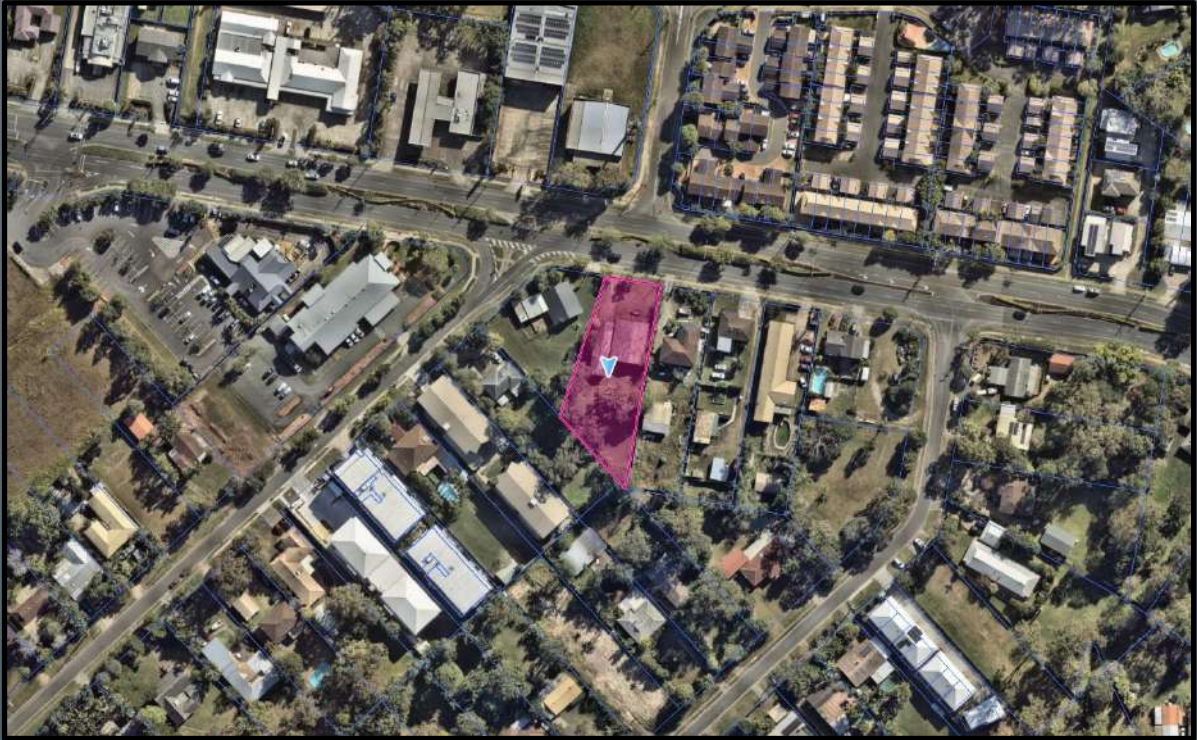


# HCE Engineers

Ref. (23327)

**MATERIAL CHANGE OF USE  
85 BRYANTS ROAD, LOGANHOLME**

***CIVIL ENGINEERING ASSESSMENT REPORT  
REVISION 0***



Prepared For  
**SUNSHINE HOMES PTY LTD**



**HCE Engineers**

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## REPORT CONTROL SHEET

<b>HCE Ref. No.:</b>	23327
<b>Site:</b>	85 Bryants Road, Loganholme
<b>Report Title:</b>	Civil Engineering Assessment Report

Rev No.	Date	Written By	Reviewed By	Authorised By	Signed
<b>Draft</b>	05/09/24	ST	MN	MB	
<b>0</b>	19/09/24	ST	MN	MB	

DISTRIBUTION										
Destination	Date Sent	Revision Number								
		Draft	0	1	2	3	4	5	6	7
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Oasis Town Planning	19/09/24		<input checked="" type="checkbox"/>							

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  3. Earthworks & Retaining
  4. Access
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  6. Refuse Collection
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- Concept Design Drawings
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- Appendix C – Infrastructure Code

## 1. INTRODUCTION

This report has been prepared to support the development application for material change of use at 85 Bryants Road, Loganholme (Lot 88 on RP118023). The proposed development is for the construction of 8 townhouses with a shared access driveway, where the existing house and associated structures are to be demolished. The current lot has a total area of approximately 1991m<sup>2</sup>.

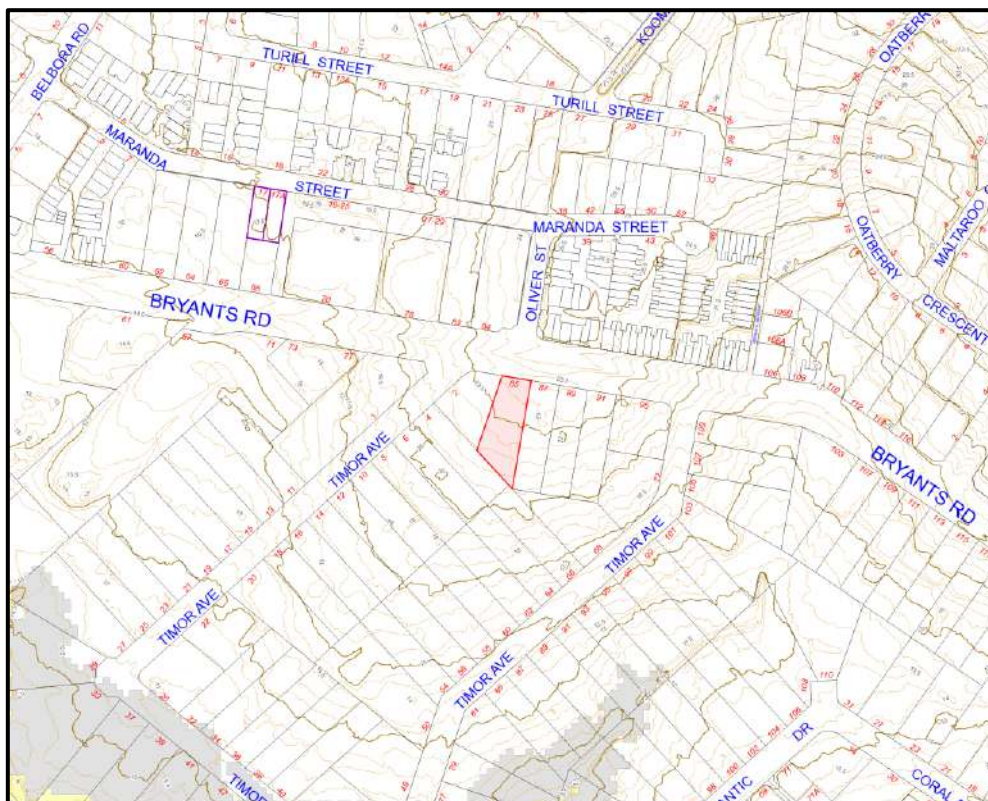
A general description of proposed works and items of particular note are contained within the body of this report. Tabular responses to each of the performance criteria within the Filling & Excavation Code and Infrastructure Code are included as Appendices.



**Image 1:** Site Location (image from Nearmap.com)

## 2. FLOODING

The Logan Flood Hazard Overlay has been examined through the PD Hub Interactive Mapping. See image below. The site is not within the Flood Hazard Overlay trigger area. A review of local topography has also been undertaken and it is confirmed there are no localised overland flow paths to be considered.



*Image 2: Flood Hazard Overlay (image from Logan PDHub)*

Refer to Appendix A for the LCC Flood Report

## 3. EARTHWORKS & RETAINING

Earthworks are proposed to provide level building pads and complaint parking and access grades. Retaining walls are required for the eastern, southern and western boundaries where the maximum height is less than 1.5m. Accordingly, compliance with Filling and Excavation Code Acceptable Outcome AO8 is achieved.

Proposed earthworks are shown on the accompanying concept design drawings.

## 4. ACCESS

The development site is proposed to have access from Bryants Road via a 6.5m wide crossover and driveway. A refuse truck turnaround area has been provided near the front of the driveway to allow for the refuse truck to exit in forward gear. Access to proposed townhouses can be achieved in compliance with the Servicing, Access and Parking Code.

Further details are provided in the Traffic Report prepared by PTT Traffic and Transport Engineering.

## **5. PARKING**

Garages are available within each townhouse and there are two visitor parking bays within the proposed development.

Further details are provided in the Traffic Report prepared by PTT Traffic and Transport Engineering.

## **6. REFUSE COLLECTION**

There is a proposed bin storage area near the front of the site with an associated truck turnaround area offset from the main driveway to allow traffic to flow whilst collection is in place.

Further details are provided in the Traffic Report prepared by PTT Traffic and Transport Engineering.

## **7. STORMWATER DRAINAGE**

Existing stormwater infrastructure in the vicinity of the development site has not been recorded within Council's as-constructed records. Detailed survey shows there is a field inlet at the southern corner of the site which connects to a 150mm diameter stormwater pipe within Lot 286 RP118024. This stormwater pipe continues to the east which discharges to Timor Avenue.

It is proposed to construct new stormwater west, through 2 Timor Avenue and connect to existing stormwater infrastructure within Timor Avenue. Both properties are owned by the same entity. A future connection is proposed for 2 Timor Avenue as shown on the drawings.

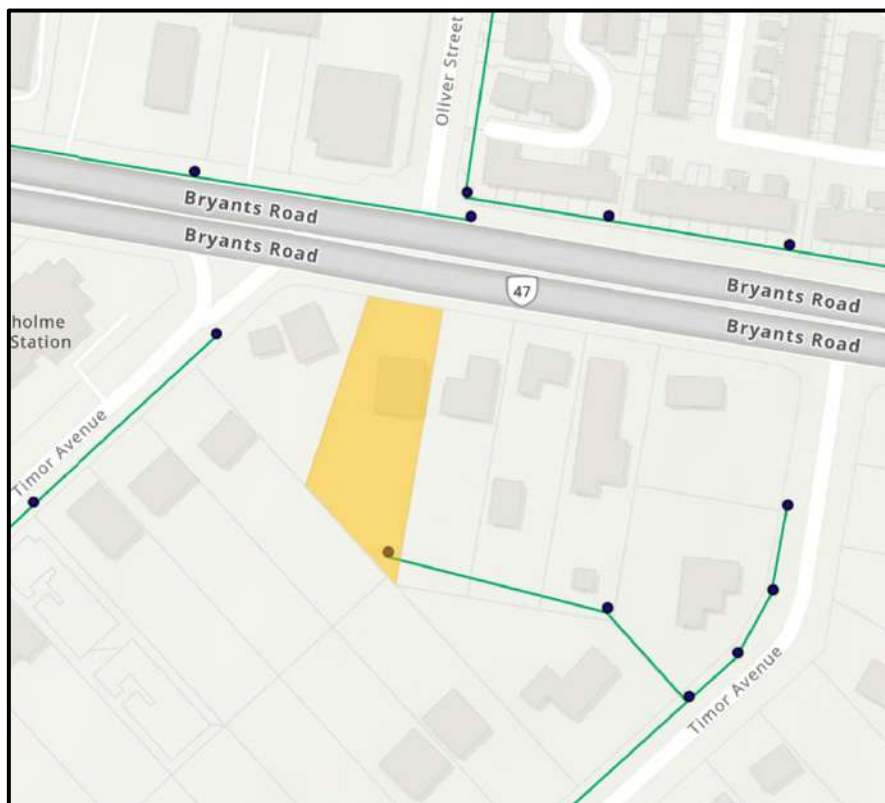
It is proposed to mitigate the impacts of development with regards to peak discharge through the implementation of stormwater detention.

Stormwater quality improvement will be achieved by providing Ocean Protect OceanGuards within the grated inlets and Ocean Protect Psorb StormFilters within the detention tank.

Further details are provided in the Stormwater Management Plan.

## 8. SEWERAGE RETICULATION

Existing sewerage infrastructure in the vicinity of the development site is shown in the image below taken from Council's open-source data.

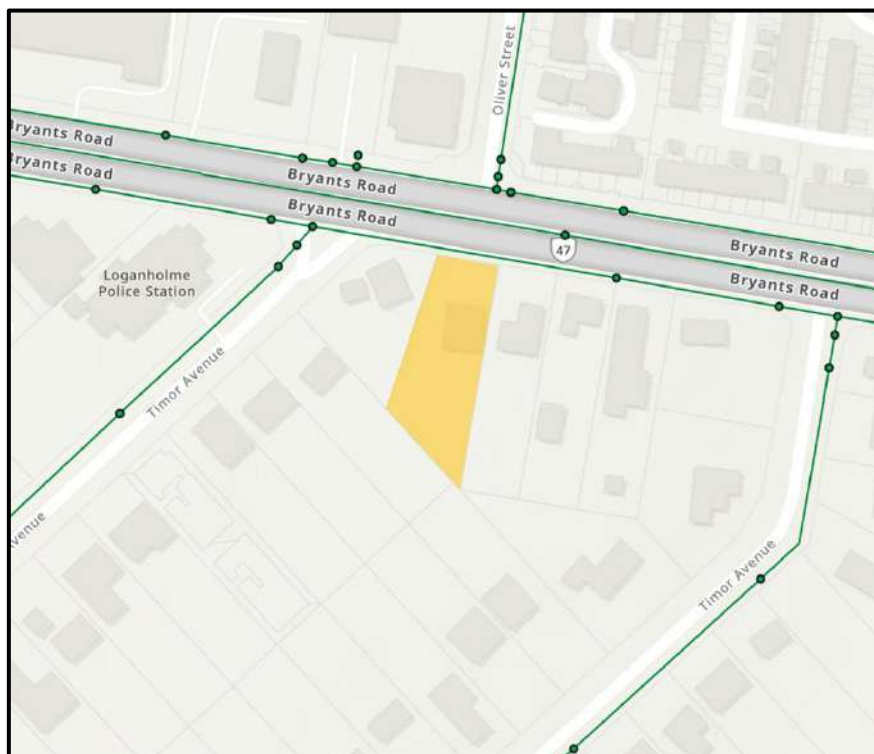


**Image 3:** Sewerage Main As Constructed near Development Site (image from Logan City Council GIS)

The existing property connection is to be upgraded to a 150mm diameter connection and the existing manhole raised to suit new surface levels.

## 9. WATER RETICULATION

Existing water reticulation infrastructure in the vicinity of the development site is shown in the image below taken from Council's open-source data.



*Image 4: Water Main As Constructed near Development Site (image from Logan City Council GIS)*

There is an existing water service provided to the development site, however it is not of adequate size to service the development. It is proposed to replace the existing water service with a suitably sized metered water service to be determined by a hydraulic consultant at the building stage.

The section of water main that will be located beneath the new crossover can be upgraded to DICL to comply with Section 4.1 of the Water Supply Code SEQ Edition.

The requirement for fire fighting for the subject site can be confirmed by the hydraulic consultant at building works stage.

A concept design for proposed water reticulation works is shown on the accompanying drawings.

## 10. CONCLUSIONS

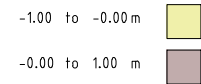
The proposed development has been assessed against Logan City Council's City Plan.

Compliance with the Performance Outcomes of the Filling & Excavation Code and Infrastructure Code has been achieved.

Reasonable and relevant conditions can be applied to the development approval to achieve compliant and adequate servicing of the development.

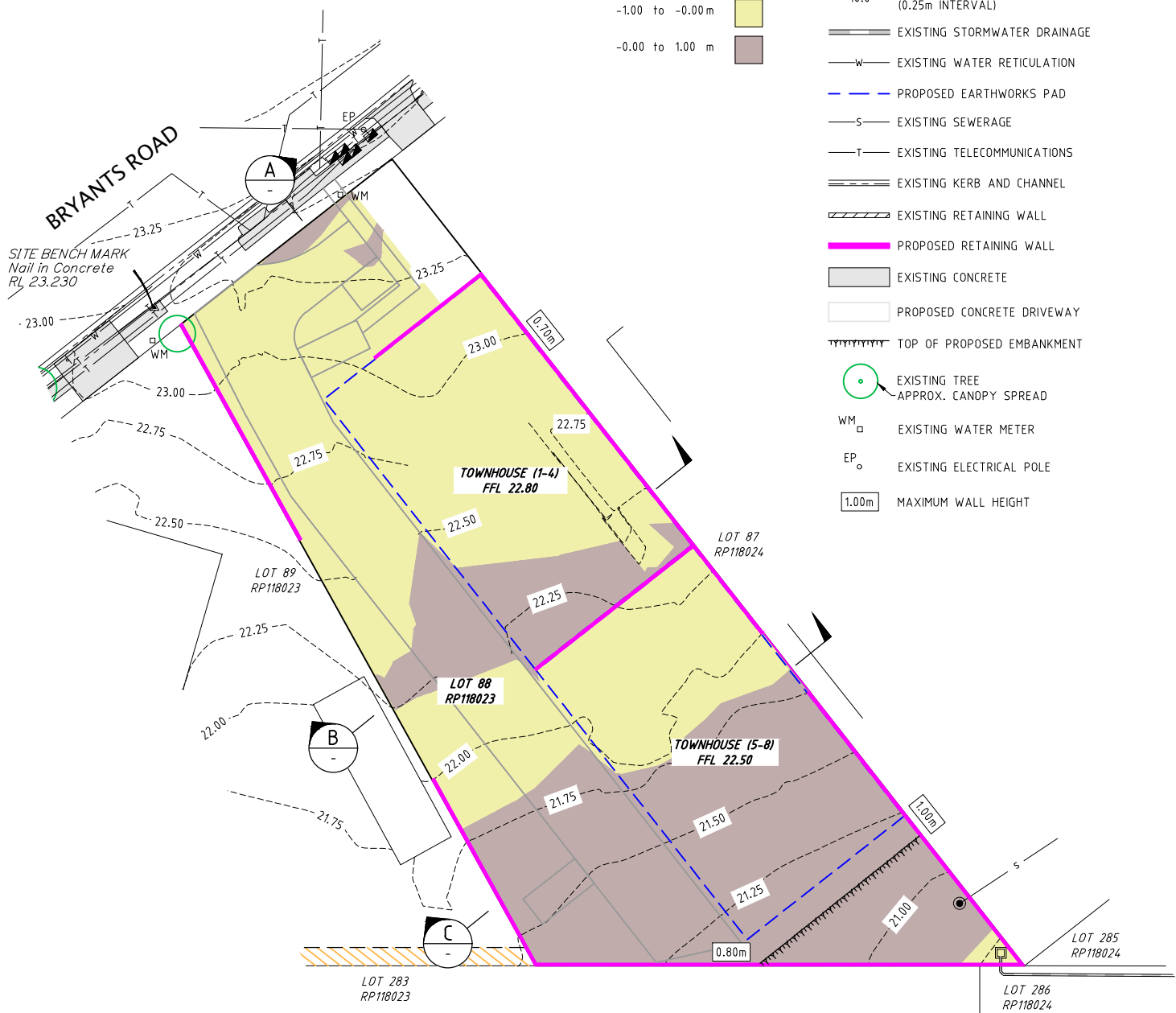
**CONCEPT DESIGN DRAWINGS**

**CUT/FILL DEPTHS**

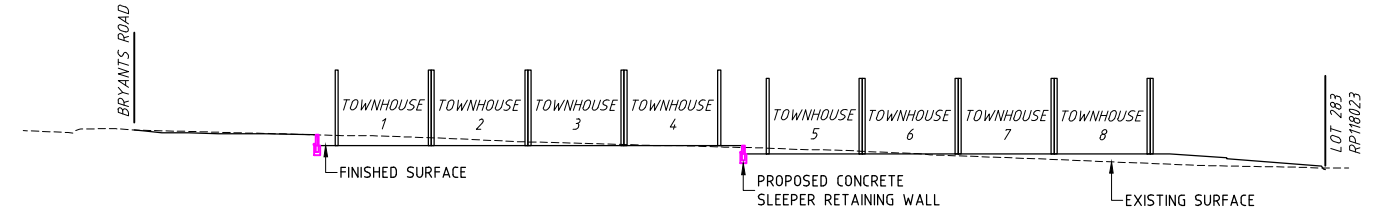


**LEGEND**

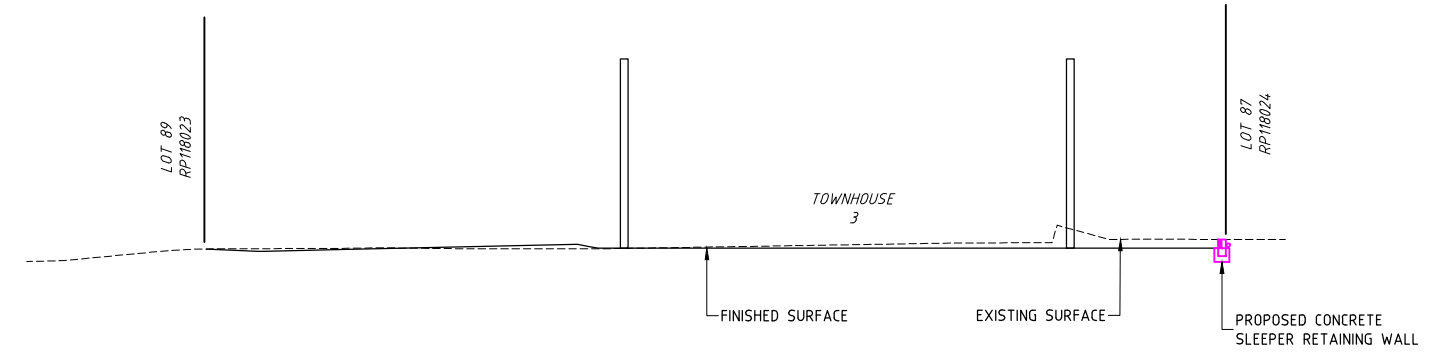
- 10.0--- EXISTING SURFACE CONTOURS (0.25m INTERVAL)
- ===== EXISTING STORMWATER DRAINAGE
- W— EXISTING WATER RETICULATION
- S— EXISTING SEWERAGE
- T— EXISTING TELECOMMUNICATIONS
- ===== EXISTING KERB AND CHANNEL
- ===== EXISTING RETAINING WALL
- ===== PROPOSED RETAINING WALL
- ===== EXISTING CONCRETE
- ===== PROPOSED CONCRETE DRIVEWAY
- ===== TOP OF PROPOSED EMBANKMENT
- EXISTING TREE APPROX. CANOPY SPREAD
- WM □ EXISTING WATER METER
- EP ○ EXISTING ELECTRICAL POLE
- 1.00m MAXIMUM WALL HEIGHT



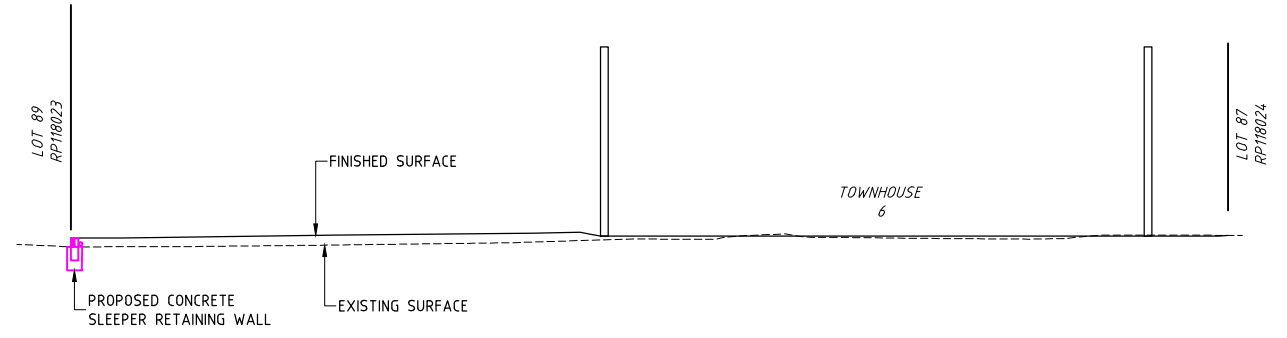
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**SECTION A**  
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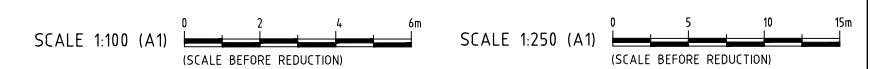


**SECTION B**  
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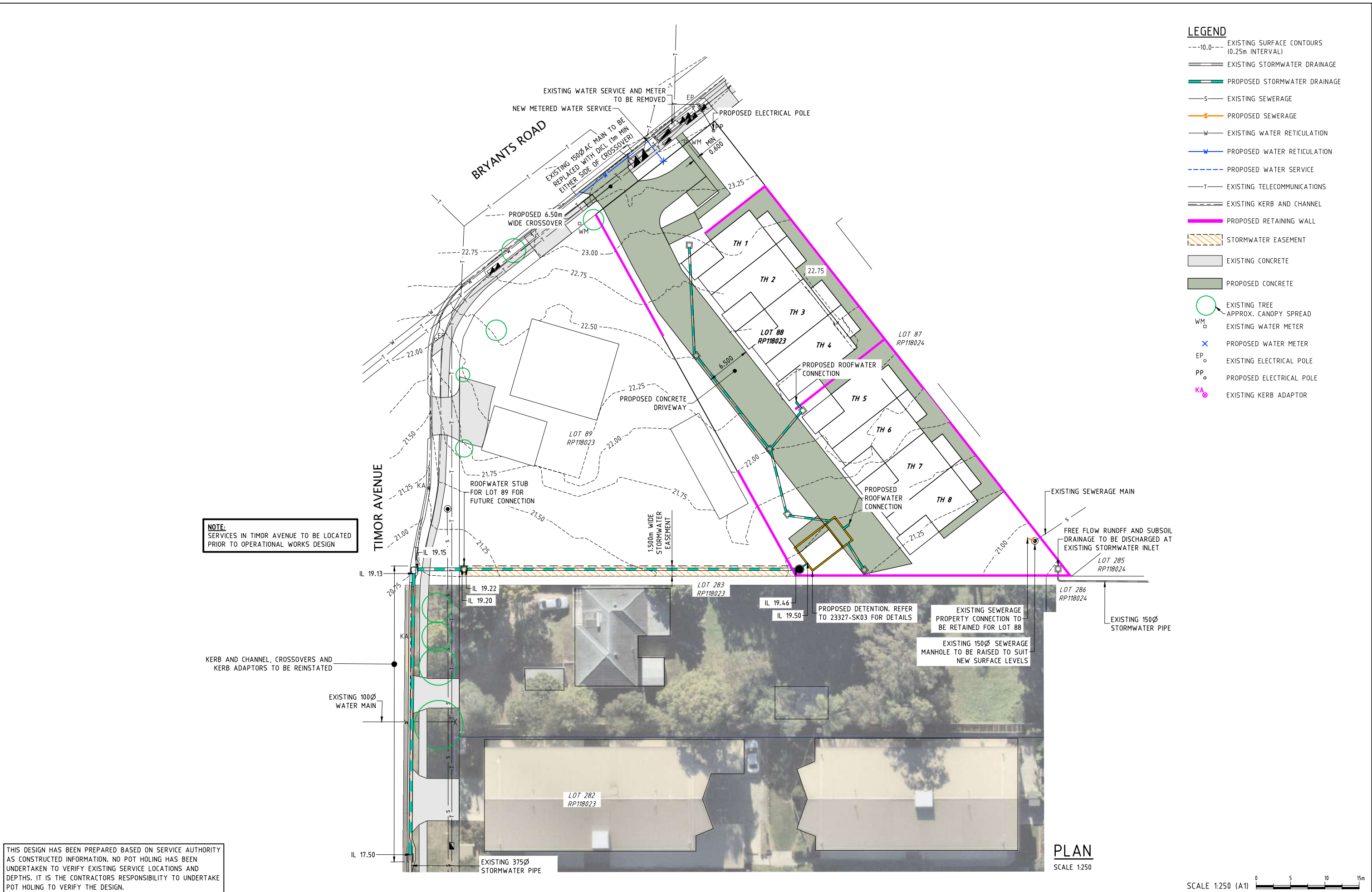


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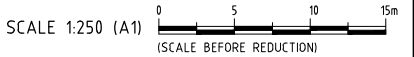
THIS DESIGN HAS BEEN PREPARED BASED ON SERVICE AUTHORITY AS CONSTRUCTED INFORMATION. NO POT HOLING HAS BEEN UNDERTAKEN TO VERIFY EXISTING SERVICE LOCATIONS AND DEPTHS. IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERTAKE POT HOLING TO VERIFY THE DESIGN.



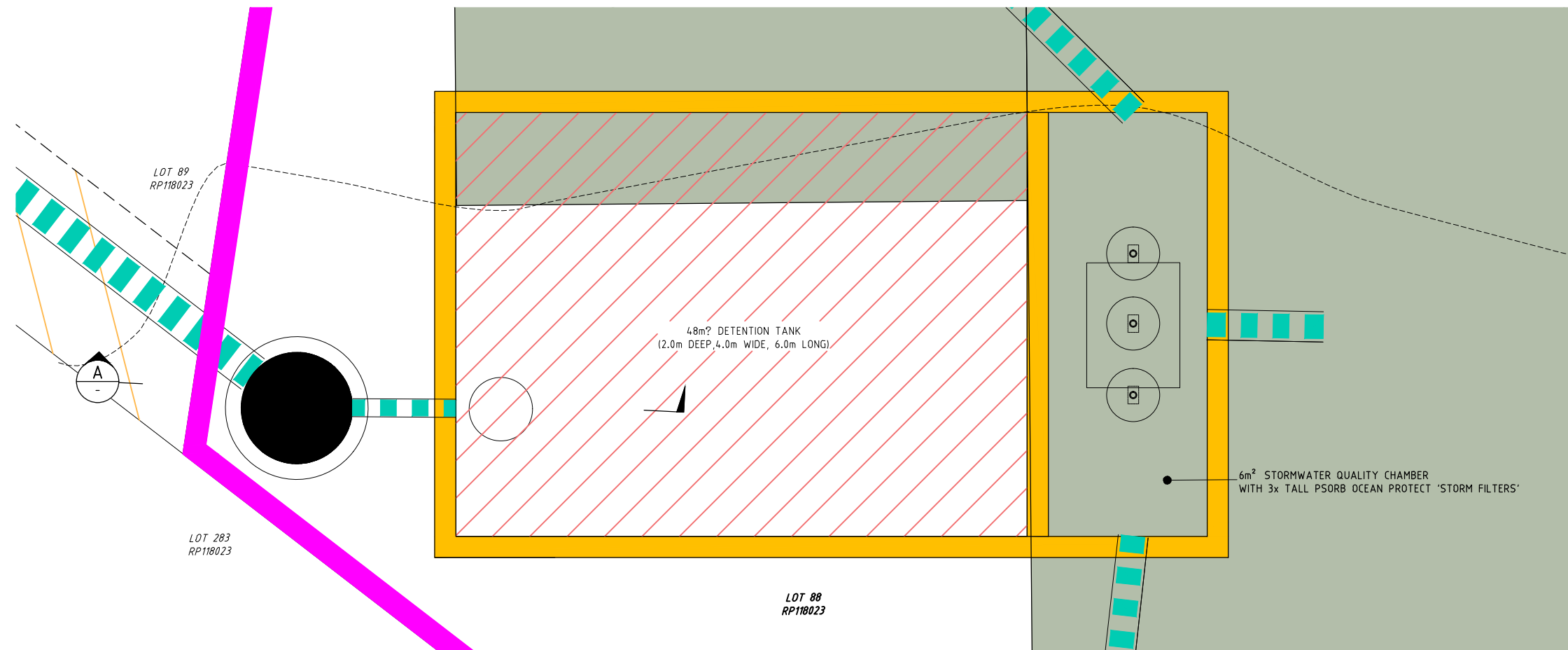
<p><b>HCE Engineers</b> Phone: (07) 3829 1399 mail@hce-engineers.com.au P.O. Box 7214 Redland Bay Level 1 55-57 Jardine Drive Redland Bay QLD 4165</p>	<p>PROJECT 85 BRYANTS ROAD LOGANHOLME QLD 4129 LOT 88 RP 118023</p>	<p>TITLE CONCEPT EARTHWORKS PLAN AND SECTIONS</p>	<p>CLIENT SUNSHINE HOMES PTY LTD</p>	<p><b>NOT FOR CONSTRUCTION. CONCEPT ONLY.</b></p>	<p>REVISION A ISSUED FOR COMMENT B ISSUED FOR DA APPROVAL</p>	<p>DATE 05/09/24 19/09/24</p>	<p>DO NOT SCALE. CONFIRM ALL DIMENSIONS ON SITE.</p>
	<p>Approval No. -----</p>	<p>Scale AS SHOWN</p>	<p>Drawing No. 23327-SK01</p>		<p>Date 28/08/24</p>	<p>Rev. B</p>	



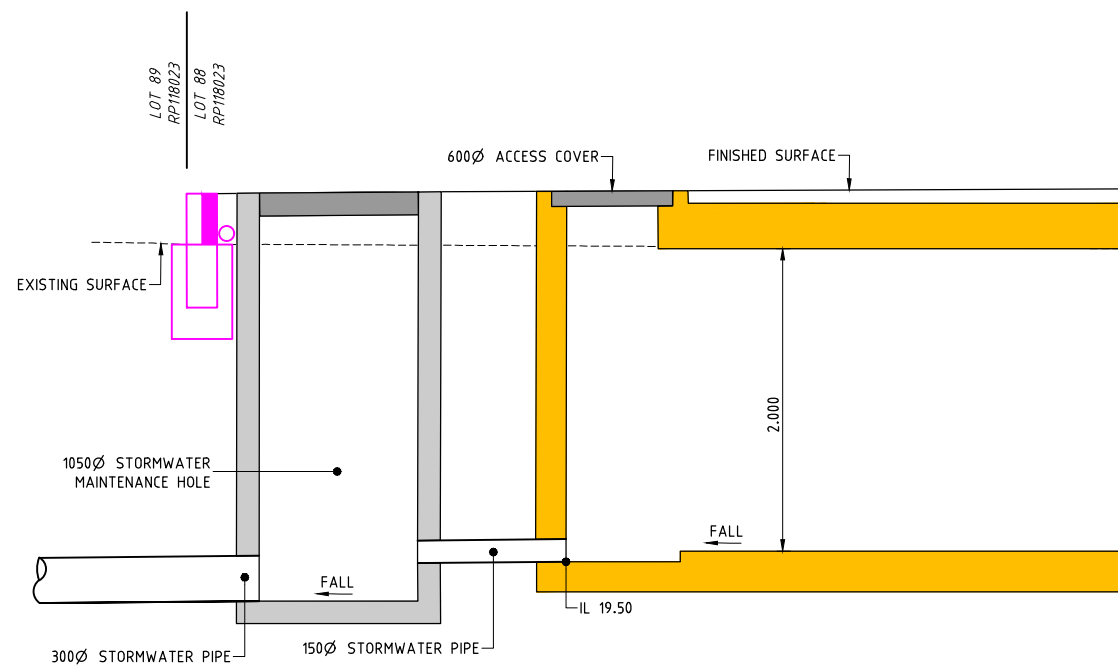
THIS DESIGN HAS BEEN PREPARED BASED ON SERVICE AUTHORITY AS CONSTRUCTED INFORMATION. NO POT HOLING HAS BEEN UNDERTAKEN TO VERIFY EXISTING SERVICE LOCATIONS AND DEPTHS. IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERTAKE POT HOLING TO VERIFY THE DESIGN.



<b>HCE Engineers</b> Phone: (07) 3829 1399 mail@hce-engineers.com.au P.O. Box 7214 Redland Bay Level 1 55-57 Jardine Drive Redland Bay QLD 4165	PROJECT <b>85 BRYANTS ROAD          LOGANHOLME QLD 4129          LOT 88 RP 118023</b>	TITLE <b>CONCEPT CIVIL SERVICING          PLAN</b>	CLIENT <b>SUNSHINE HOMES PTY LTD</b>	<b>NOT FOR          CONSTRUCTION.          CONCEPT ONLY.</b>	REVISION A ISSUED FOR COMMENT B ISSUED FOR DA APPROVAL	AMENDMENT DATE 05/09/24 19/09/24	DO NOT SCALE. CONFIRM ALL DIMENSIONS ON SITE.	Copyright © Designed MN Drawn ST Date 28/08/24
	Approval No. ----- Scale AS SHOWN		Drawing No. 23327-SK02 Rev. B					



**PLAN**  
SCALE 1:25



**SECTION A**  
SCALE 1:25

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SCALE 1:25 (A1)

(SCALE BEFORE REDUCTION)

<p><b>HCE Engineers</b> Phone: (07) 3829 1399 mail@hce-engineers.com.au P.O. Box 7214 Redland Bay</p>	<p>PROJECT 85 BRYANTS ROAD LOGANHOLME QLD 4129 LOT 88 RP 118023</p>	<p>TITLE DETENTION TANK DETAILS</p>	<p>CLIENT SUNSHINE HOMES PTY LTD</p>	<p style="color: red; text-align: center;"><b>NOT FOR CONSTRUCTION. CONCEPT ONLY.</b></p>	<p>REVISION</p>	<p>AMENDMENT</p>	<p>DATE</p>	<p>DO NOT SCALE. CONFIRM ALL DIMENSIONS ON SITE.</p>
					<p>A ISSUED FOR COMMENT</p>	<p>B ISSUED FOR DA APPROVAL</p>	<p>05/09/24 19/09/24</p>	<p>Designed MN</p> <p>Drawn ST</p> <p>Approval No. ----</p> <p>Drawing No. 23327-SK03</p>

**APPENDIX A – FLOOD REPORT**

# PROPERTY FLOOD REPORT



## Property Details

**Address:** 85 Bryants Road LOGANHOLME QLD 4129

**Lot/Plan:** Lot 88 RP 118023

**Size/Area:** 2,026 m<sup>2</sup>

**Property Key:** 200638

## Latest Flood Risk

The extract below comes from the flood risk map based on the latest (most recent) flood studies accepted by Council applicable for this property.



## LEGEND

### High

Floodwaters may be deep or fast flowing, or have a relatively high chance of occurrence (e.g. 80% chance in 30 years). Conditions may pose a risk to life and cause damage to buildings, possibly severe. Limited development may be considered if not increasing the flood risk exposure for people or property. These areas are generally better suited to environmental, recreational and some agricultural uses.

### Moderate

Less frequently affected by flooding or if more frequent, with shallow or slower moving floodwater. Conditions may pose an unacceptable risk to people or property if not mitigated. Development may be tolerable if measures are taken to address flood impacts, protect people and limit damage.

### Low

Extremely unlikely chance of flooding (1% chance or less over a 30 year period) and/or relatively shallow or benign flooding conditions. Development is generally acceptable except for vulnerable uses and essential community infrastructure.

### Very Low

Identifies the full floodplain under the largest flood that could conceivably occur. Development is generally acceptable except for essential community infrastructure (e.g. emergency services). Vulnerable uses (e.g. childcare, aged care) may be ok subject to building and site access mitigation measures.

### Investigation area

Locations where a current flood study has not been delivered and information to determine flood risk is not available. The approximation of the floodplain in these areas is based on a citywide overland flow study. Development should avoid these areas until further investigation (updated flood study or localised risk assessment) is completed.



The flood studies this map is based on consider the impacts of climate change, as required by Queensland's planning legislation and policies. The map considers the whole floodplain for Logan and reflects a risk-based approach that takes into account:

- How likely a flood of a given size is in any given year, and
- What the impact or level of danger of that flood is.

## Summary Flood Assessment

The table below presents the flood risks applicable to the selected property. There may be multiple studies and flood scenarios affecting the property, particularly for larger sites.

Assessment	Details
Risk area(s)	Not applicable
Investigation area	Not applicable
Isolation risk	Not applicable
River flooding	Not applicable
Creek flooding	Not applicable
Overland flow	Not applicable

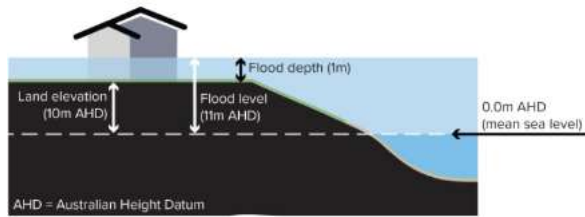
## Ground Levels

Ground levels are based on an aerial LiDAR (Light Detection and Ranging) survey, which uses millions of laser point measurements to build a model of the ground surface. The source of the data is displayed in the table below so that you know when the survey was conducted.

Ground level	Details
Minimum ground level	20.6 metres AHD
Maximum ground level	23.6 metres AHD

**Source:** 2021 Digital elevation model (1 metre grid)

The projected flood depth (how deep the water may be above ground, in metres) is the difference between the flood levels in the section above and the ground levels in this table. The diagram below provides an example (land elevation is ground level).



### Current Climate Scenarios

This extract comes from the map showing flood affected areas **without** considering the impacts of climate change. This map represents modelled flooding under current conditions, and can be used for insurance purposes.



#### LEGEND

 5% chance

The areas modelled to be impacted by a flood that has a 5% (or 1 in 20) chance of happening in any given year, or 80% chance over a 30 year period, which is the common term of a mortgage. This modelling is based on **current (present day) conditions** and does not take into account the impacts of climate change.

 2% chance

The areas modelled to be impacted by a flood that has a 2% (or 1 in 50) chance of happening in any given year, or 45% chance over a 30 year period, which is the common term of a mortgage. This modelling is based on **current (present day) conditions** and does not take into account the impacts of climate change.

 1% chance

The areas modelled to be impacted by a flood that has a 1% (or 1 in 100) chance of happening in any given year, or 25% chance over a 30 year period, which is the common term of a mortgage. This modelling is based on **current (present day) conditions** and does not take into account the impacts of climate change.

 0.5% chance

The areas modelled to be impacted by a flood that has a 0.5% (or 1 in 200) chance of happening in any given year, or 15% chance over a 30 year period, which is the common term of a mortgage. This modelling is based on **current (present day) conditions** and does not take into account the impacts of climate change.

 0.05% chance

The areas modelled to be impacted by a flood that has a 0.05% (or 1 in 2000) chance of happening in any given year. This is an extremely unlikely flood event with a 1% chance of happening over a 30 year period, not including the impacts of climate change.

 PMF

The PMF or probable maximum flood scenario represents the full extent of the floodplain, or the most serious flood that could be expected to occur. This is usually estimated based on the probable maximum rainfall, not including the impacts of climate change

 Investigation area

Locations where a current flood study has not been delivered and information to determine flood risk is not available. The approximation of the floodplain in these areas is based on a citywide overland flow study. Further investigation is needed.

### Historic Flood Events

Based on the best information available to Council, the table below indicates whether or not the selected property may have been impacted by significant historic flood events. It is possible that other creek flooding or overland flow, which is not included in Council's mapping of these events, may have impacted the property.

Flood event	Property impacted
1974	No
2017 (after ex Tropical Cyclone Debbie)	No
2022 (late February / early March)	No

## Further Information

1. Floods are highly unpredictable and variable, and properties may be affected by other sources of potential flooding. Each flood and its impact is different. Areas that were not flooded previously may be affected by future events. Areas that have been previously flooded may be impacted in different ways. This online report cannot take all of this into account.
2. The flood mapping and levels in this report are based on data from flood studies undertaken at a particular time and are subject to change. For example, if the method for calculating flood levels is updated, industry guidelines are updated or more recent information becomes available, this may result in changes to the information in this report. In areas where development is ongoing, the flood mapping and levels may not reflect developed conditions.
3. Flood studies do not create risk. They help us to understand the risk, based on relevant legislation and Queensland Government policies and guidelines. Flood studies also consider a range of other factors such as rainfall and river level information from recent events, climate change and trends, the impacts of development, changes to catchment conditions, new technologies and industry best practice (which help to improve accuracy).
4. Flood studies and models are developed from the best information available at the time. They do not tell you how the flood waters might behave, how quickly they may rise, or how dangerous the flooding will be. The models also cannot represent changes that have occurred since they were developed which may impact flood behaviour, such as earthworks, new developments or road infrastructure.
5. This report is not a substitute for independent professional advice. You should engage the services of a Registered Professional Engineer of Queensland (RPEQ) to get site specific information regarding the flood risk to your property, and how that might affect any proposed building or development work.
6. While Logan City Council takes reasonable care in producing this report, it does not guarantee that the information is accurate, complete or current. Logan City Council does not accept any responsibility for any loss or damage (however it was caused) in connection with the use of or reliance on the information in this report.

## Contact Information

Where to go for further information depends on the type of information you need. Please refer to the [Flood Risk Fact Sheet](#) or contact Council using the details below.

Topic	Contact Details
Flood studies and modelling information, and the flood risk on your property	Contact Council on <a href="tel:0734123412">07 3412 3412</a> or email <a href="mailto:council@logan.qld.gov.au">council@logan.qld.gov.au</a> . Further information about flooding and flood studies is available on the <a href="#">Flood page</a> on Council's website.
Planning and development enquiries or proposals	Contact Council on <a href="tel:0734123412">07 3412 3412</a> or email <a href="mailto:development@logan.qld.gov.au">development@logan.qld.gov.au</a> . Before lodging a development application, <a href="#">pre-lodgement advice</a> is recommended.
Building information	Contact Council on <a href="tel:0734123412">07 3412 3412</a> or email <a href="mailto:council@logan.qld.gov.au">council@logan.qld.gov.au</a> . You can also contact a <a href="#">private building certifier</a> .
Properties in Priority Development Areas	Contact <a href="#">Economic Development Queensland</a> . Council is not the planning authority for these properties.
Independent advice about flooding on your property	Contact a registered engineer through the Board of Professional Engineers of Queensland: Phone: <a href="tel:0732103100">07 3210 3100</a> Email: <a href="mailto:admin@bpeq.qld.gov.au">admin@bpeq.qld.gov.au</a> Web: <a href="http://Home - Board of Professional Engineers Queensland (bpeq.qld.gov.au)">Home - Board of Professional Engineers Queensland (bpeq.qld.gov.au)</a>

**APPENDIX B – FILLING & EXCAVATION CODE**

## 9.4.2 Filling and excavation code

### 9.4.2.1 Application

1. This code applies to:
  - a. material change of use:
    - i. that is accepted development (subject to requirements) or code assessable and for which the Filling and excavation code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in a table of assessment in section 5.5 - Categories of development and assessment - Material change of use in Part 5 - Tables of assessment;
    - ii. that is made impact assessment in a table of assessment in section 5.5 - Categories of development and assessment - Material change of use or section 5.9 - Categories of development and assessment - local plans in Part 5 - Tables of assessment;
  - b. reconfiguring a lot:
    - i. that is code assessable and for which the Filling and excavation code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in Table 5.6.1 - Reconfiguring a lot in Part 5 - Tables of assessment;
    - ii. that is impact assessable in Table 5.6.1 - Reconfiguring a lot in Part 5 - Tables of assessment;
  - c. operational work that is accepted development (subject to requirements) and code assessable operational work - filling or excavation for which the Filling and excavation code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in Table 5.8.1 - Operational work.
2. When using this code, reference should be made to section 5.3.2 - Determining the category of development and category of assessment and, where applicable, section 5.3.3 - Determining the 'assessment benchmarks for assessable development and requirements for accepted development' located in Part 5 - Tables of assessment.

### 9.4.2.2 Purpose

1. The purpose of the code is to protect premises, people and natural processes from adverse impacts associated with filling or excavation.
2. The purpose of the code will be achieved through the following overall outcomes:
  - a. development protects:
    - i. natural physical processes and ecosystems;
    - ii. existing and planned infrastructure;
    - iii. personal health and safety and premises;
    - iv. visual amenity.

**9.4.2.3 Assessment benchmarks for assessable development and requirements for accepted development**

**Part A - Requirements for accepted development (subject to requirements) and assessment benchmarks for assessable development**

**Table 9.4.2.3.1 - Filling and excavation code: accepted development (subject to requirements) and assessable development**

Performance outcomes	Acceptable outcomes	Comments
<b>For accepted development (subject to requirements) and assessable development</b>		
<b>Protection of natural processes and ecosystems</b>		
<b>PO1</b> The discharge of sediments and pollutants from filling or excavation does not adversely affect a waterway or the stormwater network.	<b>AO1</b> The discharge of sediments and pollutants to a waterway or stormwater network complies with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	The Acceptable Outcome can be and is proposed to be met
<b>PO2</b> Topsoil and spoil stockpiled on the premises do not adversely affect natural processes and ecosystems.	<b>AO2</b> Topsoil and spoil is stockpiled to comply with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	The Acceptable Outcome can be and is proposed to be met
<b>PO3</b> Filling is carried out using stable, solid and clean earth, free of organic and putrescible waste, rubbish and refuse material.	<b>AO3</b> Filling complies with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	The Acceptable Outcome can be and is proposed to be met
<b>Protection of existing and planned infrastructure</b>		
<b>PO4</b> Filling or excavation works do not adversely affect infrastructure, including any services.	<b>AO4</b>	The Acceptable Outcome can be and is proposed to be met

	Filling or excavation works comply with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	
<b>Protection and enhancement of personal health and safety and premises</b>		
<b>PO5</b> Filling or excavation works do not adversely affect personal health and safety.	<b>A05</b> Filling or excavation works comply with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	The Acceptable Outcome can be and is proposed to be met
<b>Surface water flow</b>		
<b>PO6</b> Surface water drainage does not cause any of the following: a. ponding on any premises; or b. a hazard or adversely affect personal health and safety and premises; or c. diversion or concentration of flow from or onto adjoining premises or infrastructure.	<b>A06</b> Surface water drainage complies with part 3.3 - Filling or excavation standards in Planning scheme policy 5 - Infrastructure.	The Acceptable Outcome can be and is proposed to be met
<b>Batters</b>		
<b>PO7</b> A batter: a. does not adversely affect the natural physical processes and ecosystems; b. protects existing and planned infrastructure; c. is safe, stable and easily maintained; d. is landscaped to enhance visual amenity.	<b>A07</b> A batter is designed and constructed to comply with the standards specified in 3.3.6 - Batters and retaining walls in Planning scheme policy 5 - Infrastructure.	The Acceptable Outcome can be and is proposed to be met
<b>Retaining walls</b>		

<p><b>PO8</b>                  A retaining wall:</p> <ol style="list-style-type: none"> <li>a. is not constructed of timber and is not located on existing or proposed lot boundaries, or movement networks;</li> <li>b. does not adversely affect the natural physical processes and ecosystems;</li> <li>c. is located to avoid conflict with adjoining premises;</li> <li>d. is located such that existing and planned infrastructure is not adversely affected;</li> <li>e. protects the visual amenity of adjoining premises or a public open space;</li> <li>f. is located within the premises that is being filled;</li> <li>g. is located within the premises that is cut and is designed to take any surcharge loading allowable on the uphill lot;</li> <li>h. is safe and stable;</li> <li>i. enables easy access for maintenance.</li> </ol>	<p><b>A08</b>                  A retaining wall is designed and constructed to comply with the standards specified in section 3.3.6.2 - Retaining walls in Planning scheme policy 5 - Infrastructure.</p>	<p>The Acceptable Outcome can be and is proposed to be met, as identified on the accompanying drawings</p>
<p><b>Filling of a dam</b></p>		
<p><b>PO9</b>                  The filling of a dam:</p> <ol style="list-style-type: none"> <li>a. does not adversely affect the natural physical processes and ecosystems;</li> <li>b. creates a safe and stable surface;</li> <li>c. is integrated into the landscape.</li> </ol>	<p><b>A09</b>                  The filling of a dam complies with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.</p>	<p>Not applicable to this development</p>

**APPENDIX C – INFRASTRUCTURE CODE**

## 9.4.3 Infrastructure code

### 9.4.3.1 Application

1. This code applies to:
  - a. material change of use:
    - i. that is accepted development (subject to requirements) or code assessable and for which the Infrastructure code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in a table of assessment in section 5.5 - Categories of development and assessment - Material change of use in Part 5 - Tables of assessment;
    - ii. that is made impact assessment in a table of assessment in section 5.5 - Categories of development and assessment - Material change of use or section 5.9 - Categories of development and assessment - Local plans in Part 5 - Tables of assessment;
  - b. reconfiguring a lot:
    - i. that is code assessable and for which the Infrastructure code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in Table 5.6.1 - Reconfiguring a lot in Part 5 - Tables of assessment;
    - ii. made impact assessment in Table 5.6.1 - Reconfiguring a lot in Part 5 - Tables of assessment;
  - c. operational work that is infrastructure work:
    - i. that is accepted development (subject to requirements) or code assessable and for which the Infrastructure code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column Table 5.8.1 - Operational work in Part 5 - Tables of assessment.
2. When using this code, reference should be made to section 5.3.2 - Determining the category of development and category of assessment and, where applicable, section 5.3.3 - Determining the 'assessment benchmarks for assessable development and requirements for accepted development' located in Part 5 - Tables of assessment.

### 9.4.3.2 Purpose

1. The purpose of the code is to ensure that infrastructure is provided to service development.
2. The purpose of the code will be achieved through the following overall outcomes:
  - a. development protects the existing infrastructure and planned infrastructure networks being the:
    - i. movement network;
    - ii. park network;
    - iii. water network;

- iv. sewerage network;
- v. stormwater network;
- vi. other networks including electricity, gas and telecommunications;
- vii. land for community facilities network;
- b. development other than operational work provides infrastructure that is necessary to service the development, including elements of:
  - i. a safe, efficient and legible road network;
  - ii. a safe, efficient and legible public transport network;
  - iii. a safe, efficient and legible cycle network;
  - iv. a safe, efficient and legible pedestrian network;
  - v. a safe, efficient and legible parks network;
  - vi. a safe and efficient water network;
  - vii. a safe and efficient sewerage network;
  - viii. a safe and efficient stormwater network;
  - ix. safe and efficient other networks including electricity, gas and telecommunications;
  - x. a safe and efficient road lighting network;
  - xi. land for a community facilities network;
- c. development integrates with existing and planned infrastructure networks;
- d. infrastructure is designed and constructed to deliver a standard of service that is efficient and equitable;
- e. the cost to the community for the life of the infrastructure is minimised by providing for a suitable design life, ease of maintenance and ease of replacement;
- f. development appropriately manages refuse and recycling storage and collection;
- g. infrastructure protects personal health and safety and premises;
- h. infrastructure protects environmental values.

**9.4.3.3 Assessment benchmarks for assessable development and requirements for accepted development**

**Part A - Requirements for accepted development (subject to requirements) and assessment benchmarks for assessable development**

**Table 9.4.3.3.1 - Infrastructure code: accepted development (subject to requirements) and assessable development**

Performance outcomes	Acceptable outcomes	Comments
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For accepted development (subject to requirements) and assessable development		
Provision, design, construction and location of infrastructure		
<p><b>PO1</b> Development is demonstrated to be capable of being serviced by necessary infrastructure.</p>	<p><b>AO1</b> Reports, plans and drawings are provided in accordance with part 2 of Planning scheme policy 5 - Infrastructure.</p>	<p>The Acceptable Outcome can be and is proposed to be met, as identified on the accompanying drawings</p>
<p><b>PO2</b> Development:</p> <ol style="list-style-type: none"> <li>a. provides necessary infrastructure to service the development;</li> <li>b. provides that the design, construction and location of necessary infrastructure:               <ol style="list-style-type: none"> <li>i. protects existing and planned infrastructure networks;</li> <li>ii. services proposed development;</li> <li>iii. integrates with existing and planned infrastructure networks;</li> <li>iv. delivers a standard of service that is efficient and equitable;</li> <li>v. minimises the cost to the community for the life of the infrastructure by providing a suitable design life, ease of maintenance and ease of replacement;</li> <li>vi. protects personal health, safety and premises;</li> <li>vii. protects environmental values.</li> </ol> </li> </ol>	<p><b>AO2</b> Development:</p> <ol style="list-style-type: none"> <li>a. in a water supply service area connects to the water network in accordance with the SEQ Water Supply and Sewerage Design and Construction Code;</li> <li>b. not in a water supply service area provides a tank with a minimum storage capacity of 45,000 litres;</li> <li>c. in a sewerage supply service area connects to the waste water network in accordance with the SEQ Water Supply and Sewerage Design and Construction Code;</li> <li>d. not in a sewerage supply service area complies with part 1 of the Queensland Plumbing and Wastewater Code;</li> <li>e. provides stormwater infrastructure in accordance with part 3.6 of Planning scheme policy 5 - Infrastructure;</li> <li>f. provides a movement network infrastructure in accordance with part 3.4 of Planning scheme policy 5 - Infrastructure;</li> <li>g. provides parks in accordance with part 3.12 of Planning scheme policy 5 - Infrastructure;</li> </ol>	<p>The Acceptable Outcome can be and is proposed to be met, as identified on the accompanying drawings</p>

	<p>h. provides road lighting in accordance with part 3.5 of Planning scheme policy 5 - Infrastructure;</p> <p>i. provides electricity reticulation in accordance with part 3.8 of Planning scheme policy 5 - Infrastructure;</p> <p>j. provides gas and telecommunications reticulation in accordance with part 3.9 of Planning scheme policy 5 - Infrastructure.</p> <p>k. is consistent with the general planning layouts in part 7.2 of Planning scheme policy 5 - Infrastructure.</p> <p>Editor's note - The delivery of any part of a network identified in the plans for trunk infrastructure is governed by Part 4 - Local government infrastructure plan.</p>	
<b>Location of development</b>		
<p><b>PO3</b>                  Development is located to protect trunk infrastructure networks.</p>	<p><b>A03</b>                  Development is located outside a network identified in Local government infrastructure plan map LGIP-03.00 to 08.00 Plans for trunk infrastructure in Schedule 3 - Local government infrastructure plan mapping and tables.</p>	<p>The Acceptable Outcome is met</p>
<b>Fire fighting</b>		
<p><b>PO4</b>                  Development in a water service area accessed by common private title provides:</p> <ul style="list-style-type: none"> <li>a. fire hydrant infrastructure;</li> <li>b. unimpeded access for emergency services vehicles.</li> </ul> <p>Editor's note - The term common private title refers to areas such as access roads in community title developments or</p>	<p><b>A04</b>                  Development in a water service area involving a material change of use or reconfiguring a lot where, or to be, accessed by common private title ensures that fire hydrant placement and technical requirements for streets and access ways are in accordance with:</p>	<p>The Acceptable Outcome can be and is proposed to be met, as identified on the accompanying drawings</p>

<p>strata title unit access, which are private and under group or body corporate control.</p>	<p>a. Australian Standard (AS) 2419.1 - 2005 <i>Fire hydrant installations</i>;                  b. QFES: <i>Fire Hydrant and vehicle access guidelines for residential, commercial and industrial lots</i>.</p>	
<p><b>PO5</b>                  Development not in a water service area provides sufficient water storage with adequate pressure, volume and flow to service development for fire fighting purposes.</p>	<p><b>AO5</b>                  Development:                  a. is connected to a reticulated water supply scheme that has sufficient flow and pressure characteristics for fire fighting purposes at all times with a minimum pressure and flow of 10 litres per second at 200kPa; or                  b. has on-site water storage in accordance with Table 9.4.3.3.2 - Water storage for fire fighting, dedicated or retained for fire fighting purposes that is made of fire resistant materials and is:                      i. a separate tank; or                      ii. a reserve section in the bottom part of the main water supply tank/water tank.                  Editor's note - The requirement in AO5 is:                  - in addition to the requirement for potable water supply/storage in AO2 in Table 9.4.3.3.1 - Infrastructure code: accepted development (subject to requirements) and assessable development;                  - reflected in AO5 in Table 8.2.3.3.1 - Bushfire hazard overlay code: accepted development (subject to requirements) and assessable development.</p>	<p>Not Applicable</p>
<p><b>Waste management</b></p>		
<p><b>PO6</b></p>	<p><b>AO6.1</b></p>	<p>The Acceptable Outcomes can be and are proposed to be met, as identified on the accompanying drawings</p>

<p>Development provides refuse and recycling collection and storage facilities that are located and managed so that adverse impacts on building occupants, neighbouring properties and the public realm are minimised.</p>	<p>Development provides refuse and recycling collection and storage facilities in accordance with Planning scheme policy 9 - Waste management.</p> <p><b>A06.2</b>          Development ensures that the location and design of refuse and recycling collection and storage facilities does not have any adverse impact including odour, noise or visual impacts on the amenity of land uses within or adjoining the development.</p> <p>Note - Planning scheme policy 9 - Waste management provides guidance on how to achieve this outcome.</p>	
<b>Disposal of trade waste</b>		
<p><b>PO7</b>          The disposal of trade waste in a sewerage supply service area does not adversely affect the sewerage network.</p>	<p><b>A07</b>          The disposal of trade waste in a sewerage supply service area complies with the sewer admission standards in section 3.2.6 - Sewer admission standards in Planning scheme policy 3 - Environmental management.</p>	<p>Not applicable for this development</p>
<b>Roof water drainage and surface water drainage</b>		
<p><b>PO8</b>          Development provides stormwater infrastructure for the drainage of the premises so as not to cause any of the following:</p> <ul style="list-style-type: none"> <li>a. ponding of stormwater on the premises;</li> <li>b. a hazard to personal health and safety;</li> <li>c. damage to premises;</li> <li>d. an increased risk of flooding to premises within the catchment.</li> </ul>	<p><b>A08</b>          Development complies with the standards for stormwater infrastructure specified in part 3.6 of Planning scheme policy 5 - Infrastructure.</p>	<p>The Acceptable Outcome can be and is proposed to be met, as identified on the accompanying drawings</p>

<b>Natural flow of surface water</b>		
<p><b>PO9</b>                      Development provides that the natural flow of surface water is:</p> <ul style="list-style-type: none"> <li>a. not altered so as to cause a risk to personal health and safety or damage to property;</li> <li>b. not increased in intensity, velocity or frequency;</li> <li>c. not concentrated onto adjoining premises.</li> </ul>	<p><b>AO9</b>                      Development complies with the standards for stormwater infrastructure specified in part 3.6 of Planning scheme policy 5 - Infrastructure.</p>	<p>The Acceptable Outcome can be and is proposed to be met, as identified on the accompanying drawings</p>
<b>Water sensitive urban design</b>		
<p><b>PO10</b>                      Development which provides stormwater infrastructure incorporates water sensitive urban design principles having regard to:</p> <ul style="list-style-type: none"> <li>a. protecting existing natural features and ecological processes;</li> <li>b. protecting the natural hydrologic behaviour of catchments;</li> <li>c. protecting the existing natural flow and water quality regimes of waterways;</li> <li>d. protecting water quality of surface and ground waters;</li> <li>e. minimising demand on the water network;</li> <li>f. minimising sewage discharges to the natural environment;</li> <li>g. integrating water into the landscape to enhance visual and ecological values.</li> </ul>	<p><b>AO10</b>                      Development complies with the standards for stormwater infrastructure specified in part 3.6 of Planning scheme policy 5 - Infrastructure.</p>	<p>The Acceptable Outcome can be and is proposed to be met</p>
<b>Movement network</b>		
<p><b>PO11</b></p>	<p><b>AO11</b></p>	<p>Not applicable for this development</p>

<p>The projected traffic levels for a use do not adversely affect the planned standards of service for a road or intersection.</p>	<p>Development does not cause or contribute to projected traffic levels:</p> <ul style="list-style-type: none"> <li>a. exceeding the maximum vehicle trips per day in Table 3.4.1.4.2 in Planning scheme policy 5 - Infrastructure; or</li> <li>b. exceeding the maximum control delays through intersections in peak periods in Table 3.4.1.4.3 in Planning scheme policy 5 - Infrastructure.</li> </ul>	
<p><b>Integrated movement concept report</b></p>		
<p><b>PO12</b>                  Development which generates more than 3,000 vehicle trips per average weekday is designed to integrate the movement network to minimise the transportation costs required to service the use.</p>	<p><b>AO12</b>                  Development which generates more than 3,000 vehicle trips per average weekday provides an integrated movement concept report which integrates the planning of the movement network in accordance with part 2 and 3 of Planning scheme policy 5 - Infrastructure.</p>	<p>Not applicable for this development</p>
<p><b>For assessable development only</b></p>		
<p><b>Land use and transport integration</b></p>		
<p><b>PO13</b>                  Development within 400 metres of existing or future public passenger transport facilities where the total site area is 5,000m<sup>2</sup> or more:</p> <ul style="list-style-type: none"> <li>a. supports a road hierarchy which facilitates efficient, safe and accessible bus services connecting to existing and future public passenger transport facilities;</li> </ul>	<p><b>AO13</b>                  No acceptable outcome provided.</p>	<p>Not applicable for this development</p>

<p>b. enhances connectivity between existing and future public passenger transport facilities and other transport modes;</p> <p>c. optimises the walkable catchment to existing and future public passenger transport facilities;</p> <p>d. provides for direct and safe access to and use of existing or future public passenger transport facilities.</p> <p>Note - SPP code: Land use and transport integration in Appendix 4 of the state planning policy provides guidance to achieve this outcome.</p>		
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**Table 9.4.3.3.2 - Water storage for fire fighting**

Column 1 Lot size / use type	Column 2 Water requirement
For each residential lot:	
a. less than 1,000m <sup>2</sup>	5,000 litres
b. between 1,000m <sup>2</sup> and less than 1 hectare	10,000 litres
c. greater than 1 hectare	20,000 litres
Multiple dwelling	5,000 litres per dwelling up to a maximum of 20,000 litres
A use other than Multiple dwelling	5,000 litres or the prevailing rural fire brigade standard