van der meer

INFRASTRUCTURE REQUIREMENTS REPORT

PROPOSED DATA CENTRE

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Huntingwood NSW 2148

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J	Issued for SSDA Modification	16 April 2026	Hary Budhi

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This document and its contents are intended for the addressee only and contains opinions held by the Author based on material available at the time and expresses those opinions for the purposes of consideration by the Addressee and not for general publication without written consent.

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Acronyms

BCC – Blacktown City Council

DBYD – Dial-Before-You-Dig

MSB – Main Switchboard

OSD – On-Site Detention

UPS – Uninterruptible Power Supply

VDM – Van der Meer Consulting

Executive Summary

van der Meer Consulting has been engaged by AW Edwards to prepare an infrastructure requirements report to support a SSDA modification application for a proposed data centre development at 51 Huntingwood Drive, Huntingwood NSW 2148.

The proposed development consists of 6 buildings with associated infrastructure. The buildings will be surrounded by a ring road which connects to Huntingwood Drive. The existing site is occupied by an Endeavour Energy Office building and is located in an established industrial zone. As such, the site is well-serviced by existing infrastructure.

The existing electrical infrastructure will be inadequate for the proposed development. 132 kV feeder lines and on-site substations are proposed to service the development. Water pipes along Huntingwood Drive may also require upgrades to adequately service the data centre. Stormwater, Sewer and Telecommunications will connect to existing assets.

1 Introduction

1.1 Purpose of this Report

van der Meer Consulting has been engaged by AW Edwards to prepare this report for an appraisal of infrastructure services for the 51 Huntingwood Drive Data Centre development.

This report will outline:

- Existing services infrastructure in the area and servicing the site
- Utility demands of the development
- Infrastructure upgrades required to service the development
- Description of infrastructure delivery and staging

The Planning Secretary's Environmental Assessment Requirements (SEAR's) requires the following to be addressed in Issue 22:

- assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site.
- identify any infrastructure upgrades 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.
- 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.

These points are covered in this report in Sections 3, 4 and 5.

1.2 Site Context

The site is located at 51 Huntingwood Drive, Huntingwood NSW 2148. Huntingwood is a predominantly industrial area located in Blacktown City Council in Sydney's West. The current zoning of the site is IN2 (Light Industrial) under the Blacktown Local Environmental Plan 2015.

The site is approximately 9ha and is occupied by an existing Endeavour Energy office building with surrounding carparking and landscaping. There is also an existing communications tower located in the south-east corner of the site. The site is bounded by an Arnott's industrial building on the west, Huntingwood drive to the north, the M4 Western Motorway to the south, and several smaller industrial buildings along Healey Circuit to the east. The site currently has one access driveway to Huntingwood Drive at the centre of the Northern boundary.

Figure 1.1 shows the location of the subject site.

1.3 Description of proposed Development

The proponent of this development is proposing a data centre to be constructed on the existing site. Existing buildings and redundant services are proposed to be removed from the site.

The data centre will consist of a seven-storey building consisting of building modules of tenant spaces, facility support areas and open areas for external containerised plant. Water storage

systems, diesel fuel storage areas and electrical plant will also be required for the development.

A ring road will be constructed around the building footprint and will have two separate entrances. Carparking will be on grade, with marked pedestrian access to the foyer of the building. A security fence will surround the development. The proposed development will occupy the entire site.

Figure 1.1 – Location of Subject Site

2 Methodology

This report was written utilising the following methodology. Information utilised to complete the report are shown in the references.

- Gather information about existing services. This was completed by collating various information sources including Dial-before-you-dig (DBYD) requests, utilities surveys, satellite imagery and site surveys.
- The proposed site layout was compared to existing public utility infrastructure within the site to determine whether any works to remove or divert utilities would be required.
- Review and collate assessments of demand from other consultants for each of the utilities required for the proposal.
- Outline proposed servicing strategy for each utility including defining point(s) of connection.
- Review and summarise consultation with services providers and relevant stakeholders to-date including required services upgrades.

3 Existing Environment

The existing site is occupied by a large central building occupied by Endeavour Energy. There are many internal utilities which service the existing use case. Table 3.1 shows known utilities providers within the site or immediately adjacent to the site.

Table 3.1 – Schedule of Utilities

Utility Provider	**Utility Type**
Jemena	Gas
Endeavour Energy	Electricity
Fibreconx	Telecommunications
NBN	Telecommunications
Optus	Telecommunications
Telstra	Telecommunications
Blacktown City Council	Stormwater
Sydney Water	Water/Sewer
Westlink M7	Traffic Signals/Electrical

3.1 Gas

Information regarding existing Gas utilities was obtained via a Dial-Before-You-Dig request and the Utilities Survey.

There is an existing 75mm Nylon 210kPa gas main owned by Jemena located on the Northern side of Huntingwood drive running parallel to the Northern boundary of the subject site. There is also a 50mm stub connection running from this line to the north-eastern corner of the site.

There are no existing internal connections to this line shown on either the Dial-Before-You-Dig request or on the Utilities Survey.

3.2 Electricity

Information regarding existing electrical utilities was obtained via a Dial-Before-You-Dig request and the Utilities Survey.

There are numerous existing electrical conduits throughout the site. Most of these conduits are low-voltage and supply power to carpark lighting and other existing facilities. There are also several Endeavour Energy conduits running through the site. The location of these conduits is shown in Appendix B2.

There is a conduit running from the existing main building through the southern boundary of the site which crosses the Western Motorway runs behind properties located on Peter Brock Drive before connecting to the transmission tower located at the eastern edge of Sydney Motorsport Park.

There is also a conduit which runs approximately along the Eastern edge of the site before connecting to other electricity assets running along Huntingwood Drive at the north-west corner of the site.

A third conduit enters the property on the south-western corner of the site before connecting to the other assets at the southern edge of the existing building.

3.3 Telecommunications

Information regarding existing telecommunications assets was available from the Utilities Survey, Site Survey, DBYD Request and Satellite imagery.

The Dial-Before-You-Dig Request received responses from four telecommunications service providers: Telstra, Optus, NBN and Fibreconx. Of these, NBN and Fibreconx did not have assets inside or connected to the subject site. These assets are located along Huntingwood Drive.

Telstra and Optus both have telecommunications conduits running into the subject site. The Telstra DBYD shows a cable running from the north-east corner of the site along the eastern boundary and into the existing building. The Optus DBYD and the site survey indicate that an Optus cable runs in the same conduit.

In addition, there are two Telstra mains cables which run along a similar alignment to the other cable to the building. There is also a branch which runs to an Endeavour Energy owned and operated Microwave communications tower located in the south-east corner of the site. The utility survey shows two additional conduits which run from this tower to the southern end of the existing building.

There is also a telecommunications tower shown in the south-west corner of 14 Healey circuit. This tower is located directly adjacent to the south-east corner of the subject site. The DBYD information indicates that this is likely serviced by an Optus cable which runs on the southern side of the southern boundary (external to the site) and should not be affected by the proposed works.

3.4 Stormwater

Information regarding existing stormwater assets was available from the Utilities Survey, Site Survey and Satellite imagery.

The existing building located on the site is located on a high point compared to the surrounding area. As a result, about 40% of the site naturally grades to the south-west. Another 30% grades towards the north-east and the remaining 30% grades towards the north-west.

There is a crest located on Huntingwood Drive along the northern boundary of the site. Due to this crest, there are council stormwater pits located adjacent to both the north-eastern corner and north-western corner of the site.

The existing site has multiple stormwater outlets. The first discharge point is at the north-east corner of the site. A 675mm pipe connects to an existing kerb inlet pit located at the south side of Huntingwood drive. This pit connects to the grassed swale at the sag point on Huntingwood Drive approximately 25m east of the site boundary.

The second discharge point is to a vegetated detention basin in south-west corner of the site via a 300mm pipe. The outlet for this basin connects to a 450 pipe which crosses DP866251 and likely connects to stormwater assets in the road reserve of the M4 Western Motorway.

There is an additional existing stormwater line which runs west from the south-west corner of the existing carpark at the southern end of the site towards a headwall located on the existing embankment.

There is also an existing underground OSD tank located at the north-west corner of the site in the carpark. However, there is no stormwater information showing any drainage connections to on-site or external stormwater assets.

3.5 Water

Information regarding existing Water services was via a Dial-Before-You-Dig request and the Utilities Survey.

The Sydney Water DBYD response map shows an existing 250mm Ductile Iron Cement Lined pipe running along the southern side of Huntingwood Drive at the northern boundary of the site. There are 3 potable water hydrants along the northern boundary and two Potable Water stop valves located at the North-Eastern Corner of the site.

The existing on-site potable water network is primarily connected to the mains supply at the north-eastern corner of the site.

However, the Utilities Survey also shows a connection from the existing fuel area at the south-eastern corner of the site into 12 Healey Circuit. As this property is outside of the scope of work of the survey it is unclear how far this connection runs. The Dial-Before-You-Dig shows a 150mm CICL pipe running along Healey Cct which may be the point of connection.

3.6 Sewer

Information regarding existing Sewer services was via a Dial-Before-You-Dig request and the Utilities Survey.

The Sydney Water Dial-Before-You-Dig response map shows an existing 225mm Vitrified Clay Sewer connection in the North-East corner of the site and invert depth of approximately 1.6m. The Utilities survey shows some sewer pits located within the property boundary of the subject site, but it is unclear in what way they connect to the sewer main along Huntingwood Drive.

3.7 Traffic Signals

Information regarding existing Traffic signal services was via a Dial-Before-You-Dig request and the Utilities Survey.

The Westlink M7 DBYD indicates that there are communications and electrical cables located near the south-west corner of the site. However, as the DBYD does not show a property boundary, it is difficult to determine whether these are inside the site. Any works in this area should to determine the location of these cables before commencement.

There are no traffic signals adjacent to the site on Huntingwood Drive.

4 Utilities Demands & Servicing Strategies

4.1 Gas

Connection to gas supply is not required for this development. All power will be supplied via electrical mains and/or diesel generators. There are no existing gas pipes to be removed.

4.2 Electricity

4.2.1 Demands

The preliminary calculated site electricity demand will be limited to 400 MVA. Existing electrical connections to the site have been deemed insufficient to meet the electrical demand of the proposed data centre.

4.2.2 Mains Supply

Endeavour Energy and the Proponent have engaged in regular communication and consultation, with meetings occurring on a 3-weekly basis since mid-2021, to determine means of providing the required demand. The process has been undertaken in accordance with the pathway provided in the Electricity Supply Act 1995. Endeavour Energy have provided a Connection Offer and Project Definition which accepts and provides advice on Endeavour Energy asset upgrades to meet the demands of the development. The next steps are to complete the design of the connection route & STS. Following the completion of this design, Endeavor Energy will review and provide a stamped approval.

Two new separate 2N 132 kV connections to existing Endeavour Energy feeders 93Z and 9J1 have been proposed. These feeders are running on twin dual circuit steel tower lines and are located at the eastern side of the Sydney Motorsport Park. A new 132 kV switching station will be constructed adjacent to transmission towers 17 and 20. The proposed connection assets which include the 132 kV switching station, 132 kV feeders and on-site substation is to be designed, constructed, and funded by the connection customer. The proponent has estimated the total required feeder capacity will be 400 MVA.

The proposed 132 kV feeders will connect to multiple on-site 22 kV substations at the southern boundary of the site. Further detail is shown on the conceptual drawings for the proposed feeder lines in Appendix B3.

4.2.3 Backup Generation

Each proposed shell will be provided with a Diesel Generator and uninterruptible power supply (UPS). Each shell will be provided with separate dedicated bulk fuel systems including fill points so that each is completely independent of the other building shells.

The proponent has estimated that the total site fuel storage will be approximately 4,048 kL when including belly tanks, day tanks and bulk storage tanks.

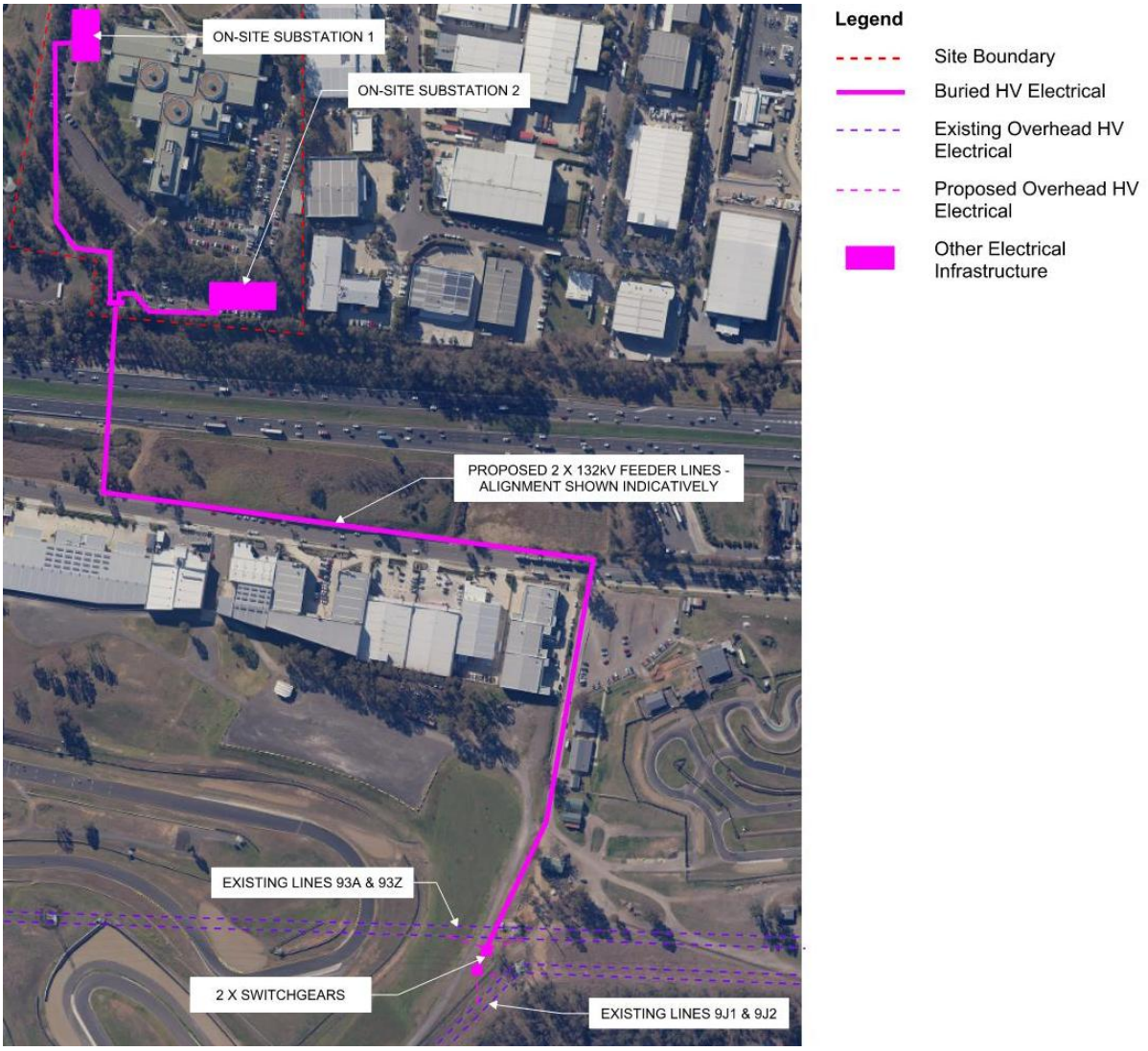


Figure 4.1 – Conceptual Electrical Servicing Strategy

4.3 Stormwater

A roof drainage system will be used to drain the building roof. The box gutter system will be sized for a 1:100yr ARI storm event and connected to inground rainwater tanks. These tanks will overflow into the civil stormwater system.

The north-eastern portion of the site grades towards the north-east and is currently located in a catchment for an existing precinct OSD basin located across the road. The north-western portion of the site will require and OSD tank of 1,100 m^3 and the southern portion of the site will require an OSD Basin of 1,400 m^3 capacity.

The stormwater pipes are designed for flows up to the 1% AEP event and site grading is designed to accommodate overland flow of stormwater in the event of 100% blockage.

The proposed Civil stormwater system will require 3 separate discharge pipes: a Ø375, Ø675 and Ø450.

The stage 1 (northern) building will drain into a stormwater line running to the OSD tank A located at the north-west corner of the site, and discharge via a Ø375 pipe to the existing kerb inlet pit on Huntingwood Drive.

The eastern catchment of the stage 2 (southern) building will drain into a stormwater line which runs via a Ø675 pipe to the existing discharge point at the north-east corner of the site. No OSD will be required for this discharge point.

The western catchment of the stage 2 (southern) building will drain into a stormwater line running to the OSD Basin B located at the south-west corner of the site, and discharge via a Ø450 pipe to the existing pit in the south-west corner of the site.

Proprietary stormwater filter chambers and pit baskets will be utilised to achieve Blacktown City Council WSUD requirements prior to discharge.

The conceptual stormwater servicing strategy is shown in Figure 4.2.

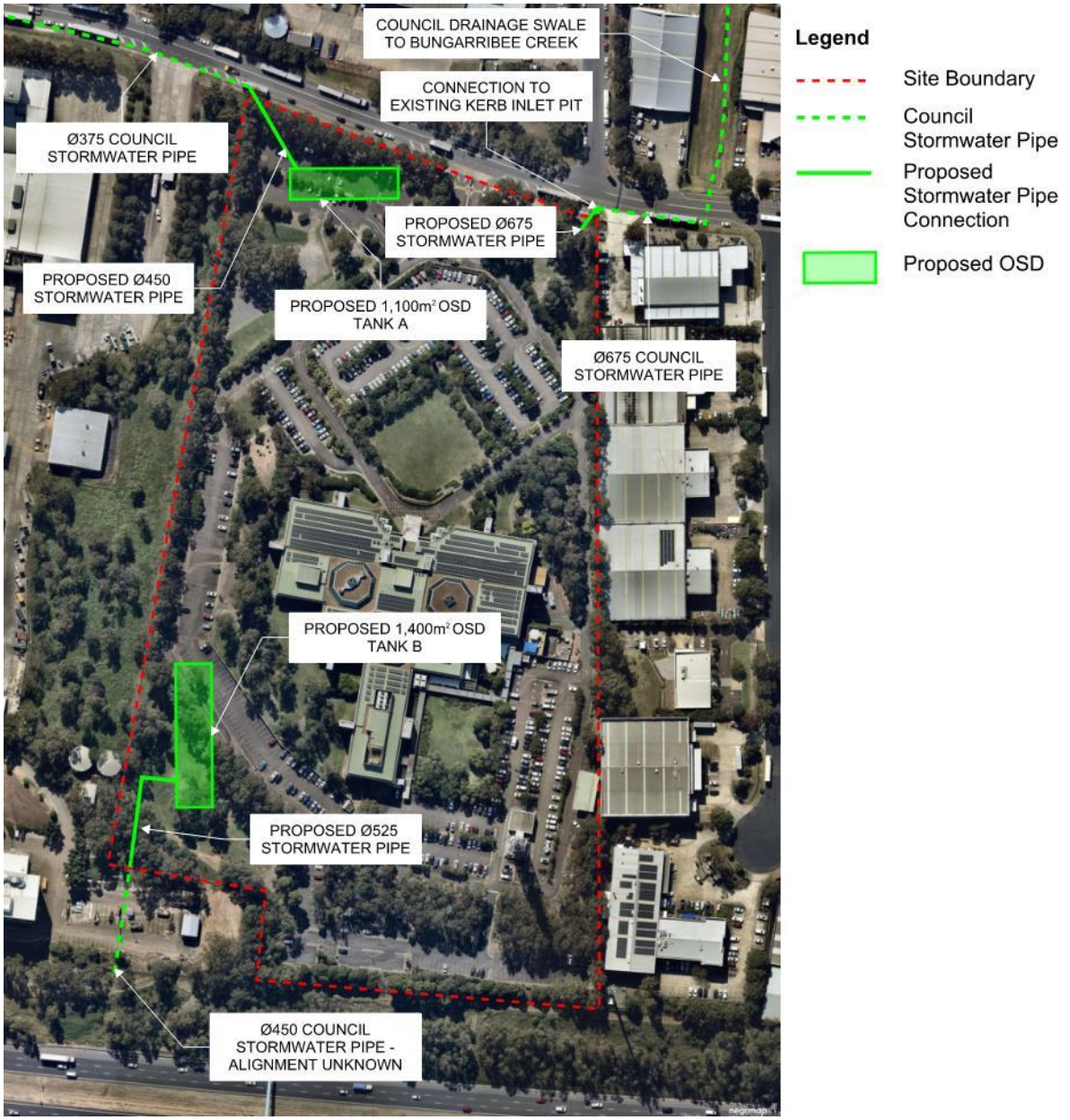


Figure 4.2 – Conceptual Stormwater Servicing Strategy

4.4 Telecommunications

The proposed data centre will require four lead-ins from boundary pits. Two lead ins from Huntingwood Drive on the north and two from the M4 on the south. These lead-ins are required to be spaced 150m apart. An NBN service will be provided for the data centre using the installation of telecommunications infrastructure as part of the development. Preliminary consultation with telecommunications service providers has taken place.

As discussed in 3.4, there is a Telstra conduit that runs along the southern side of Huntingwood Drive adjacent to the northern boundary. There is also an Optus conduit running along the southern side of the southern boundary which connects to the communications tower at 14 Healey Circuit.

There is also an existing tower owned and operated by Endeavour Energy located in the south-east corner of the site, which has microwave equipment. This tower will be

decommissioned and demolished to facilitate the proposed development. The Telstra mains cables that service this tower and the Endeavour Energy building will also be removed. Internally, a campus pit and duct system will be provided as a ring around the building form.

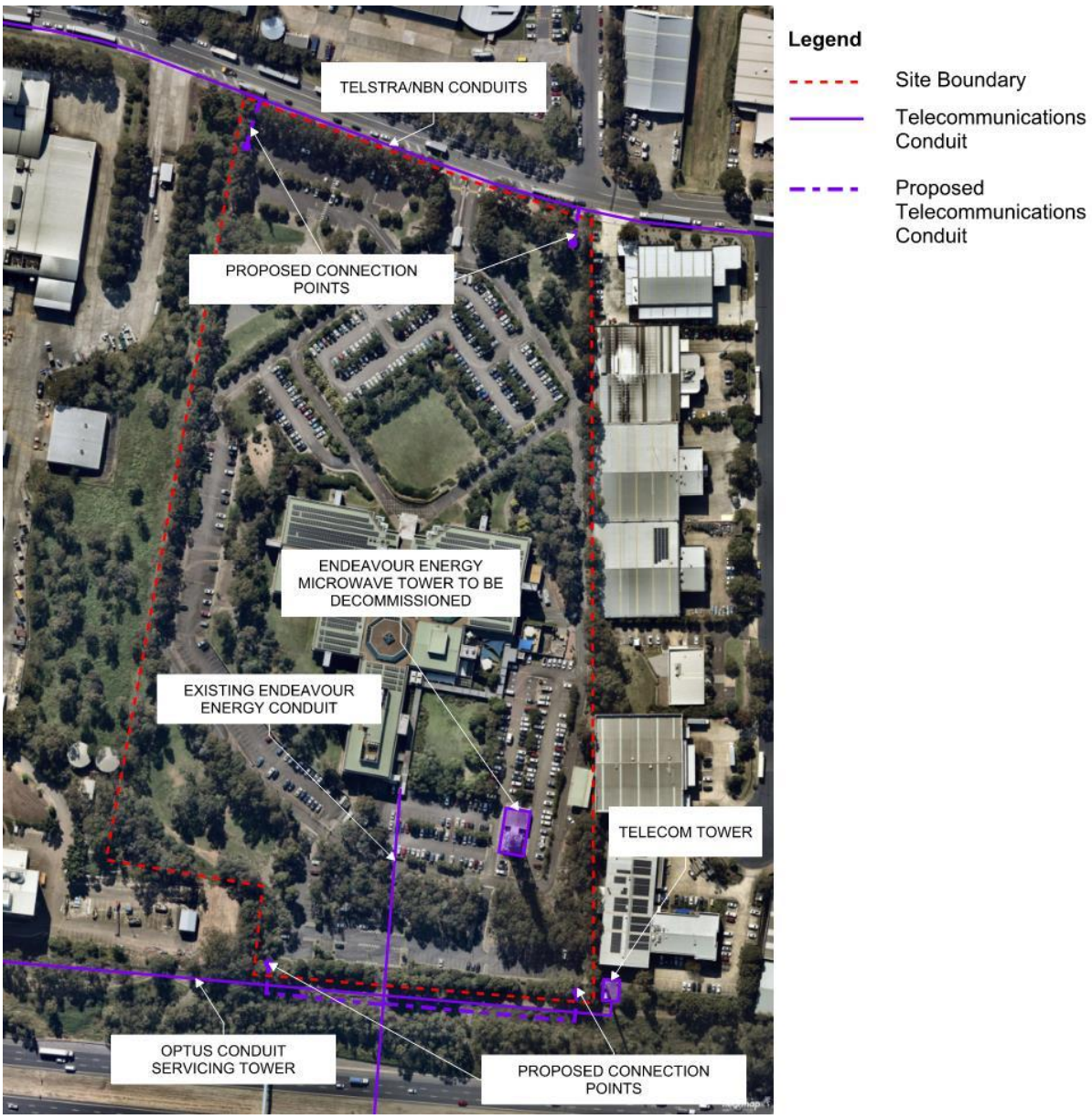


Figure 4.3 – Conceptual Telecommunications Servicing Strategy

4.5 Water

4.5.1 Potable Water

The existing Sydney Water Ø250 water main located along Huntingwood Drive has been deemed to not be adequate for the full site water demand. The calculated critical water flow rate is 147.4 L/s. It is anticipated that the critical water flow rate will exceed the max. permissible flow rate of the existing water main.

The water main will need to be upgraded to service the proposed development. A Section 73 Feasibility Study has been lodged with Sydney Water to assess the proposed mains amplifications upgrades.

An allowance for 24 hours of water storage has been made for in the site layout. The water supply from the mains will be reticulated in water storage tanks.

4.5.2 Water Reuse

Rainwater re-use will be utilised for the main roof catchment. 1 x 335 kL and 1x 100 kL inground water tanks will be used to collect rainwater before being processed in a filtration plant and re-used for mechanical make-up water and landscaping. The filtration will include 3 stage filtrations, UV and a chemical dosing plant. Overflow from the rainwater tanks will be to the stormwater network.

4.5.3 Connection strategy

The conceptual water servicing strategy is shown in Figure 4.4.

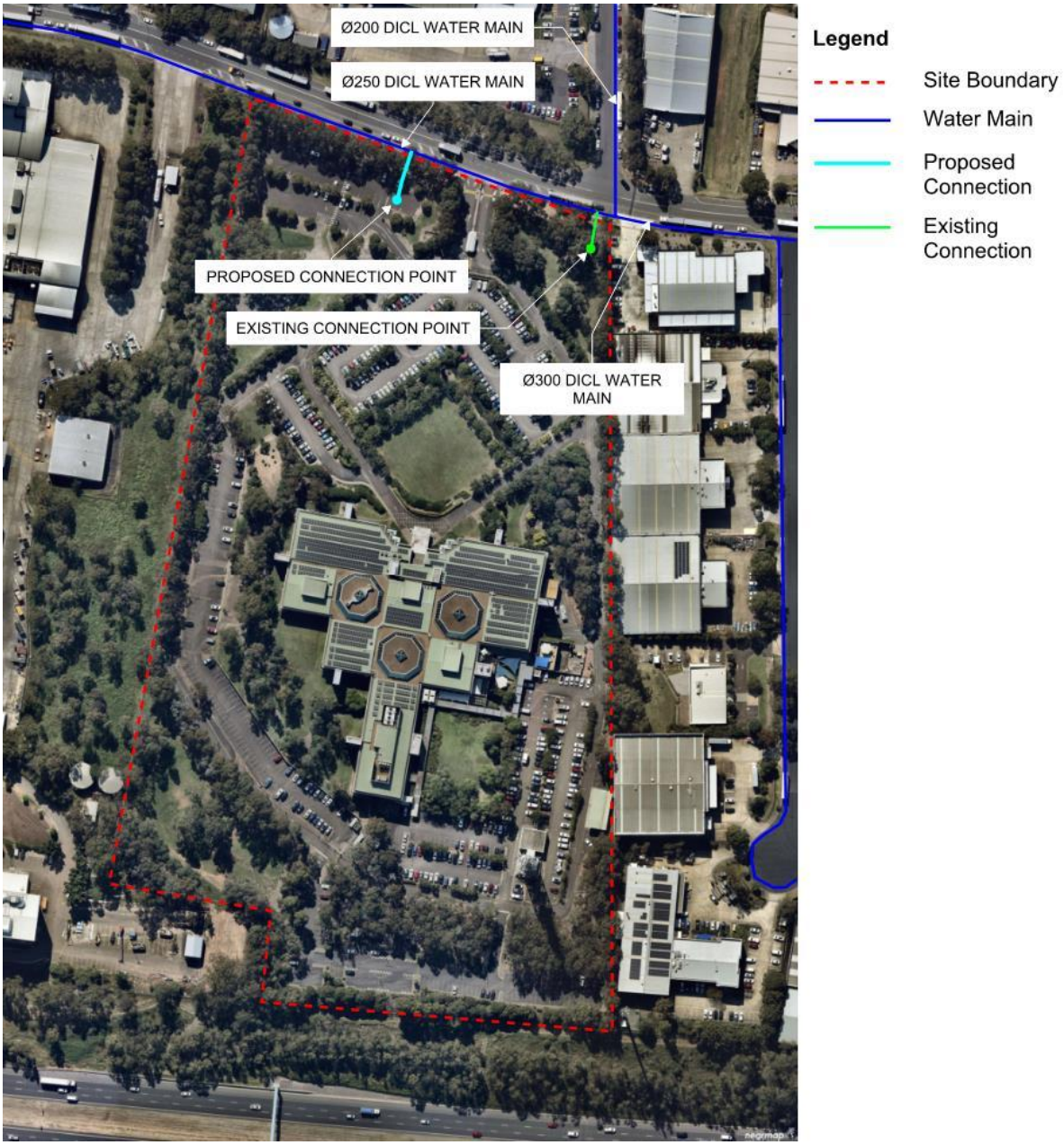


Figure 4.4 – Conceptual Water Servicing Strategy

4.6 Sewer

The calculated sewer drainage rate for the site is 14.7 L/s.

The existing Ø225 sewer main is located along Huntingwood Drive. There is an existing connection at the north-eastern corner of the site. The site can be graded to achieve gravity drainage without provision of pump stations.

Sydney Water will require a Section 73 application to assess the proposed development and provide a notice of requirements. Preliminary discussions have indicated that the existing network can accommodate a 14.7 L/s sewer discharge. A water services coordinator will be required to be appointed for these works.

Metering of sewer discharge will also be provided as Sydney Water typically bases the charges on water consumption. As the site is predominantly using water for evaporative cooling, the sewer discharge will be significantly less than the water usage.

The conceptual sewer servicing strategy is shown in Figure 4.5.

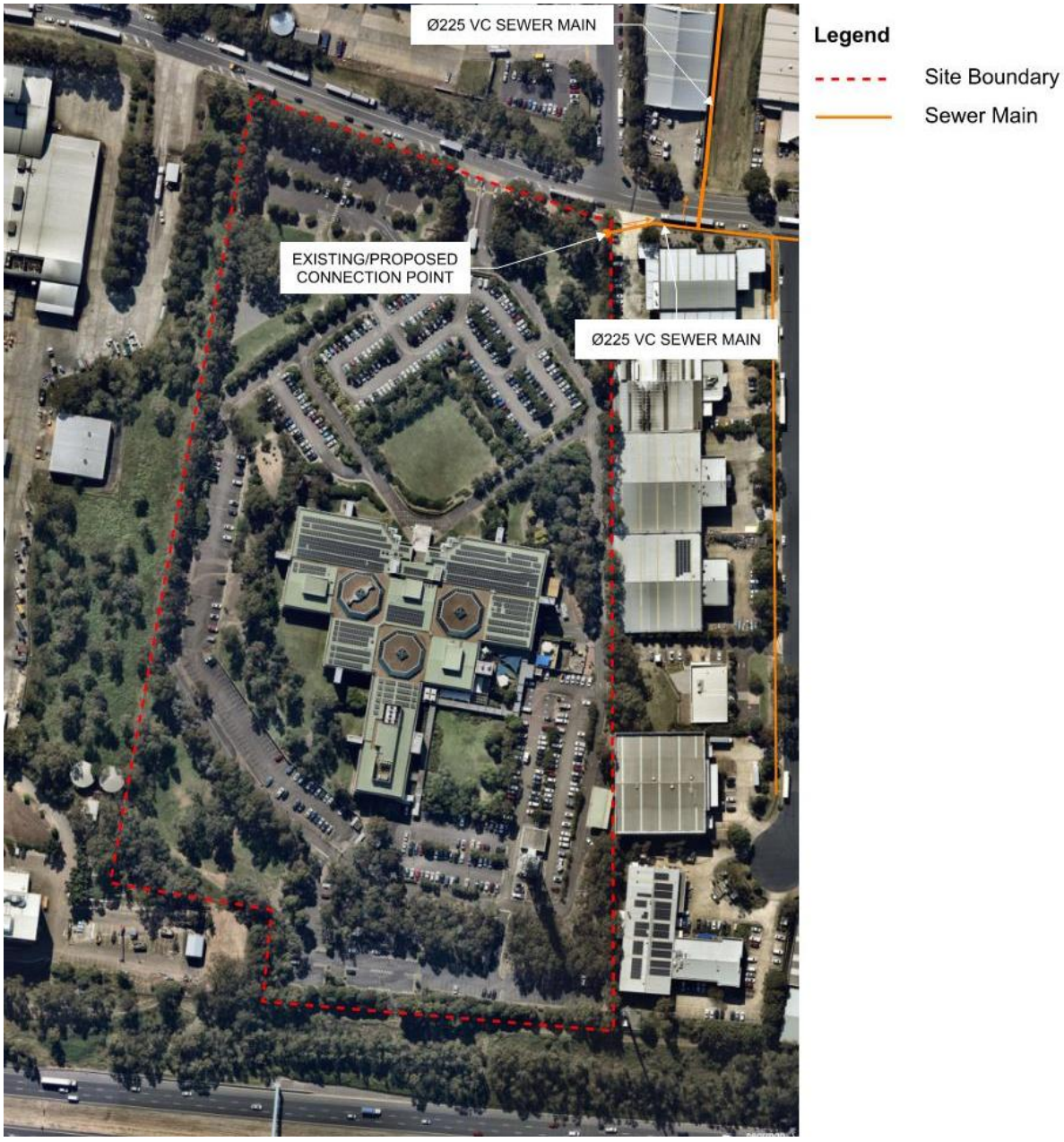


Figure 4.5 – Conceptual Sewer Servicing Strategy

4.7 Traffic Signals

Existing traffic signals outline in section 4.6 will need to be located and retained, unless consultation with Westlink M7 indicates that these cables can be removed.

There are no proposed traffic signals along Huntingwood Drive to service the site ingress/egress.

5 Assessment of Potential Impacts

5.1 Gas

All existing gas utilities are outside the subject site area, and no gas connections are proposed. Any potential modifications to stormwater, telecommunications, water, and sewer outside the boundary will need to ensure no adverse effects to the existing gas line on Huntingwood Drive.

5.2 Electricity

There are several existing electrical conduits throughout the site. These assets will require decommissioning or diversion to ensure no adverse impacts.

The proposed on-site switchgear and substation will be required to be operational from day one. The staging of later works will need to ensure that this plant is not impacted.

The design and construction of the proposed switchgear adjacent to Sydney Motorsport Park, and the construction of the 132 kV Feeder lines to the subject site will require works to be carried out around and under public roads, including the M4 Western Motorway. These works will need to be staged appropriately to ensure minimal disruption to the public.

5.3 Telecommunications

There are several minor telecommunications conduits running into the site which will need to be decommissioned prior to construction. There are also Telstra mains cables running to an Endeavour Energy owned and operated tower in the south-east corner of the site. This tower will need to be decommissioned appropriately prior to works commencing on site. NBN is to advise on any upgrade requirements for the site.

5.4 Stormwater

Existing stormwater internally within the site will need to be removed to facilitate construction. As connections are to existing stormwater pits, there will be limited offsite impacts.

5.5 Water

Any required upgrades to water assets outside the property boundary will require approval from the relevant roads authority as well as Sydney Water. There are likely to be impacts on traffic along Huntingwood Drive because of these works. Amplification of water mains is likely required subject to Sydney Water advice.

5.6 Sewer

Any required upgrades to sewer assets outside the property boundary will require approval from the relevant roads authority as well as Sydney Water. However, as previously stated, works to upgrade the sewer will not be required.

6 References

Blacktown City Council. (2015). *Blacktown Local Environmental Plan*.

Endeavour Energy. (2021, November 17). *Project Definition: 132kV Supply to HVC Data Centre at Huntingwood*.

Geoscience Australia. (2019). *Australian Rainfall and Runoff*.

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

Sydney Water. (n.d.). *Section 73 Feasibility Study: 51 Huntingwood Drive*.

Appendix A - DBYD

A1 – 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 earthing and 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.
- Our plans may not show the presence of all cables, pipes and plant. Endeavour Energy plans do not depict any underground consumer mains. These assets are the conductors between the connection point at a network operators' asset such as a pillar or column, and the customer Service Equipment Enclosure
- It should be noted that adjacent to any network operator asset, there may be multiple underground consumer mains that feed from a pillar or column. Those underground consumer mains and any other underground services will need to be positively identified prior to mechanical excavation in the vicinity. Please refer to the Work Near Underground Assets Guideline published in 2007 by the WorkCover Authority.
- 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 as a result of changes to road, footpath or surface levels subsequent to installation.
- Our 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 any plan is as accurate as possible at the time of installation, the location of underground assets depicted on a plan is approximate and Endeavour Energy will accept no liability for inaccuracies in the information shown on such plans.

OVERVIEW ONLY
ASSETS ARE ONLY SHOWN ON DETAILED TILES (PAGES)

N

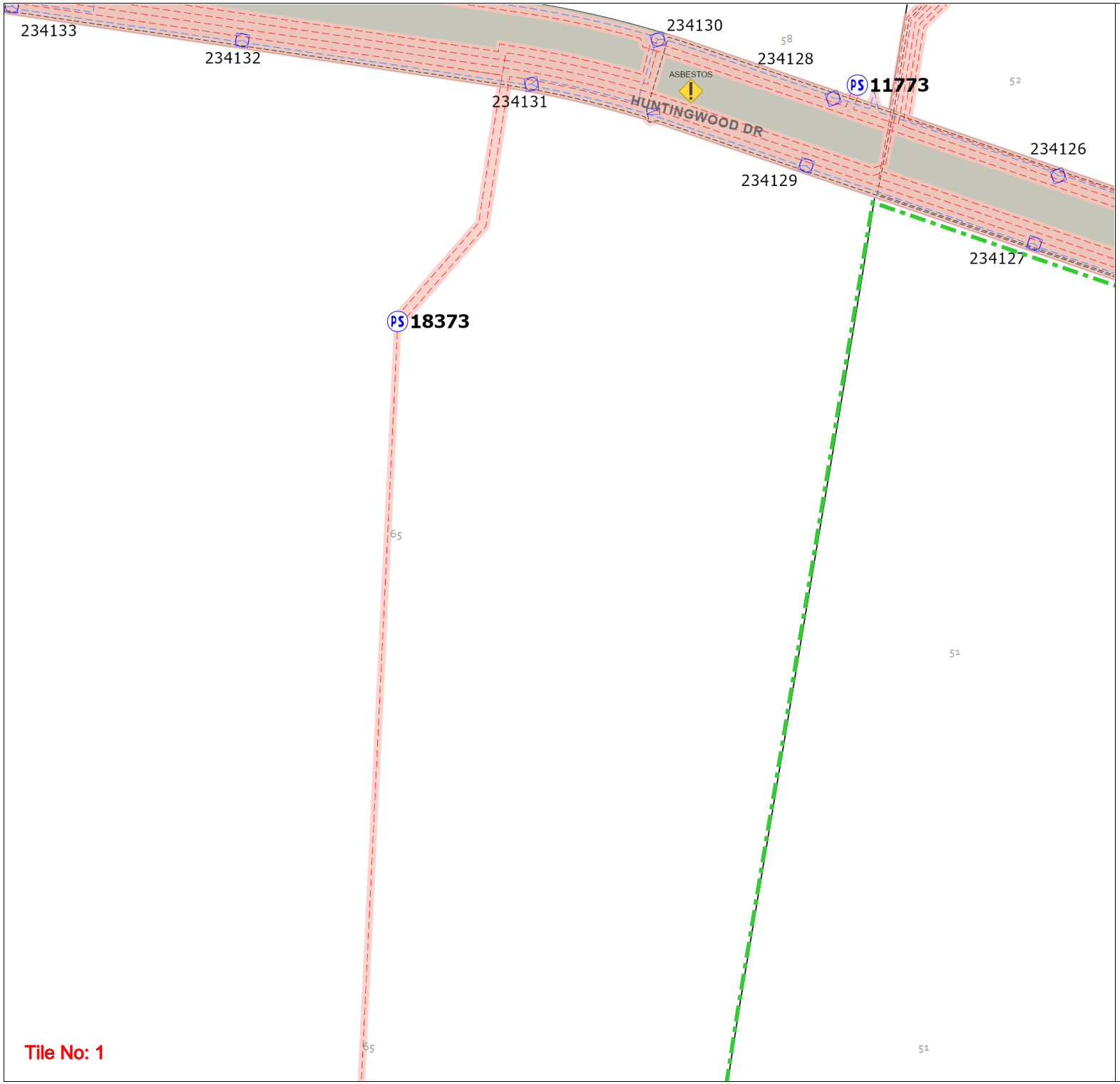
NOT TO SCALE

BYDA Sequence No.: 263917173

Issued Date: 10 Nov 2025

Endeavour Energy

Cadastre: © Land and Property Information 2015, 2016



Tile No: 1

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WARNING
THIS EXCAVATION IS IN THE VICINITY OF
ENDEAVOUR ENERGY TRANSMISSION, PILOT,
COMMUNICATION OR FIBRE OPTIC CABLES
PLEASE RING **9853 7121** OR **0407 468 626**
10 WORKING DAYS BEFORE COMMENCING WORK

ENDEAVOUR ENERGY MAP LEGEND

Hazard Area	Conductor	Column	Substation
Asbestos	HV, LV, SL, TR	Pole	Zone Substation
Cubicle	Pilot Cable	Pillar	
Pit	Earth Cable	*Note: Pink features may be in construction.*	

N

NOT TO SCALE

BYDA Sequence No.: 263917173

Issued Date: 10 Nov 2025

Endeavour Energy

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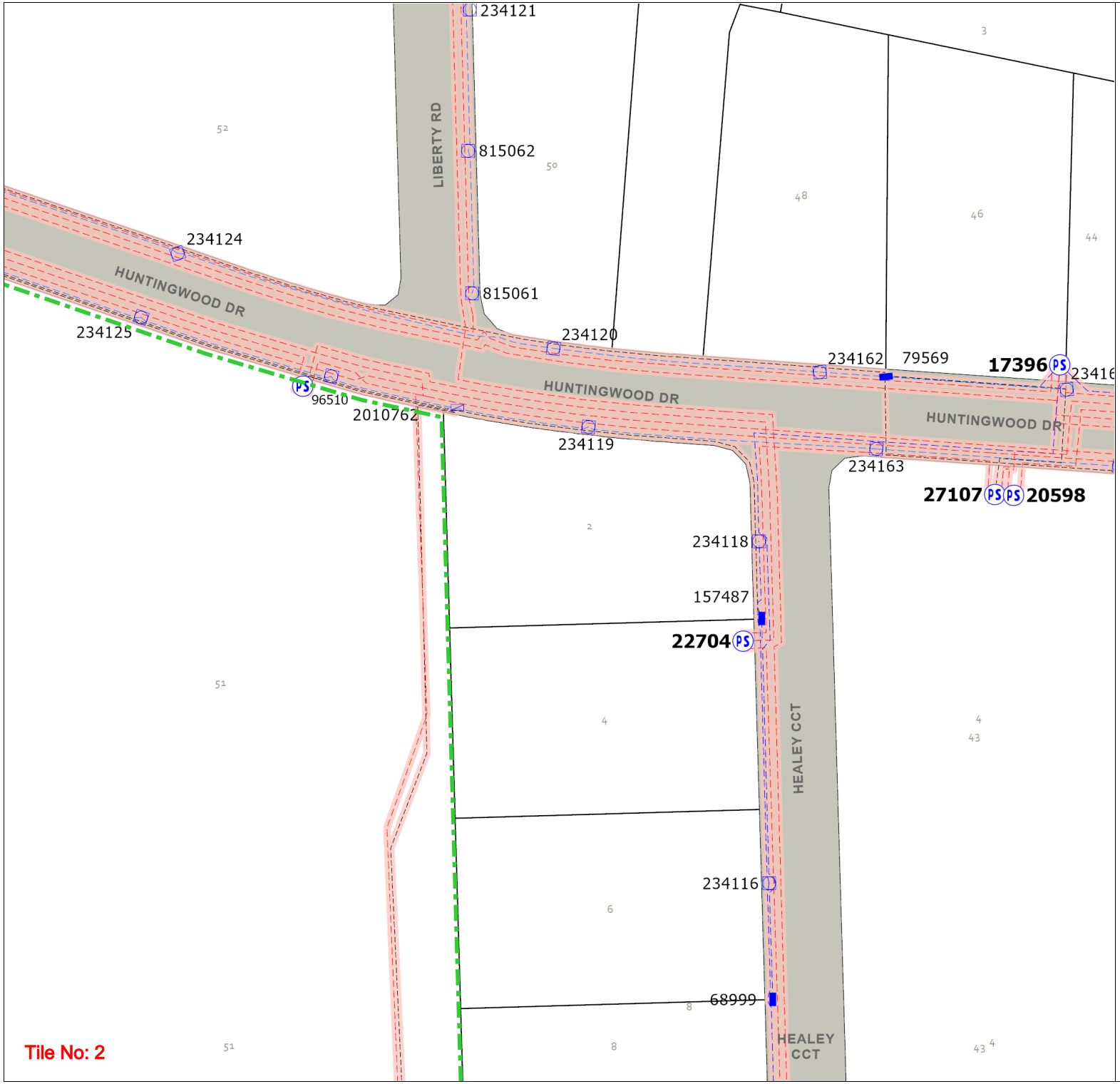

WARNING

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ENDEAVOUR ENERGY MAP LEGEND

Hazard Area	Conductor: HV, LV, SL, TR	Column	Substation
Asbestos		Pole	Zone Substation
Cubicle	Pilot Cable	Pillar	
Pit	Earth Cable		

Note: Pink features may be in construction.

N

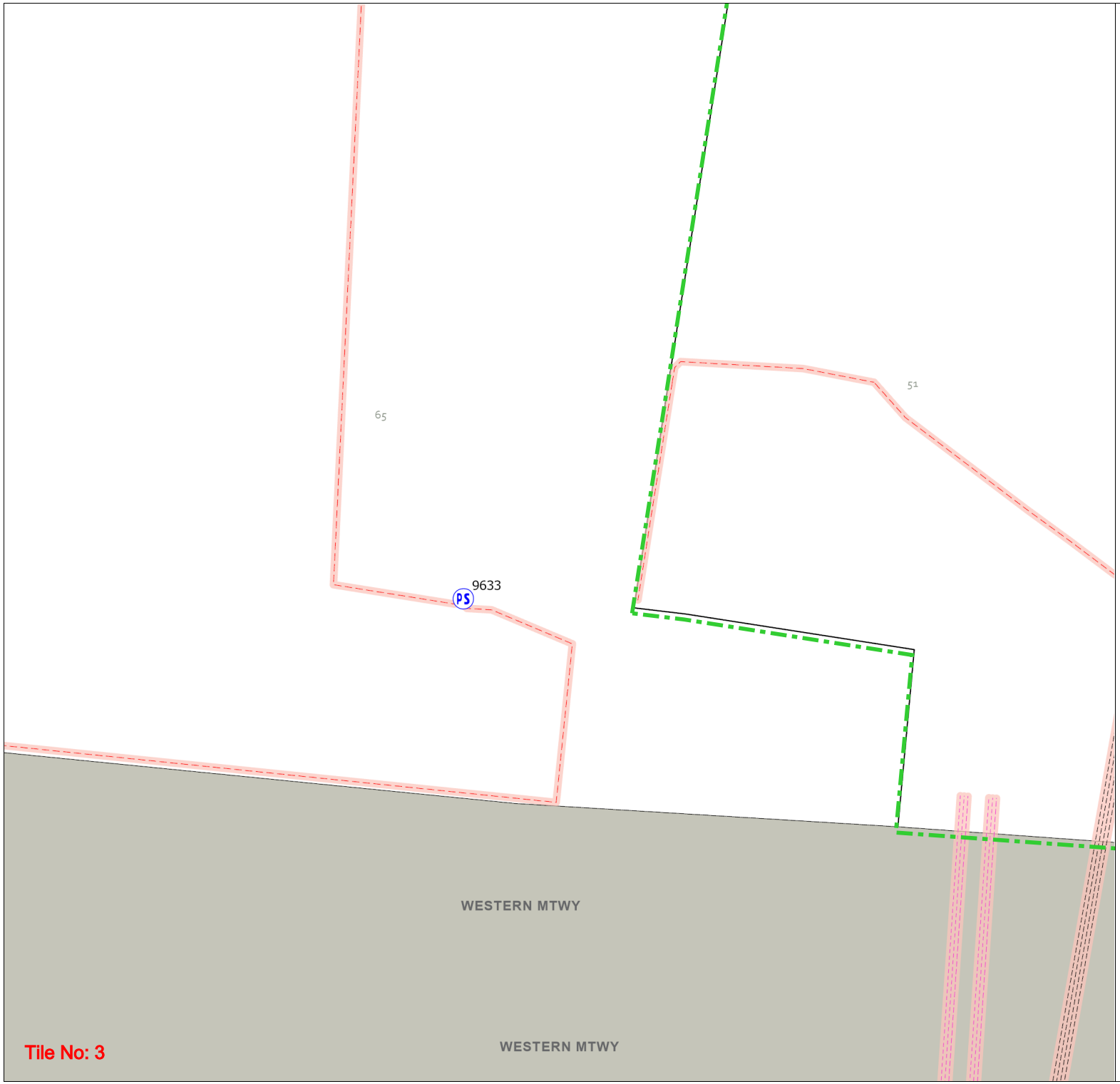
NOT TO SCALE

BYDA Sequence No.: 263917173

Issued Date: 10 Nov 2025

Endeavour Energy

Cadastre: © Land and Property Information 2015, 2016



Tile No: 3

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10 WORKING DAYS BEFORE COMMENCING WORK

ENDEAVOUR ENERGY MAP LEGEND

Hazard Area	Conductor: HV, LV, SL, TR	Column	Substation (PS)
Asbestos		Pole	Zone Substation (ZS)
Cubicle (LV)	Pilot Cable	Pillar	
Pit	Earth Cable		

Note: Pink features may be in construction.

N

NOT TO SCALE

BYDA Sequence No.: 263917173

Issued Date: 10 Nov 2025

Endeavour Energy

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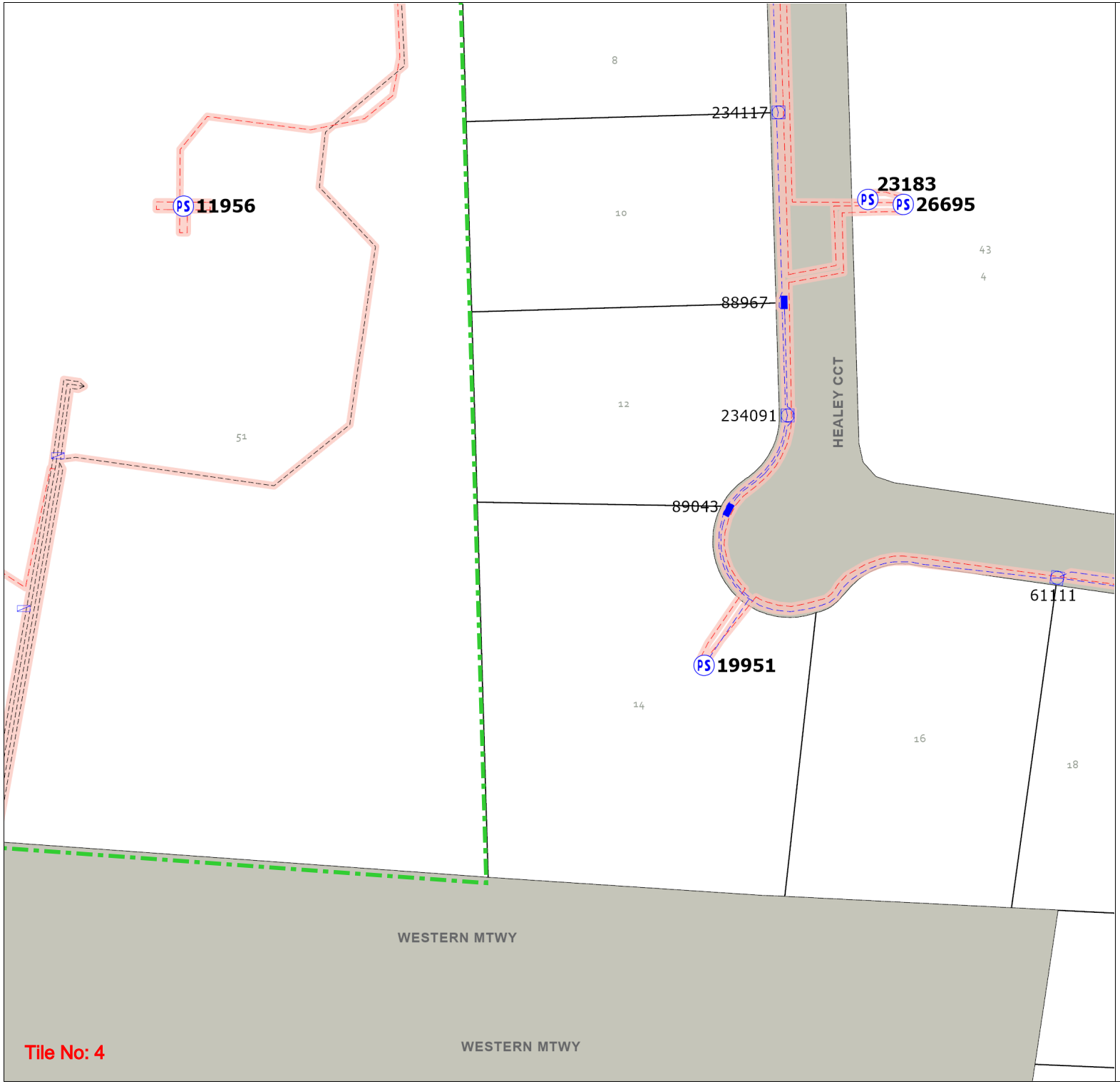

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10 WORKING DAYS BEFORE COMMENCING WORK

ENDEAVOUR ENERGY MAP LEGEND

Hazard Area	Conductor: HV, LV, SL, TR	Column	Substation
Asbestos		Pole	Zone Substation
Cubicle	Pilot Cable	Pillar	
Pit	Earth Cable		

Note: Pink features may be in construction.

N

NOT TO SCALE

BYDA Sequence No.: 263917173

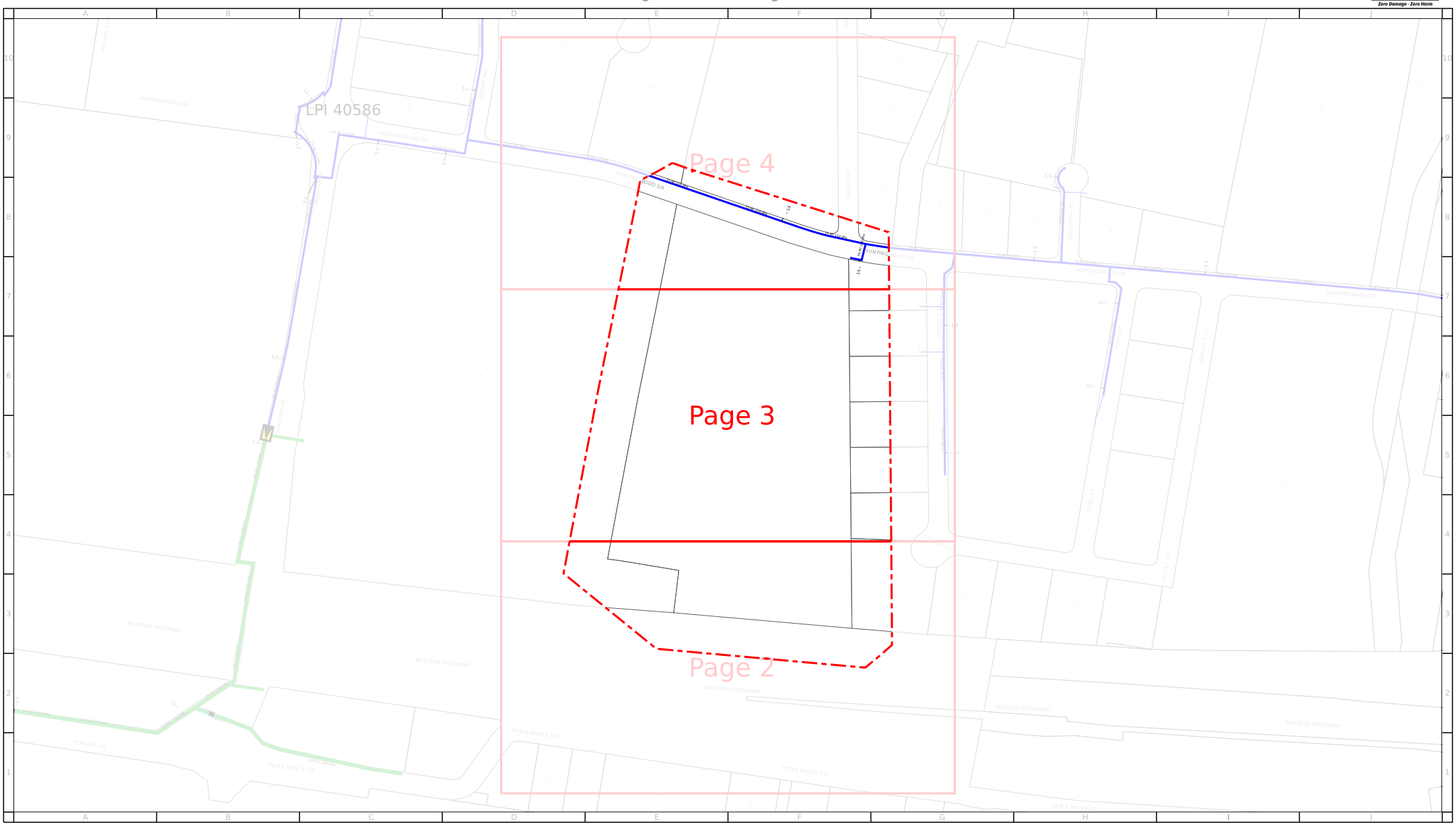
Issued Date: 10 Nov 2025

Cadastre: © Land and Property Information 2015, 2016

A2 – Jemena

BYDA Authority: Jemena Gas Networks (NSW)

BYDA Location: 51 Huntingwood Dr Huntingwood NSW, 2148



Jemena
ABN 87 003 004 322

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

Scale: 1:6301

Issue Date: 10/11/2025
BYDA Seq No: 263917169
BYDA Job No: 51646670
Overview Page:

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. 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: 51 Huntingwood Dr Huntingwood NSW, 2148

Jemena
ABN 87 003 004 322

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

Issue Date: 10/11/2025
BYDA Seq No: 263917169
BYDA Job No: 51646670

Scale: 1:2000

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.

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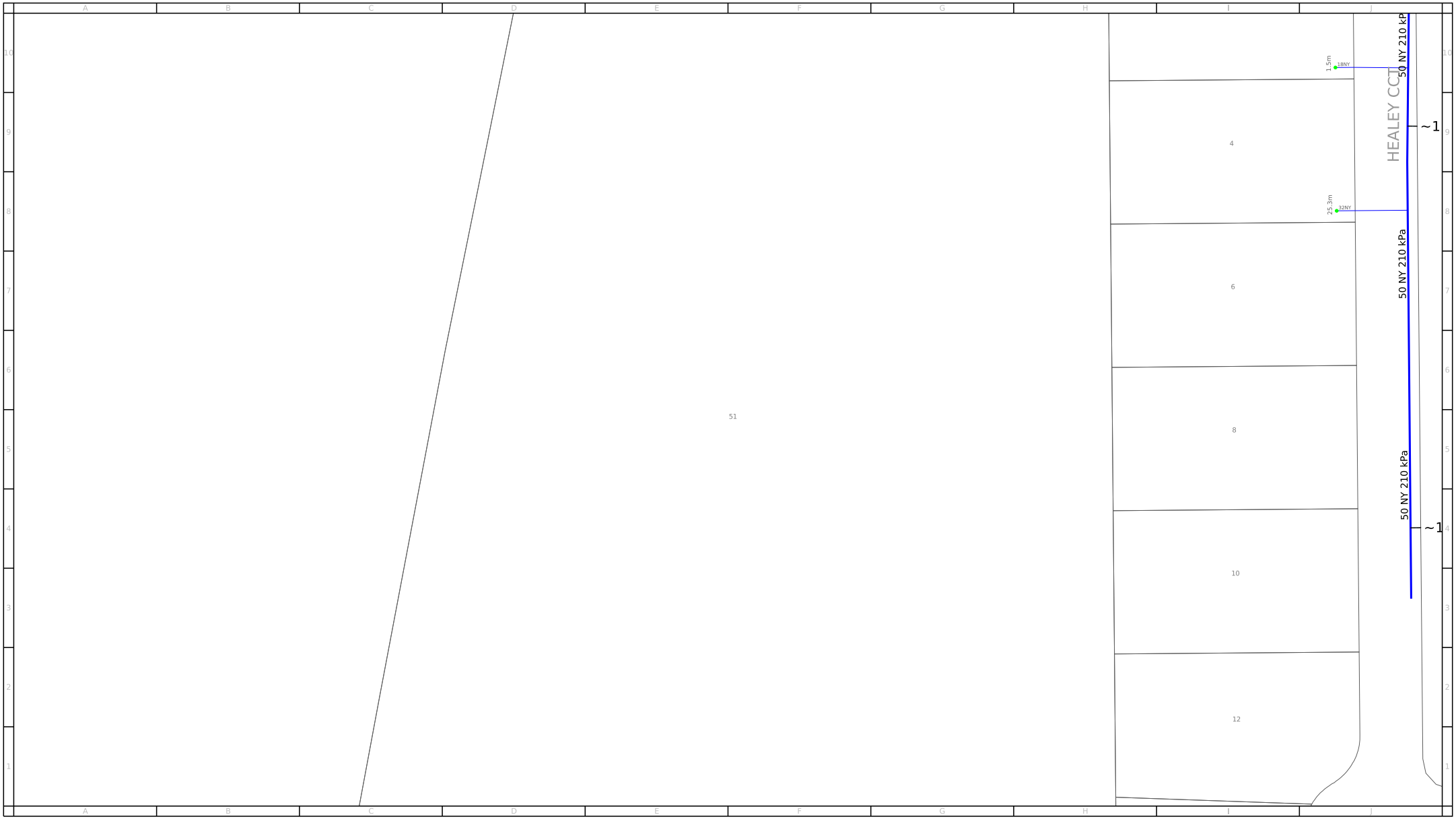

Jemena
ABN 87 003 004 322

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

N
W
E
S

Scale: 1:2000

Issue Date: 10/11/2025
BYDA Seq No: 263917169
BYDA Job No: 51646670

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

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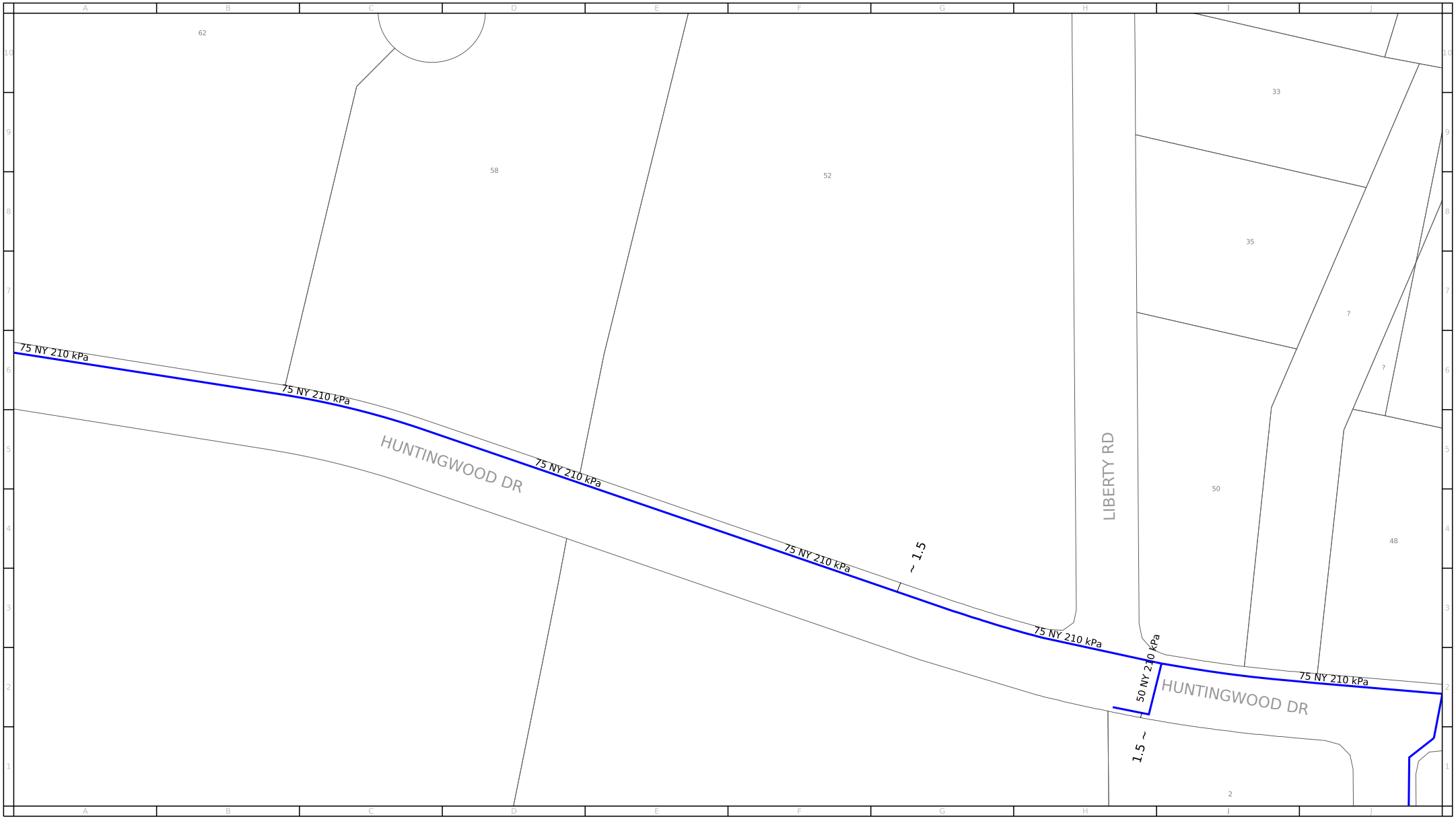

Jemena
ABN 87 003 004 322

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Issue Date: 10/11/2025
BYDA Seq No: 263917169
BYDA Job No: 51646670

Scale: 1:2000

0m 10m 20m 30m 40m 50m 60m 70m80m

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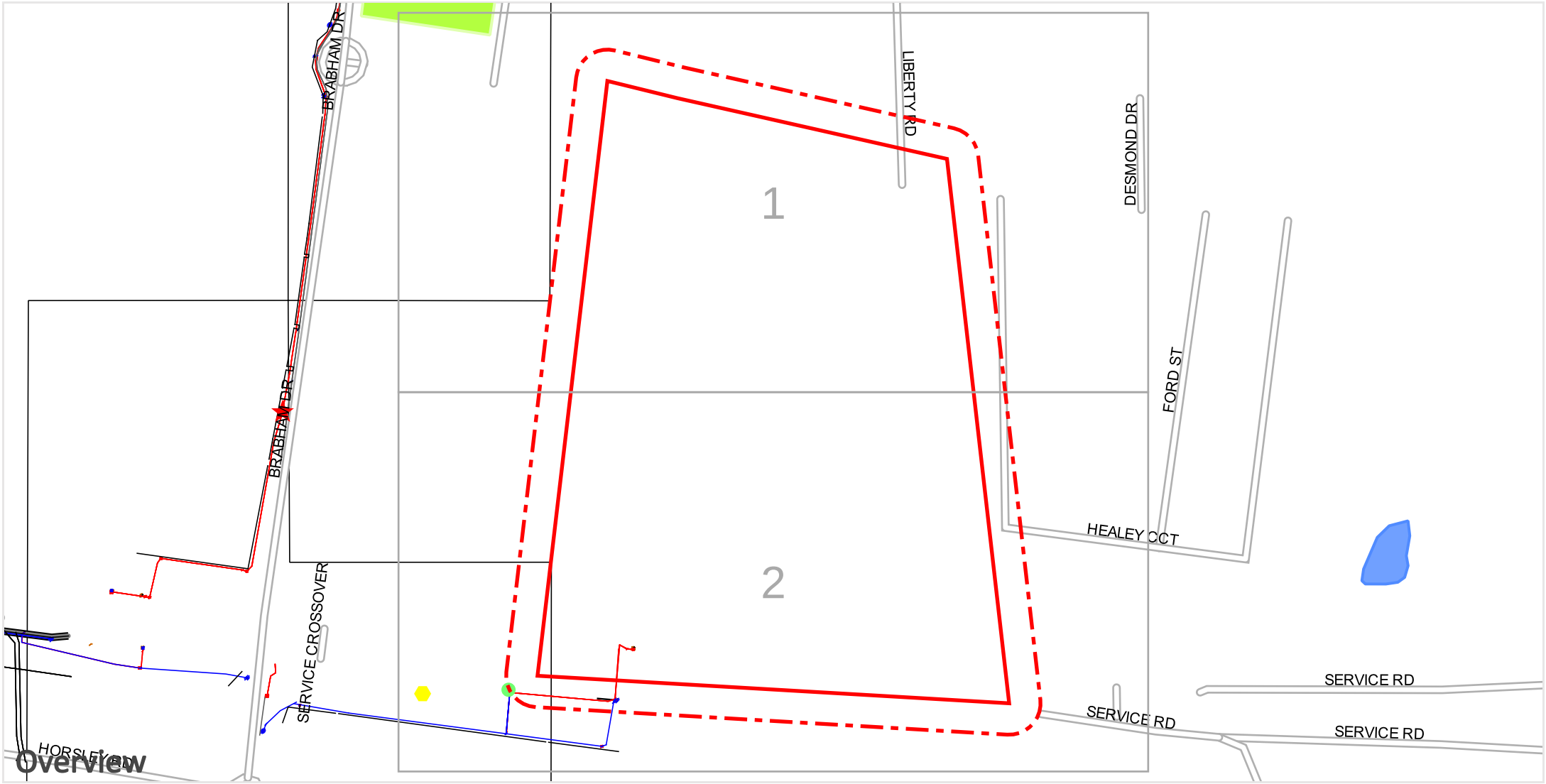
A3 – Westlink M7

Sequence No: 210272215
Job No: 31757799
Location: 51 Huntingwood Drive, Huntingwood, NSW 2148



Overview

Legend | Scale: 1:5125

N

Communications Cable / Devices

Electric Cable / Devices

Note: Buried communications cables are contained within white conduit. Buried electric cables are contained within orange conduits.

DISCLAIMER: Please be advised that, although not necessarily shown on the attached plan, there are many services within the Westlink M7 Motorway reserve including live power and optical fibres, both M7 and other utilities. An access permit and induction must be obtained from Westlink for any work proposed within the M7 motorway corridor.

The permit would cover excavation near services that are within the M7 boundary. While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Westlink M7 or PelicanCorp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information contained in it or the completeness or accuracy of such information. Use of such information is subject to and constitutes acceptance of these terms.

Sequence No: 210272215
Job No: 31757799
Location: 51 Huntingwood Drive, Huntingwood, NSW 2148

Legend | Scale: 1:2500

N

Communications Cable / Devices

Electric Cable / Devices

Note: Buried communications cables are contained within white conduit. Buried electric cables are contained within orange conduits.

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Job No: 31757799
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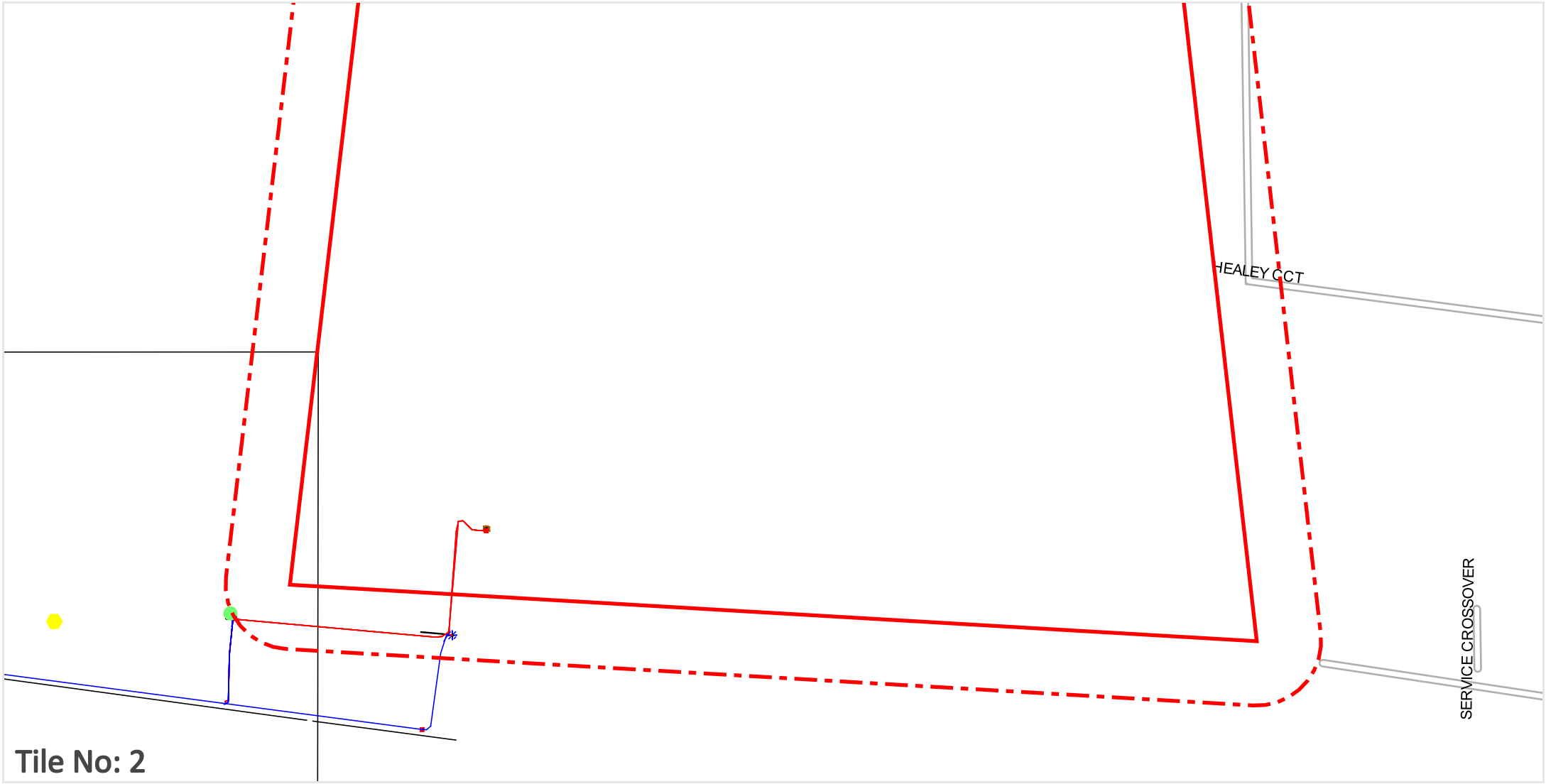

Legend | Scale: 1:2500

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Electric Cable / Devices

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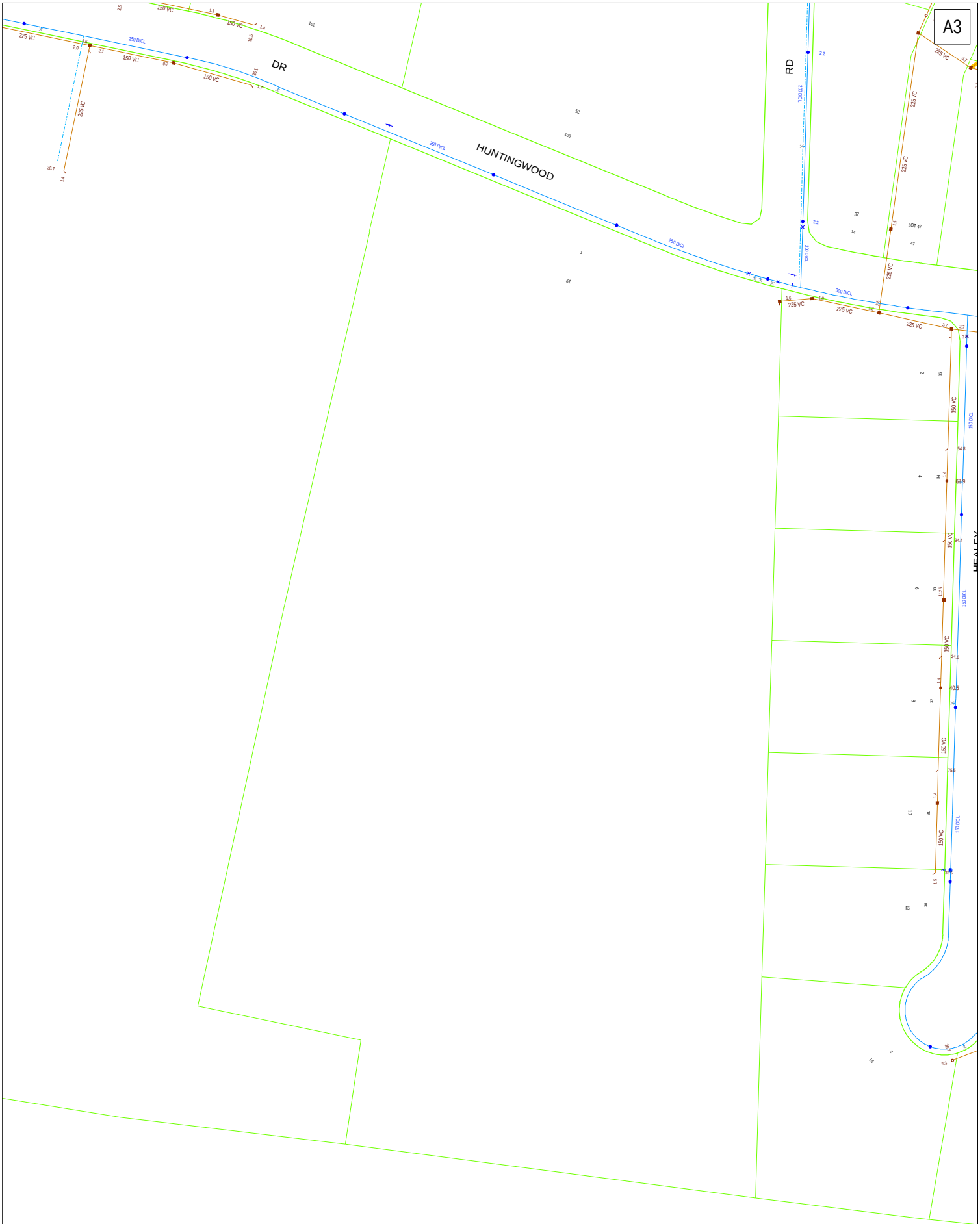
A4 – Sydney Water



DBYD Address:
51 Huntingwood Dr
Huntingwood NSW 2148

DBYD Job No: 51646670

DBYD Sequence No: 263917171

Copyright Reserved Sydney Water 2025
No warranty is given that the information shown is complete or accurate.
SYDNEY WATER CORPORATION

Scale: 1:1500

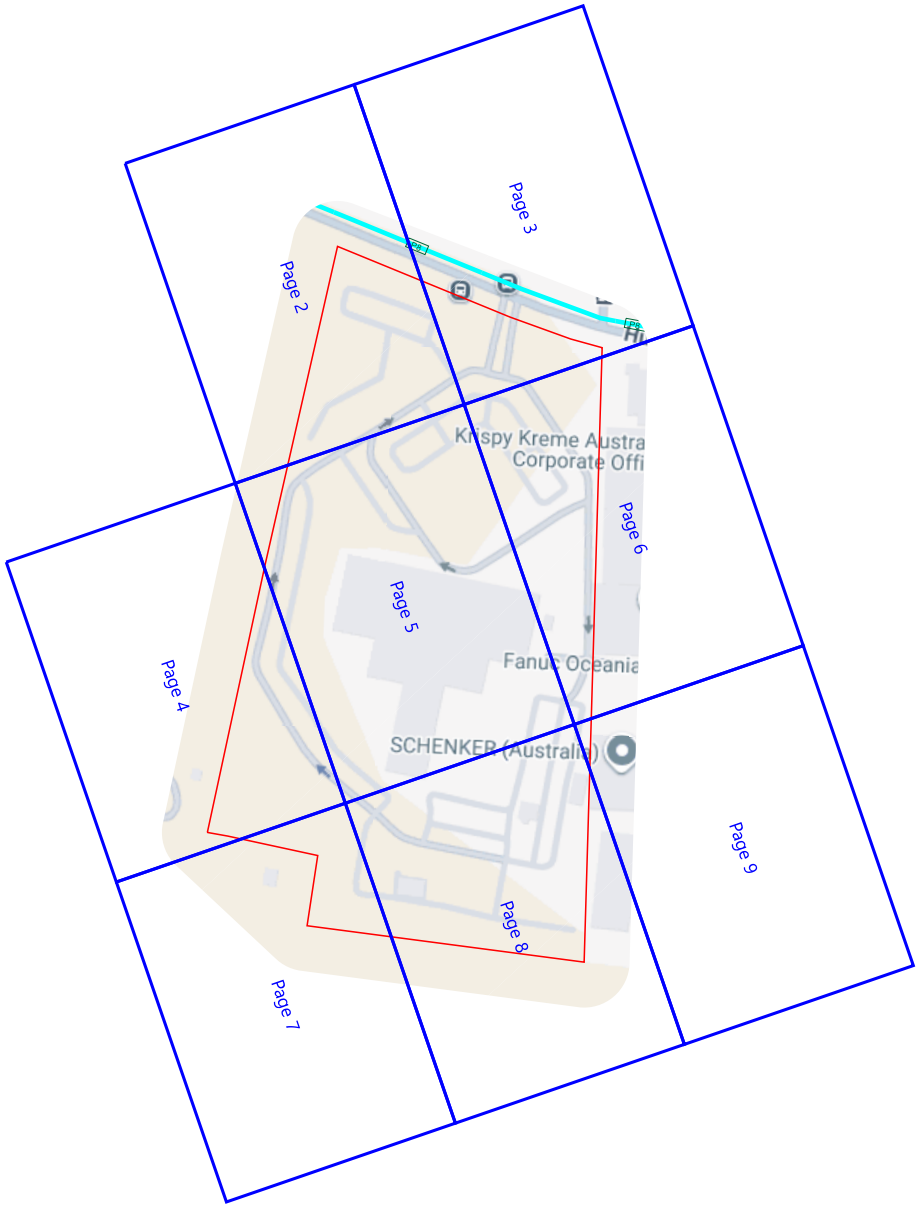
Date of Production: 10/11/2025

Plan 1 of 1

N

0m 7m 14m 21m 28m

A5 - Fibreconx



Created: 10/11/2025 18:06:44

Job number: 51646670

Sequence number: 263917165

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FIBRECONX

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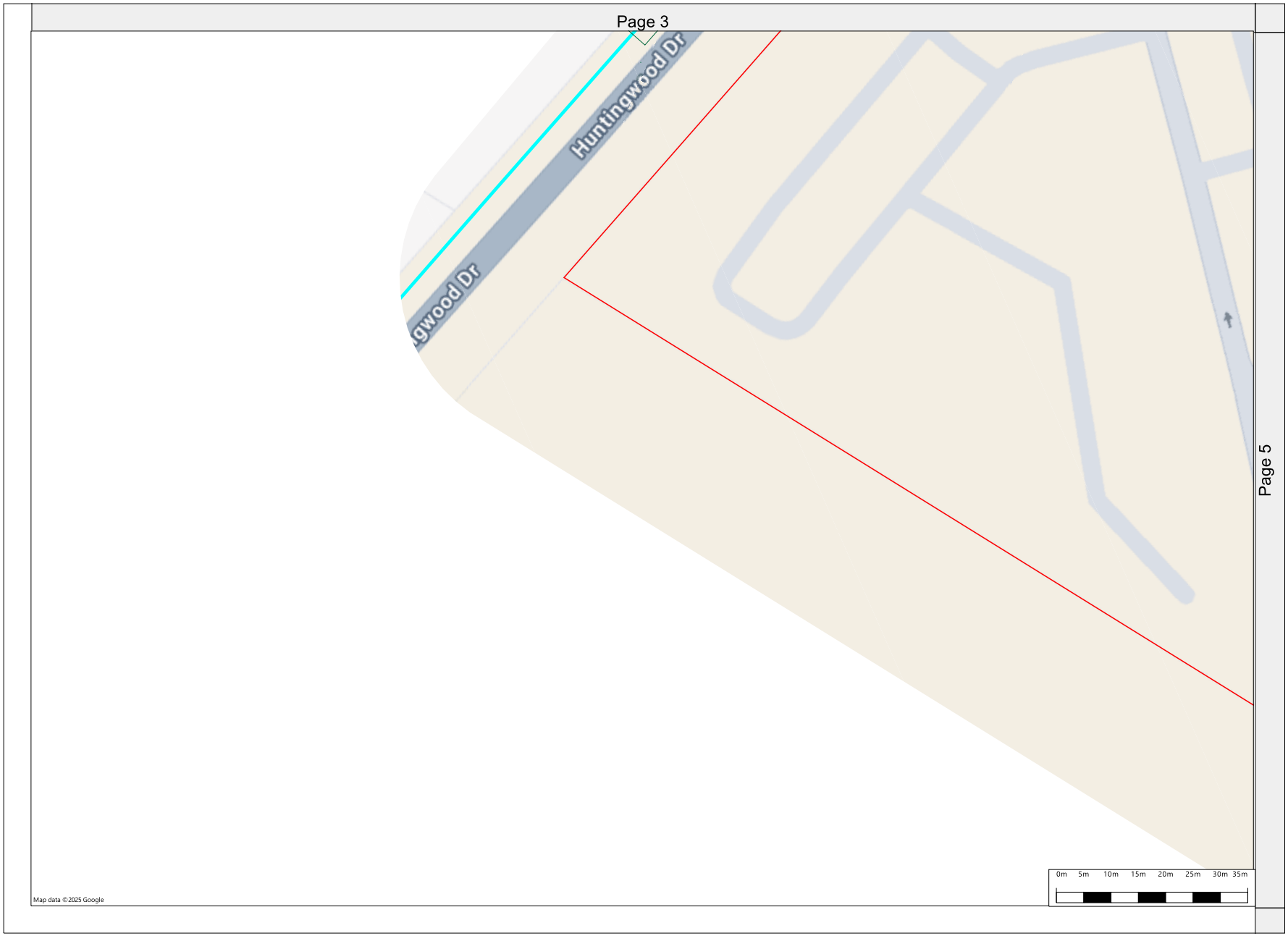

P8 FibreconX P8 Pit

FibreconX Conduit

Referral Area of Interest

Created: 10/11/2025 18:06:45

Job number: 51646670

Sequence number: 263917165

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Scale: 1:1000

FIBRECONX

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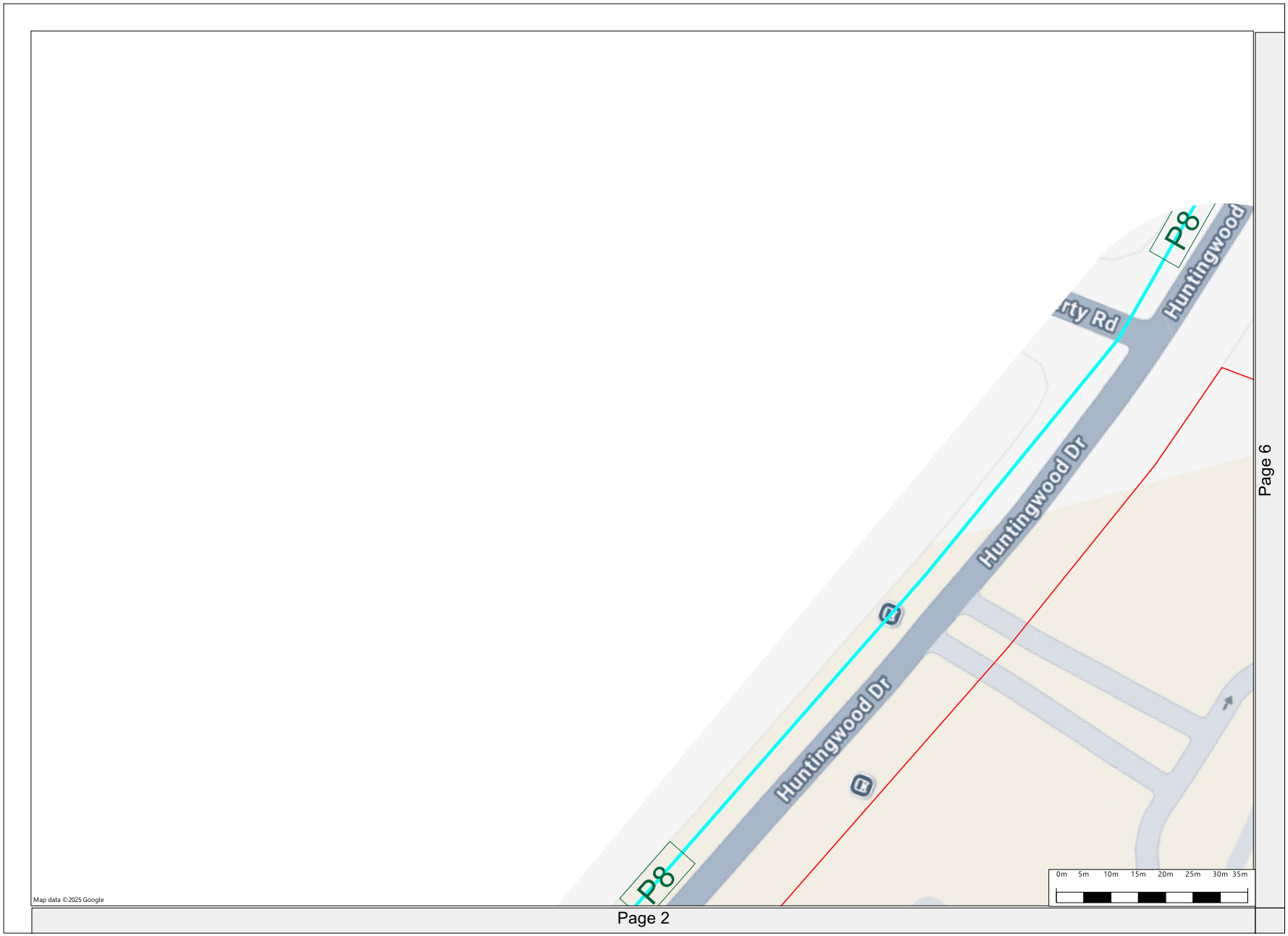

Created: 10/11/2025 18:06:47

Job number: 51646670

Sequence number: 263917165

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Scale: 1:1000

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Created: 10/11/2025 18:06:49

Job number: 51646670

Sequence number: 263917165

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Scale: 1:1000

FIBRECONX

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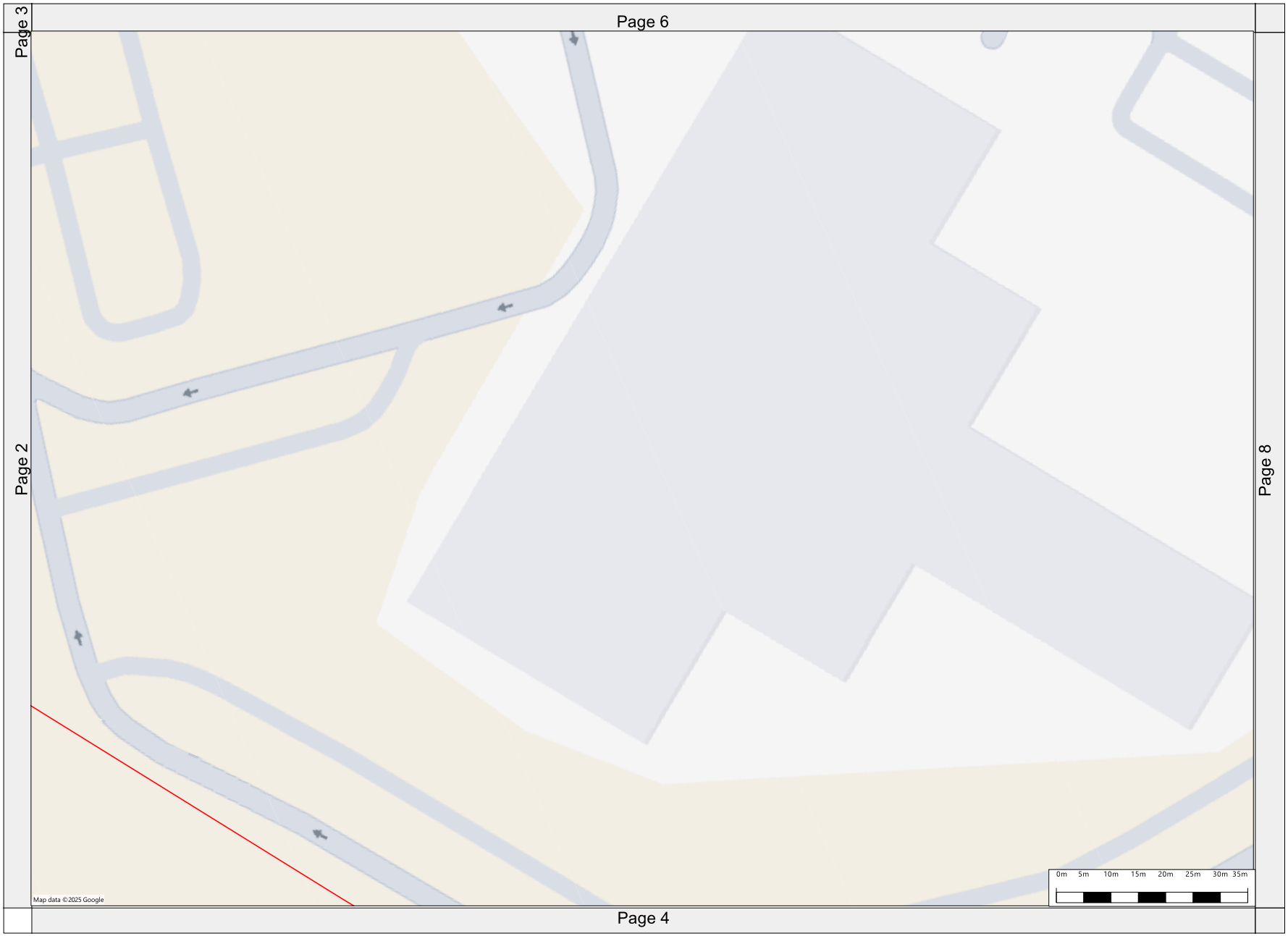

Referral Area of Interest

Created: 10/11/2025 18:06:50

Job number: 51646670

Sequence number: 263917165

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FIBRECONX

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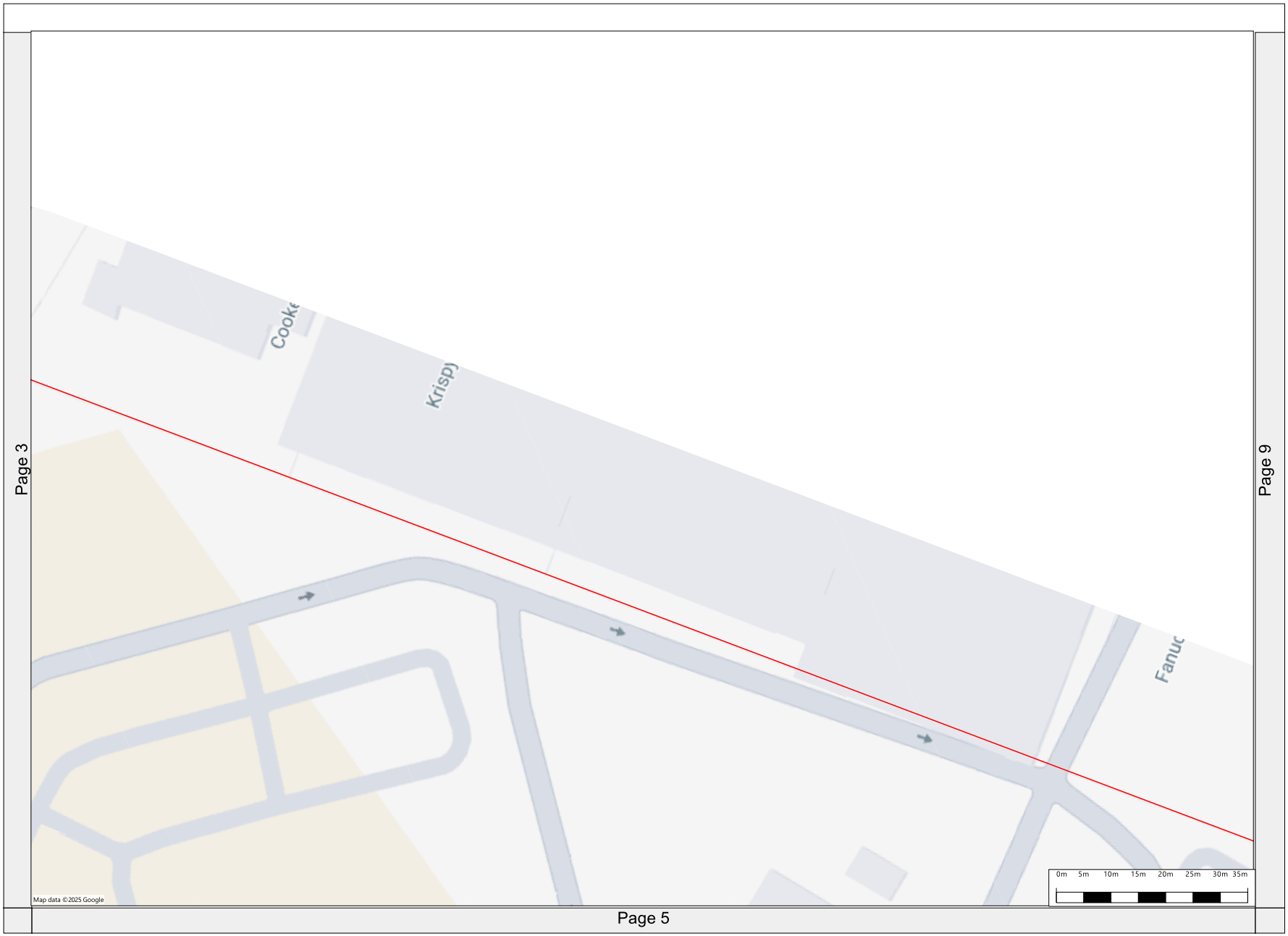


P8 FibreconX P8 Pit

FibreconX Conduit

Referral Area of Interest

Created: 10/11/2025 18:06:52

Job number: 51646670

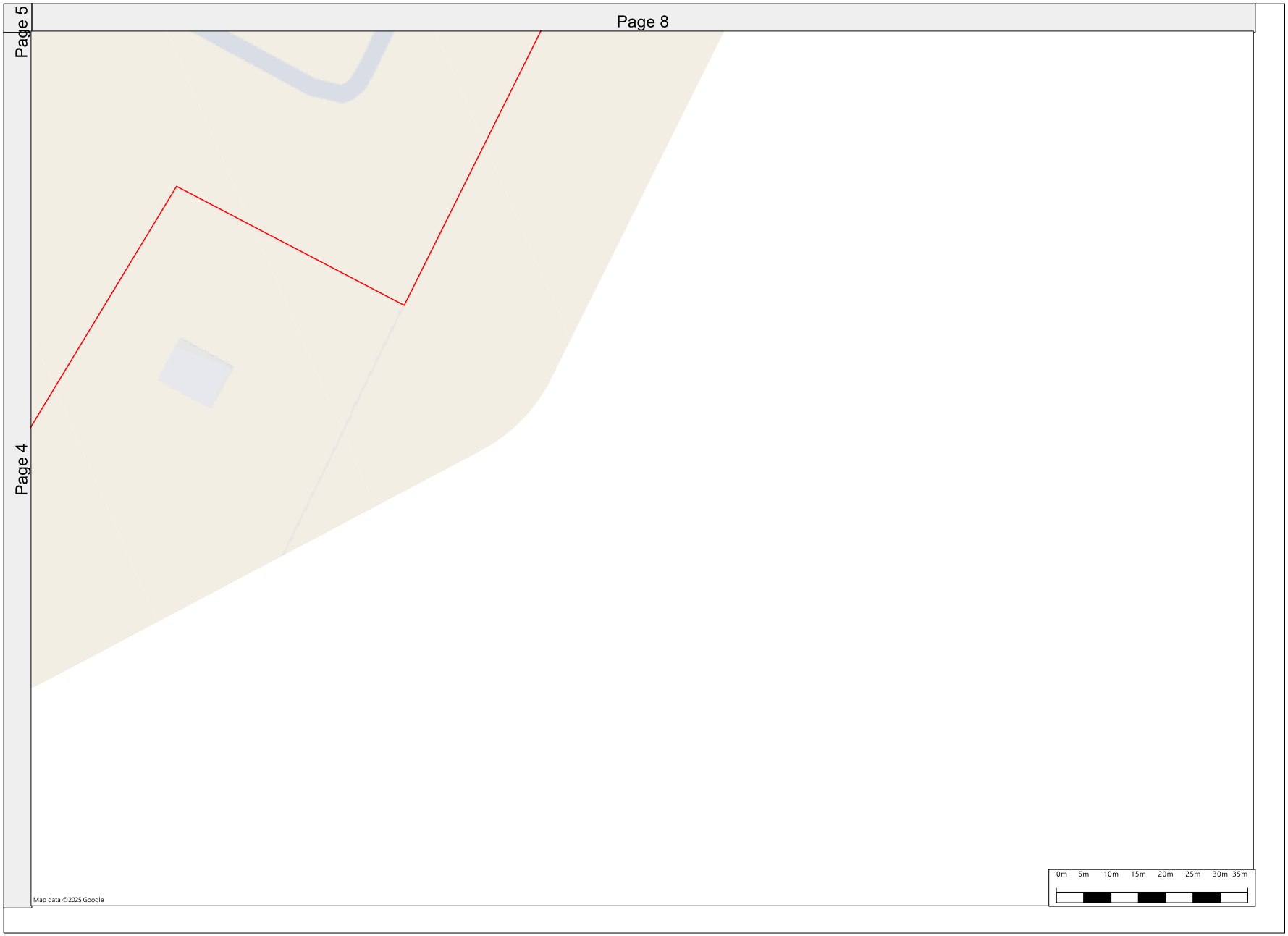
Sequence number: 263917165

WARNING: This document is confidential and may also be privileged. Confidentiality nor privilege is not waived or destroyed by virtue of it being transmitted to an incorrect addressee. Unauthorised use of the contents is therefore strictly prohibited. Any information contained in this document that has been extracted from our records is believed to be accurate, but no responsibility is assumed for any error or omission. FibreConX Plans and information supplied are valid for 28 days from the date of issue. If this timeline has elapsed please raise a new enquiry.

Scale: 1:1000

FIBRECONX

DIAL BEFORE YOU DIG www.1100.com.au



P8 FibreconX P8 Pit

FibreconX Conduit

Referral Area of Interest

Created: 10/11/2025 18:06:53

Job number: 51646670

Sequence number: 263917165

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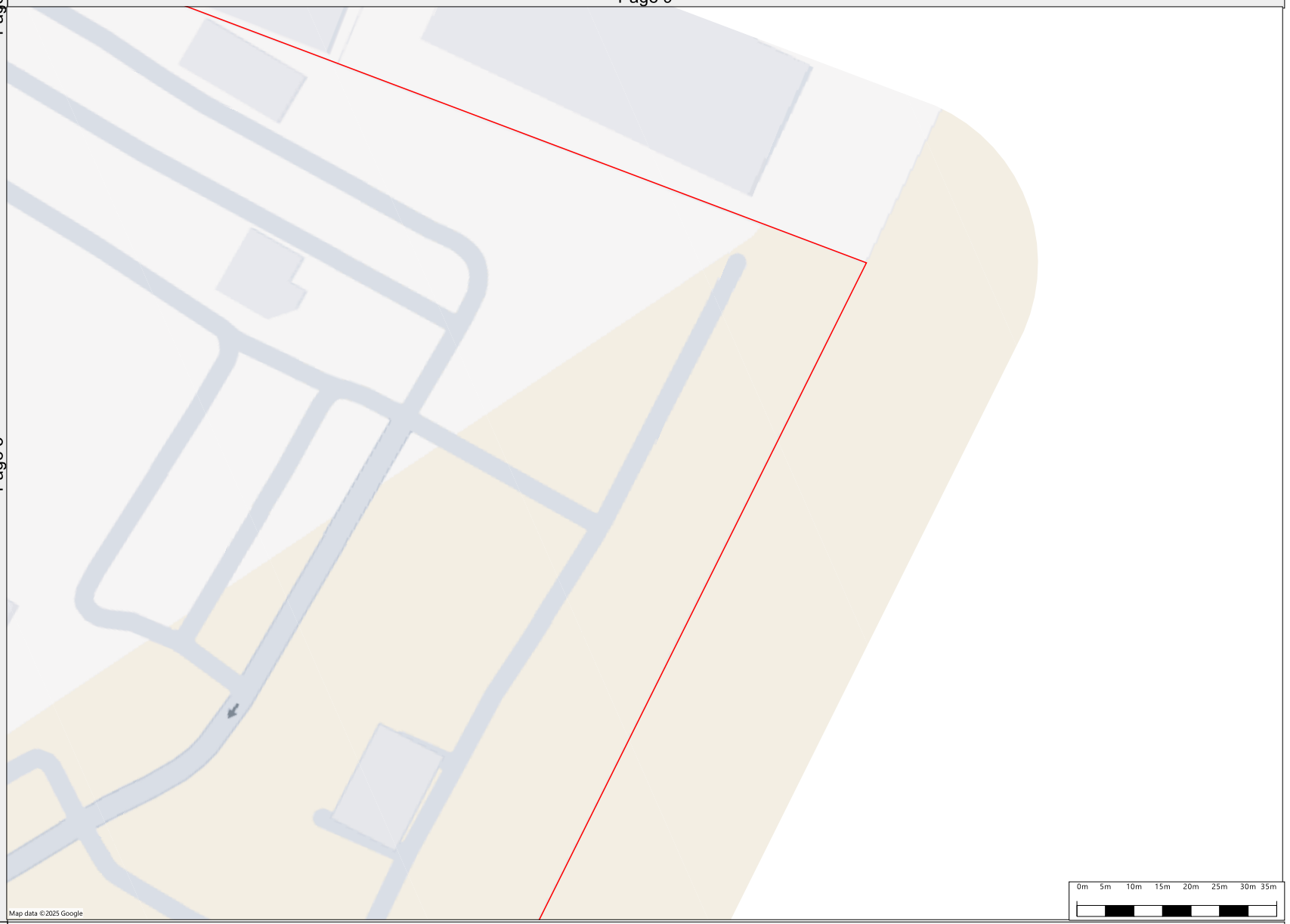
Scale: 1:1000

FIBRECONX

DIAL BEFORE YOU DIG www.1100.com.au



Referral Area of Interest

Created: 10/11/2025 18:06:55

Job number: 51646670

Sequence number: 263917165

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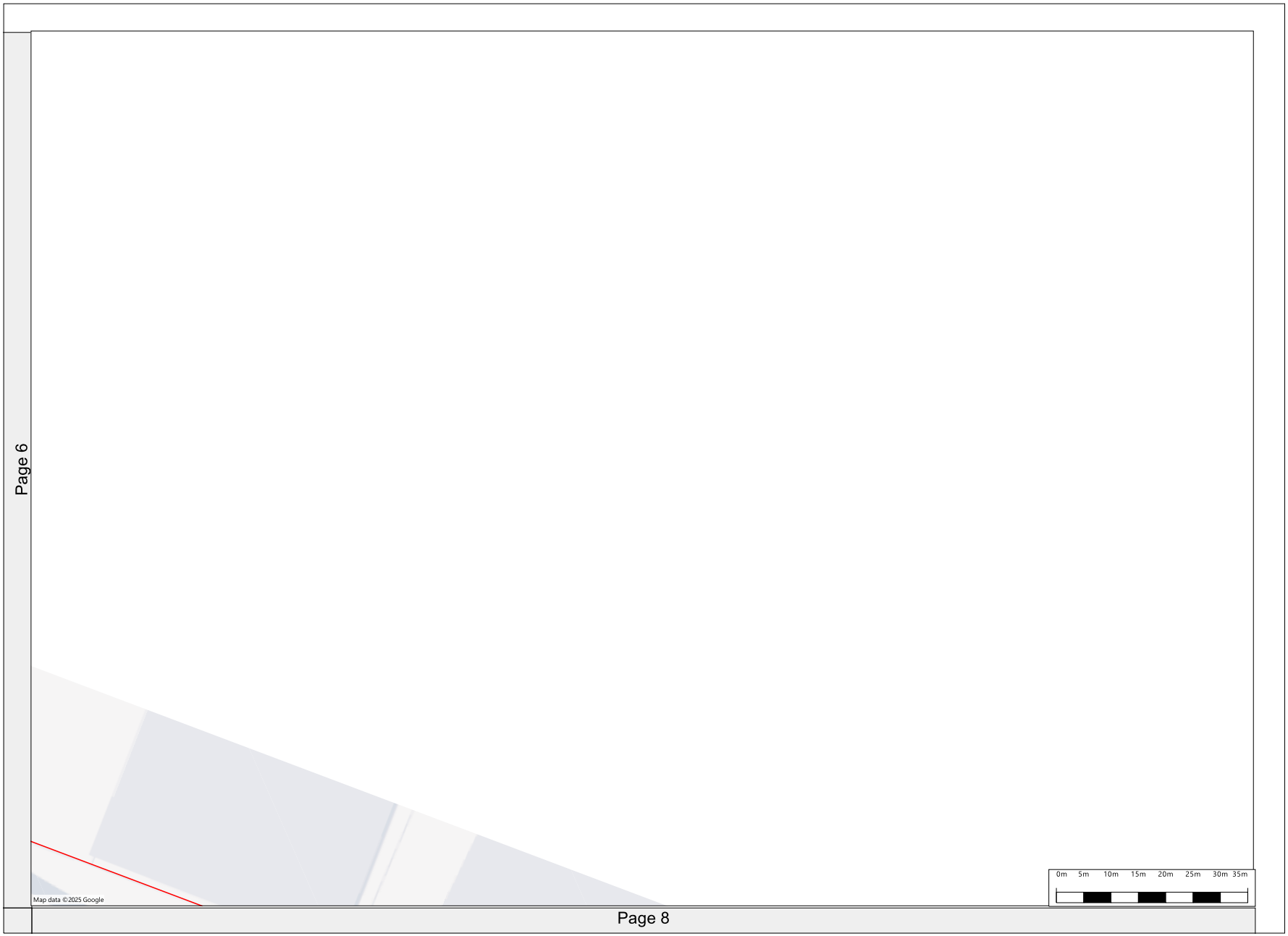
Scale: 1:1000

FIBRECONX

DIAL BEFORE YOU DIG www.1100.com.au



Referral Area of Interest

Created: 10/11/2025 18:06:56

Job number: 51646670

Sequence number: 263917165

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Scale: 1:1000

FIBRECONX

DIAL BEFORE YOU DIG www.1100.com.au

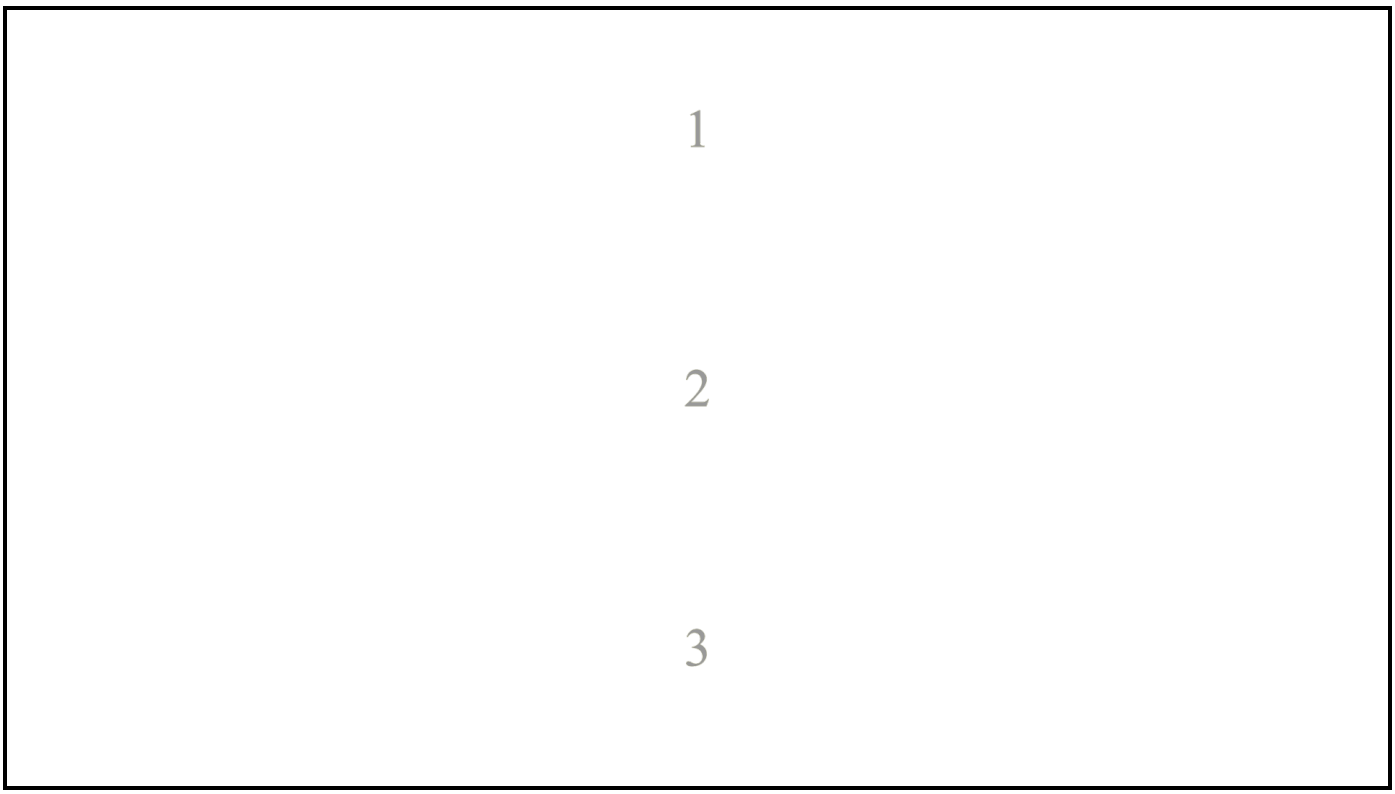
A6 - NBN

To:	Hary Budhi
Phone:	Not Supplied
Fax:	Not Supplied
Email:	hary.budhi@vandermeer.com.au

Dial before you dig Job #:	51646670
Sequence #	263917164
Issue Date:	10/11/2025
Location:	51 Huntingwood Dr , Huntingwood , NSW , 2148

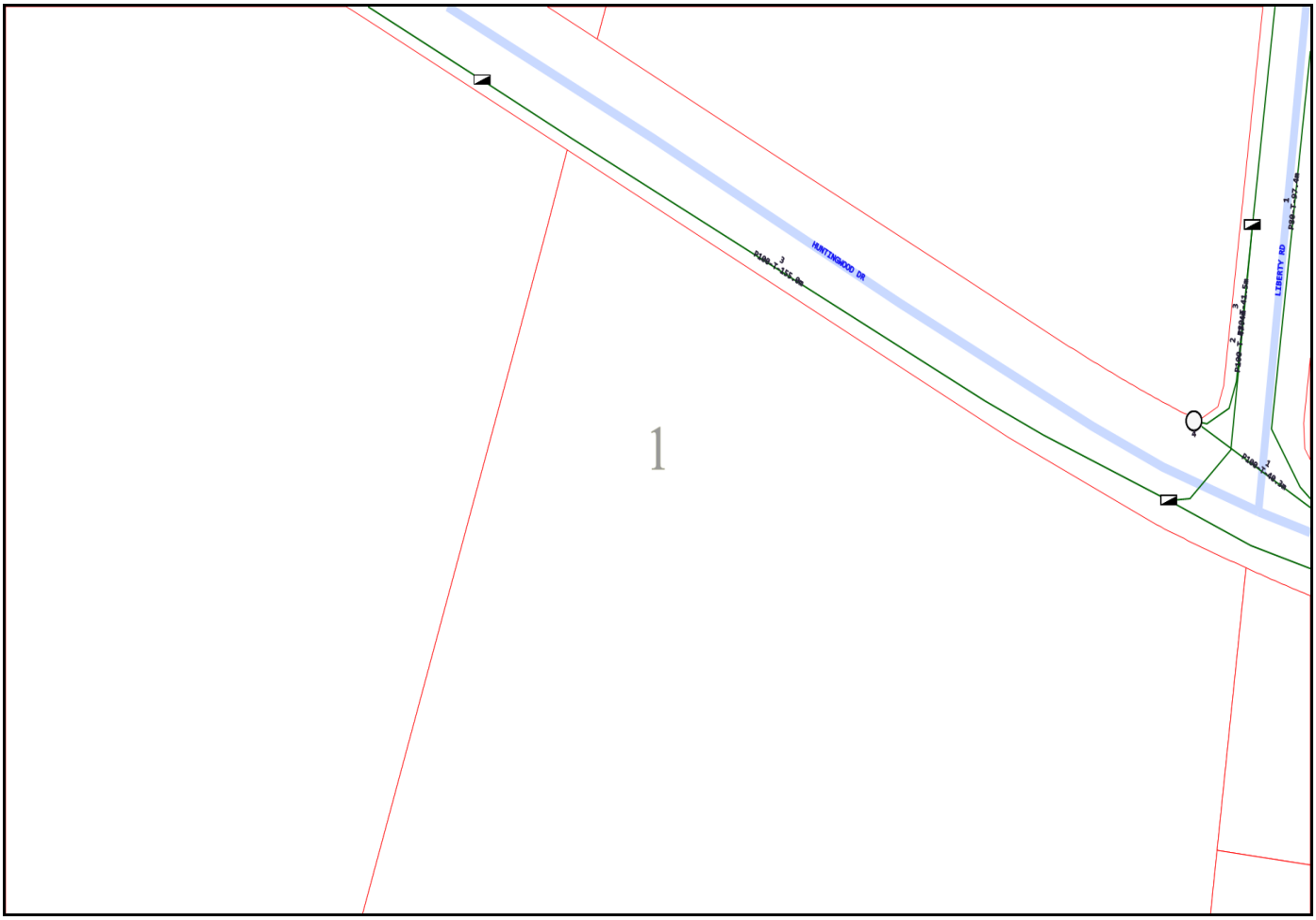
BEFORE YOU DIG www.byda.com.au Zero Damage - Zero Harm

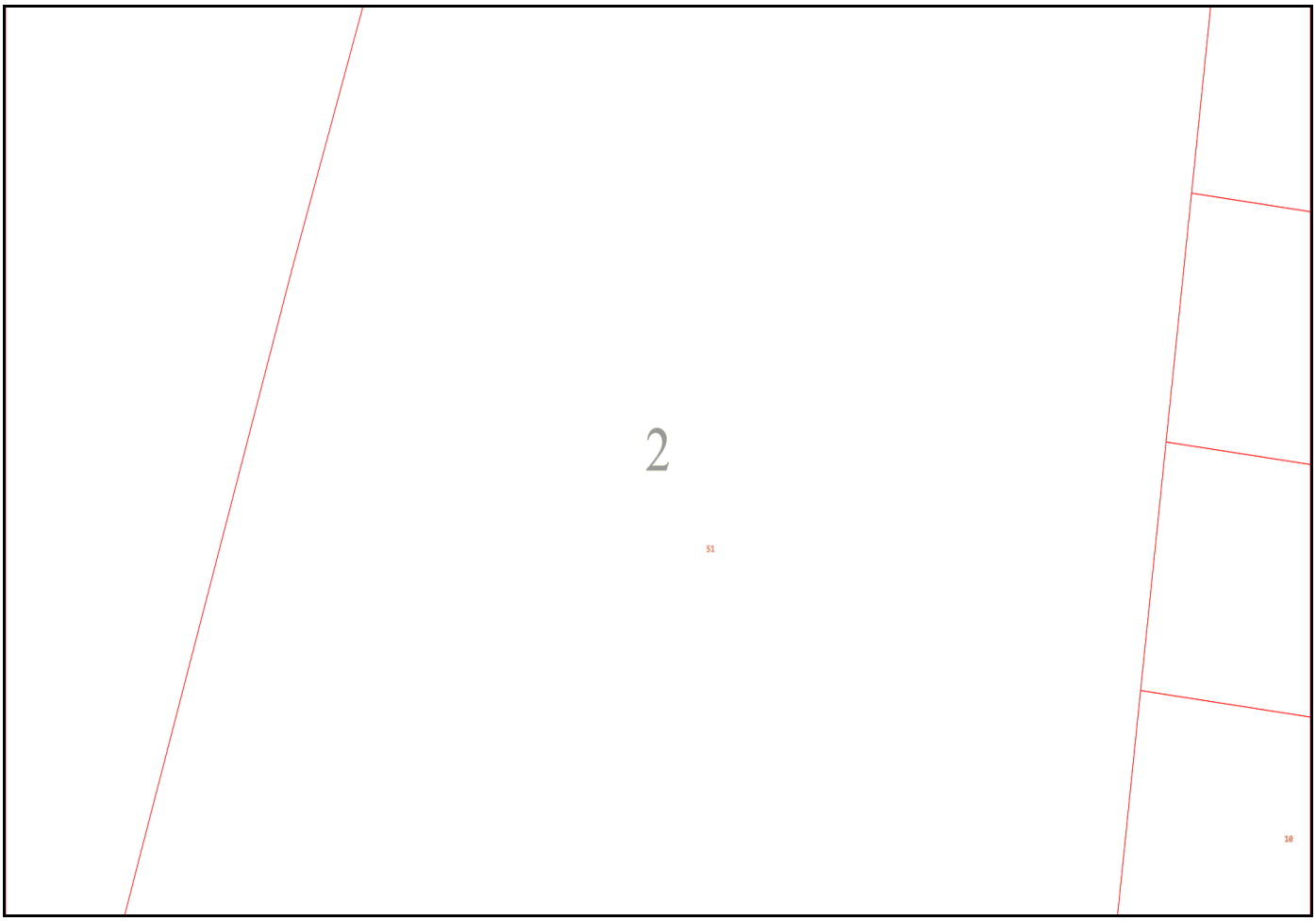
Indicative Plans are tiled below to demonstrate how to layout and read nbn asset plans

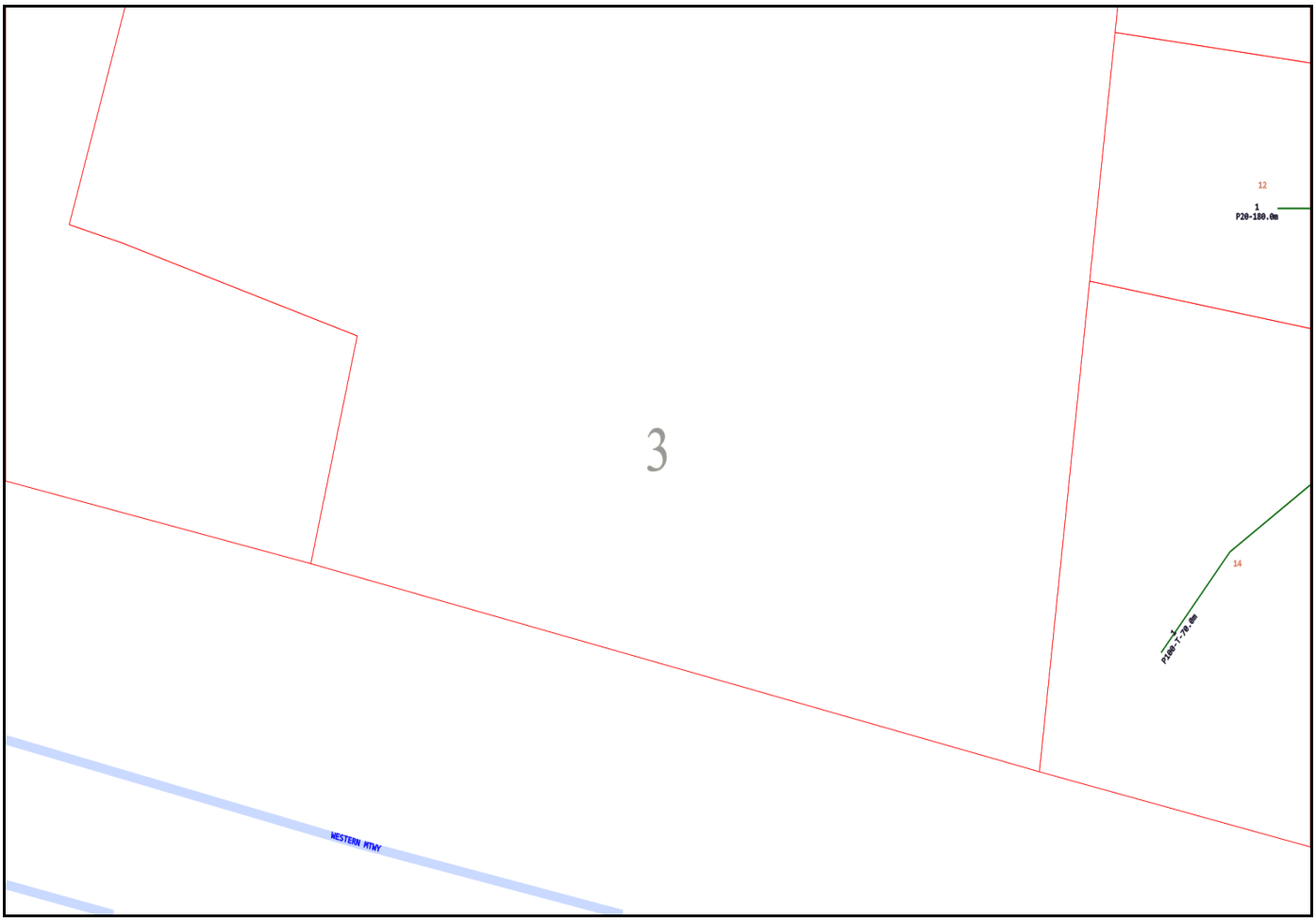


LEGEND

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


HUNTINGWOOD DR
LIBERTY RD
1

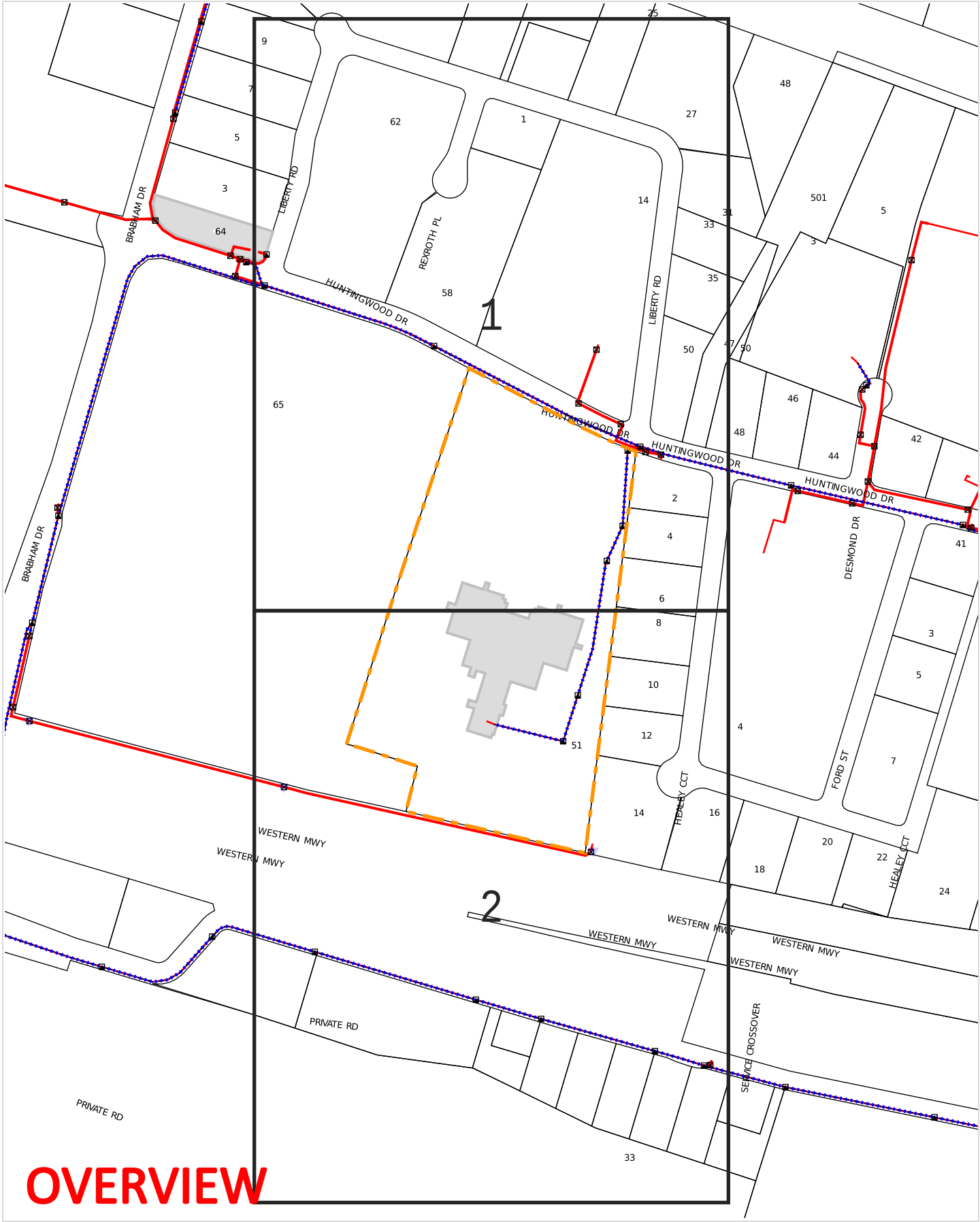

2
51
10



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.

A7 - Optus



OVERVIEW

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Sequence Number: 263917170

Date Generated: 10 Nov 2025

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

Tile No: 1

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Sequence Number: 263917170

Date Generated: 10 Nov 2025

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For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208

Tile No: 2

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Date Generated: 10 Nov 2025

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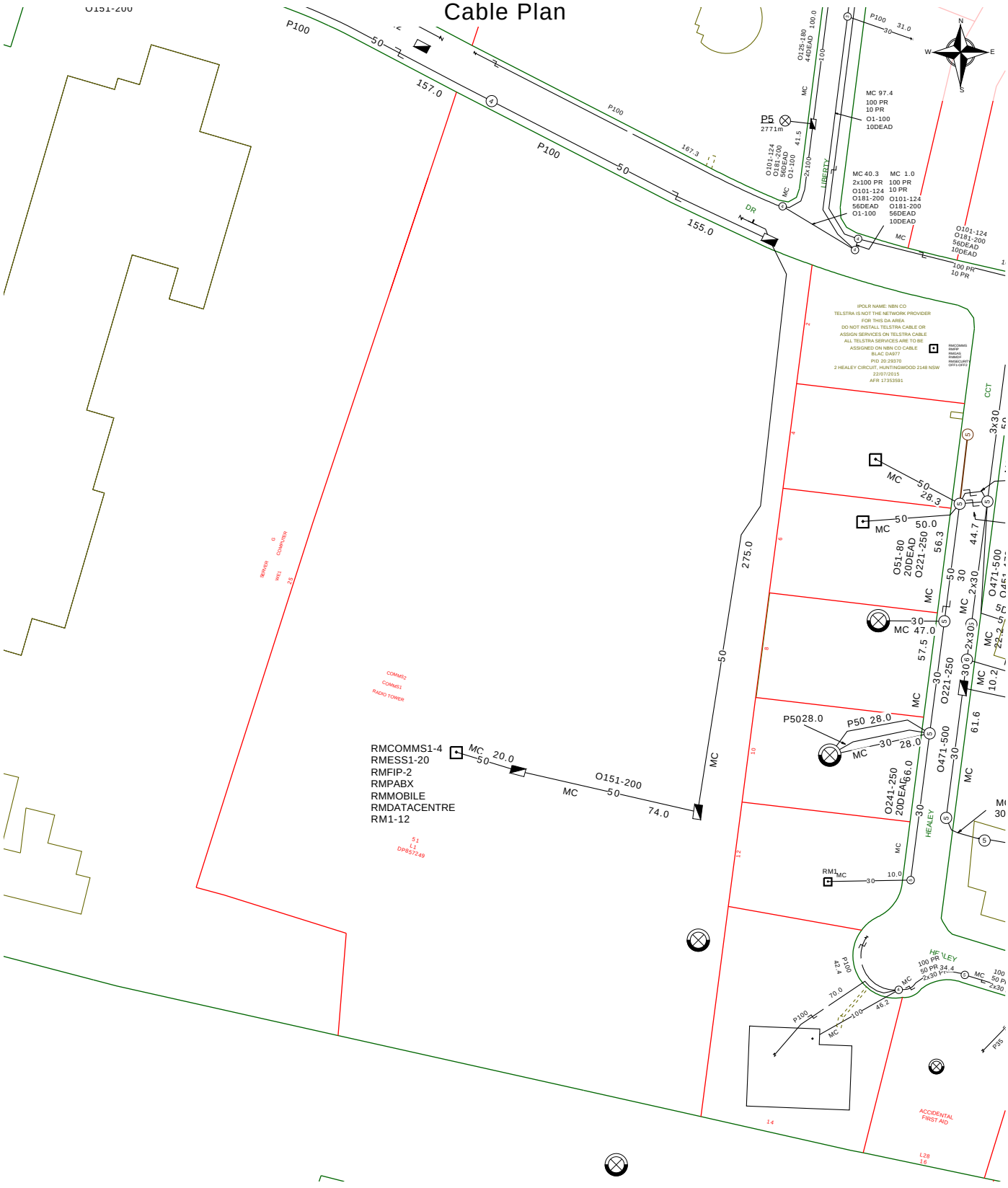
Optus Limited ACN 052 833 208

A8 - Telstra

Cable Plan



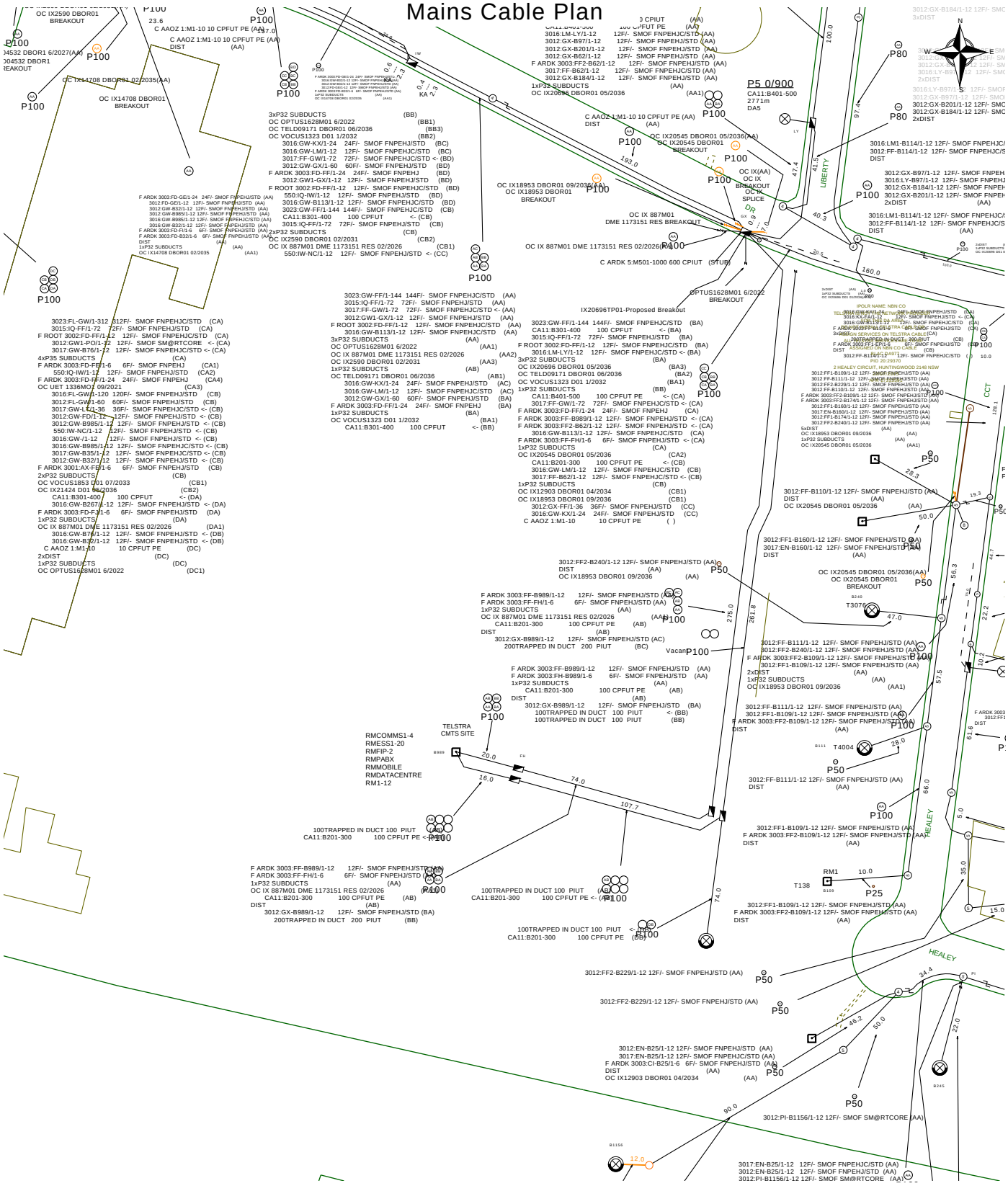
Report Damage:https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-c Ph - 13 22 03 Email - Telstra.Plans@team.telstra.com Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries	Sequence Number: 263917174
TELSTRA LIMITED A.C.N. 086 174 781	CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.
Generated On 10/11/2025 11:08:13	

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

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

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

Mains Cable Plan



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

TELSTRA LIMITED A.C.N. 086 174 781

Generated On 10/11/2025 11:08:31

Sequence Number: 263917174

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

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

WARNING
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Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing it.
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See the Steps- Telstra Duty of Care that was provided in the email response.

Appendix B – Surveys

B1 – Geoscope Utility Survey

PROJECT OVERVIEW PLAN

Geoscope Utility Detection Services Pty Ltd
PO Box 362, Minto, NSW 2566
ABN 70 164 777 208
T: 1300 750 350
M: 0432 296 323
E: info@geoscopelocating.com.au
W: www.geoscopelocating.com.au

ISSUE	DETAILS OF AMENDMENT	BY	DATE
A	UTILITY INVESTIGATION	SB	21-06-2021

LOCATED BY	SW/ MW/ NP/ DT
SURVEYED BY	JA
DRAFTED BY	JA / SB / JM
CHECKED BY	SW/ MW/ NP/ DT
APPROVED BY	SW
LOCATED DATE	11-06-2021 TO 22-06-2021

NOTES

THIS PLAN MUST BE READ IN CONJUNCTION WITH ALL SHEETS FOR ADDITIONAL WARNINGS, NOTES AND LEGENDS.

TRACEABLE SERVICES WERE LOCATED USING ELECTROMAGNETIC AND GPR LOCATING METHODS.

THIS UTILITY SURVEY IS NOT FOR CONSTRUCTION. FURTHER POTHOLING INVESTIGATION AND VERIFICATION IS REQUIRED PRIOR TO EXCAVATION WORK.

IT IS THE RESPONSIBILITY OF THE PERSON/S UNDERTAKING THE WORKS TO ADHREE TO ALL DUTIES OF CARE WHEN WORKING AROUND SERVICES MARKED BY GEOSCOPE UTILITY DETECTION SERVICES PTY LTD.

CLIENT

AW EDWARDS

DRAWING TITLE	UTILITY INVESTIGATION
SITE LOCATION	51 HUNTINGWOOD DRIVE, HUNTINGWOOD
DRAWING NUMBER	20210621SUI
DRAWING FILE NAME	20210621SUI - 51 HUNTINGWOOD DRIVE, HUNTINGWOOD
HEIGHT DATUM	---
COORDINATE SYSTEM	---
SHEET	1 OF 16

NORTH

A2

Geoscope UTILITY DETECTION SERVICES

Geoscope Utility Detection Services Pty Ltd
PO Box 362, Minto, NSW 2566
ABN 70 164 777 208
T: 1300 750 350
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E: info@geoscopelocating.com.au
W: www.geoscopelocating.com.au

ISSUE	DETAILS OF AMENDMENT	BY	DATE
A	UTILITY INVESTIGATION	SB	21-06-2021

LOCATED BY SW/ MW/ NP/ DT
SURVEYED BY JA
DRAFTED BY JA / SB / JM
CHECKED BY SW/ MW/ NP/ DT
APPROVED BY SW
LOCATED DATE 11-06-2021 TO 22-06-2021

NOTES

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CLIENT

AW EDWARDS

SCALE 1:300 (0 3 6 9 12 15 in metres)
DRAWING TITLE UTILITY INVESTIGATION
SITE LOCATION 51 HUNTINGWOOD DRIVE, HUNTINGWOOD
DRAWING NUMBER 20210621SUI
DRAWING FILE NAME 20210621SUI-51 HUNTINGWOOD DRIVE, HUNTINGWOOD

NORTH
HEIGHT DATUM ---
COORDINATE SYSTEM ---
SHEET 2 OF 16
A2

Geoscope Utility Detection Services Pty Ltd
PO Box 362, Minto, NSW 2566
ABN 70 164 777 208
T: 1300 750 350
M: 0432 296 323
E: info@geoscopelocating.com.au
W: www.geoscopelocating.com.au

ISSUE	DETAILS OF AMENDMENT	BY	DATE
A	UTILITY INVESTIGATION	SB	21-06-2021

LOCATED BY	SW/ MW/ NP/ DT
SURVEYED BY	JA
DRAFTED BY	JA / SB / JM
CHECKED BY	SW/ MW/ NP/ DT
APPROVED BY	SW
LOCATED DATE	11-06-2021 TO 22-06-2021

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CLIENT

AW EDWARDS

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DRAWING TITLE	UTILITY INVESTIGATION
SITE LOCATION	51 HUNTINGWOOD DRIVE, HUNTINGWOOD
DRAWING NUMBER	20210621SUI
DRAWING FILE NAME	20210621SUI - 51 HUNTINGWOOD DRIVE, HUNTINGWOOD
HEIGHT DATUM	---
COORDINATE SYSTEM	---
SHEET	3 OF 16
	A2

NORTH

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A	UTILITY INVESTIGATION	SB	21-06-2021

LOCATED BY SW/ MW/ NP/ DT
SURVEYED BY JA
DRAFTED BY JA / SB / JM
CHECKED BY SW/ MW/ NP/ DT
APPROVED BY SW
LOCATED DATE 11-06-2021 TO 22-06-2021

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CLIENT
AW EDWARDS

SCALE 1:100 (0 1 2 3 4 5 in metres)
DRAWING TITLE UTILITY INVESTIGATION
SITE LOCATION 51 HUNTINGWOOD DRIVE, HUNTINGWOOD
DRAWING NUMBER 20210621SUI
DRAWING FILE NAME 20210621SUI - 51 HUNTINGWOOD DRIVE, HUNTINGWOOD
NORTH
HEIGHT DATUM ---
COORDINATE SYSTEM ---
SHEET 4 OF 16
A2

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ISSUE	DETAILS OF AMENDMENT	BY	DATE
A	UTILITY INVESTIGATION	SB	21-06-2021

LOCATED BY	SW/ MW/ NP/ DT
SURVEYED BY	JA
DRAFTED BY	JA / SB / JM
CHECKED BY	SW/ MW/ NP/ DT
APPROVED BY	SW
LOCATED DATE	11-06-2021 TO 22-06-2021

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CLIENT

AW EDWARDS

SCALE	1:300 (0 3 6 9 12 15 in metres)
DRAWING TITLE	UTILITY INVESTIGATION
SITE LOCATION	51 HUNTINGWOOD DRIVE, HUNTINGWOOD
DRAWING NUMBER	20210621SUI
DRAWING FILE NAME	20210621SUI - 51 HUNTINGWOOD DRIVE, HUNTINGWOOD
HEIGHT DATUM	---
COORDINATE SYSTEM	---
SHEET	5 OF 16
	A2

NORTH

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LOCATED BY	SW/ MW/ NP/ DT
SURVEYED BY	JA
DRAFTED BY	JA / SB / JM
CHECKED BY	SW/ MW/ NP/ DT
APPROVED BY	SW
LOCATED DATE	11-06-2021 TO 22-06-2021

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SITE LOCATION	51 HUNTINGWOOD DRIVE, HUNTINGWOOD
DRAWING NUMBER	20210621SUI
DRAWING FILE NAME	20210621SUI - 51 HUNTINGWOOD DRIVE, HUNTINGWOOD
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SHEET	6 OF 16
	A2

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DRAWING NUMBER	20210621SUI
DRAWING FILE NAME	20210621SUI - 51 HUNTINGWOOD DRIVE, HUNTINGWOOD
HEIGHT DATUM	---
COORDINATE SYSTEM	---
SHEET	7 OF 16
	A2

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DRAWING NUMBER	20210621SUI
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HEIGHT DATUM	---
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SHEET	8 OF 16
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NORTH

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DRAFTED BY	JA / SB / JM
CHECKED BY	SW/ MW/ NP/ DT
APPROVED BY	SW
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CLIENT

AW EDWARDS

SCALE	1:300 (0 3 6 9 12 15 in metres)
DRAWING TITLE	UTILITY INVESTIGATION
SITE LOCATION	51 HUNTINGWOOD DRIVE, HUNTINGWOOD
DRAWING NUMBER	20210621SUI
DRAWING FILE NAME	20210621SUI-51 HUNTINGWOOD DRIVE, HUNTINGWOOD
NORTH	
HEIGHT DATUM	---
COORDINATE SYSTEM	---
SHEET	9 OF 16
	A2

Geoscope Utility Detection Services Pty Ltd
PO Box 362, Minto, NSW 2566
ABN 70 164 777 208
T: 1300 750 350
M: 0432 296 323
E: info@geoscopelocating.com.au
W: www.geoscopelocating.com.au

ISSUE	DETAILS OF AMENDMENT	BY	DATE
A	UTILITY INVESTIGATION	SB	21-06-2021

LOCATED BY	SW/ MW/ NP/ DT
SURVEYED BY	JA
DRAFTED BY	JA / SB / JM
CHECKED BY	SW/ MW/ NP/ DT
APPROVED BY	SW
LOCATED DATE	11-06-2021 TO 22-06-2021

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DRAWING NUMBER	20210621SUI
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SHEET	15 OF 16
	A2

NORTH

AUSTRALIAN STANDARD AS 5488-2013:
CLASSIFICATION OF SUBSURFACE UTILITY INFORMATION (SUI CLASSIFICATION)

SUI CLASSIFICATION FROM THE AUSTRALIAN STANDARD (AS 5488-2013) ALLOWS THE USER OF THIS INFORMATION TO FULLY UNDERSTAND THE GATHERED INFORMATION AND DETERMINED QUALITY LEVELS. THE QUALITY LEVELS (QL-A, QL-B, QL-C, QL-D) REFER TO THE ACCURACY OF EACH INFORMATION COLLECTED ON SUBSURFACE UTILITIES ON THIS PLAN. WITH THESE QUALITY LEVELS, PROJECT RISKS RELATED TO UNDERGROUND UTILITIES CAN BE PROPERLY MANAGED. BELOW ARE THE DESCRIPTION OF EACH QUALITY LEVEL WITH QUALITY LEVEL A (QL-A) AS THE HIGHEST OF ALL THE QUALITY LEVELS. HIGHER QUALITY LEVEL WOULD CORRESPOND TO MORE ACCURATE INFORMATION ON SUBSURFACE UTILITIES.

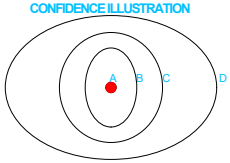
QUALITY LEVEL A (QL-A) IS THE HIGHEST QUALITY LEVEL OF ACCURACY WITH AN ABSOLUTE LOCATION IN THREE DIMENSIONS (X, Y, Z COORDINATES). THE MAXIMUM HORIZONTAL AND VERTICAL TOLERANCE IS ±50 MM. THIS IS OBTAINED BY USING A NON-DESTRUCTIVE EXCAVATION (POT HOLING) OR BY MEASURING DIRECTLY TO THE UTILITIES (I.E. MANHOLE). THE VERTICAL INFORMATION FOR THIS LOCATING METHOD IS ON THE TOP OF THE SHALLOWEST PART OF THE LOCATED SERVICE—UNLESS STATED INVERT OR OBVERT MEASUREMENT.

QUALITY LEVEL B (QL-B) IS THE MOST COMMON FORM OF UTILITY LOCATING. THE UTILITIES IN THIS LEVEL ARE LOCATED USING ELECTROMAGNETIC PIPE AND CABLE LOCATORS, SONDES OR FLEXI TRACE, AND GROUND PENETRATING RADAR (GPR) AND ACOUSTIC PULSE EQUIPMENT. THE MINIMUM REQUIREMENT FOR THIS QUALITY LEVEL IS RELATIVE SPATIAL POSITION WITH A MAXIMUM HORIZONTAL TOLERANCE OF ±300 MM AND A MAXIMUM VERTICAL TOLERANCE OF ±500 MM. THIS QUALITY LEVEL IS AN INDICATION OF EXISTENCE OF SUBSURFACE UTILITIES AND DOES NOT VALIDATE THE LOCATION AND ATTTRIBUTES BECAUSE ELECTRONIC DETECTION IS NOT RECOMMENDED FOR OBTAINING ACCURATE DEPTH INFORMATION DUE TO INTERFERENCE FROM OTHER ADJACENT SERVICES OR DUE TO GEOLOGICAL CONDITIONS. IN ADDITION, IT IS NOT ALWAYS ENTIRELY ACCURATE DUE TO DIFFERING ELECTROMAGNETIC FIELDS, SOIL CONDITIONS, AND MULTIPLE BANKS OF CABLES AFFECTING THE LOCATING SIGNAL.

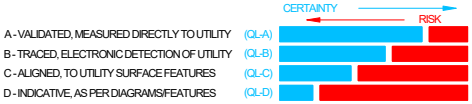
QUALITY LEVEL C (QL-C) CORRELATES THE SURVEY OF VISIBLE UTILITY SURFACE FEATURES SUCH AS MARKER PLATES, WATER HYDRANTS, AND ACQUIRED DIAL BEFORE YOU DIG PLANS TO DRAW A STRING WHICH SHOWS THE APPROXIAMTE POSITION OF THE SERVICES. THE MINIMUM REQUIREMENT FOR THIS QUALITY LEVEL IS RELATIVE SPATIAL POSITION; HOWEVER, THIS METHOD DOES NOT USUALLY SHOW MULTIPLE BANKS OF CABLES AND THREE-DIMENSIONAL INFORMATION.

QUALITY LEVEL D (QL-D) IS THE LOWEST OF ALL THE QUALITY LEVELS AS PER AUSTRALIAN STANDARD (AS 5488-2013). THIS IS THE MOST BASIC LEVEL OF UTILITY LOCATIONS BY USING ONLY THE INFORMATION BASED ON THE EXISTING DIAL BEFORE YOU DIG PLANS AND BY MEASURING BOUNDARY OFFSETS. THIS QUALITY LEVEL COULD BE A SIMPLE APPROXIMATION FROM SITE RECORDS, ANECDOTAL EVIDENCE, OR A SERVICE WHICH WAS NOT LOCATED USING ELECTRONIC OR GROUND PENETRATING RADAR METHODS. THIS METHOD OF UTILITY LOCATING SHOULD ALWAYS BE TREATED AS AN INDICATION OF THE PRESENCE OF A SERVICE ONLY AND SHOULD NOT BE USED FOR DESIGN.

SUI QUALITY LEVEL CONFIDENCE ILLUSTRATION



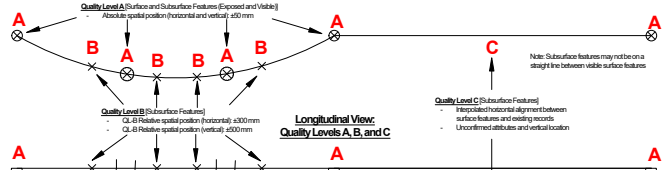
UTILITY POSITIONING CLASSIFICATION



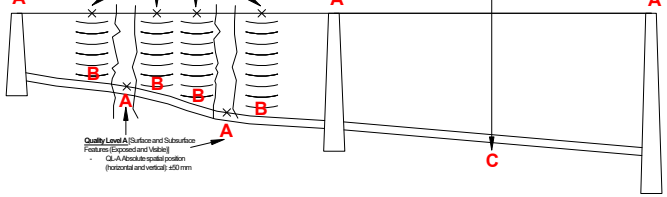
VARYING QUALITY LEVELS

Adapted from AS 5488-2013

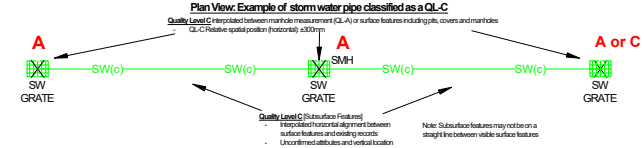
Plan View: Quality Levels A, B, and C



Longitudinal View: Quality Levels A, B, and C



Plan View: Example of storm water pipe classified as a QL-C



Plan View: Example of sewer main pipe classified as a QL-D

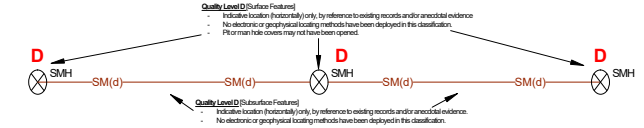
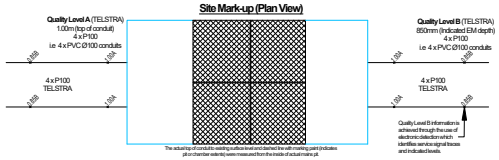


ILLUSTRATION OF (TELSTRA) MANHOLE OR MAINS PIT



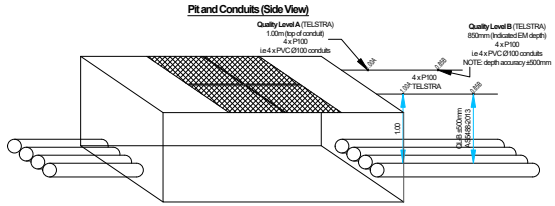


ILLUSTRATION OF PHYSICAL VERIFICATION - QUALITY LEVEL A

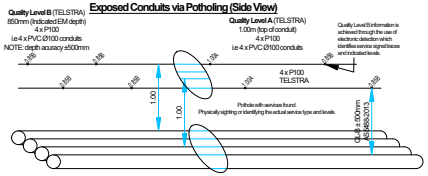


ILLUSTRATION OF STORM WATER GRATE PIT

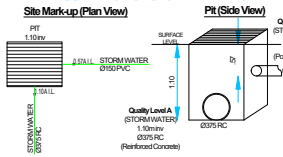
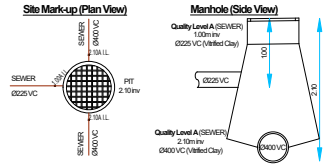


ILLUSTRATION OF SEWER MANHOLE OR PIT



UTILITY AND SURVEY ABBREVIATIONS

LEGEND	DESCRIPTION	LEGEND	DESCRIPTION
ø	Pipe Diameter	AHD	Australian Height Datum
S	Steel	EOT	End of Trace
AC	Asbestos Cement	FOD	Full of Debris
BH	Bore Hole	FOW	Full of Water
CI	Cast Iron	GRP	Glass Reinforced Plastics
DH	Drill Hole	HYD	Hydrant
DI	Ductile Iron	inv/ IL	Invert Level
EW	Earthenware	MGA	Map Grid of Australia
FH	Fire Hydrant	obv/ OL	Obvert Level
GI	Galvanised Iron	OOA	Out of Area
GV	Gas Valve	PVC	Polyvinyl Chloride
IC	Inspection Cover	RMS	Roads and Maritime Services
KI	Kerb Inlet	SCL	Steel Cement (Mortar) Lined
LP	Light Pole	SGW	Salt Glazed Ware
MH	Manhole Cover	UTL	Unable to Locate
MS	Mild Steel	UTO	Unable to Open
PE	Polyethylene	UTS	Unable to Survey
PP	Power Pole	UTT	Unable to Trace
RC	Reinforced Concrete	CICL	Cast Iron Cement Lined
RL	Reduced Level	CONC	Concrete
SS	Stainless Steel	DICL	Ductile Iron Cement Lined
SV	Stop Valve	FIBG	Fibreglass
VC	Vitrified Clay	HDPE	High Density Polyethylene
VP	Vent Pipe	MSCL	Mild Steel Cement Lined
VS	Vent Shaft	PVC-M	Polyvinyl Chloride Modified
WI	Wrought Iron	PVC-U	Polyvinyl Chloride Unplasticised
WM	Water Meter	UGOH	Underground to Overhead Service

DISCLAIMER

GEOSCOPE HAVE MARKED UTILITIES WITHIN AN AREA SPECIFIED BY THE CLIENT. UTILITIES HAVE BEEN REFERENCED TO THE RELATIVE UTILITY OWNER DIAGRAMS; HOWEVER, ALL UTILITIES MAY NOT HAVE BEEN SHOWN. UTILITY LINES WERE INTERPOLATED BETWEEN POINTS THAT WERE GATHERED ON SITE BY UTILITY DETECTION METHODS AND MARKED BASED ON THE AUSTRALIAN STANDARD OF UTILITY CLASSIFICATION. UTILITY DESCRIPTIONS WERE LABELLED FROM MEASURED VISIBLE SERVICES ORIGINATING FROM CLASS (QL-A) POINTS AND/ OR FROM DIAGRAMMATIC RECORDS.

(QL-A) PIPE AND CONDUIT DIAMETERS INDICATED HAVE BEEN MEASURED AS ACCURATELY AS POSSIBLE FROM THE TOP OF AN OPEN MANHOLE. SOME PIPE WORK MAY HAVE SLIGHT VARIANCE IN DIAMETER DUE TO THE ABILITY TO MEASURE UNDER PIT LIDS OR EROSION AND/OR FORMED OR SHAPED BELLMOUTHS LARGER THAN THE ACTUAL INSIDE DIAMETER. FURTHER INVESIGATION MAYBE NECESSARY.

ONLY MANHOLE CONFIRMATION AND POTHOLED OR TRENCHED SERVICES AREAS ARE CLASS (QL-A). ALL OTHER AREAS ARE INTERPOLATED BETWEEN CLASS (QL-B) POINTS USING A VARIETY OF LOCATING METHODS INCLUDING EMI AND GPR.

ELECTRONIC DETECTION MUST NOT BE SOLELY USED TO DETERMINE LOCATION FOR CONSTRUCTION PURPOSES. THE ELECTRONIC (INDICATIVE) SUBSURFACE MEASUREMENTS MUST BE PROVEN BY PHYSICALLY SIGHTING THE ASSET. ELECTROMAGNETIC LOCATING WILL DETECT ALMOST ALL BURIED CONDUCTORS; BUT THERE ARE SOME OBJECTS THAT DO NOT RADIATE ANY DETECTABLE SIGNAL.

EXPOSING UNDERGROUND STRUCTURES BY POTHOLING USING HAND-HELD TOOLS OR NON-DESTRUCTIVE EXCAVATION METHODS TO DETERMINE THE PRECISE LOCATION AND EXTENT OF STRUCTURES BEFORE ANY MECHANICAL MEANS OF EXCAVATION IS RECOMMENDED.

SEWER LINES ARE SHOWN AS CLASS (QL-C) AND (QL-D) INFORMATION ONLY DRAWN FROM MANHOLE AND PIT INVESTIGATIONS USING FLEXI-ROD AND DRAIN DYE METHODS. FURTHER INVESTIGATION WILL BE NECESSARY.

THIS PLAN IS FOR DESIGN PURPOSES ONLY. IT DOES NOT REPLACE THE PLANS PROVIDED BY THE UTILITY ASSET OWNERS IN THE DESIGNATED WORK AREA THROUGH THE DIAL BEFORE YOU DIG (DBYD) SERVICE. CONTRACTORS ARE REMINDED OF THEIR OWN "DUTY OF CARE" AND SHOULD CONDUCT THEIR OWN "DIAL BEFORE YOU DIG" PRIOR TO EXCAVATION OR CONSTRUCTION.

THESE PLANS DO NOT GIVE APPROVAL TO DIG. PERMITS AND APPROVALS MUST BE OBTAINED FROM THE RELEVANT AUTHORITIES. THIS PLAN MUST BE PRINTED IN COLOUR. FAILURE TO DO SO WILL INVALIDATE THE INFORMATION SHOWN ON THIS PLAN.

GEOSCOPE UTILITY SERVICES LEGEND

	TELSTRA NETWORK	OPTIC UNDERGROUND	COMMUNICATIONS	NON-TELSTRA FIBRE
CLASS QL-A	TN(a)—TN(a)	OU(a)—OU(a)	T(a)—T(a)	OF(a)—OF(a)
CLASS QL-B	TN(b)—TN(b)	OU(b)—OU(b)	T(b)—T(b)	OF(b)—OF(b)
CLASS QL-C	TN(c)—TN(c)	OU(c)—OU(c)	T(c)—T(c)	OF(c)—OF(c)
CLASS QL-D	TN(d)—TN(d)	OU(d)—OU(d)	T(d)—T(d)	OF(d)—OF(d)
	ELECTRIC UNDERGROUND	LOW VOLTAGE	HIGH VOLTAGE	TRAFFIC SIGNALS
CLASS QL-A	EU(a)—EU(a)	LV(a)—LV(a)	HV(a)—HV(a)	TS(a)—TS(a)
CLASS QL-B	EU(b)—EU(b)	LV(b)—LV(b)	HV(b)—HV(b)	TS(b)—TS(b)
CLASS QL-C	EU(c)—EU(c)	LV(c)—LV(c)	HV(c)—HV(c)	TS(c)—TS(c)
CLASS QL-D	EU(d)—EU(d)	LV(d)—LV(d)	HV(d)—HV(d)	TS(d)—TS(d)
	WATER	WATER MAIN	WATER SERVICE	STORM WATER
CLASS QL-A	W(a)—W(a)	WM(a)—WM(a)	WS(a)—WS(a)	SW(a)—SW(a)
CLASS QL-B	W(b)—W(b)	WM(b)—WM(b)	WS(b)—WS(b)	SW(b)—SW(b)
CLASS QL-C	W(c)—W(c)	WM(c)—WM(c)	WS(c)—WS(c)	SW(c)—SW(c)
CLASS QL-D	W(d)—W(d)	WM(d)—WM(d)	WS(d)—WS(d)	SW(d)—SW(d)
	GAS MAIN	GAS SERVICE	HIGH PRESSURE GAS	RECYCLED WATER
CLASS QL-A	GM(a)—GM(a)	GS(a)—GS(a)	HG(a)—HG(a)	RW(a)—RW(a)
CLASS QL-B	GM(b)—GM(b)	GS(b)—GS(b)	HG(b)—HG(b)	RW(b)—RW(b)
CLASS QL-C	GM(c)—GM(c)	GS(c)—GS(c)	HG(c)—HG(c)	RW(c)—RW(c)
CLASS QL-D	GM(d)—GM(d)	GS(d)—GS(d)	HG(d)—HG(d)	RW(d)—RW(d)
	FIRE HYDRANT	FIRE SERVICE	SEWER MAIN	SEWER
CLASS QL-A	FH(a)—FH(a)	FS(a)—FS(a)	SM(a)—SM(a)	S(a)—S(a)
CLASS QL-B	FH(b)—FH(b)	FS(b)—FS(b)	SM(b)—SM(b)	S(b)—S(b)
CLASS QL-C	FH(c)—FH(c)	FS(c)—FS(c)	SM(c)—SM(c)	S(c)—S(c)
CLASS QL-D	FH(d)—FH(d)	FS(d)—FS(d)	SM(d)—SM(d)	S(d)—S(d)
		UNIDENTIFIED PIPE	UNKNOWN RADAR	
CLASS QL-A		TP(a)—TP(a)	TR(a)—TR(a)	
CLASS QL-B		TP(b)—TP(b)	TR(b)—TR(b)	
CLASS QL-C		TP(c)—TP(c)	TR(c)—TR(c)	
CLASS QL-D		TP(d)—TP(d)	TR(d)—TR(d)	

SURVEY SYMBOLS LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
•	Above Ground Joining Post	○	Unidentified Pole/ Power Pole
◪	Std 1.1m by 1.1m Main Pit		Speed Camera
•	Telephone Pole	✳	Seismic Test Shot
☒	Telephone Single Concrete Pit	UI	Unidentified Service
▦	Telephone Twin Concrete Pit		Underground Tank
☎	Mobile Phone Transmitter		AP/ DH/ GI/ Pipe or RMCB
▣	Optical Fibre Junction Box/ Pit	△	Bolt/ Dumpy/ Nail/ Spike
OFC	Optical Fibre Cable Marker	○	Peg/ Boundary Peg
▦	Telephone Triple Concrete Pit	■	RTA Control Mark/ PM SSM
TBX	Telephone Box Point	▲	Miscellaneous Survey Mark
TC	Telephone Cable Marker	↑	Broad Arrow
•	Telephone Distribution Pillar	⁵⁄₈	Default MX Survey Mark
▦	Gas Manhole Cover	▲	Trig Station
HP	High Pressure Gas Pipeline Marker	○	Drainage Junction Manhole
▦	Gas Meter	HWALL	End of Wingwall
HP	Gas Pipeline Marker	HFLOOD	Flood Height
▣	Gas Regulator Box	•	Gully Pit at Gutter Line
▲	Gas Test Point	HBOH	Bottom of Headwall
•	Gas Vent Pipe	HTOH	Top of Headwall
⊟	Distribution Fuse Point	FIBRE	Invert - 225 mm Diameter
⊟	Electricity Cable Junction Box/ Manhole	FIBRE	Invert - 1800 mm Diameter
⊟	Transformer Cabinet Centre	SUMP	Inlet to Sump
⊟	Underground Power Service Pillar	POP	Invert of Pipe
⊠	High Tension Pylon	▦	Top of Concrete Junction Box/ Petrol Pump
●	Garden Light	POP	Obvert of Pipe
✳	Pole - Light	⁵⁄₈	Invert of Subsoil Drain Outlet
♂	Pole - Power and Light	⁵⁄₈	Subsoil Drain Flush Point
♂	Pole - Power and Transformer	WVALVE	Water Level Point
△	Stay Anchor Pole		Recycled Water Air Valve
•	Stay Pole		Recycled Water Earth Terminal
⊷	Light with Outreach		Recycled Water Hydrant
○	Sewer Lamphole		Recycled Water Main Marker
○	Sewer Manhole		Recycled Water Meter
▰	Sewer Vent Pipe		Recycled Water Stop Valve
•	Bore Hole		Recycled Water Tap
•	MX Break String	△	Water Air Valve
▣	Red Light Camera	▦	Water Earth Terminal
	Camera - Flash Unit	WH	Water Fire Hydrant
▣	Gatic Cover Lid	□	Water Hydrant
TP	Geotech Test Point	WMM	Water Main Marker
⊟	Pot Hole - Null Level	M	Water Meter
PH	Pot Hole - With RL	▲	Water Stop Valve
HP	High Pressure Oil Pipeline Marker	●	Water Tap

0.80A
1.60B
EU(b)
1.60B

DENOTES THE DEPTH OF THE UNDERGROUND SERVICE DETERMINED USING LOCATING METHODS PERFORMED. QUALITY LEVELS INDICATED BESIDE THE DEPTH. IN THE EXAMPLE, THE DEPTH IS 800mm AND THE QUALITY LEVEL IS A.

EXAMPLE OF ELECTRICAL CABLES LOCATED BY QUALITY LEVEL QL-B WITH THE DEPTH INDICATING BETWEEN 500mm to 600mm BELOW THE SURFACE VIA ELECTROMAGNETIC LOCATING TRACE.

0.D
SW(d)
0.D

EXAMPLE OF STORM WATER PIPE PLOTTED BY QUALITY LEVEL QL-D WITH NO DEPTH INDICATION AS THE PIPE WAS NOT TRACED AND/OR UNABLE TO BE TRACED BETWEEN ACCESSIBLE STORM WATER PITS.

SCOPE OF WORKS

SCOPE OF WORKS FOR SUBSURFACE UTILITY INVESTIGATION

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Geoscope Utility Detection Services Pty Ltd
PO Box 362, Minto, NSW 2566
ABN 70 164 777 208
T: 1300 750 350
M: 0432 296 323
E: info@geoscopelocating.com.au
W: www.geoscopelocating.com.au

ISSUE	DETAILS OF AMENDMENT	BY	DATE
A	UTILITY INVESTIGATION	SB	21-06-2021

LOCATED BY	SW/ MW/ NP/ DT
SURVEYED BY	JA
DRAFTED BY	JA / SB / JM
CHECKED BY	SW/ MW/ NP/ DT
APPROVED BY	SW
LOCATED DATE	11-06-2021 TO 22-06-2021

NOTES

THIS PLAN MUST BE READ IN CONJUNCTION WITH ALL SHEETS FOR ADDITIONAL WARNINGS, NOTES AND LEGENDS.

TRACEABLE SERVICES WERE LOCATED USING ELECTROMAGNETIC AND GPR LOCATING METHODS.

THIS UTILITY SURVEY IS NOT FOR CONSTRUCTION. FURTHER POTHOLING INVESTIGATION AND VERIFICATION IS REQUIRED PRIOR TO EXCAVATION WORK.

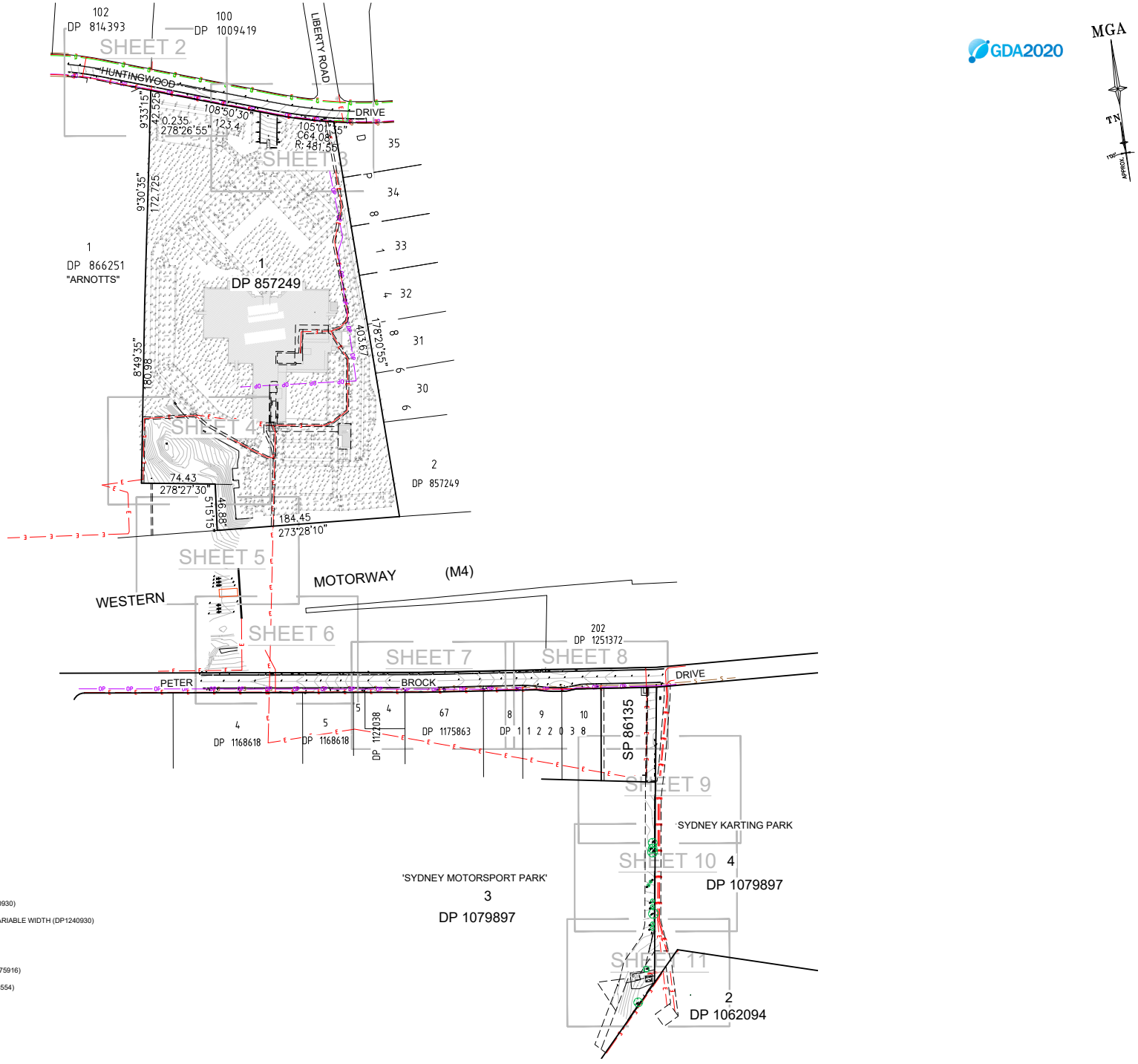
IT IS THE RESPONSIBILITY OF THE PERSON/S UNDERTAKING THE WORKS TO ADHREE TO ALL DUTIES OF CARE WHEN WORKING AROUND SERVICES MARKED BY GEOSCOPE UTILITY DETECTION SERVICES PTY LTD.

CLIENT

AW EDWARDS

DRAWING TITLE	UTILITY INVESTIGATION
SITE LOCATION	51 HUNTINGWOOD DRIVE, HUNTINGWOOD
HEIGHT DATUM	--
DRAWING NUMBER	20210621SUI
COORDINATE SYSTEM	--
DRAWING FILE NAME	20210621SUI - 51 HUNTINGWOOD DRIVE, HUNTINGWOOD
SHEET	16 OF 16
	A2

B2 – LTS Site Survey



LEGEND

BENCH MARK	▲
COMMS PIT	COM
TELSTRA PIT	TEL
OPTUS PIT	OP
ELECTRIC LIGHT POLE	ELP
ELECTRICITY BOX	EL
PIT WITH CONCRETE LID	CLID
PIT WITH METAL LID	MLID
STREET SIGN	SS
GRATED INLET PIT	GIP
KERB INLET PIT	KIP
STORMWATER MANHOLE	SWMH
STOP VALVE	SV
HYDRANT	HYD
WATER METER	WM
GATE	
VEHICLE CROSSING	(VC)
PRAM CROSSING	(PC)
GAS	G
OPTUS	OP
COMMUNICATION	C
WATER	W
SEWER	S
ELECTRICITY (U'GROUND)	E

NOTES

1. THE BOUNDARIES HAVE NOT BEEN MARKED ON GROUND
2. ALL AREAS AND DIMENSIONS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE BY NSW LAND REGISTRY SERVICES AND ARE SUBJECT TO FINAL SURVEY
3. ORIGIN OF LEVELS ON A.H.D. IS TAKEN FROM SSM103436 R.L. 51.855 (A.H.D.) IN LIDCO STREET
4. ORIGIN OF MGA2020 COORDINATES IS SSM54393 AT CNR HUNTINGWOOD DRIVE AND LIBERTY ROAD.
5. CONTOUR INTERVAL 0.5 m
6. CONTOURS ARE INDICATIVE ONLY. ONLY SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION
7. KERB LEVELS ARE TO TOP OF KERB UNLESS SHOWN OTHERWISE
8. NO INVESTIGATION OF UNDERGROUND SERVICES HAS BEEN MADE. SERVICES HAVE BEEN PLOTTED FROM RELEVANT AUTHORITIES INFORMATION AND HAVE NOT BEEN SURVEYED. ALL RELEVANT AUTHORITIES SHOULD BE NOTIFIED PRIOR TO ANY EXCAVATION ON OR NEAR THE SITE
9. SHOWS APPROXIMATE POSITION OF ROAD LINEMARKING AND IS INDICATIVE ONLY
10. BEARINGS SHOWN ARE MGA (MAP GRID OF AUSTRALIA) ADD APPROX. 1°00' FOR TRUE NORTH
11. INFORMATION SHOWN IN GREYSCALE SURVEYED BY SP SITE SETOUT PTY LTD 31-05-2021 DRAWING REF: SP1224-001.PRO AS PROVIDED BY AIRTRUNK PTY LTD

EASEMENTS

(A) RIGHT OF ACCESS 10 WIDE 1.5 WIDE (VIDE DP1122038)
(A1) PROPOSED EASEMENT FOR UNDERGROUND CABLES 9 WIDE (DP1280825)
(A2) PROPOSED EASEMENT FOR UNDERGROUND CABLES 10 WIDE & VARIABLE (DP1280825)
(B) EASEMENT FOR UNDERGROUND CABLES 1.2 WIDE (VIDE DP1122038)
(B1) PROPOSED EASEMENT FOR OVERHEAD POWERLINES VARIABLE WIDTH (DP1280825)
(C) EASEMENT FOR COMMUNICATION EQUIPMENT 7 WIDE (AN444554)
(C1) PROPOSED EASEMENT FOR ELECTRICITY EQUIPMENT VARIABLE WIDTH (DP1280825)
(D) EASEMENT FOR DRAINAGE OF WATER 2.9 WIDE (DP1122038)
(E) EASEMENT FOR PADMOUNT SUBSTATION 2.75 WIDE (DP1170648)
(E1) PROPOSED EASEMENT FOR OVERHEAD POWERLINE, UNDERGROUND CABLES 15.1 WIDE (DP1240930)
(E2) PROPOSED EASEMENT FOR UNDERGROUND CABLES & COMMUNICATION CABLES 6 WIDE & VARIABLE (DP1240930)
(E3) PROPOSED EASEMENT FOR UNDERGROUND CABLES 6 WIDE & VARIABLE (DP1240930)
(E4) PROPOSED EASEMENT FOR OVERHEAD POWERLINE, UNDERGROUND CABLES & COMMUNICATION CABLES VARIABLE WIDTH (DP1240930)
(F) RESTRICTION ON THE USE OF LAND (DP1170648)
(G) RESTRICTION ON THE USE OF LAND (DP1170648)
(J) EASEMENT FOR UNDERGROUND CABLES 2.5 WIDE & VARIABLE (DP1275916)
(K) EASEMENT FOR UNDERGROUND CABLES 2.5 WIDE & VARIABLE (DP1275916)
(L) EASEMENT FOR UNDERGROUND COMMUNICATION CABLES 6 WIDE (LIMITED IN STRATUM) (DP1275916)
(M) EASEMENT FOR UNDERGROUND COMMUNICATION CABLES 2.5 WIDE & VARIABLE (LIMITED IN STRATUM) (DP1275916)
(N) EASEMENT FOR UNDERGROUND CABLES VARIABLE WIDTH (LIMITED IN STRATUM) (DP1275916)
(O) EASEMENT FOR OVERHEAD POWERLINE, UNDERGROUND CABLES & COMMUNICATION CABLES 6 WIDE (AN444554)
(P) EASEMENT FOR OVERHEAD POWERLINES VARIABLE WIDTH (AN444554)
(Q) EASEMENT FOR SWITCHING STATION VARIABLE WIDTH (LIMITED IN STRATUM) (DP1275916)
(R) EASEMENT FOR INDOOR SUBSTATION VARIABLE WIDTH (LIMITED IN STRATUM) (DP1275916)
(S) EASEMENT FOR COMMUNICATIONS EQUIPMENT VARIABLE WIDTH (LIMITED IN STRATUM) (DP1275916)
(T) BENEFITTED BY EASEMENT TO DRAIN WATER 1.5 WIDE (DP815719)
(U) EASEMENT FOR INDOOR SUBSTATION VARIABLE WIDTH (LIMITED IN STRATUM) (DP1275916)
(V) EASEMENT FOR COMMUNICATIONS EQUIPMENT 12.75 WIDE (DP1275916)
(W) RIGHT OF ACCESS 1, 4.6 & 7.5 WIDE (LIMITED IN STRATUM) (DP1275916)

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SCALE 1: 2000 @ A1

Revision	Date	Description	Reference
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G	00/00/00	-	00
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A	00/00/00	-	00

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THIS IS THE PLAN REFERRED TO IN MY LETTER DATED:

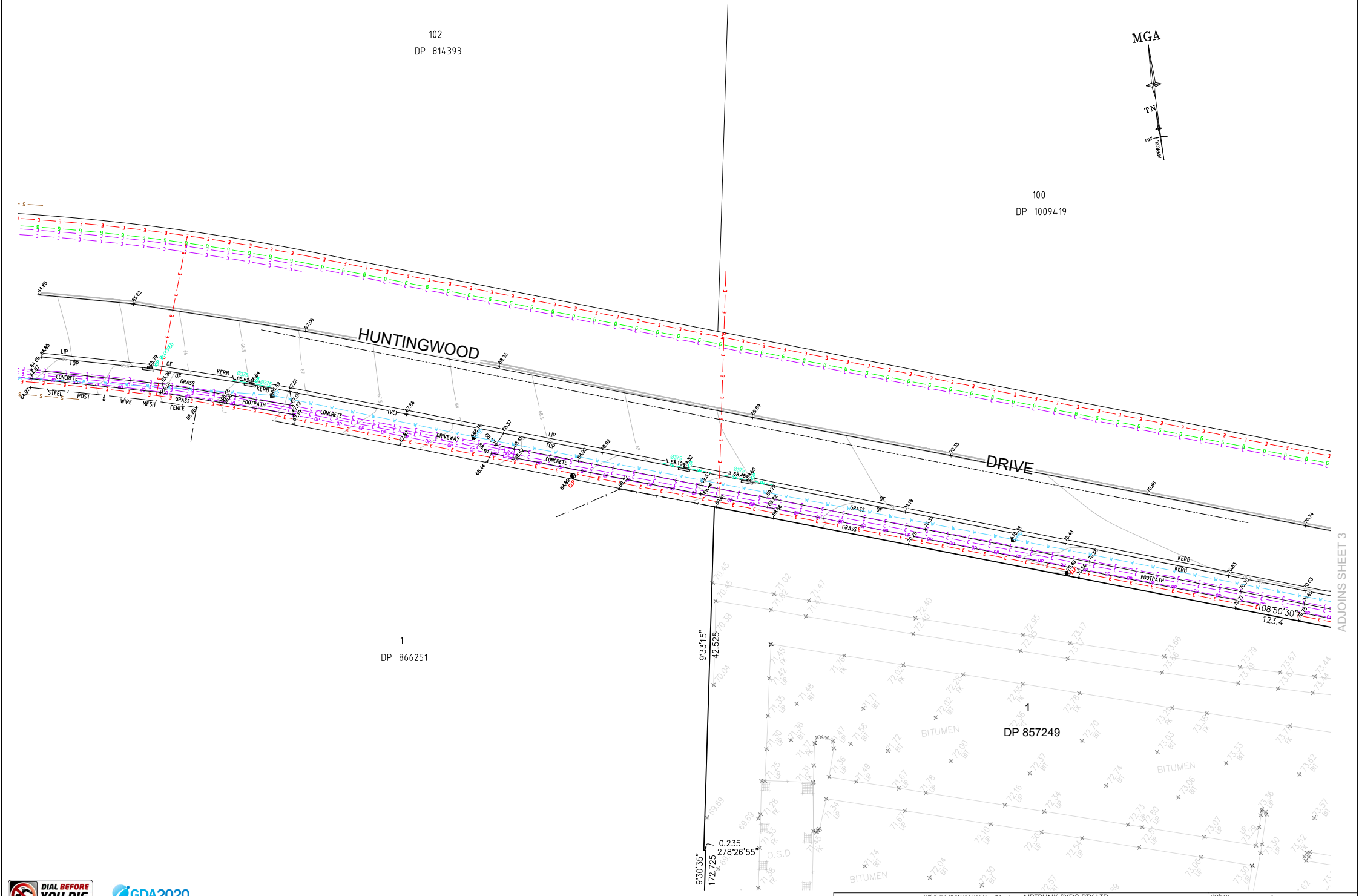
Registered Surveyor NSW

Client - AIRTRUNK SYD3 PTY LTD

Drawing title
PLAN OF DETAIL AND LEVELS OVER THE WESTERN MOTORWAY / PETER BROCK DRIVE AND SYDNEY MOTORSPORT PARK, EASTERN CREEK FOR 132Kv FEEDER

datum AHD
site Area N/A
LGA BLACKTOWN

reference number 51643 001DT
scale 1:2000 @A1
date of survey 21/02/2022
SHEET 1 OF 11



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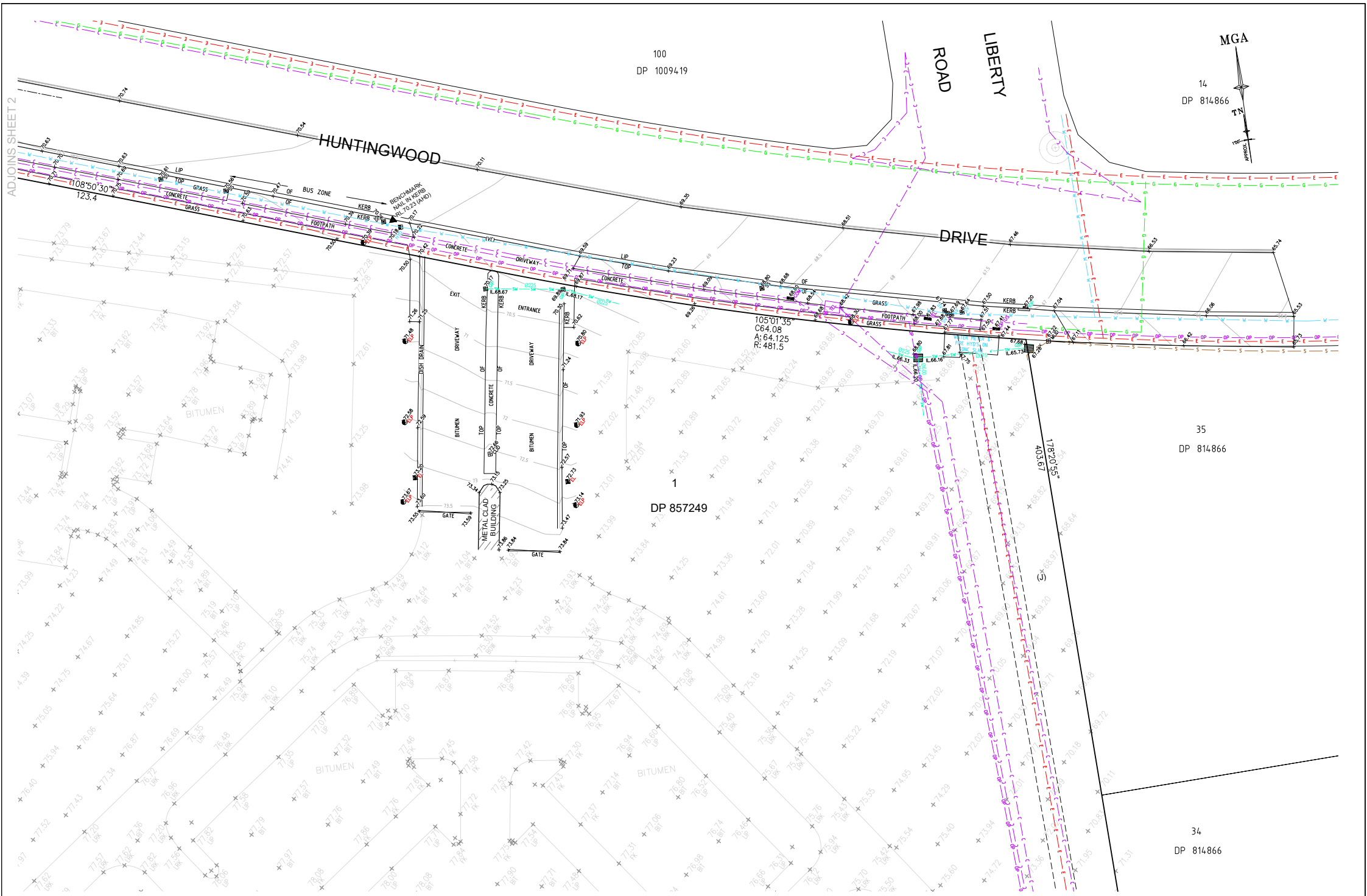

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site Area	N/A
LGA	BLACKTOWN
reference number	51643 001DT
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date of survey	21/02/2022
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LGA	BLACKTOWN
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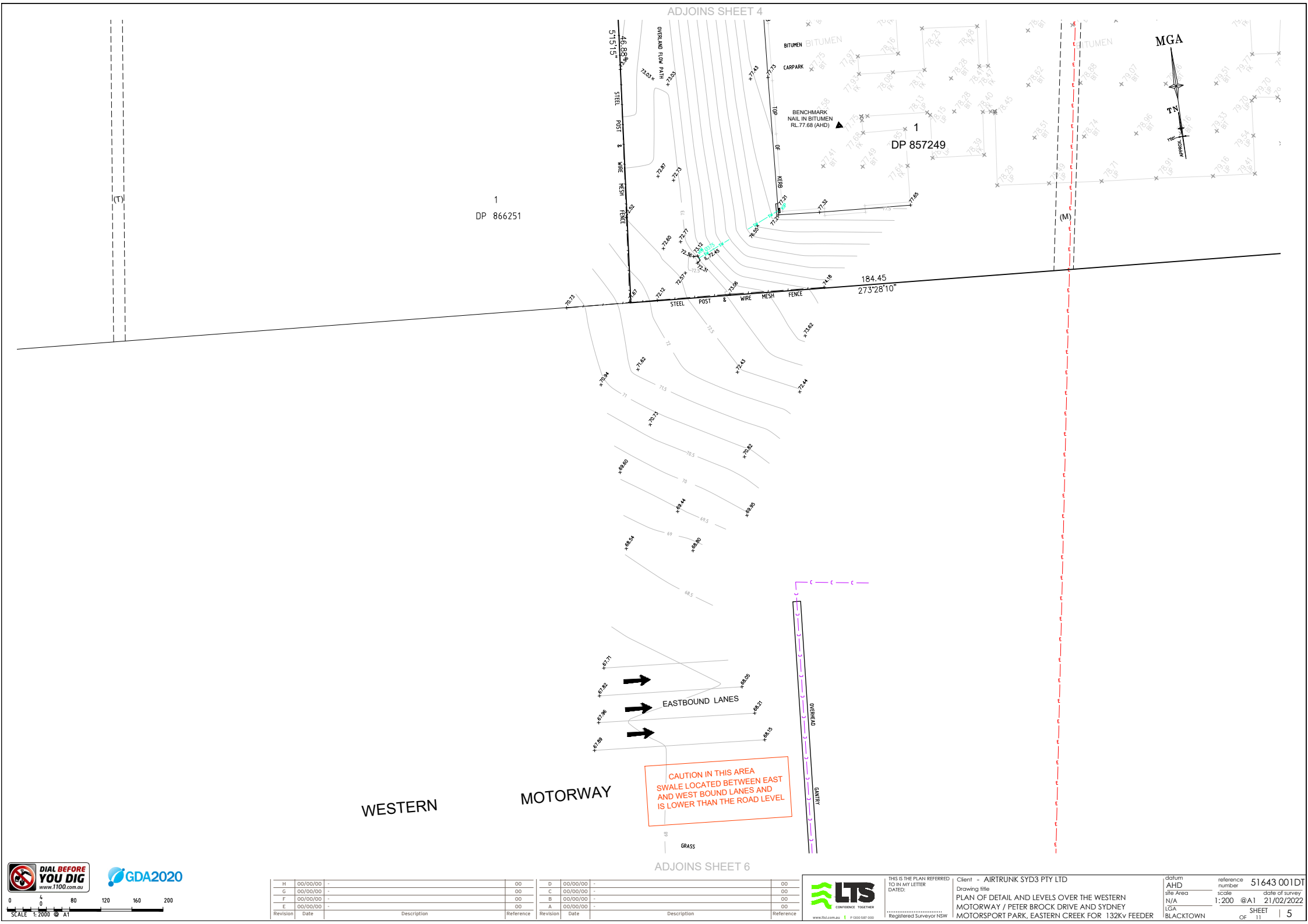
OF	11



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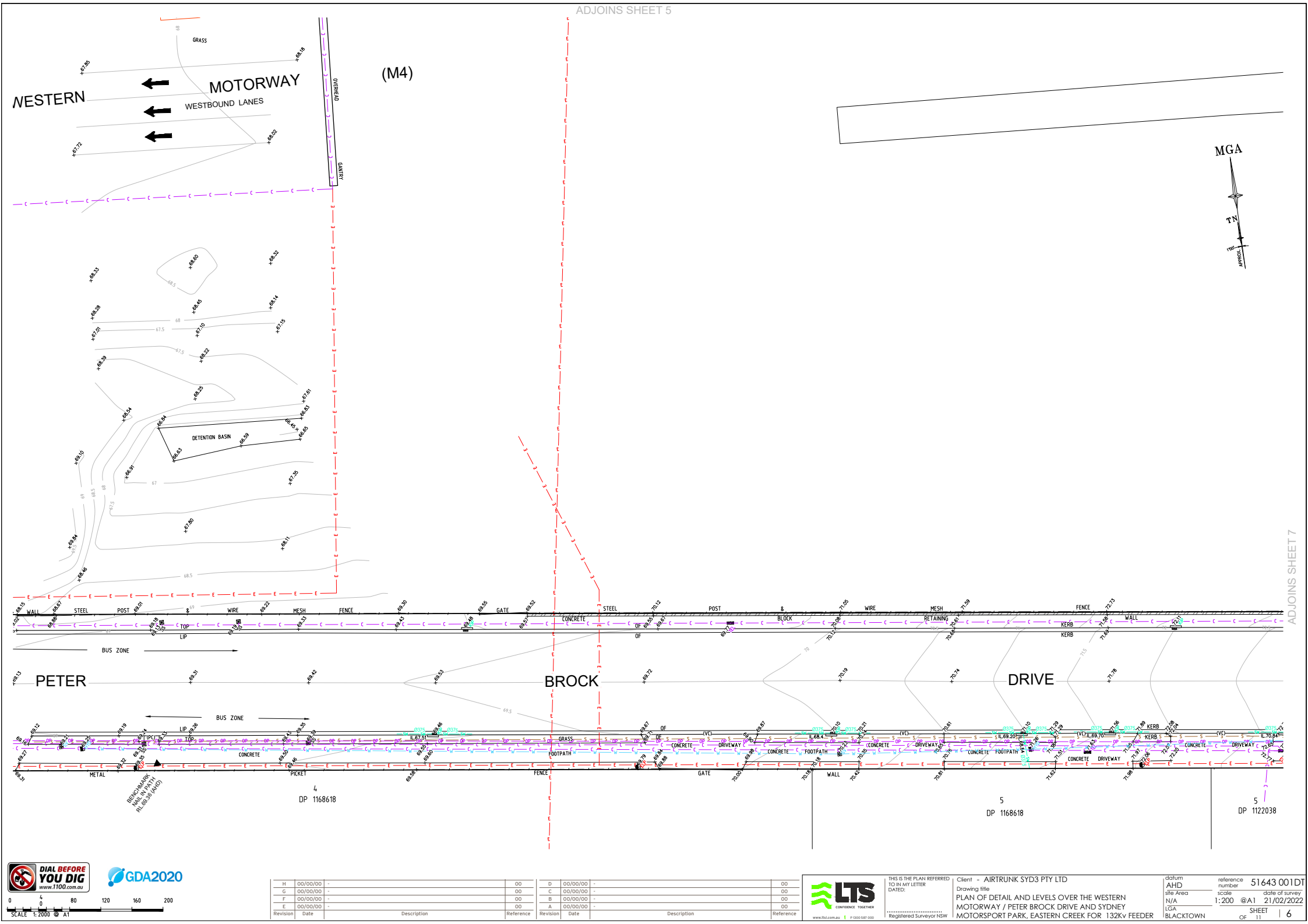
date of survey 21/02/2022
SHEET 5 OF 11

ADJOINS SHEET 5



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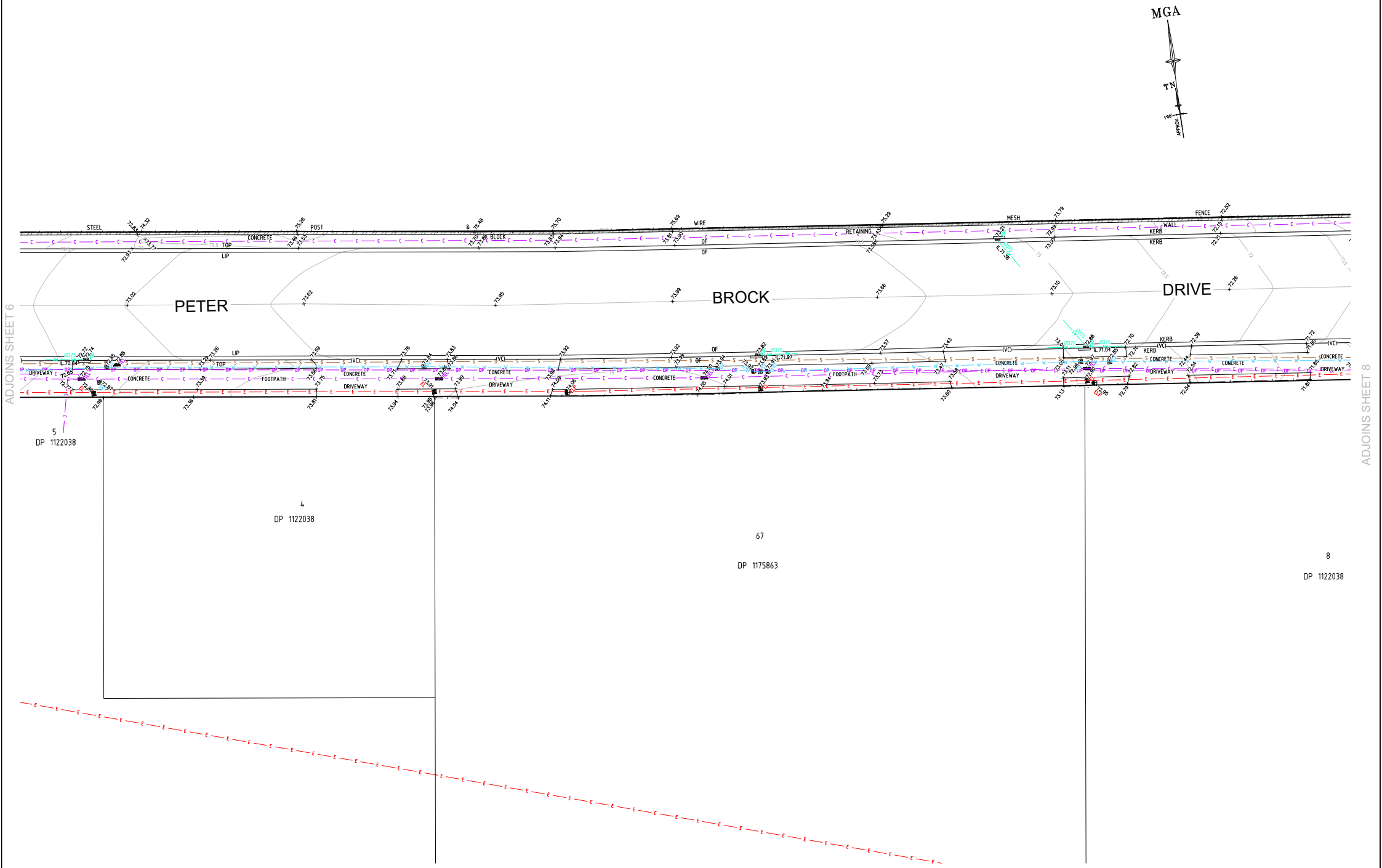
SHEET 6 OF 11



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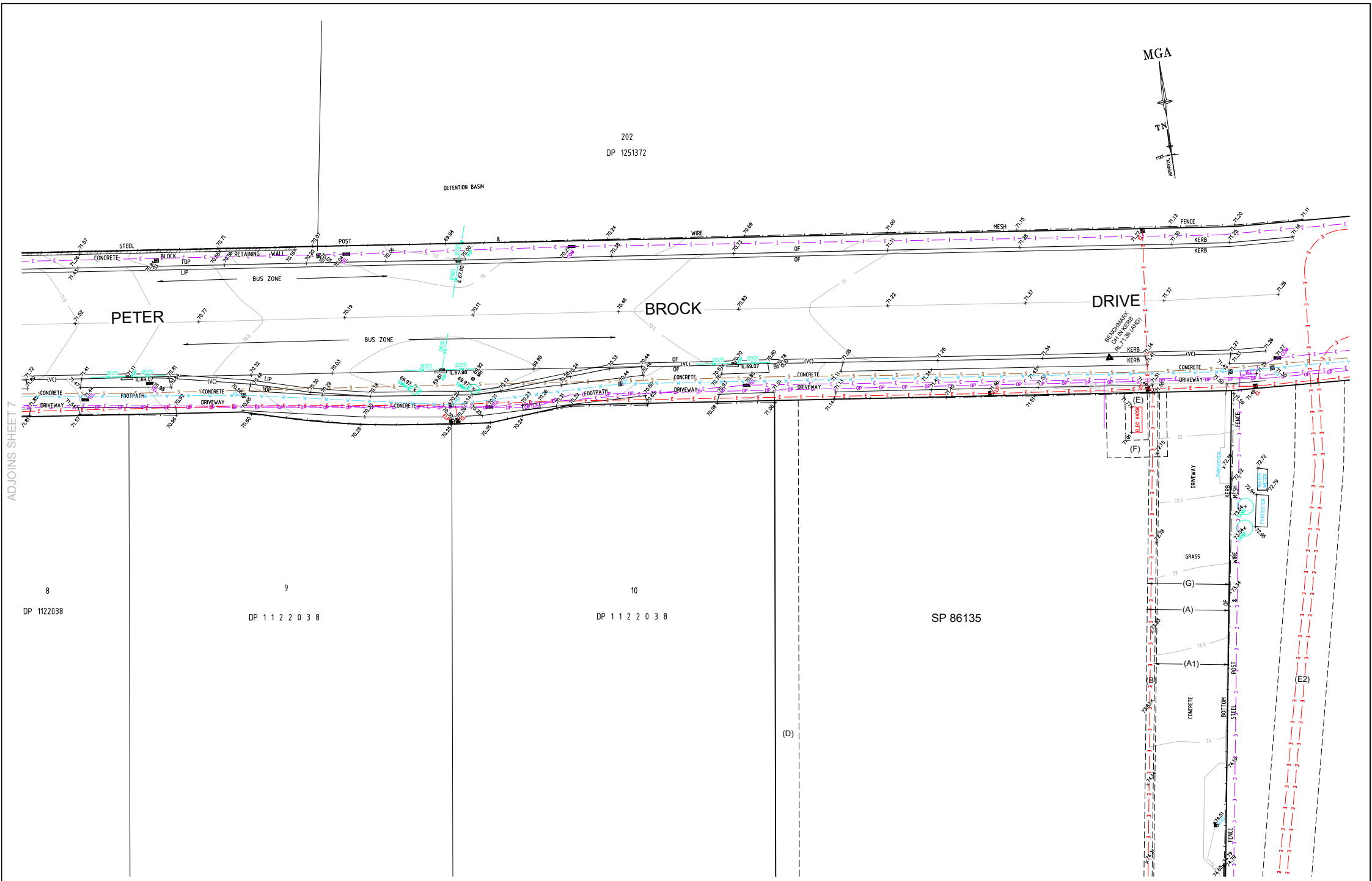
SHEET 7 OF 11



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LGA BLACKTOWN

reference number 51643 001DT
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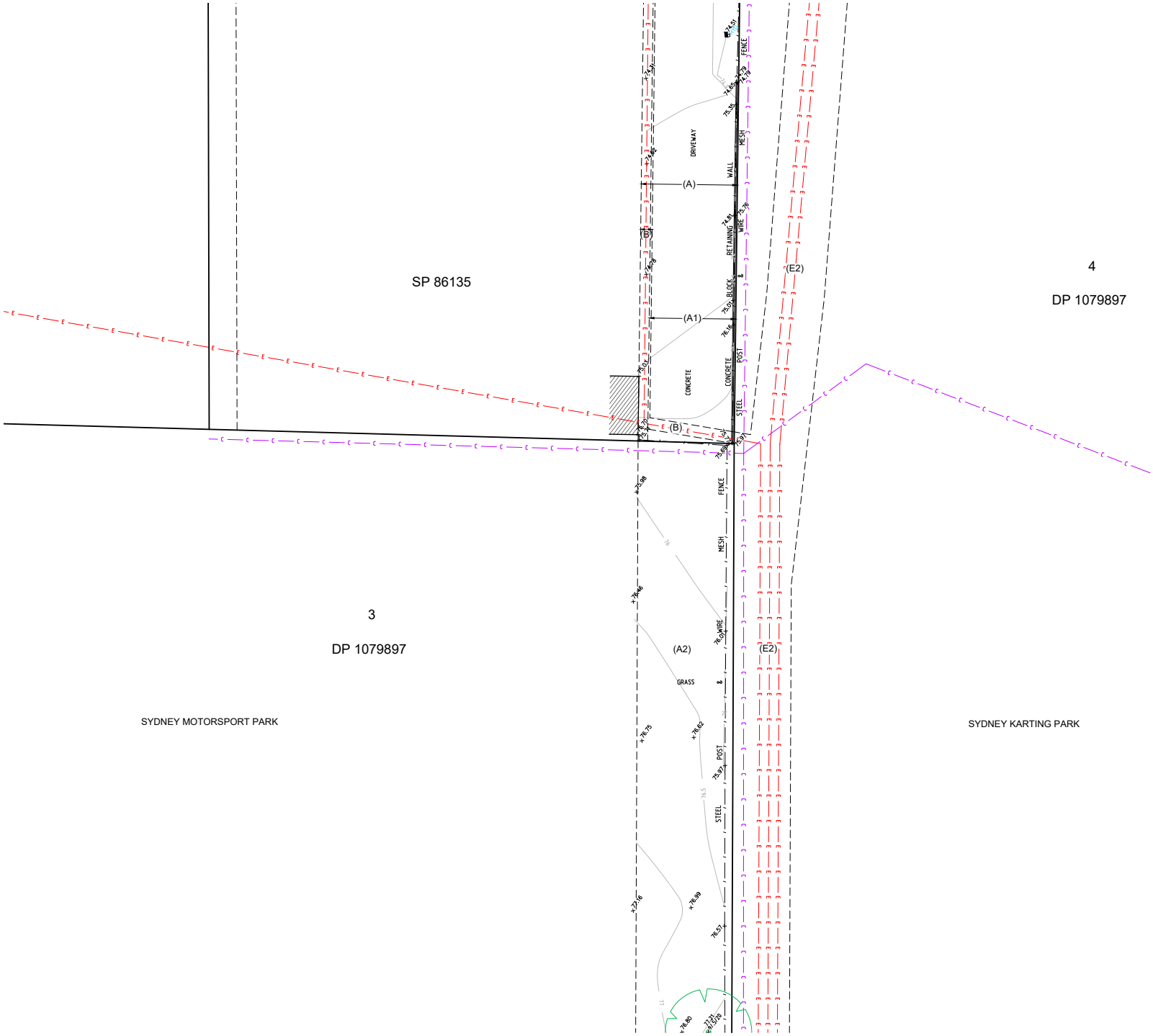
SHEET 8 OF 11

ADJOINS SHEET 8



ADJOINS SHEET 10

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datum AHD
site Area N/A
LGA BLACKTOWN

reference number 51643 001DT
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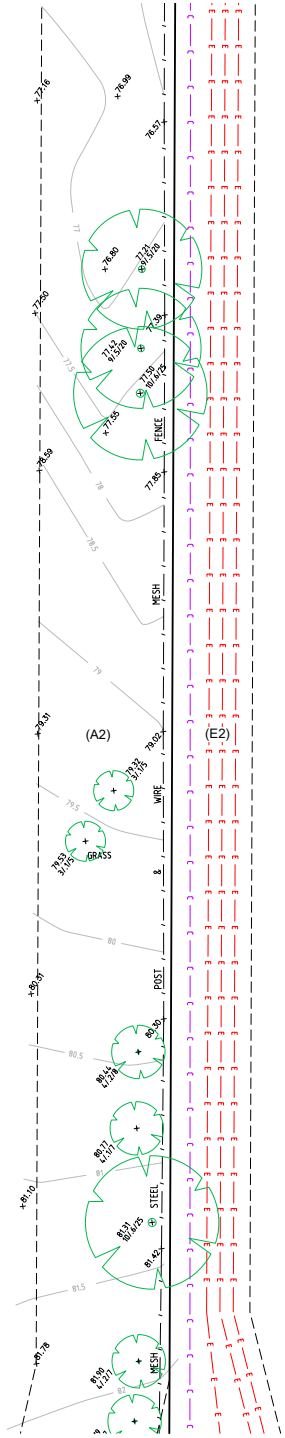
date of survey 21/02/2022
SHEET 9 OF 11

ADJOINS SHEET 9



MGA

TN

'SYDNEY MOTORSPORT PARK'

4

DP 1079897

SYDNEY KARTING PARK

4

DP 1079897

ADJOINS SHEET 11

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datum AHD

site Area N/A

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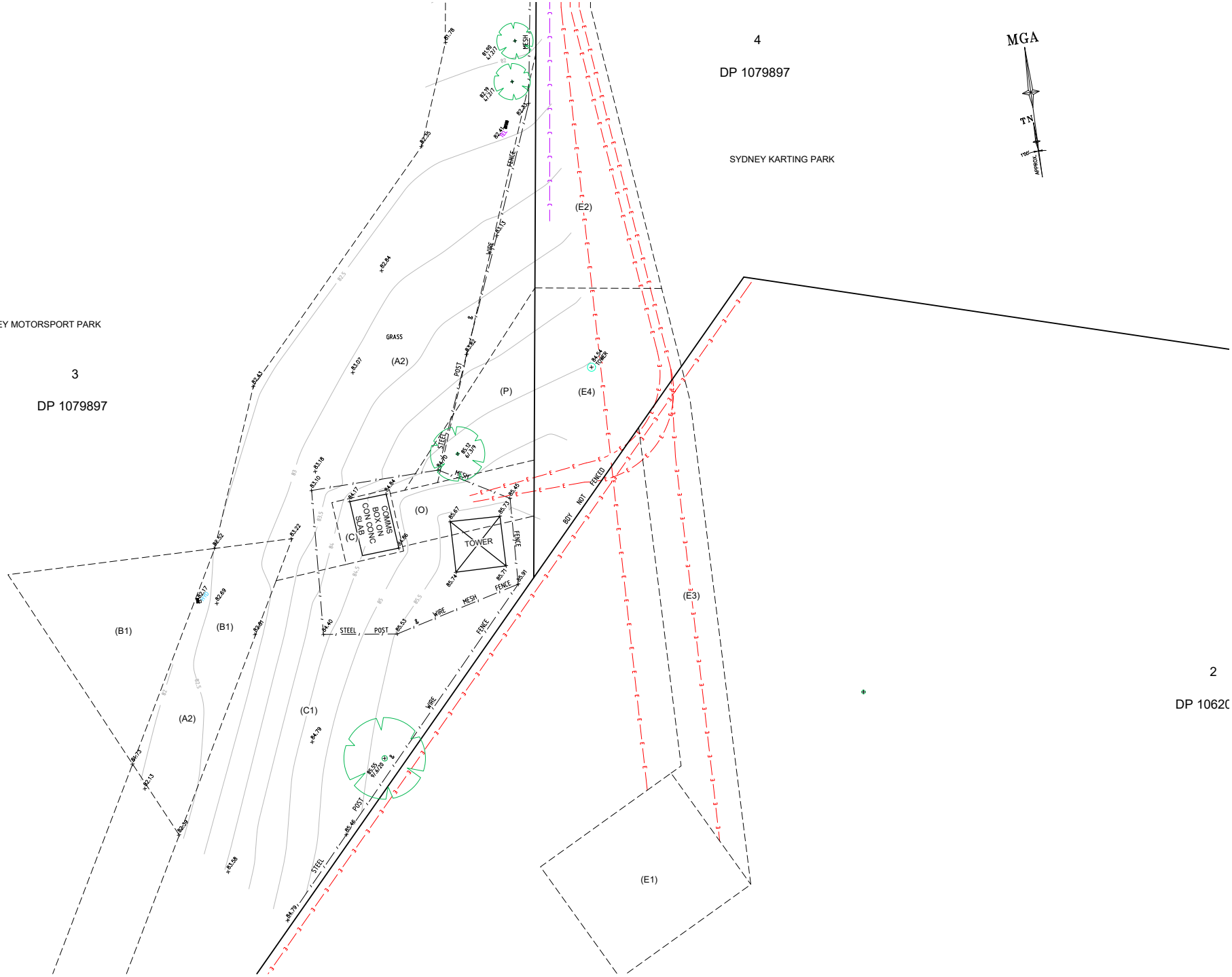
reference number 51643 001DT

scale 1:200 @A1

date of survey 21/02/2022

SHEET 10 OF 11

ADJOINS SHEET 10



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GDA2020

0 40 80 120 160 200
SCALE 1: 2000 @ A1

Revision	Date	Description	Reference
H	00/00/00	-	00
G	00/00/00	-	00
F	00/00/00	-	00
E	00/00/00	-	00

Revision	Date	Description	Reference
D	00/00/00	-	00
C	00/00/00	-	00
B	00/00/00	-	00
A	00/00/00	-	00

LTS CONFIDENCE TOGETHER
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THIS IS THE PLAN REFERRED TO IN MY LETTER DATED:

Registered Surveyor NSW

Client - AIRTRUNK SYD3 PTY LTD

Drawing title
PLAN OF DETAIL AND LEVELS OVER THE WESTERN MOTORWAY / PETER BROCK DRIVE AND SYDNEY MOTORSPORT PARK, EASTERN CREEK FOR 132Kv FEEDER

datum AHD
site Area N/A
LGA BLACKTOWN

reference number 51643 001DT
scale 1:200 @A1
date of survey 21/02/2022
SHEET 11 OF 11

B3 – Endeavour Supply Arrangement

SITE PLAN (1:1000)

- EXISTING POLE
- EXISTING TOWER
- EXISTING DUCT ROUTE
- TRENCH AND INSTALL 3 x 200mm & 2 x 100mm CONDUITS
- TRENCH AND INSTALL 4 x 125mm CONDUITS
- NEW EASEMENT BOUNDARY
- EXISTING 132kV OVERHEAD MAINS
- NEW CAT HOLE (INDICATIVE ONLY)
- NEW PADMOUNT SUBSTATION (AUX. SUPPLY)

1:1000 – A1

GENERAL NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT ENDEAVOUR ENERGY NETWORK STANDARDS AND DRAWINGS.
2. ATTENTION:
   PERMANENT SURVEY MARKS MAY EXIST IN THIS AREA. THESE ARE TO BE LOCATED BY A SURVEYOR PRIOR TO COMMENCEMENT OF WORK.
3. DO NOT PLACE ANY RELIANCE ON ANY QUANTITIES OR DIMENSIONS GIVEN IN THIS DRAWING QUANTITIES AND DIMENSIONS GIVEN ON THIS DRAWING ARE BASED ON DESIGN INFORMATION AND SITE CONDITIONS AT THE TIME OF DESIGN. AS QUANTITIES AND DIMENSIONS ARE SUBJECT TO CHANGE, THE BUILDER OF THIS PROJECT MUST CHECK ALL QUANTITIES AND DIMENSIONS ON SITE PRIOR TO TENDERING AND PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL PEG ALL PROPERTY BOUNDARIES AND ESTABLISH FINAL LEVELS PRIOR TO COMMENCEMENT OF WORKS.

EXCAVATION WORKS

1. TRENCHES SHALL BE SHORED WHERE NECESSARY FOR SAFETY AND SECURITY ADJACENT TO BUILDINGS, PAVEMENTS, STRUCTURE FOOTINGS, ETC. THE SHORING SHALL COMPLY WITH SAFEWORK NSW REQUIREMENTS.

132kV CONDUIT INSTALLATIONS

1. IT IS ASSUMED THAT CONDUITS ARE INSTALLED AFTER FINAL GROUND LEVELS ARE ESTABLISHED. CONDUIT COVER IS TO THE FINAL DESIGN LEVEL.
2. NOMINAL DEPTH OF COVER IS 750mm.
3. ALL CONDUITS ARE TO BE LAYED WITH COLLARS FACING TOWARDS THE DIRECTION OF PULL AS SPECIFIED ON THE ROUTE PLAN.
4. ALL CONDUIT JOINTS ARE TO BE SEALED WITH APPROVED PVC SOLVENT CEMENT SUPPLIED BY THE CONTRACTOR.
5. ALL CONDUITS TO BE PROVIDED WITH DRAW ROPE. DRAW ROPE IS TO BE TO ENDEAVOUR ENERGY STANDARDS.
6. ALL CONDUIT BENDS SHALL BE SMOOTH, FLAT AND TRUE, HAVE A MINIMUM RADIUS OF 6m UNLESS OTHERWISE SPECIFIED. ALL CONDUIT BENDS TO BE ENCASED IN 15MPa CONCRETE, MINIMUM 75mm THICKNESS AROUND THE OUTSIDE OF THE CONDUITS. THE ENCASEMENT SHALL EXTEND FOR 500mm BEYOND THE BEND.
7. THE CONTRACTOR'S REGISTERED SURVEYOR SHALL TAKE LEVELS OF THE EXISTING SURFACE, TOP AND BOTTOM OF THE TRENCH PRIOR TO BACKFILL, AND FINISHED SURFACE AT ADEQUATE INTERVALS, INTERSECTIONS AND CROSSING WITH OTHER SERVICES. CONTRACTOR SHALL ALSO SUBMIT ASSET DATA DETAILS AS PER SAD 004.
12. ALL CONDUITS SHALL BE PROVEN INTERNALLY WITH AN APPROVED MANDREL TEST. THE MANDREL TEST IS TO BE PERFORMED BY THE CIVIL CONTRACTOR AND WITNESSED BY THE ENDEAVOUR ENERGY'S INSPECTOR.

CONCRETE ENCASEMENT AROUND ASSETS

1. THE VERTICAL CROSSING DISTANCE FROM NEW TRANSMISSION CONDUITS TO OTHER SERVICES SHALL NOT BE LESS THAN 300mm. MECHANICAL PROTECTION OF 15MPa 75mm THICK CONCRETE SHALL BE USED TO COMPLETELY ENCASE ALL TRANSMISSION CONDUITS ASSOCIATED WITH THE CROSSING, FOR A MIN. DISTANCE OF 500mm EITHER SIDE OF THE CROSSING.

COMPACTED BACKFILL

1. UNLESS SPECIFICALLY DIRECTED OTHERWISE, BACKFILL MATERIAL MUST BE COMPOSED OF SELECTED EXCAVATED MATERIAL WHICH IS FREE FROM ALL EXTRANEOUS MATERIALS LIKELY TO IMPEDE COMPACTION AND CAUSE FUTURE SUBSIDENCE, FOR EXAMPLE GRASS SODS, TREE ROOTS, CLODS OF CLAY AND STONES OVER 75mm IN GREATEST DIMENSION ARE NOT PERMITTED.
2. WHERE THE ORIGINAL SOIL IS INSUFFICIENT TO FULLY BACKFILL, ADDITIONAL MATERIAL OF SIMILAR ELECTRICAL RESISTIVITY TO THE ORIGINAL TO BE USED.

14:1 SAND/ CEMENT BEDDING

1. STANDARD 14:1 SAND/ CEMENT BEDDING MATERIAL TO HAVE A THERMALLY RESISTIVITY (g) OF 1.0 °Cm/W OR LESS, MOISTURE EXTRACTED. A "FATTY" SAND/CEMENT MIX OF 14:1 WILL GENERALLY PROVIDE g = 0.8 TO 0.9 °Cm/W MOISTURE EXTRACTED.
2. MECHANICAL PROTECTION SHALL BE INSTALLED IMMEDIATELY OVER THE 14:1 SAND/ CEMENT MIX.

JOINT BAYS

1. FOR JOINT BAY CONSTRUCTION REFER TO ENDEAVOUR ENERGY DRAWING 507644 AND CLAUSE 5.16 IN MDI 0051 ' UNDERGROUND TRANSMISSION MAINS DESIGN'.
2. DEPTH OF JOINT BAY WILL DEPEND ON DEPTH OF INSTALLED CONDUITS.
3. THE STRUCTURE DESIGN OF THE JOINT BAY HAS TO BE CERTIFIED AND APPROVED BY A STRUCTURAL ENGINEER.
4. JOINT BAYS MUST BE INSTALLED SUCH THAT THE FLOOR IS HORIZONTAL FOR THE LENGTH OF THE JOINT BAY, EVEN WHERE THE JOINT BAY IS CONSTRUCTED ON A SLOPE.

CAT HOLES

1. FOR CAT HOLE CONSTRUCTION REFER TO ENDEAVOUR ENERGY DRAWING 297280 AND CLAUSE 5.18 IN MDI 0051 ' UNDERGROUND TRANSMISSION MAINS DESIGN'.
2. CAT HOLES MUST BE A MINIMUM OF 3000m IN LENGTH, AND A TRENCH WIDTH OF MINIMUM 1750mm, OR 500mm FROM THE EDGE OF THE TRENCH TO THE NEAREST OUTER CONDUIT, WHICHEVER IS GREATER. THE CONDUITS MUST HAVE A MINIMUM CLEARANCE TO THE BOTTOM OF THE TRENCH OF 250mm.
3. CONDUITS TO BE CONTINUOUS FOR THE ENTIRE LENGTH OF THE CAT HOLE.
4. DEPTH OF CAT HOLE WILL DEPEND ON DEPTH OF INSTALLED CONDUITS.

CABLE AND CONDUIT ROUTE IDENTIFICATION

1. WHERE CABLES/ CONDUITS ARE PROPOSED OFF-ROAD, THE ROUTE MUST BE LABELLED BY MEANS OF 1345mm X 110mm X 90mm STEEL REINFORCED CONCRETE POSTS (REFER TO ENDEAVOUR ENERGY DRAWING No. 303319 AND STOCK CODE 1553338). THE POSTS MUST BE PAINTED YELLOW (IF SANDSTONE COLOUR OXIDE IS NOT INCORPORATED INTO THE CONCRETE) AND HAVE THE WARNING "ENDEAVOUR ENERGY CABLES IN THE AREA. FOR LOCATIONS PHONE 131 081" INTO THE FACE OF THE POST. THE POSTS MUST BE LOCATED AT INTERVALS OF APPROXIMATELY 150m ALONG THE FEEDER ROUTE AND WHEREVER SIGNIFICANT ROUTE DEVIATIONS OCCUR.

CABLE HAULING

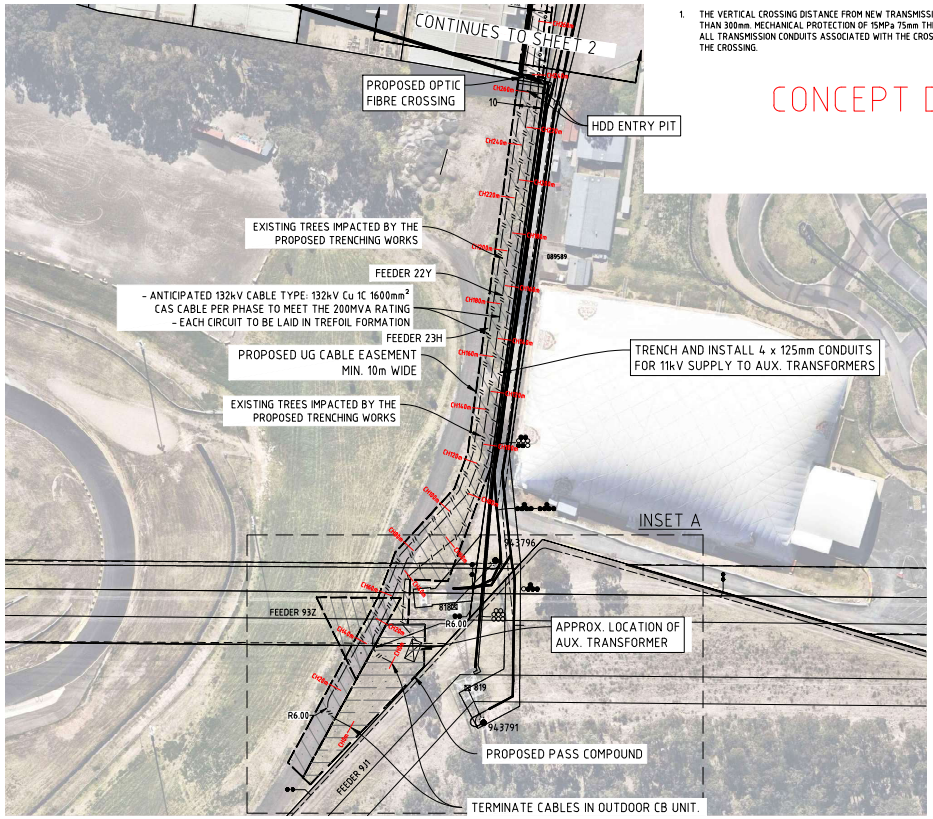
1. DURING CABLE INSTALLATION POLYWATER LUBRICANT 'J' MUST BE USED TO REDUCE FRICTION (COEFFICIENT OF FRICTION 0.2)
2. THE CONTRACTOR MUST MONITOR THE PULLING TENSION DURING INSTALLATION OF 132kV CABLES USING A DYNAMOMETER AND PROVIDE RECORDS OF;
   - PULLING TENSION Vs DISTANCE,
   - TIME Vs DISTANCE,

   ON COMPLETION OF EVERY CABLE PULL.
3. DURING CABLE WORKS, APPROPRIATE SAFE WORKING PRACTICES SHALL BE IMPLEMENTED ON-SITE TO AVOID THE POSSIBILITY OF PERSONNEL BEING EXPOSED TO DANGER FROM INDUCE OR TRANSFERRED CABLE SHEATH VOLTAGES.

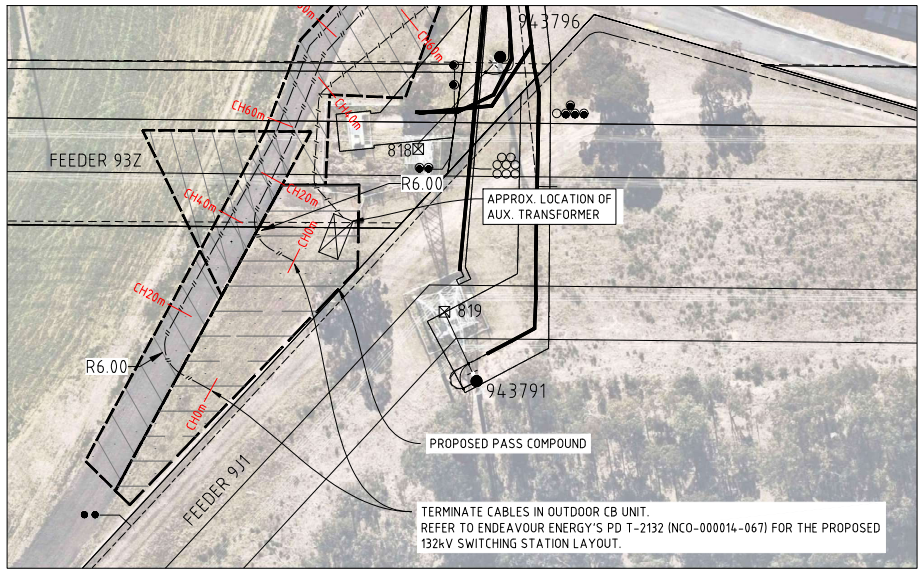
NETWORK ACCESS CONSTRAINT

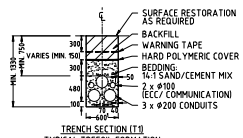
1. THE OUTAGES SHOULD ONLY BE DURING LIGHT LOAD SHOULDER PERIODS, WHICH IS GENERALLY LATE MARCH TO MAY AND AUGUST TO EARLY OCTOBER. FAST RECALL IS REQUIRED FOR THESE FEEDER WORKS AND A WORK METHOD SHOULD BE USED TO THAT OFFER THE BEST EMERGENCY RECALL TIME.

CONCEPT DESIGN ONLY - NOT FOR CONSTRUCTION

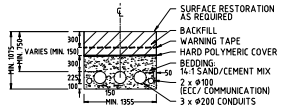


INSET A (1:500)





TRENCH SECTION (T1)
TYPICAL TREFOIL FORMATION
INTS)
TYPICAL 132kV TRENCH CROSS SECTION
TREFOIL FORMATION
NOT WITHIN ROAD WAYS
REFER TO EE DWG. 290689
1. WHERE SHORING OF A TRENCH IS REQUIRED DUE TO TO THE DEPTH OF THE TRENCH, THE WIDTH MAY BE INCREASED AS REQUIRED.



TRENCH SECTION (T1)
TYPICAL FLAT FORMATION
INTS)
TYPICAL 132kV TRENCH CROSS SECTION
FLAT FORMATION
NOT WITHIN ROAD WAYS

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AMENDMENTS	DRAFT No.	DATE	CHK'D	DRWN
ORIGINAL ISSUE	A			
DELETION OF SWITCHING STATION EXTENSION AND 132kV UG MAINS TO PASS COMPOUND.	B	05/11/2021	HC	SWC / HC
MODIFICATION TO 132kV SWITCHROOM/ 132kV SUBSTATION LAYOUT	C	02/06/2022	HC	BW / HC

CONCEPT DESIGN ISSUED FOR TENDER PURPOSES

TEMPLATE VERSION No.5.20

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REFERENCE DRAWING'S		WORK ORDERS	
		GENERAL	
		OVERHEAD	
		UNDERGROUND	
		SUBSTATIONS	

CAMS File No.	
AM PROJ. No.	TBA
HV SWITCHING	
EE DEPOT	
EE REGION	
HV OP DIAG	
LOCAL GOV AREA	BLACKTOWN

ORIGINAL SCALE	1:1000
DRAWN	SWC
DATE	22/09/2021
CH'D	
DESIGN	HC

DO NOT SCALE
DIMENSIONS IN METRES

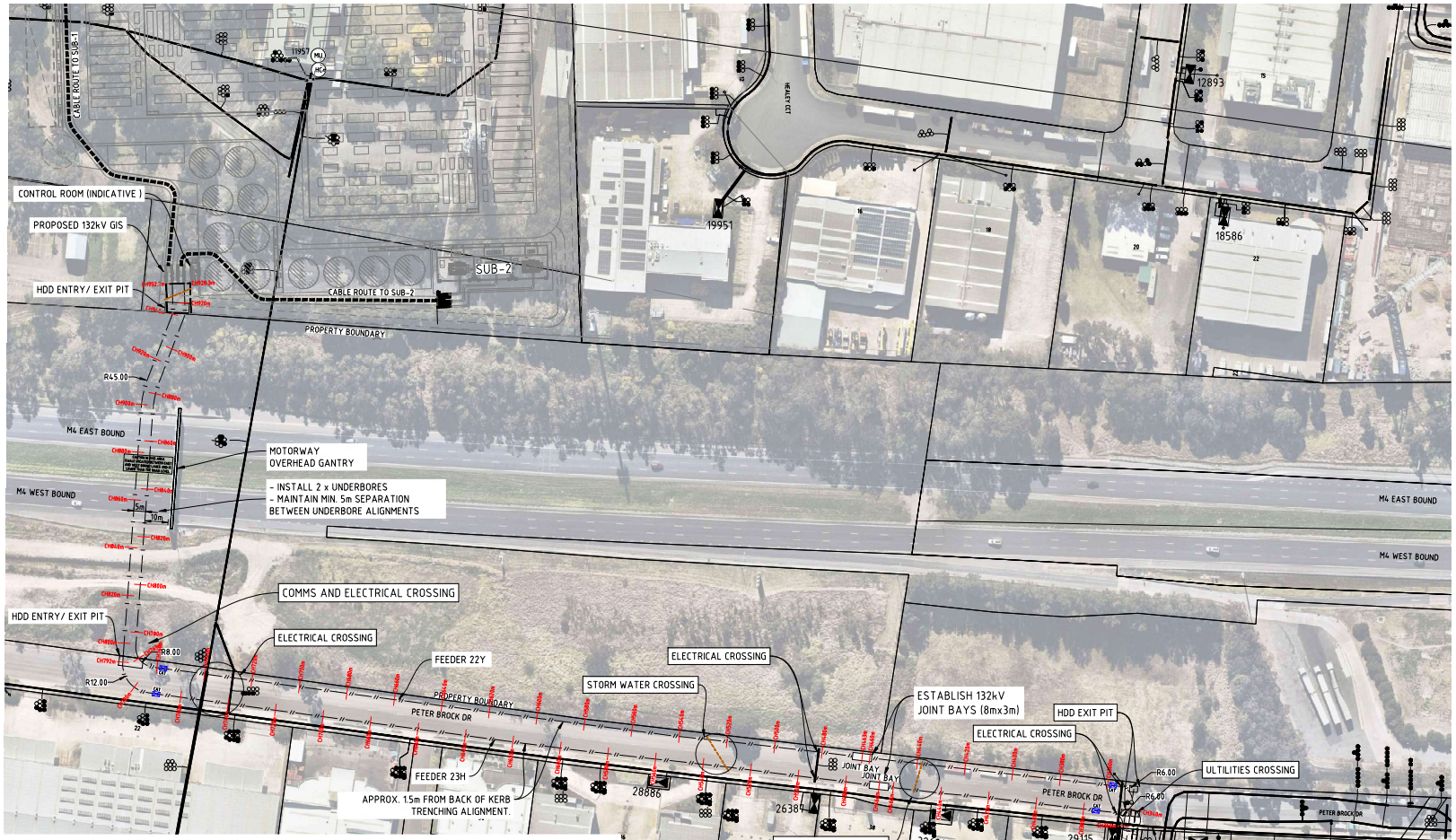
[redacted]
HUNTINGWOOD DATA CENTRE
SUPPLY ARRANGEMENT
132kV DUAL CABLE FEEDERS
CONCEPT DESIGN

Endeavour Energy

A1 ELEC-001 C

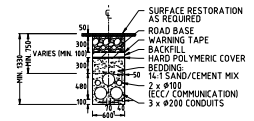
SHEET No 1 OF 5 SHEETS

90061

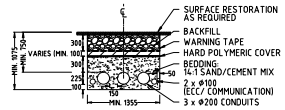


SITE PLAN (1:1000)

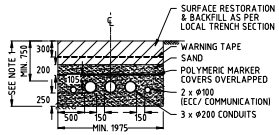
- EXISTING POLE
- EXISTING PADMOUNT SUBSTATION
- EXISTING DUCT ROUTE
- TRENCH AND INSTALL 3 x 200mm & 2 x 100mm HD CONDUITS
- UNDERBORE AND INSTALL 3 x 250mm & 2 x 140mm PE CONDUITS
- UNDERBORE AND INSTALL 4 x 125mm CONDUITS
- NEW EASEMENT BOUNDARY
- 132kV JOINT BAY (8m x 3m)
- NEW CAT HOLE (INDICATIVE ONLY)



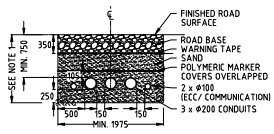
TRENCH SECTION (T2)
TYPICAL TREFOIL FORMATION
(NTS)
TYPICAL 132kV TRENCH CROSS SECTION
TREFOIL FORMATION
WITHIN ROAD WAYS (OTHER THAN RMS ROAD)
REFER TO EE DWG. S07641
1. WHERE SHORING OF A TRENCH IS REQUIRED DUE TO TO THE DEPTH OF THE TRENCH, THE WIDTH MAY BE INCREASED AS REQUIRED.



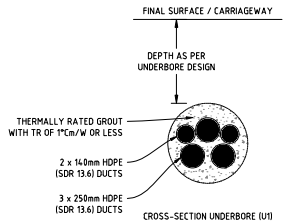
TRENCH SECTION (F2)
TYPICAL FLAT FORMATION
(NTS)
TYPICAL 132kV TRENCH CROSS SECTION
FLAT FORMATION
WITHIN ROAD WAYS (OTHER THAN RMS ROAD)



CROSS SECTION - NEW CAT HOLE
(NTS)
TYPICAL CAT HOLE CROSS SECTION
NOT WITHIN ROAD WAYS
1. DEPTH OF THE CAT HOLE WILL DEPEND ON THE DEPTH OF THE INSTALLED CONDUITS.



CROSS SECTION - NEW CAT HOLE
(NTS)
TYPICAL CAT HOLE CROSS SECTION
WITHIN ROAD WAYS (OTHER THAN RMS ROAD)
1. DEPTH OF THE CAT HOLE WILL DEPEND ON THE DEPTH OF THE INSTALLED CONDUITS.



CROSS-SECTION UNDERBORE (U1)
TYPICAL

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AMENDMENTS	DRAFT No. 01	CHK'D	DRWN
A ORIGINAL ISSUE			
B 05/11/2021	DELETION OF SWITCHING STATION OPTION AND 132kV UG MAINS TO PASS COMPOUND.	HC	SWC / HC
C 02/06/2022	MODIFICATION TO 132kV SWITCHROOM/ 132kV SUBSTATION LAYOUT	HC	BW / HC

CONCEPT DESIGN
ISSUED FOR TENDER
PURPOSES

TEMPLATE VERSION No.5.20
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REFERENCE DRAWING'S		WORK ORDERS	
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		UNDERGROUND	
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CAMS File No.		
AM PROJ. No.	TBA	
HV SWITCHING		
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LOCAL GOV AREA	BLACKTOWN	

ORIGINAL SCALE	1:1000
DRAWN	SWC
DATE	22/09/2021
CH'D	
DESIGN	HC

DO NOT SCALE
DIMENSIONS IN METRES

HUNTINGWOOD DATA CENTRE
SUPPLY ARRANGEMENT
132kV DUAL CABLE FEEDERS
CONCEPT DESIGN

Endeavour Energy

A1 ELEC-001 c

SHEET No 2 OF 5 SHEETS

90061