Overall, utilisation of

the site for high density residential is favourable over development of surrounding greenfield sites with higher ecological significance helping to protect and retain viable habitat and connections for fauna within the locality.

Table 10 – Comparison of Impact to Mapped Koala Habitat on Lot 96 on RP187418

Mapped Koala Habitat Area	Area	Percentage of Mapped KHA
Total area of Koala Habitat on-site	2 ha	100%
Existing approved impact	1.25ha	62.5%
Additional proposed impact (this application)	0.57 ha	28.5%
Area for Retention (this application)	0.18ha	9%

The proposed development footprint is in the western portion of the site and adds to the existing approval in the east (see **Plan 3.00** and **3.01 - Development Assessment**). The central portion of the site contains highly modified values including an existing dwelling, cleared areas and planted vegetation. Remnant eucalypt woodland is located across a portion of the western area in an irregular shaped polygon, along with non-remnant areas of historically modified vegetation through the center. A constructed dam is also located in the north-western portion of the site, with drainage feature mapping commencing on-site and running north through new adjacent residential development. No notable waterway features were identified on-site. As shown in supporting mapping and figures, the area is undergoing significant change and urban intensification for residential purposes with a mix of town houses, higher density units alongside detached dwellings approved and proposed within the locality. The significant changes and urban intensification are in accordance with the approvals granted by CGC and are therefore reflective of the planning scheme objectives and preferred outcomes.

To implement this development, a large portion of the assessment area will be unavoidably impacted as a result of the necessary required cut and fill earthworks to facilitate the development. This includes direct impact to 0.57 ha area of Koala habitat area (core), 0.57 ha of medium priority vegetation under the City Plan Environmental significance – environmental management overlay. Additionally impacts occur to state significant species and Koala habitat areas mapped under the Environmental significance – priority species overlay partially encroaching on the north-western and south-east portion of the site, with assessment provided in **Appendix E** (refer



Inset 1 – Water Act 2000 Mapping

Source : Queensland Globe, 2024

Plan 3b).

The overlay for wetlands and waterway buffer area of the City Plan will be unavoidably impacted along the northwest boundary. Current CoGC mapping can be seen in **Figure 12 and Plan 3b**. Notably this waterway mapping appears to be dated and does not reflect on ground values with land north containing the wetlands and waterway overlay mapping having been redeveloped for housing, roads and hardstand. Additionally, the linework appears to align with State mapped drainage feature under the *Water Act 2000* and thus does not contain defined banks. This mapping is inaccurate of conditions on the ground and is mapped over newly developed housing, roads and infrastructure, showing the mapping is not reflective of current on ground development nor ecological values. The location of mapped waterway on housing and hard stand supports this reporting conclusions of mapping anomalies around the waterway/buffer values (see **Inset 1** below).

Existing impediments occur within the locality for fauna movement, including proposed street networks connecting through the site centrally and along the east (**Plan 3**), and George Alexander Way (4 lane local road) along the western boundary, with the Gold Coast Trainline and Pacific Highway further south west (see **Plan 4**). The location of future road network creates a barrier for ecological connectivity and connection on and through the development site limiting the movement of fauna. The current proposal allows for a 20 m vegetated buffer along the southern boundary with retention of existing surveyed NJKHT wherever practical as per **Plan 3, 3a and 3b**.

Due to the small size of the site, irregular mapping of KHA, and planning intent for the site and surrounding areas, it is not considered reasonably feasible to retain additional areas of vegetation in the development

design for koala habitat as part of this application. Additionally, a development design that wholly avoids medium priority vegetation areas, state significant species mapping and KHA is not considered viable for a site mapped to contain medium and high-density residential development. The proposal is considered a balanced outcome, helping to house the growing population of South East Queensland while providing a future ecological connection east/west and sustainable use of land within the Urban Footprint of the South East Queensland Regional Plan. A response to the SDAP State Code 25 addressing impacts to Koala habitat areas is provided within the supplementary State Code 25 Report by Saunders Havill Group. A response to the Environmental Significance overlay code is provided in **Appendix E**.

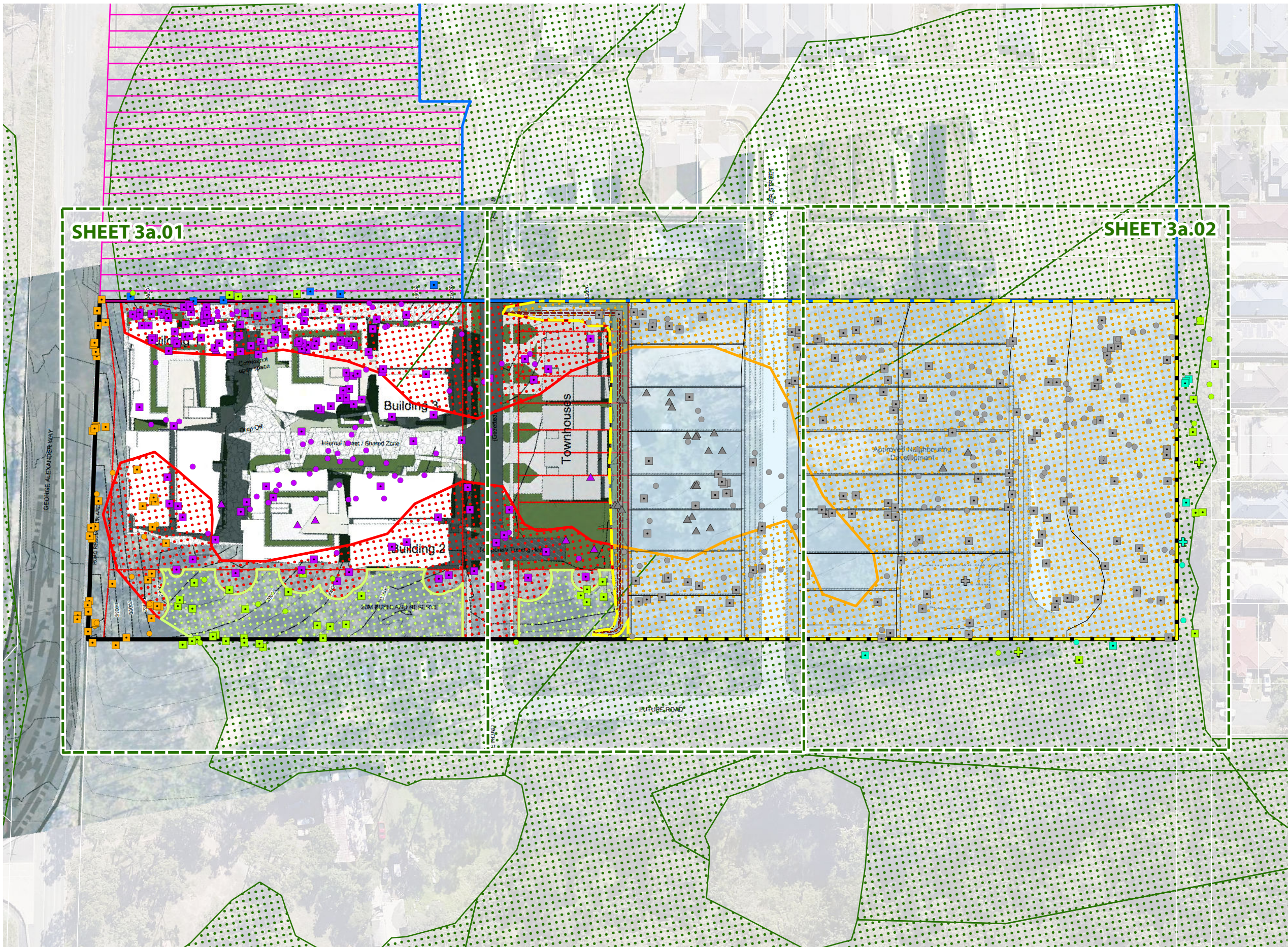


Inset 1 – Water Act 2000 Mapping

Source : Queensland Globe, 2024

Plan 3: Development Assessment

3a.00 Development Assessment



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- Legend**
- Site DCDB
 - Qld DCDB
 - Approved Clearing Extent
 - Existing High Density Residential Approval
 - Future High Density Residential Approval

- State Overlays**
- Koala Habitat Areas (KHA) [2.00 ha On-site]
 - Impacted KHA Previous Approval [1.25 ha]
 - Impacted KHA Current Approval [0.57 ha]
 - Retained KHA [0.18 ha]

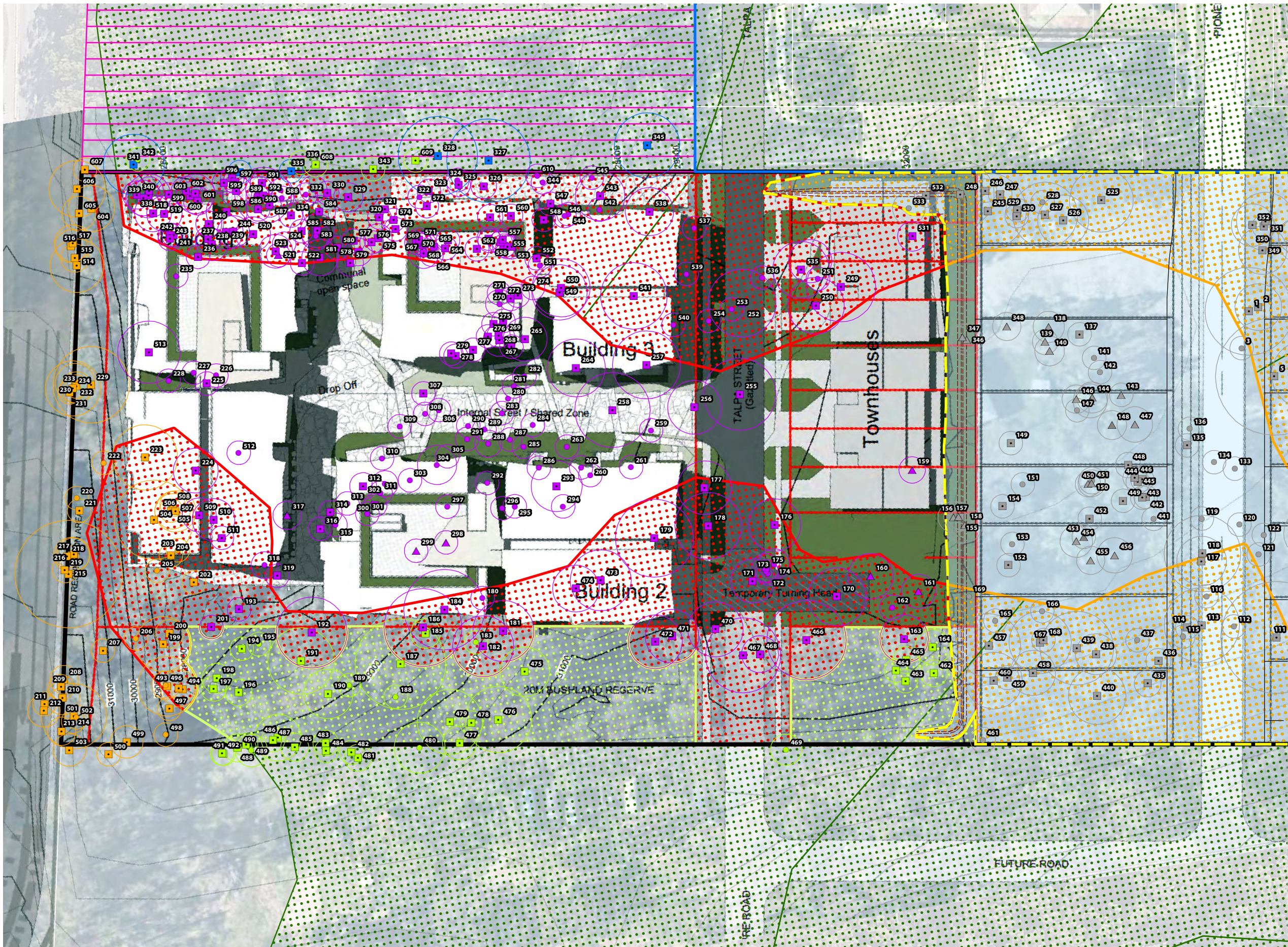
- Engineering (Eastern Works)**
- Earthworks Cut/Fill
 - Lot Design
 - Earthworks Interface

- GPS Tree Plot**
- Non-juvenile Koala Habitat Tree to Retain Subject to Detail Design [41]
 - Native Tree to Retain Subject to Detail Design [14]
 - Dead Tree (stag) to Retain Subject to Detail Design [2]
 - Non-juvenile Koala habitat tree in neighbouring lot, retention subject to arborist assessment (Previous Approval) [6]
 - Native tree in neighbouring lot, retention subject to arborist assessment (Previous Approval) [3]
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Issue	Date	Description	Drawn	Checked
B	5/07/2024	Updates	LS	CM
C	6/08/2024	Updates	LS	CM

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6/08/2024 | 11241 E 03a Development Assessment D

3a.01 Development Assessment



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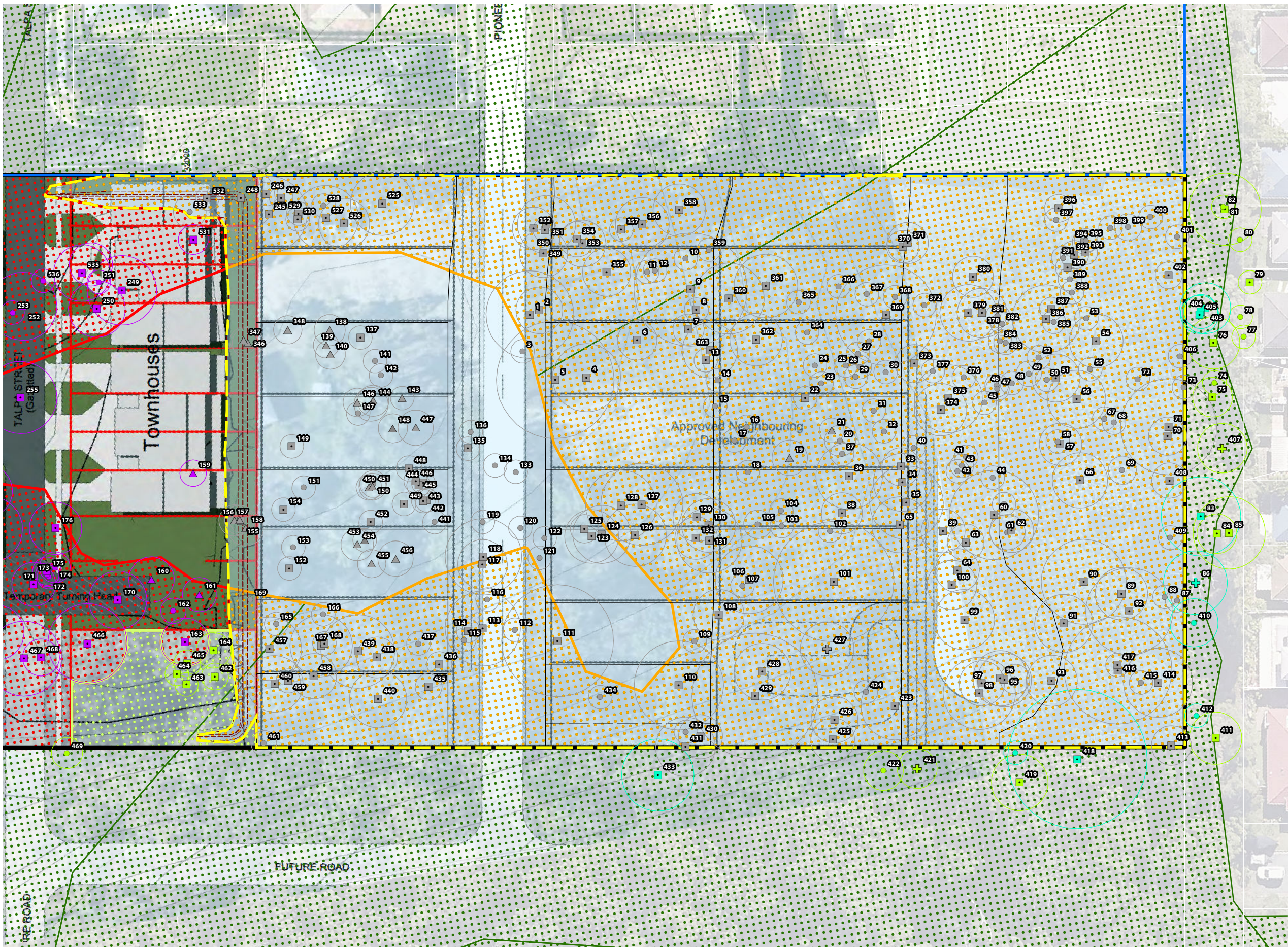
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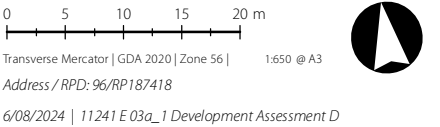
3a.02 Development Assessment



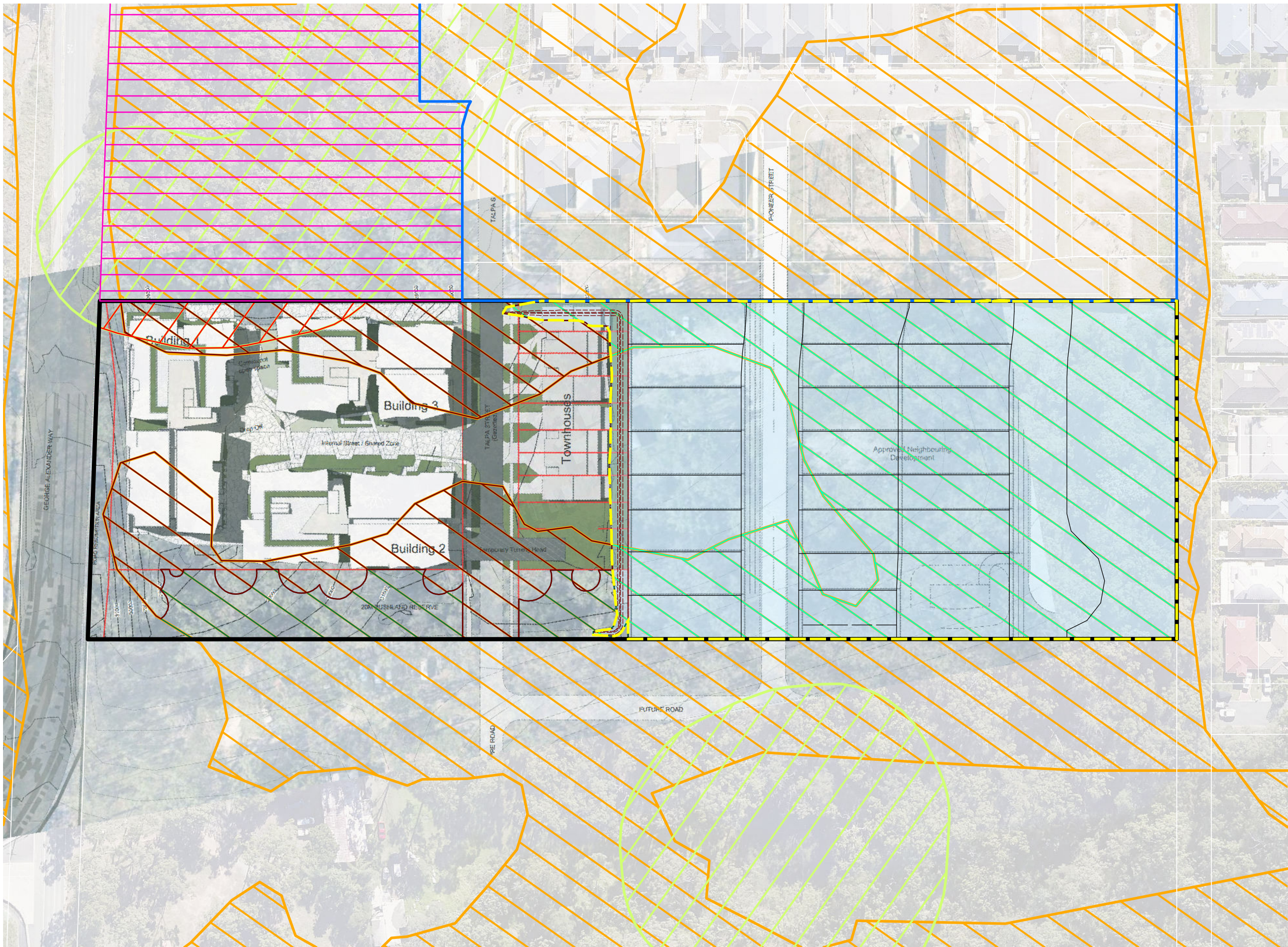
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3b. Development Assessment



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- Legend
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 - Qld DCDB
 - Approved Clearing Extent
 - Existing High Density Residential Approval
 - Future High Density Residential Approval
- Local Overlays
- City of Gold Coast (CGC) Wetland and Waterways Buffer [0.08 ha On-site]
 - Impacted CGC Wetland and Waterways Buffer [0.08 ha]
 - CGC Medium Priority Vegetation [2.00 ha On-site]
 - Impacted CGC Medium Priority Vegetation Previous Approval [1.25 ha]
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5.2. Potential impacts

The key potential ecological impacts associated with the development proposal are described herein. A list of potential impacts during varying phases of the proposed development is presented in **Table 11**.

Table 11: Summary of Potential Impacts

Construction Phase	Operation Phase (ongoing disturbance)
▪ Vegetation Clearing ▪ Weeds ▪ Vehicle movements ▪ Earthworks ▪ Light emissions during construction ▪ Noise and vibration ▪ Waste disposal ▪ Hazardous and dangerous goods ▪ Increased human presence	▪ Weed incursion ▪ Vehicle strike ▪ Noise and light pollution ▪ Increased human presence

5.2.1 Vegetation clearing

Unavoidable clearing of modified vegetation values and remnant eucalypt woodland areas is required to establish the residential areas and access roads.

The subject site is predominantly comprised of Category B (remnant) vegetation with a large area of Category X, non-remnant vegetation containing modified vegetation values within the central and western portion of the site. The property is currently used as semi-rural residential lot.

5.2.2 Weeds

Increased vehicle movement during the construction phase has the potential to increase the spread of weeds in the area, particularly during the vegetation clearing phase. Portions of the site have a relatively high incidence of weed incursion and established exotic ornamentals. With the implementation of standard mitigation measures and improvement measures as part of the development, it is not anticipated that an increase in weed presence will occur on and adjoining the site.

5.2.3 Vehicle movements

During construction, a large number of vehicles will be required on-site. Direct impact from vehicle movements on threatened species and vegetation communities include:

- damage or destruction of vegetation or fauna habitat by vehicles traversing these areas; and
- fauna strike.

Indirect impacts include:

- interference of fauna through visual and noise impacts. This may affect feeding, roosting, breeding or nesting behaviour;
- introducing and/or spreading weeds or feral animals carried on or in vehicles, resulting in deterioration or loss of vegetation and important fauna habitat; and
- damage or destruction of vegetation and fauna habitat through smothering by dust generated by vehicles traversing the site.

With the implementation of standard mitigation measures, the development is likely to result in a temporary and minor impact to ecological values due to vehicular movements. Further, ecological field survey confirmed mainly common avi-fauna are present on-site. It is unlikely that the site supports permanent residence of macropods or Koala.

5.2.4 Earthworks

Construction activities have the potential to generate dust emissions. Dust emissions during construction will be temporary. The main sources of dust will be generated via:

- wheel-generated dust from the haul roads created for the construction phase;
- dust lift-off from exposed surfaces (e.g. construction roads and pads);
- earthworks, including construction of the embankments, and moving, dumping and shaping material; and
- vegetation and soil clearing of the land.

Excessive deposition of dust on leaves of plants can suppress the growth and photosynthesis, resulting in reduced habitat quality for fauna. High levels of airborne dust can irritate the respiratory systems of fauna and potentially result in ingestion of dust-coated seeds and other foods. Excessive deposition of dust on open water bodies may also degrade water quality and overall habitat quality for fauna. With the implementation of standard mitigation measures, the development is likely to result in a temporary and minor impact to ecological values due to the generation of dust.

5.2.5 Light emissions during construction

Artificial light can affect both nocturnal and diurnal animals by disrupting behavioural patterns, with quality of light (e.g. wavelength, colour), intensity and duration potentially evoking different faunal responses. Impacts from increased light levels include disorientation from, or attraction toward, artificial sources of light; mortality from collisions with structures; and effects on light-sensitive cycles of species (e.g. breeding and migration for fauna and flowering in plants). An artificial increase in lighting can also affect abundance of predators.

Presence and intensity of artificial light in the development area will temporarily increase during the construction phase, however, night works will not be common. Lighting will be directed to construction areas within the site. Some light spillage will be inevitable and is likely to be contained mainly for security reasons

around the site compound. Potential impacts associated with light emissions will be temporary and unlikely to be significant.

With the implementation of standard mitigation measures, the development is likely to result in a negligible impact to ecological values due to the use of light pollution during construction.

5.2.6 Noise and vibration

Noise levels greater than existing ambient noise levels are expected during the construction within the development area. Sources of noise are likely to consist of noise in short, intense pulses from mobile plant equipment, and more prolonged noise, with consistent vibration, pitch and volume from generators, excavators and pumps, in addition from noise from vehicles.

Both steady continuous and single noise events have the potential to lead to ecological impacts. Construction noise is expected to elicit some avoidance response from fauna using the surrounding vegetation though, with consideration of the extent of habitat available in the development area, this is likely to be a temporary and negligible to minor impact.

5.2.7 Waste disposal

Inappropriate disposal of non-hazardous wastes can attract vermin and other wildlife to site. This may exacerbate potential impacts (e.g. road mortality). Litter may also enter surrounding environments. With the implementation of standard mitigation measures, the project is likely to result in a negligible impact to ecological values due to the generation and handling of waste.

5.2.8 Hazardous and dangerous goods

Spills and leaks from transfers (fuel, chemicals) and inadequate storage of dangerous goods and hazardous wastes could result in point-source contamination of surrounding land. Direct adverse impacts could include toxic impacts on vegetation (resulting in degradation or loss of vegetation and habitats), direct toxic impacts on fauna (from contact, inhalation or ingestion) or indirect impacts on threatened and migratory species from habitat loss. Direct adverse impacts on surface and groundwater quality are also possible.

With the application of standard mitigation and management measures, impacts from liquid and solid waste disposal will be avoided or localised and small in scale. Further to this, the likelihood of significant spillages is considered low. Therefore, the development is likely to result in a negligible impact to ecological values due to potential spills and leaks.

5.2.9 Increased human presence

Increased human activity during construction has the potential to disturb fauna both within adjacent habitat areas. Examples of impacts included heightened vigilance and predator avoidance, which can disrupt foraging and roosting efficiency, or deter wildlife from using particular areas. Impacts essentially represent a reduction in core habitat due to edge effects. The development is likely to result in a temporary and minor impact to ecological values due the increased human presence on-site during construction.

5.2.10 Bushfire Hazard

Under the Queensland Government State Planning Police Interactive Mapping System this lot and the adjacent lots to the north and south are mapped as containing 'Medium Potential Bushfire intensity.' The potential risk of bushfire onsite exists from the adjacent uncleared sites and retained 20 m buffer area in the south. However, this risk is expected to be resolved as adjacent lots and eastern side of the lot are slated for development in future.

To meet accepted development outcomes or the Bushfire hazard overlay code a written assessment by a suitably qualified and experienced bushfire management consultant should be sought to confirm that the site is not in a Bushfire Hazard Area for the purpose of accepted development. Additional clearing and management actions be conducted in accordance with this advice.

5.3. Ongoing disturbances

After completion of construction, the ongoing presence of infrastructure and increased human activity can continue to have potential for adverse direct and indirect impacts. The key continuing risks to ecological values include:

- weed incursion;
- vehicle movements;
- noise and light; and
- increased human presence.

Each potential impact associated with ongoing use of the site is described in detail in the following sections.

5.3.1 Weed incursion

Residential gardens and landscaping of common areas will introduce a variety of new and exotic species to the area. Garden escapes have the potential to be introduced into adjacent bushland areas through vectors such as birds, wind and runoff. Weed incursion and edge effects will be an ongoing issue and can be difficult to prevent. Nonetheless, the problem is often mostly constrained to edges of bushland that abut gardens and along urban waterways. Importantly, the development site is already heavily weeded and retention areas will be buffered.

With the implementation of standard mitigation measures, the development is not likely to exacerbate adverse impacts to ecological values due to the introduction and spread of weeds.

5.3.2 Vehicle strike

Upon completion of the development, there will be a significant increase of vehicle traffic (compared to baseline conditions) and this will increase the likelihood of fauna strike. The probability of fauna strike is reduced due to the fact that most fauna will generally avoid urban areas. Notwithstanding this, a low number of fauna may occasionally enter the area and be at risk of vehicular strike. However, given the low connectivity within the area, the risk of vehicle strike is considered to be negligible.

5.3.3 Noise and light

Noise levels are likely to increase once residents move into the areas as there will be increased vehicular and pedestrian traffic. Road noise will be the primary source of noise impact.

Artificial light from industrial lighting may affect nocturnal and diurnal animals by disrupting patterns, with quality of light (e.g. wavelength, colour), intensity and duration potentially evoking different responses. Impacts from increased light levels include disorientation from or attraction toward artificial sources of light; mortality from collisions with structures; and effects on light-sensitive cycles of species (e.g. breeding and migration for fauna and flowering in plants). The presence and intensity of artificial light may have most impact at the edges of adjacent vegetation. With the implementation of standard mitigation measures, the development is likely to result in a negligible impact to wildlife due to light spillage.

5.3.4 Increased human presence

Increased human activity associated with land uses within the development has the potential to disturb fauna that exist within the broader area. Examples of impacts included heightened vigilance and predator avoidance, which can disrupt foraging and roosting efficiency, or deter wildlife from using particular areas.

5.4. Management and compensatory measures

A number of management and compensatory measures are proposed to minimise and offset impacts associated with the development. These are discussed in the following subsections.

5.4.1 Avoidance Measures

The proposed development has been located within the eastern portion of the site within the Medium Density Residential Zone of the *Gold Coast City Plan 2016*. The development footprint has been located wholly outside of the MLES waterway buffer.

5.4.2 Vegetation Clearing and Fauna Management Plan

A Vegetation Clearing and Fauna Management Plan (VCFMP) should form part of the broader management document submitted as part of the operational works application for the development site. The VCFMP should cover clearing of all vegetation listed in this report and include details on:

- Clearly show trees to be removed.
- All civil works likely to impact on existing vegetation.
- Temporary and permanent exclusion and protection fencing.
- Roles and responsibilities for site contractors, the developer and the consultant group.
- Stockpiling and site access locations.
- Fauna species surveyed as using the site with a focus on those most likely impacted by development works.
- A list of relevant State and Commonwealth legislation constraints and controls for the above listed fauna.
- A plan showing existing habitat opportunities and locations.

- A clearing sequence plan showing the commencement of clearing and direction of removal.
- Details of the threats to existing fauna species.
- Management and mitigation measures, e.g. temporary use of fauna exclusion fencing.
- Fauna spotter role, contacts and certification.
- Specific fauna management procedures for potential or known habitat trees.
- Links to weed management and revegetation proposals.
- The stock piling and reuse of cleared vegetation.

5.4.3 Koala Management Plan

A Koala Management Plan (KMP) has been completed. The purpose of this KMP is to provide a single explanatory management document for the inclusion in the design, construction and operation of the development. The objectives of this KMP are as follows:

- 1) To highlight the existing flora, fauna and ecosystem values on the subject site and in surrounding areas;
- 2) Describe key results from survey data, including Koala occurrence and the availability and quality of habitat;
- 3) Identify key direct and indirect impacts on Koalas and describe proposed avoidance and mitigation measures; and,
- 4) List out actions and legislative requirements to be implemented to manage construction impacts.

5.4.4 Fauna Spotter Catcher Supervision

It is recommended that all vegetation clearing for the proposed development be supervised by a DES approved Fauna Spotter Catcher to minimise the potential impacts and adverse outcomes for fauna disturbed during vegetation clearing. In addition, prior to vegetation clearing taking place, a preclearing assessment will be required to be undertaken by a qualified fauna spotter catcher to provide a contemporary assessment of likely fauna present within areas to be cleared, and to ensure strategies are in place to manage the safe removal and relocation of fauna within the clearing areas.

5.4.5 Koala Habitat Area Offsets

As the development layout will result in removal of non-juvenile koala habitat trees (NJKHTs) within Koala habitat areas, the proposed development application will require referral to State Assessment Referral Agency (SARA) and assessment against the Performance Outcomes of *SDAP Code 25: Development in South East Queensland koala habitat areas*. Supporting State Code 25 Report provides assessment against the code and other Koala provisions in Queensland.

In order to meet the Performance Outcomes of the *SDAP Code 25: Development in South East Queensland koala habitat areas*, an environmental offset may be required to compensate for the proposed impacts to NJKHT within Koala habitat areas.

As detailed in the accompanying State Code 25 Response Report, the proposed development will impact approximately 0.57 ha with a total of 142 NJKHTs. In the eastern position of the site, impacts to NJKHTs were approved (2302-33455 SRA) and therefore not subject to further assessment as part of this western area of proposed development. To compensate for the removal of 142 NJKHT, and to comply with the performance outcomes of State Code 25, an Environmental Offset may be required. This will be determined with the State as part of the referral process.

5.5. Medium Priority Vegetation Offsets

Under the *Gold Coast City Plan 2016*, clearing of medium priority vegetation mapped in the Environmental Significance Vegetation Management Overlay map is required to be offset in accordance with the SC6.9 City Plan policy – Environmental offsets. The site is mapped as containing medium priority vegetation according to the Environmental Significance Vegetation Management Overlay map, therefore an environmental offset would ordinarily be required for impacts to this value.

However, the area of medium priority vegetation to be impacted on the site is analogous to the mapped Koala habitat area proposed to be impacted. It is expected that an environmental offset will be provided in accordance with the *Queensland Environmental Offset Policy* for the proposed impacts on the mapped Koala habitat area. Therefore, to avoid environmental offset duplication (as outlined in Section 1.1.3 of the *Queensland Environmental Offset Policy*) it is anticipated that no environmental offset for impacts to *Gold Coast City Plan 2016* mapped medium will be required, as impacts to this value will be addressed through the required offset for impacts to state mapped Koala habitat area.

6. Conclusion

This EAR was prepared on behalf of Coomera GA Pty Ltd who seek to develop land at 54 George Alexander Way, Coomera, Queensland 4209, described as Lot 96 on RP187418 to deliver high and medium density residential development and relevant infrastructure. This EAR provides a contemporary review of the ecological values across the site in accordance with Commonwealth, State and Local Government Legislation.

Overall, the following conclusions were made:

- The site provides an east/west ecological connection through the provision of a 20 m greenspace corridor. NJKHT will be retained wherever possible within the location. There is opportunity for future development to the south to add to this ecological corridor, helping to improve connectivity and linkages within the highly urbanised area of Coomera.
- The development provides a balanced approach to the higher density residential intended for the site, and the provision of fauna connectivity to surrounding ecological corridors in the east and north east.
- The assessment area has been used as a rural residential allotment with some modifications on-site including the construction of dams, a residential dwelling and associated infrastructure. Mature eucalypt woodland is located across the site and is dominant in the eastern portion of the site. Dominant species observed include *E. siderophloia* (Grey Ironbark) and *E. microcorys* (Tallowwood).
- Evidence of Koala activity was recorded in the form of scats throughout the site; however, direct observations of Koala were not recorded, suggesting Koala may utilise the vegetation on-site in a transient capacity.
- Detailed ecological field survey did not directly identify threatened species or TECs listed under the EPBC Act as present, nor were any flora species listed under the NCA observed within the assessment area.
- The site is mapped as Category X and is non-remnant vegetation through the middle of the site and north-western dam for 1 ha of the site. Category B (remnant vegetation) described as Least Concern RE12.11.24 and Least Concern RE12.11.5 is mapped across the balance of the site. Regional Ecosystem characteristics across the assessment area reflect RE12.11.5 and RE12.11.24.
- A total of seventy-two (72) flora species were recorded across the site, with forty-three (43) considered native species and twenty-nine (29) introduced / invasive species.
- A total of eight (8) fauna species were observed within the assessment area or as fly-over species during the field survey effort in 2022. Most fauna species observed are common urban and peri-urban species. Indirect evidence of Koala in the form of scats was observed within the assessment area.
- Potential impacts to Koala will be managed through the implementation of a site-specific Vegetation Clearing and Fauna Management Plan and Koala Management Plan as detailed in **Section 5.4**.
- A response to the SDAP State Code 25 addressing impacts to Koala habitat areas is provided is provided as a supplementary State Code 25 report to this EAR. Significant residual impacts on KHAs will be offset in accordance with the *Environmental Offsets Act 2014*.

- Impacts to Gold Coast City Plan medium priority vegetation mapped in the Environmental Significance Vegetation Management overlay are analogous to the impacts on state KHA which are to be offset under the Queensland Environmental Offsets Policy, Therefore, to avoid duplication of offsets, and environmental offset in accordance with SC6.9 City Plan policy – Environmental offsets is anticipated not required for the proposed impacts to medium priority vegetation.

7. Appendices

Appendix A

Development Layout

Appendix B

Environment Protection and Biodiversity Conservation Act 1999

Protected Matters Report

Appendix C

Nature Conservation Act 1992

Wildlife Online Search Results

Appendix D

Environmental Searches

Appendix E

Response to Environmental Significance Overlay Code

Gold Coast City Plan V9

Appendix F

Tree Schedule

Appendix G

Eastern Extent Development Approval

Appendix A

Development Layout

54 George Alexander Way

DA Submission

NO	SHEET NAME	Current Revision
AR-DA-000	Cover Sheet & Drawing List	A
AR-DA-001	Perspectives	A
AR-DA-002	Site Context Plan at 1-1000	A
AR-DA-003	RAL Plan	A
AR-DA-005	Proposed Stage 1a Site Plan at 1-500	A
AR-DA-006	Proposed Stage 1b Site Plan 1-500	A
AR-DA-007	Proposed Stage 2 Site Plan 1-500	A
AR-DA-008	Diagram - Open Space Overlay	A
AR-DA-009	3D Diagram	A
AR-DA-010	Building Form & Facade Diagrams	A
AR-DA-100	Figure Ground Plan	A
AR-DA-102	Basement	A
AR-DA-200	Overall Floor Plan - Level 0	A
AR-DA-201	Overall Floor Plan - Level 1	A
AR-DA-202	Overall Floor Plan - Typical Levels 2 - 5	A
AR-DA-206	Overall Floor Plan - Level 6	A
AR-DA-207	Overall Floor Plan - Level 7	A
AR-DA-208	Overall Floor Plan - Level 8	A
AR-DA-209	Overall Roof Plan	A
AR-DA-300	Elevations - Overall Site - North & South	A
AR-DA-301	Elevations - Lot 1 - East & West	A
AR-DA-302	Elevations - Lot 1 - Internal Street	A
AR-DA-303	Elevations - Lot 2 - East & West	A
AR-DA-400	Sections - Overall Site	A
AR-DA-402	Sections - Overall Site	A

SITE PARTICULARS

RPD	=	96/RP187418	
LOCAL AUTHORITY	=	GOLD COAST CITY COUNCIL	
STREET ADDRESS	=	54 GEORGE ALEXANDER WAY	
SUBURB	=	COOMERA	
TOTAL SITE AREA	=	14,845sqm	
ROAD RESUMPTION	=	475sqm	
ROAD RESERVE	=	1600sqm	
LOT 1	=	9770sqm	
SITE COVER	=	4566sqm	(47%)
OPEN SPACE	=	5204sqm	(53%)
LOT 2	=	3000sqm	
SITE COVER	=	1439sqm	(48%)
OPEN SPACE	=	1561sqm	(52%)

LOT 1 DWELLING MIX SUMMARY

APARTMENTS	QTY	APT MIX
1 BEDROOM		
TYPE 1B	= 30	14%
2 BEDROOM		
TYPE 2B A	= 12	6%
TYPE 2B B	= 98	47%
TYPE 2B C	= 47	23%
3 BEDROOM		
TYPE 3B	= 21	10%
TOTAL	= 208	

LOT 1 PARKING

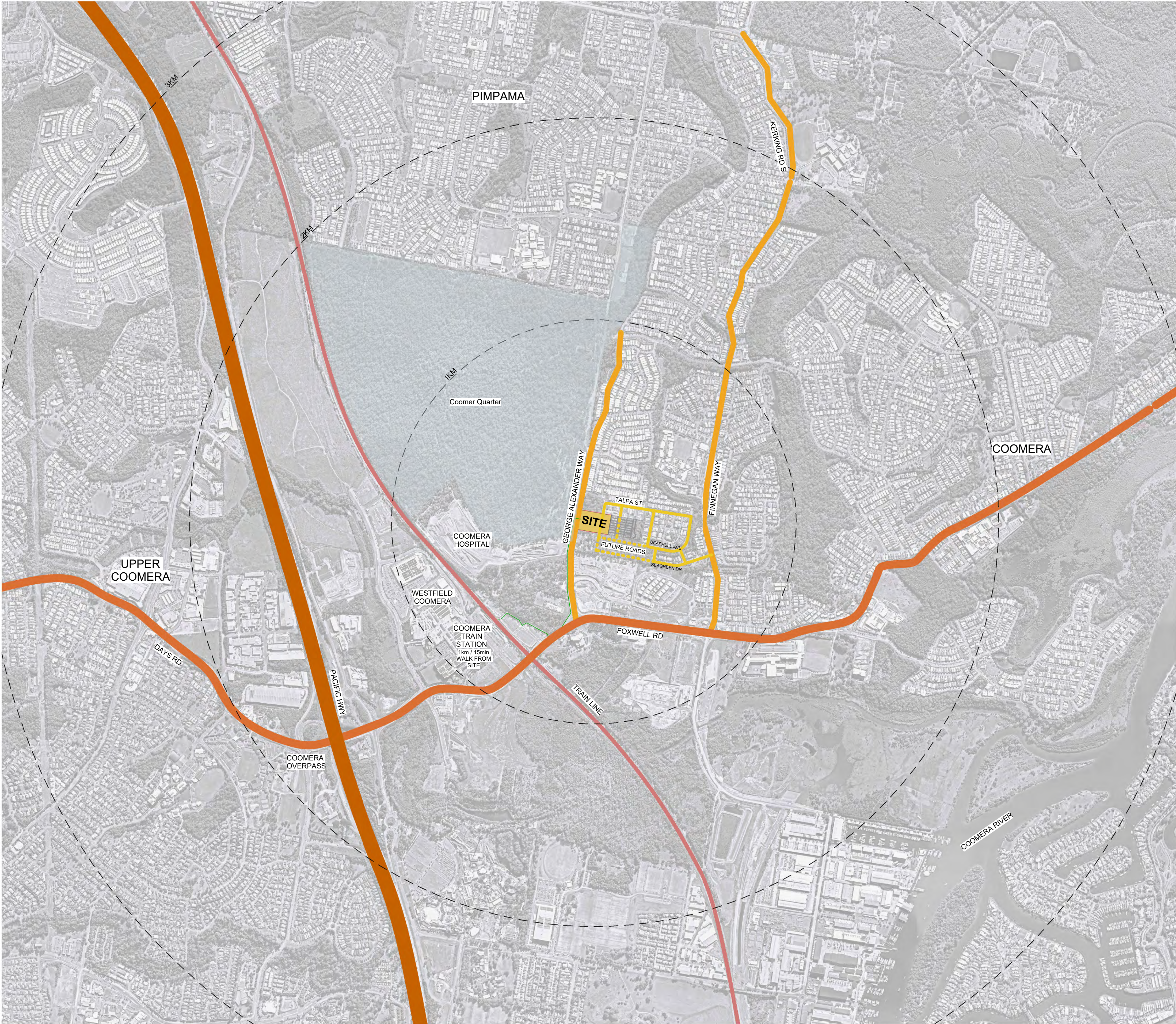
RESIDENT CAR PARKING	=	258
VISITOR CAR PARKING	=	24
TOTAL CAR PARKING	=	282
MOTORCYCLE PARKING	=	7
RESIDENT BICYCLE PARKING	=	70
VISITOR BICYCLE PARKING	=	17
TOTAL BICYCLE PARKING	=	87
E-bike/scooter charging	=	30

LOT 2 DWELLING MIX SUMMARY

TOWNHOUSES						
4 BED TH TYPE A	=	6	60%			
4 BED TH TYPE B	=	4	40%			
TOTAL	=	10				

CAR PARKING

GARAGE	CAR PORT	DRIVEWAY	TOTAL P/U	TOTAL
2	0	1	3	18
1	1	1	3	12
TOTAL				30



1 Location Plan
1:10000

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Client

Coomera GA Pty Ltd ATF
The Coomera GA Unit Trust

Rev Initial Description
A DJ Material Change of Use
Application Issue

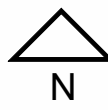
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Project
24013
54 George Alexander Way
54 George Alexander Way Coomera QLD
4209 Australia

DRAWING TITLE
Cover Sheet & Drawing List

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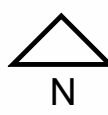
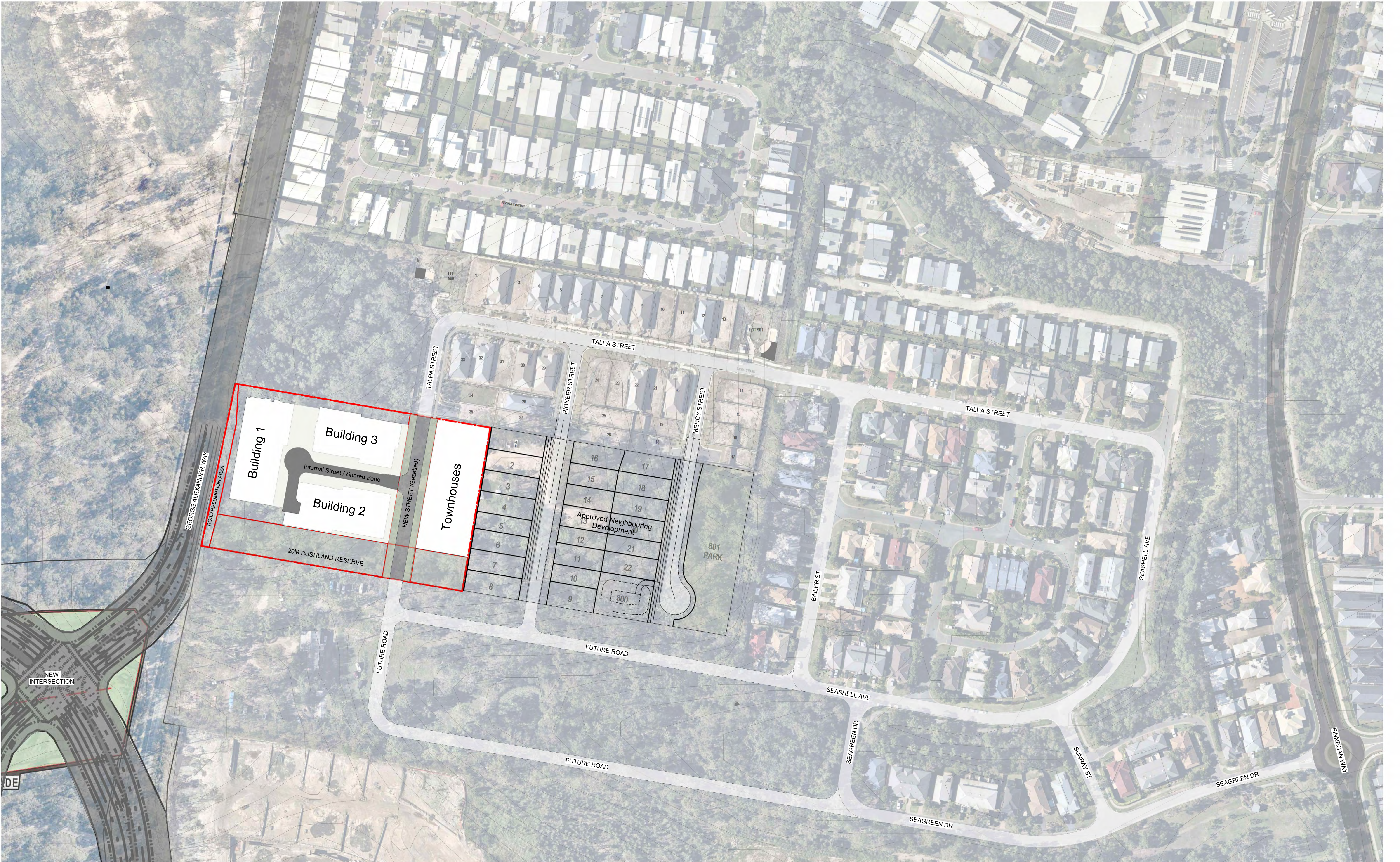


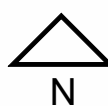
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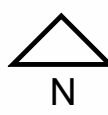


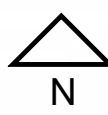


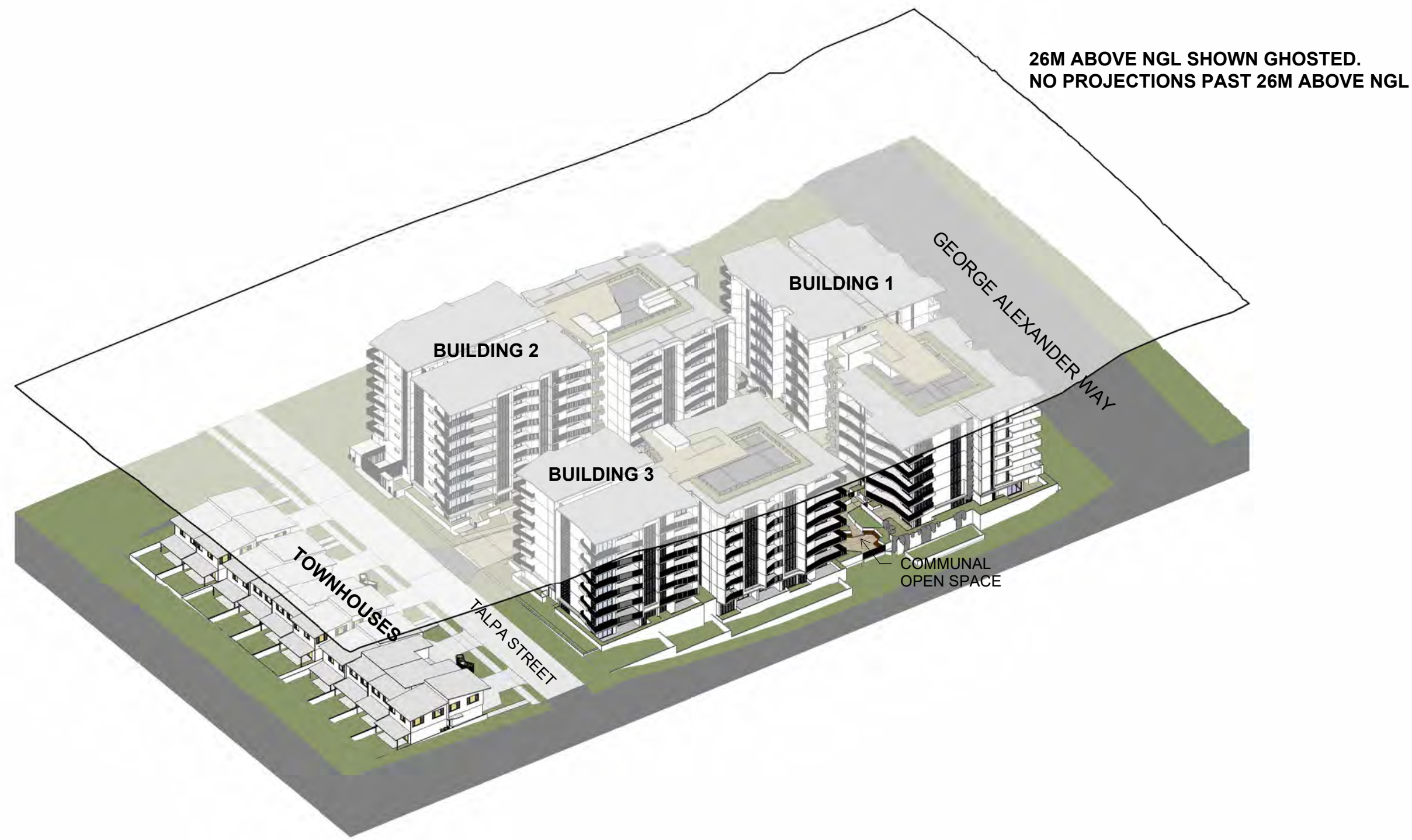




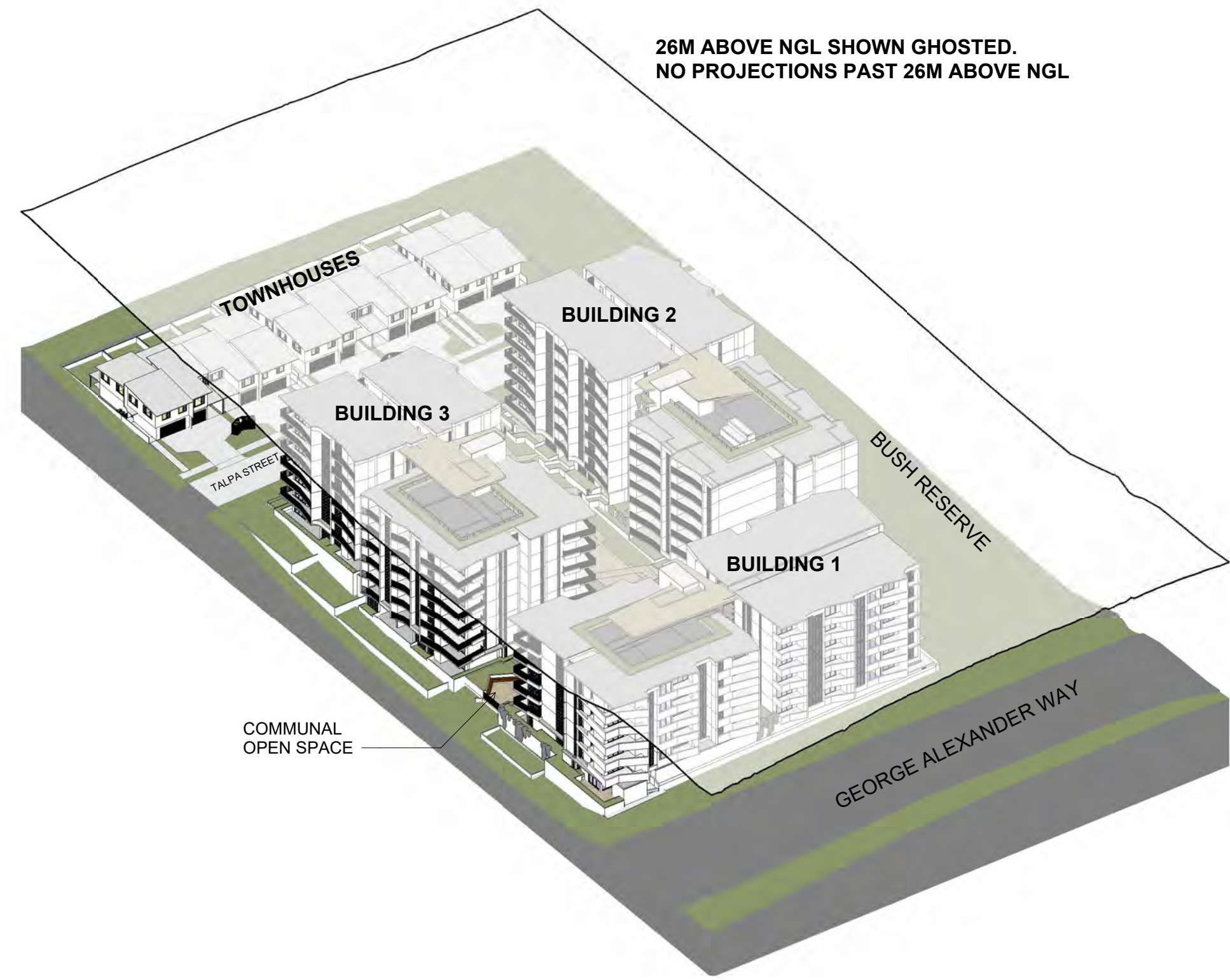




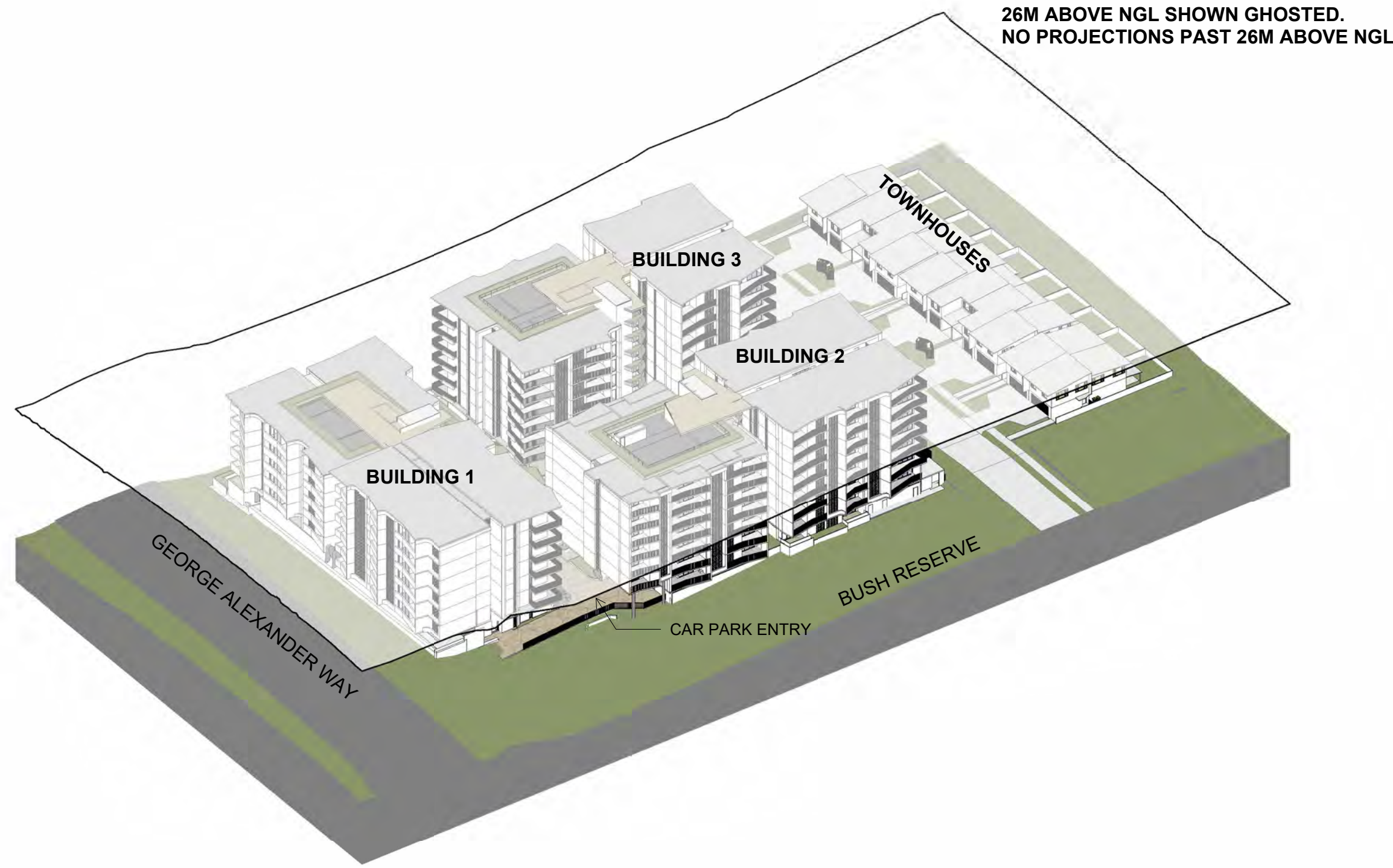




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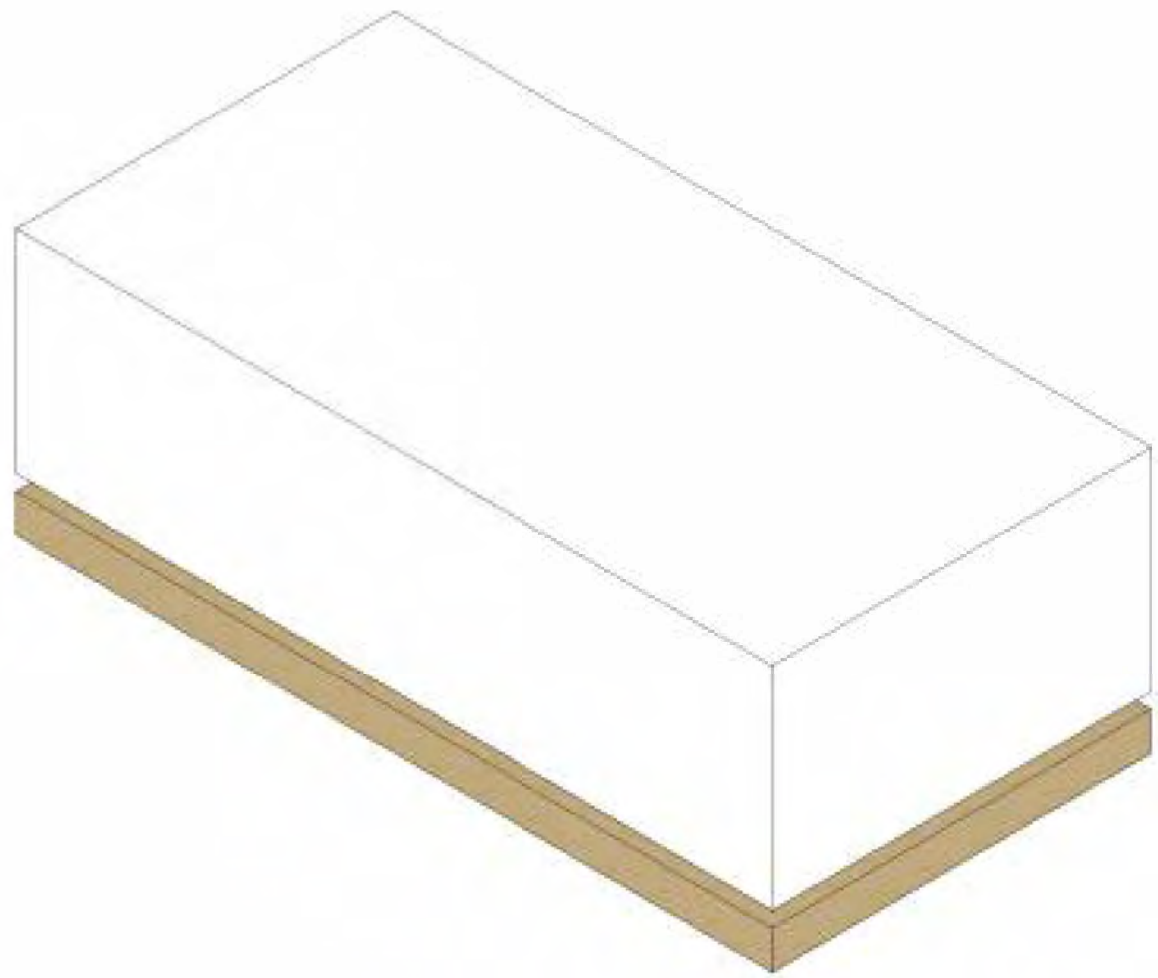
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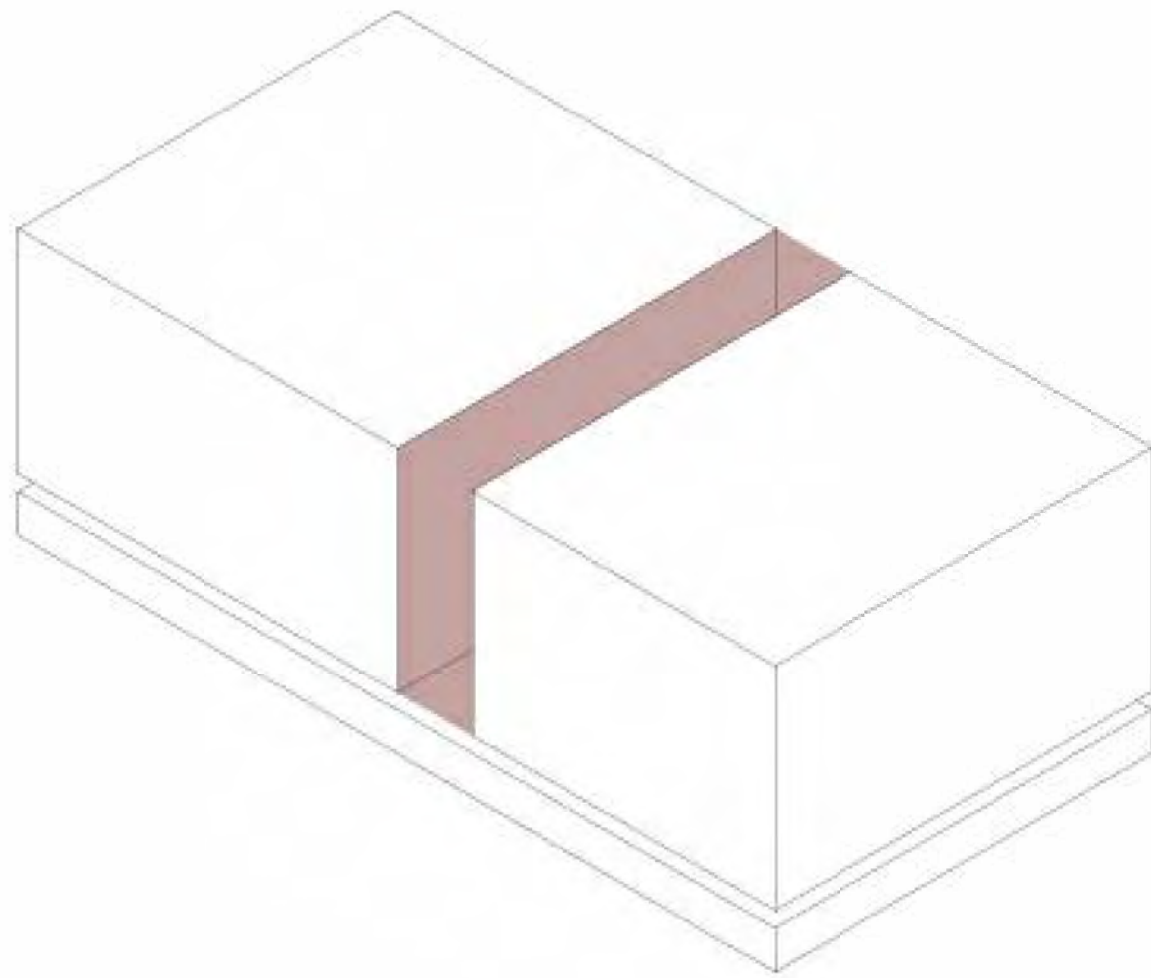
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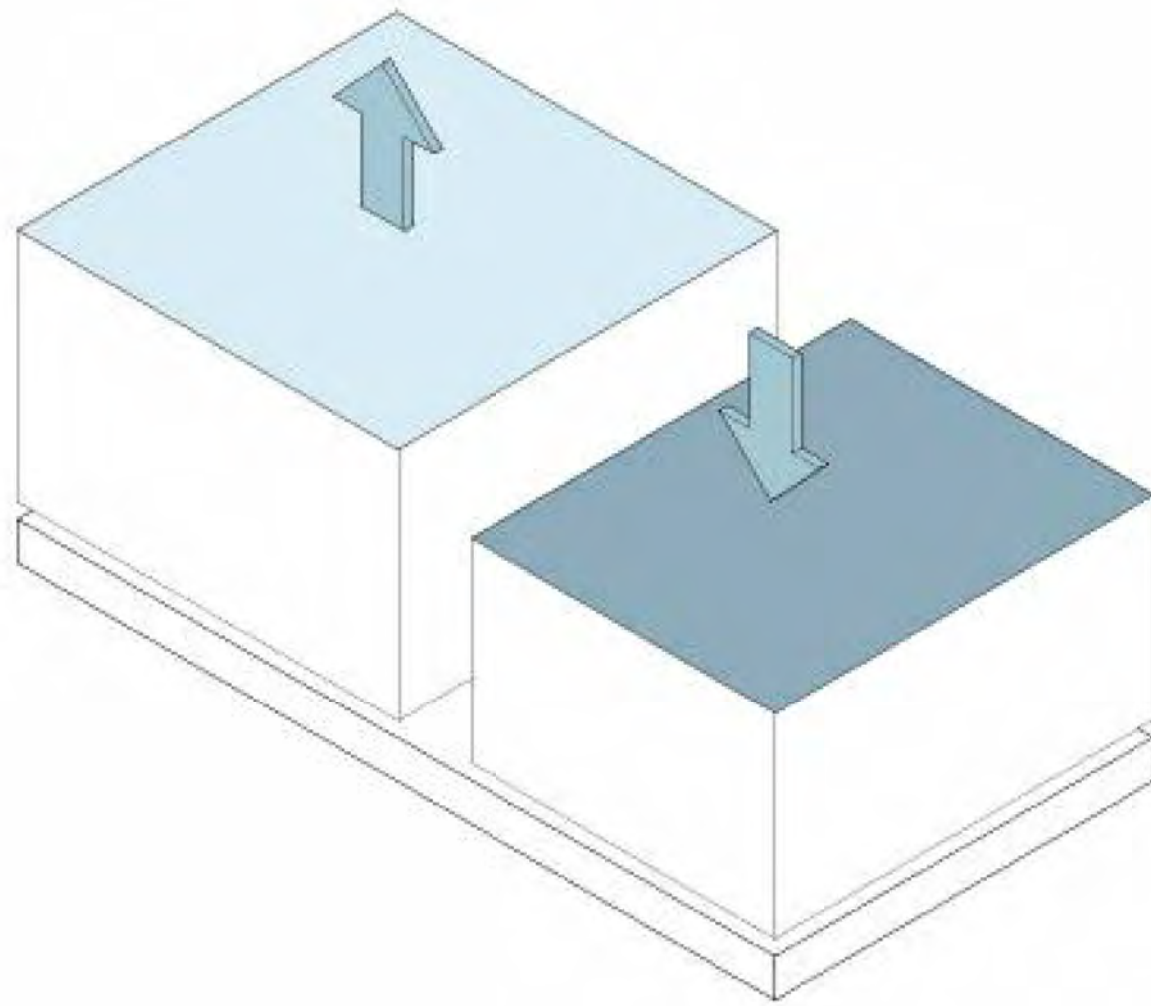
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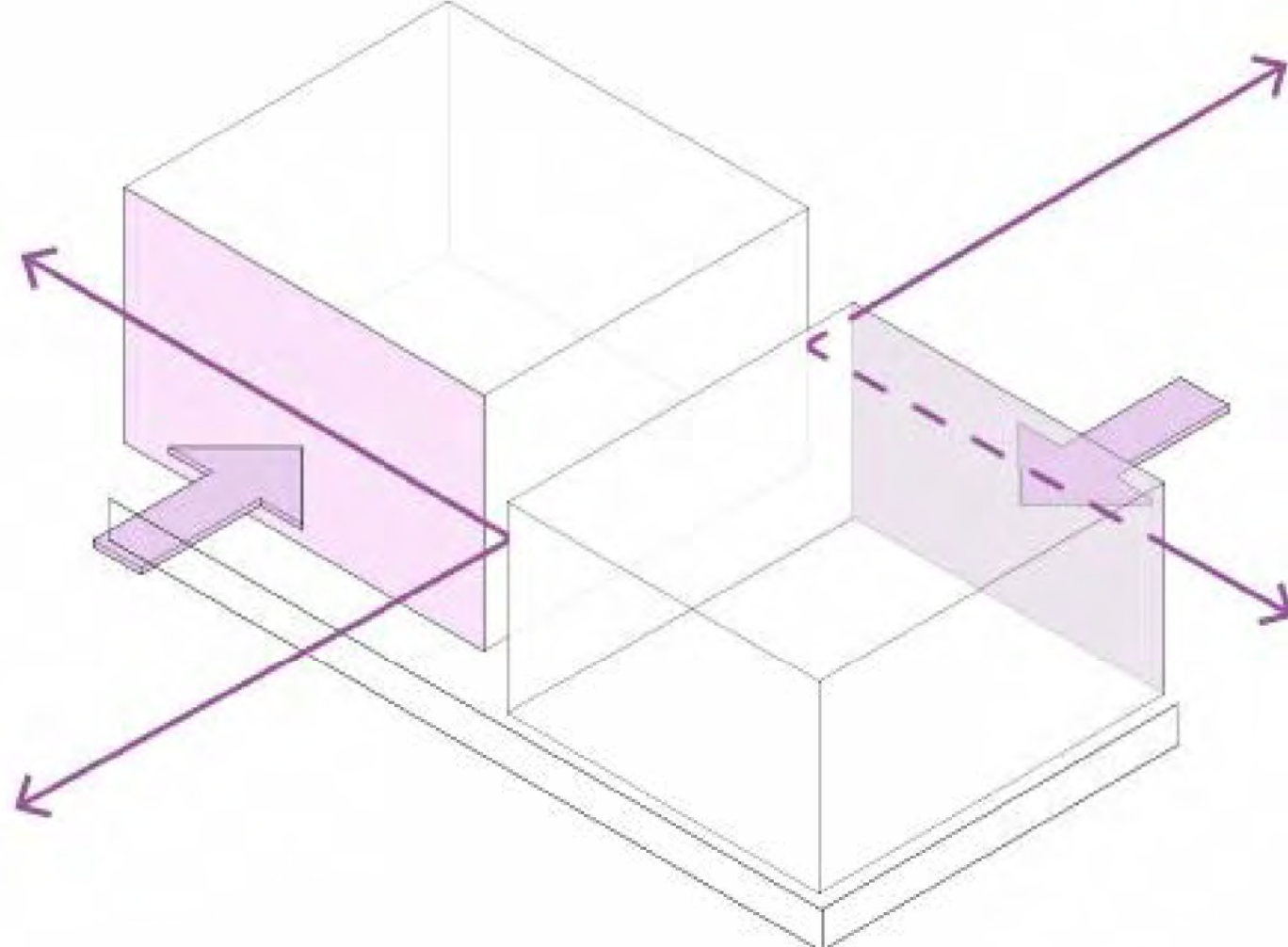
Use topography to sleeve parking & non active uses.



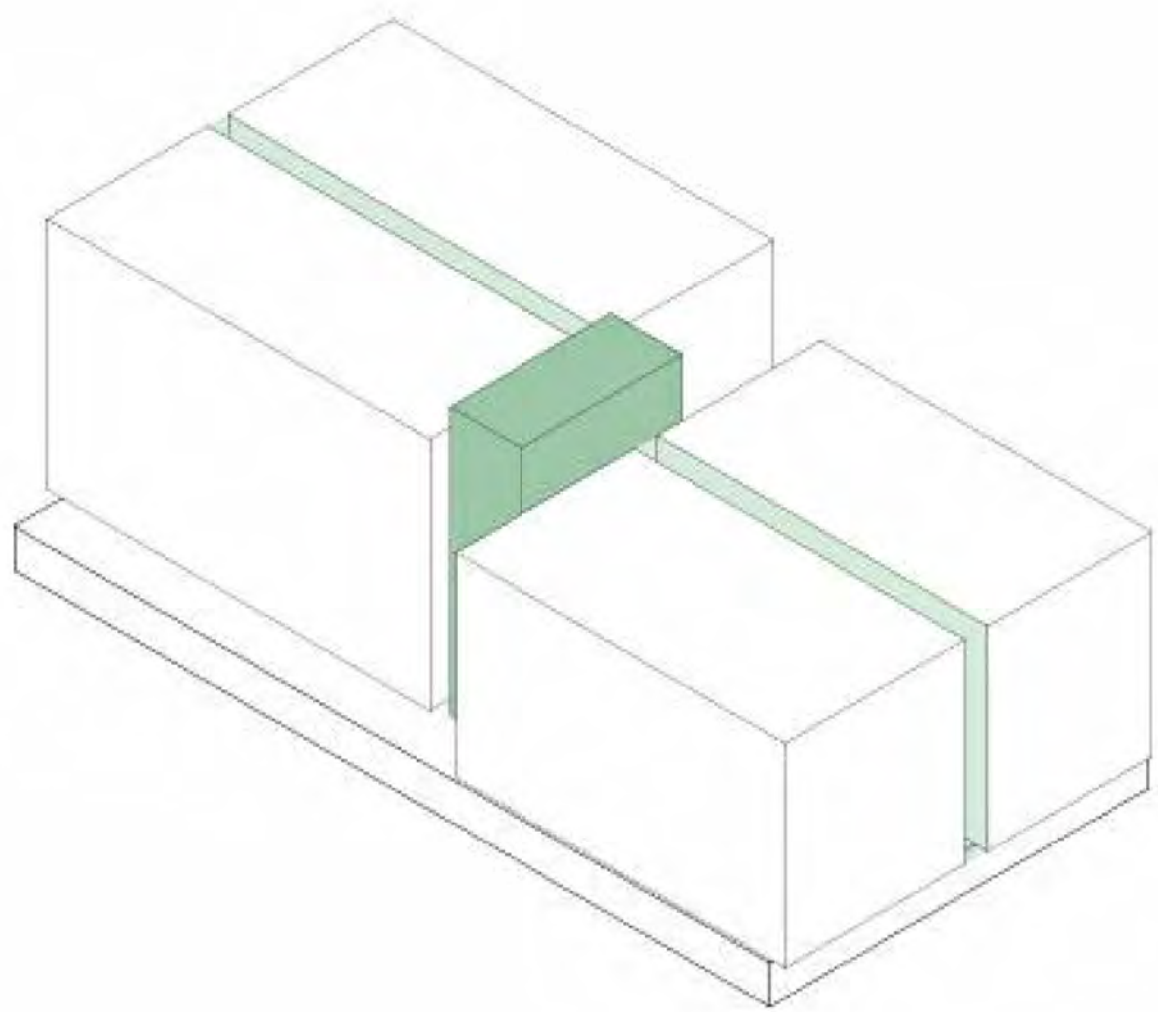
Break up building bulk and scale



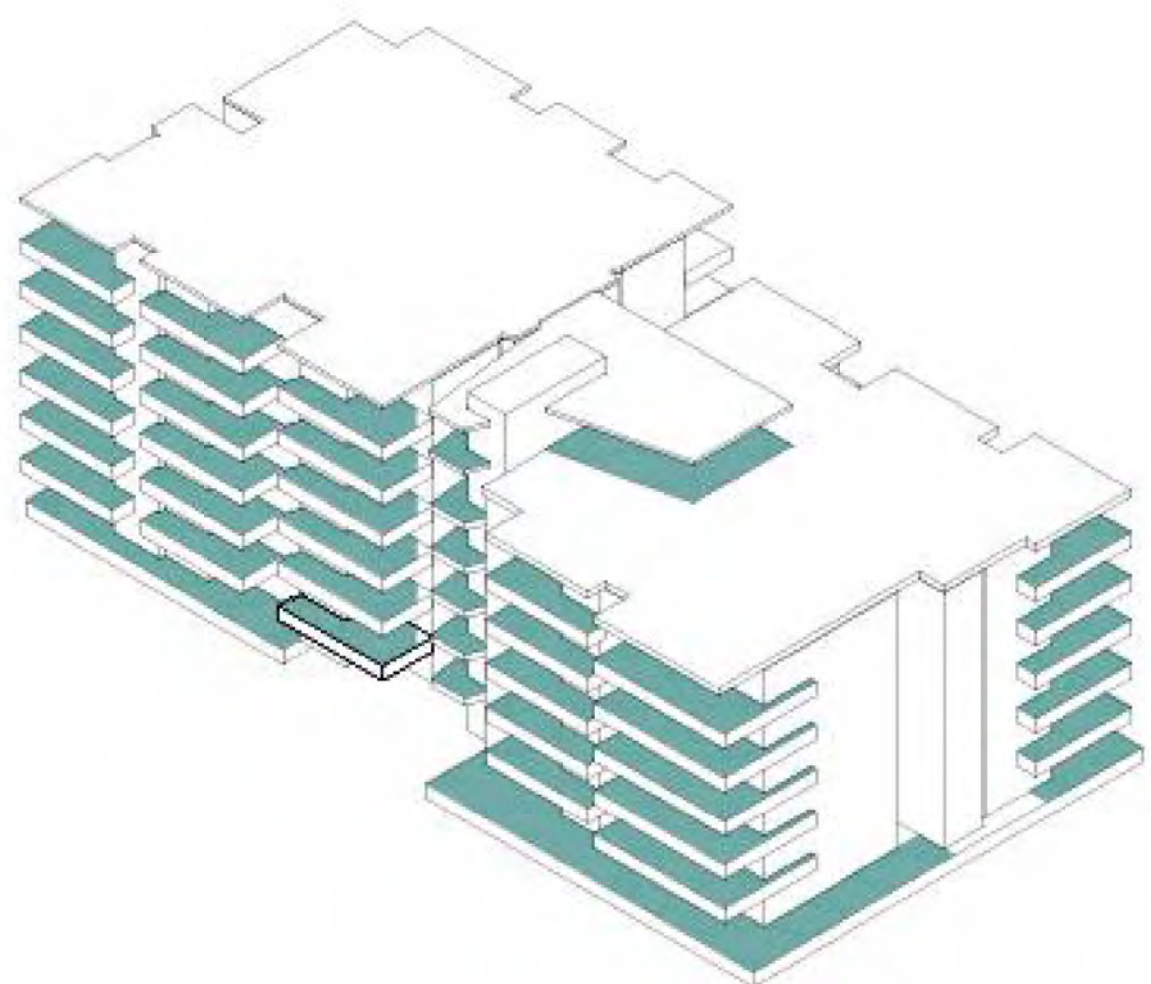
Vary building height to step with topography



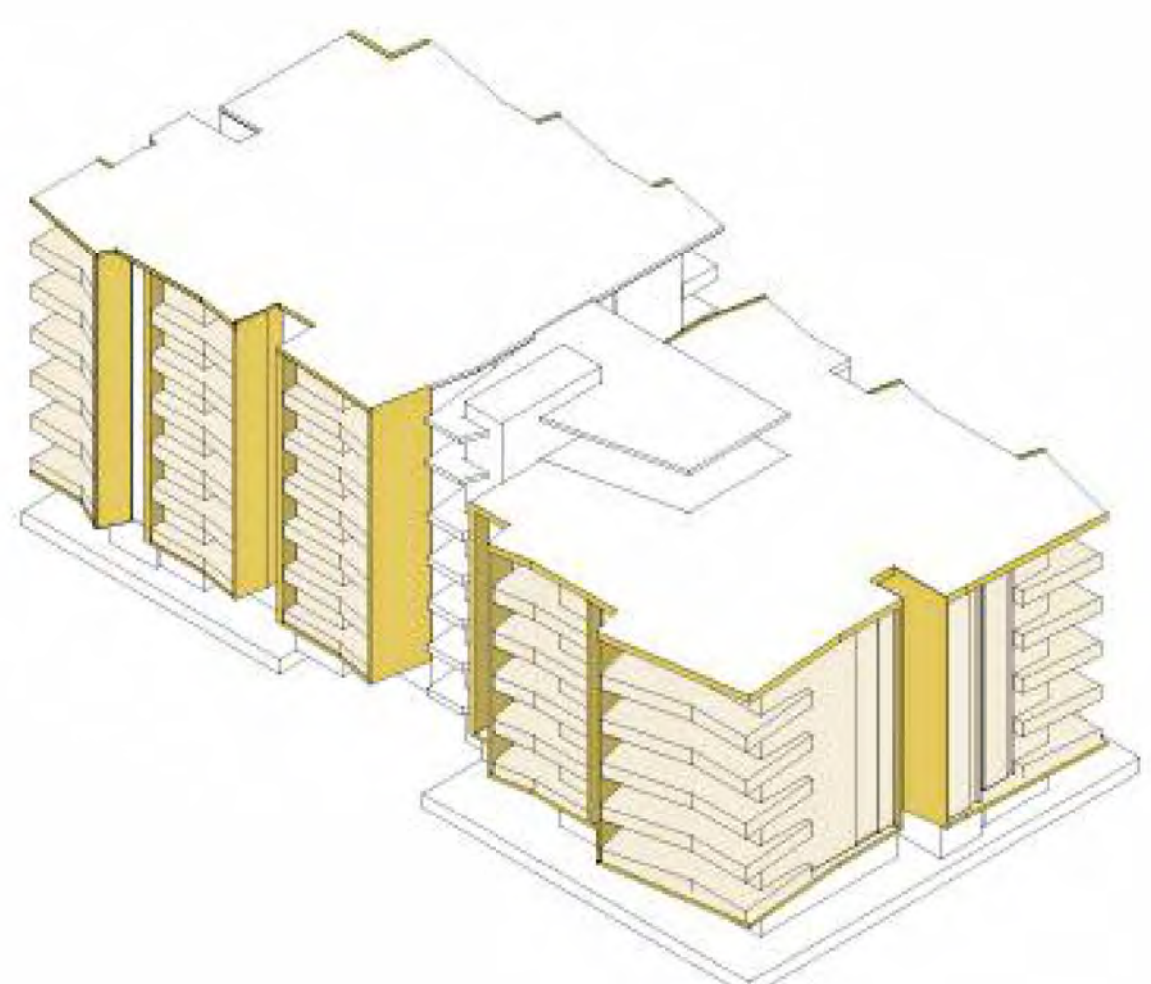
Step building forms to introduce views to corner units



Create naturally ventilated corridors and lobbies.



Articulate building edges with balconies

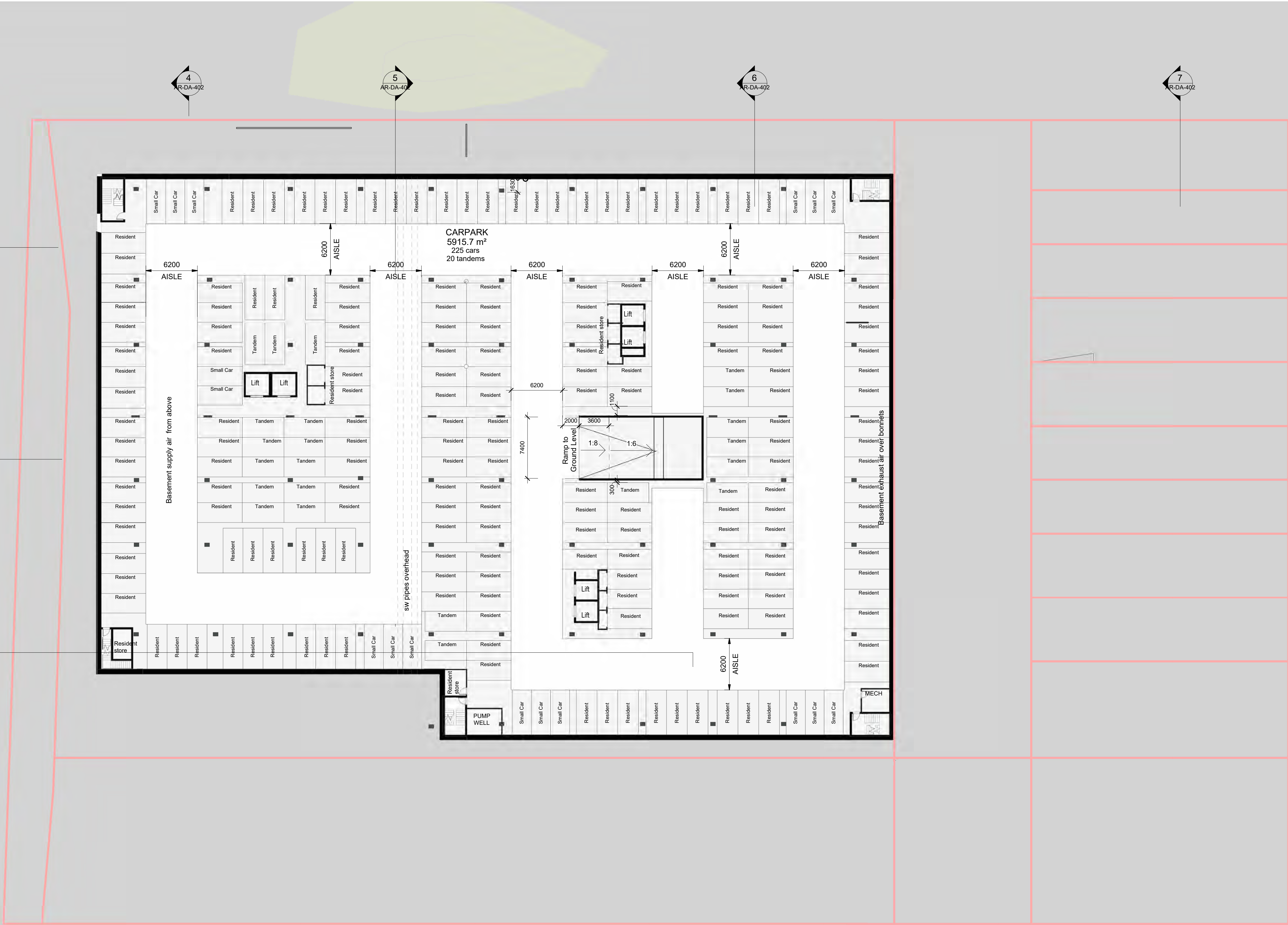


Direct views away from other units to prevent overlook and shield from south west



Intergrate landscape up into building forms



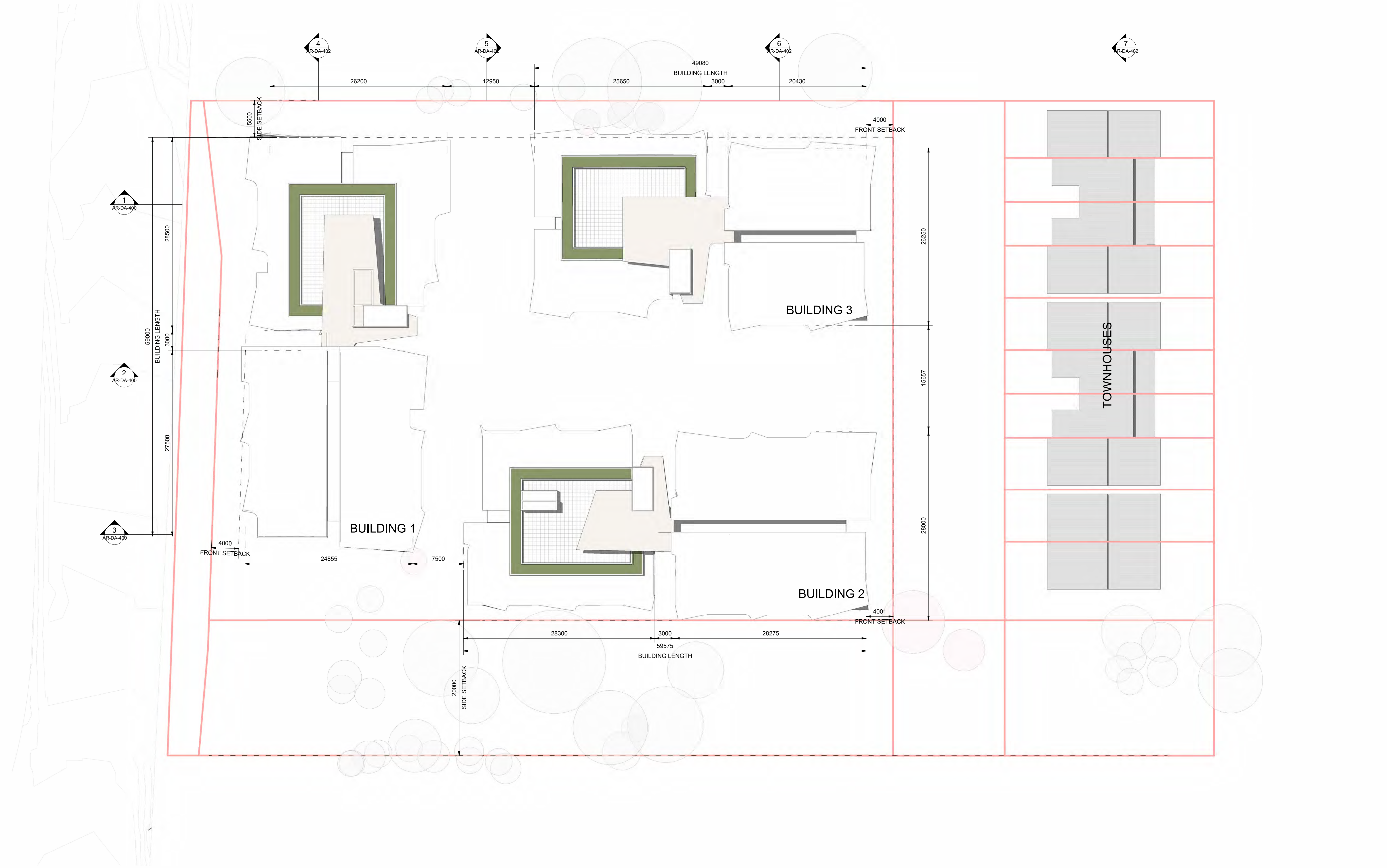












MATERIAL & FINISHES LEGEND

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BAT-1	Batten Screen
BLK-1	Rendered Blockwork - Paint Finish (White Coloured)
BLK-2	Rendered Blockwork - Paint Finish (Warm Colour)
BLK-3	Concrete Face Blockwork (Dark Colour - Sealed)
BLK-4	Concrete Blockwork (Grey)
CLD-A	Lightweight Cladding - Type A (Light Colour)
CLD-B	Lightweight Cladding - Type B (Dark Colour)
CON-1	Concrete Roof (White Coloured)
CON-2	Concrete Slab Edge (White Coloured)
CON-3	Concrete Upstand (White Coloured)
TIL-1	Blockwork Wall - Tile Finish
FEN-1	Fence (Max 1800mm Above Ground)
SCR-1	Batten Screen - Vertical (Bronze)
LVR-1	Glazed Louvres With Crimsafe Screen
LVR-2	Metal Weatherproof Louvre
MRS-1	Metal Roof Sheetting (Light Colour)
TRL-1	Cable Trellis / Fall Protection
SGD-1	Sliding Glass Door With Crimsafe Screen
SGW-1	Sliding Glass Window With Crimsafe Screen
SSB-1	Sunshading Blade - Precast Concrete (Grey)
SSA-1	Sunshading Awning



1 Overall Elevation - North

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2 Overall Elevation South

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TRL-1	Cable Trellis / Fall Protection
SGD-1	Sliding Glass Door With Crimsafe Screen
SGW-1	Sliding Glass Window With Crimsafe Screen
SSB-1	Sunshading Blade - Precast Concrete (Grey)
SSA-1	Sunshading Awning



1 Overall Elevation - West

AR-DA-201 1 : 250



2 Building 2 & 3 Elevation - East

AR-DA-201 1 : 250

DEVELOPMENT APPROVAL

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Client

Coomera GA Pty Ltd ATF
The Coomera GA Unit Trust

Rev

Initial

Description

Date

06.08.2024

Project

24013

54 George Alexander Way
54 George Alexander Way Coomera QLD
4209 Australia

DRAWING TITLE

Elevations - Lot 1 - East & West

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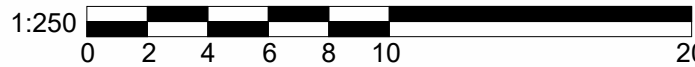
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SGW-1	Sliding Glass Window With Crimsafe Screen
SSB-1	Sunshading Blade - Precast Concrete (Grey)
SSA-1	Sunshading Awning



1 Building 1 Elevation - East



2 Building 2 Elevation - North



3 Building 3 Elevation - South

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Client
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24013
54 George Alexander Way
54 George Alexander Way Coomera QLD
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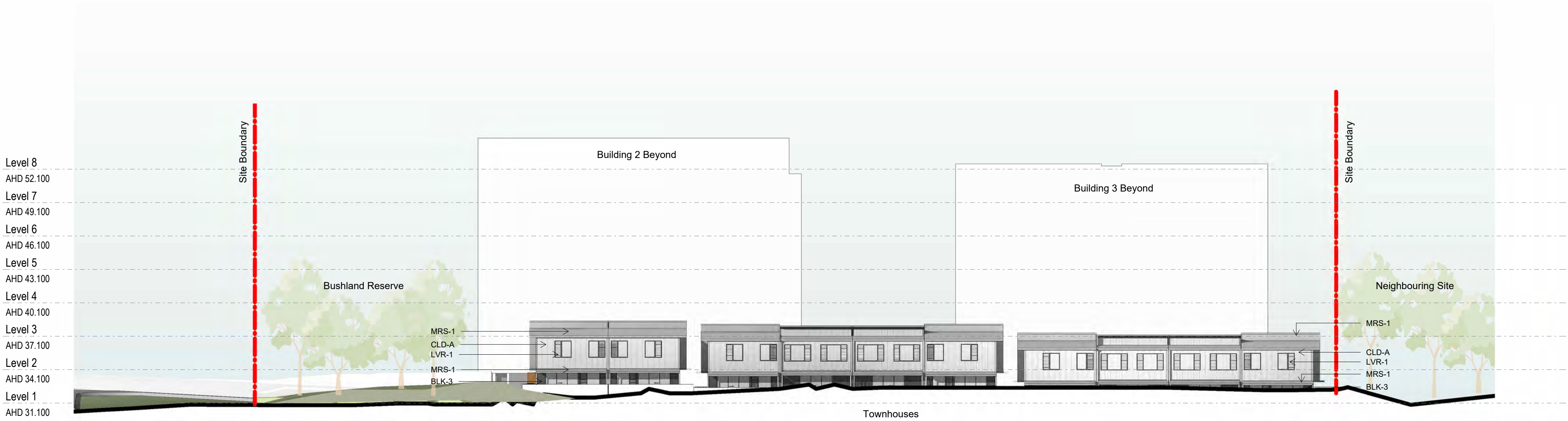


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SGD-1	Sliding Glass Door With Crimsafe Screen
SGW-1	Sliding Glass Window With Crimsafe Screen
SSB-1	Sunshading Blade - Precast Concrete (Grey)
SSA-1	Sunshading Awning



1 Townhouse Elevation West



2 Overall Elevation - East

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A DJ Material Change of Use Application Issue 06.08.2024

Project
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54 George Alexander Way
54 George Alexander Way Coomera QLD
4209 Australia

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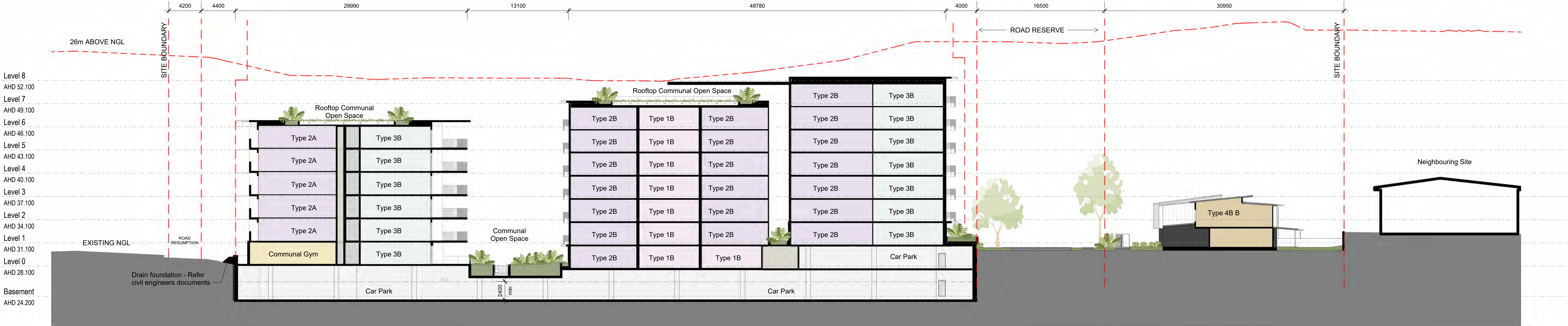


DEVELOPMENT APPROVAL

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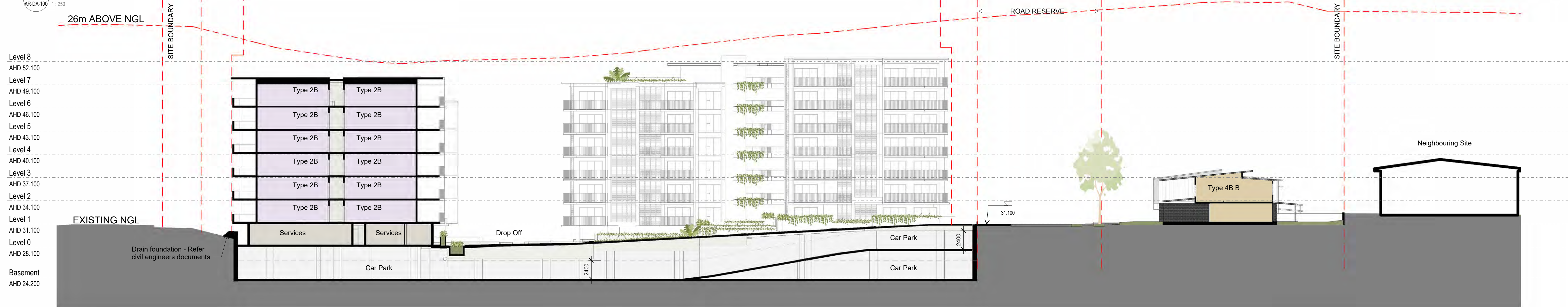
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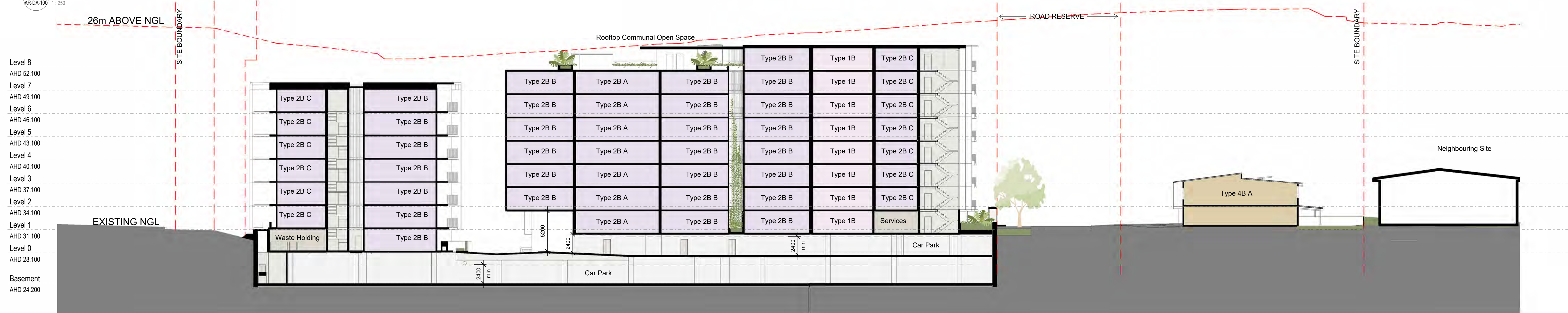
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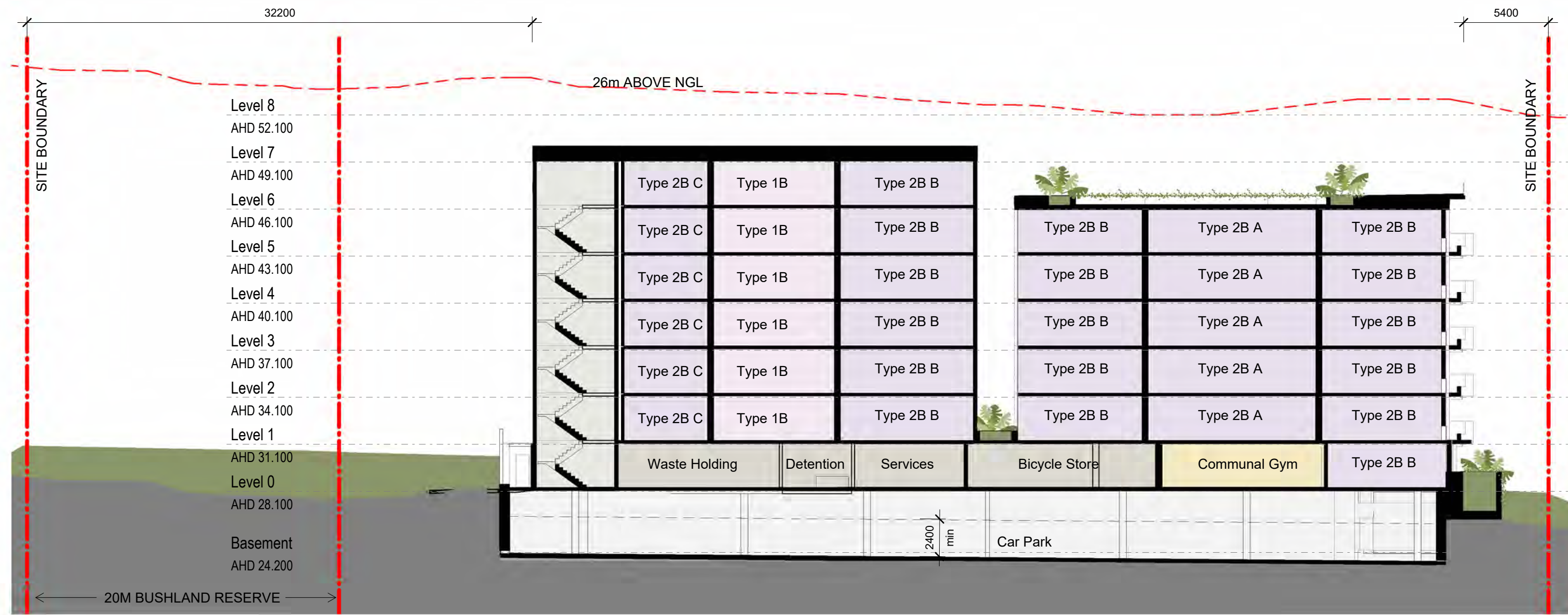


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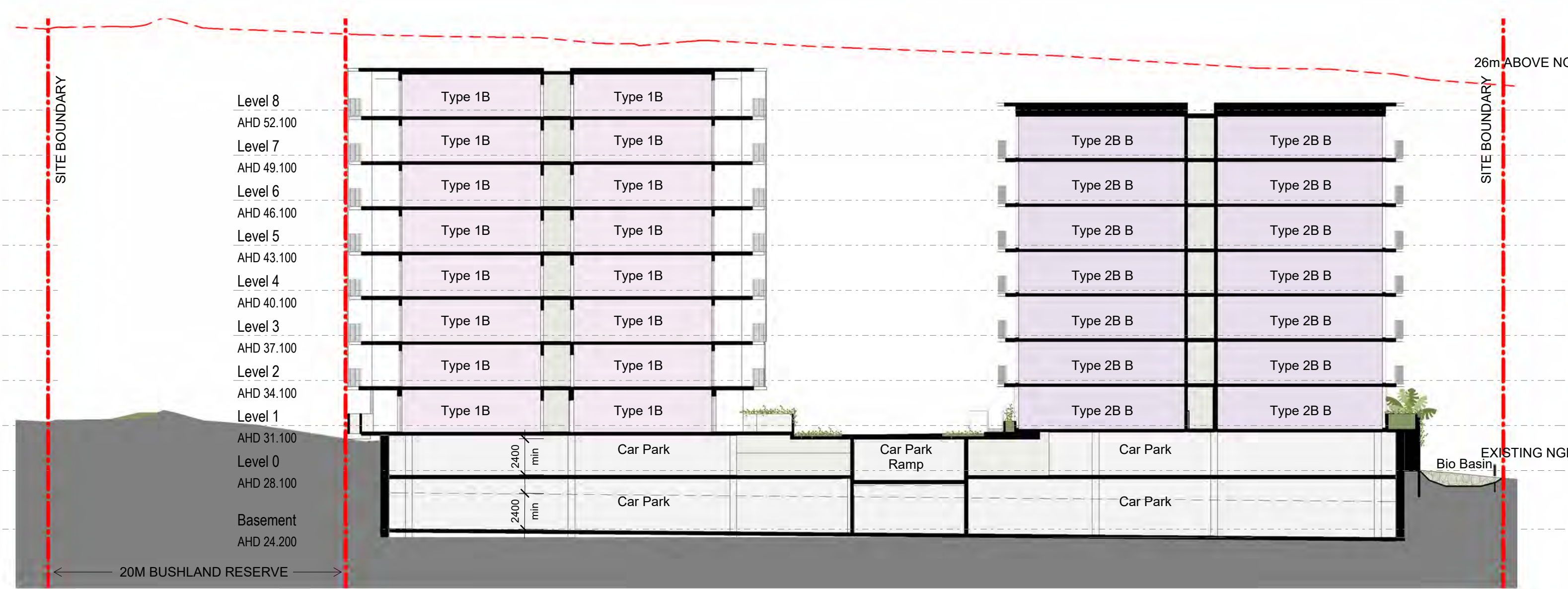
Section 3

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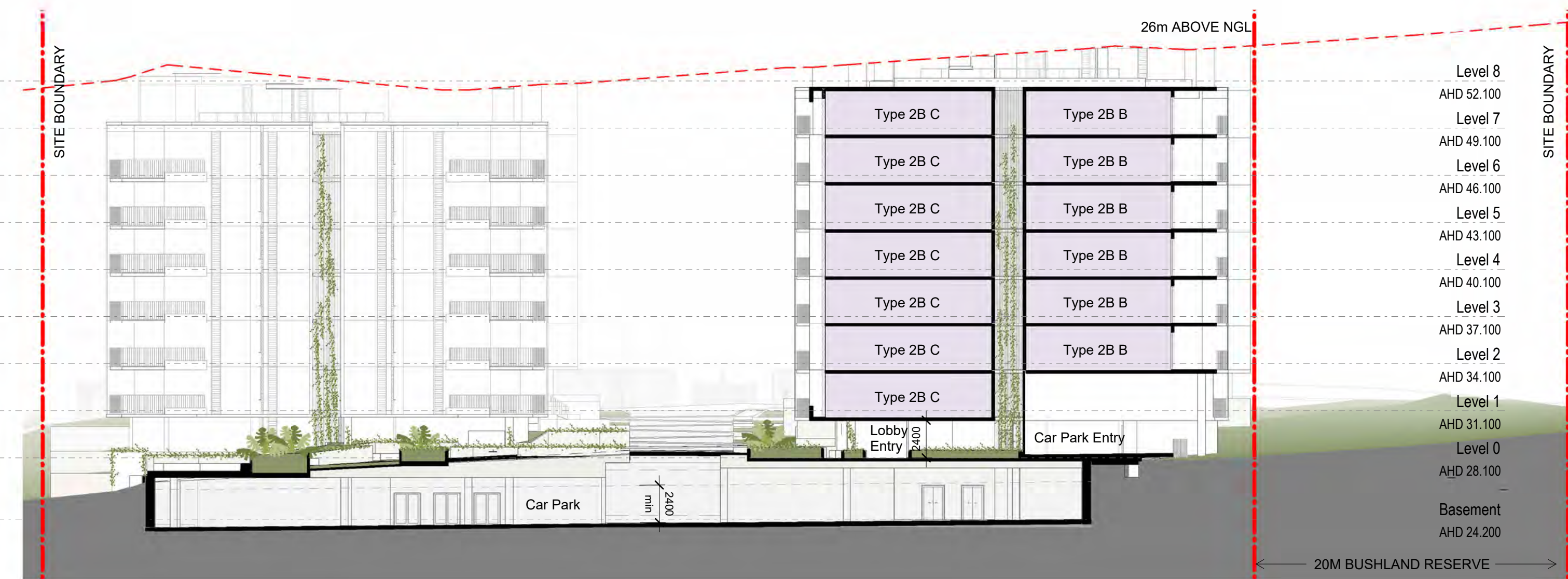
DEVELOPMENT APPROVAL



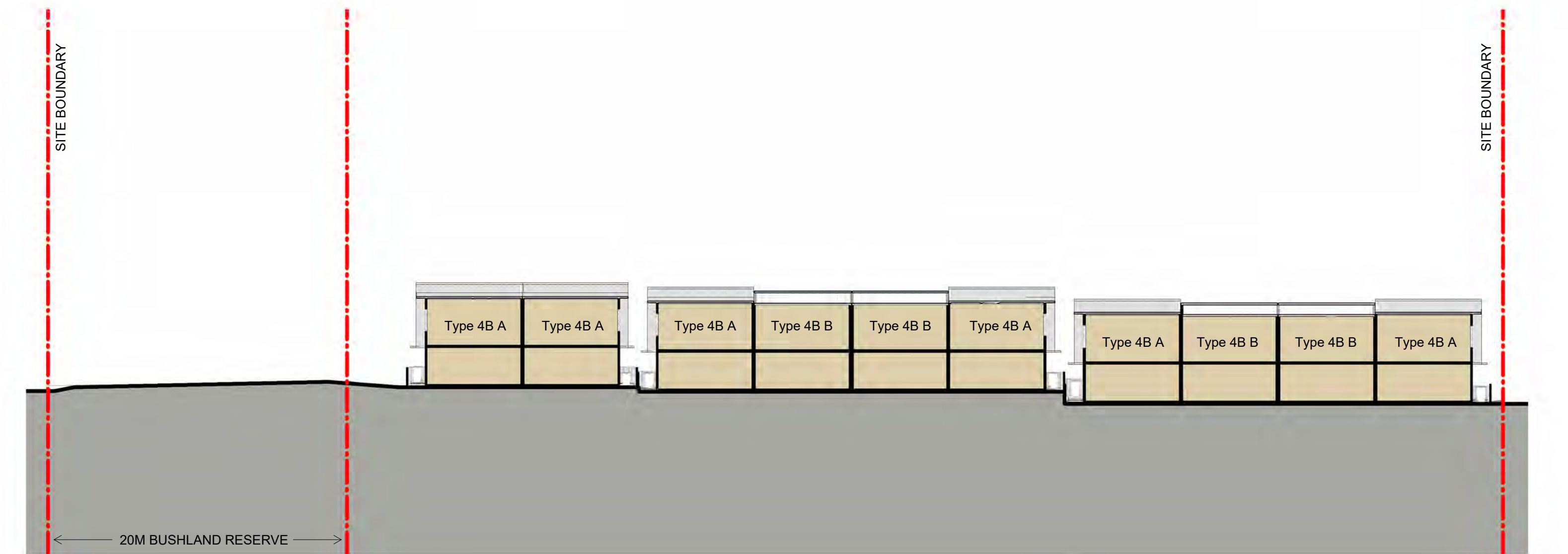
4 Section 4
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6 Section 6
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5 Section 5
AR-DA-100 1:250



7 Section 7
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Appendix B

*Environment Protection and Biodiversity
Conservation Act 1999*
Protected Matters Report



Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 01-Jul-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	98
Listed Migratory Species:	67

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	103
Whales and Other Cetaceans:	2
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	7
Regional Forest Agreements:	None
Nationally Important Wetlands:	2
EPBC Act Referrals:	46
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	Buffer Status
Moreton bay	Within Ramsar site	In feature area

Listed Threatened Ecological Communities	[Resource Information]
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For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area	In feature area

Listed Threatened Species	[Resource Information]
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Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In buffer area only
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area	In buffer area only
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat may occur within area	In feature area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Erythroriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat known to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat may occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area	In buffer area only
FISH			
Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
FROG			
Litoria longburensis Wallum Sedge Frog [1821]	Vulnerable	Species or species habitat may occur within area	In feature area
Mixophyes fleayi Fleay's Frog [25960]	Endangered	Species or species habitat likely to occur within area	In feature area
INSECT			
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area	In feature area
MAMMAL			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chalinolobus dwyeri			
Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area	In feature area
Macroderma gigas			
Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata			
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Potorous tridactylus tridactylus			
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
Xeromys myoides			
Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
PLANT			
Acacia attenuata			
[10690]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Acronychia littoralis Scented Acronychia [8582]	Endangered	Species or species habitat may occur within area	In buffer area only
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Baloghia marmorata Marbled Balogia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Coleus habrophyllus listed as Plectranthus habrophyllus [91378]	Endangered	Species or species habitat likely to occur within area	In feature area
Coleus nitidus listed as Plectranthus nitidus Nightcap Plectranthus, Silver Plectranthus [91380]	Endangered	Species or species habitat may occur within area	In buffer area only
Corchorus cunninghamii Native Jute [14659]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat may occur within area	In feature area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In feature area
Cupaniopsis shirleyana Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat may occur within area	In feature area
Endiandra floydii Floyd's Walnut, Crystal Creek Walnut [52955]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Leichhardtia longiloba listed as Marsdenia longiloba Clear Milkvine [91911]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Lepidium peregrinum Wandering Pepper-cress [14035]	Endangered	Species or species habitat may occur within area	In buffer area only
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Notelaea lloydii Lloyd's Olive [15002]	Vulnerable	Species or species habitat may occur within area	In feature area
Owenia cepiodora Onionwood, Bog Onion, Onion Cedar [11344]	Vulnerable	Species or species habitat may occur within area	In feature area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area	In feature area
Planchonella eerwah Shiny-leaved Condoo, Black Plum, Wild Apple [17340]	Endangered	Species or species habitat likely to occur within area	In feature area
Randia moorei Spiny Gardenia [10577]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Sophora fraseri [8836]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Syzygium hodgkinsoniae Smooth-bark Rose Apple, Red Lilly Pilly [3539]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In feature area
Vincetoxicum woollsii listed as Tylophora woollsii [40080]	Endangered	Species or species habitat may occur within area	In feature area
Zieria collina [2178]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat may occur within area	In feature area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

SHARK			
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area	In buffer area only
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only

Listed Migratory Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In buffer area only
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area	In buffer area only
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In buffer area only
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In buffer area only
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In buffer area only
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area	In buffer area only
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area	In buffer area only
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In buffer area only
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
Calidris alba Sanderling [875]		Roosting known to occur within area	In buffer area only
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting known to occur within area	In buffer area only
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area	In buffer area only
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area	In buffer area only
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area	In buffer area only
Limicola falcinellus Broad-billed Sandpiper [842]	Vulnerable	Roosting known to occur within area	In buffer area only
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat may occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting known to occur within area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa brevipes Grey-tailed Tattler [851]	Endangered	Roosting known to occur within area	In buffer area only
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area	In buffer area only
Tringa incana Wandering Tattler [831]		Roosting known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]	Vulnerable	Roosting known to occur within area	In buffer area only
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In buffer area only
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In buffer area only
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
Calidris alba Sanderling [875]		Roosting known to occur within area	In buffer area only
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting known to occur within area overfly marine area	In buffer area only
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area	In buffer area only
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area overfly marine area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area overfly marine area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area	In buffer area only
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area overfly marine area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area	In buffer area only
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area	In buffer area only
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area overfly marine area	In buffer area only
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area overfly marine area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting known to occur within area overfly marine area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In buffer area only
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phaethon lepturus White-tailed Tropicbird [1014]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area overfly marine area	In buffer area only
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Recurvirostra novaehollandiae Red-necked Avocet [871]	Endangered	Roosting known to occur within area overfly marine area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]		Species or species habitat known to occur within area overfly marine area	In feature area
Sterna striata White-fronted Tern [799]		Migration route may occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Thalassarche cauta Shy Albatross [89224]		Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area overfly marine area	In buffer area only
Tringa incana as Heteroscelus incanus Wandering Tattler [831]		Roosting known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area	In buffer area only
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area overfly marine area	In buffer area only
Fish			
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In buffer area only
Campichthys tryoni Tryon's Pipefish [66193]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area	In buffer area only
Corythoichthys ocellatus Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area	In buffer area only
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area	In buffer area only
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area	In buffer area only
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area	In buffer area only
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area	In buffer area only
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area	In buffer area only
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In buffer area only
Hippocampus kelloggi Kellogg's Seahorse, Great Seahorse [66723]		Species or species habitat may occur within area	In buffer area only
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area	In buffer area only
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]	Endangered	Species or species habitat may occur within area	In buffer area only
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]		Species or species habitat likely to occur within area	In buffer area only
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only
Micrognathus andersonii Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area	In buffer area only
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area	In buffer area only
Microphis manadensis Manado Pipefish, Manado River Pipefish [66258]		Species or species habitat may occur within area	In buffer area only
Solegnathus dunckeri Duncker's Pipehorse [66271]		Species or species habitat may occur within area	In buffer area only
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area	In buffer area only
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In buffer area only
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In buffer area only
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In buffer area only
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In buffer area only
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In buffer area only
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In buffer area only
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

Whales and Other Cetaceans			[Resource Information]
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area	In buffer area only
Sousa sahalensis Australian Humpback Dolphin [87942]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Coombabah	Fish Habitat Area (B)	QLD	In buffer area only
Coomera	Fish Habitat Area (B)	QLD	In buffer area only
Moreton Bay	Marine Park	QLD	In buffer area only
Pimpama	Conservation Park	QLD	In buffer area only
Pimpama	Fish Habitat Area (B)	QLD	In buffer area only
Saltwater Creek	Conservation Park	QLD	In buffer area only
Southern Moreton Bay Islands	National Park	QLD	In buffer area only

Nationally Important Wetlands			[Resource Information]
Wetland Name	State		Buffer Status
Lake Coombabah	QLD		In buffer area only
Moreton Bay	QLD		In buffer area only

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status Buffer Status

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Coomera Woods Master Planned Development, 49 & 51 George Alexander Way, Coomera, Qld	2017/8134		Assessment	In feature area
Oxenford quarry extractive boundary realignment, Oxenford, Qld	2018/8356		Assessment	In buffer area only
Stage 1 Coomera Connector	2020/8646		Post-Approval	In buffer area only
Controlled action				
Clearing of vegetation for the Gainsborough Greens residential subdivision	2013/6751	Controlled Action	Post-Approval	In buffer area only
Coomera Woods master planned residential development, Qld	2015/7610	Controlled Action	Completed	In feature area
Gold Coast International Marine Precinct	2008/4002	Controlled Action	Post-Approval	In buffer area only
Gold Coast Marine Development	2005/2404	Controlled Action	Completed	In buffer area only
Jacobs Well Airport	2004/1361	Controlled Action	Completed	In feature area
Jacobs Well Airport Project	2003/947	Controlled Action	Completed	In feature area
Nambucca Crescent residential subdivision Pimpama, QLD	2014/7190	Controlled Action	Post-Approval	In buffer area only
Pimpama Wastewater Treatment Plant, Recycled Water	2007/3407	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
Clearing of vegetaion for a residential subdivision on Karingal Drive, Pimpama, QLD	2013/6716	Not Controlled Action	Completed	In buffer area only
Coomera Hospital and Health Precinct	2021/8946	Not Controlled Action	Completed	In feature area
Coomera Town Centre shopping centre development, Coomera Qld	2014/7292	Not Controlled Action	Completed	In buffer area only
Coomera Waters Phase 2	2003/941	Not Controlled Action	Completed	In buffer area only
Coomera Woods Protection Zone, 49 George Alexander Way, Coomera Qld	2018/8214	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Development of the Heritage Park Sporting Precinct, Rifle Range Road, Pimpama, Qld	2016/7831	Not Controlled Action	Completed	In buffer area only
Development of the Pimpama Junction Shopping Centre Precinct	2013/6772	Not Controlled Action	Completed	In buffer area only
Develop Stage 1 & 2 (Lots 21, 23 & 24), Coomera Urban Village, Cnr Foxwell Rd & Finnegan Wy, Coomera	2014/7124	Not Controlled Action	Completed	In feature area
Dreamworld Town Centre Development	2001/484	Not Controlled Action	Completed	In buffer area only
GCCC Northern Wastewater Strategy and associated Reclaimed Water Scheme - Stage	2001/282	Not Controlled Action	Completed	In feature area
Heavy Rail Duplication Project, Coomera to Helensvale, Qld	2014/7392	Not Controlled Action	Completed	In buffer area only
Helensvale Waste Transfer Station Expansion, QLD	2012/6581	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Low impact industrial development and associated infrastructure, Old Pacific Highway, Coomera	2013/6819	Not Controlled Action	Completed	In buffer area only
Mixed use development, Lot 138, 62 Finnegan Way, Coomera, Qld	2015/7488	Not Controlled Action	Completed	In feature area
Pimpama School, Coomera, Qld	2018/8252	Not Controlled Action	Completed	In buffer area only
Prawn Aquaculture Expansion	2001/322	Not Controlled Action	Completed	In buffer area only
Residential development, Big Sky Estate (Stages 5-8), Coomera	2015/7535	Not Controlled Action	Completed	In feature area
Residential Development Stages 4 & 9-10 Big Sky Estate, Coomera, QLD	2014/7192	Not Controlled Action	Completed	In feature area
Residential subdivision, 152 Yawalpah Road, Pimpama, Qld	2013/6914	Not Controlled Action	Completed	In buffer area only
Residential subdivision, 54-64 Karingal Drive, Pimpama, Qld	2013/6739	Not Controlled Action	Completed	In buffer area only
Residential subdivision, Reserve Road	2004/1333	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Road Extension - Foxwell Road, Coomera	2021/8990	Not Controlled Action	Completed	In buffer area only
To develop high and medium density residential dwellings, commercial precincts and open space areas.	2014/7291	Not Controlled Action	Completed	In buffer area only
Upgraded sewerage infrastructure in the Helensvale/Coombah catchment	2004/1427	Not Controlled Action	Completed	In buffer area only
Vegetation clearing for a residential development at 109 Amity Road, Coomera	2013/6821	Not Controlled Action	Completed	In buffer area only
Vegetation clearing for the Gainsborough Park Residential Estate	2012/6667	Not Controlled Action	Completed	In buffer area only
Vegtation clearing for a residential development at 100 Amity Road, Coomera	2013/6797	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
Kerkins Levee Rehabilitation Project, Phases 2-8	2004/1435	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Residential development, hotel & extension of Lake Serenity	2004/1863	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Waterway Downs Urban Estate Development	2010/5730	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Coomera, QLD	2013/7104	Referral Decision	Completed	In buffer area only
Coomera high school, Coomera, Qld	2018/8240	Referral Decision	Completed	In buffer area only
New School, Foxwell Road, Coomera, Qld	2018/8333	Referral Decision	Completed	In buffer area only
Residential Development on Finnegan Way, Coomera, QLD	2012/6685	Referral Decision	Completed	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
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- [-Australian Government, Department of Defence](#)
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- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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Appendix C

Nature Conservation Act 1992

Wildlife Online Search Results



Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: Native
Queensland status: Rare and threatened species
Records: Confirmed
Date: Since 1980
Latitude: -27.841
Longitude: 153.3228
Distance: 5
Email: chelseamailer@saundershavill.com
Date submitted: Monday 01 Jul 2024 06:53:09
Date extracted: Monday 01 Jul 2024 07:00:03

The number of records retrieved = 18

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Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Myobatrachidae	<i>Crinia tinnula</i>	wallum froglet		V		2
animals	birds	Accipitridae	<i>Erythroriorchis radiatus</i>	red goshawk		E	E	1
animals	birds	Apodidae	<i>Hirundapus caudacutus</i>	white-throated needletail		V	V	3
animals	birds	Cacatuidae	<i>Calyptorhynchus lathami</i>	glossy black-cockatoo		V		2
animals	birds	Cacatuidae	<i>Calyptorhynchus lathami lathami</i>	glossy black-cockatoo (eastern)		V	V	16
animals	birds	Scolopacidae	<i>Limosa lapponica baueri</i>	Western Alaskan bar-tailed godwit		V	E	8
animals	birds	Scolopacidae	<i>Numenius madagascariensis</i>	eastern curlew		E	CE	9
animals	birds	Strigidae	<i>Ninox strenua</i>	powerful owl		V		16
animals	mammals	Muridae	<i>Xeromys myoides</i>	water mouse		V	V	23
animals	mammals	Phascolarctidae	<i>Phascolarctos cinereus</i>	koala		E	E	197
animals	mammals	Pseudocheiridae	<i>Petauroides volans volans</i>	southern greater glider		E	E	1
plants	land plants	Lamiaceae	<i>Coleus habrophyllus</i>			E	E	2/2
plants	land plants	Lauraceae	<i>Endiandra wongawallanensis</i>			E		6/6
plants	land plants	Myrtaceae	<i>Rhodamnia rubescens</i>	scrub turpentine		CR	CE	1
plants	land plants	Myrtaceae	<i>Rhodomyrtus psidioides</i>	native guava		CR	CE	1
plants	land plants	Myrtaceae	<i>Syzygium moorei</i>	Durobby		V	V	1/1
plants	land plants	Proteaceae	<i>Macadamia integrifolia</i>	macadamia nut		V	V	3/1
plants	land plants	Sapindaceae	<i>Cupaniopsis newmanii</i>	long-leaved tuckeroo		NT		2

CODES

I - Y indicates that the taxon is introduced to Queensland and has naturalised.

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992*.

The codes are Extinct (EX), Extinct in the Wild (PE), Critically Endangered (CR), Endangered (E), Vulnerable (V), Near Threatened (NT), Special Least Concern (SL) and Least Concern (C).

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999*.

The values of EPBC are Extinct (EX), Extinct in the Wild (XW), Critically Endangered (CE), Endangered (E), Vulnerable (V) and Conservation Dependent (CD).

Records - The first number indicates the total number of records of the taxon (wildlife records and species listings for selected areas).

This number is output as 99999 if it equals or exceeds this value. A second number located after a / indicates the number of specimen records for the taxon.

This number is output as 999 if it equals or exceeds this value.

Appendix D

Environmental Searches



Environmental searches

54 George Alexander Way, Coomera
Queensland, 4209
Coomera GA Pty Ltd ATF
11 July 2024

11241

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Property attributes		11 July 2024
Address	54 George Alexander Way, Queensland, 4209	
Lot/plan(s)	Lot 96 on RP187418	
Area (ha)	3.01 ha	
Local government area	Gold Coast City Council	

1. Federal Matters of National Environmental Significance

A Protected Matters Report was generated from the environment.gov.au website and returned the following results. These matters may occur within a 5 km radius of the site and are protected under the *Environment Protection and Biodiversity Conservation Act 1999*.

World Heritage Properties:	0
National Heritage Places:	0
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5

Community	Status	RE Mapped
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	No
Coastal Swamp Oak (<i>Casuarina glauca</i>) Forest of New South Wales and South East Queensland ecological community	Endangered	No
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	No
Lowland Rainforest of Subtropical Australia	Critically Endangered	No
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	No

Listed Threatened Species: 98

Listed Migratory Species: 67

2. State Matters

2.1 Nature Conservation Act 1992 and subordinate legislation

Protected Plants Flora Survey Trigger Map Partially within high risk area

2.2 Vegetation Management Act 1999 and subordinate legislation

Regulated Vegetation Management Map and Vegetation Management Supporting Map

Regional Ecosystem	VMA status	Category	Area (ha)
12.11.5	Least Concern	B	0.82
12.11.24	Least Concern	B	1.19
Non-remnant	None	X	1.00
Essential Habitat		<i>Phascolarctos cinerus</i> (Koala)	
Wetland/s		Not present Present	
Bioregion		Coastal bioregions and sub-regions	

2.3 Koala Habitat Mapping

Koala Priority Area (KPA)	Not within KPA
Koala Habitat Area	Koala Habitat Area (core)

2.4 State Planning Policy Interactive Mapping System (selected environmental matters)

Error! Reference source not found.	MSES – Wildlife habitat (koala habitat areas – core)
	MSES – Regulated vegetation (essential habitat)
	MSES – Regulated vegetation (intersecting a watercourse)
SPP — Coastal Environment	Not within coastal management district
SPP — Water Quality	Does not apply
SPP — Natural Hazards Risk and Resilience	Flood hazard area - Local Government flood mapping area
	Bushfire prone area
	Medium Potential Bushfire Intensity
	Potential Impact Buffer

2.5 Development Assessment Mapping System

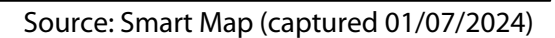
DAMS — Coastal Protection	Does not apply
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DAMS — Fish Habitat Areas

Does not apply

3. Local matters — Gold Coast LGA

Zoning	Medium Density Residential High Density Residential
Overlay — Significance Biodiversity Areas	Does not apply
Overlay — Environmental Significance Priority Species	State significant species Koala Habitat Areas
Overlay — Significance Vegetation Management	Medium priority vegetation
Overlay — Significance Wetlands and Watercourse	Local significant wetlands buffer area



Map 2 — Aerial image (current)



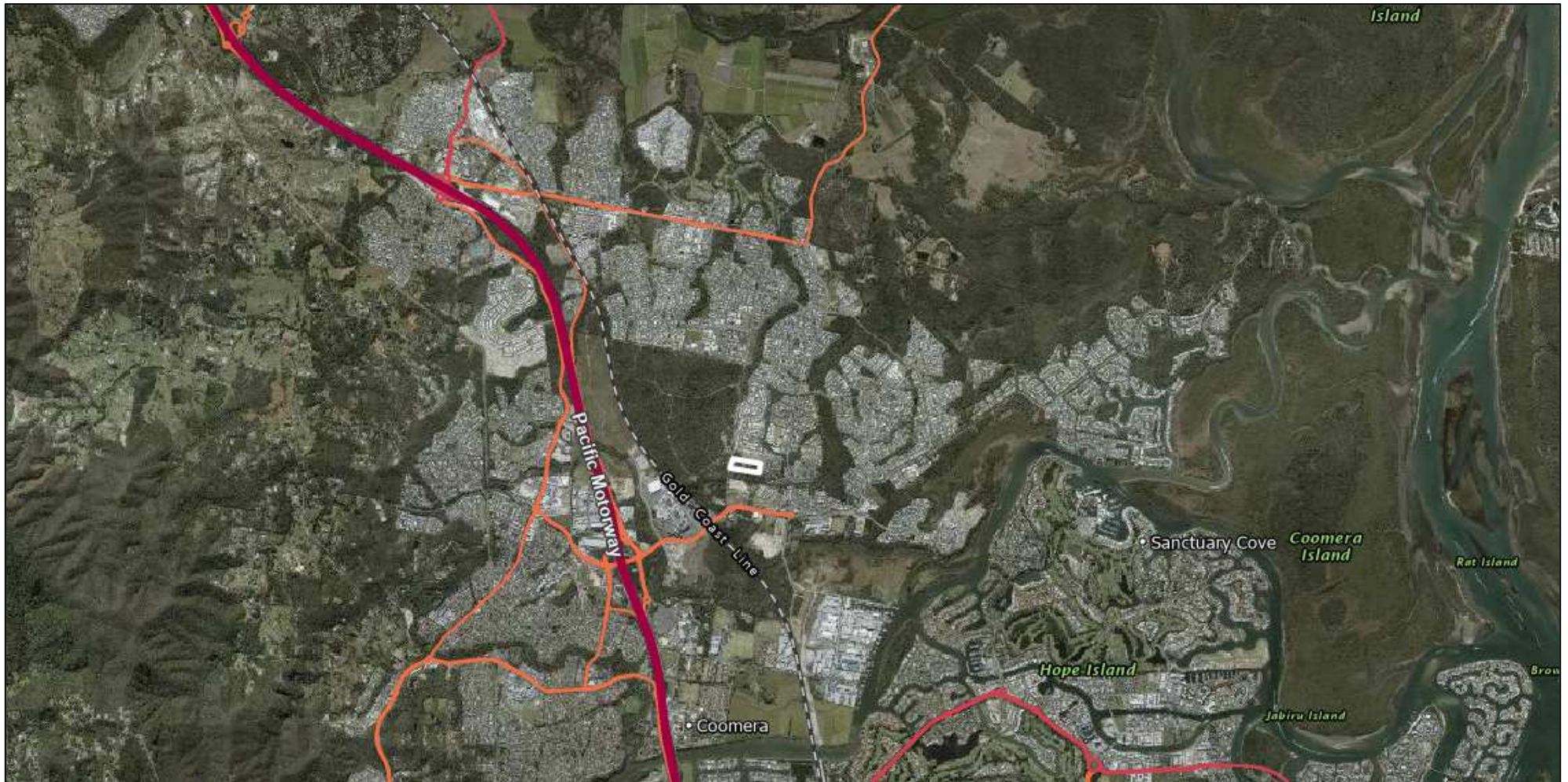
Source: Qld Globe (captured 01/07/2024)

Map 3 — Aerial image (historical)



Source: Qld Globe (captured 01/11/1983)

Map 4 — Locality



Source: Qld Globe (captured 01/07/2024)

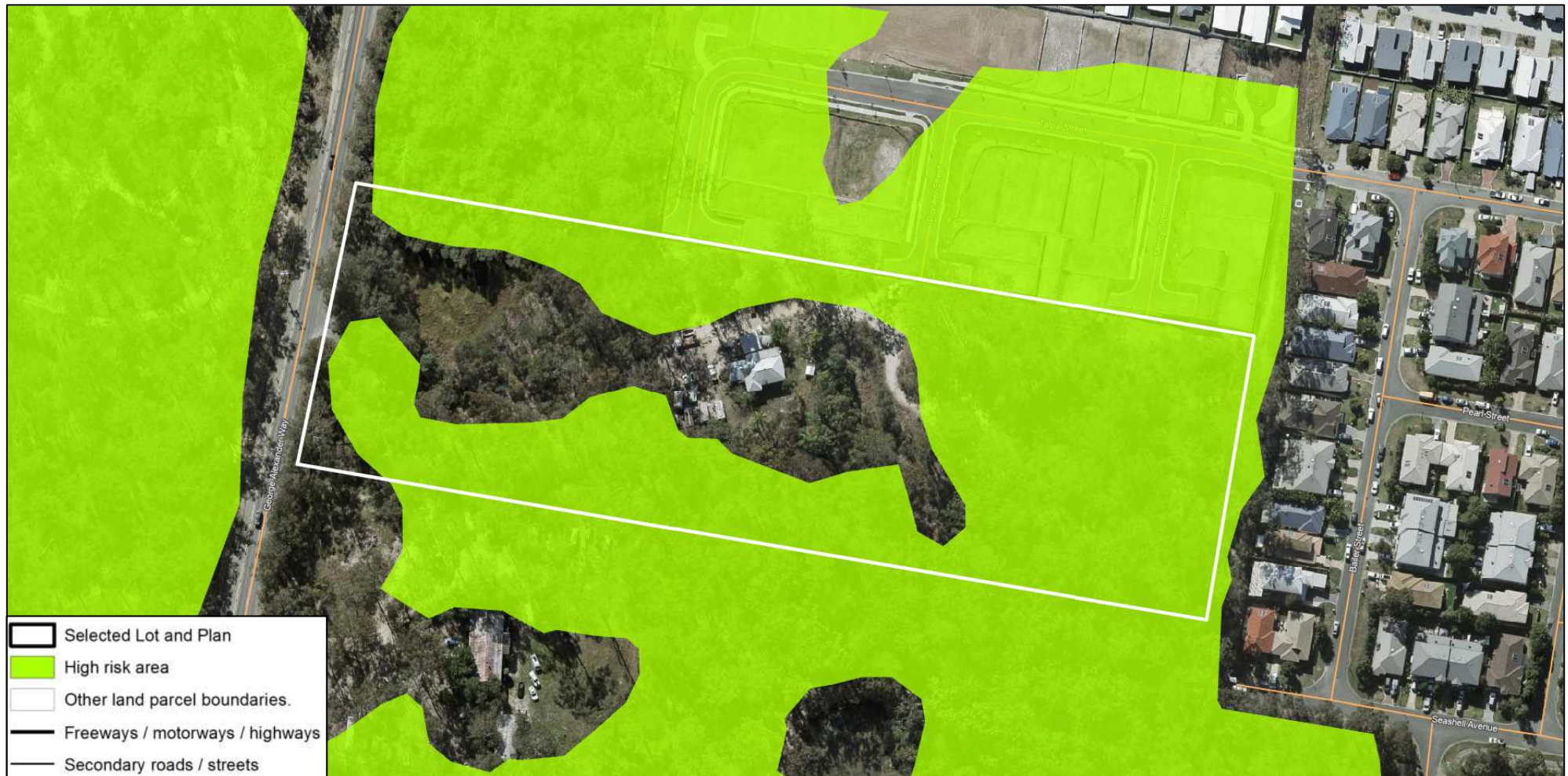
Map 5 — Elevation Contours



Source: Qld Globe (captured 01/07/2024)

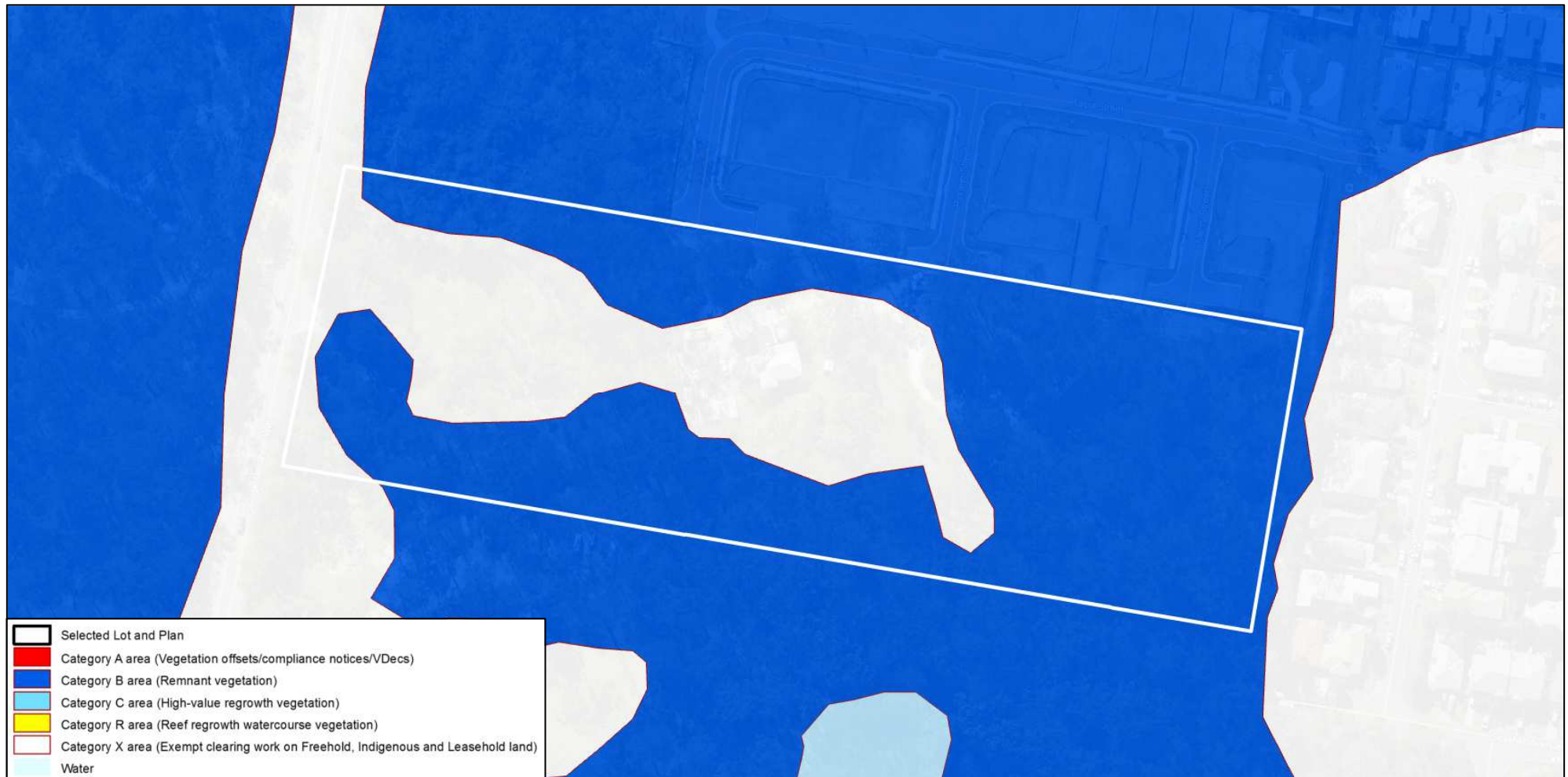
State matters

Map 6 — Protected Plants Flora Survey Trigger Map



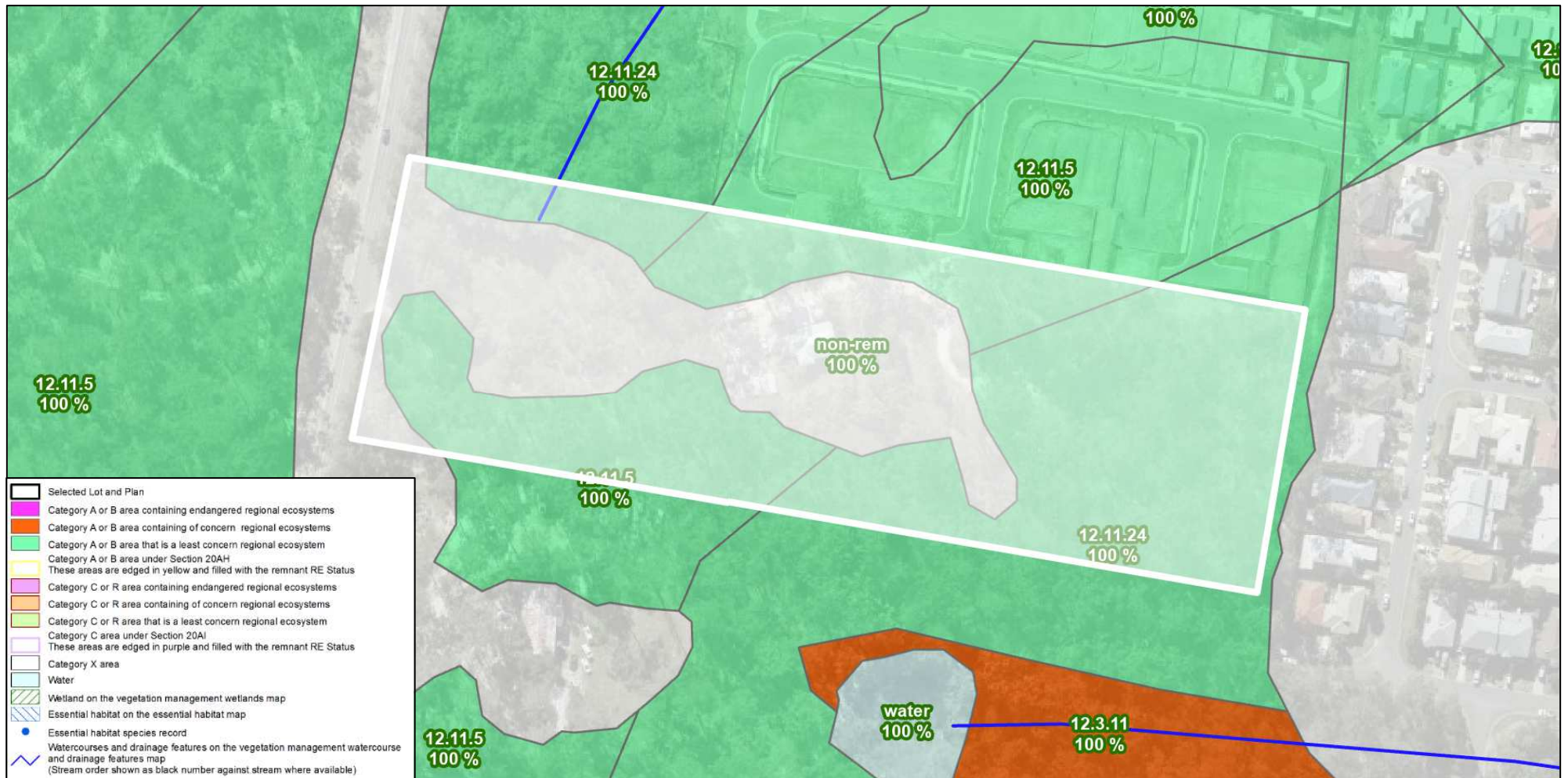
Source: Queensland Government (Department of Environment and Science) 2023 (captured 01/07/2024)

Map 7 — Regulated Vegetation Management Map



Source: Queensland Government (Department of Environment and Science) 2023 (captured 01/07/2024)

Map 8 — Vegetation Management Supporting Map



Source: Queensland Government (Department of Environment and Science) 2023 (captured 01/07/2024)

Map 9 — Vegetation Management Pre-clear Ecosystem Map



Source: Queensland Government (Department of Environment and Science) 2023 (captured 01/07/2024)

Map 10 — Koala priority area and koala habitat area



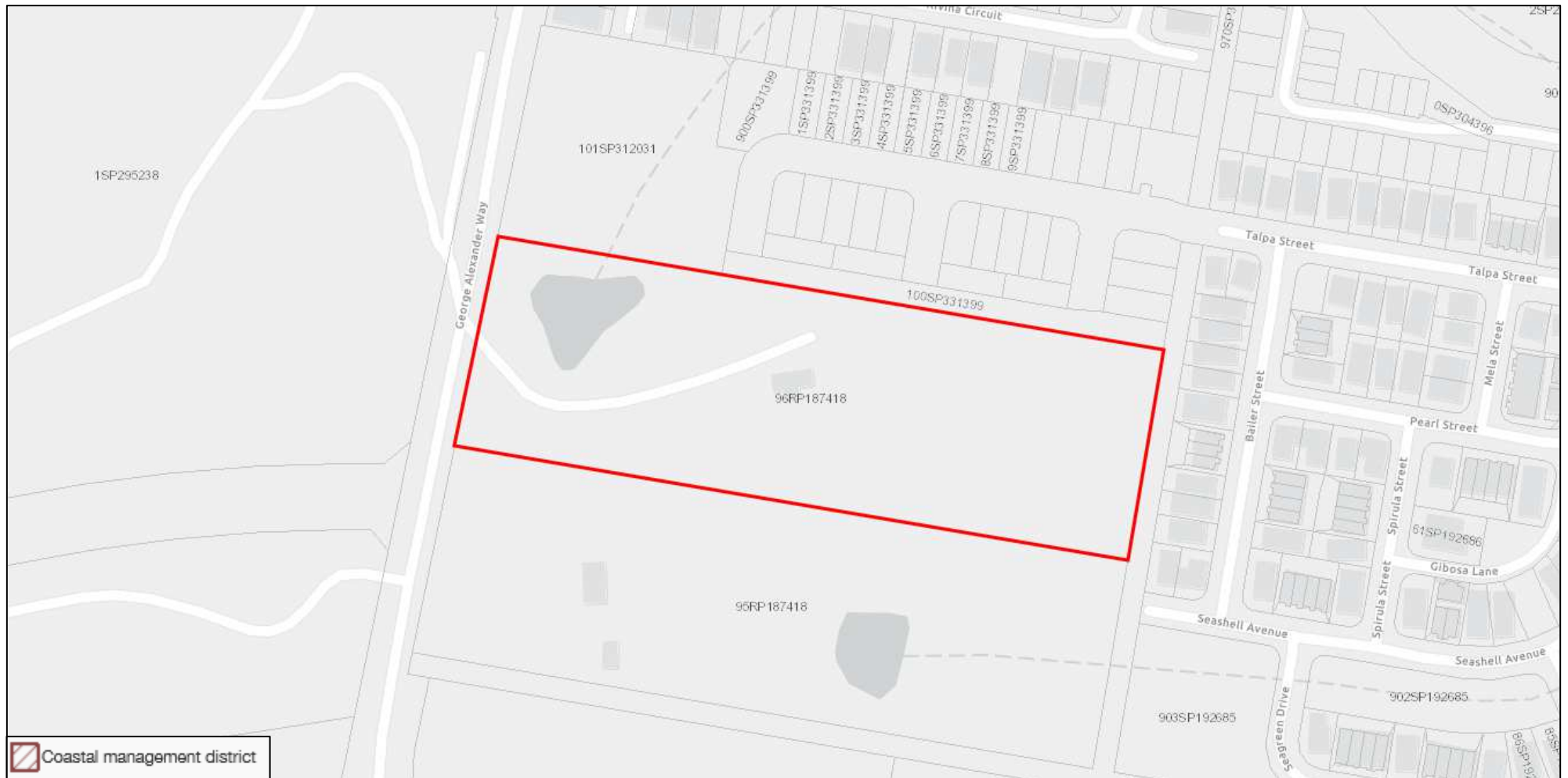
Source: Queensland Government (Department of Environment and Science) 2023 (captured 01/07/2024)

Map 11 — SPP — Biodiversity

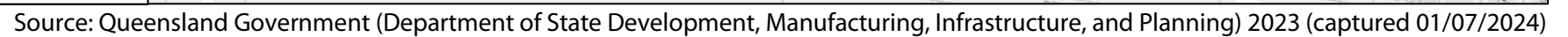


Queensland Government (Department of State Development, Manufacturing, Infrastructure, and Planning) 2023
(captured 01/07/2024)

Map 12 — SPP — Coastal Environment



Source: Queensland Government (Department of State Development, Manufacturing, Infrastructure, and Planning) 2023 (captured 01/07/2024)



Map 14 — SPP — Natural Hazards Risk and Resilience



Source: Queensland Government (Department of State Development, Manufacturing, Infrastructure, and Planning) 2023 (captured 01/07/2024)

Map 15 — DAMS — Coastal Protection



Source: Queensland Government (Department of State Development, Manufacturing, Infrastructure, and Planning) 2023 (captured 01/07/2024)

Map 16 — DAMS — Fish Habitat Areas



Source: Queensland Government (Department of State Development, Manufacturing, Infrastructure, and Planning) 2023 (captured 01/07/2024)

Map 17 — Water Act 2000 – Watercourse Identification



Source: Qld Globe (captured: 01/07/2024)

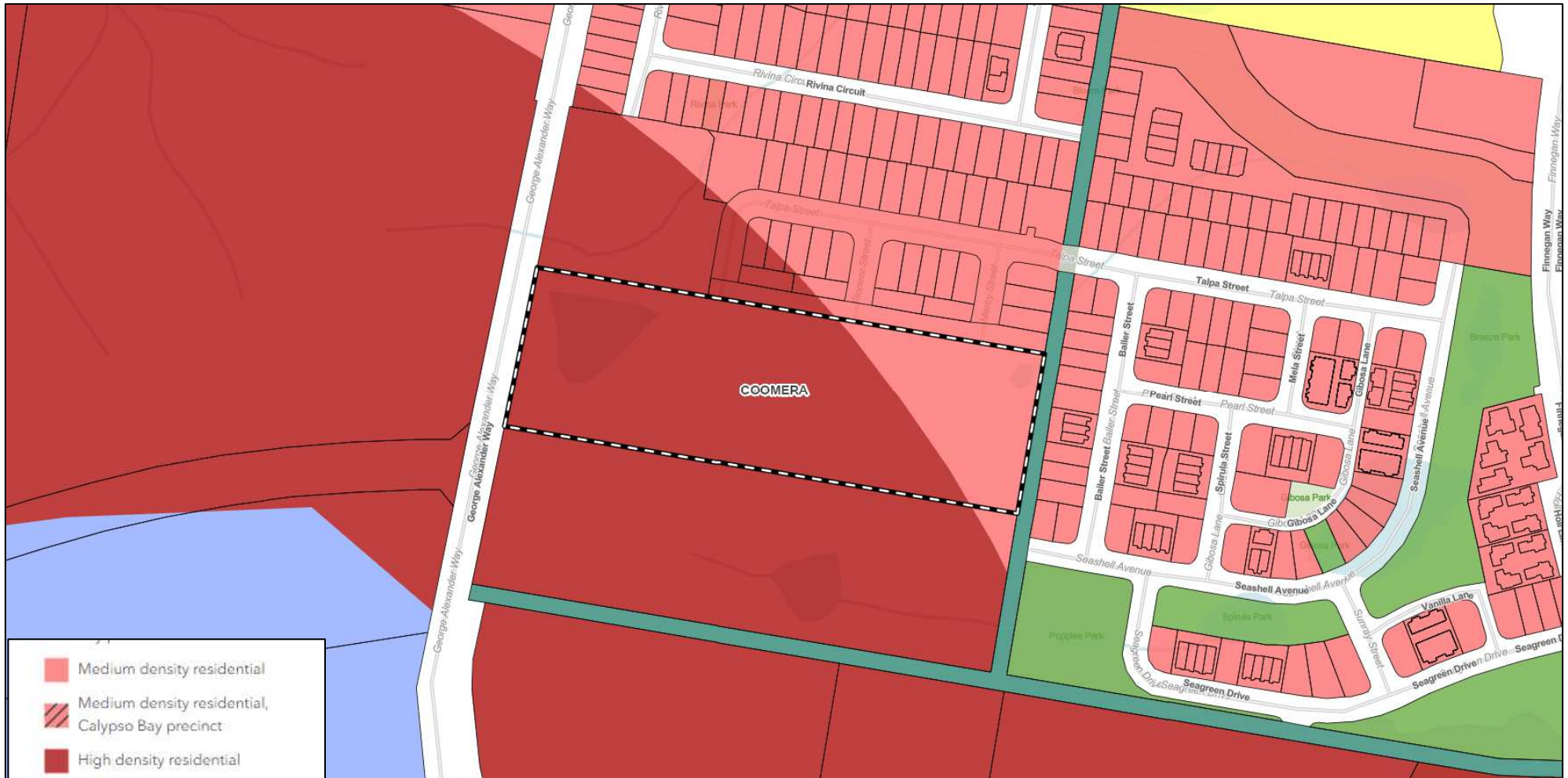
Map 18 — Highest Astronomical Tide



Source: Qld Globe (captured: 01/07/2024)

Local matters — Gold Coast LGA

Map 19 – Zoning



Source: Gold Coast City Plan 2017 (captured 01/07/2024)

Map 20 - Overlay — Environmental Significance Biodiversity Areas



Source: Gold Coast City Plan 2017 (captured 01/07/2024)

Map 21 - Overlay — Environmental Significance Priority Species



Source: Gold Coast City Plan 2017 (captured 01/07/2024)

Map 22 - Overlay — Environmental Significance Vegetation Management



Source: Gold Coast City Plan 2017 (captured 01/07/2024)

Map 23 - Overlay — Environmental Significance Wetlands and Watercourse



Source: Gold Coast City Plan 2017 (captured 01/07/2024)

Appendix E

Response to Environmental Significance
Overlay Code
Gold Coast City Plan V9

Response to Table 8.2.6-2: Environmental significance overlay code – for assessable development

Performance outcomes	Acceptable outcomes	Response
Ecological site assessment		
PO1 All matters of environmental significance on and adjacent to the development site are identified and protected. Note - An Ecological Site Assessment prepared in accordance with SC6.7 City Plan policy – Ecological site assessments, is Council's preferred method for addressing this performance outcome.	AO1 Proposed works do not impact on: a) areas identified on Environmental significance – vegetation management overlay map; b) buffers to wetlands and waterways being: i. 100m from the mapped boundary of a State significant aquatic area, as identified on Environmental significance – wetlands and waterways overlay map; ii. 100m from the outer landward boundary of a State significant wetland, as identified on Environmental significance – wetlands and waterways overlay map; iii. 100m from the outer landward boundary of a Local significant wetland, as identified on Environmental significance – wetlands and waterways overlay map; iv. 60m from the outer bank of a Major Waterway identified on Environmental significance – wetlands and waterways overlay map; or v. 30m from the outer bank of a Waterway identified on Environmental significance – wetlands and waterways overlay map; and	PO1 - COMPLIES The development site has had extensive survey works to date to identify areas of environmental significance on and adjacent to the site. As discussed within the main reporting, the site is located in a highly modified and urban environment with existing rural residential lots transitioning to low and medium residential development in the surrounding locality. The site to the north contains approval for high density development in the western extent (the vegetated portion of the site) with the eastern extent under construction for detached residential. Councils mapping for Environmental Significance aligns with State mapped Koala Habitat and Regulated Vegetation Category B. The mapping for Environmental Significance – wetlands and waterways overlay map appears to align with mapped Water Act drainage feature linework. As outlined within the above reporting, the state mapping for waterways is not reflective of on ground ecological significance, and 'drainage features' under the <i>Water Act</i> is not assessable. PR 'Schedule 21 Exempt clearing work', and therefore approval for clearing native vegetation protected under the VMA is not required under the Planning Act 2016. To further support this, mapping is located on recently developed land containing houses, roads and hardstand and therefore is not reflective of the site and adjoining property ecological values. The existing approval impacts 1.25ha of area mapped Medium Priority Vegetation (MPV) and will impact an additional 0.57ha MPV for this

Performance outcomes	Acceptable outcomes	Response
		current approval. The development impacts a total area of 1.82 ha of mapped Medium Priority Vegetation under the <i>Environmental significance – vegetation management</i> overlay map and on trees located within the mapped areas on the <i>Environmental significance – priority species</i> overlay map. An Ecological Assessment Report (EAR) has been provided to identify matters of environmental significance on the site. The development will unavoidably impact a small portion of the 'wetland and waterways buffer area' which intersects the north-western boundary of the site. The vegetation within this area is low-lying and adjoins the dam wall to the south and has been ground truthed as <u>not a waterway</u>. Development has occurred on surrounding sites over the waterway and buffer mapping further reinforcing this finding. The waterway is located in a disturbed and artificial flow path associated with the constructed dam. Observed waterway features were limited to an overland flow path downstream of the dam. Impacts to areas of medium priority vegetation are unavoidable, and recommendations for mitigation measures have been provided in the EAR. Due to the highly modified nature of the buffer area, it is not anticipated the clearing and development works in this area will impact the drainage feature.
	c) individual trees within areas mapped on the environmental significance – priority species overlay map.	

Performance outcomes	Acceptable outcomes	Response
Biodiversity areas		
PO2 Development does not impact on Protected Areas as identified on the Environmental significance–biodiversity areas overlay map .	AO2.1 No acceptable outcome provided.	AO2.1 – NOT APPLICABLE The subject site is not situated in areas mapped as Protected Areas as identified on the <i>Environmental significance – biodiversity areas</i> overlay map. See Map 20.
PO3 Development within the Hinterland to Coast Critical Corridors as identified on the Environmental significance –biodiversity areas overlay map is located and designed to: a) provide corridors of sufficient dimensions and characteristics that will enable adequate movement of fauna through the site; b) protect in situ matters of environmental significance and associated buffers; c) protect in situ, vegetation identified on the Environmental significance – vegetation management overlay map and habitat for native flora and fauna; d) link matters of environmental significance, existing corridors and/or conservation estate/reserves on adjacent properties;	AO3.1 No acceptable outcome provided.	AO3.1 – NOT APPLICABLE The subject site is not situated in areas mapped as Hinterland to Coast Critical Corridors as identified on the <i>Environmental significance – biodiversity areas</i> overlay map. See Map 20.

Performance outcomes	Acceptable outcomes	Response
e) maintain and improve upon the regional connectivity of the Hinterland to Coast Critical Corridors; and f) allow for the rehabilitation of disturbed, cleared or modified areas that form part of the Hinterland to Coast Critical Corridors. Note: Recommendations provided in an ecological site assessment (prepared in accordance with SC6.7 City Plan policy – Ecological site assessments) are Council's preferred method for determining corridor dimensions.		
P04 Development within Hinterland Core Habitat Systems, Coastal Wetlands and Islands Core Habitat Systems and Substantial Remnant Areas as identified on the Environmental significance – biodiversity areas overlay map is located and designed to: a) protect in situ matters of environmental significance and associated buffers; b) protect in situ vegetation identified on the Environmental significance – vegetation management overlay map	A04 No acceptable outcome provided.	P04 – NOT APPLICABLE The assessment area is not identified as 'Hinterland Core Habitat Systems', 'Coastal Wetlands' and 'Islands Core Habitat Systems' as identified on the <i>Environmental significance–biodiversity areas</i> overlay map. See Map 20.

Performance outcomes	Acceptable outcomes	Response
and habitat for native flora and fauna; and c) allow for the rehabilitation of disturbed, cleared or modified areas.		
Wetland and waterway		
PO5 Buffers are provided to wetlands and waterways identified on the Environmental significance – wetlands and waterways overlay map to ensure the: a) protection of matters of environmental significance mapped onsite or identified through an ecological site assessment; b) unimpeded movement of fauna along the waterway; c) water quality is maintained; d) bank stability; and e) protection of property and infrastructure. Note: The buffer width for wetlands is measured from the outer, landward boundary of the mapped wetland, as shown on Environmental significance – wetland and waterways overlay map.	AO5.1 Buffers at least 100m wide are provided between the development and the mapped boundary of a state significant aquatic area, as identified on environmental significance – wetlands and waterways overlay map. AO5.2 Buffers at least 100m wide are provided between the development and the outer landward boundary of a state significant wetland, as identified on environmental significance – wetlands and waterways overlay map. AO5.3 Buffers at least 100m wide are provided between the development and the outer landward boundary of a local significant wetland as identified on the environmental significance – wetlands and waterways overlay map.	AO5.1 – NOT APPLICABLE The subject site is not situated in or near areas mapped as state significant aquatic areas as identified on the <i>Environmental significance – wetlands and waterways</i> overlay map. See Map 23. AO5.2 – NOT APPLICABLE The subject site is not situated in or near areas mapped as state significant wetland as identified on the <i>Environmental significance – wetlands and waterways</i> overlay map. See Map 23. NOT APPLICABLE AO5.3 As discussed above the mapping for wetlands and waterways is not reflective of on ground/true waterway and wetland values. The subject site is mapped to contain a minor area mapped as local significant wetland as identified on the <i>Environmental significance – wetlands and waterways</i> overlay map (see Map 23). Importantly this locally mapped feature is not identified as a watercourse under the <i>Water Act 2000</i>, nor a state wetland, and rather is a Drainage Feature (see Map 17) and lacks ecological significance. As shown on Inset 2 below, the mapping is an anomaly in state mapping under the <i>Water Act</i>. Additionally, this

Performance outcomes	Acceptable outcomes	Response
Note: Recommendations provided in an ecological site assessment (prepared in accordance with SC6.7 City Plan policy – Ecological site assessments) is Council’s preferred method for determining alternative buffer widths. Note Artificial waterways are to be addressed through the Coastal erosion hazard overlay code and map. Where a waterbody contains both natural and artificial banks, the natural banks are to be assessed in accordance with this performance outcome.		mapping is shown on newly developed lots to the north where no wetlands or waterways exist. Instead new residential allotments and roads intersect the mapping for environmental significance. For the site development unavoidably encroaches the locally mapped area of wetland in the northwest of the site. However as already discussed this mapping is not reflective of ground truthed values and land further north contains approved subdivision layouts completely encroaching both the locally mapped watercourse and wetland and are not reflective out on ground values. It should be noted that the mapped waterway is located in a disturbed and artificial flow path associated with the constructed dam. Observed waterway features were limited to an overland flow path downstream of the dam. The minor encroachment and low ecological values of the waterway onsite are unlikely to require a buffer as the mapping appears to not be reflective of on ground values for waterways and wetlands.

Performance outcomes	Acceptable outcomes	Response
		
		Inset 2 – QLD Globe Mapping – Drainage features Source : QLD Globe 2024
	AO5.4 Buffers at least 60m wide are provided between the development and the outer bank of a Major Waterway as identified on the Environmental significance – wetlands and waterways overlay map .	AO5.4 – NOT APPLICABLE A major waterway is not mapped within the assessment area. See Map 23.
	AO5.5 Buffers at least 30m wide are provided between the development and the outer bank of a waterway as identified on the Environmental significance – wetlands and waterways overlay map .	AO5.5 – NOT APPLICABLE See response to AO5.3 above. Development is unavoidably positioned such that it encroaches on the mapped wetland north of the site. The locally mapped water is mapped on a State level as a Drainage Feature. A Drainage Feature defined by the <i>Water Act 2000</i> does not contain defined banks. It should be noted that

Performance outcomes	Acceptable outcomes	Response
		the mapped waterway is located in a disturbed and artificial flow path associated with the constructed dam. Observed waterway features were limited to an overland flow path downstream of the dam and as a result are considered unlikely to require a 30 metre buffer. Further all development directly to the north within 400m of the site have similar to full encroachment to the locally mapped waterway supporting the case the mapping is an anomaly based on State linework aligning with drainage feature mapping.
Vegetation management		
PO6 Regulated vegetation is protected in situ when it is: a) identified on the Environmental significance – vegetation management overlay map; and b) within biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.	A06 Development does not impact on regulated vegetation.	PO6 – NOT APPLICABLE The subject site is not mapped to contain regulated vegetation as identified on the <i>Environmental significance – vegetation management overlay map</i> nor are there any biodiversity areas as identified on the <i>Environmental significance – biodiversity areas overlay map</i> located on-site. See Map 20 and Map 22.
PO7 Development is designed to maintain regulated vegetation and minimise disturbance when it is: a) identified on the Environmental significance – vegetation management overlay map; and	A07 Development avoids impacts on regulated vegetation.	PO7 – NOT APPLICABLE The subject site is not situated in or near areas mapped as regulated vegetation as identified on the <i>Environmental significance – vegetation management overlay map</i> nor are there any biodiversity areas as identified on the <i>Environmental significance – biodiversity areas overlay map</i> located onsite.

Performance outcomes	Acceptable outcomes	Response
b) outside of biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map .		
PO8 High priority vegetation as identified on the Environmental significance – vegetation management overlay map is protected in situ.	AO8 No acceptable outcome provided.	PO8 – NOT APPLICABLE The subject site is not situated in or near areas mapped as high priority vegetation as identified on the <i>Environmental significance–vegetation management</i> overlay map.
PO9 Medium and general priority vegetation as identified on the Environmental significance – vegetation management overlay map within biodiversity areas as identified on the Environmental significance –biodiversity areas overlay map is protected in situ.	AO9 No acceptable outcome provided.	PO9 – NOT APPLICABLE The site is not mapped as occurring within biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map (See Map 20).
PO10 Vegetation is protected when it is: a) identified as medium priority vegetation on the Environmental significance – vegetation management overlay map; and b) located outside the biodiversity areas identified on the Environmental	AO10 Vegetation is not damaged when it is: a) identified as medium priority vegetation on the Environmental significance – vegetation management overlay map; and b) located outside the Environmental significance – biodiversity areas overlay map. OR	AO10 - COMPLIES Vegetation mapped as medium priority vegetation as identified on the Environmental significance – vegetation management overlay map is required to be impacted by the proposed development. The site is not mapped to contain Environmental significance – vegetation management overlay map. Environmental Significance – Vegetation Management is mapped on-site in line with state Core Koala Habitat Area as shown in Figure 11 . The

Performance outcomes	Acceptable outcomes	Response
significance – biodiversity areas overlay map.	Where all attempts have been made to avoid and minimise damage to vegetation as stated above, any significant residual impact is offset consistent with the <i>Environmental Offsets Act 2014</i> , at a ratio of 3:1 (area) in accordance with SC6.9 City Plan policy – Environmental offsets. OR Damage to medium priority vegetation identified on the Environmental significance – vegetation management overlay map and located outside the biodiversity areas identified on the Environmental significance – biodiversity areas overlay map is for committed development.	development will retain a 20 m bushland corridor of this mapping along the southern side of the development as per Plans 3 . This area is retained and protected and will provide a east/west ecological corridor. Impacts to Gold Coast City Plan medium priority vegetation mapped in the Environmental Significance Vegetation Management overlay are analogous to the impacts on state KHA which are to be offset under the Queensland Environmental Offsets Policy, Therefore, to avoid duplication of offsets, and environmental offset in accordance with SC6.9 City Plan policy – Environmental offsets is not required for the proposed impacts to medium priority vegetation.
PO11 Disturbance to vegetation is minimised when it is: a) identified as General priority vegetation on the Environmental significance – vegetation management overlay map ; and b) located outside the Environmental significance – biodiversity areas overlay map .	AO11 Development avoids impacts on general priority vegetation. Any damage is minimised to the greatest extent possible.	PO11 – NOT APPLICABLE The subject site is not situated in areas mapped as general priority vegetation as identified on the <i>Environmental significance – vegetation management</i> overlay map (see Figure 11).
PO12 Buffers are provided that protect the long term viability of high priority and regulated vegetation located on or adjacent to the site.	AO12 Buffers at least 30m wide are provided between the development and any retained vegetation identified as high priority or regulated vegetation on the	AO12 - COMPLIES The subject site is not situated on areas mapped as high priority or regulated vegetation as identified on the <i>Environmental significance -</i>

Performance outcomes	Acceptable outcomes	Response
	Environmental significance – vegetation management overlay map on or adjacent to the site.	<i>vegetation management</i> overlay map (see Figure 11). Regulated vegetation mapped to the south of the subject site is approximately 35 m from the proposed development therefore a sufficient buffer is supplied.
Priority species		
PO13 Assessable koala feed and shelter trees are protected in situ when they are located: a) in koala habitat areas as identified on the Environmental significance – priority species overlay map; and b) within biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.	AO13 Development does not impact on assessable koala feed and shelter trees.	PO13 – NOT APPLICABLE The subject site is located over areas mapped as Koala habitat areas as identified on the <i>Environmental significance – priority species</i> overlay map. However, this area is not identified within a biodiversity area as identified on the <i>Environmental significance – biodiversity areas</i> overlay map.
PO14 Assessable koala feed and shelter trees are protected when they are: a) in koala habitat areas as identified on the Environmental significance – priority species overlay map; and b) outside biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.	AO14 Development avoids impacts on assessable koala feed and shelter trees. Any damage is minimised to the greatest extent possible.	PO14 – Alternative Solution Matters of State Environmental Significance for Koala Habitat is addressed within the supplementary reporting for State Code 25. The mapping in CoGC City Plan does not reflect the current possible Koala Habitat within the site and surrounds (see Figure 10). Land north of the site contains newly developed housing, roads and hardstand, and the adjoining Lot 101 in the north west is approved for high density residential development. The Koala and fauna connectivity has been mapped in Figure 6 and Plan 4 and shows the development will provide a essential east/west connection adding to and joining existing and future ecological corridors to the east.

Performance outcomes	Acceptable outcomes	Response
PO15 Site design provides safe koala movement opportunities by incorporating measures to maintain connectivity between areas of koala habitat on and adjacent to the site. Note : DEHP's Koala-Sensitive Design Guideline should be consulted for suitable measures to provide for safe koala movement.	A015 No acceptable outcome provided.	The development has been designed to minimise impact to Koala Habitat as much as is practical, while also taking into account the sites zoning for medium and high density, and location within a transitioning suburb of CoGC, providing a range of housing types for the predicted population growth within the region.
		Development layout has been designed to minimise impacts to koala feed and shelter trees in koala habitat areas as identified by <i>Environment significance – priority species</i> to the greatest extent possible, while designing an outcome that takes into account the current and future urban landscape of the sites location. PO15 - COMPLIES The site is located within a rapidly urbanising landscape associated with the Coomera urban centre. The planning intent for the site and adjoining lots to the south is for medium and high-density residential areas, maximising the yield on the site to provide a balance and sustainable approach to urban development within the Coomera region. Potential future connections for Koala and fauna movement have been mapped in Plan 4, and the protection of Koala Habitat within the bushland buffer to the south of the site will provide an east/west connection, linking to Conservation areas and Koala Habitat in the east and north-east. It is not considered viable or favorable to promote Koala movement opportunities on-site further to the bushland buffer in the south, as the landscape will be subject to increasing vehicle traffic and increased population density over the coming years. Further George Alexander

Performance outcomes	Acceptable outcomes	Response
		Way is proposed for widening, and the site to north will also be exposing the Koala to an increased level of threats when construction commences for high density residential. In addition, the Coomera Woods project is located to the west of the site which will clear a large area of mapped Koala habitat. As such, future Koala movement opportunities are anticipated to diminish as approved development projects. Providing a connection east that can be added to with future development to the south is a balance and ideal outcome for Koala and other transient fauna.
PO16 During the clearing and construction phases, measures are incorporated to protect koalas from death or injury.	AO16 Threats to koalas as a result of clearing and construction activities are mitigated by: a) ensuring no tree in which a koala is present or a tree with a crown overlapping a tree containing a koala is cleared; b) undertaking clearing of vegetation in stages, and ensuring: i. no more than 1 ha is cleared per day for sites less than 6 ha in size; ii. no more than 2 ha is cleared per day for sites greater than 6 ha in size; iii. that between each stage there is at least 12 hours where no clearing occurs; and iv. koala habitat is always linked to allow koalas to move out of the site; c) use of qualified koala spotters;	AO16 - COMPLIES A VCFMP will be implemented to manage vegetation clearing and mitigate impacts on fauna, including the Koala, for works on the site. A qualified Koala spotter will be located on-site prior to and during all clearing works. In addition, a Koala Management Plan has also been provided in the accompanying State Code 25 Response Report.

Performance outcomes	Acceptable outcomes	Response
	d) prohibition of domestic dogs and security dogs on site; and e) use of koala safety fencing.	
PO17 State significant species, and their habitat, are protected in situ when it is: a) identified on the Environmental significance – priority species overlay map, or through an ecological site assessment; and b) within biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.	AO17 Development does not impact on State significant species, and their habitat.	PO17 – NOT APPLICABLE The subject site is situated on areas mapped as state significant species as identified on the <i>Environmental significance – priority species</i> overlay map however is not identified within a biodiversity area as identified on the <i>Environmental significance – biodiversity areas</i> overlay map.
PO18 Development protects state significant species, and their habitat or is designed to minimise and mitigate impacts on habitat values when it is: a) identified on the Environmental significance – priority species overlay map; and b) outside of biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.	AO18.1 Development avoids impacts on state significant species, and their habitat. AO18.2 Where development impacts on state significant species and their habitat, the following occurs: flora species are propagated and used in rehabilitation and landscaping onsite; and fauna species are safely relocated by a qualified fauna spotter catcher.	PO18 - COMPLIES The site is mapped with state significant species identified on the <i>Environmental significance – priority species</i> overlay map. A VCFMP will be implemented to manage vegetation clearing and mitigate impacts on fauna, including the Koala, for works on the site. A qualified Koala spotter will be located on-site prior to and during all clearing works. In addition, a Koala Management Plan has also been provided in the accompanying State Code 25 Response Report.

Performance outcomes	Acceptable outcomes	Response
PO19 Local significant species, and their habitat, are protected in situ when it is: a) identified on the Environmental significance – priority species overlay map, or through an ecological site assessment; and b) within biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.	AO19 Development does not impact on local significant species, and their habitat.	PO19 – NOT APPLICABLE The subject site is not situated on areas mapped as local significant species as identified on the <i>Environmental significance – priority species overlay map</i> and is not identified within a biodiversity area as identified on the <i>Environmental significance – biodiversity areas overlay map</i>.
PO20 Development protects local significant species, and their habitat or is designed to minimise and mitigate impacts on habitat values when it is: a) identified on the Environmental significance – priority species overlay map; and b) outside of biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.	AO20.1 Development avoids impacts on local significant species, and their habitat. AO20.2 Where development impacts on local significant species and their habitat, the following occurs: a) flora species are propagated and used in rehabilitation and landscaping onsite; and b) fauna species are safely relocated by a qualified fauna spotter catcher.	PO20 – COMPLIES The subject site is not situated on areas mapped as local significant species as identified on the <i>Environmental significance – priority species overlay map</i> and is not identified within a biodiversity area as identified on the <i>Environmental significance – biodiversity areas overlay map</i>.
Fauna management		
PO21	AO21	PO21 - COMPLIES The proposed development will provide a 20 m bushland corridor along the southern boundary of the site allowing for sage movement of native

Performance outcomes	Acceptable outcomes	Response
Development design and location provides for the safe movement of native fauna through the site.	Where infrastructure crosses native fauna movement paths, the design of new development incorporates fauna friendly movement solutions. Note: Fauna friendly movement solutions developed in accordance with the Queensland Government Fauna Sensitive Road Design Manual Volume 2: Preferred Practices; and the QLD Government Koala-Sensitive Design Guidelines is Council's preferred method for addressing this outcome.	fauna through the site. As properties to the south are developed this corridor can be added to with additional greenspace, ultimately providing fauna connection to conservation areas in the east and northeast. Importantly the eastern portion of the site containing mapped Koala Habitat and State Significant Species under the Environmental Significance Priority Species Mapping has been approved to clear for development (see Appendix G). Further the adjoining lot to the north Lot 101, also contains approval for high density residential development, with the eastern portion of the site to north having been redeveloped for low density residential in recent times. As such the proposed corridor along the southern boundary is a favorable approach, to minimise future edge effects while maximising connectivity to the east. Due to the small size of the site it is not considered viable to include dedicated wildlife movement solutions within the site, however the corridor in the south will help to provide safe fauna movement at the site. Fauna movement opportunities are considered to be relatively limited in the surrounding landscape with a development located to the north and an established residential community to the east. George Alexander Way bounds the site to the west representing a hazard to safe wildlife movement and is earmarked for a road widening. A VCFMP will be produced to manage vegetation clearing and mitigate impacts on fauna, including the Koala, for works within and adjacent to the site.

Performance outcomes	Acceptable outcomes	Response
PO22 Where fauna habitat is proposed to be damaged, management strategies must be implemented to ensure: a) the native fauna is safely relocated to an area of similar habitat; b) the sequence of habitat disturbance ensures that fauna is not isolated from adjoining areas of habitat; c) fauna relocation occurs immediately prior to habitat disturbance; d) accredited and experienced spotter catchers, licensed by the Queensland Parks and Wildlife Service, are to be present on the site to direct and undertake the removal and relocation of fauna; and e) where possible, damaged habitat and nesting sites are rehabilitated outside of development areas. Note: A Fauna Management Plan prepared by a suitably qualified person and in accordance with SC6.8 City Plan policy – Environmental management plans is Council's preferred method for addressing this outcome.	A022 No acceptable outcome provided.	PO22 - COMPLIES A VCFMP will be implemented to manage vegetation clearing and mitigate impacts on fauna, including the Koala, for works on the site. Qualified Koala spotters will be utilised prior to and during clearing works. In addition, a Koala Management Plan has also been provided in the accompanying State Code 25 Response Report.
Tenure, ownership and management arrangements		

Performance outcomes	Acceptable outcomes	Response
PO23 Matters of environmental significance and associated buffers, mapped areas as identified on the Environmental significance – vegetation management overlay map proposed for retention and areas requiring rehabilitation are suitably protected in perpetuity and will: a) enable necessary fire management in accordance with an approved fire management plan and any adopted bushfire management plan; b) allow unimpeded movement of native fauna through matters of environmental significance and associated buffers; c) enable maintenance access and regular management; d) enable auditing and reporting of maintenance and management activities; e) provide for public access along major waterways, where such access is consistent with the ecological functions; f) allow for linkages and buffers to adjacent areas of ecological significance; and	AO23 Matters of environmental significance and associated buffers, mapped areas as identified on the Environmental significance – vegetation management overlay map proposed for retention and areas requiring rehabilitation are transferred to Council ownership as Public Open Space. OR Where not required for public access, matters of environmental significance and associated buffers, and mapped areas as identified on the Environmental significance – vegetation management overlay map proposed for retention and areas requiring rehabilitation are retained in private ownership and protected under a statutory covenant (under the <i>Land Title Act 1994</i>). Note: Where the area is adjacent to existing public open space, or is a buffer to a major waterway, Council's preference is for the land to be dedicated as Public Open Space.	PO23 – NOT APPLICABLE No areas on-site are proposed to be rehabilitated as part of the development proposal, however the bushland to the south will have a maintained understory with mowed grass to reduce bushfire hazard (see Bushfire Hazard Assessment under separate cover).

Performance outcomes	Acceptable outcomes	Response
g) allow for a coordinated approach to the management of adjacent areas of conservation estate.		
PO24 An Open Space Management Plan prepared in accordance with SC6.12 City Plan policy – Landscape work is prepared for areas to be dedicated to Council as Public Open Space.	AO24 No acceptable outcome provided.	PO24 – NOT APPLICABLE No areas on-site are proposed to be dedicated to Council as Public Open Space.
PO25 A Covenant Management Plan is prepared for areas to be protected under a statutory covenant. The management plan must include the following details: a) rehabilitation area and strategy of works; b) weed eradication and control requirements; c) how the covenant area will be maintained and managed in perpetuity; d) feral and domestic animal exclusion requirements; and e) required maintenance access. Note: A Covenant Management Plan is prepared by a suitably qualified person and in accordance with SC6.8 City Plan policy –	AO25 No acceptable outcome provided.	PO25 – NOT APPLICABLE Covenants are not proposed for any privately held areas/lots.

Performance outcomes	Acceptable outcomes	Response
Environmental management plans is Council's preferred method for addressing this performance outcome.		
Rehabilitation		
PO26 Disturbed, cleared or modified areas are rehabilitated where they form part of: a) an ecological corridor; or b) matters of environmental significance and associated buffers; or c) areas identified within an Ecological Site Assessment as requiring rehabilitation. Note : A Rehabilitation Management Plan prepared in accordance with the South East Queensland Ecological Restoration Framework and SC6.8 City Plan policy – Environmental management plans is Council's preferred method for addressing this outcome.	AO26 No acceptable outcome provided.	PO26 – COMPLIES No areas on-site are proposed to be rehabilitated as part of the development design.

Appendix F

Tree Schedule

Tree Schedule - Job 11241 54 George Alexander Way, Coomera (Coomera GA Pty Ltd) 29/07/2024																															
Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details			
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes	
1	Eucalyptus fibrosa	Broad-leaved Red Ironbark	620		620	195	28.0	16.0	7.4	2.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
2	Corymbia intermedia	Pink Bloodwood	330		330	104	6.0	3.0	4.0	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
3	Acacia concurrens	Black Wattle	110	90	142	45	4.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
4	Eucalyptus microcorys	Tallowwood	340	340	481	151	16.0	7.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
5	Eucalyptus fibrosa	Broad-leaved Red Ironbark	830		830	261	27.0	14.0	10.0	3.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
6	Corymbia intermedia	Pink Bloodwood	280		280	88	12.0	6.0	3.4	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
7	Eucalyptus propinqua	Small-fruited Grey Gum	220		220	69	15.0	6.0	2.6	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	Old	-	-	-	-	Remove (Previous Application)		
8	Eucalyptus fibrosa	Broad-leaved Red Ironbark	170		170	53	7.0	4.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
9	Eucalyptus fibrosa	Broad-leaved Red Ironbark	800		800	251	28.0	16.0	9.6	3.0	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termite nest	-	Remove (Previous Application)		
10	Acacia concurrens	Black Wattle	120		120	38	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
11	Acacia concurrens	Black Wattle	130		130	41	4.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
12	Acacia concurrens	Black Wattle	110		110	35	5.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
13	Corymbia citriodora	Spotted Gum	110		110	35	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
14	Acacia concurrens	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
15	Acacia concurrens	Black Wattle	120		120	38	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
16	Allocasuarina littoralis	Black She-oak	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
17	Acacia concurrens	Black Wattle	140		140	44	6.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
18	Allocasuarina littoralis	Black She-oak	110		110	35	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
19	Syagrus romanzoffiana	Cocos Palm	250		250	79	6.0	5.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
20	Allocasuarina littoralis	Black She-oak	220		220	69	7.0	4.0	2.6	1.8	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
21	Schefflera actinophylla	Umbrella Tree	150	90	175	55	7.0	3.0	2.1	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
22	Eucalyptus carnea	Broad-leaved White Mahogany	100		100	31	5.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	Introduced	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
23	Allocasuarina littoralis	Black She-oak	130		130	41	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
24	Allocasuarina littoralis	Black She-oak	110		110	35	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
25	Allocasuarina littoralis	Black She-oak	100		100	31	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
26	Allocasuarina littoralis	Black She-oak	130		130	41	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
27	Allocasuarina littoralis	Black She-oak	110		110	35	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
28	Allocasuarina littoralis	Black She-oak	150		150	47	7.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
29	Allocasuarina littoralis	Black She-oak	100		100	31	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
30	Allocasuarina littoralis	Black She-oak	130		130	41	6.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
31	Allocasuarina littoralis	Black She-oak	130		130	41	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
32	Allocasuarina littoralis	Black She-oak	130		130	41	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
33	Eucalyptus microcorys	Tallowwood	270		270	85	14.0	6.0	3.2	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
34	Eucalyptus fibrosa	Broad-leaved Red Ironbark	410		410	129	18.0	10.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
35	Corymbia citriodora	Spotted Gum	520		520	163	22.0	12.0	6.2	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
36	Eucalyptus fibrosa	Broad-leaved Red Ironbark	470		470	148	20.0	10.0	5.6	2.4	Regular	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
37	Allocasuarina littoralis	Black She-oak	100		100	31	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
38	Corymbia intermedia	Pink Bloodwood	290		290	91	14.0	7.0	3.5	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
39	Corymbia citriodora	Spotted Gum	310		310	97	18.0	5.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
40	Allocasuarina littoralis	Black She-oak	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
41	Allocasuarina littoralis	Black She-oak	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
42	Allocasuarina littoralis	Black She-oak	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
43	Allocasuarina littoralis	Black She-oak	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
44	Allocasuarina littoralis	Black She-oak	130		130	41	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details			
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes	
45	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
46	<i>Allocasuarina littoralis</i>	Black She-oak	140		140	44	7.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	Small	-	-	Remove (Previous Application)		
47	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
48	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
49	<i>Allocasuarina littoralis</i>	Black She-oak	180		180	57	7.0	3.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
50	<i>Acacia concurrens</i>	Black Wattle	130		130	41	7.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
51	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	340		340	107	21.0	8.0	4.1	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
52	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
53	<i>Allocasuarina littoralis</i>	Black She-oak	150		150	47	6.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
54	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	380		380	119	21.0	8.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
55	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	6.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
56	<i>Corymbia citriodora</i>	Spotted Gum	410		410	129	23.0	11.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
57	<i>Corymbia intermedia</i>	Pink Bloodwood	300		300	94	16.0	7.0	3.6	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
58	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	4.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
59	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	4.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
60	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	630		630	198	22.0	12.0	7.6	2.7	Regular	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
61	<i>Acacia concurrens</i>	Black Wattle	250		250	79	6.0	4.0	3.0	1.8	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
62	<i>Corymbia citriodora</i>	Spotted Gum	310		310	97	18.0	8.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
63	<i>Corymbia citriodora</i>	Spotted Gum	260		260	82	18.0	7.0	3.1	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
64	<i>Corymbia citriodora</i>	Spotted Gum	310		310	97	18.0	7.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
65	<i>Corymbia citriodora</i>	Spotted Gum	300	260	397	125	20.0	8.0	4.8	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
66	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	390		390	123	23.0	11.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
67	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
68	<i>Acacia disparrima</i>	Hickory Wattle	110		110	35	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
69	<i>Acacia disparrima</i>	Hickory Wattle	200		200	63	7.0	4.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
70	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	270		270	85	12.0	6.0	3.2	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
71	<i>Corymbia citriodora</i>	Spotted Gum	680		680	214	24.0	14.0	8.2	2.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
72	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
73	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
74	<i>Acacia concurrens</i>	Black Wattle	170		170	53	6.0	4.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
75	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	280		280	88	12.0	6.0	3.4	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
76	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	370		370	116	20.0	10.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
77	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
78	<i>Acacia concurrens</i>	Black Wattle	120	110	163	51	4.0	3.0	2.0	1.5	Regular	-	-	Die-back	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	Retain		
79	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	100		100	31	4.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
80	<i>Acacia concurrens</i>	Black Wattle	130		130	41	4.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
81	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	510		510	160	21.0	10.0	6.1	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
82	<i>Acacia disparrima</i>	Hickory Wattle	140		140	44	4.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
83	<i>Corymbia citriodora</i>	Spotted Gum	560		560	176	23.0	10.0	6.7	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)		
84	<i>Corymbia citriodora</i>	Spotted Gum	280		280	88	17.0	7.0	3.4	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
85	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	510		510	160	25.0	12.0	6.1	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
86	DEAD/STAG		450		450	141	24.0	12.0	5.4	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)		
87	<i>Acacia disparrima</i>	Hickory Wattle	140	90	166	52	5.0	3.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
88	<i>Allocasuarina littoralis</i>	Black She-oak	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
89	<i>Corymbia citriodora</i>	Spotted Gum	370		370	116	18.0	7.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-					

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details				
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes		
92	<i>Eucalyptus microcorys</i>	Tallowwood	450	420	616	193	20.0	14.0	7.4	2.7	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)	koala scats	
93	<i>Corymbia citriodora</i>	Spotted Gum	360		360	113	23.0	10.0	4.3	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
94	<i>Allocasuarina littoralis</i>	Black She-oak	210		210	66	5.0	4.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
95	<i>Eucalyptus microcorys</i>	Tallowwood	380		380	119	18.0	9.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
96	<i>Corymbia citriodora</i>	Spotted Gum	390		390	123	21.0	12.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
97	<i>Corymbia citriodora</i>	Spotted Gum	320		320	101	21.0	7.0	3.8	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
98	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	510		510	160	25.0	15.0	6.1	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
99	<i>Corymbia citriodora</i>	Spotted Gum	330	270	426	134	16.0	6.0	5.1	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
100	<i>Corymbia citriodora</i>	Spotted Gum	350		350	110	20.0	10.0	4.2	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
101	<i>Corymbia citriodora</i>	Spotted Gum	850		850	267	23.0	12.0	10.2	3.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
102	<i>Acacia melanoxylon</i>	Australian Blackwood	110		110	35	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
103	<i>Acacia disparrima</i>	Hickory Wattle	150		150	47	6.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
104	<i>Acacia concurrens</i>	Black Wattle	120		120	38	5.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
105	<i>Acacia disparrima</i>	Hickory Wattle	200		200	63	5.0	3.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
106	<i>Eucalyptus microcorys</i>	Tallowwood	480		480	151	22.0	10.0	5.8	2.4	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
107	<i>Acacia disparrima</i>	Hickory Wattle	150		150	47	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
108	<i>Corymbia citriodora</i>	Spotted Gum	360		360	113	20.0	10.0	4.3	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
109	<i>Acacia concurrens</i>	Black Wattle	100		100	31	4.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
110	<i>Eucalyptus microcorys</i>	Tallowwood	630		630	198	24.0	14.0	7.6	2.7	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
111	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	790		790	248	23.0	15.0	9.5	3.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termite nest	-	-	Remove (Previous Application)		
112	<i>Allocasuarina littoralis</i>	Black She-oak	160		160	50	6.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
113	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	530		530	167	18.0	7.0	6.4	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termite nest	-	-	Remove (Previous Application)		
114	<i>Corymbia intermedia</i>	Pink Bloodwood	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
115	<i>Acacia disparrima</i>	Hickory Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
116	<i>Acacia concurrens</i>	Black Wattle	150		150	47	5.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
117	<i>Corymbia intermedia</i>	Pink Bloodwood	350		350	110	20.0	12.0	4.2	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
118	<i>Eucalyptus microcorys</i>	Tallowwood	540		540	170	18.0	10.0	6.5	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
119	<i>Acacia concurrens</i>	Black Wattle	140		140	44	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
120	<i>Acacia concurrens</i>	Black Wattle	110		110	35	4.0	3.0	2.0	1.3		-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)	
121	<i>Acacia concurrens</i>	Black Wattle	150		150	47	5.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
122	<i>Acacia concurrens</i>	Black Wattle	100		100	31	4.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
123	<i>Eucalyptus microcorys</i>	Tallowwood	380		380	119	14.0	6.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
124	<i>Eucalyptus microcorys</i>	Tallowwood	410		410	129	15.0	6.0	4.9	2.3	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
125	<i>Corymbia citriodora</i>	Spotted Gum	200		200	63	8.0	4.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
126	<i>Eucalyptus microcorys</i>	Tallowwood	330	290	439	138	18.0	7.0	5.3	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
127	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	580		580	182	25.0	12.0	7.0	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
128	<i>Eucalyptus microcorys</i>	Tallowwood	500		500	157	18.0	10.0	6.0	2.5	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
129	<i>Corymbia citriodora</i>	Spotted Gum	340		340	107	16.0	8.0	4.1	2.1	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
130	<i>Corymbia intermedia</i>	Pink Bloodwood	380		380	119	22.0	12.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
131	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	460		460	145	23.0	11.0	5.5	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
132	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	300		300	94	15.0	7.0	3.6	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
133	<i>Acacia concurrens</i>	Black Wattle	100	100	141	44	4.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
134	<i>Acacia concurrens</i>	Black Wattle	160		160	50	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
135	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	100																													

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details			
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes	
139	<i>Syagrus romanzoffiana</i>	Cocos Palm	180		180	57	6.0	3.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
140	<i>Syagrus romanzoffiana</i>	Cocos Palm	210		210	66	7.0	3.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
141	<i>Acacia concurrens</i>	Black Wattle	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
142	<i>Acacia concurrens</i>	Black Wattle	160		160	50	6.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
143	<i>Pinus elliotii</i>	Slash Pine	160		160	50	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
144	<i>Syagrus romanzoffiana</i>	Cocos Palm	220		220	69	7.0	4.0	2.6	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
145	<i>Syagrus romanzoffiana</i>	Cocos Palm	240		240	75	7.0	4.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
146	<i>Syagrus romanzoffiana</i>	Cocos Palm	200		200	63	8.0	3.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
147	<i>Acacia disparrima</i>	Hickory Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
148	<i>Dypsis lutescens</i>	Golden Cane Palm	100	90, 90, 90, 90	206	65	4.0	3.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
149	<i>Eucalyptus microcorys</i>	Tallowwood	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
150	<i>Acacia concurrens</i>	Black Wattle	190		190	60	6.0	4.0	2.3	1.6	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
151	<i>Acacia concurrens</i>	Black Wattle	110		110	35	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
152	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
153	<i>Acacia concurrens</i>	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
154	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
155	<i>Corymbia citriodora</i>	Spotted Gum	110		110	35	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
156	<i>Syagrus romanzoffiana</i>	Cocos Palm	220		220	69	7.0	4.0	2.6	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
157	<i>Syagrus romanzoffiana</i>	Cocos Palm	210		210	66	7.0	4.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
158	<i>Syagrus romanzoffiana</i>	Cocos Palm	250		250	79	8.0	5.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
159	<i>Solanum mauritianum</i>	Wild Tobacco	130	100, 90	187	59	4.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
160	<i>Corymbia torelliana</i>	Cadaghi	320		320	101	8.0	7.0	3.8	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
161	<i>Corymbia torelliana</i>	Cadaghi	240		240	75	7.0	6.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
162	<i>Acacia concurrens</i>	Black Wattle	180		180	57	7.0	4.0	2.2	1.6	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
163	<i>Corymbia citriodora</i>	Spotted Gum	340		340	107	18.0	10.0	4.1	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	Old	-	-	-	-	Remove (Current Application)		
164	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	250		250	79	16.0	6.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	Old	-	-	-	-	Retain		
165	<i>Acacia concurrens</i>	Black Wattle	120		120	38	4.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
166	<i>Acacia concurrens</i>	Black Wattle	130		130	41	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
167	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	440		440	138	16.0	6.0	5.3	2.3	Irregular	-	-	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
168	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
169	<i>Acacia concurrens</i>	Black Wattle	160		160	50	6.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
170	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	410		410	129	16.0	7.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termite nest	-	Remove (Current Application)		
171	<i>Corymbia intermedia</i>	Pink Bloodwood	310		310	97	18.0	6.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
172	<i>Acacia disparrima</i>	Hickory Wattle	130		130	41	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
173	<i>Acacia disparrima</i>	Hickory Wattle	120	100	156	49	5.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
174	<i>Acacia disparrima</i>	Hickory Wattle	150	130, 90	218	68	6.0	4.0	2.6	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
175	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	200		200	63	14.0	6.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
176	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	370		370	116	21.0	8.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
177	<i>Corymbia citriodora</i>	Spotted Gum	380		380	119	23.0	10.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
178	<i>Corymbia citriodora</i>	Spotted Gum	470		470	148	25.0	14.0	5.6	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
179	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	550		550	173	22.0	10.0	6.6	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
180	<i>Acacia concurrens</i>	Black Wattle	160		160	50	6.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
181	<i>Corymbia citriodora</i>	Spotted Gum	430		430	135	25.0	14.0	5.2	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
182	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	430		430	135	26.0	12.0	5.2	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
183	<i>Acacia concurrens</i>	Black Wattle	110		110	35	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-											

Tree ID	Specimen Details										Canopy Condition Details							Trunk Condition Details					Fauna Details and Habitat Value						Additional Details	
	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
186	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	550		550	173	24.0	12.0	6.6	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
187	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	640		640	201	26.0	15.0	7.7	2.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
188	<i>Acacia concurrens</i>	Black Wattle	100		100	31	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
189	<i>Acacia concurrens</i>	Black Wattle	100		100	31	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	Retain	
190	<i>Eucalyptus acmenoides</i>	White Mahogany	350		350	110	15.0	6.0	4.2	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
191	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	470		470	148	21.0	10.0	5.6	2.4	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Retain	
192	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	500		500	157	25.0	14.0	6.0	2.5	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
193	<i>Corymbia citriodora</i>	Spotted Gum	160		160	50	7.0	2.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
194	<i>Eucalyptus microcorys</i>	Tallowwood	100	90, 90	162	51	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
195	<i>Acacia concurrens</i>	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
196	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	190		190	60	8.0	3.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
197	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	180		180	57	12.0	5.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Retain	
198	<i>Eucalyptus acmenoides</i>	White Mahogany	210		210	66	11.0	5.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Retain	
199	<i>Eucalyptus acmenoides</i>	White Mahogany	270	230, 160	389	122	12.0	6.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
200	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	200		200	63	8.0	5.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
201	<i>Corymbia intermedia</i>	Pink Bloodwood	120		120	38	6.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
202	<i>Lophostemon suaveolens</i>	Swamp Box	110	90	142	45	5.0	2.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
203	<i>Acacia concurrens</i>	Black Wattle	110		110	35	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
204	<i>Eucalyptus acmenoides</i>	White Mahogany	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
205	<i>Acacia concurrens</i>	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
206	<i>Allocasuarina littoralis</i>	Black She-oak	140		140	44	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
207	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
208	<i>Corymbia intermedia</i>	Pink Bloodwood	200		200	63	7.0	4.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
209	<i>Corymbia intermedia</i>	Pink Bloodwood	180		180	57	7.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
210	<i>Corymbia intermedia</i>	Pink Bloodwood	240		240	75	7.0	5.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
211	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	120		120	38	6.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
212	<i>Corymbia intermedia</i>	Pink Bloodwood	230		230	72	8.0	5.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
213	<i>Corymbia citriodora</i>	Spotted Gum	200		200	63	10.0	5.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
214	<i>Acacia concurrens</i>	Black Wattle	100		100	31	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
215	<i>Eucalyptus acmenoides</i>	White Mahogany	760		760	239	26.0	12.0	9.1	2.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	Large	-	-	-	Remove (Road Works)	
216	<i>Eucalyptus acmenoides</i>	White Mahogany	250		250	79	8.0	4.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
217	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	230		230	72	8.0	4.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
218	<i>Eucalyptus acmenoides</i>	White Mahogany	160		160	50	7.0	4.0	2.0	1.5	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
219	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	180		180	57	9.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termite nest	-	Remove (Road Works)	
220	<i>Acacia concurrens</i>	Black Wattle	100		100	31	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
221	<i>Corymbia intermedia</i>	Pink Bloodwood	100		100	31	5.0	1.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
222	<i>Acacia concurrens</i>	Black Wattle	100		100	31	4.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
223	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	460		460	145	22.0	8.0	5.5	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	Old	-	-	-	-	Remove (Road Works)	
224	<i>Eucalyptus acmenoides</i>	White Mahogany	260	180	316	99	8.0	5.0	3.8	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
225	<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
226	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	4.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
227	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
228	<i>Allocasuarina littoralis</i>	Black She-oak	100	90	135	42	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
229	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	540		540	170	18.0	8.0	6.5	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
230	<i>Allocasuarina littoralis</i>	Black She-oak	220		220	69	4.0	3.0	2.6	1.8																				

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details		
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
233	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	140		140	44	7.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
234	<i>Corymbia citriodora</i>	Spotted Gum	270	190, 160, 130	389	122	12.0	7.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
235	<i>Acacia concurrens</i>	Black Wattle	160		160	50	5.0	3.0	2.0	1.5	Regular	-	-	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
236	<i>Corymbia intermedia</i>	Pink Bloodwood	120	90	150	47	7.0	2.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
237	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	180		180	57	8.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
238	<i>Corymbia intermedia</i>	Pink Bloodwood	140	120, 100, 90	228	72	7.0	3.0	2.7	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
239	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	210	90, 90	246	77	10.0	4.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
240	<i>Eucalyptus acmenoides</i>	White Mahogany	160	90	184	58	8.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
241	<i>Corymbia intermedia</i>	Pink Bloodwood	120	90	150	47	7.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
242	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	150		150	47	10.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
243	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	100		100	31	3.0	2.0	2.0	1.3	Regular	-	-	-	-	Lopped	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
244	<i>Eucalyptus acmenoides</i>	White Mahogany	150	140, 100	228	72	7.0	4.0	2.7	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
245	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	540		540	170	26.0	12.0	6.5	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	Remove (Previous Application)	
246	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
247	<i>Corymbia citriodora</i>	Spotted Gum	150		150	47	10.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
248	<i>Corymbia citriodora</i>	Spotted Gum	480		480	151	22.0	10.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
249	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	490		490	154	25.0	13.0	5.9	2.5	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
250	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	400		400	126	26.0	12.0	4.8	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
251	<i>Acacia disparrima</i>	Hickory Wattle	100		100	31	4.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
252	<i>Corymbia citriodora</i>	Spotted Gum	480		480	151	22.0	14.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
253	<i>Acacia concurrens</i>	Black Wattle	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
254	<i>Acacia concurrens</i>	Black Wattle	140		140	44	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
255	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	510		510	160	25.0	12.0	6.1	2.5	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
256	<i>Corymbia intermedia</i>	Pink Bloodwood	380		380	119	14.0	7.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
257	<i>Corymbia citriodora</i>	Spotted Gum	480		480	151	24.0	14.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
258	<i>Corymbia citriodora</i>	Spotted Gum	530		530	167	23.0	12.0	6.4	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
259	<i>Acacia concurrens</i>	Black Wattle	160		160	50	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
260	<i>Acacia concurrens</i>	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
261	<i>Acacia concurrens</i>	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
262	<i>Acacia concurrens</i>	Black Wattle	100	90	135	42	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
263	<i>Acacia concurrens</i>	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
264	<i>Corymbia citriodora</i>	Spotted Gum	410		410	129	20.0	10.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
265	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	310		310	97	13.0	6.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
266	<i>Corymbia citriodora</i>	Spotted Gum	110		110	35	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
267	<i>Corymbia citriodora</i>	Spotted Gum	230		230	72	16.0	7.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
268	<i>Corymbia intermedia</i>	Pink Bloodwood	110		110	35	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
269	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
270	<i>Acacia disparrima</i>	Hickory Wattle	200		200	63	7.0	3.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
271	<i>Corymbia citriodora</i>	Spotted Gum	130		130	41	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
272	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
273	<i>Corymbia citriodora</i>	Spotted Gum	140		140	44	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
274	<i>Acacia disparrima</i>	Hickory Wattle	100		100	31	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
275	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
276	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	140		140	44	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
277	<i>Corymbia citriodora</i>	Spotted																												

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details		
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
280	Acacia disparrima	Hickory Wattle	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
281	Acacia disparrima	Hickory Wattle	110	100	149	47	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
282	Acacia concurrens	Black Wattle	130		130	41	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
283	Acacia concurrens	Black Wattle	100		100	31	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
284	Allocasuarina littoralis	Black She-oak	120		120	38	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
285	Acacia concurrens	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
286	Acacia concurrens	Black Wattle	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
287	Acacia concurrens	Black Wattle	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
288	Acacia concurrens	Black Wattle	190		190	60	7.0	4.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
289	Acacia concurrens	Black Wattle	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
290	Acacia concurrens	Black Wattle	130		130	41	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
291	Acacia concurrens	Black Wattle	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
292	Acacia concurrens	Black Wattle	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
293	Eucalyptus fibrosa	Broad-leaved Red Ironbark	360		360	113	18.0	6.0	4.3	2.2	Regular	-	-	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
294	Acacia concurrens	Black Wattle	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
295	Acacia concurrens	Black Wattle	160		160	50	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
296	Acacia concurrens	Black Wattle	110		110	35	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
297	Acacia concurrens	Black Wattle	150		150	47	6.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
298	Corymbia torelliana	Cadaghi	100		100	31	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
299	Corymbia torelliana	Cadaghi	110		110	35	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
300	Corymbia citriodora	Spotted Gum	130		130	41	6.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
301	Acacia concurrens	Black Wattle	120		120	38	7.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
302	Acacia concurrens	Black Wattle	130	130	184	58	6.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
303	Allocasuarina littoralis	Black She-oak	150		150	47	6.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
304	Acacia concurrens	Black Wattle	200	190	276	87	7.0	5.0	3.3	1.9	Regular	-	Thinning	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
305	Allocasuarina littoralis	Black She-oak	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
306	Acacia concurrens	Black Wattle	160		160	50	6.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
307	Corymbia citriodora	Spotted Gum	100		100	31	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
308	Allocasuarina littoralis	Black She-oak	110		110	35	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
309	Allocasuarina littoralis	Black She-oak	120		120	38	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
310	Acacia concurrens	Black Wattle	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
311	Acacia concurrens	Black Wattle	110		110	35	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
312	Corymbia citriodora	Spotted Gum	190		190	60	8.0	4.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
313	Allocasuarina littoralis	Black She-oak	100	90, 90	162	51	6.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
314	Eucalyptus fibrosa	Broad-leaved Red Ironbark	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
315	Allocasuarina littoralis	Black She-oak	110		110	35	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
316	Eucalyptus siderophloia	Northern Grey Ironbark	140		140	44	6.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
317	Corymbia torelliana	Cadaghi	200		200	63	7.0	4.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
318	Acacia concurrens	Black Wattle	190		190	60	7.0	4.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
319	Lophostemon suaveolens	Swamp Box	110		110	35	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
320	Eucalyptus fibrosa	Broad-leaved Red Ironbark	140		140	44	3.0	2.0	2.0	1.4	Regular	-	-	-	-	Lopped	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
321	Eucalyptus fibrosa	Broad-leaved Red Ironbark	140		140	44	4.0	2.0	2.0	1.4	Regular	-	-	-	-	Lopped	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
322	Alphitonia excelsa	Soap Tree	130		130	41	6.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
323	Corymbia citriodora	Spotted Gum	160		160	50	11.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
324	Acacia disparrima	Hickory Wattle	130		130	41	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
325	Corymbia intermedia	Pink Bloodwood	160		160	50	8.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
326	Corymbia citriodora	Spotted Gum	180</																											

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details			
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes	
327	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	590		590	185	26.0	15.0	7.1	2.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Current Application)		
328	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	560		560	176	25.0	13.0	6.7	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Current Application)		
329	<i>Lophostemon suaveolens</i>	Swamp Box	180	100	206	65	8.0	4.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
330	<i>Lophostemon suaveolens</i>	Swamp Box	100		100	31	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
331	<i>Acacia concurrens</i>	Black Wattle	190		190	60	8.0	4.0	2.3	1.6	Regular	-	-	-	-	-	Typical	Minor	Introduced	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
332	<i>Acacia disparrima</i>	Hickory Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
333	<i>Acacia disparrima</i>	Hickory Wattle	110		110	35	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
334	<i>Lophostemon suaveolens</i>	Swamp Box	100		100	31	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
335	<i>Lophostemon suaveolens</i>	Swamp Box	120		120	38	7.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Current Application)		
336	<i>Lophostemon suaveolens</i>	Swamp Box	120		120	38	7.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
337	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	310		310	97	16.0	6.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
338	<i>Eucalyptus acmenoides</i>	White Mahogany	200		200	63	9.0	5.0	2.4	1.7	Regular	-	-	-	-	-	Typical	Minor	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
339	<i>Eucalyptus acmenoides</i>	White Mahogany	250		250	79	14.0	6.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
340	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	200		200	63	14.0	5.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
341	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	430		430	135	24.0	12.0	5.2	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Current Application)		
342	<i>Acacia disparrima</i>	Hickory Wattle	160		160	50	6.0	4.0	2.0	1.5	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
343	<i>Melaleuca saligna</i>	Willow Bottlebrush	100		100	31	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
344	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
345	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	460		460	145	22.0	14.0	5.5	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Current Application)		
346	<i>Syagrus romanzoffiana</i>	Cocos Palm	220		220	69	7.0	4.0	2.6	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
347	<i>Syagrus romanzoffiana</i>	Cocos Palm	190		190	60	7.0	3.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
348	<i>Syagrus romanzoffiana</i>	Cocos Palm	200		200	63	7.0	4.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
349	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	340		340	107	26.0	11.0	4.1	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
350	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	160		160	50	9.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
351	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	410		410	129	27.0	10.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
352	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	300		300	94	23.0	9.0	3.6	2.0	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
353	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	330		330	104	25.0	8.0	4.0	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
354	<i>Corymbia intermedia</i>	Pink Bloodwood	250		250	79	18.0	6.0	3.0	1.8	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
355	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	340		340	107	21.0	11.0	4.1	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
356	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	380		380	119	15.0	6.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
357	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	120		120	38	10.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
358	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	370		370	116	18.0	7.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
359	<i>Acacia disparrima</i>	Hickory Wattle	120	80	144	45	8.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
360	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	500		500	157	26.0	12.0	6.0	2.5	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
361	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	450		450	141	27.0	13.0	5.4	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
362	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	370		370	116	23.0	9.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
363	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	390		390	123	18.0	6.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
364	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	8.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
365	<i>Acacia disparrima</i>	Hickory Wattle	100		100	31	10.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
366	<i>Acacia disparrima</i>	Hickory Wattle	110		110	35	12.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
367	<i>Acacia disparrima</i>	Hickory Wattle	120		120	38	11.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
368	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	14.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
369	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	710		710	223	27.0	10.0	8.5	2.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
370	<i>Corymbia intermedia</i>	Pink Bloodwood	230		230	72	17.0	4.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-					

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details			
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes	
374	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	370		370	116	28.0	13.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
375	<i>Corymbia citriodora</i>	Spotted Gum	480		480	151	27.0	12.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
376	<i>Acacia disparrima</i>	Hickory Wattle	110		110	35	8.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
377	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	12.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
378	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	350		350	110	18.0	8.0	4.2	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
379	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	400		400	126	16.0	8.0	4.8	2.3	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
380	<i>Corymbia intermedia</i>	Pink Bloodwood	290		290	91	18.0	6.0	3.5	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
381	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	11.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
382	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	10.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
383	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	10.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
384	<i>Allocasuarina littoralis</i>	Black She-oak	150		150	47	9.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
385	<i>Allocasuarina littoralis</i>	Black She-oak	150		150	47	14.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
386	<i>Corymbia citriodora</i>	Spotted Gum	480		480	151	28.0	11.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
387	<i>Lophostemon suaveolens</i>	Swamp Box	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
388	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	12.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
389	<i>Allocasuarina littoralis</i>	Black She-oak	140		140	44	10.0	4.0	2.0	1.4	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
390	<i>Corymbia citriodora</i>	Spotted Gum	140		140	44	14.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
391	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	9.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
392	<i>Eucalyptus microcorys</i>	Tallowwood	200		200	63	15.0	6.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
393	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	100		100	31	6.0	1.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
394	<i>Corymbia citriodora</i>	Spotted Gum	170		170	53	14.0	3.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
395	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	12.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
396	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	180	80	197	62	17.0	6.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
397	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	13.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
398	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	13.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
399	<i>Allocasuarina littoralis</i>	Black She-oak	190		190	60	16.0	5.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
400	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	11.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
401	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	14.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
402	<i>Eucalyptus acmenoides</i>	White Mahogany	190		190	60	17.0	8.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
403	<i>Corymbia citriodora</i>	Spotted Gum	360		360	113	28.0	14.0	4.3	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)		
404	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	240		240	75	18.0	9.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)		
405	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	270		270	85	18.0	6.0	3.2	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)		
406	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	8.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
407	DEAD/STAG		350		350	110	18.0	7.0	4.2	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
408	<i>Corymbia citriodora</i>	Spotted Gum	250		250	79	16.0	7.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
409	<i>Acacia disparrima</i>	Hickory Wattle	170		170	53	9.0	6.0	2.0	1.6	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
410	<i>Acacia disparrima</i>	Hickory Wattle	340		340	107	8.0	3.0	4.1	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)		
411	<i>Corymbia citriodora</i>	Spotted Gum	370		370	116	19.0	6.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
412	<i>Acacia disparrima</i>	Hickory Wattle	140		140	44	10.0	5.0	2.0	1.4	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)		
413	<i>Corymbia intermedia</i>	Pink Bloodwood	280		280	88	19.0	7.0	3.4	1.9	One-sided	-	-	-	Epicormic	-	Typical	-	-	-	Fire Dmg.	Typical	-	-	-	-	-	-	Remove (Previous Application)		
414	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	330	360	488	153	28.0	14.0	5.9	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
415	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	8.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
416	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	760		760	239	26.0	12.0	9.1	2.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
417	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	14.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-</							

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details		
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
421	DEAD/STAG		280		280	88	14.0	0.0	3.4	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	Large	-	-	-	Retain	
422	<i>Allocasuarina littoralis</i>	Black She-oak	280		280	88	18.0	6.0	3.4	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
423	<i>Corymbia citriodora</i>	Spotted Gum	480		480	151	28.0	12.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
424	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	8.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
425	<i>Corymbia citriodora</i>	Spotted Gum	310		310	97	18.0	7.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
426	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	330		330	104	21.0	11.0	4.0	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
427	DEAD/STAG		380		380	119	19.0	7.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
428	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	400		400	126	25.0	12.0	4.8	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
429	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	890		890	280	29.0	14.0	10.7	3.2	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	Large	-	-	-	Remove (Previous Application)	
430	<i>Corymbia intermedia</i>	Pink Bloodwood	310		310	97	18.0	9.0	3.7	2.0	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
431	<i>Eucalyptus microcorys</i>	Tallowwood	420		420	132	24.0	9.0	5.0	2.3	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	Remove (Previous Application)	
432	<i>Acacia disparima</i>	Hickory Wattle	150		150	47	14.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
433	<i>Eucalyptus microcorys</i>	Tallowwood	510		510	160	23.0	11.0	6.1	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)	
434	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	6.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
435	<i>Corymbia citriodora</i>	Spotted Gum	190		190	60	18.0	6.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
436	<i>Melaleuca saligna</i>	Willow Bottlebrush	120	130	177	56	10.0	5.0	2.1	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
437	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	9.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
438	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	290		290	91	21.0	11.0	3.5	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
439	<i>Corymbia citriodora</i>	Spotted Gum	510	100	520	163	26.0	10.0	6.2	2.5	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
440	<i>Corymbia citriodora</i>	Spotted Gum	380	140	405	127	23.0	9.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
441	<i>Acacia disparrima</i>	Hickory Wattle	100	90	135	42	14.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
442	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	120		120	38	12.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
443	<i>Corymbia intermedia</i>	Pink Bloodwood	100		100	31	12.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
444	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	100		100	31	11.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
445	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	110		110	35	12.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
446	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	100		100	31	11.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
447	<i>Syagrus romanzoffiana</i>	Cocos Palm	250		250	79	14.0	4.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
448	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	180		180	57	14.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
449	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	140		140	44	15.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
450	<i>Syagrus romanzoffiana</i>	Cocos Palm	180		180	57	15.0	6.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
451	<i>Syagrus romanzoffiana</i>	Cocos Palm	190		190	60	15.0	6.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
452	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	110		110	35	14.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
453	<i>Dyopsis lutescens</i>	Golden Cane Palm	70	80, 90, 60, 70	167	52	14.0	6.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
454	<i>Syagrus romanzoffiana</i>	Cocos Palm	230		230	72	16.0	7.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
455	<i>Syagrus romanzoffiana</i>	Cocos Palm	200		200	63	17.0	9.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
456	<i>Syagrus romanzoffiana</i>	Cocos Palm	250		250	79	14.0	7.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
457	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	450		450	141	28.0	14.0	5.4	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
458	<i>Corymbia intermedia</i>	Pink Bloodwood	320		320	101	18.0	9.0	3.8	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
459	<i>Corymbia citriodora</i>	Spotted Gum	170		170	53	15.0	5.0	2.0	1.6	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
460	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	400		400	126	23.0	13.0	4.8	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
461	<i>Acacia disparrima</i>	Hickory Wattle	180		180	57	14.0	6.0	2.2	1.6	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
462	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	190		190	60	16.0	5.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	Old	-	-	-	-	Retain	
463	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	140		140	44	12.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	Old	-	-	-	-	Retain	
464	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	140	80	161	51	14.0	6.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
465	<i>Eucalyptus carnea</i>	<																												

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details		
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
468	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	260		260	82	17.0	6.0	3.1	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
469	<i>Acacia disparrima</i>	Hickory Wattle	220		220	69	15.0	5.0	2.6	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
470	<i>Corymbia citriodora</i>	Spotted Gum	390		390	123	25.0	13.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
471	<i>Corymbia citriodora</i>	Spotted Gum	380		380	119	21.0	11.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
472	<i>Corymbia citriodora</i>	Spotted Gum	380		380	119	23.0	12.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
473	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	430		430	135	21.0	11.0	5.2	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
474	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	330		330	104	16.0	7.0	4.0	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
475	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	350		350	110	17.0	8.0	4.2	2.1	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
476	<i>Corymbia citriodora</i>	Spotted Gum	470		470	148	28.0	14.0	5.6	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
477	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	240		240	75	16.0	7.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
478	<i>Corymbia intermedia</i>	Pink Bloodwood	150		150	47	15.0	6.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
479	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	460		460	145	23.0	11.0	5.5	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
480	<i>Acacia disparrima</i>	Hickory Wattle	360		360	113	15.0	9.0	4.3	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
481	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	190		190	60	15.0	6.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
482	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	170		170	53	14.0	6.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
483	<i>Eucalyptus microcorys</i>	Tallowwood	180		180	57	12.0	5.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
484	<i>Lophostemon suaveolens</i>	Swamp Box	140		140	44	12.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
485	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	170	100	197	62	15.0	5.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
486	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	330		330	104	15.0	6.0	4.0	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
487	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	130		130	41	15.0	7.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
488	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	160		160	50	13.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
489	<i>Acacia disparrima</i>	Hickory Wattle	230		230	72	14.0	6.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
490	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	200		200	63	14.0	7.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
491	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	110		110	35	9.0	4.0	2.0	1.3	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
492	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	130		130	41	14.0	6.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
493	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	420		420	132	28.0	14.0	5.0	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
494	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	100		100	31	9.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
495	<i>Corymbia citriodora</i>	Spotted Gum	260		260	82	16.0	5.0	3.1	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
496	<i>Acacia disparrima</i>	Hickory Wattle	200		200	63	14.0	6.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
497	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	120		120	38	11.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
498	<i>Acacia disparrima</i>	Hickory Wattle	140		140	44	11.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
499	<i>Corymbia citriodora</i>	Spotted Gum	230		230	72	18.0	7.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
500	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	140		140	44	14.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
501	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	460		460	145	28.0	15.0	5.5	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
502	<i>Acacia disparrima</i>	Hickory Wattle	110		110	35	12.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
503	<i>Corymbia intermedia</i>	Pink Bloodwood	230		230	72	15.0	6.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
504	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	560		560	176	25.0	15.0	6.7	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
505	<i>Corymbia citriodora</i>	Spotted Gum	250		250	79	12.0	4.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
506	<i>Corymbia citriodora</i>	Spotted Gum	140		140	44	15.0	4.0	2.0	1.4	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
507	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	160	140, 200	292	92	17.0	8.0	3.5	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
508	<i>Eucalyptus microcorys</i>	Tallowwood	140	110	178	56	13.0	6.0	2.1	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
509	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	240		240	75	16.0	8.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
510	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	180	240	300	94	18.0	9.0	3.6	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
511	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	140		140	44	14.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
512	<i>Acacia disparrima</i>	H																												

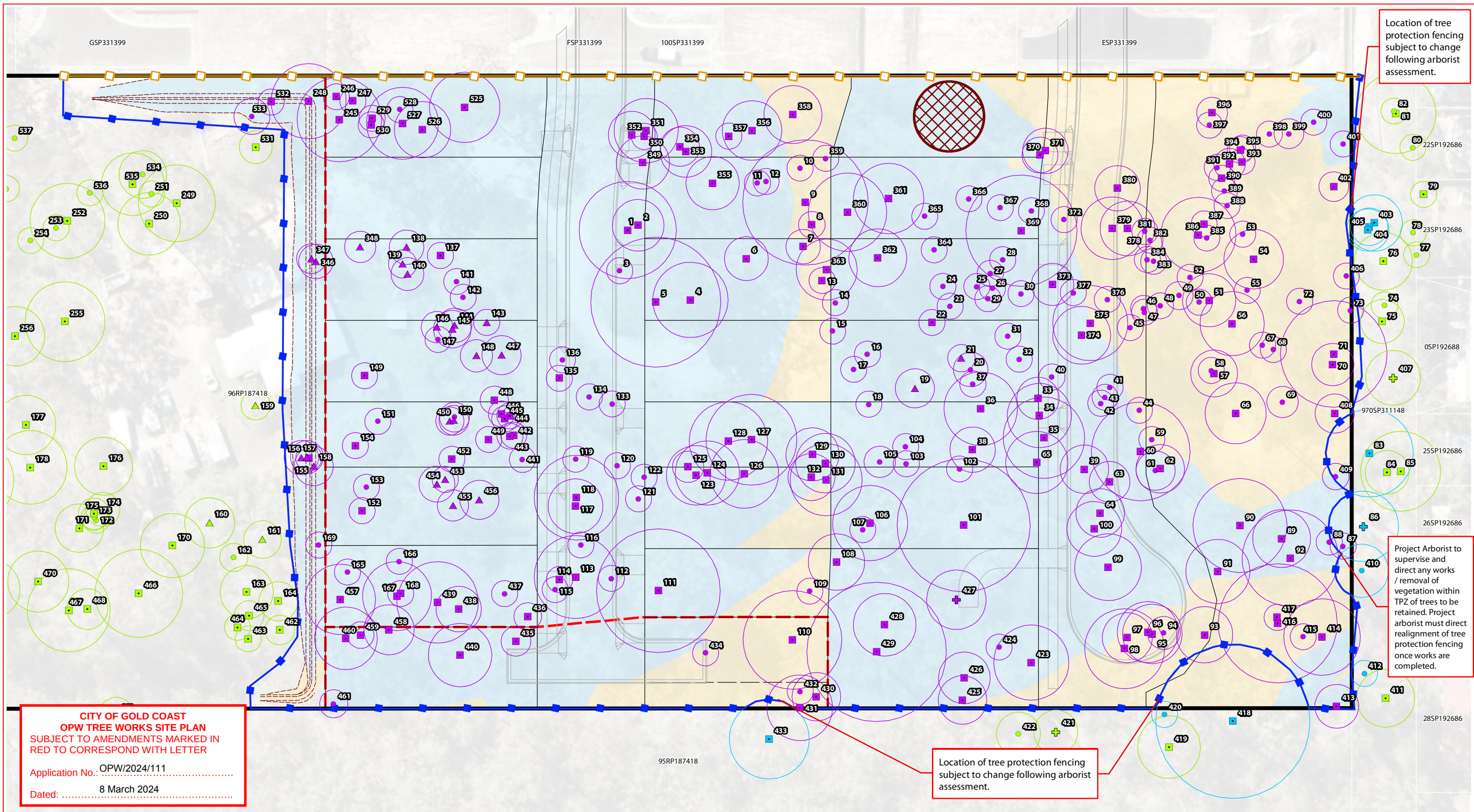
Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details		
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
515	<i>Corymbia intermedia</i>	Pink Bloodwood	200		200	63	16.0	7.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
516	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	230		230	72	16.0	7.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
517	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	260		260	82	18.0	8.0	3.1	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
518	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	260		260	82	18.0	6.0	3.1	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
519	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	250		250	79	17.0	6.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
520	<i>Corymbia intermedia</i>	Pink Bloodwood	170	130, 120	245	77	15.0	6.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
521	<i>Corymbia torelliana</i>	Cadaghi	120		120	38	12.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
522	<i>Melaleuca saligna</i>	Willow Bottlebrush	130		130	41	14.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
523	<i>Corymbia intermedia</i>	Pink Bloodwood	180	100, 120	238	75	17.0	6.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
524	<i>Lophostemon suaveolens</i>	Swamp Box	100		100	31	12.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
525	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	450		450	141	23.0	13.0	5.4	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
526	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	360		360	113	17.0	6.0	4.3	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
527	<i>Corymbia citriodora</i>	Spotted Gum	460		460	145	23.0	11.0	5.5	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
528	<i>Acacia leiocalyx</i>	Early-flowering Black Wattle	80	100, 60	141	44	10.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
529	<i>Corymbia citriodora</i>	Spotted Gum	140		140	44	12.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
530	<i>Corymbia citriodora</i>	Spotted Gum	120		120	38	14.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
531	<i>Eucalyptus tereticornis</i>	Forest Red Gum	210		210	66	16.0	5.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
532	<i>Corymbia citriodora</i>	Spotted Gum	120		120	38	12.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
533	<i>Acacia disparrima</i>	Hickory Wattle	230		230	72	15.0	8.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
534	<i>Acacia disparrima</i>	Hickory Wattle	230	200	305	96	14.0	9.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
535	<i>Corymbia citriodora</i>	Spotted Gum	400		400	126	23.0	11.0	4.8	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
536	<i>Acacia leiocalyx</i>	Early-flowering Black Wattle	100		100	31	10.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
537	<i>Acacia leiocalyx</i>	Early-flowering Black Wattle	110		110	35	10.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
538	<i>Corymbia citriodora</i>	Spotted Gum	340		340	107	19.0	8.0	4.1	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
539	<i>Acacia leiocalyx</i>	Early-flowering Black Wattle	110		110	35	11.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
540	<i>Acacia leiocalyx</i>	Early-flowering Black Wattle	100		100	31	9.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
541	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	470		470	148	23.0	15.0	5.6	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
542	<i>Acacia disparrima</i>	Hickory Wattle	150		150	47	10.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
543	<i>Corymbia intermedia</i>	Pink Bloodwood	350		350	110	21.0	11.0	4.2	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
544	<i>Allocasuarina littoralis</i>	Black She-oak	160		160	50	9.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
545	<i>Allocasuarina littoralis</i>	Black She-oak	150		150	47	14.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
546	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	14.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
547	<i>Corymbia citriodora</i>	Spotted Gum	140		140	44	16.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
548	<i>Corymbia citriodora</i>	Spotted Gum	110	120	163	51	16.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
549	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	390		390	123	23.0	14.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
550	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	410		410	129	24.0	12.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
551	<i>Acacia disparrima</i>	Hickory Wattle	140		140	44	14.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
552	<i>Corymbia intermedia</i>	Pink Bloodwood	110		110	35	14.0	1.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
553	<i>Corymbia intermedia</i>	Pink Bloodwood	110	50, 80	145	46	13.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
554	<i>Corymbia citriodora</i>	Spotted Gum	140		140	44	14.0	1.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
555	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	110		110	35	12.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
556	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	100		100	31	11.0	1.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
557	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	110		110	35	12.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
558	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	100		100	31	14.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	

Specimen Details											Canopy Condition Details							Trunk Condition Details					Fauna Details and Habitat Value						Additional Details	
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
562	<i>Corymbia citriodora</i>	Spotted Gum	150	80	170	53	1.0	3.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
563	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	150		150	47	14.0	6.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
564	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	120		120	38	15.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
565	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	130	90	158	50	14.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
566	<i>Corymbia intermedia</i>	Pink Bloodwood	140		140	44	14.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
567	<i>Corymbia intermedia</i>	Pink Bloodwood	190	100	215	67	13.0	4.0	2.6	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
568	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	130		130	41	12.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
569	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	110		110	35	12.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
570	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	110		110	35	11.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
571	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	110		110	35	10.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
572	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	110		110	35	10.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
573	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	140		140	44	14.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
574	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	120		120	38	10.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
575	<i>Corymbia intermedia</i>	Pink Bloodwood	140	130, 60	200	63	14.0	5.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
576	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	100		100	31	9.0	1.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
577	<i>Lophostemon suaveolens</i>	Swamp Box	100		100	31	11.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
578	<i>Melaleuca saligna</i>	Willow Bottlebrush	100	120, 90, 80	197	62	14.0	1.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
579	<i>Melaleuca saligna</i>	Willow Bottlebrush	190		190	60	11.0	4.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
580	<i>Corymbia intermedia</i>	Pink Bloodwood	120	120	170	53	15.0	6.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
581	<i>Corymbia intermedia</i>	Pink Bloodwood	160	200	256	80	17.0	5.0	3.1	1.9	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
582	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	170	170	240	76	17.0	6.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
583	<i>Acacia disparrima</i>	Hickory Wattle	120	160	200	63	15.0	6.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
584	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	230		230	72	17.0	7.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
585	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	110		110	35	14.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
586	<i>Corymbia intermedia</i>	Pink Bloodwood	170		170	53	13.0	3.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
587	<i>Corymbia intermedia</i>	Pink Bloodwood	100	80	128	40	11.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
588	<i>Acacia disparrima</i>	Hickory Wattle	120		120	38	11.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
589	<i>Corymbia intermedia</i>	Pink Bloodwood	160		160	50	15.0	2.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
590	<i>Corymbia citriodora</i>	Spotted Gum	190		190	60	17.0	3.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
591	<i>Corymbia intermedia</i>	Pink Bloodwood	110		110	35	11.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
592	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	400		400	126	21.0	9.0	4.8	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
593	<i>Lophostemon suaveolens</i>	Swamp Box	150		150	47	12.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Current Application)	
594	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	180	130	222	70	15.0	5.0	2.7	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
595	<i>Melaleuca saligna</i>	Willow Bottlebrush	100	90	135	42	10.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
596	<i>Lophostemon suaveolens</i>	Swamp Box	100		100	31	9.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
597	<i>Melaleuca saligna</i>	Willow Bottlebrush	110		110	35	12.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
598	<i>Corymbia intermedia</i>	Pink Bloodwood	200	210	290	91	16.0	8.0	3.5	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
599	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	200		200	63	16.0	6.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
600	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	120	250	277	87	14.0	8.0	3.3	1.9	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	Remove (Current Application)	
601	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	200		200	63	17.0	8.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
602	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	210		210	66	18.0	9.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
603	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	120		120	38	14.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
604	<i>Corymbia intermedia</i>	Pink Bloodwood	250	210	326	103	15.0	7.0	3.9	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
605	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	240		240	75	17.0	8.0	2.9	1.8	One-sided	-	-	-																

Specimen Details											Canopy Condition Details							Trunk Condition Details						Fauna Details and Habitat Value						Additional Details	
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes	
609	<i>Lophostemon suaveolens</i>	Swamp Box	100		100	31	9.0	1.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
610	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	11.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		

Appendix G

Eastern Extent Development Approval



Legend

- | | | | | | |
|---|--|---|--|--|---|
|  Non-juvenile Koala habitat tree to retain w/ TPZ |  Non-juvenile Koala habitat tree in neighbouring lot, retention subject to arborist assessment w/ TPZ |  Non-juvenile Koala habitat tree to remove w/ TPZ |  Fauna Friendly Tree Protection Fencing |  Easement Design |  Earthworks Fill |
|  Native tree to retain w/ TPZ |  Native tree in neighbouring lot, retention subject to arborist assessment w/ TPZ |  Native tree to remove w/ TPZ |  Temporary Fauna Exclusion Fencing |  Stage Boundaries |  Stockpile Location (Indicative) |
|  Dead/stag tree to retain w/ TPZ |  Dead/stag tree in neighbouring lot, retention subject to arborist assessment w/ TPZ |  Dead/stag tree to remove w/ TPZ |  Site DCDB |  Road Design | |
|  Introduced species/environmental weed to retain w/ TPZ |  Introduced species/environmental weed to retain w/ TPZ |  Introduced species/environmental weed to remove w/ TPZ |  QLD DCDB |  Earthworks Interface | |
| | | |  Lot Design |  Earthworks Cut | |

Vegetation Clearing & Fauna Management Plan - *Detail sheet*



Client:

Coomera GA Pty Ltd

Disclaimer:

THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT. SAUNDERS HAVILL GROUP CANNOT ACCEPT RESPONSIBILITY FOR ANY USE OF OR RELIANCE UPON THE CONTENTS OF THESE DRAWING BY ANY THIRD PARTY.

CONFIRM ALL DIMENSIONS ON SITE PRIOR TO CONSTRUCTION AND DO NOT SCALE FROM THE DRAWINGS. ALL DIMENSIONS ARE IN MILLIMETRES. ANY DISCREPANCIES SHOULD BE CLARIFIED IN WRITING WITH SAUNDERS HAVILL GROUP PRIOR TO THE COMMENCEMENT OF WORK.

CONFIRM ALL DIMENSIONS ON SITE PRIOR TO CONSTRUCTION AND DO NOT SCALE FROM THE DRAWINGS. ALL DIMENSIONS ARE IN MILLIMETRES. ANY DISCREPANCIES SHOULD BE CLARIFIED IN WRITING WITH SAUNDERS HAVILL GROUP PRIOR TO THE COMMENCEMENT OF WORK.

PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR FURTHER UNDER-GROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.

References:

Engineering drawing (ARCADIS 2023)



Amendments:

Issue	Date	Description	Checked
A	23/01/2024	Client Draft	AW
B	25/01/2024	Updated Engineering	AW
C	22/02/2024	Amendments	AW

Project:

George Alexander Way,
Coomera

 environmental management

Plan of: **Vegetation Clearing & Fauna Management Plan**

DATE: 22/02/2024	CHECKED: AW
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CLIENT REF: 11241	DRAWN: LS
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DRAWING No.: 11241 E 05 VCFMP C





SARA reference: 2302-33455 SRA
Council reference: COM/2023/16

21 September 2023

Chief Executive Officer
Gold Coast City Council
mail@goldcoast.qld.gov.au

Dear Sir/Madam

SARA referral agency response—54 George Alexander Way, Coomera

(Referral agency response given under section 56 of the *Planning Act 2016*)

The development application described below was confirmed as properly referred by the State Assessment and Referral Agency (SARA) on 23 February 2023.

Response

Outcome:	Referral agency response – with conditions
Date of response:	21 September 2023
Conditions:	The conditions in Attachment 1 must be attached to any development approval
Advice:	Advice to the applicant is in Attachment 2
Reasons:	The reasons for the referral agency response are in Attachment 3

Development details

Description:	Combined application for a Material change of Use for Dual occupancy (6) and Reconfiguring a Lot for 1 Lot into 26 Lot subdivision (including 24 freehold residential lots, 1 drainage Lot and 1 balance Lot), and new road over 2 stages
SARA role:	Referral agency
SARA trigger:	Schedule 10, Part 10, Division 3, Subdivision 3, Table 1, Item 1 (Planning Regulation 2017) – Development interfering with koala habitat in koala habitat areas outside koala priority areas.
SARA reference:	2302-33455 SRA
Assessment manager:	Gold Coast City Council
Street address:	54 George Alexander Way, Coomera

Real property description: Lot 96 on RP187418

Applicant name: Coomera Ga Pty Ltd Atf The Coomera Ga Unit Trust

Applicant contact details: c/- Saunders Havill Group
sarahvalentine@saundershavill.com

Human Rights Act 2019 considerations: A consideration of the 23 fundamental human rights protected under the *Human Rights Act 2019* has been undertaken as part of this decision. It has been determined that this decision does not limit human rights.

Representations

An applicant may make representations to a concurrence agency, at any time before the application is decided, about changing a matter in the referral agency response (s.30 Development Assessment Rules). Copies of the relevant provisions are in **Attachment 4**.

A copy of this response has been sent to the applicant for their information.

For further information please contact Gabriel Escobar, A/ Senior Planning Officer, on (07) 5644 3212 or via email SEQSouthPlanning@dsdilgp.qld.gov.au who will be pleased to assist.

Yours sincerely



Shane Spargo

Acting Regional Director (South), Department of State Development, Infrastructure, Local Government and Planning

cc Coomera Ga Pty Ltd Atf The Coomera Ga Unit Trust c/- Saunders Havill Group,
sarahvalentine@saundershavill.com

enc Attachment 1 - Referral agency conditions
Attachment 2 - Advice to the applicant
Attachment 3 - Reasons for referral agency response
Attachment 4 - Representations about a referral agency response provisions
Attachment 5 - Documents referenced in conditions

Attachment 1—Referral agency conditions

(Under section 56(1)(b)(i) of the *Planning Act 2016* the following conditions must be attached to any development approval relating to this application) (Copies of the documents referenced below are found at Attachment 5)

No.	Conditions	Condition timing
Development Permit for Reconfiguring a Lot		
Schedule 10, Part 10, Division 3, Subdivision 3, Table 1, Item 1—The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of the Department of Environment and Science to be the enforcement authority for the development to which this development approval relates for the administration and enforcement of any matter relating to the following condition(s):		
1.	Clearing is limited to the removal of 128 non-juvenile koala habitat trees identified as <i>Non-juvenile koala habitat tree to remove</i>, <i>Non-juvenile Koala habitat tree in neighbouring lot retention subject to arborist assessment</i> and <i>Non-juvenile Koala habitat tree to remove as exempted development</i> on the Koala Habitat Area Impact Assessment, prepared by Saunders Havil Group, dated 18/08/2023, reference 11241 E 02 KHA Impact B and issue B as amended in red by SARA on 21 September 2023 to outline the balance lot subject to rehabilitation requirements in accordance with Condition 4 of this referral response. Any additional clearing of koala habitat trees within mapped koala habitat is prohibited.	At all times.
2.	Any person carrying out vegetation clearing under this approval must be provided with a full copy of this approval. The holder of this approval must ensure that any person carrying out vegetation clearing under this approval has read and understood each condition of this approval.	Prior to any vegetation clearing.
3.	All clearing and construction activities must be carried out in accordance with the Koala Management Plan, prepared by Saunders Havill Group, dated 18 August 2023, reference 11241 and issue E.	During all clearing and construction activities.
4.	a) The holder of this approval must engage an <i>appropriately qualified person</i> to prepare a Rehabilitation Plan. The Rehabilitation Plan and must address (at a minimum): i. Details of the weed management works within the balance lot outlined in the Koala Habitat Area Impact Assessment, prepared by Saunders Havil Group, dated 18/08/2023, reference 11241 E 02 KHA Impact B and issue B as amended in red by SARA on 21 September 2023 to outline the balance lot subject to rehabilitation requirements. ii. Details of any planting in the balance lot outlined in the Koala Habitat Area Impact Assessment, prepared by Saunders Havil Group, dated 18/08/2023, reference 11241 E 02 KHA Impact B and issue B as amended in red by SARA on 21 September 2023 to outline the balance lot subject to rehabilitation requirements with local native plants of the same type and composition as found in the pre-cleared regional ecosystem will be met. iii. Details of how any vegetation planted as a result of the rehabilitation work will be suitably maintained.	(a) and (b) Prior to undertaking any clearing works. (c) As per the timeframe in the plan. (d) Within 3 months from the completion of the rehabilitation works.

	iv. Timeframes for the completion of all steps. b) A copy of the Rehabilitation Plan must be provided to the Department of Environment and Science by emailing Koala.Compliance@des.qld.gov.au or by post to GPO Box 2454 Brisbane Queensland 4001. c) The holder of this approval must carry out rehabilitation and maintenance in accordance with the Rehabilitation Plan and implement all aspects of the Rehabilitation Plan; and d) The holder of this approval must provide certification by an appropriately qualified person that (c) has been fulfilled by emailing Koala.Compliance@des.qld.gov.au or by post to GPO Box 2454 Brisbane Queensland 4001.	
5.	The holder of this approval must deliver an environmental offset in accordance with the <i>Environmental Offsets Act 2014</i> to counterbalance any significant residual impacts on the matter of state environmental significance being 128 non-juvenile koala habitat trees. <i>Note: Section 16 of the Environmental Offsets Act 2014 provides that when an offset condition is imposed on an authority, a number of deemed conditions are taken to apply. These deemed conditions are detailed in sections 19B, 22, 24 and 25 of the Environmental Offsets Act 2014. Contravention of a deemed condition is taken to be contravention of an imposed condition.</i> More information on offset delivery can be found here: https://www.qld.gov.au/environment/pollution/management/offsets/delivering. Please send the notice of election to SEQSouthPlanning@dsdilgp.qld.gov.au	Prior to commencing any clearing works.
6.	Prior to the commencement of clearing activities, notify the Department of Environment and Science at Koala.Compliance@des.qld.gov.au of: - the expected date the clearing activity will commence, - the expected duration of the clearing activity, - the name and contact details of the koala spotter that has been contracted for the clearing activity, and - the name, contact details and authority number of the spotter catcher that has been contracted for the clearing activity.	72 hours prior to commencement of vegetation clearing.

Attachment 2—Advice to the applicant

General advice	
1.	Terms and phrases used in this document are defined in the <i>Planning Act 2016</i> , its regulation or the State Development Assessment Provisions (SDAP) (version 3.0). If a word remains undefined it has its ordinary meaning.
Advice provided outside of SARA	
2.	The Nature Conservation (Koala) Conservation Plan 2017 includes mandatory requirements that applies to all persons undertaking the clearing of koala habitat trees, including that clearing be undertaken sequentially and in the presence of a koala spotter. Penalties for non-compliance apply. For further information please contact the Department of Environment and Science at koala.compliance@des.qld.gov.au.
3.	Despite this development approval, other permits or approvals may be required for the clearing of koala habitat. To determine if the proposed clearing requires other approvals under other local, State or federal laws go to www.qld.gov.au (search 'vegetation clearing requirements').

Attachment 3—Reasons for referral agency response

(Given under section 56(7) of the *Planning Act 2016*)

The reasons for the SARA's decision are:

The proposed development has been assessed against and complies with State code 25 of the SDAP with conditions, for the following reasons:

- Clearing of koala habitat areas will be limited and subject to a condition in accordance with relevant plans of development.
- Koalas will be protected during construction activities subject to a condition to ensure it is undertaken in general accordance with the proposed Koala Management Plan.
- Rehabilitation of retained areas will be carried out subject to a condition for the preparation of a rehabilitation management plan.
- Outstanding SRI will be offset subject to conditions.

Material used in the assessment of the application:

- the development application material and submitted plans
- *Planning Act 2016*
- Planning Regulation 2017
- the SDAP (version 3.0), as published by SARA
- the Development Assessment Rules
- SARA DA Mapping system
- section 58 of the *Human Rights Act 2019*

Attachment 4—Representations about a referral agency response provisions

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Attachment 5—Documents referenced in conditions

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Development Assessment Rules—Representations about a referral agency response

The following provisions are those set out in sections 28 and 30 of the Development Assessment Rules¹ regarding **representations about a referral agency response**

Part 6: Changes to the application and referral agency responses

28 Concurrence agency changes its response or gives a late response

- 28.1. Despite part 2, a concurrence agency may, after its referral agency assessment period and any further period agreed ends, change its referral agency response or give a late referral agency response before the application is decided, subject to section 28.2 and 28.3.
- 28.2. A concurrence agency may change its referral agency response at any time before the application is decided if—
- (a) the change is in response to a change which the assessment manager is satisfied is a change under section 26.1; or
 - (b) the Minister has given the concurrence agency a direction under section 99 of the Act; or
 - (c) the applicant has given written agreement to the change to the referral agency response.²
- 28.3. A concurrence agency may give a late referral agency response before the application is decided, if the applicant has given written agreement to the late referral agency response.
- 28.4. If a concurrence agency proposes to change its referral agency response under section 28.2(a), the concurrence agency must—
- (a) give notice of its intention to change its referral agency response to the assessment manager and a copy to the applicant within 5 days of receiving notice of the change under section 25.1; and
 - (b) the concurrence agency has 10 days from the day of giving notice under paragraph (a), or a further period agreed between the applicant and the concurrence agency, to give an amended referral agency response to the assessment manager and a copy to the applicant.

¹ Pursuant to Section 68 of the *Planning Act 2016*

² In the instance an applicant has made representations to the concurrence agency under section 30, and the concurrence agency agrees to make the change included in the representations, section 28.2(c) is taken to have been satisfied.

Part 7: Miscellaneous

30 Representations about a referral agency response

30.1. An applicant may make representations to a concurrence agency at any time before the application is decided, about changing a matter in the referral agency response.³

³ An applicant may elect, under section 32, to stop the assessment manager's decision period in which to take this action. If a concurrence agency wishes to amend their response in relation to representations made under this section, they must do so in accordance with section 28.

PLANS AND DOCUMENTS
referred to in the REFERRAL
AGENCY RESPONSE

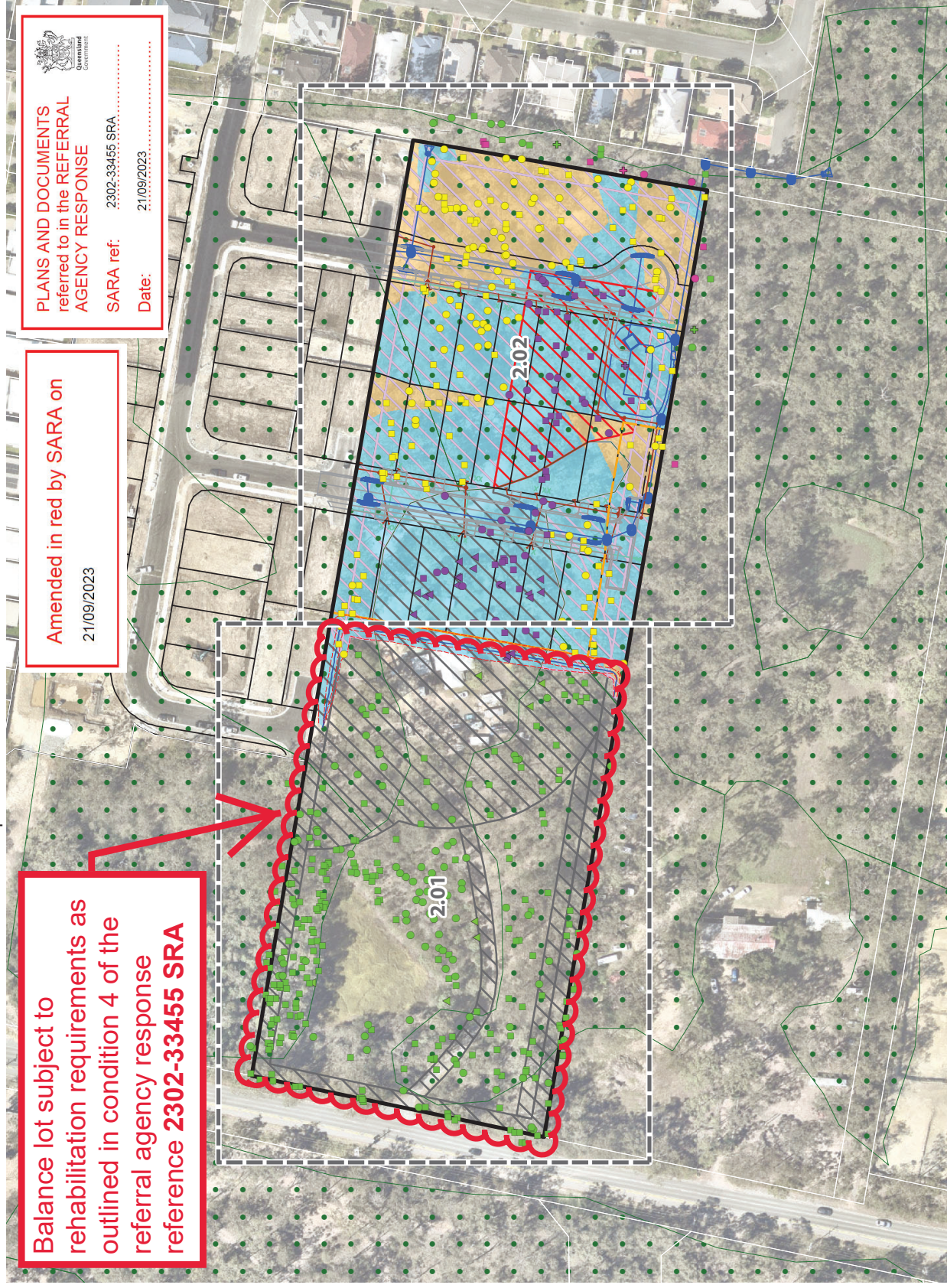
SARA ref: 2302-33455 SRA.....

Date: 21/09/2023.....

 Queensland
GOVERNMENT

Balance lot subject to rehabilitation requirements as outlined in condition 4 of the referral agency response reference **2302-33455 SRA**

Amended in red by SARA on
21/09/2023



George Alexander Way, Coomera



Koala Management Plan

SDAP v3.0 State Code 25 (Qld)

54 George Alexander Way, Coomera, Queensland 4209
Prepared for Coomera GA Pty Ltd

18 August 2023

Job 11241

Document Control

Document: State Code 25 (Qld) Koala Management Plan – 54 George Alexander Way, Coomera, prepared by Saunders Havill Group for Coomera GA Pty Ltd, dated 18 August 2023.

Document Issue

Issue	Date	Prepared by	Checked by
Issue A	01/02/2023	MD/AW	KT
Issue B	03/02/2023	KT	KT
Issue C	19/06/2023	AW	AW
Issue D	30/06/2023	AW	AW
Issue E	18/08/2023	AW	AW

Prepared by

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Table of Contents

1. Introduction	1
2. Project description	2
3. Summary of Ecological values	6
4. Impacts to the Koala	14
4.1. Risk Assessment	14
5. KMP Framework	16
5.1. General Management	16
5.1.1 Roles and Responsibilities	16
5.1.2 Environmental Training	17
5.2. Construction Management	17
5.2.1 Fauna	17
5.2.2 Vegetation Management / Sequential Clearing	19
5.2.3 Adaptive Management and Management Strategy	21
6. Management activities	22

Figures

Figure 1:	Site context	3
Figure 2:	Site aerial	4
Figure 3:	Koala Habitat Provision	5
Figure 4:	Regulated Vegetation Management Map	8
Figure 5:	Regulated Vegetation Supporting Map	9

Plans

Plan 1:	Koala Habitat Area Exempted Development	10
Plan 2:	Koala Habitat Area Impact Assessment	11

Tables

Table 1:	Risk Assessment	14
Table 2:	Key Management Personnel	17
Table 3:	Management Roles and Responsibilities	22

Acronyms and Abbreviations

Legislation, policies and guidelines

Draft Code	<i>Draft Code of Practice for the Welfare of Animals Affected by Land-clearing and Other Habitat Impacts</i>
EMP Guidelines	<i>Environmental Management Plan Guidelines, prepared by the Commonwealth of Australia, 2014</i>
VMA	<i>Vegetation Management Act 1999 (Qld)</i>

Government departments

CGC	City of Gold Coast
DES	Department of Environment and Science (Qld)
DSDILGP	Department of State Development, Infrastructure, Local Government and Planning (Qld)

General terms

CPP	<i>Gold Coast City Plan 2016 City Plan Policy – Ecological site assessments</i>
DBH	Diameter at Breast Height
ha	hectares
km	kilometres
KMP	Koala Management Plan
mm	millimetres
PO	Performance Outcome
RE	Regional Ecosystems
SAT	Spot Assessment Technique
SDAP	State Development Assessment Provisions
SHG	Saunders Havill Group
VCFMP	Vegetation Clearing and Fauna Management Plan
WHIMP	Wildlife Habitat Impact Mitigation Plan
WPMP	Wildlife Protection and Management Plan

1. Introduction

Saunders Havill Group (SHG) have been engaged by Coomera GA Pty Ltd to prepare a Koala Management Plan (KMP) to demonstrate compliance with the State Development Assessment Provisions (SDAP) *State Code 25: Development in South East Queensland Koala habitat areas version 3* (State Code 25), implemented by the Department of State Development, Infrastructure, Local Government and Planning (DSDILGP). Specifically, this KMP is required to demonstrate compliance with Performance Outcome 10 (PO10) within the State Code 25, to demonstrate the development within a mapped KHA is undertaken in a way that prevents the risk of injury or death of Koalas.

This KMP has been prepared in accordance with the document *Environmental Management Plan Guidelines, prepared by the Commonwealth of Australia, 2014* (EMP Guidelines). The purpose of this KMP is to provide a single explanatory management document for the inclusion in the design, construction and operation of the development. The objectives of this KMP are as follows:

- 1) To highlight the existing flora, fauna and ecosystem values on the subject site and in surrounding areas;
- 2) Describe key results from survey data, including Koala occurrence and the availability and quality of habitat;
- 3) Identify key direct and indirect impacts on Koalas and describe proposed avoidance and mitigation measures; and,
- 4) List out actions and legislative requirements to be implemented to manage construction impacts.

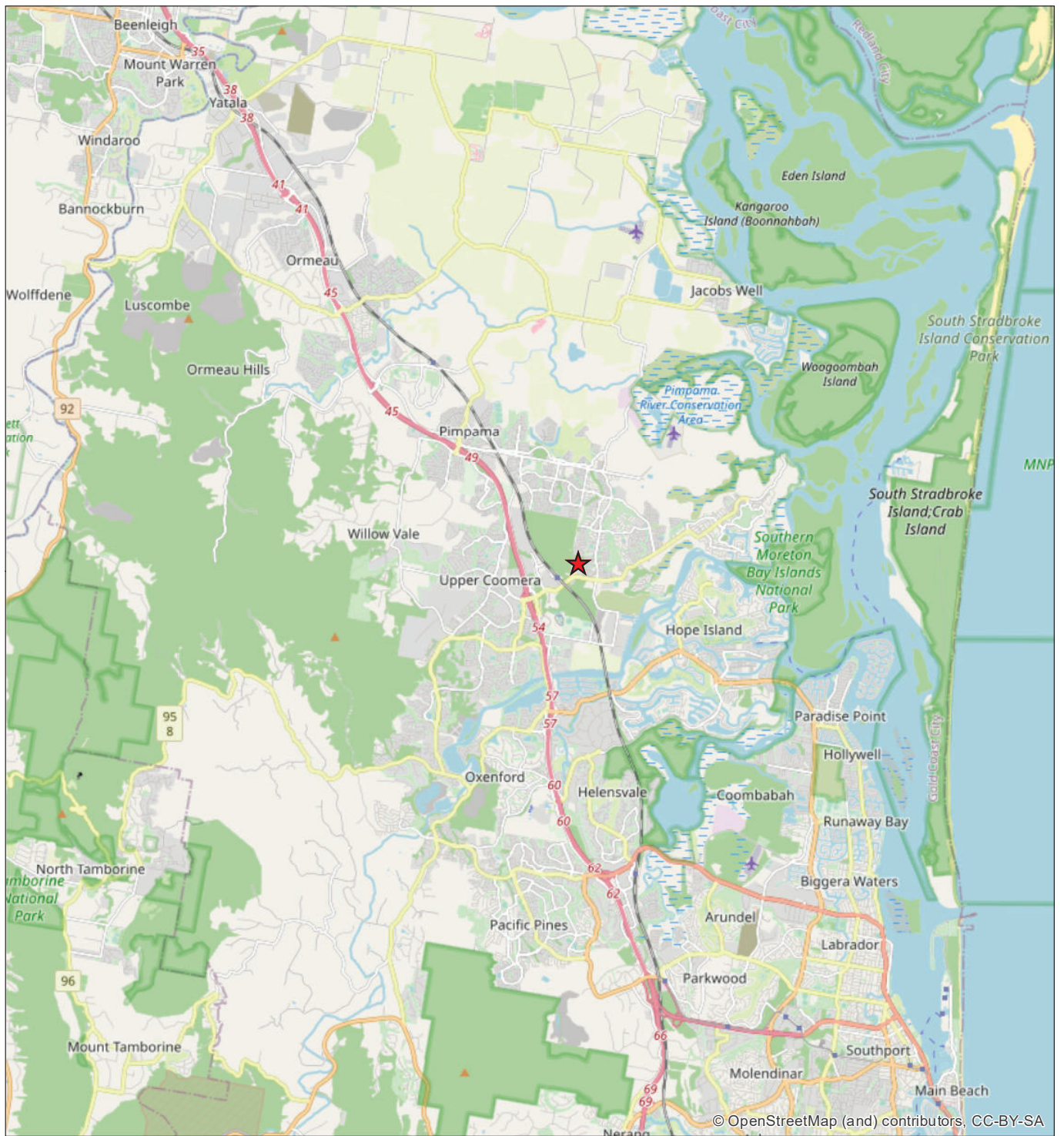
2. Project description

The subject site is located at 54 George Alexander Way, Coomera, Queensland, and is described as Lot 96 on RP187418. Contextually, the site comprises approximately 3.01 hectares (ha) located within the suburb of Coomera.

Parts of the site have been historically cleared and modified for previous residential purposes (refer **Figure 1** for Site Context and **Figure 2** for Site Aerial). Currently, the site is surrounded by residential developments to the east, a new residential development under construction to the north and a larger vegetated lot to the south. Vegetation exists to the west; however, the site is bound by George Alexander Way to the west. The wider landscape is characterised by significant urban development with a mix of residential, commercial, and retail land uses and is bisected by major infrastructure including the Gold Coast Railway Line and the Pacific Motorway.

The proposed development is to reconfigure one (1) lot into twenty-two (22) residential lots including internal access roads, a stormwater detention basin and park area. The development footprint is located in the eastern portion of the site within the area zoned as medium density residential under the *Gold Coast City Plan 2015*. The western portion of the site is zoned as high density residential. Proposed works are considered to meet planning intent of the City Plan. Furthermore, the proposal is consistent with surrounding land uses, being residential uses located to the east and residential development under construction immediately north of the subject site. The project has been designed to link to the adjoining northern development as it will be accessible via access roads to the north.

The site is not located within a KPA, however, approximately 2.0 ha of KHA is mapped across the site (refer **Figure 3**). The subject site is located at the edge of a development and represents a logical area to progress development within the rapidly urbanising Coomera Urban Centre as it will reduce impacts such as fragmentation of habitat values.



Legend



Figure 1

Site Context

Coomera GA
Pty Ltd

File ref. 11241 E Figure 1 Site Context A
Date 2/02/2023
Project George Alexander Way, Coomera

0 1 2 3 4 5 km

Scale (A4): 1:150,000 [GDA 2020 MGA Z56]



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Legend



Figure 2

Site Aerial

Coomera GA
Pty Ltd

File ref. 11241 E Figure 2 Site Aerial A
Date 2/02/2023
Project George Alexander Way, Coomera

0 10 20 30 40 50 m

Scale (A4): 1:2,000 [GDA 2020 MGA Z56]



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Legend



Site DCDB



Qld DCDB

Koala Habitat Areas



Core Remnant Koala Habitat Areas



Core Regrowth Koala Habitat Areas



Locally Refined Koala Habitat Areas



Koala Priority Areas

Figure 3

Koala Priority Areas and
Koala Habitat Areas

File ref. 11241 E Figure 3 Koala 2019 A

Date 2/02/2023

Project George Alexander Way, Coomera

0 10 20 30 40 50 m

Scale (A4): 1:2,000 [GDA 2020 MGA Z56]



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3. Summary of Ecological values

Two Ecologists from SHG assessed the project area on 18 October 2022. The entire site was traversed by foot to ensure all vegetation communities, and flora and fauna species were recorded. Particular attention was paid to threatened flora and habitat for threatened fauna species that were listed as possibly occurring on or within the vicinity of the development site, and specific micro assemblages which may support these threatened species.

This included a detailed tree plot to confirm vegetation habitat structure and status, and meandering searches for presence of Koala in the forms of scats and specimens where habitat was considered of suitable size and structure to potentially support Koala. As detailed in the State Code 25 Response and Ecological Assessment Report (EAR), the patch of KHA located on and directly adjoining the site is considered relatively isolated and is anticipated to become increasingly fragmented due to surrounding development approvals and as the planning intent is for medium and high-density residential areas.

The site is mapped as Category X (non-remnant) vegetation and Category B (remnant) vegetation containing Least Concern RE12.11.5 along the western section of the northern and southern boundaries and Least Concern RE 12.11.24 in the eastern portion (refer **Figure 4** and **Figure 5**). Regulated vegetation areas are also mapped as KHA and essential habitat for Koala under the State Planning Policy 2017 (SPP).

Field surveys confirmed on-ground vegetation values are generally reflective of regional ecosystem mapping. Modified areas containing minimal to no native vegetation values are located in the central portion the site and are generally associated with the dwelling and surrounding areas. Relatively intact eucalypt woodland is present within the mapped Category B (remnant) vegetation areas which contains large eucalypt species aligning with RE12.11.24 and RE12.11.5. *Corymbia citriodora* (Spotted Gum), *Eucalyptus fibrosa* (Broad-leaved Red Ironbark), *E. siderophloia* (Grey Ironbark), *E. microcorys* (Tallowwood), *E. carnea* (Broad-leaved White Mahogany) and *E. acemnoides* (White Mahogany).

The understorey contains a mix of *Acacia disparrima* (Hickory Wattle), *Lophostemon saueolens* (Swamp Box), *Melaleuca saligna* (White Bottlebrush) and *Allocasuarina littoralis* (Black She-oak). The ground and shrub layer throughout the site is modified in previously cleared areas, particularly surrounding the dwelling. Ground layer weed species including *Senecio madagascariensis* (Fireweed) and *Ageratum houstonianum* (Blue Billygoat Weed) were recorded.

The property contains two constructed dams, one in the north-western corner of the site and a second smaller dam in the north-eastern corner. The dam in the north-eastern corner is surrounded by *Acacia disparrima* (Hickory Wattle) and *Acacia concurrens* (Black Wattle) along with *Lophostemon saueolens* (Swamp Box) and *Allocasuarina littoralis* (Black She-Oak). Vegetation surrounding the second larger dam in the west includes *A. disparrima*, *L. saueolens* and *Melaleuca saligna* (White Bottlebrush).

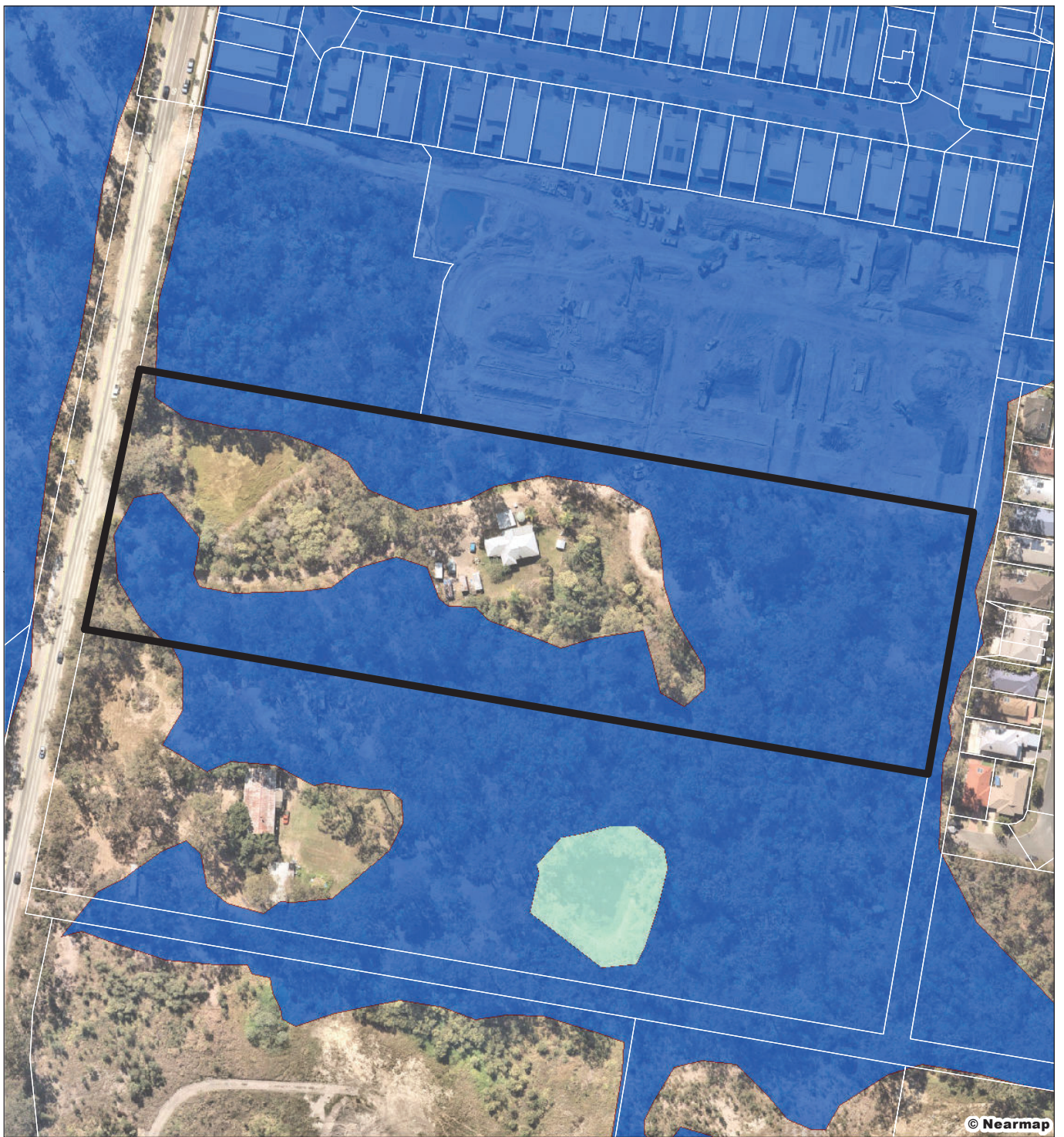
The field data collected during this period is considered to provide sufficient information to effectively understand and assess the existing ecological features and consequently the constraints that would influence the extent of developable land. The identification of ecological features considered to be of significance was

facilitated through application of the field survey methodology. Field surveys were conducted in accordance with State Guidelines and *Gold Coast City Plan 2016* City Plan Policy – Ecological site assessments (CPP).

Whilst the mapped KHA contains suitable Koala food and shelter trees, the on-site KHA is already relatively fragmented and considered unlikely to provide long-term value as a stepping-stone or patch habitat for Koala given the site is surrounded by residential development and George Alexander Way to the west.

Under the Planning Regulation framework's definition of exempted development, a total of 0.95 ha including 174 Non-Juvenile Koala Habitat Trees (NJKHTs) can be cleared for essential management for the purpose of bushfire risk mitigation. An additional 0.05 ha can be cleared as a one-off clearing area as exempted development and 0.29 ha as boundary clearing exemptions (refer **Plan 1**).

The proposed development proposes assessable impacts of 0.24 ha of mapped KHA containing 22 NJKHTs with an additional 114 proposed to be removed outside of a KHA (refer **Plan 2**).



Legend

	Site DCDB		Category C area - High value regrowth vegetation
	Old DCDB		Category R area - Reef regrowth watercourse vegetation
Regulated Vegetation			Category A area - Vegetation Offset/Compliance notices/VDecs
	Category B area - Remnant vegetation		Category X area - Vegetation not regulated under the VMA
			Water
			Area not categorised

Figure 4

Regulated Vegetation Management Map

File ref. 11241 E Figure 4 RVMM A
Date 2/02/2023
Project George Alexander Way, Coomera

0 10 20 30 40 50 m

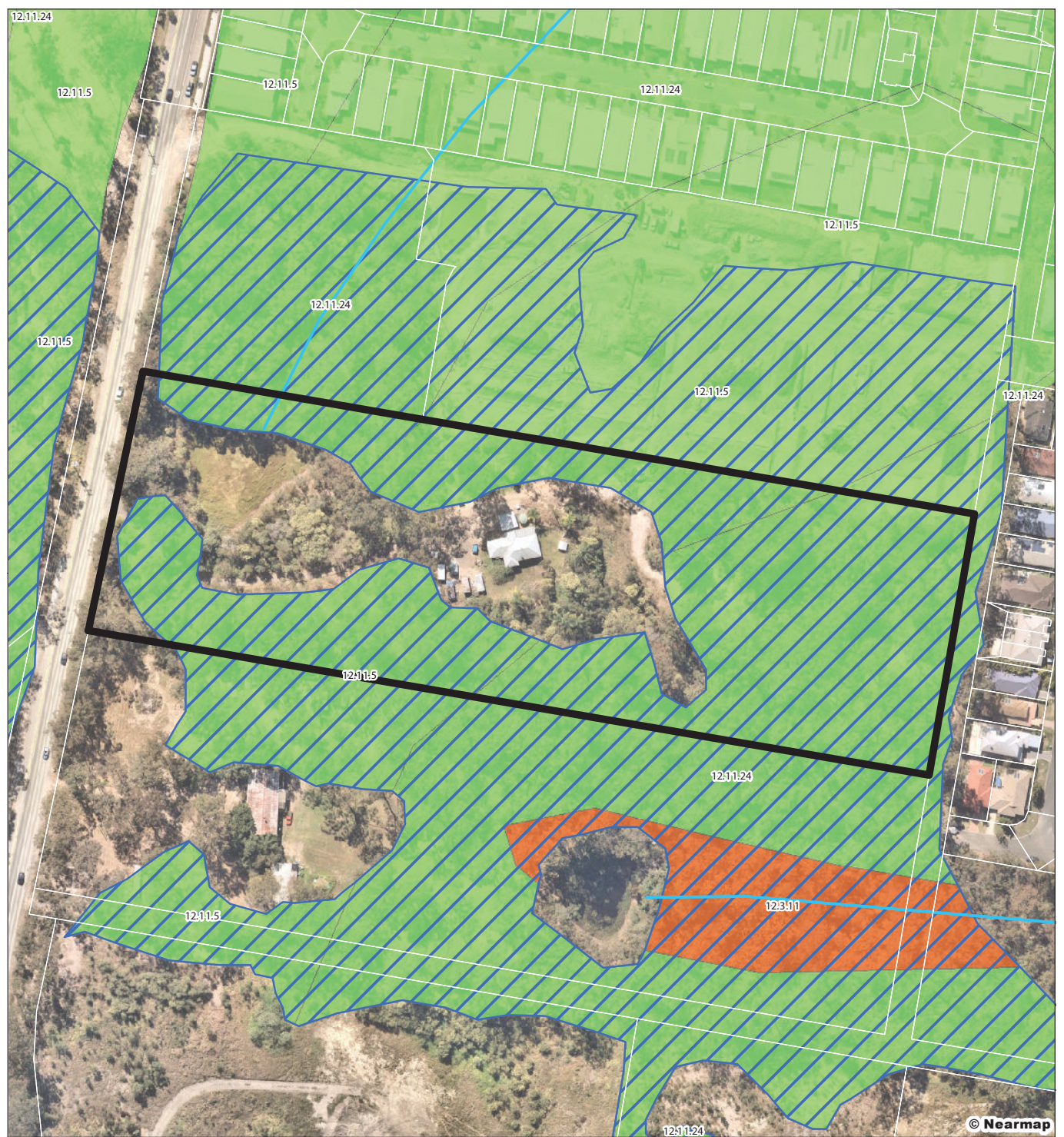
Scale (A4): 1:2,000 [GDA 2020 MGA Z56]



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Legend



Site DCDB

Qld DCDB



VM Watercourses



VM Essential Habitat



VM Wetland

Regional Ecosystems mapping



Category A or B area containing
endangered regional ecosystems



Category A or B area containing
of concern regional ecosystems



Category A or B area that is a
least concern regional ecosystem



Category C area containing
endangered regional ecosystems



Category C area containing
of concern regional ecosystems



Category C area that is a
least concern regional ecosystem

Figure 5

Regulated Vegetation Supporting Map

File ref. 11241 E Figure 5 RVSM A

Date 2/02/2023

Project George Alexander Way, Coomera



Scale (A4): 1:2,000 [GDA 2020 MGA Z56]



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1.0 Koala Habitat Area Exempted Development



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Legend

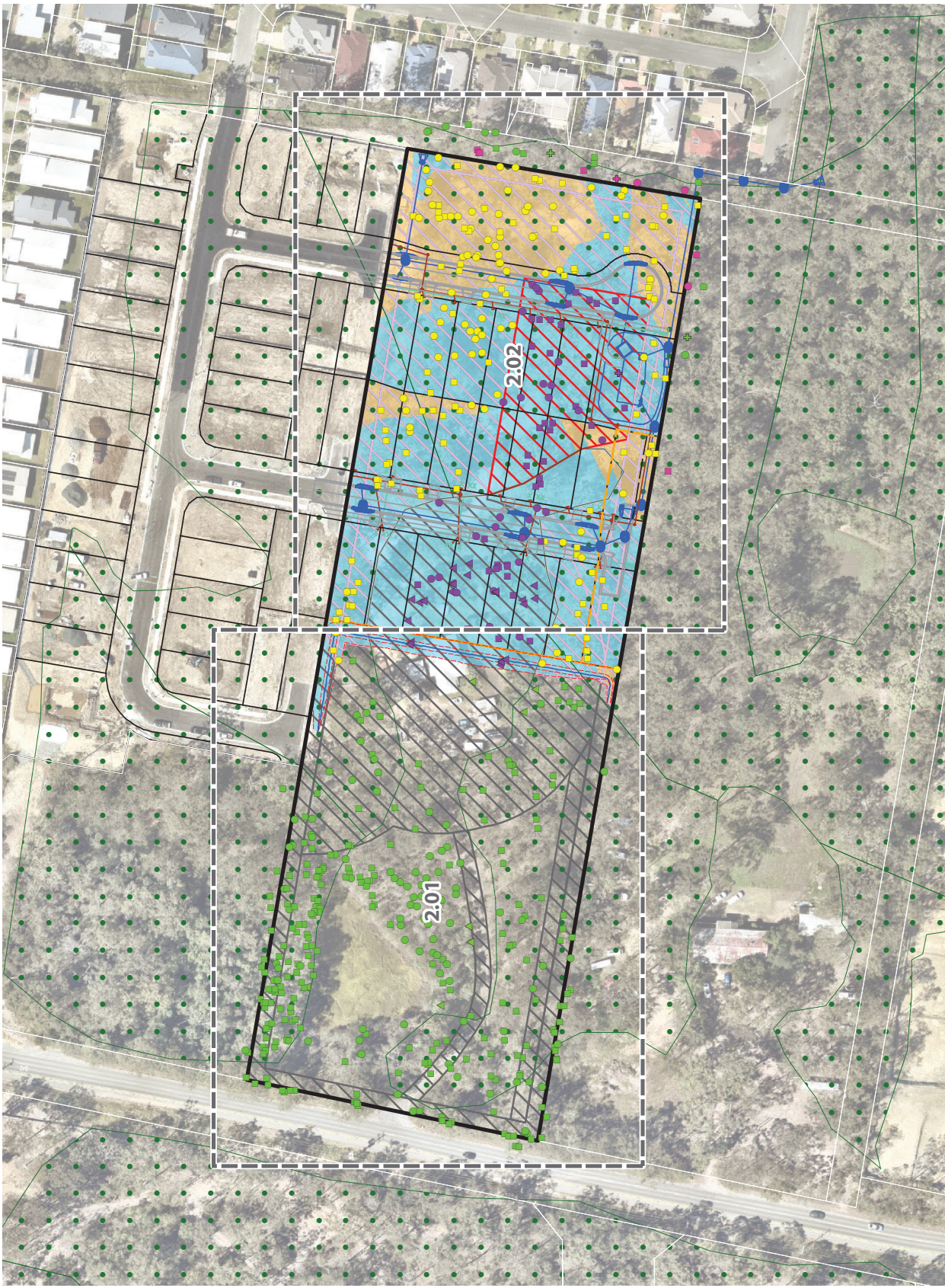
- Site DCDB
- Old DCDB
- Koala Habitat Areas (KHA)
- Koala Habitat Area that can be cleared under exempted development (K) 500 m2 exemption (0.05 ha)
- Koala Habitat Area that can be cleared under exempted development (I) (i) boundary clearing (0.26 ha)
- Koala Habitat Area that can be cleared under exempted development (n) (vi) essential management (0.95 ha)
- Koala Habitat Area not under exempted development (0.39 ha)

Date	Description	Drawn	Checked
A	02/02/2023	Preliminary	AW
B	29/06/2023	Updated Layout	TP
		TP	AW

01020304050 m

1:2,500 @ A3

2.00 Koala Habitat Area Impact Assessment



This map was prepared for a desktop assessment only. The information on this map is not suitable for any other purpose. The map is not a legal document and should not be used for any legal purpose. The map is not a legal document and should not be used for any legal purpose. The map is not a legal document and should not be used for any legal purpose.

Legend

- Site DCD8
- Old DCD8
- Koala Habitat Area (KHA)
- Koala habitat that can be cleared as exempted development under Planning Regulation 2017
- Koala habitat to be cleared as exempted development under Planning Regulation 2017
- Koala habitat to be impacted outside of definition of exempted development (0.24 ha)

Engineering Detail

- Proposed Lot Boundaries
- Proposed Easements
- Proposed Road Design
- Stage Boundaries
- Earthworks Interface
- Sewer Services
- Water Services
- Earthworks (Extent of Cut)
- Earthworks (Extent of Fill)

GPS Tree Plot

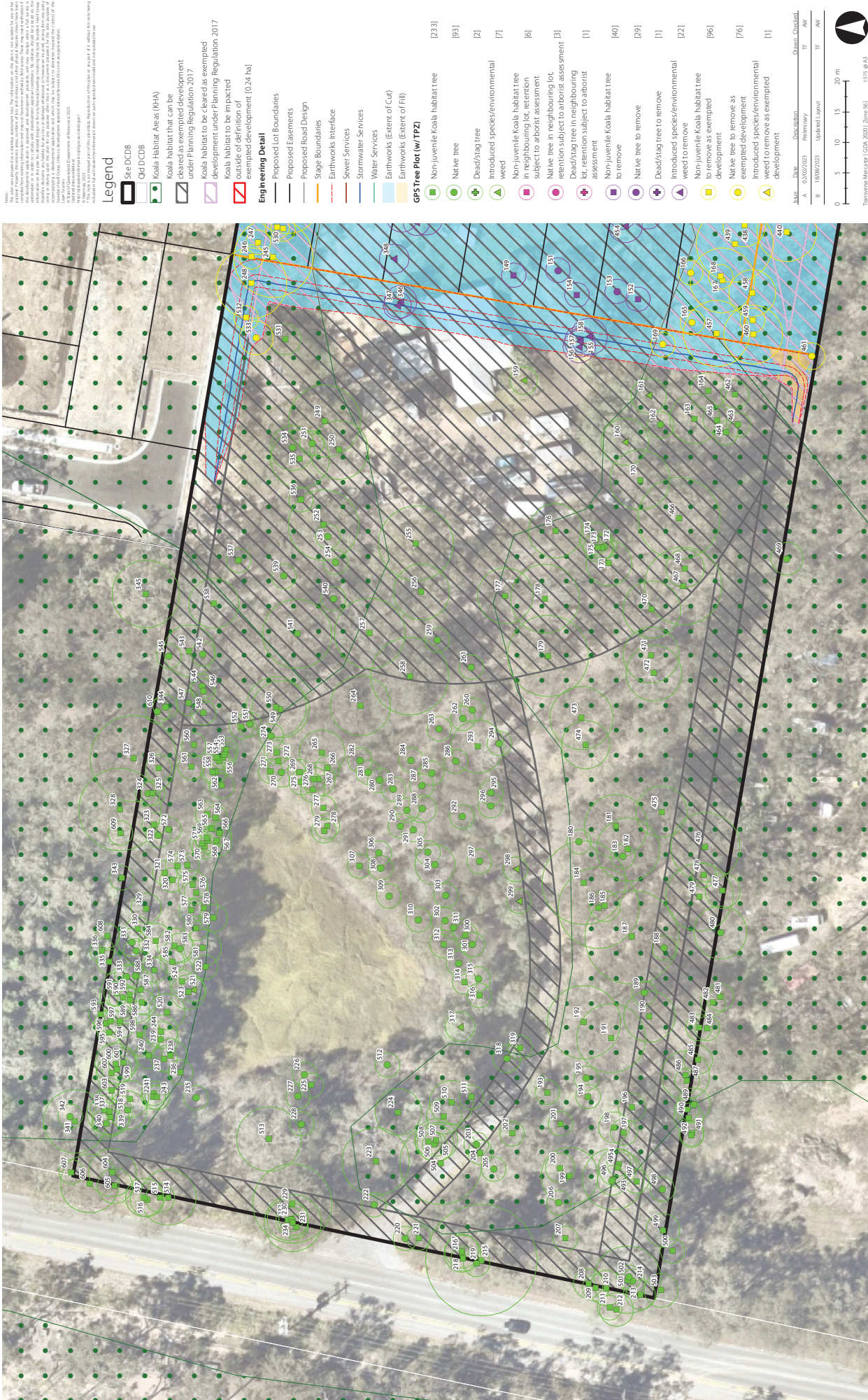
- Non-Juvenile Koala habitat tree [233]
- Native tree [93]
- Dead/Tag tree [2]
- Introduced species/environmental weed to retain [7]
- Non-Juvenile Koala habitat tree in neighbouring lot, retention subject to arborist assessment [6]
- Native tree in neighbouring lot, retention subject to arborist assessment [3]
- Dead/Tag tree in neighbouring lot, retention subject to arborist assessment [1]
- Non-Juvenile Koala habitat tree to remove [40]
- Native tree to remove [29]
- Dead/Tag tree to remove [1]
- Introduced species/environmental weed to remove [22]
- Non-Juvenile Koala habitat tree to remove as exempted development [96]
- Native tree to remove as exempted development [76]
- Introduced species/environmental weed to remove as exempted development [1]

DATE	DESCRIPTION	PREPARED BY	DATE	DESCRIPTION
A	02/02/2023	Preliminary	AW	
B	18/08/2023	Updated Layout	AW	

Transverse Mercator (GDA 2020) Zone 56 112.90 84.3

0 10 20 30 40 50 m

2.01 Koala Habitat Area Impact Assessment



4. Impacts to the Koala

The following direct and indirect impacts have been identified as having potential to occur as a result of construction.

Construction Impacts

- Direct loss of approximately 1.24 ha of mapped KHA habitat including 0.24 ha of assessable impacts.
- Indirect loss of habitat through edge effects.
- Loss of 136 non-juvenile koala habitat trees (NJKHTs), 22 of which are assessable impacts within a KHA.
- Potential loss of an additional five (5) NJKHTs subject to arborist assessment and supervision.
- Potential for injury or mortality caused by vegetation clearing.
- Potential for injury or mortality caused by vehicle use during construction.
- Potential species displacement into surrounding habitat areas.

4.1. Risk Assessment

Each of the identified potential impacts were considered in the context of the proposed action within the Risk Assessment Table (refer **Table 1**) to identify where avoidance and mitigation measures are to be focused.

Table 1: Risk Assessment

Impact	Likelihood	Consequence	Risk Rating
Construction Phase			
Direct loss of approximately 1.24 ha of mapped KHA habitat.	Almost certain (A)	Minor (2)	High
Indirect loss of habitat through edge effects	Almost certain (A)	Minor (2)	High
Loss of 136 NJKHTs	Almost certain (A)	Minor (2)	High
Potential loss of an additional five (5) NJKHTs	Possible (C)	Minor (2)	Moderate
Injury and mortality due to vegetation clearing	Unlikely (D)	Major (4)	Moderate
Injury and mortality due to increased vehicle usage	Unlikely (D)	Major (4)	Moderate
Potential species displacement into other habitat areas	Possible (C)	Minor (2)	Moderate

As identified from the risk assessment above, management measures will focus on avoiding and mitigating impacts caused by:

- Loss of habitat (direct and indirect).

- Risk of injury and death caused by:
 - vegetation clearing; and
 - vehicle strike.
- Barriers to dispersal into surrounding habitat areas.

5. KMP Framework

This KMP focuses on the management and safety of Koalas during the construction of the project. To achieve the objectives of the KMP, as detailed in **Section 1**, the implementation of specific management actions at each phase of project design and construction will occur. Management tasks and actions relevant to the project are explained throughout the following subsections. Specific actions are converted to schedules within **Section 6**, and documented using the S.M.A.R.T criteria (Specific, Measurable, Achievable, Reasonable and Time Specific).

5.1. General Management

5.1.1 Roles and Responsibilities

The successful implementation of this KMP requires a number of key personnel to complete various roles. While many of the contractors for the project are yet to be appointed, these will be specified within on-site working versions of the KMP.

Environmental Coordinator

SHG is the Environmental Coordinator for the project and is responsible for the development of this KMP and documentation for overarching environmental management. SHG will be responsible for managing non-compliance by appointed contractors and sub-contractors, including establishing additional management procedures.

Administering Authority

CGC is the government approval authority for the Local Government Area and issuer of development and operational approvals for the project.

Site Coordinator

The Site Coordinator is a representative of the project team (typically the Project Engineer) and is responsible for coordinating the project consultants and construction contractor.

Site Supervisor

The Site Supervisor is a representative of the Construction Contractor (to be appointed) and is responsible for overseeing all pre-clearing, clearing and construction activities. The Site Supervisor is responsible for ensuring all pre-clearing, clearing and construction activities are undertaken in accordance with this KMP and subsequent environmental management documentation. The Site Contractor will be responsible for engaging and commissioning the Fauna Spotter Catcher.

Fauna Spotter Catcher

A Department of Environment and Science (DES) approved Fauna Spotter Catcher is a person who holds a rehabilitation permit with an extended authority issued by DES specifying the holder may take, keep or use an animal whose habitat is about to be destroyed by a human activity. A DES approved Fauna Spotter Catcher will be engaged by the Proponent for pre-construction and construction phases of the project. It is noted that

the Fauna Spotter Catcher must hold a Rehabilitation Permit and a copy of this permit along with their contact details will be passed on to the Environmental Coordinator. The engaged Fauna Spotter Catcher will be responsible for undertaking pre-clearing surveys of the site and preparing all required pre-clearing and post-clearing reporting. The Fauna Spotter Catcher must be present on site during all clearing activities and is responsible for the relocation of native fauna.

A list of key contacts for the project is contained in **Table 2**.

Table 2: Key Management Personnel

Role	Nominated Person	Company
Proponent/ Project Coordinator	Michael Zielski	Coomera GA Pty Ltd
Environmental Coordinator	Amy Westman	Saunders Havill Group
CGC Contact	TBA	City of Gold Coast
Site Coordinator	TBA	TBA
Principal Site Contractor	TBA	TBA
Registered Fauna Spotter	TBA	TBA

5.1.2 Environmental Training

The KMP will be issued to all site contractors and sub-contractors and will be made available within the site construction office. Elements of compliance with the KMP will form part of the responsibility of the Principal Site Contractor. Training on the KMP will be incorporated as part of the broader environmental management and workplace health and safety procedures for the site. This will include the following management plans actions:

- 1) Providing a copy of the KMP to all site contractors and sub-contractors.
- 2) Requirements of the KMP discussed during site induction.
- 3) Making available the final copy of the KMP within the site construction office.
- 4) Requirements of the KMP to be incorporated into workplace checklists, work method statement and toolbox talks.
- 5) Monthly review and report on compliance with the KMP as part of the Principal Contractor's role.

5.2. Construction Management

5.2.1 Fauna

The sequential clearing of site vegetation will be undertaken in accordance with fauna management protocols implemented by a Fauna Spotter Catcher registered by DES. Additionally, the adoption of aspects of a leading practice fauna management model to guide works prior, during and post construction. This model is cited as the *Draft Code of Practice for the Welfare of Animals Affected by Land-clearing and Other Habitat Impacts*,

endorsed by the Australia Zoo Wildlife Warriors and Voiceless (the Draft Code). Under the Draft Code, the following procedures will apply to all clearing works:

Action 1- Engagement of Fauna Spotter Catcher

This action requires that the developer engage a Fauna Spotter Catcher with full registrations and licences provided in accordance with the DES.

Action 2- Fauna Spotter Catcher to prepare a Wildlife Protection and Management Plan (WPMP)

The WPMP will include the following information:

- description of the project with reference to impacts on wildlife and wildlife habitat;
- pre-development plan of the site showing habitat areas, features, corridors, riparian habitats and adjacent areas;
- results of any fauna surveys including pre-clearance surveys; and
- a wildlife and habitat impact assessment based on the proposed development works.

Action 3- Prepare a Wildlife and Habitat Impact Mitigation Plan (WHIMP)

Following the completion of the WPMP, the Fauna Spotter Catcher will prepare a more detailed WHIMP, which will provide details on:

- measures required to be completed to minimise wildlife and habitat impacts during operational works;
- wildlife capture and removal plan;
- contingency plan for wildlife requiring euthanasia, other veterinary procedures or captive care;
- wildlife storage and housing plan;
- wildlife release and disposal plan; and
- post works measures to minimise impacts on wildlife.

Action 4 – Role of Fauna Spotter Catcher at Pre-Start Meeting

Prior to the commencement of any construction works, a pre-start meeting is to be held between the project manager, site foreperson, plant operators and Local Government representatives (if required). At the pre-start meeting, the Fauna Spotter Catcher is to outline the clearing process and the requirements of the WPMP.

Action 5 – During Construction

The Fauna Spotter Catcher is to be on-site during all phases of construction which involve potential impacts on wildlife or habitat. This will enable the Fauna Spotter Catcher to make any necessary adjustments to the WPMP to cater for any specific issues encountered during the clearing works.

Action 6 – Post Works Reporting (Wildlife Management Report)

During the course of all site works, including the pre-clearance surveys, the Fauna Spotter Catcher is to keep an accurate record of all animals encountered, captured, incidents and disposals for the project. The records

should form part of the post-works Wildlife Management Report to be issued under licence requirements to DES. The Wildlife Management Report should consist of the following three sections:

1. Wildlife Habitat Management Plan – Aspects of the planning, design, construction and ongoing operation of the project in which risks to wildlife have been identified. This plan should also include recommendations and outline the type, frequency and timeframes for monitoring
2. Wildlife Capture and Disposal Plan – Should contain the following details for each captured animals:
 - a. Species.
 - b. Identification name or number.
 - c. Sex (M, F or unknown).
 - d. Approximate Age or Age Class (neonate, juvenile, sub-adult, adult).
 - e. Time and date of capture.
 - f. Method of capture.
 - g. Exact point of capture (GPS coordinates).
 - h. State of health.
 - i. Incidents associated with capture likely to affect health.
 - j. Veterinary intervention or treatments.
 - k. Time held in captivity.
 - l. Disposal method (euthanasia, translocation, re-release).
 - m. Date and time of disposal.
 - n. Detailed of disposal (GPS points of release).
 - o. For released animals, location relative to point of capture.
3. Animal Injury and Euthanasia Report – similar details for the Wildlife Capture and Disposal Plan should be included in this report.

5.2.2 Vegetation Management / Sequential Clearing

Vegetation clearing over the development footprint will occur sequentially and most likely in accordance with an endorsed Vegetation Clearing and Management Plan and Fauna Management Plan (VCFMP) to be provided at the Operational Works phase. VCFMP's if required will detail fauna exclusion fencing to be erected around construction areas to prevent fauna from dispersing into these hostile areas.

Sequential clearing means the clearing of vegetation that:

- ensures any Koalas in the area being cleared have enough time to move out of the clearing zone without human intervention. For sites with an area of more than 3 ha, this means:
 - i. vegetation clearing is to be carried out in stages, where the total area to be cleared in any one stage:
 - is no greater than 50 % of the area of a site that is 6 ha or smaller;

- is no greater than 3 ha or 3 % of the area of a site that is larger than 6 ha.
 - ii. between each stage and the next, there is at least one 12-hour period commencing at 6 pm on one day and concluding at 6 am the following day, during which no trees are cleared on the site.
 - iii. no tree in which a Koala is present, or a tree with a crown overlapping a tree in which a Koala is present, is cleared until the tree is vacated by the Koala.
- ensures vegetation clearing is directed away from threatening processes, or hostile environments, and towards any retained vegetation or habitat links, ensuring that:
 - i. Koalas are not pressured, through loss of habitat, to cross roads or move through developed or disturbed areas, such as residential areas or areas that require movement of greater than 100 m over cleared ground to reach suitable habitat;
 - ii. Koalas are not isolated to an “island” of habitat between hostile environments, such as road and cleared areas, unless there are no other more suitable habitat areas in which to direct Koalas; and
 - iii. Koalas can safely leave the site of clearing and relocate to adjacent habitat through maintained habitat links.

The following additional controls for the appointed DES Fauna Spotter Catcher during vegetation clearing include:

1. No vegetation clearing is to commence or continue without the presence of the appointed DES endorsed Fauna Spotter Catcher.
2. All trees scheduled for removal will be checked on the day of their removal (prior to the start of operations) for the presence of Koalas by the appointed DES endorsed Fauna Spotter Catcher.
3. The appointed DES endorsed Fauna Spotter Catcher is responsible for ensuring, throughout the duration of the clearing operations, that no tree in which a Koala is present, or a tree with a crown overlapping a tree in which a Koala is present, or a tree identified as being a risk to Koalas, should not be felled, damaged or interfered with until the Koala has moved from the clearing zone on its own volition.
4. Where a Koala is present within a clearing zone, the tree will be marked with distinctive flagging (and other advisory means as required) and machinery operators will be briefed on the location of the area. No clearing works can occur within 20 m of the tree retaining a Koala until the animal has moved on via its own volition (where the strategy is to allow the Koala to move of its own accord, overnight). On the following day, the tree and retained area, are to be checked again prior to their removal. If necessary, the procedure is repeated until the Koala has moved.
5. In the event that the Koala is sick or injured and needs medical attention, DES will be contacted and trapping by the Fauna Spotter Catcher may be required to allow the Koala to receive medical attention. Actions will be guided by DES and the Fauna Spotter Catcher.

5.2.3 Adaptive Management and Management Strategy

An adaptive management strategy is to be applied to this KMP to enable it to alter as necessary to better protect Koala from injury or mortality if required. As a part of this strategy the following minimal protocols are to be applied in the event of koala injury or mortality as a result of clearing or construction:

1. Clearing and construction is immediately ceased.
2. The DES is notified in writing within 48 hours of the Koala injury or mortality occurring.
3. Measures for minimising impacts to Koalas as a result of clearing and construction are revised, in consultation with a suitably qualified person to reduce the likelihood of Koala injury or mortality before clearing and construction recommences.

6. Management activities

A number of management activities have been identified within this KMP and broadly explained through **Section 5. Table 3** provides environmental management commitments to be implemented during construction works. Specific details relevant to each management commitment are provided, including timing, funding, responsible parties, and monitoring to ensure each commitment can be achieved. Each suite of management activities is categorised into pre-construction, during construction and operational measures. This KMP will be reviewed annually, or at the completion of each phase of the project, and where necessary edited.

Table 3: Management Roles and Responsibilities

Environmental Management Commitment	Responsibility	Timing	Funding	Monitoring / Frequency
PRE-COMMENCEMENT MANAGEMENT ACTIONS				
1. Provide a copy of the KMP to all contractors and subcontractors, and retain a final copy at the construction office on-site, at all times.	Proponent to provide to principal contractor. Principal Contractor to all sub-contractors	As part of contractor appointment and throughout construction.	Contractor costs associated with action to be included in tender scope funded by Proponent.	Provision for supplying the KMP to the Principal Contractor will occur with contractual appointment. The Principal Contractor is responsible for providing evidence that each appointed sub-contractor has been provided the KMP.
2. Key KMP Criteria to be included on the Workplace Health and Safety and Environmental Management work method statement.	Prepared by the principal contractor as part of other site induction checklists	Checklist to be completed prior to commencement and issued as part of all site inductions.	Principal Contractor via Proponent	The site induction process requires all visitors and personnel at the site to read and acknowledge work method statements as part of a signed checklist. This is provided to and signed by each new entrant to the site as part of induction procedures.
3. Contractor will review project compliance with the KMP, on a monthly basis, if required.	Principal Contractor in their role as Superintendent for the project.	Monthly	Principal Contractor via Proponent	Review of compliance on a monthly basis. Any non-compliances must be reported immediately.

Environmental Management Commitment	Responsibility	Timing	Funding	Monitoring / Frequency
4. Engagement of DES approved Fauna Spotter Catcher - ensure Fauna Spotter Catcher retains all necessary licenses and accreditations.	Proponent (or as passed onto Principal contractor)	Before clearing commences on any stage of works and during construction including any post construction reporting.	Proponent	Pre-clearance report issued to the Environmental Coordinator prior to commencement of works. Fauna Spotter Catcher on site during all vegetation clearing works.
5. Develop Wildlife Protection and Management Plan (Prepared in accordance with elements of the Draft Queensland Code of Practice for the Welfare of Animals affected by Land Clearing).	Fauna Spotter Catcher	Before construction commences.	Proponent	Prior to commencement of clearing in any stage.
6. Develop Wildlife and Habitat Impact Mitigation Plan (Prepared in accordance with elements of the Draft Queensland Code of Practice for the Welfare of Animals affected by Land Clearing).	Fauna Spotter Catcher	Before construction commences.	Proponent	Prior to commencement of clearing in any stage
7. Attendance of Fauna Spotter Catcher at Pre-Start Meeting.	Fauna Spotter Catcher / Principal contractor	At the pre-start meeting clearing works.	Proponent	Fauna Spotter Catcher to confirm attendance.
8. Install temporary fauna exclusion fence or other suitable barrier around construction areas to prevent koala access into construction zone.	Contractors	After the clearing is completed and prior to construction occurring within the development area.	Proponent	Fence is to be monitored monthly by the Principal Contactor.
DURING CONSTRUCTION MANAGEMENT ACTIONS				

Environmental Management Commitment	Responsibility	Timing	Funding	Monitoring / Frequency
9. All clearing of koala habitat is to occur in a staged and sequential pattern enabling the directional flushing of native animals as guided by the suitably qualified Fauna Spotter Catcher.	Principal Contractor and or appointed clearing sub-contractor.	At the time of clearing works for each stage	Proponent	Staged and sequential clearing may also be guided by the VCFMP if conditioned. Monitoring occurs as part of pre-start and completion inspections if required by officers from CGC.
10. Stop works procedures for clearing vegetation supporting any Koalas until such time that any present Koalas vacate the vegetation or are relocated by a suitable qualified person.	Fauna Spotter Catcher / Principal Contractor and or appointed clearing sub-contractor.	During clearing no tree in which a Koala is present, or a tree with a crown overlapping a tree in which a Koala is present, or a tree identified as being a risk to Koalas, to be felled, damaged or interfered with until the Koala has moved from the clearing zone of its own volition.	Proponent	Where a Koala is present within a clearing zone, the tree will be marked with distinctive flagging (and other advisory means as required) and machinery operators will be briefed on the location of the area. No clearing works can occur within 20 m of the tree retaining a Koala until the animal has moved on via its own volition (where the strategy is to allow the Koala to move of its own accord, overnight). On the following day, the tree and retained area, are to be checked again prior to their removal. If necessary, the procedure is repeated until the Koala has moved. In the event the Koala is sick or injured and needs medical attention, DES will be contacted and trapping by the Fauna Spotter Catcher may be required to allow the Koala to receive medical attention.
11. A Post clearing and construction works Wildlife Management Report is to be prepared by the appointed Fauna Spotter Catcher at the completion of each stage of works - Prepared in accordance with elements of the Draft Queensland Code of Practice for the Welfare of Animals affected by Land Clearing.	Fauna Spotter/Catcher	Records to be kept during construction and final report submitted at completion of works	Proponent	Within 10 working days of the conclusion of each stage of clearing.

DWG. No.	DESCRIPTION
GENERAL	
0001	COVER SHEET, LOCALITY PLAN & DRAWING SCHEDULE
0011	EXISTING FEATURES SURVEY PLAN
EARTHWORKS	
0101	BULK EARTHWORKS CUT AND FILL LAYOUT PLAN
0105	TYPICAL RETAINING WALL DETAILS
0111	BULK EARTHWORKS SECTIONS
0121	EROSION AND SEDIMENT CONTROL PLAN
0131	EROSION AND SEDIMENT CONTROL DETAILS SHEET 1
0132	EROSION AND SEDIMENT CONTROL DETAILS SHEET 2
0133	EROSION AND SEDIMENT CONTROL DETAILS SHEET 3
ROADWORKS	
0201	CONTROL LINE SETOUT PLAN
0202	CONTROL LINE SETOUT TABLE & TYPICAL ROAD CROSS SECTION
0221	PIONEER STREET AND MERCY STREET LONGITUDINAL SECTIONS
MISCELLANEOUS	
0601	HAZARD REGISTER



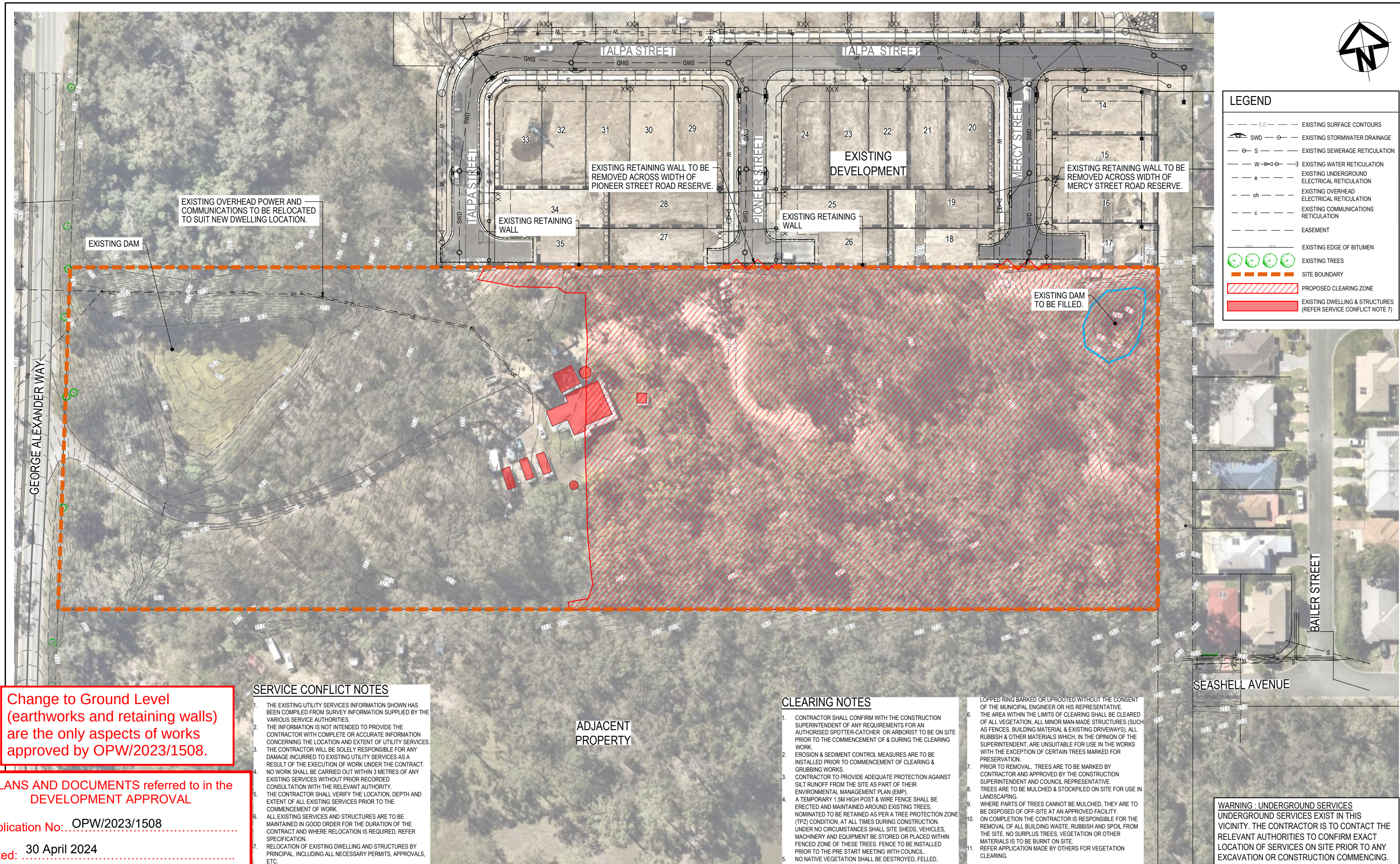
Change to Ground Level
(earthworks and retaining walls)
are the only aspects of works
approved by OPW/2023/1508.

LEVELS & GRID
ORIGIN PM139395 RL 26.512
LEVEL TO AHD
(AUSTRALIAN HEIGHT DATUM)
GRID MGA (ZONE 56)

DISCLAIMER

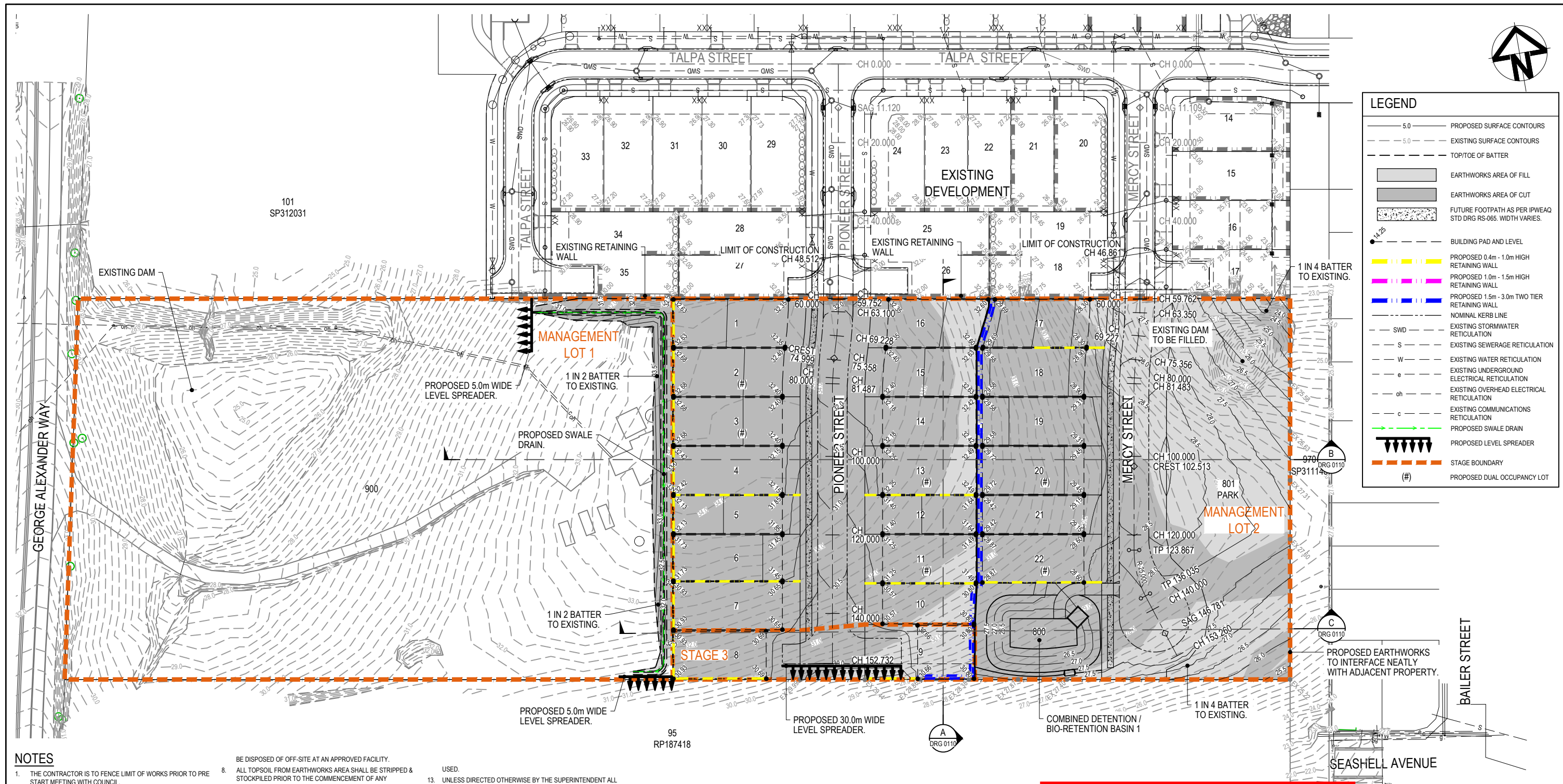
THIS MAP HAS BEEN PREPARED USING [nearmap.com](#) IMAGERY. THIS DATA IS NOT GUARANTEED TO BE FREE FROM ERROR OR OMISSION. THEREFORE ARCADIS AND ITS EMPLOYEES DISCLAIM LIABILITY OF ANY ACT DONE OR OMISSION MADE ON THE INFORMATION CONTAINED IN THIS DATA AND ANY CONSEQUENCES OF SUCH ACTS OR OMISSIONS. THIS DRAWING IS PROVIDED FOR THE INFORMATION OF THE PERSON OR ORGANISATION TO WHOM ARCADIS PROVIDES IT. IT MAY NOT BE PROVIDED TO, OR USED BY, ANY OTHER PERSON WITHOUT ARCADIS'S PRIOR WRITTEN CONSENT.

The image shows the ARCADIS logo, which consists of a stylized orange 'A' icon followed by the word 'ARCADIS' in a bold, black, sans-serif font. Below the logo, the text 'Arcadis Australia Pacific Pty Limited' is written in a smaller font. Further down, the address 'Level 7, Seabank Building, 12-14 Marine Parade' and 'SOUTHPORT QLD 4215' are listed. The phone number 'ABN 76 104 485 289' and 'Tel No: +61 7 5503 4800' are also provided. At the bottom, there is a table with two columns: 'Project Number' and 'Issue'. The 'Project Number' column contains the value '30157884', and the 'Issue' column contains the value '01'. The table is bordered by a thin black line.



Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

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NOTES

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|---|--|--|
| 1. THE CONTRACTOR IS TO FENCE LIMIT OF WORKS PRIOR TO PRE START MEETING WITH COUNCIL. | 8. ALL TOPSOIL FROM EARTHWORKS AREA SHALL BE STRIPPED & STOCKPILED PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS OPERATIONS. | 13. UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT ALL FILL SHALL BE PLACED AT BETWEEN +2% & -2% OF OPTIMUM MOISTURE CONTENT. |
| 2. SEDIMENT & EROSION CONTROL MEASURES ARE TO BE INSTALLED PRIOR TO COMMENCEMENT OF CLEARING & GRUBBING WORKS. | 9. NOTWITHSTANDING THE LIMITS OF CUTTING & FILLING SHOWN ON THE DRAWINGS, THE ACTUAL LIMITS SHALL BE DETERMINED ON SITE BY THE ENGINEER DURING CONSTRUCTION. FINISHED SURFACE CONTOURS MAY BE ADJUSTED BY WRITTEN DIRECTION OF THE ENGINEER DURING CONSTRUCTION. | 14. PROPOSED SURFACE CONTOURS ARE DESIGNED FINISHED SURFACE LEVELS. SPOT LEVELS ARE DESIGN FINISHED SURFACE LEVELS. |
| 3. AN AUTHORISED SPOTTER-CATCHER IS TO BE ON SITE PRIOR TO THE COMMENCEMENT OF A DURING THE CLEARING WORK. | 10. FILL AREAS SHALL BE CONSTRUCTED IN LAYERS NOT EXCEEDING 300mm LOOSE DEPTH. THE FILL MATERIAL SHALL BE COMPACTED TO 95% (MINIMUM) OF THE MAXIMUM DRY DENSITY. TESTING SHALL BE IN ACCORDANCE WITH A.S.1289 (MODIFIED COMPACTION). THE CONTRACTOR SHALL SUPPLY TO THE ENGINEER CERTIFICATION OF THE COMPACTION ACHIEVED. | 15. ALL NEW WORKS TO MATCH NEATLY WITH EXISTING. THE CONTRACTOR SHALL CONFIRM LOCATION OF ALL EXISTING SERVICES & PROTECT THESE SERVICES DURING CONSTRUCTION. DAMAGED SERVICES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE. |
| 4. ANY CLEARING REQUIRED TO BE UNDERTAKEN BY THE CONTRACTOR IS TO BE STRICTLY IN ACCORDANCE WITH THE COUNCIL APPROVED VEGETATION MANAGEMENT PLAN. | 11. ALL EARTHWORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH AS3798 UNDER LEVEL 1 SUPERVISION AND HAVE A FREQUENCY FIELD DENSITY TESTING RECORD IN ACCORDANCE WITH TABLE 8.1 OF AS3798. | 16. ALL OF THE SITE SHALL BE KEPT FREE DRAINING DURING ALL PHASES OF THE PROJECT. |
| 5. THE AREA WITHIN THE LIMITS OF CLEARING SHALL BE CLEARED OF ALL VEGETATION, ALL MINOR MAN-MADE STRUCTURES (SUCH AS FENCES, BUILDING MATERIAL & EXISTING DRIVEWAYS), ALL RUBBISH & OTHER MATERIALS WHICH, IN THE OPINION OF THE SUPERINTENDENT, ARE UNSUITABLE FOR USE IN THE WORKS WITH THE EXCEPTION OF CERTAIN TREES MARKED FOR PRESERVATION. | 12. ALL FILL PLACED ON THE SITE IS TO COMPRISE OF ONLY NATURAL EARTH & ROCK & IS TO BE FREE OF ALL CONTAMINANTS (REFER TO THE ENVIRONMENTAL PROTECTION ACT 1994 SECTION 11). NO DEMOLITION MATERIAL IS TO BE USED. | 17. REFER TO ROAD CROSS SECTIONS FOR BATTER GRADES. WHERE GRADES ARE NOT SPECIFIED:-
FILL - 1 IN 4 CUT - 1 IN 4 |
| 6. TREES ARE TO BE MULCHED & STOCKPILED ON SITE FOR USE IN LANDSCAPING. EXCESS TO BE REMOVED FROM SITE AT CONTRACTORS EXPENSE. | | 18. ALL ALLOTMENTS TO BE GRASS SEEDED WITH MINIMUM 80% COVERAGE. SEEDING TO OCCUR WITHIN 7 DAYS OF COMPLETION OF EARTHWORKS. |
| 7. WHERE PARTS OF TREES CANNOT BE MULCHED, THEY ARE TO | | 19. FOR TYPICAL RETAINING WALL DETAILS REFER DRG 0105. |

ADJACENT
PROPERTY

Dark Grey/Charcoal finish required for all sleeper retaining walls. Plain Grey concrete finish not acceptable.

Change to Ground Level
(earthworks and retaining walls)
are the only aspects of works
approved by OPW/2023/1508.

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1508

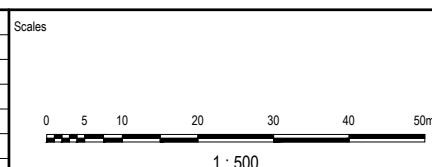
Dated: 30 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

CUT / FILL VOLUMES

CUT	-14,294.744m³
FILL	2,302.670m³
BALANCE (EXPORT)	-11,992.074m³
NOTE: NO TOPSOIL STRIP OF EXISTING AND TOPSOIL RE-SPREAD HAS BEEN APPLIED TO VOLUMES. NO COMPACTION OR BULKING FACTORS HAVE BEEN APPLIED.	

01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023
Issue	Description	DR	CH	VE	Date



Surveyor	
----------	--



Coomera GA Pty Ltd
ATF The Coomera
GA Unit Trust
Pty Ltd

	Status
--	--------

FOR APPROVAL
CONSTRUCTION SUBJECT TO APPROVAL

Original Issue Signature

Original Issue Signatures		Original Size	A1
Drawn	D. KEARNEY	Height Datum	AHD
Designed	G. GESMUNDO	Grid	MGA (ZONE 56)
Project Manager	A. SHEPHERD	R.P.E.Q. No: 7850 Date 31.01.2024	
Verified	R. MULLIGAN		

	Project
--	---------

54 GEORGE ALEXANDER WAY,
COOMERA

Title

BULK EARTHWORKS CUL LAYOUT PLAN



Arcadis Australia Pacific Pty Limited
Level 7, Seabank Building, 12-14 Marine Parade
SOUTHPORT QLD 4215
ARN 76 104 485 289

Tel No: +61 7 5503 4800

www.arcadis.com/au

Drawing No.

Project Number	30157884
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GAW-AAP-BE-00-DRG-CV-0101

01

Dark Grey/Charcoal finish required for all sleeper retaining walls. Plain Grey concrete finish not acceptable.

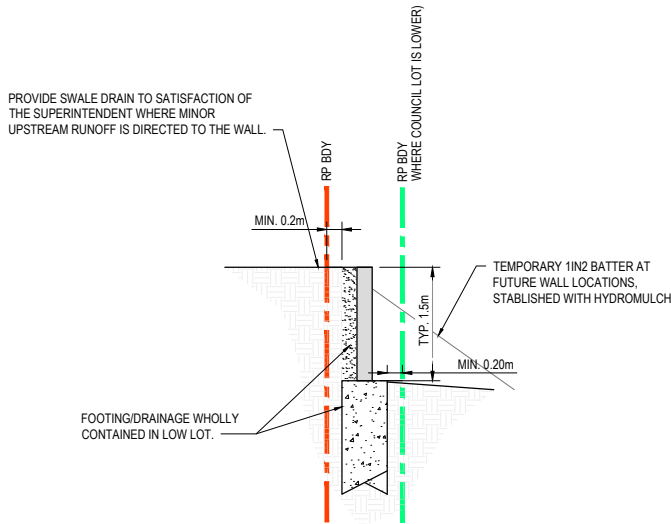
Change to Ground Level (earthworks and retaining walls) are the only aspects of works approved by OPW/2023/1508.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

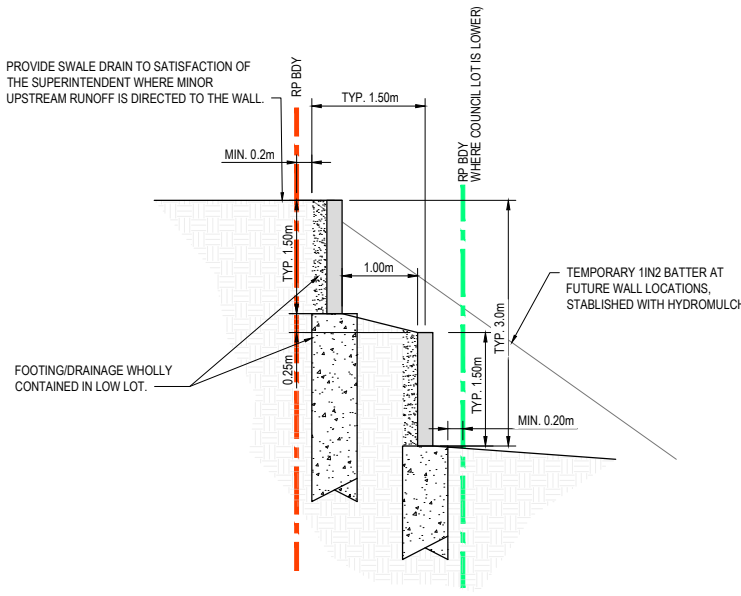
Application No: OPW/2023/1508

Dated: 30 April 2024

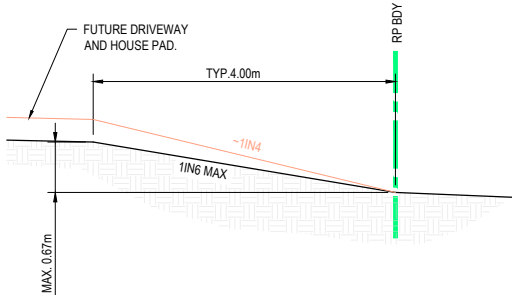
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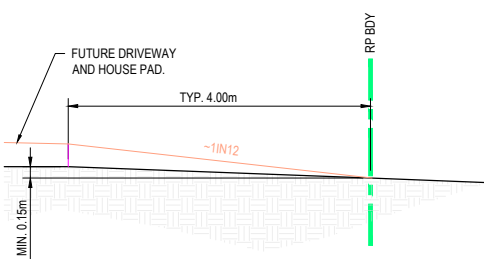
**SINGLE TIER RETAINING WALL
CONCRETE SLEEPER**
SCALE 1:50



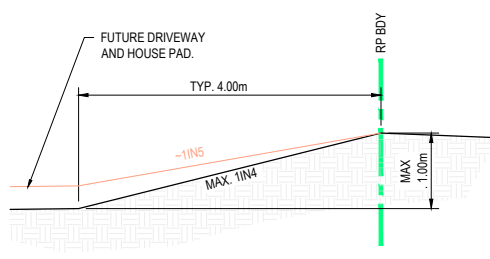
**DOUBLE TIER RETAINING WALL (NO REAR SERVICE)
CONCRETE SLEEPER**
SCALE 1:50



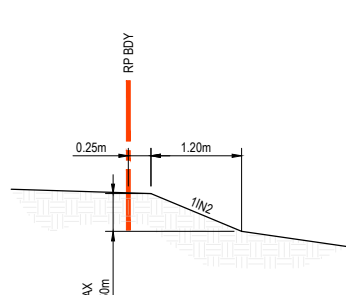
**TYPICAL LOT SETBACK
HIGHER THAN VERGE TYPE 2
AT INDICATIVE DRIVEWAY LOCATION**
SCALE 1:50



**TYPICAL LOT SETBACK
HIGHER THAN VERGE TYPE 1
AT INDICATIVE DRIVEWAY LOCATION**
SCALE 1:50



**TYPICAL LOT SETBACK
LOWER THAN VERGE
AT INDICATIVE DRIVEWAY LOCATION**
SCALE 1:50

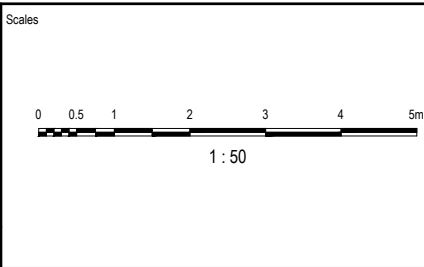


SIDE BOUNDARY BATTER
SCALE 1:50

TYPICAL SLEEPER RETAINING WALL NOTES

- DETAILS SHOWN ARE TYPICAL ONLY AND NOT FOR CONSTRUCTION. CONTRACTOR SHALL PROVIDE DESIGN DRAWINGS AND RPEQ RELEVANT CERTIFICATIONS TO THE SUPERINTENDED 10 WORKING DAYS PRIOR TO THE COUNCIL PRE-START MEETING (CONDITION 15.83). POST CONSTRUCTION CERTIFICATIONS MUST BE PROVIDED WITHIN 5 WORKING DAYS UPON COMPLETION OF THE WALL.
- WALLS SHALL BE DESIGNED IN ACCORDANCE WITH AS4678 AND THE DEVELOPMENT APPROVAL CONDITIONS 'EARTHWORKS - RETAINING STRUCTURES'.
- CONCRETE STANDARD IS AS3600 STANDARD DESIGN EXPOSURE CLASSIFICATION SLEEPERS AND POSTS - B1 AND FOOTINGS - A2.
- A MINIMUM SURCHARGE LOAD OF 10kPa SHALL BE USED WHERE THE RETAINING WALL IS BELOW AND ADJACENT TO ROAD RESERVE AND 5kPa ELSEWHERE. THE DESIGN MUST ALSO CONSIDER ANY CONSTRUCTION LOADING DURING BUILDING CONSTRUCTION.
- WALL SHALL BE DESIGNED TO BRIDGE ANY UNDERGROUND SERVICES, SO AS NOT TO IMPOSE ANY ADDITIONAL LOADINGS.
- ALL WALLS ADJACENT TO PROPERTY BOUNDARIES SHALL BE DESIGNED TO ALLOW FOR AND INSTALLED WITH FENCE BRACKETS. MINIMUM FENCE HEIGHT IS 1.8m EXCEPT WHERE VARIED BY THE CONDITIONS OF APPROVAL.
- SUBSOIL DRAINAGE BEHIND ALL WALLS TO INCLUDE DISCHARGE PIPE INTO THE NEAREST STORMWATER STRUCTURE (OR DEDICATED KERB ADAPTOR) AND BE FREE DRAINING. ALL WALL DRAINAGE LINES DISCHARGING THROUGH LOTS OR ROAD VERGE TO BE SOLID uPVC (NO SLOTS) AND MUST BE FREE DRAINING.
- TEMPORARY SAFETY BARRIER MESH FENCING SHALL BE PROVIDED AND MAINTAINED TO ALL WALLS 1.0m AND GREATER IN HEIGHT.
- RP BDY LINE LOCATIONS APPLY UNLESS NOTED OTHERWISE ON PLAN.
- ALL SLEEPER WALLS TO HAVE DARK GRAY FINISH (PLAIN CONCRETE COLOUR NOT ACCEPTABLE).

02	OPW IR RESPONSE	DK	AS	RM	31.01.2024
01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023
Issue	Description	DR	CH	VE	Date



Coomera GA Pty Ltd
ATF The Coomera
GA Unit Trust
Pty Ltd

Status	FOR APPROVAL CONSTRUCTION SUBJECT TO APPROVAL			
© Copyright reserved				
Original Issue Signatures				
Drawn	D. KEARNEY	Original Size	A1	
Designed	G. GESMUNDO	Height Datum	AHD	
Project Manager	A. SHEPHERD	Grid	MGA (ZONE 56)	
Verified	R. MULLIGAN	R.P.E.Q. No: 7850 Date 31.01.2024		

Project	54 GEORGE ALEXANDER WAY, COOMERA	
Title	TYPICAL RETAINING WALL DETAILS	

		Project Number	30157884
Arcadis Australia Pacific Pty Limited Level 7, Seabank Building, 12-14 Marine Parade SOUTHPORT QLD 4215 ABN 76 104 485 289 Tel No: +61 7 5503 4800 www.arcadis.com/au		Issue	01
Drawing No.		GAW-AAP-BE-00-DRG-CV-0105	

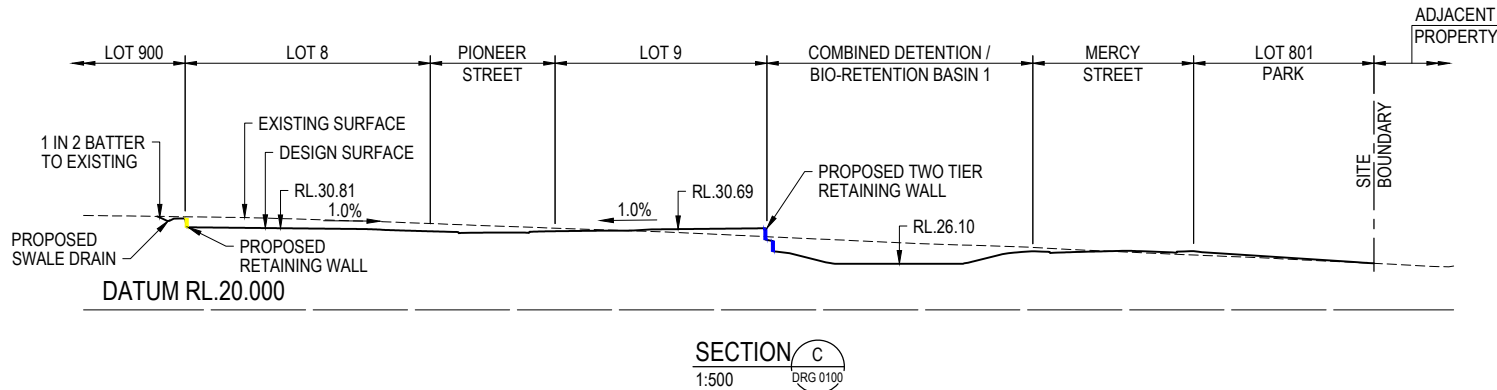
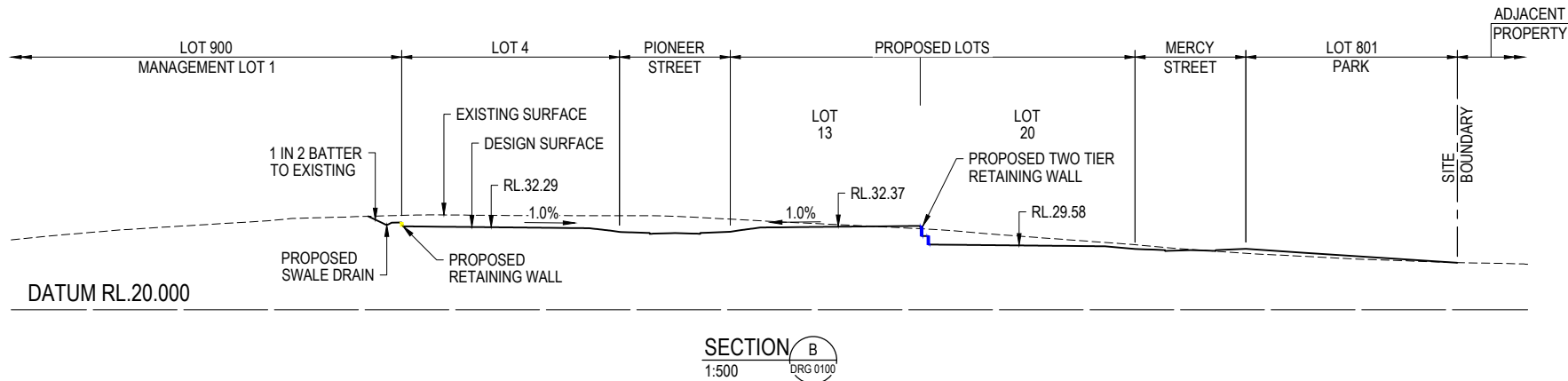
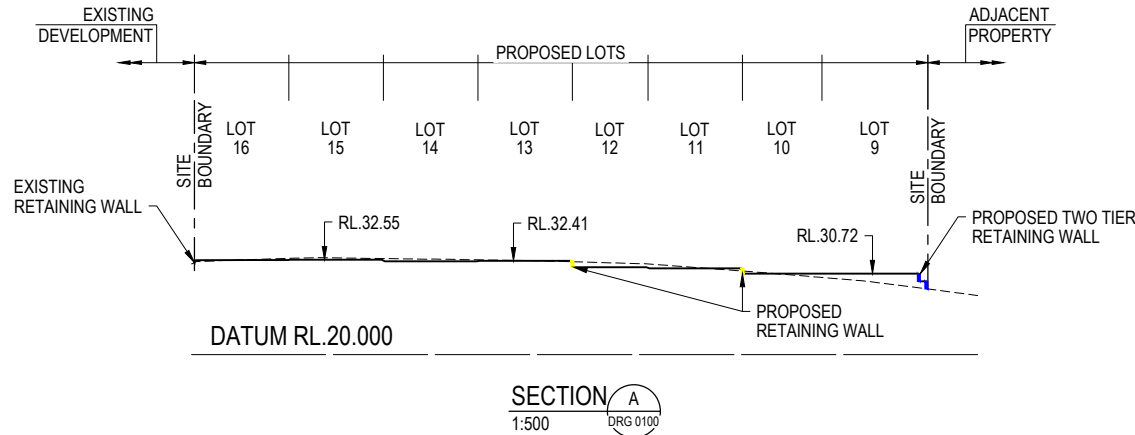
PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1508

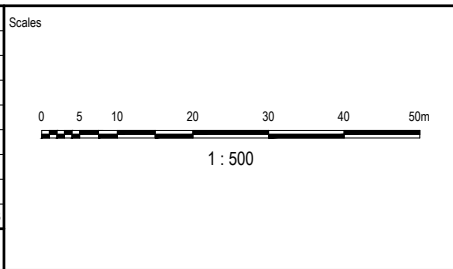
Dated: 30 April 2024

Development shall comply with the
conditions of approval as detailed in the
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Change to Ground Level
(earthworks and retaining walls)
are the only aspects of works
approved by OPW/2023/1508.



01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023
Issue	Description	DR	CH	VE	Date



Client

Coomera GA Pty Ltd
ATF The Coomera
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Title	
BULK EARTHWORKS SECTIONS	

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1. EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE DRAWINGS ARE MINIMUM REQUIREMENTS BASED ON THE UNDERSTOOD CONSTRUCTION SCOPE AND METHODOLOGY. IT IS THE CONTRACTORS RESPONSIBILITY AT ALL TIMES TO EMPLOY APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES BASED ON THE CONSTRUCTION METHODOLOGY, SEQUENCING OF WORKS AND LOCAL SITE CONDITIONS TO THE APPROVAL OF THE AUTHORISING AUTHORITY.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE INSPECTION, MAINTENANCE AND TESTING OF ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES ARE UNDERTAKEN ON SITE.
3. ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE LATEST INTERNATIONAL EROSION CONTROL ASSOCIATION (IECA) AUSTRALASIA BEST PRACTICE EROSION AND SEDIMENT CONTROL (BPESC) DOCUMENT.
4. REFER TO APPROVED PLANS FOR LOCATION, EXTENT, AND CONSTRUCTION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
5. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED AND A REVISED EROSION AND SEDIMENT CONTROL PLAN (ESCP) MUST BE SUBMITTED FOR APPROVAL IN THE EVENT THAT SITE CONDITIONS CHANGE SIGNIFICANTLY FROM THOSE CONSIDERED WITHIN THIS ESCP.
6. IN CIRCUMSTANCES WHERE IT IS CONSIDERED NECESSARY TO PREPARE AN AMENDED EROSION AND SEDIMENT CONTROL PLAN (ESCP), AND WHERE THE DELIVERY OF SUCH AN AMENDED ESCP IS NOT IMMEDIATE, THEN ALL NECESSARY NEW OR MODIFIED EROSION AND SEDIMENT CONTROL WORKS MUST BE IN ACCORDANCE WITH THE LATEST VERSION OF THE IECA BPESC DOCUMENT. UPON APPROVAL OF THE AMENDED ESCP, ALL WORKS MUST BE IMPLEMENTED IN ACCORDANCE WITH THE AMENDED PLAN.
7. WHERE THERE IS A HIGH PROBABILITY THAT SERIOUS OR MATERIAL ENVIRONMENTAL HARM MAY OCCUR AS A RESULT OF SEDIMENT LEAVING THE SITE, APPROPRIATE ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED SUCH THAT ALL REASONABLE AND PRACTICABLE MEASURES ARE BEING TAKEN TO PREVENT OR MINIMISE SUCH HARM. ONLY THOSE WORKS NECESSARY TO MINIMISE OR PREVENT ENVIRONMENTAL HARM SHALL BE CONDUCTED ON-SITE PRIOR TO APPROVAL OF THE AMENDED EROSION AND SEDIMENT CONTROL PLAN (ESCP).
8. AT ALL TIMES THE CONTRACTOR SHALL MONITOR THE PREVAILING WEATHER CONDITIONS AND PROTECT ANY DOWNSTREAM CONSTRUCTION OR RECEIVING ENVIRONMENTS.
9. WORKS SHALL BE COMPLETED ON SITE GENERALLY IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:
 - (i) PRE CONSTRUCTION - CONSTRUCT SILT FENCES PRIOR TO PRE-START MEETING, WHICH WILL PROTECT EXISTING DOWNSTREAM PROPERTIES, PARKS OR ROAD RESERVES FROM SEDIMENTATION AND EROSION.
 - (ii) CLEARING AND BULK EARTHWORKS - CONSTRUCT AND MAINTAIN SILT FENCES WHICH CONTROL SEDIMENTATION AND EROSION DURING CLEARING AND BULK EARTHWORKS. ALL DISTURBED AREAS TO BE EITHER GRASS SEEDS OR TURFED, AS SPECIFIED, AS SOON AS POSSIBLE OR WITHIN 7 DAYS OF FINAL TRIMMING OF EARTHWORKS.
 - (iii) MAINTENANCE PERIOD - CONSTRUCT AND MAINTAIN SILT MANAGEMENT CONTROLS WHICH CONTROL SEDIMENTATION AND EROSION PRIOR TO THE ESTABLISHMENT OF GRASS COVER AND REHABILITATION, PROVIDE GRASS FILTER STRIPS IN LOCATIONS AS SHOWN ON EROSION AND SEDIMENT CONTROL PLANS.
10. EROSION AND SEDIMENT CONTROL PROTECTION MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONTRACT.

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO WORKS COMMENCING AND IN THE FOLLOWING SEQUENCE:
 - a. CONSTRUCT TEMPORARY STABILISED SITE ACCESS
 - b. PROVIDE INLET PROTECTION TO STORMWATER INLETS AND GULLIES ON ALL ROADS ADJOIN THE SITE.
 - c. CONSTRUCT BARRIER FENCING AROUND RESTRICTED 'NO-GO' ZONES OF THE RETAINED VEGETATION AND AREAS NOT TO BE DISTURBED AND AREAS WHICH REMAIN UN-WORKED.
 - d. INSTALL ALL TEMPORARY SEDIMENT FENCES
 - e. CONSTRUCT DIVERSION BANKS AS NECESSARY (PARALLEL TO CONTOURS) TO DIVERT RUNOFF FROM DISTURBED AREAS INTO THE SEDIMENT PONDS/BASINS
 - f. WORK AREAS TO BE DELINEATED BY BARRIER FENCING AND DIVERSION CHANNEL UPSLOPE AND SEDIMENT FENCING DOWNSLOPE.
 - g. MAINTAIN EXISTING SEDIMENT PONDS/BASINS AS LONG AS PRACTICALLY POSSIBLE
 - h. STABILISE ALL DISTURBED AREAS ASAP AND PROGRESSIVELY AS WORKS ARE COMPLETED.
 - i. TEMPORARY STABILISATION TO BE DONE USING MULCHING, HYDROMULCHING, HYDROSEEDING OR DIRECT SEEDING TO GIVE A 70% COVERAGE OF GROUND SURFACE WITHIN 14 DAYS OF WORKS COMPLETING (EVEN IF WORKS MAY CONTINUE LATER)
2. EROSION AND SEDIMENT CONTROL PROTECTION MEASURES MAY NEED TO BE REVISED AND UPDATED TO REFLECT THE SITE CONDITIONS AND PROGRESSION OF THE WORKS, I.E. MEASURES INCLUDING SEDIMENT FENCES SHOULD BE MOVED AND REINSTATED AS WORKS PROGRESS.

1. HIGH EFFICIENCY DUST CONTROL TECHNIQUES MUST BE EMPLOYED ON SITE ON AN AS NEEDS BASIS TO PREVENT THE EMISSION OF DUST FROM THE SITE. SUCH TECHNIQUES MUST BE APPLIED TO THE MOVEMENT OF SOIL, SAND, ALL EXCAVATED AREAS, STOCKPILES, HAUL ROADS AND RAMPS, AND TO ANY OTHER AREAS OR APPLICATIONS WHERE THE POTENTIAL FOR DUST GENERATION EXISTS. THESE CONTROL TECHNIQUES MAY INCLUDE THE USE OF WATER SPRAYS, APPLICATION OF DUST SUPPRESSANTS, SURFACE STABILIZATION OR COVERING EXPOSED SURFACES. DUST CONTROL TECHNIQUES MUST BE EMPLOYED ON SITE AT ALL TIMES INCLUDING OUTSIDE NORMAL WORKING HOURS. ALL PERMANENT ROADS AND TRAFFICABLE AREAS MUST BE SEALED OR HARD SURFACED TO MINIMISE DUST GENERATION .
2. ALL OFFICE FACILITIES AND OPERATIONAL ACTIVITIES MUST BE LOCATED SUCH THAT ANY LIQUID EFFLUENT (E.G. PROCESS WATER, WASH-DOWN WATER, EFFLUENT FROM EQUIPMENT CLEANING, OR PLANT WATERING), CAN BE TOTALLY CONTAINED AND TREATED WITHIN THE SITE.
3. THE CONSTRUCTION SCHEDULE MUST AIM TO MINIMISE THE DURATION THAT ANY AND ALL AREAS OF SOIL ARE EXPOSED TO THE EROSION EFFECTS OF WIND, RAIN AND SURFACE WATER.
4. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN ACCORDANCE WITH THE ESCP AND ASSOCIATED DEVELOPMENT CONDITIONS.
5. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN SUCH A MANNER THAT ALLOWS ALL REASONABLE AND PRACTICABLE MEASURES TO BE UNDERTAKEN TO:
 - (i) ALLOW STORMWATER TO PASS THROUGH THE SITE IN A CONTROLLED MANNER AND AT NON-EROSIVE FLOW VELOCITIES UP TO THE SPECIFIED DESIGN STORM DISCHARGE;
 - (ii) MINIMISE SOIL EROSION RESULTING FROM RAIN, WATER FLOW AND/OR WIND;
 - (iii) MINIMISE ADVERSE EFFECTS OF SEDIMENT RUNOFF, INCLUDING SAFETY ISSUES;
 - (iv) PREVENT, OR AT LEAST MINIMISE, ENVIRONMENTAL HARM RESULTING FROM WORK-RELATED SOIL EROSION AND SEDIMENT RUNOFF;
 - (v) ENSURE THAT THE VALUE AND USE OF LAND/PROPERTIES ADJACENT TO THE DEVELOPMENT (INCLUDING ROADS) ARE NOT DIMINISHED AS A RESULT OF THE ADOPTED ESC MEASURES.

- (i) THE DEVELOPMENT APPROVAL CONDITION ISSUED BY THE RELEVANT REGULATORY AUTHORITY; AND
 - (ii) THE APPROVED ESCP AND SUPPORTING DOCUMENTATION; OR
 - (iii) THE LATEST VERSION OF THE IECA BPESC DOCUMENT, IF THE STANDARDS AND SPECIFICATIONS ARE NOT CONTAINED IN THE APPROVED ESCP.
7. ANY WORKS THAT MAY CAUSE SIGNIFICANT SOIL DISTURBANCE AND ARE ANCILLARY TO ANY ACTIVITY FOR WHICH REGULATORY BODY APPROVAL IS REQUIRED, MUST NOT COMMENCE BEFORE THE ISSUE OF THAT APPROVAL.
 8. ADDITIONAL AND/OR ALTERNATIVE ESC MEASURES MUST BE IMPLEMENTED IN THE EVENT THAT SITE INSPECTIONS, THE SITE'S MONITORING AND MAINTENANCE PROGRAM, OR THE REGULATORY AUTHORITY, IDENTIFIES THAT UNACCEPTABLE OFF-SITE SEDIMENTATION IS OCCURRING AS A RESULT OF THE WORK ACTIVITIES.
 9. LAND-DISTURBING ACTIVITIES MUST NOT CAUSE UNNECESSARY SOIL DISTURBANCE IF AN ALTERNATIVE CONSTRUCTION PROCESS IS AVAILABLE THAT ACHIEVES THE SAME OR EQUIVALENT OUTCOMES AT AN EQUIVALENT COST.
 10. SEDIMENT (INCLUDING CLAY, SILT, SAND, GRAVEL, SOIL, MUD, CEMENT AND CERAMIC WASTE) DEPOSITED OFF THE SITE AS A DIRECT RESULT OF AN ON-SITE ACTIVITY, MUST BE COLLECTED AND THE AREA APPROPRIATELY CLEANED/REHABILITATED AS SOON AS REASONABLE AND PRACTICABLE, AND IN A MANNER THAT GIVES APPROPRIATE CONSIDERATION TO THE SAFETY AND ENVIRONMENTAL RISKS ASSOCIATED WITH THE SEDIMENT DEPOSITION.
 11. WHEREVER REASONABLE AND PRACTICABLE, BRICK, TILE AND MASONRY CUTTING MUST BE CARRIED OUT ON A PEROUS SURFACE, SUCH AS GRASS, OR OPEN SOIL, OR IN SUCH A MANNER THAT ALL SEDIMENT-LADEN RUNOFF IS PREVENTED FROM DISCHARGING INTO A GUTTER, DRAIN, OR WATER BODY.
 12. ADEQUATE WASTE COLLECTION BINS MUST BE PROVIDED ON-SITE AND MAINTAINED SUCH THAT POTENTIAL AND ACTUAL ENVIRONMENTAL HARM RESULTING FROM SUCH MATERIAL WASTE IS MINIMISED.
 13. CONCRETE WASTE AND CHEMICAL PRODUCTS, INCLUDING PETROLEUM AND OIL-BASED PRODUCTS, MUST BE PREVENTED FROM ENTERING AN INTERNAL WATER BODY, OR AN EXTERNAL DRAIN, STORMWATER SYSTEM, OR WATER BODY.
 14. ALL FLAMMABLE AND COMBUSTIBLE LIQUIDS, INCLUDING ALL LIQUID CHEMICALS IF SUCH CHEMICALS COULD POTENTIALLY BE WASHED OR DISCHARGED FROM THE SITE, ARE STORED AND HANDLED ON-SITE IN ACCORDANCE WITH RELEVANT STANDARDS SUCH AS AS1940 THE STORAGE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.
 15. TRENCHES NOT LOCATED WITHIN ROADWAYS MUST BE BACKFILLED AND COMPACTED TO 95% STANDARD COMPACTION, CAPPED WITH TOPSOIL, AND COMPACTED TO A LEVEL AT LEAST 75mm ABOVE ADJOINING GROUND LEVEL AND APPROPRIATELY STABILISED.
 16. ALL STORMWATER, SEWER LINE AND OTHER SERVICE TRENCHES, NOT LOCATED WITHIN ROADWAYS, MUST BE MULCHED AND SEEDED, OR OTHERWISE APPROPRIATELY STABILISED WITHIN 7 DAYS AFTER BACKFILL.
 17. NO MORE THAN 150m OF A STORMWATER, SEWER LINE OR OTHER SERVICE TRENCH MUST BE OPEN AT ANY ONE TIME.
 18. SITE SPOIL MUST BE LAWFULLY DISPOSED OF IN A MANNER THAT DOES NOT RESULT IN ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
 19. ALL FILL MATERIAL, PLACED ON SITE MUST COMPRISE ONLY NATURAL EARTH AND ROCK, AND IS TO BE FREE OF CONTAMINANTS, BE FREE DRAINING, AND BE COMPACTED IN LAYERS NOT EXCEEDING 300mm TO 95% STANDARD RELATIVE DRY DENSITY IN ACCORDANCE WITH AS1289.
 20. FOOT AND VEHICULAR TRAFFIC WILL BE RESTRICTED IN RECENTLY STABILISED AREAS INCLUDING THOSE HYDROSEEDED, TURFED OR GRASS SEED.
 21. TEMPORARY SITE STABILISATION PROCEDURES MUST COMMENCE AT LEAST 30 DAYS PRIOR TO THE NOMINATED SITE SHUTDOWN DATE. AT LEAST 70% STABLE COVER OF ALL UNSTABLE AND/OR DISTURBED SOIL SURFACES MUST BE ACHIEVED PRIOR TO SHUTDOWN. THE STABILISATION WORKS MUST NOT RELY UPON THE LONGEVITY OF NON-VEGETATED EROSION CONTROL BLANKETS, OR TEMPORARY SOIL BINDERS.
 22. IF BIO-RETENTION FILTER MEDIA IS INSTALLED PRIOR TO 80% OF THE UPSTREAM CATCHMENT BEING FULLY DEVELOPED, THE FILTER MEDIA SHALL BE PROTECTED WITH A LAYER OF GEOTEXTILE WITH TURF ON TOP.

1. LAND CLEARING MUST BE DELAYED AS LONG AS PRACTICABLE AND MUST BE UNDERTAKEN IN CONJUNCTION WITH DEVELOPMENT OF EACH STAGE OF WORKS, UNLESS OTHERWISE APPROVED BY SUPERINTENDENT.
2. ALL REASONABLE AND PRACTICABLE EFFORTS MUST BE TAKEN TO DELAY THE REMOVAL OF, OR DISTURBANCE TO, EXISTING GROUND COVER (ORGANIC OR INORGANIC) PRIOR TO LAND-DISTURBING ACTIVITIES.
3. BULK TREE CLEARING MUST OCCUR IN A MANNER THAT MINIMISES DISTURBANCE TO EXISTING GROUND COVER (ORGANIC OR INORGANIC).
4. BULK TREE CLEARING AND GRUBBING OF THE SITE MUST BE IMMEDIATELY FOLLOWED BY SPECIFIED TEMPORARY STABILISATION MEASURES (E.G. TEMPORARY GRASSING, OR MULCHING) PRIOR TO COMMENCEMENT OF EACH STAGE OF CONSTRUCTION WORKS.
5. DISTURBANCE TO NATURAL WATERCOURSES (INCLUDING BED AND BANKS) AND THEIR ASSOCIATED RIPARIAN ZONES MUST BE LIMITED TO THE MINIMUM PRACTICABLE.
6. NO LAND CLEARING SHALL BE UNDERTAKEN UNLESS PRECEDED BY THE INSTALLATION OF ADEQUATE DRAINAGE AND SEDIMENT CONTROL MEASURES, UNLESS SUCH CLEARING IS REQUIRED FOR THE PURPOSE OF INSTALLING SUCH MEASURES, IN WHICH CASE, ONLY THE MINIMUM CLEARING REQUIRED TO INSTALL SUCH MEASURES SHALL OCCUR.
7. LAND CLEARING MUST BE LIMITED TO 2M FROM THE EDGE OF ANY ESSENTIAL CONSTRUCTION ACTIVITY, AS SHOWN ON THE ENGINEERING PLANS, UNLESS OTHERWISE APPROVED BY SUPERINTENDENT.
8. PRIOR TO LAND CLEARING, AREAS OF PROTECTED VEGETATION, AND SIGNIFICANT AREAS OF RETAINED VEGETATION MUST BE CLEARLY IDENTIFIED (E.G. WITH HIGH-VISIBILITY TAPE, OR LIGHT FENCING) FOR THE PURPOSES OF MINIMISING THE RISK OF UNNECESSARY LAND CLEARING.
9. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO MINIMISE THE REMOVAL OF, OR DISTURBANCE TO, THOSE TREES, SHRUBS AND GROUND COVERS (ORGANIC OR INORGANIC) THAT ARE INTENDED TO BE RETAINED.
10. ALL LAND CLEARING MUST BE IN ACCORDANCE WITH THE FEDERAL, STATE AND LOCAL GOVERNMENT VEGETATION PROTECTION/PRESERVATION REQUIREMENTS AND/OR POLICIES.
11. LAND CLEARING IS LIMITED TO THE MINIMUM PRACTICABLE DURING THOSE PERIODS WHEN SOIL EROSION DUE TO WIND, RAIN OR SURFACE WATER IS POSSIBLE.
12. LAND CLEARING MUST NOT EXTEND BEYOND THAT NECESSARY TO PROVIDE UP TO EIGHT (8) WEEKS OF SITE ACTIVITY DURING THOSE MONTHS WHEN THE ACTUAL OR AVERAGE RAINFALL IS LESS THAN 45mm, SIX (6) IF BETWEEN 45 AND 100mm, FOUR (4) WEEKS IF BETWEEN 100 AND 225mm, AND TWO (2) WEEKS IF GREATER THAN 225mm.
13. NATIVE SITE VEGETATION REQUIRED AND APPROVED FOR CLEARING SHOULD BE MULCHED AND STOCKPILED FOR LATER USE IN LANDSCAPING, STABILISATION AND/OR SITE REHABILITATION WORKS.
14. SOIL DISTURBANCE ACTIVITIES ARE TO BE IN ACCORDANCE WITH CHAPTER 4.2 OF "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION" LANDCOM 4TH EDITION, 2004, SLOPE LENGTHS ON BATTERS ARE NOT TO EXCEED THOSE SPECIFIED IN TSC DEVELOPMENT CODE D7.45.6.1.

1. PRIOR TO THE COMMENCEMENT OF SITE WORKS, THE LOCATION OF THE SITE ACCESS POINT(S) MUST BE VERIFIED WITH THE RELEVANT REGULATORY AUTHORITY.
2. SITE ACCESS MUST BE RESTRICTED TO A MAXIMUM OF 2 PRACTICAL LOCATIONS AS SHOWN ON THE ESCP AND SUBJECT TO THE APPROVAL OF COUNCIL.
3. SITE EXIT POINTS MUST BE APPROPRIATELY MANAGED TO MINIMISE THE RISK OF SEDIMENT BEING TRACKED ONTO

5. INSTALL SEDIMENT FENCING AND/OR BARRIER FENCING TO CONFINE INGRESS TO AND EGRESS FROM THE SITE TO STABILISED ACCESS POINTS ONLY.
4. STORMWATER RUNOFF FROM ACCESS ROADS AND STABILISED ENTRY/EXIT POINTS MUST DRAIN TO AN APPROPRIATE SEDIMENT CONTROL DEVICE.
18. IF AFTER USING SHAKEDOWN DEVICE, MATERIAL IS STILL ADHERING TO TRUCK WHEELS, AND BEING DEPOSITED ON PUBLIC ROADS, A WHEEL WASHING DEVICE MUST BE INSTALLED AND USED AT SITE EXIT LOCATIONS TO ENSURE NO FURTHER MATERIAL IS CARTED OFF SITE AND DEPOSITED ON PUBLIC ROADS.

1. THE SHAKEDOWN DEVICE SHALL BE EITHER- a) A SHAKER GRID (METAL BAR CATTLE GRID MINIMUM LENGTH 7m) PLACED TO ENSURE VEHICLES CROSSING THE GRID HAVE SUFFICIENT SPEED TO SHAKE OFF MUD AND CONTAMINANTS or b) A 15m LONG SHAKEDOWN AREA CONSTRUCTED WITH 75mm CRUSHED ROCK AS SPECIFIED FURTHER BELOW:

1. **ROCK:** WELL GRADED, HARD, ANGULAR, EROSION RESISTANT ROCK, NOMINAL DIAMETER OF 75mm (SMALL DISTURBANCES) OR 100 TO 150mm (LARGE DISTURBANCES). ALL REASONABLE MEASURES MUST BE TAKEN TO OBTAIN ROCK OF NEAR UNIFORM SIZE.
2. **FOOTPATH STABILISING AGGREGATE:** 25 TO 50mm GRAVEL OR AGGREGATE.
3. **GEOTEXTILE FABRIC:** HEAVY-DUTY, NEEDLE - PUNCHED, NON-WOVEN FILTER CLOTH ('BIDIM' A24 OR EQUIVALENT).

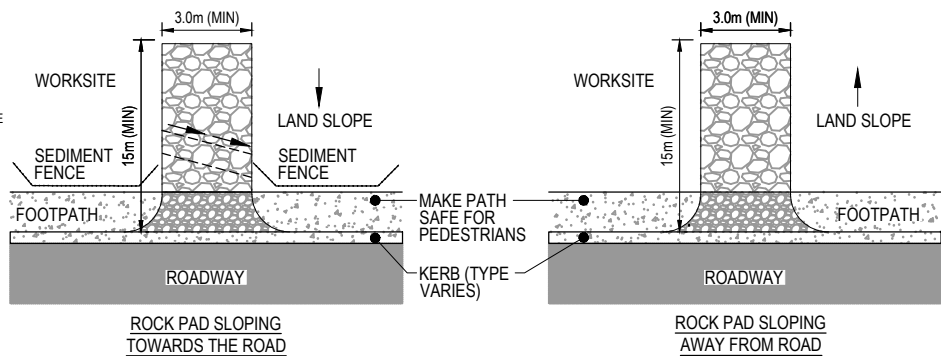
1. CLEAR THE LOCATION OF THE ROCK PAD, REMOVING STUMPS, ROOTS AND OTHER VEGETATION TO PROVIDE A FIRM FOUNDATION SO THAT THE ROCK IS NOT PRESSED INTO SOFT GROUND. CLEAR SUFFICIENT WIDTH TO ALLOW PASSAGE OF LARGE VEHICLES, BUT CLEAR ONLY THAT NECESSARY FOR THE EXIT. DO NOT CLEAR ADJACENT AREAS UNTIL THE REQUIRED EROSION AND SEDIMENT CONTROL DEVICES ARE IN PLACE.
2. IF THE EXPOSED SOIL IS SOFT, PLASTIC OR CLAYEY, PLACE A SUB-BASE OF CRUSHED ROCK OR A LAYER OF HEAVY-DUTY FILTER CLOTH TO PROVIDE A FIRM FOUNDATION.
3. PLACE THE ROCK PAD FORMING A MINIMUM 200mm THICK LAYER OF CLEAN, OPEN-VOID ROCK.
4. IF THE ASSOCIATED CONSTRUCTION SITE IS UP-SLOPE OF THE ROCKPAD, THUS CAUSING STORMWATER RUNOFF TO FLOW TOWARD THE ROCK PAD, THEN FORM A MINIMUM 300mm HIGH FLOW CONTROL BERM ACROSS THE ROCK PAD TO DIVERT SUCH RUNOFF TO A SUITABLE SEDIMENT TRAP.
5. THE LENGTH OF THE ROCK PAD SHOULD BE AT LEAST 15m WHERE PRACTICABLE, AND AS WIDE AS THE FULL WIDTH OF THE ENTRY OR EXIT AND AT LEAST 3m. THE ROCK PAD SHOULD COMMENCE AT THE EDGE OF THE OFF-SITE SEALED ROAD OR PAVEMENT.
6. FLARE THE END THE ROCK PAD WHERE IT MEETS THE PAVEMENT SO THAT THE WHEELS OF TURNING VEHICLES DO NOT TRAVEL OVER UNPROTECTED SOIL.
7. IF THE FOOTPATH IS OPEN TO PEDESTRIAN MOVEMENT, THEN COVER THE COARSE ROCK WITH FINE AGGREGATE OR GRAVEL, OR OTHERWISE TAKE WHATEVER MEASURES ARE NEEDED TO MAKE THE AREA SAFE.

1. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR LATER USE ONSITE.
2. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO OBTAIN THE MAXIMUM BENEFIT FROM EXISTING TOPSOIL, INCLUDING:
 - (i) WHERE THE PROPOSED AREA OF SOIL DISTURBANCE DOES NOT EXCEED 2500m², AND THE TOPSOIL DOES NOT CONTAIN UNDESIRABLE WEED SEED, THE TOP 100mm OF SOIL LOCATED WITHIN AREAS OF PROPOSED SOIL DISTURBANCE (INCLUDING STOCKPILE AREAS) MUST BE STRIPPED AND STOCKPILED SEPARATELY FROM THE REMAINING SOIL.
 - (ii) WHERE THE PROPOSED AREA OF SOIL DISTURBANCE EXCEEDS 2500m², AND THE TOPSOIL DOES NOT CONTAIN UNDESIRABLE WEED SEED, THE TOP 50mm OF SOIL MUST BE STRIPPED AND STOCKPILED SEPARATELY FROM THE REMAINING TOPSOIL, AND SPREAD AS A FINAL SURFACE SOIL.
 - (iii) IN AREAS WHERE THE TOPSOIL CONTAINS UNDESIRABLE WEED SEED, THE AFFECTED SOIL MUST BE SUITABLY BURIED OR REMOVED FROM THE SITE.
3. STOCKPILES OF ERODABLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED, MUST BE:
 - (i) APPROPRIATELY PROTECTED FROM WIND, RAIN, CONCENTRATED SURFACE FLOW AND EXCESSIVE UP-SLOPE STORMWATER SURFACE FLOWS.
 - (ii) LOCATED AT LEAST 2M (PREFERABLY 5M) FROM ANY HAZARDOUS AREA, RETAINED VEGETATION, ROADS AND CONCENTRATED WATER FLOW.
 - (iii) LOCATED UP-SLOPE OF AN APPROPRIATE SEDIMENT CONTROL SYSTEM.
 - (iv) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) THAT REDUCES THE C-FACTOR ON BARE SURFACE AREAS TO 0.15 OR LESS AS DEFINED BY "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION" LANDCOM 4TH EDITION, 2004 APPENDIX M. THIS EQUATES TO 50% GRASS COVER IF SOIL HAS BEEN RECENTLY DISTURBED.
 - (iv) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 10 DAYS DURING THOSE MONTHS THAT HAVE A HIGH EROSION RISK.
 - (vi) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 5 DAYS DURING THOSE MONTHS THAT HAVE AN EXTREME EROSION RISK.
4. A SUITABLE FLOW DIVERSION SYSTEM MUST BE ESTABLISHED IMMEDIATELY UP-SLOPE OF A STOCKPILE OF ERODABLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED, IF THE UP-SLOPE CATCHMENT AREA DRAINING TO THE STOCKPILE EXCEEDS 1500m².

1. **SOCKS:** MINIMUM Ø200mm SYNTHETIC OR BIODEGRADABLE TUBES MANUFACTURED FROM NON-WOVEN OR COMPOSITE FABRIC SUITABLE FOR THE "FILTRATION" OF COURSE SEDIMENT.
2. **FILL MATERIALS:** STRAW, CANE MULCH, COMPOSTED MATERIAL (AS4454), COARSE SAND, OR CLEAN AGGREGATE

1. ENSURE THE SOCKS ARE PLACED INDIVIDUALLY OR COLLECTIVELY (AS A SINGLE SEDIMENT TRAP) SUCH THAT:

- i) LEAKAGE AROUND OR UNDER THE SOCKS IS MINIMISED;
- ii) ADJOINING SOCKS ARE TIGHTLY BUTTED OR OVERLAPPED AT LEAST 450mm.
- iii) THE SURFACE AREA OF POTENTIAL WATER PONDING UP-SLOPE OF EACH SEDIMENT TRAP IS MAXIMISED.
- iv) TO THE MAXIMUM DEGREE PRACTICAL, ALL SEDIMENT-LADEN WATER WILL PASS THROUGH THE FORMED POND BEFORE FLOWING OVER THE DOWN-SLOPE END OF THE SEDIMENT TRAP.



TYPICAL STOCKPILE CONFIGURATION



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Verified	R. MULLIGAN	R.P.E. Q. No: 7850 Date 31.01.2024	

Project

54 GEORGE ALEXANDER WAY,
COOMERA

EROSION AND SEDIMENT
CONTROL DETAILS SHEET 1



Drawing No.

Project Number	30157884
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1. WHEREVER REASONABLE AND PRACTICABLE, STORMWATER RUNOFF ENTERING THE SITE FROM EXTERNAL AREAS, AND NON-SEDIMENT LOADED (CLEAN) STORMWATER RUNOFF ENTERING A WORK AREA OR AREA OF SOIL DISTURBANCE, MUST BE DIVERTED AROUND OR THROUGH THAT AREA IN A MANNER THAT MINIMISES SOIL EROSION AND THE CONTAMINATION OF THAT WATER FOR ALL DISCHARGES UP TO THE SPECIFIED DESIGN STORM DISCHARGE.
2. DURING THE CONSTRUCTION PERIOD, ALL REASONABLE AND PRACTICABLE MEASURES MUST BE IMPLEMENTED TO CONTROL FLOW VELOCITIES IN SUCH A MANNER THAT PREVENTS SOIL EROSION ALONG DRAINAGE PATHS AND AT THE ENTRANCE AND EXIT OF ALL DRAINS AND DRAINAGE PIPES DURING ALL STORMS UP TO THE RELEVANT DESIGN STORM DISCHARGE.
3. TO THE MAXIMUM DEGREE REASONABLE AND PRACTICABLE, ALL WATERS DISCHARGED DURING THE CONSTRUCTION PHASE MUST DISCHARGE ONTO STABLE LAND, IN A NON-EROSIVE MANNER, AND AT A LEGAL POINT OF DISCHARGE.
4. DURING THE CONSTRUCTION PERIOD, ROOF WATER MUST BE MANAGED IN A MANNER THAT MINIMISES SOIL EROSION THROUGHOUT THE SITE, AND SITE WETNESS WITHIN ACTIVE WORK AREAS.

1. CLEAR THE LOCATION FOR THE CHANNEL, CLEARING ONLY WHAT IS NEEDED TO PROVIDE ACCESS FOR PERSONNEL AND CONSTRUCTION EQUIPMENT.
2. REMOVE ROOTS, STUMPS, AND OTHER DEBRIS AND DISPOSE OF THEM PROPERLY. DO NOT USE DEBRIS TO BUILD ANY ASSOCIATED EMBANKMENTS.
3. EXCAVATE THE CHANNEL TO THE SPECIFIED SHAPE, ELEVATION AND GRADIENT (1% MIN). THE SIDES OF THE CHANNEL SHOULD BE NO STEEPER THAN A 2:1 (H:V) IF CONSTRUCTED IN EARTH, UNLESS SPECIFICALLY DIRECTED WITHIN THE APPROVED PLANS.
4. STABILISE THE CHANNEL AND BANKS IMMEDIATELY UNLESS IT WILL OPERATE FOR LESS THAN 30 DAYS. IN EITHER CASE, TEMPORARY EROSION PROTECTION (MATTING, ROCK, TURF, ETC.) WILL BE REQUIRED AS SPECIFIED WITHIN THE APPROVED PLANS OR AS DIRECTED.
5. IF THE CHANNEL IS CUT INTO A DISPERSIVE (SODIC) SOIL, THE EXPOSED DISPERSIVE SOIL MUST BE COVERED AND MAINTAINED WITH A MINIMUM 200mm THICK LAYER OF NON-DISPERSIVE SOIL PRIOR TO PLACEMENT OF EROSION PROTECTION MEASURES.
6. ENSURE THE CHANNEL DISCHARGES TO A STABLE AREA SUCH THAT SOIL EROSION WILL BE PREVENTED. SPECIFICALLY, ENSURE THE DRAIN DOES NOT DISCHARGE TO AN UNSTABLE FILL SLOPE.

1. THE APPLICATION OF LIQUID-BASED SOIL SUPPRESSION MEASURES MUST ENSURE THAT SEDIMENT-LADEN RUNOFF RESULTING FROM SUCH MEASURES DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD.
2. ALL TEMPORARY EARTH BANKS, FLOW DIVERSION SYSTEMS, AND EMBANKMENTS ASSOCIATED WITH CONSTRUCTED SEDIMENT BASINS MUST BE MACHINE-COMPACTED, SEEDED AND MULCHED FOR THE PURPOSE OF ESTABLISHING A TEMPORARY VEGETATIVE COVER WITHIN 10 DAYS AFTER GRADING.
3. UNPROTECTED SLOPE LENGTHS MUST NOT EXCEED 80M, OR AN EQUIVALENT VERTICAL FALL OF 3M.
4. THE CONSTRUCTION AND STABILISATION OF EARTH BATTERS STEEPER THAN 6:1 (H:V) MUST BE STAGED SUCH THAT NO MORE THAN 3 VERTICAL-METRES OF ANY BATTER IS EXPOSED TO RAINFALL AT ANY INSTANT.
5. SYNTHETIC REINFORCED FERTILISATION CONTROL MATS AND BLANKETS MUST NOT BE PLACED WITHIN, OR ADJACENT TO, RIPARIAN ZONES AND WATERCOURSES IF SUCH MATERIALS ARE LIKELY TO CAUSE ENVIRONMENTAL HARM TO WILDLIFE OR WILDLIFE HABITATS.
6. A MINIMUM 60% GROUND COVER MUST BE ACHIEVED ON ALL NON-COMPLETED EARTHWORKS EXPOSED TO ACCELERATED SOIL EROSION IF FURTHER CONSTRUCTION ACTIVITIES OR SOIL DISTURBANCES ARE LIKELY TO BE SUSPENDED FOR MORE THAN 30 DAYS DURING THOSE MONTHS WHEN THE EXPECTED RAINFALL IS LESS THAN 30mm; MINIMUM 70% COVER WITHIN 30 DAYS IF BETWEEN 30 AND 45mm; MINIMUM 70% COVER WITHIN 20 DAYS IF BETWEEN 45 AND 100mm; MINIMUM 75% COVER WITHIN 10 DAYS IF BETWEEN 100 AND 225mm; AND MINIMUM 80% COVER WITHIN 5 DAYS IF GREATER THAN 225mm. (ALTERNATIVE TO ABOVE)

1. EROSION CONTROL MATS MUST BE STORED AWAY FROM DIRECT SUNLIGHT OR COVERED WITH ULTRAVIOLET PROTECTIVE SHEETING UNTIL THE SITE IS READY FOR THEIR INSTALLATION.
2. VEHICLES AND CONSTRUCTION EQUIPMENT MUST NOT BE PERMITTED TO MANEUVER OVER THE MATTING UNLESS IT HAS BEEN COVERED WITH A LAYER OF SOIL OR GRAVEL AT LEAST 150mm THICK.
3. IF THE CHANNEL IS TO BE GRASSED, PREPARE A SMOOTH SEED BED OF APPROXIMATELY 75mm OF TOPSOIL, SEED, FERTILISER, WATER AND RAKE TO REMOVE ANY REMAINING SURFACE IRREGULARITIES.
4. EXCAVATE A 300mm DEEP BY 150mm WIDE ANCHOR TRENCH ALONG THE FULL WIDTH OF THE UPSTREAM END OF THE AREA TO BE TREATED.
5. AT LEAST 300mm OF THE MAT MUST BE ANCHORED INTO THE TRENCH WITH THE ROLL OF MATTING RESTING ON THE GROUND UP-SLOPE OF THE TRENCH.
6. WHEN SPREADING THE MATS, AVOID STRETCHING THE FABRIC. THE MATS SHOULD REMAIN IN GOOD CONTACT WITH THE SOIL.
7. THE INSTALLATION PROCEDURE MUST ENSURE THAT THE MAT ACHIEVES AND RETAINS GOOD CONTACT WITH THE SOIL.
8. DAMAGED MATTING MUST BE REPAIRED OR REPLACED.

1. TURF SHOULD BE USED WITHIN 12 HOURS OF DELIVERY, OTHERWISE ENSURE THE TURF IS STORED IN CONDITIONS APPROPRIATE FOR THE WEATHER CONDITIONS (e.g. A SHADED AREA).
2. MOISTENING THE TURF AFTER IT IS UNROLLED WILL HELP MAINTAIN ITS VIABILITY.
3. TURF SHOULD BE LAID ON A MINIMUM 75mm BED OF ADEQUATELY FERTILISED TOPSOIL. RAKE THE SOIL SURFACE TO BREAK THE CRUST JUST BEFORE LAYING THE TURF.
4. DURING THE WARMER MONTHS, LIGHTLY IRRIGATE THE SOIL IMMEDIATELY BEFORE LAYING THE TURF.
5. ENSURE THE TURF IS NOT LAID ON GRAVEL, HEAVILY COMPACTED SOILS, OR SOILS THAT HAVE BEEN RECENTLY TREATED WITH HERBICIDES.
6. ENSURE THE TURF EXTENDS UP THE SIDES OF THE DRAIN AT LEAST 100mm ABOVE THE ELEVATION OF THE CHANNEL INVERT, OR AT LEAST TO A SUFFICIENT ELEVATION TO FULLY CONTAIN EXPECTED CHANNEL FLOW.
7. ON CHANNEL GRADIENTS OF 3:1 (H:V) OR STEEPER, OR IN SITUATIONS WHERE HIGH FLOW VELOCITIES (i.e. VELOCITY $> 1.5\text{ m/s}$) ARE LIKELY WITHIN THE FIRST TWO WEEK FOLLOWING PLACEMENT, SECURE THE INDIVIDUAL TURF STRIPS WITH WOODEN OR PLASTIC PEGS.
8. ENSURE THAT INTIMATE CONTACT IS ACHIEVED AND MAINTAINED BETWEEN THE TURF AND THE SOIL SUCH THAT SEEPAGE FLOW BENEATH THE TURF IS AVOIDED.
9. WATER UNTIL THE SOIL IS WET 100mm BELOW THE TURF. THEREAFTER, WATERING SHOULD BE SUFFICIENT TO MAINTAIN AND PROMOTE HEALTHY GROWTH.

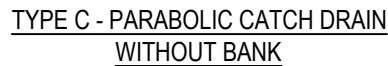
NOT TO SCALE

3. ALL ROCK MUST BE HARD, WEATHER RESISTANT, AND DURABLE AGAINST DISINTEGRATION UNDER CONDITIONS TO BE MET IN HANDLING, PLACEMENT AND OPERATION.
2. ALL ROCK MUST HAVE ITS GREATEST DIMENSION NOT GREATER THAN 3 TIMES ITS LEAST DIMENSIONS.
3. THE ROCK USED IN FORMATION OF THE DRAIN MUST BE EVENLY GRADED WITH 50% BY WEIGHT LARGER THAN THE SPECIFIED NOMINAL ROCK SIZE AND HAVE SUFFICIENT SMALL ROCK TO FILL THE VOIDS BETWEEN THE LARGER ROCK. DIRT, FINES, AND SMALLER ROCK MUST NOT EXCEED 5% BY WEIGHT.
4. THE DIAMETER OF THE LARGEST ROCK SIZE SHOULD BE NO LARGER THAN 1.5 TIMES THE NOMINAL ROCK SIZE. SPECIFIC GRAVITY TO BE AT LEAST 2.5.
5. FILTER CLOTH GEOTEXTILE FABRIC: HEAVY-DUTY, NEEDLE-PUNCHED, NON-WOVEN FILTER CLOTH, MINIMUM "BIDIM" A24 OR EQUIVALENT.
6. PRIOR TO PLACEMENT, ALL ROCKS MUST BE VISUALLY CHECKED FOR SIZE, ELONGATION, CRACKS, DETEIORATION AND OTHER VISIBLE DEFECTS. THE DEGREE AND THOROUGHNESS OF SUCH CHECKING MUST BE APPROPRIATE FOR THE POTENTIAL CONSEQUENCES ASSOCIATED WITH FAILURE OF THE STRUCTURE OR PURPOSE FOR WHICH THE MATERIAL WILL BE USED.
7. IF A FILTER CLOTH UNDERLAY IS SPECIFIED, PLACE THE FILTER FABRIC DIRECTLY ON THE PREPARED FOUNDATION. IF MORE THAN ONE SHEET OF FILTER CLOTH IS REQUIRED OVER THE AREA, OVERLAP THE EDGE OF EACH SHEET AT LEAST 300mm, AND SECURE ANCHOR PINS AT MINIMUM 1M SPACING ALONG THE OVERLAP.
8. ENSURE THE FILTER CLOTH IS PROTECTED FROM PUNCHING OR TEARING DURING INSTALLATION OF THE FABRIC AND THE ROCK. REPAIR ANY DAMAGE BY REMOVING THE ROCK AND REPLACING WITH ANOTHER PIECE OF FILTER CLOTH OVER THE DAMAGED AREA OVERLAPPING THE EXISTING FABRIC A MINIMUM OF 300mm.
9. PLACEMENT OF ROCK SHOULD FOLLOW IMMEDIATELY AFTER PLACEMENT OF THE FILTER LAYER. PLACE ROCK SO THAT IT FORMS A DENSE, WELL-GRADED MASS OF ROCK WITH A MINIMUM OF VOIDS.
10. PLACE ROCK LINING TO THE EXTENT AND DEPTH INDICATED WITHIN THE APPROVED PLANS.
11. ENSURE THE ROCK IS PLACED IN AN APPROPRIATE MANNER TO AVOID DISPLACING UNDERLYING MATERIALS OR PLACING UNDUE IMPACT FORCE ON THE BEDDING MATERIALS.
12. ENSURE THE ROCK IS PLACED WITH A MINIMUM THICKNESS OF 1.5 TIMES THE NOMINAL ROCK SIZE (D50).
13. ENSURE MATERIALS THAT ARE D50 AND LARGER ARE POSITIONED FLUSH WITH THE TOP SURFACE WITH FACES AND SHAPES MATCHED TO MINIMISE VOIDS.
14. ENSURE PROJECTIONS ABOVE OR DEPRESSIONS UNDER THE SPECIFIED TOP SURFACE ARE LESS THAN 20% OF THE ROCK LAYER THICKNESS. THE AVERAGE SURFACE PLANE OF THE FINISHED ROCK IS DEFINED AS THE PLANE WHERE 50% OF THE TOPS OF ROCKS WOULD CONTACT.
15. ENSURE THE COMPLETED CHANNEL HAS SUFFICIENT DEPTH (AS SPECIFIED FOR THE TYPE OF CHANNEL) MEASURED FROM THE CHANNEL INVERT (AVERAGE SURFACE PLANE ALONG CHANNEL INVERT) TO THE TOP OF THE EMBANKMENT. THE AVERAGE SURFACE PLANE OF THE FINISHED ROCK IS DEFINED AS THE PLANE WHERE 50% OF THE TOPS OF ROCKS WOULD CONTACT.
16. TO THE MAXIMUM DEGREE PRACTICABLE, THE MATERIAL BETWEEN LARGER ROCK MUST NOT BE LOOSE OR EASILY DISPLACED BY THE EXPECTED FLOW.
17. AFTER PLACEMENT OF THE ROCK LINING, ENSURE THE DRAIN HAS A CONSTANT FALL IN THE DESIRED DIRECTION FREE OF OBSTRUCTIONS.

1. ROCK: 150 TO 300mm EQUIVALENT DIAMETER HARD EROSION RESISTANT ROCK.
2. RECYCLED CONCRETE: 150 TO 300mm EQUIVALENT DIAMETER FREE FROM FINES AND CEMENT DUST.
3. SANDBAGS: GEOTEXTILE BAGS (WOVEN SYNTHETIC, OR NON-WOVEN BIODEGRADABLE) FILLED WITH CLEAN COARSE SAND, CLEAN AGGREGATE, OR COMPOST.

1. PRIOR TO PLACEMENT OF THE SEDIMENT TRAP, ENSURE THE DRAINAGE CHANNEL IS DEEP ENOUGH TO PREVENT WATER BEING UNSAFELY DIVERTED OUT OF THE DRAIN ONCE THE CHECK DAMS ARE INSTALLED.
2. LOCATE EACH CHECK DAM SEDIMENT TRAP AS DIRECTED WITHIN THE APPROVED PLANS, OR OTHERWISE AT SUCH A SPACING TO ACHIEVE THE REQUIRED SEDIMENT TRAPPING OUTCOMES. REFER DETAIL.
3. PLACE EACH CHECK DAM SEDIMENT TRAP TO THE LINES AND PROFILE SHOWN IN THE APPROVED PLAN OR AS DIRECTED BY THE SITE SUPERVISOR.

1. THE OUTLET SILL OF THE SPREADER SHOULD BE PROTECTED WITH EROSION CONTROL MATTING TO PREVENT EROSION DURING THE ESTABLISHMENT OF VEGETATION. THE MATTING SHOULD BE A MINIMUM OF 1200mm WIDE EXTENDING AT LEAST 300mm UPSTREAM OF THE EDGE OF THE OUTLET CREST AND BURIED AT LEAST 150mm IN A VERTICAL TRENCH. THE DOWNSTREAM EDGE SHOULD BE SECURELY HELD IN PLACE WITH CLOSELY SPACED HEAVY-DUTY WIRE STAPLES AT LEAST 150mm LONG.
2. ENSURE THAT THE OUTLET SILL (CREST) IS LEVEL FOR THE SPECIFIED LENGTH.
3. IMMEDIATELY AFTER CONSTRUCTION, TURF, OR SEED AND MULCH WHERE APPROPRIATE, THE LEVEL SPREADER.



CONSTRUCTED DIMENSIONS OF TRIANGULAR V-DRAINS		
DRAIN TYPE	FORMED WIDTH WITH OR WITHOUT BANK	FORMED DEPTH WIDTH OR WITHOUT BANK
TYPE-AV	2.0m	0.30m
TYPE-BV	2.7m	0.45m
TYPE-CV	3.9m	0.65m



Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



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SEDIMENT CONTROL

- 1. OPTIMUM BENEFIT MUST BE MADE OF EVERY OPPORTUNITY TO TRAP SEDIMENT WITHIN THE WORK SITE, AND AS CLOSE AS PRACTICABLE TO ITS SOURCE.
- 2. SEDIMENT TRAPS MUST BE INSTALLED AND OPERATED TO BOTH COLLECT AND RETAIN SEDIMENT.
- 3. THE POTENTIAL SAFETY RISK OF A PROPOSED SEDIMENT TRAP TO SITE WORKERS AND THE PUBLIC MUST BE GIVEN APPROPRIATE CONSIDERATION, ESPECIALLY THOSE DEVICES LOCATED WITHIN PUBLICLY ACCESSIBLE AREAS.
- 4. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO PREVENT, OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT FROM THE SITE.
- 5. SUITABLE ALL-WEATHER MAINTENANCE ACCESS MUST BE PROVIDED TO ALL SEDIMENT CONTROL DEVICES.

SEDIMENT FENCE

- 1. SEDIMENT FENCE TO BE INSTALLED ALONG A LINE OF CONSTANT GROUND ELEVATION WHEREVER PRACTICAL.
- 2. BOTH ENDS OF THE SEDIMENT FENCE TO EXTEND UP THE SLOPE AT LEAST 1m.
- 3. SUPPORT POST TO BE SPACED A MAXIMUM 2m UNLESS THE FENCE IS SUPPORTED BY A TOP WIRE OR MESH BACKING, IN WHICH CASE 3m MAXIMUM SPACING.
- 4. FENCE 'RETURNS' SHALL BE INSTALLED AT MAXIMUM 20m SPACING IF FENCE IS INSTALLED ALONG THE CONTOUR, OTHERWISE 5 TO 10m MAXIMUM SPACING DEPENDING ON SLOPE.
- 5. MINIMUM 4 STAPLES OR TIE WIRES PER STAKE.

MATERIALS:

- 1. FABRIC: POLYPROPYLENE, POLYAMIDE, NYLON, POLYESTER, OR POLYETHYLENE WOVEN OR NON-WOVEN FABRIC, AT LEAST 700mm IN WIDTH AND A MINIMUM UNIT WEIGHT OF 140GSM. ALL FABRICS TO CONTAIN ULTRAVIOLET INHIBITORS AND STABILISERS TO PROVIDE A MINIMUM OF 6 MONTHS OF USEABLE CONSTRUCTION LIFE (ULTRAVIOLET STABILITY EXCEEDING 70%).
- 2. FABRIC REINFORCEMENTS: WIRE OR STEEL MESH MINIMUM 14-GAUGE WITH A MAXIMUM MESH SPACING OF 200mm.
- 3. SUPPORT POSTS/STAKES: 1500mm² (MIN.) HARDWOOD, 2500mm² (MIN.) SOFTWOOD, OR 1.5kg/m (MIN) STEEL STAR PICKETS WITH SAFETY CAPS SUITABLE FOR ATTACHING FABRIC.

INSTALLATION OF A SPILL-THROUGH WEIR:

- 1. LOCATE THE SPILL-THROUGH WEIR SUCH THAT THE WEIR CREST WILL BE LOWER THAN THE GROUND LEVEL AT EACH END OF THE FENCE.
- 2. ENSURE THE CREST OF THE SPILL-THROUGH WEIR IS AT LEAST 300mm ABOVE THE GROUND ELEVATION.
- 3. SECURELY TIE A HORIZONTAL CROSS MEMBER (WEIR) TO THE SUPPORT POSTS/STAKES EACH SIDE OF THE WEIR. CUT THE FABRIC DOWN THE SIDE OF EACH POST AND FOLD THE FABRIC OVER THE CROSS MEMBER AND APPROPRIATELY SECURE THE FABRIC.
- 4. INSTALL A SUITABLE SPLASH PAD AND/OR CHUTE IMMEDIATELY DOWN-SLOPE OF THE SPILL-THROUGH WEIR TO CONTROL SOIL EROSION AND APPROPRIATELY DISCHARGE THE CONCENTRATED FLOW PASSING OVER THE WEIR.

INSTALLATION FABRIC DROP INLET PROTECTION:

- 1. ENSURE THAT THE INSTALLATION OF THE SEDIMENT TRAP WILL NOT CAUSE UNDESIRABLE SAFETY OR FLOODING ISSUES.
- 2. WHERE POSSIBLE, EXCAVATE A 200x200mm TRENCH AROUND THE INLET STRUCTURE.
- 3. SPACE STAKES EVENLY AROUND THE PERIMETER OF THE STORMWATER INLET AT A MAXIMUM 1m SPACING AND SECURELY DRIVE THEM INTO THE GROUND.
- 4. WHERE NECESSARY, INSTALL A HORIZONTAL SPILL-THROUGH WEIR TO LIMIT THE MAXIMUM HEIGHT WATER PONDING AROUND THE STRUCTURE.
- 5. ENSURE THE MAXIMUM POND HEIGHT WILL NOT CAUSE A SAFETY HAZARD, INCLUDING UNDESIRABLE FLOODING OF AN ADJACENT PROPERTY OR ROADWAY. WHEREVER PRACTICAL, THE SPILL-THROUGH WEIR SHOULD BE AT LEAST 300mm ABOVE GROUND LEVEL.
- 6. IF A SPILL THROUGH WEIR IS NOT INSTALLED, THEN FRAME THE TOP OF THE STAKES WITH HORIZONTAL CROSS MEMBERS.
- 7. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS.
- 8. PLACE THE BOTTOM 300mm OF FABRIC IN THE EXCAVATED TRENCH
- 9. SECURELY FASTEN THE FABRIC TO THE STAKES AND CROSS MEMBERS AT THE FABRIC JOINT, OVERLAP THE FABRIC TO THE NEXT STAKE.
- 10. BACKFILL THE TRENCH WITH AT LEAST 200mm OF AGGREGATE OR COMPACTED SOIL. IF A TRENCH CANNOT BE EXCAVATED, LAY THE BOTTOM 300mm OF FABRIC EVENLY ON THE GROUND SURFACE AND COVER WITH A 300mm LAYER OF AGGREGATE, NOT EARTH OR SOIL.
- 11. WHERE REQUIRED, INSTALL A FLOW CONTROL BUND TO MAINTAIN THE SPECIFIED POOL DEPTH AND CONTROL THE MOVEMENT OF WATER.
- 12. TAKE ALL NECESSARY MEASURES TO MINIMISE THE SAFETY RISK CAUSED BY THE STRUCTURE AND TO PREVENT UNSAFE ENTRY INTO THE STORMWATER INLET.

SEDIMENT BASIN

- 1. REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
- 2. PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING AT LEAST 100mm TO HELP BOND COMPACTED FILL TO THE EXISTING SUBSTRATE.
- 3. FOR EARTH EMBANKMENT MATERIAL TYPE AND COMPACTION REFER TO DTMR SPECIFICATION MRTS04 SECTION14.2.6 - WATER RETAINING EMBANKMENTS.
- 4. CONSTRUCT EMERGENCY SPILLWAY.
- 5. INSTALL MARKER POST SHOWING MAXIMUM STORAGE AND SETTLING ZONE VOLUMES.
- 6. AS-CONSTRUCTED PLANS MUST BE PREPARED FOR ALL CONSTRUCTED SEDIMENT BASINS AND ASSOCIATED EMERGENCY SPILLWAYS. SUCH PLANS MUST APPROPRIATELY VERIFY THE BASINS DIMENSIONS, LEVELS AND VOLUMES, AND MUST BE SUBMITTED TO THE RELEVANT REGULATORY AUTHORITY WITHIN 14 CALENDAR DAYS OF THE CONSTRUCTION OF EACH BASIN.
- 7. BASINS SHOULD BE APPROPRIATELY FENCED AND MARKED BY WARNING SIGNS IF UNSUPERVISED PUBLIC ACCESS IS LIKELY AND PUBLIC SAFETY IS AT RISK.

SITE MONITORING AND MAINTENANCE

- 1. ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSPECTED:
 - (i) AT LEAST DAILY (WHEN WORK IS OCCURRING ON-SITE);
 - (ii) AT LEAST WEEKLY (WHEN WORK IS NOT OCCURRING ON-SITE);
 - (iii) WITHIN 24 HOURS OF EXPECTED RAINFALL; AND

(iv) WITHIN 18 HOURS OF A RAINFALL EVENT OF SUFFICIENT INTENSITY AND DURATION TO CAUSE RUNOFF ON-SITE).

WHERE MORE THAN 2,500m² OF LAND ARE DISTURBED, A SELF AUDITING PROGRAM MUST BE DEVELOPED FOR THE SITE. A SITE INSPECTION SELF AUDIT AND MONITORING PROGRAM MUST BE UNDERTAKEN BY THE LAND DEVELOPER OR AS DELEGATED IN ADDITION TO THE ABOVE FOR THE FOLLOWING:

- a) IMMEDIATELY BEFORE SITE CLOSURE;
- b) IMMEDIATELY FOLLOWING RAINFALL EVENTS THAT CAUSE RUN-OFF.

2. INSPECTION SHALL BE CONDUCTED IN LINE WITH THE FOLLOWING AS A MINIMUM:

- i) RECORD TYPE OF DEVICE/CONTROL MEASURE BEING INSPECTED AND ITS LOCATION;
- ii) RECORD THE CONDITION OF EACH DEVICE/CONTROL MEASURE BEING INSPECTED;
- iii) RECORD MAINTENANCE REQUIREMENTS FOR DEVICE/CONTROL MEASURE BEING INSPECTED;
- iv) RECORD SEDIMENT VOLUMES REMOVED FROM DEVICE/CONTROL MEASURE BEING INSPECTED;
- v) RECORD DETAILS OF SEDIMENT BASIN TREATMENT, FLOCCULANT DOSAGE AND CLEANOUTS;
- vi) RECORD SEDIMENT DISPOSAL PROCEDURES AND LOCATION;

3. ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES MUST BE MAINTAINED IN PROPER WORKING ORDER AT ALL TIMES DURING THEIR OPERATIONAL LIVES.

4. SEDIMENT CONTROL DEVICES MUST BE DE-SILTED AND MADE FULLY OPERATIONAL AS SOON AS REASONABLE AND PRACTICABLE AFTER A SEDIMENT-PRODUCING EVENT, WHETHER NATURAL OR ARTIFICIAL. IF THE DEVICE'S SEDIMENT RETENTION CAPACITY FALLS BELOW 75% OF ITS DESIGN RETENTION CAPACITY, DE-SILT SEDIMENT TRAP IF THE SEDIMENT LEVEL EXCEEDS 1/3 OF THE CREST HEIGHT.

5. MATERIALS, WHETHER LIQUID OR SOLID, REMOVED FROM SEDIMENT CONTROL DEVICES DURING MAINTENANCE OR DECOMMISSIONING, MUST BE DISPOSED OF IN A MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.

6. ALL WATER QUALITY DATA, INCLUDING DATES OF RAINFALL, DATES OF TESTING, TESTING RESULTS AND DATES OF WATER RELEASE, MUST BE KEPT IN AN ON-SITE REGISTER. THE REGISTER IS TO BE MAINTAINED UP TO DATE FOR THE DURATION OF THE APPROVED WORKS AND BE AVAILABLE ON-SITE FOR INSPECTION BY THE RELEVANT REGULATORY AUTHORITY ON REQUEST.

7. AT NOMINATED INSTREAM WATER MONITORING SITES, A MINIMUM OF 3 WATER SAMPLES MUST BE TAKEN AND ANALYSED, AND THE AVERAGE RESULT USED TO DETERMINE QUALITY.

8. ALL ENVIRONMENTALLY RELEVANT INCIDENTS MUST BE RECORDED IN A FIELD LOG THAT MUST REMAIN ACCESSIBLE TO ALL RELEVANT REGULATORY AUTHORITIES.

9. WASHING/FLUSHING OF SEALED ROADWAYS MUST ONLY OCCUR WHERE SWEEPING HAS FAILED TO REMOVE SUFFICIENT SEDIMENT AND THERE IS A COMPELLING NEED TO REMOVE THE REMAINING SEDIMENT (E.G. FOR SAFETY REASONS). IN SUCH CIRCUMSTANCES, ALL REASONABLE AND PRACTICABLE SEDIMENT CONTROL MEASURES MUST BE USED TO PREVENT, OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT INTO RECEIVING WATERS. ONLY THOSE MEASURES THAT WILL NOT CAUSE SAFETY AND PROPERTY FLOODING ISSUES SHALL BE EMPLOYED. SEDIMENT REMOVED FROM ROADWAYS MUST BE DISPOSED OF IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.

10. ALL SEEDING, HYDROSEEDING AND TURFING REQUIRES REGULAR WATERING UNTIL EFFECTIVE COVER IS ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. WATERING SHOULD DEPEND ON WEATHER AND SOIL CONDITIONS. WATERING SHOULD START IMMEDIATELY AFTER PLANTING AND SHOULD COMPLY WITH THE FOLLOWING AS A MINIMUM:

- c) WEEK 1 3 WATERINGS PER WEEK
- ii) WEEK 2-6 2 WATERINGS PER WEEK
- iii) WEEK 7-12 1 WATERING PER WEEK

11. MAINTENANCE MOWING OF ALL ROAD SHOULDERS, TABLE DRAINS, BATTERS AND OTHER SURFACES LIKELY TO EXPERIENCE ACCELERATED SOIL EROSION MUST AIM TO LEAVE THE GRASS LENGTH NO SHORTER THAN 50mm WHERE REASONABLE AND PRACTICABLE.

12. MAINTENANCE MOWING MUST BE DONE IN A MANNER THAT WILL NOT DAMAGE THE PROFILE OF FORMED, SOFT EDGES, SUCH AS THE CREST OF EARTH EMBANKMENTS.

SEDIMENT BASIN

- 2. CONSTRUCTED SEDIMENT BASINS MUST BE MAINTAINED AND FULLY OPERATIONAL THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL EACH BASIN'S CATCHMENT AREA ACHIEVES 80% GROUND COVER ON ALL SOIL SURFACES.
- 3. SETTLED SEDIMENT MUST BE REMOVED FROM SEDIMENT BASINS WHEN THE VOLUME OF THE SEDIMENT EXCEEDS THE DESIGNATED SEDIMENT STORAGE VOLUME, OR THE DESIGN MAXIMUM SEDIMENT STORAGE ELEVATION.
- 4. SEDIMENT BASIN WATER QUALITY SAMPLES MUST BE TAKEN AT A DEPTH NO GREATER THAN 200mm ABOVE THE LEVEL OF SETTLED SEDIMENT BY A SUITABLY QUALIFIED PERSON. WATER TESTING TO BE UNDERTAKEN USING EITHER A HANDHELD PH/TURBIDITY METER OR SAMPLES COLLECTED FOR LABORATORY TESTING PRIOR TO BASIN DEWATERING. ALL LABORATORY TESTING TO BE UNDERTAKEN BY A NATA ACCREDITED LABORATORY.
- 5. ALL WATER PUMPED FROM THE SEDIMENT BASIN SHALL BE TESTED FOR ENVIRONMENTAL COMPLIANCE AGAINST THE RELEASE CRITERIA IN THE TABLE BELOW (AS A MINIMUM), UNLESS ALTERNATIVE (MORE STRINGENT) STANDARDS ARE SPECIFIED BY THE LOCAL AUTHORITY PRIOR TO RELEASE.

PARAMETER	RELEASE CRITERIA
SUSPENDED SOLIDS	50mg/l MAX
pH	WITHIN RANGE 6.5-8.5
TURBIDITY	60NTU MAX

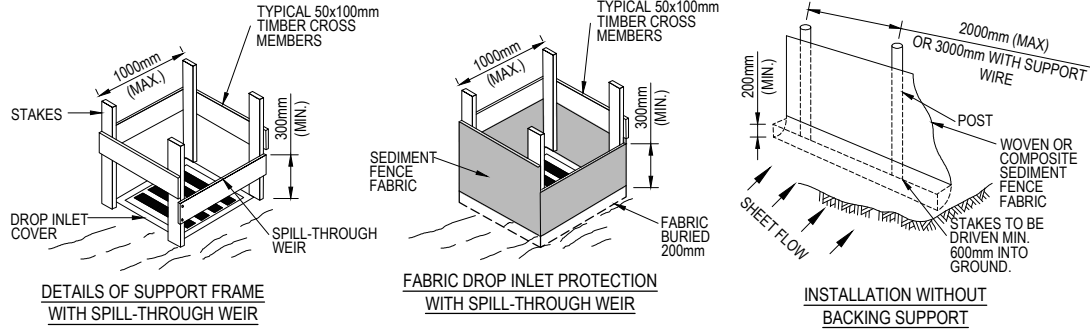
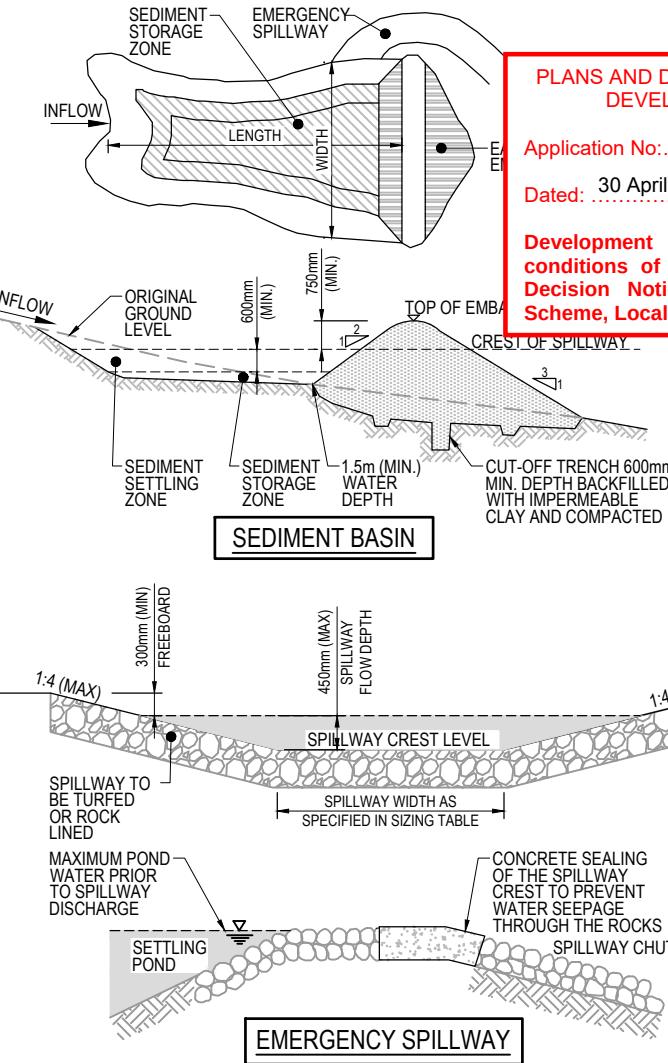
- 6. THE SEDIMENT BASIN SHALL BE TREATED BY FLOCCULATION AFTER ALL RAINFALL EVENTS (> 5mm) USING GYPSUM OR ALUM. MANUAL DOSAGE OF BASIN SHALL BE UNDERTAKEN USING A MINIMUM RATE OF 32kg/100m³ FOR GYPSUM AND 1.5-8kg/100m³ FOR ALUM. HIGHER DOSAGE MAY BE REQUIRED DEPENDING ON SOIL TYPE AND APPLICATION TECHNIQUE. ALUM SHAL NOT BE USED WHERE THE CATCHMENT DISCHARGES DIRECTLY TO A WATERWAY.
- 7. THE CHOSEN FLOCCULENT SHALL BE SPREAD EVENLY OVER THE BASIN SURFACE AREA. THE BASIN WILL REQUIRE A PUMP SYSTEM TO SPRAY SLURRY OF FLOCCULANTS OVER SURFACE AT AN ANGLE OF 10°-20°.
- 8. THE TREATED BASIN SHALL BE DEWATERED WITH A PUMP SYSTEM WITH A FLOATING INLET TO ENSURE SETTLED SEDIMENT IS NOT ENTRAINED AND DISCHARGED. BASIN DEWATERING SHALL OCCUR WITHIN 5 DAYS FROM CONCLUSION OF RAINFALL EVENT.

SITE REHABILITATION

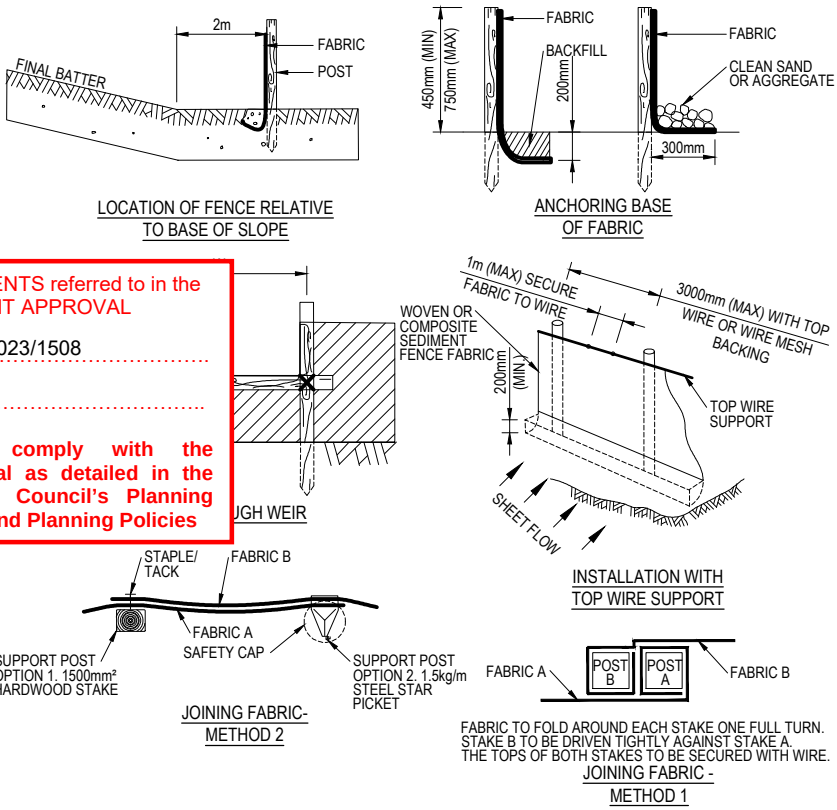
- 1. ALL DISTURBED AREAS IDENTIFIED AS VERY LOW, LOW, MEDIUM, HIGH, OR EXTREME EROSION RISK MUST BE SUITABLY STABILISED WITHIN 60, 30, 20, 10 OR 5 DAYS RESPECTIVELY, OR PRIOR TO ANTICIPATED RAINFALL, WHICHEVER IS THE GREATER, FROM THE DAY THAT SOIL DISTURBANCES ON THE AREA HAVE BEEN FINALISED.
- 2. THE TYPE OF GROUND COVER APPLIED TO COMPLETED EARTHWORKS SHOULD BE COMPATIBLE WITH THE ANTICIPATED LONG-TERM LAND USE, ENVIRONMENTAL RISK, AND SITE REHABILITATION MEASURES.
- 3. UNLESS OTHERWISE DIRECTED BY SUPERINTENDENT OR WHERE DIRECTED BY THE APPROVED REVEGETATION PLAN, TOPSOIL MUST BE PLACED AT A MINIMUM DEPTH OF 75mm ON SLOPES 4:1 (H:V) OR

FLATTER, AND 50mm ON SLOPES STEEPER THAN 4:1.

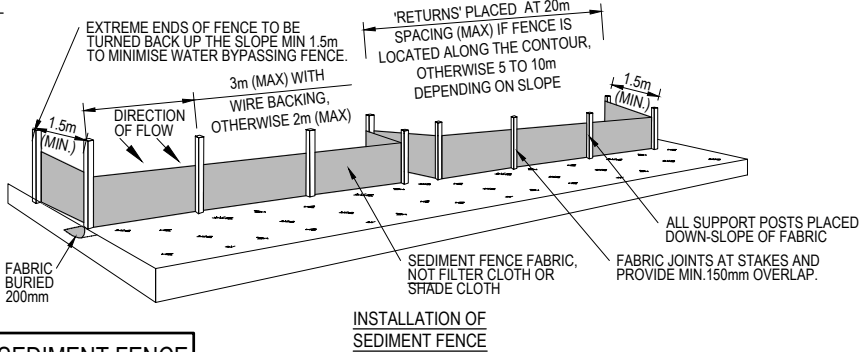
- 4. THE PH LEVEL (SOIL:WATER 1:5) OF TOPSOIL MUST BE ADEQUATE TO ENABLE ESTABLISHMENT AND GROWTH OF THE SPECIFIED VEGETATION.
- 5. SOIL AMELIORANTS MUST BE ADDED TO THE SOIL IN ACCORDANCE WITH THE APPROVED LANDSCAPE/REVEGETATION PLANS AND/OR SOIL ANALYSIS.
- 6. SOIL DENSITY/COMPACTION MUST BE ADJUSTED PRIOR TO SEEDING/PLANTING IN ACCORDANCE WITH THE RELEVANT SPECIFICATIONS, SOIL REPORT AND/OR APPROPRIATE REFERENCE PLANS.
- 7. ALL UNSTABLE OR DISTURBED SOIL SURFACES MUST BE ADEQUATELY STABILISED AGAINST EROSION TO ACHIEVE A C-FACTOR OF 0.15 OR LESS AS DEFINED BY "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION" LANDCOM 4TH EDITION, 2004 APPENDIX M. THIS EQUATES TO MINIMUM 50% GRASS COVER IF SOIL HAS BEEN RECENTLY DISTURBED ON ALL LANDS. STOCKPILES AND OTHER EXPOSED MATERIALS SCHEDULED TO REMAIN UNATTENDED FOR A DURATION OF MORE THAN 20 DAYS.
- 8. ALL TEMPORARY DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES MUST BE REMOVED AFTER ACHIEVING A SATISFACTORY "OFF-MAINTENANCE INSPECTION" BY THE RELEVANT REGULATORY AUTHORITY.
- 9. DISPOSE OF ANY COLLECTED SEDIMENT OR FILL IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
- 10. IMMEDIATELY PRIOR TO THE CONSTRUCTION OF THE PERMANENT STORMWATER TREATMENT DEVICE, APPROPRIATE FLOW BYPASS CONDITIONS MUST BE ESTABLISHED TO PREVENT SEDIMENT-LADEN WATER ENTERING THE DEVICE.
- 11. IMMEDIATELY FOLLOWING THE CONSTRUCTION OF THE FILTER MEDIA OF THE PERMANENT STORMWATER TREATMENT DEVICE, THE FILTER MEDIA MUST BE COVERED BY HEAVY-DUTY FILTER CLOTH (MINIMUM BIDUM A44 OR EQUIVALENT) AND A MINIMUM 200mm LAYER OF EARTH OR SACRIFICIAL FILTER MEDIA. SUCH EARTH AND FILTER CLOTH MUST NOT BE REMOVED FROM THE DEVICE UNTIL SUITABLE SURFACE CONDITIONS BEING ACHIEVED WITHIN THE BASIN'S CATCHMENT AREA.
- 12. IMMEDIATELY FOLLOWING THE CONSTRUCTION OF THE PERMANENT STORMWATER TREATMENT DEVICE AN APPROPRIATE TYPE 2 SEDIMENT TRAP MUST BE INSTALLED IN A MANNER TO PREVENT SEDIMENT INTRUSION INTO THE DEVICE.
- 13. THE MINIMUM SEDIMENT CONTROL STANDARD FOR THE PROTECTION OF THE PERMANENT STORMWATER TREATMENT DEVICE DURING THE CONSTRUCTION AND MAINTENANCE PHASES IS A TYPE 2 SEDIMENT TRAP. (ALTERNATIVE TO ABOVE)
- 14. PLANT ESTABLISHMENT WITHIN THE PERMANENT STORMWATER TREATMENT DEVICE MUST BE DELAYED UNTIL SEDIMENT INTRUSION INTO THE DEVICE IS SUITABLY UNDER CONTROL.
- 15. UPON SUITABLE CONDITIONS BEING ACHIEVED WITHIN THE BASIN'S CATCHMENT AREA, THE OPERATIONAL FEATURES OF THE PERMANENT STORMWATER TREATMENT SYSTEM MUST BE MADE FULLY OPERATIONAL (I.E. MAINTENANCE AND/OR RECONSTRUCTION AS REQUIRED).
- 16. THE PERMANENT STORMWATER TREATMENT FEATURES OF THE REHABILITATED BASIN MUST NOT BE MADE OPERATIONAL UNTIL ALL UP-SLOPE SITE STABILISATION MEASURES HAVE BEEN IMPLEMENTED AND ARE APPROPRIATELY WORKING TO CONTROL SOIL EROSION AND SEDIMENT RUNOFF IN ACCORDANCE WITH THE SPECIFIED ESC STANDARD. (ALTERNATIVE TO ABOVE).



FABRIC DROP INLET PROTECTION

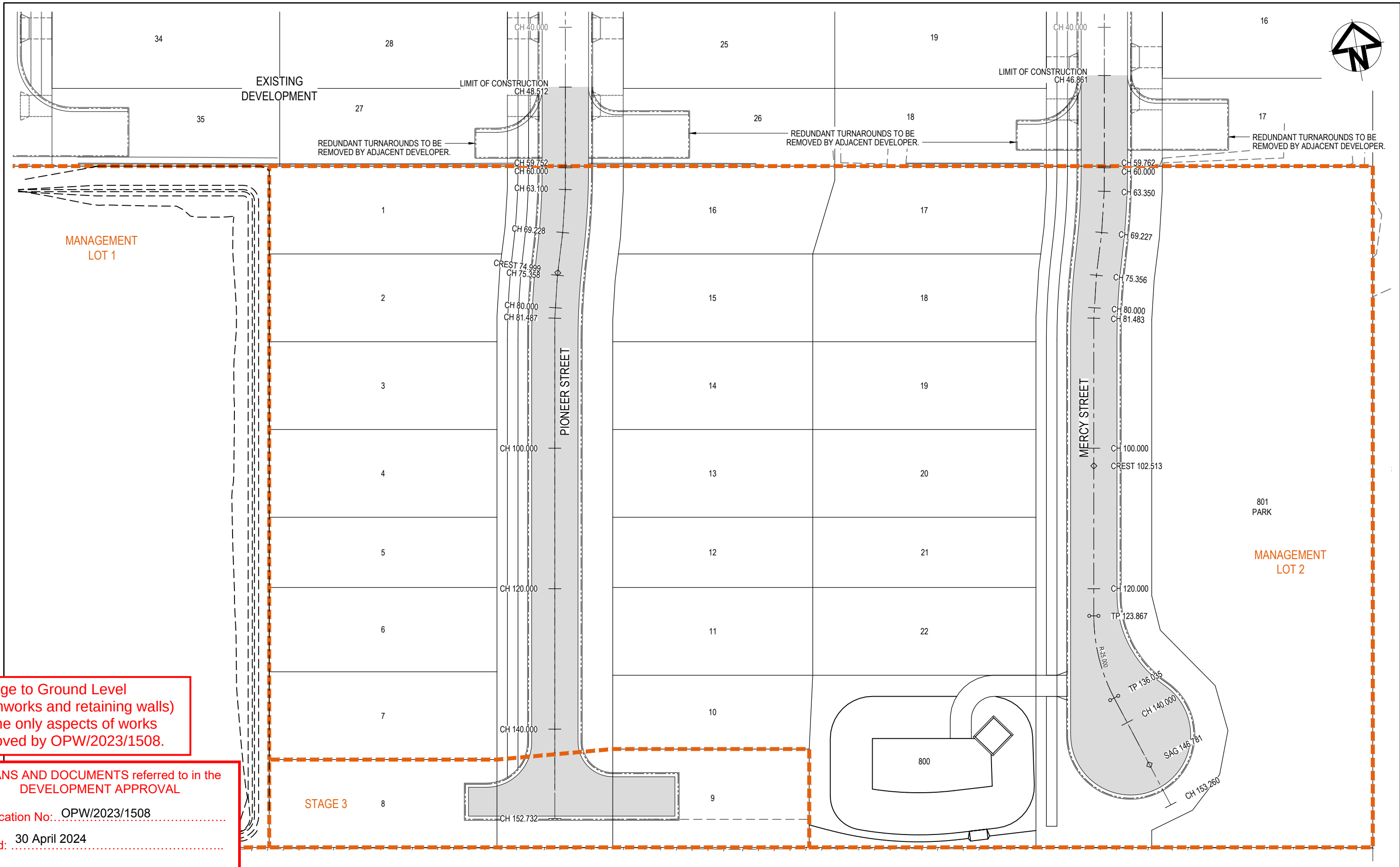


SEDIMENT FENCE



		Change to Ground Level (earthworks and retaining walls) are the only aspects of works approved by OPW/2023/1508.				
01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023	
Issue	Description	DR	CH	VE	Date	

Surveyor	Client	Status	Project	ARCADIS	
saunders havill group	Coomera GA Pty Ltd ATF The Coomera GA Unit Trust Pty Ltd	FOR APPROVAL CONSTRUCTION SUBJECT TO APPROVAL	54 GEORGE ALEXANDER WAY, COOMERA	Arcadis Australia Pacific Pty Limited Level 7, Seabank Building, 12-14 Marine Parade SOUTHPORT QLD 4215 ABN 76 104 485 289 Tel No: +61 7 5503 4800 www.arcadis.com/au	
		© Copyright reserved		Project Number 30157884	
		Original Issue Signatures		Title	
		Drawn D. KEARNEY	Original Size A1		
		Designed G. GESMUNDO	Height Datum AHD		
		Project Manager A. SHEPHERD	Grid MGA (ZONE 56)		
		Verified R. MULLIGAN	R.P.E.Q. No: 7850 Date: 31.01.2024		
			Project No: 30157884-54	Issue	
			GAW-AAP-BE-00-DRG-CV-0133		01



Change to Ground Level (earthworks and retaining walls) are the only aspects of works approved by OPW/2023/1508.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

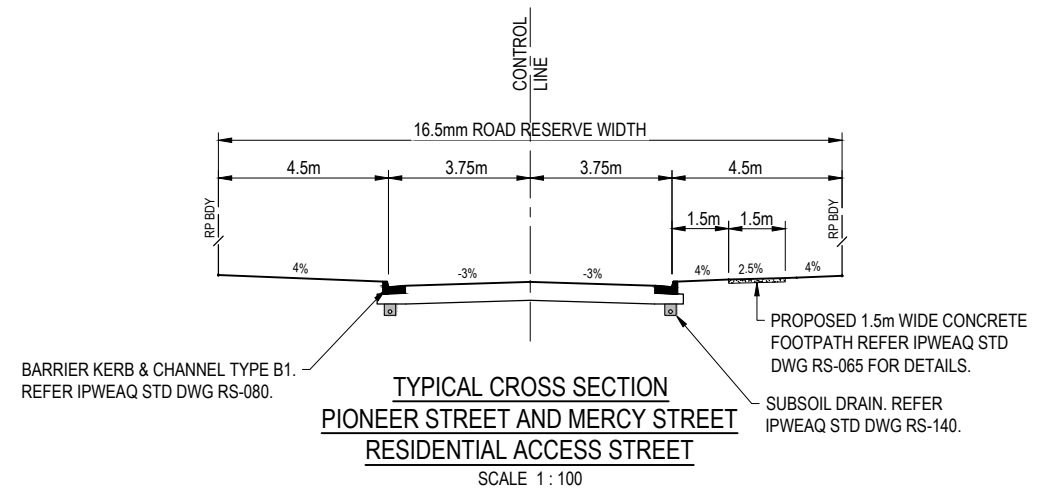
Application No: OPW/2023/1508

Dated: 30 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

01 ORIGINAL ISSUE Issue Description		DK AS RM 19.12.2023 DR CH VE Date	Scales 0 5 10 15 20 25m 1 : 250	Surveyor	Client Coomera GA Pty Ltd ATF The Coomera GA Unit Trust Pty Ltd	Status FOR APPROVAL CONSTRUCTION SUBJECT TO APPROVAL © Copyright reserved Original Issue Signatures Drawn D. KEARNEY Original Size A1 Designed G. GESMUNDO Height Datum AHD Project Manager A. SHEPHERD Grid MGA (ZONE 56) Verified R. MULLIGAN R.P.E.Q. No: 7850 Date 31.01.2024	Project 54 GEORGE ALEXANDER WAY, COOMERA Title CONTROL LINE SETOUT PLAN	Arcadis Australia Pacific Pty Limited Level 7, Seabank Building, 12-14 Marine Parade SOUTHPORT QLD 4215 ABN 76 104 485 289 Tel No: +61 7 5503 4800 www.arcadis.com/au Project Number 30157884 Issue 01
Date Plotted: 31 Jan 2024 - 09:09AM File Name: C:\Users\dkaz3682\Documents\Arcadis ACC US\AAU-30157884-54 George Alexander Way\Project Files\10_WIP\10e_Civil_C1Stage_BE\DRG\GAW-AAP-BE-00-DRG-CV-0201-ControlLine.dwg								

CONTROL LINE SETOUT - MERCY STREET								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	1917.408	9668.313	22.552	189°46'50.43"			
IP 2	59.762	1907.256	9609.420	27.261				
IP 3	63.350	1906.631	9605.886	27.441				
IP 4	69.227	1905.280	9600.167	27.735				
IP 5	75.356	1903.508	9594.299	28.041				
IP 6	81.483	1902.100	9588.337	28.347				
TC	123.867	1894.900	9546.568	28.338	189°46'47.70"			
IP 7	129.951	1893.846	9540.452	28.106		R = -25.000	12.167	27°53'07.38"
CT	136.035	1895.775	9534.553	27.945	161°53'40.32"			
IP 8	153.260	1901.128	9518.180	27.873	161°53'40.32"			



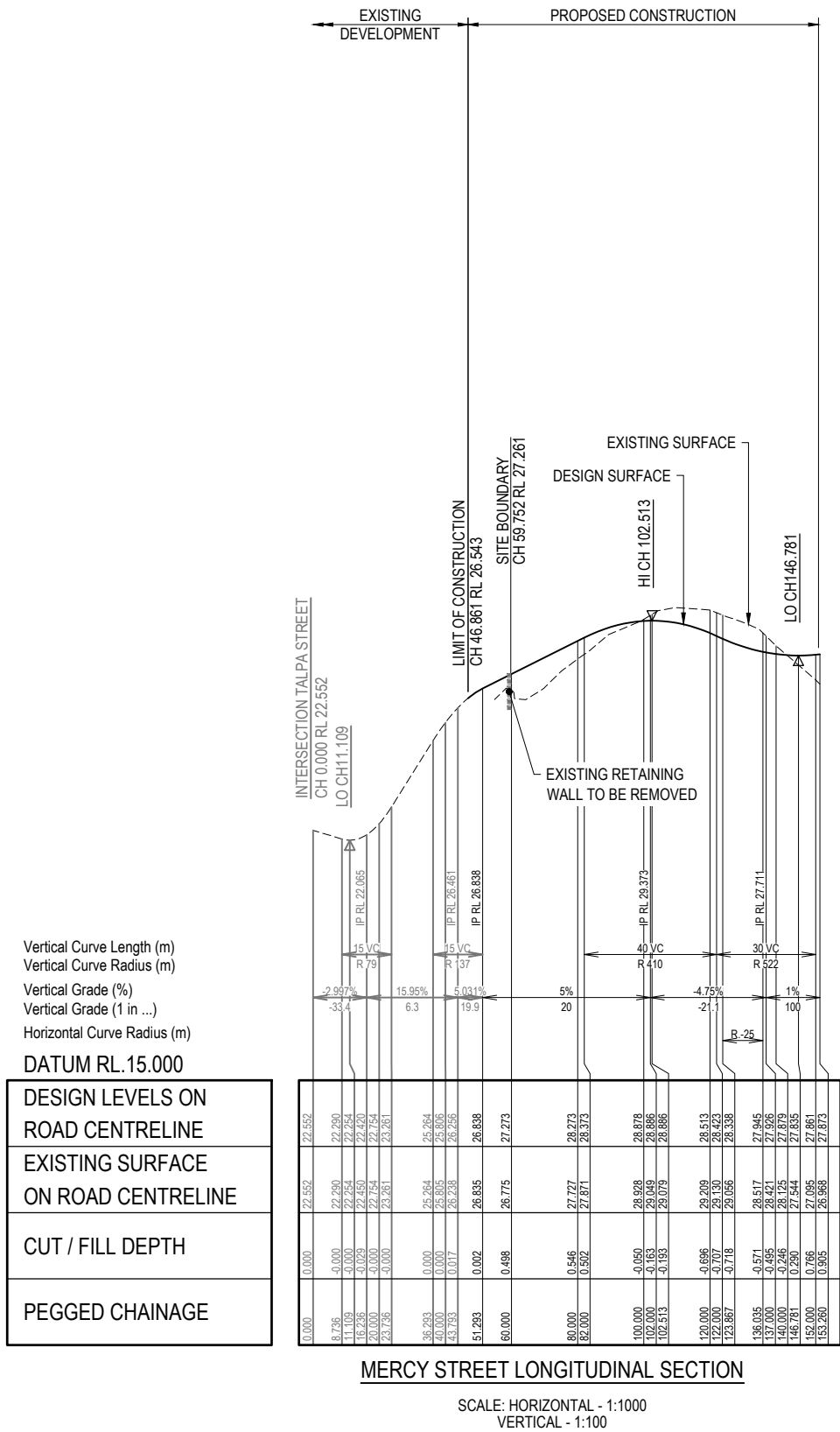
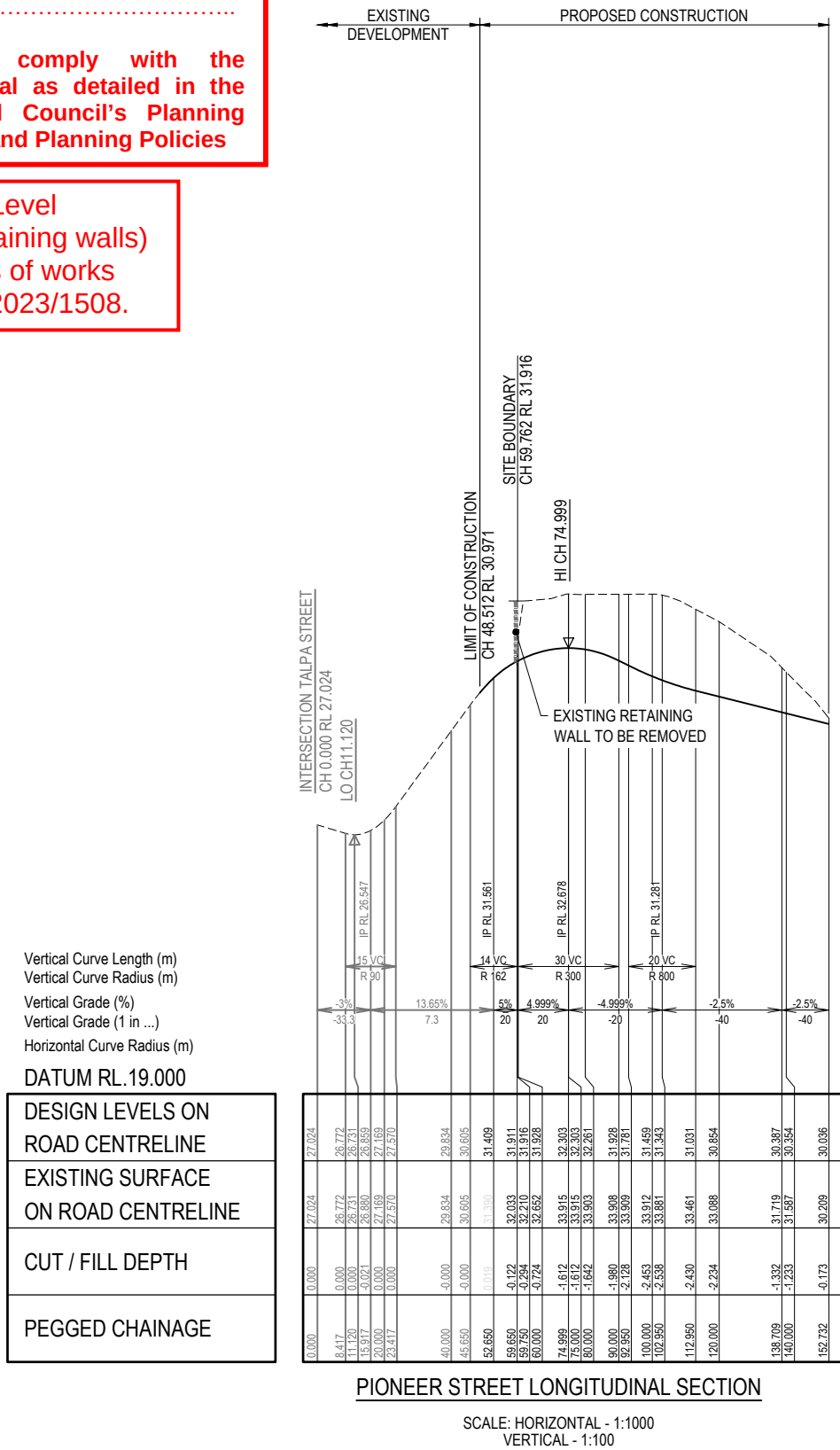
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1508

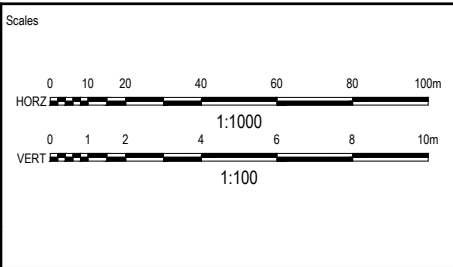
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01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023
Issue	Description	DR	CH	VE	Date



Client

Coomera GA Pty Ltd
ATF The Coomera
GA Unit Trust
Pty Ltd

Status	FOR APPROVAL CONSTRUCTION SUBJECT TO APPROVAL
Original Issue Signatures	© Copyright reserved
Drawn	D. KEARNEY
Designed	G. GESMUNDO
Project Manager	A. SHEPHERD
Verified	R. MULLIGAN
Original Size	A1
Height Datum	AHD
Grid	MGA (ZONE 56)
R.P.E.Q. No.	7850
Date	31.01.2024

Project

54 GEORGE ALEXANDER WAY,
COOMERA

Title

PIONEER STREET AND
MERCY STREET
LONGITUDINAL SECTIONS

Arcadis Australia Pacific Pty Limited
Level 7, Seabank Building, 12-14 Marine Parade
SOUTHPORT QLD 4215
ABN 76 104 485 289
Tel No: +61 7 5503 4800
www.arcadis.com/au

Project Number 30157884

Issue 01

Drawing No. GAW-AAP-BE-00-DRG-CV-0221



State Code 25 Response

State Development Assessment Provisions v3.0

54 George Alexander Way, Coomera, Queensland 4209
Prepared for Coomera GA Pty Ltd

8 August 2024

Job 11241

Document Control

Document: 54 George Alexander Way, Coomera, Queensland 4209, SDAP v3.0 State Code 25 Response, prepared by Saunders Havill Group for Coomera GA Pty Ltd, dated 11 July 2024.

Document Issue

Issue	Date	Prepared by	Checked by
Issue A	7.08.2024	CM/RM	RM

Prepared by
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Table of Contents

1. Introduction	1
2. <i>Planning Regulation 2017</i>	6
3. Koala Habitat Area field assessment	8
3.1. Koala Surveys	8
3.2. Vegetation Values	8
3.3. Landscape connectivity analysis	14
4. State Development Assessment Provisions	17
5. Appendices	29

Figures

Figure 1:	Site context	4
Figure 2:	Site aerial	5
Figure 3:	Koala priority area and koala habitat area	7
Figure 4:	Regulated Vegetation Management Map	11
Figure 5:	Regulated Vegetation Supporting Map	12

Plans

Plan 1:	GPS Tree Plot	13
Plan 2:	Koala Connectivity Assessment	16
Plan 3:	Development Assessment	26

Tables

Table 1:	Property summary	3
Table 2:	Response to State Code 25, Table 25.3 Reconfiguring a Lot.	18

Acronyms and abbreviations

DA	Development Application
DES	Department of Environment and Science
DSDILGP	Department of State Development, Infrastructure, Local Government and Planning (Qld)
EAR	Ecological Assessment Report
COGC	City of Gold Coast
ha	Hectare
KHA	Koala habitat area (core)
KPA	Koala Priority Area
KMP	Koala Management Plan
km	Kilometres
MSES	Matters of State Environmental Significance
NCA	<i>Nature Conservation Act 1992</i>
PA	<i>Planning Act 2016 (Qld)</i>
PO	Performance Outcome
PR	<i>Planning Regulation 2017 (Qld)</i>
RE	Regional Ecosystem
RoL	Reconfiguration of a Lot
SARA	State Assessment Referral Agency (part of DILGP)
SDAP	State Development Assessment Provision
SHG	Saunders Havill Group
SPP	State Planning Policy 2017 (Qld)
VCFMP	Vegetation Clearing and Fauna Management Plan
VMA	<i>Vegetation Management Act 1999 (Qld)</i>

1. Introduction

Saunders Havill Group (SHG) was engaged by Coomera GA Pty Ltd (the client) to complete site investigations and prepare a report to demonstrate compliance with State Development Assessment Provision (SDAP) *State Code 25: Development in South East Queensland Koala habitat areas* version 3.0 (State Code 25), implemented by the Department of State Development, Infrastructure, Local Government and Planning (DSDILGP). This report provides a response to State Code 25 for land located at 54 George Alexander Way, Coomera, Queensland, 4209 (described as Lot 96 on RP187418). This report supports the requirements of a Development Application (DA) to City of Gold Coast (CoGC) and reviews the site's ecological values in accordance with State Code 25.

The site is situated approximately 2.7 kilometers (km) south of Coomera centre and around 1.4 km west of the Pacific Motorway. It is bordered by George Alexander Way to the west, an approved development to the north, a similar large residential lot to the south, and an established residential community to the east. Notably, the eastern portion of the lot has received approval for development. See **Figure 1** for Site Context and **Figure 2** for Site Aerial. Key property details are listed in **Table 1**.

South East Queensland Koala habitat protection mechanisms are incorporated into the *Planning Regulation 2017* (PR). Schedule 10 Part 10 of the PR sets out what is and is not prohibited or assessable development in a Koala Habitat Area. Where inside a Koala Priority Area (KPA), the provisions of Schedule 11 of the PR apply unless certain criteria are met (refer Part 10 Division 2 16 A 2). Where outside of a KPA, development that involves interfering with a Koala Habitat Area is assessable unless certain criteria apply (refer Part 10 Division 3 16 B 2). Development that is assessable outside of a KPA is referable to the State and must address SDAP Code 25: Development in South East Queensland Koala Habitat Areas. The site is not mapped within a KPA; however it does contain mapped KHA (core). As the development proposes to impact mapped KHA, referral to the State under SDAP State Code 25 is required and is further supported by supplementary Koala Management Plan Report. The site is partially mapped as containing KHA, with this area spanning the eastern edge and extending along the northern and southern boundaries of the lot (refer to Figure 3).

The site is relatively isolated and fragmented from other KHA due to the presence of major roads and residential developments in the larger landscape, as outlined in the Ecological Assessment Report (EAR) accompanying this application. A substantial patch of KHA is located to the west of George Alexander Way; however, existing development approval over this KHA area paired with the location of three lane George Alexander Way suggests that it would be more beneficial to direct Koala movement to ecological corridors in the surrounding landscape east. Suitable riparian corridors are located approximately 500 meters east of the site allowing a safer corridor for koala and other fauna travelling through the locality. The proposal with inclusion of a 20m wide bushland buffer helps to protect and enhance fauna connectivity within the locality and can be extended on through future development to the south dedicating habitat as additional corridors.

The site is located within the Urban Footprint of the South East Queensland Regional Plan, and additionally is zoned as High density residential (western portion of site) and Medium density residential (eastern portion of site) in the east under Gold Coast City Plan 2016. Achieving higher densities in areas earmarked for future development in close proximity and access to essential infrastructure helps achieve orderly and efficient land

use optimisation while catering for the growing South East Queensland population. As the site is located within the developing suburb of Coomera, with newer residential developments north and east, the remaining rural residential lots to the south are exposed to high levels of existing habitat fragmentation.

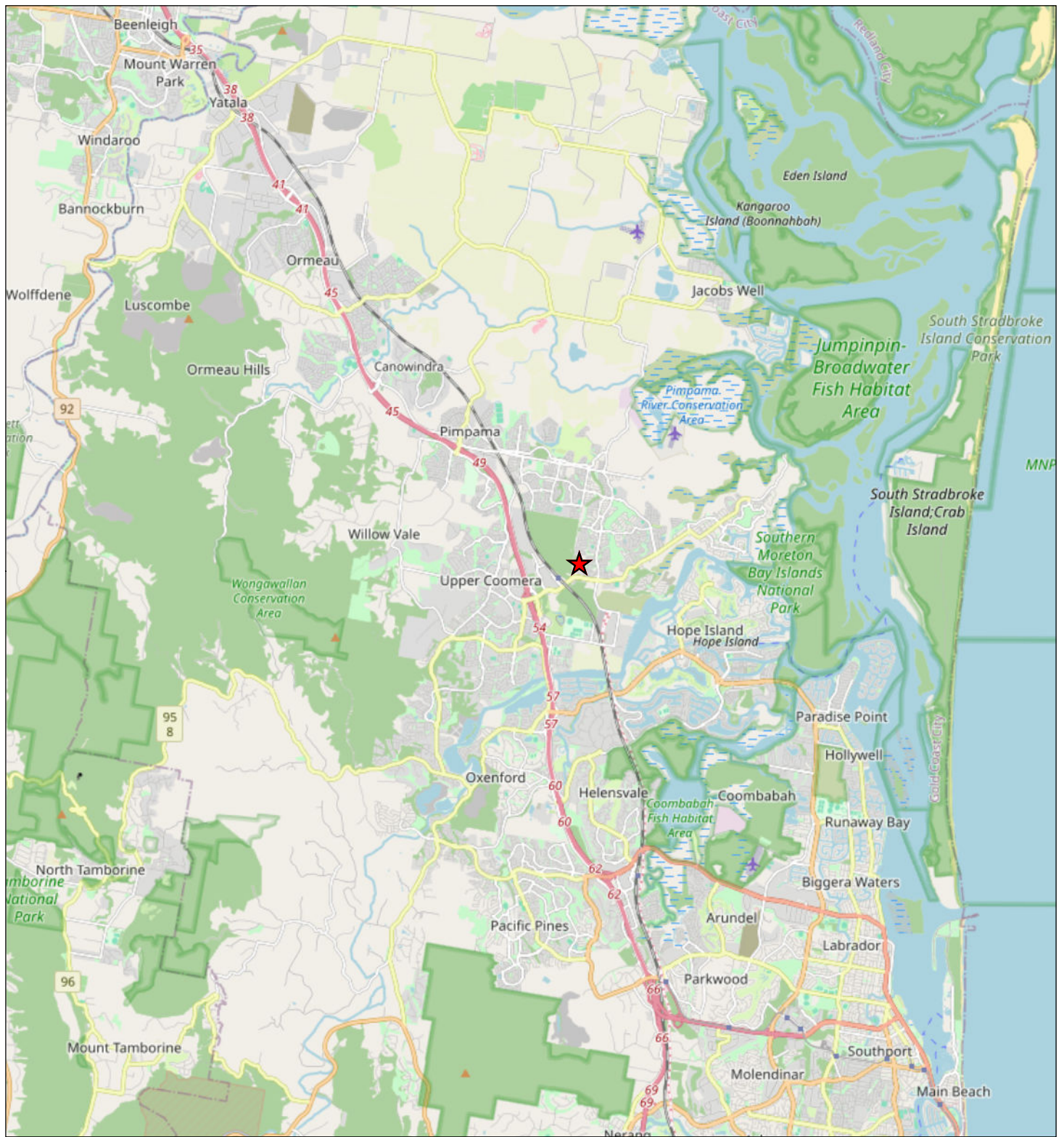
Fauna barriers and impediments to connectivity occur within the locality and include newer residential development to the north and established residential communities to the east. Threat from vehicle strike (fauna injury or death) limit habitat and ecological connectivity within the surrounding context with discussion included further in section 3.3 of this report. The development does however propose the retention of a 20 meter wildlife corridor to the south of the site with retention of NJKHT and maintained understory as per Bushfire Consulting (under separate cover).

The application proposes the removal of mapped KHA to facilitate for the proposed development. Since the development will impact the Koala habitat on the premises, a response to State Code 25 is necessary to demonstrate compliance with performance outcomes (POs).

Table 1: Property summary

Address	54 George Alexander Way, Coomera, Queensland 4209
RPD	Lot 96 on RP187418
Area	3.01 ha
VMA 1999	Category B (remnant) Least Concern RE12.11.5 (0.82 ha) Category B (remnant) Least Concern RE12.11.24 (1.19 ha) Category X (non-remnant) vegetation (1.0 ha) Essential habitat for <i>Phascolarctos cinereus</i> (Koala)
MSES	MSES – Wildlife habitat (koala habitat areas – core) MSES – Regulated vegetation (essential habitat) MSES – Regulated vegetation (intersecting a watercourse) MSES – Regulated vegetation (category B)
Koala Habitat	Wholly outside Koala Priority Area Partially contains Koala Habitat Area (core)
LGA	City of Gold Coast
Planning Scheme / Zoning	<i>Gold Coast City Plan 2016</i> / High density residential, Medium density residential
Environmental Overlays	<u>Priority species</u> : Matters of State Environmental Significance – State significant species and Koala habitat areas <u>Vegetation management</u> : Matters of Local Environmental Significance vegetation management – medium priority vegetation <u>Significance wetlands and watercourse</u> : local significant wetlands buffer area
Existing Land Use	Large lot residential
Proposed Land Use	Residential subdivision
Existing Council Approvals Over Site	OPW/2024/111 OPW/2023/1508 COM/2023/16
Existing SARA Approval Over Site	2302-33455 SRA

Figure 1: Site context



Legend

★ Application Location

Figure 1
Site Context

Coomera GA
Pty Ltd

File ref. 11241 E Figure 1 Site Context A
Date 11/07/2024
Project George Alexander Way, Coomera

SH saunders
havill
group

0 1 2 3 4 5 km

Scale (A4): 1:150,000 [GDA 2020 MGA Z56]





Legend

 Site DCDB

Figure 1.2
Site Context

Coomera GA
Pty Ltd

File ref. 11241 E Figure 1_2 Site Context C
Date 2/08/2024
Project George Alexander Way, Coomera



0 1 2 km
Scale (A4): 1:50,000 [GDA 2020 MGA Z56]



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Figure 2: Site aerial



Legend

- Site DCDB
- Qld DCDB
- Application Area
- Existing High Density Residential Approval
- Future High Density Residential Approval

Figure 2

Site Aerial

Coomera GA
Pty Ltd

File ref. 11241 E Figure 2 Site Aerial B
Date 5/08/2024
Project George Alexander Way, Coomera

SH saunders
havill
group

0 10 20 30 40 50 m

Scale (A4): 1:2,000 [GDA 2020 MGA Z56]



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2. *Planning Regulation 2017*

The clearing of Koala habitat for development is regulated under the *Planning Regulation 2017* (PR). The PR was amended on 7 February 2020 to strengthen protections over Koala habitat with respect to development. The amendments saw the introduction of KPAs and KHA. Whether or not a site is located within a KPA and / or contains KHA determines the level of restrictions imposed and the response or referral pathway required for the site.

The Department of State Development, Infrastructure, Local Government and Planning's (DSDILGP's) State Assessment and Referral Agency (SARA) Development Assessment Mapping System (DAMS) identifies the site as being located entirely outside a KPA however, the site does contain a small amount of mapped KHA (refer **Figure 3**). As per Schedule 10, Part 10, Division 2, Section 16A of the PR (refer extract below), the removal of a KHA is not prohibited where located outside of a KPA.

Part 10	Koala habitat in SEQ region
Division 1	Preliminary
16	Application of part
	This part applies in relation to development on a lot that is completely or partly in the SEQ region.
Division 2	Prohibited development
16A	Prohibited development—development interfering with koala habitat in koala priority area and koala habitat area
(1)	Development is prohibited development to the extent the development involves interfering with koala habitat in an area that is both—
(a)	a koala priority area; and
(b)	a koala habitat area.

Under Schedule 10, Part 10, Division 3, Subdivision 1, Section 16B, the proposal is considered assessable development as it interferes with a KHA outside the KPA (refer extract below). Under Subdivision 2, Table 1, the proposal is assessable under the SDAP. The SDAP code assessment relevant to Koala is *State Code 25: Development in South East Queensland koala habitat areas*.

Division 3	Development interfering with koala habitat in koala habitat areas outside koala priority areas
Subdivision 1	Assessable development
16B	Assessable development—development interfering with koala habitat in koala habitat areas outside koala priority areas
(1)	Development is assessable development to the extent the development involves interfering with koala habitat in an area that—
(a)	is a koala habitat area; but
(b)	is not a koala priority area.

Figure 3: Koala priority area and koala habitat area



© Nearmap

Legend

- Site DCDB
- Qld DCDB
- Application Area
- Core Remnant Koala Habitat Areas
- Core Regrowth Koala Habitat Areas
- KHA Approved for Removal Under Past Approval
- KHA Removed and Land Developed
- KHA to be Removed Under Future Approval
- KHA Mapped on High Density Approval Site
- KHA Mapped on Easements (Exemptions)

Figure 3

Koala Priority Areas and
Koala Habitat Areas

Coomera GA
Pty Ltd

File ref. 11241 E Figure 3 Koala 2019 B
Date 8/08/2024
Project George Alexander Way, Coomera

SH saunders
havill
group

0 10 20 30 40 50 m



Scale (A4): 1:2,000 [GDA 2020 MGA Z56]

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CONTENTS OF THESE DRAWINGS BY ANY THIRD PARTY.

3. Koala Habitat Area field assessment

A desktop assessment revealed the subject site contains approximately 2 ha of mapped core KHA which spans approximately two-thirds of the site along the northern and southern areas, as well as an irregular polygon on the eastern side of the lot which is currently approved for clearing (refer **Figure 3** and **Appendix A**). The central and western portion of the site does not contain KHA mapping and is reflective of the disturbed residential portion of the site.

3.1. Koala Surveys

The site area was walked to ensure all species (flora and fauna) were recorded and identified. Particular attention was paid to any Matters of National, State or Local Environmental Significance that were listed as possibly occurring on or within the vicinity of the site and specific micro-assemblages which may support these threatened species. This included observation of vertebrate fauna present on or proximal to the site.

The observational survey included identification of ecological features and values such as broad vegetation communities, fauna habitats and ecological corridors. Recording fauna habitat features within the project area included the identification of habitat trees. Evidence of Koala in the form of scats was identified on-site (refer to **Photo set 1**).



Photo set 1: Koala scats observed on-site.



Field assessment included a GPS tree plot survey of all site trees during which each was individually examined for Koala usage (refer **Plan 1**). The GPS tree plot found evidence of Koala in the form of scats and scratch marks.

3.2. Vegetation Values

The Regulated Vegetation Management Map identified the site is mapped partially as Category X (non-remnant) vegetation and partially as Category B (remnant) vegetation containing Least Concern RE12.11.5 (0.82 ha) and Least Concern RE12.11.24 (1.19 ha) which is considered generally accurate based on ground-truthing field surveys (refer **Figure 4** and **Figure 5**).

Several eucalypt species are present across the site including predominately *Corymbia citriodora* (Spotted Gum), *Eucalyptus siderophloia* (Grey Ironbark), *E. propinqua* (Small-fruited Grey Gum) and *E. acmenoides* (White Mahogany). Scattered *E. fibrosa* (Broad-leaved Red Ironbark) and *Eucalyptus carnea* (Broad-leaved White Mahogany) are also present. These species are consistent with the mapped regional ecosystem. Refer to **Photos 2 to 4**.

A mix of understorey eucalypt and non-eucalypt trees are also scattered throughout including the area including *Acacia concurrens* (Black Wattle), *Alphitonia excelsa* (Soap Tree), *Acacia disparrima* (Hickory Wattle), *Lophostemon suaveolens* (Swamp Box), *Melaleuca saligna* (White Bottlebrush) and *Allocasuarina littoralis* (Black She-oak). The ground layer across the site contains a mix of native and exotic species including *Imperata cylindrica* (Blady Grass), *Dianella caerulea* (Blue Flax-lily), *Heteropogon contortus* (Black Speargrass), *Themeda triandra* (Kangaroo Grass), *Chrysocephalum apiculatum* (Yellow Buttons), *Senecio madagascariensis* (Fireweed), and *Ageratum houstonianum* (Blue Billygoat Weed). Floral structural complexity is lacking in some regulated vegetation areas with native vegetation values absent within the shrub and ground layer.

Category X areas similarly contain scattered non-juvenile eucalypt trees, however, with a higher proportion of cleared areas with planted natives and exotic species surrounding the residential dwelling and associated infrastructure.

Following the survey of vegetation values, it was that confirmed that the mapped KHA on the site contains various Koala habitat tree species, such as the *Corymbia* and *Eucalyptus* species detailed above, and is therefore accurately mapped as KHA. The tree plot for site survey is shown in **Plan 1**.



Photo 2: Large *Corymbia citriodora* and *Eucalyptus acmenoides* within mapped KHA in eastern portion of site.

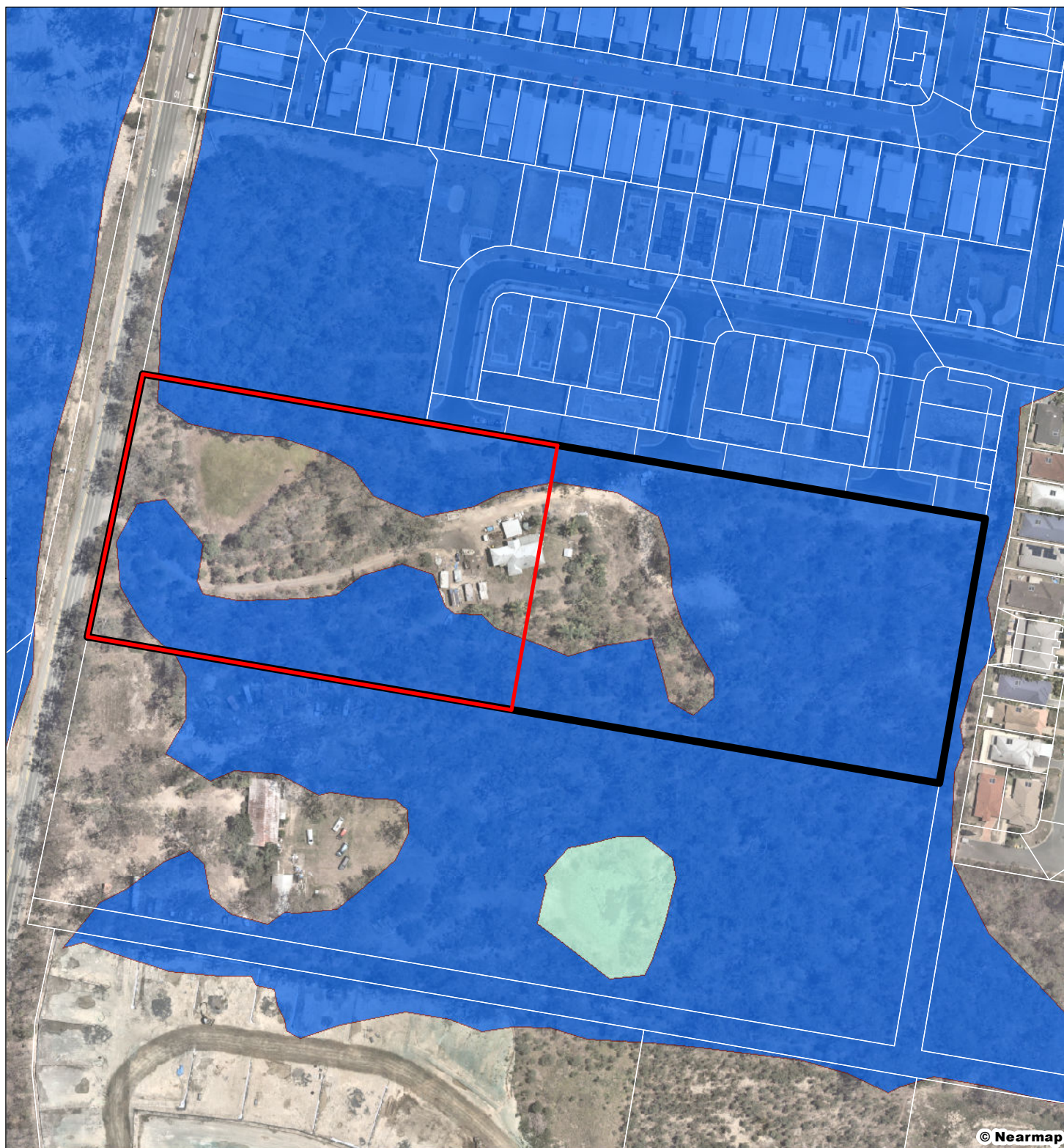


Photo 3: Scattered non-juvenile Koala habitat trees within KHA in southern portion of site.



Photo 4: Scattered non-juvenile Koala habitat trees within KHA in northern portion of site.

Figure 4: Regulated Vegetation Management Map



Legend



Site DCDB



Qld DCDB



Application Area

Regulated Vegetation



Category A area -
Vegetation Offset/Compliance
notices/VDecs



Category B area -
Remnant vegetation



Category C area -
High value regrowth
vegetation



Category R area -
Reef regrowth
watercourse vegetation



Category X area -
Vegetation not regulated
under the VMA



Water



Area not categorised

Figure 4

Regulated Vegetation Management Map

File ref. 11241 E Figure 4 RVMM A

Date 11/07/2024

Project George Alexander Way, Coomera

0 10 20 30 40 50 m

Scale (A4): 1:2,000 [GDA 2020 MGA Z56]



Coomera GA
Pty Ltd

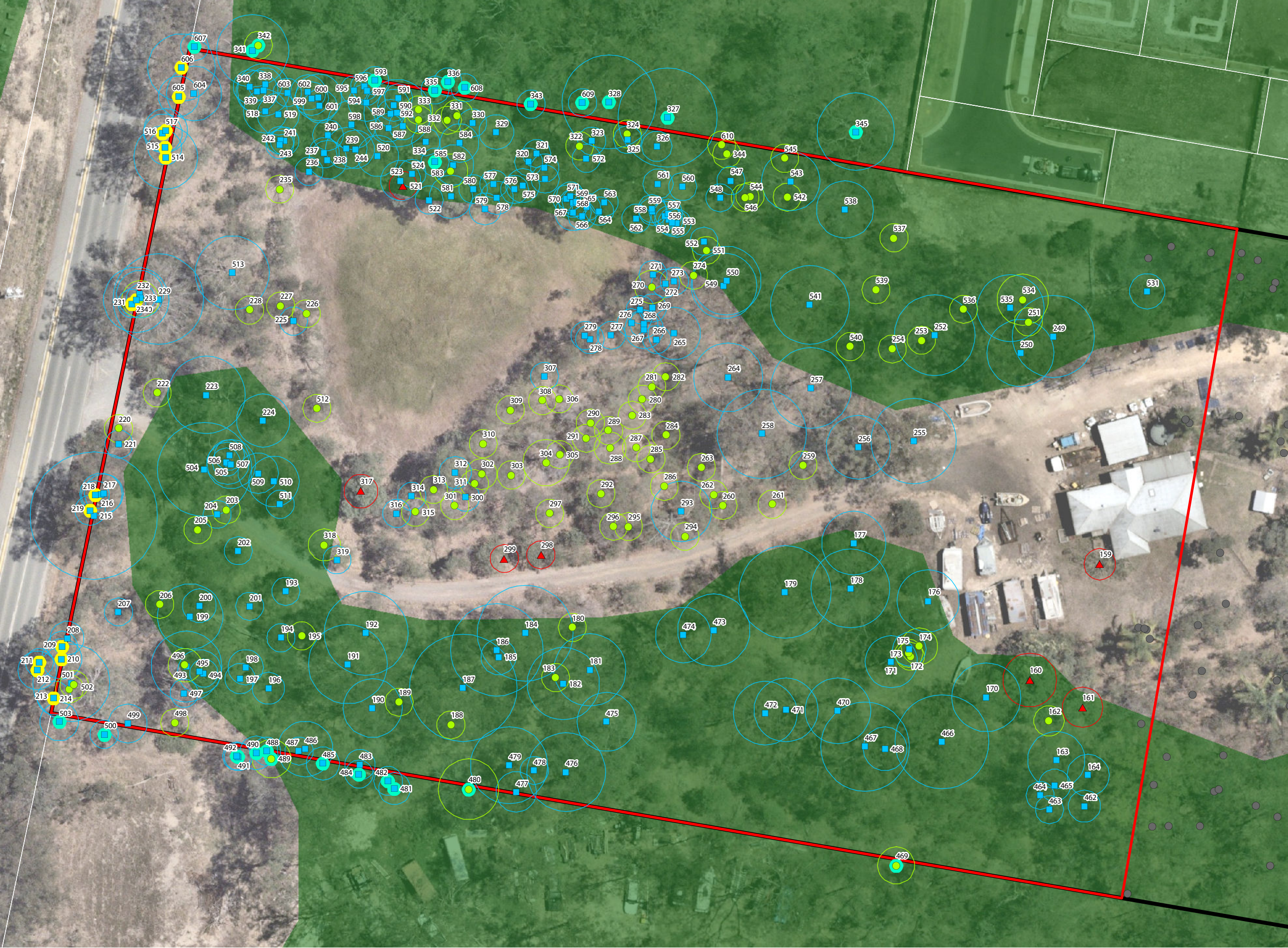
SH saunders
havill
group

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OF THE CLIENT SAUNDERS HAVILL GROUP. SAUNDERS HAVILL GROUP
CANNOT ACCEPT RESPONSIBILITY FOR ANY USE OF OR RELIANCE UPON THE
CONTENTS OF THESE DRAWINGS BY ANY THIRD PARTY.

Figure 5: Regulated Vegetation Supporting Map

Plan 1: Tree Plot

1. GPS Tree Plot



Notes:
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Legend

- Site DCDB
- Qld DCDB
- Koala Habitat Areas**
 - Core Remnant Koala Habitat Areas
 - Core Regrowth Koala Habitat Areas
- GPS Tree Plot (w/ TPZ)**
 - Non-juvenile Koala Habitat Tree
 - Native Tree
 - Dead/Stag Tree
 - Introduced Species/ Environmental Weed
 - Tree in neighbouring property
 - Tree in road reserve
 - Tree subject to separate approval

Issue	Date	Description	Drawn	Checked
A	11/07/2024	Preliminary	TF	CM



3.3. Landscape connectivity analysis

A mix of land uses occurs in the surrounding landscape including low and medium density residential development to larger lot rural residential areas. George Alexander Way bounds the site to the west and is earmarked for road widening and presents a significant risk to fauna and specifically Koalas.

The adjoining property to the north Lot 101 on SP312031 has an existing approval over the site for high density residential, with the large parcel of land to the west also currently undergoing development assessment. The site itself has development approval (OPW/2023/1508) including an approved clearing plan for the eastern portion of the site (see **Appendix A**). The existing and future approvals have been overlaid on the desktop Koala Habitat Mapping as shown in **Plan 2**, contrasted with current mapped Core Koala Habitat Area Mapping within the locality and potential future ecological linkages east. The accuracy of KHA mapping is overstated as it does not accurately consider existing approvals on and adjoining to the site, and the existing impact from fragmentation of habitat and edge effects.

The Coomera locality includes various large scale infrastructure obstructions to fauna include the Gold Coast Train Line and Coomera Train Station approximately 500m west, and Pacific Highway 1.4km west as shown in **Context Figure 1.2**. George Alexander Way is currently identified as a local road, however, will be upgraded to a four-lane arterial road in the future. Additionally, Foxwell Road in the south provides a significant fauna barrier as a connector road approximately 500m south. Urban areas and roads in the vicinity limit fauna movement to the west, north and south. While not a high-quality connection, the site and adjoining property to the south could create a future ecological corridor connecting east, linking to the existing wider ecological corridors (refer **Photos 5 and 6**) as proposed of the Plans of Development. The proposed 20-meter vegetated buffer will provide a fauna linkage east/west, with opportunity for the adjoining property to the south to add an additional 20m in the future, creating a future 40m wide corridor west-east. Refer to **Plan 2** for Koala Connectivity Assessment and identification of surrounding approvals and connectivity.

Connectivity to other areas of KHA is mainly limited to the west of George Alexander Way and to the east via the vegetated parklands and waterway corridors. Given these pre-existing and future landscape factors and the presence of a high-traffic road to the west and surrounding existing and future residential development, the site's long-term viability to support Koalas is considerably reduced.

A large, contiguous area of KHA presently exists to the west of the site and adjoins the Gold Coast railway line. This area links to larger patches of contiguous KHA to the north. It should be noted that a large portion of this habitat is earmarked for development under the proposed Coomera Woods development. Councils' intention for this land and possible future ecological corridors as per the City Plan are shown on **Plan 2**. The link between this parcel of land running north is approximately 450m from the subject site, with proposed high density residential development in between. There is no logical hypothesis for a long term fauna connection to west of the site.

KHA is also mapped immediately south of the site within large lot residences. However, these areas are unlikely to be retained due to zoning intent for medium and high-density residential development nor are the sites ideal locations for KHA due to ongoing edge effects and threat from car strike and dogs. An established Koala/wildlife corridor is located approximately 580 meters to the east, accessible via a linear strip of retained trees/parkland to the east of the site. The subject site's potential to support broader landscape movements is

limited by significant hazards and increasing urban encroachment (refer to **Photo 7**). Additionally, Foxwell Road, which experiences heavy traffic from the Pacific Motorway, is approximately 300 meters south of the site, further reducing connectivity to the south.

While the site contains Non-Juvenile Koala Habitat Trees (NJKHT) and evidence of Koala activity, its broader connectivity potential is generally limited due to the lack of habitat to the north, east and south, and the presence of George Alexander Way to the west and Foxwell Road to the south. The site does not represent significant stepping-stone vegetation, as its immediate connecting habitat values are confined to the south within an area planned for residential development. Notably a small area of bushland reserve is planned to be retained bordering this area. Overall, the site is not conducive to fauna movement and is unlikely to provide long-term value to Koalas in the broader landscape context.



Photo 5: High density residential under construction to the north.



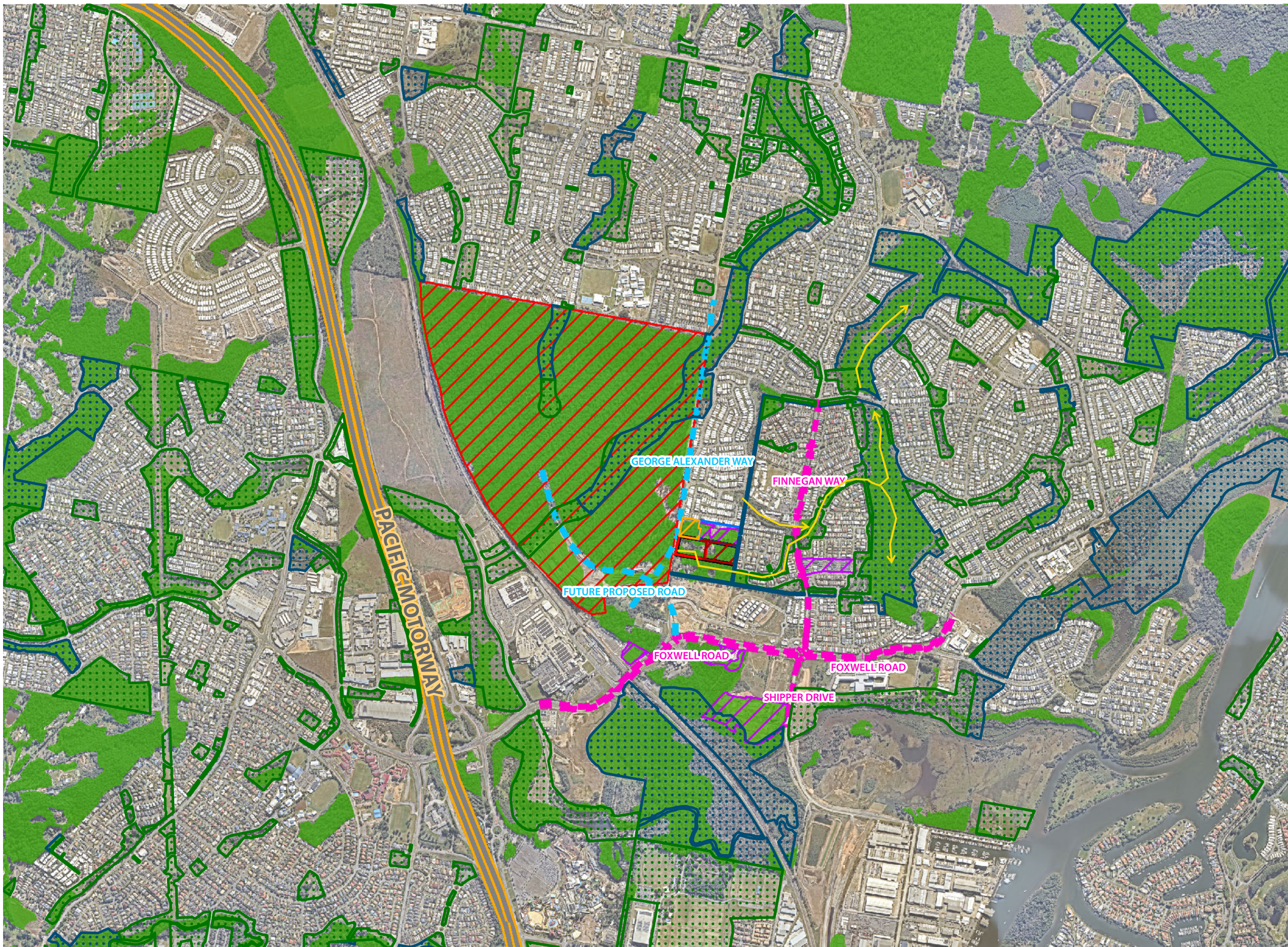
Photo 6: Construction to the north and high density residential to the east (east facing)



Photo 7: Fence along southern boundary and adjoining vegetation values.

Plan 2: Koala Connectivity Assessment

2. Koala Connectivity Assessment



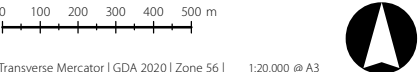
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Legend

- Site DCDB
- Application Area
- Gold Coast City Plan 2015 Zoning
 - Open space
 - Conservation
- Connectivity
 - Koala habitat areas
 - Possible Koala Linkages
- Impediments
 - Major & arterial roads
 - Trunk road infrastructure
 - Proposed trunk road infrastructure
 - Future masterplanned development – Coomera Woods (EPBC 2017/8134)
 - Cleared Koala habitat areas
 - Waterways
 - Existing On-site Approval
 - Existing High Density Residential Approval
 - Future High Density Residential Approval

Issue	Date	Description	Drawn	Checked
A	5/08/2024	Preliminary	TF	CM
B	5/08/2024	Amendments	LS	RM



Address / RPD: 96/RP187418

5/08/2024 | 11241 E 02 Connectivity Assessment B

4. State Development Assessment Provisions

It is acknowledged that the proposed development will interfere with a KHA outside of the KPA (refer **Plan 1** for Development Assessment Plan).

Under Schedule 10, Part 10, Division 3, Subdivision 1, Section 16B, the proposal is considered assessable development and is therefore to be referred to the chief executive of the Department of Environment and Science (DES) for assessment under State Code 25. The purpose of the code is to ensure that development in South East Queensland:

1. *does not cause an unacceptable impact on mapped koala habitat areas;*
2. *is designed and located to avoid impacts or, where the matters of state environmental significance cannot be reasonably avoided, impacts are reasonably minimised and mitigated; and*
3. *does not result in a significant residual impact on a matter of state environmental significance unless the significant residual impact is acceptable, and an offset is provided.*

The proposed development will impact approximately 0.57 ha of KHA for the site 'application area' as shown in Figure 2. A total of 141 NJKHTs within mapped KHA of 'application area' Figure 2 are proposed to be removed. A response to relevant performance outcomes of State Code 25 is provided in **Table 2**. Refer to **Plan 2** for Connectivity Assessment and **1** for Development Assessment.

Table 2: Response to State Code 25, Table 25.3 Reconfiguring a Lot.

Performance outcomes	Acceptable outcomes	Response
PO6 Development supports connectivity between highly connected patches of mapped koala habitat areas.	No acceptable outcome is prescribed.	PO6 – Complies The development proposes to impact 0.57 ha of Koala habitat in the ‘Application Area’ as shown in Figure 2, including necessary cut and fill earthworks to facilitate the development. Mapped Koala habitat values are shown in State mapping surrounding the site to the west beyond George Alexander Way, to the immediate north and south. Lot 101 to the north of the site is approved for high density residential, and the adjoining land east of Lot 101 have been recently cleared with construction commencing for Residential Development. Additionally, land 100m south of the site has been cleared with construction commencing for residential development. Encroachment from urban development surrounds the site, paired with the sites zoning for medium and high-density development making the locality unsafe for fauna movement. Additionally the land is earmarked to house the growing population of South East Queensland and the high density zoning is required to achieve the housing projections of Queensland Government. A true reflection of Koala Habitat within the locality is shown on Figure 3. It is understood that the site is encapsulated within the medium and high-density residential zones adjoining the Coomera Town Centre and is unlikely to focus on supporting Koala movement at the landscape level.

Performance outcomes	Acceptable outcomes	Response
P07 Interfering with koala habitat as a result of the development does not compromise safe koala movement by preventing fragmentation of patches of mapped koala habitat areas.	No acceptable outcome is prescribed.	Notably, the large contiguous area of KHA mapped to the west of the site is associated with the approved Coomera Woods development project. Retained Koala habitat areas are located in a linear corridor approximately 580 m to the east of the site (refer Plan 2). Therefore, due to the surrounding landscape context, it is not considered that the mapped koala habitat areas on site or adjacent to the site are currently highly connected. It is anticipated that any connection between koala habitat areas will further diminish as a result of the approved developments that will be constructed surrounding the site. The proposal strikes a balanced outcome between the most efficient and sustainable use of the site for high density development, while also allowing a wildlife corridor to the south of the site. This wildlife corridor can be added to through future development to the south, future enhancing connectivity east for fauna.
		P07 – Complies The site is situated within a landscape increasingly isolated from conservation areas and Koala Habitat by urban development. The site is currently connected to Koala habitat to the south within large lot residential areas, and a small patch of habitat located immediately to the northwest, adjoining residential development. However, this northwest area is zoned for high-density residential use and is unlikely to be retained long-term. Habitat values are generally absent to the north and east of the site (see Figure 3). Consequently, the development will not isolate or fragment existing patches of mapped Koala habitat areas.

Performance outcomes	Acceptable outcomes	Response
PO8 Interfering with koala habitat as a result of the development supports connectivity between highly connected patches of mapped koala habitat areas.	No acceptable outcome is prescribed.	Although the proposed development affects mapped KHA, it is not expected to worsen fragmentation or reduce safe Koala movement within the landscape, as these issues are already present due to existing urban development surrounding the site. The proposed development layout has been positioned adjacent to the recently cleared area for development immediately to the north. This aligns with existing residential areas and concentrates new urban roads and residential dwellings in areas where threats to safe Koala movement already exist. The vegetated corridor in the south will help to provide connectivity for Koala and other fauna east. PO8 - Complies The development proposes to impact 0.57 ha of Koala habitat containing 142 NJKHTs within the current application area of for necessary earthworks to facilitate the development (see Plan 3). Despite the small size of the site and surrounding planning intent a 20 meter bushland reserve buffer is planned for retention in the south of site. As the adjoining property to the south is redeveloped additional land can be added to this corridor providing a connection and connectivity to higher connected patches of Koala habitat in the east (see Plan2). Surrounding patches of vegetation are becoming increasingly disconnected due to the already approved developments around the site, designation for high density development and mapped Koala Habitat does not reflect the true future Koala Habitat within the locality (see Figure 3)

Performance outcomes	Acceptable outcomes	Response
		Habitat connections that are more likely to promote safe Koala movement into the future are present to the east of the site within a linear corridor of retained vegetation located to the east of the site (refer Plan 2).
PO9 Development supports safe koala movement by preventing fragmentation of patches of mapped koala habitat areas.	No acceptable outcome is prescribed.	PO9 – Complies Koala habitat values are mapped to be located immediately south of the site, to the northwest, and across George Alexander Way, however this mapping is not reflective of on the ground values, nor current and future development (with approvals and pending approvals) in the locality (refer to Plan 2). Existing habitat areas are becoming increasingly isolated due to encroachment from approved urban development, with no future corridor/connection possible to the north (currently under construction and approved for high density residential), western connections are limited due to high density development proposed directly west of George Alexander Way, and development is under construction 100m south. Further the eastern portion of the site is approved for clearing (Appendix A). The site is directly adjacent George Alexander Way to the west, which is expected to experience increased traffic as the Coomera Woods and other projects progress, and has consequently been earmarked for road widening. The site represents the logical next step for development with minimal impact on habitat fragmentation, while also providing an ecological connection to the south of the site. The development layout has been designed to connect to

Performance outcomes	Acceptable outcomes	Response
		adjacent developments to the north with road networks dissecting the site in two locations. The central portion of the site hosts highly modified habitat values due to existing rural residential land uses including a dwelling. A 20 meter area of retained bushland is planned for the south of site and it is not considered that the retention of further KHA areas on-site would provide a more significantly favourable outcome for Koala. As threats in the landscape surrounding the site become more prevalent as a result of increased traffic from George Alexander Way, and the approved encroaching urban development occurring to the north and east of the site connections west are not favourable. The development proposes to impact 0.57 ha of Koala habitat containing 142 NJKHTs within the application area (Plan 1) for necessary earthworks to facilitate the development and will retain 0.18 ha of Koala Habitat (41 NJKHA) along the southern boundary within the proposal. This bushland reserve when added to with additional development in the future will provide and support koala movement within the locality, helping to connect fauna to wider areas of conservation and Koala Habitat.
PO10 Development within a mapped koala habitat area is undertaken in a way that prevents the risk of injury or death of koalas.	No acceptable outcome is prescribed.	PO10 - Complies A Koala Management Plan (KMP) has been provided with this assessment to ensure compliance with PO10 (refer to Appendix B). The KMP has been developed by a suitably qualified person and addresses:

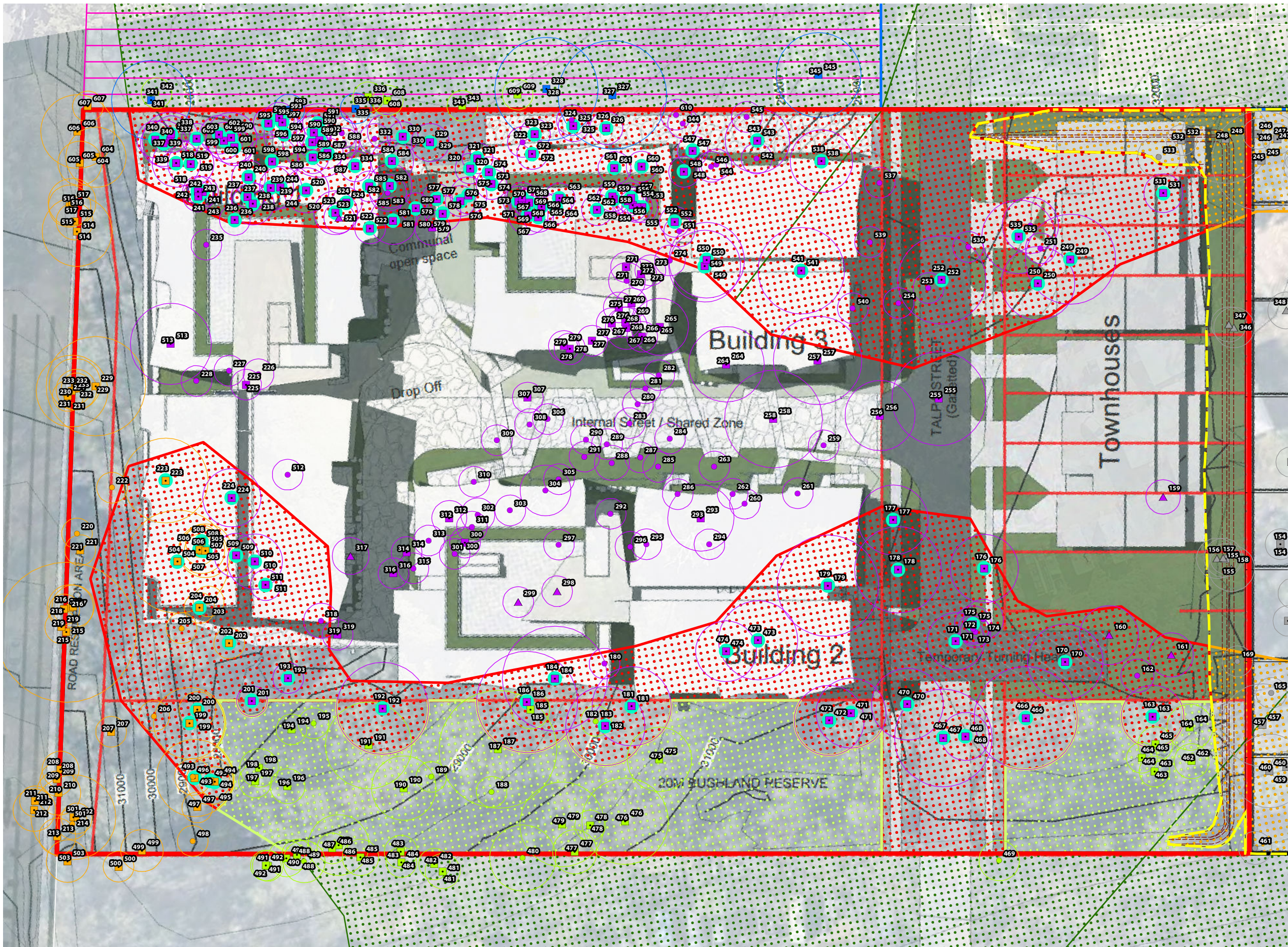
Performance outcomes	Acceptable outcomes	Response
		- activities that may cause injury or death of koalas from construction activities; and - acceptable measures to avoid and mitigate injury or death of koalas from construction activities - compliance with the sequential clearing and koala spotter requirements under section 10 and 11 of the Nature Conservation (Koala) Conservation Plan 2017. More specifically, the KMP will address mitigation measures and risk management via the utilisation of the protocols within the KMP as well as the subsequent Vegetation Clearing and Fauna Management Plan (VCFMP) outlining further mitigation measures (to be issued at Operational Works stage). Within these, potential adverse impacts to Koalas are identified and outlined, with risk assessments, management frameworks and action plans to thoroughly assess and monitor the area during activity. Specific actions and mitigation measures include engagement of a Fauna Spotter Catcher, development of a Wildlife Protection and Management Plan (WPMP) a Wildlife and Habitat Impact Mitigation Plan (WHIMP), VCFMP, temporary fencing, stop works procedures, and post-clearing and construction works Wildlife Management Report. The Fauna Spotter Catcher is to be on-site during vegetation clearing, both within and external to the mapped KHA.

Performance outcomes	Acceptable outcomes	Response
PO11 Development is designed and sited to: 1. avoid impacts on matters of state environmental significance; or 2. minimise and mitigate impacts on matters of state environmental significance after demonstrating avoidance is not reasonably possible; and 3. provide an offset if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable significant residual impact on a matter of state environmental significance.	No acceptable outcome is prescribed.	The development is to be undertaken in a way that prevents the risk of injury or death of Koalas.
		PO11 – Complies The proposal is to develop the land for high density residential and associated internal access roads and 20m bushland buffer along the southern boundary of the site. The currently application area for the development proposes to impact 0.57 ha of mapped Koala habitat area containing 142 NJKHTs while retaining 0.18ha of Koala Habitat and 41 NJKHT (Plan 1). The development footprint is located in the western portion of the development site and provides road connections to the adjoining development to the east and north (refer Plan 2). The redevelopment of the site for high density residential consolidates residential development, and population targets into an area that has limited koala movement linkages and corridors, already compromised from adjacent approved developments, and where threats to koala movement such as busy roads, and residential properties already existed. An area of bushland in the south of site is planned to be retain containing mapped KHA vegetation. Due to the small size of the site, the footprint required for high density residential, and surrounding edge effects it is not considered viable to retain a large proportion of vegetation on-site. Notably the central portion of the site hosts highly modified habitat values due to existing rural residential land uses including a dwelling. Furthermore, with proposed developments surrounding the site, it is not considered a favorable outcome for the Koala in

Performance outcomes	Acceptable outcomes	Response
		the long-term to encourage movement onto and adjoining the site to the north and west. The implementation of the KMP and VCFMP will ensure that clearing of vegetation is undertaken in way that prevents the risk of injury or death of Koalas. 142 NJKHTs within mapped on-site KHA of the current approval area identified on Plan 1 are required to be removed to facilitate the proposed development. An offset for significant residual impacts on Matters of State Environmental Significance will be provided in accordance with the <i>Environmental Offsets Act 2014</i>. The DES Environmental Offset Calculator indicates that a financial offset obligation of \$ 130,640.00 will be required to offset the impacts associated with removal of 142 NJKHTs within Koala habitat area (Appendix D).

Plan 3: Development Assessment

3. Development Assessment



Notes:
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- Legend
- Site DCDB
 - Qld DCDB
 - Application Area
 - Approved Clearing Extent
 - Existing High Density Residential Approval
 - Future High Density Residential Approval

- State Overlays
- Koala Habitat Areas (KHA) [2.00 ha On-site]
 - Impacted KHA Previous Approval [1.25 ha]
 - Impacted KHA Current Approval [0.57 ha]
 - Retained KHA [0.18 ha]

- Engineering (Eastern Works)
- Lot Design
 - Earthworks Interface

- GPS Tree Plot (with TPZ)
- Non-juvenile Koala Habitat Tree to Retain Subject to Detail Design [41]
 - Native Tree to Retain Subject to Detail Design [14]
 - Dead Tree (stag) to Retain Subject to Detail Design [2]
 - Non-juvenile Koala Habitat Tree to Remove (Previous Approval) [136]
 - Native Tree to Remove (Previous Approval) [105]
 - Dead Tree (stag) to Remove (Previous Approval) [1]
 - Introduced / Weed Tree to Remove (Previous Approval) [23]
 - Non-juvenile Koala Habitat Tree to Remove (Road Works) [44]
 - Native Tree to Remove (Road Works) [10]
 - Non-juvenile Koala Habitat Tree to Remove (Current Approval) [142]
 - Native Tree to Remove (Current Approval) [69]
 - Introduced / Weed Tree to Remove (Current Approval) [7]
 - Non-juvenile Koala habitat tree in neighbouring lot, retention subject to arborist assessment (Current Approval) [6]
 - Non-juvenile Koala Habitat Tree to Remove (Current Approval) within KHA [127]

Issue	Date	Description	Drawn	Checked
B	5/07/2024	Updates	LS	CM
C	8/08/2024	Updates	LS	CM

0 5 10 15 20 m

Transverse Mercator | GDA 2020 | Zone 56 | 1:500 @ A3

Address / RPD: 96/RP187418

8/08/2024 | 11241 E03 Development Assessment D

5. Appendices

Appendix A

Previous Approval Documents

Appendix B

Koala Management Plan

Appendix C

Tree Schedule

Appendix D

KHA Offset Calculation

Appendix A

Previous Approval Documents



SARA reference: 2302-33455 SRA
Council reference: COM/2023/16

21 September 2023

Chief Executive Officer
Gold Coast City Council
mail@goldcoast.qld.gov.au

Dear Sir/Madam

SARA referral agency response—54 George Alexander Way, Coomera

(Referral agency response given under section 56 of the *Planning Act 2016*)

The development application described below was confirmed as properly referred by the State Assessment and Referral Agency (SARA) on 23 February 2023.

Response

Outcome:	Referral agency response – with conditions
Date of response:	21 September 2023
Conditions:	The conditions in Attachment 1 must be attached to any development approval
Advice:	Advice to the applicant is in Attachment 2
Reasons:	The reasons for the referral agency response are in Attachment 3

Development details

Description:	Combined application for a Material change of Use for Dual occupancy (6) and Reconfiguring a Lot for 1 Lot into 26 Lot subdivision (including 24 freehold residential lots, 1 drainage Lot and 1 balance Lot), and new road over 2 stages
SARA role:	Referral agency
SARA trigger:	Schedule 10, Part 10, Division 3, Subdivision 3, Table 1, Item 1 (Planning Regulation 2017) – Development interfering with koala habitat in koala habitat areas outside koala priority areas.
SARA reference:	2302-33455 SRA
Assessment manager:	Gold Coast City Council
Street address:	54 George Alexander Way, Coomera

Real property description: Lot 96 on RP187418

Applicant name: Coomera Ga Pty Ltd Atf The Coomera Ga Unit Trust

Applicant contact details: c/- Saunders Havill Group
sarahvalentine@saundershavill.com

Human Rights Act 2019 considerations: A consideration of the 23 fundamental human rights protected under the *Human Rights Act 2019* has been undertaken as part of this decision. It has been determined that this decision does not limit human rights.

Representations

An applicant may make representations to a concurrence agency, at any time before the application is decided, about changing a matter in the referral agency response (s.30 Development Assessment Rules). Copies of the relevant provisions are in **Attachment 4**.

A copy of this response has been sent to the applicant for their information.

For further information please contact Gabriel Escobar, A/ Senior Planning Officer, on (07) 5644 3212 or via email SEQSouthPlanning@dsdilgp.qld.gov.au who will be pleased to assist.

Yours sincerely



Shane Spargo

Acting Regional Director (South), Department of State Development, Infrastructure, Local Government and Planning

cc Coomera Ga Pty Ltd Atf The Coomera Ga Unit Trust c/- Saunders Havill Group,
sarahvalentine@saundershavill.com

enc Attachment 1 - Referral agency conditions
Attachment 2 - Advice to the applicant
Attachment 3 - Reasons for referral agency response
Attachment 4 - Representations about a referral agency response provisions
Attachment 5 - Documents referenced in conditions

Attachment 1—Referral agency conditions

(Under section 56(1)(b)(i) of the *Planning Act 2016* the following conditions must be attached to any development approval relating to this application) (Copies of the documents referenced below are found at Attachment 5)

No.	Conditions	Condition timing
Development Permit for Reconfiguring a Lot		
Schedule 10, Part 10, Division 3, Subdivision 3, Table 1, Item 1—The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of the Department of Environment and Science to be the enforcement authority for the development to which this development approval relates for the administration and enforcement of any matter relating to the following condition(s):		
1.	Clearing is limited to the removal of 128 non-juvenile koala habitat trees identified as <i>Non-juvenile koala habitat tree to remove</i>, <i>Non-juvenile Koala habitat tree in neighbouring lot retention subject to arborist assessment</i> and <i>Non-juvenile Koala habitat tree to remove as exempted development</i> on the Koala Habitat Area Impact Assessment, prepared by Saunders Havil Group, dated 18/08/2023, reference 11241 E 02 KHA Impact B and issue B as amended in red by SARA on 21 September 2023 to outline the balance lot subject to rehabilitation requirements in accordance with Condition 4 of this referral response. Any additional clearing of koala habitat trees within mapped koala habitat is prohibited.	At all times.
2.	Any person carrying out vegetation clearing under this approval must be provided with a full copy of this approval. The holder of this approval must ensure that any person carrying out vegetation clearing under this approval has read and understood each condition of this approval.	Prior to any vegetation clearing.
3.	All clearing and construction activities must be carried out in accordance with the Koala Management Plan, prepared by Saunders Havill Group, dated 18 August 2023, reference 11241 and issue E.	During all clearing and construction activities.
4.	a) The holder of this approval must engage an <i>appropriately qualified person</i> to prepare a Rehabilitation Plan. The Rehabilitation Plan and must address (at a minimum): i. Details of the weed management works within the balance lot outlined in the Koala Habitat Area Impact Assessment, prepared by Saunders Havil Group, dated 18/08/2023, reference 11241 E 02 KHA Impact B and issue B as amended in red by SARA on 21 September 2023 to outline the balance lot subject to rehabilitation requirements. ii. Details of any planting in the balance lot outlined in the Koala Habitat Area Impact Assessment, prepared by Saunders Havil Group, dated 18/08/2023, reference 11241 E 02 KHA Impact B and issue B as amended in red by SARA on 21 September 2023 to outline the balance lot subject to rehabilitation requirements with local native plants of the same type and composition as found in the pre-cleared regional ecosystem will be met. iii. Details of how any vegetation planted as a result of the rehabilitation work will be suitably maintained.	(a) and (b) Prior to undertaking any clearing works. (c) As per the timeframe in the plan. (d) Within 3 months from the completion of the rehabilitation works.

	iv. Timeframes for the completion of all steps. b) A copy of the Rehabilitation Plan must be provided to the Department of Environment and Science by emailing Koala.Compliance@des.qld.gov.au or by post to GPO Box 2454 Brisbane Queensland 4001. c) The holder of this approval must carry out rehabilitation and maintenance in accordance with the Rehabilitation Plan and implement all aspects of the Rehabilitation Plan; and d) The holder of this approval must provide certification by an appropriately qualified person that (c) has been fulfilled by emailing Koala.Compliance@des.qld.gov.au or by post to GPO Box 2454 Brisbane Queensland 4001.	
5.	The holder of this approval must deliver an environmental offset in accordance with the <i>Environmental Offsets Act 2014</i> to counterbalance any significant residual impacts on the matter of state environmental significance being 128 non-juvenile koala habitat trees. <i>Note: Section 16 of the Environmental Offsets Act 2014 provides that when an offset condition is imposed on an authority, a number of deemed conditions are taken to apply. These deemed conditions are detailed in sections 19B, 22, 24 and 25 of the Environmental Offsets Act 2014. Contravention of a deemed condition is taken to be contravention of an imposed condition.</i> More information on offset delivery can be found here: https://www.qld.gov.au/environment/pollution/management/offsets/delivering. Please send the notice of election to SEQSouthPlanning@dsdilgp.qld.gov.au	Prior to commencing any clearing works.
6.	Prior to the commencement of clearing activities, notify the Department of Environment and Science at Koala.Compliance@des.qld.gov.au of: - the expected date the clearing activity will commence, - the expected duration of the clearing activity, - the name and contact details of the koala spotter that has been contracted for the clearing activity, and - the name, contact details and authority number of the spotter catcher that has been contracted for the clearing activity.	72 hours prior to commencement of vegetation clearing.

Attachment 2—Advice to the applicant

General advice	
1.	Terms and phrases used in this document are defined in the <i>Planning Act 2016</i> , its regulation or the State Development Assessment Provisions (SDAP) (version 3.0). If a word remains undefined it has its ordinary meaning.
Advice provided outside of SARA	
2.	The Nature Conservation (Koala) Conservation Plan 2017 includes mandatory requirements that applies to all persons undertaking the clearing of koala habitat trees, including that clearing be undertaken sequentially and in the presence of a koala spotter. Penalties for non-compliance apply. For further information please contact the Department of Environment and Science at koala.compliance@des.qld.gov.au.
3.	Despite this development approval, other permits or approvals may be required for the clearing of koala habitat. To determine if the proposed clearing requires other approvals under other local, State or federal laws go to www.qld.gov.au (search 'vegetation clearing requirements').

Attachment 3—Reasons for referral agency response

(Given under section 56(7) of the *Planning Act 2016*)

The reasons for the SARA's decision are:

The proposed development has been assessed against and complies with State code 25 of the SDAP with conditions, for the following reasons:

- Clearing of koala habitat areas will be limited and subject to a condition in accordance with relevant plans of development.
- Koalas will be protected during construction activities subject to a condition to ensure it is undertaken in general accordance with the proposed Koala Management Plan.
- Rehabilitation of retained areas will be carried out subject to a condition for the preparation of a rehabilitation management plan.
- Outstanding SRI will be offset subject to conditions.

Material used in the assessment of the application:

- the development application material and submitted plans
- *Planning Act 2016*
- Planning Regulation 2017
- the SDAP (version 3.0), as published by SARA
- the Development Assessment Rules
- SARA DA Mapping system
- section 58 of the *Human Rights Act 2019*

Attachment 4—Representations about a referral agency response provisions

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Attachment 5—Documents referenced in conditions

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Development Assessment Rules—Representations about a referral agency response

The following provisions are those set out in sections 28 and 30 of the Development Assessment Rules¹ regarding **representations about a referral agency response**

Part 6: Changes to the application and referral agency responses

28 Concurrence agency changes its response or gives a late response

- 28.1. Despite part 2, a concurrence agency may, after its referral agency assessment period and any further period agreed ends, change its referral agency response or give a late referral agency response before the application is decided, subject to section 28.2 and 28.3.
- 28.2. A concurrence agency may change its referral agency response at any time before the application is decided if—
- (a) the change is in response to a change which the assessment manager is satisfied is a change under section 26.1; or
 - (b) the Minister has given the concurrence agency a direction under section 99 of the Act; or
 - (c) the applicant has given written agreement to the change to the referral agency response.²
- 28.3. A concurrence agency may give a late referral agency response before the application is decided, if the applicant has given written agreement to the late referral agency response.
- 28.4. If a concurrence agency proposes to change its referral agency response under section 28.2(a), the concurrence agency must—
- (a) give notice of its intention to change its referral agency response to the assessment manager and a copy to the applicant within 5 days of receiving notice of the change under section 25.1; and
 - (b) the concurrence agency has 10 days from the day of giving notice under paragraph (a), or a further period agreed between the applicant and the concurrence agency, to give an amended referral agency response to the assessment manager and a copy to the applicant.

¹ Pursuant to Section 68 of the *Planning Act 2016*

² In the instance an applicant has made representations to the concurrence agency under section 30, and the concurrence agency agrees to make the change included in the representations, section 28.2(c) is taken to have been satisfied.

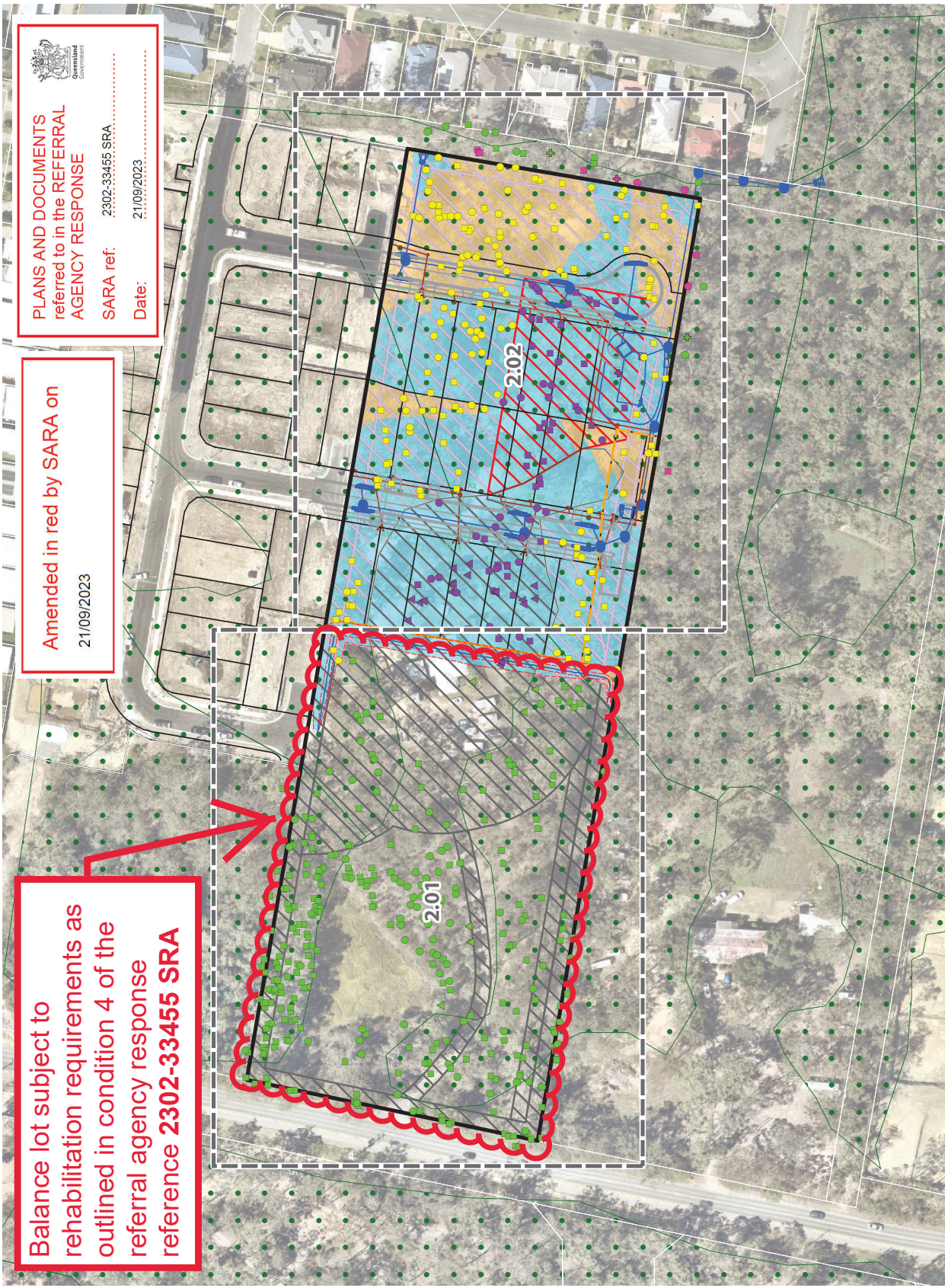
Part 7: Miscellaneous

30 Representations about a referral agency response

30.1. An applicant may make representations to a concurrence agency at any time before the application is decided, about changing a matter in the referral agency response.³

³ An applicant may elect, under section 32, to stop the assessment manager's decision period in which to take this action. If a concurrence agency wishes to amend their response in relation to representations made under this section, they must do so in accordance with section 28.

2.00 Koala Habitat Area Impact Assessment



DWG. No.	DESCRIPTION
GENERAL	
0001	COVER SHEET, LOCALITY PLAN & DRAWING SCHEDULE
0011	EXISTING FEATURES SURVEY PLAN
EARTHWORKS	
0101	BULK EARTHWORKS CUT AND FILL LAYOUT PLAN
0105	TYPICAL RETAINING WALL DETAILS
0111	BULK EARTHWORKS SECTIONS
0121	EROSION AND SEDIMENT CONTROL PLAN
0131	EROSION AND SEDIMENT CONTROL DETAILS SHEET 1
0132	EROSION AND SEDIMENT CONTROL DETAILS SHEET 2
0133	EROSION AND SEDIMENT CONTROL DETAILS SHEET 3
ROADWORKS	
0201	CONTROL LINE SETOUT PLAN
0202	CONTROL LINE SETOUT TABLE & TYPICAL ROAD CROSS SECTION
0221	PIONEER STREET AND MERCY STREET LONGITUDINAL SECTIONS
MISCELLANEOUS	
0601	HAZARD REGISTER



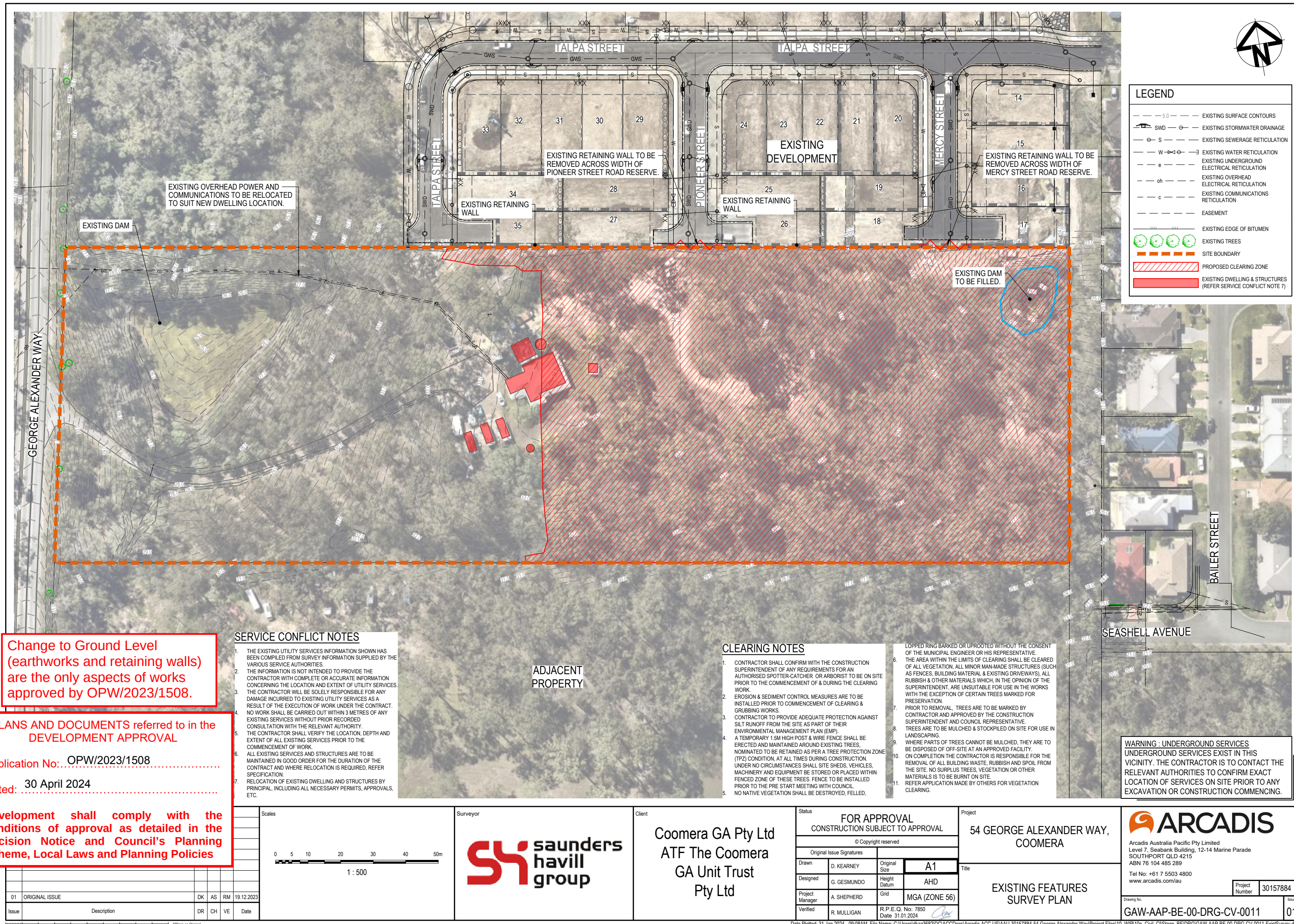
Change to Ground Level
(earthworks and retaining walls)
are the only aspects of works
approved by OPW/2023/1508.

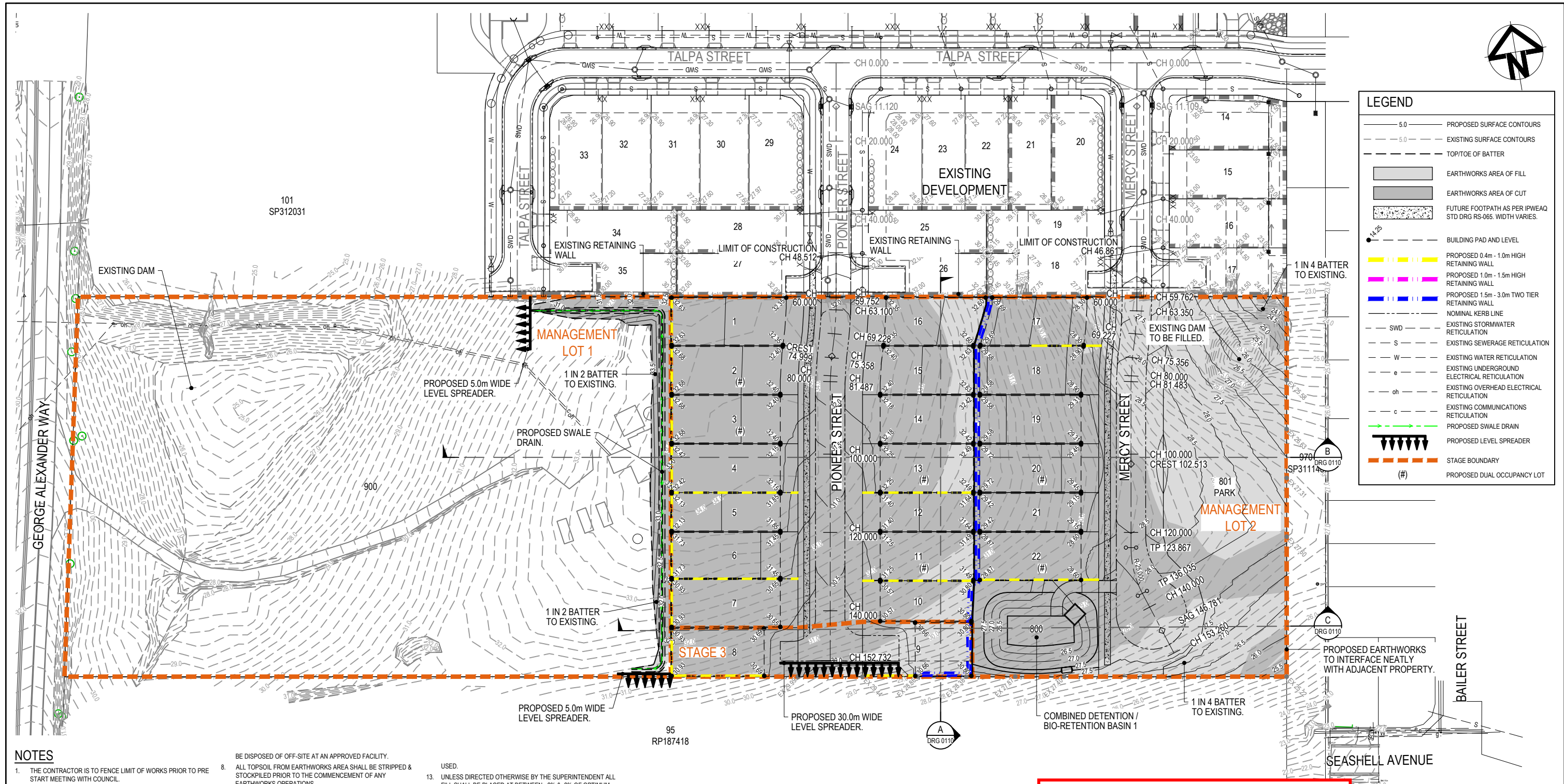
LEVELS & GRID
ORIGIN PM139395 RL 26.512
LEVEL TO AHD
(AUSTRALIAN HEIGHT DATUM)
GRID MGA (ZONE 56)

DISCLAIMER

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The image shows the ARCADIS logo, which consists of a stylized orange 'A' icon followed by the word 'ARCADIS' in a bold, black, sans-serif font. Below the logo, the text 'Arcadis Australia Pacific Pty Limited' is written in a smaller font. Further down, the address 'Level 7, Seabank Building, 12-14 Marine Parade' and 'SOUTHPORT QLD 4215' are listed. The phone number 'ABN 76 104 485 289' and 'Tel No: +61 7 5503 4800' are provided. The website 'www.arcadis.com/au' is also included. At the bottom right, there is a table with two columns: 'Project Number' and 'Issue'. The 'Project Number' is '30157884' and the 'Issue' is '01'. The table is partially cut off on the right side.





NOTES

- THE CONTRACTOR IS TO FENCE LIMIT OF WORKS PRIOR TO PRE START MEETING WITH COUNCIL.
- SEDIMENT & EROSION CONTROL MEASURES ARE TO BE INSTALLED PRIOR TO COMMENCEMENT OF CLEARING & GRUBBING WORKS.
- AN AUTHORISED SPOTTER-CATCHER IS TO BE ON SITE PRIOR TO THE COMMENCEMENT OF & DURING THE CLEARING WORK.
- ANY CLEARING REQUIRED TO BE UNDERTAKEN BY THE CONTRACTOR IS TO BE STRICTLY IN ACCORDANCE WITH THE COUNCIL APPROVED VEGETATION MANAGEMENT PLAN.
- THE AREA WITHIN THE LIMITS OF CLEARING SHALL BE CLEARED OF ALL VEGETATION, ALL MINOR MAN-MADE STRUCTURES (SUCH AS FENCES, BUILDING MATERIAL & EXISTING DRIVEWAYS), ALL RUBBISH & OTHER MATERIALS WHICH, IN THE OPINION OF THE SUPERINTENDENT, ARE UNSUITABLE FOR USE IN THE WORKS WITH THE EXCEPTION OF CERTAIN TREES MARKED FOR PRESERVATION.
- TREES ARE TO BE MULCHED & STOCKPILED ON SITE FOR USE IN LANDSCAPING. EXCESS TO BE REMOVED FROM SITE AT CONTRACTORS EXPENSE.
- WHERE PARTS OF TREES CANNOT BE MULCHED, THEY ARE TO BE DISPOSED OF OFF-SITE AT AN APPROVED FACILITY.
- ALL TOPSOIL FROM EARTHWORKS AREA SHALL BE STRIPPED & STOCKPILED PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS OPERATIONS.
- NOTWITHSTANDING THE LIMITS OF CUTTING & FILLING SHOWN ON THE DRAWINGS, THE ACTUAL LIMITS SHALL BE DETERMINED ON SITE BY THE ENGINEER DURING CONSTRUCTION. FINISHED SURFACE CONTOURS MAY BE ADJUSTED BY WRITTEN DIRECTION OF THE ENGINEER DURING CONSTRUCTION.
- FILL AREAS SHALL BE CONSTRUCTED IN LAYERS NOT EXCEEDING 300mm LOOSE DEPTH. THE FILL MATERIAL SHALL BE COMPACTED TO 95% (MINIMUM) OF THE MAXIMUM DRY DENSITY. TESTING SHALL BE IN ACCORDANCE WITH A.S.1289 (MODIFIED COMPACTION). THE CONTRACTOR SHALL SUPPLY TO THE ENGINEER CERTIFICATION OF THE COMPACTION ACHIEVED.
- ALL EARTHWORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH AS3798 UNDER LEVEL 1 SUPERVISION AND HAVE A FREQUENCY FIELD DENSITY TESTING RECORD IN ACCORDANCE WITH TABLE 8.1 OF AS3798.
- ALL FILL PLACED ON THE SITE IS TO COMPRISE OF ONLY NATURAL EARTH & ROCK & IS TO BE FREE OF ALL CONTAMINANTS (REFER TO THE ENVIRONMENTAL PROTECTION ACT 1994 SECTION 11). NO DEMOLITION MATERIAL IS TO BE USED.
- UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT ALL FILL SHALL BE PLACED AT BETWEEN +2% & -2% OF OPTIMUM MOISTURE CONTENT.
- PROPOSED SURFACE CONTOURS ARE DESIGNED FINISHED SURFACE LEVELS. SPOT LEVELS ARE DESIGN FINISHED SURFACE LEVELS.
- ALL NEW WORKS TO MATCH NEATLY WITH EXISTING. THE CONTRACTOR SHALL CONFIRM LOCATION OF ALL EXISTING SERVICES & PROTECT THESE SERVICES DURING CONSTRUCTION. DAMAGED SERVICES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
- ALL OF THE SITE SHALL BE KEPT FREE DRAINING DURING ALL PHASES OF THE PROJECT.
- REFER TO ROAD CROSS SECTIONS FOR BATTER GRADES. WHERE GRADES ARE NOT SPECIFIED:-
FILL - 1 IN 4 CUT - 1 IN 4
- ALL ALLOTMENTS TO BE GRASS SEEDING WITH MINIMUM 80% COVERAGE. SEEDING TO OCCUR WITHIN 7 DAYS OF COMPLETION OF EARTHWORKS.
- FOR TYPICAL RETAINING WALL DETAILS REFER DRG 0105.

ADJACENT
PROPERTY

Dark Grey/Charcoal finish
required for all sleeper
retaining walls. Plain Grey
concrete finish not acceptable.

Change to Ground Level
(earthworks and retaining walls)
are the only aspects of works
approved by OPW/2023/1508.

PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No... OPW/2023/1508

Dated: 30 April 2024

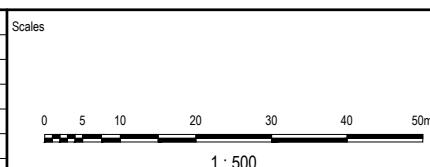
Development shall comply with the
conditions of approval as detailed in the
Decision Notice and Council's Planning
Scheme, Local Laws and Planning Policies

CUT / FILL VOLUMES

CUT	-14,294.744m³
FILL	2,302.670m³
BALANCE (EXPORT)	-11,992.074m³

NOTE: NO TOPSOIL STRIP OF EXISTING AND TOPSOIL RE-SPREAD HAS BEEN APPLIED TO VOLUMES. NO COMPACTION OR BULKING FACTORS HAVE BEEN APPLIED.

Issue	Description	DR	CH	VE	Date
01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023



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ATF The Coomera
GA Unit Trust
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Original Issue Signatures			
Drawn	D. KEARNEY	Original Size	A1
Designed	G. GESMUNDO	Height Datum	AHD
Project Manager	A. SHEPHERD	Grid	MGA (ZONE 56)
Verified	R. MULLIGAN	R.P.E.Q. No: 7850 Date: 31.01.2024	

Project
54 GEORGE ALEXANDER WAY,
COOMERA

Title
BULK EARTHWORKS CUT & FILL
LAYOUT PLAN

ARCADIS

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Project Number 30157884

Drawing No. GAW-AAP-BE-00-DRG-CV-0101

Issue 01

Dark Grey/Charcoal finish required for all sleeper retaining walls. Plain Grey concrete finish not acceptable.

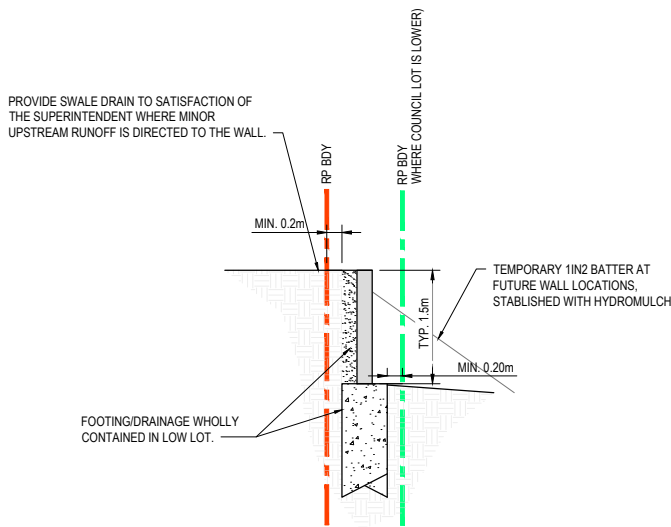
Change to Ground Level (earthworks and retaining walls) are the only aspects of works approved by OPW/2023/1508.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

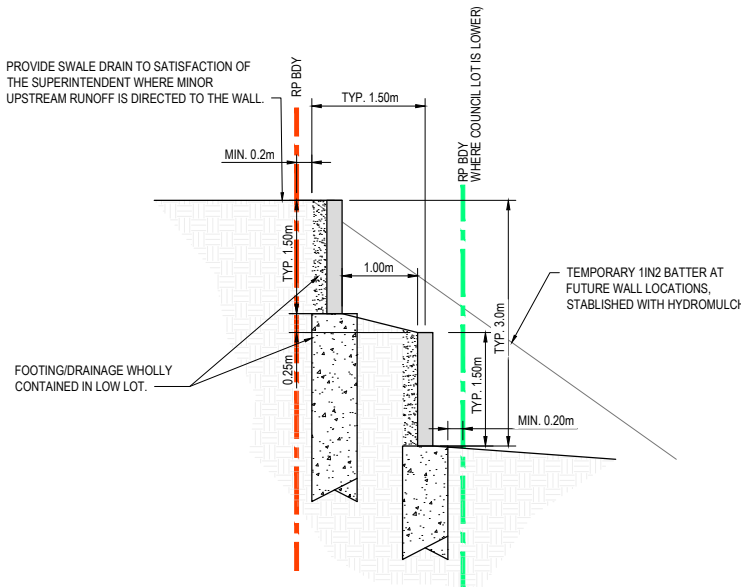
Application No: OPW/2023/1508

Dated: 30 April 2024

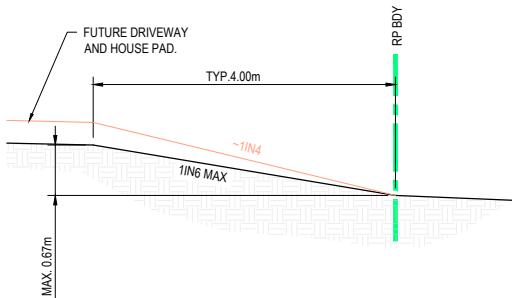
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



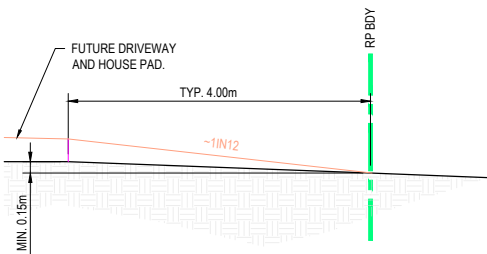
**SINGLE TIER RETAINING WALL
CONCRETE SLEEPER**
SCALE 1:50



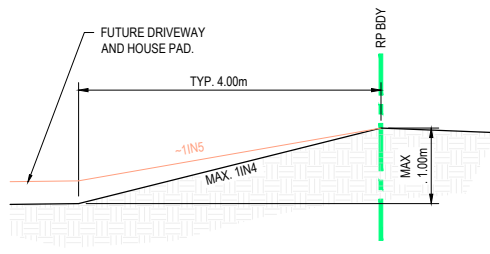
**DOUBLE TIER RETAINING WALL (NO REAR SERVICE)
CONCRETE SLEEPER**
SCALE 1:50



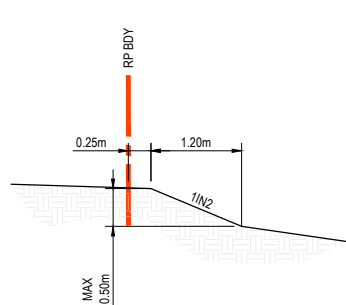
**TYPICAL LOT SETBACK
HIGHER THAN VERGE TYPE 2
AT INDICATIVE DRIVEWAY LOCATION**
SCALE 1:50



**TYPICAL LOT SETBACK
HIGHER THAN VERGE TYPE 1
AT INDICATIVE DRIVEWAY LOCATION**
SCALE 1:50



**TYPICAL LOT SETBACK
LOWER THAN VERGE
AT INDICATIVE DRIVEWAY LOCATION**
SCALE 1:50

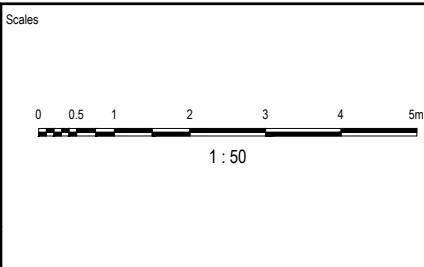


SIDE BOUNDARY BATTER
SCALE 1:50

TYPICAL SLEEPER RETAINING WALL NOTES

- DETAILS SHOWN ARE TYPICAL ONLY AND NOT FOR CONSTRUCTION. CONTRACTOR SHALL PROVIDE DESIGN DRAWINGS AND RPEQ RELEVANT CERTIFICATIONS TO THE SUPERINTENDED 10 WORKING DAYS PRIOR TO THE COUNCIL PRE-START MEETING (CONDITION 15.83). POST CONSTRUCTION CERTIFICATIONS MUST BE PROVIDED WITHIN 5 WORKING DAYS UPON COMPLETION OF THE WALL.
- WALLS SHALL BE DESIGNED IN ACCORDANCE WITH AS4678 AND THE DEVELOPMENT APPROVAL CONDITIONS 'EARTHWORKS - RETAINING STRUCTURES'.
- CONCRETE STANDARD IS AS3600 STANDARD DESIGN EXPOSURE CLASSIFICATION SLEEPERS AND POSTS - B1 AND FOOTINGS - A2.
- A MINIMUM SURCHARGE LOAD OF 10kPa SHALL BE USED WHERE THE RETAINING WALL IS BELOW AND ADJACENT TO ROAD RESERVE AND 5kPa ELSEWHERE. THE DESIGN MUST ALSO CONSIDER ANY CONSTRUCTION LOADING DURING BUILDING CONSTRUCTION.
- WALL SHALL BE DESIGNED TO BRIDGE ANY UNDERGROUND SERVICES, SO AS NOT TO IMPOSE ANY ADDITIONAL LOADINGS.
- ALL WALLS ADJACENT TO PROPERTY BOUNDARIES SHALL BE DESIGNED TO ALLOW FOR AND INSTALLED WITH FENCE BRACKETS. MINIMUM FENCE HEIGHT IS 1.8m EXCEPT WHERE VARIED BY THE CONDITIONS OF APPROVAL.
- SUBSOIL DRAINAGE BEHIND ALL WALLS TO INCLUDE DISCHARGE PIPE INTO THE NEAREST STORMWATER STRUCTURE (OR DEDICATED KERB ADAPTOR) AND BE FREE DRAINING. ALL WALL DRAINAGE LINES DISCHARGING THROUGH LOTS OR ROAD VERGE TO BE SOLID uPVC (NO SLOTS) AND MUST BE FREE DRAINING.
- TEMPORARY SAFETY BARRIER MESH FENCING SHALL BE PROVIDED AND MAINTAINED TO ALL WALLS 1.0m AND GREATER IN HEIGHT.
- RP BDY LINE LOCATIONS APPLY UNLESS NOTED OTHERWISE ON PLAN.
- ALL SLEEPER WALLS TO HAVE DARK GRAY FINISH (PLAIN CONCRETE COLOUR NOT ACCEPTABLE).

02	OPW IR RESPONSE	DK	AS	RM	31.01.2024
01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023
Issue	Description	DR	CH	VE	Date



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Project Manager	A. SHEPHERD	Grid	MGA (ZONE 56)
Verified	R. MULLIGAN	R.P.E.Q. No: 7850 Date 31.01.2024	

Project	54 GEORGE ALEXANDER WAY, COOMERA	
Title	TYPICAL RETAINING WALL DETAILS	

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Project Number	30157884
Issue	01

Drawing No: GAW-AAP-BE-00-DRG-CV-0105

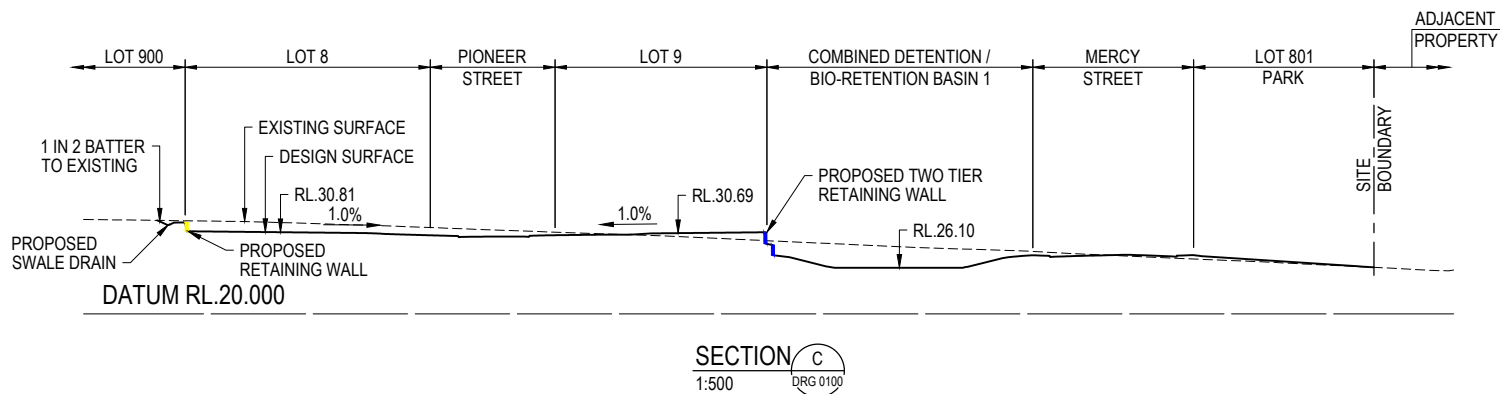
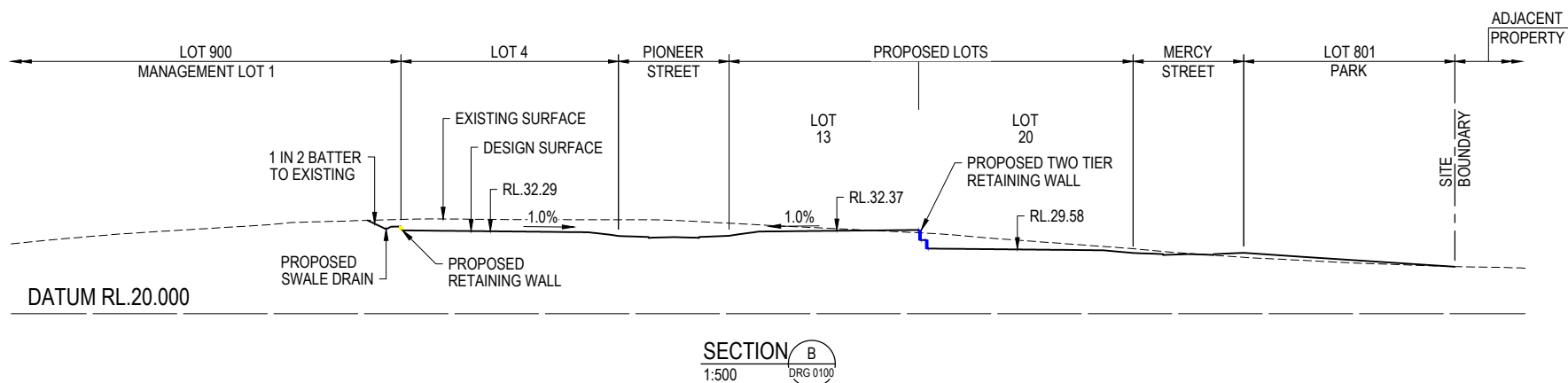
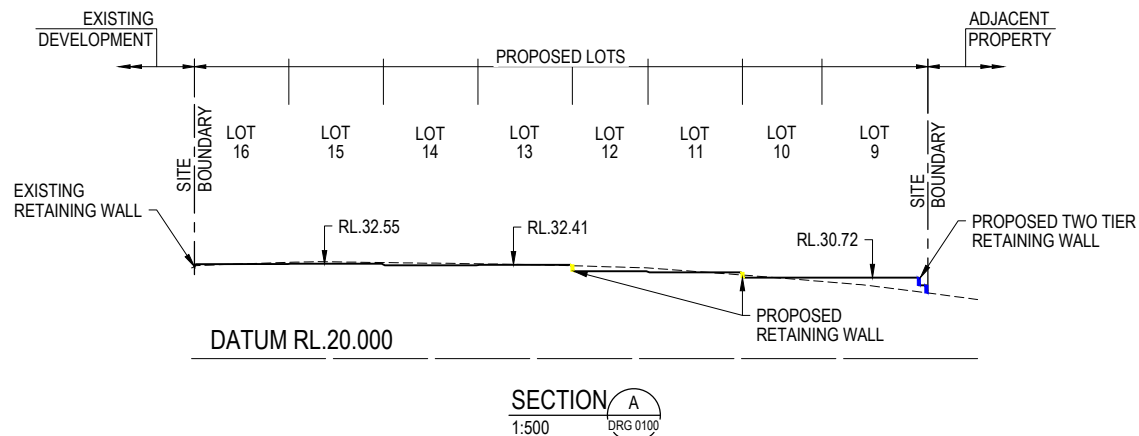
PLANS AND DOCUMENTS referred to in the
DEVELOPMENT APPROVAL

Application No: OPW/2023/1508

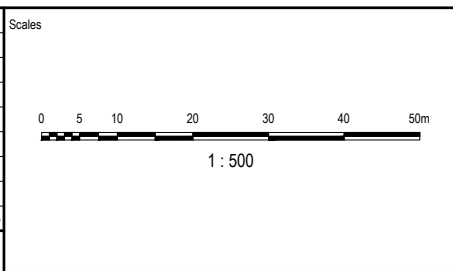
Dated: 30 April 2024

Development shall comply with the
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Change to Ground Level
(earthworks and retaining walls)
are the only aspects of works
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01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023
Issue	Description	DR	CH	VE	Date



Client

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Verified	R. MULLIGAN	R.P.E.Q. No: 7850 Date 31.01.2024	

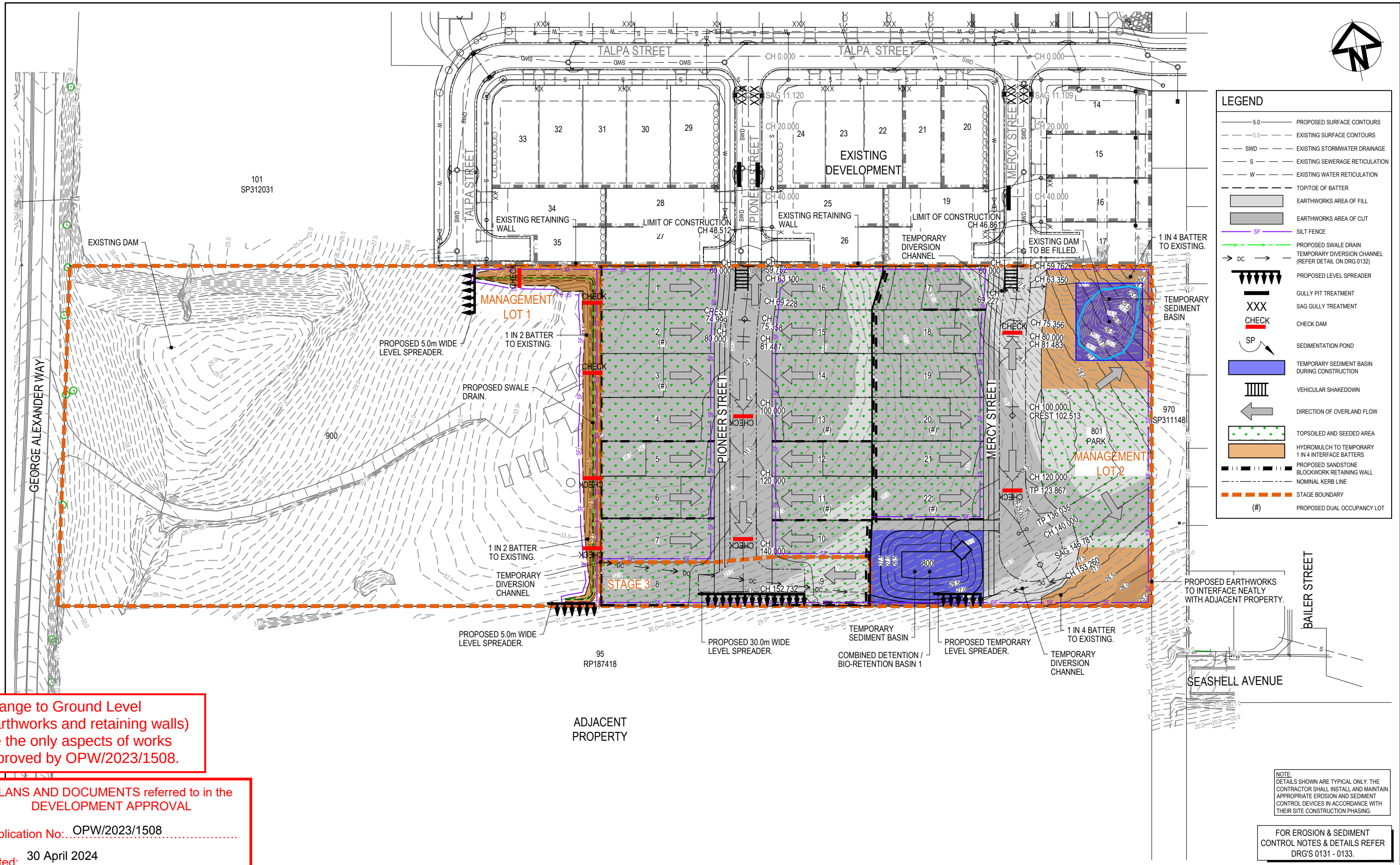
Project	54 GEORGE ALEXANDER WAY, COOMERA
Title	
BULK EARTHWORKS SECTIONS	

Arcadis Australia Pacific Pty Limited
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ABN 76 104 485 289
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www.arcadis.com/au

Project Number	30157884
Issue	01

Drawing No.

GAW-AAP-BE-00-DRG-CV-0111



Change to Ground Level (earthworks and retaining walls) are the only aspects of works approved by OPW/2023/1508.

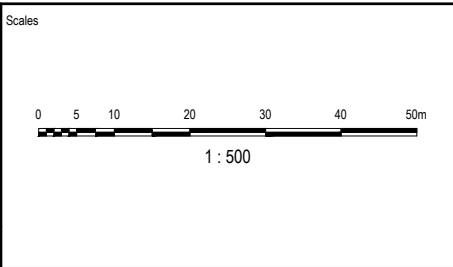
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1508

Dated: 30 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023
Issue	Description	DR	CH	VE	Date



Client

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Project Manager	A. SHEPHERD	Grid	MGA (ZONE 56)
Verified	R. MULLIGAN	R.P.E.Q. No: 7850 Date: 31.01.2024	

Project

54 GEORGE ALEXANDER WAY,
COOMERA

Title

EROSION AND SEDIMENT
CONTROL PLAN



Arcadis Australia Pacific Pty Limited
Level 7, Seabank Building, 12-14 Marine Parade
SOUTHPORT QLD 4215
ABN 76 104 485 289
Tel No: +61 7 5503 4800
www.arcadis.com/au

Project Number

30157884

Issue

01

Drawing No.

GAW-AAP-BE-00-DRG-CV-0121

NOTE:
DETAILS SHOWN ARE TYPICAL ONLY. THE
CONTRACTOR SHALL INSTALL AND MAINTAIN
APPROPRIATE EROSION AND SEDIMENT
CONTROL DEVICES IN ACCORDANCE WITH
THEIR SITE CONSTRUCTION PHASING.

FOR EROSION & SEDIMENT
CONTROL NOTES & DETAILS REFER
DRG'S 0131 - 0133.

1. EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE DRAWINGS ARE MINIMUM REQUIREMENTS BASED ON THE UNDERSTOOD CONSTRUCTION SCOPE AND METHODOLOGY. IT IS THE CONTRACTORS RESPONSIBILITY AT ALL TIMES TO EMPLOY APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES BASED ON THE CONSTRUCTION METHODOLOGY, SEQUENCING OF WORKS AND LOCAL SITE CONDITIONS TO THE APPROVAL OF THE AUTHORISING AUTHORITY.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE INSPECTION, MAINTENANCE AND TESTING OF ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES ARE UNDERTAKEN ON SITE.
3. ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE LATEST INTERNATIONAL EROSION CONTROL ASSOCIATION (IECA) AUSTRALASIA BEST PRACTICE EROSION AND SEDIMENT CONTROL (BPESC) DOCUMENT.
4. REFER TO APPROVED PLANS FOR LOCATION, EXTENT, AND CONSTRUCTION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.
5. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED AND A REVISED EROSION AND SEDIMENT CONTROL PLAN (ESCP) MUST BE SUBMITTED FOR APPROVAL IN THE EVENT THAT SITE CONDITIONS CHANGE SIGNIFICANTLY FROM THOSE CONSIDERED WITHIN THIS ESCP.
6. IN CIRCUMSTANCES WHERE IT IS CONSIDERED NECESSARY TO PREPARE AN AMENDED EROSION AND SEDIMENT CONTROL PLAN (ESCP), AND WHERE THE DELIVERY OF SUCH AN AMENDED ESCP IS NOT IMMEDIATE, THEN ALL NECESSARY NEW OR MODIFIED EROSION AND SEDIMENT CONTROL WORKS MUST BE IN ACCORDANCE WITH THE LATEST VERSION OF THE IECA BPESC DOCUMENT. UPON APPROVAL OF THE AMENDED ESCP, ALL WORKS MUST BE IMPLEMENTED IN ACCORDANCE WITH THE AMENDED PLAN.
7. WHERE THERE IS A HIGH PROBABILITY THAT SERIOUS OR MATERIAL ENVIRONMENTAL HARM MAY OCCUR AS A RESULT OF SEDIMENT LEAVING THE SITE, APPROPRIATE ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED SUCH THAT ALL REASONABLE AND PRACTICABLE MEASURES ARE BEING TAKEN TO PREVENT OR MINIMISE SUCH HARM. ONLY THOSE WORKS NECESSARY TO MINIMISE OR PREVENT ENVIRONMENTAL HARM SHALL BE CONDUCTED ON-SITE PRIOR TO APPROVAL OF THE AMENDED EROSION AND SEDIMENT CONTROL PLAN (ESCP).
8. AT ALL TIMES THE CONTRACTOR SHALL MONITOR THE PREVAILING WEATHER CONDITIONS AND PROTECT ANY DOWNSTREAM CONSTRUCTION OR RECEIVING ENVIRONMENTS.
9. WORKS SHALL BE COMPLETED ON SITE GENERALLY IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:
 - (i) PRE CONSTRUCTION - CONSTRUCT SILT FENCES PRIOR TO PRE-START MEETING, WHICH WILL PROTECT EXISTING DOWNSTREAM PROPERTIES, PARKS OR ROAD RESERVES FROM SEDIMENTATION AND EROSION.
 - (ii) CLEARING AND BULK EARTHWORKS - CONSTRUCT AND MAINTAIN SILT FENCES WHICH CONTROL SEDIMENTATION AND EROSION DURING CLEARING AND BULK EARTHWORKS. ALL DISTURBED AREAS TO BE EITHER GRASS SEEDS OR TURFED, AS SPECIFIED, AS SOON AS POSSIBLE OR WITHIN 7 DAYS OF FINAL TRIMMING OF EARTHWORKS.
 - (iii) MAINTENANCE PERIOD - CONSTRUCT AND MAINTAIN SILT MANAGEMENT CONTROLS WHICH CONTROL SEDIMENTATION AND EROSION PRIOR TO THE ESTABLISHMENT OF GRASS COVER AND REHABILITATION, PROVIDE GRASS FILTER STRIPS IN LOCATIONS AS SHOWN ON EROSION AND SEDIMENT CONTROL PLANS.
10. EROSION AND SEDIMENT CONTROL PROTECTION MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONTRACT.

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND FUNCTIONAL PRIOR TO WORKS COMMENCING AND IN THE FOLLOWING SEQUENCE:
 - a. CONSTRUCT TEMPORARY STABILISED SITE ACCESS
 - b. PROVIDE INLET PROTECTION TO STORMWATER INLETS AND GULLIES ON ALL ROADS ADJOIN THE SITE.
 - c. CONSTRUCT BARRIER FENCING AROUND RESTRICTED 'NO-GO' ZONES OF THE RETAINED VEGETATION AND AREAS NOT TO BE DISTURBED AND AREAS WHICH REMAIN UN-WORKED.
 - d. INSTALL ALL TEMPORARY SEDIMENT FENCES
 - e. CONSTRUCT DIVERSION BANKS AS NECESSARY (PARALLEL TO CONTOURS) TO DIVERT RUNOFF FROM DISTURBED AREAS INTO THE SEDIMENT PONDS/BASINS
 - f. WORK AREAS TO BE DELINEATED BY BARRIER FENCING AND DIVERSION CHANNEL UPSLOPE AND SEDIMENT FENCING DOWNSLOPE.
 - g. MAINTAIN EXISTING SEDIMENT PONDS/BASINS AS LONG AS PRACTICALLY POSSIBLE
 - h. STABILISE ALL DISTURBED AREAS ASAP AND PROGRESSIVELY AS WORKS ARE COMPLETED.
 - i. TEMPORARY STABILISATION TO BE DONE USING MULCHING, HYDROMULCHING, HYDROSEEDING OR DIRECT SEEDING TO GIVE A 70% COVERAGE OF GROUND SURFACE WITHIN 14 DAYS OF WORKS COMPLETING (EVEN IF WORKS MAY CONTINUE LATER)
2. EROSION AND SEDIMENT CONTROL PROTECTION MEASURES MAY NEED TO BE REVISED AND UPDATED TO REFLECT THE SITE CONDITIONS AND PROGRESSION OF THE WORKS, I.E. MEASURES INCLUDING SEDIMENT FENCES SHOULD BE MOVED AND REINSTATED AS WORKS PROGRESS.

1. HIGH EFFICIENCY DUST CONTROL TECHNIQUES MUST BE EMPLOYED ON SITE ON AN AS NEEDS BASIS TO PREVENT THE EMISSION OF DUST FROM THE SITE. SUCH TECHNIQUES MUST BE APPLIED TO THE MOVEMENT OF SOIL, SAND, ALL EXCAVATED AREAS, STOCKPILES, HAUL ROADS AND RAMPS, AND TO ANY OTHER AREAS OR APPLICATIONS WHERE THE POTENTIAL FOR DUST GENERATION EXISTS. THESE CONTROL TECHNIQUES MAY INCLUDE THE USE OF WATER SPRAYS, APPLICATION OF DUST SUPPRESSANTS, SURFACE STABILIZATION OR COVERING EXPOSED SURFACES. DUST CONTROL TECHNIQUES MUST BE EMPLOYED ON SITE AT ALL TIMES INCLUDING OUTSIDE NORMAL WORKING HOURS. ALL PERMANENT ROADS AND TRAFFICABLE AREAS MUST BE SEALED OR HARD SURFACED TO MINIMISE DUST GENERATION .
2. ALL OFFICE FACILITIES AND OPERATIONAL ACTIVITIES MUST BE LOCATED SUCH THAT ANY LIQUID EFFLUENT (E.G. PROCESS WATER, WASH-DOWN WATER, EFFLUENT FROM EQUIPMENT CLEANING, OR PLANT WATERING), CAN BE TOTALLY CONTAINED AND TREATED WITHIN THE SITE.
3. THE CONSTRUCTION SCHEDULE MUST AIM TO MINIMISE THE DURATION THAT ANY AND ALL AREAS OF SOIL ARE EXPOSED TO THE EROSION EFFECTS OF WIND, RAIN AND SURFACE WATER.
4. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN ACCORDANCE WITH THE ESCP AND ASSOCIATED DEVELOPMENT CONDITIONS.
5. LAND-DISTURBING ACTIVITIES MUST BE UNDERTAKEN IN SUCH A MANNER THAT ALLOWS ALL REASONABLE AND PRACTICABLE MEASURES TO BE UNDERTAKEN TO:
 - (i) ALLOW STORMWATER TO PASS THROUGH THE SITE IN A CONTROLLED MANNER AND AT NON-EROSIVE FLOW VELOCITIES UP TO THE SPECIFIED DESIGN STORM DISCHARGE;
 - (ii) MINIMISE SOIL EROSION RESULTING FROM RAIN, WATER FLOW AND/OR WIND;
 - (iii) MINIMISE ADVERSE EFFECTS OF SEDIMENT RUNOFF, INCLUDING SAFETY ISSUES;
 - (iv) PREVENT, OR AT LEAST MINIMISE, ENVIRONMENTAL HARM RESULTING FROM WORK-RELATED SOIL EROSION AND SEDIMENT RUNOFF;
 - (v) ENSURE THAT THE VALUE AND USE OF LAND/PROPERTIES ADJACENT TO THE DEVELOPMENT (INCLUDING ROADS) ARE NOT DIMINISHED AS A RESULT OF THE ADOPTED ESC MEASURES.

- (i) THE DEVELOPMENT APPROVAL CONDITION ISSUED BY THE RELEVANT REGULATORY AUTHORITY; AND
 - (ii) THE APPROVED ESCP AND SUPPORTING DOCUMENTATION; OR
 - (iii) THE LATEST VERSION OF THE IECA BPESC DOCUMENT, IF THE STANDARDS AND SPECIFICATIONS ARE NOT CONTAINED IN THE APPROVED ESCP.
7. ANY WORKS THAT MAY CAUSE SIGNIFICANT SOIL DISTURBANCE AND ARE ANCILLARY TO ANY ACTIVITY FOR WHICH REGULATORY BODY APPROVAL IS REQUIRED, MUST NOT COMMENCE BEFORE THE ISSUE OF THAT APPROVAL.
 8. ADDITIONAL AND/OR ALTERNATIVE ESC MEASURES MUST BE IMPLEMENTED IN THE EVENT THAT SITE INSPECTIONS, THE SITE'S MONITORING AND MAINTENANCE PROGRAM, OR THE REGULATORY AUTHORITY, IDENTIFIES THAT UNACCEPTABLE OFF-SITE SEDIMENTATION IS OCCURRING AS A RESULT OF THE WORK ACTIVITIES.
 9. LAND-DISTURBING ACTIVITIES MUST NOT CAUSE UNNECESSARY SOIL DISTURBANCE IF AN ALTERNATIVE CONSTRUCTION PROCESS IS AVAILABLE THAT ACHIEVES THE SAME OR EQUIVALENT OUTCOMES AT AN EQUIVALENT COST.
 10. SEDIMENT (INCLUDING CLAY, SILT, SAND, GRAVEL, SOIL, MUD, CEMENT AND CERAMIC WASTE) DEPOSITED OFF THE SITE AS A DIRECT RESULT OF AN ON-SITE ACTIVITY, MUST BE COLLECTED AND THE AREA APPROPRIATELY CLEANED/REHABILITATED AS SOON AS REASONABLE AND PRACTICABLE, AND IN A MANNER THAT GIVES APPROPRIATE CONSIDERATION TO THE SAFETY AND ENVIRONMENTAL RISKS ASSOCIATED WITH THE SEDIMENT DEPOSITION.
 11. WHEREVER REASONABLE AND PRACTICABLE, BRICK, TILE AND MASONRY CUTTING MUST BE CARRIED OUT ON A PEROUS SURFACE, SUCH AS GRASS, OR OPEN SOIL, OR IN SUCH A MANNER THAT ALL SEDIMENT-LADEN RUNOFF IS PREVENTED FROM DISCHARGING INTO A GUTTER, DRAIN, OR WATER BODY.
 12. ADEQUATE WASTE COLLECTION BINS MUST BE PROVIDED ON-SITE AND MAINTAINED SUCH THAT POTENTIAL AND ACTUAL ENVIRONMENTAL HARM RESULTING FROM SUCH MATERIAL WASTE IS MINIMISED.
 13. CONCRETE WASTE AND CHEMICAL PRODUCTS, INCLUDING PETROLEUM AND OIL-BASED PRODUCTS, MUST BE PREVENTED FROM ENTERING AN INTERNAL WATER BODY, OR AN EXTERNAL DRAIN, STORMWATER SYSTEM, OR WATER BODY.
 14. ALL FLAMMABLE AND COMBUSTIBLE LIQUIDS, INCLUDING ALL LIQUID CHEMICALS IF SUCH CHEMICALS COULD POTENTIALLY BE WASHED OR DISCHARGED FROM THE SITE, ARE STORED AND HANDLED ON-SITE IN ACCORDANCE WITH RELEVANT STANDARDS SUCH AS AS1940 THE STORAGE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.
 15. TRENCHES NOT LOCATED WITHIN ROADWAYS MUST BE BACKFILLED AND COMPACTED TO 95% STANDARD COMPACTION, CAPPED WITH TOPSOIL, AND COMPACTED TO A LEVEL AT LEAST 75mm ABOVE ADJOINING GROUND LEVEL AND APPROPRIATELY STABILISED.
 16. ALL STORMWATER, SEWER LINE AND OTHER SERVICE TRENCHES, NOT LOCATED WITHIN ROADWAYS, MUST BE MULCHED AND SEEDED, OR OTHERWISE APPROPRIATELY STABILISED WITHIN 7 DAYS AFTER BACKFILL.
 17. NO MORE THAN 150m OF A STORMWATER, SEWER LINE OR OTHER SERVICE TRENCH MUST BE OPEN AT ANY ONE TIME.
 18. SITE SPOIL MUST BE LAWFULLY DISPOSED OF IN A MANNER THAT DOES NOT RESULT IN ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
 19. ALL FILL MATERIAL, PLACED ON SITE MUST COMPRISE ONLY NATURAL EARTH AND ROCK, AND IS TO BE FREE OF CONTAMINANTS, BE FREE DRAINING, AND BE COMPACTED IN LAYERS NOT EXCEEDING 300mm TO 95% STANDARD RELATIVE DRY DENSITY IN ACCORDANCE WITH AS1289.
 20. FOOT AND VEHICULAR TRAFFIC WILL BE RESTRICTED IN RECENTLY STABILISED AREAS INCLUDING THOSE HYDROSEEDED, TURFED OR GRASS SEED.
 21. TEMPORARY SITE STABILISATION PROCEDURES MUST COMMENCE AT LEAST 30 DAYS PRIOR TO THE NOMINATED SITE SHUTDOWN DATE. AT LEAST 70% STABLE COVER OF ALL UNSTABLE AND/OR DISTURBED SOIL SURFACES MUST BE ACHIEVED PRIOR TO SHUTDOWN. THE STABILISATION WORKS MUST NOT RELY UPON THE LONGEVITY OF NON-VEGETATED EROSION CONTROL BLANKETS, OR TEMPORARY SOIL BINDERS.
 22. IF BIO-RETENTION FILTER MEDIA IS INSTALLED PRIOR TO 80% OF THE UPSTREAM CATCHMENT BEING FULLY DEVELOPED, THE FILTER MEDIA SHALL BE PROTECTED WITH A LAYER OF GEOFABRIC WITH TURF ON TOP.

1. LAND CLEARING MUST BE DELAYED AS LONG AS PRACTICABLE AND MUST BE UNDERTAKEN IN CONJUNCTION WITH DEVELOPMENT OF EACH STAGE OF WORKS, UNLESS OTHERWISE APPROVED BY SUPERINTENDENT.
2. ALL REASONABLE AND PRACTICABLE EFFORTS MUST BE TAKEN TO DELAY THE REMOVAL OF, OR DISTURBANCE TO, EXISTING GROUND COVER (ORGANIC OR INORGANIC) PRIOR TO LAND-DISTURBING ACTIVITIES.
3. BULK TREE CLEARING MUST OCCUR IN A MANNER THAT MINIMISES DISTURBANCE TO EXISTING GROUND COVER (ORGANIC OR INORGANIC).
4. BULK TREE CLEARING AND GRUBBING OF THE SITE MUST BE IMMEDIATELY FOLLOWED BY SPECIFIED TEMPORARY STABILISATION MEASURES (E.G. TEMPORARY GRASSING, OR MULCHING) PRIOR TO COMMENCEMENT OF EACH STAGE OF CONSTRUCTION WORKS.
5. DISTURBANCE TO NATURAL WATERCOURSES (INCLUDING BED AND BANKS) AND THEIR ASSOCIATED RIPARIAN ZONES MUST BE LIMITED TO THE MINIMUM PRACTICABLE.
6. NO LAND CLEARING SHALL BE UNDERTAKEN UNLESS PRECEDED BY THE INSTALLATION OF ADEQUATE DRAINAGE AND SEDIMENT CONTROL MEASURES, UNLESS SUCH CLEARING IS REQUIRED FOR THE PURPOSE OF INSTALLING SUCH MEASURES, IN WHICH CASE, ONLY THE MINIMUM CLEARING REQUIRED TO INSTALL SUCH MEASURES SHALL OCCUR.
7. LAND CLEARING MUST BE LIMITED TO 2M FROM THE EDGE OF ANY ESSENTIAL CONSTRUCTION ACTIVITY, AS SHOWN ON THE ENGINEERING PLANS, UNLESS OTHERWISE APPROVED BY SUPERINTENDENT.
8. PRIOR TO LAND CLEARING, AREAS OF PROTECTED VEGETATION, AND SIGNIFICANT AREAS OF RETAINED VEGETATION MUST BE CLEARLY IDENTIFIED (E.G. WITH HIGH-VISIBILITY TAPE, OR LIGHT FENCING) FOR THE PURPOSES OF MINIMISING THE RISK OF UNNECESSARY LAND CLEARING.
9. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO MINIMISE THE REMOVAL OF, OR DISTURBANCE TO, THOSE TREES, SHRUBS AND GROUND COVERS (ORGANIC OR INORGANIC) THAT ARE INTENDED TO BE RETAINED.
10. ALL LAND CLEARING MUST BE IN ACCORDANCE WITH THE FEDERAL, STATE AND LOCAL GOVERNMENT VEGETATION PROTECTION/PRESERVATION REQUIREMENTS AND/OR POLICIES.
11. LAND CLEARING IS LIMITED TO THE MINIMUM PRACTICABLE DURING THOSE PERIODS WHEN SOIL EROSION DUE TO WIND, RAIN OR SURFACE WATER IS POSSIBLE.
12. LAND CLEARING MUST NOT EXTEND BEYOND THAT NECESSARY TO PROVIDE UP TO EIGHT (8) WEEKS OF SITE ACTIVITY DURING THOSE MONTHS WHEN THE ACTUAL OR AVERAGE RAINFALL IS LESS THAN 45mm, SIX (6) IF BETWEEN 45 AND 100mm, FOUR (4) WEEKS IF BETWEEN 100 AND 225mm, AND TWO (2) WEEKS IF GREATER THAN 225mm.
13. NATIVE SITE VEGETATION REQUIRED AND APPROVED FOR CLEARING SHOULD BE MULCHED AND STOCKPILED FOR LATER USE IN LANDSCAPING, STABILISATION AND/OR SITE REHABILITATION WORKS.
14. SOIL DISTURBANCE ACTIVITIES ARE TO BE IN ACCORDANCE WITH CHAPTER 4.2 OF "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION" LANDCOM 4TH EDITION, 2004, SLOPE LENGTHS ON BATTERS ARE NOT TO EXCEED THOSE SPECIFIED IN TSC DEVELOPMENT CODE D7.45.6.1.

1. PRIOR TO THE COMMENCEMENT OF SITE WORKS, THE LOCATION OF THE SITE ACCESS POINT(S) MUST BE VERIFIED WITH THE RELEVANT REGULATORY AUTHORITY.
2. SITE ACCESS MUST BE RESTRICTED TO A MAXIMUM OF 2 PRACTICAL LOCATIONS AS SHOWN ON THE ESCP AND SUBJECT TO THE APPROVAL OF COUNCIL.
3. SITE EXIT POINTS MUST BE APPROPRIATELY MANAGED TO MINIMISE THE RISK OF SEDIMENT BEING TRACKED ONTO

5. INSTALL SEDIMENT FENCING AND/OR BARRIER FENCING TO CONFINE INGRESS TO AND EGRESS FROM THE SITE TO STABILISED ACCESS POINTS ONLY.
4. STORMWATER RUNOFF FROM ACCESS ROADS AND STABILISED ENTRY/EXIT POINTS MUST DRAIN TO AN APPROPRIATE SEDIMENT CONTROL DEVICE.
18. IF AFTER USING SHAKEDOWN DEVICE, MATERIAL IS STILL ADHERING TO TRUCK WHEELS, AND BEING DEPOSITED ON PUBLIC ROADS, A WHEEL WASHING DEVICE MUST BE INSTALLED AND USED AT SITE EXIT LOCATIONS TO ENSURE NO FURTHER MATERIAL IS CARTED OFF SITE AND DEPOSITED ON PUBLIC ROADS.

1. THE SHAKEDOWN DEVICE SHALL BE EITHER- a) A SHAKER GRID (METAL BAR CATTLE GRID MINIMUM LENGTH 7m) PLACED TO ENSURE VEHICLES CROSSING THE GRID HAVE SUFFICIENT SPEED TO SHAKE OFF MUD AND CONTAMINANTS or b) A 15m LONG SHAKEDOWN AREA CONSTRUCTED WITH 75mm CRUSHED ROCK AS SPECIFIED FURTHER BELOW:

1. **ROCK:** WELL GRADED, HARD, ANGULAR, EROSION RESISTANT ROCK, NOMINAL DIAMETER OF 75mm (SMALL DISTURBANCES) OR 100 TO 150mm (LARGE DISTURBANCES). ALL REASONABLE MEASURES MUST BE TAKEN TO OBTAIN ROCK OF NEAR UNIFORM SIZE.
2. **FOOTPATH STABILISING AGGREGATE:** 25 TO 50mm GRAVEL OR AGGREGATE.
3. **GEOTEXTILE FABRIC:** HEAVY-DUTY, NEEDLE - PUNCHED, NON-WOVEN FILTER CLOTH ('BIDIM' A24 OR EQUIVALENT).

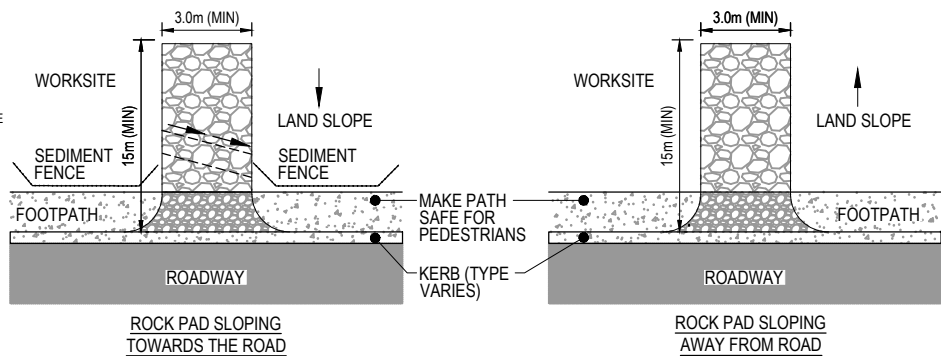
1. CLEAR THE LOCATION OF THE ROCK PAD, REMOVING STUMPS, ROOTS AND OTHER VEGETATION TO PROVIDE A FIRM FOUNDATION SO THAT THE ROCK IS NOT PRESSED INTO SOFT GROUND. CLEAR SUFFICIENT WIDTH TO ALLOW PASSAGE OF LARGE VEHICLES, BUT CLEAR ONLY THAT NECESSARY FOR THE EXIT. DO NOT CLEAR ADJACENT AREAS UNTIL THE REQUIRED EROSION AND SEDIMENT CONTROL DEVICES ARE IN PLACE.
2. IF THE EXPOSED SOIL IS SOFT, PLASTIC OR CLAYEY, PLACE A SUB-BASE OF CRUSHED ROCK OR A LAYER OF HEAVY-DUTY FILTER CLOTH TO PROVIDE A FIRM FOUNDATION.
3. PLACE THE ROCK PAD FORMING A MINIMUM 200mm THICK LAYER OF CLEAN, OPEN-VOID ROCK.
4. IF THE ASSOCIATED CONSTRUCTION SITE IS UP-SLOPE OF THE ROCKPAD, THUS CAUSING STORMWATER RUNOFF TO FLOW TOWARD THE ROCK PAD, THEN FORM A MINIMUM 300mm HIGH FLOW CONTROL BERM ACROSS THE ROCK PAD TO DIVERT SUCH RUNOFF TO A SUITABLE SEDIMENT TRAP.
5. THE LENGTH OF THE ROCK PAD SHOULD BE AT LEAST 15m WHERE PRACTICABLE, AND AS WIDE AS THE FULL WIDTH OF THE ENTRY OR EXIT AND AT LEAST 3m. THE ROCK PAD SHOULD COMMENCE AT THE EDGE OF THE OFF-SITE SEALED ROAD OR PAVEMENT.
6. FLARE THE END THE ROCK PAD WHERE IT MEETS THE PAVEMENT SO THAT THE WHEELS OF TURNING VEHICLES DO NOT TRAVEL OVER UNPROTECTED SOIL.
7. IF THE FOOTPATH IS OPEN TO PEDESTRIAN MOVEMENT, THEN COVER THE COARSE ROCK WITH FINE AGGREGATE OR GRAVEL, OR OTHERWISE TAKE WHATEVER MEASURES ARE NEEDED TO MAKE THE AREA SAFE.

1. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR LATER USE ONSITE.
2. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO OBTAIN THE MAXIMUM BENEFIT FROM EXISTING TOPSOIL, INCLUDING:
 - (i) WHERE THE PROPOSED AREA OF SOIL DISTURBANCE DOES NOT EXCEED 2500m², AND THE TOPSOIL DOES NOT CONTAIN UNDESIRABLE WEED SEED, THE TOP 100mm OF SOIL LOCATED WITHIN AREAS OF PROPOSED SOIL DISTURBANCE (INCLUDING STOCKPILE AREAS) MUST BE STRIPPED AND STOCKPILED SEPARATELY FROM THE REMAINING SOIL.
 - (ii) WHERE THE PROPOSED AREA OF SOIL DISTURBANCE EXCEEDS 2500m², AND THE TOPSOIL DOES NOT CONTAIN UNDESIRABLE WEED SEED, THE TOP 50mm OF SOIL MUST BE STRIPPED AND STOCKPILED SEPARATELY FROM THE REMAINING TOPSOIL, AND SPREAD AS A FINAL SURFACE SOIL.
 - (iii) IN AREAS WHERE THE TOPSOIL CONTAINS UNDESIRABLE WEED SEED, THE AFFECTED SOIL MUST BE SUITABLY BURIED OR REMOVED FROM THE SITE.
3. STOCKPILES OF ERODABLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED, MUST BE:
 - (i) APPROPRIATELY PROTECTED FROM WIND, RAIN, CONCENTRATED SURFACE FLOW AND EXCESSIVE UP-SLOPE STORMWATER SURFACE FLOWS.
 - (ii) LOCATED AT LEAST 2M (PREFERABLY 5M) FROM ANY HAZARDOUS AREA, RETAINED VEGETATION, ROADS AND CONCENTRATED WATER FLOW.
 - (iii) LOCATED UP-SLOPE OF AN APPROPRIATE SEDIMENT CONTROL SYSTEM.
 - (iv) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) THAT REDUCES THE C-FACTOR ON BARE SURFACE AREAS TO 0.15 OR LESS AS DEFINED BY 'MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION' LANDCOM 4TH EDITION, 2004 APPENDIX M. THIS EQUATES TO 50% GRASS COVER IF SOIL HAS BEEN RECENTLY DISTURBED.
 - (iv) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 10 DAYS DURING THOSE MONTHS THAT HAVE A HIGH EROSION RISK.
 - (vi) PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 5 DAYS DURING THOSE MONTHS THAT HAVE AN EXTREME EROSION RISK.
4. A SUITABLE FLOW DIVERSION SYSTEM MUST BE ESTABLISHED IMMEDIATELY UP-SLOPE OF A STOCKPILE OF ERODABLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED, IF THE UP-SLOPE CATCHMENT AREA DRAINING TO THE STOCKPILE EXCEEDS 1500m².

1. **SOCKS:** MINIMUM Ø200mm SYNTHETIC OR BIODEGRADABLE TUBES MANUFACTURED FROM NON-WOVEN OR COMPOSITE FABRIC SUITABLE FOR THE "FILTRATION" OF COURSE SEDIMENT.
2. **FILL MATERIALS:** STRAW, CANE MULCH, COMPOSTED MATERIAL (AS4454), COARSE SAND, OR CLEAN AGGREGATE

1. ENSURE THE SOCKS ARE PLACED INDIVIDUALLY OR COLLECTIVELY (AS A SINGLE SEDIMENT TRAP) SUCH THAT:

- i) LEAKAGE AROUND OR UNDER THE SOCKS IS MINIMISED;
- ii) ADJOINING SOCKS ARE TIGHTLY BUTTED OR OVERLAPPED AT LEAST 450mm.
- iii) THE SURFACE AREA OF POTENTIAL WATER PONDING UP-SLOPE OF EACH SEDIMENT TRAP IS MAXIMISED.
- iv) TO THE MAXIMUM DEGREE PRACTICAL, ALL SEDIMENT-LADEN WATER WILL PASS THROUGH THE FORMED POND BEFORE FLOWING OVER THE DOWN-SLOPE END OF THE SEDIMENT TRAP.



TYPICAL STOCKPILE CONFIGURATION

[illegible]

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FOR APPROVAL CONSTRUCTION SUBJECT TO APPROVAL			
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Original Issue Signatures			
Drawn	D. KEARNEY	Original Size	A1
Designed	G. GESMUNDO	Height Datum	AHD
Project Manager	A. SHEPHERD	Grid	MGA (ZONE 56)
Verified	R. MULLIGAN	R.P.E.C. No: 7850 Date 31.01.2014	

54 GEORGE ALEXANDER WAY,
COOMERA

Title

EROSION AND SEDIMENT
CONTROL DETAILS SHEET 1



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Drawing No.

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1. WHEREVER REASONABLE AND PRACTICABLE, STORMWATER RUNOFF ENTERING THE SITE FROM EXTERNAL AREAS, AND NON-SEDIMENT LOADED (CLEAN) STORMWATER RUNOFF ENTERING A WORK AREA OR AREA OF SOIL DISTURBANCE, MUST BE DIVERTED AROUND OR THROUGH THAT AREA IN A MANNER THAT MINIMISES SOIL EROSION AND THE CONTAMINATION OF THAT WATER FOR ALL DISCHARGES UP TO THE SPECIFIED DESIGN STORM DISCHARGE.
2. DURING THE CONSTRUCTION PERIOD, ALL REASONABLE AND PRACTICABLE MEASURES MUST BE IMPLEMENTED TO CONTROL FLOW VELOCITIES IN SUCH A MANNER THAT PREVENTS SOIL EROSION ALONG DRAINAGE PATHS AND AT THE ENTRANCE AND EXIT OF ALL DRAINS AND DRAINAGE PIPES DURING ALL STORMS UP TO THE RELEVANT DESIGN STORM DISCHARGE.
3. TO THE MAXIMUM DEGREE REASONABLE AND PRACTICABLE, ALL WATERS DISCHARGED DURING THE CONSTRUCTION PHASE MUST DISCHARGE ONTO STABLE LAND, IN A NON-EROSIVE MANNER, AND AT A LEGAL POINT OF DISCHARGE.
4. DURING THE CONSTRUCTION PERIOD, ROOF WATER MUST BE MANAGED IN A MANNER THAT MINIMISES SOIL EROSION THROUGHOUT THE SITE, AND SITE WETNESS WITHIN ACTIVE WORK AREAS.

1. CLEAR THE LOCATION FOR THE CHANNEL, CLEARING ONLY WHAT IS NEEDED TO PROVIDE ACCESS FOR PERSONNEL AND CONSTRUCTION EQUIPMENT.
2. REMOVE ROOTS, STUMPS, AND OTHER DEBRIS AND DISPOSE OF THEM PROPERLY. DO NOT USE DEBRIS TO BUILD ANY ASSOCIATED EMBANKMENTS.
3. EXCAVATE THE CHANNEL TO THE SPECIFIED SHAPE, ELEVATION AND GRADIENT (1% MIN). THE SIDES OF THE CHANNEL SHOULD BE NO STEEPER THAN A 2:1 (H:V) IF CONSTRUCTED IN EARTH, UNLESS SPECIFICALLY DIRECTED WITHIN THE APPROVED PLANS.
4. STABILISE THE CHANNEL AND BANKS IMMEDIATELY UNLESS IT WILL OPERATE FOR LESS THAN 30 DAYS. IN EITHER CASE, TEMPORARY EROSION PROTECTION (MATTING, ROCK, TURF, ETC.) WILL BE REQUIRED AS SPECIFIED WITHIN THE APPROVED PLANS OR AS DIRECTED.
5. IF THE CHANNEL IS CUT INTO A DISPERSIVE (SODIC) SOIL, THE EXPOSED DISPERSIVE SOIL MUST BE COVERED AND MAINTAINED WITH A MINIMUM 200mm THICK LAYER OF NON-DISPERSIVE SOIL PRIOR TO PLACEMENT OF EROSION PROTECTION MEASURES.
6. ENSURE THE CHANNEL DISCHARGES TO A STABLE AREA SUCH THAT SOIL EROSION WILL BE PREVENTED. SPECIFICALLY, ENSURE THE DRAIN DOES NOT DISCHARGE TO AN UNSTABLE FILL SLOPE.

1. THE APPLICATION OF LIQUID-BASED SOIL SUPPRESSION MEASURES MUST ENSURE THAT SEDIMENT-LOADED RUNOFF RESULTING FROM SUCH MEASURES DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD.
2. ALL TEMPORARY EARTH BANKS, FLOW DIVERSION SYSTEMS, AND EMBANKMENTS ASSOCIATED WITH CONSTRUCTED SEDIMENT BASINS MUST BE MACHINE-COMPACTED, SEEDED AND MULCHED FOR THE PURPOSE OF ESTABLISHING A TEMPORARY VEGETATIVE COVER WITHIN 10 DAYS AFTER GRADING.
3. UNPROTECTED SLOPE LENGTHS MUST NOT EXCEED 80M, OR AN EQUIVALENT VERTICAL FALL OF 3M.
4. THE CONSTRUCTION AND STABILISATION OF EARTH BATTERS STEEPER THAN 6:1 (H:V) MUST BE STAGED SUCH THAT NO MORE THAN 3 VERTICAL-METRES OF ANY BATTER IS EXPOSED TO RAINFALL AT ANY INSTANT.
5. SYNTHETIC REINFORCED FERTILISATION CONTROL MATS AND BLANKETS MUST NOT BE PLACED WITHIN, OR ADJACENT TO, RIPARIAN ZONES AND WATERCOURSES IF SUCH MATERIALS ARE LIKELY TO CAUSE ENVIRONMENTAL HARM TO WILDLIFE OR WILDLIFE HABITATS.
6. A MINIMUM 60% GROUND COVER MUST BE ACHIEVED ON ALL NON-COMPLETED EARTHWORKS EXPOSED TO ACCELERATED SOIL EROSION IF FURTHER CONSTRUCTION ACTIVITIES OR SOIL DISTURBANCES ARE LIKELY TO BE SUSPENDED FOR MORE THAN 30 DAYS DURING THOSE MONTHS WHEN THE EXPECTED RAINFALL IS LESS THAN 30mm; MINIMUM 70% COVER WITHIN 30 DAYS IF BETWEEN 30 AND 45mm; MINIMUM 70% COVER WITHIN 20 DAYS IF BETWEEN 45 AND 100mm; MINIMUM 75% COVER WITHIN 10 DAYS IF BETWEEN 100 AND 225mm; AND MINIMUM 80% COVER WITHIN 5 DAYS IF GREATER THAN 225mm. (ALTERNATIVE TO ABOVE)

1. EROSION CONTROL MATS MUST BE STORED AWAY FROM DIRECT SUNLIGHT OR COVERED WITH ULTRAVIOLET PROTECTIVE SHEETING UNTIL THE SITE IS READY FOR THEIR INSTALLATION.
2. VEHICLES AND CONSTRUCTION EQUIPMENT MUST NOT BE PERMITTED TO MANEUVER OVER THE MATTING UNLESS IT HAS BEEN COVERED WITH A LAYER OF SOIL OR GRAVEL AT LEAST 150mm THICK.
3. IF THE CHANNEL IS TO BE GRASSED, PREPARE A SMOOTH SEED BED OF APPROXIMATELY 75mm OF TOPSOIL, SEED, FERTILISER, WATER AND RAKE TO REMOVE ANY REMAINING SURFACE IRREGULARITIES.
4. EXCAVATE A 300mm DEEP BY 150mm WIDE ANCHOR TRENCH ALONG THE FULL WIDTH OF THE UPSTREAM END OF THE AREA TO BE TREATED.
5. AT LEAST 300mm OF THE MAT MUST BE ANCHORED INTO THE TRENCH WITH THE ROLL OF MATTING RESTING ON THE GROUND UP-SLOPE OF THE TRENCH.
6. WHEN SPREADING THE MATS, AVOID STRETCHING THE FABRIC. THE MATS SHOULD REMAIN IN GOOD CONTACT WITH THE SOIL.
7. THE INSTALLATION PROCEDURE MUST ENSURE THAT THE MAT ACHIEVES AND RETAINS GOOD CONTACT WITH THE SOIL.
8. DAMAGED MATTING MUST BE REPAIRED OR REPLACED.

1. TURF SHOULD BE USED WITHIN 12 HOURS OF DELIVERY, OTHERWISE ENSURE THE TURF IS STORED IN CONDITIONS APPROPRIATE FOR THE WEATHER CONDITIONS (e.g. A SHADED AREA).
2. MOISTENING THE TURF AFTER IT IS UNROLLED WILL HELP MAINTAIN ITS VIABILITY.
3. TURF SHOULD BE LAID ON A MINIMUM 75mm BED OF ADEQUATELY FERTILISED TOPSOIL. RAKE THE SOIL SURFACE TO BREAK THE CRUST JUST BEFORE LAYING THE TURF.
4. DURING THE WARMER MONTHS, LIGHTLY IRRIGATE THE SOIL IMMEDIATELY BEFORE LAYING THE TURF.
5. ENSURE THE TURF IS NOT LAID ON GRAVEL, HEAVILY COMPACTED SOILS, OR SOILS THAT HAVE BEEN RECENTLY TREATED WITH HERBICIDES.
6. ENSURE THE TURF EXTENDS UP THE SIDES OF THE DRAIN AT LEAST 100mm ABOVE THE ELEVATION OF THE CHANNEL INVERT, OR AT LEAST TO A SUFFICIENT ELEVATION TO FULLY CONTAIN EXPECTED CHANNEL FLOW.
7. ON CHANNEL GRADIENTS OF 3:1 (H:V) OR STEEPER, OR IN SITUATIONS WHERE HIGH FLOW VELOCITIES (i.e. VELOCITY $> 1.5\text{ m/s}$) ARE LIKELY WITHIN THE FIRST TWO WEEK FOLLOWING PLACEMENT, SECURE THE INDIVIDUAL TURF STRIPS WITH WOODEN OR PLASTIC PEGS.
8. ENSURE THAT INTIMATE CONTACT IS ACHIEVED AND MAINTAINED BETWEEN THE TURF AND THE SOIL SUCH THAT SEEPAGE FLOW BENEATH THE TURF IS AVOIDED.
9. WATER UNTIL THE SOIL IS WET 100mm BELOW THE TURF. THEREAFTER, WATERING SHOULD BE SUFFICIENT TO MAINTAIN AND PROMOTE HEALTHY GROWTH.

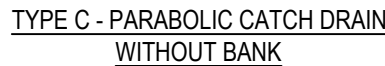
NOT TO SCALE

1. ALL ROCK MUST BE HARD, WEATHER RESISTANT, AND DURABLE AGAINST DISINTEGRATION UNDER CONDITIONS TO BE MET IN HANDLING, PLACEMENT AND OPERATION.
2. ALL ROCK MUST HAVE ITS GREATEST DIMENSION NOT GREATER THAN 3 TIMES ITS LEAST DIMENSIONS.
3. THE ROCK USED IN FORMATION OF THE DRAIN MUST BE EVENLY GRADED WITH 50% BY WEIGHT LARGER THAN THE SPECIFIED NOMINAL ROCK SIZE AND HAVE SUFFICIENT SMALL ROCK TO FILL THE VOIDS BETWEEN THE LARGER ROCK. DIRT, FINES, AND SMALLER ROCK MUST NOT EXCEED 5% BY WEIGHT.
4. THE DIAMETER OF THE LARGEST ROCK SIZE SHOULD BE NO LARGER THAN 1.5 TIMES THE NOMINAL ROCK SIZE. SPECIFIC GRAVITY TO BE AT LEAST 2.5.
5. FILTER CLOTH GEOTEXTILE FABRIC: HEAVY-DUTY, NEEDLE-PUNCHED, NON-WOVEN FILTER CLOTH, MINIMUM "BIDIM" A24 OR EQUIVALENT.
6. PRIOR TO PLACEMENT, ALL ROCKS MUST BE VISUALLY CHECKED FOR SIZE, ELONGATION, CRACKS, DETEIORATION AND OTHER VISIBLE DEFECTS. THE DEGREE AND THOROUGHNESS OF SUCH CHECKING MUST BE APPROPRIATE FOR THE POTENTIAL CONSEQUENCES ASSOCIATED WITH FAILURE OF THE STRUCTURE OR PURPOSE FOR WHICH THE MATERIAL WILL BE USED.
7. IF A FILTER CLOTH UNDERLAY IS SPECIFIED, PLACE THE FILTER FABRIC DIRECTLY ON THE PREPARED FOUNDATION. IF MORE THAN ONE SHEET OF FILTER CLOTH IS REQUIRED OVER THE AREA, OVERLAP THE EDGE OF EACH SHEET AT LEAST 300mm, AND SECURE ANCHOR PINS AT MINIMUM 1M SPACING ALONG THE OVERLAP.
8. ENSURE THE FILTER CLOTH IS PROTECTED FROM PUNCHING OR TEARING DURING INSTALLATION OF THE FABRIC AND THE ROCK. REPAIR ANY DAMAGE BY REMOVING THE ROCK AND REPLACING WITH ANOTHER PIECE OF FILTER CLOTH OVER THE DAMAGED AREA OVERLAPPING THE EXISTING FABRIC A MINIMUM OF 300mm.
9. PLACEMENT OF ROCK SHOULD FOLLOW IMMEDIATELY AFTER PLACEMENT OF THE FILTER LAYER. PLACE ROCK SO THAT IT FORMS A DENSE, WELL-GRADED MASS OF ROCK WITH A MINIMUM OF VOIDS.
10. PLACE ROCK LINING TO THE EXTENT AND DEPTH INDICATED WITHIN THE APPROVED PLANS.
11. ENSURE THE ROCK IS PLACED IN AN APPROPRIATE MANNER TO AVOID DISPLACING UNDERLYING MATERIALS OR PLACING UNDUE IMPACT FORCE ON THE BEDDING MATERIALS.
12. ENSURE THE ROCK IS PLACED WITH A MINIMUM THICKNESS OF 1.5 TIMES THE NOMINAL ROCK SIZE (D50).
13. ENSURE MATERIALS THAT ARE D50 AND LARGER ARE POSITIONED FLUSH WITH THE TOP SURFACE WITH FACES AND SHAPES MATCHED TO MINIMISE VOIDS.
14. ENSURE PROJECTIONS ABOVE OR DEPRESSIONS UNDER THE SPECIFIED TOP SURFACE ARE LESS THAN 20% OF THE ROCK LAYER THICKNESS. THE AVERAGE SURFACE PLANE OF THE FINISHED ROCK IS DEFINED AS THE PLANE WHERE 50% OF THE TOPS OF ROCKS WOULD CONTACT.
15. ENSURE THE COMPLETED CHANNEL HAS SUFFICIENT DEPTH (AS SPECIFIED FOR THE TYPE OF CHANNEL) MEASURED FROM THE CHANNEL INVERT (AVERAGE SURFACE PLANE ALONG CHANNEL INVERT) TO THE TOP OF THE EMBANKMENT. THE AVERAGE SURFACE PLANE OF THE FINISHED ROCK IS DEFINED AS THE PLANE WHERE 50% OF THE TOPS OF ROCKS WOULD CONTACT.
16. TO THE MAXIMUM DEGREE PRACTICABLE, THE MATERIAL BETWEEN LARGER ROCK MUST NOT BE LOOSE OR EASILY DISPLACED BY THE EXPECTED FLOW.
17. AFTER PLACEMENT OF THE ROCK LINING, ENSURE THE DRAIN HAS A CONSTANT FALL IN THE DESIRED DIRECTION FREE OF OBSTRUCTIONS.

1. ROCK: 150 TO 300mm EQUIVALENT DIAMETER HARD EROSION RESISTANT ROCK.
2. RECYCLED CONCRETE: 150 TO 300mm EQUIVALENT DIAMETER FREE FROM FINES AND CEMENT DUST.
3. SANDBAGS: GEOTEXTILE BAGS (WOVEN SYNTHETIC, OR NON-WOVEN BIODEGRADABLE) FILLED WITH CLEAN COARSE SAND, CLEAN AGGREGATE, OR COMPOST.

1. PRIOR TO PLACEMENT OF THE SEDIMENT TRAP, ENSURE THE DRAINAGE CHANNEL IS DEEP ENOUGH TO PREVENT WATER BEING UNSAFELY DIVERTED OUT OF THE DRAIN ONCE THE CHECK DAMS ARE INSTALLED.
2. LOCATE EACH CHECK DAM SEDIMENT TRAP AS DIRECTED WITHIN THE APPROVED PLANS, OR OTHERWISE AT SUCH A SPACING TO ACHIEVE THE REQUIRED SEDIMENT TRAPPING OUTCOMES. REFER DETAIL.
3. PLACE EACH CHECK DAM SEDIMENT TRAP TO THE LINES AND PROFILE SHOWN IN THE APPROVED PLAN OR AS DIRECTED BY THE SITE SUPERVISOR.

1. THE OUTLET SILL OF THE SPREADER SHOULD BE PROTECTED WITH EROSION CONTROL MATTING TO PREVENT EROSION DURING THE ESTABLISHMENT OF VEGETATION. THE MATTING SHOULD BE A MINIMUM OF 1200mm WIDE EXTENDING AT LEAST 300mm UPSTREAM OF THE EDGE OF THE OUTLET CREST AND BURIED AT LEAST 150mm IN A VERTICAL TRENCH. THE DOWNSTREAM EDGE SHOULD BE SECURELY HELD IN PLACE WITH CLOSELY SPACED HEAVY-DUTY WIRE STAPLES AT LEAST 150mm LONG.
2. ENSURE THAT THE OUTLET SILL (CREST) IS LEVEL FOR THE SPECIFIED LENGTH.
3. IMMEDIATELY AFTER CONSTRUCTION, TURF, OR SEED AND MULCH WHERE APPROPRIATE, THE LEVEL SPREADER.



CONSTRUCTED DIMENSIONS OF TRIANGULAR V-DRAINS		
DRAIN TYPE	FORMED WIDTH WITH OR WITHOUT BANK	FORMED DEPTH WITH OR WITHOUT BANK
TYPE-AV	2.0m	0.30m
TYPE-BV	2.7m	0.45m
TYPE-CV	3.9m	0.65m



Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies



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SEDIMENT CONTROL

- 1. OPTIMUM BENEFIT MUST BE MADE OF EVERY OPPORTUNITY TO TRAP SEDIMENT WITHIN THE WORK SITE, AND AS CLOSE AS PRACTICABLE TO ITS SOURCE.
- 2. SEDIMENT TRAPS MUST BE INSTALLED AND OPERATED TO BOTH COLLECT AND RETAIN SEDIMENT.
- 3. THE POTENTIAL SAFETY RISK OF A PROPOSED SEDIMENT TRAP TO SITE WORKERS AND THE PUBLIC MUST BE GIVEN APPROPRIATE CONSIDERATION, ESPECIALLY THOSE DEVICES LOCATED WITHIN PUBLICLY ACCESSIBLE AREAS.
- 4. ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO PREVENT, OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT FROM THE SITE.
- 5. SUITABLE ALL-WEATHER MAINTENANCE ACCESS MUST BE PROVIDED TO ALL SEDIMENT CONTROL DEVICES.

SEDIMENT FENCE

- 1. SEDIMENT FENCE TO BE INSTALLED ALONG A LINE OF CONSTANT GROUND ELEVATION WHEREVER PRACTICAL.
- 2. BOTH ENDS OF THE SEDIMENT FENCE TO EXTEND UP THE SLOPE AT LEAST 1m.
- 3. SUPPORT POST TO BE SPACED A MAXIMUM 2m UNLESS THE FENCE IS SUPPORTED BY A TOP WIRE OR MESH BACKING, IN WHICH CASE 3m MAXIMUM SPACING.
- 4. FENCE 'RETURNS' SHALL BE INSTALLED AT MAXIMUM 20m SPACING IF FENCE IS INSTALLED ALONG THE CONTOUR, OTHERWISE 5 TO 10m MAXIMUM SPACING DEPENDING ON SLOPE.
- 5. MINIMUM 4 STAPLES OR TIE WIRES PER STAKE.

MATERIALS:

- 1. FABRIC: POLYPROPYLENE, POLYAMIDE, NYLON, POLYESTER, OR POLYETHYLENE WOVEN OR NON-WOVEN FABRIC, AT LEAST 700mm IN WIDTH AND A MINIMUM UNIT WEIGHT OF 140GSM. ALL FABRICS TO CONTAIN ULTRAVIOLET INHIBITORS AND STABILISERS TO PROVIDE A MINIMUM OF 6 MONTHS OF USEABLE CONSTRUCTION LIFE (ULTRAVIOLET STABILITY EXCEEDING 70%).
- 2. FABRIC REINFORCEMENTS: WIRE OR STEEL MESH MINIMUM 14-GAUGE WITH A MAXIMUM MESH SPACING OF 200mm.
- 3. SUPPORT POSTS/STAKES: 1500mm² (MIN.) HARDWOOD, 2500mm² (MIN.) SOFTWOOD, OR 1.5kg/m (MIN) STEEL STAR PICKETS WITH SAFETY CAPS SUITABLE FOR ATTACHING FABRIC.

INSTALLATION OF A SPILL-THROUGH WEIR:

- 1. LOCATE THE SPILL-THROUGH WEIR SUCH THAT THE WEIR CREST WILL BE LOWER THAN THE GROUND LEVEL AT EACH END OF THE FENCE.
- 2. ENSURE THE CREST OF THE SPILL-THROUGH WEIR IS AT LEAST 300mm ABOVE THE GROUND ELEVATION.
- 3. SECURELY TIE A HORIZONTAL CROSS MEMBER (WEIR) TO THE SUPPORT POSTS/STAKES EACH SIDE OF THE WEIR. CUT THE FABRIC DOWN THE SIDE OF EACH POST AND FOLD THE FABRIC OVER THE CROSS MEMBER AND APPROPRIATELY SECURE THE FABRIC.
- 4. INSTALL A SUITABLE SPLASH PAD AND/OR CHUTE IMMEDIATELY DOWN-SLOPE OF THE SPILL-THROUGH WEIR TO CONTROL SOIL EROSION AND APPROPRIATELY DISCHARGE THE CONCENTRATED FLOW PASSING OVER THE WEIR.

INSTALLATION FABRIC DROP INLET PROTECTION:

- 1. ENSURE THAT THE INSTALLATION OF THE SEDIMENT TRAP WILL NOT CAUSE UNDESIRABLE SAFETY OR FLOODING ISSUES.
- 2. WHERE POSSIBLE, EXCAVATE A 200x200mm TRENCH AROUND THE INLET STRUCTURE.
- 3. SPACE STAKES EVENLY AROUND THE PERIMETER OF THE STORMWATER INLET AT A MAXIMUM 1m SPACING AND SECURELY DRIVE THEM INTO THE GROUND.
- 4. WHERE NECESSARY, INSTALL A HORIZONTAL SPILL-THROUGH WEIR TO LIMIT THE MAXIMUM HEIGHT WATER PONDING AROUND THE STRUCTURE.
- 5. ENSURE THE MAXIMUM POND HEIGHT WILL NOT CAUSE A SAFETY HAZARD, INCLUDING UNDESIRABLE FLOODING OF AN ADJACENT PROPERTY OR ROADWAY. WHEREVER PRACTICAL, THE SPILL-THROUGH WEIR SHOULD BE AT LEAST 300mm ABOVE GROUND LEVEL.
- 6. IF A SPILL THROUGH WEIR IS NOT INSTALLED, THEN FRAME THE TOP OF THE STAKES WITH HORIZONTAL CROSS MEMBERS.
- 7. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS.
- 8. PLACE THE BOTTOM 300mm OF FABRIC IN THE EXCAVATED TRENCH
- 9. SECURELY FASTEN THE FABRIC TO THE STAKES AND CROSS MEMBERS AT THE FABRIC JOINT, OVERLAP THE FABRIC TO THE NEXT STAKE.
- 10. BACKFILL THE TRENCH WITH AT LEAST 200mm OF AGGREGATE OR COMPACTED SOIL. IF A TRENCH CANNOT BE EXCAVATED, LAY THE BOTTOM 300mm OF FABRIC EVENLY ON THE GROUND SURFACE AND COVER WITH A 300mm LAYER OF AGGREGATE, NOT EARTH OR SOIL.
- 11. WHERE REQUIRED, INSTALL A FLOW CONTROL BUND TO MAINTAIN THE SPECIFIED POOL DEPTH AND CONTROL THE MOVEMENT OF WATER.
- 12. TAKE ALL NECESSARY MEASURES TO MINIMISE THE SAFETY RISK CAUSED BY THE STRUCTURE AND TO PREVENT UNSAFE ENTRY INTO THE STORMWATER INLET.

SEDIMENT BASIN

- 1. REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
- 2. PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING AT LEAST 100mm TO HELP BOND COMPACTED FILL TO THE EXISTING SUBSTRATE.
- 3. FOR EARTH EMBANKMENT MATERIAL TYPE AND COMPACTION REFER TO DTMR SPECIFICATION MRTS04 SECTION 14.2.6 - WATER RETAINING EMBANKMENTS.
- 4. CONSTRUCT EMERGENCY SPILLWAY.
- 5. INSTALL MARKER POST SHOWING MAXIMUM STORAGE AND SETTLING ZONE VOLUMES.
- 6. AS-CONSTRUCTED PLANS MUST BE PREPARED FOR ALL CONSTRUCTED SEDIMENT BASINS AND ASSOCIATED EMERGENCY SPILLWAYS. SUCH PLANS MUST APPROPRIATELY VERIFY THE BASINS DIMENSIONS, LEVELS AND VOLUMES, AND MUST BE SUBMITTED TO THE RELEVANT REGULATORY AUTHORITY WITHIN 14 CALENDAR DAYS OF THE CONSTRUCTION OF EACH BASIN.
- 7. BASINS SHOULD BE APPROPRIATELY FENCED AND MARKED BY WARNING SIGNS IF UNSUPERVISED PUBLIC ACCESS IS LIKELY AND PUBLIC SAFETY IS AT RISK.

SITE MONITORING AND MAINTENANCE

- 1. ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSPECTED:
 - (i) AT LEAST DAILY (WHEN WORK IS OCCURRING ON-SITE);
 - (ii) AT LEAST WEEKLY (WHEN WORK IS NOT OCCURRING ON-SITE);
 - (iii) WITHIN 24 HOURS OF EXPECTED RAINFALL; AND

(iv) WITHIN 18 HOURS OF A RAINFALL EVENT OF SUFFICIENT INTENSITY AND DURATION TO CAUSE RUNOFF ON-SITE).

WHERE MORE THAN 2,500m² OF LAND ARE DISTURBED, A SELF AUDITING PROGRAM MUST BE DEVELOPED FOR THE SITE. A SITE INSPECTION SELF AUDIT AND MONITORING PROGRAM MUST BE UNDERTAKEN BY THE LAND DEVELOPER OR AS DELEGATED IN ADDITION TO THE ABOVE FOR THE FOLLOWING:

- a) IMMEDIATELY BEFORE SITE CLOSURE;
- b) IMMEDIATELY FOLLOWING RAINFALL EVENTS THAT CAUSE RUN-OFF.

2. INSPECTION SHALL BE CONDUCTED IN LINE WITH THE FOLLOWING AS A MINIMUM:

- i) RECORD TYPE OF DEVICE/CONTROL MEASURE BEING INSPECTED AND ITS LOCATION;
- ii) RECORD THE CONDITION OF EACH DEVICE/CONTROL MEASURE BEING INSPECTED;
- iii) RECORD MAINTENANCE REQUIREMENTS FOR DEVICE/CONTROL MEASURE BEING INSPECTED;
- iv) RECORD SEDIMENT VOLUMES REMOVED FROM DEVICE/CONTROL MEASURE BEING INSPECTED;
- v) RECORD DETAILS OF SEDIMENT BASIN TREATMENT, FLOCCULANT DOSAGE AND CLEANOUTS;
- vi) RECORD SEDIMENT DISPOSAL PROCEDURES AND LOCATION;

3. ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES MUST BE MAINTAINED IN PROPER WORKING ORDER AT ALL TIMES DURING THEIR OPERATIONAL LIVES.

4. SEDIMENT CONTROL DEVICES MUST BE DE-SILTED AND MADE FULLY OPERATIONAL AS SOON AS REASONABLE AND PRACTICABLE AFTER A SEDIMENT-PRODUCING EVENT, WHETHER NATURAL OR ARTIFICIAL. IF THE DEVICE'S SEDIMENT RETENTION CAPACITY FALLS BELOW 75% OF ITS DESIGN RETENTION CAPACITY, DE-SILT SEDIMENT TRAP IF THE SEDIMENT LEVEL EXCEEDS 1/3 OF THE CREST HEIGHT.

5. MATERIALS, WHETHER LIQUID OR SOLID, REMOVED FROM SEDIMENT CONTROL DEVICES DURING MAINTENANCE OR DECOMMISSIONING, MUST BE DISPOSED OF IN A MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.

6. ALL WATER QUALITY DATA, INCLUDING DATES OF RAINFALL, DATES OF TESTING, TESTING RESULTS AND DATES OF WATER RELEASE, MUST BE KEPT IN AN ON-SITE REGISTER. THE REGISTER IS TO BE MAINTAINED UP TO DATE FOR THE DURATION OF THE APPROVED WORKS AND BE AVAILABLE ON-SITE FOR INSPECTION BY THE RELEVANT REGULATORY AUTHORITY ON REQUEST.

7. AT NOMINATED INSTREAM WATER MONITORING SITES, A MINIMUM OF 3 WATER SAMPLES MUST BE TAKEN AND ANALYSED, AND THE AVERAGE RESULT USED TO DETERMINE QUALITY.

8. ALL ENVIRONMENTALLY RELEVANT INCIDENTS MUST BE RECORDED IN A FIELD LOG THAT MUST REMAIN ACCESSIBLE TO ALL RELEVANT REGULATORY AUTHORITIES.

9. WASHING/FLUSHING OF SEALED ROADWAYS MUST ONLY OCCUR WHERE SWEEPING HAS FAILED TO REMOVE SUFFICIENT SEDIMENT AND THERE IS A COMPELLING NEED TO REMOVE THE REMAINING SEDIMENT (E.G. FOR SAFETY REASONS). IN SUCH CIRCUMSTANCES, ALL REASONABLE AND PRACTICABLE SEDIMENT CONTROL MEASURES MUST BE USED TO PREVENT, OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT INTO RECEIVING WATERS. ONLY THOSE MEASURES THAT WILL NOT CAUSE SAFETY AND PROPERTY FLOODING ISSUES SHALL BE EMPLOYED. SEDIMENT REMOVED FROM ROADWAYS MUST BE DISPOSED OF IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.

10. ALL SEEDING, HYDROSEEDING AND TURFING REQUIRES REGULAR WATERING UNTIL EFFECTIVE COVER IS ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. WATERING SHOULD DEPEND ON WEATHER AND SOIL CONDITIONS. WATERING SHOULD START IMMEDIATELY AFTER PLANTING AND SHOULD COMPLY WITH THE FOLLOWING AS A MINIMUM:

- c) WEEK 1 3 WATERINGS PER WEEK
- ii) WEEK 2-6 2 WATERINGS PER WEEK
- iii) WEEK 7-12 1 WATERING PER WEEK

11. MAINTENANCE MOWING OF ALL ROAD SHOULDERS, TABLE DRAINS, BATTERS AND OTHER SURFACES LIKELY TO EXPERIENCE ACCELERATED SOIL EROSION MUST AIM TO LEAVE THE GRASS LENGTH NO SHORTER THAN 50mm WHERE REASONABLE AND PRACTICABLE.

12. MAINTENANCE MOWING MUST BE DONE IN A MANNER THAT WILL NOT DAMAGE THE PROFILE OF FORMED, SOFT EDGES, SUCH AS THE CREST OF EARTH EMBANKMENTS.

SEDIMENT BASIN

- 2. CONSTRUCTED SEDIMENT BASINS MUST BE MAINTAINED AND FULLY OPERATIONAL THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL EACH BASIN'S CATCHMENT AREA ACHIEVES 80% GROUND COVER ON ALL SOIL SURFACES.
- 3. SETTLED SEDIMENT MUST BE REMOVED FROM SEDIMENT BASINS WHEN THE VOLUME OF THE SEDIMENT EXCEEDS THE DESIGNATED SEDIMENT STORAGE VOLUME, OR THE DESIGN MAXIMUM SEDIMENT STORAGE ELEVATION.
- 4. SEDIMENT BASIN WATER QUALITY SAMPLES MUST BE TAKEN AT A DEPTH NO GREATER THAN 200mm ABOVE THE LEVEL OF SETTLED SEDIMENT BY A SUITABLY QUALIFIED PERSON. WATER TESTING TO BE UNDERTAKEN USING EITHER A HANDHELD PH/TURBIDITY METER OR SAMPLES COLLECTED FOR LABORATORY TESTING PRIOR TO BASIN DEWATERING. ALL LABORATORY TESTING TO BE UNDERTAKEN BY A NATA ACCREDITED LABORATORY.
- 5. ALL WATER PUMPED FROM THE SEDIMENT BASIN SHALL BE TESTED FOR ENVIRONMENTAL COMPLIANCE AGAINST THE RELEASE CRITERIA IN THE TABLE BELOW (AS A MINIMUM), UNLESS ALTERNATIVE (MORE STRINGENT) STANDARDS ARE SPECIFIED BY THE LOCAL AUTHORITY PRIOR TO RELEASE.

PARAMETER	RELEASE CRITERIA
SUSPENDED SOLIDS	50mg/l MAX
pH	WITHIN RANGE 6.5-8.5
TURBIDITY	60NTU MAX

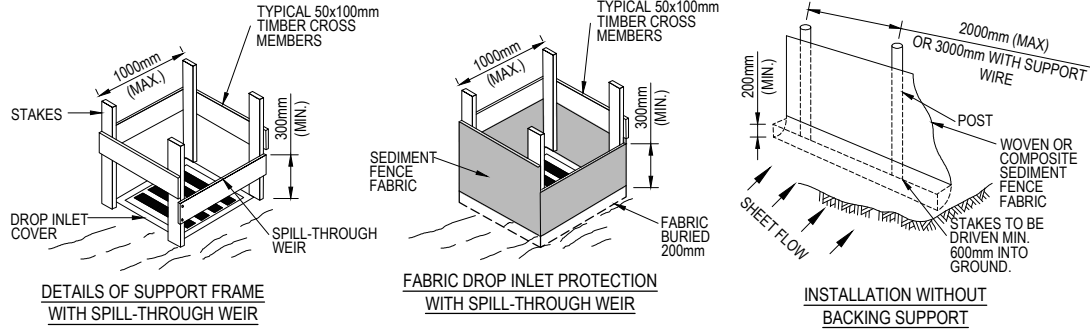
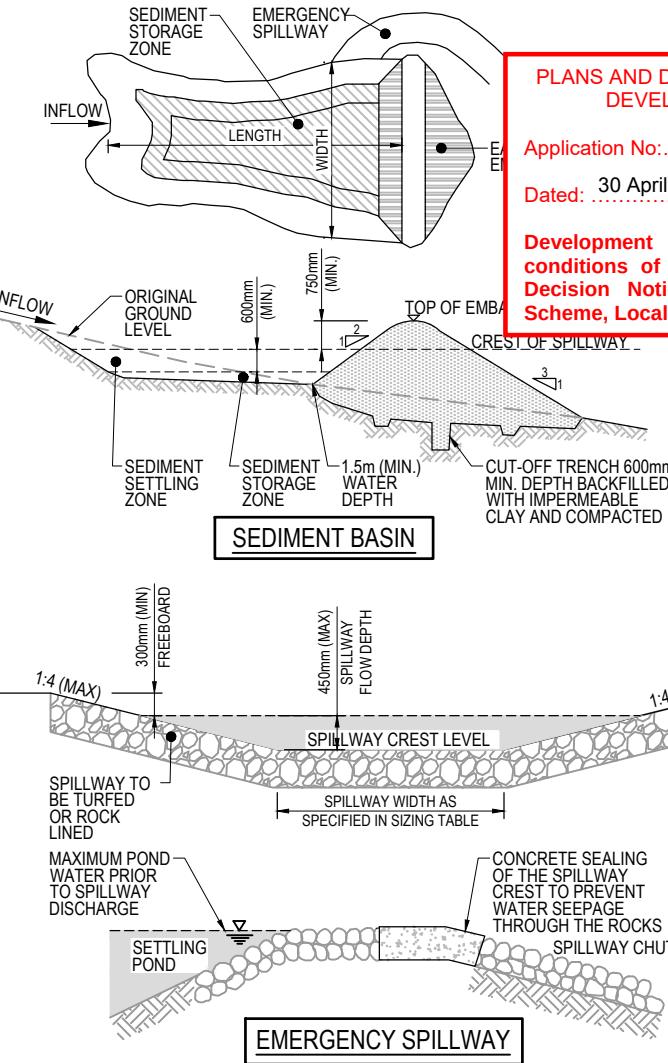
- 6. THE SEDIMENT BASIN SHALL BE TREATED BY FLOCCULATION AFTER ALL RAINFALL EVENTS (> 5mm) USING GYPSUM OR ALUM. MANUAL DOSAGE OF BASIN SHALL BE UNDERTAKEN USING A MINIMUM RATE OF 32kg/100m³ FOR GYPSUM AND 1.5-8kg/100m³ FOR ALUM. HIGHER DOSAGE MAY BE REQUIRED DEPENDING ON SOIL TYPE AND APPLICATION TECHNIQUE. ALUM SHAL NOT BE USED WHERE THE CATCHMENT DISCHARGES DIRECTLY TO A WATERWAY.
- 7. THE CHOSEN FLOCCULENT SHALL BE SPREAD EVENLY OVER THE BASIN SURFACE AREA. THE BASIN WILL REQUIRE A PUMP SYSTEM TO SPRAY SLURRY OF FLOCCULANTS OVER SURFACE AT AN ANGLE OF 10°-20°.
- 8. THE TREATED BASIN SHALL BE DEWATERED WITH A PUMP SYSTEM WITH A FLOATING INLET TO ENSURE SETTLED SEDIMENT IS NOT ENTRAINED AND DISCHARGED. BASIN DEWATERING SHALL OCCUR WITHIN 5 DAYS FROM CONCLUSION OF RAINFALL EVENT.

SITE REHABILITATION

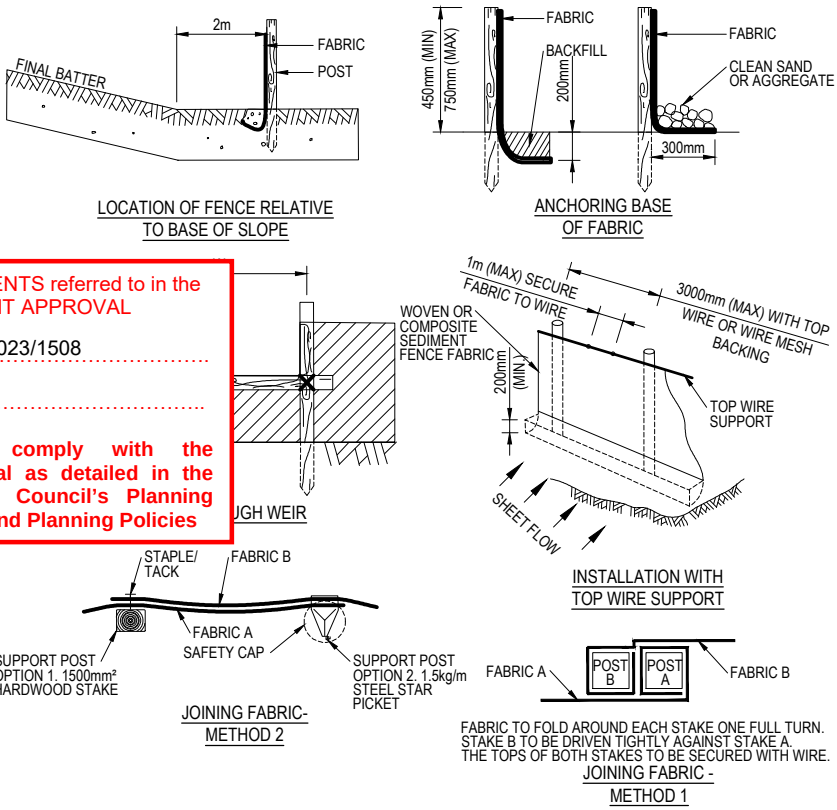
- 1. ALL DISTURBED AREAS IDENTIFIED AS VERY LOW, LOW, MEDIUM, HIGH, OR EXTREME EROSION RISK MUST BE SUITABLY STABILISED WITHIN 60, 30, 20, 10 OR 5 DAYS RESPECTIVELY, OR PRIOR TO ANTICIPATED RAINFALL, WHICHEVER IS THE GREATER, FROM THE DAY THAT SOIL DISTURBANCES ON THE AREA HAVE BEEN FINALISED.
- 2. THE TYPE OF GROUND COVER APPLIED TO COMPLETED EARTHWORKS SHOULD BE COMPATIBLE WITH THE ANTICIPATED LONG-TERM LAND USE, ENVIRONMENTAL RISK, AND SITE REHABILITATION MEASURES.
- 3. UNLESS OTHERWISE DIRECTED BY SUPERINTENDENT OR WHERE DIRECTED BY THE APPROVED REVEGETATION PLAN, TOPSOIL MUST BE PLACED AT A MINIMUM DEPTH OF 75mm ON SLOPES 4:1 (H:V) OR

FLATTER, AND 50mm ON SLOPES STEEPER THAN 4:1.

- 4. THE PH LEVEL (SOIL:WATER 1:5) OF TOPSOIL MUST BE ADEQUATE TO ENABLE ESTABLISHMENT AND GROWTH OF THE SPECIFIED VEGETATION.
- 5. SOIL AMELIORANTS MUST BE ADDED TO THE SOIL IN ACCORDANCE WITH THE APPROVED LANDSCAPE/REVEGETATION PLANS AND/OR SOIL ANALYSIS.
- 6. SOIL DENSITY/COMPACTION MUST BE ADJUSTED PRIOR TO SEEDING/PLANTING IN ACCORDANCE WITH THE RELEVANT SPECIFICATIONS, SOIL REPORT AND/OR APPROPRIATE REFERENCE PLANS.
- 7. ALL UNSTABLE OR DISTURBED SOIL SURFACES MUST BE ADEQUATELY STABILISED AGAINST EROSION TO ACHIEVE A C-FACTOR OF 0.15 OR LESS AS DEFINED BY "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION" LANDCOM 4TH EDITION, 2004 APPENDIX M. THIS EQUATES TO MINIMUM 50% GRASS COVER IF SOIL HAS BEEN RECENTLY DISTURBED ON ALL LANDS. STOCKPILES AND OTHER EXPOSED MATERIALS SCHEDULED TO REMAIN UNATTENDED FOR A DURATION OF MORE THAN 20 DAYS.
- 8. ALL TEMPORARY DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES MUST BE REMOVED AFTER ACHIEVING A SATISFACTORY "OFF-MAINTENANCE INSPECTION" BY THE RELEVANT REGULATORY AUTHORITY.
- 9. DISPOSE OF ANY COLLECTED SEDIMENT OR FILL IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
- 10. IMMEDIATELY PRIOR TO THE CONSTRUCTION OF THE PERMANENT STORMWATER TREATMENT DEVICE, APPROPRIATE FLOW BYPASS CONDITIONS MUST BE ESTABLISHED TO PREVENT SEDIMENT-LADEN WATER ENTERING THE DEVICE.
- 11. IMMEDIATELY FOLLOWING THE CONSTRUCTION OF THE FILTER MEDIA OF THE PERMANENT STORMWATER TREATMENT DEVICE, THE FILTER MEDIA MUST BE COVERED BY HEAVY-DUTY FILTER CLOTH (MINIMUM BIDUM A44 OR EQUIVALENT) AND A MINIMUM 200mm LAYER OF EARTH OR SACRIFICIAL FILTER MEDIA. SUCH EARTH AND FILTER CLOTH MUST NOT BE REMOVED FROM THE DEVICE UNTIL SUITABLE SURFACE CONDITIONS BEING ACHIEVED WITHIN THE BASIN'S CATCHMENT AREA.
- 12. IMMEDIATELY FOLLOWING THE CONSTRUCTION OF THE PERMANENT STORMWATER TREATMENT DEVICE AN APPROPRIATE TYPE 2 SEDIMENT TRAP MUST BE INSTALLED IN A MANNER TO PREVENT SEDIMENT INTRUSION INTO THE DEVICE.
- 13. THE MINIMUM SEDIMENT CONTROL STANDARD FOR THE PROTECTION OF THE PERMANENT STORMWATER TREATMENT DEVICE DURING THE CONSTRUCTION AND MAINTENANCE PHASES IS A TYPE 2 SEDIMENT TRAP. (ALTERNATIVE TO ABOVE)
- 14. PLANT ESTABLISHMENT WITHIN THE PERMANENT STORMWATER TREATMENT DEVICE MUST BE DELAYED UNTIL SEDIMENT INTRUSION INTO THE DEVICE IS SUITABLY UNDER CONTROL.
- 15. UPON SUITABLE CONDITIONS BEING ACHIEVED WITHIN THE BASIN'S CATCHMENT AREA, THE OPERATIONAL FEATURES OF THE PERMANENT STORMWATER TREATMENT SYSTEM MUST BE MADE FULLY OPERATIONAL (I.E. MAINTENANCE AND/OR RECONSTRUCTION AS REQUIRED).
- 16. THE PERMANENT STORMWATER TREATMENT FEATURES OF THE REHABILITATED BASIN MUST NOT BE MADE OPERATIONAL UNTIL ALL UP-SLOPE SITE STABILISATION MEASURES HAVE BEEN IMPLEMENTED AND ARE APPROPRIATELY WORKING TO CONTROL SOIL EROSION AND SEDIMENT RUNOFF IN ACCORDANCE WITH THE SPECIFIED ESC STANDARD. (ALTERNATIVE TO ABOVE).



FABRIC DROP INLET PROTECTION



SEDIMENT FENCE

Change to Ground Level (earthworks and retaining walls) are the only aspects of works approved by OPW/2023/1508.

01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023
Issue	Description	DR	CH	VE	Date

SCALE



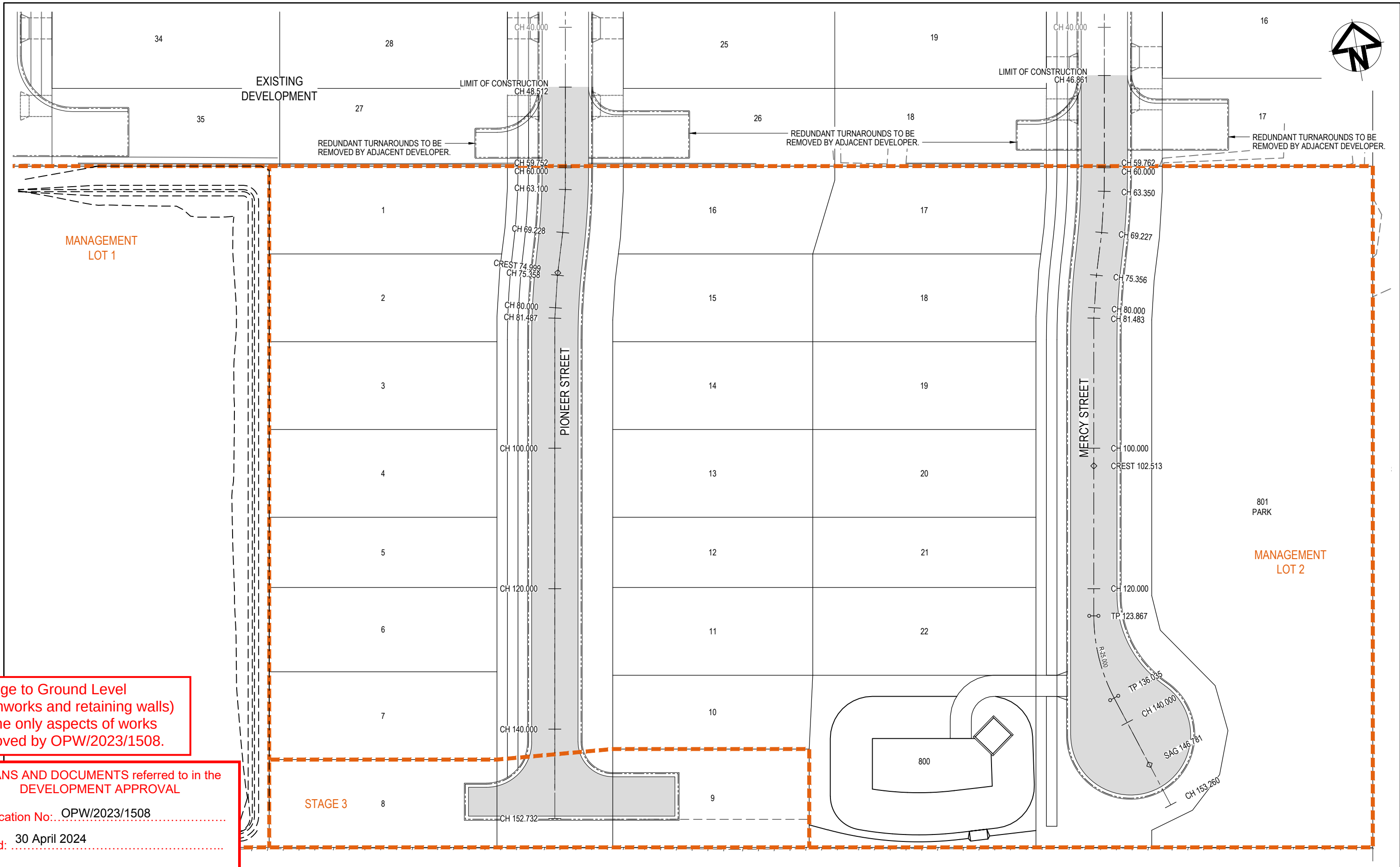
Coomera GA Pty Ltd
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GA Unit Trust
Pty Ltd

Status	FOR APPROVAL CONSTRUCTION SUBJECT TO APPROVAL
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Original Issue Signatures	
Drawn	D. KEARNEY
Designed	G. GESMUNDO
Project Manager	A. SHEPHERD
Verified	R. MULLIGAN
Original Size	A1
Height Datum	AHD
Grid	MGA (ZONE 56)
R.P.E.Q. No.	7850
Date	31.01.2024

Project
54 GEORGE ALEXANDER WAY,
COOMERA

Title
EROSION AND SEDIMENT
CONTROL DETAILS SHEET 3

Arcadis Australia Pacific Pty Limited Level 7, Seabank Building, 12-14 Marine Parade SOUTHPORT QLD 4215 ABN 76 104 485 289 Tel No: +61 7 5503 4800 www.arcadis.com/au	
Project Number	30157884
Issue	01
GAW-AAP-BE-00-DRG-CV-0133	



Change to Ground Level (earthworks and retaining walls) are the only aspects of works approved by OPW/2023/1508.

PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1508

Dated: 30 April 2024

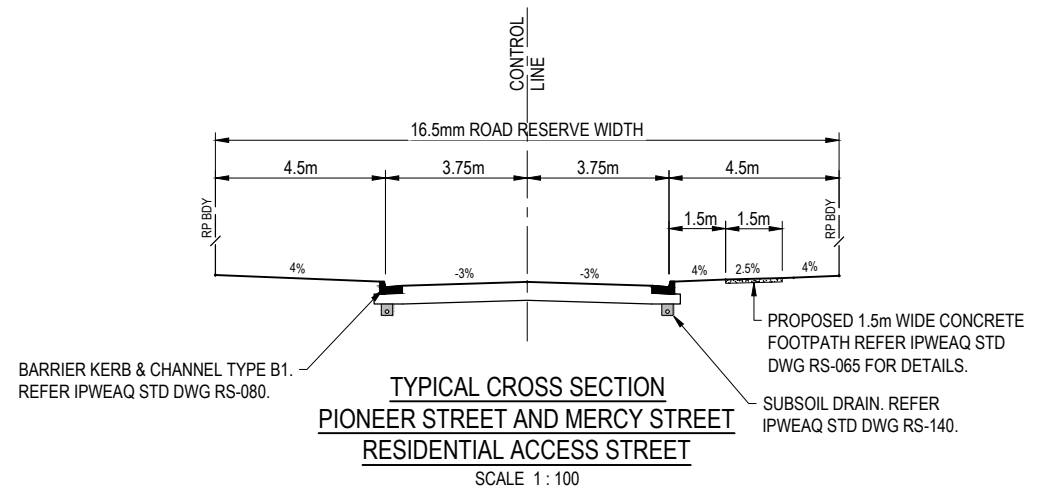
Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

01 ORIGINAL ISSUE Issue Description		DK AS RM 19.12.2023 DR CH VE Date	Scales 0 5 10 15 20 25m 1 : 250	Surveyor	Client Coomera GA Pty Ltd ATF The Coomera GA Unit Trust Pty Ltd	Status FOR APPROVAL CONSTRUCTION SUBJECT TO APPROVAL © Copyright reserved Original Issue Signatures Drawn D. KEARNEY Original Size A1 Designed G. GESMUNDO Height Datum AHD Project Manager A. SHEPHERD Grid MGA (ZONE 56) Verified R. MULLIGAN R.P.E.Q. No: 7850 Date 31.01.2024	Project 54 GEORGE ALEXANDER WAY, COOMERA Title CONTROL LINE SETOUT PLAN	Arcadis Australia Pacific Pty Limited Level 7, Seabank Building, 12-14 Marine Parade SOUTHPORT QLD 4215 ABN 76 104 485 289 Tel No: +61 7 5503 4800 www.arcadis.com/au Project Number 30157884 Issue 01 GAW-AAP-BE-00-DRG-CV-0201
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Date Plotted: 31 Jan 2024 - 09:09AM

File Name: C:\Users\dkaz3682\Documents\Arcadis ACC US\AAU-30157884-54 George Alexander Way\Project Files\10_WIP\10e_Civil_C1\Stage_BE\DRG\GAW-AAP-BE-00-DRG-CV-0201-ControlLine.dwg

CONTROL LINE SETOUT - MERCY STREET								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	1917.408	9668.313	22.552	189°46'50.43"			
IP 2	59.762	1907.256	9609.420	27.261				
IP 3	63.350	1906.631	9605.886	27.441				
IP 4	69.227	1905.280	9600.167	27.735				
IP 5	75.356	1903.508	9594.299	28.041				
IP 6	81.483	1902.100	9588.337	28.347				
TC	123.867	1894.900	9546.568	28.338	189°46'47.70"			
IP 7	129.951	1893.846	9540.452	28.106		R = -25.000	12.167	27°53'07.38"
CT	136.035	1895.775	9534.553	27.945	161°53'40.32"			
IP 8	153.260	1901.128	9518.180	27.873	161°53'40.32"			



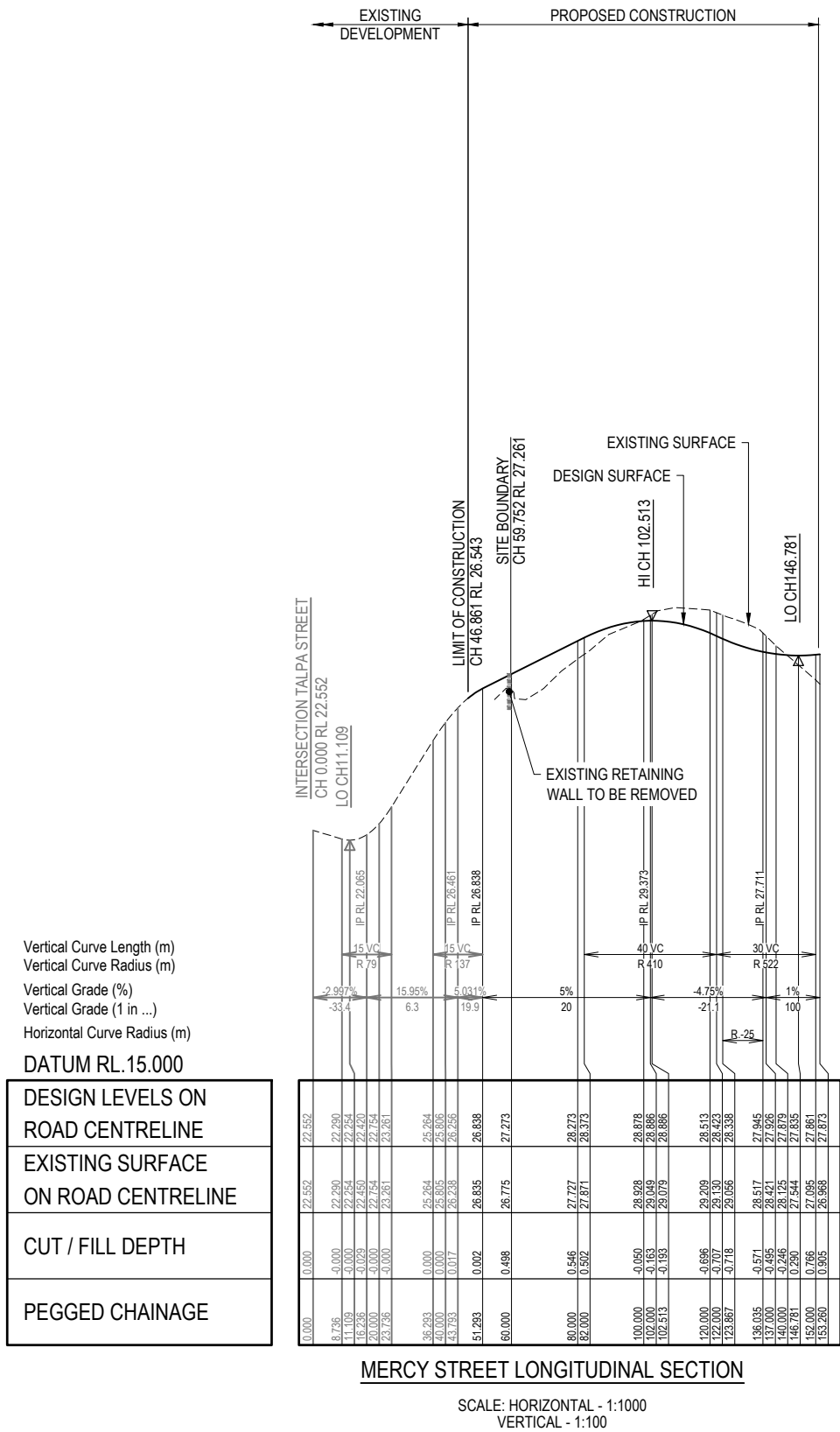
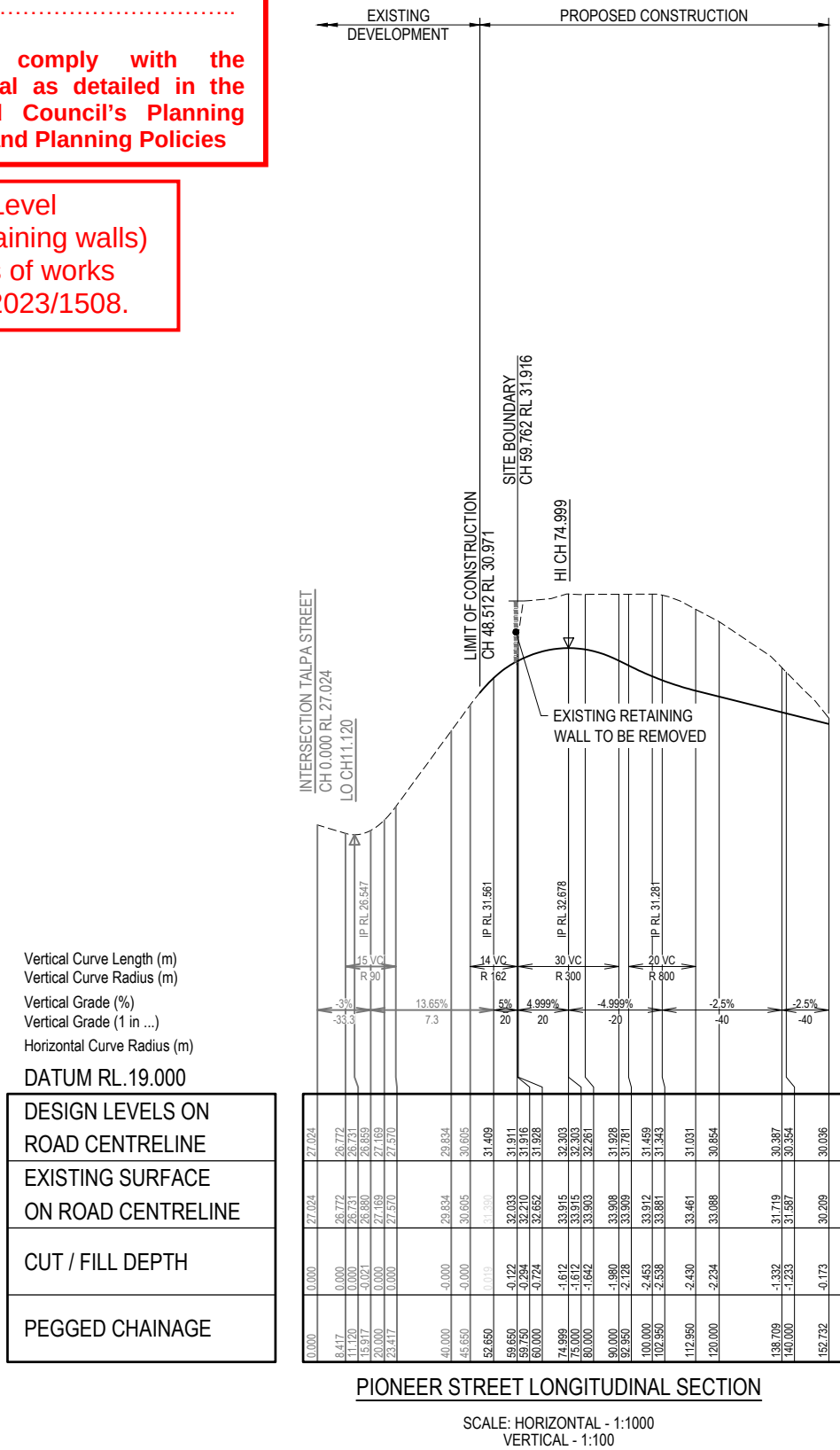
PLANS AND DOCUMENTS referred to in the DEVELOPMENT APPROVAL

Application No: OPW/2023/1508

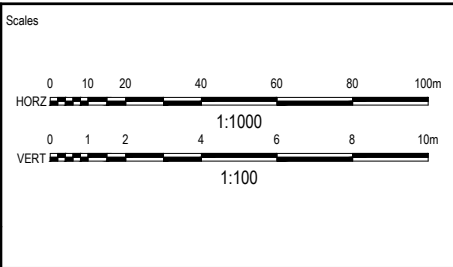
Dated: 30 April 2024

Development shall comply with the conditions of approval as detailed in the Decision Notice and Council's Planning Scheme, Local Laws and Planning Policies

Change to Ground Level (earthworks and retaining walls) are the only aspects of works approved by OPW/2023/1508.



01	ORIGINAL ISSUE	DK	AS	RM	19.12.2023
Issue	Description	DR	CH	VE	Date



Client

Coomera GA Pty Ltd
ATF The Coomera
GA Unit Trust
Pty Ltd

Status	FOR APPROVAL CONSTRUCTION SUBJECT TO APPROVAL
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Verified	R. MULLIGAN
Original Size	A1
Height Datum	AHD
Grid	MGA (ZONE 56)
R.P.E.Q. No.	7850
Date	31.01.2024

Project

54 GEORGE ALEXANDER WAY,
COOMERA

Title

PIONEER STREET AND
MERCY STREET
LONGITUDINAL SECTIONS

Arcadis Australia Pacific Pty Limited
Level 7, Seabank Building, 12-14 Marine Parade
SOUTHPORT QLD 4215
ABN 76 104 485 289
Tel No: +61 7 5503 4800
www.arcadis.com/au

Project Number 30157884

Issue 01

Drawing No. GAW-AAP-BE-00-DRG-CV-0221

Appendix B

Koala Management Plan



Koala Management Plan

SDAP v3.0 State Code 25 (Qld)

54 George Alexander Way, Coomera, Queensland 4209
Prepared for Coomera GA Pty Ltd

August 2024

Job 11241

Document Control

Document: State Code 25 (Qld) Koala Management Plan – 54 George Alexander Way, Coomera, prepared by Saunders Havill Group for Coomera GA Pty Ltd, dated 11 July 2024.

Document Issue

Issue	Date	Prepared by	Checked by
Issue A	6/08/2024	CM/RM	RM

Prepared by
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ABN 24 144 972 949
www.saundershavill.com

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Table of Contents

1. Introduction	1
2. Project description	2
3. Summary of Ecological values	8
4. Impacts to the Koala	13
4.1. Risk Assessment	13
5. KMP Framework	15
5.1. General Management	15
5.1.1 Roles and Responsibilities	15
5.1.2 Environmental Training	16
5.2. Construction Management	16
5.2.1 Fauna	16
5.2.2 Vegetation Management / Sequential Clearing	18
5.2.3 Adaptive Management and Management Strategy	20
6. Management activities	21

Figures

Figure 1:	Site context	3
Figure 2:	Site aerial	4
Figure 3:	Koala Habitat Provision	10
Figure 4:	Regulated Vegetation Management Map	11
Figure 5:	Regulated Vegetation Supporting Map	12

Plans

Plan 1:	Development Assessment	5
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Tables

Table 1:	Risk Assessment	13
Table 2:	Key Management Personnel	16
Table 3:	Management Roles and Responsibilities	21

Acronyms and Abbreviations

Legislation, policies and guidelines

Draft Code	<i>Draft Code of Practice for the Welfare of Animals Affected by Land-clearing and Other Habitat Impacts</i>
EMP Guidelines	<i>Environmental Management Plan Guidelines, prepared by the Commonwealth of Australia, 2014</i>
VMA	<i>Vegetation Management Act 1999 (Qld)</i>

Government departments

CGC	City of Gold Coast
DES	Department of Environment and Science (Qld)
DSDILGP	Department of State Development, Infrastructure, Local Government and Planning (Qld)

General terms

CPP	<i>Gold Coast City Plan 2016 City Plan Policy – Ecological site assessments</i>
DBH	Diameter at Breast Height
ha	hectares
km	kilometres
KMP	Koala Management Plan
mm	millimetres
PO	Performance Outcome
RE	Regional Ecosystems
SAT	Spot Assessment Technique
SDAP	State Development Assessment Provisions
SHG	Saunders Havill Group
VCFMP	Vegetation Clearing and Fauna Management Plan
WHIMP	Wildlife Habitat Impact Mitigation Plan
WPMP	Wildlife Protection and Management Plan

1. Introduction

Saunders Havill Group (SHG) have been engaged by Coomera GA Pty Ltd to prepare a Koala Management Plan (KMP) to demonstrate compliance with the State Development Assessment Provisions (SDAP) *State Code 25: Development in South East Queensland Koala habitat areas version 3* (State Code 25), implemented by the Department of State Development, Infrastructure, Local Government and Planning (DSDILGP). Specifically, this KMP is required to demonstrate compliance with Performance Outcome 10 (PO10) within the State Code 25, to demonstrate the development within a mapped KHA is undertaken in a way that prevents the risk of injury or death of Koalas.

This KMP has been prepared in accordance with the document *Environmental Management Plan Guidelines, prepared by the Commonwealth of Australia, 2014* (EMP Guidelines). The purpose of this KMP is to provide a single explanatory management document for the inclusion in the design, construction and operation of the development. The objectives of this KMP are as follows:

- 1) To highlight the existing flora, fauna and ecosystem values on the subject site and in surrounding areas;
- 2) Describe key results from survey data, including Koala occurrence and the availability and quality of habitat;
- 3) Identify key direct and indirect impacts on Koalas and describe proposed avoidance and mitigation measures; and,
- 4) List out actions and legislative requirements to be implemented to manage construction impacts.

2. Project description

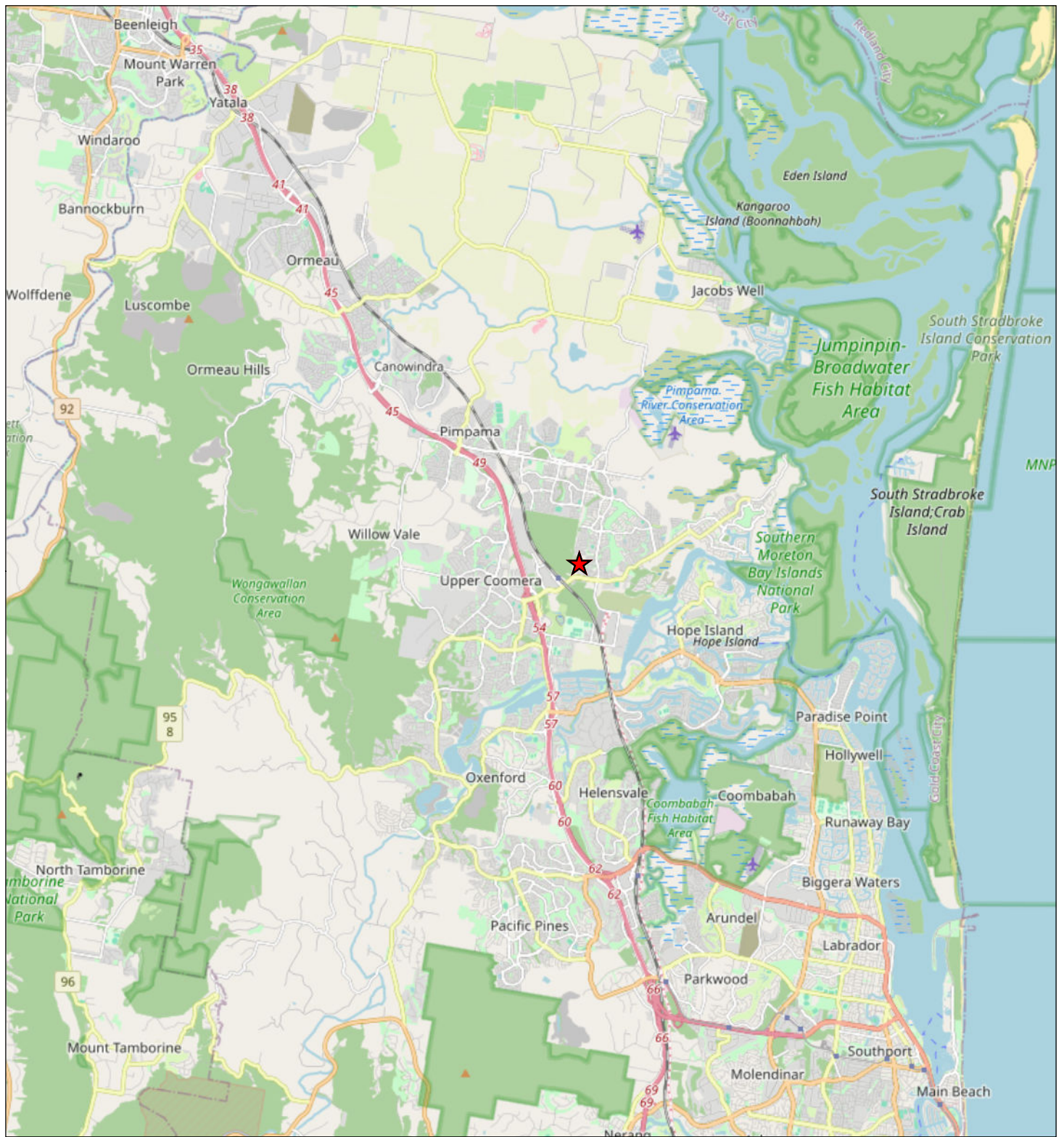
The subject site is located at 54 George Alexander Way, Coomera, Queensland, and is described as Lot 96 on RP187418. Contextually, the site comprises approximately 3.01 hectares (ha) located within the suburb of Coomera.

Parts of the site have been historically cleared and modified for previous residential purposes (refer **Figure 1** for Site Context and **Figure 2** for Site Aerial). Currently, the site is surrounded by residential developments to the east, a new residential development under construction to the north and a larger vegetated lot to the south. Vegetation exists to the west; however, the site is bound by George Alexander Way to the west which is earmarked for road widening. The wider landscape is characterised by significant urban development with a mix of residential, commercial, and retail land uses and is bisected by major infrastructure including the Gold Coast Railway Line and the Pacific Motorway. Lot 101 to the north of the site is approved for high density residential development and the land to the east of Lot 101 has been developed in recent years for detached residential development. Approximately 100m south of the site construction has commenced for residential development further limiting corridors within the locality particularly south. There are no potential future ecological corridors north of the site, with the only potential to link east-west through the proposed bushland reserve along the southern boundary of the proposed layout. As land to the south undergoes future development assessment, further land can be dedicated as Koala Habitat to add to and enhance this future ecological corridor.

The proposed development as per Plan 1 is to redevelop the site into medium and high-density residential lots including internal access roads. The eastern portion of the wider parcel of land has recently received development approval and approved clearing plan to remove Koala Habitat in the east of the site (2302-33455 SRA). The new application proposes a development footprint on the western balanced lot for high density development, and will provide a 20m bushland buffer along the southern side of the property. The site is within the area zoned as medium density residential under the *Gold Coast City Plan 2015*. The western portion of the site is zoned as high density residential. Notably, eastern portion of the site has previously been approved for clearing. Proposed works are considered to meet planning intent of the City Plan. Furthermore, the proposal is consistent with surrounding land uses, with residential uses located to the east and residential development under construction immediately north of the subject site and 100m south across the site (refer **Figure 3**). The project has been designed to link to the adjoining northern development as it will be accessible via access roads to the north.

The site is not located within a KPA, however, approximately 0.57 ha of KHA (142 NJKHT) as shown in **Plan 1** mapped as Koala Habitat Area will be impacted. The subject site is located at the edge of a development and represents a logical area to progress development within the rapidly urbanising Coomera urban centre as it will reduce impacts such as fragmentation of habitat values.

Figure 1: Site context



Legend

★ Application Location

Figure 1
Site Context

Coomera GA
Pty Ltd

File ref. 11241 E Figure 1 Site Context A
Date 11/07/2024
Project George Alexander Way, Coomera

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group

0 1 2 3 4 5 km

Scale (A4): 1:150,000 [GDA 2020 MGA Z56]



Figure 2: Site aerial



Legend

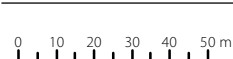
- Site DCDB
- Qld DCDB
- Application Area

Figure 2
Site Aerial

Coomera GA
Pty Ltd

File ref. 11241 E Figure 2 Site Aerial A
Date 11/07/2024
Project George Alexander Way, Coomera

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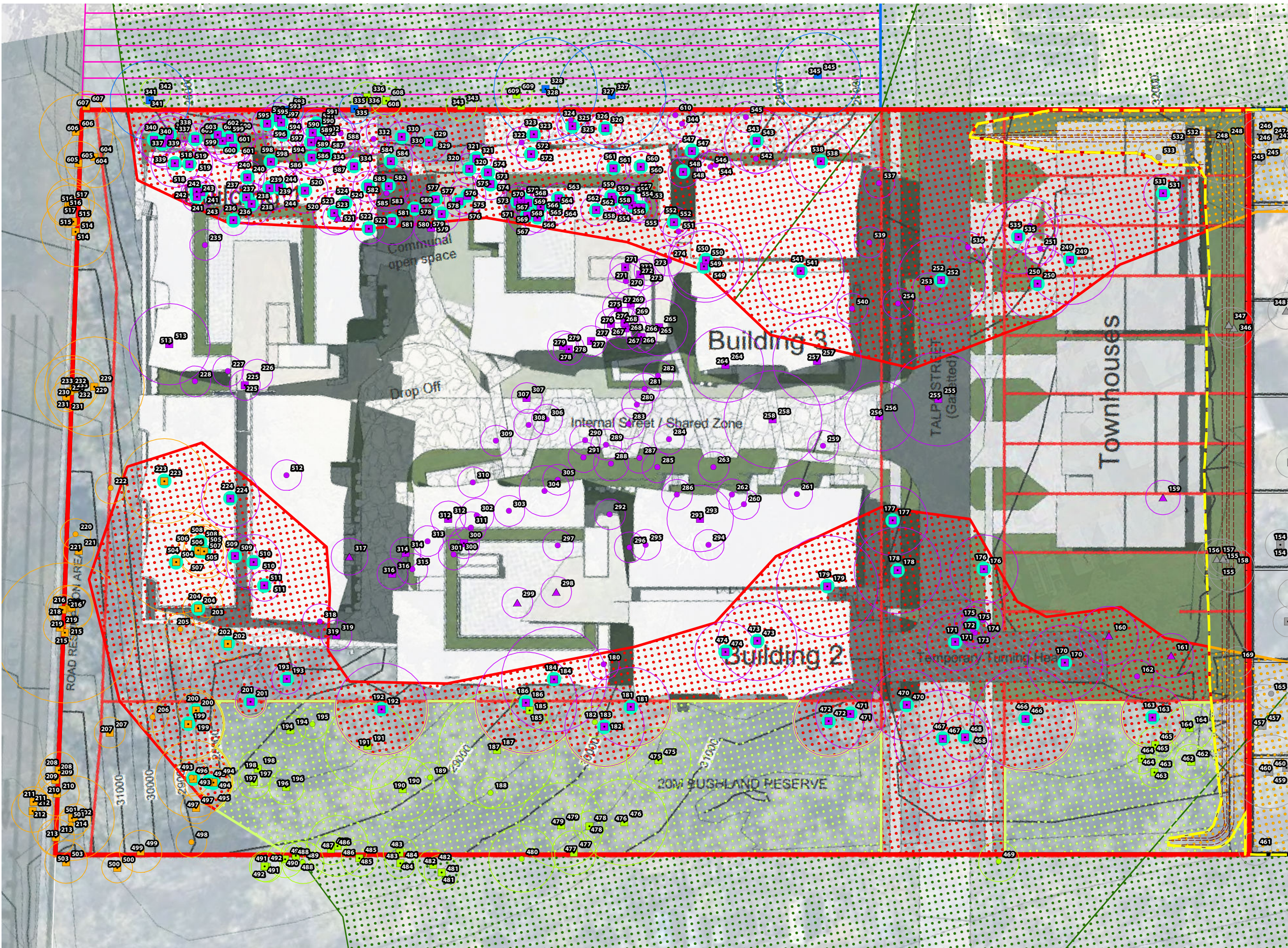
Scale (A4): 1:2,000 [GDA 2020 MGA Z56]



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Plan 1: Development Assessment

1. Development Assessment



Notes:
This plan was prepared as a desktop assessment tool. The information on this plan is not suitable for any other purpose. Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for design or for any financial dealings involving the land. Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

Layer Sources:
© State of Queensland (Department of Resources) 2024.
Updated data available at <http://qldspatialinformation.qld.gov.au/catalogue/>
© Neatmap, 2024.
* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

- Legend**
- Site DCDB
 - Qld DCDB
 - Application Area
 - Approved Clearing Extent
 - Existing High Density Residential Approval
 - Future High Density Residential Approval

- State Overlays**
- Koala Habitat Areas (KHA) [2.00 ha On-site]
 - Impacted KHA Previous Approval [1.25 ha]
 - Impacted KHA Current Approval [0.57 ha]
 - Retained KHA [0.18 ha]

- Engineering (Eastern Works)**
- Lot Design
 - Earthworks Interface

- GPS Tree Plot (with TPZ)**
- Non-juvenile Koala Habitat Tree to Retain Subject to Detail Design [41]
 - Native Tree to Retain Subject to Detail Design [14]
 - Dead Tree (stag) to Retain Subject to Detail Design [2]
 - Non-juvenile Koala Habitat Tree to Remove (Previous Approval) [136]
 - Native Tree to Remove (Previous Approval) [105]
 - Dead Tree (stag) to Remove (Previous Approval) [1]
 - Introduced / Weed Tree to Remove (Previous Approval) [23]
 - Non-juvenile Koala Habitat Tree to Remove (Road Works) [44]
 - Native Tree to Remove (Road Works) [10]
 - Non-juvenile Koala Habitat Tree to Remove (Current Approval) [142]
 - Native Tree to Remove (Current Approval) [69]
 - Introduced / Weed Tree to Remove (Current Approval) [7]
 - Non-juvenile Koala habitat tree in neighbouring lot, retention subject to arborist assessment (Current Approval) [6]
 - Non-juvenile Koala Habitat Tree to Remove (Current Approval) within KHA [127]

Issue	Date	Description	Drawn	Checked
B	5/07/2024	Updates	LS	CM
C	8/08/2024	Updates	LS	CM

0 5 10 15 20 m

Transverse Mercator | GDA 2020 | Zone 56 | 1:500 @ A3

Address / RPD: 96/RP187418

8/08/2024 | 11241 E01 Development Assessment D

3. Summary of Ecological values

Two Ecologists from SHG assessed the project area on 18 October 2022. The entire site was traversed by foot to ensure all vegetation communities, and flora and fauna species were recorded. Particular attention was paid to threatened flora and habitat for threatened fauna species that were listed as possibly occurring on or within the vicinity of the development site, and specific micro assemblages which may support these threatened species.

This included a detailed tree plot to confirm vegetation habitat structure and status, and meandering searches for presence of Koala in the forms of scats and specimens where habitat was considered of suitable size and structure to potentially support Koala. As detailed in the State Code 25 Response and Ecological Assessment Report (EAR), the patch of KHA located on and directly adjoining the site is considered relatively isolated and is anticipated to become increasingly fragmented due to surrounding development approvals and as the planning intent is for medium and high-density residential areas.

The site is mapped as Category X (non-remnant) vegetation and Category B (remnant) vegetation containing Least Concern RE12.11.5 along the western section of the northern and southern boundaries and Least Concern RE 12.11.24 in the eastern portion (refer **Figure 4** and **Figure 5**). Regulated vegetation areas are also mapped as KHA and essential habitat for Koala under the State Planning Policy 2017 (SPP).

Field surveys confirmed on-ground vegetation values are generally reflective of regional ecosystem mapping. Modified areas containing minimal to no native vegetation values are located in the central portion the site and are generally associated with the dwelling and surrounding areas. Relatively intact eucalypt woodland is present within the mapped Category B (remnant) vegetation areas which contains large eucalypt species aligning with RE12.11.24 and RE12.11.5. *Corymbia citriodora* (Spotted Gum), *Eucalyptus fibrosa* (Broad-leaved Red Ironbark), *E. siderophloia* (Grey Ironbark), *E. microcorys* (Tallowwood), *E. carnea* (Broad-leaved White Mahogany) and *E. acemnoides* (White Mahogany).

The understorey contains a mix of *Acacia disparrima* (Hickory Wattle), *Lophostemon sauveolens* (Swamp Box), *Melaleuca saligna* (White Bottlebrush) and *Allocasuarina littoralis* (Black She-oak). The ground and shrub layer throughout the site is modified in previously cleared areas, particularly surrounding the dwelling. Ground layer weed species including *Senecio madagascariensis* (Fireweed) and *Ageratum houstonianum* (Blue Billygoat Weed) were recorded.

The property contains two constructed dams, one in the north-western corner of the site and a second smaller dam in the north-eastern corner. The dam in the north-eastern corner is surrounded by *Acacia disparrima* (Hickory Wattle) and *Acacia concurrens* (Black Wattle) along with *Lophostemon sauveolens* (Swamp Box) and *Allocasuarina littoralis* (Black She-Oak). Vegetation surrounding the second larger dam in the west includes *A. disparrima*, *L. sauveolens* and *Melaleuca saligna* (White Bottlebrush).

The field data collected during this period is considered to provide sufficient information to effectively understand and assess the existing ecological features and consequently the constraints that would influence the extent of developable land. The identification of ecological features considered to be of significance was

facilitated through application of the field survey methodology. Field surveys were conducted in accordance with State Guidelines and *Gold Coast City Plan 2016* City Plan Policy – Ecological site assessments (CPP).

Whilst the mapped KHA contains suitable Koala food and shelter trees, the on-site KHA is already relatively fragmented and considered unlikely to provide long-term value as a stepping-stone or patch habitat for any transient Koala. Given the site is surrounded by residential development and George Alexander Way to the west. Due to the increasing demand for housing within the suburb of Coomera (and wider Gold Coast), paired with the high-density zoning of the site, the applicant proposes a more efficient use of the site with a refreshed application including high density residential in the west, and a 20m ecological corridor to the south. The proposed development is designed to connect to the constructed residential subdivision directly to the north and provide a future road connection north/south at two locations.

Additionally, it is important to note vegetated Lot 101 on SP312031 directly to the north holds an approval for high density development and George Alexander Way is earmarked for widening, resuming an area of land along the western boundary for the site and surrounding properties. This land resumption further limits capacity to form a future ecological corridor and has been considered with the provision of ecological corridor to the south of the site, helping to provide an east/west future fauna corridor to more established Koala Habitat in the east and north/east (see **Plan 2 - Connectivity Assessment**).

The site is zoned as high-density residential and medium density residential under the *Gold Coast City Plan 2016* and is located within an urban footprint undergoing significant urban development to support the rapid expansion of the Coomera Town Centre. Notably, the lots located to the north and south of the site are similarly zoned as a mix of medium and high-density residential, with residential development already under construction on land to the north and to the south approximately 100m. The proposal for a residential subdivision is consistent with the local planning intent for the site. It is worth noting that the eastern side of Lot 96 on RP187418 is currently under clearing approval from Gold Coast City Council and SARA. Therefore, the state mapped CKHA is not reflective of the true area of potential KH on adjoining land and consequently possible connectivity onsite and through the locality. **Figure 3** graphically displays the true extent of KHA within the vicinity of the site, taking into account land cleared with new housing developments, easements, and existing approvals both prior to introduction of Koala legislation in Planning Act (Lot 101), and the clearing approval over the subject site.

The proposed development will impact approximately 1.57 ha of mapped KHA containing 142 NJKHTs.

Figure 3: Koala Habitat Provision



Legend

- Site DCDB
- Qld DCDB
- Application Area
- Core Remnant Koala Habitat Areas
- Core Regrowth Koala Habitat Areas
- KHA Approved for Removal Under Past Approval
- KHA Removed and Land Developed
- KHA to be Removed Under Future Approval
- KHA Mapped on High Density Approval Site
- KHA Mapped on Easements (Exemptions)

Figure 3

Koala Priority Areas and
Koala Habitat Areas

File ref. 11241 E Figure 3 Koala 2019 B
Date 8/08/2024
Project George Alexander Way, Coomera

0 10 20 30 40 50 m

Scale (A4): 1:2,000 [GDA 2020 MGA Z56]

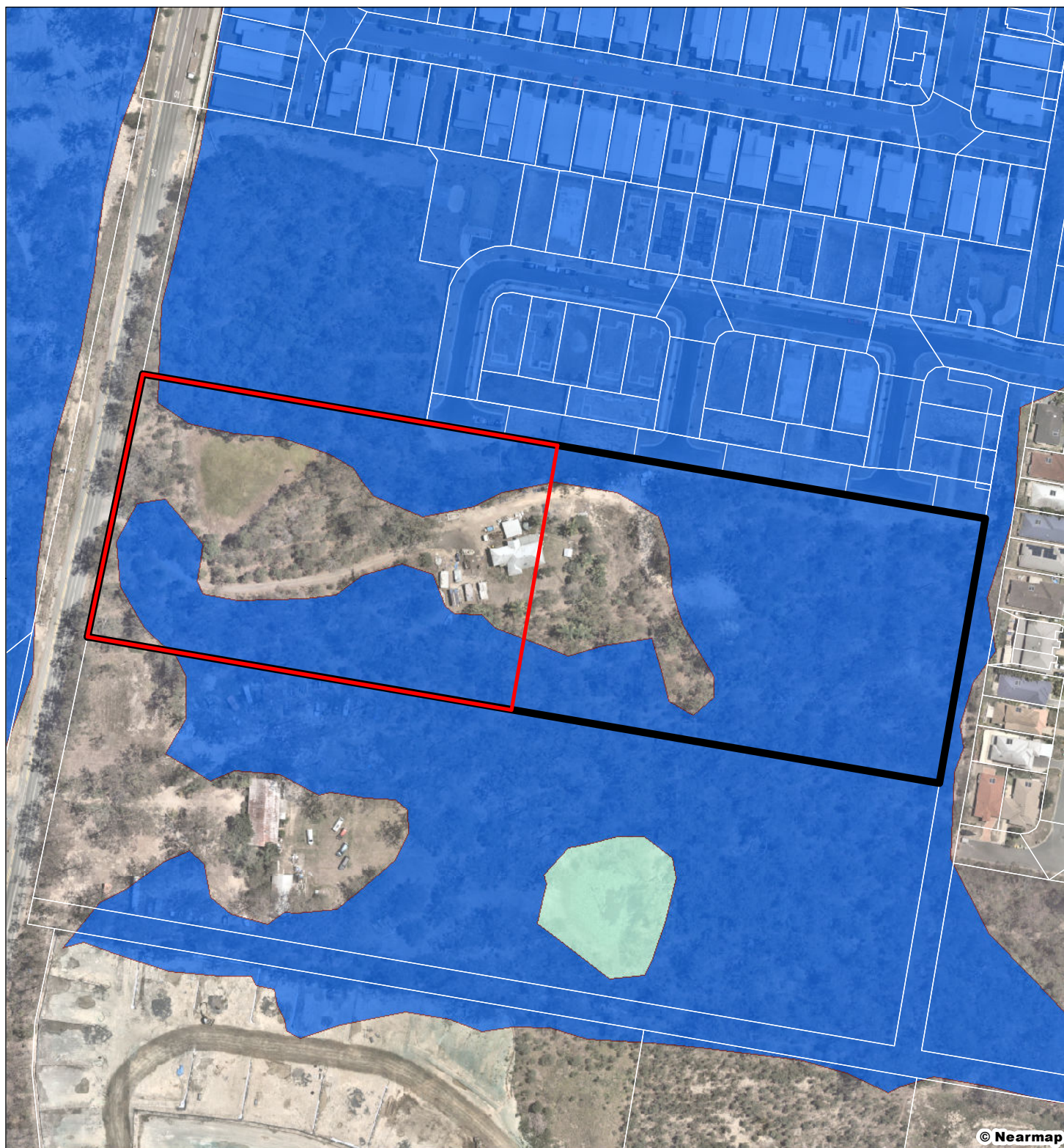


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Figure 4: Regulated Vegetation Management Map



Legend



Site DCDB



Qld DCDB



Application Area

Regulated Vegetation



Category A area -
Vegetation Offset/Compliance
notices/VDecs



Category B area -
Remnant vegetation



Category C area -
High value regrowth
vegetation



Category R area -
Reef regrowth
watercourse vegetation



Category X area -
Vegetation not regulated
under the VMA



Water



Area not categorised

Figure 4

Regulated Vegetation Management Map

File ref. 11241 E Figure 4 RVMM A

Date 11/07/2024

Project George Alexander Way, Coomera

0 10 20 30 40 50 m

Scale (A4): 1:2,000 [GDA 2020 MGA Z56]



Coomera GA
Pty Ltd

SH saunders
havill
group

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Figure 5: Regulated Vegetation Supporting Map

4. Impacts to the Koala

The following direct and indirect impacts have been identified as having potential to occur as a result of construction.

Construction Impacts for current application in western portion of site:

- Direct loss of approximately 0.57 ha of mapped KHA habitat.
- Indirect loss of habitat through edge effects.
- Loss of 142 non-juvenile koala habitat trees (NJKHTs) within mapped KHA.
- Potential loss of an additional seven (6) NJKHTs subject to arborist assessment and supervision.
- Potential for injury or mortality caused by vegetation clearing.
- Potential for injury or mortality caused by vehicle use during construction.
- Potential species displacement into surrounding habitat areas.

4.1. Risk Assessment

Each of the identified potential impacts were considered in the context of the proposed action within the Risk Assessment Table (refer **Table 1**) to identify where avoidance and mitigation measures are to be focused.

Table 1: Risk Assessment for entire Lot 96 on RP187418

Impact	Likelihood	Consequence	Risk Rating
Construction Phase			
Direct loss of approximately 1.82 ha of mapped KHA habitat.	Almost certain (A)	Minor (2)	High
Indirect loss of habitat through edge effects	Almost certain (A)	Minor (2)	High
Loss of 322 NJKHTs	Almost certain (A)	Minor (2)	High
Potential loss of an additional seven (12) NJKHTs	Possible (C)	Minor (2)	Moderate
Injury and mortality due to vegetation clearing	Unlikely (D)	Major (4)	Moderate
Injury and mortality due to increased vehicle usage	Unlikely (D)	Major (4)	Moderate
Potential species displacement into other habitat areas	Possible (C)	Minor (2)	Moderate

As identified from the risk assessment above, management measures will focus on avoiding and mitigating impacts caused by:

- Loss of habitat (direct and indirect).

- Risk of injury and death caused by:
 - vegetation clearing; and
 - vehicle strike.
- Barriers to dispersal into surrounding habitat areas.

5. KMP Framework

This KMP focuses on the management and safety of Koalas during the construction of the project. To achieve the objectives of the KMP, as detailed in **Section 1**, the implementation of specific management actions at each phase of project design and construction will occur. Management tasks and actions relevant to the project are explained throughout the following subsections. Specific actions are converted to schedules within **Section 6**, and documented using the S.M.A.R.T criteria (Specific, Measurable, Achievable, Reasonable and Time Specific).

5.1. General Management

5.1.1 Roles and Responsibilities

The successful implementation of this KMP requires a number of key personnel to complete various roles. While many of the contractors for the project are yet to be appointed, these will be specified within on-site working versions of the KMP.

Environmental Coordinator

SHG is the Environmental Coordinator for the project and is responsible for the development of this KMP and documentation for overarching environmental management. SHG will be responsible for managing non-compliance as notified by appointed contractors and sub-contractors, including establishing additional management procedures.

Administering Authority

CGC is the government approval authority for the Local Government Area and issuer of development and operational approvals for the project.

Site Coordinator

The Site Coordinator is a representative of the project team (typically the Project Engineer) and is responsible for coordinating the project consultants and construction contractor.

Site Supervisor

The Site Supervisor is a representative of the Construction Contractor (to be appointed) and is responsible for overseeing all pre-clearing, clearing and construction activities. The Site Supervisor is responsible for ensuring all pre-clearing, clearing and construction activities are undertaken in accordance with this KMP and subsequent environmental management documentation. The Site Contractor will be responsible for engaging and commissioning the Fauna Spotter Catcher.

Fauna Spotter Catcher

A Department of Environment and Science (DES) approved Fauna Spotter Catcher is a person who holds a rehabilitation permit with an extended authority issued by DES specifying the holder may take, keep or use an animal whose habitat is about to be destroyed by a human activity. A DES approved Fauna Spotter Catcher will be engaged by the Proponent for pre-construction and construction phases of the project. It is noted that

the Fauna Spotter Catcher must hold a Rehabilitation Permit and a copy of this permit along with their contact details will be passed on to the Environmental Coordinator. The engaged Fauna Spotter Catcher will be responsible for undertaking pre-clearing surveys of the site and preparing all required pre-clearing and post-clearing reporting. The Fauna Spotter Catcher must be present on site during all clearing activities and is responsible for the relocation of native fauna.

A list of key contacts for the project is contained in **Table 2**.

Table 2: Key Management Personnel

Role	Nominated Person	Company
Proponent/ Project Coordinator	Michael Zielski	Coomera GA Pty Ltd
Environmental Coordinator	TBA	Saunders Havill Group
CGC Contact	TBA	City of Gold Coast
Site Coordinator	TBA	TBA
Principal Site Contractor	TBA	TBA
Registered Fauna Spotter	TBA	TBA

5.1.2 Environmental Training

The KMP will be issued to all site contractors and sub-contractors and will be made available within the site construction office. Elements of compliance with the KMP will form part of the responsibility of the Principal Site Contractor. Training on the KMP will be incorporated as part of the broader environmental management and workplace health and safety procedures for the site. This will include the following management plans actions:

- 1) Providing a copy of the KMP to all site contractors and sub-contractors.
- 2) Requirements of the KMP discussed during site induction.
- 3) Making available the final copy of the KMP within the site construction office.
- 4) Requirements of the KMP to be incorporated into workplace checklists, work method statement and toolbox talks.
- 5) Monthly review and report on compliance with the KMP as part of the Principal Contractor's role.

5.2. Construction Management

5.2.1 Fauna

The sequential clearing of site vegetation will be undertaken in accordance with fauna management protocols implemented by a Fauna Spotter Catcher registered by DES. Additionally, the adoption of aspects of a leading practice fauna management model to guide works prior, during and post construction. This model is cited as the *Draft Code of Practice for the Welfare of Animals Affected by Land-clearing and Other Habitat Impacts*,

endorsed by the Australia Zoo Wildlife Warriors and Voiceless (the Draft Code). Under the Draft Code, the following procedures will apply to all clearing works:

Action 1- Engagement of Fauna Spotter Catcher

This action requires that the developer engage a Fauna Spotter Catcher with full registrations and licences provided in accordance with the DES.

Action 2- Fauna Spotter Catcher to prepare a Wildlife Protection and Management Plan (WPMP)

The WPMP will include the following information:

- description of the project with reference to impacts on wildlife and wildlife habitat;
- pre-development plan of the site showing habitat areas, features, corridors, riparian habitats and adjacent areas;
- results of any fauna surveys including pre-clearance surveys; and
- a wildlife and habitat impact assessment based on the proposed development works.

Action 3- Prepare a Wildlife and Habitat Impact Mitigation Plan (WHIMP)

Following the completion of the WPMP, the Fauna Spotter Catcher will prepare a more detailed WHIMP, which will provide details on:

- measures required to be completed to minimise wildlife and habitat impacts during operational works;
- wildlife capture and removal plan;
- contingency plan for wildlife requiring euthanasia, other veterinary procedures or captive care;
- wildlife storage and housing plan;
- wildlife release and disposal plan; and
- post works measures to minimise impacts on wildlife.

Action 4 – Role of Fauna Spotter Catcher at Pre-Start Meeting

Prior to the commencement of any construction works, a pre-start meeting is to be held between the project manager, site foreperson, plant operators and Local Government representatives (if required). At the pre-start meeting, the Fauna Spotter Catcher is to outline the clearing process and the requirements of the WPMP.

Action 5 – During Construction

The Fauna Spotter Catcher is to be on-site during all phases of construction which involve potential impacts on wildlife or habitat. This will enable the Fauna Spotter Catcher to make any necessary adjustments to the WPMP to cater for any specific issues encountered during the clearing works.

Action 6 – Post Works Reporting (Wildlife Management Report)

During the course of all site works, including the pre-clearance surveys, the Fauna Spotter Catcher is to keep an accurate record of all animals encountered, captured, incidents and disposals for the project. The records

should form part of the post-works Wildlife Management Report to be issued under licence requirements to DES. The Wildlife Management Report should consist of the following three sections:

1. Wildlife Habitat Management Plan – Aspects of the planning, design, construction and ongoing operation of the project in which risks to wildlife have been identified. This plan should also include recommendations and outline the type, frequency and timeframes for monitoring
2. Wildlife Capture and Disposal Plan – Should contain the following details for each captured animals:
 - a. Species.
 - b. Identification name or number.
 - c. Sex (M, F or unknown).
 - d. Approximate Age or Age Class (neonate, juvenile, sub-adult, adult).
 - e. Time and date of capture.
 - f. Method of capture.
 - g. Exact point of capture (GPS coordinates).
 - h. State of health.
 - i. Incidents associated with capture likely to affect health.
 - j. Veterinary intervention or treatments.
 - k. Time held in captivity.
 - l. Disposal method (euthanasia, translocation, re-release).
 - m. Date and time of disposal.
 - n. Detailed of disposal (GPS points of release).
 - o. For released animals, location relative to point of capture.
3. Animal Injury and Euthanasia Report – similar details for the Wildlife Capture and Disposal Plan should be included in this report.

5.2.2 Vegetation Management / Sequential Clearing

Vegetation clearing over the development footprint will occur sequentially and most likely in accordance with an endorsed Vegetation Clearing and Management Plan and Fauna Management Plan (VCFMP) to be provided at the Operational Works phase. VCFMP's if required will detail fauna exclusion fencing to be erected around construction areas to prevent fauna from dispersing into these hostile areas.

Sequential clearing means the clearing of vegetation that:

- ensures any Koalas in the area being cleared have enough time to move out of the clearing zone without human intervention. For sites with an area of more than 3 ha, this means:
 - i. vegetation clearing is to be carried out in stages, where the total area to be cleared in any one stage:
 - is no greater than 50 % of the area of a site that is 6 ha or smaller;

- is no greater than 3 ha or 3 % of the area of a site that is larger than 6 ha.
 - ii. between each stage and the next, there is at least one 12-hour period commencing at 6 pm on one day and concluding at 6 am the following day, during which no trees are cleared on the site.
 - iii. no tree in which a Koala is present, or a tree with a crown overlapping a tree in which a Koala is present, is cleared until the tree is vacated by the Koala.
- ensures vegetation clearing is directed away from threatening processes, or hostile environments, and towards any retained vegetation or habitat links, ensuring that:
 - i. Koalas are not pressured, through loss of habitat, to cross roads or move through developed or disturbed areas, such as residential areas or areas that require movement of greater than 100 m over cleared ground to reach suitable habitat;
 - ii. Koalas are not isolated to an “island” of habitat between hostile environments, such as road and cleared areas, unless there are no other more suitable habitat areas in which to direct Koalas; and
 - iii. Koalas can safely leave the site of clearing and relocate to adjacent habitat through maintained habitat links.

The following additional controls for the appointed DES Fauna Spotter Catcher during vegetation clearing include:

1. No vegetation clearing is to commence or continue without the presence of the appointed DES endorsed Fauna Spotter Catcher.
2. All trees scheduled for removal will be checked on the day of their removal (prior to the start of operations) for the presence of Koalas by the appointed DES endorsed Fauna Spotter Catcher.
3. The appointed DES endorsed Fauna Spotter Catcher is responsible for ensuring, throughout the duration of the clearing operations, that no tree in which a Koala is present, or a tree with a crown overlapping a tree in which a Koala is present, or a tree identified as being a risk to Koalas, should not be felled, damaged or interfered with until the Koala has moved from the clearing zone on its own volition.
4. Where a Koala is present within a clearing zone, the tree will be marked with distinctive flagging (and other advisory means as required) and machinery operators will be briefed on the location of the area. No clearing works can occur within 20 m of the tree retaining a Koala until the animal has moved on via its own volition (where the strategy is to allow the Koala to move of its own accord, overnight). On the following day, the tree and retained area, are to be checked again prior to their removal. If necessary, the procedure is repeated until the Koala has moved.
5. In the event that the Koala is sick or injured and needs medical attention, DES will be contacted and trapping by the Fauna Spotter Catcher may be required to allow the Koala to receive medical attention. Actions will be guided by DES and the Fauna Spotter Catcher.

5.2.3 Adaptive Management and Management Strategy

An adaptive management strategy is to be applied to this KMP to enable it to alter as necessary to better protect Koala from injury or mortality if required. As a part of this strategy the following minimal protocols are to be applied in the event of koala injury or mortality as a result of clearing or construction:

1. Clearing and construction is immediately ceased.
2. The DES is notified in writing within 48 hours of the Koala injury or mortality occurring.
3. Measures for minimising impacts to Koalas as a result of clearing and construction are revised, in consultation with a suitably qualified person to reduce the likelihood of Koala injury or mortality before clearing and construction recommences.

6. Management activities

A number of management activities have been identified within this KMP and broadly explained through **Section 5. Table 3** provides environmental management commitments to be implemented during construction works. Specific details relevant to each management commitment are provided, including timing, funding, responsible parties, and monitoring to ensure each commitment can be achieved. Each suite of management activities is categorised into pre-construction, during construction and operational measures. This KMP will be reviewed annually, or at the completion of each phase of the project, and where necessary edited.

Table 3: Management Roles and Responsibilities

Environmental Management Commitment	Responsibility	Timing	Funding	Monitoring / Frequency
PRE-COMMENCEMENT MANAGEMENT ACTIONS				
1. Provide a copy of the KMP to all contractors and subcontractors, and retain a final copy at the construction office on-site, at all times.	Proponent to provide to principal contractor. Principal Contractor to all sub-contractors	As part of contractor appointment and throughout construction.	Contractor costs associated with action to be included in tender scope funded by Proponent.	Provision for supplying the KMP to the Principal Contractor will occur with contractual appointment. The Principal Contractor is responsible for providing evidence that each appointed sub-contractor has been provided the KMP.
2. Key KMP Criteria to be included on the Workplace Health and Safety and Environmental Management work method statement.	Prepared by the principal contractor as part of other site induction checklists	Checklist to be completed prior to commencement and issued as part of all site inductions.	Principal Contractor via Proponent	The site induction process requires all visitors and personnel at the site to read and acknowledge work method statements as part of a signed checklist. This is provided to and signed by each new entrant to the site as part of induction procedures.
3. Contractor will review project compliance with the KMP, on a monthly basis, if required.	Principal Contractor in their role as Superintendent for the project.	Monthly	Principal Contractor via Proponent	Review of compliance on a monthly basis. Any non-compliances must be reported immediately.

Environmental Management Commitment	Responsibility	Timing	Funding	Monitoring / Frequency
4. Engagement of DES approved Fauna Spotter Catcher - ensure Fauna Spotter Catcher retains all necessary licenses and accreditations.	Proponent (or as passed onto Principal contractor)	Before clearing commences on any stage of works and during construction including any post construction reporting.	Proponent	Pre-clearance report issued to the Environmental Coordinator prior to commencement of works. Fauna Spotter Catcher on site during all vegetation clearing works.
5. Develop Wildlife Protection and Management Plan (Prepared in accordance with elements of the Draft Queensland Code of Practice for the Welfare of Animals affected by Land Clearing).	Fauna Spotter Catcher	Before construction commences.	Proponent	Prior to commencement of clearing in any stage.
6. Develop Wildlife and Habitat Impact Mitigation Plan (Prepared in accordance with elements of the Draft Queensland Code of Practice for the Welfare of Animals affected by Land Clearing).	Fauna Spotter Catcher	Before construction commences.	Proponent	Prior to commencement of clearing in any stage
7. Attendance of Fauna Spotter Catcher at Pre-Start Meeting.	Fauna Spotter Catcher / Principal contractor	At the pre-start meeting clearing works.	Proponent	Fauna Spotter Catcher to confirm attendance.
8. Install temporary fauna exclusion fence or other suitable barrier around construction areas to prevent koala access into construction zone.	Contractors	After the clearing is completed and prior to construction occurring within the development area.	Proponent	Fence is to be monitored monthly by the Principal Contactor.

DURING CONSTRUCTION MANAGEMENT ACTIONS

Environmental Management Commitment	Responsibility	Timing	Funding	Monitoring / Frequency
9. All clearing of koala habitat is to occur in a staged and sequential pattern enabling the directional flushing of native animals as guided by the suitably qualified Fauna Spotter Catcher.	Principal Contractor and or appointed clearing sub-contractor.	At the time of clearing works for each stage	Proponent	Staged and sequential clearing may also be guided by the VCFMP if conditioned. Monitoring occurs as part of pre-start and completion inspections if required by officers from CGC.
10. Stop works procedures for clearing vegetation supporting any Koalas until such time that any present Koalas vacate the vegetation or are relocated by a suitable qualified person.	Fauna Spotter Catcher / Principal Contractor and or appointed clearing sub-contractor.	During clearing no tree in which a Koala is present, or a tree with a crown overlapping a tree in which a Koala is present, or a tree identified as being a risk to Koalas, to be felled, damaged or interfered with until the Koala has moved from the clearing zone of its own volition.	Proponent	Where a Koala is present within a clearing zone, the tree will be marked with distinctive flagging (and other advisory means as required) and machinery operators will be briefed on the location of the area. No clearing works can occur within 20 m of the tree retaining a Koala until the animal has moved on via its own volition (where the strategy is to allow the Koala to move of its own accord, overnight). On the following day, the tree and retained area, are to be checked again prior to their removal. If necessary, the procedure is repeated until the Koala has moved. In the event the Koala is sick or injured and needs medical attention, DES will be contacted and trapping by the Fauna Spotter Catcher may be required to allow the Koala to receive medical attention.
11. A Post clearing and construction works Wildlife Management Report is to be prepared by the appointed Fauna Spotter Catcher at the completion of each stage of works - Prepared in accordance with elements of the <i>Draft Queensland Code of Practice for the Welfare of Animals affected by Land Clearing</i> .	Fauna Spotter/Catcher	Records to be kept during construction and final report submitted at completion of works	Proponent	Within 10 working days of the conclusion of each stage of clearing.

Appendix C

Tree Schedule

Tree Schedule - Job 11241 54 George Alexander Way, Coomera (Coomera GA Pty Ltd) 29/07/2024																															
Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details			
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes	
1	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	620		620	195	28.0	16.0	7.4	2.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
2	<i>Corymbia intermedia</i>	Pink Bloodwood	330		330	104	6.0	3.0	4.0	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
3	<i>Acacia concurrens</i>	Black Wattle	110	90	142	45	4.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
4	<i>Eucalyptus microcorys</i>	Tallowwood	340	340	481	151	16.0	7.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
5	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	830		830	261	27.0	14.0	10.0	3.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
6	<i>Corymbia intermedia</i>	Pink Bloodwood	280		280	88	12.0	6.0	3.4	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
7	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	220		220	69	15.0	6.0	2.6	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	Old	-	-	-	-	Remove (Previous Application)		
8	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	170		170	53	7.0	4.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
9	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	800		800	251	28.0	16.0	9.6	3.0	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termite nest	-	Remove (Previous Application)		
10	<i>Acacia concurrens</i>	Black Wattle	120		120	38	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
11	<i>Acacia concurrens</i>	Black Wattle	130		130	41	4.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
12	<i>Acacia concurrens</i>	Black Wattle	110		110	35	5.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
13	<i>Corymbia citriodora</i>	Spotted Gum	110		110	35	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
14	<i>Acacia concurrens</i>	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
15	<i>Acacia concurrens</i>	Black Wattle	120		120	38	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
16	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
17	<i>Acacia concurrens</i>	Black Wattle	140		140	44	6.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
18	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
19	<i>Syagrus romanzoffiana</i>	Cocos Palm	250		250	79	6.0	5.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
20	<i>Allocasuarina littoralis</i>	Black She-oak	220		220	69	7.0	4.0	2.6	1.8	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
21	<i>Schefflera actinophylla</i>	Umbrella Tree	150	90	175	55	7.0	3.0	2.1	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
22	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	100		100	31	5.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	Introduced	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
23	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
24	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
25	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
26	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
27	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
28	<i>Allocasuarina littoralis</i>	Black She-oak	150		150	47	7.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
29	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
30	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	6.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
31	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
32	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
33	<i>Eucalyptus microcorys</i>	Tallowwood	270		270	85	14.0	6.0	3.2	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
34	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	410		410	129	18.0	10.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
35	<i>Corymbia citriodora</i>	Spotted Gum	520		520	163	22.0	12.0	6.2	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
36	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	470		470	148	20.0	10.0	5.6	2.4	Regular	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
37	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
38	<i>Corymbia intermedia</i>	Pink Bloodwood	290		290	91	14.0	7.0	3.5	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
39	<i>Corymbia citriodora</i>	Spotted Gum	310		310	97	18.0	5.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
40	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
41	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
42	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
43	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
44	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details		
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
45	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
46	<i>Allocasuarina littoralis</i>	Black She-oak	140		140	44	7.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	Small	-	-	Remove (Previous Application)	
47	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
48	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
49	<i>Allocasuarina littoralis</i>	Black She-oak	180		180	57	7.0	3.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
50	<i>Acacia concurrens</i>	Black Wattle	130		130	41	7.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
51	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	340		340	107	21.0	8.0	4.1	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
52	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
53	<i>Allocasuarina littoralis</i>	Black She-oak	150		150	47	6.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
54	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	380		380	119	21.0	8.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
55	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	6.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
56	<i>Corymbia citriodora</i>	Spotted Gum	410		410	129	23.0	11.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
57	<i>Corymbia intermedia</i>	Pink Bloodwood	300		300	94	16.0	7.0	3.6	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
58	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	4.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
59	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	4.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
60	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	630		630	198	22.0	12.0	7.6	2.7	Regular	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
61	<i>Acacia concurrens</i>	Black Wattle	250		250	79	6.0	4.0	3.0	1.8	Regular	-	-	-	-	-	Typical	Minor	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
62	<i>Corymbia citriodora</i>	Spotted Gum	310		310	97	18.0	8.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
63	<i>Corymbia citriodora</i>	Spotted Gum	260		260	82	18.0	7.0	3.1	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
64	<i>Corymbia citriodora</i>	Spotted Gum	310		310	97	18.0	7.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
65	<i>Corymbia citriodora</i>	Spotted Gum	300	260	397	125	20.0	8.0	4.8	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
66	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	390		390	123	23.0	11.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
67	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
68	<i>Acacia disparrima</i>	Hickory Wattle	110		110	35	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
69	<i>Acacia disparrima</i>	Hickory Wattle	200		200	63	7.0	4.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
70	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	270		270	85	12.0	6.0	3.2	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
71	<i>Corymbia citriodora</i>	Spotted Gum	680		680	214	24.0	14.0	8.2	2.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
72	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
73	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
74	<i>Acacia concurrens</i>	Black Wattle	170		170	53	6.0	4.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
75	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	280		280	88	12.0	6.0	3.4	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
76	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	370		370	116	20.0	10.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
77	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
78	<i>Acacia concurrens</i>	Black Wattle	120	110	163	51	4.0	3.0	2.0	1.5	Regular	-	-	Die-back	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	Retain	
79	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	100		100	31	4.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
80	<i>Acacia concurrens</i>	Black Wattle	130		130	41	4.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
81	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	510		510	160	21.0	10.0	6.1	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
82	<i>Acacia disparrima</i>	Hickory Wattle	140		140	44	4.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
83	<i>Corymbia citriodora</i>	Spotted Gum	560		560	176	23.0	10.0	6.7	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)	
84	<i>Corymbia citriodora</i>	Spotted Gum	280		280	88	17.0	7.0	3.4	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
85	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	510		510	160	25.0	12.0	6.1	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
86	DEAD/STAG		450		450	141	24.0	12.0	5.4	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)	
87	<i>Acacia disparrima</i>	Hickory Wattle	140	90	166	52	5.0	3.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
88	<i>Allocasuarina littoralis</i>	Black She-oak	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
89	<i>Corymbia citriodora</i>	Spotted Gum	370		370	116	18.0	7.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details				
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes		
92	<i>Eucalyptus microcorys</i>	Tallowwood	450	420	616	193	20.0	14.0	7.4	2.7	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)	koala scats	
93	<i>Corymbia citriodora</i>	Spotted Gum	360		360	113	23.0	10.0	4.3	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
94	<i>Allocasuarina littoralis</i>	Black She-oak	210		210	66	5.0	4.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
95	<i>Eucalyptus microcorys</i>	Tallowwood	380		380	119	18.0	9.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
96	<i>Corymbia citriodora</i>	Spotted Gum	390		390	123	21.0	12.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
97	<i>Corymbia citriodora</i>	Spotted Gum	320		320	101	21.0	7.0	3.8	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
98	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	510		510	160	25.0	15.0	6.1	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
99	<i>Corymbia citriodora</i>	Spotted Gum	330	270	426	134	16.0	6.0	5.1	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
100	<i>Corymbia citriodora</i>	Spotted Gum	350		350	110	20.0	10.0	4.2	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
101	<i>Corymbia citriodora</i>	Spotted Gum	850		850	267	23.0	12.0	10.2	3.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
102	<i>Acacia melanoxylon</i>	Australian Blackwood	110		110	35	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
103	<i>Acacia disparrima</i>	Hickory Wattle	150		150	47	6.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
104	<i>Acacia concurrens</i>	Black Wattle	120		120	38	5.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
105	<i>Acacia disparrima</i>	Hickory Wattle	200		200	63	5.0	3.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
106	<i>Eucalyptus microcorys</i>	Tallowwood	480		480	151	22.0	10.0	5.8	2.4	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
107	<i>Acacia disparrima</i>	Hickory Wattle	150		150	47	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
108	<i>Corymbia citriodora</i>	Spotted Gum	360		360	113	20.0	10.0	4.3	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
109	<i>Acacia concurrens</i>	Black Wattle	100		100	31	4.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
110	<i>Eucalyptus microcorys</i>	Tallowwood	630		630	198	24.0	14.0	7.6	2.7	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
111	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	790		790	248	23.0	15.0	9.5	3.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termite nest	-	-	Remove (Previous Application)		
112	<i>Allocasuarina littoralis</i>	Black She-oak	160		160	50	6.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
113	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	530		530	167	18.0	7.0	6.4	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termite nest	-	-	Remove (Previous Application)		
114	<i>Corymbia intermedia</i>	Pink Bloodwood	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
115	<i>Acacia disparrima</i>	Hickory Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
116	<i>Acacia concurrens</i>	Black Wattle	150		150	47	5.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
117	<i>Corymbia intermedia</i>	Pink Bloodwood	350		350	110	20.0	12.0	4.2	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
118	<i>Eucalyptus microcorys</i>	Tallowwood	540		540	170	18.0	10.0	6.5	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
119	<i>Acacia concurrens</i>	Black Wattle	140		140	44	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
120	<i>Acacia concurrens</i>	Black Wattle	110		110	35	4.0	3.0	2.0	1.3		-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)	
121	<i>Acacia concurrens</i>	Black Wattle	150		150	47	5.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
122	<i>Acacia concurrens</i>	Black Wattle	100		100	31	4.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
123	<i>Eucalyptus microcorys</i>	Tallowwood	380		380	119	14.0	6.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
124	<i>Eucalyptus microcorys</i>	Tallowwood	410		410	129	15.0	6.0	4.9	2.3	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
125	<i>Corymbia citriodora</i>	Spotted Gum	200		200	63	8.0	4.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
126	<i>Eucalyptus microcorys</i>	Tallowwood	330	290	439	138	18.0	7.0	5.3	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
127	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	580		580	182	25.0	12.0	7.0	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
128	<i>Eucalyptus microcorys</i>	Tallowwood	500		500	157	18.0	10.0	6.0	2.5	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	-	Remove (Previous Application)		
129	<i>Corymbia citriodora</i>	Spotted Gum	340		340	107	16.0	8.0	4.1	2.1	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
130	<i>Corymbia intermedia</i>	Pink Bloodwood	380		380	119	22.0	12.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
131	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	460		460	145	23.0	11.0	5.5	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
132	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	300		300	94	15.0	7.0	3.6	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
133	<i>Acacia concurrens</i>	Black Wattle	100	100	141	44	4.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
134	<i>Acacia concurrens</i>	Black Wattle	160		160	50	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	-	Remove (Previous Application)		
135	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	100																													

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details			
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes	
139	<i>Syagrus romanzoffiana</i>	Cocos Palm	180		180	57	6.0	3.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
140	<i>Syagrus romanzoffiana</i>	Cocos Palm	210		210	66	7.0	3.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
141	<i>Acacia concurrens</i>	Black Wattle	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
142	<i>Acacia concurrens</i>	Black Wattle	160		160	50	6.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
143	<i>Pinus elliotii</i>	Slash Pine	160		160	50	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
144	<i>Syagrus romanzoffiana</i>	Cocos Palm	220		220	69	7.0	4.0	2.6	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
145	<i>Syagrus romanzoffiana</i>	Cocos Palm	240		240	75	7.0	4.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
146	<i>Syagrus romanzoffiana</i>	Cocos Palm	200		200	63	8.0	3.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
147	<i>Acacia disparrima</i>	Hickory Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
148	<i>Dypsis lutescens</i>	Golden Cane Palm	100	90, 90, 90, 90	206	65	4.0	3.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
149	<i>Eucalyptus microcorys</i>	Tallowwood	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
150	<i>Acacia concurrens</i>	Black Wattle	190		190	60	6.0	4.0	2.3	1.6	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
151	<i>Acacia concurrens</i>	Black Wattle	110		110	35	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
152	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
153	<i>Acacia concurrens</i>	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
154	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
155	<i>Corymbia citriodora</i>	Spotted Gum	110		110	35	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
156	<i>Syagrus romanzoffiana</i>	Cocos Palm	220		220	69	7.0	4.0	2.6	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
157	<i>Syagrus romanzoffiana</i>	Cocos Palm	210		210	66	7.0	4.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
158	<i>Syagrus romanzoffiana</i>	Cocos Palm	250		250	79	8.0	5.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
159	<i>Solanum mauritianum</i>	Wild Tobacco	130	100, 90	187	59	4.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
160	<i>Corymbia torelliana</i>	Cadaghi	320		320	101	8.0	7.0	3.8	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
161	<i>Corymbia torelliana</i>	Cadaghi	240		240	75	7.0	6.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
162	<i>Acacia concurrens</i>	Black Wattle	180		180	57	7.0	4.0	2.2	1.6	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
163	<i>Corymbia citriodora</i>	Spotted Gum	340		340	107	18.0	10.0	4.1	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	Old	-	-	-	-	Remove (Current Application)		
164	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	250		250	79	16.0	6.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	Old	-	-	-	-	Retain		
165	<i>Acacia concurrens</i>	Black Wattle	120		120	38	4.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
166	<i>Acacia concurrens</i>	Black Wattle	130		130	41	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
167	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	440		440	138	16.0	6.0	5.3	2.3	Irregular	-	-	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
168	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
169	<i>Acacia concurrens</i>	Black Wattle	160		160	50	6.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
170	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	410		410	129	16.0	7.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termite nest	-	Remove (Current Application)		
171	<i>Corymbia intermedia</i>	Pink Bloodwood	310		310	97	18.0	6.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
172	<i>Acacia disparrima</i>	Hickory Wattle	130		130	41	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
173	<i>Acacia disparrima</i>	Hickory Wattle	120	100	156	49	5.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
174	<i>Acacia disparrima</i>	Hickory Wattle	150	130, 90	218	68	6.0	4.0	2.6	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
175	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	200		200	63	14.0	6.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
176	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	370		370	116	21.0	8.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
177	<i>Corymbia citriodora</i>	Spotted Gum	380		380	119	23.0	10.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
178	<i>Corymbia citriodora</i>	Spotted Gum	470		470	148	25.0	14.0	5.6	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
179	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	550		550	173	22.0	10.0	6.6	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
180	<i>Acacia concurrens</i>	Black Wattle	160		160	50	6.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
181	<i>Corymbia citriodora</i>	Spotted Gum	430		430	135	25.0	14.0	5.2	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
182	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	430		430	135	26.0	12.0	5.2	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
183	<i>Acacia concurrens</i>	Black Wattle	110		110	35	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-											

Tree ID	Specimen Details										Canopy Condition Details							Trunk Condition Details					Fauna Details and Habitat Value						Additional Details	
	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
186	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	550		550	173	24.0	12.0	6.6	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
187	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	640		640	201	26.0	15.0	7.7	2.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
188	<i>Acacia concurrens</i>	Black Wattle	100		100	31	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
189	<i>Acacia concurrens</i>	Black Wattle	100		100	31	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	Retain	
190	<i>Eucalyptus acmenoides</i>	White Mahogany	350		350	110	15.0	6.0	4.2	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
191	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	470		470	148	21.0	10.0	5.6	2.4	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Retain	
192	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	500		500	157	25.0	14.0	6.0	2.5	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
193	<i>Corymbia citriodora</i>	Spotted Gum	160		160	50	7.0	2.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
194	<i>Eucalyptus microcorys</i>	Tallowwood	100	90, 90	162	51	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
195	<i>Acacia concurrens</i>	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
196	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	190		190	60	8.0	3.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
197	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	180		180	57	12.0	5.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Retain	
198	<i>Eucalyptus acmenoides</i>	White Mahogany	210		210	66	11.0	5.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Retain	
199	<i>Eucalyptus acmenoides</i>	White Mahogany	270	230, 160	389	122	12.0	6.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
200	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	200		200	63	8.0	5.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
201	<i>Corymbia intermedia</i>	Pink Bloodwood	120		120	38	6.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
202	<i>Lophostemon suaveolens</i>	Swamp Box	110	90	142	45	5.0	2.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
203	<i>Acacia concurrens</i>	Black Wattle	110		110	35	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
204	<i>Eucalyptus acmenoides</i>	White Mahogany	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
205	<i>Acacia concurrens</i>	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
206	<i>Allocasuarina littoralis</i>	Black She-oak	140		140	44	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
207	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
208	<i>Corymbia intermedia</i>	Pink Bloodwood	200		200	63	7.0	4.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
209	<i>Corymbia intermedia</i>	Pink Bloodwood	180		180	57	7.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
210	<i>Corymbia intermedia</i>	Pink Bloodwood	240		240	75	7.0	5.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
211	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	120		120	38	6.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
212	<i>Corymbia intermedia</i>	Pink Bloodwood	230		230	72	8.0	5.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
213	<i>Corymbia citriodora</i>	Spotted Gum	200		200	63	10.0	5.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
214	<i>Acacia concurrens</i>	Black Wattle	100		100	31	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
215	<i>Eucalyptus acmenoides</i>	White Mahogany	760		760	239	26.0	12.0	9.1	2.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	Large	-	-	-	Remove (Road Works)	
216	<i>Eucalyptus acmenoides</i>	White Mahogany	250		250	79	8.0	4.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
217	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	230		230	72	8.0	4.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
218	<i>Eucalyptus acmenoides</i>	White Mahogany	160		160	50	7.0	4.0	2.0	1.5	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
219	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	180		180	57	9.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termite nest	-	Remove (Road Works)	
220	<i>Acacia concurrens</i>	Black Wattle	100		100	31	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
221	<i>Corymbia intermedia</i>	Pink Bloodwood	100		100	31	5.0	1.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
222	<i>Acacia concurrens</i>	Black Wattle	100		100	31	4.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
223	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	460		460	145	22.0	8.0	5.5	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	Old	-	-	-	-	Remove (Road Works)	
224	<i>Eucalyptus acmenoides</i>	White Mahogany	260	180	316	99	8.0	5.0	3.8	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
225	<i>Melaleuca quinquenervia</i>	Broad-leaved Paperbark	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
226	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	4.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
227	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
228	<i>Allocasuarina littoralis</i>	Black She-oak	100	90	135	42	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
229	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	540		540	170	18.0	8.0	6.5	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
230	<i>Allocasuarina littoralis</i>	Black She-oak	220		220	69	4.0	3.0	2.6	1.8																				

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details		
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
233	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	140		140	44	7.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
234	<i>Corymbia citriodora</i>	Spotted Gum	270	190, 160, 130	389	122	12.0	7.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
235	<i>Acacia concurrens</i>	Black Wattle	160		160	50	5.0	3.0	2.0	1.5	Regular	-	-	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
236	<i>Corymbia intermedia</i>	Pink Bloodwood	120	90	150	47	7.0	2.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
237	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	180		180	57	8.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
238	<i>Corymbia intermedia</i>	Pink Bloodwood	140	120, 100, 90	228	72	7.0	3.0	2.7	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
239	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	210	90, 90	246	77	10.0	4.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
240	<i>Eucalyptus acmenoides</i>	White Mahogany	160	90	184	58	8.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
241	<i>Corymbia intermedia</i>	Pink Bloodwood	120	90	150	47	7.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
242	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	150		150	47	10.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
243	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	100		100	31	3.0	2.0	2.0	1.3	Regular	-	-	-	-	Lopped	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
244	<i>Eucalyptus acmenoides</i>	White Mahogany	150	140, 100	228	72	7.0	4.0	2.7	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
245	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	540		540	170	26.0	12.0	6.5	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	Old	-	-	-	-	-	Remove (Previous Application)	
246	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
247	<i>Corymbia citriodora</i>	Spotted Gum	150		150	47	10.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
248	<i>Corymbia citriodora</i>	Spotted Gum	480		480	151	22.0	10.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
249	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	490		490	154	25.0	13.0	5.9	2.5	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
250	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	400		400	126	26.0	12.0	4.8	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
251	<i>Acacia disparrima</i>	Hickory Wattle	100		100	31	4.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
252	<i>Corymbia citriodora</i>	Spotted Gum	480		480	151	22.0	14.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
253	<i>Acacia concurrens</i>	Black Wattle	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
254	<i>Acacia concurrens</i>	Black Wattle	140		140	44	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
255	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	510		510	160	25.0	12.0	6.1	2.5	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
256	<i>Corymbia intermedia</i>	Pink Bloodwood	380		380	119	14.0	7.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
257	<i>Corymbia citriodora</i>	Spotted Gum	480		480	151	24.0	14.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
258	<i>Corymbia citriodora</i>	Spotted Gum	530		530	167	23.0	12.0	6.4	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
259	<i>Acacia concurrens</i>	Black Wattle	160		160	50	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
260	<i>Acacia concurrens</i>	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
261	<i>Acacia concurrens</i>	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
262	<i>Acacia concurrens</i>	Black Wattle	100	90	135	42	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
263	<i>Acacia concurrens</i>	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
264	<i>Corymbia citriodora</i>	Spotted Gum	410		410	129	20.0	10.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
265	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	310		310	97	13.0	6.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
266	<i>Corymbia citriodora</i>	Spotted Gum	110		110	35	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
267	<i>Corymbia citriodora</i>	Spotted Gum	230		230	72	16.0	7.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
268	<i>Corymbia intermedia</i>	Pink Bloodwood	110		110	35	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
269	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
270	<i>Acacia disparrima</i>	Hickory Wattle	200		200	63	7.0	3.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
271	<i>Corymbia citriodora</i>	Spotted Gum	130		130	41	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
272	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
273	<i>Corymbia citriodora</i>	Spotted Gum	140		140	44	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
274	<i>Acacia disparrima</i>	Hickory Wattle	100		100	31	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
275	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
276	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	140		140	44	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
277	<i>Corymbia citriodora</i>	Spotted																												

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details		
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
280	Acacia disparrima	Hickory Wattle	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
281	Acacia disparrima	Hickory Wattle	110	100	149	47	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
282	Acacia concurrens	Black Wattle	130		130	41	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
283	Acacia concurrens	Black Wattle	100		100	31	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
284	Allocasuarina littoralis	Black She-oak	120		120	38	5.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
285	Acacia concurrens	Black Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
286	Acacia concurrens	Black Wattle	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
287	Acacia concurrens	Black Wattle	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
288	Acacia concurrens	Black Wattle	190		190	60	7.0	4.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
289	Acacia concurrens	Black Wattle	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
290	Acacia concurrens	Black Wattle	130		130	41	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
291	Acacia concurrens	Black Wattle	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
292	Acacia concurrens	Black Wattle	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
293	Eucalyptus fibrosa	Broad-leaved Red Ironbark	360		360	113	18.0	6.0	4.3	2.2	Regular	-	-	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
294	Acacia concurrens	Black Wattle	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
295	Acacia concurrens	Black Wattle	160		160	50	5.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
296	Acacia concurrens	Black Wattle	110		110	35	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
297	Acacia concurrens	Black Wattle	150		150	47	6.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
298	Corymbia torelliana	Cadaghi	100		100	31	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
299	Corymbia torelliana	Cadaghi	110		110	35	4.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
300	Corymbia citriodora	Spotted Gum	130		130	41	6.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
301	Acacia concurrens	Black Wattle	120		120	38	7.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
302	Acacia concurrens	Black Wattle	130	130	184	58	6.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
303	Allocasuarina littoralis	Black She-oak	150		150	47	6.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
304	Acacia concurrens	Black Wattle	200	190	276	87	7.0	5.0	3.3	1.9	Regular	-	Thinning	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
305	Allocasuarina littoralis	Black She-oak	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
306	Acacia concurrens	Black Wattle	160		160	50	6.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
307	Corymbia citriodora	Spotted Gum	100		100	31	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
308	Allocasuarina littoralis	Black She-oak	110		110	35	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
309	Allocasuarina littoralis	Black She-oak	120		120	38	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
310	Acacia concurrens	Black Wattle	100		100	31	6.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
311	Acacia concurrens	Black Wattle	110		110	35	6.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
312	Corymbia citriodora	Spotted Gum	190		190	60	8.0	4.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
313	Allocasuarina littoralis	Black She-oak	100	90, 90	162	51	6.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
314	Eucalyptus fibrosa	Broad-leaved Red Ironbark	100		100	31	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
315	Allocasuarina littoralis	Black She-oak	110		110	35	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
316	Eucalyptus siderophloia	Northern Grey Ironbark	140		140	44	6.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
317	Corymbia torelliana	Cadaghi	200		200	63	7.0	4.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
318	Acacia concurrens	Black Wattle	190		190	60	7.0	4.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
319	Lophostemon suaveolens	Swamp Box	110		110	35	5.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
320	Eucalyptus fibrosa	Broad-leaved Red Ironbark	140		140	44	3.0	2.0	2.0	1.4	Regular	-	-	-	-	Lopped	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
321	Eucalyptus fibrosa	Broad-leaved Red Ironbark	140		140	44	4.0	2.0	2.0	1.4	Regular	-	-	-	-	Lopped	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
322	Alphitonia excelsa	Soap Tree	130		130	41	6.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
323	Corymbia citriodora	Spotted Gum	160		160	50	11.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
324	Acacia disparrima	Hickory Wattle	130		130	41	7.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
325	Corymbia intermedia	Pink Bloodwood	160		160	50	8.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
326	Corymbia citriodora	Spotted Gum	180</																											

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details			
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes	
327	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	590		590	185	26.0	15.0	7.1	2.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Current Application)		
328	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	560		560	176	25.0	13.0	6.7	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Current Application)		
329	<i>Lophostemon suaveolens</i>	Swamp Box	180	100	206	65	8.0	4.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
330	<i>Lophostemon suaveolens</i>	Swamp Box	100		100	31	7.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
331	<i>Acacia concurrens</i>	Black Wattle	190		190	60	8.0	4.0	2.3	1.6	Regular	-	-	-	-	-	Typical	Minor	Introduced	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
332	<i>Acacia disparrima</i>	Hickory Wattle	100		100	31	5.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
333	<i>Acacia disparrima</i>	Hickory Wattle	110		110	35	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
334	<i>Lophostemon suaveolens</i>	Swamp Box	100		100	31	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
335	<i>Lophostemon suaveolens</i>	Swamp Box	120		120	38	7.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Current Application)		
336	<i>Lophostemon suaveolens</i>	Swamp Box	120		120	38	7.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
337	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	310		310	97	16.0	6.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
338	<i>Eucalyptus acmenoides</i>	White Mahogany	200		200	63	9.0	5.0	2.4	1.7	Regular	-	-	-	-	-	Typical	Minor	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
339	<i>Eucalyptus acmenoides</i>	White Mahogany	250		250	79	14.0	6.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
340	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	200		200	63	14.0	5.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
341	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	430		430	135	24.0	12.0	5.2	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Current Application)		
342	<i>Acacia disparrima</i>	Hickory Wattle	160		160	50	6.0	4.0	2.0	1.5	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
343	<i>Melaleuca saligna</i>	Willow Bottlebrush	100		100	31	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
344	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	7.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		
345	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	460		460	145	22.0	14.0	5.5	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Current Application)		
346	<i>Syagrus romanzoffiana</i>	Cocos Palm	220		220	69	7.0	4.0	2.6	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
347	<i>Syagrus romanzoffiana</i>	Cocos Palm	190		190	60	7.0	3.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
348	<i>Syagrus romanzoffiana</i>	Cocos Palm	200		200	63	7.0	4.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
349	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	340		340	107	26.0	11.0	4.1	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
350	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	160		160	50	9.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
351	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	410		410	129	27.0	10.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
352	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	300		300	94	23.0	9.0	3.6	2.0	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
353	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	330		330	104	25.0	8.0	4.0	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
354	<i>Corymbia intermedia</i>	Pink Bloodwood	250		250	79	18.0	6.0	3.0	1.8	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
355	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	340		340	107	21.0	11.0	4.1	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
356	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	380		380	119	15.0	6.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
357	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	120		120	38	10.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
358	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	370		370	116	18.0	7.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
359	<i>Acacia disparrima</i>	Hickory Wattle	120	80	144	45	8.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
360	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	500		500	157	26.0	12.0	6.0	2.5	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
361	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	450		450	141	27.0	13.0	5.4	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
362	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	370		370	116	23.0	9.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
363	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	390		390	123	18.0	6.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
364	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	8.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
365	<i>Acacia disparrima</i>	Hickory Wattle	100		100	31	10.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
366	<i>Acacia disparrima</i>	Hickory Wattle	110		110	35	12.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
367	<i>Acacia disparrima</i>	Hickory Wattle	120		120	38	11.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
368	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	14.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
369	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	710		710	223	27.0	10.0	8.5	2.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
370	<i>Corymbia intermedia</i>	Pink Bloodwood	230		230	72	17.0	4.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-					

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details			
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes	
374	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	370		370	116	28.0	13.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
375	<i>Corymbia citriodora</i>	Spotted Gum	480		480	151	27.0	12.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
376	<i>Acacia disparrima</i>	Hickory Wattle	110		110	35	8.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
377	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	12.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
378	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	350		350	110	18.0	8.0	4.2	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
379	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	400		400	126	16.0	8.0	4.8	2.3	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
380	<i>Corymbia intermedia</i>	Pink Bloodwood	290		290	91	18.0	6.0	3.5	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
381	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	11.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
382	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	10.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
383	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	10.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
384	<i>Allocasuarina littoralis</i>	Black She-oak	150		150	47	9.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
385	<i>Allocasuarina littoralis</i>	Black She-oak	150		150	47	14.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
386	<i>Corymbia citriodora</i>	Spotted Gum	480		480	151	28.0	11.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
387	<i>Lophostemon suaveolens</i>	Swamp Box	140		140	44	6.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
388	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	12.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
389	<i>Allocasuarina littoralis</i>	Black She-oak	140		140	44	10.0	4.0	2.0	1.4	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
390	<i>Corymbia citriodora</i>	Spotted Gum	140		140	44	14.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
391	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	9.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
392	<i>Eucalyptus microcorys</i>	Tallowwood	200		200	63	15.0	6.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
393	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	100		100	31	6.0	1.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
394	<i>Corymbia citriodora</i>	Spotted Gum	170		170	53	14.0	3.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
395	<i>Allocasuarina littoralis</i>	Black She-oak	120		120	38	12.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
396	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	180	80	197	62	17.0	6.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
397	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	13.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
398	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	13.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
399	<i>Allocasuarina littoralis</i>	Black She-oak	190		190	60	16.0	5.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
400	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	11.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
401	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	14.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
402	<i>Eucalyptus acmenoides</i>	White Mahogany	190		190	60	17.0	8.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
403	<i>Corymbia citriodora</i>	Spotted Gum	360		360	113	28.0	14.0	4.3	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)		
404	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	240		240	75	18.0	9.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)		
405	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	270		270	85	18.0	6.0	3.2	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)		
406	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	8.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
407	DEAD/STAG		350		350	110	18.0	7.0	4.2	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
408	<i>Corymbia citriodora</i>	Spotted Gum	250		250	79	16.0	7.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
409	<i>Acacia disparrima</i>	Hickory Wattle	170		170	53	9.0	6.0	2.0	1.6	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
410	<i>Acacia disparrima</i>	Hickory Wattle	340		340	107	8.0	3.0	4.1	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)		
411	<i>Corymbia citriodora</i>	Spotted Gum	370		370	116	19.0	6.0	4.4	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
412	<i>Acacia disparrima</i>	Hickory Wattle	140		140	44	10.0	5.0	2.0	1.4	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)		
413	<i>Corymbia intermedia</i>	Pink Bloodwood	280		280	88	19.0	7.0	3.4	1.9	One-sided	-	-	-	Epicormic	-	Typical	-	-	-	Fire Dmg.	Typical	-	-	-	-	-	-	Remove (Previous Application)		
414	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	330	360	488	153	28.0	14.0	5.9	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
415	<i>Allocasuarina littoralis</i>	Black She-oak	130		130	41	8.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
416	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	760		760	239	26.0	12.0	9.1	2.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
417	<i>Corymbia citriodora</i>	Spotted Gum	100		100	31	14.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-</							

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details			
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes	
421	DEAD/STAG		280		280	88	14.0	0.0	3.4	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	Large	-	-	-	Retain		
422	<i>Allocasuarina littoralis</i>	Black She-oak	280		280	88	18.0	6.0	3.4	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
423	<i>Corymbia citriodora</i>	Spotted Gum	480		480	151	28.0	12.0	5.8	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
424	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	8.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
425	<i>Corymbia citriodora</i>	Spotted Gum	310		310	97	18.0	7.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
426	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	330		330	104	21.0	11.0	4.0	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
427	DEAD/STAG		380		380	119	19.0	7.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
428	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	400		400	126	25.0	12.0	4.8	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
429	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	890		890	280	29.0	14.0	10.7	3.2	Regular	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	Large	-	-	-	Remove (Previous Application)		
430	<i>Corymbia intermedia</i>	Pink Bloodwood	310		310	97	18.0	9.0	3.7	2.0	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
431	<i>Eucalyptus microcorys</i>	Tallowwood	420		420	132	24.0	9.0	5.0	2.3	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
432	<i>Acacia disparima</i>	Hickory Wattle	150		150	47	14.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
433	<i>Eucalyptus microcorys</i>	Tallowwood	510		510	160	23.0	11.0	6.1	2.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Previous Application)		
434	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	6.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
435	<i>Corymbia citriodora</i>	Spotted Gum	190		190	60	18.0	6.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
436	<i>Melaleuca saligna</i>	Willow Bottlebrush	120	130	177	56	10.0	5.0	2.1	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
437	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	9.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
438	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	290		290	91	21.0	11.0	3.5	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
439	<i>Corymbia citriodora</i>	Spotted Gum	510	100	520	163	26.0	10.0	6.2	2.5	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
440	<i>Corymbia citriodora</i>	Spotted Gum	380	140	405	127	23.0	9.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
441	<i>Acacia disparrima</i>	Hickory Wattle	100	90	135	42	14.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
442	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	120		120	38	12.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
443	<i>Corymbia intermedia</i>	Pink Bloodwood	100		100	31	12.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
444	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	100		100	31	11.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
445	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	110		110	35	12.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
446	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	100		100	31	11.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
447	<i>Syagrus romanzoffiana</i>	Cocos Palm	250		250	79	14.0	4.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
448	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	180		180	57	14.0	4.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
449	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	140		140	44	15.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
450	<i>Syagrus romanzoffiana</i>	Cocos Palm	180		180	57	15.0	6.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
451	<i>Syagrus romanzoffiana</i>	Cocos Palm	190		190	60	15.0	6.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
452	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	110		110	35	14.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
453	<i>Dyopsis lutescens</i>	Golden Cane Palm	70	80, 90, 60, 70	167	52	14.0	6.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
454	<i>Syagrus romanzoffiana</i>	Cocos Palm	230		230	72	16.0	7.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
455	<i>Syagrus romanzoffiana</i>	Cocos Palm	200		200	63	17.0	9.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
456	<i>Syagrus romanzoffiana</i>	Cocos Palm	250		250	79	14.0	7.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
457	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	450		450	141	28.0	14.0	5.4	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
458	<i>Corymbia intermedia</i>	Pink Bloodwood	320		320	101	18.0	9.0	3.8	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
459	<i>Corymbia citriodora</i>	Spotted Gum	170		170	53	15.0	5.0	2.0	1.6	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
460	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	400		400	126	23.0	13.0	4.8	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
461	<i>Acacia disparrima</i>	Hickory Wattle	180		180	57	14.0	6.0	2.2	1.6	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)		
462	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	190		190	60	16.0	5.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	Old	-	-	-	-	Retain		
463	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	140		140	44	12.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	Old	-	-	-	-	Retain		
464	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	140	80	161	51	14.0	6.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
465	<i>Eucalyptus carnea</i>																														

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details		
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
468	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	260		260	82	17.0	6.0	3.1	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
469	<i>Acacia disparrima</i>	Hickory Wattle	220		220	69	15.0	5.0	2.6	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
470	<i>Corymbia citriodora</i>	Spotted Gum	390		390	123	25.0	13.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
471	<i>Corymbia citriodora</i>	Spotted Gum	380		380	119	21.0	11.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
472	<i>Corymbia citriodora</i>	Spotted Gum	380		380	119	23.0	12.0	4.6	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
473	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	430		430	135	21.0	11.0	5.2	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
474	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	330		330	104	16.0	7.0	4.0	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
475	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	350		350	110	17.0	8.0	4.2	2.1	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
476	<i>Corymbia citriodora</i>	Spotted Gum	470		470	148	28.0	14.0	5.6	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
477	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	240		240	75	16.0	7.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
478	<i>Corymbia intermedia</i>	Pink Bloodwood	150		150	47	15.0	6.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
479	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	460		460	145	23.0	11.0	5.5	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
480	<i>Acacia disparrima</i>	Hickory Wattle	360		360	113	15.0	9.0	4.3	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
481	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	190		190	60	15.0	6.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
482	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	170		170	53	14.0	6.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
483	<i>Eucalyptus microcorys</i>	Tallowwood	180		180	57	12.0	5.0	2.2	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
484	<i>Lophostemon suaveolens</i>	Swamp Box	140		140	44	12.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
485	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	170	100	197	62	15.0	5.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
486	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	330		330	104	15.0	6.0	4.0	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
487	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	130		130	41	15.0	7.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
488	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	160		160	50	13.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
489	<i>Acacia disparrima</i>	Hickory Wattle	230		230	72	14.0	6.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
490	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	200		200	63	14.0	7.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
491	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	110		110	35	9.0	4.0	2.0	1.3	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
492	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	130		130	41	14.0	6.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain	
493	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	420		420	132	28.0	14.0	5.0	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
494	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	100		100	31	9.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
495	<i>Corymbia citriodora</i>	Spotted Gum	260		260	82	16.0	5.0	3.1	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
496	<i>Acacia disparrima</i>	Hickory Wattle	200		200	63	14.0	6.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
497	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	120		120	38	11.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
498	<i>Acacia disparrima</i>	Hickory Wattle	140		140	44	11.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
499	<i>Corymbia citriodora</i>	Spotted Gum	230		230	72	18.0	7.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
500	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	140		140	44	14.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
501	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	460		460	145	28.0	15.0	5.5	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
502	<i>Acacia disparrima</i>	Hickory Wattle	110		110	35	12.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
503	<i>Corymbia intermedia</i>	Pink Bloodwood	230		230	72	15.0	6.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
504	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	560		560	176	25.0	15.0	6.7	2.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
505	<i>Corymbia citriodora</i>	Spotted Gum	250		250	79	12.0	4.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
506	<i>Corymbia citriodora</i>	Spotted Gum	140		140	44	15.0	4.0	2.0	1.4	One-sided	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
507	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	160	140, 200	292	92	17.0	8.0	3.5	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
508	<i>Eucalyptus microcorys</i>	Tallowwood	140	110	178	56	13.0	6.0	2.1	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
509	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	240		240	75	16.0	8.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
510	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	180	240	300	94	18.0	9.0	3.6	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
511	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	140		140	44	14.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
512	<i>Acacia disparrima</i>	H																												

Specimen Details											Canopy Condition Details						Trunk Condition Details					Fauna Details and Habitat Value						Additional Details		
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
515	<i>Corymbia intermedia</i>	Pink Bloodwood	200		200	63	16.0	7.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
516	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	230		230	72	16.0	7.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
517	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	260		260	82	18.0	8.0	3.1	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
518	<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	260		260	82	18.0	6.0	3.1	1.9	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
519	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	250		250	79	17.0	6.0	3.0	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
520	<i>Corymbia intermedia</i>	Pink Bloodwood	170	130, 120	245	77	15.0	6.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
521	<i>Corymbia torelliana</i>	Cadaghi	120		120	38	12.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
522	<i>Melaleuca saligna</i>	Willow Bottlebrush	130		130	41	14.0	4.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
523	<i>Corymbia intermedia</i>	Pink Bloodwood	180	100, 120	238	75	17.0	6.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
524	<i>Lophostemon suaveolens</i>	Swamp Box	100		100	31	12.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
525	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	450		450	141	23.0	13.0	5.4	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
526	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	360		360	113	17.0	6.0	4.3	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
527	<i>Corymbia citriodora</i>	Spotted Gum	460		460	145	23.0	11.0	5.5	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
528	<i>Acacia leiocalyx</i>	Early-flowering Black Wattle	80	100, 60	141	44	10.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
529	<i>Corymbia citriodora</i>	Spotted Gum	140		140	44	12.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
530	<i>Corymbia citriodora</i>	Spotted Gum	120		120	38	14.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
531	<i>Eucalyptus tereticornis</i>	Forest Red Gum	210		210	66	16.0	5.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
532	<i>Corymbia citriodora</i>	Spotted Gum	120		120	38	12.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
533	<i>Acacia disparrima</i>	Hickory Wattle	230		230	72	15.0	8.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Previous Application)	
534	<i>Acacia disparrima</i>	Hickory Wattle	230	200	305	96	14.0	9.0	3.7	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
535	<i>Corymbia citriodora</i>	Spotted Gum	400		400	126	23.0	11.0	4.8	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
536	<i>Acacia leiocalyx</i>	Early-flowering Black Wattle	100		100	31	10.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
537	<i>Acacia leiocalyx</i>	Early-flowering Black Wattle	110		110	35	10.0	4.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
538	<i>Corymbia citriodora</i>	Spotted Gum	340		340	107	19.0	8.0	4.1	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
539	<i>Acacia leiocalyx</i>	Early-flowering Black Wattle	110		110	35	11.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
540	<i>Acacia leiocalyx</i>	Early-flowering Black Wattle	100		100	31	9.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
541	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	470		470	148	23.0	15.0	5.6	2.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
542	<i>Acacia disparrima</i>	Hickory Wattle	150		150	47	10.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
543	<i>Corymbia intermedia</i>	Pink Bloodwood	350		350	110	21.0	11.0	4.2	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
544	<i>Allocasuarina littoralis</i>	Black She-oak	160		160	50	9.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
545	<i>Allocasuarina littoralis</i>	Black She-oak	150		150	47	14.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
546	<i>Allocasuarina littoralis</i>	Black She-oak	100		100	31	14.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
547	<i>Corymbia citriodora</i>	Spotted Gum	140		140	44	16.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
548	<i>Corymbia citriodora</i>	Spotted Gum	110	120	163	51	16.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
549	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	390		390	123	23.0	14.0	4.7	2.2	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
550	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	410		410	129	24.0	12.0	4.9	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
551	<i>Acacia disparrima</i>	Hickory Wattle	140		140	44	14.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
552	<i>Corymbia intermedia</i>	Pink Bloodwood	110		110	35	14.0	1.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
553	<i>Corymbia intermedia</i>	Pink Bloodwood	110	50, 80	145	46	13.0	3.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
554	<i>Corymbia citriodora</i>	Spotted Gum	140		140	44	14.0	1.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
555	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	110		110	35	12.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
556	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	100		100	31	11.0	1.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
557	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	110		110	35	12.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
558	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	100		100	31	14.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	

Tree ID	Botanical Name	Specimen Details									Canopy Condition Details							Trunk Condition Details					Fauna Details and Habitat Value						Additional Details	
		Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes
562	<i>Corymbia citriodora</i>	Spotted Gum	150	80	170	53	1.0	3.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
563	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	150		150	47	14.0	6.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
564	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	120		120	38	15.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
565	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	130	90	158	50	14.0	5.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
566	<i>Corymbia intermedia</i>	Pink Bloodwood	140		140	44	14.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
567	<i>Corymbia intermedia</i>	Pink Bloodwood	190	100	215	67	13.0	4.0	2.6	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
568	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	130		130	41	12.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
569	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	110		110	35	12.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
570	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	110		110	35	11.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
571	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	110		110	35	10.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
572	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	110		110	35	10.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
573	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	140		140	44	14.0	5.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
574	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	120		120	38	10.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
575	<i>Corymbia intermedia</i>	Pink Bloodwood	140	130, 60	200	63	14.0	5.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
576	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	100		100	31	9.0	1.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
577	<i>Lophostemon suaveolens</i>	Swamp Box	100		100	31	11.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
578	<i>Melaleuca saligna</i>	Willow Bottlebrush	100	120, 90, 80	197	62	14.0	1.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
579	<i>Melaleuca saligna</i>	Willow Bottlebrush	190		190	60	11.0	4.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
580	<i>Corymbia intermedia</i>	Pink Bloodwood	120	120	170	53	15.0	6.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
581	<i>Corymbia intermedia</i>	Pink Bloodwood	160	200	256	80	17.0	5.0	3.1	1.9	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
582	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	170	170	240	76	17.0	6.0	2.9	1.8	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
583	<i>Acacia disparrima</i>	Hickory Wattle	120	160	200	63	15.0	6.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
584	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	230		230	72	17.0	7.0	2.8	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
585	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	110		110	35	14.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
586	<i>Corymbia intermedia</i>	Pink Bloodwood	170		170	53	13.0	3.0	2.0	1.6	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
587	<i>Corymbia intermedia</i>	Pink Bloodwood	100	80	128	40	11.0	2.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
588	<i>Acacia disparrima</i>	Hickory Wattle	120		120	38	11.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
589	<i>Corymbia intermedia</i>	Pink Bloodwood	160		160	50	15.0	2.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
590	<i>Corymbia citriodora</i>	Spotted Gum	190		190	60	17.0	3.0	2.3	1.6	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
591	<i>Corymbia intermedia</i>	Pink Bloodwood	110		110	35	11.0	2.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
592	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	400		400	126	21.0	9.0	4.8	2.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
593	<i>Lophostemon suaveolens</i>	Swamp Box	150		150	47	12.0	4.0	2.0	1.5	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Arborist Neighbouring (Current Application)	
594	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	180	130	222	70	15.0	5.0	2.7	1.8	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
595	<i>Melaleuca saligna</i>	Willow Bottlebrush	100	90	135	42	10.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
596	<i>Lophostemon suaveolens</i>	Swamp Box	100		100	31	9.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
597	<i>Melaleuca saligna</i>	Willow Bottlebrush	110		110	35	12.0	3.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
598	<i>Corymbia intermedia</i>	Pink Bloodwood	200	210	290	91	16.0	8.0	3.5	2.0	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
599	<i>Eucalyptus fibrosa</i>	Broad-leaved Red Ironbark	200		200	63	16.0	6.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
600	<i>Eucalyptus carnea</i>	Broad-leaved White Mahogany	120	250	277	87	14.0	8.0	3.3	1.9	Regular	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	Remove (Current Application)	
601	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	200		200	63	17.0	8.0	2.4	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
602	<i>Eucalyptus siderophloia</i>	Northern Grey Ironbark	210		210	66	18.0	9.0	2.5	1.7	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
603	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	120		120	38	14.0	3.0	2.0	1.4	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)	
604	<i>Corymbia intermedia</i>	Pink Bloodwood	250	210	326	103	15.0	7.0	3.9	2.1	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Road Works)	
605	<i>Eucalyptus propinqua</i>	Small-fruited Grey Gum	240		240	75	17.0	8.0	2.9	1.8	One-sided	-	-																	

Specimen Details											Canopy Condition Details							Trunk Condition Details						Fauna Details and Habitat Value						Additional Details	
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Trunk Circumference (cm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termite Nest	Habitat Value	Retention	Additional Notes	
609	<i>Lophostemon suaveolens</i>	Swamp Box	100		100	31	9.0	1.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Retain		
610	<i>Allocasuarina littoralis</i>	Black She-oak	110		110	35	11.0	5.0	2.0	1.3	Regular	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	Remove (Current Application)		

Appendix D

KHA Offset Calculation

From: no-reply@des.qld.gov.au
Sent: Thursday, 8 August 2024 10:17 AM
To:
Subject: Environmental offsets calculator results - Financial settlement offset calculator
Attachments: data.csv

Environmental offsets calculator results - Financial settlement offset calculator

Payment details

Non-protected non-SEQ koala cost

On ground cost	\$0.00
Landholder incentive payment	\$0.00
Administrative cost	\$0.00
Total non-protected area cost	\$0.00

Protected area cost

Total protected area cost	\$0.00
---------------------------	--------

City of Gold Coast koala habitat area (capped at \$230,000 per impact ha)

Total koala habitat cost for City of Gold Coast	\$130,640.00
---	--------------

Total cost

Grand total	\$130,640.00
-------------	--------------

Total offset area: 1.704 ha

Section 1

LGA

City of Gold Coast

Bioregion

Southeast Queensland

Subregion

Burringbar - Conondale Ranges

Impact area

0.568 ha

Notional offset area

1.704 ha

Distinct matter area 1.1

Impact area: 0.568 ha

Notional offset area: 1.704 ha

Matter groups:

- 1.1.1: SEQ Koala Habitat

City of Gold Coast koala habitat

The notional offset area for this LGA is 1.704 ha.

Sections, areas and matter groups used in calculations

Section	Bioregion / Marine (and waterways) zone	Subregion / Marine bioregion	Local government area (LGA)	Distinct matter area (DMA)	DMA impact area (ha)	DMA notional offset area (ha)	Matter group
1	Southeast Queensland	Burringbar - Conondale Ranges	City of Gold Coast	1.1	0.568	1.704	1.1.1 SEQ Koala Habitat

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Operational Waste Management Plan

Proposed Residential Development

Located at 54 George Alexander Way, Coomera

On Behalf of Keylin Property Group



About TTM

For 30 years, we’ve been at the centre of the Australian development and infrastructure industry. Our unique combination of acoustics, data, traffic and waste services is fundamental to the success of any architectural or development project.

We have over 50 staff, with an unrivalled depth of experience. Our industry knowledge, technical expertise and commercial insight allow us to deliver an exceptional and reliable service.

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Revision Record

Issue No.	Author	Reviewed/Approved	Development Stage / Revision Description	Date
1.	S. Baker	M. Krisanski	OWMP Draft	05/08/2024
2.	S. Baker	S. Kenny 	OWMP Final	08/08/2024
3.				

Contents

1	Introduction	4
1.1.	Background.....	4
1.2.	Scope and Client Brief.....	4
1.3.	Site Location	5
1.4.	Development Summary.....	6
2	Regulatory Refuse Management Requirements.....	7
2.1.	Regulatory and Governance Considerations	7
2.1.	Multi-Unit Dwelling Refuse Calculations	10
2.2.	Standard Rate Entitlement (Townhouses).....	11
2.3.	Refuse Bin, Equipment Requirements and Specification.....	12
2.4.	Residential Refuse Storage	14
2.5.	Refuse Transfer	19
2.6.	RCV and Bin Servicing Arrangements.....	24
3	Recommended Operational Requirements.....	27
3.1	Refuse Disposal	27
3.2	On-going Management.....	29
Appendix A	Site Plans and Swept Paths	33
Appendix B	Systems and Specifications	38
B.1	Specified Refuse Management Equipment	39
Appendix C	Refuse Signage	41
C.1	Refuse Signage	42
C.2	Other Refuse, Facility and Safety Signage	43
Appendix D	Terms and Abbreviations.....	44

Table Index

Table 1.1: Scope Items	4
Table 1.2: MUD Development Summary.....	6
Table 1.3: Townhouse Development Summary	6
Table 2.1: Planning Scheme Compliance Checklist.....	7
Table 2.2: CoGC Refuse Generation Rates	10
Table 2.3: Building 1 Calculations	10
Table 2.4: Building 2 Calculations	10
Table 2.5: Building 3 Calculations	11
Table 2.6: Bins Combined (Storage and Presentation)	12
Table 2.7: Townhouse Rate Entitlement	12
Table 2.8: Additional Equipment	13
Table 2.9 Refuse Storage Area Design Requirements	17
Table 3-1: Disposal of Frequently Generated Waste	27
Table 3-2: Disposal of Infrequently Generated Waste	28
Table 3-3: General Refuse Management Checklist.....	29
Table 3-4: Safety Checklist	29
Table 3-5: Signage Checklist.....	30
Table 3-6: Cleaning and Maintenance Checklist	30
Table 3-7: Refuse Minimisation Checklist	31
Table 3-8: Education and Communication Checklist	31
Table 3-9: Monitoring and Review Checklist.....	32

Figure Index

Figure 1.1: Site Location	5
Figure 2.1: Refuse Storage Overview.....	14
Figure 2.2: Refuse Room (Building 1)	15
Figure 2.3: Refuse Room (Building 2)	15
Figure 2.4: Refuse Room (Building 3)	16
Figure 2.5: Waste Holding Room	16
Figure 2.6: Refuse Transfer (Buildings 1 – 3).....	19
Figure 2.7: Townhouse Kerbside Presentation	22
Figure 2.8: Front Loader RCV Swept Path	24
Figure 2.9: Side Loader RCV Swept Path	25

1 Introduction

1.1. Background

TTM Consulting has been engaged by Keylin Property Group to prepare an Operational Waste Management Plan (OWMP) to support a proposed residential development located at 46 George Alexander Way, Coomera. It is understood that a development application will be lodged with City of Gold Coast Council (CoGC).

1.2. Scope and Client Brief

The content of this OWMP is intended to provide information on the typical movement of waste streams from generation to collection. Information on refuse management is given for each use within the development.

The items covered within the OWMP are described in Table 1.1.

Table 1.1: Scope Items

Item	Description
Refuse streams	Identification of refuse streams & anticipated development refuse volumes likely to be produced
Refuse separation	Recommendations for appropriate segregation methods for each refuse stream
Refuse collections	Assessment of refuse collection vehicle (RCV) access and manoeuvring
Refuse storage	Detailed analysis of refuse storage facilities and design
Refuse transfer	Assessment of refuse transfer between refuse storage and collections areas
Refuse disposal	Recommendations for refuse disposal within the development
Refuse management equipment	Identification of recommended and optional refuse management systems and equipment
Refuse management operations	Recommendations for operational efficiency and ongoing management, including refuse minimisation, tenant education and safety
Building design	Recommendations for design of refuse management facilities

Detailed information including site plans and drawings, recommended refuse management equipment and system specifications, common refuse signage as well as a list of terms and abbreviations are provided in the appendices.

The recommendations in this report relate to the operational phase of the development only. Additional requirements for refuse management during or after demolition or construction phases are not included and require a dedicated plan.

1.3. Site Location

The formal application address for the site is 54 George Alexander Way, Coomera.

The development footprint is depicted in Figure 1.1. and will have dual frontages on George Alexander Way and a newly constructed street adjoining Talpa Street. A future road will also be built to allow for complete circulation of the development onto Seashell Avenue.

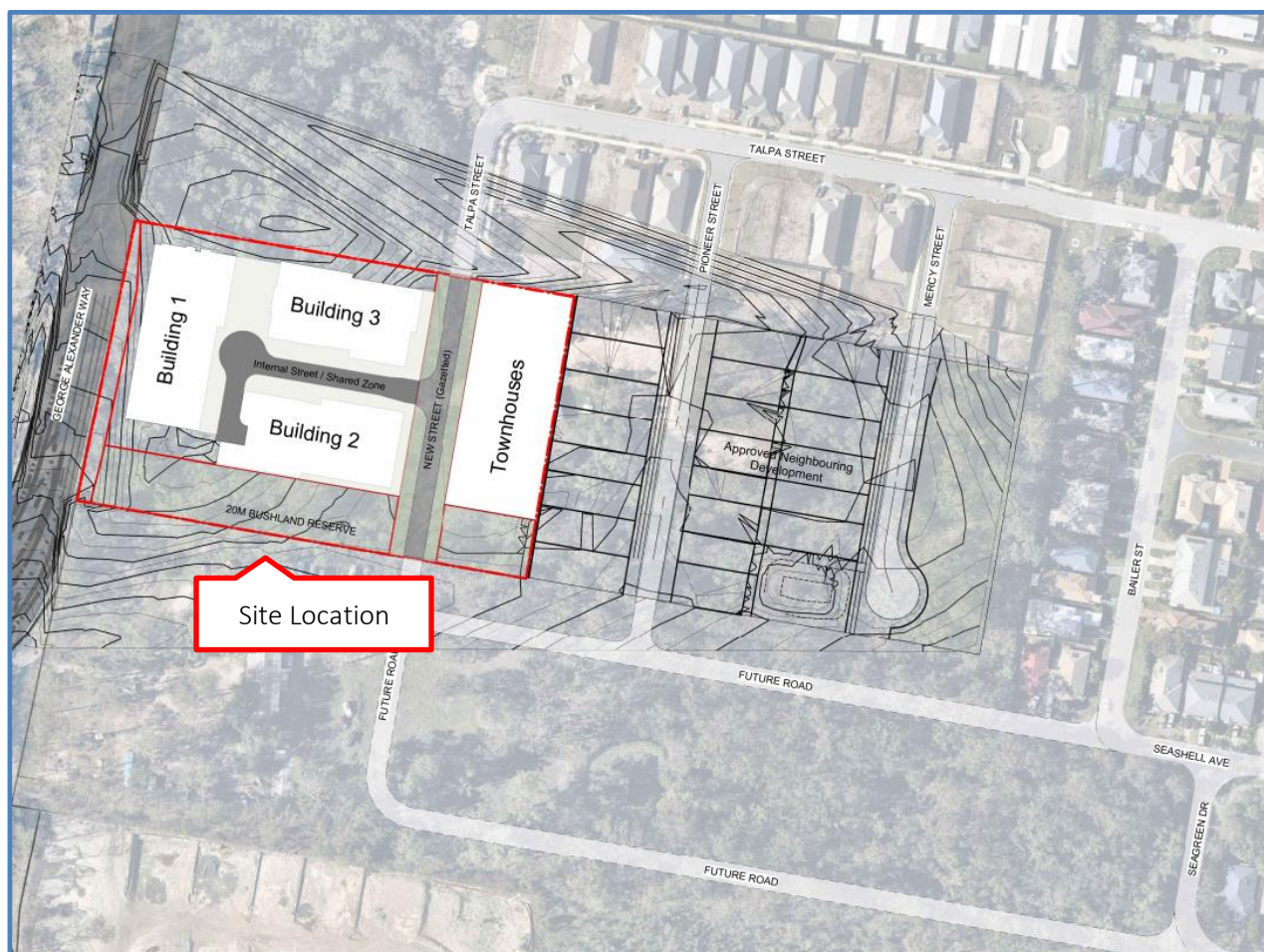


Figure 1.1: Site Location

Source: Nearmap, Dated: 02/06/24

1.4. Development Summary

The proposed development consists of three (3) buildings containing multi-unit dwellings (MUDs) over basement parking, and 10 individual townhouse lots.

Table 1.2 provides a summary of the development with regard to the residential towers, providing context for the volume information provided in Section 2. Table 1.3 provides a summary of the townhouse portion of the development.

Table 1.2: MUD Development Summary

Building	Description	Measure (Dwellings)
Building 1	1 Bedroom	6
	2 Bedrooms	54
	3+ Bedrooms	5
Building 1 - Total		65
Building 2	1 Bedroom	7
	2 Bedrooms	62
	3+ Bedrooms	7
Building 2 - Total		76
Building 3	1 Bedroom	8
	2 Bedrooms	52
	3+ Bedrooms	7
Building 3 - Total		67
All Buildings - Total		208 MUD's

Table 1.3: Townhouse Development Summary

Description	Measure (Dwellings)
Residential Townhouses	10

2 Regulatory Refuse Management Requirements

This section provides the detailed refuse calculations and describes the arrangements for the collection, storage, transfer and disposal of refuse within the development as deemed to satisfy council's current assessment benchmarks. This includes associated bin quantities, storage capacities, equipment details, collection frequencies and site access details.

2.1. Regulatory and Governance Considerations

The plan satisfies City of Gold Coast's requirements by providing the following information:

- Type and quantity of refuse materials to be generated during the occupancy of the proposed site.
- Refuse collection, storage, transfer and disposal arrangements during occupancy of the completed development.
- Recommended operational requirements for the operational phase of the development, and design requirements for the building and refuse management facilities.

As this development is a residential site, TTM has referred to the requirements relating to residential uses as outlined in Schedule 6.15 of the City of Gold Coast's City Plan Policy – Solid Waste Management Code, as shown in Table 1.2.

Table 2.1: Planning Scheme Compliance Checklist

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome?
Waste and recycling storage and bin wash-down facilities		
PO1 Development provides waste and recycling storage and servicing facilities that are safe, convenient, efficient, appropriately sized for the type and volume of waste generated.	AO1.1 Development includes waste storage points of sufficient size to accommodate the required number of waste and recyclable bins consistent with SC6.15 City Plan policy –Solid waste management.	Complies with AO1.1 and PO1 Bin servicing point is provided for storage of all refuse and is appropriately sized in accordance with SC6.15 City Plan policy –Solid waste management.
	AO1.2 Waste and recycling storage points are located, designed and sized consistent with SC6.15 City Plan policy – Solid waste management.	Complies with AO1.2 and PO1 The refuse rooms have been designed in accordance with SC6.15 City Plan policy – Solid waste management. Which includes adequate clearances around combined bin area.
	AO1.3 Development with a dwelling above the third story include appropriate waste removal systems which incorporate: (a) waste chutes; (b) hoppers; and (c) separate waste storage rooms.	Complies with PO1 Dual refuse chute provided. Designed in accordance with SC6.15 City Plan policy – Solid waste management.

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome?
Waste and recycling storage and bin wash-down facilities		
	Note: Waste removal system design is to be consistent with SC6.15 City Plan policy – Solid waste management.	

Waste and recycling storage and bin wash-down facilities - Continued		
	AO1.4 Development that includes a commercial kitchen or generates clinical or related waste incorporate additional waste facilities consistent with SC6.15 City Plan policy –Solid waste management.	N/A – Residential site only
PO2 Development provides a bin wash-down facility that maintains appropriate environmental health and amenity standards.	AO2 Development includes appropriately sized and located bin wash-down facilities consistent with SC6.13 City Plan policy –Solid waste management.	Complies with AO2 and PO2 Bin wash-down facilities will be provided in the refuse presentation point and refuse rooms. Will be designed in accordance with SC6.15 City Plan policy – Solid waste management.
Amenity		
PO3 Waste and recycling storage and servicing points are appropriately located and designed for convenient and safe access by all users and to minimise the potential for nuisance to occupants of the development or adjoining properties.	AO3.1 Direct unobstructed paths exist between waste and recycling storage and servicing points and road frontages.	Complies with AO3.1 and PO3 All disposal and transfer paths between the disposal points, bin storage room and servicing area are as direct as feasible.
	AO3.2 Waste and recycle storage points are screened by solid fencing or vegetation to ensure they are not visible from a public place or sensitive land use.	Complies with AO3.2 and PO3 Refuse storage is provided within dedicated rooms and screened from the public realm.
Waste servicing		
PO4 Waste and recycling servicing points are appropriately located and designed to facilitate safe, unobstructed and efficient servicing of waste containers.	AO4 Waste and recycling servicing points are located, designed and sufficiently sized consistent with SC6.15 City Plan policy –Solid waste management. Note: Regulation of the access, stopping and maneuvering of refuse collection vehicles are subject to meeting, Part 9.4.13 Transport code and associated City Plan guidelines.	Complies with AO4 and PO4 The refuse rooms have been designed to accommodate the required number of bins as calculated in Section 2 of this OWMP.

Non-serviced areas		
P05 Developments in non-serviced areas have appropriate solid waste management measures to adequately service the development. Note: For Commercial developments a WMP, prepared in accordance with SC6.15 City Plan policy – Solid waste management, is Council’s preferred method of addressing the above outcome.	A05 No acceptable outcome provided.	Complies with A05 and P05 The OWMP has been prepared in accordance with SC6.15 City Plan policy – Solid waste management.

2.1. Multi-Unit Dwelling Refuse Calculations

The refuse volumes utilised for the calculation of residential refuse storage are based on rates recommended by City of Gold Coast for multi-unit dwellings.

A residential collection frequency of 3 times per week has been established for both general waste and commingled recycling, in line with CoGC Councils maximum frequency for multi-unit developments.

Table 2.2 demonstrates the refuse generation rates prescribed by the CoGC. Table 2.3, 2.4 and 2.5 illustrate the calculations estimated for the individual buildings.

Table 2.2: CoGC Refuse Generation Rates

Generation Rate	Measure	General Waste	Combined Recycling
1 Bedroom Dwelling	L / Dwelling / Week	80	50
2 Bedroom Dwelling		100	60
3+ Bedroom Dwelling		120	80

Table 2.3: Building 1 Calculations

Building	Type	Quantity	General Waste L/Week	Commingled Recycling L/Week
Building 1	1 Bedroom Dwelling	6	480	300
	2 Bedroom Dwelling	54	5,400	3,240
	3+ Bedroom Dwelling	5	600	400
Total Weekly Volumes Compacted (L / Week)			6,480	3,940
Volumes per Day (L / Day)			926	563
Volumes per Collection (L / Collection)			2,777	1,689
Collection and Equipment Details	Collections per Week		3	3
	Storage Capacity		3 Days	3 Days
	Equipment Size		2,000L	2,000L
	Equipment Quantity Required		2	1

Table 2.4: Building 2 Calculations

Building	Type	Quantity	General Waste L/Week	Commingled Recycling L/Week
Building 2	1 Bedroom Dwelling	7	560	350
	2 Bedroom Dwelling	62	6,200	3,720
	3+ Bedroom Dwelling	7	840	560
Total Weekly Volumes Compacted (L / Week)			7,600	4,630
Volumes per Day (L / Day)			1,086	661
Volumes per Collection (L / Collection)			3,257	1,984
Collection and Equipment Details	Collections per Week		3	3
	Storage Capacity		3 Days	3 Days
	Equipment Size		2,000L	2,000L
	Equipment Quantity Required		2	1

Table 2.5: Building 3 Calculations

Building	Type	Quantity	General Waste L/Week	Commingle Recycling L/Week
Building 3	1 Bedroom Dwelling	8	640	400
	2 Bedroom Dwelling	52	5,200	3,120
	3+ Bedroom Dwelling	7	840	560
Total Weekly Volumes Compacted (L / Week)			6,680	4,080
Volumes per Day (L / Day)			954	583
Volumes per Collection (L / Collection)			2,863	1,749
Collection and Equipment Details	Collections per Week		3	3
	Storage Capacity		3 Days	3 Days
	Equipment Size		2,000L	2,000L
	Equipment Quantity Required		2	1

2.2. Standard Rate Entitlement (Townhouses)

Individual wheelie bins will be provided for each townhouse per the existing rate entitlement for townhouse dwellings. 240L mobile garbage bins (MGB's) will be provided in line with council's standard waste collection. All townhouses will be provided with 1 x 240L MGB for general waste and 1 x 240L MGB for commingled recycling.

2.3. Refuse Bin, Equipment Requirements and Specification

Table 2.6 outlines the total bin quantities required for the multi-unit dwelling portion of the development.

Table 2.7 outlines the required bin quantities for each townhouse.

Table 2.8 outlines the additional equipment required for the development based on the volume calculations above.

As refuse volumes may vary from assessment benchmarks, bin numbers and sizes may need to be altered to suit the building operation. The tables show the maximum volume of storage and equipment expected for the development.

Table 2.6: Bins Combined (Storage and Presentation)

Refuse Storage Point	Refuse Stream	Bin / Storage – Size or Type	Number Required*
Building 1	General Waste	2000L	2 (+1 spare)
	Commingled Recycling		1 (+1 spare)
Building 2	General Waste	2000L	2 (+1 spare)
	Commingled Recycling		1 (+1 spare)
Building 3	General Waste	2000L	2 (+1 spare)
	Commingled Recycling		1 (+1 spare)
Total (Holding Point)	General Waste	2000L	6
	Commingled Recycling		3

*Note: (+1 spare) represent additional bins to remain underneath the chute during servicing. These bins are not included in the total quantity to be held at the waste holding room for servicing, as they will always remain in their corresponding waste room in each building.

Table 2.7: Townhouse Rate Entitlement

Refuse Storage Point	Refuse Stream	Bin / Storage – Size or Type	Number Required*
Townhouses	General Waste	240L	10 (1 per townhouse)
	Commingled Recycling		10 (1 per townhouse)

Table 2.8: Additional Equipment

Description	Quantity	Capability / Specification - See Appendix C for details
Dual Chute System	3	A dual chute system will be required for each residential tower, totalling 6 chutes in total. Allows for stream separation between general waste and comingled recycling.
Bin tug	1	A single bin tug will assist building management in transferring refuse from each of the buildings. Bins can be daisy chained to transport multiple bins at a time. The bin tug will also allow for bins to be manoeuvred up any gradients above 1:4.
Chain-Mesh Partition / Dividers	TBA	Chain-mesh fence used to partition each of the chutes to ensure the safety of entrants from falling items.



Figure 2.2: Refuse Room (Building 1)

Source: Archipelago Architects, 54 George Alexander Way, Coomera, Overall Floor Plan – Level 0, AR-DA-200, Revision A, Date: 06.08.2024.

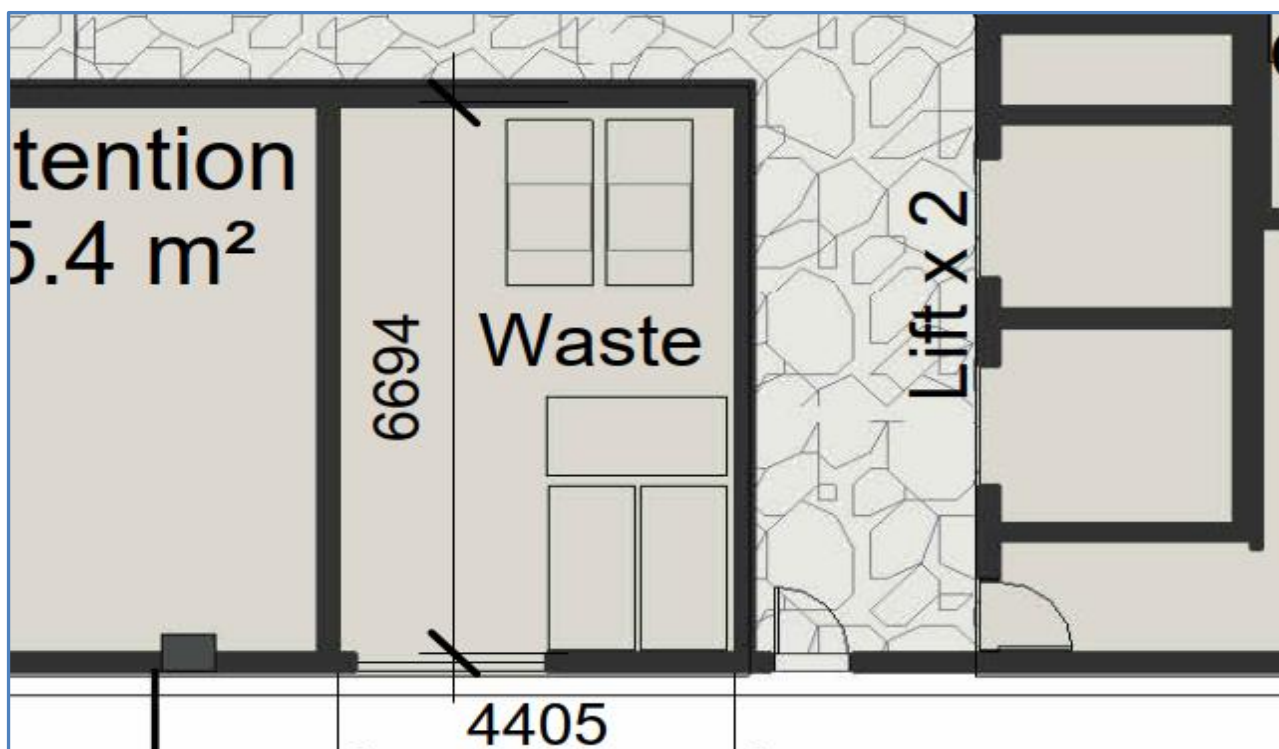


Figure 2.3: Refuse Room (Building 2)

Source: Archipelago Architects, 54 George Alexander Way, Coomera, Overall Floor Plan – Level 0, AR-DA-200, Revision A, Date: 06.08.2024.

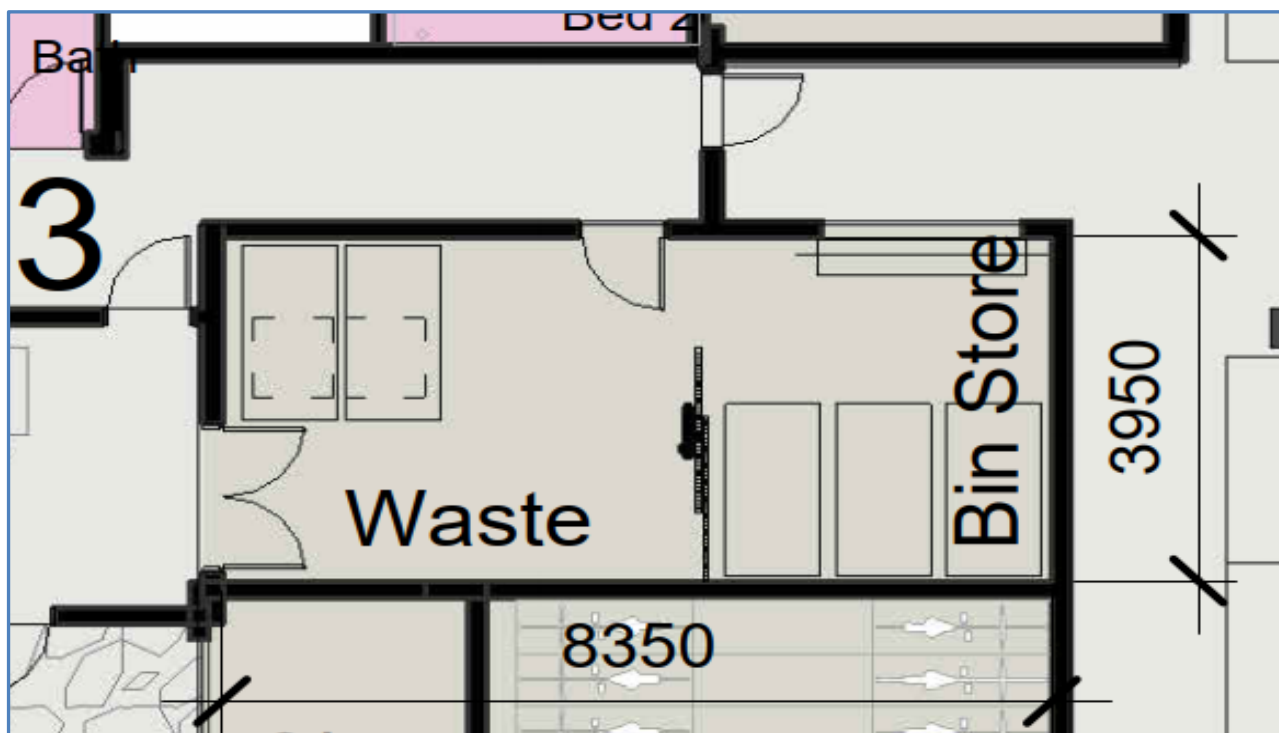


Figure 2.4: Refuse Room (Building 3)

Source: Archipelago Architects, 54 George Alexander Way, Coomera, Overall Floor Plan – Level 0, AR-DA-200, Revision A, Date: 06.08.2024.

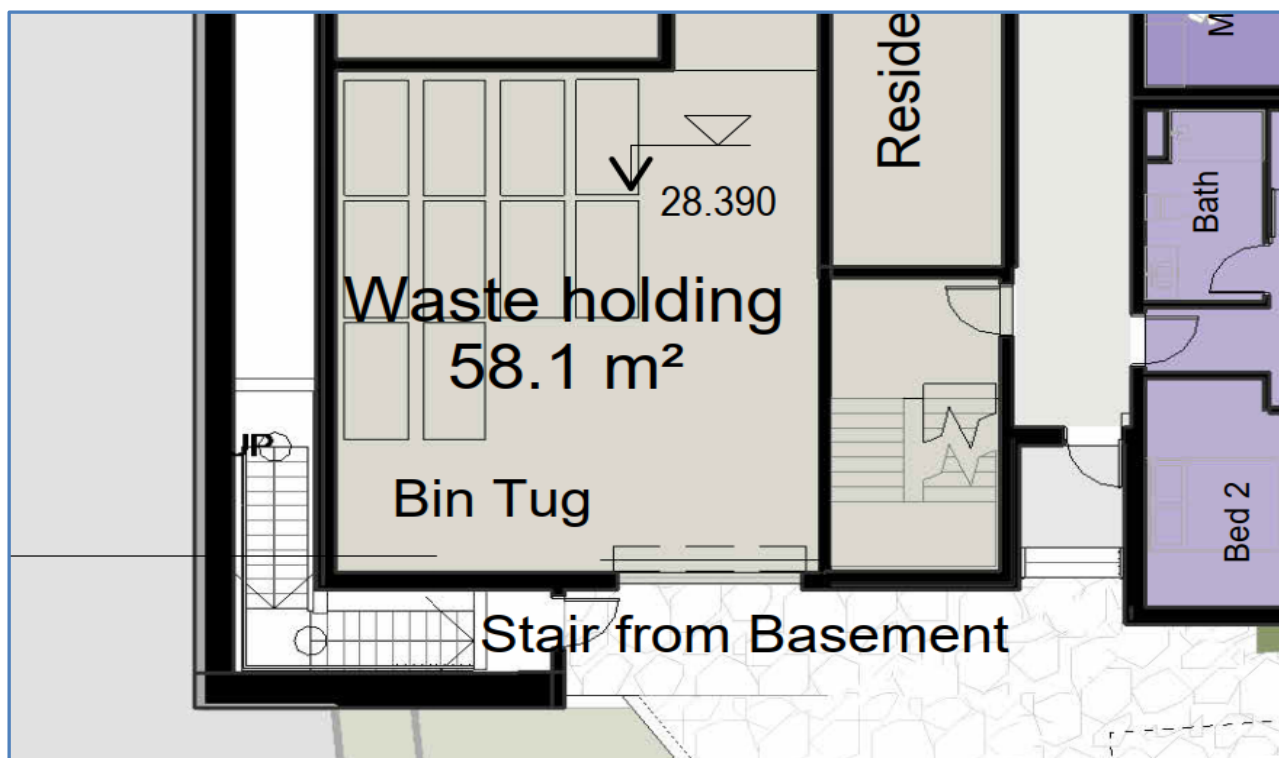


Figure 2.5: Waste Holding Room

Source: Archipelago Architects, 54 George Alexander Way, Coomera, Overall Floor Plan – Level 0, AR-DA-200, Revision A, Date: 06.08.2024.

Table 2.9 outlines the refuse storage area design criteria addressed in order to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area.

Table 2.9 Refuse Storage Area Design Requirements

Positioning Considerations
Positioned in immediate proximity of the designated loading point
Is in a purpose-built storage room which is vermin proofed and used solely for the storage of refuse leaving the site only.
Not located adjacent to or within any habitable portion of a building or place used in connection with food preparation (including food storage).
Is positioned away from entrances to shops or residential premises
Is over 5m from any door, window or fresh air intake within the development or any adjoining site.
Visual Amenity Considerations
Is enclosed on all sides except for the access points to ensure bins are not visible from a public place, neighbouring properties, passing vehicles or pedestrian traffic external to the site.
Is designed to minimise their visual impact on the surrounding areas.
Functional Design Considerations
Is of sufficient size to accommodate the bins with sufficient clearance around the combined bin area
Doors / shutters wide enough to allow for the easy removal of the largest container to be stored.
Permits unobstructed access for removal of the containers to the service point.
The height of the bin storage area allows for waste bins to be opened and closed.
Does not have any steps or lips where bins are required to be moved.
Adequate artificial lighting.
Bin Washing and Room Cleaning Considerations
A hose cock provided inside the room for cleaning bins and the enclosures.
The walls, ceilings, floors and equipment are to be designed and constructed of impervious material with a smooth finish to allow for easy cleaning.
The floors to be graded to fall to a drainage point.
Drainage points connected to sewer in accordance with trade waste requirements.
Roofed and designed to prevent entry by rainwater.
The walls and floors to be sealed with waterproof sealant to a minimum height of 1m.

2.4.2. Refuse Storage (Townhouses)

All refuse will be stored within stream separated 240L MGB's located externally at grade of each townhouse site for everyday use. The residents of each townhouse will be required to store all bins within the dwelling boundary and behind a side access gate to ensure bins are screened from public view. The storage location will not be positioned within 1.5m of adjoining townhouses or within 3m of the frontage of each site.

Bins will be stored in the front yard behind a partition for townhouses where side access is not retained. Bins will be stored to ensure they are not viewable from the public realm, to retain the visual amenity of the development.

2.5. Refuse Transfer

2.5.1. Refuse Transfer (Buildings 1 – 3)

Residents will dispose of refuse using the dual chute hoppers accessible from each level of the development. Access to each waste room will be maintained to allow for residents to dispose of bulk waste unfit for the chutes.

Staff and building management will be responsible for manoeuvring bulk bins at capacity to the refuse holding room prior to servicing.

An electric bin tug will be used to assist building management for any transfers up gradients steeper than 1:20.

To prevent any conflicts with traffic and ensure the safety of operators undertaking transferal duties, building staff will be required to transport all bins during low traffic periods.

The refuse holding room is adequately sized to accommodate the required bins outlined in Table 2.6.

Figure 2.6 depicts the transfer pathway from each refuse room to the refuse holding room for servicing.

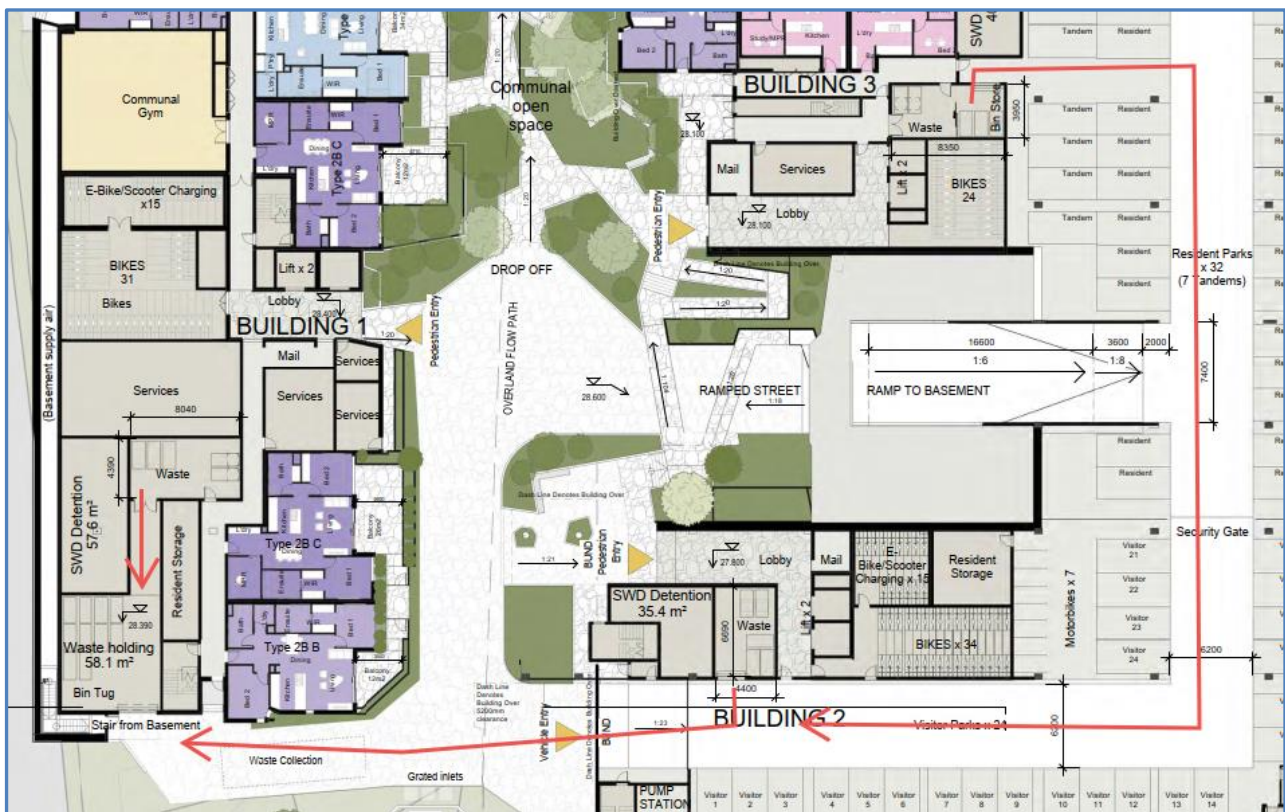


Figure 2.6: Refuse Transfer (Buildings 1 – 3)

Source: Archipelago Architects, 54 George Alexander Way, Coomera, Overall Floor Plan – Level 0, AR-DA-200, Revision A, Date: 06.08.2024.

The refuse transfer path has been designed to allow for:

The bins to be transferred via hard stand pathway.
Allows bins to be easily manoeuvred.
Does not impede traffic flow.
Does not extend through any habitable parts of a building or food premise
Does not have any lips, stairs or steps for bins to be manoeuvred easily.

2.5.2. Refuse Transfer (Townhouses)

The collecting contractor will collect all correctly presented bins directly from the designated collection point on the kerbside for each townhouse. No transfer is required by the collecting contractor to service bins under the proposed kerbside arrangement.

Residents will be required to transfer bins a short distance from the storage point on each property to the kerbside frontage on servicing days.

Adequate kerbside frontage is provided for the presentation of all townhouses lots. Each bin will have a minimum of 1m worth of kerbside frontage, as depicted in Figure 2.7.

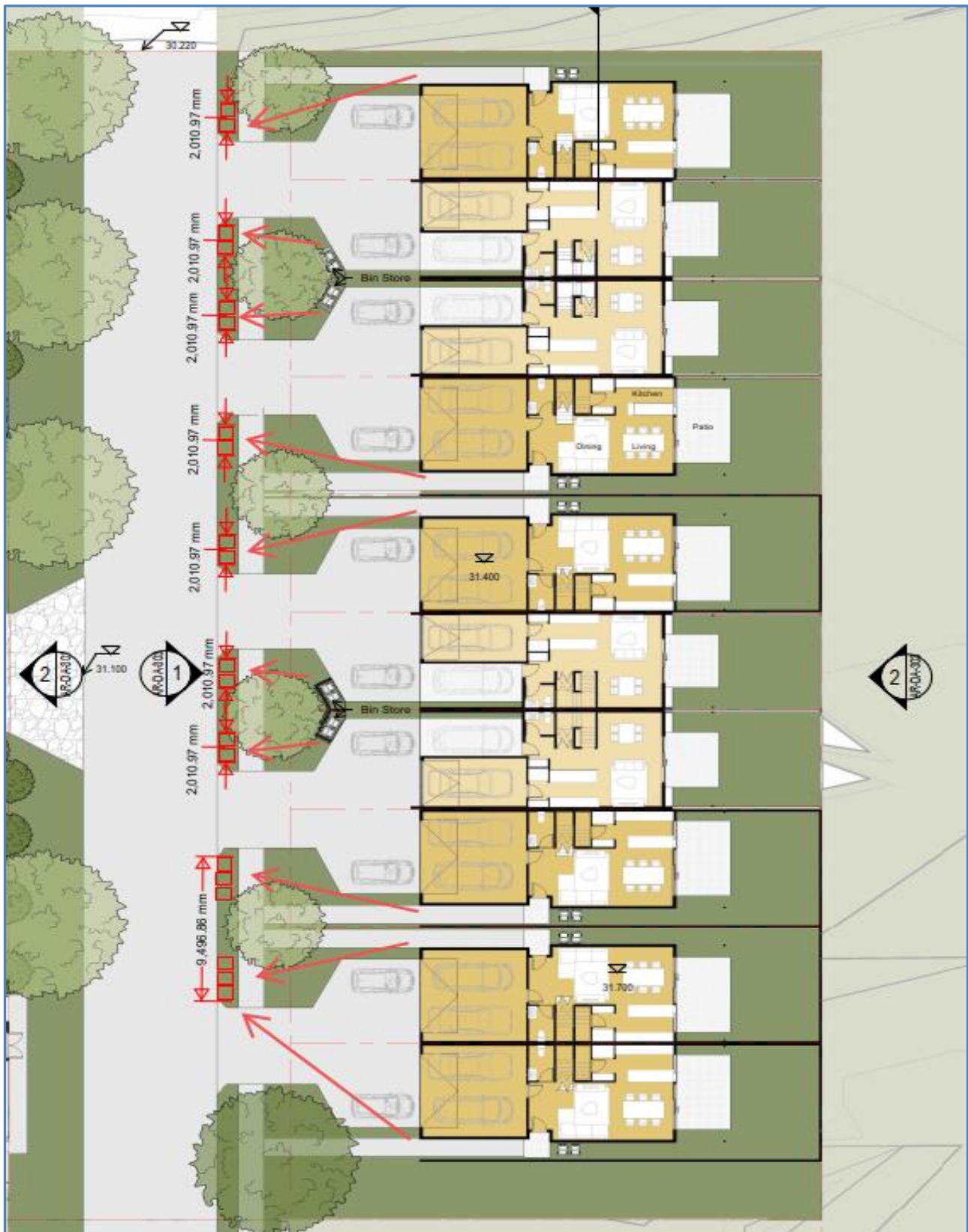


Figure 2.7: Townhouse Kerbside Presentation

Source: TTM Markup

The refuse transfer pathways for all sites utilising kerbside collection have been designed to allow for:

The bins to be transferred via hard stand pathway.
Allows bins to be easily manoeuvred.
Does not impede traffic flow.
Does not extend through any habitable parts of a building or food premise
Does not have any lips, stairs or steps for bins to be manoeuvred easily.

2.6. RCV and Bin Servicing Arrangements

2.6.1. Servicing (Buildings 1 – 3)

Refuse generated by the multi-unit dwellings will be collected by a front loader RCV. The site has been designed to be serviceable by Council's appointed collections contractor.

The RCV will enter development via the driveway adjoining Talpa Street. RCV's will enter the development in a forward gear, driving into the specified loading bay adjacent to Building 1. The contractor will then exit the vehicle and access the waste holding room. The contractor will be required to manoeuvre bulk bins a short distance to the front loader mechanism and return bins back to the waste holding room.

Once servicing has taken place, the contractor will re-enter the vehicle and perform a reverse manoeuvre out of the loading bay. The RCV will then turn in a forward gear and exit the driveway back onto Talpa Street.

Further details on RCV access and on-site manoeuvring can be found in the traffic report submitted with the development application submission.

Figure 2.8 depicts the swept paths for a front loader RCV.

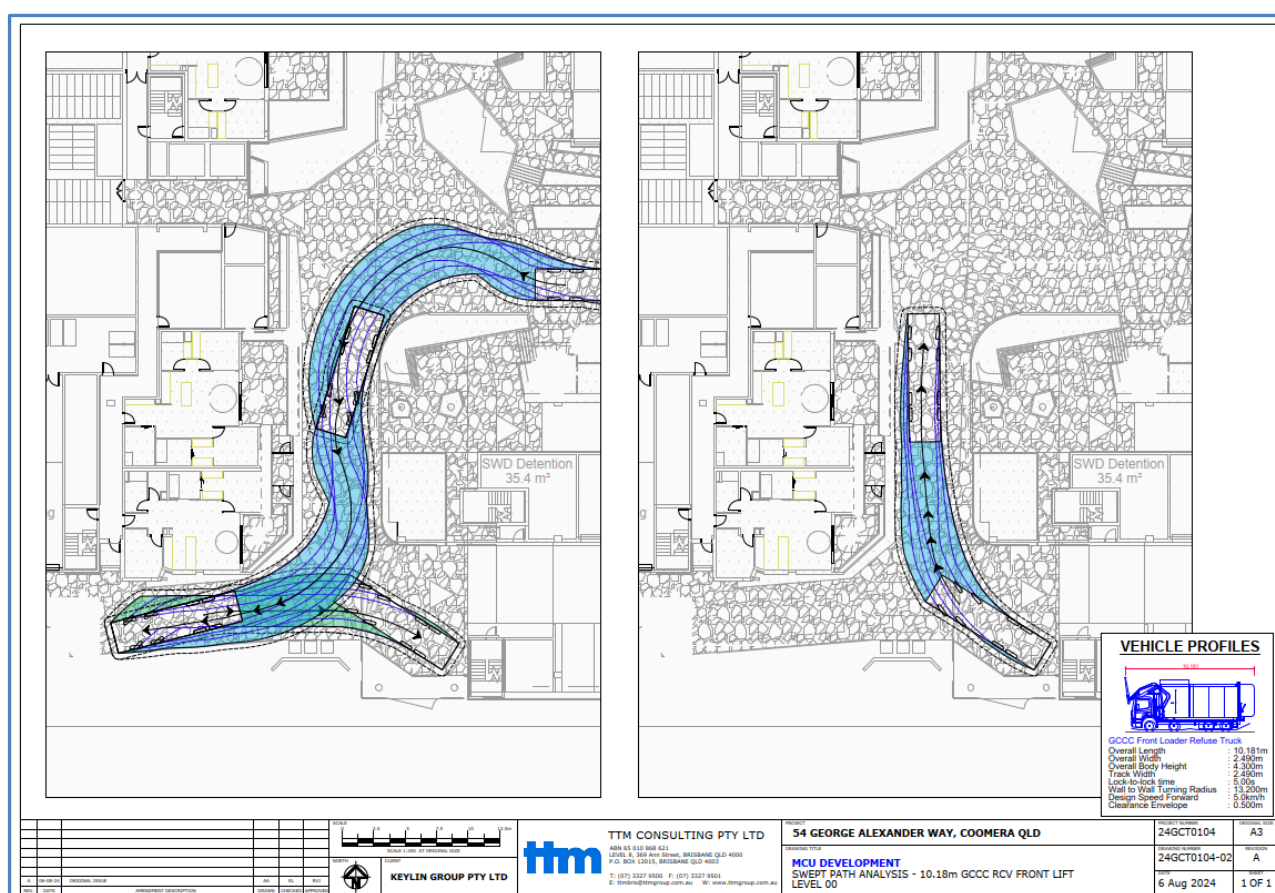


Figure 2.8: Front Loader RCV Swept Path

Source: TTM Traffic Report

2.6.2. Servicing (Townhouses)

Townhouses will be serviced by a council compliant side loader RCV. Each 240L MGB will be serviced kerbside by the side loader mechanism. The contractor will not be required to exit the vehicle during the servicing process.

A turning head will be implemented into the design of the street prior to the construction of all future roads. The turning head will allow for the RCV to perform a turn-around manoeuvre, allowing for complete circulation of the townhouse by an RCV.

Figure 2.9 depicts the swept paths for a council compliant side loader RCV servicing the townhouse portion of the development.

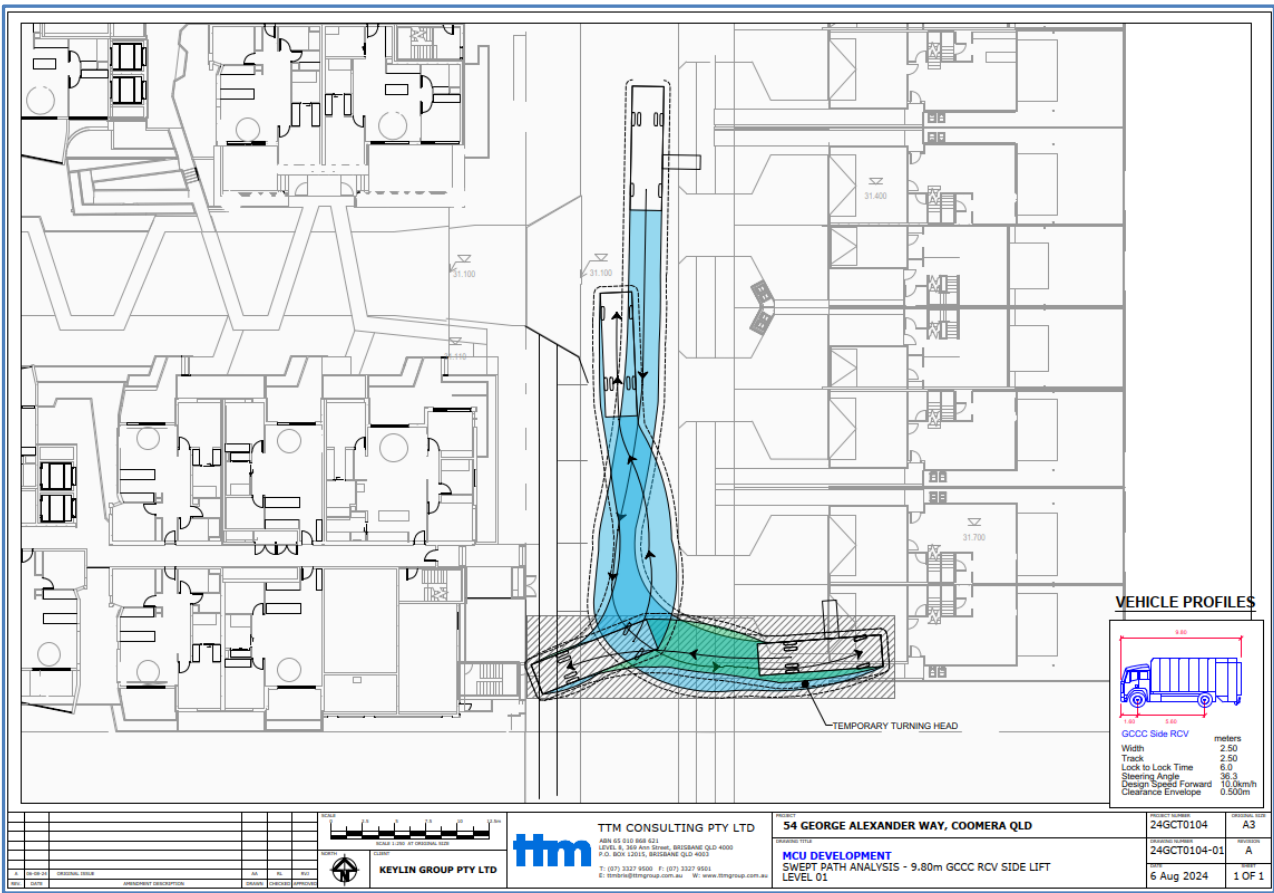


Figure 2.9: Side Loader RCV Swept Path

Source: TTM Traffic Report

The bin servicing area has been designed with the following features:

Has sufficient access and clearance for the waste and recycling collection vehicles to service the bins, including no overhead obstructions.
Allows bins to be serviced safely while minimising the impediment to vehicle movements during servicing.
Is clearly separated from car parking bays, footpaths and pedestrian access.
Is devoid of stairs, lips or ramps and allows bins to be manoeuvred easily.
Does not block the entry and exit to the property.
Is not adjacent to a kitchen or eating area for public use.
Is over 5m from any door, window or fresh air intake within the development or any adjoining site.
Is screened sufficiently to minimise the view of bins from neighbouring properties or passing vehicles and pedestrian traffic external to the site.
Is positioned away from entrances to shops or residential premises.

3 Recommended Operational Requirements

3.1 Refuse Disposal

The tables in this section summarise general recommended disposal arrangements for frequently generated and infrequently generated refuse for each use within the development. Section 3.1.1 describes the frequently generated refuse streams that are generated in high volumes for any given period and require capacity for storage prior to collections. Section 3.1.2 describes the infrequently generated refuse streams that are generated in relatively low volumes, and where minimal provision for storage can be easily managed by collection frequency.

3.1.1 Frequently Generated Refuse

Occupants will provision bins of a sufficient quantity for each residential dwelling to store at least one days' worth of generated refuse within the dwelling. Each day or as required, all refuse will be transferred by residents to the MGB's provided for that dwelling. Further details are provided in Table 3.1.

Table 3-1: Disposal of Frequently Generated Waste

Refuse Stream	Disposal Details
WASTE	
General Waste	Residential Waste Waste bins should always be lined with bags and the bags tied before removal. Operationally, general waste should weigh approximately 3 kg or less to reduce manual handling load when transferring refuse for disposal. Residents will have receptacles within their individual dwelling for collection and storage of at least one day of general waste. Bins are typically placed under the kitchen sink and accompanied by a commingled recycling bin in order to facilitate separation of general waste and recycling.
Organic (Food) Waste	CoGC offers an opt-in food organics and garden organics collections service at an additional waste charge. Additionally, domestic style equipment such as organic household composter or worm farms are available for use where practical and space allows. Any composting activities should be organized and managed by the Community Manager or caretaker.

RECYCLING	
Commingled, including. • glass • aluminium • steel cans • tins • cardboard • semi rigid plastics	Items for recycling must not be bagged and disposed in loose form. This can be done by decanting the materials from the individual receptacles into the MGB. Residents will be responsible for organising disposal of bulky recyclables too large for MGB disposal. Residents will have receptacles within their individual dwelling for collection and storage of at least one day of recycling. Recycling bins are typically placed under the kitchen sink next to the general waste bin. Recycling bins will usually be used for all recycling materials (commingled recycling). However, residents are encouraged to make use of the container refund scheme and separate eligible containers from the commingled recycling material. Container deposit / refund schemes are currently in place in Queensland. Various models exist including bottle return facilities and (automated) reverse vending machines. Occupants should be encouraged to separate containers that qualify for the schemes from the waste or recycling streams and send back to a return point.

3.1.2 Infrequent Waste

Table 3-2: Disposal of Infrequently Generated Waste

Refuse Stream	Disposal Details
Hard Waste / Bulky Goods	Hard waste collections will be coordinated by the building manager, and hard waste / bulky goods moved to a designated area for removal prior to collection. When storing bulky goods in a loading area, it is recommended that items are placed on a pallet for efficient loading via a pallet jack or forklift onto the RCV. Alternatively, skip bins may be placed around the development site on a routine basis to enable the disposal of bulky goods.
Green Waste	Green waste will be produced from surrounding landscaped areas or potted plants on an ad-hoc and largely weather dependent basis. Green waste will be removed by residents or the building manager or designated landscape maintenance contractor when generated, interim storage has not been provided. The engaged contractor will be required to send this material to a composting or resource recovery facility rather than to a landfill.
Hazardous Waste (paints, batteries and cartridges) Electronic Waste	Where applicable, occupants usually make their own arrangements for the disposal of specialised or hazardous waste and electronic waste such as recycling of toner cartridges and batteries. Please refer to Council and QLD government websites for disposal options. It is an expectation that the Building Manager assist with disposal of hazardous, electronic or liquid waste and any paint or chemicals as required and requested. Hazardous waste must be handled with due care, separated and securely stored for collection by a specialist waste contractor. Please refer to local and QLD government websites for further information.

3.2 On-going Management

The tables below are provided for the demonstration of required tasks during the operational phase of the development and therefore intentionally left blank.

Responsibilities have to be assigned for all on-going refuse management operations. This is generally done by a Community Manager or caretaker. The following lists (Table 3-3 to Table 3-9) are designed to help managing responsibilities and monitor the refuse operations in order to maintain efficient services and a safe environment.

Table 3-3: General Refuse Management Checklist

Objectives	Checked	Remarks
Consider temporary additional bulk bins or collections to cater for additional waste generated during initial tenant move in.		May also be required for high resident turnover events.
Organising of weekly pick-ups for all refuse streams.		Liaise with Council and private contractors as required.
Monitor bin transfers between refuse storage / collection areas if required.		
Monitor bin presentation of residents to ensure compliance with council requirements.		

3.2.1 Safety

Transferring refuse bins and using refuse management equipment are considered hazardous tasks. Therefore, contractors must ensure that a full risk assessment of equipment, surfaces and related gradients is complete. The contractor must provide procedural documentation to appropriate personnel prior to delivery of equipment and occupancy of the development.

Table 3-4: Safety Checklist

Objectives	Checked	Remarks
Abiding by all relevant occupational health and safety legislation, regulations, and guidelines to ensure site safety for residents, visitors, staff and contractors.		
Assessment of any manual handling risks and preparation of a manual handling control plan for waste and bin transfers.		
Provision of equipment manuals, training, health and safety procedures, risk assessments and personal protective equipment to staff / contractors in order to control hazards associated with all waste management activities.		

3.2.2 Signage

All receptacles, bins and other refuse management equipment will have adequate signage. Standard signage will be provided in and around waste collection and storage areas and should be colour coded in accordance with AS 4123.7 – 2006 Mobile waste containers (see *Appendix C*).

Table 3-5: Signage Checklist

Objectives	Checked	Remarks
Ensuring compliance of signage with government local council regulations.		Use signage provided by collections contractor if available
Ensuring that labelling on bins, refuse room etc. is appropriate and clear and easy to read and updated if required.		

3.2.3 Cleaning and Maintenance

Regular cleaning and maintenance of all refuse management facilities is important to maintain a safe and hygienic environment for visitors, staff, and contractors.

Table 3-6: Cleaning and Maintenance Checklist

Objectives	Checked	Remarks
General cleaning of all waste holding and transfer areas including - Refuse bins and storage areas, - Refuse transfer areas including paths and driveways, - Any other refuse management equipment.		Frequency depends on refuse generation and building operation.
Maintenance and servicing of refuse management equipment as per schedule.		Frequency as per manufacturers recommendation and warranty requirements.

3.2.4 Refuse Minimisation

Refuse minimisation is an important part of any site operation, it is strongly recommended that the Community Manager is actively involved in encouraging and assisting residents to follow the refuse hierarchy. At a minimum, the following should be implemented. Guidance on additional refuse minimisation options can be provided during the operational phase of the development by external review.

Refuse minimisation requires regular reviewing to ensure operational sustainability of refuse volumes, equipment, and economic feasibility.

Table 3-7: Refuse Minimisation Checklist

Objectives	Checked	Remarks
Encourage regular review of grocery quantities to avoid over-ordering and food waste.		
Consideration of secondary and recycled materials where possible.		
Encouraging refuse minimisation through education and signage (see below).		
Reduce refuse through continuous monitoring and review (see below).		

3.2.5 Education and Communication

On-going education is important to ensure people continue to use the facilities as originally intended and to avoid ongoing contamination of recoverable refuse streams. Community Manager should be involved in the education of residents and encouraging participation in recycling activities. All leasing contracts should contain clauses pertaining to waste management arrangements and use of any associated equipment.

Table 3-8: Education and Communication Checklist

Objectives	Checked	Remarks
Communication of refuse management arrangements to residents, staff and contractors as required.		
Consideration of promotional opportunities for any successes e.g. local shopping partnerships / discounts.		

3.2.6 Monitoring and Review

Regular monitoring and inspections of waste and related equipment and facilities from the development should be conducted by Community Manager.

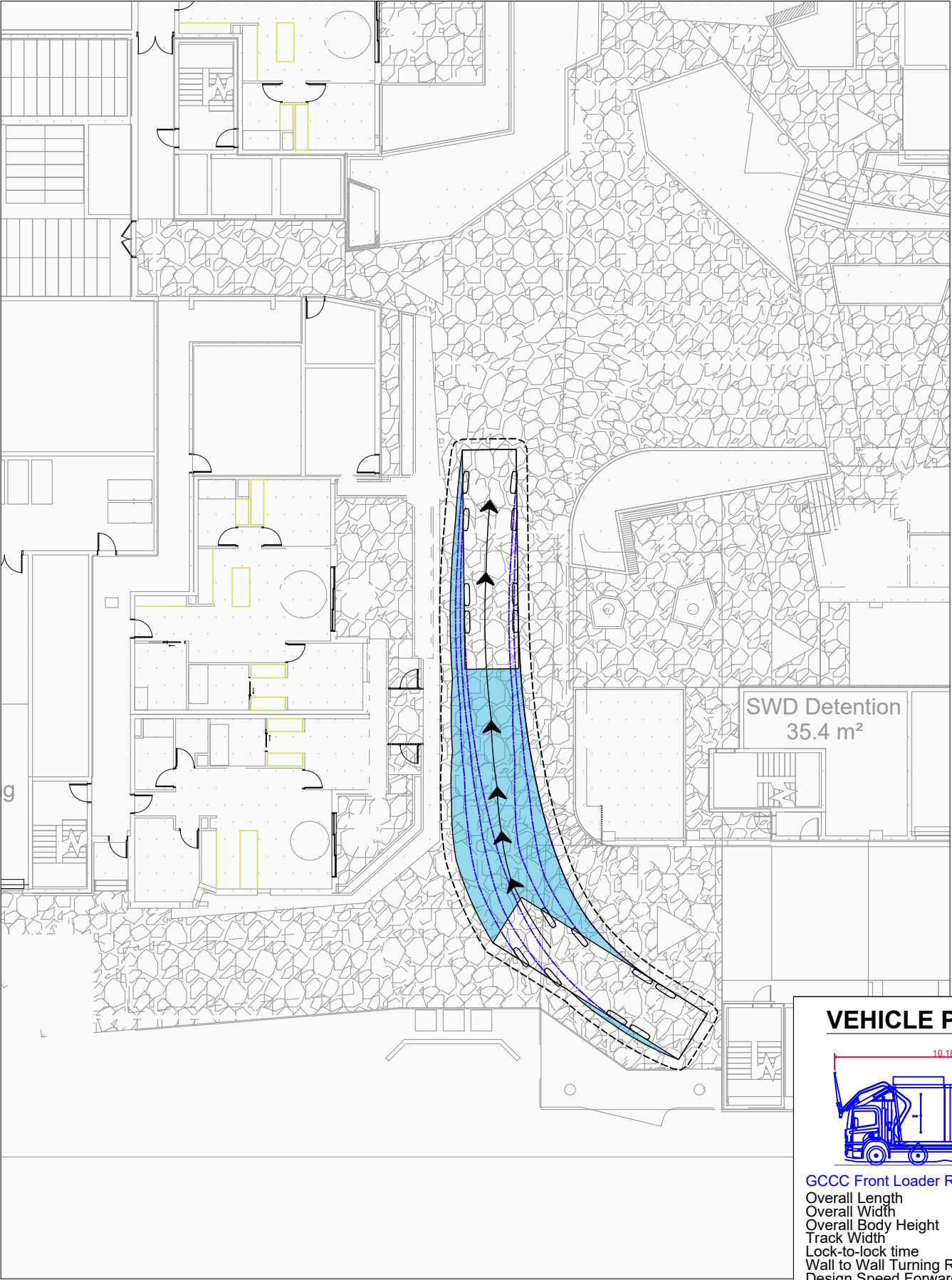
Table 3-9: Monitoring and Review Checklist

Objectives	Checked	Remarks
Continual monitoring of equipment uses and scheduling to ensure best operational outcomes.		
Regular review of refuse management equipment and facilities such as bin volumes, refuse storage capacities and stormwater management arrangements.		

Appendix A Site Plans and Swept Paths







VEHICLE PROFILES

GCCC Front Loader Refuse Truck

Overall Length	: 10.181m
Overall Width	: 2.490m
Overall Body Height	: 4.300m
Track Width	: 2.490m
Lock-to-lock time	: 5.00s
Wall to Wall Turning Radius	: 13.200m
Design Speed Forward	: 5.0km/h
Clearance Envelope	: 0.500m

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	06-08-24	ORIGINAL ISSUE	AA	RL	RVJ

SCALE

SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT

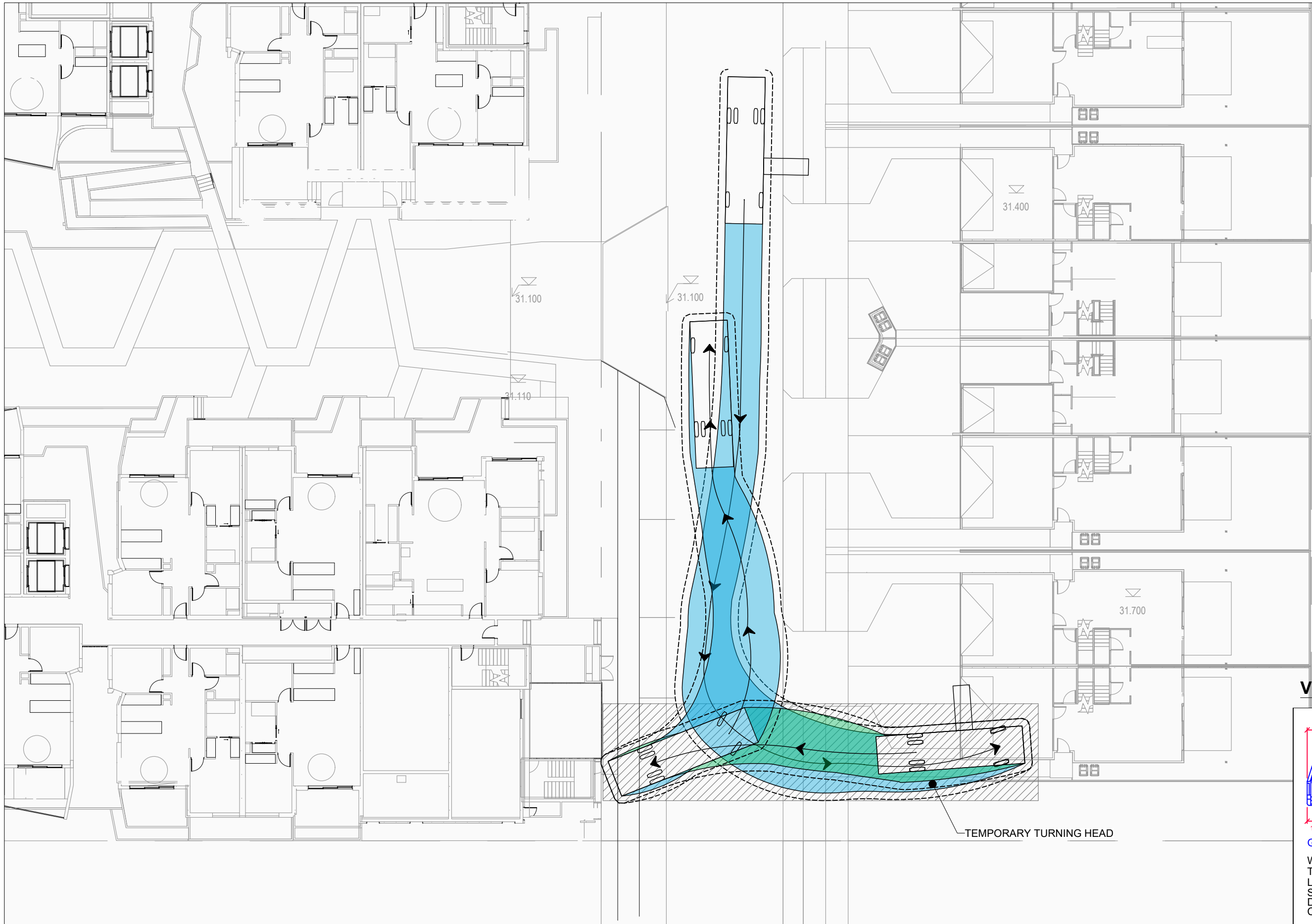
KEYLIN GROUP PTY LTD



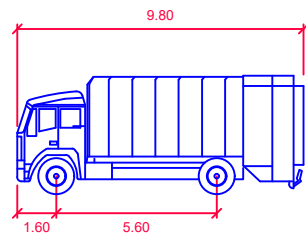
TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
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E: ttmbri@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT	54 GEORGE ALEXANDER WAY, COOMERA QLD
DRAWING TITLE	MCU DEVELOPMENT SWEPT PATH ANALYSIS - 10.18m GCCC RCV FRONT LIFT LEVEL 00

PROJECT NUMBER	24GCT0104	ORIGINAL SIZE	A3
DRAWING NUMBER	24GCT0104-02	REVISION	A
DATE	6 Aug 2024	SHEET	1 OF 1



VEHICLE PROFILES



GCCC Side RCV		metres
Width	2.50	
Track	2.50	
Lock to Lock Time	6.0	
Steering Angle	36.3	
Design Speed Forward	10.0km/h	
Clearance Envelope	0.500m	

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	06-08-24	ORIGINAL ISSUE	AA	RL	RVJ

SCALE
0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT
KEYLIN GROUP PTY LTD



TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
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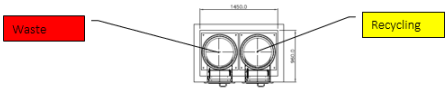
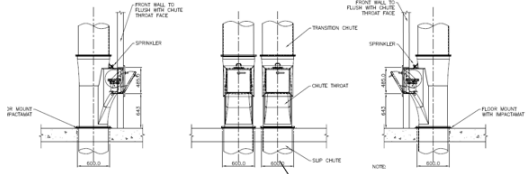
PROJECT 54 GEORGE ALEXANDER WAY, COOMERA QLD	PROJECT NUMBER 24GCT0104	ORIGINAL SIZE A3
DRAWING TITLE MCU DEVELOPMENT SWEPT PATH ANALYSIS - 9.80m GCCC RCV SIDE LIFT LEVEL 01	DRAWING NUMBER 24GCT0104-01	REVISION A
	DATE 6 Aug 2024	SHEET 1 OF 1

Appendix B Systems and Specifications

B.1 Specified Refuse Management Equipment

The table below provides contextual examples of the specific equipment types specified in this OWMP and is not intended to provide an exhaustive list of all potential options of the required equipment.

Bin / Equipment Types	Waste Streams	Examples	Information
Residential unit bins	General waste and recycling		Various options and sizes. Built and standalone bin available. Examples: https://www.bunnings.com.au
Communal area bins	General waste, recycling, food waste, paper / cardboard		Various options and sizes available. Tenant to supply depending on preference and space available. Example: 60L multisort bins https://www.sourceseparationsystems.com.au/product/multisort
2000L bins	General waste, recycling, paper / cardboard		Dimensions approx. 2050 x 965 x 1553mm (L x W x H) (dimensions depend on contractor) Examples: http://www.justwheeliebins.com.au , https://www.australianwastemanagement.com.au
240L MGB's	General waste, paper, recycling, green waste		Dimensions approx. 740 x 580 x 1080mm (L x W x H) (dimensions may depend on contractor) Examples: http://www.justwheeliebins.com.au , http://wheeliebinonline.com.au
Bin tugs / trailers	-		Assisted transfer of refuse Examples: http://ev.spacepac.com.au/categories/tugger , https://www.spacepac.com.au/product/wheelie-bin-aluminum-steel-trailers

Bin / Equipment Types	Waste Streams	Examples	Information
			
Chute systems	General waste, recycling, food waste	   	Refuse disposal in multi-storey buildings through refuse chutes: single chute for waste only, or single chute with diverter system or dual chute for disposal of waste and recycling Examples: https://www.wastech.com.au/products/chutes https://www.elephantsfoot.com.au/products/chutes

Appendix C Refuse Signage

C.1 Refuse Signage

Waste signage guideline are provided by the Queensland government:

<https://www.qld.gov.au/environment/pollution/management/waste/recovery/recycling/signage>.

General Refuse Signage



Other Refuse Signage



Colour coding as per AS 4123.7-2006

Mixed (Commingled) Recycling	PMS 108
General waste (landfill)	PMS 032C
Organics	PMS 15-0343
Paper and cardboard recycling	PMS Process Blue C
Soft Plastics	PMS 1655
Used Cooking Oil	Grey

C.2 Other Refuse, Facility and Safety Signage

Various signage including refuse area, safety and facility signage should be arranged through certified signage providers. Example signs can be found at <http://www.signblitz.com.au>, <https://www.wayout.com.au> or <https://www.smartsign.com>.

Example Refuse Room Signage



Example Facility Signage



Example Safety Signage



Appendix D Terms and Abbreviations

In this OWMP, a term or abbreviation has the following meaning unless indicated otherwise:

TERM	ABBREVIATION	DEFINITION
Equipment		
Bin (Refuse Bin)		A plastic or steel container for disposal and temporary storage of waste or recycling items. Various types and sizes exist for different items and purposes. Examples include residential unit bins, bulk bins, MGB, steely bins and specialised for medical waste or cigarette butts.
Bin Storage Area		An enclosed area designated for storing on-site refuse bins or a refuse compactor within the property.
Bulk Bin		A galvanized or steel bin receptacle that is greater than 360L in capacity generally ranging from 1.00m ³ to 4.50m ³ used for the storage of refuse that is used for on-site refuse collection.
Bulk Mobile Garbage Bin	Bulk MGB	A plastic (polypropylene) receptacle that is greater than 360L in capacity generally ranging from 660L to 1100L used for the storage of refuse.
Collection Point		An identified position where refuse bins are stored for collection and emptying. The collection point can also be the bin storage area.
Compactor		A receptacle that provides for the mechanical compaction and temporary storage of refuse. It allows to reduce bin numbers and collection frequency.
Composter		A container or machine used for composting specific food scraps and/or organic materials.
Food Waste Recycling System		Defined as a vacuum or pump-based system for shredding, macerating or pulping of food waste. The food waste is transferred through pressure (service) pipes to sealed liquid storage tanks.
Green Waste		All vegetated organic material such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers.
Liquid Waste		Non-hazardous liquid waste generated by commercial premises should be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste).
Mobile Garbage Bin	MGB	A plastic (polypropylene) bin or bins used for the temporary storage of refuse that is up to 360L in capacity and may be used in kerbside refuse collection or on-site collection.
Putrescible Waste		Putrescible waste is the component of the waste stream liable to become putrid and usually breaks down in a landfill to create landfill gases and leachate. Typically applies to food, animal and organic products.
Recycling		Recycling contains all material suitable for re-manufacture or re-use, e.g. glass bottles and jars; plastics such as PET, HDPE and PVC; aluminium aerosol and steel cans and lids; milk and juice cartons; soft drink, milk and shampoo containers; paper, cardboard, junk mail, newspapers and magazines.
Refuse		Refuse is material generated and discarded from residential and commercial buildings including general waste, recyclables, green waste and bulky items.
Refuse Storage Room		An area identified for storing on-site MGBs or Bulk Bins within the property.
Refuse Trolley		A cart on wheels that can be used to collect smaller quantities of refuse from different areas or rooms of a building or site, and wheel the collected refuse to a (bulk) bin storage area where it is disposed. Refuse trolleys are commonly used in hotels or offices.
Regulated Waste		Regulated waste is waste prescribed under legislation as regulated waste.

TERM	ABBREVIATION	DEFINITION
Transfer (Manual Transfer)		Manual transfer means physical transfer of refuse material and associated bulk bins or trolleys without assistance.
Waste		Waste is referred to as refuse material with the exclusion of recycling, green waste, hazardous waste, special waste, liquid waste and restricted solid waste.
Waste (General Waste)		General waste is generally referred to as material free of any actual or apparent contamination such as pathological / infectious, radioactive materials and / or hazardous chemical. Reporting use is for material considered to be free of food waste.
Wheelie Bin		A MGB of up to 360L, usually with 2 wheels for easy transfer. A common type is a 240L wheelie bin used for kerbside collection in many residential areas.
Measures		
Cubic Metre	m ³	Volume in cubic metre(s) related to refuse management equipment.
Ground Floor Area	GFA	The GFA of all storeys of a building is measured from the outside of the external walls or the centre of a common wall. It is commonly measured in square metres.
Kilogram	kg	Kilogram(s) related to refuse weight.
Litre	L	Litre(s) related to refuse volumes.
Square Metre	m ²	Square metre(s) related to refuse areas.
Ton	T	Ton(s) related to refuse weight.
Collection Vehicles		
Body Truck		A conventional heavy vehicle with a covered loading area. It is generally not specifically designed for emptying the content of bins into the truck during refuse collections, but can be used to carry entire (full) bins for servicing by bin swap-over.
Refuse Collection Vehicle	RCV	A vehicle specifically designed for collecting and emptying refuse bins and refuse compactors.
Rear-End-Loading Refuse Collection Vehicle	REL RCV	A truck specially designed to collect municipal solid waste and recycling, typically 240L wheelie bins to 1100L bulk bins, from rear loading mechanism and haul the collected waste to a solid waste treatment facility.
Tank Truck		An RCV that is specifically designed to collect liquid wastes such as waste cooking oil and food waste pulp. The waste is typically pumped from a waste storage tank into the truck via a hose. Liquid waste management equipment is often provided by the contractor who collects the waste and operates the truck.



**BUSHFIRE MITIGATION REPORT
FM 6743
for
KEYLIN
at
54 GEORGE ALEXANDER WAY
COOMERA**

**PREPARED BY
ELDON BOTTCHER ARCHITECT PTY LTD
145 VARSITY PARADE
VARSITY LAKES
PH 07 55920082
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9/08/2024**



TABLE OF CONTENTS**DISCLAIMER****1. INTRODUCTION**

- 1.1. Address
- 1.2. Local Authority
- 1.3. R.P.D.
- 1.4. Site Area
- 1.5. Responsible Fire Authority
- 1.6. Potential Bushfire Hazard Rating.
- 1.7. Land Tenure
- 1.8. Adjoining Owners
- 1.9. Current Land Use
- 1.10. Fire Danger Index
- 1.11. Topography
- 1.12. Predominant Wind Direction
- 1.13. Slope
- 1.14. Aspect
- 1.15. Fuel Type
- 1.16. Threat Vegetation Location
- 1.17. Fire History
- 1.18. Location of access tracks
- 1.19. Location of fire breaks
- 1.20. Location of existing firefighting infrastructure
- 1.21. Historical and cultural sites
- 1.22. Koala Habitat

2. SITE AND HAZARD ASSESSMENT

- 2.1. Discussion with Responsible Fire Authority
- 2.2. Vegetation Types
- 2.3. Potential Bushfire Hazard Rating.
- 2.4. Building Construction
- 2.5. Ecological Requirements

3. RISK MANAGEMENT PLAN

- 3.1. Agencies / Persons Responsible
- 3.2. Bushfire Safety Objectives
- 3.3. Aims
- 3.4. Functional Requirements
- 3.5. Proposed Fire Fighting Infrastructure
- 3.6. Vegetation Management
- 3.7. Fencing
- 3.8. Building Construction
- 3.9. Street Numbering
- 3.10. Less Flammable Landscaping
- 3.11. Insurance
- 3.12. Emergency Response Procedures
- 3.13. Community Awareness Strategies
- 3.14. Administering Staff

4. FIRE MANAGEMENT ACTION SUMMARY AND SCHEDULE**5. APPENDICES**

- 5.1. Form 15
- 5.2. Site Plans
- 5.3. Supporting Information

6. PROFILES

DISCLAIMER

Experienced fire fighters with extensive knowledge of building have prepared this Report. Their practical knowledge of fire fighting has been backed up by academic study.

However, fire is an element of nature. Small natural occurrences can disastrously affect the outcome of the best planning. Human actions similarly can have disastrous results.

Whilst every care has been taken in the formulation of this management report, there can be no guarantee that even the strictest adherence to its recommendations can guarantee safety of life and property.

The authors of this report accept no responsibility for any damage to life or property caused by fire or any other cause to persons using land or structures, which could in any way be construed to be the subject of this report.

The report has been commissioned as the land falls within an area deemed a fire risk by the local authority.

As such, it must be recognized that structures upon this land and those using the structures could be deemed at risk.

Logo by LogoInstant

Very Important Note:

This report is valid for the following periods;

- a) A maximum time of 5 years from date of preparation.
- b) The currency of the legislation referred to in Section 1 Report Brief
- c) Changes to any legislation generally that may impact on the report outcomes.
- d) Changes to vegetation, both on and off site, which may impact on the results of this report.
- e) Any other changes that may impact on the report in any manner.

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THIS REPORT RELIES ON THE AS 3959 FOR THE CALCULATION OF CONSTRUCTION LEVELS.

ANY POSSIBLE ERRORS IN THE STANDARD ARE NOT THE RESPONSIBILITY OF THE AUTHOR.

THIS REPORT IS ONLY TO BE USED AND DISTRIBUTED AS A COMPLETE REPORT CONTAINING AS A MINIMUM SECTIONS 1,2,3,4 AND 5 (SECTIONS 5.1 & 5.2)

THIS REPORT IS NOT TO BE AMENDED IN ANY WAY BY ANY PERSONS OTHER THAN THE ORIGINAL AUTHOR.

THIS REPORT IS ONLY TO BE USED FOR PROJECTS IDENTIFIED IN THE REPORT AND REPRESENTED ON THE SITE PLAN ACCOMPANYING THE REPORT.

INTRODUCTION

This Fire Management Report has been written for the benefit of future occupants of this proposed site and developed in accordance with the requirements of;

- The Gold Coast City Council Town Plan,
- SPP 07/2017.
- Queensland Planning Act 2016
- “Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest” Natural Hazards, Risk and Resilience-Bushfire” published by QFES and Queensland Government.
- Natural hazards, risk and resilience-Bushfire State Planning Policy-state interest guidance material published by Queensland Government
- Bushfire Resilient Building Guidance for Queensland Homes published by CSIRO and Queensland Government
- The National Construction Code
- Queensland Bushfire Plan published by Queensland Government prepared by QFES.
- Australian Standard AS3959,
- International Fire Safety Engineering Guidelines
- Australian Fire Engineering Guidelines

The report has been prepared as supporting documentation for a Material Change of Use (Building) /Reconfiguration of Lot Application.

This report is to be reviewed as development occurs on adjoining and opposing sites with resultant changes to the impacting vegetation masses.

- 1.1. **Address:**
54 George Alexander Way
Coomera.
- 1.2. **Local Authority**
Gold Coast City Council
- 1.3. **R.P.D.**
Lot 96 on RP187418
- 1.4. **Site area**
30100m²
- 1.5. **Responsible Fire Authority**
QFD for all fires.
- 1.6. **Potential Bushfire Hazard Rating.**
The hazard rating maps prepared for the Council show the ratings on this property ranging from Medium to being in a Bushfire Hazard Buffer Area
The draft risk rating maps prepared for the State Government show the ratings on this property ranging from Medium to being in a Bushfire Hazard Buffer Area

It must be noted that State Government is currently revising the mapping and there may be changes to mapped areas.
- 1.7. **Land tenure.**
Freehold
- 1.8. **Adjoining owners are:**
Freehold
- 1.9. **Current Land Use:**
Rural Residential
- 1.10. **Fire danger Index.**
FDI 40 (nominated by AS 3959 as advised by Queensland Government Dept. of Housing and Public Works)
- 1.11. **Topography**
Rolling Hills

1.12. Predominant Wind Direction

The predominate wind direction is from the South East. In times of severe fire weather, the wind direction will be from the North West. The Topography will create microclimates, which will cause swirling, which will modify the apparent wind direction according to primary direction and velocity.

1.13. Slope

-6⁰ Upslope to West and North West
7⁰ to South East

1.14. Aspect

South East

1.15. Fuel Type

Predominate vegetation.

REGIONAL ECOSYSTEM	VHC	VHC DESCRIPTION	SURFACE FUEL LOAD	TOTAL FUEL LOAD
12.11.24 (12.11.5a)	9.2	Moist to dry eucalypt woodland on coastal lowlands and range	11.4	17.2
12.11.5	10.1	Spotted Gum dominated open forests	16.3	20.8

1.16. Threat Vegetation Location

RE 12.11.25 is located on adjoining properties, Lot 95 on RP187418 to the South East and Lot 101 on SP312031 North West
RE 12.11.5 is located on Lot 1 on SP295238 opposing to the west.

1.17. Fire History

There is no evidence of a recent fire event.

1.18. Location of Access Tracks

The site is served by a sealed road system.

1.19. Location of Fire Breaks

There are no formal firebreaks. Managed and Low threat vegetation to the western end of Lot 95 on RP187418 to the South East forms effective fire breaks.

1.20. Location of existing firefighting Infrastructure

The site is served by reticulated water.

1.21. Historical and Cultural Sites

There is no evidence of Historical and Cultural sites on the property.

1.22. Koala Habitat

The site is in a Koala Habitat area and there are specific requirements in relation to bushfire management.

2. SITE AND HAZARD ASSESSMENT

2.1. Discussion with Responsible Fire Authority

The fires management report has not been discussed with the Fire Brigade.

2.2. Vegetation Types

The vegetation type predominate to this site are as scheduled in section 1.15.

2.3. Potential Bushfire Hazard Rating.

Desktop study, site inspection and assessment against the State Planning Policy Mapping Methodology generally confirms the intent of both Local Government and State Mapping in that the area is in a Potential Bushfire Hazard Area, and the relevant aspects required for Town Planning and Building are to be addressed.

2.4. Building Construction

All buildings situated within the site are in a Designated Risk Area. There is a requirement that certain Buildings within this area be constructed in accordance with the National Construction Code/Building Code of Australia, which refers to either the Australian Standard for Construction in Bushfire Prone Areas (AS 3959) or NASH Standard-Steel Framed Construction in Bushfire Areas as Deemed to Satisfy Solutions.

The levels determined effect the types and usage of materials in relation to the type of Bushfire Attack, which may occur as assessed under the Standard. The Level of Bushfire Attack is assessed taking the vegetation types, slope, and distance from vegetation into account. The most common elements affected are Windows and flyscreening, with some restrictions on cladding and timber types. A comprehensive breakdown is available in either the National Construction Code, the Australian Standard for Construction in Bushfire Prone Areas or NASH Standard-Steel Framed Construction in Bushfire Areas.

Extracts of these documents are not provided due to copyright reasons. Full details can be obtained from your building designer or certifier.

Note that the Building Code of Australia only requires Classes 1,2 and 3 buildings, certain Class 9 buildings and Class 10a building associated with those buildings to comply with the bushfire provisions of the NCC /BCA.

Where a plan used to show the construction levels that may apply to a Building, the base construction level is taken as the highest level shown that the building is located in. The building cannot be graded in construction levels in accordance with distance from the vegetation.

Building Class requirements AS 3959

2.4.1.	FDI	40
	<u>Transect 1 opposing to West</u>	
	Vegetation Classification	RE 12.11.5
	Land slope	Upslope -6 degrees

Distance of building from Predominate vegetation class (m) (Vegetation Management Zone)	Primary Bushfire Attack Level
0-<5.3	BAL -FZ
5.3-<7.1	BAL-40
7.1-<10.5	BAL-29
10.5-<15.4	BAL-19
15.4-<100	BAL-12.5
100-	BAL-LOW

Transect 2 to North West

Vegetation Classification	RE 12.11.5a
Land slope	Upslope -6 degrees

Distance of building from Predominate vegetation class (m) (Vegetation Management Zone)	Primary Bushfire Attack Level
0-<4	BAL -FZ
4-<5.4	BAL-40
5.4-<8	BAL-29
8-<11.8	BAL-19
11.8-<100	BAL-12.5
100-	BAL-LOW

Transect 3 to South East
Vegetation Classification
Land slope

RE 12.11.5a
Downslope
7 degrees

Distance of building from Predominate vegetation class (m) (Vegetation Management Zone)	Primary Bushfire Attack Level
0-<6.6	BAL -FZ
6.6-<8.9	BAL-40
8.9-<13.3	BAL-29
13.3-<19.2	BAL-19
19.2-<100	BAL-12.5
100-	BAL-LOW

Note:

The levels shown above have been produced using Method 2 as outlined in the AS 3959. Printouts of these calculations are included as Appendix 5.3.1. Site specific fuel loads provided by the State Government are utilised as a Performance Solution to provide more accurate site-specific loads than those provided in AS 3959.

The Vegetation management zone is described as all areas managed to a Low Threat condition encompassed by the distance between the building and threat vegetation from which construction levels are taken.

The distances shown above are horizontal distances, not measured along the slope.

ALL ELEVATIONS ARE TO BE THE SAME CONSTRUCTION LEVEL DUE TO VEGETATION MASS DISTRIBUTION.

Construction Levels are shown as part of a comprehensive Bushfire Management Plan.

They are provided for the end user of the land and its eventual occupants.

THEY ARE NOT PROVIDED FOR ASSESSMENT BY THE LOCAL AUTHORITY, IN ACCORDANCE WITH THE PLANNING ACT 2016, THE STATE PLANNING POLICY, AND THE BUILDING ACT 1975.

The Planning Act 2016 Section 8 What are Planning Instruments (5) and (6) state;

- (5) A local planning instrument must not include provisions about building work, to the extent the building work is regulated under the building assessment provisions, unless permitted under the Building Act.
- (6) To the extent a local planning instrument does not comply with subsection (5), the local planning instrument has no effect.

The Building Act 1975, Section 31 states;

“(4) A local law, local planning instrument or local government resolution must not include provisions about building work, to the extent the building work is regulated under a code under subsection (3).

(5) To the extent a local law, local planning instrument or local government resolution does not comply with subsection (4), the local law; local planning instrument or local government resolution is of no effect.

(6) Subsections (3) to (5) are subject to sections 32 and 33.”

The National Construction Code- Volume 1 Building Code of Australia, Part G5 Construction in Bushfire Prone Areas, Performance Requirements G5P1 Bushfire Resistance cites performance Requirements for

- (a) a Class 2 or 3 Building; and
 - (b) a Class 9a health-care building; and
 - (c) a Class 9b-
 - i) early childhood centre; and
 - ii) primary or secondary school; and
 - (d) a Class 9c residential care building; and
 - (e) a Class 10a building or deck immediately adjacent or connected to a building of a type listed in (a) to (d).
- Section G5P2 addresses “ Additional bushfire requirements for certain Class 9 buildings” and applies to Class 9a, 9b and 9c buildings.

G5D1 Deemed-to-Satisfy Provisions

- (1) Where a Deemed-to Satisfy Solution is proposed, Performance Requirement s G5P1⁵ and subject to G5D2⁶, GfP2⁷, are satisfied by complying with G5D3⁸ and G5D4⁹

G5D3 Protection -residential buildings

In a designated bushfire prone area, the following must comply with AS 3959:

- (a) A Class 2 or 3 building
- (b) A class 10a building or deck immediately adjacent or connected to as Class 2 or 3 building.

G5D4 Protection – certain Class 9 Buildings

- (1) In a designated bushfire prone area, the following must comply with Specification 43²⁵

- a) A Class 9a health -care building
- b) A class 9b-
 - i) Early childhood centre ; or
 - ii) Primary or secondary school
- c) A Class 9c residential care building

- (2) In a designated bushfire prone area, a Class 10a building immediately adjacent or connected to a building of a type listed in (1) must comply with S43C2²⁶ and S43c13²⁷

The National Construction Code- Volume 2 Building Code of Australia, Performance Requirements H7P5 Buildings in bushfire prone areas:-

A Class 1 building or a Class 10a building or deck associated with a Class 1 building that is constructed in a designated bushfire prone area must be designed and constructed to-

- a) Reduce the risk of ignition from a *design bushfire* with an annual probability of exceedance not more than 1:50 years; and
- b) Take account of the assessed duration and intensity of the fire actions of the *design bushfire*; and
- c) Be designed to prevent internal ignition of the building and its contents; and
- d) Maintain the structural integrity of the building for the duration of the *design bushfire*.

H7D4 Construction in bushfire prone areas

- (1) The requirements of (2) only apply in a *designated bushfire prone area*.
- (2) Performance requirement H7P5 is satisfied for a Class 1 building, or a Class 10a building or deck associated with a Class 1 building, if it is constructed in accordance with-
 - a) AS 3959 ; or
 - b) NASH Standard-Steel Framed Construction in Bushfire Areas.

Qld Variation to H7D4 Construction in Bushfire prone areas

- (3) The requirements of (2) do not apply when, in accordance with AS 3959, the classified vegetation is group F rainforest (excluding wet sclerophyll forest types), mangrove community=swamps or grass lands under 300mm high.

Therefore, it is clear that compliance with any Construction Level of AS 3959 satisfies the Performance Requirements of Building Code of Australia, and all construction levels therefore are to be considered as mitigating risk in an equal manner.

2.5. Ecological Requirements

The site is in a Koala Habitat Area and there is specific restriction in relation to vegetation management.

Note;

The Category of Bushfire Attack referred to in the Australian Standard is different to the Hazard/Risk area referred to above.

Extensive modification of the existing vegetation types including that on adjoining sites could result in a change of Category of Bushfire Attack and therefore variation in the Level of construction required.

It is the responsibility of the owner of each individual site to ensure that plantings after their occupation of the site do not reduce the safety of their buildings in a manner, which could require a higher level of Construction than that originally utilised.

3. RISK MANAGEMENT PLAN

3.1. Agencies / Persons Responsible

The responsible Fire Authority is the Queensland Fire Department being responsible for Structural Fires. It is the responsibility of the Developers and Owners of the properties to ensure that the relevant measures required by this Management Report are in place prior to inspection by the Council and the Building Certifier and to ensure that those measures are in place prior to the occupation of any buildings, which are the subject of this report. It is the responsibility of Council and Building Certifiers to ensure that relevant measures within their responsibility are in place prior to the issuance of any certification.

3.2. Bushfire Safety Objective

The objective of this report is to minimise potential risk to life and property by protecting the buildings from the effects of bushfire.

3.3. Aims

The aims to achieve this objective are to mitigate the effect of the bushfire attack mechanisms of: -

- 3.3.1. Radiant Heat
- 3.3.2. Direct Flame Contact
- 3.3.3. Wind
- 3.3.4. Ember Attack
- 3.3.5. Smoke

3.4. Functional Requirements

The functional requirements to achieve this objective are: -

- 3.4.1. The provision of safe conditions for fire fighters
- 3.4.2. The provision of safe conditions for residents
- 3.4.3. Ensure adequate and safe access to and from the property.
- 3.4.4. Ensure adequate and safe water supply to the property and the establishment of firefighting water reserves.
- 3.4.5. Provide a system of fire breaks and trails to protect the building component.
- 3.4.6. Remove vegetation that is considered dangerous and a hazard in Fire Conditions
- 3.4.7. To ascertain the required standard of construction of the buildings in accordance with the requirements of the National Construction Code and the Australian Standard for Construction in Bushfire Prone Areas or the provision of a satisfactory alternative solution
- 3.4.8. Facilitate the return to "normalcy "

3.5. Proposed Fire Fighting Infrastructure

- 3.5.1. The proposed buildings are to be served by a reliable reticulated water supply.

3.6. Vegetation management

- 3.6.1. Any grass and existing mid storey vegetation within the Vegetation Management Zone shall be always kept to a maximum of 100mm or be of less flammable or rain forest species.
- 3.6.2. Existing non rainforest trees within this area are to be reduced to give a noncontinuous canopy cover between trees with a total cover of less than 30% of the area.
- 3.6.3. Generally, no trees that are of protected size are required to be removed to comply with the above requirements, subject to the comments below in relation to wind during a bushfire event.
- 3.6.4. The above vegetation management scenario will produce a Low Threat scenario like "maintained public reserves and parklands" as cited in section 2.2.3.2(f) of AS 3959.
- 3.6.5. The width of the vegetation management zone noted above can be used to calculate the required BAL.
- 3.6.6. **NO WORKS CAN BE CARRIED OUT ON ADJOINING PROPERTIES UNLESS FORMAL APPROVAL IN PERPETUITY IS PROVIDED AND ATTACHED TO THE LAND TITLE**
- 3.6.7. Requirements noted above may be subject to State and Local Authority approval. Those approvals must be obtained prior to implementation of any of these measures.
- 3.6.8. Refer to Sections 14 and 19 of the Planning Act 2016 in relation to Local Authority Approval.
- 3.6.9. The management referred to above is regarded as "Essential Management "(necessary to remove or reduce the imminent risk that the vegetation poses of serious personal injury or damage to infrastructure" under the Sustainable Planning Regulation Schedule 24. It is recommended that the owner register any clearing work with www.dnrm.qld.gov.au, "Vegetation management notification form for self-assessable codes".

Under changes to **Planning Regulation 2017 effective December 13, 2019**, permitted operational work includes the following:

Schedule 6, Part 3, Section 20A - Operational work for necessary firebreaks or fire management lines

Operational work that is clearing native vegetation if—

(a) the clearing is necessary for—

(i) establishing or maintaining a necessary firebreak to protect infrastructure, other than a fence, road or vehicular track, and the maximum width of the firebreak is equal to 1.5 times the height of the tallest vegetation next to the infrastructure, or 20m, whichever is the wider; or

(ii) establishing a necessary fire management line, and the maximum width of the clearing for the fire management line is 10m; and

(b) the clearing—

(i) is on freehold land; or

(ii) is on indigenous land; or

(iii) is on land leased under the Land Act 1994 for agriculture or grazing purposes; or

(iv) is on land leased under the Land Act 1994, other than for agriculture or grazing purposes, and is consistent with the purpose of the lease; or

(v) is on trust land under the Land Act 1994, other than indigenous land, is carried out, or allowed to be carried out, by the trustee and is consistent with achieving the purpose of the trust; or

(vi) is on unallocated State land and is carried out, or allowed to be carried out, by the chief executive of the department in which the Land Act 1994 is administered; or

(vii) is on land that is subject to a licence or permit under the Land Act 1994 and is carried out by the licensee or permittee.

As an example, with a height of the tallest vegetation being between 30 – 35m, the width of clearing would be calculated as between 45 – 52.5m.

*Under **Planning (Spit Master Plan and Other Matters) Amendment Regulation 2019 (Subordinate Legislation 2019 No.243)** amends Schedule 6 Part 3 stating that “Development local categorising instrument is prohibited from stating if the above operational work is assessable development”.*

Under Schedule 7 Part 3 this is placed in context, stating that *the above operational work is accepted development.*

It must be noted that the distances noted above in relation to 20m, and vegetation height are not related to distances necessary to achieve a BAL but relate more to damage that may occur from a tree falling. In relation to bushfire this could be from wind which is one of the attack mechanisms of bushfire and could be exacerbated by the drying impacts of a bushfire loosening tree roots through drying out of the soil.

Note. The major fire threat to this building is from ember attack from fire in vegetation outside the control of the owner located on surrounding land. As such, there is little that the owner can do to manage this.

The management is a component of the Construction Level. Therefore, the Building Certifier must ensure that the management has occurred in accordance with this report before issuing final certification.

Recent research (Project Vesta) indicates that tree canopy without mid storey and surface fuels forms an important filter for control of ember attack, which is responsible for more than 90% all bushfire related Building fires.

3.7. Fencing

Any boundary fencing located adjoining bushland, or a fire access trail is to be.

3.7.1. A maximum of 1000mm high

3.7.2. At least 75 % transparency

3.7.3. Contain at least 1 personal gate from each lot to the threat vegetation.

3.7.4. Contain personal gates between each lot on the fire trail easement.

3.7.5. Fencing materials to be non-combustible materials or wood compliant with Appendix F of AS 3959.

3.7.6. No CCA treated timbers are to be used due to the potential toxicity of the products of combustion.

and
Fencing between Buildings should be of materials matching the requirements for external walls for the relevant level of construction of the subject Building where within 6m of the building.

3.7.7. No CCA treated timbers are to be used due to the potential toxicity of the products of combustion.

3.8. Building Construction

All construction is to be in accordance with National Construction Code/Building Code of Australia, which refers to either the Australian Standard for Construction in Bushfire Prone Areas (AS 3959) or NASH Standard-Steel Framed Construction in Bushfire Areas as Deemed to Satisfy Solutions. and the Level of construction assessed under Section 2.4 “Building Construction .”

Note that it is our opinion that timber should not be used externally for BAL-29 plus construction even though under the Australian Standard situations could arise where it could be deemed acceptable.

The plans lodged for Building Certification are to be assessed on this basis by the Building Certifier. A final stage completion certificate (Form 21) issued by the Building Certifier is to be received prior to occupation of the building.

Buildings are not to be occupied until certification is received.

Buildings are to be maintained in a manner that protects the integrity of the construction and building elements as outlined in this report.

We recommend that the buildings being assessed as having a BAL greater than BAL 29 not be constructed until the impacting vegetation has been cleared to accommodate future development

3.9. Street Numbering

Numbering is to be installed in accordance with the current Street Numbering System at time of completion of building.

3.10. Less Flammable Landscaping

Any new landscaping within the vegetation management zone is to be Less Flammable, in accordance with the list enclosed as an Appendix at the rear of this Report, rainforest species, or cultivated gardens, and comply with the requirements of “Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest” Natural Hazards , Risk and Resilience-Bushfire” published by QFES and Queensland Government, and “Natural hazards, risk and resilience-Bushfire-Assessment Benchmark 5” which cite a maximum Fuel Load of 8t/ha for revegetation or rehabilitation within bushfire prone areas.

“Bushfire Resilient Building Guidance for Queensland Homes” published by Qld State Government provides a schedule of species in Appendix E.

<https://www.qra.qld.gov.au/bushfireguideline>

3.11. Insurance

Failure to comply with this management report may have a detrimental effect upon the Insurance of the subject Buildings.

3.12. Emergency Response Procedures

In the event of Fire Emergency, assistance is to be obtained by dialling 000.

- 3.12.1. The owner should read thoroughly the brochures contained and those recommended at the rear of this report. They contain valuable information that could assist in the saving of lives and property in a fire event!

3.13. Community Awareness Strategies

- 3.13.1. Each subsequent owner is to be provided with a copy of this Fire Management report with an alert placed on either Title or Council Rate searches that the Report is in existence and is to be made available to ensuing owners.

3.14. Administering Staff

It is the responsibility of the developers and owners to ensure compliance with this Report and the Town Plan, and to ensure that each of the new owners is provided with a copy of this report.

It is the responsibility of the Council and the Building Certifier to ensure that the relevant measures required by this management report are in place prior to the final completion stage inspection of any buildings on any sites which are the subject of this report as noted in Clause 3.1 of this report.

It is the responsibility of the ensuing owners of the properties to maintain the properties in the conditions outlined in this report.

4. FIRE MANAGEMENT ACTION SUMMARY AND SCHEDULE

DEVELOPMENT REQUIREMENTS	BUILDING REQUIREMENTS	MAINTENANCE
All dead and damaged timber to be removed from the areas indicated to be mowed and removed from site.	Buildings to comply with the National Construction Code/Building Code of Australia, No occupation until compliance with Standard and Management Report	Regular mowing and maintenance of the vegetation management areas as set out in this report. Drive and fire trail access to be kept clear and accessible to satisfaction of the Fire Brigade. Building materials are to be maintained in "as new "condition to preserve the integrity of the relevant materials.

5. APPENDICES

- 5.1. Form 15
- 5.2. Site Plans
- 5.3. Supporting Information:
 - 5.3.1. Method 2 Calculation printouts
 - 5.3.2. Fuel Load Calculation

Note. These items below are referenced for information purposes only and are not to be construed as being part of the management report.

This information is generic and not provided for approval purposes.

It is only provided for end user knowledge and only included within the report hardcopy.

- 5.3.3. Planning Regulation Fact Sheet December 2019
- 5.3.4. Prepare. Act. Survive
- 5.3.5. Rural property Fire Management Guide 2010
- 5.3.6. Notes for Landholders
- 5.3.7. Bushfire Action Guide
- 5.3.8. Bushfire Safety in Urban Fringe Areas
- 5.3.9. Water + Power -Vital for Fire fighting
- 5.3.10. Less Flammable Vegetation
- 5.3.11. Fire Retardant Native Plants
- 5.3.12. Tree selection for Fire-Prone Areas
- 5.3.13. Bushfire Resilient Building Guidance for Queensland Homes Appendix E
- 5.3.14. First Draft (specifying timber in bush fire zones)
- 5.3.15. External water spray system
- 5.3.16. Fire Retardant Coating Solutions
- 5.3.17. Archicentre Bushfire Design Guide
- 5.3.18. Section 3.8 Sign Types - Fire Trail Signage of the GCCC Natural Areas Management Unit Signage Guidelines
(Page 16)
- 5.3.19. Trail Number and Key Point signage
- 5.3.20. Bushfire Hydrant detail
- 5.3.21. Tank detail
- 5.3.22. Recycled Water for Firefighting
- 5.3.23. Sample Easement Document
- 5.3.24. Bushfire Windows and Shutters
- 5.3.25. A guide to retrofit your home for better protection from a bushfire.
- 5.3.26. FireFly BAL-FZ System
- 5.3.27. Bushfire Planning and Design Certification Scheme Update
- 5.3.28. Eaves Water System
- 5.3.29. Aussi Ember Guard
- 5.3.30. The Australian "False Alarm: the great rainforest fire that wasn't".
- 5.3.31. Hijacking Australian 2019 Bushfire Tragedies to Fearmonger Climate Change
- 5.3.32. Bushfires have been in Australia for over 60 million years.

We also recommend that the landholder obtains and reads the following;

- 5.3.33. Bushfire Hazard Planning in Queensland
- 5.3.34. Protecting your home against Bushfire
Both available from the Dept. of Local Government and Planning, and
- 5.3.35. Fire in Bushland Conservation
Available from Queensland Heritage Trust.
- 5.3.36. Bushfire Resilient Building Guidance for Queensland Homes
<https://www.qra.qld.gov.au/bushfireguideline>

Signed

E J Bottcher

.....
Eldon Bottcher

Grad. Dip. DBPA (UWS) Dip. Arch. (QIT), Cert. R.F.M. (USQ), F.R.A.I.A., M.A.I.E.S. AIFireE
Architect
BPAD-L3 Practitioner



APPENDIX 5.1
FORM 15

Form 15**Compliance certificate for
building design or specification**

This form is to be used by an appointed competent person for the purposes of section 10 of the *Building Act 1975* and sections 73 and 77 of the Building Regulation 2021 (Design-specification certificate) stating that an aspect of building work or specification will, if installed or carried out as stated in this form, comply with the building assessment provisions.

Additional explanatory information is included in the Appendix at the end of this form.

1. Property description This section need only be completed if details of street address and property description are applicable. E.g., in the case of (standard/generic) pool design/shell manufacture and/or patio and carport systems this section may not be applicable. The description must identify all land the subject of the application. The lot and plan details (e.g., SP/RP) are shown on title documents or rates notice. If the plan is not registered by title, provide previous lot and plan details.	Street address <i>(include no., street, suburb/locality, and postcode)</i> 54 George Alexander Way Coomera State QLD Postcode Lot and plan details <i>(attach list if necessary)</i> Lot 96 on RP187418 Local government area the land is situated in. Gold Coast City Council
2. Description of aspect/s certified Clearly describe the extent of work covered by this certificate, e.g., all structural aspects of the steel roof beam.	Work as required for bushfire mitigation purposes as set out in the Bushfire Management Report FM 6743 prepared by Eldon Bottcher Architect Pty Ltd including assessment of Construction Levels assessed under AS 3959 and nominated in Section 2.4 of the report.
3. Basis of certification Detail the basis for giving the certificate and the extent to which tests, specifications, rules, standards, codes of practice and other publications were relied upon.	Compliance with the Bushfire Management Report FM 6743 prepared by Eldon Bottcher Architect Pty Ltd No certification of components covered by The Building Act 1975, The building Code of Australia or AS 3959. Gold Coast City Council Town Plan Bushfire Management Constraint code.
4. Reference documentation Clearly identify any relevant documentation, e.g., numbered structural engineering plans.	Bushfire Mitigation Report FM 6743

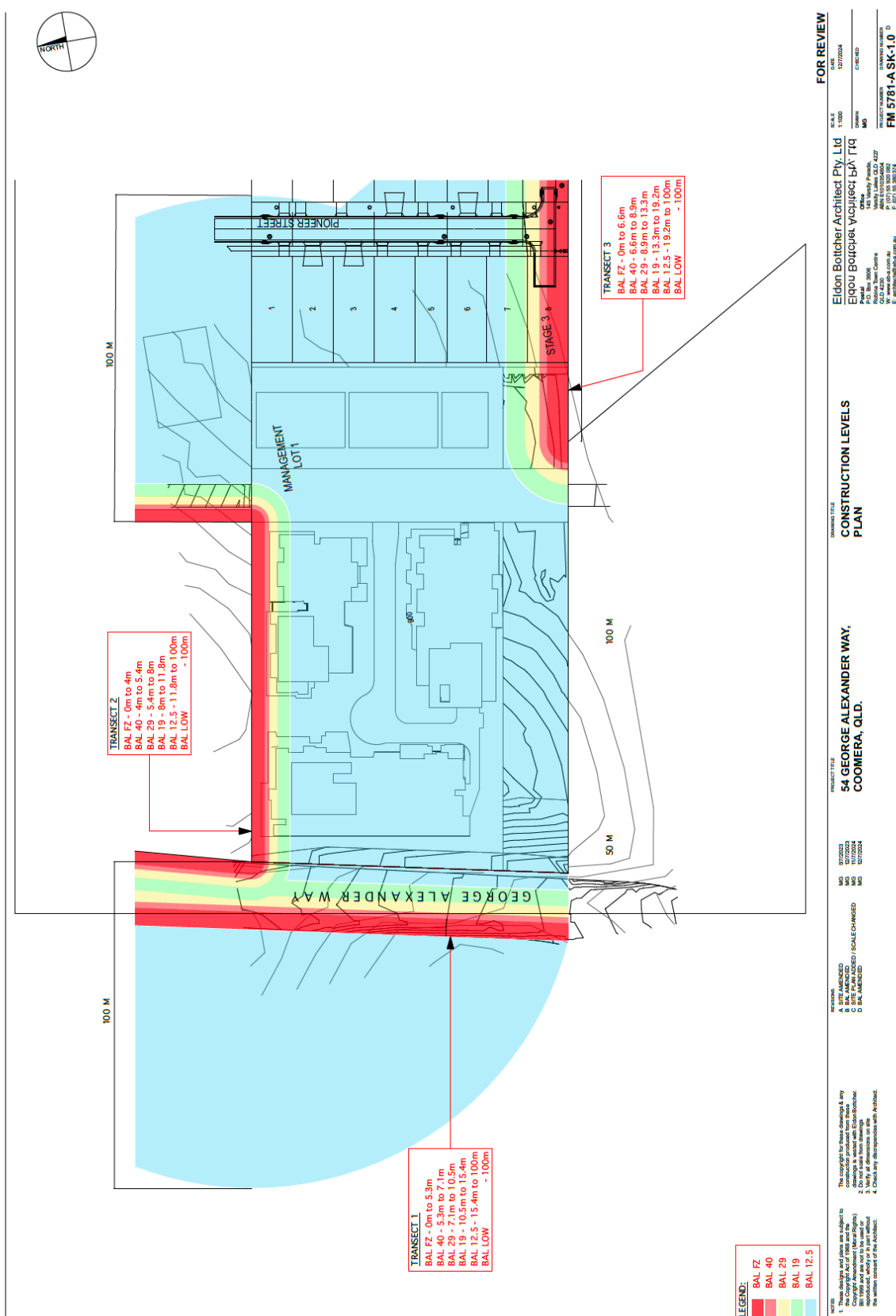
5. Building certifier reference number and building development application number	Building certifier reference number Building development application number <i>(if available)</i> Not Available																				
6. Appointed Competent person details. Under Part 6 of the Building Regulation a person must be assessed as a competent for the type of work (design - specification) by the relevant building certifier.	<table border="0"> <tr> <td colspan="2">Name <i>(in full)</i> Eldon John Bottcher</td> <td>Contact person Eldon Bottcher</td> </tr> <tr> <td colspan="2">Company name <i>(if applicable)</i> Eldon Bottcher Architect Pty Ltd</td> <td>Mobile number 0412434134</td> </tr> <tr> <td colspan="2">Business phone number 07 55920082</td> <td></td> </tr> <tr> <td colspan="3">Email address. bushfires@eb-a.com.au</td> </tr> <tr> <td colspan="3">Postal address P.O. Box 3606 Robina Town Centre Postcode 4230</td> </tr> <tr> <td colspan="3">Licence Class or registration type <i>(if applicable)</i> Licence or registration number <i>(if applicable)</i> Reg Architect Qld 1325 FPA Australia BPAD Level 3 practitioner 16935 </td> </tr> </table>			Name <i>(in full)</i> Eldon John Bottcher		Contact person Eldon Bottcher	Company name <i>(if applicable)</i> Eldon Bottcher Architect Pty Ltd		Mobile number 0412434134	Business phone number 07 55920082			Email address. bushfires@eb-a.com.au			Postal address P.O. Box 3606 Robina Town Centre Postcode 4230			Licence Class or registration type <i>(if applicable)</i> Licence or registration number <i>(if applicable)</i> Reg Architect Qld 1325 FPA Australia BPAD Level 3 practitioner 16935		
Name <i>(in full)</i> Eldon John Bottcher		Contact person Eldon Bottcher																			
Company name <i>(if applicable)</i> Eldon Bottcher Architect Pty Ltd		Mobile number 0412434134																			
Business phone number 07 55920082																					
Email address. bushfires@eb-a.com.au																					
Postal address P.O. Box 3606 Robina Town Centre Postcode 4230																					
Licence Class or registration type <i>(if applicable)</i> Licence or registration number <i>(if applicable)</i> Reg Architect Qld 1325 FPA Australia BPAD Level 3 practitioner 16935																					
7. Signature of appointed competent person This certificate must be signed by the individual assessed and appointed by the building certifier as competent to give design-specification help.	<table border="0"> <tr> <td>Signature</td> <td>Date</td> </tr> <tr> <td><i>E J Bottcher</i></td> <td>9 August 24</td> </tr> <tr> <td colspan="2">.....</td> </tr> </table>			Signature	Date	<i>E J Bottcher</i>	9 August 24														
Signature	Date																				
<i>E J Bottcher</i>	9 August 24																				
.....																					

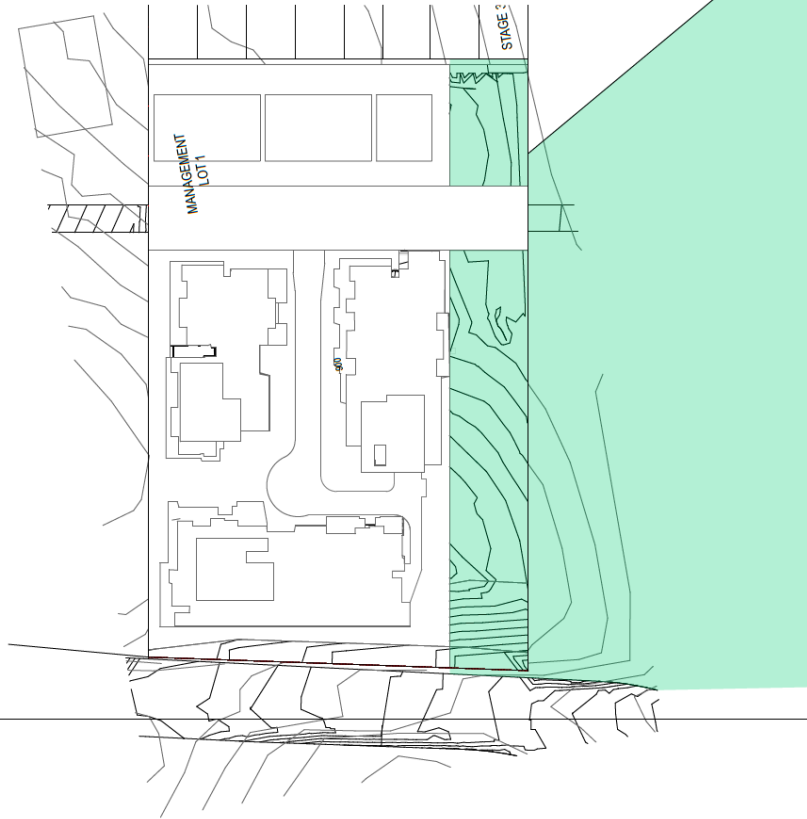
LOCAL GOVERNMENT USE ONLY

Date received		Reference Number/s	
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APPENDIX 5.2

SITE PLANS





LOW THREAT VEGETATION

Eldon Boltcher Architect Pty. Ltd
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P.O. Box 3696 Robins Town Centre QLD 4230 W: www.eba.com.au A: info@eba.com.au	145 Varsity Parade, Orinda Vic 3163 AUSN 61 03 928 0654 P (07) 55 920 1952 F (07) 55 380 114
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SCALE	DATE	CHECKED	DRAWN	Md	PROJECT NUMBER	DRAWING NUMBER
1:1000	13/7/2024					FM 5781-A SK-3.0 D

APPENDIX 5.3 SUPPORTING INFORMATION

(NOTE: SOME OF THIS INFORMATION IS GENERIC AND NOT PROVIDED FOR APPROVAL PURPOSES. IT IS ONLY PROVIDED FOR END USER KNOWLEDGE

BUSHFIRE ATTACK ASSESSMENT



ELDON BOTTCHE ARCHITECT PTY LTD
145 VARSITY PARADE PH 0755920082
VARSITY LAKES E architects@eb-a.com.au
QLD. 4327

THIS ASSESSMENT USES AS 3959-2009 METHOD 2

PROJECT	PROPOSED RESIDENTIAL DEVELOPMENT	
SITE ADDRESS	54 GEORGE ALEXANDER WAY COOMERA TRANSECT 1 WEST RE 12.11.5	
INPUTS		
FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		20.8 tonnes/ha
SLOPE UNDER VEGETATION		-6 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		-6 degrees
FLAME WIDTH		100 m
ELEVATION OF RECEIVER		2.8 m
DISTANCE BETWEEN VEGETATION AND BUILDING		5.3 m
RESULTS		
RADIANT HEAT		39.33 kw/m ²
FLAME LENGTH		5.86 m
RATE OF SPREAD		0.52 km/hr
ATMOSPHERIC TRANSMISSIMTY		89%
PEAK ELEVATION OF RECEIVER		2.8 m
FLAME ANGLE		50 degrees
CONSTRUCTION LEVEL REQUIRED		BAL-40 BAL

BUSHFIRE ATTACK ASSESSMENT



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THIS ASSESSMENT USES AS 3959-2009 METHOD 2

PROJECT	PROPOSED RESIDENTIAL DEVELOPMENT	
SITE ADDRESS	54 GEORGE ALEXANDER WAY COOMERA TRANSECT 1 WEST RE 12.11.5	
INPUTS		
FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		20.8 tonnes/ha
SLOPE UNDER VEGETATION		-6 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		-6 degrees
FLAME WIDTH		100 m
ELEVATION OF RECEIVER		3.23 m
DISTANCE BETWEEN VEGETATION AND BUILDING		7.1 m
RESULTS		
RADIANT HEAT		28.83 kw/m ²
FLAME LENGTH		5.86 m
RATE OF SPREAD		0.52 km/hr
ATMOSPHERIC TRANSMISSIMTY		88%
PEAK ELEVATION OF RECEIVER		3.23 m
FLAME ANGLE		60 degrees
CONSTRUCTION LEVEL REQUIRED		BAL-29 BAL

BUSHFIRE ATTACK ASSESSMENT



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E architects@eb-a.com.au

THIS ASSESSMENT USES AS 3959-2009 METHOD 2

PROJECT	PROPOSED RESIDENTIAL DEVELOPMENT	
SITE ADDRESS	54 GEORGE ALEXANDER WAY COOMERA TRANSECT 1 WEST RE 12.11.5	
INPUTS		
FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		20.8 tonnes/ha
SLOPE UNDER VEGETATION		-6 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		-6 degrees
FLAME WIDTH		100 m
ELEVATION OF RECEIVER		3.8 m
DISTANCE BETWEEN VEGETATION AND BUILDING		10.5 m
RESULTS		
RADIANT HEAT		18.93 kw/m ²
FLAME LENGTH		5.86 m
RATE OF SPREAD		0.52 km/hr
ATMOSPHERIC TRANSMISSIMTY		87%
PEAK ELEVATION OF RECEIVER		3.8 m
FLAME ANGLE		68 degrees
CONSTRUCTION LEVEL REQUIRED		BAL-19 BAL

BUSHFIRE ATTACK ASSESSMENT



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QLD. 4327

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E architects@eb-a.com.au

THIS ASSESSMENT USES AS 3959-2009 METHOD 2

PROJECT	PROPOSED RESIDENTIAL DEVELOPMENT	
SITE ADDRESS	54 GEORGE ALEXANDER WAY COOMERA TRANSECT 1 WEST RE 12.11.5	
INPUTS		
FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		20.8 tonnes/ha
SLOPE UNDER VEGETATION		-6 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		-6 degrees
FLAME WIDTH		100 m
ELEVATION OF RECEIVER		4.4 m
DISTANCE BETWEEN VEGETATION AND BUILDING		15.4 m
RESULTS		
RADIANT HEAT		12.45 kw/m ²
FLAME LENGTH		5.86 m
RATE OF SPREAD		0.52 km/hr
ATMOSPHERIC TRANSMISSIVITY		85%
PEAK ELEVATION OF RECEIVER		4.4 m
FLAME ANGLE		73 degrees
CONSTRUCTION LEVEL REQUIRED		BAL-12.5 BAL

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QLD. 4327



THIS ASSESSMENT USES AS 3959-2009 METHOD 2

PROJECT	PROPOSED RESIDENTIAL DEVELOPMENT	
SITE ADDRESS	54 GEORGE ALEXANDER WAY COOMERA TRANSECT 2 NORTH WEST RE 12.11.24	
INPUTS		
FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		17.2 tonnes/ha
SLOPE UNDER VEGETATION		-6 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		-6 degrees
FLAME WIDTH		100 m
ELEVATION OF RECEIVER		2.2 m
DISTANCE BETWEEN VEGETATION AND BUILDING		4 m
RESULTS		
RADIANT HEAT		39.41 kw/m ²
FLAME LENGTH		4.42 m
RATE OF SPREAD		0.36 km/hr
ATMOSPHERIC TRANSMISSIMTY		89%
PEAK ELEVATION OF RECEIVER		2.2 m
FLAME ANGLE		52 degrees
CONSTRUCTION LEVEL REQUIRED		BAL-40 BAL

BUSHFIRE ATTACK ASSESSMENT



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145 VARSITY PARADE
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PH 0755920082
E architects@eb-a.com.au



THIS ASSESSMENT USES AS 3959-2009 METHOD 2

PROJECT	PROPOSED RESIDENTIAL DEVELOPMENT	
SITE ADDRESS	54 GEORGE ALEXANDER WAY COOMERA TRANSECT 2 NORTH WEST RE 12.11.24	
INPUTS		
FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		17.2 tonnes/ha
SLOPE UNDER VEGETATION		-6 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		-6 degrees
FLAME WIDTH		100 m
ELEVATION OF RECEIVER		2.4 m
DISTANCE BETWEEN VEGETATION AND BUILDING		5.4 m
RESULTS		
RADIANT HEAT		28.74 kw/m ²
FLAME LENGTH		4.42 m
RATE OF SPREAD		0.36 km/hr
ATMOSPHERIC TRANSMISSIMTY		89%
PEAK ELEVATION OF RECEIVER		2.4 m
FLAME ANGLE		60 degrees
CONSTRUCTION LEVEL REQUIRED		BAL-29 BAL

BUSHFIRE ATTACK ASSESSMENT



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QLD. 4327

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PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT

SITE ADDRESS

54 GEORGE ALEXANDER WAY
COOMERA
TRANSECT 2
NORTH WEST
RE 12.11.24

INPUTS

FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		17.2 tonnes/ha
SLOPE UNDER VEGETATION		-6 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		-6 degrees
FLAME WIDTH		100 m
ELEVATION OF RECEIVER		2.8 m
DISTANCE BETWEEN VEGETATION AND BUILDING		8 m

RESULTS

RADIANT HEAT	18.93 kw/m ²
FLAME LENGTH	4.42 m
RATE OF SPREAD	0.36 km/hr
ATMOSPHERIC TRANSMISSIVITY	87%
PEAK ELEVATION OF RECEIVER	2.8 m
FLAME ANGLE	68 degrees
CONSTRUCTION LEVEL REQUIRED	BAL-19 BAL

BUSHFIRE ATTACK ASSESSMENT



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E architects@eb-a.com.au

THIS ASSESSMENT USES AS 3959-2009 METHOD 2

PROJECT	PROPOSED RESIDENTIAL DEVELOPMENT		
SITE ADDRESS	54 GEORGE ALEXANDER WAY COOMERA TRANSECT 2 NORTH WEST RE 12.11.24		
INPUTS			
FDI			40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads	
TOTAL FUEL LOAD			17.2 tonnes/ha
SLOPE UNDER VEGETATION			-6 degrees
SLOPE BETWEEN VEGETATION AND BUILDING			-6 degrees
FLAME WIDTH			100 m
ELEVATION OF RECEIVER			3.4 m
DISTANCE BETWEEN VEGETATION AND BUILDING			11.8 m
RESULTS			
RADIANT HEAT			12.48 kw/m ²
FLAME LENGTH			4.42 m
RATE OF SPREAD			0.36 km/hr
ATMOSPHERIC TRANSMISSIMTY			86%
PEAK ELEVATION OF RECEIVER			3.4 m
FLAME ANGLE			73 degrees
CONSTRUCTION LEVEL REQUIRED			BAL-12.5 BAL

BUSHFIRE CONSTRUCTION STANDARD (BAL) ASSESSMENT



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 VARSITY LAKES
 QLD. 4327

PH 0755920082
 E architects@eb-a.com.au



THIS ASSESSMENT USES AS 3959 METHOD 2

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT

SITE ADDRESS

**54 GEORGE ALEXANDER WAY
 COOMERA**

TRANSECT 3

INPUTS

FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		17.2 tonnes/ha
SLOPE UNDER VEGETATION		7 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		1 degrees

FLAME WIDTH	100 m
ELEVATION OF RECEIVER	3 m
DISTANCE BETWEEN VEGETATION AND BUILDING	6.6 m

RESULTS

RADIANT HEAT	39.62 kw/m ²
FLAME LENGTH	7.83 m
RATE OF SPREAD	0.89 km/hr
ATMOSPHERIC TRANSMISSIMTY	89%
PEAK ELEVATION OF RECEIVER	3 m
FLAME ANGLE	54 degrees
CONSTRUCTION LEVEL REQUIRED	BAL-40 BAL

BUSHFIRE CONSTRUCTION STANDARD (BAL) ASSESSMENT



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THIS ASSESSMENT USES AS 3959 METHOD 2

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT

SITE ADDRESS

54 GEORGE ALEXANDER WAY
COOMERA

TRANSECT 3

INPUTS

FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		17.2 tonnes/ha
SLOPE UNDER VEGETATION		7 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		1 degrees
FLAME WIDTH		100 m
ELEVATION OF RECEIVER		3.4 m
DISTANCE BETWEEN VEGETATION AND BUILDING		8.9 m

RESULTS

RADIANT HEAT	29.00 kw/m ²
FLAME LENGTH	7.83 m
RATE OF SPREAD	0.89 km/hr
ATMOSPHERIC TRANSMISSIVITY	87%
PEAK ELEVATION OF RECEIVER	3.4 m
FLAME ANGLE	65 degrees
CONSTRUCTION LEVEL REQUIRED	BAL - 29 BAL

BUSHFIRE CONSTRUCTION STANDARD (BAL) ASSESSMENT



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THIS ASSESSMENT USES AS 3959 METHOD 2

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT

SITE ADDRESS

54 GEORGE ALEXANDER WAY
COOMERA

TRANSECT 3

INPUTS

FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		17.2 tonnes/ha
SLOPE UNDER VEGETATION		7 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		1 degrees
FLAME WIDTH		100 m
ELEVATION OF RECEIVER		3.5 m
DISTANCE BETWEEN VEGETATION AND BUILDING		13.3 m

RESULTS

RADIANT HEAT	18.95 kw/m ²
FLAME LENGTH	7.83 m
RATE OF SPREAD	0.89 km/hr
ATMOSPHERIC TRANSMISSIVITY	86%
PEAK ELEVATION OF RECEIVER	3.5 m
FLAME ANGLE	74 degrees
CONSTRUCTION LEVEL REQUIRED	BAL-19 BAL

BUSHFIRE CONSTRUCTION STANDARD (BAL) ASSESSMENT



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THIS ASSESSMENT USES AS 3959 METHOD 2

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT

SITE ADDRESS

54 GEORGE ALEXANDER WAY
COOMERA

TRANSECT 3

INPUTS

FDI		40
VEGETATION TYPE	SEE TABLE	Site Specific Fuel Loads
TOTAL FUEL LOAD		17.2 tonnes/ha
SLOPE UNDER VEGETATION		7 degrees
SLOPE BETWEEN VEGETATION AND BUILDING		1 degrees
FLAME WIDTH		100 m
ELEVATION OF RECEIVER		3.5 m
DISTANCE BETWEEN VEGETATION AND BUILDING		19.5 m

RESULTS

RADIANT HEAT	12.46 kw/m ²
FLAME LENGTH	7.83 m
RATE OF SPREAD	0.89 km/hr
ATMOSPHERIC TRANSMISSIVITY	84%
PEAK ELEVATION OF RECEIVER	3.5 m
FLAME ANGLE	79 degrees
CONSTRUCTION LEVEL REQUIRED	BAL-12.5 BAL



State-wide Bushfire Prone Area Mapping

Vegetation Hazard Class Descriptions and Fuel Characteristics – Jan 2017

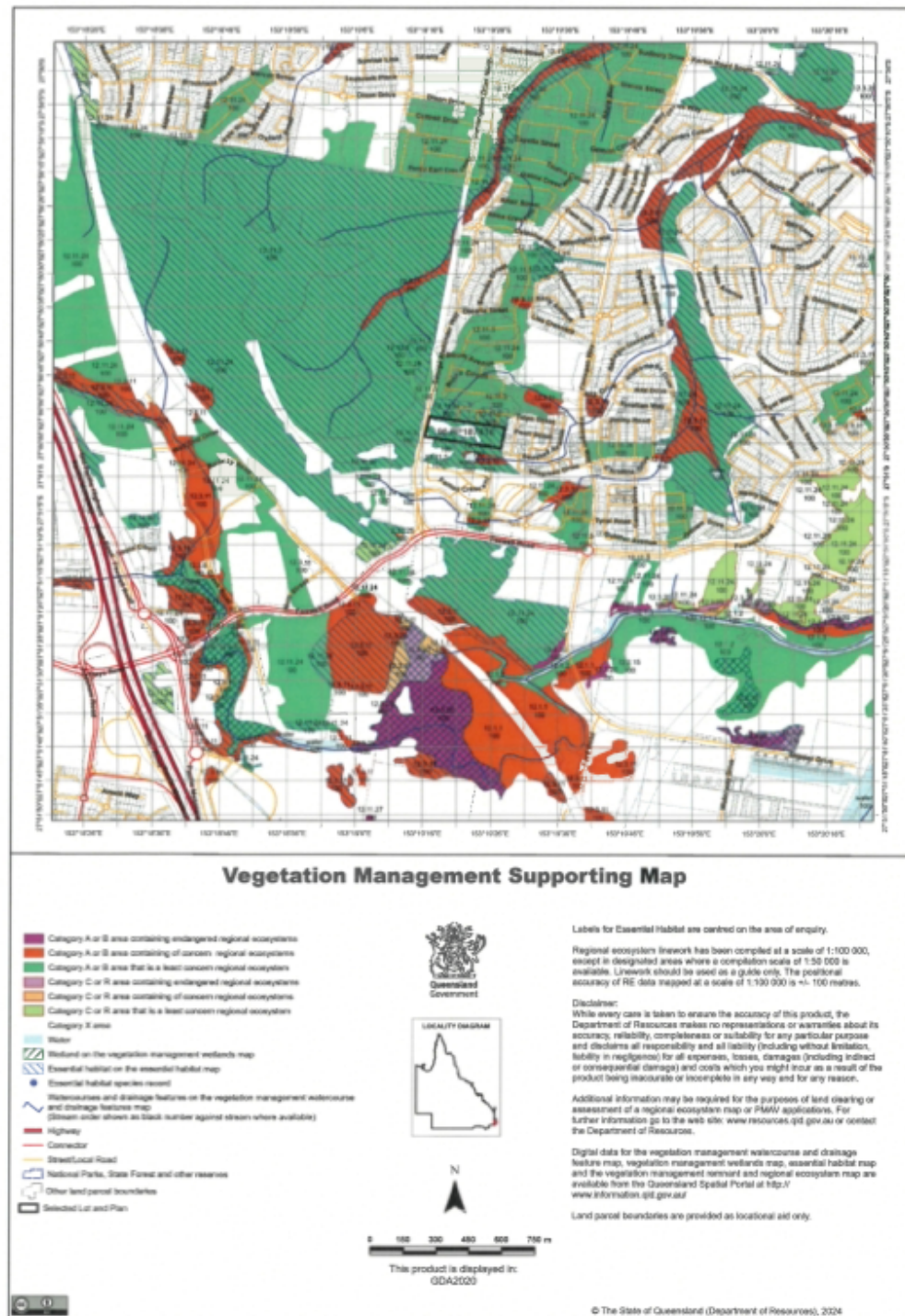
Vegetation Hazard Class	Potential Fuel Load (t/ha)						Prone Type ¹		Fuel Continuity ²	
	Surface	Near Surface	Elevated	Bark	Total (Remnant)	Total (Non-Remnant)	Remnant	Non-Remnant	Remnant	Non-Remnant
1.1 Complex mesophyll to notophyll vine forests	2.6	0.0	0.0	0.0	2.6	12.0	3	1	2	1
2.1 Complex to simple, semi-deciduous mesophyll to notophyll vine forest	3.5	0.0	0.0	0.0	3.5	12.0	3	1	2	1
3.1 Notophyll vine forest	4.5	0.0	0.0	0.0	4.5	12.0	3	1	2	1
3.3 Notophyll vine thicket	4.4	0.0	0.0	0.0	4.4	12.0	3	1	2	1
4.1 Notophyll and notophyll palm or vine forest	4.5	0.0	0.0	0.0	4.5	12.0	3	1	2	1
5.1 Notophyll to microphyll vine forests	3.9	0.0	0.0	0.0	3.9	12.0	3	1	2	1
5.2 Notophyll to microphyll vine forest with sparse overstorey	3.9	0.0	0.0	0.0	3.9	12.0	3	1	2	1
5.5 Sedgeland within Notophyll to microphyll vine forests	3.9	0.0	0.0	0.0	3.9	12.0	3	1	2	1
6.1 Montane Notophyll vine forest and microphyll fern forest	3.9	0.0	0.0	0.0	3.9	12.0	3	1	2	1
6.3 Montane Notophyll vine thicket and microphyll fern thicket	3.9	0.0	0.0	0.0	3.9	12.0	3	1	2	1
7.1 Semi-evergreen to deciduous microphyll vine forest	6.0	0.0	0.0	0.0	6.0	12.0	3	1	2	1
7.2 Sparse semi-evergreen to deciduous microphyll vine forest	6.0	0.0	0.0	0.0	6.0	12.0	3	1	2	1
8.1 Wet eucalypt tall open forest	28.0	3.0	2.0	2.0	35.0	35.0	1	1	1	1
8.2 Wet eucalypt tall woodland	18.0	3.1	1.7	1.0	23.8	23.8	1	1	1	1
9.1 Moist to dry eucalypt open forests on coastal lowlands and ranges	17.5	3.5	2.2	1.0	24.2	24.2	1	1	1	1
9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges	11.4	3.5	1.3	1.0	17.2	17.2	1	1	1	
9.3 Shrubland within moist to dry eucalypt on coastal lowlands and ranges	7.8	3.0	1.9	0.0	12.7	12.7	1	1	1	1
10.1 Spotted gum dominated open forests	16.3	3.0	1.5	0.0	20.8	20.8	1	1	1	1
10.2 Spotted gum dominated woodlands	14.0	3.0	1.0	0.0	18.0	18.0	1	1	1	1
11.2 Moist to dry eucalypt woodlands on basalt areas	7.5	4.0	0.5	1.0	13.0	13.0	1	1	1	1
12.1 Dry eucalypt open forest on sandstone and shallow soils	15.0	3.5	1.5	1.0	21.0	21.0	1	1	1	1

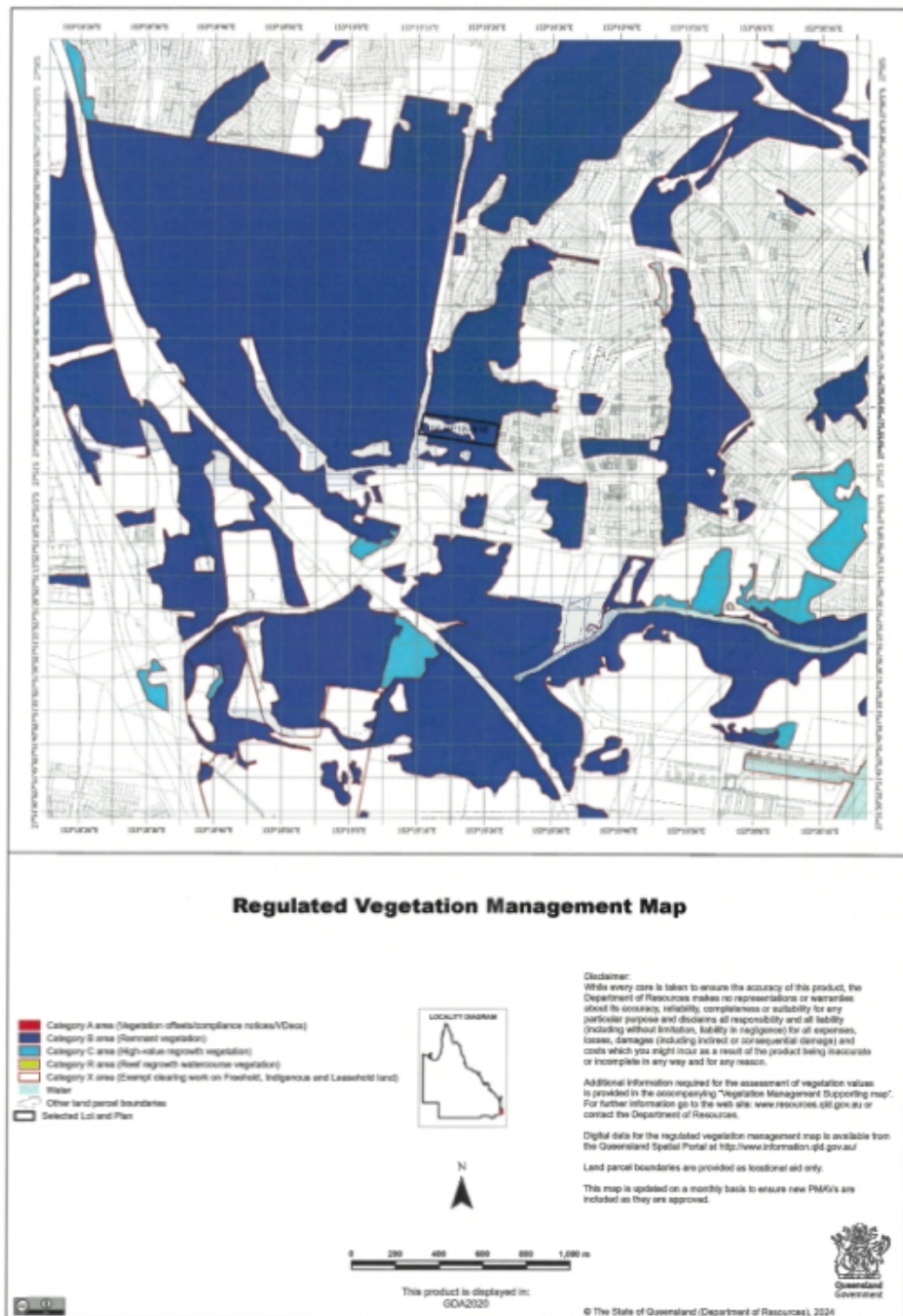
¹ Prone Type: 1 = Bushfire Prone, 2 = Grass Fire Prone, 3 = Low Hazard

² Fuel Continuity: 1 = Continuous, 2 = Discontinuous

RE8	RE8_Label	VHC	VHC_DESC
12.1.1	Casuarina glauca woodland on margins of marine clay plains	28.2	28.2 Woodlands in coastal locations with species such as she-oak or swamp box
12.1.2	Saltpan vegetation including grassland, herbland and sedgeland on marine clay plains	35.4	35.4 Tidal saltmarshes
12.1.3	Mangrove shrubland to low closed forest on marine clay plains and estuaries	35.3	35.3 Shrubland associated with mangroves and tidal saltmarshes
12.11.1	Simple notophyll vine forest often with abundant Archontophoenix cunninghamiana (gully vine forest) on metamorphics ± interbedded volcanics	4.1	4.1 Notophyll and notophyll palm or vine forest
12.11.10	Notophyll vine forest ± Araucaria cunninghamii on metamorphics ± interbedded volcanics	2.1	2.1 Complex to simple, semi-deciduous mesophyll to notophyll vine forest
12.11.11	Araucarian microphyll vine forest on metamorphics ± interbedded volcanics; usually southern half of bioregion	5.1	5.1 Notophyll to microphyll vine forests
12.11.12	Araucarian complex microphyll vine forest on metamorphics ± interbedded volcanics; usually northern half of bioregion	5.1	5.1 Notophyll to microphyll vine forests
12.11.13	Semi-evergreen vine thicket on metamorphics ± interbedded volcanics; usually northern half of bioregion	7.1	7.1 Semi-evergreen to deciduous microphyll vine forest
12.11.14	Eucalyptus crebra, E. tereticornis, Corymbia intermedia woodland on metamorphics ± interbedded volcanics	13.2	13.2 Dry to moist eucalypt woodlands on undulating metamorphics and granite
12.11.15	Eucalyptus tereticornis, Corymbia intermedia open woodland with Xanthorrhoea johnsonii understorey on serpentinite	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.16	Eucalyptus cloeziana open forest on metamorphics ± interbedded volcanics	8.1	8.1 Wet eucalypt tall open forest
12.11.16x1	Eucalyptus cloeziana ± E. propinqua, E. acmenoides, E. microcorys and E. grandis tall open forest on sedimentary rocks	8.1	8.1 Wet eucalypt tall open forest
12.11.17	Eucalyptus acmenoides or E. portuensis open forest on metamorphics ± interbedded volcanics	9.1	9.1 Moist to dry eucalypt open forests on coastal lowlands and ranges
12.11.18	Eucalyptus moluccana woodland on metamorphics ± interbedded volcanics	13.2	13.2 Dry to moist eucalypt woodlands on undulating metamorphics and granite
12.11.18a	Eucalyptus moluccana, E. tereticornis and Lophostemon confertus open forest in gullies on metamorphics ± interbedded volcanics	13.1	13.1 Dry to moist eucalypt open forests on undulating metamorphics and granite
12.11.19	Eucalyptus fibrosa subsp. fibrosa woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.2	Eucalyptus saligna or E. grandis, E. microcorys, Lophostemon confertus tall open forest on metamorphics ± interbedded volcanics	8.1	8.1 Wet eucalypt tall open forest
12.11.20	Corymbia intermedia, Lophostemon suaveolens woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.21	Allocasuarina luehmanni, Melaleuca nervosa woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.22	Angophora leiocarpa, Eucalyptus crebra woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.23	Eucalyptus pilularis open forest on coastal metamorphics and interbedded volcanics	8.1	8.1 Wet eucalypt tall open forest
12.11.3	Eucalyptus siderophloia, E. propinqua ± E. microcorys, Lophostemon confertus, Corymbia intermedia, E. acmenoides open forest on metamorphics ± interbedded volcanics	9.1	9.1 Moist to dry eucalypt open forests on coastal lowlands and ranges
12.11.3a	Lophostemon confertus ± Eucalyptus microcorys, E. carnea, E. propinqua, E. major, E. siderophloia woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.3b	Eucalyptus pilularis tall open forest on subcoastal hills and ranges of metamorphics ± interbedded volcanics	8.1	8.1 Wet eucalypt tall open forest
12.11.4	Semi-evergreen vine thicket on metamorphics ± interbedded volcanics	7.1	7.1 Semi-evergreen to deciduous microphyll vine forest
12.11.5	Corymbia citriodora subsp. variegata, Eucalyptus siderophloia, E. major open forest on metamorphics ± interbedded volcanics	10.1	10.1 Spotted gum dominated open forests
12.11.5a	Eucalyptus tindaliae, E. carnea, Corymbia intermedia ± E. siderophloia or E. crebra, Corymbia citriodora subsp. variegata woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.5e	Corymbia citriodora subsp. variegata woodland ± Eucalyptus siderophloia or crebra, E. carnea, E. acmenoides, E. propinqua on metamorphics ± interbedded volcanics	10.2	10.2 Spotted gum dominated woodlands
12.11.5h	Eucalyptus planchoniana woodland to open forest on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.5j	Eucalyptus racemosa subsp. racemosa and/or E. seana and Corymbia intermedia woodland on metamorphics ± interbedded volcanics	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.11.5k	Corymbia henryi ± Eucalyptus crebra, E. carnea, E. tindaliae, E. fibrosa subsp. fibrosa woodland on metamorphics ± interbedded volcanics	10.2	10.2 Spotted gum dominated woodlands
12.11.6	Corymbia citriodora subsp. variegata, Eucalyptus crebra woodland on metamorphics ± interbedded volcanics	10.2	10.2 Spotted gum dominated woodlands
12.11.7	Eucalyptus crebra woodland on metamorphics ± interbedded volcanics	13.2	13.2 Dry to moist eucalypt woodlands on undulating metamorphics and granite
12.11.8	Eucalyptus melanophloia, E. crebra woodland on metamorphics ± interbedded volcanics	17.2	17.2 Dry woodlands dominated by poplar box, silver-leaved ironbark or White's ironbark on sand or depositional plains
12.11.9	Eucalyptus tereticornis open forest on metamorphics ± interbedded volcanics. Usually higher altitudes	9.1	9.1 Moist to dry eucalypt open forests on coastal lowlands and ranges
12.11.9x1	Eucalyptus montivaga open forest on metamorphics ± interbedded volcanics	8.1	8.1 Wet eucalypt tall open forest
12.12.1	Simple notophyll vine forest usually with abundant Archontophoenix cunninghamiana (gully vine forest) on Mesozoic to Proterozoic igneous rocks	4.1	4.1 Notophyll and notophyll palm or vine forest
12.12.10	Shrubland of rocky peaks on Mesozoic to Proterozoic igneous rocks	29.3	29.3 Heathlands and associated scrubs and shrublands
12.12.11	Eucalyptus portuensis or E. acmenoides, Corymbia trachyphloia subsp. trachyphloia woodland on Mesozoic to Proterozoic igneous rocks	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.12.12	Eucalyptus tereticornis, Corymbia intermedia, E. crebra ± Lophostemon suaveolens woodland on Mesozoic to Proterozoic igneous rocks	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
12.12.13	Araucarian complex microphyll to notophyll vine forest on Mesozoic to Proterozoic igneous rocks	2.1	2.1 Complex to simple, semi-deciduous mesophyll to notophyll vine forest
12.12.14	Eucalyptus racemosa subsp. racemosa ± Lophostemon confertus, Syncarpia glomulifera, Eucalyptus acmenoides woodland usually on rocky near coastal areas on Mesozoic to Proterozoic igneous rocks	9.2	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges







ELDON BOTTCHEER

EDUCATION AND QUALIFICATIONS

Graduate Diploma in Design in Bushfire Prone Areas

University of Western Sydney

Diploma in Architecture

Queensland Institute of Technology

Certificate of Rural Fire Management

University of Southern Queensland

Registered Architect

Queensland

A+ Architect

Australian Institute of Architects

FPA Australia Certified Practitioner (BPAD-Level 3-16935)

Bushfire Planning and Design (BPAD-LEVEL 3),
Alternate Solutions & DTS

PROFESSIONAL MEMBERSHIPS

Fellow

Australian Institute of Architects

Member

Australian Institute of Emergency Services

Member

Australian Institute of Engineers Society of Fire Safety

Member

Queensland Environmental Law Association.

Member Board of Experts

Bushfire Building Council of Australia

Associate Member

Institution of Fire Engineers

Corporate Member

Fire Protection Association of Australia

PROFESSIONAL EXPERIENCE

Director

Eldon Bottcher Architect Pty Ltd since 1978

Bushfire Assessment and Planning Consultant since 1998 with Involvement in more than 6,000 Bushfire Mitigation Projects ranging from single dwellings to major subdivisions, burn plans and general mitigation advice.

Group Officer

Albert Rural Fire Brigades Group

Queensland Fire and Rescue Service

Group Officer

Gold Coast Rural Fire Brigades Group

Queensland Fire and Rescue Service

Group Officer

South East Regional Support Group

Queensland Fire and Rescue Service

Planning Officer

Gold Coast Rural Fire Brigades Group

Queensland Fire and Rescue Service

Life Member

Guanaba Rural Fire Brigade

Member

Clagiraba Rural Fire Brigade

Member Practice Committee AIA Qld Chapter

AIA delegate to Building Industry and Research Consultation Panel on Bushfire Hazard advising Queensland State Bushfire Committee

BBCA representation to Australian Standards Committee FP20 (AS 3959 & AS 5414)

Research Consultant to Queensland University of Technology Scenic Rim Black Saturday Recovery Project

OTHER BUSHFIRE RELATED COURSES AND TRAINING

I.C.S./AIIIMS (40 hr. course) in Incident Command Systems

Certificate 4 (Workplace Training and Assessment)

RFSQ Level 1

RFSQ Level 2 (Officer)

RFSQ Fire Management 1

RFSQ Crew Leader

Certificate II in Public Safety (Firefighting Operations)

Fire Weather 1

QELA Expert Witness Workshop 2020

BUSHFIRE RELATED AWARDS

National Planning Award

State Planning Award

Planning Institute of Australia

Gold Coast Bushfire Management Strategy

(Co-Initiator and Member of Preparation Committee)

Australian Government

National Medal

Long and Distinguished Service to Fire fighting

Queensland Fire and Rescue Service

Diligent and Ethical Service Medal + Clasp

Service to Fire fighting

Queensland Government

Australia Day Medallion

Services to Rural Fire Fighting

Queensland Government

Year of the Volunteer Medallion

Services to Fire fighting

UDIA

Best Consultancy Team Award in 2007.

SERVICES OFFERED

Bushfire management Reports

Bushfire Safety Engineering

Bushfire Planning and Design

Bushfire Hazard Assessment

Alternative Solutions

Expert Witnessing

(See Planning and Environment Court of Queensland Determination

File No. BD 624 of 2005 sections 28 to 35)

Continuing Professional Development Lectures

Tertiary Education Lectures and Tutorials

Town Planning Bushfire Codes for Local Authorities

Bushfire Burn Planning

General consultancy relating to all aspects of Bushfire