# **SERVICEABILITY REPORT**

# FOR THE PROPOSED GREENBANK SHOPPING CENTRE STAGE 2

LOCATED AT 251 TEVIOT ROAD, GREENBANK

PREPARED FOR REGION GROUP

> PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL



Approval no:DEV2019/1087/7Date:20 February 2024

BORNHORST +WARD

### Bornhorst & Ward Pty Ltd

A.B.N. 78 010 151 354 A.C.N. 010 151 354 Level 14, 133 Mary Street Brisbane Qld 4000 Phone: (07) 3013 4699 E-mail: mail@bornhorstward.com.au

Bornhorst and Ward Project No: 21282

If you have any queries regarding this proposal, then please contact: Robert Gray

Revision	Date	Description Author		Rev.	Арр.	
А	Apr 2023	Issue for DA	ST	RG	RG	
В	Aug 2023	Response to RFI	ST	RG	RG	

COPYRIGHT: This document is and shall remain the property of Bornhorst & Ward Pty Ltd and shall not be copied in whole or part. Unauthorized use of this document in any form is prohibited.

File Name: J:\2021\21282\07\_REPORTS\DESIGNREPORTS\Serviceability\REV B\RPT\_Serviceability(B).docx



### CONTENTS

1.		1
2.	SITE CHARACTERISTICS	
2.1	LOCATION AND EXISTING FEATURES	
2.2	PROPOSED DEVELOPMENT	
2.3	TOPOGRAPHY AND CATCHMENT CHARACTERISTICS	
2.4	EXISTING FLOODING CONDITIONS	3
3.	EXISTING AND PROPOSED CIVIL WORKS AND INFRASTRUCTURE	4
3.1	STORMWATER	4
	3.1.1 Existing Infrastructure	4
	3.1.2 Proposed Infrastructure	4
3.2	EARTHWORKS	5
3.3	ROADWORKS	
3.4	SEWER	5
	3.4.1 Existing Infrastructure	5
	3.4.2 Proposed Infrastructure	5
3.5	WATER	5
	3.5.1 Existing Infrastructure	5
	3.5.2 Proposed Infrastructure	5
3.6	ELECTRICITY	6
3.7	COMMUNICATIONS	6
3.8	GAS	6
4,	LOGAN CITY COUNCIL CODES	6
5.	SUMMARY	7

### **LIST OF FIGURES**

Figure 1: Site Locality Plan	2
Figure 2: Logan City Council Interactive Flood Map	3

### APPENDICES

- Appendix ADEVELOPMENT DRAWINGSAppendix BENGINEERING DRAWINGSAppendix CEXISTING SERVICES INFORMATION
- Appendix D COUNCIL CODES



### **1. INTRODUCTION**

Bornhorst and Ward has been commissioned to investigate and report on the serviceability requirements pertaining to the proposed Stage 2 extension to the Greenbank Shopping Centre located on the corner of Teviot Road and Pub Lane, Greenbank (Lots 1 & 5 on SP214051). The proposal consists of constructing new tenancies, associated carparking and landscaping, and a new access to Pub Lane. Plans of the proposed development layout can be seen in Appendix A.

This document reports on the existing and proposed civil works and infrastructure required as part of the proposed development. The engineering requirements for this proposal shall be in accordance with Engineering Best Management Practices, Logan City Council Planning Scheme 2015 and the State Planning Policy 2017.

This report outlines the preliminary design methodology in support of a Development Application and should be read in conjunction with other documents issued by the consultant team.

### **2. SITE CHARACTERISTICS**

#### 2.1 LOCATION AND EXISTING FEATURES

The development site, located at 251 Teviot Road has the following existing characteristics:

- The site is bound by residential lots to the north; the existing Greenbank Shopping Centre to the east; Pub Lane to the south; and undeveloped land to the west.
- The existing site is undeveloped and consists of grass and tree cover;
- The total area of the site is 14.100 ha;
- Existing access to the Greenbank Shopping Centre site is achieved via Pub Lane and Teviot Road;
- There are two easements located within the site extents (A & B on SP214051) for drainage;
- The site is located within the Greater Flagstone Priority Development Area.

Refer to Figure 1 for locality details.

### BORNHORST +WARD



Figure 1: Site Locality Plan

#### 2.2 PROPOSED DEVELOPMENT

The following points outline information regarding the proposed development:

 It is proposed to construct new tenancies for the Greenbank Shopping Centre, associated carparking and landscaping, and a new access to Pub Lane.

Refer to the development drawings in Appendix A for further details of the proposed development.

#### 2.3 TOPOGRAPHY AND CATCHMENT CHARACTERISTICS

The existing topography and catchment characteristics are as follows:

- The high point of the existing Stage 2 site is approximately RL 69.50m AHD located towards the south-eastern corner;
- The development falls from the high point at an approximate grade of 2.3% to a low point of approximately RL 64.25m AHD at the drainage easement to the north;
- During major storm events, runoff from the site discharges as overland flow towards the drainage easement running along the northern boundary, and to the rail corridor located to the west of the site;
- There are no external catchments associated with the development site;
- Runoff from the current centre is captured in roof water and stormwater systems before being directed to an open drain along the northern boundary. A detention basin exists within the Stage 2 development site to service the existing development.

See the survey plan in Appendix C for more information.



#### 2.4 EXISTING FLOODING CONDITIONS

A Logan City Council Flood Report has been obtained for the site and states the following:

- No flood levels or flags for building development purposes exist for the development site.
- The interactive mapping system within Logan PD Hub confirms that the development site is not affected by flooding.
- It is expected that the site is at a low risk of flood inundation.

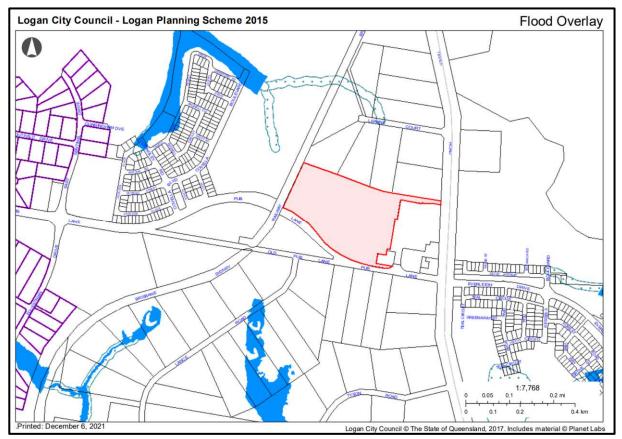


Figure 2: Logan City Council Interactive Flood Map



### **3.** EXISTING AND PROPOSED CIVIL WORKS AND INFRASTRUCTURE

#### 3.1 STORMWATER

#### 3.1.1 Existing Infrastructure

A Dial Before You Dig Investigation has been completed of the site and its surrounding area. The following stormwater infrastructure was noted:

- There are 3 x 450mm dia. stormwater pipes flowing south from the development site across Pub Lane;
- A large open channel grassed drain exists along the northern boundary, draining the development site towards the west, into a detention basin. Discharge from Stage 1 of the shopping centre enters this drain from 2 locations, each with a Gross Pollutant Trap (GPT) immediately prior to discharge.

Council Asset Plans of the existing stormwater infrastructure can be found in Appendix C of this report.

#### 3.1.2 Proposed Infrastructure

The following points outline the proposed stormwater infrastructure for the development site:

- As there will be an increase to the impervious area as a result of the development, there will be an expected increase to peak stormwater discharge rates from the site. Based on this, stormwater detention measures are required.
- Considering the development works area is greater than 2500m<sup>2</sup> stormwater quality treatment measures will be required for the site.
- Minor events will be collected by stormwater piped network;
- Major events will be directed by surface grading within the proposed carpark to a stormwater detention basin;
- Two stormwater detention basins are proposed; one underneath the proposed S1 Tenancy (Basin 1) and one to the north of the proposed western carpark (Basin 2). The Stage 2 development encroaches on the basin constructed for the Stage 1 development and will not be able to remain. Basin 1 is proposed to match the levels of the existing basin and utilise a portion of the existing basin's area. Flows from the drainage channel that currently enter the Stage 1 basin are proposed to be piped via a culvert underneath the proposed Stage 2 Shopping Centre external pavement into Basin 1 beneath the proposed S1 tenancy.
- Basin 1 is proposed to collect:
  - Any overland flow from the existing Stage 1 development that enters the drainage easement along the northern boundary;
  - Minor flows from the existing Stage 1 development, which are proposed to be piped through Stage 2, but will bypass any stormwater treatment;
  - The Stage 2 Shopping Centre northern roof water catchment; and
  - The Stage 2 service yard pavement to the north of the proposed Stage 2 Shopping Centre.
- Basin 2 is proposed to collect:
  - The remainder of overland flow from the Stage 1 development that does not discharge to the drainage easement along the northern boundary;
  - Overland flow from the Stage 2 southern carpark and Stage 2 western carpark; and
  - The Stage 2 Shopping Centre southern roof water catchment.

Refer to Bornhorst and Ward's Stormwater Management Plan for further details. Refer to the engineering drawings in Appendix B for further information.



#### 3.2 EARTHWORKS

Earthworks will be required to construct building pads, create appropriate road grades and to ensure the site can be serviced. A detailed earthworks plan will be prepared as a part of the detailed design operational works lodgement. A Preliminary Earthworks Plan has been provided in Appendix B.

All earthworks will be undertaken in accordance with the Logan City Council guidelines.

#### 3.3 ROADWORKS

The proposed road works are as follows:

- A new access to the site is proposed off Pub Lane;
- All proposed road works will be undertaken in accordance with Logan City Council Guidelines.

Refer to the engineering drawings in Appendix B for further information.

#### 3.4 SEWER

#### 3.4.1 Existing Infrastructure

The LCC Asset Plans from a Dial Before You Dig investigation indicate the following existing sewer information:

An existing 150mm diameter sewer main drains west within the drainage easement running along the northern boundary. There is a property connection from this main which terminates within the Stage 2 development extents.

LCC Asset Plans of the existing sewer infrastructure can be found in Appendix C of this report.

#### 3.4.2 Proposed Infrastructure

The proposed sewer infrastructure for this development is as follows:

- It is expected that the existing connection will continue to service the proposed development.

Refer to Appendix B for preliminary drawings of the proposed sewer works.

#### 3.5 WATER

#### 3.5.1 Existing Infrastructure

The LCC Asset Plans from a Dial Before You Dig investigation indicate the following existing water infrastructure:

There is an existing 150mm dia. water main located within the Pub Lane access road to the existing Greenbank Shopping Centre. The water main splits into multiple connections within the centre, and it is expected that this is for separate fire and water supply. This service will be retained for use and is considered to be suitable for the Stage 2 expansion as fire tanks exist on the site. Refer to the site plan prepared by Cottee Parker in Appendix A for further information.

LCC Asset Plans of the existing water infrastructure can be found in Appendix C of this report.

#### 3.5.2 Proposed Infrastructure

The proposed water infrastructure for the development is as follows:

– It is expected that the existing water connection will remain to continue servicing the proposed development.

Refer to Appendix B for preliminary drawings of the proposed water works.



#### 3.6 ELECTRICITY

The Energex Asset Plans from a Dial Before You Dig investigation indicate the following:

- Underground electrical infrastructure is located within the Stage 1 development and the Pub Lane road reserve.
- Above ground electrical infrastructure was also identified within the Pub Lane road reserve.

Energex Asset Plans of the existing electrical infrastructure can be found in Appendix C of this report.

Electrical services required for the proposed development including assessment of the existing infrastructure capacity will be designed and determined by an electrical engineer and will be assessed by Energex during the detailed design phase of the development.

#### 3.7 COMMUNICATIONS

The Telstra and Optus Asset Plans from a Dial Before You Dig investigation indicate the following:

- Below ground communications infrastructure exists within the Stage 1 development and the Pub Lane road reserve.

Telstra and Optus Asset Plans of the existing communications infrastructure can be found in Appendix C of this report.

All works required to provide communication services to the proposed development will be undertaken with the relevant service providers approval and coordination.

#### 3.8 GAS

The APA Asset Plans from a Dial Before You Dig investigation indicate the following:

– A high pressure natural gas infrastructure exists in the Pub Lane road reserve.

APA Asset Plans of the existing gas infrastructure can be found in Appendix C of this report. All works required to provide gas services to the proposed development will be undertaken by the appropriate consultant with APA Group's approval and coordination.

### 4. LOGAN CITY COUNCIL CODES

The relevant Logan City Council Codes with respect to engineering aspects for assessment of the Development Application have been addressed. The codes will assist in assessing operational works requirements. The codes addressed in this report include: -

- Filling and Excavation Code;
- Infrastructure Code.

The completed codes can be found attached in Appendix D of this Report.



### 5. SUMMARY

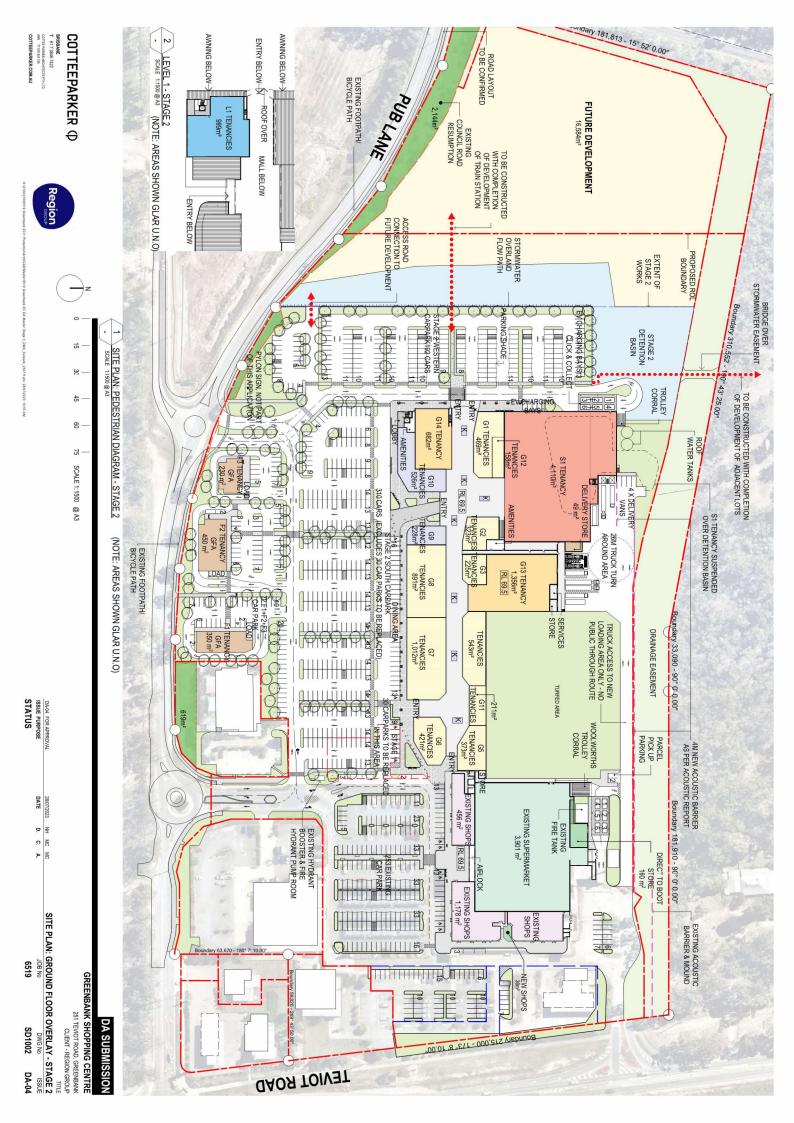
This reporting relating to the proposed Shopping Centre development located at 251 Teviot Road has shown the following:

- The proposed development site has no flood levels or flags for building or development purposes and is expected to be low risk.
- Stormwater detention and stormwater quality treatment is proposed and required.
- Earthworks will be required to level the site and provide appropriate road grades.
- Sewer and water connections to the existing surrounding infrastructure are proposed to service the development.
   LCC will be required to confirm the suitability of these connections and the capacity of the existing network.
- There is existing electrical, gas and telecommunications surrounding the site which may be used to service the development.



# APPENDIX A

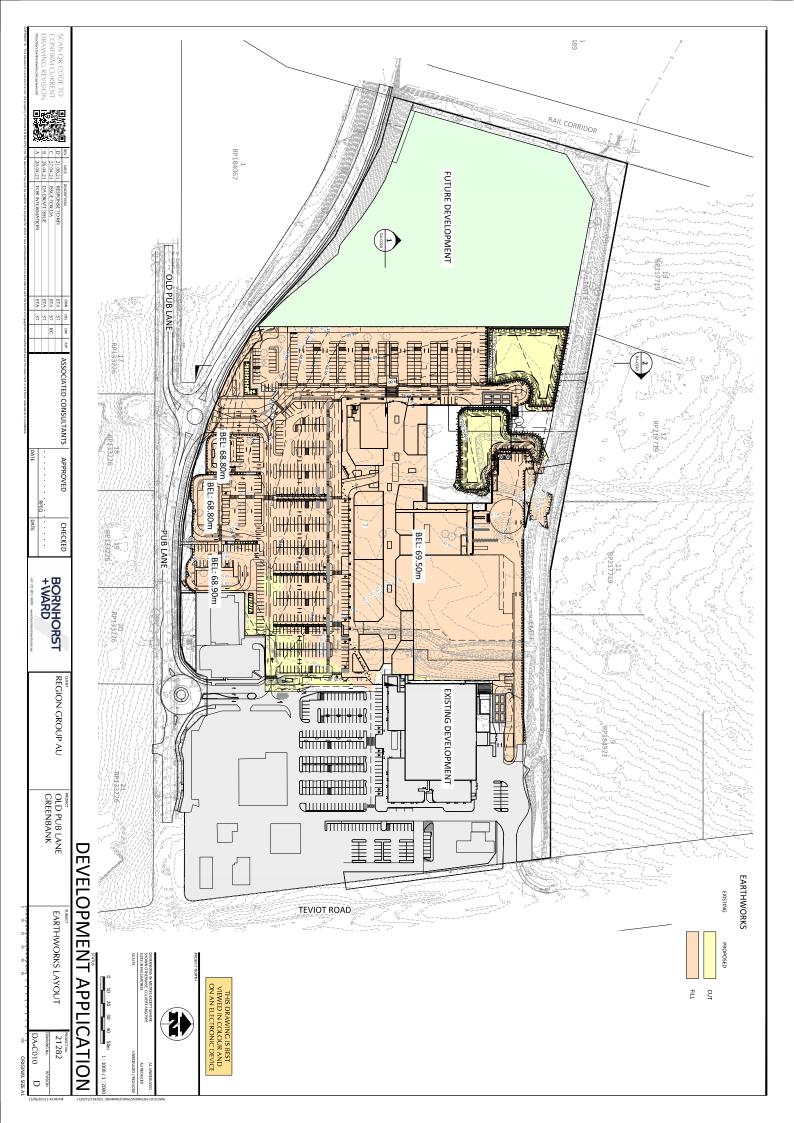
# **DEVELOPMENT DRAWINGS**

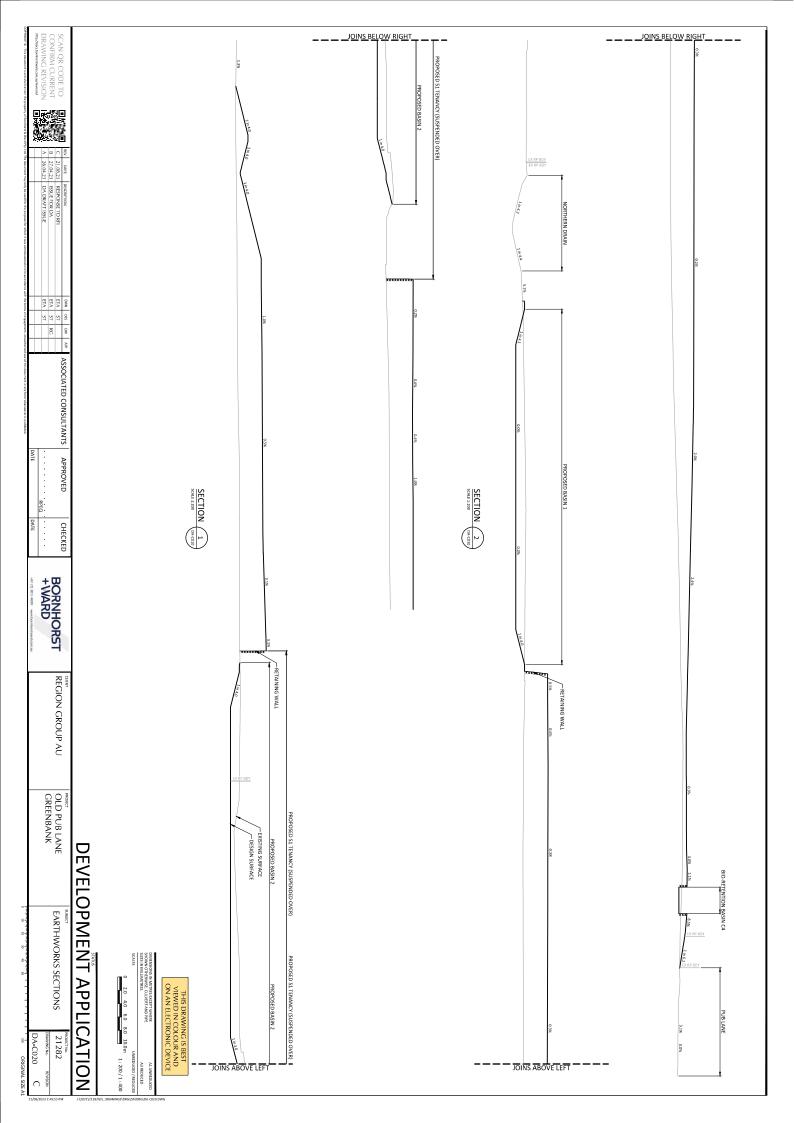


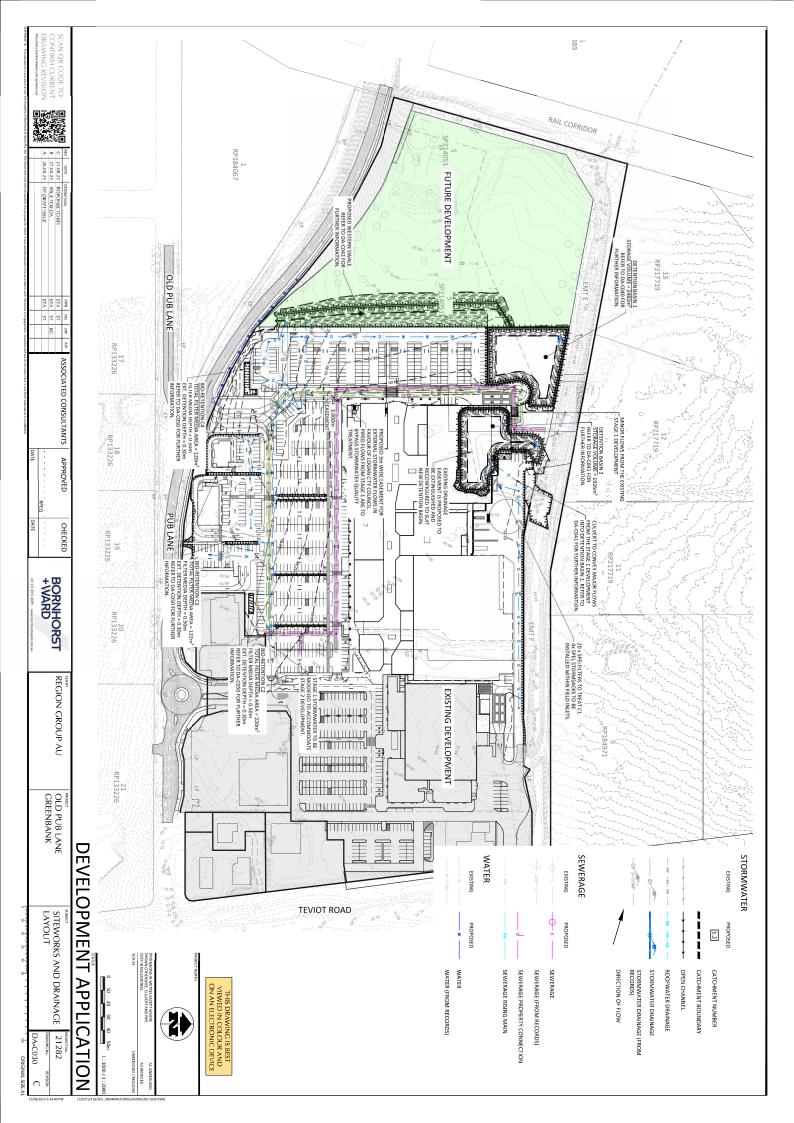


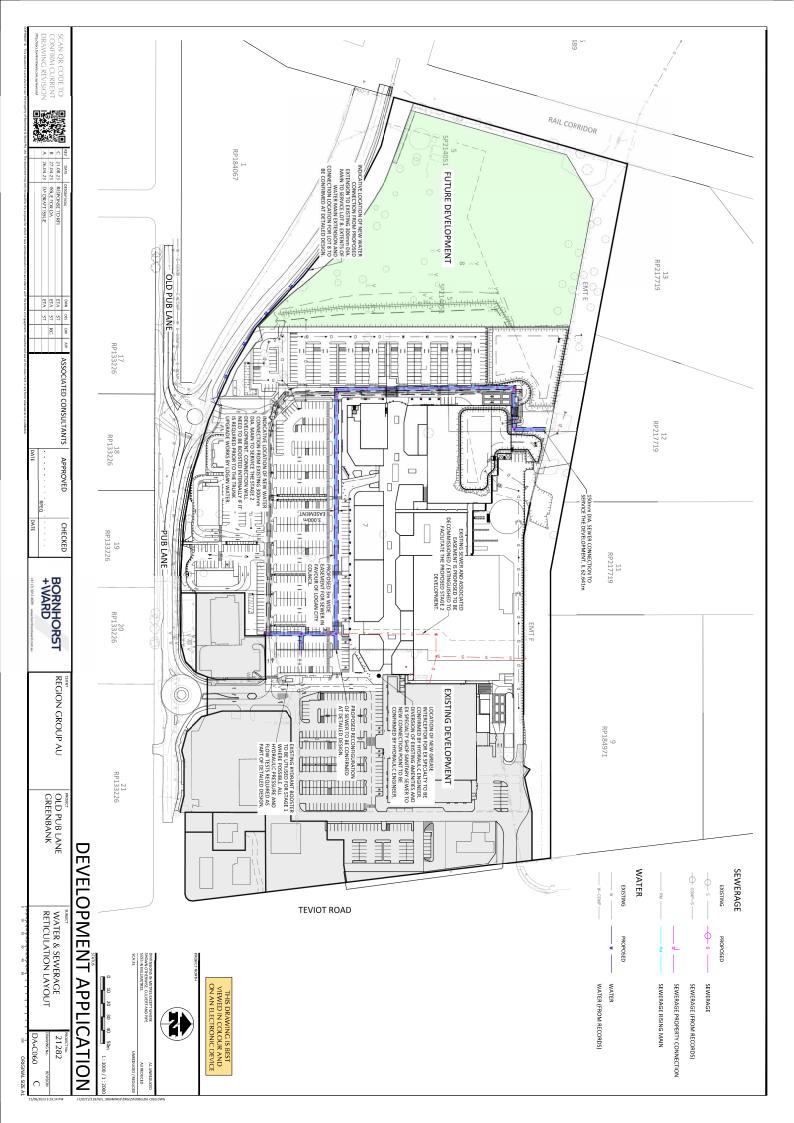
# APPENDIX B

## **ENGINEERING DRAWINGS**











# APPENDIX C

# **EXISTING SERVICES INFORMATION**

# Flood Report

During a flood or other emergency event, please visit Logan's Disaster Dashboard for the latest information.

This Flood Report provides information from Logan's planning scheme and any updated information Council has accepted from more recent flood studies.

# **Property Details**

Address:	19-67 Pub Lane GREENBANK QLD 4124		
Lot/Plan:	Lot 5 SP 214051	Property Key:	314242
Property Size:	99,640 m <sup>2</sup> (survey plan area)	Division:	11
Zone and	Priority Development Area - No Precinct		
precinct:			

Flood hazard overlay in Logan Planning Scheme 2015	NO	This property is not mapped on the Flood hazard overlay map in the Logan Planning Scheme 2015. If more recent information about the flood hazard is available, it should be used to inform development decisions. This is to ensure risks associated with flood hazard are avoided or mitigated to protect people and property. See further details below.
Flood Level Information	NO	There is no flood level information for this property included in this report. This does not mean the property is not potentially impacted by floods. Please see further details below or contact Council's River and Catchment Engineering Program using the details in the Further Information section below.
Updated flood mapping based on more recent flood studies	NO	There is no updated flood mapping for this property at this time. This may change in future. Please contact Council's River and Catchment Engineering Program using the details in the Further Information section below or check this report in future.

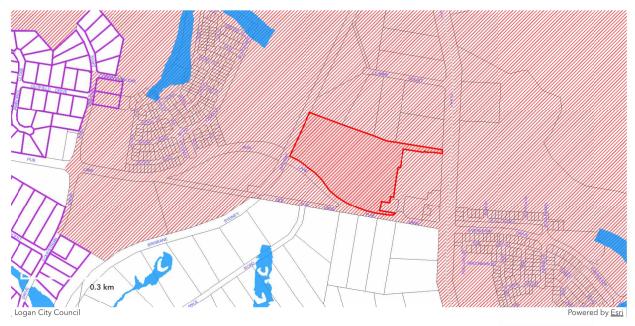
# Planning Scheme Flood hazard overlay map

The selected property is shown on the extract below of the Flood hazard overlay map in the Logan Planning Scheme 2015.

Various provisions of the Logan Planning Scheme 2015 which refer to premises affected by the 'flood hazard overlay' apply to the part(s) of the property affected by the Flood hazard overlay map. The map may not reflect the most recent information about flood hazard.

If more recent information is available about the flood hazard for this property, that should be used to inform development decisions to ensure risks associated with flood hazard are avoided or mitigated to protect people and property. Please refer to the Updated flood mapping section below.

**Note:** this property is in a Priority Development Area. The Logan Planning Scheme does not apply and the extract below is for information only. Please contact Economic Development Queensland for advice on planning and development decisions.



# **Further Information**

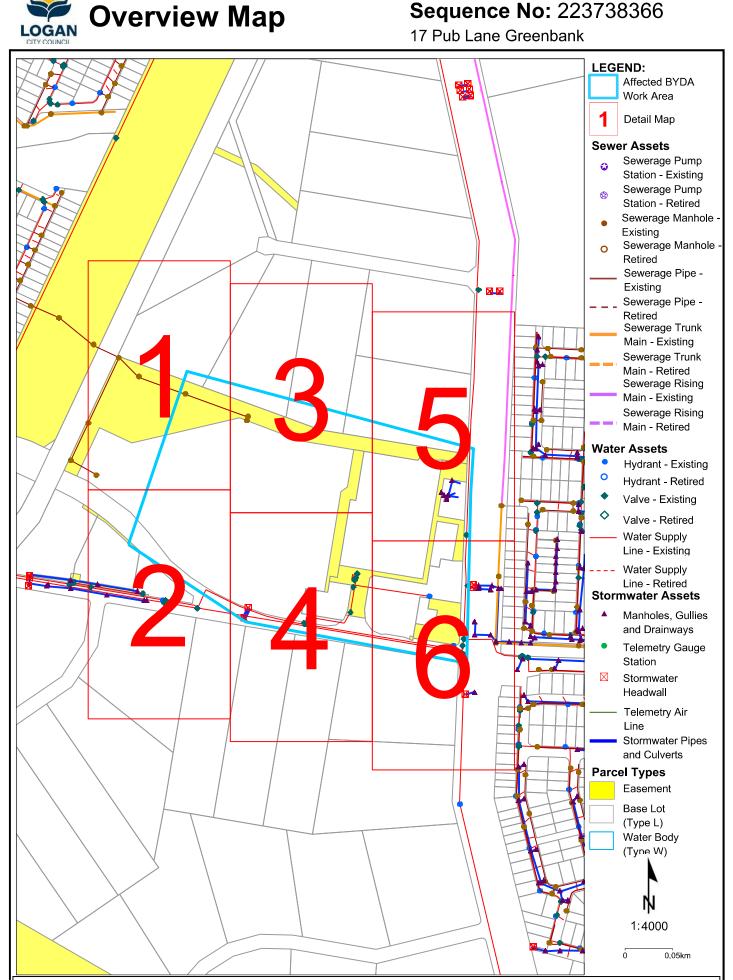
Please refer to the Flood Risk Fact Sheet or contact Council using the details below.

Planning and development enquiries	Contact Council on 07 3412 5269 or email <u>development@logan.qld.gov.au</u>
	Before lodging a development application, pre-lodgement advice is recommended.
Building information	Contact Council on 07 3412 3412 or email <u>council@logan.qld.gov.au</u> .
	You can also contact a <u>private building certifier</u> .
Flood studies and modelling information	Contact Council on 07 3412 3412 or email <u>council@logan.qld.gov.au</u> .
	Flood studies are available from the <u>Flood page</u> on Council's website.
Properties in Priority Development areas	Contact Economic Development Queensland.

#### Please note:

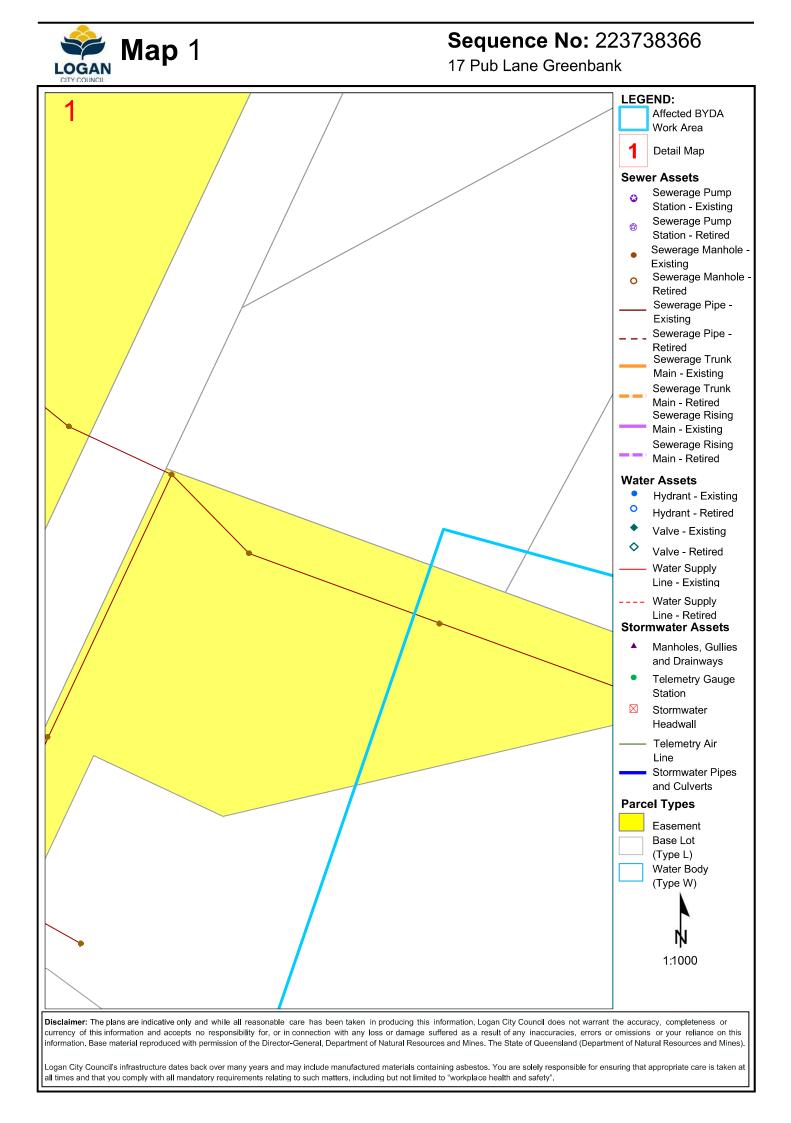
- 1. This report can be used for the purposes of development assessment but should **not** be relied upon as part of a property transaction.
- 2. This report does not represent the highest possible flood level that might affect the property, as floods are highly unpredictable and variable.
- 3. A property may also be affected by other sources of potential inundation.
- 4. The flood levels are sourced from Council's accepted flood studies and flood modelling and are measured in metres Australian Height Datum (AHD), where mean sea level is approximately zero (0) metres AHD. Ground level information for the property is provided as context for the flood levels.
- 5. The flood mapping and levels in this report are based on data that was obtained through flood studies undertaken at a particular time and date and which are subject to change. For example, if the method for calculating flood levels is updated, industry guidelines are amended, or more recent information becomes available, this may result in changes to the information in this report.
- 6. If flood level information is not available (shown as 'N/A'), you will need to contact Council using the details in the table above.
- 7. This report provides limited information for development assessment purposes and is not a substitute for independent professional advice. You should engage the services of a Registered Professional Engineer of Queensland (RPEQ) to obtain site specific information regarding the flood risk to your property and any the implications for any proposed building or development.
- 8. Although Logan City Council takes reasonable care in producing this report, it does not guarantee the information is accurate, complete, or current. Logan City Council does not accept any responsibility for any loss or damage (however it was caused) in connection with the use of or reliance on the information in this report.

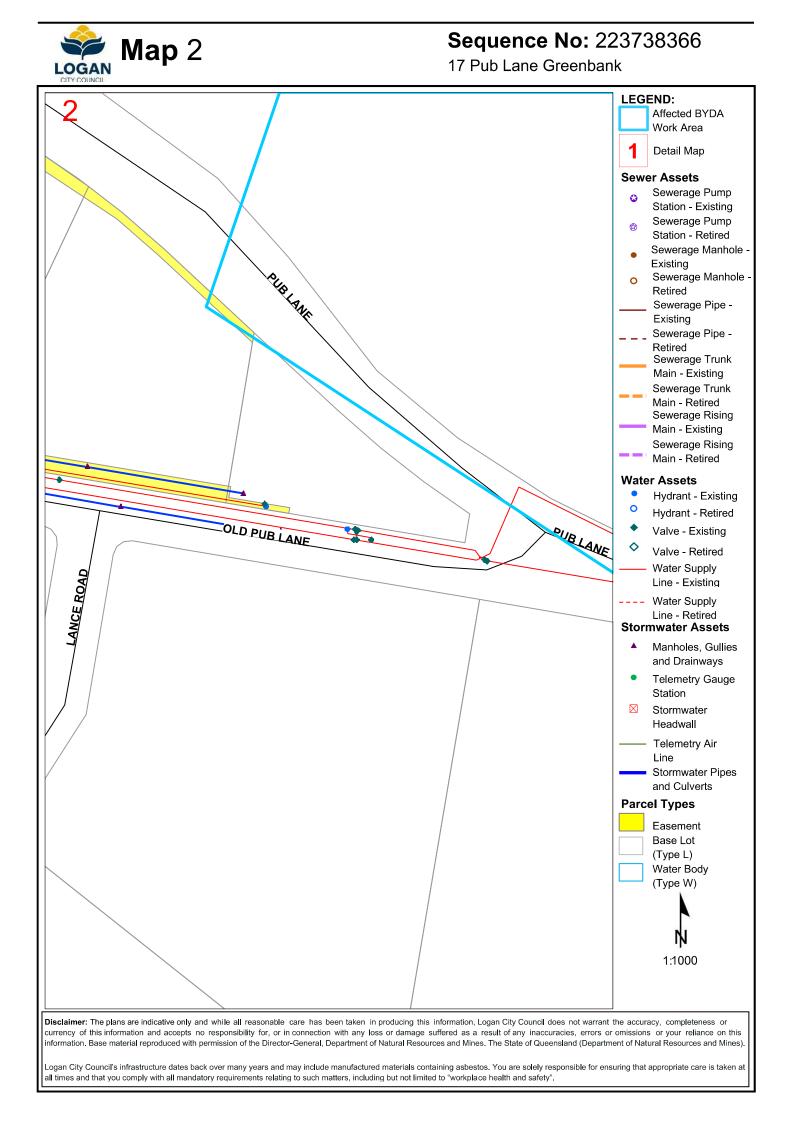
Logan City Council PO Box 3226 Logan Central QLD 4114 Generated: Tuesday, 25 April 2023 8:23 PM Phone: (07) 3412 5269Email: council@logan.qld.gov.auWeb: logan.qld.gov.au

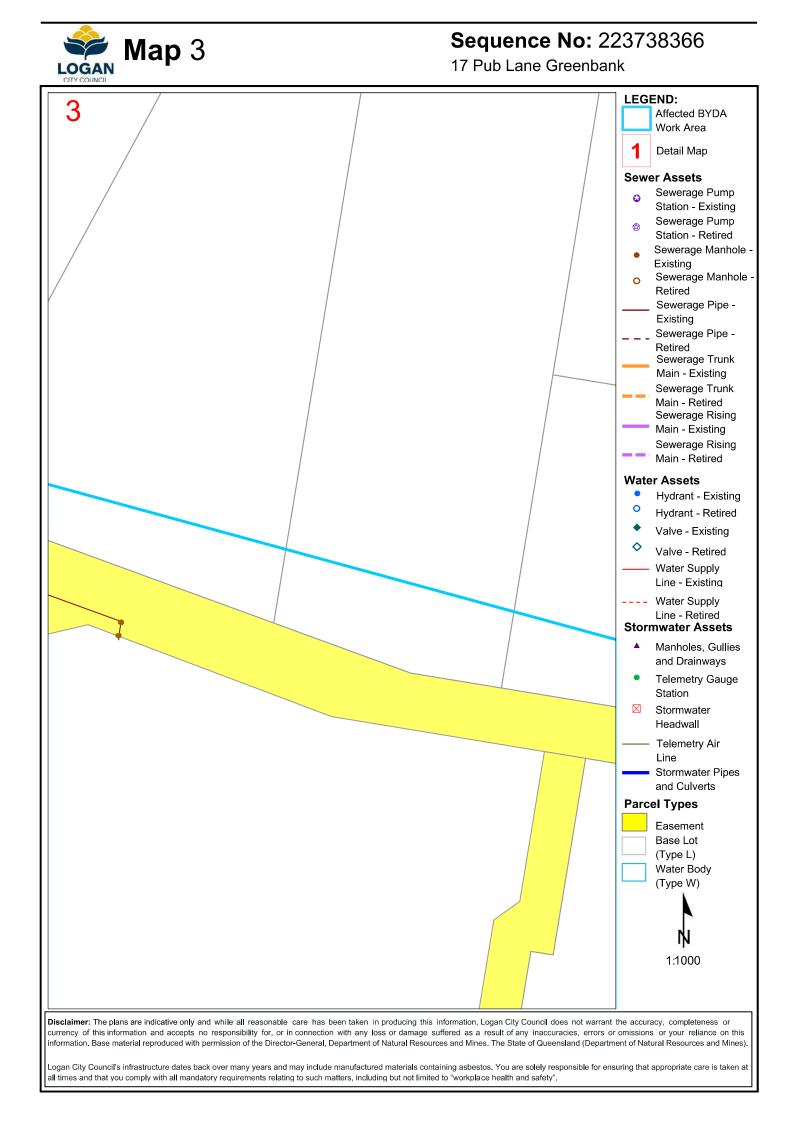


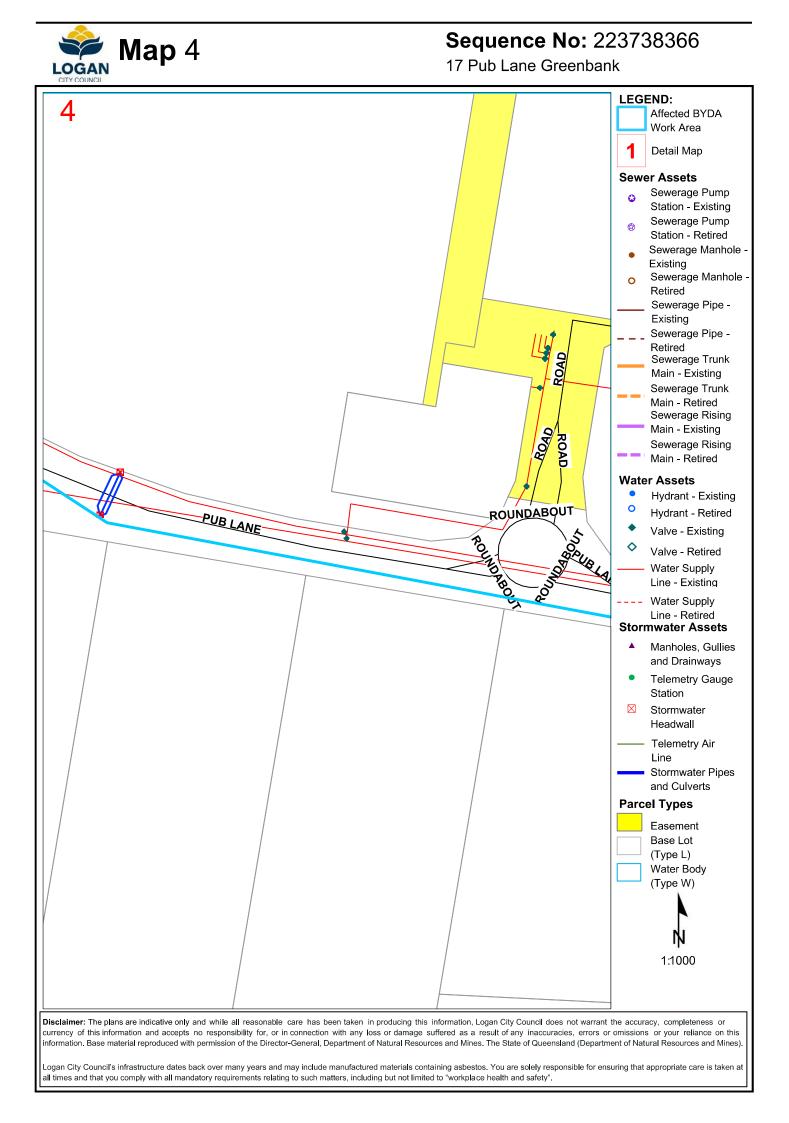
Disclaimer: The plans are indicative only and while all reasonable care has been taken in producing this information, Logan City Council does not warrant the accuracy, completeness or currency of this information and accepts no responsibility for, or in connection with any loss or damage suffered as a result of any inaccuracies, errors or omissions or your reliance on this information. Base material reproduced with permission of the Director-General, Department of Natural Resources and Mines. The State of Queensland (Department of Natural Resources and Mines).

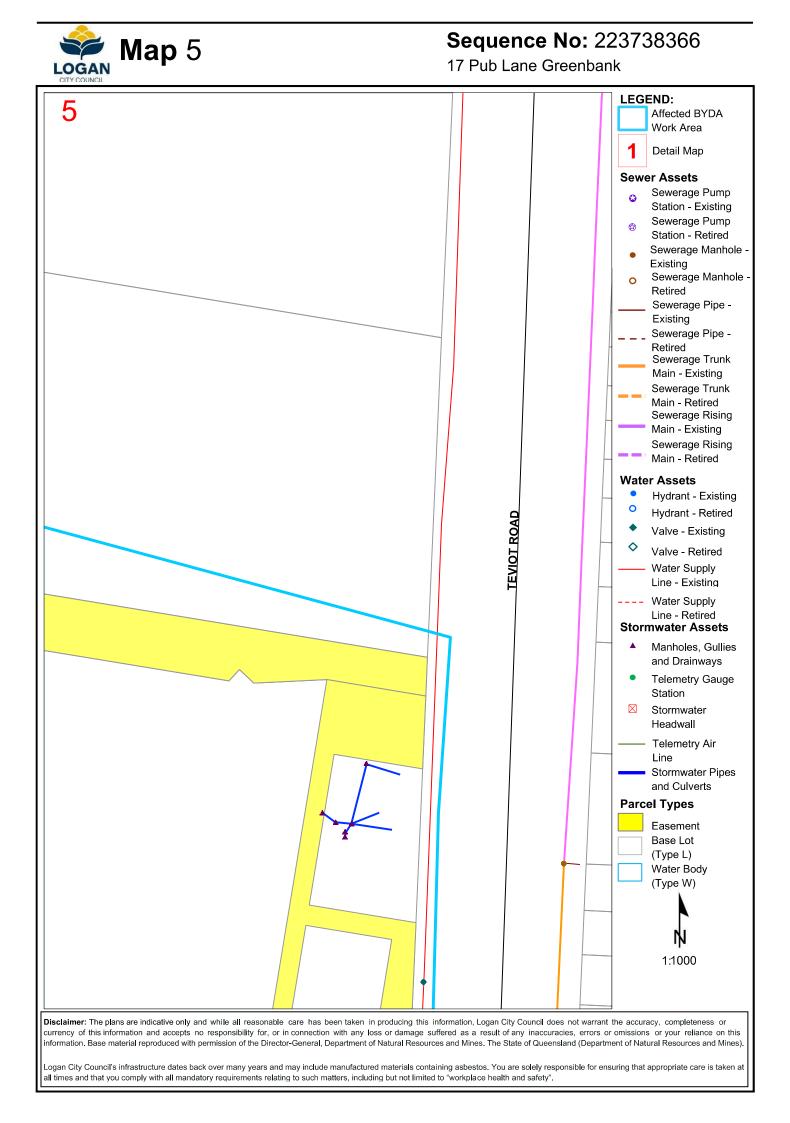
Logan City Council's infrastructure dates back over many years and may include manufactured materials containing asbestos. You are solely responsible for ensuring that appropriate care is taken at all times and that you comply with all mandatory requirements relating to such matters, including but not limited to "workplace health and safety".

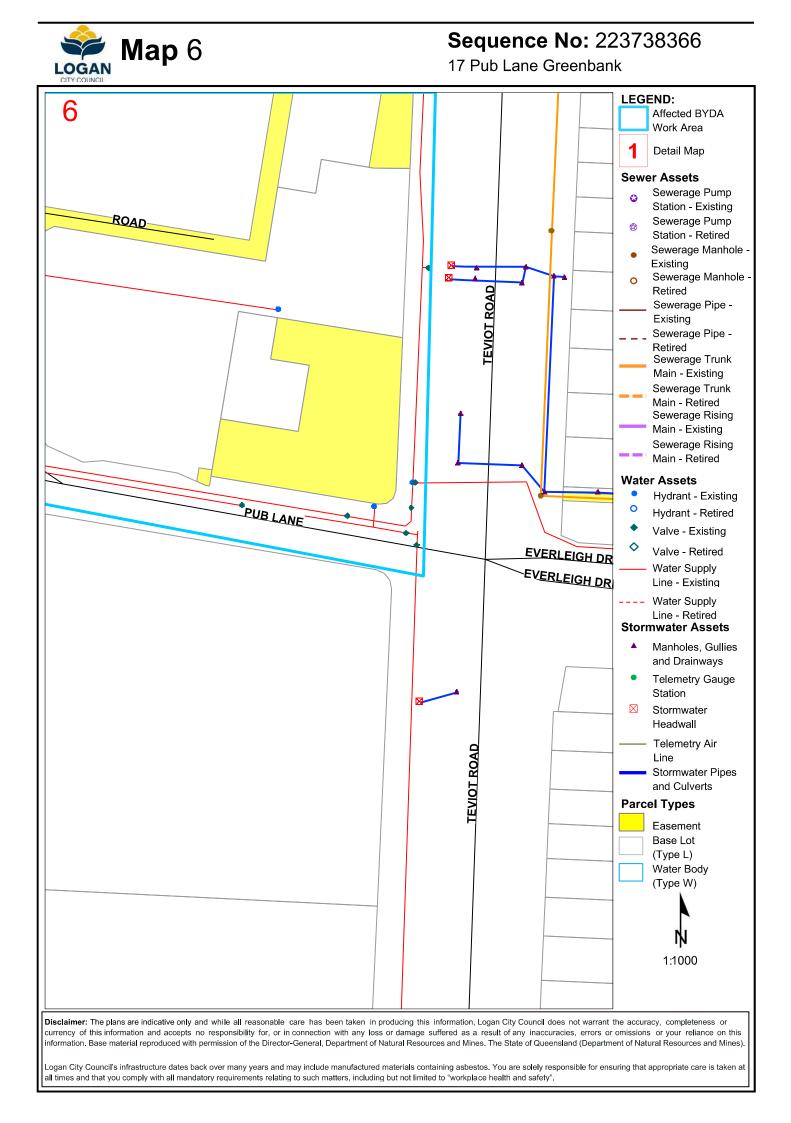




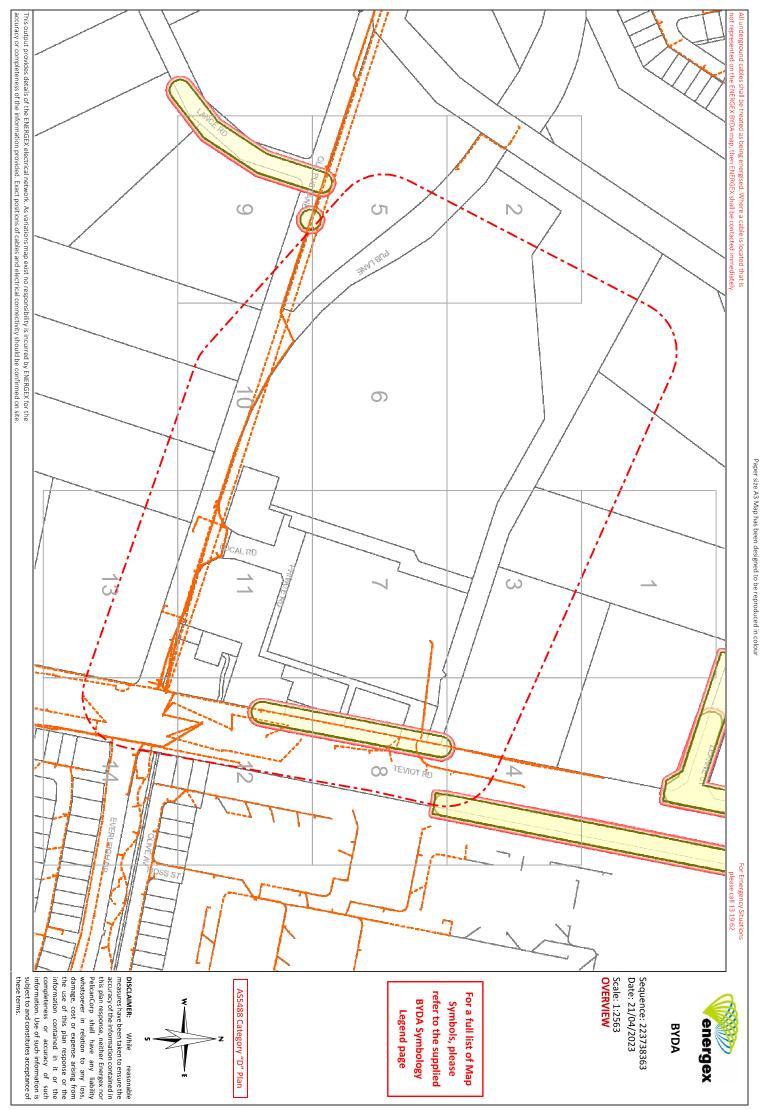


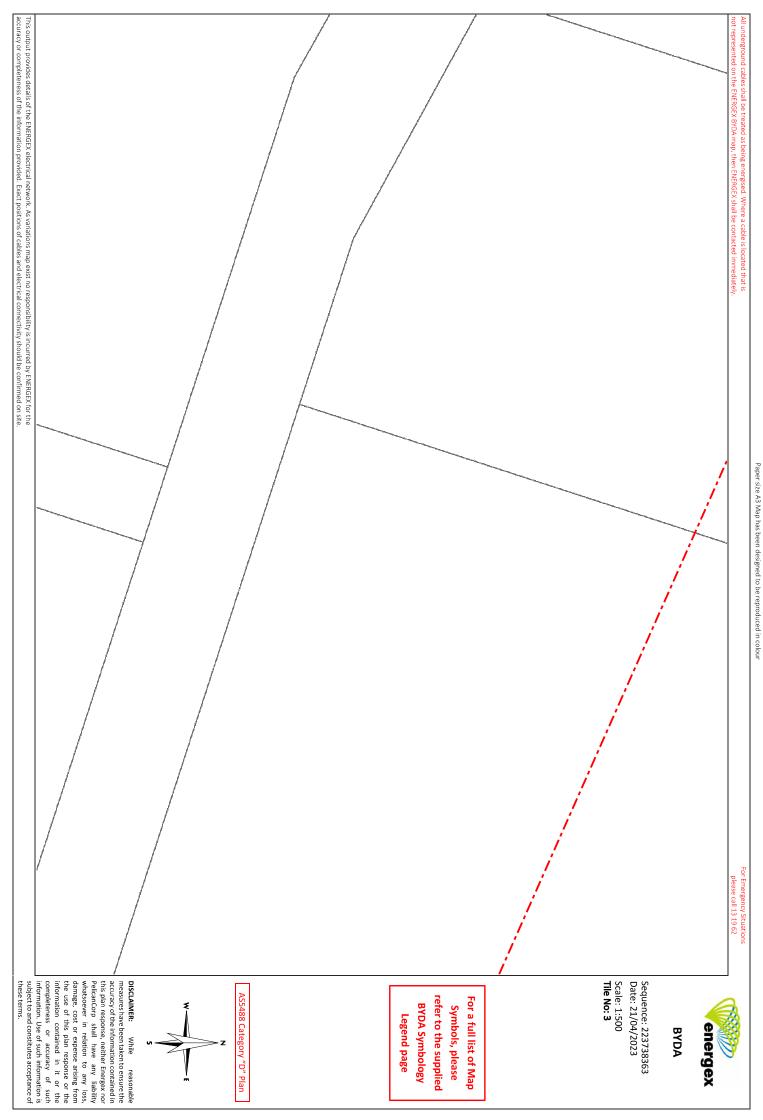






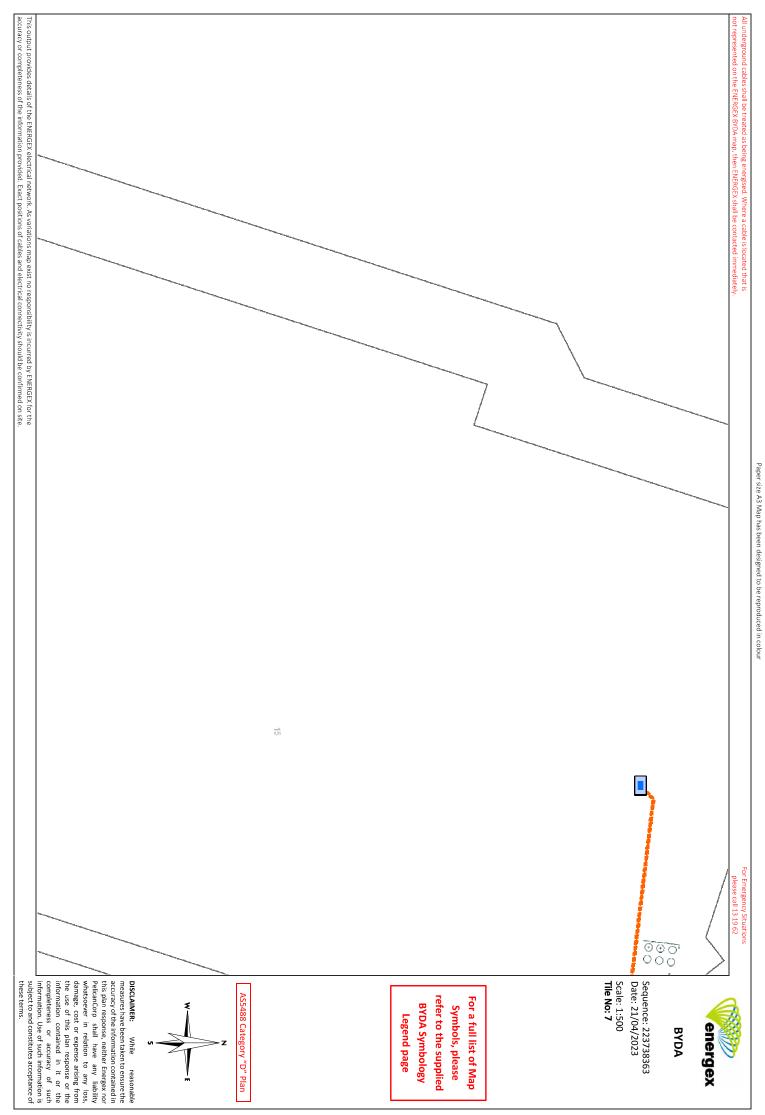




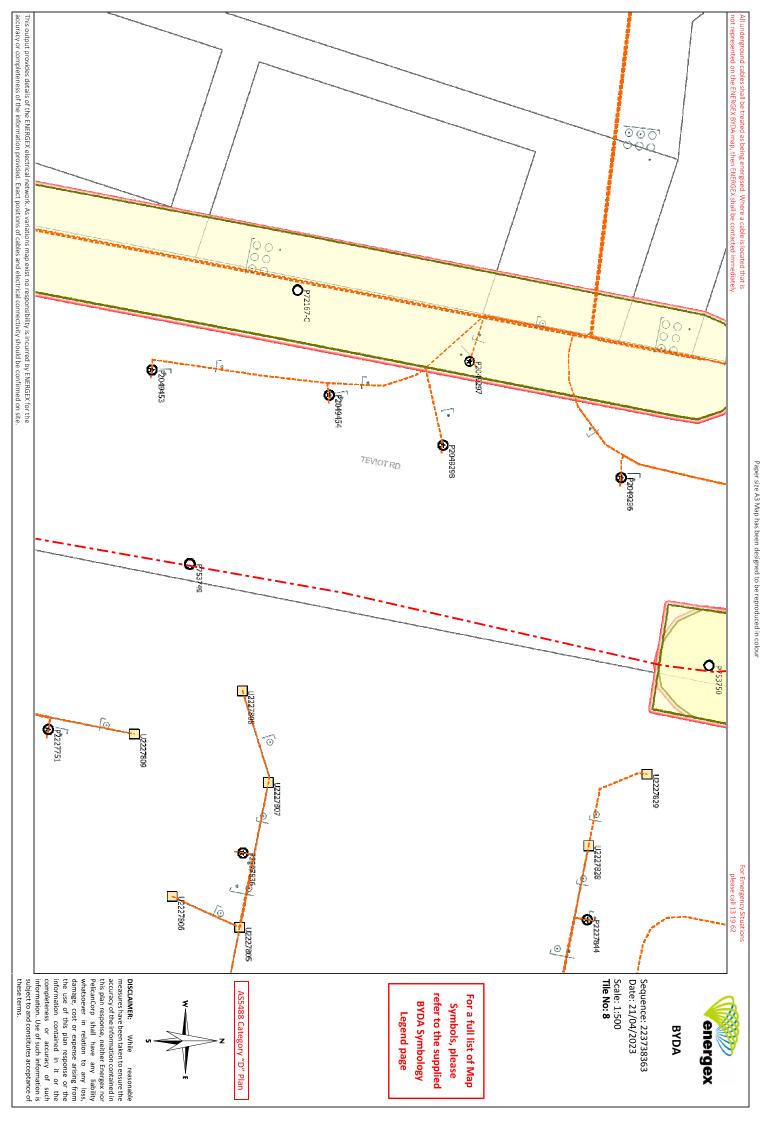


Plans generated 21/04/2023 by Pelicancorp TicketAccess Software   www.pelicancorp.com	This output provides details of the ENERGEX electrical network. As variations map exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.			Paper size A3 Map has been designed to be reproduced in colour
Energex - Response Plan.docx (13 Mar 2023)	subject to and constitutes acceptance of these terms.	EVDA Sequence: 223738363 Scale: 1:500 Tile No: 6 Symbols, please refer to the supplied BYDA Symbology Legend page Discument: While reasonable measures have been taken to ensure the accuracy of the information contained in the or the accuracy of the information contained in the or the completeness or accuracy of six the completeness or accuracy of six the completeness or accuracy of six the information contained in to or the completeness or accuracy of six the completeness or accuracy of six the completeness or accuracy of six the information contained in to or the completeness or accuracy of six the	For Emergency Situations please call 13 19 62	

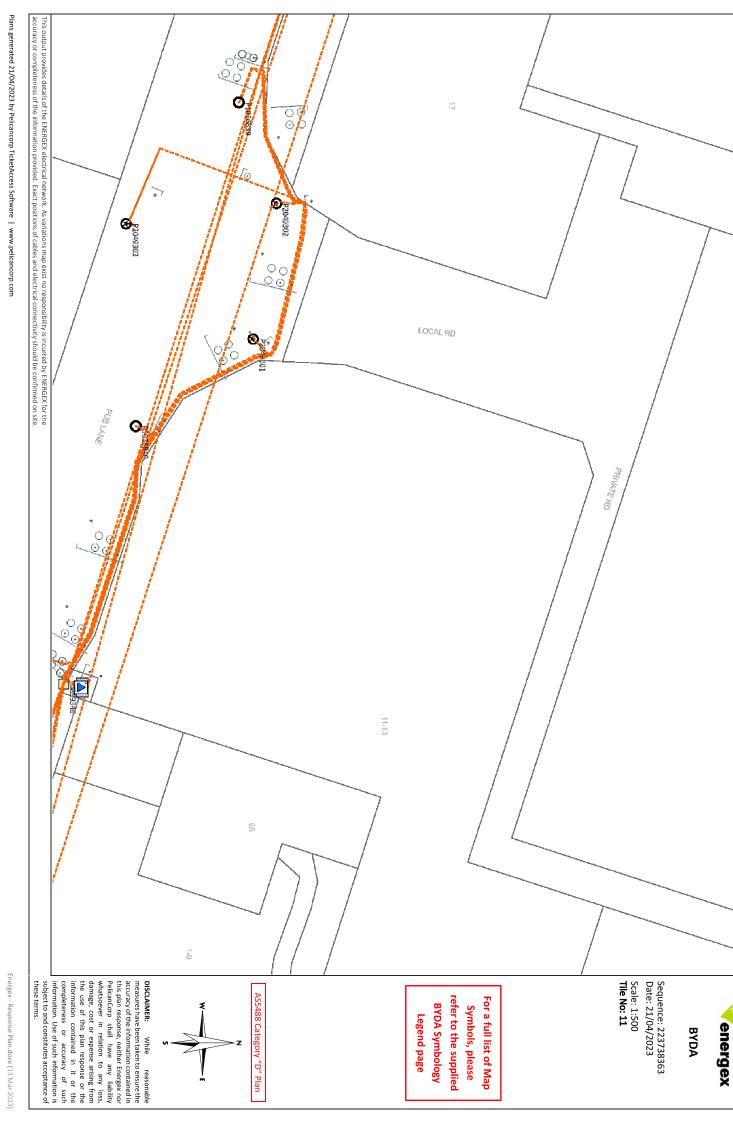








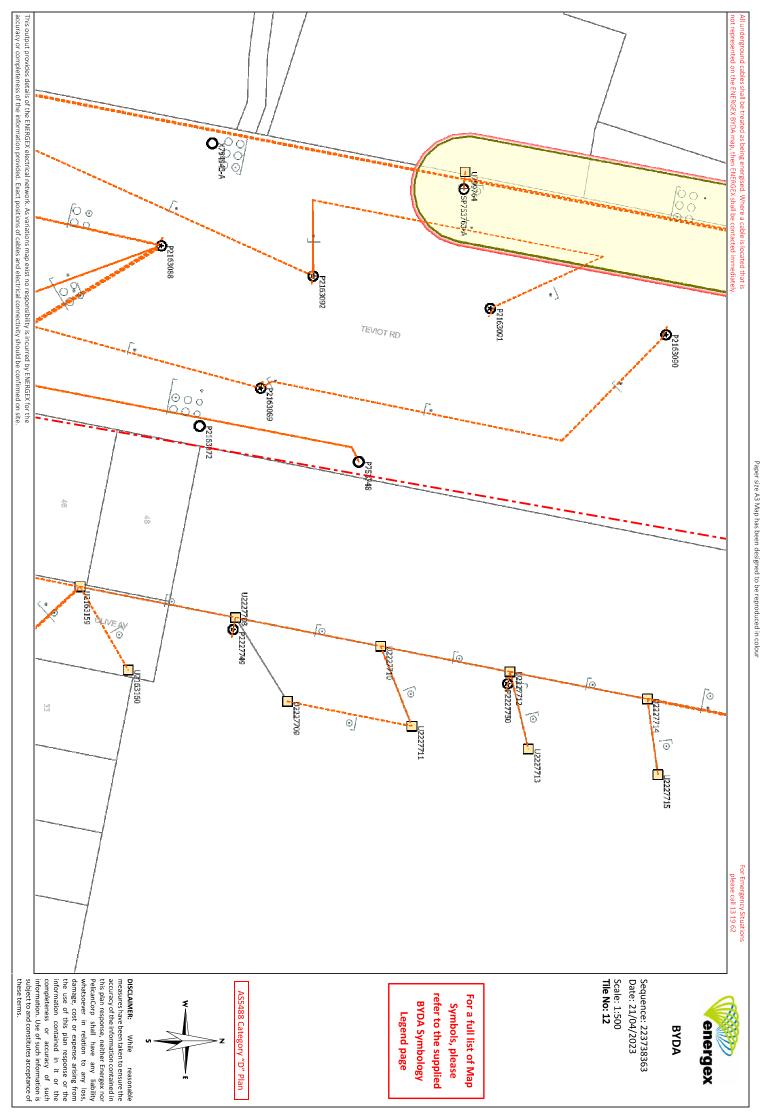


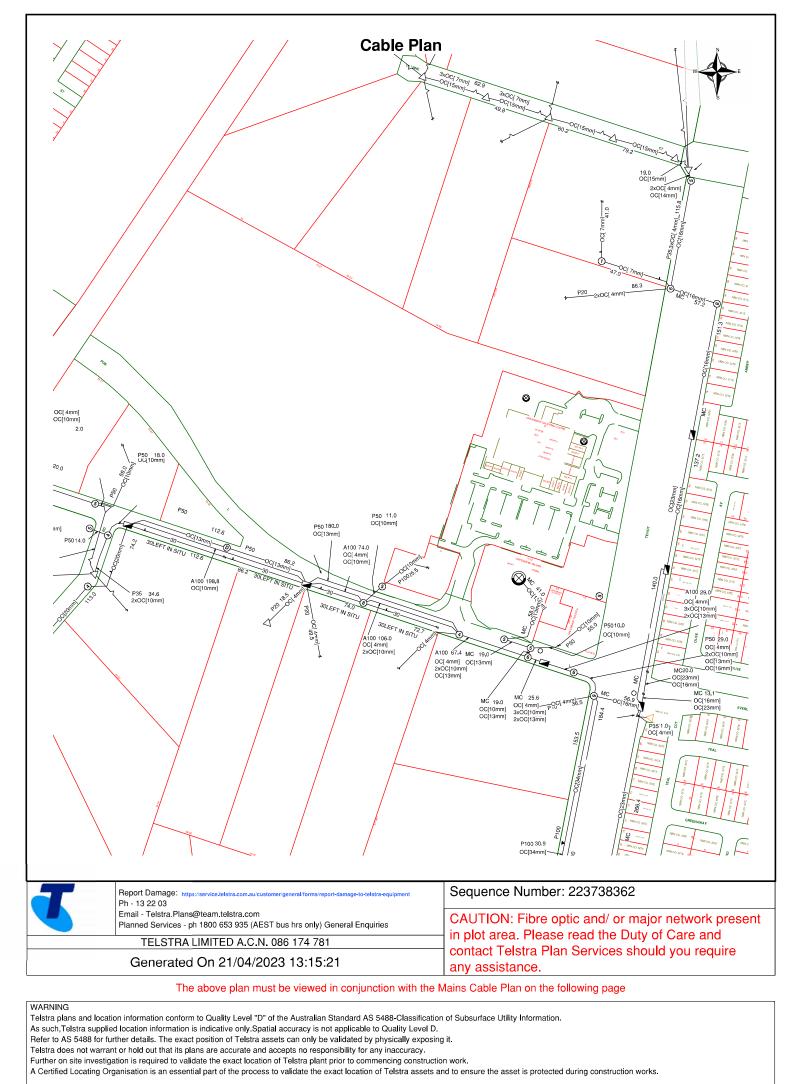


Paper size A3 Map has been designed to be reproduced in colour

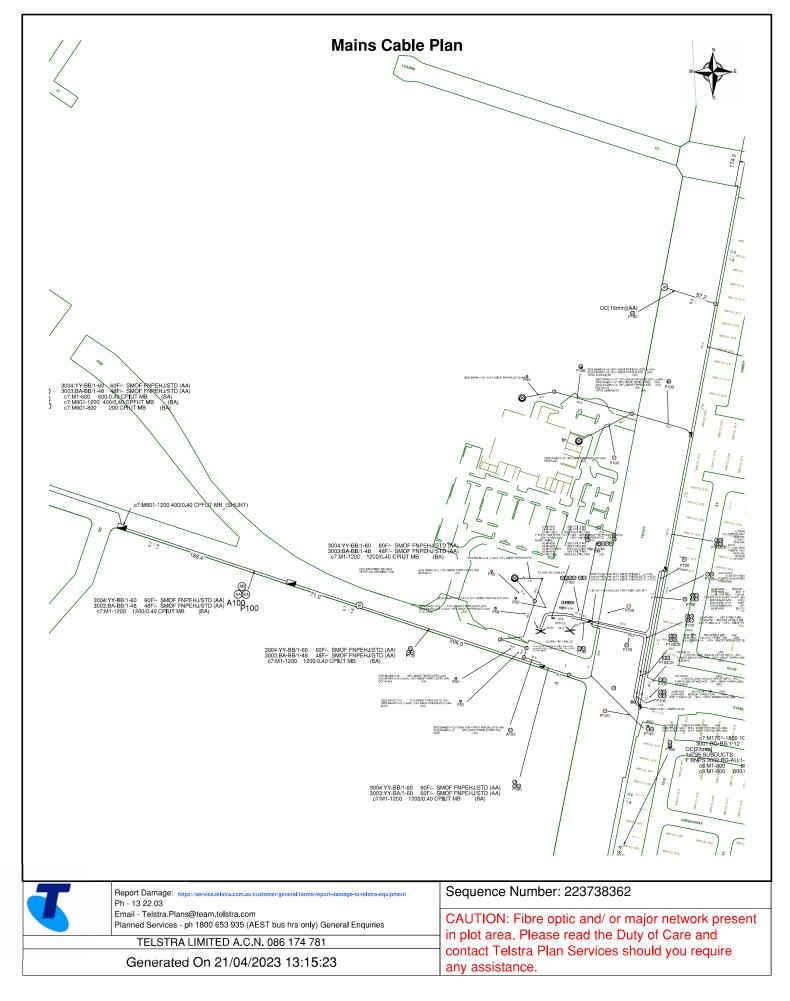
For Emergency Situations please call 13 19 62

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.





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



WARNING

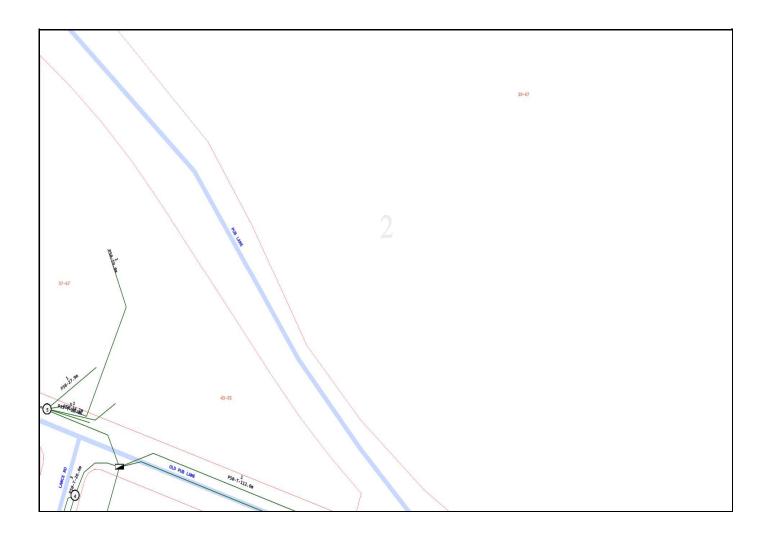
Telstra plans and location information conform to Quality Level "D" of the Australian Standard AS 5488-Classification of Subsurface Utility Information.

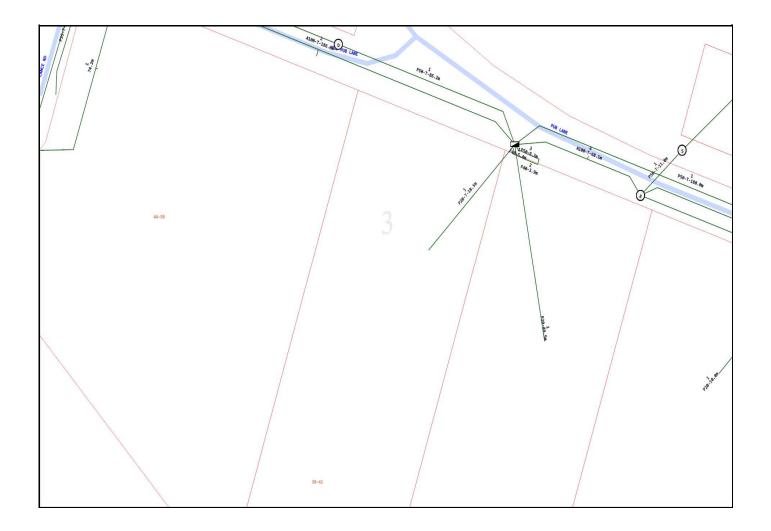
As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D.

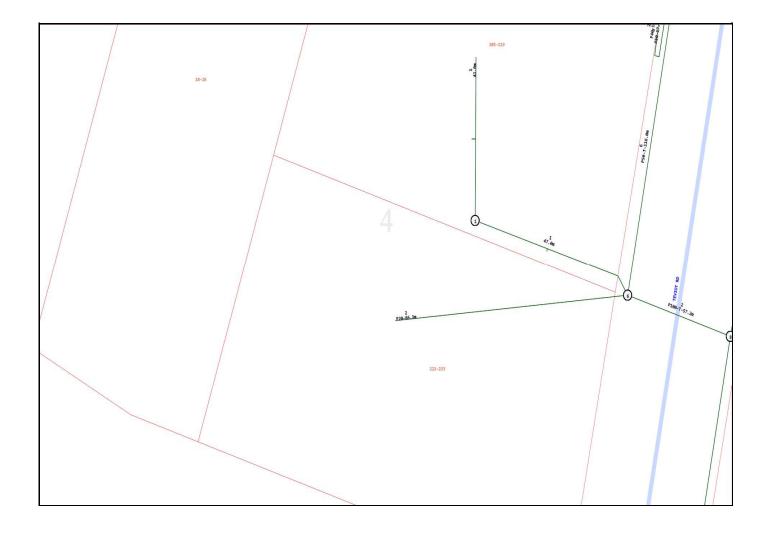
Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing it.

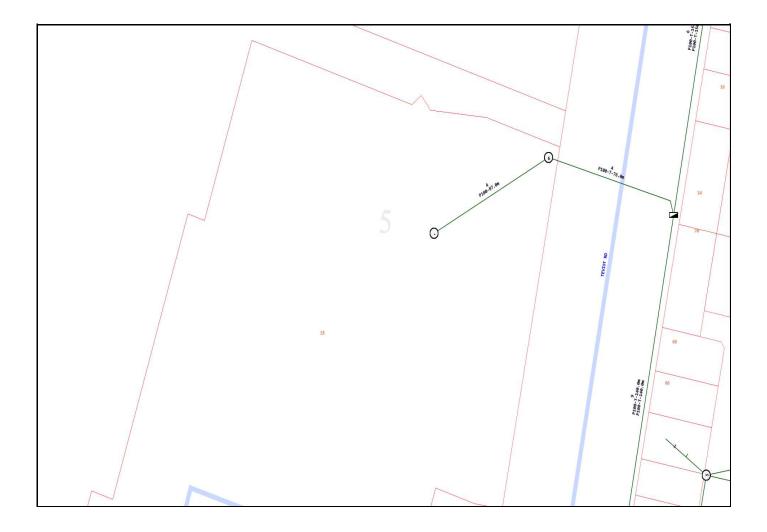
Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy.

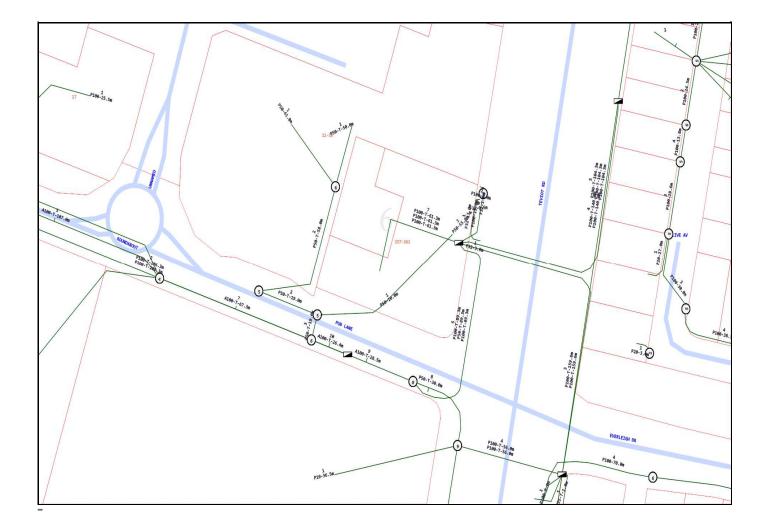
Further on site investigation is required to validate the exact location of Telstra plant piro to commencing construction work. A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works.





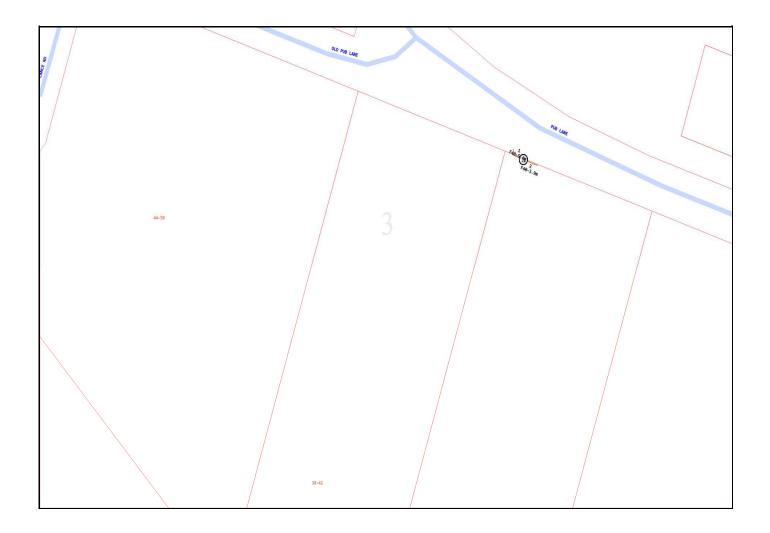


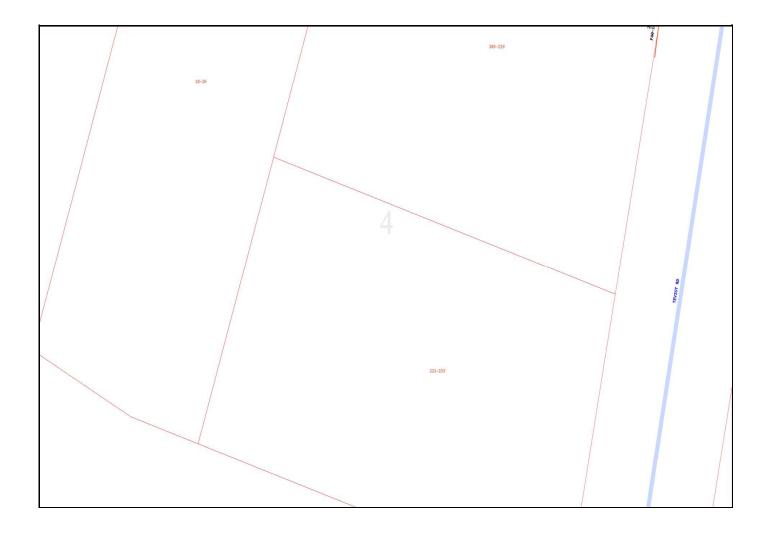




### **Emergency Contacts**

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

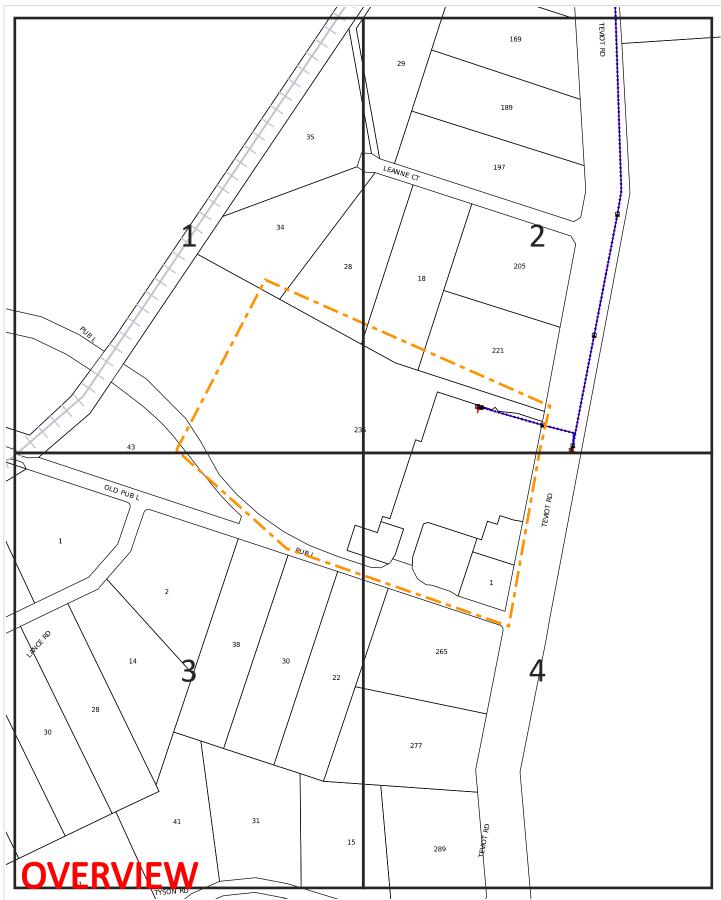






### **Emergency Contacts**

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



Sequence Number: 223738361



For all Optus DBYD plan enquiries – Email: <u>Fibre.Locations@optus.net.au</u> For urgent onsite assistance contact 1800 505 777 Optus Limited ACN 052 833 208





Sequence Number: 223738361



For all Optus DBYD plan enquiries – Email: <u>Fibre.Locations@optus.net.au</u> For urgent onsite assistance contact 1800 505 777 Optus Limited ACN 052 833 208





Sequence Number: 223738361



For all Optus DBYD plan enquiries – Email: <u>Fibre.Locations@optus.net.au</u> For urgent onsite assistance contact 1800 505 777 Optus Limited ACN 052 833 208





Sequence Number: 223738361



For all Optus DBYD plan enquiries – Email: <u>Fibre.Locations@optus.net.au</u> For urgent onsite assistance contact 1800 505 777 Optus Limited ACN 052 833 208





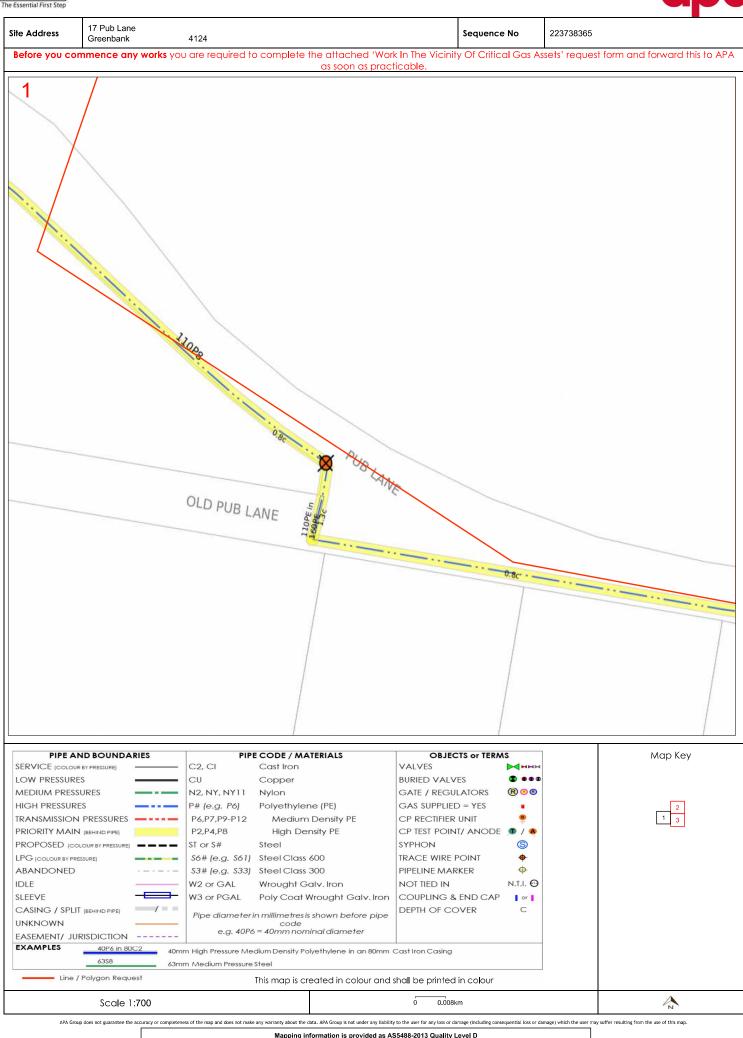
Sequence Number: 223738361



For all Optus DBYD plan enquiries – Email: <u>Fibre.Locations@optus.net.au</u> For urgent onsite assistance contact 1800 505 777 Optus Limited ACN 052 833 208







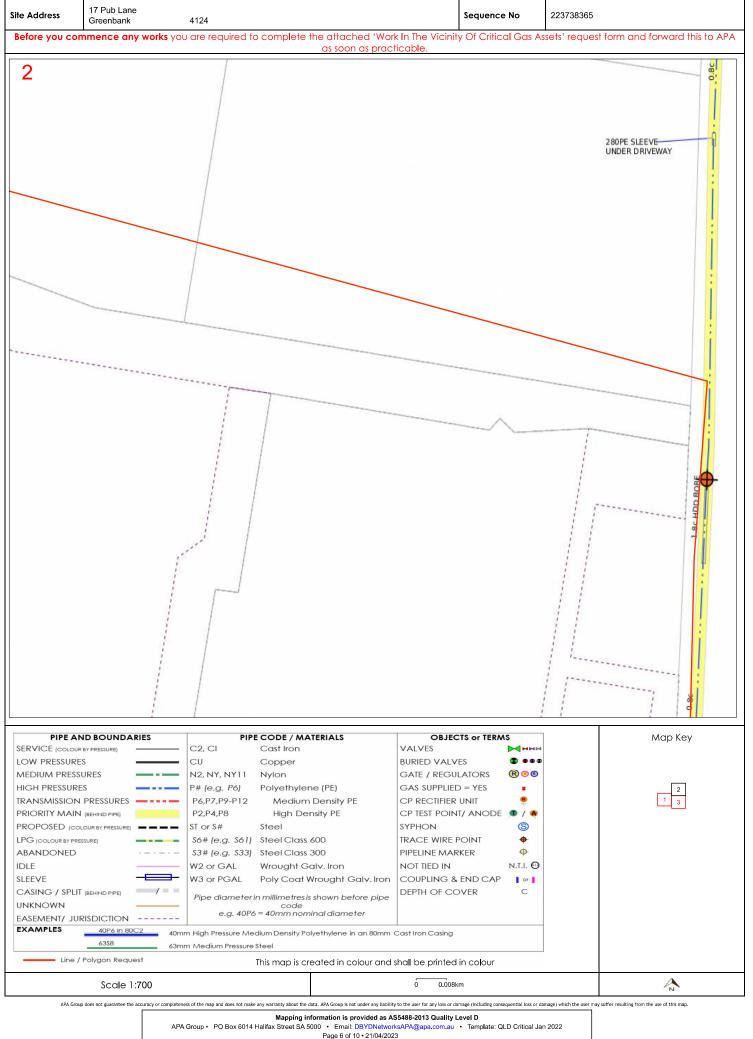
 Mapping information is provided as AS5488-2013 Quality Level D

 APA Group • PO Box 6014 Halifax Street SA 5000 • Email: DBYDNetworksAPA@apa.com.au • Template: QLD Critical Jan 2022

Page 5 of 10 • 21/04/2023









Site Address

3

IDLE

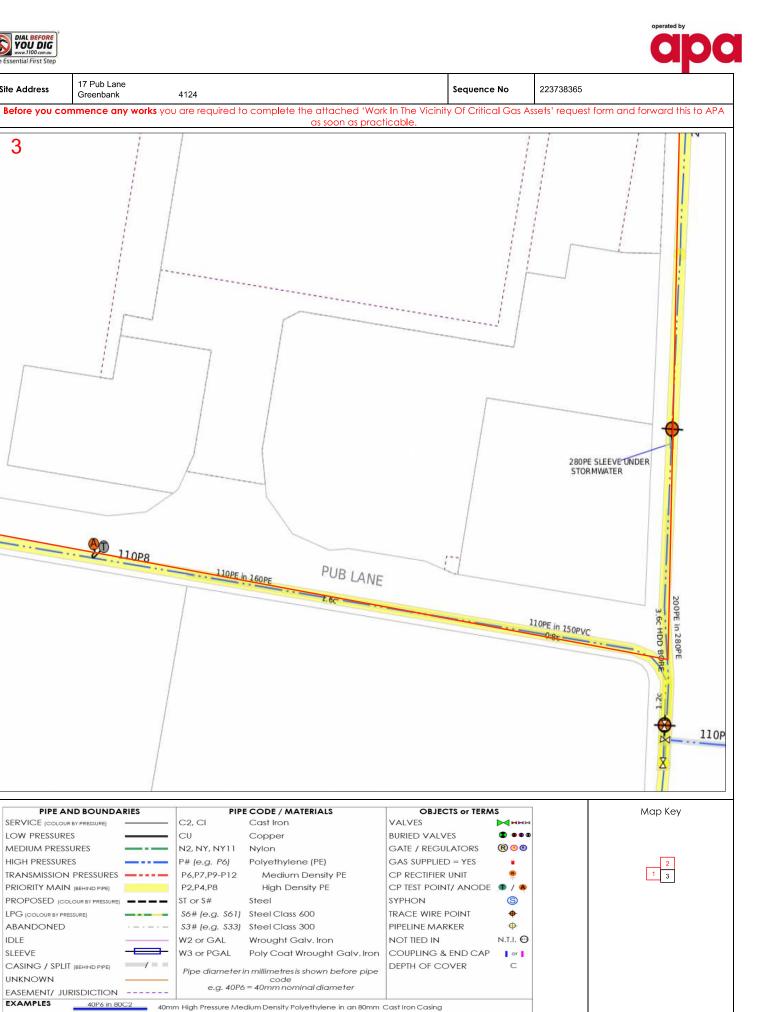
SLEEVE

UNKNOWN

EXAMPLES

Line / Polygon Request

Scale 1:700



63mm Medium Pressure Steel

APA Group does not guarantee the accuracy or completeness of the map and does not make any warranty about the data. APA Group is not under any liability to the user for any loss or damage (including consequential loss or damage) which the user may suffer resulting from the use of this map

A

Mapping information is provided as AS5488-2013 Quality Level D APA Group • PO Box 6014 Halifax Street SA 5000 • Email: DBYDNetworksAPA@apa.com.au • Tem vorksAPA@apa.com.au • Template: QLD Critical Jan 2022

Page 7 of 10 • 21/04/2023

This map is created in colour and shall be printed in colour



APPENDIX D

**COUNCIL CODES** 

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS <sup>1</sup>	COMMENTS	COUNCIL USE
Protection of natural processes and ecosystems	SWI			
<b>PO1</b> The discharge of sediments and pollutants from filling or excavation does not adversely affect a waterway or the stormwater network.	<b>A01</b> The discharge of sediments and pollutants to a waterway or stormwater network complies with part 3.3—Filling and excavation standards in planning scheme policy 5—Infrastructure.	۲	Erosion and sediment control will be utilised to minimise impacts on the downstream waterways. The discharge of sediments and pollutants to a waterway or stormwater network will comply with part 3.3—Filling and excavation standards in planning scheme policy 5—Infrastructure.	
<b>PO2</b> Topsoil and spoil stockpiled on the premises do not adversely affect natural processes and ecosystems.	<b>AO2</b> Topsoil and spoil is stockpiled to comply with part 3.3–Filling and excavation standards in planning scheme policy 5–Infrastructure.	۲	Topsoil and spoil stockpiled on the development site will not adversely affect the natural processes and ecosystems and will comply with the filling and excavation standards set in planning scheme policy 5 – Infrastructure.	
<b>PO3</b> Filling is carried out using stable, solid and clean earth, free of organic and putrescible waste, rubbish and refuse material.	<b>AO3</b> Filling complies with part 3.3–Filling and excavation standards in planning scheme policy 5–Infrastructure.	<b>~</b>	Cut and fill earthworks are required onsite. Fill material used will be inspected to ensure compliance with the standards set in the planning scheme policy 5 – Infrastructure. Fill material used will comply with the standards set in the planning scheme policy 5 – Infrastructure.	
Protection of existing and planned infrastructure	lure			
<b>PO4</b> Filling or excavation works do not adversely affect infrastructure, including any services.	<b>A04</b> Filling or excavation works comply with part 3.3– Filling and excavation standards in planning scheme policy 5–Infrastructure.	۲	Filling or excavation works will not adversely affect any existing infrastructure or services and will comply with part 3.3–Filling and excavation standards in planning scheme policy 5– Infrastructure.	
Protection and enhancement of personal health and safety and premises	Ith and safety and premises			
<b>PO5</b> Filling or excavation works do not adversely affect personal health and safety.	AO5 Filling or excavation works comply with part 3.3– Filling and excavation standards in planning scheme policy 5–Infrastructure.	٩	Filling or excavation works will not adversely affect personal health and safety and the filling or excavation works comply with part 3.3– Filling and excavation standards in planning scheme	
Solution: $\checkmark$ = Acceptable Solution				

A/S = Alternative SolutionN/A = Not Applicable to this Proposal

**Performance Criteria and Acceptable Solutions** 

FILLING AND EXCAVATION CODE

## **Performance Criteria and Acceptable Solutions** FILLING AND EXCAVATION CODE

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS <sup>1</sup>	COMMENTS	COUNCIL USE
			policy 5–Infrastructure.	
Surface water flow			-	
<ul> <li>PO6</li> <li>Surface water drainage does not cause any of the following:</li> <li>(a) ponding on any premises; or</li> <li>(b) a hazard or adversely affect personal health and safety and premises; or</li> <li>(c) diversion or concentration of flow from or onto adjoining premises or infrastructure.</li> </ul>	<b>A06</b> Surface water drainage complies with part 3.3– Filling or excavation standards in planning scheme policy 5–Infrastructure.		Surface water will not cause: Ponding; Present a hazard or adversely affect personal health and safety and premises; or Divert or concentrate flow from or onto an adjoining premises or infrastructure. Surface water drainage will comply with part 3.3–Filling or excavation standards in planning scheme policy 5 Infrastructure.	
Batters				
<b>PO7</b> A batter: (a) does not adversely affect the natural physical processes and ecosystems; (b) protects existing and planned infrastructure;	<b>A07</b> A batter is designed and constructed to comply with the standards specified in section 3.3.6–Batters and retaining walls in planning scheme policy 5–Infrastructure.	۲,	Batters will be required as a part of the development. Batters will: Not adversely affect the natural physical processes and ecosystems; Be safe, stable and easily maintained; Protect existing and planned infrastructure; and Be landscaped to enhanced visual amenity.	
<ul><li>(b) protects existing and planned infrastructure;</li><li>(c) is safe, stable and easily maintained;</li><li>(d) is landscaped to enhance visual amenity.</li></ul>			Protect existing and planned infrastructure; and Be landscaped to enhanced visual amenity.	
Retaining walls		-	-	
ng wall: constru n existir nent net	<b>AO8</b> A retaining wall is designed and constructed to comply with the standards specified in section 3.3.6.2–Retaining walls in planning scheme policy 5–Infrastructure.	<	Retaining walls will be required as a part of the development. Any retaining walls will be designed and constructed to comply with the standards specified in section 3.3.6.2–Retaining walls in planning scheme policy 5–Infrastructure.	
Solution: $\checkmark$ = Acceptable Solution				

A/S = Alternative Solution N/A = Not Applicable to this Proposal

## **Performance Criteria and Acceptable Solutions** FILLING AND EXCAVATION CODE

	There will be no filling of dams as a part of this development proposal.	N/A	AO9 The filling of a dam complies with part 3.3–Filling and excavation standards in planning scheme policy 5–Infrastructure.	<ul> <li>PO9</li> <li>The filling of a dam: <ul> <li>(a) does not adversely affect the natural physical processes and ecosystems;</li> </ul> </li> <li>(b) creates a safe and stable surface;</li> <li>(c) is integrated into the landscape.</li> </ul>
				Filling of a dam
				(i) enables easy access for maintenance.
				(h) is safe and stable;
				(g) is located within the premises that is cut and is designed to take any surcharge loading allowable on the uphill lot;
				(f) is located within the premises that is being filled;
				(e) protects the visual amenity of adjoining premises or a public open space;
				(d) is located such that existing and planned infrastructure is not adversely affected;
				<ul> <li>(b) does not adversely affect the natural physical processes and ecosystems;</li> <li>(c) is located to avoid conflict with adjoining premises;</li> </ul>
COUNCIL USE ONLY	COMMENTS	SOLUTIONS <sup>1</sup>	ACCEPTABLE SOLUTIONS	PERFORMANCE CRITERIA

Solution:  $\checkmark$  = Acceptable Solution A/S = Alternative Solution N/A = Not Applicable to this Proposal

Performance Criteria and Acceptable Solution.	INIED ACTDUICTUDE CODE
---	------------------------

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS <sup>1</sup>	COMMENTS	COUNCIL USE
Provision, design, construction and location of infrastructure	of infrastructure			
<b>P01</b> Development is demonstrated to be capable of being serviced by necessary infrastructure.	<b>A01</b> Reports, plans and drawings are provided in accordance with part 2 of planning scheme policy 5–Infrastructure.	×	The development is capable of being serviced by the necessary infrastructure in accordance with part 2 of the planning scheme policy 5-Infastructure. Refer to the Bornhorst and Ward Serviceability Report for service connection locations.	
<b>PO2</b> Development: (a) provides necessary infrastructure to service the development;	AO2 Development: (a) in a water supply service area connects to the water network in accordance with the SEQ Water Supply and Sewerage Design and		The development is in a water and sewerage supply service area and is capable of being serviced by the necessary infrastructure in accordance with part 2 of the planning scheme policy 5-Infastructure and the SEQ Water Supply and Sewerage Design and Construction	
(b) provides that the design, construction and location of necessary infrastructure:	Construction Code;		Code. Refer to the Bornhorst and Ward Serviceability Report for service connection locations	
(i) protects existing and planned infrastructure networks;	(b) not in a water supply service area provides a tank with a minimum storage capacity of 45,000 litres;	<	The development provides stormwater infrastructure in accordance with part 3.6 of planning scheme policy 5- Infrastructure. Refer to the Bornhorst and Ward	
(ii) services proposed development;	(c) in a sewerage supply service area connects to the waste water network in accordance with			
(iii) integrates with existing and planned infrastructure networks;	the SEQ Water Supply and Sewerage Design and Construction Code;		The development provides a movement network infrastructure in accordance with part 3.4 of planning scheme plicy 5- Infrastructure. Refer to the Bornhorst	
(iv) delivers a standard of service that is efficient and equitable;	(d) not in a sewerage supply service area complies with part 1 of the Queensland Plumbing and Wastewater Code;			
(v) minimises the cost to the community for the life of the infrastructure by providing a	(a) provides stormwater infrastructure in			
suitable design life, ease of maintenance and ease of replacement;	accordance with part 3.6 of planning scheme policy 5–Infrastructure;			
(vi) protects personal health, safety and premises;	<li>(f) provides a movement network infrastructure in accordance with part 3.4 of planning scheme policy 5–Infrastructure;</li>			
	(g) provides parks in accordance with part 3.12 of planning scheme policy 5–Infrastructure;			

Solution:

 $\checkmark$  = Acceptable Solution A/S = Alternative Solution N/A = Not Applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS <sup>1</sup>	COMMENTS	
	(h) provides road lighting in accordance with part 3.5 of planning scheme policy 5– Infrastructure;			
	<ul> <li>(i) provides electricity reticulation in accordance with part 3.8 of planning scheme policy 5– Infrastructure;</li> </ul>			
	(j) provides gas and telecommunications reticulation in accordance with part 3.9 of planning scheme policy 5–Infrastructure.			
	Editor's note—The delivery of any part of a networ k identified in the plans for trunk infrastructure is governed b y Part 4— Priority infrastructure plan.			
Fire fighting				
<b>PO4</b> Development in a water service area accessed by common private title provides: (a) fire hydrant infrastructure;	AO4 Development in a water service area accessed by common private title complies with the Acceptable outcomes of the SPP code: Fire services in developments accessed by common private title in	2	Water reticulation with required fire hydrants will be provided as part of the development.	
(b) unimpeded access for emergency services vehicles.	Appendix 1 of the state planning policy.	A/S		
Editor's note—'The term common private title refers to areas such as access roads in community title developments or strata title unit access, which are private and under group or body corporate control.				
<b>P05</b> Development not in a water service area provides sufficient water storage with adequate pressure, volume and flow to service development for fire fighting purposes.	<b>AO5</b> Development: (a) is connected to a reticulated water supply scheme that has sufficient flow and pressure characteristics for fire fighting purposes at all times with a minimum pressure and flow of 10 litres per second at 200kPa; or	N/A	The development lies within a water service area.	
Solution: $\checkmark$ = Acceptable Solution				

✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal

**Performance Criteria and Acceptable Solutions** INFRASTRUCTURE CODE

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS <sup>1</sup>	COMMENTS	COUNCIL USE
	has an on-site water storage in accordance with			
	(b) Table 9.4.3.3.2—Water storage for fire fighting, dedicated or retained for fire fighting purposes that is made of fire resistant materials and is:			
	(i) a separate tank; or			
	(ii) a reserve section in the bottom part of the main water supply tankwater tank .			
	Editor's note—The requirement in AO5 is; in addition to the requirement for potable water supplystorage in AO2 in Table 9.4.3.3.2-Infrastructure code: self-assessable and assessable development; - reflected in AO5 in Table 8.2.3.3.1-Bushfire hzard overlay code: self-assessable and assessable development.			
Disposal of trade waste		-		
P06	A06			
The disposal of trade waste in a sewerage supply service area does not adversely affect the sewerage network.	The disposal of trade waste in a sewerage supply service area complies with the sewer admission standards in section 3.2.6–Sewer admission standards in planning scheme policy 3– Environmental management.	N/A		
Roof water drainage and surface water drainage	ge			
<b>PO7</b> Development provides stormwater infrastructure for the drainage of the premises so as not to cause any of the following: (a) ponding of stormwater on the premises;	<b>A07</b> Development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5–Infrastructure.	۲	Stormwater infrastructure proposed for the development will be sized to capture the minor storm in underground drainage, and safely transfer up to the major storm as overland flow. Refer to the Bornhorst and Ward Stormwater Management Plan for further information.	
(b) a hazard to personal health and safety;			The Development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5-Infrastructure	
Solution: $\checkmark$ = Acceptable Solution				
> .				

**Performance Criteria and Acceptable Solutions** 

INFRASTRUCTURE CODE

A/S = Alternative Solution N/A = Not Applicable to this Proposal

## **Performance Criteria and Acceptable Solutions** INFRASTRUCTURE CODE

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	<b>SOLUTIONS<sup>1</sup></b>	COMMENTS	COUNCIL USE
(d) an increased risk of flooding to premises within the catchment.			and the B+W Stormwater Management Plan for further information.	
Natural flow of surface water		-	-	
<b>PO8</b> Development provides that the natural flow of surface water is: (a) not altered so as to cause a risk to personal	AO8 Development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5–Infrastructure.	<b>ب</b>	Overland flows will be maintained as per existing site conditions. Refer to the Bornhorst and Ward Stormwater Mangaement Plan for further information.	
<ul> <li>(a) not affered so as to cause a risk to personal health and safety or damage to property;</li> <li>(b) not increased in intensity, velocity or frequency;</li> </ul>	planning scheme policy 5–Intrastructure.		The Development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5–Infrastructure. Refer to section 3.1 of the attached Engineering Report and the B+W Stormwater Management Plan for further	
(c) not concentrated onto adjoining premises.				
Water sensitive urban design		-		
<b>PO9</b> Development which provides stormwater infrastructure incorporates water sensitive urban design principles having regard to: (a) protecting existing natural features and ecological processes;	<b>AO9</b> Development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5–Infrastructure.	۲	The Development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5–Infrastructure. Refer to section 3.1 of the attached Engineering Report and the B+W Stormwater Management Plan for further information.	
(b) protecting the natural hydrologic behaviour of catchments;				
(c) protecting the existing natural flow and water quality regimes of waterways;				
(d) protecting water quality of surface and ground waters;				
(e) minimising demand on the water network;				
Solution: $\checkmark$ = Acceptable Solution		-		

A/S = Alternative Solution N/A = Not Applicable to this Proposal

# INFRASTRUCTURE CODE Performance Criteria and Acceptable Solutions

				Land use and transport integration
	Please refer to the Traffic Impact Assessment for further information.	A/S	<b>A011</b> Development which generates more than 3,000 vehicle trips per average weekday provides an integrated movement concept report which integrates the planning of the movement network in accordance with part 2 and 3 of planning scheme policy 5–Infrastructure.	<b>PO11</b> Development which generates more than 3,000 vehicle trips per average weekday is designed to integrate the movement network to minimise the transportation costs required to service the use.
				Integrated movement concept report
	Please refer to the Traffic Impact Assessment for further information.	A/S	<ul> <li>AO10</li> <li>Development does not cause or contribute to projected traffic levels: <ul> <li>(a) exceeding the maximum vehicle trips per day in Table 3.4.1.4.2 in planning scheme policy 5–Infrastructure; or</li> <li>(b) exceeding the maximum control delays through intersections in peak periods in Table 3.4.1.4.3 in planning scheme policy 5–Infrastructure.</li> </ul> </li> </ul>	<b>PO10</b> The projected traffic levels for a use do not adversely affect the planned standards of service for a road or intersection.
				Movement network
				<ul><li>(f) minimising sewage discharges to the natural Environment</li><li>(g) integrating water into the landscape to enhance visual and ecological values.</li></ul>
COUNCIL USE ONLY	COMMENTS	SOLUTIONS <sup>1</sup>	ACCEPTABLE SOLUTIONS	PERFORMANCE CRITERIA

Solution:  $\checkmark$  = Acceptable Solution A/S = Alternative Solution N/A = Not Applicable to this Proposal

Performance Criteria and Acceptable Solutions	INERASTRI ICTI IRE CODE
---	-------------------------

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS <sup>1</sup>	COMMENTS	COUNCIL USE ONLY
<b>PO12</b> Development within 400 metres of existing or future public passenger transport facilities where the total site area is 5000m <sup>2</sup> or more: (a) supports a road hierarchy which facilitates efficient, safe and accessible bus services connecting to existing and future public passenger transport facilities;	A012 No acceptable outcome provided.	A/S	Please refer to the Traffic Impact Assessment for further information.	
(b) enhances connectivity between existing and future public passenger transport facilities and other transport modes;				
(c) optimises the walkable catchment to existing and future public passenger transport facilities;				
(d) provides for direct and safe access to and use of existing or future public passenger transport facilities.				
Note—SPP code: Land use and transport integration in Appendix 4 of the state planning policy provides guidance to achieve this outcome.				

 $\checkmark$  = Acceptable Solution A/S = Alternative Solution N/A = Not Applicable to this Proposal