

PLANS AND DOCUMENTS
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DEVELOPMENT APPROVAL

Approval no: DEV2022/1307

Date: 25/05/2023



39 Mayne Road,
Bowen Hills QLD 4006

Civil Engineering Report

Site Based Stormwater Management &
Engineering Services Report

Cushman & Wakefield Pty Ltd

February 2023

Document Verification

Job Title 39 Mayne Road, Bowen Hills QLD 4006

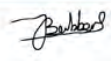
Job Number 26807

Document Title Civil Engineering Report

Document Control

Date	Document	Revision No.	Author	Reviewer
03.02.2023	Civil Engineering Report	00	JB	ET

Approval for Issue

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EXECUTIVE SUMMARY

ADG Engineers (Aust.) Pty Ltd was engaged by Cushman & Wakefield Pty Ltd to prepare a Civil Engineering Report suitable for submission to Brisbane City Council and Economic Development Queensland (EDQ) for a site located at 39 Mayne Road, Bowen Hills QLD 4006. The proposed development is for a refitting of existing workshops and ancillary areas alongside the inclusion of a temporary container-mounted shelter.

This report has been compiled to provide a response to Item 1 of the 'Further Issues' letter from EDQ dated 12 October 2022. This letter stipulated that submission of an Engineering Services Report (ESR) was required to support further assessment of the PDA development application.

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

The stormwater quantity objective was to demonstrate that there is no increase in peak discharges from the subject site. This considered storm events up to and including the Q100 storm event. The purpose is to ensure that the existing infrastructure and/or downstream properties are not adversely affected. As the post-developed site has a similar proportion of pervious area, there will be no significant increase in flow volume or flow rate resulting from the development. As such, no on-site detention will be required.

Given the site's developable portion of land is less than 2,500m², the site does not trigger the State Planning Policy for stormwater quality. Hence, the use of the treatment devices is not proposed.

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

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

- › BCC Planning Scheme Policy
- › BCC Land Development Guidelines
- › State Planning Policy (SPP) 2017
- › Queensland Urban Drainage Manual (QUDM) 2017
- › Plumbing and Drainage Code AS3500.3
- › Australian Rainfall and Runoff Guideline (ARR)

1 INTRODUCTION

1.1 Background

ADG Engineers (Aust.) Pty Ltd was engaged by Cushman & Wakefield Pty Ltd to carry out a Civil Engineering Report suitable for submission to Brisbane City Council, EDQ and any required referral agencies for a site located at 39 Mayne Road, Bowen Hills QLD 4006. The proposed development is for a refitting of existing workshops and ancillary areas alongside the inclusion of a temporary container-mounted shelter.

This report has been compiled to provide a response to Item 1 of the 'Further Issues' letter from EDQ dated 12 October 2022. This letter stipulated that submission of an Engineering Services Report (ESR) was required to support further assessment of the PDA development application.

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

1.2 Property Detail

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

Table 1 - Property Detail

Title	Lot 6 on SL 12311
Street Address	39 Mayne Road, Bowen Hills QLD 4006
Total Lot Area	6,707m ²
Developable Site Area	2,430m ² (approx.)

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

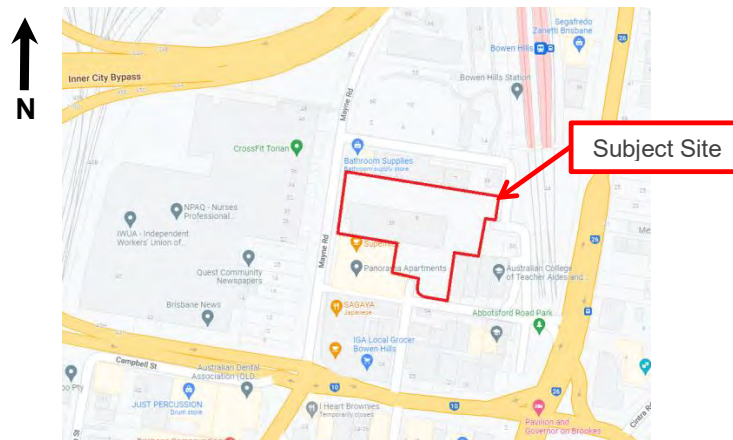


Figure 1 - Site Location (as accessed from Google Maps 16.01.23)

2 EXISTING SITE

2.1 Existing Site Features

The subject site currently comprises of a workshop building surrounded by hardstand and gravel with poor grass coverage. The site is bound by:

- Mayne Road to the west
- A residential tower, commercial developments and Hazelmount Street to the south
- Commercial developments, Jamieson Street and Pace Street to the east
- Commercial developments to the north

The site generally slopes from southwest to northeast at a grade of approximately 4.5%

The existing site features can be seen in **Figure 2**.



Figure 2 - Site Layout (as accessed from QLD Globe 16.01.23)

The existing contours, surface levels and the location of the existing buildings are identified on the architectural drawings and mapping data as attached in **Appendix A** of this report.

3 ACID SULFATE SOILS

The subject site may be affected by acid sulfate soil contamination. **Figure 3** indicates that the site is between 5m AHD and 20m AHD and has the potential for acid sulfate contamination. Due to the fact that the works to be conducted within this site entail internal area refitment and minor surface disturbance, it is not expected that acid sulfate soils will be disturbed.

In the event that acid sulfate soil is encountered, treatment measures will be undertaken in accordance with the Potential and Actual Acid Sulfate Soil Planning Scheme Policy.

Refer to **Appendix F** for the Potential and Actual Acid Sulfate Soils Overlay Code.

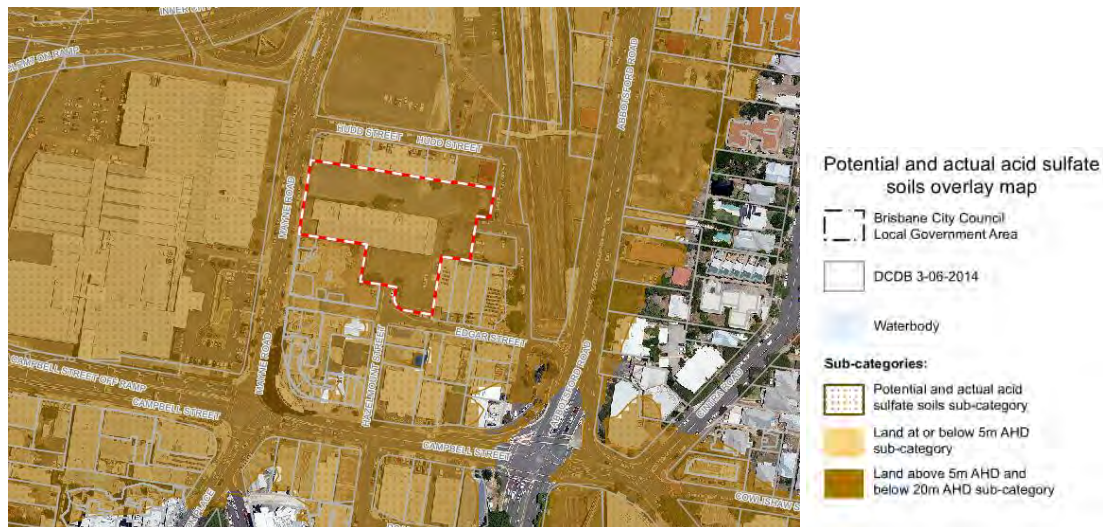


Figure 3 - Acid Sulfate Soils (as accessed on 16.01.23)

4 EARTHWORKS

4.1 Bulk Earthworks

The subject site will require minimal to no earthworks to create the proposed development and achieve the desired finished surface levels due to the scope of the development. Details of the earthwork's quantities, if applicable, will be provided during the detailed design phase of the development.

5 ROADWORKS

5.1 Existing Infrastructure

The subject site is adjacent to the following roads:

- › Mayne Road – arterial road with kerb and channel drainage on each side and a two-way crossfall.
- › Hazelmount Street – access road with kerb and channel drainage on each side and a two-way crossfall.
- › Pace Street – neighbourhood road with kerb and channel drainage on each side and a two-way crossfall.

The site is currently accessed via four (4) vehicle crossovers, two fronting Mayne Road, one fronting Pace Street and one fronting Hazelmount Street.

5.2 Proposed Infrastructure

ADG anticipate that no new vehicle crossovers or associated access ramps are to be constructed, with the existing crossovers fronting Mayne Road to be individualised as the primary entrance or exit points while crossovers fronting Pace Street and Hazelmount Street act as optional access. Kerbs are to be reinstated to Council standards in the event of any damage caused during construction.

Refer to the architectural drawings supplied in support of this report for further information. A copy of infrastructure design code has been completed and is provided in **Appendix F**.

6 FLOODING

A Flood Awareness Map Report for 39 Mayne Road, Bowen Hills QLD 4006 was generated from the BCC website. The report states that no Defined Flood Levels (DFL) or Overland Flow flags for building and development purposes for this property had been identified. The BCC Flood Awareness Map Report is attached within **Appendix G** for further information.

7 STORMWATER INFRASTRUCTURE

7.1 Existing Infrastructure

A BCC eBIMAP2 search identified the following stormwater infrastructure within the vicinity of the subject site:

- › 3 inlet pits on the development end of Mayne Road;
- › A 150mm drain line extending through the site from south to north, with a maintenance structure within site boundaries; and
- › A maintenance structure within site boundaries on the eastern end of the subject site, conveying flows east through a 150mm drainpipe.

Refer to the eBIMAP2 information in **Appendix J** for further information regarding the existing stormwater infrastructure.

7.2 Lawful Point of Discharge (LPD)

7.2.1 Existing LPD

Based on information gathered via mapping contour data and aerial imagery, and due to existing site drainage plans not being available, there is some uncertainty on the actual existing lawful points of discharge being used for the subject site. However, it can be determined with some confidence that the subject site discharges flows to existing council infrastructure, located within the subject site or within the adjoining road reserves. Refer to ADG's Preliminary Drainage Layout Plan DA03 located within **Appendix D**.

It is anticipated that site flows are currently being directed to council infrastructure within the subject site or adjacent streets via an internal drainage network.

7.2.2 Proposed LPD

It is proposed to maintain the existing LPD as noted above, as there is no change to the pre-development flow regime.

8 STORMWATER QUANTITY ASSESSMENT

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

- Address the need for stormwater quantity control measures.
- Ensure there is no increase in peak discharges from the subject site for events up to and including the 1 in 100-year ARI event.
- Ensure proposed quantity control measures detain and convey flows in accordance with QUDM minimum freeboard recommendations.

This section of the report should be read in conjunction with **Appendix I** which shows the values used to calculate the peak flow rate and preliminary detention volumes.

8.1 Proposed Development and Associated Issues

It is essential that there are no increases in volume and flow rate of stormwater runoff, and that any sizable increases are mitigated such that post-developed peak flows do not exceed those for the pre-developed case.

The proposed development leads to a negligible increase in impervious area, however post-developed flows result in a non-worsening effect on the stormwater discharge. Hence, stormwater detention measures are not proposed for this development.

8.2 Flow Rate Methodology

8.2.1 Design Storm Events

Based on recommendations within QUDM 2017, AS/NZ 3500.3 and Council standards the major and minor storm events were selected as follows:

- Minor Event: 1 in 10-year ARI
 - Surface drainage infrastructure sized for a 1 in 10-year ARI through to point of discharge.
- Major Event: 1 in 100-year ARI
 - Roof water capture system is to capture and pipe all flows up to and including the 1 in 100-year ARI through to the LPD.
 - Surface drainage overflows in events up to and including the 1 in 100-year ARI will not present a hazard to people or cause significant damage to property.

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

8.2.2 Rational Method for Peak Flow Rate

Peak flow rates for the site have been obtained using the Rational Method in accordance with ARR 1987 as stipulated in the BCC Planning Scheme Policy and QUDM. Further detail of the Rational Method hydrology calculations are presented in **Sections 8.3** and **Section 8.4**.

$$Q_y = \frac{C_y \cdot t_{Iy} \cdot A}{360}$$

Equation 1

Q_y	Peak flow rate (m ³ /s) for average recurrence interval
C_y	Co-efficient of runoff for ARI of y years (dimensionless)
^tI_y	Average rainfall intensity (mm/hr) for a design duration of 't' hours and an ARI of 'y' years
A	Catchment area (ha)

Catchment areas were measured using AutoCAD, contour surface data and known cadastral boundaries. Catchment boundaries and areas for both the pre-developed and post-developed scenarios.

Coefficient of runoff, C_{10} values were determined using catchment-specific fraction impervious values, $^1I_{10}$ rainfall intensity, and QUDM Table 4.5.3 and Table 4.5.4. Corresponding C_y values for the remaining coefficients of runoff were derived using the frequency factors presented within QUDM Table 4.5.2.

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

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

8.3 Pre-Development Hydrology

Stormwater flows accumulated in the subject site are delineated by two separate catchments, based on contours derived from BCC EbiMaps2, discharging flows to Mayne Road and Pace Street via a combination of sheet flow and internal pipe infrastructure. Existing internal drainage network and roof flow direction is unclear given the available information, hence, flows derived in **Table 2** are indicative only and based on existing contours.

The post-development catchment plan is attached within **Appendix B** for further information.

Table 2 - Pre-development Catchment Details

Catchment I.D	Area (m ²)	% Impervious	C_{10}	C_{100}	Time of Concentration (t_c)	Q_{10} (m ³ /s)	Q_{100} (m ³ /s)
EX1	4,742	98.4%	0.897	1.00	5	0.255	0.428
EX2	1,965	97.4%	0.896	1.00	5	0.106	0.177
Total	6,707	98.1%	0.897	1.00	5	0.361	0.606

Please refer to **Appendix I** for a summary of the Rational Method calculations and all parameters used.

8.4 Post-Development Hydrology

The development proposes no change to the existing catchments or roof flows. The consistencies in catchment parameters between the pre-developed and post-developed scenarios result in no change to the post-developed flow rates.

Based on preliminary architectural drawings, the area and fraction impervious of the various catchments were determined and listed in **Table 3** below.

The post-development catchment plan is attached within **Appendix C** for further information.

Table 4 - Post-development Catchment Details

Catchment I.D	Area (m ²)	% Impervious	C ₁₀	C ₁₀₀	Time of Concentration (t _c)	Q ₁₀ (m ³ /s)	Q ₁₀₀ (m ³ /s)
C1	4,742	98.4%	0.90	1.00	5	0.256	0.428
C2	1,965	98.5%	0.90	1.00	5	0.106	0.177
Total	6,707	98.4%	0.90	1.00	5	0.362	0.606

Please refer to **Appendix I** for a summary of the Rational Method calculations and all parameters used.

8.4.1 Recommendation

ADG propose to maintain the existing flow regime as part of this development. Due to limited works occurring to external areas, the fraction of impervious area increased marginally in proportion to the site area. This produced a non-worsening result for stormwater discharge generated from the subject site.

Refer to the **Appendix D** for the stormwater drainage layout plan for further information.

9 STORMWATER QUALITY ASSESSMENT

9.1 Treatment Objectives

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

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

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

The 'net developable area' within the constraints of this development is largely insignificant in proportion to the size of the subject site, with most works pertaining to internal refitting of the existing warehouse. Hence, a large portion of the lot has been excluded from developable land on the basis that it will be unchanged as part of the development and therefore should not be included in the assessable land.

The proposal does not include an OPW for land area greater than 2,500m². As a result, the development does not trigger the SPP treatment requirement and does not require any stormwater quality improvement devices as the majority area of works conducted are to be performed within building extents, with slight alterations to external ground resulting in an increase of impervious area by approximately 2%.

9.2 Erosion and Sediment Control

9.2.1 Erosion Hazard Assessment

The erosion risk has been assessed against the BCC Erosion hazard guidelines and found to be medium risk based on the sub-2,500m² developable area. Refer to the Erosion Hazard Form attached in **Appendix H**.

9.2.2 Pre-Development Phase

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

- Sediment barriers to be installed on all entrances to downstream stormwater infrastructure (i.e. gully pits);
- Protect vegetation to remain after development;
- Install construction entry and exit shakedown areas;
- Sediment fences are to be installed on the downstream boundaries of the subject site; and
- Install dust control measures as required.

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

9.2.3 Construction Phase

During the construction phase of the development, there is a risk of sedimentation transport due to the refitting of external areas. The following erosion and sediment control measures may need to be installed to ensure there is minimal disturbance and the quality of runoff is maintained to an acceptable standard:

- Sediment fences to be installed on the downstream side of any stockpiles and batters; and
- Re-vegetation of all disturbed areas within two (2) weeks of completion.

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

9.2.4 Maintenance

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

10 SEWERAGE & WATER DEMAND

As the subject site is located within an Urban Utilities (UU) service area, sewerage and water demands for the proposed development and their impacts on the current reticulation infrastructure will be calculated by UU as part of the sewerage and water approval. Thus, no water or sewerage demand calculations have been provided as part of this report.

11 WATER SUPPLY

11.1 Existing Infrastructure

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

- › A 150mm m-PVC main in Mayne Road adjacent to the western boundary of the subject site;
- › A 150mm m-PVC main in Mayne Road on the opposite side to the subject site;
- › A hydrant located on Jamieson Street adjacent to the subject site;
- › A 100mm CI main on Jamieson Street adjacent to the subject site; and
- › A 100mm CI service connection extending through Pace Street which stems off the 100mm CI main in Jamieson Street.

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

11.2 Point Of Connection

Due to the demand for the proposed development remaining similar to the pre-existing use of the facility, the site is not expected to require an upgraded water property connection to be installed in order to meet the expected water supply demands.

ADG Engineers anticipate that the proposed development will maintain service connectivity by the existing 100mm CI property connection from Pace Street. Details of the connections to be reused will be provided at the detailed design stage, as part of a future Urban Utilities reuse application

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

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

12 SEWERAGE RETICULATION

12.1 Existing Infrastructure

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

- › Two (2) type G 900mm manholes located within the eastern end of the development;
- › A 150mm EW main located within site boundaries extending to a manhole on Pace Street, with property connections into above mains and manholes;
- › A 150mm EW main located beneath Jamieson Street adjacent to the development;
- › A 150mm EW main located beneath Mayne Road adjacent to the development; and
- › Property from the subject site into the above mentioned Mayne Road, and Pace Street mains.

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

12.2 Point Of Connection

ADG Engineers anticipate that the proposed development will be connected to the existing manhole/main within site boundaries, reusing the existing property connection. Details of the proposed connections will be provided at the detailed design stage, as part of a future Urban Utilities reuse application

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

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

13 ELECTRICAL SUPPLY

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

- ▶ Underground electrical cables (less than 33kV) along Mayne Road adjacent to the subject site.

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

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

14 COMMUNICATIONS

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

- › Underground cabling owned by Optus and Reef traversing adjacent to the train lines, on Jamieson Street opposite the Eastern end of the subject site;
- › Underground Optus cabling on opposite side of Mayne Road;
- › Underground Uecomm assets along Mayne Road adjacent to the subject site; and
- › Underground Telstra conduit with property connections on Mayne Road, Pace Street and Jamieson Streets.

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

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

15 GAS

The BYDA information has identified the following APA Gas infrastructure within the vicinity of the subject site:

- › Underground medium-pressure 31mm NY11 gas pipeline beneath Mayne Road on the opposite side to the development; and
- › Underground medium-pressure 31mm NY11 gas pipeline beneath Jamieson Street and Pace Street adjacent to the development

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

Refer to the BYDA Information in **Appendix K** for further details on the existing gas infrastructure.

16 PRIORITY INFRASTRUCTURE UPGRADES

Review of the Brisbane City Council Priority Infrastructure Plan Maps indicates that no priority infrastructure upgrades are planned within close proximity to the subject site.

17 CONCLUSION

The site appears to be well serviced by reticulated water, stormwater infrastructure, sewerage, communications, gas and electricity. The majority of these services will be reused during development, subject to future reuse applications with the respective service authorities. Information discussed in this report is inferred from BYDA records.

As outlined in **Section 8** of this report, the proposed development results in a negligible increase to the total impervious areas. However, the flow rate between the pre and post-developed scenarios remain consistent, requiring no detention as part of this proposal to be in accordance with the BCC Planning Scheme Policy.

Alongside the lack of stormwater detention, the pollutant load reduction targets as required by the SPP 2017 and Brisbane City Council standards were not relevant to the subject site as the net developable area is far less than the 2,500m² quality trigger. Hence, the implementation of any treatment devices is unwarranted.

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

Appendix A

Architectural Drawings

BRISBANE BMW

TEMPORARY SERVICE RECEPTION



DRAWING LIST			
Sheet Number	Sheet Name	Current Revision	Current Revision Date
A000	COVER SHEET	T1	26.09.22
A100	DEMOLITION SITE PLAN	T1	26.09.22
A101	PROPOSED SITE PLAN	T1	26.09.22
A102	DEMOLITION FLOOR PLAN	T1	26.09.22
A103	PROPOSED FLOOR PLAN	T1	26.09.22
A104	PROPOSED FURNITURE PLAN	T1	26.09.22
A120	DEMOLITION RCP	T1	26.09.22
A121	PROPOSED RCP	T1	26.09.22
A200	EXISTING & PROPOSED WEST ELEVATIONS	T1	26.09.22
A201	EXISTING & PROPOSED NORTH ELEVATIONS	T1	26.09.22
A202	DELETED - EXISTING & PROPOSED EAST ELEVATIONS		
A203	DELETED - EXISTING & PROPOSED SOUTH ELEVATIONS		
A204	PROPOSED CONTAINER ELEVATIONS	T1	26.09.22
A300	SECTIONS	T1	26.09.22
A400	DETAILS	T1	26.09.22
A600	SCHEDULES	T1	26.09.22
A700	JONERY DETAILS - RECEPTION, COFFEE BAR, PRINTERS/STORAGE	T1	26.09.22

GENERAL NOTES:

THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL ASSOCIATED SPECIFICATIONS, CONSULTANT DRAWINGS, REPORTS & SCHEDULES, ETC.
USE FIGURED DIMENSIONS ONLY. DO NOT SCALE OFF DRAWINGS.
REPORT ALL DISCREPANCIES TO THE ARCHITECT FOR CLARIFICATION.
CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE PRIOR TO THE COMMENCEMENT OF ANY WORKS.
CONTRACTOR SHALL PROTECT ALL EXISTING SURFACES NOT AFFECTED BY THE BUILDING WORKS.
CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE RELEVANT AUTHORITY IN RELATION TO THE BUILDING WORKS.
CONTRACTOR SHALL ENSURE ALL WORKS COMPLY WITH THE NATIONAL CONSTRUCTION CODE, RELEVANT AUSTRALIAN STANDARDS AND AUTHORITY REQUIREMENTS.
CONTRACTOR SHALL ENSURE ALL WORKS COMPLY WITH AS1428.1 - DESIGN FOR ACCESS & MOBILITY.
CONTRACTOR SHALL ENSURE FIRE INDICES OF MATERIALS, LININGS AND SURFACES COMPLY TO THE REQUIREMENTS OF THE NCC, CLAUSE C1.10 - FIRE HAZARD PROPERTIES.
ENSURE ALL FINISHED FLOOR SURFACES ARE LEVEL TO COMPLY WITH AS1428.1 CLAUSE 7.4.1.
FIRE INDICES OF MATERIALS, LININGS AND SURFACES TO COMPLY TO SPECS C1.10 OF THE BCA.
ELECTRICAL SIBDS LOCATED IN PATH OF TRAVEL TO EXITS TO BE ENCLOSED IN METAL OR OTHER INCOMBUSTIBLE CABINETS WITH SMOKE PROOF DOORS.
ALL DOORWAYS TO HAVE A MIN UNOBSTRUCTED HT OF 2000
EXIT SIGNS & EMERGENCY LIGHTS TO COMPLY WITH AS 2293
NON SLIP FINISHED TO BE PROVIDED TO ALL STEPS, RAMPS AND LANDINGS
FIRE HOSE REEL INSTALLATION TO COMPLY TO AS 2441
ARTIFICIAL LIGHTING TO COMPLY TO AS 1680
EXIT SIGNS TO BE MOUNTED AT A HT OF NOT LESS THAN 2100 OR MORE THAN 2500 UNLESS APPROVED BY THE COUNCIL'S BUILDING SURVEYOR.
EXHAUST AIR OUTLETS NOT TO BE LOCATED CLOSER THAN 600 TO FRESH AIR INLETS
ACCESSIBLE TOILET INSTALLATION TO COMPLY WITH ALL RESPECTS TO AS 1428.1.2009
WHERE SHOWERS ARE PROVIDED GLAZING TO SHOWER SCREENS TO BE GRADE A SAFETY GLASS
IN ACCORDANCE WITH TABLE 5.1 OF AS 1288-1984 MIN GLASS THICKNESS - 5mm
THRESHOLDS AT EXTERNAL DOORS TO HAVE DIMINISHING PROPRIETARY THRESHOLDS TO COMPLY WITH AS1428.

ACCESSIBLE ACCESS

ACCESSIBLE ACCESS TO COMPLY TO AS1428.1.2022
ACCESSIBLE ACCESS TO BUILDING SHALL BE TO ALL EXTERNAL DOORS.
RAMP SURFACE TO HAVE A SLIP RESISTANCE OF W1/1 WHEN DRY AND V/1/2 WHEN WET

ACCESSIBILITY NOTES - ENTRANCES

THE ENTRANCES TO ALL ACCESSIBLE BUILDINGS SHOULD INCLUDE A SMOOTH TRANSITION (I.E. NO STEPS OR LIPS).
SIGNAGE INCLUDING SYMBOLS, NUMBERING & LETTERING MUST BE DESIGNED & INSTALLED AS FOLLOWS:

BRAILLE & TACTILE SIGNAGE

- (a) SIGNS MUST BE LOCATED NOT LESS THAN 1200mm & NOT HIGHER THAN 1600mm ABOVE THE FLOOR OR GROUND SURFACE.
- (b) SIGNS WITH SINGLE LINES OF CHARACTERS MUST HAVE THE LINE OF TACTILE CHARACTERS NOT LESS THAN 1250mm NOT HIGHER THAN 1350mm ABOVE THE FLOOR OR GROUND SURFACE.
- (c) SIGNS IDENTIFYING ROOMS CONTAINING FEATURES OR FACILITIES FOR ACCESSIBILITY MUST BE LOCATED:
 - (i) ON THE WALL ON THE LATCH SIDE OF THE DOOR WITH THE LEADING EDGE OF THE SIGN LOCATED BETWEEN 50mm & 300mm FROM THE ARCHITRAVE. AND
 - (ii) IN THE EVENT OF THE INSUFFICIENT LATCH SIDE DIMENSION, A SIGN MAY BE PLACED ON THE NON - LATCH SIDE OF THE DOOR. AND
 - (iii) WHERE (i) or (ii) ARE NOT POSSIBLE, THE SIGN MAY BE PLACED ON THE DOOR ITSELF.
- (d) SIGNS IDENTIFYING PATHS OF TRAVEL MUST BE PLACED SO THEY ARE LOCATED DIRECTLY AHEAD IN THE DIRECTION OF TRAVEL. WHERE ONE WALL CONTINUES IN THE DIRECTION OF TRAVEL & THE OTHER FORMS A CORNER, THE SIGN MUST BE PLACED ON THE CONTINUING WALL.

BRAILLE & TACTILE SIGN SPECIFICATION, LUMINANCE CONTRAST & BRAILLE TO COMPLY WITH SPECIFICATION D.6.6 CLAUSE 2.2.3.8 & 2.4 RESPECTIVELY OF THE BCA
ALL SIGNAGE TO ALL SANITARY AREAS MUST COMPLY WITH AS 1428.1.2009
EXIT ACCESSIBLE SIGNAGE IS REQUIRED TO EXIT DOORS. EACH SIGN MUST INDICATE THE WORD 'EXIT' HEIGHT AND PLACEMENT OF SIGN AS PER ABOVE

BUILDING PERMIT:

- ALL WORKS TO BE IN ACCORDANCE WITH BUILDING PERMIT APPROVALS.
- ALL AMENDMENTS REQUIRED DURING CONSTRUCTION ARE TO BE DISCUSSED & APPROVED BY THE BUILDING SURVEYOR.
- ALL VISIBLE AMENDMENTS TO THE LAYOUT REQUIRED DURING CONSTRUCTION ARE TO BE DISCUSSED & APPROVED BY THE ARCHITECT.

DOORWAYS & PATHS:

- ALL DOORWAYS TO HAVE A MINIMUM UNOBSTRUCTED HEIGHT OF 2000mm
- UNLESS OTHERWISE SPECIFIED (SUCH AS AT DOORS, CURVED RAMPS AND SIMILAR), THE MINIMUM UNOBSTRUCTED WIDTH OF A CONTINUOUS ACCESSIBLE PATH OF TRAVEL SHALL BE 1000mm AND THE FOLLOWING SHALL NOT INTRUDE INTO THE MINIMUM UNOBSTRUCTED WIDTH OF A CONTINUOUS ACCESSIBLE PATH OF TRAVEL:
 - (A) FIXTURES AND FITTINGS SUCH AS LIGHTS, AWNINGS, WINDOWS THAT, WHEN OPEN, INTRUDE INTO THE CIRCULATION SPACE, TELEPHONES, SIGNPOSTS AND SIMILAR OBJECTS.
 - (B) ESSENTIAL FIXTURES AND FITTINGS SUCH AS FIRE HOSE REELS, FIRE EXTINGUISHERS AND SWITCHBOARDS.
 - (C) DOOR HANDLES LESS THAN 900mm ABOVE THE FINISHED FLOOR LEVEL.
 - HANDLES SHALL BE LOCATED BETWEEN 900-1100mm ABOVE THE LEVEL OF THE FINISHED FLOOR. 'D' TYPE LEVER HANDLES MUST HAVE A MIN. CLEARANCE BEHIND THE HANDLE OF 35 - 45mm.
 - THE CLOSER MAXIMUM OPENING FORCE OF ALL ACCESSIBLE DOORS IS 30N.

MANUAL CONTROLS TO POWER OPERATED DOORS SHALL BE POSITIONED ABOVE A LEVEL SURFACE NO CLOSER THAN 1500mm FROM THE ARC OF A HINGED DOOR OR CLEAR OF A SLIDING DOOR IN THE OPEN POSITION AND THE DOOR SHALL REMAIN OPEN FOR A SUFFICIENT PERIOD TO ENABLE A PERSON WITH IMPAIRED MOBILITY TO PASS SAFELY THROUGH THE DOORWAY

FLOOR SURFACES:

- RAMPS, STAIR TREADS AND LANDINGS SHALL HAVE A SLIP-RESISTANT SURFACE IN ACCORDANCE WITH D.10, D.13 & D.14 REQUIREMENTS OF THE NCC.
- A CONTINUOUS ACCESSIBLE PATH OF TRAVEL AND ANY CIRCULATION SPACES SHALL HAVE A SLIP-RESISTANT SURFACE.
- THERE SHALL NOT BE ANY STEPS OR LIPS BETWEEN ABUTTING FLOOR SURFACES, UNLESS THEY MEET THE TOLERANCES SET OUT IN AS1428.1 CLAUSE 7.2.
CONSTRUCTION TOLERANCES SHALL BE AS FOLLOWS:
 - (a) 0-3mm VERTICAL CHANGE IN LEVEL
 - (b) 1-6mm, PROVIDED THE EDGES HAVE A BEVELLED OR ROUNDED EDGE TO REDUCE THE LIKELIHOOD OF TRIPPING

GLAZING IDENTIFICATION

MARKING ON GLAZING (IDENTIFYING THE GLASS) TO BE PERMANENT AS PER AS 1288-2008 CL 5.2.3.1 SAFETY GLAZING MARKING ON ORIGINAL PANELS MUST NOW BE LEGIBLY MARKED IN ACCORDANCE WITH AS/NZS 2208. MARKING MUST BE OF A TYPE THAT CANNOT BE REMOVED

COMPLIANCE TO ALL RELEVANT PARTS OF AS 1288-2008

- CL 5.2 - ALL PANELS THAT CAN BE MISTAKEN AS DOORS TO HAVE GRADE A SAFETY GLASS
- CL 5.1 - ANY GLAZING WITHIN 200 OF GROUND/FLOOR LEVEL THAT CAN BE SUBJECT TO IMPACT
- CL 5.19 - PERMANENT MARKING OF GLAZING THAT CAN BE MISTAKEN FOR A DOORWAY OPENING
- CL 5.2 & 5.3 - GLAZED DOORS & SIDE PANELS
- CL 5.6 - EXTERNAL & INTERNAL SHOPFRONTS, SCHOOLS & EARLY CHILDHOOD CENTERS
- CL 5.12 - LOUVRE BLADES
- CL 5.13 - WINDOW SEAT GLAZING
- CL 5.16 - STAIRWAY GLAZING (INCLUDING MIRRORS)
- SILICONE BUTT JOINTING USED FOR GLAZING

IF THE PRESENCE OF GLASS IN A DOOR, SIDE PANEL OR AN PANEL CAPABLE OF BEING MISTAKEN FOR A DOORWAY OR OPENING IS NOT MADE APPARENT BY TRANSOMS, COLONIAL BARS, OTHER COMPONENTS OF GLAZING SYSTEMS, OR OTHER DECORATIVE TREATMENT, SUCH AS BEING OPAQUE, OR PATTERNED, MARKINGS SHALL BE IN THE FORM OF A CONTRASTING BAND NOT LESS THAN 75mm IN HEIGHT & LOCATION SO THAT THE VERTICAL DISTANCE FROM THE FLOOR LEVEL IS:

- (a) NOT LESS THAN 900mm TO 1000mm FROM THE LOWER EDGE OF THE BAND
THE BAND SHALL BE READILY APPARENT. THIS MAY BE ACHIEVED EITHER BY ENSURING THAT THE BAND IS 30% LUMINANCE CONTRAST WHEN VIEWED AGAINST FLOOR SURFACE WITHIN 2M OF GLAZING, MARKING GLASS VISIBLE BY MARKING IS NOT A SUBSTITUTE FOR THE USE OF SAFETY GLAZING WHERE IT IS A REQUIREMENT OF THE GLAZING CODE (AS 1288-2008). A BAND OR MARKING IS NOT REQUIRED WHERE ANY ONE OF THE FOLLOWING APPLIES:
 - (i) THE HEIGHT OF THE GLAZING IS NO GREATER THAN 1000 AT ANY PART
 - (ii) THE WIDTH OF THE GLAZING IS NO GREATER THAN 500mm AT ANY PART (WITH FACED GLAZING THIS APPLIES TO THE OVERALL PANELS ASSEMBLY - NOT INDIVIDUAL GLASS PIECES)
 - (iii) THERE IS NO GLAZING WITHIN 700mm OF THE FLOOR LEVEL.
 - (iv) THE GLAZING IS PROVIDED WITH AT LEAST ONE FIXED GLAZING BAR, FIRMLY ATTACHED TO THE STYLES TO LOCATE & PROTECT EACH FACE OF THE GLASS. AT LEAST ONE GLAZING BAR SHALL BE LOCATED WITH ITS UPPER EDGE NOT LESS THAN 500mm, & ITS BOTTOM EDGE NOT MORE THAN 1000 ABOVE THE FLOOR LEVEL. THE GLAZING BAR SHALL HAVE A FACE WIDTH OF NOT LESS THAN 40mm +/- 3mm.

INSTALLATIONS IN EXITS & PATHS OF TRAVEL

ALL ELECTRICAL, SWITCHBOARDS, CENTRAL TELECOMMUNICATION BOARDS OR EQUIPMENT ELECTRICAL MOTORS, ETC LOCATED WITHIN 6m OF AN EXIT OR WITHIN THE PATH OF TRAVEL TO AN EXIT TO BE ENCLOSED BY NON-COMBUSTIBLE CONSTRUCTION WITH DOORWAYS OR OPENINGS SUITABLY SEALED AGAINST SMOKE SPREADING FROM THE ENCLOSURE.

PENETRATIONS IN FIRE RATED WALLS

SERVICED OPENINGS/PENETRATIONS THROUGH FIRE RATED WALLS (S) SHALL BE FILLED WITH FIRE RATED PILLOWS OR EQUAL TO THE SAME FIRE RATING AS THE PARENT MATERIAL

PLANNING PERMIT:

- ALL WORKS TO BE IN ACCORDANCE WITH PLANNING PERMIT ISSUED BY LOCAL PLANNING DEPARTMENT

SECTION J COMPLIANCE

CLAUSE J.1.2 BCA SECTION J REQUIREMENTS: THERMAL CONSTRUCTION: INSULATION INSTALLATION OF THE BUILDING SHALL COMPLY WITH THE REQUIREMENTS OF BCA 2019 CLAUSE J.1.2 CLAUSE J.3.4 BCA SECTION J REQUIREMENTS: DOORWAYS TO RESTRICT AIR FLOW IN CONDITIONED SPACES SHALL COMPLY WITH THE REQUIREMENTS OF BCA 2019 CLAUSE J.3.4
ALL WINDOWS SHALL COMPLY WITH AS2047 CLAUSE 3.3.6 BCA SECTION J REQUIREMENTS: THE CONSTRUCTION OF ROOFS, WALLS, FLOORS AND OPENABLE WINDOWS SHALL BE CONSTRUCTED TO MINIMIZE AIR LEAKAGE IN ACCORDANCE WITH BCA 2019 CLAUSE J.3.6
ROOFS, WALLS & FLOORS SHALL BE CONSTRUCTED TO MINIMIZE AIR LEAKAGE IN ACCORDANCE WITH THE NCC, CLAUSE J3.6 - THE CONSTRUCTION OF ROOFS, WALLS AND FLOORS.

SERVICES & CONTROLS:

- CONSULTANT DRAWINGS & REPORTS TAKE PRECEDENCE OVER DRAWINGS
- ARTIFICIAL LIGHTING TO COMPLY WITH AS 1680
- EMERGENCY ESCAPE LIGHTING AND EXIT SIGNS SHALL COMPLY WITH AS 2293
- EXIT SIGNS TO BE MOUNTED AT A HEIGHT OF NOT LESS THAN 2000mm OR MORE THAN 2700mm OR IMMEDIATELY ABOVE THE DOORWAY IF THE DOORWAY IS HIGHER THAN 2700mm
- FIRE HOSE REEL INSTALLATION TO COMPLY TO AS 2441
- ALL ELECTRICAL SWITCHBOARDS, CENTRAL TELECOMMUNICATION BOARDS OR EQUIPMENT ELECTRICAL MOTORS, ETC LOCATED WITHIN 6.0m OF AN EXIT OR WITHIN THE PATH OF TRAVEL
- TO AN EXIT TO BE ENCLOSED BY NON-COMBUSTIBLE CONSTRUCTION WITH DOORWAYS OR OPENINGS SUITABLY SEALED AGAINST SMOKE SPREADING FROM THE ENCLOSURE
- EXHAUST AIR OUTLETS NOT TO BE LOCATED CLOSER THAN 6.0m TO FRESH AIR INLETS
- ALL DOOR CONTROLS, INCLUDING SECURITY CARD READERS, BREAK GLASS ALARMS, SWITCHES & GPO'S SHALL BE MOUNTED BETWEEN 900-1100mm ABOVE THE PLANE OF THE FINISHED FLOOR SURFACE AND BE A MINIMUM OF 500mm FROM INTERNAL CORNERS. GPO'S CAN VARY IF REQUIRED IN SPECIFIC CIRCUMSTANCES.
- ROCKER ACTION, TOGGLE AND PUSH-PAD SWITCHES WITH A MINIMUM WIDTH OF 35mm REQ.
- TAPS MUST HAVE EXTENDED LEVERS, OR SENSOR PLATE CONTROLS OR THE LIKE.
- LEVER HANDLES MUST BE SET AWAY FROM ADJACENT SURFACES BY A MINIMUM OF 50mm TO ELIMINATE ANY RESTRICTION TO HAND MOVEMENT.
- HOT WATER IF PROVIDED, MUST BE THROUGH A MIXING STOP.
- HOT TAPS MUST BE PLACED TO THE LEFT OR ABOVE THE COLD WATER

STAIRS AND RAMPS:

ALL STAIRS AND RAMPS TO COMPLY TO AS1428.1.2022
PROVIDE SLIP RESISTANT NOSINGS TO ALL STAIRS
BALUSTRADES AT LANDINGS MUST BE 1000mm HIGH ABOVE FFL & ELSEWHERE HIRALS MUST BE MIN 965 ABOVE NOSING FINISH LEVEL
ALL TREADS MIN 250mm CLEAR OF NOSING

STANDARD MINIMUM DOOR LEAF WIDTH

NON EXIT DOORS (ACCESSIBILITY REQ)
NON EXIT DOORS (ACCESSIBILITY NOT REQ)
SLIDING ACCESSIBLE DOOR
TOILET PARTITION CUBICLES

TACTILE GROUND INDICATORS

TG1'S AS PER AS1428.1.2022
TG1'S SHOULD BE APPLIED TO ALL KERBS RAMPS AS REQUIRED
THE INDICATORS MUST BE THE FULL WIDTH OF THE ACCESSWAY, PERPENDICULAR TO THE ANGLE OF APPROACH, SET BACK 30-40-110 FROM EDGE OF HAZARD
TG1'S LUMINANCE CONTRAST CRITERIA MUST BE MAINTAINED THROUGH THE LIFE OF THE INDICATOR.
REQUIRE TO COMPLY WITH SLIP RESISTANCE CLASSIFICATION OF AS686

T1	26.09.22	ISSUE FOR TENDER	AS
Rev	1	Issued	15
DRAWING REVISIONS / ISSUES			
DRAWING STATUS		DESCRIPTION	
TENDER		TRUE NORTH	
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PROJECT			
BRISBANE BMW-TEMP SERVICE RECEPTION			
39 MAYNE ROAD, BOWEN HILLS FOR GME DABBY MOTOR GROUP			
DRAWING TITLE		DRAWN BY	
COVER SHEET		SCALE	
JOB NO 22016		@ A1	
PROJECT NO A000		REV T1	

	EXISTING SURROUNDING BUILDINGS
	EXISTING TREES TO REMAIN
	EXISTING SMALL SHRUB / TREE TO BE REMOVED
	PROPERTY BOUNDARY LINE
EP	EXISTING ELECTRICAL POLE TO REMAIN
EL	EXISTING ELECTRICAL PILLAR TO REMAIN
PT	EXISTING SPEED CAMERA POLE TO REMAIN
RS	EXISTING ROAD SIGN TO REMAIN
PT	EXISTING PARKING TICKET BOX TO REMAIN
BOL	EXISTING BOLLARD TO REMAIN
BBQ	EXISTING BRICK BBQ TO REMAIN
WS	EXISTING WHEELSTOP BARRIER TO REMAIN
	ITEMS TO BE DEMOLISHED

KEY	DATE	DESCRIPTION	BY
T1	26.09.22	ISSUE FOR TENDER	AS

DRAWING REVISIONS / ISSUE

DRAINING STATUS	ORIENTATION
TENDER	

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PROJECT
BRISBANE BMW-TEMP SERVICE
RECEPTION
39 MAYNE ROAD, BOWEN HILLS
For SIMS DARRY MOTOR GROUP

DRAWING TITLE DEMOLITION SITE PLAN	DATE 09.06.2022	DRAWING SR
	JOB NO 22206	SCALE As indicated
	DRAWING NO A100	REV T1

A1

- FOR SERVICES SCOPE, REFER TO CONSULTANT'S DRAWINGS
- PRESSURE WASH NORTH AND WEST FACE OF BUILDING AND PREPARE FOR NEW PAINT FINISH
- REMOVE SHRUBS, WEEDS & TREES AS SHOWN INCLUDING TREE ROOTS. MAKE GOOD GROUND AND LEVEL.
- CLEAR ENTIRE SITE. REMOVE ALL RUBBISH CONTAINERS FROM SITE AND DISPOSE OFF HAND BACK TO LANDLORD
- REMOVE ALL LINE MARKING ON ASPHALT GROUND AND ALL REDUNDANT BOLLARDS.
- REMOVE ALL WEEDS AND GENERALLY TIDY UP ALL GARDEN BEDS
- REPAIR EXISTING BOUNDARY FENCE.

NOTE 1. PRESSURE WASH EXISTING SEATING, BENCH AND CONCRETE BASE.
NOTE 2. PREPARE BARRIER HOOPS AND KERBS FOR RE-PAINTING.
NOTE 3. TRIM BACK EXISTING SHRUBS IN GARDEN BED.
NOTE 4. AVOID WASH EXISTING TILES AT ENTRY AND PREPARE FOR RE-PAINTING.
NOTE 5. LEVEL GROUND IN PREPARATION FOR TEMPORARY CONTAINER SHELTERS AS SHOWN.
NOTE 6. FALL NORTH WEST END OF EXISTING YARD GRAVEL SURFACE TOWARDS STREET FRONTAGE AS MUCH AS POSSIBLE. NORTH EAST END TO FALL AS REQUIRED ON SITE. CONTRACTOR TO ENSURE YARD TO FALL TO AVOID WATER POOLING.

NOTE.7 - PRESSURE CLEAN EXISTING DRIVEWAY.
NOTE.8 - REPLACE EXISTING CHAIN LINK.

MAYNE RD

HUDD ST

JAMIESON ST

EXISTING
RAILWAY

ONE WAY LANE WAY

EDGAR ST

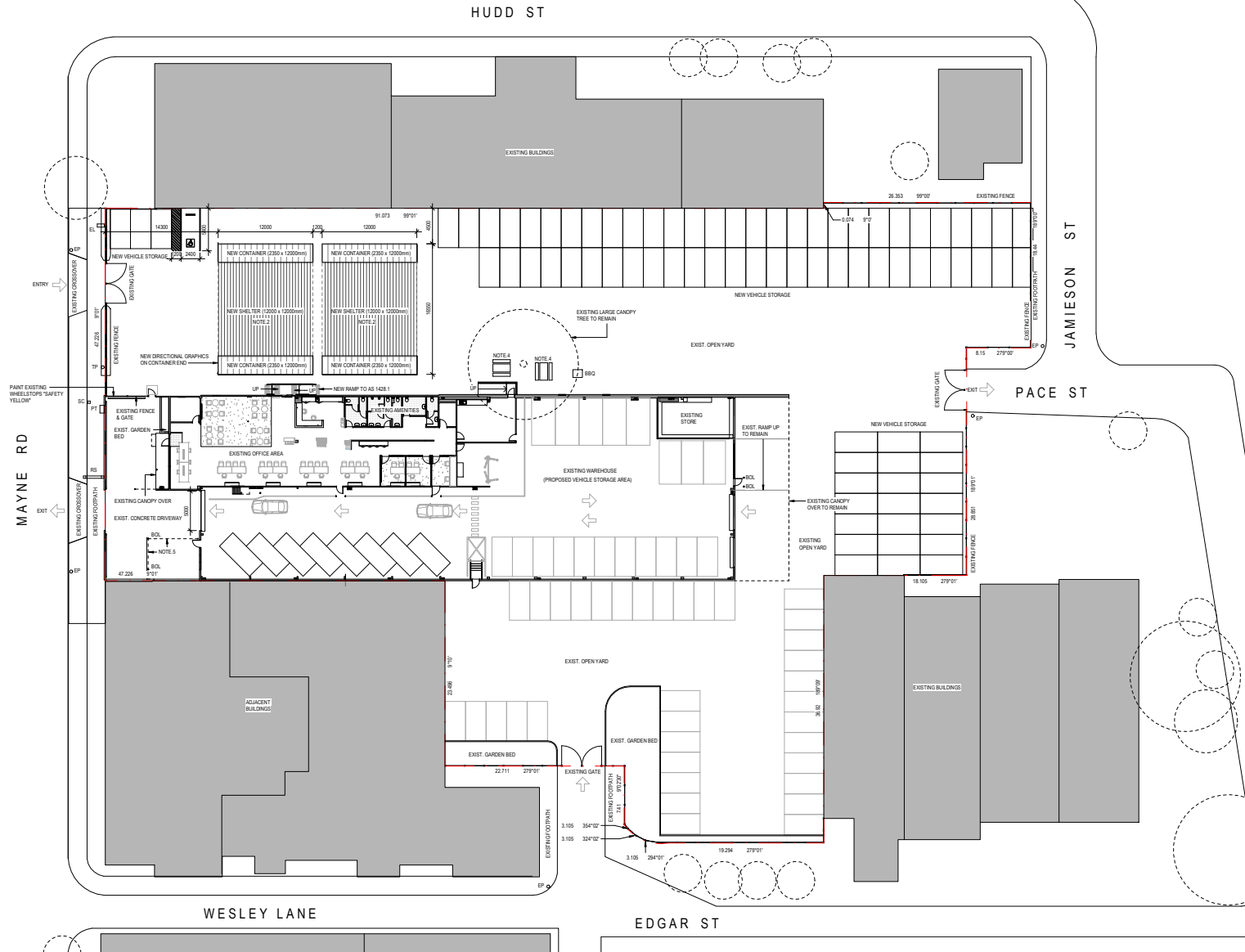
1 DEMOLITION SITE PLAN
1 : 250

GENERAL NOTES

- FOR SERVICES SCOPE, REFER TO CONSULTANT'S DRAWINGS.
- REPAIR AND PAINT EXISTING BOUNDARY FENCES AND GATES BLACK.
- PAINT EXISTING BARRIER HOOPS WHITE TO MATCH EXISTING.
- PAINT NORTH & WEST FACADE OF EXISTING BUILDING WHITE.
- INVESTIGATE ANY WATER LEAKAGE FROM EXISTING BUILDING ROOF AND RECTIFY CLEAR GUTTERS, DRAINS & DOWNPIPS TO ENSURE NO BLOCKAGE TO RELEVANT CODE IF REQUIRED.
- NEW VEHICLE PARKING SPACE LINE MARKING DELINEATIONS TO COMPLY TO AS 8085.1

NOTES

- NOTE 1: REMOVED FROM THIS DRAWING
- NOTE 2: NEW TEMP CONTAINER SHELTER BY "CONTAINER DOMES AND SHELTERS".
- NOTE 3: REMOVED FROM THIS DRAWING
- NOTE 4: EXISTING BENCH, SEAT AND CONCRETE PLATFORM TO BE PAINTED WHITE.
- NOTE 5: INSTALL NEW CHAIN LINK TO EXISTING POLES.



LEGEND

- EXISTING SURROUNDING BUILDINGS
- EXISTING TREES
- PROPERTY BOUNDARY LINE
- EP EXISTING ELECTRICAL POLE
- EL EXISTING ELECTRICAL PILLAR
- PT EXISTING SPEED CAMERA POLE
- RS EXISTING ROAD SIGN
- PT EXISTING PARKING TICKET BOX
- BOL EXISTING BOLLARD
- BRQ EXISTING BRICK BRQ

T1 26.09.22 ISSUE FOR TENDER AS
REV 1 REV 1
DRAWING REVISIONS (SEE)

TENDER

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TRUE NORTH

PROJECT
BRISBANE BMW-TEMP SERVICE RECEPTION
39 MAYNE ROAD, BOWEN HILLS
For SIME DABBY MOTOR GROUP

DRAWING TITLE
PROPOSED SITE PLAN

DATE
09.06.2022

DESIGN NO
22206

SCALE
As Indicated @ A1

DESIGNER
A101

DRAWN
T1

Appendix B

Pre-Developed Catchment Plan

LEGEND

SITE BOUNDARY

CATCHMENT BOUNDARY

MAJOR CONTOURS

MINOR CONTOURS

EXISTING BUILDING

EXISTING ROAD LINES

EXISTING FOOTPATH

EXISTING ROAD LINEMARKING

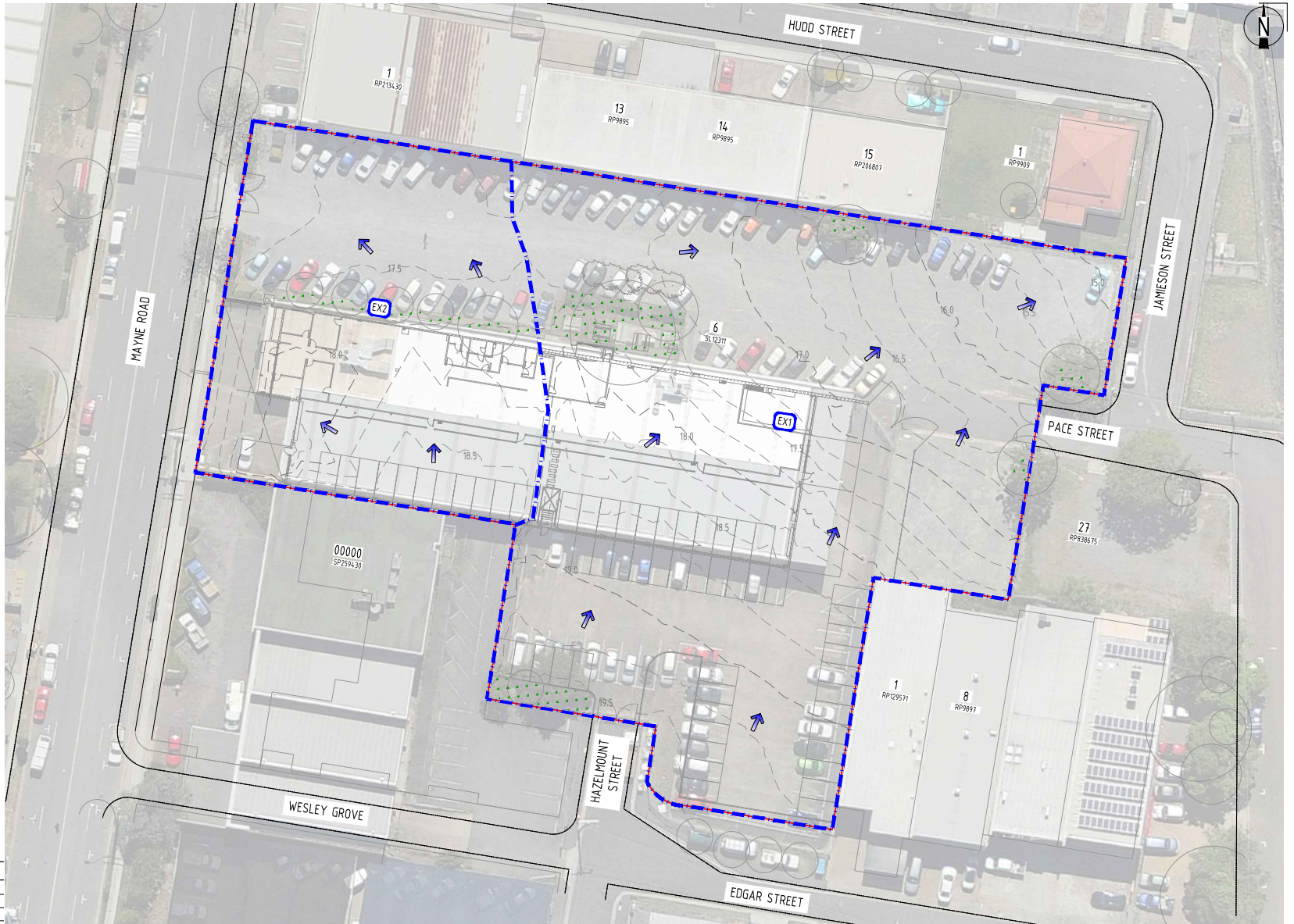
CATCHMENT LABEL

CATCHMENT FLOW DIRECTION

PERVIOUS AREA
(BALANCE OF SITE IMPERVIOUS)

NOTE
EXISTING CONTOUR INFORMATION IS BASED OFF 2019 SMALL
INTERVAL CONTOURS DERIVED FROM BCC @BIMAP2 INTERACTIVE
MAPPING.

CATCHMENT TABLE (PRE DEVELOPMENT)		
CATCHMENT NAME	AREA (ha)	FRACTION IMPERVIOUS
EX1	0.474HA	0.98%
EX2	0.191HA	0.97%



PRELIMINARY
NOT FOR CONSTRUCTION

01	02.02.23	PRELIMINARY - ISSUED FOR INFORMATION	JB	DS
Rev	Date	Description	By	CHK



ADG

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Quality Assurance ISO 9001:2015

Work Health Safety ISO 45001:2018

Environmental Management ISO 14001:2015

Client	CUSHMAN & WAKEFIELD PTY LTD
Project Name	TEMPORARY BMW RECEPTION AND SERVICE CENTRE
Address	39 MAYNE RD, FORTITUDE VALLEY 4006

Discipline	CIVIL	Status	PRELIMINARY
Designed By	JB	Checked By	ET
Project No.	26807	Drawn By	JB
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Title		DA01	01
PRELIMINARY PRE-DEVELOPED CATCHMENT PLAN			

FULL SIZE ON ORIGINAL 0 10 20 30 40 50 60 70 80 90 100mm

Appendix C

Preliminary Post-Developed Catchment Plan

LEGEND

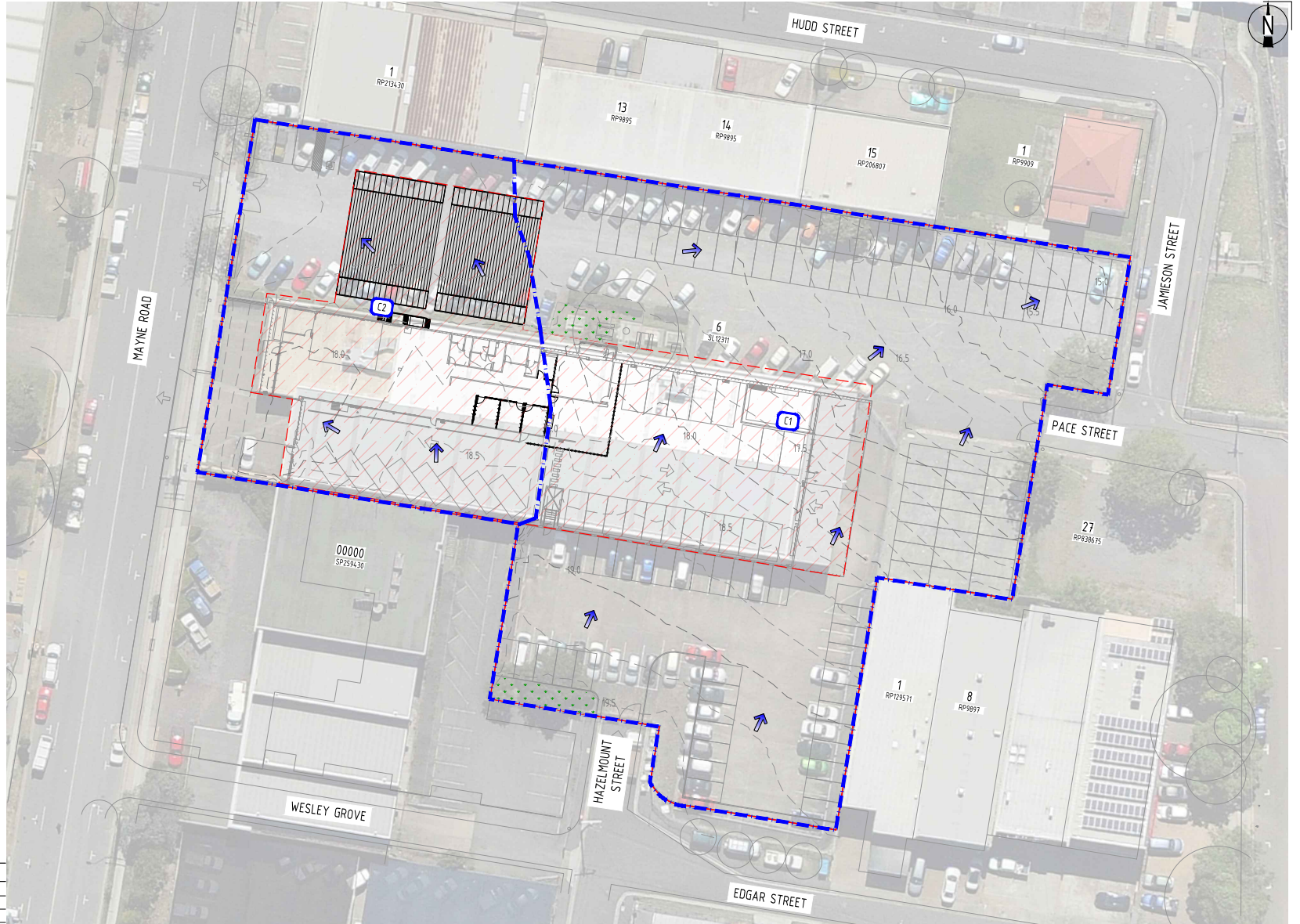
- SITE BOUNDARY
- CATCHMENT BOUNDARY
- MAJOR CONTOURS
- MINOR CONTOURS
- BUILDING EXISTING
- EXISTING ROAD LINES
- EXISTING FOOTPATH
- EXISTING ROAD LINEMARKING
- PROPOSED TEMPORARY SHELTER
- PROPOSED INTERNAL WALLS
- AREA OF WORKS
- C1 CATCHMENT LABEL
- CATCHMENT FLOW DIRECTION
- PERVIOUS AREA
(BALANCE OF SITE IMPERVIOUS)

NOTE

EXISTING CONTOUR INFORMATION IS BASED OFF 2019 SMALL INTERVAL CONTOURS DERIVED FROM BCC @BIMAP2 INTERACTIVE MAPPING.

CATCHMENT TABLE (POST DEVELOPMENT)

CATCHMENT NAME	AREA (ha)	FRACTION IMPERVIOUS
C1	0.476HA	0.984
C2	0.193HA	0.985



PRELIMINARY
NOT FOR CONSTRUCTION

Rev	Date	Description	By	Che
01	22.02.23	PRELIMINARY - ISSUED FOR INFORMATION	JB	DS

0 2 4 6 8 10m
SCALE 1:200
AT ORIGINAL SIZE (A1)

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Quality Assurance ISO 9001:2015 Work Health Safety ISO 45001:2018
Environmental Management ISO 14001:2015



Client
CUSHMAN & WAKEFIELD PTY LTD
Project Name
TEMPORARY BMW RECEPTION
AND SERVICE CENTRE
39 MAYNE RD, FORTITUDE VALLEY 4006

Discipline
CIVIL
Designed By
JB
Project No.
26807
Checked By
ET
Drawn By
JB
Scale at A1
1:250
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Status
PRELIMINARY
Approved By
DS
Issue at
1:250

Title
PRELIMINARY POST-DEVELOPED
CATCHMENT PLAN
Drawing No.
DA02
Revision
01

FULL SIZE ON ORIGINAL 0 10 20 30 40 50 60 70 80 90 100mm

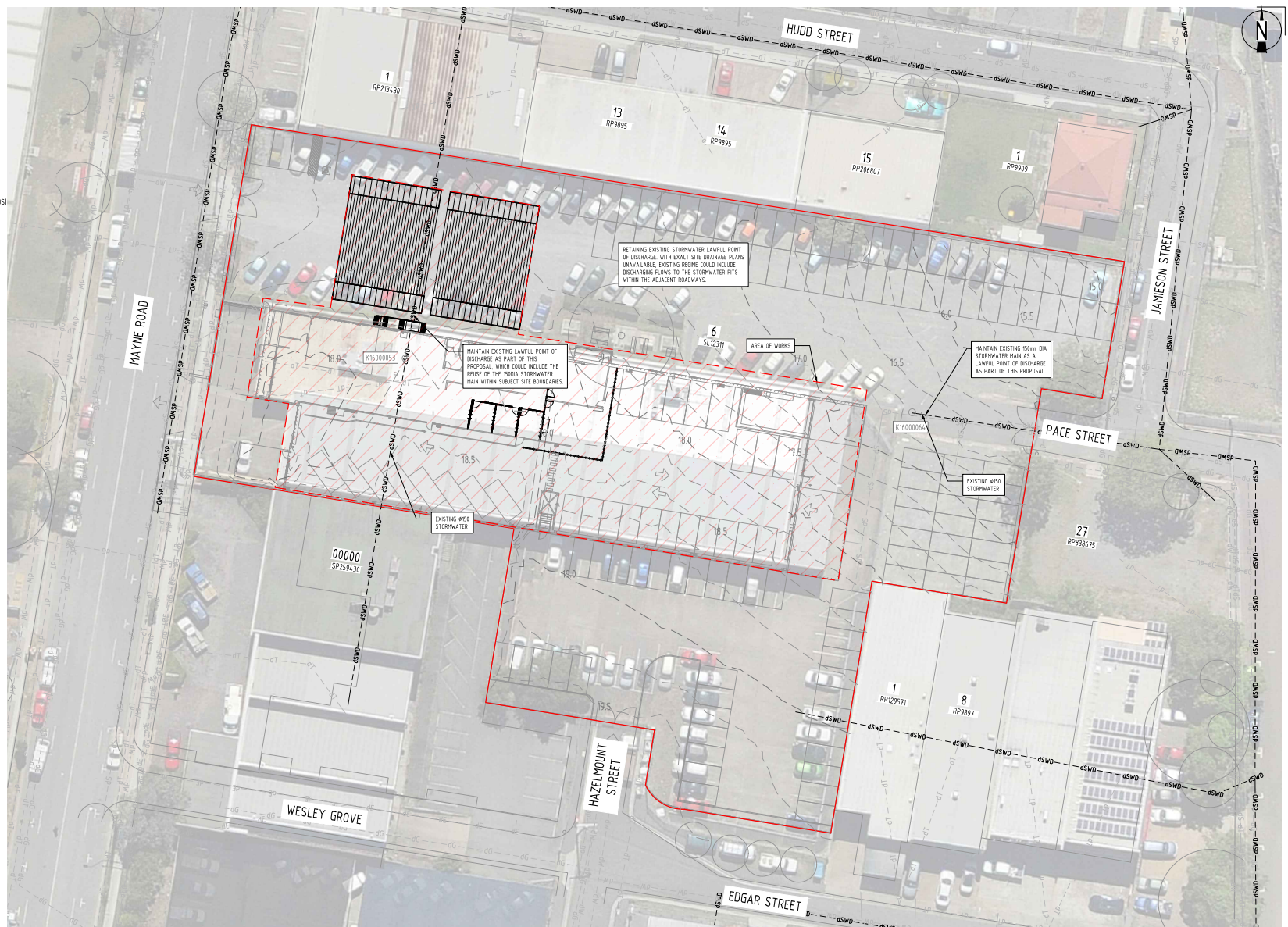
Appendix D

Preliminary Stormwater Drainage Layout

	SITE BOUNDARY
	MAJOR CONTOURS
	MINOR CONTOURS
	EXISTING BUILDING
	EXISTING ROAD LINES
	EXISTING FOOTPATH
	EXISTING ROAD LINEMARKING
	EXISTING STORMWATER DRAINAGE (RECORDS)
	EXISTING SEWER (RECORDS)
	EXISTING WATER (RECORDS)
	EXISTING UNDERGROUND ELECTRICITY (RECORDS)
	EXISTING OVERHEAD ELECTRICITY
	EXISTING GAS (RECORDS)
	EXISTING MEN (RECORDS)
	EXISTING TELECOMMUNICATIONS (RECORDS)
	PROPOSED TEMPORARY SHELTER
	PROPOSED INTERNAL WALLS
	AREA OF WORKS

EXISTING CONTOUR INFORMATION IS BASED OFF 2019 SMALL
INTERVAL CONTOURS DERIVED FROM BCC eBIMAP2 INTERACTIVE
MAPPING.

VERGE ALONG THE DEVELOPMENT FRONTAGE IS HEAVILY CONGESTED WITH EXISTING SERVICES. IT IS PROPOSED TO MAINTAIN THE EXISTING STORMWATER LOT CONNECTIONS, TO BE COORDINATED AT DETAILED DESIGN PHASE ON RECEIPT OF FURTHER SERVICE INVESTIGATIONS SUCH AS POTHOLING/GPR SCANNING.



PRELIMINARY
NOT FOR CONSTRUCTION

[illegible]

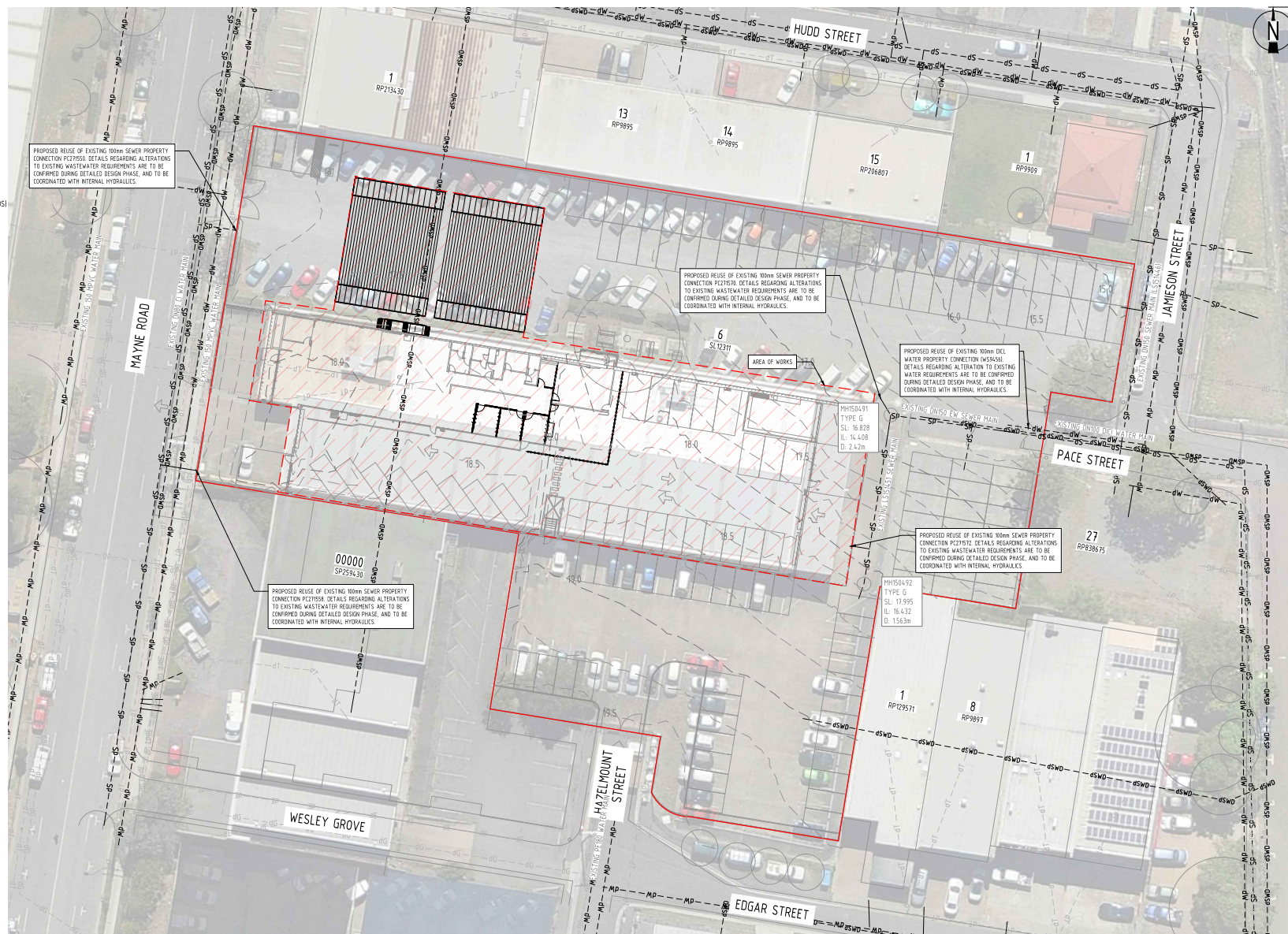
Appendix E

Preliminary Civil Services Layout Plan

	SITE BOUNDARY
	MAJOR CONTOURS
	MINOR CONTOURS
	EXISTING BUILDING
	EXISTING ROAD LINES
	EXISTING FOOTPATH
	EXISTING ROAD LINEMARKING
	EXISTING STORMWATER DRAINAGE (RECORDS)
	EXISTING SEWER (RECORDS)
	EXISTING WATER (RECORDS)
	EXISTING UNDERGROUND ELECTRICITY (RECORDS)
	EXISTING OVERHEAD ELECTRICITY
	EXISTING GAS (RECORDS)
	EXISTING MGN (RECORDS)
	EXISTING TELECOMMUNICATIONS (RECORDS)
	PROPOSED TEMPORARY SHELTER
	PROPOSED INTERNAL WALLS
	AREA OF WORKS

EXISTING CONTOUR INFORMATION IS BASED OFF 2019 SMALL
INTERVAL CONTOURS DERIVED FROM BCC eBIMAP2 INTERACTIVE
MAPPING.

1. FFL'S ARE INDICATIVE, REFER TO ARCHITECTURAL LAYOUT FOR FURTHER DETAILS
2. VERGE ALONG THE DEVELOPMENT FRONTAGE IS HEAVILY CONGESTED WITH EXISTING SERVICES. IT IS PROPOSED TO MAINTAIN THE EXISTING SEWER AND WATER CONNECTIONS. TO BE COORDINATED AT DETAILED DESIGN PHASE ON RECEIPT OF FURTHER SERVICE INVESTIGATION SUCH AS POTHOLING/GPR SCANNING.



PRELIMINARY
NOT FOR CONSTRUCTION

[illegible]

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Quality Assurance ISO 9001:2015 | Work Health Safety ISO 45001:2018
Environmental Management ISO 14001:2015

Client	CUSHMAN & WAKEFIELD PTY LTD
Project Name	TEMPORARY BMW RECEPTION AND SERVICE CENTRE 39 MAYNE RD, FORTITUDE VALLEY 4006

Discipline CIVIL		Status PRELIMINARY
Designed By JB	Checked By ET	Approved By DS
Project No. 26807	Drawn By JB	Scale at A1 1:250

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Title	PRELIMINARY CIVIL SERVICES LAYOUT PLAN
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Revision	01
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Appendix F

BCC Code Response

8.2.11 Flood overlay code

8.2.11.1 Application

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

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

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

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

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

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

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

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

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

8.2.11.2 Purpose

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

8.2.11.3 Performance outcomes and acceptable outcomes

Table 8.2.11.3.A—Performance outcomes and acceptable outcomes

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

outcomes only) or assessable development for a dwelling house including any secondary dwelling Note—Development for a dwelling house does not require assessment against any other sections of this code.	
PO1 Development involving any habitable or non-habitable part of a dwelling house, including any secondary dwelling, is located and designed to: a. minimise the risk to people from flood hazard; b. achieve acceptable flood immunity; c. minimise property impacts from a flood event up to and including the defined flood event; d. minimise disruption to residents, recovery time and rebuilding or restoration costs after a flood event up to and including the defined flood event.	AO1.1 Development for a dwelling house including any secondary dwelling: a. is not located in the Brisbane River flood planning area 1, 2a or 2b sub-categories or the Creek/waterway flood planning area 1 or 2 sub-categories; or b. is only located in these sub-categories, if a Registered Professional Engineer Queensland certifies that the dwelling house and any secondary dwelling are structurally designed to be able to resist hydrostatic and hydrodynamic loads associated with flooding up to and including the defined flood event. AO1.2 Development for a dwelling house and any secondary dwelling complies with the minimum flood planning levels in Table 8.2.11.3.B. Note—If located in an area that has no flood level information available from the Council such as an overland flow path, a Registered Professional Engineer of Queensland with expertise in undertaking flood studies is to certify that the flood level and development levels for the dwelling house and any secondary dwelling achieve the required flood planning levels in Table 8.2.11.3.B. AO1.3 Development involving a building undercroft complies with the minimum clearance requirements in Table 8.2.11.3.E. Editor's note—For creek/waterway, storm-tide and river flooding, applicable flood planning information is available from Council's FloodWise Property Report. Note—The Flood planning scheme policy provides guidance on undercroft design.

N.A

PO2 Development within the Creek/waterway flood planning area sub-categories or Overland flow flood planning area sub-category: a. maintains the conveyance of flood waters to allow flow and debris to pass predominantly unimpeded through the site; b. does not concentrate, intensify or divert floodwater onto upstream, downstream or adjacent properties; c. will not result in a material increase in flood levels or flood hazard on upstream, downstream or adjacent properties.	AO2 Development: a. is not located within the Creek/waterway flood planning area 1, 2 or 3 sub-categories or the Overland flow flood planning area sub-category; or b. provides an open undercroft area from natural ground level to habitable floor level for any area inundated by the defined flood event; or Note—This undercroft area is not suitable for providing non-habitable rooms, secure storage of valuables, or future enclosing for storage or car parking. The clear area may include structural elements such as columns and floor substructure. The Flood planning scheme policy provides guidance on undercroft design. Editor's note—An open undercroft design may be achieved through a 'valance' treatment around the perimeter of an otherwise internally clear undercroft. Editor's note—For Creek/waterway, storm-tide and river flooding, applicable flood planning information is available from Council's FloodWise Property Report. c. a report from a Registered Professional Engineer Queensland certifies that the development in the Creek/waterway flood planning area or Overland flow flood planning area sub-categories will not result in a material increase in flood level or flood hazard on upstream, downstream or adjacent properties. Note—Flood studies demonstrate that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy.	N.A
Section B—If accepted development subject to compliance with identified requirements (acceptable outcomes only) or assessable development other than for a dwelling house or reconfiguring a lot Note—If development that is accepted development subject to compliance with identified requirements complies with the acceptable outcomes of this part, no further assessment against this code is required.		
PO3 Development: a. is compatible with flood hazard in a defined flood event;	AO3 Development for a material change of use is identified in Table 8.2.11.3.C as compatible with the flood hazard in the relevant flood planning area.	Complies, refer to ADG SMP for further information. No flood flags present on subject site.

b. minimises the risk to people from flood hazard; c. does not reduce the ability of evacuation resources including emergency services to access and evacuate the site in a flood emergency, with consideration to the scale of the development; d. minimises impacts on property from flooding; e. minimises disruption to residents, business or site operations and recovery time due to flooding; f. minimises the need to rebuild structures after a flood event greater than the defined flood event. Note—Where Table 8.2.11.3.C identifies that a flood risk assessment is required, compliance with this performance outcome can be achieved by submitting a flood risk assessment, which may be included within a flood study, addressing the criteria within this performance solution. Preparing flood risk assessments and flood studies is required to be in accordance with the Flood planning scheme policy. Note—An emergency management plan prepared in accordance with the Flood planning scheme policy, which sets out procedures for evacuation due to flooding may be used to demonstrate compliance with this performance outcome.		
PO4 Development for a park ensures that the design of a park and location of structures and facilities responds to the flood hazard and balances the safety of intended users with: a. maintaining continuity of operations; b. impacts of flooding on asset life and ongoing maintenance costs; c. efficient recovery after flood events; d. recreational benefits to the city; e. availability of suitable land within the park.	AO4.1 Development involving a building or structure in a park complies with the flood planning levels specified in Table 8.2.11.3.D. AO4.2 Development involving a building or structure in a park where Table 8.2.11.3.D does not apply: a. is not located within the 20% AEP flood extent of any creek/waterway or overland flow path; or b. is located above the 20% AEP flood level of any creek/waterway or overland flow path.	N.A
Section C—If for assessable development other than for a dwelling house		
PO5 Development is located and designed to: a. minimise the risk to people from flood hazard on the	AO5.1 Development complies with the flood planning levels specified in Table 8.2.11.3.D.	Complies, refer to ADG SMP for further information. No flood flags present on subject site.

site; b. minimise flood damage to the development and contents of buildings up to the defined flood event; c. provide suitable amenity; d. minimise disruption to residents, recovery time and the need to rebuild structures after a flood event up to and including the defined flood event.	Note—If located in an area with no Council-derived flood levels such as an overland flow path, a Registered Professional Engineer Queensland with expertise in undertaking flood studies is to derive the applicable flood level and certify that the development meets the required flood planning levels in Table 8.2.11.3.D. The study is to demonstrate that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy. AO5.2 Development is: a. not located in the: i. Brisbane River flood planning area 1, 2a, or 2b sub-categories; ii. Creek/waterway flood planning area 1 or 2 sub-categories; iii. Overland flow flood planning area sub-category; or b. only located in these sub-categories if a Registered Professional Engineer Queensland with expertise in undertaking flood studies certifies that: i. the development design, siting and any mitigation measures will ensure the development is structurally adequate to resist hydrostatic, hydrodynamic and debris impact loads associated with flooding up to the defined flood event; and ii. the risk to people is managed to an acceptable level.	
PO6 Development involving essential electrical services or a basement storage area is suitably located and designed to ensure public safety and minimise flood recovery and economic consequences of damage during a flood.	AO6.1 Development ensures that: a. all areas containing essential electrical services comply with the flood planning levels in Table 8.2.11.3.D; or b. if a basement contains essential electrical services or a private basement storage area, the basement is a waterproof structure with walls and floors	Complies, refer to ADG SMP for further information. No flood flags present on subject site.

	impermeable to the passage of water with all entry points and services located at or above the relevant flood planning level in Table 8.2.11.3.D. Note—A basement storage area does not include a bike storage room, change room, building maintenance storage and non-critical electrical services. A06.2 Development involving a basement that relies on a pumping solution to manage floodwater ingress or for dewatering after a flood provides a secondary pump system with a backup power source for the pump.	
PO7 Development does not directly or indirectly create a material adverse impact on flood behaviour or drainage on properties that are upstream, downstream or adjacent to the development.	A07.1 Development: a. does not block, or divert floodwaters for any area affected by creek/waterway or overland flow flooding, excluding storm-tide flooding and Brisbane River flooding sources; or b. does not result in a material increase in flood level or hydraulic hazard on upstream, downstream or adjacent properties. Note—Compliance with this acceptable solution can be demonstrated by the submission of a flood study by a Registered Professional Engineer of Queensland with expertise in undertaking flood studies demonstrating that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy. A07.2 Development retains existing overland flow paths and does not rely wholly on piped solutions to manage major flows. A07.3 Development which creates a new overland flow path or significantly modifies an existing overland flow path via earthworks does not materially worsen hydraulic hazard on the site from existing conditions.	Complies, refer to ADG SMP for further information. No major alteration to existing site layout.

	Note—Compliance with this acceptable solution can be demonstrated by the submission of a flood study by a Registered Professional Engineer of Queensland with expertise in undertaking flood studies demonstrating that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy.	
PO8 Development for filling or excavation in an area affected by creek/waterway flooding does not directly, indirectly or cumulatively cause any material increase in flooding or hydraulic hazard or involve significant redistribution of flood storage from high to lower areas in the floodplain. Note—This can be demonstrated by undertaking earthworks in compliance with the Compensatory earthworks planning scheme policy. Note—This part of the code applies to all development other than a dwelling house and any secondary dwelling which involves filling or excavation, whether or not the development application comprises a separate development application for operational work involving filling or excavation.	AO8 Development ensures that no filling or excavation greater than 100mm is located in the Creek/waterway flood planning area 1, 2 or 3 sub-categories if contained in the 5% AEP flood extent of any Creek/waterway flood planning area sub-category for which no waterway corridor has been mapped in the Waterway corridors overlay.	Complies, refer to ADG SMP for further information. No flood flags present on subject site.
PO9 Development ensures that the building and site design: - maintains the conveyance capacity of existing overland flow paths and creek/waterways; - ensures floodwaters and flood debris can pass predominantly unimpeded under a structure or building to minimise property or building damage, including for a flood larger than the defined flood event; - mitigates flood impacts by ensuring that filling, excavation and location of services are designed to allow for the conveyance of floodwater across the site. Note—The Flood planning scheme policy provides guidance on relevant considerations in determining minimum undercroft clearances and treatment of ground level in undercroft areas where floodwater conveyance is required underneath development.	AO9.1 Development involving a building undercroft in the Creek/waterway flood planning area sub-categories or the Overland flow flood planning area sub-category: - complies with the minimum building undercroft clearance requirements in Table 8.2.11.3.E; - not located directly above any part of a waterway corridor as mapped in the Waterway corridors overlay. AO9.2 Development involving a building undercroft in the Creek/waterway flood planning area sub-categories or the Overland flow flood planning area sub category: - has a ground level within the undercroft area that is free draining; - does not involve excavation below ground level of more than 300mm within the undercroft area.	Complies, refer to ADG SMP for further information. No flood flags present on subject site.

PO10 Development for vulnerable uses, difficult to evacuate uses or assembly uses optimises vehicular access and efficient evacuation from the development to parts of the road network unaffected by flood hazard, in order to: a. protect safety of users and emergency services personnel; b. support efficient emergency services access and site evacuation with consideration to the scale of development. Note—A flood risk assessment may be required to address the performance outcomes or acceptable solutions which deal with evacuation and isolation arrangements, and the ability to take refuge. The Flood planning scheme policy provides information for undertaking flood risk assessments.	AO10 Development for vulnerable uses, difficult to evacuate uses or assembly uses: a. is not isolated in any event up to the relevant flood planning level specified in Table 8.2.11.3.L; or b. has direct vehicle access to a critical route or interim critical route in the Critical infrastructure and movement network overlay for evacuation in a flood; or c. can achieve vehicular evacuation to a suitable flood-free location. Note—A suitable flood-free location is of a size and nature sufficient to provide for the size and characteristics of the population likely to need evacuation to that area.	N.A
PO11 Development has access which, having regard to hydraulic hazard, provides for safe vehicular and pedestrian movement and emergency services access to adjoining roads.	AO11.1 Development provides an access or driveway into the site which is: a. trafficable during the defined flood event; b. not located in the Creek/waterway flood planning area 1 sub-category; c. not located in the Overland flow flood planning area sub-category if the hydraulic hazard is unsafe in the defined flood event; d. the access or driveway is not inundated by a 10% AEP flood. AO11.2 Development located in the Creek/waterway flood planning area 1, 2, 3 or 4 sub-categories locates any disabled access in the highest part of the site. Note—explanation of hydraulic hazard provided in the Flood planning scheme policy.	To be confirmed in detailed design phase.
PO12 Development involving a new road, a bridge or culvert is designed to minimise impacts to flood behaviour,	AO12 Development involving a new road complies with the flood planning levels in Table 8.2.11.3.F.	N.A

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

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

planning scheme policy can assist in demonstrating achievement of this performance outcome. Note—A pump drainage system is not an acceptable measure to meet the performance outcome.	Note—The Management of hazardous chemicals in flood affected areas planning scheme policy sets out further information and processes including risk assessment for the management of hazardous chemicals in flood planning areas.	
Additional performance outcomes and acceptable outcomes for reconfiguring a lot		
PO17 Development locates and designs all lots resulting from reconfiguring a lot to: a. minimise the risk to people from flood hazard; b. minimise damage to property from flood hazard; c. facilitate safe and efficient evacuation. Note— • Consideration of all floods up to the probable maximum flood is relevant to minimising the risk to people. • Flood warning time is not considered sufficient in the Creek/waterway planning area sub-categories or the Overland flow flood planning area sub-category. • Filling above the flood planning level for a flood event greater than the defined flood event cannot be assumed to mitigate the flood hazard.	AO17.1 Development creating new lots is identified in Table 8.2.11.3.I as suitable within the relevant flood planning area. AO17.2 Development provides for reconfiguring a lot design that achieves a road and lot layout which: a. provides trafficable vehicular egress for evacuation during a defined flood event; b. optimises hazard-free movement away from sources of flood hazard within the development. Note—Further advice on road and lot layout is contained in the Flood planning scheme policy. AO17.3 Development which creates a new residential lot in an area subject to Brisbane River flooding, if the residential flood level is greater than 12.8m AHD is not subject to a hydraulic hazard greater than 0.6m²/s DV or 0.6m deep in a 0.2% AEP flood. Note—Refer to the Flood planning scheme policy for further explanation on the 0.2% AEP flood.	N.A
PO18 Development involving reconfiguring a lot: a. minimises the risk to people from flood hazard; b. creates safe evacuation routes or avoids isolation of the development during a flood greater than the defined flood event; c. minimises damage to property and services;	AO18.1 Development involving reconfiguring a lot ensures: a. all lots comply with the flood planning levels in Table 8.2.11.3.J; b. a new road complies with the flood planning levels in Table 8.2.11.3.F. AO18.2	N.A

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

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

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

Note—

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

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

Table 8.2.11.3.C—Land use compatibility with flood hazard

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

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

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

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

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

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

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

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

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

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

Table 8.2.11.3.D—Flood planning categories for development types

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

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

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

Notes—

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

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

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

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

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

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

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

Table 8.2.11.3.E— Building undercroft clearances

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

Notes—

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

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

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

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

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

Notes—

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

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

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

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

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

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

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

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

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

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

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

(30) Water treatment
(31) Sewage treatment

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

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

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

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

Notes—

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

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

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

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

Notes—

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

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

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

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

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

Notes—

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

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

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

Table 8.2.11.3.L—Categories of flood planning levels

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

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

Notes—

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

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

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

Table 8.2.11.3.M—Hazardous chemicals flood hazard threshold

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

9.4.9 Stormwater code

9.4.9.1 Application

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

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

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

9.4.9.2 Purpose

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

9.4.9.3 Performance outcomes and acceptable outcomes

Table 9.4.9.3.A—Performance outcomes and acceptable outcomes

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

PO1 Development provides a stormwater management system which achieves the integrated management of stormwater to: a. minimise flooding; b. protect environmental values of receiving waters; c. maximise the use of water sensitive urban design; d. minimise safety risk to all persons; e. maximise the use of natural waterway corridors and natural channel design principles. Editor's note—The stormwater management system to be developed to address PO1 is not intended to require management of stormwater quality.	AO1 Development provides a stormwater management system designed in compliance with the Infrastructure design planning scheme policy.	Complies, refer to ADG SMP for further information.
PO2 Development ensures that the stormwater management system and site work does not adversely impact flooding or drainage characteristics of premises which are up slope, down slope or adjacent to the site.	AO2.1 Development does not result in an increase in flood level or flood hazard on up slope, down slope or adjacent premises. AO2.2 Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.	Complies, refer to ADG SMP for further information.
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. 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	Complies, refer to ADG SMP for further information.

	Development obtains a lawful point of discharge in compliance with the standards in the Infrastructure design planning scheme policy. A03.4 Where on private land, all underground stormwater infrastructure is secured by a drainage easement.	
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.	A04.1 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. A04.2 Development provides sufficient area to convey run-off which will comply with the standards in the Infrastructure design planning scheme policy.	Complies, refer to ADG SMP for further information.
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.	A05 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.	A06.1 Development locates stormwater detention and water quality treatment: a. outside of a waterway corridor; b. offline to any catchment not contained within the development. A06.2 Development providing for stormwater detention and water quality treatment devices are designed in compliance with the standards in the Infrastructure design planning scheme policy.	N.A

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). AO7.2 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.	Complies, refer to ADG SMP for further information.
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.	AO8.1 Development ensures natural waterway corridors and drainage paths are retained. AO8.2 Development provides the required hydraulic conveyance of the drainage channel and floodway, while maximising its potential to maximise environmental benefits and minimise scour. Editor's note—Guidance on natural channel design principles can be found in the Council's publication Natural channel design guidelines. AO8.3 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. AO8.4 Development ensures that the design of modifications to the existing design of new stormwater channels, creeks	N.A

	and major drains is in compliance with the standards in the Infrastructure design planning scheme policy.	
PO9 Development is designed to manage run-off and peak flows by minimising large areas of impervious material and maximising opportunities for capture and re-use.	AO9 No acceptable outcome is prescribed.	Complies, refer to ADG SMP for further information.
PO10 Development ensures that there is sufficient site area to accommodate an effective stormwater management system. Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.	AO10 No acceptable outcome is prescribed.	Complies, refer to ADG SMP for further information.
PO11 Development provides for the orderly development of stormwater infrastructure within a catchment, having regard to the: a. existing capacity of stormwater infrastructure within and external to the site, and any planned stormwater infrastructure upgrades; b. safe management of stormwater discharge from existing and future up-slope development; c. implication for adjacent and down-slope development.	AO11.1 Development with up-slope external catchment areas provides a drainage connection sized for ultimate catchment conditions that is directed to a lawful point of discharge. AO11.2 Development ensures that existing stormwater infrastructure that is undersized is upgraded in compliance with the Infrastructure design planning scheme policy.	Complies, refer to ADG SMP for further information.
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.	Complies, refer to ADG SMP for further information.

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.	Complies, refer to ADG SMP for further information.
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.	N.A
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.	Complies, refer to ADG SMP for further information.
Section B—Additional performance outcomes and acceptable outcomes 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 2,500m² 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.		N.A

b. reconfiguring a lot for an urban purpose that involves greater than 2,500m² of land and will result in 6 or more lots; c. operational work for an urban purpose which involves disturbing greater than 2,500m² of land.		
PO16 Development ensures that the entry and transport of contaminants into stormwater is avoided or minimised to protect receiving water environmental values. Note—Prescribed water contaminants are defined in the <i>Environmental Protection Act 1994</i>. Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.	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 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.	AO17 No acceptable outcome is prescribed.	N.A
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	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	N.A

infrastructure for the stormwater network which: 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.	Infrastructure design planning scheme policy.	
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 <i>Planning Act</i>	AO19 No acceptable outcome is prescribed.	N.A

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Table 9.4.9.3.B—Categories of flood planning levels

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

Notes—

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

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

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

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

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

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

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

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

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

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

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

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

Notes—

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

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

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

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

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

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

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

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

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

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

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

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

Notes—

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Notes—

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

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

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

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

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

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

8.2.15 Potential and actual acid sulfate soils overlay code

8.2.15.1 Application

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

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

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

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

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

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

8.2.15.2 Purpose

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

8.2.15.3 Performance outcomes and acceptable outcomes

Table 8.2.15.3—Performance outcomes and acceptable outcomes

Performance outcomes	Acceptable outcomes	Comments
PO1 Development protects the environmental values and ecological health of receiving waters and does not subject assets to accelerated corrosion.	AO1 Development ensures that: a. no potential or actual acid sulfate soils are disturbed; or Note—This can be demonstrated through the submission of an acid sulfate soil investigation report with reference to the Potential and actual acid sulfate soils planning scheme policy. b. the disturbance impacts in an area that hosts potential acid sulfate soils are appropriately managed, if less than 500m³ of soil is disturbed and the watertable is not affected; or Note—This can be demonstrated through the submission of an acid sulfate soil investigation report and a preliminary acid sulfate soil management plan, with reference to the Potential and actual acid sulfate soils planning scheme policy. c. impacts are appropriately managed if 500m³ or more of soil is disturbed or the watertable in an area that hosts potential or actual acid sulfate soils is affected. Note—This can be demonstrated through the submission of an acid sulfate soil investigation report and a full acid sulfate soil management plan, with reference to the Potential and actual acid sulfate soils planning scheme policy using levels of testing commensurate with the level of risk. If the investigation demonstrates that an acid sulfate soil management plan is not required, only an investigation report is required.	Due to the lack of bulk earthworks, the encounter of acid sulfate soils is unlikely to occur. Hence no Acid Sulfate management plan is necessary. Refer to ADG ESR for further information.

9.4.4 Infrastructure design code

9.4.4.1 Application

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

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

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

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

9.4.4.2 Purpose

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

9.4.4.3 Performance outcomes and acceptable outcomes

Table 9.4.4.3.A—Performance outcomes and acceptable outcomes

Performance outcomes	Acceptable outcomes	Comments
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.	N.A
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;	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.	Refer to ADG ESR for further details

d. allows for reasonable travel comfort.		
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.	A03 Development provides pavement edges which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.	Complies, refer to ADG ESR for further details
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; c. be maintainable by the Council.	A04 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.	N.A
PO5 Development provides a lane or laneway identified on the Streetscape hierarchy overlay map or 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.	A05 Development provides a lane or laneway identified on the Streetscape hierarchy overlay map or in a neighbourhood plan which is embellished in compliance with the streetscape locality advice standards in the Infrastructure design planning scheme policy.	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;	A06 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:	Complies, refer to ADG ESR for further details

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.	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.	
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.	A07 Development provides cycle and walking routes which are located, designed and constructed in compliance with the road corridor design and off-road pathway design standards in the Infrastructure design planning scheme policy.	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. 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.	Complies, refer to ADG ESR for further details
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.	Complies, refer to ADG ESR for further details
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. Note—Guidance on the restoration of habitat is included in the Biodiversity areas planning scheme policy. AO10.2	Refer to architectural drawings for further details

	Development provides compatible public utility services and street-lighting services which are co-located in common trenching for underground services. 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.	
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.	Complies, refer to ADG ESR for further details
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. Editor's note—An accurate, digital 'as built' three-dimensional location plan is to be supplied for all infrastructure provided in a road.	N.A
PO13 Development provides public art identified in a neighbourhood plan or park concept plan which:	AO13 Development provides public art identified in a neighbourhood plan or park concept plan which is sited	N.A

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.	and designed in compliance with the public art standards in the Infrastructure design planning scheme policy.	
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).	Complies, refer to ADG ESR for further details
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
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;	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

iv. able to service expected demand; v. fit for purpose.		
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
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. Note—All culverts and associated elements are to be designed and certified by a Registered Professional Engineer Queensland in	AO18 Development that provides culverts is designed and constructed in compliance with the structures standards in the Infrastructure design planning scheme policy.	N.A

accordance with the applicable design standards.		
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.	N.A
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.	To be confirmed in detailed design phase
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	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.	To be confirmed in detailed design phase

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.	AO21.2 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.	
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.	To be confirmed in detailed design phase
If for a material change of use or reconfiguring a lot in an urban area (as defined in the Regulation) involving premises that is, or will be, accessed by common private title, where involving buildings, either attached or detached, that are not covered by other legislation mandating fire hydrants		
PO23 Development ensures that fire hydrants are: a. installed and located to enable fire services to access water safely, effectively and efficiently; b. suitably identified so that fire services can locate them at all hours.	AO23.1 Above or below ground fire hydrants are provided on residential, commercial and industrial streets and private roads, at not more than 90m intervals, and at each street intersection. Note—On residential streets, above ground fire hydrants may be single outlet. On commercial and industrial streets above ground fire hydrants should have dual valved outlets. AO23.2 Fire hydrants are identified by: a. raised reflectorised pavement markers (RRPM) on sealed roads; b. marker posts at the fence line where on an	Complies, refer to ADG ESR for further details

	unsealed road, as road (HR) or path (HP) hydrants.	
PO24 Development ensures road widths and construction within the development, are adequate for refuse vehicles and for fire emergency vehicles to gain access to a safe working area close to buildings and near water supplies whether or not on-street parking spaces are occupied.	AO24 Internal private roads have a minimum roadway clearance between obstructions of 3.5m wide and 4.8m high in addition to any width required for on-street parking.	Complies, refer to ADG ESR for further details
Development for major electricity infrastructure and bulk water supply infrastructure identified on the State Planning Policy Interactive Mapping System where not in the Utility services zone precinct of the Special purpose zone		
PO25 Development avoids or otherwise minimises adverse impacts on surrounding land uses through the use of buffers and setbacks and the appropriate design and location of plant and operational areas within the site.	AO25 No acceptable outcome is prescribed.	Complies, refer to ADG ESR for further details
Development potentially impacting on major electricity infrastructure and bulk water supply infrastructure identified on the State Planning Policy Interactive Mapping System where the infrastructure is not in the Utility services zone precinct of the Special purpose zone		
PO26 Development is sited and designed to: a. avoid safety risks to people or property; b. minimise noise and visual impacts to people and property; c. ensure the physical integrity and operation, maintenance and expansion of the infrastructure is not compromised.	AO26 No acceptable outcome is prescribed.	Complies, refer to ADG ESR for further details

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

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

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

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

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

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

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

Note—

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

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

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

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

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

Note—

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

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

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

Appendix G

BCC Flood Awareness Map Report

FloodWise Property Report

Lot 6 on SL12311



Dedicated to a better Brisbane

THE PURPOSE OF THIS REPORT IS FOR BUILDING AND DEVELOPMENT

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

This property has no flood levels

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

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

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



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



Are you resilient and ready for flood?

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

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

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

Technical Summary

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

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

Flood Planning and Development Information

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

Flood Overlay Code

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

Flood Planning Areas (FPA)		
River	Creek / Waterway	Overland Flow
		Not Applicable

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

Coastal Hazard Overlay Code

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

Coastal Hazard Overlay Sub-Categories
There are currently no Coastal Hazard Overlays that apply to this property.

Note: Where land is identified within one for more flood planning areas on the Flood Overlay or is identified within Storm Tide Inundation are on the Coastal Hazard Overlay, the assessment criteria that provides the highest level of protection from any source of flooding applies.

Property Development Flags

Large Allotment - This property is either a Large Allotment of over 1000 square metres or is located within a Large Allotment. Flood levels may vary significantly across allotments of this size. Further investigations may be warranted in determining the variation in flood levels and the minimum habitable floor level across the site.
For more information or advice, please contact Council's Flood Information Officer via FloodPropertyReport@brisbane.qld.gov.au

Useful Flood Information Definitions

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

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

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

Data quality

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

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

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

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

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

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

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

Residential Flood Level (RFL) - This flood level for the Brisbane River equates to the 1% Annual Exceedance Probability (AEP) flood level.

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

Brisbane City Council's Online Flood Tools

Council provides several online flood tools:

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

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

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

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

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

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

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

Disclaimer

1. Defined Flood Levels and Residential Flood Levels, Minimum Habitable Floor Levels and Indicative Existing Floor Levels are determined from the best available information to Council at the date of issue. These levels, for a particular property, may change if more detailed information becomes available or changes are made in the method of calculating levels.
2. Council makes no warranty or representation regarding the accuracy or completeness of a FloodWise Property Report. Council disclaims any responsibility or liability in relation to the use or reliance by any person on a FloodWise Property Report.



Planning to build or renovate?

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

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

Appendix H

BCC Erosion Hazard Assessment



Erosion Hazard Assessment - June 2014

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

What is an Erosion Hazard Assessment?

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

When is the EHA required?

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

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

Privacy Statement

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

Assessment Details

1 Please turn over and complete the erosion hazard assessment.

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

☐ **A 'low' risk site**

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

☒ **A 'medium' risk site**

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

☐ **A 'high' risk site**

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

3 Site Information and Certification

Application number (if known)

Site address

39 Mayne Road, Bowen Hills

Postcode 4006

I certify that:

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

Certified by *Print name*

Dale Stanton

Certifier's signature

Date

31 / 01 / 2023

Assessment Table

Table 1: Low Risk Test

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

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

Yes	No
☒	☐

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

If 'Yes' then proceed to Table 2

Table 2: Medium Risk Test

		Yes	No
2.1	is the area of land disturbance > 1 hectare	☐	☒

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

If 'Yes' then proceed to Table 3

Table 3: High Risk Test

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

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

Yes	No
☐	☐

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

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

Appendix I

Rational Method Calculations

PROJECT DATA

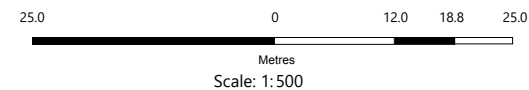
Project number	26807	Designer	JB
Date	23.01.23	Verifier	ET
Client	CUSHMAN & WAKEFIELD PTY LTD		
Project area	TEMP BMW RECEPTION & SERVICE		
Description	SW QUANTITY		

CALCULATIONS
Rational Method Based on ARR 1987 IFD Data

Catchment			Fraction Impervious		Coefficient of Discharge, C_r		Coefficient of Discharge, C_r (ARR 1987)							Rainfall Intensity, i_r (mm/h) (ARR 1987 IFD)							Peak Discharge Rate, Q_r (m ³ /s) (ARR 1987 IFD)																										
Catchment Label	Catchment Area A (ha)	Time of Concentration t_c (min)	Fraction Impervious f_i (decimal)	Rainfall Intensity, i_{10} (mm/h) ARR 1987	Coefficient of Discharge, C_{10} ARR 1987	Urban or Rural Catchment	ARR 1987 C1 (FY = 0.80)	ARR 1987 C2 (FY = 0.85)	ARR 1987 C5 (FY = 0.95)	ARR 1987 C10 (FY = 1.00)	ARR 1987 C20 (FY = 1.05)	ARR 1987 C50 (FY = 1.15)	ARR 1987 C100 (FY = 1.20)	i_{1r} (mm/h) 1 Year ARI	i_{2r} (mm/h) 2 Year ARI	i_{5r} (mm/h) 5 Year ARI	i_{10r} (mm/h) 10 Year ARI	i_{20r} (mm/h) 20 Year ARI	i_{50r} (mm/h) 50 Year ARI	i_{100r} (mm/h) 100 Year ARI	Q_r (m ³ /s) 1 Year ARI	Q_r (m ³ /s) 2 Year ARI	Q_r (m ³ /s) 5 Year ARI	Q_{10} (m ³ /s) 10 Year ARI	Q_{20} (m ³ /s) 20 Year ARI	Q_{50} (m ³ /s) 50 Year ARI	Q_{100} (m ³ /s) 100 Year ARI																				
Pre-developed Catchment																																															
EX1	0.4742	5	0.984	70.00	0.897	Urban	0.718	0.762	0.852	0.897	0.942	1.000	1.000	117.7	151.2	191.8	215.9	248.4	291.7	325.2	0.111	0.152	0.215	0.255	0.308	0.384	0.428																				
EX2	0.1965	5	0.974	70.00	0.896	Urban	0.717	0.762	0.851	0.896	0.941	1.000	1.000	117.7	151.2	191.8	215.9	248.4	291.7	325.2	0.046	0.063	0.089	0.106	0.128	0.159	0.177																				
Site Total	0.6707	5	0.981	70.00	0.897	Urban	0.718	0.762	0.852	0.897	0.942	1.000	1.000	117.7	151.2	191.8	215.9	248.4	291.7	325.2	0.157	0.215	0.305	0.361	0.436	0.543	0.606																				
Post-developed Catchment																																															
C1	0.4742	5	0.984	70.00	0.900	Urban	0.720	0.765	0.855	0.900	0.945	1.000	1.000	117.7	151.2	191.8	215.9	248.4	291.7	325.2	0.112	0.152	0.216	0.256	0.309	0.384	0.428																				
C2	0.1965	5	0.985	70.00	0.900	Urban	0.720	0.765	0.855	0.900	0.945	1.000	1.000	117.7	151.2	191.8	215.9	248.4	291.7	325.2	0.046	0.063	0.090	0.106	0.128	0.159	0.177																				
Site Total	0.6707	5	0.984	70.00	0.900	Urban	0.720	0.765	0.855	0.900	0.945	1.000	1.000	117.7	151.2	191.8	215.9	248.4	291.7	325.2	0.158	0.216	0.306	0.362	0.437	0.543	0.606																				

Appendix J

BCC eBIMAP2 Information



Legend

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

Appendix K BYDA Information



APA Group
PO Box 6014 Halifax Street
South Australia 5000



For your immediate information **THERE IS A CRITICAL GAS PIPELINE AND/OR ASSOCIATED INFRASTRUCTURE** in the area of your works.

16/01/2023

Company: ADG
Jarrod Bubbert
596 Milton Road
Toowong
QLD 4066
jbubbert@adgce.com

Dear Jarrod Bubbert

Sequence Number: 220076961
Worksite Address: 39 Mayne Street
Bowen Hills
QLD 4006

Thank you for your Dial Before You Dig enquiry regarding the location of Gas Assets. We can confirm that the APA Group has **Critical Gas Assets** in the vicinity of the above location.

You are hereby notified that **before you commence any works** you are required to complete the attached **'Work In The Vicinity Of Critical Gas Assets'** request form and forward this to APA as soon as practicable.

As laid out in the **Duty of Care** requirements supplied, any activity in the vicinity of Critical Gas Assets operated by APA requires an Authority to Work Permit and potentially attendance on site by an APA representative during any work. Please ensure you read and comply with all the relevant requirements. Should you have any questions with regards to the attached information please contact our Qld Planning & Scheduling Officer - (07) 3215 6644.

Caution - Damage to gas assets could result in possible explosion and fire with the risk of personal injury.
For Gas Emergencies please call 1800 GAS LEAK (1800 427 532)

Please find enclosed the following information:-

- APA's Duty of Care, If you are unclear of your obligations under these requirements please contact the APA Representative listed above immediately
- An overview map with your requested area highlighted to assist in locating APA's Gas Assets
- A map(s) showing APA's Gas Assets in the requested area, this information is valid for 30 days from the date of this response, **please check this represents the area you requested**, if it does not, please contact the APA Representative listed above immediately
- A 'Work In The Vicinity Of Critical Gas Assets' request form, please complete and forward to APA as soon as practicable, via PermitsQld@apa.com.au, or the address above. A **minimum of 5 business days** advance notification is required to process Authority To Work Request applications

The outcome of this request may be that a qualified APA Group Representative will be required on site when you undertake your proposed works, if this is the case, this will need to be arranged dependent on their availability. Whilst we will aim to facilitate this within 5 business days from a decision, **this cannot be guaranteed.**



Please Note: For some DBYD enquiries, you might receive 2 responses from the APA Group. Please read both responses carefully as they will relate to different assets. It is your responsibility to action all requirements set out in APA Group responses.

Please take some time to review the entire response document and check the information supplied and please let us have any feedback by sending an email to DBYDNetworksAPA@apa.com.au or contacting us direct on 1800 085 628.

Duty of Care - Working Around Gas Assets

General Conditions

- This location enquiry is valid for 30 days from the enquiry date
- Expired locations, i.e., over 30 days from the date of this response, require a new Dial Before You Dig request to validate location information
- The location information supplied in this document shall be used as a guide only. APA Group shall not be liable or responsible for the accuracy of any such information supplied pursuant to this request
- It is the responsibility of the excavator to expose all Gas Assets, including Gas Service pipes (see below), **by hand**. Gas Asset depths may vary according to ground conditions
- Gas Services (inlet service) connecting Gas Assets in the street to the gas meter on the property are typically **not** marked on the map
- Some Gas Assets are installed inside of a casing. The locations where a Gas Asset changes from inserted to direct burial are not marked on the map unless otherwise stated
- This information has been generated by an automated system based on the area highlighted in your DBYD request and has not been independently verified. It is your responsibility to ensure that the information supplied in this response matches the dig site you defined when submitting your Dial Before You Dig enquiry. If the information does not match the dig site or you have any question, please contact APA immediately using the details listed on the first page and / or please resubmit your enquiry
- For **Gas Emergencies** please call **1800 GAS LEAK (1800 427 532)**

Critical Gas Assets - Conditions

It is your responsibility to follow these important conditions when working in the vicinity of Critical Gas Assets

- A 'Work In The Vicinity Of Critical Gas Assets' request form must be submitted to APA Group PRIOR to any work commencing, a minimum of **5 business days** are required to arrange attendance by an APA Group representative
- Whilst we will aim to facilitate this within **5 business days** from a decision, **this cannot be guaranteed**. Charges for APA Group supervision may apply
- Any works in the vicinity of Critical Gas Assets requires approval from APA via **APA's 'Authority to work' permit** and supervision by an APA Group representative unless expressed otherwise on the "Authority to work" permit.
- Penalties apply to excavators commencing work in the vicinity of Critical Gas Assets **prior to receiving an APA Group 'Authority to Work' permit and an APA Group representative is present**.

Rates applicable to APA on-site representation for supervision or location

Item	Rate
Site Watch - Normal Hours	\$143.42 (hr)
Site Watch - After Hours	\$175.06 (hr)
Electronic Locate – Normal Hours	\$143.42 (hr)
Electronic Locate – After Hours	\$175.06 (hr)
Cancellation	2 hrs (where less than 1 business day notice is provided)
Mains Proving	As quoted by APA

Notes:

- All prices are exclusive of GST
- All partial hours will be charged at a full hour rate for the first hour, 1hr minimum charge.
- Cancellations must be received 1 business day prior to the booked supervision otherwise a 2hr charge will be incurred
- Contact us for State specific hours of business.

APA CHANGE NOTIFICATION

The map below may have different symbols to those you are familiar with.

APA recently upgraded the asset mapping software utilised for Dial Before You Dig requests.

To avoid confusion, please carefully review the legend along with the map.

Please direct any questions to DBYDNetworksAPA@apa.com.au

Site Address	39 Mayne Street Bowen Hills 4006	Sequence No	220076961
Name	Jarrod Bubbart		
Email	jbubbart@adgce.com		



Scale 1: 6000



Enquiry Area

Map Key Area



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

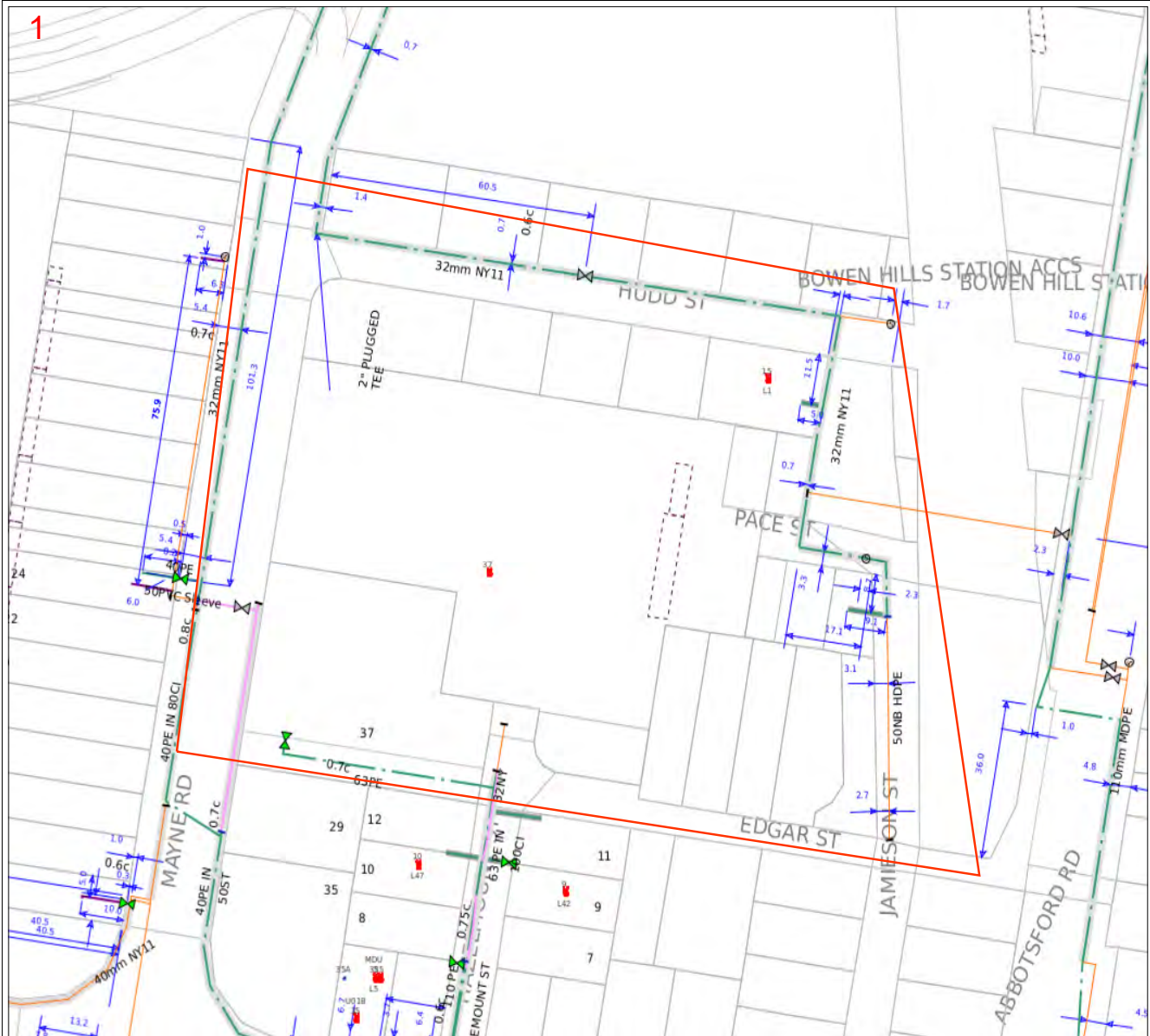
Mapping information is provided as AS5488-2013 Quality Level D

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

Page 4 of 8 • 16/01/2023

Site Address	39 Mayne Street Bowen Hills 4006	Sequence No	220076961
--------------	--	-------------	-----------

Before you commence any works you are required to complete the attached 'Work In The Vicinity Of Critical Gas Assets' request form and forward this to APA as soon as practicable.



Map Key

1

PIPE AND BOUNDARIES	PIPE CODE / MATERIALS	OBJECTS or TERMS
SERVICE (COLOUR BY PRESSURE)	C2, CI Cast Iron	VALVES
LOW PRESSURES	CU Copper	BURIED VALVES
MEDIUM PRESSURES	N2, NY, NY11 Nylon	GATE / REGULATORS
HIGH PRESSURES	P# (e.g. P6) Polyethylene (PE)	GAS SUPPLIED = YES
TRANSMISSION PRESSURES	P6,P7,P9-P12 Medium Density PE	CP RECTIFIER UNIT
PRIORITY MAIN (BEHIND PIPE)	P2,P4,P8 High Density PE	CP TEST POINT/ ANODE
PROPOSED (COLOUR BY PRESSURE)	ST or S# Steel	SYPHON
LPG (COLOUR BY PRESSURE)	S6# [e.g. S61] Steel Class 600	TRACE WIRE POINT
ABANDONED	S3# [e.g. S33] Steel Class 300	PIPELINE MARKER
IDLE	W2 or GAL Wrought Galv. Iron	NOT TIED IN
SLEEVE	W3 or PGAL Poly Coat Wrought Galv. Iron	COUPLING & END CAP
CASING / SPLIT (BEHIND PIPE)	Pipe diameter in millimetres is shown before pipe code e.g. 40P6 = 40mm nominal diameter	DEPTH OF COVER
UNKNOWN		
EASEMENT/ JURISDICTION		
EXAMPLES		
40P6 in 80C2	40mm High Pressure / Medium Density Polyethylene in an 80mm Cast Iron Casing	
63S8	63mm Medium Pressure Steel	

Line / Polygon Request

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

Scale 1:700

0 0.009km



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



WORK IN THE VICINITY OF CRITICAL GAS ASSETS

It is your responsibility to read and complete this request form

1. This request form must be received by the APA Group via the options below at least **5 business days prior to excavation or site location work commencement**
2. Excavation / works must not commence on site until you have received a 'Authority to Work Permit' from the APA Group
3. This request form must be accompanied by a detailed schedule of works
4. Penalties apply to excavators commencing work in the vicinity of Critical Gas Assets **prior to receiving an APA Group 'Authority to Work Permit'**

For further information refer to:-

- NSW Gas Supply Act 1996 – Sec 64 C, Requirements in relation to carrying out of certain excavation work
- Victoria: Pipelines Act 2005 – Section 118, Digging near pipelines and Section 119, Interference with pipeline
- South Australia: Gas Industry Act 1997 – Section 83, Notice of work that may affect gas infrastructure.
- Northern Territory: Energy Pipelines Act as in force at 8 March 2007 – Section 66, Threat to pipeline.

Return to: PermitsQld@apa.com.au

Enquiries:

Should you have any questions with regards to the attached information please contact our Qld Planning & Scheduling Officer - (07) 3215 6644.

Work / Excavation Site Details:

Number:	Street:		
Suburb:		State:	
Sequence Number: 220076961			
Requestors Name:			
Company Name:			
Name of Authorised Company Site Representative:			
Email:			
Phone:		Mobile:	
Signature:			

Mapping information is provided as AS5488-2013 Quality Level D

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

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Description of Work / Excavation:

Activity/Excavation Details:			
Tick Applicable Box			
Excavation		Change to surface level	
Service crossing		Boring	
Proving		Other (provide details)	
Earthworks			
Excavator Size, Tooth Type & Tooth Size (provide details)			

Work / Excavation Drawings Attached (circle): Yes No

Proposed Dates and Times:

From			To	
Excavation	Date	Time	Date	Time
	/ /	am/pm	/ /	am/pm
Backfill	Date	Time	Date	Time
	/ /	am/pm	/ /	am/pm

Work is assessed as:	Class 1 Works crossing a critical gas asset	Class 2 Works within 3m of a critical gas asset	Class 3 Works involving large excavations, vibrations or blasting beyond 3m of the critical gas asset	
-----------------------------	---	---	---	--

Insurer and Policy Details

Policy Number		Policy Expiry Date	
Insurance Cover – Current Level (\$amount)			



Third Party Works Authorisation requested by (mandatory fields required for invoicing):

Company/Biller Name:	
Billing Address:	
Purchase Order:	Billing Email:
Biller Phone:	
Requestors Name:	Requesters Signature:

NOTES

5. This Authority to Work applies only to work in the vicinity of the Gas Mains. It does not authorise work near or on the Gas Mains itself
6. A minimum of 2 business days must be allowed between receipt by APA Group of this Request and a response. However, more time for notification may be necessary
7. For any gas leak related work this application must be accompanied by a detailed sequence of events, outlining all aspects of work involved and work is not permitted until an Authority to Work is issued
8. For class 1 and 2 Dial Before You Dig, APA Group will arrange for an inspector to be on site as necessary during the work. An inspector must be present at all times for works involving excavation within 1m of the Gas Mains. APA Group will advise the requirement for an inspector for other works within 3m of the Gas Mains
9. The applicant is responsible for any damage resulting from the work and all consequential damages and losses arising from such damage and therefore must insure against every liability of the contractor in respect of or arising out of any loss of life, loss of or damage to property of person (both real and personal), arising out of or in any way connected to this permit.
10. Rates applicable to APA on-site representation for supervision or location exclude GST.



Job # 33426854
Seq # 220076954
Provider: Brisbane City Council
Telephone: 07 3403 8888



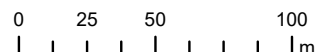
Legend
 BYDA Enquiry
 Detailed map page

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

In an emergency contact Brisbane City Council on 07 3403 8888
[Index Sheet](#)



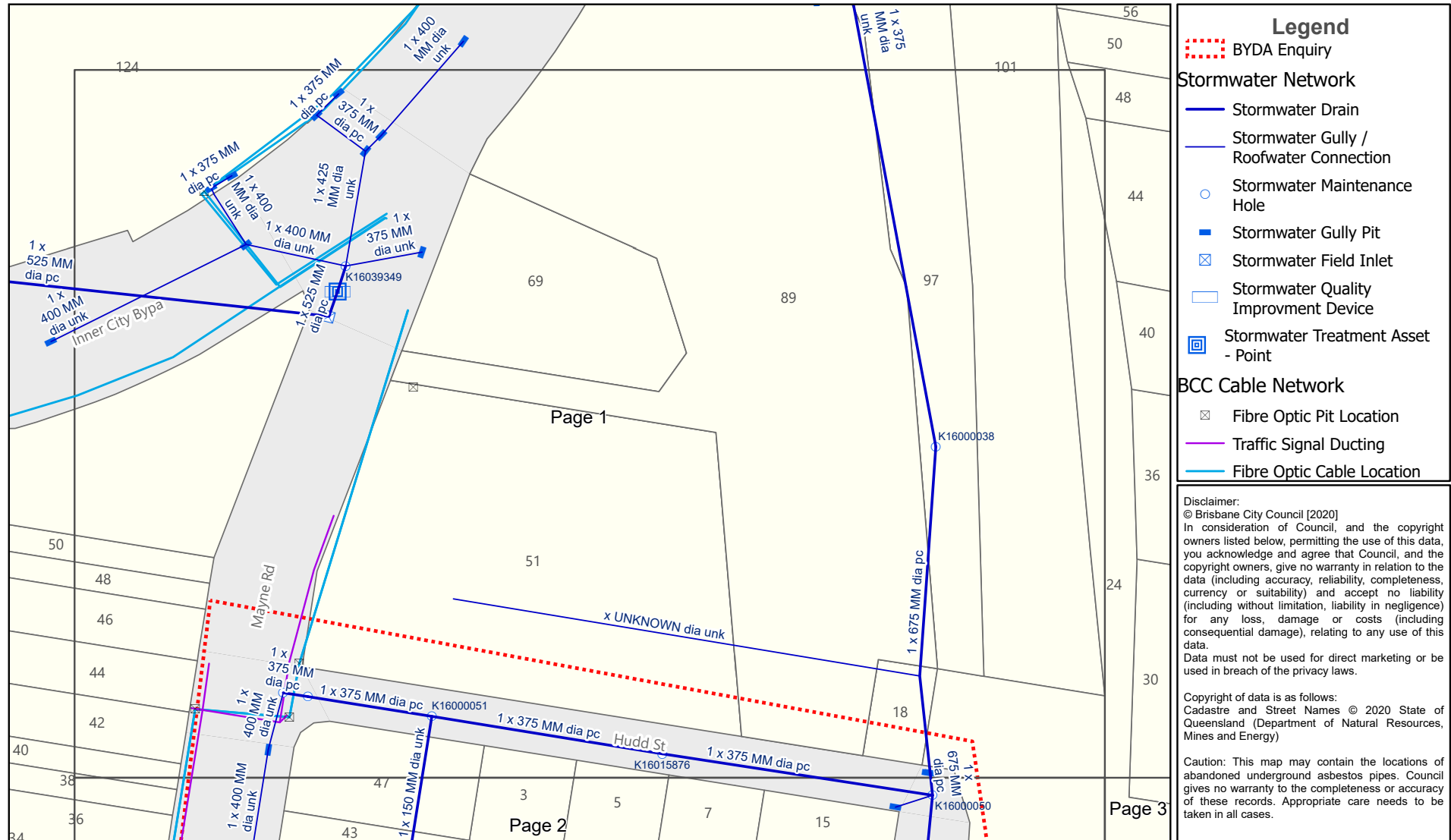
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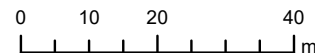
Plans generated by
SmarterWX™ Automate



Job # 33426854
Seq # 220076954
Provider: Brisbane City Council
Telephone: 07 3403 8888



In an emergency contact Brisbane City Council on 07 3403 8888
16/01/23 (valid for 30 days)



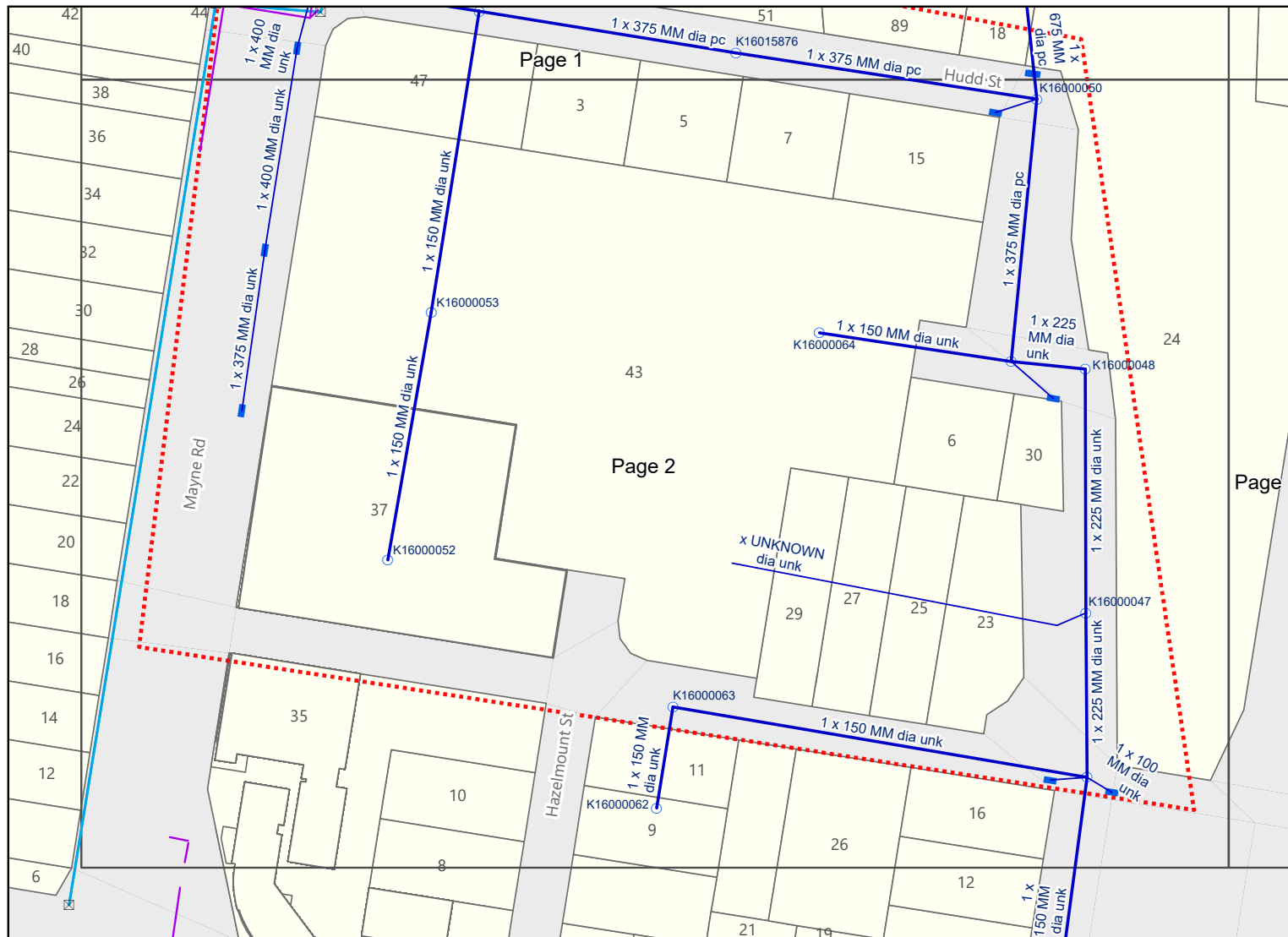
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Plans generated by
SmarterWX™ Automate



Job # 33426854
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Legend

BYDA Enquiry

Stormwater Network

- Stormwater Drain
- Stormwater Gully / Roofwater Connection
- Stormwater Maintenance Hole
- Stormwater Gully Pit

BCC Cable Network

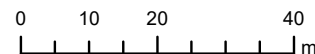
- Fibre Optic Pit Location
- Traffic Signal Ducting
- Fibre Optic Cable Location

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16/01/23 (valid for 30 days)



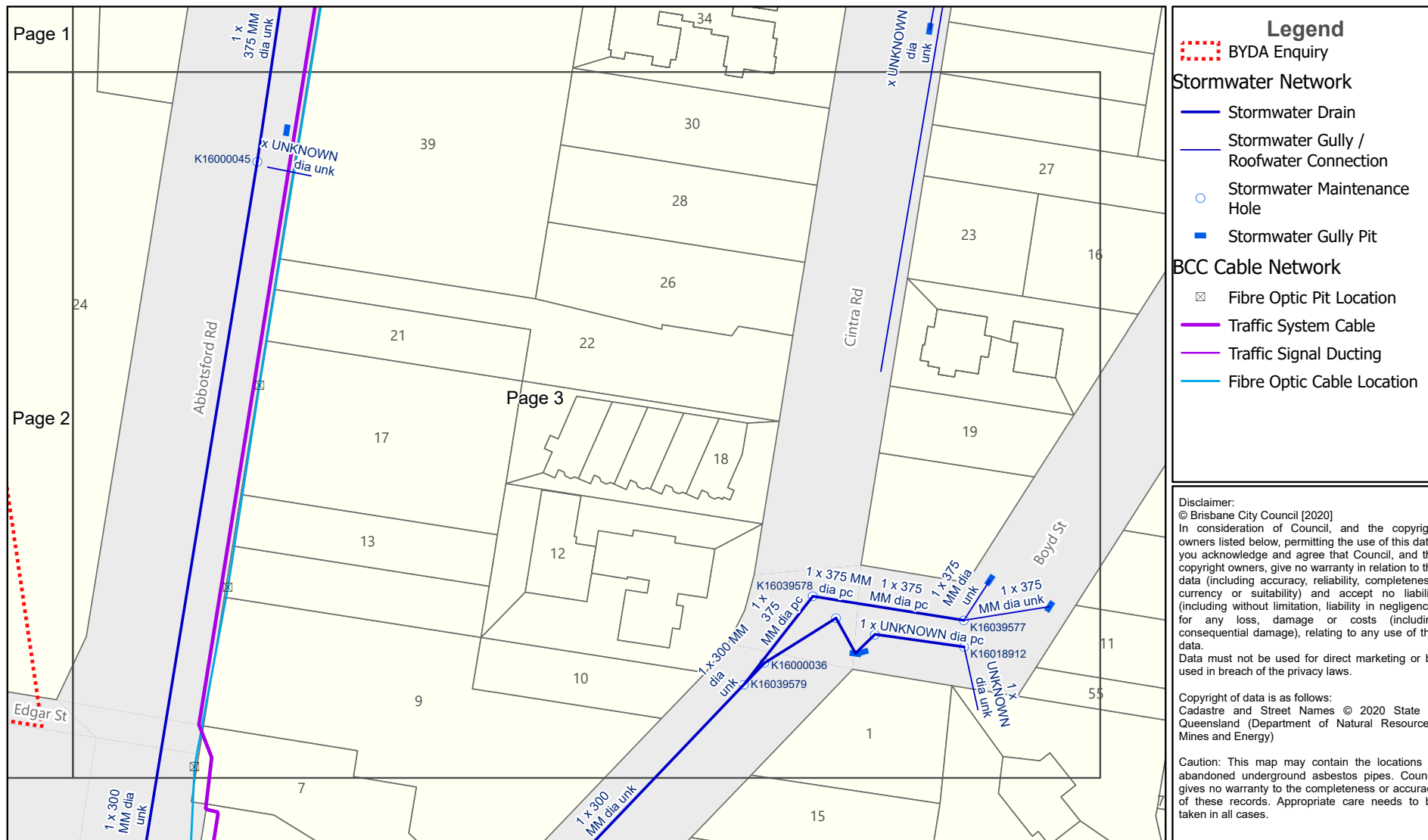
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Plans generated by
SmarterWX™ Automate



Job # 33426854
Seq # 220076954
Provider: Brisbane City Council
Telephone: 07 3403 8888



In an emergency contact Brisbane City Council on 07 3403 8888
16/01/23 (valid for 30 days)

All underground cables shall be treated as being energised. Where a cable is located that is not represented on the ENERGEX DBYD map, then ENERGEX shall be contacted immediately.

For Emergency Situations
please call 13 19 62



DBYD

Sequence: 220076956

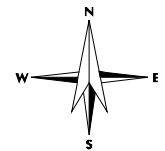
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Scale: 1:1538

OVERVIEW

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

AS5488 Category "D" Plan



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This output provides details of the ENERGEX electrical network. As variations map exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.

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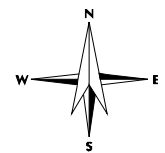


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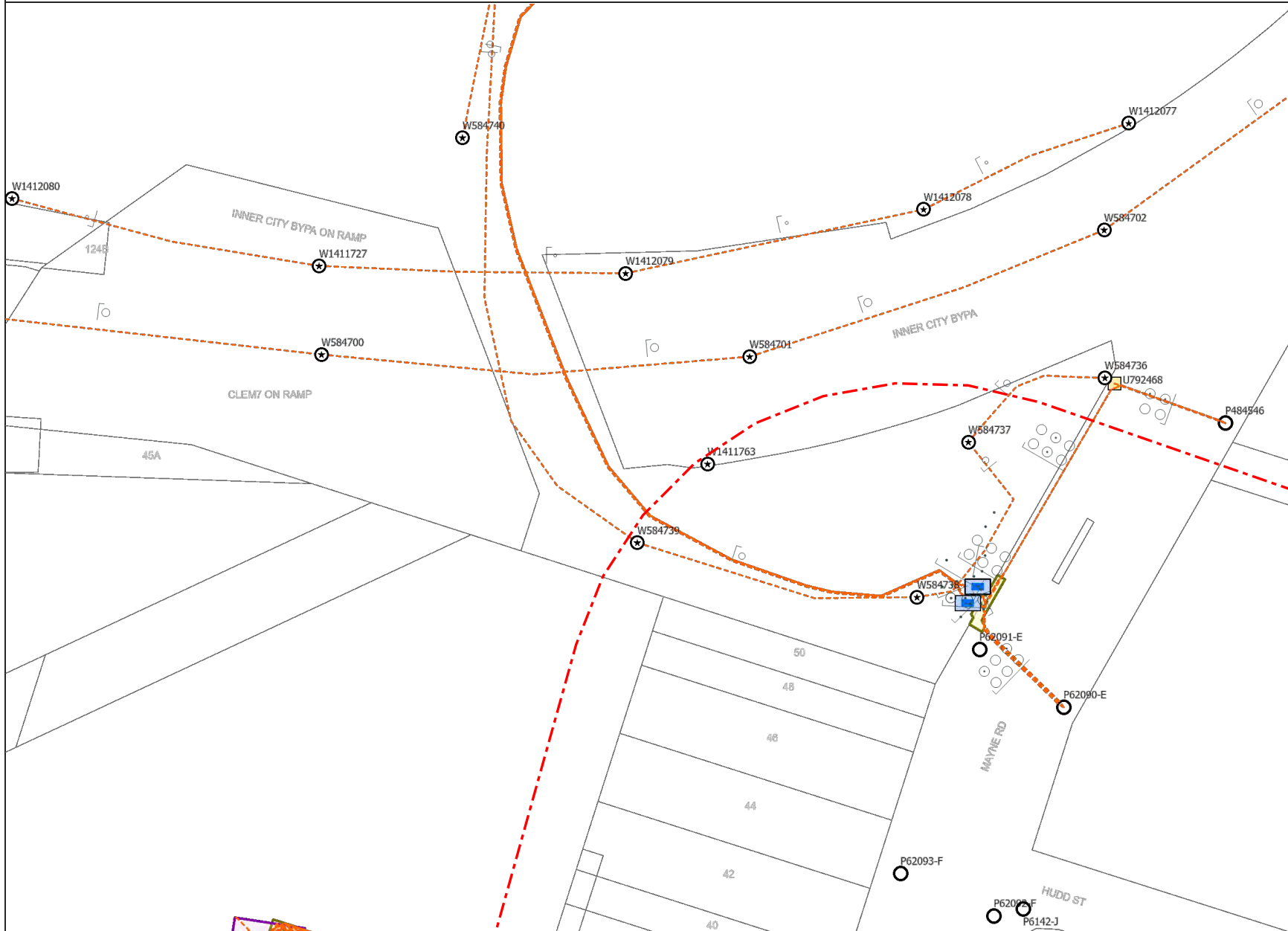
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Symbols, please
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DBYD Symbolology
Legend page

AS5488 Category "D" Plan



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For Emergency Situations
please call 13 19 62

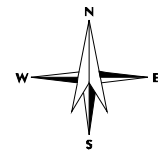


DBYD

Sequence: 220076956
Date: 16/01/2023
Scale: 1:500
Tile No: 2

For a full list of Map
Symbols, please
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DBYD Symbolology
Legend page

AS5488 Category "D" Plan



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This output provides details of the ENERGEX electrical network. As variations map exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.

All underground cables shall be treated as being energised. Where a cable is located that is not represented on the ENERGEX DBYD map, then ENERGEX shall be contacted immediately.

For Emergency Situations
please call 13 19 62

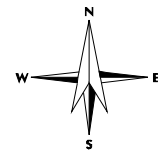


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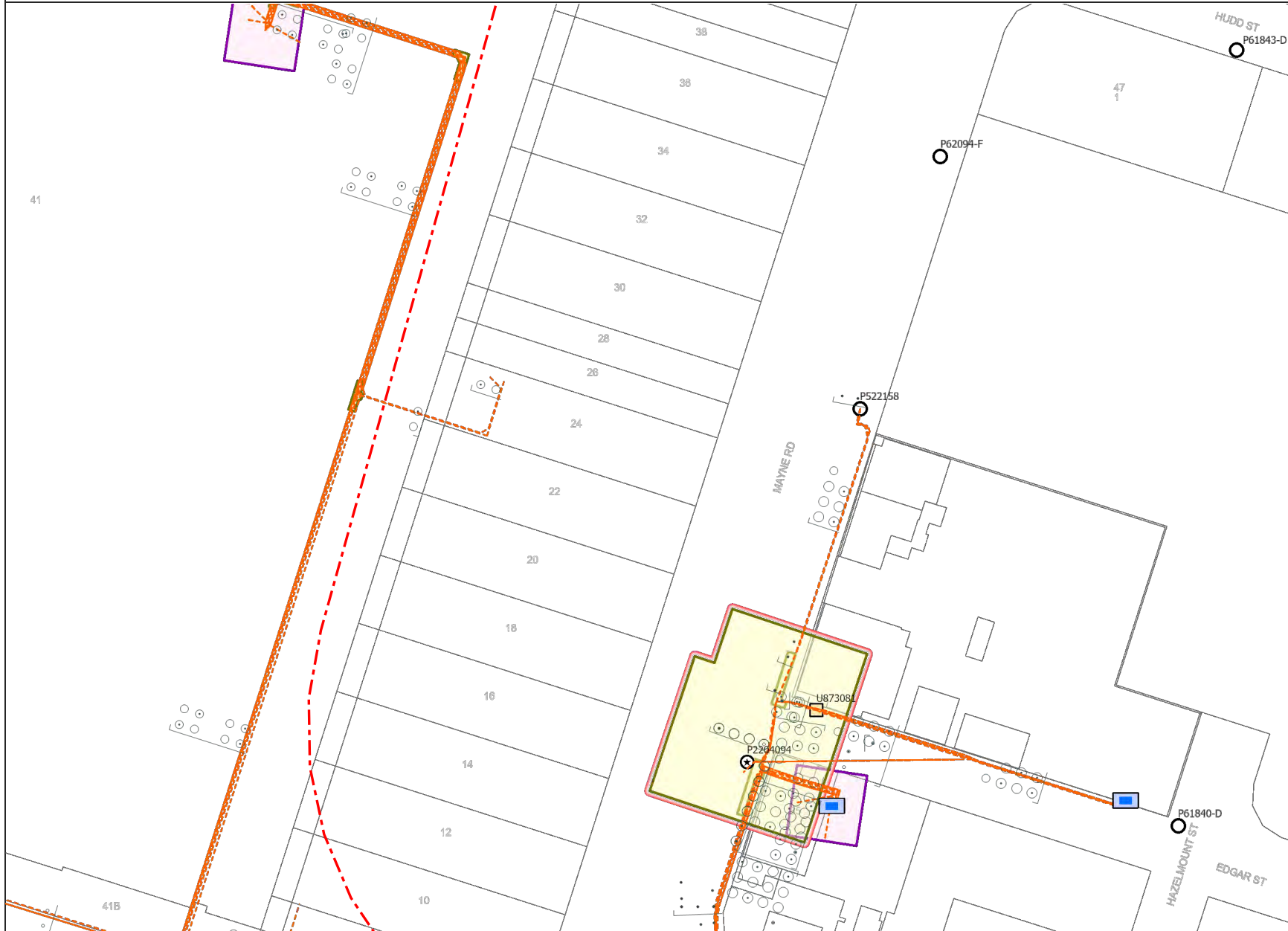
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Date: 16/01/2023
Scale: 1:500
Tile No: 3

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

AS5488 Category "D" Plan



DISCLAIMER: While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Energex nor PelicanCorp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information contained in it or the completeness or accuracy of such information. Use of such information is subject to and constitutes acceptance of these terms.



This output provides details of the ENERGEX electrical network. As variations map exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.

All underground cables shall be treated as being energised. Where a cable is located that is not represented on the ENERGEX DBYD map, then ENERGEX shall be contacted immediately.

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please call 13 19 62

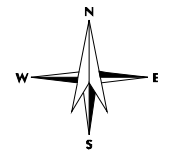


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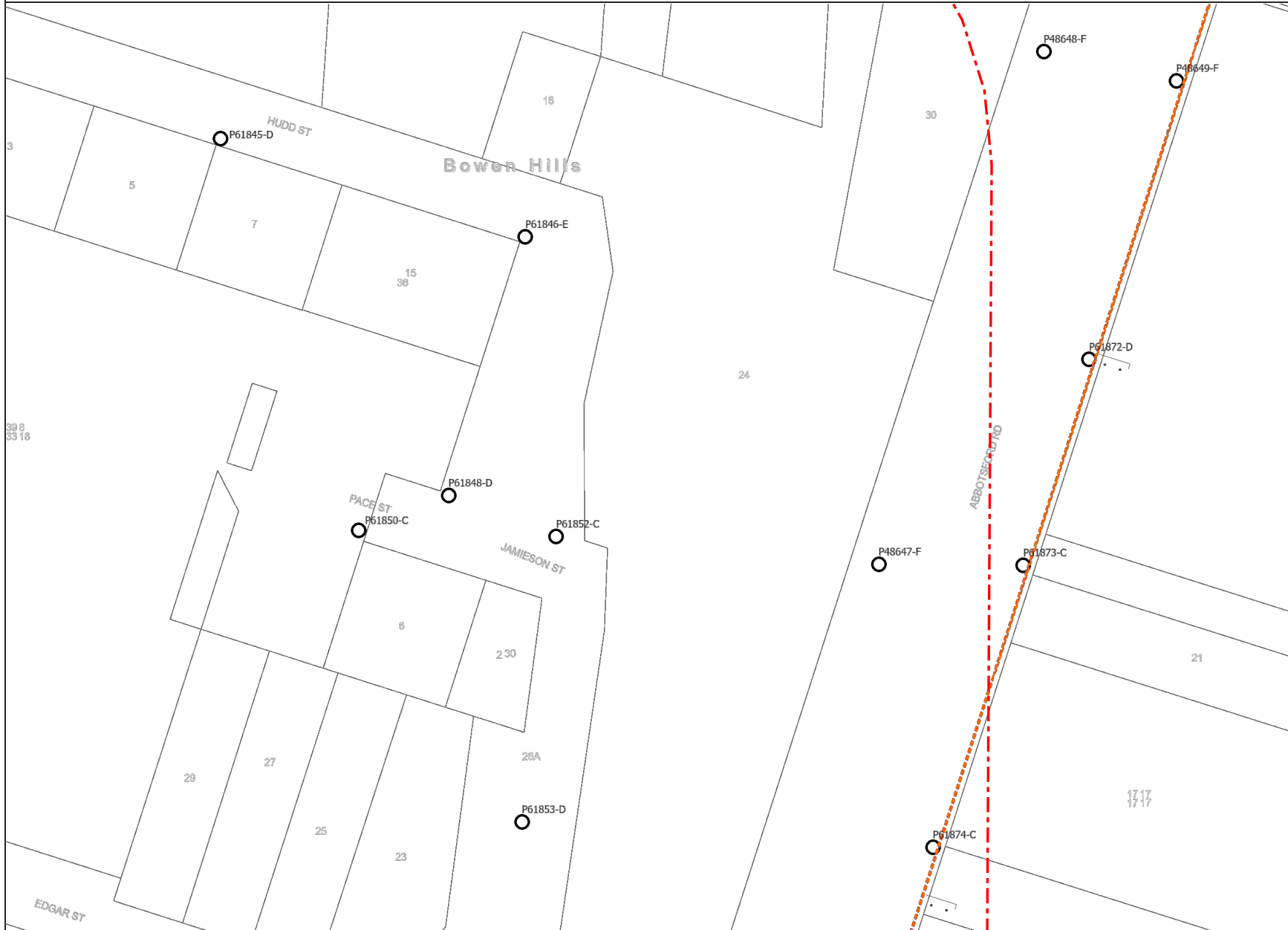
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For a full list of Map
Symbols, please
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DBYD Symbology
Legend page

AS5488 Category "D" Plan



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This output provides details of the ENERGEX electrical network. As variations map exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.

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For Emergency Situations
please call 13 19 62

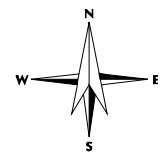


DBYD

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Date: 16/01/2023
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Tile No: 5

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

AS5488 Category "D" Plan

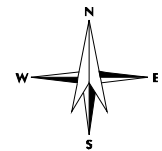


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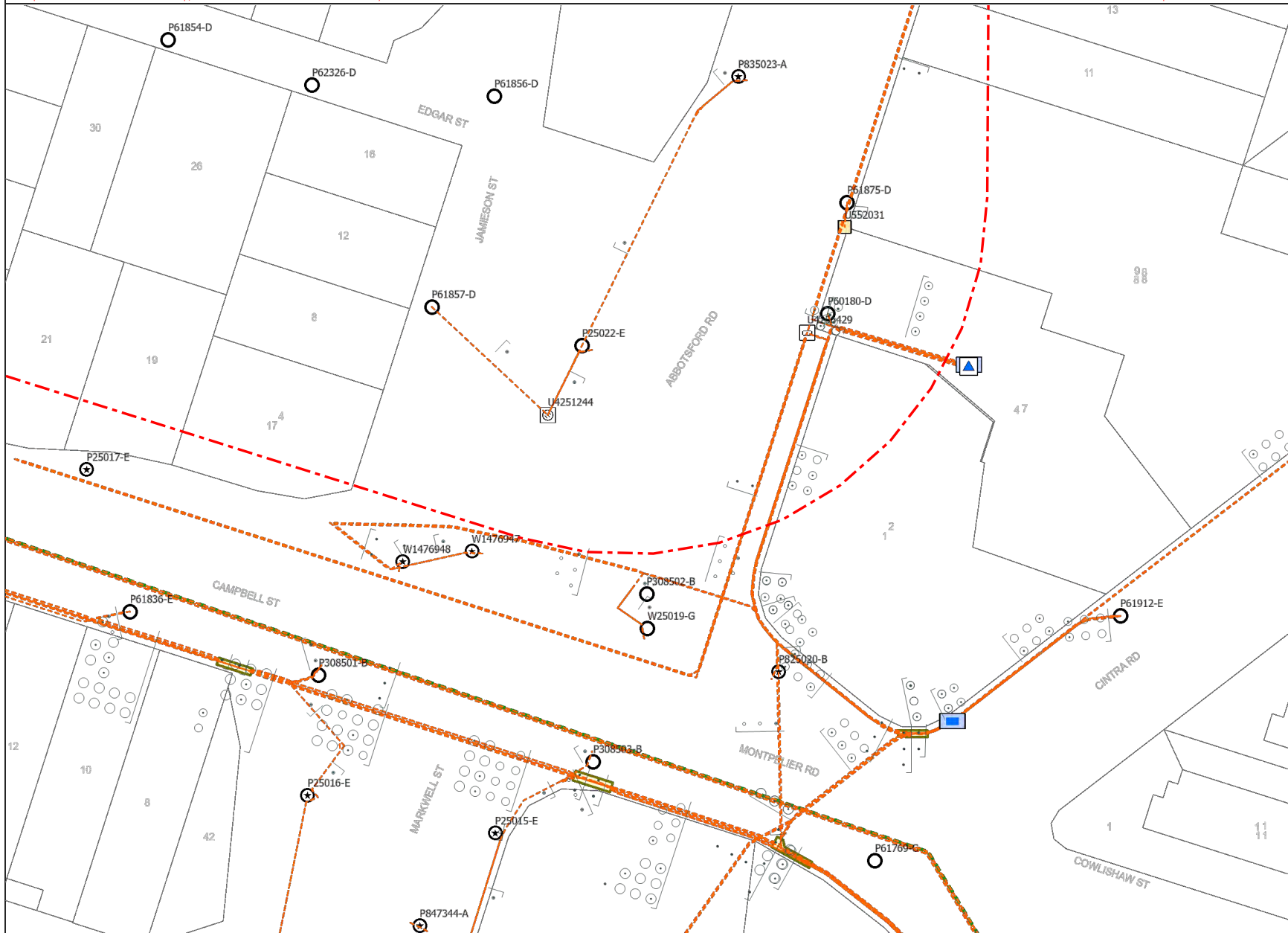
This output provides details of the ENERGEX electrical network. As variations map exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.

Sequence: 220076956
Date: 16/01/2023
Scale: 1:500
Tile No: 6

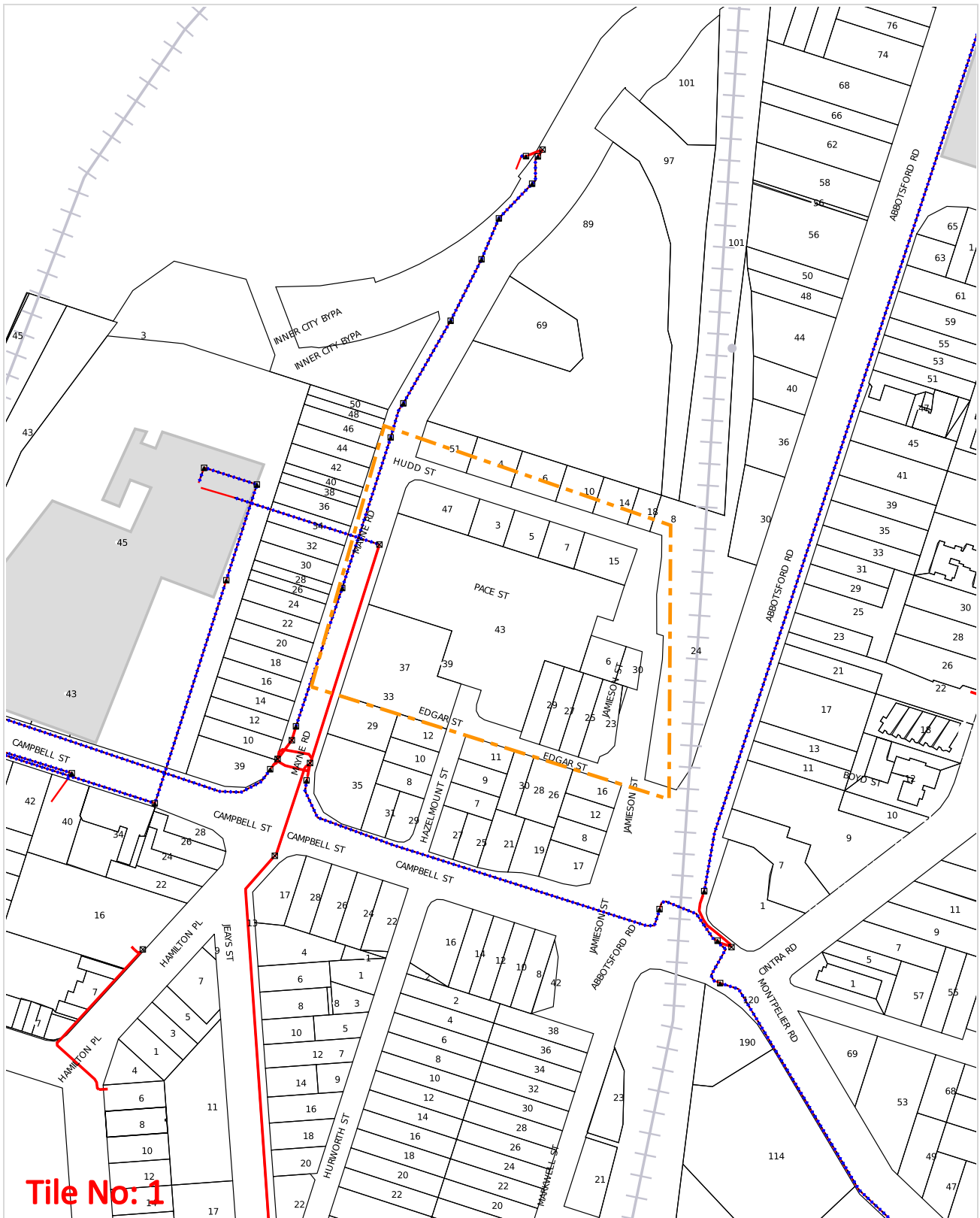
AS5488 Category "D" Plan



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Sequence Number: 220076955

Date Generated: 16 Jan 2023



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





Powerlink Queensland
33 Harold Street,
Virginia, Qld, 4014
Phone: (07) 3866 1313
16/01/2023

To: ('Applicant')
ADG - Jarrod Bubbert
596 Milton Road
Toowong QLD 4066

Email: jbubbart@adgce.com

Phone: +611300657402

Sequence No 220076952

Enquiry Location: 39 Mayne Street Bowen Hills

Enquiry Date: 16/01/2023 13:57

Dear Jarrod Bubbart

Thank you for your enquiry in relation to the Enquiry Location. Queensland Electricity Transmission Corporation Limited ACN 078 849 233 trading as Powerlink Queensland ("Powerlink") respond as follows:

Powerlink's records show that there **ARE** underground cables in the Enquiry Location.

A plan is attached showing the approximate location of Powerlink's assets in the vicinity of the Enquiry Location.

Should our response identify the presence of decommissioned Powerlink assets it should be noted that damage to these assets may result in an environmental hazard. As a precaution, all underground assets should be treated as live, and all necessary precautions should be taken to ensure that the cables are not damaged. Should damage occur, all work in the area surrounding the cables must be ceased immediately and Powerlink called on 07 3266 9410 to report the damage and get further advice.

Proposed works in close proximity to Powerlink's plant must undergo a detailed assessment by Powerlink. Please allow at least four to six weeks (more in complex situations) for Powerlink to process your application.

All work in close proximity to Powerlink's cables must be supervised by a Powerlink-appointed person and can be arranged by contacting Powerlink on (07) 3866 1313 at least seven days in advance.

The attached duty of care guidelines below must be observed at all times

Yours faithfully

A handwritten signature in black ink, appearing to read "Narelle Titman".

Narelle Titman
Manager Property
Powerlink Queensland

Powerlink Queensland
33 Harold Street, Virginia
PO Box 1193, Virginia, Queensland 4014, Australia
Telephone: (07) 3866 1313
Emergencies all hours: 1800 353 031
www.powerlink.com.au



Before You Dig Terms and Conditions

“Duty of Care” for Everyone

Responsibilities When Working in the Vicinity of POWERLINK’S Plant

Everyone has a legal duty of care that must be observed, particularly when working in the vicinity of electrical plant. “Electrical plant” includes underground cables, conduits and other associated underground equipment. It should be noted that the placing or removal of soil by excavation, digging or by any other means is not allowed in a Powerlink-easement without prior written consent from Powerlink. In most cases it is unlikely that consent will be granted.

When discharging this duty of care in relation to Powerlink’s plant, the following points must be considered:

1. It is the responsibility of the architect, consulting engineer, developer and head contractor in the project planning stages to design for minimal impact and adequate protection of Powerlink’s plant. Powerlink will provide free plans showing the presence of its underground plant to assist.
2. It is the developer or constructor’s responsibility to:
 - investigate whether Powerlink’s plant is present in a particular location and obtain the most up to date plans available from Powerlink before commencing construction.
 - visually locate Powerlink’s plant by hand digging where construction activities may be in close proximity to or interfere with Powerlink’s plant.
 - contact Powerlink’s Property Services & Management Team on (07) 3866 1313 if Powerlink’s plant is wholly or partly affected by planned development and construction activities.
3. As the alignment and boundaries of road ways with other properties (and roads within road ways) frequently change, the alignments and boundaries contained within Powerlink’s plans and maps will frequently differ from present alignments and boundaries “on the ground”. Accordingly, in every case where it appears that alignments and boundaries have shifted, or new road ways have been added, the constructor should obtain confirmation of the actual position of Powerlink’s plant under or along the road ways. The constructor must never rely on statements made by third parties in relation to the position of Powerlink’s plant.

Important Points to Note – Please Read

- Plans and details provided by Powerlink are current for one month from the Response Date and should be disposed of by shredding or any other secure disposal method after use.
- Powerlink’s plans are diagrams only. They indicate the presence of underground plant in the general vicinity of the Enquiry Location. Exact ground cover and alignments cannot be given with any certainty, as such levels can change over time.
- To avoid damage or injury, Powerlink’s plant must be carefully located under the supervision of a Powerlink-appointed person before excavation work or similar activities are undertaken near Powerlink’s plant.
- Powerlink, its servants and agents will not be liable for any loss or damage caused or occasioned by the use of plans and or details so supplied to the applicant, its servants and agents, and the applicant agrees to indemnify Powerlink against any claim or demand for any such loss or damage.
- Where work commences prior to obtaining Powerlink’s plans, or Powerlink’s instructions are not followed, the developer/constructor is responsible for all damages sustained to Powerlink’s plant.
- Powerlink reserves all rights to recover compensation for loss or damage caused by interference or damage, including consequential loss and damages to its cable network, or other property.
- All underground conduits and cover slabs must be presumed to contain asbestos. Refer to “Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018 (2005)].
- PCB (polychlorinated biphenyl) contamination may exist in some cables.



Remote or On-Site Location Assistance

If requested, Powerlink may provide either remote over –the-phone or on-site location assistance with locating Powerlink’s plant. This assistance may include guidance on visually locating and protecting Powerlink plant when excavating. Please note that any markings or pegs placed on the site by Powerlink during any such visit are indications of approximate cable locations only. The constructor is responsible for all hand digging (potholing) to visually locate and expose POWERLINK’S plant.

If the constructor is unable to locate Powerlink’s plant within five metres of indicative plan locations, they must contact Powerlink’s Regional Officer for Local Security for further advice. Contact details are as follows;

Officers for Local Security:

<u>Region name</u>	<u>Contact’s name</u>	<u>Telephone number</u>	<u>Mobile number</u>
Southern	Bruce Muhling	(07) 3860 2305	0417 294 210
Central	Jeff Anstey	(07) 4931 2718	0418 785 743
Northern	Steve Cazzulino	(07) 4789 5561	0418 875 137

When working in the vicinity of Powerlink’s plant, please observe the following conditions:

Records

The first step before any excavation commences is to obtain records of Powerlink’s plant in the vicinity of the work. For new work, records should be obtained during the initial planning and design stage. The records provided by Powerlink must also be made available to all construction groups on site. Where plant information is transferred to plans for the proposed work, care must be exercised to ensure that important detail is not lost in the process.

Location of Cables

Examining the records is not sufficient, as reference points may change from the time of installation. Records must also be validated when working in close proximity to underground plant. The exact location of plant that maybe affected must be confirmed by use of an electronic cable locator followed by careful hand excavation to the level of cover slabs or conduits. Hand excavation must be used in advance of excavators. If doubt exists with respect to interpretation of cable records, Powerlink’s Regional Officer for Local Security must be contacted. Refer to the contact details above.

Electrical Cable Covers

Powerlink’s cables have underground cable warning tapes installed above the cables with the wording ‘high voltage cable’ and some may also have additional mechanical protection. Please note that some cables are known to be buried without covers.

Supervision

Any work in close proximity (within cable easement or five metres from the cable) to Powerlink’s cables will always require on site supervision arranged by Powerlink.

Proposed works

No placing or removal of soil by excavation, digging or by any other means is allowed in Powerlink’s easement without prior specific written consent from Powerlink.

Excavating Near Cables

For all work within five metres of where the plant is shown on Powerlink’s plans, the constructor is required to hand dig (pothole) and expose the plant to confirm its exact location before work can commence.

Excavating Parallel to Cables

If construction work is parallel to Powerlink's cables, then hand digging (potholing) at least every four metres is required to establish the location of all cables to confirm the exact location of Powerlink's plant before work can commence. Generally, no restrictions are placed on excavations parallel to Powerlink's cables to a depth not exceeding that of the cable and the entire excavation is located outside Powerlink's easement. If an excavation exceeds the depth of the cables and is within five metres of the edge of the easement (or within ten metres of the cable) it is likely that the covers or bedding material around the cables or conduits will move, and Powerlink must be contacted. Design for the installation of parallel infrastructure will need to take into account electrical issues, including induction and transferred potential. Please note that cable depths may change suddenly.

Excavating Across Cables

A minimum clearance of 150 mm above, below, and to the sides of cables must be maintained. A standard clearance between services must be maintained as set down by the individual authorities. If the width or depth of the excavation is such that the cable warning tapes are exposed or the cables being unsupported, then Powerlink must be contacted to determine whether the cables should be taken out of service, or whether they need to be protected or supported. In the case of high voltage cables, it is unlikely that Powerlink will be able to take the cables out of service, and is definitely not an option without a lead time of at least 12 months. A cable cover must never be removed without prior specific written approval. A cable cover and the warning tapes may only be replaced under the supervision of a Powerlink officer. Protective cover strips must never be omitted to allow separation between Powerlink's cables and other services.

Directional Boring Near Cables

When boring parallel to cables, it is essential that trial holes are carefully hand dug at regular intervals to validate the actual location of the Powerlink's conduits or cables before using boring machinery. Where it is required to bore across the line of cables, the actual location of the cables must first be proven by hand digging. A trench must be excavated one metre from the side of the cables where the auger will approach to ensure a minimum clearance of 150 mm from cables can be maintained.

Heavy Machinery Operation over Cables

If a heavy "crawler" or "vibration" type machinery is proposed to be operated over the top of cables, detailed engineering plans and supporting information must be submitted to Powerlink for its approval, or otherwise (in writing) prior to any on site work commencing.

Hot Work in Proximity to Exposed POWERLINK'S Plant and Underground Cables

Exposed underground electrical cables must be protected against the effects of heat by shielding or covering cables with a suitable material. Heating of exposed insulation is dangerous and must be avoided at all costs.

Explosives

Before using explosives in the vicinity of POWERLINK'S cables, clearances should be obtained from Powerlink's Design Engineer. If explosives are proposed to be used within 100 metres of cables, an engineering report demonstrating that no damage will be sustained to Powerlink's plant must be provided to Powerlink prior to using such explosives.

Damage Reporting

All damage to Powerlink's cables, conduits and pipes must be reported to Powerlink no matter how insignificant the damage appears to be. Even very minor damage to cable protective coverings can lead to eventual failure of cables through corrosion of metal sheaths and moisture ingress. Some cables contain oil, and damage may result in an oil leak which will seriously impact the performance of the cable and will be treated as an environmental incident. All work in the vicinity of any of Powerlink's plant that has been damaged should cease and the area should be vacated until a clearance to continue work has been obtained from an authorised Powerlink officer.

Please note that high voltage electrical cables, if damaged, can cause serious injury, or fatality. Extreme caution needs to be exercised at all times when working in close proximity to these cables.



Electricity emergencies all areas or after hours enquiries
24 Hours 1800 353 031

Plant Solutions and Assistance

If Powerlink's plant location plans or visual location of Powerlink's plant by hand digging reveals that the location of this plant is situated wholly or partly where the developer or constructor plans to work, then Powerlink's Property Services & Management Team must be contacted on (07) 3866 1313 to discuss possible engineering solutions.

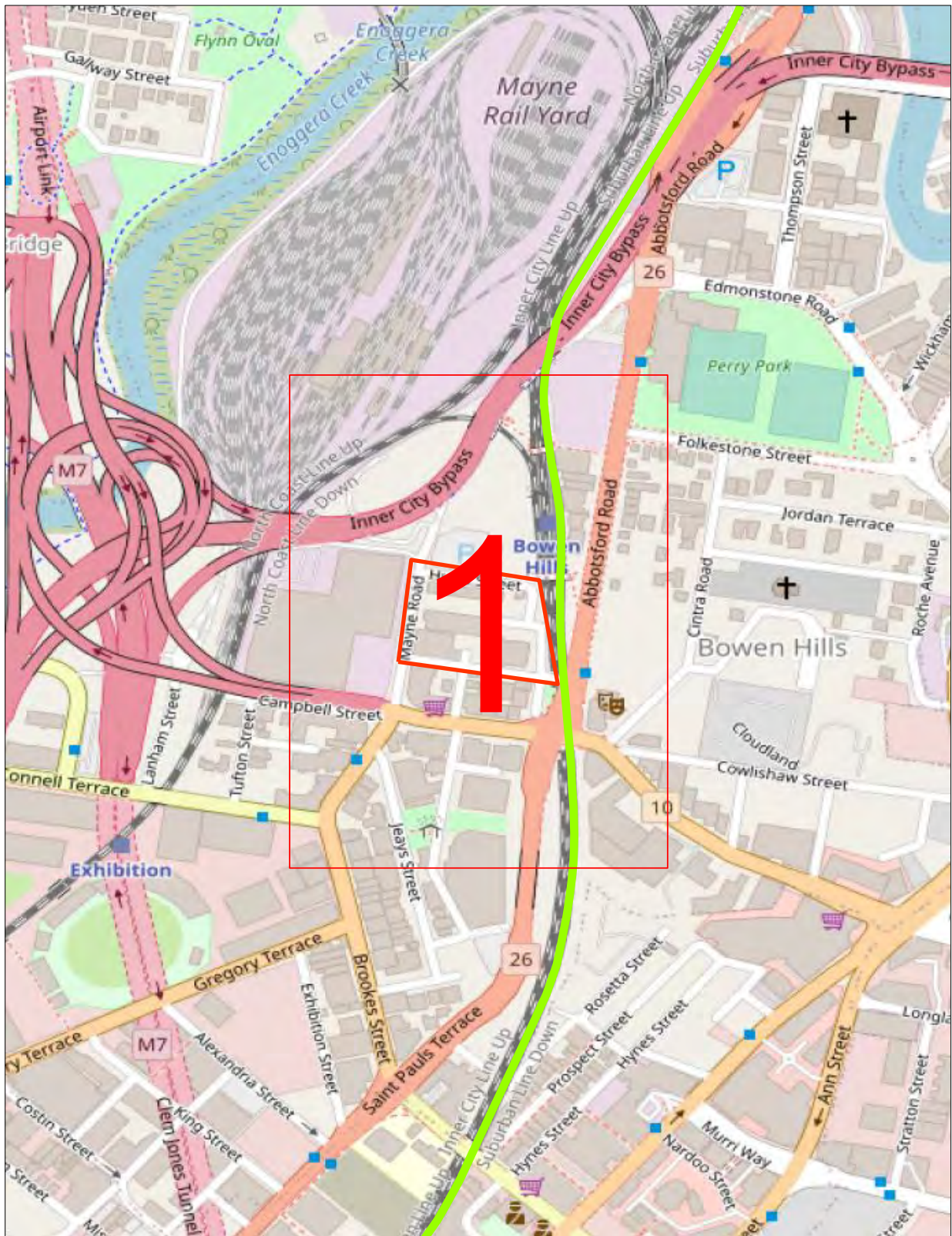
If detailed engineering assessment work, plant relocation, or protection works are part of the solution offered by Powerlink, then the cost of this work (the technical assessment and design, as well as the solution implementation cost) is recoverable by Powerlink from the principal developer or constructor. Powerlink will not commence work on the assessment and design until the developer or constructor provide a purchase order for these works. Powerlink will then provide a cost estimate for any proposed solution, and will not commence work on the solution until the developer or constructor provide a purchase order for the cost estimate.



Overview Map

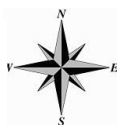
Enquiry No: 220076952

39 Mayne Street Bowen Hills



Powerlink Queensland makes every effort that the information contained on this map is up to date and correct but accepts no responsibility for this information.

The information is provided as a guide only. For up to date and specific information you should contact our Virginia office on (07) 3866 1313.



LEGEND:

- | | | |
|---|---|---|
| 1 Detail Map Area | — High Voltage Cable | Affected BYDA Work Area Symbols
● |
| Powerlink Substation | — Pilot Cable | |
| Other Substation | — Optic Fibre | |
| Possible Comms | — Decommissioned | |

0 0.05km

Imagery sourced from Open StreetMaps



Map 1

Enquiry No: 220076952

39 Mayne Street Bowen Hills



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0 0.02km

Imagery sourced from Open StreetMaps

LEGEND:

Powerlink Substation

Other Substation

Possible Comms

High Voltage Cable

Pilot Cable

Optic Fibre

Decommissioned

Affected BYDA Work Area Symbols





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Sequence Number: 220076955

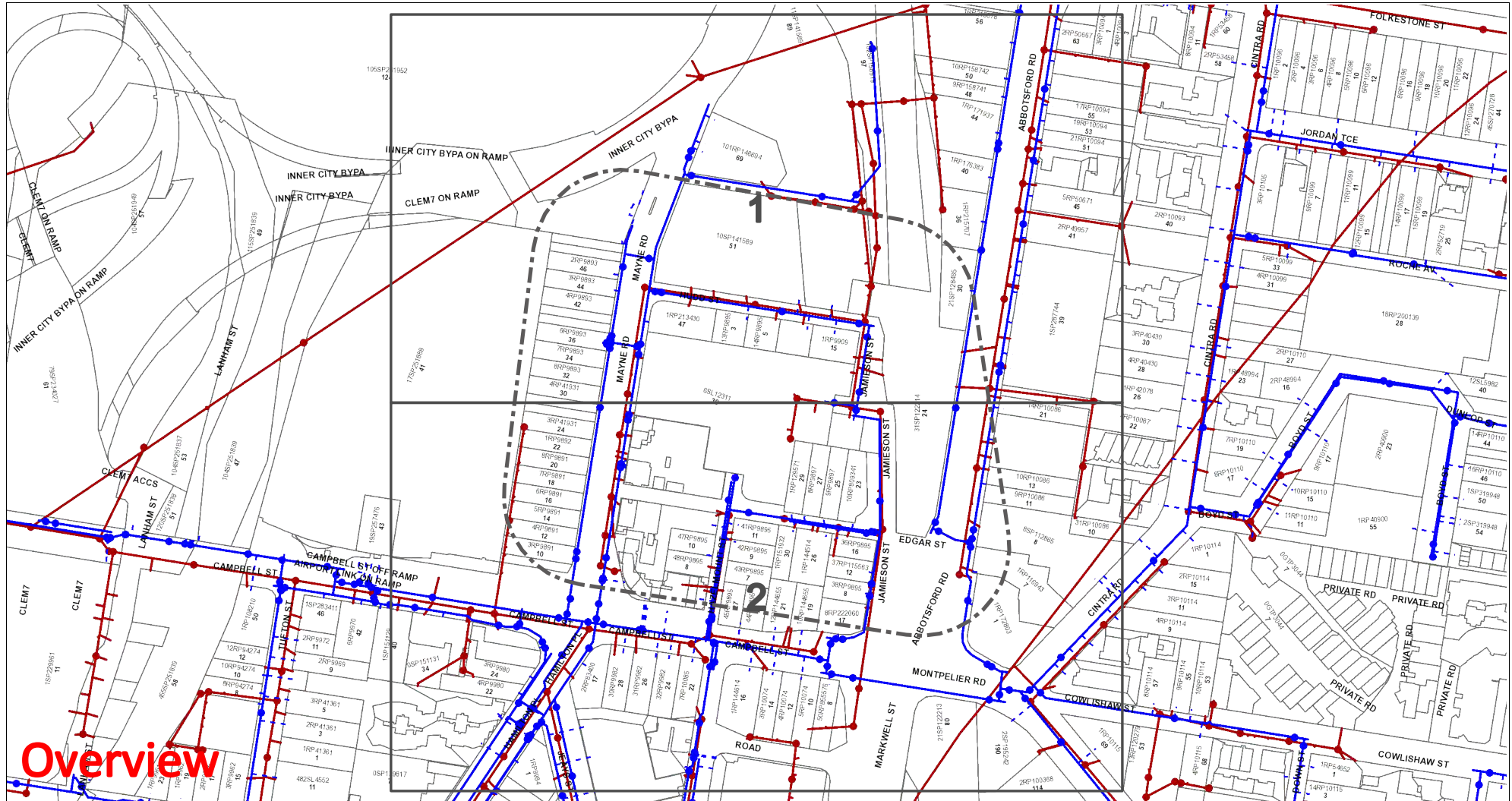
Date Generated: 16 Jan 2023



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Email: Fibre.Locations@optus.net.au
For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208



Urban Utilities - Water, Recycled Water and Sewer Infrastructure



Overview

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

DBYD Reference No: 220076960

Date DBYD Ref Received: 16/01/2023

Date DBYD Job to Commence: 17/01/2023

Date DBYD Map Produced: 16/01/2023

This Map is valid for 30 days

Produced By: Urban Utilities



Sewer

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

Water

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



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

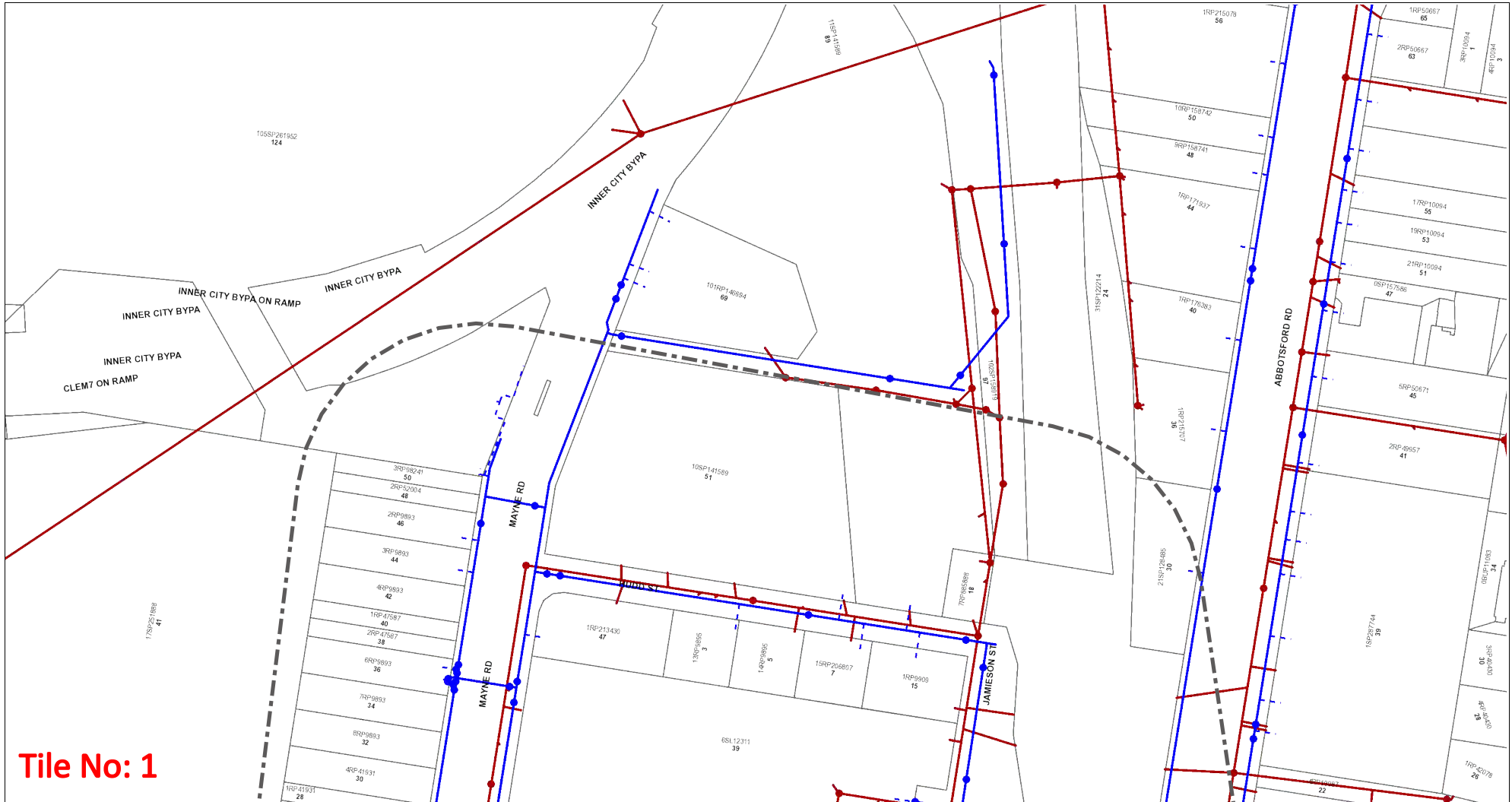
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Based on or contains data provided by the State of Queensland (Department of Natural Resources and Mines) [2020], in consideration of the State permitting the use of this data you acknowledge and agree that the State gives no warranty in relation to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

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

ABN 86 673 835 011

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



Tile No: 1



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

DBYD Reference No: 220076960

Date DBYD Ref Received: 16/01/2023

Date DBYD Job to Commence: 17/01/2023

Date DBYD Map Produced: 16/01/2023

This Map is valid for 30 days

Produced By: Urban Utilities

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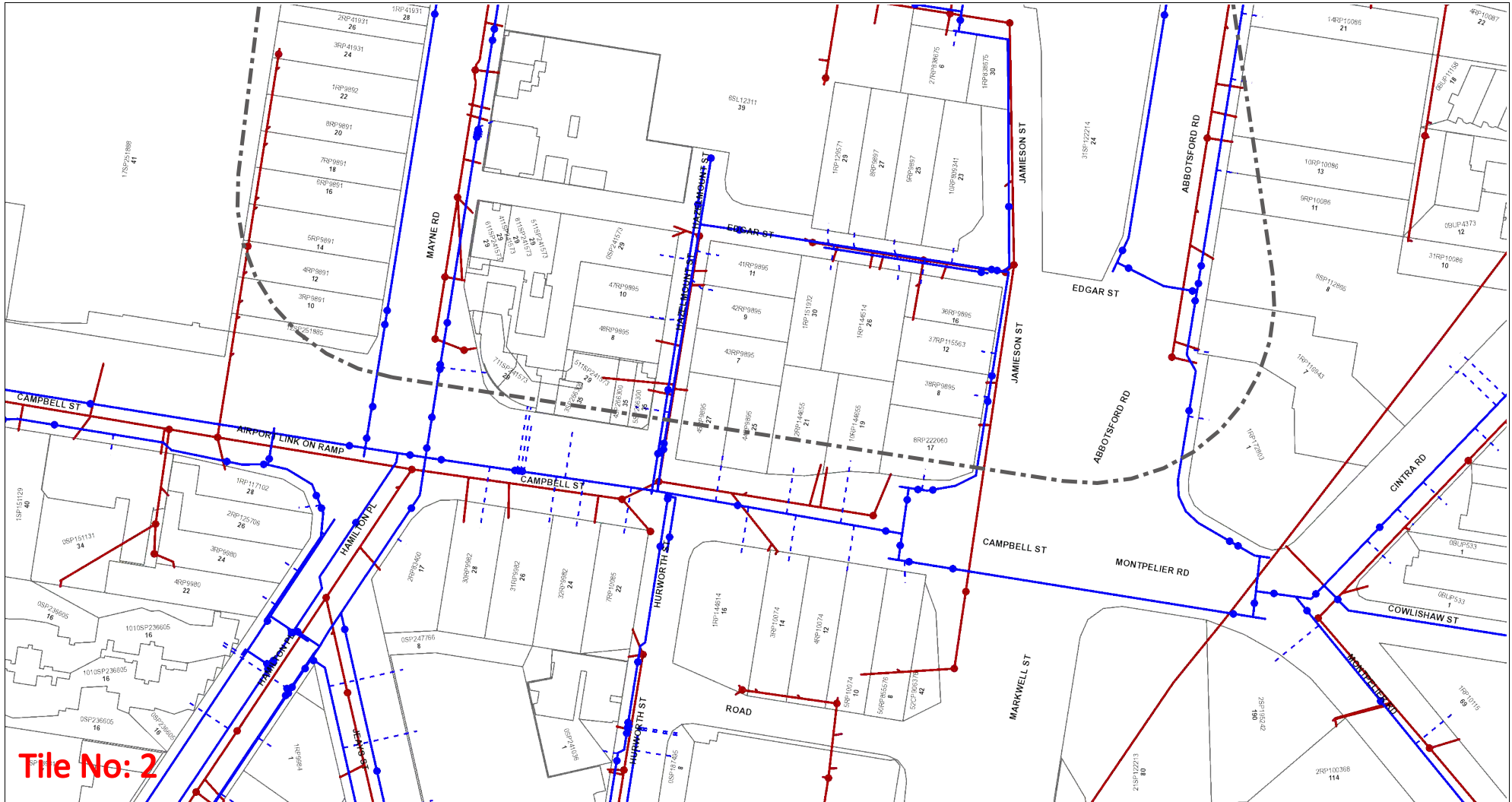
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ABN 86 673 835 011

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



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

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Date DBYD Job to Commence: 17/01/2023

Date DBYD Map Produced: 16/01/2023

This Map is valid for 30 days

Produced By: Urban Utilities

Sewer

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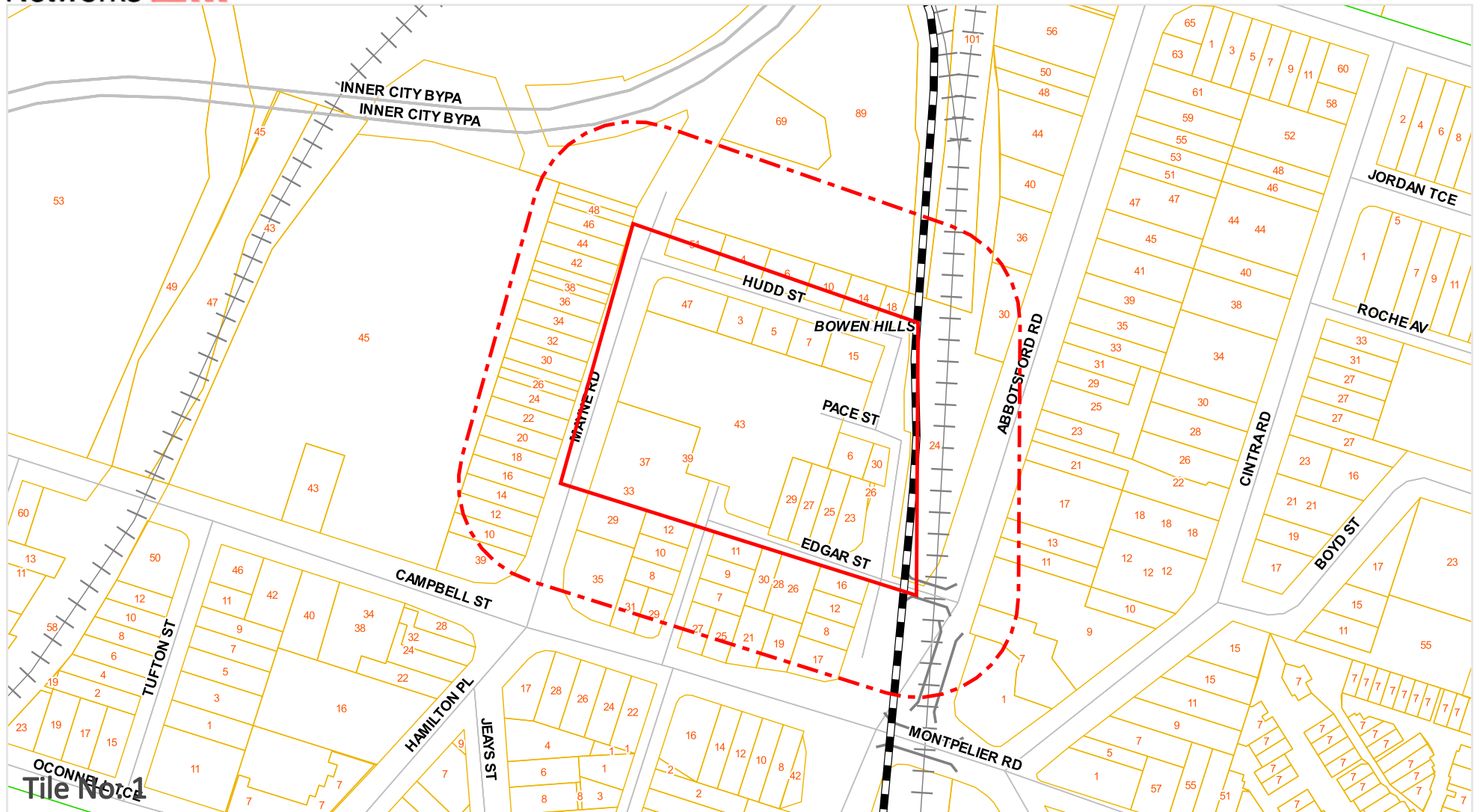
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www.urbanutilities.com.au ABN 86 673 835 011

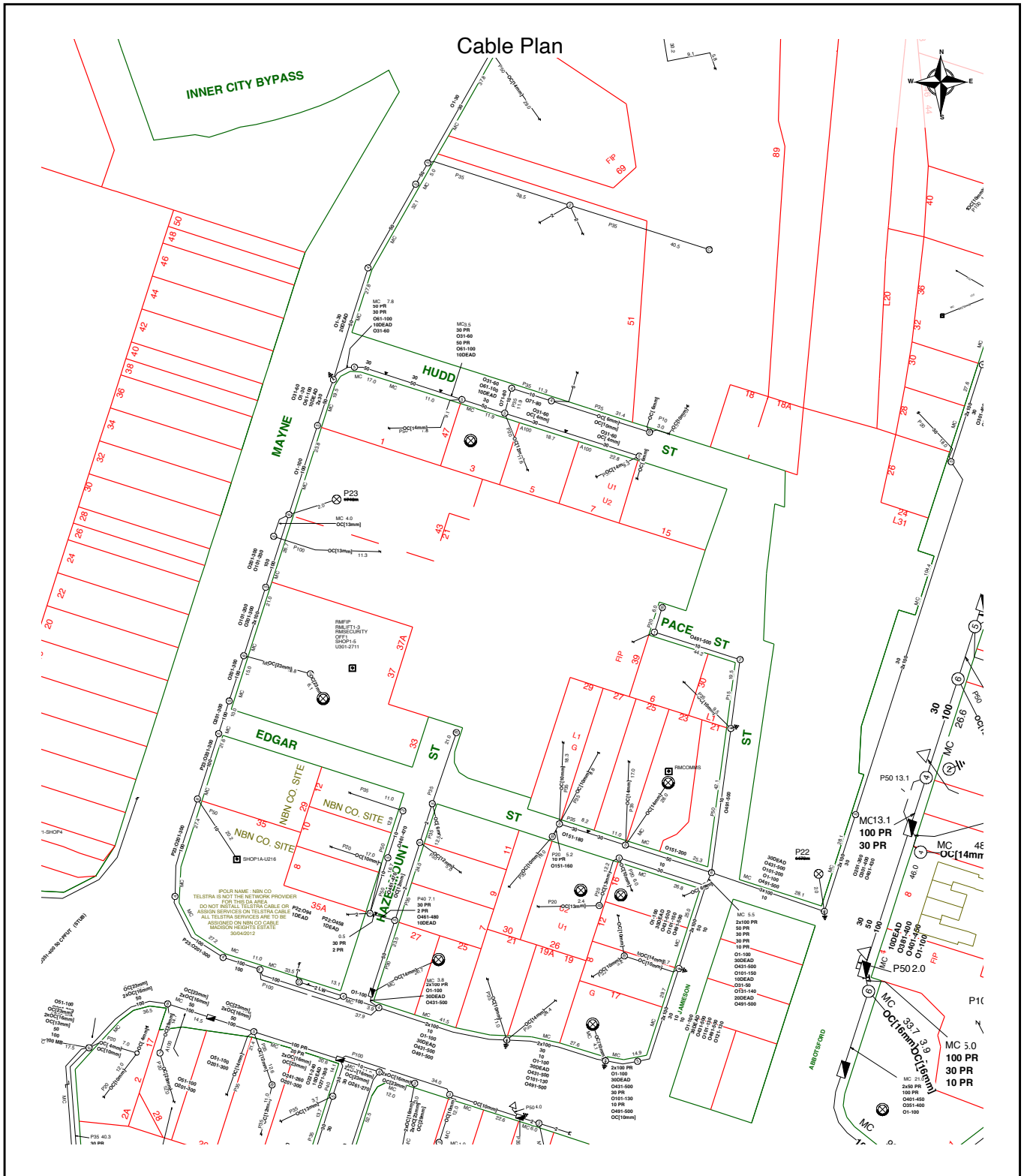


Legend | Scale: 1:2500



Cable

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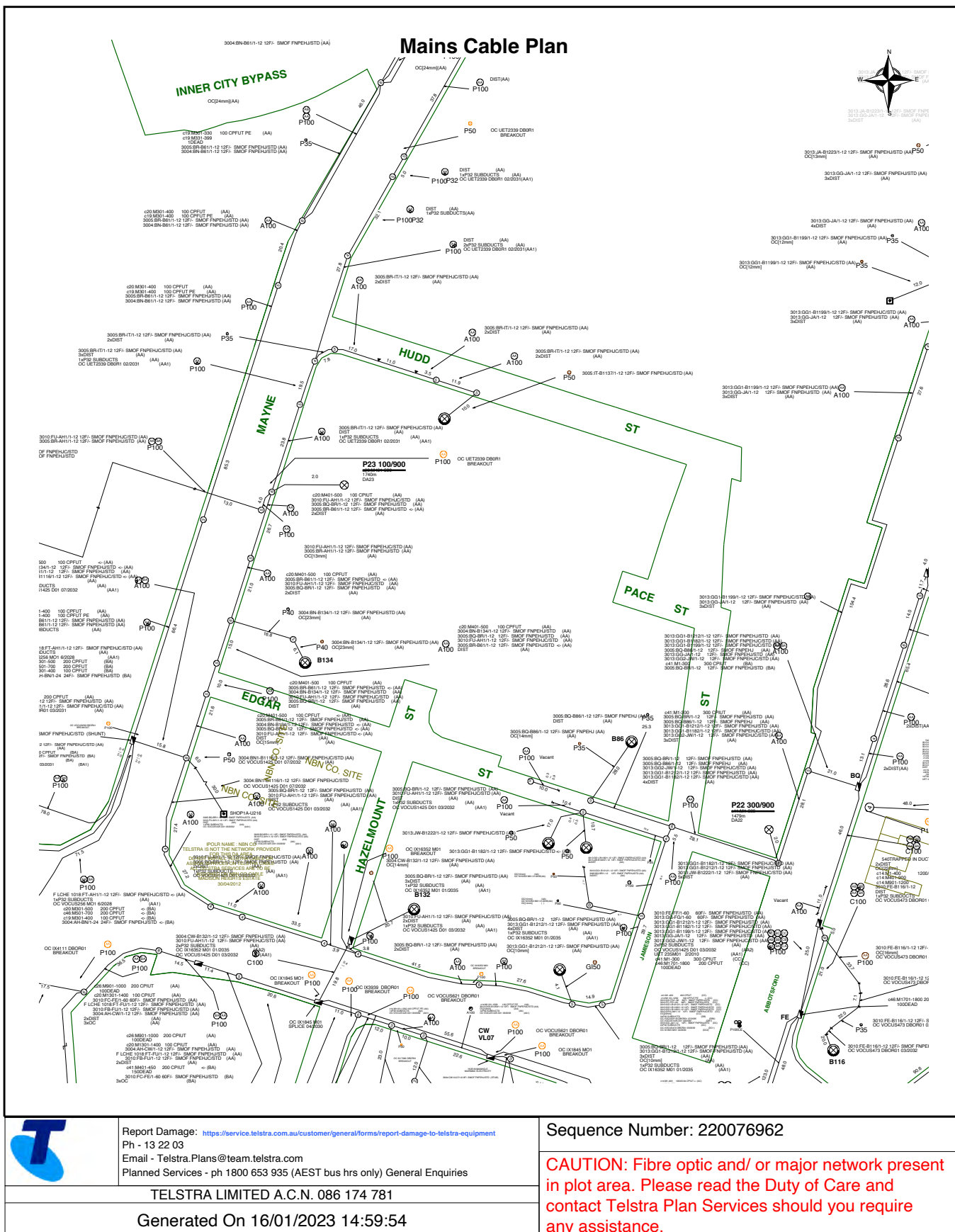
	Report Damage: https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-equipment Ph - 13 22 03 Email - Telstra.Plans@team.telstra.com Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries	Sequence Number: 220076962
Generated On 16/01/2023 14:59:50		

CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

WARNING
Telstra plans and location information conform to Quality Level "D" of the Australian Standard AS 5488-Classification of Subsurface Utility Information. As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D. Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing it. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy. Further on site investigation is required to validate the exact location of Telstra plant prior to commencing construction work. A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works.

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



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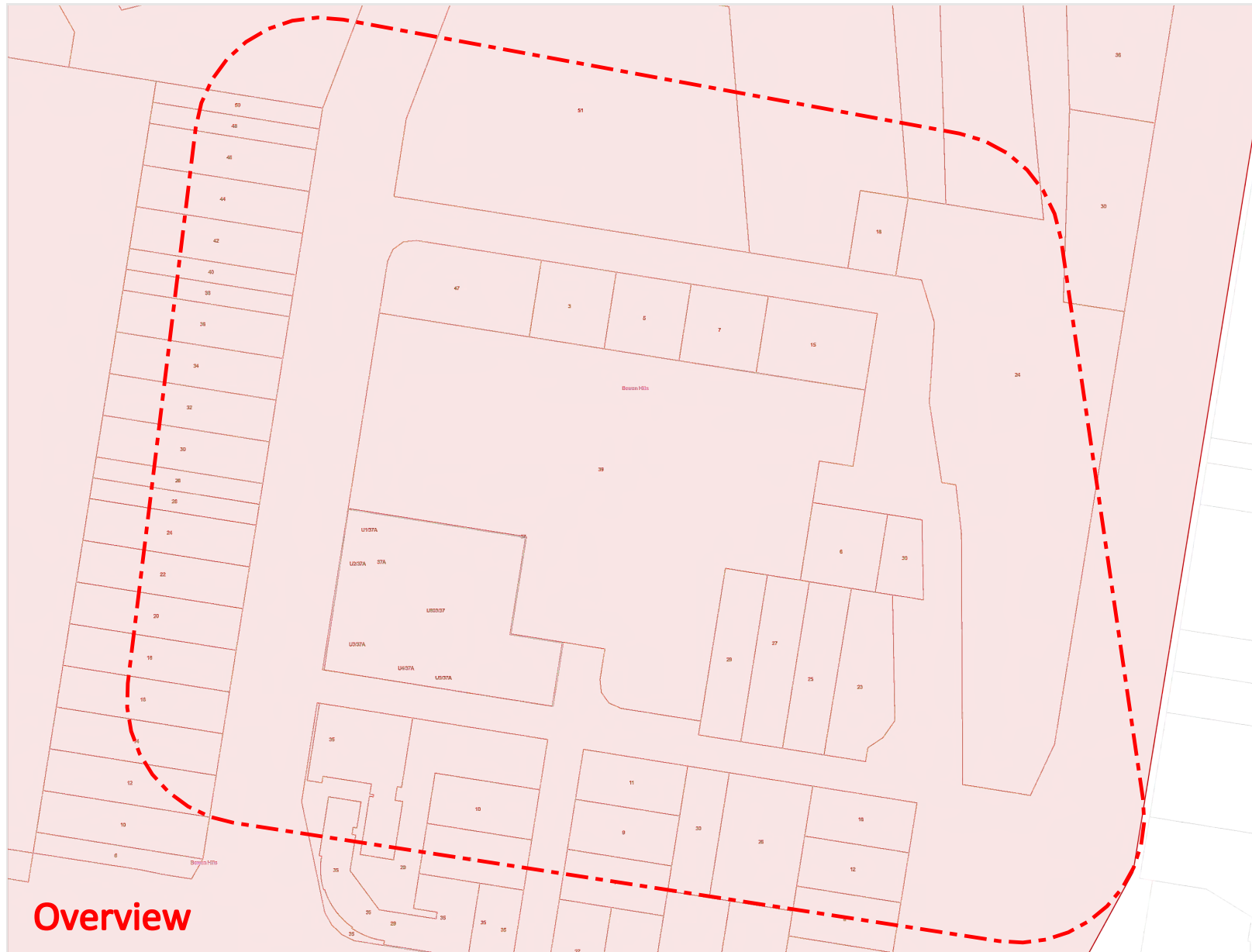
Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing it.

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

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



Legend

- Transurban Asset Area
- DBYD Search Area



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Scale: 1:1263
Expires: 13 Feb 2023

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Tile No: 1

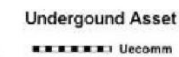
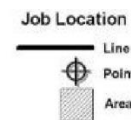
Uecomm Underground Cable

Scale: 1:2500

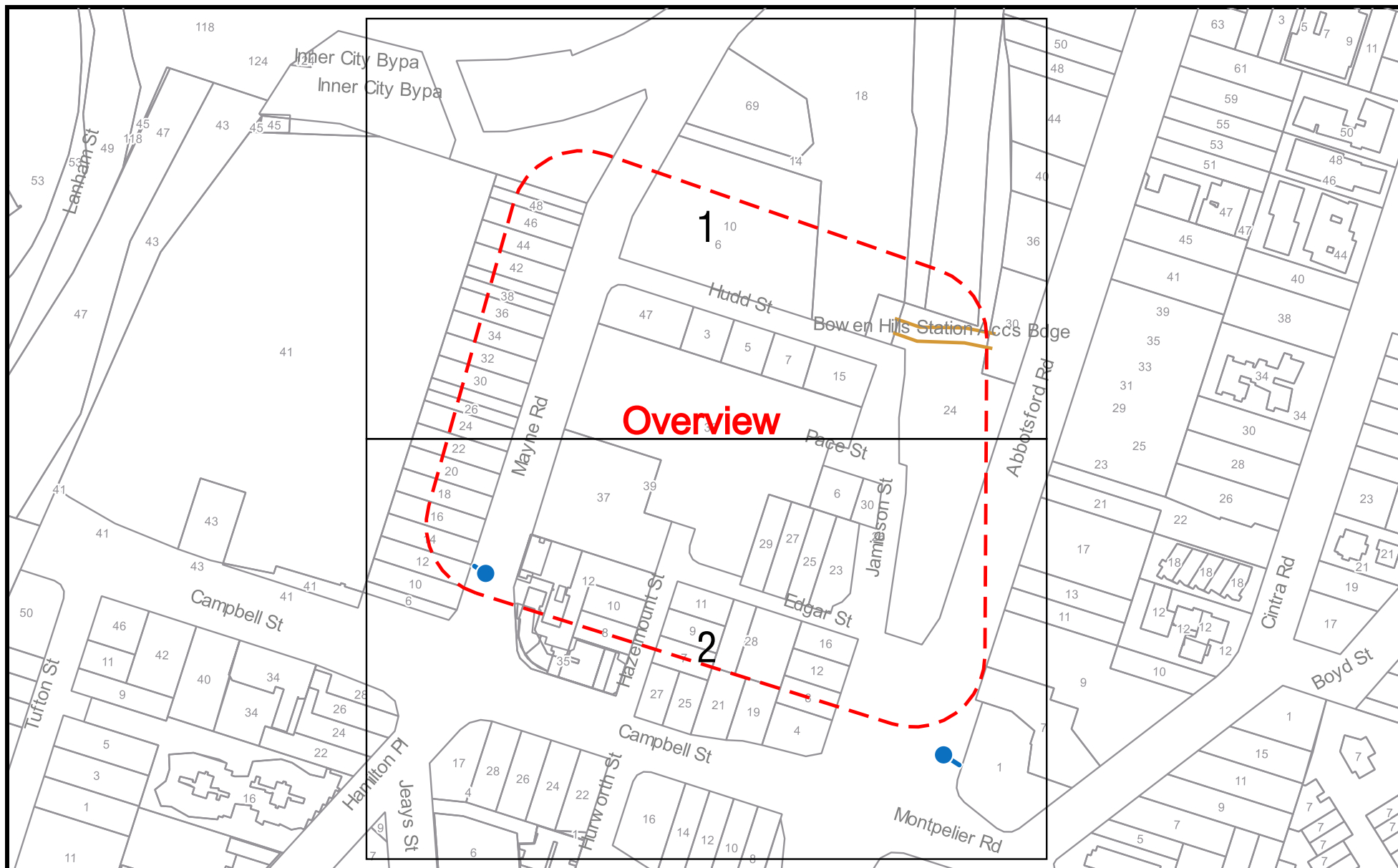
Printed on: 16 Jan 2023

Sequence Number: 220076955

Location: 39 Mayne Street, Bowen Hills, QLD 4006



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SEQUENCE NUMBER: 220076957
 JOB NUMBER: 33426854
 ADDRESS: 39 Mayne Street, Bowen Hills, QLD 4006

LEGEND

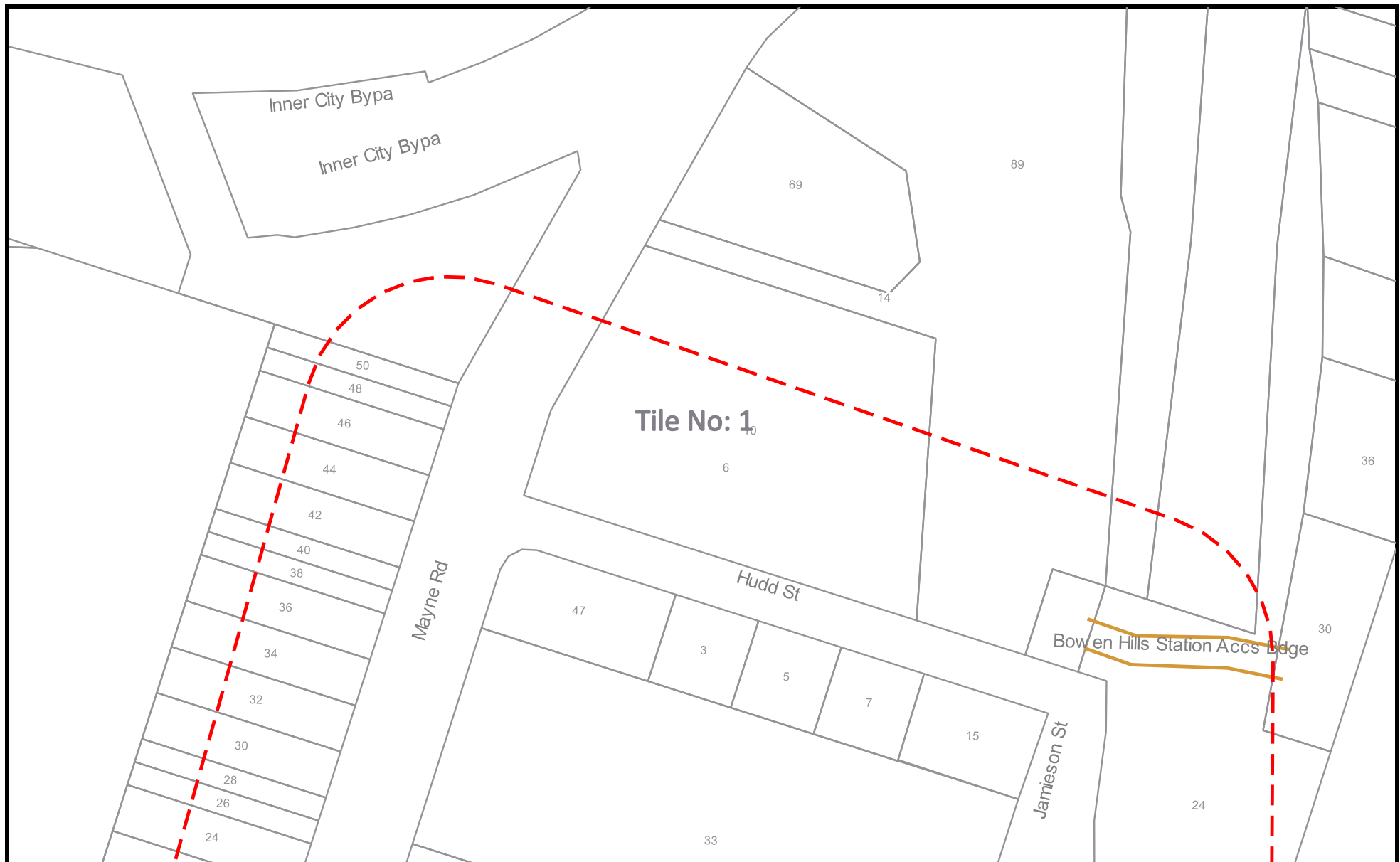


Vocus Group Pit



Vocus Group Conduit

SCALE: 1:2050



SEQUENCE NUMBER: 220076957
 JOB NUMBER: 33426854
 ADDRESS: 39 Mayne Street, Bowen Hills, QLD 4006

LEGEND

- Vocus Group Pit
- Vocus Group Conduit

SCALE: 1:1000



SEQUENCE NUMBER: 220076957
 JOB NUMBER: 33426854
 ADDRESS: 39 Mayne Street, Bowen Hills, QLD 4006

LEGEND

-  Vocus Group Pit
-  Vocus Group Conduit

SCALE: 1:1000

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