

**BCC DS
LODGED**

06/08/2026

APPLICATION REF

A007082941



**KARAMISHEFF
NAGEL PTY LTD**
CONSULTING ENGINEERS

Civil Assessment Report

Site Address: 21-23 Western Avenue, Chermside

Development: Multi-Residential Development

Document Number: KN-26-113-R01-B

Date: July 2026

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Document Status

Revision No.	Author	Approved	Date
A	S Wade	G Nagel	3 July 2026
B	S Wade	G Nagel	22 July 2026

1.00 SCOPE

- 1.01 The scope of this report is to provide advice on the proposed civil engineering infrastructure required for the above Project in terms of bulk earthworks, retaining walls, driveways including hardstand areas, stormwater drainage, sewerage connection, water supply and associated works to support the Development Application for the proposed Multi-Residential Development on the subject property.
- 1.02 A summary of these services is detailed below and indicated on the attached Karamisheff Nagel Drawings 26-113-P01 to P05 (Appendix B).

2.00 BACKGROUND

- 2.01 The subject site, namely 21-23 Western Avenue, Chermside, comprises a total area of approximately 1,217m² and is described as Lots 16 and 17 on RP46834.
- 2.02 The subject site is currently occupied by 2 existing residential dwellings. The existing dwellings will be demolished to allow the site to be redeveloped as detailed below.
- 2.03 The subject site is bordered by residential properties to the northern, southern and eastern boundaries and frontage to Western Avenue along the western boundary.

3.00 SITE DEVELOPMENT

- 3.01 The proposed development at 21-23 Western Avenue, Chermside is a multi-residential building comprising 42 unit residential apartments and associated car parking on the ground level and 2 basement levels as detailed on the Architectural Drawings DA-01(A) to DA-18(A) prepared by Reddog Architects. (Ground Floor Plan DA-04(A) provided in Appendix A)
- 3.02 Preliminary engineering design including bulk earthworks and retaining walls, driveway and car parking grading and levels, internal stormwater drainage and proposed infrastructure works to service the site is detailed on the attached Karamisheff Nagel Drawings 26-113-P01 to P05 (Appendix B) and as further discussed in the relevant sections of this report.
- 3.03 The proposed driveways and car parking levels been determined based on the required grading constraints, relationship with the units and the permanent levels along the Western Avenue frontage.
- 3.04 The detailed civil engineering design and documentation will be completed in accordance with the Development Permit Conditions and will incorporate detailed Erosion and Sediment Control documentation to address the Construction Phase.

4.00 EARTHWORKS AND RETAINING WALLS

- 4.01 The subject site slopes from the southeast corner of the site with an elevation of RL 37.4m to the northwestern corner of the site at an elevation of RL 33.7m.
- 4.02 The site will require earthworks and the construction of basement retaining walls to achieve appropriate grading for the proposed buildings, basement car parking and driveways. Refer to Drawings 26-113-P01 to P05 (Appendix B).
- 4.03 Due to the adjacent developments, basement walls will be structurally designed to ensure there is no impact of the surrounding existing infrastructure.

5.00 EXTERNAL ROADWORKS – WESTERN AVENUE

- 5.01 The existing site has direct access from Western Avenue with existing concrete crossovers to both dwellings. All existing crossovers will be removed and reinstated with kerb and channel and footpath in accordance with Council standards.
- 5.02 The development proposes to gain direct access from Western Avenue via a 6.5m wide Type B2 vehicle crossover to the multi-residential ground level and basement car parks (67 bays). The proposed crossover will be designed and constructed in accordance with Council standards.

- 5.03 All works shall be in accordance with the BCC Transport Access, Parking and Servicing (TAPS) PSP and relevant Australian Standards where required.
- 5.04 Western Avenue is a through road classified as a local street in the BCC City Plan 2014 with a 7.0 metre road pavement with a minimum 3.75m wide verge on the proposed development side of Western Avenue. As part of the development, it is proposed to reconstruct the existing concrete footpath for the full frontage of the site to Council requirements.

6.00 STORMWATER DRAINAGE

- 6.01 The subject site slopes from the southeast corner with an elevation of RL 37.4 m to the northwestern corner of the property boundary at RL 33.7m.
- 6.02 The site is not impacted by overland flow.
- 6.03 There is no existing stormwater infrastructure located in Western Avenue near the proposed development. The closest existing stormwater infrastructure is located within the road reserve at the intersection of Western Avenue and Curwen Terrace. This stormwater network discharges into the downstream creek waterway (Downfall Creek) at the northwest end of the street from Curwen Terrace.
- 6.04 In accordance with Brisbane City Council's Development Guidelines, a suitably sized piped network shall be provided to cater for the minor storm event for the development. Major flows from the total site will be contained within the site by above detention devices and will discharge to Western Avenue road reserve.
- 6.05 The lawful points of the discharge for this development been identified as Western Avenue for both minor and major stormwater:
- Roof Area – As the roofs falls to the rear of the site, minor and major storm flows will discharge to the Western Avenue via a piped network incorporating the stormwater detention facility to maintain pre-development flow volumes.
 - Forecourt Area – The driveway and the majority of the forecourt will provide a piped stormwater network for the minor storms discharging to Western Avenue via kerb adaptors. Major flows from this area will discharge to the Western Avenue road reserve as overland flow.
- 6.06 Refer to the Site Based Stormwater Management Report (Appendix C) for further details.

7.00 WATER SUPPLY

- 7.01 Urban Utilities records confirm the site is serviced by two (2) existing 20mm connections from an existing 150mm mPVC main in the opposite side verge to the proposed development (refer Appendix D).
- 7.02 The existing services will be taken up and capped at the main.
- 7.03 The proposed development shall provide a new water service and meter from the existing 150mm water main in accordance with Urban Utilities standards.
- 7.04 It is not proposed that any upgrade to the existing water main shall be required.

8.00 SEWERAGE RETICULATION

- 8.01 Urban Utilities records confirm the presence of an existing 150mm sewer main in the verge along Western Avenue for the full frontage.
- 8.02 The existing house connections will be taken up and capped at the main.
- 8.03 The proposed development shall provide a new DN160 sewer connection in accordance with Urban Utilities standards.

9.00 ELECTRICITY AND COMMUNICATION SERVICES

- 9.01 These services would be designed and constructed in accordance with the relevant Service Providers.

Appendix A – Proposed Development Ground Floor Plan

- ## LEGEND



Appendix B – Proposed Civil Works Plans



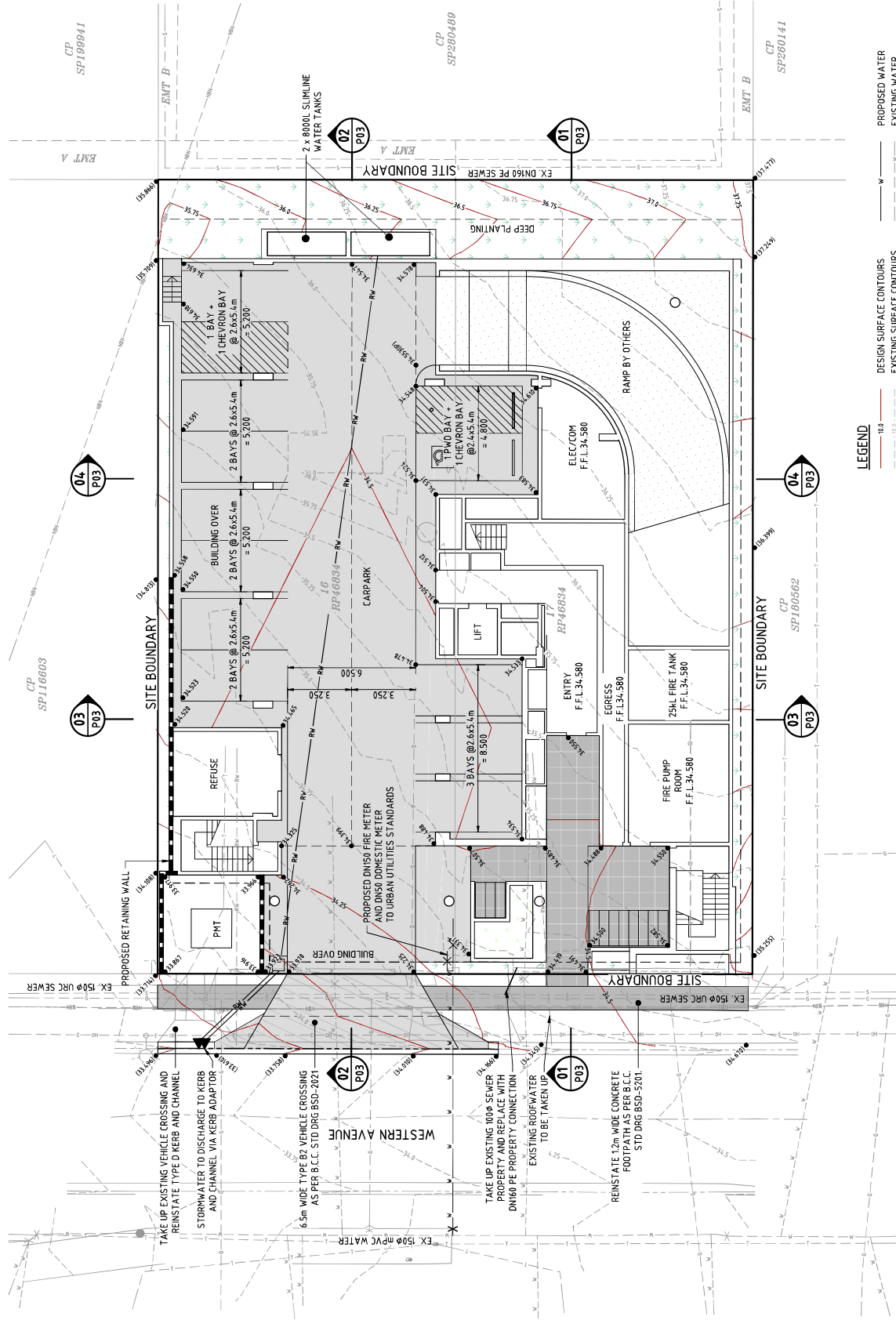
Seq	Description	Date	Seq
A	FOR DISCUSSION	03/06/76	
B	FOR APPROVAL	02/07/76	
C	FOR APPROVAL	22/07/76	



ASSOCIATED CONSULTANTS:

CLIENT:

Local Authority	BRISBANE CITY COUNCIL		Checked GBN
Drawn SW	Designed SW	A3	
Scale AS SHOWN		Drawing No 26-113-P01	

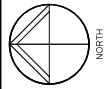


LEGEND

10.0	DESIGN SURFACE CONTOURS
10.0	EXISTING SURFACE CONTOURS
PROPOSED RETAINING WALL	
PROPOSED TYPE 'D' KERB	
EXISTING KERB AND CHANNEL	
EXISTING STORMWATER	
PROPOSED ROOFWATER	
PROPOSED SEWER	
EXISTING SEWER	
EXISTING GAS	

PROPOSED WATER
EXISTING WATER
EXISTING OVERHEAD ELECTRICAL
EXISTING TELECOMMUNICATIONS
EXISTING NBN
PROPOSED ROOF/WATER KERB ADA
PROPOSED WATER METER
EXISTING WATER LEVEL
FINISHED SURFACE LEVEL





REVISIONS		
No	Description	Date By
A	FOR DISCUSSION	03/04/20
B	FOR APPROVAL	02/07/20
C	FOR APPROVAL	02/07/20



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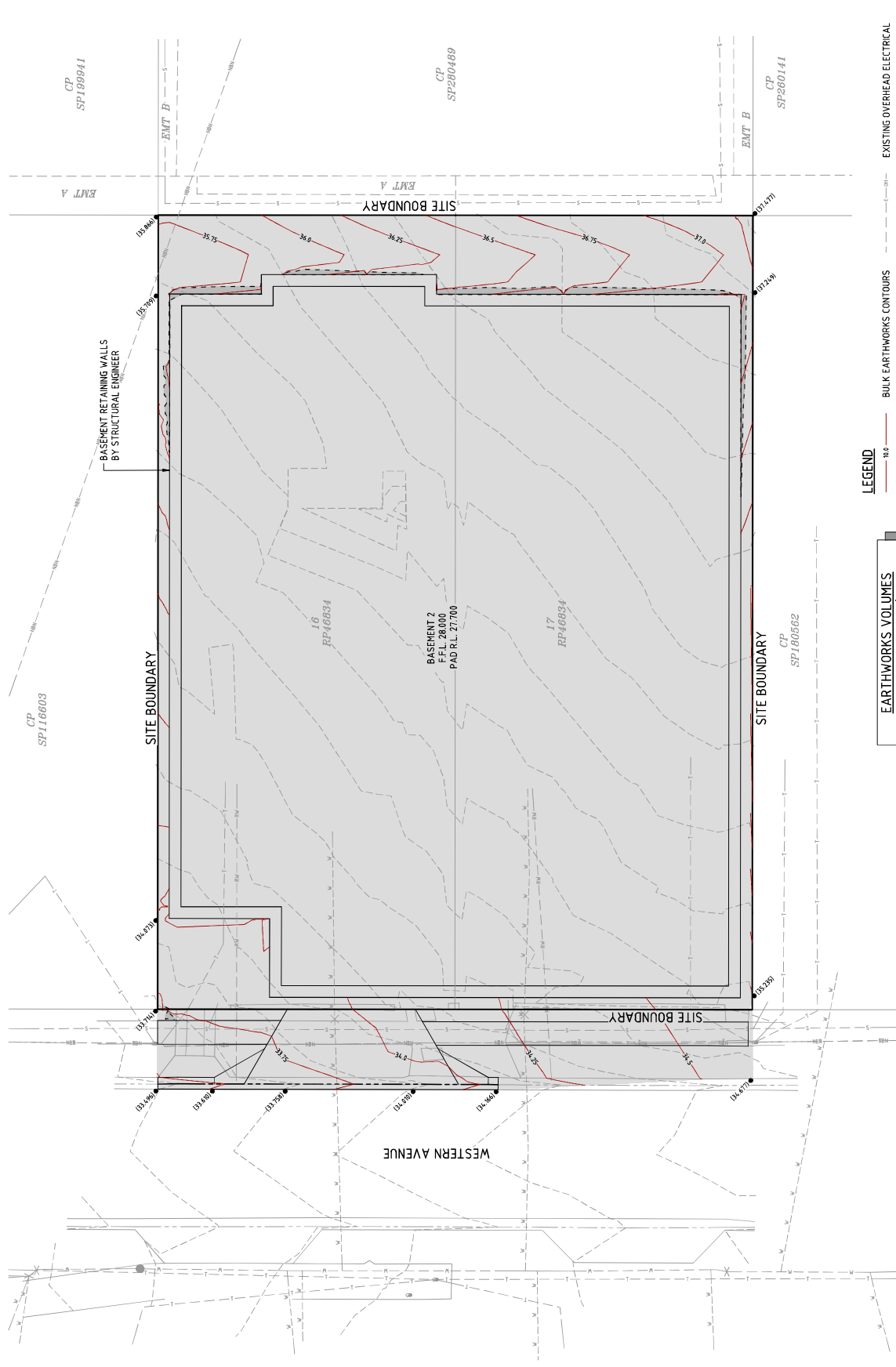
ASSOCIATE CONSULTANT

ASSOCIATED CONSULTANTS:

CLIENT
DILIGENT DEVELOPMENT
PROJECT
21-23 WESTERN AVENUE,
CHERMESIDE

TITLE
BULK EARTHWORKS PLAN

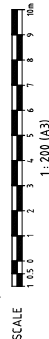
BRISBANE CITY COUNCIL			
Drawn	Checked	Date	
SW	SW	GBN	MAY 26
Scale	AS SHOWN	A3	Sheet 2 of 5
Drawing No	26-113-P02		
Revision	C		



LEGEND

- BULK EARTHWORKS CONTOURS
 - EXISTING SURFACE CONTOURS
 - PROPOSED TYPE 'D' KERB
 - EXISTING KERB AND CHANNEL
 - EXISTING STORMWATER
 - EXISTING SEWER
 - EXISTING WATER
 - EXISTING GAS
- EXISTING OVERHEAD ELECTRICAL
 - EXISTING TELECOMMUNICATIONS
 - EXISTING NBN
 - CUT AREA
 - FILL AREA
 - EXISTING SURFACE LEVEL
 - BULK EARTHWORKS LEVEL

EARTHWORKS VOLUMES
TOTAL CUT = 7,889m³
TOTAL FILL = 2m³
NET = 7,887m³ (CUT)
AREA = 1334m²
VOLUMES BASED ON EARTHWORKS SURFACE
300mm BELOW BUILDINGS
AND 100mm BELOW EXISTING SURFACE LEVELS



NORTH

No	Description	Date	By
A	FOR DISCUSSION	03/04/20	
B	FOR APPROVAL	22/07/20	
C	FOR APPROVAL	22/07/20	

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APPROVED - URBAN

10/12/2020

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CLIENT
DILIGENT DEVELOPMENT

PROJECT
21-23 WESTERN AVENUE,
CHERMESIDE

TITLE
SITE CROSS SECTIONS

Local Authority
BRISBANE CITY COUNCIL

Drawn	Checked	Date
PW	SW	MAY 26

Scale	AS SHOWN	Sheet	Revision
Drawing No	A3	3	5

26-113-P03

C

The figure displays three vertical cross-sections of a site, labeled 01, 02, and 03. Each section shows the profile of the ground, existing structures, and proposed retaining walls. Section 01 shows a concrete footpath crossing Western Avenue, with a retaining wall on the left and a ramp on the right. Section 02 shows a ramp and a retaining wall. Section 03 shows a retaining wall and a ramp. The drawings include various dimensions, levels, and labels for different parts of the site, such as 'BASEMENT 1 F.F.L. 31.000', 'BASEMENT 2 F.F.L. 28.000', and 'EXISTING SURFACE'. A scale bar at the bottom right indicates a scale of 1:200 (A3).



REVISIONS		
No	Description	Date By
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B	FOR APPROVAL	22/07/20
C	FOR APPROVAL	22/07/20

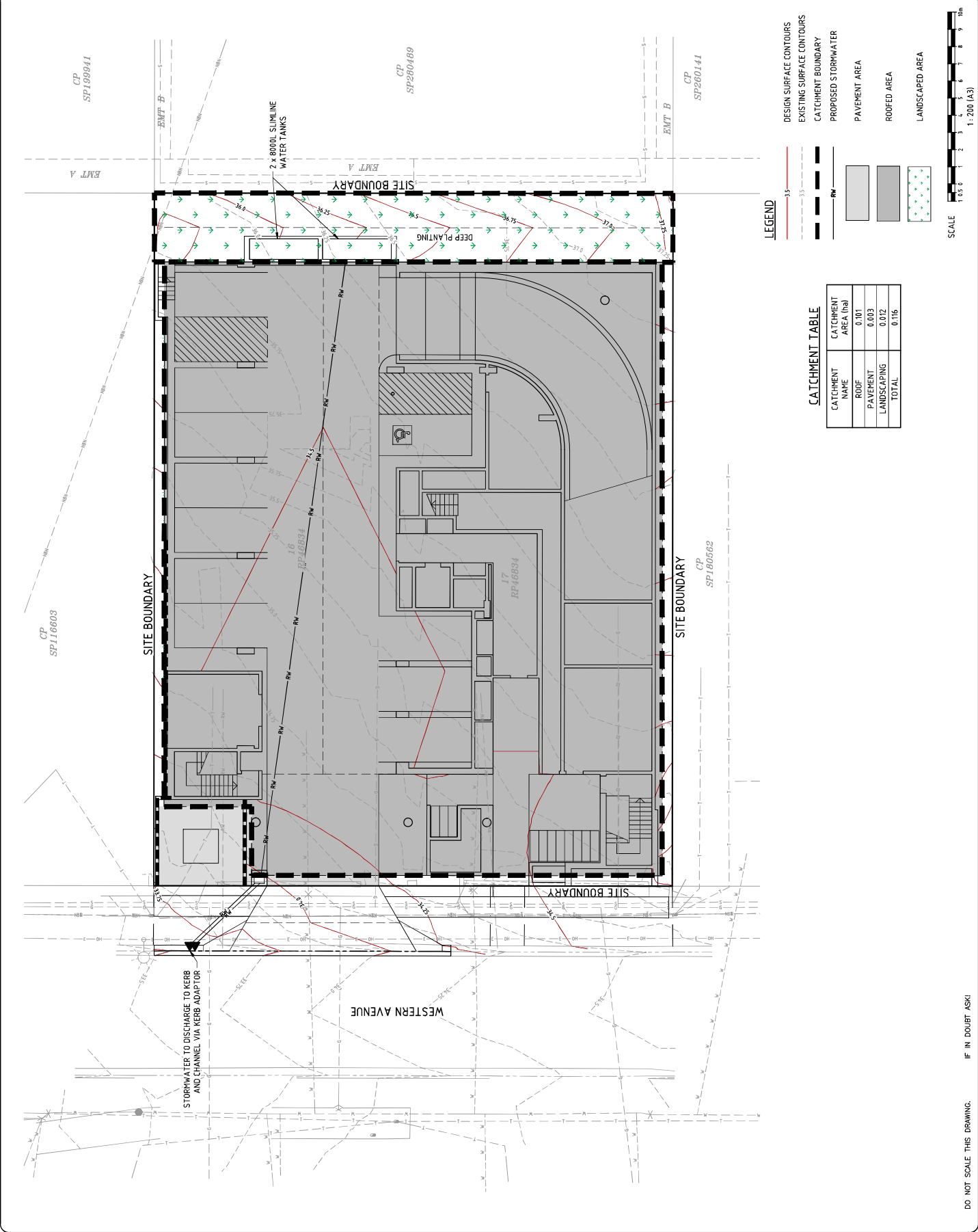


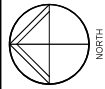
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APPROVED - URBAN
10/12/2020

CLIENT: DILIGENT DEVELOPMENT
PROJECT: 21-23 WESTERN AVENUE, CHERMSIDE
TITLE: STORMWATER MANAGEMENT PLAN
BRISBANE CITY COUNCIL
Drawn: SW
Checked: SW
Date: MAY '20
Scale: A3
Revision: 5
Drawing No: 26-113-P04
Revision: C





NORTH

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C	FOR APPROVAL	22/07/20



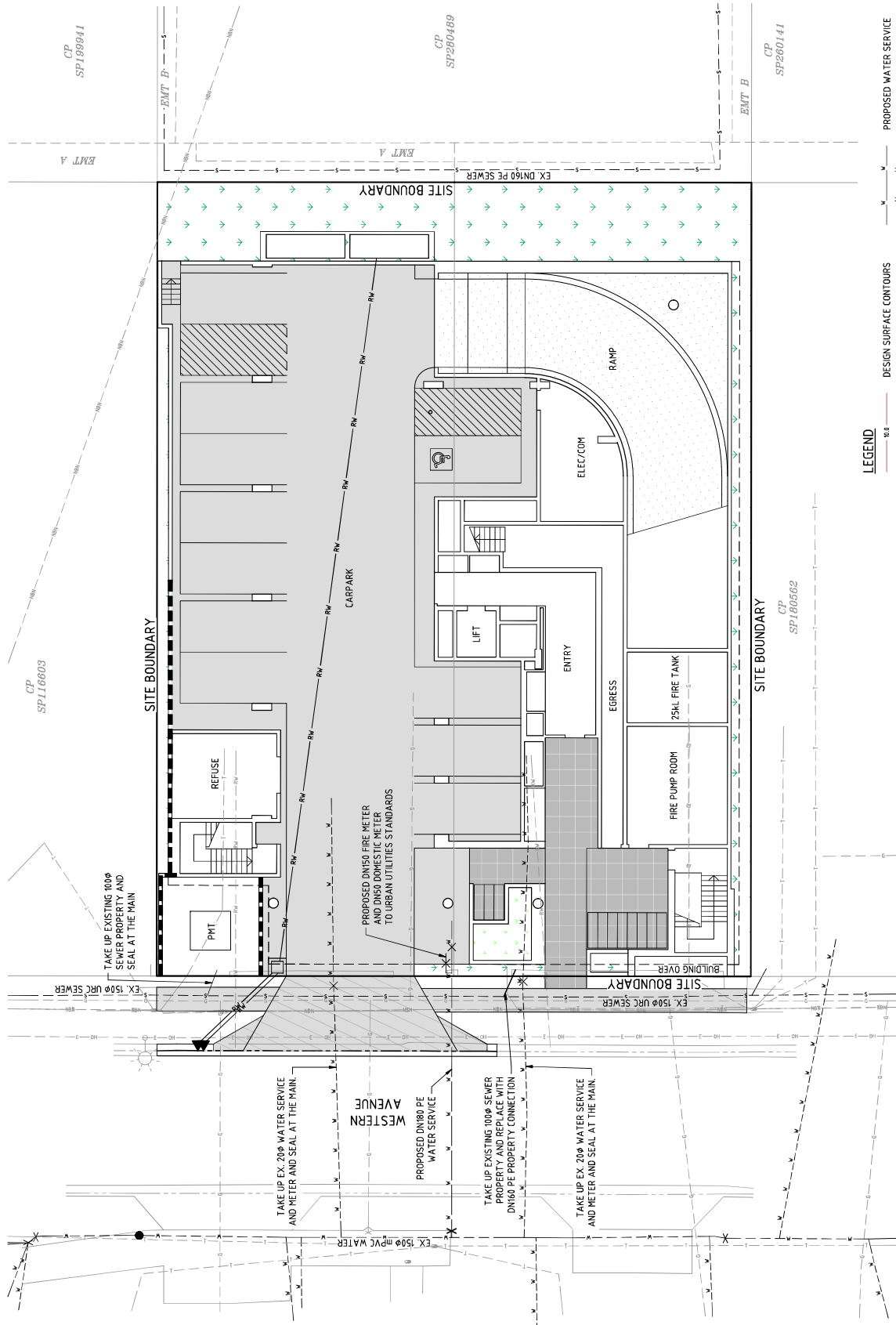
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APPROVED - URBAN

ASSOCIATED CONSULTANTS:

DILIGENT DEVELOPMENT
PROJECT:
21-23 WESTERN AVENUE,
CHERMESIDE

TITLE:
**PRELIMINARY SEWER
AND WATER PLAN**

BRISBANE CITY COUNCIL			
Drawn	Checked	Date	
PW	SW	GBN	MAY '26
Scale	AS SHOWN	A3	Sheet 5 of 5
Drawing No	26-113-P05		
Revision	C		



LEGEND

- DESIGN SURFACE CONTOURS
- EXISTING SURFACE CONTOURS
- PROPOSED RETAINING WALL
- PROPOSED TYPE 'D' KERB
- EXISTING KERB AND CHANNEL
- EXISTING STORMWATER
- PROPOSED ROOFWATER
- PROPOSED SEWER
- EXISTING SEWER

PROPOSED WATER SERVICE
EXISTING WATER SERVICE
EXISTING WATER MAIN
EXISTING GAS
EXISTING OVERHEAD ELECTRICAL
EXISTING TELECOMMUNICATIONS
EXISTING NBN
PROPOSED ROOFWATER KERB ADAPTOR
PROPOSED WATER METER

SCALE 1:200 (A3)

1 2 3 4 5 6 7 8 9 10m

Appendix C – Stormwater Management Report



**KARAMISHEFF
NAGEL PTY LTD**
CONSULTING ENGINEERS

Site Based Stormwater Management Plan

Site Address: 21-23 Western Avenue, Chermside

Development: Multi-Residential Development

Document Number: KN-26-113-R02-B

Date: July 2026

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Document Status

Revision No.	Author	Approved	Date
A	S Wade	G Nagel	3 July 2026
B	S Wade	G Nagel	22 July 2026

1 INTRODUCTION

1.1 Scope of Report

Karamisheff Nagel Pty Ltd has been commissioned to prepare a Site Based Stormwater Management Plan for inclusion in the Development Application to Brisbane City Council for the multi-residential development at 21-23 Western Avenue, Chermiside.

This report has been prepared to assess the following:

- The existing and proposed stormwater drainage of the site.
- The management of stormwater quantity and quality within the site.
- The impact of the development on the existing stormwater infrastructure and downstream properties.

2 SITE CHARACTERISTICS

2.1 Location

The subject site consists of two adjacent freehold lots (Lots 16 & 17 on RP46834) covering a total area of approximately 1,217m² and is currently occupied by two existing residential dwellings. The site is surrounded by residential properties on the southern, eastern and northern boundary of the site and Western Avenue to the west. See Figure 1 for reference.

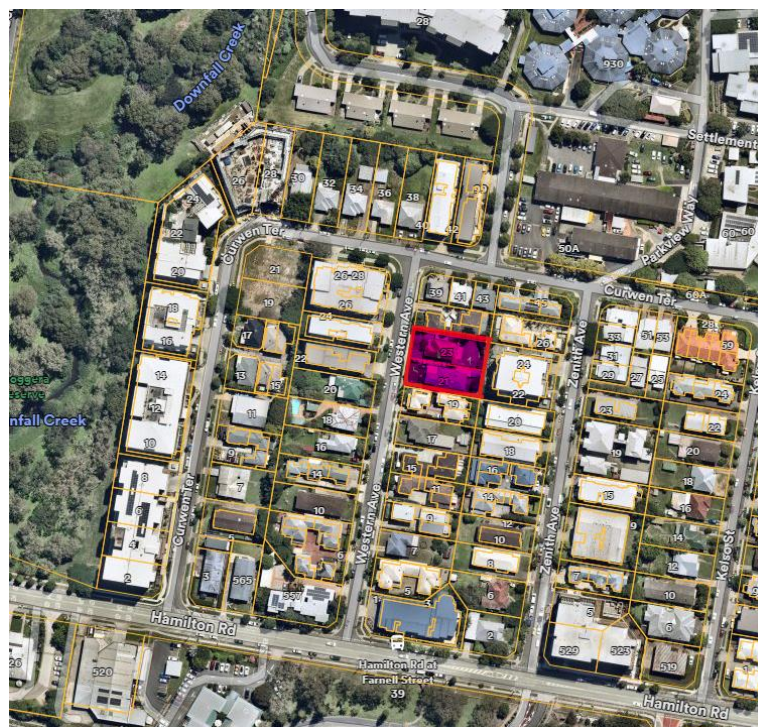


Figure 1 Locality aerial photo (source: NearMap 2026)

2.2 Topography, Survey, Site Drainage and Watercourses

The subject site slopes from the southeast corner of the site with an elevation of RL 37.4m to the northwestern corner of the site at an elevation of RL 33.7m.

The site currently has existing roof water drainage that collects runoff from the roof areas. All runoff is collected and piped to discharge to Western Avenue via two kerb adaptors.

The site is not located in a mapped Overland Flow Path.

2.3 Existing and Proposed Land Use

The subject site is currently occupied by two existing residential dwellings and associated structures, creating an impervious area that covers 51% of the total area of the site which is approximately 620m².

The development proposes the removal of all existing structures and construct a Multi-residential Building with a double basement carpark. Along with associated landscaping and driveways, the development will result in an impervious area of 1,050m², covering 86% of the site.

2.4 Legal Point of Discharge

The existing site runoff and roof water is discharged to Western Avenue frontage via kerb adaptors while the major stormwater runoff is directed to the Western Avenue as overland flow.

There is no existing stormwater infrastructure located in Western Avenue near the proposed development. The closest existing stormwater infrastructure is located within the road reserve at the intersection of Western Avenue and Curwen Terrace.

On this basis, the Legal Point of Discharge is considered to be:

- **Roof Area** – As the roofs falls to the rear of the site, minor and major storm flows will discharge to the Western Avenue via a piped network incorporating the stormwater detention facility to maintain pre-development flow volumes.
- **Forecourt Area** – The driveway and the majority of the forecourt will provide a piped stormwater network for the minor storms discharging to Western Avenue via kerb adaptors. Major flows from this area will discharge to the Western Avenue road reserve as overland flow.

3 STORMWATER QUANTITY MANAGEMENT

3.1 Proposed Stormwater Quantity Management

In accordance with Brisbane City Council's Development Guidelines, a suitably sized piped network shall be provided to cater for the minor storm event. Major flows shall be wholly contained within the site and directed to the legal point of discharge as overland flow.

3.2 On-site Detention Requirements

It is considered that the proposed development will increase impervious area and therefore increase peak discharge. In order to mitigate discharged flows to pre-development levels the site shall need to incorporate on-site detention.

In accordance with BCC Infrastructure Design Planning Scheme Policy (IDPSP) – Chapter 7, for development sites less than 2 hectares in site area, the deemed to comply solution can be used for detention sizing.

The pre-development site conditions comprise two existing houses, driveways and pathways which resulted in an impervious percentage of 51%. On this basis the development site storage requirements would be calculated using category D3.

The proposed development comprises a large roof area and concrete hardstand areas with limited landscaping. The proposed impervious area is 86% of the site area and therefore, under Table 7.5.5.A, the rate of required detention storage is 115m³ / ha.

Based on the Deemed to Comply method, the required detention storage for the site is 14.0m³. As the detention tanks will be above ground, the detention requirements will be increased by 15% resulting in a Deemed to Comply detention volume of 16.0m³.

Refer to the enclosed Stormwater Management Drawing No. 26-113-P04 for the proposed detention facility which ensures pre development discharge is achieved.

4 STORMWATER QUALITY MANAGEMENT

4.1 State Planning Policy 2017

State Planning Policy 2017 identifies development applications that need to demonstrate compliance to the requirements of the policy which fall into any of the following categories:

- 1) *a material change of use for an urban purpose that involves premises 2500 square metres or greater in size and:*
 - a) *will result in six or more dwellings; or*
 - b) *will result in an impervious area greater than 25 per cent of the net developable area; or*
- 2) *reconfiguring a lot for an urban purpose that involves premises 2500 square metres or greater in size and will result in six or more lots; or*
- 3) *operational works for an urban purpose that involves disturbing a land area 2500 square metres or greater in size.*

As the development site is less than 2,500m², the proposed development does not need to demonstrate compliance with the stormwater quality load reduction objectives outlined in State Planning Policy 2017 Stormwater Quality Objectives

5 CONCLUSION

It is considered that the subject site can be successfully developed to cater for the proposed development without adversely impacting on existing infrastructure or adjoining properties.

The legal point of discharge for this development has been identified as Western Avenue for minor storm events and the major storm events.

In accordance with Brisbane City Council's Infrastructure Design Planning Scheme Policy (IDPSP) Section 7.5.2, stormwater detention of 16.0m³ via above ground tanks is required to mitigate peak flows to pre development flows for the proposed development.

Due to the site being less than 2,500m² the proposed development does not require water quality treatment.

Karamisheff Nagel Pty. Ltd.



G.B. Nagel
RPEQ 2009



REVISIONS		
No	Description	Date By
A	FOR DISCUSSION	03/04/20
B	FOR APPROVAL	22/07/20
C	FOR APPROVAL	22/07/20

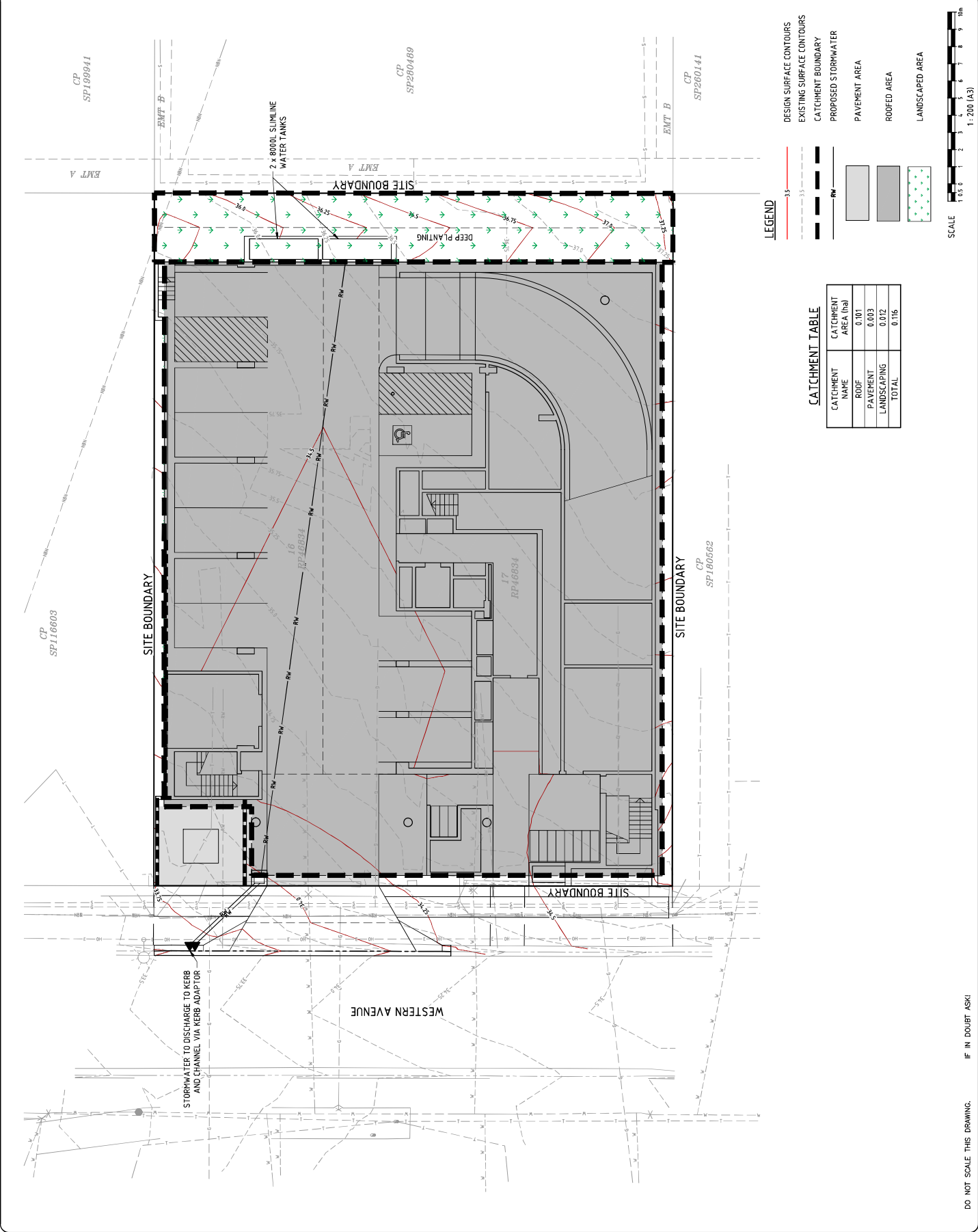


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ASSOCIATED CONSULTANTS:

APPROVED - URBAN
10/12/2020

CLIENT: DILIGENT DEVELOPMENT
PROJECT: 21-23 WESTERN AVENUE, CHERMSIDE
TITLE: STORMWATER MANAGEMENT PLAN
BRISBANE CITY COUNCIL
Drawn: SW
Checked: SW
Date: MAY '20
Scale: A3
Revision: 5
Drawing No: 26-113-P04
Revision: C

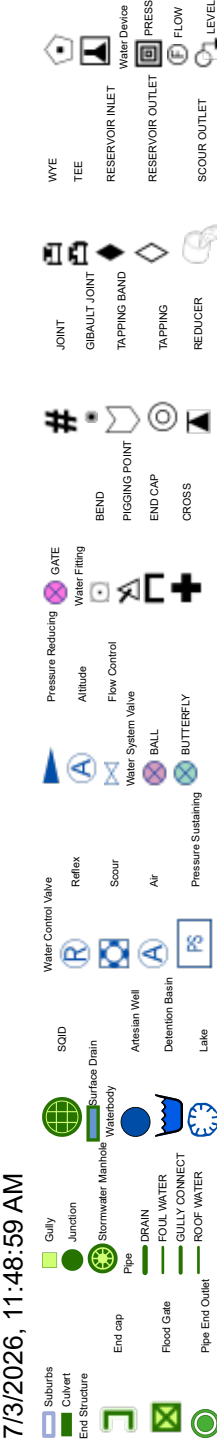


Appendix D – BCC Community Maps, Existing Survey and Existing Services

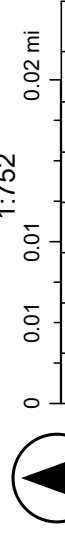
Community Maps



7/3/2026, 11:48:59 AM



1:752



0 0.01 0.02 0.04 km

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LSA

Locate Services Australia

Know What's Below

SERVICE LOCATION REPORT

PROJECT DETAILS

DATE: 11-11-2025

LOCATOR: Luke Bryant

JOB NO: #3807LSA

DBYD NO: 51655571

SITE ADDRESS: 21-23 Western Rd, Chermside

CLIENT DETAILS

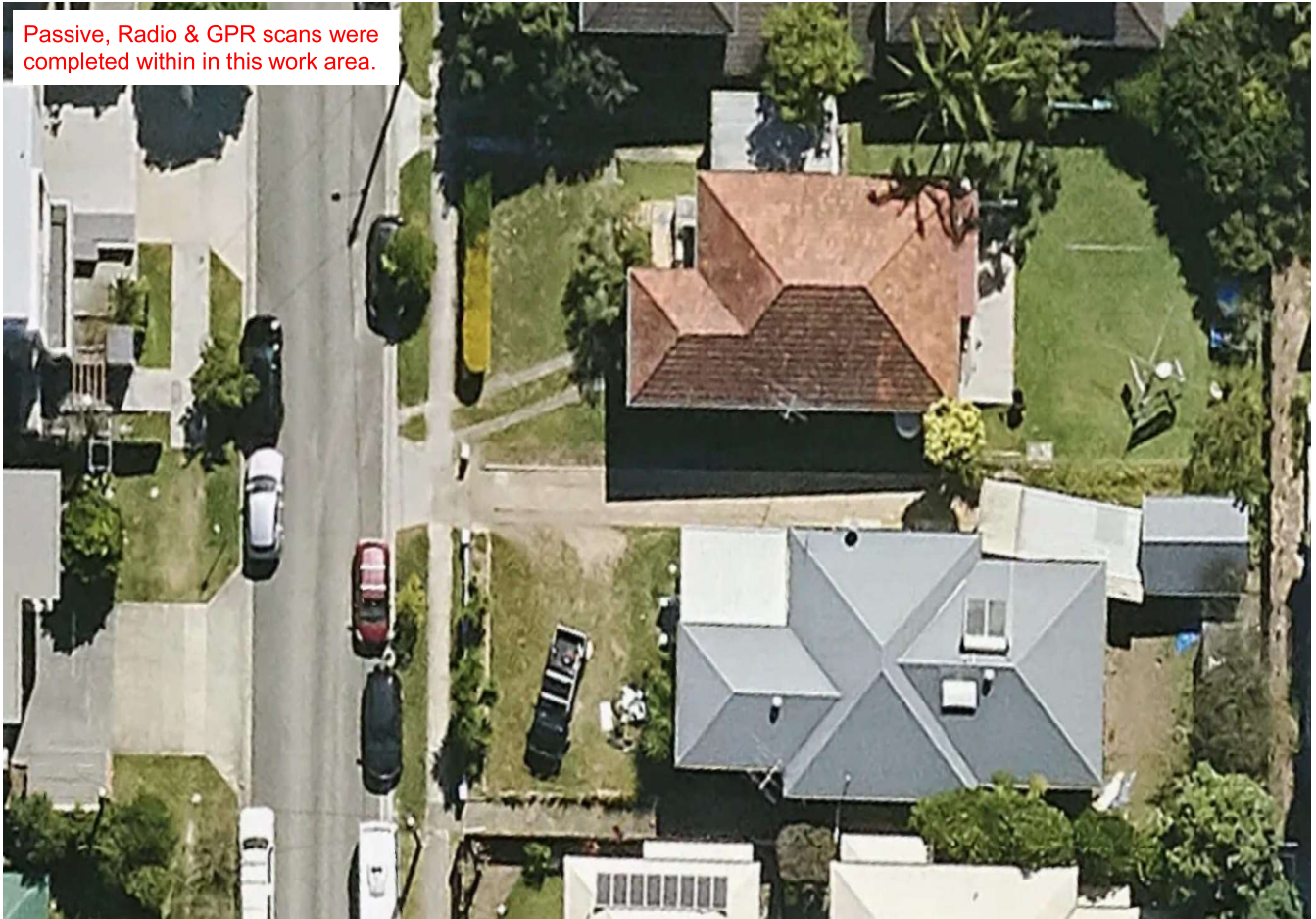
CLIENT NAME: J Surveyors

CLIENT CONTACT: Ben Cole

CLIENT EMAIL: ben@jsurveyors.com.au

SCOPE OF WORK OVERVIEW

Passive, Radio & GPR scans were completed within in this work area.



	NORTH FACING		TELSTRA PILLAR		ELECTRICAL MANHOLE		RECYCLED WATER MANHOLE		SEWER MANHOLE		OPTUS PIT
	DEPTH BOX		TELSTRA MANHOLE		ELECTRICAL MANHOLE		RECYCLED WATER VALVE		SEWER MANHOLE		UECOMM PIT
	POTHOLE LOCATION		TELSTRA 9 PIT		ELECTRICAL PIT		RECYCLED WATER METER		SEWER MANHOLE		PIPE NETWORKS PIT
	GAS PIT		TELSTRA 8 PIT		ELECTRICAL PIT		RECYCLED WATER TAP		SEWER MANHOLE		REEF NETWORKS PIT
	GAS VALVE		TELSTRA 6 PIT		ELECTRICAL PILLAR		STORMWATER MANHOLE		SEWER INSPECTION OPENING		VOCUS PIT
	WATER MANHOLE		TELSTRA 5 PIT		ELECTRICAL TRANSFORMER		STORMWATER MANHOLE		SEWER VALVE		AAPT PIT
	WATER VALVE		TELSTRA 4 PIT		STREET LIGHT		STORM WATER GULLY PIT		NBN PIT		TPG PIT
	WATER HYDRANT		TELSTRA 3 PIT		POWER POLE		STORM WATER GULLY PIT		NBN NODE		POWERTEL PIT
	WATER METER		TELSTRA 2 PIT		FIRE MAIN VALVE		STORM WATER GULLY PIT		COMMUNICATIONS PIT		AARNET PIT
	WATER TAP		TELSTRA BURIED PIT		FIRE MAIN HYDRANT		STORM WATER HEAD WALL		COMMUNICATIONS PIT		NEXTGEN PIT
	SCOPE OF WORKS		WARNING CLOUD		FIRE MAIN HYDRANT		FIRE HOSE REEL		COMMUNICATIONS PIT		

QUALITY LEVELS & LINE TYPES

QUALITY LEVELS AND LINE COLOURS AS PER AUSTRALIAN STANDARDS (AS 5488.1.2019)

Quality Level A (QL-A): Only available through survey. The absolute 3D position (+/- 50mm) is recorded of the exposed utility asset by survey as an X, Y, Z coordinate along with additional attribute information (e.g. asset type, size and material).

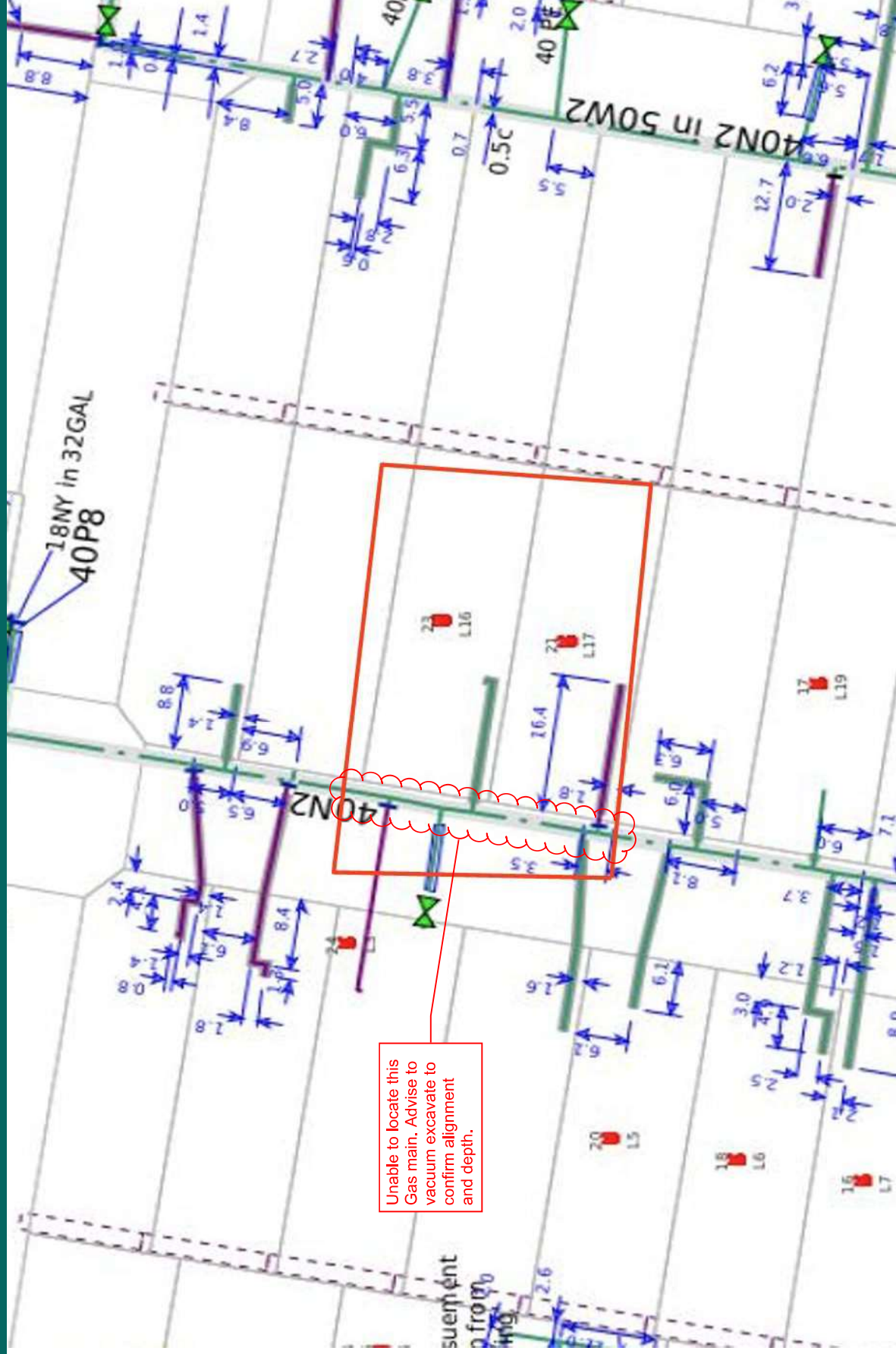
Quality Level B (QL-B): The relative spatial position of the subsurface utility has been located in three dimensions (horizontal +/- 300mm & vertical +/- 500mm) by tracing or through physical measurement that does not satisfy QL-A. Tracing has been achieved by applying an electromagnetic signal along / within the utility and traced to a known or visible end point.

Quality Level C (QL-C): The relative spatial position of the subsurface utility is interpreted based on correlating surface features such as marker plates or utility lids with reference to existing records, site investigations or anecdotal evidence. GPR can be used to improve and refine the relative spatial position of a QL-C alignment.

Quality Level D (QL-D): Existing Dial-Before-You-Dig plans, other available existing records, cursory site inspections or anecdotal evidence suggest the potential presence of subsurface utilities; however, it has not been possible to accurately locate these subsurface utilities using electromagnetic or GPR techniques within the tolerances set out in AS 5488.1:2019. Subsurface utilities shown as QL-D should NOT be relied upon or used for design.

	Communications/Telstra/Optic Fibre (Drafted in black when on a white/pale background)
	Electricity (Low Voltage & High Voltage)
	Gas (High Pressure & Low Pressure)
	Water
	Fire Service
	Sewer (includes sewer rising mains and vacuum sewers)
	Drainage / Stormwater
	Recycled Water
	Unknown Service
	Petroleum (includes oil, flammable and combustible materials)

**ALL UTILITIES OUTLINED ON THIS REPORT REQUIRE VACUUM EXCAVATION
TO DETERMINE ACTUAL ALIGNMENT AND DEPTH.**



UTILITY SERVICE REPORT

Disclaimer and Sign Off:

Passive, Radio, Induction & GPR (Ground Penetrating Radar) scans were completed in work area nominated on the first page of this report. Only the services found at the time of locating work were marked on site and recorded in this report.

The alignment(s) of subsurface utilities as shown in this report are indicative only and should not be relied upon as an accurate positional record of the subsurface utilities as located on site. This Photo Report has not been scaled and dimensions should NEVER be taken or interpreted from this report.

While every reasonable effort has been made to accurately reflect the site works undertaken, this Photo Report should not be considered as a complete record of the works undertaken within the site extents and additional subsurface utilities may have been marked within the site extents but not shown within this Photo Report.

Additional subsurface utilities may remain unmarked within the site extents due to the limitations of the locating technologies used. Due caution should be exercised during any activity in places where contact or interference with subsurface utilities may reasonably be expected to occur, whether located or not.

These reports DO NOT replace any requirements for a current Dial Before You Dig search to be held on site at the time of any excavation, boring or other works.

This Photo Report was undertaken as per the scope of works as agreed with the Client listed on the front page and as such has been carried out in accordance with the Terms and Conditions unless otherwise agreed by all parties.

The Client acknowledges that the information and data forming part of the Services of the Equipment used by LSA cannot be guaranteed for 100% accuracy. As a minimum, all information and data has been provided in accordance with AS 5488 "Classification of Sub-surface Utility Information (SUI)" as updated and amended. The Client acknowledges that:

- (a) in some instances, some services are untraceable or unidentifiable in accordance with AS 5488 because they are for example: Optic Fibre, PVC piping, or other non -ferrous material substances, and
- (b) there are geotechnical conditions (including voids and anomalies) that cannot be identified.

In these instances, LSA has taken all due care with regards to the information and data it has provided, including the location and identification of services; however, LSA expressly disclaims any warranty, whether expressed or implied:

- (a) in the event LSA has been unable to locate or identify a service or condition which causes subsequent damage in any way whatsoever; and
- (b) the interpretation of any information/data provided to LSA arising from or in connection to this photo report.

This Photo Report is solely for the use of the Client and is not intended to and should not be used or relied upon by anyone else. LSA does not accept any duty of care to any other person or entity other than the Client.

Locator Name:
Luke Bryant

Signature:


Date:
11-11-2025

DBYD Certified Locator #: L-40773

Appendix F – Filling and Excavation Code

FILLING AND EXCAVATION CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO1 Development for filling or excavation minimises visual impacts from retaining walls and earthworks.	AO1 Development ensures that the total height of any cut and fill, whether or not retained, does not exceed: (a) 2.5m in a zone in the Industry zones category; (b) 1m in all other zones, or if adjoining a sensitive zone.	N/A ✓	Excavation over 1.0 metres will be required within the majority of the site to construct the basement retaining walls. This will have no affect on the adjoining properties.
PO2 Development of a retaining wall proposed as a result of filling or excavation: (a) is designed and constructed to be fit for purpose; (b) does not impact adversely on significant vegetation; (c) is capable of easy maintenance. Editor's note—A retaining wall also needs to comply with the Building Regulation and embankment gradients will need to comply with the Building Regulation. Note—Guidance on the protection of native vegetation is included in the Biodiversity areas planning scheme policy.	AO2.1 Development of a retaining structure, including footings, surface drainage and subsoil drainage: (a) is wholly contained within the site; (b) if the total height to be retained is greater than 1m, then: (i) the retaining wall at the property boundary is no greater than 1m above the ground level; (ii) all further terracing from the 1m high boundary retaining wall is 1 vertical unit:1 horizontal unit; (iii) the distance between each successive retaining wall (back of lower wall to face of higher wall) is no less than 1m horizontally to incorporate planting areas.	✓ N/A N/A N/A	Excavation over 1.0 metres will be required within the majority of the site to construct the basement retaining walls. This will have no affect on the adjoining properties.
	AO2.2 Development of a retaining wall over 1m in height protects significant vegetation on the site and on adjoining land and is designed and constructed in accordance with the structures standards in the Infrastructure design planning scheme policy and certified by a Registered Professional Engineer Queensland.	N/A	

21-23 Western Avenue, Chermside – July 2026

FILLING AND EXCAVATION CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO6 Development ensures that the design and construction of all open drainage works is undertaken in accordance with natural channel design principles, being the development of a stormwater conveyance system for major flows, by using a vegetated open channel or drain that approximates the features and functions of a natural waterway to enhance or improve riparian values of those stormwater conveyance systems. Editor's note—Guidance on natural channel design principles can be found in the Council's publication Natural channel design guidelines.	AO6 No acceptable outcome is prescribed.	N/A	
PO7 Development for filling or excavation: (a) does not degrade water quality or adversely affect environmental values in receiving waters; (b) ensures site sediment and erosion control standards are best practice.	AO7.1 Development for filling or excavation provides water quality treatment that complies with the stormwater drainage section of the Infrastructure design planning scheme policy.	N/A	
	AO7.2 Development provides erosion and sediment control standards that are in accordance with the stormwater drainage section of the Infrastructure design planning scheme policy.	✓	Erosion and Sediment Control will be designed and documented in the Compliance Assessment phase.

FILLING AND EXCAVATION CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO8 Development for filling or excavation is conducted such that adverse impacts at a sensitive use due to noise and dust are prevented or minimised. Note—A noise and dust impact management plan prepared in accordance with the Management plans planning scheme policy can assist in demonstrating achievement of this performance outcome.	AO8.1 Development ensures that no dust emissions extend beyond the boundary of the site, including dust from construction vehicles entering and leaving the site.	✓	
	AO8.2 Development for filling or excavation activity only occurs between the hours of 6:30am and 6:30pm Monday to Saturday, excluding public holidays.	✓	
PO9 Development ensures that vibration generated by the filling or excavation operation does not exceed the vibration criteria in Table 9.4.3.3.D, Table 9.4.3.3.E, Table 9.4.3.3.F and Table 9.4.3.3.G. Note—A noise management report prepared in accordance with the Noise impact assessment planning scheme policy can assist in demonstrating achievement of this performance outcome.	AO9 Development involving filling or excavation does not cause a ground-borne vibration beyond the boundary of the site.	✓	To be addressed by others. This can be Conditioned.
PO10 Development ensures that heavy trucks hauling material to and from the site do not affect the amenity of established areas and limits environmental nuisance impact on adjacent land.	AO10 Development ensures that heavy trucks hauling material to and from the site: (a) occur for a maximum of 3 weeks; (b) use a major road to access the site; (c) only use a minor road for the shortest-most-direct route that has the least amount of environmental nuisance if there is no major road alternative.	✓ ✓ ✓	To be addressed by others. This can be Conditioned.

21-23 Western Avenue, Chermside – July 2026

FILLING AND EXCAVATION CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO13 Development ensures cutting and filling for the development of canals or artificial waterways avoids adverse impacts on coastal resources and processes.	AO13 Development does not involve the creation of canals or artificial waterways.	N/A	

Appendix G – Infrastructure Design Code

INFRASTRUCTURE DESIGN CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO1 Development provides roads, pavement, edging and landscaping which: (a) are designed and constructed in accordance with the road hierarchy; (b) provide for safe travel for pedestrians, cyclists and vehicles; (c) provide access to properties for all modes; (d) provide utilities; (e) provide high levels of aesthetics and amenity, improved liveability and future growth; (f) provide for the amelioration of noise and other pollution; (g) provide a high-quality streetscape; (h) provide a low-maintenance asset with a minimal whole-of-life cost. Note—This can be demonstrated in an engineering report prepared and certified by a Registered Professional Engineer Queensland in accordance with the Infrastructure design planning scheme policy.	AO1 Development provides roads and associated pavement, edging and landscaping which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.	✓	External roads will be retained as existing. A new crossover to be provided for the development in accordance with Council standards.

INFRASTRUCTURE DESIGN CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO2 Development provides road pavement surfaces which: (a) are well designed and constructed; (b) durable enough to carry the wheel loads of the intended types and numbers of travelling and parked vehicles; (c) ensures the safe passage of vehicles, pedestrians and cyclists, the discharge of stormwater run-off and the preservation of all-weather access; (d) allows for reasonable travel comfort.	AO2 Development provides road pavement surfaces which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.	✓	
PO3 Development provides a pavement edge which is designed and constructed to: (a) control vehicle movements by delineating the carriageway for all users; (b) provide for people with disabilities by allowing safe passage of wheelchairs and other mobility aids.	AO3 Development provides pavement edges which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.	✓	
PO4 Development provides verges which are designed and constructed to: (a) provide safe access for pedestrians clear of obstructions and access areas for vehicles onto properties; (b) provide a sufficient area for public utility services; be maintainable by the Council.	AO4 Development provides verges which are designed and constructed in compliance with the road corridor design and streetscape locality advice standards in the Infrastructure design planning scheme policy.	✓	The proposed development will regrade the existing verge. The existing concrete footpath to be reinstated to Council standards.

INFRASTRUCTURE DESIGN CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO5 Development provides a lane or laneway identified in a neighbourhood plan which: (a) allows equitable access for all modes; (b) is safe and secure; (c) has 24-hour access; (d) is a low-speed shared zone environment; (e) has a high-quality streetscape.	AO5 Development provides a lane or laneway identified in a neighbourhood plan which is embellished in compliance with the streetscape locality advice standards in the Infrastructure design planning scheme policy.	N/A	
PO6 Development of an existing premises provides at the frontage to the site, if not already provided, the following infrastructure to an appropriate urban standard: (a) an effective, high-quality paved roadway; (b) an effective, high-quality roadway kerb and channel; (c) safe, high-quality vehicle crossings over channels and verges; (d) safe, accessible, high-quality verges compatible and integrated with the surrounding environment; (e) safe vehicle access to the site that enables ingress and egress in a forward gear; (f) provision of and required alterations to public utilities; (g) effective drainage; (h) appropriate conduits to facilitate the provision of required street-lighting systems and traffic signals.	AO6 Development of an existing premises provides at the frontage of the site, if not already existing, the following infrastructure to the standard that would have applied if the development involved new premises as stated in the road corridor design standards in the Infrastructure design planning scheme policy: (a) concrete kerb and channel; (b) forming and grading to verges; (c) crossings over channels and verges; (d) a constructed bikeway; (e) a constructed verge or reconstruction of any damaged verge; (f) construction of the carriageway; (g) payment of costs for required alterations to public utility mains, services or installations; (h) construction of and required alterations to public utility mains, services or installations; (i) drainage works; (j) installation of electrical conduits.	✓	Development to maintain existing road infrastructure with addition a new vehicular crossing in accordance with Council standards.

INFRASTRUCTURE DESIGN CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO7 Development provides both cycle and walking routes which: (a) are located, designed and constructed to their network classification (where applicable); (b) provide safe and attractive travel routes for pedestrians and cyclists for commuter and recreational purposes; (c) provide safe and comfortable access to properties for pedestrians and cyclists; (d) incorporate water sensitive urban design into stormwater drainage; (e) provide for utilities; (f) provide for a high level of aesthetics and amenity, improved liveability and future growth; (g) are a low-maintenance asset with a minimal whole-of-life cost; (h) minimise the clearing of significant native vegetation. Note—This can be demonstrated in an engineering report prepared and certified by a Registered Professional Engineer Queensland in accordance with the Infrastructure design planning scheme policy.	AO7 Development provides cycle and walking routes which are located, designed and constructed in compliance with the road corridor design and off-road pathway design standards in the Infrastructure design planning scheme policy.	N/A	
PO8 Development provides refuse and recycling collection, separation and storage facilities that are located and managed so that adverse impacts on building occupants, neighbouring properties and the public realm are minimised.	AO8.1 Development provides refuse and recycling collection and storage facilities in accordance with the Refuse planning scheme policy.	✓	

INFRASTRUCTURE DESIGN CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
	AO8.2 Development ensures that refuse and recycling collection and storage location and design do not have any adverse impact including odour, noise or visual impacts on the amenity of land uses within or adjoining the development. Note—Refer to the Refuse planning scheme policy for further guidance.	✓	
PO9 Development ensures that: (a) land used for an urban purpose is serviced adequately with regard to water supply and waste disposal; (b) the water supply meets the stated standard of service for the intended use and fire-fighting purposes.	AO9.1 Development ensures that the reticulated water and sewerage distribution system for all services is in place before the first use is commenced.	✓	
	AO9.2 Development provides the lot with reticulated water supply and sewerage to a standard acceptable to the distributor—retailer.	✓	
PO10 Development provides public utilities and street lighting which are the best current or alternative technology and facilitate accessibility, easy maintenance, minimal whole-of-life costs, and minimal adverse environmental impacts.	AO10.1 Development provides public utilities and street lighting which are located and aligned to: (a) avoid significant native vegetation and areas identified within the Biodiversity areas overlay map; (b) minimise earthworks; (c) avoid crossing waterways, waterway corridors and wetlands or if a crossing is unavoidable, tunnel-boring techniques are used to minimise disturbance, and a disturbed area is reinstated and restored on completion of the work.	N/A ✓ N/A	No new public utilities or street lighting are proposed for the development. All existing infrastructure will be retained.

INFRASTRUCTURE DESIGN CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
	AO10.2 Development provides compatible public utility services and street-lighting services which are co-located in common trenching for underground services.	N/A	
	AO10.3 Development provides public utilities and street lighting which are designed and constructed in compliance with the public utilities standards in the Infrastructure design planning scheme policy.	N/A	
PO11 Development ensures that land used for urban purposes is serviced adequately with telecommunications and energy supply.	AO11 Development provides land with the following services to the standards of the approved supplier: (a) electricity; (b) telecommunications services; (c) gas service where practicable.	✓	
PO12 Development ensures that major public projects promote the provision of affordable, high-bandwidth telecommunications services throughout the city.	AO12 Development provides conduits which are provided in all major Council and government works projects to enable the future provision of fibre optic cabling, if: (a) the additional expense is unlikely to be prohibitive; or (b) further major work is unlikely or disruption would be a major concern, such as where there is a limited capacity road; or (c) there is a clear gap in the telecommunications network; or (d) there is a clear gap in the bandwidth available to the area.	N/A	

INFRASTRUCTURE DESIGN CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO13 Development provides public art identified in a neighbourhood plan or park concept plan which: (a) is provided commensurate with the status and scale of the proposed development; (b) is sited and designed: (i) as an integrated part of the project design; (ii) as conceptually relevant to the context of the location; (iii) to reflect and respond to the cultural values of the community; (iv) to promote local character in a planned and informed manner	AO13 Development provides public art identified in a neighbourhood plan or park concept plan which is sited and designed in compliance with the public art standards in the Infrastructure design planning scheme policy.	N/A	
PO14 Development provides signage of buildings and spaces which promote legibility to help users find their way.	AO14 Development provides public signage: (a) at public transport interchanges and stops, key destinations, public spaces, pedestrian linkages and at entries to centre developments; (b) which details the location of the key destinations, public spaces and pedestrian linkages in the vicinity, the services available within the development and where they are located. Editor's note—Signage is to be in accordance with Local Law Number 1 (Control of Advertisements Local Law).	N/A	
PO15 Development that provides community facilities which form part of the development is functional, safe, low maintenance, and fit for purpose.	AO15 Development that provides community facilities which form part of the development is designed in compliance with the community facilities standards in the Infrastructure design planning scheme policy.	N/A	

INFRASTRUCTURE DESIGN CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO16 Development provides public toilets which: (a) are required as part of a community facility or park; (b) are located, designed and constructed to be: (i) safe; (ii) durable; (iii) resistant to vandalism; (iv) able to service expected demand; (v) fit for purpose.	AO16 Development that provides public toilets is designed and constructed in compliance with the public toilets standards in the Infrastructure design planning scheme policy.	N/A	
PO17 Development provides bridges, tunnels, elevated structures and water access structures that are designed and constructed using proven methods, materials and technology to provide for: (a) safe movement of intended users; (b) an attractive appearance appropriate to the general surroundings and any adjacent structures; (c) functionality and easy maintenance; (d) minimal whole-of-life cost; (e) longevity; (f) current and future services. Note—All bridges and elevated and associated elements must be designed and certified by a Registered Professional Engineer Queensland in accordance with the Infrastructure design planning scheme policy.	AO17 Development that provides bridges, tunnels, elevated structures and water access structures is designed and constructed in compliance with the standards in the Infrastructure design planning scheme policy.	N/A	

INFRASTRUCTURE DESIGN CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO18 Development provides culverts which are designed and constructed using proven methods, materials and technology to provide for: (a) safety; (b) an attractive appearance appropriate to the general surroundings; (c) functionality and easy maintenance; (d) minimal whole-of-life cost; (e) longevity; (f) future widening; (g) current and future services; (h) minimal adverse impacts, such as increase in water levels or flow velocities, and significant change of flood patterns.	AO18 Development that provides culverts is designed and constructed in compliance with the structures standards in the Infrastructure design planning scheme policy.	N/A	
PO19 Development provides batters, retaining walls, and seawalls and river walls which are designed and constructed using proven methods, materials and technology to provide for: (a) safety; (b) an attractive appearance appropriate to the surrounding area; (c) easy maintenance; (d) minimal whole-of-life cost; (e) longevity; (f) minimal water seepage. Note—All retaining walls and associated elements are to be designed and certified by a Registered Professional Engineer Queensland in accordance with the applicable design standards.	AO19 Development that provides batters, retaining walls, seawalls and river walls is designed and constructed in compliance with the structures standards in the Infrastructure design planning scheme policy.	✓	

INFRASTRUCTURE DESIGN CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
If for development with a gross floor area greater than 1,000m²			
PO20 Development ensures that construction is managed so that use of public spaces and movement on pedestrian, cyclist and other traffic routes is not unreasonably disrupted and existing landscaping is adequately protected from short- and long-term impacts. Note—The preparation of a construction management plan can assist in demonstrating achievement of this performance outcome. Note—The Transport, access, parking and servicing planning scheme policy provides advice on the management of vehicle parking and deliveries during construction.	AO20 Development ensures that during construction: (a) the ongoing use of adjoining and surrounding parks and public spaces, such as malls and outdoor dining, is not compromised; (b) adjoining and surrounding landscaping is protected from damage; (c) safe, legible, efficient and sufficient pedestrian, cyclist and vehicular accessibility and connectivity to the wider network are maintained.	N/A ✓ ✓	
PO21 Development ensures that construction and demolition activities are guided by measures that prevent or minimise adverse impacts including sleep disturbance at a sensitive use, due to noise and dust, including dust from construction vehicles entering and leaving the site. Note—A noise and dust impact management plan prepared in accordance with the Management plans planning scheme policy can assist in demonstrating achievement of this performance outcome.	AO21.1 Development ensures that demolition and construction: (a) only occur between 6:30am and 6:30pm Monday to Saturday, excluding public holidays; (b) do not occur over periods greater than 6 months. AO21.2 Development including construction and demolition does not release dust emissions beyond the boundary of the site. AO21.3 Development construction and demolition does not involve asbestos-containing materials.	✓ ✓ ✓	

INFRASTRUCTURE DESIGN CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO22 Development ensures that: (a) construction and demolition do not result in damage to surrounding property as a result of vibration; (b) vibration levels achieve the vibration criteria in Table 9.4.4.3.B, Table 9.4.4.3.C, Table 9.4.4.3.D and Table 9.4.4.3.E. Note—A vibration impact assessment report prepared in accordance with the Noise impact assessment planning scheme policy can assist in demonstrating achievement of this performance outcome.	AO22 Development ensures that the nature and scale of construction and demolition do not generate noticeable levels of vibration.	✓	

Appendix H – Stormwater Code

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STORMWATER CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO3 Development ensures that the stormwater management system does not direct stormwater run-off through existing or proposed lots and property where it is likely to adversely affect the safety of, or cause nuisance to properties.	AO3.1 Development ensures that the location of the stormwater drainage system is contained within a road reserve, drainage reserve, public pathway, park or waterway corridor.	N/A	
	AO3.2 Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.	✓	
	AO3.3 Development obtains a lawful point of discharge in compliance with the standards in the Infrastructure design planning scheme policy.	✓	Lawful point of discharge for the site will be Western Ave.
	AO3.4 Where on private land, all underground stormwater infrastructure is secured by a drainage easement.	N/A	
PO4 Development provides a stormwater management system which has sufficient capacity to safely convey run-off taking into account increased run-off from impervious surfaces and flooding in local catchments.	AO4.1 Development provides a stormwater conveyance system which is designed to safely convey flows in compliance with the standards in the Infrastructure design planning scheme policy.	✓	
	AO4.2 Development provides sufficient area to convey run-off which will comply with the standards in the Infrastructure design planning scheme policy.	✓	

STORMWATER CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO5 Development designs stormwater channels, creek modification works, bridges, culverts and major drains to protect and enhance the value of the waterway corridor or drainage path for fauna movement.	AO5 Development ensures the design of stormwater channels, creek modifications or other infrastructure, permits terrestrial and aquatic fauna movement.	N/A	
PO6 Development ensures that location and design of stormwater detention and water quality treatment: (a) minimises risk to people and property; (b) provides for safe access and maintenance; (c) minimises ecological impacts to creeks and waterways.	AO6.1 Development locates stormwater detention and water quality treatment: (a) outside of a waterway corridor; (b) offline to any catchment not contained within the development.	✓	Stormwater detention to be provided by rainwater tanks located at the back of the proposed site. Stormwater quality not required due to the site being less than 2,500m ² .
	AO6.2 Development providing for stormwater detention and water quality treatment devices are designed in compliance with the standards in the Infrastructure design planning scheme policy.	✓	Stormwater detention to be provided by rainwater tanks located at the back of the proposed site. Stormwater quality not required due to the site being less than 2,500m ² .
PO7 Development is designed, including any car parking areas and channel works to: (a) reduce property damage; (b) provide safe access to the site during the defined flood event.	AO7.1 Development (including any ancillary structures and car parking areas) is located above minimum flood immunity levels in Table 9.4.9.3.B, Table 9.4.9.3.C, Table 9.4.9.3.D, Table 9.4.9.3.E and Table 9.4.9.3.F. Note—Compliance with this acceptable outcome can be demonstrated by the submission of a hydraulic and hydrology report identifying flood levels and development design levels (as part of a site-based stormwater management plan).	✓	

STORMWATER CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
	A07.2 Development including the road network provides a stormwater management system that provides safe pedestrian and vehicle access in accordance with the standards in the Infrastructure design planning scheme policy.	✓	
PO8 Development designs stormwater channels, creek modification works and the drainage network to protect and enhance the environmental values of the waterway corridor or drainage path.	A08.1 Development ensures natural waterway corridors and drainage paths are retained.	N/A	
	A08.2 Development provides the required hydraulic conveyance of the drainage channel and floodway, while maximising its potential to maximise environmental benefits and minimise scour.	N/A	
	A08.3 Development provides stormwater outlets into waterways, creeks, wetlands and overland flow paths with energy dissipation to minimise scour in compliance with the standards in the Infrastructure design planning scheme policy.	N/A	
	A08.4 Development ensures that the design of modifications to the existing design of new stormwater channels, creeks and major drains is in compliance with the standards in the Infrastructure design planning scheme policy.	N/A	

STORMWATER CODE

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTION	COMMENTS
PO9 Development is designed to manage run-off and peak flows by minimising large areas of impervious material and maximising opportunities for capture and re-use.	AO9 No acceptable outcome is prescribed.	✓	Complies with P09
PO10 Development ensures that there is sufficient site area to accommodate an effective stormwater management system. Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.	AO10 No acceptable outcome is prescribed.	✓	Complies with P10
PO11 Development provides for the orderly development of stormwater infrastructure within a catchment, having regard to the existing capacity of stormwater infrastructure within and external to the site, and any planned stormwater infrastructure upgrades; (a) safe management of stormwater discharge from existing and future up-slope development; (b) implication for adjacent and down-slope development.	AO11.1 Development with up-slope external catchment areas provides a drainage connection sized for ultimate catchment conditions that is directed to a lawful point of discharge.	N/A	No external catchment upslope of subject site.

STORMWATER CODE

	AO11.2 Development ensures that existing stormwater infrastructure that is undersized is upgraded in compliance with the Priority infrastructure plan and the standards in the Infrastructure design planning scheme policy.	N/A	
PO12 Development provides stormwater infrastructure which: (a) remains fit for purpose for the life of the development and maintains full functionality in the design flood event; (b) can be safely accessed and maintained cost effectively; (c) ensures no structural damage to existing stormwater infrastructure.	AO12.1 The stormwater management system is designed in compliance with the Infrastructure design planning scheme policy.	✓	
	AO12.2 Development provides a clear area with a minimum of 2m radius from the centre of an existing manhole cover and with a minimum height clearance of 2.5m.	N/A	
PO13 Development ensures that all reasonable and practicable measures are taken to manage the impacts of erosion, turbidity and sedimentation, both within and external to the development site from construction activities, including vegetation clearing, earthworks, civil construction, installation of services, rehabilitation, revegetation and landscaping to protect: (a) the environmental values and water quality objectives of waters; (b) waterway hydrology; (c) the maintenance and serviceability of stormwater infrastructure. Note—The Infrastructure design planning scheme policy outlines the appropriate measures to be taken into account to achieve the performance outcome.	AO13 No acceptable outcome is prescribed.	✓	Detailed Erosion and Sediment Control measures will be documented in the Compliance Assessment phase to ensure compliance with PO13.

STORMWATER CODE

PO14 Development ensures that: (a) unnecessary disturbance to soil, waterways or drainage channels is avoided; (b) all soil surfaces remain effectively stabilised against erosion in the short and long term.	AO14 No acceptable outcome is prescribed.	✓	Erosion and Sediment Control will be designed and documented in the Compliance Assessment phase to ensure compliance with PO14.
PO15 Development does not increase: (a) the concentration of total suspended solids or other contaminants in stormwater flows during site construction; (b) run-off which causes erosion either on site or off site.	AO15 No acceptable outcome is prescribed.	✓	Erosion and Sediment Control will be designed and documented in the Compliance Assessment phase to ensure compliance with PO15.
Section B—Additional criteria which apply to high-risk development, being one or more of the following: (a) a material change of use for an urban purpose which involves greater than 2,500m ² of land that: (i) will result in an impervious area greater than 25% of the net developable area; or (ii) will result in 6 or more dwellings. (b) reconfiguring a lot for an urban purpose that involves greater than 2,500m ² of land and will result in 6 or more lots; (c) operational work for an urban purpose which involves disturbing greater than 2,500m² of land.			
PO16 Development ensures that the entry and transport of contaminants into stormwater is avoided or minimised to protect receiving water environmental values. Note—Prescribed water contaminants are defined in the Environmental Protection Act 1994 . Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.	AO16 Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.	N/A	
PO17 Development ensures that: (a) the discharge of wastewater to a waterway or external to the site is avoided; or	AO17 No acceptable outcome is prescribed.	N/A	

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(b) if the discharge cannot practicably be avoided, the development minimises wastewater discharge through re-use, recycling, recovery and treatment. Note—The preparation of a wastewater management plan can assist in demonstrating achievement of this performance outcome. Editor's note—This code does not deal with sewerage which is the subject of the Wastewater code.			
Section C—Additional performance outcomes and acceptable outcomes for assessable development for a material change of use or reconfiguring a lot			
PO18 Development protects stormwater infrastructure to ensure the following are not compromised: (a) the long term infrastructure for the stormwater network in the Long term infrastructure plans; (b) the existing and planned infrastructure for the stormwater network in the Local government infrastructure plan; (c) the provision of long term, existing and planned infrastructure for the stormwater network which: (d) (i) is required to service the development or an existing and future urban development in the planning scheme area; or (ii) is in the interests of rational development or the efficient and orderly planning of the general area in which the site is situated. Editor's note—A condition which requires a proposed development to keep permanent improvements and structures associated with the approved development clear of the area of long term infrastructure, may be imposed.	AO18 Development protects stormwater infrastructure in compliance with the following: (a) for long term infrastructure for the stormwater network, the Long term infrastructure plans; (b) for existing and planned infrastructure for the stormwater network, the Local government infrastructure plan; (c) the standards for stormwater drainage in the Infrastructure design planning scheme policy.	✓	

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PO19 Development provides for the payment of extra trunk infrastructure costs for the following: (a) for development completely or partly outside the priority infrastructure area in the Local government infrastructure plan; (b) for development completely inside the priority infrastructure area in the Local government infrastructure plan involving: (i) trunk infrastructure that is to be provided earlier than planned in the Local government infrastructure plan; (ii) long term infrastructure for the stormwater network which is made necessary by development that is not assumed future urban development; (iii) other infrastructure for the stormwater network associated with development that is not assumed future urban development which is made necessary by the development. Editor's note—The payment of extra trunk infrastructure costs for development completely inside the priority infrastructure area in the Local government infrastructure plan is to be worked out in accordance with the Charges Resolution. Editor's note—See section 130 Imposing Development conditions (Conditions for extra trunk infrastructure costs) of the Planning Act 2016.	AO19 No acceptable outcome is prescribed	N/A	
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