

BCC DS
RECEIVED
21/11/2025
APPLICATION REF
A006530099



409 Priestdale Road, Rochedale 4123 QLD

Civil Engineering Report

Site Based Stormwater Management &
Engineering Services Report

Packhill Pty Ltd

June 2025

Document Verification

Job Title 409 Priestdale Road, Rochedale 4123 QLD


Job Number 26551

Document Title Civil Engineering Report

Document Control

Date	Document	Revision No.	Author	Reviewer
24.04.2024	Civil Engineering Report	01	JB	CDM
20.06.2025	Civil Engineering Report	02	CC	CDM

Approval for Issue

Name	Signature	Date
Cameron Moore		20.06.2025
John Ghobrial (RPEQ 7956)		20.06.2025

© Document copyright of ADG Engineers (Aust) Pty Ltd

This document is and shall remain in the property of ADG. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

To the extent permitted by law, ADG expressly disclaims and excludes liability for any loss, damage, cost or expenses suffered by any third party relating to or resulting from the use of, or reliance on, any information contained in this report. ADG does not admit that any action, liability or claim exist or be available to any third party.

CONTENTS

EXECUTIVE SUMMARY	1
1 INTRODUCTION	2
1.1 Background	2
1.2 Property Detail.....	2
2 EXISTING SITE	3
2.1 Existing Site Features	3
2.2 Existing Adjoining Approvals.....	3
3 ACID SULFATE SOILS	4
4 EARTHWORKS	5
4.1 Bulk Earthworks	5
5 ROADWORKS	6
5.1 Existing Infrastructure	6
5.2 Proposed Infrastructure.....	6
6 FLOODING	7
7 STORMWATER INFRASTRUCTURE	8
7.1 Existing Infrastructure	8
7.2 Lawful Point of Discharge (LPD)	8
7.2.1 Existing LPD	8
7.2.2 Proposed LPD	8
8 STORMWATER QUANTITY ASSESSMENT	9
8.1 Proposed Development and Associated Issues	9
8.2 Flow Rate Methodology	9
8.2.1 Design Storm Events	9
8.2.2 Rational Method for Peak Flow Rate	9
8.2.3 Catchment Area (A)	10
8.2.4 Coefficient of Runoff (C)	10
8.2.5 Time of Concentration (t_c)	10
8.3 External Catchment.....	10
8.4 Pre-Development Hydrology	12
8.5 Post-Development Hydrology	12
8.5.1 Recommendation	12
9 STORMWATER QUALITY ASSESSMENT	13
9.1 Treatment Objectives	13
9.2 Erosion and Sediment Control	13
9.2.1 Erosion Hazard Assessment	13
9.2.2 Pre-Development Phase	13
9.2.3 Bulk Earthworks Phase	14
9.2.4 Construction Phase	14

9.2.5	Maintenance	14
9.3	Operational Phase Treatment Devices	15
9.3.1	Bioretention Street Pod	15
9.4	MUSIC Model.....	15
9.5	On-site Treatment Lifecycle Costs	16
9.6	Water Quality Monitoring.....	16
9.7	Maintenance.....	16
10	WATER SUPPLY	17
10.1	Existing Infrastructure	17
10.2	Point Of Connection	17
11	SEWERAGE RETICULATION	18
11.1	Existing Infrastructure	18
11.2	Point Of Connection	18
12	ELECTRICAL SUPPLY	19
13	COMMUNICATIONS	20
14	PRIORITY INFRASTRUCTURE UPGRADES	21
15	CONCLUSION	22

TABLES

Table 1 - Property Detail	2
Table 2 - External Hydrology	11
Table 3 - Pre-development Catchment Details	12
Table 4 - Post-development Catchment Details	12

FIGURES

Figure 1 - Site Location (as accessed from eBiMaps2 28.06.23)	2
Figure 2 - Site Layout (as accessed from QLD Globe 28.06.23)	3
Figure 3 – Acid Sulfate Soil Mapping (as accessed from BCC CityPlan 2014 on 28.06.23)	4
Figure 4 – Adjacent Lot Swale	10
Figure 5 – eBIMAP2 Adjacent Lot Contours	11
Figure 6 - External Catchment	11
Figure 7 – Post-development Treatment Train and Results	15
Figure 8 - Priority Infrastructure	21

APPENDICES

Appendix A Site Survey Plan
Appendix B Preliminary Civil Plan
Appendix C BCC Code Response
Appendix D BCC Floodwise Property Report

Appendix E BCC Erosion Hazard Assessment

Appendix F Rational Method Calculations

Appendix G MUSIC Model Information

Appendix H Neighbouring Development Plans

Appendix I BCC eBIMAP2 Information

Appendix J BYDA Information

EXECUTIVE SUMMARY

ADG Engineers (Aust.) Pty Ltd have been engaged by Packhill Pty Ltd to prepare a Civil Engineering Report suitable for submission to Brisbane City Council (BCC) to support a development application for a site located at 409 Priestdale Road, Rochedale 4123 QLD. The proposed development is for an eighteen (18) lot subdivision. The proposed subdivision will be accessed via a new road proposed to be constructed as part of the adjoining development (DA: A005513937).

The purpose of this Civil Engineering Report is to provide advice on the proposed development as detailed in the AJS Surveys subdivision plan. The works described herein are subject to further approvals and cover works required to service the proposed development including earthworks, roadworks, stormwater drainage, sewerage and water supply, electricity and communications.

Although the development will result in an increase to the site's impervious area, no detention measures have been proposed. Detention measures have been assumed to be negated as per the neighbouring development's (DA: A005513937) pre-lodgement meeting minutes, Item 6: Lawful point of Discharge - No detention needed when connecting to the existing 1050 RCP pipe running at the rear of Lot 2, RP812764. A preliminary catchment analysis for the proposed lawful point of discharge indicates there is sufficient capacity within the existing stormwater network to convey the additional flows generated from the development to the downstream receiving waterway.

In addition to the stormwater quantity results, the report includes a summary of the modelled water quality results. Water Sensitive Urban Design (WSUD) features have been included in the design to reduce water pollutants in accordance with the State Planning Policy (SPP), namely, the removal of gross pollutants, suspended solids, nitrogen and phosphorus. Target reduction levels have not been achieved as WSUD street tree pits are the only stormwater quality improvement device specified. However, this strategy does achieve best practice outcomes aligned with BCC expectations. ADG recommends the use of the following features to reduce the pollutant production:

- 10 x Bioretention Street Tree pits in accordance with BCC Standard Drawing BSD-8339

Post construction of the above-mentioned neighbouring development (DA: A005513937), the site appears to be adequately serviced by reticulated water, sewerage, stormwater infrastructure, telecommunications, and electricity. These services require to be connected during development. Information discussed in this report is inferred from BYDA records and information gathered via site investigation, including the neighbouring development plans.

All relevant standards and guidelines are addressed in this report including criteria from:

- BCC Planning Scheme Policy
- BCC Land Development Guidelines
- State Planning Policy (SPP)
- Queensland Urban Drainage Manual (QUDM)
- Plumbing and Drainage Code AS3500.3
- Australian Rainfall and Runoff (ARR) Guideline

1 INTRODUCTION

1.1 Background

ADG Engineers (Aust.) Pty Ltd was engaged by Packhill Pty Ltd to carry out a Civil Engineering Report suitable for submission to BCC and any required referral agencies for a site located at 409 Priestdale Road, Rochedale 4123 QLD. The proposed development is for an eighteen (18) lot sub-division. The proposed subdivision will be accessed via a new road proposed to be constructed as part of the adjoining development (DA: A005513937).

The purpose of this Civil Engineering Report is to provide advice on the proposed development with regard to earthworks, roadworks, stormwater drainage, sewerage and water supply, electricity, communications, stormwater quality and quantity measures, and flooding. The required infrastructure will be subject to the conditions attached to the Development Approval to be provided by BCC and any nominated referral agencies.

1.2 Property Detail

The details of the property for the proposed development can be seen in **Table 1** below.

Table 1 - Property Detail

Title	Lot 2 on RP 223993
Street Address	409 Priestdale Road, Rochedale 4123 QLD
Site Area	10,000m ²

The location of the proposed development is demonstrated in **Figure 1**.

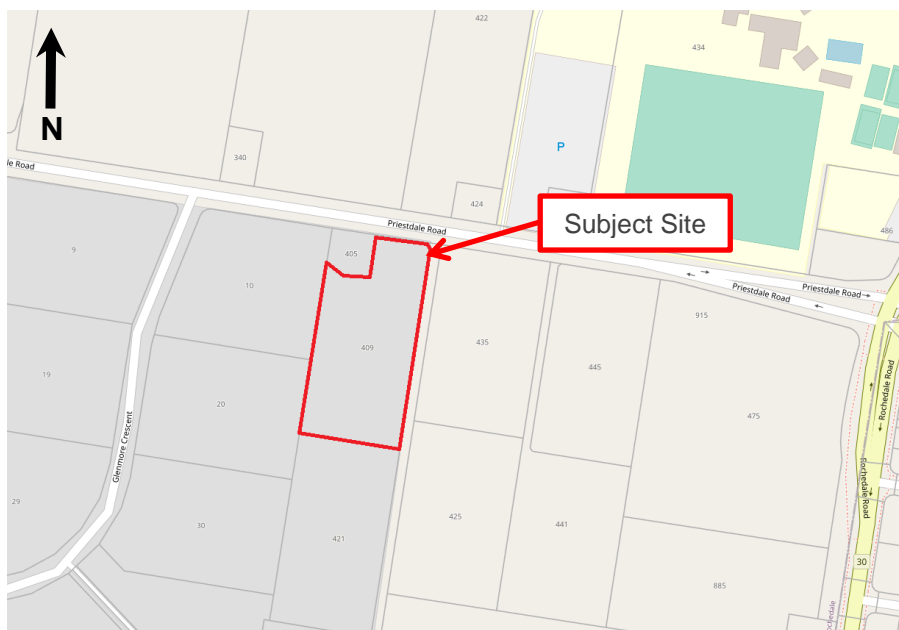


Figure 1 - Site Location (as accessed from eBiMaps2 28.06.23)

3 ACID SULFATE SOILS

Review of the BCC Potential and Actual Acid Sulfate Soils Map has identified that the subject site is **not** located in an area susceptible to acid sulfate soils.

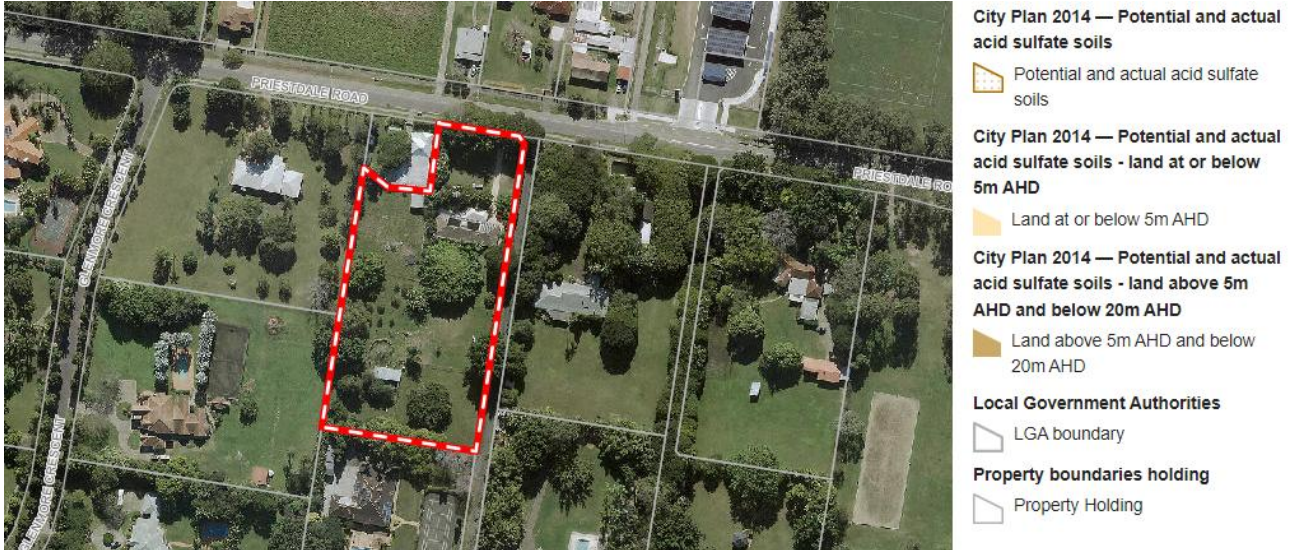


Figure 3 – Acid Sulfate Soil Mapping (as accessed from BCC CityPlan 2014 on 28.06.23)

4 EARTHWORKS

4.1 Bulk Earthworks

The subject site will require earthworks and retaining walls to facilitate the proposed subdivision and achieve desired road and lot grading. Required retaining walls throughout the site have been kept to a maximum of 1m height in accordance with the BCC Planning Scheme Policy. There will be slight reshaping of the verge required to grade the verge back to Priestdale Road and away from the subject site.

Refer to **Appendix B** and **Appendix C** for the Conceptual Civil Plans and BCC Filling and Excavation Code respectively.

5 ROADWORKS

5.1 Existing Infrastructure

The subject site is adjacent to the following roads:

- ▶ Priestdale Road – suburban road, with kerb and channel drainage on the development side and a swale on the opposite side to the development, without kerb, and a two-way crossfall.

The site is currently accessed via a vehicle crossover along Priestdale Road.

5.2 Proposed Infrastructure

ADG anticipate that a new road and individual lot crossovers will be constructed as part of the development to facilitate the connection of the proposed lots to the road network. The internal road is an extension of the proposed road within the adjacent development (DA: A005513937), and will provide a future connection point to the undeveloped lot, 371 Priestdale Road.

The existing vehicle crossover to Priestdale Road is to be made redundant, demolished and removed offsite as part of the construction works. All kerbs to be reinstated to BCC standards.

Refer to the proposed subdivision plan supplied in support of this report for further information. A copy of the populated infrastructure design code has been provided in **Appendix C**.

6 FLOODING

A FloodWise Property Report for 409 Priestdale Road, Rochedale 4123 QLD was generated from the BCC website. The report states that no Defined Flood Levels (DFL) or Overland Flow flags for building and development purposes for this property had been identified.

The BCC FloodWise report is attached within **Appendix D** for further information.

7 STORMWATER INFRASTRUCTURE

7.1 Existing Infrastructure

Survey, BCC eBIMAP2 and BYDA information identified the following stormwater infrastructure within the vicinity of the subject site:

- A 1050mm main located north and west of the subject site, within an easement;
- 2 inlet pits on Priestdale Road connecting to the above mentioned main; and
- A type C manhole located in Priestdale Road northwest of the subject site.

Refer to the survey, eBIMAP2 and BYDA information in **Appendix A**, **Appendix I** and **Appendix J** respectively for further information regarding the existing stormwater infrastructure.

7.2 Lawful Point of Discharge (LPD)

7.2.1 Existing LPD

Based on information gathered via survey and contour data, aerial imagery and site investigation it has been determined that the subject site discharges flows to the existing neighbouring property south of the subject site, leading to an open waterway downstream.

7.2.2 Proposed LPD

It is proposed to connect the development to the existing 1050mm stormwater main within the easement west of the subject site and provide a new LPD.

8 STORMWATER QUANTITY ASSESSMENT

The aim of the stormwater quantity assessment is to ensure that the proposed development shall result in no adverse effects on surrounding properties or receiving water bodies, and that the conveyance of flows will be in a safe manner with minimal risk of human endangerment by:

- Addressing the need for stormwater quantity control measures.
- Ensuring there is no increase in peak discharges from the subject site for events up to and including the 2% Annual Exceedance Probability (AEP) event.
- Ensuring proposed quantity control measures convey flows in accordance with QUDM minimum freeboard recommendations.

This section of the report should be read in conjunction with **Appendix F** which shows the values used to calculate the peak flow rate.

8.1 Proposed Development and Associated Issues

Although the development will result in an increase to the site's impervious area, detention measures have been proposed. Detention measures have been assumed to be negated as per the neighbouring development's (DA: A005513937) pre-lodgement meeting minutes, Item 6: Lawful point of Discharge - No detention needed when connecting to the existing 1050RCP pipe running at the rear of Lot 2, RP812764.. A preliminary catchment analysis for the proposed lawful point of discharge indicates sufficient capacity within the stormwater network to convey the additional flows generated from the development to the downstream receiving waterway.

8.2 Flow Rate Methodology

8.2.1 Design Storm Events

Based on recommendations within QUDM, AS/NZ 3500.3 and BCC standards the major and minor storm events were selected as follows:

- Minor Event: 50% AEP
 - Captured within pit and pipe drainage infrastructure through to LPD.
- Major Event: 2% AEP
 - Surface drainage overflows in events up to and including the 2% AEP are to be captured with overland flows paths and road corridors and will not present a hazard to people or cause significant damage to property.

Pipe sizing will be performed during detailed design and increased as required to ensure a safe depth vs velocity is maintained at all times during the major event.

8.2.2 Rational Method for Peak Flow Rate

Peak flow rates for the site have been obtained using the Rational Method (Equation 1 below) in accordance with ARR, QUDM and the BCC Planning Scheme Policy. Further detail of the Rational Method hydrology calculations are presented in **Sections 8.4** and **Section 8.5** for the pre and post-developed scenarios respectively.

$$Q_y = \frac{C_y \cdot I_y \cdot A}{360} \quad \text{Equation 1}$$

Q_y	Peak flow rate (m ³ /s) for annual exceedance probability (AEP) of 1 in 'y' years
C_y	Co-efficient of runoff for AEP of 1 in 'y' years (dimensionless)
tI_y	Average rainfall intensity (mm/hr) for a design duration of 't' hours and an AEP of 1 in 'y' years (ARR 1987 IFD's adopted in accordance with BCC Planning scheme Policy)
A	Catchment area (ha)

8.2.3 Catchment Area (A)

Catchment areas were measured using AutoCAD, contour surface data and known cadastral boundaries. Catchment boundaries and areas for both the pre-developed and post-developed scenarios can be seen in **Appendix B**.

8.2.4 Coefficient of Runoff (C)

Table 7.3.3.1.A of the BCC Stormwater Drainage Infrastructure Design Planning Scheme Policy was used to determine the C_{10} values for the pre-developed and post-developed scenarios. From the C_{10} values the remaining coefficients of runoff were derived for all storm events up to and including the 1% AEP using the frequency factors presented within Table 4.5.2 of QUDM.

8.2.5 Time of Concentration (t_c)

The time of concentration (t_c) for each catchment was calculated using a combination of methods, in accordance with QUDM Section 4.6.

Please refer to **Appendix F** for more details.

8.3 External Catchment

There is an adjacent lot which appears to discharge stormwater vis sheet flow in a south-westerly direction. Site investigation accompanied by 2019 eBIMAP2 contours indicate that a portion of the upstream lot shall not contribute sheet flow into the site due to a swale present within the public driveway adjacent to the subject site, as can be seen in **Figure 4**. eBIMAP2 contours have been provided in **Figure 5** for reference.



Figure 4 – Adjacent Lot Swale

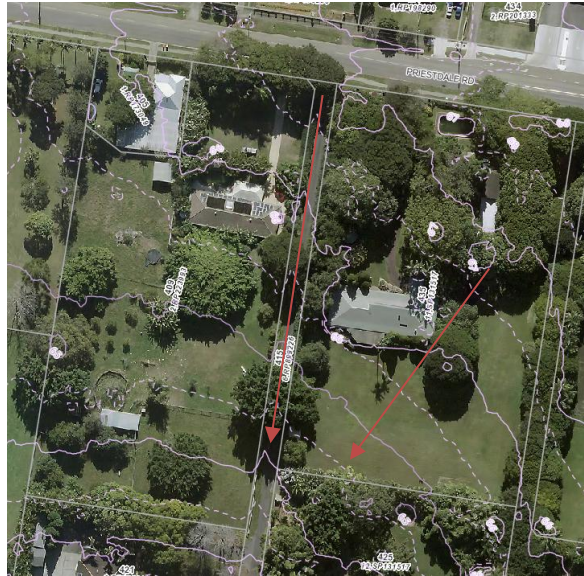


Figure 5 – eBIMAP2 Adjacent Lot Contours

There is a small external catchment which may contribute flows to the subject site. Aerial imaging indicates that a portion of the upstream lot shall contribute sheet flow into the site, as can be seen in **Figure 6**. Based on aerial imaging, it can be seen that the external catchment consists primarily of roofed area surrounded by grass. Site inspection does not provide any indication that this roof water is discharged to drainage infrastructure. As a result, it has been assumed that the entire catchment outlined is to be discharged through the site, in order to provide a conservative estimate of sheet flow.



Figure 6 - External Catchment

Rational Method calculations were performed, the results of which can be seen in **Table 2**. Please refer to **Appendix F** for a summary of the Rational Method calculations and all parameters used.

Table 2 - External Hydrology

Catchment I.D	Area (m ²)	% Impervious	C ₂	C ₅₀	Time of Concentration (t _c)	50% AEP (m ³ /s)	2% AEP (m ³ /s)	1% AEP (m ³ /s)
EXT1	584	80.0%	0.731	0.989	5	0.018	0.036	0.053
Total	584	80.0%	0.731	0.989	5	0.018	0.036	0.053

8.4 Pre-Development Hydrology

The subject site has a total area of 10,000m² and currently comprises of a single residential dwelling. The dwelling appears to discharge all flows via sheet flow to the downstream lot.

Rational Method calculations were performed, the results of which can be seen outlined in **Table 3**. Please refer to **Appendix F** for a summary of the Rational Method calculations and all parameters used.

Table 3 - Pre-development Catchment Details

Catchment I.D	Area (m ²)	% Impervious	C ₂	C ₅₀	Time of Concentration (t _c)	50% AEP (m ³ /s)	2% AEP (m ³ /s)	1% AEP (m ³ /s)
EX1	10,000	10.0%	0.612	0.828	20	0.145	0.395	0.463
Total	10,000	10.0%	0.612	0.828	20	0.145	0.395	0.463

8.5 Post-Development Hydrology

The total land area considered for the post-development was 10,000m². The post-development catchment plan is attached within **Appendix B** for further information.

Rational Method calculations were performed, the results of which can be seen in **Table 4**. Please refer to **Appendix F** for a summary of the Rational Method calculations and all parameters used.

Table 4 - Post-development Catchment Details

Catchment I.D	Area (m ²)	% Impervious	C ₂	C ₅₀	Time of Concentration (t _c)	50% AEP (m ³ /s)	2% AEP (m ³ /s)	1% AEP (m ³ /s)
C1	10,000	80.0%	0.731	0.989	8	0.257	0.677	0.763
Total	10,000	80.0%	0.731	0.989	8	0.257	0.677	0.763

8.5.1 Recommendation

ADG recommend that the site is to convey all minor event flows to the 1050mm stormwater main located adjacent to the site, discharging the water to the open waterway downstream, with the internal roadway to grade from north to south, and to continue grading west through the proposed neighbouring road to Glenmore Crescent to cater for the 1% AEP storm event.

9 STORMWATER QUALITY ASSESSMENT

9.1 Treatment Objectives

This assessment identifies issues relating to stormwater quality runoff and assesses possible methods of treatment if required. The aim of this section of the report is to determine practical approaches to achieving improvements in the quality of the stormwater run-off from the site that can be readily implemented.

The SPP proposes criteria which apply to 'high-risk' development for stormwater. The criteria include one or more of the following:

- A Material Change of Use (MCU) for an urban purpose which involves greater than 2,500m² of land that:
 - will result in an impervious area greater than 25% of the net developable area; or
 - will result in six (6) or more dwellings
- A Reconfiguration of a Lot (ROL) for urban purposes that involves a land area greater than 2,500m² and will result in six (6) or more lots; or
- Operational works for urban purposes that involve disturbing more than 2,500m² of land.

The proposal includes a ROL for land area greater than 2,500m² that will result in six (6) or more allotments, however, as proposed for the neighbouring development, the use of WSUD features is advised by the council. Therefore, in order to provide adequate stormwater quality treatment, best practice management is required.

9.2 Erosion and Sediment Control

9.2.1 Erosion Hazard Assessment

The erosion risk has been assessed against the BCC Erosion hazard guidelines and found to be medium risk. Refer to the Erosion Hazard Form attached in **Appendix E**.

9.2.2 Pre-Development Phase

Prior to construction commencing, the following erosion and sediment control measures will need to be installed around the subject site to minimise disturbance and ensure the quality of runoff discharging from the site is of an acceptable standard:

- Sediment barriers to be installed on all entrances to downstream stormwater infrastructure (i.e. gully pits);
- Designation of transport routes through the site to minimise vegetation disturbance;
- Maximise retention of existing vegetation to reduce soil disturbance and provide filter strip treatment for runoff;
- Install construction entry and exit shakedown areas;
- Sediment fences are to be installed on the downstream boundaries of the subject site; and
- Install dust control measures as required.

All erosion and sediment control measures are to be designed and installed in accordance with IECA Guidelines. Further details regarding the proposed erosion and sediment control measures will be provided during the detailed design phase of the development.

9.2.3 Bulk Earthworks Phase

During the bulk earthworks phase, the following erosion and sediment control measure will need to be installed in addition to the aforementioned measures (Pre-Development Phase) to ensure there is minimal disturbance to downstream receiving water bodies:

- Construction chutes to control runoff over earthworks batters;
- Construction of temporary bunds at the top of all earthworks batters to ensure runoff is directed away from exposed batters;
- Sediment basins to be constructed at low points within each stage of the proposed development;
- Construction of temporary diversion drains to divert water to sediment basins and around any stockpiles;
- Sediment fences to be installed on the downstream side of any stockpiles; and
- Stabilisation of all batters upon reaching the finished earthworks levels.

All erosion and sediment control measures are to be designed and installed in accordance with IECA Guidelines. Further details regarding the proposed erosion and sediment control measures will be provided during the detailed design phase of the development.

9.2.4 Construction Phase

During the construction phase of the development, there is a risk of sedimentation transport due to large areas of disturbed land. The following erosion and sediment control measure will need to be installed in addition to the aforementioned measures (Pre-Development and Bulk Earthworks Phases) to ensure there is minimal disturbance and the quality of runoff is maintained to an acceptable standard:

- Construction of temporary diversion drains to divert water to sediment basins;
- Construction of temporary diversion drains to divert water to protect bioretention and treatment devices as required;
- Sediment barriers to be installed on all entrances to newly constructed stormwater infrastructure (i.e. gully pits);
- Sediment fences to be installed on the downstream side of any stockpiles and batters; and
- Re-vegetation of all disturbed areas within two (2) weeks of completion.

All erosion and sediment control measures are to be designed and installed in accordance with IECA Guidelines. Further details regarding the proposed erosion and sediment control measures will be provided during the detailed design phase of the development.

9.2.5 Maintenance

All erosion and sediment control devices are to be maintained through the entire phase of the development leading up to the operational phase. Erosion and sediment control devices will need to be monitored closely throughout the entire project to ensure they are operating correctly and efficiently. No erosion and sediment control devices are to be removed unless otherwise authorised by a suitably qualified engineer or the site superintendent.

9.3 Operational Phase Treatment Devices

Currently no stormwater quality management measures are in place for the subject site, and as proposed for the neighbouring development, as mentioned in the council pre-lodgement meeting minutes, the use of street trees is provided as advice, which has been proposed to be extended to the subject site. During the operational phase, it is proposed to have the roof area to be conveyed to the proposed road, which will contain Bioretention Street Pod within turf in accordance with BCC Standard drawing BSD-8339. Water captured within the tree pods will drain through OceanGuards devices prior discharging to the stormwater main located in the easement adjacent to the subject site.

Internal stormwater drainage shall be designed and constructed in accordance with AS3500.3 and all other relevant standards and guidelines.

The proposed stormwater quality treatment measures for the development will consist of:

- 10 x Bioretention Street Tree pits in accordance with BCC Standard Drawing BSD-8339

9.3.1 Bioretention Street Pod

Water smart trees remove contaminants and sedimentation from stormwater runoff via infiltration through layers of soil media. The water smart tree is made of an 800mm filter media layer, a 100mm transition layer, and a 200mm drainage layer, located above in-situ soil. The water smart tree is to be vegetated, as per BCC standard drawing BSD-8339 and BSD-8340. These plants provide additional treatment and will prevent clogging of the basin. Runoff within the water smart tree area gradually infiltrates the soil layers, before discharging through an underdrain to the lawful point of discharge. For further information on the conceptual layout of the proposed internal drainage network, refer to **Appendix B**.

9.4 MUSIC Model

The sites stormwater run-off was modelled using MUSIC (version 6.3.0) and the water quality pollutant reduction loads have been presented, for comparison between the pre-developed and post-developed scenarios. The results of the above MUSIC model are presented in **Figure 7**.

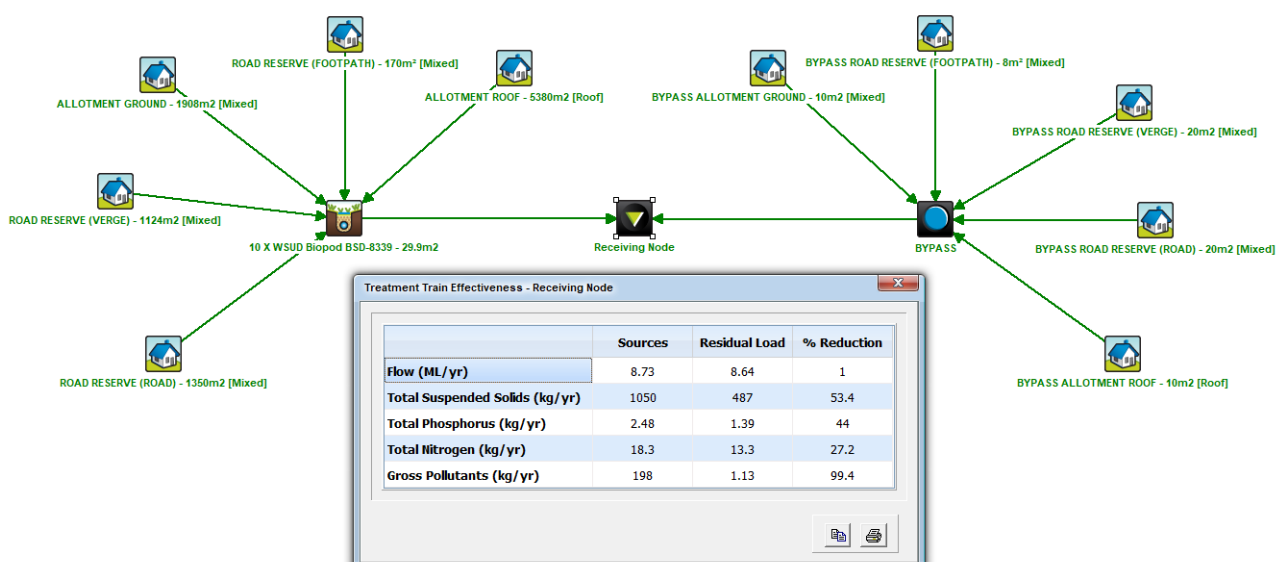


Figure 7 – Post-development Treatment Train and Results

The above results do not meet the percent reduction water quality objectives identified by BCC standards and the SPP. This result has been achieved using WSUD street trees (in-line with neighbouring developments approved DA A005513937) as a best practice system.

To achieve water quality objectives, a bio retention basin is required, however, the implementation of a bio-retention basin for this development would represent an on-going maintenance asset issue for BCC. Therefore, ADG have adopted a Best Practice proposal for this development

Details of the MUSIC model are attached within **Appendix G** for further information.

9.5 On-site Treatment Lifecycle Costs

A lifecycle cost analysis is not a part of the scope of this report. All the recommended water quality treatment infrastructure lies within the development site and it shall be maintained and serviced by the owners of the development at no cost to Council.

9.6 Water Quality Monitoring

No water quality monitoring is proposed for this development at this stage due to the nature of the development and the expected pollutant levels. This would not be considered a high-risk source.

9.7 Maintenance

Maintenance of the SQIDs will be the responsibility of the owners of the development for the initial minimum 24 month “on-maintenance” period. Once the SQIDs have successfully completed the “on maintenance” period and are accepted “off maintenance” by Council, Council will be responsible for the continuing maintenance of the SQIDs. The Biofiltration maintenance should be in accordance with the Healthy Waterways guidelines “Guide to the Cost of Maintaining Bioretention Systems” dated February 2015.

10 WATER SUPPLY

10.1 Existing Infrastructure

A BCC eBIMAP2 search identified the following water infrastructure relevant to the subject site:

- A 150mm AC main in Priestdale Road adjacent on the opposite side of the subject site;
- A hydrant located along Priestdale Road on the opposite side of the subject site; and
- A 25mm service connection adjacent to the sites northern boundary which stems off the above mentioned main.

Refer to the eBIMAP2 information in **Appendix I** for further information regarding the existing water infrastructure.

10.2 Point Of Connection

Due to the demand for the proposed development, the site will require a property connection installed in order to meet the expected water supply demands.

ADG Engineers anticipate that the proposed development will be connected to the proposed water main located in the new road to be constructed as part of the neighbouring development.

To understand with greater certainty the requirements from Urban Utilities (UU) for this development, a Service Advice Notice Request has been prepared and lodged with UU.

For more information on the proposed connection, refer to the Preliminary Civil Services Layout Plan in **Appendix B**.

11 SEWERAGE RETICULATION

11.1 Existing Infrastructure

A BCC eBIMAP2 search identified the following sewerage infrastructure relevant to the subject site:

- ▶ A extension of a downstream sewer main, to be extended through the neighbouring development;

Refer to the eBIMAP2 information in **Appendix I** for further information regarding the existing sewerage infrastructure.

11.2 Point Of Connection

ADG Engineers anticipate that the proposed development will be connected to the proposed sewer main located in the new road to be constructed as part of the neighbouring development.

To understand with greater certainty the requirements from Urban Utilities (UU) for this development, a Service Advice Notice Request has been prepared and lodged with UU.

For more information on the proposed connection, refer to the Preliminary Civil Services Layout Plan in **Appendix B**.

12 ELECTRICAL SUPPLY

Site inspection reveals that the site is currently serviced by overhead electrical cables. In addition, the BYDA information has identified that the following underground infrastructure is present within the vicinity of the subject site:

- ▶ Underground electrical cables (less than 33kV) along Glenmore Crescent on the development side;

An electrical consultant will determine the extent of the upgrading and connection works that will be required to facilitate the required electrical reticulation for the proposed development at detailed design stage.

Refer to the BYDA Information in **Appendix J** for further details on the existing electrical infrastructure.

13 COMMUNICATIONS

The BYDA information has identified that the following infrastructure is present within the vicinity of the subject site:

- Underground NBN cabling on the development side of Priestdale Road and in Glenmore Crescent; and
- Underground Telstra cabling on the development side of Priestdale Road and in Glenmore Crescent.

It is proposed that the telecommunications consultant will negotiate with the relevant carriers regarding the requirements of the proposed development telecommunications connection and the extent of any upgrading and possible relocation works to the system if necessary.

Refer to the BYDA Information in **Appendix J** for further details on the existing communications infrastructure.

14 PRIORITY INFRASTRUCTURE UPGRADES

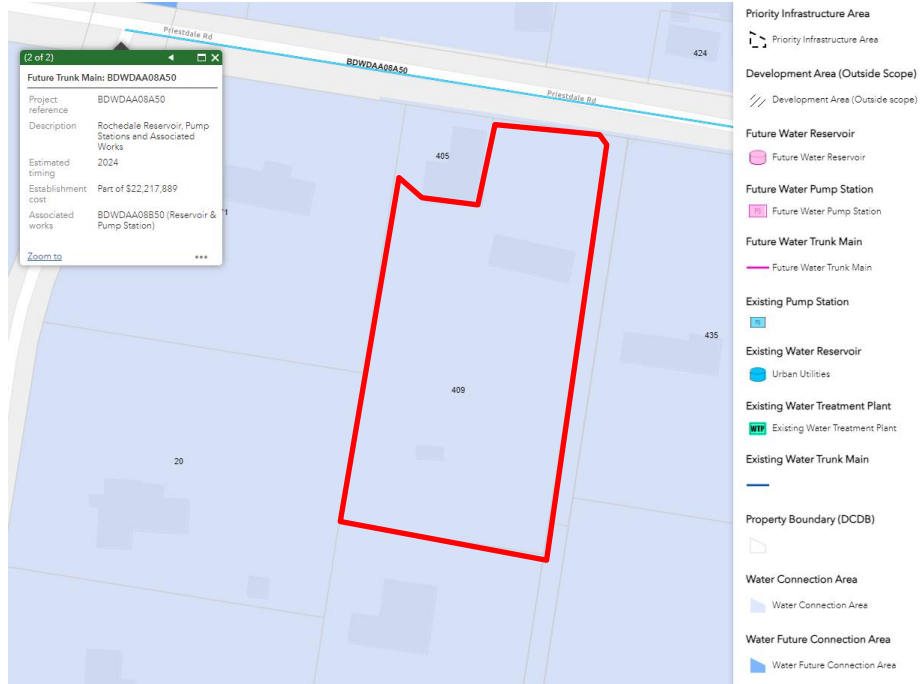


Figure 8 - Priority Infrastructure

The Brisbane City Council Priority Infrastructure Plan Maps indicates that there is the following priority infrastructure within the vicinity of the site:

- A water trunk main located beneath and running parallel with Priestdale Road.

15 CONCLUSION

The site appears to be well serviced by reticulated water, stormwater infrastructure, sewerage, communications and electricity. These services will need to be connected during development. Information discussed in this report is inferred from BYDA records and information gathered via site investigation.

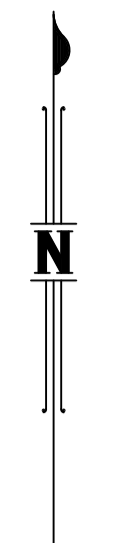
As outlined in **Section 8** of this report, ADG recommends that the site is to convey all minor event flows to the 1050mm stormwater main located adjacent to the site, discharging the water to the open waterway downstream, with the internal roadway to grade from north to south, and to continue grading west through the proposed neighbouring road to Glenmore Crescent to cater for the 1% AEP storm event. As such, no stormwater detention is required.

In preparing this report, we have achieved all requirements for Stormwater Management Plans as described in QUDM standards, as well as a best practice approach on the pollutant load reduction as implicated by the neighbouring developments council pre-lodgement meeting minutes. ADG recommends the use of the following treatment devices to meet the treatment targets specified by the relevant authorities:

- 10 x Bioretention Street Tree pits in accordance with BCC Standard Drawing BSD-8339

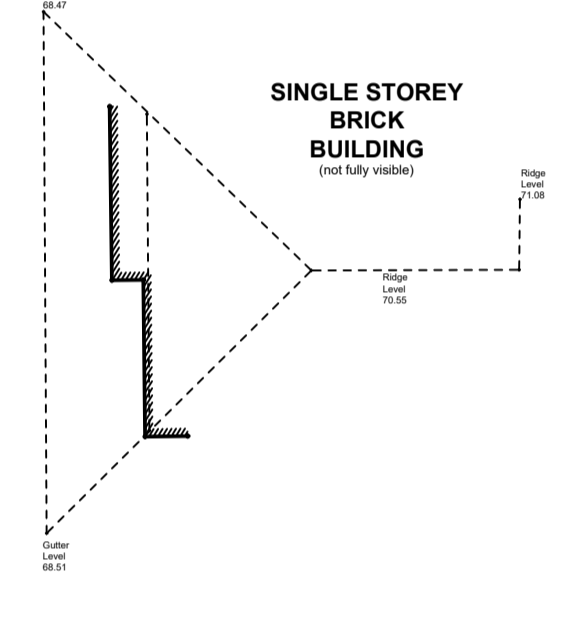
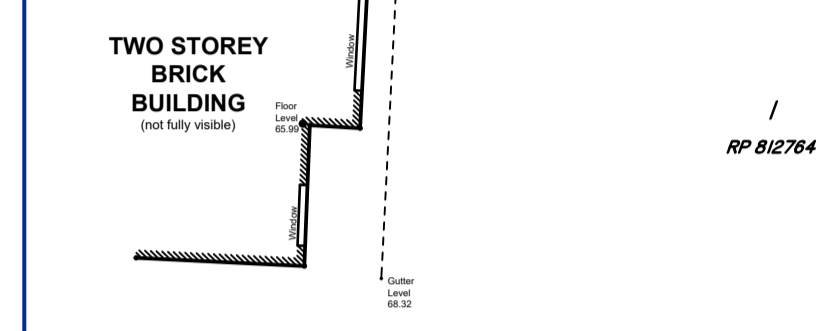
Detailed engineering diagrams and management requirements for the proposed development are to be submitted to Council for approval prior to any works commencing on site with design certification prepared by a qualified stormwater engineer or scientist.

Appendix A Site Survey Plan



PRIESTDALE

ROAD



- LEGEND**
- LIGHT POLE
 - ORIGINAL PEG
 - POWER POLE
 - FIRE HYDRANT
 - STOP VALVE
 - SEWER MANHOLE
 - ROOFWATER PIT
 - POWER BOX
 - TELSTRA PIT
 - RETAINING WALL
 - STORMWATER MANHOLE
 - GAS SUPPLY/GAS CYLINDER
 - TEMPORARY BENCH MARK (TBM)
 - PERMANENT SURVEY MARK
 - GULLY GRATE
 - WATER METER
 - SIGN
 - HEADWALL/CROSSOVER
 - ROCK WALL
 - PALM
 - TREE

REVISIONS

27/02/2024	Add/Remove Trees and Palms	JRM	C
15/02/2024	Remove trees as directed by client	JRM	B
15/03/2023	Original Issue	PDR	A

ASSOCIATED CONSULTANTS:

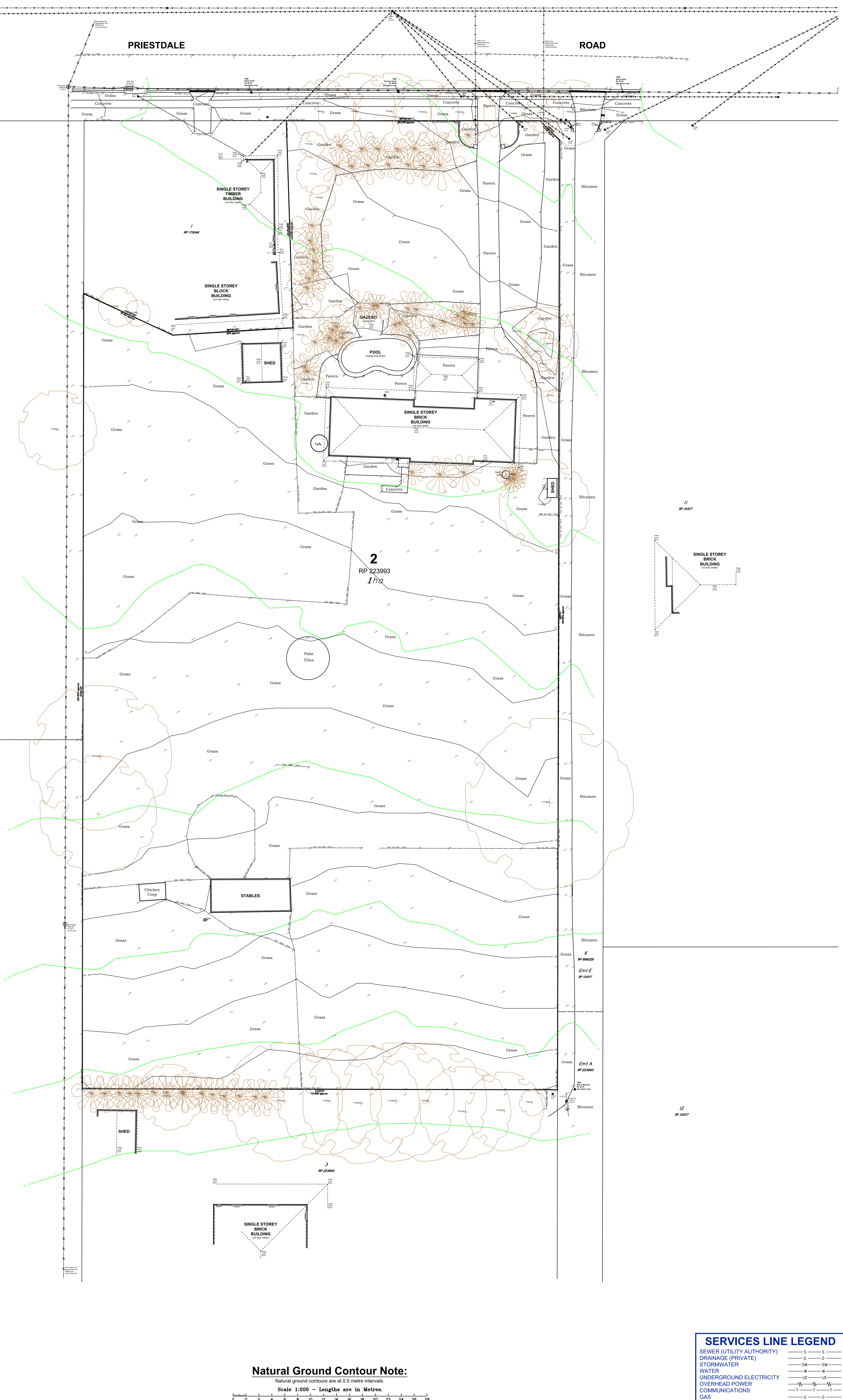
SURVEYOR: JRM
DRAWN: PDR
DATE: 13/03/2023
CHECKED: JRM

DATUM:
LEVEL DATUM: AHD Via CORS (PSM 27605 RL 62.839m)
HORIZ DATUM: ARBITRARY
COORD ORIGIN: ARBITRARY
MERIDIAN: RP 223993

CLIENT:
PACKHILL PTY LTD

SITE:
409 Priestdale Road, Rochedale
Lot 2 on RP 223993

SCALE: 1:200 (A0)
PLAN REF: 23071-D1-C


















Natural Ground Contour Note:
Natural ground contours are at 0.5 metre intervals.
Scale 1:200 - Lengths are in Metres.

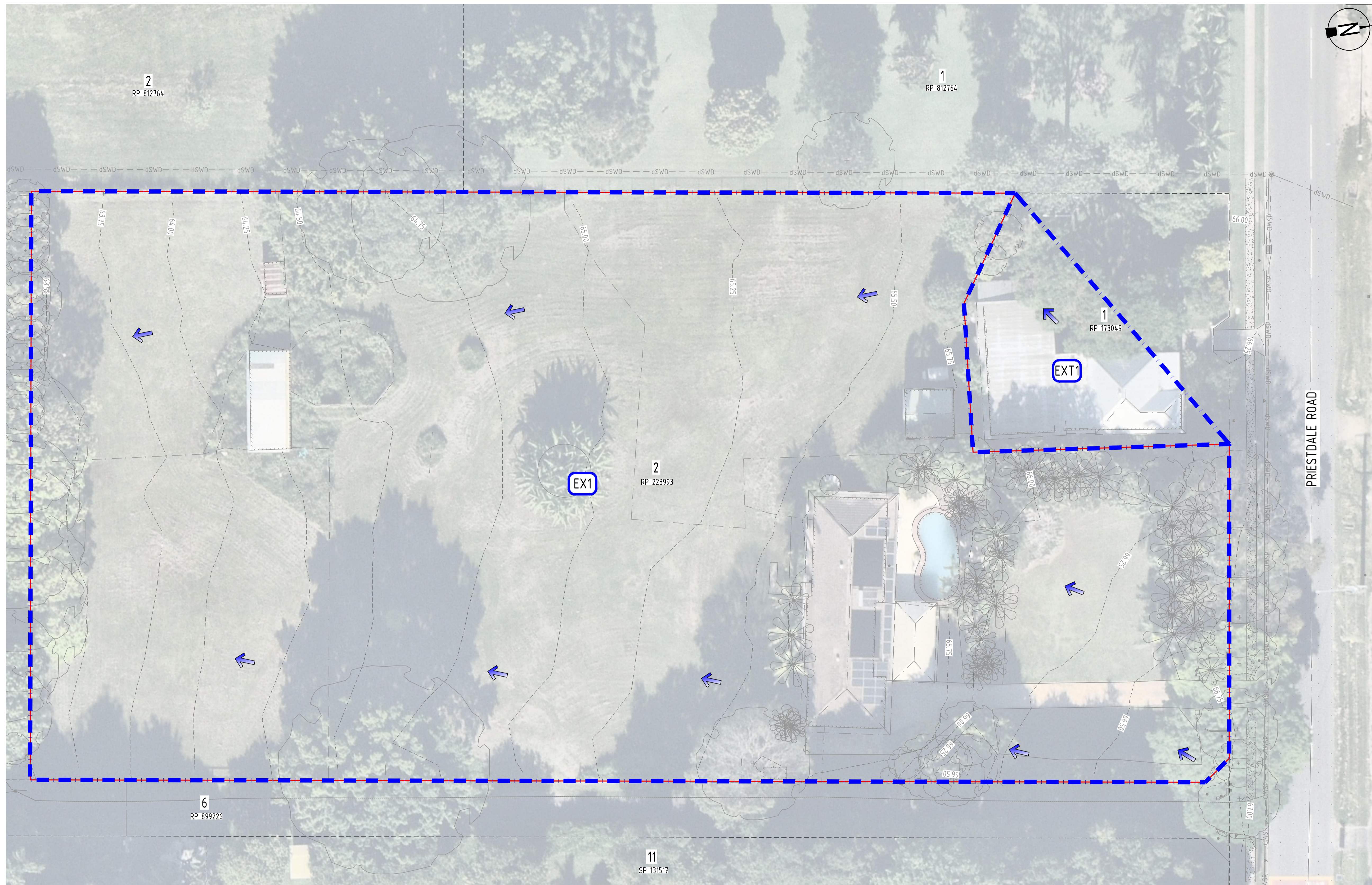
SERVICES LINE LEGEND

SEWER (UTILITY AUTHORITY)	— S — S —
DRAINAGE (PRIVATE)	— D — D —
STORMWATER	— SW — SW —
WATER	— W — W —
UNDERGROUND ELECTRICITY	— UE — UE —
OVERHEAD POWER	— W — W —
COMMUNICATIONS	— T — T —
GAS	— G — G —

Appendix B Preliminary Civil Plan

LEGEND

-  12.0 ——— EXISTING SURFACE CONTOURS
-  SITE BOUNDARY
-  EXISTING PROPERTY BOUNDARY
-  EXISTING NOMINAL KERB LINE / EDGE OF ROAD
-  EXISTING EDGE OF BITUMEN
-  EXISTING ROAD CENTERLINE
-  EXISTING EDGE OF BUILDING
-  EXISTING EDGE OF BUILDING EAVE
-  EXISTING STORMWATER DRAINAGE
-  EXISTING FENCE
-  CATCHMENT BOUNDARY
-  CATCHMENT LABEL
-  CATCHMENT FLOW DIRECTION
-  EXISTING FOOTPATH
-  EXISTING ROAD



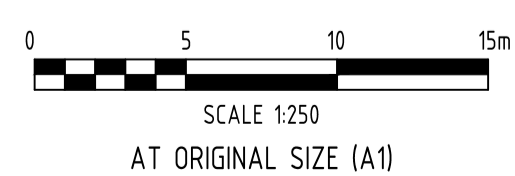
ALL DETAILS SHOWN ARE SUBJECT TO FURTHER DETAILED DESIGN

CATCHMENT TABLE (PRE-DEVELOPMENT)

CATCHMENT NAME	AREA (ha)	FRACTION IMPERVIOUS
EX1	1.000	0.100
EXT1	0.058	0.800

ISSUED FOR APPROVAL

Rev	Date	Description	By	Chk
02	22.01.25	ISSUED FOR APPROVAL	JTB	CDM
01	20.01.25	ISSUED FOR APPROVAL	JTB	CDM



T: 1300 857 402 E: info@adgce.com W: www.adgce.com
 Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
 Environmental Management ISO 14001:2015

Client PACKHILL PTY LTD		Status APPROVAL	
Project Name PROPOSED 18 LOT RESIDENTIAL SUBDIVISION 409 PRIESTDALE ROAD ROCHEDALE QLD 4123			
Discipline CIVIL	Designed By JE	Checked By CDM	Approved By CDM
Project No. 26551	Drawn By JTB	Scale at A1 1:250	

The concepts and information contained in this document are the copyright of ADG Engineers (Aust) Pty Ltd. Use or copying of the document in whole or in part without the written permission of ADG Engineers (Aust) Pty Ltd constitutes an infringement of copyright. Do not scale drawings. If in doubt, ask!

Title PRE-DEVELOPED CATCHMENT PLAN	
Drawing No. DA01	Revision 02

LEGEND

- 12.0 EXISTING SURFACE CONTOURS
- SITE BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING NOMINAL KERB LINE / EDGE OF ROAD
- EXISTING EDGE OF BITUMEN
- EXISTING ROAD CENTERLINE
- EXISTING EDGE OF BUILDING
- EXISTING EDGE OF BUILDING EAVE
- SWD EXISTING STORMWATER DRAINAGE
- EXISTING FENCE
- 12.0 FINISHED SURFACE CONTOURS
- PROPOSED SITE BOUNDARY
- PROPOSED LOT BOUNDARY
- PROPOSED ROAD/DRIVEWAY CENTERLINE
- PROPOSED NOMINAL KERB LINE
- PROPOSED BUILDING PAD EXTENT
- SWD PROPOSED STORMWATER DRAINAGE
- CATCHMENT BOUNDARY
- CATCHMENT LABEL
- CATCHMENT FLOW DIRECTION
- EXISTING ROAD
- EXISTING FOOTPATH
- PROPOSED ROAD PAVEMENT
- PROPOSED FOOTPATH
- PROPOSED DRIVEWAY CROSSOVER
- PROPOSED BIO-RETENTION STREET TREE AS PER BCC BSD-8339 & BSD-8340.
- PROPOSED MAX 1m HEIGHT RETAINING WALL



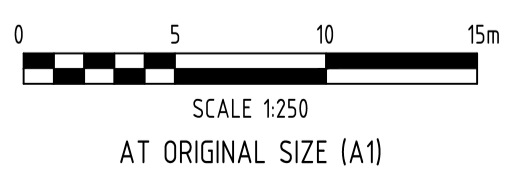
ALL DETAILS SHOWN ARE SUBJECT TO FURTHER DETAILED DESIGN

CATCHMENT TABLE (POST-DEVELOPMENT)

CATCHMENT NAME	AREA (ha)	FRACTION IMPERVIOUS
C1	1.000	0.800
EXT1	0.058	0.800

ISSUED FOR APPROVAL

Rev	Date	Description	By	Chk
01	20.01.25	ISSUED FOR APPROVAL	JTB	CDM



T: 1300 657 402 E: info@adg.com W: www.adg.com
 Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
 Environmental Management ISO 14001:2015

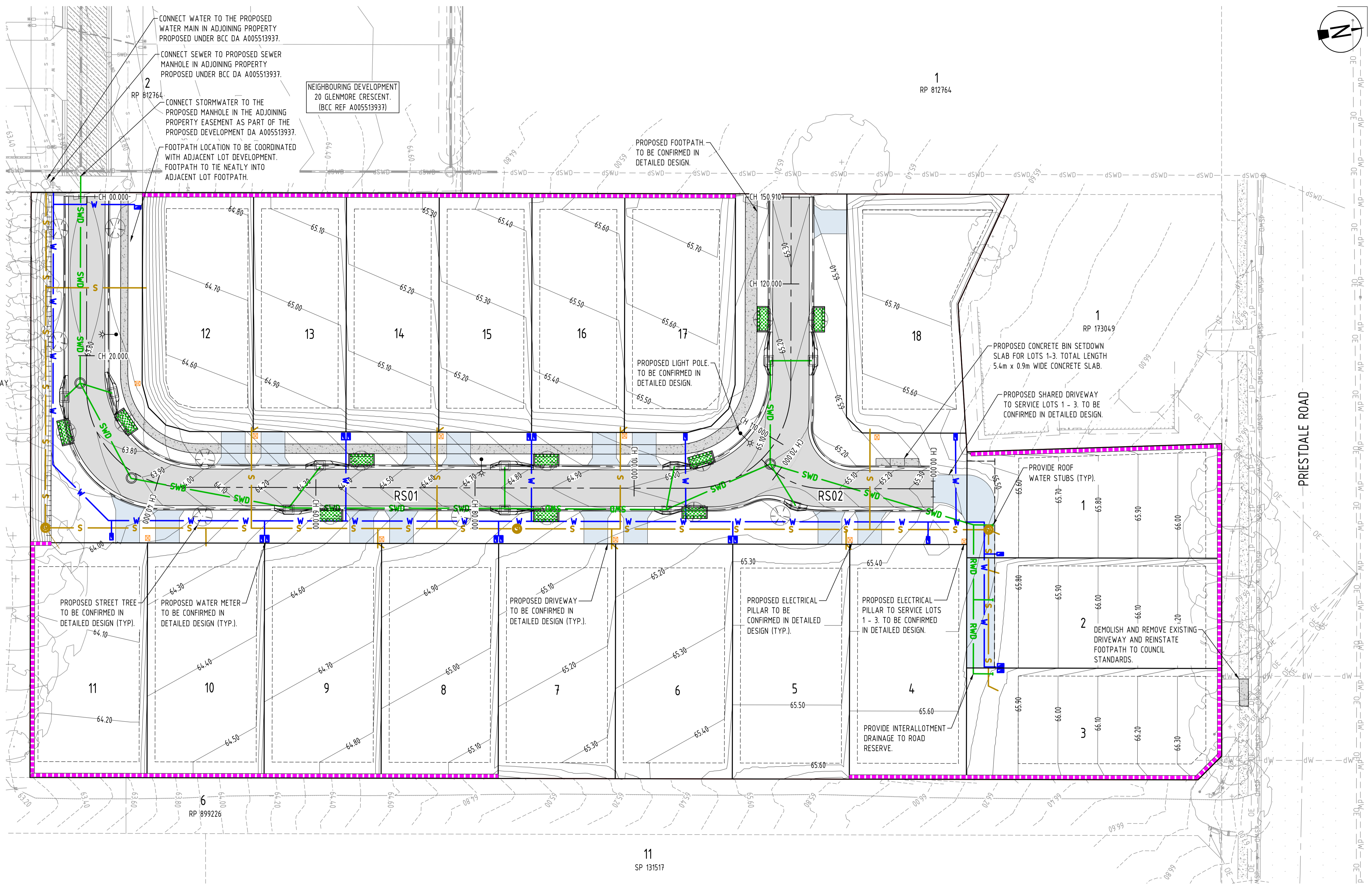
Client: **PACKHILL PTY LTD**
 Project Name: **PROPOSED 18 LOT RESIDENTIAL SUBDIVISION**
409 PRIESTDALE ROAD
ROCHEDALE QLD 4123

Discipline: CIVIL	Status: APPROVAL
Designed By: JE	Checked By: CDM
Project No: 26551	Drawn By: JTB
Approved By: CDM	Scale at A1: 1:250

Title: POST-DEVELOPED CATCHMENT PLAN
Drawing No: DA02
Revision: 01

LEGEND

- 12.0 FINISHED SURFACE CONTOURS
- PROPOSED SITE BOUNDARY
- LOT BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING NOMINAL KERB LINE
- EXISTING ELECTRICITY (RECORDS)
- EXISTING STORMWATER (RECORDS)
- EXISTING WATER (RECORDS)
- EXISTING OVERHEAD ELECTRICITY (RECORDS)
- EXISTING COMMUNICATIONS (RECORDS)
- EXISTING STORMWATER (RECORDS)
- PROPOSED ROAD/DRIVEWAY CENTERLINE
- PROPOSED KERB AND CHANNEL
- PROPOSED BUILDING PAD EXTENT
- PROPOSED STORMWATER DRAINAGE
- PROPOSED SEWER
- PROPOSED WATER
- EXISTING ROAD
- EXISTING FOOTPATH
- PROPOSED 3.0m WIDE CONCRETE DRIVEWAY CROSSOVER EXTENTS, IN ACCORDANCE WITH BCC STD DRG BSD-2022.
- PROPOSED 5.5m WIDE NOMINAL ROAD PAVEMENT
- PROPOSED 1.2m WIDE CONCRETE FOOTPATH, IN ACCORDANCE WITH BCC STD DRG BSD-5201
- PROPOSED BIO-RETENTION STREET TREE AS PER BCC BSD-8339 & BSD-8340.
- PROPOSED MAX 1m HEIGHT RETAINING WALL
- PROPOSED WATER METER (INDICATIVE LOCATION ONLY)
- PROPOSED ELECTRICAL PILLAR (INDICATIVE LOCATION ONLY)
- PROPOSED STREET LIGHT (INDICATIVE LOCATION ONLY)
- PROPOSED STREET TREE (INDICATIVE LOCATION ONLY)



WATER QUALITY NOTES (BEST PRACTICE)
 1. PROPOSED 10 x STORMWATER TREATMENT ASSET (STA) - TREE WITHIN TURF AS PER BCC STD DRG BSD-8339 & BSD-8340

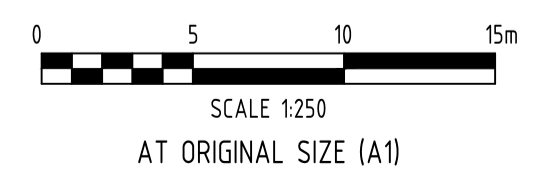
CONNECTING SERVICES
 1. PROPOSED SERVICES ARE SUBJECT TO THE ADJACENT DEVELOPMENT WORKS, AND ARE INDICATIVE ONLY.

DRIVEWAY NOTE
 1. DRIVEWAYS SHOWN ARE PROPOSED 3.0m WIDE RESIDENTIAL CROSSOVERS AS PER BCC STD. DRG. BSD-2022

RETAINING WALLS
 1. RETAINING WALLS ARE SHOWN INDICATIVELY ONLY. TYPE OF RETAINING WALLS AND FINISHES TO BE APPLIED ARE TO BE DETERMINED AS PART OF THE DETAILED DESIGN PHASE.

ALL DETAILS SHOWN ARE SUBJECT TO FURTHER DETAILED DESIGN

Rev	Date	Description	By	Chk
01	20.01.25	ISSUED FOR APPROVAL	JTB	CDM
















ADG
 T: 1300 857 402 E: info@adgce.com W: www.adgce.com
 Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
 Environmental Management ISO 14001:2015

Client: **PACKHILL PTY LTD**
 Project Name: **PROPOSED 18 LOT RESIDENTIAL SUBDIVISION**
 409 PRIESTDALE ROAD
 ROCHEDALE QLD 4123


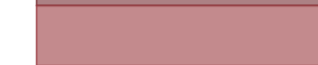





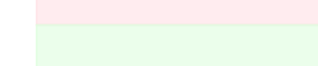
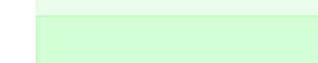
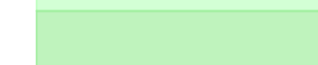






Discipline: CIVIL	Status: APPROVAL
Designed By: JE	Checked By: CDM
Project No: 26551	Drawn By: JTB
Scale at A1: 1:250	Approved By: CDM

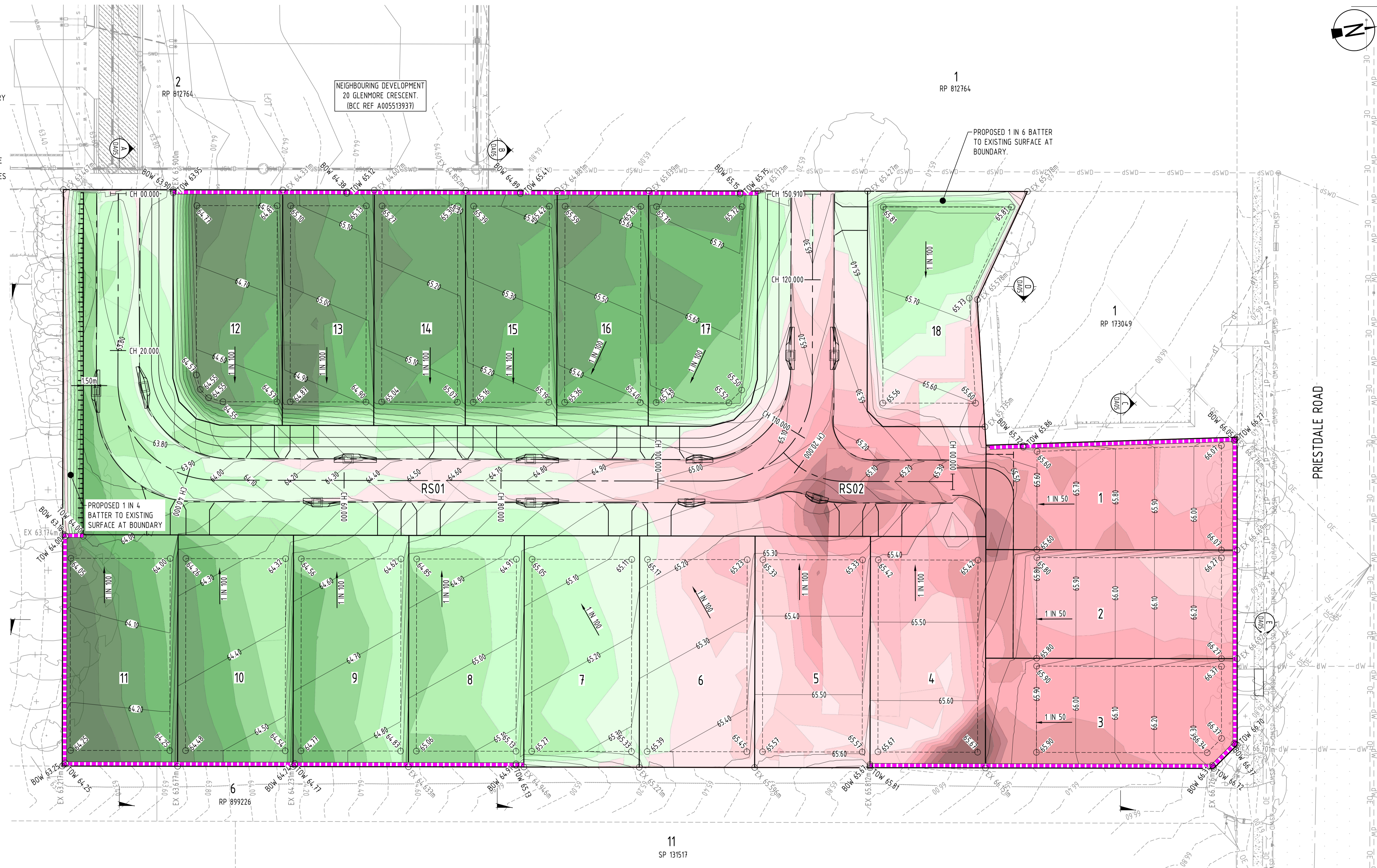
Title: **CONCEPTUAL ENGINEERING SERVICES AND STORMWATER DRAINAGE LAYOUT PLAN**
 Drawing No: **DA03**
 Revision: **01**

LEGEND

-  PROPOSED SITE BOUNDARY
-  FINISHED SURFACE CONTOURS
-  LOT BOUNDARY
-  EXISTING PROPERTY BOUNDARY
-  EXISTING NOMINAL KERB LINE
-  EXISTING EDGE OF BITUMEN
-  PROPOSED ROAD/DRIVEWAY CENTERLINE
-  PROPOSED NOMINAL KERB LINE
-  PROPOSED BUILDING ENVELOPES
-  PROPOSED BATTER
-  PROPOSED MAX 1m HEIGHT RETAINING WALL
-  EXISTING ROAD
-  EXISTING FOOTPATH

LEGEND

-  CUT >0.7m
-  CUT 0.6m - 0.7m
-  CUT 0.5m - 0.6m
-  CUT 0.4m - 0.5m
-  CUT 0.3m - 0.4m
-  CUT 0.2m - 0.3m
-  CUT 0.1m - 0.2m
-  CUT 0.0m - 0.1m
-  FILL 0.0m - 0.1m
-  FILL 0.1m - 0.2m
-  FILL 0.2m - 0.3m
-  FILL 0.3m - 0.4m
-  FILL 0.4m - 0.5m
-  FILL 0.5m - 0.6m
-  FILL 0.6m - 0.7m
-  FILL >0.7m

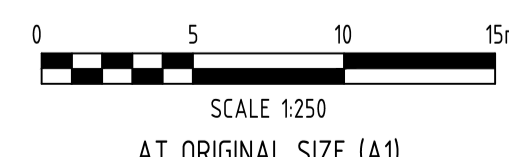


RETAINING WALLS
 1. RETAINING WALLS ARE SHOWN INDICATIVELY ONLY. TYPE OF RETAINING WALLS AND FINISHES TO BE APPLIED ARE TO BE DETERMINED AS PART OF THE DETAILED DESIGN PHASE.

ALL DETAILS SHOWN ARE SUBJECT TO FURTHER DETAILED DESIGN

ISSUED FOR APPROVAL

Rev	Date	Description	By	Chk
01	20.01.25	ISSUED FOR APPROVAL	JTB	CDM

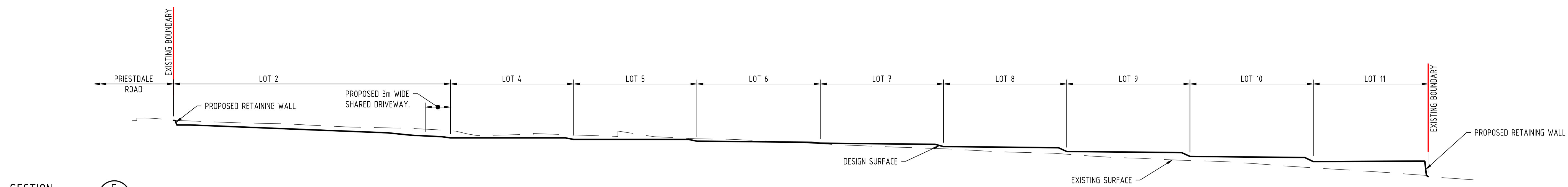


T: 1300 857 402 E: info@adg.com W: www.adg.com
 Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
 Environmental Management ISO 14001:2015

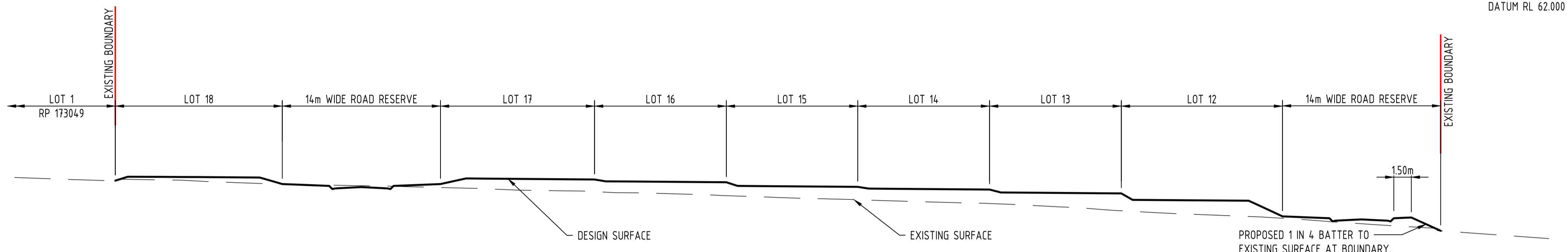
Client: PACKHILL PTY LTD
 Project Name: PROPOSED 18 LOT RESIDENTIAL SUBDIVISION
 409 PRIESTDALE ROAD
 ROCHEDALE QLD 4123

Discipline: CIVIL	Status: APPROVAL
Designed By: JE	Checked By: CDM
Project No: 26551	Drawn By: JTB
Scale at A1: 1:250	

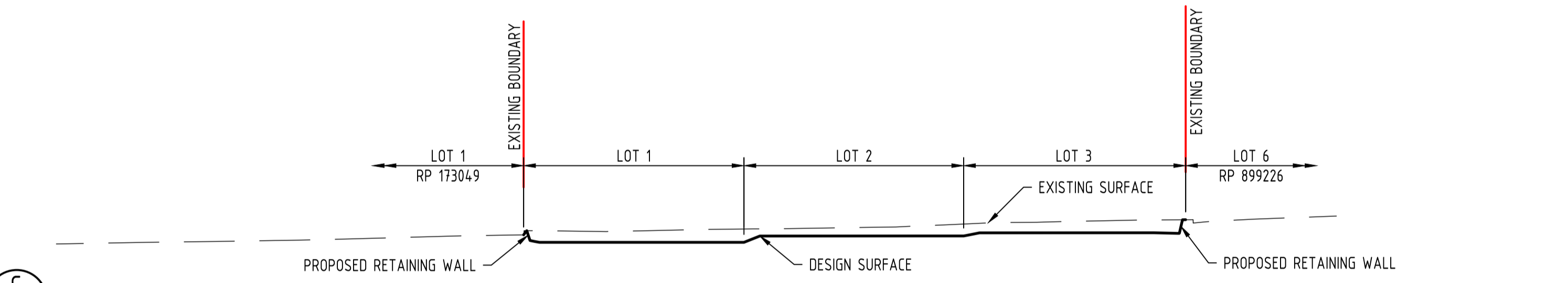
Title: CONCEPTUAL BULK EARTHWORKS LAYOUT PLAN	Revision: 01
Drawing No: DA04	



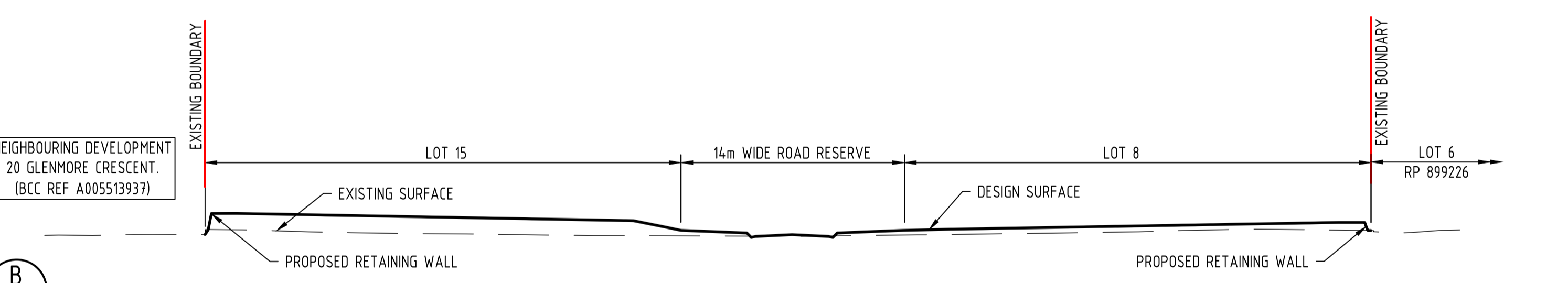
SECTION E
 HORIZONTAL SCALE 1:250
 VERTICAL SCALE 1:125
 DA04



SECTION D
 HORIZONTAL SCALE 1:250
 VERTICAL SCALE 1:125
 DA04



SECTION C
 HORIZONTAL SCALE 1:250
 VERTICAL SCALE 1:125
 DA04



SECTION B
 HORIZONTAL SCALE 1:250
 VERTICAL SCALE 1:125
 DA04



SECTION A
 HORIZONTAL SCALE 1:250
 VERTICAL SCALE 1:125
 DA04

ISSUED FOR APPROVAL

Rev	Date	Description	By	Chk
01	20.01.25	ISSUED FOR APPROVAL	JTB	CDM



ADG
 T: 1300 657 402 E: info@adgce.com W: www.adgce.com
 Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
 Environmental Management ISO 14001:2015

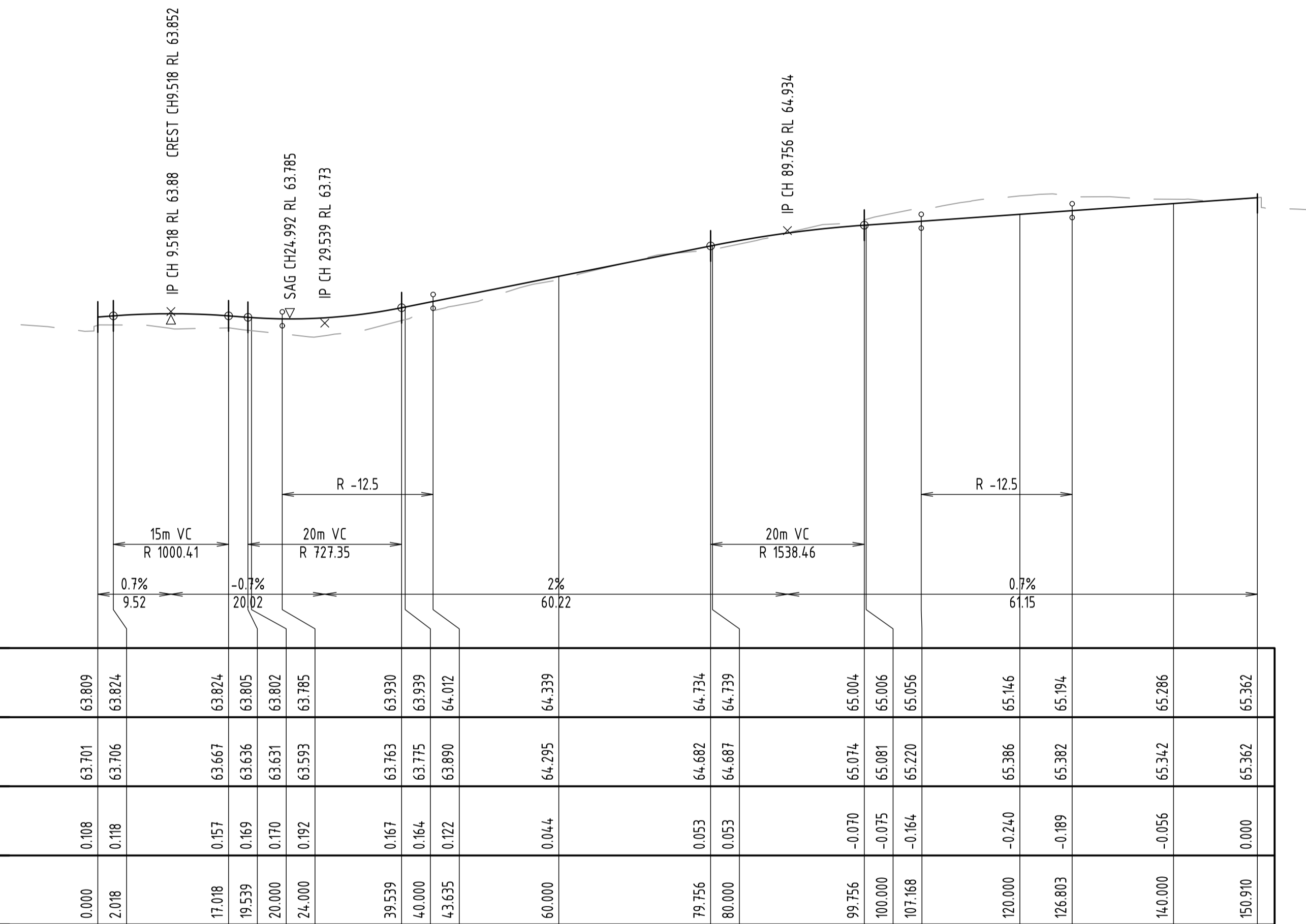
Client: PACKHILL PTY LTD
 Project Name: PROPOSED 18 LOT RESIDENTIAL SUBDIVISION
 409 PRIESTDALE ROAD
 ROCHE DALE QLD 4123

Discipline: CIVIL	Status: APPROVAL
Designed By: JE	Checked By: CDM
Approved By: CDM	Project No: 26551
Drawn By: JTB	Scale at A1: AS SHOWN

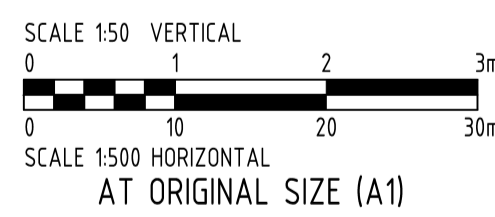
Title: CONCEPTUAL BULK EARTHWORKS SITE SECTIONS	
Drawing No: DA05	Revision: 01

HORIZONTAL CURVE DATA

VERTICAL CURVE LENGTH (m)
 VERTICAL CURVE RADIUS (m)
 VERTICAL GEOMETRY GRADE (%)
 VERTICAL GEOMETRY LENGTH (m)
 DATUM RL 59.500

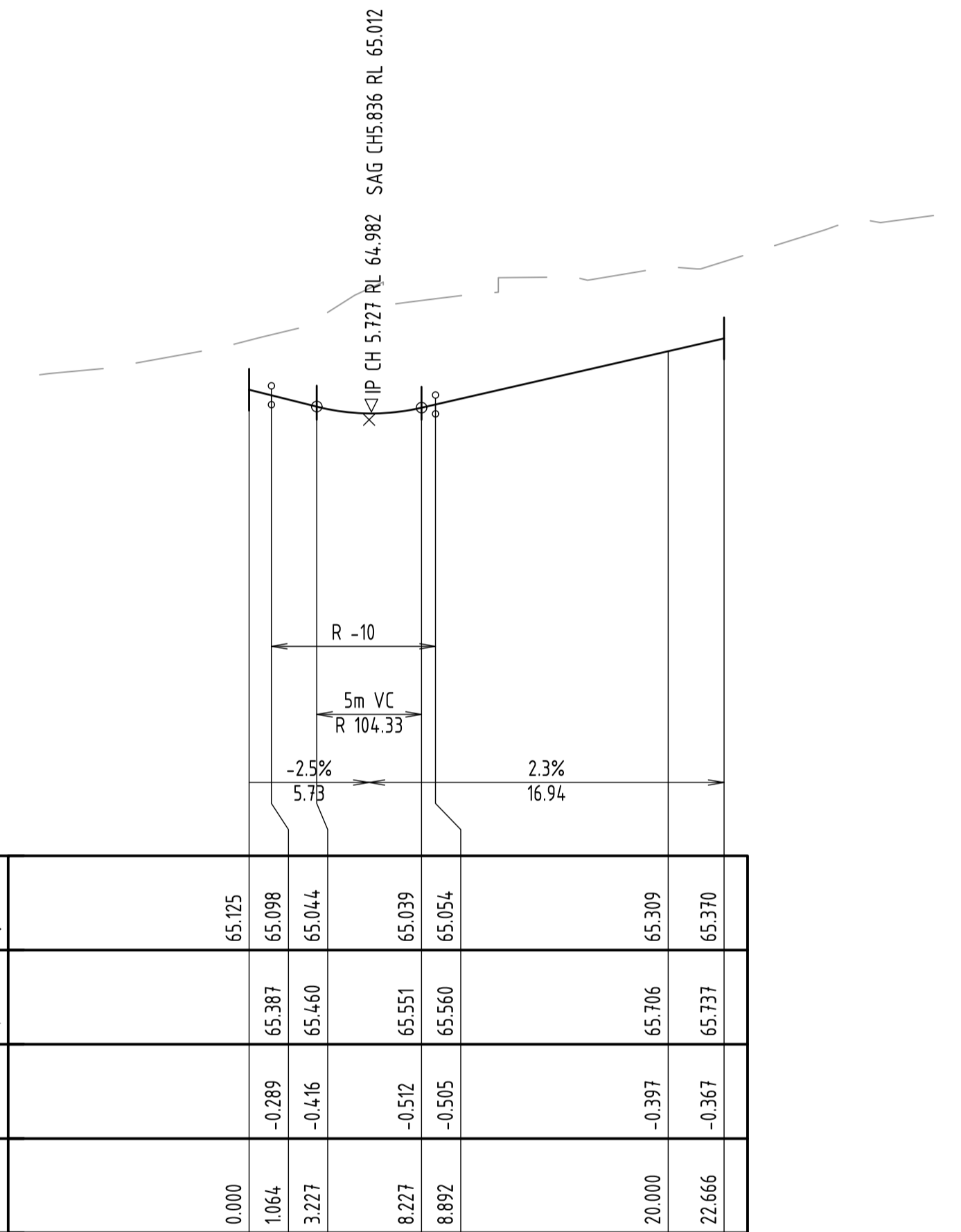


A1 SCALE: H 1:500 V 1:50
 LONGITUDINAL SECTION RS01

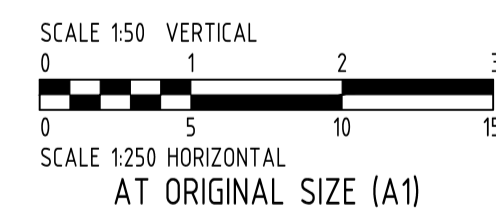


HORIZONTAL CURVE DATA

VERTICAL CURVE LENGTH (m)
 VERTICAL CURVE RADIUS (m)
 VERTICAL GEOMETRY GRADE (%)
 VERTICAL GEOMETRY LENGTH (m)
 DATUM RL 62.900



A1 SCALE: H 1:250 V 1:25
 LONGITUDINAL SECTION RS02



ISSUED FOR APPROVAL

Rev	Date	Description	By	Chk
01	20.01.25	ISSUED FOR APPROVAL	JTB	CDM

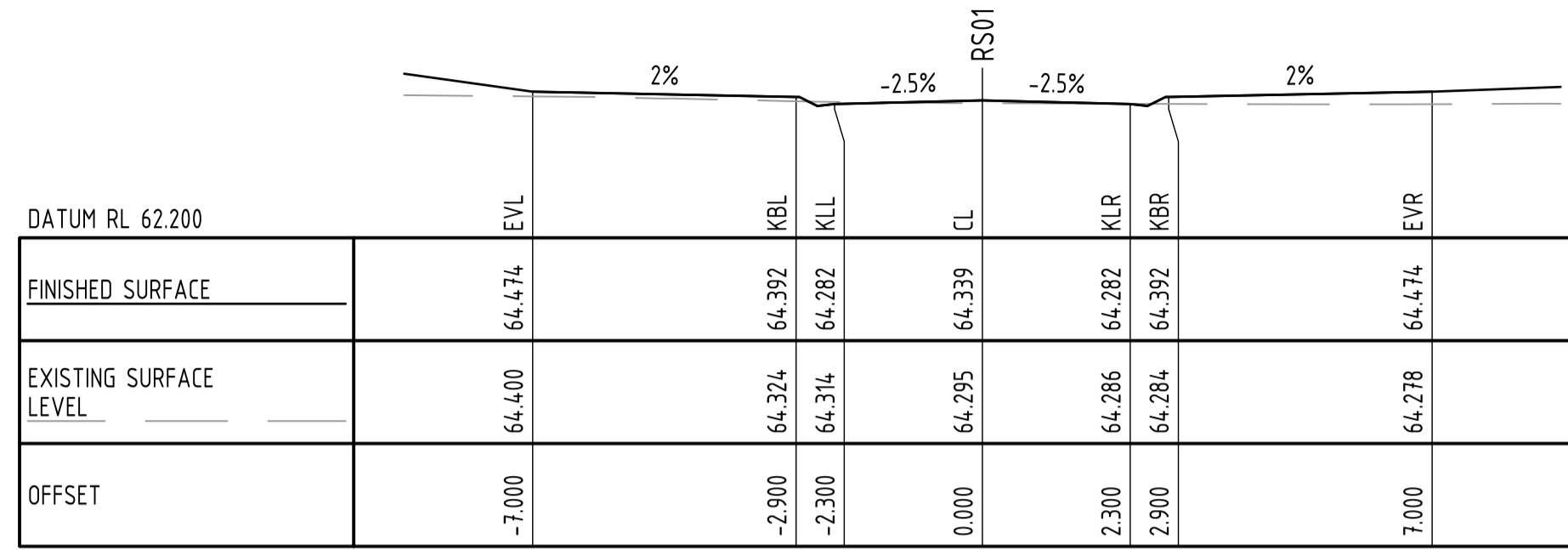
--	--	--	--	--

T: 1300 657 402 E: info@adgce.com W: www.adgce.com
 Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
 Environmental Management ISO 14001:2015

Client PACKHILL PTY LTD		Discipline CIVIL		Status APPROVAL	
Project Name PROPOSED 18 LOT RESIDENTIAL SUBDIVISION 409 PRIESTDALE ROAD ROCHEDALE QLD 4123		Designed By JE	Checked By CDM	Approved By CDM	
Project No. 26551	Drawn By JTB	Scale at A1 AS SHOWN			

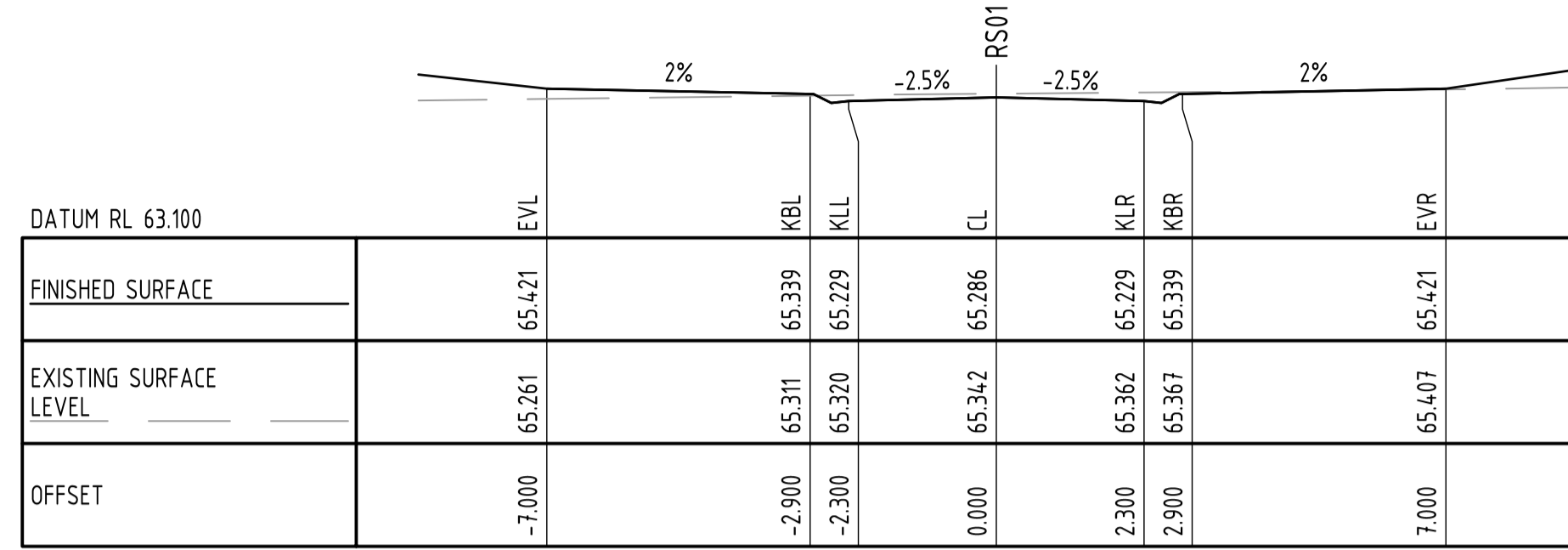
The concepts and information contained in this document are the copyright of ADG Engineers (Aust) Pty Ltd. Use or copying of this document in whole or in part without the written permission of ADG Engineers (Aust) Pty Ltd constitutes an infringement of copyright. Do not scale drawings. If in doubt, ask!

Title CONCEPTUAL ROADWORKS LONGITUDINAL SECTIONS		Drawing No. DA06		Revision 01	
--	--	---------------------	--	----------------	--



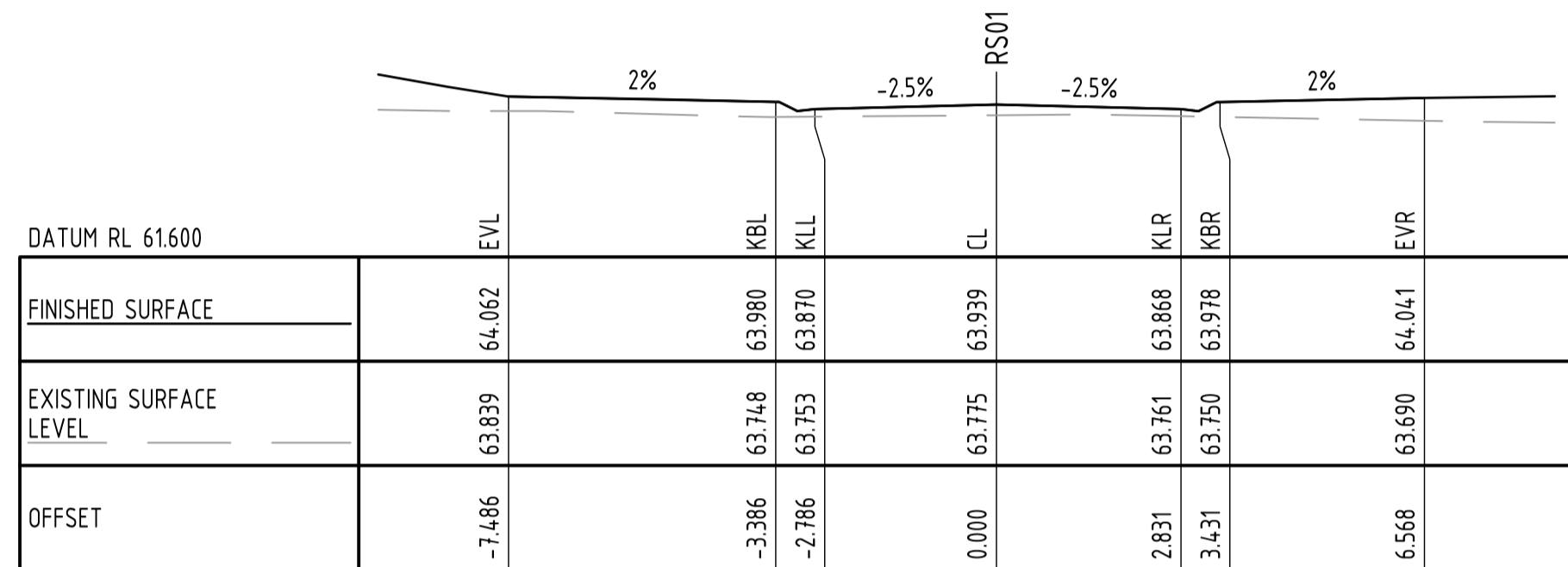
A1 SCALE: H 1:100 V 1:100

CH 60.000



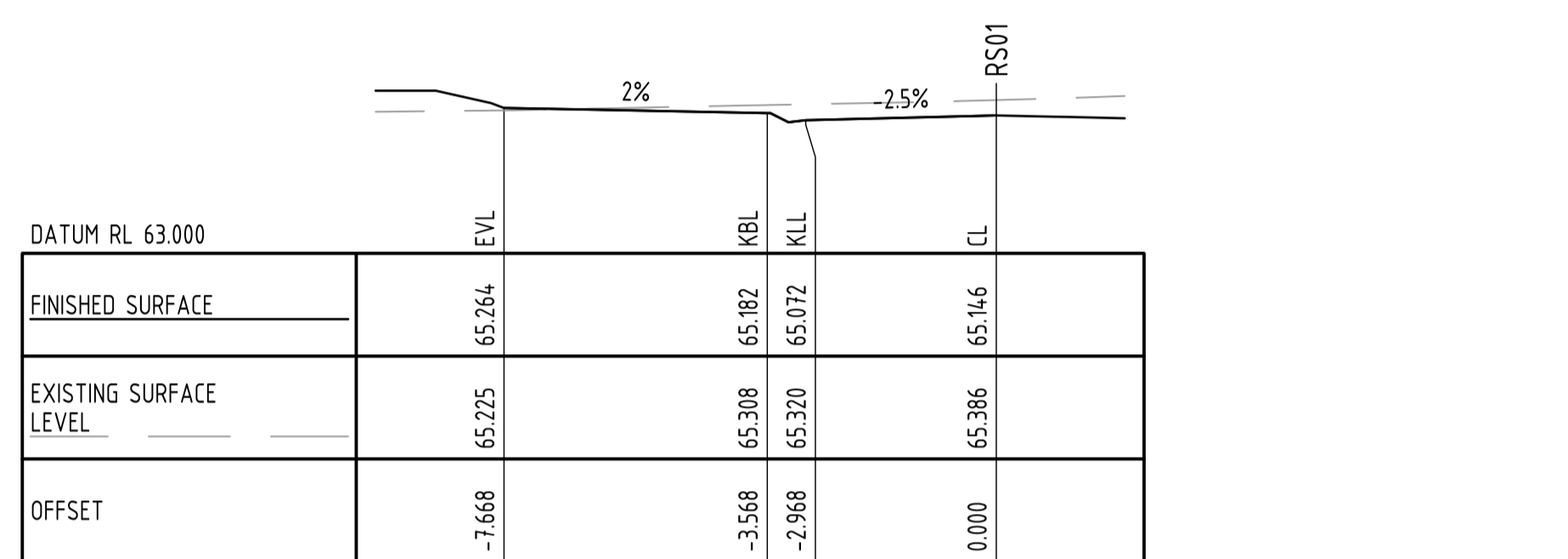
A1 SCALE: H 1:100 V 1:100

CH 140.000



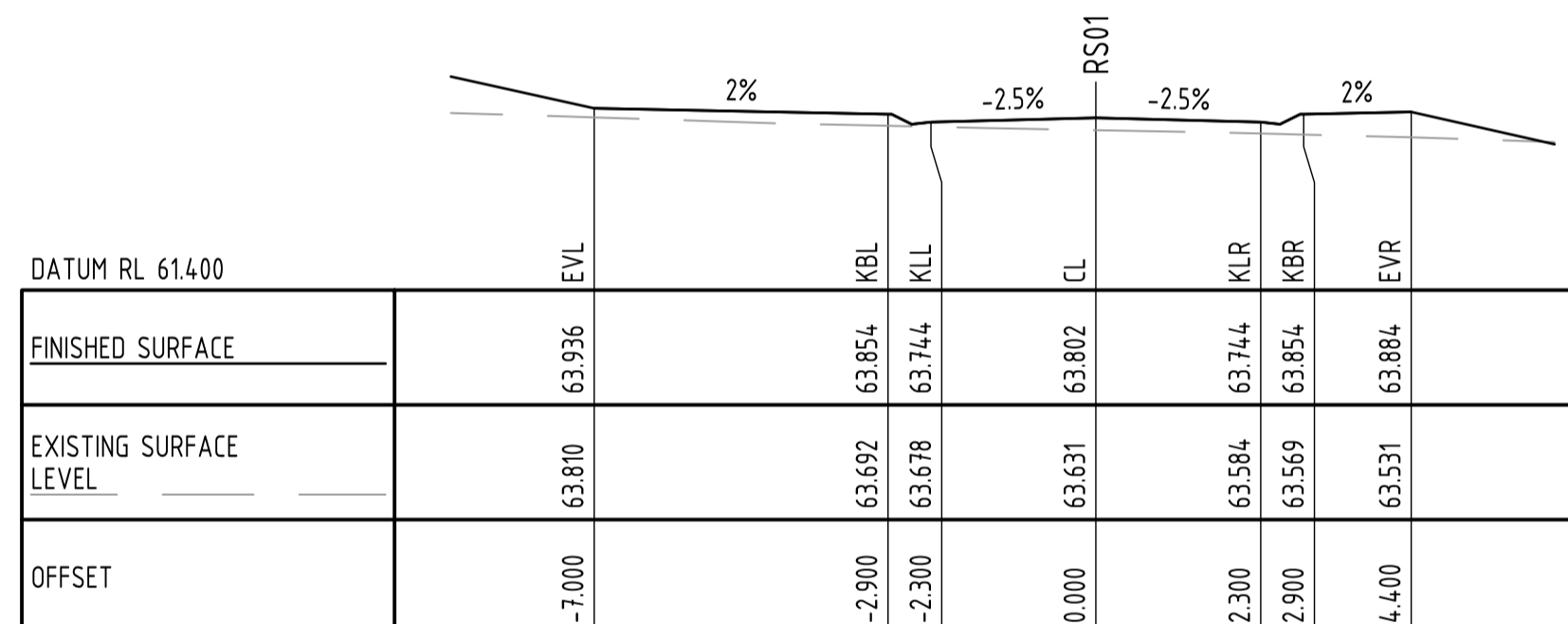
A1 SCALE: H 1:100 V 1:100

CH 40.000



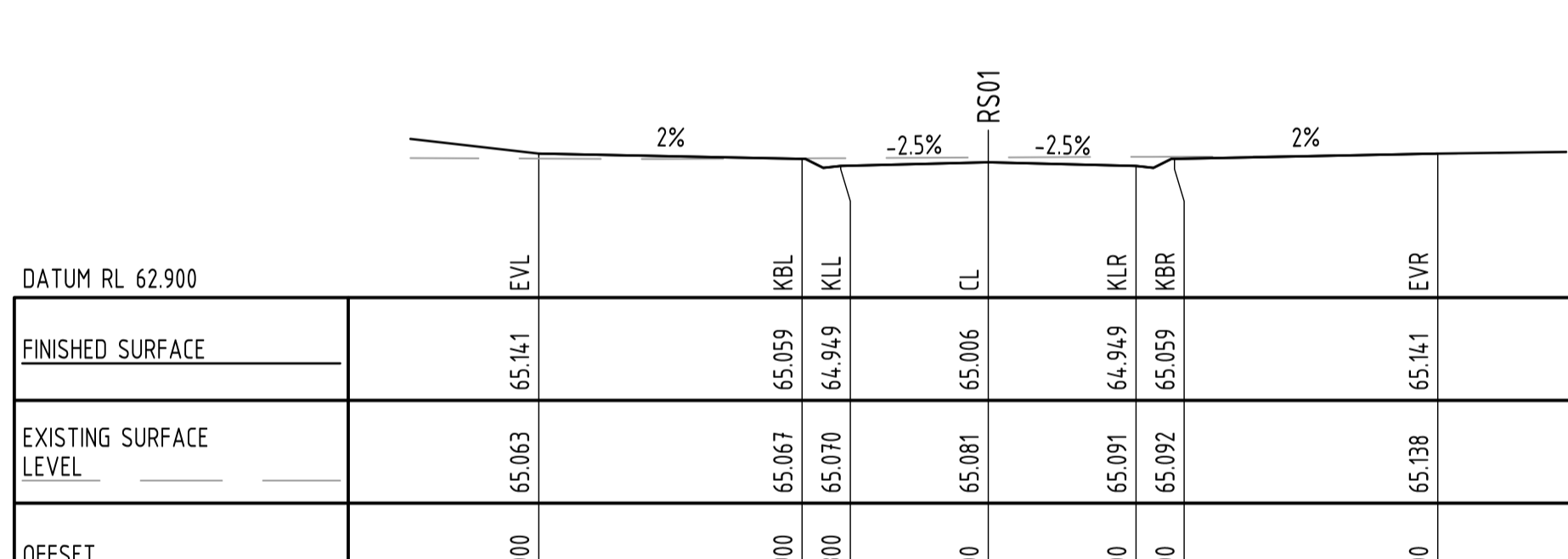
A1 SCALE: H 1:100 V 1:100

CH 120.000



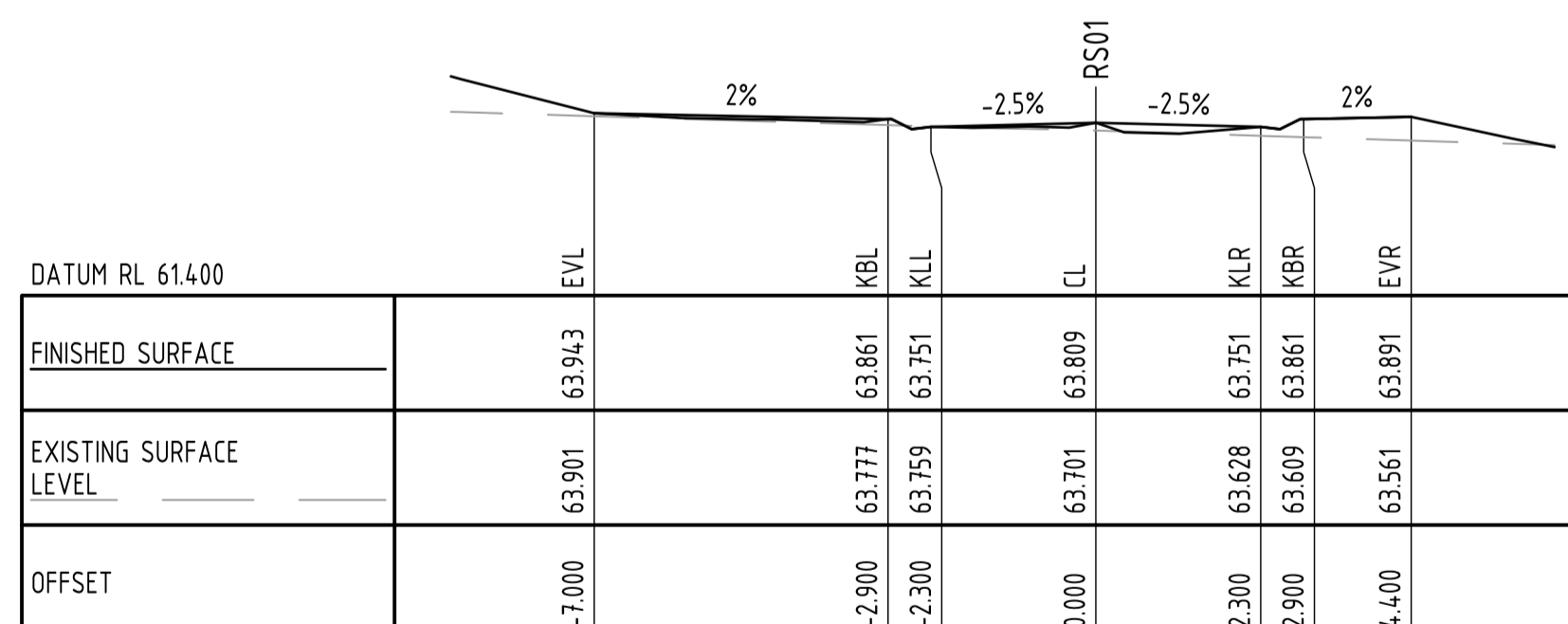
A1 SCALE: H 1:100 V 1:100

CH 20.000



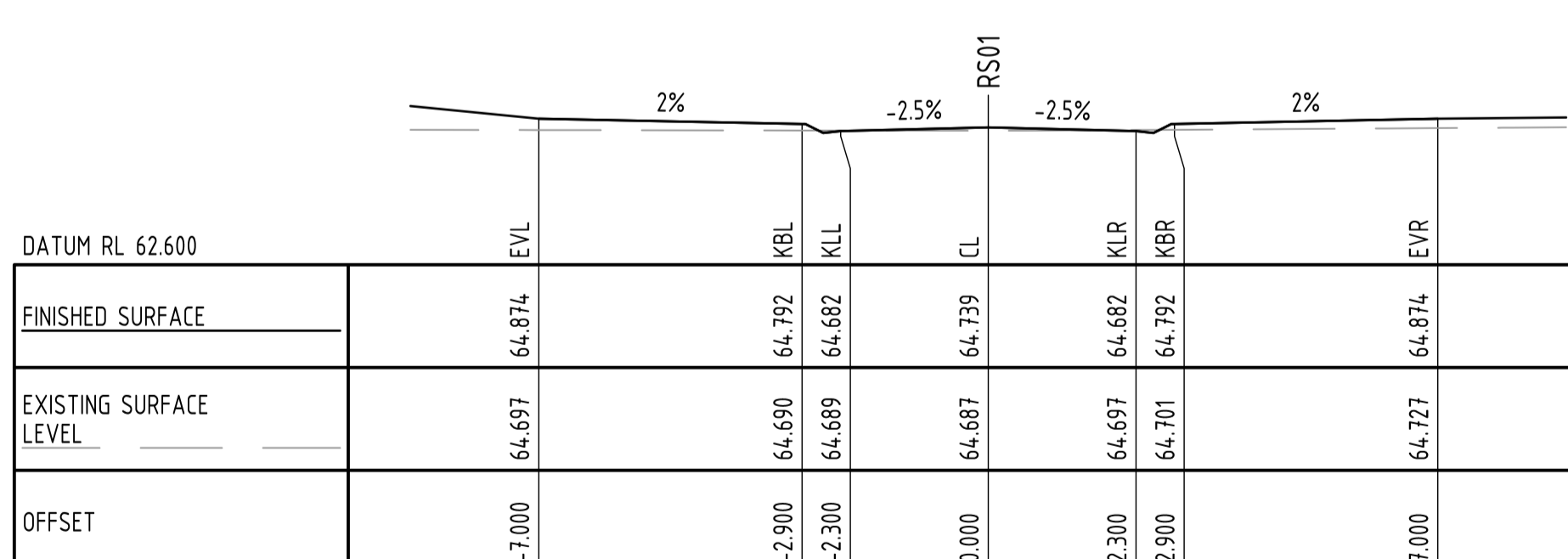
A1 SCALE: H 1:100 V 1:100

CH 100.000



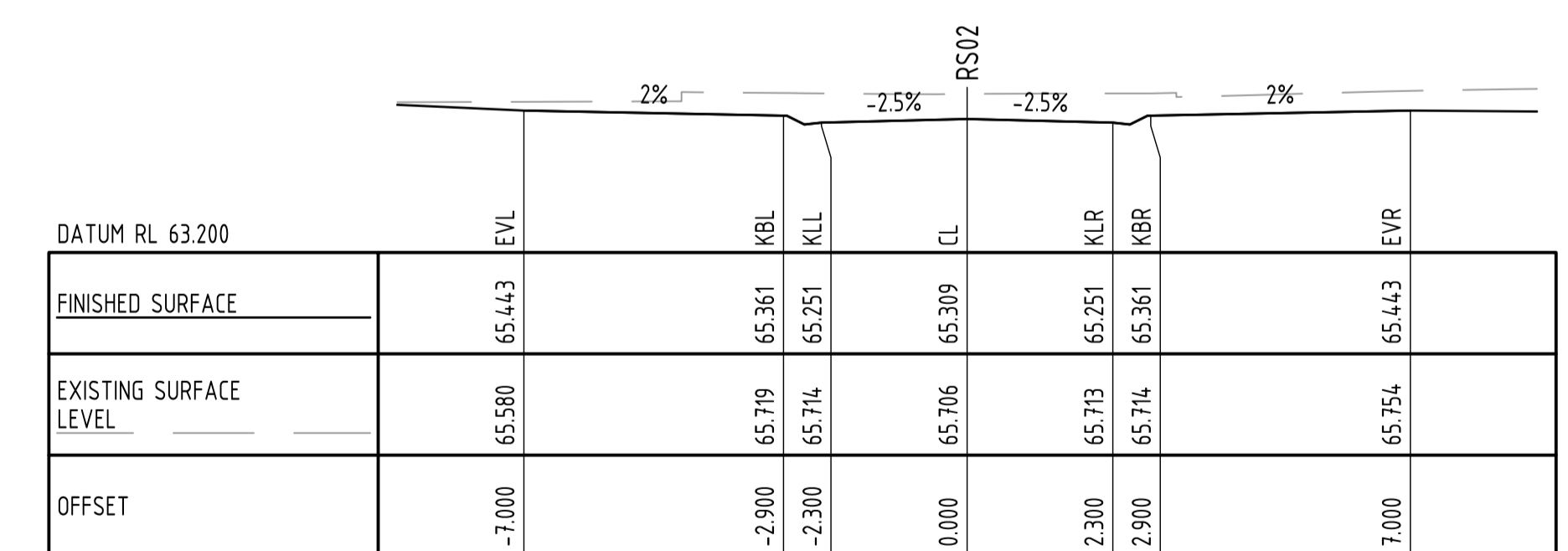
A1 SCALE: H 1:100 V 1:100

CH 0.000



A1 SCALE: H 1:100 V 1:100

CH 80.000



A1 SCALE: H 1:100 V 1:100

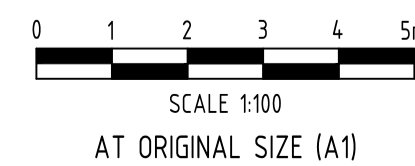
CH 20.000

CROSS SECTIONS RS01

CROSS SECTIONS RS02

ISSUED FOR APPROVAL

Rev	Date	Description	By	Chk
01	20.01.25	ISSUED FOR APPROVAL	JTB	CDM



ADG
 T:1300 657 402 E: info@adgce.com W: www.adgce.com
 Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
 Environmental Management ISO 14001:2015

Client PACKHILL PTY LTD	Discipline CIVIL	Status APPROVAL	Title CONCEPTUAL ROADWORKS CROSS SECTIONS
Project Name PROPOSED 18 LOT RESIDENTIAL SUBDIVISION 409 PRIESTDALE ROAD ROCHEDALE QLD 4123	Designed By JE	Checked By CDM	Approved By CDM
	Project No. 26551	Drawn By JTB	Scale at A1 1:100
The concepts and information contained in this document are the copyright of ADG Engineers (Aust) Pty Ltd. Use or copying of the document in whole or in part without the written permission of ADG Engineers (Aust) Pty Ltd constitutes an infringement of copyright. Do not scale drawings. If in doubt, ask!			Drawing No. DA07
			Revision 01

Appendix C BCC Code Response

8.2.11 Flood overlay code

8.2.11.1 Application

1. This code applies to assessing development in the Flood overlay, if:
 - a. accepted development subject to compliance with identified requirements, where acceptable outcomes of this code are identified requirements in a table of assessment for an overlay (section 5.10); or
 - b. assessable development where this code is an applicable code identified in the assessment benchmarks column of a table of assessment for an overlay (section 5.10); or
 - c. impact assessable development.
2. Land in the Flood overlay is identified on the Flood overlay map and is included in the following sub-categories:
 - a. Brisbane River flood planning area 1 sub-category;
 - b. Brisbane River flood planning area 2a sub-category;
 - c. Brisbane River flood planning area 2b sub-category;
 - d. Brisbane River flood planning area 3 sub-category;
 - e. Brisbane River flood planning area 4 sub-category;
 - f. Brisbane River flood planning area 5 sub-category;
 - g. Creek/waterway flood planning area 1 sub-category;
 - h. Creek/waterway flood planning area 2 sub-category;
 - i. Creek/waterway flood planning area 3 sub-category;
 - j. Creek/waterway flood planning area 4 sub-category;
 - k. Creek/waterway flood planning area 5 sub-category;
 - l. Overland flow flood planning area sub-category.

Editor's note—For the purposes of the overlay, the Pine and South Pine rivers are treated as Creek/waterway flood planning area sub-categories.

Note—The Flood overlay is a 'natural hazard area' for the purpose of the State Planning Policy. Within this area, susceptibility to flooding has been identified. The natural hazard area identified on the Flood overlay map may not reflect the full extent of the flood affected area.

3. When using this code, reference should be made to section 1.5 and section 5.3.3.

Note—The following purpose, overall outcomes, performance outcomes and acceptable outcomes comprise the assessment benchmarks of this code.

Note—Where this code includes performance outcomes or acceptable outcomes that relate to:

- management of flood hazard or hydraulic hazard, guidance is provided in the Flood planning scheme policy;
- filling or excavation within the Creek/waterway flood planning area sub-categories, guidance is provided in the Compensatory earthworks planning scheme policy;
- handling or storage of hazardous materials, guidance is provided in the Management of hazardous chemicals in flood affected areas planning scheme policy;
- standards and specifications for public assets in a park, guidance is provided in the Infrastructure design planning scheme policy;
- standards and specifications for stormwater drainage assets, guidance is provided in the Infrastructure design planning scheme policy.

Editor's note—For a proposal to be accepted development subject to compliance with identified requirements, it must meet all the identified acceptable outcomes of this code that relate to the applicable sub-category

and any other applicable code. Where it does not meet all identified acceptable outcomes, the proposal becomes assessable development and a development application is required. Where a development application is required, only the specific acceptable outcomes that the proposal fails to meet need to be assessed against the corresponding assessable acceptable outcomes or performance outcomes and relevant overall outcomes. Other identified acceptable outcomes that are met are not assessed as part of the development application.

8.2.11.2 Purpose

1. The purpose of the Flood overlay code is to:
 - a. Implement the policy direction in the Strategic framework, in particular:
 - i. Theme 2: Brisbane’s outstanding lifestyle, and Element 2.3 – Brisbane’s healthy and safe communities;
 - ii. Theme 4: Brisbane’s highly effective transport and infrastructure networks, and Element 4.3 – Brisbane’s coordinated infrastructure planning and delivery.
 - b. Provide for the assessment of the suitability of development in the Flood overlay.
2. The purpose of the Flood overlay code will be achieved through the following overall outcomes:
 - a. Development minimises exposure of people and property to unacceptable risk from flood hazard in all flood events.
 - b. Development and infrastructure mitigates the flood risk through its location, siting, design, construction and operation whilst maintaining amenity.
 - c. Development does not unduly burden the city’s counter-disaster response capacity, including emergency services access during a flood emergency.
 - d. Development provides for efficient evacuation and access for evacuation resources including emergency services during flood events, or otherwise plans for the prospect and impact of isolation or hindered evacuation during flooding.
 - e. Development involving essential community infrastructure remains functional during and immediately after flood events.
 - f. Development ensures that emergency management plans respond to the number and capacity of future users of the development to safely participate in emergency measures such as evacuation.
 - g. Development ensures that essential building services or services essential for the development are designed, located and operated to minimise the flood risk to people, minimise damage to property, disruption to building function, and re-establishment time after a flood event.
 - h. Development involving hazardous materials manufactured, handled or stored in bulk does not adversely impact on public safety and the environment as a result of the impacts of floodwater.
 - i. Development does not, directly or cumulatively, cause or increase adverse impacts on other properties or land within the floodplain from flooding.
 - j. Development and infrastructure mitigates the impacts of hydraulic hazard due to predictable future increases in rainfall intensity on flooding.
 - k. Development prioritises, in order, the safety of people, protection of public infrastructure and protection of private property, in the management of the economic, social and environmental impacts of flooding.

8.2.11.3 Performance outcomes and acceptable outcomes

Table 8.2.11.3.A—Performance outcomes and acceptable outcomes

Performance outcomes	Acceptable outcomes	Comments
Section A—If for accepted development subject to compliance with identified requirements (acceptable		

<p>outcomes only) or assessable development for a dwelling house including any secondary dwelling Note—Development for a dwelling house does not require assessment against any other sections of this code.</p>		
<p>PO1 Development involving any habitable or non-habitable part of a dwelling house, including any secondary dwelling, is located and designed to:</p> <ul style="list-style-type: none"> a. minimise the risk to people from flood hazard; b. achieve acceptable flood immunity; c. minimise property impacts from a flood event up to and including the defined flood event; d. minimise disruption to residents, recovery time and rebuilding or restoration costs after a flood event up to and including the defined flood event. 	<p>AO1.1 Development for a dwelling house including any secondary dwelling:</p> <ul style="list-style-type: none"> a. is not located in the Brisbane River flood planning area 1, 2a or 2b sub-categories or the Creek/waterway flood planning area 1 or 2 sub-categories; or b. is only located in these sub-categories, if a Registered Professional Engineer Queensland certifies that the dwelling house and any secondary dwelling are structurally designed to be able to resist hydrostatic and hydrodynamic loads associated with flooding up to and including the defined flood event. 	<p>Complies, refer to ADG SMP for further details. Site is not located within mapped flood zone.</p>
	<p>AO1.2 Development for a dwelling house and any secondary dwelling complies with the minimum flood planning levels in Table 8.2.11.3.B. Note—If located in an area that has no flood level information available from the Council such as an overland flow path, a Registered Professional Engineer of Queensland with expertise in undertaking flood studies is to certify that the flood level and development levels for the dwelling house and any secondary dwelling achieve the required flood planning levels in Table 8.2.11.3.B.</p>	
	<p>AO1.3 Development involving a building undercroft complies with the minimum clearance requirements in Table 8.2.11.3.E. Editor's note—For creek/waterway, storm-tide and river flooding, applicable flood planning information is available from Council's FloodWise Property Report. Note—The Flood planning scheme policy provides guidance on undercroft design.</p>	

<p>PO2 Development within the Creek/waterway flood planning area sub-categories or Overland flow flood planning area sub-category:</p> <ul style="list-style-type: none"> a. maintains the conveyance of flood waters to allow flow and debris to pass predominantly unimpeded through the site; b. does not concentrate, intensify or divert floodwater onto upstream, downstream or adjacent properties; c. will not result in a material increase in flood levels or flood hazard on upstream, downstream or adjacent properties. 	<p>AO2 Development:</p> <ul style="list-style-type: none"> a. is not located within the Creek/waterway flood planning area 1, 2 or 3 sub-categories or the Overland flow flood planning area sub-category; or b. provides an open undercroft area from natural ground level to habitable floor level for any area inundated by the defined flood event; or <p>Note—This undercroft area is not suitable for providing non-habitable rooms, secure storage of valuables, or future enclosing for storage or car parking. The clear area may include structural elements such as columns and floor substructure. The Flood planning scheme policy provides guidance on undercroft design. Editor's note—An open undercroft design may be achieved through a 'valance' treatment around the perimeter of an otherwise internally clear undercroft. Editor's note—For Creek/waterway, storm-tide and river flooding, applicable flood planning information is available from Council's FloodWise Property Report.</p> <ul style="list-style-type: none"> c. a report from a Registered Professional Engineer Queensland certifies that the development in the Creek/waterway flood planning area or Overland flow flood planning area sub-categories will not result in a material increase in flood level or flood hazard on upstream, downstream or adjacent properties. <p>Note—Flood studies demonstrate that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy.</p>	<p>N/A</p>
<p>Section B—If accepted development subject to compliance with identified requirements (acceptable outcomes only) or assessable development other than for a dwelling house or reconfiguring a lot Note—If development that is accepted development subject to compliance with identified requirements complies with the acceptable outcomes of this part, no further assessment against this code is required.</p>		
<p>PO3 Development:</p> <ul style="list-style-type: none"> a. is compatible with flood hazard in a defined flood event; 	<p>AO3 Development for a material change of use is identified in Table 8.2.11.3.C as compatible with the flood hazard in the relevant flood planning area.</p>	<p>N/A</p>

<p>b. minimises the risk to people from flood hazard; c. does not reduce the ability of evacuation resources including emergency services to access and evacuate the site in a flood emergency, with consideration to the scale of the development; d. minimises impacts on property from flooding; e. minimises disruption to residents, business or site operations and recovery time due to flooding; f. minimises the need to rebuild structures after a flood event greater than the defined flood event.</p> <p>Note—Where Table 8.2.11.3.C identifies that a flood risk assessment is required, compliance with this performance outcome can be achieved by submitting a flood risk assessment, which may be included within a flood study, addressing the criteria within this performance solution. Preparing flood risk assessments and flood studies is required to be in accordance with the Flood planning scheme policy.</p> <p>Note—An emergency management plan prepared in accordance with the Flood planning scheme policy, which sets out procedures for evacuation due to flooding may be used to demonstrate compliance with this performance outcome.</p>		
<p>PO4 Development for a park ensures that the design of a park and location of structures and facilities responds to the flood hazard and balances the safety of intended users with:</p> <ul style="list-style-type: none"> a. maintaining continuity of operations; b. impacts of flooding on asset life and ongoing maintenance costs; c. efficient recovery after flood events; d. recreational benefits to the city; e. availability of suitable land within the park. 	<p>AO4.1 Development involving a building or structure in a park complies with the flood planning levels specified in Table 8.2.11.3.D.</p> <p>AO4.2 Development involving a building or structure in a park where Table 8.2.11.3.D does not apply:</p> <ul style="list-style-type: none"> a. is not located within the 20% AEP flood extent of any creek/waterway or overland flow path; or b. is located above the 20% AEP flood level of any creek/waterway or overland flow path. 	<p>N/A</p>
<p>Section C—If for assessable development other than for a dwelling house</p>		
<p>PO5 Development is located and designed to:</p> <ul style="list-style-type: none"> a. minimise the risk to people from flood hazard on the 	<p>AO5.1 Development complies with the flood planning levels specified in Table 8.2.11.3.D.</p>	<p>N/A</p>

<p>site; b. minimise flood damage to the development and contents of buildings up to the defined flood event; c. provide suitable amenity; d. minimise disruption to residents, recovery time and the need to rebuild structures after a flood event up to and including the defined flood event.</p>	<p>Note—If located in an area with no Council-derived flood levels such as an overland flow path, a Registered Professional Engineer Queensland with expertise in undertaking flood studies is to derive the applicable flood level and certify that the development meets the required flood planning levels in Table 8.2.11.3.D. The study is to demonstrate that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy.</p> <p>AO5.2 Development is:</p> <ul style="list-style-type: none"> a. not located in the: <ul style="list-style-type: none"> i. Brisbane River flood planning area 1, 2a, or 2b sub-categories; ii. Creek/waterway flood planning area 1 or 2 sub-categories; iii. Overland flow flood planning area sub-category; or b. only located in these sub-categories if a Registered Professional Engineer Queensland with expertise in undertaking flood studies certifies that: <ul style="list-style-type: none"> i. the development design, siting and any mitigation measures will ensure the development is structurally adequate to resist hydrostatic, hydrodynamic and debris impact loads associated with flooding up to the defined flood event; and ii. the risk to people is managed to an acceptable level. 	
<p>PO6 Development involving essential electrical services or a basement storage area is suitably located and designed to ensure public safety and minimise flood recovery and economic consequences of damage during a flood.</p>	<p>AO6.1 Development ensures that:</p> <ul style="list-style-type: none"> a. all areas containing essential electrical services comply with the flood planning levels in Table 8.2.11.3.D; or b. if a basement contains essential electrical services or a private basement storage area, the basement is a waterproof structure with walls and floors 	<p>N/A</p>

	<p>impermeable to the passage of water with all entry points and services located at or above the relevant flood planning level in Table 8.2.11.3.D.</p> <p>Note—A basement storage area does not include a bike storage room, change room, building maintenance storage and non-critical electrical services.</p> <p>A06.2 Development involving a basement that relies on a pumping solution to manage floodwater ingress or for dewatering after a flood provides a secondary pump system with a backup power source for the pump.</p>	
<p>PO7 Development does not directly or indirectly create a material adverse impact on flood behaviour or drainage on properties that are upstream, downstream or adjacent to the development.</p>	<p>A07.1 Development:</p> <ul style="list-style-type: none"> a. does not block, or divert floodwaters for any area affected by creek/waterway or overland flow flooding, excluding storm-tide flooding and Brisbane River flooding sources; or b. does not result in a material increase in flood level or hydraulic hazard on upstream, downstream or adjacent properties. <p>Note—Compliance with this acceptable solution can be demonstrated by the submission of a flood study by a Registered Professional Engineer of Queensland with expertise in undertaking flood studies demonstrating that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy.</p> <p>A07.2 Development retains existing overland flow paths and does not rely wholly on piped solutions to manage major flows.</p> <p>A07.3 Development which creates a new overland flow path or significantly modifies an existing overland flow path via earthworks does not materially worsen hydraulic hazard on the site from existing conditions.</p>	<p>N/A</p>

	<p>Note—Compliance with this acceptable solution can be demonstrated by the submission of a flood study by a Registered Professional Engineer of Queensland with expertise in undertaking flood studies demonstrating that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy.</p>	
<p>PO8 Development for filling or excavation in an area affected by creek/waterway flooding does not directly, indirectly or cumulatively cause any material increase in flooding or hydraulic hazard or involve significant redistribution of flood storage from high to lower areas in the floodplain. Note—This can be demonstrated by undertaking earthworks in compliance with the Compensatory earthworks planning scheme policy. Note—This part of the code applies to all development other than a dwelling house and any secondary dwelling which involves filling or excavation, whether or not the development application comprises a separate development application for operational work involving filling or excavation.</p>	<p>AO8 Development ensures that no filling or excavation greater than 100mm is located in the Creek/waterway flood planning area 1, 2 or 3 sub-categories if contained in the 5% AEP flood extent of any Creek/waterway flood planning area sub-category for which no waterway corridor has been mapped in the Waterway corridors overlay.</p>	<p>N/A</p>
<p>PO9 Development ensures that the building and site design:</p> <ol style="list-style-type: none"> a. maintains the conveyance capacity of existing overland flow paths and creek/waterways; b. ensures floodwaters and flood debris can pass predominantly unimpeded under a structure or building to minimise property or building damage, including for a flood larger than the defined flood event; c. mitigates flood impacts by ensuring that filling, excavation and location of services are designed to allow for the conveyance of floodwater across the site. <p>Note—The Flood planning scheme policy provides guidance on relevant considerations in determining minimum undercroft clearances and treatment of ground level in undercroft areas where floodwater conveyance is required underneath development.</p>	<p>AO9.1 Development involving a building undercroft in the Creek/waterway flood planning area sub-categories or the Overland flow flood planning area sub-category:</p> <ol style="list-style-type: none"> a. complies with the minimum building undercroft clearance requirements in Table 8.2.11.3.E; b. not located directly above any part of a waterway corridor as mapped in the Waterway corridors overlay. <p>AO9.2 Development involving a building undercroft in the Creek/waterway flood planning area sub-categories or the Overland flow flood planning area sub category:</p> <ol style="list-style-type: none"> a. has a ground level within the undercroft area that is free draining; b. does not involve excavation below ground level of more than 300mm within the undercroft area. 	<p>N/A</p>

<p>PO10 Development for vulnerable uses, difficult to evacuate uses or assembly uses optimises vehicular access and efficient evacuation from the development to parts of the road network unaffected by flood hazard, in order to:</p> <ol style="list-style-type: none"> protect safety of users and emergency services personnel; support efficient emergency services access and site evacuation with consideration to the scale of development. <p>Note—A flood risk assessment may be required to address the performance outcomes or acceptable solutions which deal with evacuation and isolation arrangements, and the ability to take refuge. The Flood planning scheme policy provides information for undertaking flood risk assessments.</p>	<p>AO10 Development for vulnerable uses, difficult to evacuate uses or assembly uses:</p> <ol style="list-style-type: none"> is not isolated in any event up to the relevant flood planning level specified in Table 8.2.11.3.L; or has direct vehicle access to a critical route or interim critical route in the Critical infrastructure and movement network overlay for evacuation in a flood; or can achieve vehicular evacuation to a suitable flood-free location. <p>Note—A suitable flood-free location is of a size and nature sufficient to provide for the size and characteristics of the population likely to need evacuation to that area.</p>	<p>N/A</p>
<p>PO11 Development has access which, having regard to hydraulic hazard, provides for safe vehicular and pedestrian movement and emergency services access to adjoining roads.</p>	<p>AO11.1 Development provides an access or driveway into the site which is:</p> <ol style="list-style-type: none"> trafficable during the defined flood event; not located in the Creek/waterway flood planning area 1 sub-category; not located in the Overland flow flood planning area sub-category if the hydraulic hazard is unsafe in the defined flood event; the access or driveway is not inundated by a 10% AEP flood. <p>AO11.2 Development located in the Creek/waterway flood planning area 1, 2, 3 or 4 sub-categories locates any disabled access in the highest part of the site.</p> <p>Note—explanation of hydraulic hazard provided in the Flood planning scheme policy.</p>	<p>N/A</p>
<p>PO12 Development involving a new road, a bridge or culvert is designed to minimise impacts to flood behaviour,</p>	<p>AO12 Development involving a new road complies with the flood planning levels in Table 8.2.11.3.F.</p>	<p>N/A</p>

<p>minimise disruption to traffic during a flood and allow for emergency access.</p>		
<p>PO13 Development for pedestrian and cyclist paths: a. provides a suitable level of trafficability; b. manages the impacts of flooding on asset life and ongoing maintenance costs; c. balances route availability with recreational and transport connectivity benefits to the city.</p>	<p>AO13.1 Development for cyclist and pedestrian facilities other than on public roads, including those traversing through a park and adjacent to a watercourse and overland flow path, are located above the 39% AEP (2 year ARI) flood immunity from all flooding sources. Note—If the site is subject to more than one type of flooding, the requirement that affords the greatest level of protection will apply.</p> <p>AO13.2 All new on-road cyclist and pedestrian facilities comply with the flood planning levels and trafficability standards for the applicable category of road in Table 8.2.11.3.F or Table 8.2.11.3.K.</p>	<p>N/A</p>
<p>PO14 Development which increases the residential population within the Brisbane River flood planning area sub-categories minimises the risk to people in all flood events with consideration to flood hazard, including warning time.</p>	<p>AO14 Development in the Brisbane River flood planning area sub-categories in areas where the residential flood level is greater than 12.8m AHD involving: a. an increase in the number of residential dwellings; or b. additional residential lots is not subject to an unsafe hydraulic hazard in the 0.2% AEP flood event. Note—Explanation of a hydraulic hazard is provided in the Flood planning scheme policy.</p>	<p>N/A</p>
<p>Additional performance outcomes and acceptable outcomes for essential community infrastructure</p>		
<p>PO15 Development involving essential community infrastructure: a. remains functional to serve community need during and immediately after a flood event, or is part of a network that is able to maintain the function of the</p>	<p>AO15 Development involving essential community infrastructure: a. is ancillary to and not relied upon for the provision of the essential service during a flood; or b. is located above the flood planning levels in Table</p>	<p>N/A</p>

<p>essential community infrastructure when parts of the development are unable to function during or after a flood;</p> <p>b. is designed, sited and operated to avoid adverse impacts on the community or the environment due to the impacts of flooding on infrastructure, facilities or access and egress routes;</p> <p>c. is able to remain functional or is part of a network which is able to remain functional even when other infrastructure or services (such as electricity supply) may be compromised in a flood event;</p> <p>d. contains mitigation measures which are not entirely dependent on human activation to respond to a flood event.</p> <p>Note—Protection of function is required up to and including the flood event in Table 8.2.11.3.G.</p>	<p>8.2.11.3.G;</p> <p>c. has access to or provides the necessary back-up emergency electricity and communications supply in times of flood;</p> <p>d. is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the flood event listed for the development type in Table 8.2.11.3.G;</p> <p>e. that services a local area:</p> <p>i. is able to be accessed in times of flood to service local community needs up to the event listed for that development type in Table 8.2.11.3.G; or</p> <p>ii. has a service continuity plan that demonstrates the continued provision of service during the relevant flood event.</p>	
<p>Additional performance outcomes and acceptable outcomes if development involves the processes in Table 8.2.11.3.H</p>		
<p>PO16 Development involving the storage and handling of hazardous materials avoids or minimises risks to public health and safety and the environment, by:</p> <p>a. protecting underground tanks for hazardous materials against the forces of buoyancy, velocity flow and debris impacts;</p> <p>b. securing above-ground tanks for hazardous materials against flotation and lateral movement;</p> <p>c. preventing damage to hazardous materials pipework or entry of floodwater into hazardous materials pipework;</p> <p>d. preventing damage to or off-site release of packages, drums or containers storing hazardous materials.</p> <p>Note—A chemical hazards flood risk report prepared in accordance with the Management of hazardous chemicals in flood affected areas</p>	<p>AO16</p> <p>a. Development does not include the storage or handling of hazardous chemicals that exceed the hazardous chemicals flood hazard threshold quantities in Table 8.2.11.3.M.</p> <p>b. Development involving the processes listed in Table 8.2.11.3.H:</p> <p>i. where located in the Flood overlay area, occurs only in the Creek/waterway flood planning area 5 sub-category or the Brisbane River flood planning area 5 sub-category; or</p> <p>ii. is consistent with the standards contained in the Management of hazardous chemicals in flood affected areas planning scheme policy and can operate without risk of environmental harm during a flood event.</p>	<p>N/A</p>

<p>planning scheme policy can assist in demonstrating achievement of this performance outcome. Note—A pump drainage system is not an acceptable measure to meet the performance outcome.</p>	<p>Note—The Management of hazardous chemicals in flood affected areas planning scheme policy sets out further information and processes including risk assessment for the management of hazardous chemicals in flood planning areas.</p>	
<p>Additional performance outcomes and acceptable outcomes for reconfiguring a lot</p>		
<p>PO17 Development locates and designs all lots resulting from reconfiguring a lot to:</p> <ol style="list-style-type: none"> a. minimise the risk to people from flood hazard; b. minimise damage to property from flood hazard; c. facilitate safe and efficient evacuation. <p>Note—</p> <ul style="list-style-type: none"> • Consideration of all floods up to the probable maximum flood is relevant to minimising the risk to people. • Flood warning time is not considered sufficient in the Creek/waterway planning area sub-categories or the Overland flow flood planning area sub-category. • Filling above the flood planning level for a flood event greater than the defined flood event cannot be assumed to mitigate the flood hazard. 	<p>AO17.1 Development creating new lots is identified in Table 8.2.11.3.I as suitable within the relevant flood planning area.</p> <p>AO17.2 Development provides for reconfiguring a lot design that achieves a road and lot layout which:</p> <ol style="list-style-type: none"> a. provides trafficable vehicular egress for evacuation during a defined flood event; b. optimises hazard-free movement away from sources of flood hazard within the development. <p>Note—Further advice on road and lot layout is contained in the Flood planning scheme policy.</p> <p>AO17.3 Development which creates a new residential lot in an area subject to Brisbane River flooding, if the residential flood level is greater than 12.8m AHD is not subject to a hydraulic hazard greater than 0.6m²/s DV or 0.6m deep in a 0.2% AEP flood. Note—Refer to the Flood planning scheme policy for further explanation on the 0.2% AEP flood.</p>	<p>Complies, refer to ADG SMP for further details. Site is not located within mapped flood zone. Plan follows original subdivision masterplan.</p>
<p>PO18 Development involving reconfiguring a lot:</p> <ol style="list-style-type: none"> a. minimises the risk to people from flood hazard; b. creates safe evacuation routes or avoids isolation of the development during a flood greater than the defined flood event; c. minimises damage to property and services; 	<p>AO18.1 Development involving reconfiguring a lot ensures:</p> <ol style="list-style-type: none"> a. all lots comply with the flood planning levels in Table 8.2.11.3.J; b. a new road complies with the flood planning levels in Table 8.2.11.3.F. <p>AO18.2</p>	<p>Complies, refer to ADG SMP for further details. Site is not located within mapped flood zone.</p>

<p>d. provides lots and roads that are not frequently flooded or subject to nuisance ponding or seepage; e. ensures lots created for park or private open space minimise the risk to people from flood hazard and are fit for purpose; f. provides a lot that is not substantially burdened by flood mitigation infrastructure.</p>	<p>Development involving reconfiguring a lot creating more than 6 residential lots or a lot for industry ensures the flood planning levels of a dedicated road fronting the development or providing primary access within 200m of the development:</p> <p>a. complies with Table 8.2.11.3.K; or b. has acceptable trafficability in accordance with the requirements in the Flood planning scheme policy and the Queensland Urban Drainage Manual.</p> <p>Note—The Flood planning scheme policy contains supporting information about trafficability on existing roads and serviceability during floods.</p>	
	<p>AO18.3 Development protects the conveyance of flood hazard area by providing an easement over the:</p> <p>a. 2% AEP flood extent for overland flow flooding; b. 1% AEP flood extent for creek/waterway flooding.</p>	

Table 8.2.11.3.B—Flood planning levels for a dwelling house (BCA building classification 1a)

Flooding source	Minimum habitable floor level	Minimum non-habitable floor level (i.e. utility areas, garage, laundry, storage room and basement entries)
Brisbane River	RFL + 500mm	2% AEP flood level + 300mm
Creek/waterway	1% AEP flood level + 500mm	1% AEP flood level + 300mm
Overland flow	2% AEP flood level + 500mm	2% AEP level + 300mm
	<p>Note—Where no detailed flood level information is available from the Council such as an overland flow path, a Registered Professional Engineer Queensland with expertise in flood studies is to derive the relevant flood level and certify that the development level for the dwelling house, including any secondary dwelling, meets the required flood immunity standards.</p>	

- Note—
- Where the site is subject to more than one flooding source, the minimum flood planning level is the highest level determined from these flooding sources.
 - Flood planning levels for a dwelling house from storm-tide inundation are located in the Coastal hazard overlay code.
 - A flood event with an AEP of 1% is the equivalent of a 100 year ARI flood event.

- A flood event with an AEP of 2% is the equivalent of a 50 year ARI flood event.

Table 8.2.11.3.C—Land use compatibility with flood hazard

C – Land use is compatible with the flood hazard subject to meeting all other relevant requirements.

– Flood risk assessment in accordance with requirements of the Flood planning scheme policy is required to demonstrate the use is compatible with the flood hazard.

Accommodation activities	Brisbane River flood planning area sub-category						Creek/waterway flood planning area sub-category					Overland flow flood planning area sub-category
	5	4	3	2B	2A	1	5	4	3	2	1	
Community residence	C	#	#	#	#	#	C	#	#	#	#	#
Dual occupancy	C	C	#	#	#	#	C	#	#	#	#	C
Dwelling unit	C	C	#	#	#	#	C	#	#	#	#	C
Multiple dwelling (1–3 storeys)	C	C	#	#	#	#	C	#	#	#	#	C
Multiple dwelling (4+ storeys)	C	C	C	#	#	#	C	#	#	#	#	C
Nature-based tourism	C	C	C	#	#	#	C	#	#	#	#	C
Relocatable home park	C	#	#	#	#	#	C	#	#	#	#	C
Residential care facility	#	#	#	#	#	#	#	#	#	#	#	#
Resort complex	C	C	C	#	#	#	C	#	#	#	#	C
Retirement facility	C	#	#	#	#	#	#	#	#	#	#	C
Rooming	C	C	#	#	#	#	C	#	#	#	#	C

accommodation, short-term accommodation or hotel where including accommodation (1–3 storeys)												
Rooming accommodation, short-term accommodation or hotel where including accommodation (4+ storeys)	C	C	C	#	#	#	C	#	#	#	#	C
Tourist park	C	C	#	#	#	#	C	C	#	#	#	C
Commercial land uses	Brisbane River flood planning area sub-category						Creek/waterway flood planning area sub-category					Overland flow flood planning area sub-category
	5	4	3	2B	2A	1	5	4	3	2	1	
Agricultural supplies store	C	C	#	#	#	#	C	#	#	#	#	C
Animal husbandry	C	C	#	#	#	#	C	#	#	#	#	C
Animal keeping	C	C	#	#	#	#	C	#	#	#	#	C
Aquaculture	C	C	#	#	#	#	C	#	#	#	#	C
Bulk landscape supplies	C	C	C	C	C	C	C	C	C	#	#	C

Car park ancillary to another use	C	C	C	C	C	#	C	C	#	#	#	C
Car wash	C	C	C	C	C	#	C	C	#	#	#	C
Food and drink outlet	C	C	#	#	#	#	C	C	#	#	#	C
Function facility	C	C	#	#	#	#	C	#	#	#	#	C
Garden centre	C	C	C	#	#	#	C	C	#	#	#	C
Hardware and trade supplies	C	C	#	#	#	#	C	C	#	#	#	C
Home-based business	C	C	#	#	#	#	C	#	#	#	#	C
Hotel (where not including accommodation)	C	C	#	#	#	#	C	#	#	#	#	C
Market	C	C	C	#	#	#	C	C	#	#	#	C
Nightclub entertainment facility	C	C	#	#	#	#	C	#	#	#	#	C
Office	C	C	#	#	#	#	C	#	#	#	#	C
Outdoor sales	C	C	#	#	#	#	C	C	#	#	#	C
Parking station	C	C	C	C	C	#	C	C	#	#	#	C
Roadside stalls	C	C	C	#	#	#	C	C	#	#	#	C
Sales office	C	C	#	#	#	#	C	C	#	#	#	C
Shop, Adult store	C	C	#	#	#	#	C	#	#	#	#	C
Shopping centre	C	#	#	#	#	#	C	#	#	#	#	C
Showroom	C	C	#	#	#	#	C	C	#	#	#	C

Theatre	C	C	#	#	#	#	C	#	#	#	#	C
Tourist attraction	C	C	C	#	#	#	C	C	#	#	#	C
Veterinary service	C	C	#	#	#	#	C	#	#	#	#	C
Wholesale nursery	C	C	C	C	C	C	C	C	C	#	#	C
Community land uses	Brisbane River flood planning area sub-category						Creek/waterway flood planning area sub-category					Overland flow flood planning area sub-category
	5	4	3	2B	2A	1	5	4	3	2	1	
Childcare centre	C	#	#	#	#	#	C	#	#	#	#	#
Club	C	C	#	#	#	#	C	C	#	#	#	C
Community care centre	C	#	#	#	#	#	C	#	#	#	#	C
Community use	C	#	#	#	#	#	C	C	#	#	#	C
Educational establishment (and outdoor education centre)	C	#	#	#	#	#	C	#	#	#	#	C
Environment facility	C	C	C	C	C	C	C	C	C	C	C	C
Health care service	C	#	#	#	#	#	C	#	#	#	#	C
Hospital	#	#	#	#	#	#	#	#	#	#	#	#
Indoor sport and recreation	C	C	#	#	#	#	C	C	#	#	#	C

Major sport, recreation and entertainment facility	C	#	#	#	#	#	C	C	#	#	#	C
Motor sport facility	C	C	C	#	#	#	C	C	C	#	#	C
Outdoor sport and recreation	C	C	C	#	#	#	C	C	#	#	#	C
Park	C	C	C	C	C	C	C	C	C	C	C	C
Place of worship	C	#	#	#	#	#	C	C	#	#	#	C
Special purpose land uses	Brisbane River flood planning area sub-category						Creek/waterway flood planning area sub-category					Overland flow flood planning area sub-category
	5	4	3	2B	2A	1	5	4	3	2	1	
Air service	C	#	#	#	#	#	C	#	#	#	#	C
Cemetery	C	C	C	#	#	#	C	C	#	#	#	C
Crematorium	C	#	#	#	#	#	C	#	#	#	#	C
Detention facility	#	#	#	#	#	#	#	#	#	#	#	C
Emergency services	#	#	#	#	#	#	#	#	#	#	#	#
Funeral parlour	C	#	#	#	#	#	C	#	#	#	#	C
Landing	C	C	C	C	C	C	C	C	C	C	#	C
Major electricity infrastructure	#	#	#	#	#	#	#	#	#	#	#	#

Port service	C	C	C	#	#	#	C	C	C	C	#	C
Substation	C	#	#	#	#	#	C	#	#	#	#	#
Telecommunications facility	C	#	#	#	#	#	C	#	#	#	#	#
Utility installation	C	#	#	#	#	#	#	#	#	#	#	#
Industry land uses	Brisbane River flood planning area sub-category						Creek/waterway flood planning area sub-category				Overland flow flood planning area sub-category	
	5	4	3	2B	2A	1	5	4	3	2	1	
Extractive industry	C	C	C	#	#	#	C	C	C	#	#	C
High impact industry	C	C	#	#	#	#	C	C	#	#	#	C
Intensive animal industry	C	C	#	#	#	#	C	#	#	#	#	C
Intensive horticulture	C	C	C	#	#	#	C	C	#	#	#	C
Low impact industry	C	C	#	#	#	#	C	C	#	#	#	C
Marine industry	C	C	C	#	#	#	C	C	#	#	#	C
Medium impact industry	C	C	#	#	#	#	C	C	#	#	#	C
Research and technology industry	C	#	#	#	#	#	C	#	#	#	#	C
Rural industry	C	C	C	C	C	C	C	C	C	#	#	C

Service industry	C	C	#	#	#	#	C	C	#	#	#	C
Service station	C	#	#	#	#	#	C	#	#	#	#	C
Special industries	C	#	#	#	#	#	#	#	#	#	#	C
Transport depot	C	#	#	#	#	#	C	#	#	#	#	C
Warehouse	C	C	#	#	#	#	C	#	#	#	#	C

Note—Caretaker's accommodation and home-based business are considered ancillary to the dominant land use.

Table 8.2.11.3.D—Flood planning categories for development types

BCA building classification ⁽¹⁾	Development types and design levels, assigned design floor or pavement levels	Category – refer to Table 8.2.11.3.L for flood planning levels
Class 1–4	Habitable room ⁽²⁾	Category A
	Non-habitable room including patio and courtyard	Category B
	Non-habitable part of a Class 2 or Class 3 building excluding the essential services ⁽²⁾ control room	Category B Risk management approach to Brisbane River flooding is permitted (refer to Flood planning scheme policy)
	Parking located in the building undercroft of a multiple dwelling	Category C
	Carport ⁽⁴⁾ , unroofed car park; vehicular manoeuvring area	Category D
	Essential electrical services ⁽²⁾ of a Class 2 or Class 3 building only	Category A ⁽⁶⁾
	Basement parking entry ⁽³⁾	Category C + 300mm
Class 5, Class 6, or Class 8	Building floor level	Category C Risk management approach to Brisbane River flooding is permitted (refer to Flood planning scheme policy)
	Garage or car park located in the building undercroft ⁽³⁾	Category C

	Carport ⁽⁴⁾ or unroofed car park	Category D
	Vehicular access and manoeuvring areas	Category D
	Basement parking entry ⁽³⁾	Category C
	Essential electrical services ⁽²⁾	Class 8 – Category C ⁽⁶⁾ Class 5 & 6 – Category A ⁽⁶⁾
Class 7a	Refer to the relevant building class specified in this table	
Class 7b	Building floor level	Category C Risk management approach to Brisbane River flooding is permitted (refer to Flood planning scheme policy)
	Vehicular access and manoeuvring area	Category D
	Essential electrical services ⁽²⁾	Category C
Class 9	Building floor level	Category A
	Building floor level for habitable rooms in Class 9a or 9c where for a residential care facility	0.2% AEP flood
	Building floor level for habitable rooms in Class 9b where involving children, such as a childcare centre	0.2% AEP flood
	Garage or car park located in the building undercroft ⁽³⁾	Category C
	Carport ⁽⁵⁾ or unroofed car park	Category D
	Vehicular access and manoeuvring areas	Category D
	Essential electrical services ⁽²⁾	Category A
Class 10a	Car parking facility	Refer to the relevant building class specified in this table
	Shed ⁽⁵⁾ or the like	Category D

Class 10b	Swimming pool	Category E
	Associated mechanical and electrical pool equipment	Category C
	Other structures	Flood planning levels do not apply

Notes—

(1) Refer to the Building Code of Australia for definitions of building classifications.

(2) Essential electrical services include any area or room used for fire control panel, telephone PABX, sensitive substation equipment including transformers, low voltage switch gear, high voltage switch gear, battery chargers, protection control and communication equipment, low voltage cables, high voltage cables, and lift or pump controls.

(3) Basement car parks must be suitably waterproofed and all air vents, air-conditioning ducts, pedestrian access and entry and exit ramps into the basement must comply with the applicable flood planning levels in this table.

(4) A shelter for a motor vehicle, which has a roof and one or more open sides, and which can be built against the side of a building.

(5) A slight or rough structure built for shelter and storage; or a large strongly built structure, often open at the sides or end.

(6) Where essential electrical services are proposed in a basement below the specified flood planning level, the flood immunity of all air vents, air-conditioning ducts, pedestrian access, lift shafts and entry/exit ramps at the basement entrance and any other openings into that basement must conform with the flood planning levels for Category A for Residential development, and the relevant basement entry level of all other uses. To ensure flood immunity, basements require a waterproof basement design to prevent flood waters entering the basement.

- A flood event with an AEP of 2% is the equivalent of a 50 year ARI flood event.
- A flood event with an AEP of 0.2% is the equivalent of a 500 year ARI flood event.
- Where a building has a combination of uses that includes a component of classes 2, 3 or 9, the essential services for that building shall comply with the requirements of the building class with the greatest flood planning level requirement.
- Use classes for residential development also include basement storage.

Table 8.2.11.3.E— Building undercroft clearances

Flooding source	Minimum clearance requirement ⁽¹⁾⁽³⁾
Overland flow— Hydraulic Hazard (DV <0.6 m ² /s and depth <600mm in 2% AEP flood event)	Lowest floor level is to be 1.5m ⁽²⁾ above the highest ground elevation in undercroft area
Overland flow— Hydraulic Hazard (DV >0.6 m ² /s or depth >600mm in 2% AEP flood event)	Lowest floor level is to be 2.5m ⁽²⁾ above the highest ground elevation in undercroft area
Creek/waterway (Flood planning area 1, 2 or 3 sub-categories)	Lowest floor level is to be 2.5m ⁽²⁾ above the highest ground elevation in undercroft area
Creek/waterway (Flood planning area 4 sub-category)	Lowest floor level is to be 1.5m ⁽²⁾ above the highest ground elevation in undercroft area

Notes—

(1) The minimum undercroft only relates to the minimum clearance requirements from ground level to the finished floor level and not minimum flood planning levels. Where the flood planning level requirement with freeboard results in a higher finished floor level that higher level needs to be adopted.

(2) Refer to the Flood planning scheme policy for explanatory material regarding clearances and considerations.

(3) The minimum undercroft clearance only applies to the area of undercroft above the relevant flood extent or flood planning area sub-category.

Table 8.2.11.3.F—Flood planning levels for a new road

Flooding source ⁽¹⁾	Minimum design levels at the crown of the road (m AHD) ⁽²⁾	
	Residential development	Industrial or commercial development
Brisbane River ⁽³⁾	Defined flood level	5% AEP flood level
Creek/waterway	1% AEP flood level	2% AEP flood level
Overland flow	2% AEP flood level	2% AEP flood level

Notes—

(1) Where the road is subject to more than one flooding source, the minimum flood planning level is the highest level determined from these sources.

(2) Where flood levels are not available from Council's FloodWise Property Report, such as for overland flow flooding, a suitably qualified Registered Professional Engineer Queensland with expertise in undertaking flood studies is required to estimate the relevant flood level.

(3) A risk management approach determining flood planning levels of roads for Brisbane River flooding can be applied as an alternative to Table 8.2.11.3.F. Typically such roads would have a flood immunity no worse than the surrounding roads that support a similar land use, otherwise a Flood Risk Assessment which complies with the relevant requirements of the Flood planning scheme policy is provided.

Table 8.2.11.3.G—Flood planning levels for essential community infrastructure

Type of essential community infrastructure	Minimum design levels
Emergency services	0.2% AEP flood
Emergency services, where for an emergency shelter	0.5% AEP flood
Emergency services, where for police facilities	0.5% AEP flood
Hospital and health care service where associated with a hospital	0.2% AEP flood
Community facility where involving storage of valuable records or items of historic or cultural significance (e.g. galleries and libraries)	0.5% AEP flood

State-controlled roads Major or minor electricity infrastructure not otherwise listed in this table Utility installation where for rail transport services Air service Telecommunications facility	No specific recommended level but development proponents should ensure that the infrastructure is optimally located and designed to achieve suitable levels of service, having regard to the processes and policies of the administering government agency.
Power stations (as defined in the <i>Electricity Act 1994</i>) or renewable energy facility.	0.2% AEP flood
Major electricity infrastructure where a major switch yard	0.2% AEP flood
Substations	0.5% AEP flood
Utility installation where for a sewage treatment plant	Defined flood event
Utility installation where for a water treatment plant	0.5% AEP flood

Note—A flood event with an AEP of 0.2% is the equivalent of a 500 year ARI flood event.

Note—A flood event with an AEP of 0.5% is the equivalent of a 200 year ARI flood event.

Table 8.2.11.3.H—Table of processes requiring additional assessment in a flood planning area

Process
(1) Oil refining or processing
(2) Producing, refining or processing gas or fuel gas
(3) Power station, including the activity of generating electricity by using fuel
(4) Producing, quenching, cutting, crushing or grading coke
(5) Waste incinerator, including thermal treatment of waste
(6) Pulp or paper manufacturing
(7) Tannery or works for curing animal skins, hides or finishing leather
(8) Textile manufacturing, including carpet manufacturing, wool scouring or carbonising, cotton milling, or textile bleaching, dyeing or finishing
(9) Rendering plant, including meat processing

(10) Manufacturing chemicals, poisons and explosives
(11) Manufacturing fertilisers involving ammonia
(12) Manufacturing polyvinyl chloride plastic
(13) Major hazard facilities for the storage and handling of dangerous goods
(14) Storage of hazardous chemicals in quantities that would exceed the hazardous chemicals flood hazard threshold set out in Table 8.2.11.3.M
(15) Manufacturing medium-density fibreboard, chipboard, particle board, plywood, laminated board or wood veneer products
(16) Manufacturing or processing plaster
(17) Enamelling workshop
(18) Galvanising works
(19) Anodising or electroplating workshop
(20) Powder coating workshop
(21) Treating timber for preservation using chemicals including copper, chromium, arsenic, borax and creosote
(22) Manufacturing soil conditioners by receiving, blending, storing, processing, drying or composting organic material or organic waste, including animal manures, sewage, septic sludges and domestic waste
(23) Manufacturing tyres, asbestos products, asphalt, cement, glass or glass fibre, mineral wool or ceramic fibre
(24) Abattoir, including meat processing
(25) Recycling chemicals, oils or solvents
(26) Waste disposal activity (other than waste incinerator), including waste transfer station operation
(27) Recycling, storing or reprocessing regulated waste, including regulated waste treatment
(28) Manufacturing batteries and battery recycling
(29) Drum and container reconditioning

(30) Water treatment
(31) Sewage treatment

Table 8.2.11.3.I—Suitability of reconfiguring a lot within a flood planning area

C – Reconfiguring a lot is suitable within a flood planning area

– Flood risk assessment in accordance with the requirements of the Flood planning scheme policy is required to demonstrate the mitigation of risk from flood hazard

Flood planning area	Creek/waterway flood planning area sub-categories			Brisbane River flood planning area sub-categories		
	Residential	Industrial	Other	Residential	Industrial	Other
1	#	#	#	#	#	#
2/2a;2b	#	#	#	#	C	#
3	#	#	#	#	C	C
4	C	C	C	C	C	C
5	C	C	C	C	C	C

- Notes—
- A flood risk assessment is required for residential reconfiguring a lot development where creating more than two new lots in the overland flow flood planning area sub-category.
 - Additional requirements apply for the Brisbane River flood planning area sub-category if the residential flood level is greater than 12.8m AHD.
 - Minimum site levels, requirements for no adverse off site impacts and other provisions in the planning scheme still apply.

Table 8.2.11.3.J—Flood planning levels for reconfiguring a lot

Flooding source ⁽¹⁾	Minimum lot levels (m AHD) ⁽²⁾		
	Residential (creating 6 or less lots with no new road)	Residential (creating more than 6 lots), or a new road	Other than residential
Brisbane River	2% AEP flood level + 300mm	RFL + 0.3m	1% AEP flood level

Creek/waterway	Minimum 300m ² area at the 1% AEP flood level + 300mm ⁽³⁾	1% AEP flood level + 300mm	2% AEP flood level
Overland flow	Minimum 300m ² area at the 2% AEP flood level + 300mm ⁽³⁾	2% AEP flood level + 300mm	2% AEP flood level

Notes—

⁽¹⁾ Where the site is subject to more than one flooding source, the minimum flood planning level is the highest level determined from these sources.

⁽²⁾ Where flood levels are not available from Council's FloodWise Property Report such as for overland flow flooding, a suitably qualified Registered Professional Engineer Queensland with expertise in undertaking flood studies is required to estimate the relevant flood level.

⁽³⁾ The 300m² area is considered suitable for siting a dwelling house with open space area at or above the nominated flood planning level.

Table 8.2.11.3.K—Flood planning levels for existing road providing access to or fronting a development

Flooding source ⁽¹⁾	Minimum design levels at the crown of the road (m AHD) ⁽²⁾⁽³⁾		
	Local road	Neighbourhood road	District road, suburban road, arterial road
Brisbane River	5% AEP flood level	2% AEP flood level	2% AEP flood level
Creek/waterway	5% AEP flood level	2% AEP flood level	2% AEP flood level
Overland flow	5% AEP flood level	5% AEP flood level	5% AEP flood level

Notes—

⁽¹⁾ Where the site is subject to more than one flooding source, the minimum flood planning level is the highest level determined from these sources.

⁽²⁾ Where flood levels are not available from Council's FloodWise Property Report such as overland flow flooding a suitably qualified Registered Professional Engineer in Queensland with expertise in undertaking flood studies is required to estimate the relevant flood level. The Flood planning scheme policy sets out the requirements for a flood risk assessment process.

⁽³⁾ The design standard for industry access is the 5% AEP flood level for all flooding sources.

Table 8.2.11.3.L—Categories of flood planning levels

Flooding source ⁽¹⁾	Minimum design floor or pavement levels (m AHD) ⁽²⁾ (refer to Table 8.2.11.3.D for assignment of these categories)				
	Category A	Category B	Category C	Category D	Category E

Brisbane River	RFL + 500mm	RFL + 300mm	DFL	5% AEP flood level	5% AEP flood level
Creek/ waterway	1% AEP flood level + 500mm	1% AEP flood level + 300mm	1% AEP flood level	1% AEP flood level	5% AEP flood level
Overland flow	2% AEP flood level + 500mm	2% AEP flood level + 300mm	2% AEP flood level	2% AEP flood level	5% AEP flood level

Notes—

(1) Where the site is subject to more than one type of flooding that is overland flow flooding, creek or waterway flooding or river flooding, the minimum flood immunity level is the highest level determined from these sources.

(2) Where flood levels are not available from Council's FloodWise Property Report such as overland flow flooding, the applicant will need to engage a suitably qualified Registered Professional Engineer Queensland with expertise in undertaking flood studies required to estimate the relevant flood level. The Flood planning scheme policy sets out the requirements for a flood risk assessment process.

- A flood event with an AEP of 1% is the equivalent of a 100 year ARI flood event.
- A flood event with an AEP of 2% is the equivalent of a 50 year ARI flood event.
- A flood event with an AEP of 5% is the equivalent of a 20 year ARI flood event.

Table 8.2.11.3.M—Hazardous chemicals flood hazard threshold

Hazardous chemicals flood hazard threshold means any of the following:
A hazardous chemical listed in schedule 11 of the Work Health and Safety Regulation 2011 in a quantity that exceeds a threshold quantity stated in column 5 of schedule 11
A chemical classified as hazardous to the aquatic environment under the Australian Dangerous Goods Code in the Acute I or Chronic I category that exceeds 2500 litres or kilograms
A chemical classified as hazardous to the aquatic environment under the Australian Dangerous Goods Code in the Chronic II category that exceeds 10,000 litres or kilograms
A chemical classified as hazardous to the aquatic environment under the Australian Dangerous Goods Code and assigned to Packing Group III that exceeds 10,000 litres or kilograms
A chemical classified as hazardous to the aquatic environment under the Globally Harmonised System of Classification and Labelling of Chemicals that exceeds 10,000 litres or kilograms

8.2.15 Potential and actual acid sulfate soils overlay code

8.2.15.1 Application

1. This code applies to assessing development in the Potential and actual acid sulfate soils overlay, if:
 - a. assessable development where this code is an applicable code identified in the assessment benchmarks column of a table of assessment for an overlay (section 5.10); or
 - b. impact assessable development.

Note—Where the natural ground level is greater than 20m AHD, the Potential and actual acid sulfate soils overlay code does not apply.

Editor's note—Where the Potential and actual acid sulfate soils overlay code does not apply, it is recommended that acid sulfate soil be appropriately managed in other circumstances as well. For example, installing a piped drain may not disturb much soil but could result in a degraded asset.

2. Land in the Potential and actual acid sulfate soils overlay is identified on the Potential and actual acid sulfate soils overlay map and is included in the following sub-categories:
 - a. Potential and actual acid sulfate soils sub-category;
 - b. Land at or below 5m AHD sub-category;
 - c. Land above 5m AHD and below 20m AHD sub-category.
3. When using this code, reference should be made to section 1.5 and section 5.3.3.

Note—The following purpose, overall outcomes, performance outcomes and acceptable outcomes comprise the assessment benchmarks of this code.

Note—Where this code includes performance outcomes or acceptable outcomes that relate to acid sulfate soils, an acid sulfate soil investigation report, or an acid sulfate soil management plan, guidance is provided in the Potential and actual acid sulfate soils planning scheme policy.

8.2.15.2 Purpose

1. The purpose of the Potential and actual acid sulfate soils overlay code is to:
 - a. Implement the policy direction in the Strategic framework, in particular Theme 2: Brisbane's outstanding lifestyle and Element 2.3 – Brisbane's healthy and safe communities.
 - b. Provide for the assessment of the suitability of development in the Potential and actual acid sulfate soils overlay.
2. The purpose of the code will be achieved through the following overall outcomes:
 - a. Development ensures that the release of an acid and associated metal contaminant is avoided by not disturbing acid sulfate soils when excavating, removing soil or extracting groundwater or filling land.
 - b. Development ensures that disturbed acid sulfate soils or drainage waters are treated and, if required, ongoing management practices are adopted that minimise the potential for environmental harm from acid sulfate soil and protect corrodible assets from acid sulfate soil.
 - c. Development is located, designed and constructed to avoid the mobilisation and release of iron compounds for coastal algal blooms.

8.2.15.3 Performance outcomes and acceptable outcomes

Table 8.2.15.3—Performance outcomes and acceptable outcomes

Performance outcomes	Acceptable outcomes	Comments
<p>PO1 Development protects the environmental values and ecological health of receiving waters and does not subject assets to accelerated corrosion.</p>	<p>AO1 Development ensures that:</p> <ul style="list-style-type: none"> a. no potential or actual acid sulfate soils are disturbed; or <p>Note—This can be demonstrated through the submission of an acid sulfate soil investigation report with reference to the Potential and actual acid sulfate soils planning scheme policy.</p> <ul style="list-style-type: none"> b. the disturbance impacts in an area that hosts potential acid sulfate soils are appropriately managed, if less than 500m³ of soil is disturbed and the watertable is not affected; or <p>Note—This can be demonstrated through the submission of an acid sulfate soil investigation report and a preliminary acid sulfate soil management plan, with reference to the Potential and actual acid sulfate soils planning scheme policy.</p> <ul style="list-style-type: none"> c. impacts are appropriately managed if 500m³ or more of soil is disturbed or the watertable in an area that hosts potential or actual acid sulfate soils is affected. <p>Note—This can be demonstrated through the submission of an acid sulfate soil investigation report and a full acid sulfate soil management plan, with reference to the Potential and actual acid sulfate soils planning scheme policy using levels of testing commensurate with the level of risk. If the investigation demonstrates that an acid sulfate soil management plan is not required, only an investigation report is required.</p>	<p>N/A. Subject site not located in BCC mapped Potential and Actual Acid Sulfate Soil Area</p>

9.4.3 Filling and excavation code

9.4.3.1 Application

1. This code applies to assessing:
 - a. accepted development subject to compliance with identified requirements, where acceptable outcomes of this code are identified requirements in a table of assessment for an overlay (section 5.10); or
 - b. operational work for filling or excavation which is assessable development if this code is an applicable code identified in the assessment benchmarks column of a table of assessment for operational work (section 5.8) or an overlay (section 5.10); or
 - c. a material change of use or reconfiguring a lot if:
 - i. assessable development where this code is identified as a prescribed secondary code in the assessment benchmarks column of a table of assessment for material change of use (section 5.5) or reconfiguring a lot (section 5.6); or
 - ii. impact assessable development, to the extent relevant.

Note—The following purpose, overall outcomes, performance outcomes and acceptable outcomes comprise the assessment benchmarks of this code.

Note—This code does not apply to building work as defined in the Act.

Note—A development application involving a rock anchor within an adjoining site is submitted with proof of consent from an adjoining land and building owner.

Editor's note—Guidance on managing the spread of invasive species in filling or excavation activities is provided in Minimising Pest Spread Advisory Guidelines prepared for the Petroleum industry.

Editor's note—Where filling or excavation is conducted on land previously occupied by a notifiable activity or on land listed on the Environmental Management Register or the Contaminated Land Register, the relevant Queensland Government department should be contacted for advice and guidelines.

2. When using this code, reference should be made to section 1.5 and section 5.3.3.

Note—Where this code includes performance outcomes or acceptable outcomes that relate to:

- air quality assessment, guidance is provided in the Air quality planning scheme policy;
- ecological assessment, koala habitat or development design, guidance is provided in the Biodiversity areas planning scheme policy;
- retaining wall construction, guidance is provided in the Infrastructure design planning scheme policy;
- landscape design, guidance is provided in the Landscape design planning scheme policy;
- noise and dust impacts during construction and/or demolition, guidance is provided in the Management plans planning scheme policy;
- noise impact assessment, guidance is provided in the Noise impact assessment planning scheme policy;
- the selection of planting species, guidance is provided in the Planting species planning scheme policy;
- significant vegetation, guidance is provided in the Vegetation planning scheme policy.

Editor's note—For a proposal to be accepted development, subject to compliance with identified requirements, it must meet all the identified acceptable outcomes of this code and any other applicable code. Where it does not meet all identified acceptable outcomes, the proposal becomes assessable development and a development application is required. Where a development application is triggered, only the specific acceptable outcome that the proposal fails to meet needs to be assessed against the corresponding acceptable outcome or performance outcome and relevant overall outcomes. Other identified acceptable outcomes that are met are not assessed as part of the development application.

9.4.3.2 Purpose

1. The purpose of the Filling and excavation code is to assess the suitability of development for filling or excavation.
2. The purpose of the code will be achieved through the following overall outcomes:
 - a. filling or excavation does not adversely affect the visual character and amenity of the site or the surrounding area and provides access for maintenance to any structure as a result of filling or excavation.
 - b. filling or excavation does not adversely impact significant vegetation, water quality or drainage of upstream, downstream and adjoining land.
 - c. filling or excavation effectively manages the impacts associated with the activity.
 - d. filling or excavation and any retaining structure is designed and constructed to be fit for purpose and to protect services and utilities.

9.4.3.3 Performance outcomes and acceptable outcomes

Table 9.4.3.3.A—Performance outcomes and acceptable outcomes

Performance outcomes	Acceptable outcomes	Comments
<p>PO1 Development for filling or excavation minimises visual impacts from retaining walls and earthworks.</p>	<p>AO1 Development ensures that the total height of any cut and fill, whether or not retained, does not exceed:</p> <ol style="list-style-type: none"> a. 2.5m in a zone in the Industry zones category; b. 1m in all other zones, or if adjoining a sensitive zone. 	<p>Complies, refer to ADG ESR for further details.</p>
<p>PO2 Development of a retaining wall proposed as a result of filling or excavation:</p> <ol style="list-style-type: none"> a. is designed and constructed to be fit for purpose; b. does not impact adversely on significant vegetation; c. is capable of easy maintenance. <p>Editor's note—A retaining wall also needs to comply with the Building Regulation and embankment gradients will need to comply with the Building Regulation. Note—Guidance on the protection of native vegetation is included in the Biodiversity areas planning scheme policy.</p>	<p>AO2.1 Development of a retaining structure, including footings, surface drainage and subsoil drainage:</p> <ol style="list-style-type: none"> a. is wholly contained within the site; b. if the total height to be retained is greater than 1m, then: <ol style="list-style-type: none"> i. the retaining wall at the property boundary is no greater than 1m above the ground level; ii. all further terracing from the 1m high boundary retaining wall is 1 vertical unit:1 horizontal unit; iii. the distance between each successive retaining wall (back of lower wall to face of 	<p>To be confirmed in detailed design.</p>

	<p>higher wall) is no less than 1m horizontally to incorporate planting areas.</p> <p>AO2.2 Development of a retaining wall over 1m in height protects significant vegetation on the site and on adjoining land and is designed and constructed in accordance with the structures standards in the Infrastructure design planning scheme policy and certified by a Registered Professional Engineer Queensland.</p> <p>AO2.3 Development provides a retaining wall finish that presents to adjoining land that is maintenance free if the setback is less than 750mm from the boundary.</p> <p>AO2.4 Development for filling only uses clean fill that does not include any construction rubble, debris, weed seed or viable parts of plant species listed as an undesirable plant species in the Planting species planning scheme policy.</p>	
<p>PO3 Development ensures that a rock anchor is designed and constructed to be fit for purpose.</p>	<p>AO3 Development ensures that a rock anchor:</p> <ol style="list-style-type: none"> a. is constructed in accordance with the standards in the Infrastructure design planning scheme policy; b. where it extends beyond the property boundary, is supported by a letter of consent from the adjoining land and building owners. 	<p>To be confirmed in detailed design.</p>

<p>PO4 Development protects all services and public utilities.</p>	<p>AO4 Development protects services and public utilities and ensures that any alteration or relocation of services or public utilities meets the standard design specifications of the responsible service authorities.</p>	<p>Complies, refer to ADG ESR for further details.</p>
<p>PO5 Development provides surface and sub-surface drainage to prevent water seepage, concentration of run-off or ponding of stormwater on adjacent land.</p>	<p>AO5 Development ensures all flows and subsoil drainage are directed to a lawful point of discharge of a surface water diversion drain, including to the top or toe of a retaining wall in accordance with the stormwater drainage section of the Infrastructure design planning scheme policy.</p>	<p>To be confirmed in detailed design.</p>
<p>PO6 Development ensures that the design and construction of all open drainage works is undertaken in accordance with natural channel design principles, being the development of a stormwater conveyance system for major flows, by using a vegetated open channel or drain that approximates the features and functions of a natural waterway to enhance or improve riparian values of those stormwater conveyance systems. Editor's note—Guidance on natural channel design principles can be found in the Council's publication Natural channel design guidelines.</p>	<p>AO6 Filling or excavation does not involve the construction of open drainage.</p>	<p>N/A</p>
<p>PO7 Development for filling or excavation:</p> <ol style="list-style-type: none"> a. does not degrade water quality or adversely affect environmental values in receiving waters; b. ensures site sediment and erosion control standards are best practice. 	<p>AO7.1 Development for filling or excavation provides water quality treatment that complies with the stormwater drainage section of the Infrastructure design planning scheme policy.</p> <p>AO7.2 Development provides erosion and sediment control standards that are in accordance with the stormwater drainage section of the Infrastructure design planning scheme policy.</p>	<p>Refer to ADG SMP for further details.</p>

<p>PO8 Development for filling or excavation is conducted such that adverse impacts at a sensitive use due to noise and dust are prevented or minimised. Note—A noise and dust impact management plan prepared in accordance with the Management plans planning scheme policy can assist in demonstrating achievement of this performance outcome.</p>	<p>AO8.1 Development ensures that no dust emissions extend beyond the boundary of the site, including dust from construction vehicles entering and leaving the site.</p> <p>AO8.2 Development for filling or excavation activity only occurs between the hours of 6:30am and 6:30pm Monday to Saturday, excluding public holidays.</p>	<p>To be confirmed in detailed design.</p>
<p>PO9 Development ensures that vibration generated by the filling or excavation operation does not exceed the vibration criteria in Table 9.4.3.3.B, Table 9.4.3.3.C, Table 9.4.3.3.D and Table 9.4.3.3.E. Note—A noise management report prepared in accordance with the Noise impact assessment planning scheme policy can assist in demonstrating achievement of this performance outcome.</p>	<p>AO9 Development involving filling or excavation does not cause a ground-borne vibration beyond the boundary of the site.</p>	<p>To be confirmed in detailed design.</p>
<p>PO10 Development ensures that heavy trucks hauling material to and from the site do not affect the amenity of established areas and limits environmental nuisance impact on adjacent land.</p>	<p>AO10 Development ensures that heavy trucks hauling material to and from the site:</p> <ol style="list-style-type: none"> a. occur for a maximum of 3 weeks; b. use a major road to access the site; c. only use a minor road for the shortest-most-direct route that has the least amount of environmental nuisance if there is no major road alternative. 	<p>To be confirmed in detailed design.</p>
<p>PO11 Development for filling or excavation protects the environment and community health and wellbeing from exposure to contaminated land and contaminated material.</p>	<p>AO11 Development does not involve:</p> <ol style="list-style-type: none"> a. excavation on land previously occupied by a notifiable activity or on land listed on the Environmental Management Register or the Contaminated Land Register; b. filling with material containing a contaminant. 	<p>To be confirmed in detailed design.</p>
<p>PO12</p>	<p>AO12.1</p>	<p>To be confirmed in detailed design.</p>

<p>Development provides for:</p> <ul style="list-style-type: none"> a. landscaping for water conservation purposes; b. water sensitive urban design measures which are employed within the landscape design to maximise stormwater use; c. drainage and stormwater measures to reduce any adverse impacts on the landscape; d. stormwater harvesting to be maximised and any adverse impacts of stormwater minimised; e. reticulated irrigation to all artificial growing environments. <p>Note—The Landscape design planning scheme policy provides guidance on information to be provided to demonstrate compliance with the performance outcome and acceptable outcomes.</p>	<p>Development provides drainage for artificial growing environments which is connected to the stormwater drain.</p> <p>AO12.2 Development ensures that the maximum site stormwater harvest capacity is utilised to meet the irrigation demand of the development before alternative irrigation sources are utilised and is in compliance with the standards in the Landscape design planning scheme policy.</p>	
	<p>AO12.3 Development provides areas of pavement, turf, landscaping and mulched garden beds which are drained.</p> <p>Note—This may be achieved through the provision and/or treatment of swales, spoon drains, field gullies, sub-surface drainage and stormwater connections.</p>	
	<p>AO12.4 Development provides a reticulated irrigation system to all landscaping areas in accordance with the Landscape design planning scheme policy.</p>	
<p>PO13 Development ensures cutting and filling for the development of canals or artificial waterways avoids adverse impacts on coastal resources and processes.</p>	<p>AO13 Development does not involve the creation of canals or artificial waterways.</p>	<p>N/A</p>

Table 9.4.3.3.B— Recommended intermittent vibration levels for cosmetic damage

Type of building	Peak particle velocity (mm/s)		
Reinforced or framed structures; industrial and heavy commercial buildings	50mm/s at 4Hz and above		
Unreinforced or light-framed structures; residential or light-	Below 4Hz	4Hz to 15Hz	15Hz and

commercial type buildings			above
	0.6mm/s	15mm/s at 4Hz increasing to 20mm/s at 15Hz	20mm/s at 15Hz increasing to 50mm/s at 40Hz and above

Table 9.4.3.3.C— Recommended blasting vibration levels for human comfort

Type of building	Type of blasting operations	Peak component particle velocity (mm/s)
Residences, educational establishments and places of worship	Operation blasting longer than 12 months or more than 20 blasts	5mm/s for 95% blasts per year 10mm/s maximum unless agreement is reached with the occupier that a higher limit may apply
Residences, educational establishments and places of worship	Operations lasting for less than 12 months or less than 20 blasts	10mm/s maximum unless agreement is reached with the occupier that a higher limit may apply
Industry or commercial premises	All blasting	25 mm/s maximum unless agreement is reached with the occupier that a higher limit may apply. For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturer's specifications or levels that do not adversely affect the equipment operation.

Table 9.4.3.3.D— Recommended levels for continuous and impulsive vibration acceleration (m/s²) 1–80Hz for human comfort

Location	Assessment period ⁽¹⁾	Preferred values ⁽³⁾		Maximum values ⁽³⁾	
		z-axis	x and y axes	z-axis	x and y axes
Continuous vibration					
Critical areas ⁽²⁾	Day or night	0.005 m/s ²	0.0036 m/s ²	0.01 m/s ²	0.0072 m/s ²

Residences	Day	0.01 m/s ²	0.0071 m/s ²	0.02 m/s ²	0.014 m/s ²
-	Night	0.007 m/s ²	0.005 m/s ²	0.014 m/s ²	0.01 m/s ²
Offices, educational establishments and places of worship	Day or night	0.02 m/s ²	0.014 m/s ²	0.04 m/s ²	0.028 m/s ²
Workshops	Day or night	0.04 m/s ²	0.029 m/s ²	0.08 m/s ²	0.058 m/s ²
Impulsive vibration					
Critical areas	Day or night	0.005 m/s ²	0.0036 m/s ²	0.01 m/s ²	0.0072 m/s ²
Residences	Day	0.3 m/s ²	0.21 m/s ²	0.6 m/s ²	0.42 m/s ²
-	Night	0.1 m/s ²	0.071 m/s ²	0.2 m/s ²	0.14 m/s ²
Offices, educational establishments and places of worship	Day or night	0.64 m/s ²	0.46 m/s ²	1.28 m/s ²	0.92 m/s ²
Workshops	Day or night	0.64 m/s ²	0.46 m/s ²	1.28 m/s ²	0.92 m/s ²

Note—

(1) Day is 7am to 10pm and night is 10pm to 7am.

(2) Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring.

(3) Situations exist where vibration above the preferred values can be acceptable, particularly for temporary or short-term events. Further guidance is given in the Noise impact assessment planning scheme policy.

Table 9.4.3.3.E— Recommended vibration dose values for intermittent vibration (m/s^{1.75}) for human comfort

Location	Daytime ⁽¹⁾		Night time ⁽¹⁾	
	Preferred value	Maximum value	Preferred value ⁽³⁾	Maximum value ⁽³⁾
Critical areas ⁽²⁾	0.1 m/s ^{1.75}	0.2 m/s ^{1.75}	0.1 m/s ^{1.75}	0.2 m/s ^{1.75}

Residences	0.2 m/s ^{1.75}	0.4 m/s ^{1.75}	0.13 m/s ^{1.75}	0.26 m/s ^{1.75}
Offices, educational establishments and places of worship	0.4 m/s ^{1.75}	0.8 m/s ^{1.75}	0.4 m/s ^{1.75}	0.8 m/s ^{1.75}
Workshops	0.8 m/s ^{1.75}	1.6 m/s ^{1.75}	0.8 m/s ^{1.75}	1.6 m/s ^{1.75}

Note—

- (1) Day is 7am to 10pm and night is 10pm to 7am.
- (2) Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring.
- (3) Situations exist where vibration above the preferred values can be acceptable, particularly for temporary or short-term events. Further guidance is given in the Noise impact assessment planning scheme policy.

9.4.4 Infrastructure design code

9.4.4.1 Application

1. This code applies to assessing a material change of use, reconfiguring a lot or building work if:
 - a. assessable development where this code is identified as a prescribed secondary code in the assessment benchmarks column of a table of assessment for a material change of use (section 5.5), reconfiguring a lot (section 5.6), operational work (section 5.8), or an overlay (section 5.10); or
 - b. impact assessable development, to the extent relevant.
2. When using this code, reference should be made to section 1.5 and section 5.3.3.

Note—The following purpose, overall outcomes, performance outcomes and acceptable outcomes comprise the assessment benchmarks of this code.

Note—Where this code includes performance outcomes or acceptable outcomes that relate to:

- ecological assessment, koala habitat or development design, guidance is provided in the Biodiversity areas planning scheme policy;
- infrastructure design and construction works, guidance is provided in the Infrastructure design planning scheme policy;
- noise and dust impacts during construction and/or demolition, guidance is provided in the Management plans planning scheme policy;
- noise impact assessment, guidance is provided in the Noise impact assessment planning scheme policy;
- refuse and recycling, guidance is provided in the Refuse planning scheme policy;
- parking or servicing management during construction, guidance is provided in the Transport, access, parking and servicing planning scheme policy.

9.4.4.2 Purpose

1. The purpose of the Infrastructure design code is to assess the suitability of infrastructure for development.
2. The purpose of the code will be achieved through the following overall outcomes:
 - a. Development is provided with a safe, connected and efficient transport network for all modes that has a minimal whole-of-life cost.
 - b. Development provides for public utilities and services to the standards acceptable to the Council and the reasonable expectations of service providers.
 - c. Development involving infrastructure which is intended to become a Council asset is safe, aesthetically pleasing, functional, fit for purpose, durable, minimises environmental impacts and has minimal whole-of-life cost.
 - d. Development provides for a public space to be safe and inviting, allowing high levels of pedestrian activity.
 - e. Development ensures that the community and environment are not unreasonably disrupted or impacted by construction or demolition for the development.
 - f. Development involving infrastructure is designed with consideration of, and to integrate with, other related and interfacing infrastructure components.
 - g. Development accessed by common private title is provided with appropriate fire hydrant infrastructure and has unimpeded access for refuse vehicles and for emergency service vehicles to protect people, property and the environment.
 - h. Development ensures major electricity infrastructure and bulk water supply infrastructure identified on the State Planning Policy Interactive Mapping System is not compromised.
 - i. Development for major electricity infrastructure and bulk water supply infrastructure identified on the State Planning Policy Interactive Mapping System avoids or otherwise minimises adverse impacts on surrounding land uses.

9.4.4.3 Performance outcomes and acceptable outcomes

Table 9.4.4.3.A—Performance outcomes and acceptable outcomes

Performance outcomes	Acceptable outcomes	Comments
<p>PO1 Development provides roads, pavement, edging and landscaping which:</p> <ul style="list-style-type: none"> a. are designed and constructed in accordance with the road hierarchy; b. provide for safe travel for pedestrians, cyclists and vehicles; c. provide access to properties for all modes; d. provide utilities; e. provide high levels of aesthetics and amenity, improved liveability and future growth; f. provide for the amelioration of noise and other pollution; g. provide a high-quality streetscape; h. provide a low-maintenance asset with a minimal whole-of-life cost. <p>Note—This can be demonstrated in an engineering report prepared and certified by a Registered Professional Engineer Queensland in accordance with the Infrastructure design planning scheme policy.</p>	<p>AO1 Development provides roads and associated pavement, edging and landscaping which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.</p>	<p>Complies. Refer to ADG ESR for further details.</p>
<p>PO2 Development provides road pavement surfaces which:</p> <ul style="list-style-type: none"> a. are well designed and constructed; b. durable enough to carry the wheel loads of the intended types and numbers of travelling and parked vehicles; c. ensures the safe passage of vehicles, pedestrians and cyclists, the discharge of stormwater run-off and the preservation of all-weather access; 	<p>AO2 Development provides road pavement surfaces which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.</p>	<p>To be confirmed in detailed design.</p>

d. allows for reasonable travel comfort.		
<p>PO3 Development provides a pavement edge which is designed and constructed to:</p> <ul style="list-style-type: none"> a. control vehicle movements by delineating the carriageway for all users; b. provide for people with disabilities by allowing safe passage of wheelchairs and other mobility aids. 	<p>AO3 Development provides pavement edges which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.</p>	To be confirmed in detailed design.
<p>PO4 Development provides verges which are designed and constructed to:</p> <ul style="list-style-type: none"> a. provide safe access for pedestrians clear of obstructions and access areas for vehicles onto properties; b. provide a sufficient area for public utility services; c. be maintainable by the Council. 	<p>AO4 Development provides verges which are designed and constructed in compliance with the road corridor design and streetscape locality advice standards in the Infrastructure design planning scheme policy.</p>	To be confirmed in detailed design.
<p>PO5 Development provides a lane or laneway identified on the Streetscape hierarchy overlay map or in a neighbourhood plan which:</p> <ul style="list-style-type: none"> a. allows equitable access for all modes; b. is safe and secure; c. has 24-hour access; d. is a low-speed shared zone environment; e. has a high-quality streetscape. 	<p>AO5 Development provides a lane or laneway identified on the Streetscape hierarchy overlay map or in a neighbourhood plan which is embellished in compliance with the streetscape locality advice standards in the Infrastructure design planning scheme policy.</p>	To be confirmed in detailed design.
<p>PO6 Development of an existing premises provides at the frontage to the site, if not already provided, the following infrastructure to an appropriate urban standard:</p> <ul style="list-style-type: none"> a. an effective, high-quality paved roadway; b. an effective, high-quality roadway kerb and channel; 	<p>AO6 Development of an existing premises provides at the frontage of the site, if not already existing, the following infrastructure to the standard that would have applied if the development involved new premises as stated in the road corridor design standards in the Infrastructure design planning scheme policy:</p>	To be confirmed in detailed design.

<ul style="list-style-type: none"> c. safe, high-quality vehicle crossings over channels and verges; d. safe, accessible, high-quality verges compatible and integrated with the surrounding environment; e. safe vehicle access to the site that enables ingress and egress in a forward gear; f. provision of and required alterations to public utilities; g. effective drainage; h. appropriate conduits to facilitate the provision of required street-lighting systems and traffic signals. 	<ul style="list-style-type: none"> a. concrete kerb and channel; b. forming and grading to verges; c. crossings over channels and verges; d. a constructed bikeway; e. a constructed verge or reconstruction of any damaged verge; f. construction of the carriageway; g. payment of costs for required alterations to public utility mains, services or installations; h. construction of and required alterations to public utility mains, services or installations; i. drainage works; j. installation of electrical conduits. 	
<p>PO7 Development provides both cycle and walking routes which:</p> <ul style="list-style-type: none"> a. are located, designed and constructed to their network classification (where applicable); b. provide safe and attractive travel routes for pedestrians and cyclists for commuter and recreational purposes; c. provide safe and comfortable access to properties for pedestrians and cyclists; d. incorporate water sensitive urban design into stormwater drainage; e. provide for utilities; f. provide for a high level of aesthetics and amenity, improved liveability and future growth; g. are a low-maintenance asset with a minimal whole-of-life cost; h. minimise the clearing of significant native vegetation. <p>Note—This can be demonstrated in an engineering report prepared and certified by a Registered Professional Engineer Queensland in accordance with the Infrastructure design planning scheme policy.</p>	<p>A07 Development provides cycle and walking routes which are located, designed and constructed in compliance with the road corridor design and off-road pathway design standards in the Infrastructure design planning scheme policy.</p>	<p>To be confirmed in detailed design.</p>

<p>PO8 Development provides refuse and recycling collection, separation 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>AO8.1 Development provides refuse and recycling collection and storage facilities in accordance with the Refuse planning scheme policy.</p> <p>AO8.2 Development ensures that refuse and recycling collection and storage location and design do not have any adverse impact including odour, noise or visual impacts on the amenity of land uses within or adjoining the development. Note—Refer to the Refuse planning scheme policy for further guidance.</p>	<p>To be confirmed in detailed design.</p>
<p>PO9 Development ensures that:</p> <ul style="list-style-type: none"> a. land used for an urban purpose is serviced adequately with regard to water supply and waste disposal; b. the water supply meets the stated standard of service for the intended use and fire-fighting purposes. 	<p>AO9.1 Development ensures that the reticulated water and sewerage distribution system for all services is in place before the first use is commenced.</p> <p>AO9.2 Development provides the lot with reticulated water supply and sewerage to a standard acceptable to the distributor–retailer.</p>	<p>Complies. Refer to ADG ESR for further details.</p>
<p>PO10 Development provides public utilities and street lighting which are the best current or alternative technology and facilitate accessibility, easy maintenance, minimal whole-of-life costs, and minimal adverse environmental impacts.</p>	<p>AO10.1 Development provides public utilities and street lighting which are located and aligned to:</p> <ul style="list-style-type: none"> a. avoid significant native vegetation and areas identified within the Biodiversity areas overlay map; b. minimise earthworks; c. avoid crossing waterways, waterway corridors and wetlands or if a crossing is unavoidable, tunnel-boring techniques are used to minimise disturbance, and a disturbed area is reinstated and restored on completion of the work. <p>Note—Guidance on the restoration of habitat is included in the Biodiversity areas planning scheme policy.</p> <p>AO10.2</p>	<p>To be confirmed in detailed design.</p>

	<p>Development provides compatible public utility services and street-lighting services which are co-located in common trenching for underground services.</p> <p>AO10.3 Development provides public utilities and street lighting which are designed and constructed in compliance with the public utilities standards in the Infrastructure design planning scheme policy.</p>	
<p>PO11 Development ensures that land used for urban purposes is serviced adequately with telecommunications and energy supply.</p>	<p>AO11 Development provides land with the following services to the standards of the approved supplier:</p> <ul style="list-style-type: none"> a. electricity; b. telecommunications services; c. gas service where practicable. 	Complies. Refer to ADG ESR for further details.
<p>PO12 Development ensures that major public projects promote the provision of affordable, high-bandwidth telecommunications services throughout the city.</p>	<p>AO12 Development provides conduits which are provided in all major Council and government works projects to enable the future provision of fibre optic cabling, if:</p> <ul style="list-style-type: none"> a. the additional expense is unlikely to be prohibitive; or b. further major work is unlikely or disruption would be a major concern, such as where there is a limited capacity road; or c. there is a clear gap in the telecommunications network; or d. there is a clear gap in the bandwidth available to the area. <p>Editor's note—An accurate, digital 'as built' three-dimensional location plan is to be supplied for all infrastructure provided in a road.</p>	To be confirmed in detailed design.
<p>PO13 Development provides public art identified in a neighbourhood plan or park concept plan which:</p>	<p>AO13 Development provides public art identified in a neighbourhood plan or park concept plan which is sited</p>	N/A

<p>a. is provided commensurate with the status and scale of the proposed development;</p> <p>b. is sited and designed:</p> <ul style="list-style-type: none"> i. as an integrated part of the project design; ii. as conceptually relevant to the context of the location; iii. to reflect and respond to the cultural values of the community; iv. to promote local character in a planned and informed manner. 	<p>and designed in compliance with the public art standards in the Infrastructure design planning scheme policy.</p>	
<p>PO14 Development provides signage of buildings and spaces which promote legibility to help users find their way.</p>	<p>AO14 Development provides public signage:</p> <ul style="list-style-type: none"> a. at public transport interchanges and stops, key destinations, public spaces, pedestrian linkages and at entries to centre developments; b. which details the location of the key destinations, public spaces and pedestrian linkages in the vicinity, the services available within the development and where they are located. <p>Editor's note—Signage is to be in accordance with Local Law Number 1 (Control of Advertisements Local Law).</p>	<p>N/A</p>
<p>PO15 Development that provides community facilities which form part of the development is functional, safe, low maintenance, and fit for purpose.</p>	<p>AO15 Development that provides community facilities which form part of the development is designed in compliance with the community facilities standards in the Infrastructure design planning scheme policy.</p>	<p>N/A</p>
<p>PO16 Development provides public toilets which:</p> <ul style="list-style-type: none"> a. are required as part of a community facility or park; b. are located, designed and constructed to be: <ul style="list-style-type: none"> i. safe; ii. durable; iii. resistant to vandalism; 	<p>AO16 Development that provides public toilets is designed and constructed in compliance with the public toilets standards in the Infrastructure design planning scheme policy.</p>	<p>N/A</p>

<p>iv. able to service expected demand; v. fit for purpose.</p>		
<p>PO17 Development provides bridges, tunnels, elevated structures and water access structures that are designed and constructed using proven methods, materials and technology to provide for:</p> <ul style="list-style-type: none"> a. safe movement of intended users; b. an attractive appearance appropriate to the general surroundings and any adjacent structures; c. functionality and easy maintenance; d. minimal whole-of-life cost; e. longevity; f. current and future services. <p>Note—All bridges and elevated and associated elements must be designed and certified by a Registered Professional Engineer Queensland in accordance with the Infrastructure design planning scheme policy.</p>	<p>AO17 Development that provides bridges, tunnels, elevated structures and water access structures is designed and constructed in compliance with the standards in the Infrastructure design planning scheme policy.</p>	<p>N/A</p>
<p>PO18 Development provides culverts which are designed and constructed using proven methods, materials and technology to provide for:</p> <ul style="list-style-type: none"> a. safety; b. an attractive appearance appropriate to the general surroundings; c. functionality and easy maintenance; d. minimal whole-of-life cost; e. longevity; f. future widening; g. current and future services; h. minimal adverse impacts, such as increase in water levels or flow velocities, and significant change of flood patterns. <p>Note—All culverts and associated elements are to be designed and certified by a Registered Professional Engineer Queensland in</p>	<p>AO18 Development that provides culverts is designed and constructed in compliance with the structures standards in the Infrastructure design planning scheme policy.</p>	<p>N/A</p>

accordance with the applicable design standards.		
<p>PO19 Development provides batters, retaining walls, and seawalls and river walls which are designed and constructed using proven methods, materials and technology to provide for:</p> <ul style="list-style-type: none"> a. safety; b. an attractive appearance appropriate to the surrounding area; c. easy maintenance; d. minimal whole-of-life cost; e. longevity; f. minimal water seepage. <p>Note—All retaining walls and associated elements are to be designed and certified by a Registered Professional Engineer Queensland in accordance with the applicable design standards.</p>	<p>AO19 Development that provides batters, retaining walls, seawalls and river walls is designed and constructed in compliance with the structures standards in the Infrastructure design planning scheme policy.</p>	To be confirmed in detailed design.
If for development with a gross floor area greater than 1,000m²		
<p>PO20 Development ensures that construction is managed so that use of public spaces and movement on pedestrian, cyclist and other traffic routes is not unreasonably disrupted and existing landscaping is adequately protected from short- and long-term impacts.</p> <p>Note—The preparation of a construction management plan can assist in demonstrating achievement of this performance outcome. Note—The Transport, access, parking and servicing planning scheme policy provides advice on the management of vehicle parking and deliveries during construction.</p>	<p>AO20 Development ensures that during construction:</p> <ul style="list-style-type: none"> a. the ongoing use of adjoining and surrounding parks and public spaces, such as malls and outdoor dining, is not compromised; b. adjoining and surrounding landscaping is protected from damage; c. safe, legible, efficient and sufficient pedestrian, cyclist and vehicular accessibility and connectivity to the wider network are maintained. 	To be confirmed in detailed design.
<p>PO21 Development ensures that construction and demolition activities are guided by measures that prevent or minimise adverse impacts including sleep disturbance at a sensitive use, due to noise and dust, including dust</p>	<p>AO21.1 Development ensures that demolition and construction:</p> <ul style="list-style-type: none"> a. only occur between 6:30am and 6:30pm Monday to Saturday, excluding public holidays; b. do not occur over periods greater than 6 months. 	To be confirmed in detailed design.

<p>from construction vehicles entering and leaving the site. Note—A noise and dust impact management plan prepared in accordance with the Management plans planning scheme policy can assist in demonstrating achievement of this performance outcome.</p>	<p>AO21.2 Development including construction and demolition does not release dust emissions beyond the boundary of the site.</p>	
<p>PO22 Development ensures that:</p> <ul style="list-style-type: none"> a. construction and demolition do not result in damage to surrounding property as a result of vibration; b. vibration levels achieve the vibration criteria in Table 9.4.4.3.B, Table 9.4.4.3.C, Table 9.4.4.3.D and Table 9.4.4.3.E. <p>Note—A vibration impact assessment report prepared in accordance with the Noise impact assessment planning scheme policy can assist in demonstrating achievement of this performance outcome.</p>	<p>AO22 Development ensures that the nature and scale of construction and demolition do not generate noticeable levels of vibration.</p>	<p>To be confirmed in detailed design.</p>
<p>If for a material change of use or reconfiguring a lot in an urban area (as defined in the Regulation) involving premises that is, or will be, accessed by common private title, where involving buildings, either attached or detached, that are not covered by other legislation mandating fire hydrants</p>		
<p>PO23 Development ensures that fire hydrants are:</p> <ul style="list-style-type: none"> a. installed and located to enable fire services to access water safely, effectively and efficiently; b. suitably identified so that fire services can locate them at all hours. 	<p>AO23.1 Above or below ground fire hydrants are provided on residential, commercial and industrial streets and private roads, at not more than 90m intervals, and at each street intersection. Note—On residential streets, above ground fire hydrants may be single outlet. On commercial and industrial streets above ground fire hydrants should have dual valved outlets.</p> <p>AO23.2 Fire hydrants are identified by:</p> <ul style="list-style-type: none"> a. raised reflectorised pavement markers (RRPM) on sealed roads; b. marker posts at the fence line where on an 	<p>To be confirmed in detailed design.</p>

	unsealed road, as road (HR) or path (HP) hydrants.	
PO24 Development ensures road widths and construction within the development, are adequate for refuse vehicles and for fire emergency vehicles to gain access to a safe working area close to buildings and near water supplies whether or not on-street parking spaces are occupied.	AO24 Internal private roads have a minimum roadway clearance between obstructions of 3.5m wide and 4.8m high in addition to any width required for on-street parking.	To be confirmed in detailed design.
Development for major electricity infrastructure and bulk water supply infrastructure identified on the State Planning Policy Interactive Mapping System where not in the Utility services zone precinct of the Special purpose zone		
PO25 Development avoids or otherwise minimises adverse impacts on surrounding land uses through the use of buffers and setbacks and the appropriate design and location of plant and operational areas within the site.	AO25 No acceptable outcome is prescribed.	To be confirmed in detailed design.
Development potentially impacting on major electricity infrastructure and bulk water supply infrastructure identified on the State Planning Policy Interactive Mapping System where the infrastructure is not in the Utility services zone precinct of the Special purpose zone		
PO26 Development is sited and designed to: <ul style="list-style-type: none"> a. avoid safety risks to people or property; b. minimise noise and visual impacts to people and property; c. ensure the physical integrity and operation, maintenance and expansion of the infrastructure is not compromised. 	AO26 No acceptable outcome is prescribed.	To be confirmed in detailed design.

Table 9.4.4.3.B—Recommended intermittent vibration levels for cosmetic damage

Type of building	Peak particle velocity (mm/s)
------------------	-------------------------------

Reinforced or framed structures; industrial and heavy commercial buildings	50mm/s at 4Hz and above		
Unreinforced or light-framed structures; residential or light commercial type buildings	Below 4Hz	4Hz to 15Hz	15Hz and above
	0.6mm/s	15mm/s at 4Hz increasing to 20mm/s at 15Hz	20mm/s at 15Hz increasing to 50mm/s at 40Hz and above

Table 9.4.4.3.C—Recommended blasting vibration levels for human comfort

Type of building	Type of blasting operations	Peak component particle velocity (mm/s)
Residences, educational establishments and places of worship	Operation blasting longer than 12 months or more than 20 blasts	5mm/s for 95% blasts per year 10mm/s maximum unless agreement is reached with the occupier that a higher limit may apply
Residences, educational establishments and places of worship	Operation blasting longer than 12 months or more than 20 blasts	10mm/s maximum unless agreement is reached with the occupier that a higher limit may apply
Industry or commercial premises	All blasting	25mm/s maximum unless agreement is reached with the occupier that a higher limit may apply. For sites containing equipment sensitive to vibration, the vibration should be kept below manufacturer's specifications or levels that do not adversely affect the equipment operation.

Table 9.4.4.3.D—Recommended levels for continuous and impulsive vibration acceleration (m/s²) 1–80Hz for human comfort

Location	Assessment period ⁽¹⁾	Preferred values ⁽³⁾		Maximum values ⁽³⁾	
		z-axis	x and y axes	z-axis	x and y axes
Continuous vibration					
Critical areas ⁽²⁾	Day or night	0.005 m/s ²	0.0036 m/s ²	0.01 m/s ²	0.0072 m/s ²
Residences	Day	0.01 m/s ²	0.0071 m/s ²	0.02 m/s ²	0.014 m/s ²
-	Night	0.007 m/s ²	0.005 m/s ²	0.014 m/s ²	0.01 m/s ²
Offices, educational establishments and places of worship	Day or night	0.02 m/s ²	0.014 m/s ²	0.04 m/s ²	0.028 m/s ²
Workshops	Day or night	0.04 m/s ²	0.029 m/s ²	0.08 m/s ²	0.058 m/s ²
Impulsive vibration					
Critical areas	Day or night	0.005 m/s ²	0.0036 m/s ²	0.01 m/s ²	0.0072 m/s ²
Residences	Day	0.3 m/s ²	0.21 m/s ²	0.6 m/s ²	0.42 m/s ²
-	Night	0.1 m/s ²	0.071 m/s ²	0.2 m/s ²	0.14 m/s ²
Offices, educational establishments and places of worship	Day or night	0.64 m/s ²	0.46 m/s ²	1.28 m/s ²	0.92 m/s ²
Workshops	Day or night	0.64 m/s ²	0.46 m/s ²	1.28 m/s ²	0.92 m/s ²

Note—

⁽¹⁾ Day is 7am to 10pm and night is 10pm to 7am.

⁽²⁾ Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring.

⁽³⁾ Situations exist where vibration above the preferred values can be acceptable, particularly for temporary or short-term events. Further guidance is given in the Noise impact assessment planning scheme policy.

Table 9.4.4.3.E—Recommended vibration dose values for intermittent vibration ($\text{m/s}^{1.75}$) for human comfort

Location	Daytime ⁽¹⁾		Night time ⁽¹⁾	
	Preferred value	Maximum value	Preferred value ⁽³⁾	Maximum value ⁽³⁾
Critical areas ⁽²⁾	0.1 $\text{m/s}^{1.75}$	0.2 $\text{m/s}^{1.75}$	0.1 $\text{m/s}^{1.75}$	0.2 $\text{m/s}^{1.75}$
Residences	0.2 $\text{m/s}^{1.75}$	0.4 $\text{m/s}^{1.75}$	0.13 $\text{m/s}^{1.75}$	0.26 $\text{m/s}^{1.75}$
Offices, educational establishments and places of worship	0.4 $\text{m/s}^{1.75}$	0.8 $\text{m/s}^{1.75}$	0.4 $\text{m/s}^{1.75}$	0.8 $\text{m/s}^{1.75}$
Workshops	0.8 $\text{m/s}^{1.75}$	1.6 $\text{m/s}^{1.75}$	0.8 $\text{m/s}^{1.75}$	1.6 $\text{m/s}^{1.75}$

Note—

⁽¹⁾ Day is 7am to 10pm and night is 10pm to 7am.

⁽²⁾ Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring.

⁽³⁾ Situations exist where vibration above the preferred values can be acceptable, particularly for temporary or short-term events. Further guidance is given in the Noise impact assessment planning scheme policy.

9.4.9 Stormwater code

9.4.9.1 Application

1. This code applies to assessing a material change of use, reconfiguring a lot or operational work if:
 - a. assessable development where this code is identified as a prescribed secondary code in the assessment benchmarks column of a table of assessment for a material change of use (section 5.5), reconfiguring a lot (section 5.6) operational work (section 5.8) or an overlay (section 5.10); or
 - b. impact assessable development, to the extent relevant.
2. When using this code, reference should be made to section 1.5 and section 5.3.3.

Note—The following purpose, overall outcomes, performance outcomes and acceptable outcomes comprise the assessment benchmarks of this code.

Note—Where this code includes performance outcomes or acceptable outcomes that relate to infrastructure design and construction works, guidance is provided in the Infrastructure design planning scheme policy.

9.4.9.2 Purpose

1. The purpose of the Stormwater code is to assess the suitability of the stormwater aspects of development.
2. The purpose of the code will be achieved through the following overall outcomes:
 - a. Development achieves acceptable levels of stormwater run-off quality and quantity by applying water sensitive urban design principles as part of an integrated stormwater management framework.
 - b. Development protects public health and safety and protects against damage or nuisance caused by stormwater flows.
 - c. Development has a stormwater management system which maintains, recreates or minimises impact to natural catchment hydrological processes.
 - d. Development ensures that the environmental values of the city's waterways are protected or enhanced.
 - e. Development minimises run-off, including peak flows.
 - f. Development maintains or enhances the efficiency and integrity of the stormwater infrastructure network.
 - g. Development minimises the whole of life cycle cost of stormwater infrastructure.

9.4.9.3 Performance outcomes and acceptable outcomes

Table 9.4.9.3.A—Performance outcomes and acceptable outcomes

Performance outcomes	Acceptable outcomes	Comments
<p>Section A—If for a material change of use, reconfiguring a lot, operational work or building work Note—Compliance with the performance outcomes and acceptable outcomes in this section should be demonstrated by the submission of a site-based stormwater management plan for high risk development only.</p>		

<p>PO1 Development provides a stormwater management system which achieves the integrated management of stormwater to:</p> <ul style="list-style-type: none"> a. minimise flooding; b. protect environmental values of receiving waters; c. maximise the use of water sensitive urban design; d. minimise safety risk to all persons; e. maximise the use of natural waterway corridors and natural channel design principles. <p>Editor's note—The stormwater management system to be developed to address PO1 is not intended to require management of stormwater quality.</p>	<p>AO1 Development provides a stormwater management system designed in compliance with the Infrastructure design planning scheme policy.</p>	<p>Complies. Refer to ADG SMP for further details.</p>
<p>PO2 Development ensures that the stormwater management system and site work does not adversely impact flooding or drainage characteristics of premises which are up slope, down slope or adjacent to the site.</p>	<p>AO2.1 Development does not result in an increase in flood level or flood hazard on up slope, down slope or adjacent premises.</p> <p>AO2.2 Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.</p>	<p>Complies. Refer to ADG SMP for further details.</p>
<p>PO3 Development ensures that the stormwater management system does not direct stormwater run-off through existing or proposed lots and property where it is likely to adversely affect the safety of, or cause nuisance to properties.</p>	<p>AO3.1 Development ensures that the location of the stormwater drainage system is contained within a road reserve, drainage reserve, public pathway, park or waterway corridor.</p> <p>AO3.2 Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.</p> <p>AO3.3</p>	<p>Complies. Refer to ADG SMP for further details.</p>

	Development obtains a lawful point of discharge in compliance with the standards in the Infrastructure design planning scheme policy.	
PO4 Development provides a stormwater management system which has sufficient capacity to safely convey run-off taking into account increased run-off from impervious surfaces and flooding in local catchments.	AO3.4 Where on private land, all underground stormwater infrastructure is secured by a drainage easement.	Complies. Refer to ADG SMP for further details. Preliminary calculations indicate the LPD stormwater pipe has sufficient capacity.
PO5 Development designs stormwater channels, creek modification works, bridges, culverts and major drains to protect and enhance the value of the waterway corridor or drainage path for fauna movement.	AO4.1 Development provides a stormwater conveyance system which is designed to safely convey flows in compliance with the standards in the Infrastructure design planning scheme policy.	N/A
PO6 Development ensures that location and design of stormwater detention and water quality treatment: <ul style="list-style-type: none"> a. minimises risk to people and property; b. provides for safe access and maintenance; c. minimises ecological impacts to creeks and waterways. 	AO4.2 Development provides sufficient area to convey run-off which will comply with the standards in the Infrastructure design planning scheme policy.	Complies. Refer to ADG SMP for further details.
	AO5 Development ensures the design of stormwater channels, creek modifications or other infrastructure, permits terrestrial and aquatic fauna movement.	
	AO6.1 Development locates stormwater detention and water quality treatment: <ul style="list-style-type: none"> a. outside of a waterway corridor; b. offline to any catchment not contained within the development. 	
	AO6.2 Development providing for stormwater detention and water quality treatment devices are designed in compliance with the standards in the Infrastructure design planning scheme policy.	

<p>PO7 Development is designed, including any car parking areas and channel works to:</p> <ol style="list-style-type: none"> a. reduce property damage; b. provide safe access to the site during the defined flood event. 	<p>A07.1 Development (including any ancillary structures and car parking areas) is located above minimum flood immunity levels in Table 9.4.9.3.B, Table 9.4.9.3.C, Table 9.4.9.3.D, Table 9.4.9.3.E and Table 9.4.9.3.F. Note—Compliance with this acceptable outcome can be demonstrated by the submission of a hydraulic and hydrology report identifying flood levels and development design levels (as part of a site-based stormwater management plan).</p> <p>A07.2 Development including the road network provides a stormwater management system that provides safe pedestrian and vehicle access in accordance with the standards in the Infrastructure design planning scheme policy.</p>	<p>To be confirmed in detailed design.</p>
<p>PO8 Development designs stormwater channels, creek modification works and the drainage network to protect and enhance the environmental values of the waterway corridor or drainage path.</p>	<p>A08.1 Development ensures natural waterway corridors and drainage paths are retained.</p> <p>A08.2 Development provides the required hydraulic conveyance of the drainage channel and floodway, while maximising its potential to maximise environmental benefits and minimise scour. Editor's note—Guidance on natural channel design principles can be found in the Council's publication Natural channel design guidelines.</p> <p>A08.3 Development provides stormwater outlets into waterways, creeks, wetlands and overland flow paths with energy dissipation to minimise scour in compliance with the standards in the Infrastructure design planning scheme policy.</p> <p>A08.4 Development ensures that the design of modifications to the existing design of new stormwater channels, creeks</p>	<p>To be confirmed in detailed design.</p>

	and major drains is in compliance with the standards in the Infrastructure design planning scheme policy.	
PO9 Development is designed to manage run-off and peak flows by minimising large areas of impervious material and maximising opportunities for capture and re-use.	AO9 No acceptable outcome is prescribed.	Complies. Refer to ADG SMP for further details.
PO10 Development ensures that there is sufficient site area to accommodate an effective stormwater management system. Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.	AO10 No acceptable outcome is prescribed.	Complies. Refer to ADG SMP for further details.
PO11 Development provides for the orderly development of stormwater infrastructure within a catchment, having regard to the: <ol style="list-style-type: none"> a. existing capacity of stormwater infrastructure within and external to the site, and any planned stormwater infrastructure upgrades; b. safe management of stormwater discharge from existing and future up-slope development; c. implication for adjacent and down-slope development. 	AO11.1 Development with up-slope external catchment areas provides a drainage connection sized for ultimate catchment conditions that is directed to a lawful point of discharge. AO11.2 Development ensures that existing stormwater infrastructure that is undersized is upgraded in compliance with the Infrastructure design planning scheme policy.	Complies. Refer to ADG SMP for further details.
PO12 Development provides stormwater infrastructure which: <ol style="list-style-type: none"> a. remains fit for purpose for the life of the development and maintains full functionality in the design flood event; b. can be safely accessed and maintained cost effectively; c. ensures no structural damage to existing stormwater infrastructure. 	AO12.1 The stormwater management system is designed in compliance with the Infrastructure design planning scheme policy. AO12.2 Development provides a clear area with a minimum of 2m radius from the centre of an existing manhole cover and with a minimum height clearance of 2.5m.	To be confirmed in detailed design.

<p>PO13 Development ensures that all reasonable and practicable measures are taken to manage the impacts of erosion, turbidity and sedimentation, both within and external to the development site from construction activities, including vegetation clearing, earthworks, civil construction, installation of services, rehabilitation, revegetation and landscaping to protect:</p> <ul style="list-style-type: none"> a. the environmental values and water quality objectives of waters; b. waterway hydrology; c. the maintenance and serviceability of stormwater infrastructure. <p>Note—The Infrastructure design planning scheme policy outlines the appropriate measures to be taken into account to achieve the performance outcome.</p>	<p>AO13 No acceptable outcome is prescribed.</p>	<p>To be confirmed in detailed design.</p>
<p>PO14 Development ensures that:</p> <ul style="list-style-type: none"> a. unnecessary disturbance to soil, waterways or drainage channels is avoided; b. all soil surfaces remain effectively stabilised against erosion in the short and long term. 	<p>AO14 No acceptable outcome is prescribed.</p>	<p>To be confirmed in detailed design.</p>
<p>PO15 Development does not increase:</p> <ul style="list-style-type: none"> a. the concentration of total suspended solids or other contaminants in stormwater flows during site construction; b. run-off which causes erosion either on site or off site. 	<p>AO15 No acceptable outcome is prescribed.</p>	<p>Refer to ADG SMP for further details.</p>
<p>Section B—Additional performance outcomes and acceptable outcomes which apply to high-risk development, being one or more of the following:</p> <ul style="list-style-type: none"> a. a material change of use for an urban purpose which involves greater than 2,500m² of land that: <ul style="list-style-type: none"> i. will result in an impervious area greater than 25% of the net developable area; or ii. will result in 6 or more dwellings. 		

<p>b. reconfiguring a lot for an urban purpose that involves greater than 2,500m² of land and will result in 6 or more lots; c. operational work for an urban purpose which involves disturbing greater than 2,500m² of land.</p>		
<p>PO16 Development ensures that the entry and transport of contaminants into stormwater is avoided or minimised to protect receiving water environmental values. Note—Prescribed water contaminants are defined in the <i>Environmental Protection Act 1994</i>. Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.</p>	<p>AO16 Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.</p>	To be confirmed in detailed design.
<p>PO17 Development ensures that: a. the discharge of wastewater to a waterway or external to the site is avoided; or b. if the discharge cannot practicably be avoided, the development minimises wastewater discharge through re-use, recycling, recovery and treatment. Note—The preparation of a wastewater management plan can assist in demonstrating achievement of this performance outcome. Editor's note—This code does not deal with sewerage which is the subject of the Wastewater code.</p>	<p>AO17 No acceptable outcome is prescribed.</p>	To be confirmed in detailed design.
<p>Section C—Additional performance outcomes and acceptable outcomes for assessable development for a material change of use or reconfiguring a lot</p>		
<p>PO18 Development protects stormwater infrastructure to ensure the following are not compromised: a. the long term infrastructure for the stormwater network in the Long term infrastructure plans; b. the existing and planned infrastructure for the stormwater network in the Local government infrastructure plan; c. the provision of long term, existing and planned</p>	<p>AO18 Development protects stormwater infrastructure in compliance with the following: a. for long term infrastructure for the stormwater network, the Long term infrastructure plans; b. for existing and planned infrastructure for the stormwater network, the Local government infrastructure plan; c. the standards for stormwater drainage in the</p>	To be confirmed in detailed design.

<p>infrastructure for the stormwater network which:</p> <ul style="list-style-type: none"> i. is required to service the development or an existing and future urban development in the planning scheme area; or ii. is in the interests of rational development or the efficient and orderly planning of the general area in which the site is situated. <p>Editor's note—A condition which requires a proposed development to keep permanent improvements and structures associated with the approved development clear of the area of long term infrastructure, may be imposed.</p>	<p>Infrastructure design planning scheme policy.</p>	
<p>PO19 Development provides for the payment of extra trunk infrastructure costs for the following:</p> <ul style="list-style-type: none"> a. for development completely or partly outside the priority infrastructure area in the Local government infrastructure plan; b. for development completely inside the priority infrastructure area in the Local government infrastructure plan involving: <ul style="list-style-type: none"> i. trunk infrastructure that is to be provided earlier than planned in the Local government infrastructure plan; ii. long term infrastructure for the stormwater network which is made necessary by development that is not assumed future urban development; iii. other infrastructure for the stormwater network associated with development that is not assumed future urban development which is made necessary by the development. <p>Editor's note—The payment of extra trunk infrastructure costs for development completely inside the priority infrastructure area in the Local government infrastructure plan is to be worked out in accordance with the Charges Resolution. Editor's note—See section 130 Imposing Development conditions (Conditions for extra trunk infrastructure costs) of the <i>Planning Act</i></p>	<p>AO19 No acceptable outcome is prescribed.</p>	<p>To be confirmed in detailed design.</p>

2016.		
-------	--	--

Table 9.4.9.3.B—Categories of flood planning levels

Flooding type ⁽¹⁾	Minimum design floor or pavement levels (m AHD) ⁽²⁾ (refer to Table 9.4.9.3.C for assignment of these categories)				
	Category A	Category B	Category C	Category D	Category E
Waterway ^(A) or open channel	1% AEP flood level + 500mm	1% AEP flood level + 300mm	1% AEP flood level	1% AEP flood level	5% AEP flood level
Overland flow flooding ^(B)	2% AEP flood level +500mm	2% AEP flood level +300mm	2% AEP flood level	2% AEP flood level	5% AEP flood level

Notes—

(1) Where the site is subject to more than one type of flooding that is overland flow flooding, creek or waterway flooding or river flooding, the minimum flood immunity level is the highest level determined from these sources.

(2) Where flood levels are not available from Council's Floodwise Property Report such as overland flow flooding, the applicant will need to engage a suitably qualified Registered Professional Engineer Queensland with expertise in undertaking flood studies to estimate the relevant flood level.

Note ^(A) A waterway, including any indicated on the planning scheme maps, is defined as any element of a river, creek, stream, gully or drainage channel, including the bed and banks, typically with a catchment area greater than 30ha.

Note ^(B) Overland flow flooding usually occurs when the capacity of the underground piped drainage system is exceeded and/or when the overland flow path is blocked. Localised overland flow paths generally traverse along roadways, and in the older established areas, through private properties within existing low points and gullies. A localised overland flow path is not characterised by well-defined bed and banks and the contributing catchment is generally less than 30ha.

Note—A flood event with an AEP of 1% is the equivalent of a 100 year ARI flood event.

Note—A flood event with an AEP of 2% is the equivalent of a 50 year ARI flood event.

Note—A flood event with an AEP of 5% is the equivalent of a 20 year ARI flood event.

Note—The flood immunity level in some older inner-city areas is often controlled by local ponding.

Table 9.4.9.3.C—Flood planning level categories for development types

BCA building classification ⁽¹⁾	Development types and design levels, assigned design floor or pavement levels	Category Refer to Table 8.2.11.3.L
Class 1–4	Habitable room	Category A

	Non-habitable room including patio and courtyard	Category B
	Non-habitable part of a Class 2 or Class 3 building excluding the essential services ⁽²⁾ control room	Category B
	Parking located in the building undercroft of a multiple dwelling	Category C
	Carport ⁽⁴⁾ , unroofed car park; vehicular manoeuvring area	Category D
	Essential electrical services ⁽²⁾ of a Class 2 or Class 3 building only	Category A ⁽⁶⁾
	Basement parking entry ⁽³⁾	Category C + 300mm
Class 5, Class 6, or Class 8	Building floor level	Category C
	Garage or car park located in the building undercroft ⁽³⁾	Category C
	Carport ⁽⁴⁾ or unroofed car park	Category D
	Vehicular access and manoeuvring areas	Category D
	Basement parking entry ⁽³⁾	Category C
	Essential electrical services ⁽²⁾	Class 8 – Category C ⁽⁶⁾ Class 5 & 6 – Category A ⁽⁶⁾
Class 7a	Refer to the relevant building class specified in this table	
Class 7b	Building floor level	Category C
	Vehicular access and manoeuvring area	Category D
	Essential electrical services ⁽²⁾	Category C
Class 9	Building floor level	Category A

	Building floor level for habitable rooms in Class 9a or 9c where for a residential care facility	0.2% AEP flood
	Garage or car park located in the building undercroft ⁽³⁾	Category C
	Carport ⁽⁴⁾ or unroofed car park	Category D
	Vehicular access and manoeuvring areas	Category D
	Essential electrical services ⁽²⁾	Category A
Class 10a	Car parking facility	Refer to the relevant building class specified in this table
	Shed ⁽⁵⁾ or the like	Category D
Class 10b	Swimming pool	Category E
	Associated mechanical and electrical pool equipment	Category C
	Other structures	Flood immunity standard does not apply

Notes—

⁽¹⁾ Refer to the Building Code of Australia for definitions of building classifications.

⁽²⁾ Essential services include any room used for fire control panel, telephone PABX, sensitive substation equipment including transformers, low voltage switch gear, high-voltage switch gear, battery chargers, protection control and communication equipment, low voltage cables, high-voltage cables and lift controls.

⁽³⁾ Basement car parks must be suitably waterproofed and all air vents, air-conditioning ducts, pedestrian access and entry and exit ramps at the car park entrance have flood immunity in accordance with this table.

⁽⁴⁾ A shelter for a motor vehicle, which has a roof and one or more open sides, and which can be built against the side of a building.

⁽⁵⁾ A slight or rough structure built for shelter and storage; or a large strongly built structure, often open at the sides or end.

⁽⁶⁾ Where essential services are proposed in a basement below the specified flood planning level, the flood immunity of all air vents, air-conditioning ducts, pedestrian access, lift shafts and entry/exit ramps at the basement entrance and any other openings into that basement must conform to Category A for Residential development, and the relevant basement entry level of all other uses. This will require a waterproof basement design to prevent floodwaters entering the basement to ensure flood immunity.

Note—A flood event with an AEP of 2% is the equivalent of a 50 year ARI flood event.

Note—A flood event with an AEP of 0.2% is the equivalent of a 500 year ARI flood event.

Note—Where a building has a combination of uses that includes a component of class 2, 3 or 9, the essential services for that building shall comply with the requirements of the building class with the greatest flood immunity requirement.

Note—Use classes for residential development also include basement storage.

Table 9.4.9.3.D—Flood planning levels for a new road

Flooding type ⁽¹⁾	Minimum design levels at the crown of the road (m AHD) ⁽²⁾	
	Residential development	Industrial or commercial development
Waterway ^(A) or open channel	1% AEP flood level	2% AEP flood level
Overland flow flooding ^(B)	2% AEP flood level	2% AEP flood level

Notes—

⁽¹⁾ Where the site is subject to more than 1 type of flooding, the minimum flood planning level is the highest level determined from these sources. It should be noted that the flooding planning level in some older areas is often controlled by local ponding.

⁽²⁾ Where flood levels are not available from Council's Floodwise Property Report, such as overland flow flooding, the applicant will need to engage a suitably qualified Registered Professional Engineer Queensland with expertise in undertaking flood studies to estimate the relevant flood level.

Note ^(A) A waterway including any indicated on the planning scheme maps is defined as any element of a river, creek, stream, gully or drainage channel, including the bed and banks typically with a catchment area greater than 30ha.

Note ^(B) Overland flow flooding usually occurs when the capacity of the underground piped drainage system is exceeded and/or when the overland flow path is blocked. Localised overland flow paths generally traverse along roadways, and in the older established areas, through private properties within existing low points and gullies. A localised overland flow path is not characterised by well-defined bed and banks and the contributing catchment is generally less than 30ha.

Note—A flood event with an AEP of 1% is the equivalent of a 100 year ARI flood event.

Note—A flood event with an AEP of 2% is the equivalent of a 50 year ARI flood event.

Note—A flood event with an AEP of 5% is the equivalent of a 20 year ARI flood event.

Table 9.4.9.3.E—Flood planning levels for essential community infrastructure

Type of essential community infrastructure	Minimum design levels
Emergency services	0.2% AEP flood
Emergency services, where for an emergency shelter	0.5% AEP flood
Emergency services, where for police facilities	0.5% AEP flood
Hospital and health care service, where associated with a hospital	0.2% AEP flood

Community facility where involving storage of valuable records or items of historic or cultural significance (e.g. galleries and libraries)	0.5% AEP flood
State-controlled roads Major or minor electricity infrastructure not otherwise listed in this table Utility installation where for rail transport services Air service Telecommunications facility	No specific recommended level but development proponents should ensure that the infrastructure is optimally located and designed to achieve suitable levels of service, having regard to the processes and policies of the administering government agency.
Power stations (as defined in the <i>Electricity Act 1994</i>) or renewable energy facility.	0.2% AEP flood
Major electricity infrastructure where a major switch yard	0.2% AEP flood
Substations	0.5% AEP flood
Utility installation where for a sewage treatment plant	DFE
Utility installation where for a water treatment plant	0.5% AEP flood

Note—A flood event with an AEP of 0.2% is the equivalent of a 500 year ARI flood event.

Note—A flood event with an AEP of 0.5% is the equivalent of a 200 year ARI flood event.

Table 9.4.9.3.F—Flood planning levels for reconfiguring a lot

Flooding type ⁽¹⁾	Minimum lot levels (m AHD) ⁽²⁾	
	Residential	Other than residential
Waterway ^(A) or open channel	1% AEP flood level + 300mm	1% AEP flood level
Overland flow flooding ^(B)	1% AEP flood level + 300mm	2% AEP flood level

Notes—

⁽¹⁾ Where the site is subject to more than one type of flooding, the minimum flood immunity level is the highest level determined from these sources.

⁽²⁾ Where flood levels are not available from Council's Floodwise Property Report such as overland flow flooding, the applicant will need to engage a suitably qualified Registered Professional Engineer Queensland with expertise in undertaking flood studies to estimate the relevant flood level.

Note ^(A) A waterway including any indicated on the planning scheme maps is defined as any element of a river, creek, stream, gully or drainage channel, including the bed and banks typically with a catchment area greater than 30ha.

Note ^(B) Overland flow flooding usually occurs when the capacity of the underground piped drainage system is exceeded or when the overland flow path is blocked. Localised overland flow paths generally traverse along roadways, and in the older established areas, through private properties within existing low points and gullies. A localised overland flow path is not characterised by well-defined bed and banks and the contributing catchment is generally less than 30ha.

Note—A flood event with an AEP of 1% is the equivalent of a 100 year ARI flood event.

Note—A flood event with an AEP of 2% is the equivalent of a 50 year ARI flood event.

Appendix D BCC Floodwise Property Report


THE PURPOSE OF THIS REPORT IS FOR BUILDING AND DEVELOPMENT

Brisbane City Council's FloodWise Property Report **provides technical flood planning information** including estimated flood levels, habitable floor level requirements and more. **This report uses the adopted flood planning information in CityPlan**, that guides how land in Brisbane is used and developed for the future. Find out more about [planning and building](#). To understand how to be **resilient and prepare for floods**, visit Council's [Be Prepared](#) webpage. Find more information about [how to read a FloodWise Property Report](#).

This property has no flood levels

Brisbane City Council has not assigned flood level information for this property however it may be affected by one or more flood or property development flags. Please refer to the Flood Planning and Development Information below for details. The property may have 0.2% AEP flood level which will appear on the Flood Planning Information table if applicable. For professional advice or detailed assessment of a property contact a Registered Professional Engineer of Queensland.

Find [Be Prepared](#) information on your flood risk and how to prepare your home or business for potential flooding.

 **Combined** 1% AEP for river, creek and storm tide flood extent (if applicable). Aerial map shows river and creek flooding extent from the adopted CityPlan. Read more about [CityPlan](#).



Department of Resources and Brisbane City Council | Brisbane City Council | © Brisbane City Council... Powered by Esri

Are you resilient and ready for flood?

- Sign up to the Brisbane Severe Weather Alert at brisbane.qld.gov.au/beprepared
- Visit bom.gov.au for the latest weather updates.
- Have an evacuation plan, emergency kit and important phone numbers ready.
- Observe where water flows from and to during heavy rain.
- Consider how flood-resilient building techniques will have you home faster and with less damage.

Life threatening emergencies
000 Police/fire/ambulance
(mobiles **000** and **112**)

State Emergency Service (SES) **132 500**
Energex **13 19 62**
Brisbane City Council **3403 8888**

Technical Summary

This section of the FloodWise Property Report contains more detailed flood information for this property so **surveyors, builders, certifiers, architects, and engineers can plan and build** in accordance with Council's planning scheme.

Find more information about [planning and building](#) in Brisbane or talk to a Development Services Planning Information Officer via Council's Contact Centre on (07) 3403 8888.

Flood Planning and Development Information

This section of the FloodWise Property Report contains information about Council's planning scheme overlays. Overlays identify areas within the planning scheme that reflect distinct themes that may include constrained land and/or areas sensitive to the effects of development.

Flood overlay code

The Flood overlay code of Council's planning scheme uses the following information to provide guidelines when developing properties. The table below summarises the flood planning areas (FPAs) that apply to this property. Development guidelines for the FPAs are explained in [Council's planning scheme](#).

Flood planning areas (FPA)		
River	Creek / waterway	Overland flow
		Not Applicable

To find more information about Council's flood planning areas (FPAs) for Brisbane River and Creek/waterway flooding to guide future building and development in flood prone areas, please review [Council's Flood Planning Provisions](#).

Coastal hazard overlay code

The Coastal hazard overlay code of Council's planning scheme uses the following information to provide guidelines when conducting new developments. The table below summarises the coastal hazard categories that apply to this property. Development guidelines for the following Coastal hazard overlay sub-categories are explained in Council's [planning scheme](#).

Coastal hazard overlay sub-categories

There are currently no Coastal hazard overlay sub-categories that apply to this property.

Note: Where land is identified within one for more flood planning areas on the Flood overlay or is identified within one of the Storm tide inundation area sub-categories on the Coastal hazard overlay, the assessment criteria that provides the highest level of protection from any source of flooding applies.

Property development flags

Large allotment - This property is either a Large Allotment of over 1000 square metres or is located within a Large Allotment. Flood levels may vary significantly across allotments of this size. Further investigations may be warranted in determining the variation in flood levels and the minimum habitable floor level across the site.

For more information or advice, please consult a Registered Professional Engineer of Queensland (RPEQ).

Useful Flood Information Definitions

Australian Height Datum (AHD) - The reference level for defining ground levels in Australia. The level of 0.0m AHD is approximately mean sea level.

Annual Exceedance Probability (AEP) - The probability of a flood event of a given size occurring in any one year, usually expressed as a percentage annual chance.

- **0.2% AEP** - A flood event of this size is considered rare but may still occur. A flood of size or larger has a 1 in 500 chance or a 0.2% probability of occurring in any year.
- **1% AEP** - A flood of this size or larger has a 1 in 100 chance or a 1% probability of occurring in any year.
- **2% AEP** - A flood of this size or larger has a 1 in 50 chance or a 2% probability of occurring in any year.
- **5% AEP** - A flood of this size or larger has a 1 in 20 chance or a 5% probability of occurring in any year.
- **20% AEP** - A flood of this size or larger has a 1 in 5 chance or a 20% probability of occurring in any year.

Data quality

- **Data Quality Code A** - Level data based on recent surveyor report or approved as-constructed drawings.
- **Data Quality Code B** - Level data based on ground-based mobile survey or similar.
- **Data Quality Code C** - Level data derived from Airborne Laser Scanning or LiDAR information.

Defined Flood Level (DFL) - The DFL is used for commercial and industrial development. The Defined flood level (DFL) for Brisbane River flooding is a level of 3.7m AHD at the Brisbane City Gauge based on a flow of 6,800 m³/s. DFL is only applicable for non-residential uses affected by Brisbane River flooding.

Flood planning area (FPA) - Council has developed five Flood planning areas (FPAs) as part of City Plan Flood overlay mapping for Brisbane River, Creek/waterway flooding and Overland flow to guide future building and development in flood prone areas. Storm tide flooding is mapped separately. The FPAs are designed to recognise the flood hazard for different flooding types. Flood hazard is a combination of frequency of flooding, the flood depth, and the speed at which the water is travelling. [Find more information here.](#)

Maximum and minimum ground level - Highest and lowest ground levels on the property based on available ground level information. A Registered Surveyor can confirm exact ground levels.

Minimum habitable floor level (dwelling house) - The minimum level in metres AHD at which habitable areas of development (generally including bedrooms, living rooms, kitchen, study, family, and rumpus rooms) must be constructed as required by the Brisbane City Plan.

Indicative existing floor level - The approximate level in metres AHD of the lowest habitable floor in the existing building. This data is sourced from a range of sources with varying accuracy levels.

Property - A property will contain 1 or more lots. The multiple lot warning is shown if you have selected a property that contains multiple lots.

Residential flood level (RFL) - This flood level for the Brisbane River equates to the 1% annual exceedance probability (AEP) flood level.

To learn more, visit [Brisbane City Council's Flood Information Hub](#)

Brisbane City Council's Online Flood Tools

Council provides several online flood tools:

- to guide planning and development
- to help residents and businesses understand their flood risk and prepare for flooding.

Council's online flood tools for planning and development purposes include:

- **FloodWise Property Report**
- **Flood Overlay Code**

For more information on Council's planning scheme and online flood tools for planning and development:

- phone (07) 3403 8888 and ask to talk to a Development Services Planning Information Officer

- visit brisbane.qld.gov.au/planning-building

Council's Planning Scheme - The City Plan (planning scheme) has been prepared in accordance with the Sustainable Planning Act as a framework for managing development in a way that advances the purpose of the Act. In seeking to achieve this purpose, the planning scheme sets out the Council's intention for future development in the planning scheme area, over the next 20 years.

Disclaimer

1. Defined flood levels and residential flood levels, minimum habitable floor levels and indicative existing floor levels are determined from the best available information to Council at the date of issue. These levels, for a particular property, may change if more detailed information becomes available or changes are made in the method of calculating levels.
2. Council makes no warranty or representation regarding the accuracy or completeness of a FloodWise Property Report. Council disclaims any responsibility or liability in relation to the use or reliance by any person on a FloodWise Property Report.



Planning to build or renovate?

For information, guidelines, tools and resources to help you track, plan or apply for your development visit brisbane.qld.gov.au/planning-building

You can also find the Brisbane City Plan 2014 and Neighbourhood Plans as well as other information and training videos to help, with your building and development plans.

Appendix E BCC Erosion Hazard Assessment



Erosion Hazard Assessment - June 2014

Brisbane City Council (BCC), *Erosion Hazard Assessment* form must be read in conjunction with the *Erosion Hazard Assessment- Supporting Technical Notes* (June 2014 or later version) for explanatory terms and Certification information.

What is an Erosion Hazard Assessment?

Soil erosion and sediment from urban development, particularly during construction activities, is a significant source of sediment pollution in Brisbane's waterways. The Erosion Hazard Assessment determines whether the risk of soil erosion and sediment pollution to the environment is 'low', 'medium' or 'high'.

When is the EHA required?

An *Erosion Hazard Assessment* form must be completed and lodged with BCC for any Development Application (ie MCU or ROL) that will result in soil disturbance OR Operational Works or Compliance Assessment Application for 'Filling' or Excavation.

Failure to submit this form during lodgement of an application may result in assessment delays or refusal of the application.

Privacy Statement

The personal information collected on this form will be used by Brisbane City Council for the purposes of fulfilling your request and undertaking associated Council functions and services. Your personal information will not be disclosed to any third party without your consent, unless this is required or permitted by law.

Assessment Details

1 Please turn over and complete the erosion hazard assessment.

2 Based on the erosion hazard assessment overleaf, is the site:

A 'low' risk site

Best practice erosion and sediment control (ESC) must be implemented but no erosion and sediment control plans need to be submitted with the development application. Factsheets outlining best practice ESC can be found at <http://www.waterbydesign.com.au/factsheets>

A 'medium' risk site

If the development is approved, the applicant will need to engage a Registered Professional Engineer (RPEQ) or Certified Professional in Erosion and Sediment Control (CPESC) to prepare an ESC Program and Plan and supporting documentation — in accordance with the requirements of the Infrastructure Design Planning Scheme Policy.

A 'high' risk site

If the development is approved, the applicant will need to engage a RPEQ and CPESC to prepare an ESC Program and Plan and supporting documentation — in accordance with the requirements of the Infrastructure Design Planning Scheme Policy. The plans and program will need to be certified by a CPESC.

3 Site Information and Certification

Application number (if known)

Site address

409 Priestdale Road

Rochedale

QLD

Postcode 4123

I certify that:

- I have made all relevant enquiries and am satisfied no matters of significance have been withheld from the assessment manager.
- I am a person with suitable qualifications and/or experience in erosion and sediment control.
- The Erosion Hazard Assessment was completed in accordance with the Erosion Hazard Assessment Supporting Technical Notes and the BCC Infrastructure Design Planning Scheme Policy.
- The Erosion Hazard Assessment accurately reflects the site's overall risk of soil erosion and sediment pollution to the environment.
- I acknowledge and accept that the BCC, as assessment manager, relies, in good faith, on this certification as part of its development assessment process and the provision of false or misleading information to the BCC constitutes an offence for which BCC may take punitive steps/ action against me/ enforcement action against me.

Certified by *Print name*

Certifier's signature

Date

Table 1: Low Risk Test

		Yes	No
1.1	is the area of land disturbance > 1000 m ²	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.2	does any land disturbance occur in a BCC mapped waterway corridor	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.3	is there any slope on site (longer than three metres in length) before, during or after construction that is steeper than 5%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.4	does any land disturbance occur below 5 m AHD	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.5	does development involve endorsement of a staging plan	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.6	is there an upstream catchment passing through the site > 1 hectare	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Have you answered 'yes' to any of the questions in Table 1?

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>

If 'No' then site is low risk with respect to erosion and sediment control

If 'Yes' then proceed to Table 2

Table 2: Medium Risk Test

		Yes	No
2.1	is the area of land disturbance > 1 hectare	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If 'No' then site is medium risk with respect to erosion and sediment control

If 'Yes' then proceed to Table 3

Table 3: High Risk Test

3.1	is there an upstream catchment passing through the site > 1 hectare	<input type="checkbox"/>	<input type="checkbox"/>
3.2	does any land disturbance occurs in a BCC mapped waterway corridor	<input type="checkbox"/>	<input type="checkbox"/>
3.3	is there any slope on site (longer than three metres in length) before, during or after construction that is steeper than 15%	<input type="checkbox"/>	<input type="checkbox"/>

Have you answered 'yes' to any of the questions in Table 3?

Yes	No
<input type="checkbox"/>	<input type="checkbox"/>

If 'No' then site is medium risk with respect to erosion and sediment control

If 'Yes' then site is high risk with respect to erosion and sediment control

Appendix F Rational Method Calculations

PROJECT DATA

Project number	26551	Designer	CC
Date	19.06.25	Verifier	CDM
Client	PACKHILL PTY LTD		
Project area	409 PRIESTDALE ROAD		
Description	ROL		

CALCULATIONS

Rational Method Based on ARR 2016 & ARR 1987 IFD Data

Catchment			Fraction Impervious			Coefficient of Discharge, C _y			Coefficient of Discharge, C _y (ARR 1987)							Rainfall Intensity, I _y (mm/h) (ARR 1987 IFD)							Peak Discharge Rate, Q _y (m ³ /s) (ARR 1987 IFD)						
Catchment Label	Catchment Area A (ha)	Time of Concentration t _c (min)	Fraction Impervious f _i (decimal)	Rainfall Intensity, I ₁₀ (mm/h) ARR 2016	Rainfall Intensity, I ₁₀ (mm/h) ARR 1987	Coefficient of Discharge, C ₁₀ ARR 2016	Coefficient of Discharge, C ₁₀ ARR 1987	Urban or Rural Catchment	ARR 1987 C1 (FY = 0.80)	ARR 1987 C2 (FY = 0.85)	ARR 1987 C5 (FY = 0.95)	ARR 1987 C10 (FY = 1.00)	ARR 1987 C20 (FY = 1.05)	ARR 1987 C50 (FY = 1.15)	ARR 1987 C100 (FY = 1.20)	I _{1y} (mm/h) 1 Year ARI	I _{2y} (mm/h) 2 Year ARI	I _{5y} (mm/h) 5 Year ARI	I _{10y} (mm/h) 10 Year ARI	I _{20y} (mm/h) 20 Year ARI	I _{50y} (mm/h) 50 Year ARI	I _{100y} (mm/h) 100 Year ARI	Q ₁ (m ³ /s) 1 Year ARI	Q ₂ (m ³ /s) 2 Year ARI	Q ₅ (m ³ /s) 5 Year ARI	Q ₁₀ (m ³ /s) 10 Year ARI	Q ₂₀ (m ³ /s) 20 Year ARI	Q ₅₀ (m ³ /s) 50 Year ARI	Q ₁₀₀ (m ³ /s) 100 Year ARI
TOTAL	21.9000	49		64.4	70.0	0.82	0.82	Urban	0.656	0.697	0.779	0.820	0.861	0.943	0.984	40.8	52.9	69.1	79.0	92.1	109.7	123.6	1.627	2.243	3.274	3.939	4.823	6.295	7.397
SCHOOL	15.7000	101		64.4	70.0	0.88	0.88	Urban	0.704	0.748	0.836	0.880	0.924	1.000	1.000	25.5	33.2	43.7	50.1	58.7	70.2	79.3	0.782	1.082	1.592	1.924	2.365	3.063	3.458
RESIDENTIAL	3.7000	15		64.4	70.0	0.82	0.82	Urban	0.656	0.697	0.779	0.820	0.861	0.943	0.984	75.5	97.4	125.2	141.9	164.2	194.0	217.3	0.509	0.698	1.002	1.196	1.453	1.881	2.198
ROAD	1.5000	9		64.4	70.0	0.88	0.88	Urban	0.704	0.748	0.836	0.880	0.924	1.000	1.000	93.8	120.8	154.0	173.8	200.4	235.9	263.4	0.275	0.376	0.536	0.637	0.771	0.983	1.098
NEIGHBOURING	1.0000	5		64.4	70.0	0.86	0.86	Urban	0.688	0.731	0.817	0.860	0.903	0.989	1.000	117.7	151.2	191.8	215.9	248.4	291.7	325.2	0.225	0.307	0.435	0.516	0.623	0.801	0.903
EXISTING	1.0000	20	0.10	64.4	70.0	0.72	0.72	Urban	0.576	0.612	0.684	0.720	0.756	0.828	0.864	66.1	85.4	110.2	125.2	145.2	171.9	192.9	0.106	0.145	0.209	0.250	0.305	0.395	0.463
PROPOSED	1.0000	8	0.80	64.4	70.0	0.86	0.86	Urban	0.688	0.731	0.817	0.860	0.903	0.989	1.000	98.4	126.5	161.1	181.7	209.3	246.3	274.8	0.188	0.257	0.366	0.434	0.525	0.677	0.763
EXTERNAL	0.0584	5	0.80	64.4	70.0	0.86	0.86	Urban	0.688	0.731	0.817	0.860	0.903	0.989	1.000	117.7	151.2	191.8	215.9	248.4	291.7	325.2	0.013	0.018	0.025	0.030	0.036	0.047	0.053

Appendix G MUSIC Model Information

MUSIC Model Information

Introduction:

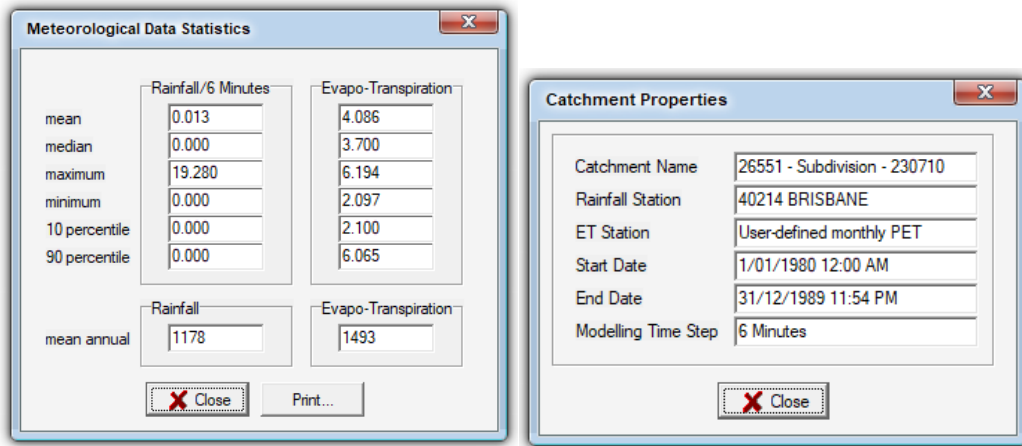
The quality of stormwater runoff and the impact of the proposed stormwater quality improvement measures were analysed using MUSIC Version 6.0 according to the MUSIC Modelling Guidelines Version 1.0, Water by Design 2010. A summary of the modelled catchment is presented in the table below.

Catchment I.D	Land Use	Area (m ²)	% Impervious
Road	Mixed	1350	100%
Verge	Mixed	1124	0%
Roof	Mixed	5380	100%
Allotment Ground	Mixed	1908	30%
Footpath	Mixed	170	100%
Bypass Road	Mixed	20	100%
Bypass Verge	Mixed	20	0%
Bypass Roof	Mixed	10	100%
Bypass Allotment Ground	Mixed	10	30%
Bypass Footpath	Mixed	8	100%

Meteorological Data:

The MUSIC model was carried out using the following parameters:

- The modelling period should be 10 years with a time step of 6 minutes.
- The nearest available 6 minute time step rainfall series to the subject site is Brisbane 40214.



Source Nodes – Pollutant Exports:

Pollutant export parameters were assigned as per Table 3.8 of the MUSIC Modelling Guidelines.

The pollutant exports parameters adopted in the MUSIC model are summarized in the table below.

Table 3.8 Pollutant export parameters for split catchment land use (log¹⁰ values)

FLOW TYPE	SURFACE TYPE	TSS log ¹⁰ values		TP log ¹⁰ values		TN log ¹⁰ values	
		Mean	St. dev.	Mean	St. dev.	Mean	St. dev.
Urban residential							
Baseflow parameters	Roof	N/A	N/A	N/A	N/A	N/A	N/A
	Roads	1.00	0.34	-0.97	0.31	0.20	0.20
	Ground level	1.00	0.34	-0.97	0.31	0.20	0.20
Stormflow parameters	Roof	1.30	0.39	-0.89	0.31	0.26	0.23
	Roads	2.43	0.39	-0.30	0.31	0.26	0.23
	Ground level	2.18	0.39	-0.47	0.31	0.26	0.23
Industrial							
Baseflow parameters	Roof	N/A	N/A	N/A	N/A	N/A	N/A
	Roads	0.78	0.45	-1.11	0.48	0.14	0.20
	Ground level	0.78	0.45	-1.11	0.48	0.14	0.20
Stormflow parameters	Roof	1.30	0.44	-0.89	0.36	0.25	0.32
	Roads	2.43	0.44	-0.30	0.36	0.25	0.32
	Ground level	1.92	0.44	-0.59	0.36	0.25	0.32
Commercial							
Baseflow parameters	Roof	N/A	N/A	N/A	N/A	N/A	N/A
	Roads	0.78	0.39	-0.60	0.50	0.32	0.30
	Ground level	0.78	0.39	-0.60	0.50	0.32	0.30
Stormflow parameters	Roof	1.30	0.38	-0.89	0.34	0.37	0.34
	Roads	2.43	0.38	-0.30	0.34	0.37	0.34
	Ground level	2.16	0.38	-0.39	0.34	0.37	0.34

Input Parameters:

Biopod:

Properties of 10 X WSUD Biopod BSD-8339 - 29.9m²

Location: 10 X WSUD Biopod BSD-8339 - 29.9m² Products >>

Inlet Properties		Lining Properties	
Low Flow By-pass (cubic metres per sec)	0.000	Is Base Lined?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
High Flow By-pass (cubic metres per sec)	100.000		
Storage Properties		Vegetation Properties	
Extended Detention Depth (metres)	0.30	<input checked="" type="radio"/> Vegetated with Effective Nutrient Removal Plants <input type="radio"/> Vegetated with Ineffective Nutrient Removal Plants <input type="radio"/> Unvegetated	
Surface Area (square metres)	30.00		
Filter and Media Properties		Outlet Properties	
Filter Area (square metres)	30.00	Overflow Weir Width (metres)	1.00
Unlined Filter Media Perimeter (metres)	0.01	Underdrain Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Saturated Hydraulic Conductivity (mm/hour)	200.00	Submerged Zone With Carbon Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Filter Depth (metres)	0.80	Depth (metres)	0.45
TN Content of Filter Media (mg/kg)	400		
Orthophosphate Content of Filter Media (mg/kg)	30.0		
Infiltration Properties		<input type="button" value="Fluxes..."/> <input type="button" value="Notes..."/> <input type="button" value="More"/>	
Exfiltration Rate (mm/hr)	0.00	<input type="button" value="Cancel"/> <input type="button" value="Back"/> <input type="button" value="Finish"/>	

Appendix H Neighbouring Development Plans

Received
21/04/2021
BCC DS

PLANS AND DOCUMENTS
referred to in the
APPROVAL
Dated: 25/05/2021

THIS APPROVAL SHOULD NOT BE TAKEN TO CONSTITUTE PERMISSION TO ENTER NEIGHBOURING PROPERTIES TO CONSTRUCT (INCLUDING ASSOCIATED WORKS SUCH AS DRAINAGE AND EXCAVATION) ANY BUILT TO BOUNDARY WALL OR FENCES. PERMISSION MUST BE OBTAINED FROM RELEVANT PROPERTY OWNERS.

Yield Breakdown	
Residential Allotment	Yield
14m x 32m+	7
16m x 32m+	4
18m+ x 32m+	3
Total Residential Allotments	14

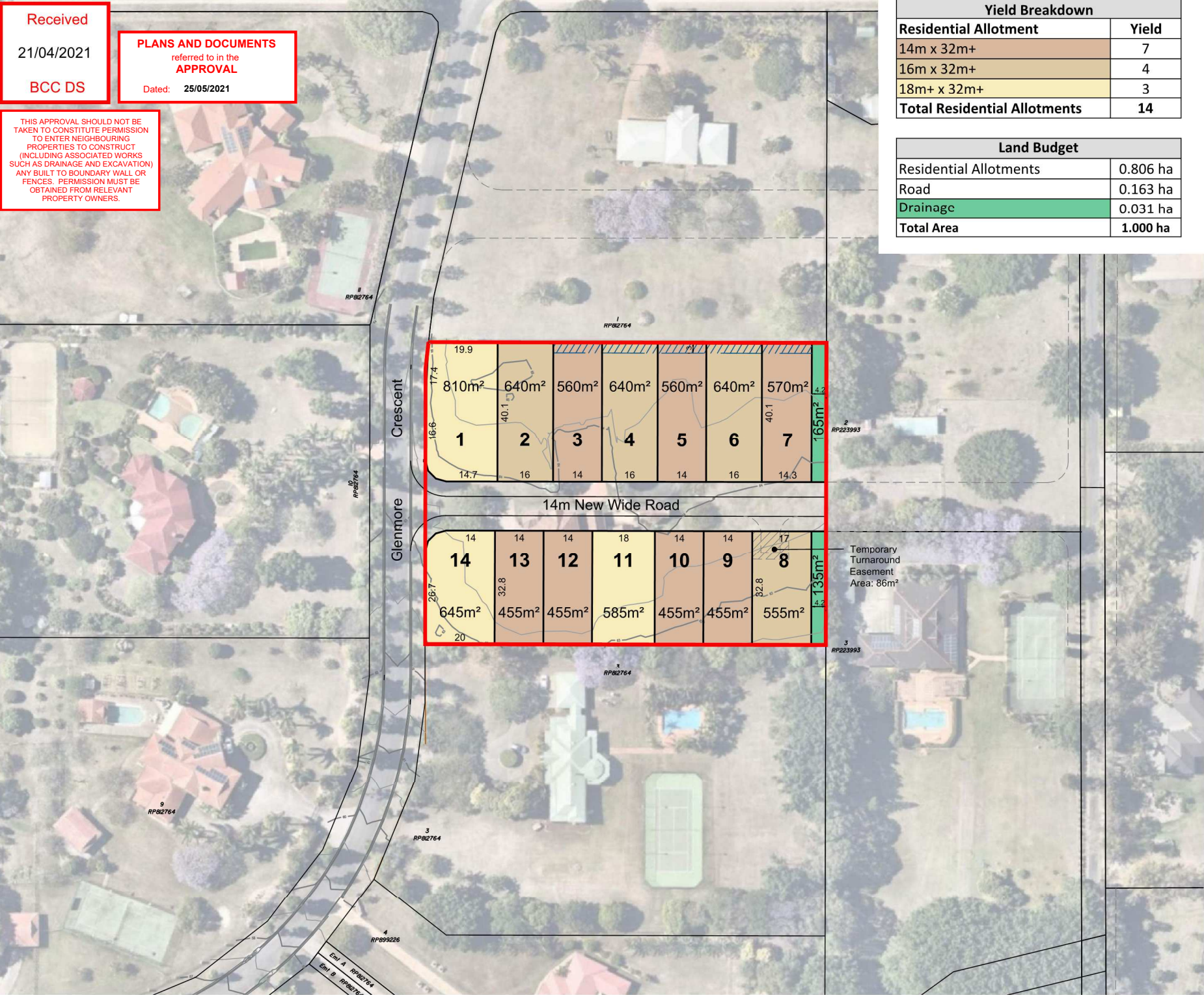
Land Budget	
Residential Allotments	0.806 ha
Road	0.163 ha
Drainage	0.031 ha
Total Area	1.000 ha

0 5 10 15 20 30 1:1,000 @ A3

**GLENMORE CRESCENT
ROCHEDALE**

CONCEPT LAYOUT

PLAN REF: **145782-01**
Rev No: **G**
DATE: 13 APRIL 2021
CLIENT: BUGDEN ALLEN LAWYERS
DRAWN BY: MD
CHECKED BY: MD



- Legend**
- Site Boundary
 - ▨ Temporary Turnaround Easement
 - ▧ Drainage Easement - Overland Flow

Note:
All Lot Numbers, Dimensions and Areas are approximate only, and are subject to survey and Council approval.
Dimensions have been rounded to the nearest 0.1 metres.
Areas have been rounded down to the nearest 5m².
The boundaries shown on this plan should not be used for final detailed engineers design.

Source Information:
Site boundaries: RPS Survey
Adjoining information: DCDB.
Contours: RPS Survey
Aerial photography: Nearmap

URBAN DESIGN
Level 4 HQ South
520 Wickham Street
PO Box 1559
Fortitude Valley QLD 4006
T +61 7 3539 9500
W rpsgroup.com



© COPYRIGHT PROTECTS THIS PLAN
Unauthorised reproduction or amendment not permitted.
Please contact the author.

LEGEND

	ASPHALTIC PAVEMENT
	REINFORCED CONCRETE PAVEMENT
	WSUD PLANTING
	PROPOSED RETAINING WALL
	PROPOSED SEWER MANHOLE
	EXISTING SEWER MANHOLE
	EXISTING SEWER
	PROPOSED SEWER
	SEWER MANHOLE NUMBER
	KERB ADAPTOR
	ON GRADE GULLY PIT
	SAG GULLY PIT
	600 x 600 FIELD INLET
	900 x 600 FIELD INLET
	1500 DA FIELD INLET
	STORMWATER LINE
	STORMWATER HEADWALL
	EXISTING STORMWATER LINE
	NATURAL SURFACE LEVEL
	STORMWATER NUMBER
	WATER RETICULATION U.P.V.C.
	WATER RETICULATION D.I.C.L.
	PROPOSED WATER METER
	GATE VALVE
	FIRE HYDRANT
	EXISTING WATER METER
	DUAL OUTLET HYDRANT
	SWABBING FIRE HYDRANT
	WATER SERVICE FITTING
	TELEPHONE
	ELECTRICITY
	EDGE OF BITUMEN
	FENCE
	NATURAL CONTOURS
	FINISHED SURFACE LEVEL
	OVERHEAD POWER

EARTHWORKS SUMMARY

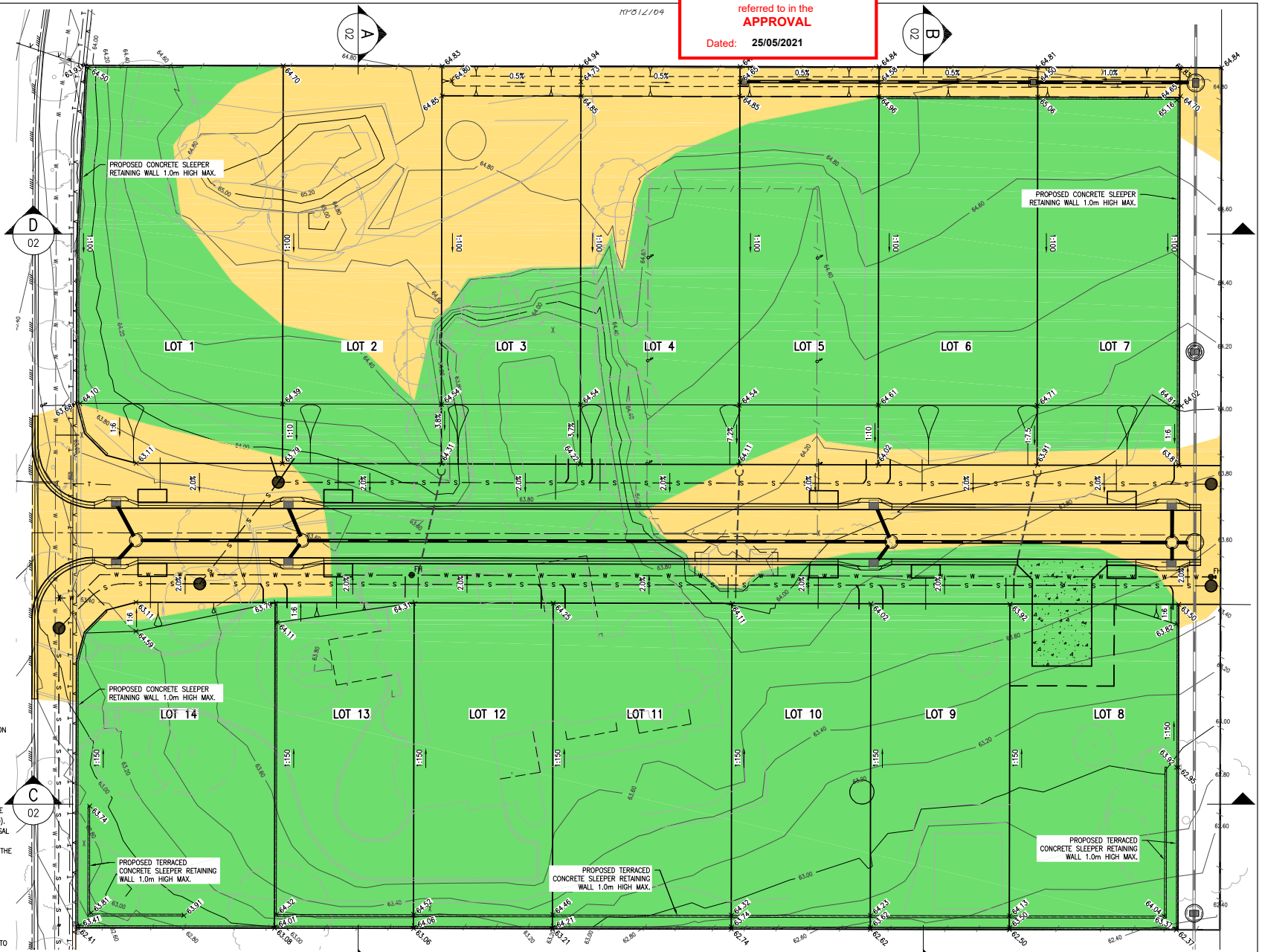
THE EARTHWORKS VOLUMES SHOWN ARE INDICATIVE NETT FIGURES ONLY BETWEEN EXISTING SURFACE LEVEL AND FINISHED EARTHWORKS LEVEL AND DO NOT ALLOW FOR DEMOLITION WORKS, STRIPPING OF TOPSOIL, UNSUITABLE MATERIAL AND VEGETATION OR COMPACTION LOSSES.
PAVEMENT LEVELS SHOWN ARE 250mm BELOW F.S.L.
PROPOSED LOT LEVELS ARE SHOWN AS F.S.L.
EARTHWORKS LEVELS MAY BE ADJUSTED TO SUIT FFL'S AND CONCRETE THICKNESS BASED ON STRUCTURAL DESIGN AS APPROVED BY SUPERINTENDENT.

AREA OF FILL - GREEN AREA OF CUT - YELLOW

GENERAL NOTES

1. IN CASE OF DOUBT - ASK!
2. ALL LEVELS TO AHD, DIMENSIONS IN METERS U.N.O
3. ALL LIAISON WITH LOCAL, STATE & STATUTORY AUTHORITIES IS THE CONTRACTOR'S RESPONSIBILITY.
4. THE LOCATION OF EXISTING SERVICES IS FOR CONTRACTOR'S INFORMATION ONLY, THE LOCATION OF SERVICES WILL BE CONFIRMED BY THE CONTRACTOR TO THE COMMENCEMENT OF WORKS.
5. ANY DAMAGE CAUSED TO THE EXISTING SERVICE WILL BE MADE GOOD AT THE CONTRACTORS EXPENSE.
6. EARTHWORKS PROCEDURES ARE TO BE CARRIED OUT IN ACCORDANCE WITH AS 3798 - 2007 "GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS".
7. EARTHWORKS OPERATIONS ARE TO BE CARRIED OUT IN GENERAL ACCORDANCE WITH THE GEOTECHNICAL REPORT.
8. WORKS NOT SPECIFICALLY REFERRED TO, ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GENERAL DRAWINGS AND SPECIFICATIONS OF THE LOCAL AUTHORITY (BCC SPECIFICATION S140).
9. THE CONTRACTOR IS TO ALLOW FOR ALL FEES AND HAULAGE COSTS ASSOCIATED WITH DISPOSAL OF MATERIAL FROM THE SITE.
10. ALL COSTS ASSOCIATED WITH NOISE AND DUST SUPPRESSION FOR SITE WORKS ARE DEEMED THE CONTRACTOR'S RESPONSIBILITY.
11. COMPACTION STANDARDS
- MODIFIED TO AS 1289 TEST 5.2.1
- STANDARD TO AS 1289 TEST 5.1.1
12. PRIOR TO COMMENCEMENT OF WORKS THE CONTRACTOR WILL PROVIDE SCOUR AND EROSION PROTECTION INCLUDING PROVISION OF SILT TRAPS AND FENCES TO MINIMISE DEPOSITION OF MATERIAL DOWNSTREAM OF THE PROPERTY.
13. NO BLASTING WILL BE PERMITTED.
14. THE LOCATION OF THE SITE SHEDS, SITE OFFICE AND AMENITIES BUILDING WILL BE LOCATED TO SUIT TEMPORARY UTILITY SERVICES OR AS AGREED WITH THE MANAGER.
15. TESTING FREQUENCY AS 3798 - 2007 SECTION 8.0 OR AS APPROVED BY THE GEOTECHNICAL ENGINEER.
16. AT COMPLETION OF CONSTRUCTION THE CONTRACTOR SHALL ARRANGE FOR AN INDEPENDENT LICENSED SURVEYOR TO CARRY OUT A "WORKS AS CONSTRUCTED" SURVEY AND SUBMIT THE DETAIL PLAN TO THE MANAGER.
17. THE LOCATION OF TEMPORARY STOCKPILES DURING CONSTRUCTION IS TO BE AGREED WITH THE MANAGER.

THIS APPROVAL SHOULD NOT BE TAKEN TO CONSTITUTE PERMISSION TO ENTER NEIGHBOURING PROPERTIES TO CONSTRUCT (INCLUDING ASSOCIATED WORKS SUCH AS DRAINAGE AND EXCAVATION) ANY BUILT TO BOUNDARY WALL OR FENCES. PERMISSION MUST BE OBTAINED FROM RELEVANT PROPERTY OWNERS.



NOTE: TEMPORARY EXCAVATIONS ARE TO BE SUPERVISED BY A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER.

CONTRACTOR TO USE EXCAVATION TECHNIQUE THAT WILL PREVENT SUBSIDENCE WITHIN NEIGHBOURING PROPERTIES IN ACCORDANCE WITH GEOTECHNICAL ENGINEERS REPORT AND ADVICE ON SITE.

ALL RETAINING WALLS LOCATED WITHIN THE SITE TO STABILISE CUT ARE TO BE WHOLLY WITHIN THE PROPERTY BOUNDARY INCLUDING ALL ASSOCIATED FOOTINGS AND SUB-SOIL DRAINAGE.

PRELIMINARY EARTHWORKS PLAN

SCALE: 1:200
(A1 SIZE)

PRELIMINARY NOT FOR CONSTRUCTION



WESTER PARTNER
STRUCTURAL-CIVIL-ENVIRONMENTAL ENG
www.westerpartners.com.au | ABN 52 097 4

GOLD COAST
14/04/21
14/04/21
14/04/21

SURVEYOR
RPS
PHONE: (07) 3539 9500

DATUM
AHD
PM 180546
RL 71.303

No.	DATE	REVISIONS
B	14.04.2021	STORMWATER CONCEPT AMENDED
A	14.10.2020	REVISED TO BCC RFI

SHEET	PRELIMINARY EARTHWORKS PLAN
PROJECT	PROPOSED RESIDENTIAL SUBDIVISION
LOCATION	LOT 2 ON RP812764 20 GLENMORE CRESCENT, ROCHEDALE
CLIENT	CNH INTERNATIONAL PTY LTD

APPROVED		DESIGNED D.S.M	SHEET NUMBER
DATE DRAWN JULY 2020	DRAWN D.S.M	REVISION B	1 OF 2
FILE NAME PRE_Ewks.dwg	PRODUCT NUMBER B20/017 P		

Received

21/04/2021

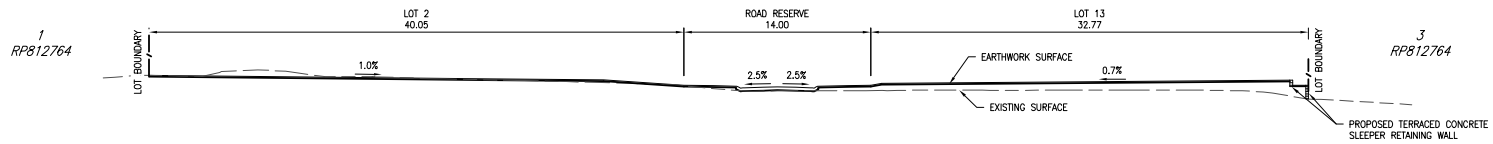
BCC DS

THIS APPROVAL SHOULD NOT BE TAKEN TO CONSTITUTE PERMISSION TO ENTER NEIGHBOURING PROPERTIES TO CONSTRUCT (INCLUDING ASSOCIATED WORKS SUCH AS DRAINAGE AND EXCAVATION) ANY BUILT TO BOUNDARY WALL OR FENCES. PERMISSION MUST BE OBTAINED FROM RELEVANT PROPERTY OWNERS.

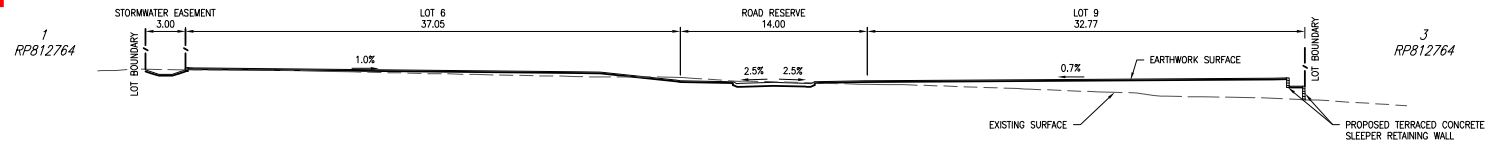
PLANS AND DOCUMENTS

referred to in the APPROVAL

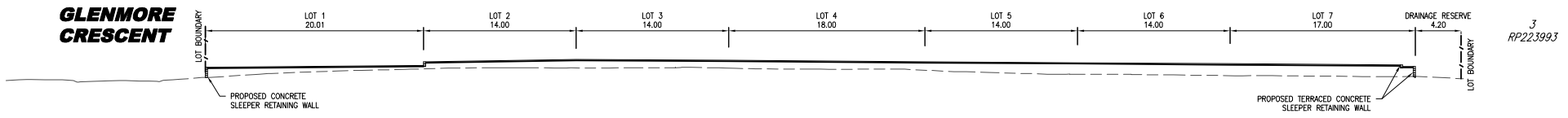
Dated: 25/05/2021



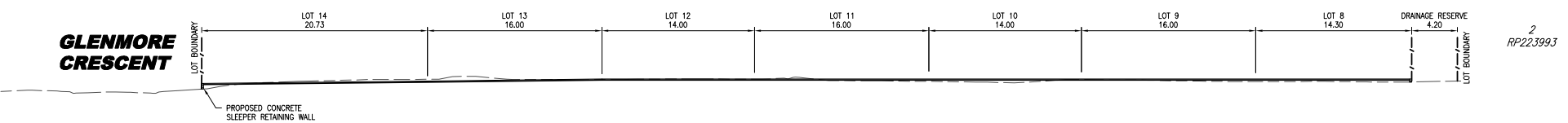
SECTION A
SCALE 1:200



SECTION B
SCALE 1:200



SECTION C
SCALE 1:200



SECTION D
SCALE 1:200

PRELIMINARY
NOT FOR CONSTRUCTION

No.	DATE	REVISIONS
B	14.04.2021	STORMWATER CONCEPT AMENDED
A	14.10.2020	REVISED TO BCC RFI

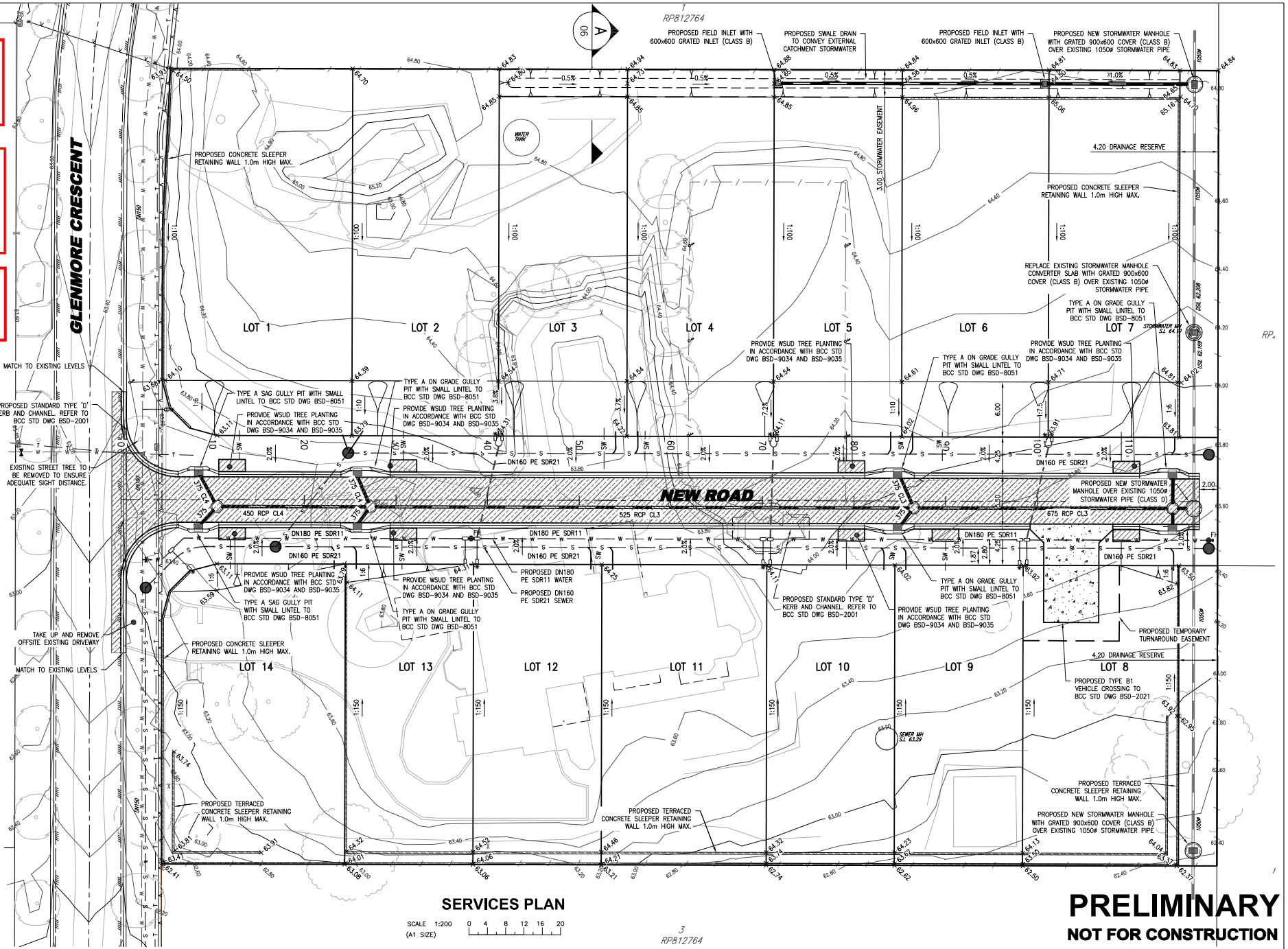
SHEET	PRELIMINARY EARTHWORKS SECTIONS
PROJECT	PROPOSED RESIDENTIAL SUBDIVISION
LOCATION	LOT 2 ON RP812764 20 GLENMORE CRESCENT, ROCHEDALE
CLIENT	CNH INTERNATIONAL PTY LTD

APPROVED	DESIGNED D.S.M	SHEET NUMBER
	DRAWN D.S.M	2 OF 2
DATE DRAWN JULY 2020	REVISION B	PROJECT NUMBER
FILE NAME PRE_Ewks.dwg	B20/017 P	

Received
21/04/2021
BCC DS

THIS APPROVAL SHOULD NOT BE TAKEN TO CONSTITUTE PERMISSION TO ENTER NEIGHBOURING PROPERTIES TO CONSTRUCT (INCLUDING ASSOCIATED WORKS SUCH AS DRAINAGE AND EXCAVATION) ANY BUILT TO BOUNDARY WALL OR FENCES. PERMISSION MUST BE OBTAINED FROM RELEVANT PROPERTY OWNERS.

PLANS AND DOCUMENTS referred to in the APPROVAL
Dated: 25/05/2021



NOTE:
ALL LINEMARKING, SIGNAGE AND R.R.P.A.'S ARE TO BE PROVIDED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

PRE-START MEETING:
WESTERA PARTNERS TO BE CONTACTED AT LEAST 10 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION FOR A PRE-START MEETING. PHONE 3652 4333.

CONSTRUCTION NOTE:
CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LOCAL AUTHORITIES STANDARD DRAWINGS AND SPECIFICATIONS. WORKS MUST BE COMPLETED TO THE SATISFACTION OF THE SUPERINTENDENT AND LOCAL AUTHORITY. REFER TO SHEET 2 FOR CONSTRUCTION NOTES AND DETAILED DRAWING LEGEND.

EXISTING SERVICES NOTE:
THE INVERT LEVEL & LOCATION OF ALL EXISTING STORMWATER & SEWER INFRASTRUCTURE SHALL BE CONFIRMED ON SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

STORMWATER STUB NOTE:
PROVIDE STUBS AS SHOWN FOR ROOF AND/OR HARD DRAINAGE CONNECTION. REFER HYDRAULIC ENGINEERS DRAWINGS FOR DETAILS.

REFER STRUCTURAL ENGINEERS DRAWINGS FOR ALL RETAINING WALLS.

FINISHED FLOOR LEVELS TO BE CONFIRMED WITH ARCHITECT PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

SERVICES PLAN

SCALE 1:200 0 4 8 12 16 20
(A1 SIZE)

**PRELIMINARY
NOT FOR CONSTRUCTION**

WESTERA PARTNERS
STRUCTURAL-CIVIL-ENVIRONMENTAL ENGINEERS
www.westerapartners.com.au | ABN 52 097 417 975

SUNSHINE COAST
Suite 2, North Coast Regional Centre
13 Northgate, Varsity Lakes
T 07 5381 3777 F 07 5346 5950
E info@westera.com.au

GOLD COAST
17 Water St, Southport
T 07 5591 8299 F 07 5511 1500
E info@westera.com.au

BRISBANE
Level 1, Liverpool
33 Campbell St, Newstead
T 07 3623 4333 F 07 3652 4372
E info@westera.com.au

NORTHERN NSW
15 South Road, Singleton
T 02 5674 8049 F 02 5674 8049
E info@westera.com.au

SURVEYOR
RPS
PHONE: (07) 3539 9500

DATUM
AHD
PM 180546
RL 71.303

NO. **DATE** **REVISIONS**

C	14.04.2021	STORMWATER CONCEPT AMENDED
B	14.10.2020	REVISED TO BCC RFI
A	22.09.2020	STORMWATER EASEMENT AMENDED & TREE REMOVAL NOTE ADDED

SHEET PRELIMINARY SERVICES PLAN
PROJECT PROPOSED RESIDENTIAL SUBDIVISION
LOCATION LOT 2 ON RP812764
20 GLENMORE CRESCENT, ROCHEDALE
CLIENT CNH INTERNATIONAL PTY LTD

3
RP812764

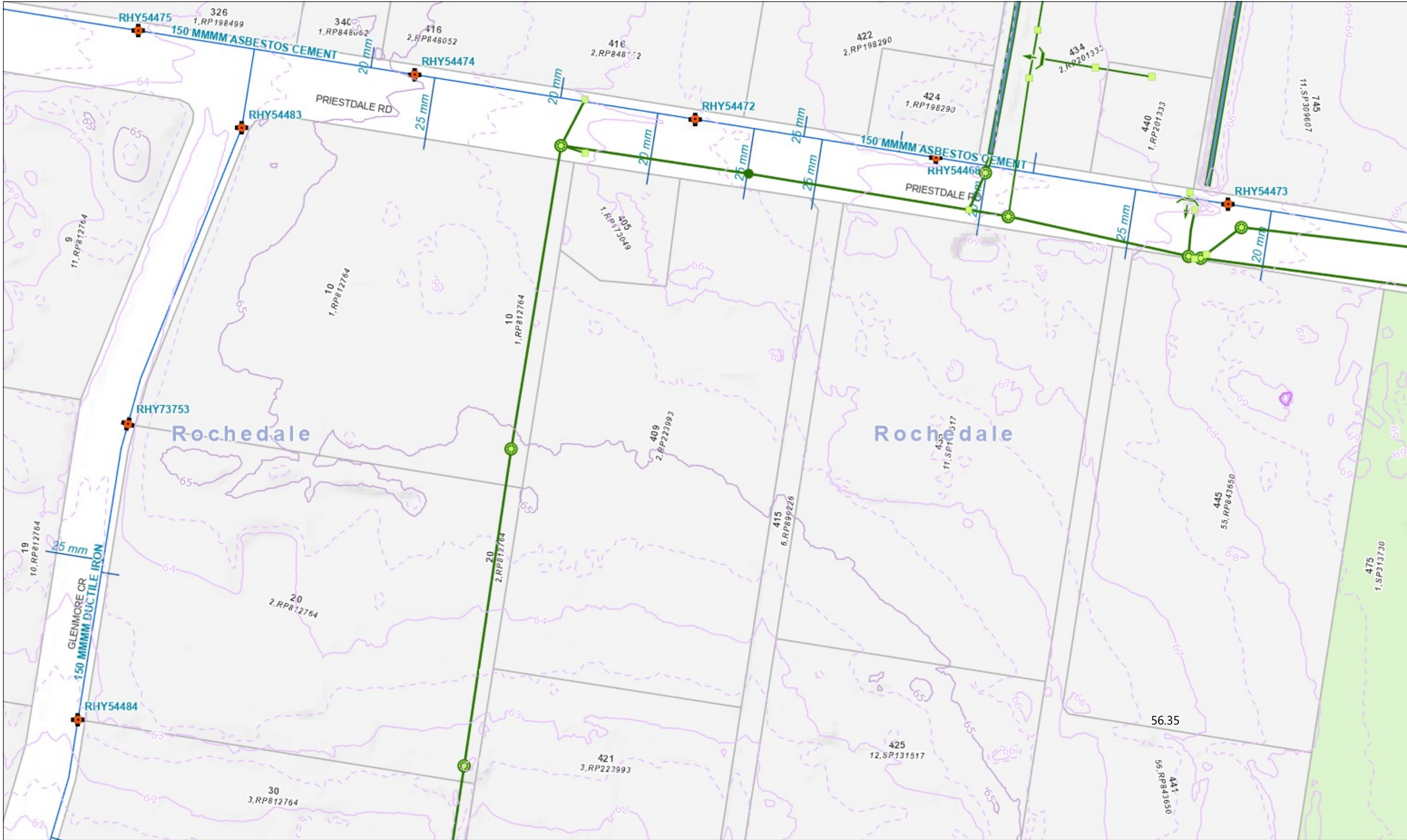
APPROVED

DESIGNED D.S.M
DRAWN D.S.M
DATE DRAWN SEPT 2020
FILE NAME PRE_Services.dwg

SHEET NUMBER 4 OF 6
REVISION C
PRODUCT NUMBER B20/017 P

J. HILL RPE0018891
REG AND C.S. BOARD OF
WESTERN AUSTRALIA

Appendix I BCC eBIMAP2 Information



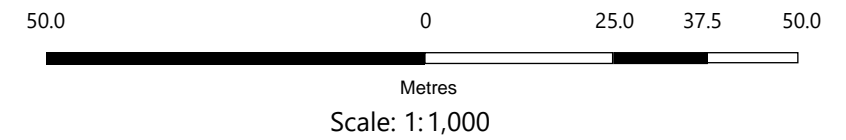
In consideration of Council, and the copyright owners listed above, permitting the use of this data, you acknowledge and agree that Council, and the copyright owners, give no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage), relating to any use of this data.

Print Date:
10/07/2023 - 11:55 AM
Projection:
Web Mercator Auxiliary Sphere

© Brisbane City Council 2021 (unless stated below)
Cadastral © 2021 Department of Natural Resources, Mines and Energy
StreetPro © 2021 Precisely; © 2021 PSMA Australia Ltd
Contours © 2009 AAMHatch



Dedicated to a better Brisbane



Legend

1m Contour (2019)	50m Contour	10m Contour	5m Contour	1m Contour
50cm Contour (2019)	Sewer Chamber	CHAMBER	CHAMBER - OFFLINE	Sewer Fitting - Main Fittings
END FLUSHING POINT	INLINE FLUSHING POINT	OUTLET	VACUUM LIFT	Sewer Fitting - All Other Fittings
JOINT	RODDING JOINT	PROPERTY CONNECTION BOUNDARY	JUNCTION	END CAP
BEND	WYE	TEE	REDUCER	GIBAULT JOINT
CROSS	INLET	OUTLET	<all other values>	Sewer Structure - by Type
CONCRETE STOP	PIPE BRIDGE	ANCHOR BLOCK	HEAD WALL	PIER
Sewer Support Structure Boundary	Sewer Manholes	MANHOLE	MANHOLE - OFFLINE	<all other values>
Sewer Manhole -All Other Types	End	Flume Pit	Sewer Manhole Stub	Sewer Control Valve - by Type
AIR	SCOUR	VACCUM, AS CONSTRUCTED	REFLUX	AIR - OFFLINE
SCOUR - OFFLINE	VACCUM - OFFLINE	REFLUX - OFFLINE	Sewer System Valve - by Type	SEWER DOOR
GATE	BUTTERFLY	SEWER DOOR - OFFLINE	GATE - OFFLINE	BUTTERFLY - OFFLINE
<all other values>	Sewer Network Structure -Treatment	TREATMENT PLANT, AS CONSTRUCTED	TREATMENT PLANT - OFFLINE	Sewer Network Structure - All Features
STORAGE FACILITY	ODOUR CONTROL	WET WELL	STORAGE FACILITY - OFFLINE	WET WELL - OFFLINE
ODOUR CONTROL - OFFLINE	Sewer Pump Station	PUMP STATION	PUMP STATION - OFFLINE	Sewer Network Structure Boundary
Sewer Vertical Gravity Main	Sewer Vertical Pressure Main	Sewer Service	Model Link	Service
<all other values>	Sewer Gravity Main - by Type	SYPHON	DISCHARGE	TRUNK MAIN
RETICULATION MAIN	OVERFLOW MAIN	MODEL LINK	SYPHON - OFFLINE	DISCHARGE - OFFLINE
TRUNK MAIN - OFFLINE	RETICULATION MAIN - OFFLINE	OVERFLOW MAIN - OFFLINE	MODEL LINK - OFFLINE	<all other values>
Sewer Pressure Main - by Type	MODEL LINK	LOW PRESSURE MAIN	RISING MAIN	VACUUM MAIN
MODEL LINK - OFFLINE	LOW PRESSURE MAIN - OFFLINE	RISING MAIN - OFFLINE	VACUUM MAIN - OFFLINE	Culvert
End Structure	End cap	Flood Gate	Pipe End Outlet	Gully
Junction	Manhole	Drain	Gully Connect	Foul Water and Roof Water
SQID	Surface Drain	Waterbody	Artesian Well	Detention Basin
Lake	Water Device - All Other Assets	FLOW METER	PRESSURE GAUGE	LEVEL SENSOR
FLOW METER - OFFLINE	PRESSURE GAUGE - OFFLINE	LEVEL SENSOR - OFFLINE	<all other values>	Water Fitting
BEND	PIGGING POINT	END CAP	CROSS	JOINT
GIBAULT JOINT	TAPPING BAND	TAPPING	REDUCER	WYE
TEE	RESERVOIR INLET	RESERVOIR OUTLET	SCOUR OUTLET	CHEMICAL INJECTION POINT
SAMPLING STATION	<all other values>	Water Structures	ANCHOR BLOCK	PIPE BRIDGE
CONCRETE STOP	HEADWALL	PIER	<all other values>	Water Chamber
Water Hydrant	PILLAR HYDRANT	INGROUND HYDRANT	<all other values>	Water Service Valve
Service Valve, CLOSED	Service Valve, OPEN	Water Network Structure - Reservoir	QUU	SEQWATER
PRIVATE	QUU - NON POT	SEQ - NON POT	PRIVATE - NON POT	QUU - OFFLINE
SEQ - OFFLINE	PRIV - OFFLINE	Water Network Structure Boundary	Water Pump Stations	QUU
SEQWATER	PRIVATE	QUU - OFFLINE	SEQWATER - OFFLINE	PRIVATE - OFFLINE
<all other values>	Water Sampling Point	Water Pumps	BOOSTER PUMP	BORE PUMP
LIFT PUMP	BOOSTER PUMP - OFFLINE	BORE PUMP - OFFLINE	LIFT PUMP - OFFLINE	Water Vertical Pressure Main
Water Pressure Main - by Type	Water - Model Link	Raw Water Main	Reticulation Main	Trunk Main
Scour Main	Water Service	SERVICE	MODEL LINK	COMMON SERVICE
Property Holding	Sealed Plan	Parcel	Parcel - Outside Brisbane	

Appendix J BYDA Information



Caller Details

Contact: Jarrod Bubbert
Company: ADG
Address: 596 Milton Road
Toowong QLD 4066

Caller Id: 3198035
Phone: 1300 657 402
Email: jbubbert@adgce.com

Dig Site and Enquiry Details

WARNING: The map below only displays the location of the proposed dig site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.



User Reference: 409 Priestdale Road
Working on Behalf of: Private
Enquiry Date: 19/06/2023
Start Date: 20/06/2023
End Date: 21/06/2023

Address:
409 Priestdale Road
Rosedale QLD 4123

Job Purpose:
Excavation

Onsite Activities:
Mechanical Excavation

Location of Workplace:
Private

Location in Road:

- Check that the location of the dig site is correct. If not you must submit a new enquiry.
- Should the scope of works change, or plan validity dates expire, you must submit a new enquiry.
- Do NOT dig without plans. Safe excavation is your responsibility. If you do not understand the plans or how to proceed safely, please contact the relevant asset owners.

Notes/Description of Works:
Not supplied

Your Responsibilities and Duty of Care

- The lodgement of an enquiry does not authorise the project to commence. You must obtain all necessary information from any and all likely impacted asset owners prior to excavation.
- If plans are not received within 2 working days, contact the asset owners directly & quote their Sequence No.
- ALWAYS perform an onsite inspection for the presence of assets. Should you require an onsite location, contact the asset owners directly. Please remember, plans do not detail the exact location of assets.
- Pothole to establish the exact location of all underground assets using a hand shovel, before using heavy machinery.
- Ensure you adhere to any State legislative requirements regarding Duty of Care and safe digging requirements.
- If you damage an underground asset you MUST advise the asset owner immediately.
- By using this service, you agree to Privacy Policy and the terms and disclaimers set out at www.byda.com.au
- **For more information on safe excavation practices, visit www.byda.com.au**

Asset Owner Details

The assets owners listed below have been requested to contact you with information about their asset locations within 2 working days. Additional time should be allowed for information issued by post. It is **your responsibility** to identify the presence of any underground assets in and around your proposed dig site. Please be aware, that not all asset owners are registered with the Before You Dig service, so it is **your responsibility** to identify and contact any asset owners not listed here directly.

** Asset owners highlighted by asterisks ** require that you visit their offices to collect plans.

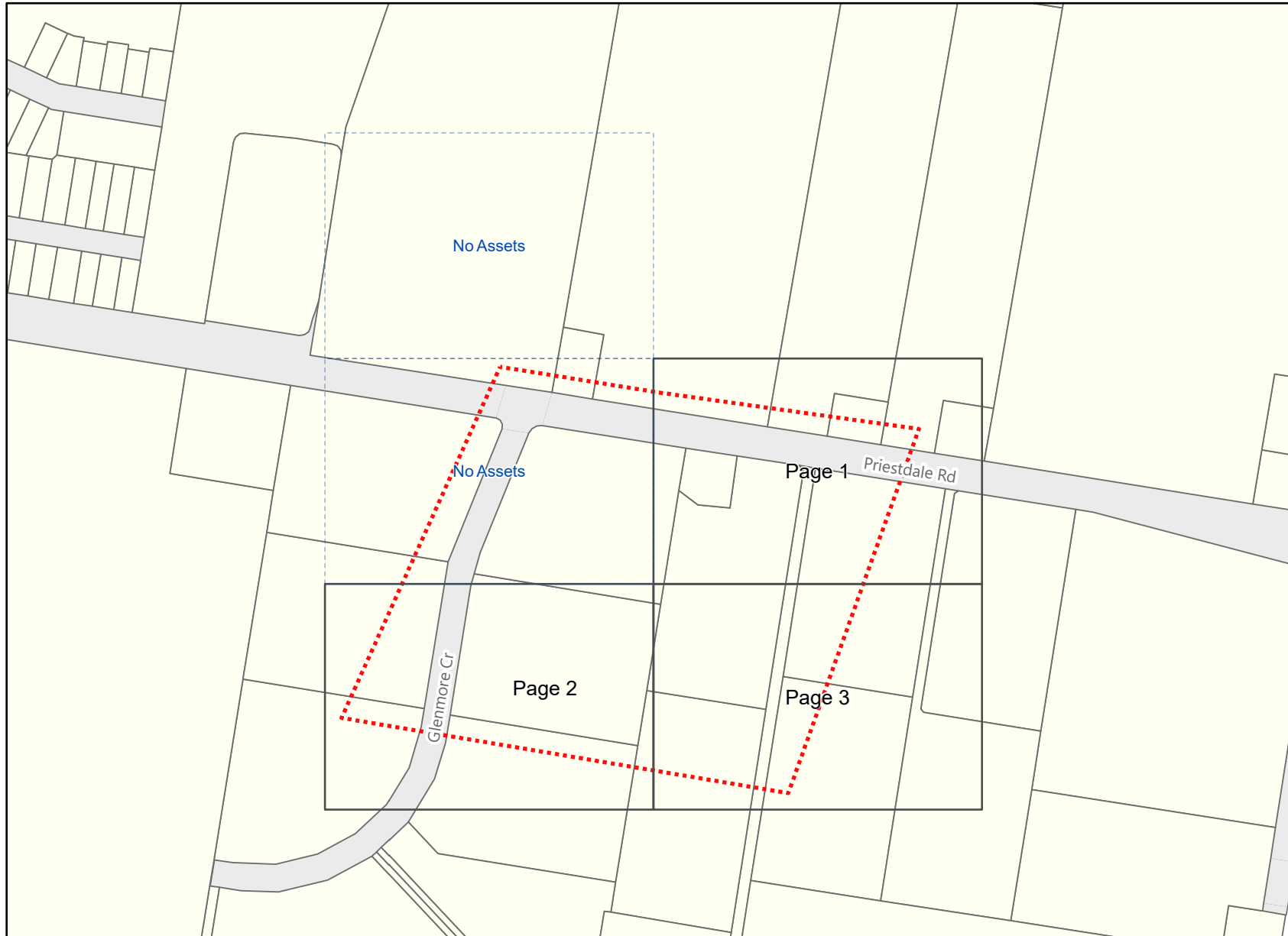
Asset owners highlighted with a hash # require that you call them to discuss your enquiry or to obtain plans.

Seq. No.	Authority Name	Phone	Status
225988521	Brisbane City Council	(07) 3403 8888	NOTIFIED
225988523	Energex QLD	13 12 53	NOTIFIED
225988524	NBN Co Qld	1800 687 626	NOTIFIED
225988525	Queensland Urban Utilities	13 23 64	NOTIFIED
225988522	Telstra QLD FA	1800 653 935	NOTIFIED

END OF UTILITIES LIST



Job # 34436609
 Seq # 225988521
 Provider: Brisbane City Council
 Telephone: 07 3403 8888



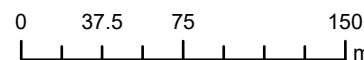
Legend

- BYDA Enquiry
- Detailed map page
- No dig site assets

Disclaimer:
 © Brisbane City Council [2020]
 In consideration of Council, and the copyright owners listed below, permitting the use of this data, you acknowledge and agree that Council, and the copyright owners, give no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage), relating to any use of this data.
 Data must not be used for direct marketing or be used in breach of the privacy laws.

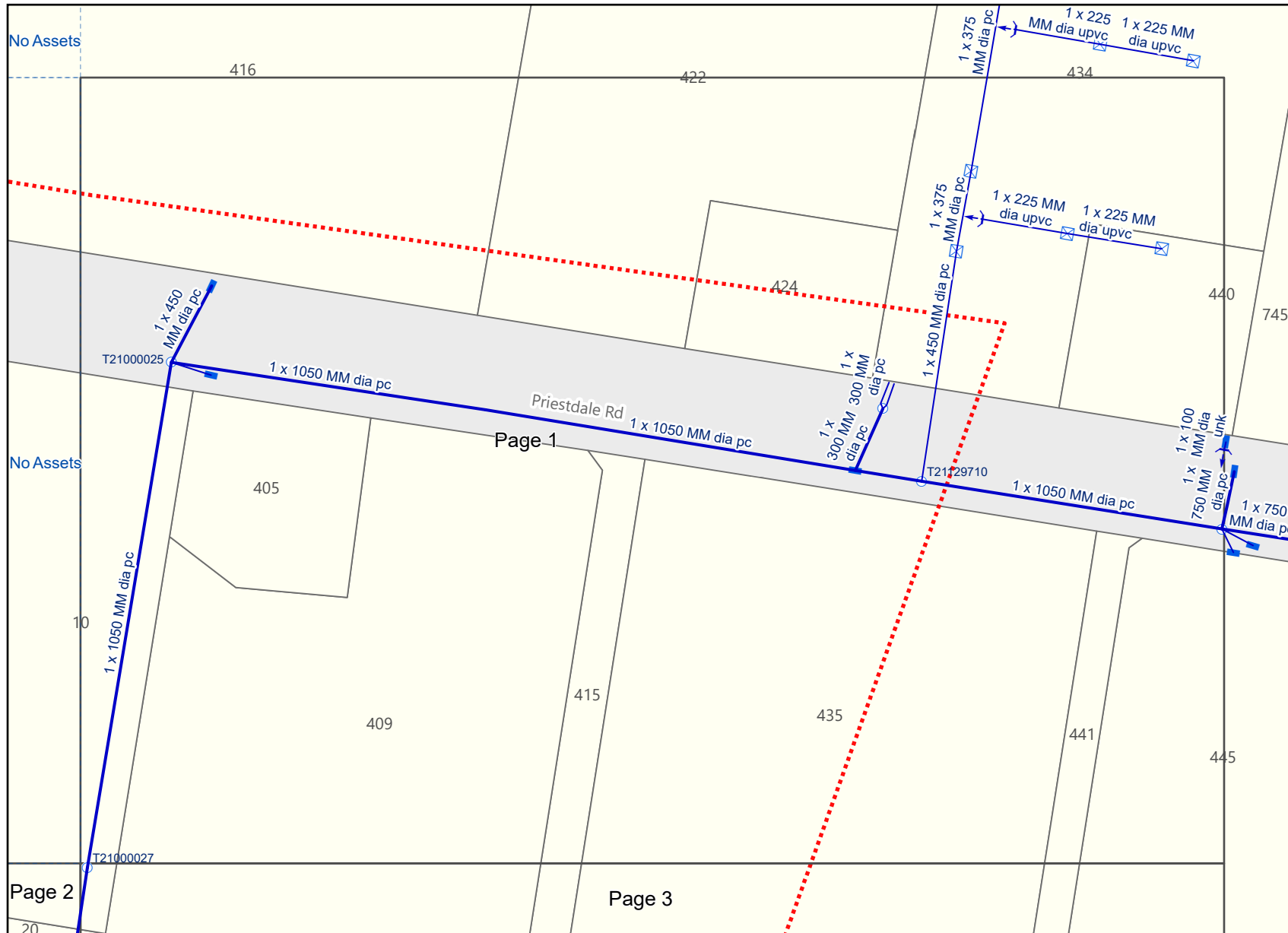
Copyright of data is as follows:
 Cadastre and Street Names © 2020 State of Queensland (Department of Natural Resources, Mines and Energy)

Caution: This map may contain the locations of abandoned underground asbestos pipes. Council gives no warranty to the completeness or accuracy of these records. Appropriate care needs to be taken in all cases.





Job # 34436609
 Seq # 225988521
 Provider: Brisbane City Council
 Telephone: 07 3403 8888



Legend

- BYDA Enquiry

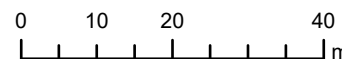
Stormwater Network

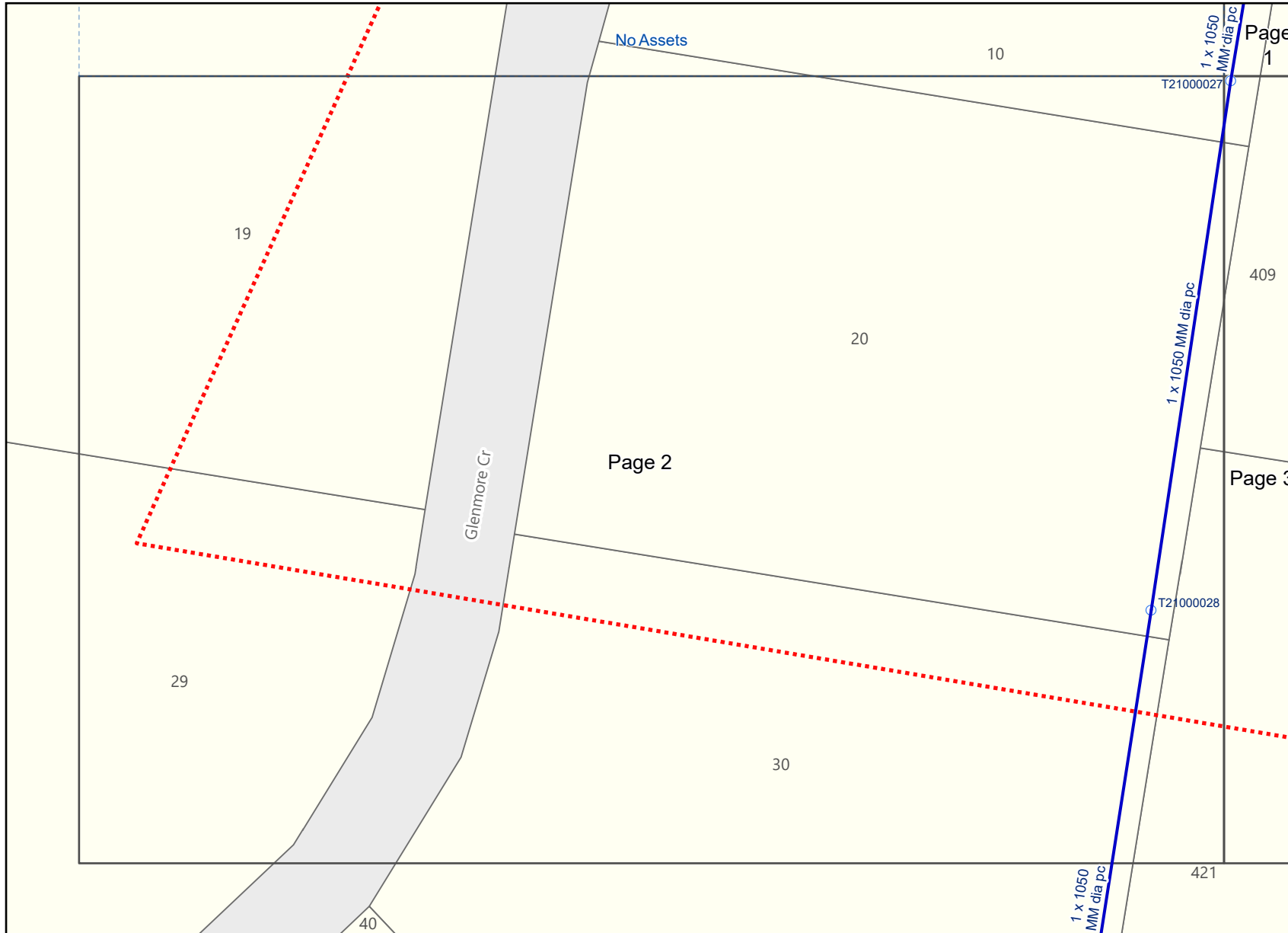
- Stormwater Drain
- Stormwater Gully / Roofwater Connection
- Stormwater Maintenance Hole
- Stormwater Gully Pit
- Stormwater Field Inlet
- Pipe End Outlet

Disclaimer:
 © Brisbane City Council [2020]
 In consideration of Council, and the copyright owners listed below, permitting the use of this data, you acknowledge and agree that Council, and the copyright owners, give no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage), relating to any use of this data.
 Data must not be used for direct marketing or be used in breach of the privacy laws.

Copyright of data is as follows:
 Cadastre and Street Names © 2020 State of Queensland (Department of Natural Resources, Mines and Energy)

Caution: This map may contain the locations of abandoned underground asbestos pipes. Council gives no warranty to the completeness or accuracy of these records. Appropriate care needs to be taken in all cases.





Legend

- BYDA Enquiry

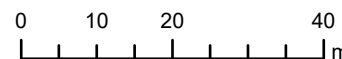
Stormwater Network

- Stormwater Drain
- Stormwater Maintenance Hole

Disclaimer:
 © Brisbane City Council [2020]
 In consideration of Council, and the copyright owners listed below, permitting the use of this data, you acknowledge and agree that Council, and the copyright owners, give no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage), relating to any use of this data.
 Data must not be used for direct marketing or be used in breach of the privacy laws.

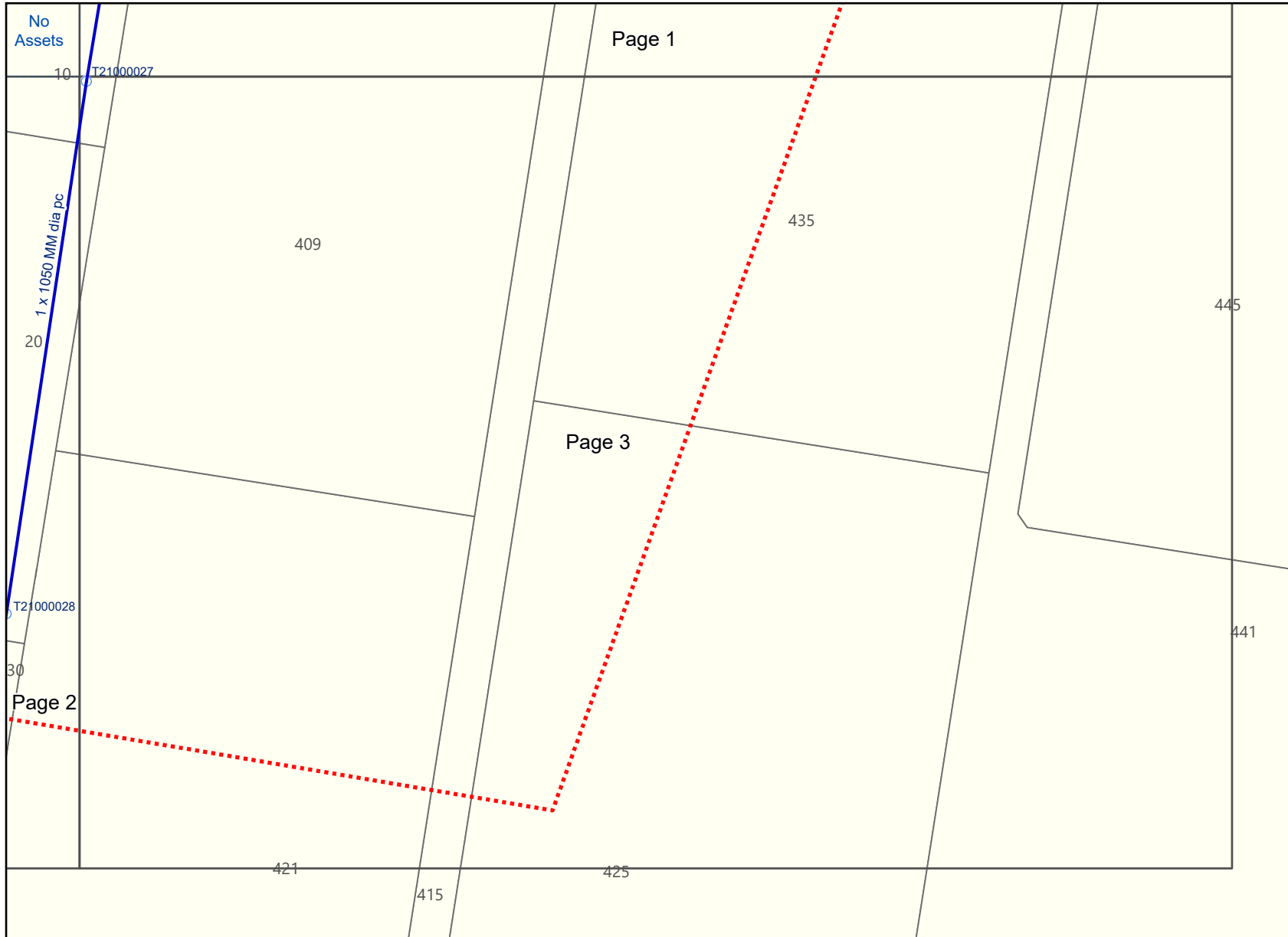
Copyright of data is as follows:
 Cadastre and Street Names © 2020 State of Queensland (Department of Natural Resources, Mines and Energy)

Caution: This map may contain the locations of abandoned underground asbestos pipes. Council gives no warranty to the completeness or accuracy of these records. Appropriate care needs to be taken in all cases.





Job # 34436609
 Seq # 225988521
 Provider: Brisbane City Council
 Telephone: 07 3403 8888



Legend

- BYDA Enquiry

Stormwater Network

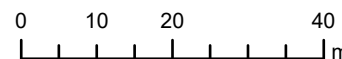
- Stormwater Drain
- Stormwater Maintenance Hole

Disclaimer:
 © Brisbane City Council [2020]
 In consideration of Council, and the copyright owners listed below, permitting the use of this data, you acknowledge and agree that Council, and the copyright owners, give no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage), relating to any use of this data.
 Data must not be used for direct marketing or be used in breach of the privacy laws.

Copyright of data is as follows:
 Cadastre and Street Names © 2020 State of Queensland (Department of Natural Resources, Mines and Energy)

Caution: This map may contain the locations of abandoned underground asbestos pipes. Council gives no warranty to the completeness or accuracy of these records. Appropriate care needs to be taken in all cases.

In an emergency contact Brisbane City Council on 07 3403 8888
 19/06/23 (valid for 30 days)



Scale 1:1,000



Plans generated by SmarterWX™ Automate



BYDA

Sequence: 225988523

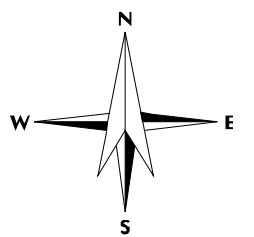
Date: 19/06/2023

Scale: 1:1538

OVERVIEW

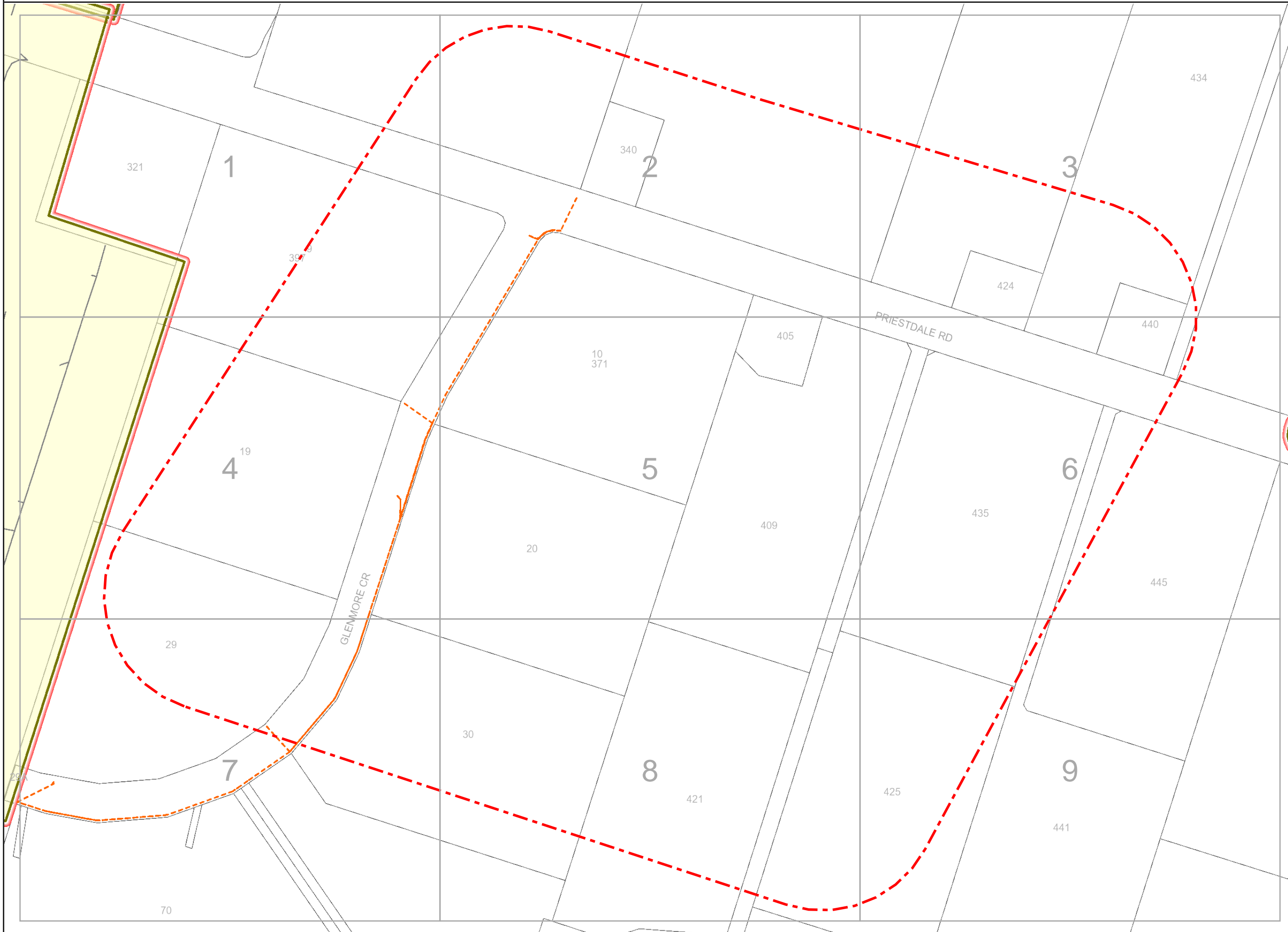
**For a full list of Map
Symbols, please
refer to the supplied
BYDA Symbology
Legend page**

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.

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.



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.

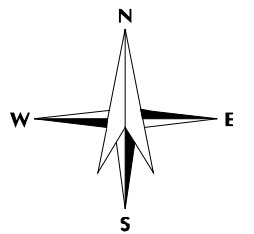


BYDA

Sequence: 225988523
Date: 19/06/2023
Scale: 1:500
Tile No: 1

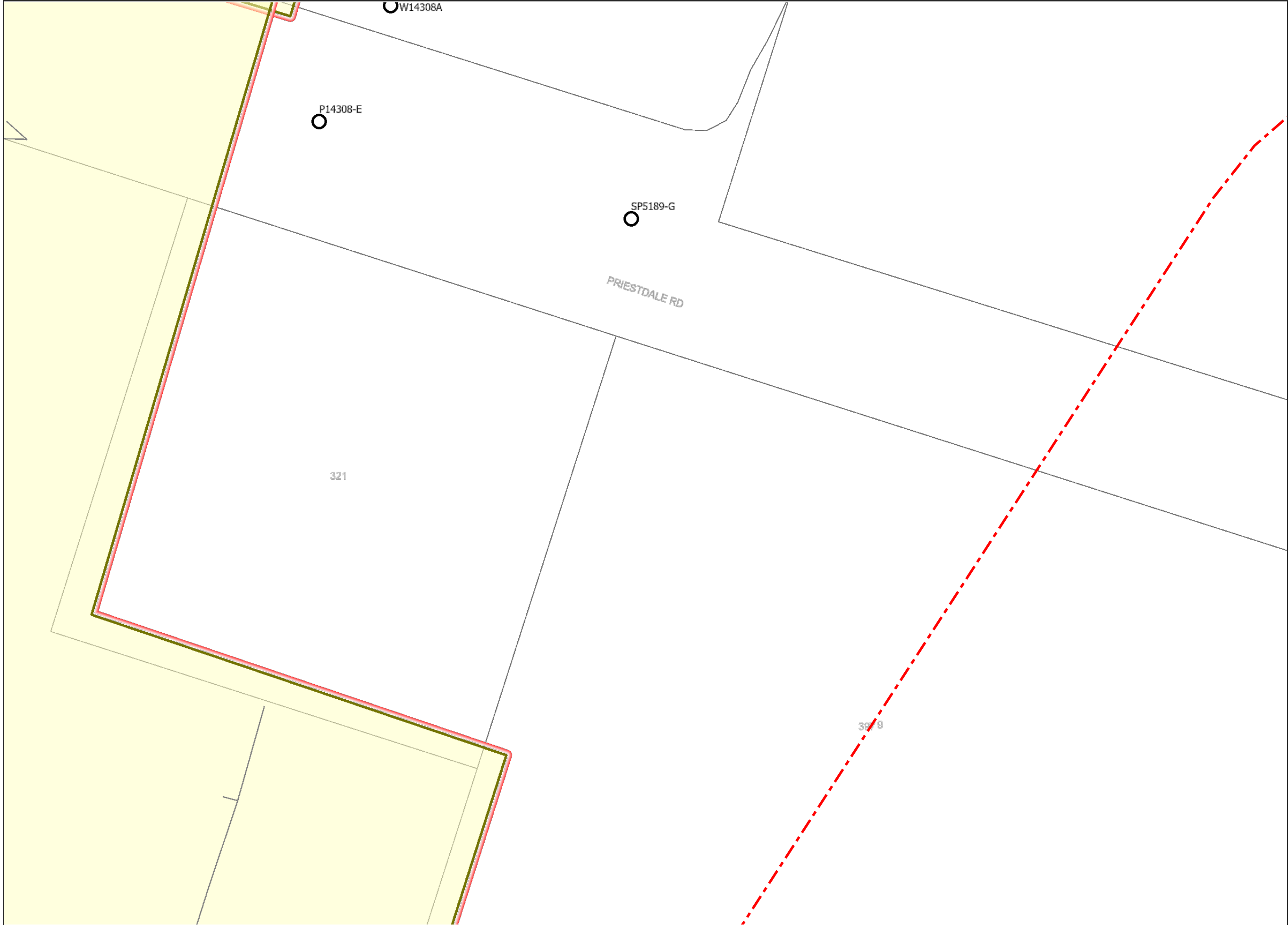
For a full list of Map
Symbols, please
refer to the supplied
BYDA Symbology
Legend page

AS5488 Category "D" Plan



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.

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.



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.

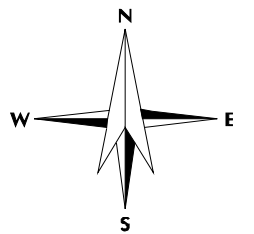


BYDA

Sequence: 225988523
Date: 19/06/2023
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



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.

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.



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.



BYDA

Sequence: 225988523

Date: 19/06/2023

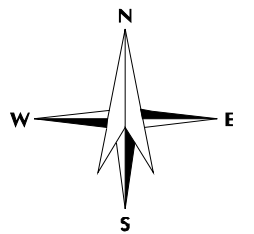
Scale: 1:500

Tile No: 3

434

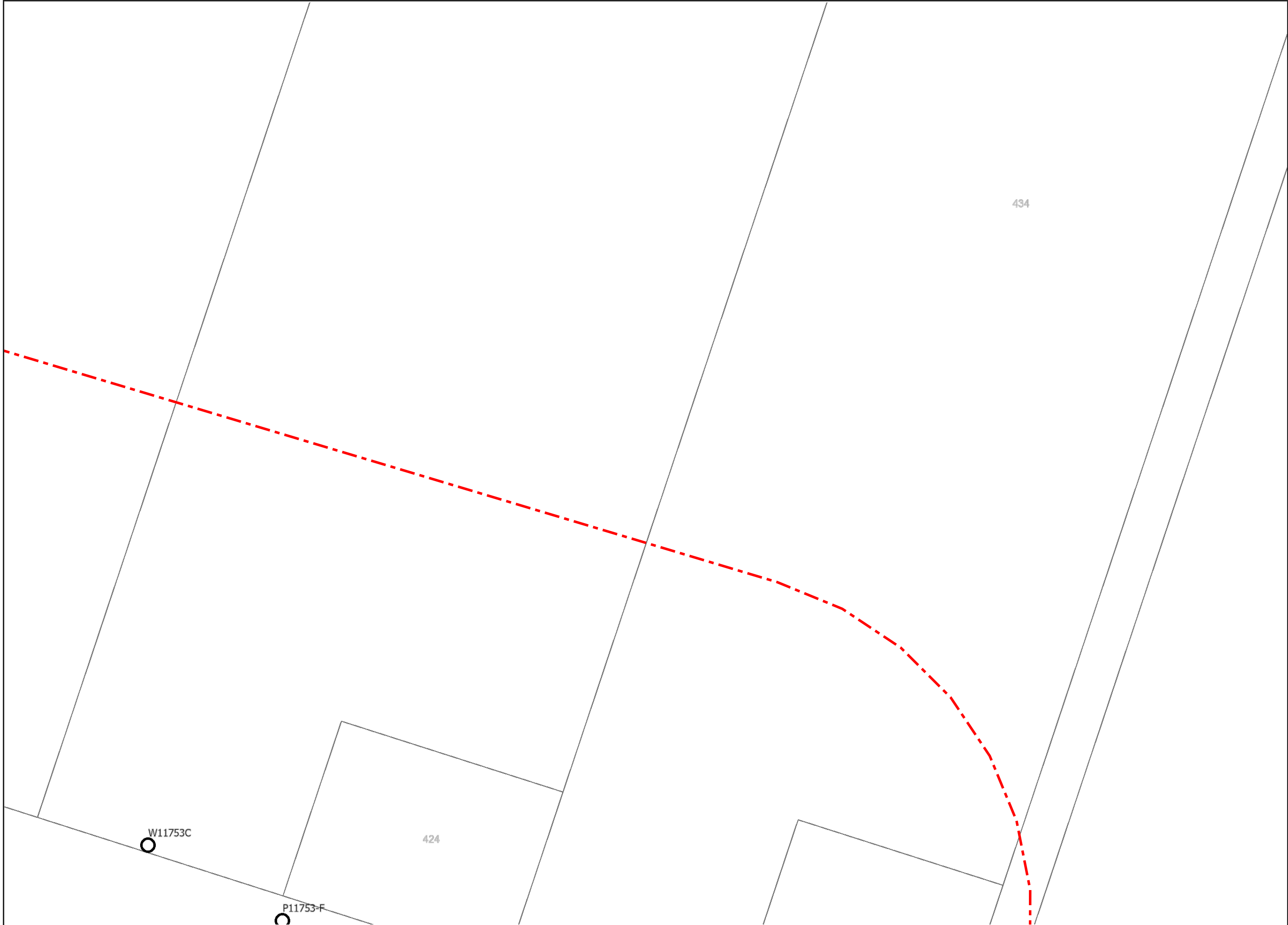
For a full list of Map
Symbols, please
refer to the supplied
BYDA Symbology
Legend page

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.

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.



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: 225988523

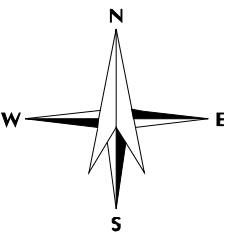
Date: 19/06/2023

Scale: 1:500

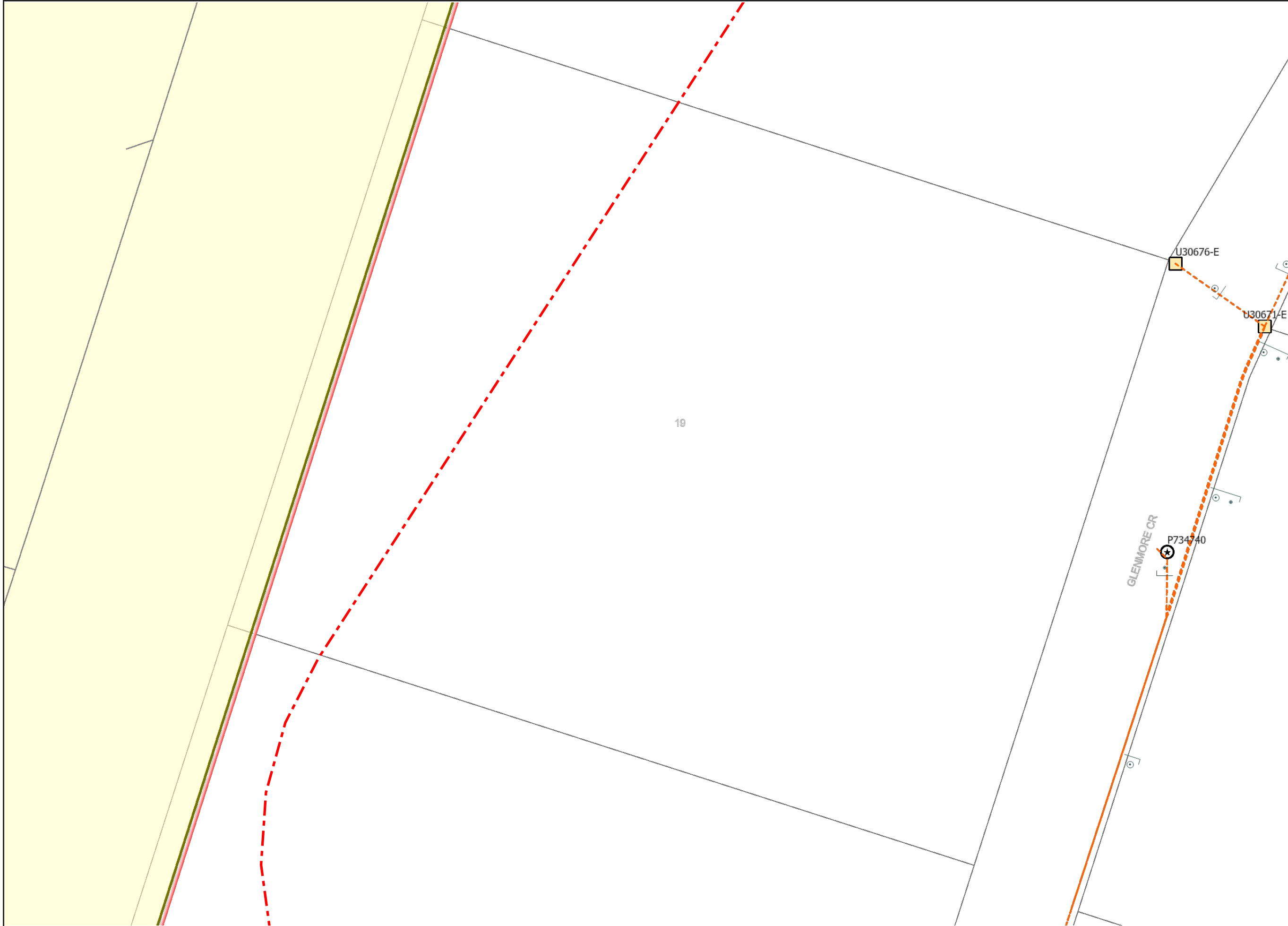
Tile No: 4

For a full list of Map Symbols, please refer to the supplied BYDA Symbolology 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.



19

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.

For Emergency Situations
please call 13 19 62

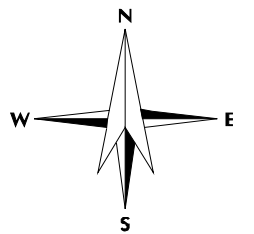


BYDA

Sequence: 225988523
Date: 19/06/2023
Scale: 1:500
Tile No: 5

**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.

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.



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.



BYDA

Sequence: 225988523

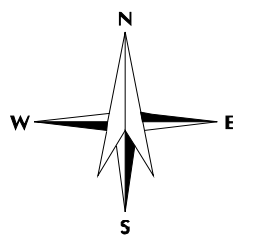
Date: 19/06/2023

Scale: 1:500

Tile No: 6

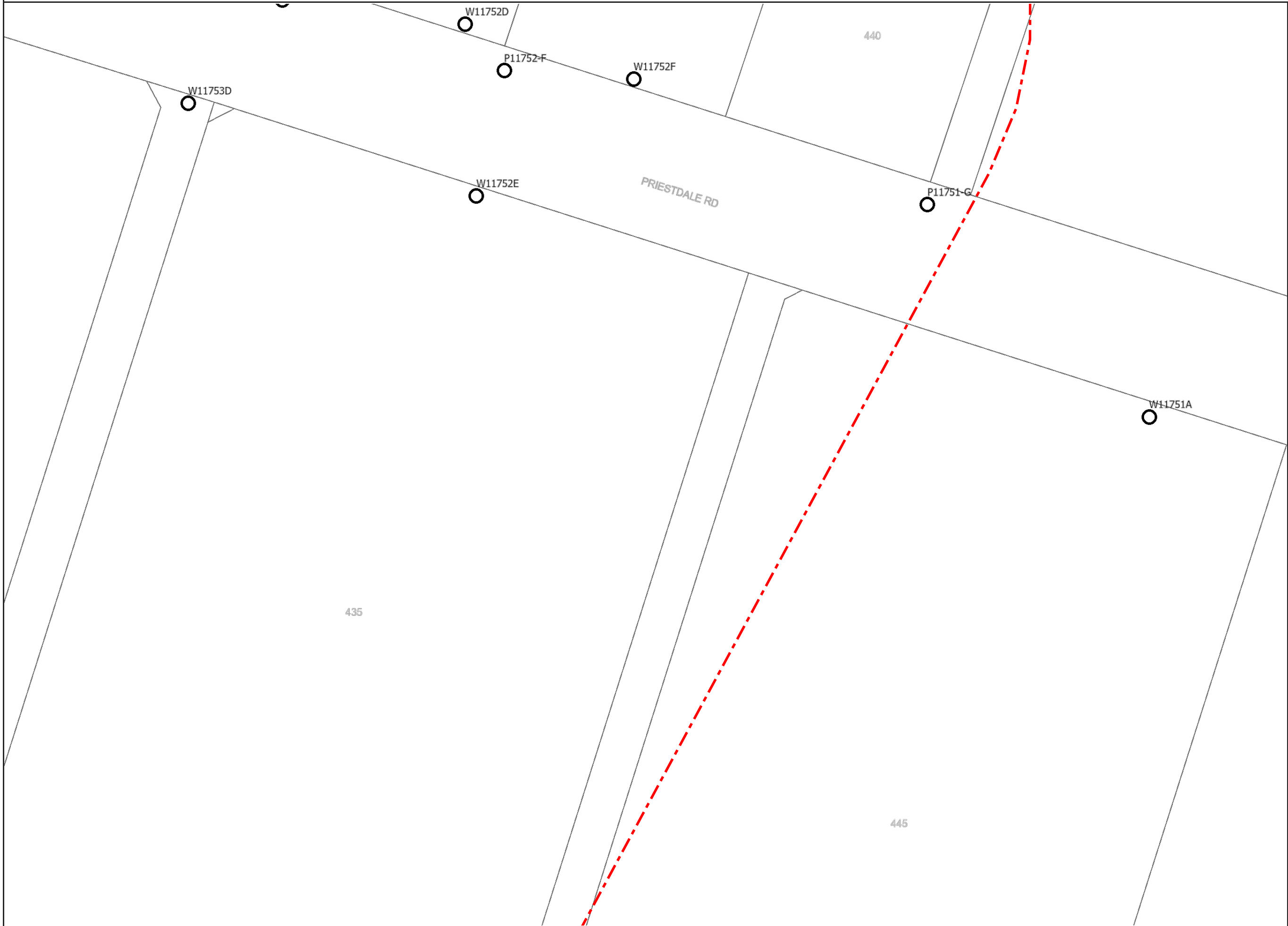
For a full list of Map
Symbols, please
refer to the supplied
BYDA Symbology
Legend page

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.

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.



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

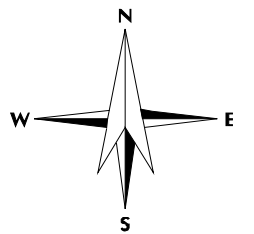


BYDA

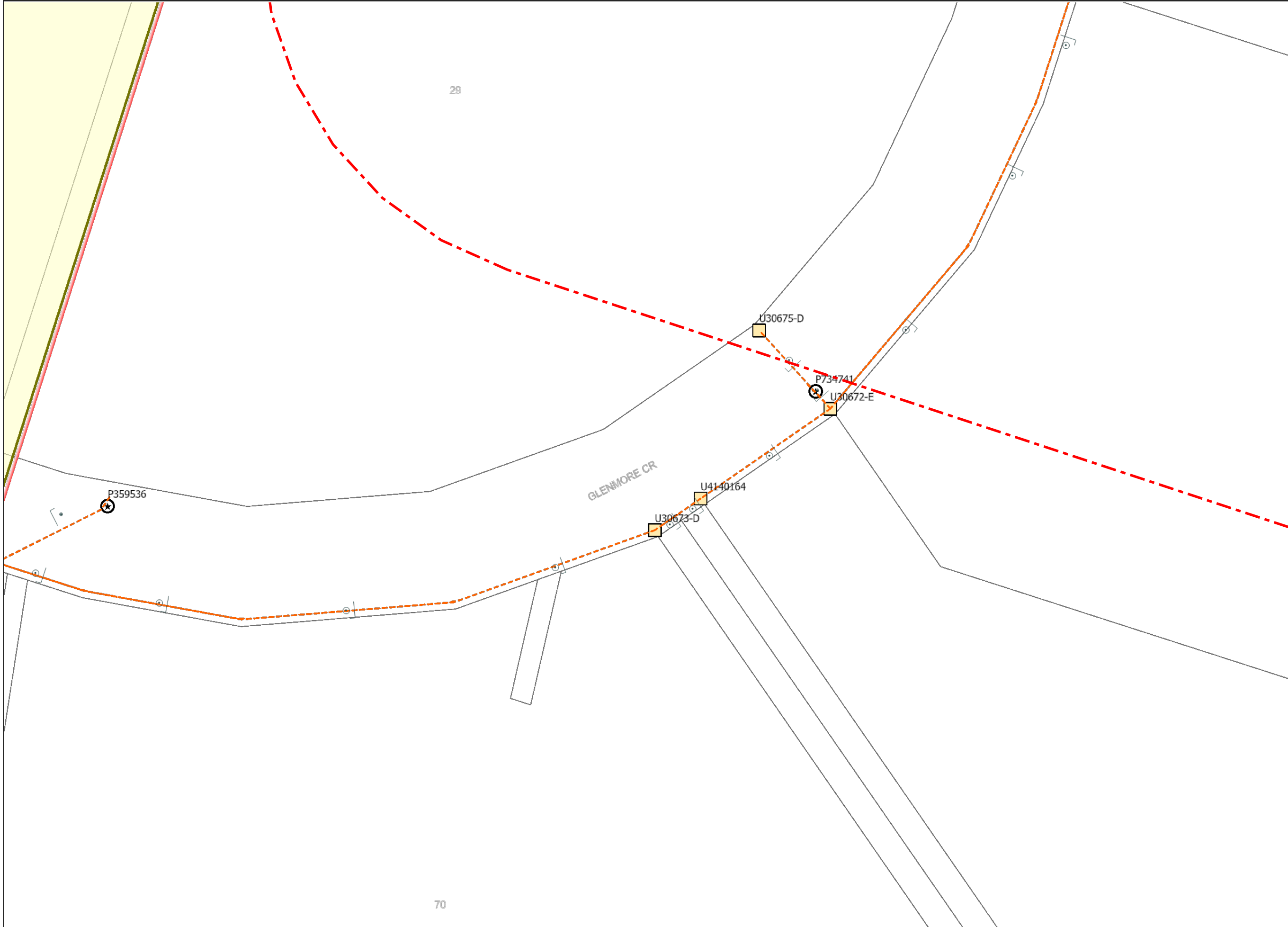
Sequence: 225988523
Date: 19/06/2023
Scale: 1:500
Tile No: 7

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



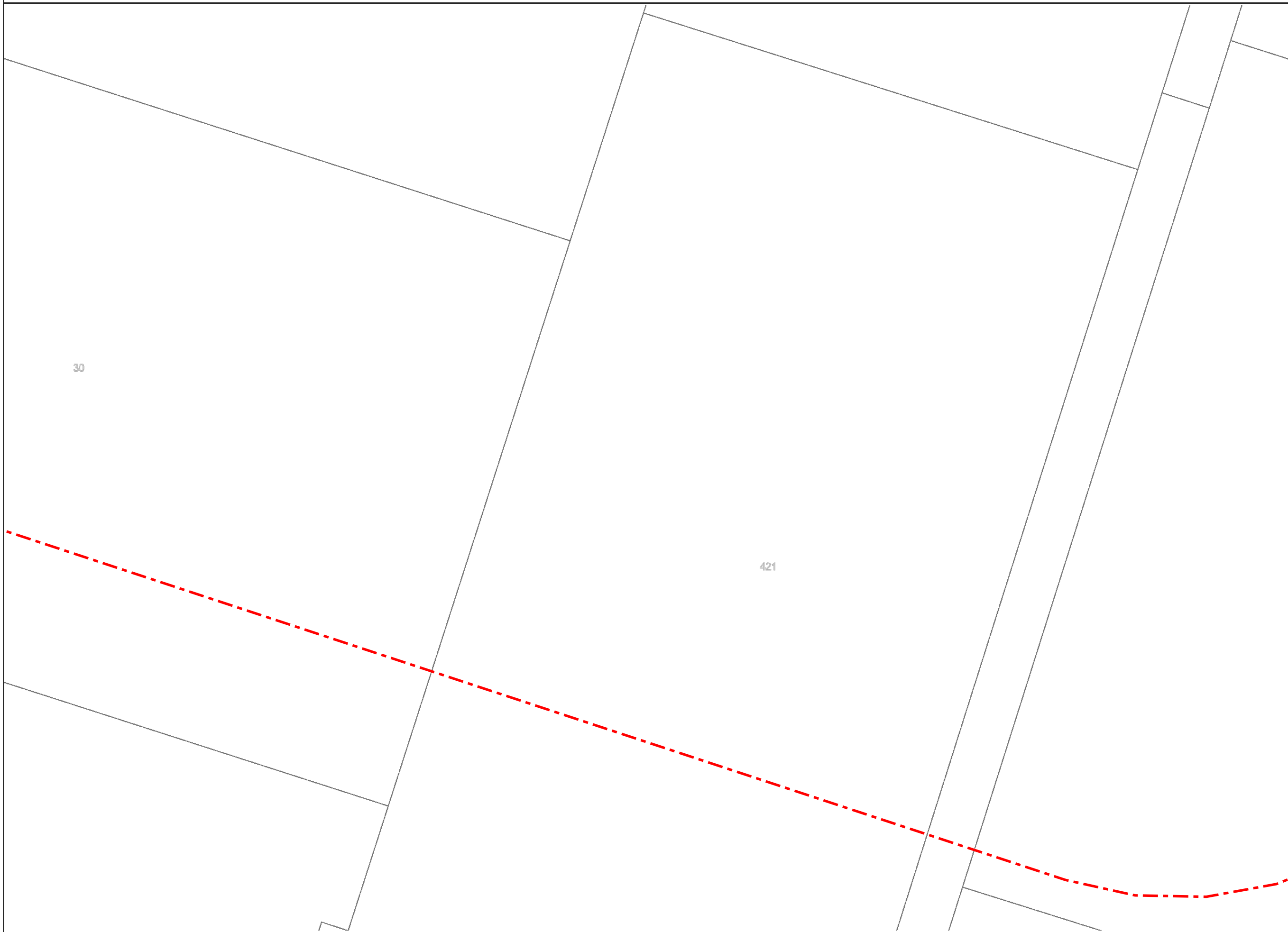
BYDA

Sequence: 225988523

Date: 19/06/2023

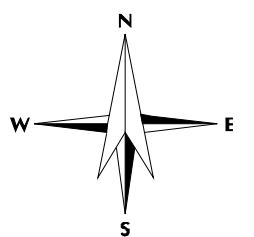
Scale: 1:500

Tile No: 8



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.

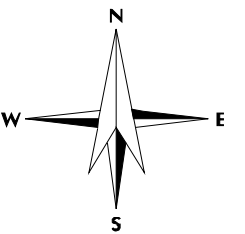


BYDA

Sequence: 225988523
Date: 19/06/2023
Scale: 1:500
Tile No: 9

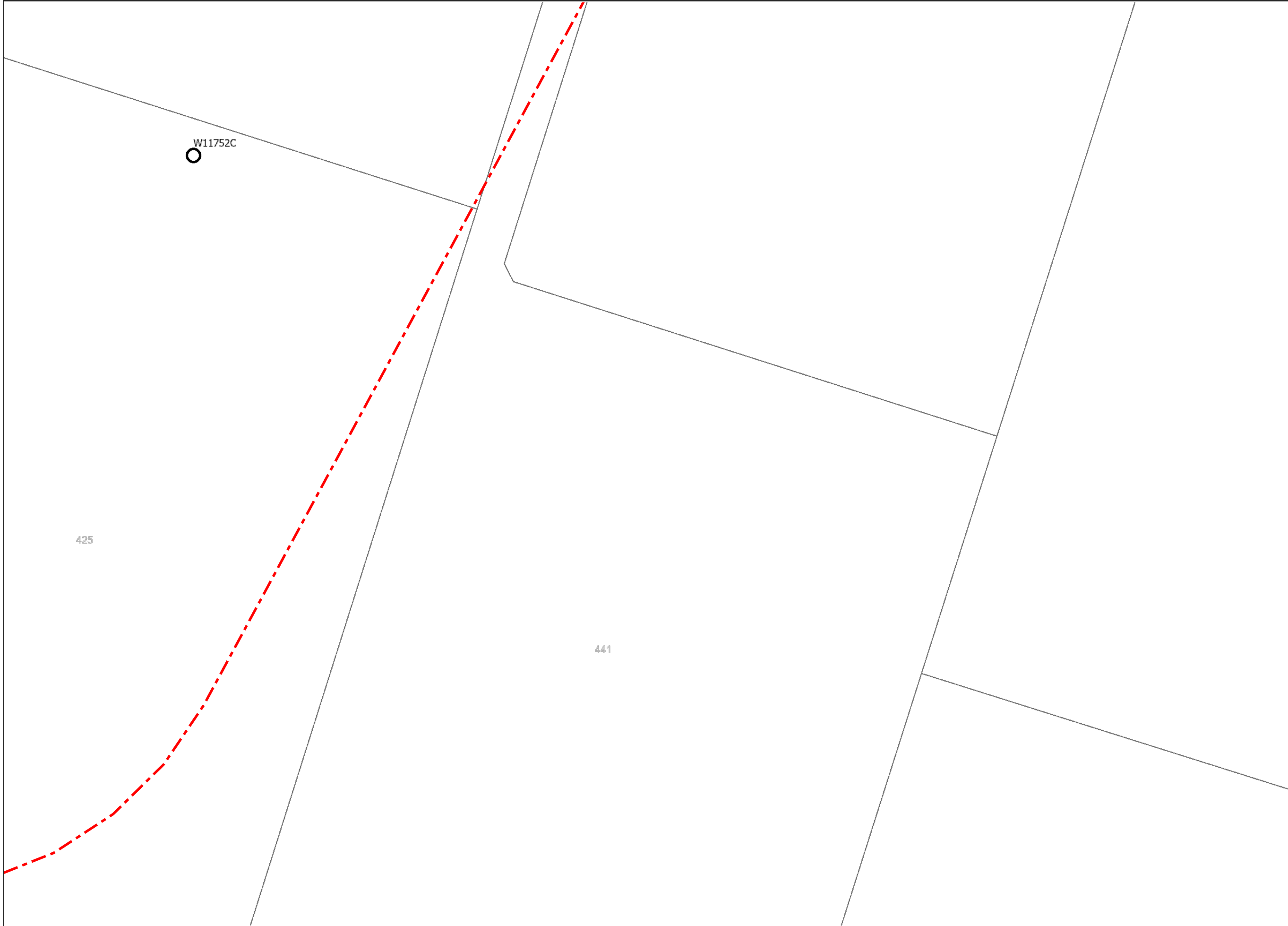
**For a full list of Map
Symbols, please
refer to the supplied
BYDA Symbolology
Legend page**

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.

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.



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.

To: Jarrod Bubbert
Phone: Not Supplied
Fax: Not Supplied
Email: jbubbert@adgce.com

Dial before you dig Job #:	34436609	
Sequence #	225988524	
Issue Date:	19/06/2023	
Location:	409 Priestdale Road , Rochedale , QLD , 4123	

Indicative Plans

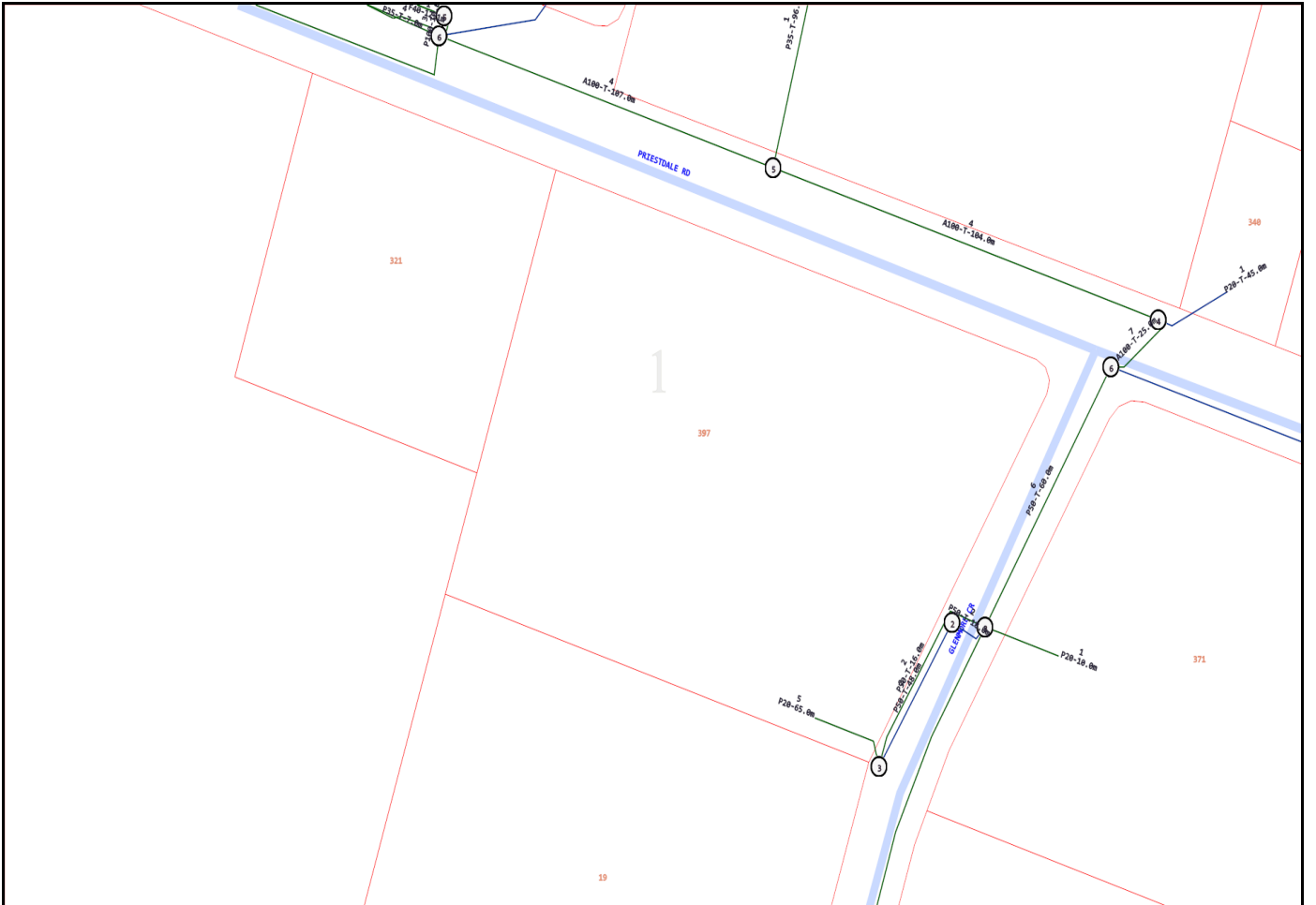
1	3
2	4

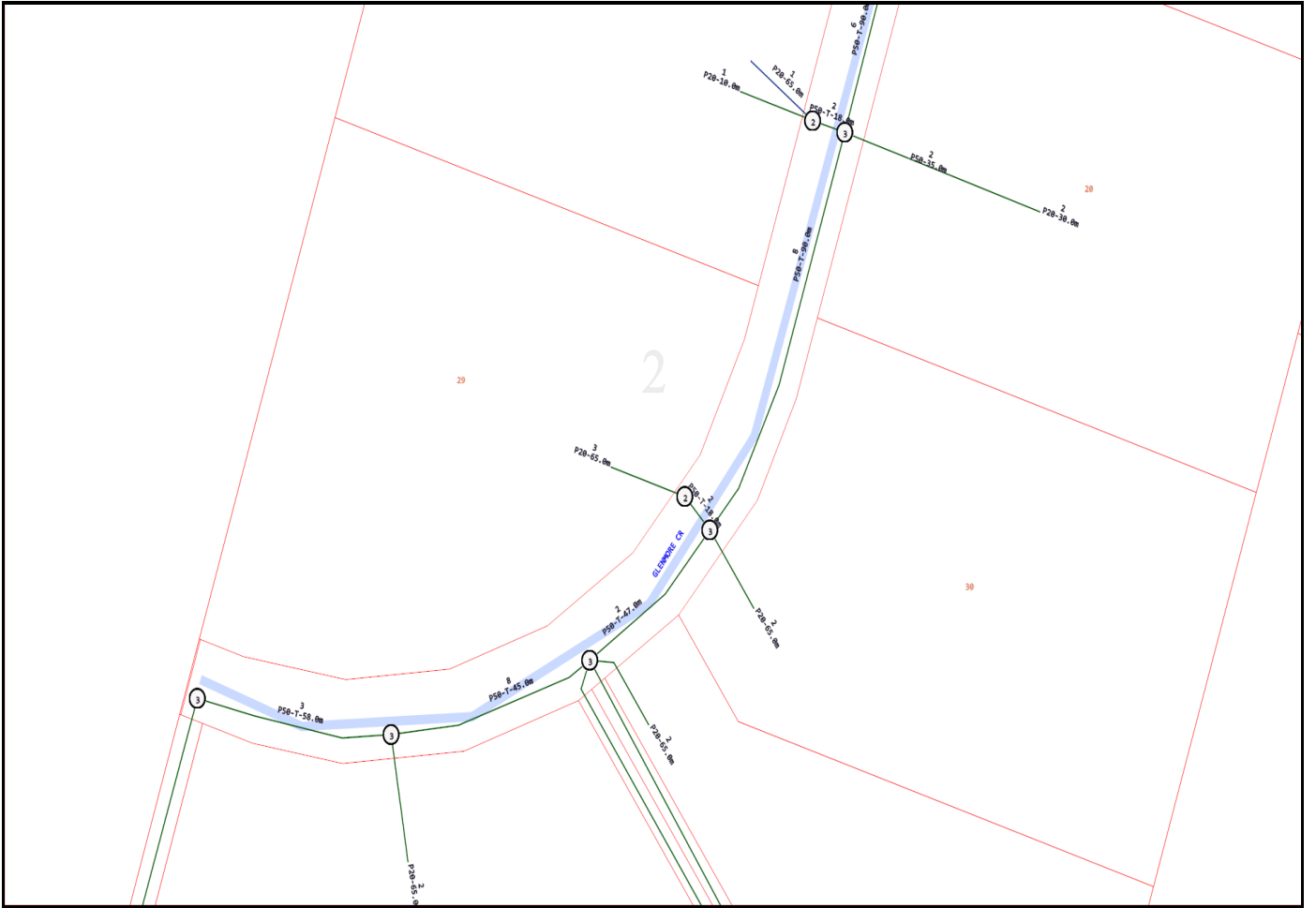


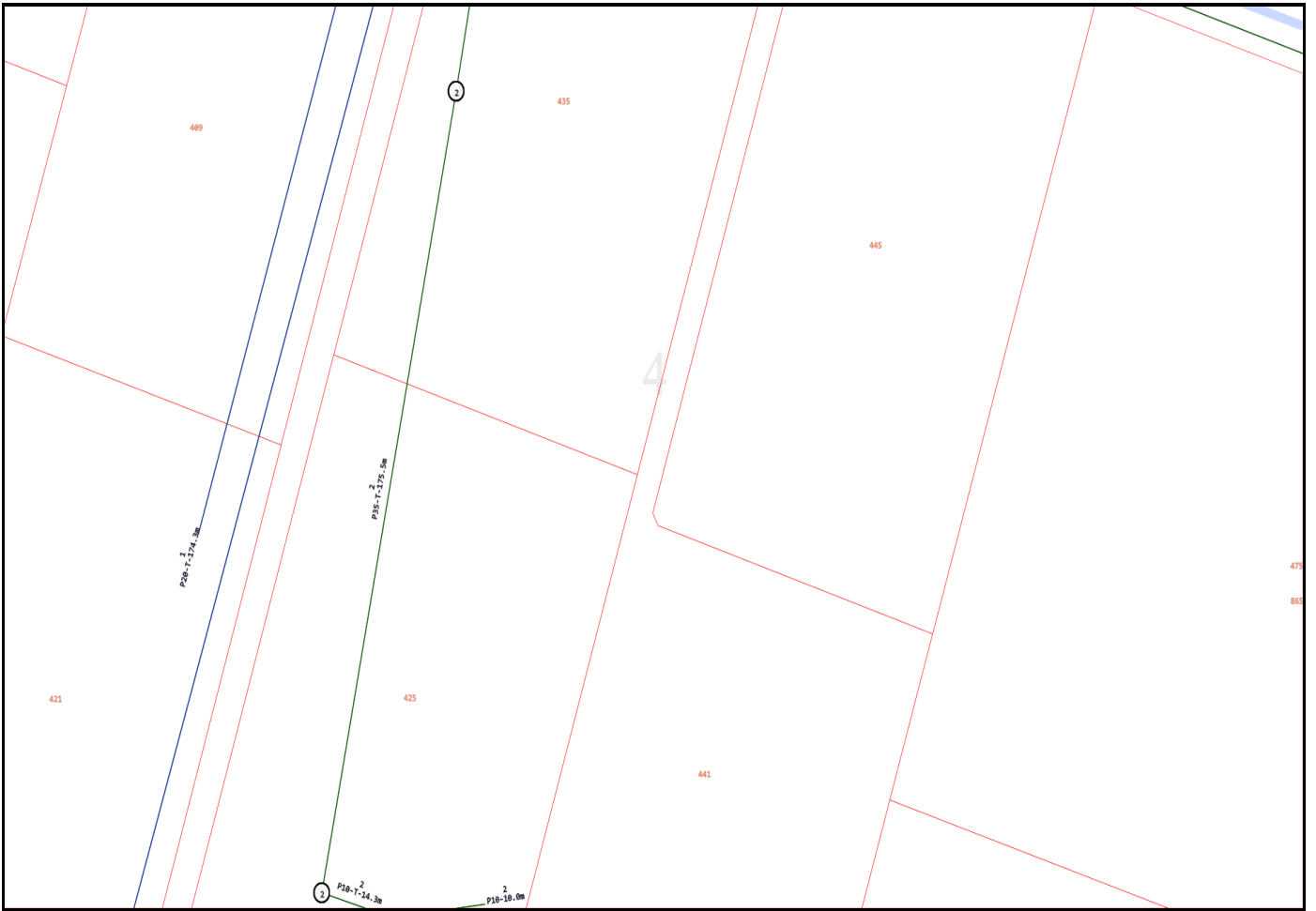
LEGEND



	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**TM network that you are/become aware of. Notification may be by telephone - 1800 626 329.

To: Jarrod Bubbert
Phone: Not Supplied
Fax: Not Supplied
Email: jbubbert@adgce.com

Dial before you dig Job #:	34436609	
Sequence #	225988524	
Issue Date:	19/06/2023	
Location:	409 Priestdale Road , Rochedale , QLD , 4123	

Indicative Plans

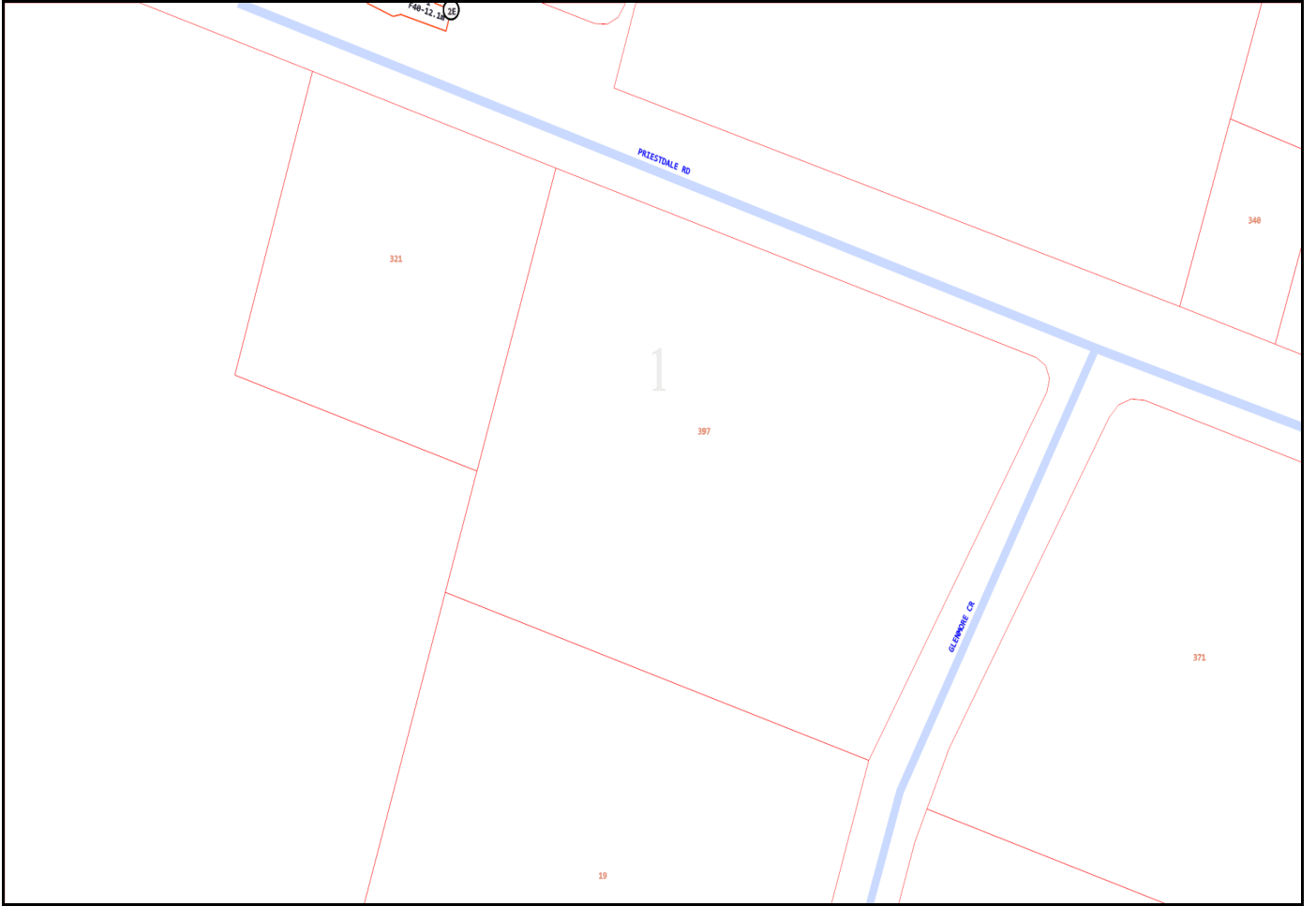
1	3
2	4

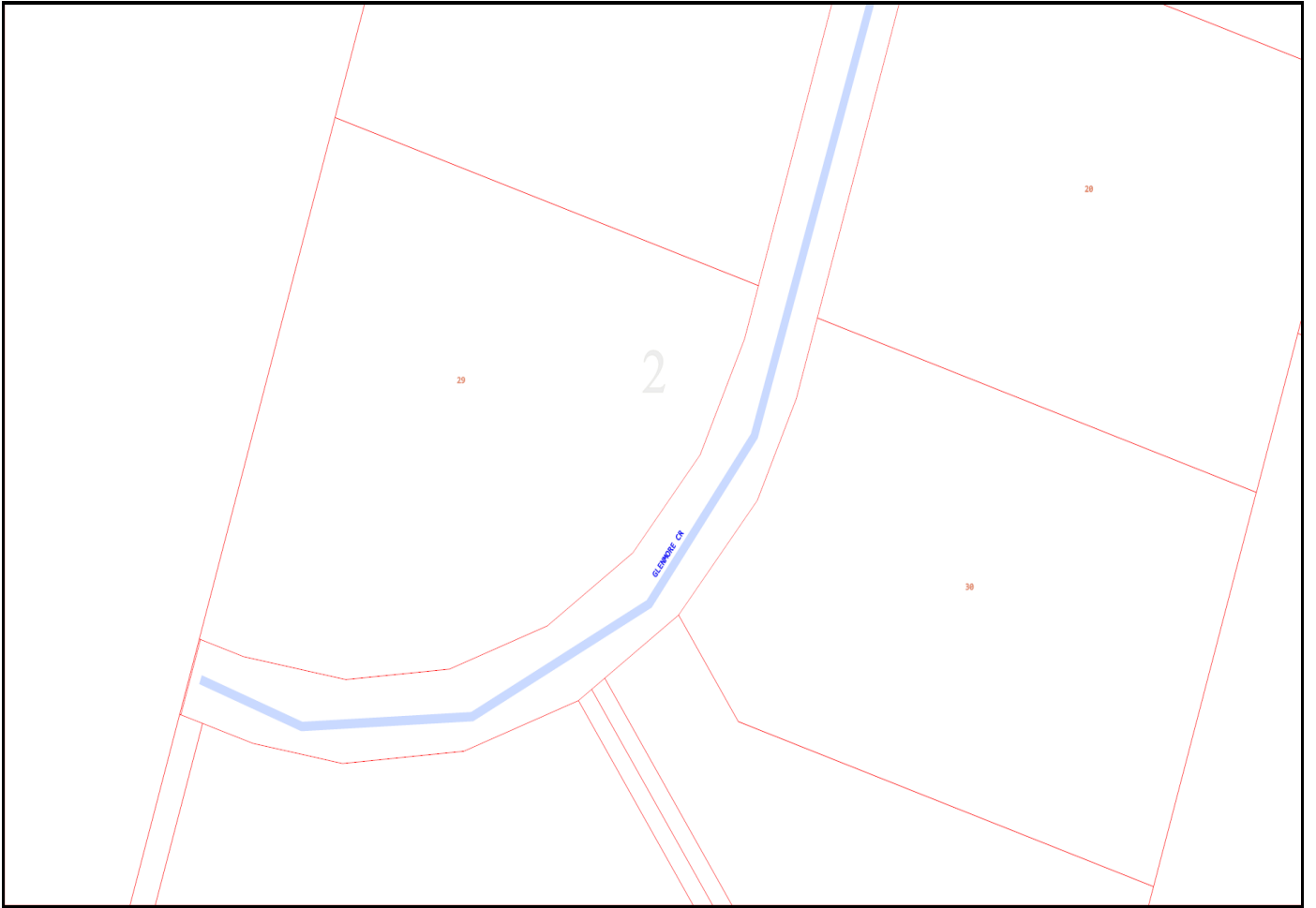


LEGEND

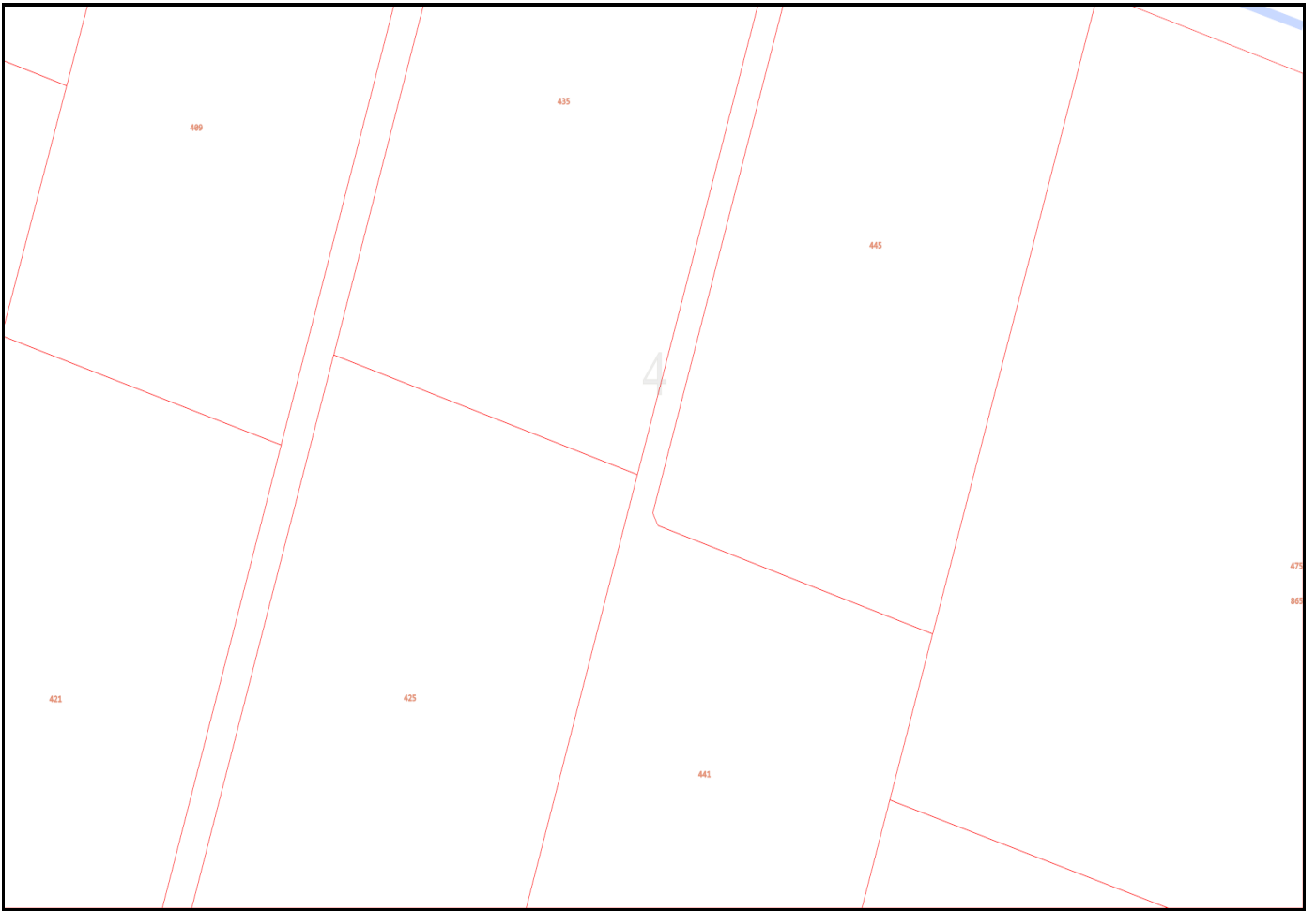


	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) 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**TM network that you are/become aware of. Notification may be by telephone - 1800 626 329.

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



Overview

Dial Before You Dig - Urban Utilities Water, Recycled Water and Sewer Infrastructure

DBYD Reference No: 225988525

Date DBYD Ref Received: 19/06/2023

Date DBYD Job to Commence: 20/06/2023

Date DBYD Map Produced: 19/06/2023

This Map is valid for 30 days

Produced By: Urban Utilities



Sewer

- Infrastructure
- ◆ Major Infrastructure
- Network Pipelines
- ▨ Network Structures

Water

- Infrastructure
- ◆ Major Infrastructure
- Network Pipelines
- ▨ Network Structures
- - - Water Service (Indicative only)



Map Scale
1:2050

While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Urban Utilities 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.

The plans are indicative and approximate only and provided without warranties of any kind, express or implied including in relation to accuracy, completeness, correctness, currency or fitness for purpose.

Urban Utilities takes no responsibility and accepts no liability for any loss, damage, costs or liability that may be incurred by any person acting in reliance on the information provided on the plans.

This plan should be used as guide only. Any dimensions should be confirmed on site by the relevant authority.

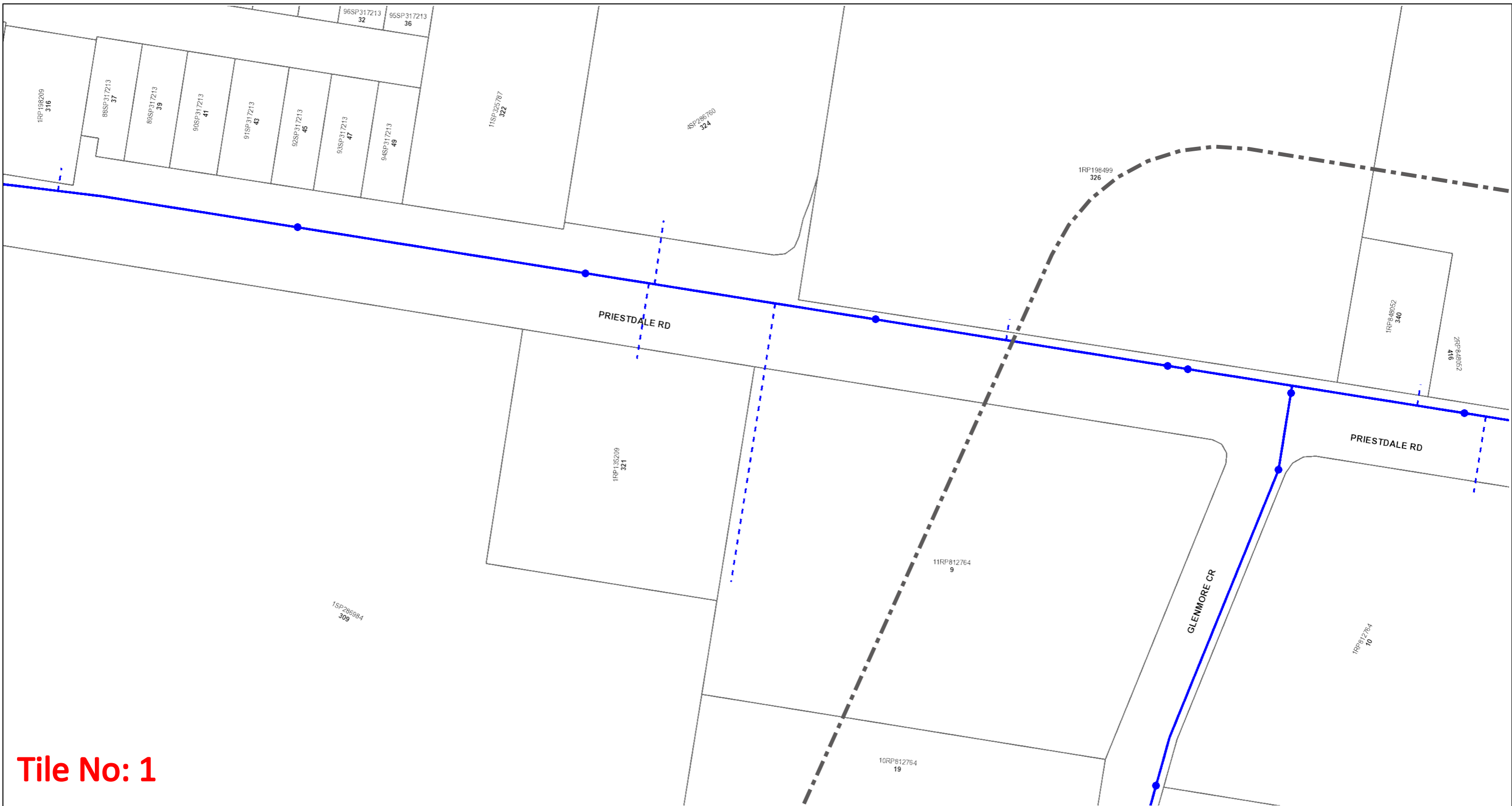
Based on or contains data provided by the State of Queensland (Department of Natural Resources and Mines) [2020]. In consideration of the State permitting the use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws. © State of Queensland Department of Natural Resources and Mines [2020]

For further information, please call Urban Utilities on 13 26 57 (8am-6pm weekdays). Faults and emergencies 13 23 64 (24/7).

www.urbanutilities.com.au

ABN 86 673 835 011

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



Tile No: 1

Dial Before You Dig - Urban Utilities Water, Recycled Water and Sewer Infrastructure

DBYD Reference No: 225988525

Date DBYD Ref Received: 19/06/2023

Date DBYD Job to Commence: 20/06/2023

Date DBYD Map Produced: 19/06/2023

This Map is valid for 30 days

Produced By: Urban Utilities



Sewer

- Infrastructure
- ◆ Major Infrastructure
- Network Pipelines
- ▨ Network Structures

Water

- Infrastructure
- ◆ Major Infrastructure
- Network Pipelines
- ▨ Network Structures
- - - Water Service (Indicative only)



Map Scale
1:1000

While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Urban Utilities 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.

The plans are indicative and approximate only and provided without warranties of any kind, express or implied including in relation to accuracy, completeness, correctness, currency or fitness for purpose.

Urban Utilities takes no responsibility and accepts no liability for any loss, damage, costs or liability that may be incurred by any person acting in reliance on the information provided on the plans.

This plan should be used as guide only. Any dimensions should be confirmed on site by the relevant authority.

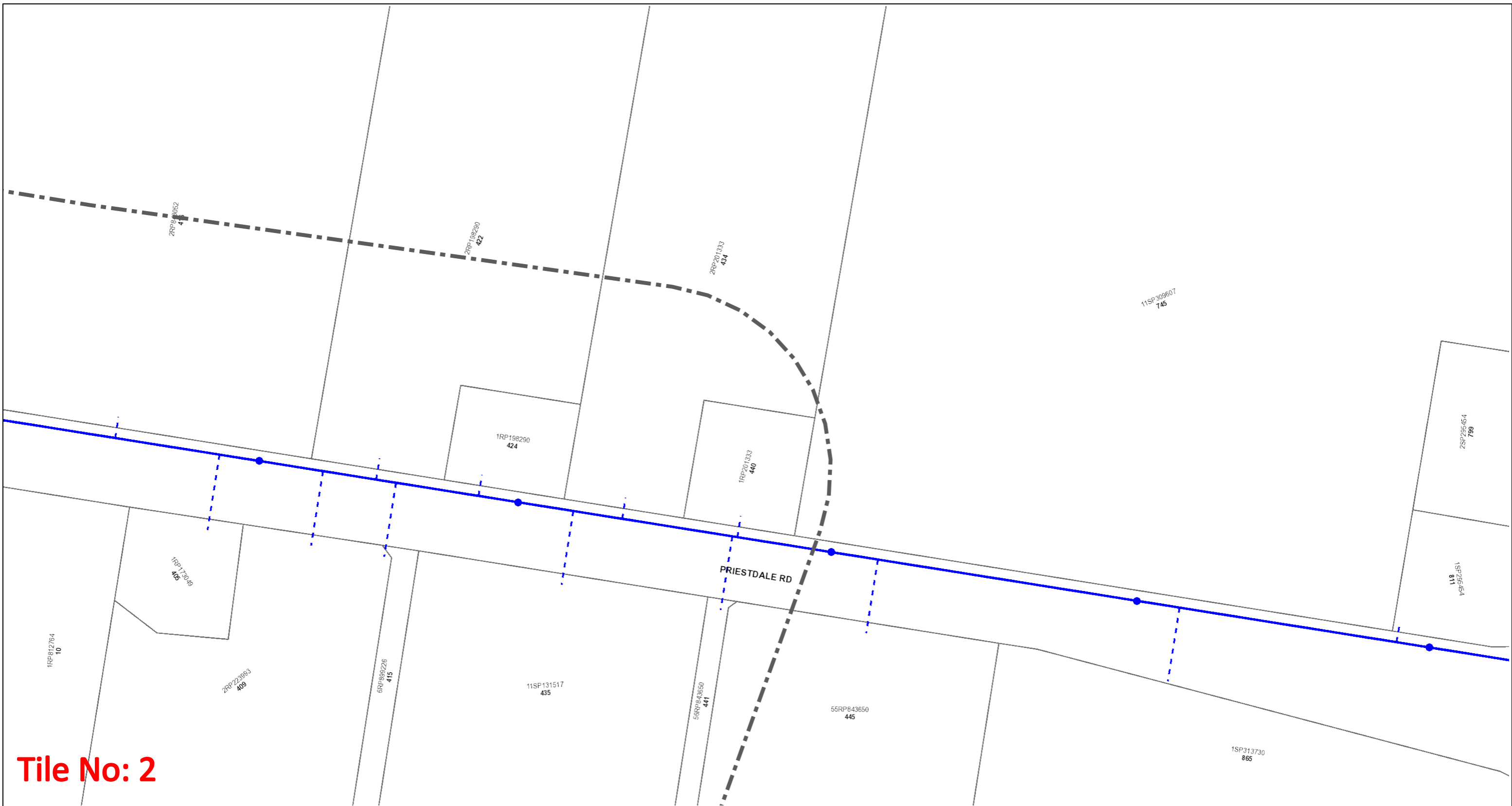
Based on or contains data provided by the State of Queensland (Department of Natural Resources and Mines) [2020]. In consideration of the State permitting the use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws. © State of Queensland Department of Natural Resources and Mines [2020]

For further information, please call Urban Utilities on 13 26 57 (8am-6pm weekdays). Faults and emergencies 13 23 64 (24/7).

www.urbanutilities.com.au

ABN 86 673 835 011

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



Tile No: 2

Dial Before You Dig - Urban Utilities Water, Recycled Water and Sewer Infrastructure

DBYD Reference No: 225988525

Date DBYD Ref Received: 19/06/2023

Date DBYD Job to Commence: 20/06/2023

Date DBYD Map Produced: 19/06/2023

This Map is valid for 30 days

Produced By: Urban Utilities



Sewer

- Infrastructure
- ◆ Major Infrastructure
- Network Pipelines
- ▨ Network Structures

Water

- Infrastructure
- ◆ Major Infrastructure
- Network Pipelines
- ▨ Network Structures
- - - Water Service (Indicative only)



Map Scale
1:1000

While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Urban Utilities 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.

The plans are indicative and approximate only and provided without warranties of any kind, express or implied including in relation to accuracy, completeness, correctness, currency or fitness for purpose.

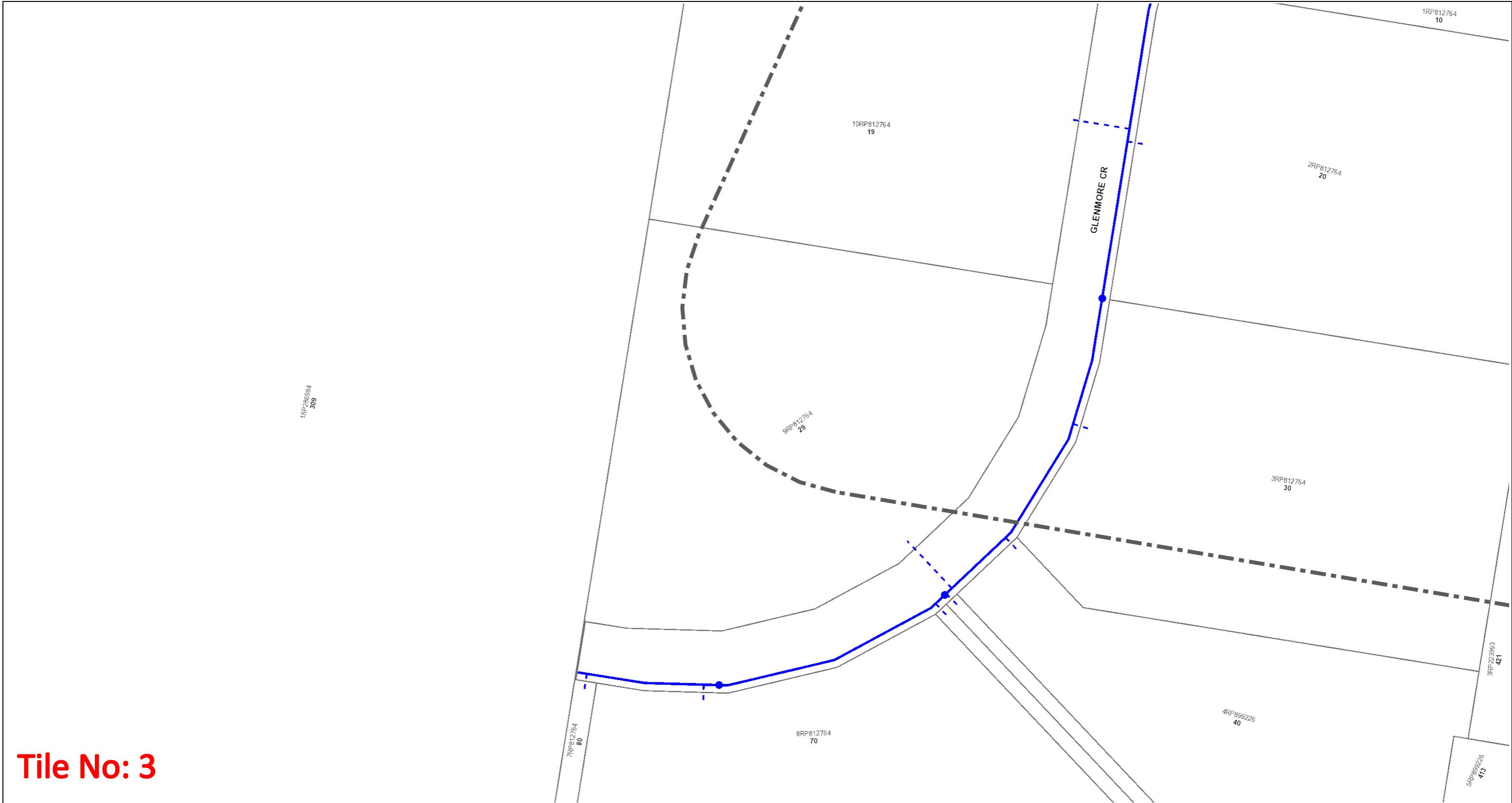
Urban Utilities takes no responsibility and accepts no liability for any loss, damage, costs or liability that may be incurred by any person acting in reliance on the information provided on the plans.

This plan should be used as guide only. Any dimensions should be confirmed on site by the relevant authority.

Based on or contains data provided by the State of Queensland (Department of Natural Resources and Mines) [2020]. In consideration of the State permitting the use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws. © State of Queensland Department of Natural Resources and Mines [2020]

For further information, please call Urban Utilities on 13 26 57 (8am-6pm weekdays). Faults and emergencies 13 23 64 (24/7).
www.urbanutilities.com.au ABN 86 673 835 011

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



Tile No: 3

Dial Before You Dig - Urban Utilities Water, Recycled Water and Sewer Infrastructure

DBYD Reference No: 225988525

Date DBYD Ref Received: 19/06/2023
 Date DBYD Job to Commence: 20/06/2023
 Date DBYD Map Produced: 19/06/2023

This Map is valid for 30 days Produced By: Urban Utilities



Sewer

- Infrastructure
- ◆ Major Infrastructure
- Network Pipelines
- ▨ Network Structures

Water

- Infrastructure
- ◆ Major Infrastructure
- Network Pipelines
- ▨ Network Structures
- - - Water Service (Indicative only)



Map Scale
1:1000

While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Urban Utilities 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.

The plans are indicative and approximate only and provided without warranties of any kind, express or implied including in relation to accuracy, completeness, correctness, currency or fitness for purpose.

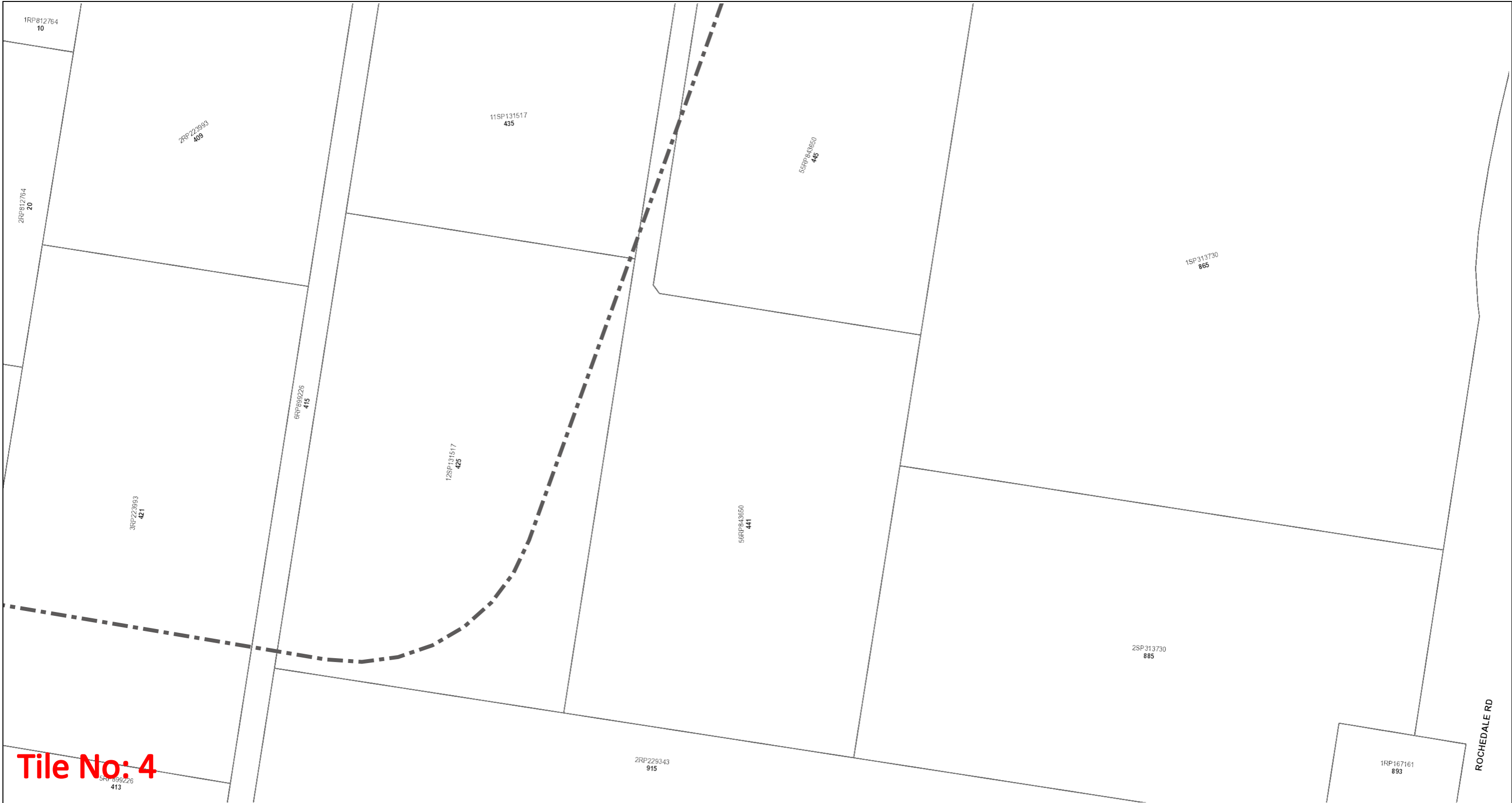
Urban Utilities takes no responsibility and accepts no liability for any loss, damage, costs or liability that may be incurred by any person acting in reliance on the information provided on the plans.

This plan should be used as guide only. Any dimensions should be confirmed on site by the relevant authority.

Based on or contains data provided by the State of Queensland (Department of Natural Resources and Mines) [2020]. In consideration of the State permitting the use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws. © State of Queensland Department of Natural Resources and Mines [2020]

For further information, please call Urban Utilities on 13 26 57 (8am-6pm weekdays). Faults and emergencies 13 23 64 (24/7).
www.urbanutilities.com.au ABN 86 673 835 011

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



Tile No: 4

Dial Before You Dig - Urban Utilities Water, Recycled Water and Sewer Infrastructure



DBYD Reference No: 225988525
 Date DBYD Ref Received: 19/06/2023
 Date DBYD Job to Commence: 20/06/2023
 Date DBYD Map Produced: 19/06/2023

This Map is valid for 30 days Produced By: Urban Utilities

Sewer

- Infrastructure
- ◆ Major Infrastructure
- Network Pipelines
- ▨ Network Structures

Water

- Infrastructure
- ◆ Major Infrastructure
- Network Pipelines
- ▨ Network Structures
- - - Water Service (Indicative only)



Map Scale
1:1000

While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Urban Utilities 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.

The plans are indicative and approximate only and provided without warranties of any kind, express or implied including in relation to accuracy, completeness, correctness, currency or fitness for purpose.

Urban Utilities takes no responsibility and accepts no liability for any loss, damage, costs or liability that may be incurred by any person acting in reliance on the information provided on the plans.

This plan should be used as guide only. Any dimensions should be confirmed on site by the relevant authority.

Based on or contains data provided by the State of Queensland (Department of Natural Resources and Mines) [2020]. In consideration of the State permitting the use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws. © State of Queensland Department of Natural Resources and Mines [2020]

For further information, please call Urban Utilities on 13 26 57 (8am-6pm weekdays). Faults and emergencies 13 23 64 (24/7).
www.urbanutilities.com.au ABN 86 673 835 011

Brisbane

596 Milton Road,
Toowong, QLD 4066
PO Box 1492
Toowong BC, QLD 4066
Phone: +61 07 3300 8800
Email: info@adgce.com

Melbourne

Suite 309, 838 Collins Street,
Docklands VIC 3008
Phone: +61 03 9269 6300
Email: info@adgce.com

Sunshine Coast

Level 3, 2 Emporio Place
Maroochydore, QLD 4558
PO Box 5014
Maroochydore BC, QLD 4558
Phone: +61 07 5444 0400
Email: info@adgce.com

Darwin

Tenancy 3, Lvl 1, 5 Edmunds St,
Darwin NT 0800
GPO Box 2422
Darwin, NT 0801
Phone: +61 08 8944 6300
Email: info@adgce.com

Sydney

13 / 20 Berry Street,
North Sydney NSW 4006
Phone: +61 02 8908 5400
Email: info@adgce.com

Gold Coast

Suite 201, Level 1, 1 Short Street
Southport, QLD 4215
PO Box 208
Southport, QLD 4215
Phone: +61 07 5552 4700
Email: info@adgce.com

Toowoomba

Tenancy 8, 158 Margaret Street
Toowoomba QLD 4350, Australia
Phone: +61 07 3300 8800
Email: info@adgce.com

Perth

Level 3, Suite 15, 23 Railway Road,
Subiaco, WA 6008
PO Box 443
Subiaco, WA 6904
Phone: +61 08 9217 0900
Email: info@adgce.com

