



**POWERLINK MID**

**33 HAROLD ST,  
VIRGINIA QLD 4014**

**Civil Engineering Report**

Site Based Stormwater Management &  
Engineering Services

Powerlink Queensland

April 2025



## Document Verification

Job Title Powerlink MID



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## EXECUTIVE SUMMARY

ADG Engineers (Aust.) Pty Ltd was engaged by Powerlink Queensland to prepare a Civil Engineering Report suitable to support a Ministerial Infrastructure Designation (MID) application for the proposed development at 33 Harold Street, Virginia QLD 4014. The proposed redevelopment includes:

- Partial demolition of existing building within the footprint of the new development,
- Construction of a new three (3) storey “Tesla” building plus plant,
- Construction of new two (2) storey FDOE building,
- New on-grade carparking spaces and vehicle manoeuvring areas.

The purpose of this Civil Engineering Report is to provide advice on the proposed development as detailed in the Woods Bagot architectural drawings. The scope of this report includes civil works required service the development including earthworks, roadworks, stormwater drainage, sewerage and water supply, electricity, communications and gas.

The stormwater management strategy has been developed to ensure that post-development does not worsen the pre-development conditions. The refurbishment project complies with Brisbane City Council’s Infrastructure Design Planning Scheme Policy, which exempts stormwater detention requirements where existing impervious surface coverage exceeds 60%. As the project catchments exceed this threshold, no additional detention infrastructure is required. This approach aligns with Council guidelines for urban redevelopment, ensuring efficient stormwater management while adhering to regulatory standards.

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 (SPP) 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:

### ➤ Catchment 1:

- Min. 7 No. OceanGuards with 200-micron mesh bags (OG-200); and
- A 12 No. Tall (690) SQIDEP PSorb cartridge StormFilter system within a DN2300 precast manhole configured Offline.

### ➤ Catchment 2:

- Min. 2 No. OceanGuards with 200-micron mesh bags (OG-200); and
- An 8 No. Tall (690) SQIDEP PSorb cartridge StormFilter system within a DN2300 precast manhole configured Offline.

### ➤ Catchment 3:

- Min. 4 No. OceanGuards with 200-micron mesh bags (OG-200); and
- A 4 No. Tall (690) SQIDEP PSorb cartridge StormFilter system within a DN1500 precast manhole configured Offline.

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



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

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



# 1 INTRODUCTION

## 1.1 Background

ADG Engineers (Aust.) Pty Ltd was engaged by Powerlink Queensland to carry out a Civil Engineering Report to support a Ministerial Infrastructure Designation (MID) application and any required referral agencies for a site located at 33 Harold St, Virginia. The proposal involves a redevelopment of the existing site including construction of a new three (3) storey “Tesla” building plus plant, new two (2) storey FDOE building, new carparking spaces and vehicle manoeuvring areas by partially demolishing the existing “Tesla” building.

The purpose of this Civil Engineering Report is to provide advice on the proposed development with regards 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 MID (if any) to be provided by the Department of State Development, Infrastructure and Planning and any nominated referral agencies.

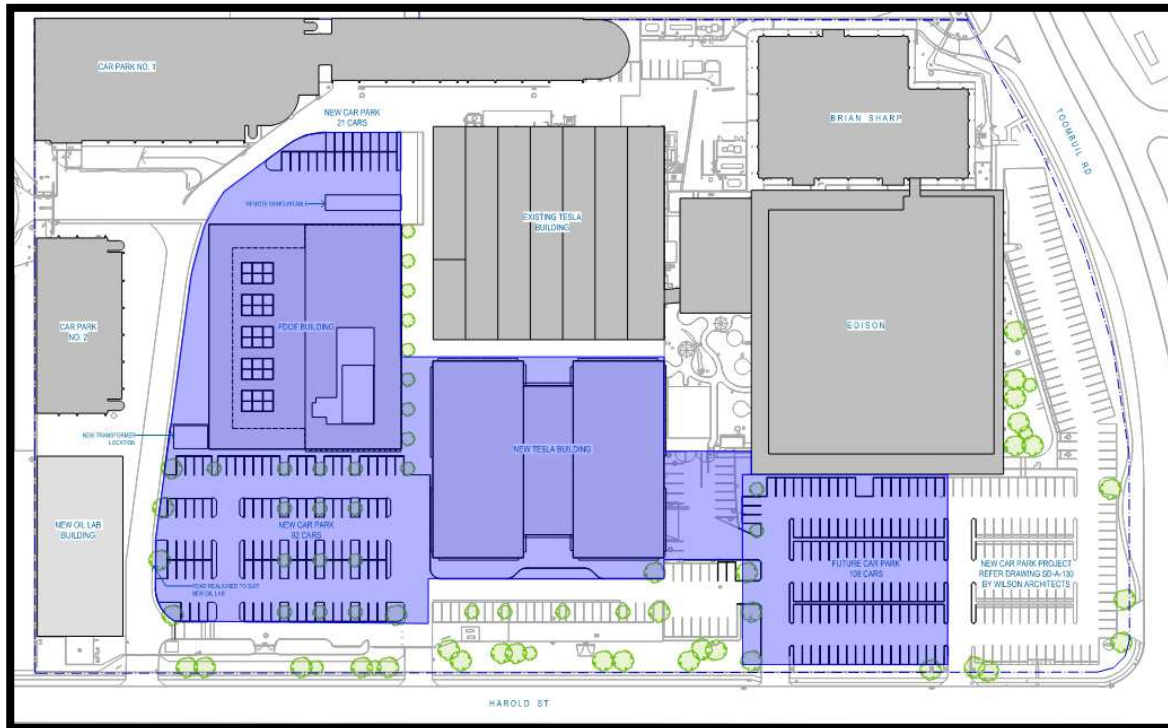
The proposal will occur in seven (7) stages which are outlined as follows:

- Stage 1 – Demolition of western quadrant of Tesla Warehouse and establishment of new Oil Lab, administration building and food.
- Stage 2 – Continuation of construction and fit out works and demolition of eastern quadrant of existing Tesla Warehouse.
- Stage 3 – Completion of new Tesla Warehouse and associated porte cochere, carpark and landscaping. Demolition of carpark adjacent Edison to facilitate future landscaping works.
- Stage 4 – Completion of new on-grade carpark adjacent to Tesla Warehouse. Completion of landscaped area between Tesla and Edison.
- Stage 5 – Completion of Edison carpark upgrades.
- Stage 6 – Completion of Toombul Road carpark.
- Stage 7 – Completion of new FDOE building and carparks.

From a civil engineering standpoint, Stage 7 has been assessed to meet the relevant standards as noted within this engineering report. Stages 1 to 6 shall be subject to reviewed by a suitably qualified consultant at detailed design to ensure compliance to civil engineering practices. Please refer to **Appendix J** for the architectural staging plan.

The updated architectural plans for the site indicate the proposed demolition of the Edison Building and its conversion to a landscaped area. These works, to be assessed and documented by others and do not impact the civil engineering design principles, stormwater management strategy, or site servicing provisions outlined in this report.





**Figure 1 - Scope of work**

## 1.2 Property Detail

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

**Table 1 - Property Detail**

Title	Lot 8 on SP241022
Street Address	33 Harold St, Virginia QLD 4014
Site Area	54,660 m <sup>2</sup>

The location of the proposed development is demonstrated in **Figure 2**.





Figure 2 - Site Location (as accessed from Vexcel Viewer on 21.02.25)



## 2 EXISTING SITE

### 2.1 Existing Site Features

The subject site currently consists of existing offices and warehouse buildings for Powerlink administration and storage with minimal landscaping.

➤ The site is bound by:

- Harold Street to the North;
- Existing Commercial and Industrial buildings to the East and South;
- Toombul Road to the West.

The existing site features can be seen in **Figure 3**.



**Figure 3 - Site Layout (as accessed from Vexcel Viewer on 21.02.25)**

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

A review of the Brisbane City Council Planning Scheme Policy overlay mapping for Acid Sulfate Soil (ASS) (**Figure 4**) has identified that the subject site is located within an area of potential and actual acid sulphate soils for:

- Land at, or below 5m AHD; and
- Land above 5m AHD and below 20m AHD.

Excavation and earthworks are anticipated to occur at approximately 5.0m AHD to facilitate the construction of new buildings and associated on-grade car parks. Therefore, it is expected that acid sulfate soils may be encountered on-site. The contamination will be addressed in accordance with the Potential and Actual Soil Planning Scheme Policy by submitting an Acid Sulfate Soils Investigation Report and an Acid Sulfate Soil Management Plan. Refer to **Appendix D** for the Potential and Actual Acid Sulfate Soils Overlay Code.

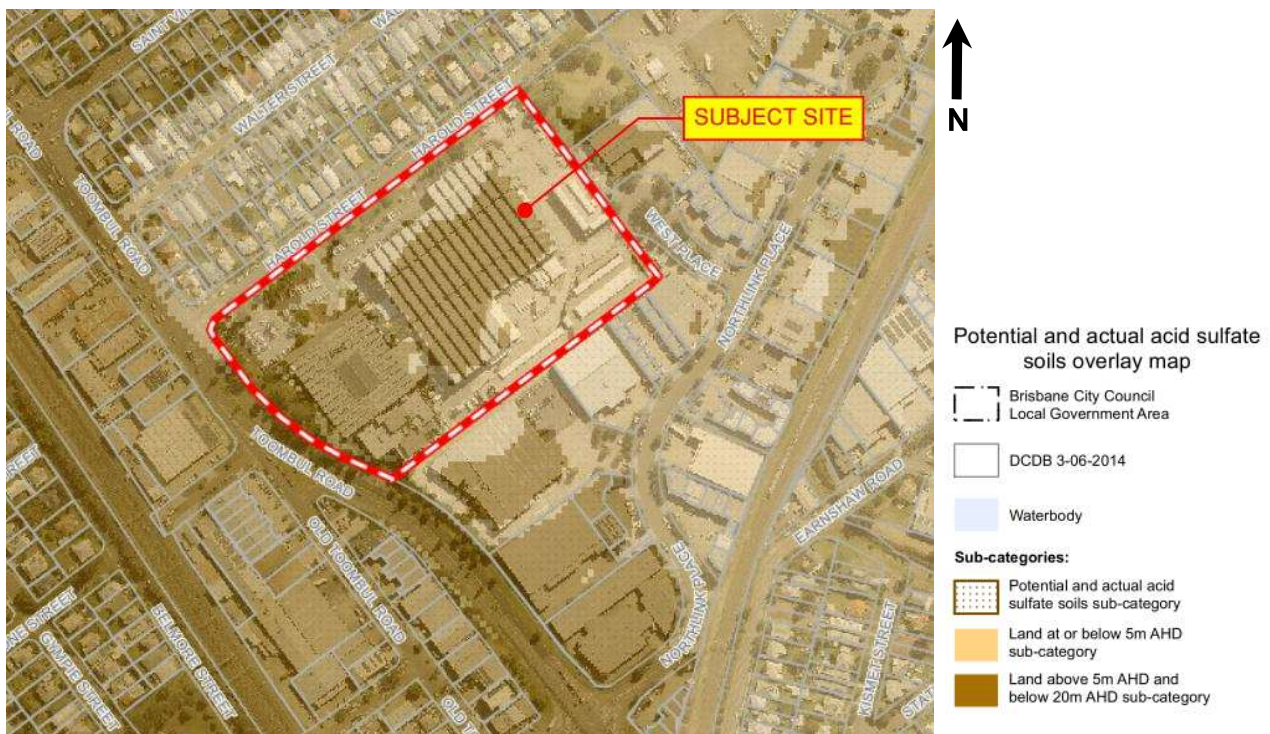


Figure 4 - Actual and Potential Acid Sulfate Soils Mapping (Attained 04/02/25)



## 4 EARTHWORKS

### 4.1 Bulk Earthworks

The proposed development will require minimal earthworks to achieve the desired finished surface levels. Earthworks quantities will be provided during the detailed design phase of the development.

Refer to **Appendix D** for the BCC Filling and Excavation Code.



## 5 ROADWORKS

### 5.1 Existing Infrastructure

The subject site is adjacent to the following roads:

- Harold Street – suburban road with existing stormwater drainage infrastructure and a two-way crossfall.
- Toombul Road – arterial road with existing stormwater drainage infrastructure and a two-way crossfall.

The site is currently accessed via:

- Two (2) vehicle crossovers along Toombul Road, and
- Four (4) vehicle crossovers along Harold Street.

### 5.2 Proposed Infrastructure

ADG anticipates no additional vehicles crossovers as part of the proposed development. All existing vehicle crossovers are to be maintained.

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



## 6 FLOODING

An investigation into the potential and historical flooding at the proposed subject site has been completed using available Brisbane City Council Flood Awareness Mapping as well as FloodWise report. **Figure 5** below provides an extract of the Flood Awareness Mapping within the vicinity of the proposed development.



**Figure 5 - BCC Flood Awareness Mapping for Potential and Historical Flooding (Attained 04/02/25)**

As illustrated in **Figure 5**, the subject site has historically remained flood-immune during the 2022, 2011, and 1974 Brisbane flood events. In addition, Brisbane City Council flood mapping indicates that the proposed development is not impacted by river or creek flooding. However, there is an indication of overland flow along Harold Street, which may affect the proposed development.

A FloodWise property report have been obtained for the subject site and is provided in **Appendix E**. This report outlines the combined 1% AEP for river, creek and storm tide flood. Further investigation to determine the extent of the overland flow area through flood modelling is recommended to be completed by a flood consultant.

Refer to **Appendix D** for the Brisbane City Council Flood Overlay compliance code.



## 7 STORMWATER INFRASTRUCTURE

### 7.1 Existing Infrastructure

A review of the available Community Mapping for Brisbane City Council and Before You Dig Australia (BYDA) information indicates the presence of existing stormwater infrastructure within and surrounding the proposed development site, including:

- Multiple manholes, gully pits and stormwater pipes along Harold Street;
- Multiple manholes, gully pits and stormwater pipes along Toombul Road;
- Multiple manholes, gully pits and stormwater pipes surrounding and across the site (33 Harold Street).



Figure 6 - Stormwater Asset (accessed from BCC Community Maps on 05.02.25)

Refer to the BYDA information in **Appendix I** for further information regarding the existing stormwater infrastructure.

### 7.2 Lawful Point of Discharge (LPD)

#### 7.2.1 Existing LPD

Based on the information gathered via survey and contour data, aerial imagery and site investigation, it has been determined that stormwater flows from the subject site discharges into existing Council infrastructure through multiple Lawful Points of Discharge (LPDs), summarised below:

- Existing Tesla Building: roofwater is collected and conveyed via multiple down pipes along the north and the south of the building facade. Stormwater runoff from the Tesla Building eventually discharges into Council stormwater network respectively. A pre-developed catchment sketch has been provided in **Appendix C** to indicate these locations.



- Existing carpark in front of Edison Building is captures the stormwater surface runoff via multiple existing gully pits, which then discharge into the existing DN1220 Council stormwater main.

### **7.2.2 Proposed LPD**

In recognition of the above, the development proposes to maintain all the existing LPDs as per the current flow regime.

A pipe capacity assessment will be undertaken during the detailed design phase to evaluate the capacity of the existing connections to accommodate the flows from the proposed development. Should the assessment indicate insufficient pipe capacity, an upgrade to the stormwater infrastructure will be proposed to ensure compliance and effective drainage performance.



## 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.

### 8.1 Proposed Development and Associated Issues

A comparison between the fraction impervious of the existing catchment and proposed catchment is tabulated in **Table 2**. The following section should be read in conjunction with **Appendix C** for catchment sketches.

Catchment EX1 shows a minor reduction in impervious areas from 100% to 97% in the proposed C1 design, while catchment EX2 remains unchanged at 100% imperviousness in C2. The overall catchment areas remain consistent between existing and proposed conditions.

There is a change in impervious area for catchment EX3 where the fractions impervious increases from 63% to 100% in proposed catchment C3.

**Table 2 - Existing and Proposed Catchment Details**

Details	Existing Catchments			Proposed Catchment		
	EX1	EX2	EX3	C1	C2	C3
Area (ha)	0.9553	0.5018	0.3100	0.9553	0.5140	0.3100
Fraction Impervious (%)	100%	100%	63%	97%	87%	100%

According to the BCC Infrastructure Design Planning Scheme Policy, Chapter 7.5.2, developments with existing impervious fractions exceeding 60% may be waived from implementing additional stormwater detention measures. The policy recognises that in highly urbanised sites, the incremental hydrological impact of further development is negligible.

Thus, the development will not require a detention system.

### 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: 10% AEP (1 in 10-year ARI)
  - Determined in accordance with BCC PSP Table 7.2.2.3.B, Design Standards for Drainage Systems, and in recognition of the development proposal.



- Conveyed by the proposed development's internal hydraulic drainage network to the proposed stormwater infrastructure.
- To be conveyed by stormwater infrastructure proposed by Civil to the nominated Lawful Point of Discharge.
- Major Event: 1% AEP (1 in 100-year ARI)
  - Determined in accordance with BCC PSP Table 7.2.2.3.B, Design Standards for Drainage Systems, in recognition of the development proposal.

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

## 8.2.2 Rational Method for Peak Flow Rate

The peak flow rate for the site has been obtained using the Rational Method in accordance with ARR and QUDM..

$$Q = (2.78 \times 10^{-3}) C_y I_y A$$

**Equation 1**

Q = Peak flow rate (m<sup>3</sup>/s) for average recurrence interval

C<sub>y</sub> = Co-efficient of runoff for ARI of y years (dimensionless)

A = Catchment area (ha)

I<sub>y</sub> = Average rainfall intensity (mm/hr) for a design duration of t hours and an ARI of y years

## 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 C**.

## 8.2.4 Co-efficient of runoff (C)

Coefficient of runoff, C<sub>10</sub> values were determined using catchment-specific fraction impervious values, <sup>1</sup>I<sub>10</sub> rainfall intensity, and QUDM Table 4.5.3 and Table 4.5.4. Corresponding C<sub>y</sub> values for the remaining coefficients of runoff were derived using the frequency factors presented within QUDM Table 4.5.2. These values were altered as necessary to align with Table 7.3.3.1.A of the BCC PSP for the post-development scenario.

## 8.2.5 Time of Concentration

A standard inlet time of concentration (t<sub>c</sub>) of 5 minutes was adopted for each catchment in accordance with QUDM Section 4.6.

## 8.2.6 Rainfall Intensity

BOM 1987 Intensity, Frequency, and Duration values have been adopted for the Rational Method. This is in accordance with BCC PSP Section 7.2.2 which specifies:

- IFD based on coefficients issued by the Bureau of Meteorology (Ref FN2615) for Latitude 27.475S Longitude 153.025E.



- IFD's used in the Rational Method calculations for the pre-development and post-development scenario have been altered to reflect the values provided in Table 7.2.2.2.A of the BCC PSP.
- Calculated in accordance with Australian Rainfall and Runoff (1987 Edition).



## 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 2,500m<sup>2</sup> 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 2,500m<sup>2</sup> and will result in six (6) or more lots; or
- Operational works for urban purposes that involve disturbing more than 2,500m<sup>2</sup> of land.

The proposal includes an MCU for a land area of 1.78 ha 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 proposal includes a refurbishment of a land area of

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 3 - 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 F**.

### 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 a *Stormfilter* device before discharging to Harold Street.

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:

- Catchment 1:
  - Min. 7 No. OceanGuards with 200-micron mesh bags (OG-200); and
  - A 12 No. Tall (690) SQIDEP PSorb cartridge StormFilter system within a DN2300 precast manhole configured Offline.
- Catchment 2:
  - Min. 2 No. OceanGuards with 200-micron mesh bags (OG-200); and



- An 8 No. Tall (690) SQIDEP PSorb cartridge StormFilter system within a DN2300 precast manhole configured Offline.

#### ➤ Catchment 3:

- Min. 4 No. OceanGuards with 200-micron mesh bags (OG-200); and
- A 4 No. Tall (690) SQIDEP PSorb cartridge StormFilter system within a DN1500 precast manhole configured Offline.

### 9.4.1 OceanGuard

*OceanGuards* consist of a steel frame and a cage. Within the cage, a screening bag is attached to capture litter, debris, sediment, and other pollutants from stormwater flows. The mesh size of the screening bag proposed for each *OceanGuard* within the site is 200 micro-meters. This mesh size is small enough to capture heavy metals and hydrocarbons associated with the solids in stormwater flows. *OceanGuards* are effective when utilised as a pre-treatment device upstream of a *StormFilter* and this system shall be adopted within the site.

### 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 6.3.0) and the water quality objectives for South-East Queensland specified in the SPP 2017 of 80% TSS reduction, 60% TP reduction, 45% TN reduction, and 90% Gross Pollutants reduction.

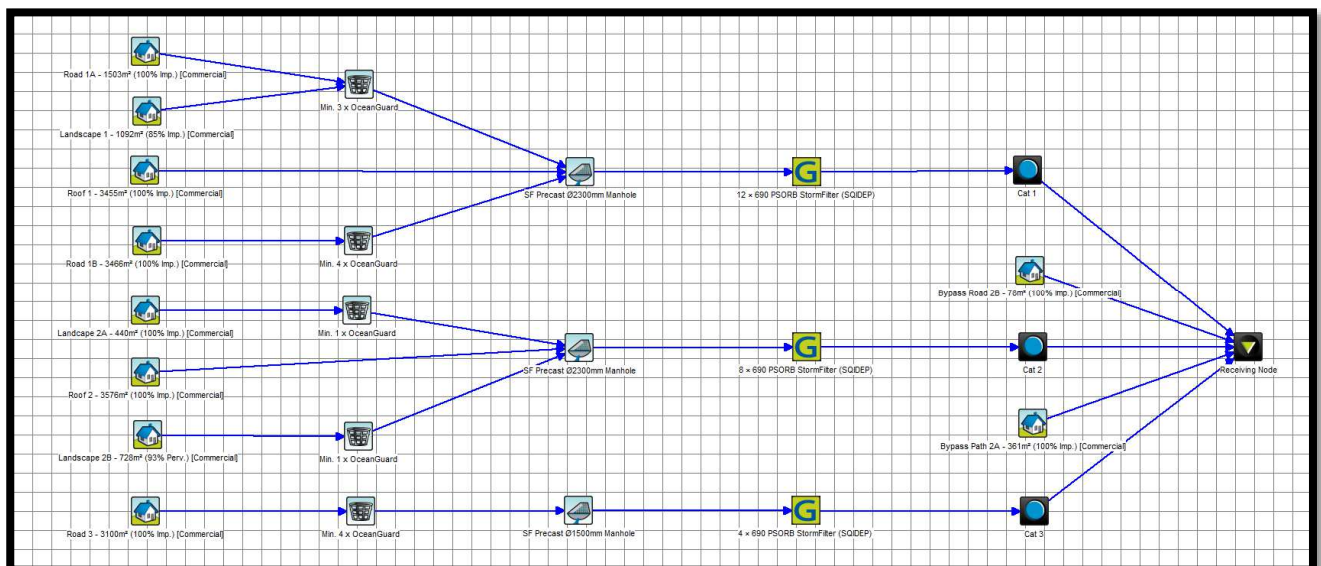


Figure 7 - Treatment train

The results of the above MUSIC model are presented in **Figure 8**.



	Sources	Residual Load	% Reduction
Flow (ML/yr)	18.3	18.3	0
Total Suspended Solids (kg/yr)	4080	526	87.1
Total Phosphorus (kg/yr)	8.33	3.32	60.1
Total Nitrogen (kg/yr)	58.5	31.5	46.2
Gross Pollutants (kg/yr)	421	10.8	97.4

Figure 8 - Results for the treatment train

The above results meet the percent reduction water quality objectives identified by the SPP 2017. Details of the MUSIC model are attached within **Appendix G** 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:

### 9.8.1 OceanProtect 'OceanGuards'

Maintenance to be carried out by manufacturer's maintenance staff including but not limited to inspection of basket, and the removal and lawful disposal of trapped litter or sediment. Refer to **Appendix H** for further information regarding the maintenance of *OceanGuards*.

### 9.8.2 OceanProtect 'Stormfilter'

Maintenance to be carried out by manufacturer's maintenance staff including but not limited to de-silting of cartridges. Refer to **Appendix H** for further information regarding the maintenance of *Stormfilter*.



## 10 WATER SUPPLY

### 10.1 Existing Infrastructure

A review of the available Community Mapping for Brisbane City Council and BYDA information demonstrate that the following water infrastructures are located within the vicinity of the subject site:

- A DN150 Ductile Iron Water Main (RS13219) located within the verge of Harold Street, corner Toombul Road.
- A DN150 Ductile Iron Water Main (RS125732) located within the verge of Toombul Road.
- Several service connections along Toombul Road, Harold Street and along the North-East boundary.

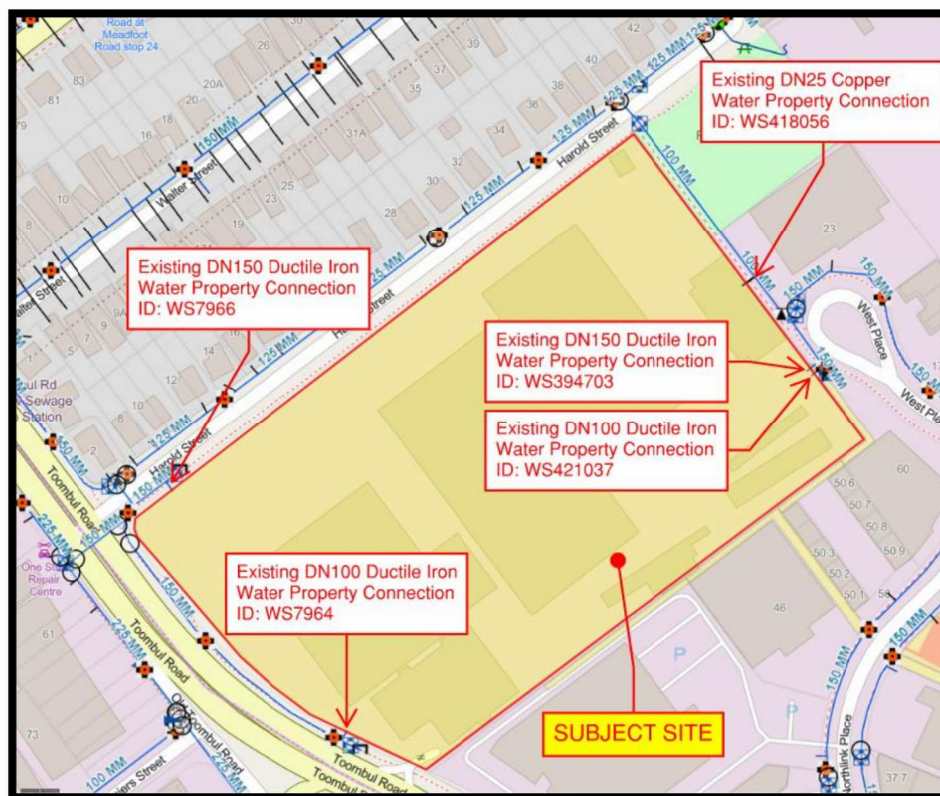


Figure 9 - BCC GIS Mapping – Water Infrastructure

Refer to the BYDA information in **Appendix I** for further information regarding the existing water infrastructure.

### 10.2 Point Of Connection

To facilitate the proposed development, it is expected that there will be new internal water and fire connections required for the new buildings. The location and sizes of the internal water connections will be determined during detailed design in accordance with the internal hydraulic engineer's requirements.

A Service Advice Notice (SAN) has been submitted to Urban Utilities (UU) to identify the capacity of the existing water infrastructure and any upgrades required due to the development.

Refer to the Preliminary Civil Services Layout Plan in **Appendix B**.



# 11 SEWERAGE RETICULATION

## 11.1 Existing Infrastructure

A review of the available Community Mapping for Brisbane City Council and BYDA information demonstrate that the following sewer infrastructures are located within the vicinity of the subject site:

- A DN150 Vitrified Clay Sewer Main (LS82539) located perpendicular to the subject site across Harold Street.
- A DN150 Vitrified Clay Sewer Main (LS82531) located perpendicular to the subject site across Toombul Road.
- Several maintenance holes surrounding the subject site along Harold Street and Toombul Road.

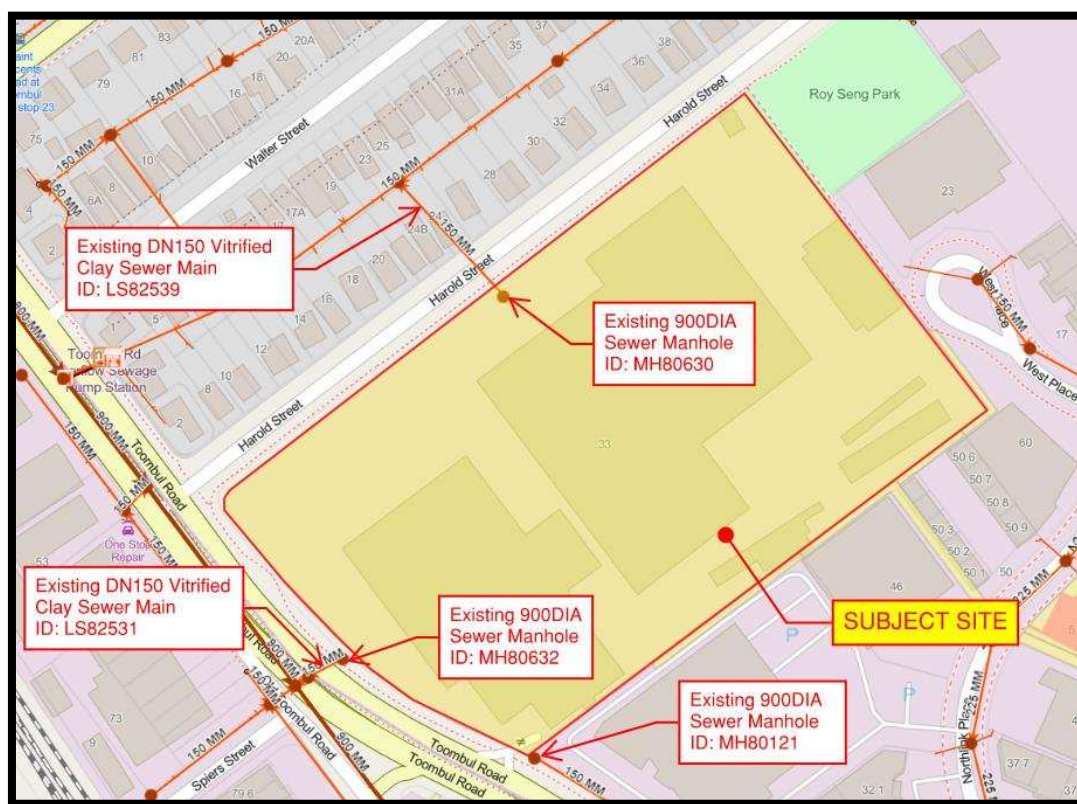


Figure 10 - BCC GIS Mapping – Sewer Infrastructure

Refer to the BYDA information in **Appendix I** for further information regarding the existing sewerage infrastructure.

## 11.2 Point Of Connection

To facilitate the proposed refurbishment to the subject site, it is expected that there will be new internal sanitary drainage connections required for the new buildings. The location and sizes of the internal connections will be determined during detailed design in accordance with the internal hydraulic engineer's requirements.

A Service Advice Notice (SAN) has been submitted to Urban Utilities (UU) to identify the capacity of the existing sewer infrastructure and any upgrades required due to the development.

Refer to the Preliminary Civil Services Layout Plan in **Appendix B**.



## 12 ELECTRICAL SUPPLY

Review of Google Maps and BYDA information reveals that the following infrastructure is present within the vicinity of the subject site:

- › Underground electrical cable (less than 33kV) along Toombul Road adjacent to the subject site.
- › Underground electrical cable (less than 33kV) running across the subject site, perpendicular to Toombul Road.
- › Underground electrical cable (less than 33kV) running along the footpath between the North-eastern boundary and Roy Seng/ West Place Park.
- › Overhead electrical cables along Harold Street and along Toombul Road.

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 I** for further details on the existing electrical infrastructure.



## 13 TELECOMMUNICATIONS

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

- › Underground conduit owned by NBN running perpendicular to Harold Street, across the subject site.
- › Underground Optus IOF cable running along the verge of Toombul Road.
- › Underground Uecomm asset running along Toombul Road.

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 I** for further details on the existing communications infrastructure.



## 14 GAS

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

- › Underground medium pressure gas pipeline beneath Harold Street on the opposite side to the development; and
- › Underground medium pressure gas pipeline beneath Toombul Road on the opposite side to the development.

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

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



## 15 PRIORITY INFRASTRUCTURE UPGRADES

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



## 16 CONCLUSION

The site appears to be well serviced by reticulated water, stormwater infrastructure, sewerage, communications, gas and electricity. The information presented in this report has been inferred from BYDA records and site investigation.

As outlined in **Section 8** of this report, while the development results in an increase in impervious surface coverage, Brisbane City Council Infrastructure Design Planning Scheme Policy exempts sites from stormwater detention requirements where the existing impervious fraction exceeds 60%. Given that all project catchments exceed this threshold, additional stormwater detention infrastructure has been deemed unnecessary for this refurbishment project.

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. ADG recommends the use of the following treatment devices to meet the treatment targets specified by the relevant authorities:

### » Catchment 1:

- Min. 7 No. OceanGuards with 200-micron mesh bags (OG-200); and
- A 12 No. Tall (690) SQIDEP PSorb cartridge StormFilter system within a DN2300 precast manhole configured Offline.

### » Catchment 2:

- Min. 2 No. OceanGuards with 200-micron mesh bags (OG-200); and
- an 8 No. Tall (690) SQIDEP PSorb cartridge StormFilter system within a DN2300 precast manhole configured Offline.

### » Catchment 3:

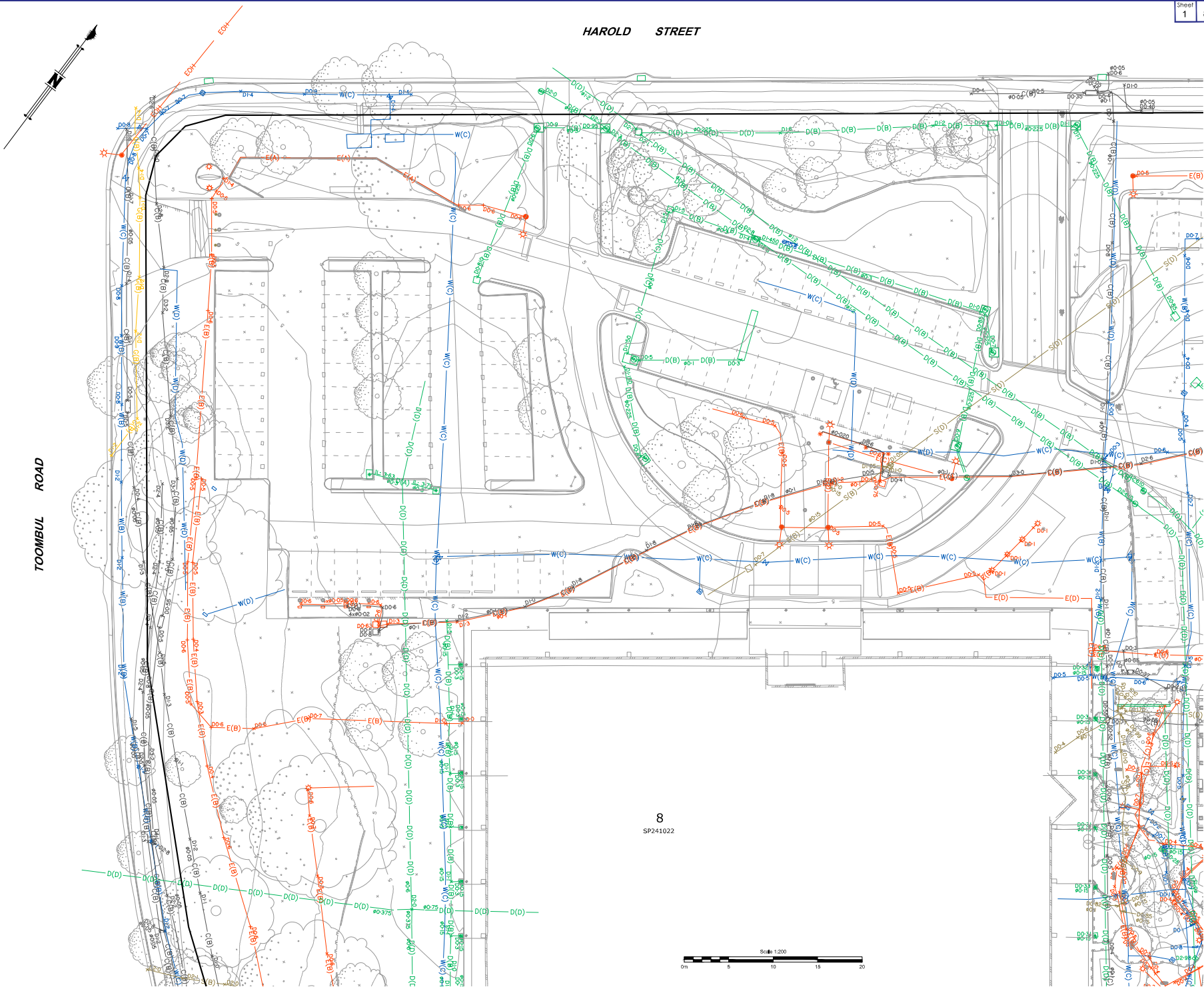
- Min. 4 No. OceanGuards with 200-micron mesh bags (OG-200); and
- A 4 No. Tall (690) SQIDEP PSorb cartridge StormFilter system within a DN1500 precast manhole configured Offline.

Detailed engineering diagrams and management requirements for the proposed development in accordance with any Ministerial Designation for Infrastructure approval are conditioned.



## Appendix A Site Survey Plan



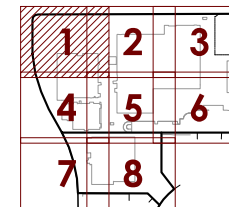


TOOMBUL ROAD

HAROLD STREET

Sheet 1 of 8

- LEGEND:**
- S — Underground Sewer Line
  - D — Underground Stormwater Line
  - W — Underground Water Main
  - C — Underground Comms Line
  - E — Overhead Power Line
  - E — Underground Power Line
  - G — Underground Gas Line
  - \* (A) — Service (Survey Quality A)
  - \* (B) — Service (Survey Quality B)
  - \* (C) — Service (Survey Quality C)
  - \* (D) — Service (Survey Quality D)
  - Building Line
  - Edge of Blotum
  - Top of Bank
  - Toe of Bank



**Key Plan**  
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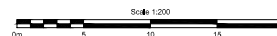
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  2. All levels are in metres on the Australian Height Datum referred to PM26559 + RL5.272m AHD situated in Folgate SL.
  3. Contour Interval: 0.25m
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  7. Horiz datum: MGA Derived GNSS (CORS)
  8. Level datum: AHD Derived (PSM26559)
  9. Coord Origin: GNSS (8000SC)
  10. GDA System: GDA2020 Coordinate System: Plane 1:1

Issue	Original Issue	D.J.L.	24/07/2024
Revision	Revision	Int.	Date

**Verification Plot - Services**  
Lot 8 on SP241022, Lot 4 on  
RP896057, Toombul Road, West  
Place and North Link Place

Client:	POWERLINK AUSTRALIA		
Locality:	TOOMBUL		
Local Gov:	BCC	Prepared By:	D.
Surveyed By:	B+B	Approved:	K
Date Created:	24/07/2024	Scale:	1:20
Comp File:	231190.project		
Plan No:	231190_003_DET		

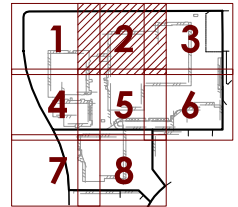
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## LEGEND:

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- D — Underground Stormwater Line
- W — Underground Water Main
- C — Underground Comms Line
- Overhead Power Line
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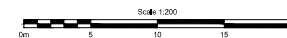

**Key Plan**  
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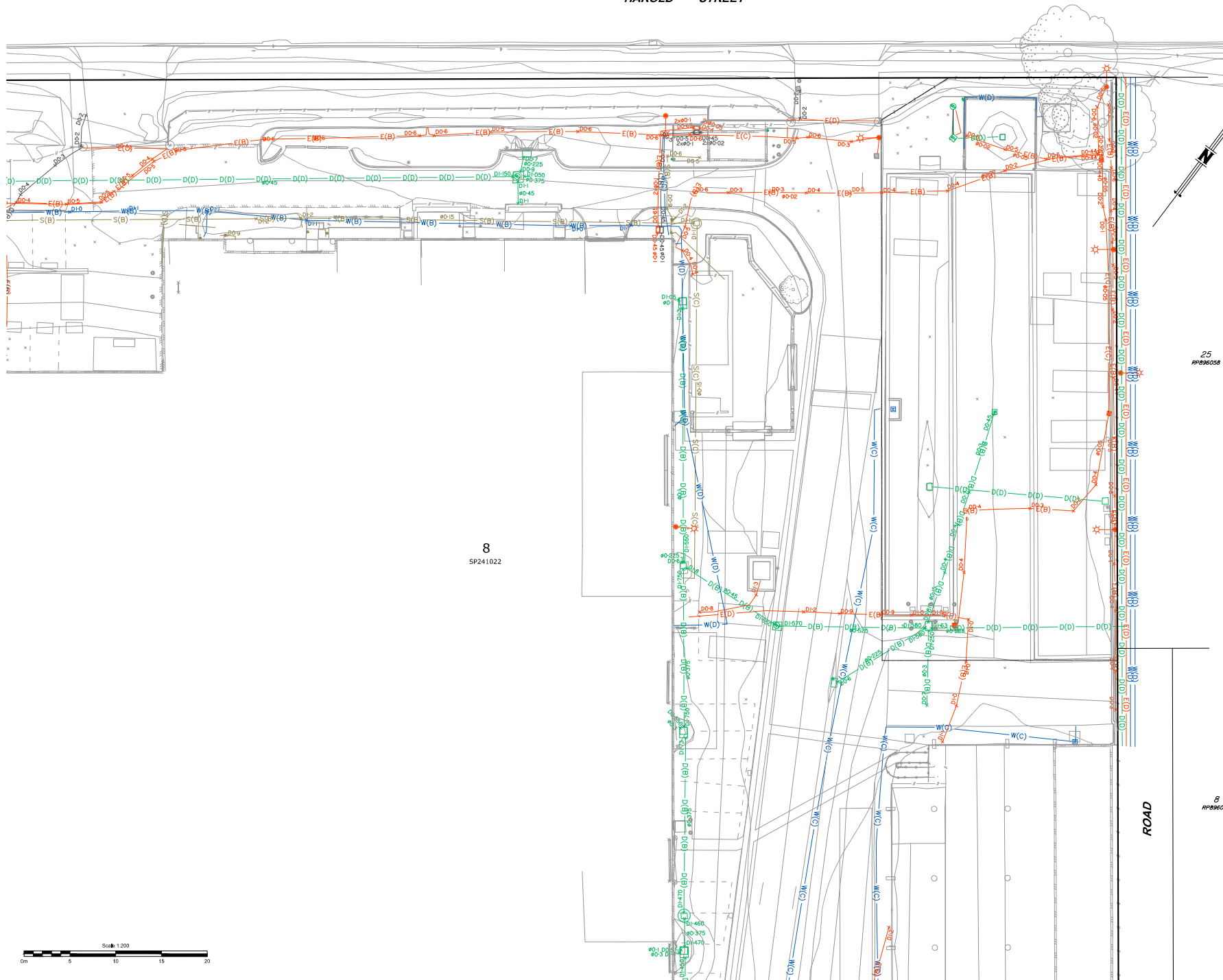
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10. GDA System: GDA2020 Coordinate System: Plane 1:1

Issue	Revision	Int	Date
A	Original Issue	DJL	24/07/2024

Title:

**Verification Plot - Services**
 Lot 8 on SP241022, Lot 4 on  
 RP896057, Toombul Road, West  
 Place and North Link Place
Client: **POWERLINK AUSTRALIA**
 Locality: TOOMBUL  
 Local Gov: BCC Prepared By: DJL  
 Surveyed By: B+B Approved: KS  
 Date Created: 24/07/2024 Scale: 1:200  
 Comp File: 231190\_project  
 Plan No: 231190\_003\_DET

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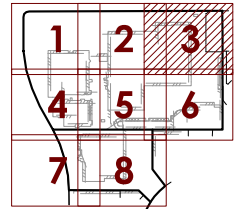



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 SP241022

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## LEGEND:

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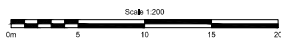
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Issue	Revision	Int.	Date
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 Client: **POWERLINK AUSTRALIA**

Locality: **TOOMBUL**  
 Local Gov: **BCC** Prepared By: **D.J.L**  
 Surveyed By: **B+B** Approved: **KS**  
 Date Created: **24/07/2024** Scale: **1:200**  
 Comp File: **231190\_project**  
 Plan No: **231190\_003\_DET**





**LEGEND:**

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**Key Plan**  
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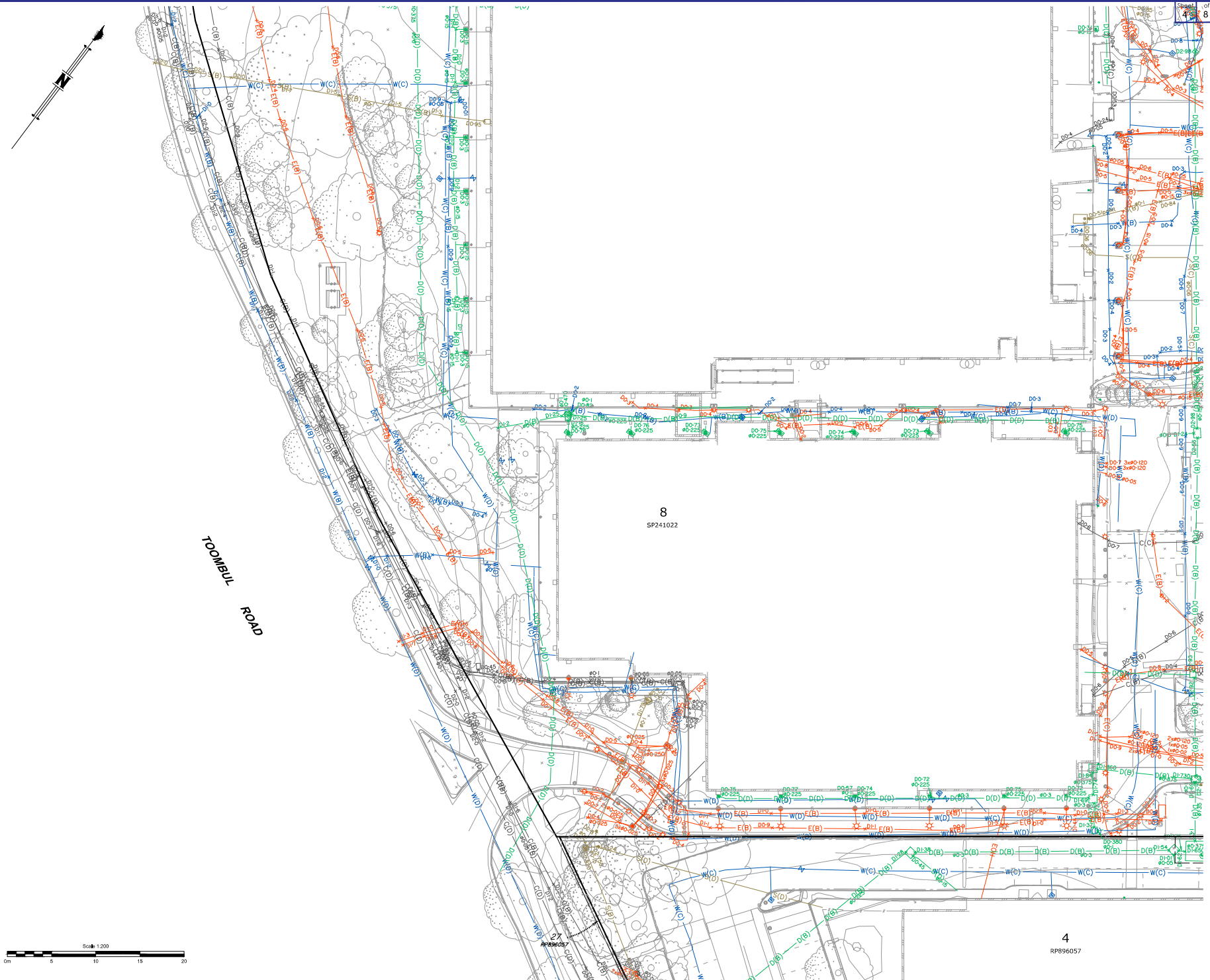
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A	Original Issue	DJL	24/07/2024
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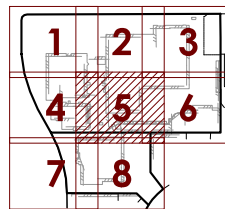
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Locality:	TOOMBUL
Local Gov:	BCC
Surveyed By:	B+B
Date Created:	24/07/2024
Comp File:	231190_project
Plan No:	231190_003_DET





LEGEND:

- S Underground Sewer Line
- D Underground Stormwater Line
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- E Underground Power Line
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Issue	Revision	Int	Date
A	Original Issue	DJL	24/07/2024

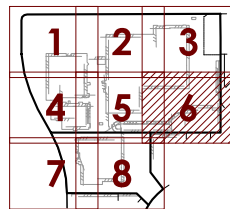
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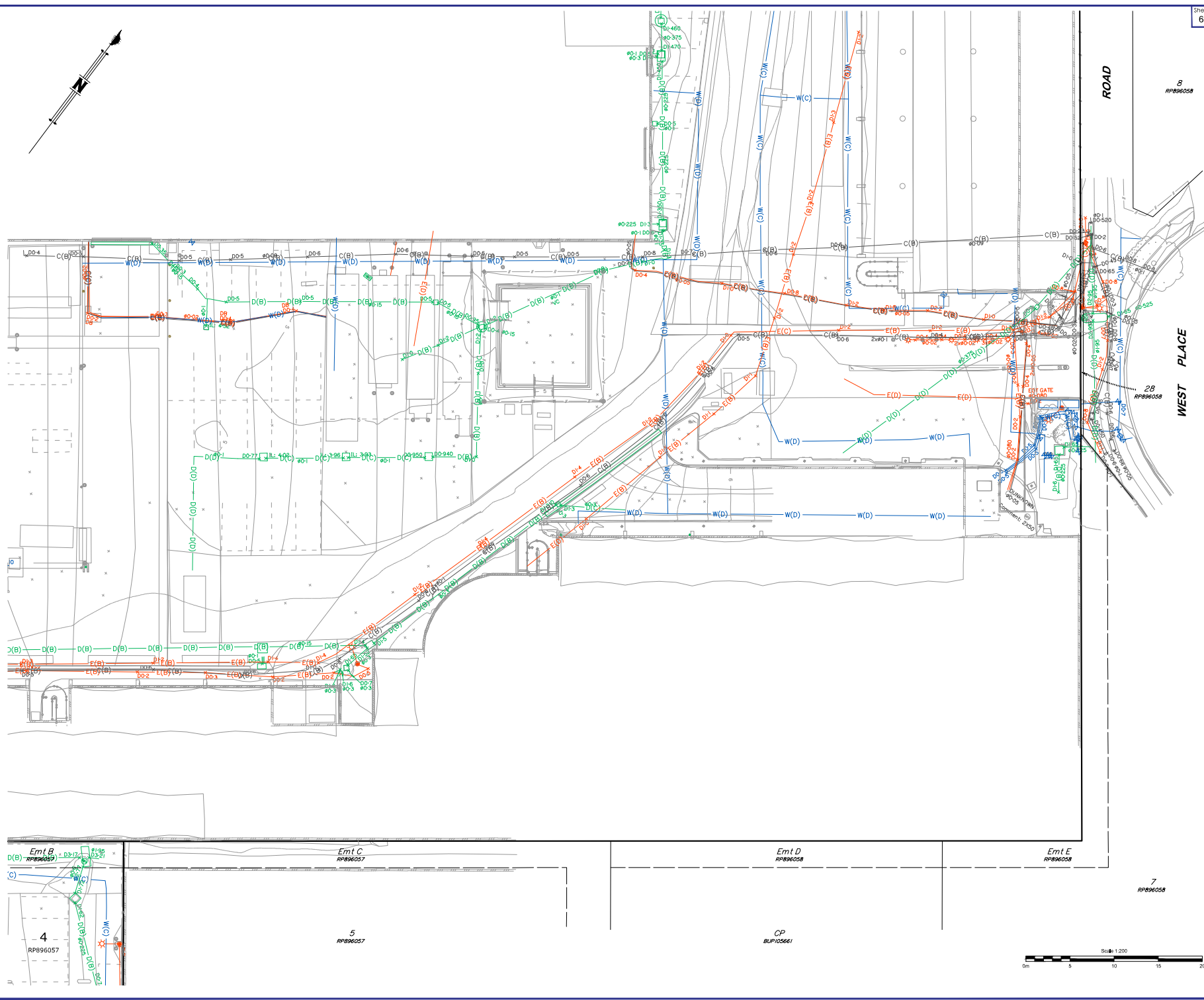
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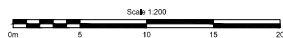
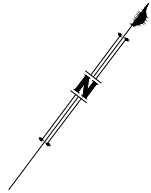
A	Original Issue	D.J.L.	24/07/2024
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Lot 8 on SP241022, Lot 4 on  
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Client:	POWERLINK AUSTRALIA
Locality:	TOOMBUL
Local Gov:	BCC
Surveyed By:	B+B
Date Created:	24/07/2024
Comp File:	231190_project
Plan No:	231190_003_DET







TOOMBUL  
ROAD



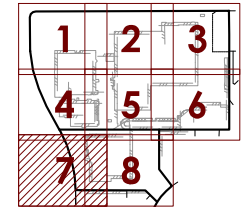
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RP896057

2  
SP123505

Sheet  
7 of  
8

**LEGEND:**

- S — Underground Sewer Line
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A	Original Issue	D/L	24/07/2024
Issue	Revision	Int.	Date

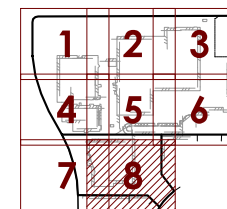
**Title:**  
**Verification Plot - Services**  
Lot 8 on SP241022, Lot 4 on  
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Place and North Link Place

Client:	POWERLINK AUSTRALIA		
Locality:	TOOMBUL		
Local Gov:	BCC	Prepared By:	DJL
Surveyed By:	B+B	Approved:	KS
Date Created:	24/07/2024	Scale:	1:200
Comp File:	231190.project		
Plan No:	231190_003_DET		



# LEGEND:

S	Underground Sewer Line
D	Underground Stormwater Line
W	Underground Water Main
C	Underground Comms Line
—	Overhead Power Line
E	Underground Power Line
G	Underground Gas Line
*(A)	*Service (Survey Quality A)
*(B)	*Service (Survey Quality B)
*(C)	*Service (Survey Quality C)
*(D)	*Service (Survey Quality D)
---	Building Line
---	Edge of Bitumen
---	Top of Bank
---	Toe of Bank



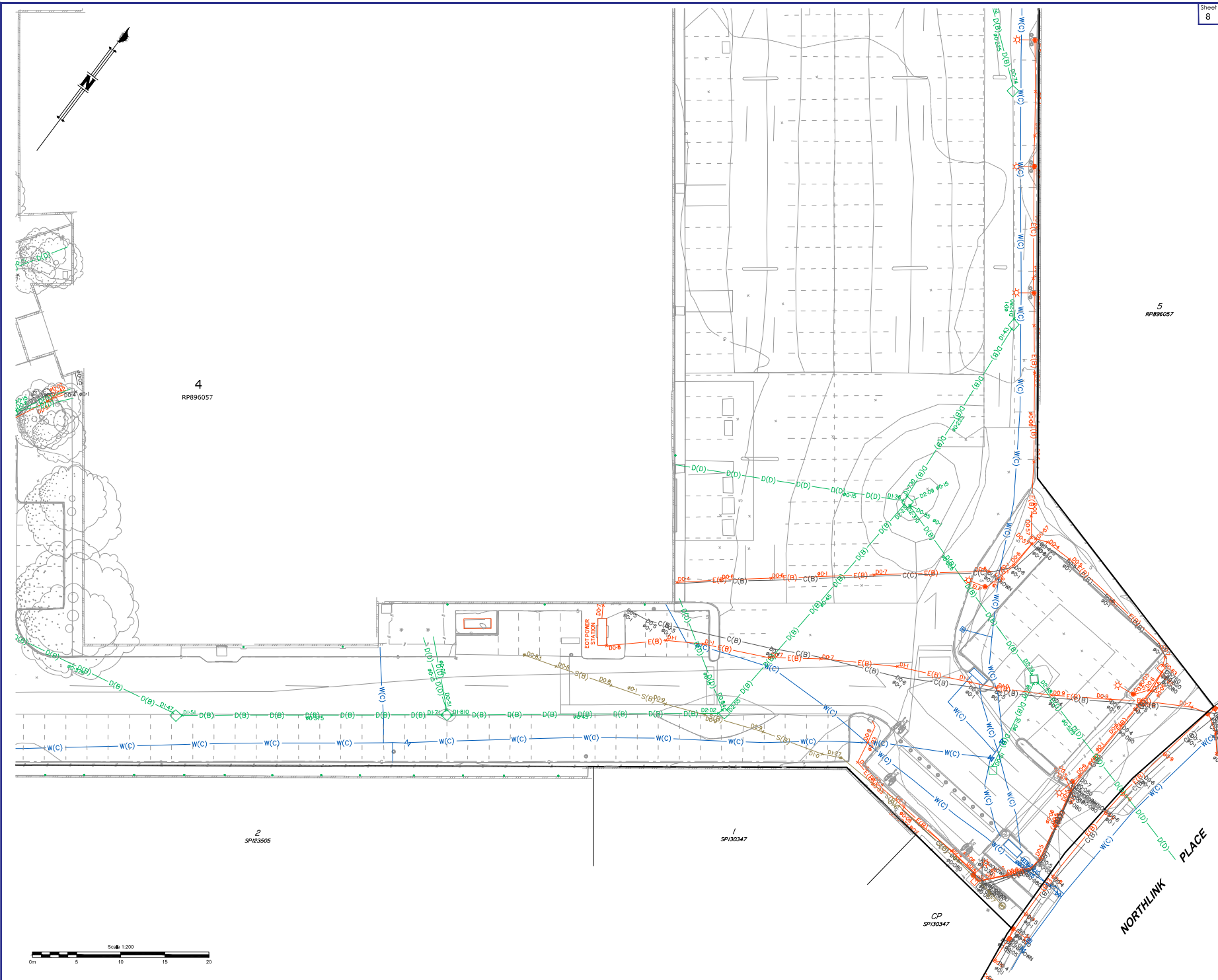
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Client:	POWERLINK AUSTRALIA
Locality:	TOOMBUL
Local Gov:	BCC
Surveyed By:	B+B
Date Created:	24/07/2024
Comp File:	231190_project
Plan No:	231190_003_DET





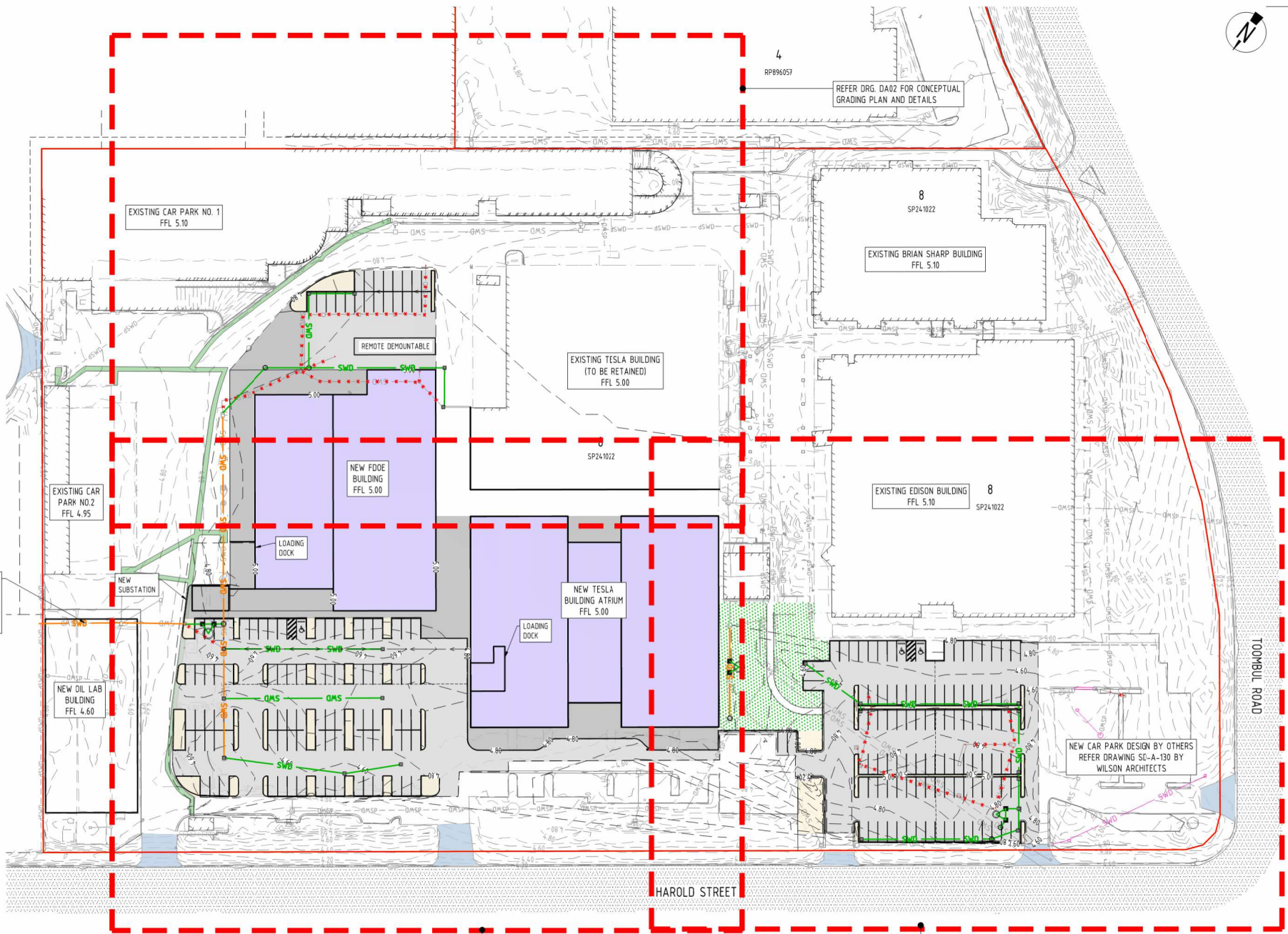
## Appendix B

### Conceptual Engineering Plans



# LEGEND

- SITE BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING EASEMENT BOUNDARY
- EXISTING SURFACE CONTOURS
- FINISHED CONTOURS
- EXISTING NOMINAL KERB LINE
- EXISTING EDGE OF BITUMEN LINE
- EXISTING EDGE OF BUILDING
- EXISTING EDGE OF BUILDING EAVE
- EXISTING STORMWATER DRAINAGE
- EXISTING STORMWATER DRAINAGE (RECORDS)
- PROPOSED BUILDING OUTLINE
- PROPOSED SAWCUT
- EXISTING STORMWATER TO BE REMOVED
- PROPOSED STORMWATER DRAINAGE
- PROPOSED SWALE
- PROPOSED STORMWATER DRAINAGE DESIGNED BY OTHERS (INDICATIVE ONLY)
- EXISTING STORMWATER DRAINAGE TO BE UPGRADED
- EXISTING PEDESTRIAN ACCESS LINEMARKING
- EXISTING VEHICLE CROSSOVER
- EXISTING ROAD
- PROPOSED CARPARK/INTERNAL DRIVEWAY
- PROPOSED PATH
- PROPOSED BUILDING
- PROPOSED CARPARK ISLAND
- PROPOSED LANDSCAPE AREA  
REFER TO DESIGN BY LANDSCAPE ARCHITECT FOR FURTHER DETAILS.



ALL DETAILS SHOWN ARE  
SUBJECT TO FURTHER  
DETAILED DESIGN

ALL PIPE SIZES SHOWN  
INDICATIVELY AND ARE SUBJECT  
TO CHANGE IN DETAILED DESIGN.

REFER DRG. DA03 FOR CONCEPTUAL  
GRADING PLAN AND DETAILS

REFER DRG. DA04 FOR CONCEPTUAL  
GRADING PLAN AND DETAILS

**PRELIMINARY**  
NOT FOR CONSTRUCTION

Rev	Date	Description	By	Chk
01	20.03.25	PRELIMINARY ISSUE	NS	ETV

FILE NAME: \\ADG\LOCAL\PROJECTS\BNE\17000\17117\17117\_001\_CONCEPTUAL CARPARK GRADING AND STORMWATER DRAINAGE OVERALL PLAN.DWG

0 10 20 30m  
SCALE 1:500  
AT ORIGINAL SIZE (A1)



Client: POWERLINK QUEENSLAND  
Project Name: POWERLINK MID - TESLA REDEVELOPMENT  
33 HAROLD STREET, VIRGINIA  
QLD 4014

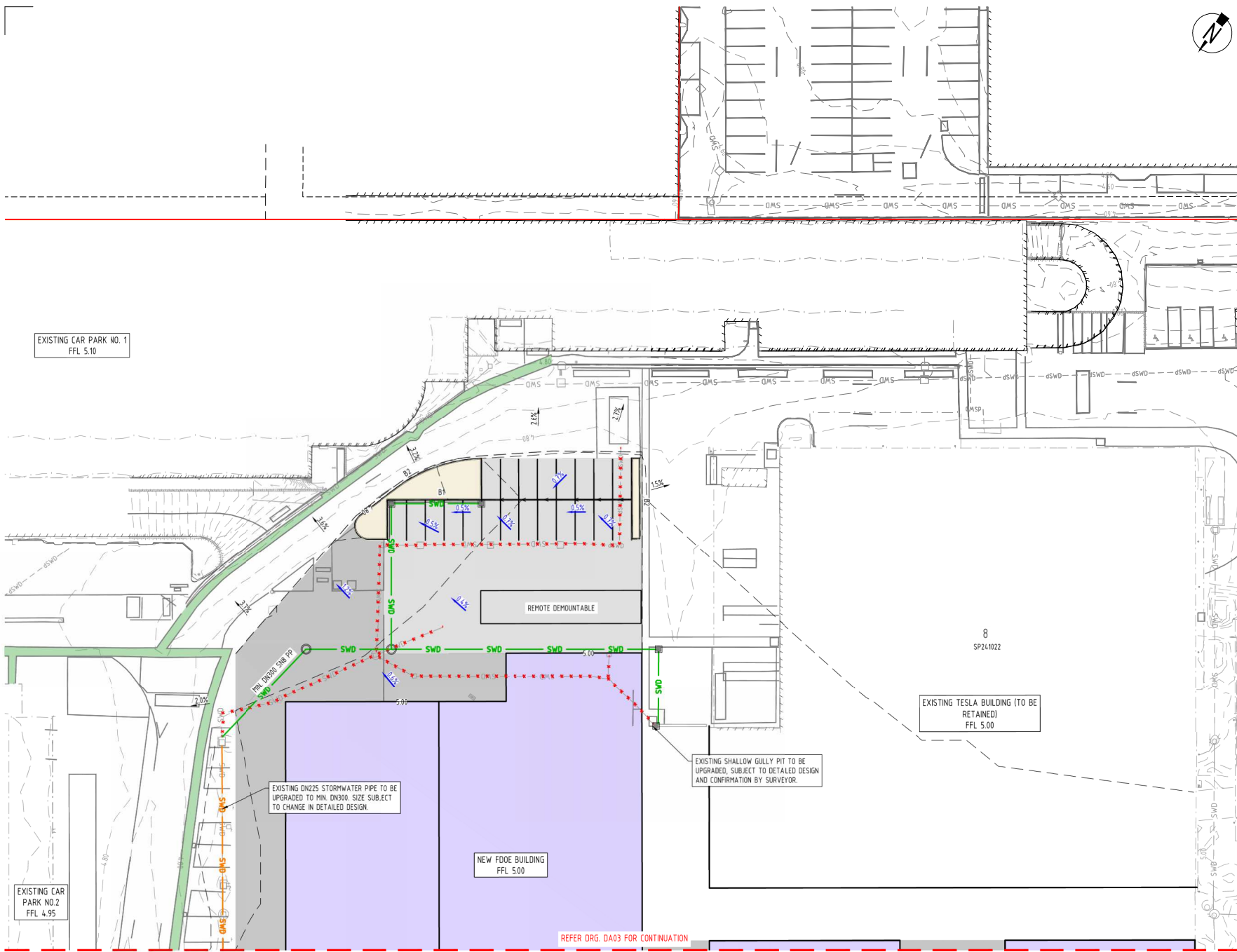
Discipline	Checked By	Status
CIVIL	ETV	PRELIMINARY
Designed By	ETV	Approved By
Project No:	27717	Scale at A1
		1:500

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Title	Drawing No.	Revision
CONCEPTUAL CARPARK GRADING AND STORMWATER DRAINAGE OVERALL PLAN	DA01	01

Full size on original: 0 10 20 30 40 50 60 70 80 90 100mm





LEGEND

- SITE BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING EASEMENT BOUNDARY
- EXISTING SURFACE CONTOURS
- FINISHED CONTOURS
- EXISTING SURFACE SLOPE
- FINISHED SURFACE SLOPE
- EXISTING NOMINAL KERB LINE
- EXISTING EDGE OF BITUMEN LINE
- EXISTING EDGE OF BUILDING
- EXISTING EDGE OF BUILDING EAVE
- EXISTING STORMWATER DRAINAGE
- EXISTING STORMWATER DRAINAGE (RECORDS)
- EXISTING LINEMARKING
- PROPOSED TYPE E KERB AND CHANNEL
- PROPOSED TYPE E KERB
- PROPOSED BUILDING OUTLINE
- PROPOSED SAWCUT
- PROPOSED STORMWATER TO BE REMOVED
- EXISTING STORMWATER DRAINAGE
- PROPOSED SWALE
- PROPOSED STORMWATER DRAINAGE DESIGNED BY OTHERS (INDICATIVE ONLY)
- EXISTING STORMWATER DRAINAGE TO BE UPGRADED
- EXISTING PEDESTRIAN ACCESS LINEMARKING
- EXISTING VEHICLE CROSSOVER
- EXISTING ROAD
- PROPOSED CARPARK/INTERNAL DRIVEWAY
- PROPOSED PATH
- PROPOSED BUILDING
- PROPOSED CARPARK ISLAND
- PROPOSED LANDSCAPE AREA. REFER TO DESIGN BY LANDSCAPE ARCHITECT FOR FURTHER DETAILS.

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**PRELIMINARY**  
NOT FOR CONSTRUCTION

Rev	Date	Description	By	CHK
01	20.03.25	PRELIMINARY ISSUE	NS	ETY

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AT ORIGINAL SIZE (A1)



Client  
POWERLINK QUEENSLAND  
Project Name  
POWERLINK MID - TESLA REDEVELOPMENT  
33 HAROLD STREET, VIRGINIA  
QLD 4014

Discipline  
CIVIL  
Designed By  
LS  
Project No.  
27717  
Checked By  
ETY  
Drawn By  
NS

Status  
PRELIMINARY  
Approved By  
CM  
Scale at A1  
1:250

Title  
CONCEPTUAL CARPARK GRADING  
AND STORMWATER DRAINAGE  
LAYOUT PLAN SHEET 1

Drawing No.  
DA02  
Revision  
01





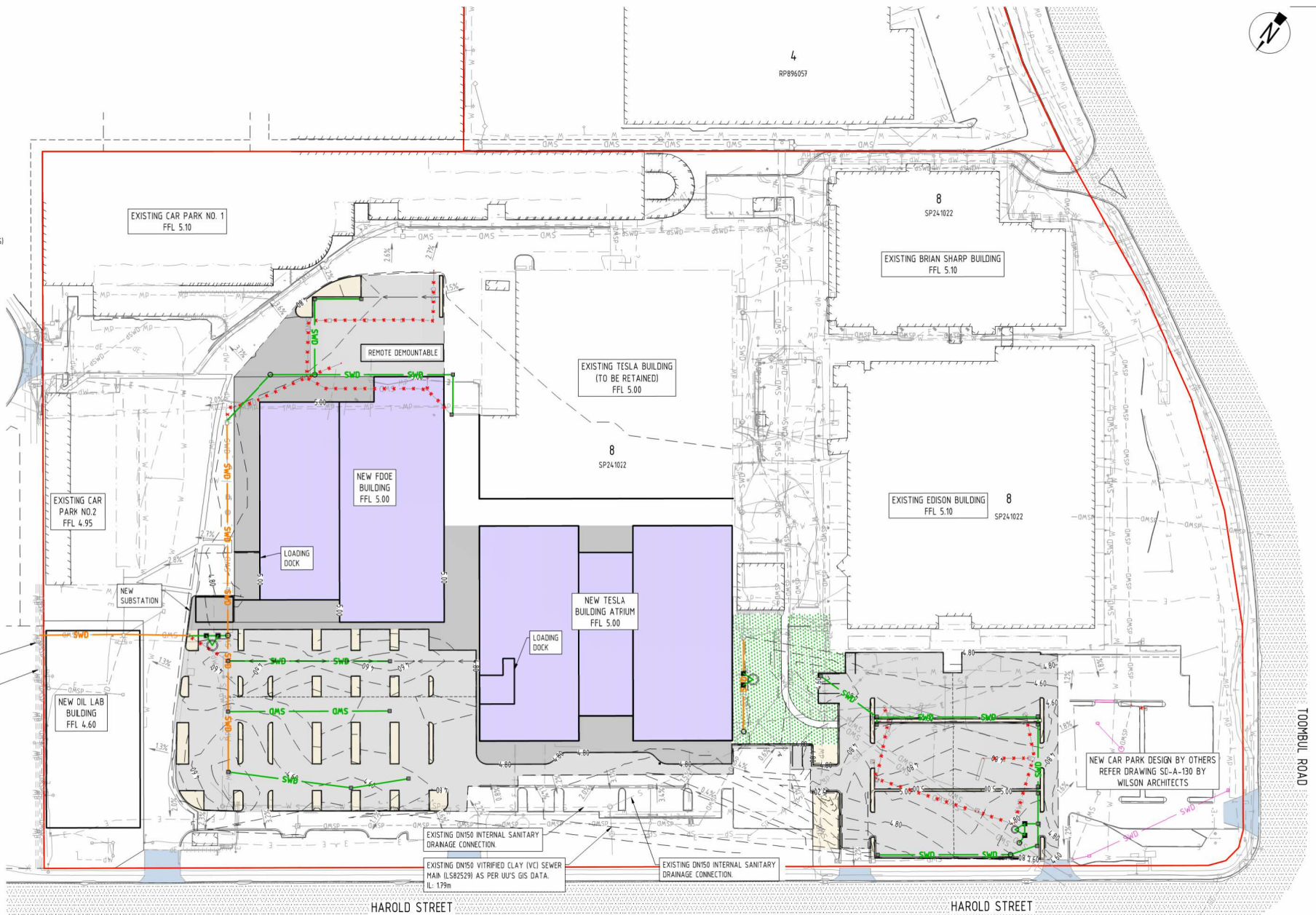






# LEGEND

- 12.0 FINISHED SURFACE CONTOURS
- SITE BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING EASEMENT BOUNDARY
- EXISTING NOMINAL KERB LINE
- EXISTING STORMWATER DRAINAGE
- EXISTING STORMWATER DRAINAGE (RECORDS)
- EXISTING SEWER
- EXISTING SEWER (RECORDS)
- EXISTING WATER
- EXISTING WATER (RECORDS)
- EXISTING UNDERGROUND ELECTRICITY
- EXISTING UNDERGROUND ELECTRICITY (RECORDS)
- EXISTING TELECOMMUNICATIONS
- EXISTING TELECOMMUNICATIONS (RECORDS)
- EXISTING FENCE
- EXISTING VEHICLE CROSSOVER
- EXISTING EDGE OF BUILDING
- PROPOSED BUILDING OUTLINE
- PROPOSED SAWCUT
- PROPOSED STORMWATER DRAINAGE
- PROPOSED SWALE
- PROPOSED STORMWATER DRAINAGE BY OTHERS
- EXISTING STORMWATER DRAINAGE TO BE UPGRADED
- EXISTING PEDESTRIAN ACCESS LINEMARKING
- EXISTING VEHICLE CROSSOVER
- EXISTING ROAD
- PROPOSED CARPARK/INTERNAL DRIVEWAY
- PROPOSED PATH
- PROPOSED BUILDING
- PROPOSED CARPARK ISLAND
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INDICATIVELY AND ARE SUBJECT  
TO CHANGE IN DETAILED DESIGN.

## NOTE

LOCATION, PIPE SIZE AND MATERIAL OF INTERNAL  
WATER, FIRE, AND SANITARY DRAINAGE CONNECTION  
SHALL BE DESIGNED BY THE INTERNAL HYDRAULICS  
CONSULTANT.

Rev	Date	Description	By	Chk
01	20.03.25	PRELIMINARY ISSUE	NS	ETV

FILE NAME: \\ARCE\LOCAL\PROJECTS\BNE\27000\27171\CH\DWG\27171\_SAWL\_CONCEPTUAL\_CIVIL\_SERVICES\_OVERALL\_PLAN.DWG

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SCALE 1:500  
AT ORIGINAL SIZE (A1)



Client  
POWERLINK QUEENSLAND  
Project Name  
POWERLINK MID - TESLA REDEVELOPMENT  
33 HAROLD STREET, VIRGINIA  
QLD 4014

Discipline	Status
CIVIL	PRELIMINARY
Designed By LS	Checked By ETV
Project No. 27717	Drawn By NS
	Scale at A1 1:500

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**PRELIMINARY**  
NOT FOR CONSTRUCTION

Title	Drawing No.	Revision
CONCEPTUAL CIVIL SERVICES OVERALL PLAN	DA06	01

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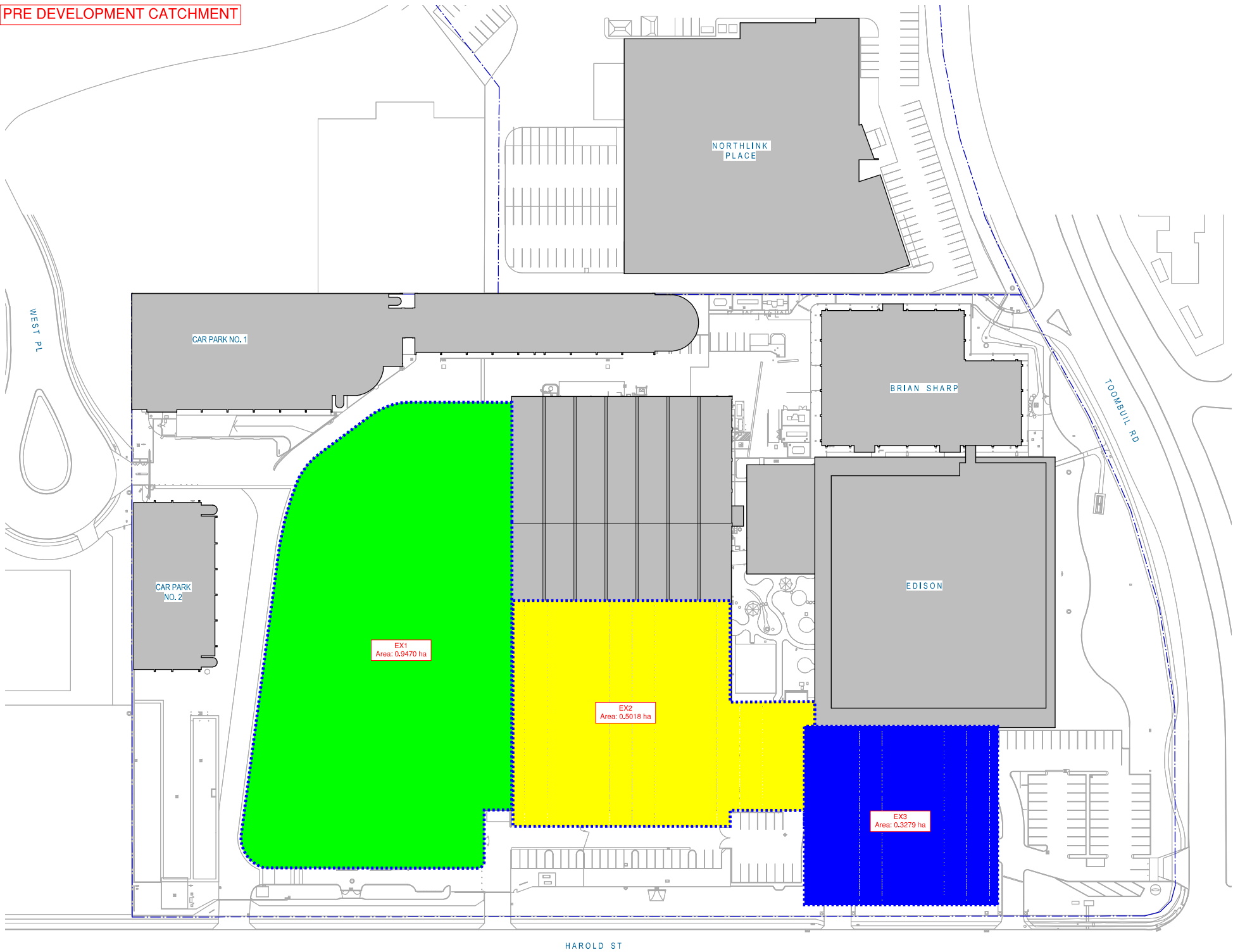


## Appendix C

### Pre-Developed and Post-Developed Catchment Sketches

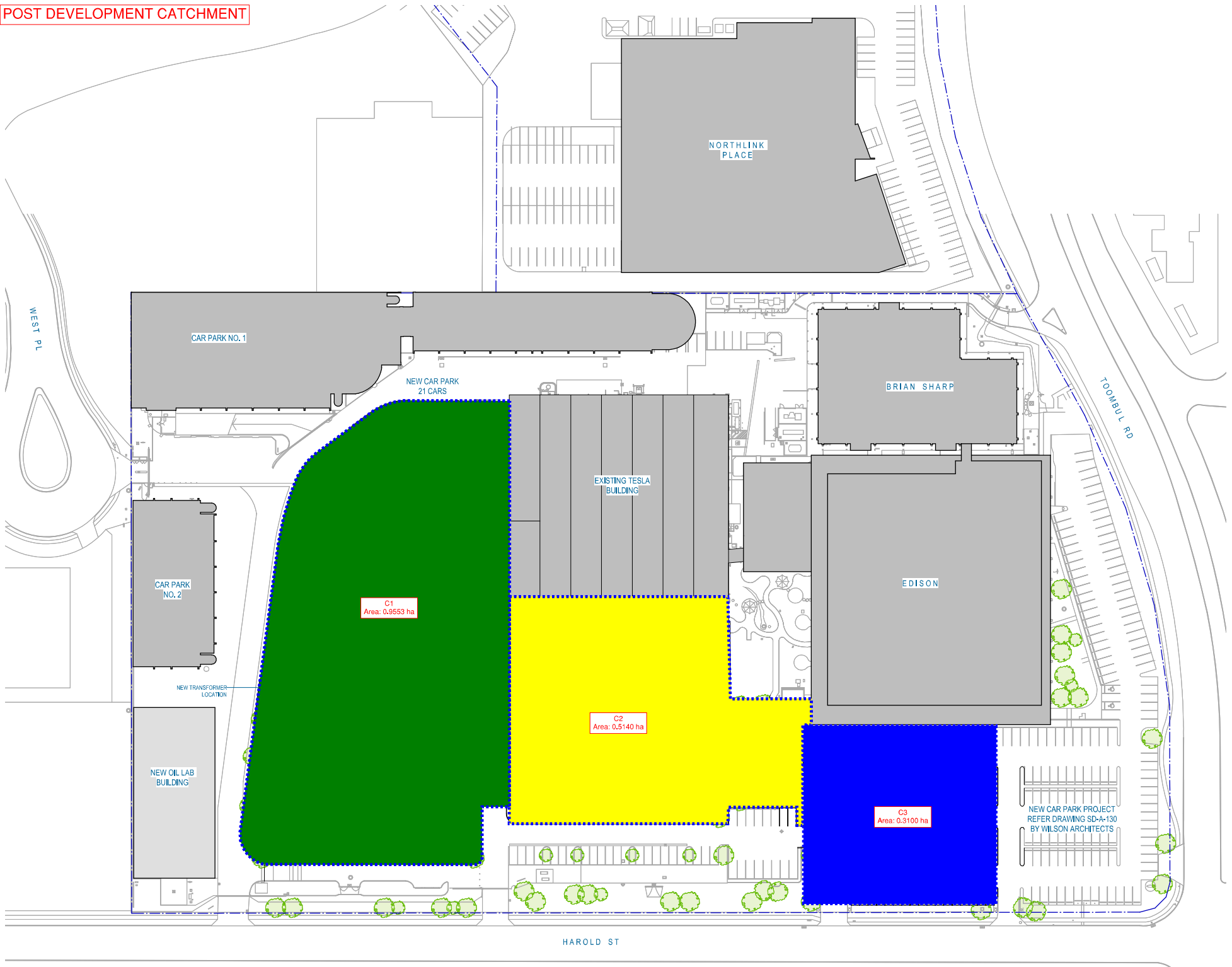


PRE DEVELOPMENT CATCHMENT





POST DEVELOPMENT CATCHMENT





## Appendix D

### BCC Code Response



## 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
<b>PO1</b> Development protects the environmental values and ecological health of receiving waters and does not subject assets to accelerated corrosion.	<b>AO1</b> Development ensures that: <ul style="list-style-type: none"> <li>a. no potential or actual acid sulfate soils are disturbed; or</li> </ul> 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. <ul style="list-style-type: none"> <li>b. the disturbance impacts in an area that hosts potential acid sulfate soils are appropriately managed, if less than 500m<sup>3</sup> of soil is disturbed and the watertable is not affected; or</li> </ul> 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. <ul style="list-style-type: none"> <li>c. impacts are appropriately managed if 500m<sup>3</sup> or more of soil is disturbed or the watertable in an area that hosts potential or actual acid sulfate soils is affected.</li> </ul> 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.	<b>Performance Outcome.</b> Acid Sulphate Soil Investigation Report to be prepared by the environmental/ geotechnical consultant.



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## **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**

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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
<b>PO1</b> Development for filling or excavation minimises visual impacts from retaining walls and earthworks.	<b>AO1</b> Development ensures that the total height of any cut and fill, whether or not retained, does not exceed: <ol style="list-style-type: none"> <li>a. 2.5m in a zone in the Industry zones category;</li> <li>b. 1m in all other zones, or if adjoining a sensitive zone.</li> </ol>	<b>Performance Outcome.</b> The development anticipates minimal excavation as there is no basement proposed. Minimal visual impact.  No new retaining walls are proposed as part of the development.
<b>PO2</b> Development of a retaining wall proposed as a result of filling or excavation: <ol style="list-style-type: none"> <li>a. is designed and constructed to be fit for purpose;</li> <li>b. does not impact adversely on significant vegetation;</li> <li>c. is capable of easy maintenance.</li> </ol> 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.	<b>AO2.1</b> Development of a retaining structure, including footings, surface drainage and subsoil drainage: <ol style="list-style-type: none"> <li>a. is wholly contained within the site;</li> <li>b. if the total height to be retained is greater than 1m, then: <ol style="list-style-type: none"> <li>i. the retaining wall at the property boundary is no greater than 1m above the ground level;</li> <li>ii. all further terracing from the 1m high boundary retaining wall is 1 vertical unit:1 horizontal unit;</li> <li>iii. the distance between each successive retaining wall (back of lower wall to face of</li> </ol> </li> </ol>	<b>Performance Outcome.</b> Retaining wall to be designed by structural engineer (as required).



	<p>higher wall) is no less than 1m horizontally to incorporate planting areas.</p> <p><b>AO2.2</b>                      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.</p> <p><b>AO2.3</b>                      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.</p> <p><b>AO2.4</b>                      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.</p>	
<p><b>PO3</b>                      Development ensures that a rock anchor is designed and constructed to be fit for purpose.</p>	<p><b>AO3</b>                      Development ensures that a rock anchor:</p> <ul style="list-style-type: none"> <li>a. is constructed in accordance with the standards in the Infrastructure design planning scheme policy;</li> <li>b. where it extends beyond the property boundary, is supported by a letter of consent from the adjoining land and building owners.</li> </ul>	<p><b>Not Applicable.</b>                      No rock anchors are proposed as part of the development.</p>
<p><b>PO4</b>                      Development protects all services and public utilities.</p>	<p><b>AO4</b>                      Development protects services and public utilities and ensures that any alteration or relocation of services or</p>	<p><b>Performance Outcome.</b>                      Construction of the development will take necessary precautions and actions to ensure the protection of existing services and public utilities.</p>



	public utilities meets the standard design specifications of the responsible service authorities.	
<b>PO5</b> Development provides surface and sub-surface drainage to prevent water seepage, concentration of run-off or ponding of stormwater on adjacent land.	<b>A05</b> 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.	<b>Performance Outcome.</b> Please refer to ADG's site-based stormwater management plan.
<b>PO6</b> 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.	<b>A06</b> Filling or excavation does not involve the construction of open drainage.	<b>Not Applicable.</b>
<b>PO7</b> Development for filling or excavation: <ul style="list-style-type: none"> <li>a. does not degrade water quality or adversely affect environmental values in receiving waters;</li> <li>b. ensures site sediment and erosion control standards are best practice.</li> </ul>	<b>A07.1</b> Development for filling or excavation provides water quality treatment that complies with the stormwater drainage section of the Infrastructure design planning scheme policy.  <b>A07.2</b> Development provides erosion and sediment control standards that are in accordance with the stormwater drainage section of the Infrastructure design planning scheme policy.	<b>Performance Outcome.</b> Water quality treatment has been designed in accordance with the infrastructure design planning scheme policy and the State Planning Policy. An erosion and sediment control plan will be provided as part of detailed design stage.
<b>PO8</b>	<b>A08.1</b>	<b>Performance Outcome.</b> A noise management plan shall be provided by a suitably qualified consultant as part of detailed design.



<p>Development for filling or excavation is conducted such that adverse impacts at a sensitive use due to noise and dust are prevented or minimised.</p> <p>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.</p>	<p>Development ensures that no dust emissions extend beyond the boundary of the site, including dust from construction vehicles entering and leaving the site.</p> <p><b>AO8.2</b></p> <p>Development for filling or excavation activity only occurs between the hours of 6:30am and 6:30pm Monday to Saturday, excluding public holidays.</p>	
<p><b>PO9</b></p> <p>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.</p> <p>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.</p>	<p><b>AO9</b></p> <p>Development involving filling or excavation does not cause a ground-borne vibration beyond the boundary of the site.</p>	<p><b>Performance Outcome.</b></p> <p>A vibration analysis report (if required) shall be provided by a suitably qualified consultant as part of detailed design.</p>
<p><b>PO10</b></p> <p>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.</p>	<p><b>AO10</b></p> <p>Development ensures that heavy trucks hauling material to and from the site:</p> <ol style="list-style-type: none"> <li>occur for a maximum of 3 weeks;</li> <li>use a major road to access the site;</li> <li>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.</li> </ol>	<p><b>Performance Outcome.</b></p> <p>A construction management plan shall be provided by the principal contractor.</p>
<p><b>PO11</b></p> <p>Development for filling or excavation protects the environment and community health and wellbeing from exposure to contaminated land and contaminated material.</p>	<p><b>AO11</b></p> <p>Development does not involve:</p> <ol style="list-style-type: none"> <li>excavation on land previously occupied by a notifiable activity or on land listed on the Environmental Management Register or the Contaminated Land Register;</li> <li>filling with material containing a contaminant.</li> </ol>	<p><b>Performance Outcome.</b></p> <p>A geotechnical report to be provided by a suitably qualified geotechnical engineer.</p>
<b>PO12</b>	<b>AO12.1</b>	<b>Performance Outcome.</b>



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.  <b>AO12.2</b> 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.	Please refer to landscaping plan and report by the Landscape Architect.
	<b>AO12.3</b> 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.	
<b>PO13</b> Development ensures cutting and filling for the development of canals or artificial waterways avoids adverse impacts on coastal resources and processes.	<b>AO13</b> Development does not involve the creation of canals or artificial waterways.	<b>Not Applicable.</b>

**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
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**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<sup>2</sup>) 1–80Hz for human comfort**

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



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

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<sup>1.75</sup>) for human comfort**

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



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Workshops	0.8 m/s <sup>1.75</sup>	1.6 m/s <sup>1.75</sup>	0.8 m/s <sup>1.75</sup>	1.6 m/s <sup>1.75</sup>
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Note—

<sup>(1)</sup> Day is 7am to 10pm and night is 10pm to 7am.

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

<sup>(3)</sup> 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.



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## **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
<p><b>PO1</b>  Development provides roads, pavement, edging and landscaping which:</p> <ul style="list-style-type: none"> <li>a. are designed and constructed in accordance with the road hierarchy;</li> <li>b. provide for safe travel for pedestrians, cyclists and vehicles;</li> <li>c. provide access to properties for all modes;</li> <li>d. provide utilities;</li> <li>e. provide high levels of aesthetics and amenity, improved liveability and future growth;</li> <li>f. provide for the amelioration of noise and other pollution;</li> <li>g. provide a high-quality streetscape;</li> <li>h. provide a low-maintenance asset with a minimal whole-of-life cost.</li> </ul> <p>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.</p>	<p><b>AO1</b>  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.</p>	<p><b>Not Applicable.</b>  No new council roads are proposed as part of the proposed development.</p>
<p><b>PO2</b>  Development provides road pavement surfaces which:</p> <ul style="list-style-type: none"> <li>a. are well designed and constructed;</li> <li>b. durable enough to carry the wheel loads of the intended types and numbers of travelling and parked vehicles;</li> <li>c. ensures the safe passage of vehicles, pedestrians and cyclists, the discharge of stormwater run-off and the preservation of all-weather access;</li> </ul>	<p><b>AO2</b>  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.</p>	<p><b>Not Applicable.</b>  No new council roads are proposed as part of the development.</p>



d. allows for reasonable travel comfort.		
<b>PO3</b> Development provides a pavement edge which is designed and constructed to: <ul style="list-style-type: none"> <li>a. control vehicle movements by delineating the carriageway for all users;</li> <li>b. provide for people with disabilities by allowing safe passage of wheelchairs and other mobility aids.</li> </ul>	<b>A03</b> Development provides pavement edges which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.	<b>Not Applicable.</b> No pavement edge is required as part of the development.
<b>PO4</b> Development provides verges which are designed and constructed to: <ul style="list-style-type: none"> <li>a. provide safe access for pedestrians clear of obstructions and access areas for vehicles onto properties;</li> <li>b. provide a sufficient area for public utility services;</li> <li>c. be maintainable by the Council.</li> </ul>	<b>A04</b> 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.	<b>Not Applicable.</b> No new verges are proposed as part of the development.
<b>PO5</b> Development provides a lane or laneway identified on the Streetscape hierarchy overlay map or in a neighbourhood plan which: <ul style="list-style-type: none"> <li>a. allows equitable access for all modes;</li> <li>b. is safe and secure;</li> <li>c. has 24-hour access;</li> <li>d. is a low-speed shared zone environment;</li> <li>e. has a high-quality streetscape.</li> </ul>	<b>A05</b> 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.	<b>Not Applicable.</b> No new lane or laneway is proposed as part of the development.
<b>PO6</b> Development of an existing premises provides at the frontage to the site, if not already provided, the following infrastructure to an appropriate urban standard: <ul style="list-style-type: none"> <li>a. an effective, high-quality paved roadway;</li> <li>b. an effective, high-quality roadway kerb and channel.</li> </ul>	<b>A06</b> 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:	<b>Not Applicable.</b> No new council roads are proposed as part of the development.  Electrical/telecommunications conduits and other public utility services to be confirmed at detailed design by a suitably qualified consultant.



<ul style="list-style-type: none"> <li>c. safe, high-quality vehicle crossings over channels and verges;</li> <li>d. safe, accessible, high-quality verges compatible and integrated with the surrounding environment;</li> <li>e. safe vehicle access to the site that enables ingress and egress in a forward gear;</li> <li>f. provision of and required alterations to public utilities;</li> <li>g. effective drainage;</li> <li>h. appropriate conduits to facilitate the provision of required street-lighting systems and traffic signals.</li> </ul>	<ul style="list-style-type: none"> <li>a. concrete kerb and channel;</li> <li>b. forming and grading to verges;</li> <li>c. crossings over channels and verges;</li> <li>d. a constructed bikeway;</li> <li>e. a constructed verge or reconstruction of any damaged verge;</li> <li>f. construction of the carriageway;</li> <li>g. payment of costs for required alterations to public utility mains, services or installations;</li> <li>h. construction of and required alterations to public utility mains, services or installations;</li> <li>i. drainage works;</li> <li>j. installation of electrical conduits.</li> </ul>	
<p><b>PO7</b>  Development provides both cycle and walking routes which:</p> <ul style="list-style-type: none"> <li>a. are located, designed and constructed to their network classification (where applicable);</li> <li>b. provide safe and attractive travel routes for pedestrians and cyclists for commuter and recreational purposes;</li> <li>c. provide safe and comfortable access to properties for pedestrians and cyclists;</li> <li>d. incorporate water sensitive urban design into stormwater drainage;</li> <li>e. provide for utilities;</li> <li>f. provide for a high level of aesthetics and amenity, improved liveability and future growth;</li> <li>g. are a low-maintenance asset with a minimal whole-of-life cost;</li> <li>h. minimise the clearing of significant native vegetation.</li> </ul> <p>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.</p>	<p><b>A07</b>  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.</p>	<p><b>Not Applicable.</b>  No cycle or walking routes are proposed as part of the development.</p>



<p><b>PO8</b>  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.</p>	<p><b>AO8.1</b>  Development provides refuse and recycling collection and storage facilities in accordance with the Refuse planning scheme policy.</p> <p><b>AO8.2</b>  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.</p>	<p><b>Performance Outcome.</b>  A waste management report to be provided by the waste management consultant.</p>
<p><b>PO9</b>  Development ensures that:</p> <ul style="list-style-type: none"> <li>a. land used for an urban purpose is serviced adequately with regard to water supply and waste disposal;</li> <li>b. the water supply meets the stated standard of service for the intended use and fire-fighting purposes.</li> </ul>	<p><b>AO9.1</b>  Development ensures that the reticulated water and sewerage distribution system for all services is in place before the first use is commenced.</p> <p><b>AO9.2</b>  Development provides the lot with reticulated water supply and sewerage to a standard acceptable to the distributor–retailer.</p>	<p><b>Performance Outcome.</b>  Refer to ADG Civil Engineering Report for the Preliminary Engineering Services Layout Plan.</p>
<p><b>PO10</b>  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.</p>	<p><b>AO10.1</b>  Development provides public utilities and street lighting which are located and aligned to:</p> <ul style="list-style-type: none"> <li>a. avoid significant native vegetation and areas identified within the Biodiversity areas overlay map;</li> <li>b. minimise earthworks;</li> <li>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.</li> </ul> <p>Note—Guidance on the restoration of habitat is included in the Biodiversity areas planning scheme policy.</p> <p><b>AO10.2</b></p>	<p><b>Performance Outcome.</b>  Electrical design shall be provided as part of detailed design by the electrical consultant.</p>



	<p>Development provides compatible public utility services and street-lighting services which are co-located in common trenching for underground services.</p> <p><b>AO10.3</b>                      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.</p>	
<p><b>PO11</b>                      Development ensures that land used for urban purposes is serviced adequately with telecommunications and energy supply.</p>	<p><b>AO11</b>                      Development provides land with the following services to the standards of the approved supplier:</p> <ul style="list-style-type: none"> <li>a. electricity;</li> <li>b. telecommunications services;</li> <li>c. gas service where practicable.</li> </ul>	<p><b>Performance Outcome.</b>                      Telecommunications and energy supply design shall be provided as part of detailed design by the suitably qualified consultant.</p>
<p><b>PO12</b>                      Development ensures that major public projects promote the provision of affordable, high-bandwidth telecommunications services throughout the city.</p>	<p><b>AO12</b>                      Development provides conduits which are provided in all major Council and government works projects to enable the future provision of fibre optic cabling, if:</p> <ul style="list-style-type: none"> <li>a. the additional expense is unlikely to be prohibitive; or</li> <li>b. further major work is unlikely or disruption would be a major concern, such as where there is a limited capacity road; or</li> <li>c. there is a clear gap in the telecommunications network; or</li> <li>d. there is a clear gap in the bandwidth available to the area.</li> </ul> <p>Editor's note—An accurate, digital 'as built' three-dimensional location plan is to be supplied for all infrastructure provided in a road.</p>	<p><b>Not Applicable.</b></p>
<p><b>PO13</b>                      Development provides public art identified in a neighbourhood plan or park concept plan which:</p>	<p><b>AO13</b>                      Development provides public art identified in a neighbourhood plan or park concept plan which is sited</p>	<p><b>Not Applicable.</b>                      No public art is proposed as part of the development.</p>



<ul style="list-style-type: none"> <li>a. is provided commensurate with the status and scale of the proposed development;</li> <li>b. is sited and designed: <ul style="list-style-type: none"> <li>i. as an integrated part of the project design;</li> <li>ii. as conceptually relevant to the context of the location;</li> <li>iii. to reflect and respond to the cultural values of the community;</li> <li>iv. to promote local character in a planned and informed manner.</li> </ul> </li> </ul>	<p>and designed in compliance with the public art standards in the Infrastructure design planning scheme policy.</p>	
<p><b>PO14</b>  Development provides signage of buildings and spaces which promote legibility to help users find their way.</p>	<p><b>AO14</b>  Development provides public signage:</p> <ul style="list-style-type: none"> <li>a. at public transport interchanges and stops, key destinations, public spaces, pedestrian linkages and at entries to centre developments;</li> <li>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.</li> </ul> <p><small>Editor's note—Signage is to be in accordance with Local Law Number 1 (Control of Advertisements Local Law).</small></p>	<p><b>Not Applicable.</b>  Public signage is not required as part of this development.</p>
<p><b>PO15</b>  Development that provides community facilities which form part of the development is functional, safe, low maintenance, and fit for purpose.</p>	<p><b>AO15</b>  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.</p>	<p><b>Not Applicable.</b>  No community facilities are proposed as part of the development.</p>
<p><b>PO16</b>  Development provides public toilets which:</p> <ul style="list-style-type: none"> <li>a. are required as part of a community facility or park;</li> <li>b. are located, designed and constructed to be: <ul style="list-style-type: none"> <li>i. safe;</li> <li>ii. durable;</li> <li>iii. resistant to vandalism;</li> </ul> </li> </ul>	<p><b>AO16</b>  Development that provides public toilets is designed and constructed in compliance with the public toilets standards in the Infrastructure design planning scheme policy.</p>	<p><b>Not Applicable.</b>  No public toilets are proposed as part of the development.</p>



iv. able to service expected demand; v. fit for purpose.		
<p><b>PO17</b>  Development provides bridges, tunnels, elevated structures and water access structures that are designed and constructed using proven methods, materials and technology to provide for:</p> <ul style="list-style-type: none"> <li>a. safe movement of intended users;</li> <li>b. an attractive appearance appropriate to the general surroundings and any adjacent structures;</li> <li>c. functionality and easy maintenance;</li> <li>d. minimal whole-of-life cost;</li> <li>e. longevity;</li> <li>f. current and future services.</li> </ul> <p>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.</p>	<p><b>AO17</b>  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.</p>	<p><b>Not Applicable.</b>  No bridges, tunnels, elevated structures and water access structures are proposed as part of the development.</p>
<p><b>PO18</b>  Development provides culverts which are designed and constructed using proven methods, materials and technology to provide for:</p> <ul style="list-style-type: none"> <li>a. safety;</li> <li>b. an attractive appearance appropriate to the general surroundings;</li> <li>c. functionality and easy maintenance;</li> <li>d. minimal whole-of-life cost;</li> <li>e. longevity;</li> <li>f. future widening;</li> <li>g. current and future services;</li> <li>h. minimal adverse impacts, such as increase in water levels or flow velocities, and significant change of flood patterns.</li> </ul>	<p><b>AO18</b>  Development that provides culverts is designed and constructed in compliance with the structures standards in the Infrastructure design planning scheme policy.</p>	<p><b>Not Applicable.</b>  No culverts are proposed as part of the development.</p>



<p>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.</p>		
<p><b>PO19</b>  Development provides batters, retaining walls, and seawalls and river walls which are designed and constructed using proven methods, materials and technology to provide for:</p> <ul style="list-style-type: none"> <li>a. safety;</li> <li>b. an attractive appearance appropriate to the surrounding area;</li> <li>c. easy maintenance;</li> <li>d. minimal whole-of-life cost;</li> <li>e. longevity;</li> <li>f. minimal water seepage.</li> </ul> <p>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.</p>	<p><b>AO19</b>  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.</p>	<p><b>Not Applicable.</b>  No retaining structures are proposed as part of the development.</p>
<p><b>If for development with a gross floor area greater than 1,000m<sup>2</sup></b></p>		
<p><b>PO20</b>  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.</p>	<p><b>AO20</b>  Development ensures that during construction:</p> <ul style="list-style-type: none"> <li>a. the ongoing use of adjoining and surrounding parks and public spaces, such as malls and outdoor dining, is not compromised;</li> <li>b. adjoining and surrounding landscaping is protected from damage;</li> <li>c. safe, legible, efficient and sufficient pedestrian, cyclist and vehicular accessibility and connectivity to the wider network are maintained.</li> </ul>	<p><b>Performance Outcome.</b>  A construction management plan will be prepared by a suitably qualified consultant.</p>
<p><b>PO21</b>  Development ensures that construction and demolition activities are guided by measures that prevent or minimise adverse impacts including sleep disturbance at</p>	<p><b>AO21.1</b>  Development ensures that demolition and construction:</p> <ul style="list-style-type: none"> <li>a. only occur between 6:30am and 6:30pm Monday to Saturday, excluding public holidays;</li> </ul>	<p><b>Performance Outcome.</b>  A construction management plan will be prepared by a suitably qualified consultant.</p>



<p>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.</p>	<p>b. do not occur over periods greater than 6 months.</p> <p><b>AO21.2</b>  Development including construction and demolition does not release dust emissions beyond the boundary of the site.</p> <p><b>AO21.3</b>  Development construction and demolition does not involve asbestos-containing materials.</p>	
<p><b>PO22</b>  Development ensures that:</p> <ul style="list-style-type: none"> <li>a. construction and demolition do not result in damage to surrounding property as a result of vibration;</li> <li>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.</li> </ul> <p>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.</p>	<p><b>AO22</b>  Development ensures that the nature and scale of construction and demolition do not generate noticeable levels of vibration.</p>	<p><b>Performance Outcome.</b>  Vibration analysis report (or similar) to be provided by a suitably qualified consultant.</p>
<p><b>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</b></p>		
<p><b>PO23</b>  Development ensures that fire hydrants are:</p> <ul style="list-style-type: none"> <li>a. installed and located to enable fire services to access water safely, effectively and efficiently;</li> <li>b. suitably identified so that fire services can locate them at all hours.</li> </ul>	<p><b>AO23.1</b>  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.</p> <p><b>AO23.2</b>  Fire hydrants are identified by:</p>	<p><b>Not Applicable.</b>  The development is either a material change of use or a reconfiguring a lot.</p>



	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.	
<b>PO24</b> 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.	<b>AO24</b> 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.	<b>Not Applicable.</b> The development is either a material change of use or a reconfiguring a lot.
<b>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</b>		
<b>PO25</b> 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.	<b>AO25</b> No acceptable outcome is prescribed.	<b>Not Applicable.</b> No major electricity infrastructure or bulk water supply infrastructure was proposed as part of the development.
<b>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</b>		
<b>PO26</b> Development is sited and designed to: <ul style="list-style-type: none"> <li>a. avoid safety risks to people or property;</li> <li>b. minimise noise and visual impacts to people and property;</li> <li>c. ensure the physical integrity and operation, maintenance and expansion of the infrastructure is not compromised.</li> </ul>	<b>AO26</b> No acceptable outcome is prescribed.	<b>Performance Outcome.</b> The proposed development will ensure safety risks, noise and visual impacts, and physical integrity and operation are managed and considered through all stages of the project lifecycle.



**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.
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**Table 9.4.4.3.D—Recommended levels for continuous and impulsive vibration acceleration (m/s<sup>2</sup>) 1–80Hz for human comfort**

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



Note—

<sup>(1)</sup> Day is 7am to 10pm and night is 10pm to 7am.

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

<sup>(3)</sup> 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<sup>1.75</sup>) for human comfort**

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

Note—

<sup>(1)</sup> Day is 7am to 10pm and night is 10pm to 7am.

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

<sup>(3)</sup> 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
<b>Section A—If for a material change of use, reconfiguring a lot, operational work or building work</b> 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.		



<p><b>PO1</b>                  Development provides a stormwater management system which achieves the integrated management of stormwater to:</p> <ul style="list-style-type: none"> <li>a. minimise flooding;</li> <li>b. protect environmental values of receiving waters;</li> <li>c. maximise the use of water sensitive urban design;</li> <li>d. minimise safety risk to all persons;</li> <li>e. maximise the use of natural waterway corridors and natural channel design principles.</li> </ul> <p>Editor's note—The stormwater management system to be developed to address PO1 is not intended to require management of stormwater quality.</p>	<p><b>AO1</b>                  Development provides a stormwater management system designed in compliance with the Infrastructure design planning scheme policy.</p>	<p><b>Performance Outcome.</b>                  Refer ADG Civil Engineering Report for further design details in relation to the stormwater management plan.</p>
<p><b>PO2</b>                  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.</p>	<p><b>AO2.1</b>                  Development does not result in an increase in flood level or flood hazard on up slope, down slope or adjacent premises.</p> <p><b>AO2.2</b>                  Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.</p>	<p><b>Performance Outcome.</b>                  Refer ADG Civil Engineering Report for further design details in relation to the stormwater management plan.</p>
<p><b>PO3</b>                  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.</p>	<p><b>AO3.1</b>                  Development ensures that the location of the stormwater drainage system is contained within a road reserve, drainage reserve, public pathway, park or waterway corridor.</p> <p><b>AO3.2</b>                  Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.</p> <p><b>AO3.3</b></p>	<p><b>Performance Outcome.</b>                  Refer ADG Civil Engineering Report for further design details in relation to the stormwater management plan.</p>



	Development obtains a lawful point of discharge in compliance with the standards in the Infrastructure design planning scheme policy.	
	<b>AO3.4</b> Where on private land, all underground stormwater infrastructure is secured by a drainage easement.	
<b>PO4</b> 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.	<b>AO4.1</b> 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.  <b>AO4.2</b> Development provides sufficient area to convey run-off which will comply with the standards in the Infrastructure design planning scheme policy.	<b>Performance Outcome.</b> Refer ADG Civil Engineering Report for further design details in relation to the stormwater management plan.
<b>PO5</b> 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.	<b>AO5</b> Development ensures the design of stormwater channels, creek modifications or other infrastructure, permits terrestrial and aquatic fauna movement.	<b>Not Applicable.</b> No stormwater channels, creek modification works, bridges, culverts or major drains is proposed as part of development.
<b>PO6</b> Development ensures that location and design of stormwater detention and water quality treatment: <ul style="list-style-type: none"> <li>a. minimises risk to people and property;</li> <li>b. provides for safe access and maintenance;</li> <li>c. minimises ecological impacts to creeks and waterways.</li> </ul>	<b>AO6.1</b> Development locates stormwater detention and water quality treatment: <ul style="list-style-type: none"> <li>a. outside of a waterway corridor;</li> <li>b. offline to any catchment not contained within the development.</li> </ul> <b>AO6.2</b> Development providing for stormwater detention and water quality treatment devices are designed in compliance with the standards in the Infrastructure design planning scheme policy.	<b>Acceptable Outcome.</b> No stormwater detention is proposed as part of the development. Stormwater quality treatment devices are designed in compliance with the standards in the Infrastructure design planning scheme policy.  Refer to ADG Civil Reporting.



<p><b>PO7</b>                  Development is designed, including any car parking areas and channel works to:</p> <ul style="list-style-type: none"> <li>a. reduce property damage;</li> <li>b. provide safe access to the site during the defined flood event.</li> </ul>	<p><b>AO7.1</b>                  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).</p> <p><b>AO7.2</b>                  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.</p>	<p><b>Not Applicable.</b>                  Development does not consist of any defined flood level according to FloodWise Property reports.</p>
<p><b>PO8</b>                  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.</p>	<p><b>AO8.1</b>                  Development ensures natural waterway corridors and drainage paths are retained.</p> <p><b>AO8.2</b>                  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.</p> <p><b>AO8.3</b>                  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.</p> <p><b>AO8.4</b>                  Development ensures that the design of modifications to the existing design of new stormwater channels, creeks</p>	<p><b>Not Applicable.</b>                  The development does not involve works within natural waterway corridors, creeks, wetlands or drainage paths.</p>



	and major drains is in compliance with the standards in the Infrastructure design planning scheme policy.	
<b>PO9</b> 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.	<b>AO9</b> No acceptable outcome is prescribed.	<b>Performance Outcome.</b> Development is proposed to maintain existing stormwater runoff flow rates and similar existing condition. Refer ADG Civil Engineering Report for further design details in relation to the stormwater management plan.
<b>PO10</b> 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.	<b>AO10</b> No acceptable outcome is prescribed.	<b>Performance Outcome.</b> There is sufficient site area to accommodate an effective stormwater management system. Refer ADG Civil Engineering Report for further design details in relation to the stormwater management plan.
<b>PO11</b> Development provides for the orderly development of stormwater infrastructure within a catchment, having regard to the: <ul style="list-style-type: none"> <li>a. existing capacity of stormwater infrastructure within and external to the site, and any planned stormwater infrastructure upgrades;</li> <li>b. safe management of stormwater discharge from existing and future up-slope development;</li> <li>c. implication for adjacent and down-slope development.</li> </ul>	<b>AO11.1</b> 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.  <b>AO11.2</b> Development ensures that existing stormwater infrastructure that is undersized is upgraded in compliance with the Infrastructure design planning scheme policy.	<b>Performance Outcome.</b> Refer ADG Civil Engineering Report for further design details in relation to the stormwater management plan.
<b>PO12</b> Development provides stormwater infrastructure which: <ul style="list-style-type: none"> <li>a. remains fit for purpose for the life of the development and maintains full functionality in the design flood event;</li> <li>b. can be safely accessed and maintained cost effectively;</li> </ul>	<b>AO12.1</b> The stormwater management system is designed in compliance with the Infrastructure design planning scheme policy.  <b>AO12.2</b>	<b>Performance Outcome.</b> Refer ADG Civil Engineering Report for further design details in relation to the stormwater management plan.



c. ensures no structural damage to existing stormwater infrastructure.	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.	
<b>PO13</b> 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: <ul style="list-style-type: none"> <li>a. the environmental values and water quality objectives of waters;</li> <li>b. waterway hydrology;</li> <li>c. the maintenance and serviceability of stormwater infrastructure.</li> </ul> Note—The Infrastructure design planning scheme policy outlines the appropriate measures to be taken into account to achieve the performance outcome.	<b>AO13</b> No acceptable outcome is prescribed.	<b>Performance Outcome.</b> An erosion and sediment control plan will be provided at detailed design stage.
<b>PO14</b> Development ensures that: <ul style="list-style-type: none"> <li>a. unnecessary disturbance to soil, waterways or drainage channels is avoided;</li> <li>b. all soil surfaces remain effectively stabilised against erosion in the short and long term.</li> </ul>	<b>AO14</b> No acceptable outcome is prescribed.	<b>Performance Outcome.</b> An erosion and sediment control plan will be provided at detailed design stage.
<b>PO15</b> Development does not increase: <ul style="list-style-type: none"> <li>a. the concentration of total suspended solids or other contaminants in stormwater flows during site construction;</li> <li>b. run-off which causes erosion either on site or off site.</li> </ul>	<b>AO15</b> No acceptable outcome is prescribed.	<b>Performance Outcome.</b> An erosion and sediment control plan will be provided at detailed design stage.



<b>Section B—Additional performance outcomes and acceptable outcomes which apply to high-risk development, being one or more of the following:</b> <ul style="list-style-type: none"> <li>a. a material change of use for an urban purpose which involves greater than 2,500m<sup>2</sup> of land that: <ul style="list-style-type: none"> <li>i. will result in an impervious area greater than 25% of the net developable area; or</li> <li>ii. will result in 6 or more dwellings.</li> </ul> </li> <li>b. reconfiguring a lot for an urban purpose that involves greater than 2,500m<sup>2</sup> of land and will result in 6 or more lots;</li> <li>c. operational work for an urban purpose which involves disturbing greater than 2,500m<sup>2</sup> of land.</li> </ul>			
<b>PO16</b> Development ensures that the entry and transport of contaminants into stormwater is avoided or minimised to protect receiving water environmental values. Note—Prescribed water contaminants are defined in the <i>Environmental Protection Act 1994</i> . Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.	<b>AO16</b> Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.	<b>Performance Outcome.</b> Stormwater quality treatment devices will be provided in accordance with the Infrastructure design planning scheme policy and State Planning Policy.	
<b>PO17</b> Development ensures that: <ul style="list-style-type: none"> <li>a. the discharge of wastewater to a waterway or external to the site is avoided; or</li> <li>b. if the discharge cannot practicably be avoided, the development minimises wastewater discharge through re-use, recycling, recovery and treatment.</li> </ul> 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.	<b>AO17</b> No acceptable outcome is prescribed.	<b>Performance Outcome.</b> Stormwater quality treatment devices will be provided in accordance with the Infrastructure design planning scheme policy and State Planning Policy.	
<b>Section C—Additional performance outcomes and acceptable outcomes for assessable development for a material change of use or reconfiguring a lot</b>			
<b>PO18</b> Development protects stormwater infrastructure to ensure the following are not compromised:	<b>AO18</b> Development protects stormwater infrastructure in compliance with the following:	<b>Not Applicable.</b>	



<ul style="list-style-type: none"> <li>a. the long term infrastructure for the stormwater network in the Long term infrastructure plans;</li> <li>b. the existing and planned infrastructure for the stormwater network in the Local government infrastructure plan;</li> <li>c. the provision of long term, existing and planned infrastructure for the stormwater network which: <ul style="list-style-type: none"> <li>i. is required to service the development or an existing and future urban development in the planning scheme area; or</li> <li>ii. is in the interests of rational development or the efficient and orderly planning of the general area in which the site is situated.</li> </ul> </li> </ul> <p>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.</p>	<ul style="list-style-type: none"> <li>a. for long term infrastructure for the stormwater network, the Long term infrastructure plans;</li> <li>b. for existing and planned infrastructure for the stormwater network, the Local government infrastructure plan;</li> <li>c. the standards for stormwater drainage in the Infrastructure design planning scheme policy.</li> </ul>	
<p><b>PO19</b>  Development provides for the payment of extra trunk infrastructure costs for the following:</p> <ul style="list-style-type: none"> <li>a. for development completely or partly outside the priority infrastructure area in the Local government infrastructure plan;</li> <li>b. for development completely inside the priority infrastructure area in the Local government infrastructure plan involving: <ul style="list-style-type: none"> <li>i. trunk infrastructure that is to be provided earlier than planned in the Local government infrastructure plan;</li> <li>ii. long term infrastructure for the stormwater network which is made necessary by development that is not assumed future urban development;</li> <li>iii. other infrastructure for the stormwater network associated with development that is</li> </ul> </li> </ul>	<p><b>AO19</b>  No acceptable outcome is prescribed.</p>	<p><b>Not Applicable.</b></p>



<p>not assumed future urban development which is made necessary by the development.</p> <p>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.</p> <p>Editor's note—See section 130 Imposing Development conditions (Conditions for extra trunk infrastructure costs) of the <i>Planning Act 2016</i>.</p>		
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**Table 9.4.9.3.B—Categories of flood planning levels**

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

Notes—

<sup>(1)</sup> 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.

<sup>(2)</sup> 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 <sup>(A)</sup> 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 <sup>(B)</sup> 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 <sup>(1)</sup>	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 <sup>(2)</sup> control room	Category B
	Parking located in the building undercroft of a multiple dwelling	Category C
	Carport <sup>(4)</sup> , unroofed car park; vehicular manoeuvring area	Category D
	Essential electrical services <sup>(2)</sup> of a Class 2 or Class 3 building only	Category A <sup>(6)</sup>
	Basement parking entry <sup>(3)</sup>	Category C + 300mm
Class 5, Class 6, or Class 8	Building floor level	Category C
	Garage or car park located in the building undercroft <sup>(3)</sup>	Category C
	Carport <sup>(4)</sup> or unroofed car park	Category D
	Vehicular access and manoeuvring areas	Category D
	Basement parking entry <sup>(3)</sup>	Category C
	Essential electrical services <sup>(2)</sup>	Class 8 – Category C <sup>(6)</sup> Class 5 & 6 – Category A <sup>(6)</sup>
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 <sup>(2)</sup>	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 <sup>(3)</sup>	Category C
	Carport <sup>(4)</sup> or unroofed car park	Category D
	Vehicular access and manoeuvring areas	Category D
	Essential electrical services <sup>(2)</sup>	Category A
Class 10a	Car parking facility	Refer to the relevant building class specified in this table
	Shed <sup>(5)</sup> 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—

<sup>(1)</sup> Refer to the Building Code of Australia for definitions of building classifications.

<sup>(2)</sup> 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.

<sup>(3)</sup> 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.

<sup>(4)</sup> 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.

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

<sup>(6)</sup> 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 <sup>(1)</sup>	Minimum design levels at the crown of the road (m AHD) <sup>(2)</sup>	
	Residential development	Industrial or commercial development
Waterway <sup>(A)</sup> or open channel	1% AEP flood level	2% AEP flood level
Overland flow flooding <sup>(B)</sup>	2% AEP flood level	2% AEP flood level

Notes—

<sup>(1)</sup> 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.

<sup>(2)</sup> 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 <sup>(A)</sup> 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 <sup>(B)</sup> Overland flow flooding usually occurs when the capacity of the underground piped drainage system is exceeded and/or when the overland flow path is blocked. Localised overland flow paths generally traverse along roadways, and in the older established areas, through private properties within existing low points and gullies. A localised overland flow path is not characterised by well-defined bed and banks and the contributing catchment is generally less than 30ha.

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

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

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

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

Type of essential community infrastructure	Minimum design levels
Emergency services	0.2% AEP flood



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

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

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

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

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

Notes—



<sup>(1)</sup> 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.

<sup>(2)</sup> 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 <sup>(A)</sup> 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 <sup>(B)</sup> 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.



## Appendix E

### BCC Floodwise Property Report



# FloodWise Property Report

33 HAROLD ST, VIRGINIA 4014  
Lot 8 on SP241022



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](#).

### This property has no flood levels

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

Visit the [Be Prepared](#) page to find more information on how to prepare your home or business for potential flooding.

 **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](#).



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# Are you resilient and ready for flood?

- Sign up to the Brisbane Severe Weather Alert at [brisbane.qld.gov.au/beprepared](https://brisbane.qld.gov.au/beprepared)
- Visit [bom.gov.au](https://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	3.8	C
Maximum ground level	5.9	C
Indicative existing floor level	5.2	C



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
		Applicable

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

Coastal hazard overlay code

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

Coastal hazard overlay sub-categories
There are currently no Coastal hazard 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 Stormtide 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

**Overland flow path** - Mapping indicates this property may be located within an overland flow path. 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. It is recommended you consult a Registered Professional Engineer of Queensland (RPEQ) to determine this property's habitable floor level and flooding depth. Please refer to Council's planning scheme for further information.

**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 including 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 include:

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

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

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

- visit [brisbane.qld.gov.au/planning-building](https://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 disdains 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](https://brisbane.qld.gov.au/planning-building)

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



## Appendix F BCC Erosion Hazard Assessment





# 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 site:

☐ **A 'low' risk site**

*Best practice erosion and sediment control (ESC) must be implemented but no erosion and sediment control plans need to be submitted with the development application. Factsheets outlining best practice ESC can be found at <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)

N/A

Site address

33 Harold Street,

Virginia

QLD

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)

Zaid Alali

Certifier's signature

Zaid Alali  
2025.03.20 13:44:42+10'00'

Date

20 / 03 / 2025



## Assessment Table

**Table 1: Low Risk Test**

		Yes	No
1.1	is the area of land disturbance > 1000 m2?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.2	does any land disturbance occur in a BCC mapped waterway corridor?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.3	is there any slope on site (longer than three metres in length) before, during or after construction that is steeper than 5%?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.4	does any land disturbance occur below 5 m AHD?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.5	does development involve endorsement of a staging plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.6	is there an upstream catchment passing through the site > 1 hectare?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.2	does any land disturbance occurs in a BCC mapped waterway corridor?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.3	is there any slope on site (longer than three metres in length) before, during or after construction that is steeper than 15%?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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.



## Appendix G

### MUSIC Model Information



## MUSIC Model Information

### Introduction:

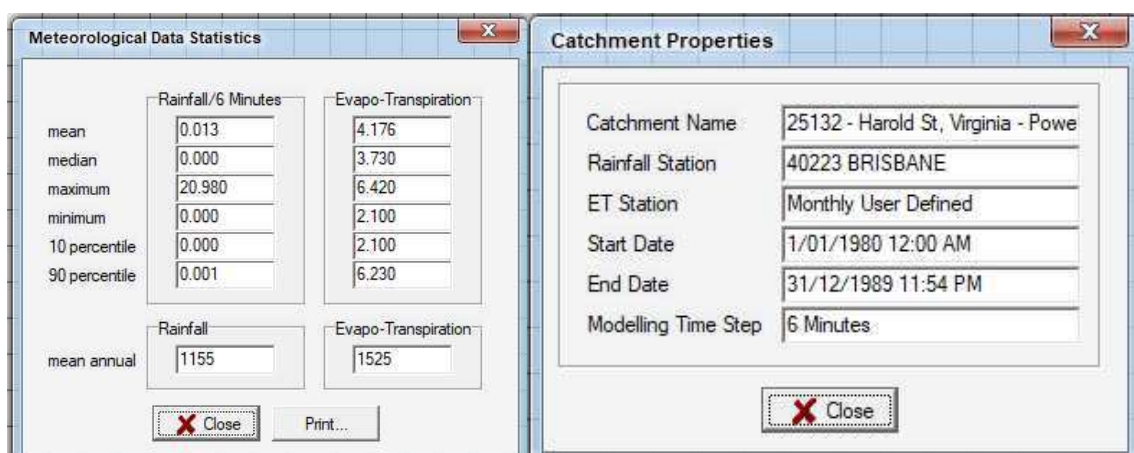
The quality of stormwater runoff and the impact of the proposed stormwater quality improvement measures were analysed using MUSIC Version 6.3.0 according to the MUSIC Modelling Guidelines Version 1.0, Water by Design 2010. A summary of the modelled catchment is presented in the table below.

Catchment I.D	Land Use	Area (m <sup>2</sup> )	% Impervious
Road 1A	Commercial	1503	100%
Landscape 1	Commercial	1092	85%
Roof 1	Commercial	3455	100%
Road 1B	Commercial	3466	100%
Landscape 2A	Commercial	440	100%
Roof 2	Commercial	3576	100%
Landscape 2B	Commercial	728	7%
Roof 3	Commercial	3100	100%

### 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 screenshot displays two windows from the MUSIC model interface:

- Meteorological Data Statistics:** This window shows statistical data for Rainfall/6 Minutes and Evapo-Transpiration. The Rainfall/6 Minutes statistics include mean (0.013), median (0.000), maximum (20.980), minimum (0.000), 10 percentile (0.000), and 90 percentile (0.001). The mean annual rainfall is 1155. The Evapo-Transpiration statistics include mean (4.176), median (3.730), maximum (6.420), minimum (2.100), 10 percentile (2.100), and 90 percentile (6.230). The mean annual evapo-transpiration is 1525.
- Catchment Properties:** This window shows the following details:
  - Catchment Name: 25132 - Harold St, Virginia - Powe
  - Rainfall Station: 40223 BRISBANE
  - ET Station: Monthly User Defined
  - Start Date: 1/01/1980 12:00 AM
  - End Date: 31/12/1989 11:54 PM
  - Modelling Time Step: 6 Minutes

➤ The nearest available 6 minute time step rainfall series to the subject site is 40223 Brisbane (East).



## Source Nodes – Pollutant Exports:

Pollutant export parameters were assigned as per Table 3.8 of the MUSIC Modelling Guidelines.

The pollutant exports parameters adopted in the MUSIC model are summarized in the table below.

**Table 3.8 Pollutant export parameters for split catchment land use (log<sub>10</sub> values)**

FLOW TYPE	SURFACE TYPE	TSS log <sup>10</sup> values		TP log <sup>10</sup> values		TN log <sup>10</sup> values	
		Mean	St. dev.	Mean	St. dev.	Mean	St. dev.
Urban residential							
Baseflow parameters	Roof	N/A	N/A	N/A	N/A	N/A	N/A
	Roads	1.00	0.34	-0.97	0.31	0.20	0.20
	Ground level	1.00	0.34	-0.97	0.31	0.20	0.20
Stormflow parameters	Roof	1.30	0.39	-0.89	0.31	0.26	0.23
	Roads	2.43	0.39	-0.30	0.31	0.26	0.23
	Ground level	2.18	0.39	-0.47	0.31	0.26	0.23
Industrial							
Baseflow parameters	Roof	N/A	N/A	N/A	N/A	N/A	N/A
	Roads	0.78	0.45	-1.11	0.48	0.14	0.20
	Ground level	0.78	0.45	-1.11	0.48	0.14	0.20
Stormflow parameters	Roof	1.30	0.44	-0.89	0.36	0.25	0.32
	Roads	2.43	0.44	-0.30	0.36	0.25	0.32
	Ground level	1.92	0.44	-0.59	0.36	0.25	0.32
Commercial							
Baseflow parameters	Roof	N/A	N/A	N/A	N/A	N/A	N/A
	Roads	0.78	0.39	-0.60	0.50	0.32	0.30
	Ground level	0.78	0.39	-0.60	0.50	0.32	0.30
Stormflow parameters	Roof	1.30	0.38	-0.89	0.34	0.37	0.34
	Roads	2.43	0.38	-0.30	0.34	0.37	0.34
	Ground level	2.16	0.38	-0.39	0.34	0.37	0.34







Properties of Min. 4 x OceanGuard

X

Location

Min. 4 x OceanGuard

Inlet Properties

Low Flow By-pass (cubic metres per sec)

0.00000

High Flow By-pass (cubic metres per sec)

0.08000

Target Element

☒ Gross Pollutants (kg/ML)

☐ Total Phosphorus (mg/L)

☐ Total Suspended Solids (mg/L)

☐ Total Nitrogen (mg/L)

Gross Pollutants (kg/ML)

Transfer Functions







☒ Concentration Based Capture Efficiency

☐ Flow Based Capture Efficiency

☐ Both

Concentration Based Capture Efficiency

Input	Output
0.0000	0.0000
14.7808	0.0000

Flow Based Capture Efficiency

Inflow (m <sup>3</sup> /s)	% Capture
0.0000	100.0000
1.0000	100.0000

Fluxes...

Notes...

X Cancel

Back

Finish



### Properties of Min. 1 x OceanGuard

**Properties of Min. 1 x OceanGuard**

Location:

**Inlet Properties**

Low Flow By-pass (cubic metres per sec):

High Flow By-pass (cubic metres per sec):

**Target Element**

☒ Gross Pollutants (kg/ML)
 ☐ Total Phosphorus (mg/L)
 ☐ Total Suspended Solids (mg/L)
 ☐ Total Nitrogen (mg/L)

**Gross Pollutants (kg/ML)**

**Transfer Functions:**

☒ Concentration Based Capture Efficiency
 ☐ Flow Based Capture Efficiency
 ☐ Both

**Concentration Based Capture Efficiency**

Input	Output
0.0000	0.0000
14.7808	0.0000

**Flow Based Capture Efficiency**

Inflow (m <sup>3</sup> /s)	% Capture
0.0000	100.0000
1.0000	100.0000



### Stormfilter:

**Properties of 12 x 690 PSORB StormFilter (SQIDEP)**

Location: **12 x 690 PSORB StormFilter (SQIDEP)**

**Inlet Properties**

Low Flow By-pass (cubic metres per sec): **0.00000**

High Flow By-pass (cubic metres per sec): **0.01512**

**Target Element**

☒ Flow (cubic metres per sec) ☐ Total Phosphorus (mg/L)

☐ Gross Pollutants (kg/ML) ☐ Total Nitrogen (mg/L)

☐ Total Suspended Solids (mg/L)

**Flow (cubic metres per sec)**

**Transfer Functions**

☒ Concentration Based Capture Efficiency ☐ Flow Based Capture Efficiency

☐ Both

**Concentration Based Capture Efficiency**

Inflow	Outflow
0.0000	0.0000
10.0000	10.0000

**Flow Based Capture Efficiency**

Inflow (m <sup>3</sup> /s)	% Capture
----------------------------	-----------

Fluxes... Notes...

**Cancel** **Back** **Finish**



**Properties of 8 x 690 PSORB StormFilter (SQIDEP)**

Location: **8 x 690 PSORB StormFilter (SQIDEP)**

**Inlet Properties**

Low Flow By-pass (cubic metres per sec): **0.00000**

High Flow By-pass (cubic metres per sec): **0.01008**

**Target Element**

☒ Flow (cubic metres per sec)
 ☐ Total Phosphorus (mg/L)
 ☐ Gross Pollutants (kg/ML)
 ☐ Total Nitrogen (mg/L)
 ☐ Total Suspended Solids (mg/L)

**Flow (cubic metres per sec)**

**Transfer Functions**

☒ Concentration Based Capture Efficiency
 ☐ Flow Based Capture Efficiency
 ☐ Both

**Concentration Based Capture Efficiency**

Inflow	Outflow
0.0000	0.0000
10.0000	10.0000

**Flow Based Capture Efficiency**

Inflow (m <sup>3</sup> /s)	% Capture
----------------------------	-----------



**Properties of 4 x 690 PSORB StormFilter (SQIDEP)**

Location: **4 x 690 PSORB StormFilter (SQIDEP)**

**Inlet Properties**

Low Flow By-pass (cubic metres per sec): 0.00000

High Flow By-pass (cubic metres per sec): 0.00504

**Target Element**

☒ Flow (cubic metres per sec)
 ☐ Total Phosphorus (mg/L)
 ☐ Gross Pollutants (kg/ML)
 ☐ Total Nitrogen (mg/L)
 ☐ Total Suspended Solids (mg/L)

**Flow (cubic metres per sec)**

**Transfer Functions**


☒ Concentration Based Capture Efficiency
 ☐ Flow Based Capture Efficiency
 ☐ Both

**Concentration Based Capture Efficiency**

Inflow	Outflow
0.0000	0.0000
10.0000	10.0000

**Flow Based Capture Efficiency**

Inflow (m <sup>3</sup> /s)	% Capture
----------------------------	-----------

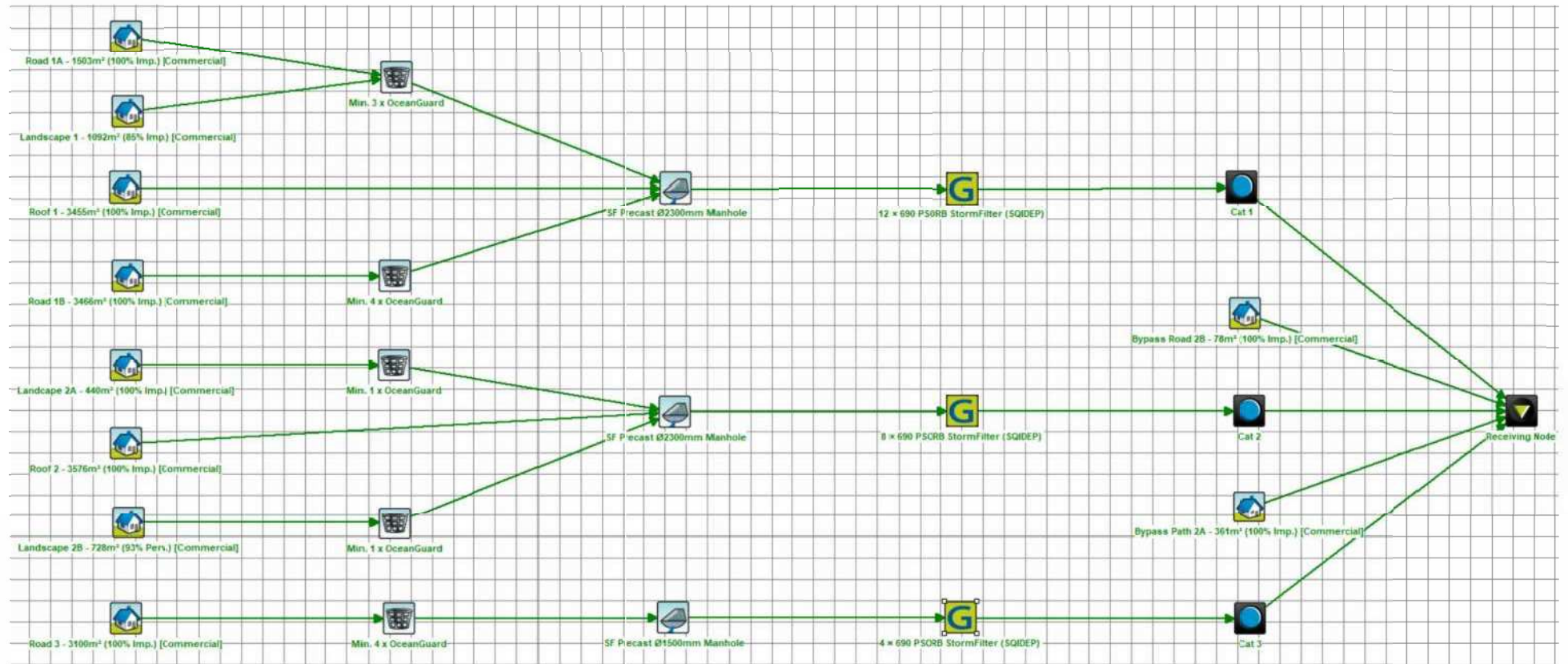


Fluxes... Notes...

✖ Cancel
⬅ Back
✔ Finish



## Treatment train:





## Appendix H

### SQID Maintenance





StormFilter

Operations & Maintenance Manual



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## Introduction

The primary purpose of stormwater treatment devices is to capture and prevent pollutants from entering waterways, maintenance is a critical component of ensuring the ongoing effectiveness of this process. The specific requirements and frequency for maintenance depends on the treatment device and pollutant load characteristics of each site. This manual has been designed to provide details on the cleaning and maintenance processes for the StormFilter as recommended by the manufacturer.

The StormFilter is designed and sized to meet stringent regulatory requirements. It removes the most challenging target pollutants (including fine solids, soluble heavy metals, oil, and soluble nutrients) using a variety of media. For more than two decades, StormFilter has helped clients meet their regulatory needs and, through ongoing product enhancements, the design continues to be refined for ease of use and improved performance.

### Why do I need to perform maintenance?

Adhering to the inspection and maintenance schedule of each stormwater treatment device is essential to ensuring that it functions properly throughout its design life.

During each inspection and clean, details of the mass, volume and type of material that has been collected by the device should be recorded. This data will assist with the revision of future management plans and help determine maintenance interval frequency. It is also essential that qualified and experienced personnel carry out all maintenance (including inspections, recording and reporting) in a systematic manner.

Maintenance of your stormwater management system is essential to ensuring ongoing at-source control of stormwater pollution. Maintenance also helps prevent structural failures (e.g. prevents blocked outlets) and aesthetic failures (e.g. debris build up), but most of all ensures the long term effective operation of the StormFilter.



## Health and Safety

Access to a StormFilter unit requires removing heavy access covers/grates, and it is necessary to enter into a confined space. Pollutants collected by the StormFilter will vary depending on the nature of your site. There is potential for these materials to be harmful. For example, sediments may contain heavy metals, carcinogenic substances or objects such as broken glass and syringes. For these reasons, all aspects of maintaining and cleaning your StormFilter require careful adherence to Occupational Health and Safety (OH&S) guidelines.

It is important to note that the same level of care needs to be taken to ensure the safety of non-work personnel. As a result, it may be necessary to employ traffic/pedestrian control measures when the device is situated in, or near areas with high vehicular/pedestrian activity.

### Personnel health and safety

Whilst performing maintenance on the StormFilter, precautions should be taken in order to minimise (or, if possible, prevent) contact with sediment and other captured pollutants by maintenance personnel. The following personal protective equipment (PPE) is subsequently recommended:

- Puncture resistant gloves
- Steel capped safety boots
- Long sleeve clothing, overalls or similar skin protection
- Eye protection
- High visibility clothing or vest

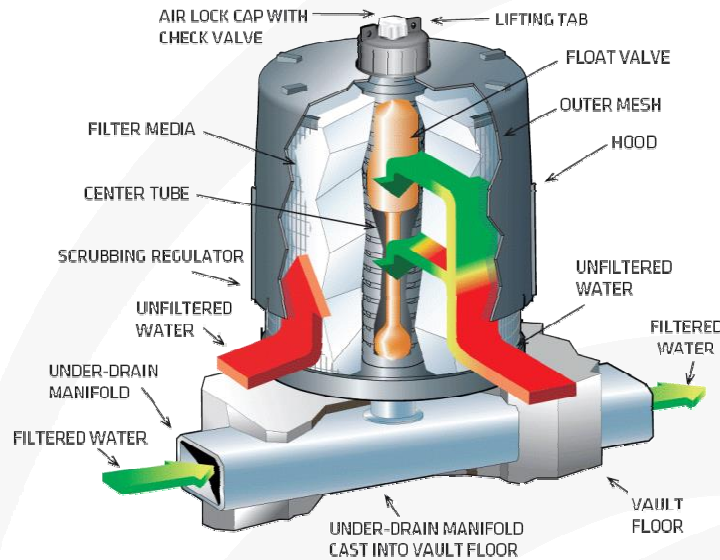
During maintenance activities, it may be necessary to implement traffic control measures. Ocean Protect recommend that a separate site-specific traffic control plan is implemented as required to meet the relevant governing authority guidelines.

Whilst some aspects of StormFilter maintenance can be performed from surface level, there will be a need to enter the StormFilter system (confined space) during a major service. It is recommended that all maintenance personnel evaluate their own needs for confined space entry and compliance with relevant industry regulations and guidelines. Ocean Protect maintenance personnel are fully trained and carry certification for confined space entry applications.



## How does it Work?

Stormwater enters the cartridge chamber, passes through the filtration media and begins filling the cartridge center tube. When water reaches the top of the cartridge the float valve opens and filtered water is allowed to drain at the designed flow rate. Simultaneously, a one-way check valve closes activating a siphon that draws stormwater evenly throughout the filter media and into the center tube. Treated stormwater is then able to discharge out of the system through the underdrain manifold pipework.



As the rain event subsides, the water level outside the cartridge drops and approaches the bottom of the hood, air rushes through the scrubbing regulators releasing the water column and breaking the siphon. The turbulent bubbling action agitates the surface of the cartridge promoting trapped sediment to drop to the chamber floor. After a rain event, the chamber is able to drain dry by way of an imperfect seal at the base of the float valve.

## Maintenance Procedures

To ensure optimal performance, it is advisable that regular maintenance is performed. Typically, the StormFilter requires an inspection every 6 months with a minor service at 12 months. Additionally, as the StormFilter cartridges capture pollutants the media will eventually become occluded and require replacement (expected media life is 1-3 years).

### Primary Types of Maintenance

The table below outlines the primary types of maintenance activities that typically take place as part of an ongoing maintenance schedule for the StormFilter.

	Description of Typical Activities	Frequency
Inspection	Visual Inspection of cartridges & chamber Remove larger gross pollutants Perform minimal rectification works (if required)	Every 6 Months
Minor Service	Evaluation of cartridges and media Removal of accumulated sediment (if required) Wash-down of StormFilter chamber (if required)	Every 12 Months
Major Service	Replacement of StormFilter cartridge media	As required



Maintenance requirements and frequencies are dependent on the pollutant load characteristics of each site. The frequencies provided in this document represent what the manufacturer considers to be best practice to ensure the continuing operation of the device is in line with the original design specification.

## Inspection

The purpose of the inspecting the StormFilter system is to assess the condition of the StormFilter chamber and cartridges. When inspecting the chamber, particular attention should be taken to ensure all cartridges are firmly connected to the connectors. It is also an optimal opportunity to remove larger gross pollutants and inspect the outlet side of the StormFilter weir.

## Minor Service

This service is designed to ensure the ongoing operational effectiveness of the StormFilter system, whilst assessing the condition of the cartridge media.

1. Establish a safe working area around the access point(s)
2. Remove access cover(s)
3. Evaluate StormFilter cartridge media (if exhausted schedule major service within 6 months)
4. Measure and record the level of accumulated sediment in the chamber  
(if sediment depth is less than 100 mm skip to step 9)
5. Remove StormFilter cartridges from the chamber
6. Use vacuum unit to removed accumulated sediment and pollutants in the chamber
7. Use high pressure water to clean StormFilter chamber
8. Re-install StormFilter cartridges
9. Replace access cover(s)

## Major Service (Filter Cartridge Replacement)

For the StormFilter system a major service is reactionary process based on the outcomes from the minor service, specifically the evaluation of the cartridge media.

Trigger Event	Maintenance Action
Cartridge media is exhausted <sup>[1]</sup>	Replace StormFilter cartridge media <sup>[2]</sup>

[1] Multiple assessment methods are available, contact Ocean Protect for assistance

[2] Replacement filter media and components are available for purchase from Ocean Protect.

This service is designed to return the StormFilter device back to optimal operating performance

1. Establish a safe working area around the access point(s)
2. Remove access cover(s)
3. By first removing the head cap, remove each individual cartridge hood to allow access to the exhausted media.
4. Utilise a vacuum unit to remove exhausted media from each cartridge
5. Use vacuum unit to remove accumulated sediment and pollutants in the chamber
6. Use high pressure water to clean StormFilter chamber
7. Inspect each empty StormFilter cartridges for any damage, rectify damage as required
8. Re-fill each cartridge with media in line with project specifications
9. Re-install replenished StormFilter cartridges
10. Replace access cover(s)



## Additional Types of Maintenance

Occasionally, events on site can make it necessary to perform additional maintenance to ensure the continuing performance of the device.

### Hazardous Material Spill

If there is a spill event on site, the StormFilter unit should be inspected and cleaned. Specifically, all captured pollutants and liquids from within the unit should be removed and disposed in accordance with any additional requirements that may relate to the type of spill event. Additionally, it will be necessary to inspect the filter cartridges and assess them for contamination, depending on the type of spill event it may be necessary to replace the filtration media.

### Blockages

In the unlikely event that flooding occurs upstream of the StormFilter system the following steps should be undertaken to assist in diagnosing the issue and determining the appropriate response.

1. Inspect the upstream diversion structure (if applicable) ensuring that it is free of debris and pollutants
2. Inspect the StormFilter unit checking the underdrain manifold as well as both the inlet and outlet pipes for obstructions (e.g. pollutant build-up, blockage), which if present, should be removed.

### Major Storms and Flooding

In addition to the scheduled activities, it is important to inspect the condition of the StormFilter after a major storm event. The focus is to inspect for damage and higher than normal sediment accumulation that may result from localised erosion. Where necessary damaged components should be replaced and accumulated pollutants should be removed and disposed.

### Disposal of Waste Materials

The accumulated pollutants found in the StormFilter must be handled and disposed of in a manner that is in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. If the filter media has been contaminated with any unusual substance, there may be additional special handling and disposal methods required to comply with relevant government/authority/industry regulations.

## Maintenance Services

With over a decade and a half of maintenance experience Ocean Protect has developed a systematic approach to inspecting, cleaning and maintaining a wide variety of stormwater treatment devices. Our fully trained and professional staff are familiar with the characteristics of each type of system, and the processes required to ensure its optimal performance.

Ocean Protect has several stormwater maintenance service options available to help ensure that your stormwater device functions properly throughout its design life. In the case of our StormFilter system we offer long term pay-as-you-go contracts, pre-paid once off servicing and replacement media for cartridges.

For more information please visit [www.OceanProtect.com.au](http://www.OceanProtect.com.au)





OceanGuard™

## Operations & Maintenance Manual



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## Introduction

The primary purpose of stormwater treatment devices is to capture and prevent pollutants from entering waterways, maintenance is a critical component of ensuring the ongoing effectiveness of this process. The specific requirements and frequency for maintenance depends on the treatment device and pollutant load characteristics of each site. This manual has been designed to provide details on the cleaning and maintenance processes as recommended by the manufacturer.

The OceanGuard technology is a gully pit basket designed to fit within new and existing gully pits to remove pollution from stormwater runoff. The system has a choice of Filtration liners, designed to remove gross pollutants, total suspended solids and attached pollutants as either a standalone technology or as part of a treatment train with our StormFilter or Jellyfish Filtration products. OceanGuard pit baskets are highly effective, easy to install and simple to maintain.

### Why do I need to perform maintenance?

Adhering to the maintenance schedule of each stormwater treatment device is essential to ensuring that it functions properly throughout its design life.

During each inspection and clean, details of the mass, volume and type of material that has been collected by the device should be recorded. This data will assist with the revision of future management plans and help determine maintenance interval frequency. It is also essential that qualified and experienced personnel carry out all maintenance (including inspections, recording and reporting) in a systematic manner.

Maintenance of your stormwater management system is essential to ensuring ongoing at-source control of stormwater pollution. Maintenance also helps prevent structural failures (e.g. prevents blocked outlets) and aesthetic failures (e.g. debris build up), but most of all ensures the long term effective operation of the OceanGuard.



## Health and Safety

Access to pits containing an OceanGuard typically requires removing (heavy) access covers/grates, but typically it is not necessary to enter into a confined space. Pollutants collected by the OceanGuard will vary depending on the nature of your site. There is potential for these materials to be harmful. For example, sediments may contain heavy metals, carcinogenic substances or sharp objects such as broken glass and syringes. For these reasons, there should be no primary contact with the waste collect and all aspects of maintaining and cleaning your OceanGuard require careful adherence to Occupational Health and Safety (OH&S) guidelines.

It is important to note that the same level of care needs to be taken to ensure the safety of non-work personnel, as a result it may be necessary to employ traffic/pedestrian control measures when the device is situated in, or near areas with high vehicular/pedestrian activity.

### Personnel health and safety

Whilst performing maintenance on the OceanGuard pit insert, precautions should be taken in order to minimise (or when possible prevent) contact with sediment and other captured pollutants by maintenance personnel. In order to achieve this the following personal protective equipment (PPE) is recommended:

- Puncture resistant gloves
- Steel capped safety boots,
- Long sleeve clothing, overalls or similar skin protection
- Eye protection
- High visibility clothing or vest

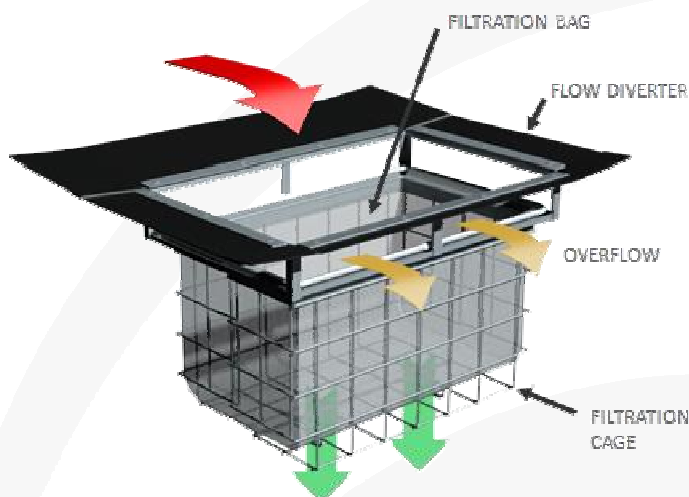
During maintenance activities it may be necessary to implement traffic control measures. Ocean Protect recommend that a separate site specific traffic control plan is implemented as required to meet the relevant governing authority guidelines.

The OceanGuard pit insert is designed to be maintained from surface level, without the need to enter the pit. However depending on the installation configuration, location and site specific maintenance requirements it may be necessary to enter a confined space occasionally. It is recommended that all maintenance personnel evaluate their own needs for confined space entry and compliance with relevant industry regulations and guidelines. Ocean Protect maintenance personnel are fully trained and carry certification for confined space entry.



## How does it Work?

OceanGuard is designed to intercept stormwater as it enters the stormwater pits throughout a site. The OceanGuard has diversion panels that sit flush with the pit walls, this ensures that as stormwater enters at the top of the pit it is directed to the middle of the insert where the Filtration bag is situated. The filtration bag allows for screening to occur removing 100% of pollutants greater than the opening of the filtration material (200micron, 1600micron bags available).



During larger rain events the large flows overflow slots in the flow diverter of the OceanGuard ensure that the conveyance of stormwater is not impeded thus eliminating the potential for surface flooding. As the flow subsides, the captured pollutants are held in the OceanGuard Filtration bag dry. The waste then starts to dry which reduces the magnitude of organic material decomposition transitioning between maintenance intervals.

## Maintenance Procedures

To ensure that each OceanGuard pit insert achieves optimal performance, it is advisable that regular maintenance is performed. Typically the OceanGuard requires 2-4 minor services annually, pending the outcome of these inspections additional maintenance servicing may be required.

### Primary Types of Maintenance

The table below outlines the primary types of maintenance activities that typically take place as part of an ongoing maintenance schedule for the OceanGuard.

	Description of Typical Activities	Frequency
Minor Service	Filter bag inspection and evaluation Removal of capture pollutants Disposal of material	2-4 Times Annually
Major Service	Filter Bag Replacement Support frame rectification	As required



Maintenance requirements and frequencies are dependent on the pollutant load characteristics of each site. The frequencies provided in this document represent what the manufacturer considers to be best practice to ensure the continuing operation of the device is in line with the original design specification.

## Minor Service

This service is designed to return the OceanGuard device back to optimal operating performance. This type of service can be undertaken either by hand or with the assistance of a Vacuum unit.

### Hand Maintenance

1. Establish a safe working area around the pit insert
2. Remove access cover/grate
3. Use two lifting hooks to remove the filtration bag
4. Empty the contents of the filtration bag into a disposal container
5. Inspect and evaluate the filtration bag
6. Inspect and evaluate remaining OceanGuard components (i.e. flow diverter, filtration cage and supporting frame)
7. Rejuvenate filtration bag by removing pollutant build up with a stiff brush, additionally the filtration bag can be washed using high pressure water
8. Re-install filtration bag and replace access cover/grate

### Vacuum Maintenance

1. Establish a safe working area around the pit insert
2. Remove access cover/grate
3. Vacuum captured pollutants from the filtration bag
4. Remove filtration bag
5. Inspect and evaluate the filtration bag
6. Inspect and evaluate remaining OceanGuard components (i.e. flow diverter, filtration cage and supporting frame)
7. Rejuvenate filtration bag by removing pollutant build up with a stiff brush, additionally the filtration bag can be washed using high pressure water
8. Re-install filtration bag and replace access cover/grate

## Major Service (Filter Bag Replacement)

For the OceanGuard system, a major service is a reactionary process based on the outcomes from the minor service.

Trigger Event from Minor Service	Maintenance Action
Filtration bag inspection reveals damage	Replace the filtration bag <sup>[1]</sup>
Component inspection reveals damage	Perform rectification works and if necessary replace components <sup>[1]</sup>

[1] Replacement filtration bags and components are available for purchase from Ocean Protect.



## Additional Reasons of Maintenance

Occasionally, events on site can make it necessary to perform additional maintenance to ensure the continuing performance of the device.

### Hazardous Material Spill

If there is a spill event on site, all OceanGuard pits that potentially received flow should be inspected and cleaned. Specifically all captured pollutants from within the filtration bag should be removed and disposed in accordance with any additional requirements that may relate to the type of spill event. All filtration bags should be rejuvenated (replaced if required) and re-installed.

### Blockages

The OceanGuards internal high flow bypass functionality is designed to minimise the potential of blockages/flooding. In the unlikely event that flooding occurs around the stormwater pit the following steps should be undertaken to assist in diagnosing the issue and implementing the appropriate response.

1. Inspect the OceanGuard flow diverter, ensuring that they are free of debris and pollutants
2. Perform a minor service on the OceanGuard
3. Remove the OceanGuard insert to access the pit and inspect both the inlet and outlet pipes, ensuring they are free of debris and pollutants

### Major Storms and Flooding

In addition to the scheduled activities, it is important to inspect the condition of the OceanGuard pit insert after a major storm event. The inspection should focus on checking for damage and higher than normal sediment accumulation that may result from localised erosion. Where necessary damaged components should be replaced and accumulated pollutants disposed.

### Disposal of Waste Materials

The accumulated pollutants found in the OceanGuard must be handled and disposed of in a manner that is in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. If the filtration bag has been contaminated with any unusual substance, there may be additional special handling and disposal methods required to comply with relevant government/authority/industry regulations.

## Maintenance Services

With over a decade and a half of maintenance experience Ocean Protect has developed a systematic approach to inspecting, cleaning and maintaining a wide variety of stormwater treatment devices. Our fully trained and professional staff are familiar with the characteristics of each type of system, and the processes required to ensure its optimal performance.

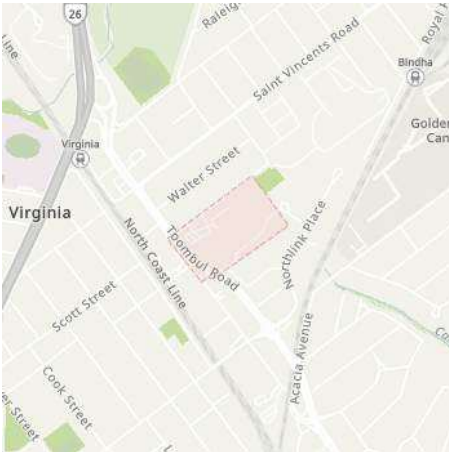
Ocean Protect has several stormwater maintenance service options available to help ensure that your stormwater device functions properly throughout its design life. In the case of our OceanGuard system we offer long term pay-as-you-go contracts, pre-paid once off servicing and replacement filter bags.

For more information please visit [www.OceanProtect.com.au](http://www.OceanProtect.com.au)



## Appendix I BYDA Information



[Review responses online](#) ↗


Received 11 of 11 responses

**All responses received**

33 Harold Street, Virginia QLD 4014

Job dates

07/02/2025 → 21/02/2025

These plans expire on

28 Feb 2025

Lodged by

Chanlyly Chea

Authority	Status	Page
✉ BYDA Confirmation		2
🏢 AARNet Pty Ltd Qld	Received	4
🏢 APA Group Gas Networks (70710)	Received	19
🏢 Brisbane City Council	Received	76
🏢 Energex QLD	Received	86
🏢 NBN Co Qld	Received	133
🏢 Optus and or Ucomm Qld	Received	147
🏢 Powerlink Qld	Received	170
🏢 Queensland Urban Utilities	Received	179
🏢 Reef Networks	Received	190
🏢 Telstra QLD South East	Received	194
🏢 Torus Networks Pty Ltd	Received	203





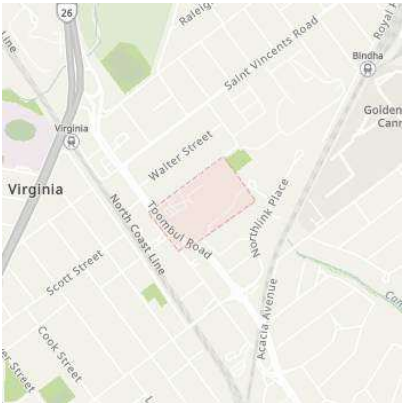
Contact Details

Contact	Contact number	Company	Enquirer ID
Chanlyly Chea	0451 693 495	-	3306639
Email	Address		
cchea@adgce.com	596 Milton Road Toowong QLD 4066		

Job Site and Enquiry Details

**WARNING:** The map below only displays the location of the proposed job site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.

Enquiry date	Start date	End date	On behalf of	Job purpose	Locations	Onsite activities
31/01/2025	07/02/2025	21/02/2025	Private	Design	Private	Planning & Design



Check that the location of the job site is correct. If not, you must submit a new enquiry.

If the scope of works change or plan validity dates expire, you must submit a new enquiry.

Do NOT dig without plans. Safe excavation is your responsibility. If you don't understand the plans or how to proceed safely, please contact the relevant asset owners.

User Reference	Address	Notes/description
33 Harold Street	33 Harold Street Virginia QLD 4014	-

Your Responsibility and Duty of Care

- **Lodging an enquiry does not authorise project commencement.** Before starting work, you must obtain all necessary information from all affected asset owners.
- If you don't receive plans within 2 business days, contact the asset owner & quote their sequence number.
- Always follow the 5Ps of Safe Excavation (page 2), and locate assets before commencing work.
- Ensure you comply with State legislative requirements for Duty of Care and safe digging.
- If you damage an underground asset, you MUST advise the asset owner immediately.
- By using the BYDA service, you agree to the [Privacy Policy](#) and [Term of Use](#).
- For more information on safe digging practices, visit [www.byda.com.au](http://www.byda.com.au)

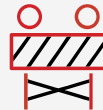
Asset Owner Details

Below is a list of asset owners with underground infrastructure in and around your job site. It is your responsibility to identify the presence of these assets. Plans issued by Members are indicative only unless specified otherwise. Note: not all asset owners are registered with BYDA. You must contact asset owners not listed here directly.

Referral ID (Seq. no)	Authority Name	Phone	Status
250319428	AARNet Pty Ltd Qld	1300 275 662	NOTIFIED
250319433	APA Group Gas Networks (70710)	1800 085 628	NOTIFIED
250319429	Brisbane City Council	(07) 3403 8888	NOTIFIED
250319430	Energex QLD	13 12 53	NOTIFIED
250319424	NBN Co Qld	1800 687 626	NOTIFIED
250319426	Optus and or Uecomm Qld	1800 505 777	NOTIFIED
250319434	Powerlink Qld	(07) 3866 1313	NOTIFIED
250319432	Queensland Urban Utilities	13 26 57	NOTIFIED
250319427	Reef Networks	1800 336 886	NOTIFIED
250319431	Telstra QLD South East	1800 653 935	NOTIFIED
250319425	Torus Networks Pty Ltd	0404 010 658	NOTIFIED

END OF UTILITIES LIST





## Plan

Plan your job. Use the BYDA service at least one day before your job is due to begin, and ensure you have the correct plans and information required to carry out a safe project.

## Prepare

Prepare by communicating with asset owners if you need assistance. Look for clues onsite. Engage a skilled Locator.

## Pothole

Potholing is physically sighting the asset by hand digging or hydro vacuum extraction.

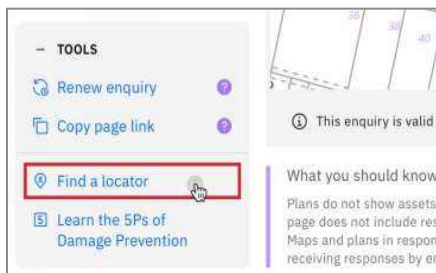
## Protect

Protecting and supporting the exposed infrastructure is the responsibility of the excavator. Always erect safety barriers in areas of risk and enforce exclusion zones.

## Proceed

Only proceed with your excavation work after planning, preparing, potholing (unless prohibited), and having protective measures in place.

## Engage a skilled Locator



When you lodge an enquiry you will see skilled Locators to contact

Visit the Certified Locator website directly and search for a locator near you

[certloc.com.au/locators](http://certloc.com.au/locators)

## Book a FREE BYDA Session



BYDA offers two different sessions to suit you and your organisation's needs. The free sessions are offered in two different formats - online and face-to-face:

1. **Awareness Session:** Understand the role of BYDA, safe excavation practices, complying with asset-owner instructions, and the consequences of damages. Learn how to mitigate and avoid potential damage and harm and ensure a safe work environment.
2. **Plan Reading Session:** Develop the skills to interpret asset owners' plans, legends, and symbols effectively. Understand the complexities of plan interpretation to ensure smooth project execution.

To book a session, visit:

[byda.com.au/contact/education-awareness-enquiry-form/](http://byda.com.au/contact/education-awareness-enquiry-form/)

**BOOK NOW**



Referral

250319428

Member Phone

1300 275 662

Responses from this member

Response received Fri 31 Jan 2025 10.19am

File name	Page
Response Body	5
250319428 - AARNet Plan.pdf	7
250319428 - AARNet Plan.pdf	12
AARNet - Guidelines for Fibre Optic.pdf	17



Date: 31 Jan 2025

To: Chanlyly Chea

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**Please DO NOT SEND A REPLY to this email as it has been automatically generated and replies are not monitored.**

Thank you for your BYDA enquiry (referenced below)—this letter is in relation to the proposed work at location detailed below. AARNet has assets in the area but not in the local vicinity of the proposed work.

<b>SEQUENCE NO.:</b>	250319428
<b>JOB NO.:</b>	38537442
<b>LOCATION:</b>	33 Harold Street Virginia QLD 4014
<b>COMMENCEMENT DATE:</b>	07 Feb 2025

Attached is a map indicating the location of the enquiry area and an approximate location of AARNet's underground infrastructure in the local vicinity.

There may be additional AARNet assets in this area that are contained within Telstra duct. No work is to take place until plans have been obtained from Telstra and reviewed as necessary.

Any information provided is valid for 28 days from the date of issue of this document.

**WARNING: When working in the vicinity of AARNet's underground infrastructure you have a legal Duty of Care that must be observed.**

Please review the map and if you have any further concerns, contact the AARNet NOC on [1300 APL NOC](#).

To best manage the risk of damage and liability, we recommend that you engage the services of a [BYDA Certified Locator](#)

#### Important Notice

Where AARNet plans have been attached, they are indicative of the position of AARNet Pty Ltd's (AARNet) installation/s **only**. Services belonging to other third parties are not included on these plans.

These plans have been prepared solely for the use of AARNet and any reliance placed on these plans by you is entirely at your own risk. The plans may show the position of our assets relative to fences, buildings, etc, as they existed at the time the fibre, etc, was installed. The plans may not have been updated to take account of any subsequent change in the location or style of those features since the time at which the plans were initially prepared.

AARNet makes no warranty as to the accuracy or completeness of the enclosed plans and does not assume any duty of care to you nor any responsibility for the accuracy, adequacy, suitability or completeness of the plans or for any error, omission, lack of detail, transmission



failure or corruption in the information provided. AARNet does not accept any responsibility for any loss that you or anyone else may suffer in connection with the provision of these plans, however that loss may arise (including whether or not arising from the negligence of AARNet, its employees, agents, officers or contractors).

The recipient of these plans must use their own care and diligence in carrying out their works and must carry out further surveys to locate services at their work site. Persons excavating or carrying out other earthworks will be held responsible for any damage caused to AARNet's installations.

**Disclaimer:** While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither AARNet 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.

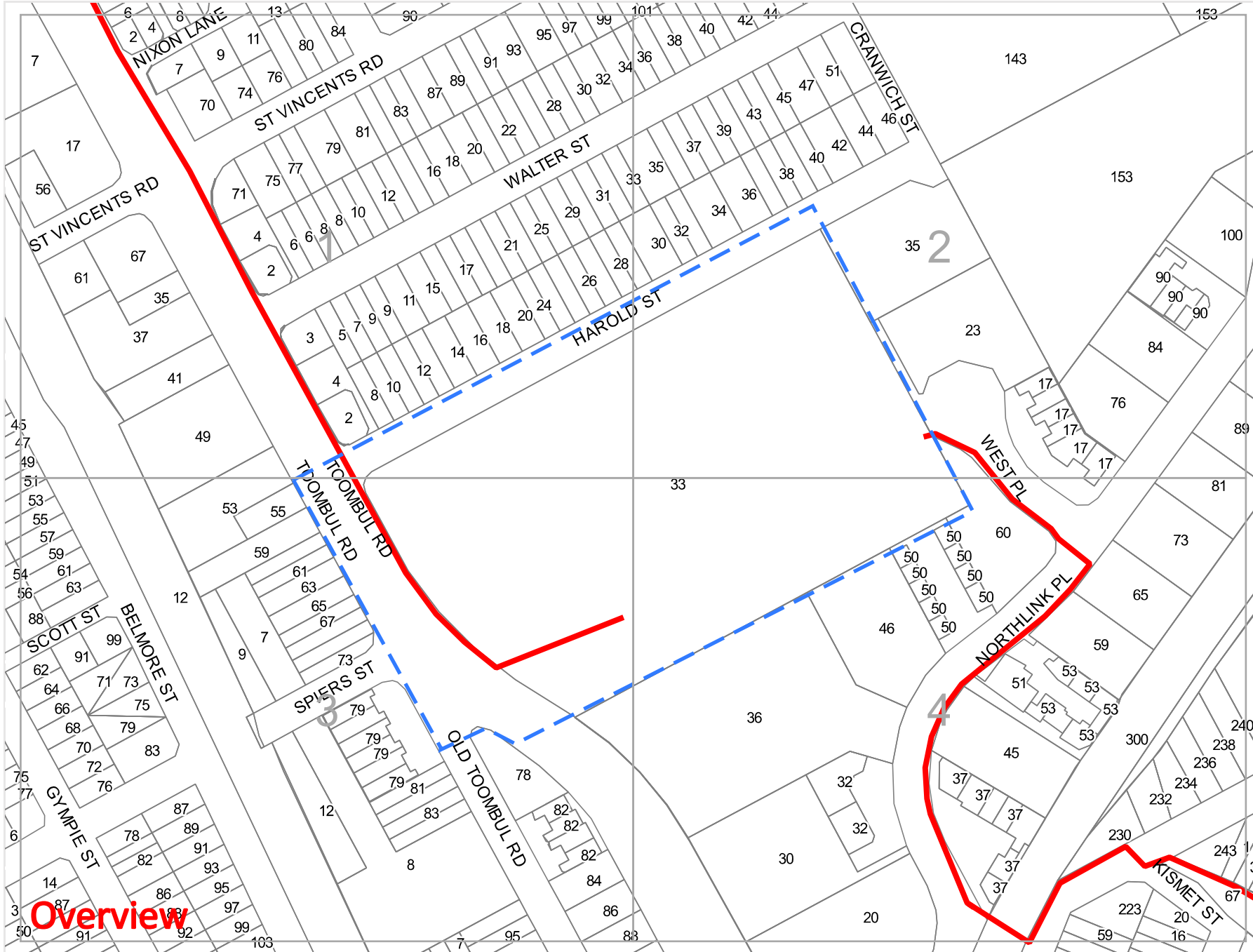
If you are unable to launch any of the files for viewing and printing, you may need to download and install free viewing and printing software such as [Adobe Acrobat Reader \(for PDF files\)](#).

PelicanCorp

Compiled with TicketAccess by PelicanCorp







**Legend**

-  Enquiry Area
-  AARNet Fibre Optic Assets
-  AARNet Power Assets
-  Cadastre



Scale: 1:3075  
Expires: 27 Feb 2025

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**Legend**

-  Enquiry Area
-  AARNet Fibre Optic Assets
-  AARNet Power Assets
-  Cadastre



Scale: 1:1500  
Expires: 27 Feb 2025





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**Tile No: 1**





#### Legend

-  Enquiry Area
-  AARNET Fibre Optic Assets
-  AARNET Power Assets
-  Cadastre

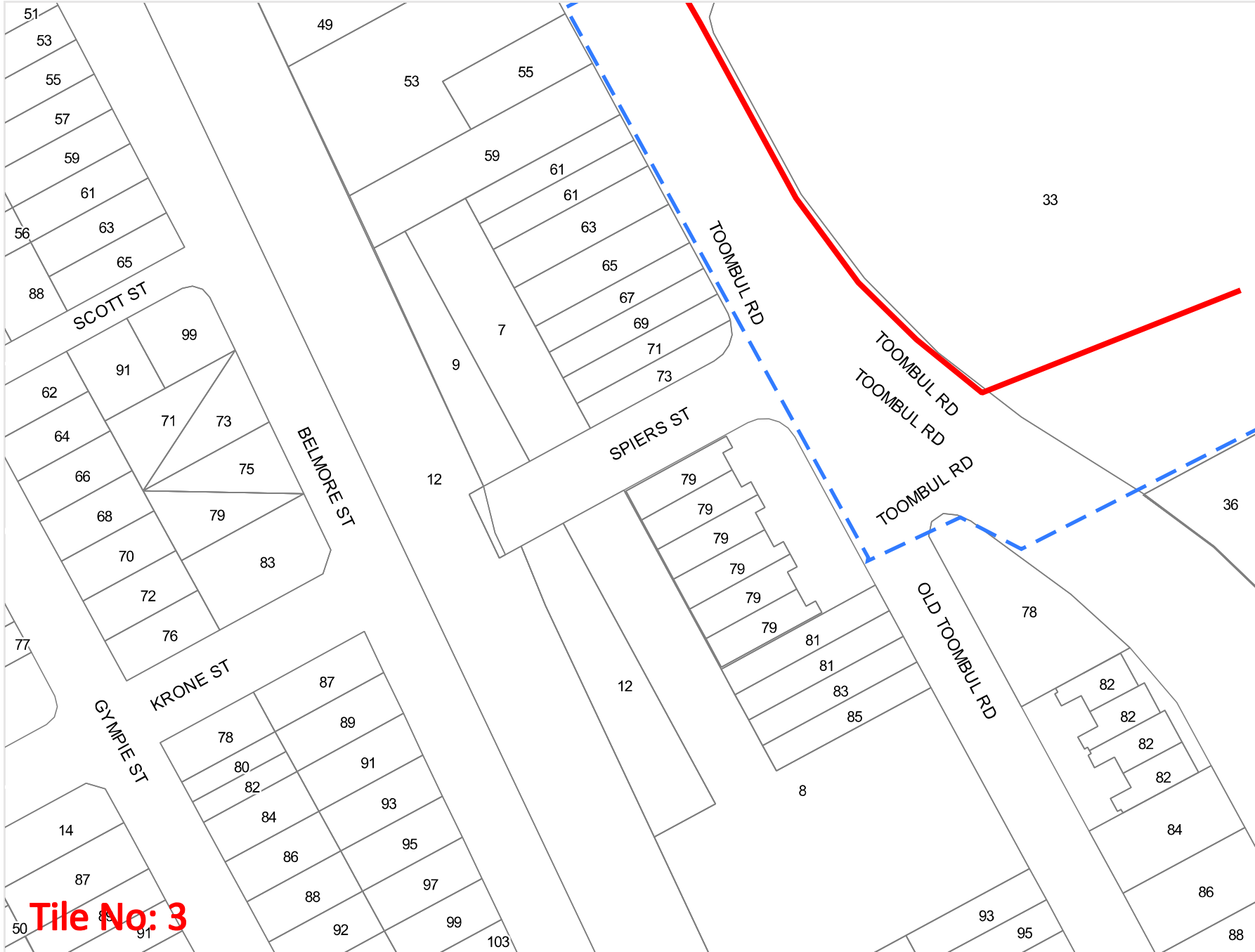


Scale: 1:1500  
Expires: 27 Feb 2025





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Tile No: 2





#### Legend

-  Enquiry Area
-  AARNET Fibre Optic Assets
-  AARNET Power Assets
-  Cadastre



Scale: 1:1500  
Expires: 27 Feb 2025





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**Tile No: 3**





**Legend**

-  Enquiry Area
-  AARNET Fibre Optic Assets
-  AARNET Power Assets
-  Cadastre

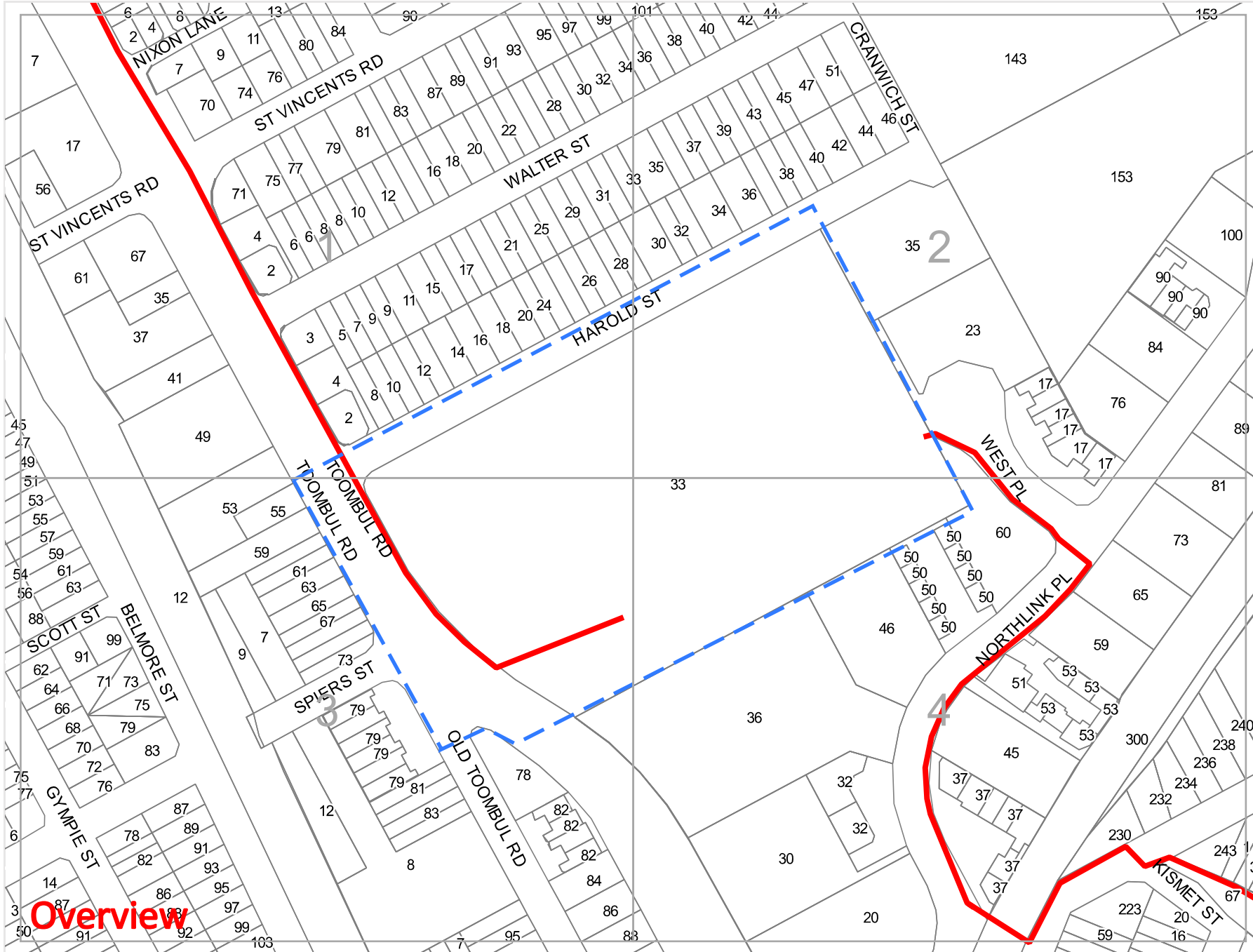


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**Tile No: 4**





**Legend**

-  Enquiry Area
-  AARNet Fibre Optic Assets
-  AARNet Power Assets
-  Cadastre



Scale: 1:3075  
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**Legend**

-  Enquiry Area
-  AARNET Fibre Optic Assets
-  AARNET Power Assets
-  Cadastre



Scale: 1:1500  
Expires: 27 Feb 2025

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**Legend**

-  Enquiry Area
-  AARNET Fibre Optic Assets
-  AARNET Power Assets
-  Cadastre

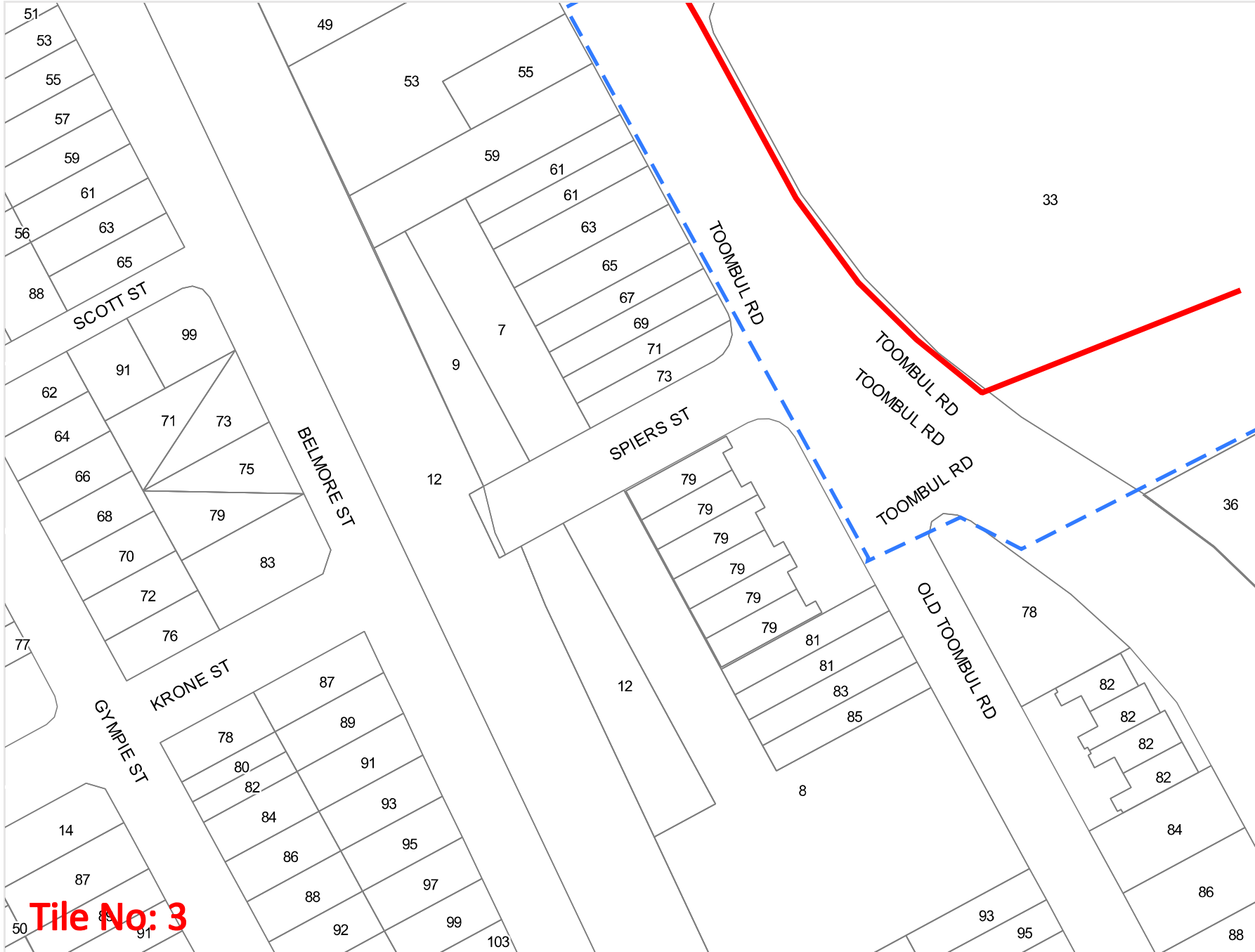


Scale: 1:1500  
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**Tile No: 2**





**Legend**

-  Enquiry Area
-  AARNET Fibre Optic Assets
-  AARNET Power Assets
-  Cadastre



Scale: 1:1500  
Expires: 27 Feb 2025





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**Tile No: 3**





#### Legend

-  Enquiry Area
-  AARNET Fibre Optic Assets
-  AARNET Power Assets
-  Cadastre



Scale: 1:1500  
Expires: 27 Feb 2025

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**Tile No: 4**



## Guidelines for digging in the vicinity of AARNet Fibre Optic infrastructure

### **REQUIREMENTS FOR ALL AREAS**

Under no circumstances shall construction, digging or excavating work entailing crossing AARNet plant be carried out without first exposing or locating the AARNet asset by an accredited locator and under the supervision of an accredited plant location contractor.

Manual pot-holing needs to be undertaken with extreme care, common-sense and employing techniques least likely to damage cables. For example, orientate shovel blades and trowels parallel to the cable rather than digging across the cable.

Visual location of asset must be carried out by hand digging or using non-destructive water jet method (pot holing) where construction activities may damage or interfere with AARNet assets.

The following minimum clearances must be maintained between mechanical construction activity and the located AARNet asset.

<b>Jackhammers / Pneumatic Breakers</b>	Not within 1.0m of actual location
<b>Vibrating Plate or Wacker Packer Compactor</b>	Not within 0.5m of actual location 300mm compact clearance before compactor can be used over AARNet conduits. 750mm compact clearance cover before compactor can be used Over AARNet Direct Buried cable
<b>Boring Equipment (in-line, horizontal and vertical)</b>	Not within 5.0m of actual location without supervision of accredited plant location contractor onsite  OR  AARNet asset must exposed via hand dig or nondestructive water jet method (pot holing).  AND  AARNet asset must not be crossed without first exposing the asset at the crossing point and not without an accredited plant location contractor representative onsite
<b>Heavy vehicle Traffic (over 3 tonnes)</b>	Not to be driven over AARNet conduits or assets with less than 600mm of cover.  Depth to be verified via hand digging
<b>Mechanical Excavators, Farm ploughing, Boring, Tree removal, fencing</b>	Not within 1.0m of actual location. Constructor to hand dig or use non-destructive water jet method (pot holing) and expose asset

General Enquires **1300 APL NOC (1300 275 662)**

*To resubmit or change the nominated search area contact BYDA via [www.1100.com.au](http://www.1100.com.au)*



## **REQUIREMENTS FOR URBAN AREAS**

Under no circumstances shall construction, digging or excavating work be carried out: within 1.5m of AARNet assets without first locating and identifying the AARNet asset by an accredited locator and under the supervision of an accredited plant location contractor.

## **REQUIREMENTS FOR RURAL AREAS**

Under no circumstances shall construction, digging or excavating work be carried out within 10m of AARNet plant be carried out without first locating and identifying the AARNet asset by an accredited locator and under the supervision of an accredited plant location contractor.

## **ASSET RELOCATIONS**

**You are not permitted to relocate, modify or alter any AARNet assets under any circumstances. Please contact AARNet Infrastructure Development Group via email [apl-dig@aarnet.edu.au](mailto:apl-dig@aarnet.edu.au) for all enquiries relating to the relocation of AARNet assets.**

## **DAMAGE**

AARNet will seek Compensation for any loss caused by damage to its assets. Damage to any AARNet asset must be immediately reported to AARNet NOC on 1300 APL NOC (1300 275 662).

## **FURTHER ASSISTANCE**

Assistance can be obtained by contacting AARNet NOC on 1300 APL NOC (1300 275 662) Where an on-site location is provided by an accredited locator, the owner is responsible for all costs associated with hand digging or use of non-destructive water jet method (pot holing) to visually locate AARNet assets. If plant location drawings or visual location of AARNet assets by digging reveals that the location of AARNet plant is situated wholly or partly within the owner work area, then AARNet Infrastructure Development Group

**[apl-dig@aarnet.edu.au](mailto:apl-dig@aarnet.edu.au) must be contacted to discuss possible engineering solutions.**



APA Group Gas Networks (70710)

Referral  
250319433

Member Phone  
1800 085 628

Responses from this member

Response received Fri 31 Jan 2025 10.17am

File name	Page
Response Body	20
400-STD-AM-0001_2 Guidelines for Works Near Existing Gas Assets.pdf	21
250319433.pdf	62



**PLEASE NOTE:** This is an automated response. Please **DO NOT REPLY to this email.** If you require further information in relation to this Before You Dig response, please contact  
BYDA\_APA@apa.com.au

**Enquiry Details:**

Impact	affected
Sequence Number	250319433
Enquirer Id	3306639
Activity	Planning and Design
Job Number	38537442
User Reference	33 Harold Street
Message	

**Site Details:**

Address	33 Harold Street Virginia QLD 4014
---------	--

**Enquirers Details:**

Contact	Chanlyly Chea
Company	
Email	cchea@adgce.com
Phone	+61451693495
Address	596 Milton Road Toowong QLD 4066

APA Group





# Guidelines for Works Near Existing Gas Assets

## 400-STD-AM-0001

Revision 2

OWNER NAME:	Alan Creffield
OWNER TITLE:	Manager of Integrity
APPROVER NAME:	Anastasia Coutie
APPROVER TITLE:	Team Lead – 3 <sup>rd</sup> Party Engagement
APPROVAL SIGNATURE:	
APPROVAL DATE:	18/08/2023

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## DOCUMENT CONTROL & APPROVAL INFORMATION

### Summary of Changes

Below is a brief summary of the changes made to the document since the previous issued version.

Revision	Description	Date	Author
0.0	Issue for Use	29.06.2018	Matthew Read
1.0	Issued for Use – document periodic update / major overhaul	01.03.2022	Kahil Parsons
2.0	Removal of incorrect table 2 references to 1. proximity of HV cables 2. Updating separation distances to AS2885.3 BYDA reference update Table 4 Note	16.08.2023	Dale Russell

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1. The information contained in this document relates only to APA Networks operated assets (as defined in this document) and does not relate to any other utility assets owned or operated by APA, such as APA Gas Transmission Pipelines.
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The purpose of this document is to provide guidelines for third parties planning to install new infrastructure or conduct works near existing APA Networks (**APA**) operated assets.

It is intended that this document will be provided to third parties proposing works around existing gas assets for their use during the design and planning phase following initial planning BYDA enquiries. This document does not provide authorisation to undertake the works but provides APA requirements to ensure that any review and acceptance of proposed works is completed as quickly as possible.



# 1 INTRODUCTION

## 1.1 Scope of this Document

This document addresses APA's requirements for considering how a third party's proposed works and APA managed works may impact APA Networks operated assets under the following parts:

**Part 1** – APA Notification and Authorisation Requirements

**Part 2** – Design and Asset Protection Requirements

**Part 3** – Construction and Land Use Requirements

**Part 4** – Alteration of Existing Gas Assets

APA Networks acts as the asset operator on behalf of entities Australian Gas Networks (**AGN**), Allgas, APA, Origin and Queensland Nitrates (**QNP**) and operates in New South Wales, Northern Territory, Queensland, South Australia and Victoria. The criteria provided in this document only applies to the assets managed by APA Networks on behalf of these companies.

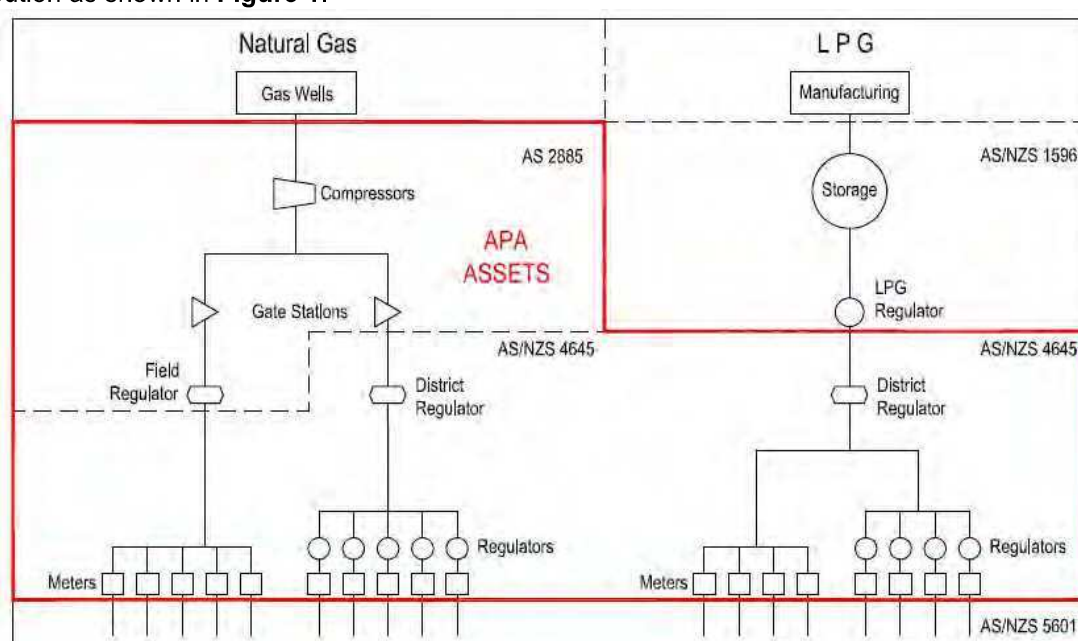
APA also owns and operates natural gas transmission infrastructure on all mainland states and territories of Australia. These assets are operated by a separate APA entity and are out of scope for this document.

A glossary of all terms and abbreviations used in this document is contained in **Section 7**.

A list of all relevant external standards and APA reference documents is contained in **Section 8**.

## 1.2 Asset Types

APA Networks' operated gas assets include buried pipe, above and below ground stations (e.g. pressure regulation, valves, meters), electrical cables, cathodic protection systems (e.g. test points, anode beds), pits and electrical cabinets. Depending on the gas type and the operating pressure, gas assets are classified as natural gas transmission, natural gas distribution and Liquefied Petroleum Gas (**LPG**) distribution as shown in **Figure 1**.



**Figure 1 Asset Types and Standards Operated by APA Networks**

### 1.2.1 Natural Gas Transmission

Natural gas transmission pressure assets operate at pressures above 1,050 kPag, and are generally used for transporting large quantities of gas across country. Design, construction and operation of these assets is governed by the AS 2885 suite of Australian Standards (**AS**).

Due to the higher pressure and energy density, there are severe safety, supply and environmental consequences which can result from third party interference. Hence, more stringent requirements and controls are applied to third party works in the vicinity of these assets.



Buried transmission pipelines are constructed from coated steel pipe where the appearance can vary depending on the year of construction, but will generally appear as yellow, black or grey when physically exposed.

### **1.2.2 Natural Gas Distribution**

Natural gas distribution pressure assets operate at pressures below or equal to 1,050 kPag from offtakes of transmission pressure assets, and are generally used to supply consumers such as businesses and homes. Design, construction and operation of these assets is governed by the AS/NZS 4645 suite of Australian Standards.

Due to the lower energy density compared to transmission assets, less stringent requirements and controls are applied to distribution assets. Some distribution assets are deemed critical by APA Networks due to the safety and supply implications that may arise due to a third party strike. These critical distribution assets will be defined on BYDA responses, and some of the controls which are applied to transmission pressure assets (e.g. permit and site watch) will be required.

Buried distribution pressure pipes may be constructed from the following materials and physical appearances when exposed:

- Cast Iron (black);
- Polyethylene (PE) (yellow or black with yellow stripes);
- Steel coated or uncoated (generally yellow, black or grey); and
- Other plastic such as Polyvinyl Chloride (PVC) or nylon (yellow).

Some legacy materials such as cast iron and nylon may require additional protection during construction works due to the unpredictable nature of the materials.

### **1.2.3 LPG Distribution**

LPG distribution pressure assets operate at pressures below 140 kPag from storage compounds and are generally used to supply consumers such as businesses and homes in parts of Queensland, South Australia and Northern Territory. Design, construction and operation of these assets is governed by the AS/NZS 4645 suite of Australian Standards.

**Additional safety considerations are required in addition to the requirements for natural gas, as LPG is heavier than air and will pool at the leak point and can accumulate in a trench or excavation.**

The same materials used for buried distribution pressure pipes (**Section 1.2.2**) may be used on LPG distribution networks.

## **1.3 Damage and Emergencies**

If you smell gas or damage has occurred, or is suspected, on any gas asset call APA emergency number **1800 GAS LEAK (1800 427 532) or 1800 808 526 for LPG assets.**

Any unreported damage has the potential to escalate and endanger public safety.

Where damage has resulted in a release of gas, you are advised to take the following immediate action:

- Clear the area of all people. Do not under any circumstance re-enter the damage area;
- Where safe to do so, shut off or remove all ignition sources and devices in the area e.g. naked flames, vehicle engines, power tools, mobile phones;
- Do not attempt to stop the flow or repair the damage;
- Allow the gas to vent to air; and
- Once clear of the area, contact the emergency number **1800 427 532 or 1800 808 526 for LPG assets.**

The conditions in this document or as provided by APA Networks are intended to protect the gas assets as well as keep safe any construction crews or general public in the vicinity. Depending on the circumstances, some variation to the conditions in this document may be required or may be provided by an approved APA Networks site watch representative. It is legislated in all jurisdictions that the direction provided by APA is followed.



## **1.4 General Duty of Care and Responsibility to Obtain Information**

Anybody working near a gas asset, or responsible for such work, has a duty of care to exercise caution, to maintain a safe working environment and to meet requirements of all relevant laws and Occupational Health and Safety legislation.

For general enquiries about results from BYDA please contact:

- [DBYDNetworksAPA@apa.com.au](mailto:DBYDNetworksAPA@apa.com.au) for Northern Territory, South Australia, Southern New South Wales and Victoria, and;
- [PermitsQLD@apa.com.au](mailto:PermitsQLD@apa.com.au) for Queensland and Northern NSW (incl. Tamworth).

The third party shall make contact with APA through the BYDA process if any clarification is required to determine the approval processes for any proposed land use changes (within the Measurement Length), design works and construction activities within 3 m of a gas asset or within a pipeline easement.

Any works proposed by the third party will only be authorised if APA is satisfied that the works will not affect the integrity of the APA Networks operated assets.

Any person undertaking work near an APA Networks operated asset, or responsible for such work, must ensure that they familiarise themselves with APA requirements.

Working around any gas asset, especially transmission pressure pipelines, without appropriate planning and controls as specified by APA Networks can be extremely dangerous. Damage to a gas asset could result in:

- Possible explosion and fire with the risk of loss of equipment, property, personal injury, and death;
- Loss of gas supply to thousands of customers;
- Substantial repair and gas restoration liability costs to the authority or principal responsible; and,
- Prosecution under the relevant laws governing pipeline and gas safety.

**Prior to the commencement of any works within the Protected Zone of transmission pressure or critical gas assets, the Contractor performing the work must receive an Authority to Work Permit (ATWP).**

Any works within the Protected Zone of critical assets must comply with any conditions attached to an ATWP and depending upon the nature of the asset and works supported by an approved construction methodology.

Written authorisation in the form of the ATWP must be kept on site at all times, and the holder of the authorisation must comply with all the conditions of the ATWP. The performance of any works near critical APA Networks operated assets without a valid ATWP and full compliance with its conditions will constitute a safety incident and may also result in an infringement notice and associated penalties issued by the regulator of the APA Networks asset.

### **1.4.1 Additional Transmission Pressure Pipeline Requirements**

Where the works proposed by the third party may result in a change in land use within the Measurement Length for a transmission pressure pipeline (as defined in AS/NZS 2885.6 for Pipelines – Gas and Liquid Petroleum), such works may also be subject to formal approval requirements through APA Networks and applicable local and state government planning processes. This may also require a Safety Management Study (**SMS**) Report to be completed and approved by APA Networks. The SMS Report is generated from an SMS workshop involving an SMS facilitator, the third party and APA Networks. APA Networks is the owner of the SMS Report and any resulting recommendations/ actions must be implemented to the satisfaction of APA prior to the commencement of any physical works.

Certain categories of development/ land use change are not appropriate to be located within the Measurement Length of transmission pressure pipelines. In certain circumstances, the otherwise unacceptable risks associated with such developments may be alleviated with the aid of installing protective slabbing over the asset or undertaking other protection and mitigation measures.



## 2 PROTECTION PROCESS

APA is committed to working cooperatively with third parties to ensure that existing gas assets will be appropriately protected from any proposed works.

The process to be followed for any proposed works is outlined in **Table 1**. This table cross references the relevant section of this document which provides any specific requirements for each gas asset classification. The steps in this table are to be followed in conjunction with the process outlined by BYDA<sup>1</sup>, a flow chart is also provided in **APPENDIX A**.

**Table 1 Protection Process Summary**

Section	Step	Purpose
3	<b>Notification and Authorisation</b>	<p><b>Identify and locate existing gas assets in the vicinity of any proposed works.</b></p> <p>Submit BYDA requests to obtain indicative plans of gas assets.</p> <p>Notify APA Networks and obtain approval to verify the exact position by physically proving the position of gas assets at the cost of the third party.</p>
4	<b>Design and Protection Requirements</b>	<p><b>Review APA Networks design and protection requirements for any proposed infrastructure near gas assets.</b></p> <p>If acceptable clearance is available in accordance with this section review impact of construction methodology on existing gas assets.</p> <p>If acceptable clearance is not available in accordance with this section and the proposed infrastructure cannot be modified, alteration or protection of the existing gas assets will be required at the cost of the third party.</p>
5	<b>Construction and Land Use Requirements</b>	<p><b>Review construction methodology for adverse impact to existing gas assets.</b></p> <p>Some additional protection measures may be required depending on the existing gas assets, the construction methodology and whether land use changes are required.</p> <p>If works meet the requirements of this document, submit work package to APA Networks for review and approval. If approval is given, then undertake works in accordance with APA Networks conditions/ permits. If approval is not given modify work package accordingly.</p> <p>If works do not meet the requirements of this document or APA Networks approval cannot be reached, alteration or protection of the existing gas assets will be required.</p>
6	<b>Alteration</b>	<p><b>Request alteration of existing gas infrastructure if there is insufficient clearance or construction methods will adversely impact existing gas assets.</b></p> <p>Alteration of existing gas assets are fully recoverable and may result in delays if not identified early.</p>

### 2.1 Assessment Information

Throughout the protection process, APA Networks assessment may be required to determine if the proposed works/ installation has sufficient separation or if work can be undertaken with a suitable construction methodology. If APA Networks assessment is required, the following information must be provided to enable an efficient and comprehensive review.

- Due dates or a work program;
- The location / address and extent of proposed works;

<sup>1</sup> BYDA process is available at <https://www.1100.com.au/safety-information/digging-safely/>



- Scope / description of the work impacting APA assets;
- A work package containing detailed design or construction issue drawings with the location of APA assets and the extent of works marked and / or georeferenced. Sufficient details must be provided on the plans to verify locations against APA information, which is typically measured from property boundaries. Plan and cross sectional drawings are typically required, including any proving locations;
- The proposed construction methodology (if available); and
- For critical assets only, a completed permit request form. This form is automatically provided in response to a BYDA enquiry when it is required, with direction for this form included in the BYDA response (refer to **Section 5.2**).

If the information provided is incomplete, or irrelevant information is provided, it may result in a delay of the assessment process and provision of a response. Due to the varying nature of potential works, it is not possible to develop a comprehensive listing of information that will be required for each work type, but the above is provided as a general guideline for what will normally be required.



## 3 PART 1 - APA NOTIFICATION AND AUTHORISATION REQUIREMENTS

### 3.1 BYDA Request

The fastest method for obtaining APA Network gas asset locations is to lodge a BYDA request. A response can be expected from APA within two business days, and may include one of three responses as outlined in **APPENDIX A**, depending on the location of the works in relation to existing APA operated gas assets in the vicinity.

For some BYDA requests, APA Networks may provide different responses to different assets affected by the proposed works. In all instances it is the responsibility of the third party to review and follow the direction of all BYDA responses.

The information provided by APA Networks in response to a BYDA request, along with any other plans or subsequent information provided by APA, show only the indicative location of the asset at the time and are a guide only. In most instances it will be necessary to prove the location of all buried assets within the proposed work area.

The following items must be considered when using asset information provided by APA Networks:

- Gas service lines from buried distribution pressure supply mains to consumers may not be shown on plans. Service lines are usually laid at right angles from main to a meter position, except where road conduits are provided; and
- Plans become rapidly outdated and so should be used within 30 days and then destroyed. It is the responsibility of the third party to contact APA Networks to seek the updated or renewal of any information after this time.

APA shall not be liable or responsible for the accuracy of any information supplied.

### 3.2 Provings and Site Identification

Electronic location (e.g. ground penetrating radar, pipe locators) of gas assets is required to verify the onsite locations and any plans that have been provided.

Physical proving of existing gas assets is required at key locations to verify that the separation and protection criteria provided in this document have been achieved. The location and quantity of provings will depend on the scope of proposed work, but provings will at least be required at infrastructure crossing points or where changes to surface level condition are planned.

Additional verifications are required for works parallel and in close vicinity to existing gas assets. Physical provings at maximum 10 m intervals along straight sections of pipe, along with all bends, branch lines and customer service offtakes to verify asset locations.

**Note:** Live service offtakes which no longer supply consumers may protrude from the gas asset and are not traceable or identifiable from records.

**Note:** The maximum physical proving intervals for straight sections of pipe may be adjusted based upon the discretion of APA personnel for extenuating circumstances.

The following items must be considered when proving the location of an existing gas asset:

- Provings must be conducted safely and in accordance with the requirements of **Section 5.5.2**. If damage to a gas asset does occur it should be reported immediately to APA as described in **Section 1.3**.
- Permit and site watch by an APA Networks representative may be required for some proving activities in accordance with **Section 5.2**.

### 3.3 APA Notification and Authorisation Process

Prior to the third party undertaking any works/ activities or as part of the planning and design phase, the third party shall ensure a BYDA request is submitted. The automated response received from the BYDA system will be tailored based on the criticality of the assets.



For assets operated at distribution pressures and not considered critical mains, a Duty of Care Notice is provided with the BYDA response for the third party to consider. Site watch may be necessary under a duty of care notice where additional protection or other integrity concerns require it.

In the event that works are conducted within the Protected Zone of a transmission pipeline and/ or critical distribution main, these works will require a review approval received from APA prior to commencement of works. Works subject to this requirement are deemed to include, but not limited to, the following activities that fall under **Table 3**;

- Non Destructive Digging (**NDD**);
- Mechanical excavation including trenchless excavation i.e. drilling (boring, horizontal direction drilling (**HDD**), pipeline bursting and tunnelling) for installing infrastructure such as the following;
  - o Roadways, driveways, railways, pavements;
  - o Electrical equipment (cables, overhead transmission lines, telecommunication cable or power poles);
  - o Installation of culverts/ pipes (water, drainage, sewer or reticulation);
  - o Landscaping.

APA will not approve certain activities and structures in the transmission pipeline easement (if applicable), including the following;

- Permanent storage;
- Installation of billboard structures;
- Use and storage for explosives, flammables or corrosives;
- Blasting;
- Structures forming part of any house, house extensions, carports or entertainment areas;
- Dams and other manmade water features. Locations of dams off the pipeline easement/ protected zone must not create run off or drainage towards the pipeline easement;
- Chemically treated effluent coming in contact with the pipeline easement/ protected zone;
- Garbage, sand fill, refuse disposal;
- Airstrips.

The Third Party must submit an enquiry to APA at the earliest possible stage to allow sufficient time for assessment. Submissions should include the following information;

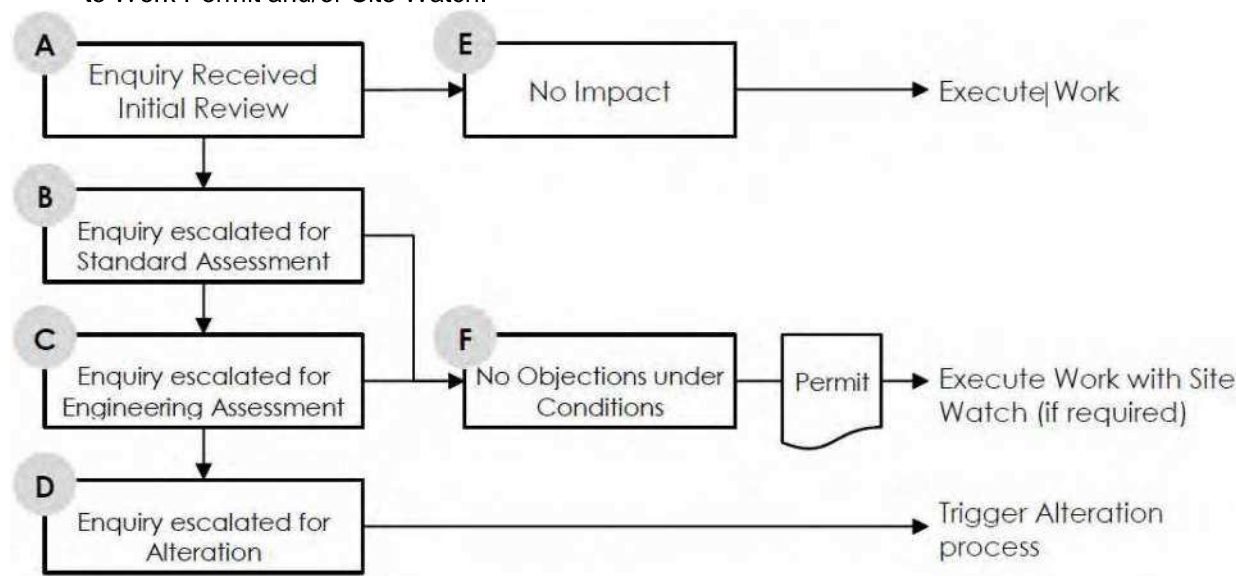
- Land description and map identifying location of the proposed works;
- Types of works to be carried out;
- Intended future use of the land (where relating to change in land use)
- Type and weight of machinery that will be used;
- Any plans or diagrams of the works;
- Timeframe for the works.

The sequence of obtaining APA approval is as follows;

- a) Submit enquiry for Initial Review – The Third Party submits the request prior to works commencing and APA Networks will complete an 'Initial Review'. The third party must not progress any works on site until they receive a response from APA Networks. The two possible outcomes of this stage are a 'No Impact' response or;
- b) Enquiry Escalated for Standard Assessment – The request will be forwarded to APA Networks Field or System Operations personnel for a more detailed appraisal, which may involve contacting the third party, site visits, locating of assets of site, and/or request for additional information. The third party must not progress any work on site until they receive a response from APA Networks. The two possible outcomes of this stage are a 'No Objection under standard conditions' response or;
- c) Enquiry Escalated for Engineering Assessment – The request has been forwarded to the Integrity Third Party Engagement team for additional appraisal and determination of specific conditions. The third party must not progress any works on site until they receive a response from APA Networks. The two possible outcomes of this stage are a 'No Objection under special conditions response' or;



- d) Enquiry Escalated for Alteration – The Integrity Third Party Engagement team triggers the alteration process for this enquiry. The third party will be contacted for additional information and must not progress any work on site until they receive a response from APA Networks.
- e) No Impact – The third party receives a ‘No Impact’ response and can proceed with the works under appropriate APA Networks requirements e.g. Duty of Care, Authority to Work Permit and/or Site Watch.
- f) No Objection Under Conditions – The third party will receive a No Objection under standard or special conditions response and can progress with the planning of the works under the conditions specified in the response and appropriate APA Networks requirements e.g. Duty of Care, Authority to Work Permit and/or Site Watch.



**Figure 2 Stages for Third Party Works Authorisation Request**

For works around APA Networks transmission pipelines or critical mains the documents take precedence in the following order;

- APA Authority to Work Permit (**ATWP**)
- APA accepted Third Party Construction Drawings
- APA accepted Third Party Construction Methodology
- APA Networks Guidelines for Works Near Existing Gas Assets (this document)
- APA accepted Third Party Safe Work Method Statement (**SWMS**) (if applicable)

### 3.4 Commercial Agreement and Service Delivery

APA will undertake a review of Third Party Works, as required. At APA’s discretion cost recovery for these works may be required. Where APA Networks requires cost recovery a commercial service agreement in the form of a Works Agreement will be required.

**Note:** Any third party works requiring blasting, seismic and/or tunnelling work near APA Networks operated assets will not be considered “low risk” and cost recovery for detailed review maybe required.

### 3.5 Decommissioned Gas Assets

Decommissioned gas assets that remain in the ground are not always shown on BYDA plans.

Where unknown assets are identified or suspected on site but are not on APA plans, they must be treated as being live. In this instance, the third party must contact all utility owners and operators in the area of the BYDA and notify them of the findings.

Following review, if APA accepts that it is a decommissioned gas asset, the asset must be treated as per the requirements of this document. APA will take no further action where it is not considered to be a decommissioned gas asset.



In some cases, decommissioned gas assets are required for future use by APA (sometimes noted as “Idle” on APA plans). These assets must be treated as live using the same criteria outlined in this document, and must not be removed or altered without APA’s express written approval.

Where APA confirms there is no future use of a decommissioned gas asset (sometimes noted as “Abandoned” on APA plans), removal of the asset can be undertaken by the third party under the following conditions:

- For assets considered by APA to be decommissioned gas assets, APA must be engaged to verify that the asset is gas free;
- End caps must be permanently sealed, using an APA approved methodology, on any decommissioned sections that are to be left in place to prevent future water ingress into the remaining sections of the decommissioned gas asset;
- An as-built drawing must be submitted by the third party for any section(s) of a decommissioned gas asset removed by the third party or its sub-contractors to ensure BYDA can be updated accordingly; and
- Payment for costs associated with any verification or alteration activities must be provided prior to APA undertaking works.



## 4 PART 2 - DESIGN AND ASSET PROTECTION REQUIREMENTS

### 4.1 Standard Clearances

Minimum clearance dimensions outlined in this section must be met to allow for safe future maintainability and protection of existing gas assets. If separation clearances cannot be achieved, APA will review the proposed infrastructure on a case-by-case basis to determine whether a resolution can be achieved before alteration of any existing gas assets is considered. Authorisation of works by APA is still required, regardless of being able to achieve the required separation distances.

Clearances specified in **Table 2** are measured from the closest edges of the existing gas asset to the proposed infrastructure. Depending on the exact nature of proposed infrastructure, additional clearance may be required.

**Note:** Clearances specified herein are from gas assets, third party utilities may have their own standard separations that exceed APA's minimums specified in **Table 2**.

The future access zone required around a gas asset depends upon a number of factors such as size, operating pressure, depth and soil conditions, but typically this access zone is at least 1000 mm either side and 700 mm below the gas asset. As an aid for design and / or installation, the minimum clearances presented in **Table 2** are provided to allow for safe future access to gas assets. These minimum clearances assume that the asset have been proven and the location verified. There may be circumstances where additional clearances are required.

**Table 2 Minimum Clearances**

Clearance Type (Note 2, 9)	Minimum Transmission Pressure Asset Clearance	Minimum Distribution Pressure Asset Clearance
Any installation up to 0.6 metres wide which is crossing the gas asset	500 mm Vertical (Note 2)	300 mm Vertical (Note 2)
Any installation over 0.6 metres wide which is crossing the gas asset	500 mm Vertical	300 mm Vertical (Note 2)
Any installation laid by trenchless excavation e.g. HDD, boring, etc.	3000 mm Vertical	600 mm Vertical
	Refer to <b>Section 5.6</b> for minimum horizontal separation distances	
Any installation laid parallel to a steel gas asset	600 mm Horizontal (Note 2, 3)	
Any installation laid parallel to any gas asset other than steel	N/A	300 mm Horizontal (Note 2, 3)
Trenching separation from edge of gas asset to edge of trench (Note 4)	500 mm Horizontal	300 mm Horizontal
Underground electrical cables laid parallel to any gas asset other than steel	N/A	300 mm Horizontal
Electrical conduits and cables (<11 kV) laid parallel to a steel gas asset	Engineering assessment required (Note 2, 3)	
Electrical conduits and cables (≥ 11kV) laid parallel to a steel gas asset	(Note 2, 3) Engineering assessment required (Note 7)	



Electrical earthing systems near a steel gas asset	High Voltage: Engineering Assessment Required Low Voltage: 300 mm Horizontal <b>(Note 7)</b>	
Electrical earthing system near any gas asset other than steel	N/A	300 mm Horizontal
Clearance Type (Note 2, 9)	Minimum Transmission Pressure Asset Clearance	Minimum Distribution Pressure Asset Clearance
Undisturbed cover from the top of the gas asset to the underside of trenching or road pavement boxing	500 mm Vertical	300 mm Vertical <b>(Note 1)</b>
Distance from predominant building line	3000 mm Horizontal Where applicable outside pipeline easement	Refer to <b>Section 4.2</b>
Distance from Sensitive Use Locations (Refer <b>Section 7</b> for Glossary of Terms and Abbreviations)	APA Engineering Assessment Required <b>(Note 8)</b>	N/A
Canopies longer than 15 m parallel to the edge of the gas asset	3000 mm Horizontal <b>(Note 10)</b>	Refer to <b>Table 4 (Note 10)</b>
Any installation that could add excessive loads to the gas asset or restrict access to the gas asset	3000 mm Horizontal <b>(Note 2)</b>	
Any installations that may need require underpinning were APA to expose the gas asset	3000 mm Horizontal	
Any temporary stake, e.g. star picket	300 mm Horizontal	
Electrical poles including street lighting and traffic signals	3000 mm Horizontal Where applicable outside pipeline easement	1000 mm <b>(Note 3, 5, 6, 7)</b>
Fence post, including road safety barriers	3000 mm Horizontal when installed per APA requirements	500 mm Horizontal when installed per APA requirements
Pile or pier	3000 mm Horizontal when installed per APA requirements	500 mm Horizontal when installed per APA requirements
Permanent Heavy Vehicle Loads (Greater than 4.5T)	Refer to <b>Section 4.7</b> Temporary and Permanent Vehicle Loads	
Tree Root Barrier	3000 mm Horizontal	1000 mm Horizontal Refer to <b>Section 4.3</b> Landscaping Plans
Separation distances for vegetation	Refer to <b>Section 4.3</b> Landscaping Plans	



**Note 1:** For distribution main crossings, where the vertical separation distance is less than 300 mm physical protective slabbing, e.g. HDPE or concrete, shall be installed where the other utility is crossing beneath the APA pipeline/distribution main.

HDPE or concrete, shall be installed where the other utility is crossing above the APA pipeline/distribution main.

No protective slabbing is required for utility crossings greater than 500 mm separation.

**Note 2:** Structures and large utilities crossing APA Networks operated assets need to be self-supporting so that future repairs or maintenance of the asset can occur as per **Section 4.2 Third Party Assets and Structures**.

**Note 3:** Horizontal separation includes utility surface access pits, thrust blocks and/ or footings.

**Note 4:** Additional horizontal separation may be required depending on the extent of the planned works, local soil conditions and trench stability of the existing gas asset. This is particularly relevant where works occur within the angle of repose of the existing gas asset (e.g. parallel trenching that is deeper than the existing gas asset) and may result in undermining.

**Note 5:** In accordance with 'AS/NZS 4853 – Electrical hazards on metallic pipelines' without further information and APA engineering assessment, no electrical power poles for 66kV or above are permitted within the following separation distances of steel gas assets;

- If the power line has an Overhead Earth Wire (**OHEW**) – 15 m;
- If power line does not have an OHEW – 100 m;

**Note 6:** Where electrical poles (including street lighting and traffic signals) are proposed which place the gas asset within the no dig zone specified by the electrical authority either of the following shall occur;

- a) The poles shall be designed with deeper foundations to be self-supporting if the gas asset needs to be excavated. Or;
- b) For non-metallic assets relocated into a conduit that extends past the no dig zone.

**Note 7:** Clearance for electrical cables and earthing systems from steel gas assets must be reviewed in accordance with **Section 4.6 Earthing and Electrical Effects**. Electrical cables, substations and/or earthing systems installed in the vicinity of steel gas assets require an Earth Potential Risk (**EPR**) and Low Frequency Induction (**LFI**) assessment to AS/NZS 4853.

**Note 8:** Requires a setback distance to stay away from the Measurement Length (refer to **Table 14 Glossary of Terms and Abbreviations**). Alternatively, the setback distance may be reduced if protection slabbing is installed along the Sensitive Use Location where interaction with the Measurement Length occurs. This may also be limited to the development area subject to APA engineering assessment.

**Note 9:** Pipeline protection needs to be assessed and shown on the design plans with design clearances. This includes recoating, bridge slab or asset strike protection slab.

**Note 10:** Clearance may be dependent on demonstrating that there is sufficient continuous ventilation.



For construction and land use activities around gas assets the minimum horizontal clearances referenced in **Table 3** must be followed.

**Table 3 Minimum Clearances for Construction Works and Land Use Activities**

Construction and Land Use Activities	Minimum Horizontal Clearance	
	Transmission Pressure & Critical Distribution Mains	Non-Critical Distribution Pressure Mains
Excavation without APA representative present ( <b>Note 1</b> )	3000 mm	N/A
Trenchless Excavation ( <b>Note 1</b> )	3000 mm Refer to <b>Section 5.6</b>	1000 mm Refer to <b>Section 5.6</b>
Temporary Heavy Vehicle Traffic (greater than 4.5T)	If the load has not been assessed, maintain a Horizontal separation of 3000 mm.  APA engineering assessment must be completed if crossing asset.  Refer to <b>Section 4.7</b> Temporary and Permanent Vehicle Crossings	Refer to <b>Section 4.7</b> Temporary and Permanent Vehicle Crossings
Installation of Piles, Piers or Poles	Refer to <b>Table 2</b> and <b>Section 5.7</b>	
Hot Works from Construction Activities	Any hot works within 5000 mm of an open trench containing gas asset or where cover is less than 300 mm. Refer to <b>Section 5.8. (Note 2)</b>	
Compaction	<b>Section 5.10</b> for Compaction Limits Maximum Compaction Limits	
Vibration Limits	No vibration within 3000 mm of the pipeline and greater distance to comply with <b>Section 5.9</b>	
Blasting, Seismic Survey or the use of Explosives	Approval required for works within 100m. Refer to <b>Section 5.11.</b>	
Lifting over exposed gas asset	Not permitted over the gas asset. Refer to <b>Section 5.12</b> for Suspended Materials above Gas Assets and No Go Zones for Cranes.	
Clearance of crane outriggers to gas assets	Not permitted within 3000 mm of gas asset. Refer to <b>Section 5.12</b> for Suspended Materials above Gas Assets and No Go Zones for Cranes.	
Clearance of temporary material from pipeline	Not permitted within 3000 mm of gas assets. Refer to <b>Section 5.13</b> for Temporary Materials.	

**Note 1:** Excavation covers NDD, mechanical excavation and trenchless excavation (boring, HDD, pipeline bursting and tunnelling).

**Note 2:** Horizontal separation distance also applies to any pits or valve covers.



## 4.2 Third Party Assets and Structures

Structures, including but not limited to buildings, walls, canopies, footings, pile caps or retaining walls, must not transfer any load to or be installed over any gas asset.

The design of any third party asset or structure must take into account future safe access of any gas assets in the vicinity. The proposed third party asset or structure must be installed in a way that prevents the angle of repose from encroaching into the future access zone as specified in **Section 4.1** around the existing gas asset.

Any third party asset or structure installed within proximity to a transmission pipeline or critical distribution pressure main must be designed to be self-supporting and allow for a minimum excavation window 1m on either side of the asset and 700 mm below the edge of the asset, for maintenance of the asset. This self-supporting design information is required to be shown on the construction drawings supported by geotechnical data and calculations. Construction of structures on pipeline easements are not permitted without explicit consent from APA.

Distribution pressure gas mains must be offset from the expected predominant building line at a distance in accordance with **Table 4**. Transmission pressure gas assets shall be per **Table 2**.

**Table 4 Minimum Building Offset Distances for Distribution Pressure Gas Mains**

Diameter (DN)	MAOP (kPag)			
	≤210	>210 ≤ 420	>420 ≤ 600	>600
≤110	0.5 m	0.5 m	1.0m	3 m
>110 ≤ 160	0.5 m	0.5 m	3 m	5 m
>160	0.5 m	3 m	3 m	8 m

Gas assets may be located underneath curbing or strip footings for road safety barriers for short sections up to 10 m to allow for tapers. The integrity of the gas asset to be located underneath the curbing or strip footing may require inspection, repair, recoating and / or slabbing depending on the existing condition and extent of proposed works.

Posts or poles which are located in road reserve, or otherwise exposed to vehicle impact, must be designed such that there will be no damage to the gas asset in the event of a vehicle impact.

For works in Victoria, consent from the relevant State Minister is required under Section 120 of the *Pipelines Act 2005* (VIC) for the erection of structures or buildings within 3,000 mm of a transmission pressure asset. Ministerial consent must be arranged through Energy Safe Victoria (**ESV**) following review and acceptance of the proposed designs by APA Networks.

## 4.3 Landscaping Plans

Vegetation may limit line of site, access and passage along an existing gas asset alignment, while the associated roots may damage existing buried pipe, coating or other ancillary equipment (e.g. cables). Above ground gas infrastructure may also be exposed to hazards from falling vegetation and increased fire risk. Additionally, trees and tree roots may limit access to the gas asset in an emergency, during normal operations and when make new connections or modifications.

Landscaping plans which include vegetation should select tree species which do not have vigorous root activity and do not exceed above 5m in height when fully mature when planted within 3m of gas assets. The pre-selection of trees considered suitable for planting within road reserves and near gas assets should also consider interference with, or damage to, other underground and overhead services.

For all landscaping works within 3 m of transmission pressure or critical distribution pressure gas assets the following details must submitted to APA for review and approval prior to planting.

- Tree species – botanical and common name
- Mature tree buttress and canopy diameter
- Mature tree height



- Maximum root ball diameter
- Offset from gas asset
- Method of protection to gas asset

Trees to be planted within 3 m of transmission pressure or critical distribution pressure gas assets, should also adhere to **Table 5** below.

**Note:** Horizontal separation is measured from pipe edge to edge of mature trunk or mature drip line, whichever is the greater.

Strata cells are not considered an appropriate protection from tree roots. If strata cells are to be installed in the vicinity of existing buried gas assets, the controls identified in **Table 5** must be used for protection.

**Table 5 Protection of Distribution Gas Assets from Vegetation**

Vegetation Types	Requirements	Horizontal Separation from Pipe Edge to Vegetation			
		Greater than 3 m	1.5 to 3m	1.5 to 0.5 m	<0.5 m
Trees or Large Shrubs	Min. separation of 3 m is required between trees and pipe if no protection methods are utilised.				
Medium and Small Shrubs	Within 1.5 m – 0.5 m protection methods must be utilised.				
Ground cover and grasses	No protection methods required.				
Gas Protection Methods					
	No protection methods required, provided separation limits are followed.				
	<p>Within 3 m, tree species which have mature buttress diameters less than 0.15 m and do not have invasive or deep roots may be accommodated without protection methods after consultation with APA Networks (<b>Note 1</b>).</p> <p>For trees with mature buttress diameters greater than 0.15 m one of the following gas protection methods must be implemented;</p> <ol style="list-style-type: none"> <li>1. Lowering or relocation of the gas asset to a minimum of 1.2 m cover.</li> <li>2. Installation of new gas conduit beyond the structural root zone (<b>SRZ</b>) of the mature tree species for future use. (<b>Note 2</b>)</li> <li>3. Installation of a root barrier system. System to be 1 m deep or extend 250mm below the gas asset, whichever is the greater.</li> </ol>				
	<p>Within 1.5 m installation of a root barriers system is mandatory and gas protection methods are as follows;</p> <ol style="list-style-type: none"> <li>1. Installation of a robust root barrier system. System to be 1 m deep or extend 250 mm below the gas asset, whichever is the greater.</li> </ol> <p><b>AND</b></p> <ol style="list-style-type: none"> <li>2. Lowering or relocation of the gas asset to a minimum of 1.2 m cover.</li> </ol> <p><b>OR</b></p> <ol style="list-style-type: none"> <li>3. Installation of new gas conduit beyond the SRZ of the mature tree species for future use. (<b>Note 2</b>)</li> </ol>				
	Planting directly over gas assets is not permitted in any location, as it prevents emergency and maintenance access. Tree roots can damage gas asset resulting in gas leaks.				



**Note 1:** Refers to the minimum 1.5 m structural root zone for a mature buttress diameter less than 0.15 m mandated under AS 4970 – Protection of trees on development sites.

**Note 2:** Suitable protection method for PE mains only. Conduits to be recorded in Geographic Information System (GIS) for future referencing.

**Note 3:** On transmission pressure assets vegetation must not limit line of site along the buried gas assets alignment, all signage must remain each in sight of the other.

#### **4.4 Surface Levels and Conditions**

Decreases or increases to surface levels must consider depth of cover requirements for gas assets specified in **Table 6**. This is in addition to maintaining a minimum working cover from the top of the gas asset to the underside of trenching or road box out works during construction as specified in **Table 2**. Vehicles must not cross gas assets at covers less than those specified in **Table 6** unless in accordance with **Section 5.10** for Compaction Limits or **Section 4.7** for Temporary and Permanent Vehicle Crossings.

Where existing surfaces are to be modified, finished cover levels are not to be reduced to less than existing levels, unless meeting the minimum requirements of **Table 6**. The requirement for, and the extent of, protective slabbing over any APA Networks operated asset will be determined by APA at its sole discretion with adherence to minimum depth of cover without physical protection as the preference. Depending on the location, local councils and relevant road/ rail authorities may have minimum depth of cover requirements that APA are required to meet which are more stringent than those listed in **Table 6**. Depth of cover requirements for individual consumer offtakes (service connections) are also provided in **Table 7**.

Details of any additional fill proposed to be placed on or within 3 metres of a gas asset, or within any applicable easement, must be clearly shown on plans and must be approved by APA Networks in writing. A maximum depth of cover of 2,500 mm for transmission pressure assets and 2000 mm for distribution assets apply in all locations; however, it is preferred not to exceed 1500 mm for both types of assets.

**Table 6 Minimum Depth of Cover Requirements for Pipelines and Mains**

Asset Location	Minimum Depth of Cover (Note 3)	
	Transmission Pressure Asset	Distribution Pressure Asset
Under Minor Road Pavement ( <b>Note 1</b> )	<ul style="list-style-type: none"> <li>1,200 mm</li> <li>1,200 mm to 1,000 mm with physical protection slabbing and APA engineering load assessment</li> </ul>	<ul style="list-style-type: none"> <li>750 mm</li> <li>750 mm to 600 mm with physical protection slabbing and APA engineering load assessment</li> </ul>
Under Major Road Pavement ( <b>Note 2</b> )	<ul style="list-style-type: none"> <li>1,200 mm</li> <li>1200 mm to 1,000 mm with bridging slabs (<b>Note 4</b>)</li> </ul>	<ul style="list-style-type: none"> <li>1,200 mm</li> <li>1200 mm to 750 mm with bridging slabs (<b>Note 4</b>)</li> </ul>
In Road Reserve but not Under Road Pavement	<ul style="list-style-type: none"> <li>900 mm</li> <li>900 mm to 750 mm with protective slabbing contingent upon pipeline location class</li> </ul>	<ul style="list-style-type: none"> <li>750 mm</li> <li>750 mm to 600 mm with protective slabbing</li> </ul>
Not in Road Reserve	<ul style="list-style-type: none"> <li>900 mm</li> <li>750 mm with protective slabbing contingent upon pipeline location class</li> </ul>	<ul style="list-style-type: none"> <li>750 mm for &gt; 210 kPa</li> <li>600 mm for ≤ 210 kPa</li> </ul>
Railway Reserve	2000 mm ( <b>Note 5</b> )	
Large Open Drain or Major Water Crossing	2000 mm ( <b>Note 6</b> )	



**Note 1:** Minor road pavements typically are owned by local councils.

**Note 2:** All roads owned by state and federal authorities are major roads. Roads owned by council may be major or minor roads. Covers less than 1200 mm may require dispensation from the relevant road authority.

**Note 3:** Protective slabbing must be installed where minimum depth of cover requirements cannot be met or are required to meet specific safety requirements. Bridging slabbing for transmission pressure assets may be replaced with protection slabbing following APA engineering assessment.

**Note 4:** The requirement for bridging slabs can be downgrade to physical protection slabbing where APA engineering assessment is completed and approved.

**Note 5:** Installation within railway reserve shall be in accordance with both AS 4799 and the respective operating standard for the gas assets i.e. AS 2885 and AS 4645.

**Note 6:** The minimum depth of cover of 2,000 mm shall consider future scour of the drain or waterway crossing. For man-made drains the depth of cover can be reduced to 1200 mm if sealed (i.e. concreted) and appropriately designed. For transmission pressure assets, waterway crossings shall be designed in accordance with AS 2885.1 – 2018 Clause 5.8.6.2. For all assets, as a minimum the following shall be considered;

- a) A hydrological investigation to determine the stream power under peak stream, watercourse or waterway flows. The investigation shall determine the 1 in 100 year flood and the probable maximum flood and intermediate (optional) flood conditions.
- b) A geotechnical investigation to determine the physical parameters of the crossings, and using the information from the hydrological investigation, the erosion potential. This assessment should also consider the meander potential of the watercourse so that the limits of special construction can be defined.

**Table 7 Minimum Depth of Cover Requirements for Customer Offtakes (Services)**

Asset Location	Customer Offtake size	
	≤ DN50	> DN50 and ≤ DN110 (Note 1)
Roadway	450 mm	600 mm
Private Property	300 mm	450 mm

**Note 1:** Customer offtakes (services) with diameters greater than DN110 shall have depth of cover in accordance with **Table 6**.

Changes to surface conditions (e.g. changing from nature strip to road pavement) or which place the gas asset in an inaccessible position (e.g. with excessive cover) may require slabbing, recoating and / or relocation. Changes to surrounding surface levels or conditions must also consider drainage and the potential to result in erosion of cover for gas assets. Additionally, gas fittings such as valves, stopple fittings or flanges must not be located underneath road pavement. An APA Engineering assessment will be required if this is not feasible, refer to **Section 6**.

Where a new hardstand surface is installed on non-metallic distribution pressure mains (e.g. a painted concrete driveway), consideration should be given to including a casing or enveloper pipe to APA requirements for insertion of future gas assets. This will ensure that the new hardstand surface is not modified as part of the future gas installation. Where a casing or enveloper pipe is installed for future insertion works surveyed as-constructed records are to be provided to APA Networks for incorporation into the GIS records.

For transmission pressure gas assets, any landscaping material should be level within the easement or a minimum of 3 m (but preferably 6 m) to each side of the pipeline, to permit excavating equipment to operate without having to destroy the adjacent landscaping.

## **4.5 Casings Vent Stacks**

Casings provide mechanical protection and protection to gas assets from external loadings. Some cased crossings are sealed and fitted with a casing vent stack, which gas leaks are identified via.

The following APA requirements are to be applied for works near casing vent stacks:



- Casing vent stacks cannot be removed unless an alternative arrangement has been approved by APA Networks or they have been assessed as being redundant;
- Unfettered access is to be maintained to casing vent stacks; and
- Minimum distance from casing vent stack discharge point to any electrical installation or overhead structure must be 1000 mm.

## 4.6 Earthing and Electrical Effects

Steel gas assets are susceptible to adverse effects from electrical sources such as above and below ground cables, substations, transformers, earth rods, cathodic protection systems or electrified tram / train lines.

Without any further information or engineering assessment, earthing systems for distribution ( $\geq 11\text{kV}$ ) and transmission ( $\geq 66\text{kV}$ ) power lines must satisfy the Earth Potential Rise (**EPR**) Level 1 (Conservative) compliance of AS/NZS 4853 – 2012 Table 4.3 & 4.5 which specifies separation distances from pipe appurtenances (e.g. valves, regulators, isolation joints), access points or earth points (including cathodic protection test points). For the potential hazards to be accepted as low risk on the basis of a Level 1 assessment the separation between a conductive structure or substation and pipeline subject to EPR shall be greater than the values given in **Table 8** below.

**Table 8 Separation Distances for Pipeline Subject to EPR from Power Lines (Level 1 Assessment)**

Fault Current or Actual Current (A) (Note 2, 3)	Separation Required (m) - Note 1			
	Distribution ( $\geq 11\text{kV}$ )	Power Line	Transmission ( $\geq 66\text{kV}$ )	Power Line
	100 $\Omega\cdot\text{m}$	500 $\Omega\cdot\text{m}$	100 $\Omega\cdot\text{m}$	500 $\Omega\cdot\text{m}$
150	40	190	N/A	N/A
300	80	390	N/A	N/A
500	130	660	N/A	N/A
750	200	1,000	N/A	N/A
1,000	270	1,300	60	310
3,000	N/A	N/A	190	940
6,000	N/A	N/A	380	1,900
10,000	N/A	N/A	635	>3,500

**Note 1:** Earth resistivity of 500  $\Omega\cdot\text{m}$  shall be used for dry sand or rock and 100  $\Omega\cdot\text{m}$  for all other cases.

**Note 2:** If the fault current is unknown for a distribution power line ( $\geq 11\text{kV}$ ), a fault current of 1000 A shall be used for the first pass assessment.

**Note 3:** If the transmission power line ( $\geq 66\text{kV}$ ) uses an OHEW, uses values up to 3,000 A (this assumes a current split of 30% of 10 kA). For lines without an OHEW, use values up to 10,000 A for current going down the structure.



Without any further information or engineering assessment, distribution ( $\geq 11$  kV) and transmission ( $\geq 66$  kV) power lines parallel to steel gas assets must satisfy the Low Frequency Induction (LFI) Level 1 (Conservative) compliance of AS/NZS 4853 – 2012 Table 4.2 & 4.4 which specifies maximum acceptable power line to pipeline exposure length.

Per AS/NZS 4853 – 2012 the pipeline exposure length (average separation for the parallel section) under LFI conditions shall be less than the values given in **Table 9** below.

**Table 9 Exposure Length for Pipeline Subject to LFI from Power Lines (Level 1 Assessment)**

Power line to pipeline separation (m)	Exposure Length (m) – Note 1		
	Distribution Power Line ( $\geq 11$ kV) – 100 $\Omega$ .m	Transmission Power Line ( $\geq 66$ kV) – 100 $\Omega$ .m	
5	180	95	
10	210	110	
20	240	127	
50	310	165	
100	400	210	
200	550	290	
500	950	500	

**Note 1:** Without soil resistivity data, assessments are to be completed assuming 100  $\Omega$ .m. If soil resistivity data is available refer to AS/NZS 4853 – 2012.

Where AS/NZS 4853 Level 1 EPR or LFI requirements cannot be achieved a Level 2 and/or 3 assessment will be required.

The third party must provide to APA detailed plans of any source(s) of earthing and/ or electrical effects proposed to be located in the vicinity of steel gas assets, with an assessment report compliant with AS/NZS 4853 Electrical Hazards on Metallic Pipelines. This assessment report is to determine any effects to existing cathodic protection or induced voltage mitigation systems from these types of installations. The third party must address any relevant requirements and any recommendations and/or actions must be implemented to the satisfaction of APA Networks. All cost association with the study, and implementing its recommendations and/ or actions are to be borne by the third party. The third party must also complete validation testing upon completion of construction and provide all findings/ reports to APA Networks.

Hazards which may arise due to electrical systems located in the vicinity of steel gas assets include the following:

- Accidental contact between gas assets and electrical systems;
- Capacitive coupling;
- Conductive coupling;
- Electromagnetic induction;
- Low Frequency Induction (LFI);
- Earth Potential Rise (EPR), including due to fault current or lightning discharge; and,
- Adverse cathodic protection interference in excess of those allowed under AS 2832.1 or relevant state regulations

## 4.7 Temporary and Permanent Vehicle Crossings

Vehicle crossings over existing gas assets are limited to light vehicles (Gross Vehicle Mass not greater than 4.5 tonnes unless advised otherwise by APA Networks in writing) on unsealed surfaces or Heavy Vehicles (compliant General Access Vehicles) on established road pavements.

Any proposed new crossings must be assessed and authorised in writing by APA Networks.



A maximum surface pressure of 400 kPa is allowable directly above buried gas assets. However, any surface pressure exceeding this limit or where cover over the gas asset has been reduced from **Table 6** will require an APA Engineering Assessment and approval.

Where soil conditions exhibit poor compaction and load bearing characteristics, such as wet soil conditions, equipment is not permitted to cross the gas asset irrespective of weight without establishing a stable sealed surface or road plates.

Crane footings or bog mats must not be placed where the angle of repose can influence an existing gas asset without express written approval by APA. Where the existing gas asset is within the angle of response, the maximum surface pressure due to the crane must be provided.

## **5 PART 3 - CONSTRUCTION AND LAND USE REQUIREMENTS**

Extreme care should be exercised at all times when working around existing gas assets, as repair works will be fully chargeable and may result in delays to any works. Refer to the duty of care outlined in **Section 1.4** and the requirements of this section when selecting construction methods.

### **5.1 Land Use Change**

Where works proposed by a third party may result in a change in land use within the Measurement Length (as defined in AS/NZS 2885.6 for Pipelines – Gas and Liquid Petroleum) of transmission assets, such works may also be subject to formal approval requirements through APA Networks and applicable local and state government planning processes.

This may also require a Safety Management Study (SMS) report be completed and approved by APA Networks. This SMS report is generated from an SMS workshop involving an independent SMS facilitator, third party and APA Networks. APA Networks is the owner of the SMS report and any resulting recommendation/ actions must be implemented to the satisfaction of APA Networks prior to the commencement of any physical works.

Certain categories of development, such as Sensitive Use Locations (refer to **Table 14 Glossary of Terms and Abbreviations**), are not appropriate to be located with the Measurement Length. In certain circumstances, the otherwise unacceptable risks associated with such developments may be alleviated with the aid of installing protective slabbing over the transmission pipeline or undertaking other protection and mitigation measures.

Sensitive Use Locations near transmission pipelines are designated under AS/NZS 2885.6 and identify land where the consequences of a Failure Event may be increased because it is developed for use by sectors of the community who may be unable to protect themselves from the consequences of a pipeline Failure Event.

Sensitive uses are defined as follows;

- Schools, which includes colleges
- Hospitals and aged care facilities such as nursing homes, elderly people's homes
- Prisons and jails
- Sheltered housing
- Buildings with five or more stories
- Large community and leisure facilities, large open air gatherings
- Day care facilities
- Other potentially difficult to evacuate facilities
- Other structures as defined by relevant local councils.

For further information regarding the SMS process, refer to APA Networks Encroachment and Land Use Change SMS Trigger Procedure, **400-PR-L-0003**.

### **5.2 Permits and Site Watch**

Transmission pressure assets and critical distribution pressure assets, must have a permit issued prior to proposed works in the vicinity of the existing assets, including any proving activities. Following the issue of a permit, a site watch inspector may be required to verify that the activities are carried out appropriately.



Other distribution pressure assets not considered critical will only require site watch as determined by APA Networks.

Where a permit is required, the response provided to the BYDA enquiry will include the relevant forms and process to be followed for submitting a permit request.

While BYDA recommends completing the request two business days prior to undertaking works, this is to ensure that the location information is obtained. This may not allow sufficient time for APA Networks to supply site watch. Further delays may be experienced if the proposed works are significantly complicated, do not meet the requirements of this document or if insufficient information is provided.

**It is an offence in all jurisdictions to undertake activities in the vicinity of transmission pipelines without prior authorisation by the operator.**

### **5.3 Coating Surveys and Leakage Surveys**

Where proposed works have potential to indirectly damage pipe coating (i.e. due to compaction) or result in a leak of the gas asset (e.g. vibration of cast iron pipes), additional monitoring activities such as Direct Current Voltage Gradient (DCVG) or leakage surveys may be required.

If required, chargeable DCVG surveys will be conducted prior to works to establish any existing coating faults which exist on the gas asset. A subsequent DCVG survey will be conducted at the conclusion of works, and where new faults have developed on the gas asset, repairs shall be made with costs charged to the works owner. Surveys can be conducted prior to finalising road surfaces to avoid costly repairs.

A similar chargeable survey program can be applied where leakage surveys are required. However, additional surveys may be necessary throughout works to ensure work crews do not operate in a gaseous environment once leaks are caused.

### **5.4 Pipeline Repairs, Recoating and Slabbing**

Buried steel assets operated by APA Networks are coated to provide protection from corrosion.

Where the surface conditions above a buried steel pipe are changed which may limit future access to the existing gas asset an assessment of the coating condition will likely be triggered.

The requirement for pipeline recoating is assessed by APA Networks on a case by case basis, based on the proposed works, but will generally be dependent on the following:

- The asset class;
- The existing coating type, age and condition;
- Increase in loading that can bring forward any pipeline anomalies; and,
- Changes limiting access to the existing asset(s), such as the installation of slabbing, road pavement, culverts, embankment ramps or any other feature.

A chargeable coating survey carried out in accordance with **Section 5.3** may be required to assess the condition of the existing gas asset coating.

Recoating and/ or associated slabbing works over any gas asset will be determined by APA Networks Engineering Assessments and any applicable risk assessments (Safety Management Study or Formal Safety Assessment).

Pipeline repairs, recoating and slabbing that form part of any third party commercial agreement will be charged to the third party.

The requirement for, and the extent of, slabbing over any APA Networks operated asset will be determined by APA at its sole discretion and may depend on factors other than only changes in depth of cover discussed in **Section 4.4**. Slabbing may be required for the following reasons:

- Removable protective slab to provide protection from third party mechanical excavation;
- Bridging slab to provide protection from external loadings e.g. insufficient depth of cover combined with vehicle traffic.

Slabbing must be installed with adequate separation from the pipe, which may impact the undisturbed cover requirement, and cannot be installed directly underneath road pavement or at surface level.



Any bridging slab designs prepared by a third party must be accompanied by certification from the registered practising structural engineer (Registered Professional Engineer Queensland (**RPEQ**) required for works in Queensland, and so on as required for other States and Territories) confirming that the design is adequate to prevent pipeline loading.

## **5.5 Exposure of Buried Gas Assets**

### **5.5.1 General**

Excavation works covers Non-Destructive Digging (**NDD**) and mechanical excavation. All such excavations must be completed in accordance with APA's direction.

The Third Party or its Contractor can perform exposure works on APA Networks operated assets via NDD using vacuum excavation and subsequent mechanical excavation works under the following conditions:

- **A current BYDA request is available for the works.**
- An approved Authority to Work Permit (**ATWP**) is issued for works near transmission pipelines or critical mains.
- APA Site Watch Officer is present for works near transmission pipelines or critical mains as outlined on the ATWP.
- The Third Party (or its Contractor) shall ensure they have their own SWMS, Risk Assessment, Environmental Management Plan, Tool Box Talk, Traffic Management and Pre-Start in line with their own corporate policy in place prior to works commencing.
- All underground assets have been identified by surface marking where within or close to the excavation area prior to proceeding with planned proving works (i.e. hand or NDD (e.g. Hydro-Vacuum Excavation). Any non-recorded assets should be identified prior to breaking ground (e.g. excavation or cutting).
- A check for gas leaks has been conducted prior to the commencement of work.
- If the mechanical excavation operator cannot see the spotter (where applicable, APA Site Watch Officer), he or she must stop moving immediately and not resume movement until contact has been established. Spotters must be aware of their surroundings and should never walk into the path of a vehicle, moving equipment or a swinging load. They need to scan the ground to become aware of any trip or fall hazards.
- If excavations are greater than 1.5 m or ground conditions are considered unstable benching/ battering/ shoring must be utilised. Additionally, appropriate ladders/ ramps or steps must be utilised to ensure safe access and egress.
- **Under no circumstances is mechanical equipment to be used within 300 mm of any gas asset.**

### **5.5.2 Physically Proving Gas Assets**

Prior to mechanical excavation of the gas assets, the asset shall be physically proven by NDD or through the use of hand excavation. The method used will vary based on the criticality of the asset. The requirements in **Section 5.5.1** shall be implemented prior to physically proving the gas asset.

#### **Technique 1 – Vacuum Excavation (Critical and Non-Critical Gas Assets)**

A vacuum truck can be used to prove and expose the gas asset. Please ensure the requirements detailed in **Section 5.5.3** are adhered to.

#### **Technique 2 – Hand Excavation (Critical and Non-Critical Gas Assets)**

If the anticipated depth of cover of the gas asset is less than 1m (measured from the top of pipe) then hand excavation shall be used to expose the gas asset. The use of round edge shovels should be used to avoid damage to the pipe or coating. In the event that the anticipated depth of cover of the gas asset is greater than 1m then mechanical excavation can be undertaken in accordance with the requirements of **Section 5.5.4** but must stop when within 1m of the gas asset (i.e. 1.3m anticipated depth means that 300 mm of cover can be removed by mechanical excavation and the



remainder by hand excavation as described above. The anticipated depth shall be based on the shallowest result from BYDA or pipe locator.

### **Technique 3 – Hand + Excavation (Non-Critical Gas Assets ONLY)**

If the gas asset is deemed non-critical then a combination of hand digging and excavation can be used. This technique requires the third party to hand excavate 300 mm then mechanically excavate the first 150 mm. In this technique the hand excavation shall always lead the mechanical excavation by 150 mm. Once within 300 mm of the gas asset then only hand excavation is allowed.

### **5.5.3 Hydro-Vacuum Excavation**

Where hydro-vacuum excavation is used in the vicinity or to expose existing gas assets, the following conditions must be applied:

- Ensure the general requirements in **Section 5.5.1** are adhered to prior to the works commencing.
- Root cutting heads shall not be used at any time.
- When locating pipelines and mains, a maximum water pressure of 2500 PSI (17200 kPa) may be used to a depth no greater than 450 mm. Below this depth, the maximum water pressure shall be set in accordance with **Table 10** for the asset type in the vicinity.
- When locating customer offtakes (services), a maximum water pressure of 2500 PSI (17200 kPa) may be used to a depth no greater than 300 mm. Below this depth, the maximum water pressure shall be set in accordance with **Table 10** for the asset type in the vicinity.
- Where air is used in place of water the air pressure shall not exceed 175 PSI (1200 kPa).
- A minimum distance of 200 mm shall be maintained between the nozzle tip and subsoil and vertical movements avoided (i.e. nozzle shall not touch or be inserted into soil).
- The wand shall never remain motionless during excavation. Aiming directly at the gas asset shall be avoided at all times.
- NDD vacuum equipment must not come into contact (impact) with the pipe or coating.
- Once a gas asset has been exposed via hydro-vacuum methods, a visual check must be undertaken to ensure no damage has occurred to the pipe or its coating. Damage caused to the pipe coating by the third party will be chargeable.
- A dead man trigger or similar, shall be installed and used on the wand.
- If conduits are to be installed for identification of the gas assets location the conduit shall be offset to one side and recorded or a flexible conduit installed over the gas asset. The placement of PVC pipes directly on the gas asset may cause damage to the pipe coating and require repair at the contractor's expense.
- Vacuum excavated holes shall be cleaned of any rocks and debris and backfilled with a minimum 300 mm of sand.

Personnel operating NDD equipment shall monitor ground conditions to determine and adjust for the lowest water pressure setting and vacuum used to adequately expose the gas asset. The objective shall be to use the lowest possible pressure and vacuum required to adequately excavate in order to minimise risk of coating and/or pipe damage. **Table 10** provides the maximum water pressure to be used for various pipe and coating types.



Table 10 Maximum Water Pressure for Hydro-Vacuum Excavation

Pipe / Coating Type		Max. Water Pressure (PSI)	Pipe / Coating Type	Max. Water Pressure (PSI)
Steel	Coal Tar Enamel Coated	1,000	Steel – Mummified fittings (e.g. valves, flanges)	Not Permitted
	Polyethylene Tape Coated	1,000	Cast Iron	1,000
	Polyethylene Coated	2,000	Polyethylene	2,000
	Trilaminate Coated	2,000	Nylon or PVC	1,500
	FBE or HBE Coated	2,000	Unknown Material or Steel Pipe Coating	1,000
	Uncoated	2,500		

#### 5.5.4 Mechanical Excavation

Prior to commencing any excavation works the general requirements in **Section 5.5.1** must be adhered to.

Where works are to be carried out within 3 m of the gas alignment and to 1 m of the known gas main depth, the contractor is required to pothole and expose the gas asset as outlined in **Section 5.5.5**.

Prior to the mechanical excavation commencing ensure the excavator is in working order and all pre-start equipment checks are completed.

Excavators with general purpose buckets (e.g. mud bucket, general purpose teeth) up to 30 tonnes are permitted to conduct mechanical excavations in the vicinity of existing APA gas assets in accordance with APA requirements. Any variation of excavator size or bucket type will require assessment and approval by APA Networks. Buckets with any type of tiger or penetration teeth are not permitted unless explicitly approved by APA Networks.

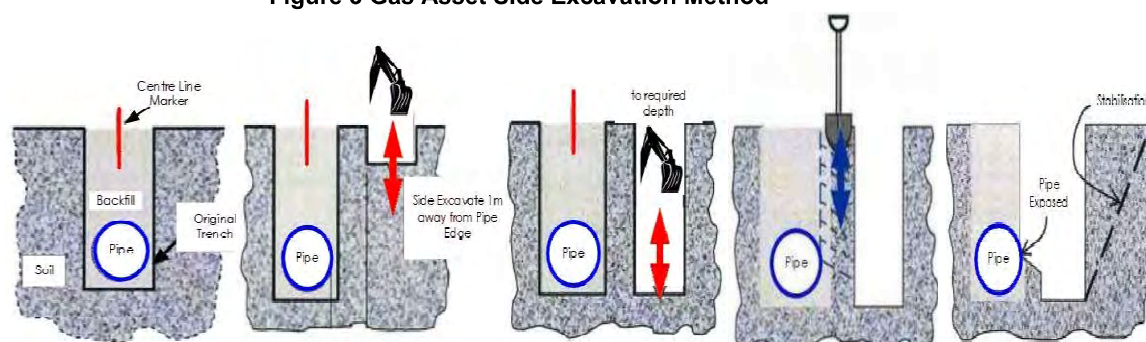
#### Critical Gas Assets

No mechanical equipment shall be used within 1 m of the potholed depth of the critical gas asset, except under explicit on site direction from an APA representative (i.e. APA Site Watch).

**Under no circumstances is mechanical equipment to be used within 300 mm of any gas asset.**

Once the gas asset has been positively proven, as outlined in **Section 5.5.2**, mechanical excavations can commence at a minimum of 300 mm offset from the outer edge of the pipe. The third party shall not mechanical excavate directly over a critical gas asset, with hand excavation only directly over the alignment or to expose the asset.

Figure 3 Gas Asset Side Excavation Method





## Non-Critical Gas Assets

Mechanical excavation is permitted directly over the top of non-critical gas assets however **under no circumstances is mechanical excavation equipment to be used within 300 mm of any gas asset**. If the third party is in doubt with regards to the criticality of the gas asset, then the excavation method outlined for critical gas assets shall be used.

Prior to the mechanical excavation commencing, the asset shall be physically proved as outlined in **Section 5.5.2**. Once the depth has been physically proven the third party can proceed with excavating around the gas asset until within 300 mm. From this point hand excavation or NDD is required.

### 5.5.6 Protection During Exposure

Additional protection measures are required where an exposed gas asset may be subject to impact from construction activities, sagging of exposed pipe and trench instability. Any works requiring exposure and protection of the gas asset should have an accompanying methodology and approval by APA Networks.

Physical protection (e.g. structural steel protection, sandbags, wrapped with split PVC pipe) should be installed around the exposed gas asset when exposed, particularly when new infrastructure is planned to be installed crossing below the gas asset. If the gas asset is to be exposed for longer than one day or otherwise left unattended, suitable barricades, security fencing and/ or steel plates will be required to provide protection from vehicles, dropped objects (such as construction materials) or vandalism.

Unsupported exposed pipe lengths require protection from sagging by using suitable supports such as sandbags or slings. Where slings or other support types come into contact with the gas asset, protection methods must be employed (e.g. wrapped with split PVC pipe) to prevent damage to the existing pipe or coating. Exposed unsupported joints must also be identified and supported during works. The maximum allowable length of exposed pipe without support is provided in **Table 11**.

**Table 11 Maximum Unsupported Lengths of Exposed Pipe**

Gas Asset Diameter (mm)	Steel Maximum Unsupported Length (mm)	Polyethylene Maximum Unsupported Length (mm)	Other Material Maximum Unsupported Length (mm)
≤20	2,000	1,500	1,500 (Note 1)
>20 & ≤63	2,800	2,000	
>63 & ≤100	3,600	3,000	
>100 & ≤150	4,200		
>150 & ≤250	5,000		
>250	5,700		

**Note 1:** Particular care should be taken for other materials include cast iron, PVC or nylon due to the unpredictable nature of the joints.

Additional protection and support during trench or bell-hole excavation works to minimise ground instability may also be necessary to protect the integrity of existing gas assets during exposure works. Trenches are to be inspected prior to commencing works each day and monitored by the onsite party responsible for the excavation. APA shall be notified of any condition likely to affect the stability of trench.

Any deep excavations, within 3 m of a gas asset, shall be designed and constructed such that the effects of subsidence, collapse or extreme weather will not affect the gas asset. Any such excavations prepared by a third party must be accompanied by certification from a registered practising engineer (RPEQ required for works in Queensland, and so on as required for other States and Territories) confirming that the design is adequate to protect the gas asset.



### **5.5.7 Backfill and Reinstatement**

Prior to backfilling, a minimum of 150 mm of bedding sand must be placed around all gas assets. Bedding sand shall be in accordance with APA specification **400-SP-L-0002**, which can be provided to third parties upon request. The bedding must be compacted in accordance with **Section 5.10**, including suitable compaction and backfill of the underside of the gas asset to prevent any further vertical movement during subsequent layers above the asset. APA may require geo-fabric installation between different trench reinstatement products to prevent sand migration in which nonwoven fabric is required and needs to extend 1000 mm past either side of the utility crossing.

The bedding material shall be clean, free from all sharp objects, sandbags, clay material, vegetable matter, building debris and disused road paving material to the specification provided by APA. Recycled bedding material and stabilised sand must not be used unless explicitly approved by APA.

The remainder of the excavation shall be backfilled and compacted in accordance with **Section 5.10**, at maximum increments of 300 mm to a density which is similar to the surrounding sub-grade material. Only clean fill material shall be used, preferably the same as the natural soil in the area, and free from ash, weeds and pest plants, salt or any chemicals which could harm the gas assets. Where required, concrete slabbing shall be installed in accordance with **Section 5.4**.

In all circumstances gas warning tape / marker board shall be installed in accordance with the following requirements:

- Gas warning tape installed at 300 mm below finished surface level.
- Gas marker board installed 300 mm above the top of the pipe.

Note, where gas warning tape cannot be installed 300 mm below the finished surface level due to road pavement box out, marker board is to be installed 50 mm below the box out work zone.

In situations where a physical protection slab or bridging slab has been utilised an additional layer of gas marker board must be installed 50 mm above the slabbing.

The excavated area is to be reinstated to the original condition or as approved by APA and the relevant local council, road authority or landowner as applicable. Any marker signs removed during excavation works must also be reinstated in original positions. Additional marker signs may be required at new infrastructure crossings as directed by APA.

## **5.6 Trenchless Excavation**

Trenchless excavation covers horizontal directional drilling (**HDD**), boring, pipe bursting and tunnelling. These activities are considered high risk that require additional controls to prevent damage to existing gas assets. This includes proving the existing gas asset location and depth for all horizontal bores, as well as providing a witness trench to verify that the bore will pass the asset with sufficient separation.

A witness trench must be used in addition to live electronic tracking of the bore head. The witness trench must be prepared to the specification provided in **Table 12**. The progressive measurement of the length of the bore must also be made and plotted along its proposed direction to ensure the bore head has not missed the witness trench. The bore head must be exposed in the witness trench, when the crossing is above the existing gas asset.

For all assets installed via trenchless excavation a vertical separation aligning with the maximum borehole diameter (e.g. reamed diameter) shall be demonstrated. For transmission pressure and distribution pressure assets this vertical separation distance is 1000 mm and 600 mm, respectively.

If the works run parallel to a transmission pressure or critical gas assets a minimum separation distance of 3 m must be maintained. For non-critical gas assets, the minimum separation distance of 1 m must be maintained. For works running parallel to gas assets, proving of the actual location of the gas asset must occur every 4 m.

**Note:** It is expected that HDD operators working near gas assets hold the national competency RIICCM202 – Identify, location and protect underground service.



**Table 12 Minimum Witness Trench Dimensions**

Crossing Type	Witness Trench Depth	Witness Trench Dimensions
Crossing Above Existing Gas Asset	To bottom (invert) of gas asset	Witness trench shall be 1000 mm to 2000 mm in front of the gas asset on the approach side. Witness trench shall be min. 1500 mm long and 300 mm wide centred on bore centre line.
Crossing Below Existing Gas Asset	To bottom (invert) of gas asset plus 500 mm	

Dispensation may be considered where detailed long sections are provided for assessment by APA and where depths of existing gas assets or separation to the bore are greater than 2500 mm.

Pipe bursting is not permitted within 1000 mm of an existing gas asset.

## 5.7 Piles, Piers or Poles

No piling such as pile-driving, sheet-piling or hammer-piling is permitted within 15 m of an existing gas asset unless explicit consent has been provided by APA. In all instances, vertical bored (augured) piles, piers or poles are preferred.

Where installation of piles, piers or poles are proposed between 500 mm and 1000 mm clearance from a gas asset (distribution and transmission pressures, respectively), the area directly below the proposed pile, pier or post location must be excavated to a level equivalent to the bottom (invert) of the existing gas asset, and works started from that depth.

**Note:** Proving of the gas asset must be completed in accordance with the requirements set out in **Section 5.5.2** prior to the commencement of any works.

Temporary steel plates may also be installed between the gas asset and the proposed pile, pier or post used for vertical bore methods within this clearance to provide extra protection.

**Note:** Direct vibration monitoring on the gas main may be required depending upon the installation method utilised. Refer to **Section 5.9** for APA Networks vibration limits.

## 5.8 Hot Works for Construction Activities

Typical hot works include grinding, welding, thermal or oxygen cutting or heating, and other related heat producing or spark-producing operations. Heat sources or hot works must not impact gas assets, taking into consideration that the ground or adjacent structures may also be capable of transmitting heat.

In order to safely undertake hot works, response procedures in the event of fire or flammable gas detection must be prepared and monitoring for flammable gases must be undertaken during works.

APA must approve any hot works where there is less than 300 mm ground cover to buried gas assets, or within 5,000 mm of any exposed gas assets (including any pits or valve covers). A heat shield or barrier may be required to provide protection if it cannot be demonstrated that works can be undertaken without impacting the gas asset.

## 5.9 Vibration Limits

Significant vibration may arise from activities such as blasting, piling, tunnelling and HDD/boring.

To avoid damage to existing APA Networks operated pipes and coatings, the following vibration limits must not be exceeded at any point on the pipe:

- For cast iron mains: 5 mm/s maximum Peak Particle Velocity (**PPV**) measured on the pipe.
- For steel pipe with a coal tar enamel (**CTE**) coating or with poor coating health: 10 mm/s maximum PPV measured on the pipe.
- For non-coal tar enamel pipe coatings and other pipe materials (i.e. steel, PE, PVC or Nylon): 20 mm/s maximum PPV measured on the pipe.



- d) For blasting, the above vibration limits can be increased if supported by calculations in accordance with Design Guidelines for Buried Steel Pipeline – American Lifelines Alliance American Society of Civil Engineers (**ASCE**) and approved in writing by an APA Networks Integrity Engineer.

**Note:** Cast iron mains are particularly susceptible to damage by vibration. The PPV limit may not prevent leaks from cast iron and may require additional gas leakage survey activities during works in accordance with **Section 5.3**.

For vibration monitoring adopt an alarm at 80% of the acceptable PPV value and when the alarm is activated, the work must stop and be re-assessed. Short incursions up to 100% are acceptable, for sustained periods of vibration longer than 5 minutes, works must be stopped.

The zone of influence for vibration assessment undertaken by the third party is shown below;

- For compaction, refer to **Table 13**.
- For trenchless excavation (HDD/ boring), refer to **Section 5.6**.
- For piling refer to **Section 5.7**.
- For blasting refer to **Section 5.11**.

## 5.10 Compaction Limits

Compaction activities such as establishing a base course for a road pavement may result in damage to the pipes and coatings of existing gas assets. Compaction limits in the vicinity of existing gas assets are summarised in **Table 13**.

**Table 13 Maximum Compaction Limits**

Horizontal Separation (m)	Minimum Cover to Top of Gas Asset (mm)	Compaction Limits
≤3 (Note 1)	300	Small handheld compactor only
	500	Large handheld compactor Maximum 4 tonne tandem drum static roller
	750	Maximum 8 tonne tandem drum static roller
	1200	Maximum 10 tonne tandem drum static roller subject to APA approval
>3 & ≤10	All	Maximum 8 tonne tandem drum vibrating roller
>10 & ≤15	All	Maximum 10 tonne tandem drum vibrating roller
>15	All	Any compaction method

**Note 1:** Compaction within 3 m of gas assets is limited to static rollers. If vibration compaction is necessary a robust vibration assessment and construction methodology signed off by an RPEQ for works in Queensland, and so on as required for other States and Territories, will need to be produced by the third party for review and approval by an APA Networks Integrity Engineer.

## 5.11 Blasting / Seismic Survey / Explosives

Blasting, seismic survey or the use of explosives is not permitted within 100 m of a gas asset unless explicit approval is provided by APA Networks. The size and quantity of the explosives to be used will determine how close to the pipeline blasting will be permitted. In all cases, blasting methods must be arranged to limit ground vibrations so that the peak particle velocity does not exceed acceptable limits. At no stages will blasting be permitted within 3 m of the pipeline.



### **5.12 Suspended Materials above Gas Assets and No Go Zones for Cranes**

Where gas assets are exposed, no cranes, excavators or backhoes are permitted to carry or suspend materials directly over or across a gas asset without an APA Networks approved lifting plan and SWMS.

Outriggers must be set up outside a 3 m radius from gas assets unless otherwise approved by APA Networks in writing.

### **5.13 Temporary Materials**

In all instances it is preferred that temporary materials (e.g. soil, shipping containers) are not stored on top of transmission pressure and critical gas assets. Temporary material must not restrict access and should be placed at least 1,500 mm from the alignment of these assets unless otherwise approved by APA Networks.

## **6 PART 4 - ALTERATION OF EXISTING GAS ASSETS**

Where the proposed third party works do not comply with the requirements of this document, and adequate additional controls or a specialised engineering solutions cannot be developed, alteration of the existing gas assets will be required.

Gas asset alterations will only be undertaken under a Recoverable Works Agreement (**RWA**) appropriate to the scope and extent of the works required.

An Early Works Agreement (**EWA**) may also be required where works are proposed which require proving, engineering design activities or purchase of long lead items. This will allow for completion of these items prior to execution of a RWA and avoid delaying works.

If either or both these agreements are required, then APA Networks will enter negotiations with the relevant third party and any costs will be payable by that third party.



## 7 GLOSSARY OF TERMS AND ABBREVIATIONS

Table 14 Glossary of Terms and Abbreviations

Term/ Abbreviation	Meaning
AGN	Australian Gas Networks
APA	Each entity that forms part of the APA Group
APA Engineering Assessment	Covers technical assessments which may involve field integrity assessments that may or may not include the use of specialist Consultants managed by APA.
APA Networks Operated Assets	APA Networks acts as the asset operator on behalf of entities Australian Gas Networks (AGN), Allgas, APA, Origin and Queensland Nitrates (QNP) and operates in New South Wales, Northern Territory, Queensland, South Australia and Victoria.
APA Permit Issuing Officer	The APA Permit Issuing Officer is responsible for opening the Permit To Work, validating APA Networks assets have been located and being the Site Watch for works within the gas Easement or Protected Zone.
AS	Australian Standard
ASCE	American Society of Civil Engineers
ATWP	Authority to Work Permit
CTE	Coal Tar Enamel
Damage	Physical damage to and interference with APA's assets. Damage includes reducing design life, coating damage, dents, scratches, rupture, cutting of cathodic protection cables. Damage can also include potential impacts that APA pipelines can have on third party assets.
BYDA	Before You Dig Australia (previously known as Dial Before You Dig (DBYD))
DCVG	Direct Current Voltage Gradient
Depth of Cover	Vertical distance from the existing natural ground surface to the top of the buried gas asset
EPR	Earth Potential Rise
ESV	Energy Safe Victoria
EWA	Early Works Agreement



Excavation	Excavation refers to manual digging or mechanised digging operation with plant or equipment which involves trenching and trenchless excavation. Trenchless excavation covers boring, Horizontal Directional Drilling (HDD), pipe bursting and tunnelling.
FBE	Fusion Bonded Epoxy
GIS	Geographic Information System
HBE	High Build Epoxy
HDD	Horizontal Directional Drilling
Hot Works	Hot works are defined as grinding, welding, thermal or oxygen cutting or heating, and other related heat-producing or spark-producing operations. Heat sources or hot works must not impact pipelines, taking into consideration that the ground or adjacent structures may also be capable of transmitting heat.
LFI	Low Frequency Induction
LPG	Liquefied Petroleum Gas
MAOP	Maximum Allowable Operating Pressure
Measurement Length	<p>The maximum length of pipeline route which presents an extended source of hazard on the basis that an event of failure could affect any part of the development or specific location relevant to the development.</p> <p>The maximum length corresponds to the heat radiation hazard associated with a 4.7 kW/m<sup>2</sup> heat radiation contour for an ignited full bore rupture calculated in accordance with AS/NZS 2885.6. If the pipeline is designed as a no rupture pipe, then the measurement length corresponds to a credible leak size.</p>
NDD	Non-Destructive Digging (NDD) refers to either hand digging or Non-Destructive Pot Holing using a vacuum pipe connected to a vacuum truck with either a water lance or air lance. Hydro-Vacuum Excavation consists of a water lance and vacuum truck and is used to physically prove existing assets.
OHEW	Overhead Earth Wire
PE	Polyethylene
Pipe Bursting	Pipe bursting refers to a pipe being inserted to a larger pipe that results in the larger pipe being damaged. For an example of pipe bursting, refer to the following You-Tube video: <a href="https://www.youtube.com/watch?v=HX5beh0ubGY">https://www.youtube.com/watch?v=HX5beh0ubGY</a>
Pipeline Easement	The pipeline area shown on a survey plan and referenced on the property title.
Predominate Building Line	The expected predominate building line relates to the façade of the building, not necessarily the property boundary.
Protected Zone	A Protected Zone is an area extending both horizontally and longitudinally along a gas asset. It is the area where loads and/or any hot works may potentially cause damage to the gas asset.



	The Protected Zone refers to works near APA Networks gas assets or works within the vicinity of the gas assets that may cause an unacceptable risk to the asset in accordance with Table 2 Minimum Clearances or Table 3 Minimum Clearances for Construction Works and Land Use Activities
PTW	Permit to Work
PPV	Peak Particle Velocity
PVC	Polyvinyl Chloride
QNP	Queensland Nitrates Plant
RPEQ	Registered Profession Engineer Queensland
RWA	Recoverable Works Agreement
Sensitive Use Locations	<p>This is designated as Class “S” as per AS/NZS 2885.6 Pipelines - Gas and liquid petroleum - Pipeline safety management and refers to the sub location class.</p> <p>Sensitive Use Location Class (S) identifies land where the consequences of a FAILURE EVENT may be increased because it is developed for use by sectors of the community who may be unable to protect themselves from the consequences of a pipeline FAILURE EVENT.</p> <p>Sensitive uses are defined as follows:</p> <ul style="list-style-type: none"> <li>• Schools which includes colleges</li> <li>• Hospitals</li> <li>• Aged care facilities such as nursing homes, elderly people’s homes</li> <li>• Prisons and jails</li> <li>• Convalescent homes</li> <li>• Sheltered housing</li> <li>• Buildings with five or more stories</li> <li>• Large community and leisure facilities, large open air gatherings</li> <li>• Day care facilities</li> <li>• Other potentially difficult to evacuate facilities</li> <li>• Other structures as defined by relevant local councils.</li> </ul> <p>The Sensitive Use Location Class “S” must be assigned to any section of a gas transmission pipeline where there is a sensitive development within the applicable Measurement Length.</p>



Site Watch	<p>An APA Site Watch representative can be the Permit Issuing Officer for excavation work within a gas Easement or Protected Zone and is referred to as the primary spotter for excavation works.</p> <p>The secondary spotter is provided by the Contractor.</p> <p>The primary spotter has the ultimate decision regarding works within the gas Easement or Protected Zone which includes the method of excavation, starting and stopping excavation work.</p> <p>The APA Site Watch representative is the nominated competent person responsible for the following;</p> <ul style="list-style-type: none"> <li>• Making themselves highly visible and everyone on the job site should be aware of the Site Watch's role;</li> <li>• Communication to personnel operating mobile plant and equipment ensuring minimum clearance to above and below ground assets is maintained and the construction methodology is adhered to and complies with APA Networks requirements.</li> </ul> <p>Ensuring personnel do not encroach within the swing radius of the operating machinery.</p>
SMS	Safety Management Study
SMWS	Safe Work Method Statement used by APA or Contractors to execute field work. The risks and associated control measures risk assessments should be transferred to SWMS.
SRZ	Structural Root Zone
Structures	Structures refer to third party structures which includes, but is not limited to; temporary or permanent buildings, walls, canopies, footings, pile caps or retaining walls
Third Party	The person or entity and their agents or Contractors that propose to undertake work near APA assets.
Third Party Assets	Third Party Assets include roads, utilities and structures.
Third Party Excavation	Third Party Excavation which is <b>not</b> associated with APA (e.g. road works, utility installation, private development, fencing).
Third Party Works Classification	<p>The Third Party Work Classification as shown in <b>Section 3.3</b> covers the following three work classifications:</p> <ol style="list-style-type: none"> <li>1. No Impact to gas assets</li> <li>2. No Objection Under Conditions</li> <li>3. Enquiry Escalated for Alteration</li> </ol>
Transmission Pipeline	Gas transmission pipeline which includes all associated equipment such as cathodic protection, earthing grid, instrumentation and electrical cables.
Utilities	Includes water, wastewater, drainage, telecommunications cables, power poles and cables owned by individuals or organisations other than APA Networks.
Voltage	<p>Difference of potential normally between conductors or between conductors and earth as follows:</p> <ol style="list-style-type: none"> <li>a) Extra-low voltage – Not exceeding 50V a.c. or 120 V ripple-free d.c.</li> <li>b) Low voltage – Exceeding extra-low voltage, but not exceeding 1000 V a.c. or 1500 V d.c.</li> </ol>



	c) High voltage – Exceeding low voltage.
Works	The development of any type of buildings, structures and other obstructions (including residential buildings, pools, sheds, carports, major developments, transport infrastructure, services, stockpiles, trees), and any work that causes changes to the ground (including movement of heavy vehicles, blasting, tunnelling, pile driving, ground compaction, earthworks, open and trenchless excavations)



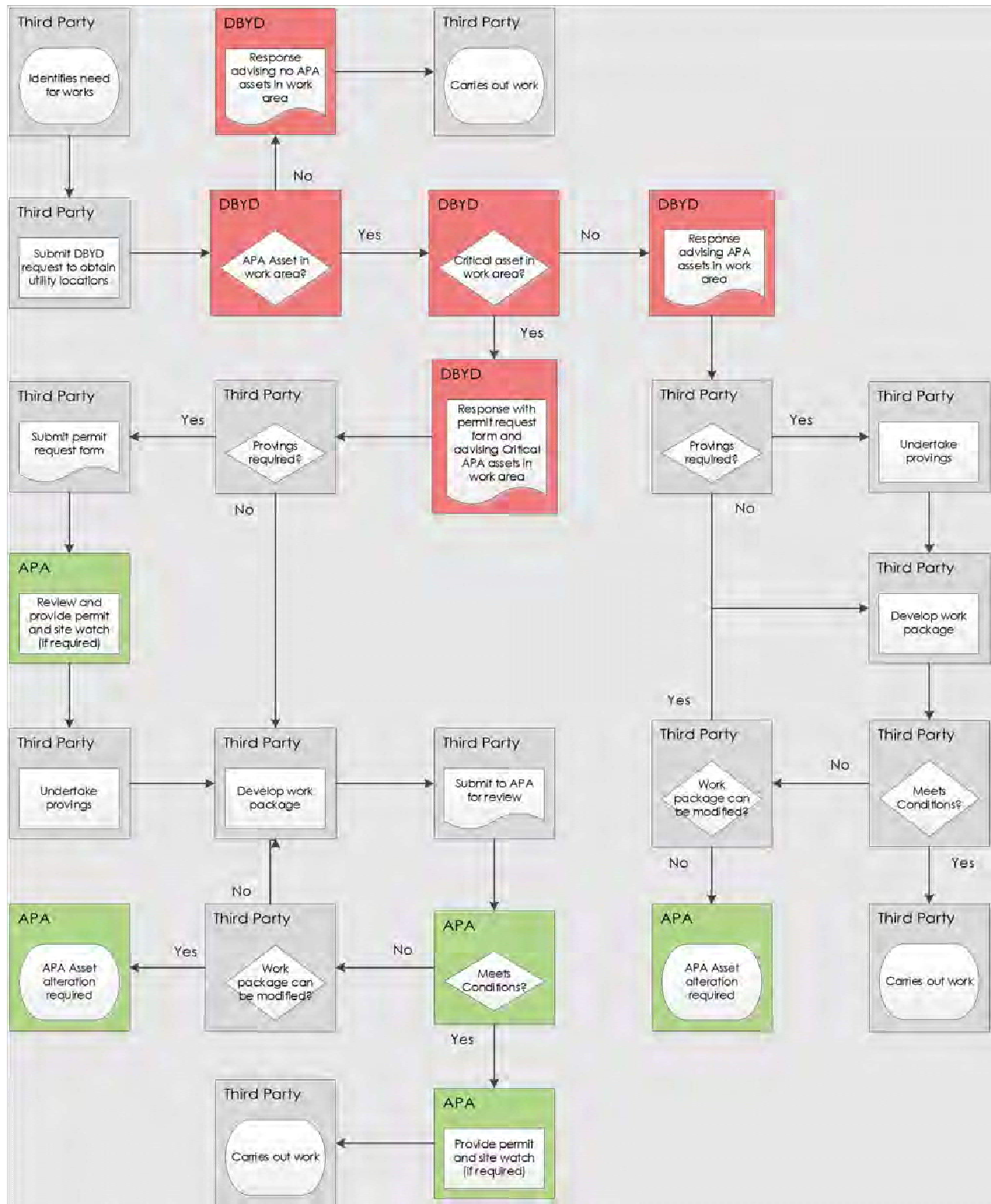
## 8 DOCUMENT REFERENCES

**Table 15 Document References**

External Standards	
API RP 1102	Steel Pipeline Crossing Railroads and Highways
AS 2832.1	Cathodic protection of metals: Pipes and cables
AS 2885.0	Pipelines – Gas and liquid petroleum: General requirements
AS/NZS 2885.1	Pipelines – Gas and liquid petroleum: Design and Construction
AS/NZS 2885.2	Pipelines – Gas and liquid petroleum: Welding
AS 2885.3	Pipelines – Gas and liquid petroleum: Operations and Maintenance
AS 2885.5	Pipelines – Gas and liquid petroleum: Field Pressure Testing
AS/NZS 2885.6	Pipelines – Gas and liquid petroleum: Pipeline safety management
AS/NZS 4645.1	Gas Distribution Networks - Network Management
AS/NZS 4645.2	Gas Distribution Networks - Steel Pipe Systems
AS/NZS 4645.3	Gas Distribution Networks - Plastics Pipe Systems
AS 4799	Installation of Underground Utility Services and Pipelines Within Railway Boundaries
AS 4827.1	Coating defect surveys for buried pipelines Part 1: Direct current voltage gradient (DCVG)
AS/NZS 4853	Electrical Hazards on Metallic Pipelines
AS 4970	Protection of trees on development sites
Standard Policies, Procedures, Specifications, Guidelines, Forms and Templates	
400-SP-L-0002	Networks Bedding Material Specification
400-PR-L-0003	Encroachment and Land Use Change SMS Trigger Procedure



## GENERAL DBYD RESPONSE PROCESS





# Before You Dig Australia

apa

Classification: Networks

Enquiry Date: 31/01/2025  
Sequence Number: 250319433  
Work Site Address: 33 Harold Street  
Virginia  
QLD

4014







**NO WORK TO PROCEED UNTIL  
APPROVED BY APA**



**For your immediate information THERE IS A  
CRITICAL GAS PIPELINE OR INFRASTRUCTURE  
(Gas Assets) located in close vicinity to your works.**

---

**Enquiry Date:** 31/01/2025  
**Enquirer:** Chanlyly Chea

---

**Sequence Number:** 250319433  
**Worksite Address:** 33 Harold Street  
Virginia  
QLD 4014

---

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

**We confirm there are CRITICAL Gas Assets located in close vicinity of the above location. Damage to gas assets may result in explosion, fire and personal injury.**

---

Any work activity in vicinity of Critical Gas Assets operated by APA requires an assessment by APA and may require attendance by APA Site Watch whilst work is in progress. Please ensure you read and comply with all the relevant information contained in this response to your BYDA enquiry.

---

Complete the **Work In The Vicinity Of Critical Gas Assets request form** on the following page and forward this to APA as soon as practicable.

---

Wait for APA to provide written authorisation before proceeding with works. APA may require supervision of works, issuance of a permit, or conditional instructions to ensure the safety of the community and security of supply.



## Work in the vicinity of critical gas assets request form

Work / Excavation Site Details	
Number:	Street:
Suburb:	State:
Sequence Number : 250319433	
Requestors Name:	
Company Name:	
Name of Authorised Company Site Representative:	
Email:	
Phone:	Mobile:

## Request to work in the vicinity of critical gas assets conditions

It is the proponent's\* responsibility to read these conditions and complete the request form

1. A minimum of three (3) business days is required to process and assess requests to work in vicinity of critical assets and provide a response.
2. This request form must be accompanied by a detailed schedule of works.
3. When an APA Authority to Work permit is issued, the permit will provide the applicable conditions whilst conducting excavation or work in vicinity of the gas assets.
4. Work must not commence until the requestor has received an APA Authority to Work Permit, or written approval from APA.

\*Person or company requesting to undertake works in proximity to critical gas assets.



**Work/Excavation Drawings Attached**☐ Yes ☐ No**Proposed Work Dates and Times**

From		To	
Date	Time	Date	Time
/ /	am/pm	/ /	am/pm

**\*Requestor / Billing Details - Mandatory Information**

Company / Requestor Name:

Address:

Purchase Order (if applicable):

Phone:

Email:

**Description of Work / Excavation**

Activity/Excavation Details:

**Tick Applicable**

Excavation	Change to surface level
Service crossing	Boring
Proving / Pot-holing	Other (provide details)
Earthworks	
Excavator Size, Tooth Type & Tooth Size (provide details)	

**Return this to:** BYDA\_APA@apa.com.au**Enquiries:** APA Before You Dig officer - 1800 085 628



# Before You Dig Checklist

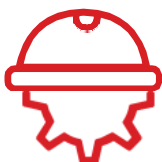


## 1. Plan

- Review maps provided with this BYDA response and confirm the location of your work site is correct.
- Complete the **Work in the Vicinity of Critical Gas Assets** request form and submit to APA.
- Have received contact from APA to confirm details of proposed work.
- Review the **APA Guidelines for Works Near Existing Gas Assets** and clearly understand requirements relating to my scope of work.
- Receive authority to proceed with work from APA.

---

## 2. Prepare



- Electronically locate gas assets and mark locations.
- Site Watch booking confirmed (if required by APA).
- Note: Enquirers should still look for visible evidence of gas assets at the worksite not shown on plans.

---

## 3. Pothole



- Physically confirm ('prove') the location of gas assets by potholing by hand excavation or non-destructive vacuum excavation methods in accordance with **APA Guidelines for Works Near Existing Gas Assets**.
- Road authorities, councils, utilities and their authorised contractors and agents are responsible to pothole or use other suitable methods to verify the location and depth of all gas assets, including gas (inlet) services, prior to commencing any works.

---

## 4. Protect



- Protect gas assets by maintaining clearances whilst excavating and following conditions provided by APA.
- Where required by APA, only conducting work in proximity to gas assets while Site Watch is on site.
- Where applicable, APA Authority To Work permit conditions are clearly understood and complied.
- Strap and support exposed mains and inlet services. Cover exposed mains to prevent damage until the excavation can be restored permanently.

---

## 5. Proceed

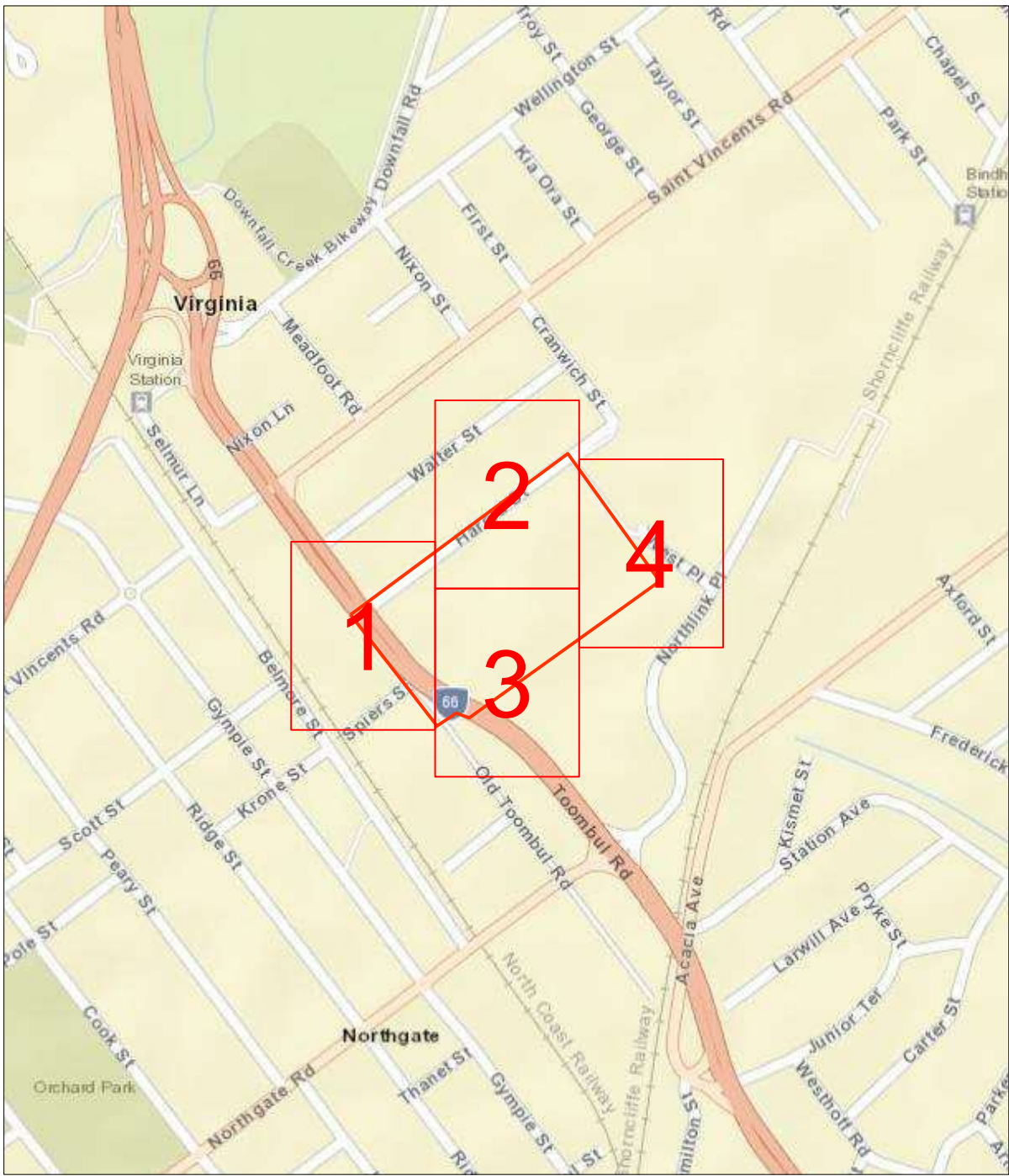


- Only proceed with your work once you have completed all the planning, preparation, potholing and protection requirements.
- APA BYDA response (including maps) are on site for reference at all times, and less than 30 days old.



Site Address 33 Harold Street  
Virginia  
QLD 4014

Sequence No 250319433



Scale 1: 6000

Map Sources: Esri, Garmin, HERE, FAO, NOAA, USGS,  
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Enquiry Area

Map Key Area

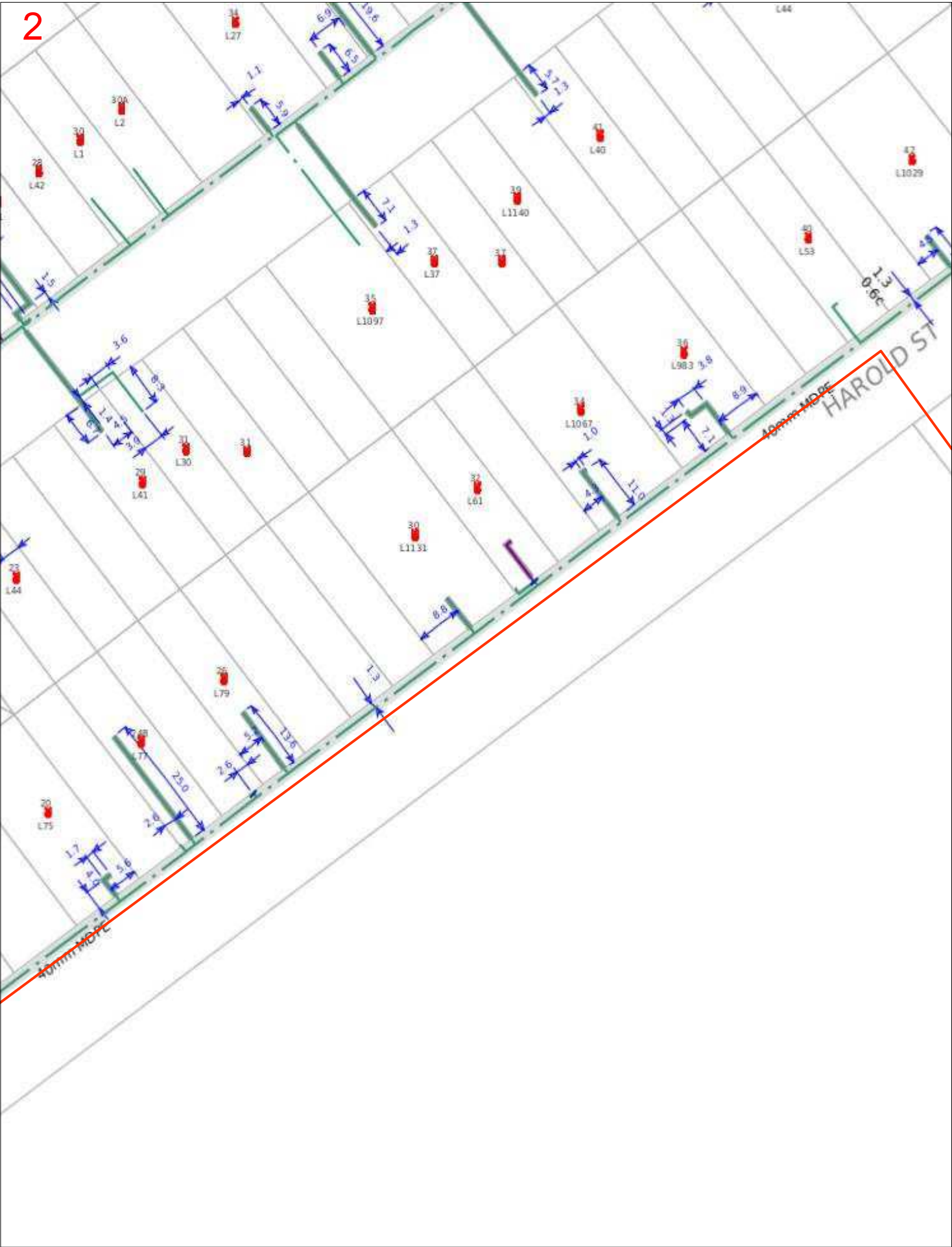








2



Scale 1: 700

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



Enquiry Area

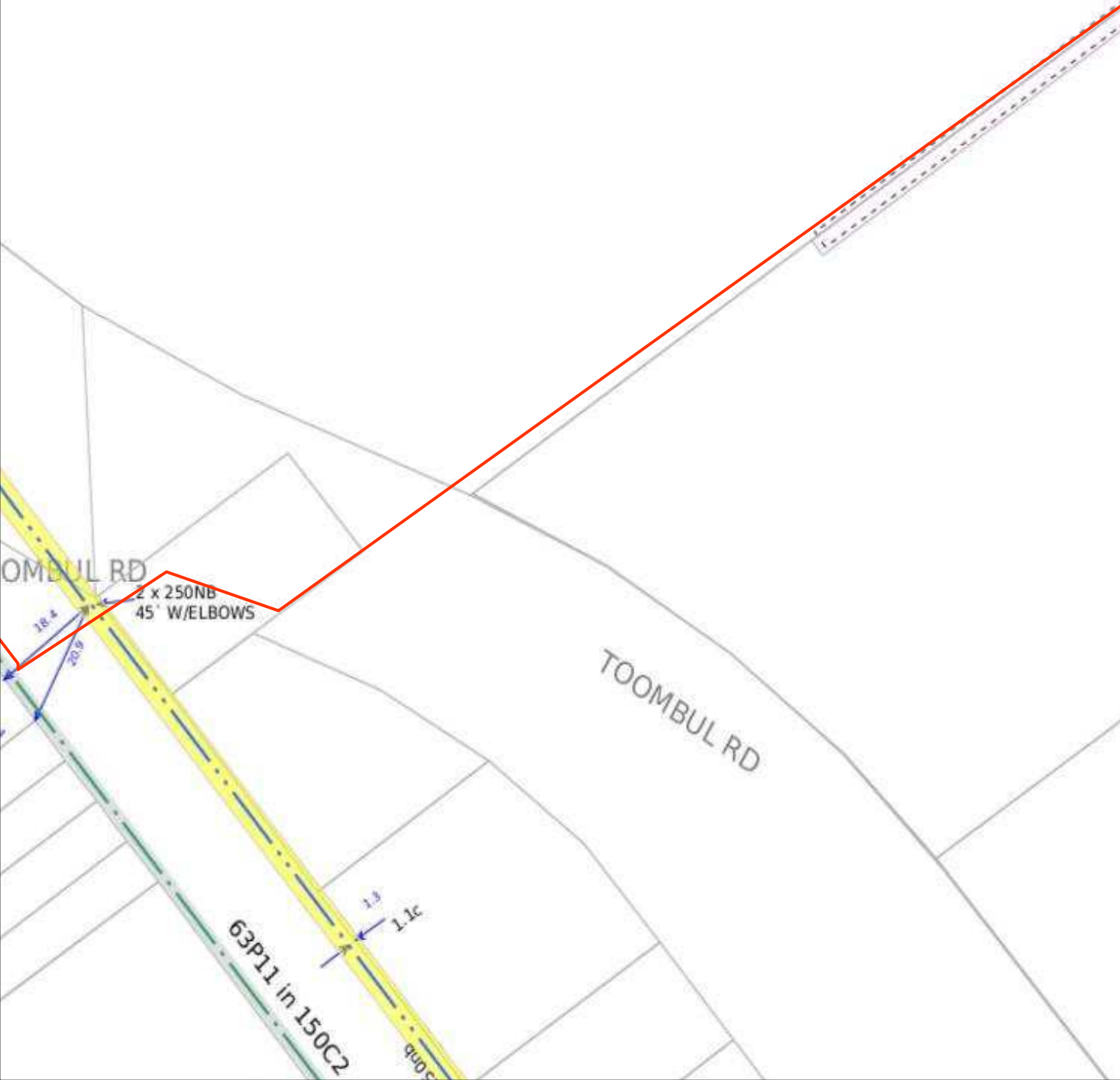
Map Key Area





3

SSING ALIGNED WITH  
PERTY BOUNDARY



Scale 1: 700

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Enquiry Area

Map Key Area







Scale 1: 700

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



Enquiry Area

Map Key Area





## Map Symbolology

Pipe	Pipe code and material	Object
Low pressure	C* (for example, C2) Cast iron	Valve
Medium pressure	CU Copper	Buried valve
High pressure	N2 Nylon	Regulator
Transmission pressure	P* Polyethylene (PE)	Gas supplied = yes
Critical main (behind pipe)	P6, P7, P9-P12 Medium density PE	CP rectifier terminal
Proposed (pressure by colour)	P2, P4, P8 High density PE	CP test station
LPG (pressure by colour)	S* Steel	CP anode
Abandoned	W2 Wrought galv iron	CP bond wire
Idle/inactive	W3 PE coat wrought galv iron	Syphon
Sleeve		Trace wire point
Casing (behind pipe)		
Area	Abbreviation	
BYDA area of interest	BoK Back of kerb	FoK Front of kerb
	C Depth of cover	Galv Galvanized
	CP Cathodic protection	NTI Not tied in
Example		
<b>Pipe</b>	<b>Pipe code</b>	
40P6 in 80C2	40 mm high pressure medium density poly in an 80 mm cast iron casing	Pipe diameter in millimetres is shown before pipe code.
63S8	63 mm medium pressure steel	40P6 = 40 mm nominal diameter

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



## 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 cancellations 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.

## 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)



## 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.

## 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.



The background features a bold, abstract design with large, angular shapes in red and white. The red shapes are primarily in the upper and right portions, while the white shapes are in the lower and left portions, creating a dynamic, high-contrast visual.

**apa**



Referral  
250319429

Member Phone  
(07) 3403 8888

Responses from this member

Response received Fri 31 Jan 2025 10.17am

File name	Page
Response Body	77
ASSET 250319429.pdf	78



**Attention: Chanlyly Chea**

Thank you for your enquiry with Brisbane City Council's Before You Dig service.

**Job Number:** 38537442  
**Sequence Number:** 250319429

The attached .PDF file contains the location of Council's relevant services for your requested location. If you are having trouble viewing these files, it is recommended you upgrade your version of Adobe Reader. You can download the latest version of Adobe Reader for free at <http://get.adobe.com/reader/>

If you require more information, Council offers a convenient online mapping subscription service containing additional services data. The online service offers a wide variety of spatial information suitable for searches over large areas, including information previously available only by visiting Council's Customer Service Centres.

For more information on Council's online mapping services, visit <http://www.brisbane.qld.gov.au/planning-building/planning-guidelines-and-tools/online-tools/ebimap/index.htm>

Kind regards,

Brisbane City Council  
Before You Dig

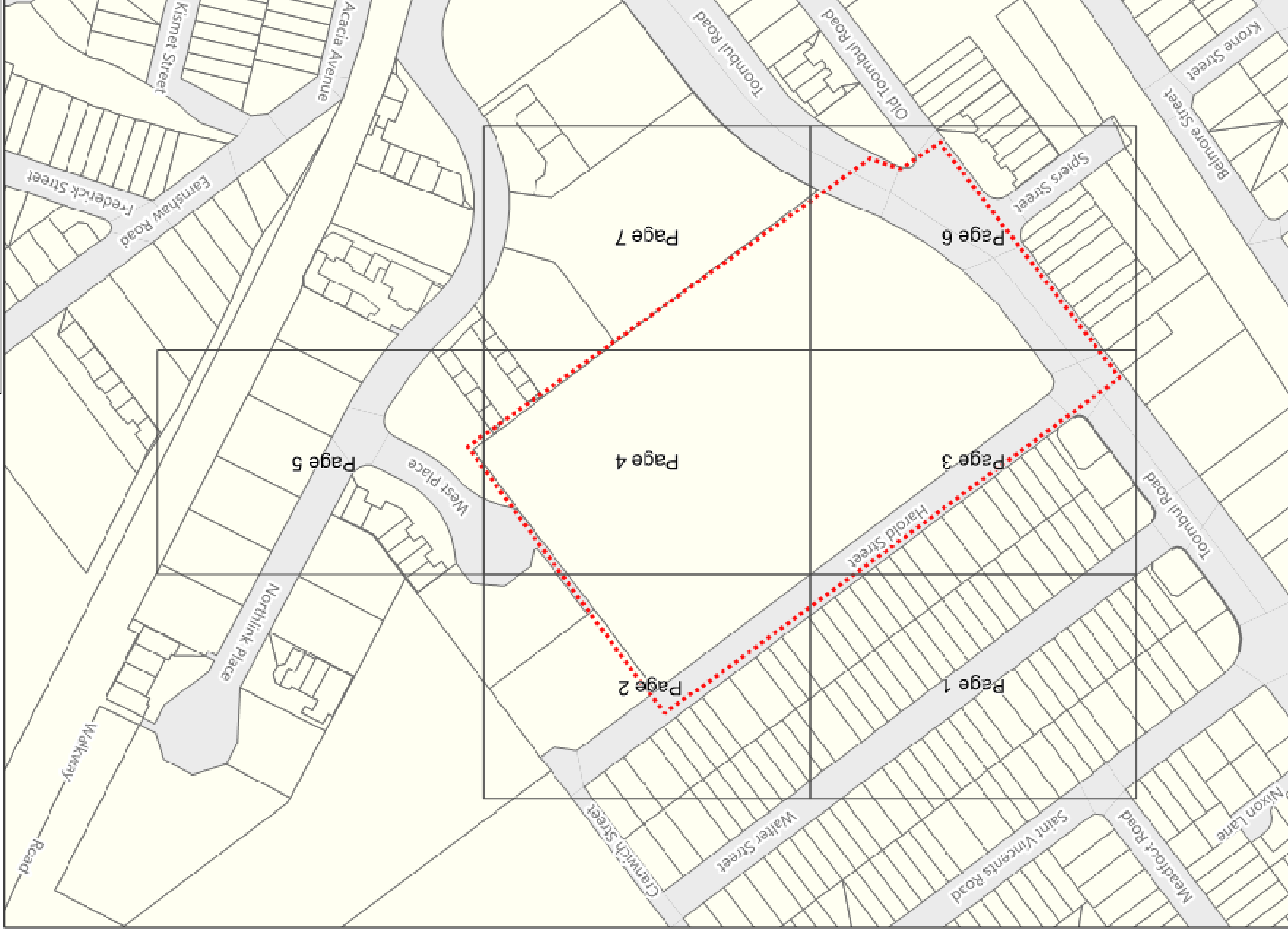




Job # 38537442  
Seq # 250319429  
Provider: Brisbane City Council  
Telephone: (07) 3403 8888



**Legend**  
 BYDA Enquiry  
 Detailed map page



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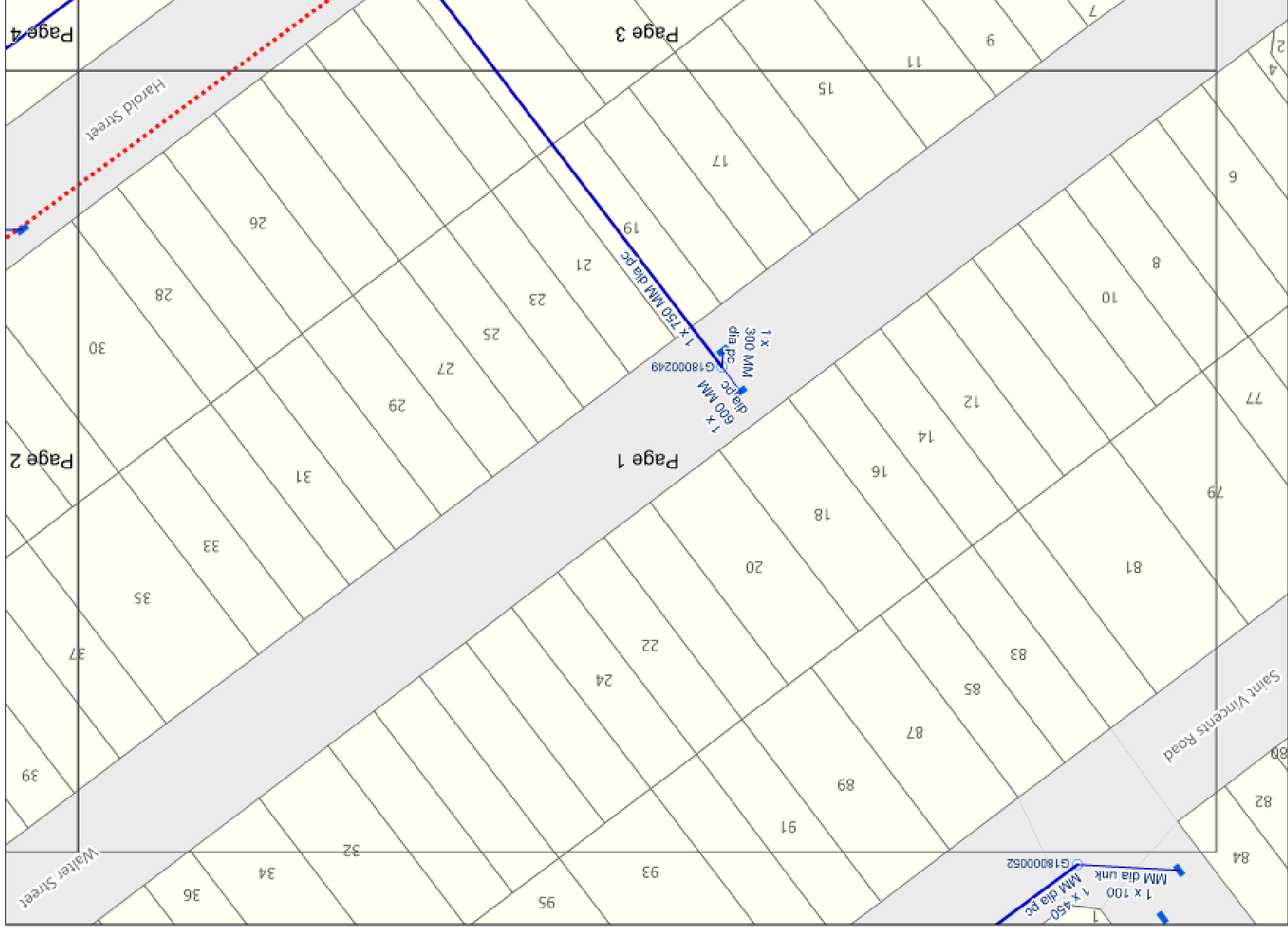
**Legend**

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

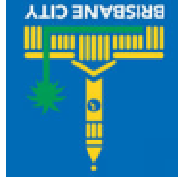
**BYDA Enquiry**

Stormwater Gully Pit

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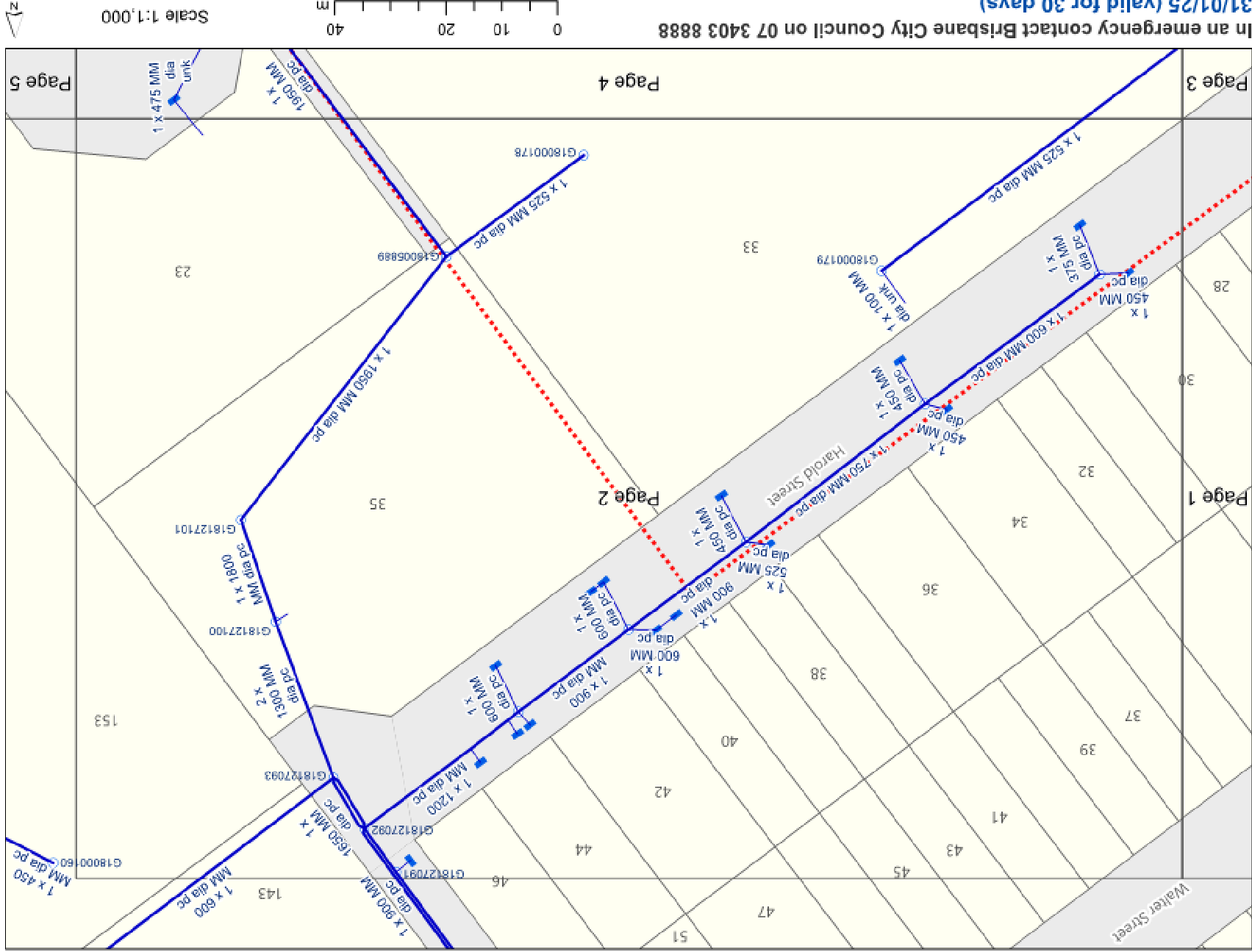
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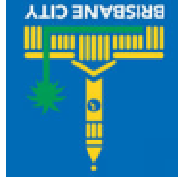
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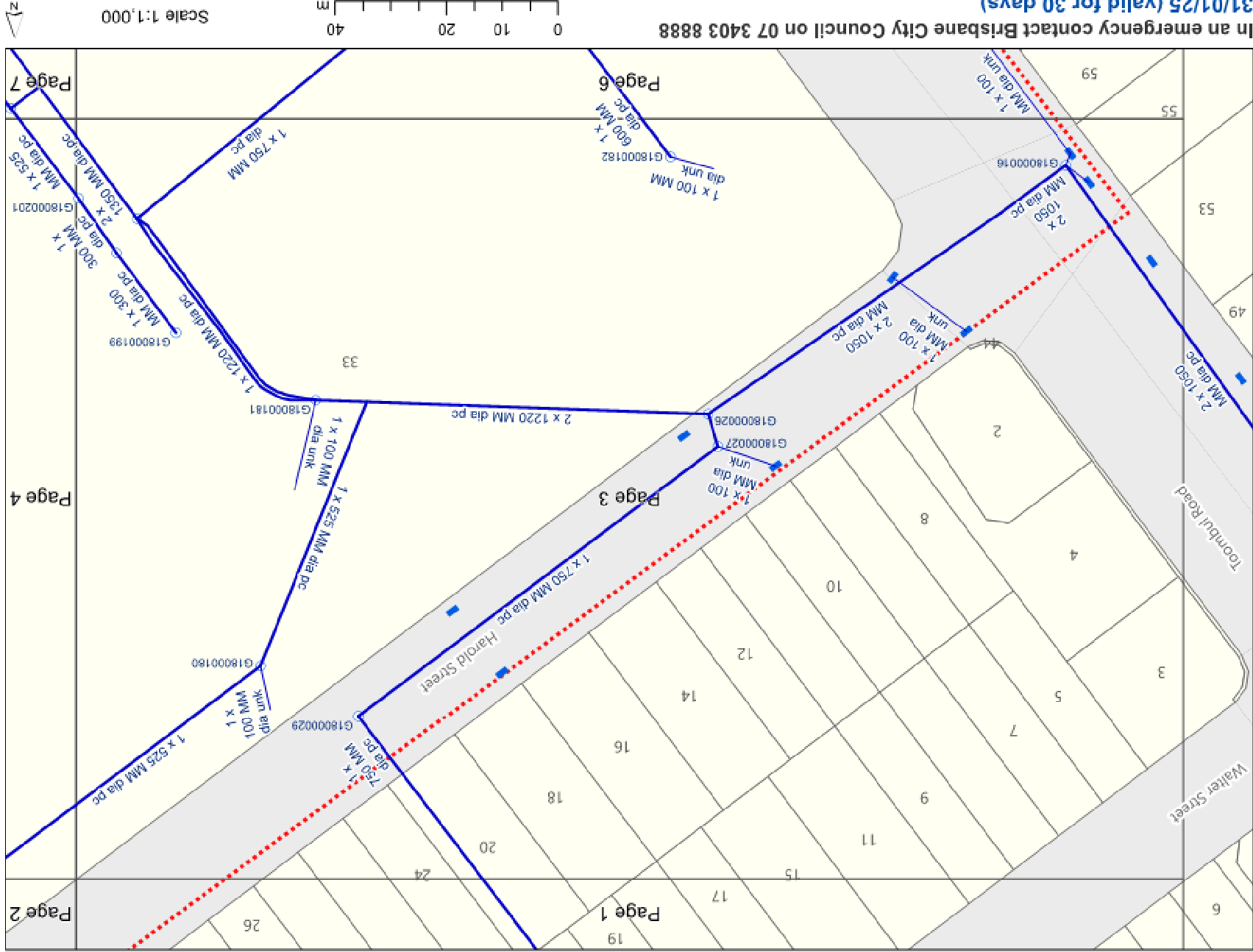
**BYDA Enquiry**

Page 2

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Page 4

**Page 7**











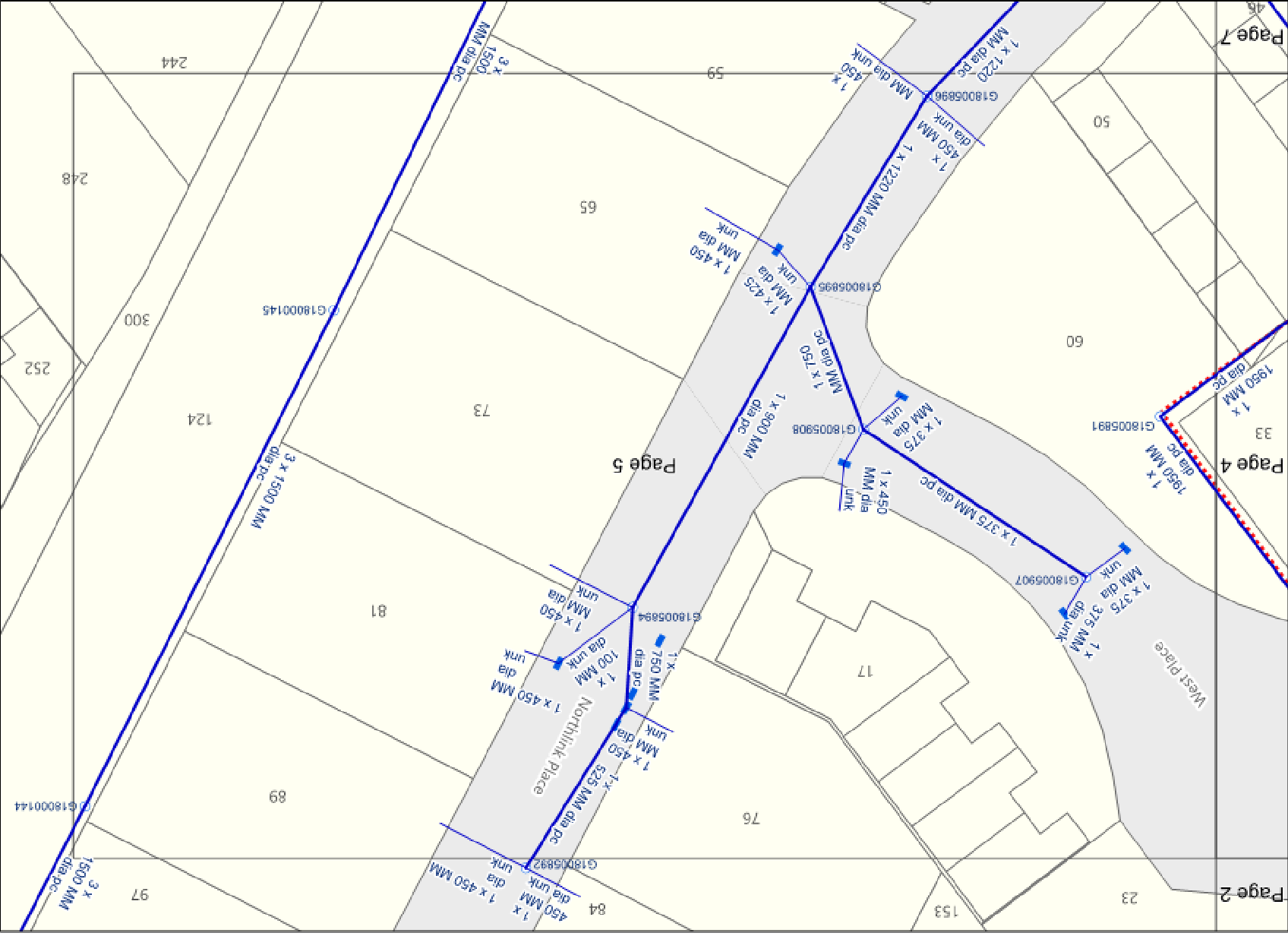
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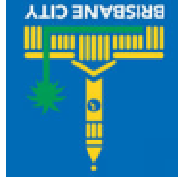
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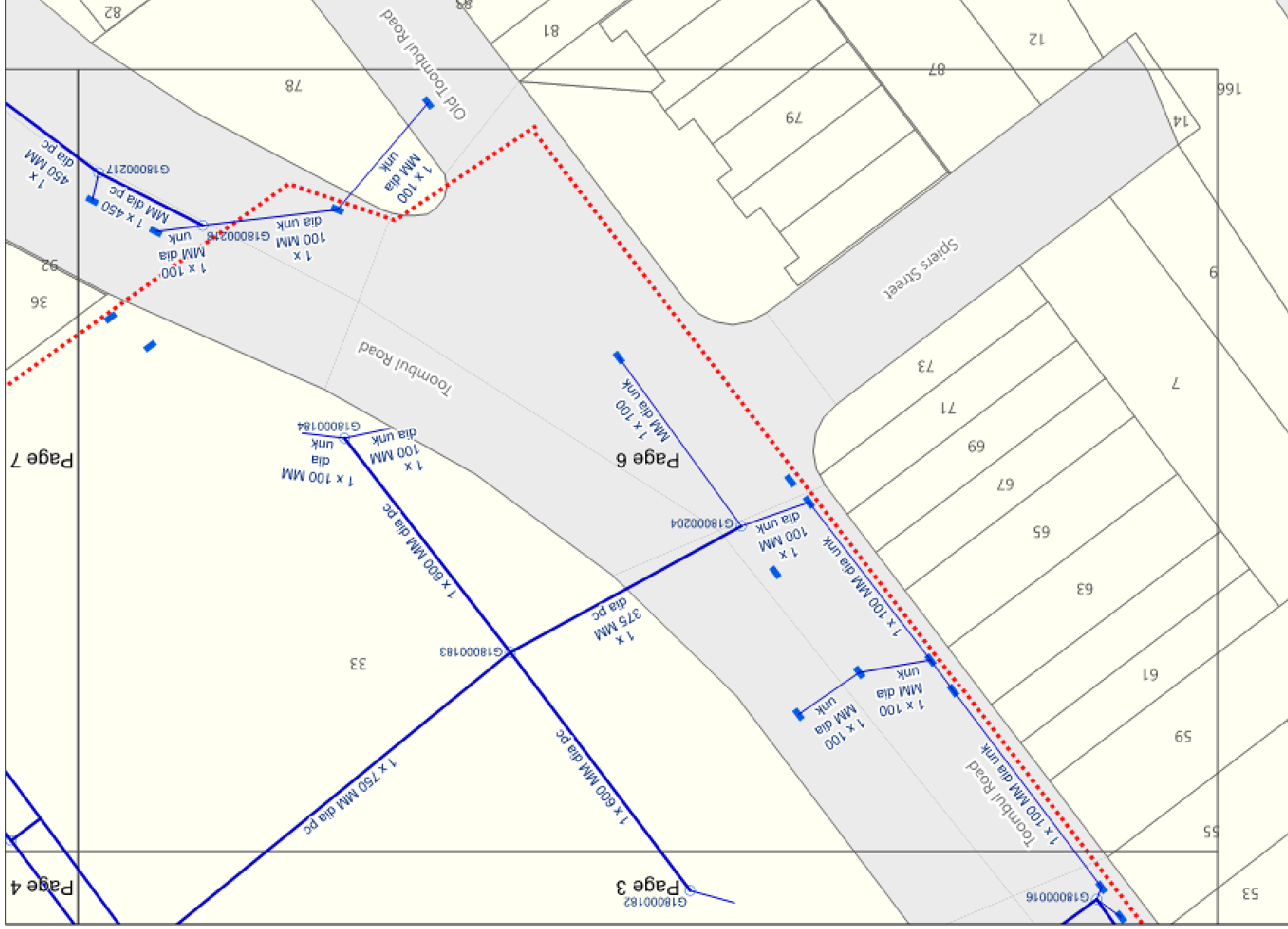
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  - Stormwater Gully Pit

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





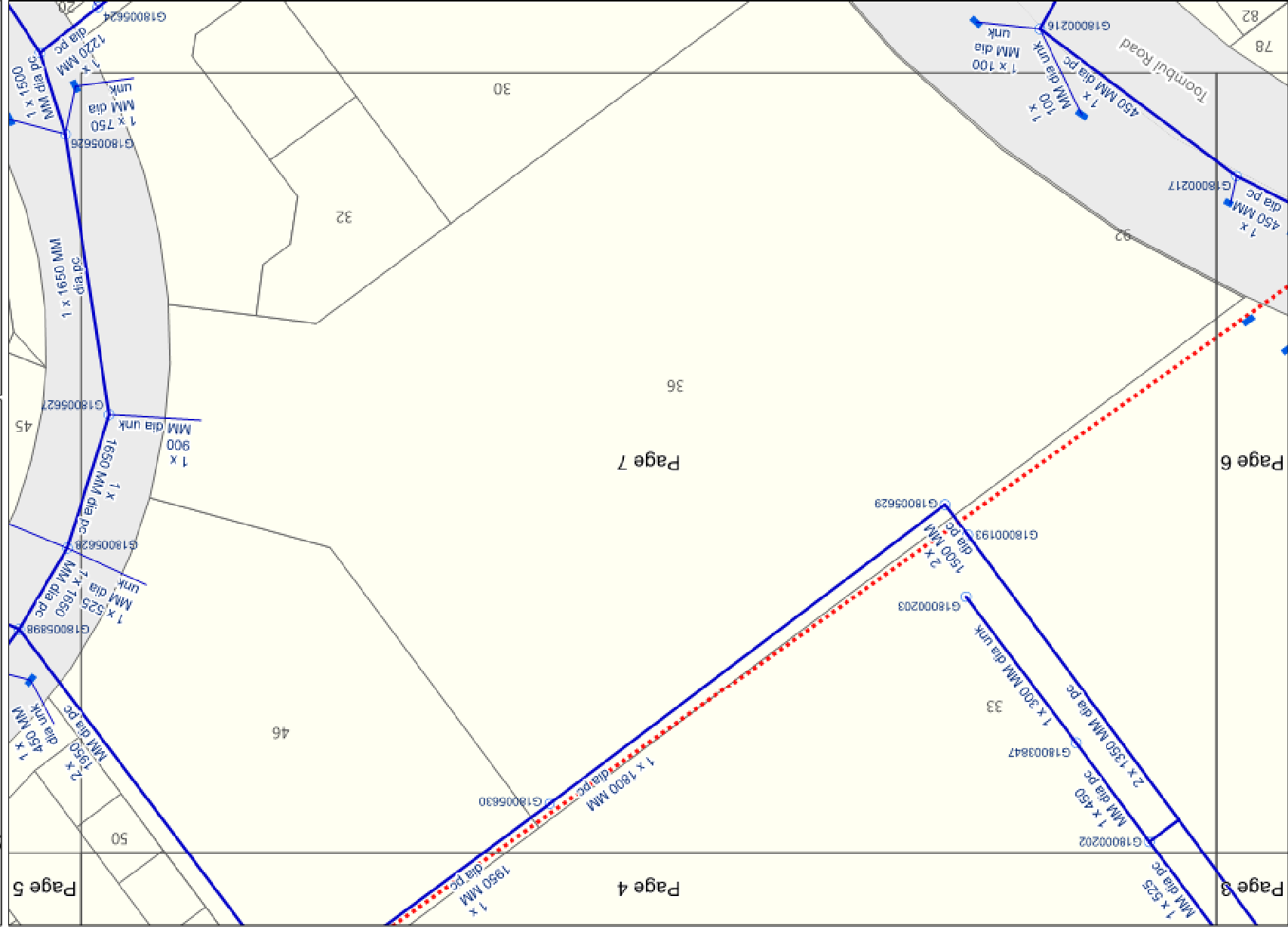
Job # 38537442  
Seq # 250319429  
Provider: Brisbane City Council  
Telephone: (07) 3403 8888



**Legend**

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

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





Referral  
250319430

Member Phone  
13 12 53

Responses from this member

Response received Fri 31 Jan 2025 10.18am

File name	Page
Response Body	87
Energex BYDA Terms and Conditions.pdf	90
250319430 - Energex Plan.pdf	95
Working Near Overhead and Underground Electric Lines.pdf	105



# Assets and Planned Assets found Before You Dig Australia (BYDA) Request

**Please DO NOT SEND A REPLY to this email as it has been automatically generated and replies are not monitored.**

Our search has revealed there is existing and planned Energex Assets within the defined search area.

They are shown on the attached plan.

There is a possibility the planned Assets may have been installed prior to your enquiry.

**You:**

Chanlyly Chea

**BYDA Enquiry No:**

250319430

**Company:**

Not Supplied

**Date of Response:**

31 Jan 2025

**Search Location:**

33 Harold Street  
Virginia,  
QLD 4014

**Period of Plan Validity:**

4 Weeks

**External Comments (if any):**

**WARNING: When working in the vicinity of Energex's Assets You have a legal Duty of Care that must be observed.**

**It is important that You note:**

1. Immediately report life threatening emergencies to Emergency Services on **000** or to ENERGEX on **13 19 62**.
2. Please read and understand all the information and disclaimers provided - including the Terms and Conditions on the attached pages.
3. We have only searched the area which has been nominated in the request. If this nominated area is not what You require, please resubmit another enquiry with BYDA.
4. Plans provided by ENERGEX are only an indication of the presence of underground assets within the nominated area. Locations provided are approximate and the plans are not suitable for scaling purposes, as exact ground cover and alignments cannot be provided. You must confirm the exact location of underground electrical equipment by use of an electronic cable locator followed by careful, non-mechanical excavation (ie, potholing).
5. Plans provided by ENERGEX do not encompass ENERGEX's overhead Assets.
6. ENERGEX, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and details supplied pursuant to the BYDA Request and You agree to indemnify ENERGEX against any claim or demand for any such loss or damage to You, Your servants or Your agents.



7. You are responsible for any damage to Assets caused by works pursuant to or in any way connected with this BYDA Request.
8. In addition to Assets marked on attached plan, there could be underground earth conductors, underground substation earth conductors, Multiple Earthed Network (MEN) conductors, Single Wire Earth Return (SWER) Substation Earth Conductors, Air Break Switch (ABS) Earth Mats or Consumer Mains in the vicinity or private underground cables (inc. consumers' mains that may run from ENERGEX mains onto private property) in the vicinity of the nominated work area(s) that are not marked on the plans.
9. Independent underground cable locators can be found via the [Certified Locator website](#) with LV Cable (up to 1kV), HV Cable (1kV-<33kV) & HV cable (33kV and over) displayed.
10. The ENERGEX Before You Dig Australia (BYDA) information map(s) provide the vicinity of underground cable and will not be adequate for conveyancing purposes. A Request for Search (Property Search) can be arranged through ENERGEX.
11. The attached plans are only valid for a period of four weeks from receipt. If excavation does not commence within four weeks, a new plan must be obtained.
12. The ENERGEX BYDA map (named maps.pdf) may contain shaded area(s), indicating the location of planned work(s). Should You find planned works that You believe may affect Your planned work(s), please contact the ENERGEX BYDA team on the details listed below.
13. ENERGEX may contact You to discuss Your proposed excavation in the vicinity of feeders identified on the attached plan(s).
14. Do not access any Assets, for example conduits, cables, pits or cabinets.
15. Your work will need to comply with:
  - [Working near overhead and underground electric lines - Electrical safety code of practice 2020](#)
  - [Managing Electrical Risk in Workplace Electrical Safety Code of Practice \(2013\)](#)
  - [Excavation Work Code of Practice \(2021\)](#)
16. **NOTE:** Where Your proposed work location contains ENERGEX 33kV or greater Underground cables please access the [Energex before you dig Website](#) for more information.

General enquiries (7:00am - 5:30pm Mon to Fri) **13 12 53**  
Life threatening emergencies only triple zero (000) or **13 19 62**

To re-submit or change the nominated search area please visit [BYDA.com.au](https://www.energex.com.au/byda)

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

If you are unable to launch any of the files for viewing and printing, you may need to download and install free viewing and printing software such as [Adobe Acrobat Reader \(for PDF files\)](#)









## **Responsibilities – (When Working in the Vicinity of Energex Assets)**

Extreme care must be taken during non-mechanical or mechanical excavation as damage to Energex Assets can lead to injury or death of workers or members of the public. Assets include underground cables, conduits and other associated underground Asset used for controlling, generating, supplying, transforming or transmitting electricity.

In accordance with the Electrical Safety Act 2002, a Person Conducting a Business or Undertaking (PCBU) must ensure the person's business or undertaking is conducted in a way that is electrically safe. This includes:

- a) ensuring that all Assets used in the conduct of the person's business or undertaking are electrically safe;
- b) if the person's business or undertaking includes the performance of electrical work, ensuring the electrical safety of all persons and property likely to be affected by the electrical work; and
- c) if the person's business or undertaking includes the performance of work, whether or not electrical work, involving contact with, or being near to, exposed parts, ensuring persons performing the work are electrically safe.

In addition, a PCBU at a workplace must ensure, so far as is reasonably practicable, that no person, Asset or thing at the workplace comes within an unsafe distance of an underground electric line.

Workers and other persons must also take reasonable care for their own and other person's electrical safety. This includes complying, so far as is reasonably able, with any reasonable instructions given by Energex to ensure compliance with the [Electrical Safety Act 2002](#)

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The following matters must be considered when working near Energex Assets:

The PCBU must ensure, so far as is reasonably practicable, that no person, Asset or thing at the workplace comes within an unsafe distance of an underground electric line (see section 68 of the [Electrical Safety Regulation 2013](#))

1. It is the responsibility of the architect, consulting engineer, developer and head contractor in the project planning stages to design for minimal impact and protection of Energex Assets.
2. It is the constructor's responsibility to:
  - a) Anticipate and request plans of Energex Assets for a location at a reasonable time before construction begins.
  - b) Visually locate Energex Assets by hand or vacuum excavation where construction activities may damage or interfere with Energex Assets.
  - c) notify Energex if the information provided is found to be not accurate or Assets are found on site that are not recorded on the Energex BYDA plans.
  - d) Read and understand all the information and disclaimers provided.

**Note:** A constructor may include but not limited to a PCBU, Designer, Project Manager, Installer, Contractor, Electrician, Builder, Engineer or a Civil Contractor

3. Comply with applicable work health and safety and electrical safety codes of practice including but not limited to:
  - a) Working near Assets – [Electrical safety codes of practice 2020](#)
  - b) Managing electrical risk in the workplace – [Managing Electrical Risks in the workplace Code of Practice 2021](#)
  - c) [Excavation work – Code of practice 2021](#)

#### IMPORTANT NOTES:

- As the alignment and boundaries of roadways with other properties (and roads within roadways) frequently change, the alignments and boundaries contained within Energex plans and maps will frequently differ from present alignments and boundaries "on the ground". Accordingly, in every case where it appears that alignments and boundaries have shifted, or new roadways have been added, the constructor should obtain confirmation of the actual position of Energex cables and pipelines under the roadways. In no case should the constructor rely on statements of third parties in relation to the position of Energex cables and pipelines. It is the applicant's responsibility to accurately locate all services as part of the design and/or prior to excavation.
- Energex does not provide information on private underground installations, including consumers' mains that may run from Energex mains onto private property. Assets located on private property are the responsibility of the owner for identification and location.
- Energex plans are circuit diagrams or pipe indication diagrams only and indicate the presence of Asset in the general vicinity of the geographical area shown. Exact ground cover and alignments cannot be given with any certainty; as such levels can change over time.
- All underground conduits are presumed to contain asbestos. Refer to the:
  - [Electrical safety codes of practice 2020](#)
  - [Model Code of Practice: How to manage and control asbestos in the workplace | Safe Work Australia](#)
  - [How to manage and control asbestos in the workplace code of practice 2021 \(Workplace Health and Safety Queensland \(WHSQ\)\)](#)
  - [How to safely remove asbestos code of practice 2021 \(WHSQ\)](#)
- Plans provided by Energex are not guaranteed to show the presence of above ground Assets.
- In addition to underground cables marked on attached plan there could be underground substation, underground earth conductors, Multiple Earthed Neutral(MEN) conductors, Single Wire Earth Return(SWER), substation Earth Conductors, ABS Earth Mats or Consumer Mains in the vicinity or private underground cables (inc. consumers' mains that may run from Energex mains onto private property) in the vicinity of the nominated work area(s) that are not marked on the plans.
- Being aware of Your obligations including but not limited to [ss 304, 305] Excavation work— underground essential services information under the [Work Health and Safety Regulation 2011](#) , Chapter 6 Construction work, Part 6.3 Duties of person conducting business or undertaking. This includes but is not limited to taking reasonable steps to obtain the current information & providing this information to persons engaged to carry out the excavation work. For further information please refer to: - <http://www.legislation.qld.gov.au/LEGISLTN/SLS/2011/11SL240.pdf>
- Energex plans are designed to be printed in colour and as an A3 Landscape orientation.

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ABN: 40 078 849 055





## **Conditions – (When Working in the Vicinity of Energex Assets)**

### **Records:**

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

**Plans and or details provided by Energex are current for four weeks from the date of dispatch** and should be disposed of by shredding or any other secure disposal method after use. A new BYDA enquiry must be made for proposed works/activities to be undertaken outside of the four-week period.

Energex retains copyright of all plans and details provided in connection with Your request.

Energex plans or other details are provided for the use of the applicant, its servants, or agents, and shall not be used for any unauthorised purpose.

On receipt of BYDA plans and before commencing excavation work or similar activities near Energex's Assets check to see that it relates to the area You have requested and carefully locate this Asset first to avoid damage. If You are unclear about any information contained in the plan, You must contact Energex on the General Enquiries number listed below for further advice.

Energex, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and or details so supplied to the applicant, its servants and agents, and the applicant agrees to indemnify Energex against any claim or demand for any such loss or damage.

The contractor is responsible for all Asset damages when works commence prior to obtaining Energex plans, or failure to follow agreed instructions, or failure to demonstrate all reasonable measures were taken to prevent the damage once plans were received from Energex.

Energex reserves all rights to recover compensation for loss or damage caused by interference or damage, including consequential loss and damages to its Assets, or other property.

**NOTE:** Where Your proposed work location contains Energex 33kV or greater Underground cables please access the [Energex BYDA website](#) for more information.

### **Location of Assets:**

Examining the records is not sufficient, as reference points may change from the time of installation. Records must also be physically proven when working in close proximity to them. The exact location of Assets likely to be affected shall be confirmed by use of an electronic cable and pipe locator followed by **careful hand or vacuum excavation to the level of cable protection cover strips or conduits**. When conducting locations, please be aware that **no** unauthorised access is permitted to Energex Assets– including Pits, Low Voltage Disconnection Boxes, Low Voltage Pillars or High Voltage Link Boxes.

**Hand or vacuum excavation must be used in advance of excavators.** In any case, where any doubt exists with respect to interpretation of cable records, You must contact Energex on the General Enquires number listed below for further advice.

If the constructor is unable to locate Energex underground Assets within 5 metres of nominal plan locations, they must contact the Energex General Enquires number listed below for further advice.

If unknown cables or conduits (i.e. not shown on issued BYDA plans) are located during excavation:

1. Call the ELECTRICITY EMERGENCIES number listed below
2. Treat Assets as if alive, post a person to keep all others clear of the excavation until Energex crew attend to make safe.
3. All work in the vicinity of damaged Asset must cease and the area must be vacated until a clearance to continue work has been obtained from an Energex officer.

General enquiries (7:00am - 5:30pm Mon to Fri) [13 12 53](tel:131253)  
Life threatening emergencies only triple zero (000) or [13 19 62](tel:131962)

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ABN: 40 078 849 055





**Asset Installation Methods:**

Energex Assets are installed with a variety of protection devices including:

1. Clay paving bricks or tiles marked "Electricity" or similar (also unmarked)
2. Concrete or PVC cover slabs
3. PVC, A/C or fibro conduit, fibre reinforced concrete, iron or steel pipe
4. Concrete encased PVC or steel pipe
5. Thin plastic marker tape
6. Large pipes housing multiple ducts
7. Multiple duct systems, including earthenware or concrete 2, 4, and 6-way ducts and shamrocks

*Note: Some Assets are known to be buried without covers and may change depth or alignment along the route.*

**Excavating Near Assets:**

For all work within 2.5 m of nominal location, the constructor is required to hand or vacuum excavate (pothole) and expose the Asset, hence proving its exact location before work can commence.

Cable protection cover strips shall not be disturbed. Excavation below these cover strips, or into the surrounding backfill material is not permitted.

**Excavating Parallel to Assets:**

If construction work is parallel to Energex cables, then hand or vacuum excavation (potholing) at least every 4m is required to establish the location of all cables, hence confirming nominal locations before work can commence. *Generally, there is no restriction to excavations parallel to Energex cables to a depth not exceeding that of the cable.* **Note: Cable depths & alignment may change suddenly.**

**Separation from Assets:**

*Any service(s) must be located at the minimum separation as per the tables below:*

**Table 1. Minimum Separation Requirements for Underground Services Running Parallel with Energex Assets**

(Minimum Separation required in mm)							
Voltage Level	Gas	Communication or TV	Water		Sanitary drainage		Storm Water
			≤DN 200	>DN200	≤DN 200	>DN 200	
LV	250	100	500	*1000	500	1000	500
HV		300					
*Contact Energex/council to obtain specific separation distances							

**Table 2. Minimum Separation Requirements for Underground Services Crossing Energex Assets**

(Minimum Separation required in mm)					
Voltage Level	Gas	Communication or TV	Water	Sanitary drainage	Storm Water
LV & HV	100	100	300	300	100

Where the above table does not list a separation requirement for a particular underground service then 300mm shall be used.

**Excavating Across Assets:**

The standard clearance between services shall be maintained as set down in Table 2 above. If the width or depth of the excavation is such that the Asset will be exposed or unsupported, then Energex shall be contacted to determine whether the Assets should be taken out of service, or whether they need to be protected or supported. In no case shall an Asset cover be removed without approval. An Asset cover may only be removed under the supervision of an Energex authorised representative. Protective cover strips when removed must be replaced under Energex supervision. Under no circumstances shall they be omitted to allow separation between Energex Assets and other services.

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ABN: 40 078 849 055





**Heavy Machinery Operation Over Assets:**

Where heavy "Crawler" or "Vibration" type machinery is operated over the top of Assets, a minimum cover of 450 mm to the cable protective cover mains must be maintained using load bearing protection whilst the machinery is in operation. For sensitive cables (i.e. 33 and 110kV fluid and gas filled cables), there may be additional constraints placed on vibration and settlement by Energex.

**Directional Boring Near Assets:**

When boring parallel to Assets, it is essential that trial holes are carefully hand or vacuum excavated at regular intervals to prove the actual location of the Asset before using boring machinery. Where it is required to bore across the line of Assets, the actual location of the Asset shall first be proven by hand or vacuum excavation. A trench shall be excavated 1m from the side of the Asset where the auger will approach to ensure a minimum clearance of 500mm above and below all LV, 11kV, 33kV & 110/132kV Asset shall be maintained.

**Explosives:**

*Explosives must not be used within 10 metres of Assets*, unless an engineering report is provided indicating that no damage will be sustained. Clearances should be obtained from Energex's Planning Engineer for use of explosives in the vicinity of Energex cables.

**Damage Reporting:**

All damage to Assets must be reported no matter how insignificant the damage appears to be. Even very minor damage to Asset protective coverings can lead to eventual failure of Assets through corrosion of metal sheaths and moisture ingress.

If any Damaged Asset is found:

1. Call the ELECTRICITY EMERGENCIES number listed below
2. Treat Assets as if alive, post a person to keep all others clear of the excavation until Energex crew attend to make safe.
3. All work in the vicinity of damaged Asset must cease and the area must be vacated until a clearance to continue work has been obtained from an Energex officer.

**Solutions and Assistance:**

If Asset location plans or visual location of Asset by hand or vacuum excavation reveals that the location of Energex Asset is situated wholly or partly where the developer or constructor plans to work, then Energex shall be contacted to assist with Your development of possible engineering solutions.

If Energex relocation or protection works are part of the agreed solution, then payment to Energex for the cost of this work shall be the responsibility of the, PCBU, principal developer or constructor. Energex will provide an estimated quotation for work on receipt of the PCBU's, developer's or constructor's order number before work proceeds.

It will be necessary for the developer or constructor to provide Energex with a written Safe Work Method Statement for all works in the vicinity of or involving Energex Assets. This Safe Work Method Statement should form part of the tendering documentation and work instruction. Refer Interactive Tool on Safe Work Australia site: [Interactive SWMS guidance tool - Overview \(safeworkaustralia.gov.au\)](https://www.safeworkaustralia.gov.au/Interactive-SWMS-guidance-tool-Overview)

**Vacuum Excavations (Hydro Vac)**

When operating hydro vac equipment to excavate in vicinity of Assets fitted with:

- Nonconductive (neoprene rubber or equivalent) vacuum (suction) hose
- Oscillating nozzle on pressure wand with water pressure adjusted to not exceeding 2000 Pound force per Square Inch(PSI).

Maintain a minimum distance of 200mm between end of pressure wand and underground electrical Assets. DO NOT insert the pressure wand jet directly into subsoil.

Ensure pressure wand is not directly aimed at underground electrical Assets (cables/conduits).

**Safety Notices (Underground Work)**

It is recommended that You obtain a written Safety Advice from Energex when working close to Energex Assets. For Safety Advice please contact [custserve@energex.com.au](mailto:custserve@energex.com.au)

**Further information on Working Safely around Energex Assets:** [Working near powerlines | Energex](#)

*Thank You for Your interest in maintaining a safe and secure Electricity Distribution network. Energex welcomes Your feedback on this document via email to [byda@energyq.com.au](mailto:byda@energyq.com.au).*

General enquiries (7:00am - 5:30pm Mon to Fri) [13 12 53](tel:131253)  
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ABN: 40 078 849 055







BYDA

Sequence: 250319430  
Date: 31/01/2025

Scale: 1:2050  
Title 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



**DISCLAIMER:** While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Energen nor Pelican Corp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of the 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.





BYDA

Sequence: 250319430  
Date: 31/01/2025

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



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BYDA

Sequence: 250319430  
Date: 31/01/2025

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



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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



BYDA

Sequence: 250319430  
Date: 31/01/2025

Scale: 1:500  
Tile No: **Tile No: 3**

**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



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BYDA

Sequence: 250319430  
Date: 31/01/2025

Scale: 1:500  
Tile No: **Tile No: 4**

**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



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BYDA

Sequence: 250319430  
Date: 31/01/2025  
Scale: 1:500  
Tile No: **Tile No: 5**

**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



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BYDA

Sequence: 250319430  
Date: 31/01/2025

Scale: 1:500  
Tile No: **Tile No: 6**

**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



**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 the 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.



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



BYDA

Sequence: 250319430  
Date: 31/01/2025

Scale: 1:500  
Tile No: **Tile No: 7**

**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



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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.





BYDA

Sequence: 250319430  
Date: 31/01/2025

Scale: 1:500  
Tile No: **Tile No: 8**

**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



**DISCLAIMER:** While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Energen nor Pelican Corp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of the 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.



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



BYDA

Sequence: 250319430  
Date: 31/01/2025

Scale: 1:500  
Tile No: **Tile No: 9**

**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



**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 the 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.





Scan to provide feedback

# ELECTRICITY ENTITY REQUIREMENTS - WORKING NEAR OVERHEAD AND UNDERGROUND ELECTRIC LINES



Part of Energy Queensland

**Purpose:** This instruction describes Electricity Entity requirements for working or operating plant near any Electricity Entity Overhead or Underground electric lines.

**Scope:** This instruction applies to anyone who may be contemplating working or operating plant near any Electricity Entity Overhead or Underground electric lines.

<b>Person responsible for ensuring compliance with this Work Practice:</b>	All EQL employees have responsibility to comply with listed controls.
<b>Measures in place to ensure compliance with the Work Practice:</b>	Team Leaders must provide appropriate supervision and / or assurance in addition to formal assurance activities performed by EQL.
<b>Person(s) responsible for reviewing the Work Practice:</b>	Prior to any task listed on this Work Practice being performed, the contents must be understood by all workers exposed to the hazard on site. (i.e. using HazChat).
<b>Work Practice control and guidance to be reviewed:</b>	All controls for this task must be verified, monitored, and maintained by crews for the duration of works.

**Key tools and equipment:** N/A

**Note:**  
Prior to works commencing the contents of supporting Work Practices must be understood.  
If at any time the control or procedural guidance in this Work Practice cannot be applied or are not suitable, work must cease, and advice must be sought from your leader or a Technical SME before proceeding.  
Work Practices may be provided as a means of sharing hazard and control information to EQL contractors. But it is the responsibility of the contractor to provide their own safe system of work (including, consultation, training, instruction, and supervision to reduce risk SFAIRP)

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## 1. ABOUT THIS GUIDE

This guide to working near the Electricity Entity network is designed to assist any person working, contemplating work or operating plant near any Electricity Entity overhead or underground electric lines to meet their duties under the Work Health and Safety Act 2011, Electrical Safety Act 2002, Electrical Safety Regulation 2013 and relevant Codes of Practice including Electrical Safety Code of Practice 2020 Working Near Overhead and Underground Electric Lines and help to identify the steps needed to ensure risks are minimised for all who work or are likely to be affected by the work in these situations.

“The Electrical Code of Practice 2020 Working Near Overhead and Under Ground Electric Lines” provides practical advice on ways to manage electrical risk when working near electric lines including the exclusion zones that apply. An electronic copy of this Code of Practice as well as, Electrical Safety Act and Regulation is available at the Queensland Government Electrical Safety Office web site at <https://www.worksafe.qld.gov.au/electricalsafety>. You should obtain a copy and read this material, to enable you to fully understand your obligations, and prospective means of complying with them.

### 1.1. Who does the Electrical Safety Code of Practice 2020 - Working Near Overhead and Underground Electric Lines and Electricity Entity Requirements apply to?

A person, worker or Person Conducting a Business or Undertaking (PCBU) at a workplace is required to comply with the requirements of Electrical Safety Regulation 2013 Part 5 Overhead and Underground Electric Lines and Electrical Safety Code of Practice 2020 Working Near Overhead and Underground Electric Lines to ensure that no person, plant or thing comes within an unsafe distance (exclusion zone) of an overhead electric line. Compliance with these regulatory requirements is essential to reduce the risk of electric shock and contact with Electricity Entity electric lines and other assets which can have deadly consequences.

Examples of work activities where risk of person, plant or equipment coming near or into contact with overhead electric lines include but are not limited to:

- Pruning or felling trees or vegetation near overhead electric lines, including the service wire into a building.
- Carrying out building work, scaffolding or demolition adjacent to overhead electric lines.
- Painting fascia, replacing roofing, guttering or external cladding near service line point of entry to a building.
- Operating cranes, tip trucks, cane harvesters, elevated work platforms, fork lifts, grain augers, excavators, irrigators, etc near OH electric lines.
- Erecting or maintaining advertising signs or billboards near overhead electric lines.
- Dam or levee bank construction.

Examples of work activities that could involve risk of damage to underground cables or earthing systems include but are not limited to:

- Digging holes, excavating, sawing, trenching, under boring, sinking bore holes, earthworks or laying cables, pipes, etc or driving implements into the ground (e.g. star pickets, fence posts) near where underground cables or earthing systems may be located.

### 1.2. Are you working or planning to work near overhead or underground electric lines?

Electrical Safety Regulation Section 68 requires that before carrying out any work at a workplace where there is a risk of any person, plant or thing encroaching the exclusion zone of overhead electric lines, the person, worker or PCBU is required to ensure that the potential hazards are identified, a risk assessment conducted and the necessary control measures implemented to minimise electrical safety risks to ensure the safety of all workers and other persons at the workplace. The Electrical Safety Regulation 2013 and Electrical Safety Code of Practice 2020 - Working Near Overhead and Underground Electric Lines detail the Exclusion Zones that must be maintained.



### 1.2.1 Work near overhead electric lines

Where a risk assessment has been conducted and control measures implemented in accordance with requirement of Electrical Safety Code of Practice 2020 - Working Near Overhead and Underground Electric Lines and Electricity Entity Requirements (this document) and it has identified that exclusion zones from overhead electric lines cannot be maintained, the person, worker or PCBU is then required to contact Electricity Entity and request written Safety Advice (refer Section 1.3 below).

The person, worker or PCBU shall be required to maintain exclusion zones until such times as the Electricity Entity has provided written Safety Advice. A person, worker or PCBU would not be required to contact the Electricity Entity and request a written Safety Advice where their risk assessment and implemented control measures ensure that exclusion zones from overhead electric lines will be maintained throughout performance of work to be undertaken at a particular site.

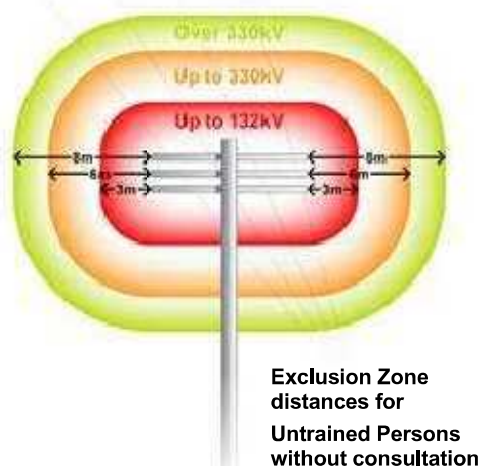
### 1.2.2 Exclusion Zones

An exclusion zone is a safety envelope around an overhead electric line. No part of a worker, operating plant or vehicle should enter an exclusion zone while the overhead electric line is energised (live).

Exclusion zones keep people, operating plant and vehicles a safe distance from energised overhead lines.

You must keep yourself and anything associated with the work activity out of the exclusion zone (e.g. a safe distance) unless it is not reasonably practicable to do so; and the person conducting a business or undertaking complies with the requirements of Section 68(2) of the Electrical Safety Regulation in relation to:

- conducting a risk assessment.
- implementing control measures
- adhering to any requirements of an Electricity Entity responsible for the line.





**Exclusion Zone – Untrained Person (distances in mm)**

Nominal phase to phase voltage of electric line	Untrained Person		
	Person	Operating Plant	Operating Vehicles
Insulated LV: Consultation with and verified by AP (Electrical)	No exclusion zone prescribed	1000	300
LV with NO consultation with Electricity Entity	3000	3000	600
LV With consultation with Electricity Entity	1000		
>LV up to 33 kV with NO consultation with Electricity Entity	3000		900
LV up to 33 kV with consultation with Electricity Entity	2000		
>33 kV up to 132 kV	3000		2100
>132 kV up to 220 kV	4500	6000	2900
>220 kV up to 275 kV	5000		

Information extracted from Electrical Safety Regulation 2013 Schedule 2



**Exclusion Zone – Instructed Person and Authorised Person (distances in mm)**

Nominal phase to phase Voltage of electric line	Instructed Person (IP) & Authorised Person (AP)		
	AP and IP	Operating Plant with Safety Observer or another Safe System of work	Operating of Vehicles
Insulated LV: Consultation with and verified by AP (Electrical)	No exclusion zone prescribed	No exclusion zone prescribed	No exclusion zone prescribed
LV	No exclusion zone prescribed	1000	600
>LV up to 33 kV	700	1200	700
>33 kV up to 50 kV	750	1300	750
>50 kV up to 66 kV	1000	1400	1000
>66 kV up to 110 kV		1800	
>110 up to 132	1200		1200

Information extracted from Electrical Safety Regulation 2013 Schedule 2

**1.2.3 Work near underground electrical lines (underground electrical assets)**

Before carrying out any earthworks at a location, the person, worker or PCBU is required to ensure that the potential hazards are identified, a risk assessment conducted and the necessary control measures implemented to minimise the risk of damaging identified or unidentified underground electrical assets and to ensure the safety of all workers and other persons at the workplace. The Electrical Safety Regulation 2013 and Electrical Safety Code of Practice 2020 - Working Near Overhead and Underground Electric Lines and Electricity Entity Requirements detail the requirement for work near underground electric lines.

There is no exclusion zone applicable for underground electrical assets – conduits, cables (unless cable is damaged, or conductors or terminations have been exposed) therefore there is **no requirement for a written Safety Advice** to be requested by a person, worker or PCBU, or issued by an electricity entity for work at a site that only involves identified or unidentified underground electrical assets (e.g. does not involved overhead electric lines or other exposed live parts within the work location).

**1.3. Obtaining Safety Advice**

To obtain written Safety Advice where identified as being required in Section 1.2.1 above, complete and return (by fax or email) the applicable Safety Advice Request Form which is accessible via the electricity entity website link on page 9:

- Energex Form - Application for Safety Advice – Working near Energex exposed live parts
- Ergon Energy Safety Advice Request Form



On receipt, the Electricity Entity will contact the Applicant to advise date and time to meet at site to provide written Safety Advice. It is advisable to bring to the meeting your copy of the Electrical Safety Code of Practice 2020 Working Near Overhead and Underground Electric Lines (and Before You Dig Australia Plan for location of underground assets where required), as reference to this will be necessary during the meeting. Written Safety Advice and/or other control measures provided by the Electricity Entity may incur a fee.

Failure to adhere to the Electrical Safety Regulation Section 68 requirements and mandatory control measures as documented on written Safety Advice as issued will result in written non-compliance advice being sent to the Electrical Safety Office.

Where this work is required to occur on a regular basis at a workplace, the PCBU may consider arranging to have one or more employees trained and subsequently accredited with the Electricity Entity as Authorised Persons.

### 1.4. Authorised Person and how to become one?

Under the Electrical Safety Regulation 2013, the exclusion zones for working near or operating plant or vehicles near exposed, low voltage or high voltage electric lines vary depending on whether a person is classed as an “Untrained Person”, “Authorised Person” or “Instructed Person”. An Authorised Person is permitted to carry out work closer to the electric lines than an Untrained Person (refer Electrical Safety Code of Practice 2020 Working Near Overhead and Underground Electric Lines Appendix B Exclusion Zones for Overhead Electric Lines).

To become an Authorised Person, the employer / self-employed person must first satisfy the “person in control” of the electric line, in this case the Electricity Entity, that their Applicants possess the required competencies. They must then apply in writing to Electricity Entity for approval.

Removal or replacement of LV service fuse to permit work on consumers’ mains, installation switchboard, consumer’s terminals or eliminate an exclusion that would exist requires the Electrical Mechanic to hold a current Queensland Electrical Mechanic Licence and perform the work in accordance with their documented safe system of work.

**NOTE:** It is not permissible to replace a blown LV service fuse(s) after loss of supply to consumer’s installation or to alter Electricity Entity LV aerial services.

### 1.5. Contacting Electricity Entity for Safety Advice or Authorised Person Enquiries

By phone

- call Electricity Entity on General Enquiries phone number (refer page 3).

By email

- **Energex:** [custserve@energex.com.au](mailto:custserve@energex.com.au) or [authorisedperson@energex.com.au](mailto:authorisedperson@energex.com.au)
- **Ergon Energy:** [safetyadvice@ergon.com.au](mailto:safetyadvice@ergon.com.au)

Website

- **Energex:** <https://www.energex.com.au/home/safety/working-near-powerlines>
- **Ergon Energy:** <https://www.ergon.com.au/network/safety/business-safety/the-outdoor-workplace/working-near-powerlines>



## 2. OVERHEAD ELECTRIC LINES

The following table sets out preparatory work options that may be required to be performed by the Electricity Entity (or electrical contractor where identified as being permitted who is an Authorised Person - Electrical) to assist a person, worker or PCBU in minimising the electrical safety risks of, encroaching within the exclusion zone or contact with electric lines.

Category of work		Description	Costing arrangement
<b>Safety Advice</b>	Base information	Provide Safety Advice	<b>Nil cost to customer</b>
<b>LV Service isolation</b>	1. Isolation carried out by customer's electrical contractor	Isolation of overhead or underground service by removal of the service fuse(s). (Preferred option to isolate supply and eliminate the exclusion zone).	No involvement by the Electricity Entity. May be a cost charged by the customer's electrical contractor.
	2. Isolation carried out by Electricity Entity	Customer requested isolation of overhead or underground service by removal of the service fuse(s); or Customer requested physical disconnection and reconnection of overhead or underground service.	<b>Cost to customer.</b>
<b>Insulation integrity verification</b>	3. Verification of insulation integrity to reduce exclusion zone to no exclusion zone prescribed e.g. no contact permitted	Verification of insulation integrity to classify as insulated service – Insulation integrity can only be verified at the time of inspection – visual inspection is required before confirmation in all cases. When service insulation integrity verified - no exclusion zone prescribed e.g. no contact permitted.	<b>Cost to customer.</b>
<b>Service replacement</b>	4. Open wire service, service fuse(s) at house/building	Replacement of service with new XLPE service cable and service fuse(s) installed at origin (pole end) of service to allow isolation of service. Insulation integrity can be verified for new XLPE services at the time of installation – visual inspection is required before confirmation.	<b>Nil cost to customer</b> for service replacement. Customer responsible for necessary installation, Mains Connection Box and service support bracket upgrade and associated costs if required.
		Service installations where: a. the consumer's mains cannot be insulated and an exclusion zone must be maintained, and b. the service cannot be isolated at the service fuse. Service to be isolated by breaking the service cable connection to the LV mains at the pole. Service fuse(s) to be installed at origin (pole end) of service prior to reconnection.	<b>Nil cost to customer</b> for first disconnection and reconnection. <b>Cost to customer</b> for subsequent requests.



Category of work		Description	Costing arrangement
	5. All other service replacements	Customer requested replacement of existing service with new XLPE service cable to classify as insulated service, in lieu of isolation, to allow work close (no exclusion zone prescribed e.g. no contact permitted). Service fuse(s) to be installed at origin (pole end) of service.	<b>Cost to customer</b> for service replacement. Customer responsible for necessary installation, Mains Connection Box and service support bracket upgrade and associated costs if required.
<b>Tiger Tails</b>	6. Installation of Tiger Tails (for visual indication only – not for providing electrical insulation of LV mains)	Customer requested coverage of LV mains for visual indication only (not permitted on HV mains). The Entity may also fit tiger tails to LV service line for visual indication only.	<b>Cost to customer.</b>
<b>Aerial Markers</b>	7. Installation of aerial marker flags or balls (for visual indication only)	Customer requested temporary or permanent installation of appropriate aerial marker devices on LV or HV mains.	<b>Cost to customer.</b>
<b>Switching</b>	8. Customer requested switching	Customer requested switching to allow customer/contractor to work close (no exclusion zone prescribed e.g. no contact permitted).	<b>Cost to customer.</b>

## 2.1. Isolation of supply to customer installation to eliminate exclusion zone around LV service line

An Electrical Mechanic (holding current Queensland Licence) working on behalf of an electrical contractor and accredited with the Electricity Entity as an Authorised Person (Electrical) is permitted to remove and replace LV service fuse(s) when isolation of customer LV service line is required to eliminate the exclusion zone around the LV service line, or to work on the customer's mains and/or switchboard. Isolation of the customer's LV service line by an Authorised Person (Electrical) is only permitted at an underground service pillar or service pole by removing a fuse wedge(s) from a service line, in accordance with Electricity Industry practices e.g. from ground level using appropriate insulated tools, PPE and insulating mats. In those situations where the service fuse/circuit breaker is not located at supply end of the LV service, contact the Electricity Entity to arrange for Safety Advice where elimination of exclusion zone around LV service line is required.

Any controls used by the Authorised Person (Electrical) to identify and confirm isolation and ensure supply to the customer's installation is not inadvertently re-energised shall comply with Electrical Safety Regulation 2013 Section 14 and 15 requirements.

**NOTE:** The Authorised Person (Electrical) will not be permitted to replace a blown LV service fuse(s) after loss of supply to a customer's installation or to alter the Electricity Entity overhead LV services. The low voltage pole top service fuse shall only be removed by use of an approved, in test, insulated telescopic pole device while standing at ground level and wearing class 00 insulating gloves. At no time is it permissible for an Authorised Person (Electrical) to climb or work aloft on the Electricity Entity's poles or assets unless approved by the Electricity Entity.

## 2.2. Operating Plant

It can be extremely difficult for operating plant operators to see overhead lines and to judge distances from them. Contact with overhead lines can pose a risk of grounding live conductors and electrocution.

In many cases the likelihood of damage or injury can be reduced by setting up and operating the machinery well clear of overhead electric lines.



## PROCEDURE / INSTRUCTIONS

In situations where operating plant is operated by an Authorised Person or Instructed Person without a Safety Observer or another safe system, the exclusion zone requirements (refer Section 1) for an Untrained Person applies (refer Electrical Safety Regulation 2013 Schedule 2 or Electrical Safety Code of Practice 2020 Working Near Overhead and Underground Electric Lines).

For an Authorised or Instructed Person and their Operating Plant to approach overhead electric lines closer than the exclusion zone distances for an Untrained Person, a Safety Observer or another safe system shall be used. Refer to the Electrical Safety Regulation 2013 and the Electrical Safety Code of Practice 2020 - Working Near Overhead and Underground Electric Lines for exclusion zone distances for Authorised and Instructed Persons operating plant with a Safety Observer or another safe system.

Where a Safety Observer is used, the Safety Observer shall:

- Be trained to perform the role.
- Not be required to carry out any other duties at the time, and
- Not be required to observe more than one item of plant operating at a time, and
- Attend all times when the item of plant is operating.

Other control measures for operating plant may include, but are not restricted to:

- Constructing physical barriers or height warning indicators either side of the overhead electric line that are lower than the maximum travel height permissible without encroaching within the exclusion zone of the overhead electric line.
- Applying appropriate signage at least 8 to 10 m either side of overhead electric lines.
- Arrange for visual indicators such as Tiger Tails or aerial markers to fitted to the overhead electric lines – only erected by the Electricity Entity (tiger tails are only permitted on LV mains).
- Ground barriers, where appropriate.
- Informing workers of required work practices.
- Ensuring operators are aware of the height and reach of their machinery in both stowed and working positions.
- Lowering all machinery to the transport position when relocating.
- Providing workers with maps or diagrams showing the location of underground and overhead electric lines, and
- Where possible, directing work away from overhead electric lines not towards them.



### 2.3. Scaffolding Requirements

The following information provided is for guidance only and shall be read in conjunction with the Electrical Safety Regulation 2013, Electrical Safety Code of Practice 2020 - Working Near Overhead and Underground Electric Lines and AS/NZS 4576:1995: Guidelines for Scaffolding.

Requirements shall be complied with where scaffolding is required to be erected within 4 m of nearby overhead electric lines:

- The scaffolding shall not be erected before contacting and obtaining Safety Advice from the Electricity Entity.
- Erection of scaffolding to comply with requirements of AS/NZS 4576:1995: Guidelines for Scaffolding.

The scaffolding can be either:

- nonconductive material scaffolding; or



## PROCEDURE / INSTRUCTIONS

- metallic scaffolding with solid nonconductive barriers (with no gaps, holes or cuts) securely fixed to the outside and/or top of the scaffolding to prevent encroachment within exclusion zones or contact with the energised mains.

Where scaffolding is erected within 3 m of nearby overhead electric lines:

- It shall be fitted with fully enclosed non-conductive solid barriers to prevent encroachment within exclusion zones or contact with the energised mains fully enclosed.
- The person required to erect and/or disassemble scaffolding as well as the required solid barrier affixed to the scaffolding should be an Authorised Person (approved in writing by the Electricity Entity - refer requirements of Section 1.4 of this Reference).
- A Safety Observer shall be used during performance of this work where there is a risk of encroachment within 3 m of nearby energised overhead electric lines for voltages up to 33 kV. Additional requirements may apply for voltage levels above 33 kV, contact the Electricity Entity for consultation.
- Alternatively, consideration should be given to the de-energisation of the nearby electric lines where possible for the duration of this work. Additional requirements may apply for voltage levels above 33 kV, contact the Electricity Entity for consultation.
- Comply with the horizontal and vertical statutory clearances from overhead electric lines as set out in Electrical Safety Regulation 2013 Schedule 4.
- Persons are not permitted to go outside of or climb on top of the solid barrier fixed on the outside and/or top of the scaffolding.

Where an insulated low voltage service line passes through the scaffolding, it should either be de-energised for duration of work or be fully enclosed by non-conductive material (e.g. form ply).

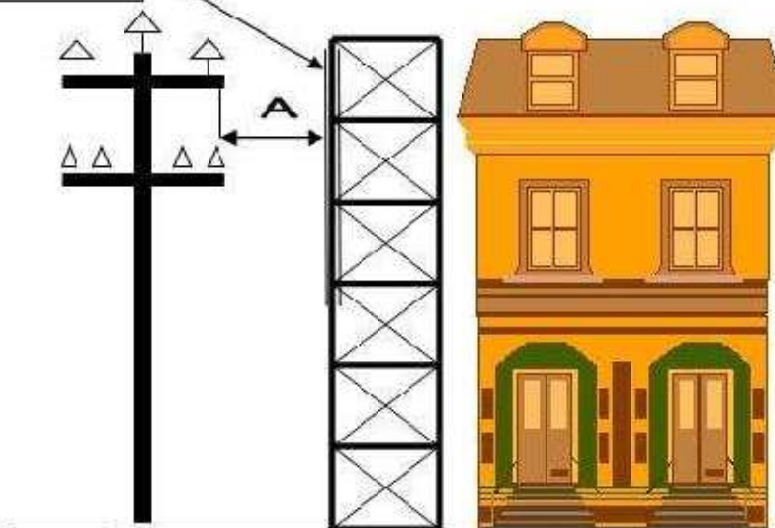
Minimum statutory clearances from nearby overhead electric lines for scaffolding erected with barriers affixed.

Voltage Level	Horizontal Distance "A" (in metres)	Vertical Distance "B" (in metres)
Low voltage conductors (uninsulated)	1.5m	2.7m
Low voltage conductors (insulated) – these distances can only be applied after the integrity of the insulation has been verified by the Electricity Entity	0.3m	0.6m
Above LV and up to 33 kV (uninsulated)	1.5m	3.0m
Above LV and up to 33 kV (insulated)	Contact Electricity Entity for consultation.	
Above 33 kV (uninsulated)	Additional requirements may apply for voltage levels above 33 kV, contact the Electricity Entity for consultation.	

**NOTE:** Dimension's "A" and "B" is between the scaffolding and the closest conductor of the overhead electric line. Dimension B is also taken from the lowest part of the mid span sag adjacent to the scaffolding.



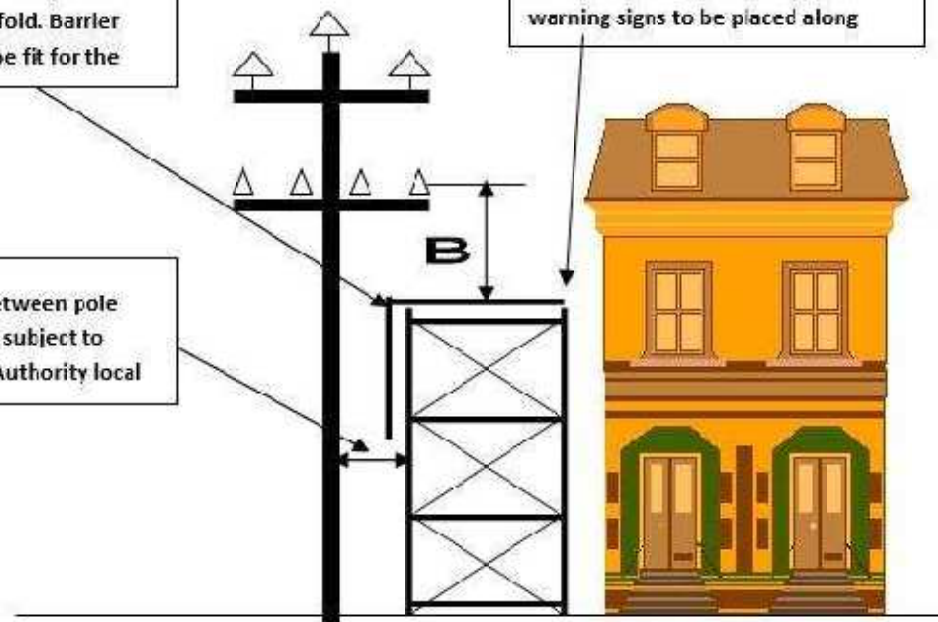
Barrier fixed securely to the face of the scaffold. Barrier material must be fit for the intended purpose.



Barrier fixed securely to the face of the scaffold. Barrier material must be fit for the

Barriers and "Live Conductors" warning signs to be placed along

Min 100 mm between pole and scaffolding subject to relevant Local Authority local





## 2.4. High Load transport under Overhead Electric Lines

Any person or company transporting a High Load (load in excess of 4.6 m high) under overhead electric lines must comply with Electrical Safety Code of Practice 2020 - Working Near Overhead and Underground Electric Lines is required to submit a Notification to Transport High Load form to the relevant Electricity Entity of the intended route and details of the high load involved. Before any person or company can transport a high load (load in excess of 4.6 m high), authorisation to travel must be received in writing from the Electricity Entity. Refer details below to contact the Electricity Entity for high load enquiries or to submit Notification to Transport High Load form:

### Energex:

- **Email:** [custserve@energex.com.au](mailto:custserve@energex.com.au)
- **Website:** [www.energex.com.au](http://www.energex.com.au)
- **Phone:** Energex Contact Centre on 13 12 53 (8am to 5:30pm, Monday to Friday)

### Ergon Energy:

- **Email:** [Highload2@ergon.com.au](mailto:Highload2@ergon.com.au)
- **Website:** [www.ergon.com.au](http://www.ergon.com.au)
- **Phone:** (07) 4932 7566 (8am to 4:30pm, Monday to Friday)

## 2.5. Additional Details and Fact Sheets on Electricity Entity Requirements

Additional details and Fact Sheets on Electricity Entity requirements for working near overhead electric lines are located on the following internet sites

**Energex:** <https://www.energex.com.au/home/safety/working-near-powerlines>

**Ergon Energy:** <https://www.ergon.com.au/network/safety/business-safety/the-outdoor-workplace/working-near-powerlines>

## 3. UNDERGROUND ELECTRICAL ASSETS

### 3.1. Responsibilities When Working in the Vicinity of Electricity Entity Underground Electrical Assets

Everyone has a legal “Duty of Care” that must be observed when working in the vicinity of underground electrical assets which includes underground cables, conduits and other associated underground equipment. When discharging this “Duty of Care” in relation to Electricity Entity underground electrical assets, the following points must be considered:

1. It is the responsibility of the architect, consulting Engineer, developer, and principal contractor in the project planning stages to design for minimal impact and protection of Electricity Entity underground electrical assets. The Electricity Entity will provide plans on request via BYDA showing the presence of the underground electrical assets to assist at this design stage.
2. It is the constructor’s responsibility to:
  - a. Anticipate and request BYDA plans of Electricity Entity underground electrical assets for a particular location at a reasonable time before earthworks begins.
  - b. Visually locate Electricity Entity underground electrical assets by use of an electronic cable locator followed by careful non-mechanical excavation (potholing using hydrovac or hand tools) when earthworks activities may damage or interfere with Electricity Entity plant.



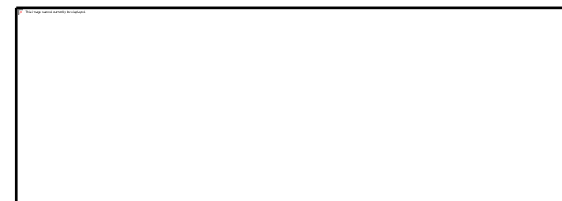
- c. After completion of steps (a) and (b) above, if there is a risk of the Electricity Entity underground electrical assets being damaged or its structural integrity compromised by your planned earthworks activities, contact the Electricity Entity (General Enquiries phone number – refer page 3) for further advice.

A constructor may include but not limited to designer, project manager, installer, contractor, civil contractor.

3. The alignments and boundaries contained within BYDA plans and maps will sometimes differ from present alignments and boundaries “on the ground”. Accordingly, in every case, the constructor should obtain confirmation of the actual position of Electricity Entity cables and pipelines under the roadways by non-mechanical excavation (potholing using hydrovac or hand tools) when earthworks activities may damage or interfere with Electricity Entity underground electrical assets. In no case should the constructor rely on statements of third parties in relation to the position of Electricity Entity underground electrical assets.

### 3.2. Conditions of Supply of Information

- Plans and details of Electricity Entity underground electrical assets provided by BYDA are only current for 4 weeks from the date of dispatch and should not be referred to after this period, if you go past this time, please re-apply to BYDA as underground services may have been updated.
- The Electricity Entity agrees to provide plans if an Electricity Entity underground electrical assets location request is made to Before You Dig Australia (BYDA) , online at <https://www.byda.com.au> or the free iPhone Application, only on the basis that at least 2 business day notice is given and the BYDA applicant agrees to the terms of this agreement.



Note that the Electricity Entity only provides information on underground electrical assets it owns. Contact the owner of any privately owned underground electrical assets for details of their assets located at site.

- The Electricity Entity retains copyright of all plans and details provided in connection to your request.
- BYDA plans or other details are provided for the use of the BYDA applicant, its servants, or agents, for the sole purpose of the applicant's responsibilities in relation to the Electricity Entity underground electrical assets and shall not be used for any other purpose.
- BYDA plans are diagrams only and indicate the presence of Electricity Entity underground electrical assets in the general vicinity of the geographical area shown. Exact ground cover and alignments cannot be given with any certainty as such levels can change over time.
- On receipt of BYDA plans and before commencing excavation work or similar activities near Electricity Entity's underground electrical assets, carefully locate this plant first to avoid damage.
- The Electricity Entity, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and of details so supplied to the BYDA applicant, its servants or agents, and the BYDA applicant agrees to indemnify the Electricity Entity against any claim or demand for any such loss or damage to the BYDA applicant, its servants, or agents or to any third party.
- The constructor is responsible for all damages to the Electricity Entity underground electrical assets when work commences prior to obtaining BYDA plans, or at any time after that for failure to follow agreed instructions contained in this document or any other advice provided by the Electricity Entity.
- By undertaking any work, you acknowledge that the Electricity Entity reserves all rights to recover compensation for loss or damage to the Electricity Entity caused by interference or damage, including consequential loss and damage to its cable network, or other property.
- Be aware that some underground conduits may contain asbestos. Refer to “Code of Practice for the Management and Control of Asbestos in Workplace [NOHSC: 2018 (2005)]” for guidance.



### 3.3. When Working in the Vicinity of Electricity Entity Underground Electrical Assets, You Must Observe the Following Conditions

#### 3.3.1 Records

The first step before any excavation commences is to obtain BYDA plans of Electricity Entity underground electrical assets in the vicinity of the work. For new work, records should be obtained during the planning and design stage. The records provided by BYDA must be made available to all relevant work groups on site. Where underground electrical asset information is transferred to plans for the proposed work, care must be exercised that important detail is not lost in the process.

#### 3.3.2 Location of underground electrical assets

Examining the records is not sufficient, as reference points may change from the time of installation. Records must also be physically proven when working in close proximity to underground electrical assets. The exact location of underground electrical assets likely to be affected shall be confirmed by use of an electronic cable locator followed by careful non mechanical excavation to the level of concrete slabs or conduits. Non mechanical excavation (potholing using hydrovac or hand tools) must be used in advance of excavators. In any case, where doubt exists with respect to interpretation of cable records, contact the Electricity Entity (General Enquiries phone number - refer page 3) for further advice.

If during excavation, cables or conduits are damaged:

- call Electricity Entity (Emergencies phone number – refer page 3) to report damaged cables or conduits.
- treat cables as if alive, post a person to keep all others clear of the excavation until the Electricity Entity crew attend to make safe.

If **unknown** cables or conduits (e.g. not shown on issued BYDA plans) are located during excavation:

- call Electricity Entity (Emergencies phone number – refer page 1) to report.
- treat cables as if alive, post a person to keep all others clear of the excavation until the Electricity Entity crew attend to make safe.

If the constructor is unable to locate Electricity Entity underground electrical assets within 2.5 m of nominal plan locations, they should contact the Electricity Entity (General Enquiries phone number - refer page 3) for further advice.

#### 3.3.3 Remote or On-Site Cable Location conducted by Electricity Entity

This service shall only be provided at Electricity Entity's discretion:

- The Electricity Entity may provide this site visit only when underground cables (33 kV or above) are present.
- Due to remote locations where external cable locator or hydro vac service providers are not readily available, Electricity Entity may attend site and assist with cable location (fees may apply for this service).
- The Electricity Entity may provide either remote over the phone or on-site cable location advice to assist in the location of Electricity Entity underground electrical assets, including how to visually locate and protect the plant when excavating.
- Where the Electricity Entity provides on-site cable location advice, any markings provided for the purpose of identifying cable location are for general guidance only, and the constructor is still responsible for non-mechanical excavation (potholing using hydrovac or hand tools) to visually locate Electricity Entity underground electrical assets.
- If the constructor is unable to locate Electricity Entity underground electrical assets within 2.5 m of nominal plan locations, they should contact Electricity Entity (General Enquiries phone number - refer page 3) to request further advice.



### 3.3.4 Electrical Cables

Electricity Entity cables may have warning covers e.g.:

- Clay paving bricks or tiles marked “Electricity” or similar (also unmarked)
- Concrete or PVC cover slabs
- PVC, asbestos or fibro conduit, fibre reinforced concrete, iron or steel pipe
- Concrete encased PVC or steel pipe
- Thin plastic marker tape
- Large pipes housing multiple ducts
- Multiple duct systems, including earthenware or concrete

**NOTE:** Some cables are known to be buried without covers.

### 3.3.5 Separation from Electricity Entity underground electrical assets

If location plans or visual location of Electricity Entity underground electrical assets by non-mechanical excavation (potholing using hydrovac or hand tools) reveals that the location of Electricity Entity underground electrical assets is situated where the developer or constructor plans to work, then contact the Electricity Entity (General Enquiries phone number - refer page 3) for further advice.

The developer or constructor shall ensure that minimum separation distance from Electricity underground electrical assets (refer Minimum Separation Requirements tables below) is complied with when installing, altering or repairing other underground services located in the vicinity.

If the Electricity Entity relocation or protection works are part of the agreed solution, then payment to the Electricity Entity for the cost of this work shall be the responsibility of the principal developer or constructor. The Electricity Entity will provide an estimate for work on receipt of the developer's or constructor's order number before work proceeds.

It will be necessary for the developer or constructor to provide the Electricity Entity with a written Work Method Statement for all works in the vicinity of, or involving Electricity Entity underground electrical assets. This Work Method Statement should form part of the tendering documentation and work instruction. All Work Method Statements shall be submitted to the Electricity Entity prior to the commencement of site earthworks.

**Underground Services Running Parallel with Electricity Entity Electrical Assets**  
(Minimum Separation required in mm)

Voltage Level	Gas	Communication or TV	Water		Sanitary drainage		Storm Water
			≤DN 200	>DN200	≤DN 200	>DN 200	
<b>LV</b>	300 (Ergon)	100	500	*1000	500	1000	500
<b>HV</b>	250 (Energex)	300					

\*Contact your local utility/council to obtain specific separation distances



## PROCEDURE / INSTRUCTIONS

### Underground Services Crossing Electricity Entity Electrical Assets (Minimum Separation required in mm)

Voltage Level	Gas	Communication or TV	Water	Sanitary drainage	Storm Water
LV	100	100	300	300	100
HV					

#### Notes:

- These clearances are each Electricity Entity's minimum requirements, additional separation may be required by the Service Owner. The greater of the separation requirements shall apply.
- Where the above tables does not list a separation requirement for a particular underground service type, the following minimum separation from electricity entity electrical assets shall apply:
  - LV = 100 mm
  - HV = 300 mm
- Compliance with these minimum separation requirements does not guarantee that issues such as Earth Potential Rise (EPR) and Low Frequency Induction (LFI) are managed, where these issues need to be managed, advice will need to be sought from an RPEQ Engineer
- All separation distances are measured from the exterior surface of the conduit / cable not centrelines or inner wall surfaces.

#### Additional Details and Fact Sheets on Electricity Entity Requirements

Additional details and Fact Sheets on Electricity Entity requirements for working near underground electrical assets are located on the following internet site.

**Energex:** <https://www.energex.com.au/home/safety/working-near-powerlines>

**Ergon Energy:** <https://www.ergon.com.au/network/safety/business-safety/the-outdoor-workplace/working-near-powerlines>

## 4. EXCAVATION

### 4.1. Excavating near Poles and Stay Wires

The following requirements are to be compiled with to minimise the risk of compromising the structural integrity of the Electricity Entity poles and stay foundations when excavation or trenching work is performed nearby that could result in the failure of one or more poles and grounding of supported electric lines.

- Excavation and trenching work undertaken by a person, worker or PCBU in the vicinity of poles and stay foundations shall:
- only be commenced after requirements of Section 3 have been complied with for any underground electrical assets located within the work site.
- upon completion of excavation and site earthworks do not restrict the Electricity Entity vehicle access to pole site for purpose of carrying out maintenance activities.



## PROCEDURE / INSTRUCTIONS

- comply with exclusion zones as detailed in the Electrical Safety Code of Practice 2020 - Working Near Overhead and Underground Electric Lines.
- not be attempted:
  - within 5 m (horizontal distance) of **pole stays** where the excavation depth is greater than 250 mm before contacting the Electricity Entity to determine requirements.
  - within 5 m (horizontal distance) of Electricity Entity poles with earth leads or cables running down into the ground before contacting the Electricity Entity to determine requirements.
  - within “Do Not Disturb” zone of pole prior to a certified engineering assessment having been completed by a Registered Professional Engineer Queensland, and then reviewed and approved by the Electricity Entity before proceeding with work. Approval by the Electricity Entity shall not relieve the PCBU of its duties to perform the work in a safe and proper manner and in accordance with all applicable legislation.
  - if the soil is exceedingly wet (saturated) or there is more than minimal wind loading unless additional pole support is provided in accordance with certified engineering assessment and approved by Electricity Entity.
  - when a severe weather event is occurring or expected (e.g. severe weather warning has been issued by Bureau of Meteorology).
- be backfilled as soon as possible (within same day where pole is required to be supported) soil mechanically compacted in layers of 150 mm and all rock and vegetable material excluded from the backfill.
- be backfilled and pole stabilised before removal of additional support required by a certified engineering assessment are permitted to be removed.

The PCBU shall be responsible for arrangement and costs of required certified engineering assessments, approvals by other regulatory bodies (eg councils, Main Roads pipeline owners, telecomm owns) and installation, maintenance, and removal of associated pole support.

Pole support equipment (where required in accordance with certified engineering assessment) shall be:

- only attached and removed by persons approved by the Electricity Entity.
- used to restrain both the pole head and foot to maintain pole stability during nearby excavation work.
- set up and positioned to maximise support effectiveness and minimise impact on traffic, pedestrian, excavation and machinery at site; and maintain exclusion zone from overhead lines. If insufficient clearance exists to maintain exclusion zone to pole support equipment, arrangements may be required for de-energising the electric line.

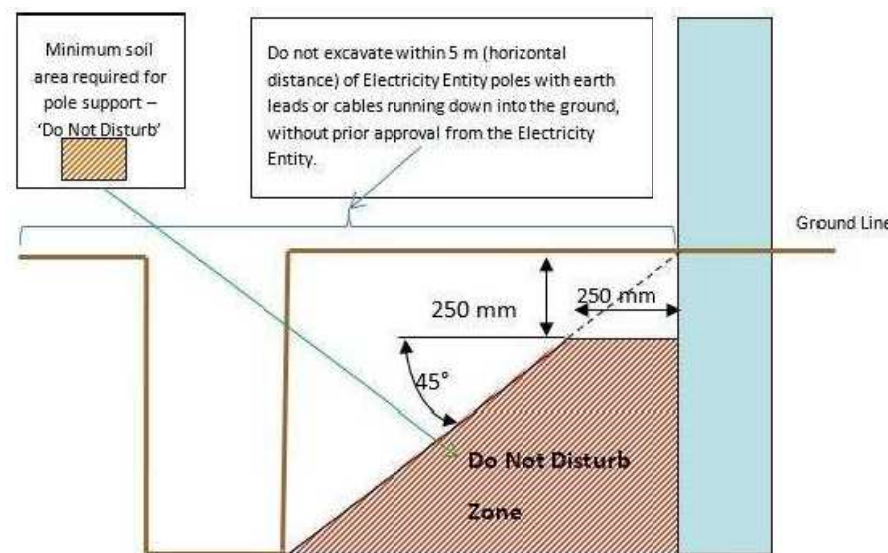


Figure 1 - Do Not Disturb Zone requirements when excavating near poles



Maximum Trench Depth	Minimum Distance from pole without pole support
Not more than 0.25 m (250 mm)	Can trench or hand dig (where cables and leads exist) right up to pole
1.0 m	1.0 m
1.5 m	1.5 m
2.0 m	2.0 m
2.5 m	2.5 m
3.0 m	3.0 m

#### 4.1.1 Certified Engineering Assessment

Where required to be provided by the PCBU, a Certified Engineering Assessment shall:

- Ensure the stability of the Electricity Entity poles and foundations is maintained during and as a result of excavation work completed within the 'Do Not Disturb' zone.
- Include detailed design drawing of pole support method.
- Be completed and certified by a Registered Professional Engineer Queensland.
- Consider and address the following key points as a minimum:
  - Pole loading (vertical and lateral) including line deviation angles, direction of lean (towards or away from resultant loading)
  - Direction of pole lean.
  - Pole inspection (conducted to meet the Electricity Entity's requirements at customer cost)
  - Pole foundation depth
  - Proximity of excavation in relation to pole
  - Soil condition
  - Proposed shoring methods as well as installation and removal process
  - Duration and staging of work
  - Requirement to independently support pole during work
  - Proximity of existing adjacent underground services and excavations
  - Proposed backfilling and reinstatement method
  - Monitoring and engineering/ geotechnical supervision during excavation work progress
  - Other equipment attached to pole (e.g. underground cables, transformer, ACR, ABS.) must be taken into consideration and in some circumstances will prevent the pole being supported.

#### 4.2. Excavating Near Underground Electrical Assets

For all work within 2.5 m of nominal location, the constructor is required to non-mechanical excavation (potholing using hydrovac or hand tools) and expose the underground electrical assets, hence proving its exact location before earthworks can commence.



#### 4.2.1 Excavating Parallel to Underground Electrical Assets

If excavation work is parallel to the Electricity Entity underground electrical cables, then non mechanical excavation (potholing using hydrovac or hand tools) at least every 4 m is required to establish the location of all cables, hence confirming nominal locations before work can commence. If an excavation exceeds the depth of the cables and it is likely that the covers or bedding material around the cables/pipes will move causing Electricity Entity cables or conduits to be unsupported, contact Electricity Entity (General Enquiries phone number - refer page 3) for further advice.

**NOTE:** Be aware that cable depths and directions may change suddenly along the route.

#### 4.2.2 Excavating Across Underground Electrical Assets

Refer Minimum Separation Requirements table in Section 3.3.5 of this document for distances that shall be maintained to prevent inadvertent contact with or damage to underground electrical assets. If the width or depth of excavation is such that the Electricity Entity cables will be unsupported, contact Electricity Entity (General Enquiries phone number - refer page 3) for further advice. In no case shall a cable cover be removed without approval. A cable cover may only be replaced under the supervision of an Electricity Entity officer. Protective cover strips when removed must be replaced under Electricity Entity supervision. Under no circumstances shall protective cover strips be omitted to achieve the minimum separation distance required between Electricity Entity cables and other underground services.

#### 4.2.3 Heavy Machinery Operation Over Underground Electrical Assets

Where heavy "crawler" or "vibration" type machinery is operated over the top of cables, a minimum cover of 450 mm to the cable protective cover must be maintained. Alternatively, subject to a Certified Engineering Assessment, use load bearing protection whilst the machinery is in operation.

#### 4.2.4 Directional Boring Near Underground Electrical Assets

When boring parallel to cables, it is essential that trial holes are carefully dug using non mechanical excavation (pot holing using hydrovac or hand tools) at regular intervals to prove the actual location of the conduits/cables before using boring machinery. Where it is required to bore across the line of cables/conduits, the actual location of the cables/conduits shall be proven by non-mechanical excavation (pot holing using hydrovac or hand tools). A trench shall be excavated 1 m from the side of the cables where the auger will approach to ensure a minimum clearance of 500 mm from cables/conduits can be maintained.

#### 4.2.5 Hydro Vac Operation

When operating hydro vac equipment to excavate in vicinity of underground electrical assets (cables/conduits):

- Fitted with:
  - nonconductive (neoprene rubber or equivalent) vacuum (suction) hose.
  - oscillating nozzle on pressure wand with water pressure adjusted to not exceeding 2000 psi.
- Maintain a minimum distance of 200 mm between end of pressure wand and underground electrical assets. DO NOT insert the pressure wand jet directly into subsoil.
- Ensure pressure wand is not directly aimed at underground electrical assets (cables / conduits).



### 4.3. Blasting

Explosives must not be used within 5 m of cables/conduits, unless an engineering report is provided indicating that no damage will be sustained. Clearances shall be obtained from the Electricity Entity for use of explosives in the vicinity of cables/conduits. Contact Electricity Entity (General Enquiries phone number - refer page 3) for further advice.

The Electricity Entity will accept the level of 25 mm / sec as a peak component particle velocity upper limit as defined in AS 2187.2 Appendix J for blasting operations in the vicinity of these power lines.

Electric line insulators and conductors are particularly susceptible to damage from fly rock and adequate control measure including the use of blast mats shall be used to manage this. Contact Electricity Entity for consultation and application.

## 5. REPORTING DAMAGE CAUSED TO OVERHEAD OR UNDERGROUND ELECTRIC LINES

Any damage caused to the Electricity Entity overhead electric lines, poles, stays, underground cables, conduits and pipes must be reported no matter how insignificant the damage appears to be. Even very minor damage to cable protective coverings can lead to eventual failure of cables through corrosion of metal sheaths and moisture ingress.

All work in the vicinity of damaged overhead or underground electric lines shall cease and the area be made safe and vacated until clearance to continue earthworks has been obtained from the Electricity Entity. Call Electricity Entity (Emergencies phone number – refer page 3).

## 6. INFRASTRUCTURE NEAR ELECTRIC LINES

### 6.1. Easements and Wayleaves

This information, whilst not a legal document, has been developed to assist the community in answering some commonly asked questions about our easements and wayleaves, and briefly outlines what you can do where land is affected by an easement or where consent to installing electrical infrastructure has been given.

#### 6.1.1 What is an Electricity Easement?

An electricity easement is the authority held by the Electricity Entity to use your land near overhead and underground electric lines and substations (electrical assets). Electricity Entity holds this authority for your own safety and to allow employees access to electrical assets at all times. Whilst it will depend on the terms of the particular grant of easement, electrical easements generally give the Electricity Entity the right to access, maintain, repair, rebuild and to restrict development within a defined area.

The easement, which is registered on the property's title, contains a plan showing the dimensions of the easement and its location on the property together with the rights and restrictions over the easement area. The Department of Natural Resources and Mines <https://www.resources.qld.gov.au/> or your solicitor will be able to provide this information. Easements may also exist for telephone lines, water and sewage mains and natural gas supply lines.

#### 6.1.2 Why are easements necessary?

Easements are also created to allow the Electricity Entity clear, 24 hour access to the electric lines. It is important to keep the easement clear at all times so regular maintenance, line upgrades, damage or technical faults can be attended to immediately to provide a safe and reliable supply of electricity. Interference with Electricity Entity's rights and electrical equipment may compromise safety of the public and the occupiers of the property. Therefore, it is essential that Electricity Entity's rights are understood and observed.



**6.1.3 How do I know if there are easements on my property?**

Contact your solicitor or The Department of Natural Resources and Mines to obtain a Title Search that shows all registered easements on the property.

**6.1.4 Who owns the land the easement is on?**

The ownership of that land encumbered with the easement remains with the property owner.

**6.1.5 How does an easement affect what I can do with my property?**

An easement controls what you can build, what size trees you can plant and what outdoor activities you can carry out in the easement area.

An easement affects the use of the property by limiting the development that can be undertaken within the easement area. The exact rights granted to an Electricity Entity under an electricity easement will depend on the wording used in the grant of easement. Property owners and occupiers should also be aware that an Electricity Entity has the right of access to land to undertake certain works (including reading meters and disconnecting supply). These rights of access are granted by Queensland legislation not the easement and so may not be registered on the property's title and therefore may not be revealed in a Title Search.

**6.1.6 Who is responsible for maintenance of easement area?**

You must provide a continuous, unobstructed area along the full length of the easement to allow an Electricity Entity access to electric lines, transformers, underground cables and other equipment at all times. A width of 4.5 m is typically required for the safe passage of vehicles and heavy plant.

You must NOT place obstructions in the easement within 5 m of any electric lines, transformer, power pole, equipment or supporting wire.

Maintenance of the easement area is generally the responsibility of the property owner and/or occupier, however, complying with regulatory and safety requirements associated with Electricity Entity's electrical assets within the easement area is the responsibility of the Electricity Entity.

**6.1.7 What type of maintenance work does Electricity Entity undertake on easements?**

To enable Electricity Entity to construct, maintain, repair and rebuild electric lines on some properties, access roads and tracks are required on or adjacent to the easement area. As required, Electricity Entity is able to construct access tracks, retain the right of use of these tracks and maintain them to a suitable level to permit access for its vehicles. Where gates are installed within the easement area, an Electricity Entity lock may be required to enable continual access along the easement corridor.

In addition, periodic vegetation management works are also undertaken by Electricity Entity to ensure that a specified minimum clearance between vegetation and the electric lines is maintained.

Where possible, property owners will be contacted prior to easement maintenance and vegetation works commencing.

**6.1.8 Where consent (Wayleave) to installing Electricity Entity infrastructure has been given**

Much of Electricity Entity's above ground electricity network is constructed without easements. Instead, the consent of the owner of the affected land is obtained and the electrical infrastructure is installed. Historically this consent has been in the form of a document known as a Wayleave.

This consent (or Wayleave) is a document evidencing the agreement from a particular owner, but it is not registered on the title of the land like an easement.

Once consent is obtained from an owner, Queensland legislation (the Electricity Act 1994) says that the consent of all future owners to the electrical infrastructure is not required.

Queensland legislation grants Electricity Entity rights to access, maintain, repair and replace electrical assets installed with consent.



## 6.2. Contact Electricity Entity when planning construction work near electric lines

When planning and before commencement (regardless of whether or not local council approval is required), it is essential to confirm that the proposed construction work (e.g. building, structure, sign, crane, scaffold) does not breach the minimum statutory clearance distances that must be maintained from nearby Electricity Entity overhead or underground electric lines. Refer Electrical Safety Regulation 2013, Schedule 4 and 5 for information on statutory clearance distances that must be complied with.

It is extremely dangerous and potentially life threatening to allow anything to come in close proximity to the conductors of an electric line.

Where it is necessary for an Electricity Entity to relocate electric lines due to statutory clearance breach caused by construction work performed nearby, the Electricity Entity is entitled to recover costs from the PCBU, property owner or occupier who caused the breach. Refer Electrical Safety Regulation 2013, Section 209 Building or adding to structure near electric lines.

Although it is preferred that the area around Electricity Entity electrical assets (including within an Easement area) is free of development, the following examples provide property owners and occupiers with an indication of what type of development is acceptable and what is not.

**NOTE:** Do not assume that your local council approval is sufficient approval for you to proceed with your work. The local council may not check whether or not your proposed construction work will comply with the Electricity Entity's statutory clearance requirements

## 6.3. What clearances must be maintained once construction work is completed?

Electrical Safety Regulation 2013, Schedule 4 - Clearance of overhead electric lines and Schedule 5 – Clearance of low voltage overhead service lines detail the statutory clearances that must be maintained from overhead electric lines for completed buildings and structures. These statutory clearances will need to be taken into consideration during the planning phase of determining the location for a building or structure. The table below sets out the minimum statutory clearances required for voltage levels up to 33 kV. Additional requirements may apply for voltage levels above 33 kV, contact the Electricity Entity for consultation.

Where the Electricity Entity has identified a breach of statutory clearance resulting from erection of a building or structure, the statutory breach will be reportable to the Electrical Safety Office as a Dangerous Electrical Event and any costs incurred in subsequent remedial work to achieve required statutory clearances may be recovered from the person or company who caused the breach of statutory clearance.



# PROCEDURE / INSTRUCTIONS

CODE	LOCATION	DIRECTION	INSULATED CABLE (ABC) (Note 1)	BARE	MORE THAN 1000 VOLTS BUT NOT MORE THAN 33kV
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## MINIMUM CLEARANCE FROM ROADS, GROUND, OR BOUNDARIES

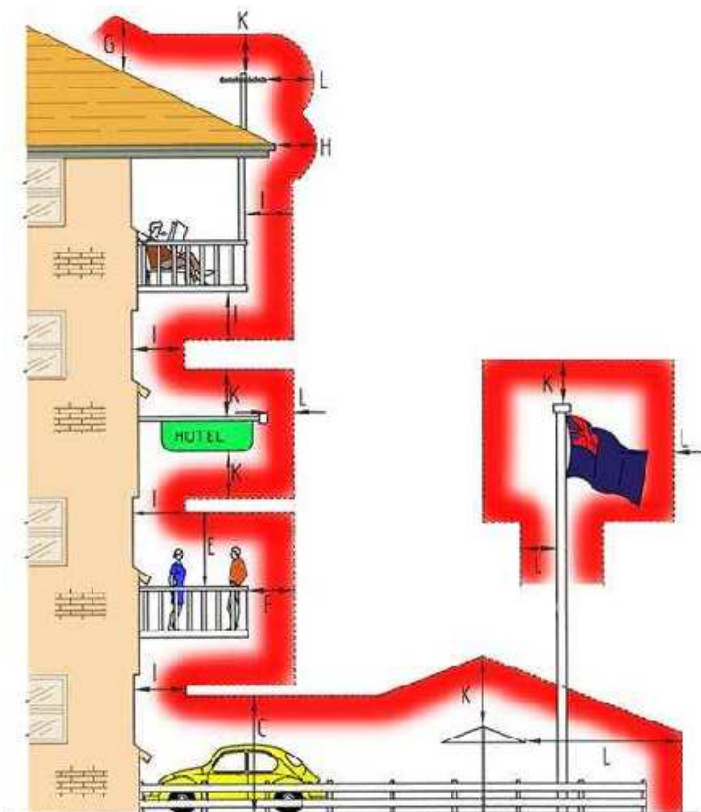
A	Crossing the carriageway, roadway	VERTICALLY	5.5m	5.5m	6.7m
A1	Designated "Over Dimension Routes"	VERTICALLY	7.0m	7.0m	7.5m
B	At other positions, footpath	VERTICALLY	5.5m	5.5m	5.5m
C	Other than roads but trafficable	VERTICALLY	5.5m	5.5m	5.5m
C1	Areas totally inaccessible to traffic or mobile machinery	VERTICALLY	4.5m	4.5m	4.5m
D	Cuttings, embankments, easement boundaries	HORIZONTALLY	1.5m	1.5m	2.1m
X	Real Property Boundaries	HORIZONTALLY	0.0m	0.0m	0.0m

## MINIMUM CLEARANCE FROM STRUCTURES AND BUILDINGS

E F	Unroofed terraces, balconies, sun-decks, paved areas, etc, subject to pedestrian traffic only. A hand rail or wall surrounding such an area and on which a person may stand. (Note)	VERTICALLY AND HORIZONTALLY (Note)	2.7m 1.2m	3.7m 1.5m	4.6m 2.1m
G H	Roofs or similar structures not used for traffic or resort but on which a person may stand. A parapet surrounding such a roof and on which a person may stand. (Note)	VERTICALLY AND HORIZONTALLY (Note)	2.7m 0.9m	3.7m 1.5m	3.7m 2.1m
I	Covered places of traffic or resort such as windows which are capable of being opened, roofed open verandahs and covered balconies.	IN ANY DIRECTION	1.2m	1.5m	2.1m
J	Blank walls, windows which cannot be opened. (Note)	HORIZONTALLY	0.6m	1.5m	1.5m
K L	Other structures not normally accessible to persons. (Note)	VERTICALLY HORIZONTALLY (Note)	0.6m 0.3m	2.7m 1.5m	3.0m 1.5m

### NOTE:

The vertical clearance and the horizontal clearance specified shall be maintained.





## PROCEDURE / INSTRUCTIONS

The following list of examples is not exhaustive, and it may be necessary to contact the Electricity Entity if doubt exists as to what is permitted around electricity assets.

<b><i>What is PERMITTED around Electricity Entity overhead or underground electric lines</i></b>	<b><i>What is NOT PERMITTED around Electricity Entity overhead or underground electric lines</i></b>
<ul style="list-style-type: none"> <li>✓ Erection of fences to a maximum height of 2.4 m is generally acceptable, provided they do not affect access to, and work on, the poles, electric lines and/or cables. Trees, shrubs and plants should be located clear of vehicle access. <b>Note:</b> Maximum Growth Height of 3 m.</li> <li>✓ Clothes hoists and barbecues should be located clear of the vehicle access way. <b>Note:</b> Maximum Height 2.5 m.</li> <li>✓ Installation of underground utility services, such as low voltage electricity, gas, telephone and water, is generally acceptable, subject to clearances from Electricity Entity poles and supporting structures, and underground electric mains.</li> <li>✓ Excavating, filling and altering of nearby land may be acceptable but full details need to be provided to the Electricity Entity for assessment.</li> <li>✓ Vehicles, mobile plant and equipment within the easement area need to maintain the minimum statutory clearances distances from overhead electric lines. Normal farming, grazing and other agricultural activities can be carried out. Take care when ploughing or operating mobile machinery or irrigation equipment near Electricity Entity's equipment.</li> <li>✓ Parking of vehicles, trucks, trailers, etc. is normally allowed. <b>Note:</b> Maximum Load and Aerial Height of 4 m. Barriers of an approved design (e.g. bollards) may be required to protect poles from vehicle contact damage. Heavy vehicle or operating plant crossings may need a protective concrete cover to ensure underground cables are not damaged.</li> </ul>	<ul style="list-style-type: none"> <li>✗ Build houses, sheds, garages or other large structures. Building of roofed/ unroofed verandahs, swimming pools and pergolas are generally not acceptable.</li> <li>✗ Flying kites or model aircraft within the easement.</li> <li>✗ Driving fence posts or stakes into ground within easements where there is underground cabling.</li> <li>✗ Storing liquids such as petrol, diesel fuel, or any flammable or combustible material that will burn.</li> <li>✗ Installing lighting poles.</li> <li>✗ Stockpiling soil or garbage within the easement.</li> <li>✗ Planting trees in large quantities that could create a fire hazard or that grow in excess of the approved maximum height of 3 m.</li> <li>✗ Storing or using explosives.</li> <li>✗ Residing in or occupying any caravan or mobile home within an easement.</li> <li>✗ Placing obstructions within the vicinity of any Electricity Entity assets (e.g. power pole, overhead electric line, equipment or pole stay) that impede access to or work on these assets.</li> </ul>

### 6.4. What about Electric and Magnetic Fields?

The Electricity Entity operates its electric lines within the current guidelines set by the National Health and Medical Research Council for exposure to 50/60 hertz electric and magnetic fields (EMF) and is mindful of some community concern about such fields and health. Contact the Electricity Entity (General Enquiries phone number - refer page 3). Alternatively, further information can be sourced from:

Energy Networks Association (ENA) brochure - "Electric and Magnetic Fields - What We Know", January 2014

[http://www.ena.asn.au/sites/default/files/emf-what-we-know-jan-2014-final\\_1\\_1.pdf](http://www.ena.asn.au/sites/default/files/emf-what-we-know-jan-2014-final_1_1.pdf)

Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) brochure - "Electricity and Health", May 2011

[http://www.arpansa.gov.au/RadiationProtection/Factsheets/is\\_electricity.cfm](http://www.arpansa.gov.au/RadiationProtection/Factsheets/is_electricity.cfm)



DEFINITIONS	
Term	Definition
Applicant	A person contacting or applying to the Electricity Entity for a Safety Advice.
Authorised Person	For work near an electrical line, means a person who has enough technical knowledge and experience to do work that involves being near to the electrical line; and has been approved by the person in control of the electrical line (Electricity Entity) to do work near to the electrical line.
Authorised Person (Electrical)	An Electrical Mechanic or Electrical Linesperson (holding current Queensland Licence) working on behalf of an electrical contractor and accredited with the Electricity Entity who is permitted to remove and replace LV service fuse(s) when isolation of customer LV service line is required to eliminate the exclusion zone around the LV service line, or to work on the customer's mains and / or switchboard.
Earthworks	Any digging, penetration or disturbance of ground including but not limited to post hole digging, excavating, trenching, directional boring, bore hole sinking, driving pickets/posts into ground, cut and fill, dam or levee bank construction, blasting.
Electricity Entity	Where Electricity Entity appears throughout this document, it relates to either Energex or Ergon Energy area of responsibility. Refer to respective contact details below.
Instructed Person	For an electrical line, means a person who is acting under the supervision of an Authorised Person for the electrical line.
Safety Advice	A written notice identifying the known electrical hazards at a specific site and advising the control measures required to be implemented by Responsible Person (person responsible for worksite) to reduce the likelihood of harm to person, plant or vehicle at site.
Safety Observer	<p>A safety observer or "spotter", for the operation of operating plant, means a person who:</p> <ul style="list-style-type: none"> <li>(a) observes the operating plant; and</li> <li>(b) advises the operator of the operating plant if it is likely that the operating plant will come within an exclusion zone for the operating plant for an overhead electric line.</li> </ul> <p>This is a person who has undergone specific training and is competent to perform the role in observing, warning and communicating effectively with the operator of the operating plant.</p>
Untrained Person	For an electrical line, means a person who is not an Authorised Person or an Instructed Person for the electrical line.

TRAINING
Staff must be current in all Statutory Training relevant for the task.



## SAFETY / ENVIRONMENTAL CONTROLS

Follow the Safety Policy, procedures and practices set out for Energy Queensland and subsidiary companies.

Personnel are responsible for understanding all the risks and ensuring their individual actions do not endanger the health and safety of themselves or others.



## FATAL HAZARDS CRITICAL CONTROLS FOR THE TASK



## REFERENCES

### Supporting Documents

Electrical Safety Regulation 2013: Part 5 - Overhead and Underground Electric Lines

Electrical Safety Code of Practice 2020 - Working Near Overhead and Underground Electric Lines

Work Health and Safety Act 2011

Work Health and Safety Regulation 2011

### Energex documents:

- Application for Safety Advice – Working near Energex exposed live parts
- Important Notice – Working near Energex Power Lines Including Overhead Services
- Safety Advice on working near Energex exposed live parts

### Ergon Energy documents:

- Safety Advice Request Form
- Safety Advice on Working around Electrical Parts Form
- Important Notice Regarding Safety Advice QRG

Copies of the relevant Acts, Regulation and Codes of Practice and any other relevant legislation can be found on the Queensland Government web site - <https://www.worksafe.qld.gov.au/>



## REFERENCES

### Disclaimer

This document refers to various standards, guidelines, calculations, legal requirements, technical details and other information and is not an exhaustive list of all safety matters that need to be considered.

Over time, changes in industry standards and legislative requirements, as well as technological advances and other factors relevant to the information contained in this document, may affect the accuracy of the information contained in this document. Whilst care is taken in the preparation of this material, Energex and Ergon Energy do not guarantee the accuracy and completeness of the information. Accordingly, caution should be exercised in relation to the use of the information in this document.

To the extent permitted by law, Energex and Ergon Energy will not be responsible for any loss, damage or costs incurred as a result of any errors, omissions or misrepresentations in relation to the material in this document or for any possible actions ensuing from information contained in the document.

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Referral

250319424

Member Phone

1800 687 626

Responses from this member

Response received Fri 31 Jan 2025 12.12pm

File name	Page
Response Body	134
4678_NBN_Dial_Before_You_Dig_Poster_20170517.pdf	135
Disclaimer_250319424_20250131_021149518307.pdf	137
250319424_20250131_021149518307_1.pdf	141



Hi Chanlyly Chea,

Please find attached the response to your DBYD referral for the address mentioned in the subject line. The location shown in our DBYD response is assumed based off the information you have provided. If the location shown is different to the location of the excavation then this response will consequently be rendered invalid.

Take the time to read the response carefully and note that this information is only valid for 28 days after the date of issue.

If you have any further enquiries, please do not hesitate to contact us.

Regards,  
Network Services and Operations  
NBN Co Limited  
P: 1800626329  
E: [dbyd@nbnco.com.au](mailto:dbyd@nbnco.com.au)  
[www.nbnco.com.au](http://www.nbnco.com.au)

**Confidentiality and Privilege Notice**

This e-mail is intended only to be read or used by the addressee. It is confidential and may contain legally privileged information. If you are not the addressee indicated in this message (or responsible for delivery of the message to such person), you may not copy or deliver this message to anyone, and you should destroy this message and kindly notify the sender by reply e-mail. Confidentiality and legal privilege are not waived or lost by reason of mistaken delivery to you. Any views expressed in this message are those of the individual sender, except where the sender specifically states them to be the views of NBN Co Limited

Please Do Not Reply To This Mail





# Working near **nbn**<sup>TM</sup> cables

**nbn** has partnered with Dial Before You Dig to give you a single point of contact to get information about **nbn** underground services owned by **nbn** and other utility/service providers in your area including communications, electricity, gas and other services. Contact with underground power cables and gas services can result in serious injury to the worker, and damage and costly repairs. You must familiarise yourself with all of the Referral Conditions (meaning the referral conditions referred to in the DBYD Notice provided by **nbn**).

## Practice safe work habits

Once the DBYD plans are reviewed, the Five P's of Excavation should be adopted in conjunction with your safe work practices (which must be compliant with the relevant state Electrical Safety Act and Safe Work Australia "Excavation Work Code of Practice", as a minimum) to ensure the risk of any contact with underground **nbn** assets are minimised.



**Plan:** Plan your job by ensuring the plans received are current and apply to the work to be performed. Also check for any visual cues that may indicate the presence of services not covered in the DBYD plans.



**Prepare:** Prepare for your job by engaging a DBYD Certified Plant Locator to help interpret plans and identify on-site assets. Contact **nbn** should you require further assistance.



**Pothole:** Non-destructive potholing (i.e. hand digging or hydro excavation) should be used to positively locate **nbn** underground assets with minimal risk of contact and service damage.



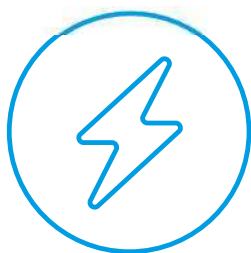
**Protect:** Protecting and supporting the exposed **nbn** underground asset is the responsibility of the worker. Exclusion zones for **nbn** assets are clearly stated in the plan and appropriate controls must be implemented to ensure that encroachment into the exclusion zone by machinery or activities with the potential to damage the asset is prevented.



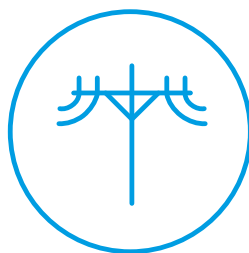
**Proceed:** Proceed only when the appropriate planning, preparation, potholing and protective measures are in place.



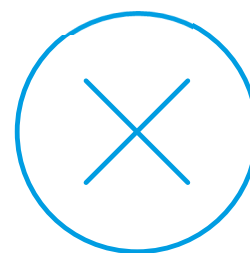
# Working near **nbn**<sup>TM</sup> cables



Identify all electrical hazards, assess the risks and establish control measures.



When using excavators and other machinery, also check the location of overhead power lines.



Workers and equipment must maintain safety exclusion zones around power lines.

Once all work is completed, the excavation should be re-instated with the same type of excavated material unless specified by **nbn**. Please note:

- Construction Partners of **nbn** may require additional controls to be in place when performing excavation activities.
- The information contained within this pamphlet must be used in conjunction with other material supplied as part of this request for information to adequately control the risk of potential asset damage.

## Contact

All **nbn**<sup>TM</sup> network facility damages must be reported online [here](#).  
For enquiries related to your DBYD request please call 1800 626 329.

### Disclaimer

This brochure is a guide only. It does not address all the matters you need to consider when working near our cables. You must familiarise yourself with other material provided (including the Referral Conditions) and make your own inquiries as appropriate.


**nbn** will not be liable or responsible for any loss, damage or costs incurred as a result of reliance on this brochure.

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**To:** Chanlyly Chea  
**Phone:** Not Supplied  
**Fax:** Not Supplied  
**Email:** cchea@adgce.com

<b>Before You Dig Australia Job #:</b>	38537442	 <b>BEFORE YOU DIG</b> www.byda.com.au Zero Damage - Zero Harm
<b>Sequence #</b>	250319424	
<b>Issue Date:</b>	31/01/2025	
<b>Location:</b>	33 Harold Street , Virginia , QLD , 4014	

## Information

The area of interest requested by you contains one or more assets.

<b>nbn™ Assets</b>	<b>Search Results</b>
<b>Communications</b>	Asset identified
<b>Electricity</b>	No assets

In this notice **nbn™ Facilities** means *underground fibre optic, telecommunications and/or power facilities, including but not limited to cables, owned and controlled by nbn™*

## Location of nbn™ Underground Assets



We thank you for your enquiry. In relation to your enquiry at the above address:

- **nbn's** records indicate that there **ARE nbn™** Facilities in the vicinity of the location identified above ("Location").
- **nbn** indicative plan/s are attached with this notice ("Indicative Plans").
- The Indicative Plan/s show general depth and alignment information only and are not an exact, scale or accurate depiction of the location, depth and alignment of **nbn™** Facilities shown on the Plan/s.
- In particular, the fact that the Indicative Plans show that a facility is installed in a straight line, or at uniform depth along its length cannot be relied upon as evidence that the facility is, in fact, installed in a straight line or at uniform depth.
- You should read the Indicative Plans in conjunction with this notice and in particular, the notes below.
- You should note that, at the present time, the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables. As such, consistent with the notes below, particular care must be taken by you to make your own enquiries and investigations to precisely locate any power cables and manage the risk arising from such cables accordingly.
- The information contained in the Indicative Plan/s is valid for 28 days from the date of issue set out above. You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators, e.g BYDA Certified Locators, at your cost to locate **nbn™** Facilities during any activities you carry out on site).

We thank you for your enquiry and appreciate your continued use of the Before You Dig Australia Service. For any enquiries related to moving assets or Planning and Design activities, please visit the **nbn Commercial Works** website to complete the online application form. If you are planning to excavate and require further information, please email [dbyd@nbnco.com.au](mailto:dbyd@nbnco.com.au) or call 1800 626 329.

#### Notes:

1. You are now aware that there are **nbn™** Facilities in the vicinity of the above property that could be damaged as a result activities carried out (or proposed to be carried out) by you in the vicinity of the Location.
2. You should have regard to section 474.6 and 474.7 of the *Criminal Code Act 1995* (CoA) which deals with the consequences of interfering or tampering with a telecommunications facility. Only persons authorised by **nbn** can interact with **nbn's** network facilities.
3. Any information provided is valid only for **28 days** from the date of issue set out above.

## Referral Conditions

The following are conditions on which **nbn** provides you with the Indicative Plans. By accepting the plans, you are agreeing to these conditions. These conditions are in addition, and not in replacement of, any duties and obligations you have under applicable law.

1. **nbn** does not accept any responsibility for any inaccuracies of its plans including the Indicative Plans. You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators, e.g BYDA Certified Locators, at your cost to locate **nbn™** Facilities during any activities you carry out on site).
2. You acknowledge that **nbn** has specifically notified you above that the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables.
3. You should not assume that **nbn™** Facilities follow straight lines or are installed at uniform depths



along their lengths, even if they are indicated on plans provided to you. Careful onsite investigations are essential to locate the exact position of cables.

4. In carrying out any works in the vicinity of **nbn**™ Facilities, you must maintain the following minimum clearances:
  - 300mm when laying assets inline, horizontally or vertically.
  - 500mm when operating vibrating equipment, for example: jackhammers or vibrating plates.
  - 1000mm when operating mechanical excavators.
  - Adherence to clearances as directed by other asset owner's instructions and take into account any uncertainty for power cables.
5. You are aware that there are inherent risks and dangers associated with carrying out work in the vicinity of underground facilities (such as **nbn**™ fibre optic, copper and coaxial cables, and power cable feed to **nbn**™ assets). Damage to underground electric cables may result in:
  - Injury from electric shock or severe burns, with the possibility of death.
  - Interruption of the electricity supply to wide areas of the city.
  - Damage to your excavating plant.
  - Responsibility for the cost of repairs.
6. You must take all reasonable precautions to avoid damaging **nbn**™ Facilities. These precautions may include but not limited to the following:
  - All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs if present must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the likelihood of damage to the cable, for example: the blades of hand equipment should be aligned parallel to the line of the cable rather than digging across the cable.
  - If any undisclosed underground cables are located, notify **nbn** immediately.
  - All personnel must be properly briefed, particularly those associated with the use of earth-moving equipment, trenching, boring and pneumatic equipment.
  - The safety of the public and other workers must be ensured.
  - All excavations must be undertaken in accordance with all relevant legislation and regulations.
7. You will be responsible for all damage to **nbn**™ Facilities that are connected whether directly, or indirectly with work you carry out (or work that is carried out for you or on your behalf) at the Location. This will include, without limitation, all losses expenses incurred by **nbn** as a result of any such damage.
8. You must immediately report any damage to the **nbn**™ network that you are/become aware of. Notification may be by telephone - 1800 626 329.
9. Except to the extent that liability may not be capable of lawful exclusion, **nbn** and its servants and agents and the related bodies corporate of **nbn** and their servants and agents shall be under no liability whatsoever to any person for any loss or damage (including indirect or consequential loss or damage) however caused (including, without limitation, breach of contract negligence and/or breach of statute) which may be suffered or incurred from or in connection with this information sheet or any plans (including Indicative Plans) attached hereto. Except as expressly provided to the contrary in this information sheet or the attached plans (including Indicative Plans), all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

All works undertaken shall be in accordance with all relevant legislations, acts and regulations applicable to the particular state or territory of the Location. The following table lists all relevant documents that shall be considered and adhered to.

State/Territory	Documents
National	Work Health and Safety Act 2011
	Work Health and Safety Regulations 2011
	Safe Work Australia - Working in the Vicinity of Overhead and Underground Electric Lines (Draft)



	Occupational Health and Safety Act 1991
<b>NSW</b>	Electricity Supply Act 1995
	Work Cover NSW - Work Near Underground Assets Guide
	Work Cover NSW - Excavation Work: Code of Practice
<b>VIC</b>	Electricity Safety Act 1998
	Electricity Safety (Network Asset) Regulations 1999
<b>QLD</b>	Electrical Safety Act 2002
	Code of Practice for Working Near Exposed Live Parts
<b>SA</b>	Electricity Act 1996
<b>TAS</b>	Tasmanian Electricity Supply Industry Act 1995
<b>WA</b>	Electricity Act 1945
	Electricity Regulations 1947
<b>NT</b>	Electricity Reform Act 2005
	Electricity Reform (Safety and Technical) Regulations 2005
<b>ACT</b>	Electricity Act 1971

Thank You,

**nbn BYDA**


Date: 31/01/2025

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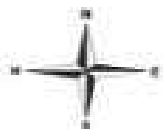
**To:** Chanlyly Chea  
**Phone:** Not Supplied  
**Fax:** Not Supplied  
**Email:** cchea@adgce.com

<b>Dial before you dig Job #:</b>	38537442	
<b>Sequence #</b>	250319424	
<b>Issue Date:</b>	31/01/2025	
<b>Location:</b>	33 Harold Street , Virginia , QLD , 4014	

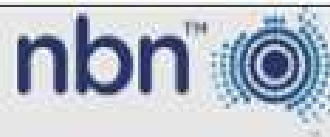
Indicative Plans are tiled below to demonstrate how to layout and read nbn asset plans

1	3
2	4





## LEGEND



	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	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 Direct buried cables between pits of sizes, "5" and "9" are 10.0m apart.
	Trench containing any <b>INSERVICE/CONSTRUCTED</b> (Copper/RF/Fibre) cables.
	Trench containing only <b>DESIGNED/PLANNED</b> (Copper/RF/Fibre/Power) cables.
	Trench containing any <b>INSERVICE/CONSTRUCTED</b> (Power) cables.
	Road and the street name "Broadway ST"
Scale 	0 20 40 60 Meters 1:2000 1 cm equals 20 m





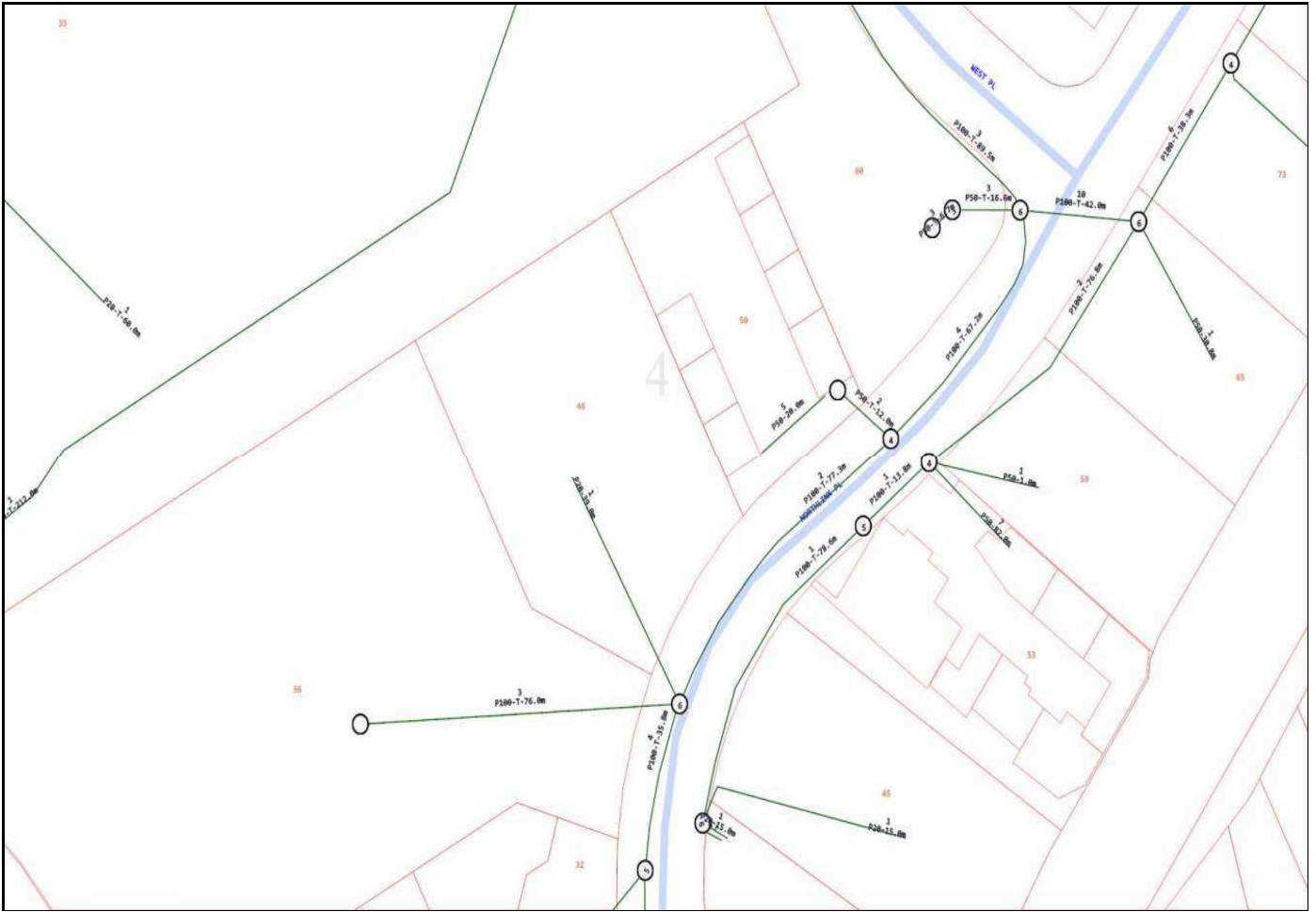












## Emergency Contacts

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



Optus and or Uecomm Qld

Referral  
250319426

Member Phone  
1800 505 777

Responses from this member

Response received Fri 31 Jan 2025 10.19am

File name	Page
Response Body	148
250319426 - Optus Plan.pdf	149
250319426 - Optus Response Letter.pdf	152

Response received Fri 31 Jan 2025 10.19am

File name	Page
Response Body	164
250319426 - Optus Response Letter (Uecomm).pdf	165
250319426 - Uecomm Plan.pdf	167
4355-3.zip	Excluded



Optus - Before You Dig Australia - REFERRAL NOTIFICATION

This referral has been successfully processed by Optus and the results are contained in the attached files.

Notice: Please DO NOT REPLY TO THIS EMAIL as it has been automatically generated and replies are not monitored.

If you have any queries or attachments missing please contact:

Network Operations Centre  
1 Lyonpark Road,  
Macquarie Park, NSW 2113  
Ph: 1800 505 777  
Fax: 1300 307 035

You will require Adobe Reader to view attachments.

<http://www.adobe.com/downloads/>

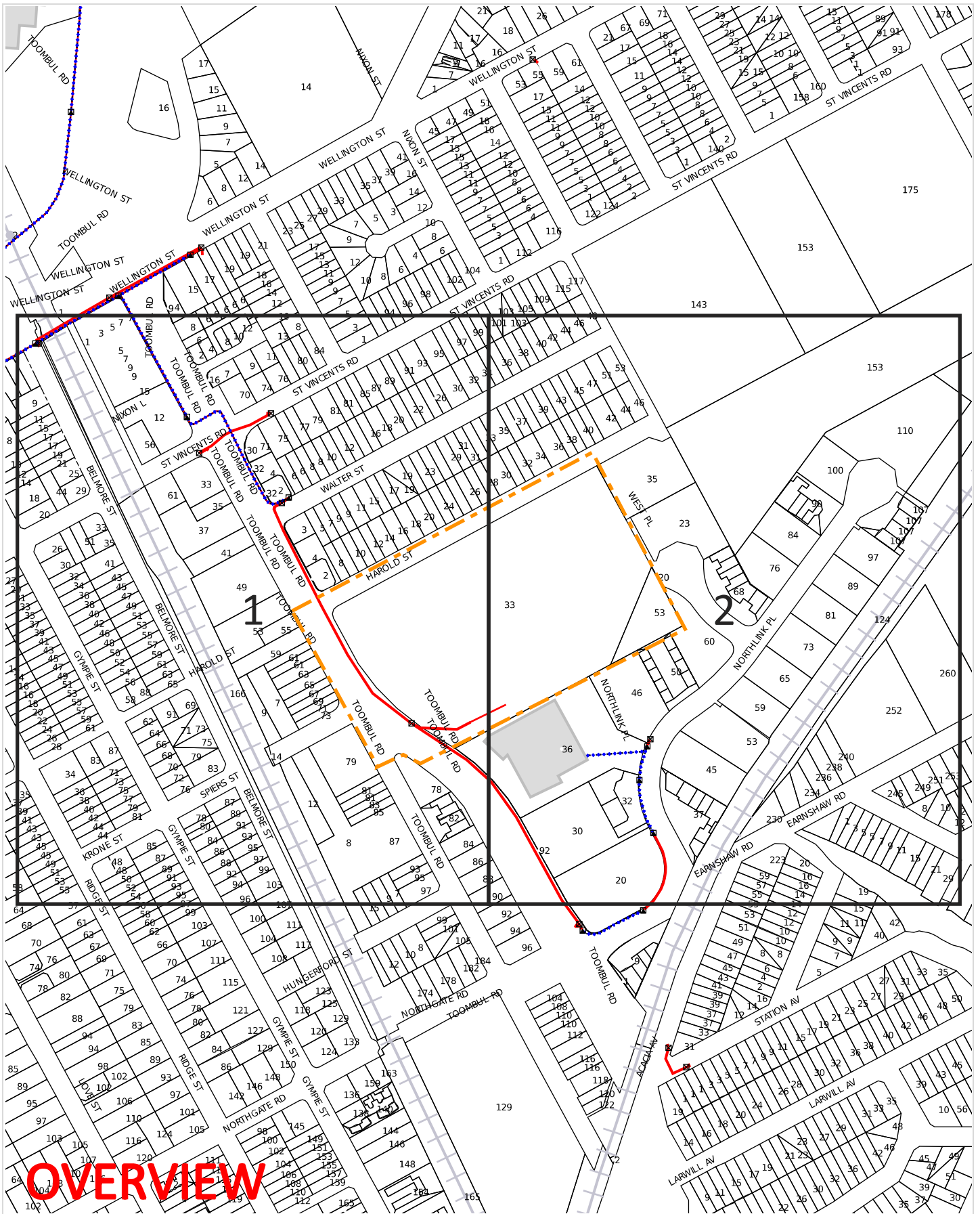
We thank you for your enquiry and appreciate your continued use of the “Before You Dig Australia Service” Asset Analysis Service. If you require further information in relation to Optus and/or Uemcomm cables please contact Optus on above.

This reply relates only to the location indicated above and is valid for 30 days from the sent date. Where additional works are planned that have not been specified within this reply, Optus require that an additional enquiry be submitted to Before You Dig Australia enquiry Service: <http://www.byda.com.au>

In the case of no additional location request being submitted, Optus will hold the relevant party responsible for any damage to Optus and/or Uecommm plant and all expenses incurred by Optus as a result of asset damage.

This e-mail may contain confidential information. If you are not the intended recipient, please notify Network Operations Centre immediately and delete this e-mail from your system. You must not disclose this e-mail to anyone without express permission from the sender. The contents of all e-mails sent to and received from Optus may be scanned, stored, or disclosed to others at Optus’ discretion.





WARNING: This document is confidential and may also be privileged. Confidentiality nor privilege is not waived or destroyed by virtue of it being transmitted to an incorrect addressee. Unauthorised use of the contents is therefore strictly prohibited. Any information contained in this document that has been extracted from our records is believed to be accurate, but no responsibility is assumed for any error or omission. Optus Plans and information supplied are valid for 30 days from the date of issue. If this timeline has elapsed, please raise a new enquiry.

Sequence Number: 250319426

Date Generated: 31 Jan 2025



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







WARNING: This document is confidential and may also be privileged. Confidentiality nor privilege is not waived or destroyed by virtue of it being transmitted to an incorrect addressee. Unauthorised use of the contents is therefore strictly prohibited. Any information contained in this document that has been extracted from our records is believed to be accurate, but no responsibility is assumed for any error or omission. Optus Plans and information supplied are valid for 30 days from the date of issue. If this timeline has elapsed, please raise a new enquiry.

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





Date: 31 Jan 2025  
To: Chanlyly Chea  
Company: Not Supplied  
Address: 596 Milton Road  
Toowong, QLD 4066

## ENQUIRY DETAILS

Location: 33 Harold Street, Virginia, QLD 4014  
Sequence No.: 250319426  
BYDA Reference: 38537442

In relation to your enquiry concerning the above location, Optus advises as follows:

**Optus records indicate that there ARE underground Optus FIBRE OPTIC TELECOMMUNICATIONS ASSETS in the vicinity of the above location as per the attached drawing(s).**

**PLEASE NOTE that any interference with these assets may be considered an offence under the Criminal Code Act 1995 (Cth). Optus reserves the right to seek compensation for loss or damage to its assets including consequential loss.**

**This reply is valid for a period of 30 days from the date above.**

## IMPORTANT INFORMATION

Asset location drawings provided by Optus are reference diagrams and are provided as a guide only. The completeness of the information in these drawings cannot be guaranteed. Exact ground cover and alignments cannot be provided with any certainty as these may have altered over time. Depths of telecommunications assets vary considerably as do alignments. It is essential to identify the location of any Optus assets in the vicinity prior to engaging in any works.

**All Optus assets in the vicinity of any planned works will need to be electronically located to ascertain their general location. Depending on the scope of planned works in the vicinity, the assets may also need to be physically located.**

**YOU MUST ENGAGE THE SERVICES OF ONE OF THE OPTUS ASSET ACCREDITED LOCATORS TO CARRY OUT ASSET LOCATION (REFER LIST OF ACCREDITED LOCATORS AT THE END OF THIS OPTUS RESPONSE).**

**Unless otherwise agreed with Optus, where an on-site asset location is required, the requestor is responsible for all costs associated with the locating service including (where required) physically exposing the Optus asset.**

## DUTY OF CARE

When working in the vicinity of telecommunications assets you have a legal "Duty of Care" and non-interference that must be observed.

It is your responsibility as the requesting party (as a landowner or any other party involved in the planned works) to design for minimal impact to any existing Optus asset. Optus can assist at the design stage through consultation.

It is also your, as the requesting party (or your representative's), responsibility to:

- Obtain location drawings (through the Before You Dig Australia process) of any existing Optus assets at a reasonable time before any planned works begin;
- Have an Optus Accredited Asset Locator identify the general location of the Optus asset and physically locate the asset where planned works may encroach on its alignment; and
- Contact Optus for further advice where requested to do so by this letter.



## **DAMAGE TO ANY OPTUS ASSET MUST BE REPORTED TO 1800 505 777 IMMEDIATELY**

You, your head contractor, and any relevant subcontractor are all responsible for any Optus asset damage as a result of planned activities in the vicinity of Optus assets.

This applies where works commence prior to obtaining Optus drawings, where there is failure to follow instructions or during any construction activities.

**Optus reserves the right to recover compensation for loss or damage to its assets including consequential loss. Also, you, your head contractor and any relevant subcontractor may also be liable for prosecution under the Criminal Code Act 1995 (Cth).**

### **ASSET RELOCATIONS**

You are not permitted by law to relocate, alter or interfere with any Optus asset under any circumstance. Any unauthorised interference with an Optus asset may lead to prosecution under the Criminal Code Act 1995 (Cth). Enquiries relating to the relocation of Optus assets must be referred to the relevant Optus Damages and Relocations Team (refer to "FURTHER ASSISTANCE").

### **APPROACH DISTANCES**

On receipt of Optus asset location drawings and prior to commencing any planned works near an Optus asset, engage an Optus Accredited Locator to undertake a general location of the Optus asset.

Physical location of the Optus asset by an Optus Accredited Locator will also be required where planned works are within the following approach distances of the general location of the Optus asset:

- In built up metropolitan areas where road and footpaths are well defined by kerbs or other features a minimum clear distance of 1 meter must be maintained from the general location of the Optus asset.
- In non-established or unformed metropolitan areas, a minimum clear distance of 3 meters must be maintained from the general location of the Optus asset.
- In country or rural areas where wider variations may exist between the general and actual location of an Optus asset may exist, then a minimum clear distance of 5 meters must be maintained from the general location of the Optus asset.

If planned works are parallel to the Optus asset, then the Optus asset must be physically located by an Optus Accredited Locator at a minimum of 5 meter intervals along the length of the parallel works prior to work commencing.

Under no circumstances is crossing of any Optus asset permitted without physical location of the asset being carried out by an Optus Accredited Locator. Depending on the asset involved an Optus representative may be required onsite.

The minimum clearances to the physical location of Optus assets for the following specific types of works must be maintained at all times.

**Note: Where the clearances in the following table cannot be maintained or where the type of work differs from those listed then advice must be sought from the relevant Optus Damages and Relocations Team (refer to "FURTHER ASSISTANCE").**

Type of Works	Clearance to Physical Location of Optus Asset
Jackhammers / Pneumatic Breakers	Not within 1 meter.
Light duty Vibrating Plate or Wacker Packer type compactors (not heavy road construction vibrating rollers etc.)	500mm compact clearance cover before a light duty compactor can be used over any Optus conduit.  No compaction permitted over Optus direct buried cable without prior approval from Optus.
Boring Equipment (in-line, horizontal and vertical)	Not within 5 meters parallel of the Optus asset location without an Accredited Optus Asset Locator physically exposing the Optus asset and with an Optus representative onsite.  Not to cross the Optus asset without an Accredited Optus Asset Locator physically exposing the Optus asset and with an Optus representative onsite.



Type of Works	Clearance to Physical Location of Optus Asset
Heavy vehicle Traffic (over 3 tonnes)	<p>Not to be driven across Optus conduits with less than 600mm of cover.</p> <p>Not to be driven across Optus direct buried cable with less than 1.2 meters of cover.</p> <p>Once off crossings permitted, multiple crossing (e.g. road construction or logging) will require Optus approval.</p> <p>Accredited Optus Asset Locator to physically expose the Optus asset to verify actual depth.</p>
Mechanical Excavators, Farm Ploughing, Vertical Hole installation for water bore or fencing etc.	<p>Not within 1 meter.</p> <p>Accredited Optus Asset Locator to physically expose the Optus asset to verify actual location.</p>

### ASSET CLEARANCES AFTER COMPLETION OF WORKS

All Optus pits and manholes must be a minimum of 1 meter from the back of any kerb, 3.5 meters of the road surface without a kerb or not within 15 meters of street intersection.

In urban areas Optus conduit must have the following minimum depth of cover:

- Footway 600mm;
- Roadway 1 meter at drain invert and at road centre crown.

In rural areas Optus conduit must have a minimum depth of cover of 1 meter and direct buried cable 1.2 meters.

In cases where it is considered that the above clearances cannot be maintained at the completion of works, advice must be sought from the relevant Optus Damages and Relocations Team (refer "Further Assistance").

















### FURTHER ASSISTANCE


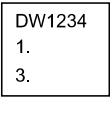



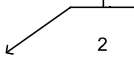
Further assistance on asset clearances, protection works, or relocation requirements can be obtained by contacting the relevant Optus Damages and Relocations Team on the following email address:

[NFODamages&RelocationsDropbox@optus.com.au](mailto:NFODamages&RelocationsDropbox@optus.com.au)

Further assistance relating to asset location drawings etc. can be obtained by contacting the Optus Network Operations Asset Analysis Team on 1800 505 777.

### OPTUS ENGINEERING DRAWING SYMBOLS

	Optus underground cable		Optus manhole/pit
	Optus underground IOF cable		Other Utility manhole/pit
	Optus conduit		Optus marker post
 OR 	Optus cable in Other Utility conduit		Railway / Tram line
	Southern Cross conduit		Highway / Major Road
	Indigo conduit		Arterial Road
	Uecomm conduit		Council Road - minor
	Optus aerial fibre cable		

	Optus underground cable		Optus marker post number Depth of Optus cable Offset to Optus cable
	Optus cable buried jointly with third party utility		
	Optus cable in conduit with subducts		Optus cable depth (approx) Optus cable offset (approx)





## Optus Accredited Asset Locators

Name	Company Name	Phone	Email	State	Region/Service Area
Drew Misko	Australian Subsurface Pty Ltd	0427 879 600	<a href="mailto:admin@australiansubsurface.com">admin@australiansubsurface.com</a>	ALL	ALL
Andrew Watson	Subsurface Mapping Solutions Pty Ltd	0408 839 723	<a href="mailto:admin@subsurfacems.com.au">admin@subsurfacems.com.au</a>	ALL (Not TAS)	South East QLD + Aus wide
Chris Gordon	Heavy Construction Solutions	1300 859 027	<a href="mailto:chris.gordon@heavycs.com.au">chris.gordon@heavycs.com.au</a>	VIC,NSW,QLD,SA TAS	All
Alan Cordner	Alcom Fibre Services Pty Ltd	0400 300 337	<a href="mailto:alcomfibre@bigpond.com">alcomfibre@bigpond.com</a>	NSW	Sydney, NSW
Brad McCorkindale	Bradmac Locating Services	0434 157 409	<a href="mailto:info@bradmaclocating.com.au">info@bradmaclocating.com.au</a>	NSW	NSW
Shane Buckley	Cable & Pipe Locations Pty Ltd	0408730430	<a href="mailto:shane@cableandpipelocations.com.au">shane@cableandpipelocations.com.au</a>	NSW	North Coast , Mid North Coast, Central West, Northern Rivers
Annabelle Pegler	Down Under Detection Services (DUDS)	0418 267 964	<a href="mailto:apegler@duds.net.au">apegler@duds.net.au</a>	NSW	All
George Koenig	Downunder Locations	0438243856	<a href="mailto:downunderlocations@gmail.com">downunderlocations@gmail.com</a>	NSW	Tweed Heads/Gold Coast
Michael Grant	M&K Grant Bega Bobcats Pty Ltd	0427 260 423	<a href="mailto:zzbobcat@bigpond.net.au">zzbobcat@bigpond.net.au</a>	NSW	Bega, Far South Coast
Antony Critcher	Geotrace Australia Pty Ltd	0417 147 945	<a href="mailto:antony@geotrace.com.au">antony@geotrace.com.au</a>	NSW	All Areas, Sydney, Wollongong, Newcastle, ACT
Sarah Martin	Hydro Digga	0447 774 000	<a href="mailto:admin@hydrodigga.com">admin@hydrodigga.com</a>	NSW	Mid North Coast
Nathan Ellis	Utility Locating Services	0404 087 555	<a href="mailto:nathan@uls.com.au">nathan@uls.com.au</a>	NSW	Sydney
Scott O'Malley	Coastal Cable Locators Pty Ltd	0427 975 777	<a href="mailto:skomalley@bigpond.com">skomalley@bigpond.com</a>	NSW	South Coast- Snowy Mountains- Southern Highlands
Liam Bolger	Brandon Construction Services	0438 044 008	<a href="mailto:liam.bolger@hotmail.com">liam.bolger@hotmail.com</a>	NSW	Sydney
Laura Elvery	Durkin Construction Pty Ltd	02 9712 0308	<a href="mailto:info@durkin.au">info@durkin.au</a>	NSW	NSW
Shireen Sidhu	Locate & Map	(02) 8753 0049	<a href="mailto:admin@locateandmap.com.au">admin@locateandmap.com.au</a>	NSW	Sydney & Regional NSW only



Ken Browne	Riteway Traffic Control Pty Ltd	0419 212 969	<a href="mailto:kbrowne@ritewaytc.com.au">kbrowne@ritewaytc.com.au</a>	NSW	Central Coast, Hunter
Jean-Max Monty	Civilscan	1300 575 488	<a href="mailto:john@civilscan.com.au">john@civilscan.com.au</a>	NSW	Sydney, Central Coast, Newcastle, Wollongong, Hunter Valley, Blue Mountains
Scott Hunter	Hunter Ground Search	0409327345	<a href="mailto:admin@hunter-groundsearch.net.au">admin@hunter-groundsearch.net.au</a>	NSW	Hunter, Upper Hunter, Central Coast, Newcastle
Damien Black	Mid North Coast Hydro Digging & Service Locating P/L	0418 409 465	<a href="mailto:djblack1@bigpond.com">djblack1@bigpond.com</a>	NSW	Mid North Coast
Michael Nicholls	Utility Mapping NSW	1300 627 746	<a href="mailto:sydney@utilitymapping.com.au">sydney@utilitymapping.com.au</a>	NSW	All NSW
Joseph Restuccia	ProLocate	0415 633 393	<a href="mailto:joe.restuccia@prolocate.com.au">joe.restuccia@prolocate.com.au</a>	NSW	NSW Wide
Barry Maloney	Online Pipe & Cable Locating	1300 665 384	<a href="mailto:Office@onlinepipe.com.au">Office@onlinepipe.com.au</a>	NSW	Sydney, Central Coast, Canberra, Wollongong, Newcastle
Sam Romano	Locating Services	0403 065 510	<a href="mailto:sam.romano@locatingservices.com.au">sam.romano@locatingservices.com.au</a>	NSW	NSW All
Scott Allison	Crux Surveying Australia	02 9540 9940	<a href="mailto:sydneyoffice@cruxsurveying.com.au">sydneyoffice@cruxsurveying.com.au</a>	NSW	Sydney Metro & Surrounding Areas
Donna Wullaert	Commence Communications Pty Ltd	02 6226 3869	<a href="mailto:admin@commencecomms.com.au">admin@commencecomms.com.au</a>	NSW	Canberra/ Yass / Bungendore/ Goulburn and surrounding regional areas
Grant Pearson	Warrabinya Services	0423 651 615	<a href="mailto:sales@warrabinya.com.au">sales@warrabinya.com.au</a>	NSW	Sydney Metro & Surrounding Areas
Stephen Fraser	Advanced Ground Locations	(02) 4930 3195	<a href="mailto:steve_agl@hotmail.com">steve_agl@hotmail.com</a>	NSW	Newcastle, Hunter Valley, Central Coast, Taree & Surrounding Areas
Andrew Findlay/ Anthony Hart	LiveLocates	1300 517 062	<a href="mailto:info@livelocates.com.au">info@livelocates.com.au</a>	NSW/ACT	South Coast NSW, ACT, Snowy Mountains , Snowy Valley
Mark Smith	Armidale Electrical	02 6772 3702	<a href="mailto:office@armidale-electrical.com.au">office@armidale-electrical.com.au</a>	NSW	New England/Northwest
Samantha Guptill	Australian Locating Services	1300 761 545	<a href="mailto:admin@locating.com.au">admin@locating.com.au</a>	NSW	All NSW
Clay Laneyrie	Laneyrie Electrical	0411142627	<a href="mailto:bindy@laneyrieelectrical.com.au">bindy@laneyrieelectrical.com.au</a>	NSW	Illawarra, South Coast, Shoalhaven, Southern Highlands
Reece Gainsford	East Coast Locating Services	0431 193 111	<a href="mailto:eastcoastlocating@hotmail.com">eastcoastlocating@hotmail.com</a>	NSW	Sydney, Maitland, Newcastle, Hunter, Port Stephens, Central Coast



Craig Vallely	Aqua Freeze & Locate Pty Ltd	0458 774 440	<a href="mailto:service@aquafreeze.com.au">service@aquafreeze.com.au</a>	NSW	Sydney only
Jason Vane	Smartscan Locators PTY Ltd	1300 778 923	<a href="mailto:Admin@sslocators.com.au">Admin@sslocators.com.au</a>	NSW	Sydney
Alex Farcash	Newcastle Locating Services Pty Ltd	0410698599	<a href="mailto:Admin@newcastlelocatings-services.com.au">Admin@newcastlelocatings-services.com.au</a>	NSW	Newcastle, Hunter Valley, Central Coast, Taree & Surrounding Areas
Amer El Chami	Site Scan Pty Ltd	0449 992 520	<a href="mailto:office@sitescan.net.au">office@sitescan.net.au</a>	NSW	All NSW
Ian Brown	A1 Locate Services	0400 484 828	<a href="mailto:Ian.brown@a1locate.com.au">Ian.brown@a1locate.com.au</a>	NSW	All NSW
Paul Wallis	Beveridge Williams	0431 458 878	<a href="mailto:wallisp@bevwill.com.au">wallisp@bevwill.com.au</a>	NSW	Newcastle Sydney Wollongong
Cameron Handley	Wombat Underground Services	0407477038	<a href="mailto:accounts@wombatunderground-services.com.au">accounts@wombatunderground-services.com.au</a>	NSW	ALL
Samantha Cupido	Geoscope Utility Detection Services Pty Ltd	1300 750 350	<a href="mailto:info@geoscopelocating.com.au">info@geoscopelocating.com.au</a>	NSW	All regions
Laurence Mead	Astrea Pty Ltd	1300 009 346	<a href="mailto:admin@astrea.com.au">admin@astrea.com.au</a>	NSW	Sydney Only
Braydon Greenwood	City Coast Services	0422432813	<a href="mailto:braydon.greenwood@live.com.au">braydon.greenwood@live.com.au</a>	NSW	NSW
Jim Morrison	Absolute Utilities Pty Ltd	0429 496 375	<a href="mailto:jim@absoluteutilities.com.au">jim@absoluteutilities.com.au</a>	NSW	Mid North Coast
Declan Dowd	Dowds Pipe And Cable Locating	0434 635 134	<a href="mailto:accounts@pipeandcable.com.au">accounts@pipeandcable.com.au</a>	NSW	Sydney/Wollongong
Nicholas Schneider	Subsurface Utility Solutions	0421157372	<a href="mailto:nick@subsurf.com.au">nick@subsurf.com.au</a>	NSW	Sydney only
Ricky Evans	Riverina Cable Locating	0411444980	<a href="mailto:ricky@riverinacablelocating.com.au">ricky@riverinacablelocating.com.au</a>	NSW	Riverina, Murray
Adrian Ruane	Road and Rail Excavations Pty Ltd	0414 594 063	<a href="mailto:cody@roadandrailexcavations.com.au">cody@roadandrailexcavations.com.au</a>	NSW	Sydney only
Billy Cameron	Locate Down Under Pty Ltd	0431275034	<a href="mailto:info@locatedownunder.com.au">info@locatedownunder.com.au</a>	NSW	Central Coast/ Sydney
Daniel Hudson	Geosurv Locating Pty Ltd	1300 554 675	<a href="mailto:dan@geosurv.com.au">dan@geosurv.com.au</a>	NSW	Sydney only
Roneel Chand	JDG Civil	0416506891	<a href="mailto:sadhunaam@gmail.com">sadhunaam@gmail.com</a>	NSW	Sydney only
Tim Briggs	Deetect Locating Services	0414630852	<a href="mailto:deetect.locating@outlook.com">deetect.locating@outlook.com</a>	NSW	ACT / NSW
Sean Ferriter	Utech Solutions Pty Ltd	1300 427 614	<a href="mailto:seanf@vaughancivil.com.au">seanf@vaughancivil.com.au</a>	NSW	Sydney only



Mark Restuccia	Direct Connect Locating PTY LTD	0400507690	<a href="mailto:info@dclocating.com.au">info@dclocating.com.au</a>	NSW	NSW only
Ali Chahine	Underground Industries	0406906787	<a href="mailto:info@undergroundindustries.com.au">info@undergroundindustries.com.au</a>	NSW	Sydney only
Scott Copetti	Metiri	0435 710 399	<a href="mailto:scott@metiri.com.au">scott@metiri.com.au</a>	NSW	Newcastle & Hunter Region
Blake Richardson	VFT	0409 210 502	<a href="mailto:b.richardson@vfes.com">b.richardson@vfes.com</a>	NSW	NSW
Brett Pickup	BAP Services Pty Ltd	0434006009	<a href="mailto:Brett@bapservices.com.au">Brett@bapservices.com.au</a>	NSW	All Areas, Sydney, Illawarra, Newcastle, ACT
Patrick Billingham	OzDetect Pty Ltd	0497700667	<a href="mailto:patrick@ozdetect.com.au">patrick@ozdetect.com.au</a>	NSW	NSW
Jesse Gavin	LCG GLOBAL PTY LTD	1300032740	<a href="mailto:info@lcgsolutions.com.au">info@lcgsolutions.com.au</a>	NSW	All NSW
Euan Gow	Jurovich Surveying	1300 750 000	<a href="mailto:egow@jurovichsurveying.com.au">egow@jurovichsurveying.com.au</a>	WA/NSW/SA	All state
Jason Steger	Steger & Associates Registered Land Surveyors	0400 008 641	<a href="mailto:jason.steger@steger.com.au">jason.steger@steger.com.au</a>	ACT/NSW	ACT & Surrounds
Samuel Hathaway	Landmark Surveys	02 6280 9608	<a href="mailto:admin@landmarksurveys.com.au">admin@landmarksurveys.com.au</a>	NSW/ACT	ACT & Sourthen NSW
Kaisar sefian	Australian Utility Search Pty Ltd	0424 841 888	<a href="mailto:kaisar@aususearch.com.au">kaisar@aususearch.com.au</a>	NSW/ACT	All NSW, ACT
Daniel Fox	Epoca Environmental Pty Ltd	1300 376 220	<a href="mailto:daniel@epocaenvironmental.com.au">daniel@epocaenvironmental.com.au</a>	NSW & ACT	All NSW & ACT
Scott Tancred	SureSearch Underground Services	1300 884 520	<a href="mailto:Scott.Tancred@suresearch.com.au">Scott.Tancred@suresearch.com.au</a>	NSW/ACT QLD	NSW, Sydney, Northern NSW, Canberra, QLD, South East QLD.
Justin Martinez	LCG GLOBAL PTY LTD	0401749007	<a href="mailto:J.martinez@lcgsolutions.com.au">J.martinez@lcgsolutions.com.au</a>	NSW, ACT, QLD, VIC	All regions
Troy Redden	On Point Utility Locating	1300 66 76 46	<a href="mailto:Troy@onpointlocating.com.au">Troy@onpointlocating.com.au</a>	NSW/QLD	Throughout both states
Geoff Campbell	CLS Locating	0450759497	<a href="mailto:geoffrey@campbellslocating.com.au">geoffrey@campbellslocating.com.au</a>	NSW/QLD	All QLD, Northern Rivers, NSW
Alexander Bogdanoff	Expert Service Locating	0420346477	<a href="mailto:info@expertservice locating.com.au">info@expertservice locating.com.au</a>	NSW/QLD	Brisbane, Gold Coast, Sunshine Coast Northern Rivers NSW
Patrick Popovic	Site And See Pty Ltd	0479 162 692	<a href="mailto:patrick@siteandsee.com.au">patrick@siteandsee.com.au</a>	QLD/NSW	South East QLD & Northern NSW



Kelsee Stevens	Abletech Underground Group	07 5293 7746	<a href="mailto:admin@abletechunderground.com.au">admin@abletechunderground.com.au</a>	QLD / NSW	QLD / NSW
Rhys Lambert	Provac / one find cables	1300 734 772	<a href="mailto:rhys@provac.net.au">rhys@provac.net.au</a>	QLD	South East QLD
Paul Beaton	Cairns Asset Locations	0448 157 227	<a href="mailto:paul.beaton@clarketrenching.com.au">paul.beaton@clarketrenching.com.au</a>	QLD	FNQ to NT Border
Chris Hall	D C Locators Pty Ltd	0419 679 741	<a href="mailto:dcloc@powerup.com.au">dcloc@powerup.com.au</a>	QLD	Brisbane, Ipswich
Benji Lee	LADS	0478 915 237	<a href="mailto:benji@ladsqld.com.au">benji@ladsqld.com.au</a>	QLD	South East QLD
Ian Lambert	Lambert Locations Pty Ltd	07 5562 8400	<a href="mailto:admin@lambertlocations.com.au">admin@lambertlocations.com.au</a>	QLD	South East QLD & Northern NSW
Ross Clarke	FNQ Cable Locators Pty Ltd	0428 775 655	<a href="mailto:onlineco@bigpond.net.au">onlineco@bigpond.net.au</a>	QLD	QLD REGION
Col Greville	Bsure Locators	0488 520 688	<a href="mailto:admin@bsurelocators.com.au">admin@bsurelocators.com.au</a>	QLD	Wide Bay & Burnett; Central and Western QLD; Western Downs
Matthew Carr	Pensar	0405609739	<a href="mailto:matty.carr@pensar.com.au">matty.carr@pensar.com.au</a>	QLD	Brisbane
Jimmy Wilkins	GeoRadar Asutralia Pty Ltd	0425057722	<a href="mailto:jimmy@georadar.net.au">jimmy@georadar.net.au</a>	QLD	Emerald, Bundeaberg
Craig Waite	C Locate	0437 808 444	<a href="mailto:clocate@bigpond.com">clocate@bigpond.com</a>	QLD	Brisbane GC SC
Jeffrey Lenehan	Syndicate Communications	0404 151 270	<a href="mailto:jlenehan@syndicate.com.au">jlenehan@syndicate.com.au</a>	QLD	Brisbane
Toni O'Dell	Utility Location Services	1300 001 857	<a href="mailto:qldops@utilitylocation-services.com.au">qldops@utilitylocation-services.com.au</a>	QLD	South East QLD
Michael Jackman	Utility Mapping QLD	1300 627 746	<a href="mailto:brisbane@utilitymapping.com.au">brisbane@utilitymapping.com.au</a>	QLD	All QLD
Jenny Dziduch	1300 Locate Pty Ltd	1300 562 283	<a href="mailto:admin@1300locate.com.au">admin@1300locate.com.au</a>	QLD	All Queensland, Northern NSW
Brendon Smith	Advanced Locating PTY LTD	0424678823	<a href="mailto:admin@advancedlocating.com.au">admin@advancedlocating.com.au</a>	QLD	Gold Coast
Samuel Hazel	Utility ID Underground Service Locators	0401 202 515	<a href="mailto:sam@utilityid.com.au">sam@utilityid.com.au</a>	QLD	Darling Downs, South West QLD and South East QLD
Bruce Normyle	Dynamic Hydro Excavations	0434 731 933	<a href="mailto:admin@dynamicexcavation.com.au">admin@dynamicexcavation.com.au</a>	QLD	QLD
Michael Koschel	Precision Service Locating	07 46462845	<a href="mailto:paul@pslocating.com.au">paul@pslocating.com.au</a>	QLD	All QLD / North West NSW/South East QLD



Robert Rutledge	Safe Dig Services	+61 7 3376 0856	<a href="mailto:rrutledge@safedig.com.au">rrutledge@safedig.com.au</a>	QLD	Brisbane
Michael Falla	ICUC Locating Services Pty Ltd	0410085365	<a href="mailto:michael.falla@icuclocatings-services.com.au">michael.falla@icuclocatings-services.com.au</a>	QLD	South East QLD
Ben Stephens	DTS Group TA Electros-can	0434 140 556	<a href="mailto:ben.s@electroscanqld.com.au">ben.s@electroscanqld.com.au</a>	QLD	Queensland
Adam Lloyd	Aussie HydroVac Services	07 3287 7818	<a href="mailto:adam.lloyd@aussiehydrovac.com.au">adam.lloyd@aussiehydrovac.com.au</a>	QLD	All
Michael Prentice	Onsite Utility Locations	0437 172 601	<a href="mailto:admin@onsiteutilitylocations.com.au">admin@onsiteutilitylocations.com.au</a>	QLD	SEQ
Roland Mollison	LandPartners Pty Ltd	0439 488 545	<a href="mailto:roland.mollison@landpartners.com.au">roland.mollison@landpartners.com.au</a>	QLD	South East Queensland
Duncan McGrath	Abletech Underground Group	0418 511 767	<a href="mailto:duncan@abletechunderground.com.au">duncan@abletechunderground.com.au</a>	QLD	QLD Wide
Daniel Poppi	Ace Cable Locations	0431517837	<a href="mailto:acecablelocations@bigpond.com">acecablelocations@bigpond.com</a>	QLD	Wide Bay Burnett
Carl Molloy	Provac Melbourne	0451 104 611	<a href="mailto:melbourne@provac.net.au">melbourne@provac.net.au</a>	VIC	Melbourne Region
Olivier Davies	Central Locating PTY LTD	0439 995 894	<a href="mailto:ollie@centrallocating.com.au">ollie@centrallocating.com.au</a>	VIC	Melbourne & Western Victoria
Tina Brereton	D-Tech Ground & Over-head	03 9544 8933	<a href="mailto:tina@d-tech.net.au">tina@d-tech.net.au</a>	VIC	ALL
Josh Taylor	Advanced Locations Victoria Pty Ltd	0427846716	<a href="mailto:josh@advancedlocationsvic.com.au">josh@advancedlocationsvic.com.au</a>	VIC	All Victoria
Ben Minutoli	Geelong Cable Locations	1800 449 543	<a href="mailto:ben@geelongcablelocations.com.au">ben@geelongcablelocations.com.au</a>	VIC	Melbourne, Geelong, Country Victoria
Mick McGoldrick	Locate Cables	0404 241 679	<a href="mailto:mick@locatecables.com">mick@locatecables.com</a>	VIC	Western Victoria
Alex Jones	Utility Mapping VIC	1300 627 746	<a href="mailto:melbourne@utilitymapping.com.au">melbourne@utilitymapping.com.au</a>	VIC	All VIC
Phi Nguyen	Asset Detection Services Pty Ltd	1300 300 100	<a href="mailto:Phi.nguyen@assetdetection.com.au">Phi.nguyen@assetdetection.com.au</a>	VIC	Melbourne/VIC
Maurice Tobin	Drain Solutions	0412 111600	<a href="mailto:info@drainsolutions.com.au">info@drainsolutions.com.au</a>	VIC	Melbourne Metro
Kate Ficker	Seeker Utility Engineering	1300 733 583	<a href="mailto:admin@seekerutilityengineering.com.au">admin@seekerutilityengineering.com.au</a>	VIC	All Victoria
Leigh French	Veris Australia VIC	(03) 7019 8400	<a href="mailto:melbourne@veris.com.au">melbourne@veris.com.au</a>	VIC	Melbourne



Ben Wooldridge	Controltech Solutions	0447 760 759	<a href="mailto:ben.wooldridge@controltechsolutions.com.au">ben.wooldridge@controltechsolutions.com.au</a>	VIC	Melbourne
Chris Sandlant	Access Utility Engineering P/L	03 9799 8788	<a href="mailto:Chris.sandlant@accessue.com.au">Chris.sandlant@accessue.com.au</a>	VIC	Victoria & Regional
Shaun Stephen	STS Locating Services	0405 181 734	<a href="mailto:stslocatingservices@gmail.com">stslocatingservices@gmail.com</a>	VIC	All VIC
Glen Foreman	Underground Services Detection Pty Ltd	0402 748 889	<a href="mailto:undergroundservices@big-pond.com">undergroundservices@big-pond.com</a>	VIC	Victoria
Clinton Carver	Insight Underground Pty Ltd	0468 900 273	<a href="mailto:clinton@insightunderground.com.au">clinton@insightunderground.com.au</a>	VIC	Victoria
Lindsay Botha	L B Underground Service Locations & Engineering	0499 658 677	<a href="mailto:lb.locations.engineering@gmail.com">lb.locations.engineering@gmail.com</a>	VIC	Metro and Regional Victoria
Damien Nielsen	ELS Environmental Location Systems Pty Ltd	0499 499 137	<a href="mailto:bookings@elsvic.com.au">bookings@elsvic.com.au</a>	VIC	Victoria only
Tyler Blake	CHS Group	0409 437 750	<a href="mailto:tyler.blake@chsgroup.com.au">tyler.blake@chsgroup.com.au</a>	VIC	Horsham VIC
Craig Jackson	Survey Management Solutions	0400647299	<a href="mailto:craigj@surveyms.com.au">craigj@surveyms.com.au</a>	VIC	All Regions
Chloe Milligan	Tequa Plumbing and Civil	0351432666	<a href="mailto:civil@tequa.au">civil@tequa.au</a>	VIC	Gippsland only
Ashley Stevens	ABS HYDRO Pty Ltd	0422 798 476	<a href="mailto:ashley.stevens@abshydro.com.au">ashley.stevens@abshydro.com.au</a>	NSW/VIC	All of VIC, Regional NSW
Eddie Santos	Taylors Development Strategists	0488 700 155	<a href="mailto:m.tasker@taylorsds.com.au">m.tasker@taylorsds.com.au</a>	VIC/SA/TAS	Victoria
Taryn van Dyk	Trenchless Pipelaying Contractors (TPC)	08 8376 5911	<a href="mailto:tpc@trenchlesspipelaying.com.au">tpc@trenchlesspipelaying.com.au</a>	SA	All
Marc Rose	SADB	0488190699	<a href="mailto:marc@sadb.com.au">marc@sadb.com.au</a>	SA	Adelaide only
Deninis Stray	Pinpoint Services Mapping	(08) 8130 1600	<a href="mailto:hello@pinpointsm.com.au">hello@pinpointsm.com.au</a>	SA	SA and western VIC
Liam Gill	Michael Grear Surveys	08 82788732	<a href="mailto:ugsl@mgsurveys.com.au">ugsl@mgsurveys.com.au</a>	SA	SA
Matthew Cooper	Fulton Hogan	0447 320 581	<a href="mailto:Matthew.Cooper@fulton-hogan.com.au">Matthew.Cooper@fulton-hogan.com.au</a>	SA	South Australia
Liam Catchpole	APEX SERVICE LOCATING PTY LTD	0458 924 471	<a href="mailto:liam@apexvacolutions.com.au">liam@apexvacolutions.com.au</a>	SA	Adelaide
Bradley Gosling	Engineering Surveys	0433506880	<a href="mailto:bgosling@engsurveys.com.au">bgosling@engsurveys.com.au</a>	SA	Adelaide
Jason Revill	MME/Platinum Locating Services	08 94080625	<a href="mailto:jason.revill@platinumlocating.com.au">jason.revill@platinumlocating.com.au</a>	WA	Perth



Henry Westbrook	Cable Locates & Consulting	08 9524 6600	<a href="mailto:admin@cablelocates.com.au">admin@cablelocates.com.au</a>	WA	All WA
Cameron Swift	Mikcomm Communication	08 9337 1125	<a href="mailto:cswift@mikcomm.com.au">cswift@mikcomm.com.au</a>	WA	All
Tobi Lawrence-Ward	Abaxa	08 9256 0100	<a href="mailto:enquiries@abaxa.com.au">enquiries@abaxa.com.au</a>	WA	Perth, Southwest, Western Australia
Ben Upton	TerraVac Vacuum Excavation	0433 374 802	<a href="mailto:locations@terravac.com.au">locations@terravac.com.au</a>	WA	Perth
Dale Shearsmith	Subtera	1300 046 636	<a href="mailto:dale@subtera.com.au">dale@subtera.com.au</a>	WA	WA
Cheron Ingram	Bunbury Telecom Service Pty Ltd	08 9726 0088	<a href="mailto:cheron@btswa.com.au">cheron@btswa.com.au</a>	WA	WA
Drew Monkhouse	Utility Mapping WA	1300 627 746	<a href="mailto:perth@utilitymapping.com.au">perth@utilitymapping.com.au</a>	WA	All WA
Edel O'Connor	Kier Contracting	0456 190 910	<a href="mailto:edel@kier.com.au">edel@kier.com.au</a>	WA	Perth Metro & greater region; Regional WA
Nigel Nunn	CCS Group / Utility Locating Solutions	08 9385 5000	<a href="mailto:enquiry@ccswa.com.au">enquiry@ccswa.com.au</a>	WA	Perth
Jeremy Brown	Spotters Asset Locations Pty Ltd	0459 130 677	<a href="mailto:jeremy@spottersassetlocations.com.au">jeremy@spottersassetlocations.com.au</a>	WA	All
Reece Topham	Prime Locate	0400 888 406	<a href="mailto:reece@primelocate.com.au">reece@primelocate.com.au</a>	WA	All
Rhyce Murphy	RM Surveys	08 9457 7900	<a href="mailto:rhyce.murphy@rmsurveys.com.au">rhyce.murphy@rmsurveys.com.au</a>	WA	All
James Horton	Westscan Pty Ltd	1300 858 404	<a href="mailto:westscan1@gmail.com">westscan1@gmail.com</a>	WA	All
Ashleigh Austin	Veris WA	0419 024 696	<a href="mailto:perth@veris.com.au">perth@veris.com.au</a>	WA	Perth Metro & Regional
Suhairree Suhaimi	BCE Spatial	08 9791 7411	<a href="mailto:harry@bcespatial.com.au">harry@bcespatial.com.au</a>	WA	WA
Tim Daws	Award Contracting Pty Ltd	0411 878 895	<a href="mailto:info@awardcontracting.com.au">info@awardcontracting.com.au</a>	WA	Metro & Country Regions
Stephen Steart	Cabling WA Pty Ltd	0422 845 586	<a href="mailto:ssteart@cablingwa.com.au">ssteart@cablingwa.com.au</a>	WA	Perth Metro
Devvyn Barto	Pulse Locating	0431402738	<a href="mailto:devvyn.barto@pulselocating.com.au">devvyn.barto@pulselocating.com.au</a>	WA	Western Australia
Shane McQuoid	Find Wise Location Services	0407992758	<a href="mailto:shane@findwise.com.au">shane@findwise.com.au</a>	WA	Perth



Josh Pool	Utility Mapping NT	1300 627 746	<a href="mailto:darwin@utilitymapping.com.au">darwin@utilitymapping.com.au</a>	NT	All NT
Stuart Speckman	FYFE	08 8944 7888	<a href="mailto:Stuart.Speckman@fyfe.com.au">Stuart.Speckman@fyfe.com.au</a>	NT/SA/NSW	NT/SA/NSW
Wayne Parslow	Danisam	0417 089 865	<a href="mailto:danisam@westnet.com.au">danisam@westnet.com.au</a>	NT	Darwin NT and Surrounds
Heather Easter	Archers Underground Service Pty Ltd	0418 737 299	<a href="mailto:admin@auslocations.com.au">admin@auslocations.com.au</a>	TAS	Statewide
Scott Crerar	Paneltec Group	0400 895 637	<a href="mailto:scott@paneltec.com.au">scott@paneltec.com.au</a>	TAS	All
Hayden Stone	Utility Detection & Map- ping	03 61712555	<a href="mailto:admin@udmgroup.com.au">admin@udmgroup.com.au</a>	TAS	Statewide



Optus - Before You Dig Australia - REFERRAL NOTIFICATION

This referral has been successfully processed by Optus and the results are contained in the attached files.

Notice: Please DO NOT REPLY TO THIS EMAIL as it has been automatically generated and replies are not monitored.

If you have any queries or attachments missing please contact:

Network Operations Centre  
1 Lyonpark Road,  
Macquarie Park, NSW 2113  
Ph: 1800 505 777  
Fax: 1300 307 035

You will require Adobe Reader to view attachments.

<http://www.adobe.com/downloads/>

We thank you for your enquiry and appreciate your continued use of the “Before You Dig Australia Service” Asset Analysis Service. If you require further information in relation to Optus and/or Uemcomm cables please contact Optus on above.

This reply relates only to the location indicated above and is valid for 30 days from the sent date. Where additional works are planned that have not been specified within this reply, Optus require that an additional enquiry be submitted to Before You Dig Australia enquiry Service: <http://www.byda.com.au>

In the case of no additional location request being submitted, Optus will hold the relevant party responsible for any damage to Optus and/or Uecommm plant and all expenses incurred by Optus as a result of asset damage.

This e-mail may contain confidential information. If you are not the intended recipient, please notify Network Operations Centre immediately and delete this e-mail from your system. You must not disclose this e-mail to anyone without express permission from the sender. The contents of all e-mails sent to and received from Optus may be scanned, stored, or disclosed to others at Optus’ discretion.



Chanlyly Chea  
To: Not Supplied  
596 Milton Road  
Toowong, QLD 4066



**Uecomm Pty Limited**  
ABN 56 079 083 195

Building 8, 658 Church St,  
Richmond, VIC 3121  
Ph: (03) 9221 4100  
Fax: (03) 9221 4193  
Ah: 1800 707 447

## LOCATION OF UNDERGROUND FIBRE OPTIC CABLE INFORMATION SHEET

**IMPORTANT: PLEASE READ ALL INFORMATION AND CONDITIONS BELOW AND THE NOTICE ON THE REVERSE SIDE OF THE PLAN/S.**

250319426

31 Jan 2025

"Before You Dig Australia" Sequence No

Issue Date: Optus and or Uecomm Qld

Customer ID

Issue By:

33 Harold Street, Virginia, QLD 4014

Location: 4355-3  
Uecomm Asset Location No. 38537442  
Before You Dig Australia Job No.

In relation to your enquiry at the above address, Uecomm advises as follows:

**The records of Uecomm Limited disclose that there ARE underground FIBRE OPTIC / TELECOMMUNICATIONS cables in the vicinity of the above enquiry as per attached plan/s.**

- The underground cables referred to in this advice are defined as the underground communications cables owned or controlled by Uecomm Pty Limited.
- The person/company responsible for submitting the inquiry should take care to ensure all plans listed above have been received. For any plan listed above but not received please contact **1800 707 447**.
- Any information provided is valid only for **30 days** from the date of issue set out above.
- If the work operations extend beyond this period, or if the designs are altered in any way, you are requested to resubmit your proposal for reassessment.
- Further assistance may be obtained if necessary, by telephoning **1800 707 447**.

### **PLEASE READ ALL INFORMATION AND DISCLAIMERS BELOW:**

1. Due to the nature of underground cables and the age of some cables and records, it is impossible to conclusively ascertain the location of all cables. The accuracy and/or completeness of the information cannot be guaranteed and, accordingly, they are intended to be indicative only and, as a result, Uecomm does not accept any responsibility for any inaccuracies of its plans. They should not be solely relied upon when undertaking underground works. It is also inaccurate to assume that fibre optic cables follow straight lines and careful on-site investigations are essential to locate its exact position.
2. The following minimum clearances must be maintained:
  - 300mm when laying asset's inline, horizontal or vertical.
  - 500mm when operating vibrating equipment, e.g., jackhammers or vibrating plates.
  - 1000mm when operating mechanical excavators.
3. Due to the inherent dangers associated with excavation in the vicinity of underground cables, precautions should be taken in the undertaking of any underground works, including (but not limited to) the following:
  - All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs if present must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the likely hood of damage to the cable, e.g., blades of hand equipment should be orientated parallel to the line of the cable rather than digging across the cable.
  - If any undisclosed underground cables are located, Uecomm Limited should be notified immediately.
  - All personnel must be properly briefed, particularly those associated with the use of earthmoving equipment, trenching, boring and pneumatic equipment.
  - All excavations must be undertaken in accordance with the relevant legislation and regulations.



4. **DAMAGE. ANY DAMAGE TO UECOMM'S NETWORK MUST BE REPORTED IMMEDIATELY TO 1800 707 447.**
5. Uecomm recommends using Uecomm approved location contractors to provide on-site location services for Uecomm plant. You can arrange Uecomm on-site visits by calling Uecomm on 1800 707 447 and Uecomm or its approved representative will attend your site to provide guidance to the location of the Uecomm assets (the "Uecomm Asset Alignment"). **Uecomm requires 3 clear business days' notice to conduct an on-site location.** The initial on-site visit by Uecomm will not normally incur a charge, but at the discretion of Uecomm, subsequent site visits may incur a charge to be applied at an hourly rate.
6. Uecomm will hold the relevant party responsible for any damage to Uecomm plant and all expenses incurred by Uecomm as a result of asset damage.
7. Except to the extent that liability may not be capable of lawful exclusion, Uecomm Pty Limited and its servants and agents and the related bodies corporate of Uecomm Pty Limited and their servants and agents shall be under no liability whatsoever to any person for any loss or damage (including indirect or consequential loss or damage) however caused (including, without limitation, breach of contract negligence and/or breach of statute) which may be suffered or incurred from or in connection with this information sheet or any Plans attached hereto. Except as expressly provided to the contrary in this information sheet or the attached Plans, all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

We thank you for your enquiry and appreciate your continued use of the Before You Dig Australia and/or Uecomm Asset Analysis Service. If you require further information, please contact Uecomm on **1800 707 447**.

**IMPORTANT** *This document may be confidential and privileged. Unauthorised use is prohibited. If you have it in error, please notify us and shred this document. Thank you.*





# Uecomm Underground Cable

Scale: 1:5125

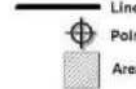
Printed on: 31 Jan 2025

Sequence Number: 250319426

Location: 33 Harold Street, Virginia, QLD 4014



Job Location



Underground Asset



This document is confidential and may also be privileged, and neither confidentiality nor privilege is waived lost or destroyed by virtue of it being transmitted to an incorrect addressee. Unauthorised use of the contents is therefore strictly prohibited. Any information contained in this document that has been extracted from our records is believed to be accurate, but no responsibility is assumed for any error or omission.





### Uecomm Underground Cable

Scale: 1:2500

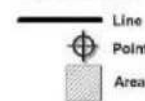
Printed on: 31 Jan 2025

Sequence Number: 250319426

Location: 33 Harold Street, Virginia, QLD 4014



#### Job Location



#### Underground Asset



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Tile No: 2

## Uecomm Underground Cable



Scale: 1:2500

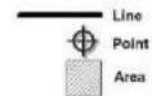
Printed on: 31 Jan 2025

Sequence Number: 250319426

Location: 33 Harold Street, Virginia, QLD 4014



### Job Location



### Underground Asset



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Referral

250319434

Member Phone

(07) 3866 1313

Responses from this member

Response received Fri 31 Jan 2025 10.17am

File name	Page
Response Body	171
250319434.pdf	172



Dear Chanlyly Chea,

RE: Before You Dig Australia ("BYDA") – REFERRAL NOTIFICATION

Sequence No: 250319434

Enquiry Date: 31/01/2025

Thank you for your Before You Dig Australia enquiry. We have included more information to assist you with your enquiry, including a map of the enquiry area. Please take the time to read all the information provided on the attachment prior to commencing any work.

This referral has been successfully processed and the results of your enquiry are contained in the attached documents.

Please note that this communication, including any attachments, is confidential. If you are not the intended recipient, you should not read it – please contact us immediately, destroy it, and do not copy or use any part of this communication or disclose anything about it.

This BYDA enquiry does not relate to Powerlink's overhead transmission lines and easements however if your proposed area of works involves the easement area please visit our website via the following link for information on obtaining approval for such works.

<https://www.powerlink.com.au/co-use-form>

Contact Powerlink's Property Services Group on (07) 3866 1313 before commencing any work in the vicinity of any overhead lines or easements.

Regards,  
Narelle Titman  
Manager Property  
Powerlink Queensland





Powerlink Queensland  
33 Harold Street,  
Virginia, Qld, 4014  
Phone: (07) 3866 1313  
31/01/2025

**To:** ('Applicant')

Chanlyly Chea  
596 Milton Road  
Toowong QLD 4066

**Email:** cchea@adgce.com

**Phone:** +61451693495

**Sequence No** 250319434

**Enquiry Location:** 33 Harold Street Virginia

**Enquiry Date:** 31/01/2025 10:16

Dear Chanlyly Chea

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

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

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

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

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

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

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

Yours faithfully

**Narelle Titman**  
Manager Property  
Powerlink Queensland

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





# Before You Dig Terms and Conditions

## *“Duty of Care” for Everyone*

### **Responsibilities When Working in the Vicinity of POWERLINK’S Plant**

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

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

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

### **Important Points to Note – Please Read**

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



## Remote or On-Site Location Assistance

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

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

### Officers for Local Security:

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

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

#### Records

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

#### Location of Cables

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

#### Electrical Cable Covers

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

#### Supervision

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

#### Proposed works

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

#### Excavating Near Cables

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



## **Excavating Parallel to Cables**

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

## **Excavating Across Cables**

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

## **Directional Boring Near Cables**

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

## **Heavy Machinery Operation over Cables**

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

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

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

## **Explosives**

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

## **Damage Reporting**

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

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



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

### **Plant Solutions and Assistance**

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

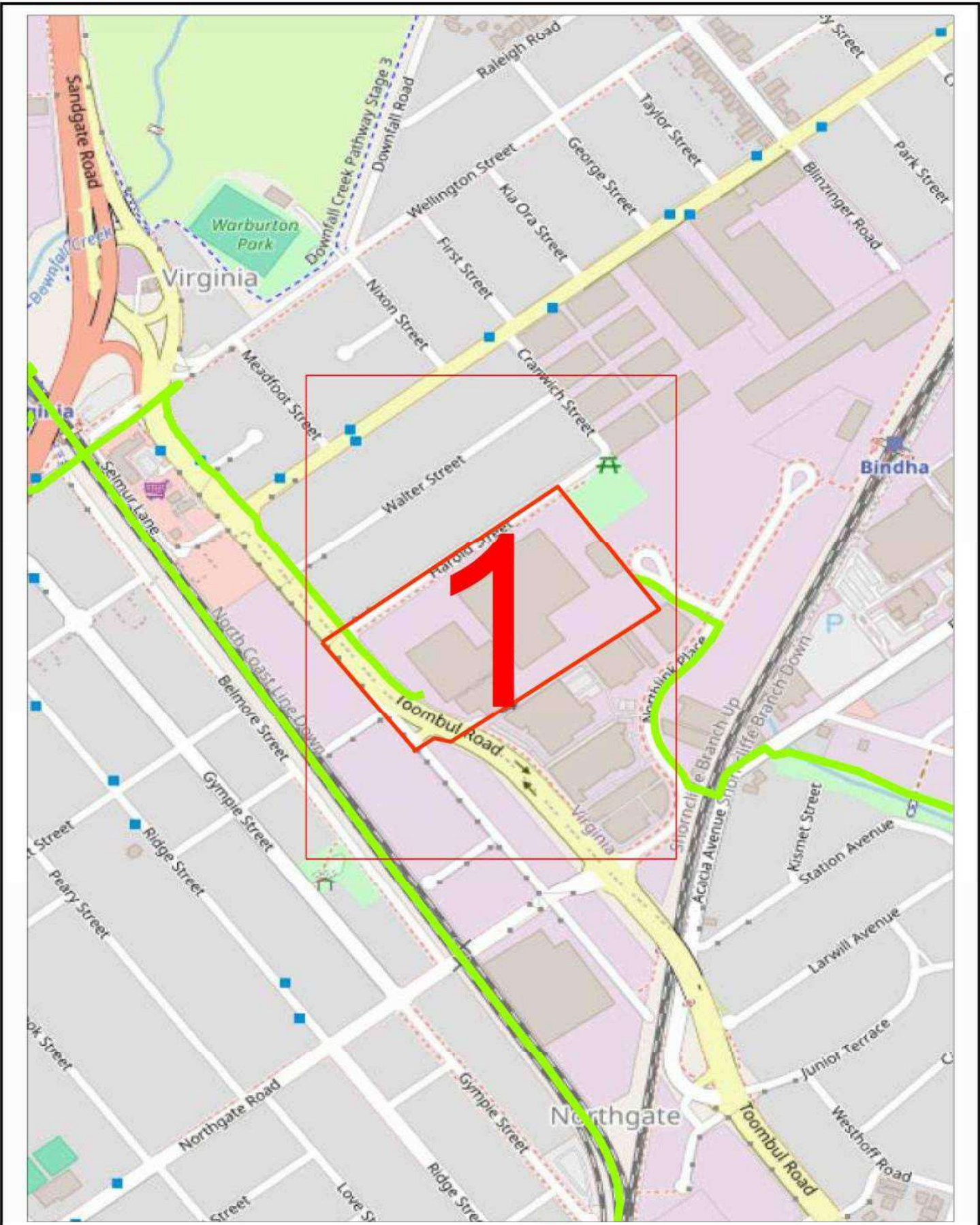
If detailed engineering assessment work, plant relocation, or protection works are part of the solution offered by Powerlink, then the cost of this work (the technical assessment and design, as well as the solution implementation cost) is recoverable by Powerlink from the principal developer or constructor.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





# Overview Map

Enquiry No: 250319434  
33 Harold Street Virginia



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

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



**LEGEND:**

0 0.05km

Imagery sourced from Open StreetMaps

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





# Map 1

## Enquiry No: 250319434

### 33 Harold Street Virginia



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



0 0.02km

Imagery sourced from Open StreetMaps

#### LEGEND:

- Powerlink Substation
- Other Substation
- Possible Comms

- High Voltage Cable
- Pilot Cable
- Optic Fibre
- Decommissioned

Affected BYDA Work Area Symbols





Referral  
250319432

Member Phone  
13 26 57

Responses from this member

Response received Fri 31 Jan 2025 10.19am

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GPO Box 2765  
Brisbane QLD 4001

Date: 31 Jan 2025

## Before You Dig Australia Response

---

**Please DO NOT SEND A REPLY to this email as it has been automatically generated and replies are not monitored.**

Dear Chanlyly Chea

We appreciate your diligence in contacting the Before You Dig Australia service (BYDA) prior to engaging in work or activities which may affect the water and sewerage infrastructure of Urban Utilities.

<b>Job Number:</b>	38537442
<b>Sequence Number:</b>	250319432
<b>Enquiry Date:</b>	31/01/2025 11:16:00 AM
<b>Enquiry Location:</b>	33 Harold Street Virginia QLD 4014

**WARNING: When working in the vicinity of Urban Utilities' assets you have a legal *Duty of Care* that must be observed.**

**Our records indicate the presence of infrastructure owned by Urban Utilities within your nominated search area, as shown on the attached plan.**

Please note that you may be liable for any loss or damage to our infrastructure which is caused by any works or activities which you undertake over or near such infrastructure. Additionally, your works or activities may conflict with other works scheduled in your nominated search area. To avoid any unnecessary impacts, before any undertaking you must obtain the following approvals:

- And/or a Urban Utilities Network Access Permit for self assessable works or activities that are within two metres of our infrastructure (refer to [Urban Utilities Network Access Permit Webpage](#))
- Either a Build Over Asset (BOA) Approval for assessable building works undertaken within specified distances of our infrastructure (refer to [DHPW BOA Factsheet](#))

We have provided additional information about your responsibilities in relation to our infrastructure in the Important Information sheet attached to this letter. By accessing BYDA to obtain our records about our infrastructure, you warrant that you have read the sheet and agree to the terms and conditions set out therein.



For further enquiries or assistance with interpretation of plans and search content please contact our BYDA Support Team by email [networkaccess@urbanutilities.com.au](mailto:networkaccess@urbanutilities.com.au). Alternatively, you can write to us at Urban Utilities, PO Box 2765, Brisbane QLD 4001.

Thank you for taking the time to consult the BYDA service.

Yours sincerely

Before You Dig Australia Support Team  
**Urban Utilities**  
[networkaccess@urbanutilities.com.au](mailto:networkaccess@urbanutilities.com.au)

---

To best manage the risk of damage and liability, we recommend that you engage the services of a [BYDA Certified Locator](#)

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### Important Notice

This enquiry response, including any associated documentation, has been assessed and compiled from the information detailed within the BYDA enquiry outlined above. **Please ensure that the BYDA enquiry details and this response accurately reflect your proposed works.**

This response is intended for use only by the addressee. If you have received the enquiry response in error, please let us know by telephone and delete all copies; you are advised that copying, distributing, disclosing or otherwise acting in reliance on the response is expressly prohibited.

**Disclaimer:** 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.

If you are unable to launch any of the files for viewing and printing, you may need to download and install free viewing and printing software such as [Adobe Acrobat Reader \(for PDF files\)](#).



## Important Information

### **Disclaimer**

All Urban Utilities' records, data and information supplied via BYDA ("**Data**") is **indicative** only. You agree that any Data supplied to you has been or will be provided only for your convenience and has not been and will not be relied upon by you for any purpose.

You also agree that Urban Utilities does not assume any responsibility or duty of care in respect of, or warrant, guarantee or make any representation as to the Data (including its accuracy, reliability, currency or suitability).

Because the location of Urban Utilities' infrastructure shown on the Data is approximate only, you must first physically locate the infrastructure by utilising relevant site detection methodologies prior to performing any works or undertaking any activities near or adjacent to infrastructure. Possible site detection methodologies include hand digging, potholing, trenching and/or probing. You are solely responsible for the selection of appropriate site detection methodologies at all times.

To the fullest extent permitted by law, Urban Utilities will not be liable to you in contract, tort, equity, under statute or otherwise arising from or in connection with the provision of any Data to you via BYDA.

### **Compliance with laws**

There may be both indicated and unmarked hazards, dangers or encumbrances, including underground asbestos pipes and abandoned mains within your nominated search area. You are solely responsible for ensuring that appropriate care is taken at all times and that you comply with all mandatory requirements relating to such matters, including in relation to workplace health and safety.

### **Damaged Infrastructure**

Please note that it is an offence under Section 192 of the *Water Supply (Safety and Reliability) Act 2008* to interfere with our infrastructure without Urban Utilities' written consent.

You may be liable to Urban Utilities for any loss of or damage to our infrastructure, together with any consequential or indirect loss or damage (including without limitation, loss of use, loss of profits or loss of revenue) arising from or in connection with any interference with Urban Utilities' infrastructure by you or any other person for which you are legally responsible.

Any damage to Urban Utilities' Infrastructure must be reported immediately to the (24 Hours) Faults and Emergencies Team on 13 23 64.

### **Links**

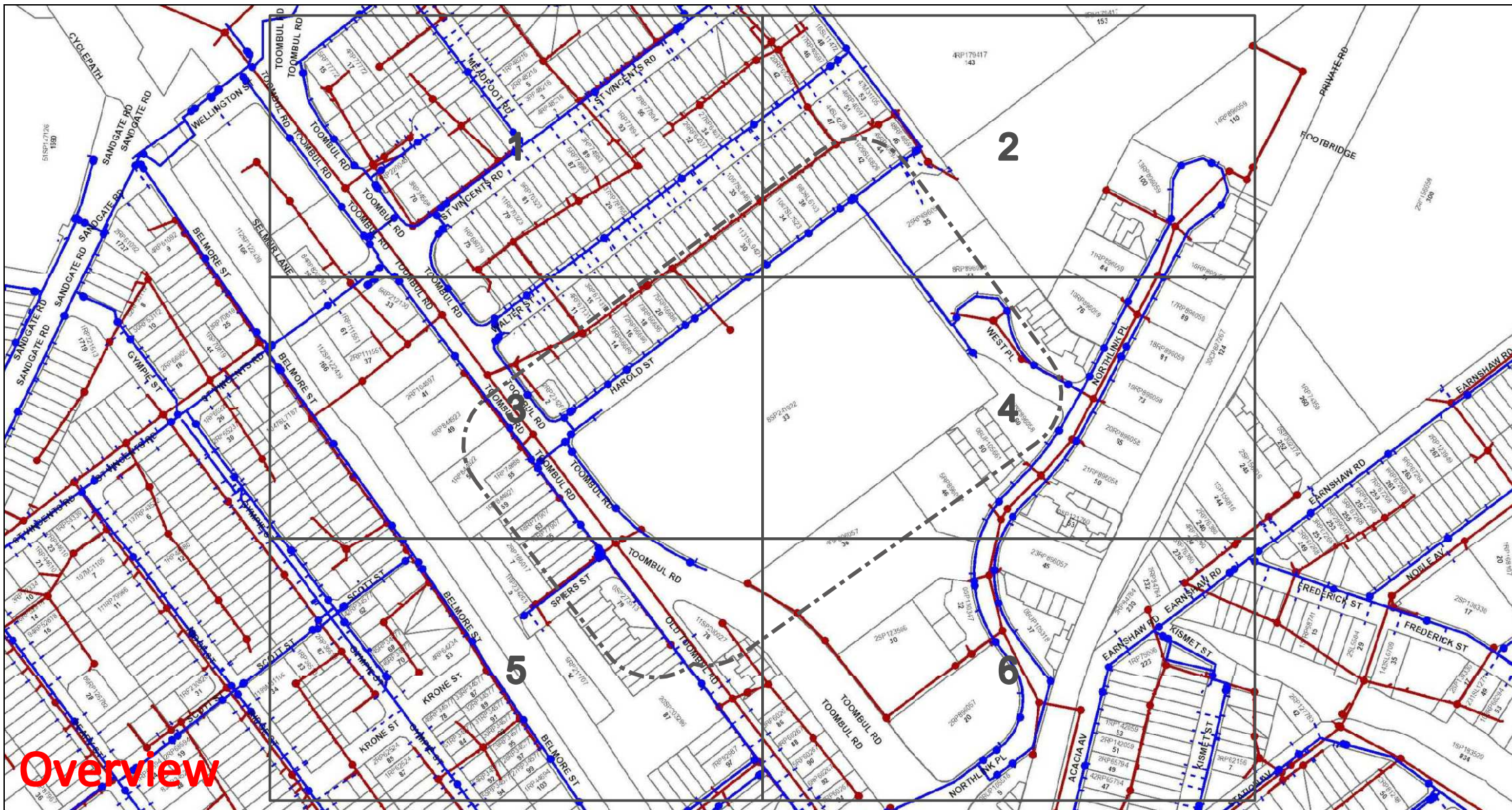
Technical Standards: <https://urbanutilities.com.au/development/help-and-advice/standards-and-guidelines>

### **Copyright**

All Data is copyright.



# Urban Utilities - Water, Recycled Water and Sewer Infrastructure



Map Scale  
1:3075

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

**BYDA Reference No: 250319432**

Date BYDA Ref Received: 31/01/2025

Date BYDA Job to Commence: 07/02/2025

Date BYDA Map Produced: 30/01/2025

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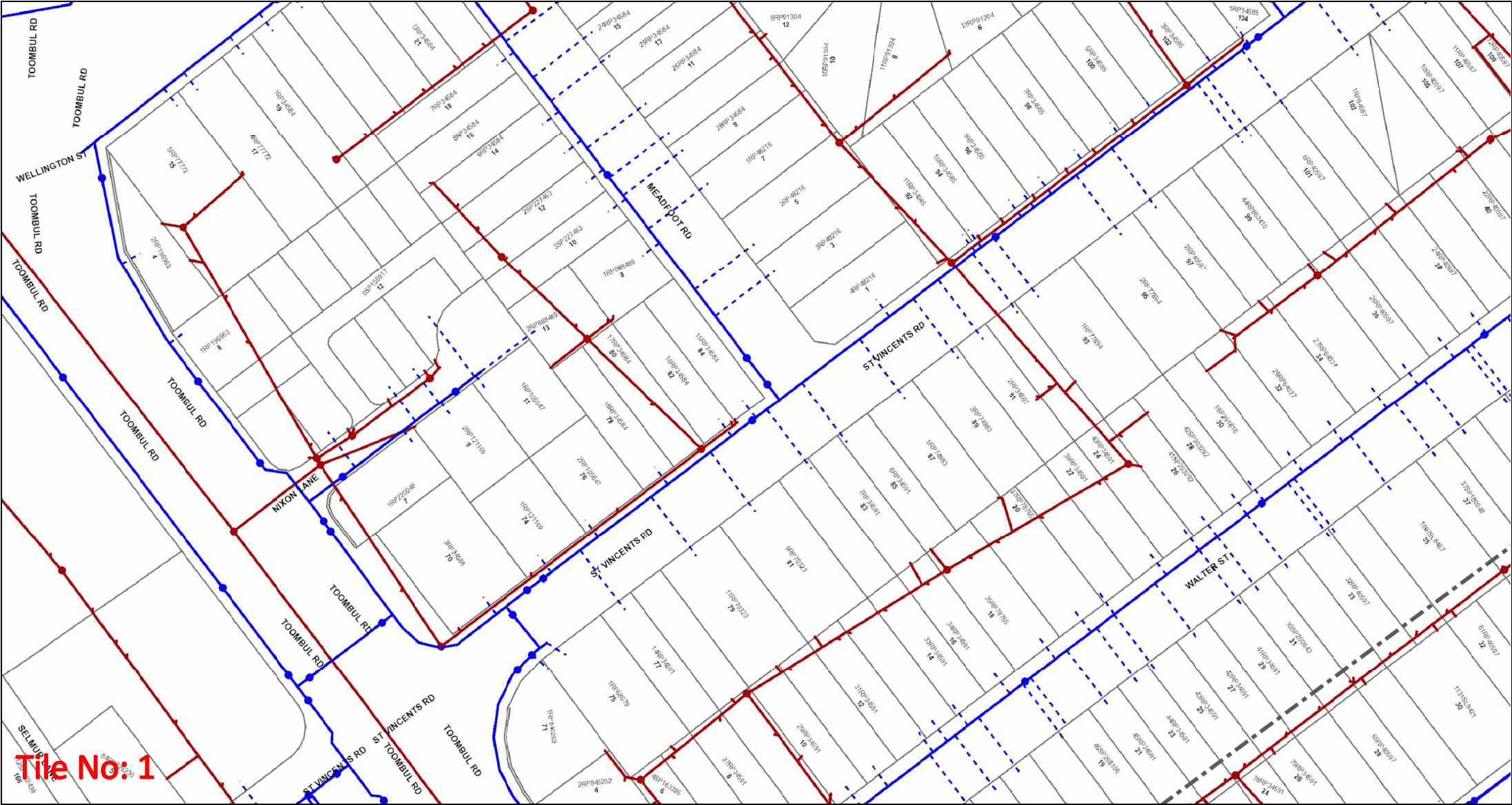
For further information, please call Urban Utilities on 13 26 57 (8am-6pm weekdays). Faults and emergencies 13 23 64 (24/7).


[www.urbanutilities.com.au](http://www.urbanutilities.com.au)

ABN 86 673 835 011



Urban Utilities - Water, Recycled Water and Sewer Infrastructure





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

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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)	

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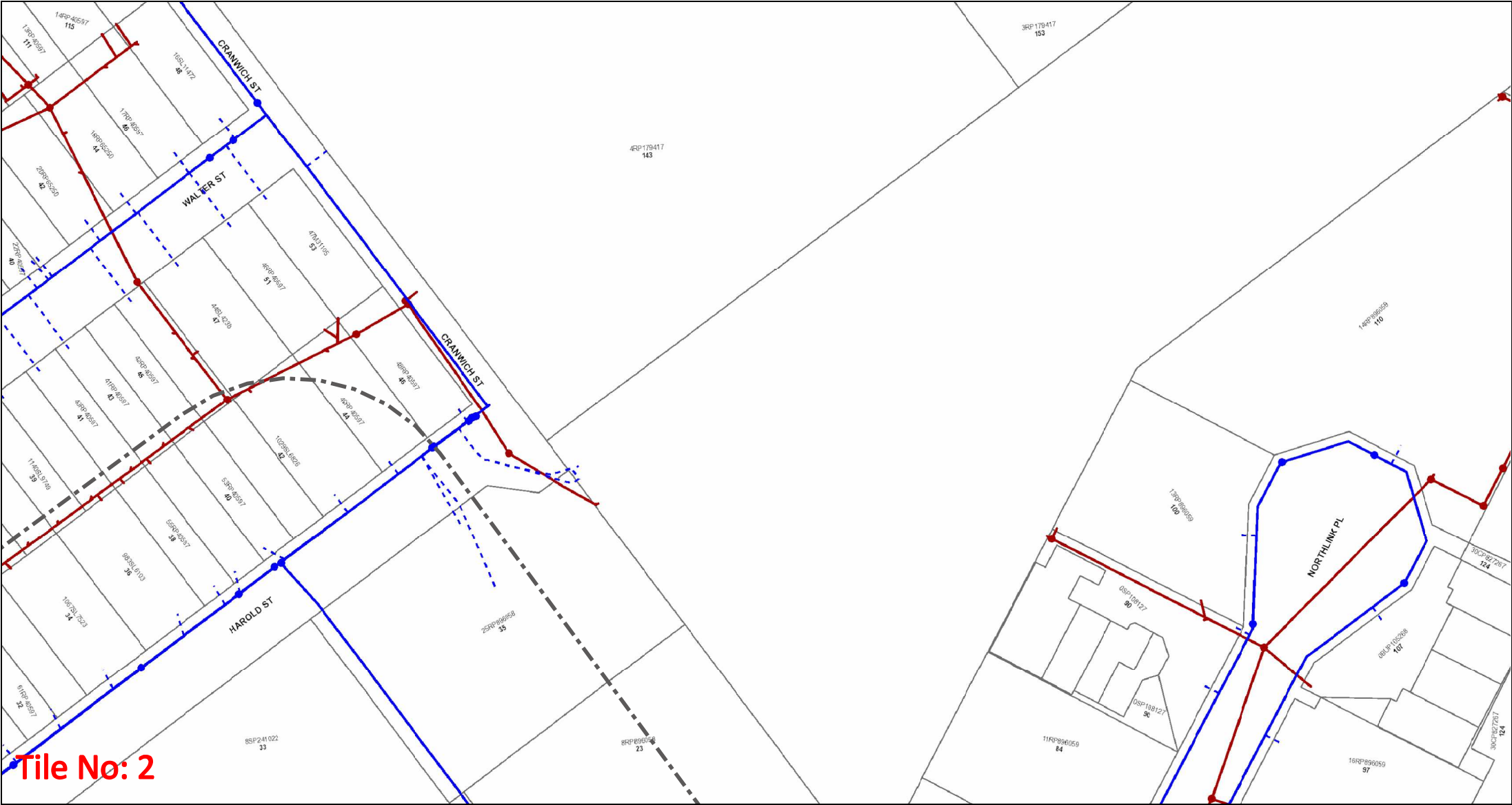
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Urban Utilities - Water, Recycled Water and Sewer Infrastructure



Tile No: 2



**Urban Utilities**

N

Map Scale  
1:1000

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

**BYDA Reference No: 250319432**

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● Infrastructure	● Infrastructure	● Infrastructure
◆ Major Infrastructure	◆ Major Infrastructure	◆ Major Infrastructure
— Network Pipelines	— Network Pipelines	— Network Pipelines
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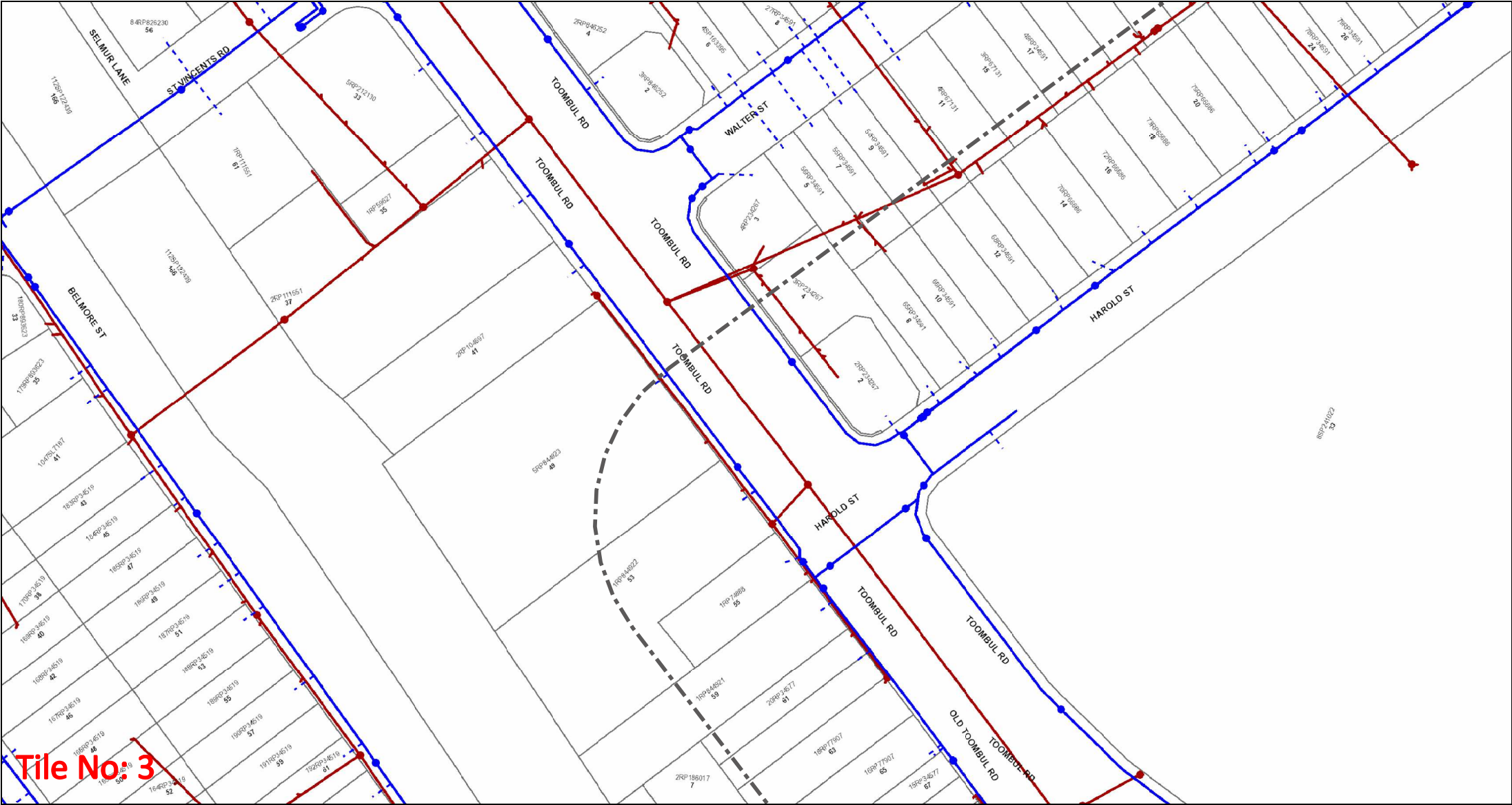
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Urban Utilities - Water, Recycled Water and Sewer Infrastructure





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

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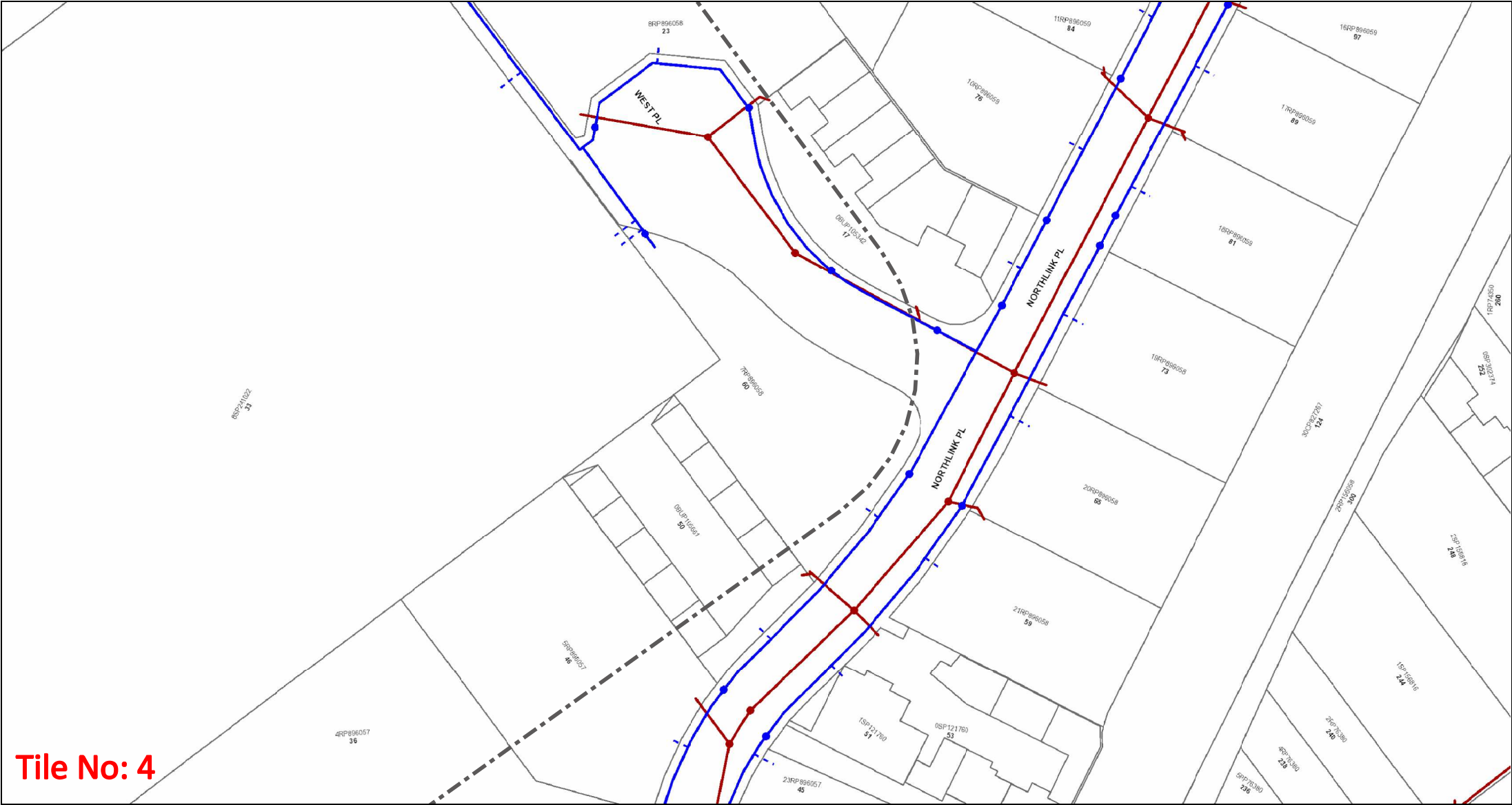
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Urban Utilities - Water, Recycled Water and Sewer Infrastructure





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

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Sewer	Water	Recycled Water
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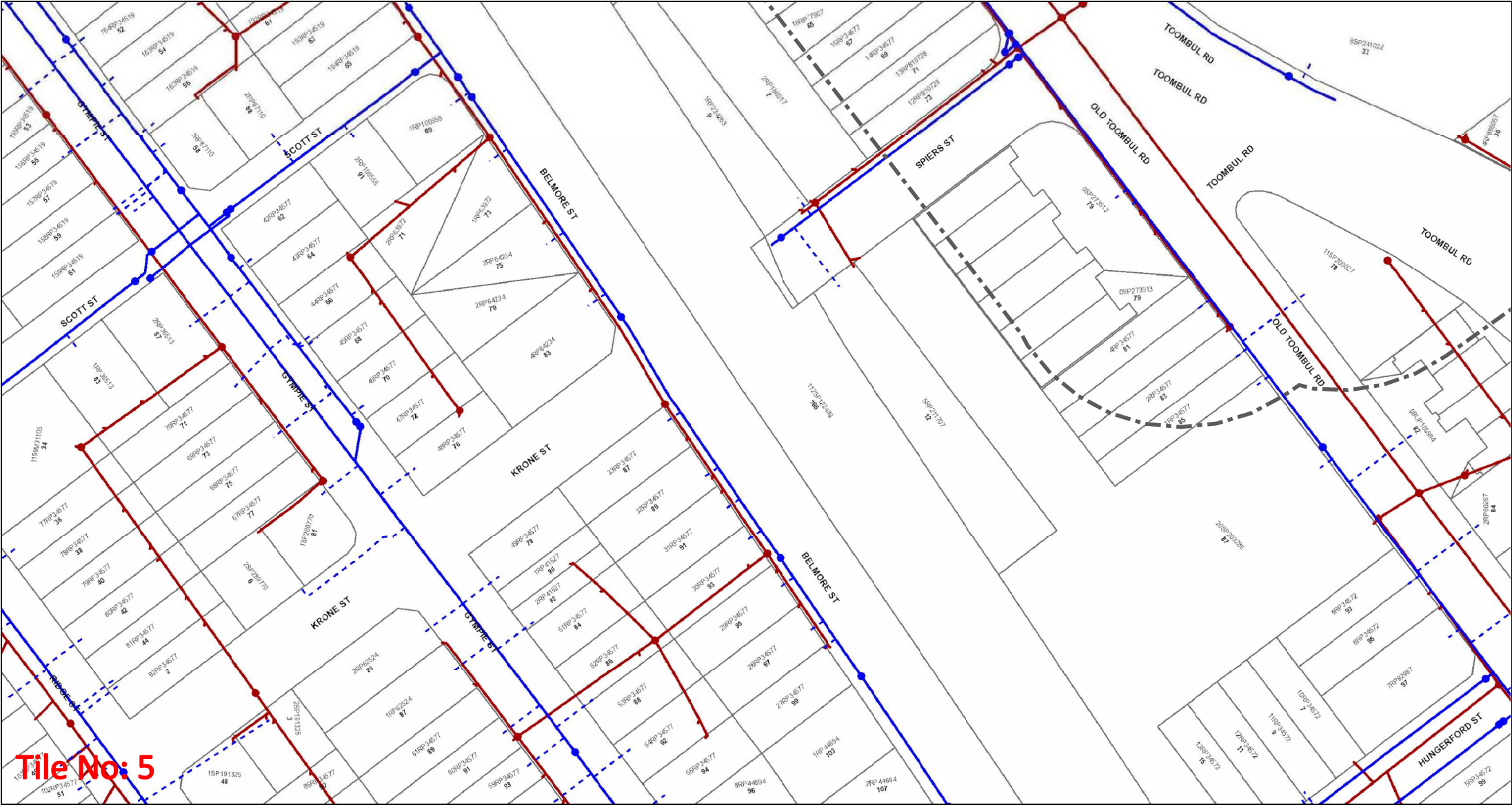
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Urban Utilities - Water, Recycled Water and Sewer Infrastructure





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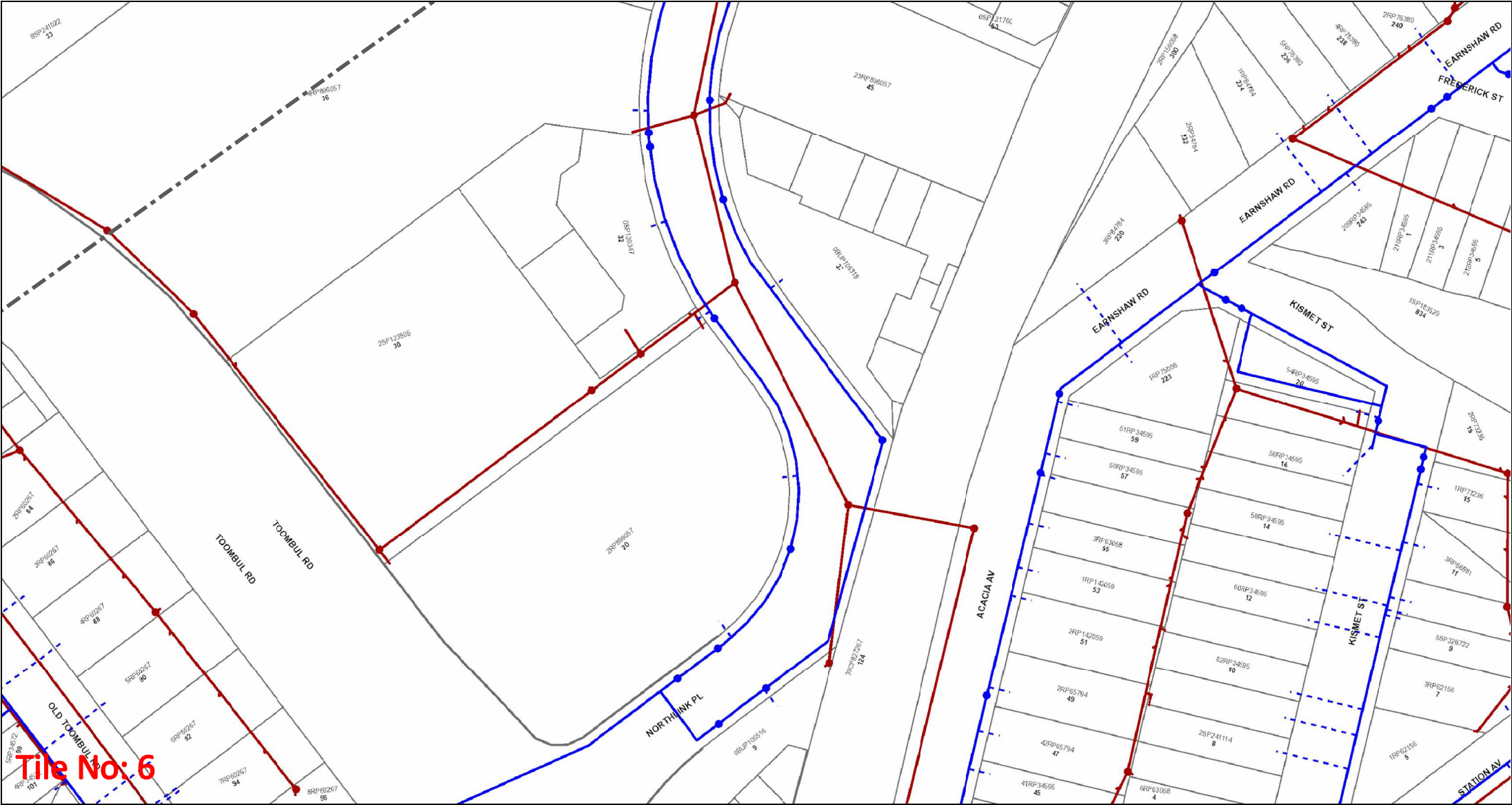
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ABN 86 673 835 011



Urban Utilities - Water, Recycled Water and Sewer Infrastructure





**Urban Utilities**

N

Map Scale  
1:1000

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

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Referral

250319427

Member Phone

1800 336 886

Responses from this member

Response received Fri 31 Jan 2025 10.18am

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ATTENTION: Chanlyly Chea

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Thank you for your DBYD enquiry.

Job No: 38537442  
Sequence No: 250319427  
Enquiry location:  
33 Harold Street  
Virginia  
QLD 4014

Attached are the files containing information relating to your recent DBYD request. Please read and understand all the attached documentation and contact VisionStream on 1800 336 886 or [reefdbysadmin@visionstream.com.au](mailto:reefdbysadmin@visionstream.com.au) if you have any queries.

Note: If you have received this email in error, please advise us by calling 1800 336 886 and quote the Sequence Number listed above.

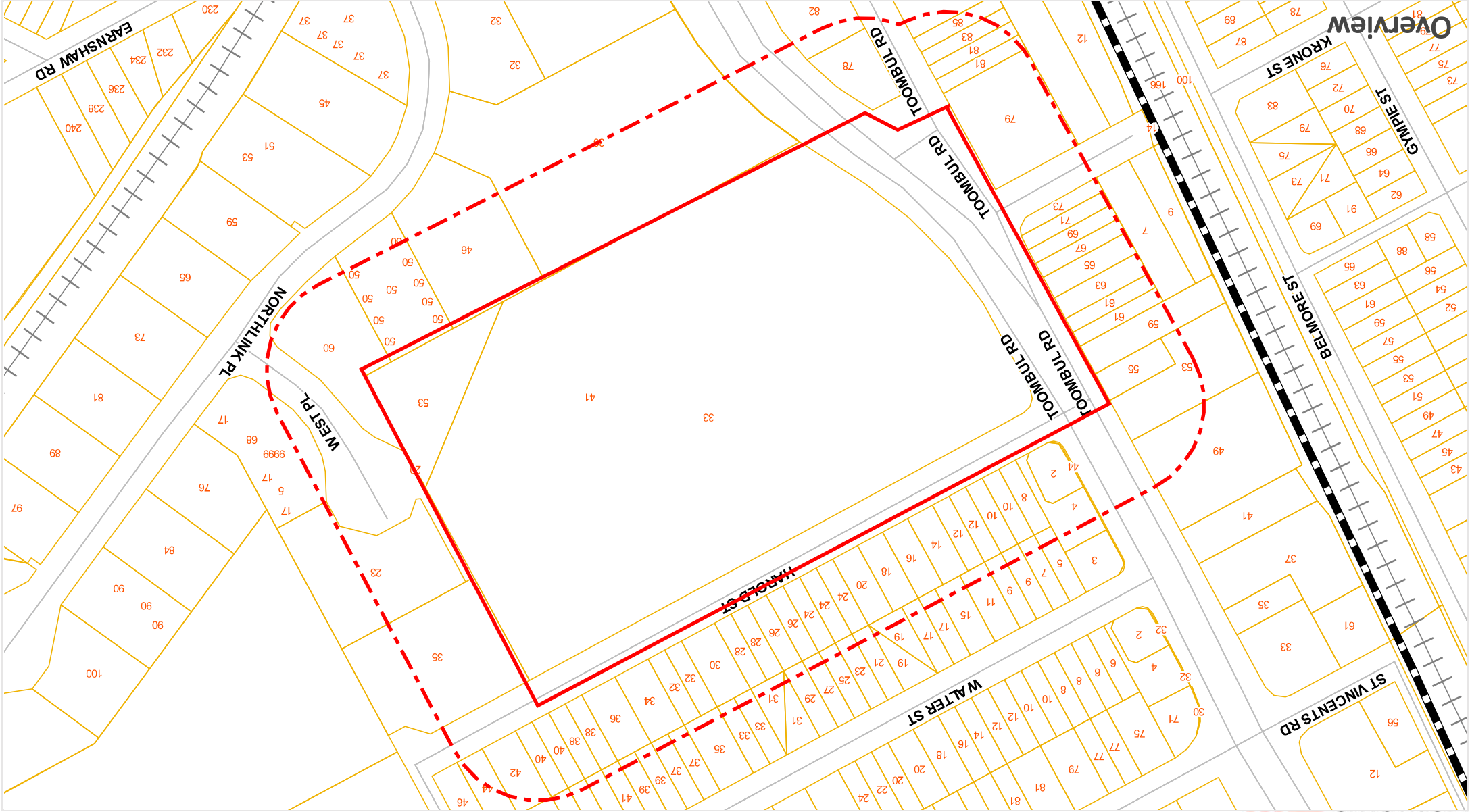
If you are unable to launch any of the files for viewing and printing, you may need to download and install free viewing and printing software such as:

Adobe Acrobat Reader (for PDF files) - <http://get.adobe.com/reader>





Sequence No: 250319427  
Job No: 38537442  
Location: 33 Harold Street, Virginia, QLD 4014



Legend | Scale: 1:2689



**DISCLAIMER:** While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Visionstream or 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.



# Plant Location Details

31/01/2025

Chanlyly Chea  
Not Supplied  
596 Milton Road  
Toowong, 4066  
Phone: +61451693495  
Mobile: No longer supplied  
Email: 5aas7kbp16m9mp.0bo76dbvytxy7r@smarterwx-mail.byda.com.au



Visionstream Pty Limited  
ABN 80 062 604 193 20  
Corporate Drive Heatherton,  
Victoria 3202  
T 1800 336 886

E [reefdbydadmin@visionstream.com.au](mailto:reefdbydadmin@visionstream.com.au)

W [www.visionstream.com.au](http://www.visionstream.com.au)

The following is a response to your Dial Before You Dig enquiry

**Sequence No:** 250319427  
**Location:** 33 Harold Street  
Virginia, QLD, 4014  
**Activity Description:** Planning & Design  
**Planning and Design:** Yes  
**Commencement Date:** 07/02/2025

As a result of your inquiry and based on the description of work provided by you, Visionstream believes that there is a low risk that the works described will damage the Reef Network. To assist you in your work, Visionstream has enclosed a copy of the relevant plans of the network. You are reminded that this does not eliminate the need for you to take every possible care when conducting work close to the Reef Network.

I should also like to point out that Visionstream would seek full restoration for any damages to the Reef Network as a result of work undertaken by you or your representatives.

Should the scope of works supplied to Visionstream change, it is expected that you will seek further information from Visionstream for any proposed variations before they are to begin construction. Visionstream will provide onsite support, where required, for nominal rates.

Once again let me thank you for your interest and please do not hesitate to contact us again if we can be of service.

Yours faithfully

Jevat Jonuzi  
for Mark Aguis

VISIONSTREAM PTY. LIMITED

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WARNING - The accuracy and/or completeness of the information provided cannot be guaranteed as property boundaries, depths and other natural landscape features may change over time, and accordingly the plans are indicative only. Reef Networks does not warrant or hold out that its plans are accurate and accepts no responsibility for any accuracy shown on the plans. It is your responsibility to locate Reef Networks' underground plant by careful vacuum excavation/hand potholing prior to any excavation in the vicinity and to exercise due care during that excavation. Please read and understand the information provided. If you do not understand what your obligations are in respect to Duty of Care, please call 1800 336 886. REEF NETWORKS WILL SEEK COMPENSATION FOR LOSS CAUSED TO ITS PLANT. Reef Network's plans and information provided are valid for 28 days from the date of issue. If this timeframe has elapsed please reapply for plan

---



While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Visionstream or 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.



Referral

250319431

Member Phone

1800 653 935

Responses from this member

Response received Fri 31 Jan 2025 10.22am

File name	Page
Response Body	195
Telstra Duty of Care v32.0c.pdf	197
Telstra Map Legend 4.0b.pdf	199
AccreditedPlantLocators 2025-01-08a.pdf	200
250319431.pdf	201



**Attention:** Chanlyly Chea

**Site Location:** 33 Harold Street, Virginia, QLD 4014

**Your Job Reference:** 33 Harold Street

**Please do not reply to this email, this is an automated message -**

Thank you for requesting Telstra information via Before You Dig Australia (BYDA).

This response contains Telstra information relating to your recent BYDA request.

**Please refer to all enclosed attachments for more information.**

Information for opening Telstra Asset Plans as well as some other useful contact information is noted in the attached documents.

**Report Damage to Telstra Equipment:** [Report damages to Telstra equipment - Telstra](#)

Please note:

When working in the vicinity of telecommunications plant you have a 'Duty of Care' that must be observed.

Ensure you read all documents (attached) - they contain important information.

Please also refer to the **Before you Dig Australia - BEST PRACTISE GUIDES and The five Ps of safe excavation** <https://www.byda.com.au/before-you-dig/best-practice-guides/>, The essential steps that must be undertaken prior to commencing construction activities.

**WARNING - MAJOR CABLES and/or OPTIC FIBRE IN THE AREA.**

**Phone 1800 653 935 for further assistance.**

Note: In some areas Telstra fibre routes may be marked as "Amcom", as Telstra has purchased much of this infrastructure. If in doubt, please contact Telstra Plan services on the number above. Telstra plans and information are only valid for 60 days from the date of issue.

**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 them. 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 assets prior to commencing work. A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the assets are protected during construction works. See the **Before You Dig Australia - BEST PRACTISE GUIDES and The five Ps of safe excavation** <https://www.byda.com.au/before-you-dig/best-practice-guides/>.

Please note that:

- it is a criminal offence under the *Criminal Code Act 1995* (Cth) to tamper or interfere with telecommunications infrastructure.
- Telstra will take action to recover compensation for damage caused to property and assets, and for interference with the operation of Telstra's networks and customers' services.

Telstra's plans contain Telstra's confidential information and are provided on the basis that they are used solely for identifying the location or vicinity of Telstra's infrastructure to avoid damage to this infrastructure occurring as part of any digging or other excavation activity. You must not use Telstra's plans for any other purpose or in a way that will cause Telstra loss or damage and you must comply with any other terms of access to the data that have been provided to you by Telstra (including Conditions of Use or Access).

(See attached file: *Telstra Duty of Care v32.0c.pdf*)

(See attached file: *Telstra Map Legend 4.0b.pdf*)



*(See attached file: AccreditedPlantLocators 2025-01-08a.pdf)*

*(See attached file: 250319431.pdf)*



# Before You Dig Australia

## Think before you dig

This document has been sent to you because you requested plans of the Telstra network through Before You Dig Australia (BYDA).

**If you are working or excavating near telecommunications cables, or there is a chance that cables are located near your site, you are responsible to avoid causing damage to the Telstra network.**

Please read this document carefully. Taking your time now and following the **BYDA's Best Practices and 5 Ps of Safe Excavation** <https://www.byda.com.au/before-you-dig/best-practice-guides/>

can help you avoid damaging our network, interrupting services, and potentially incurring civil and criminal penalties.

Our network is complex and working near it requires expert knowledge. Do not attempt these activities if you are not qualified to do so.



# Disclaimer and legal details



\*Telstra advises that the accuracy of the information provided by Telstra conforms to Quality Level D as defined in AS5488-2013.

It is a criminal offence under the Criminal Code Act 1995 (Cth) to tamper or interfere with telecommunications infrastructure.

Telstra will also take action to recover costs and damages from persons who damage assets or interfere with the operation of **Telstra's** networks.

By receiving this information including the indicative plans that are provided as part of this information package you confirm that you understand and accept the risks of working near **Telstra's** network and the importance of taking all the necessary steps to confirm the presence, alignments and various depths of **Telstra's** network. This in addition to, and not in replacement of, any duties and obligations you have under applicable law.

When working in the vicinity of a telecommunications plant you have a "Duty of Care" that must be observed. Please read and understand all the information and disclaimers provided below.

The Telstra network is complex and requires expert knowledge to interpret information, to identify and locate components, to pothole underground assets for validation and to safely work around assets without causing damage. If you are not an expert and/or qualified in these areas, then you must not attempt these activities. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers. Construction activities and/or any activities that potentially may impact on Telstra's assets must not commence without first undertaking these steps. Construction activities can include anything that involves breaking ground, potentially affecting Telstra assets.

If you are designing a project, it is recommended that you also undertake these steps to validate underground assets prior to committing to your design.

This Notice has been provided as a guide only and may not provide you with all the information that is required for you to determine what assets are on or near your site of interest. You will also need to collate and understand all information received from other Utilities and understand that some Utilities are not a part of the BYDA program and make your own enquiries as appropriate. It is the responsibility of the entities undertaking the works to protect **Telstra's** network during excavation / construction works.

Telstra owns and retains the copyright in all plans and details provided in conjunction with the applicant's request. The applicant is authorised to use the plans and details only for the purpose indicated in the applicant's request. The applicant must not use the plans or details for any other purpose.

Telstra plans or other details are provided only for the use of the applicant, its servants, agents, or CERTLOC Certified Locating Organisation (CLO). The applicant must not give the plans or details to any parties other than these and must not generate profit from commercialising the plans or details.

Telstra, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and or details so supplied to the applicant, its servants and agents, and the applicant agrees to indemnify Telstra against any claim or demand for any such loss or damage.

Please ensure Telstra plans and information provided always remains on-site throughout the inspection, location, and construction phase of any works.

Telstra plans are valid for 60 days after issue and must be replaced if required after the 60 days.

## Data Extraction Fees

In some instances, a data extraction fee may be applicable for the supply of Telstra information. Typically, a data extraction fee may apply to large projects, planning and design requests or requests to be supplied in non-standard formats. For further details contact Telstra Location Intelligence Team.

Telstra does not accept any liability or responsibility for the performance of or advice given by a CERTLOC Certified Locating Organisation (CLO). Certification is an initiative taken by Telstra towards the establishment and maintenance of competency standards. However, performance and the advice given will always depend on the nature of the individual engagement.

Neither the Certified Locating Organisation nor any of its employees are an employee or agent for Telstra. Telstra is not liable for any damage or loss caused by the Certified Locating Organisation or its employees.

Once all work is completed, the excavation should be reinstated with the same type of excavated material unless specified by Telstra.

The information contained within this pamphlet must be used in conjunction with other material supplied as part of this request for information to adequately control the risk of potential asset damage.

When using excavators and other machinery, also check the location of overhead power lines.

Workers and equipment must maintain safety exclusion zones around power lines

**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. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans. **FURTHER ON SITE INVESTIGATION IS REQUIRED TO VALIDATE THE EXACT LOCATION OF TELSTRA PLANT PRIOR TO COMMENCING CONSTRUCTION WORK.** A plant location service is an essential part of the process to validate the exact location of Telstra assets and to ensure the assets are protected during construction works. The exact position of Telstra assets can only be validated by physically exposing them. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers.

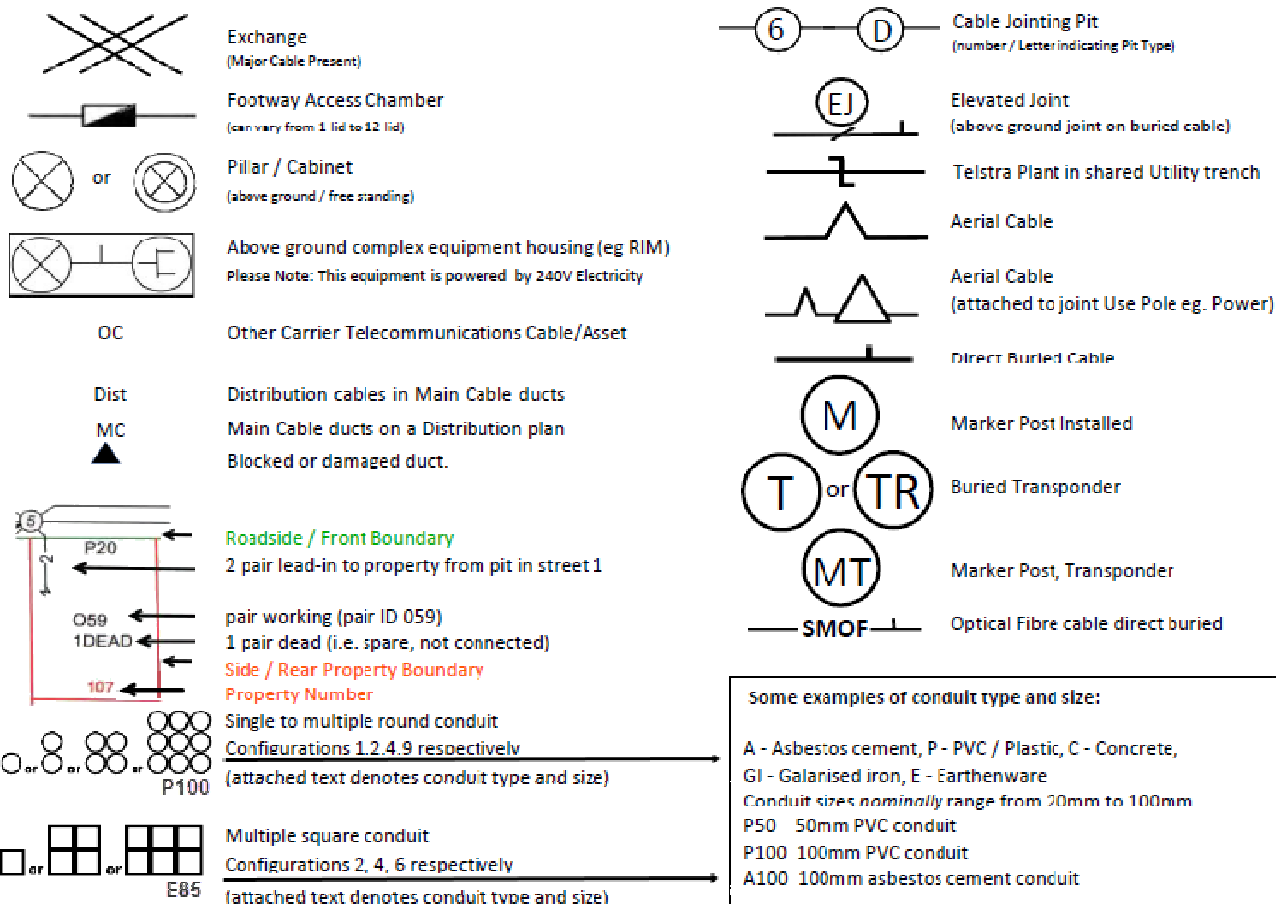
## Privacy Note

Your information has been provided to Telstra by BYDA to enable Telstra to respond to your BYDA request. Telstra keeps your information in accordance with its privacy statement. You can obtain a copy at [www.telstra.com.au/privacy](http://www.telstra.com.au/privacy) or by calling us at 1800 039 059 (business hours only).

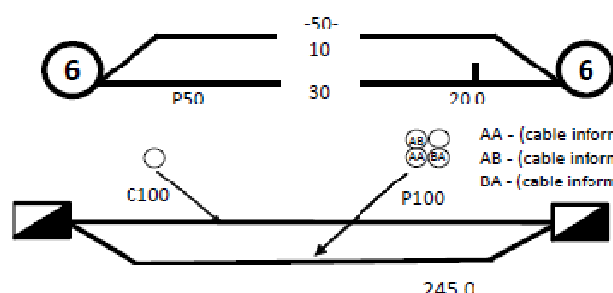




## LEGEND



### Some Examples of how to read Telstra Plans



One 50mm PVC conduit (P50) containing a 50-pair and a 10-pair cable between two 6-pits, approximately 20.0m apart, with a direct buried 30-pair cable along the same route

Two separate conduit runs between two footway access chambers (manholes) approximately 245m apart. A nest of four 100mm PVC conduits (P100) containing assorted cables in three ducts (one being empty) and one empty 100mm concrete duct (C100) along

## Protect our Network:

by maintaining the following distances from our assets:

- 1.0m Mechanical Excavators, Farm Ploughing, Tree Removal
- 500mm Vibrating Plate or Wacker Packer Compactor
- 600mm Heavy Vehicle Traffic (over 3 tonnes) not to be driven across Telstra ducts or plant.
- 1.0m Jackhammers/Pneumatic Breakers
- 2.0m Boring Equipment (in-line, horizontal and vertical)

For more info contact a [CERTLOC Certified Locating Organisation \(CLO\)](#) or Telstra Location Intelligence Team 1800 653 935





### Before you Dig Australia – BEST PRACTISE GUIDES

#### The five Ps of safe excavation

<https://www.byda.com.au/before-you-dig/best-practice-guides/>

### OPENING ELECTRONIC MAP ATTACHMENTS –

Telstra Cable Plans are generated automatically in either PDF or DWF file types.

Dependent on the site address and the size of area selected. You may need to download and install free viewing software from the internet e.g.



DWF Map Files (all sizes over A3)

Autodesk Viewer (Internet Browser) <https://viewer.autodesk.com/> or Autodesk Design Review <http://usa.autodesk.com/design-review/> for DWF files. (Windows PC)



PDF Map Files (max size A3)

Adobe Acrobat Reader <http://get.adobe.com/reader/>



Telstra BYDA map related enquiries email [Telstra.Plans@team.telstra.com](mailto:Telstra.Plans@team.telstra.com)  
1800 653 935 (AEST Business Hours only)



#### REPORT ANY DAMAGE TO THE TELSTRA NETWORK IMMEDIATELY

Report online - <https://www.telstra.com.au/forms/report-damage-to-telstra-equipment>

Ph: 13 22 03

If you receive a message asking for a phone or account number say:

“I don’t have one” then say “Report Damage” then press 1 to speak to an operator.



Telstra New Connections / Disconnections  
13 22 00



Telstra asset relocation enquiries: 1800 810 443 (AEST business hours only).

[NetworkIntegrity@team.telstra.com](mailto:NetworkIntegrity@team.telstra.com)

<https://www.telstra.com.au/consumer-advice/digging-construction>



Telstra Aerial Assets Group (overhead network)  
1800 047 909



CERTLOC Certified Locating Organisation (CLO)

[certloc.com.au/locators/](http://certloc.com.au/locators/)

**Only Telstra authorised personnel and CERTLOC Locators can access Telstra's Pit and Pipe Network.**





Generated On 31/01/2025 11:20:05

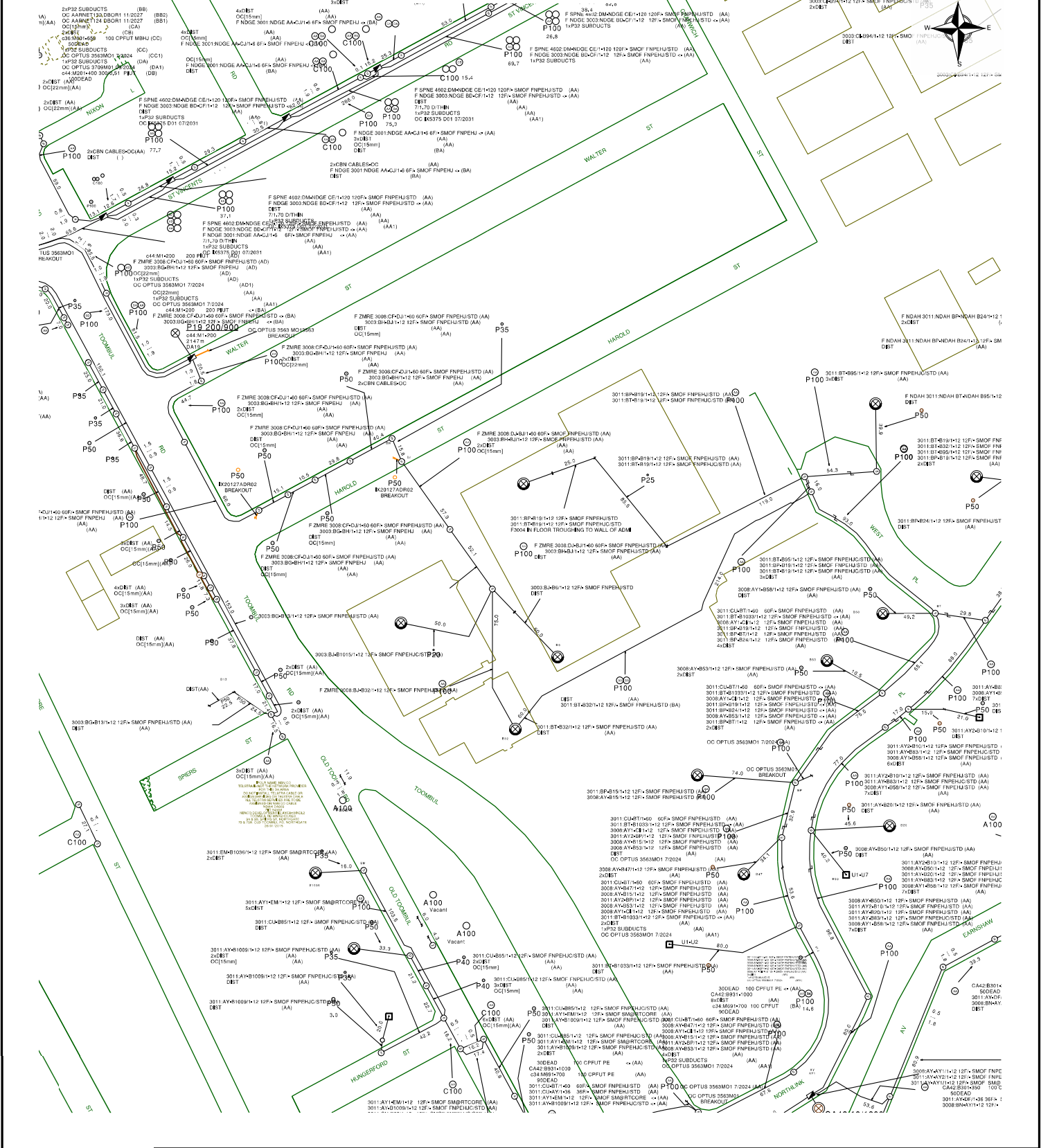
**CAUTION:** Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.


**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.

Page 1 of 2



# Mains Cable Plan



 <p>Report Damage: <a href="https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra">https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra</a>          Ph - 13 22 03          Email - Telstra.Plans@team.telstra.com          Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries</p>	<p>Sequence Number: 250319431</p> <p><b>CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.</b></p>
	<p><b>TELSTRA LIMITED A.C.N. 086 174 781</b></p> <p>Generated On 31/01/2025 11:20:16</p>

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.



Referral

250319425

Member Phone

0404 010 658

Responses from this member

Response received Fri 31 Jan 2025 10.18am

File name	Page
Response Body	204
250319425 - Torus Networks Plan.pdf	206
Torus Networks - Important Information.pdf	212





Torus Networks Pty Ltd

33/10 Benson St

Toowong

QLD 4066

Date: 31 Jan 2025

To: Chanlyly Chea

**Please DO NOT SEND A REPLY to this email as it has been automatically generated and replies are not monitored.**

Thank you for your BYDA enquiry (referenced below)—according to our records your enquiry impacts our infrastructure.

Please ensure that you read the attached documentation, as it contains important information including essential steps that must be undertaken prior to commencing your intended activities.

<b>SEQUENCE NO.:</b>	250319425
<b>JOB NO.:</b>	38537442
<b>LOCATION:</b>	33 Harold Street Virginia QLD 4014

**WARNING: When working in the vicinity of Torus Networks Pty Ltd's assets you have a legal Duty of Care that must be observed.**

If you require further information, please contact Matthew Van Hecke by emailing [matt@torusnetworks.com.au](mailto:matt@torusnetworks.com.au) or by calling [07 3122 3774](tel:0731223774)

To best manage the risk of damage and liability, we recommend that you engage the services of a BYDA Certified Locator

#### Important Notice

This enquiry response, including any associated documentation, has been assessed and compiled from the information detailed within the BYDA enquiry outlined above. **Please ensure that the BYDA enquiry details and this response accurately reflect your proposed works.**

This response is intended for use only by the addressee. If you have received the enquiry response in error, please let us know by telephone and delete all copies; you are advised that copying, distributing, disclosing or otherwise acting in reliance on the response is expressly prohibited.

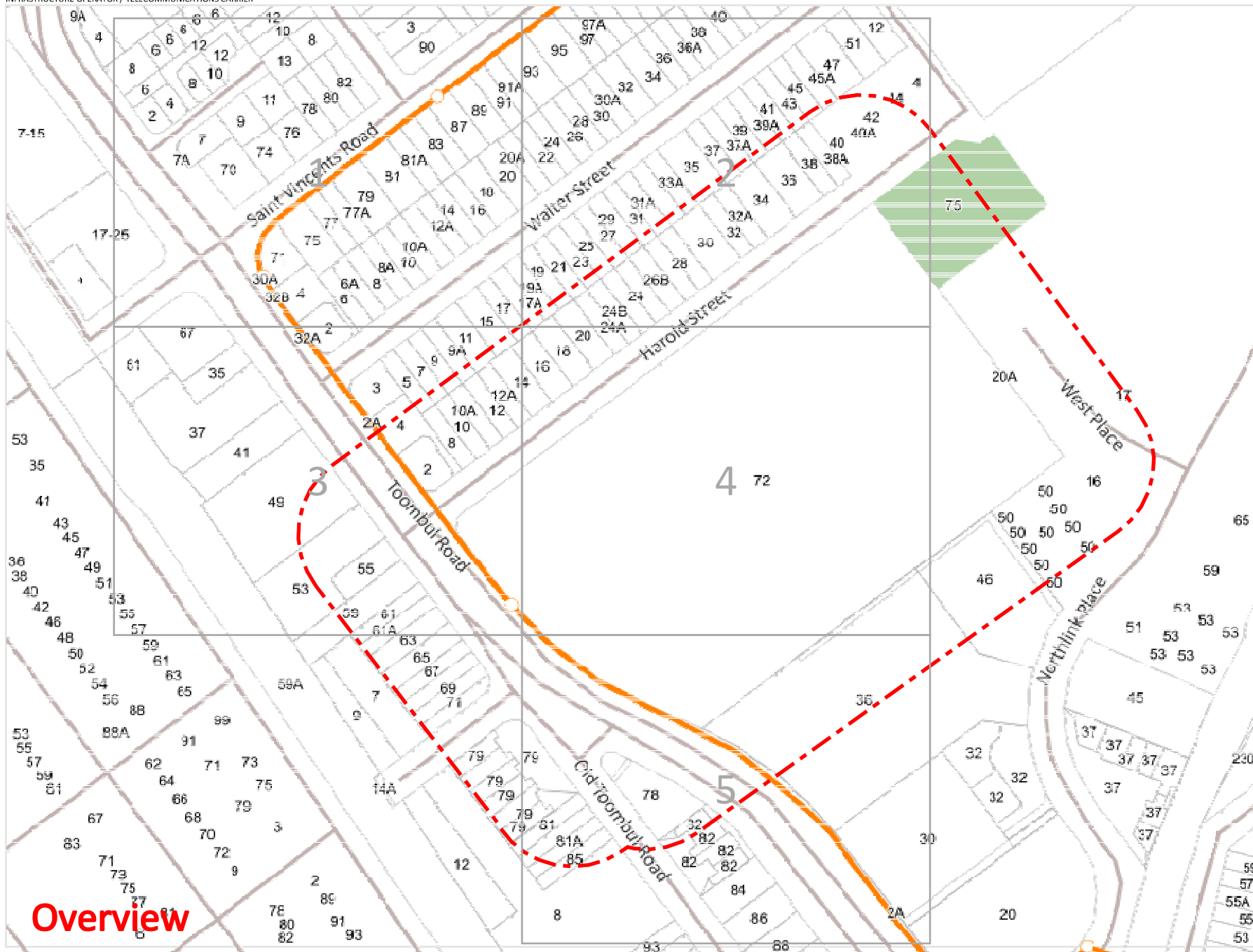
**Disclaimer:** While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Torus Networks Pty Ltd nor PelicanCorp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response 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.

If you are unable to launch any of the files for viewing and printing, you may need to download and install free viewing and printing software such as [Adobe Acrobat Reader \(for PDF files\)](#)









## Legend

-  Pit
-  Fibre Optic Cable / Conduit
-  Fibre Optic Cable / Telstra Conduit

**Where Fibre Optic Cable is denoted as being in Telstra conduit, it is critical that no works commence within the area until you have received and appraised the applicable Telstra Duct Plans**



© State of Queensland (Department of Natural Resources, Mines and Energy) 2023

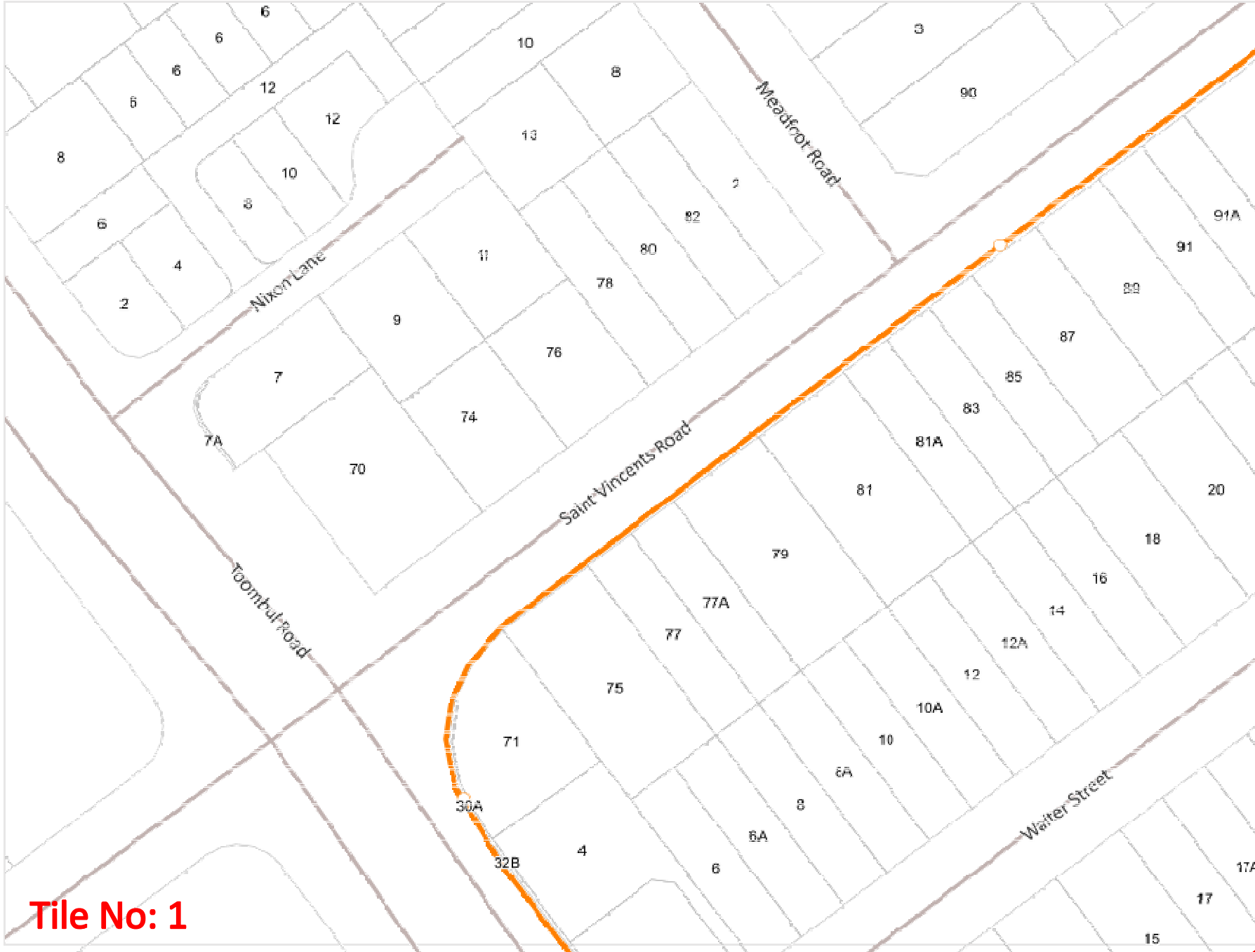


Scale: 1:3075  
Expires: 28 Feb 2025




**DISCLAIMER:** While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Torus Networks 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.







#### Legend

-  Pit
-  Fibre Optic Cable / Conduit
-  Fibre Optic Cable / Telstra Conduit

**Where Fibre Optic Cable is denoted as being in Telstra conduit, it is critical that no works commence within the area until you have received and appraised the applicable Telstra Duct Plans**



© State of Queensland (Department of Natural Resources, Mines and Energy) 2023



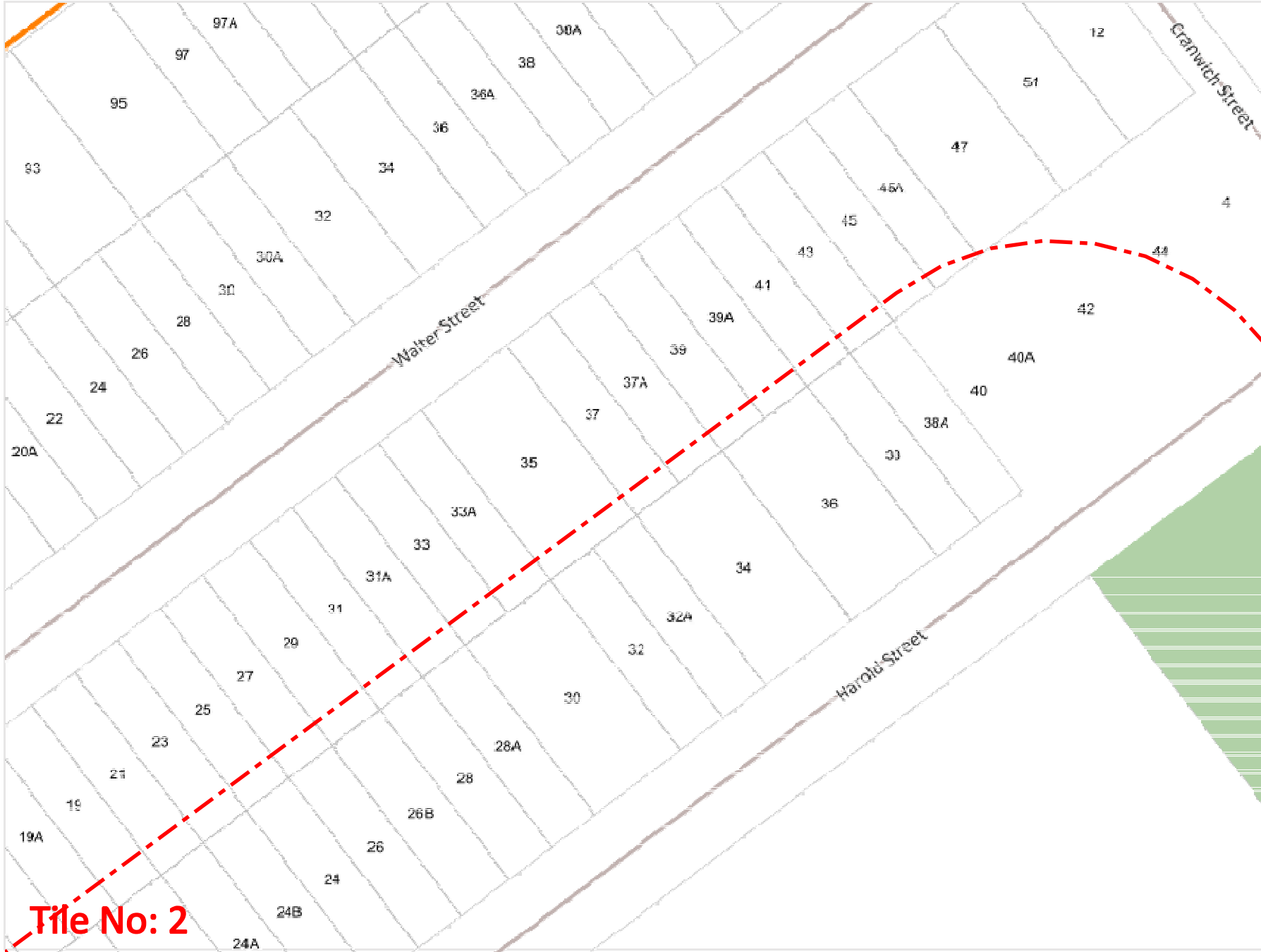
Scale: 1:1000  
Expires: 28 Feb 2025

**DISCLAIMER:** While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Torus Networks 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.






**Tile No: 1**





#### Legend

-  Pit
-  Fibre Optic Cable / Conduit
-  Fibre Optic Cable / Telstra Conduit

**Where Fibre Optic Cable is denoted as being in Telstra conduit, it is critical that no works commence within the area until you have received and appraised the applicable Telstra Duct Plans**



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Scale: 1:1000  
Expires: 28 Feb 2025

**DISCLAIMER:** While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Torus Networks 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.



**File No: 2**





#### Legend

-  Pit
-  Fibre Optic Cable / Conduit
-  Fibre Optic Cable / Telstra Conduit

**Where Fibre Optic Cable is denoted as being in Telstra conduit, it is critical that no works commence within the area until you have received and appraised the applicable Telstra Duct Plans**



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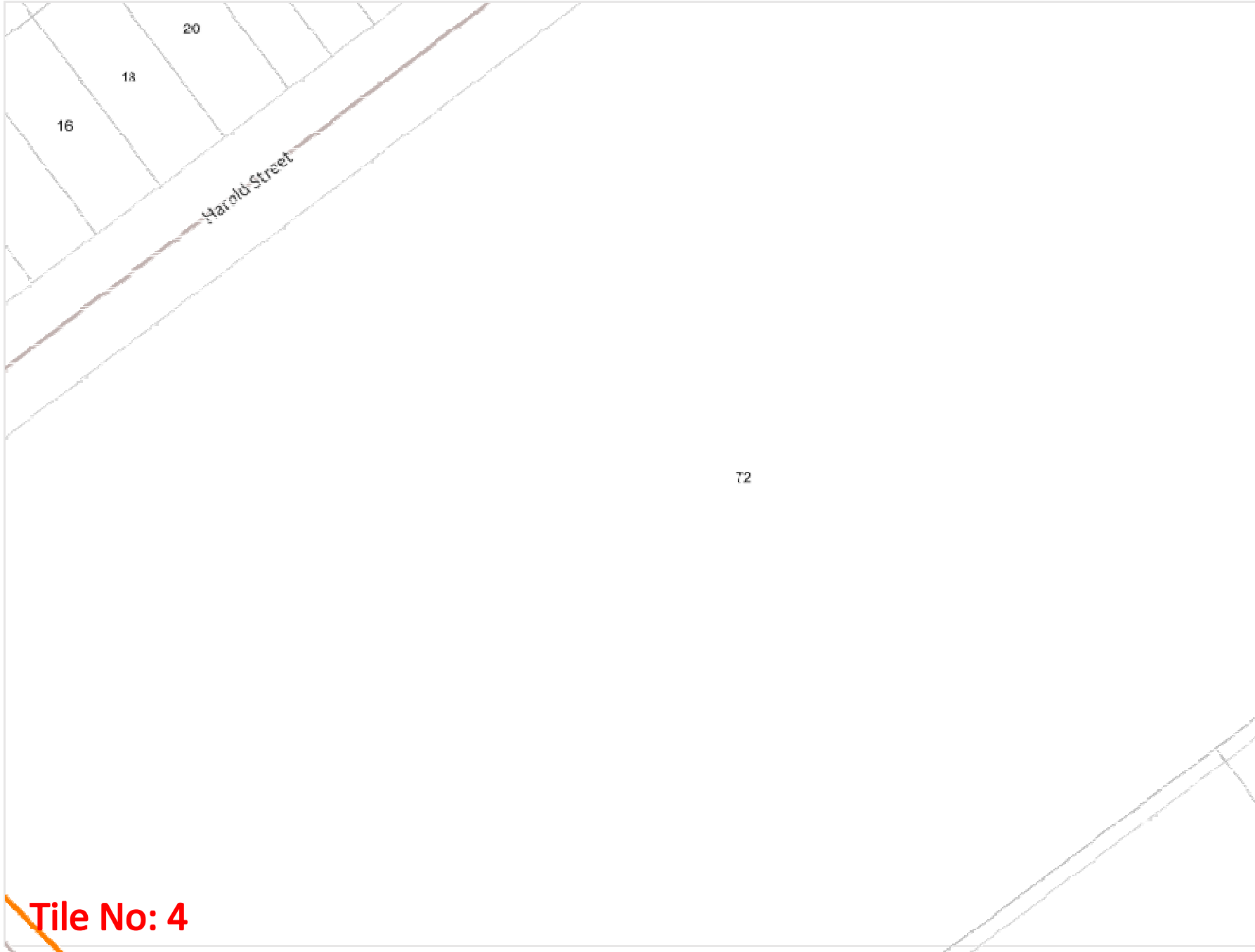
Scale: 1:1000  
Expires: 28 Feb 2025

**DISCLAIMER:** While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Torus Networks 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.






**Tile No: 3**





#### Legend

-  Pit
-  Fibre Optic Cable / Conduit
-  Fibre Optic Cable / Telstra Conduit

**Where Fibre Optic Cable is denoted as being in Telstra conduit, it is critical that no works commence within the area until you have received and appraised the applicable Telstra Duct Plans**



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Scale: 1:1000  
Expires: 28 Feb 2025

**DISCLAIMER:** While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Torus Networks 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.






**Tile No: 4**





#### Legend

-  Pit
-  Fibre Optic Cable / Conduit
-  Fibre Optic Cable / Telstra Conduit

**Where Fibre Optic Cable is denoted as being in Telstra conduit, it is critical that no works commence within the area until you have received and appraised the applicable Telstra Duct Plans**



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Scale: 1:1000  
Expires: 28 Feb 2025

**DISCLAIMER:** While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Torus Networks 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.



**Tile No: 5**



## IMPORTANT INFORMATION

Torus Networks operate third party Telecommunications Network infrastructure—this may include Third-party Infrastructure Owner's and their customers, which are highlighted where applicable on the attached Plan/s.

Plans and sketches supplied by Torus Networks are diagrams only and indicative of the presence of telecommunications infrastructure in the general vicinity of the geographical area shown. Exact ground cover and alignments cannot be given with any certainty and cover may alter over time.

## DUTY OF CARE

When working in the vicinity of telecommunications plant, you have a legal “Duty of Care” that must always be observed. The below details and information must be considered and understood.

It is the responsibility of the constructor to identify and locate infrastructure, pothole underground assets and to safely work around infrastructure without causing damage. Torus Networks (including Third-party Infrastructure Owner's and their customers) will seek compensation for any damage caused to its property and losses caused to Torus Networks and its customers.

**Any damage to Torus Network’s infrastructure must be immediately reported to (07) 3122 3774**

Due to continued network expansion, this network information can only be considered valid and accurate for 28 days from issue.

The table below details the minimum clearance distances that must be maintained between construction activity and Torus Network’s plant. If for any reason these cannot be maintained, please contact the above details to seek consultation on how to resolve the situation.

### ESSENTIAL PRECAUTION & APPROACH DISTANCES

<b>Jackhammers/Pneumatic Breakers</b>	Not within 1.0m of actual validated location.
<b>Vibrating Plate or Wacker Packer Compactor</b>	Not within 0.5m of actual validated location of Torus Networks ducts. 300mm compact clearance cover before compactor can be used across Torus Networks ducts.
<b>Boring Equipment (in-line, horizontal and vertical)</b>	Not within 2.0m of actual validated location. Constructor to hand dig or use non-destructive water jet method (pothole) and expose plant.
<b>Heavy Vehicle Traffic (over 3 tonnes)</b>	Not to be driven across Torus Networks ducts (or plant) with less than 600mm cover. Constructor to check actual depth via hand digging.
<b>Mechanical Excavators, Farm ploughing and Tree Removal</b>	Not within 1.0m of actual validated location. Constructor to hand dig or use non-destructive water jet method (pot-hole) and expose plant.



**Disclaimer:** While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Torus Networks Pty Ltd 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.





## End of document

**i** This document may exclude some files (eg. DWF or ZIP files)

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## Appendix J

### Architectural Staging Plan



# TESLA REDEVELOPMENT POWERLINK VIRGINIA CAMPUS

28/03/25

**W-B**  
WOODS BAGOT





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01

Development  
Summary

02

Staging

03

Drawings

04

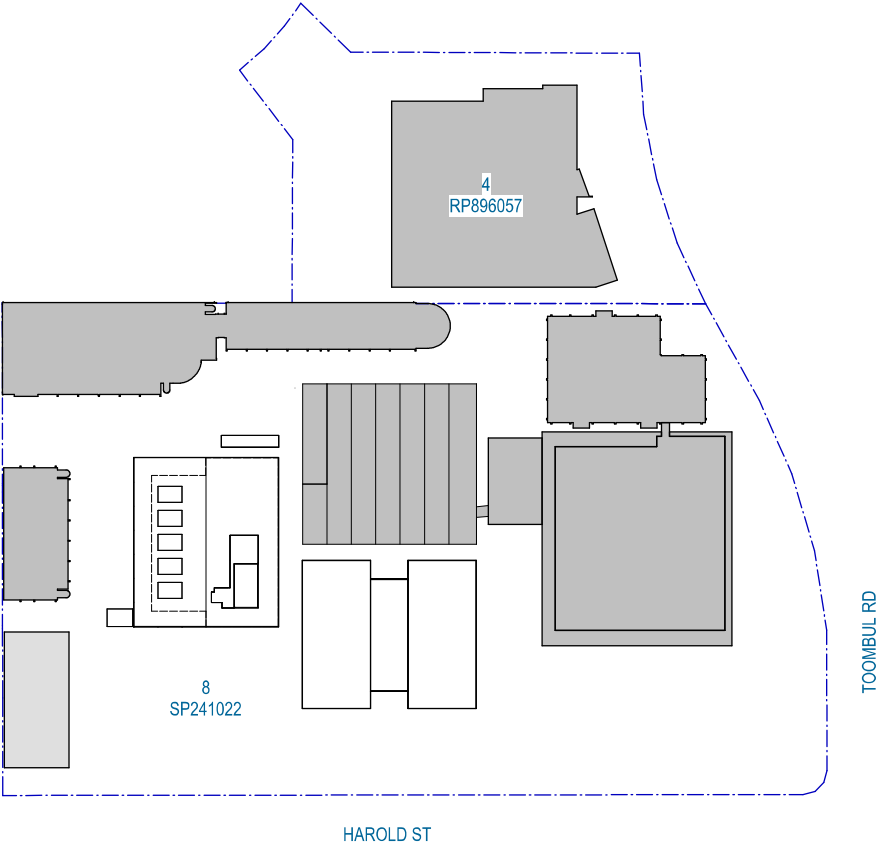
Perspectives



# 01 Development Summary

SITE AREA (TOTAL) 68,330 m<sup>2</sup>

	GFA (m2)	SITE COVER (m2)	COMMENTS
EXISTING/APPROVED BUILDINGS			
EDISON	8,277	4,441	To be decommissioned in Stage 3 - refer staging plans
BRIAN SHARP	6,430	2,145	
NORTHLINK	6,002	3,019	
NORTHLINK WAREHOUSE	2,107	2,107	
REMNERANT TESLA	4,182	4,182	Area reduced as part of MID proposal (-9,858 m2)
OIL LAB	1,080	1,080	
PROPOSED BUILDINGS			
FDOE BUILDING			
GROUND	2,607		
LEVEL 1	1,657		
LEVEL 2 (PLANT)	-		
TOTAL	4,264	2,694	
NEW TESLA BUILDING			
GROUND	3,177		
LEVEL 1	3,100		
LEVEL 2	3,100		
LEVEL 3 (PLANT)	-		
TOTAL	9,377	3,403	
OVERALL (PROPOSED)	33,442	18,630	
CHANGE TO EXISTING	-4,494	-7,662	
CAR PARKING			
	EXISTING	PROPOSED	
EXISTING PARKING	929	929	
FDOE BUILDING		+92	
NEW TOOMBUL RD CAR PARK		+96	
TESLA CAR PARK (HAROLD ST)		-32	Reconfigured to incorporate new Drop-off & Main campus entry
FUTURE HAROLD ST CAR PARK		+78	Future car park to suit relocation of main entry to New Tesla Building
TOTAL	929	1,163	
CHANGE		+234	
LANDSCAPE			
	EXISTING	PROPOSED	
TOTAL	7,674	5,351	



NOTE: Figures are approximate only and subject to detailed survey, consultant input, design development and statutory approvals.





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01

Development  
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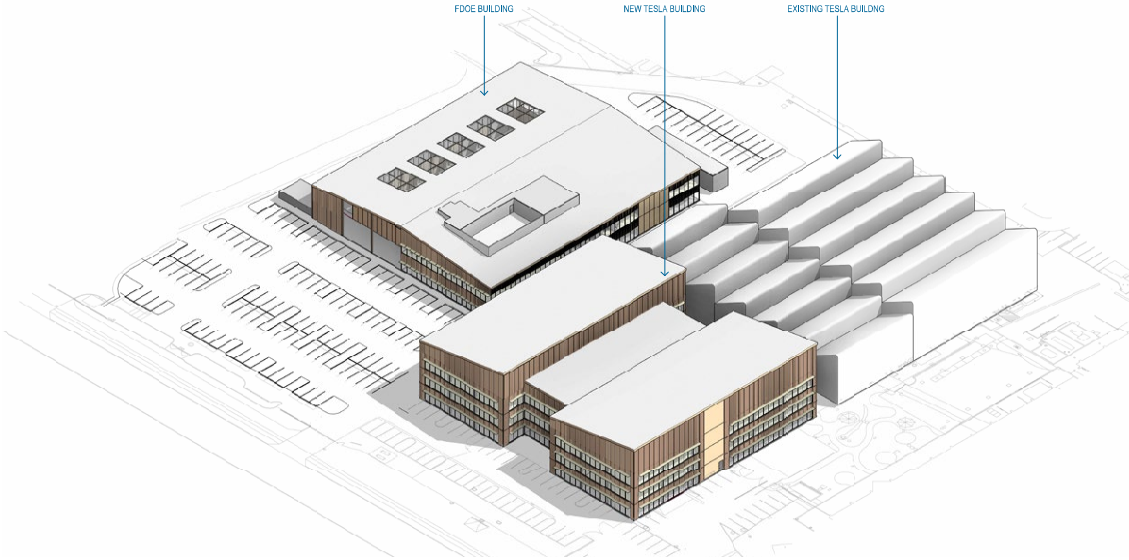
04

Perspectives



## 02 Staging Summary

	Existing		Stage 1		Stage 2		Stage 3		Stage 4		Stage 5		Stage 6		Stage 7		Stage 8	
	GFA	Site Cover	GFA	Site Cover	GFA	Site Cover	GFA	Site Cover	GFA	Site Cover	GFA	Site Cover	GFA	Site Cover	GFA	Site Cover	GFA	Site Cover
Existing Buildings*																		
Edison	8,277	4,441	8,277	4,441	8,277	4,441	0	0	0	0	0	0	0	0	0	0	0	0
Brian Sharp	6,430	2,145	6,430	2,145	6,430	2,145	6,430	2,145	6,430	2,145	6,430	2,145	6,430	2,145	6,430	2,145	6,430	2,145
Northlink	6,002	3,019	6,002	3,019	6,002	3,019	6,002	3,019	6,002	3,019	6,002	3,019	6,002	3,019	6,002	3,019	6,002	3,019
Northlink Warehouse	2,107	2,107	2,107	2,107	2,107	2,107	2,107	2,107	2,107	2,107	2,107	2,107	2,107	2,107	2,107	2,107	2,107	2,107
Existing Tesla	14,040	13,500	10,140	9,600	4,182	4,182	4,182	4,182	4,182	4,182	4,182	4,182	4,182	4,182	4,182	4,182	4,182	4,182
Proposed Buildings																		
Oil Lab*	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080
New Tesla							9,377	3,403	9,377	3,403	9,377	3,403	9,377	3,403	9,377	3,403	9,377	3,403
FDOE													4,264	2,694	4,264	2,694	4,264	2,694
Total	37,936	26,292	34,036	22,392	28,078	16,974	29,178	15,936	29,178	15,936	29,178	15,936	33,442	18,630	33,442	18,630	33,442	18,630
	Existing		Stage 1		Stage 2		Stage 3		Stage 4		Stage 5		Stage 6		Stage 7		Stage 8	
	Total	Change	Total	Change	Total	Change	Total	Change	Total	Change	Total	Change	Total	Change	Total	Change	Total	Change
Parking*	929	- 43	886	- 21	865	11	876	235	1,111	-	1,111	- 122	989	78	1,067	96	1,163	



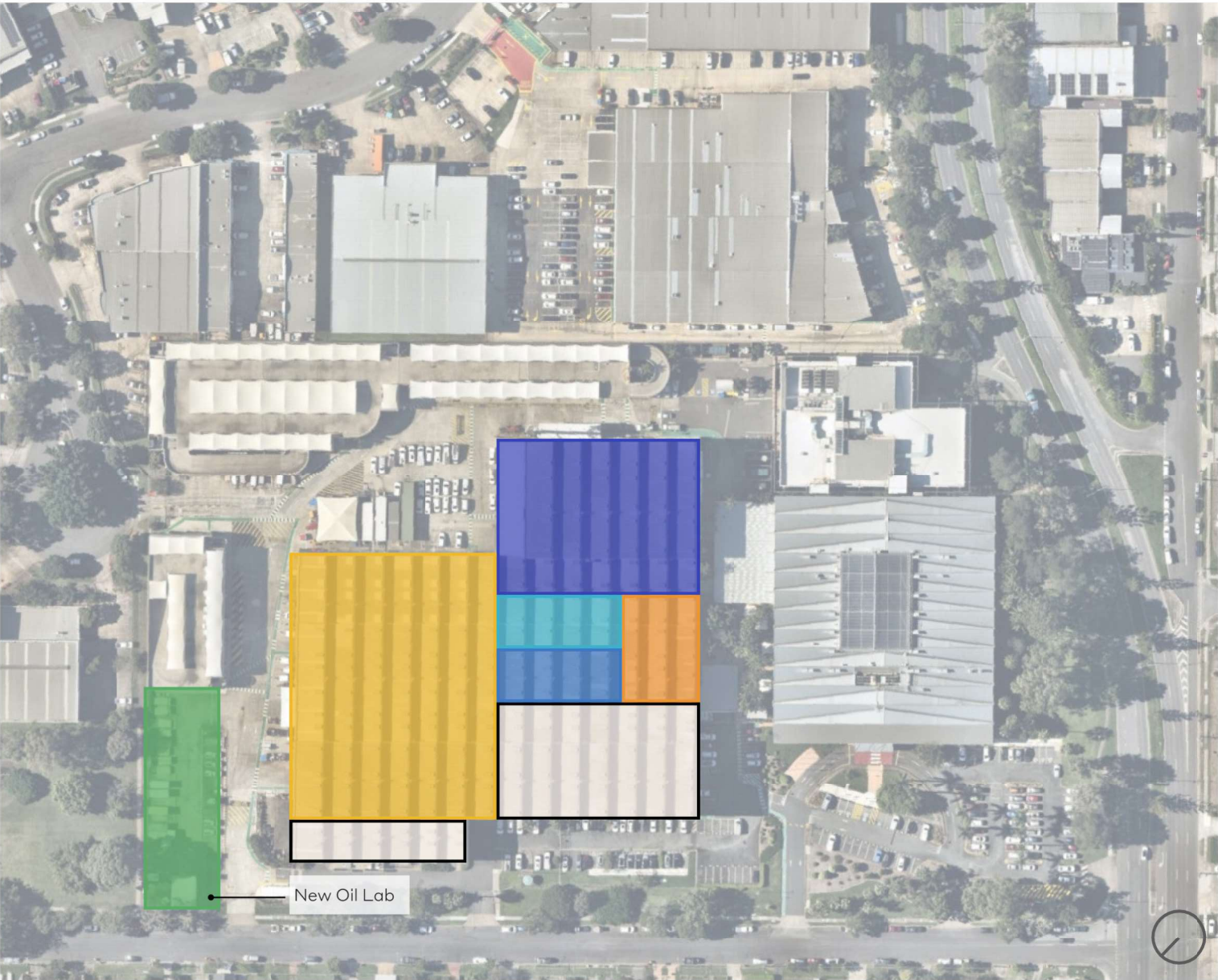
NOTE: Figures are approximate only and subject to detailed survey, consultant input, design development and statutory approvals.  
Existing area and parking figures provided by Powerlink.



# 02 Staging - Current

Summary	
GFA	37,936 m <sup>2</sup>
Site Cover	26,292 m <sup>2</sup>
Parking	929

-  Works commenced
-  Vacant
-  Tool Store
-  Training
-  Offices
-  Other Storage
-  Williamson Centre
-  Oil Lab





# 02 Staging - Stage 1

- Western quadrant of Tesla Warehouse demolished

Stage 2 - Summary	
GFA	34, 036 m²
Site Cover	22, 392 m²
Parking	886

Works commenced

Vacant

Tool Store

Training

Offices

Other Storage

Williamson Centre

Oil Lab











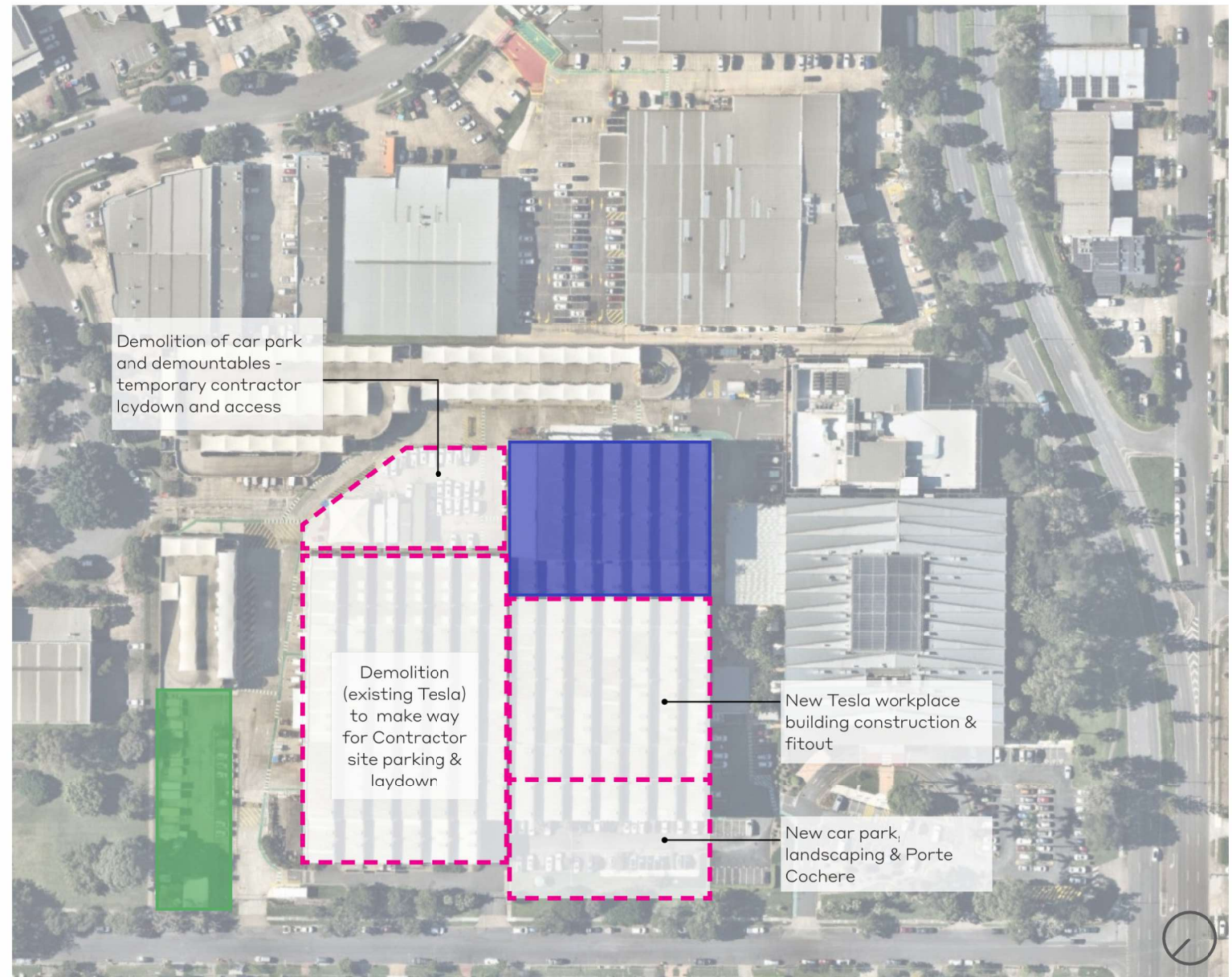
## 02 Staging - Stage 2

- New Tesla workplace building under construction
- New car parking, landscaping and Porte Cochere to new Tesla building under construction
- Demolition of eastern quadrant of existing Tesla Warehouse to allow for contractor site laydown & parking

### Stage 2 - Summary

GFA	28,078 m <sup>2</sup>
Site Cover	16,974 m <sup>2</sup>
Parking	865

	Works commenced
	Vacant
	Tool Store
	Training
	Offices
	Other Storage
	Williamson Centre
	Oil Lab













## 02 Staging - Stage 3

- New Tesla Building complete
- Porte Cochere, car park and landscaping to new Tesla Building complete
- Car park adjacent Edison demolished for future landscape area
- Edison Building decommissioned

### Stage 3 - Summary

GFA	29,178 m <sup>2</sup>
Site Cover	15,936 m <sup>2</sup>
Parking	876

	Works commenced
	Vacant
	Tool Store
	Training
	Offices
	Other Storage
	Williamson Centre
	Oil Lab













## 02 Staging - Stage 4

- New on-grade car park adjacent Tesla complete
- Landscaped area between Tesla and Edison complete
- Edison Building decommissioned

### Stage 4 - Summary

GFA	29,178 m <sup>2</sup>
Site Cover	15,936 m <sup>2</sup>
Parking	1,111

	Works commenced
	Vacant
	Tool Store
	Training
	Offices
	Other Storage
	Williamson Centre
	Oil Lab






## 02 Staging - Stage 5

- Edison Building demolished and new landscaped area provided

### Stage 5 - Summary

GFA	29, 178 m <sup>2</sup>
Site Cover	15, 936 m <sup>2</sup>
Parking	1,111

-  Works commenced
-  Vacant
-  Tool Store
-  Training
-  Offices
-  Other Storage
-  Williamson Centre
-  Oil Lab













## 02 Staging - Stage 6

- New FDOE Building complete
- New car parks to FDOE building complete

### Stage 6 - Summary

GFA	33,442 m <sup>2</sup>
Site Cover	18,630 m <sup>2</sup>
Parking	989

	Works commenced
	Vacant
	Tool Store
	Training
	Offices
	Other Storage
	Williamson Centre
	Oil Lab













## 02 Staging - Stage 7

- Reconfiguration of Edison car park complete

### Stage 7 - Summary

GFA	33, 442 m <sup>2</sup>
Site Cover	18, 630 m <sup>2</sup>
Parking	1,067

	Works commenced
	Vacant
	Tool Store
	Training
	Offices
	Other Storage
	Williamson Centre
	Oil Lab













## 02 Staging - Stage 8 Completion

- Toombul Rd car park complete

### Stage 8 - Summary

GFA	33, 442 m <sup>2</sup>
Site Cover	18, 630 m <sup>2</sup>
Parking	1,163

	Works commenced
	Vacant
	Tool Store
	Training
	Offices
	Other Storage
	Williamson Centre
	Oil Lab





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01

Development  
Summary

02

Staging

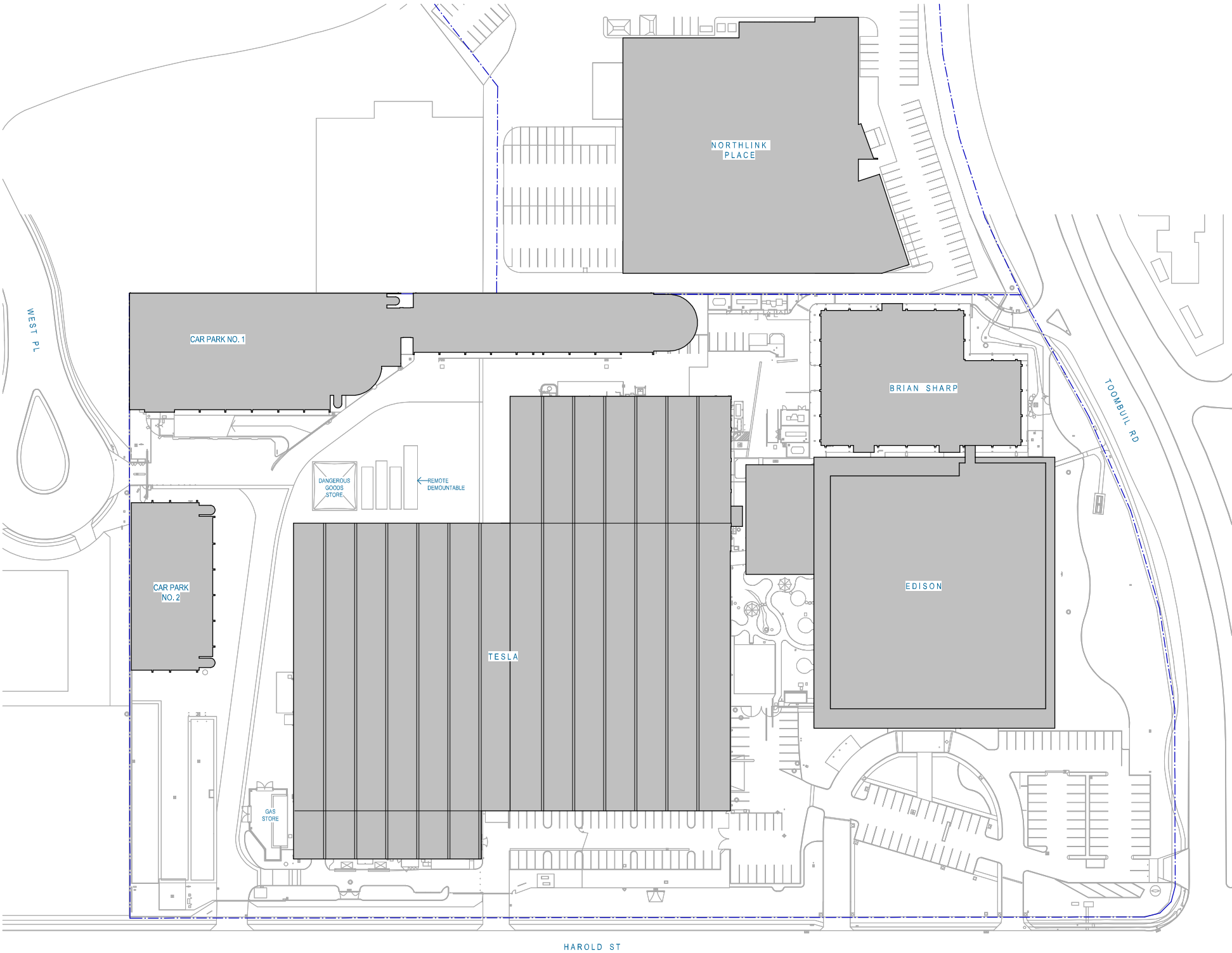
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Drawings

04

Perspectives





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3	For Information	For Information
4	For Information	For Information
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REDEVELOPMENT

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POWERLINK

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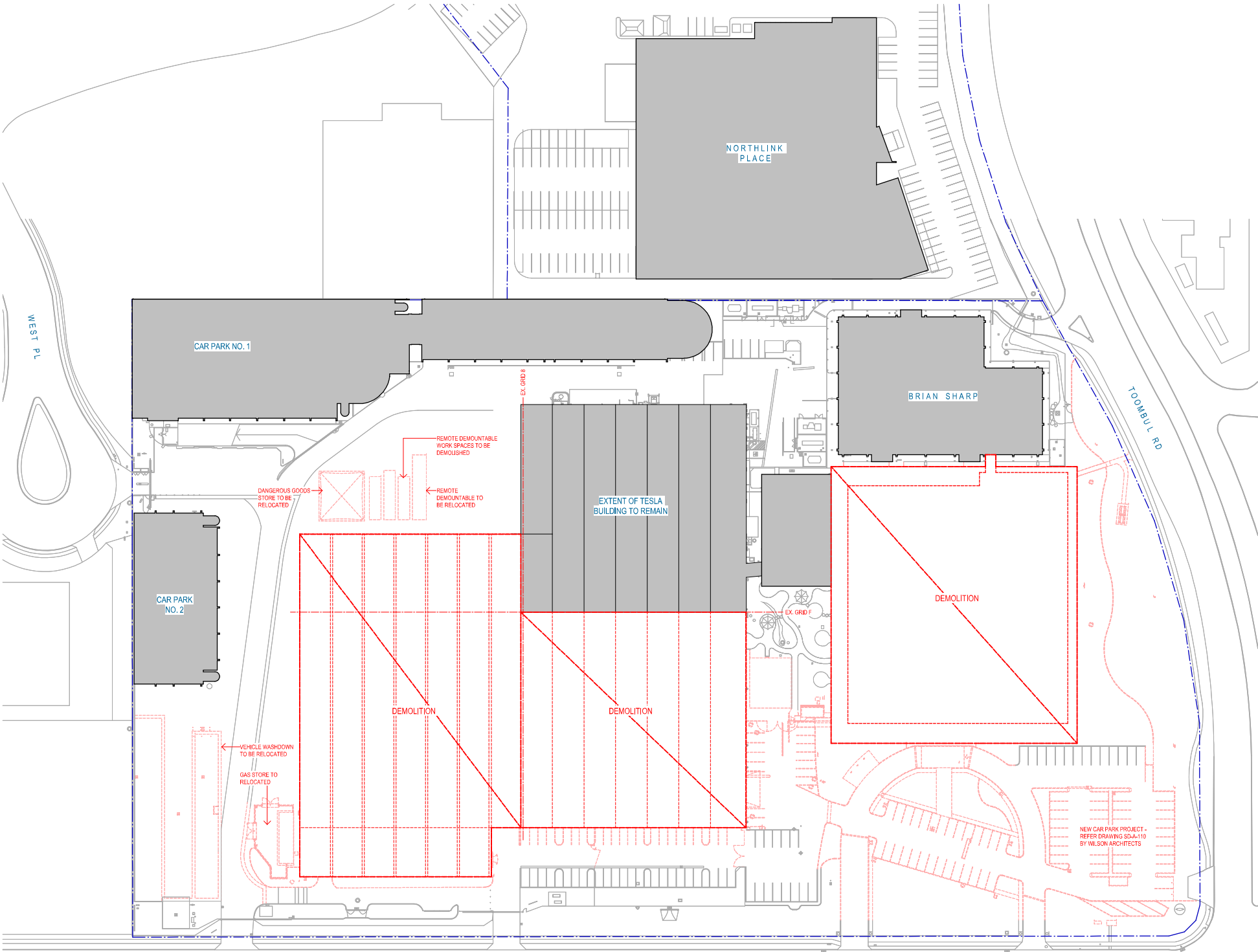
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Issue  
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3	For Information	For Information
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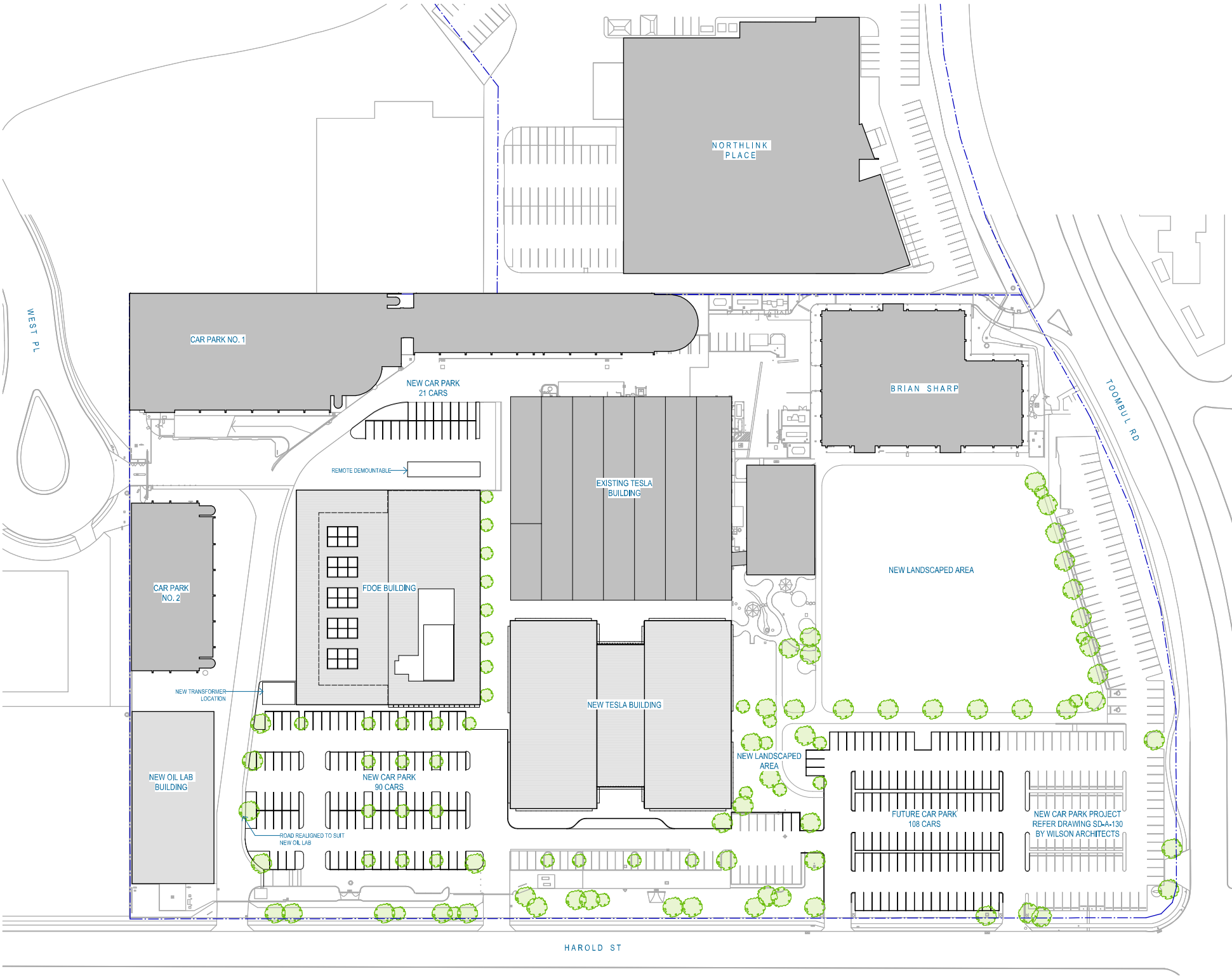
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Revision  
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Issue  
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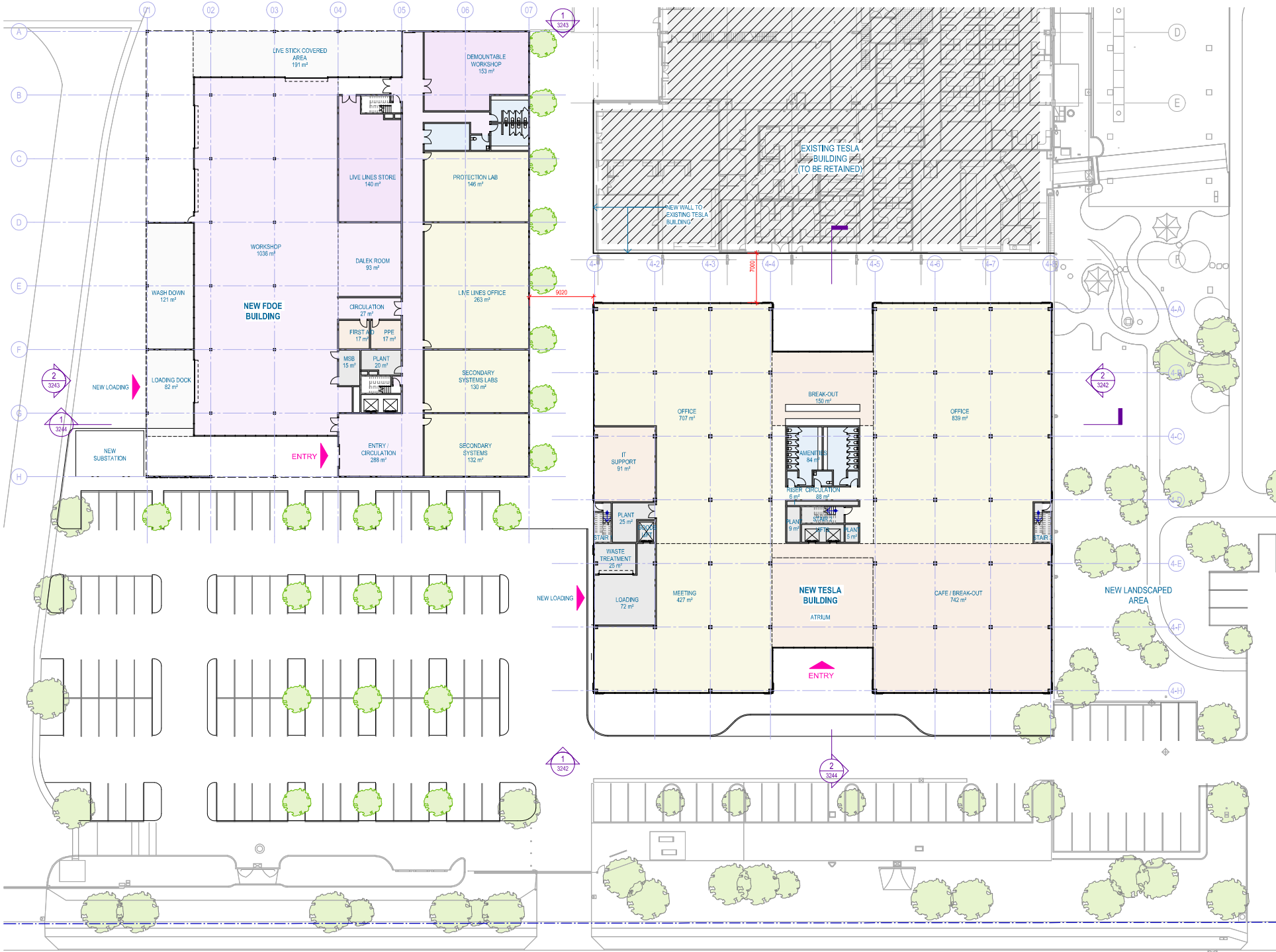
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Issue  
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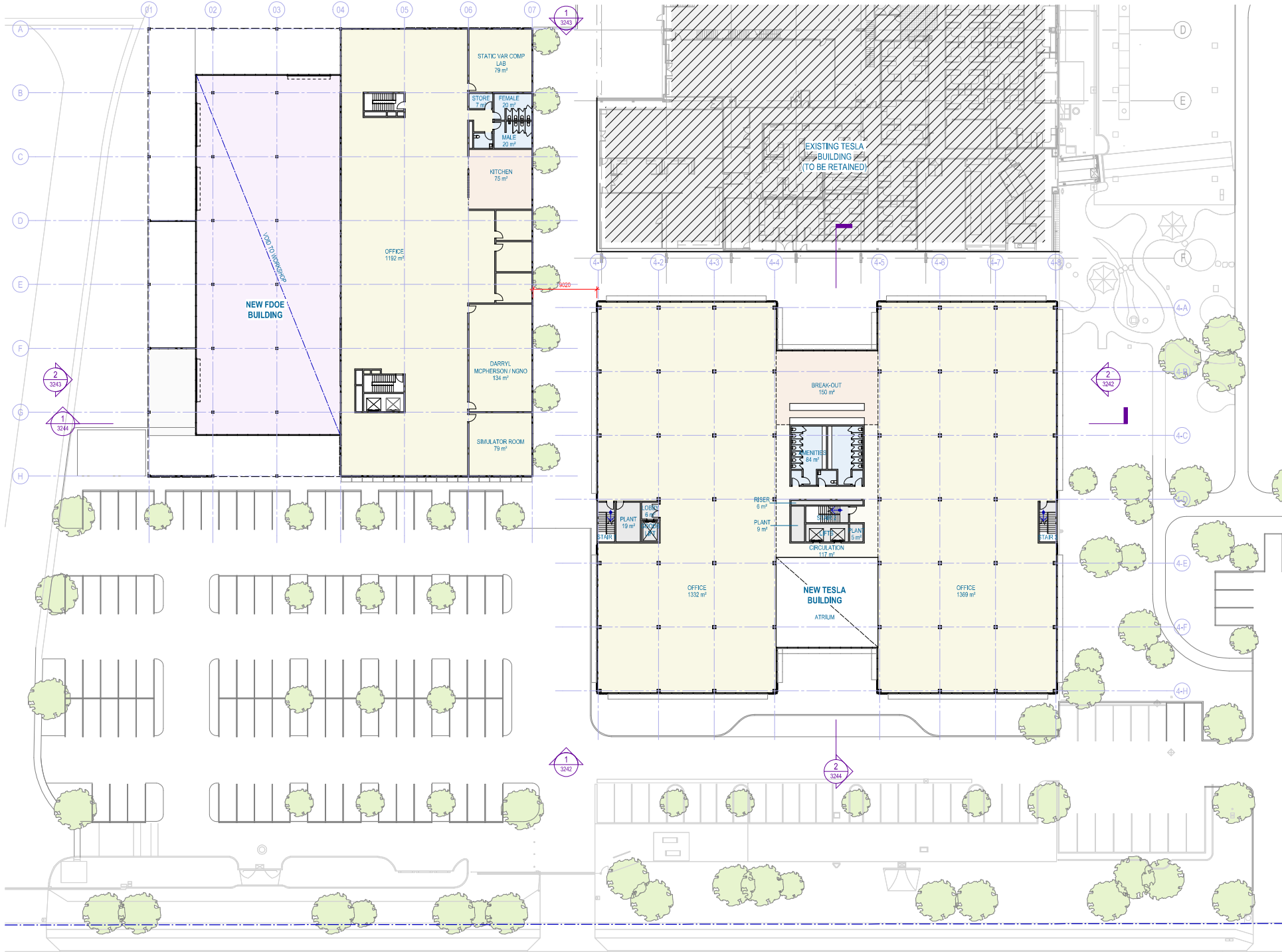
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H A R O L D   S T





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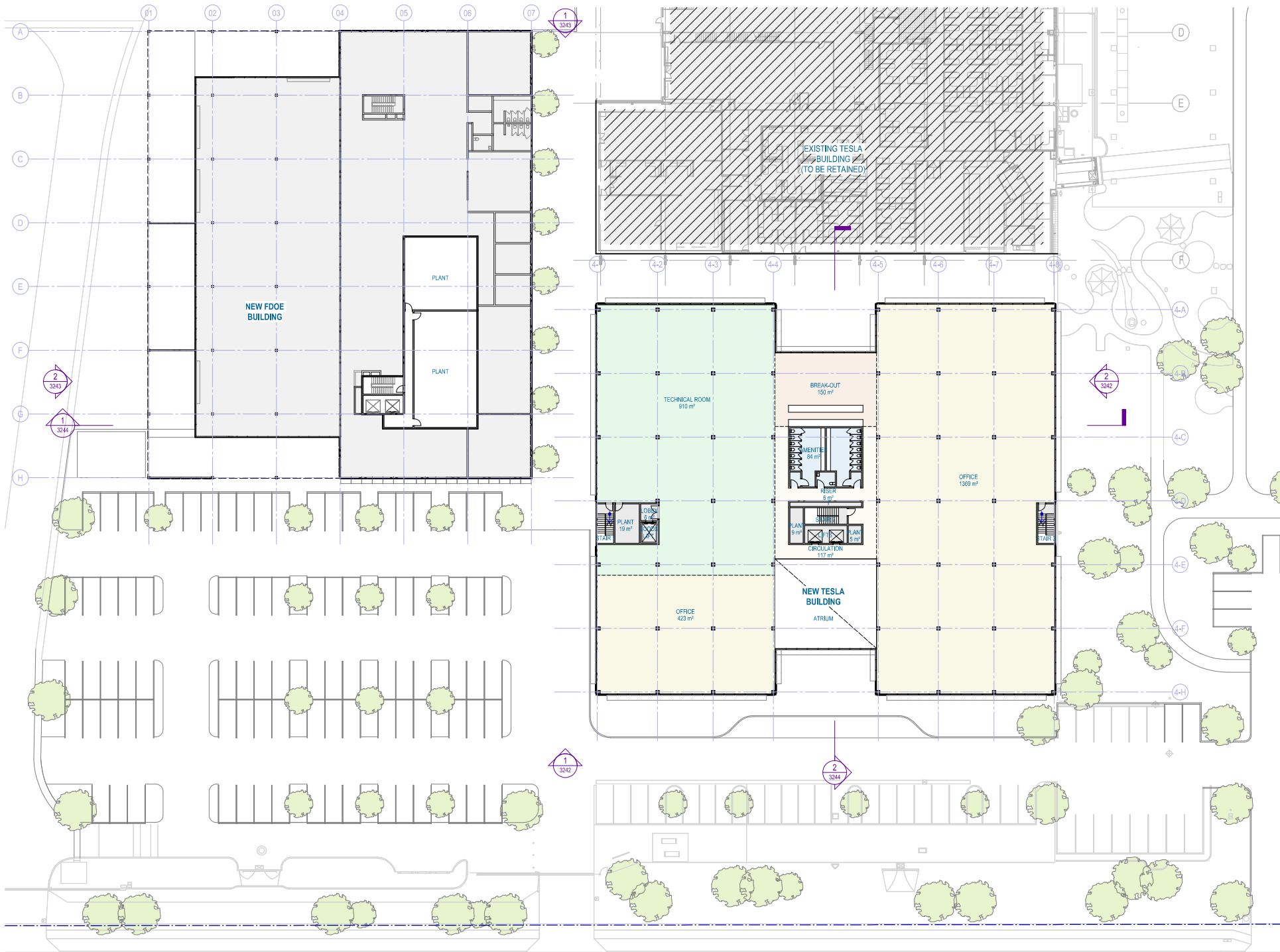
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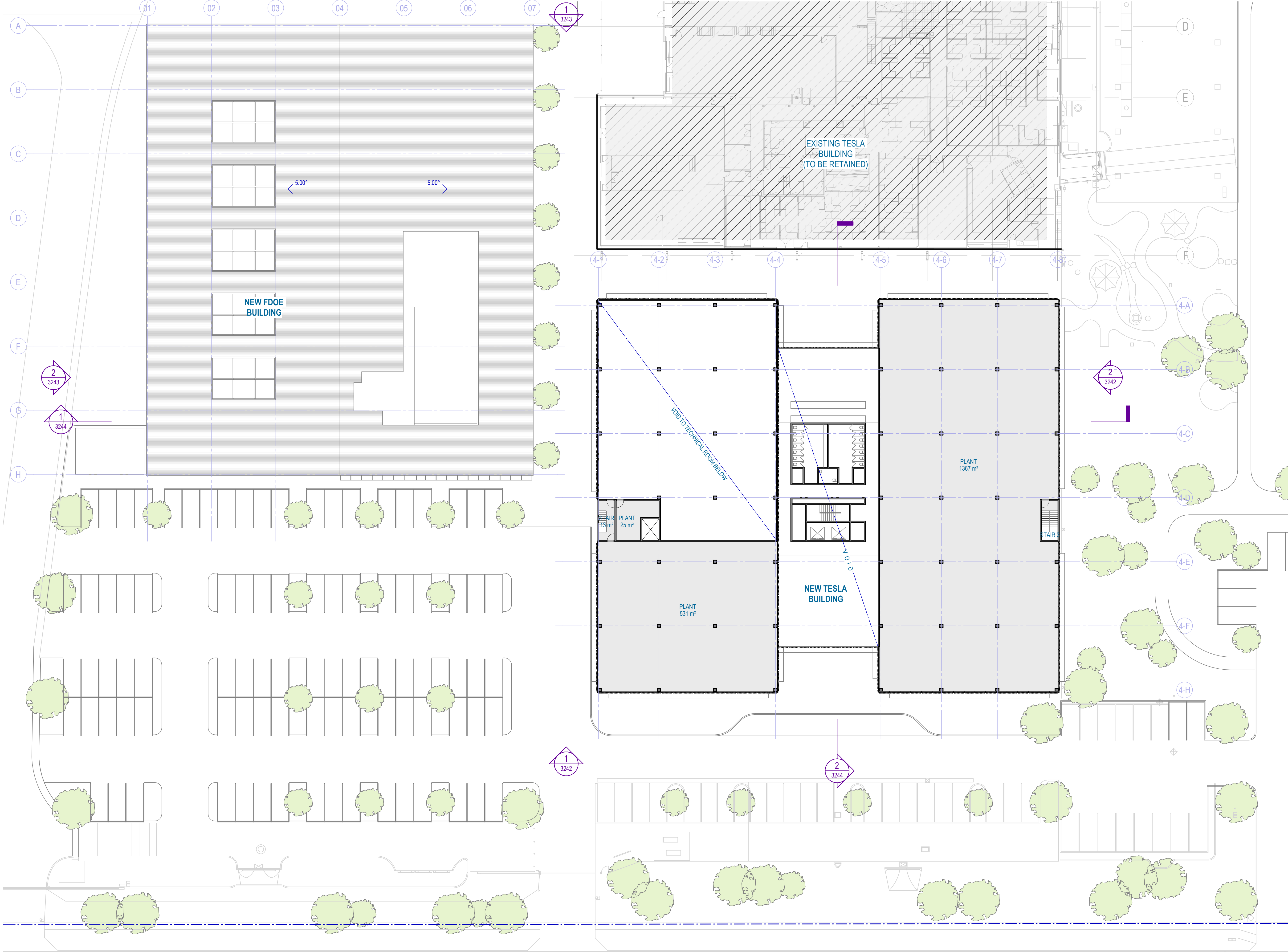
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Revision  
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2	For Information	For Information	19/10/24
3	For Information	For Information	29/11/24
4	For Information	For Information	06/12/24
5	For Information	For Information	05/03/25
6	For Information	For Information	27/03/25
7	For Information	For Information	08/04/25

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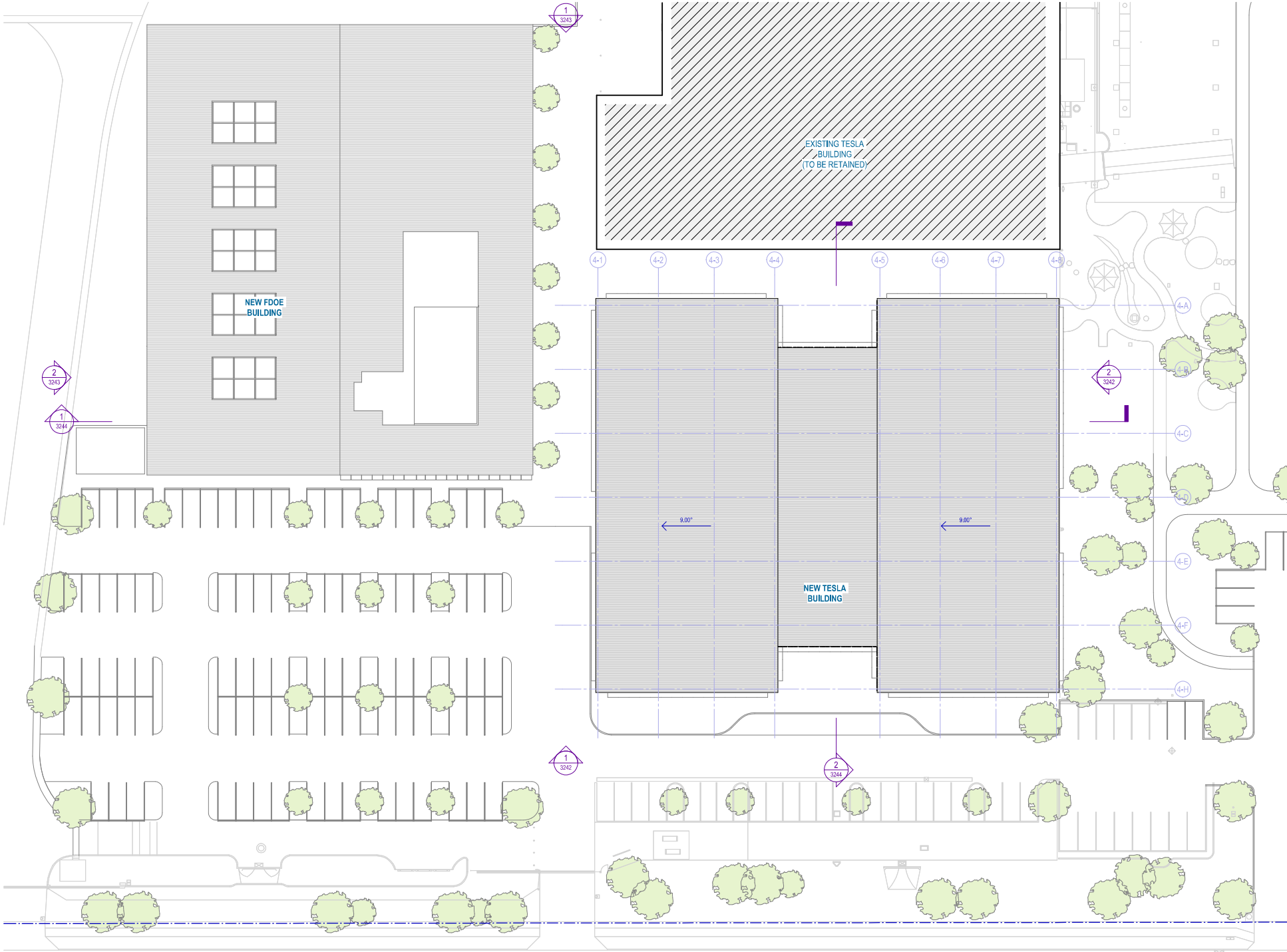
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Date
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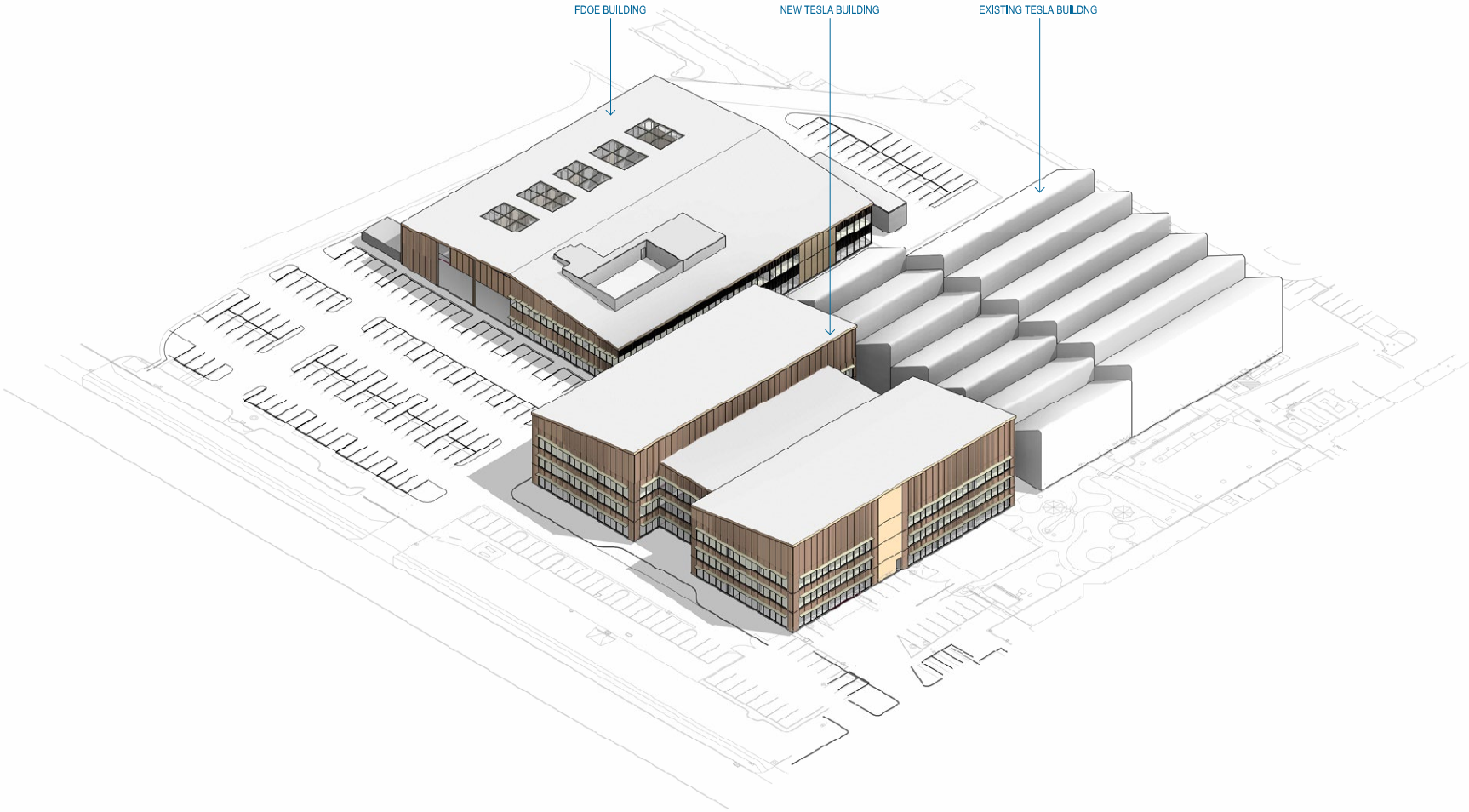
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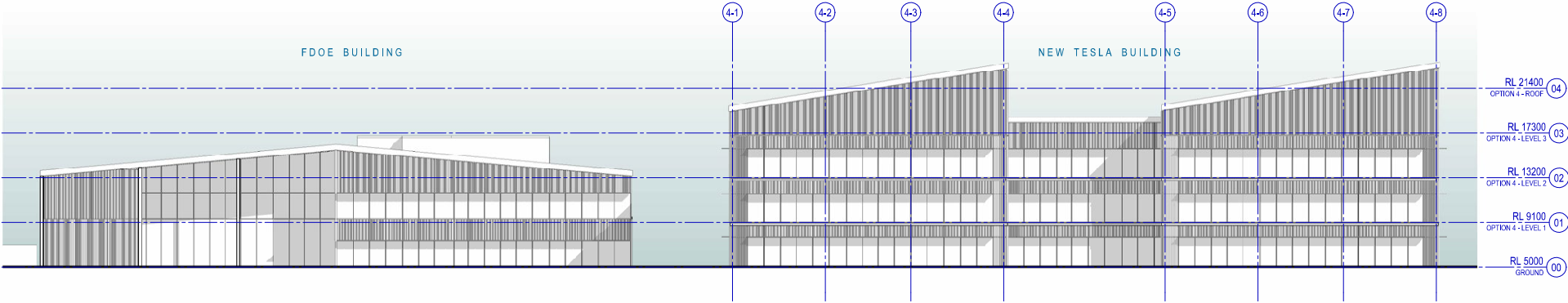
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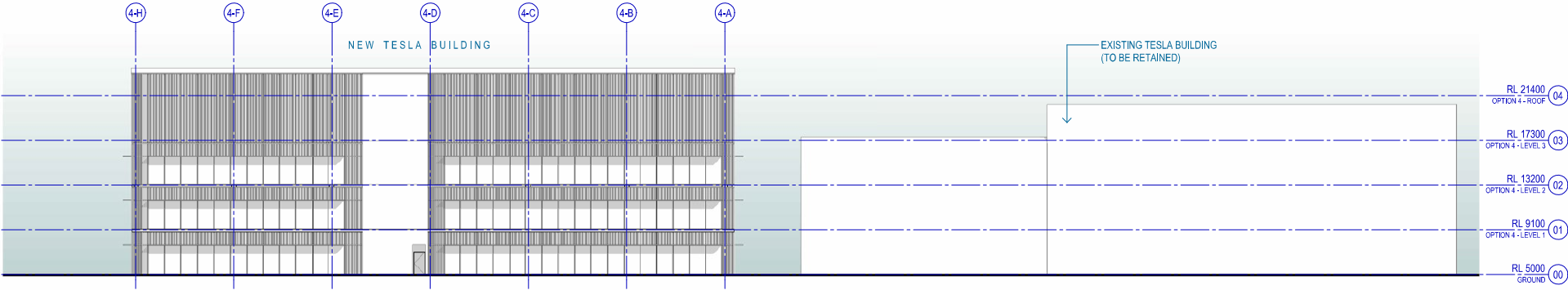
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2 OPTION 4 - WEST ELEVATION  
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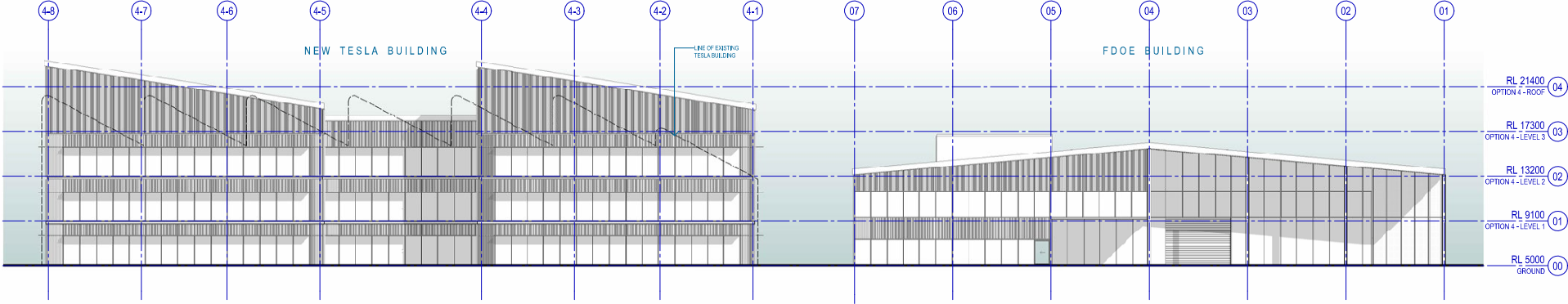
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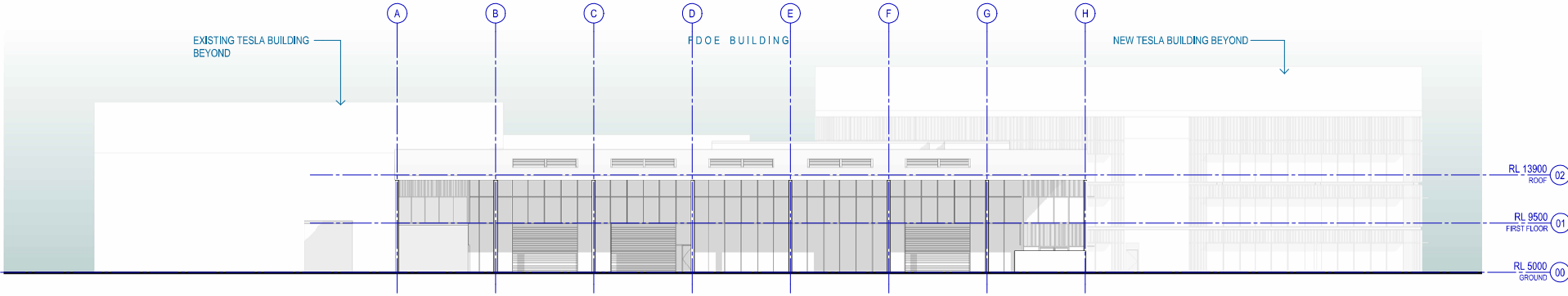
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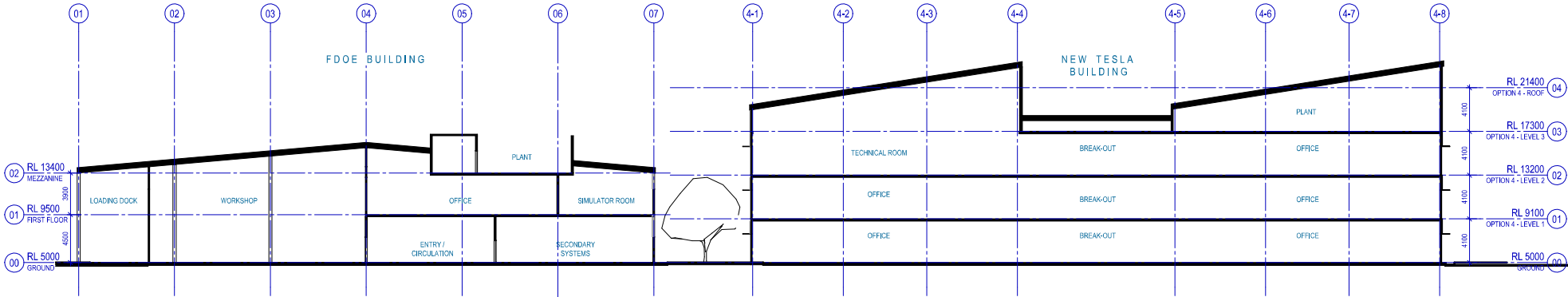
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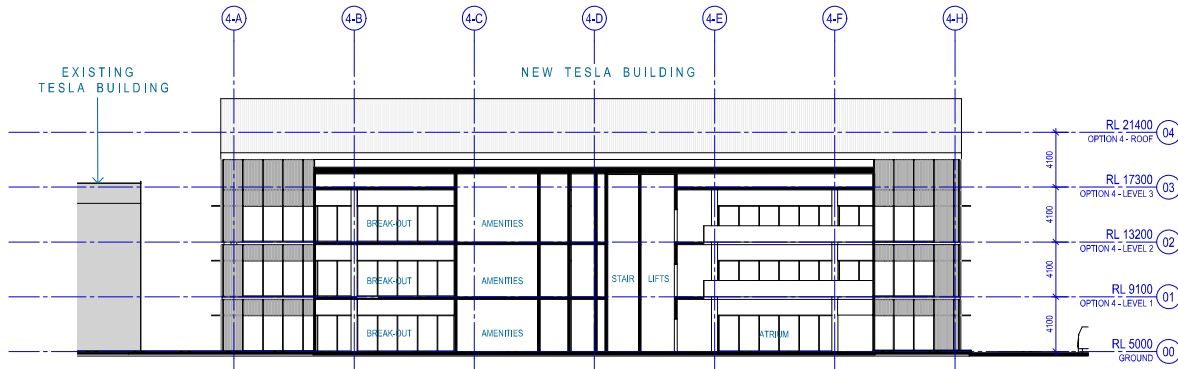
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1 SECTION A  
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2 SECTION B  
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Project  
POWERLINK VIRGINIA - TESLA  
REDEVELOPMENT

Client  
POWERLINK

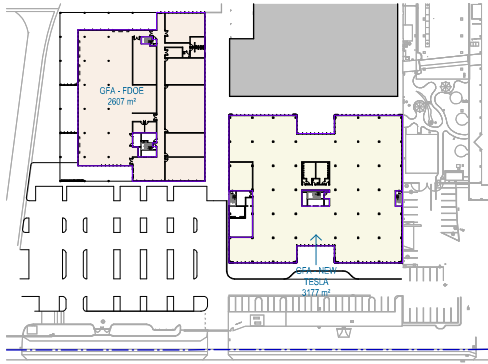
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WOODS BAGOT

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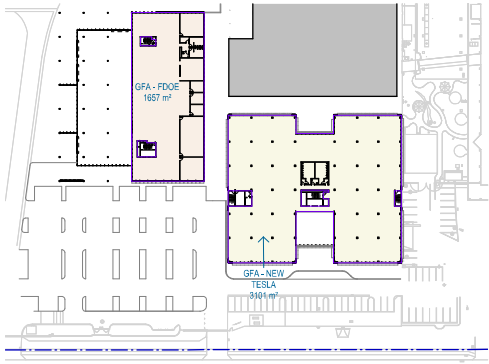
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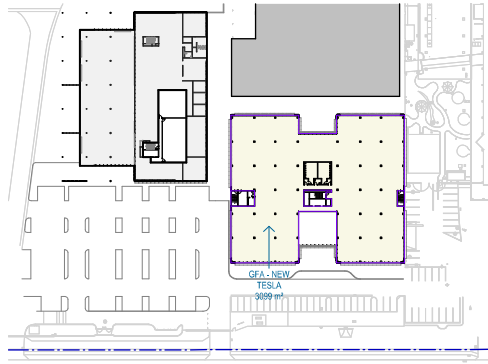




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3 LEVEL 2  
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3	For Information	For Information	06/12/24

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Project  
POWERLINK VIRGINIA - TESLA  
REDEVELOPMENT

Client  
POWERLINK

Builder  
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WOODS BAGOT

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Revision  
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01

Development  
Summary

02

Staging

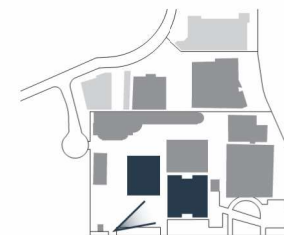
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Drawings

04

Perspectives









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## Australia & New Zealand

### Adelaide

Level 14,  
11 Waymouth Street  
Adelaide SA 5000,  
Australia  
T +61 8 8113 5900

### Auckland

Level 3,  
106–108 Quay Street  
Tāmaki Makaurau  
Auckland 1143,  
New Zealand  
T +64 9 979 9490

### Brisbane

Level 14,  
80 Ann Street,  
Brisbane Qld 4000,  
Australia  
T +61 7 3308 2900

### Melbourne

Mezzanine,  
498 Little Collins Street  
Melbourne, Vic 3000,  
Australia  
T +61 3 8646 6600

### Perth

The Palace,  
108 St Georges Terrace  
Perth WA 6000,  
Australia  
T +61 8 9322 0500

### Sydney

Level 2,  
60 Carrington Street  
Sydney NSW 2000,  
Australia  
T +61 2 9249 2500

## China

### Beijing

10F, Building H,  
Phoenix Place,  
No A5 Shuguangxili,  
Chaoyang Beijing  
China 100028  
T +86 10 6419 8555

### Hong Kong

Level 22, The Centrium  
60 Wyndham Street  
Central Hong Kong  
T +852 2526 6308

### Shanghai

Plaza 336, 9F  
336 Middle Xizang Road  
Huangpu District  
Shanghai, China 200001  
T +86 21 6023 1968

### Shenzhen

Units 07&08, 44/F  
3031 Shennan Middle Road  
Hon Kwok Center  
Futian District  
Shenzhen, China 518017  
T +86 755 3332 5218

## Middle East

### Abu Dhabi

Cloud Spaces, Level 1  
Town Square, Yas Mall,  
Yas Island, Abu Dhabi, UAE  
T +971 2 410 3561

### Dubai

Office 1, Level 1  
The Offices 1, One Central  
Dubai World Trade Centre  
Dubai, UAE  
T +971 4 404 1600

## North America

### Los Angeles

Bradbury Building,  
304 S Broadway,  
Los Angeles, CA 90013  
USA  
T +213 766 0445

### New York

30 Broad Street, 7th Floor,  
New York NY 10004,  
USA  
T +1 646 756 3300

### San Francisco

128 Spear Street,  
Ground Floor,  
San Francisco CA 94105, USA  
T +1 415 277 3000

## South East Asia

### Singapore

38 Bukit Pasoh Road  
Singapore 089852  
T +65 6800 0900

## UK & Europe

### London

75 Riding House Street,  
London W1W 7EJ  
United Kingdom  
T +44 20 7637 6880

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[WWW.WOODSBAGOT.COM](http://WWW.WOODSBAGOT.COM)

## Contacts

### David Lee

david.lee@woodsbagot.com  
T +61 7 3308 2941, M +61 434 503 811

### Ama Adikari

ama.adikari@woodsbagot.com  
T +61 7 3308 2908





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**Brisbane**

584 Milton Road, Cnr Sylvan Road  
Toowong, QLD 4066  
PO Box 1492  
Toowong BC, QLD 4066  
**Phone:** +61 07 3300 8800  
**Email:** [info@adgce.com](mailto:info@adgce.com)

---

**Melbourne**

Suite 309, 838 Collins Street,  
Docklands VIC 3008  
**Phone:** +61 03 9269 6300  
**Email:** [info@adgce.com](mailto:info@adgce.com)

---

**Sunshine Coast**

Level 3, 2 Emporio Place  
Maroochydore, QLD 4558  
PO Box 5014  
Maroochydore BC, QLD 4558  
**Phone:** +61 07 5444 0400  
**Email:** [info@adgce.com](mailto:info@adgce.com)

---

**Darwin**

Tenancy 3, Lvl 1, 5 Edmunds St,  
Darwin NT 0800  
GPO Box 2422  
Darwin, NT 0801  
**Phone:** +61 08 8944 6300  
**Email:** [info@adgce.com](mailto:info@adgce.com)

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**Sydney**

13 / 20 Berry Street,  
North Sydney NSW 4006  
**Phone:** +61 02 8908 5400  
**Email:** [info@adgce.com](mailto:info@adgce.com)

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**Gold Coast**

Suite 201, Level 1, 1 Short Street  
Southport, QLD 4215  
PO Box 208  
Southport, QLD 4215  
**Phone:** +61 07 5552 4700  
**Email:** [info@adgce.com](mailto:info@adgce.com)

---

**Toowoomba**

Tenancy 8, 158 Margaret Street  
Toowoomba QLD 4350, Australia  
**Phone:** +61 07 3300 8800  
**Email:** [info@adgce.com](mailto:info@adgce.com)

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**Perth**

Level 3, Suite 15, 23 Railway Road,  
Subiaco, WA 6008  
PO Box 443  
Subiaco, WA 6904  
**Phone:** +61 08 9217 0900  
**Email:** [info@adgce.com](mailto:info@adgce.com)

