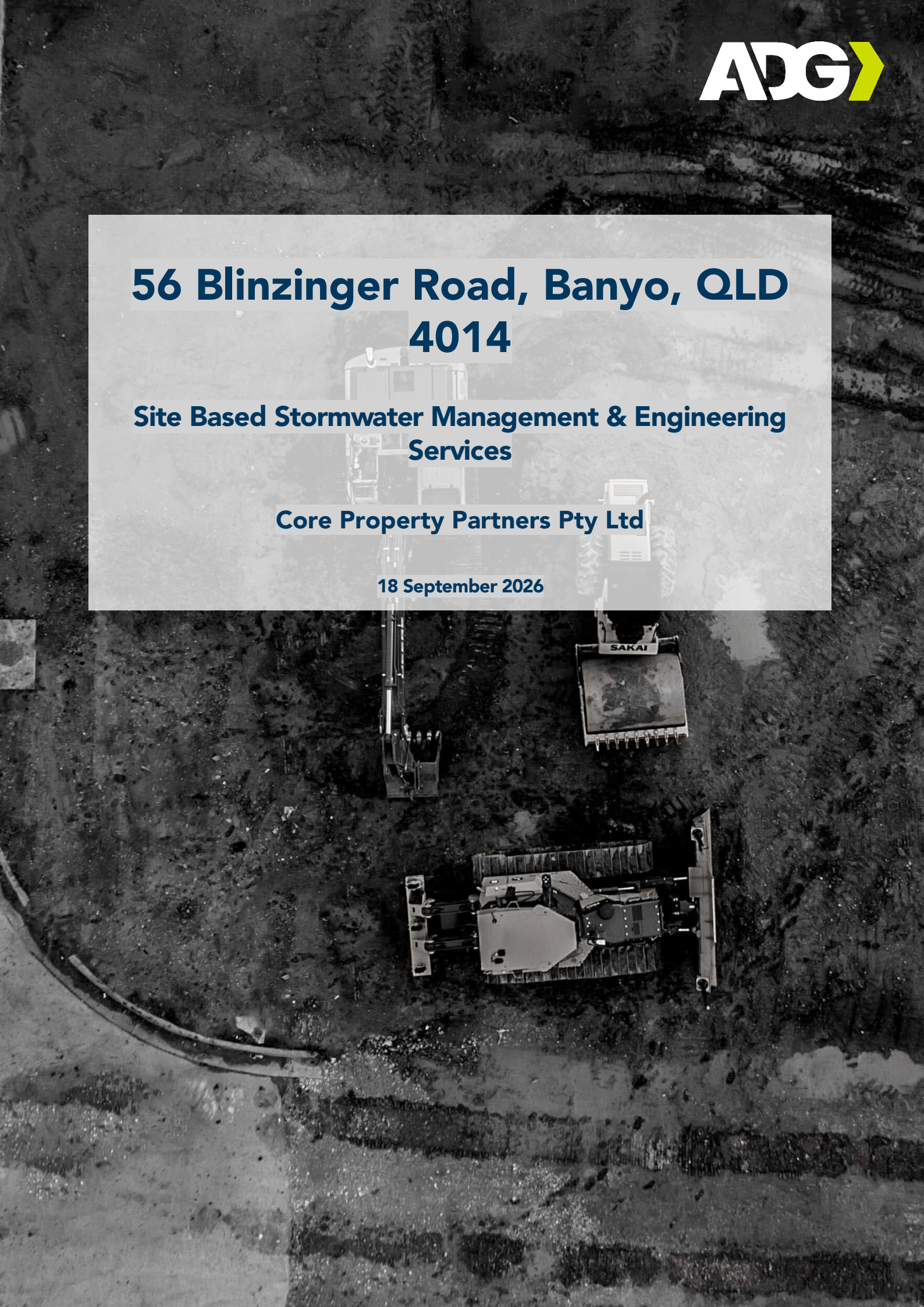
56 Blinzinger Road, Banyo, QLD 4014

Site Based Stormwater Management & Engineering Services

Core Property Partners Pty Ltd

18 September 2026



DOCUMENT VERIFICATION

Job Title 56 Blinzinger Road, Banyo, QLD 4014

Job Number 29719.001

Document Title Site Based Stormwater Management & Engineering Services

DOCUMENT CONTROL

Date	Document	Revision No.	Author	Reviewer	Approver
18/09/2026	Civil Engineering Report	00	TG	DY CM	GVG

APPROVAL FOR ISSUE

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EXECUTIVE SUMMARY

ADG Engineers (Aust.) Pty Ltd was engaged by Core Property Partners to prepare a Civil Engineering Report suitable for submission to EDQ for a site located at 56 Blinzinger Road, Banyo QLD 4014 . The proposed development is for an affordable housing project consisting of a three level multi unit complex with undercroft parking. The subject site is part of an overall Masterplan development.

The purpose of this Civil Engineering Report is to provide advice on the proposed development as detailed in the DC8 Studio architectural drawings. The works described herein are subject to further approvals and cover works required to service the proposed development including earthworks, roadworks, stormwater drainage, sewerage and water supply, electricity, 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. The above-mentioned objectives are achieved through the use of onsite detention storage measures.

To achieve the stormwater quantity objectives, the proposed development requires a total detention volume of 150m^3. This volume will be provided through an underground storage tank .

In addition to the stormwater quantity results, the report includes a summary of the modelled water quality results. Water Sensitive Urban Design (WSUD) features and/or Council Approved Proprietary Water Quality Treatment Products have been included in the design to achieve the water quality objectives for South East Queensland specified in the State Planning Policy 2017, namely, the removal of gross pollutants, suspended solids, nitrogen and phosphorus to target reduction levels. ADG recommends the use of the following devices to meet the water quality objectives identified within the SPP:

- SQID 1: Min. 3 x OceanGuards with 200µm mesh bags (OG-200).
- SQID 2: A 15 x Tall(690) NPSorb cartridge StormFilter system within a 10m^2 StormFilter chamber, inside the detention tank.

The site appears to be adequately serviced by reticulated water, sewerage, stormwater infrastructure, 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 AS/NZS 3500.3
- Australian Rainfall and Runoff Guideline (ARR)

1 INTRODUCTION

1.1 Background

ADG Engineers (Aust.) Pty Ltd was engaged by Core Property Partners Pty Ltd to carry out a Civil Engineering Report suitable for submission to EDQ and any required referral agencies for a site located at 56 Blinzinger Road, Banyo, QLD 4014. The proposed development forms part of a larger master-planned development . This report relates to the proposed Lot 102 and has been prepared to support an development application to EDQ for an affordable housing project consisting of a three level multi unit complex with undercroft parking.

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 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

Street Address	56 Blinzinger Road, Banyo QLD 4014 (Lot 102)
Site Area	4320 m^2

The location of the proposed development is demonstrated in **Figure 1**. Refer to Appendix A for the proposed lot configuration of the master plan development.



Figure 1: Site Location (as accessed from Near Maps on 09.09.2026)

2 EXISTING SITE

2.1 Existing Site Features

The subject site is currently vacant and was previously part of an overall Energex depot site which occupied majority of 56 Blinzinger Road, Banyo. The original Energex depot was fully demolished in 2017. The proposed site location is currently vacant and grass covered.

- The site is bound by:
  - Vacant land to the northwest
  - Wellington Street to the southeast
  - Blinzinger Road to the southwest

The site is fairly flat and slopes from South to West. The existing site features can be seen in Figure 2.

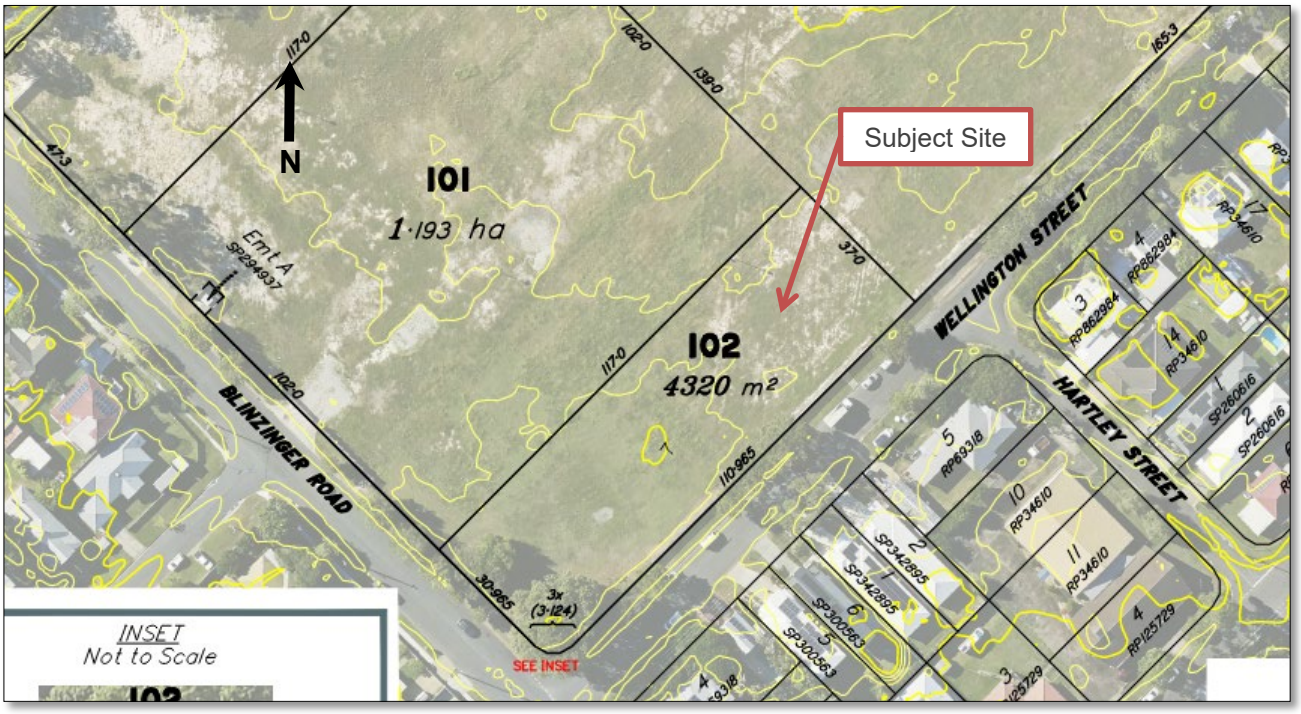


Figure 2: Site Layout (as extracted from the proposed lot configuration plan)

The existing contours, surface levels and the location of the existing buildings are identified on the survey plan drawing 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. As the site does not have basement levels and will largely be consist of minor filling works, there will be minimal excavation depending on the building foundation type. This contamination will be addressed in accordance with Potential and Actual Acid Sulfate Soil Planing Scheme Policy by submitting an Acid Sulfate Soils Investigation Report and a full Acid Sulfate Soil Management Plan. Refer to Appendix F for the Potential and Actual Acid Sulfate Soils Overlay Code.



Figure 3: Acid Sulfate Soils

4 EARTHWORKS

4.1 Bulk Earthworks

The subject site will require minimal earthworks to create the proposed development and achieve the desired finished surface levels. Details of the earthworks quantities will be provided during the detailed design phase of the development. The development may require minor reshaping of the verge.

5 ROADWORKS

5.1 Existing Infrastructure

The subject site is adjacent to the following roads:

- Wellington Street – neighbourhood road, with kerb and channel drainage on each side and two-way cross fall
- Blinzinger Street – neighbourhood Road, with kerb and channel drainage on each side and two-way cross fall

The subject site currently does not consist of any existing crossovers from Wellington Street or Blinzinger Street.

5.2 Proposed Infrastructure

ADG anticipate that a new vehicle crossover to Wellington Street will be constructed as part of the proposed development.

The development may require works for verge regrading, in order to achieve council standards.

Refer to the architectural drawings supplied in support of this report for further information.

6 FLOODING

A FloodWise Property Report was obtained from Brisbane City Council (BCC) for 56 Blinzinger Road. The report identifies that there is no River, Overland Flow or Stormtide flooding affecting the property, there is a small portion of creek/waterway affecting the northern boundary.

Whilst the report identifies creek/waterway flooding affecting portions of the parent property, the subject site is located within proposed Lot 102 at the southern corner of the parent property and is outside the mapped flood-affected area. Review of the BCC Flood Overlay Mapping confirms that the subject site is not affected by flooding. Accordingly, the subject site is deemed to be not subject to the Flood Overlay Code. A copy of the FloodWise Property Report is provided in Appendix F.

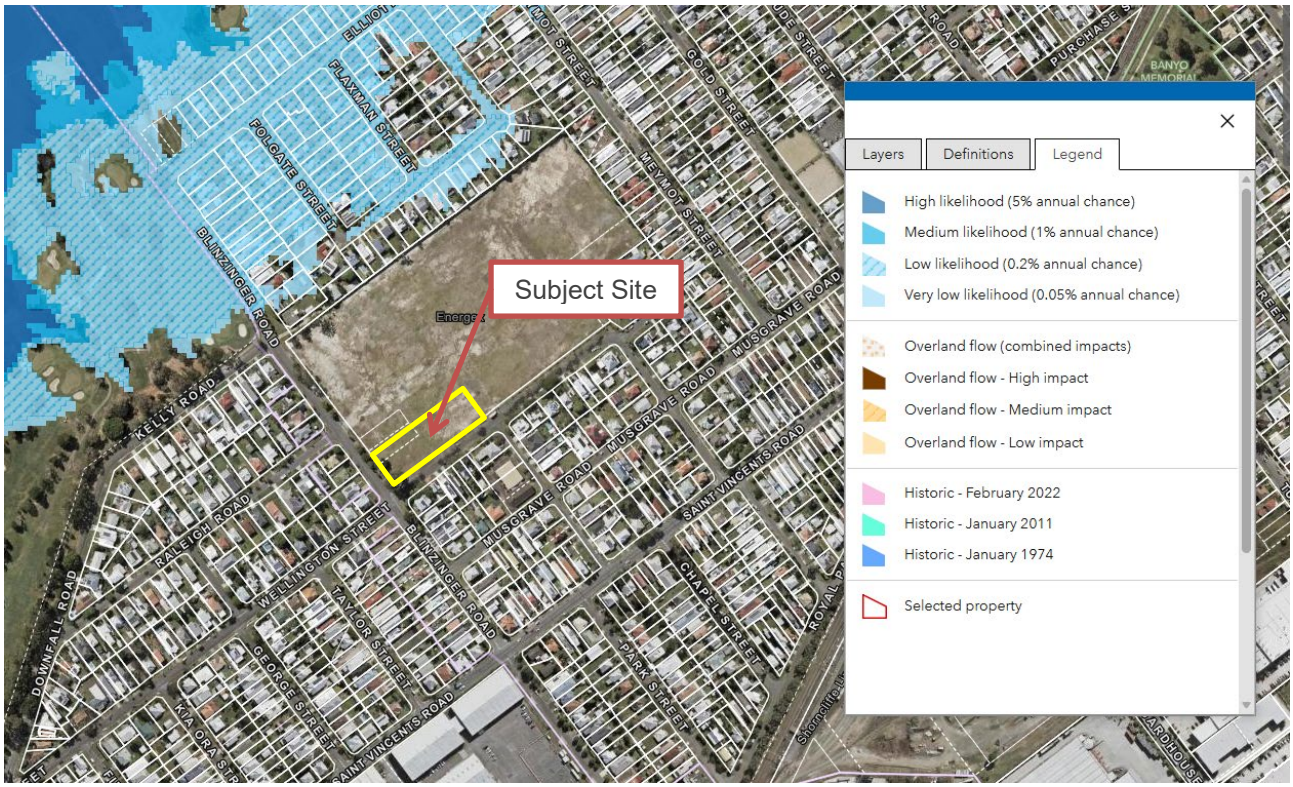


Figure 4: BCC Creek and Waterway Flood Hazard Overlay

7 STORMWATER INFRASTRUCTURE

7.1 Existing Infrastructure

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

- A 300mm stormwater main located along Wellington Street, along the southern frontage of the subject site;

Refer to the Community Maps information in Appendix J for further information regarding the existing stormwater infrastructure.



Figure 5: Existing Stormwater Lines (as accessed from BCC Community Maps on 14.09.2026)

7.2 Lawful Point of Discharge (LPD)

7.2.1 Existing LPD

Based on the available survey information, contour data, aerial imagery, and site inspection, the majority of the subject site is understood to sheet flow north to existing Council stormwater infrastructure located along the northern boundary of 56 Blinzinger Road. The rest of the site currently drains via sheet flow towards Wellington Street kerb and channel along the southern boundary and Blinzinger Street kerb and channel along the western boundary. Hence, the proposed development will aim to mimic these existing lawful points of discharge.

Refer to Appendix B for the Pre Development Catchment Plan.

7.2.2 Proposed LPD

The subject site will be split into three catchments and will seek to utilise a new stormwater connection point that will be provided by the Masterplan developers at the northern boundary of the subject site as the primary Lawful Point of Discharge (LPD) for the development. The subject site's roof catchment and carpark will be mitigated and discharged to this primary LPD, whilst the frontages of Wellington Street and Blinzinger Road will sheet flow to the respective kerb and channels as per existing pre-development drainage patterns. This approach maintains existing runoff characteristics where practical, does not increase flows to existing downstream infrastructure and provides controlled discharge of the developed catchment.

Refer to Appendix C for the Post Development Catchment Plan.

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 as well as the following objectives:

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% AEP event.
- Ensure proposed quantity control measures detain and convey flows in accordance with QUDM (2017) minimum freeboard recommendations.

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

8.1 Proposed Development and Associated Issues

One of the implications of an increase in impervious area is that the total volume and flow rate of stormwater runoff from the catchment will increase. It is essential that these increases are mitigated such that post-developed peak flows do not exceed those for the pre-developed case.

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: 20% AEP
  - Surface drainage infrastructure sized for a 20% AEP through to point of discharge.
- Major Event: 1% AEP
  - Roof water capture system is to capture and pipe all flows up to and including the 5% AEP through to the detention tanks/LPD.
  - Detention tanks designed to attenuate flows up to and including the 1% AEP.
  - Surface drainage overflows in events up to and including the 1% AEP 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 Stormwater Quantity Modelling

A DRAINS Hydraulic and Runoff model was created to analyse the post-developed scenario and determine a volume of required detention to mitigate the peak flow runoff down to the acceptable flow rates.

IL-CL Ensembled storms were used to run all design storm events. DRAINS uses Australian Rain and Runoff rainfall burst data to produce the critical storm event for each of the AEP storm events ranging from 63% to 1% AEP.

Refer to Appendix H for all model data inputs.

8.2.2.2 DRAINS IL-CL Rainfall Parameters from ARR and BOM

- Latitude -27.377000
- Longitude 153.070000
- Storm Losses
  - ID, 3602.0
  - Storm Initial Losses (mm), 13.0
  - Storm Continuing Losses (mm/h), 2.2
- Initial Impervious Continuing Losses (mm/h), 0 (adopted).

8.2.3 Catchment Area (A)

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

8.3 Pre-Development Hydrology

The subject site has a total area of 4320m2 and currently comprises of three catchment areas. The majority of existing runoff drains towards the northern portion of the site, where flows are collected by the existing stormwater network at the northern end of the lot. The remaining two minor catchments sheet flow towards Wellington Road and Blinzinger Road. DRAINS modelling calculations were performed, the results of which can be seen outlined in Table 5.

Please refer to Appendix B for the pre-development catchment plan associated with these calculations.

Table 2: Pre-Development Catchment Details

Catchment I.D	Area (m^2)	% Impervious	63% AEP (m^3/s)	50% AEP (m^3/s)	20% AEP (m^3/s)	10% AEP (m^3/s)	5% AEP (m^3/s)	2% AEP (m^3/s)	1% AEP (m^3/s)
EX1 - Northern	2722	0	0.044	0.051	0.078	0.095	0.110	0.130	0.143
EX2 - Blinzinger	417	0	0.009	0.010	0.016	0.020	0.023	0.027	0.029
EX3 - Welington	1181	0	0.022	0.026	0.041	0.051	0.063	0.073	0.080

8.4 Post-Development Hydrology

For the post-development scenario, the subject site has been modelled as discharging to three catchment areas, consistent with the pre-development condition. Hydrologic modelling was undertaken using DRAINS, with the post-development results summarised in Table 5. Please refer to Appendix C for the post-development catchment plan associated with these calculations.

Table 3: Post-Development Catchment Details

Catchment I.D	Area (m^2)	% Impervious	63% AEP (m^3/s)	50% AEP (m^3/s)	20% AEP (m^3/s)	10% AEP (m^3/s)	5% AEP (m^3/s)	2% AEP (m^3/s)	1% AEP (m^3/s)
C1	3716	0.92	0.116	0.130	0.180	0.212	0.245	0.285	0.316
C2	125	0.24	0.003	0.003	0.005	0.006	0.008	0.009	0.009
C3	479	0.22	0.011	0.012	0.019	0.024	0.030	0.033	0.036

8.5 Detention Analysis and Strategy

As can be seen, the post development peak flows for Catchment C2 and C3 are smaller than the peak outflows from the pre-development scenario. Hence, detention is not required for Catchment C2 and C3.

However, the peak outflows for the post-developed Catchment C1 scenario (Table 5) are larger than the peak outflows from the pre-developed scenario (Table 4), hence, onsite detention will be required for Catchment C1. This section outlines the detention measures required to mitigate the post-developed outflows to less than or equal to the pre-developed flows.

It is noted that the roof catchment is assumed to only be able to direct 5% AEP flows into the detention tank. Hence, the tank will be sized to over mitigate the difference in unmitigated flows from 2% AEP and 1% AEP storm events in order to achieve pre development flows overall across all storm events.

Results

A comparison between the peak discharge values between each of the DRAINS modelled scenarios is presented in Table 6.

Table 4: DRAINS Modelling Results

Design Storm (AEP)	Permissible Site Discharge (m^3/s)	Post-Development Flows, Mitigated (m^3/s)	Mitigated flow difference (m^3/s)
63%	0.044	0.039	-0.005

50%	0.051	0.042	-0.009
20%	0.078	0.052	-0.026
10%	0.095	0.057	-0.038
5%	0.110	0.071	-0.039
2%	0.130	0.111	-0.019
1%	0.143	0.142	-0.001

The proposed detention tank successfully mitigates the post-development flows to at or below permissible conditions for all major storm events.

The proposed detention volume of 150m3 will provide sufficient volume to throttle all storm events to pre-development levels. This discharge has been achieved using a multistage orifice outlet contained within the detention tanks, as described in Table 5 below.

Table 5: Outlet Configuration

Detention Location	Primary Chamber	Emergency Overflow
C1	160mm circular low flow orifice at base of tank 100mm circular mid flow orifice at 1.0m above base of tank 2m long weir at 1.3m above base of tank	Grated lid provided at the carpark surface to facilitate emergency surcharge of flows.

The proposed detention tank successfully mitigates the post-development flows to below permissible pre-development.

Refer to Appendix H for all model data and results.

8.5.2 Recommendation

ADG recommend that all stormwater generated from within catchment C1 be conveyed to a detention tank system to mitigat the peak discharge from the proposed development north of the site. The required detention volume was adopted as 150m3, which can be accommodated within an underground tank, with final design to be determined at detailed design stage. Conceptual arrangement of the proposed detention and drainage systems can be seen in the ADG Conceptual Drainage Layout Plan in Appendix D.

The nominated volumes specified above shall be reserved for detention purposes only and will be in addition to any desired roof water harvesting volume (i.e. for reuse purposes such as irrigation, if required).

As mentioned above, Catchment C2 and C3 does not require any detention since post development peak flows are less than pre-development peak flows.

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 2017 proposes criteria which apply to 'high-risk' development for stormwater. The criteria include one or more of the following:

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

The proposal includes an MCU for a land area of 2,500m2 that will result in impervious area greater than 25% of the developable area as well as more than six (6) dwellings. Hence, the development is classed as 'high risk' for water quality and the SPP 2017 applies.

The SPP 2017 suggests the development aims to:

- Avoid or otherwise minimises adverse impacts on the environmental values of receiving waters, arising from:
- altered stormwater quality or flows, and
- wastewater (other than contaminated stormwater and sewage), and
- the creation or expansion of non-tidal artificial waterways, and
- Demonstrate compliance with the SPP code - Water quality (Appendix 3).

Appendix 3 (Table B) of SPP 2017 suggests 'Post Construction Phase – Stormwater Management Design Objectives' as:

Table 6 - South East Queensland (SEQ) Targets

Total Suspended Solids (TSS)	Total Phosphorus (TP)	Total Nitrogen (TN)	Gross Pollutants >5mm
80% Removal	60% Removal	45% Removal	90% Removal

The objective is to provide the following:

- Nitrogen and Phosphorous removal

- Gross Pollutant and Suspended Solids Removal
- All of the site's impervious areas discharge to suitable treatment device/s
- Treatment device selection criteria are to be in accordance with Industry Best Practice and, WSUD Engineering Guidelines
- Provide engineering diagrams of the stormwater quality treatment of the proposed development

9.2 Erosion and Sediment Control

9.2.1 Erosion Hazard Assessment

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

9.2.2 Pre-Development Phase

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

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

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

9.2.3 Bulk Earthworks Phase

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

- Construction chutes to control runoff over earthworks batters;
- Construction of temporary bunds at the top of all earthworks batters to ensure runoff is directed away from exposed batters;
- Sediment basins to be constructed at low points within each stage of the proposed development;

- Construction of temporary diversion drains to divert water to sediment basins and around any stockpiles;
- Sediment fences to be installed on the downstream side of any stockpiles; and
- Stabilisation of all batters upon reaching the finished earthworks levels.

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

9.2.4 Construction Phase

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

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

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

9.2.5 Maintenance

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

9.3 Operational Phase Treatment

During the operational phase, it is proposed to have the roof area drain through Ocean Guards and through a Stormfilter device before discharging to the connection point provided by HCE at the northern end of the site. Please refer to the concept stormwater plan in Appendix D for more details.

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

9.4 Stormwater Quality Improvement Devices (SQIDs)

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

- SQID 1: Min. 3 x OceanGuards with 200µm mesh bags (OG-200).
- SQID 2: A 15 x Tall(690) NPSorb cartridge StormFilter system within a 10m2 StormFilter chamber, inside the underground detention tank.

9.4.1 OceanGuards

The OceanGuard system is a pit-insert basket designed to trap pollutants before they enter the stormwater network. It can be fitted into both new and existing stormwater pits. The device uses various filter bag liners to remove gross pollutants, suspended solids, and associated contaminants. It can operate on its own or as part of a broader treatment train. Its filtration bag, cage, and flow-diverting components work together to optimise treatment efficiency and ensure captured material remains dry.

9.4.2 StormFilter

The Stormfilter consists of rechargeable, media filled cartridges that can be placed within standard manholes and/or tank vaults, to filter pollutants such as Hydrocarbons from stormwater. If the treatable flows generated from the development are greater than 80L/s a by-pass inlet pit shall be placed in front of (and upstream) of the Stormfilter.

9.5 MUSIC Model

The sites stormwater run-off was modelled using MUSIC (version 6.4.0) and the water quality objectives for Southeast Queensland specified in the SPP 2017 of 80% TSS reduction, 60% TP reduction, 45% TN reduction, and 90% Gross Pollutants reduction.

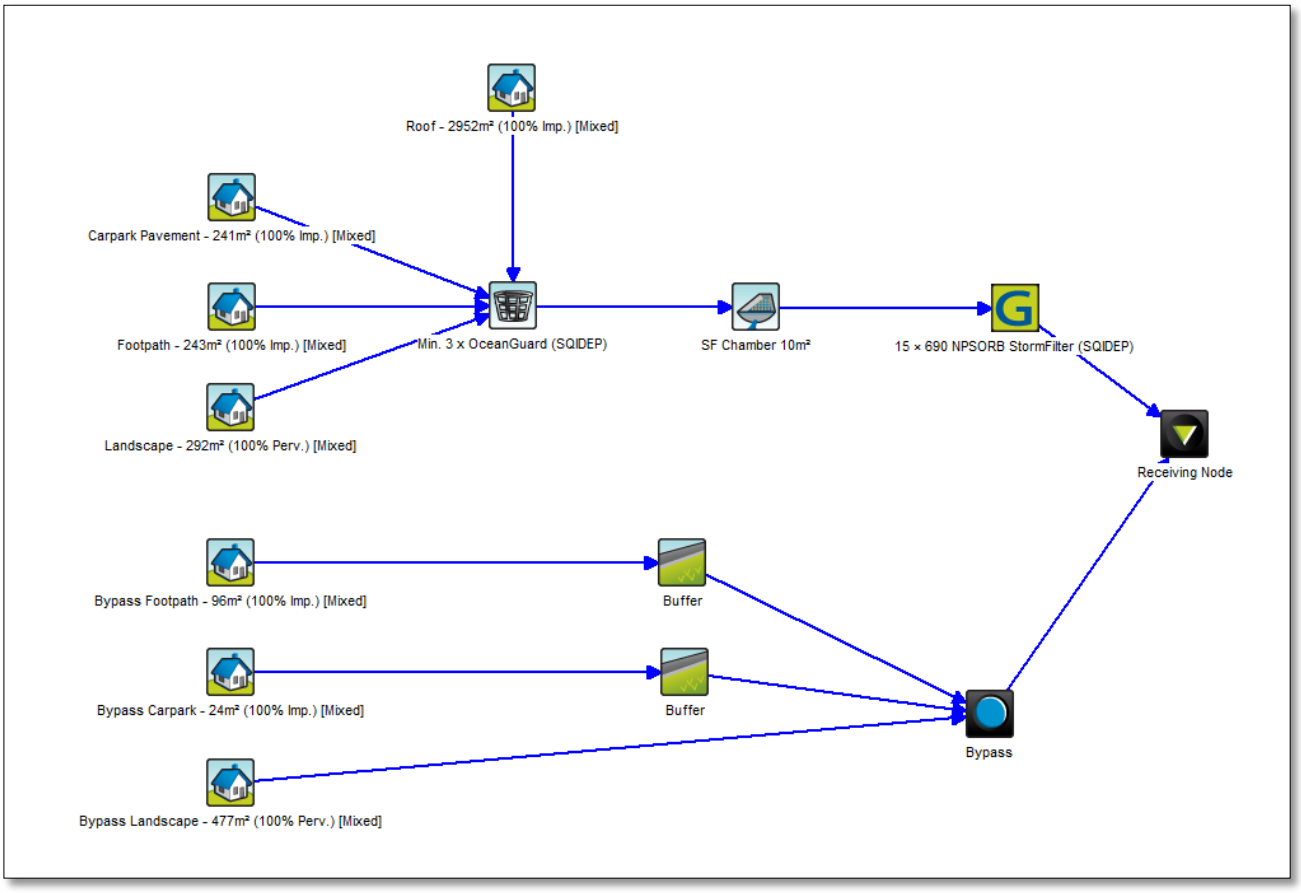
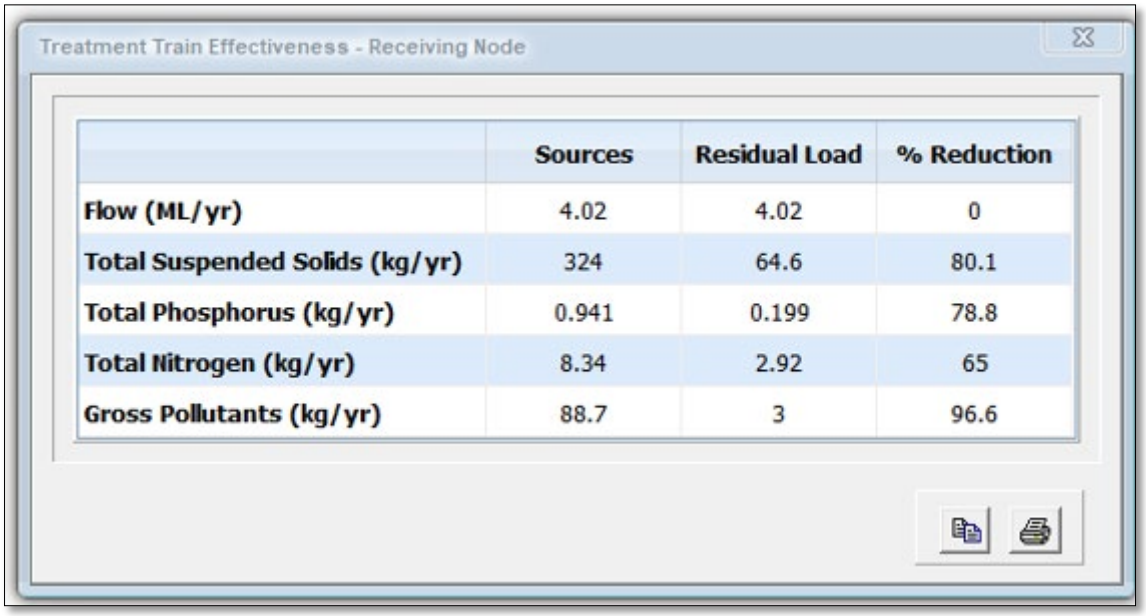


Figure 6 - Treatment train

The results of the above MUSIC model are presented in **Figure 12**.



	Sources	Residual Load	% Reduction
Flow (ML/yr)	4.02	4.02	0
Total Suspended Solids (kg/yr)	324	64.6	80.1
Total Phosphorus (kg/yr)	0.941	0.199	78.8
Total Nitrogen (kg/yr)	8.34	2.92	65
Gross Pollutants (kg/yr)	88.7	3	96.6

Figure 7 - Results for the treatment train

The above results meet the percent reduction water quality objectives identified by SPP 2017. Details of the MUSIC model are attached within Appendix J for further information.

9.6 On-site Treatment Lifecycle Costs

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

9.7 Water Quality Monitoring

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

9.8 Maintenance

Maintenance of the SQIDs will be the responsibility of the owners of the development. The maintenance should be carried out in accordance with the manufacturer's recommendations and as a minimum shall include the following:

10 WATER SUPPLY

10.1 Existing Infrastructure

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

- A 600mm MS trunk main in the carriageway Blinzinger Road;
- A 100mm CI reticulation main in the eastern verge of Blinzinger Road;
- A 100mm CI reticulation main in the western verge of Blinzinger Road;
- A 100mm CI reticulation main in the southern verge of Wellington Street;
- A 50mm domestic service connection servicing existing Lot 48;
- A 150mm fire service connection servicing existing Lot 46;
- Inground Hydrants in both Blinzinger Road and Wellington Street;

Refer to the Community Maps information in Appendix J for further information regarding the existing water infrastructure.

10.2 Point Of Connection

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

ADG Engineers anticipate that the proposed development will be connected to the 100mm CI reticulation main in the eastern verge of Blinzinger Road. Details of the proposed connection will be provided at the detailed design stage.

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

11 SEWERAGE RETICULATION

11.1 Existing Infrastructure

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

- A 150mm AC reticulation main in Wellington Street;
- A manhole in the verge of Wellington Street fronting the subject site;

Refer to the Community Maps information in Appendix J for further information regarding the existing sewerage infrastructure.

11.2 Point Of Connection

A new sewer reticulation main will be constructed through the subject site, which will provide a connection point to proposed Lot 101, north of the subject site. A sewer connection point will also be provided to the subject site and Lot 101 from the new reticulation main. Details of the proposed connection will be provided at the detailed design stage.

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

11.3 Proposed Sewer Manhole in Driveway

The existing sewer maintenance hole (MH) will be located within the extents of the proposed driveway crossover. Urban Utilities (UU) has confirmed in correspondence that maintenance holes may be located within driveways, provided the applicable trafficable chamber, cover, and surface finish requirements are met. The existing MH will be modified in accordance with these requirements in order to achieve UU compliance.

Please refer to Appendix L for reference to the correspondence indicating UU's acceptance.

12 ELECTRICAL SUPPLY

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

- Underground electrical cables (1kV -<33kV) along Wellington Street 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.

13 COMMUNICATIONS

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

- Underground Telstra Cable along the Wellington Street and Blinzinger Road verges;
- Underground NBN Cable along the Wellington Street and Blinzinger Road verges;

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.

14 GAS

The BYDA information does not identify any GAS infrastructure in the vicinity of the subject site.

15 CONCLUSION

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

As outlined in Section 8 of this report, a total detention volume of 150m3 is required to mitigate the developments peak stormwater flows (for events up to and including a Q100 event) back to the existing case.

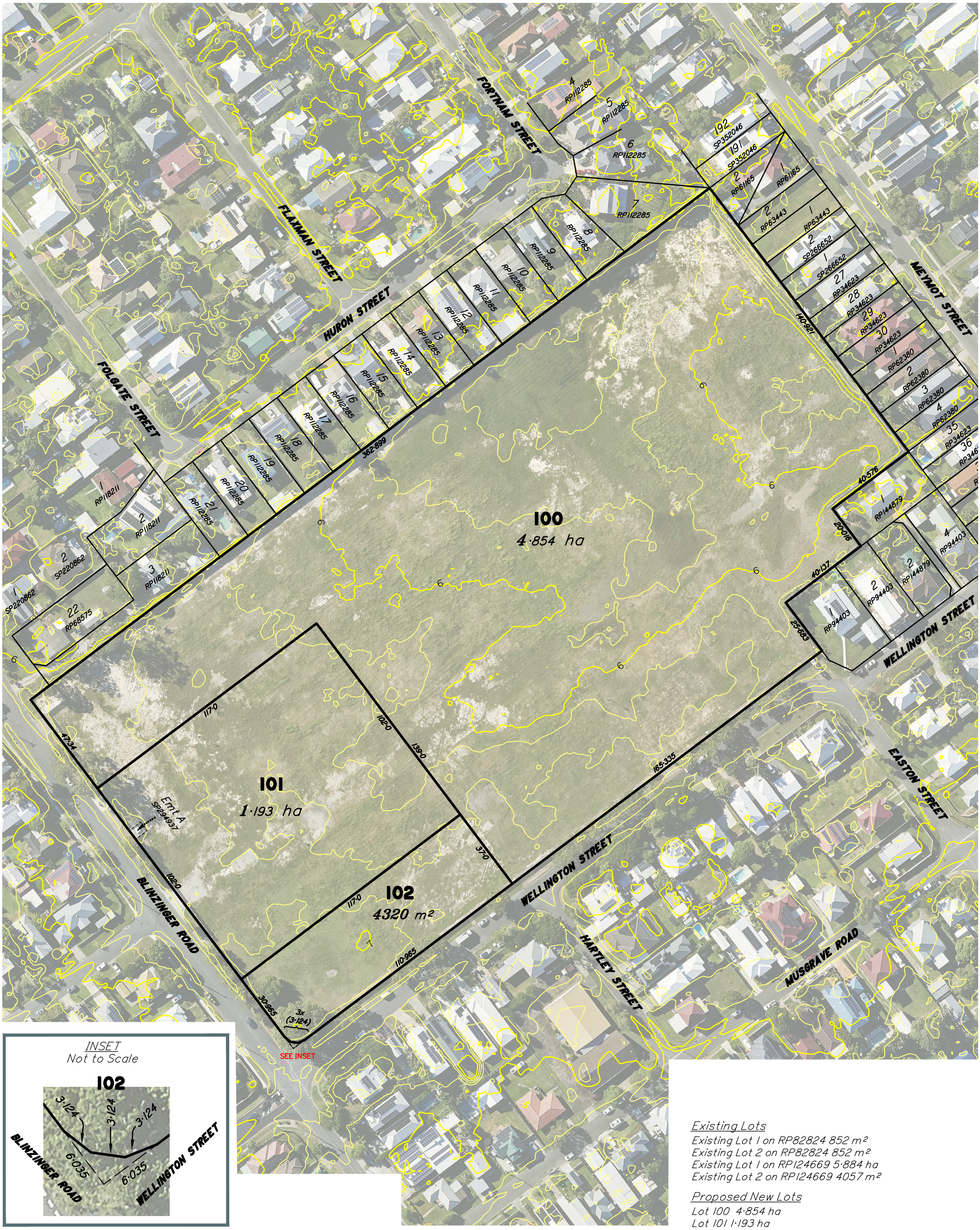
In preparing this report, we have achieved all requirements for Stormwater Management Plans as described in QUDM 2017 standards, as well as a pollutant load reduction as required by the SPP 2017 standards. ADG recommends the use of the following treatment devices to meet the treatment targets specified by the relevant authorities:

- SQID 1: Min. 3 x OceanGuards with 200µm mesh bags (OG-200).
- SQID 2: A 15 x Tall(690) NPSorb cartridge StormFilter system within a 10m2 StormFilter chamber, inside the OSD tank.

Based on a review of the Brisbane City Council (BCC) Flood Hazard Overlay Mapping and the FloodWise Property Report for 56 Blinzinger Road, the subject site (Lot 102) is located outside the mapped flood-affected area. While portions of the parent property are identified as being affected by creek flooding, the subject site is not affected by creek flooding, Brisbane River flooding, overland flow flooding, or storm tide inundation. Accordingly, the site is not subject to the Flood Overlay, and no flood-related constraints have been identified for the proposed development.

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

Appendix A
Site Survey Plan



Existing Lots

Existing Lot 1 on RP82824 852 m²
Existing Lot 2 on RP82824 852 m²
Existing Lot 1 on RP124669 5·884 ha
Existing Lot 2 on RP124669 4057 m²

Proposed New Lots

Lot 100 4·854 ha
Lot 101 1·193 ha
Lot 102 4320 m²

Dimensions and area for Proposed Lot 100 are approximate only and subject to Identification survey IS344124 the final dimensions may differ slightly to this plan.

Lidar dreived from Elvis - Elevation and Depth - Foundation Spatial Data - Brisbane 2019 Project

LEVEL DATUM: Elvis Lidar Brisbane 2019 Project

ISSUES

NO.	DRAWN	DATE	DESCRIPTION	CHECKED
A	MD	24/06/2026	ORIGINAL ISSUE	SB
B	MD	26/06/2026	DIMENSION UPDATE	SB
C	MD	29/07/2026	BOUNDARY UPDATE	SB

Saunders Havill
BOWEN HILLS | SPRINGFIELD
1300 123 744 | mail@saundershavill.com

LOT DESCRIPTION
LOTS 1 & 2 ON RP82824
LOTS 1 & 2 ON RP124669

LOCALITY: BANYO
LOCAL GOVERNMENT: BIRSBANE CITY

CLIENT
THE MINISTER FOR ECONOMIC DEVELOPMENT QUEENSLAND

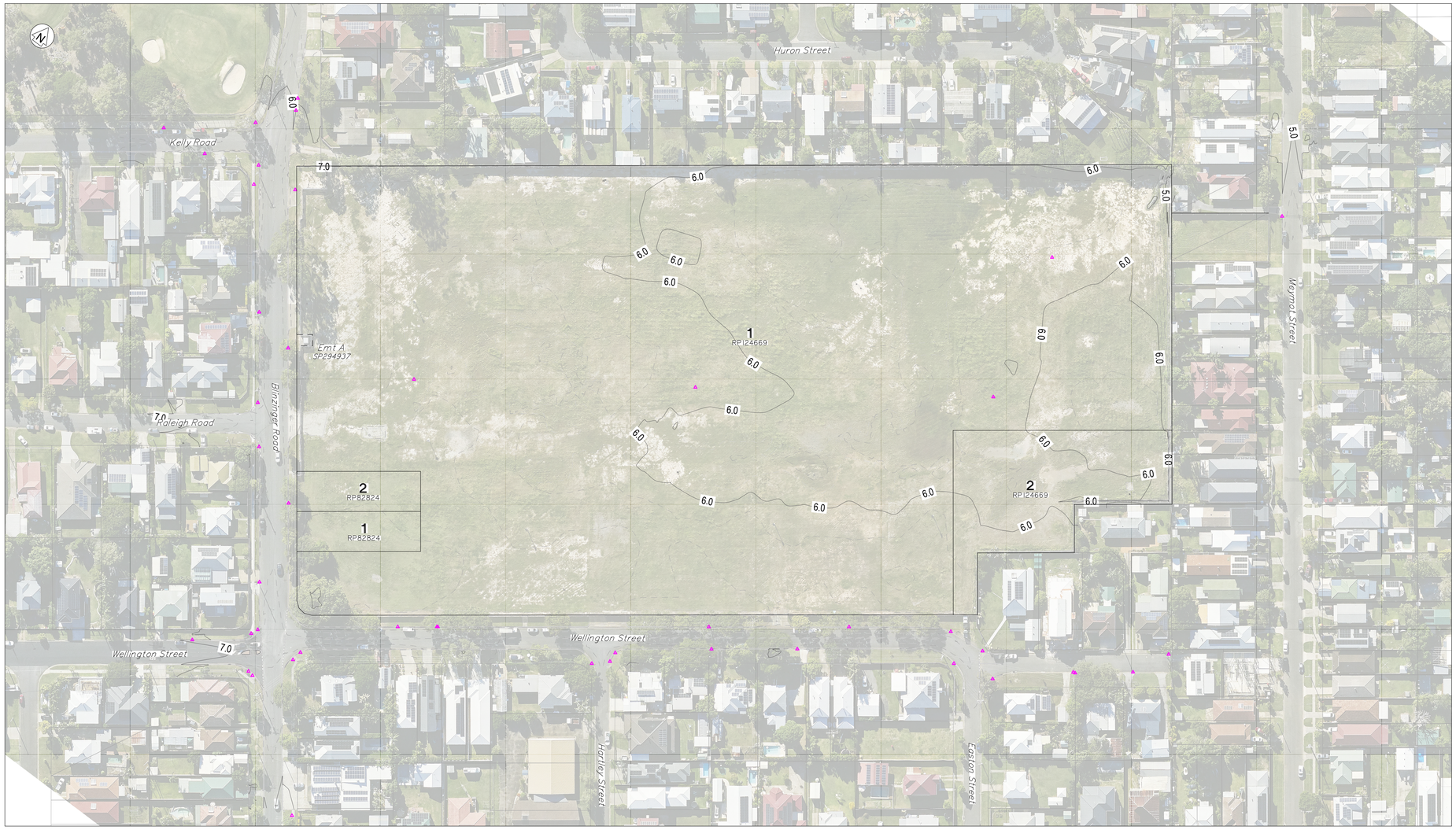
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PROJECT
56 BLINZINGER ROAD, BANYO

DRAWING TITLE
PROPOSAL PLAN

DRAWING NO.
13253 S 01 PP C

Contour and Detail Survey
56 Blinzinger Rd, Banyo QLD



Layout
Scale 1:1000

NOTE:

This plan comprises a Contour and Detail Survey of 56 Blinzinger Rd, Banyo (being Lots 1 & 2 on RP82824 and Lots 1 & 2 on RP124669) and as such it should not be used for any other purpose without the express permission of Sunrise Surveying Pty Ltd or the Client whose name appears in the titleblock.

Subject lots boundaries shown on this plan are indicative only and have been plotted from records from RP124669 and RP82824 held by the Department of Natural Resources, Mines, Manufacturing and Regional and Rural Development (DNRMMRRD).

Adjoining boundaries shown on this plan are plotted from DCDB and are indicative only.

No Boundary marks have been placed at the time of this survey. Should works be undertaken near the boundary, it is recommended that an Identification Survey of the property be conducted.

Adjoining properties were not entered during the survey. Ground levels shown within adjoining lots have been determined from observations taken from the subject property and interpolated where necessary. These levels may not represent actual ground conditions.

Services shown have been located by field measurements where possible, or plotted from BYDA records where otherwise noted - refer to Located Services Note.

LOCATED SERVICES NOTE

Services shown on this plan as "Located" have been done so by a suitably qualified locator as per AS 5488.1:2022 - Australian Standard of Subsurface Utility Information (SUI). As per the Standard all located data has a "Quality Level" which is described below.

Quality Level A (QL-A) - Verified by Exposure
The service has been positively identified or surveyed directly. The location and alignment of this service is known in 3-dimensions, and is considered "validated".
Accuracy = ±50mm Horizontal and Vertical

Quality Level B (QL-B) - Geophysical Locating
The service has been traced by a locator. Generally the location and alignment of this service is known in 2.5-dimensions, meaning a 2-dimensional position and a depth.
Accuracy = ±300mm Horizontal, ±500mm Vertical

Quality Level C (QL-C) - Surface Feature Correlation
The service has been identified by correlation or an approximate location has been found using a combination of records, and a physical survey of visible evidence (indicators, surface features etc.).
Accuracy = ±300mm Horizontal, No Vertical

Quality Level D (QL-D) - Desktop Information
The service has been identified by records and/or site inspection and/or anecdotal evidence.
Accuracy = For information only, unconfirmed accuracy

All efforts have been made to locate all services accurately, however due to age, depth and type of service, soil and ground conditions, and other factors, it is recommended that positive identification (potholing) and validation of all services be carried out prior to any construction activities.

Control Table - MGA20 Zone 56 (Ground)

Pt ID	Easting	Northing	RL (AHD)	Description
167041	506817.053	6971901.380	5.973	PSM (Mini Mark in Kb.)
177799	507131.599	6971863.482	6.672	PSM (Mini Mark in Kb.)
9000	507175.501	6971877.500	6.465	Screw in Kb.
9001	506780.006	6971858.156	6.591	Screw in Conc.
9002	506800.004	6971859.834	6.452	Screw in MH
9003	506809.138	6971882.802	6.344	Screw in Conc.
9004	506819.467	6971896.958	6.056	Screw in Conc.
9005	506820.768	6971869.424	6.369	Screw in Kb.
9006	506823.965	6971861.904	6.462	Nail in Conc.
9007	506857.576	6971820.852	6.408	Screw in Kb.
9008	506876.136	6971816.163	6.552	Screw in Kb.
9009	506879.676	6971790.492	6.504	Screw in Kb.
9010	506891.088	6971776.172	6.480	Screw in Kb.
9011	506914.942	6971764.805	6.554	Screw in Kb.
9012	506917.067	6971695.519	7.079	Nail in Kb.
9013	506924.954	6971731.428	6.698	Screw in Kb.
9014	506925.658	6971837.145	6.468	Star Picket
9015	506935.063	6971712.292	6.818	Screw in Conc.
9016	506936.216	6971715.190	6.791	Screw in Kb.
9017	506943.544	6971699.075	6.739	Drill Hole in Kb.
9018	506945.907	6971698.657	6.611	Screw in Conc.
9019	506955.422	6971713.992	6.747	Screw in Conc.
9020	506956.055	6971718.271	6.810	Screw in Kb.
9021	506981.947	6971751.033	6.542	Screw in Kb.
9022	506993.952	6971662.064	6.024	Nail in Conc.
9023	506994.943	6971760.817	6.578	Nail in Kb.
9024	506995.250	6971761.027	6.572	Screw in Kb.
9025	506997.564	6971637.642	5.884	Screw in Kb.
9026	507020.945	6971904.655	6.177	Star Picket
9027	507055.445	6971787.235	6.643	Nail in Kb.
9028	507060.555	6971796.627	6.724	Screw in Kb.
9029	507060.965	6971792.452	6.697	Screw in Kb.
9030	507085.110	6971828.537	6.780	Nail in Kb.
9031	507091.519	6971821.858	6.873	Screw in Kb.
9032	507106.828	6972036.628	5.947	Star Picket
9033	507119.973	6971843.269	6.836	Screw in Kb.
9034	507122.123	6971975.722	5.873	Star Picket
9035	507166.538	6971887.309	6.506	Nail in Kb.
9036	507172.861	6972107.589	5.258	Screw in Kb.
9037	507192.197	6971882.053	6.375	Screw in Kb.
9038	507217.251	6971904.351	6.303	Screw in Ch.
9039	507218.077	6971904.573	6.426	Screw in Kb.
9040	507237.035	6971919.277	6.374	Screw in Ch.
9041	507244.437	6971934.053	6.401	Drill Hole in Ch.
9100	507181.930	6971888.763	6.419	Screw in Kb.
9200	506839.033	6971870.392	6.399	Screw in Conc.

LEGEND

Feature	Description	Feature	Description	Feature	Description
	Survey STATION		Drainage INVERT		Road EDGE OF BITUMEN
	Comms CCTV		Drainage MANHOLE		Road KERB BACK
	Comms FEATURE		Drainage GULLY TRAP		Road KERB INVERT
	Comms TELEPHONE PIT		Drainage OPEN DRAIN ARTIFICIAL		Road KERB LIP
	Comms TELEPHONE BOX		Sewer INVERT		Road KERB TOP
	Electrical ELECTRICAL PIT		Sewer MANHOLE		Road LINEMARKING
	Electrical FEATURE		Water MONITORING WELL (PVC)		Road ROAD CROWN
	Electrical PILLAR		Water MANHOLE		Surface SURFACE LEVEL
	Electrical POWER POLE		Water PIT		Surface CHANGE OF GRADE
	Electrical ELECTRICAL PAD TRANSFORMER		Water METER		Surface CONCRETE SLAB
	Electrical ELECTRICTY STAY POLE		Water VALVE		Surface DRIVEWAYS
EOH	Electrical OVERHEAD		Water GENERAL POINT		Surface EDGE OF ROCK
	Fence BOLLARD		Vegetation TREE TRUNK		Surface FOOTPATHS
	Fence GATE		Vegetation TREE FOLIAGE		Surface RETAINING WALL BASE
	Fence LINE		Vegetation GARDEN EDGE		Surface RETAINING WALL TOP
	General POST BOX		Road Furniture SIGN		Contour Major
	Building EAVES		Road Furniture GUARD RAIL		Contour Minor
	Building GUTTER		Road CHANGE OF GRADE		
	Building SHED		Road CONCRETE INVERT		

LOCATED SERVICES LEGEND

FEATURE	DESCRIPTION
	Potholed COMMS
	Potholed DRAINAGE
	Potholed ELECTRICAL
	Potholed GAS
	Potholed WATER
	Potholed SEWER
7 (QL-B)	Quality Level B
7 (QL-C)	Quality Level C
7 (QL-D)	Quality Level D
C (QL-?)	Located COMMS
D (QL-?)	Located DRAINAGE
E (QL-?)	Located ELECTRICAL
G (QL-?)	Located GAS
W (QL-?)	Located WATER
S (QL-?)	Located SEWER

REV	DATE	DESCRIPTION	DRAWN	SURV	CHKD
A	09/07/26	First Issue	SB	SRS	MS

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CLIENT.
Minister Economic Development QLD

PROJECT.
56 Blinzinger Road

HORIZONTAL DATUM. MGA20 Zone 56 (Ground)
VERTICAL DATUM. AHD
STN9200 (AUSPOS #8255) Vide PSM26559 RL 5.272m

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Contour and Detail Survey
Title Page
Sheet 1 of 11

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56 Blinzinger Road
Banyo, QLD

LOCAL AUTHORITY
Brisbane City Council

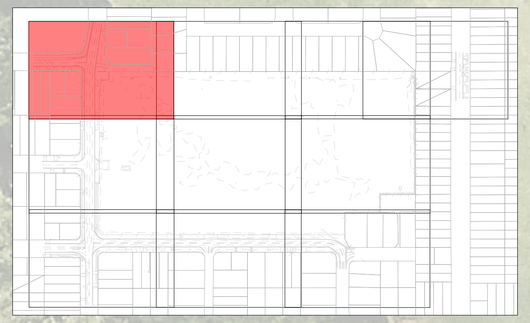
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Drawing plotted Friday, July 10, 2026 09:44:48 by SunriseSurface



Key Map
Scale 1:3500

Kelly Road

Binzinger Road

Trunk: 0.40m
Height: 5.00m
Spread: 15.00m

Trunk: 0.50m
Height: 10.00m
Spread: 10.00m

Trunk: 0.40m
Height: 10.00m
Spread: 8.00m

Trunk: 0.40m
Height: 10.00m
Spread: 8.00m

Trunk: 0.30m
Height: 4.00m
Spread: 6.00m

Trunk: 0.30m
Height: 4.00m
Spread: 6.00m

Trunk: 0.60m
Height: 15.00m
Spread: 20.00m

Poss. Water valve

SL:6.25m
UTO

SL:6.44m
UTO

IL: 5.44m
IL: 5.57m
IL: 5.43m
IL: 5.46m
IL: 5.39m
IL: 5.19m
IL: 5.25m
IL: 5.31m
IL: 5.31m
IL: 3.65m
IL: 3.62m
IL: 4.78m
SL:6.67m

EOH
UTO
D (QL-C)

Lot 1 SP192282
Emt A SP220862
Lot 1 SP220862
Lot 2 SP220862
Lot 1 RP178211
Lot 2 RP178211
Lot 3 RP178211
Lot 22 RP185575
Lot 8 SP221043
Lot 7 SP221043
Lot 9 SP221043
Lot 20 SP253906
Lot 21 SP253906
Lot 2 RP24538

7.0
6.0

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For Control table, Legends and Notes, refer to Sheet 1.

REV.	DATE	DESCRIPTION	DRAWN	SURV	CHKD
A	09/07/21	First Issue	SB	SAS	MJI

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CLIENT.
Minister Economic Development QLD

PROJECT.
56 Binzinger Road

HORIZONTAL DATUM. MGA20 Zone 56 (Ground) STN9200 (AUSPOS #82250)
VERTICAL DATUM. AHD Vide PSM26559 RL 5.272m

DRAWING DESCRIPTION.
Contour and Detail Survey
Sheet 1
Sheet 2 of 11

DRAWING NAME.
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SITE ADDRESS.
56 Binzinger Road
Banya, QLD

LOCAL AUTHORITY
Brisbane City Council

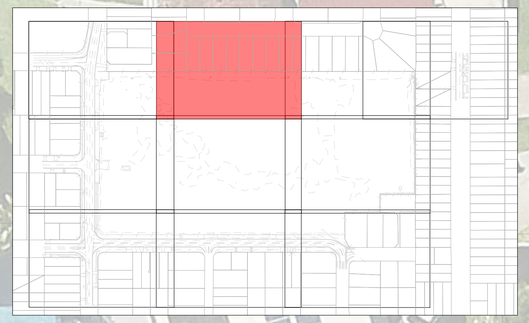
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Drawing Plotted Friday, July 16, 2021 09:43:53 by Samuelpeterzone



Key Map
Scale 1:3500

Huron Street

2 RP118211
3 RP118211
21 RP112285
20 RP112285
19 RP112285
18 RP112285
17 RP112285
16 RP112285
15 RP112285
14 RP112285
13 RP112285

SL: 6.18m
IL: 3.57m
IL: 3.03m
IL: 4.84m
IL: 4.93m
IL: 4.93m
IL: 4.01m

SL: 5.63m
IL: 2.93m
IL: 2.92m
IL: 4.13m
IL: 3.38m
IL: 2.98m

6.0
6.0
6.0
6.0

Scale Bar 1:200
0 2 5 10 20

For Control table, Legends and Notes, refer to Sheet 1.

REV.	DATE	DESCRIPTION	DRAWN	SURV	CHKD
A	09/07/26	First Issue	SB	SRS	MB

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CLIENT.
Minister Economic Development QLD

PROJECT.
56 Binzinger Road

HORIZONTAL DATUM, MGA20 Zone 56 (Ground) STN9200 (AUSPOS #8255)
VERTICAL DATUM, AHD Vide PSM26559 RL 5.272m

DRAWING DESCRIPTION.
Contour and Detail Survey
Sheet 2
Sheet 3 of 11

DRAWING NAME.
26156 4001 001-A

SCALE.
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SITE ADDRESS.
56 Binzinger Road
Banyo, QLD

LOCAL AUTHORITY
Brisbane City Council

SURVEY DATE
June '26

CONTOUR INTERVAL
Minor 0.25m
Major 1.00m

REV
A

Project Location: S:\projects\26156\Planning\Applications\SPD\01 - PROJECTS\26156 - Minister Economic Development QLD - 56 Binzinger Rd Banyo\01 CD Data\4 Data\26156 4001 SB Detail Survey.12dmodel

Drawing Plotted Friday, July 10, 2026 09:41:57 by SuhaagBhuzone



Key Map
Scale 1:3500

Huron Street

14 RP112285 | 13 RP112285 | 12 RP112285 | 11 RP112285 | 10 RP112285 | 9 RP112285 | 8 RP112285 | 7 RP112285 | 6 RP112285 | 5 RP112285 | 2 RP61165 | 2 RP63443

SL:5.63m
IL: 2.93m
IL: 2.92m
IL: 4.13m
IL: 3.38m
IL: 2.98m
SL:5.52m
IL: 2.61m
IL: 2.59m
IL: 3.02m
SL:5.70m
IL: 2.54m
IL: 2.54m
IL: 4.47m
IL: 4.12m
IL: 4.61m
Trunk: 0.90m
Height: 12.00m
Spread: 10.00m
Trunk: 0.30m
Height: 4.00m
Spread: 3.00m
4x Ø100 PVC
Above ground
D (QL-C)
6.0
5.0
M32

Scale Bar 1:200
0 2 5 10 20

For Control table, Legends and Notes, refer to Sheet 1.

REV.	DATE	DESCRIPTION	DRAWN	SURV	CHKD
A	09/07/24	First Issue	SB	SAS	MJI

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CLIENT.
Minister Economic Development QLD

PROJECT.
56 Binzinger Road

HORIZONTAL DATUM. MGA20 Zone 56 (Ground) STN9200 (AUSPOS #82250)
VERTICAL DATUM. AHD Vide PSM26559 RL 5.272m

DRAWING DESCRIPTION.
Contour and Detail Survey
Sheet 3
Sheet 4 of 11

DRAWING NAME.
26156 4 001 001-A

SITE ADDRESS.
56 Binzinger Road
Banya, QLD

LOCAL AUTHORITY
Brisbane City Council

SURVEY DATE
June 24

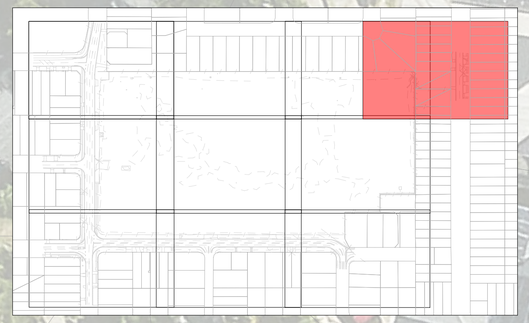
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REV
A

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Drawing Plotted Friday, July 10, 2026 09:43:42 by Santiagodiazzone



Key Map
Scale 1:3500

Trunk: 0.90m
Height: 12.00m
Spread: 10.00m

EL: 4.67m

4x Ø100 PVC
Above ground

Trunk: 0.30m
Height: 4.00m
Spread: 3.00m

Trunk: 0.30m
Height: 6.00m
Spread: 4.00m

Trunk: 0.20m
Height: 3.00m
Spread: 2.00m

Trunk: 0.20m
Height: 4.00m
Spread: 2.00m

Trunk: 0.20m
Height: 4.00m
Spread: 2.00m

EOH

5.0

6.0

Melmot Street

REV.	DATE	DESCRIPTION	DRAWN	SURV	CHKD
A	09/07/26	First Issue	SB	SRS	MJB

SUNRISE SURVEYING

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rockhampton@sunrisesurveying.com.au

Gladstone
Suite 1, 16 Clarke St, Tannum
gladstone@sunrisesurveying.com.au

CLIENT.
Minister Economic Development QLD

PROJECT.
56 Blinzinger Road

HORIZONTAL DATUM. MGA20 Zone 56 (Ground)
VERTICAL DATUM. AHD
STN'D2OO (AUSPOS #82356) Vide PSM26559
RL: 5.272m

DRAWING DESCRIPTION.
Contour and Detail Survey
Sheet 4

Sheet 5 of 11

DRAWING NAME.
26156 4001 001-A

SCALE.
1: 200 @ A1

SITE ADDRESS.
56 Blinzinger Road
Banye, QLD

LOCAL AUTHORITY
Brisbane City Council

SURVEY DATE
June 26

CONTOUR INTERVAL
Minor: 0.25m
Major: 1.00m

REV
A

Scale Bar 1:200
0 2 5 10 20

For Control table, Legends and Notes, refer to Sheet 1.

Project Location: Syncity726/Jasmine726/projects/com/CMS/01 - PROJECTS/26156 - Minister Economic Development QLD - 56 Blinzinger Rd Banye/05. 12d Data/4 Data/26156 4001 SB Detail Survey.12dmodel
Drawing Plotted Friday, Jul 10, 2026 09:45:56 by SamHopkinsstone

Key Map
Scale 1:3500

Scale Bar 1:200
0 2 5 10 20

For Control table, Legends and Notes, refer to Sheet 1.

REV.	DATE	DESCRIPTION	DRAWN	SURV	CHKD
A	09/07/31	First Issue	SB	SRS	MB

SUNRISE SURVEYING

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rockhampton@sunrisesurveying.com.au
Yeppoon
47 Normanby St, Yeppoon
yeppoon@sunrisesurveying.com.au

CLIENT.
Minister Economic Development QLD

PROJECT.
56 Blinzinger Road

HORIZONTAL DATUM. MGA20 Zone 56 (Ground)
STN9200 (AUSPOS #8255)
VERTICAL DATUM. AHD
Vide PSM26559
RL. 5.272m

DRAWING DESCRIPTION.
Contour and Detail Survey
Sheet 5
Sheet 6 of 11

DRAWING NAME.
26156 4001 001-A

SCALE.
1: 200 @ A1

SITE ADDRESS.
56 Blinzinger Road
Banya, QLD

LOCAL AUTHORITY
Brisbane City Council

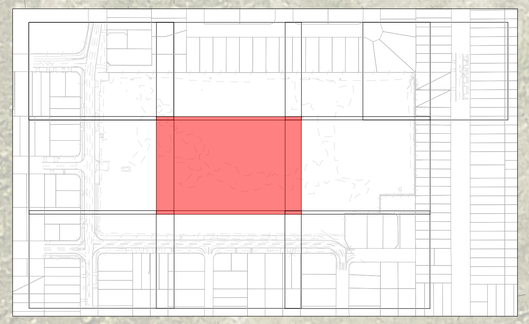
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June '24

CONTOUR INTERVAL
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Major: 1.00m

REV
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Drawing Plotted Friday, July 12, 2024 09:51:10 by SunriseBrisbane



Key Map
Scale 1:3500

1
RP124669

6.0

6.0

6.0

6.0

Scale Bar 1:200

0 2 5 10 20

For Control table, Legends and Notes, refer to Sheet 1.

REV.	DATE	DESCRIPTION	DRAWN	SURV	CHKD
A	09/07/32	First Issue	SB	SRS	MJI

SUNRISE SURVEYING

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Rockhampton
Level 1, 159 Denison St, Rockhampton
rockhampton@sunrisesurveying.com.au
Yeppoon
47 Normanby St, Yeppoon
yeppoon@sunrisesurveying.com.au

CLIENT.
Minister Economic Development QLD

PROJECT.
56 Binzinger Road

HORIZONTAL DATUM. MGA20 Zone 56 (Ground) STN9200 (AUSPOS #82551)
VERTICAL DATUM. AHD Vide PSM26559 RL: 5.272m

DRAWING DESCRIPTION.
Contour and Detail Survey
Sheet 6

Sheet 7 of 11

DRAWING NAME.
26156 4001 001-A

SCALE.
1: 200 @ A1

SITE ADDRESS.
56 Binzinger Road
Banyo, QLD

LOCAL AUTHORITY
Brisbane City Council

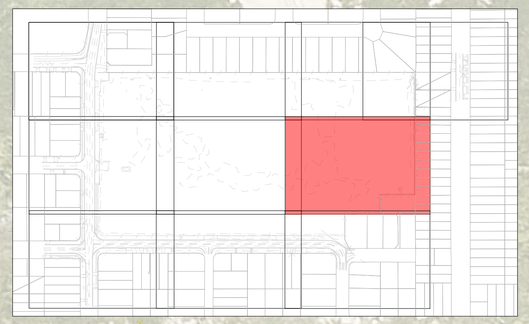
SURVEY DATE
June '26

CONTOUR INTERVAL
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Major 1.00m

REV
A

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Drawing Printed Friday, July 10, 2026 09:45:15 by SamsungBozzone



Key Map
Scale 1:3500

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Height: 6.00m
Spread: 5.00m

Trunk: 0.30m
Height: 1.50m
Spread: 0.00m

Trunk: 0.30m
Height: 1.50m
Spread: 0.00m

Trunk: 0.30m
Height: 1.50m
Spread: 0.00m

Trunk: 0.30m
Height: 6.00m
Spread: 5.00m

Trunk: 0.60m
Height: 9.00m
Spread: 7.00m

Trunk: 0.40m
Height: 9.00m
Spread: 3.00m

Trunk: 0.40m
Height: 9.00m
Spread: 3.00m

Trunk: 0.40m
Height: 9.00m
Spread: 3.00m

60

60

69

6.0

6.0

6.0

6.0

2
RP124669

RP144879

Scale Bar 1:200
0 2 5 10 20

For Control table, Legends and Notes, refer to Sheet 1.

REV.	DATE	DESCRIPTION	DRAWN	SURV	CHKD
A	09/07/33	First Issue	SB	SRS	MJR

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Yeppoon
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CLIENT.
Minister Economic Development QLD

PROJECT.
56 Binzinger Road

HORIZONTAL DATUM. MGA20 Zone 56 (Ground) STN9200 (AUSPOS #82253)
VERTICAL DATUM. AHD Vide PSM26559 RL 5.272m

DRAWING DESCRIPTION.
Contour and Detail Survey
Sheet 7
Sheet 8 of 11

DRAWING NAME.
26156 4001 001-A

SCALE.
1: 200 @ A1

SITE ADDRESS.
56 Binzinger Road
Banya, QLD

LOCAL AUTHORITY
Brisbane City Council

SURVEY DATE
June '26

CONTOUR INTERVAL
Minor. 0.25m
Major. 1.00m

REV
A

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Drawing Printed: Friday, July 10, 2026 04:51:19 by: Samuelgbuzeme

Key Map
Scale 1:3500

Scale Bar 1:200
0 2 5 10 20

For Control table, Legends and Notes, refer to Sheet 1.

Wellington Street

Blinzinger Road

REV.	DATE	DESCRIPTION	DRAWN	SURV	CHKD
A	09/07/24	First Issue	SB	SRS	MJB

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rockhampton@sunrisesurveying.com.au
Yeppoon
47 Normanby St, Yeppoon
yeppoon@sunrisesurveying.com.au

CLIENT.
Minister Economic Development QLD

PROJECT.
56 Blinzinger Road

HORIZONTAL DATUM. MGA20 Zone 56 (Ground) STN9200 (AUSPOS #8255)
VERTICAL DATUM. AHD Vide PSM26559 RL: 5.272m

DRAWING DESCRIPTION.
Contour and Detail Survey
Sheet 8
Sheet 9 of 11

DRAWING NAME.
26156 4.001 001-A

SCALE.
1: 200 @ A1

SITE ADDRESS.
56 Blinzinger Road
Banyo, QLD

LOCAL AUTHORITY
Brisbane City Council

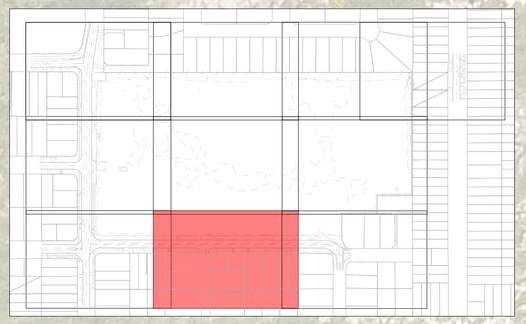
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June 24

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Major 1.00m

REV
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Drawing Plotted Friday, July 19, 2024 09:43:54 by SamagaBrusone



Key Map
Scale 1:3500

Wellington Street

Hartley Street

Scale Bar 1:200
0 2 5 10 20

For Control table, Legends and Notes, refer to Sheet 1.

REV.	DATE	DESCRIPTION	DRAWN	SURV	CHKD
A	09/07/25	First Issue	SB	SRS	MJI

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rockhampton@sunrisesurveying.com.au
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Tenancy 2b, Yeppoon
yeppoon@sunrisesurveying.com.au

CLIENT.
Minister Economic Development QLD

PROJECT.
56 Blinzinger Road

HORIZONTAL DATUM: MGA20 Zone 56 (Ground) GTN9200 (AUSPOS #8255)
VERTICAL DATUM: AHD Vide PSM26559 RL 5.272m

DRAWING DESCRIPTION.
Contour and Detail Survey
Sheet 9
Sheet 10 of 11

DRAWING NAME.
26156 4.001 001-A

SITE ADDRESS.
56 Blinzinger Road
Banya, QLD

LOCAL AUTHORITY
Brisbane City Council

SURVEY DATE
June '26

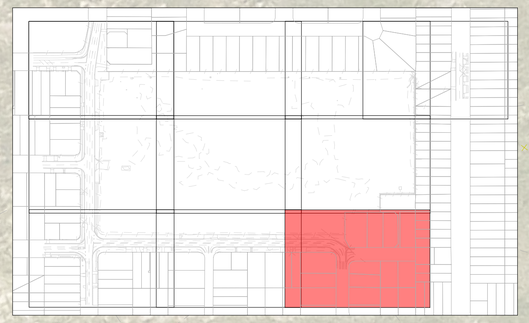
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Major: 1.00m

SCALE.
1: 200 @ A1

REV
A

Project Location: S:\Jobs\26\Current\Blinzinger\Cad\sur\26156 - Minister Economic Development QLD - 56 Blinzinger Rd Banyo\01 CAD Data\4 Detail\26156 4.001 SB Detail Survey.rDetail

Drawing Plotted Friday, July 11, 2025 09:43:28 by SamuelB@sunrise



Key Map
Scale 1:3500

Trunk: 0.40m
Height: 5.00m
Spread: 8.00m

Trunk: 0.40m
Height: 5.00m
Spread: 8.00m

Trunk: 0.30m
Height: 5.00m
Spread: 8.00m

Trunk: 0.35m
Height: 5.00m
Spread: 8.00m

Trunk: 0.60m
Height: 5.00m
Spread: 8.00m

177799

9035

9020

IL: 5.92m

9003

IL: 5.52m

SL: 6.33m
UTO

9037

Trunk: 0.62m
Height: 7.00m
Spread: 11.00m

SL: 6.39m

9038

9039

9040

9041

EOH

Wellington Street

Easton Street

1 RP94403

2 RP94403

2 RP144879

4 RP94403

2 RP116237

1 RP76135

2 RP76135

1 SP221188

2 SP221188

1 RP66368

2 RP66368

5 RP66368

7 RP66368

25 RP34610

22 RP907022

3 RP68266

6 RP68266

8 RP68266

45 RP34623

46 RP34624

Scale Bar 1:200

0 2 5 10 20

For Control table, Legends and Notes, refer to Sheet 1.

REV.	DATE	DESCRIPTION	DRAWN	SURV	CHKD
A	09/07/26	First Issue	SB	SRS	MB

SUNRISE SURVEYING

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CLIENT.
Minister Economic Development QLD

PROJECT.
56 Blinzinger Road

HORIZONTAL DATUM. MGA20 Zone 56 (Ground) GNSS2000 (AUSPOS ##255)
VERTICAL DATUM. AHD Vide PSM26559 RL: 5.272m

DRAWING DESCRIPTION.
Contour and Detail Survey
Sheet 10
Sheet 11 of 11

DRAWING NAME.
26156 4001 001-A

SCALE.
1: 200 @ A1

SITE ADDRESS.
56 Blinzinger Road
Banyo, QLD

LOCAL AUTHORITY
Brisbane City Council

SURVEY DATE
June '26

CONTOUR INTERVAL
Minor: 0.25m
Major: 1.00m

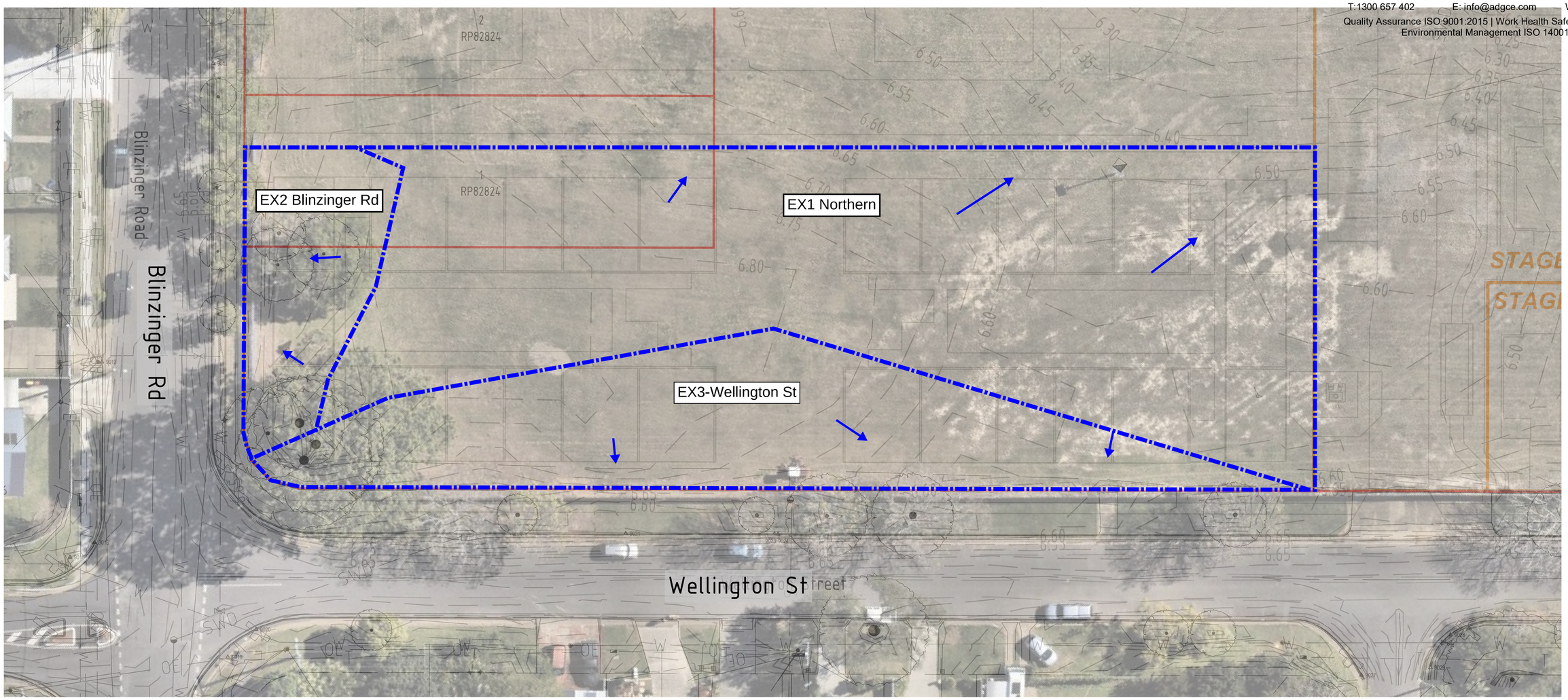
REV
A

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Drawing Plotted Friday, July 10, 2026 09:45:13 by SaintgeRuzone

Appendix B
Pre-Developed Catchment Plan

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



Legend

Catchment Boundary

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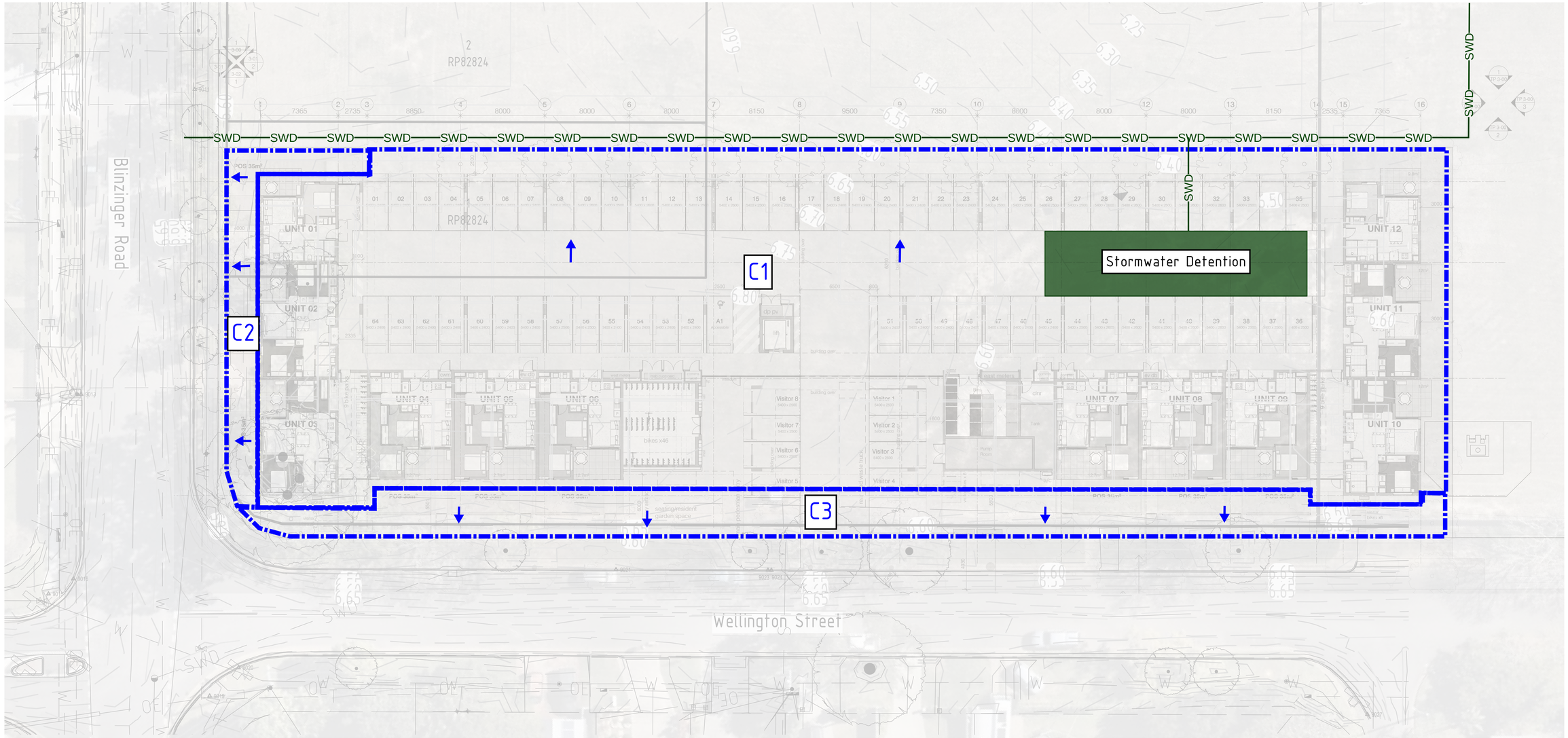
ADG ENGINEERS (AUST) PTY LTD

Concept Pre-Development Catchment Plan

SIGNATURE:	
PROJECT NAME:	Banyo Affordable Housing
PROJECT NUMBER:	29719
DATE:	17.09.26

Appendix C
Preliminary Post-Developed Catchment Plan

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



Legend

Catchment Boundary

SWD Proposed Stormwater

INTELLECTUAL PROPERTY

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Post-Development Catchment Plan

SIGNATURE:	
PROJECT NAME:	Banyo Affordable Housing
PROJECT NUMBER:	29719
DATE:	17.09.26

Appendix D
Preliminary Civil Services Layout Plan

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

Proposed Stormwater main. Location and size to be confirmed by AR Developments.

Proposed service and water meter location. Size, location to be confirmed during detailed design stage

Tank outlet size and level to be determined in coordination with AR Developments.

Combined Stormwater Detention and Quality Tank

Existing 100mm CI water reticulation main (RS193620)

Proposed sewer main to be provided by AR Developments for upstream connection for proposed Lot 101

Existing Sewer MH (MH81334) to be retained. Lid to be altered if necessary. To be confirmed during detailed design.

Proposed sewer service connection for the site. Size, location to be confirmed during detailed design stage as part of coordination with AR developments

Existing 150mm AC Sewer Reticulation Main (LS83221)

Stormwater detention and quality tank:
Proposed location for underground stormwater detention and water quality treatment tank under ground floor carpark slan.
Min. 150 m^3 detention storage required.
Quality treatment required consisting of 15 x Tall(690) NPSorb cartridge StormFilter system with approx. 10 m^2 treatment area. Min. 3 x OceanGuards with 200µm mesh bags (OG-200) installed at the inlet of the detention tank.

Six visitor bike parks
Refer Landscape Architect drawings for landscaping layout

Existing verge tree to be removed. Refer to arborist report

Existing sewer connection with traffic rated cover located in residential driveway. Sewer connection through site to service northern neighbouring property

Hydrant booster assembly
Six visitor bike parks
Sprinkler booster assembly
Visitors Intercom

Electrical PMT on neighbouring property to service subject site

1 Ground Floor General Arrangement
1 : 350@A1

Legend

—SW—SW—SW—SW— Proposed Stormwater Drainage

W—W—W—W—W—W— Proposed Water Connection

Proposed Sewer Connection

S—S—S—S—S—S— Proposed Sewer Main

ADG ENGINEERS (AUST) PTY LTD

Concept Proposed Civil Services Sketch

SIGNATURE:
PROJECT NAME: Banyo Affordable Housing
PROJECT NUMBER: 2971
DATE: 17.09.26

Appendix E
BCC Floodwise Property Report

FloodWise Property Report

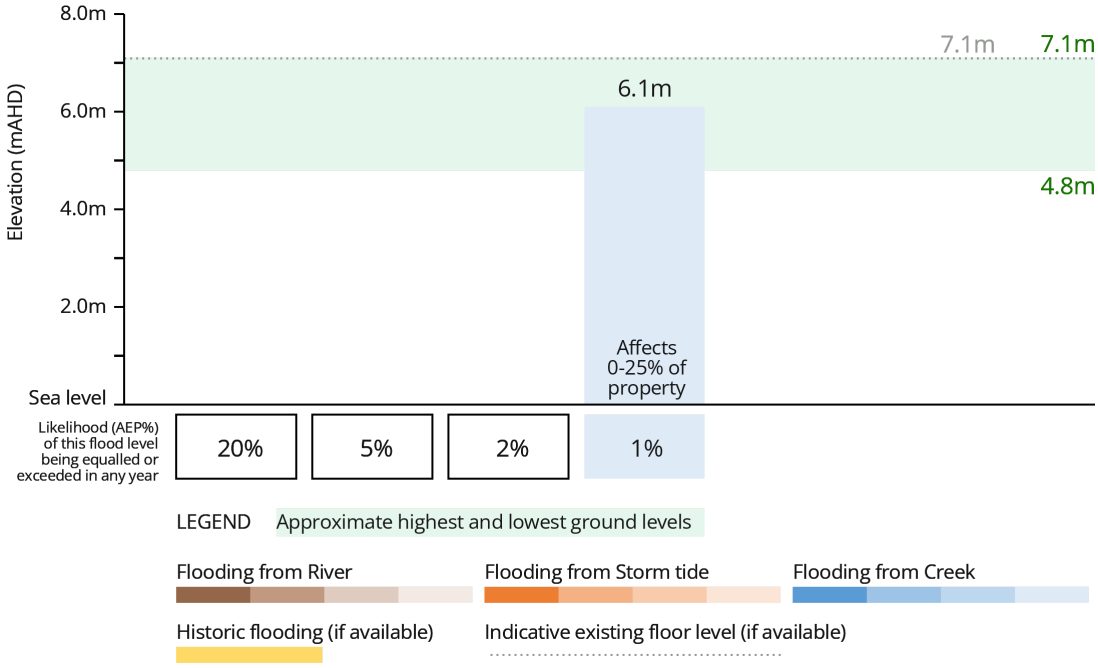
46 BLINZINGER RD, BANYO 4014
Multiple Lots (refer to Appendices)

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 Brisbane City Plan 2014**, 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.

Graph showing only the highest source/type of flooding for 1%, 2%, 5% and 20% likelihoods. Also shows historic flood levels. Other flood types and levels may be present and will be listed in the Flood Planning Information table below. This graph does not include overland flow flooding. If applicable, overland flow information is shown in the Planning and Development Information section below.
NOTE: See Useful Definitions section to explain terminology.



Combined 1% AEP for river, creek and storm tide flood extent (if applicable) from the adopted Brisbane City Plan 2014.
Read more about Brisbane City Plan 2014.





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.

Property Information Summary

The following table provides a summary of flood information for this property. More detailed flood level information is provided in the following sections of this report.

Property Summary	Level (mAHD) / Comment	Data Quality Code
Minimum ground level	4.8	C
Maximum ground level	7.1	C
Indicative existing floor level	7.1	C
Source of highest flooding	Creek/Waterway	

Flood Planning Information

The table below displays the peak estimated flood levels by probability for this property. Estimated flood level data should be used in conjunction with applicable planning scheme requirements - Refer to Flood Planning and Development Information section below for further information.

Note this table does not include overland flow. If overland flow is applicable to this property, refer to the Flood Planning and Development section below for further information.

Likelihood / Description	Level (mAHD)	Source
20%	N/A	
5%	N/A	
2%	N/A	
1%	6.1	Creek/Waterway (Nundah Creek)
0.2%	N/A	
Minimum Habitable Floor Level (dwelling house)	N/A*	

* Council may not have this data available. Customers are recommended to engage a Registered Professional Engineer of QLD (RPEQ) for further advice. For information on seeking Planning Advice, please visit www.brisbane.qld.gov.au/planning-and-building.

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**
	FPA4	Not Applicable
	FPA5	

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

Coastal hazard overlay code

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

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

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

Property development flags
Large allotment - This property is either a Large Allotment of over 1000 square metres or is located within a Large Allotment. Flood levels may vary significantly across allotments of this size. Further investigations may be warranted in determining the variation in flood levels and the minimum habitable floor level across the site. For more information or advice, please consult a Registered Professional Engineer of Queensland (RPEQ).

Useful Flood Information Definitions

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

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

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

Data quality

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

Defined Flood Level (DFL) - The DFL is used for commercial and industrial development. The Defined flood level (DFL) for Brisbane River flooding is a level of 3.7m AHD at the Brisbane City Gauge based on a flow of 6,800 m/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 Brisbane City Plan 2014 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 induding bedrooms, living rooms, kitchen, study, family, and rumpus rooms) must be constructed as required by the Brisbane City Plan 2014.

Indicative existing floor level - The approximate level in metres AHD of the lowest habitable floor in the existing building (excluding apartments). The 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 indude:

- **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 Brisbane City Plan 2014 (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 disdaims 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.

Appendices

Lot Details
Lot 2 on RP124669, Lot 2 on RP82824, Lot 1 on RP124669, Lot 1 on RP82824

Appendix F
BCC Code Assessment

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 500m^3 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 500m^3 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.	To be confirmed in detailed design phase.

9.4.3 Filling and excavation code

9.4.3.1 Application

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

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

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

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

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

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

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

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

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

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

9.4.3.2 Purpose

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

9.4.3.3 Performance outcomes and acceptable outcomes

Table 9.4.3.3.A—Performance outcomes and acceptable outcomes

Performance outcomes	Acceptable outcomes	Comments
PO1 Development for filling or excavation minimises visual impacts from retaining walls and earthworks.	**AO1** Development ensures that the total height of any cut and fill, whether or not retained, does not exceed: a. 2.5m in a zone in the Industry zones category; b. 1m in all other zones, or if adjoining a sensitive zone.	**Acceptable Outcome** The proposed earthworks will not create adverse visual impact to the surrounding properties
PO2 Development of a retaining wall proposed as a result of filling or excavation: a. is designed and constructed to be fit for purpose; b. does not impact adversely on significant vegetation; c. is capable of easy maintenance. Editor's note—A retaining wall also needs to comply with the Building Regulation and embankment gradients will need to comply with the Building Regulation. Note—Guidance on the protection of native vegetation is included in the Biodiversity areas planning scheme policy.	**AO2.1** Development of a retaining structure, including footings, surface drainage and subsoil drainage: a. is wholly contained within the site; b. if the total height to be retained is greater than 1m, then: i. the retaining wall at the property boundary is no greater than 1m above the ground level; ii. all further terracing from the 1m high boundary retaining wall is 1 vertical unit:1 horizontal unit; iii. the distance between each successive retaining wall (back of lower wall to face of	**Acceptable Outcome** The proposed retaining wall structure will be less than 1.0m, maintenance free and will be wholly contained within the site.

	higher wall) is no less than 1m horizontally to incorporate planting areas. **AO2.2** Development of a retaining wall over 1m in height protects significant vegetation on the site and on adjoining land and is designed and constructed in accordance with the structures standards in the Infrastructure design planning scheme policy and certified by a Registered Professional Engineer Queensland.	
	AO2.3 Development provides a retaining wall finish that presents to adjoining land that is maintenance free if the setback is less than 750mm from the boundary.	
	AO2.4 Development for filling only uses clean fill that does not include any construction rubble, debris, weed seed or viable parts of plant species listed as an undesirable plant species in the Planting species planning scheme policy.	
PO3 Development ensures that a rock anchor is designed and constructed to be fit for purpose.	**AO3** Development ensures that a rock anchor: a. is constructed in accordance with the standards in the Infrastructure design planning scheme policy; b. where it extends beyond the property boundary, is supported by a letter of consent from the adjoining land and building owners.	**Not Applicable**
PO4 Development protects all services and public utilities.	**AO4** Development protects services and public utilities and ensures that any alteration or relocation of services or	**Acceptable Outcome** Construction of the development will take necessary precautions and actions to ensure the protection of existing services and public utilities

	public utilities meets the standard design specifications of the responsible service authorities.	
PO5 Development provides surface and sub-surface drainage to prevent water seepage, concentration of run-off or ponding of stormwater on adjacent land.	**AO5** Development ensures all flows and subsoil drainage are directed to a lawful point of discharge of a surface water diversion drain, including to the top or toe of a retaining wall in accordance with the stormwater drainage section of the Infrastructure design planning scheme policy.	**Acceptable Outcome** Acceptable surface and subsurface drainage have been designed in accordance with the infrastructure design and planning scheme policy. Detailed design will be provided at the detailed design stage in accordance with the infrastructure and planning scheme policy.
PO6 Development ensures that the design and construction of all open drainage works is undertaken in accordance with natural channel design principles, being the development of a stormwater conveyance system for major flows, by using a vegetated open channel or drain that approximates the features and functions of a natural waterway to enhance or improve riparian values of those stormwater conveyance systems. Editor's note—Guidance on natural channel design principles can be found in the Council's publication Natural channel design guidelines.	**AO6** Filling or excavation does not involve the construction of open drainage.	**Acceptable Outcome** Filling or excavation does not involve the construction of open drainage.
PO7 Development for filling or excavation: a. does not degrade water quality or adversely affect environmental values in receiving waters; b. ensures site sediment and erosion control standards are best practice.	**AO7.1** Development for filling or excavation provides water quality treatment that complies with the stormwater drainage section of the Infrastructure design planning scheme policy. **AO7.2** Development provides erosion and sediment control standards that are in accordance with the stormwater drainage section of the Infrastructure design planning scheme policy.	**Acceptable Outcome** Water quality treatment has been designed in accordance with the infrastructure design planning scheme policy. An erosion and sediment control plan will be designed at detailed design stages in accordance with the infrastructure design planning scheme policy.
PO8	**AO8.1**	**Acceptable Outcome**

Development for filling or excavation is conducted such that adverse impacts at a sensitive use due to noise and dust are prevented or minimised. Note—A noise and dust impact management plan prepared in accordance with the Management plans planning scheme policy can assist in demonstrating achievement of this performance outcome.	Development ensures that no dust emissions extend beyond the boundary of the site, including dust from construction vehicles entering and leaving the site. **AO8.2** Development for filling or excavation activity only occurs between the hours of 6:30am and 6:30pm Monday to Saturday, excluding public holidays.	Erosion and sediment control measures will be implemented on site to ensure no dust emissions.
PO9 Development ensures that vibration generated by the filling or excavation operation does not exceed the vibration criteria in Table 9.4.3.3.B, Table 9.4.3.3.C, Table 9.4.3.3.D and Table 9.4.3.3.E. Note—A noise management report prepared in accordance with the Noise impact assessment planning scheme policy can assist in demonstrating achievement of this performance outcome.	**AO9** Development involving filling or excavation does not cause a ground-borne vibration beyond the boundary of the site.	**Acceptable Outcome** Filling and excavation activities undertaken on site will ensure to not to cause ground-borne vibration beyond the boundary of the site.
PO10 Development ensures that heavy trucks hauling material to and from the site do not affect the amenity of established areas and limits environmental nuisance impact on adjacent land.	**AO10** Development ensures that heavy trucks hauling material to and from the site: a. occur for a maximum of 3 weeks; b. use a major road to access the site; c. only use a minor road for the shortest-most-direct route that has the least amount of environmental nuisance if there is no major road alternative.	**Acceptable Outcome** Truck movement to and from site will be restricted as per BCC guidelines
PO11 Development for filling or excavation protects the environment and community health and wellbeing from exposure to contaminated land and contaminated material.	**AO11** Development does not involve: a. excavation on land previously occupied by a notifiable activity or on land listed on the Environmental Management Register or the Contaminated Land Register; b. filling with material containing a contaminant.	**Acceptable Outcome** The existing site is not expected to be listed on the contaminated land register, due to the existing nature of the site. Development will ensure the source of material free of contaminants.
PO12	**AO12.1**	**Acceptable Outcome**

Development provides for: a. landscaping for water conservation purposes; b. water sensitive urban design measures which are employed within the landscape design to maximise stormwater use and to reduce any adverse impacts on the landscape; c. stormwater harvesting to be maximised and any adverse impacts of stormwater minimised.	Development provides landscaping which is designed using the standards in the Landscape design guidelines for water conservation planning scheme policy. **AO12.2** Development ensures that the design and requirements for irrigation are in compliance with the standards in the Landscape design guidelines for water conservation planning scheme policy.	Development to ensure that the provided landscaping will be designed in accordance with the landscape design guidelines for water conservation planning scheme policy.
	AO12.3 Development provides areas of pavement, turf and mulched garden beds which are drained. Note—This may be achieved through the provision and/or treatment of swales, spoon drains, field gullies, sub-surface drainage and stormwater connections.	
PO13 Development ensures cutting and filling for the development of canals or artificial waterways avoids adverse impacts on coastal resources and processes.	**AO13** Development does not involve the creation of canals or artificial waterways.	**Acceptable Outcome** Development does not involve either the creation of canals or artificial waterways.

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

Type of building	**Peak particle velocity (mm/s)**		
Reinforced or framed structures; industrial and heavy commercial buildings	50mm/s at 4Hz and above		
Unreinforced or light-framed structures; residential or light-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 9.4.3.3.C— Recommended blasting vibration levels for human comfort

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

Table 9.4.3.3.D— Recommended levels for continuous and impulsive vibration acceleration (m/s^2) 1–80Hz for human comfort

Location	Assessment period(1)	Preferred values(3)		Maximum values(3)	
Continuous vibration		z-axis	x and y axes	z-axis	x and y axes
Critical areas(2)	Day or night	0.005 m/s^2	0.0036 m/s^2	0.01 m/s^2	0.0072 m/s^2
Residences	Day	0.01 m/s^2	0.0071 m/s^2	0.02 m/s^2	0.014 m/s^2
-	Night	0.007 m/s^2	0.005 m/s^2	0.014 m/s^2	0.01 m/s^2

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

Note—

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

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

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

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

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

Workshops	0.8 $m/s^{1.75}$	1.6 $m/s^{1.75}$	0.8 $m/s^{1.75}$	1.6 $m/s^{1.75}$

Note—

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

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

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

9.4.9 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.	**Acceptable Outcome.** The proposed stormwater quantity and quality management system is designed in accordance with the infrastructure design planning scheme policy. Refer ADG Civil Engineering Report for further design details in relation to the stormwater management plan.
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.	**Acceptable Outcome.** The proposed stormwater management system incorporates on-site detention to limit post-development discharge rates and minimise impacts on upstream, downstream and adjoining properties. The system has been designed in accordance with the Infrastructure Design Planning Scheme Policy. Refer to the DRAINS modelling results contained within this report.
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**	**Acceptable Outcome.** The proposed stormwater management system and lawful points of discharge are in compliance with the infrastructure design planning scheme policy.

	Development obtains a lawful point of discharge in compliance with the standards in the Infrastructure design planning scheme policy. **AO3.4** 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.	**AO4.1** Development provides a stormwater conveyance system which is designed to safely convey flows in compliance with the standards in the Infrastructure design planning scheme policy. **AO4.2** Development provides sufficient area to convey run-off which will comply with the standards in the Infrastructure design planning scheme policy.	**Acceptable Outcome.** Developments provides a stormwater conveyance system which is designed to safely convey stormwater runoff in accordance with the infrastructure design planning scheme policy. Development provides sufficient area to convey runoff in accordance with the infrastructure design planning scheme policy.
PO5 Development designs stormwater channels, creek modification works, bridges, culverts and major drains to protect and enhance the value of the waterway corridor or drainage path for fauna movement.	**AO5** Development ensures the design of stormwater channels, creek modifications or other infrastructure, permits terrestrial and aquatic fauna movement.	**Not Application** Not applicable
PO6 Development ensures that location and design of stormwater detention and water quality treatment: a. minimises risk to people and property; b. provides for safe access and maintenance; c. minimises ecological impacts to creeks and waterways.	**AO6.1** Development locates stormwater detention and water quality treatment: a. outside of a waterway corridor; b. offline to any catchment not contained within the development. **AO6.2** Development providing for stormwater detention and water quality treatment devices are designed in compliance with the standards in the Infrastructure design planning scheme policy.	**Acceptable Outcome.** The proposed stormwater management system incorporates on-site detention and stormwater quality treatment measures. These devices are located outside any waterway corridor and are designed in accordance with the Infrastructure Design Planning Scheme Policy. Refer to the ADG Engineering Services Report and Stormwater Management Plan for further details.

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.	**Acceptable Outcome.** Satisfies please refer to ADG, ESR Report for further details
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.	**Acceptable Outcome.** Not applicable
	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	

	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.	**Performance Outcome.** The development incorporates on-site stormwater detention to manage post-development runoff and peak discharge rates, reducing impacts on the downstream drainage network. Opportunities for stormwater quality improvement have also been incorporated within the stormwater management system. Refer to the ADG Engineering Services Report for further details.
PO10 Development ensures that there is sufficient site area to accommodate an effective stormwater management system. Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.	**AO10** No acceptable outcome is prescribed.	**Performance Outcome.** Sufficient site area has been provided to accommodate the proposed stormwater management system, including stormwater detention and water quality treatment infrastructure, while maintaining the intended site functionality and development outcomes.
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.	**Performance Outcome.** The development will ensure that the lawful point of discharge is capable to convey the proposed site's stormwater runoff for minor storm events and manage overland flows for major ones.
PO12 Development provides stormwater infrastructure which:	**AO12.1** The stormwater management system is designed in compliance with the Infrastructure design planning scheme policy.	**Acceptable Outcome.** The stormwater management system is designed in compliance with the infrastructure design planning scheme policy.

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.	**AO12.2** 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.	
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.	**Performance Outcome.** An erosion and sediment control plan will be designed at detailed design stage. Reasonable and practical measures will be taken to reduce any possible impacts to receiving waters and stormwater infrastructure during the design.
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.	**Performance Outcome.** All unnecessary disturbance to soil, waterways and drainage channels will be avoided. All soil surfaces remaining will effectively be stabilized against erosion in the short and long term.
PO15 Development does not increase: a. the concentration of total suspended solids or other contaminants in stormwater flows during site construction;	**AO15** No acceptable outcome is prescribed.	**Performance Outcome.** Development will be designed to minimize increases in run-off and total suspended solids or other contaminants in stormwater flows during construction.

b. run-off which causes erosion either on site or off site.		
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 2,500m^2 of land that: i. will result in an impervious area greater than 25% of the net developable area; or ii. will result in 6 or more dwellings. b. reconfiguring a lot for an urban purpose that involves greater than 2,500m^2 of land and will result in 6 or more lots; c. operational work for an urban purpose which involves disturbing greater than 2,500m^2 of land.		
PO16 Development ensures that the entry and transport of contaminants into stormwater is avoided or minimised to protect receiving water environmental values. Note—Prescribed water contaminants are defined in the *Environmental Protection Act 1994*. Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.	**AO16** Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.	**Acceptable Outcome.** Stormwater quality treatment measures have been incorporated into the stormwater management system and are designed in accordance with the Infrastructure Design Planning Scheme Policy. The proposed treatment measures are expected to minimise the discharge of contaminants and protect downstream receiving waters. Refer to the ADG Engineering Services Report and MUSIC assessment for further details.
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.	**Not Applicable.**
Section C —Additional performance outcomes and acceptable outcomes for assessable development for a material change of use or reconfiguring a lot		

PO18 Development protects stormwater infrastructure to ensure the following are not compromised: a. the long term infrastructure for the stormwater network in the Long term infrastructure plans; b. the existing and planned infrastructure for the stormwater network in the Local government infrastructure plan; c. the provision of long term, existing and planned infrastructure for the stormwater network which: i. is required to service the development or an existing and future urban development in the planning scheme area; or ii. is in the interests of rational development or the efficient and orderly planning of the general area in which the site is situated. Editor's note—A condition which requires a proposed development to keep permanent improvements and structures associated with the approved development clear of the area of long term infrastructure, may be imposed.	**AO18** Development protects stormwater infrastructure in compliance with the following: a. for long term infrastructure for the stormwater network, the Long term infrastructure plans; b. for existing and planned infrastructure for the stormwater network, the Local government infrastructure plan; c. the standards for stormwater drainage in the Infrastructure design planning scheme policy.	**Acceptable Outcome.** Development will not adversely impact on existing or future planned stormwater infrastructure and is in compliance with the standards of the 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;	**AO19** No acceptable outcome is prescribed.	**Not Applicable.**

iii. other infrastructure for the stormwater network associated with development that is not assumed future urban development which is made necessary by the development. Editor's note—The payment of extra trunk infrastructure costs for development completely inside the priority infrastructure area in the Local government infrastructure plan is to be worked out in accordance with the Charges Resolution. Editor's note—See section 130 Imposing Development conditions (Conditions for extra trunk infrastructure costs) of the *Planning Act 2016*.		

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 *Electricity Act 1994*) 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.

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.	**Not Applicable**
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.	**Not Applicable**

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.	**AO3** Development provides pavement edges which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.	**Acceptable Outcome** Any required pavement edges will be designed in accordance with BCC Standard Drawings and the road corridor design standards in the infrastructure design planning scheme policy at the detailed design stage.
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.	**AO4** Development provides verges which are designed and constructed in compliance with the road corridor design and streetscape locality advice standards in the Infrastructure design planning scheme policy.	**Acceptable Outcome** Development will provide verges that are designed and constructed in compliance with the road corridor design and streetscape locality advice standards in the infrastructure design planning scheme policy.
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.	**AO5** Development provides a lane or laneway identified on the Streetscape hierarchy overlay map or in a neighbourhood plan which is embellished in compliance with the streetscape locality advice standards in the Infrastructure design planning scheme policy.	**Not Applicable**
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;	**AO6** Development of an existing premises provides at the frontage of the site, if not already existing, the following infrastructure to the standard that would have applied if the development involved new premises as stated in the road corridor design standards in the Infrastructure design planning scheme policy:	**Acceptable Outcome** Infrastructure at the frontages of the site will be provided in accordance with BCC Standard Drawings and the road corridor design and planning scheme policy.

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.	**AO7** Development provides cycle and walking routes which are located, designed and constructed in compliance with the road corridor design and off-road pathway design standards in the Infrastructure design planning scheme policy.	**Not Applicable**

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.	**Acceptable Outcome** Refuse and recycling collection and storage facilities will be provided by the development in accordance with the refuse planning scheme policy and will not have any adverse impact on the amenity of land uses within or adjoining the development
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.	**Acceptable Outcome** Reticulated water supply and sewerage connections to Urban Utilities' network will be provided by the development prior to use commencing. Refer to ADG Civil Engineering Report for the Preliminary Engineering Services Layout Plan
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**	**Acceptable Outcome** Public utilities and street lighting location and alignment will be optimized to avoid significant native vegetation and minimize earthworks in accordance with the standards in the infrastructure design planning scheme policy.

	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.	Development is situated that it can be adequately serviced with electricity and telecommunications.
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.	To be addressed in the detailed design stage by a competent consultant
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	**Not Applicable**

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).	To be addressed in the detailed design stage by a competent consultant
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.	**Not Applicable**
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.	**Not Applicable**

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.	**Not Applicable**
PO18 Development provides culverts which are designed and constructed using proven methods, materials and technology to provide for: a. safety; b. an attractive appearance appropriate to the general surroundings; c. functionality and easy maintenance; d. minimal whole-of-life cost; e. longevity; f. future widening; g. current and future services; h. minimal adverse impacts, such as increase in water levels or flow velocities, and significant change of flood patterns.	**AO18** Development that provides culverts is designed and constructed in compliance with the structures standards in the Infrastructure design planning scheme policy.	**Not Applicable**

Note—All culverts and associated elements are to be designed and certified by a Registered Professional Engineer Queensland in 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.	**Not Applicable**
If for development with a gross floor area greater than 1,000m^2		
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.	**Acceptable Outcome** A construction management plan will be prepared prior to works commencing to ensure surrounding parks, public spaces and landscaping is protected during construction and that pedestrian, cyclist and vehicular movements can be managed effectively.
PO21 Development ensures that construction and demolition activities are guided by measures that prevent or minimise adverse impacts including sleep disturbance at	**AO21.1** Development ensures that demolition and construction: a. only occur between 6:30am and 6:30pm Monday to Saturday, excluding public holidays;	**Acceptable Outcome** Demolition and construction work will be limited to the approved working hours. Dust will be managed during

a sensitive use, due to noise and dust, including dust from construction vehicles entering and leaving the site. Note—A noise and dust impact management plan prepared in accordance with the Management plans planning scheme policy can assist in demonstrating achievement of this performance outcome.	b. do not occur over periods greater than 6 months. **AO21.2** Development including construction and demolition does not release dust emissions beyond the boundary of the site. **AO21.3** Development construction and demolition does not involve asbestos-containing materials.	construction to ensure it is not blown beyond the property boundary.
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.	**Acceptable Outcome** Vibration levels will be effectively managed during demolition and construction works.
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:	**Acceptable Outcome** Proposed fire hydrant/s will be confirmed during detailed design stage.

	a. raised reflectorised pavement markers (RRPM) on sealed roads; b. marker posts at the fence line where on an 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.	**Not Applicable**
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.	**Not Applicable**
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.	**Not Applicable**

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/s^2) 1–80Hz for human comfort

Location	**Assessment period(1)**	**Preferred values(3)**		**Maximum values(3)**	
Continuous vibration		z-axis	x and y axes	z-axis	x and y axes
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 Erosion Hazard Assessment

BRISBANE CITY COUNCIL ABN 72 002 765 795

Erosion Hazard Assessment

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 side:

☐ ***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 https://waterbydesign.com.au/download/erosion-sediment-control-for-small-construction-sites

☑ ***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

56 Blinzinger Road, Banyo, QLD 4014

Postcode **4014**

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)*

Darren Yuen

Certifier's signature



Date

18 / 09 / 2026

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Stock Code no. 262006

Assessment Table

Table 1: Low Risk Test

		Yes	*No*
1.1	is the area of land disturbance > 1000 m2?	✓	
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?		✓

If you answered ***'No'*** to **ALL** of these questions, then the site is **low risk** with respect to erosion and sediment control. (Do not continue to Table 2)

If you answered ***'Yes'*** to **ANY** of these questions, 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 the site is **medium risk** with respect to erosion and sediment control. (Do not continue to Table 3)

If ***'Yes'*** then proceed to ***Table 3***

Table 3: High Risk Test

		Yes	*No*
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%?		

If you answered ***'No'*** to **ALL** of these questions, then the site is also **medium risk** with respect to erosion and sediment control.

If you answered ***'Yes'*** to **ANY** of these questions, then the site is **high risk** with respect to erosion and sediment control.

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Appendix H
DRAINS Model Data

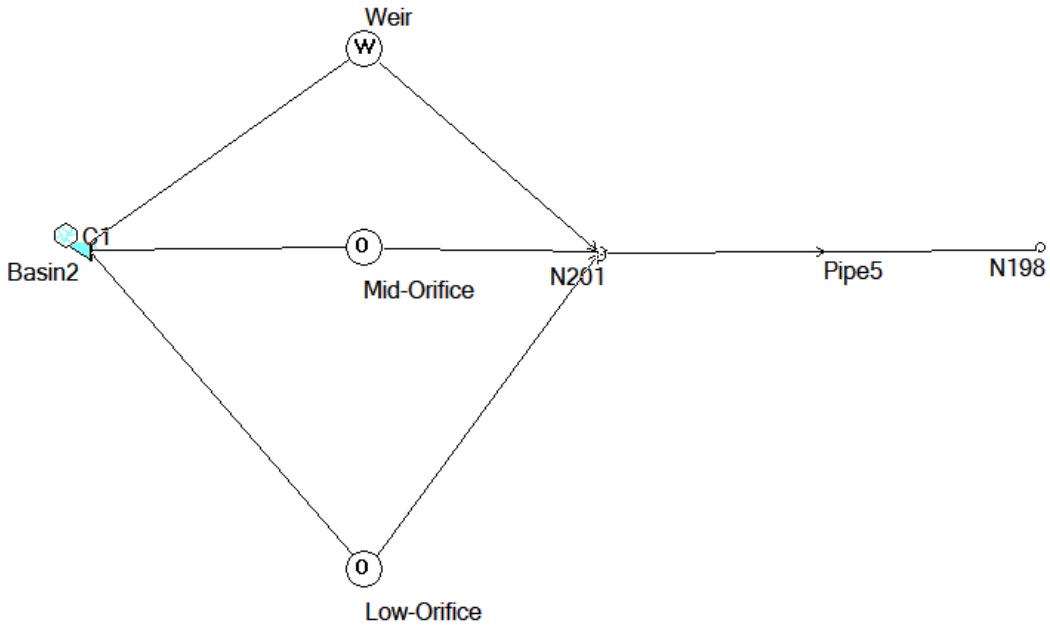


Figure F1: DRAINS Model

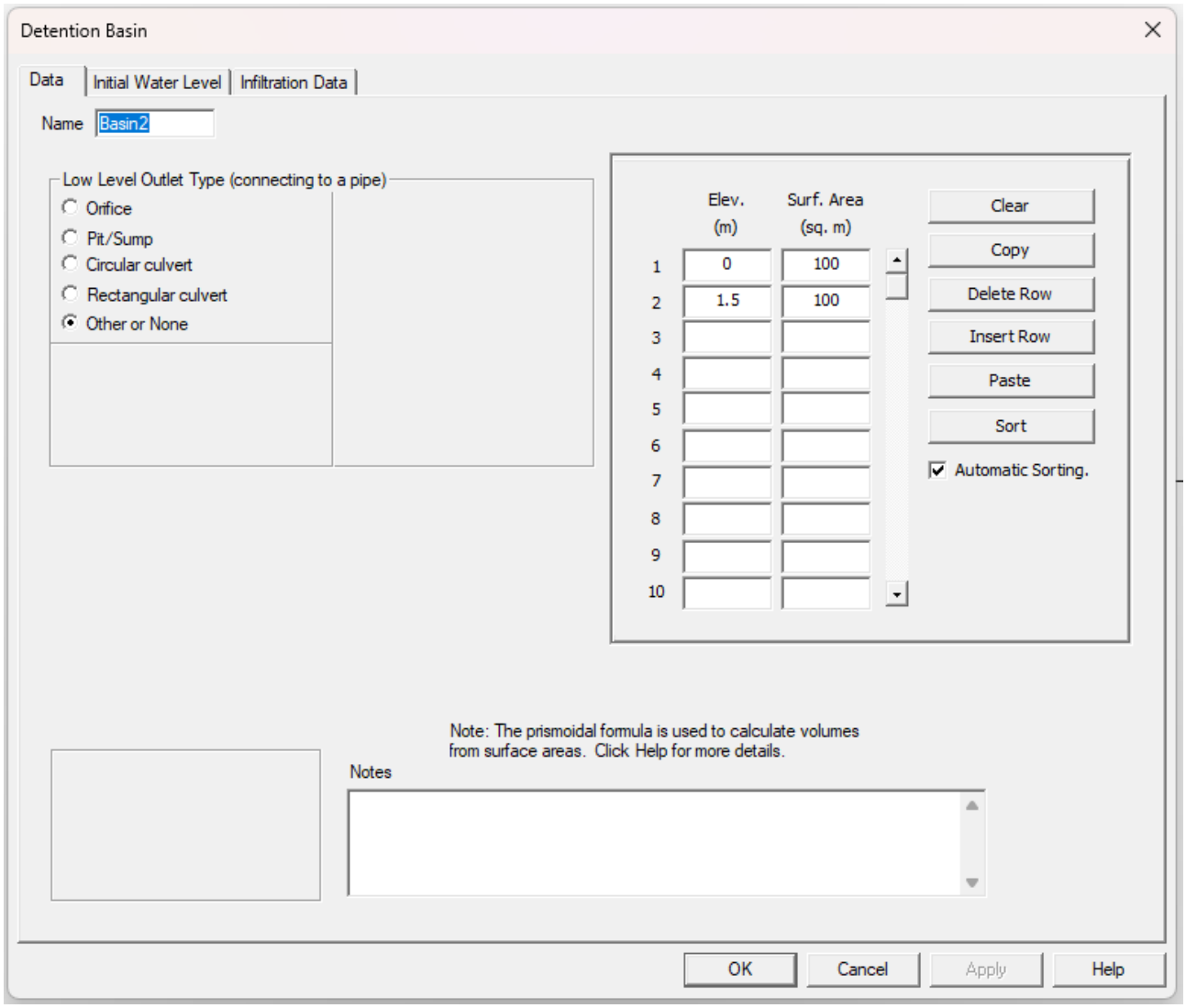


Figure F2: DRAINS input for the detention tank

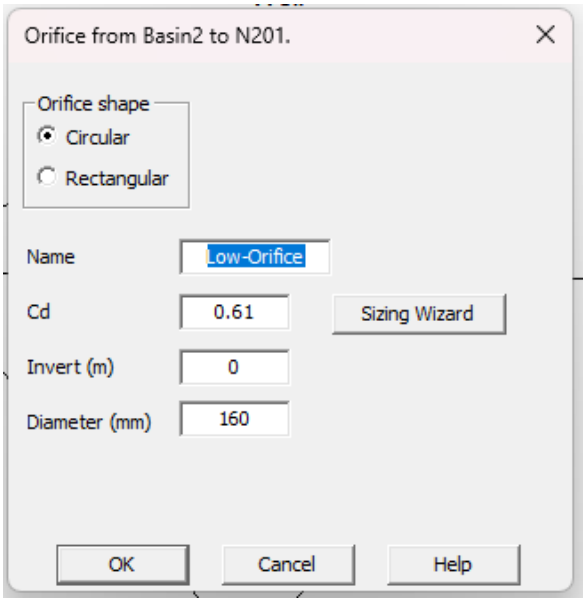


Figure F3: DRAINS input for the low flow orifice

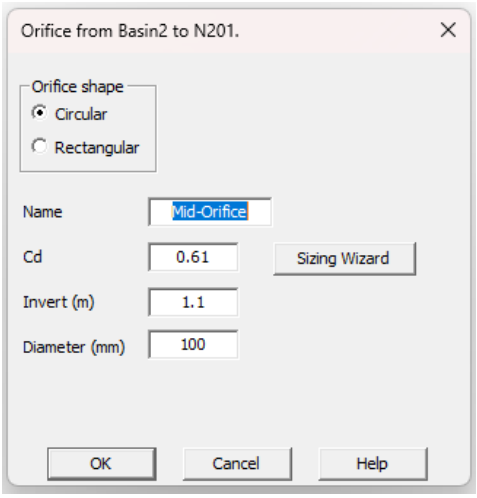


Figure F4: DRAINS input for the mid flow orifice

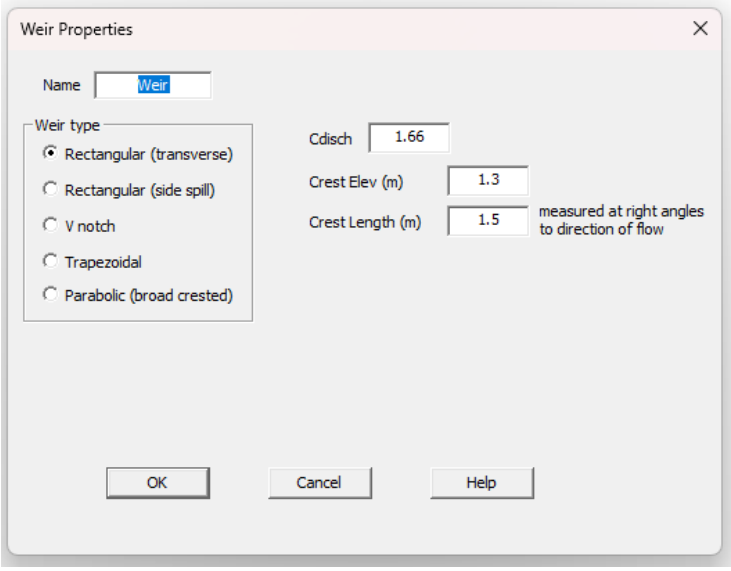


Figure F5: DRAINS input for the weir

Appendix I
MUSIC Model Information

MUSIC Model Information

Introduction:

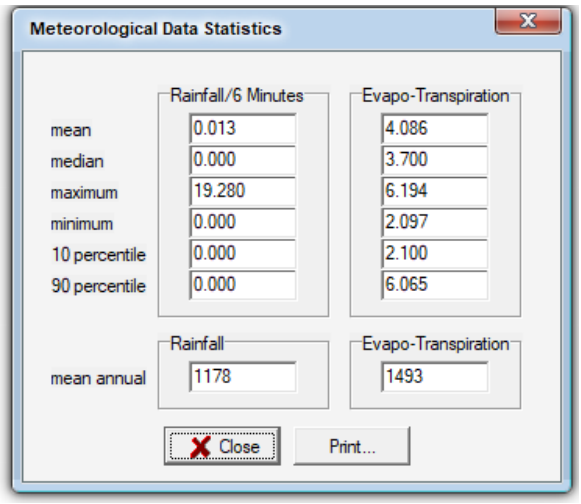
The quality of stormwater runoff and the impact of the proposed stormwater quality improvement measures were analysed using MUSIC Version 6.4.0 according to the MUSIC Modelling Guidelines Version 1.0, Water by Design 2010. A summary of the modelled catchment is presented in the table below.

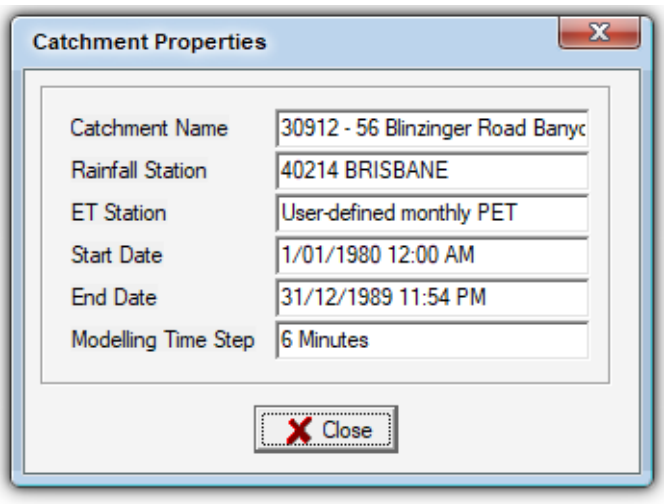
Land Use	Area (m^2)
Roof	2,952
Carpark Pavement	241
Bypass Carpark	24
Footpath	243
Bypass Footpath	96
Landscape	292
Bypass Landscape	477

Meteorological Data:

The MUSIC model was carried out using the following parameters:

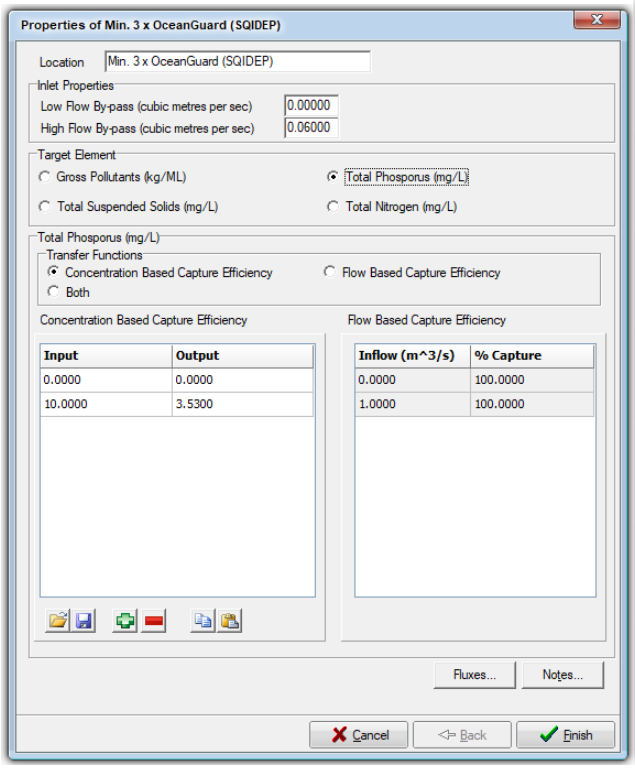
- The modelling period should be 10 years with a time step of 6 minutes.
- The nearest available 6 minute time step rainfall series to the subject site is Brisbane Regional Office 40214 (BCC central) 1980 to 1989

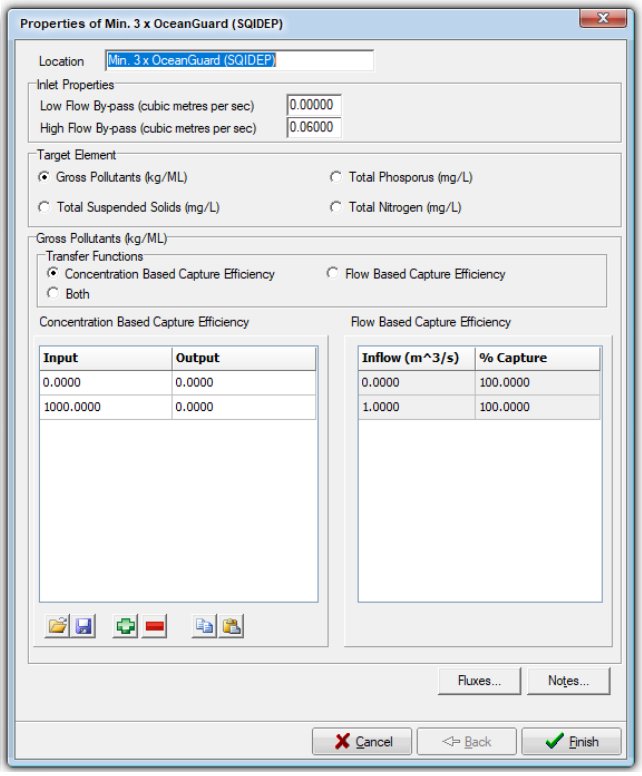


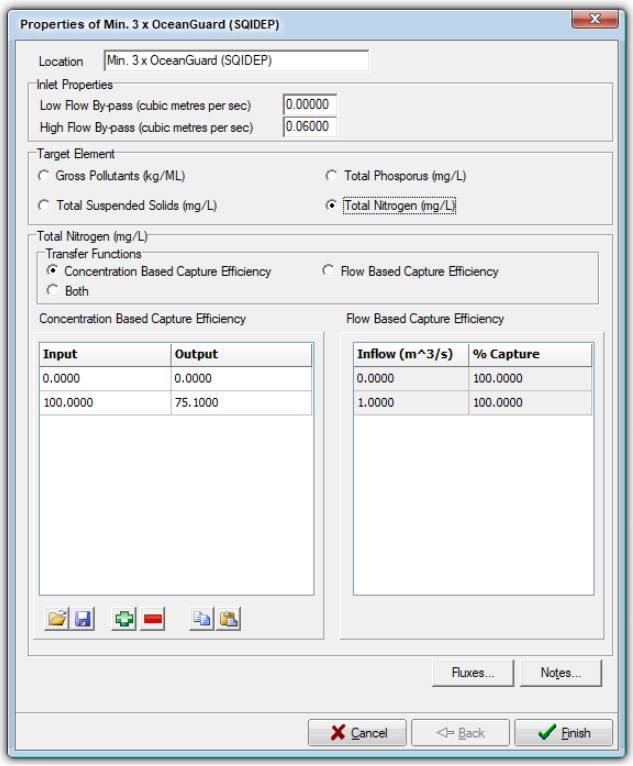


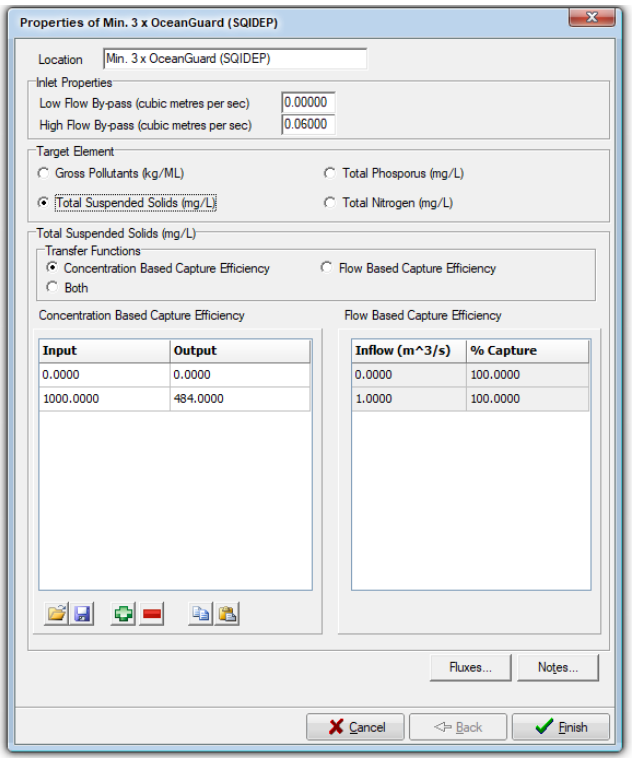
Input Parameters:

Ocean Guards

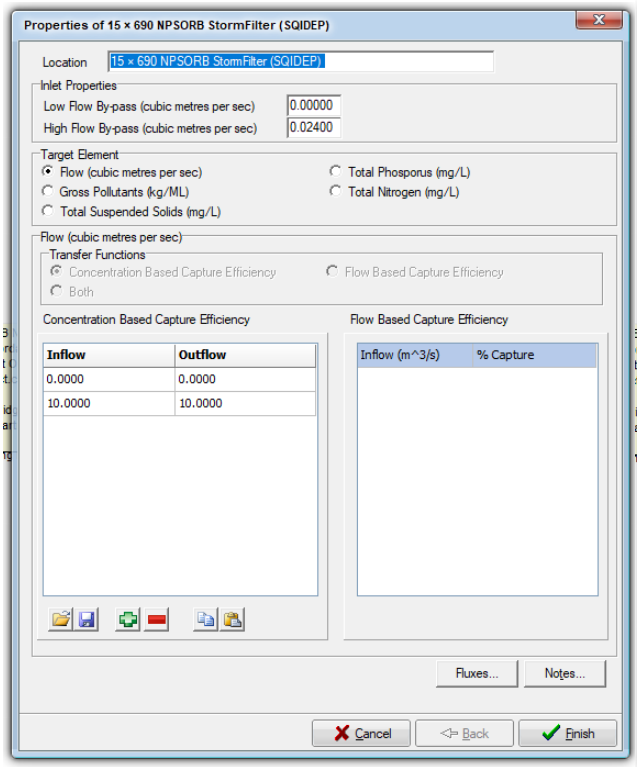


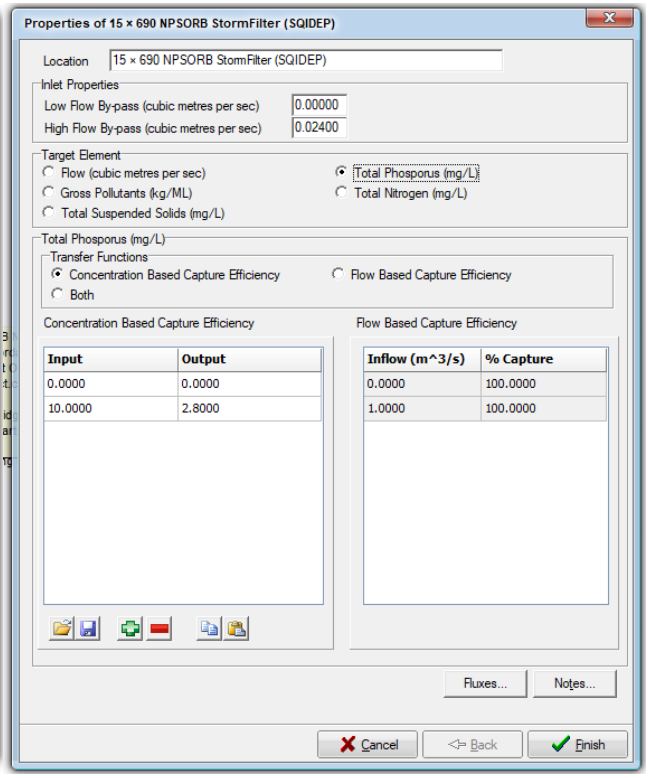


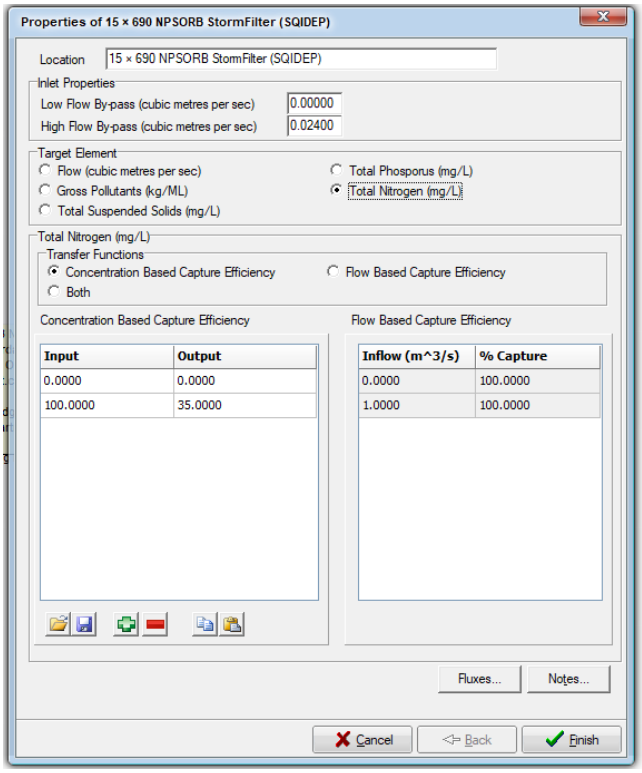


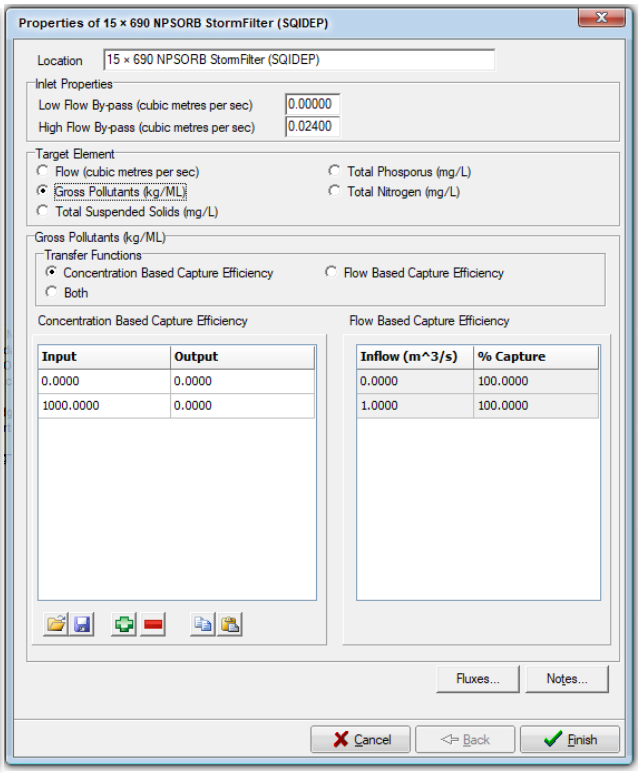


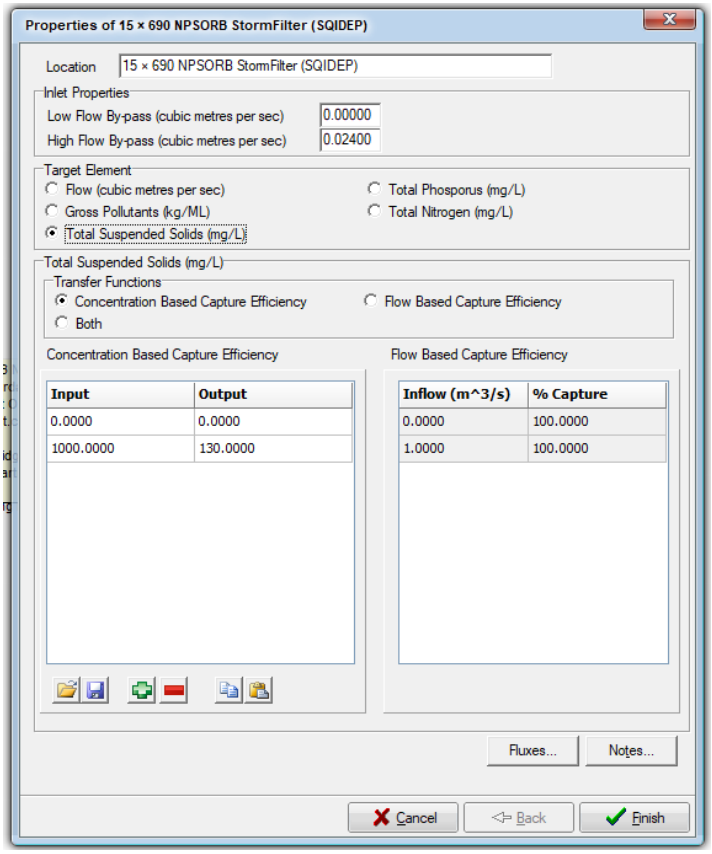
Stormfilter:










Properties of 15 × 690 NPSORB StormFilter (SQIDEP)
Location
15 × 690 NPSORB StormFilter (SQIDEP)
Inlet Properties
Low Flow By-pass (cubic metres per sec)
0.00000
High Flow By-pass (cubic metres per sec)
0.02400
Target Element
Flow (cubic metres per sec)
Gross Pollutants (kg/ML)
Total Suspended Solids (mg/L)
Total Phosporus (mg/L)
Total Nitrogen (mg/L)
Total Suspended Solids (mg/L)
Transfer Functions
Concentration Based Capture Efficiency
Flow Based Capture Efficiency
Both
Concentration Based Capture Efficiency
Input
Output
0.0000
0.0000
1000.0000
130.0000
Flow Based Capture Efficiency
Inflow (m^3/s)
% Capture
0.0000
100.0000
1.0000
100.0000
Fluxes...
Notes...
Cancel
Back
Finish

Appendix J
BCC Community Maps Information

Community Maps



9/9/2026, 10:49:46 AM

1:849

0 0.01 0.02 0.04 mi

0 0.01 0.03 0.06 km

Culvert
End Structure
End cap
Flood Gate
Pipe End Outlet
Gully
Junction
Stormwater Manhole
Pipe
DRAIN
FOUL WATER
GULLY CONNECT
ROOF WATER
SQID
Surface Drain
Waterbody
Artesian Well
Detention Basin
Lake
Water Control Valve
Reflex
Scour
Air
Pressure Sustaining
Pressure Reducing
Altitude
Flow Control
Water System Valve
BALL
BUTTERFLY
GATE
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
Water Device
PRESSURE GAUGE
FLOW METER
LEVEL SENSOR
Water Hydrant
PILLAR HYDRANT
INGROUND HYDRANT
Water Pumps
BOOSTER PUMP
BORE PUMP
LIFT PUMP
Water Pump Stations
Water Reservoirs
Water Network Structure
BORE LOCATION
FILLING STATION
TREATMENT PLANT
Water Trunk Main
Raw Water Main
Trunk Main
Water Pressure Main
Water - Model Link
Raw Water Main
Reticulation Main
Trunk Main
Scour Main
Water Service
SERVICE
MODEL LINK
COMMON SERVICE
Sewer Device
FLOW METER
PRESSURE GAUGE
VENT
Sewer Vent Pipe
MODEL LINK
VENT PIPE
Sewer Manholes
MANHOLE
END
Sewer Fitting
END CAP
WYE
TEE
REDUCER
CROSS
Sewer Control Valve
VACUUM
REFLUX
AIR
SCOUR
Sewer System Valve
SEWER DOOR
BUTTERFLY
GATE
SUBMERSIBLE
PUMP STATION
TRUNK MAIN
Sewer Gravity Main
SYPHON
DISCHARGE
TRUNK MAIN
RETICULATION MAIN
OVERFLOW MAIN
MODEL LINK
Sewer Pressure Main
MODEL LINK
LOW PRESSURE MAIN
RISING MAIN
VACUUM MAIN
Sewer Service
MODEL LINK
SERVICE
Sealed Plan
Property Parcel
Parcel Outside BCC
ImageryMaskBCC
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Red: Red
Green: Green
Blue: Blue
moreton_island_2020_10cm_mosaic_a.ecw
Red: Red
Green: Green
Blue: Blue

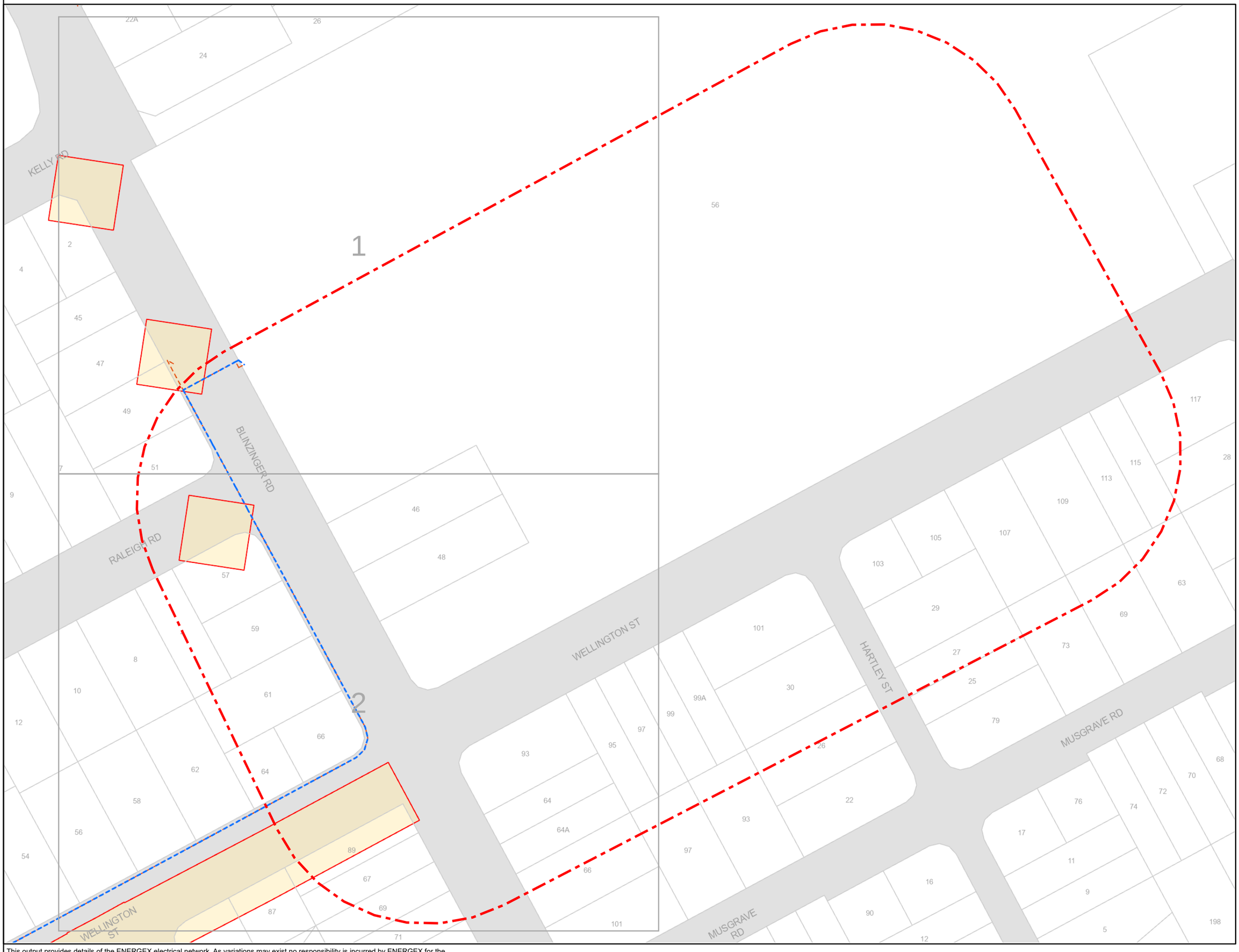
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Appendix K
BYDA Information

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

For Emergency Situations
Please Call 13 19 62



energex

BYDA

Sequence: 279363687
Date: 14/09/2026

Scale: 1:1025
Tile No: **OVERVIEW**

CAUTION - HIGH VOLTAGE

LEGEND

- Substation
- Cable Marker
- Pit
- Pole
- Pillar
- LV Cable (up to 1kV)
- HV Cable (1kV – <33kV)
- HV Cable (33kV and over)
- Pit Boundary
- Planned Work Area

AS5488 Category “D” Plan

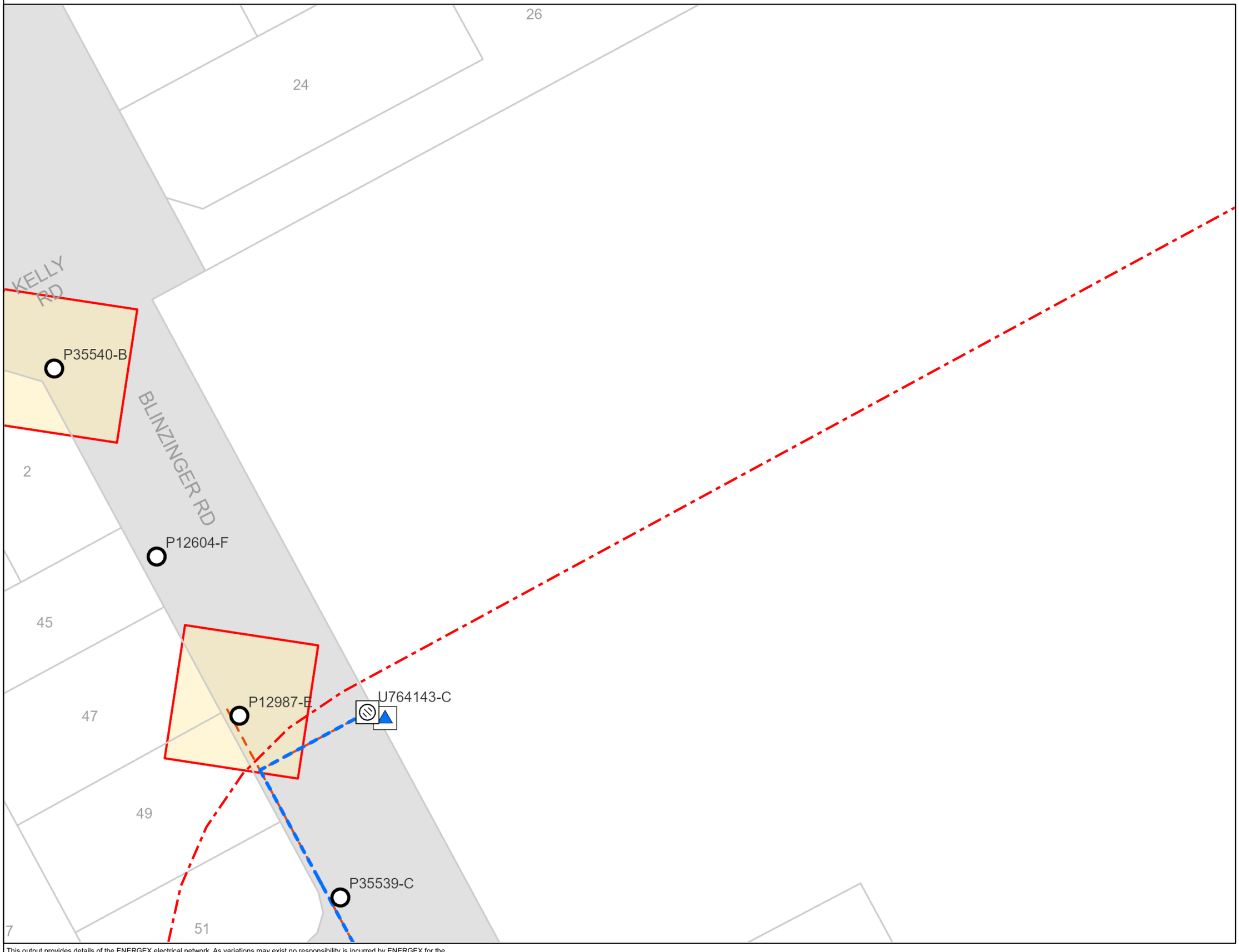
N
W E
S

DISCLAIMER: While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Energex nor Pelican Corp 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 may exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.

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

For Emergency Situations
Please Call 13 19 62



energex

BYDA

Sequence: 279363687
Date: 14/09/2026

Scale: 1:500
Tile No: **Tile No: 1**

CAUTION - HIGH VOLTAGE

LEGEND

- Substation
- Cable Marker
- Pit
- Pole
- Pillar
- LV Cable (up to 1kV)
- HV Cable (1kV – <33kV)
- HV Cable (33kV and over)
- Pit Boundary
- Planned Work Area

AS5488 Category “D” Plan

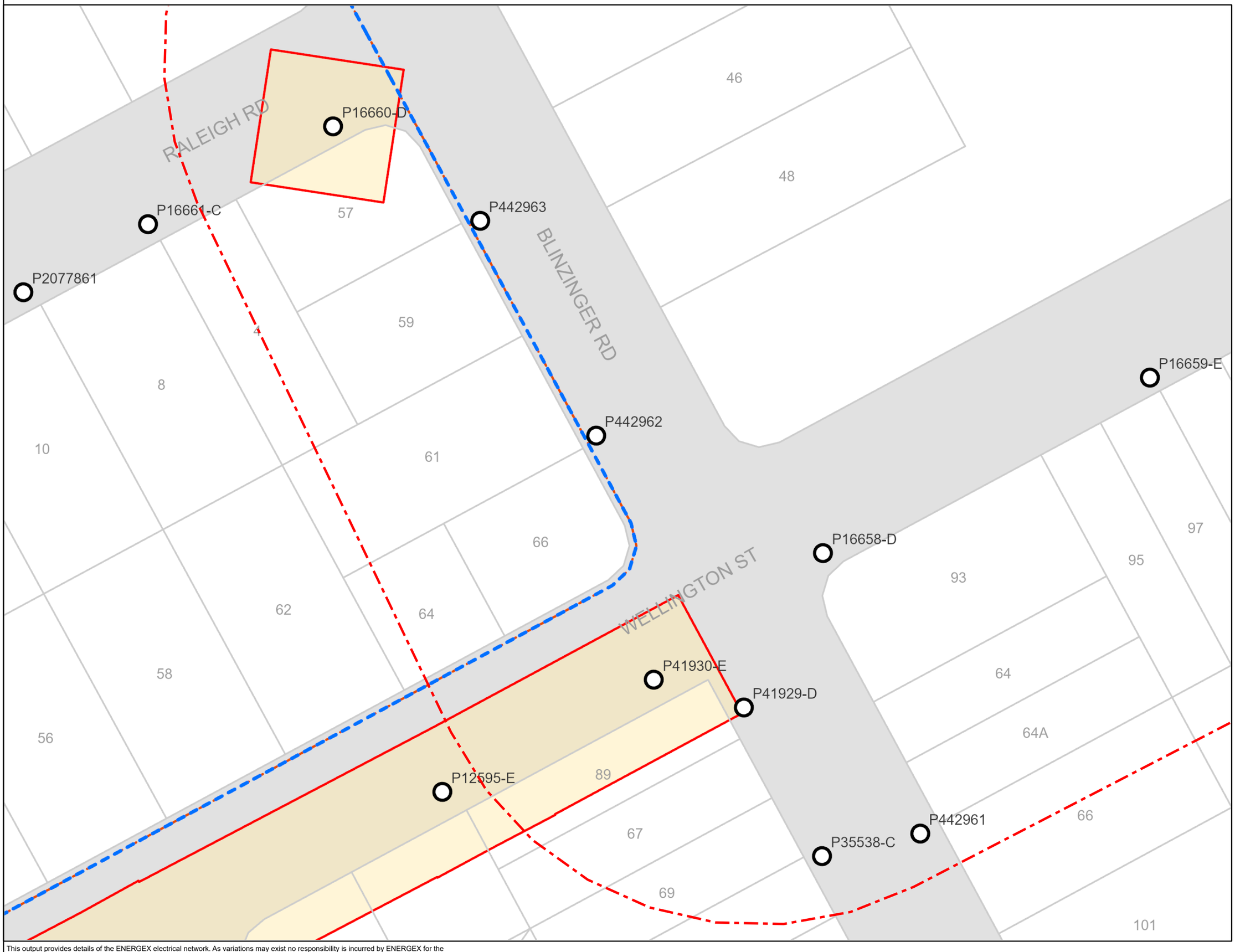
N
W E
S

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For Emergency Situations
Please Call 13 19 62



energex

BYDA

Sequence: 279363687
Date: 14/09/2026

Scale: 1:500
Tile No: **Tile No: 2**

CAUTION - HIGH VOLTAGE

LEGEND

- Substation
- Cable Marker
- Pit
- Pole
- Pillar
- LV Cable (up to 1kV)
- HV Cable (1kV – <33kV)
- HV Cable (33kV and over)
- Pit Boundary
- Planned Work Area

AS5488 Category “D” Plan

N
W E
S

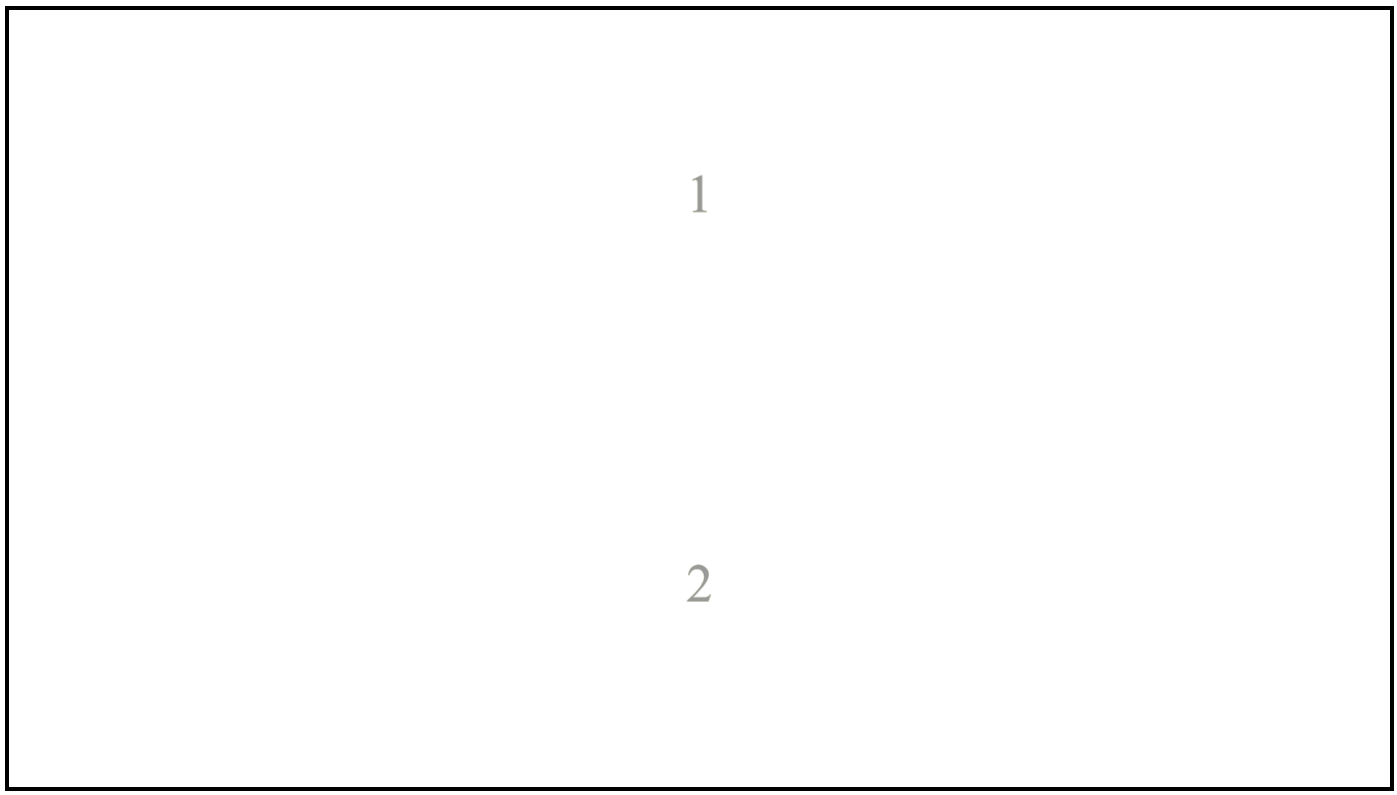
DISCLAIMER: While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Energex nor Pelican Corp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information 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 may exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.

To:	Thara Gamage
Phone:	Not Supplied
Fax:	Not Supplied
Email:	tgamage@adgce.com

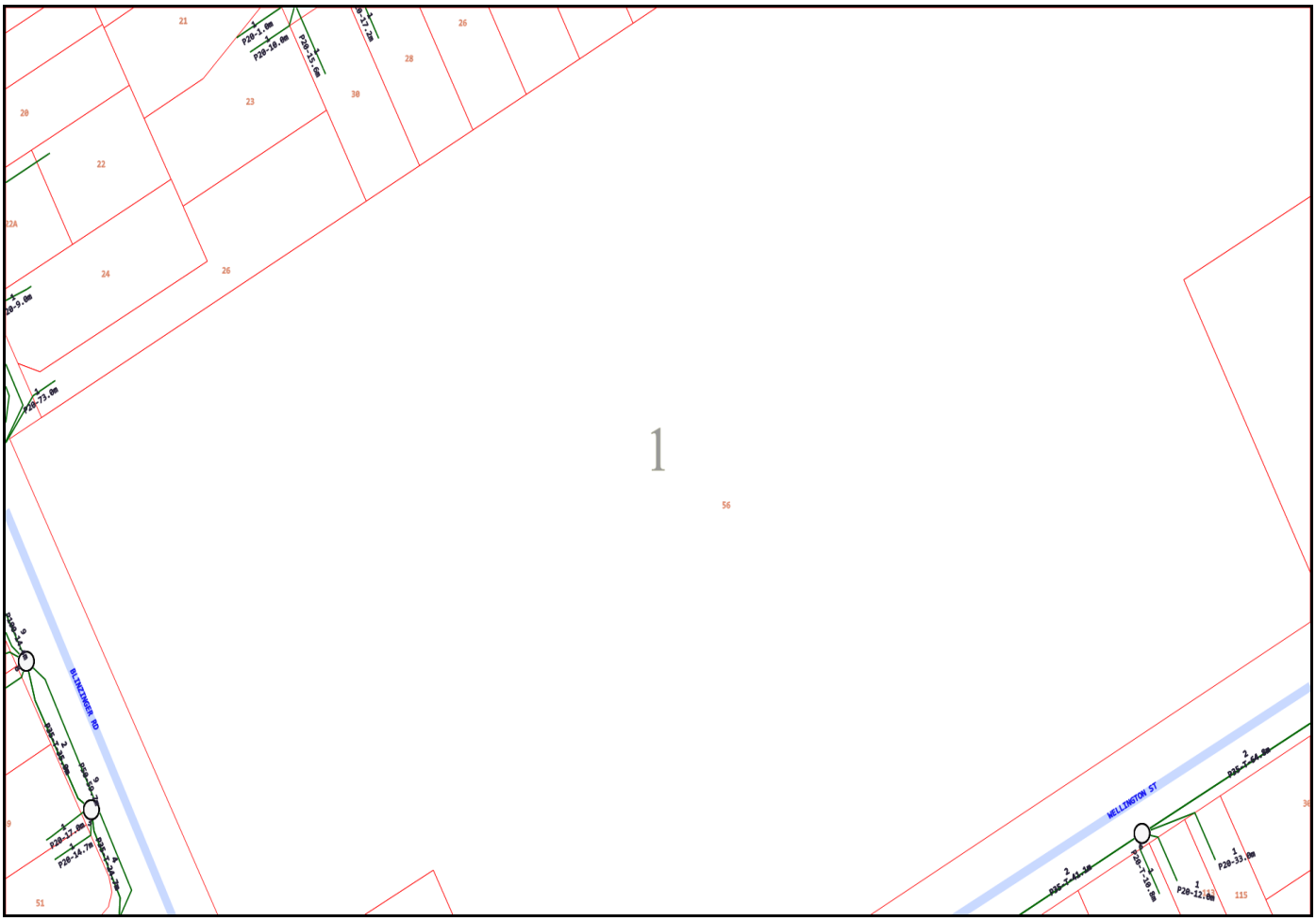
Dial before you dig Job #:	54230615	BEFORE YOU DIG www.byda.com.au Zero Damage - Zero Harm
Sequence #	279363688	
Issue Date:	14/09/2026	
Location:	34 Hartley Street , Banyo , QLD , 4014	

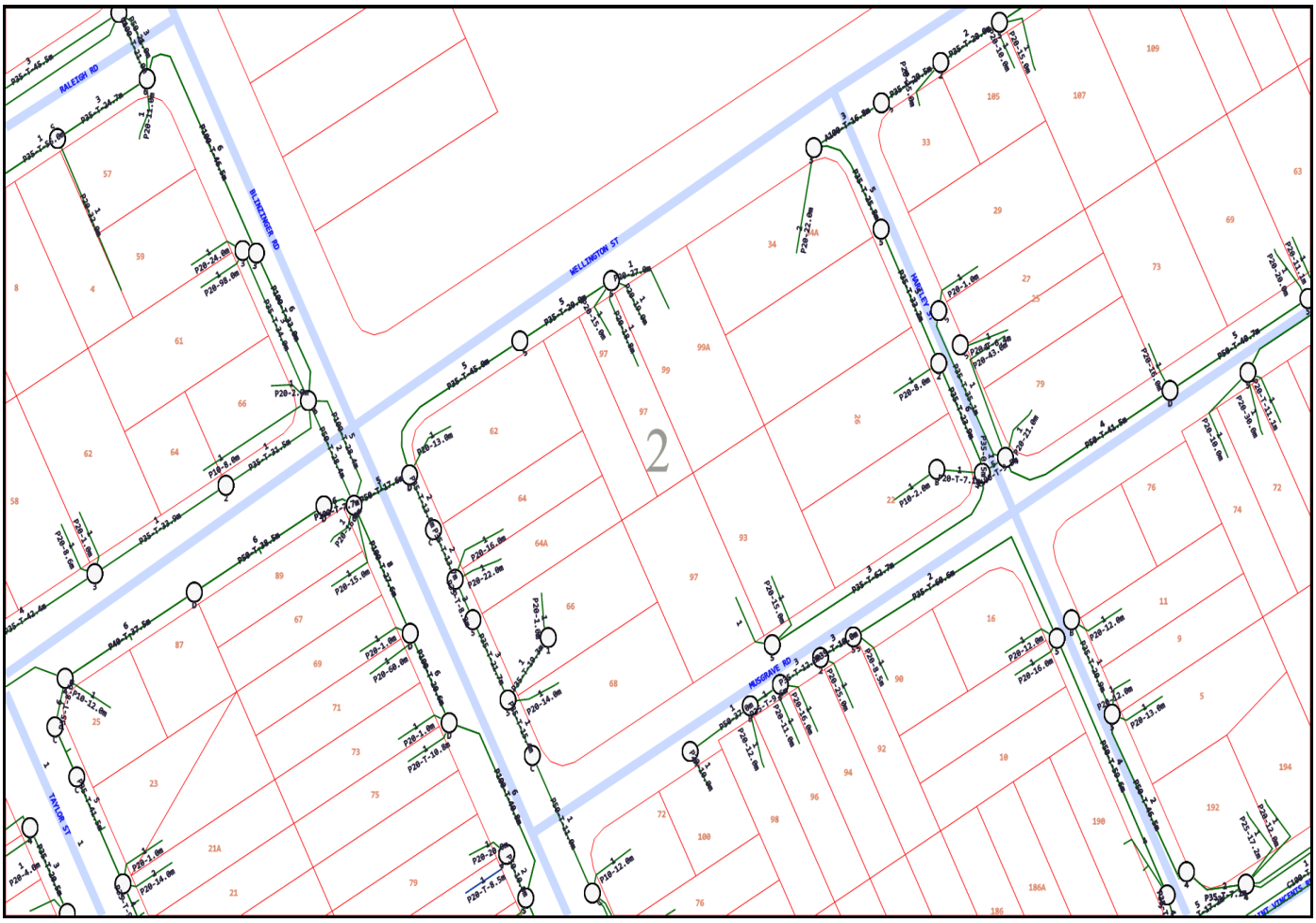
Indicative Plans are tiled below to demonstrate how to layout and read nbn asset plans



LEGEND

34	Parcel and the location
5	Pit with size "5"
2E	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
2 PO – T- 25.0m P40 – 20.0m 5 9	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
2 10.0m 5 9	2 Direct buried cables between pits of sizes ,"5" and "9" are 10.0m apart.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Copper/RF/Fibre) cables.
5 9	Trench containing only DESIGNED/PLANNED (Copper/RF/Fibre/Power) cables.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Power) cables.
BROADWAY ST	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000 1 cm equals 20 m

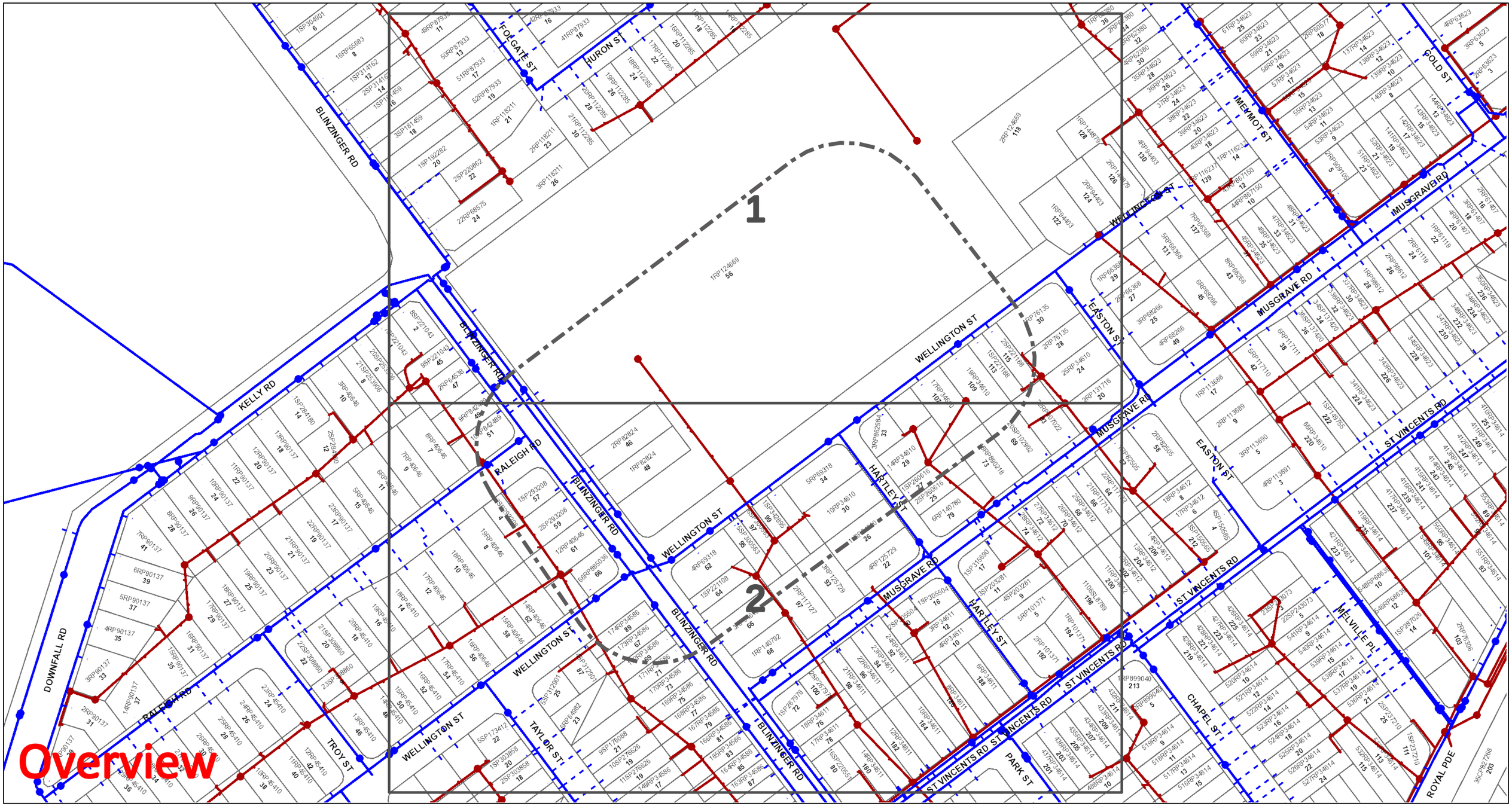

1
BLUMENBERG RD
WELLINGTON ST



Emergency Contacts

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

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



UrbanUtilities

N

Map Scale
1:2050

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

BYDA Reference No: 279363690

Date BYDA Ref Received: 14/09/2026

Date BYDA Job to Commence: 17/09/2026

Date BYDA Map Produced: 14/09/2026

This Map is valid for 30 days

Produced By: Urban Utilities

Sewer	Water	Recycled Water
Infrastructure	Infrastructure	Infrastructure
Major Infrastructure	Major Infrastructure	Major Infrastructure
Network Pipelines	Network Pipelines	Network Pipelines
Network Structures	Network Structures	Network Structures
	Water Service (Indicative only)	

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

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

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

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

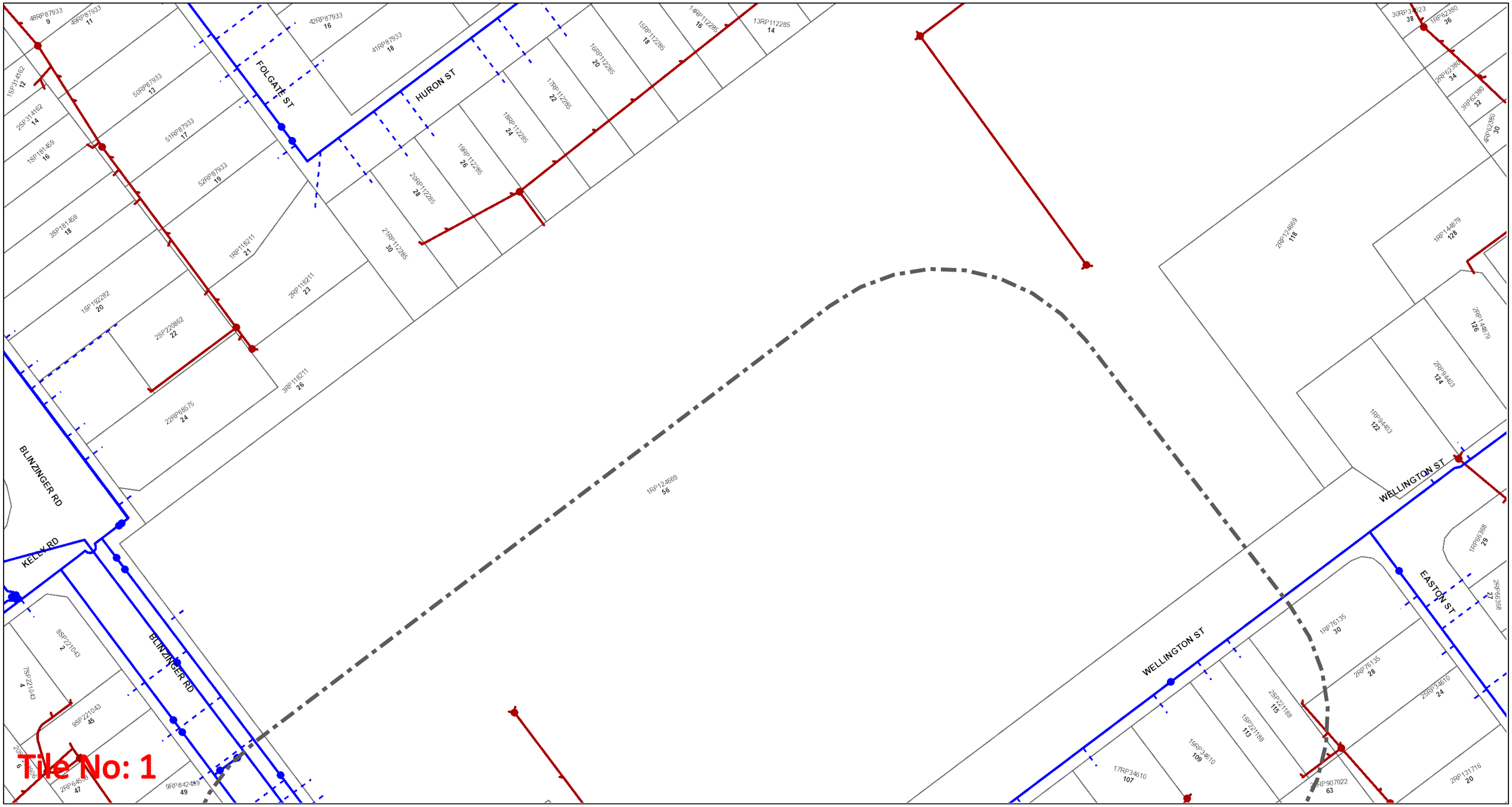
Based on or contains data provided by the State of Queensland (Department of Natural Resources and Mines) [2020]. In consideration of the State permitting the use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, liability in negligence)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

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

www.urbanutilities.com.au

ABN 86 673 835 011

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



UrbanUtilities

N

Map Scale
1:1000

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

BYDA Reference No: 279363690

Date BYDA Ref Received: 14/09/2026

Date BYDA Job to Commence: 17/09/2026

Date BYDA Map Produced: 14/09/2026

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)

Recycled Water
- Infrastructure
- Major Infrastructure
- Network Pipelines
- Network Structures

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ABN 86 673 835 011

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Map Scale 1:1000

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

BYDA Reference No: 279363690

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This Map is valid for 30 days

Produced By: Urban Utilities

Sewer	Water	Recycled Water
Infrastructure	Infrastructure	Infrastructure
Major Infrastructure	Major Infrastructure	Major Infrastructure
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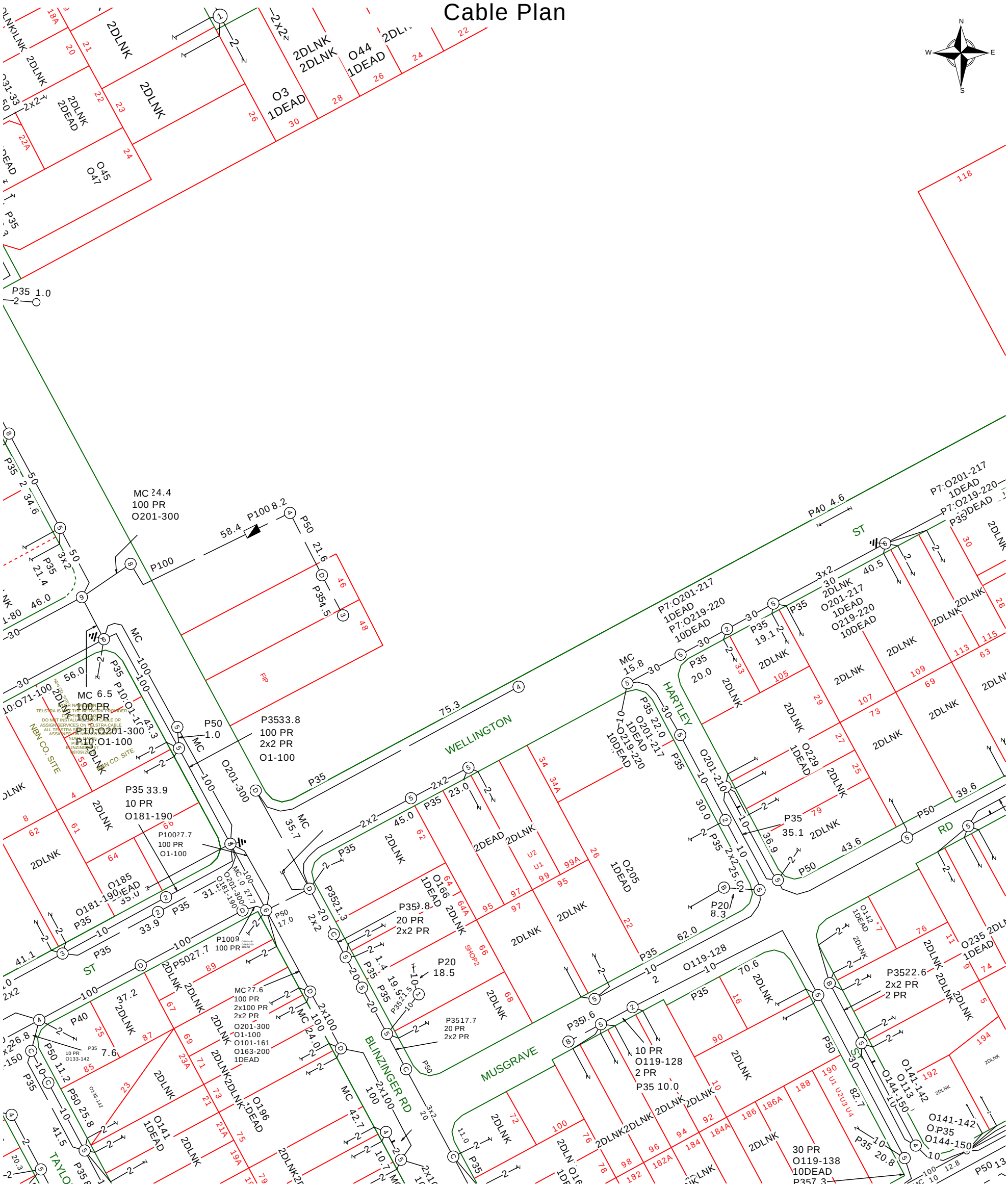
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www.urbanutilities.com.au ABN 86 673 835 011

Cable Plan



Report Damage:https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-
Ph - 13 22 03
Email - Telstra.Plans@team.telstra.com
Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries

TELSTRA LIMITED A.C.N. 086 174 781

Generated On 14/09/2026 16:51:09

Sequence Number: 279363691

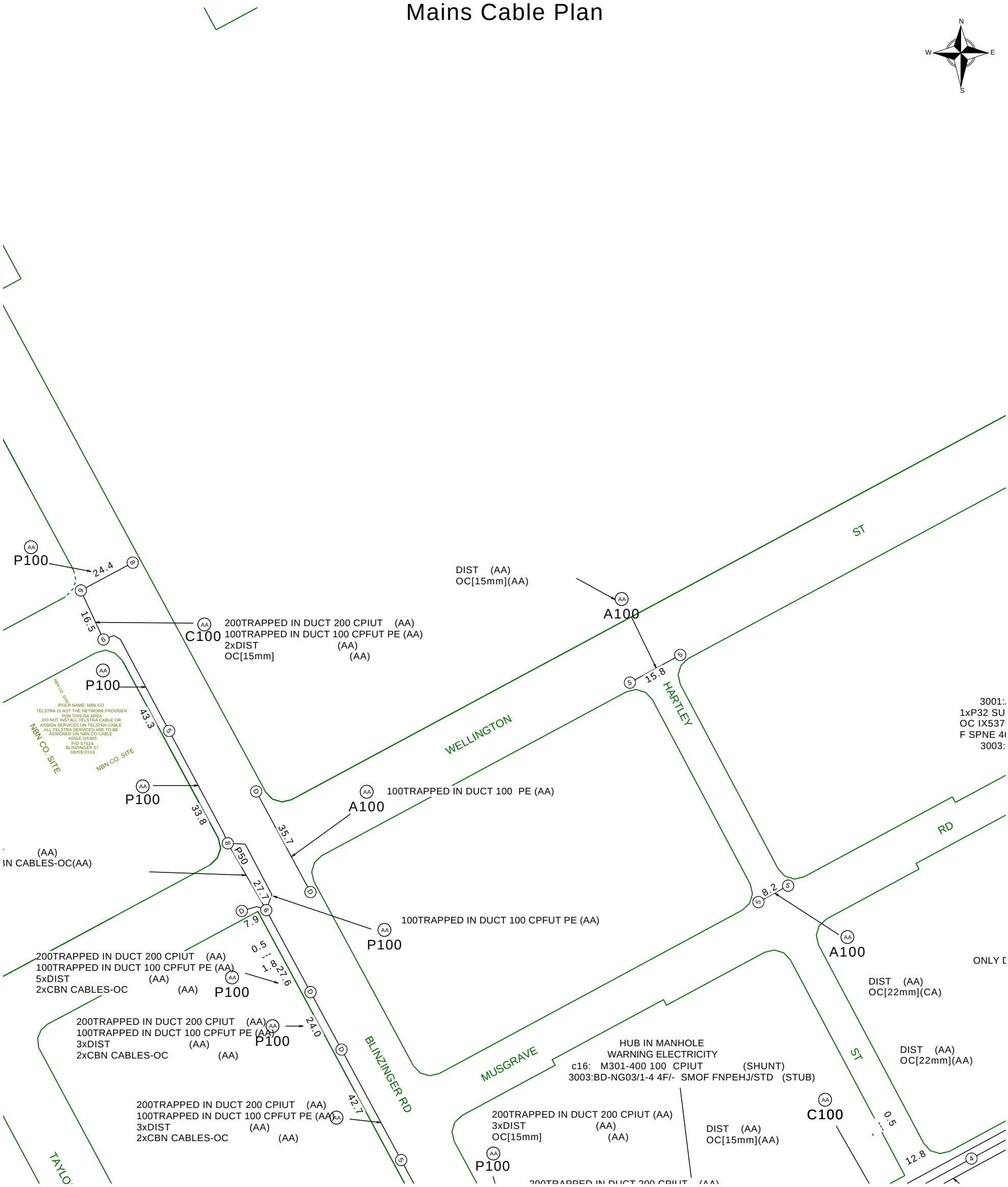
CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact InfraCo Plan Services should you require any assistance.

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.

Mains Cable Plan



Report Damage:https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-
Ph - 13 22 03
Email - Telstra.Plans@team.telstra.com
Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries

TELSTRA LIMITED A.C.N. 086 174 781

Generated On 14/09/2026 16:51:10

Sequence Number: 279363691

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

APA
Australia's energy infrastructure partner

BEFORE YOU DIG
www.byda.com.au

Before You Dig Australia

Classification: Networks

Enquiry date	14/09/2026
Sequence number	279363692
Work site address	34 Hartley Street Banyo QLD 4014



Enquiry Date:	14/09/2026
Enquirer:	Thara Gamage
Sequence Number:	279363692
Work Site Address:	34 Hartley Street
	Banyo
	QLD 4014

Thank you for your Before You Dig enquiry regarding the location of gas assets.

We confirm there are NO Gas Assets located in close vicinity of the above location.

Caution: Damage to gas assets may result in explosion, fire and personal injury.

Please ensure you read and comply with all the relevant information contained in this response to your BYDA enquiry.

Before You Dig Checklist



1. Plan

- Review maps provided with this BYDA response and confirm the location of your work site is correct.



2. Prepare

- Electronically locate gas assets and mark locations.
- Note: Look for visible evidence of gas assets at the worksite which may not be shown on plans.



3. Pothole

- Not applicable where no gas assets present.



4. Protect

- Not applicable where no gas assets present.



5. Proceed

- Only proceed with your work once you are confident no gas assets are located in vicinity to your work location.
- APA BYDA response (including maps) are on site for reference at all times, and less than 30 days old.

Contacts

Contacts APA Group	
Enquiry	**Contact Numbers**
General enquiries or feedback regarding this information or gas assets.	APA – Before You Dig Officer Phone: 1800 085 628 Email: BYDA_APA@apa.com.au
Gas Emergencies	Phone: 1800 GAS LEAK (1800 427 532)

Site Watch

Site Watch is where an APA field officer attends your work site to monitor and ensure controls are in place to protect critical gas assets from damage during work.

The following rates* apply for this service (1 hour minimum charge):

Item	Rate (excl. gst)
Site Watch – Business Hours	$143.42 per hour
Site Watch – After Hours	$175.06 per hour
Cancellation Fee *Fee applies where cancelations received after 12pm (midday), 1 business day prior to the booking*	$286.84

Contact APA – Before You Dig officer for state specific hours of business.

**The specified rates do not apply to Origin Energy LPG assets. All charges and invoicing related to these assets will be administered directly by Origin Energy. For further information contact Origin Energy.*

Site Address:	34 Hartley Street Banyo QLD 4014	**Sequence Number:**	279363692



Scale 1: 6000

Map Sources: Esri, Garmin, HERE, FAO, NOAA, USGS,
© OpenStreetMap contributors, and the GIS User Community

Enquiry Area

Map Key Area

Site Address:	34 Hartley Street Banyo QLD 4014	**Sequence Number:**	279363692



Scale 1: 700

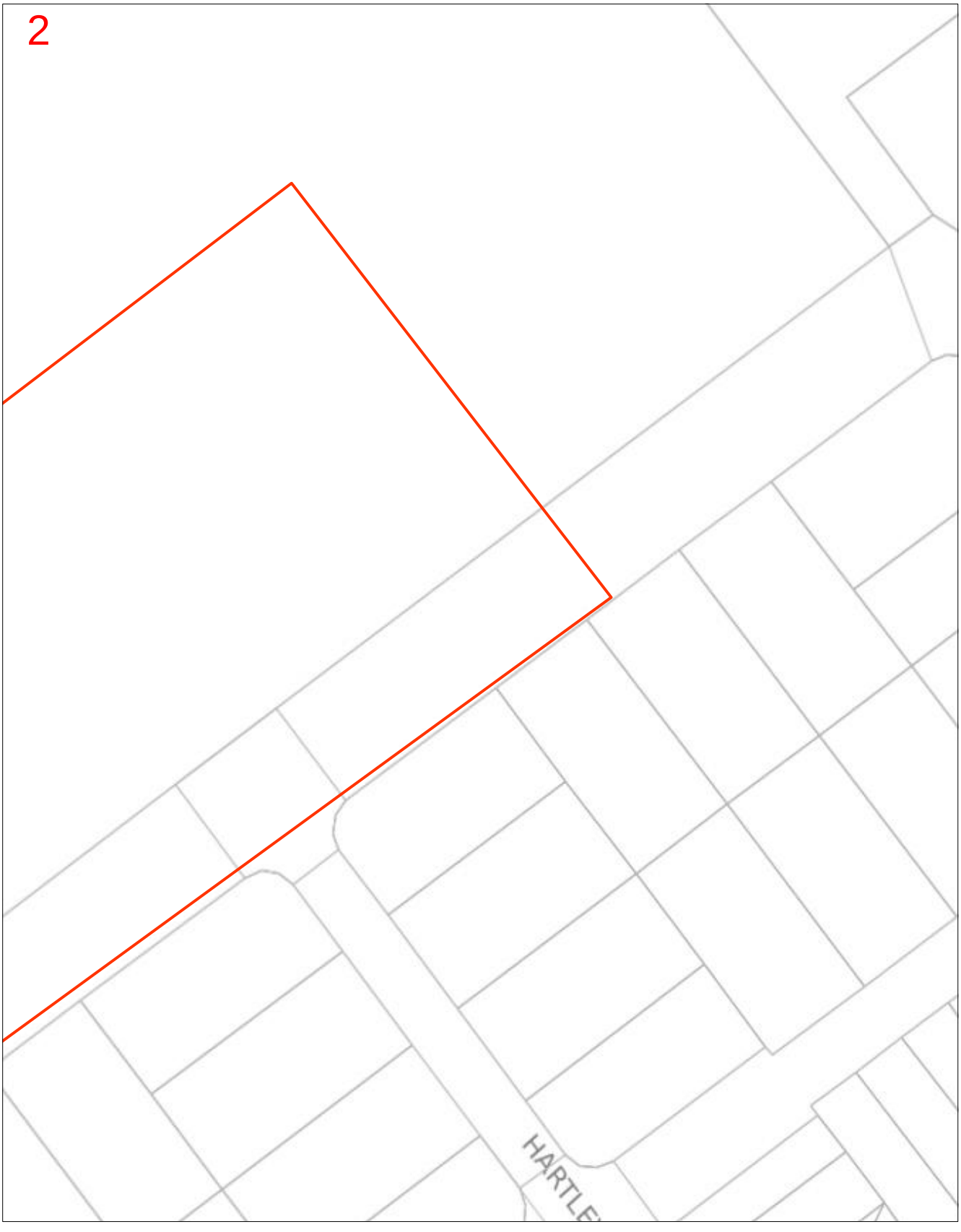
Map Sources: Esri, Garmin, HERE, FAO, NOAA, USGS,
© OpenStreetMap contributors, and the GIS User Community

N W E S

Enquiry Area

Map Key Area

Site Address:	34 Hartley Street Banyo QLD 4014	**Sequence Number:**	279363692



Scale 1: 700

Map Sources: Esri, Garmin, HERE, FAO, NOAA, USGS,
© OpenStreetMap contributors, and the GIS User Community

Enquiry Area

Map Key Area

Legend

PIPE LEGEND: GAS TYPE AND PRESSURE

	Low pressure	Medium pressure	High pressure	Transmission
Natural gas				
Natural gas – proposed				
LPG (yellow dash)	*not applicable*			*not applicable*
Hydrogen blended (aqua dash)	*not applicable*			*not applicable*

PIPE LEGEND: SPECIAL DESIGNATION

	Low pressure	Medium pressure	High pressure	Transmission
Critical main (yellow highlight)				
Casing (grey highlight)				*not applicable*

These designations typically apply to any pipe type and pressure

PIPE LEGEND: OTHER STATUS

- Abandoned pipe
- Idle or inactive pipe

ABBREVIATION

BoK	Back of kerb
C	Depth of cover
CP	Cathodic protection
FoK	Front of kerb
NTI	Not tied in

OBJECT SYMBOLS

- Valve
- Buried valve
- Regulator station
- Gas connected property
- CP test station
- CP anode
- CP bond wire
- CP rectifier terminal
- Syphon
- Marker
- Part service^

^A live gas service terminated underground within the property boundary, available for future extension to the gas meter.

PIPE CODE AND MATERIAL

P*	Polyethylene (PE)
P3	Polyvinyl chloride (PVC)
S*	Steel
C*	Cast iron
CU	Copper
N2	Nylon
W2	Wrought galv iron
W3	PE coat wrought galv iron

INTERPRETATION EXAMPLE

40P6 in 80C2 — High pressure, 40 mm polyethylene in an 80 mm cast iron casing

63S8 — Medium pressure, 63 mm steel

Pipe diameter in millimetres is shown before pipe code.
40P6 = 40 mm nominal diameter

This map was created in colour and should be printed in colour

Important information

- Refer to requirements relating to construction, excavation and other work activities in the **APA Guidelines for Works Near Existing Gas Assets** document with this BYDA response.
- BYDA enquiries are valid for 30 days. If your works commence after 30 days from the date of this response a new enquiry is required to validate location information.
- **For some BYDA enquiries, you may receive two (2) responses from APA. Please read both responses carefully as they relate to different assets.**
- Gas (inlet) services connecting Gas Assets in the street to the gas meter on the property are not marked on the map. South Australia Only – if a meter box is installed on the property, a sketch of the gas service location may be found inside the gas meter box. APA does not guarantee the accuracy or completeness of these sketches.

Free Gas Pipeline Awareness Training and Information

PROFESSIONALS

APA offers online and in-person toolbox forums to support safe work near underground gas assets. Topics include distribution and transmission pipelines, the permit process, and gas emergencies, with content suited for companies of all sizes. A Continuing Professional Development certificate is available upon completion.

Scan the QR code to register for an online toolbox, or email **damageprevention@apa.com.au** to request an in-person presentation.

HOMEOWNERS

If you're working near your home's gas pipes stay safe and view APA's video guide **'Working Safely Near Gas Lines: A DIY Homeowner's Guide'** which offers simple tips to avoid damaging gas pipes.

Scan the QR code to view the video, or for more information email **damageprevention@apa.com.au**

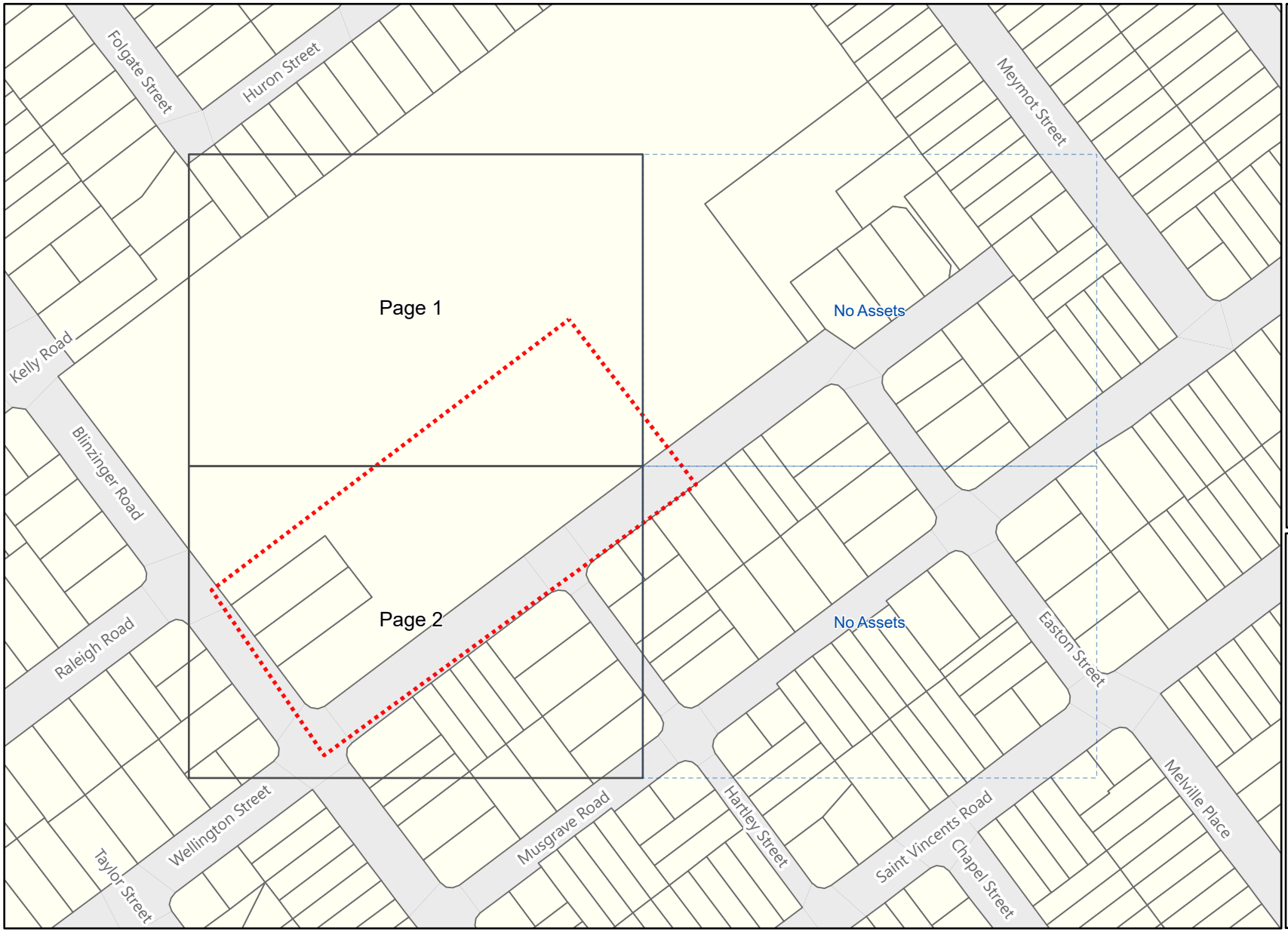
Disclaimer and legal details

- This information is valid for 30 days from the date of this response.
- This information has been generated by an automated system based on the area highlighted in your BYDA request and has not been independently verified.
- Map location information is provided as AS5488-2022 Quality Level D, as such supplied location information is indicative only.
- Whilst APA has taken reasonable steps to ensure that the information supplied is accurate, the information is provided strictly on the condition that no assurance, representation, warranty or guarantee (express or implied) is given by APA in relation to the information (including without limitation quality, accuracy, reliability, completeness, currency, sustainability, or suitability for any particular purpose) except that the information has been disclosed in good faith.
- Any party who undertakes activities in the vicinity of APA operated assets has a legal duty of care that must be observed. This legal obligation requires all parties to adhere to a standard of reasonable care while performing any acts that could foreseeably harm these assets



APA
Australia's energy infrastructure partner

Job # 54230615
Seq # 279363689
Provider: Brisbane City Council
Telephone: (07) 3403 8888



Legend

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

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Data must not be used for direct marketing or be used in breach of the privacy laws.

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

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

In an emergency contact Brisbane City Council on 07 3403 8888

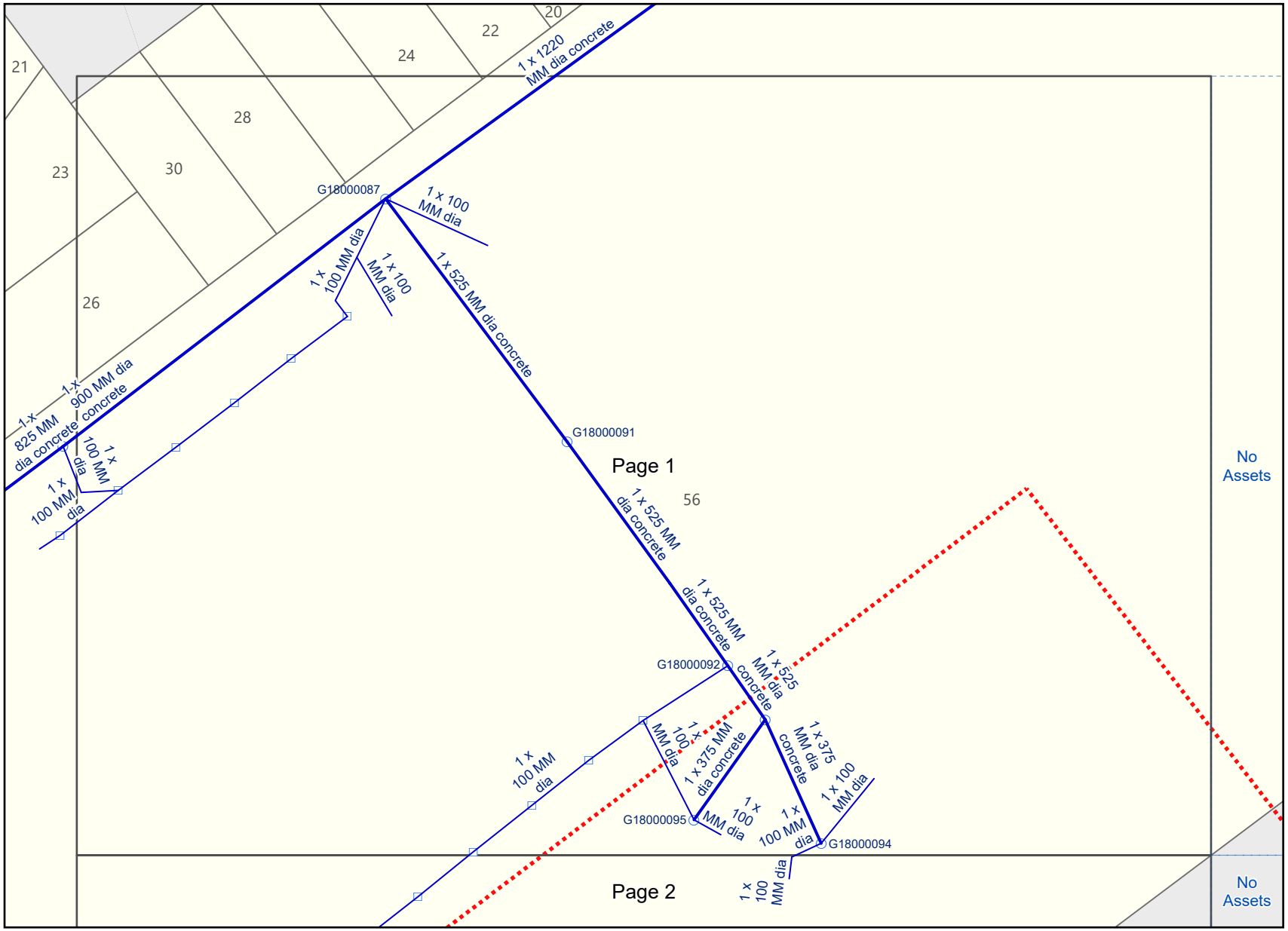
Index Sheet

0 25 50 100 m

Scale 1:2,500

Plans generated by SmarterWX™ Automate

Job # 54230615
Seq # 279363689
Provider: Brisbane City Council
Telephone: (07) 3403 8888



Legend

BYDA Enquiry

Stormwater Network

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

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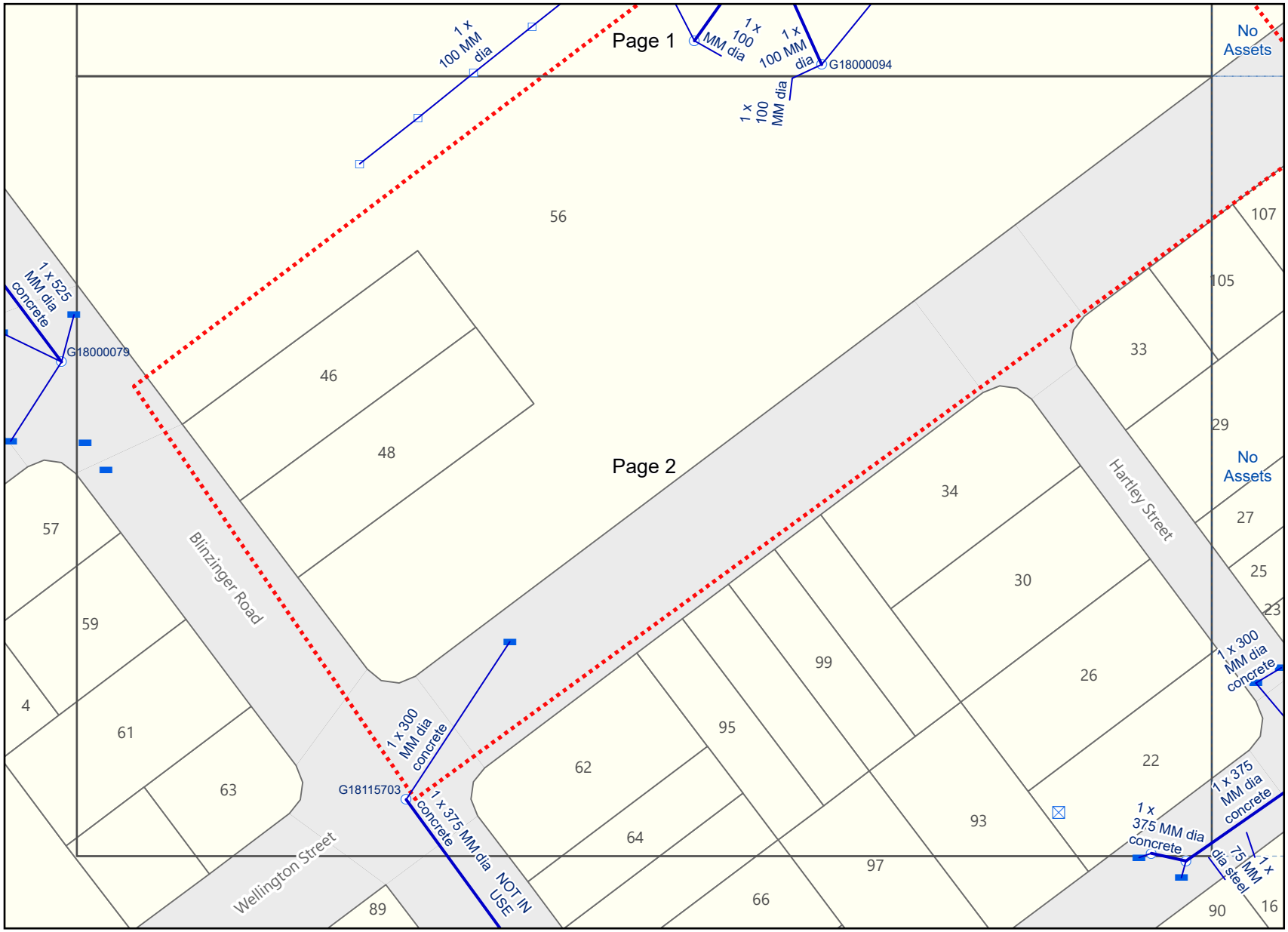
In an emergency contact Brisbane City Council on 07 3403 8888
14/09/26 (valid for 30 days)

0 10 20 40 m

Scale 1:1,000

Plans generated by SmarterWX™ Automate

Job # 54230615
Seq # 279363689
Provider: Brisbane City Council
Telephone: (07) 3403 8888



Legend

BYDA Enquiry

Stormwater Network

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

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14/09/26 (valid for 30 days)

0 10 20 40 m

Scale 1:1,000

Plans generated by SmarterWX™ Automate

Appendix L
UU Correspondence on Sewer MH on Driveway

Outlook

RE: 56 Blinzinger Rd, Banyo - Sewer manhole within driveway crossover [Filed 11 Sep 2026 15:08]

From Development Build Over Asset <development.boa@urbanutilities.com.au>
Date Fri 9/11/2026 2:58 PM
To DevelopmentEnquiries <DevelopmentEnquiries@urbanutilities.com.au>
Cc Darren Yuen <dyuen@adgce.com>

You don't often get email from development.boa@urbanutilities.com.au. Learn why this is important

Hi Darren,

The code specifies that maintenance structures are to be located clear of driveways.

However, in certain circumstances, we do allow maintenance holes to be located within a driveway, provided that;

- The sewer maintenance hole **chamber is a Type "G",** and
- The sewer maintenance hole is fitted with **a trafficable lid and surround** , and
- An acceptable trafficable maintenance hole cover - ***Circular Class "D" ductile iron manhole cover***
- The final driveway **surface is finished flush** with the sewer maintenance hole cover concrete surround and does not cause any ponding of ground water on or around the sewer maintenance hole cover.

Regards,

Joel Chin

Development Technical Officer
Customer and Innovation

T 0738567468

E Development.BOA@urbanutilities.com.au
www.urbanutilities.com.au

UrbanUtilities



From: DevelopmentEnquiries <DevelopmentEnquiries@urbanutilities.com.au >
Sent: Friday, 11 September 2026 2:09 PM
To: Development Build Over Asset <development.boa@urbanutilities.com.au >
Cc: Darren Yuen <dyuen@adgce.com >
Subject: FW: 56 Blinzinger Rd, Banyo - Sewer manhole within driveway crossover

Good afternoon team,

Please see Darren's (cc'd) query for review and advise.

Kind Regards

Alisa Inivale

Developer Support Officer
Customer and Innovation

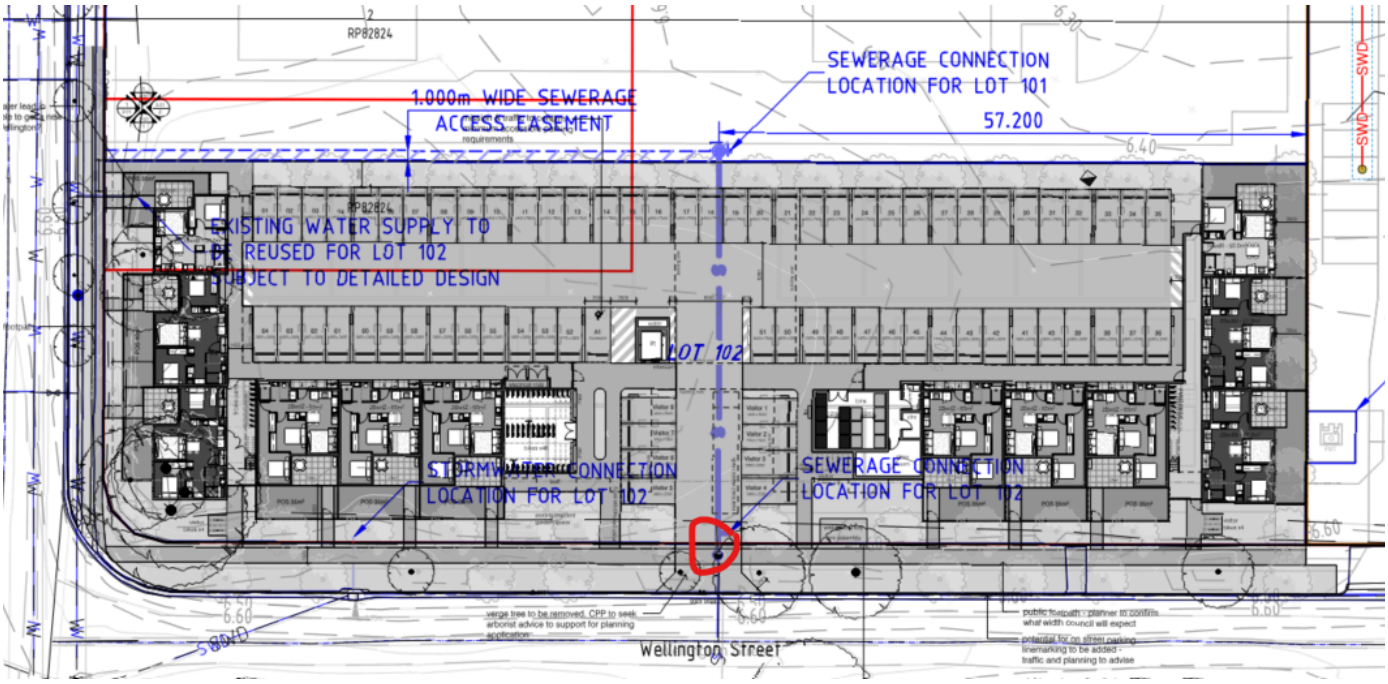
T
E Alisa.Inivale@urbanutilities.com.au
www.urbanutilities.com.au



From: Darren Yuen <dyuen@adgce.com>
Sent: Friday, 11 September 2026 9:54 AM
To: DevelopmentEnquiries <DevelopmentEnquiries@urbanutilities.com.au>
Cc: Cameron Moore <cmoore@adgce.com>; Gregg Van Greuning <gvangreuning@adgce.com>
Subject: 56 Blinzinger Rd, Banyo - Sewer manhole within driveway crossover

Hi Developer Services,

I had a general enquiry in relation to existing sewer manholes located within the extents of a proposed driveway crossover. Refer screenshot below for highlighted location circled in red.



The development intends to have two building structures on either side of the driveway and it would be most practical to maintain the existing sewer manhole along the centre of the driveway. This will maximise clearance to footings and other structural elements for the proposed sewer main extension within the site that will be facilitating an upstream connection to the northern neighbour.

Therefore, can UU please confirm if this is generally acceptable to have an existing sewer manhole within the proposed driveway crossover in this instance?

Your earliest feedback would be much appreciated.

Kind regards,

Darren Yuen
Senior Engineer - Civil
ADG Engineers

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A: 596 Milton Road
Toowong, QLD, 4066, Australia
W: www.adgce.com



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We pay our respects to the Elders and to all Aboriginal and Torres Strait Islander Peoples.

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MELBOURNE VIC 3000

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