

SERVICEABILITY REPORT

FOR THE PROPOSED GREENBANK SHOPPING CENTRE STAGE 2

LOCATED AT
15 & 19-69 PUB LANE, GREENBANK

PREPARED FOR
REGION GROUP

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2016/813/6

Date: 24/03/2026



**BORNHORST
+ WARD**

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Bornhorst and Ward Project No: **21282**



RPEQ 07048

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

Revision	Date	Description	Author	Rev.	App.
A	Apr 2023	Issue for DA	ST	RG	RG
B	Aug 2023	Response to RFI	ST	RG	RG
C	Oct 2023	Response to Further Issues	ST	RG	RG
D	Sep 2025	Updated earthworks, drainage & sewer strategies	AM	MN	NR
E	Sep 2025	Updated address, locality plan & development drawings	MN	MN	NR
F	15.Dec.25	Revised architectural staging	RG	RG	

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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 15 & 19-69 Pub Lane, Greenbank 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.



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.
- The project is staged to develop the southern access first, followed by the main centre expansion.

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

2.2.1 Civil Works Staging

To activate buildings prior to completion of entire Stage 2, we consider the following civil works need to be undertaken as part of Stage 2A, within the nominal 'Stage 2B' or 'Future Stage' areas.

Roadworks & Access

Road construction for Stage 2A will provide future access to Stage 2B and Lot 8 and is effectively 'enabling works' for Stage 2. Direct-to-Boot (DTB) expansion access will be over existing Stage 1 pavement

Sewer

The sewer diversion for Stage 2 needs to be undertaken in Stage 2A to provide connection to Stage 2A QSR's and to the existing Stage 1 centre to ensure no disruption during Stage 2B works. This sewer is nominated to be within an Easement in favour of upstream lots. Should the Direct-to-Boot (DTB) expansion require a plumbing connection, it will be connected to existing Stage 1 infrastructure.

Water (Potable and Fire)

The sub staging doesn't impact water supply works as all will be undertaken as part of Stage 2A and extended to Lot 8 and Stage 2B boundaries. The Direct-to-boot expansion will be serviced by existing stage 1 supply.

Stormwater

Stage 2A will require the expansion of the existing detention basin, along with provision of a temporary bund or swale to direct runoff from Stage 2A and portions of Stage 1 to the rear detention basin. Expansion of the detention basin also requires the reconfiguration of the outlet pipes and discharge channel as indicated on DA-C030. Direct-to-Boot (DTB) expansion will utilise existing Stage 1 stormwater systems and discharges to the expanded detention system.

Earthworks

Bulk earthworks for Stage 2B are independent of Stage 2A, other than works to implement the stormwater amendments and to provide cover to new sewer pipe systems

2.3 TOPOGRAPHY AND CATCHMENT CHARACTERISTICS

The 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 of stage 2;
- The development falls to the northwest at an average grade of 2.3% to a low point of approximately RL 63.5m AHD near the railway corridor.
- A Drainage easement along the north boundary accepts flow from the existing Greenbank Shopping Centre. This flow is directed into an existing detention basin before discharging into the Railway Corridor.
- Rainfall on the site will sheet flow towards the east. Once in the railway corridor the stormwater will travel to the north where it connects the drainage easement along the north boundary.
- A culvert under the railway allows stormwater to flow into the neighbouring Power Corridor. This conveys flow from 13.115 ha of the site. Marked as EX CATCH A, in the attached plans. Runoff from the current centre is captured in roof water and stormwater systems before being directed to an open channel along the northern boundary. A detention basin exists within the Stage 2 development site to service the existing development.
- A small portion of the site. 0.74 ha marked as EX CATCH B is conveyed to the south, under Pub Lane.
- There are no external catchments associated with the development site;

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.

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 2500m² stormwater quality treatment measures will be required for the site. This is proposed to be in the form of bio-retention basins, swales and stormwater quality improvement devices (SQID's). It is noted that alternate and equivalent SQID may be selected following detailed building hydraulic design.
- Minor events will be collected by the internal stormwater piped network, and directed to the proposed stormwater treatment system, and onwards to the proposed detention basin.
- Major events will be directed by surface grading within the proposed carparking areas to the proposed stormwater detention basin.
- The proposed detention basin will drain to the channel along the easement to the north. This channel will convey flows east towards the railway corridor.
- The proposed development encroaches the stage 1 detention basin and will be removed as part of the development. As a result, the proposed stage 2 detention basin will accommodate for both stage 1 and stage 2 flows.

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, construct drainage basins 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 drainage boundary. There is a property connection from this main which terminates within the Stage 2 development extents.
- Stage 1 is currently serviced by this main, with an additional main running north within the stage 1 development area.

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:

- As the proposed development encroaches on the existing stage 1 sewer main, a realignment will be necessary.
- This realignment will convey flow through the stage 2 carparking area and connect to the sewer main within the drainage easement. The existing stage 1 sewer main will be decommissioned / extinguished to facilitate the proposed stage 2 development.
- A new property connection from the above realignment will be made to service the stage 2 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 it is noted that fire tanks exist on the site. Refer to the site plan prepared by Cottee Parker in Appendix A for further information.
- There is an existing 300mm dia. water main located within the Pub Lane road reserve.

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:

- A new connection from the existing 300mm diameter water main within Pub Lane will be constructed to service the Stage 2 development for both fire and domestic uses. As discussed in Section 3.5.1, there are existing fire tanks on site servicing the Stage 1 development. Storage capacity for the Stage 2 development will be determined by a hydraulic engineer at the detailed design phase.
- A new connection is also proposed to service Lot 8 via an easement G within Stage 2A..

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.

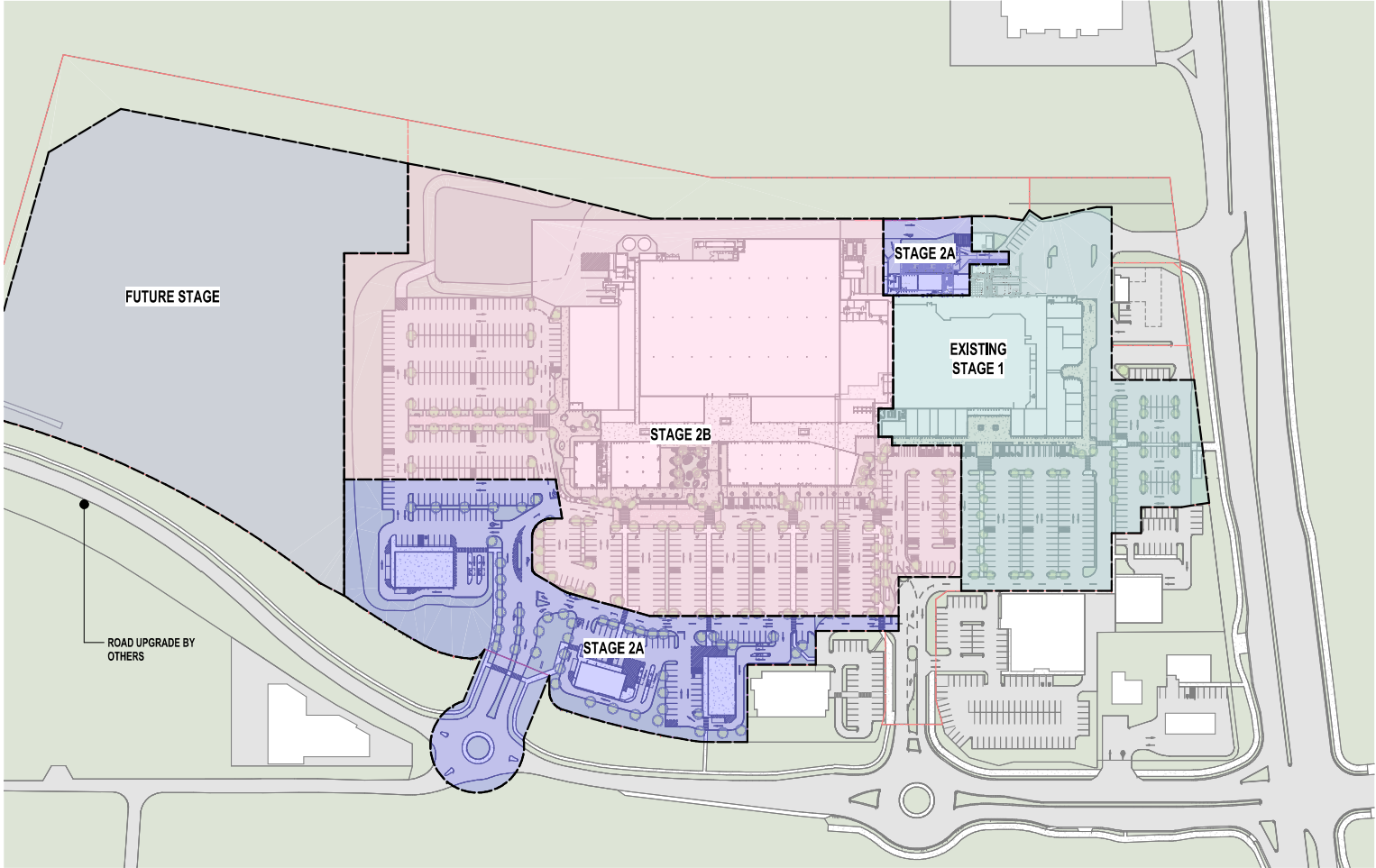
The completed codes can be found attached in Appendix D of this Report.

5. SUMMARY

This reporting relating to the proposed Shopping Centre development located at 15 & 19-69 Pub Lane, Greenbank 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, create building pads and to provide appropriate road grades.
- Sewer and water connections to the existing surrounding infrastructure are proposed to service the development. Logan City Council will be required to confirm the suitability of these connections and the capacity of the existing network.
- There are existing electrical, gas and telecommunications surrounding the site which may be used to service the development.

APPENDIX A
DEVELOPMENT DRAWINGS



COTTEEPARKER Φ

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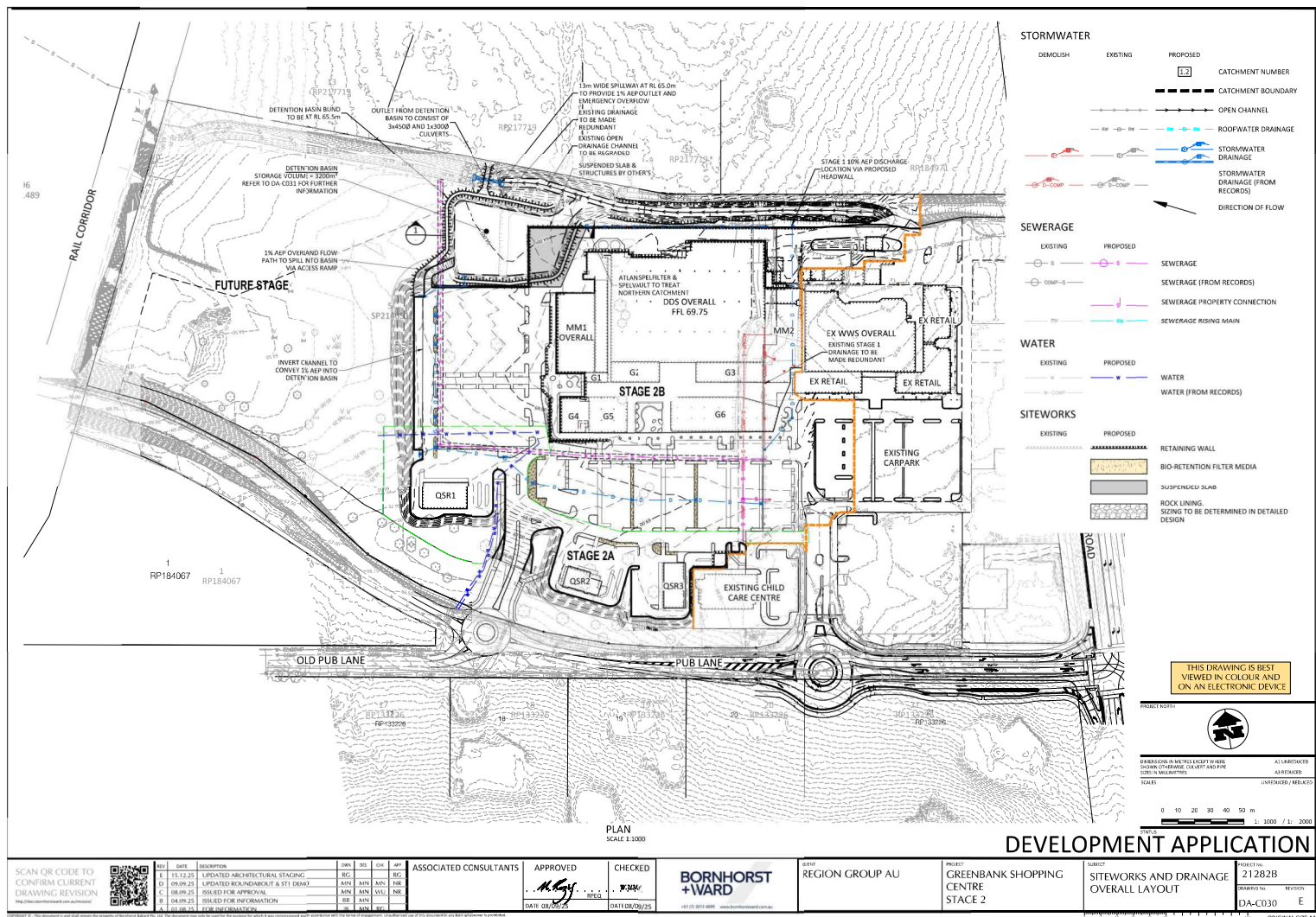
GENERAL NOTES
1. Quantity and the description of 'change' in the schedule is for guidance only and may not correspond to the drawing or the actual work.
2. Other notes are provided for all works requiring the drawing, intended for review, approval or other relevant information.

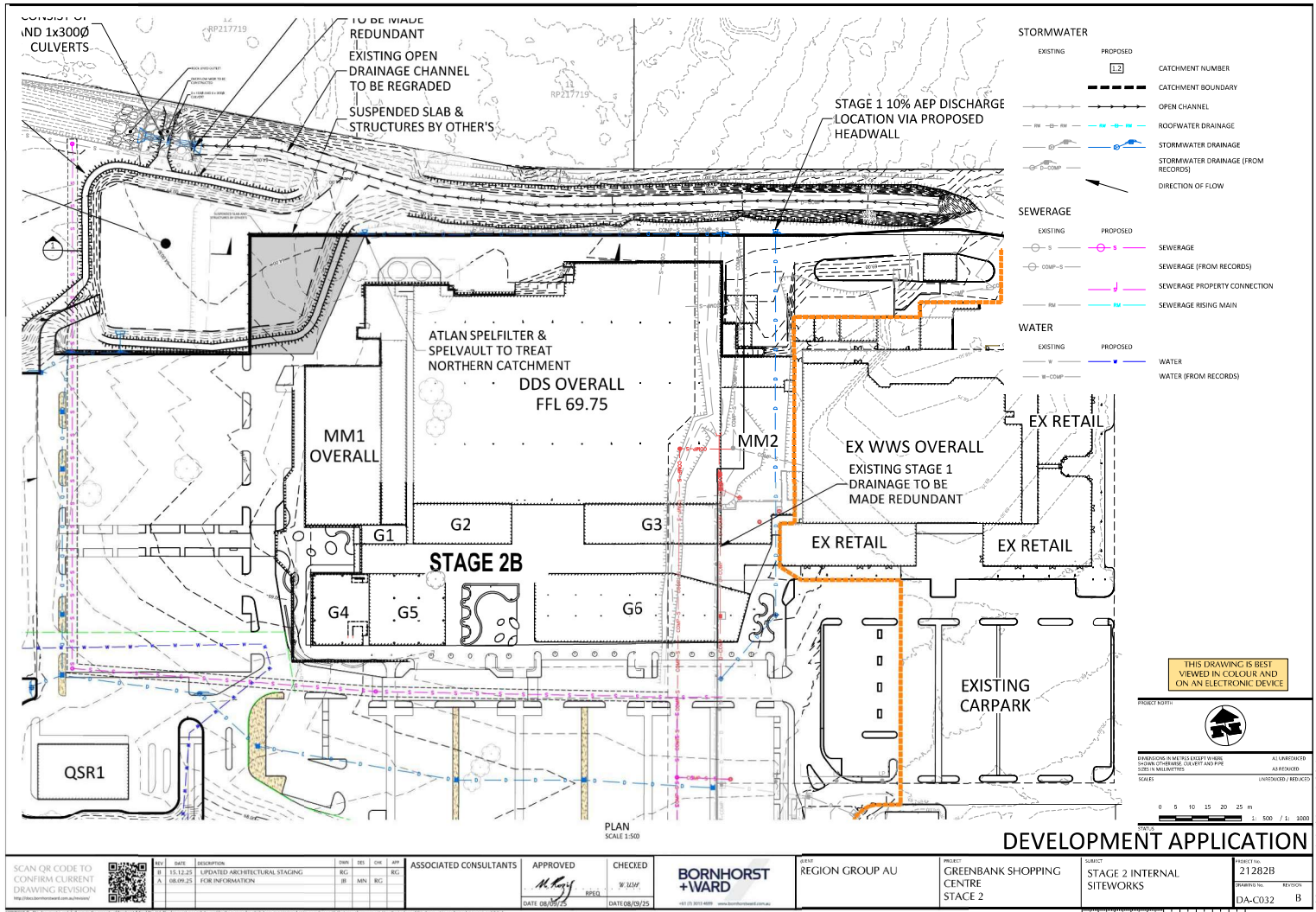
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J	10/10/2024	10/10/2024	CPA	CPA
K	10/10/2024	10/10/2024	CPA	CPA
L	10/10/2024	10/10/2024	CPA	CPA
M	10/10/2024	10/10/2024	CPA	CPA
N	10/10/2024	10/10/2024	CPA	CPA
O	10/10/2024	10/10/2024	CPA	CPA
P	10/10/2024	10/10/2024	CPA	CPA
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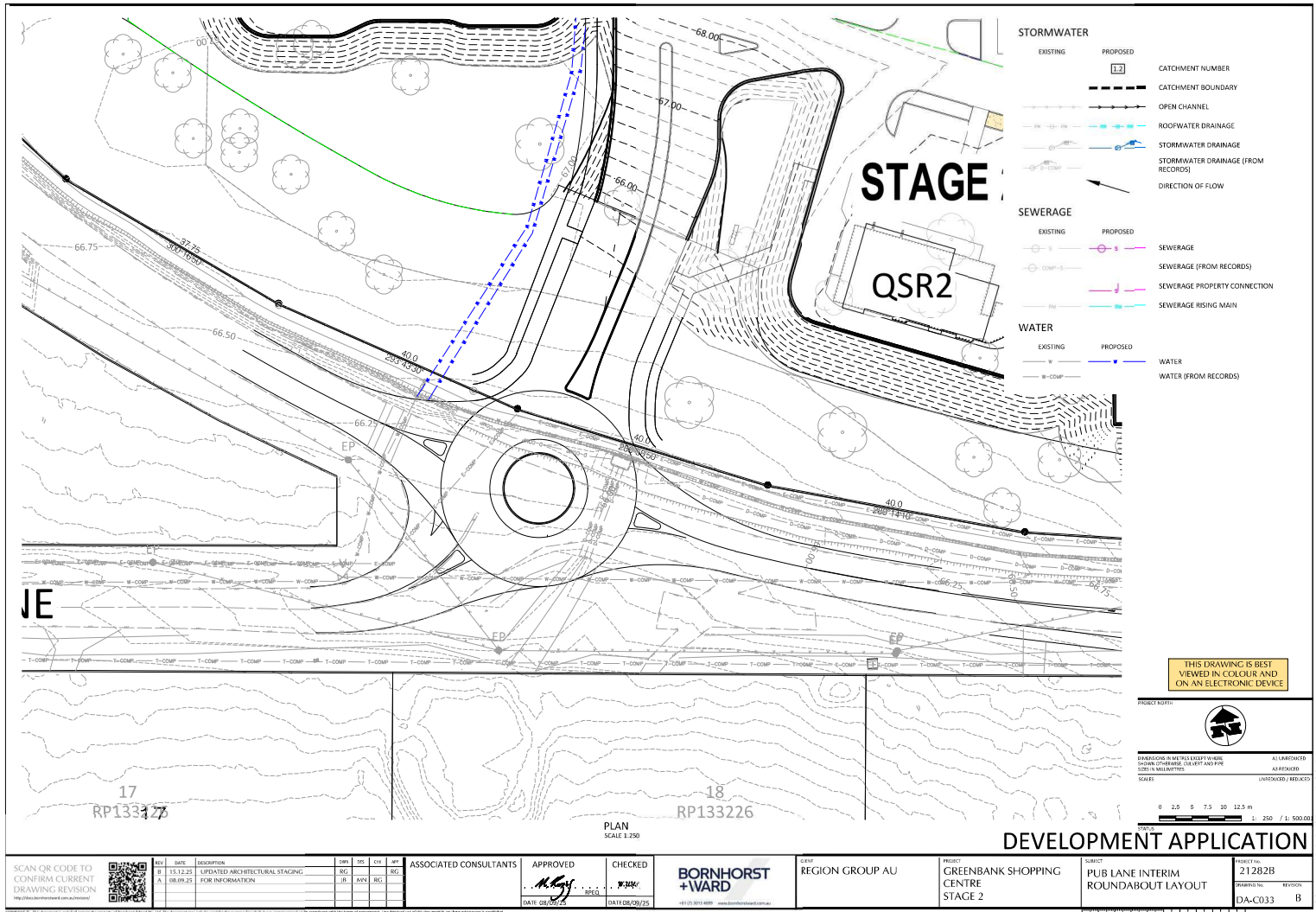
GREENBANK SC EXPANSION

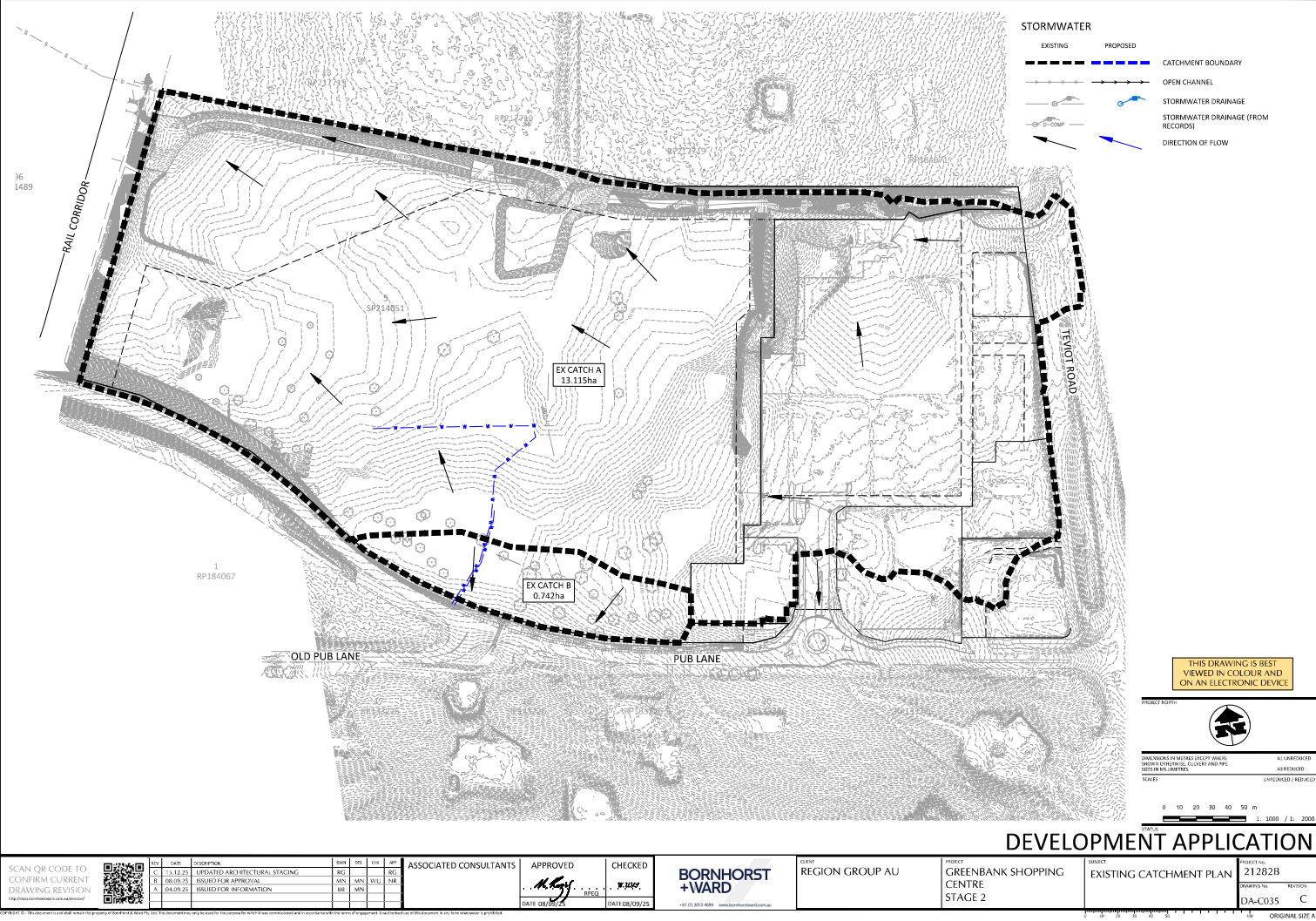
200 RIVERVIEW, GREENBANK
CLIENT - REGION GROUP
DRAWING TITLE
STAGING PLAN
27007748 SD 1002 F

APPENDIX B
ENGINEERING DRAWINGS









- STORMWATER**
- | | | |
|----------|----------|------------------------------------|
| EXISTING | PROPOSED | |
| --- | --- | CATCHMENT BOUNDARY |
| --- | --- | OPEN CHANNEL |
| --- | --- | STORMWATER DRAINAGE |
| --- | --- | STORMWATER DRAINAGE (FROM RECORDS) |
| --- | --- | DIRECTION OF FLOW |

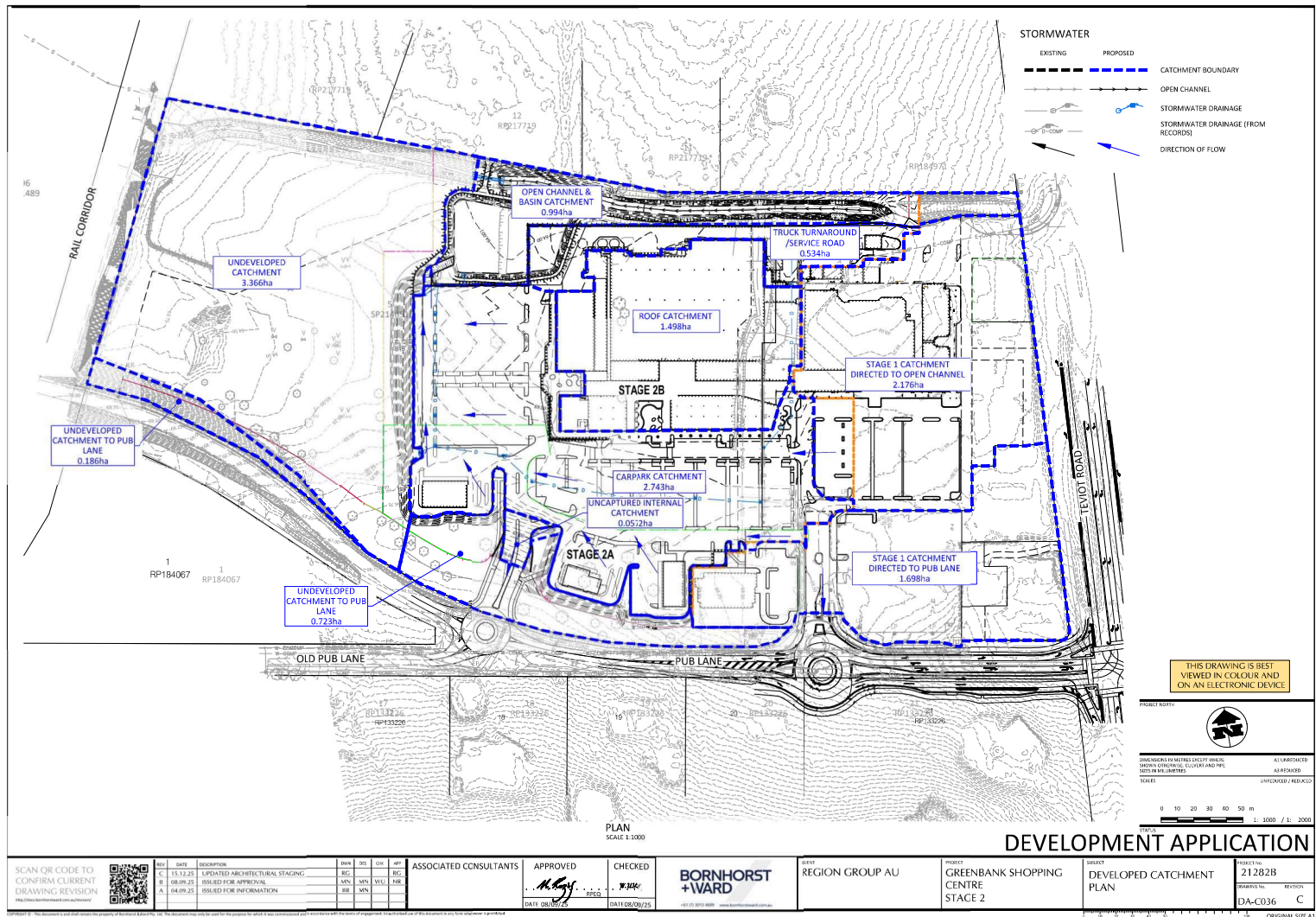
THIS DRAWING IS BEST VIEWED IN COLOUR AND ON AN ELECTRONIC DEVICE

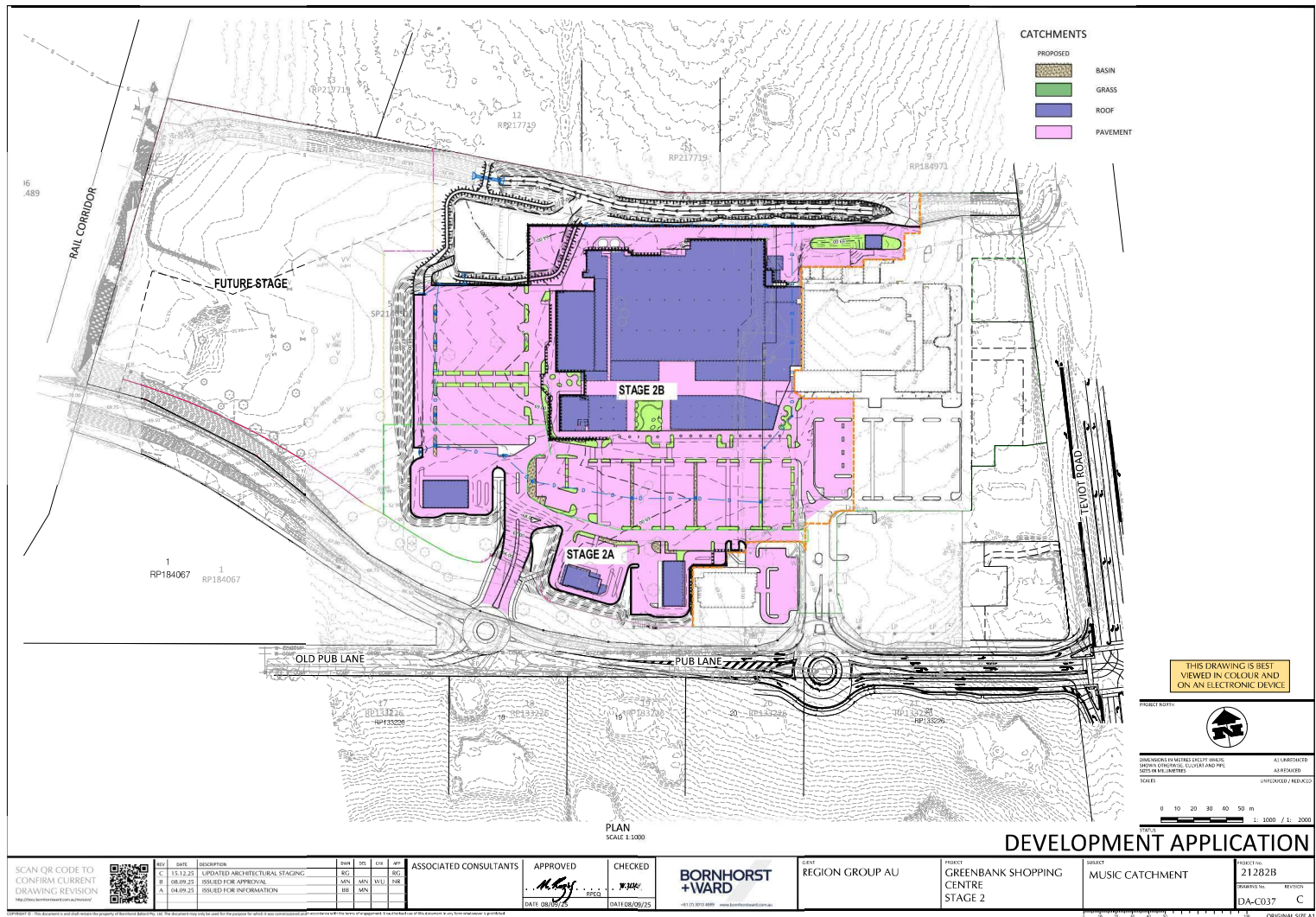


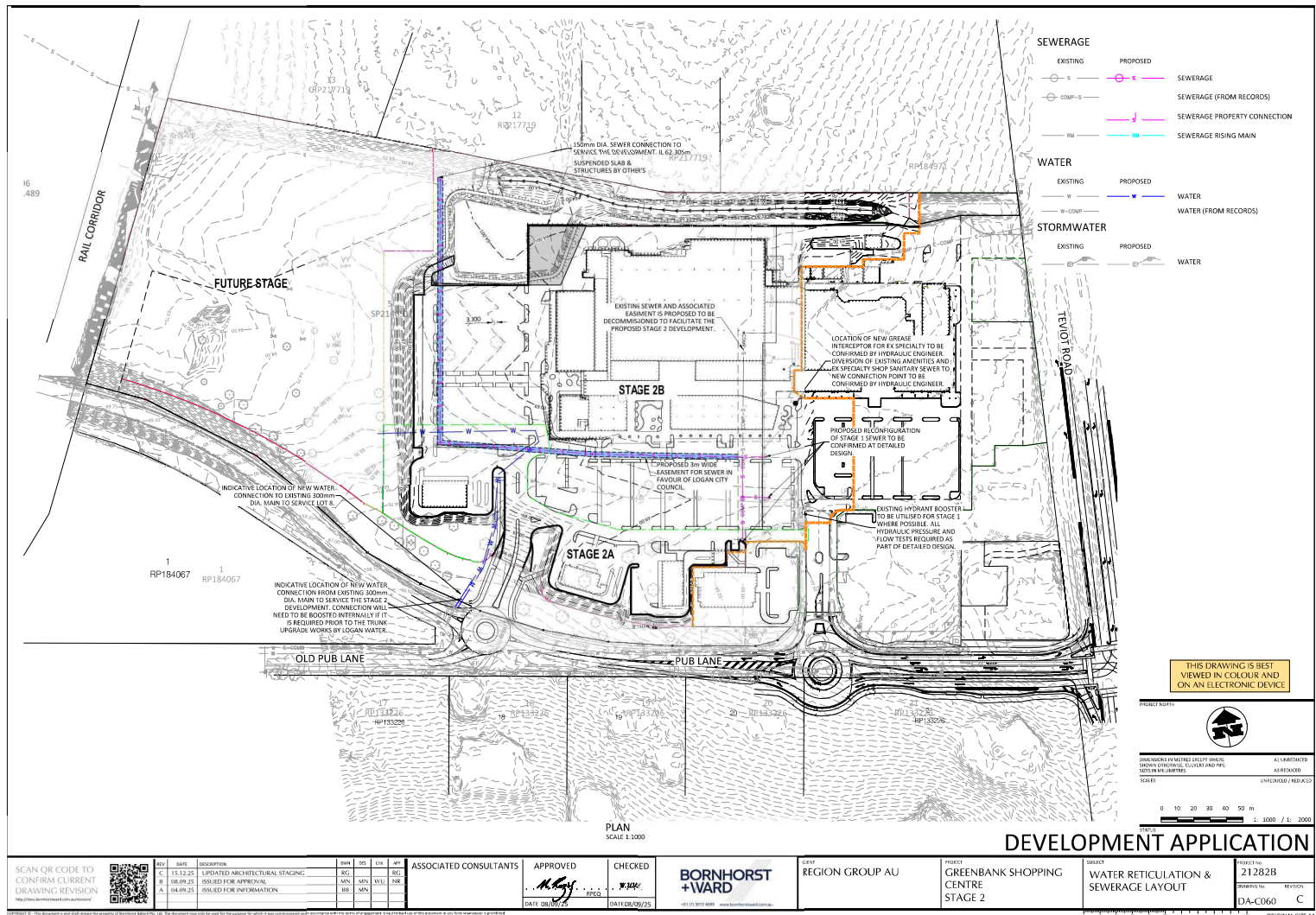
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SCALE: 1:5000 / 1:2000

DEVELOPMENT APPLICATION

SCAN QR CODE TO CONFIRM CURRENT DRAWING REVISION 	REV	DATE	DESCRIPTION	REV	DATE	DESCRIPTION	ASSOCIATED CONSULTANTS	APPROVED  DATE: 08/09/25	CHECKED  DATE: 08/09/25		CLIENT REGION GROUP AU	PROJECT GREENBANK SHOPPING CENTRE STAGE 2	SUBJECT EXISTING CATCHMENT PLAN	PROJECT NO. 212828	DRAWING NO. DA-C035	REVISION C
	C	13.12.25	EXISTING ARCHITECTURAL STAGING	REV												
	B	08.09.25	ISSUED FOR APPROVAL	MIN	MIN	MIN										
	A	04.09.25	ISSUED FOR INFORMATION	REV	MIN											







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 Size: 99,640 m² (survey plan area)
Zone and precinct: Priority Development Area - No Precinct

Property Key: 314242
Division: 11

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.

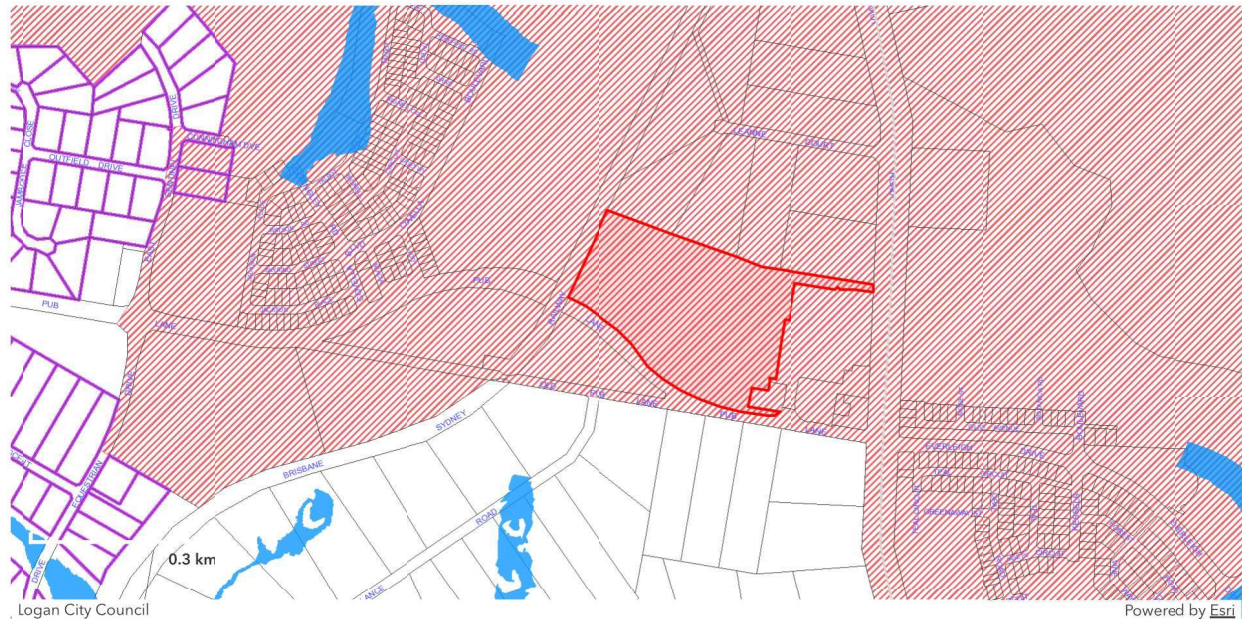
Planning Scheme Flood hazard overlay map

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 development@logan.qld.gov.au Before lodging a development application, pre-lodgement advice is recommended.
Building information	Contact Council on 07 3412 3412 or email council@logan.qld.gov.au . You can also contact a private building certifier .
Flood studies and modelling information	Contact Council on 07 3412 3412 or email council@logan.qld.gov.au . Flood studies are available from the Flood page 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

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Email: council@logan.qld.gov.au

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Before You Dig Australia (BYDA)

Asset Location Response



PO Box 3226 Logan City DC QLD 4114 • 150 Wembley Road, Logan Central
p (07) 3412 3412 • e council@logan.qld.gov.au • www.logan.qld.gov.au • ABN 21-627-796 435



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Brisbane City QLD 4000
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Logan City Council has been advised that you have placed an enquiry through the Before You Dig Australia service. Our records indicate the enquiry with the following details are affecting Logan City Council asset(s).

Enquiry Details	
Sequence Number	258536869
Enquiry Date	25/07/2025 15:52
Response	AFFECTED
Address	235-255 Teviot Road Greenbank
Location in Road	
Activity	Planning and Design

Please review plans attached and contact Logan City Council prior to commencing works:

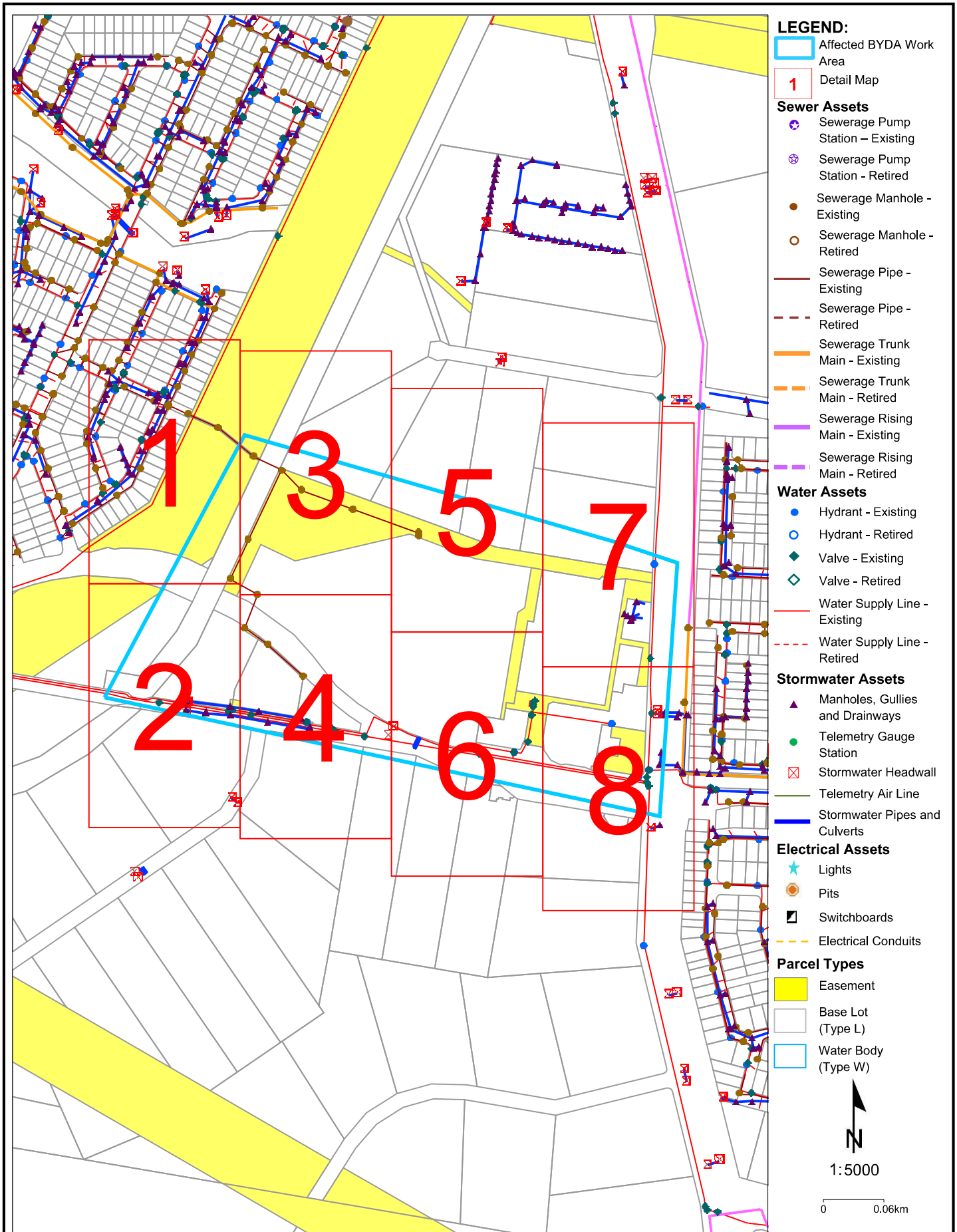
Logan City Council now provides a limited amount of As-Constructed and Drainage Plans on-line, click on the [Logan City As-Constructed Plans](#) link and type in the property address you are seeking. Unfortunately, not all properties will have plan records accessible on-line. The following options are available to customers should a record not be available:

- For **As Constructed Private Sewer/Roofwater (Inside Properties)**
Contact *Development Assessment, Building & Plumbing*
p: (07) 3412 5269
Alternatively visit our Website Link to the relevant PS1 or PS2 forms:
[Logan City As-Constructed Plans](#)
- For **As Constructed Private Sewer/Water/Stormwater (Outside Properties)**
Contact *Road Infrastructure Planning*
p: (07) 3412 5282
Alternatively visit our Website Link for PS3 forms:
[Logan City As-Constructed Plans](#)

If you need more assistance please call us on 07 3412 3412 or email us at council@logan.qld.gov.au.

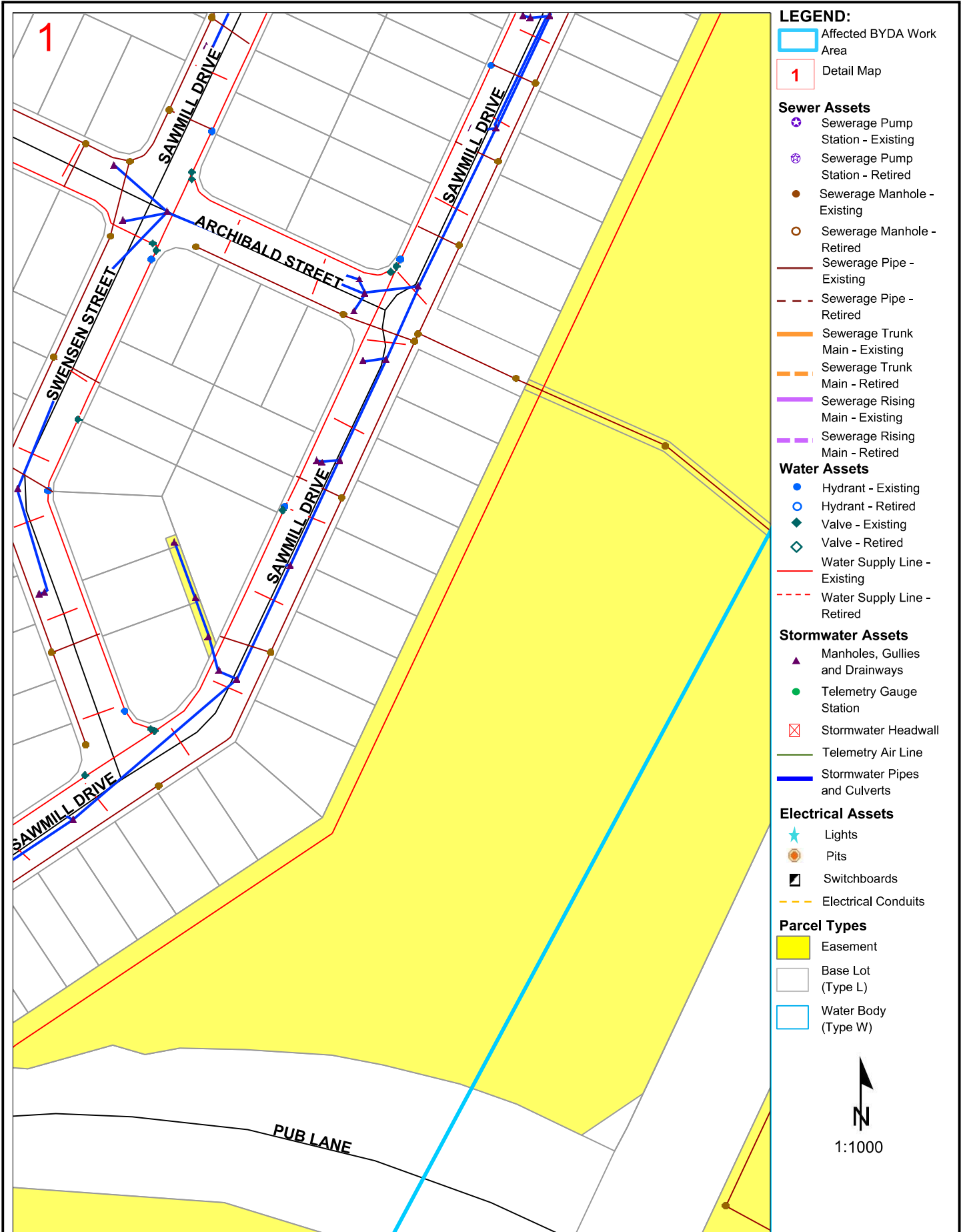
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Logan City Council's infrastructure dates back over many years and may include manufactured materials containing asbestos. You are solely responsible for ensuring that appropriate care is taken at all times and that you comply with all mandatory requirements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



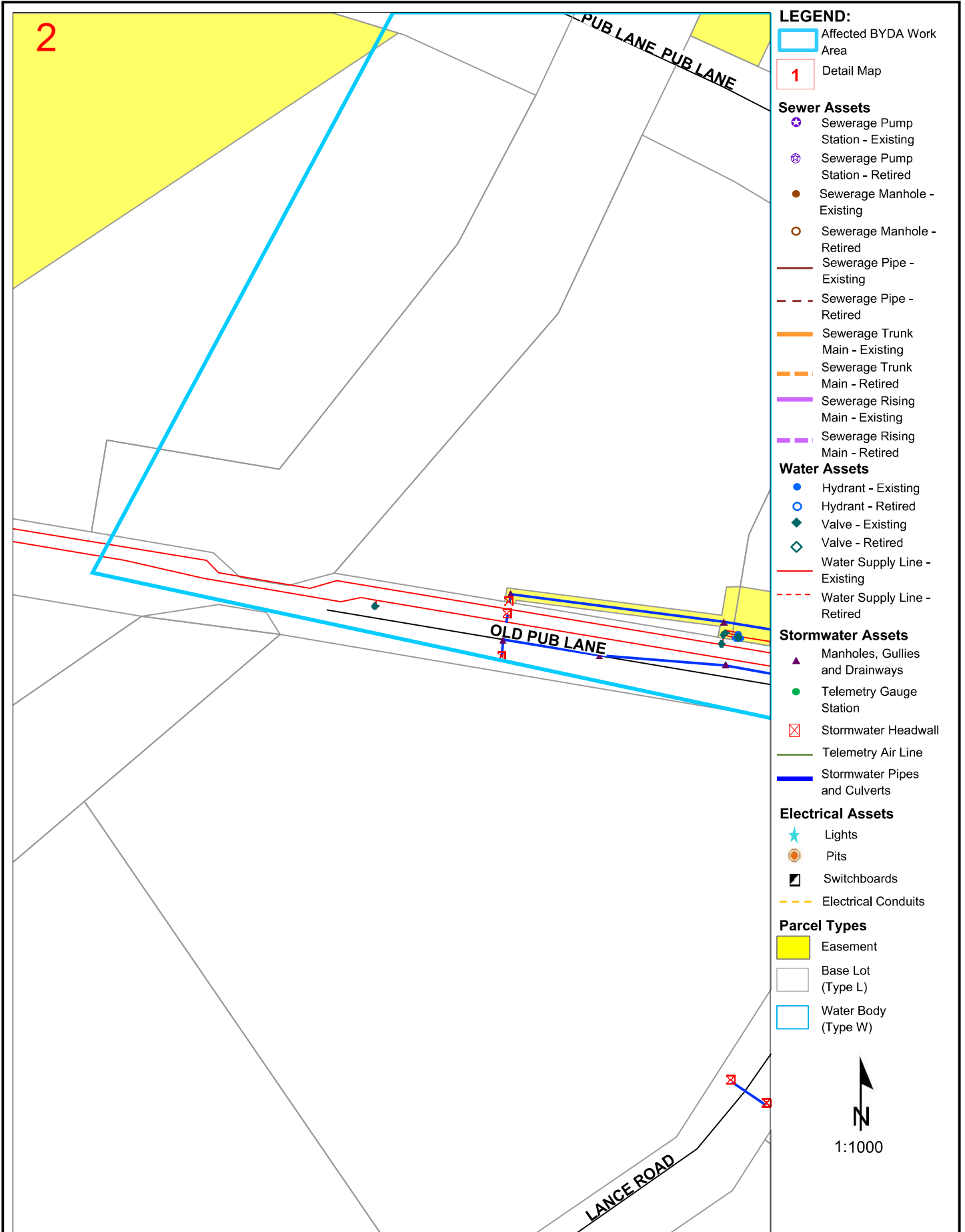
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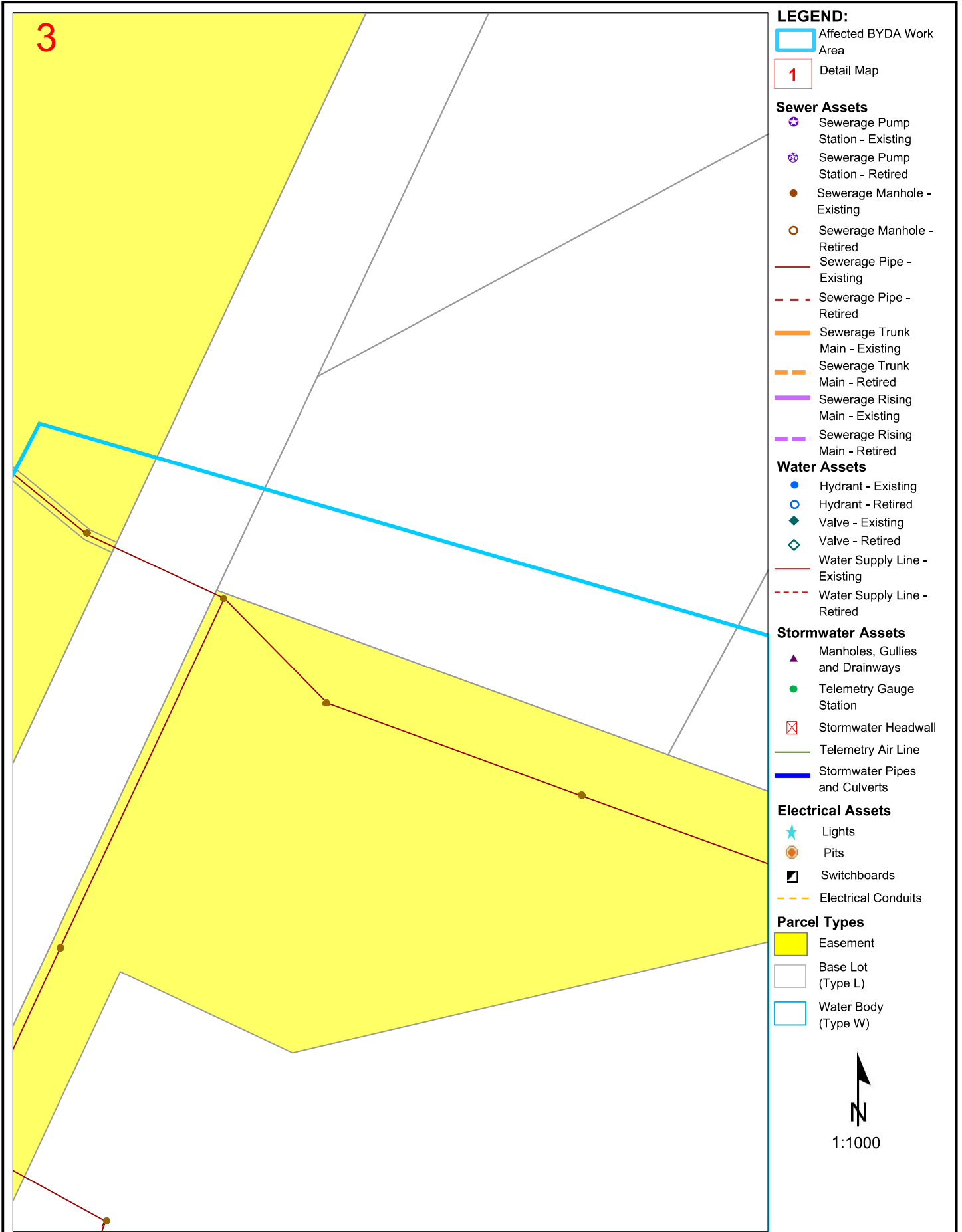
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LEGEND:

 Affected BYDA Work Area

 Detail Map

Sewer Assets

-  Sewerage Pump Station - Existing
-  Sewerage Pump Station - Retired
-  Sewerage Manhole - Existing
-  Sewerage Manhole - Retired
-  Sewerage Pipe - Existing
-  Sewerage Pipe - Retired
-  Sewerage Trunk Main - Existing
-  Sewerage Trunk Main - Retired
-  Sewerage Rising Main - Existing
-  Sewerage Rising Main - Retired

Water Assets

-  Hydrant - Existing
-  Hydrant - Retired
-  Valve - Existing
-  Valve - Retired
-  Water Supply Line - Existing
-  Water Supply Line - Retired

Stormwater Assets

-  Manholes, Gullies and Drainways
-  Telemetry Gauge Station
-  Stormwater Headwall
-  Telemetry Air Line
-  Stormwater Pipes and Culverts

Electrical Assets

-  Lights
-  Pits
-  Switchboards
-  Electrical Conduits

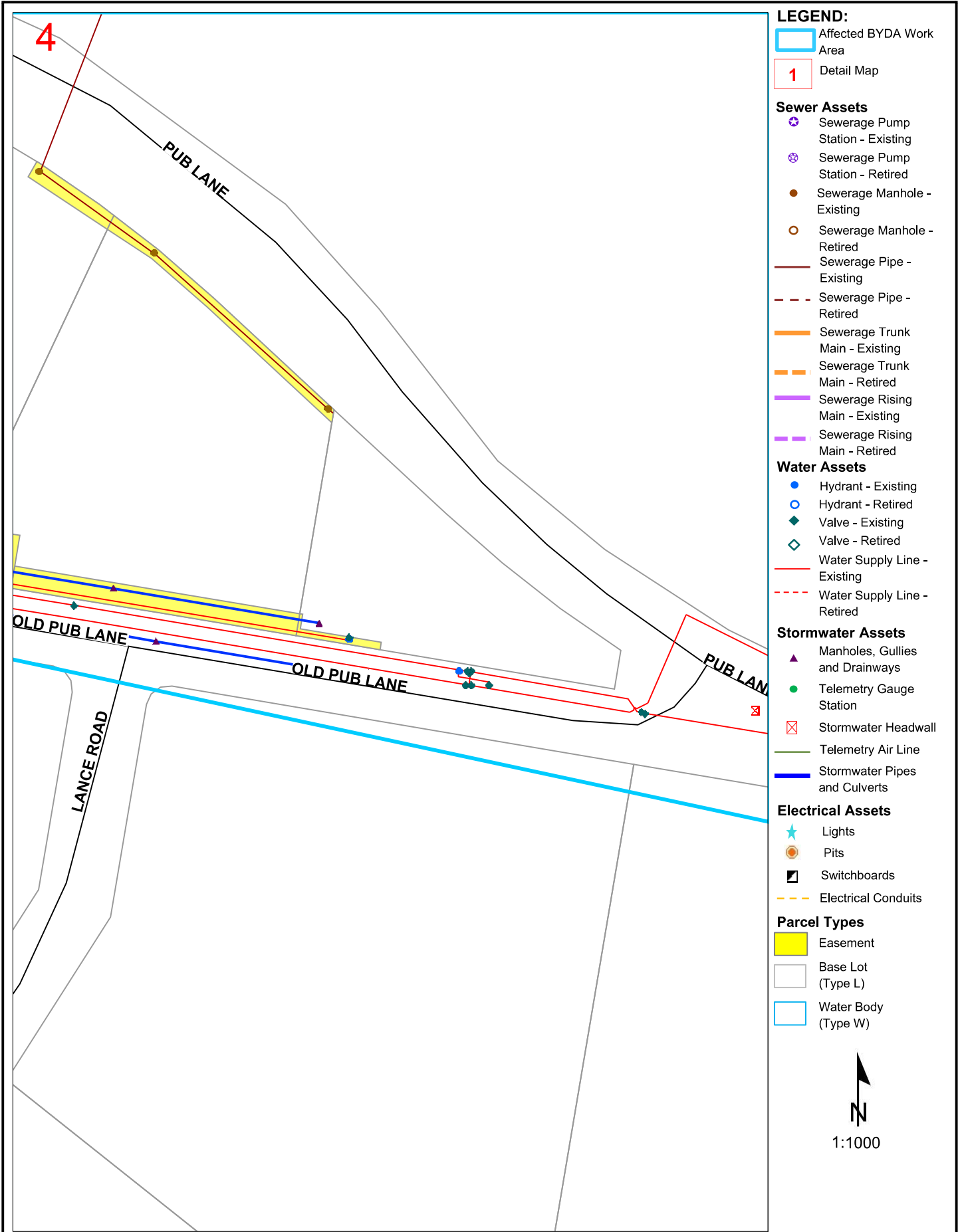
Parcel Types

-  Easement
-  Base Lot (Type L)
-  Water Body (Type W)


1:1000

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5

LEGEND:

 Affected BYDA Work Area

 Detail Map

Sewer Assets

-  Sewerage Pump Station - Existing
-  Sewerage Pump Station - Retired
-  Sewerage Manhole - Existing
-  Sewerage Manhole - Retired
-  Sewerage Pipe - Existing
-  Sewerage Pipe - Retired
-  Sewerage Trunk Main - Existing
-  Sewerage Trunk Main - Retired
-  Sewerage Rising Main - Existing
-  Sewerage Rising Main - Retired

Water Assets

-  Hydrant - Existing
-  Hydrant - Retired
-  Valve - Existing
-  Valve - Retired
-  Water Supply Line - Existing
-  Water Supply Line - Retired

Stormwater Assets

-  Manholes, Gullies and Drainways
-  Telemetry Gauge Station
-  Stormwater Headwall
-  Telemetry Air Line
-  Stormwater Pipes and Culverts

Electrical Assets

-  Lights
-  Pits
-  Switchboards
-  Electrical Conduits

Parcel Types

-  Easement
-  Base Lot (Type L)
-  Water Body (Type W)



1:1000

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6

LEGEND:

 Affected BYDA Work Area

 Detail Map

Sewer Assets

-  Sewerage Pump Station - Existing
-  Sewerage Pump Station - Retired
-  Sewerage Manhole - Existing
-  Sewerage Manhole - Retired
-  Sewerage Pipe - Existing
-  Sewerage Pipe - Retired
-  Sewerage Trunk Main - Existing
-  Sewerage Trunk Main - Retired
-  Sewerage Rising Main - Existing
-  Sewerage Rising Main - Retired

Water Assets

-  Hydrant - Existing
-  Hydrant - Retired
-  Valve - Existing
-  Valve - Retired
-  Water Supply Line - Existing
-  Water Supply Line - Retired

Stormwater Assets

-  Manholes, Gullies and Drainways
-  Telemetry Gauge Station
-  Stormwater Headwall
-  Telemetry Air Line
-  Stormwater Pipes and Culverts

Electrical Assets

-  Lights
-  Pits
-  Switchboards
-  Electrical Conduits

Parcel Types

-  Easement
-  Base Lot (Type L)
-  Water Body (Type W)



1:1000

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7

LEGEND:

 Affected BYDA Work Area

 Detail Map

Sewer Assets

-  Sewerage Pump Station - Existing
-  Sewerage Pump Station - Retired
-  Sewerage Manhole - Existing
-  Sewerage Manhole - Retired
-  Sewerage Pipe - Existing
-  Sewerage Pipe - Retired
-  Sewerage Trunk Main - Existing
-  Sewerage Trunk Main - Retired
-  Sewerage Rising Main - Existing
-  Sewerage Rising Main - Retired

Water Assets

-  Hydrant - Existing
-  Hydrant - Retired
-  Valve - Existing
-  Valve - Retired
-  Water Supply Line - Existing
-  Water Supply Line - Retired

Stormwater Assets

-  Manholes, Gullies and Drainways
-  Telemetry Gauge Station
-  Stormwater Headwall
-  Telemetry Air Line
-  Stormwater Pipes and Culverts

Electrical Assets

-  Lights
-  Pits
-  Switchboards
-  Electrical Conduits

Parcel Types

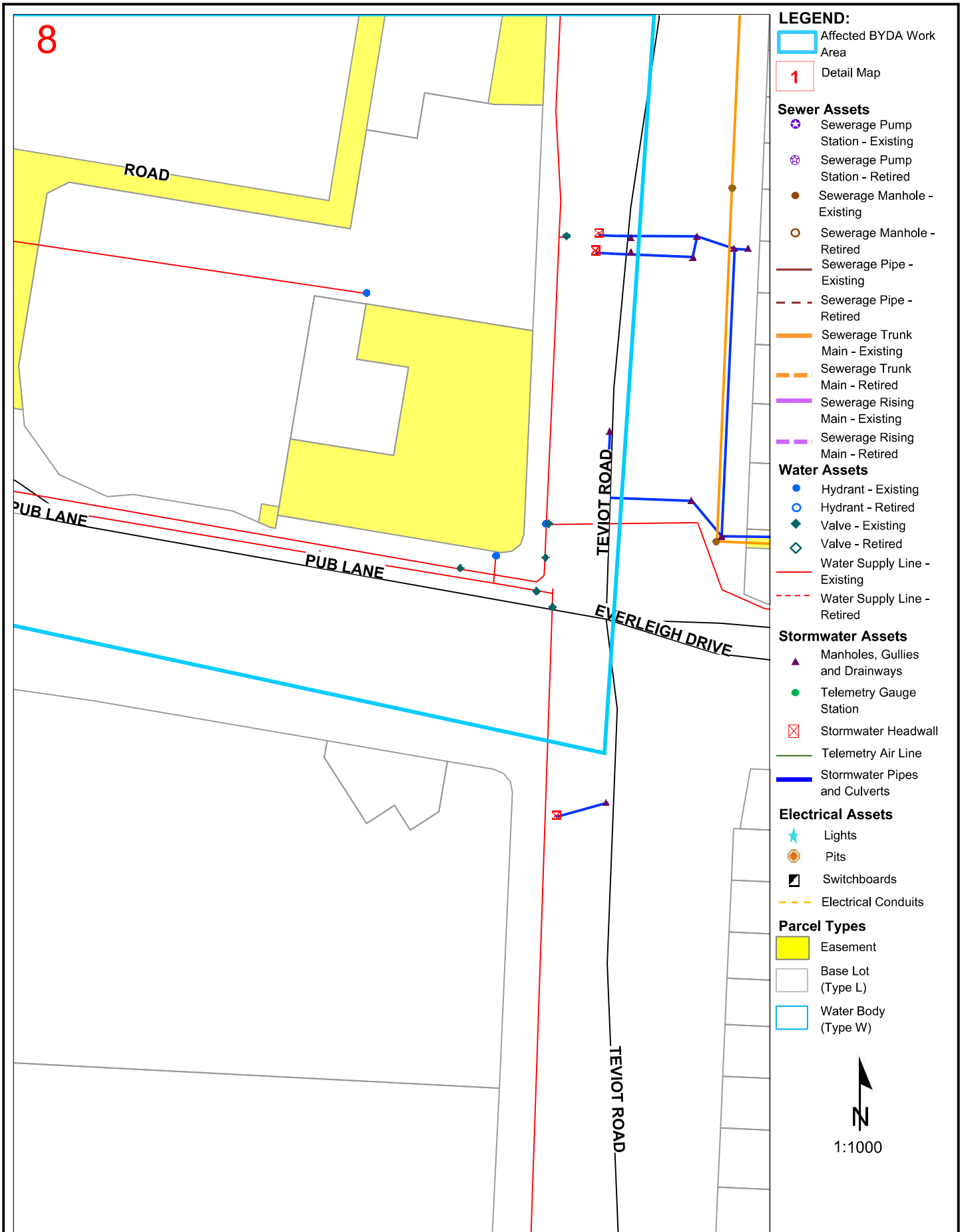
-  Easement
-  Base Lot (Type L)
-  Water Body (Type W)



1:1000

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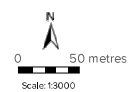
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Queensland
Government

Department of Natural Resources and Mines, Manufacturing, and Regional
and Rural Development

Contour SRTM 10m

- Index Contour
- Intermediate Contour

Contour LiDAR 5m

- Index Contour
- Intermediate Contour

Contour LiDAR 1m

- Index Contour
- Intermediate Contour

Land parcel

- Parcel

Land parcel - gt 1 ha

- Parcel

Land parcel - gt 10 ha

- Parcel

Land parcel - gt 1000 ha

- Parcel

Green bridges

-

Bridges

-

Tunnels

-

Railway stations

-

Railways

-

Roads and tracks

- Motorway
- Highway
- Secondary
- Connector
- Local
- Restricted Access Road
- Mall
- Busway
- Bikeway
- Restricted Access
- Bikeway
- Walkway
- Restricted Access
- Walkway
- Non-vehicular Track
- Track
- Restricted Access Track
- Ferry
- Proposed Thoroughfare

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APPENDIX D

COUNCIL CODES

9.4.2

Filling and excavation code

9.4.2.1

Application

1. This code applies to:
- a. material change of use:

i. that is accepted development (subject to requirements) or code assessable and for which the Filling and excavation code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in a table of assessment in section 5.5 - Categories of development and assessment - Material change of use in Part 5 - Tables of assessment;

ii. that is made impact assessment in a table of assessment in section 5.5 - Categories of development and assessment - Material change of use or section 5.9 - Categories of development and assessment - local plans in Part 5 - Tables of assessment;

b. reconfiguring a lot:

i. that is code assessable and for which the Filling and excavation code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in Table 5.6.1 - Reconfiguring a lot in Part 5 - Tables of assessment;

ii. that is impact assessable in Table 5.6.1 - Reconfiguring a lot in Part 5 - Tables of assessment;

c. operational work that is accepted development (subject to requirements) and code assessable operational work - filling or excavation for which the Filling and excavation code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in Table 5.8.1 - Operational work.
2. When using this code, reference should be made to section 5.3.2 - Determining the category of development and category of assessment and, where applicable, section 5.3.3 - Determining the 'assessment benchmarks for assessable development and requirements for accepted development' located in Part 5 - Tables of assessment.

9.4.2.2

Purpose

1. The purpose of the code is to protect premises, people and natural processes from adverse impacts associated with filling or excavation.
2. The purpose of the code will be achieved through the following overall outcomes:
- a. development protects:

i. natural physical processes and ecosystems;

ii. existing and planned infrastructure;

Solution: ✓ = Acceptable Solution

N/A = Not Applicable

AS = Alternative Solution

- iii. personal health and safety and premises;
- iv. visual amenity.

9.4.2.3 Assessment benchmarks for assessable development and requirements for accepted development

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

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

Performance outcomes	Acceptable outcomes	Solution	Comments	Council Use Only
For accepted development (subject to requirements) and assessable development				
Protection of natural processes and ecosystems				
PO1 The discharge of sediments and pollutants from filling or excavation does not adversely affect a waterway or the stormwater network.	AO1 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.	✓	Erosion and sediment control will be utilized to minimize 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.	
PO2 Topsoil and spoil stockpiled on the premises do not adversely affect natural processes and ecosystems.	AO2 Topsoil and spoil is stockpiled to comply with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	✓	Topsoil and spoil stockpiles on the development site will not adversely impact the natural processes and ecosystems and will comply with the filling and	

Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

			excavation standards set in planning scheme policy 5 – Infrastructure.	
PO3 Filling is carried out using stable, solid and clean earth, free of organic and putrescible waste, rubbish and refuse material.	AO3 Filling complies with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	✓	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.	
Protection of existing and planned infrastructure				
PO4 Filling or excavation works do not adversely affect infrastructure, including any services.	AO4 Filling or excavation works comply with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	✓	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 5 – Infrastructure.	
Protection and enhancement of personal health and safety and premises				
PO5 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.	✓	Filling or excavation works will not adversely affect personal health and safety and the filling or excavation works will comply with part 3.3 – Filling and excavation standards in planning scheme 5 – Infrastructure.	
Surface water flow				
PO6	AO6	✓	Surface water will not cause: - ponding	

Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

Surface water drainage does not cause any of the following: a. ponding on any premises; or b. a hazard or adversely affect personal health and safety and premises; or c. diversion or concentration of flow from or onto adjoining premises or infrastructure.	Surface water drainage complies with part 3.3 - Filling or excavation standards in Planning scheme policy 5 - Infrastructure.		- a hazard or adversely affect personal health and safety and premises - 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				
PO7 A batter: a. does not adversely affect the natural physical processes and ecosystems; b. protects existing and planned infrastructure; c. is safe, stable and easily maintained; d. is landscaped to enhance visual amenity.	AO7 A batter is designed and constructed to comply with the standards specified in 3.3.6 - Batters and retaining walls in Planning scheme policy 5 - Infrastructure.	✓	Batters will be required as part of the development. Batters will: - Not adversely affect the natural physical processes and ecosystems. - Be safe, stable and easily maintained. - Be landscaped to enhance visual amenity.	
Retaining walls				
PO8 A retaining wall: a. is not constructed of timber and is not located on existing or proposed	AO8 A retaining wall is designed and constructed to comply with the standards specified in section 3.3.6.2 - Retaining walls in Planning	✓	Retaining walls will be required as a part of the development. Any retaining walls will be designed and constructed to comply with	

Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

lot boundaries, or movement networks; b. does not adversely affect the natural physical processes and ecosystems; c. is located to avoid conflict with adjoining premises; d. is located such that existing and planned infrastructure is not adversely affected; e. protects the visual amenity of adjoining premises or a public open space; f. is located within the premises that is being filled; g. is located within the premises that is cut and is designed to take any surcharge loading allowable on the uphill lot; h. is safe and stable; i. enables easy access for maintenance.	scheme policy 5 - Infrastructure.		the standards specified in section 3.3.6.2 – Retaining walls in planning scheme policy 5 – Infrastructure.	
Filling of a dam				
PO9 The filling of a dam: a. does not adversely affect the natural physical processes and ecosystems; b. creates a safe and stable surface; c. is integrated into the landscape.	AO9 The filling of a dam complies with part 3.3 - Filling and excavation standards in Planning scheme policy 5 - Infrastructure.	N/A	No dams are proposed as a part of this development proposal.	

Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

9.4.3

Infrastructure code

9.4.3.1

Application

1. This code applies to:
- a. material change of use:

i. that is accepted development (subject to requirements) or code assessable and for which the Infrastructure code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in a table of assessment in section 5.5 - Categories of development and assessment - Material change of use in Part 5 - Tables of assessment;

ii. that is made impact assessment in a table of assessment in section 5.5 - Categories of development and assessment - Material change of use or section 5.9 - Categories of development and assessment - Local plans in Part 5 - Tables of assessment;

b. reconfiguring a lot:

i. that is code assessable and for which the Infrastructure code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in Table 5.6.1 - Reconfiguring a lot in Part 5 - Tables of assessment;

ii. made impact assessment in Table 5.6.1 - Reconfiguring a lot in Part 5 - Tables of assessment;

c. operational work that is infrastructure work:

i. that is accepted development (subject to requirements) or code assessable and for which the Infrastructure code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column Table 5.8.1 - Operational work in Part 5 - Tables of assessment.
2. When using this code, reference should be made to section 5.3.2 - Determining the category of development and category of assessment and, where applicable, section 5.3.3 - Determining the 'assessment benchmarks for assessable development and requirements for accepted development' located in Part 5 - Tables of assessment.

9.4.3.2

Purpose

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

i. movement network;

Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

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

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

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

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

Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

Performance outcomes	Acceptable outcomes	Solutions	Comments	Council Use Only
For accepted development (subject to requirements) and assessable development				
Provision, design, construction and location of infrastructure				
PO1 Development is demonstrated to be capable of being serviced by necessary infrastructure.	AO1 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 – infrastructure. Refer to the Bornhorst + Ward Serviceability Report for service connection plans.	
PO2 Development: a. provides necessary infrastructure to service the development; b. provides that the design, construction and location of necessary infrastructure: i. protects existing and planned infrastructure networks; ii. services proposed development; iii. integrates with existing and planned infrastructure networks; iv. delivers a standard of service that is efficient and	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 Construction Code; b. not in a water supply service area provides a tank with a minimum storage capacity of 45,000 litres; c. in a sewerage supply service area connects to the waste water network in accordance with the SEQ Water Supply and Sewerage Design and Construction Code; d. not in a sewerage supply service	✓	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 – Infrastructure and the SEQ water supply and sewerage design and construction code. Refer to the Bornhorst and Ward serviceability report for service connection locations. The development provides stormwater infrastructure in accordance with part 3.6 of planning scheme policy 5 –	

Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

equitable; v. minimises the cost to the community for the life of the infrastructure by providing a suitable design life, ease of maintenance and ease of replacement; vi. protects personal health, safety and premises; vii. protects environmental values.	area complies with part 1 of the Queensland Plumbing and Wastewater Code; e. provides stormwater infrastructure in accordance with part 3.6 of Planning scheme policy 5 - Infrastructure; f. provides a movement network infrastructure in accordance with part 3.4 of Planning scheme policy 5 - Infrastructure; g. provides parks in accordance with part 3.12 of Planning scheme policy 5 - Infrastructure; h. provides road lighting in accordance with part 3.5 of Planning scheme policy 5 - Infrastructure; i. provides electricity reticulation in accordance with part 3.8 of Planning scheme policy 5 - Infrastructure; j. provides gas and telecommunications reticulation in accordance with part 3.9 of Planning scheme policy 5 - Infrastructure. k. is consistent with the general planning layouts in part 7.2 of Planning scheme policy 5 - Infrastructure. Editor's note - The delivery of any part of a network identified in the plans for trunk		Infrastructure. Refer to the Bornhorst and Ward stormwater management plan for further information. The development provides movement network infrastructure in accordance with part 3.4 of planning scheme policy 5 – Infrastructure. Refer to Bornhorst and Ward serviceability report.	
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Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

	infrastructure is governed by Part 4 - Local government infrastructure plan.			
Location of development				
PO3 Development is located to protect trunk infrastructure networks.	AO3 Development is located outside a network identified in Local government infrastructure plan map LGIP-03.00 to 08.00 Plans for trunk infrastructure in Schedule 3 - Local government infrastructure plan mapping and tables.	✓	Development is located outside a network identified in Local government infrastructure plan map LGI-03.00 to 08.00 Plans for trunk infrastructure in Schedule 3 – Local government infrastructure plan mapping and tables.	
Fire fighting				
PO4 Development in a water service area accessed by common private title provides: a. fire hydrant infrastructure; b. unimpeded access for emergency services vehicles. 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.	AO4 Development in a water service area involving a material change of use or reconfiguring a lot where, or to be, accessed by common private title ensures that fire hydrant placement and technical requirements for streets and access ways are in accordance with: a. Australian Standard (AS) 2419.1 - 2005 <i>Fire hydrant installations</i> ; b. QFES: <i>Fire Hydrant and vehicle access guidelines for residential, commercial and industrial lots</i> .	A/S	Water reticulation with required fire hydrants will be provided as part of the development.	
PO5 Development not in a water service area provides sufficient water storage with adequate pressure, volume and flow to service development for fire fighting	AO5 Development: a. is connected to a reticulated water supply scheme that has sufficient flow and pressure	N/A	The development lies within a water service area.	

Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

purposes.	characteristics for fire fighting purposes at all times with a minimum pressure and flow of 10 litres per second at 200kPa; or b. has on-site water storage in accordance with Table 9.4.3.3.2 - Water storage for fire fighting, dedicated or retained for fire fighting purposes that is made of fire resistant materials and is: i. a separate tank; or ii. a reserve section in the bottom part of the main water supply tankwater tank. Editor's note - The requirement in AO5 is: - in addition to the requirement for potable water supply/storage in AO2 in Table 9.4.3.3.1 - Infrastructure code: accepted development (subject to requirements) and assessable development; - reflected in AO5 in Table 8.2.3.3.1 - Bushfire hazard overlay code: accepted development (subject to requirements) and assessable development.			
Waste management				
PO6 Development provides refuse and recycling collection and storage facilities that are located and managed so that adverse impacts on building occupants, neighbouring properties and the public realm are minimised.	AO6.1 Development provides refuse and recycling collection and storage facilities in accordance with Planning scheme policy 9 - Waste management. AO6.2	N/A		

Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

	Development ensures that the location and design of refuse and recycling collection and storage facilities does not have any adverse impact including odour, noise or visual impacts on the amenity of land uses within or adjoining the development. Note - Planning scheme policy 9 - Waste management provides guidance on how to achieve this outcome.			
Disposal of trade waste				
PO7 The disposal of trade waste in a sewerage supply service area does not adversely affect the sewerage network.	AO7 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				
PO8 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. a hazard to personal health and safety; c. damage to premises; d. an increased risk of flooding to	AO8 Development complies with the standards for stormwater infrastructure specified in part 3.6 of Planning scheme policy 5 - Infrastructure.	✓	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. The development complies with the standards for stormwater	

Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

premises within the catchment.			infrastructure specified in part 3.6 of planning scheme policy 5 – Infrastructure.	
Natural flow of surface water				
PO9 Development provides that the natural flow of surface water is: a. not altered so as to cause a risk to personal health and safety or damage to property; b. not increased in intensity, velocity or frequency; c. not concentrated onto adjoining premises.	AO9 Development complies with the standards for stormwater infrastructure specified in part 3.6 of Planning scheme policy 5 - Infrastructure.	✓	Overland flows will be maintained as per existing site conditions. Refer to the Bornhorst and Ward stormwater management plan for further information. The development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5 – Infrastructure.	
Water sensitive urban design				
PO10 Development which provides stormwater infrastructure incorporates water sensitive urban design principles having regard to: a. protecting existing natural features and ecological processes; 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	AO10 Development complies with the standards for stormwater infrastructure specified in part 3.6 of Planning scheme policy 5 - Infrastructure.	✓	The development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5 – Infrastructure.	

Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

and ground waters; e. minimising demand on the water network; f. minimising sewage discharges to the natural environment; g. integrating water into the landscape to enhance visual and ecological values.				
Movement network				
PO11 The projected traffic levels for a use do not adversely affect the planned standards of service for a road or intersection.	AO11 Development does not cause or contribute to projected traffic levels: a. exceeding the maximum vehicle trips per day in Table 3.4.1.4.2 in Planning scheme policy 5 - Infrastructure; or b. exceeding the maximum control delays through intersections in peak periods in Table 3.4.1.4.3 in Planning scheme policy 5 - Infrastructure.	N/A	Refer to traffic impact assessment for further information.	
Integrated movement concept report				
PO12 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.	AO12 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.	N/A	Refer to traffic impact assessment for further information.	

Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

For assessable development only				
Land use and transport integration				
PO13 Development within 400 metres of existing or future public passenger transport facilities where the total site area is 5,000m ² or more: a. supports a road hierarchy which facilitates efficient, safe and accessible bus services connecting to existing and future public passenger transport facilities; 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.	AO13 No acceptable outcome provided.	N/A	Refer to traffic impact assessment for further information.	

Table 9.4.3.3.2 - Water storage for fire fighting

Column 1	Column 2
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Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution

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

Solution: ✓ = Acceptable Solution
N/A = Not Applicable
AS = Alternative Solution