ARUP

SSD

43 - 61 Turner Road Data Centre

Infrastructure and Service Report

Reference: Appendix U

Revision 1 | 30 September 2024

Job number **299816-00**

Arup Pty Ltd | ABN 18 000 966 165

Arup Pty Ltd
Level 5
151 Clarence Street
Sydney
NSW 2000
Australia
arup.com

Executive Summary

The Proposal involves the construction of a data centre comprising of data halls, mechanical and electrical equipment rooms and ancillary equipment within the subject site legally defined as 43-61 Turner Road, Campbelltown, NSW.

The subject site is currently vacant, comprising primarily areas of grassed landscaping and several farm dams at low points. Areas surrounding the subject site are predominantly commercial/industrial land. The site generally slopes downward from the northwest corner to the southeast corner.

No publicly owned services are contained within the subject site at present with private services serving previously demolished and redundant residential dwellings. There is therefore no construction impact on existing publicly or privately owned services within the subject site.

Public services are contained within the road corridors of Turner Road (to the south), White Cliffs Avenue (to the west) and Central Hills Drive (to the northwest of the site). Utilities within these road corridors are not directly impacted by the proposed construction activities.

The proposed data centre is a mission critical facility and therefore requires redundancy in its utility servicing. This includes back-up electrical generation, water storage tanks and separated telecommunication conduit routes. Construction and fit-out of the data centre will be phased to suit marked demand.

A 132kV/22kV switching station is proposed to provide power supply to the data centre. This comprises:

- Endeavour Energy owned substation and control room.
- Proponent owned 132/22kV transformers.
- Proponent owned substation, control room and MV switchgear.

Back-up electrical supply is provided in the form of 27No. low voltage LV generators. Each generator will be contained within a prefabricated generator enclosure with noise attenuation.

The connection offer received from Endeavour Energy is for supply to be looped into the 132kV Feeder between Nepean Transmission Substation and North Leppington Zone Substation. Separate supply points minimise the time that back-up generators are operational.

To supplement the water demands associated with mechanical cooling equipment, both harvested rainwater re-use and mains water supplies are proposed. Above ground industrial process water buffer tanks will be used to store water, minimising peak water demand. Rainwater harvesting tanks will be provided to supplement mains supply. Water and fire main supply points are proposed to be supplied from the existing DN 150mm water main within Turner Road.

Sewer flows will discharge to a sewer main located below the new proposed Eastern Access Road. This existing Sydney Water sewer main ultimately connects into Sydney Water DN 225mm sewer located in Turner Road, adjacent to the southeast corner of the subject site. An independent Li-ion fire water containment tank is proposed, as per Fire NSW requirements and to be detailed further within the FSS.

A feasibility Section 73 application has been submitted to Sydney Water via a Water Servicing Co-ordinator and discussions are ongoing with respect to development needs.

Four (4) entry points for telecommunication supplies are proposed for the site, each separated by a minimum of 8m to ensure path diversity.

Glossary and Abbreviations

Abbreviations	
ASP3	Accredited Service Provide Level 3
Colo	A colocation facility, or colo, is a data centre facility in which a business can operate or rent space for servers and other computing hardware.
kL	Kilolitre (1000l – equivalent to $1m^3$ volume)
MVA	Mega Volt Amp
MW	Megawatts
POEO	Protection of the Environment Operations Act
Proposal (the)	The purpose of the proposal is
SEARs	Secretary's Environmental Assessment Requirements
UGOH	Underground to Overhead
WSC	Water Services Co-ordinator
WWTP	Wastewater Treatment Plant

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1. Introduction

1.1 Aims and Objectives

1.1.1 Proposal Overview

The Proposal involves the construction of a data centre comprising of data halls, mechanical and electrical equipment rooms, offices, substation, security gatehouse, other ancillary support spaces, and external/rooftop, mechanical and electrical equipment.

Historically, the Site has been used for rural residential development. Based on historic mapping the Site has been progressively developed since the 1940s. However, the Site is currently unoccupied following its acquisition by the applicant in 2023. Currently, the Site is vacant, with farm dams and a former residential building remaining present within the extent of the Site. The area surrounding the Site is predominantly commercial/industrial land. Immediately to the east is comprised of a riparian corridor, and farther east comprises of vacant land and residential properties. The Site is zoned IN1 General Industrial under State Environmental Planning Policy (Precincts – Western Parkland City) 2021 (WPC SEPP).

The Site generally slopes downward from the northwest corner to the southeast corner. Ground elevations vary with the Site at its highest in the northwest corner at about 104 metres Australian Height Datum (mAHD). The Site is at its lowest in the southwest corner at about 91 mAHD.

A summary of the proposal's key features includes:

- Construction of a two storey data centre comprising:
    - 2 data halls including fitout of IT Racks and equipment, associated cabling and supporting services
    - 27 backup generators
    - With an IT capacity of about 53 megawatts (MW).
- Construction of a guard house
- Infrastructure comprising civil, stormwater and drainage works and utilities servicing and connections.
- Diesel storage capacity of approximately 650 kilo litres (kL)
- High voltage substation incorporating 132/22 kilovolt (kV) transformers and associated switching and control buildings.
- 68 standard car parking spaces (of which five would have EV charging), 2 car parking spaces compliant with the *Disability Discrimination Act 1992*, 10 shared bicycle parking spaces.
- Hours of operation being on a 24 hours per day, 7 days per week basis.

A separate development application will be lodged with Camden Council for the site preparation and early works including construction of a new eastern access road, turning head at White Cliffs Avenue and connection of Central Hills Drive through the northwestern portion of the site (refer to Figure 2).

It is expected to take approximately 18 months to build the data centre with construction of the building commencing in Q1 2026 and be completed in Q2 2027 (subject to planning approval and weather conditions). It would take an additional twelve months post-construction to fully fit out the data centre. The Proposal is expected to be fully operational in Q2 2028.

Figure 1: Proposal Location

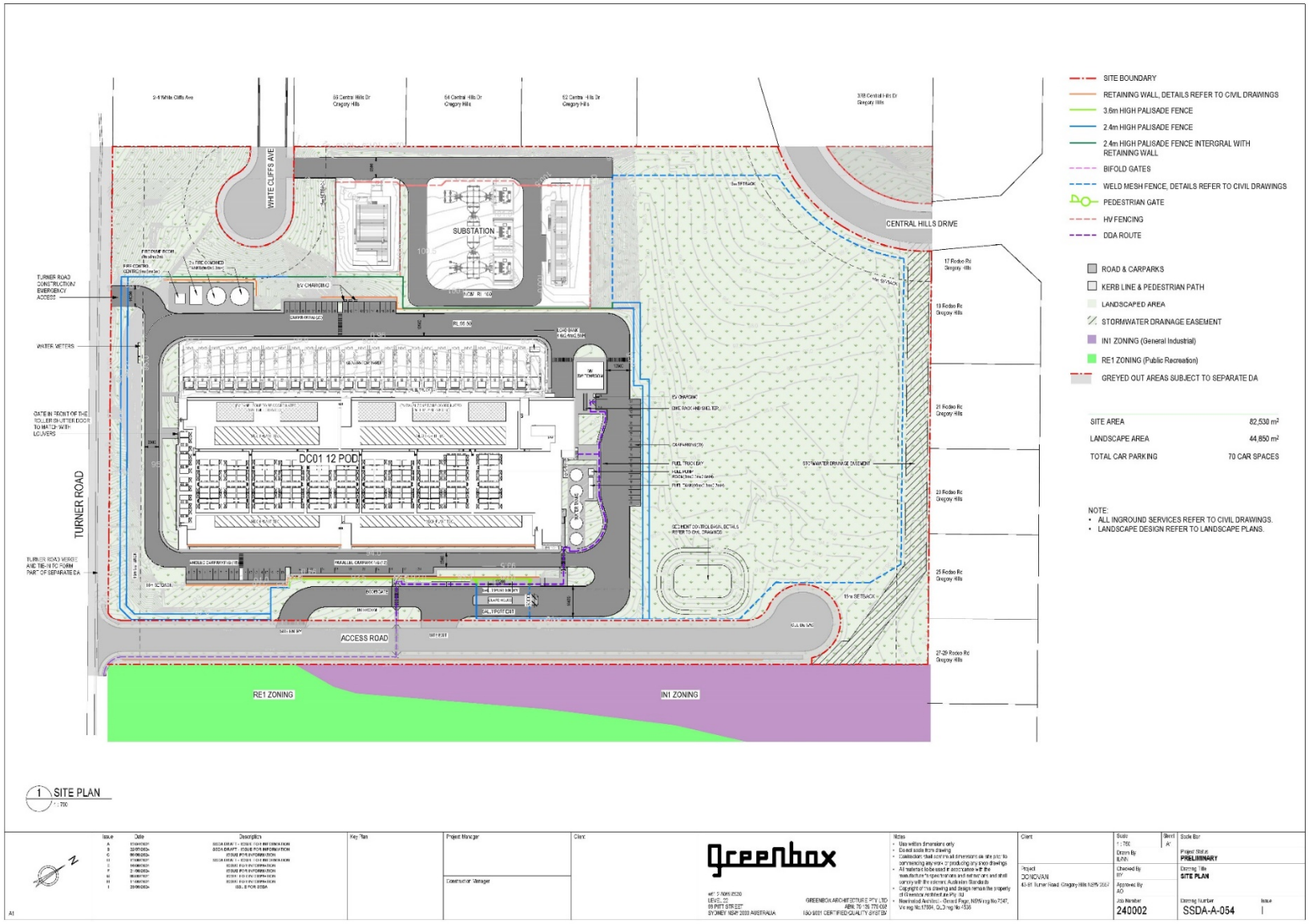


Figure 2: Preliminary Site Layout

1.1.2 Permissibility and Approval Pathway

Division 4.7 of Part 4 of the EP&A Act covers State significant development (SSD). The Proposal is identified as SSD by virtue of meeting thresholds defined under Schedule 1, Clause 25 of the State Environmental Planning Policy (Planning Systems) 2021. Specifically, the Proposal is appropriately classified as a data storage development with a capacity of more than 15 MW. Given the Proposal has a capacity that is greater than 15 MW (estimated at 53 MW), the Proposal classifies as State Significant Development (SSD) pursuant to the provisions outlined in Schedule 1 of the State Environmental Planning Policy (Planning Systems) 2021.

The proposed data centre is permissible with consent within land zoned as 'General Industrial (IN1)' pursuant to the provisions outlined in Section 2.31 of the State Environmental Planning Policy (Planning Systems) 2021.

1.1.3 SEARs and DCP Requirements

Table 1 below identifies the SEARs and DCP requirements which are relevant to this technical assessment.

Table 1: SEARs and DCP requirements for Infrastructure Delivery, Management and Staging Plan

SEARs	Addressed in Report
Infrastructure Requirements and Utilities	
Assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site.	Sections 6 and 7
Identify any infrastructure required on-site and off-site to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained.	Sections 5.1 to 5.5
Provide an infrastructure delivery and staging plan, including a description of how infrastructure requirements would be co-ordinated, funded and delivered to facilitate the development.	Section 5
Agency Comments	
EPA – Water An assessment of the premises design, operation, and maintenance so that there is no discharge of cooling water to stormwater.	Sections 0 & 5.3
EPA – Chemicals All chemicals, fuels and oils should be kept in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards (including AS 1940:2017 The storage and handling of flammable and combustible liquids), and EPA's Storing and Handling Liquids: Environmental Protection – Participant's Manual)	Section 5.1

2. Policy and Planning Context

This Section presents relevant regulation, legislation and policy governing management of public utilities as it relates to the proposal.

2.1 Legislative Context

2.1.1 Commonwealth Legislation

Relevant Commonwealth legislative requirements to protect public utilities are noted below:

- Telecommunications Act 1997
- Security of Critical Infrastructure Act 2018

2.1.2 New South Wales Legislation

Relevant NSW legislative requirements to protect public utilities are noted below:

- Protection of the Environment Operations Act 1997
- State Environmental Planning Policy (Infrastructure) 2007
- Electricity Supply Act 1995
- Gas Supply Act 1996
- Water Management Act 2000

2.1.3 Guidelines

Relevant guidelines are outlined below:

- Fire safety guideline, Access for fire brigade vehicles and firefighters, version 05.01, November 2020, Fire and Rescue NSW (FRNSW).
- Guidelines for Development Adjacent to the Upper Canal and Warragamba Pipelines, version 3, February 2020, WaterNSW.
- AS 5601 Gas installations
- AS/NZS 4645 Gas distribution networks
- Jemena Network Operator Rules
- Jemena Guidelines – Construction activities near and over Jemena gas network assets
- Building over and adjacent to pipe assets, 2015, Sydney Water
- WSA 02-2002-2.2 Sewerage Code of Australia (Sydney Water Edition)
- WSA 03-2011-3.1 Water Supply Code of Australia (Sydney Water Edition)
- Telstra's lead-in trenching requirements

3. Methodology

This Section outlines the methodology used to define the baseline and undertake the environmental assessment of potential impacts of the proposal on public utilities, including definition of the study area used as the basis of the assessment.

3.1 Study Area

The assessment area will be limited to the subject site (the site boundary) and existing utilities along the boundaries of the subject site.

The assessment also considers the detailed design documentation for the main works and the electrical substation design.

3.2 Method of Assessment

To address the project SEARs and address points raised by public utility authorities, the following methodology was developed:

- Collate and review available data on existing public utilities, including conducting a Before You Dig Australia (BYDA) search.
- Assess proposed site layout against any existing public utility infrastructure within the proposal boundary and identify any necessary protection or diversion works required.
- Undertake demand assessment for each core utility serving the data centre.
- Develop a site plan considering key, on-site utility infrastructure required to serve the data centre.
- Consult with all relevant service providers to determine necessary off-site utility upgrades.
- Consult with estate developer in developing integrated, estate utility networks.
- Define preferred point of connection or servicing strategy for the development for each service.
- Assess storage and discharge of liquids and chemicals required to support operation of the data centre. Provide management measures where appropriate.

4. Existing Environment

This section describes the existing utilities infrastructure network at the proposed development site. A Before You Dig Assessment (BYDA) was completed with available record plans contained within Appendix A. Existing utility provisions based on the obtained BYDA information are described in Sections 4.1 to 4.6.

Table 2 provides a list of utility providers which have been identified to have assets located within the broader proximity to the subject site.

Table 2: Schedule of Utility Providers with Assets in the Near Proximity of the Subject Site

Utility Provider	Utility Type
Endeavour Energy	Electricity
Jemena	Gas
NBN Co	Communications
Optus	Communications
Opticomm	Communications
Sydney Water	Water supply / Sewerage / Stormwater
Telstra	Communications
TPG	Communications
Vocus	Communications

It is noted that several of the drawings provided by utility authorities reference a road layout, with associated services below, from a previously developed and approved Development Application. This was for an estate road network serving an industrial sub-division which is no longer being adopted.

4.1 Electrical Services

Within the subject site boundary, there are no existing electrical services present other than domestic connections to existing dwellings to be demolished under a separate early works DA.

Existing underground electrical ducts run along Turner Road which are to replace the pre-existing overhead wiring prior to the development of the respective sites, based on BYDA information from Endeavour Energy.

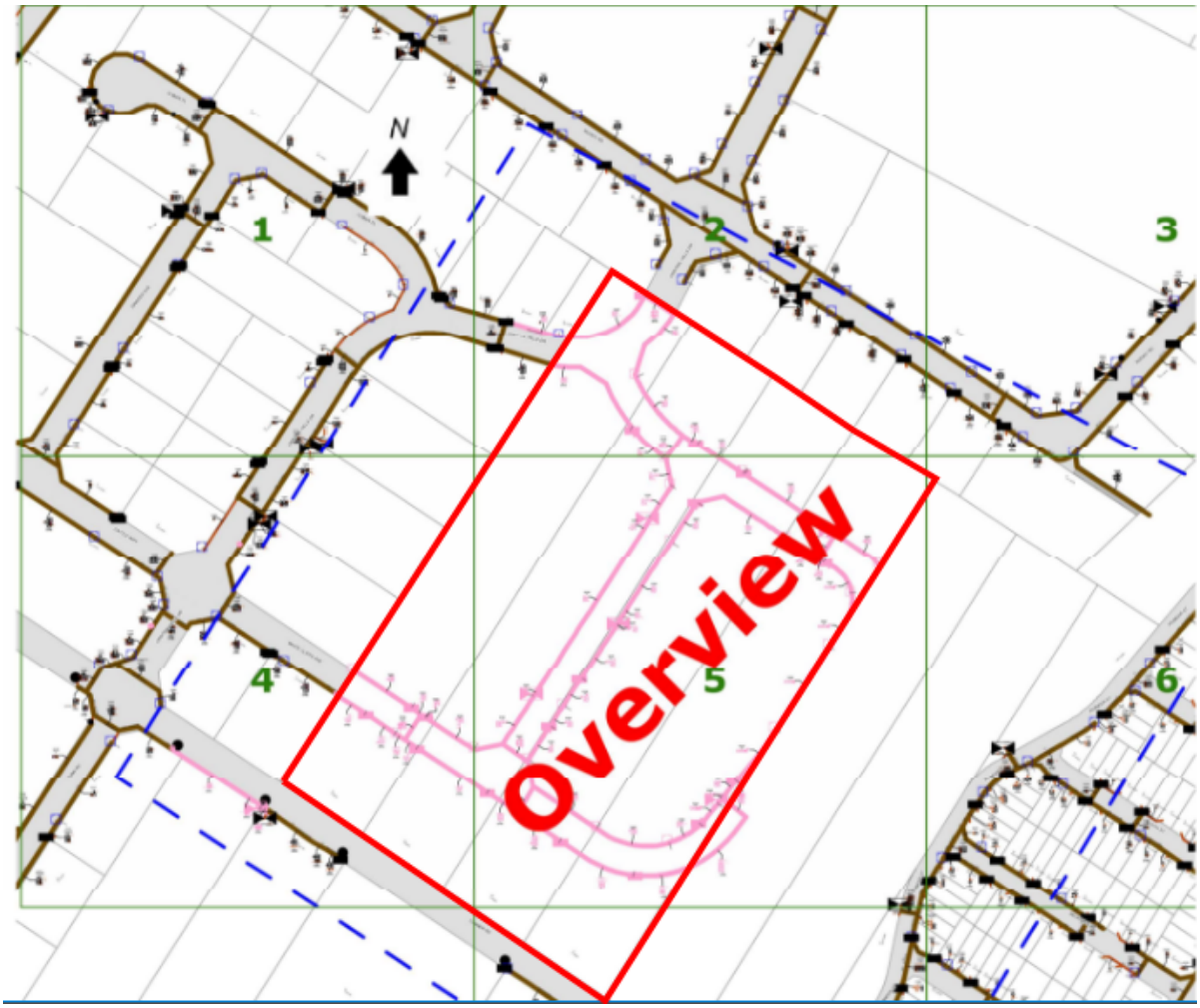


Figure 3 – Existing Electrical Infrastructure

Services shown in pink on current Endeavour Energy plans, relating to the previously approved DA, have not been constructed and are not present on site.

Photograph 1: View of Existing Overhead Electrical Wiring on Turner Road (in verge of Turner Road – subject site to left of image)

4.2 Water Services

There are no existing Sydney Water owned water services within the subject site boundary.

As shown in Figure 4, an existing 150mm uPVC Sydney Water main runs along the southern verge of Turner Road, south of the site. Sydney Water owned assets are also present under footpaths within Central Hills Drive and White Cliffs Avenue.

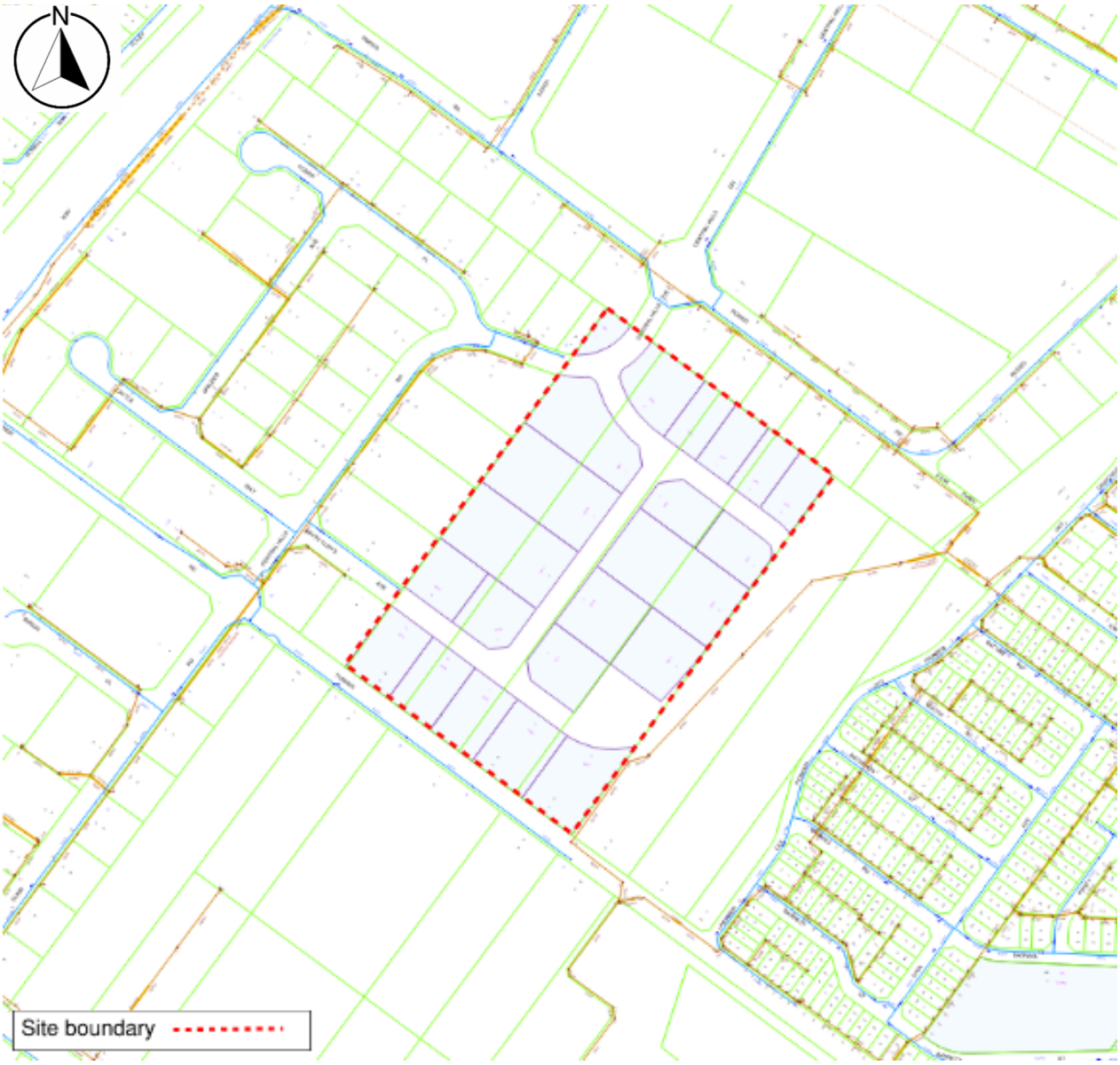


Figure 4: Sydney Water BYDA Plan (Note: Sydney Water Plan references site layout accepted as part of previous Development Application)

4.3 Sewer Services

There are no existing sewerage services within / encumbering the subject site boundary. As shown in Figure 4, the nearest sewerage service is a 225mm PVC Sydney Water line located along the eastern boundary of the site picking up the catchment zones to the north of the site. This sewer extends the length of the site connecting to a sewer manhole at the intersection of Turner Road, approximately 5m from the southeast corner of the Lot Boundary.

4.4 Communications Services

As shown in Figure 5, there are four overhead Telstra cables within the subject site boundary. These overhead cables connect to joint use poles and a 16mm conduit system running along the northern extents of Turner Road. These services serve residential dwellings that have either already been demolished or are inhabited, awaiting demolition.

According to NBN BYDA data, the above identified Telstra conduit network is shared with NBN services. New NBN services are also proposed within the site boundary in the form of 100mm PVC conduits to be connected to the existing network further north of the site.

Vocus services run adjacent to the Telstra conduits on the northern side of Turner Road, whilst Opticomm conduits and pits run along both the northern and southern extents of Turner Road. There are no TPG or Optus assets in the vicinity of the site.

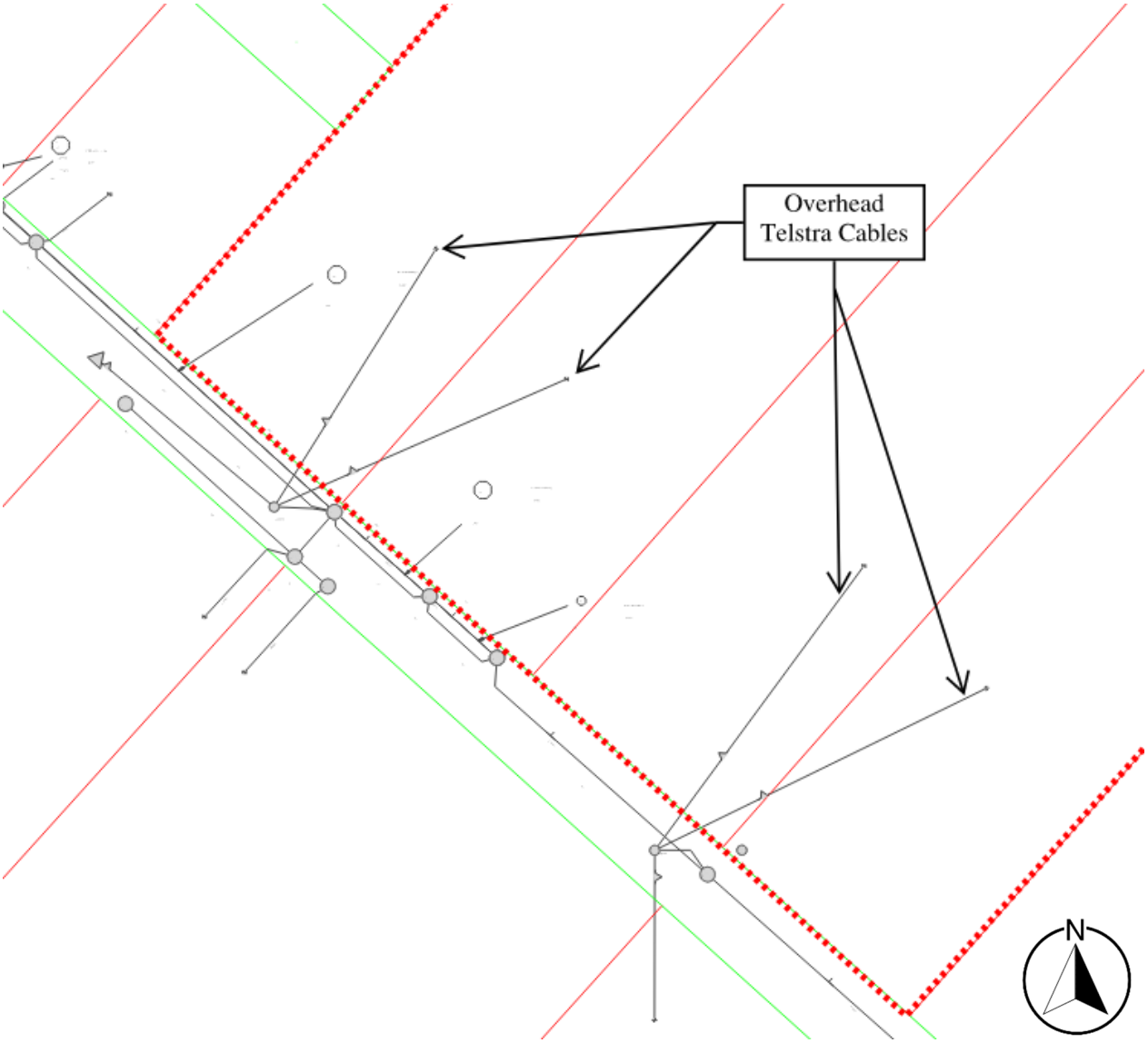


Figure 5: Telstra BYDA Plan

4.5 Gas Services

There are no existing gas services within the subject site boundary. Based on the BYDA information received from Jemena Gas (see Figure 6), there is a 110mm PE 210kPa gas main which runs under the verge of Turner Road, on the opposite side of the road to the subject site's western boundary. 63mm PE 210kPa gas mains are present below footways within Central Hills Drive, adjacent to the northwest corner of the subject site. A 63mm PE 210kPa gas main also runs below the footway on the southern side of White Cliffs Avenue to the west of the subject site.

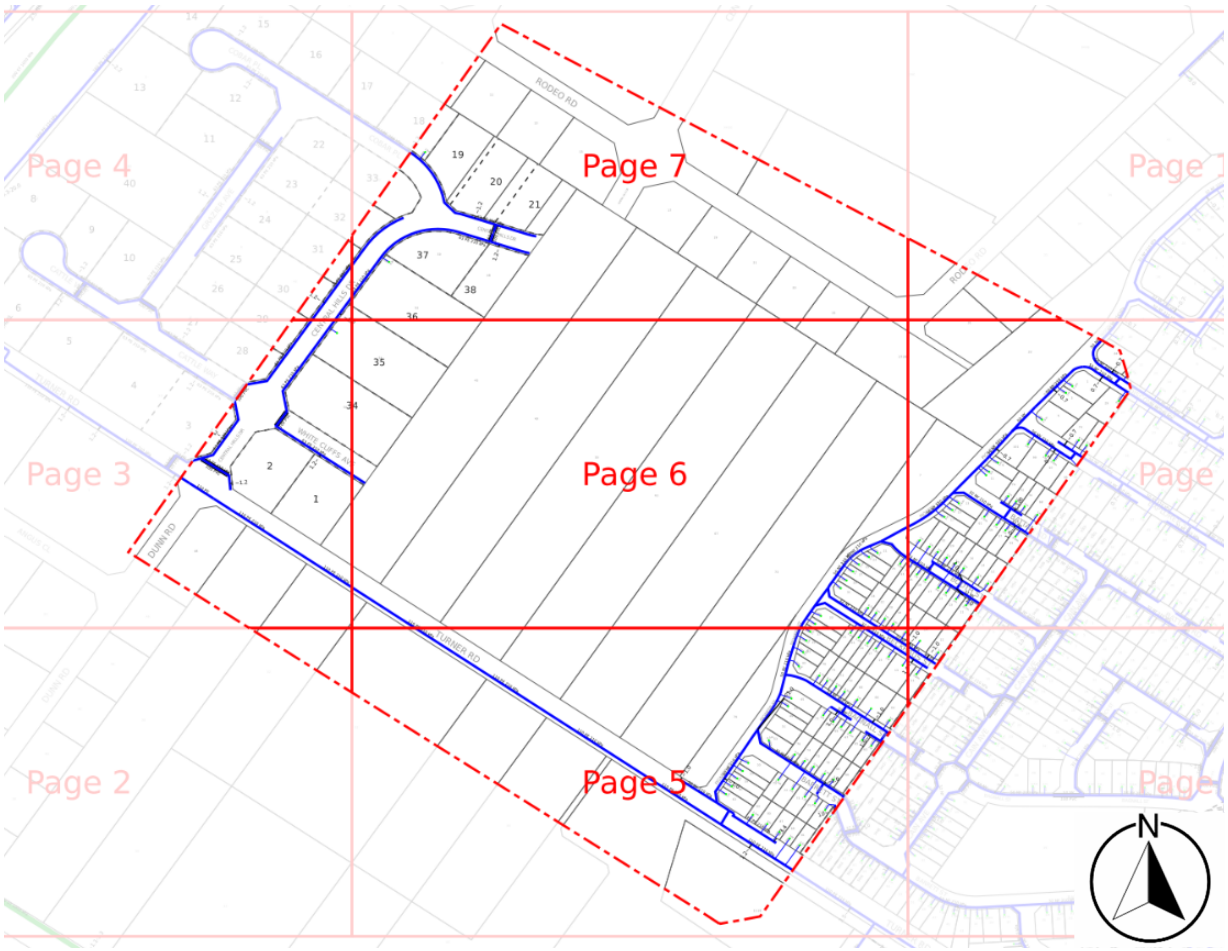


Figure 6: Jemena BYDA Plan

4.6 Existing Stormwater Assets

An information request was submitted to Camden Council to acquire available information on Council owned stormwater assets within the wider precinct. A review of both information received from Council and the topographical survey identified that there are no existing piped stormwater assets within the site boundary.

There are however several surface features including swales and farm dams/sediment basins which drain overland flows within the site. Further details on these items can be found within the Stormwater and Flooding report.

No continuous stormwater assets are present within the section of Turner Road that runs parallel with the Southern boundary of the site. A grated inlet pit, shown on Figure 7, exists immediately adjacent to the southern-most corner of the Lot Boundary. This is understood to serve Lot 1 DP 1270252. A DN600 stormwater pipe crosses Turner Road and conveys flows via the easement through DP 1241792 into the trunk stormwater system under Anderson Road.

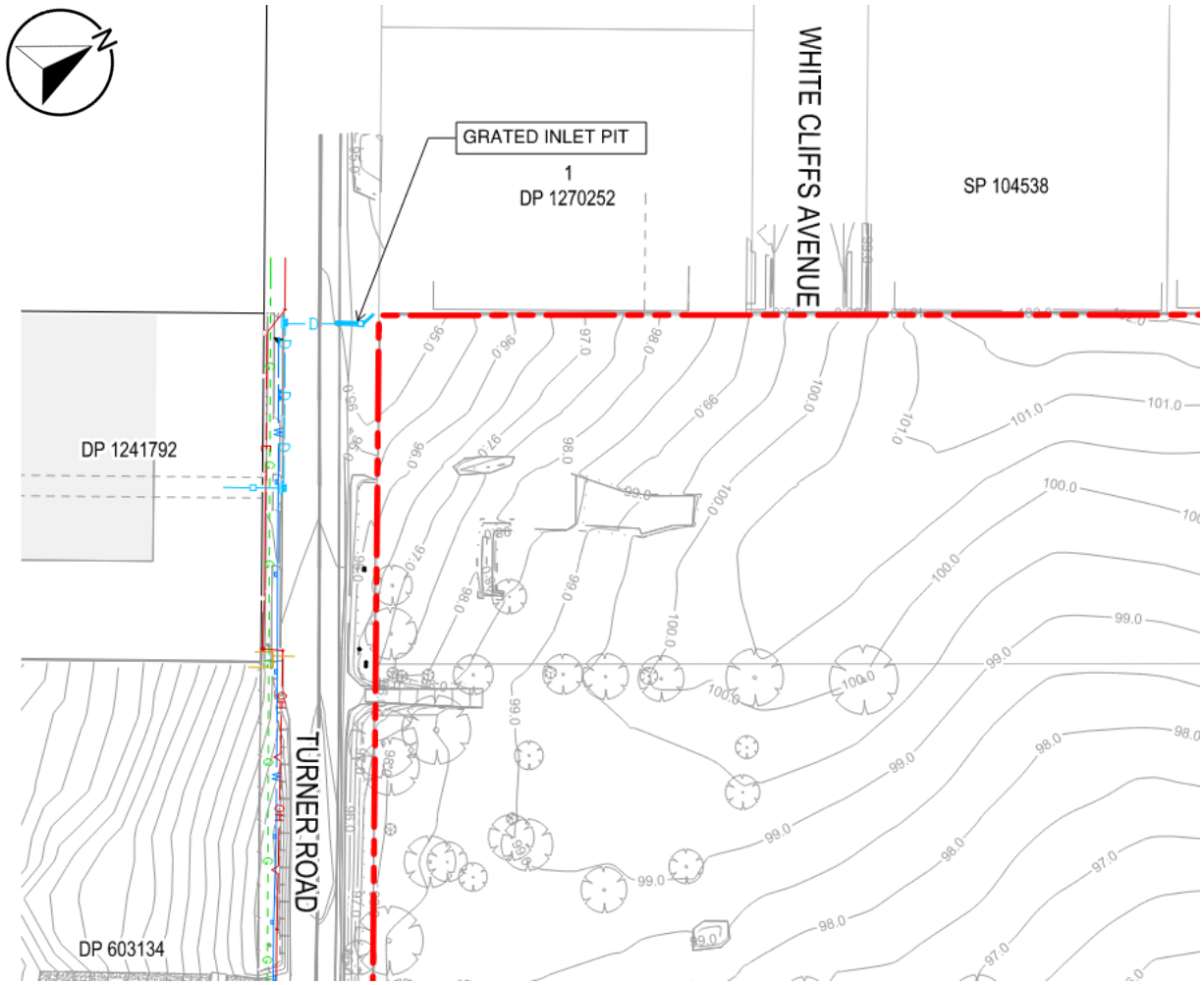


Figure 7: Existing Private Stormwater Assets Near the Subject Site.

According to the topographical survey (see extract in Figure 8) the nearest public stormwater assets are located along the western and northern boundaries of the subject site, specifically at the road connections to Central Hills Drive and White Cliffs Avenue. There is an existing council-owned 375mm stormwater pipe and standard kerb inlet pit along White Cliffs Avenue, approximately 100m north of the south-western corner of the site. Similarly, on the north-western corner of the site there are existing council-owned 375mm pipes and kerb inlet pits along both sections of Central Hills Drive.

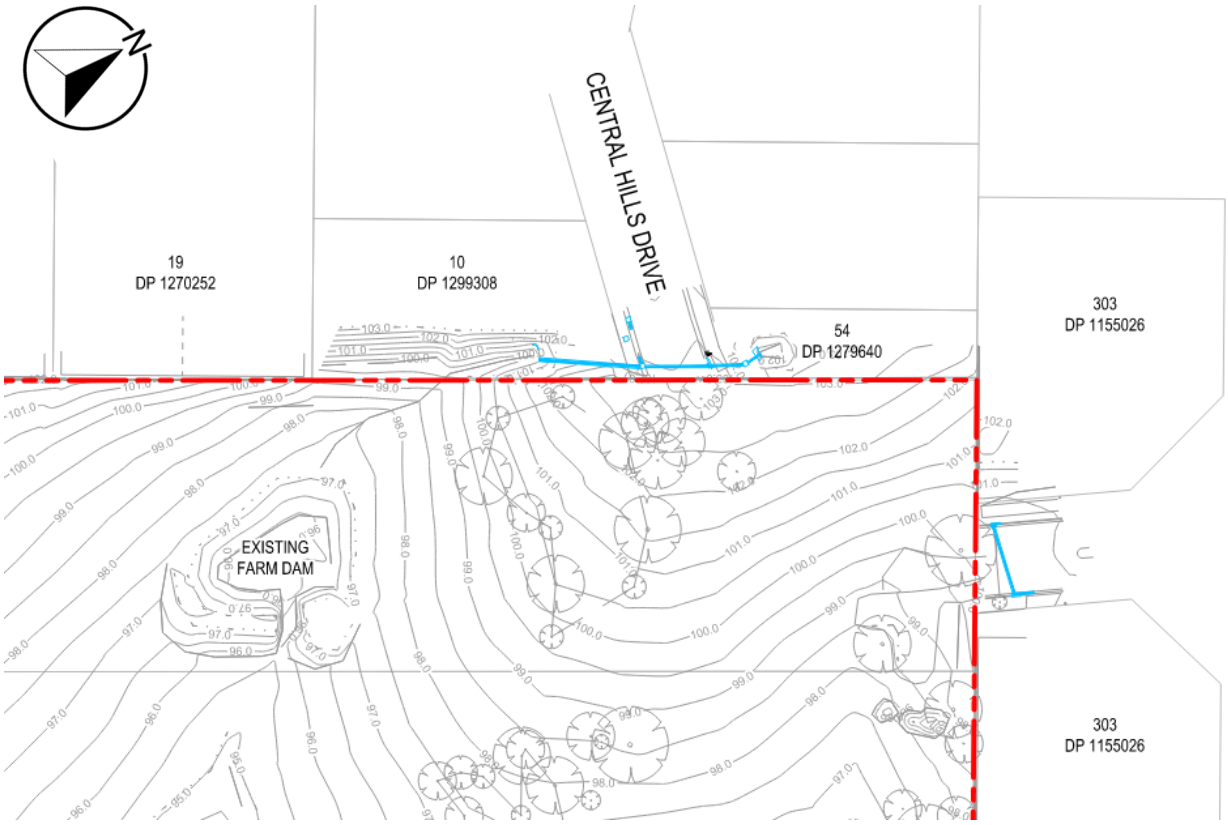


Figure 8: Existing Stormwater Infrastructure within Council Owned Roads

4.7 Traffic Signals

There are no existing traffic signals or related infrastructure within or adjacent to the subject site boundary.

5. Servicing Strategies

This Section describes the service demands and details the proposed servicing strategies for the development.

Data centres are required to maintain a controlled temperature environment to safely operate the active IT equipment contained within the data halls. The outcome of this is a calculated electrical and water peak demand which varies throughout the year depending on the ambient temperature and IT load. A large number of telecommunication conduits are also required to support the data centre.

Key on-site utility infrastructure required to serve the data centre are shown on Figure 9 (with full size version in Appendix B) and include:

- HV substation & control room including power transformers and HV Switchgear
- Back-up electrical generators
- Potable and industrial process water tanks
- Roof collection to rainwater harvesting tank for re-use
- Dedicated campus fire protection system tanks and pumps
- Provision for fire water containment.

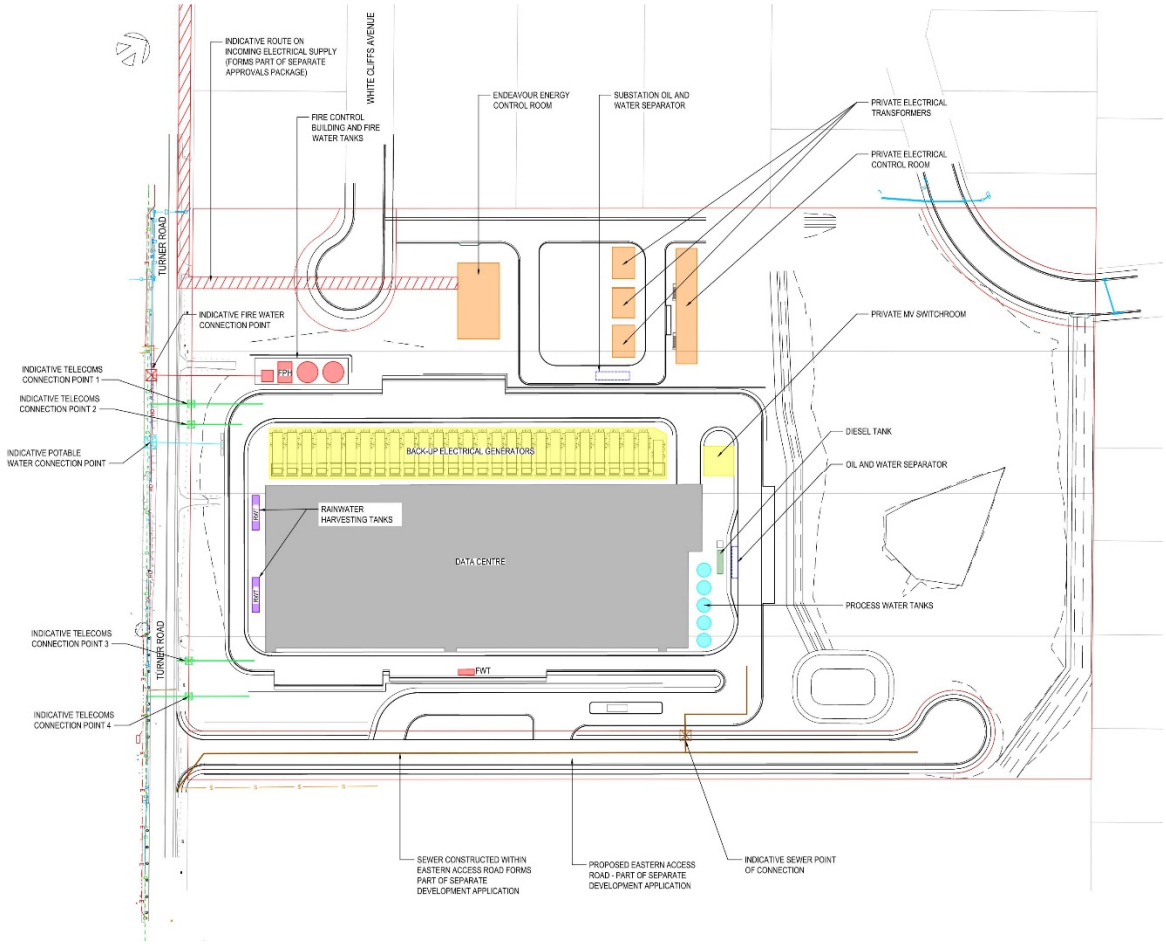


Figure 9: On-Site Utility Infrastructure

Incoming electrical supply, HV substation, potable water, fire infrastructure, fire water containment, rainwater harvesting tanks and stormwater OSD tank will be installed as part of the initial construction works.

Process water tanks and back-up electrical generators will be installed to suit the staged fit-out of the data halls which will occur over several years to meet demand.

5.1 Electrical Infrastructure and Back-Up Generators

The proposed site is to be supplied by a new 132kV/22kV substation and associated switchgear to cater for the ultimate site load. The substation will comprise:

- New 132kV switching station, owned and maintained by Endeavour Energy. The incoming 132kV supply will feed into the EE switching station, which in turn supplies:
- New 132/22kV substation. This will be privately owned and maintained by the proponent. 22kV supplies from this substation will supply the new data centre building.

The data centre is a mission critical facility and therefore requires back up generation. The site is designed for a total of 26 no. low voltage 2.8MW standby LV generators to supply the data centre critical loads. The administration building will require generators for life safety loads, which are proposed to be low voltage 1.0MW emergency backup generators. In total, the development will include 27 no. back-up electrical generators. All generators will be housed in a prefabricated, acoustic rated, generator enclosure. All generator enclosures will be free-standing on the external gantry area.

Location of the LV generators and switching station are depicted in Appendix B.

5.1.1 Demand Estimate

The maximum demand is indicated in Table 3 below. The calculated demand for the proposed site is approximately 62MVA, despite the switching station itself having the capacity to supply 120MVA.

Table 3: Site Electrical Maximum Demand

Site Electrical Load Summary Result		
	Total Load	**Unit**
IT Load	52.8	MW
Estimated PUE	1.15	
Total Load	60.7	MW
Power Factor	0.98	
Total kVA	61.9	MVA

5.1.2 On site Electrical Infrastructure

The electrical infrastructure for the proposed data centre includes a new 132kV/22kV switching station to cater for the overall consolidated site load, located at the western portion of the site (Lot DP28024).

The infrastructure in the new switching station includes:

- Endeavour Energy owned control room and switching station: This is an indoor facility with GIS GV equipment room, control room and switching room. It includes two (2) incoming feeder bays that considers separate supply routes.
- Proponent owned 132/22kV transformers.
- Proponent owned substation. This includes a control room building and indoor MV switchgear room.

Spatial provision has been made for 3No. transformer feeder bays within the overall switching station. Each transformer contains approximately 30,000L of oil. To manage the risk of a catastrophic failure of a transformer unit, the following design and management measures are proposed:

1. Each transformer plinth will have a bunded perimeter wall with a storage capacity equating to 30% of the volume of oil within the transformer.

2. Each transformer plinth will have an individual collection sump within reinforced concrete slab.
3. A standalone stormwater pipe, serving transformer plinths only will direct flows from each transformer into a full retention oil and water separator. The outlet from the oil and water separator will subsequently connect to the stormwater system.
4. Oil and water separator will be sized for 110% of the volume of oil within a single transformer. The oil and water separator shall be alarmed and contain an automatic shut-off valve preventing the discharge of oil contaminated water to the stormwater system.

Core electrical infrastructure within the Data Centre includes:

- MV Switchroom including 22kV switchgear to allow for protection, control, and distribution of power around the site.
- 2 no. 22/0.415kV Station services step down transformers to supply the electrical demands of the substation.
- 26 no. 22/0.415kV distribution transformers providing LV power to the IT and mechanical loads.
- House generator.
- LV Mains switchgear associated with each transformer.
- Additional miscellaneous equipment relating to SCADA, protection, control, and operation of the substation.
- Site MV (22kV) reticulation by means of underground cabling.
- Below ground LV reticulation conduits to serve small power units such as lighting poles, security cameras, access control and ancillary buildings associated with the data centre e.g. guardhouse and fire pump room.

In support of the back-up electrical generators, a diesel fuel-fill point and fuel tank are proposed. The diesel storage tank will be designed in accordance with AS 1940:2017. The lay-by where the diesel delivery vehicle will park will be graded away from the main internal roadway. The localised catchment will drain through an oil and water separator prior to discharge into the trunk stormwater network. This will enable the capture of oil/diesel in the event of potential spills.

5.1.3 Consultation

Consultation is currently being undertaken with the following stakeholders:

- Endeavour Energy
- Environment Protection Authority

The proponent has been liaising with Endeavour Energy on a regular basis from the project's inception. The substation design has been developed to an agreed Project Technical Brief supplied by Endeavour Energy.

A supply offer from Endeavour Energy was provided to the proponent in December 2023. A copy of this supply offer is contained within Appendix C.

Discussions between Endeavour Energy and the proponent are ongoing.

5.1.4 Connection Strategies

Two separate 132kV supply routes are proposed to supply the switching station: one from the Nepean Transmission substation (TS) and one from North Leppington Zone substation (ZS). The connection to the Endeavour Energy substation will be via Turner Road, south of the switching station. A plan of the proposed supply route is included within the electrical connection offer contained within Appendix C.

Both supply routes will sit outside the subject site boundary and will be approved under the utility authority's own permitted development rights.

5.1.5 Back-Up Generators

The data centre is a mission critical facility and therefore requires back up generation. The site is designed for a total of 26 no. low voltage 2.8MW standby LV generators to supply the data centre critical loads. The admin buildings will require generators for life safety loads, which are proposed to be low voltage 1.0MW emergency backup generators.

Generators will operate as a standby power supply in the event of mains failure. The connection offer received from Endeavour Energy is from a looped connection from existing 132kV overhead feeder between the Nepean Transmission Substation and the North Leppington Zone Substation.

Each generator will be housed in a prefabricated generator enclosure with a belly tank providing 24 hours fuel storage. Fuel tanks will be designed to comply with AS1940. Since the generator enclosures are adjacent to one another, the fuel tanks will be designed to allow for at least 600mm between inner tanks. Preliminary fuel calculations are shown in Table 4 below.

Table 4: Fuel Calculations for Back Up Generators

	Data Hall Generator	Admin Building Generator	
Generator Rating	2.8	1.0	MW
Fuel Consumption	756 (Full Load)	237 (Full Load)	L/hr
Storage time	24	24	hr
Fuel Stored	21.8	5.7	kL
No. Generators (#)	26	1	
Site Fuel Storage			
Site Fuel Consumption	**19,893 (full load)**		L/hr
Total Fuel On Site (volume)	**566.8 (generators) + 40 (storage tank) = 606.8**		kL
Total Fuel On Site (weight)	515.78		**t**

The typical operation of a data centre includes the operation of all mechanical systems and periodic testing of back-up electrical generators. Further details on generator testing frequencies are contained within the Noise and Vibration Impact Assessment.

One load bank is proposed on site to assist with quarterly and annual testing of the generators.

5.1.6 Design Status at Submission

Endeavour Energy has sent connection offers for the permanent 132kV supply, with the correspondence included above. Detailed design of the HV supplies will be undertaken by an accredited Level 3 Accredited Service Provider as part of later design stages.

Design of internal MV and LV systems will be developed after SSD submission.

5.2 Potable and Industrial Water

The buildings within the site will be supplied with both potable and fire water supplies. Potable water will be supplied to the industrial water tanks, administration, and bathroom areas, as well as hose taps surrounding the site.

All tanks and pipework within the subject site will be owned and operated by the proponent.

5.2.1 Potable Water

Potable water is proposed to be supplied from the existing DN150mm water main under Turner Road.

Potable water from Sydney Water's water mains will supply the industrial water supply storage tanks and will also be used as a water supply source to the industrial water system when the rainwater storage tanks are empty. In addition, potable water will also supply all sanitary fixtures and fittings within the administration building, data halls and control buildings associated with the HV Substation.

5.2.2 Industrial Process Water

The industrial process water system will store 24 hours volume and supply the evaporative cooling system. The cooling system recirculates water 5 to 6 cycles prior to discharge, reducing the net water demand. The industrial water system will be supplied primarily from industrial water tanks located in a tank yard adjacent to the data centre's administration building.

A privately owned industrial water reticulation network will be designed in a ring main configuration to provide an N redundancy (for tanks) and N+1 redundancy (for IW pumps) to the system.

The industrial water system will be supplied from the following sources:

- Potable water from the authority's water mains.
- Rainwater harvested from the building roof.

The industrial process water supply will be filtered with automatic back wash filters and the mechanical closed loop circulating system automatically dosed for microbial control to prevent legionella growth prior to being supplied to the mechanical evaporative cooling units.

5.2.3 Fire Water Supply

The site fire water supply will be provided from the authority's water main on Turner Road, south of the site. The site will also have fire water storage tanks sized to provide 90-minute water supply during a fire event. The site fire water storage is estimated to be approximately 375kL.

5.2.4 Demand Estimate and Water Balance

It is intended to harvest the roof water collected from the main data centre roof (~11,500m²), excluding the administration building solely for use in the evaporative cooling process. The roof water will be captured by roof gutters piped to an inground rainwater drainage system which conveys the harvested rainwater to the rainwater tank positioned south and east of the data centre building. The rainwater will pass through an in-ground flush device and be collected by a rainwater pump station where it will be transferred to an above ground filtration system prior to delivery into the industrial water tanks on-demand.

Water supplied to the evaporative cooler will be retained within the coolers' sump. Water within the sump will be pumped up to a cooling pad and be partially evaporated to cool the supply air stream. To minimise water usage, the non-evaporated water will be recirculated from the sump to the pad to be evaporated. This recirculation process will occur until adequate evaporation process has taken place, such that the concentration of solids within the sump water reaches six times the incoming water – achieving 6 cycles of concentrations.

In order to further reduce water consumption, the evaporative cooling system will only be switched on when the ambient temperature is higher than 28°C. The cooling system will supply ambient air directly, without providing any form of cooling (hence not using water), when ambient temperature is less than 28°C.

Therefore, the water demand and sewer discharge flow rates will fluctuate throughout the year with seasonal temperature variations.

Water Balance

In the final configuration, when all data halls are operational, the data centre's peak daily water demand in hot periods of the year is estimated at 1,180m^3/day. Total annual water demand is estimated at 20.6ML. A staged water demand assessment is included within Table 5.

Table 5: Total Water Demand

Water Demand				
Stage	Shell	Maximum Demand	Average Demand Estimate	Peak Flow
		(kL/Day)	(kL/Day)	(l/s)
1	Stage 1 pods 1/2	196	9.45	2.27
2	Stage 2 pods 3/4	393	18.9	4.55
3	Stage 3 pods 5/6	590	28.3	6.83
4	Stage 4 pods 7/8	787	37.7	9.11
5	Stage 5 pods 9/10	983	47.2	11.38
6	Stage 6 pods 11/12	1180	56.6	13.65

This water demand will be reduced by utilising the rainwater stored in the site's rainwater harvesting tanks. A minimum 150kL tank capacity will be provided with the final size subject to detailed design. The rainwater tanks will be sized based on the average highest daily rainfall received each month over the past 50 years, and a roof catchment area of 11,500m^2. The average annual rainfall over the past 50 years has been calculated to be 656mm/year, which provides approximately 7.5 ML/year, not all of which is capable of being utilised for mechanical process due to seasonal temperature differences utilising free cooling in lieu. The rainwater harvesting system will reduce the potable water consumption in the final configuration and by higher percentages in early stages of the IT deployment ramping profile when cooling demands are lower.

Refer to the Stormwater and Flooding Report for further details of the site-wide water balance assessment.

5.2.5 Sydney Water Consultation

The proponent has appointed a Water Services Co-ordinator (WSC), and a feasibility application has been submitted to Sydney Water in September 2024. The application case number is CN218444. A response to the application has not been provided at the time of writing; however, consultation with Sydney Water will continue during, and following, the exhibition period.

Separately, an EIS consultation letter was issued to Sydney Water on 11 March 2024 which provided Sydney Water an overview of the Proposal (see Appendix D). To date, no response to this letter has been received.

Discussions between the proponent, the WSC and Sydney Water will continue post lodgement of the SSD.

5.2.6 Connection Strategy

The proposed connection strategy, shown in Figure 10, utilises existing Sydney Water infrastructure located under Turner Road. Two separate connections to an existing DN150 water main are proposed, one meter supply for potable water and one un-metered supply for fire water. The exact connection arrangement is subject to agreement with Sydney Water as part of later design stages.

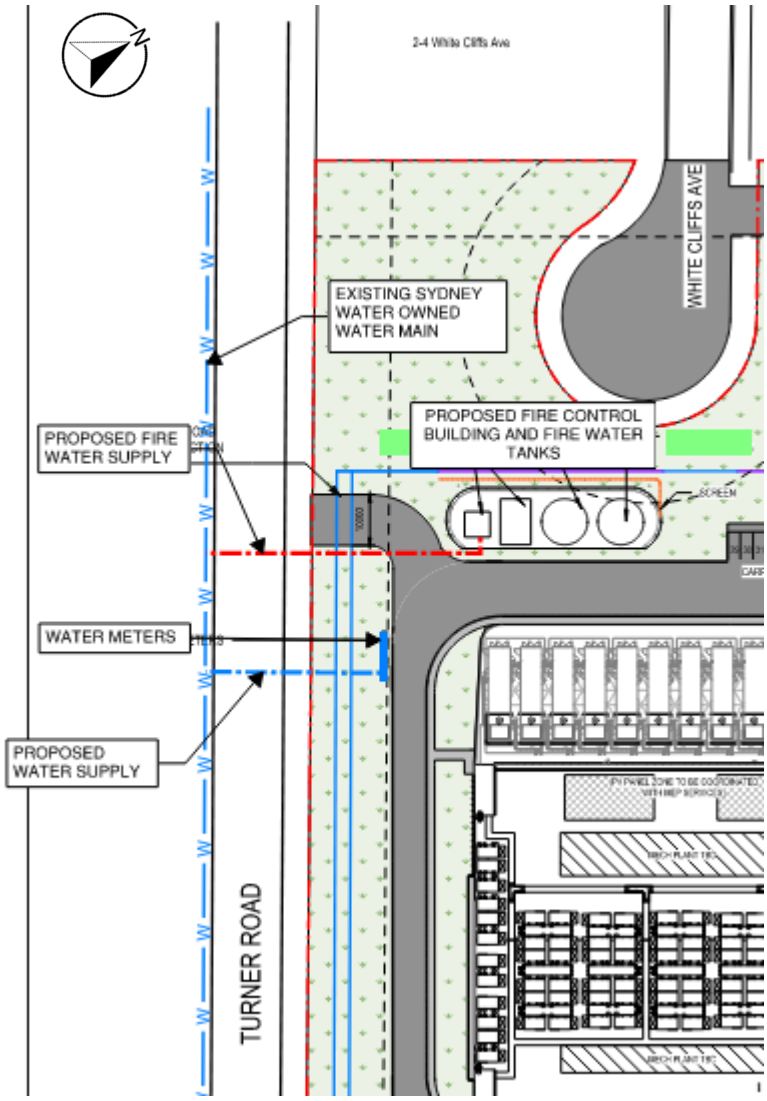


Figure 10: Water Servicing Options

It is intended to supply the site construction water requirements from either the existing authorities' water main in Turner Road or via an alternate plan including a mix of potable and other sources to be determined via development approval conditions. Water for earthworks and dust suppression will be supplied from the existing water main supply or from farm dams present on site or from water carts.

5.2.7 On-Site Water Reticulation

Potable Water Main

The incoming potable water main will enter the site at the southern boundary off Turner Road and will be directed to the tank yard north of the administration building. The potable water main will supply the industrial water tanks, administration building, sanitary fittings within the data halls and control rooms associated with the HV substation.

Fire Water Mains

The incoming fire main will enter the site at the southern boundary off Turner Road and will be routed towards the fire water tanks and booster pump set near the southwest corner of the data centre building.

A fire reticulation network is proposed around the data centre building, located under the site roads/footpath, which will supply the proposed hydrants. A fire water spur will be provided to serve the HV substation.

5.3 Sewer

The site will be serviced by a privately owned sewer drainage system that will gravity drain to a new sewer located under the Eastern Access Road. The Eastern Access Road will be owned and maintained by Council, the sewer under the road is to be owned by Sydney Water. The sewer under the Eastern Access Road will convey flows to the existing Sydney Water sewer system under Turner Road. The proposed point of connection is the existing sewer pit near the southeast corner of the Lot Boundary. Refer to Appendix B for a plan showing the sewer point of connection.

The private sewer network serving the data centre will be primarily separated into soil waste from front of house and wastewater (grey water) drainage systems, emanating from within the data halls and associated mechanical plant spaces. The data hall drainage will be piped independently to an inground fire water containment tank in accordance with FRNSW requirements. All streams of drainage shall converge to utilise a single site sewer connection to the Sydney Water sewer utility main.

5.3.1 Soil Waste

The soil waste drainage will collect all sanitary fixtures within the administration buildings and the data halls. A soil waste system will be provided to serve the control rooms associated with the HV substation.

The privately owned internal sewer system will gravity drain towards the main site access at the eastern boundary of the site, prior to exiting the site via a single point of discharge into the Sydney Water network.

5.3.2 Wastewater

The wastewater system will collect all the evaporative cooling system bleed wastewater as well as all floor waste and tundishes for condensate collection.

The wastewater drainage systems shall run separately to the soil waste systems throughout to ensure no odour or blockages are ever possible within the data halls, and will subsequently merge to the site's sanitary soil drainage system prior to site discharge via the single point of discharge into the Sydney Water network.

5.3.3 Fire Containment Water

In accordance with recent requirements advised by FRNSW, the data halls shall be drained to prevent risk of electrocution whilst sprinklers and hydrants are operating to protect personnel. A separate fire water containment piping system and containment tank will be provided to serve the data centre building, preventing fire water from rooms that contain batteries draining to the Sydney Water sewer assets or to the environment without prior chemical analysis testing. The below ground tank is proposed to be positioned centrally along the data hall building to minimise drainage depths and has an estimated 30kL containment capacity.

The exact size of the tank will be confirmed as part of later design stages through submission of the fire safety study (FSS) when the final configuration of the sprinkler system and size of the battery rooms are known. If used, discharged fire water will be contained within the tank and transported off-site to a licensed facility via tankers.

5.3.4 Demand Estimate

The majority of the site's discharge is generated by the evaporative cooling system wastewater. The evaporative portion of the cooling system is used during summer months from November to March (when ambient temperatures exceed a trigger level) and as otherwise required should a peak heat day occur out of the seasonal window.

The soil waste discharge produced from front of house staff areas is a minor contributor to the peak day in relation to the overall size of the facility.

Staged maximum and average daily demands are contained in Table 6.

Table 6: Wastewater Discharge Forecast

Wastewater				
Stage	Shell	Maximum Demand	Average Demand Estimate	Peak Sewer Flow
		(kL/Day)	(kL/Day)	(l/s)
1	Stage 1 pods 1/2	40.5	4.1	0.95
2	Stage 2 pods 3/4	81.0	8.2	1.90
3	Stage 3 pods 5/6	121.5	12.3	2.85
4	Stage 4 pods 7/8	162	16.3	3.80
5	Stage 5 pods 9/10	202.5	20.4	4.75
6	Stage 6 pods 11/12	243	24.5	5.64

As detailed on the calculations above the forecast at the ultimate load when the site is fully developed at the hottest times of year in January will be 243 kL/day Peak, with a peak discharge flow rate of 5.64 L/s. In the cooler winter months sewer flows will be limited to the sanitary flows, which are estimated to be 5 kL/day.

Sewer demands are significantly lower than peak water demands as industrial water is recirculated 5 to 6 times prior to discharge from the cooling equipment to the wastewater system.

5.3.5 Consultation

The proponent has appointed a Water Services Co-ordinator (WSC), and a feasibility application was submitted to Sydney Water in September 2024. The application case number and associated feasibility assessment response will be provided in due course with the current Sydney Water timeframes exceeding 8 weeks.

Separately, an EIS consultation letter was issued to Sydney Water on 11 March 2024 which provided Sydney Water an overview of the Proposal (See Appendix D). To date, no response to this letter has been received.

Discussions between the proponent, the WSC and Sydney Water will continue post lodgement of the SSD.

5.3.5.1 Construction Stage

Until the off-site sewer systems are constructed, construction compounds will be served by storage tanks/septic tanks with effluent disposed of at a licensed, off-site facility via tankers.

Once the sewer system within the Eastern Access Road has been constructed and connected into the sewer pit under Turner Road, construction compounds will discharge into this system.

5.4 Telecommunications

5.4.1 Connection Strategy

Four (4) entry points are proposed for the site, each separated by a minimum of 8m to ensure path diversity, as shown in Figure 11.

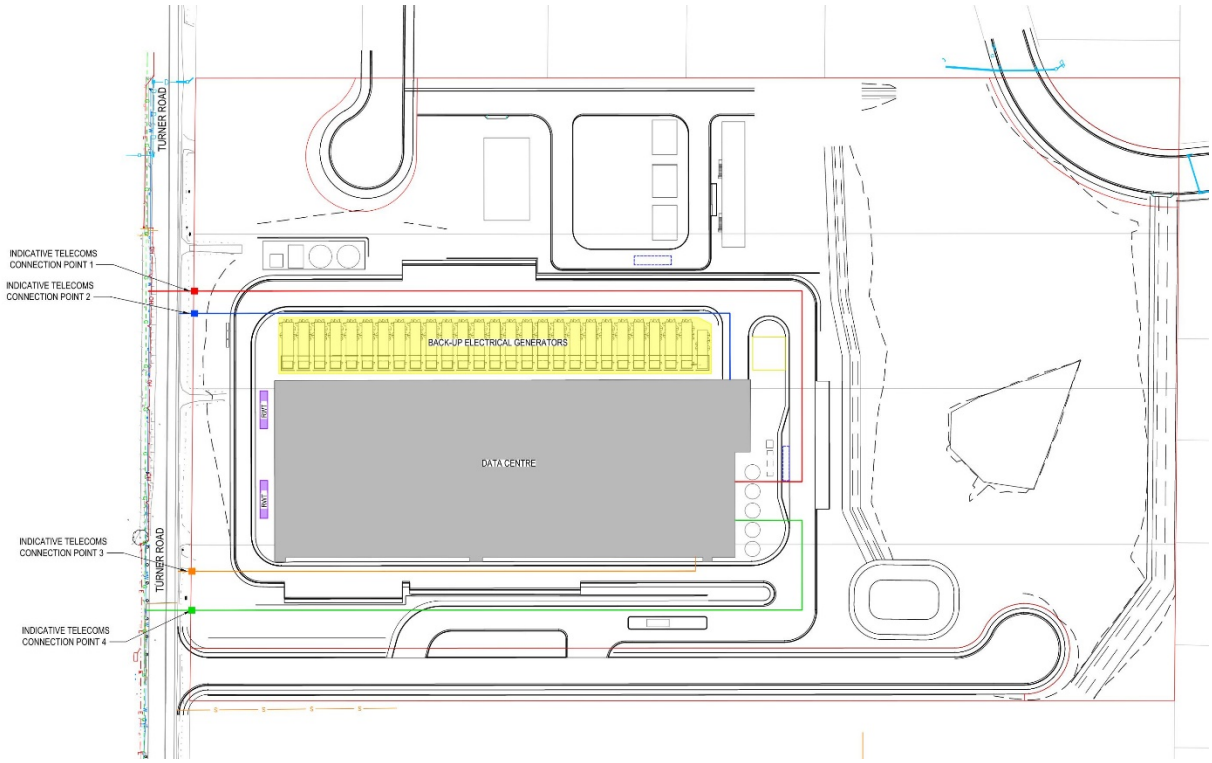


Figure 11: Proposed Telecom Connection Strategy

All four supply points will be from networks within Turner Road. The proponent is currently negotiating with their carriers of choice to finalise routes to the site. There is opportunity to use the Eastern Access Road as an alternative point of connection.

5.4.2 On-Site Reticulation

Within the main site, a series of 9x150mm conduits will reticulate under internal roads and footpaths that circulate the data centre building to support telecommunications lead-in cabling and distribution pathways.

The Administration Building will be provided with connectivity to four separate Points of Entry to ensure physical diversity.

Communications pathways always retain a minimum of 8m separation to minimise risk of concurrent damage to multiple pieces of telecommunications infrastructure.

5.5 Gas

No gas supply is required to serve the data centre facility. All power supplies will be from electrical sources with back-up power supply from diesel generators.

There are no existing gas services within the proposal boundary and therefore the development causes no impact to existing gas networks.

Based on no gas requirements for the site and no impacts to existing gas infrastructure, no consultation with Jemena has been undertaken nor is required.

6. Assessment of Potential Construction Impacts

This chapter presents potential construction impacts on existing utility infrastructure within the subject site. As discussed in Section 5, construction works will be undertaken in stages.

6.1 Electricity

In the baseline condition, there are existing overhead wiring cables and associated poles that will need to be removed as part of the works. Existing poles associated with redundant, residential swellings will require removal following isolation from the public network. This will require temporary isolation of the electrical system. Removal of existing electrical poles will be undertaken as part of an early works package which are subject to a separate approvals package.

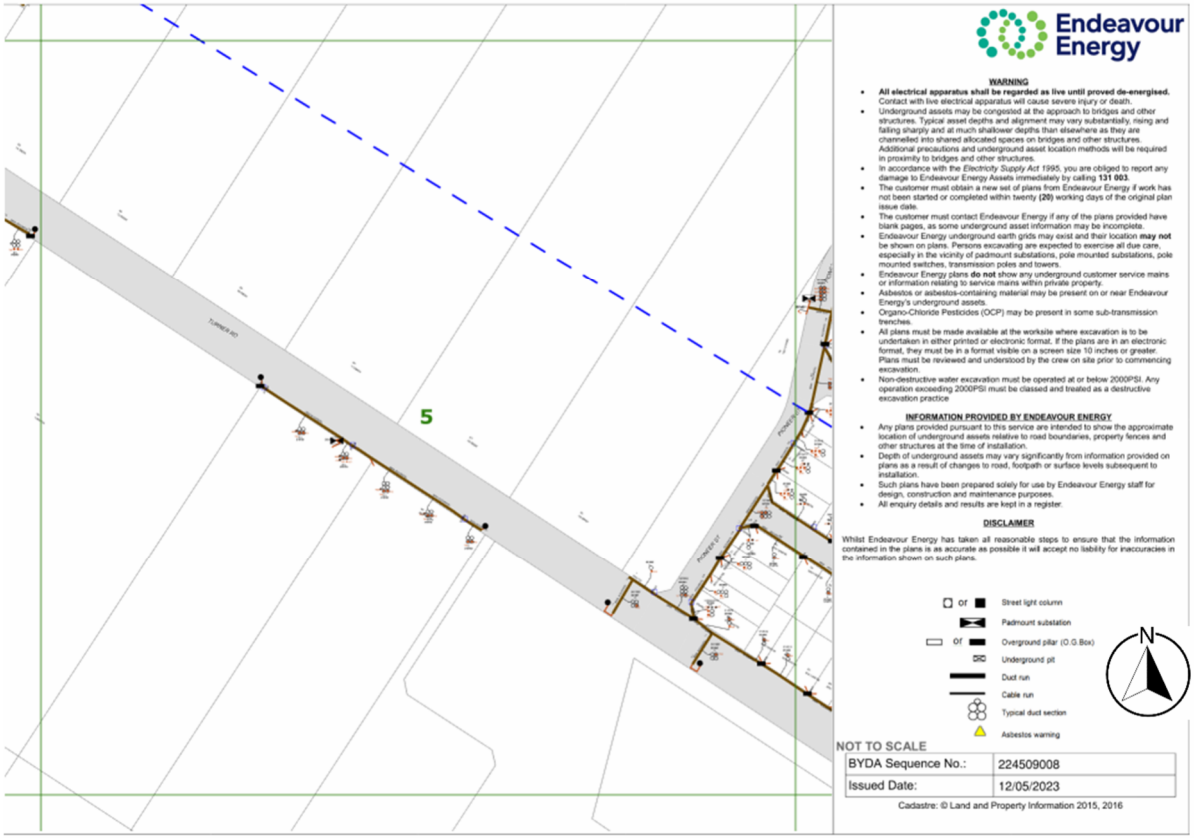


Figure 12: Endeavour Energy BYDA Plan

During later construction stages, measures will be implemented to avoid damage to electrical services and infrastructure constructed during the initial stages of work.

6.2 Water Supply

In the baseline condition, there is no Sydney Water owned water infrastructure within the subject site. Therefore, construction works within the subject site will cause no impacts to Sydney Water's infrastructure. Any existing private supplies serving un-inhabited dwellings will be shut-off and removed as part of the clearing works.

During later construction stages, measures will be implemented to avoid damage to water services constructed during the initial stages of work.

6.3 Sewerage

In the baseline condition, there is no sewer infrastructure within the subject site. Therefore, construction works within the subject site will cause no impacts to sewer infrastructure.

Existing septic tanks that served residential dwellings on the site will be drained, with effluent disposed of at a licensed facility. The remaining tank and surrounds shall be removed as part of the clearing works.

During the early construction stages, sewer flows will require to be stored on-site temporarily and trucked off-site to a licensed facility. There is a risk of spills of effluent onto the site or the wider environment.

During later construction stages, measures will be implemented to avoid damage to sewer services constructed during the initial stages of work.

6.4 Telecommunications

In the baseline condition, there is no telecommunications infrastructure within the subject site. Therefore, construction works within the subject site will cause no impacts to telecom infrastructure.

During later construction stages, measures will be implemented to avoid damage to telecommunications services constructed during the initial stages of work.

6.5 Gas

In the baseline condition, there are no gas mains within the subject site. Therefore, construction works within the subject site will cause no impacts to Jemena's gas infrastructure.

No gas supply is required to serve the data centre facility. All power supplies will be from electrical sources with back-up power supply from diesel generators.

7. Assessment of Potential Operational Impacts

Section 7 presents potential operational impacts that the development could have on the surrounding environment and public utility networks.

7.1 Electricity

Potential operational impacts of the electrical infrastructure within the subject site include:

- High electrical demand impacting the surrounding HV distribution network.
- High noise levels when testing or operating back-up generators.
- Fuel spills when filling generators.
- Fire and explosion risks associated with the generators.
- Fire and explosion risks associated with the switching station.
- Air pollution when generators are operational.

7.2 Water and Sewerage

Potential operational impacts of the water and sewer infrastructure include:

- High demands reducing the capacity of the precinct water and sewer networks.
- Overtopping of rainwater harvesting/water storage tanks.

Water discharging from the cooling equipment will be conveyed to the site's sewer system. There is no pathway between the internal mechanical and cooling systems and the stormwater system serving the site.

7.3 Telecommunications

The key operational issue for the proponent is ensuring that the facility can continue to operate in the event one telecoms route is offline. The facility will be serviced by separate telecom supply routes to ensure path diversity.

7.4 Gas

No gas supply is proposed to serve the data centre facility. All power supplies will be from electrical sources with auxiliary supply from diesel generators. There are also no existing gas services within the proposal boundary and therefore the development causes no impact to existing gas networks. As such, there is no potential risk during the operational and maintenance phase.

8. Environmental Management Measures

Table 7 details the proposed management and mitigation measures proposed as part of the design for utility impacts.

Table 7: Environmental Management Measures for Infrastructure Impacts

ID	Impacts	Mitigation	Responsibility	Timing
ID	Impacts	Mitigation	Responsibility	Timing
IR1	High electrical demand impacting the surrounding HV distribution network.	Proposals are to have data centre specific electrical supply. Electrical authorities have confirmed that capacity exists within the network to serve the site.	Proponent/Electrical Authority	Design
IR2	High noise levels when testing or operating back-up generators.	Generators are containerised units which include noise attenuation features. The noise level of generator testing will be assessed against NSW Noise Policy for Industry. Refer to Noise and Vibration Impact Assessment for further details.	Proponent/Contractor	Design and Operation
IR3	Fuel spills when filling generators.	Fuel tanks will be designed to comply with AS1940. Fuel tanks will be double walled. Each fill point will have all ancillaries to meet requirements of AS1940.	Proponent/Contractor	Design and Operation
IR4	Fire and explosion risks associated with the generators.	Generators will be designed in accordance with AS 1940 which defines minimum clearance from building and separation between fuel storage tanks (“belly tanks”). Generators located behind security fencing/gates, meaning only approved personnel can access this area.	Proponent/Contractor	Design and Operation
IR5	Fire and explosion risks associated	HV switching station will be designed by a certified Level 3 ASP designer in accordance with relevant	Proponent/Contractor	Design and Operation

	with the switching station.	current version of Australian Standards and Industry Associations Standards and Guidelines. Switching station located behind security fencing/gates, meaning only approved personnel can access this area.		
IR6	Air pollution when generators are operational	Two separate mains points of supply are proposed, and the probability of mains failure has been investigated for the electrical supply. Failure rates for a supply in this arrangement are extremely low, meaning the generators will rarely be used. Generators will include specific emissions control measures and will be Tier 2 certified to Australian EPA requirements. Refer to Air Quality Report for further details.	Proponent	Design and Operation
IR7	High demands reducing the capacity of the estate or precinct water and sewer networks.	To minimise the peak water demand on Sydney Water's potable water network, the water balance of the proposed site has been maintained through the use of rainwater re-use tanks and the provision of fire and industrial process water storage tanks on site.	Proponent / Sydney Water	Design / Construction
IR8	Overtopping of rainwater harvesting/water storage tanks.	Water overtopping from the rainwater tanks will discharge to the stormwater system. Discharged water will not contaminate the surrounding environment as it will either be from mains supply or roof collected, which has passed through water quality treatment features.	Proponent	Design / Operation
IR9	Discharge of cooling water.	Cooling water discharge is conveyed to the site's sewer system. There is no discharge to the site's stormwater system.	Proponent	Design

IR10	Failure of transformer resulting in oil spill.	Transformer units are contained within plinth foundations which have sump storage capacity min 30% volume of oil stored. A separate stormwater system, serving only the transformer plinths, will drain through a full retention oil and water separator prior to discharge to trunk stormwater system. Oil and water separator sized for 110% the volume of oil contained within 1No transformer unit.	Proponent	Design/Operation
IR11	Spills/leakages from on-site storage of effluent during early stages of construction.	On-site storage features such as septic tanks will be in accordance with the relevant Australian Standards. The Contractor shall locate the storage tanks in an appropriate location within the site and shall empty the tanks on a regular basis.	Proponent / Contractor	Design / Construction
IR12	Redundant telecoms supply	The administration building is concurrently connected to multiple entry points, providing the operator with the ability to utilise a physically diverse service in the event of failure. All telecommunications pathways are physically separated by a minimum of 8m to minimise risk of concurrent damage to multiple pieces of telecommunications infrastructure.	Proponent	Design / Operation

9. Summary of Residual Impacts

This section provides a summary of the construction and operational risks pre-mitigation and any residual impacts remaining after the implementation of the management measures described in Section 8. Pre-mitigation and residual impacts are summarised in Table 8.

Table 8: Summary of Pre-Mitigation and Residual Impacts

Potential pre-mitigation adverse impact	Relevant management measures	Potential residual impact after implementation of management measures	Comment on how any residual impacts would be managed
Construction			
Spills/leakages from on-site storage of effluent during early stages of construction.	On-site storage features such as septic tanks will be in accordance with the relevant Australian Standards. The Contractor shall locate the storage tanks in an appropriate location within the site.	Low risk that spills occur during loading of waste to tanker.	Contractor to use a licensed and certified waste disposal company who have relevant accreditation and provide a safe working method statement for filling operations. Storage tank(s) to be regularly inspected during operation for damages that may cause leaking.
Operation			
High noise levels when testing or operating back-up generators.	Generators are containerised units which include noise attenuation features. Generators will only operate in the unlikely event that both electrical supplies are off-line.	Potential that noise levels are high.	The noise level of generator testing will be assessed against NSW Noise Policy for Industry. Testing of generators to be undertaken during daytime periods unless otherwise required.
Fuel spills when filling fuel tank.	Fuel tank and fuel fill point will be designed to meet the requirements of AS1940.	Risk of accidental spills when fuelling.	Operator to prepare a management plan detailing safe method of work for filling fuel tank. Supplier to have spill kits available at the time of filling. Oil and water separator provided to drain localised catchment at fuel fill point.
Fire and explosion risks associated with the generators.	Generators positioned suitably clear from buildings.	Low risk of fire and explosion.	Operator to implement monitoring and maintenance plan. Generator area to be

	Suitable separation provided between fuel storage tanks (“belly tanks”) and generators. Access to generators limited to approved personnel.		kept clean and free from flammable materials. Generators to be frequently inspected for faults/defects.
Fire and explosion risks associated with the switching station.	HV switching station will be designed by a certified Level 3 ASP designer in accordance with relevant current version of Australian Standards and Industry Associations Standards and Guidelines Access to generators limited to approved personnel.	Low risk of fire and explosion.	Operator to implement monitoring and maintenance plan. Switching station to be kept clean and free from flammable materials. Switching station to be frequently inspected for faults/defects.

10. References

Australian Rainfall and Runoff, 2019. *Australian Rainfall and Runoff.*

Environmental Protection Authority, 1997. Managing Urban Stormwater: Council Handbook.

NSW Government, 1997. Protection of the Environment Operations Act.

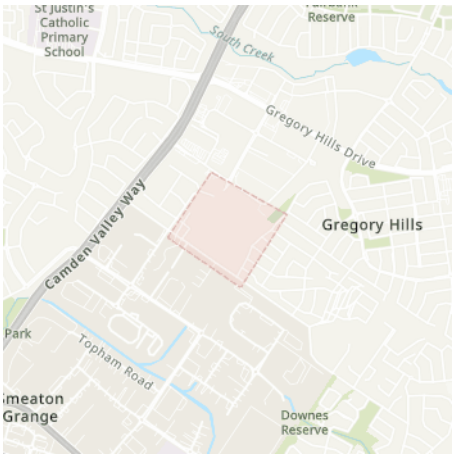
NSW Government, 2007. State Environmental Planning Policy (Infrastructure).

NSW Government, 2009. State Environmental Planning Policy (Western Sydney Employment Area).

Appendix A – Before You Dig Assessment

Job ID 37389014
SYD-091

Review responses online



Received 8 of 8 responses
All responses received

61 Turner Road, Gregory Hills NSW 2557

Job dates
03/09/2024 → 25/09/2024

These plans expire on
16 Sep 2024

Lodged by
Ramiya Ravindran

Authority	Status	Page
BYDA Confirmation		2
Endeavour Energy	Received	4
Jemena Gas West	Received	20
NBN Co NswAct	Received	34
OptiComm Ltd (NSW)	Received	59
Sydney Water	Received	70
Telstra NSW Central	Received	80
TPG Telecom (NSW)	Received	86
Vocus Communications 2	Received	95

Endeavour Energy

Referral
243455150

Member Phone
(02) 9853 4161

Responses from this member

Response received Mon 19 Aug 2024 1.52pm

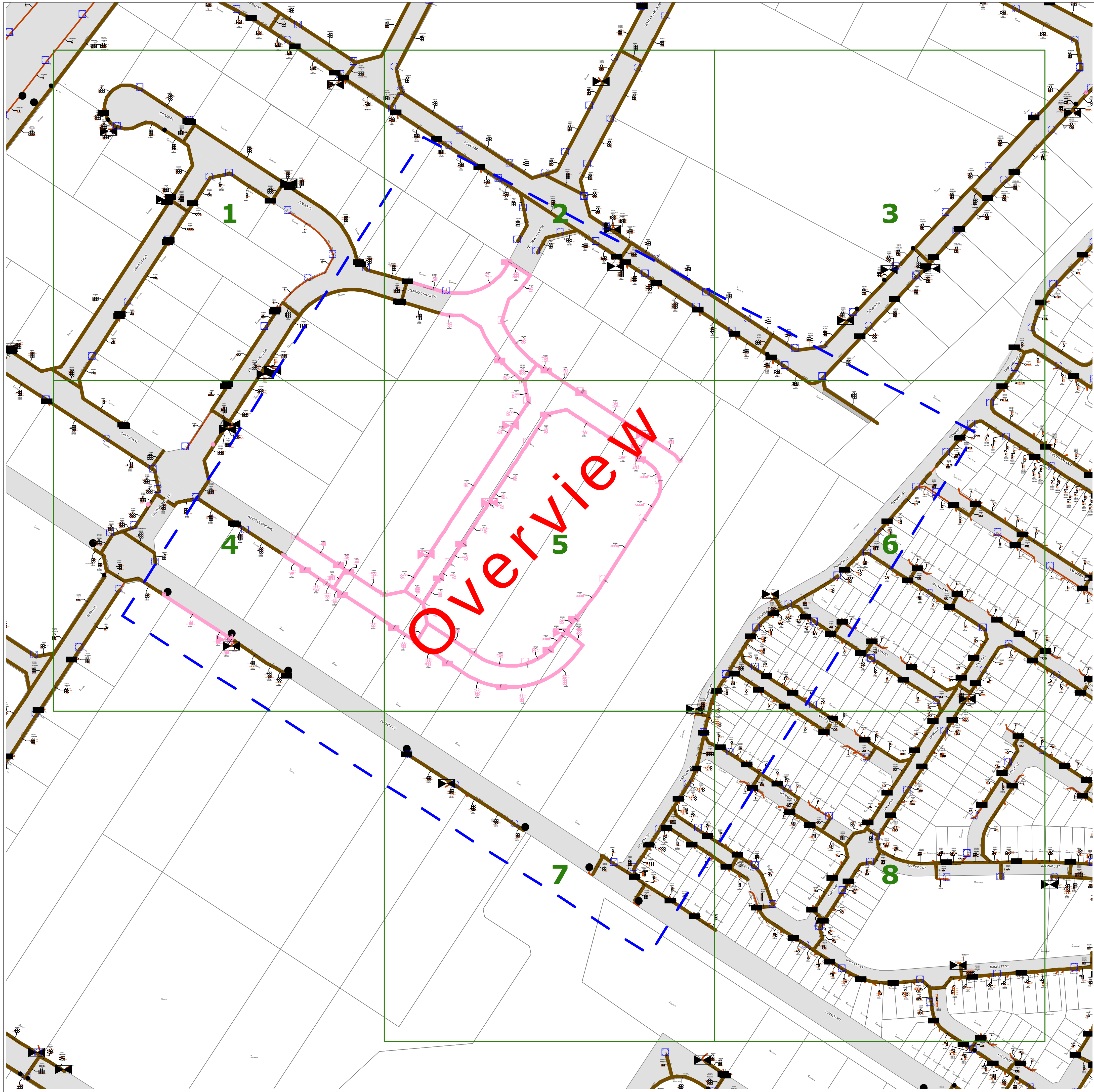
File name	Page
Response Body	5
243455150_Low Risk.pdf	6
243455150_CoverLetter - Affected.pdf	15
BYDA Excavation Disclaimer.pdf	16

DIGSAFE PRO BEFORE YOU DIG AUSTRALIA - REFERRAL NOTIFICATION

This referral has been successfully processed and the results are contained in the attached files.

If you have any queries please contact:

Ph: 02 9853 4161
Email: mocs@endeavourenergy.com.au



Endeavour Energy

WARNING

- **All electrical apparatus shall be regarded as live until proved de-energised.** Contact with live electrical apparatus will cause severe injury or death.
- Underground assets may be congested at the approach to bridges and other structures. Typical asset depths and alignment may vary substantially, rising and falling sharply and at much shallower depths than elsewhere as they are channelled into shared allocated spaces on bridges and other structures. Additional precautions and underground asset location methods will be required in proximity to bridges and other structures.
- In accordance with the *Electricity Supply Act 1995*, you are obliged to report any damage to Endeavour Energy Assets immediately by calling **131 003**.
- The customer must obtain a new set of plans from Endeavour Energy if work has not been started or completed within twenty **(20)** working days of the original plan issue date.
- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earth grids may exist and their location **may not** be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Endeavour Energy plans **do not** show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be made available at the worksite where excavation is to be undertaken in either printed or electronic format. If the plans are in an electronic format, they must be in a format visible on a screen size 10 inches or greater. Plans must be reviewed and understood by the crew on site prior to commencing excavation.
- Non-destructive water excavation must be operated at or below 2000PSI. Any operation exceeding 2000PSI must be classed and treated as a destructive excavation practice

INFORMATION PROVIDED BY ENDEAVOUR ENERGY

- Any plans provided pursuant to this service are intended to show the approximate location of underground assets relative to road boundaries, property fences and other structures at the time of installation.
- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

DISCLAIMER

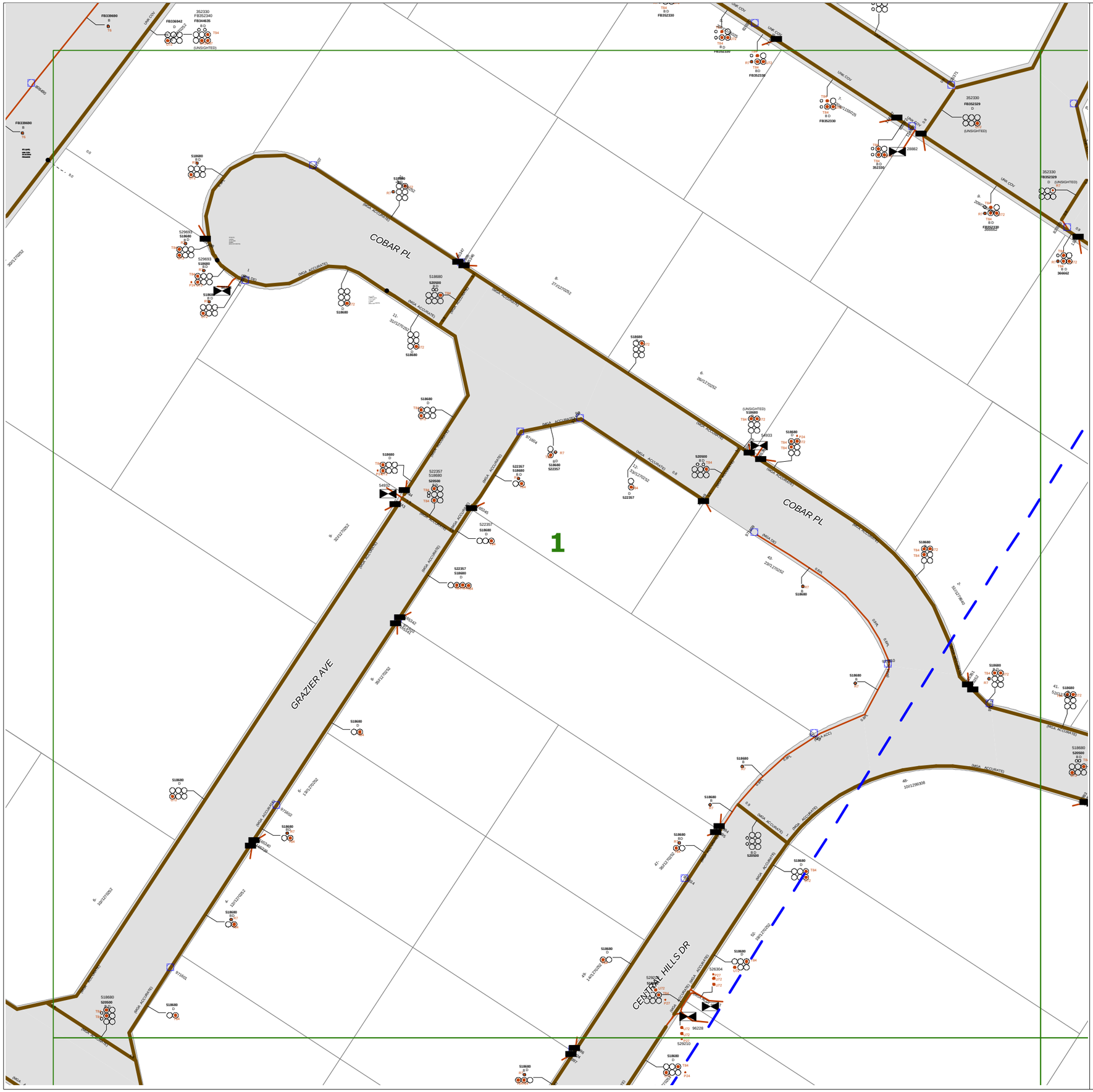
Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in the plans is as accurate as possible it will accept no liability for inaccuracies in the information shown on such plans.

or Street light column
Padmount substation
or Overground pillar (O.G.Box)
Underground pit
Duct run
Cable run
Typical duct section
Asbestos warning

N

NOT TO SCALE

BYDA Sequence No.:	243455150
Issued Date:	19/08/2024



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- Padmount substation
- or — Overground pillar (O.G.Box)
- Underground pit
- Duct run
- Cable run
- Typical duct section
- Asbestos warning

N

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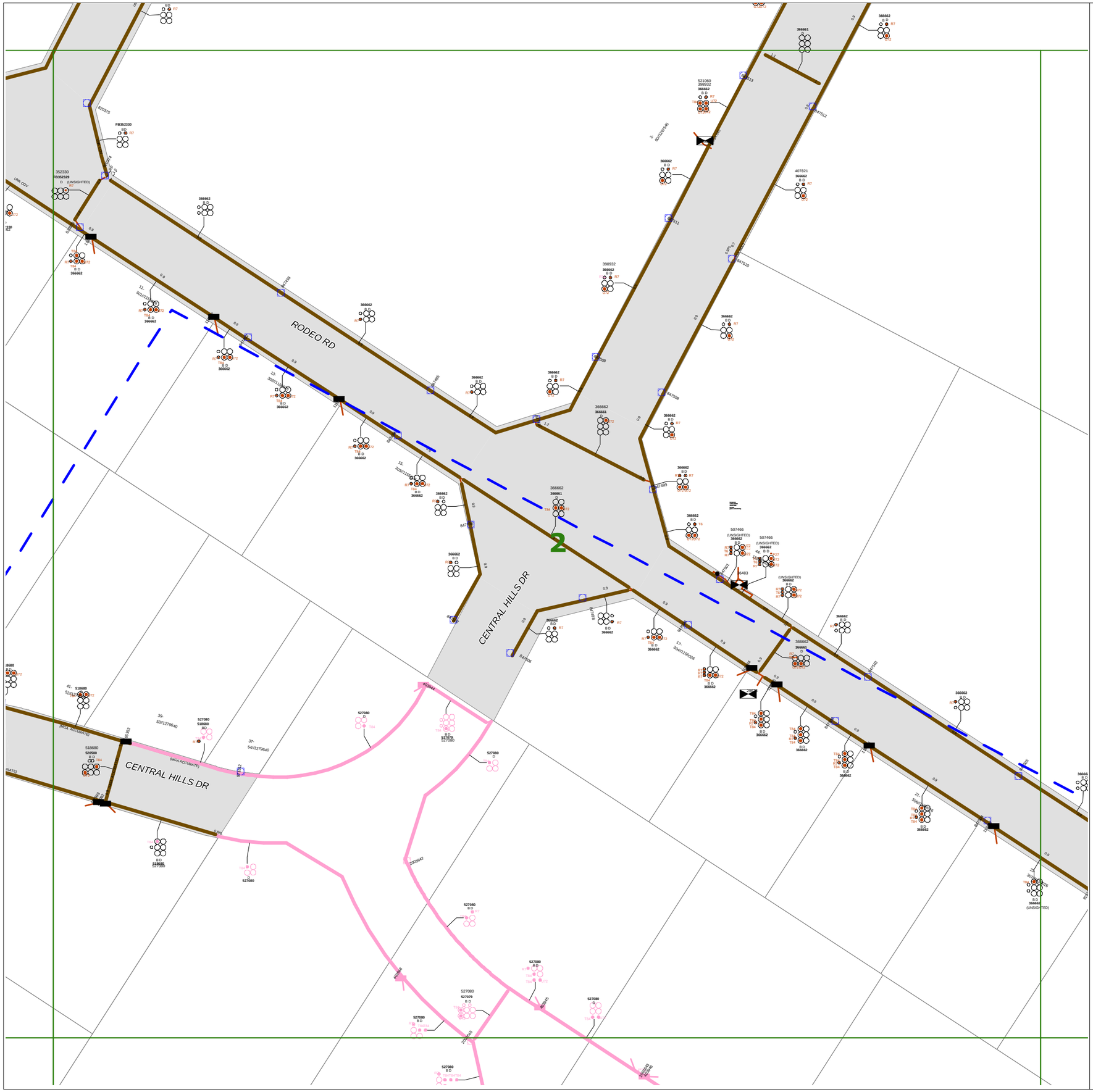

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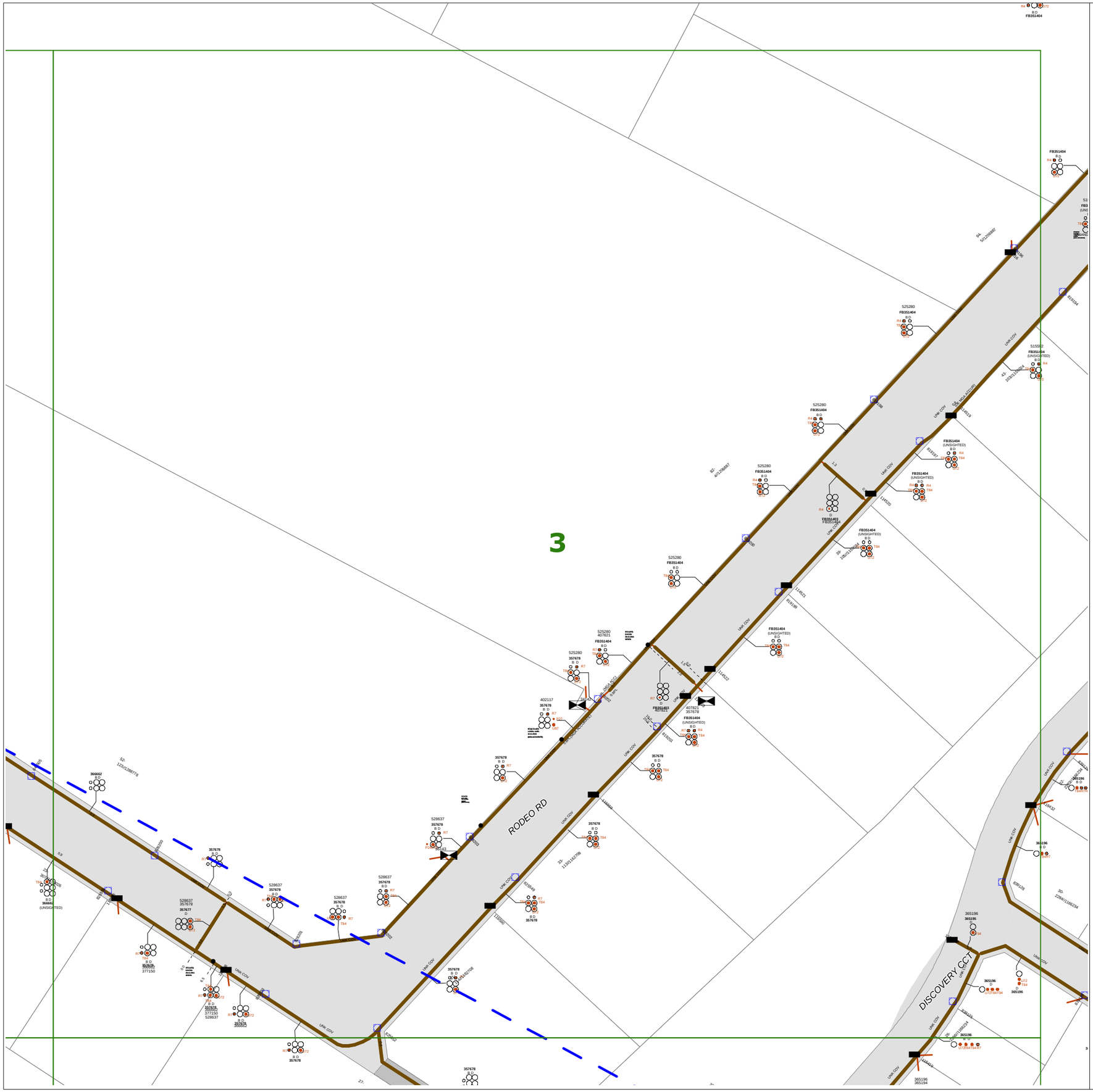
- Duct run
- Cable run
- Typical duct section
- Asbestos warning

N

NOT TO SCALE

BYDA Sequence No.:	243455150
Issued Date:	19/08/2024



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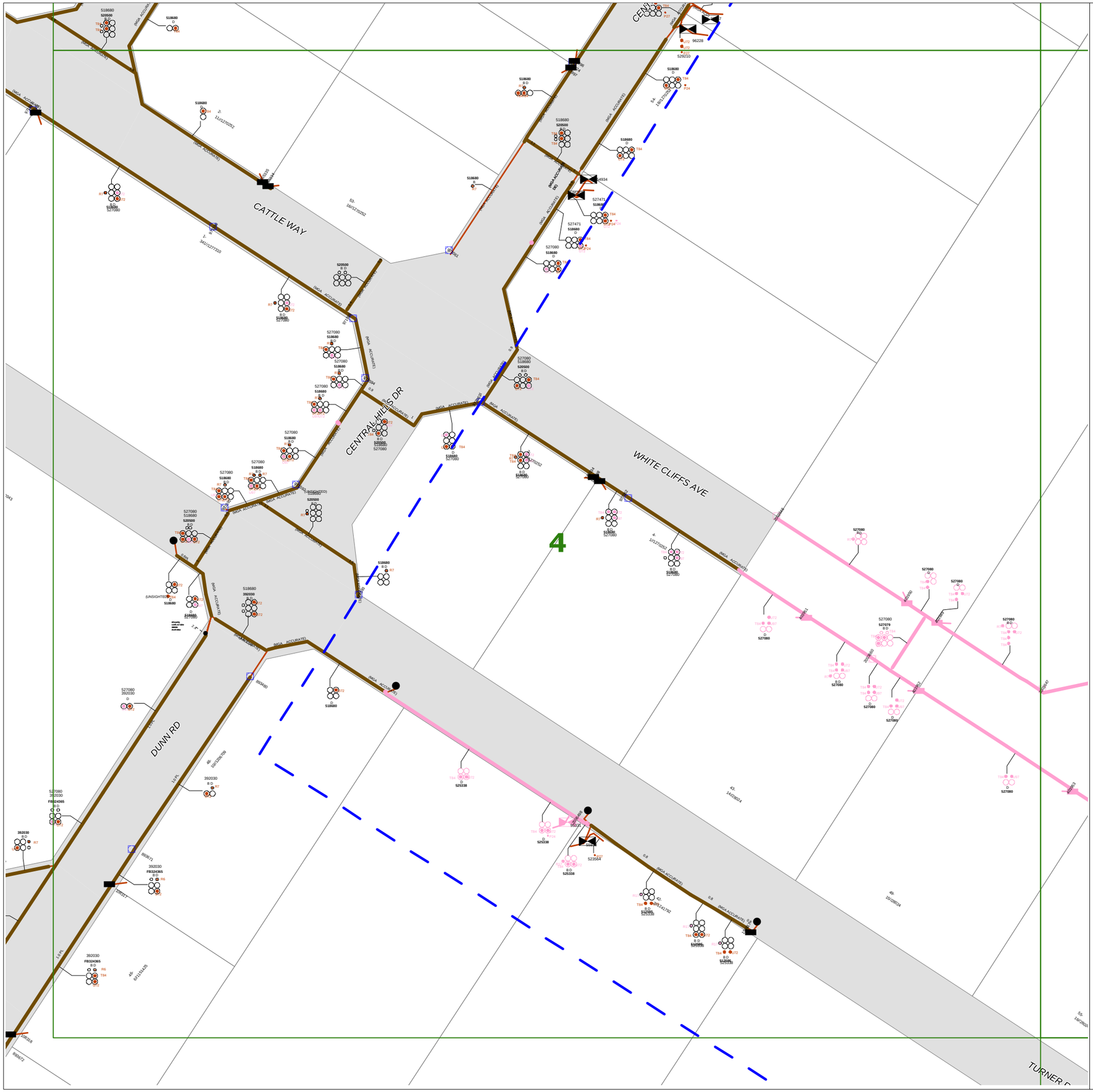

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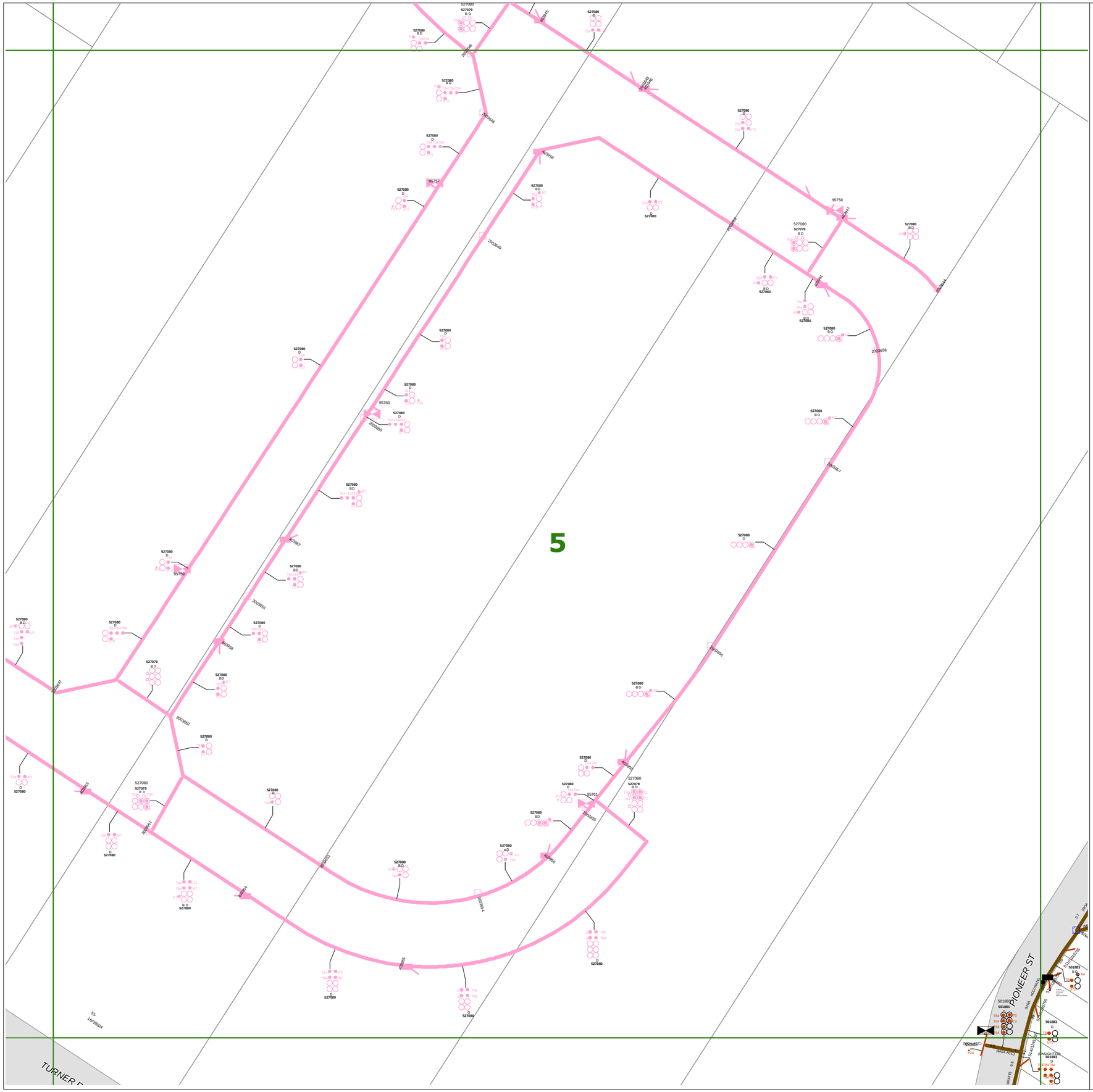

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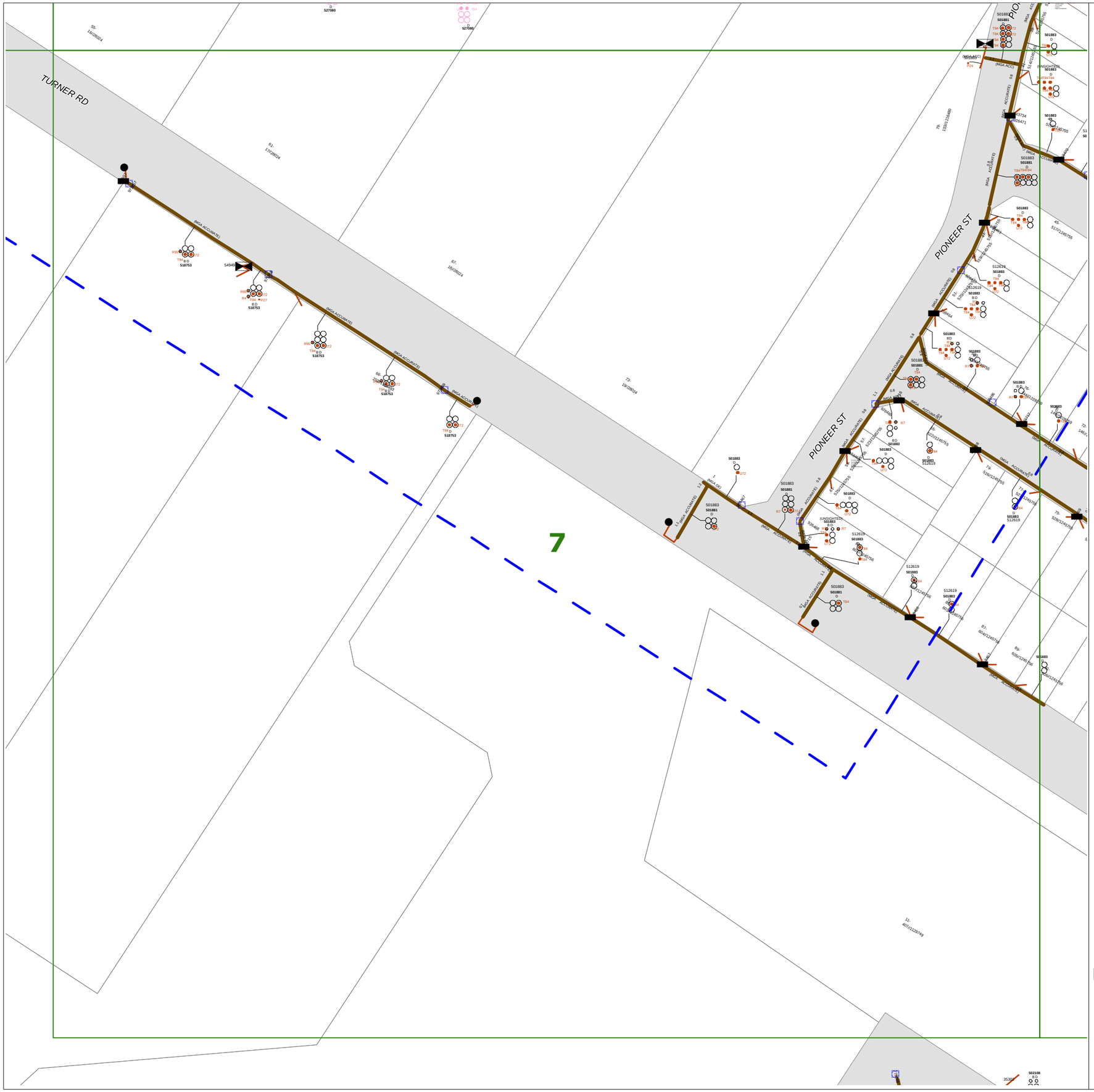

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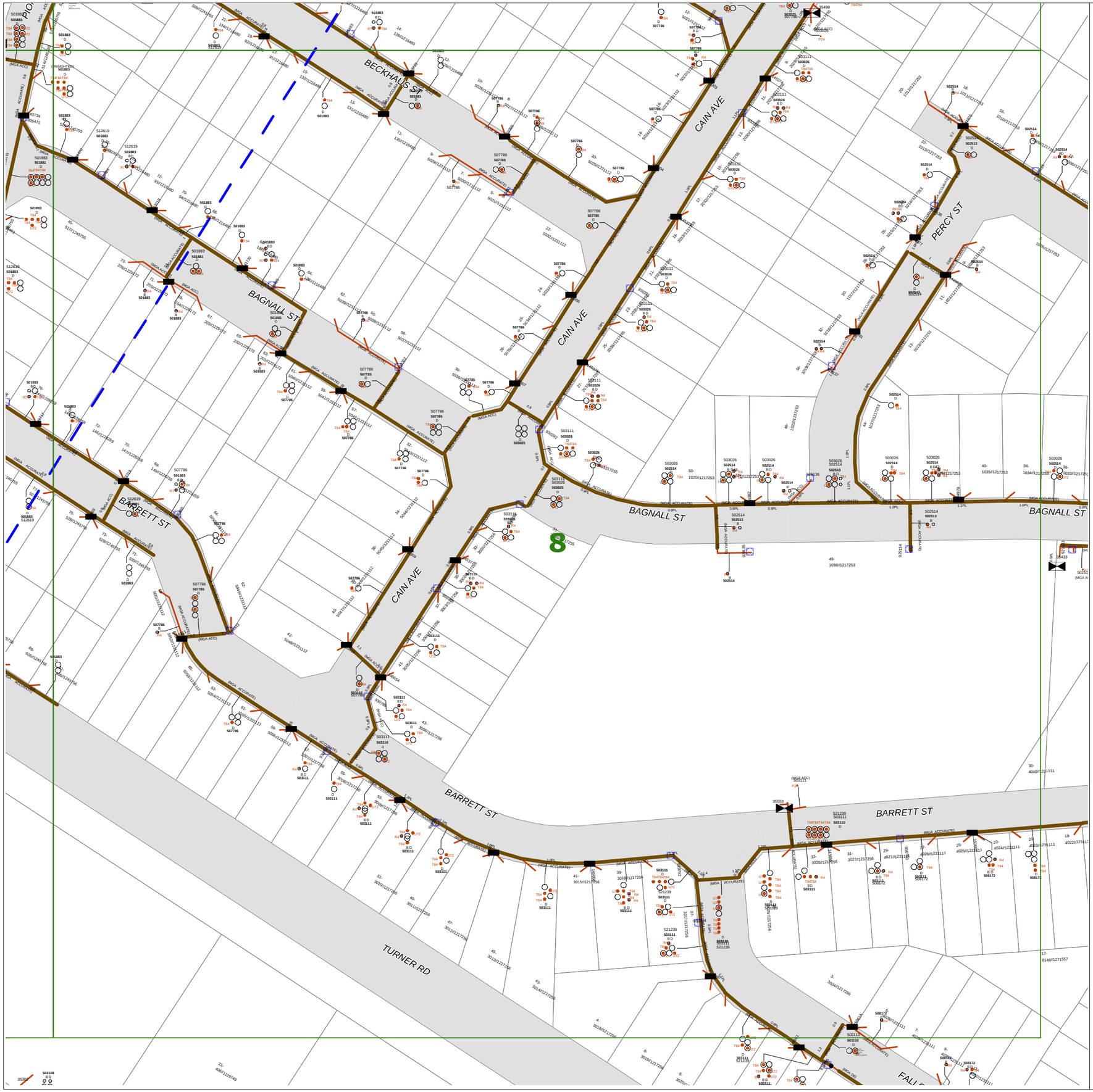

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Endeavour Energy

BYDA Underground Search Report

Date: 19/08/2024

BYDA Sequence No: 243455150 **BYDA Job No:** 37389014

ENDEAVOUR ENERGY ASSETS AFFECTED

To:	Ramiya Ravindran	Company:	Arup
Address:	151 Clarence Street, Sydney, NSW 2000		
Cust. ID:	3323757	Email:	fhzj7wxfnylxpw.vyrioqdrb5pnpt@smarterwx-mail.byda.com.au
Phone:	+61293209470		
Enquiry Location:	61 Turner Road, Gregory Hills, NSW 2557		

Our Search has shown that **UNDERGROUND ASSETS ARE PRESENT** on our plans within the nominated enquiry location. This search is based on the graphical position of the excavation site as denoted in the BYDA customer confirmation sheet.

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SUPPLEMENTARY MATERIAL

Material	Purpose	Location
BYD Cover Letter	Endeavour Energy BYD response Cover Letter	Attached
BYD Important Information & Disclaimer	Endeavour Energy disclaimer, responsibilities and information on understanding plans	Attached
BYD Response Plans	Endeavour Energy BYD plans	Attached
Work Cover NSW *"Work near underground assets: Guide"*	Guideline for anyone involved in construction work near underground assets	Contact Work Cover NSW for a copy
Work Cover NSW *"Excavation work: Code of practice"*	Practical guidance on managing health and safety risks associated with excavation	URL [Click Here]
Safe Work Australia *"Working in the vicinity of overhead and underground electric lines guidance material"*	Provides information on how to manage risks when working in the vicinity of overhead and underground electric lines at a workplace	URL [Click Here]
Endeavour Energy Safety Brochures & Guides	To raise awareness of dangers of working on or near Endeavour Energy's assets	URL [Click Here]

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BEFORE COMMENCING EXCAVATION YOU MUST READ AND UNDERSTAND ALL INFORMATION PROVIDED IN THE BYDA RESPONSE AND LISTED BELOW

BACKGROUND

Endeavour Energy is able to make available plans of its underground assets to persons who intend to undertake excavation works in Endeavour Energy's distribution area. Any plans provided to you are made available subject to the provisions set out below, in the provided plans, and in the Endeavour Energy BYDA response Cover Letter.

We have set out below important information regarding the recommended procedures that should be followed when using this service and also the extent of our responsibility in respect of any plans provided. It is very important that you read and understand all the information and disclaimers provided below before excavating.

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CUSTOMER REQUESTS AND RESPONSIBILITIES

- Endeavour Energy expects to be able to provide relevant plans within 48 hours after a request is made.
- If the enquiry falls within the Transmission Mains area, additional notification requirements shall be complied with as per the instructions in the response Cover Letter.
- Endeavour Energy retains copyright over all plans and details provided in response to a customer's request.
- Persons excavating are expected to exercise all due care in the vicinity where underground assets are indicated and will be held responsible for any damage to any underground assets (including any Endeavour Energy property) or any other loss caused (including consequential losses) as a result of such excavations.
- All underground assets should be visually located by soft digging (pot holing) or hand digging.
- A person who undertakes excavation work is subject to duties and responsibilities under the *Work Health and Safety Act 2011* and *Work Health and Safety Regulation 2011*. Please refer to the Work Cover NSW "*Work near underground assets: Guide*" and "*Excavation work: Code of practice*" which contain practical advice for working near underground utility services.
- Any damage to Endeavour Energy's assets must be immediately reported on **131 003**.
- In all cases of electric shock or suspected electric shock the victim shall immediately be transported to hospital or medical centre for treatment.
- If conduit material cannot be identified, it should be assumed to contain asbestos material.
- Endeavour Energy plans are frequently updated to record changes to underground assets. All plans are valid for **20** working days from the date of issue.

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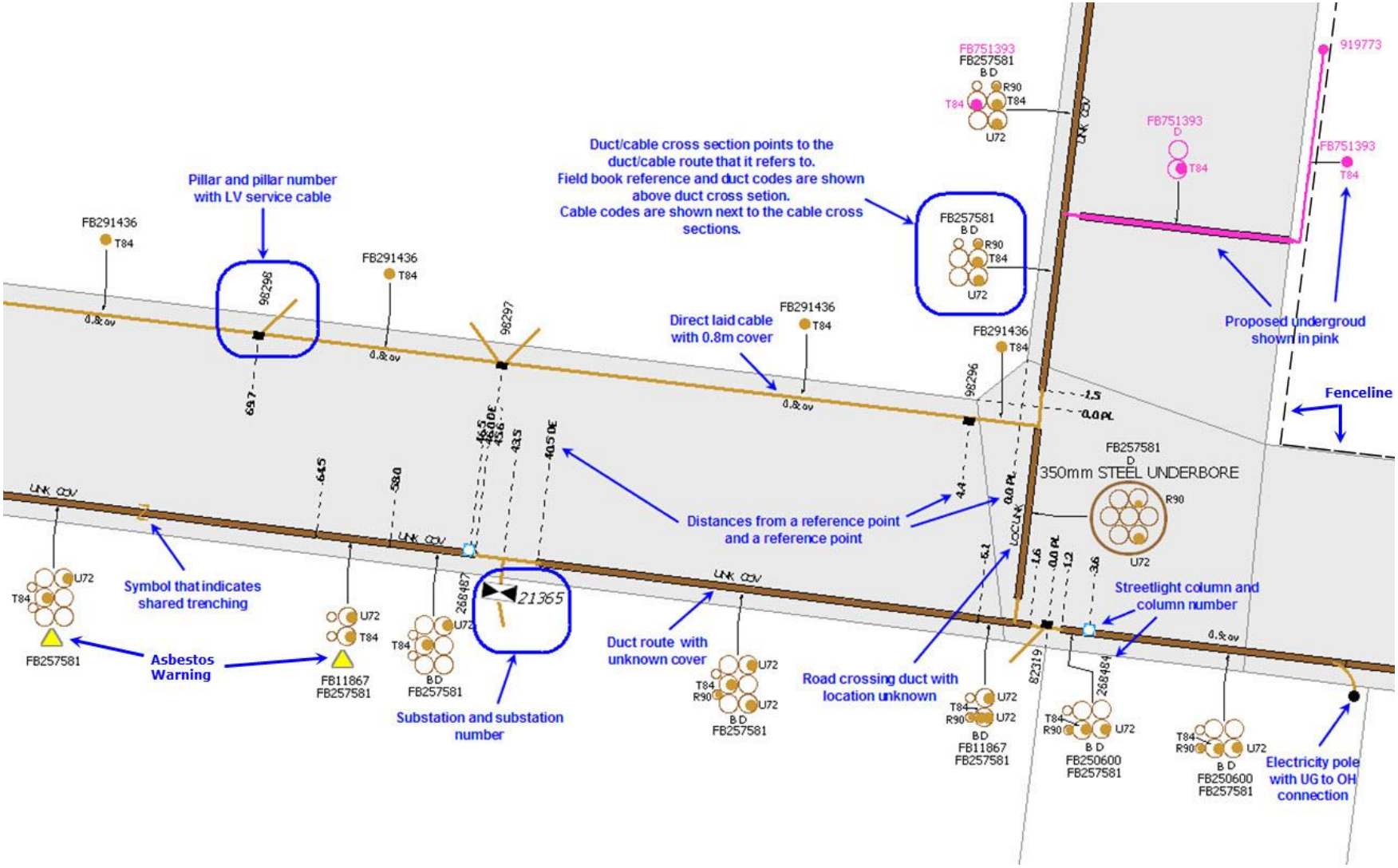
EXAMPLE OF HOW TO READ ENDEAVOUR ENERGY PLANS



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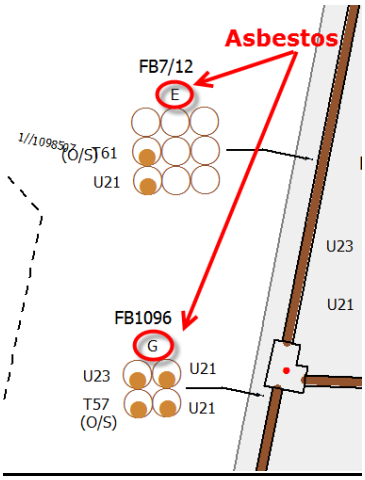
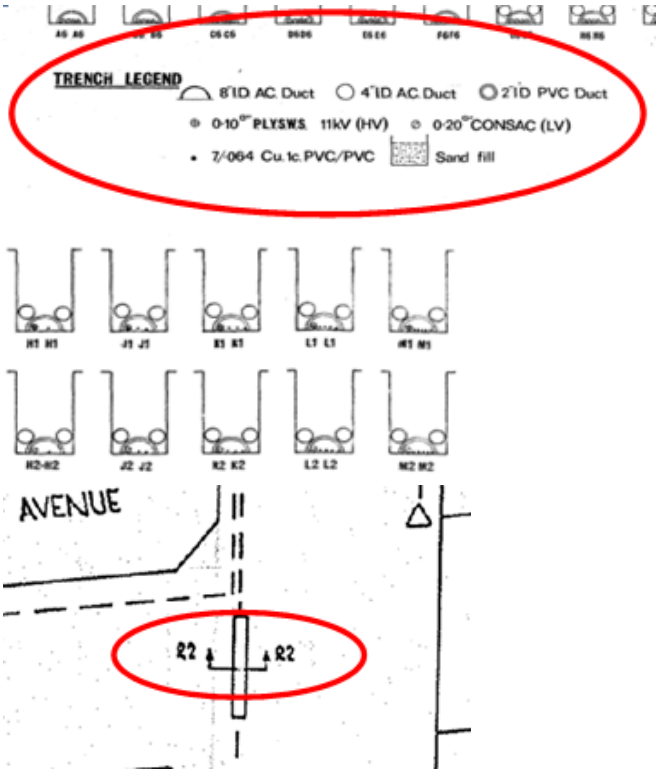
IDENTIFYING ASBESTOS DUCTS

1. Duct codes **E, F** and **G** identify Fibro Conduits

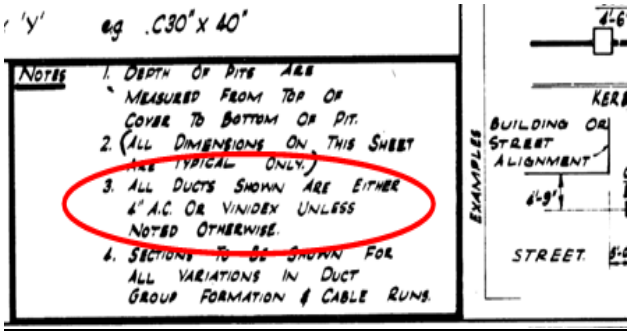


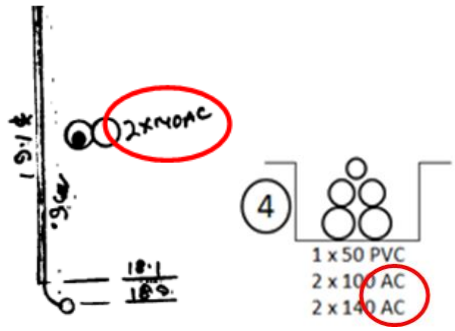
2. The duct codes **G,H,J,K,L,M Q,R,S,T,U,V,W & X** under each configuration are used on old Blue Mountains drawings to identify Asbestos



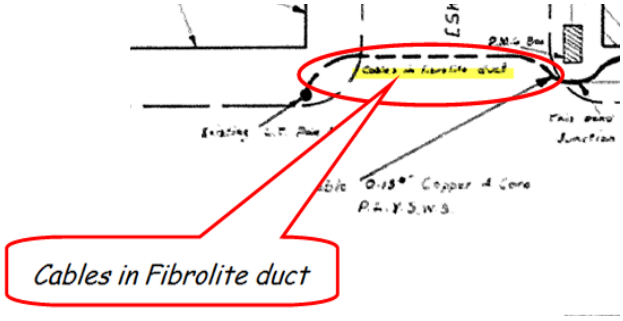
If underground details have not been captured and drawings are used, the method for identifying asbestos ducts and standards are different for the different utilities that amalgamated with Endeavour Energy. Using Reticulation Drawings, there are numerous ways to determine if a duct route has asbestos ducts, refer to following examples:

3. **AC** (Asbestos Cement) acronym

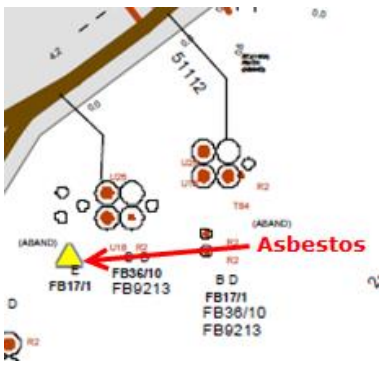




4. **Fibrolite** (asbestos) ducts



5. Yellow **triangle** identifies Fibro Conduits



If further clarification is required, please contact:
Endeavour Energy
Phone: (02) 9853 4161 (8:00am-4:30pm Mon-Fri)
Emergency Phone Number: 131 003

STANDARD UNDERGROUND SYMBOLS / LABELS

NOTE: *If symbology has not been provided on the plan use symbols as shown below.*

SYMBOLS & ACRONYMS

or — Street light column

Padmount substation

or — Overground pillar (O.G.Box)

Underground pit

Duct run

Cable run


Typical duct section


Typical underbore section

Blocked duct

Cable section

Asbestos warning

STJ, PBJ, TTJ

STJ Straight through joint

PBJ Parallel branch joint

TTJ Transition through joint

Underground to overhead pole

SL Streetlight conductor

SC Service cable

SE Cable sealed end

SF Service Feeder

OS Out of Service

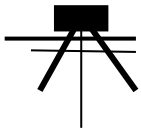
O.A.M. Over awning main

U.A.M. Under awning main

N.I.S. Not in service

Fence/dimensioning

Shared trenching


Service point of attachment

DUCT CODE LABLES

B = 50 mm PVC

D = 125mm PVC

E = 100mm Fibro Conduit (Asbestos)

F = 140mm Fibro Conduit (Asbestos)

G = 150mm Fibro Conduit (Asbestos)

DEPTH & LOCATION LABELS

0.5- 0.7 COV = 0.5m – 0.7m

0.9 COV = 0.9m Depth

UNK COV = Depth Unknown

LOC UNK = Location Unknown

0.9 PL = Located 0.9m from Property Line

Jemena Gas West

Referral
243455154

Member Phone
1300 880 906

Responses from this member

Response received Mon 19 Aug 2024 5.01pm

File name	Page
Response Body	21
Jemena_BYDAResponse_STD_37389014_243455154.pdf	22
image1	Excluded
Standard_Gas_Coversheet_Jemena.pdf	32

Dear Ramiya Ravindran

REF: BYDA JOB:37389014 SEQ:243455154 - 61 Turner Road Gregory Hills NSW 2557

Thank you for your BYDA inquiry. For a detailed response from Jemena, please refer to the attached documents.

Please follow the excavation guidelines attached.

For your safety and to further reduce the risk of accidental hit to Jemena's services, the attached plans will now show lines from the mains to the serviced properties, representing Jemena's Gas Service Pipes. This new detail is explained further on the attached legend.

This information is valid for 28 days from the date of enquiry.

Regards

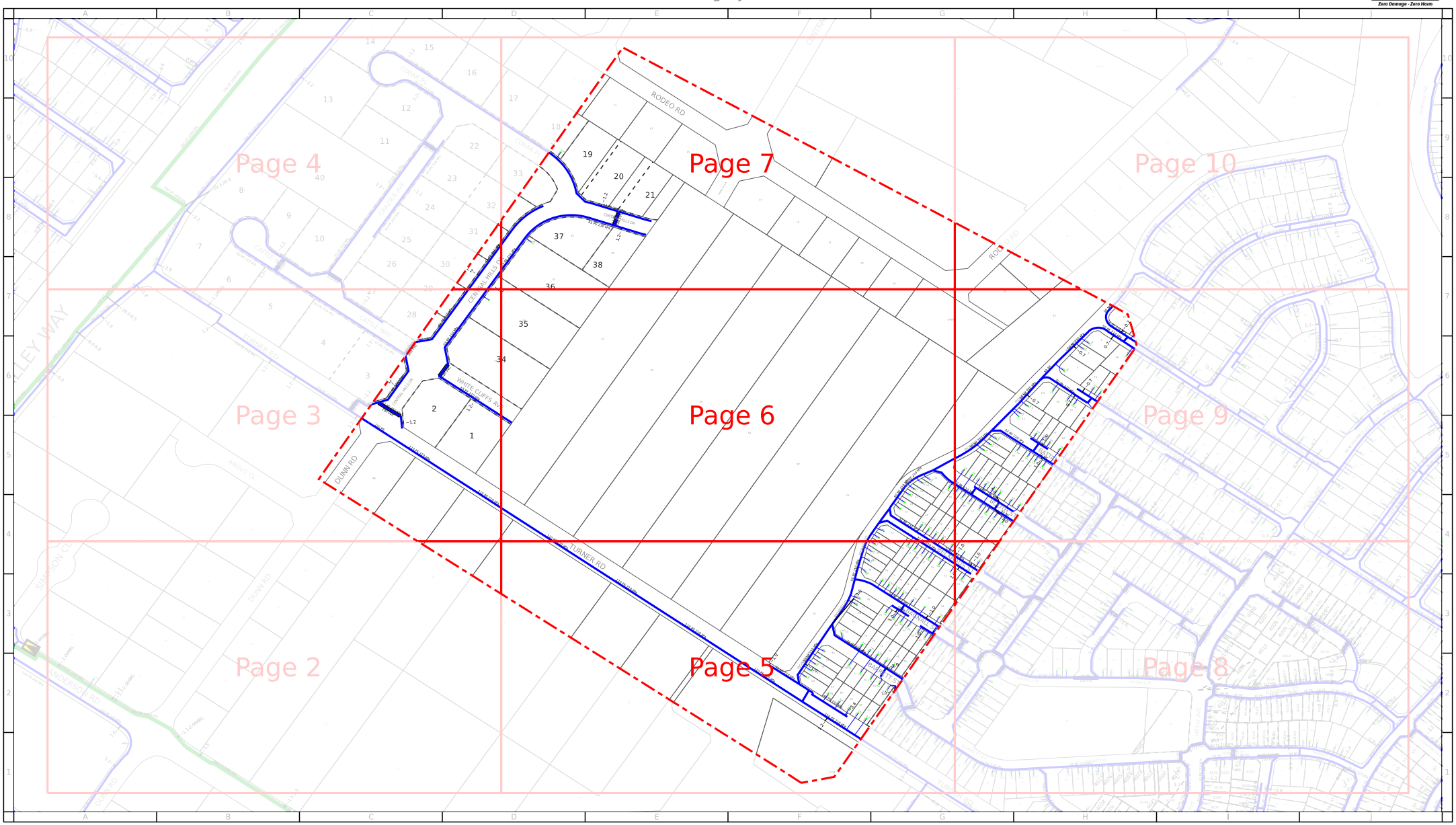
BYDA Admin, Jemena
Level 14, 99 Walker Street North Sydney, NSW 2060
PO Box 1220, North Sydney, NSW 2059
1300 880 906
www.jemena.com.au |
www.gonaturalgas.com.au

Natural Gas Jemena bringing energy to life

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

BYDA Authority: Jemena Gas Networks (NSW)

BYDA Location: 61 Turner Road Gregory Hills NSW, 2557



Jemena
ABN 87 003 004 322

For legend details, please refer to the Coversheet attachment provided as part of this BYDA response.

Scale: 1:6302

Issue Date: 19/08/2024
BYDA Seq No: 243455154
BYDA Job No: 37389014
Overview Page:

BYDA Authority: Jemena Gas Networks (NSW)

BYDA Location: 61 Turner Road Gregory Hills NSW, 2557

Jemena
ABN 87 003 004 322

For legend details, please refer to the Coversheet attachment provided as part of this BYDA response.

N W E S

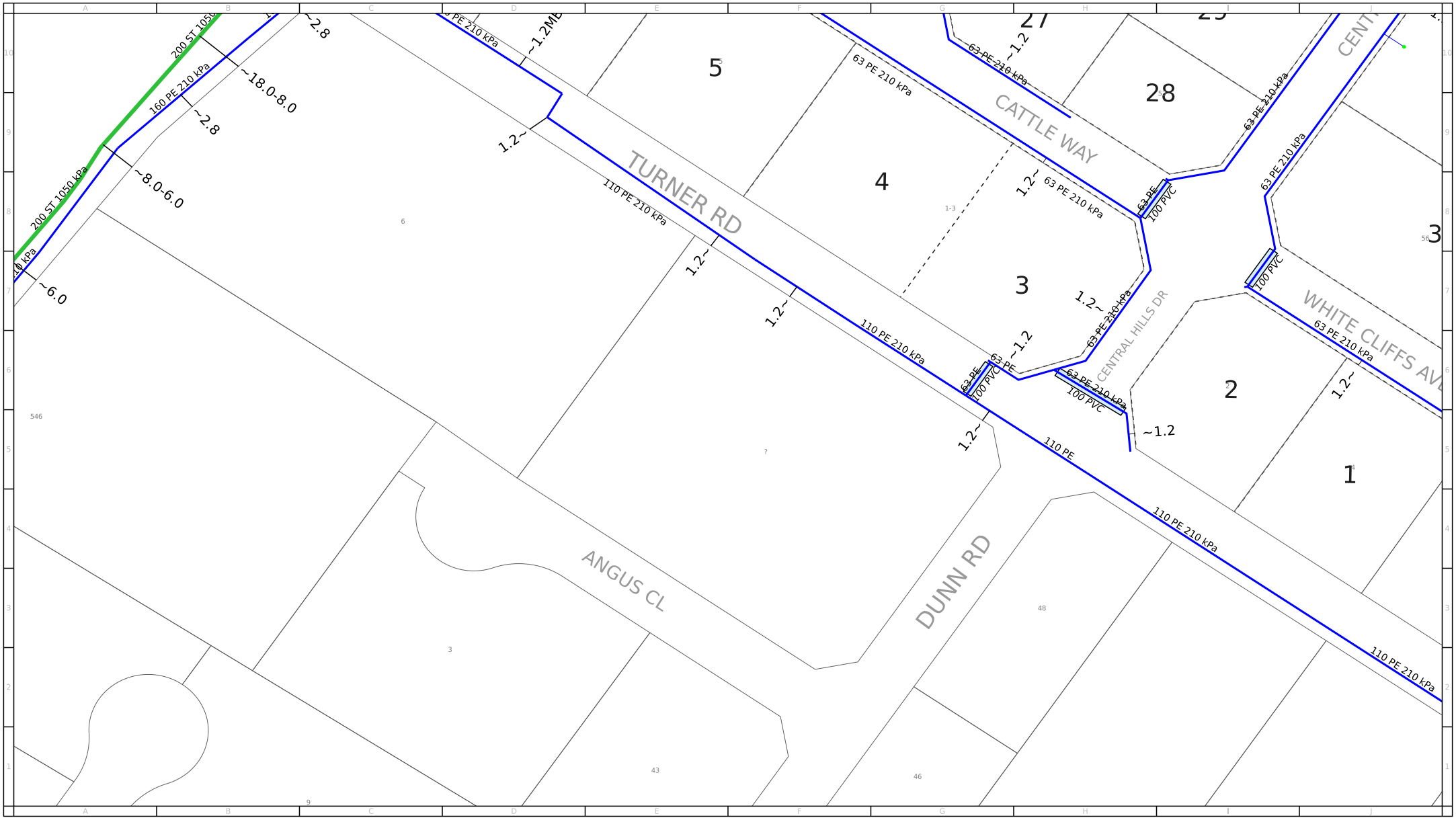
Scale: 1:2000

Issue Date: 19/08/2024
BYDA Seq No: 243455154
BYDA Job No: 37389014

0m 10m 20m 30m 40m 50m 60m 70m 80m

BYDA Authority: Jemena Gas Networks (NSW)

BYDA Location: 61 Turner Road Gregory Hills NSW, 2557



Jemena
ABN 87 003 004 322

For legend details, please refer to the Coversheet attachment provided as part of this BYDA response.

Scale: 1:2000

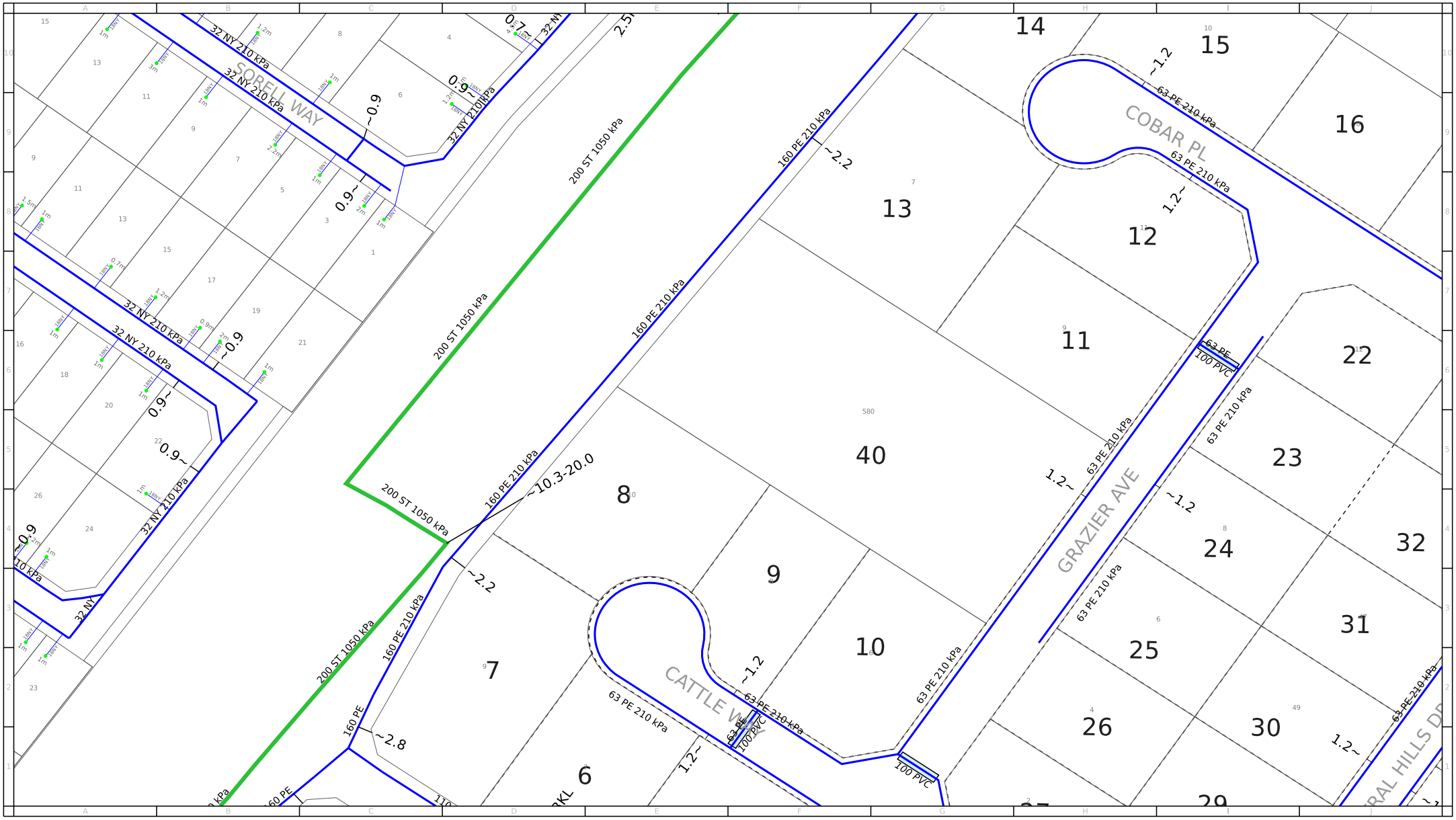
Issue Date: 19/08/2024
BYDA Seq No: 243455154
BYDA Job No: 37389014

0m 10m 20m 30m 40m 50m 60m 70m 80m

WARNING: This is a representation of Jemena Gas Networks underground assets only and may not indicate all assets in the area. It must not be used for the purpose of exact asset location in order to undertake any type of excavation. This plan is diagramatic only, and distances scaled from this plan may not be accurate. Please read all conditions and information on the attached information sheet. This extract is subject to those conditions. The information contained on this plan is only valid for 28 days from the date of issue.

BYDA Authority: Jemena Gas Networks (NSW)

BYDA Location: 61 Turner Road Gregory Hills NSW, 2557



Jemena
ABN 87 003 004 322

For legend details, please refer to the Coversheet attachment provided as part of this BYDA response.

Scale: 1:2000

Issue Date: 19/08/2024
BYDA Seq No: 243455154
BYDA Job No: 37389014

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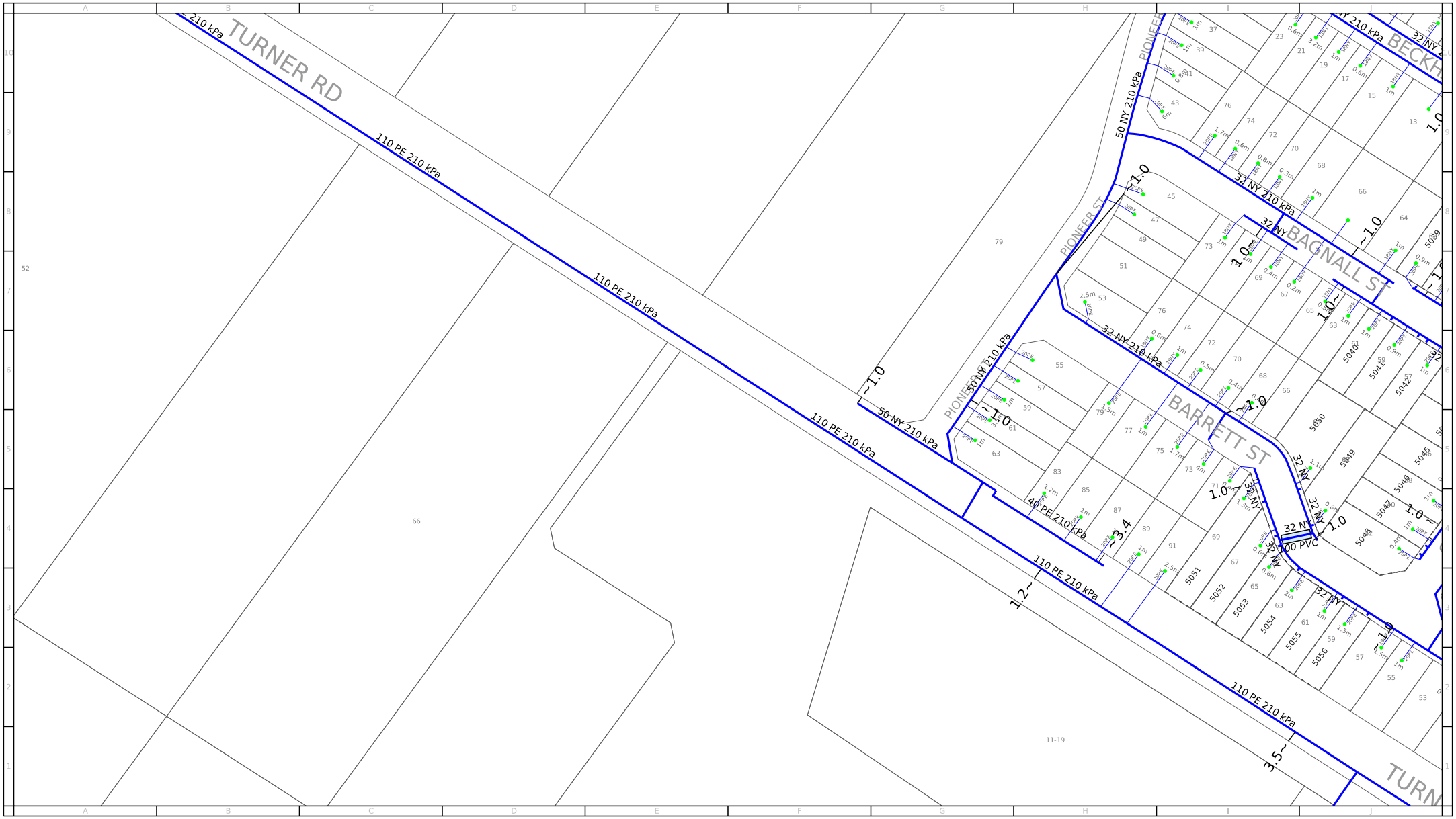

Jemena
ABN 87 003 004 322

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N
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Scale: 1:2000

Issue Date: 19/08/2024

BYDA Seq No: 243455154

BYDA Job No: 37389014

0m 10m 20m 30m 40m 50m 60m 70m 80m

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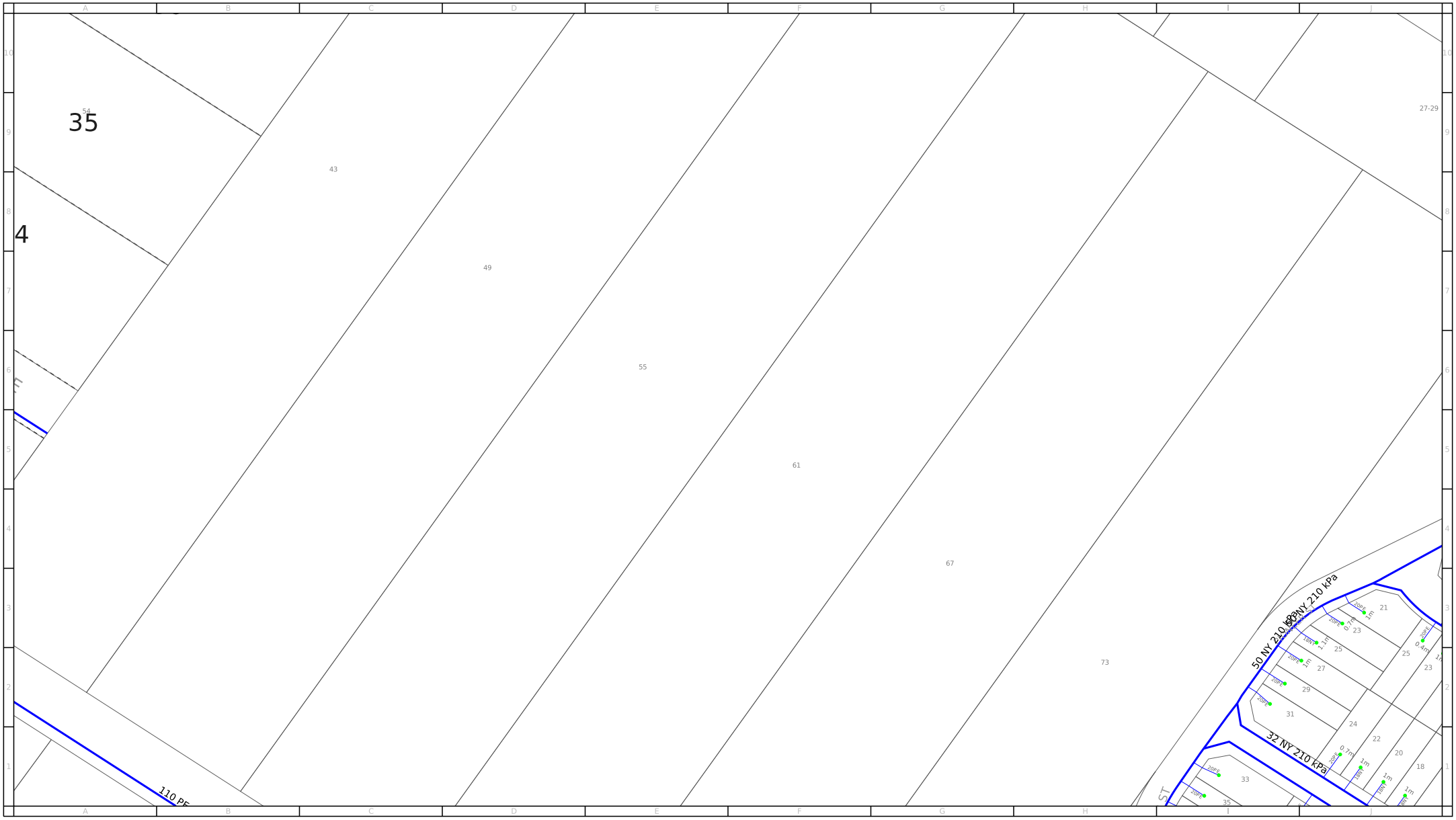

Jemena
ABN 87 003 004 322

For legend details, please refer to the Coversheet attachment provided as part of this BYDA response.

N
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Scale: 1:2000

Issue Date: 19/08/2024

BYDA Seq No: 243455154

BYDA Job No: 37389014

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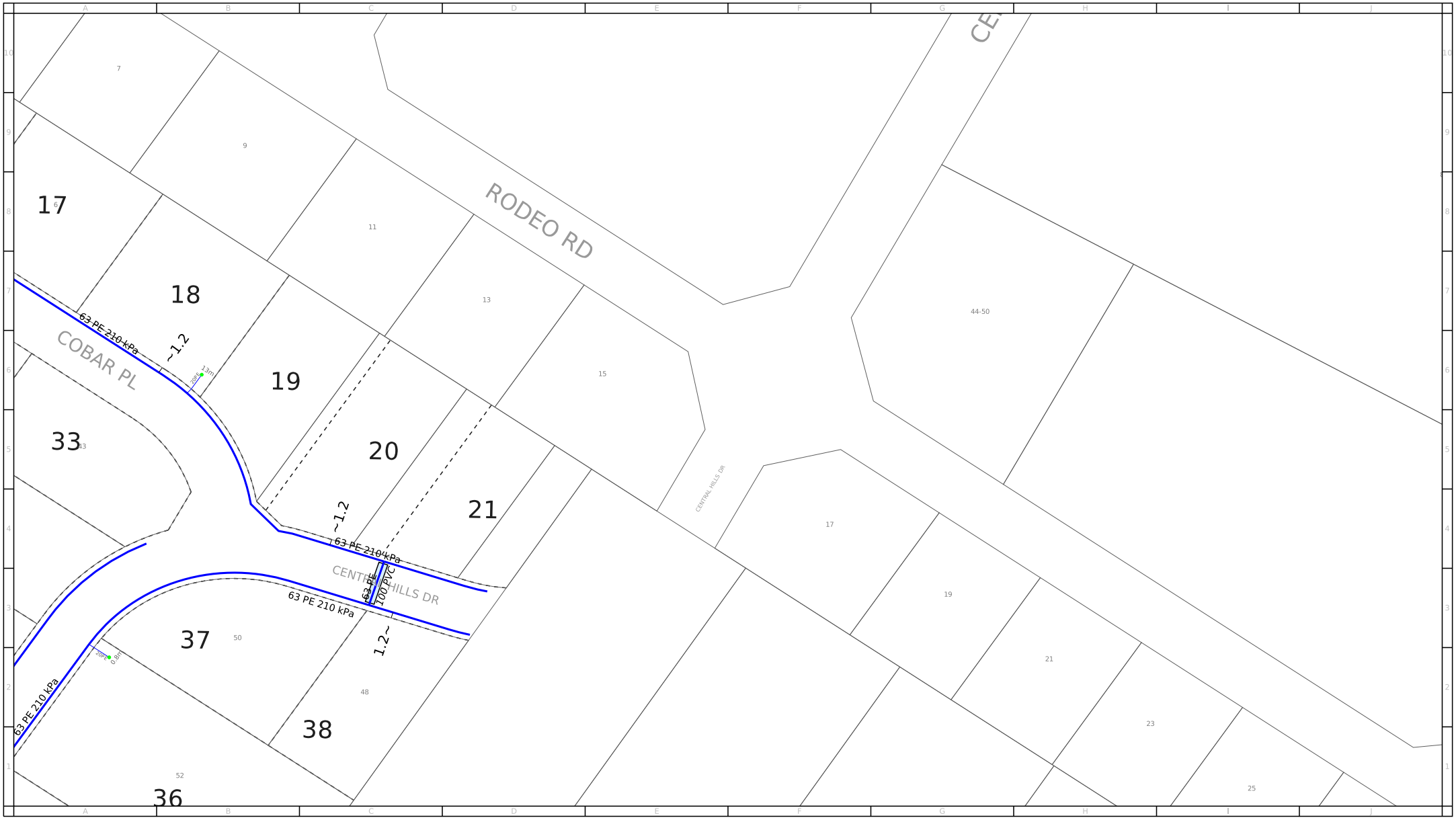

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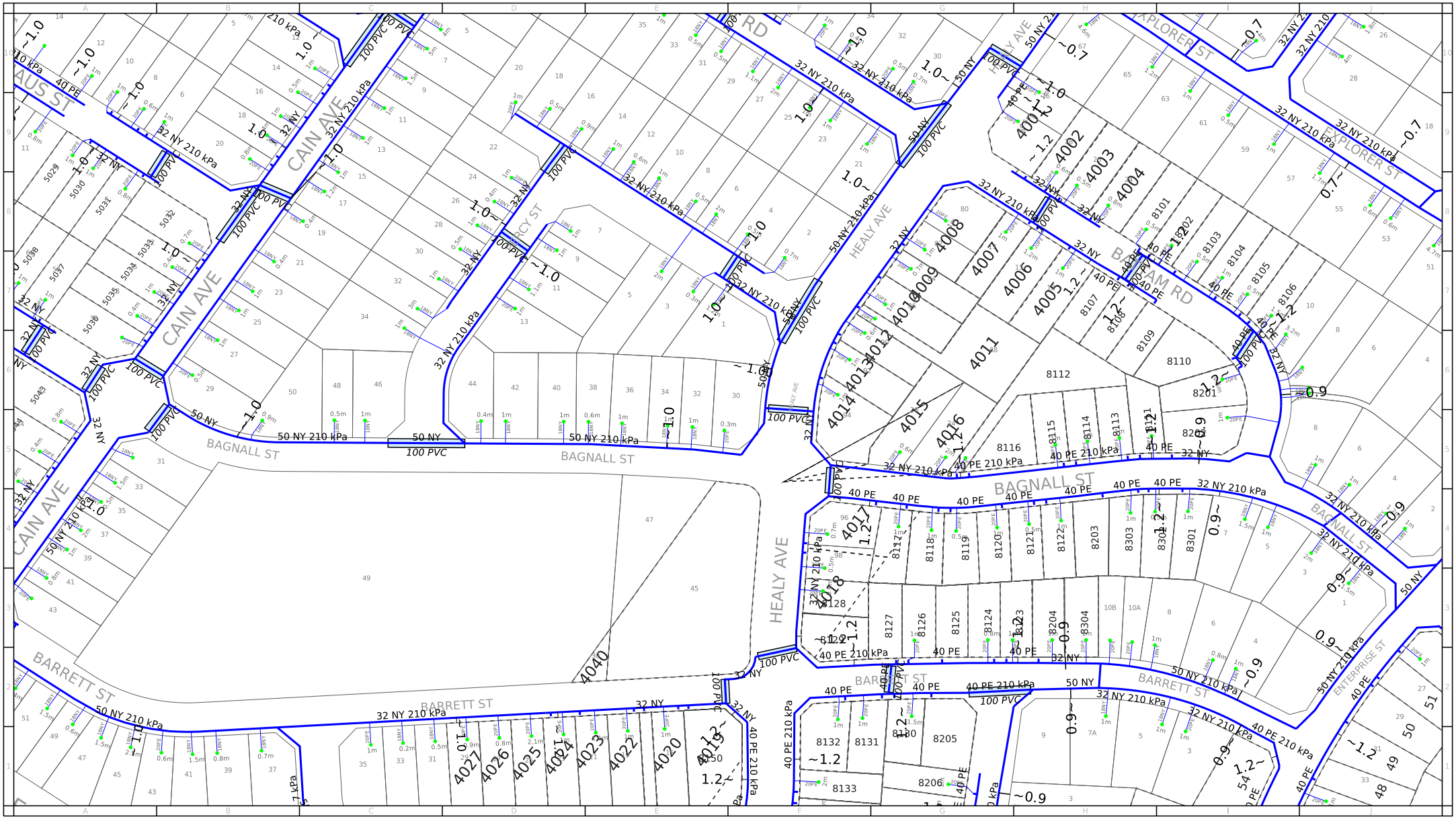

Jemena
ABN 87 003 004 322

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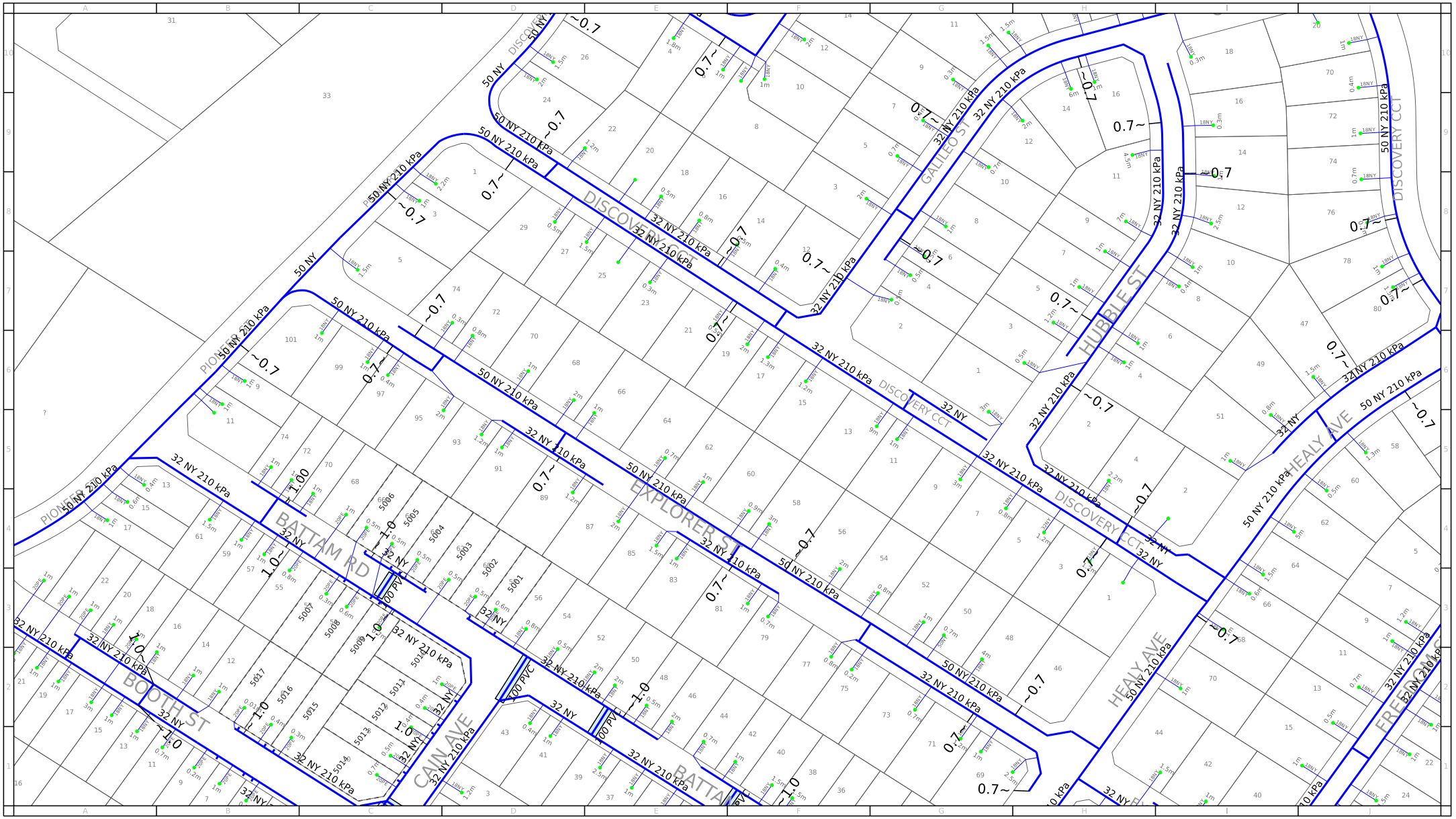

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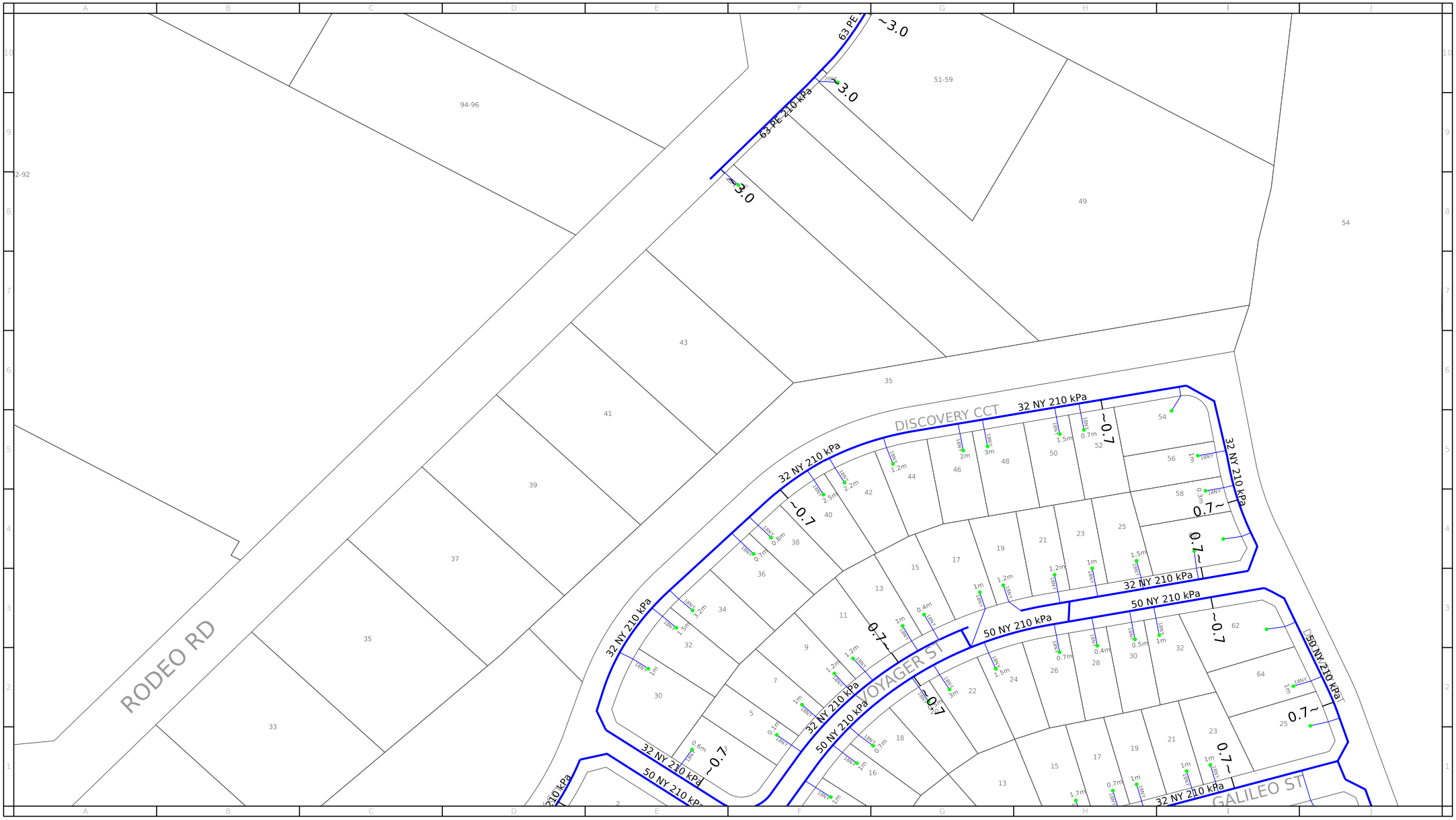

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Jemena Gas Network Protection

Jemena Asset Management Pty Ltd ABN 53 086 013 461
for and on behalf of Jemena Gas Networks (NSW) Ltd ABN 87 003 004 322

ASSETS AFFECTED

This information is only valid for 28 days from the date of issue

Please note that there are **Gas Mains or Services** in the vicinity of your intended work, as generally illustrated on the attached map. There may also be other mains or services at the location. For an explanation of the map, please see the legend attachment and read the important information below.

Please note that you have duty of care to ensure that Jemena's assets are not compromised or damaged during any digging, future development or construction work.

Excavation Guidelines:
It is essential that the location of gas pipe/s are confirmed by carefully pot-holing by hand excavation prior to proceeding with mechanical excavation in the vicinity of gas pipes. If you cannot locate the pipe, contact the local depot.

Important Information:

1. The enclosed plans have been prepared solely for the use of Jemena Gas Networks (NSW) Ltd and Jemena Asset Management Pty Ltd (together "Jemena") and. show the position of Jemena's underground gas mains and installations in public gazetted roads. If the enclosed plans show gas assets located on private property or other third party property, these are approximate locations.
2. There may be underground assets owned by other utilities in the vicinity of your work and it is your responsibility to identify and locate such assets.
3. The plans may show the position of underground mains and installations relative to fences, buildings and other structures as they existed at the time the assets were installed and may not have been updated to take account of any subsequent change in the location or style of those features. Depth of underground assets may also vary as a result of changes to road, footpath or surface levels subsequent to installation.
4. While Jemena takes all reasonable care to ensure the accuracy and completeness of the information provided, it 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 or omission. It is intended to be indicative only and must not be solely relied upon when undertaking underground works.
5. Except to the extent that liability may not be capable of being lawfully excluded, Jemena, its employees, agents, officers and contractors will not be liable to any person for loss or damage (including indirect and consequential loss or damage) which may be suffered or incurred in connection with the provision of this information.
6. Persons excavating or carrying out other earthworks will be held responsible for any damage caused to Jemena's underground mains, service lines and equipment. In accordance with the *Work Near Underground Assets – Guide* published in 2007 by Work Cover Authority*, Jemena recommends that you carry out potholing by hand to accurately confirm the location of gas mains and installation prior to commencing excavations.

Jemena BYDA Administration: 1300 880 906 ***Guide** available via: www.safework.nsw.gov.au

In case of Emergency Phone 131 909 (24 hours)

Jemena Gas Networks

Before You Dig Australia Map Legend
Feb 2024

Network Mains

- Proposed New Main (coloured as per kPa)
- Proposed Isolate (coloured as per kPa)
- Unknown kPa
- 2kPa Low Pressure gas main
- 7kPa Low Pressure gas main
- 30kPa Medium pressure gas main
- 100kPa Medium Pressure gas main
- 210kPa Medium Pressure gas main
- 300kPa Medium Pressure gas main
- 400kPa Medium Pressure gas main
- 1050kPa High Pressure gas main
- 3500kPa High Pressure gas main
- 7000kPa High Pressure gas main
- >7000kPa Transmission pipeline
- Isolated Service - Former Med/High Pressure
- Isolated Steel Main -**Treat as High Pressure**
- Conduit or Casing
  100 PVC
  Size & Material (see conduit material codes)
- Critical Main -**Treat as High Pressure**
  (Main coloured as per kPa)
- EXPOSED
  Exposed Main section
- SHALLOW-SP
  Shallow Main section: see Protection Code below, no code assume no protection

SP	Steel Plate	CE	Concrete Encased
PP	PE Plate	UNK	Unknown Type
CS	Concrete Slab		

- Warning - Blue Jacket Coated gas main
  (Main coloured and styled as per kPa)

Gas Services

- Gas service – coloured by kPa
- Serviced Site indicator

Jemena has created service pipe features programmatically based on known pipe characteristics and cartographic principles. They may provide guidance to identify assets whilst in the field in addition to existing processes.

Network Assets

- Siphon
- Network Valve
- High Pressure Main Line Valve (=>1050kPa)
- High Pressure Automatic Line Break Valve (>1050kPa)
- Boundary Regulator Set (=<1050kPa)
- Distribution Regulator Set (=<1050kPa)
- High Pressure Regulating Station (>1050kPa)

Annotations

Pipe and Conduit Material Codes

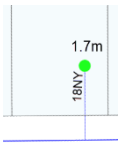
NY	Nylon	NB	Nominal Bore – Cast Iron
PE	Polyethylene	ST	Steel
P/PL	Plastic (undefined)	C/CO	Copper
PVC	Polyvinyl Chloride		

Pipe code combinations and dimension references

- **6NB 50MM NY** 50mm Nylon main inserted into 6 inch (Nominal Bore) Cast Iron pipe
- **50MM 32MM NY** 32mm Nylon main inserted into 50mm Steel pipe

~1.5 Distance (in metres) of main from Boundary Line (MBL)

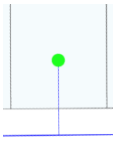
MBK	Distance in Metres Back of Kerb
MKL	Distance in Metres from Kerb Line
MEBL	Distance in Metres from Eastern Boundary Line (North/South/West)
MCL	Distance in Metres from Centre Line of Road
MFL	Distance in Metres from Fence Line



Distance (in metres) of service from side Boundary where the service pipe crosses from the road reserve into the private lot

Service placed towards left or right boundary

Service pipe size & material where known



For connected sites with insufficient asset details, service is shown down the centre of the lot with no attributes plotted

Referral
243455148

Member Phone
1800 687 626

Responses from this member

Response received Mon 19 Aug 2024 4.58pm

File name	Page
Response Body	35
4678_NBN_Dial_Before_You_Dig_Poster_20170517.pdf	36
Disclaimer_243455148_20240819_065739576990.pdf	38
243455148_20240819_065739576990_1.pdf	42

Hi Ramiya Ravindran,

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
www.nbnco.com.au

Working near nbn™ 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.

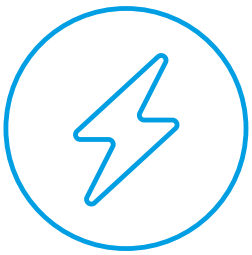
Prepare: Prepare for your job by engaging a DBYD Certified Plant Locator to help interpret plans and identify on-site assets. Contact **nbn** should you require further assistance.

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.

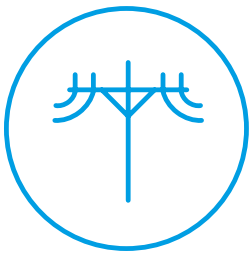
Protect: Protecting and supporting the exposed **nbn** underground asset is the responsibility of the worker. Exclusion zones for **nbn** assets are clearly stated in the plan and appropriate controls must be implemented to ensure that encroachment into the exclusion zone by machinery or activities with the potential to damage the asset is prevented.

Proceed: Proceed only when the appropriate planning, preparation, potholing and protective measures are in place.

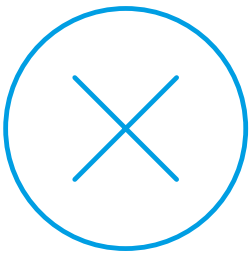
Working near **nbn**™ cables



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**™ network facility damages must be reported online here.
For enquiries related to your DBYD request please call 1800 626 329.

DIAL BEFORE YOU DIG
www.1100.com.au

To:	Ramiya Ravindran
Phone:	Not Supplied
Fax:	Not Supplied
Email:	ramiya.ravindran@arup.com

Dial before you dig Job #:	37389014	
Sequence #	243455148	
Issue Date:	19/08/2024	
Location:	61 Turner Road , Gregory Hills , NSW , 2557	

Information

The area of interest requested by you contains one or more assets.

nbn™ Assets	Search Results
Communications	Asset identified
Electricity	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 DBYD 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 Dial Before You Dig 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 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 DBYD 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 uniformed 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
NSW	Electricity Supply Act 1995
	Work Cover NSW - Work Near Underground Assets Guide
	Work Cover NSW - Excavation Work: Code of Practice
VIC	Electricity Safety Act 1998
	Electricity Safety (Network Asset) Regulations 1999
QLD	Electrical Safety Act 2002
	Code of Practice for Working Near Exposed Live Parts
SA	Electricity Act 1996
TAS	Tasmanian Electricity Supply Industry Act 1995
WA	Electricity Act 1945
	Electricity Regulations 1947
NT	Electricity Reform Act 2005
	Electricity Reform (Safety and Technical) Regulations 2005
ACT	Electricity Act 1971

Thank You,

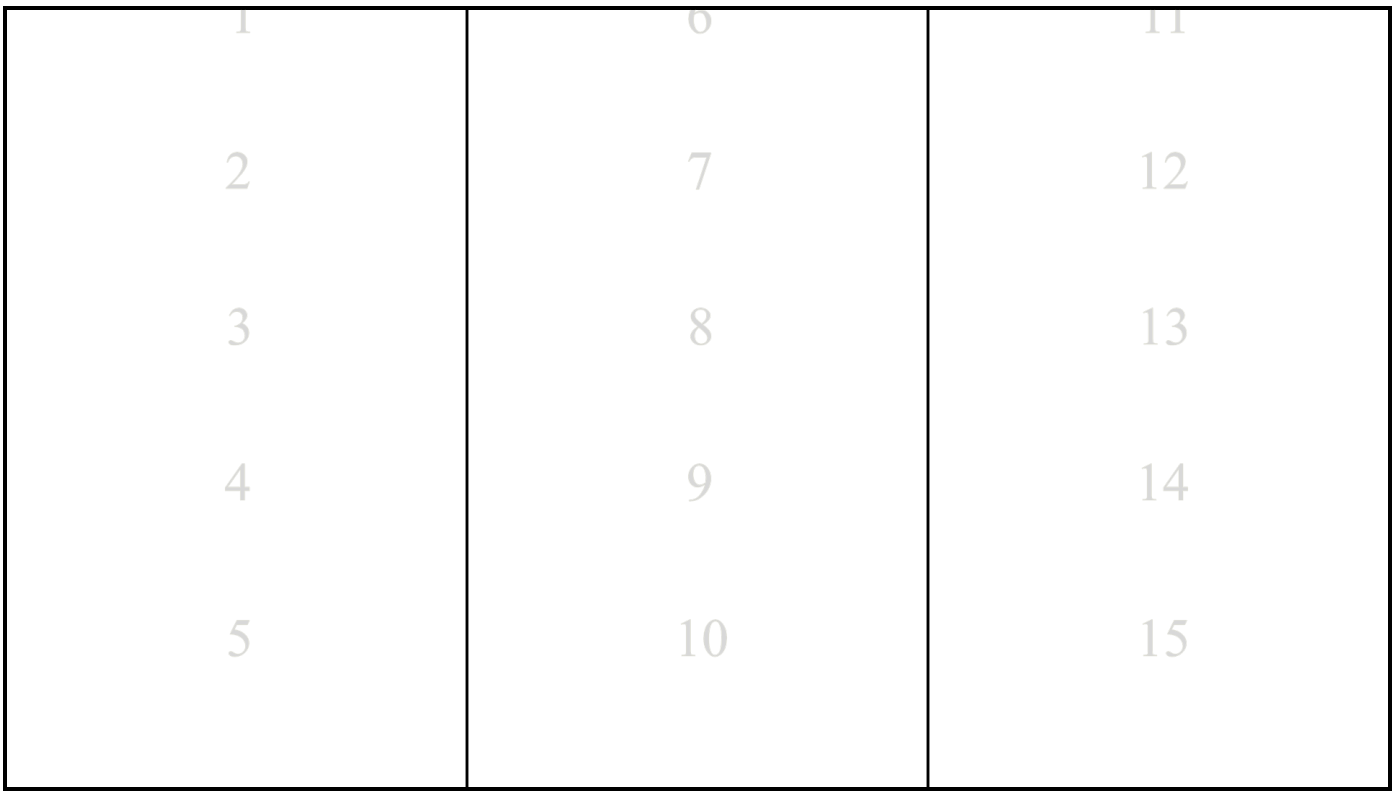
nbn DBYD

Date: 19/08/2024

To:	Ramiya Ravindran
Phone:	Not Supplied
Fax:	Not Supplied
Email:	ramiya.ravindran@arup.com

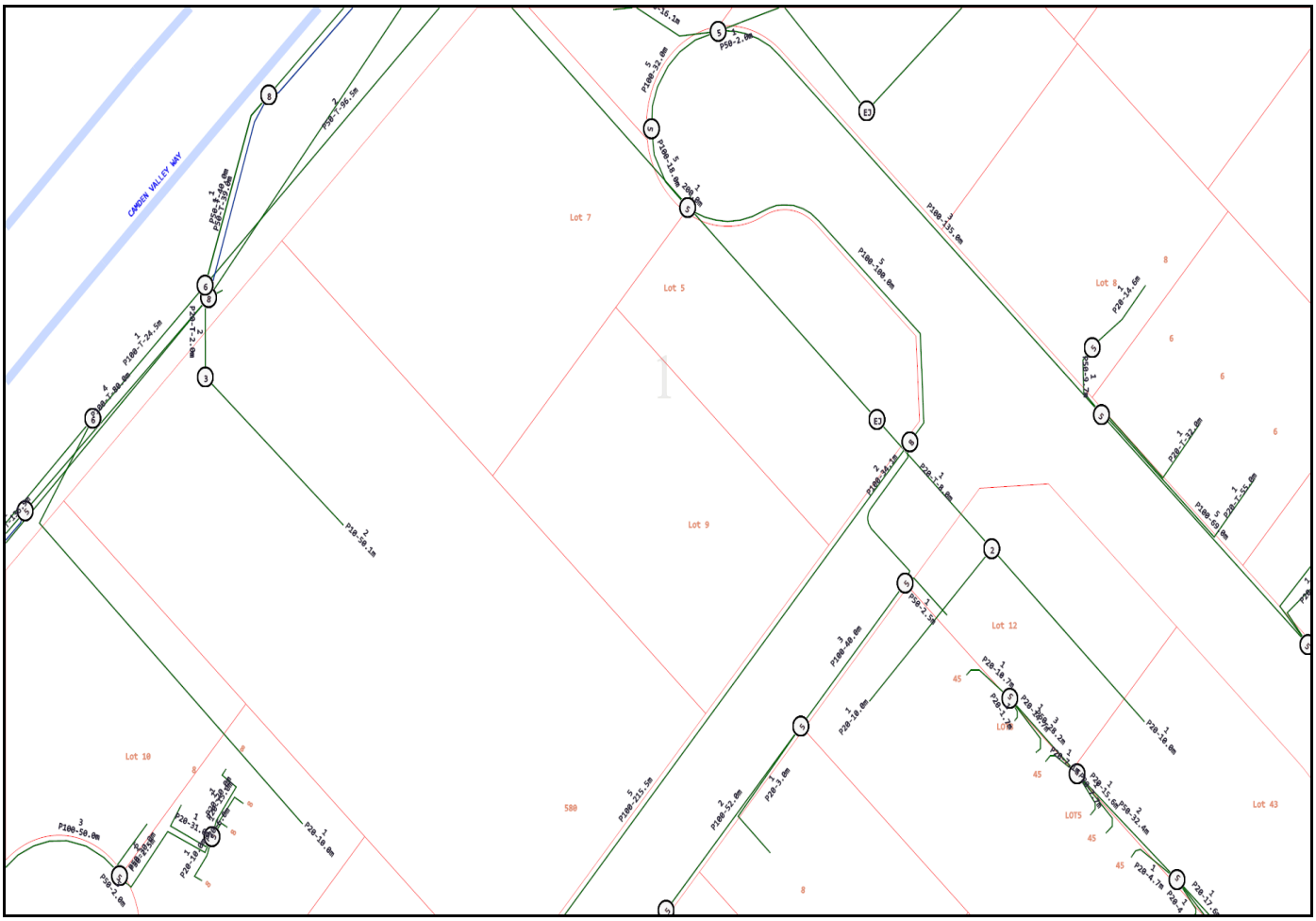
Dial before you dig Job #:	37389014	BEFORE YOU DIG www.byda.com.au Zero Damage - Zero Harm
Sequence #	243455148	
Issue Date:	19/08/2024	
Location:	61 Turner Road , Gregory Hills , NSW , 2557	

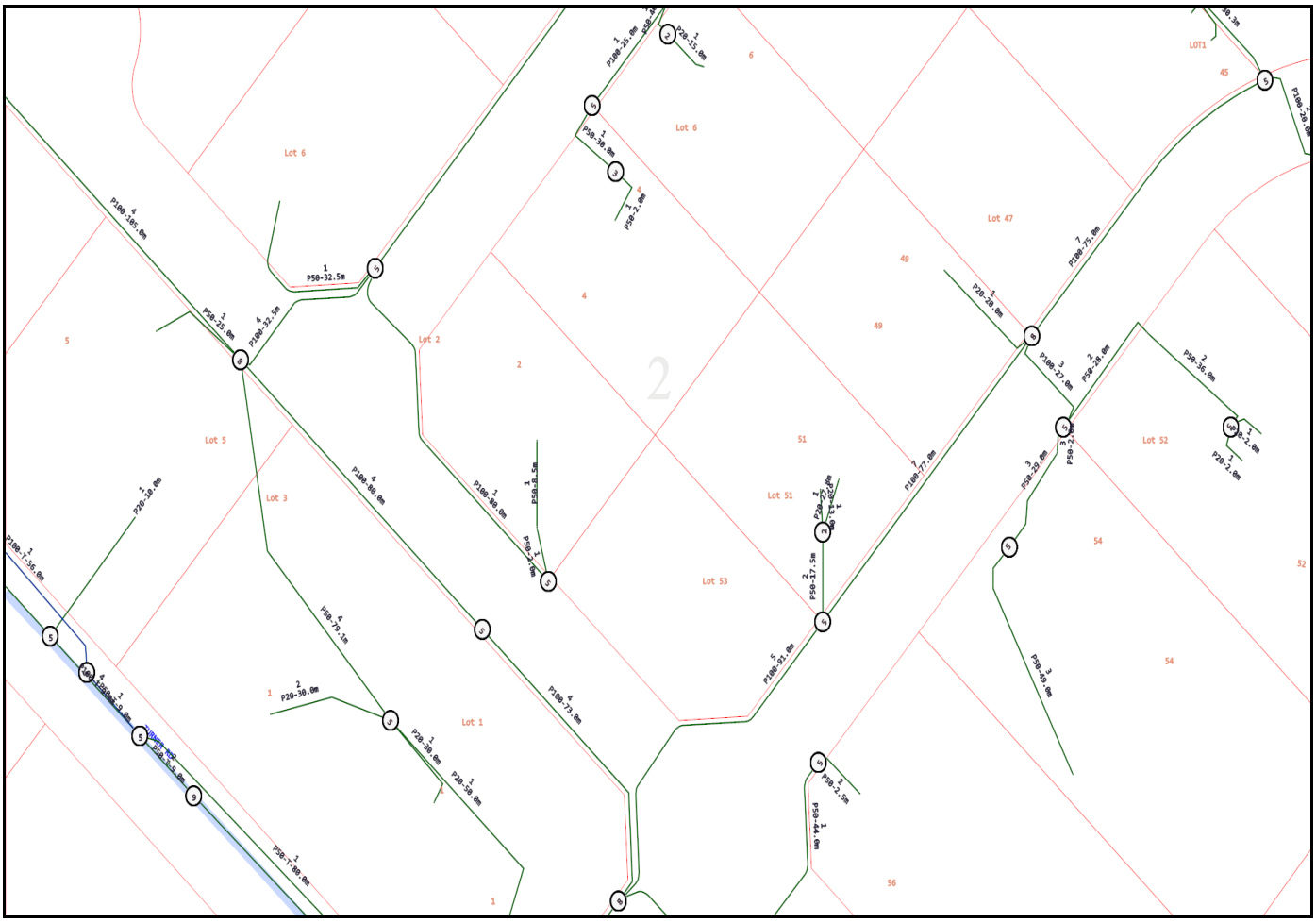
Indicative Plans are tiled below to demonstrate how to layout and read nbn asset plans

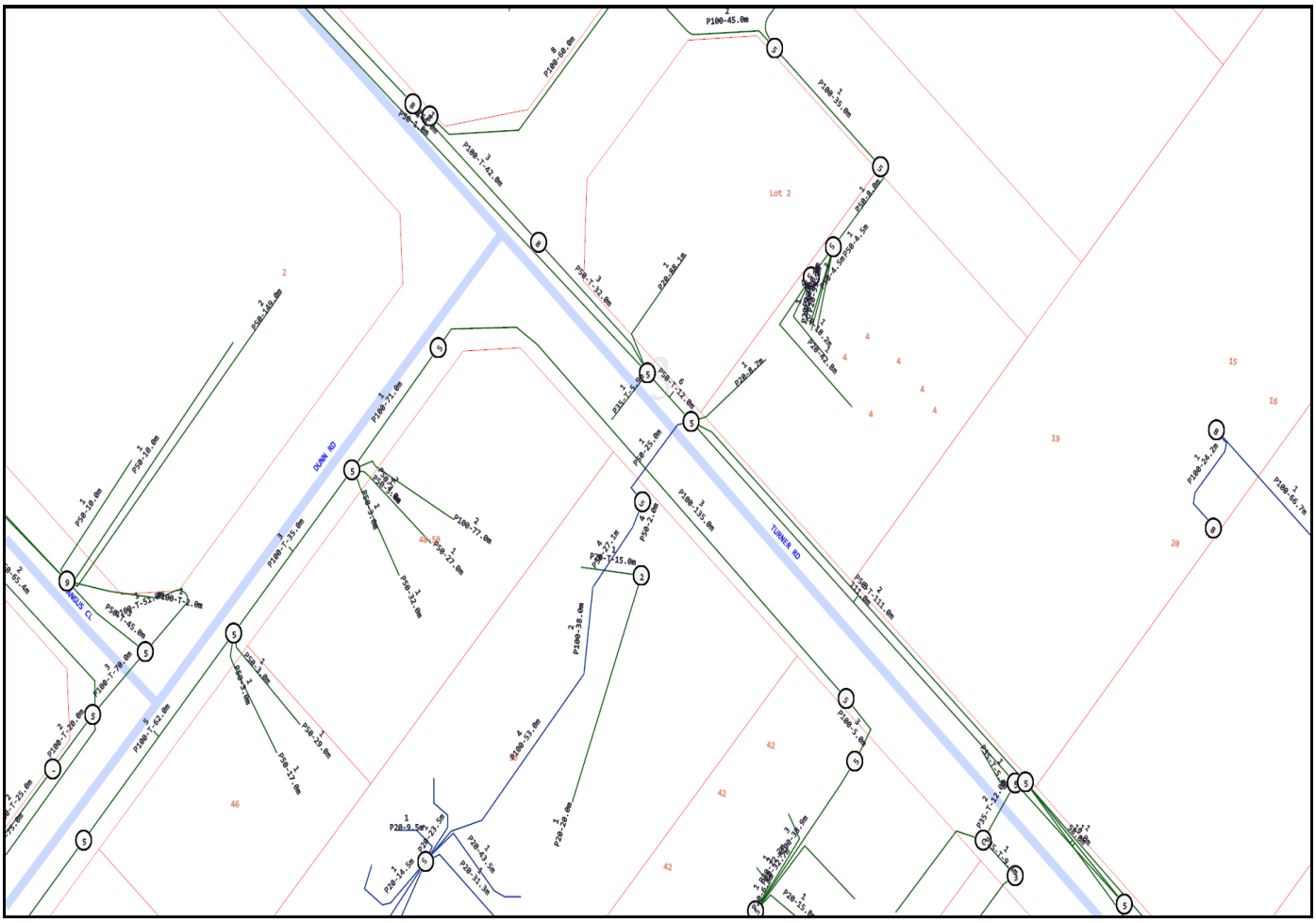


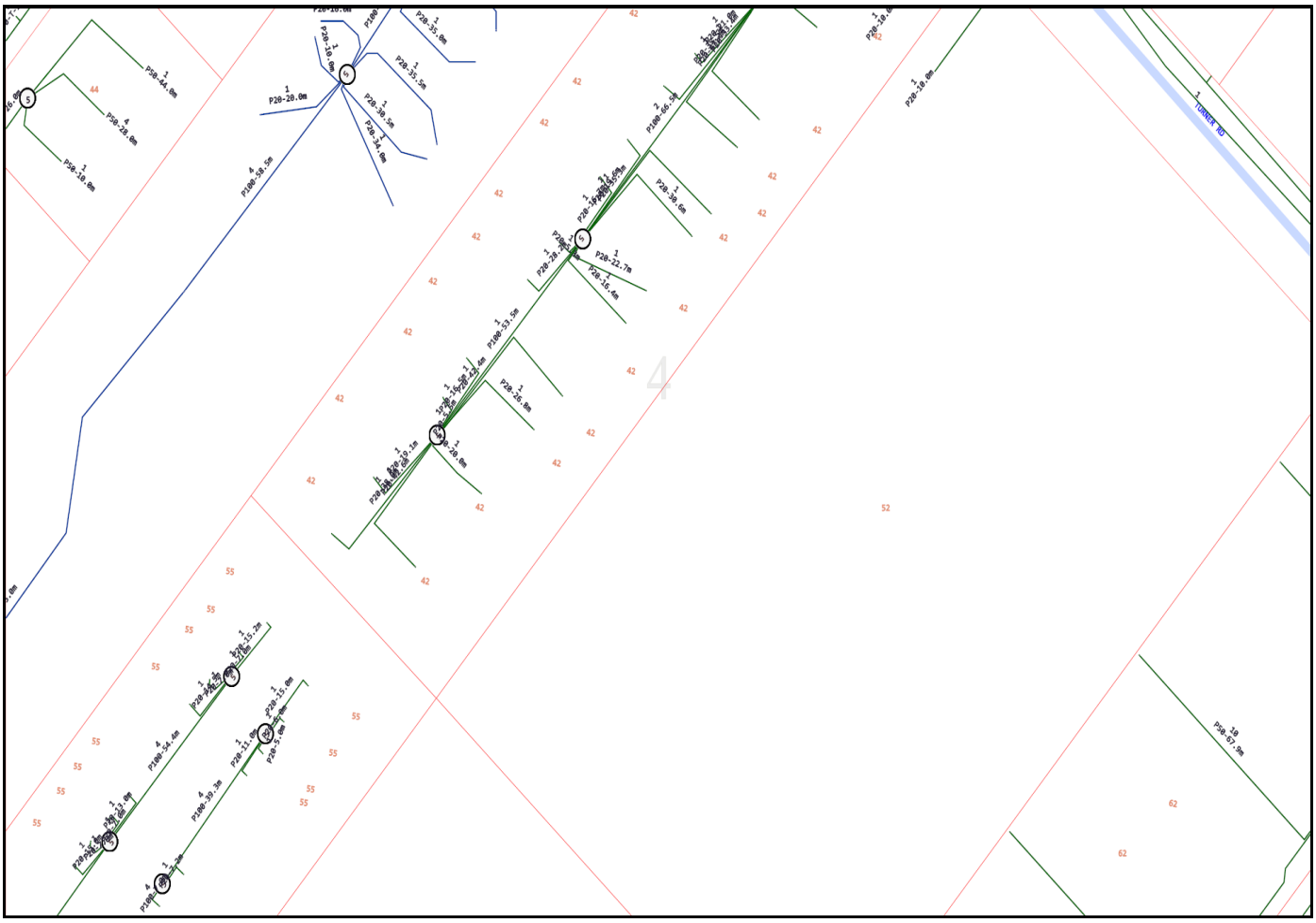
LEGEND

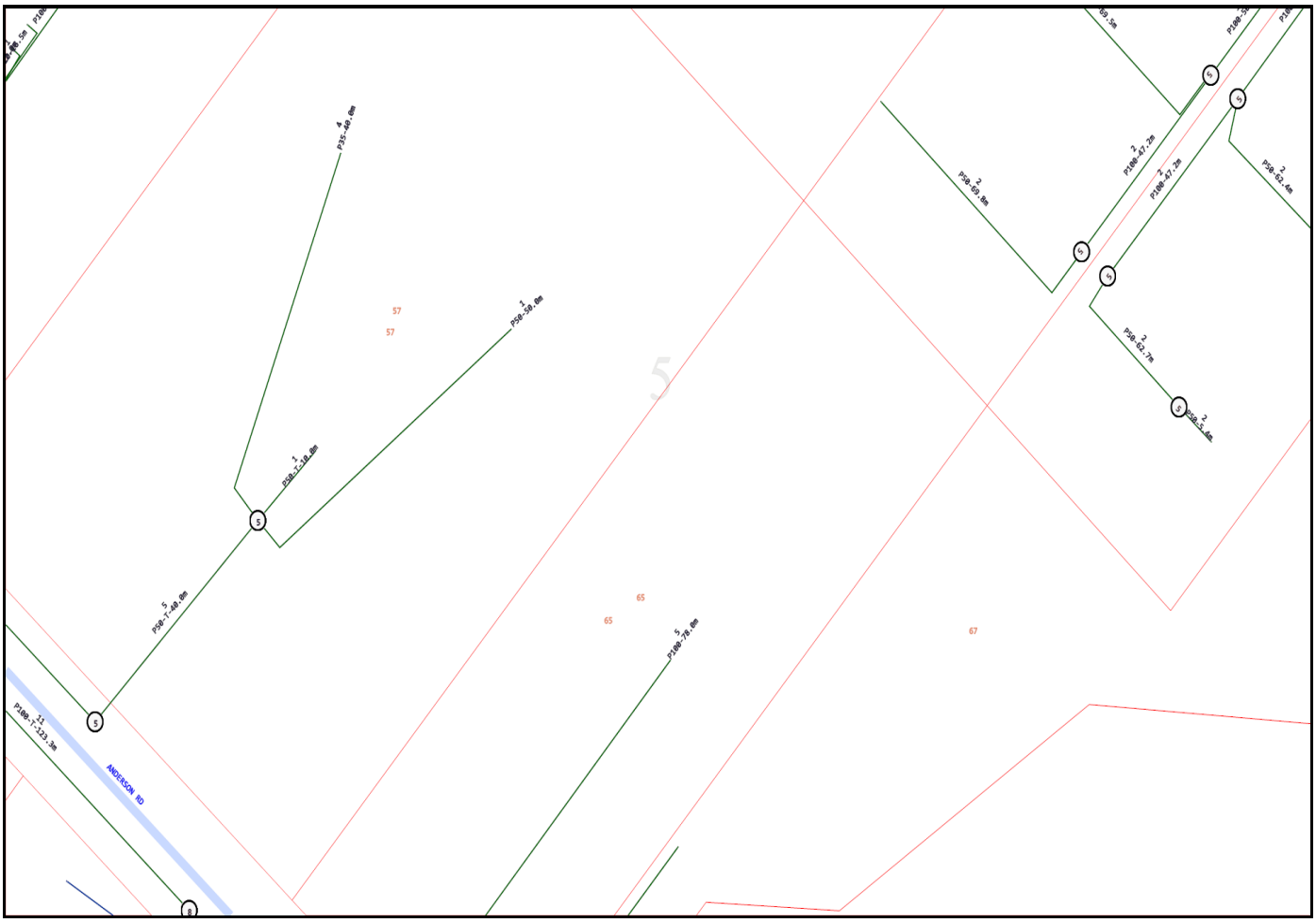
34	Parcel and the location
5	Pit with size "5"
2E	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
2 PO – T- 25.0m P40 – 20.0m 5 9	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m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

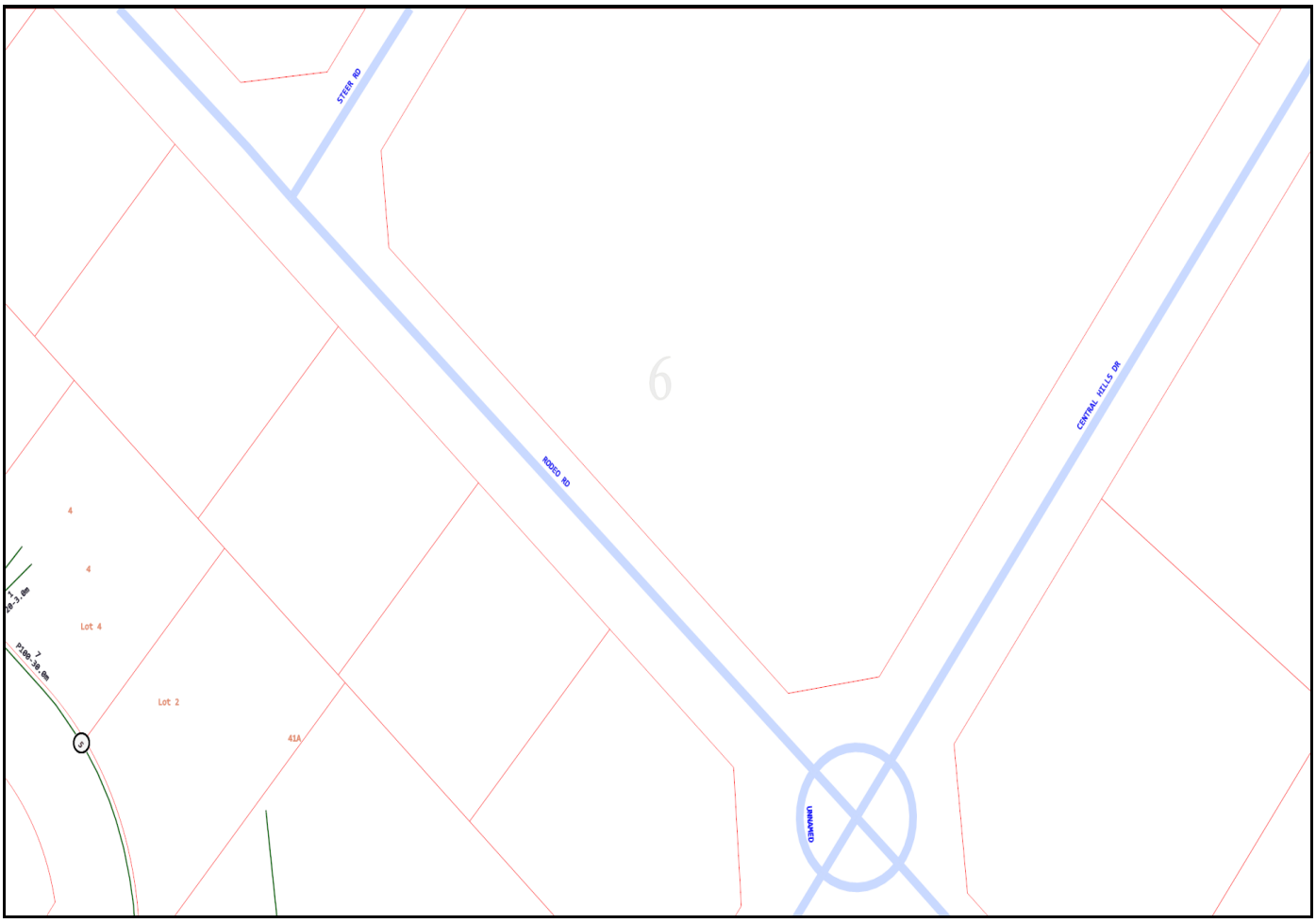

CAMDEN VALLEY WAY
Lot 7
Lot 5
Lot 9
Lot 8
Lot 12
Lot 10
Lot 43
580
LOTS
45

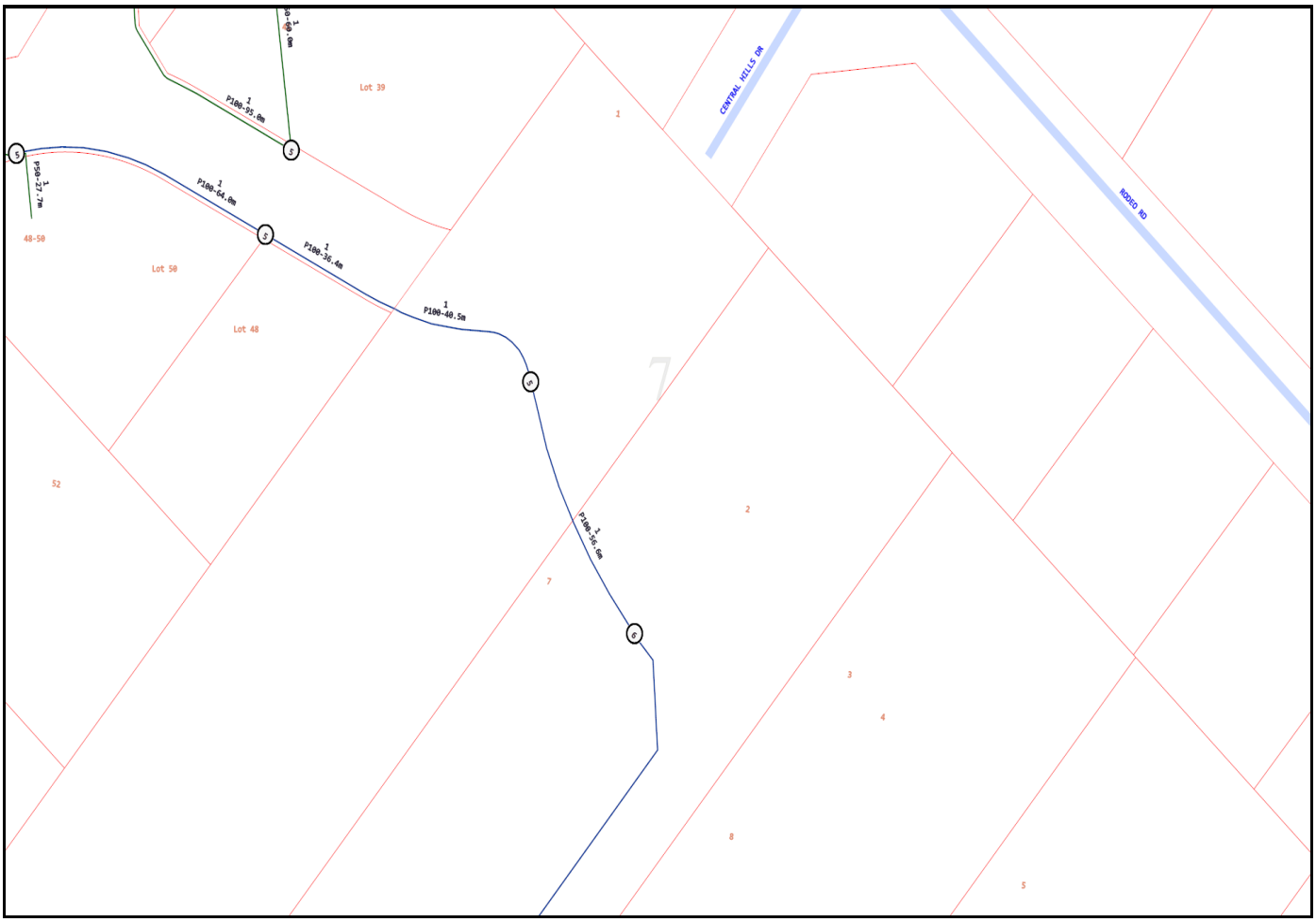

Lot 6
Lot 6
Lot 47
LOT1
Lot 2
Lot 5
Lot 3
Lot 1
Lot 53
Lot 51
Lot 52
54
56
2
P50-32.5m
P100-185.0m
P100-32.5m
P100-80.0m
P100-73.0m
P100-75.0m
P100-77.0m
P50-17.5m
P50-44.0m
P20-30.0m

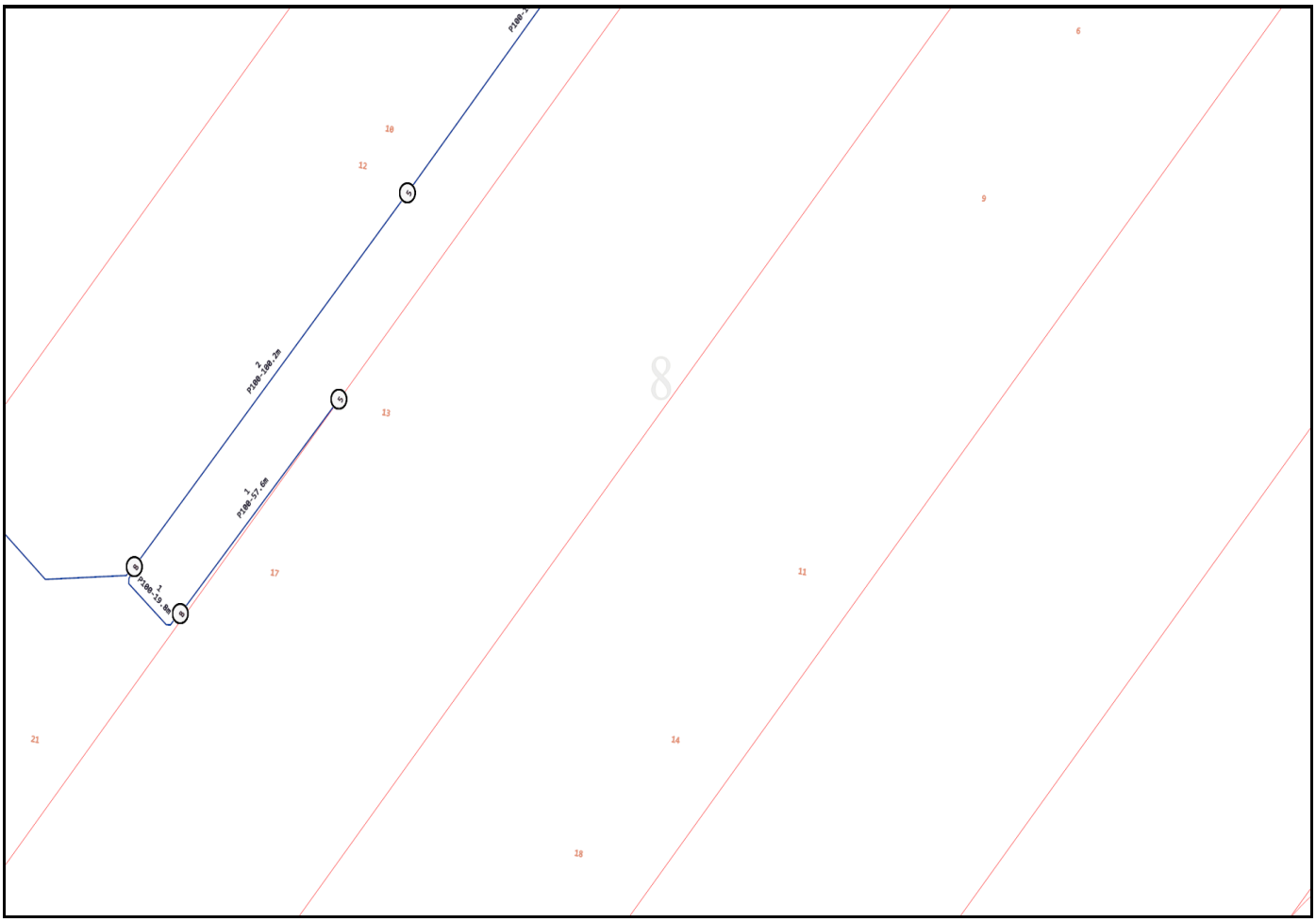

DUNN RD
TURNER RD
Lot 2

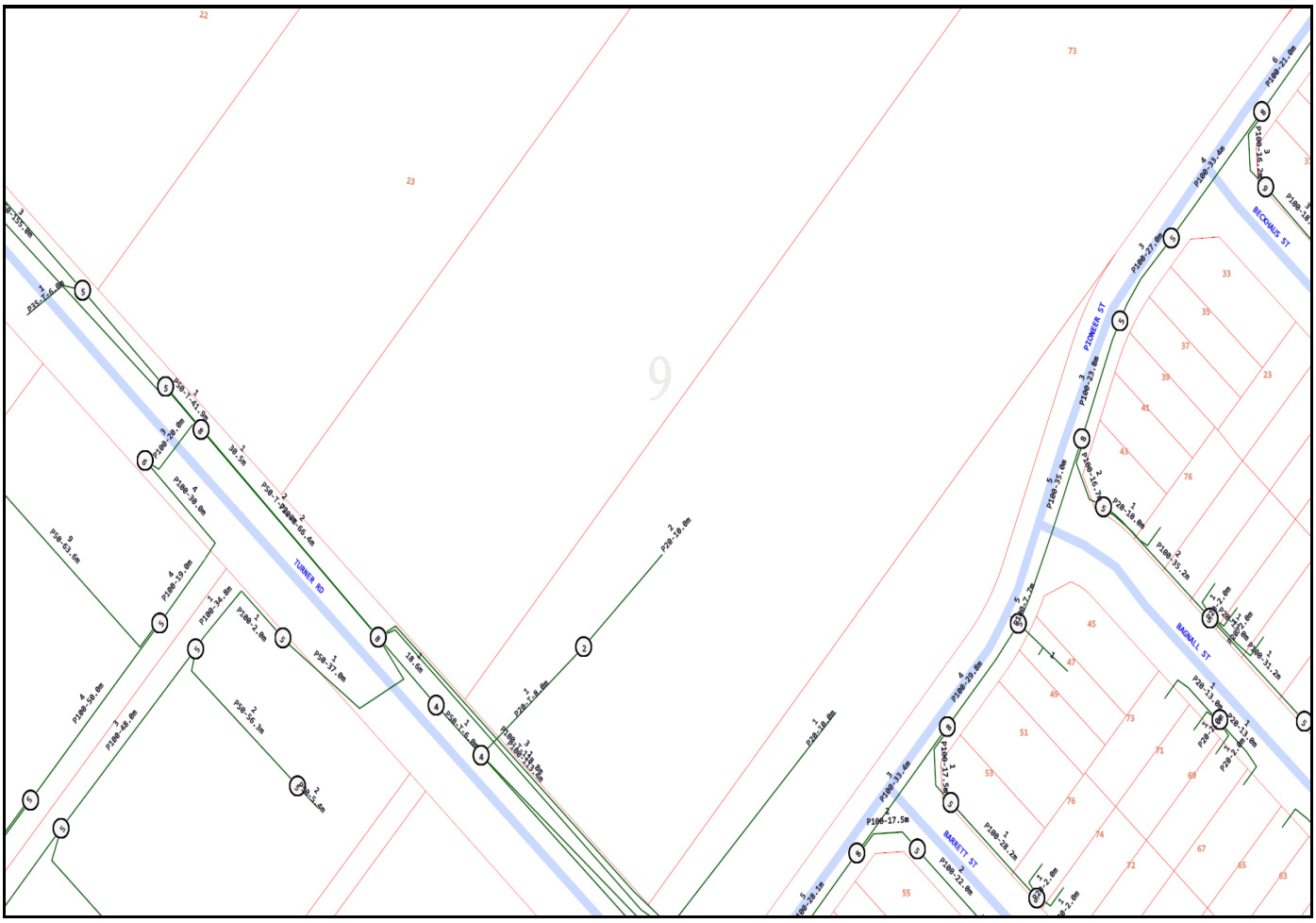

TURNER RD

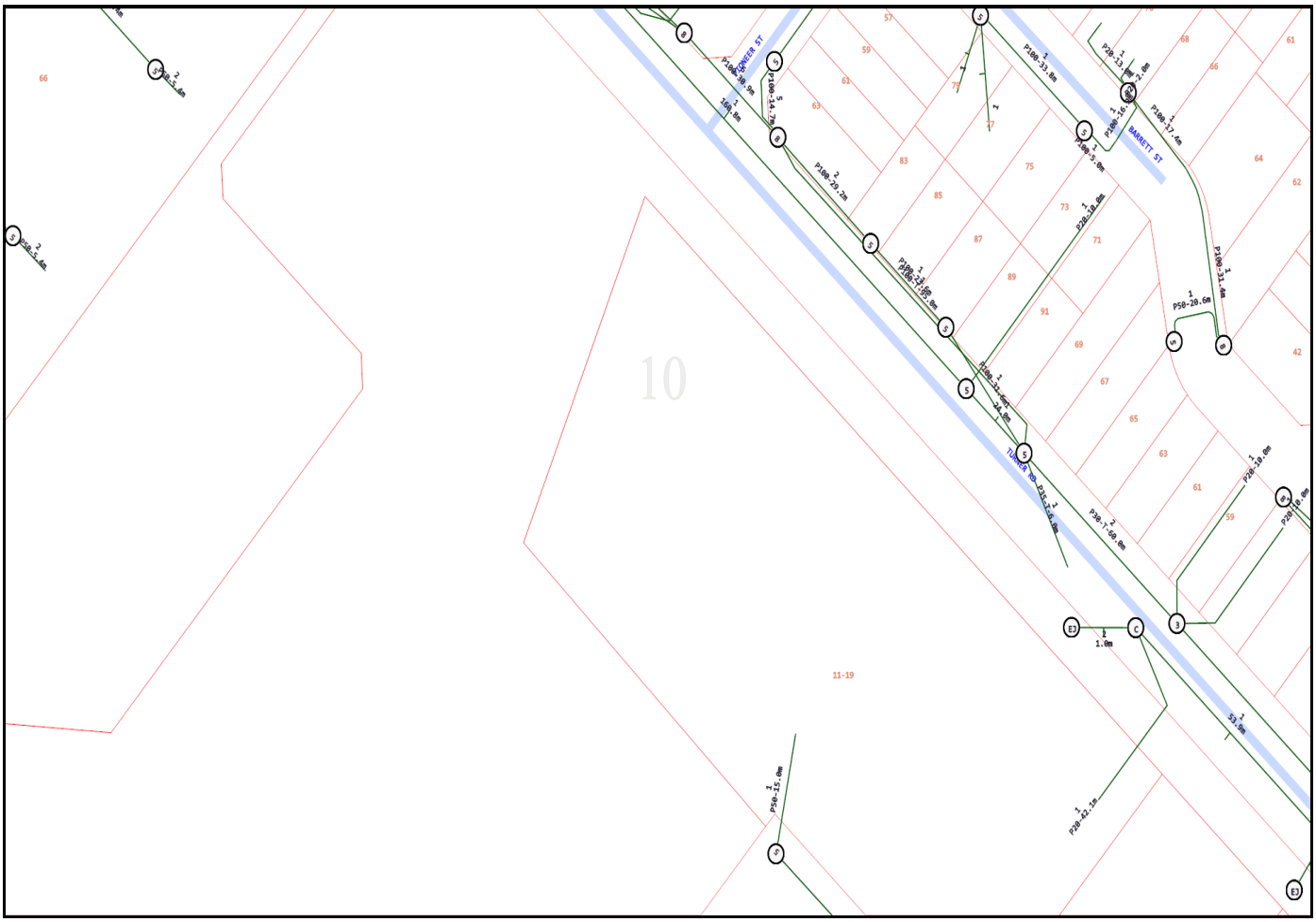

ANDERSON RD
57
65
67

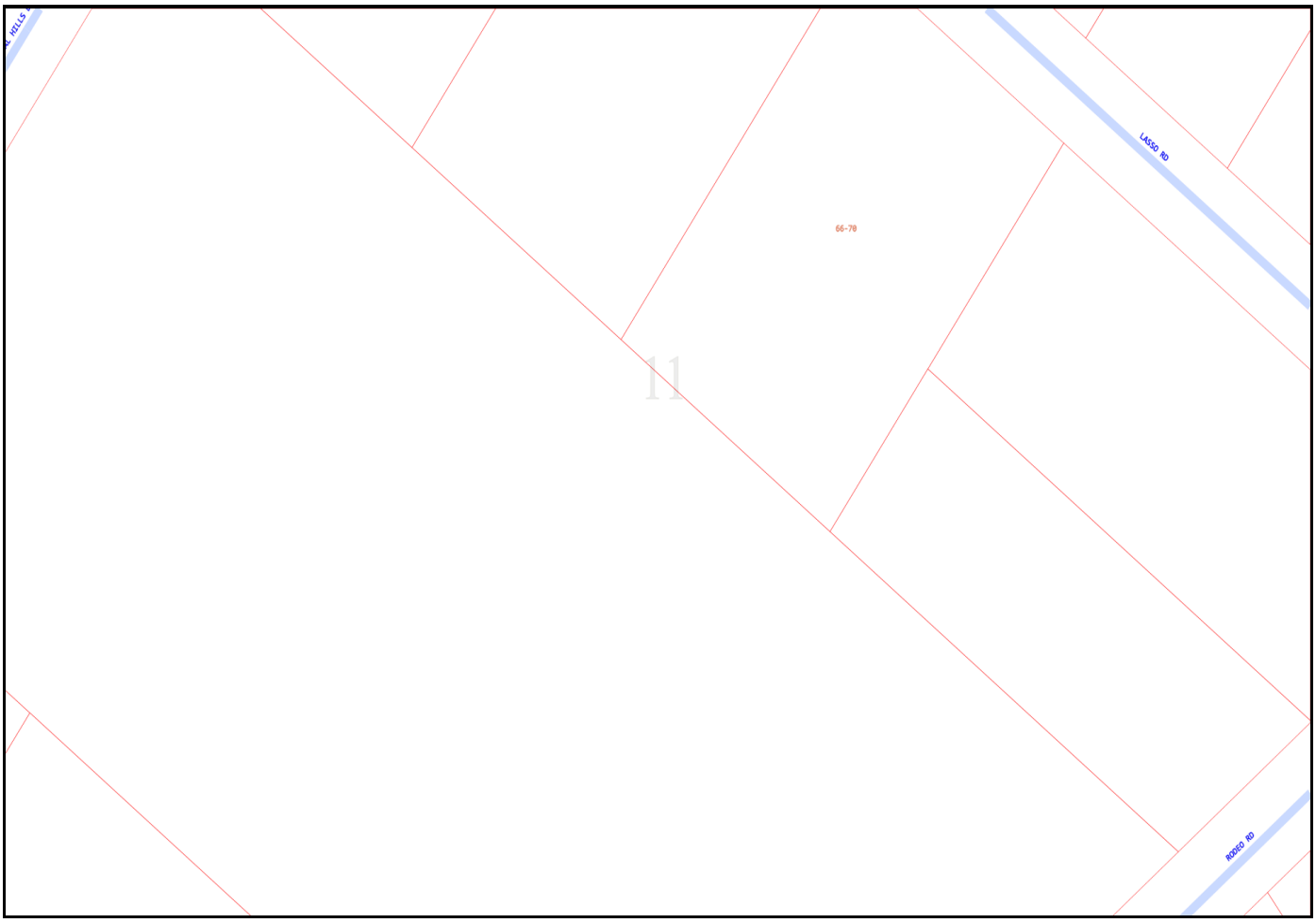

STEER RD
RODEO RD
CENTRAL HILLS DR
UNNAMED
4
4
Lot 4
Lot 2
41A

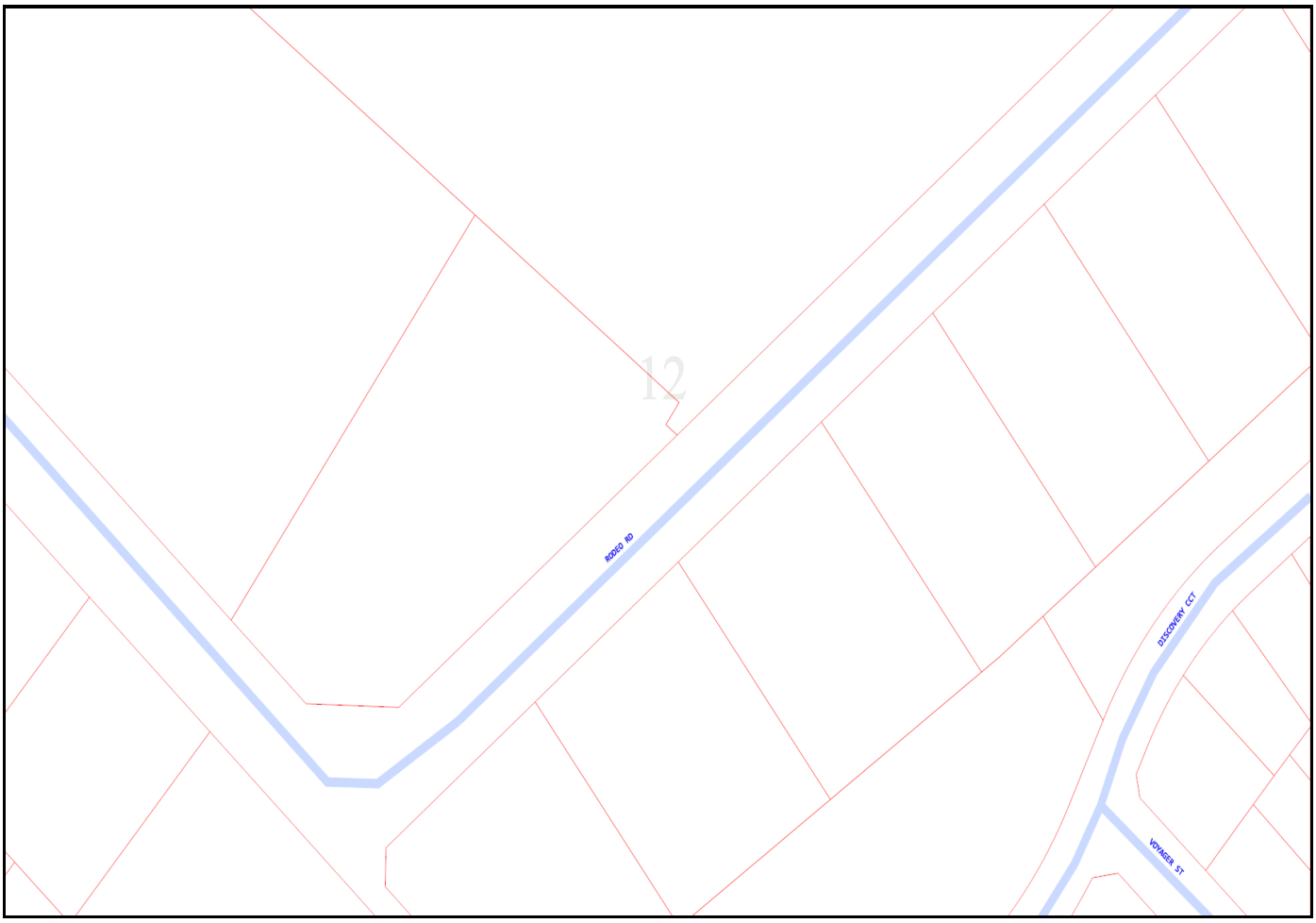

CENTRAL HILLS DR
ROYCE RD
Lot 39
Lot 50
Lot 48
48-50
52
1
2
3
4
5
7
8
P100-95.0m
P100-64.0m
P100-36.4m
P100-40.5m
P100-56.6m
P50-27.7m

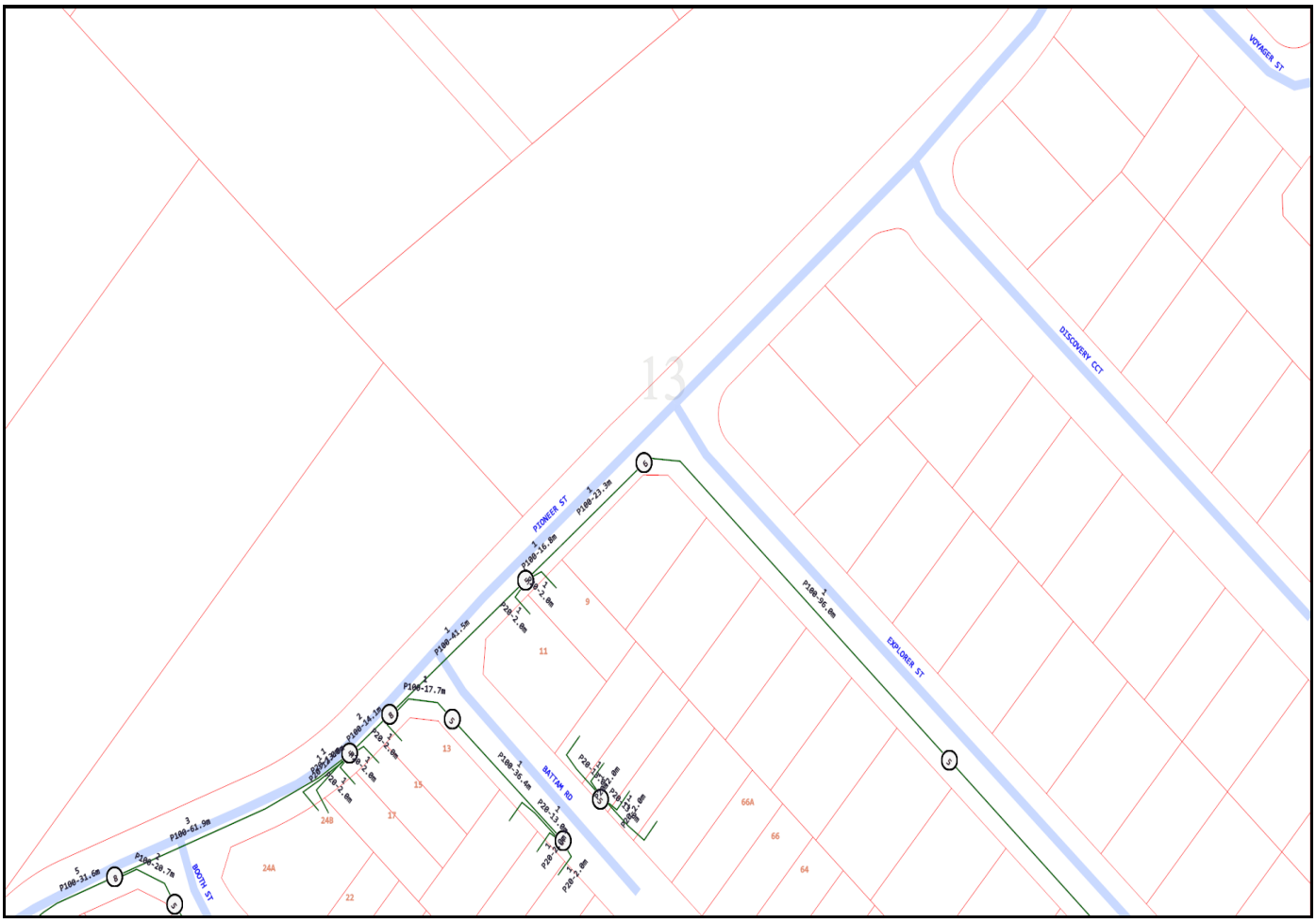

P100-3
10
12
6
9
8
2
P100-100.2m
13
1
P100-57.6m
1
P100-19.8m
17
11
21
14
18

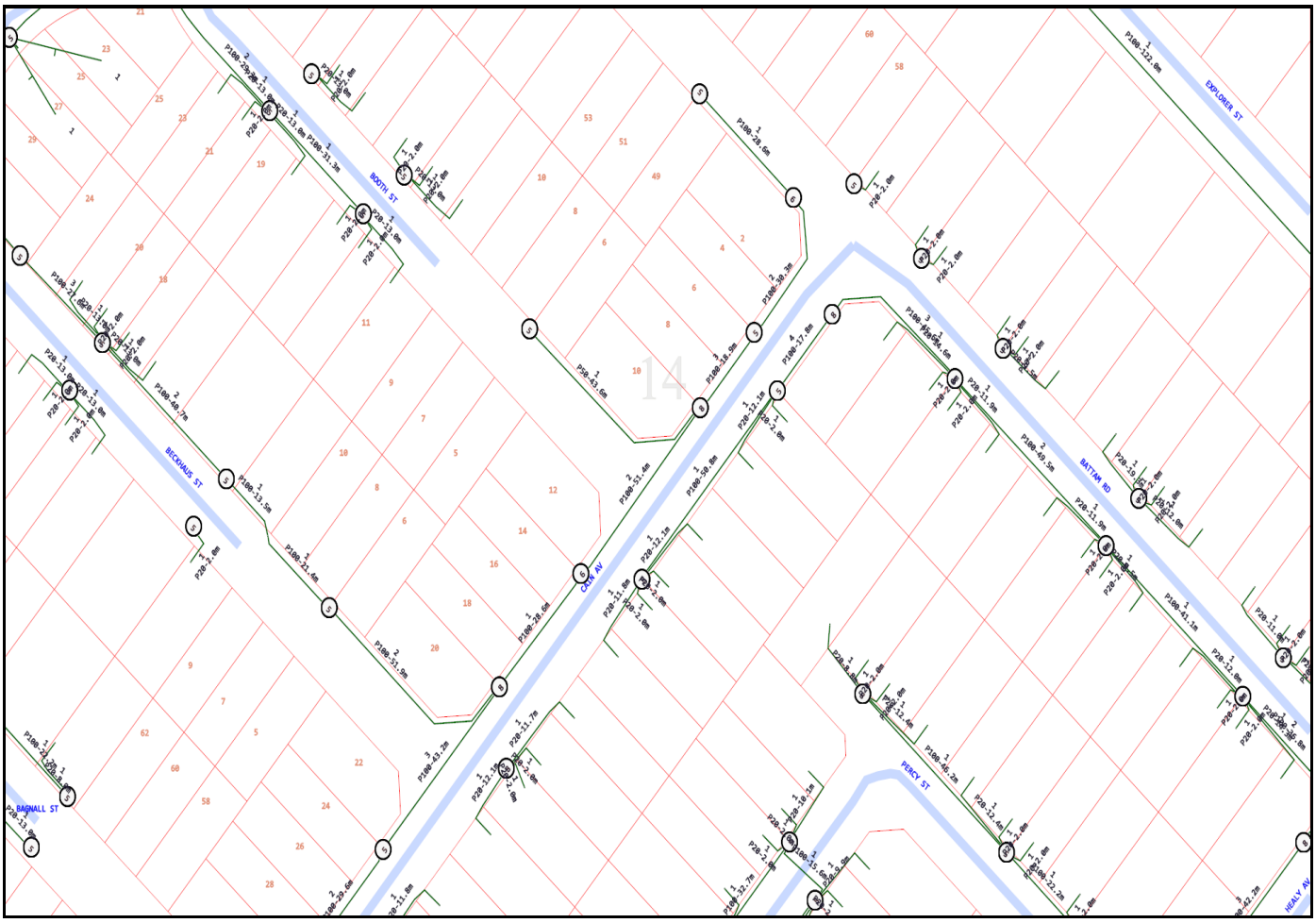

TURNER RD
PIONEER ST
BECCHUS ST
BASNALL ST
BARNETT ST

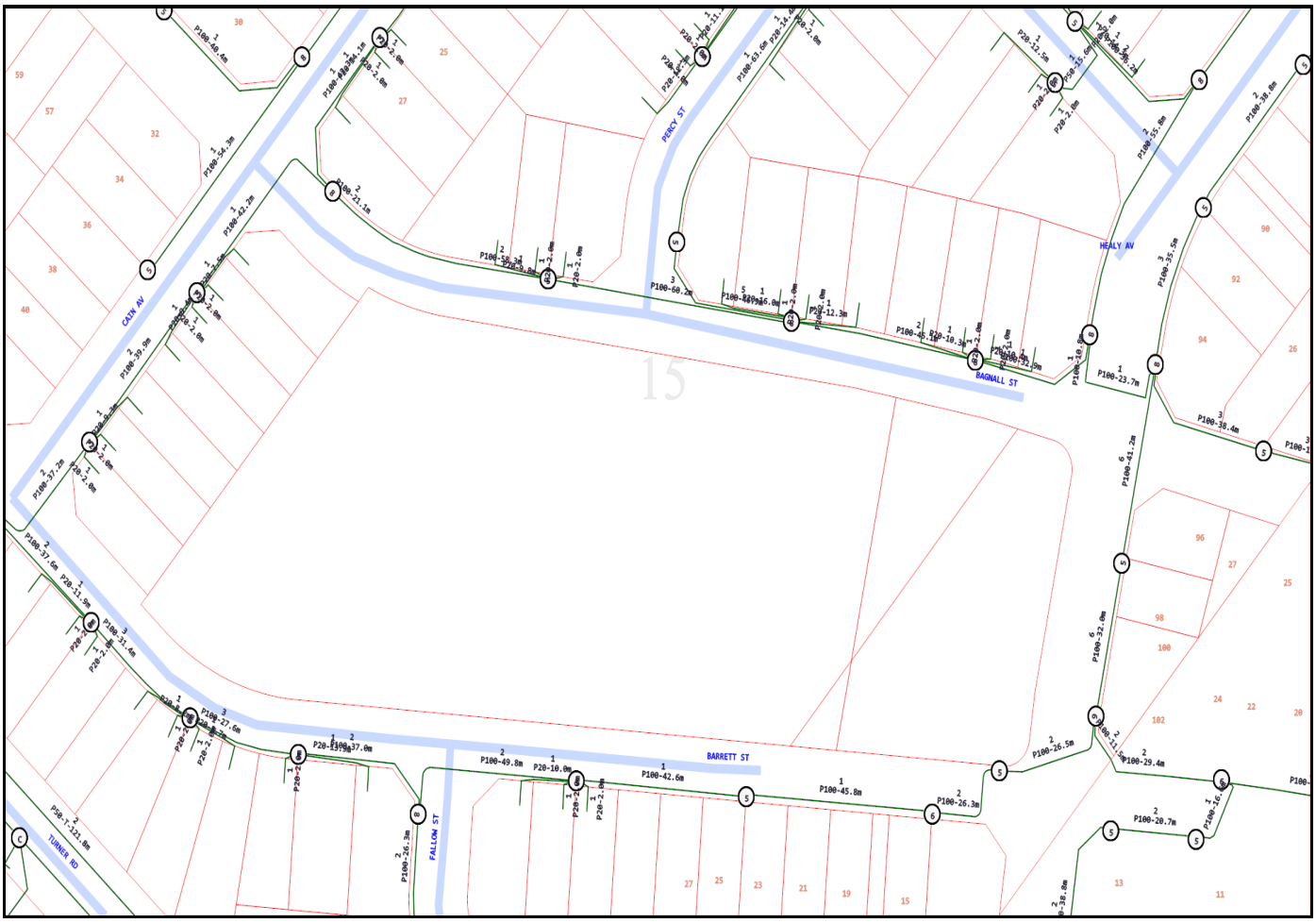

10
11-19
BARRETT ST
TURNER ST
P100-31.4m
P50-20.6m
P100-17.4m
P100-20.2m
P100-14.7m
P100-31.8m
P50-7.6m
P50-15.4m
P20-42.1m
P20-10.0m
53.7m
1.0m


LASSO RD
66-70
11
RODEO RD


12
ROMEO RD
DISCOVERY CCT
VOYAGER ST


VOYAGER ST
DISCOVERY CCT
PIONEER ST
EXPLORER ST
BOOTH ST
BATTAM RD
13
9
11
15
17
24B
24A
22
66A
66
64


BOOTH ST
BECKHAUS ST
CAW AV
BATTAM RD
EXPLORER ST
PERCY ST
BAGNALL ST
HEALY AV



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.

OptiComm Ltd (NSW)

Referral
243455149

Member Phone
1300 137 800

Responses from this member

Response received Mon 19 Aug 2024 12.14pm

File name	Page
Response Body	60
243455149 - OptiComm Response letter.pdf	61
243455149 - OptiComm Plan.pdf	62
OptiComm - Duty of Care.pdf	69

ATTENTION: Ramiya Ravindran

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

Thank you for your DBYD enquiry.

Job No: 37389014
Sequence No: 243455149
Enquiry location:
61 Turner Road
Gregory Hills
NSW 2557

Attached are the files containing information relating to your recent DBYD request. Please read and understand all the attached documentation. If you have any queries, you may contact OptiComm on 1300 743 462 or DBYD@OptiComm.net.au.

Note: If you have received this email in error, please advise by calling 1300 743 462 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

Response Cover Letter

OptiComm

Level 1/22 Salmon Street

Port Melbourne

VIC 3207

Date: 19/08/2024

To:

Ramiya Ravindran
Arup
151 Clarence Street
Sydney NSW 2000

Please find attached our response regarding your enquiry (as detailed below). Ensure you review all other documents included with this response to identify any OptiComm assets in the vicinity of your enquiry.

Sequence No: 243455149

Job No: 37389014

Location: 61 Turner Road
Gregory Hills NSW 2557

If you require further information, please contact the OptiComm on 1300 743 462 or DBYD@OptiComm.net.au

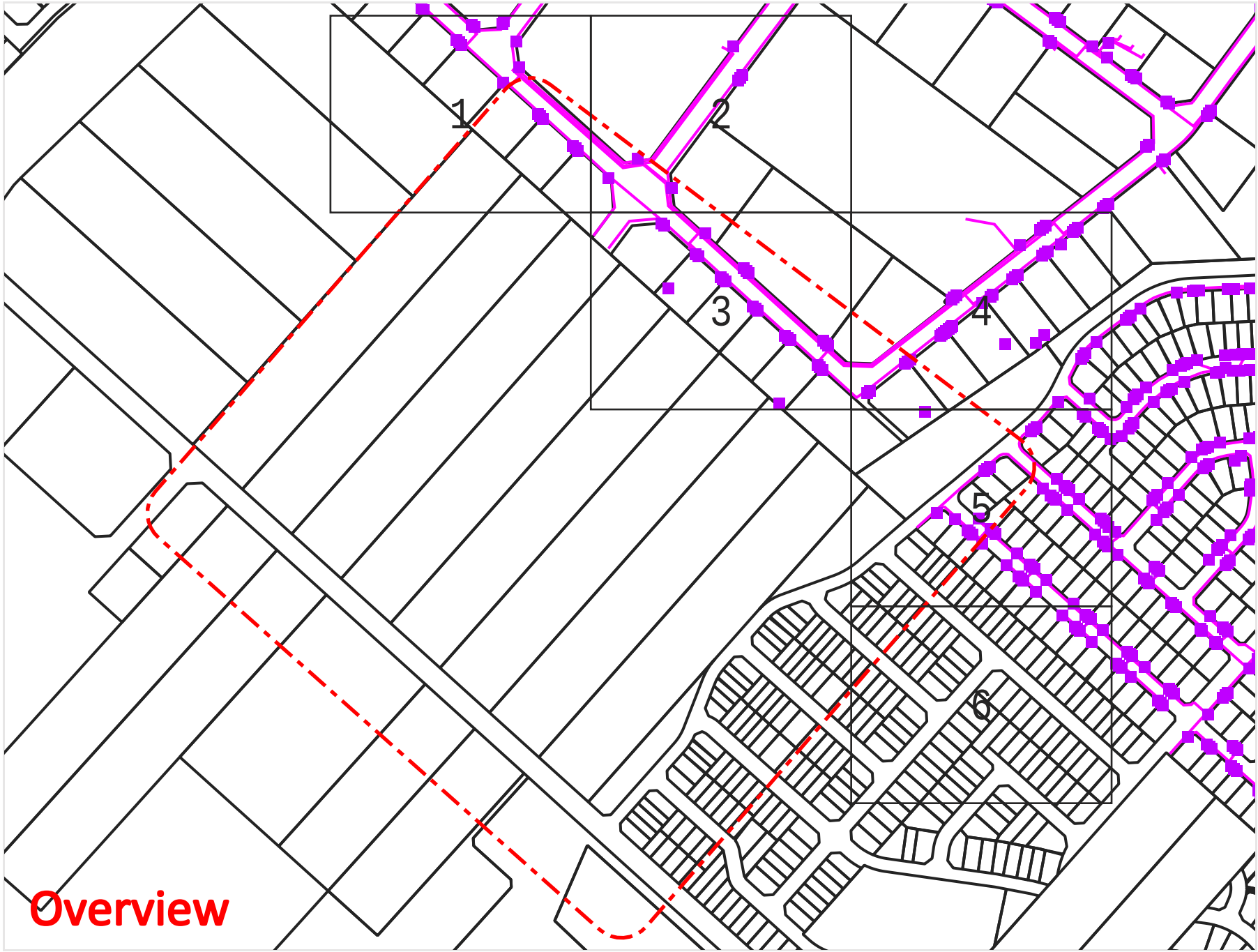
Important Notice: This enquiry response, including any associated documentation, has been assessed and compiled from the information detailed within the DBYD enquiry outlined above. Please ensure that the DBYD enquiry details and this response accurately reflect your proposed works.

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.

OptiComm
National Broadband Fibre

Sequence No: 243455149
Job No: 37389014
Location: 61 Turner Road, Gregory Hills, NSW 2557

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.



Legend
Pipes
Pits

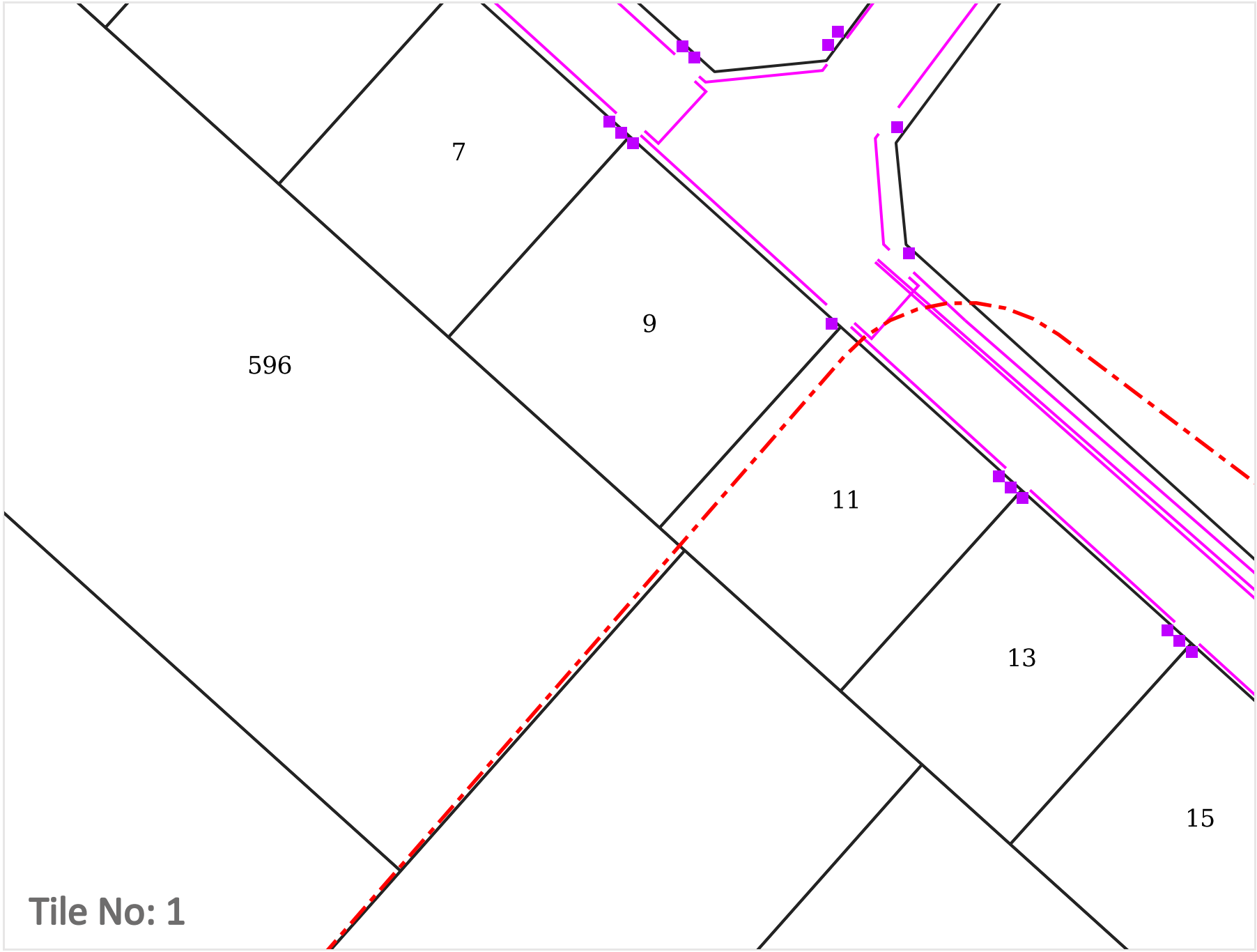
N

Scale: 1:4801
Expires: 16 Sep 2024

OptiComm
National Broadband Fibre

Sequence No: 243455149
Job No: 37389014
Location: 61 Turner Road, Gregory Hills, NSW 2557

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.



Legend

- Pipes
- Pits

N

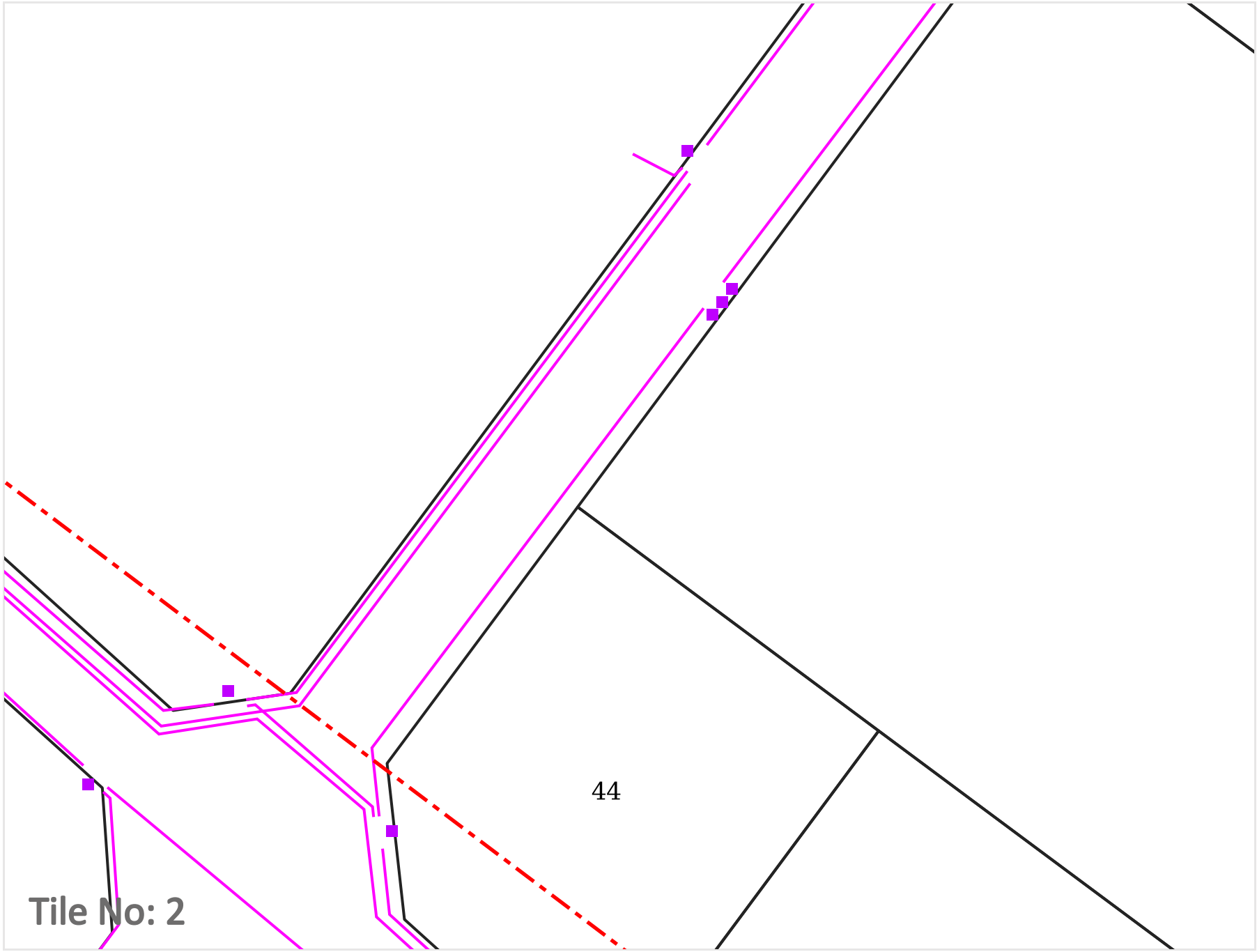
Scale: 1:1000
Expires: 16 Sep 2024

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

OptiComm
National Broadband Fibre

Sequence No: 243455149
Job No: 37389014
Location: 61 Turner Road, Gregory Hills, NSW 2557

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.



Legend

Pipes
Pits

N

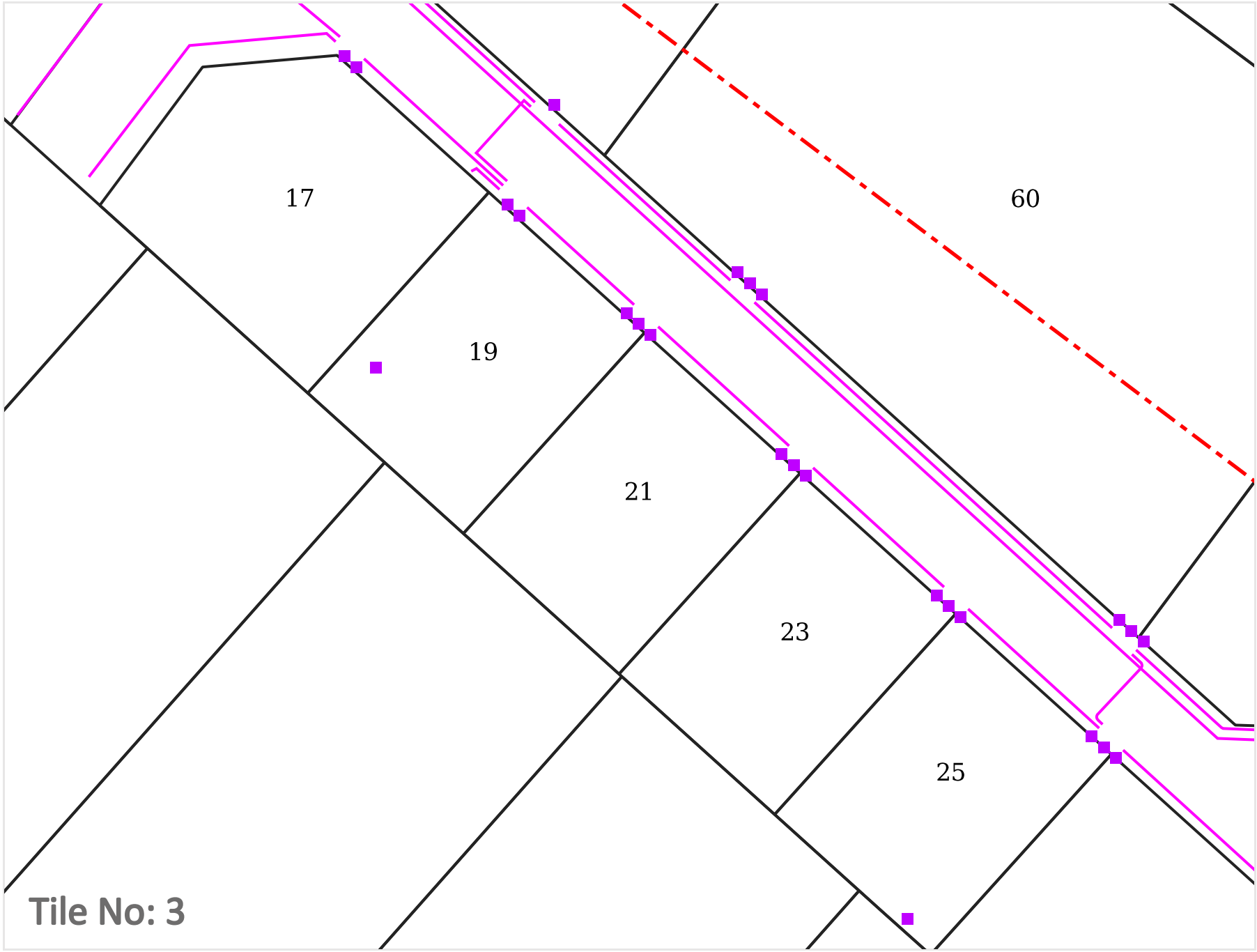
Scale: 1:1000
Expires: 16 Sep 2024

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

OptiComm
National Broadband Fibre

Sequence No: 243455149
Job No: 37389014
Location: 61 Turner Road, Gregory Hills, NSW 2557

DIAL BEFORE YOU DIG
www.1100.com.au
The Essential First Step.



Legend
Pipes
Pits

N

Scale: 1:1000
Expires: 16 Sep 2024

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

OptiComm
National Broadband Fibre

Sequence No: 243455149
Job No: 37389014
Location: 61 Turner Road, Gregory Hills, NSW 2557

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.

Legend
Pipes
Pits

N

Scale: 1:1000
Expires: 16 Sep 2024

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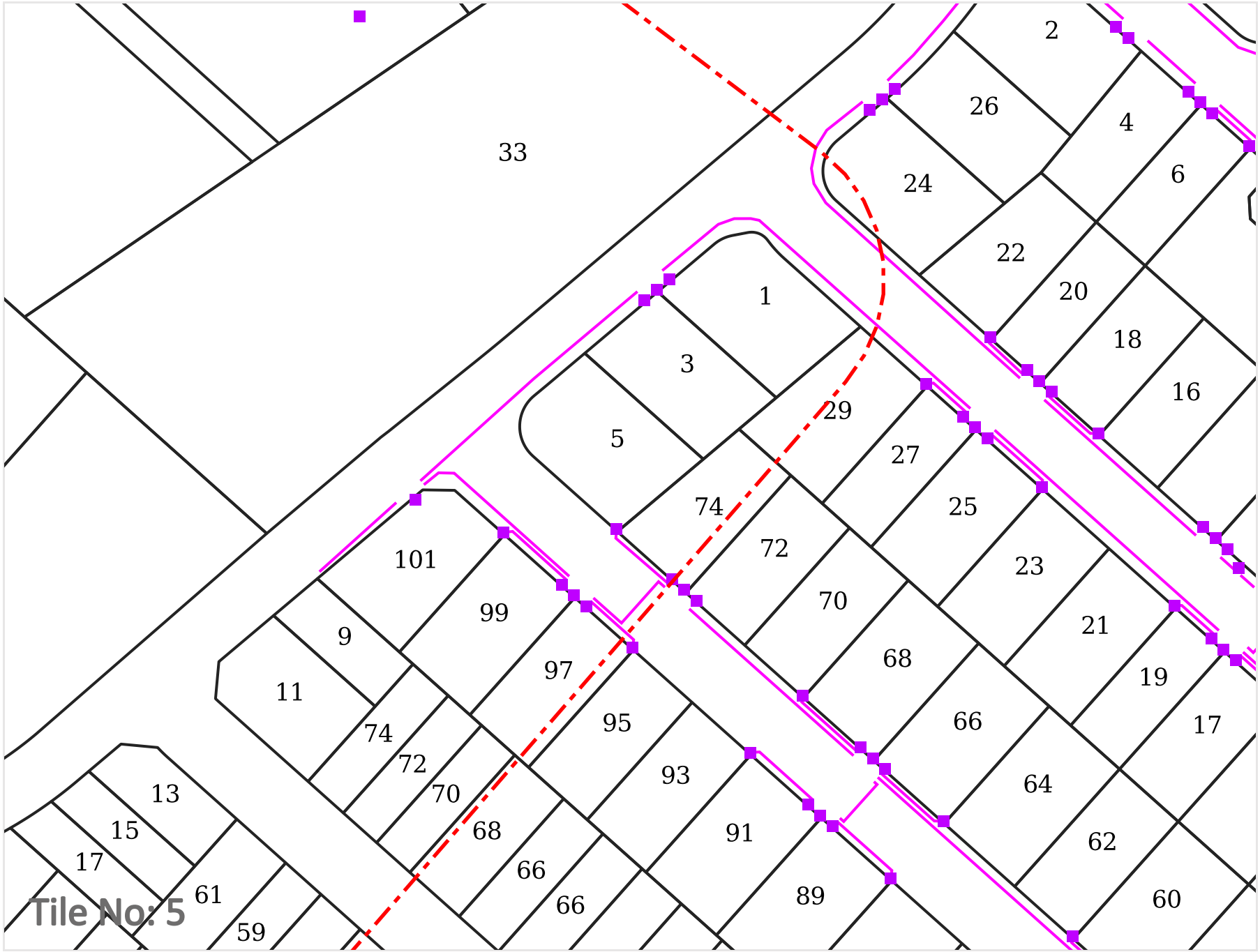
OptiComm
National Broadband Fibre

Sequence No: 243455149
Job No: 37389014
Location: 61 Turner Road, Gregory Hills, NSW 2557

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.



Legend

- Pipes
- Pits

N

Scale: 1:1000
Expires: 16 Sep 2024

OptiComm
National Broadband Fibre

Sequence No: 243455149
Job No: 37389014
Location: 61 Turner Road, Gregory Hills, NSW 2557

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.

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

P 1300 137 800
E info@opticomm.net.au

Level 1, 22 Salmon Street
Port Melbourne VIC 3207
opticomm.net.au

Duty of Care

Our plans indicate that OptiComm owns or operates telecommunications network infrastructure within the area that you have enquired about.

The indicative location of the infrastructure can be found on OptiComm's attached network plan.

This network is vital to OptiComm's operations. It is therefore critical that no works commence within the area of OptiComm's infrastructure until you have put in place measures to locate and prevent damage to OptiComm's infrastructure. This is particularly important regarding underground infrastructure as you will need to locate the exact position of the infrastructure before commencing work.

When working in areas containing telecommunications infrastructure you have a legal obligation to take all necessary steps to avoid damage to the infrastructure, this is referred to as your 'duty of care'.

It is the responsibility of the owner of the affected land and any person undertaking work on the land to perform the work in a manner that minimises the likelihood of damage to the existing infrastructure, including visually locating underground infrastructure such as cables and ducts by hand digging or using non-destructive methods such as water jet excavation where construction may interfere with OptiComm's underground infrastructure.

If you are uncertain about the exact location of underground infrastructure, we strongly recommend that you engage a plant locator.

OptiComm will seek compensation for any damage to its network through negligence or ignorance of your duty of care to avoid damage to our infrastructure.

Sydney Water

Referral
243455153

Member Phone
13 20 92

Responses from this member

Response received Mon 19 Aug 2024 12.12pm

File name	Page
Response Body	71
Important_Information_Sydney_Water_DBYD_Plans.pdf	72
Guide_to_Sydney_Water_DBYD_Plans.pdf	75
MAP_24345515337389014.pdf	77

Asset Name: 80210

Date of enquiry: 19/08/2024 2:10:00 AM
Notification No: 37389014 (Job No)
Sequence No: 243455153

Customers Name: Ramiya Ravindran
Customers Phone No: +61293209470,

Address supplied for dig site location
61 Turner Road, Gregory Hills, NSW

Notice: Please DO NOT REPLY TO THIS EMAIL as it has been automatically generated and replies are not monitored. Should you wish to advise Dial Before You Dig of any issues with this enquiry, please Call 13 20 92.

[Facebook] [Twitter] [YouTube] [Instagram]

Important information about Before You Dig

The material provided or made available to you by Sydney Water (including on the Sydney Water website) in relation to your Before You Dig enquiry (Information) is provided on each of the following conditions, which you are taken to have accepted by using the Information:

1 The Information has been generated by an automated system based on the area highlighted in the "Locality Indication Only" window on your Confirmation Email. It is your responsibility to ensure that the dig site is properly defined when submitting your Before You Dig enquiry and, if the Information does not match the dig site, to resubmit your enquiry for the correct dig site.

2 Neither Sydney Water nor Before You Dig make any representation or give any guarantee, warranty or undertaking (express or implied) as to the currency, accuracy, completeness, effectiveness or reliability of the Information. The Information, including Sydney Water plans and work-as-executed diagrams, amongst other things:

   (a) may not show all existing structures, including Sydney Water's pipelines, particularly in relation to newer developments and in relation to structures owned by parties who do not participate in the Before You Dig service;

   (b) may be out of date and not show changes to surface levels, road alignments, fences, buildings and the like;

   (c) is approximate only and is therefore not suitable for scaling purposes; and

   (d) does not show locations of property services (often called house service lines) belonging to or servicing individual customers, which are usually connected to Sydney Water's structures.

3 You are responsible for, amongst other things:

   (a) exposing underground structures, including Sydney Water's pipelines, by pot-holing using hand-held tools or vacuum techniques so as to determine the precise location and extent of structures before any mechanical means of excavation are used;

   (b) the safe and proper excavation of and for underground works and structures, including having regard to the fact that asbestos cement pipelines, which can pose a risk to health, may form part of Sydney Water's water and sewerage reticulation systems;

   (c) protecting underground structures, including Sydney Water's pipelines, from damage and interference;

   (d) maintaining minimum clearances between Sydney Water's structures and structures belonging to others;

   (e) ensuring that backfilling of excavation work in the vicinity of Sydney Water's structures complies with Sydney Water's standards contained on its website or otherwise communicated to you;

   (f) notifying Sydney Water immediately of any damage caused or threat of damage to Sydney Water's structures;

   (g) ensuring that plans are approved by Sydney Water (usually signified by stamping) prior to landscaping or building over or in the vicinity of any Sydney Water structure;

   (h) ensuring that the Information is used only for the purposes for which Sydney Water and Before You Dig intended.

4 You acknowledge that you use the Information at your own risk. In consideration for the provision of the Before You Dig service and the Information by Sydney Water and Before You Dig, to the fullest extent permitted by law

(a) all conditions and guarantees concerning the Information (whether as to quality, outcome, fitness, care, skill or otherwise) expressed or implied by statute, common law, equity, trade, custom or usage or otherwise are expressly excluded and to the extent that those statutory guarantees cannot be excluded, the liability of Sydney Water and Before You Dig to you is limited to either of the following as nominated by Sydney Water in its discretion, which you agree is your only remedy:

(i) the supplying of the Information again; or

(ii) payment of the cost of having the Information supplied again;

(b) in no event will Sydney Water or Before You Dig be liable for, and you release Sydney Water and Before You Dig from, any Loss arising from or in connection with the Information, including the use of or inability to use the Information and delay in the provision of the Information:

(i) whether arising under statute or in contract, tort or any other legal doctrine, including any negligent act, omission or default (including willful default) by Sydney Water or Before You Dig; and

(ii) regardless of whether Sydney Water or Before You Dig are or ought to have been aware of, or advised of, the possibility of such loss, costs or damages;

(c) you will indemnify Sydney Water and Before You Dig against any Loss arising from or in connection with Sydney Water providing incorrect or incomplete information to you in connection with the Before You Dig service; and

(d) you assume all risks associated with the use of the Before You Dig and Sydney Water websites, including risk to your computer, software or data being damaged by any virus, and you release and discharge Sydney Water and Before You Dig from all Loss which might arise in respect of your use of the websites.

5 "**Sydney Water**" means Sydney Water Corporation and its employees, agents, representatives and contractors. "**Before You Dig**" means Before You Dig Australia and its employees, agents, representatives and contractors. References to "**you**" include references to your employees, agents, representatives, contractors and anyone else using the Information. References to "**Loss**" include any loss, cost, expense, claim, liability or damage (including arising in connection with personal injury, death or any damage to or loss of property and economic or consequential loss, lost profits, loss of revenue, loss of management time, opportunity costs or special damages). To the extent of any inconsistency, the conditions in this document will prevail over any other information provided to you by Sydney Water and Before You Dig.

In an emergency, or to notify Sydney Water of damage or threats to its structures, call 13 20 90 (24 hours, 7 days)

Further information and guidance is available in the 'Plumbing, building and developing' section of Sydney Water's website at www.sydneywater.com.au, where you will find the following under 'Before You Dig':

- Essential references
    - Guide to Reading Sydney Water BYDA Plans
    - Avoid Damaging Water and Sewer Pipelines
    - Technical guidelines: Building over and adjacent to pipe assets
- See Also
    - Building over or next to assets, section of Sydney Water's website at www.sydneywater.com.au

Or call **13 20 92** for Customer Enquiries.

Note: The lodging of enquiries via www.byda.com.au will enable you to receive, via email, colour plans in PDF format 24 hours a day, 7 days a week.

Guide to reading Sydney Water Before You Dig Plans

This guide will help you understand our plans and what our services are.

Sewer

- Sewer Main (with flow arrow & size type text) — 225 PVC
- Disused Main
- Rising Main
- Maintenance Hole (with upstream depth to invert) — 1.7
- Sub-surface chamber
- Maintenance Hole with Overflow chamber
- Ventshalft EDUCT — VSE
- Ventshaft INDUCT — VSI
- Property Connection Point (with chainage to downstream MH) — 10.6
- Concrete Encased Section — Concrete Encased
- Terminal Maintenance Shaft — TMS
- Maintenance Shaft — MS
- Rodding Point — RP
- Lamphole
- Vertical — VERT
- Pumping Station — SP0882
- Sewer Rehabilitation

Pressure Sewer

- Pressure Sewer Main
- Pump Unit (Alarm, Electrical Cable, Pump Unit)
- Property Valve Boundary Assembly
- Stop Valve
- Reducer / Taper
- Flushing Point — FP

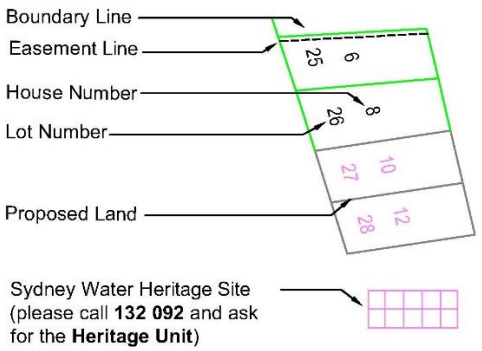
Vacuum Sewer

- Pressure Sewer Main
- Division Valve
- Vacuum Chamber
- Clean Out Point

Stormwater

- Stormwater Pipe
- Stormwater Channel
- Stormwater Gully
- Stormwater Maintenance Hole

Property Details



Sydney Water Heritage Site (please call **132 092** and ask for the **Heritage Unit**)

Water

- WaterMain - Potable (with size type text) — 200 PVC
- Disconnected Main - Potable
- Proposed Main - Potable
- Water Main - Recycled
- Special Supply Conditions - Potable
- Special Supply Conditions - Recycled
- Restrained Joints - Potable
- Restrained Joints - Recycled
- Hydrant
- Maintenance Hole
- Stop Valve
- Stop Vale with By-pass
- Stop Valve with Tapers
- Closed Stop Valve
- Air Valve
- Valve
- Scour
- Reducer / Taper
- Vertical Bends
- Reservoir
- Recycled Water is shown as per Potable above. Colour as indicated

Private Mains

- Potable Water Main
- Recycled Water Main
- Sewer Main
- Symbols for Private Mains shown grey

Pipe types

ABS	Acrylonitrile Butadiene Styrene	**AC**	Asbestos Cement
BRICK	Brick	**CI**	Cast Iron
CICL	Cast Iron Cement Lined	**CONC**	Concrete
COPPER	Copper	**DI**	Ductile Iron
DICL	Ductile Iron Cement (mortar) Lined	**DIPL**	Ductile Iron Polymeric Lined
EW	Earthenware	**FIBG**	Fibreglass
FL BAR	Forged Locking Bar	**GI**	Galvanised Iron
GRP	Glass Reinforced Plastics	**HDPE**	High Density Polyethylene
MS	Mild Steel	**MSCL**	Mild Steel Cement Lined
PE	Polyethylene	**PC**	Polymer Concrete
PP	Polypropylene	**PVC**	Polyvinylchloride
PVC - M	Polyvinylchloride, Modified	**PVC - 0**	Polyvinylchloride, Oriented
PVC - U	Polyvinylchloride, Unplasticised	**RC**	Reinforced Concrete
RC-PL	Reinforced Concrete Plastics Lined	**S**	Steel
SCL	Steel Cement (mortar) Lined	**SCL IBL**	Steel Cement Lined Internal Bitumen
SGW	Salt Glazed Ware	**SPL**	Steel Polymeric Lined
SS	Stainless Steel	**STONE**	Stone
VC	Vitrified Clay	**WI**	Wrought Iron
WS	Woodstave		

In an emergency, or to notify Sydney Water of damage or threats to its structures, call 13 20 90 (24 hours, 7 days)

Further information and guidance is available in the 'Plumbing, building and developing' section of Sydney Water's website at www.sydneywater.com.au, where you will find the following under 'Before You Dig':

- Essential references
  - Avoid Damaging Water and Sewer Pipelines
  - Important Information about Before You Dig
  - Technical guidelines: Building over and adjacent to pipe assets
- See Also
  - Building over or next to assets, section of Sydney Water's website at www.sydneywater.com.au

Or call **13 20 92** for Customer Enquiries.

Note: The lodging of enquiries via www.byda.com.au will enable you to receive, via email, colour plans in PDF format 24 hours a day, 7 days a week.

A3

BARRETT ST

BAGNALL

CAIN ST

FALLOW ST

RD

ANDERSON AVE

ANZAC ST

DR

LOT 3029

DBYD Address:
61 Turner Road
Gregory Hills NSW 2557

DBYD Job No: 37389014

DBYD Sequence No: 243455153

Scale: 1:2000

Date of Production: 19/08/2024

N

0m 10m 20m 30m 40m 50m

A3

DBYD Address:
61 Turner Road
Gregory Hills NSW 2557

DBYD Job No: 37389014

DBYD Sequence No: 243455153

Scale: 1:2000

Date of Production: 19/08/2024

Plan 2 of 3

N

0m 10m 20m 30m 40m 50m

A3

DBYD Address:
61 Turner Road
Gregory Hills NSW 2557

DBYD Job No: 37389014

DBYD Sequence No: 243455153

Scale: 1:2000

Date of Production: 19/08/2024

Plan 3 of 3

N

0m 10m 20m 30m 40m 50m

Referral
243455155

Member Phone
1800 653 935

Responses from this member

Response received Mon 19 Aug 2024 12.15pm

File name	Page
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Telstra Duty of Care v32.0a.pdf	82
243455155.dwf	Excluded
Telstra Map Legend 4.0a.pdf	84
AccreditedPlantLocators 2024-06-21a.pdf	85

Attention: Ramiya Ravindran

Site Location: 61 Turner Road, Gregory Hills, NSW 2557

Your Job Reference: SYD-091

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.

Information for opening Telstra Asset Plans as well as some other useful contact information is listed in the attached **Telstra Map Legend attached**.

Please refer to all enclosed attachments for more information.
Please 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.
Please ensure you read the 'Telstra Duty of Care' document (attached) - it contains important information including 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 Steps - Working Near Telecommunications Assets (attached Telstra Duty of Care).
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 v32.0a.pdf)

(See attached file: Telstra Map Legend 4.0a.pdf)

(See attached file: AccreditedPlantLocators 2024-06-21a.pdf)

(See attached file: 243455155.dwf)

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 steps below 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 of the 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 Certified Locating Organisation. 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 Planned Services.

Telstra does not accept any liability or responsibility for the performance of or advice given by a Certified Locating Organisation. 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.

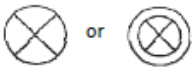
Privacy Note

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 or by calling us at 1800 039 059 (business hours only).

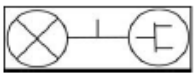
LEGEND

Exchange
(Major Cable Present)

Footway Access Chamber
(can vary from 1-lid to 12-lid)



Pillar / Cabinet
(above ground / free standing)



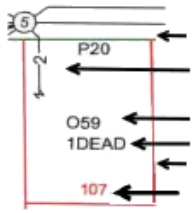
Above ground complex equipment housing (eg RIM)
Please Note: This equipment is powered by 240V Electricity

OC — Other Carrier Telecommunications Cable/Asset

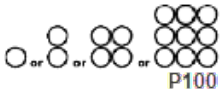
Dist — Distribution cables in Main Cable ducts

MC — Main Cable ducts on a Distribution plan

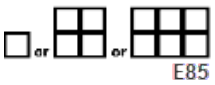
▲ — Blocked or damaged duct.



Roadside / Front Boundary
2 pair lead-in to property from pit in street 1
pair working (pair ID 059)
1 pair dead (i.e. spare, not connected)
Side / Rear Property Boundary
Property Number

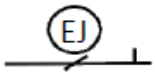


Single to multiple round conduit
Configurations 1,2,4,9 respectively
(attached text denotes conduit type and size)

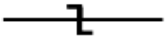


Multiple square conduit
Configurations 2, 4, 6 respectively
(attached text denotes conduit type and size)

Cable Jointing Pit
(number / Letter indicating Pit Type)



Elevated Joint
(above ground joint on buried cable)

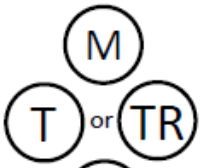


Telstra Plant in shared Utility trench

Aerial Cable

Aerial Cable
(attached to joint Use Pole eg. Power)

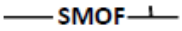
Direct Buried Cable



Marker Post Installed

Buried Transponder

Marker Post, Transponder

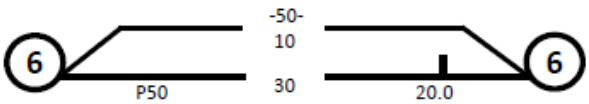


Optical Fibre cable direct buried

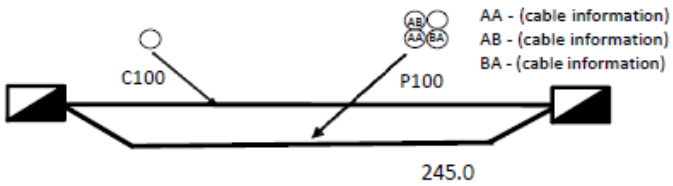
Some examples of conduit type and size:

A - Asbestos cement, P - PVC / Plastic, C - Concrete,
GI - Galanised iron, E - Earthenware
Conduit sizes *nominally* range from 20mm to 100mm
P50 50mm PVC conduit
P100 100mm PVC conduit
A100 100mm asbestos cement conduit

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



AA - (cable information)
AB - (cable information)
BA - (cable information)

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
- 500mmVibrating Plate or Wacker Packer Compactor
- 600mm Heavy Vehicle Traffic (over 3 tonnes) not to be driven across Telstra ducts or plant.
- 1.0mJackhammers/Pneumatic Breakers
- 2.0m Boring Equipment (in-line, horizontal and vertical)

For more info contact a Certified Locating Organisation or Telstra Plan Services 1800 653 935

General Information

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
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
https://www.telstra.com.au/consumer-advice/digging-construction

Telstra Aerial Assets Group (overhead network)
1800 047 909

DBYDCertification

Certified Locating Organisation (CLO)
https://dbydlocator.com/certified-locating-organisation/

TPG Telecom (NSW)

Referral
243455151

Member Phone
1800 786 306

Responses from this member

Response received Mon 19 Aug 2024 12.12pm

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Request: 243455151 Enquirer: Arup - 3323757 Contact: Ramiya Ravindran Email: ramiya.ravindran@arup.com Phone: +61293209470 Address: 151 Clarence Street Sydney NSW 2000 Site Address: 61 Turner Road Gregory Hills NSW 2557 Activity: Tendering Job Number: 37389014

TPG Telecom Limited
ABN 76 096 304 620
Level 1, 177 Pacific Hwy
North Sydney NSW 2060
Phone: 1800 786 306 (24hrs)

Date: 19/08/2024

Enquirer Name:Ramiya Ravindran
Enquirer Address:151 Clarence Street
Email: ramiya.ravindran@arup.com
Phone: +61293209470

Dear Ramiya Ravindran

The following is our response on behalf of each of the TPG carriers (listed below) to your Before You Dig Australia enquiry – Sequence 243455151

It is provided to you on a confidential basis under the following conditions and must be shredded or securely disposed of after use.

Assets Affected: 61 Turner Road Gregory Hills

Carriers (each a "TPG carrier") and assets affected:

PIPE Networks

Location:

According to our records, the underground assets in the vicinity of the location stated in your enquiry are **AFFECTED**. Please read the below information and disclaimers in addition to the any attached plans provided prior to any construction activities.

IMPORTANT INFORMATION

- The information provided is valid for 30 days from the date of this response. If your work site area changes or your construction activity is beyond 30 days please contact Before You Dig Australia on 1100 or www.1100.com.au to re-submit a new enquiry.
- Due to the nature of underground assets and the age of some assets and records, our plans are indicative of the general location only and may not show all assets in the location. You should not solely rely on these plans when undertaking construction works. It is also inaccurate to assume depth or that underground network conduit and cables follow straight lines, and careful on-site investigations are essential to locate an asset's exact position prior to excavation. It is your responsibility to locate and confirm the exact location of our infrastructure using non-destructive techniques. We make no warranty or guarantee that our plans are complete, current or error free, and to the maximum extent permitted by law we exclude all liability to you, your employees, agents and contractors for any loss, damage or claim arising out of or in connection with using our plans.
- Please note that some of our conduits carry electrical cables and gas pipes. Please exercise extreme care when working within the vicinity of these conduit and take into account the minimum clearance distances under Duty Of Care below.
- You (and your employee and contractors) must not open, move, interfere, alter or relocate any of our assets without our prior approval.
- **Note** It is a criminal offence under the *Criminal Code Act 1995 (Cth)* to tamper or interfere with communication facilities owned by a carrier. Heavy penalties may apply for breach of this prohibition, and any damages suffered, or costs incurred by us as a result of such unauthorised works may be claimed against you.

DAMAGE

- You must report immediately any damage to our network on **1800 786 306** (24hrs). We will hold you liable and seek compensation for any loss or damage to our network, our property and our customers that is caused by or arises out of your activities.

DUTY OF CARE

You have a duty of care to carefully locate, validate and protect our assets when carrying out works near our infrastructure. For construction activities that may impact on or interfere with our network, you will need to call us on **1800 786 306** to discuss a suitable engineering solution, lead time and cost involved. The below precautions must be taken when working in the vicinity of our network:

- Contact us on **1800 786 306** to discuss and obtain relevant information and plans on our infrastructure in a particular location if the information provided in this response is insufficient.
- Physically locate and mark on-site our network infrastructure using non-destructive techniques i.e. pot holing or hand digging every 5 metres prior to commencing any construction activities. Assets located must be marked to AS5488 standard. **NO CONSTRUCTION WORK IS ALLOWED UNTIL THIS STEP IS COMPLETED**. You must use an approved telecommunications accredited locator, or we can provide a locator for you at your expense. If we provide you with a locator, and this locator attended the site and is proven to be grossly negligent in physically locating and marking our infrastructure, then to the extent any TPG carrier is liable for this locator's negligence, acts and omissions, the total liability aggregated for all TPG carriers is limited, at our option, to attend the site and re-mark the infrastructure or to pay for a third party to re-mark the infrastructure.
- If you require us to locate or monitor our infrastructure, please allow five business days' notice for us to respond.
- Ensure all information, including our network requirements and any associated plans provided by us are kept confidential and remain on-site throughout your construction works.

- Use suitably qualified and supervised professionals, particularly if you are working near assets that contain electricity cables or gas pipes.

- Ensure the below minimum clearance distances between the construction activities and the actual location of our assets are met. If you need clearance distances for our above ground assets, or if the below distances cannot be met, call **1800 786 306** to discuss.

  Minimum assets clearance distances.

  - 300mm when laying asset inline, horizontal or vertical.
  - 1000mm when operating vibrating equipment. Eg: vibrating plates. No vibrating equipment on top of asset.
  - 1000mm when operating mechanical excavators or jackhammers/pneumatic breakers.
  - 2000mm when performing directional bore in-line, horizontal and vertical.
  - No heavy vehicle over 3 tonnes to be driven over asset with less than 600mm of cover.

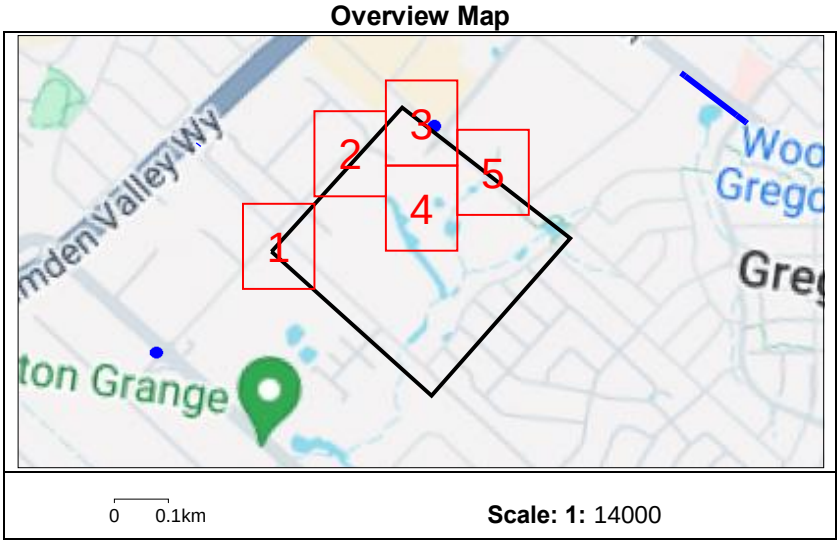
- Reinstate exposed TPG network infrastructure back to original state.

PRIVACY & CONFIDENTIALITY

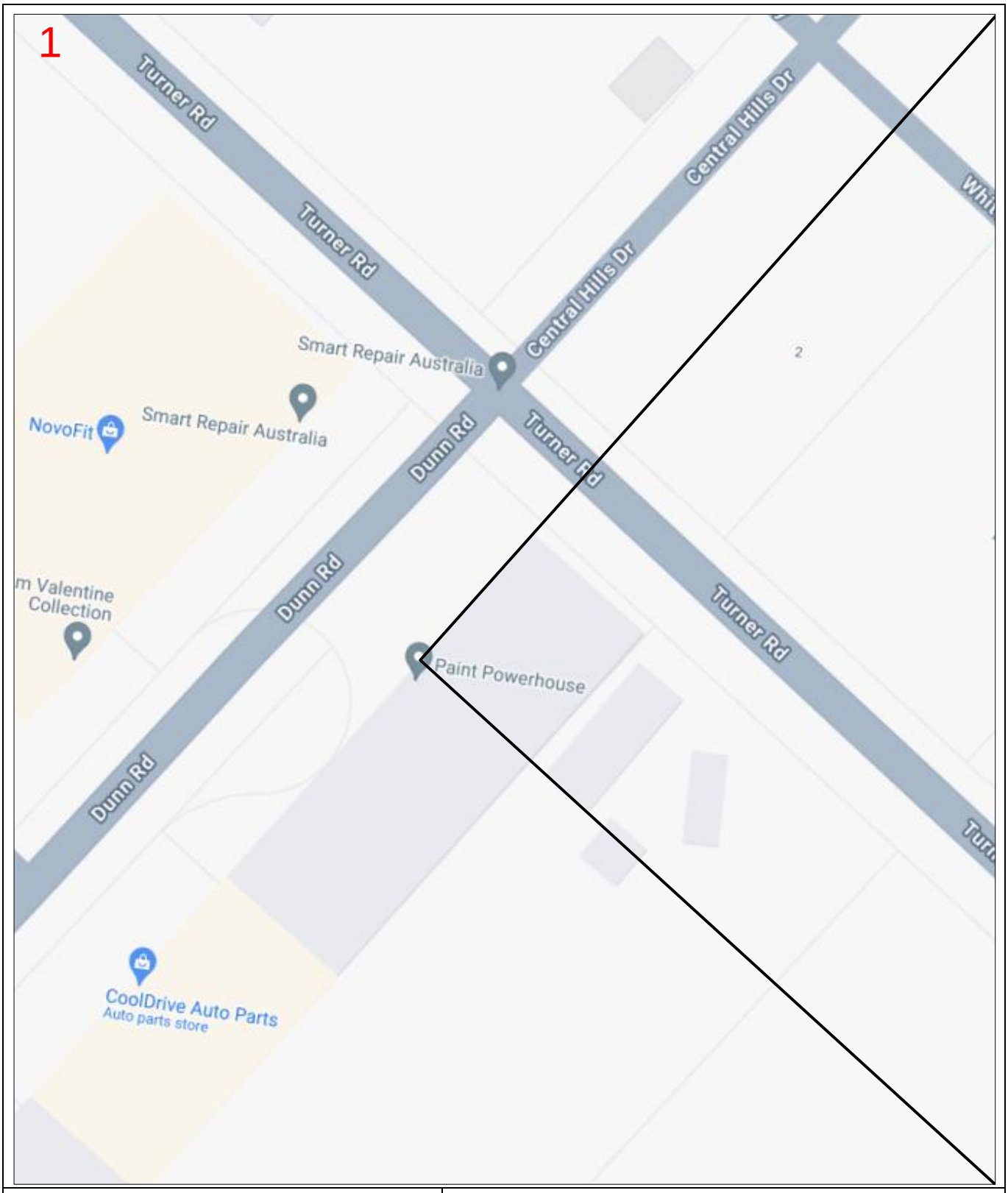
- Privacy Notice – Your information has been provided to us by Before You Dig Australia to respond to your Before You Dig Australia enquiry. We will keep your personal information in accordance with TPG's privacy policy, see www.tpg.com.au/about/privacy.

- Confidentiality – The information we have provided to you is confidential and is to be used only for planning and designing purposes in connection with your Before You Dig Australia enquiry. Please dispose of the information by shredding or other secure disposal method after use. We retain all intellectual property rights (including copyrights) in all our documents and plans.

Overview Map



TPG Telecom Limited



Enquiry Number: 243455151

Map Sheet: 1

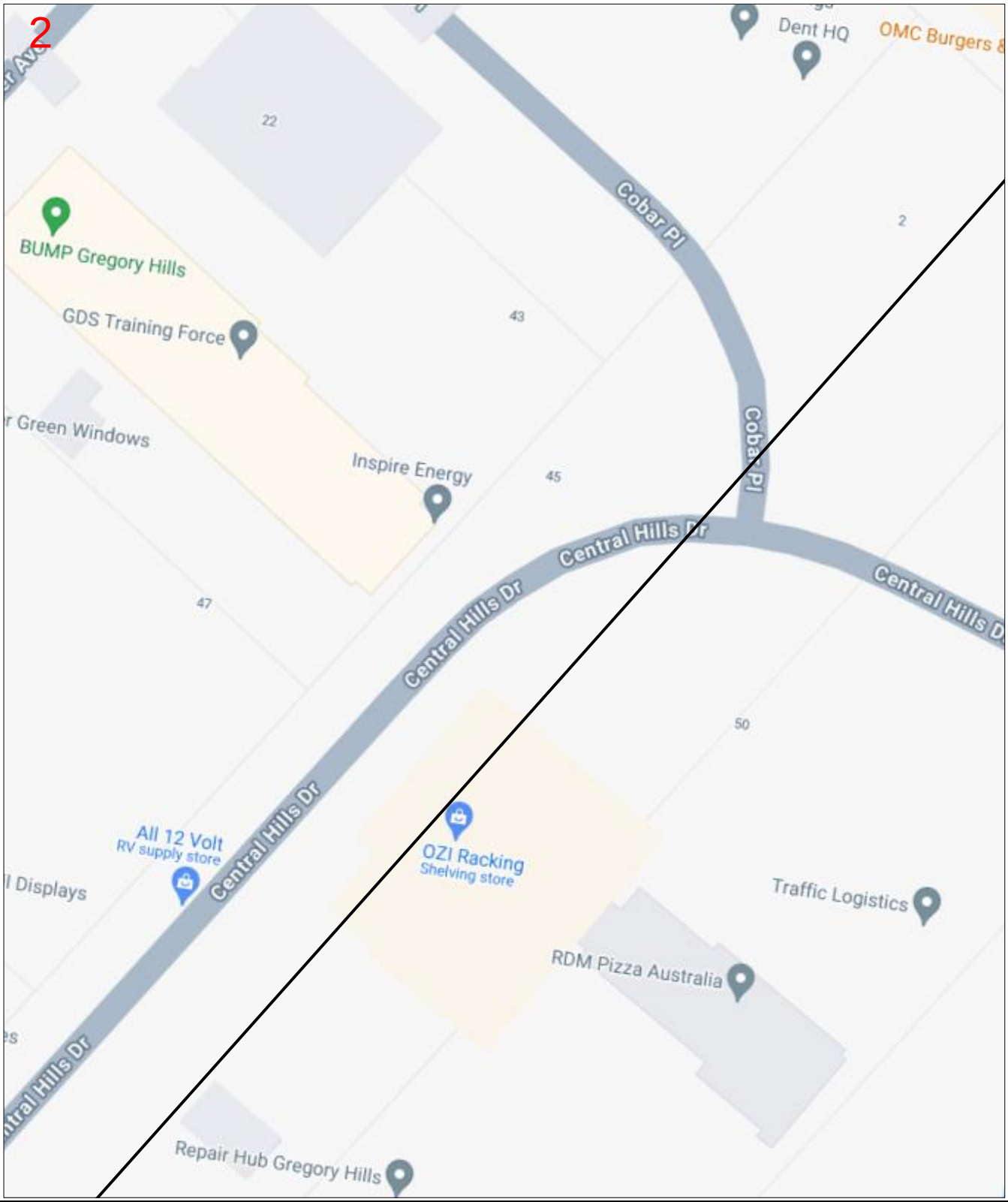
Scale: 1: 750

0 0.008km

N

LEGEND

BYDA Work Area			
AAPT/PowerTel Pit		TransACT Pit	
AAPT/PowerTel Duct		TransACT Duct	
DDA Pit		SOUL Pattinson Telecoms Pit	
DDA Duct		SOUL Pattinson Telecoms Duct	
Agile/Adam Pit		PIPE Networks Pit	
Agile/Adam Duct		PIPE Networks Duct	



Enquiry Number: 243455151

Map Sheet: 2

Scale: 1: 750

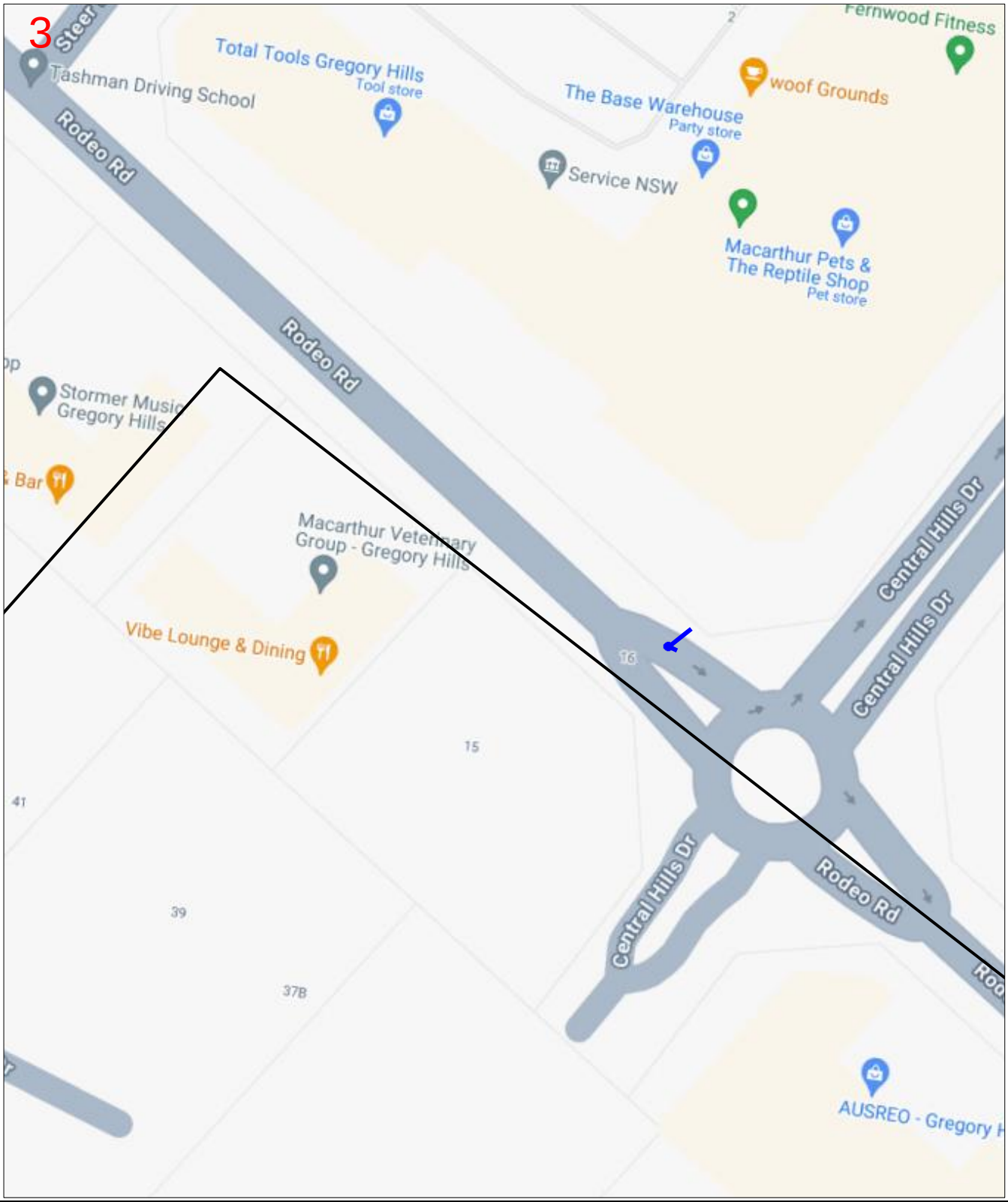
0 0.008km

N

LEGEND

BYDA Work Area

AAPT/PowerTel Pit	TransACT Pit
AAPT/PowerTel Duct	TransACT Duct
DDA Pit	SOUL Pattinson Telecoms Pit
DDA Duct	SOUL Pattinson Telecoms Duct
Agile/Adam Pit	PIPE Networks Pit
Agile/Adam Duct	PIPE Networks Duct



Enquiry Number: 243455151

Map Sheet: 3

Scale: 1: 750

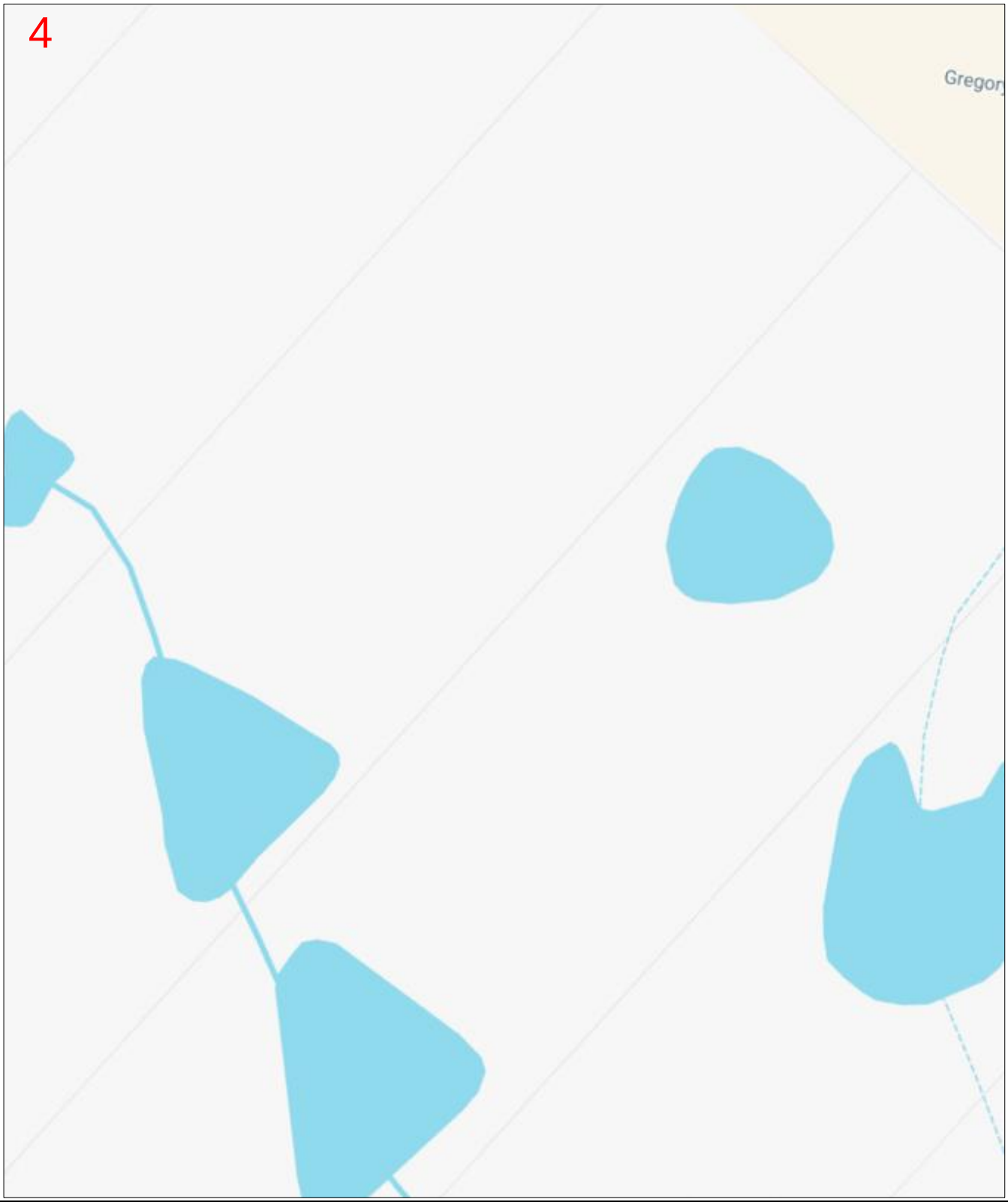
0 0.008km

N

LEGEND

BYDA Work Area

AAPT/PowerTel Pit	TransACT Pit
AAPT/PowerTel Duct	TransACT Duct
DDA Pit	SOUL Pattinson Telecoms Pit
DDA Duct	SOUL Pattinson Telecoms Duct
Agile/Adam Pit	PIPE Networks Pit
Agile/Adam Duct	PIPE Networks Duct



Enquiry Number: 243455151

Map Sheet: 4

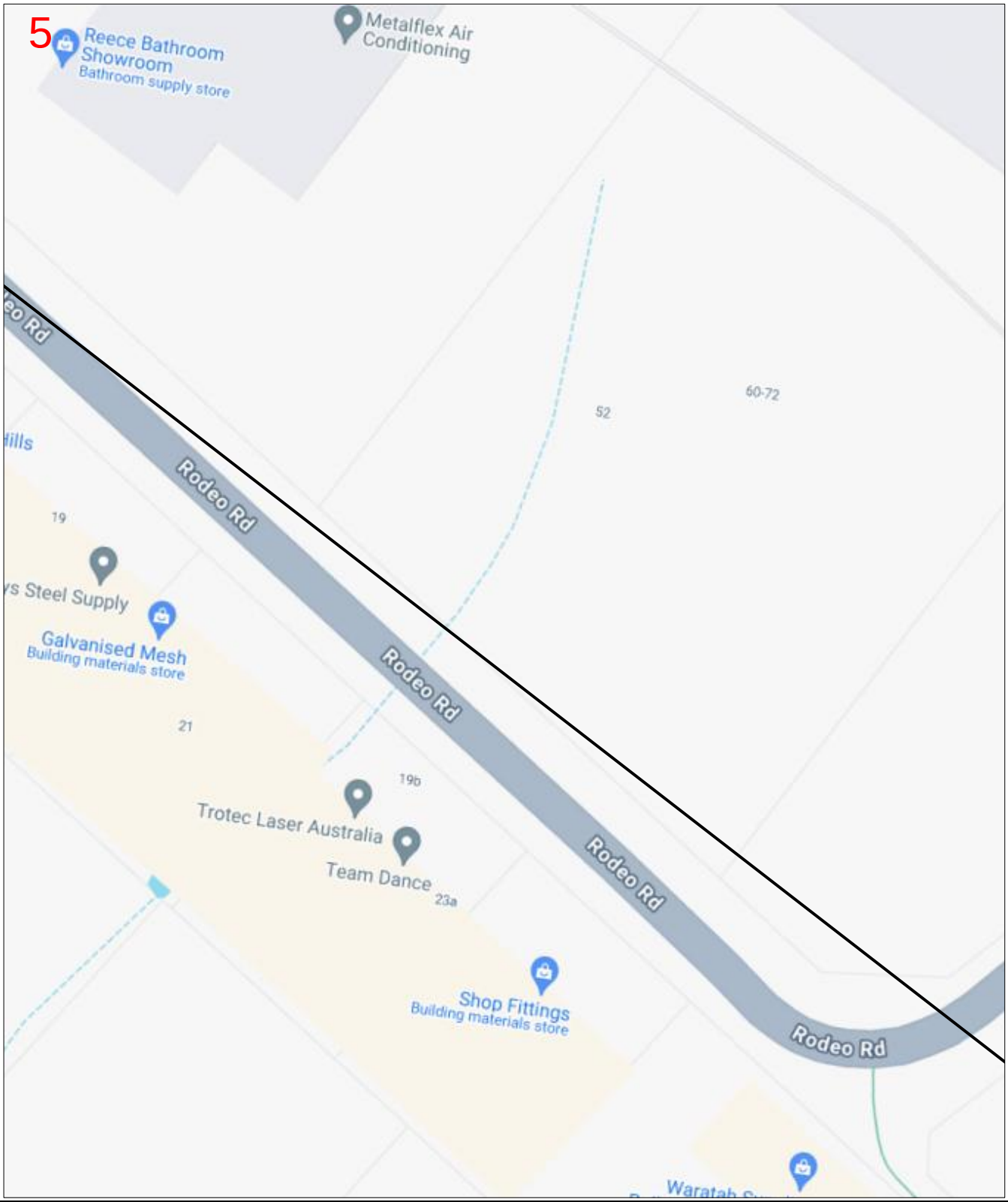
Scale: 1: 750

0 0.008km

N

LEGEND

BYDA Work Area			
AAPT/PowerTel Pit		TransACT Pit	
AAPT/PowerTel Duct		TransACT Duct	
DDA Pit		SOUL Pattinson Telecoms Pit	
DDA Duct		SOUL Pattinson Telecoms Duct	
Agile/Adam Pit		PIPE Networks Pit	
Agile/Adam Duct		PIPE Networks Duct	



Enquiry Number: 243455151

Map Sheet: 5

Scale: 1: 750

0 0.008km

N

LEGEND

BYDA Work Area	
AAPT/PowerTel Pit	TransACT Pit
AAPT/PowerTel Duct	TransACT Duct
DDA Pit	SOUL Pattinson Telecoms Pit
DDA Duct	SOUL Pattinson Telecoms Duct
Agile/Adam Pit	PIPE Networks Pit
Agile/Adam Duct	PIPE Networks Duct

Vocus Communications 2

Referral
243455152

Member Phone
1800 262 663

Responses from this member

Response received Mon 19 Aug 2024 12.13pm

File name	Page
Response Body	96
243455152 - Vocus Group Response letter.pdf	97
243455152 - Vocus Overview Plan.pdf	103

Dear Ramiya Ravindran

Thank you for your request regarding the location of telecommunication services. You requested the information for the below area:

Before You Dig Australia Job No: 37389014
Sequence No: 243455152

Enquiry Date: 19/08/2024
Address: 61 Turner Road
Suburb: Gregory Hills
State: NSW

Please find attached a copy of the services plan for the location of the works. Please note that these plans have a life of 30 days from the date you requested (above), as future works may affect your enquiry.

Kind regards,

Vocus Group BYDA Team
Level 12, 60 Miller Street
North Sydney NSW 2060
Australia

19/08/2024

Ramiya Ravindran
Arup
151 Clarence Street
Sydney NSW 2000

Dear Ramiya Ravindran

BEFORE YOU DIG AUSTRALIA - JOB: 37389014 SEQ: 243455152

Thank you for your request regarding the location of telecommunication services. You requested the information for the below area:

Enquiry Date:	19/08/2024
Address:	61 Turner Road
Suburb:	Gregory Hills
State:	NSW, 2557

Additional Information:

STOP

According to our records your enquiry with the following details impacts our infrastructure. A detailed Plan is normally attached to this response, however due to the large area, a single overview plan has been provided.

In order to have your enquiry response adequately assessed, you are required to contact damage.relocations@vocus.com.au to discuss your works in more detail.

IMPORTANT INFORMATION

Drawings and Plans provided by the Vocus Group are reference diagrams which were correct at the time the asset was built. Exact ground cover and alignments cannot be provided with any certainty, as these may alter over time. Depths of Telecommunications plant vary considerably as do alignments. The plans provided are to be used as a guide only. It is essential to uncover / pothole the asset and positively identify the assets exact location.

Yours sincerely,
Vocus Group

EMERGENCY CONTACT: 1800 262 663

Vocus Level 12, 60 Miller Street
North Sydney NSW 2060
T: 1300 88 99 88
E: info@vocus.com.au

The Vocus Group includes related bodies corporate of Vocus Communications Limited ACN 084 115 499.

DUTY OF CARE

When working in the vicinity of telecommunications plant, you have a legal "Duty of Care" that must be observed. The following points must be considered:

It is the responsibility of the constructor to design for protection and minimal impact of the Vocus Group plant. The Vocus Group will provide free plans showing the presence of its network to assist at the design stage. It is the constructors' responsibility to:

a. Request plans of the Vocus Group plant for a particular location at a reasonable time before construction begins through Before You Dig Australia.
b. Visually locate the Vocus Group plant by vacuum excavation (potholing) where construction activities may damage or interfere with the Vocus Group plant (see "Clearances for work in the vicinity of the Vocus Group Plant" section for more information).
c. Contact the Vocus Group (see below for details) if the Vocus Group plant is wholly or partly located near planned construction activities.

NOTE: Plans are provided free of charge up to 1 Km radius. Larger plans may incur a cost.

DAMAGE

ANY DAMAGE TO VOCUS GROUP NETWORK
MUST BE REPORTED TO 1800 262 663 IMMEDIATELY

The constructor is responsible for all plant damage when works commence prior to obtaining the Vocus Group plans, or failure to follow instructions.

The Vocus Group reserves all rights to recover compensation for loss or damage to its cable network or other property including consequential losses.

ASSET RELOCATIONS

You are not permitted to relocate or alter any Vocus Group assets or network under any circumstance.

For all enquiries relating to the relocation of Vocus Group assets please email Damage.Relocations@vocus.com.au

ON SITE LOCATION

Region	Onsite Locations Contact	Phone	Mobile	Fax	After Hours
NSW - Sydney	QC Communications	(02) 9620 2407		(08) 9620 1701	
NT – Alice Springs	Chambers Engineering	(08) 8955 5022	0418 837 833 0418 897 332	(08) 8955 5322	
NT – Darwin	Anywair Electrics	(08) 8988 1658	0418 890 071	(08) 8988 4654	0418 890 071
NT – Darwin	Northern Communications Services		0407 904 319		(08) 8927 3994
QLD - Brisbane	Optilinx	Scheduling (07) 3901 7353	After Hours or Emergency 0404 010 658	(07) 3901 7352	
SA – Adelaide	Trenchless Pipe-Laying Contractors	(08) 8376 5911		(08) 8376 5944	
VIC – Melbourne	Linktech	Scheduling (03) 8805 0300			
WA – Perth	Abaxa / WH Location Services	Scheduling 1300 369 642	After Hours or Emergency 0411 746 657 - Boyd	(08) 9256 2922	

The Vocus Group accepts no liability for the information provided to the Constructor by the Locators provided above. Further, the Constructor acknowledges that the Locator is the agent of the Constructor and that the Vocus Group takes no responsibility for the locators' acts or omissions.

If any of the above numbers are uncontactable and your call is urgent, please call the Vocus National Service Desk on 1800 262 663

- For all work within 2.5 metres of nominal location, the Constructor is required to prove the actual location of the plant by potholing and exposing before commencing work.
- Potholing to expose and locate the Vocus Group plant is required before work commences, at least every 3 metres where the Constructors works are parallel to the Vocus Group plant.
- The Constructor is responsible for all plant damages when works commence without the Vocus Group plans or by failure to follow advice and/or instructions from the Vocus Group.

NOTE: No machinery shall be used within 1 metre of the Vocus Group plant until the actual location has been determined by potholing using hand tools.

NOTE: No heavy earth working machinery shall be used within 5 metres of the Vocus Group plant until the actual location has been determined by potholing using hand tools.

CLEARANCES FOR WORK IN THE VICINITY OF VOCUS GROUP PLANT

These figures represent the minimum clear cover to be maintained over the Vocus Group plant. Please note that the actual cover over existing plant might be greater or less than recommended figures. Exact alignment and depths cannot be given with certainty as such levels can change over time.

Footpath and Verge Areas	450mm
Roadways	600mm

These figures represent the minimum clearance between construction and actual location of the Vocus Group plant.

Jackhammers / Pneumatic Breakers	Not within 2.5 metres of actual location
Vibrating plate or Wacker Packer compactors	Not within 500mm of actual location
Heavy Vehicle Traffic	Not to be driven across Vocus Group plant with less than 600mm cover. The constructor is to check the depth by potholing using hand tools.
Mechanical Excavators	Not within 1 metre of actual location. The constructor is to pothole and expose plant using hand tools.
Boring Equipment (in-line, horizontal and vertical)	Not within 2.5 metres of actual location. The constructor is to pothole and expose plant.

Access to the Vocus Group pits must remain accessible and at ground level at all times.

Any information provided is valid only for 30 days from the date of issue of this document. If the work operations extend beyond this period, or if the designs are altered in any way, you are requested to re-submit your proposal for re-assessment by contact Before You Dig Australia.

Phone 1100 or check the website for more details http://www.1100.com.au

RESOLUTION OF POINTS OF CONFLICT

Should plant location and potholing reveal points of conflict between the Constructors planned works and the existing Vocus Group plant, the constructor should contact the Vocus Group for advice and to discuss possible solutions. The contact details are;

Fibre Operations

Phone: 1800 262 663
Email: support@vocus.com.au

Or Urgent enquiries after business hours contact 1800 262 663

ASSESSMENT OF RISK AND PROTECTIVE ACTIONS

Where protective works are required around existing Vocus Group plant, the details will be worked out on a case by case basis. Protective works are the responsibility of the Constructor.

Where relocation or protection of Vocus Group plant is part of an agreed solution, the costs of these works will be the responsibility of the Constructor. The Vocus Group will provide an estimated cost for works. Work by the Vocus Group will not commence until a Purchase Order is received.

Schedule The Criminal Code
Chapter 10 National infrastructure
Part 10.6 Telecommunications Services
Division 474 Telecommunications offences

474.6 Interference with facilities

(1) A person is guilty of an offence if the person tampers with, or interferes with, a facility owned or operated by:

(a) a carrier; or
(b) a carriage service provider; or
(c) a nominated carrier.

Penalty: Imprisonment for 1 year.

(2) For the purposes of an offence against subsection (1), absolute liability applies to the physical element of circumstance of the offence, that the facility is owned or operated by a carrier, a carriage service provider or a nominated carrier.

(3) A person is guilty of an offence if:

(a) the person tampers with, or interferes with, a facility owned or operated by:

(i) a carrier; or
(ii) a carriage service provider; or
(iii) a nominated carrier; and

(b) this conduct results in hindering the normal operation of a carriage service supplied by a carriage service provider.

Penalty: Imprisonment for 2 years.

(4) For the purposes of an offence against subsection (3), absolute liability applies to the following physical elements of circumstance of the offence:

(a) that the facility is owned or operated by a carrier, a carriage service provider or a nominated carrier;

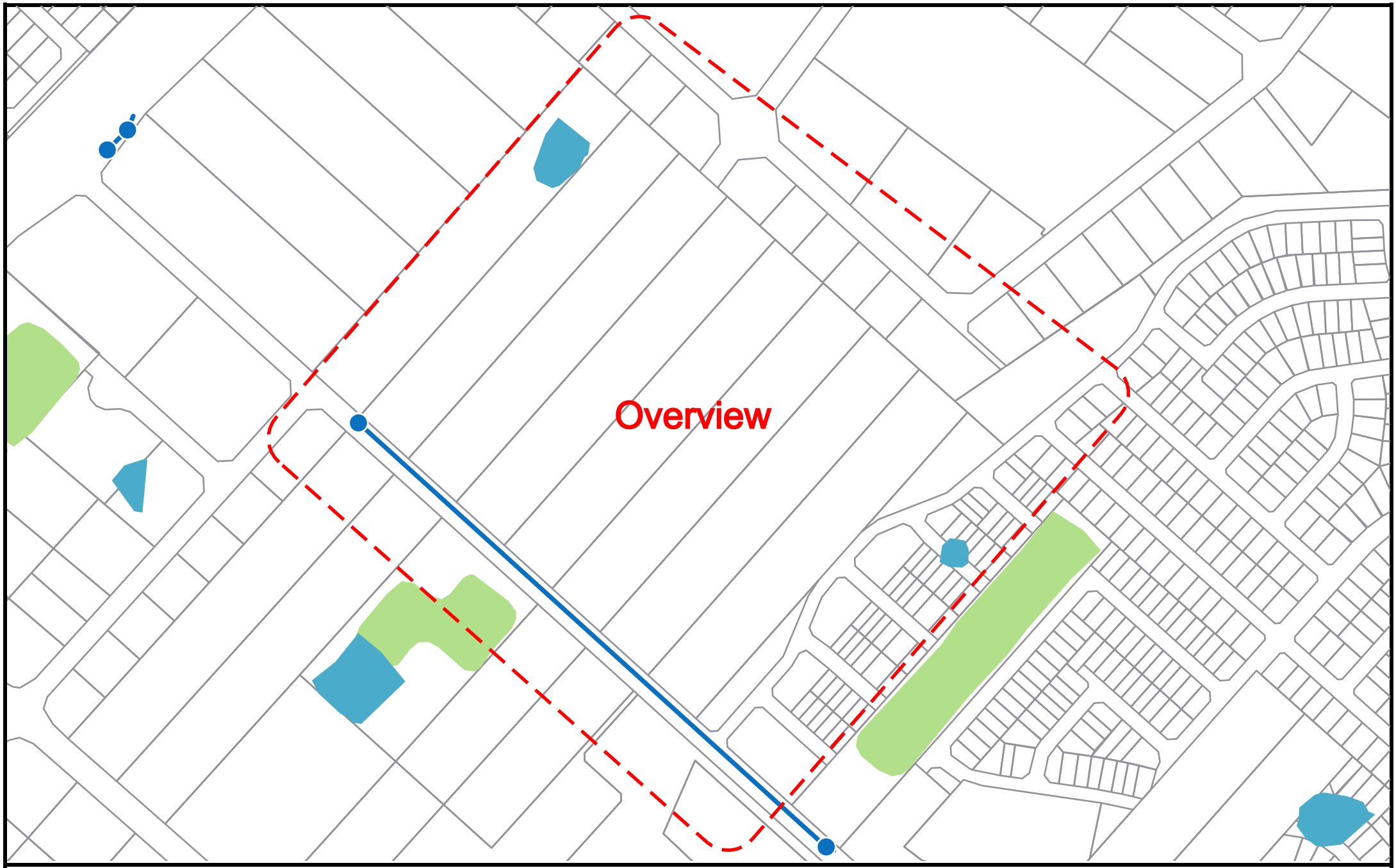
(b) that the carriage service is supplied by a carriage service provider.

(5) A person is guilty of an offence if:

(a) the person uses or operates any apparatus or device (whether or not it is comprised in, connected to or used in connection with a telecommunications network); and

(b) this conduct results in hindering the normal operation of a carriage service supplied by a carriage service provider.

Penalty: Imprisonment for 2 years.



VOCUS communications

SEQUENCE NUMBER: 243455152
JOB NUMBER: 37389014
ADDRESS: 61 Turner Road, Gregory Hills, NSW 2557

LEGEND
Vocus Group Pit
Vocus Group Conduit

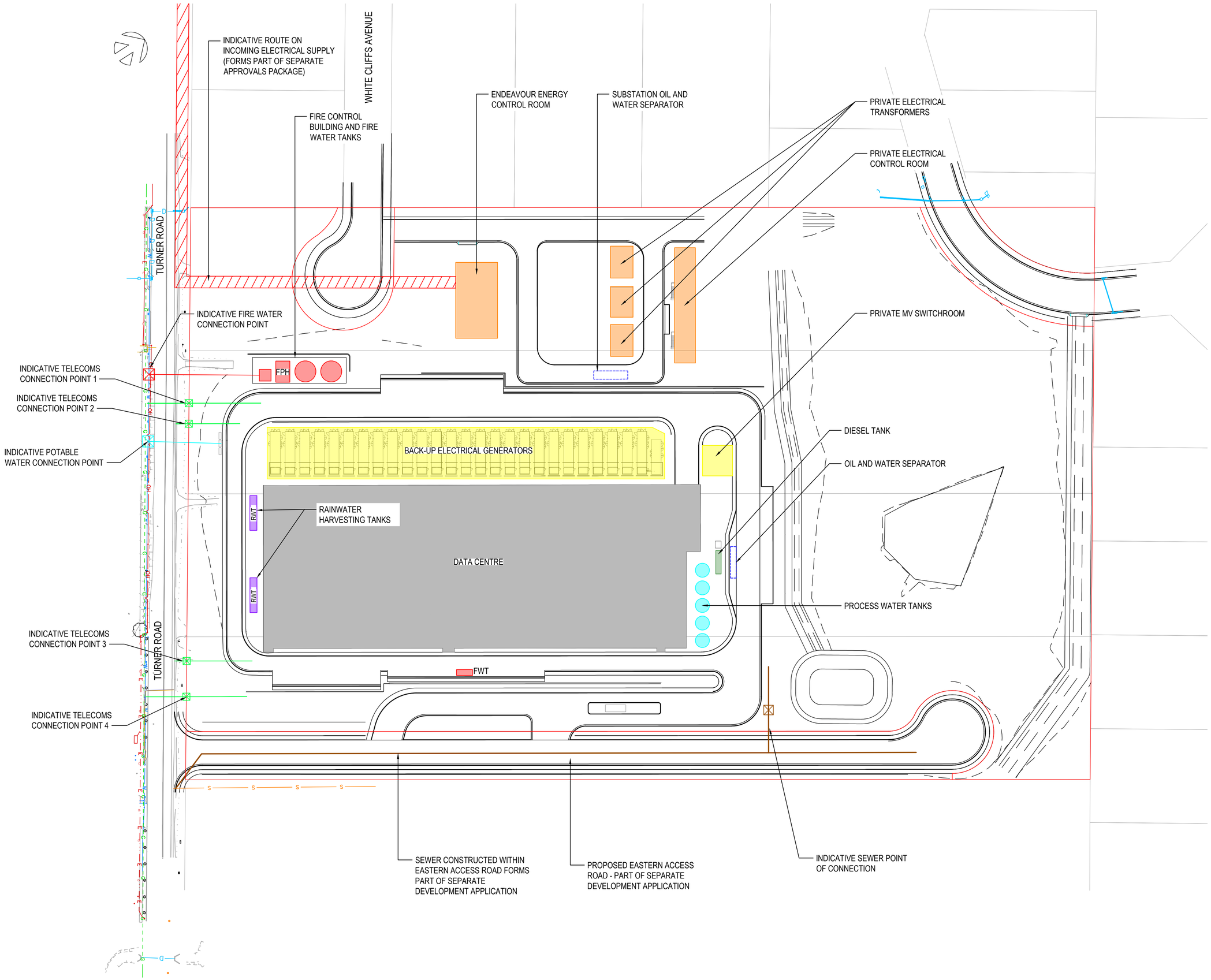
SCALE: 1:4550

End of document

This document may exclude some files (eg. DWF or ZIP files)

This document was automatically generated at a point-in-time. Be aware that the source information from which this document was created may have changed since it was produced. This document may contain incomplete or out-of-date information. Always check your enquiry details in the BYDA Referral Service for the most recent information. For copyright information refer to individual responses.

Appendix B – Infrastructure Services Plan



LEGEND:

- HV SUBSTATION EQUIPMENT
- DATA CENTRE ELECTRICAL EQUIPMENT
- FIRE TANKS AND PUMPS
- RAINWATER TANKS
- PROCESS WATER TANKS
- OIL AND WATER SEPARATOR
- DIESEL TANK

REV	DATE	DESCRIPTION	DRN	ENG	CHK	APP

MECHANICAL ENGINEER:
ARUP
+61 2 9320 9320
BARRACK PLACE, LEVEL 5, 151 CLARENCE STREET, SYDNEY NSW 2000

ELECTRICAL ENGINEER:
ARUP
+61 2 9320 9320
BARRACK PLACE, LEVEL 5, 151 CLARENCE STREET, SYDNEY NSW 2000

CIVIL ENGINEER:
ARUP
+61 2 9320 9320
BARRACK PLACE, LEVEL 5, 151 CLARENCE STREET, SYDNEY NSW 2000

STRUCTURAL ENGINEER:
ARUP
+61 2 9320 9320
BARRACK PLACE, LEVEL 5, 151 CLARENCE STREET, SYDNEY NSW 2000

ARCHITECT:
GREENBOX ARCHITECTURE
+61 2 8069 8930
LEVEL 22, 68 PITT STREET, SYDNEY NSW 2000

SECURITY ENGINEER:
ARUP
+61 2 9320 9320
BARRACK PLACE, LEVEL 5, 151 CLARENCE STREET, SYDNEY NSW 2000

PROJECT:

TITLE:
INFRASTRUCTURE SERVICES PLAN

DRAWING:
APPENDIX B

PAPER SIZE:	SCALE:	AGILE NO:	REV:
ISO A1			

PRINT IN COLOUR

Appendix C – Electrical Supply Connection Offer

Endeavour Energy
ABN 11 247 365 823
T 133 718
Level 40-42, 8 Parramatta Square
10 Darcy Street
Parramatta NSW 2150
PO Box 811, Seven Hills NSW 1730

Standard Connection Offer

15 December 2023

Endeavour Energy Ref: UIL6727
Customer Reference No. SYD091

Kevin Nuner

Sydney NSW 2000

UIL6727 – LOT 14, DP 28024, Connection of 60MVA and 120MVA at 43 TURNER ROAD, GREGORY HILLS

is developing a new data centre facility at 43 Turner Rd, Gregory Hills. An application for permanent connection of load has been submitted to Endeavour Energy (Endeavour) requesting an additional load for 60MVA and 120MVA at the site known as SYD091.

This Connection Offer will provide detailed connection requirements to assist your Level 3 accredited service provider (ASP) and installation consultants to develop the most efficient solution to meet your needs whilst complying with Endeavour's standards and the Terms and Conditions of the Model Standing Offer for a Standard Connection Service (MSO).

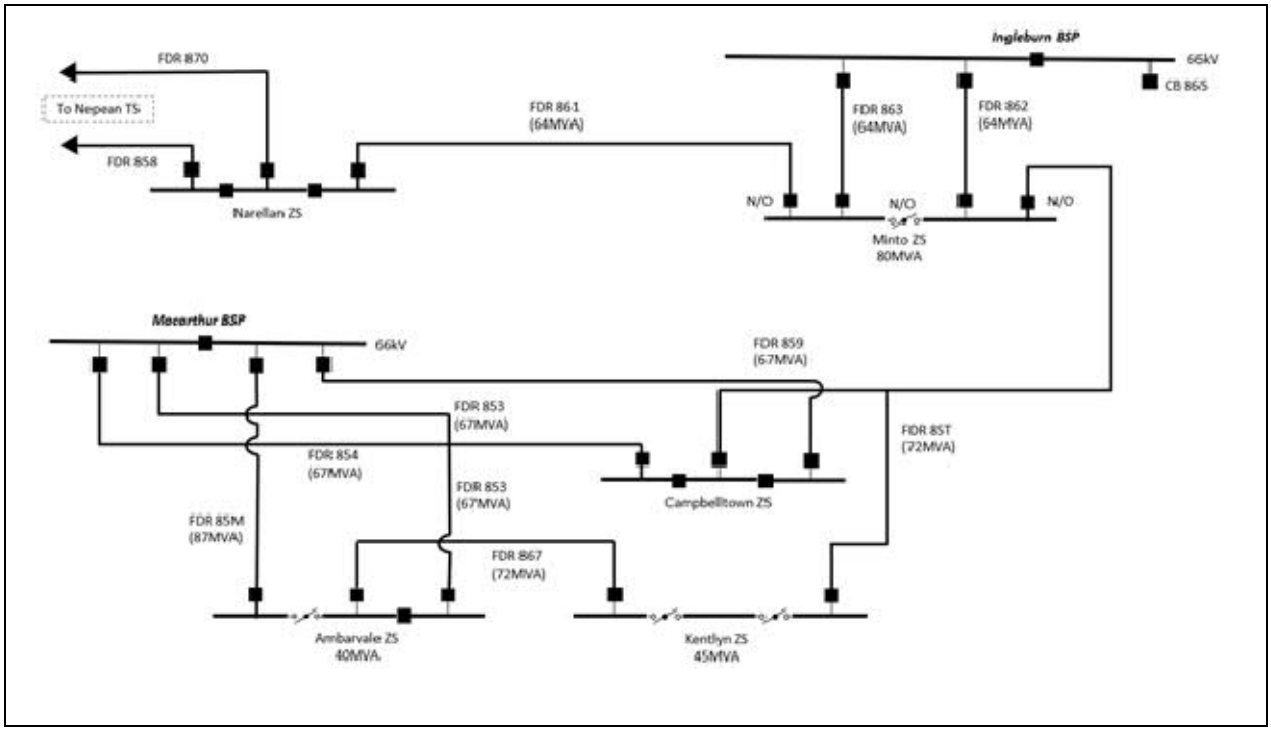
The method of supply for Data Centre with respective loads of 120MVA and 60MVA are as follows:

1. **Connection of 120MVA Data Centre**

Capacity planner assessed the network capacity and advising that the adjacent 132kV feeder 9L4 cannot support the 120MVA Datacentre. At this point in time, Endeavour cannot entertain anymore connections from Macarthur 132kV, and as such Endeavour can only provide connection via the 66kV network. Even with Kemps Creek BSP works, anticipated post 2030, Kemps Creek would likely be the closest BSP with 132kV supply options.

The 120MVA data centre can be supplied from the 66kV network via three options as follows:

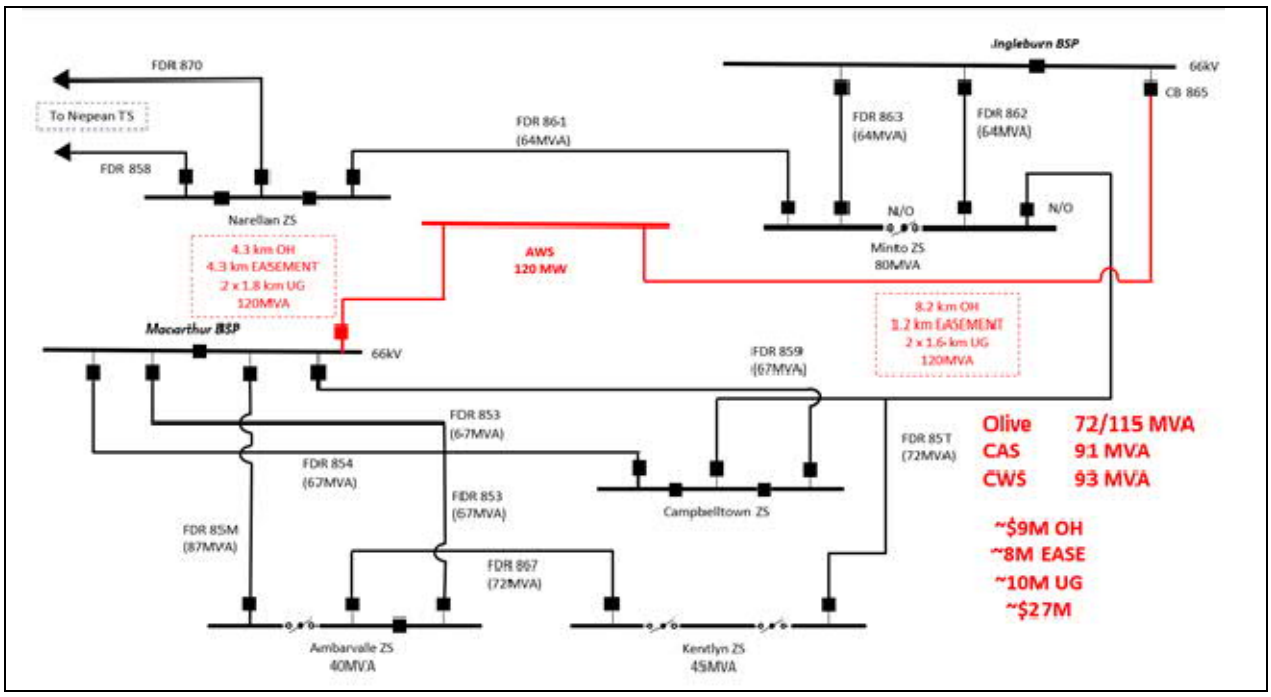
Existing SLD:



Option 1– ~$27M

1. Run a new 66kV 120MVA feeder from new circuit breaker at Macarthur BSP to customer site.
2. Run a new 66kV 120MVA feeder from existing CB 865 at Ingleburn BSP to customer site.
3. Conductor/Cable to be rated at 120MVA.

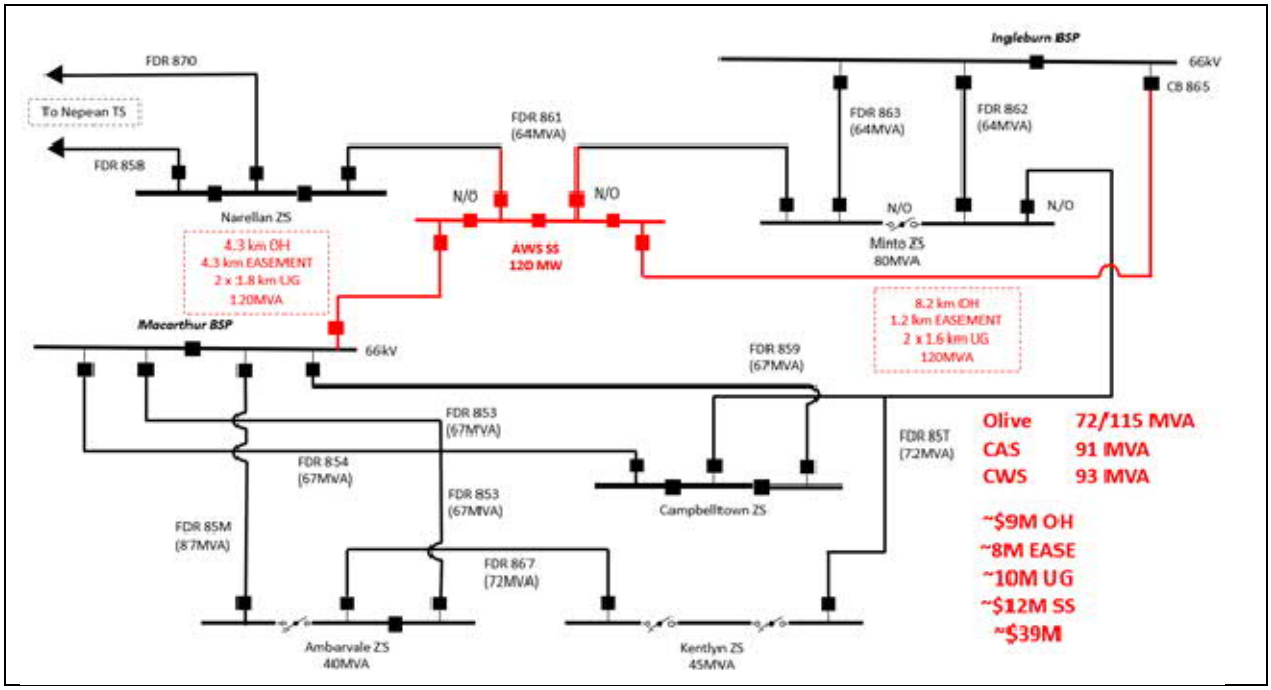
This option will require approximately 5.5km of easements and a new circuit breaker from Transgrid at Macarthur BSP.



Option 2– ~$39M

1. Establish a new 66kV switching station, SS on site.
2. Run a new 66kV 120MVA feeder from new circuit breaker at Macarthur BSP to new SS.
3. Run a new 66kV 120MVA feeder from existing CB 865 at Ingleburn BSP to new SS.
4. Conductor/Cable to be rated at 120MVA.
5. Cut Existing 66kV feeder 861 along frontage of site and extend both ends into new SS.

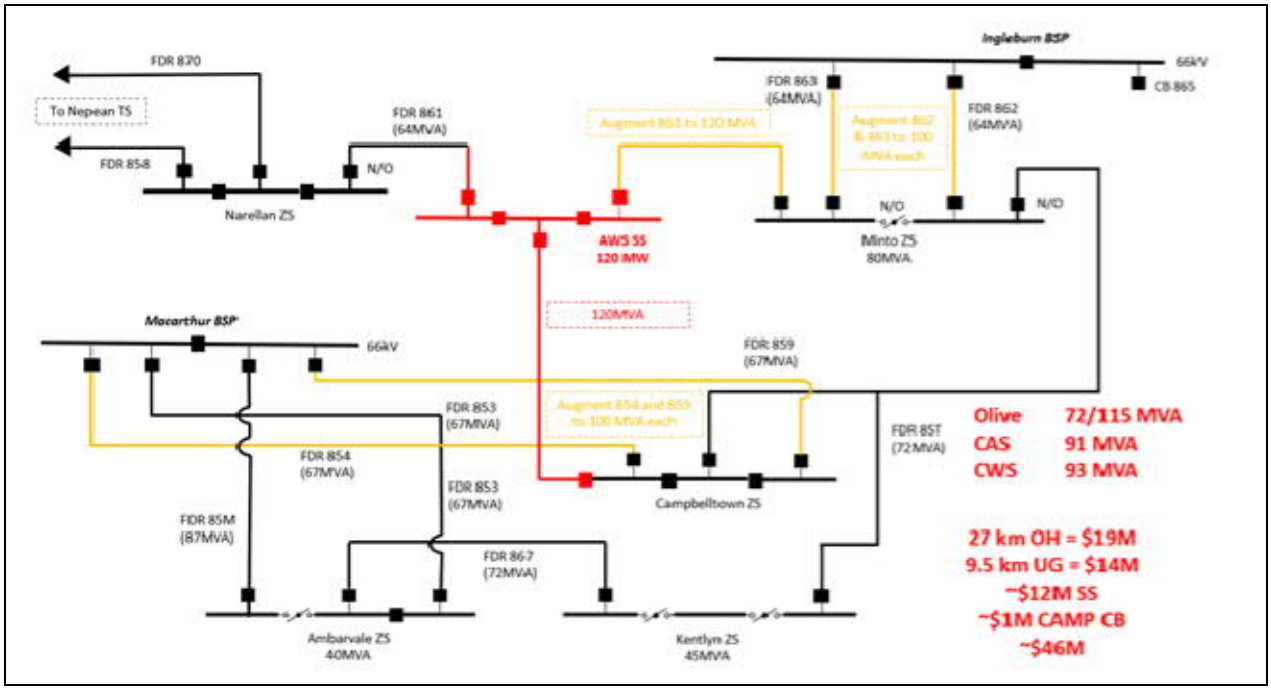
This option will require approximately 5.5km of easements and a new circuit breaker from Transgrid at Macarthur BSP.



Option 3 - ~$46M

1. Prepare new 66kV circuit breaker at Campbelltown ZS.
2. Establish new 66kV switching station on site.
3. Run new 66kV feeder from new switching station to Campbelltown ZS.
4. Cable/conductor to be rated at 120MVA.
5. Augment 66 kV feeders 854, 859, 862 and 863 to 100MVA each.

Note this MOS likely does not need an easement and likely uses road reserves.



The feasibility of these method of supply (MOS) needs to be confirmed on actual application by the relevant stakeholders. Furthermore, the above MOS is applicable to supply 1 x 120MVA datacentre only, that is either ENL4803 or ENL4520.

2. Connection of 60MVA Data Centre

The existing 132kV overhead network, feeder 9L4, have capacity for the proposed 60MVA load. An Endeavour 132kV Switching Station will be required on the proposed site. The Switching Station will be designed and constructed and funded by the Customer. The Switching Station may be an indoor or outdoor type and will containing five circuit breakers, one from Nepean Transmission Substation, one from North Leppington Zone Substation, one as a bus tie circuit breaker at the centre of the 132kV busbar and two providing outgoing supplies from either side of the bus tie circuit breaker into the Customers' installation. The Switching Station will need to comply with Endeavour standards and further details will be provided in the Technical Brief, TB.

Please refer to SDI510 for general indoor Switching Station requirements and typical layout and expected sizing. Once commissioned, the Switching Station will be handed over to Endeavour for subsequent ownership, operation and maintenance. The Point of Supply will be the load side terminals of Endeavour's 132kV isolator associated with the outgoing circuit breakers within the switching station.

The supply is proposed to come via a looped connection from existing 132kV overhead feeder 9L4 between Nepean Transmission Substation and North Leppington Zone Substation (refer

Appendix A). It has been determined that the contestable works to be carried out by the customer is from suitable poles from 132kV feeder 9L4 along Turner Rd and terminate into the Endeavour Switching Station within the Customers Substation via underground reticulations.

Works to establish the connection assets within the Customer Substation including Endeavour 132kV Switching Station, feeders and associated feeder secondary systems is deemed Contestable Works and must be designed, constructed and funded by the Customer. Ownership and operation of these 132kV connection assets will be transferred to Endeavour on acceptance in accordance with the MSO.

Easements will be required over all Endeavour assets including accommodation within the customers 132kV substation and will need to follow the Land Interests Guidelines found here. The size of easement will be determined as more information is made available during the detailed design phase and prior to final substation design. Depending on the circumstance, Endeavour may decide to forgo easements and instead adopt a lease agreement if more practical and reasonable. 24-hour unrestricted personal access will be required to all Endeavour assets.

A Technical Brief, TB describing the concept and scope of design works including protection coordination and design would be required and will be triggered upon submission of a Method of Supply proposal by a Level 3 ASP. The TB produced under old project UIL6287 is currently under reviewed and to be updated to reflect new site specific under this Cap Project, UIL6727.

Implementation of Under Frequency Load Shedding (UFLS) scheme is a requirement under the National Electricity Rules. Endeavour reserves the right to implement UFLS settings that would result in disconnection of 100% load of the customers installation typically starting at a frequency of 48.9Hz. To avoid 100% disconnection in under frequency event, Endeavour recommends the customer installs a voluntary UFLS scheme within customer installation to automatically disconnect minimum 60% of non-essential loads maintaining 40% of customer maximum demand. Please provide confirmation if a voluntary UFLS scheme within customer installation is a viable option.

After the connection works are completed, approval must be issued before the Customer's Installation can be connected at the 132kV connection points. This letter details the connection requirements which must be achieved prior to approving connection and provides information regarding the ongoing operation and interactions between Endeavour's network and the Customer's Installation.

Customer's Installation

The Customer's installation will originate at the 132kV Connection Points (Primary) defined as the load side terminals of Endeavour's 132kV isolator associated with the outgoing circuit breakers within the Switching Station. The feeder fibre Connection Points (Secondary) will be at the Endeavour's protection and control room within the Connection Customer's substation.

The Customer's Installation must be installed in accordance with AS/NZS 3000, Service and Installation Rules of NSW, and other relevant Australian Industry Standards.

Supply will not be made available until the Customer's Installation has been inspected by Endeavour's Customer Installation Section. A Certificate of Compliance for Electrical Works (CCEW), high voltage test reports and any other relevant documentation will be required. Arrangements for this inspection can be made with Endeavour's Customer Installations Section via email inspection@endeavourenergy.com.au.

Please allow a minimum of four weeks' notice to arrange a HV Customer's Installation audit prior to the proposed commissioning date.

Single Line Diagram (SLD)

A SLD for the Customer's Installation must be submitted for review. The customers final substation SLD must be approved by Endeavour prior to the purchase of primary and secondary equipment. The SLD must include reference to Endeavour 132kV feeders, 132kV connection points, incoming control and protection devices, proposed line side earth switches, location and details of metering transformers, proposed protection schemes and bus sections (if applicable). Endeavour will require proposed SLD's of all voltages including location of any proposed UPS, generation systems and transition methodology.

Endeavour does not allow customers to parallel supplies, as this creates safety and operational risks. Paralleling of the incoming supplies is not allowed at any voltage level unless under the direct control of Endeavour's System Operators.

Please ensure SLD's of the Customer's Installation extending to all voltage levels are provided which include any generation facilities, and automatic or manual paralleling facilities, along with any proposed engineering or operational controls, intended to inhibit inadvertent paralleling of incoming supplies at any voltage level.

Fault Level

In conformity with Clause 7.4.4 of the Service and Installation Rules of NSW, the prospective fault level at the Connection Point is 40kA for 1 second. The customer's equipment up to (and including) the incoming protective device must meet this minimum fault level.

Protection and Control

A Protection Concept Design Agreement (PCDA) between Endeavour and Amazon must be developed. This document will detail the conceptual agreement on the protection scheme to be installed between Nepean TS, North Leppington ZS and High Voltage Customer's installation.

The protection schemes of 132kV feeder 9L4 will be differential protection. Endeavour will own and operate the secondary feeder protection and the protection schemes will be integrated into those of the Customer's installation to operate the customer's incoming CBs.

The design of the feeder protection schemes must be approved by Endeavour prior to implementation and agreed settings will be included into an updated HV operating and maintenance protocol.

The associated feeder protection current & voltage transformers is specified by Endeavour in the TB for inclusion into the Customer's Installation, and Endeavour must approve the protection wiring diagrams to ensure the compatibility with Endeavour Energy's protection schemes.

Two stand-a-lone protection panels will be required for the new 132kV feeders at the substation control building. This panel will normally be required to contain the differential relay and the connections to the communications systems. The panel will be designed, constructed and commissioned to Endeavour's requirements. The panel layouts is provided as part of the TB.

National Metering Identifier (NMI)

Two new NMI numbers must be provided for the proposed 132kV connection points, prior to the commissioning of the revenue metering installation.

Revenue Metering

The customer is responsible for the provision of metering on both incoming supplies. Metering transformers must be incorporated into the SLD to meet the minimum requirements of Type 3 metering for a high voltage installation however it is suggested that the metering installation makes allowance for Type 2 metering. The Type of metering shall be designed and reviewed by the Customer's Electricity Retailer or Meter Provider for compliance with Chapter 7 "Metering" of the National Electricity Rules.

Prior to commissioning the Customers Installation, Endeavour requires either the Meter Provider or the Retailer to provide written confirmation that the metering has been installed in accordance the metrology requirements of the National Electricity Rules. This written confirmation must be submitted to Customer Networks Engineer prior to commissioning of the Customer's Installation.

It is further noted that metering transformer test certificates must be provided to Endeavour's Customer Installation Section as part of the documentation during the installation inspection, prior to commissioning of the Customer's Installation.

Operational Arrangements

The Connection Customer is responsible for operation and maintenance of the 132kV substation installation.

Prior to connection, the Connection Customer must contact Endeavour's High Voltage Customer Manager, Mr Ahmad Chehade (direct 02 9853 6445) to establish a 132kV Operating and Maintenance Protocol between Endeavour and the Connection Customer. The site-specific conditions including the division of responsibility, and operational and emergency contacts are included into the Protocol.

Power Factor

Power Factor is to meet NSW Service and Installation Rules referring to National Electricity Rules requirements. These require a minimum 0.95 lagging Power Factor in accordance with rule 7.4.11 'Power Factor Correction' of NSW Service and Installation Rules and 5.3.5 'Power Factor Requirements' of National Electricity Rules.

If, following connection of this installation, the site power factor does not meet the requirements, it must be improved by connection of power factor correction units within the timeframe set at the time the improvement works are determined.

Quality of Supply Requirements

The voltage regulation and harmonic content resulting from the load being connected to the Endeavour Energy network must not affect the supply of adjacent customers. Therefore, compliance is required with the criteria defined in the following documentation: -

AS/NZS 61000 Series;

- Part 3.2 relates to Harmonic Currents
- Parts 3.3 and 3.5 relate to Voltage Fluctuations and Flicker
- Parts 3.6 and 3.7 relates to Assessment of Emission Limits for "Distorting" and "Fluctuating" loads in MV and HV power systems.

Endeavour will set parameters outside of these documents in relation to the equipment being connected as part of the installation, therefore Endeavour have provided flicker and harmonic allocations consistent with the expected total load of the site. Please refer to Appendix B.

Please note that the allocations given describe the maximum allowable disturbance levels for the customer's plant at the interface between the customer and the network (connection point). Endeavour does not provide any assurance or guarantee that equipment within the customer's installation will operate satisfactorily for the full or partial utilization of these allocations. The customer must satisfy themselves that their installation has sufficient immunity to voltage disturbances caused by their own load, including motor starts.

Validity

This Connection Requirements letter is part of the Connection Offer for a Standard Connection Service and is valid for twelve (12) months from the date of issue.

Where this Connection Requirements letter has lapsed excluding customer installation requirements, you or your Level 3 ASP must contact Endeavour with the request to extend the Connection Offer. Endeavour will assess your request and will inform you of the outcome. It must be recognised that the network is being constantly extended/augmented as new customers get connected. This means that for your Connection Requirements to be extended, your Connection Requirements may require alteration. If this is the case, additional fees to cover administrative costs may apply.

The Level 3 ASP is required to submit a proposed method of supply to Endeavour for assessment.

Should you have any enquiries regarding your application please contact the undersigned.

Yours faithfully,

Customer Network Engineer
Ph: 02 9853 6152
Email: CWTech@endeavourenergy.com.au

Enclosed:

1. Notice of Advice – to be completed and returned when you have engaged your L3 ASP
2. Appendix A: Switching Station and feeder extension
3. Appendix B: Flicker allocation at 132kV

Amazon Corporate Services Pty Ltd
SydneyNSW 2000

Notice of Advice

[Insert date here]

Endeavour Energy Ref: UIL6727

Endeavour Energy
PO Box 811
Seven Hills NSW 1730
cwadmin@endeavourenergy.com.au

Attention: Customer Connections Administrator

APPOINTMENT OF ACCREDITED DESIGNER FOR THE PROPOSED DEVELOPMENT AT: *LOT 14, DP 28024, 43 TURNER ROAD, GREGORY HILLS* ("PROPOSED DEVELOPMENT")
Please complete and return this letter when a Level 3 ASP has been appointed

I refer to Endeavour Energy's offer to provide standard connection services in respect of the Proposed Development ("**Connection Offer**").

This letter confirms that:

a) the retail customer or real estate developer for the Proposed Development ("**Developer**") owns, or is developing, the land on which the Proposed Development is to be located;
b) the Developer intends to supply the Proposed Development in accordance with Endeavour Energy's requirements;
c)the Developer has appointed the Level 3 Accredited Service Provider ("**Level 3 ASP**") described below for the purposes of the Proposed Development; and
d) the Developer agrees to acquire standard connection services from Endeavour Energy in respect of the Proposed Development on the terms and conditions set out in the Connection Offer.

Confirmation of Key Contacts:

(1) Applicant	
Company/Name:	
Address:	Sydney NSW 2000
Email:	
Phone:	0409822785

(2) Developer

Company/Name:	Kevin Nuner
Address:	Sydney NSW 2000
Email:	
Phone:	0409822785

(3) L3 ASP *(if you did not nominate a Level 3 ASP in your initial application, please do so below)*	
Company/Name:	
Address:	
Email:	
Phone:	

Please ensure all fields above are completed.

The Fees will be Paid to Endeavour Energy by*:

(*Please check only one responsible party in relevant check box below)

☐ Applicant ☐ Developer ☐ Level 3 ASP

Notice of Advice Execution and Acceptance of Connection Offer:

By signing this Notice of Advice, I accept the Connection Offer made by Endeavour Energy in respect of the Proposed Development, including the terms and conditions of Endeavour Energy's Model Standing Offer for a Standard Connection Service.

Where I am accepting the Connection Offer on behalf of the Developer, I declare that:

a) I have the authority to execute this Notice of Advice and accept the Connection Offer on their behalf; and
b) I am not aware of any fact or circumstance that might affect my authority to execute this Notice of Advice and accept the Connection Offer on their behalf.

Developer/ Developer's Authorised Agent:

Signature of Developer/Developer's Authorised Agent	Name of Developer/Developer's Authorised Agent
Date	Company Name

Appendix A: Switching Station and feeder extension

Appendix B Flicker allocation

Flicker allocation at 132kV

Pst: 0.497

Plt: 0.372

Harmonic	Current (Amps)	Voltage (%)
2	7.31	0.20
3	11.54	0.46
4	1.92	0.10
5	16.19	1.09
6	1.23	0.10
7	9.46	0.89
8	0.92	0.10
9	2.21	0.27
10	0.72	0.10
11	7.07	1.04
12	0.88	0.14
13	5.06	0.88
14	0.70	0.13
15	0.28	0.11
16	0.19	0.13
17	0.87	0.59
18	0.25	0.12
19	2.05	0.52
20	0.43	0.12
21	0.28	0.08
22	0.38	0.11
23	1.36	0.42
24	0.34	0.11
25	1.13	0.38
26	0.30	0.11
27	0.18	0.06
28	0.27	0.10
29	0.82	0.32
30	0.26	0.10
31	0.70	0.29
32	0.23	0.10
33	0.15	0.06
34	0.22	0.10
35	0.53	0.25
36	0.20	0.10
37	0.47	0.23
38	0.19	0.10
39	0.12	0.06
40	0.18	0.10
THD	25.25	2.38
WTHD	174.76	

Appendix D – Sydney Water Consultation

ARUP

Level 5
151 Clarence Street
Sydney
NSW 2000
Australia

t +612 9320 9320
f +612 9320 9321

arup.com

By email
11 March 2024

Sydney Water
Email: developerservices@sydneywater.com.au
Our ref 299816

Dear Sir/Madam,

43-61 Turner Road Data Storage Centre

SSDA – Sydney Water Consultation

This letter has been prepared to provide further information to Sydney Water regarding the proposed data centre at 43-61 Turner Road, Gregory Hills (the Site). The Site comprises of four lots of lands (Lot 14, 15, 16, and 17, DP 28024). The location of the site is shown in **Appendix 1**.

This consultation has been provided in accordance with the Secretary's Environmental Assessment Requirements (SEARs No.SSD-68013714) for the Proposal, received March 1st 2024.

1. Background

The Proposal is identified as State significant development (SSD) by virtue of meeting thresholds defined under Schedule 1, Clause 25 of the State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP). Given the proposal has a capacity that is greater than 10 MW, the proposal classifies as SSD pursuant to the provisions outlined in Schedule 1 of the Planning Systems SEPP.

The proposed data centre is permissible with consent within a productivity support zone (E3) as provisioned under Division 3, Clause 2.31 of State Environmental Planning Policy (Transport and Infrastructure) 2021. The area surrounding the Site is predominantly commercial/industrial land, with the exception of the land immediately to the east, where it comprises a riparian corridor, and beyond this are vacant and residential properties. The Site is zoned IN1 General Industrial under *State Environmental Planning Policy (Precincts – Western Parkland City) 2021* (SEPP WPC).

The Proposal will serve Sydney and the wider region by providing for increasing cloud-based data storage and computing requirements. The project is committed to delivering a high-quality development with economic and employment benefits for the Gregory Hills District through effective collaboration with key stakeholders, including State government agencies and Camden Council.

2. Proposal Overview

The Proposal involves the construction and operation of a Data Storage Centre comprising of data halls, mechanical and electrical equipment rooms, offices, substation, security gatehouse, other

ancillary support spaces, and external/rooftop mechanical and electrical equipment. The parcel of land is currently vacant at approximately 9.74 hectares (ha).

Utility power will be delivered via a dedicated substation, with emergency backup power provided by a combination of lithium-ion battery systems and standby generators. Cooling will be delivered by air-cooling systems to ensure energy consumption is minimised as far as practical.

Landscaped areas are also proposed, where native trees will be used to improve aesthetics and amenity.

On-site car parking and bicycle parking spaces will be provided for staff and visitors, including disabled and electric vehicle charging.

3. Key Environmental Issues

An Environmental Impact Statement (EIS) to address the industry-specific SEARs (No.SSD-68013714) for the Proposal is currently under preparation.

Key issues raised in the request for SEARs and a response to each issue are outlined in Table 1.

Table 1: Summary and response to key issues

Key Issues	Response
Built Form and Urban Design	The EIS and supporting architectural drawings will demonstrate how the Proposal addresses and responds to the context, site characteristics, streetscape and existing and future character of the Turner Road Precinct and the locality.
Traffic, Transport and Accessibility	The EIS will include a Traffic and Transport Impact Assessment, which includes details of all traffic types and volumes likely to be generated during construction and operation of the Proposal, including vehicle movements during construction and operation, vehicle queuing and car parking.
Air Quality	The EIS will include an Air Quality Impact Assessment which includes assessment of temporary construction impacts, modelling of emissions and air pollutants from predicted operations and outlines the proposed mitigation measures that will be implemented for the Proposal.
Noise and Vibration	The EIS will include a Noise and Vibration Impact Assessment for construction and operational noise and vibration impacts on nearby sensitive receivers and structures, and outlines the proposed mitigation measures that will be implemented for the Proposal.
Consultation and Engagement	Consultation and engagement will be undertaken as required by the SEARs. This includes community consultation and an information session with relevant landowners and stakeholders.

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Our ref	SYD091
Date	11 March 2024

4. Next Steps and Deliverables

The following documentation will be submitted to Department of Planning, Housing and Infrastructure (DPHI) for the Proposal:

- Environmental Impact Statement (EIS)
- Relevant technical specialist reports, including:
  - Architectural and Landscape Plans
  - Traffic and Transport Impact Assessment
  - Noise and Vibration Impact Assessment
  - Air Quality Impact Assessment
  - Visual Impact Assessment
  - Detailed Site Investigation and Remediation Action Plan
  - Hazard and Risk Assessment
  - Social Impact Assessment
  - Aboriginal Cultural Heritage Assessment
  - Community and Stakeholder Engagement Report
  - Ecologically Sustainable Design Report
  - Biodiversity Development Assessment Report Waiver
  - Waste Management Plan
  - Surface and Groundwater Impact Assessment + Flood Risk Assessment
  - Infrastructure Delivery, Management and Staging Plan
  - Cost Summary Report
  - Building Code of Australia Compliance Report
  - Accessibility Report.

We would welcome your feedback by **29 March 2024**. If you require any further information, please do not hesitate to contact the undersigned to discuss.

Yours sincerely,

Christopher Serrano
Senior Environmental Consultant

e: christopher.serrano@arup.com
d: +61 9320 9842

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Our ref	SYD091
Date	11 March 2024

Appendix 1 – Site Location