



Infrastructure, Delivery, Management and Staging Plan

16-20 Carrington Road, 2-12 Middleton
Avenue, 4-6 Fishburn Crescent & 25-31
Sexton Avenue, Castle Hill

Issue A

Prepared For ARADA

Date: Friday, 19 September 25

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REVISION TABLE

Revision	Date	Issue Description	Issued by	Approved by	Signed
P01	19.02.2025	Preliminary Issue	PE	SELH	
P02	01.07.2025	Revised Preliminary Issue	SELH	SELH	
A	19.09.2025	Issue to Client	SELH	SELH	

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1 Executive Summary

1.1 Background

The aim of this report is to provide an outline of the Infrastructure Delivery, Management and Staging Plan considered for this project.

In particular this report also aims to satisfy the requirements as outlined in the NSW Department of Planning and Environment Planning Secretary's Environmental Assessment Requirements for in-fill affordable housing, in particular Item 21. Infrastructure Requirements and Utilities.

The purpose of this report is to provide the existing services of the public assets prior to the work on the proposed development. This report provides a referral service to access vital plans and information, including telecommunications companies, who have registered their underground infrastructure assets

2 Introduction

2.1 Brief

S&G Consultants Pty Ltd (SGC) have been engaged by ARADA to prepare an Infrastructure Delivery, Management and Staging Report in support of a Development Application for the proposed development at 16-20 Carrington Road, 2-12 Middleton Avenue, 4-6 Fishburn Crescent & 25-31 Sexton Avenue, Castle Hill.

The following tasks were carried out to enable the completion of this report: -

- Applying for the Dial Before You Dig NSW; and
- This report was compiled to describe the existing services around the subject site.

2.2 Aims

In consultation with relevant service providers this report will:

- Assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site.
- Identify any infrastructure required on-site and off-site to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained.
- 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.

2.3 Reference Documents

This assessment has been based on consultation with the following infrastructure authorities:

Table 2.1 Infrastructure Authorities

Referral ID (Seq.no)	Assessment	Phone
251725134	Endeavour Energy	(02) 9853 4161
251725139	Jemena Gas North	1300 880 906
251725142	Metro Trains Sydney Pty Ltd	0437 574 675
251725132	NBN Co NswAct	1800 687 626
251725137	Nextgen NCC - NSW	1800 262 663
251725141	Optus and or Uecomm Nsw	1800 505 777
251725133	Sydney Metro	(02) 8265 9400
251725138	Sydney Wate	13 20 92
251725140	Telstra NSW Central	1800 653 935
251725136	The Hills Shire Council	(02) 9843 0555
251725135	Transport for NSW	(02) 9983 3030

The above table is a list of asset owners with underground infrastructure located in and around the subject site. It is the responsibility of the contractor to identify the presence of these assets on-site. Plans issued by Members are indicative only unless specified otherwise.

Note: not all asset owners are registered with BYDA. You must contact asset owners not listed here directly.

2.4 The Development

2.4.1 Site Location

The proposed development is located at 16-20 Carrington Road, 2-12 Middleton Avenue, 4-6 Fishburn Crescent and 25-31 Sexton Avenue Castle Hill legally described as DP247890, refer to Figure 2.1 Site Location below. The site is located within the Local Government Area (LGA) of the Hills Shire Council.

The total site area is 1.42ha, bounded by Carrington Road to the North, Fishburn Crescent to the South, Middleton Avenue to the West and adjoining properties, Sexton Avenue to the East. The site is currently occupied by residential buildings.

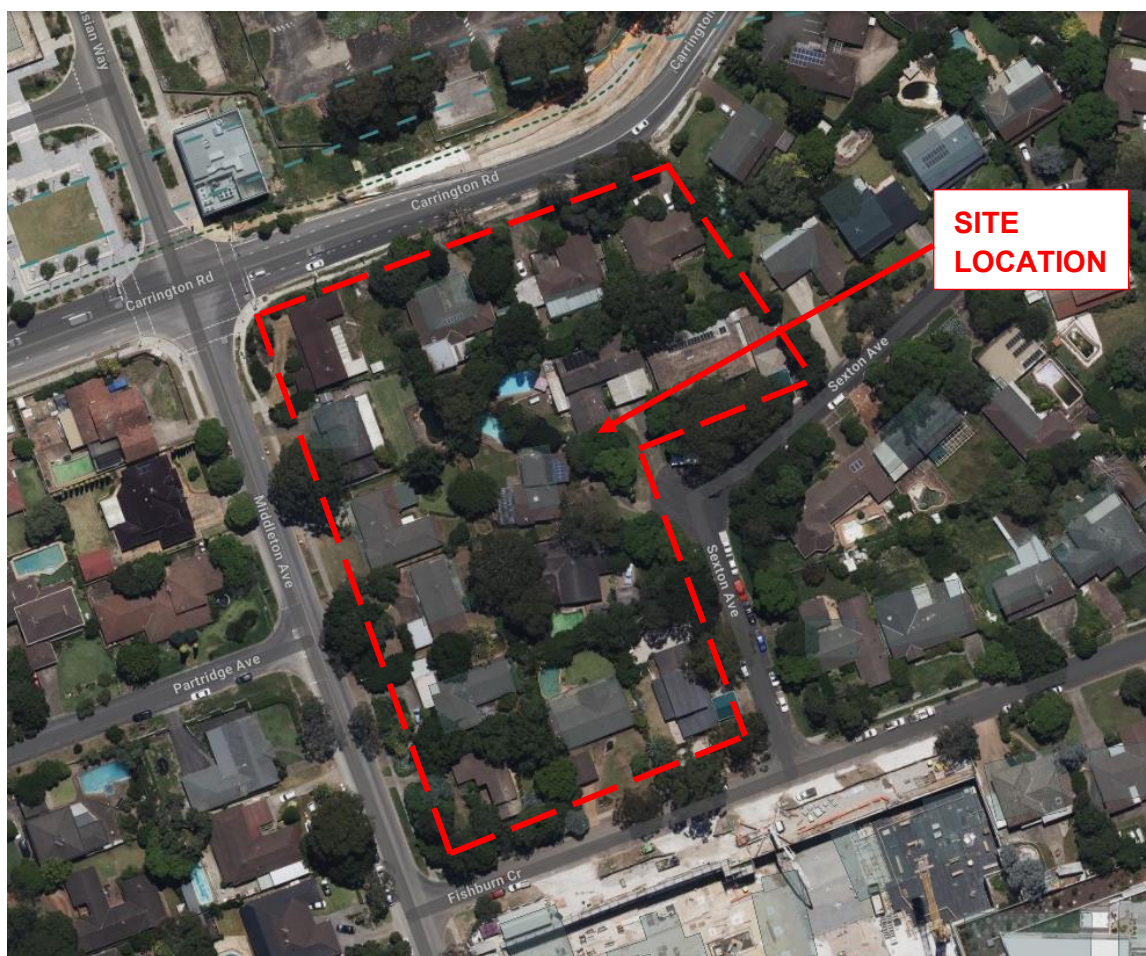


Figure 2.1 Site Location (Image courtesy of SIX Maps)

2.4.2 Proposed Development

The proposed development seeks approval to construct a residential development.

Specifically, this SSDA seeks approval for:



- Site preparation works including demolition of existing structures on the site, tree and vegetation clearing, and bulk earthworks;
- Construction of a residential development ;
- Vehicular access from Fishburn Crescent;
- Services and infrastructure improvements as required.



3 Authority Infrastructure Assessment

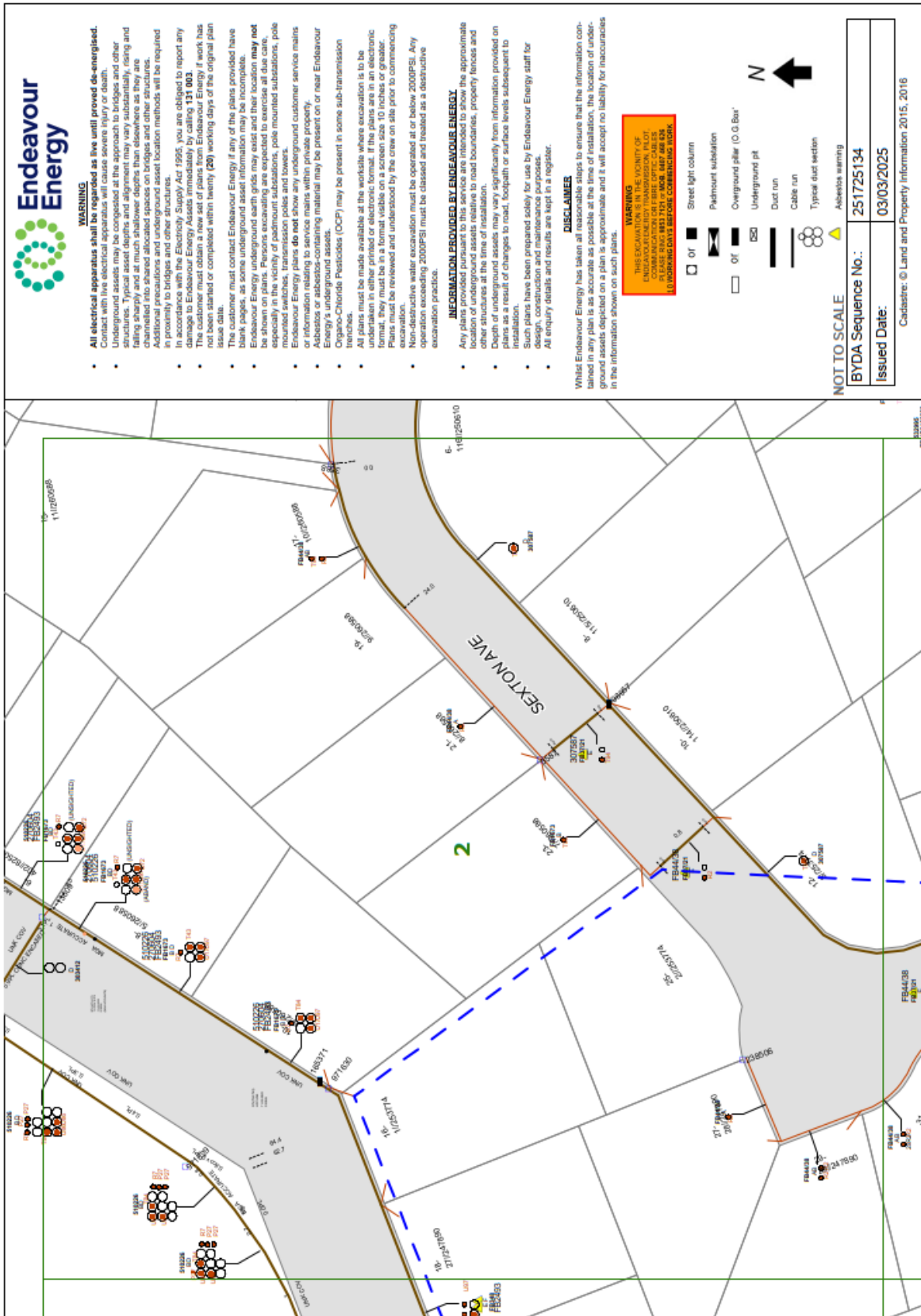
3.1 General

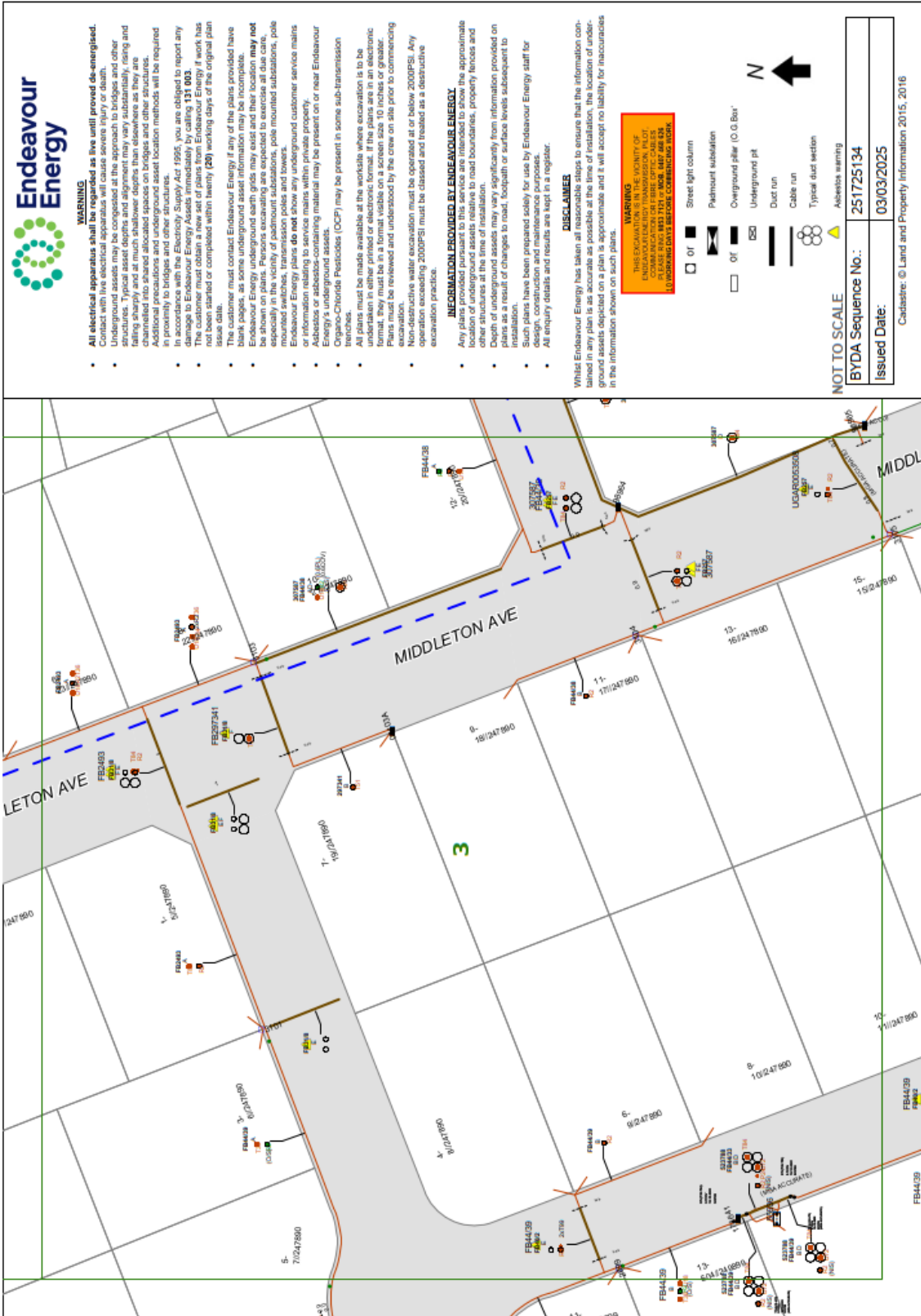
This section of the report lists all the public assets within the surrounding streets to the site and the delivery route supported with Before You Dig Australia maps and legend.

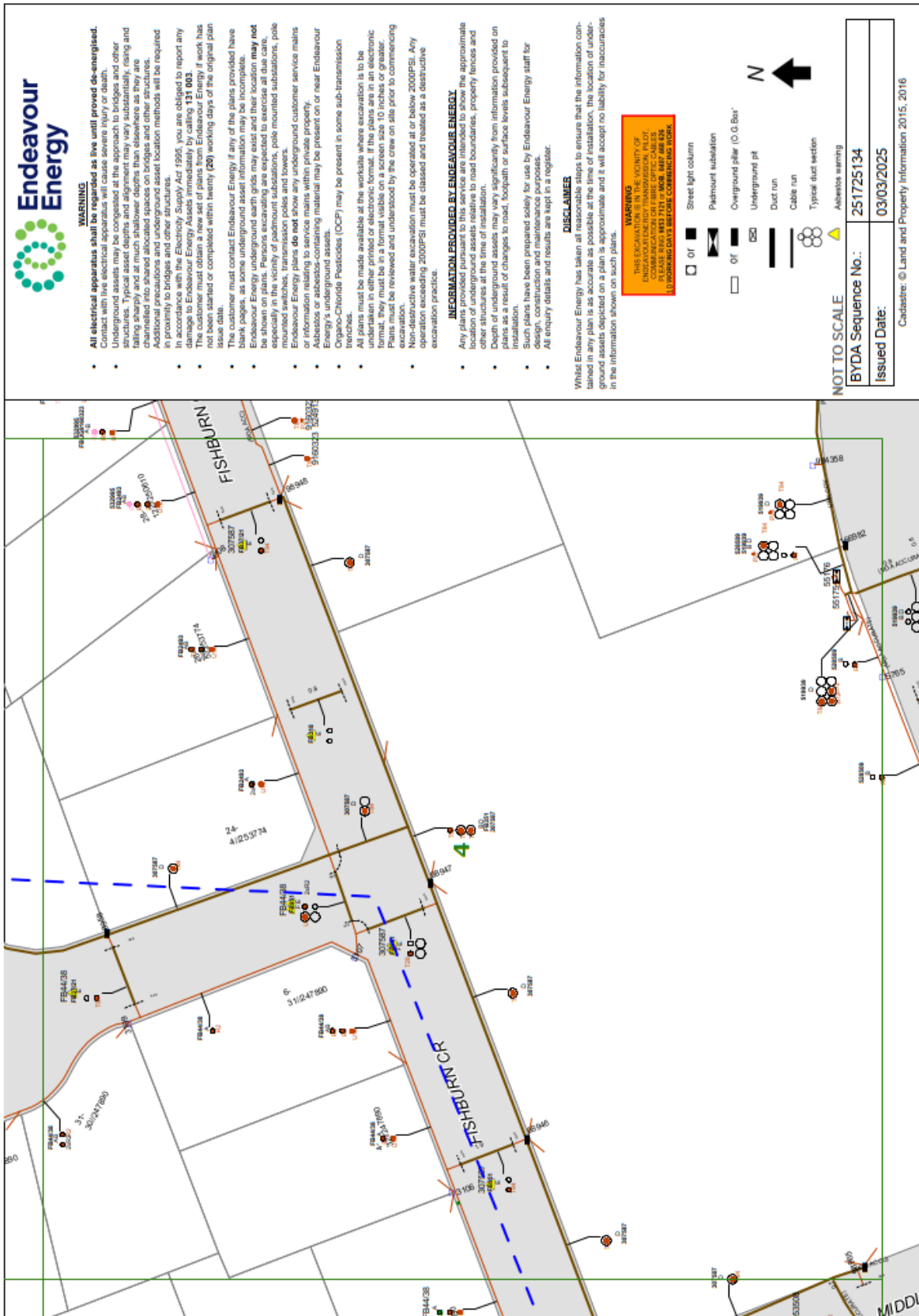
The referral service is available to anyone across Australia and should be the first point of contact when starting any project that involves digging at any depth.

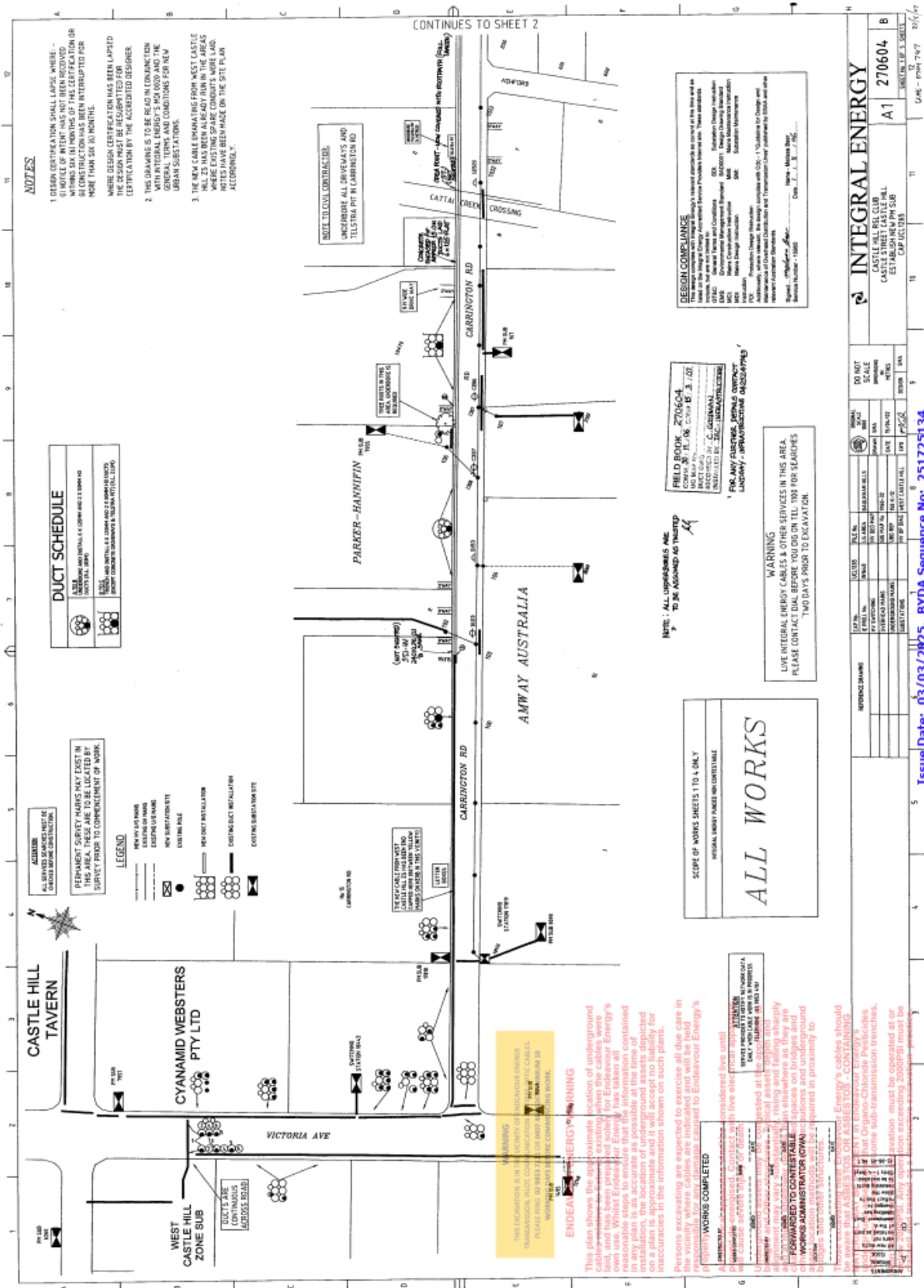
BYDA's service allows members to share detailed plans and safety information with users, including individuals or companies, planning to dig underground. BYDA's service is vital to protect essential underground infrastructure assets, and to prevent harm or injury to those working in and around those assets.

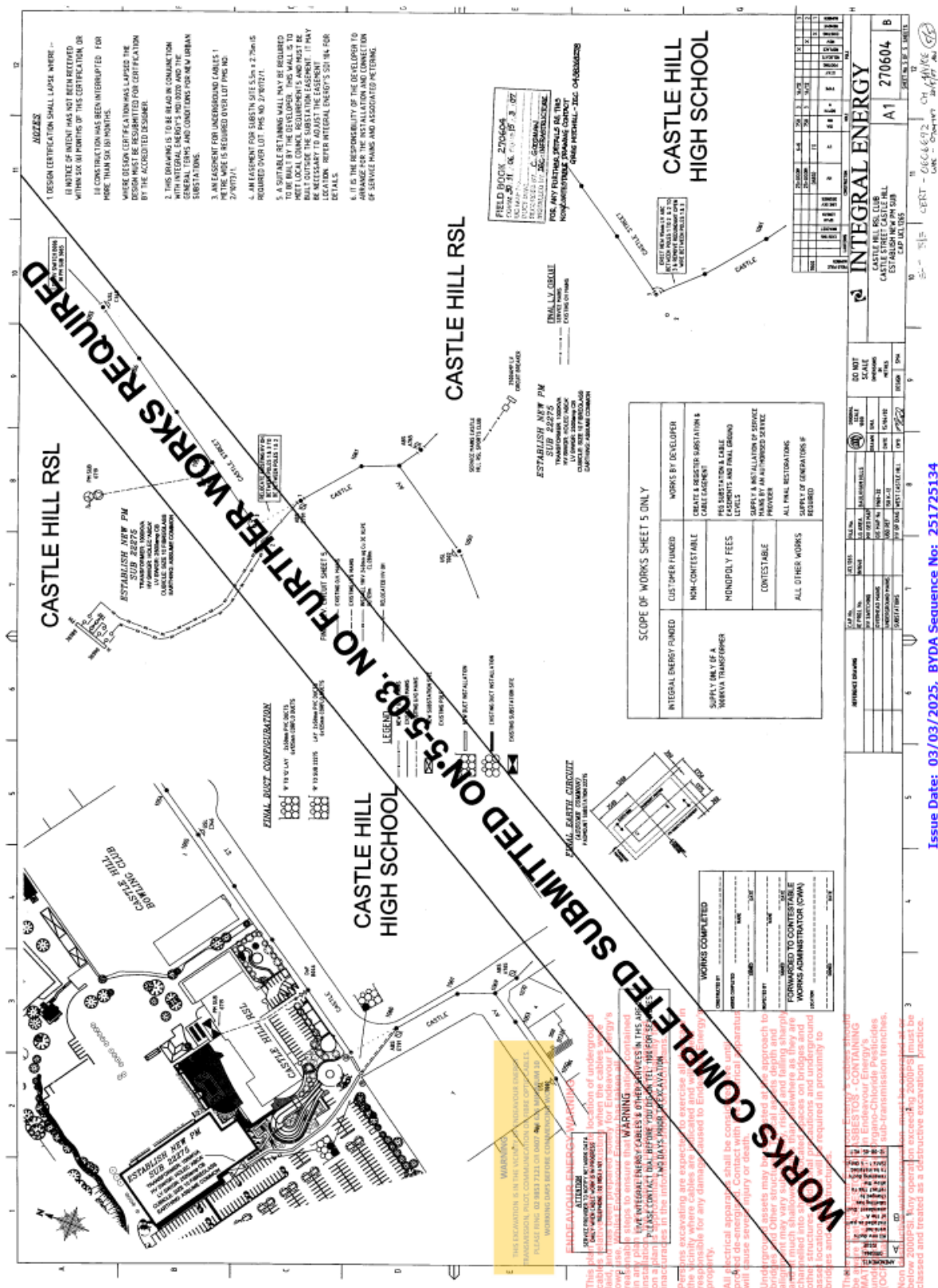
Once an enquiry is submitted using the online portal, details including the location, date and type of work being carried out are sent to all infrastructure owners with registered underground assets in the vicinity of the proposed project. The underground asset owners respond directly to the enquirer with information on the location of underground infrastructure assets that have the potential to be impacted by proposed work.

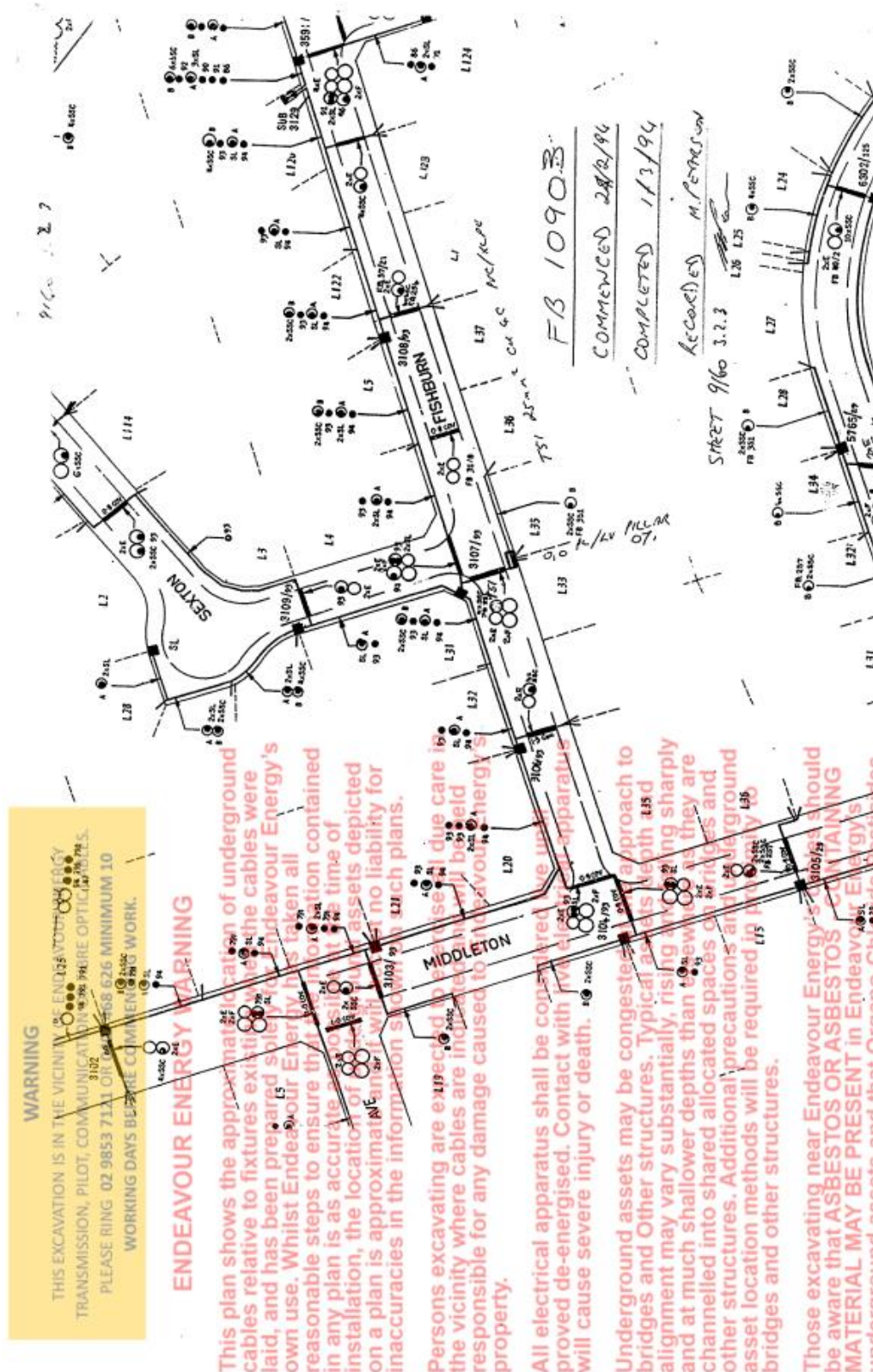




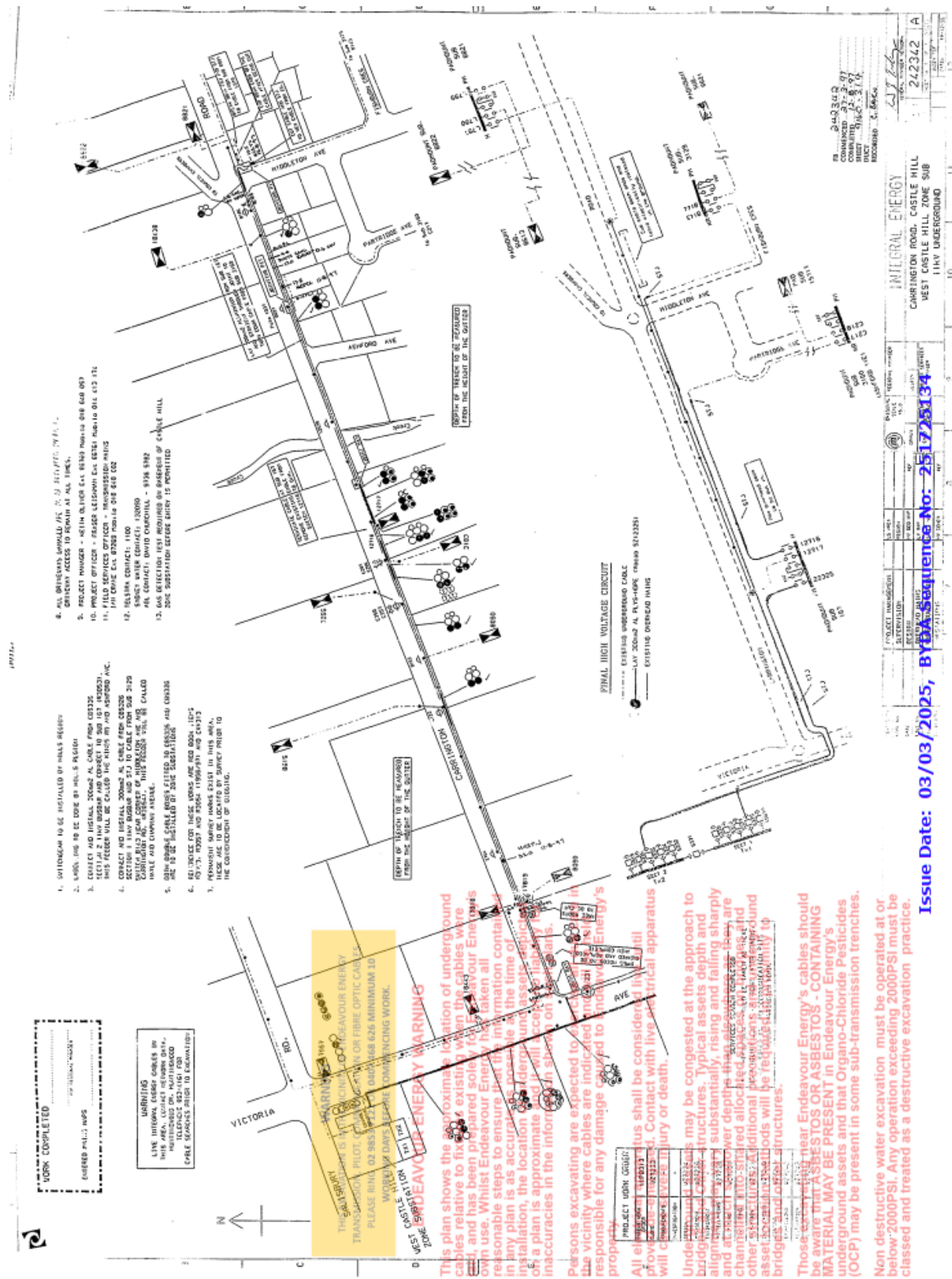


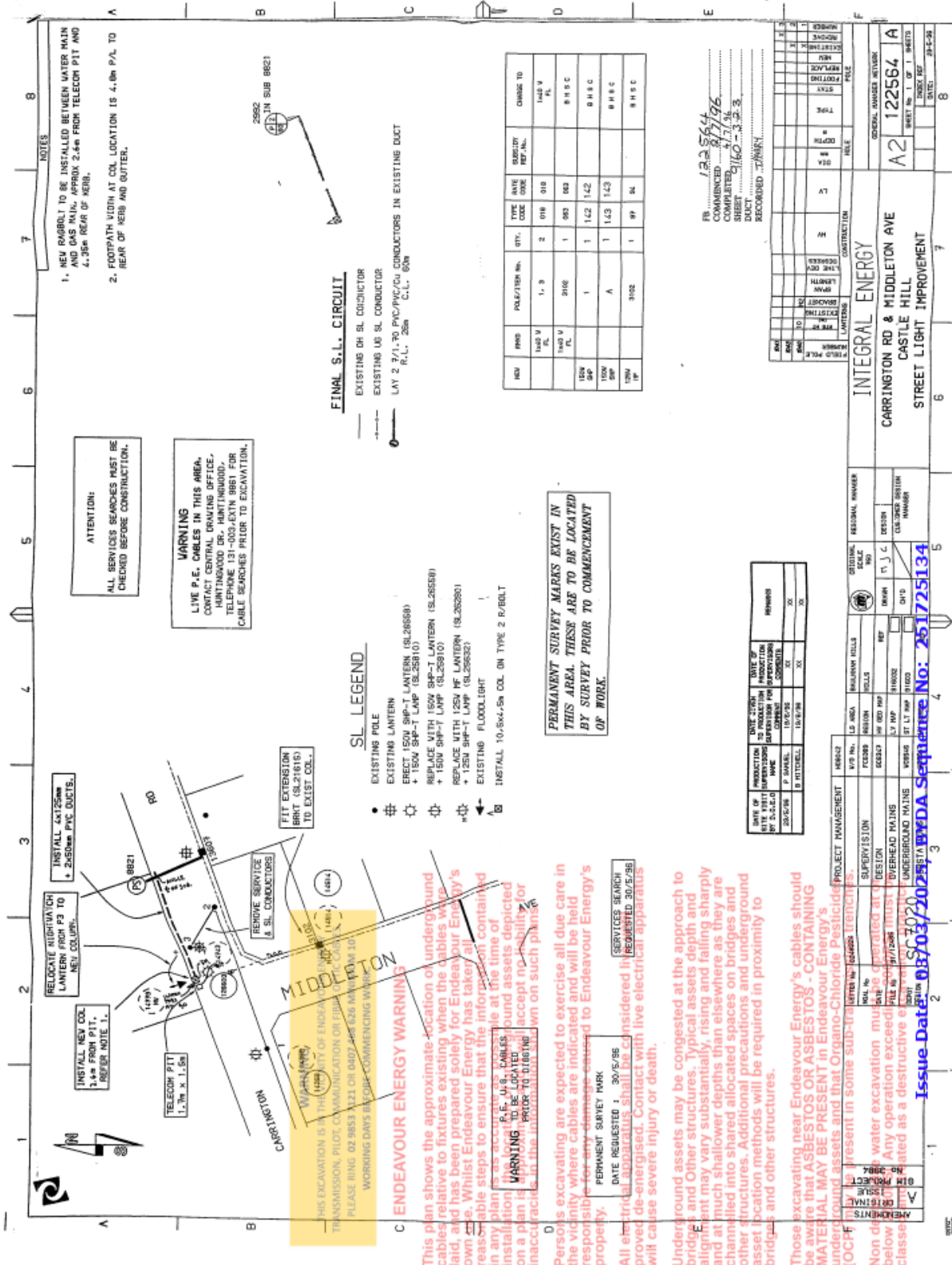


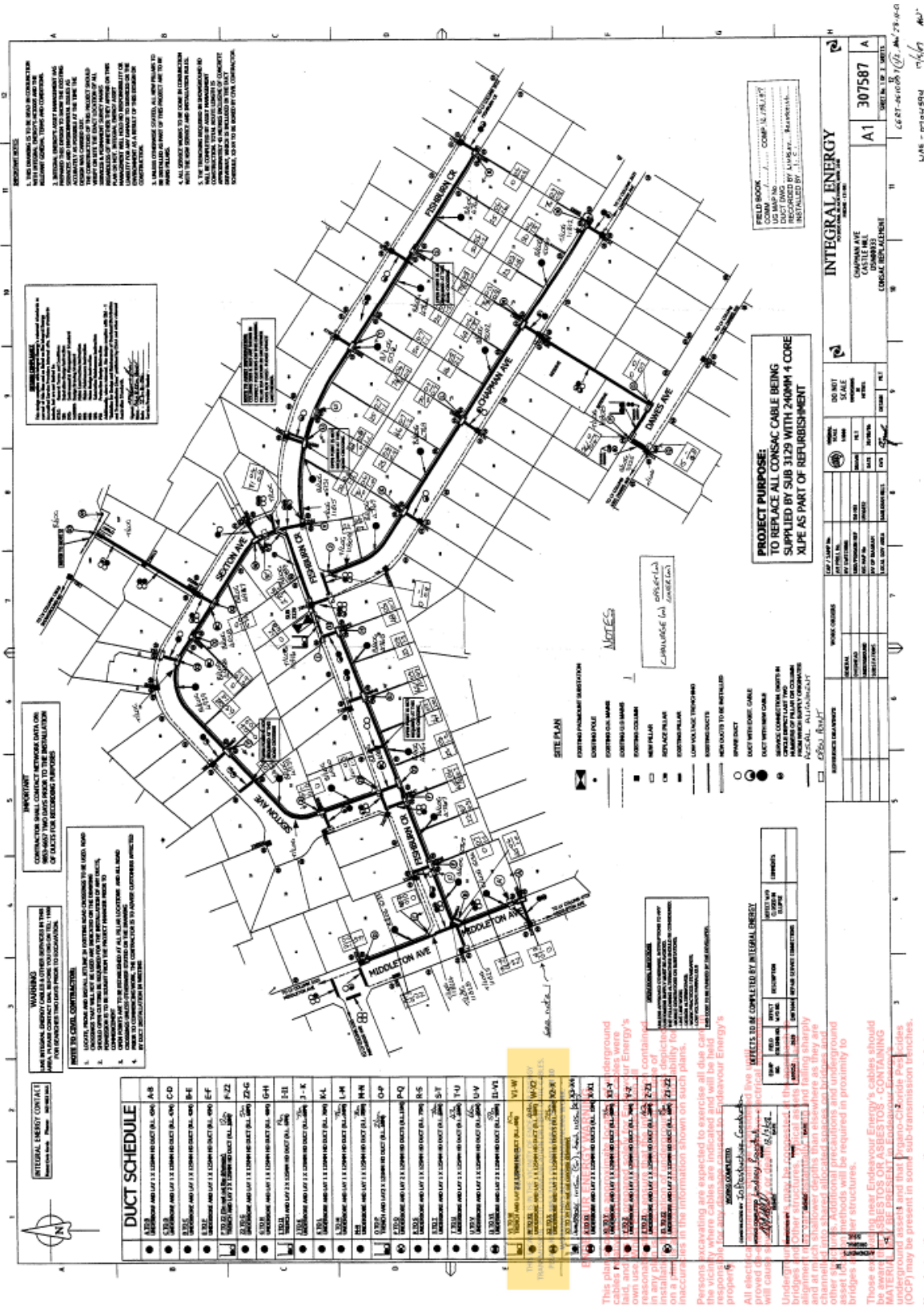


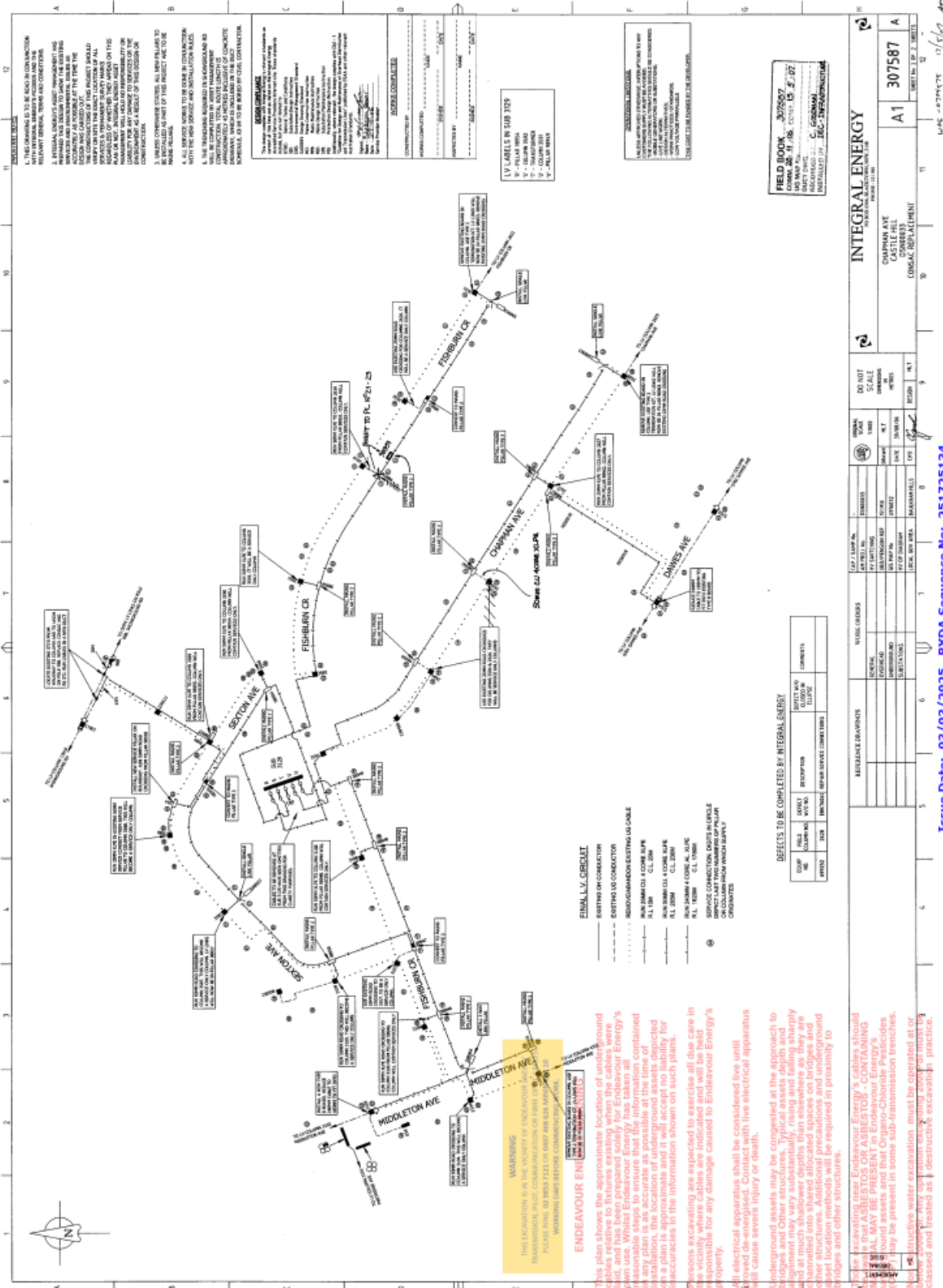


Issue Date: 03/03/2025, BYDA Sequence No: 251725134









297341

Underground Reticulation Inspections

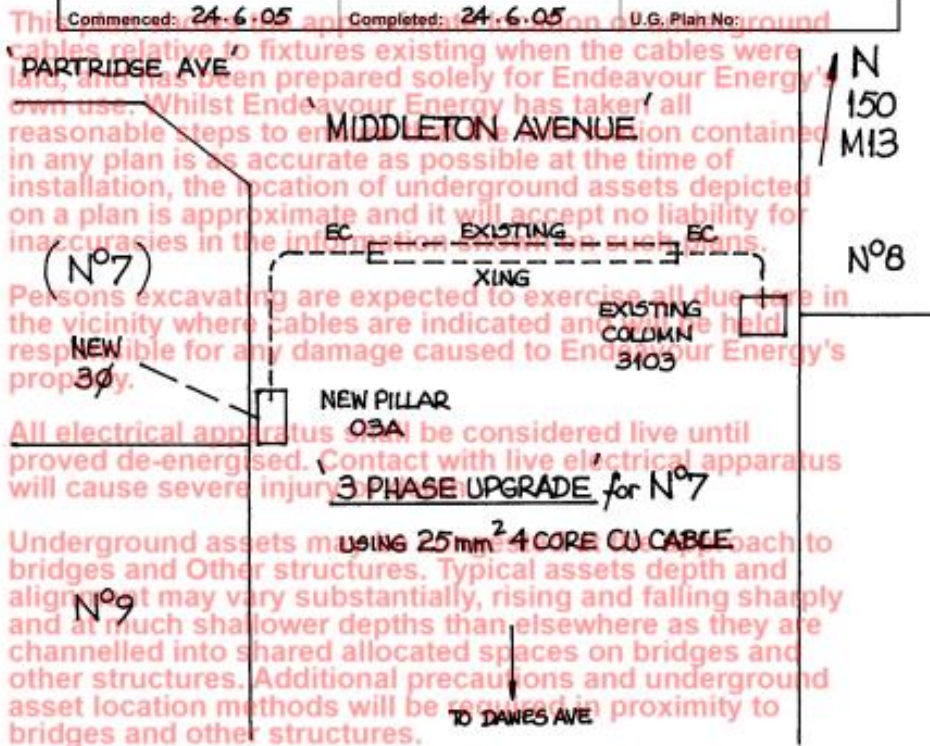


THIS EXCAVATION IS IN THE VICINITY OF ENDEAVOUR ENERGY
Network Connections Branch

The power is in your hands

Field Book No: 297341 1407 468 626 MINIMUM 10
WORKING DAYS BEFORE COMMENCING WORK.

Contact: RUSS CHIPPENDALE - DEC 0407066850	Recorded: C. GOODMAN
Location: 7 MIDDLETON AVENUE CASTLE HILL	
Commenced: 24.6.05	Completed: 24.6.05
U.G. Plan No:	



Persons excavating are expected to exercise all due care in the vicinity where cables are indicated and are held responsible for any damage caused to Endeavour Energy's property.

All electrical apparatus shall be considered live until proved de-energised. Contact with live electrical apparatus will cause severe injury.

Underground assets may be located in close proximity to bridges and other structures. Typical assets depth 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.

Those inspecting Endeavour Energy's cables should be aware that ASBESTOS OR ASBESTOS - CONTAINING MATERIALS MAY BE PRESENT in Endeavour Energy's underground assets and that Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.

Inspection of Underground Assets: ☒ Satisfactory ☐ Unsatisfactory

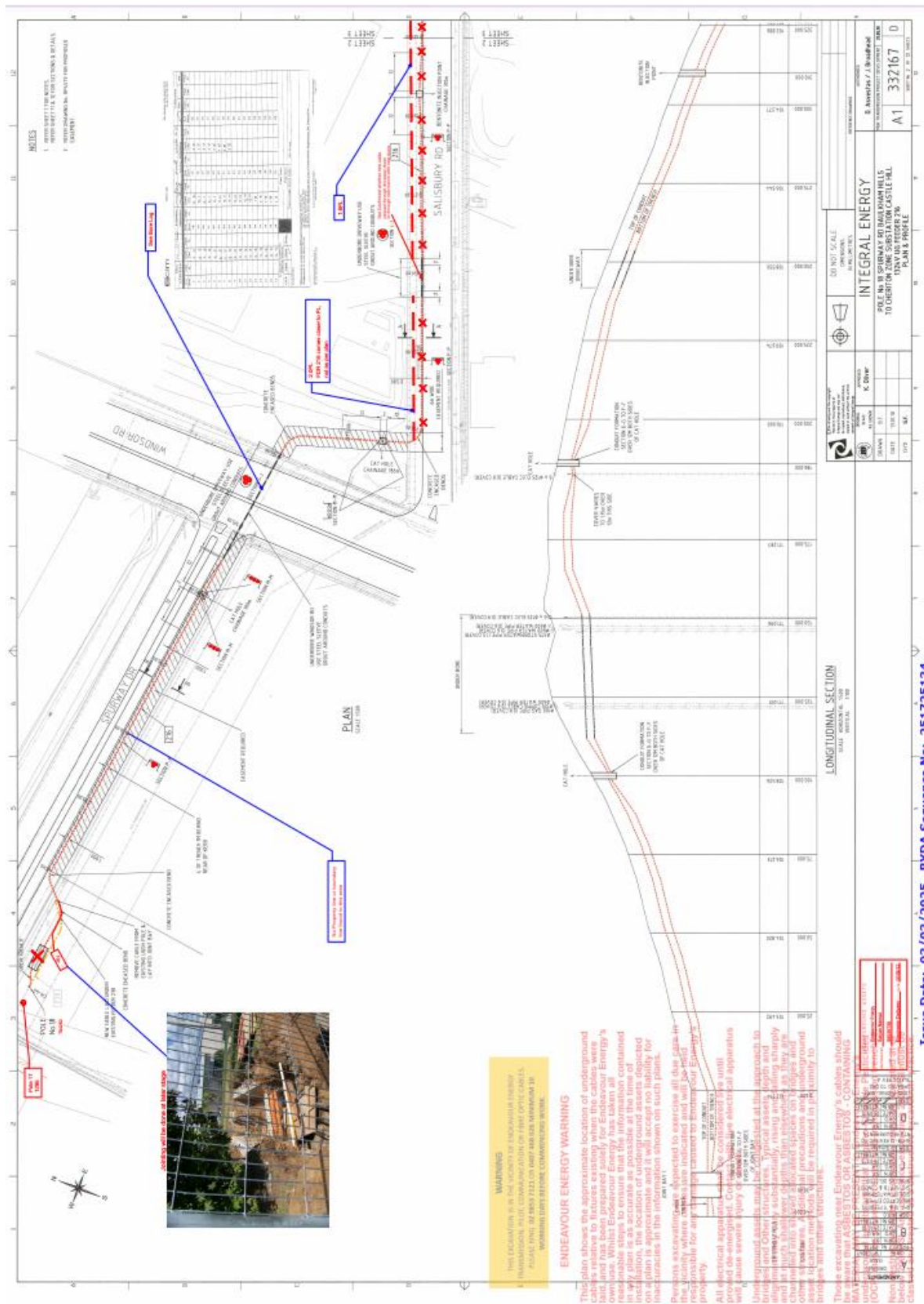
Remarks:

Non-destructive water excavation must be operated at or below 2000PSI. Any operation exceeding 2000PSI must be classified and treated as a destructive excavation practice.

Signature: [Signature] Date: 29.6.05

Issue Date: 03/03/2025, BYDA Sequence No: 251725134





Issue Date: 03/03/2025, BYDA Sequence No: 251725134

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



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

BACKGROUND

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

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

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.
- 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 channeled 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.
- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

DISCLAIMER

Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in any plan is as accurate as possible at the time of installation, the location of underground assets depicted on a plan is approximate and it will accept no liability for inaccuracies in the information shown on such plans.

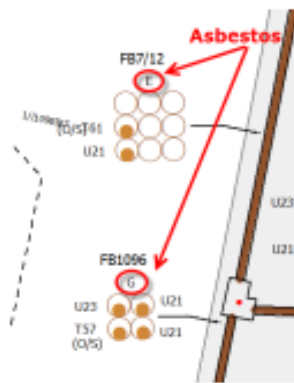
CUSTOMER REQUESTS AND RESPONSIBILITIES

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

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

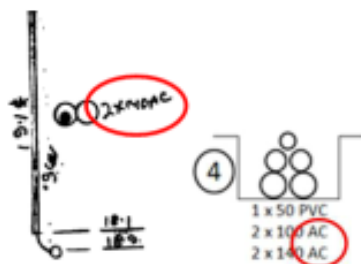
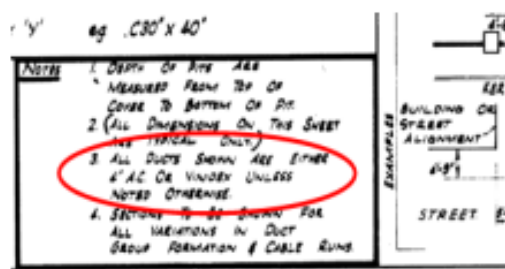
IDENTIFYING ASBESTOS DUCTS

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

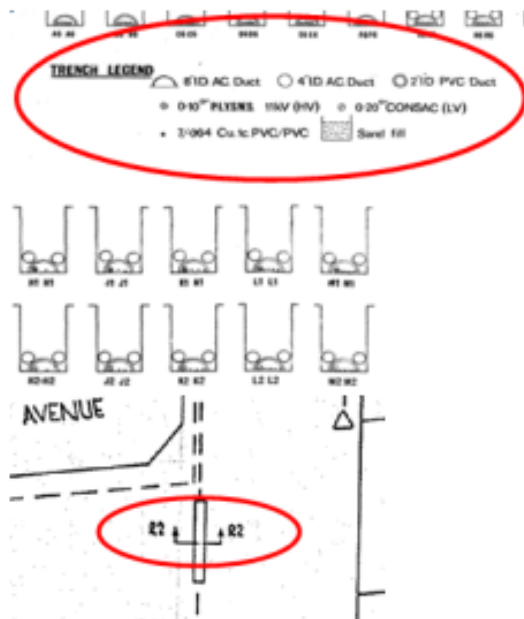


If underground details have not been captured and drawings are used, the method for identifying asbestos ducts and standards are different for the different utilities that amalgamated with Endeavour Energy. Using Reticulation Drawings, there are numerous ways to determine if a duct route has asbestos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

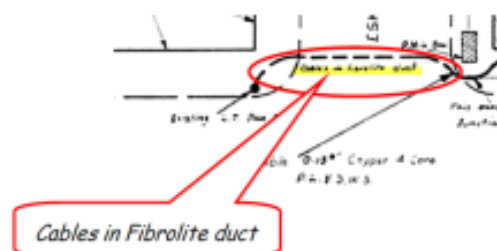
3. **AC** (Asbestos Cement) acronym



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



4. **Fibrolite** (asbestos) ducts



5. Yellow **triangle** identifies Fibro Conduits



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

STANDARD UNDERGROUND SYMBOLS / LABELS

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

SYMBOLS & ACRONYMS

 or 	Street light column
	Padmount substation
 or 	Overground pillar (O.G.Box)
	Underground pit
	Duct run
	Cable run
	Typical duct section
	Typical underbore section
	Blocked duct
	Cable section
	Asbestos warning
	STJ, PBJ, TTJ
STJ	Straight through joint
PBJ	Parallel branch joint
TTJ	Transition through joint
	Underground to overhead pole
SL	Streetlight conductor
SC	Service cable
SE	Cable sealed end
SF	Service Feeder
OS	Out of Service
O.A.M.	Over awning main
U.A.M.	Under awning main
N.I.S.	Not in service
	Fence/dimensioning
	Shared trenching
	Service point of attachment

DUCT CODE LABELS

B	= 50 mm PVC
D	= 125mm PVC
E	= 100mm Fibro Conduit (Asbestos)
F	= 140mm Fibro Conduit (Asbestos)
G	= 150mm Fibro Conduit (Asbestos)

DEPTH & LOCATION LABELS

0.5- 0.7 COV	= 0.5m – 0.7m
0.9 COV	= 0.9m Depth
UNK COV	= Depth Unknown
LOC UNK	= Location Unknown
0.9 PL	= Located 0.9m from Property Line

BYDA Underground Search Report

Date: 03/03/2025

BYDA Sequence No: 251725134

BYDA Job No: 38772740

ENDEAVOUR ENERGY ASSETS AFFECTED

To:	Sam Haddad	Company:	Not Supplied
Address:	Level 5,156-158 Pacific Highway, Greenwich, NSW 2065		
Cust. ID:	3007168	Email:	4l3xodcgg90vc9.h7pnp1h5fuc4az@smarterwx-mail.byda.com.au
Phone:	+61288834239		
Enquiry Location:	29 Sexton Avenue, Castle Hill, NSW 2154		

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

WARNING

- All electrical apparatus shall be regarded as live until proved de-energised. Contact with live electrical apparatus will cause severe injury or death.
- Underground assets may be congested at the approach to bridges and other structures. Typical asset depths and alignment may vary substantially, rising and falling sharply and at much shallower depths than elsewhere as they are channelled into shared allocated spaces on bridges and other structures. Additional precautions and underground asset location methods will be required in proximity to bridges and other structures.
- In accordance with the *Electricity Supply Act 1995*, you are obliged to report any damage to Endeavour Energy Assets immediately by calling **131 003**.
- The customer must obtain a new set of plans from Endeavour Energy if work has not been started or completed within twenty (20) working days of the original plan issue date.
- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earth grids may exist and their location **may not** be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Endeavour Energy plans **do not** show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be made available at the worksite where excavation is to be undertaken in either printed or electronic format. If the plans are in an electronic format, they must be in a format visible on a screen size 10 inches or greater. Plans must be reviewed and understood by the crew on site prior to commencing excavation.
- Non-destructive water excavation must be operated at or below 2000PSI. Any operation exceeding 2000PSI must be classed and treated as a destructive excavation practice
- 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 it will accept no liability for inaccuracies in the information shown on such plans.

SUPPLEMENTARY MATERIAL

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

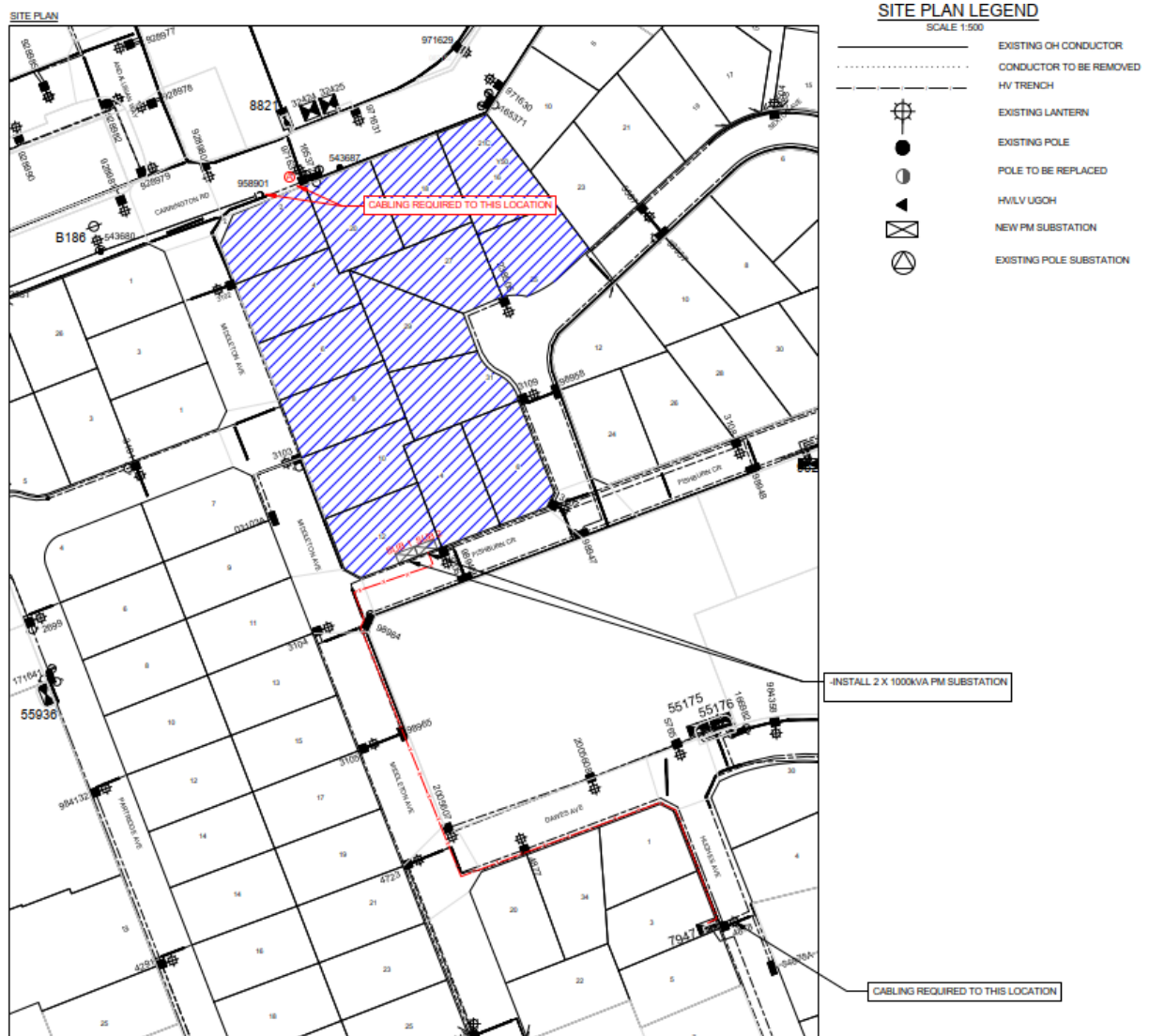


Figure 3.2 Report Sketch (from AA Power Engineering)



Ph: (02) 9553 1857
 Address: Suite 4, 15-17 Forest Rd,
 Hurstville
 NSW 2220
 Postal Address: PO BOX 910
 HURSTVILLE NSW 1481
 ABN: 33160935142

Project: Infrastructure Report Input_16-20 Carrington Ave Castle Hill:

The following is an assessment of Endeavor Energy asset impacts for the proposed residential development, located at 16-20 Carrington Ave & 2-12 Middleton Ave, 4-6 Fishburn Crescent and 25-31 Sexton Ave, Castle Hill.

AA Power is proposing to install 2 x 1000Kva Padmount substation to supply the proposed development and is basing this on a load assessment

No further comments to existing infrastructure beyond report completed by SGC

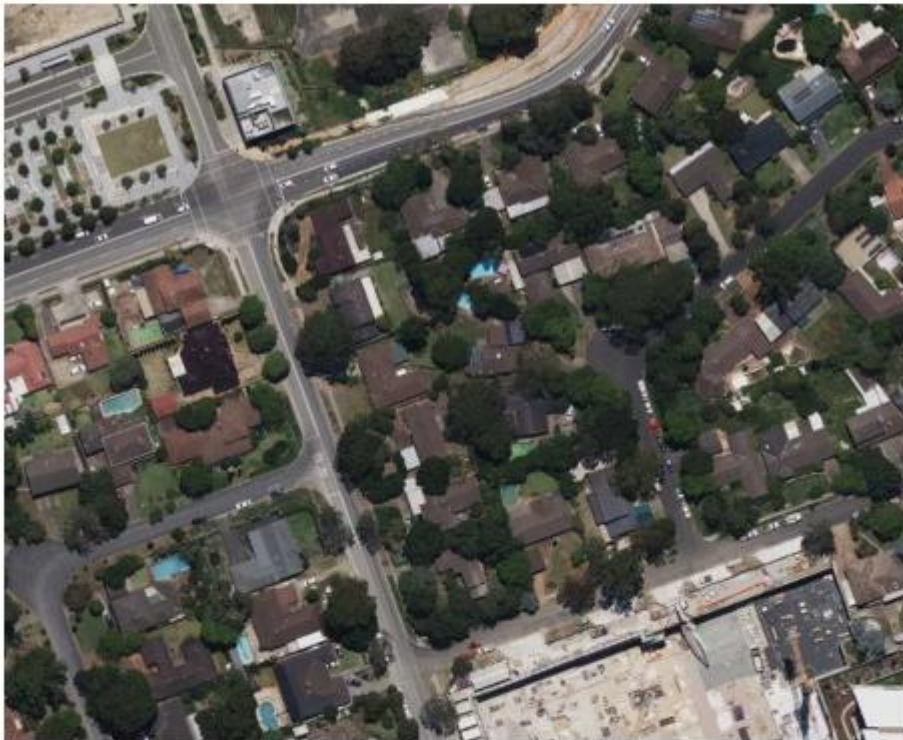


Figure: Locality area

Figure 3.3 Infrastructure Report proposal (from AA Power Engineering)

Ph: (02) 9553 1857
 Address: Suite 4, 15-17 Forest Rd,
 Hurstville
 NSW 2220
 Postal Address: PO BOX 910
 HURSTVILLE NSW 1481
 ABN: 33160935142



Figure: Existing HV network

1. Install 2 x 1000kVA Padmount Substations along Fishburn Cres
2. Supply the substation via extending new cabling from Carrington Ave, along Middleton Ave then to Fishburn Crescent to the substation location
3. Additional cabling is required to run from the substation south along Middleton Ave, East along Dawes and South along Hughs to a substation located on 3 Hughs Ave.

Please read in conjunction with Report Sketch

Figure 3.4 Infrastructure Report proposal (from AA Power Engineering)



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



WARNING

**This excavation is in the vicinity of Endeavour Energy's
Transmission, Pilot, Communication or Fibre Optic
Cables**

Please Notify

ENDEAVOUR ENERGY

**Between 7:00am – 2:00pm
on
02 9853 7121 or 0407 468 626
Transmission Mains North**

**Minimum 10 WORKING Days before commencing
excavation**

Table 3.1 Endeavour Energy Assessment

Element	Assessment
Authority	Endeavour Energy
Impact to Development	Existing infrastructure is located on site within the proposed development footprint.
Action to Existing	Existing infrastructure is to be modified to be used as temporary site power and non-utilised services are to be made redundant.
Proposed Upgrades	AA Power is proposing to install 2 x 1000Kva Padmount substation to supply the proposed development and is basing this on a load assessment. Supply the substation via extending new cabling from Carrington Ave, along Middleton Ave then to Fishburn Crescent to the substation location. Additional cabling is required to run from the substation south along Middleton Ave, East along Dawes and Soth along Hughs to s substation located on 3 Hughs Ave

3.3 Jemena

Figure 3.5 Jemena Plan

Jemena Gas Network Protection

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



ASSETS AFFECTED

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

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

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

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

Important Information:

1. The enclosed plans have been prepared solely for the use of Jemena Gas Networks (NSW) Ltd and Jemena Asset Management Pty Ltd (together "Jemena") and show the position of Jemena's underground gas mains and installations in public gazetted roads. If the enclosed plans show gas assets located on private property or other third party property, these are approximate locations.
2. There may be underground assets owned by other utilities in the vicinity of your work and it is your responsibility to identify and locate such assets.
3. The plans may show the position of underground mains and installations relative to fences, buildings and other structures as they existed at the time the assets were installed and may not have been updated to take account of any subsequent change in the location or style of those features. Depth of underground assets may also vary as a result of changes to road, footpath or surface levels subsequent to installation.
4. While Jemena takes all reasonable care to ensure the accuracy and completeness of the information provided, it makes no warranty as to the accuracy or completeness of the enclosed plans and does not assume any duty of care to you nor any responsibility for the accuracy, adequacy, suitability or completeness of the plans or for any error or omission. It is intended to be indicative only and must not be solely relied upon when undertaking underground works.
5. Except to the extent that liability may not be capable of being lawfully excluded, Jemena, its employees, agents, officers and contractors will not be liable to any person for loss or damage (including indirect and consequential loss or damage) which may be suffered or incurred in connection with the provision of this information.
6. Persons excavating or carrying out other earthworks will be held responsible for any damage caused to Jemena's underground mains, service lines and equipment. In accordance with the *Work Near Underground Assets – Guide* published in 2007 by Work Cover Authority*, Jemena recommends that you carry out potholing by hand to accurately confirm the location of gas mains and installation prior to commencing excavations.

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

In case of Emergency Phone 131 909 (24 hours)

Jemena Gas Networks

Before You Dig Australia Map Legend
Feb 2024



Network Mains

	Proposed New Main (coloured as per kPa)
	Proposed Isolate (coloured as per kPa)
	Unknown kPa
	2kPa Low Pressure gas main
	7kPa Low Pressure gas main
	30kPa Medium pressure gas main
	100kPa Medium Pressure gas main
	210kPa Medium Pressure gas main
	300kPa Medium Pressure gas main
	400kPa Medium Pressure gas main
	1050kPa High Pressure gas main
	3500kPa High Pressure gas main
	7000kPa High Pressure gas main
	>7000kPa Transmission pipeline
	Isolated Service - Former Med/High Pressure
	Isolated Steel Main -Treat as High Pressure
	Conduit or Casing
	Size & Material (see conduit material codes)
	Critical Main -Treat as High Pressure (Main coloured as per kPa)
	Exposed Main section
	Shallow Main section: see Protection Code below, no code assume no protection
	SP Steel Plate CE Concrete Encased PP PE Plate UNK Unknown Type CS Concrete Slab
	Warning - Blue Jacket Coated gas main (Main coloured and styled as per kPa)

Gas Services

	Gas service – coloured by kPa
	Serviced Site Indicator

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

Network Assets

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

Annotations

Pipe and Conduit Material Codes

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

Pipe code combinations and dimension references

⑥NB 50MM NY	50mm Nylon main inserted into 6 inch (Nominal Bore) Cast Iron pipe
⑥0MM 32MM NY	32mm Nylon main inserted into 50mm Steel pipe

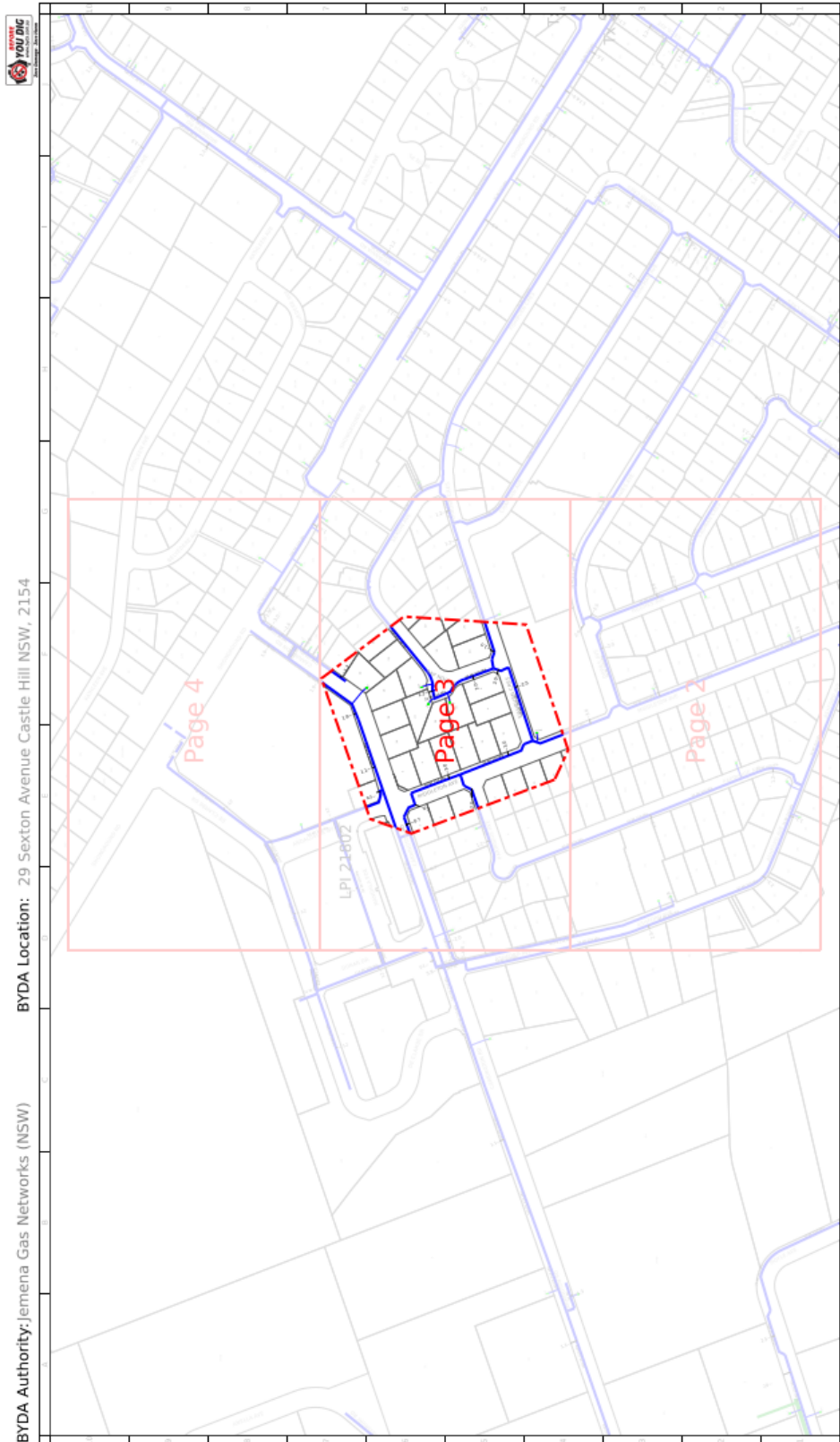
~1.5	Distance (in metres) of main from Boundary Line (MBL)
MBK	Distance in Metres Back of Kerb
MKL	Distance in Metres from Kerb Line
MEBL	Distance in Metres from Eastern Boundary Line (North/South/West)
MCL	Distance in Metres from Centre Line of Road
MFL	Distance in Metres from Fence Line



Distance (in metres) of service from side Boundary where the service pipe crosses from the road reserve into the private lot
Service placed towards left or right boundary
Service pipe size & material where known



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



Issue Date: 03/03/2025
BYDA Seq No: 251725139
BYDA Job No: 38772740
Overview Page:



Scale:1:6301

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



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: 29 Sexton Avenue Castle Hill NSW, 2154

Issue Date: 03/03/2025
 BYDA Seq No: 251725139
 BYDA Job No: 38772740

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

Scale: 1:2000



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



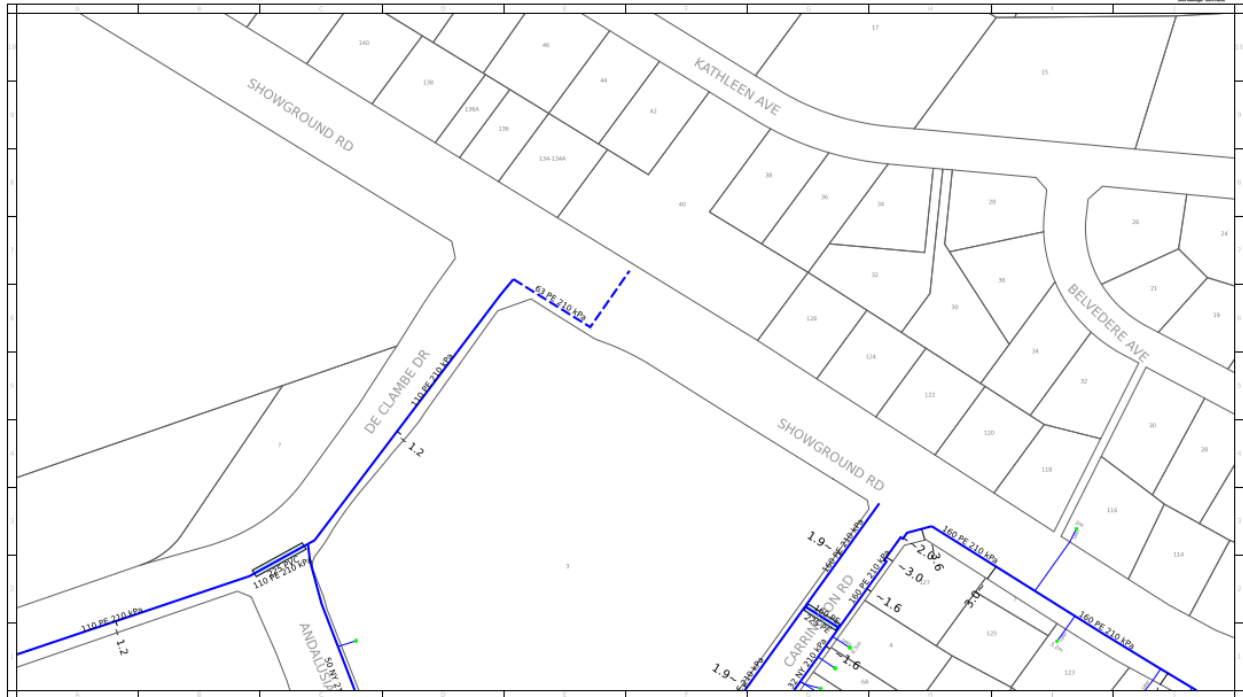
WARNING: This is a representation of Jemena Gas Networks underground assets only and may not indicate all assets in the area. It must not be used for the purpose of exact asset location in order to undertake any type of excavation. This plan is diagrammatic only, and distances scaled from this plan may 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.



 ABN 87 003 004 322	For legend details, please refer to the Coversheet attachment provided as part of this BYDA response.	Issue Date: 03/03/2025 BYDA Seq No: 251725139 BYDA Job No: 38772740 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 diagrammatic only, and distances scaled from this plan may not be accurate. Please read all conditions and information on the attached information sheet. This extract is subject to those conditions. The information contained on this plan is only valid for 28 days from the date of issue.		

BYDA Authority: Jemena Gas Networks (NSW)

BYDA Location: 29 Sexton Avenue Castle Hill NSW, 2154





ABN 87 003 004 322

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



Scale: 1:2000

Issue Date: 03/03/2025
 BYDA Seq No: 251725139
 BYDA Job No: 38772740

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 diagrammatic 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.

Table 3.2 Jemena Assessment

Element	Assessment
Authority	Jemena
Impact to Development	Existing infrastructure is located on site within the proposed development footprint
Action to Existing	Existing house services are proposed to redundant and removed.
Proposed Upgrades	Natural gas is not proposed to be used with a preference of electrification therefore upgrades are not proposed.

3.4 NBN Co

Figure 3.6 NBN Co Plan



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.

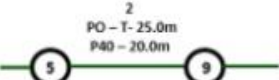
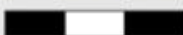
	 LEGEND
	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit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

Table 3.3 NBN Co Assessment

Element	Assessment
Authority	NBN Co
Impact to Development	Nil
Action to Existing	Nil
Proposed Upgrades	It is proposed to install new incoming carrier cabling to service the proposed development.

3.5 Sydney Water

Figure 3.7 Sydney Water Plan





Guide to reading Sydney Water Before You Dig Plans

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

Sewer Sewer Main (with flow arrow & size type test) 225 PVC Disused Main Rising Main Maintenance Hole (with upstream depth to invert) 17 Sub-surface chamber Maintenance Hole with Overflow chamber Ventshaft EDUCT Ventshaft INDUCT Property Connection Point (with change to downstream MH) Concrete Encased Section Terminal Maintenance Shaft Maintenance Shaft Rodding Point Lamphole Vertical Pumping Station Sewer Rehabilitation	Property Details Boundary Line Easement Line House Number Lot Number Proposed Land Sydney Water Heritage Site (please call 132 092 and ask for the Heritage Unit)
Pressure Sewer Pressure Sewer Main Pump Unit (Alarm, Electrical Cabinet, Pump Unit) Property Valve Boundary Assembly Stop Valve Reducer / Taper Flushing Point	Water WaterMain - Potable (with size type test) 200 PVC Disconnected Main - Potable Proposed Main - Potable Water Main - Recycled Special Supply Conditions - Potable Special Supply Conditions - Recycled Restrained Joints - Potable Restrained Joints - Recycled Hydrant Maintenance Hole Stop Valve Stop Valve with By-pass Stop Valve with Tapers Closed Stop Valve Air Valve Valve Scour Reducer / Taper Vertical Bends Reservoir Recycled Water is shown as per Potable above. Colour as indicated
Vacuum Sewer Pressure Sewer Main Division Valve Vacuum Chamber Clean Out Point	Private Mains Potable Water Main Recycled Water Main Sewer Main Symbols for Private Mains shown gray
Stormwater Stormwater Pipe Stormwater Channel Stormwater Gully Stormwater Maintenance Hole	



Pipe types

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

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

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

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

Or call 13 20 92 for Customer Enquiries.

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

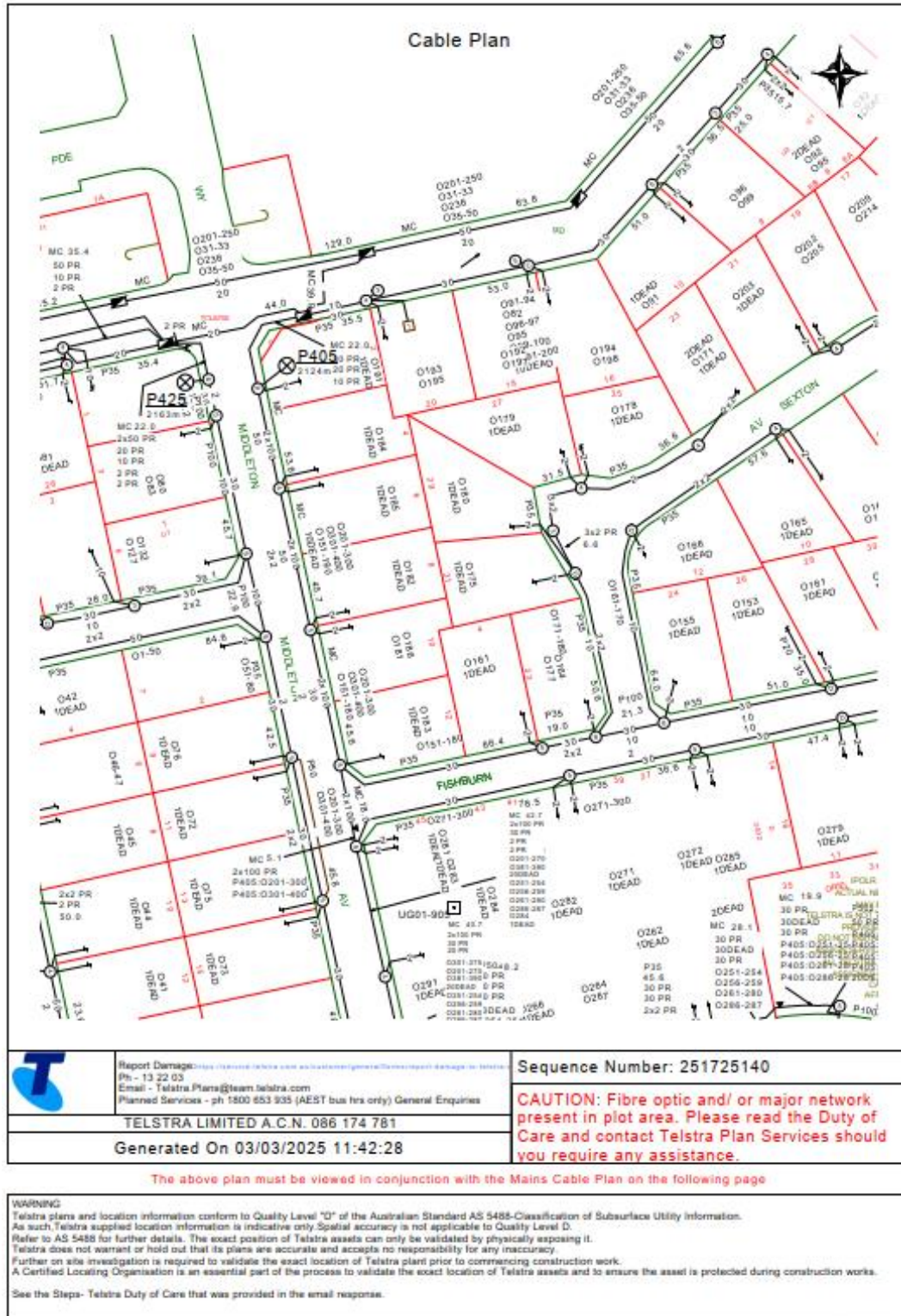
This communication is confidential. If you are not the intended recipient, please destroy all copies immediately. Sydney Water Corporation prohibits unauthorised copying or distribution of this communication.

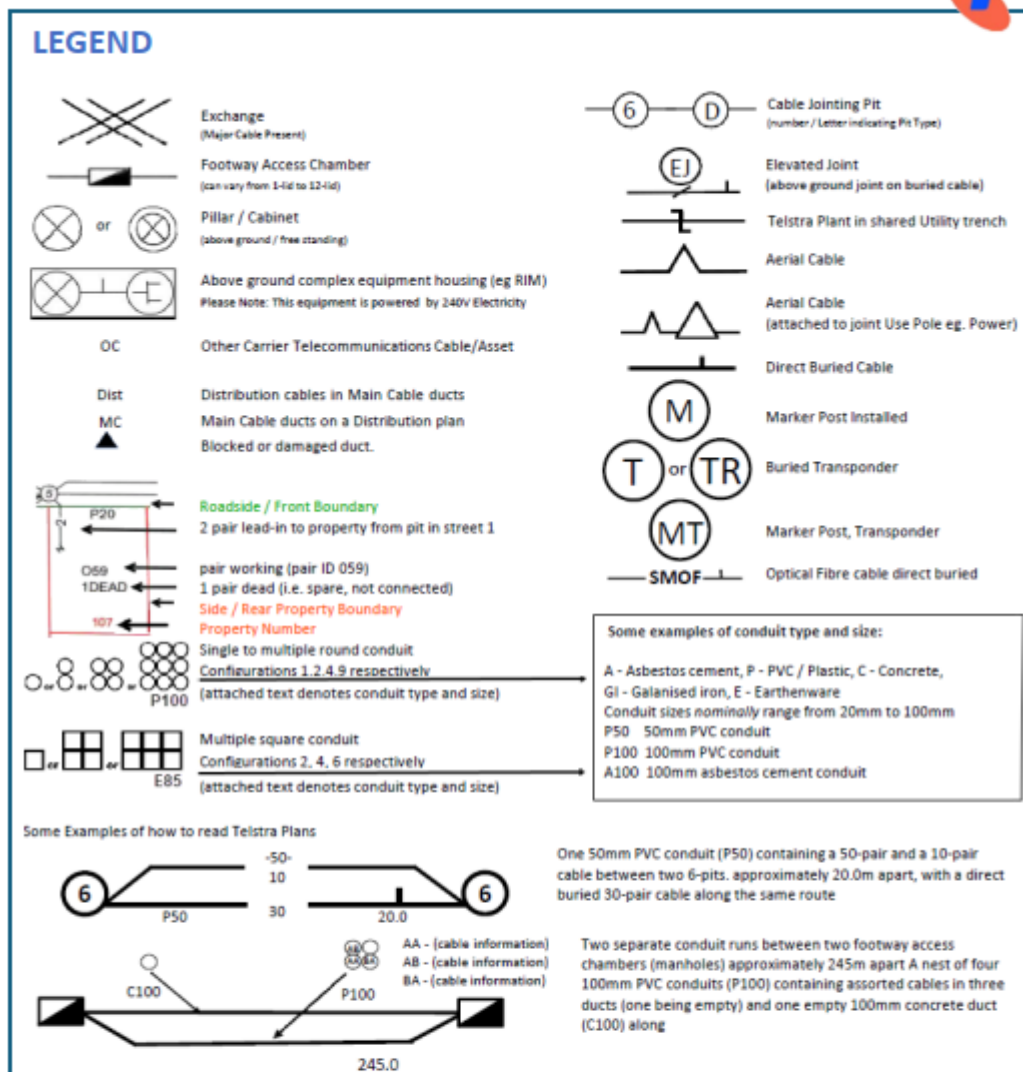
Table 3.4 Sydney Water Assessment

Element	Assessment
Authority	Sydney Water
Impact to Development	Existing sewer drainage currently traverses the site and impacts the building footprint.
Action to Existing	It is proposed to disuse the existing sewer within the site boundary.
Proposed Upgrades	Refer to Appendix 1 for sewer and water infrastructure report prepared by Hills Consulting.

3.6 Telstra

Figure 3.8 Telstra Plan





Protect our Network:

by maintaining the following distances from our assets:

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

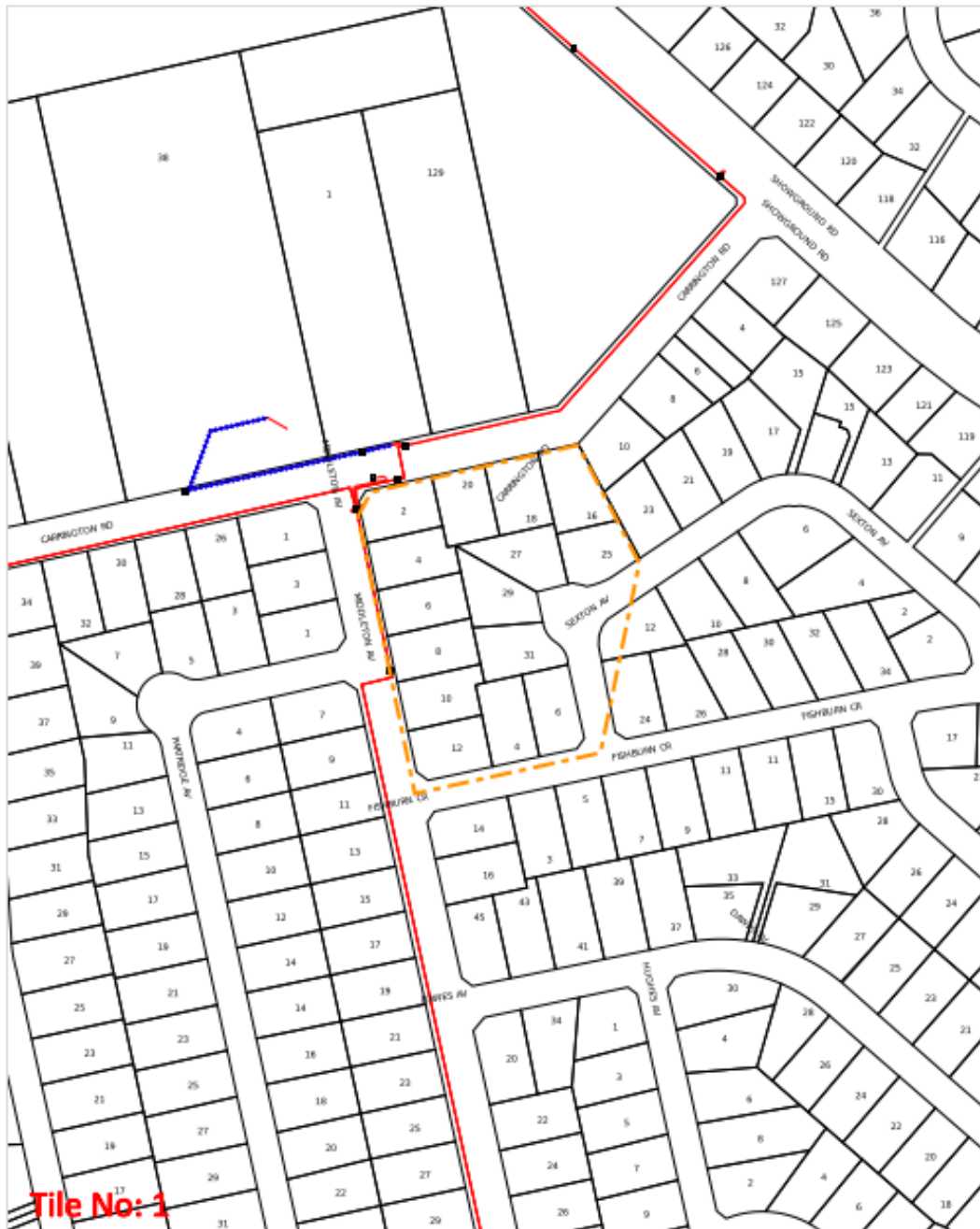
For more info contact a [Certified Locating Organisation](#) or Telstra Plan Services 1800 653 935

Table 3.5 Telstra Assessment

Element	Assessment
Authority	Telstra
Impact to Development	Existing communications reticulation currently traverses the site and impacts the building footprint.
Action to Existing	It is proposed to disuse all existing services within site. Back to pit.
Proposed Upgrades	It is proposed to install new incoming carrier cabling to service the proposed development.

3.7 Optus

Figure 3.9 Optus Plan



WARNING: This document is confidential and may also be privileged. Confidentiality nor privilege is not waived or destroyed by virtue of it being transmitted to an incorrect addressee. Unauthorised use of the contents is therefore strictly prohibited. Any information contained in this document that has been extracted from our records is believed to be accurate, but no responsibility is assumed for any error or omission. Optus Plans and information supplied are valid for 30 days from the date of issue. If this timeline has elapsed, please raise a new enquiry.

Sequence Number: 251725141

Date Generated: 03 Mar 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



Date: 03 Mar 2025
To: Sam Haddad
Company: Not Supplied
Address: Level 5, 156-158 Pacific Highway
Greenwich, NSW 2065

ENQUIRY DETAILS

Location: 29 Sexton Avenue, Castle Hill, NSW 2154
Sequence No.: 251725141
BYDA Reference: 38772740

In relation to your enquiry concerning the above location, Optus advises as follows:

Optus records indicate that there ARE underground Optus FIBRE OPTIC TELECOMMUNICATIONS ASSETS in the vicinity of the above location as per the attached drawing(s).

PLEASE NOTE that any interference with these assets may be considered an offence under the Criminal Code Act 1995 (Cth). Optus reserves the right to seek compensation for loss or damage to its assets including consequential loss.

This reply is valid for a period of 30 days from the date above.

IMPORTANT INFORMATION

Asset location drawings provided by Optus are reference diagrams and are provided as a guide only. The completeness of the information in these drawings cannot be guaranteed. Exact ground cover and alignments cannot be provided with any certainty as these may have altered over time. Depths of telecommunications assets vary considerably as do alignments. It is essential to identify the location of any Optus assets in the vicinity prior to engaging in any works.

All Optus assets in the vicinity of any planned works will need to be electronically located to ascertain their general location. Depending on the scope of planned works in the vicinity, the assets may also need to be physically located.

YOU MUST ENGAGE THE SERVICES OF ONE OF THE OPTUS ASSET ACCREDITED LOCATORS TO CARRY OUT ASSET LOCATION (REFER LIST OF ACCREDITED LOCATORS AT THE END OF THIS OPTUS RESPONSE).

Unless otherwise agreed with Optus, where an on-site asset location is required, the requestor is responsible for all costs associated with the locating service including (where required) physically exposing the Optus asset.

DUTY OF CARE

When working in the vicinity of telecommunications assets you have a legal "Duty of Care" and non-interference that must be observed.

It is your responsibility as the requesting party (as a landowner or any other party involved in the planned works) to design for minimal impact to any existing Optus asset. Optus can assist at the design stage through consultation.

It is also your, as the requesting party (or your representative's), responsibility to:

- Obtain location drawings (through the Before You Dig Australia process) of any existing Optus assets at a reasonable time before any planned works begin;
- Have an Optus Accredited Asset Locator identify the general location of the Optus asset and physically locate the asset where planned works may encroach on its alignment; and
- Contact Optus for further advice where requested to do so by this letter.



DAMAGE TO ANY OPTUS ASSET MUST BE REPORTED TO 1800 505 777 IMMEDIATELY

You, your head contractor, and any relevant subcontractor are all responsible for any Optus asset damage as a result of planned activities in the vicinity of Optus assets.

This applies where works commence prior to obtaining Optus drawings, where there is failure to follow instructions or during any construction activities.

Optus reserves the right to recover compensation for loss or damage to its assets including consequential loss. Also, you, your head contractor and any relevant subcontractor may also be liable for prosecution under the Criminal Code Act 1995 (Cth).

ASSET RELOCATIONS

You are not permitted by law to relocate, alter or interfere with any Optus asset under any circumstance. Any unauthorised interference with an Optus asset may lead to prosecution under the Criminal Code Act 1995 (Cth). Enquiries relating to the relocation of Optus assets must be referred to the relevant Optus Damages and Relocations Team (refer to "FURTHER ASSISTANCE").

APPROACH DISTANCES

On receipt of Optus asset location drawings and prior to commencing any planned works near an Optus asset, engage an Optus Accredited Locator to undertake a general location of the Optus asset.

Physical location of the Optus asset by an Optus Accredited Locator will also be required where planned works are within the following approach distances of the general location of the Optus asset:

- In built up metropolitan areas where road and footpaths are well defined by kerbs or other features a minimum clear distance of 1 meter must be maintained from the general location of the Optus asset.
- In non-established or unformed metropolitan areas, a minimum clear distance of 3 meters must be maintained from the general location of the Optus asset.
- In country or rural areas where wider variations may exist between the general and actual location of an Optus asset may exist, then a minimum clear distance of 5 meters must be maintained from the general location of the Optus asset.

If planned works are parallel to the Optus asset, then the Optus asset must be physically located by an Optus Accredited Locator at a minimum of 5 meter intervals along the length of the parallel works prior to work commencing.

Under no circumstances is crossing of any Optus asset permitted without physical location of the asset being carried out by an Optus Accredited Locator. Depending on the asset involved an Optus representative may be required onsite.

The minimum clearances to the physical location of Optus assets for the following specific types of works must be maintained at all times.

Note: Where the clearances in the following table cannot be maintained or where the type of work differs from those listed then advice must be sought from the relevant Optus Damages and Relocations Team (refer to "FURTHER ASSISTANCE").

Type of Works	Clearance to Physical Location of Optus Asset
Jackhammers / Pneumatic Breakers	Not within 1 meter.
Light duty Vibrating Plate or Wacker Packer type compactors (not heavy road construction vibrating rollers etc.)	500mm compact clearance cover before a light duty compactor can be used over any Optus conduit. No compaction permitted over Optus direct buried cable without prior approval from Optus.
Boring Equipment (in-line, horizontal and vertical)	Not within 5 meters parallel of the Optus asset location without an Accredited Optus Asset Locator physically exposing the Optus asset and with an Optus representative onsite. Not to cross the Optus asset without an Accredited Optus Asset Locator physically exposing the Optus asset and with an Optus representative onsite.

Type of Works	Clearance to Physical Location of Optus Asset
Heavy vehicle Traffic (over 3 tonnes)	Not to be driven across Optus conduits with less than 600mm of cover. Not to be driven across Optus direct buried cable with less than 1.2 meters of cover. Once off crossings permitted, multiple crossing (e.g. road construction or logging) will require Optus approval. Accredited Optus Asset Locator to physically expose the Optus asset to verify actual depth.
Mechanical Excavators, Farm Ploughing, Vertical Hole installation for water bore or fencing etc.	Not within 1 meter. Accredited Optus Asset Locator to physically expose the Optus asset to verify actual location.

ASSET CLEARANCES AFTER COMPLETION OF WORKS

All Optus pits and manholes must be a minimum of 1 meter from the back of any kerb, 3.5 meters of the road surface without a kerb or not within 15 meters of street intersection.

In urban areas Optus conduit must have the following minimum depth of cover:

- Footway 600mm;
- Roadway 1 meter at drain invert and at road centre crown.

In rural areas Optus conduit must have a minimum depth of cover of 1 meter and direct buried cable 1.2 meters.

In cases where it is considered that the above clearances cannot be maintained at the completion of works, advice must be sought from the relevant Optus Damages and Relocations Team (refer "Further Assistance").

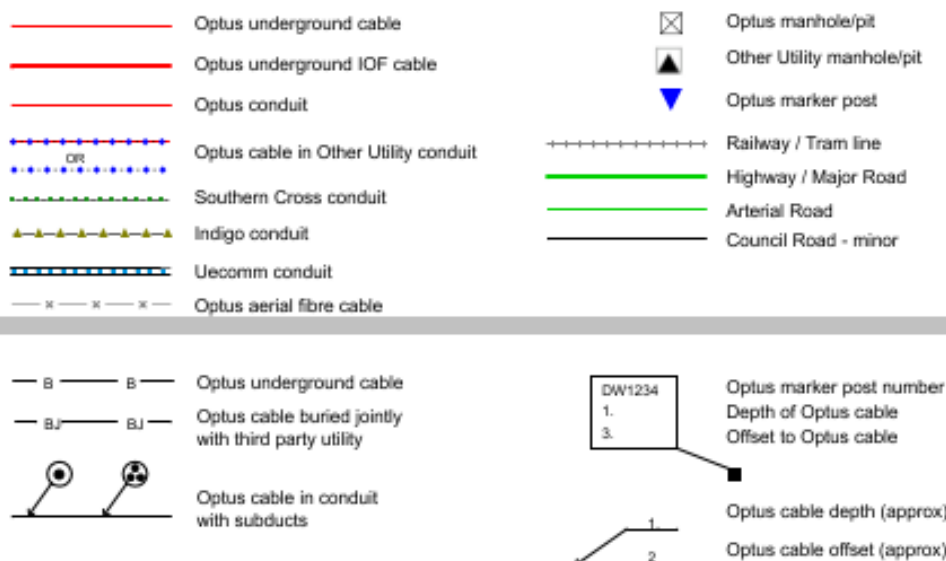
FURTHER ASSISTANCE

Further assistance on asset clearances, protection works, or relocation requirements can be obtained by contacting the relevant Optus Damages and Relocations Team on the following email address:

NFODamages&RelocationsDropbox@optus.com.au

Further assistance relating to asset location drawings etc. can be obtained by contacting the Optus Network Operations Asset Analysis Team on 1800 505 777.

OPTUS ENGINEERING DRAWING SYMBOLS



OPTUS

Optus Accredited Asset Locators

Name	Company Name	Phone	Email	State	Region/Service Area
Drew Misko	Australian Subsurface Pty Ltd	0427 879 600	admin@australiansubsurface.com	ALL	ALL
Andrew Watson	Subsurface Mapping Solutions Pty Ltd	0408 839 723	admin@subsurfacs.com.au	ALL (Not TAS)	South East QLD + Aus wide
Chris Gordon	Heavy Construction Solutions	1300 859 027	chris.gordon@heavycs.com.au	VIC,NSW,QLD,SA TAS	All
Alan Cordner	Alcom Fibre Services Pty Ltd	0400 300 337	alcomfibre@bigpond.com	NSW	Sydney, NSW
Brad McCorkindale	Bradmac Locating Services	0434 157 409	info@bradmaclocating.com.au	NSW	NSW
Shane Buckley	Cable & Pipe Locations Pty Ltd	0408730430	shane@cableandpipelocations.com.au	NSW	North Coast , Mid North Coast, Central West, Northern Rivers
Annabelle Pegler	Down Under Detection Services (DUDS)	0418 267 964	apegler@duds.net.au	NSW	All
George Koenig	Downunder Locations	0438243856	downunderlocations@gmail.com	NSW	Tweed Heads/Gold Coast
Michael Grant	M&K Grant Bega Bobcats Pty Ltd	0427 260 423	zzbobcat@bigpond.net.au	NSW	Bega, Far South Coast
Antony Critcher	Geotrace Australia Pty Ltd	0417 147 945	antony@geotrace.com.au	NSW	All Areas, Sydney, Wollongong, Newcastle, ACT
Sarah Martin	Hydro Digga	0447 774 000	admin@hydrodigga.com	NSW	Mid North Coast
Nathan Ellis	Utility Locating Services	0404 087 555	nathan@uls.com.au	NSW	Sydney
Scott O'Malley	Coastal Cable Locators Pty Ltd	0427 975 777	skomalley@bigpond.com	NSW	South Coast- Snowy Mountains- Southern Highlands
Liam Bolger	Brandon Construction Services	0438 044 008	liam.bolger@hotmail.com	NSW	Sydney
Laura Elvery	Durkin Construction Pty Ltd	02 9712 0308	info@durkin.au	NSW	NSW
Shireen Sidhu	Locate & Map	(02) 8753 0049	admin@locateandmap.com.au	NSW	Sydney & Regional NSW only

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Ken Browne	Riteway Traffic Control Pty Ltd	0419 212 969	kbrowne@ritewaytc.com.au	NSW	Central Coast, Hunter
Jean-Max Monty	Civilscan	1300 575 488	john@civilscan.com.au	NSW	Sydney, Central Coast, Newcastle, Wollongong, Hunter Valley, Blue Mountains
Scott Hunter	Hunter Ground Search	0409327345	admin@hunter-groundsearch.net.au	NSW	Hunter, Upper Hunter, Central Coast, Newcastle
Damien Black	Mid North Coast Hydro Digging & Service Locating P/L	0418 409 465	djblack1@bigpond.com	NSW	Mid North Coast
Michael Nicholls	Utility Mapping NSW	1300 627 746	sydney@utilitymapping.com.au	NSW	All NSW
Joseph Restuccia	ProLocate	0415 633 393	joe.restuccia@prolocate.com.au	NSW	NSW Wide
Barry Maloney	Online Pipe & Cable Locating	1300 665 384	Office@onlinepipe.com.au	NSW	Sydney, Central Coast, Canberra, Wollongong, Newcastle
Sam Romano	Locating Services	0403 065 510	sam.romano@locatings-services.com.au	NSW	NSW All
Scott Allison	Crux Surveying Australia	02 9540 9940	sydneyoffice@cruxsurveying.com.au	NSW	Sydney Metro & Surrounding Areas
Donna Wullaert	Commence Communications Pty Ltd	02 6226 3869	admin@commencecomms.com.au	NSW	Canberra/ Yass / Bungendore/ Goulburn and surrounding regional areas
Grant Pearson	Warrabinya Services	0423 651 615	sales@warrabinya.com.au	NSW	Sydney Metro & Surrounding Areas
Stephen Fraser	Advanced Ground Locations	(02) 4930 3195	steve_agl@hotmail.com	NSW	Newcastle, Hunter Valley, Central Coast, Taree & Surrounding Areas
Andrew Findlay/ Anthony Hart	LiveLocates	1300 517 062	info@livelocates.com.au	NSW/ACT	South Coast NSW, ACT, Snowy Mountains , Snowy Valley
Mark Smith	Armidale Electrical	02 6772 3702	office@armidale-electrical.com.au	NSW	New England/Northwest
Samantha Guptill	Australian Locating Services	1300 761 545	admin@locating.com.au	NSW	All NSW
Clay Laneyrie	Laneyrie Electrical	0411142627	bindy@laneyrielectrical.com.au	NSW	Illawarra, South Coast, Shoalhaven, Southern Highlands
Reece Gainsford	East Coast Locating Services	0431 193 111	eastcoastlocating@hotmail.com	NSW	Sydney, Maitland, Newcastle, Hunter, Port Stephens, Central Coast

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Craig Vallely	Aqua Freeze & Locate Pty Ltd	0458 774 440	service@aquafreeze.com.au	NSW	Sydney only
Jason Vane	Smartscan Locators PTY Ltd	1300 778 923	Admin@sslocators.com.au	NSW	Sydney
Alex Farcash	Newcastle Locating Services Pty Ltd	0410698599	Admin@newcastlelocatings-services.com.au	NSW	Newcastle, Hunter Valley, Central Coast, Taree & Surrounding Areas
Amer El Chami	Site Scan Pty Ltd	0449 992 520	office@sitescan.net.au	NSW	All NSW
Ian Brown	A1 Locate Services	0400 484 828	Ian.brown@a1locate.com.au	NSW	All NSW
Paul Wallis	Beveridge Williams	0431 458 878	wallisp@bevwill.com.au	NSW	Newcastle Sydney Wollongong
Cameron Handley	Wombat Underground Services	0407477038	accounts@wombatunderground-services.com.au	NSW	ALL
Samantha Cupi-ado	Geoscope Utility Detection Services Pty Ltd	1300 750 350	info@geoscopelocating.com.au	NSW	All regions
Laurence Mead	Astrea Pty Ltd	1300 009 346	admin@astrea.com.au	NSW	Sydney Only
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Jim Morrison	Absolute Utilities Pty Ltd	0429 496 375	jim@absoluteutilities.com.au	NSW	Mid North Coast
Declan Dowd	Dowds Pipe And Cable Locating	0434 635 134	accounts@pipeandcable.com.au	NSW	Sydney/Wollongong
Nicholas Schneider	Subsurface Utility Solutions	0421157372	nick@subsurf.com.au	NSW	Sydney only
Ricky Evans	Riverina Cable Locating	0411444980	ricky@riverinacablelocating.com.au	NSW	Riverina, Murray
Adrian Ruane	Road and Rail Excavations Pty Ltd	0414 594 063	cody@roadandrailexcavations.com.au	NSW	Sydney only
Billy Cameron	Locate Down Under Pty Ltd	0431275034	info@locatedownunder.com.au	NSW	Central Coast/ Sydney
Daniel Hudson	Geosurv Locating Pty Ltd	1300 554 675	dan@geosurv.com.au	NSW	Sydney only
Roneel Chand	JDG Civil	0416506891	sadhunaam@gmail.com	NSW	Sydney only
Tim Briggs	Deetect Locating Services	0414630852	deetect.locating@outlook.com	NSW	ACT / NSW
Sean Ferriter	Utech Solutions Pty Ltd	1300 427 614	seanf@vaughancivil.com.au	NSW	Sydney only

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Ali Chahine	Underground Industries	0406906787	info@undergroundindustries.com.au	NSW	Sydney only
Scott Copetti	Metiri	0435 710 399	scott@metiri.com.au	NSW	Newcastle & Hunter Region
Blake Richardson	VFT	0409 210 502	b.richardson@vftes.com	NSW	NSW
Brett Pickup	BAP Services Pty Ltd	0434006009	Brett@bapservices.com.au	NSW	All Areas, Sydney, Illawarra, Newcastle, ACT
Patrick Billingham	OzDetect Pty Ltd	0497700667	patrick@ozdetect.com.au	NSW	NSW
Jesse Gavin	LCG GLOBAL PTY LTD	1300032740	info@lcsolutions.com.au	NSW	All NSW
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Shane McQuoid	Find Wise Location Services	0407992758	shane@findwise.com.au	WA	Perth

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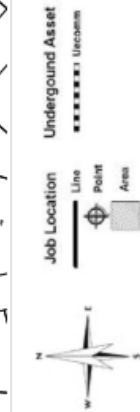
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Wayne Parslow	Danisam	0417 089 865	danisam@westnet.com.au	NT	Darwin NT and Surrounds
Heather Easter	Archers Underground Service Pty Ltd	0418 737 299	admin@auslocations.com.au	TAS	Statewide
Scott Crerar	Paneltec Group	0400 895 637	scott@paneltec.com.au	TAS	All
Hayden Stone	Utility Detection & Mapping	03 61712555	admin@udmggroup.com.au	TAS	Statewide



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Ucamm Underground Cable

Scale: 1:2500 Printed on: 03 Mar 2025
Sequence Number: 251725141
Location: 29 Sexton Avenue, Castle Hill, NSW 2154



Plans generated 03 Mar 2025 by PelicanCorp TicketAccess Software | www.pelicancorp.com



Sam Haddad
To: Not Supplied
Level 5, 156-158 Pacific Highway
Greenwich, NSW 2065



Uecomm Pty Limited
ABN 56 079 083 195

Building 8, 658 Church St,
Richmond, VIC 3121
Ph: (03) 9221 4100
Fax: (03) 9221 4193
Ah: 1800 707 447

LOCATION OF UNDERGROUND FIBRE OPTIC CABLE INFORMATION SHEET

IMPORTANT: PLEASE READ ALL INFORMATION AND CONDITIONS BELOW AND THE NOTICE ON THE REVERSE SIDE OF THE PLAN/S.

251725141

03 Mar 2025

"Before You Dig Australia" Sequence No
Customer ID

Issue Date: Optus and or Uecomm Nsw
Issue By:

29 Sexton Avenue, Castle Hill, NSW 2154

Location:
Uecomm Asset Location No. 38772740
Before You Dig Australia Job No.

In relation to your enquiry at the above address, Uecomm advises as follows:

The records of Uecomm Limited disclose that there ARE underground FIBRE OPTIC / TELECOMMUNICATIONS cables in the vicinity of the above enquiry as per attached plan/s.

- The underground cables referred to in this advice are defined as the underground communications cables owned or controlled by Uecomm Pty Limited.
- The person/company responsible for submitting the inquiry should take care to ensure all plans listed above have been received. For any plan listed above but not received please contact **1800 707 447**.
- Any information provided is valid only for **30 days** from the date of issue set out above.
- If the work operations extend beyond this period, or if the designs are altered in any way, you are requested to resubmit your proposal for reassessment.
- Further assistance may be obtained if necessary, by telephoning **1800 707 447**.

PLEASE READ ALL INFORMATION AND DISCLAIMERS BELOW:

1. Due to the nature of underground cables and the age of some cables and records, it is impossible to conclusively ascertain the location of all cables. The accuracy and/or completeness of the information cannot be guaranteed and, accordingly, they are intended to be indicative only and, as a result, Uecomm does not accept any responsibility for any inaccuracies of its plans. They should not be solely relied upon when undertaking underground works. It is also inaccurate to assume that fibre optic cables follow straight lines and careful on-site investigations are essential to locate its exact position.
2. The following minimum clearances must be maintained:
 - 300mm when laying asset's inline, horizontal or vertical.
 - 500mm when operating vibrating equipment, e.g., jackhammers or vibrating plates.
 - 1000mm when operating mechanical excavators.
3. Due to the inherent dangers associated with excavation in the vicinity of underground cables, precautions should be taken in the undertaking of any underground works, including (but not limited to) the following:
 - All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs if present must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the likely hood of damage to the cable, e.g., blades of hand equipment should be orientated parallel to the line of the cable rather than digging across the cable.
 - If any undisclosed underground cables are located, Uecomm Limited should be notified immediately.
 - All personnel must be properly briefed, particularly those associated with the use of earthmoving equipment, trenching, boring and pneumatic equipment.
 - All excavations must be undertaken in accordance with the relevant legislation and regulations.



4. **DAMAGE. ANY DAMAGE TO UECOMM'S NETWORK MUST BE REPORTED IMMEDIATELY TO 1800 707 447.**
5. Uecomm recommends using Uecomm approved location contractors to provide on-site location services for Uecomm plant. You can arrange Uecomm on-site visits by calling Uecomm on 1800 707 447 and Uecomm or its approved representative will attend your site to provide guidance to the location of the Uecomm assets (the "Uecomm Asset Alignment"). **Uecomm requires 3 clear business days' notice to conduct an on-site location.** The initial on-site visit by Uecomm will not normally incur a charge, but at the discretion of Uecomm, subsequent site visits may incur a charge to be applied at an hourly rate.
6. Uecomm will hold the relevant party responsible for any damage to Uecomm plant and all expenses incurred by Uecomm as a result of asset damage.
7. Except to the extent that liability may not be capable of lawful exclusion, Uecomm Pty Limited and its servants and agents and the related bodies corporate of Uecomm Pty Limited and their servants and agents shall be under no liability whatsoever to any person for any loss or damage (including indirect or consequential loss or damage) however caused (including, without limitation, breach of contract negligence and/or breach of statute) which may be suffered or incurred from or in connection with this information sheet or any Plans attached hereto. Except as expressly provided to the contrary in this information sheet or the attached Plans, all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

We thank you for your enquiry and appreciate your continued use of the Before You Dig Australia and/or Uecomm Asset Analysis Service. If you require further information, please contact Uecomm on **1800 707 447**.

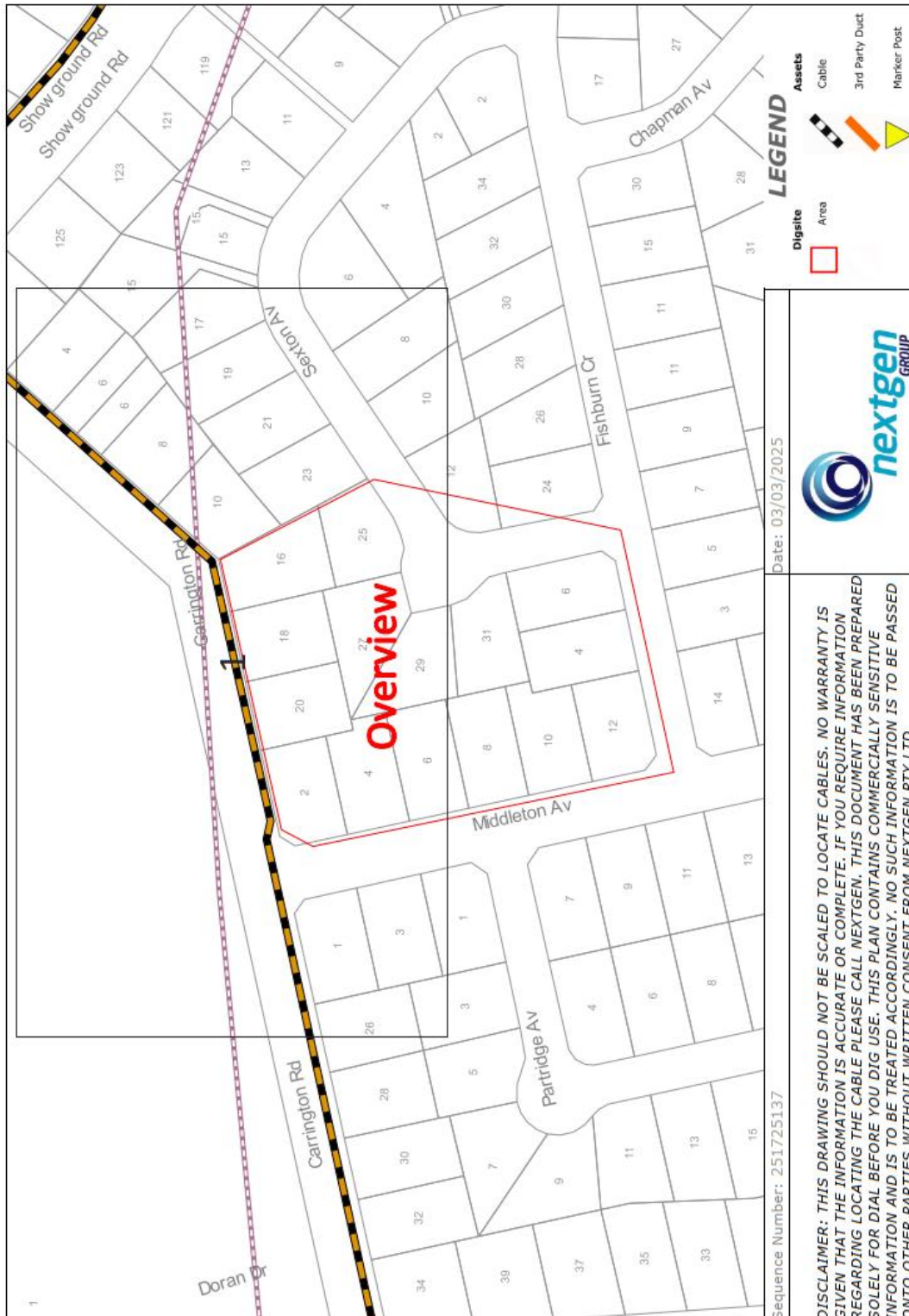
IMPORTANT *This document may be confidential and privileged. Unauthorised use is prohibited. If you have it in error, please notify us and shred this document. Thank you.*

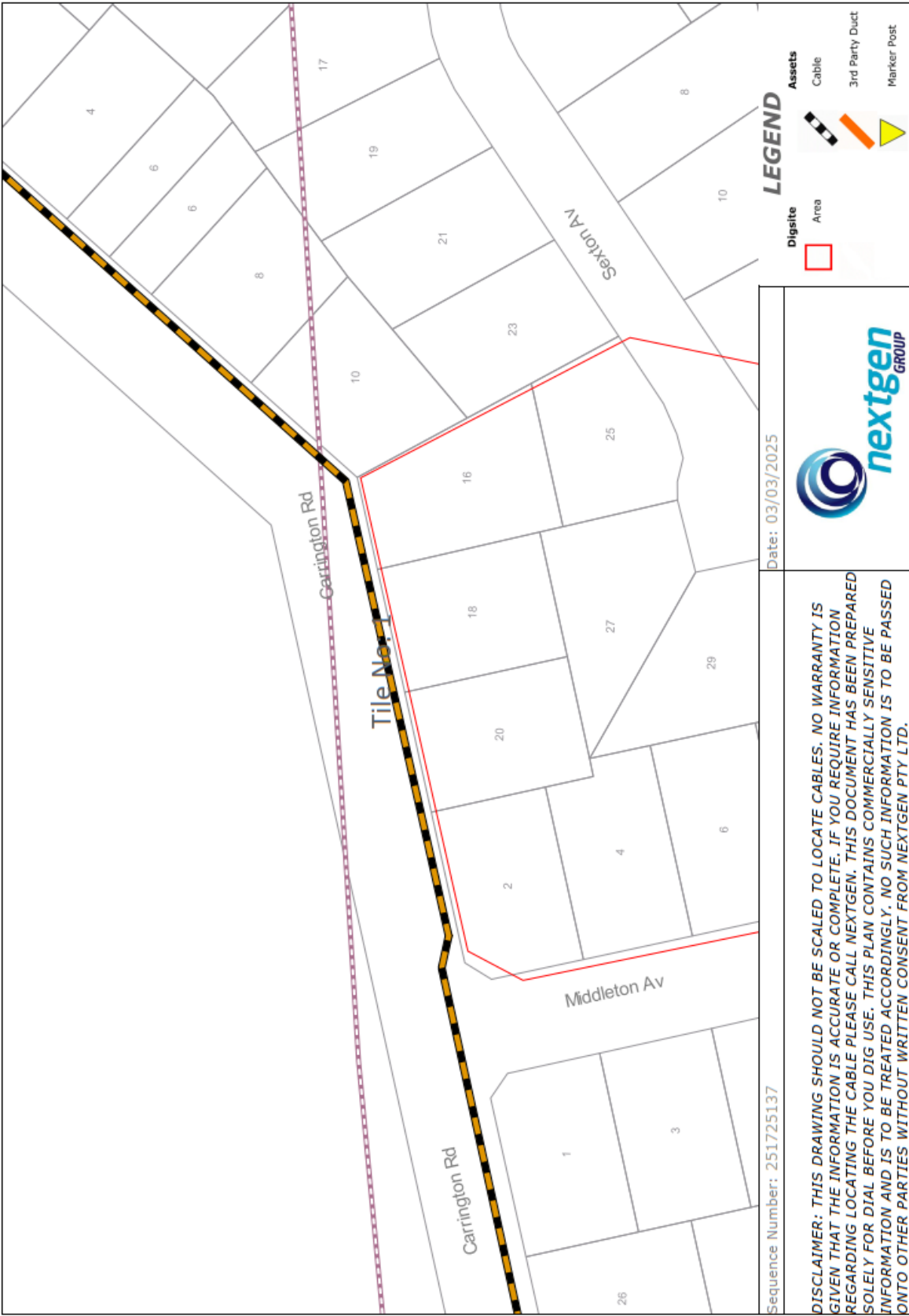
Table 3.6 Optus / Uecomm Assessment

Element	Assessment
Authority	Optus / Uecomm
Impact to Development	Existing communications reticulation currently traverses the site and impacts the building footprint.
Action to Existing	It is proposed to disuse all existing services within site.
Proposed Upgrades	Nil.

3.8 Nextgen

Figure 3.10 Nextgen Cable Plan





Plant Location Details



03/03/2025

Sam Haddad
Not Supplied
Level 5,156-158 Pacific Highway
Greenwich NSW 2065
Phone: +61288834239

Nextgen Networks Pty Ltd
Level 6, 333 Collins Street
Melbourne VIC 3000
T 1800 032 532

E Damage.Relocations@vocus.com.au

Dear Sam Haddad

The following is a response to your Dial Before You Dig enquiry

Assets Affected:

Nextgen Assets

Sequence No: 251725137

Location: 29 Sexton Avenue, Castle Hill NSW 2154

IMPORTANT:

- Please read and understand all the information and disclaimers provided below
- Sketches and Plans provided by Nextgen Networks are circuit diagrams only and indicate the presence of telecommunications plant in the general vicinity of the geographical area shown; exact ground cover and alignments cannot be given with any certainty and cover may alter over time. Telecommunications plant seldom follow straight lines and careful on site investigation is essential to uncover and reveal its exact position
- The accuracy and/or completeness of the information in the plans can not be guaranteed often due to changes in the surrounding land subsequent to Nextgen's deployment and, accordingly the plans are intended to be indicative only

"DUTY OF CARE"

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

1. It is the responsibility of the owner and any consultant engaged by the owner, including an architect, consulting engineer, developer, and head contractor to design for minimal impact and protection of Nextgen Networks plant. Nextgen Networks will provide free plans and sketches showing the presence of its network to assist at this design stage.
2. It is the owner's (or constructor's) responsibility to:
 - a) Request plans of Nextgen Networks plant for a particular location at a reasonable time before construction begins
 - b) Visually locate Nextgen Networks plant by vacuum excavation (pot-holing) where construction activities may damage or interfere with Nextgen Networks plant (see "Essential Precautions and Approach Distances" section for more information)
 - c) Contact Nextgen Networks Network (see below for details) if Nextgen Networks plant is wholly or partly located near planned construction activities

DAMAGE

ANY DAMAGE TO Nextgen Networks NETWORK MUST BE REPORTED TO 1800 032 532 IMMEDIATELY

- The owner is responsible for all plant damage when works commence prior to obtaining Nextgen Networks plans, or failure to follow agreed instructions
- Nextgen Networks reserves all rights to recover compensation for loss or damage to its cable network or other property including consequential losses

CONCERNING NEXTGEN NETWORK PLANS

- Phone 1100. Dial Before You Dig for free plans of Nextgen Networks plant locations. Please give at least 2 business days notice
- Nextgen Networks plans and information provided are valid for 30 days from the date of issue
- Nextgen Networks retains copyright in all plans and details provided in conjunction with your request. These plans and or details should be disposed of by shredding or any other secure disposal method after use
- Nextgen Networks plans or other details are provided for the use of the applicant, its servants, or agents, and shall not be used for any unauthorised purpose
- Please contact the Network Help Desk (see below for details) immediately should you locate Nextgen Networks assets not indicated on these plans
- Nextgen Networks, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and or details so supplied to the applicant, its servants and agents, and the applicant agrees to indemnify Nextgen Networks against any claim or demand for any such loss or damage
- Please ensure Nextgen Networks plans and information provided remains on-site at all times throughout your construction phase

ESSENTIAL PRECAUTION AND APPROACH DISTANCE

NOTE: If the following clearances cannot be maintained, please contact the Nextgen Network Help Desk (see below for details) for advice on how best to resolve this situation

1. On receipt of plans and sketches and before commencing excavation work or similar activities near Nextgen Networks plant, carefully locate this plant first to avoid damage. Undertake prior exposure (vacuum excavation) such as potholing when intending to excavate or work closer to Nextgen Networks plant than the following approach distances:
 - Where Nextgen Networks plant is in an area where road and footpaths are well defined by kerbs or other features a minimum clear distance of 600mm must be maintained from where it could be reasonably presumed that plant would reside
 - In non established or unformed reserves and terrain, this approach distance must be at least 1.5 metres
 - In country/rural areas which may have wider variations in reasonably presumed plant presence, the following minimum approach distances apply:
 - d) Parallel to major plant: 10 metres (for optic fibre cable)
 - e) Parallel to other plant: 5 metres

Note: Even pot-holing needs to be undertaken with extreme care, common sense and employing techniques least likely to damage cables. For example - vacuum excavation.
- If construction work is parallel to Nextgen Networks plant, then careful pot-holing at least every 5m is required to establish the location of all plant, hence continuing nominal locations before work can commence
2. Maintain the following minimum clearance between construction activity and actual location of Nextgen Networks Plant.

Jackhammers/Pneumatic Breakers	<i>Not within 1.0m of actual locations</i>
Vibrating Plate or Wackers Packer Compactors	<i>Not within 0.5m of Nextgen Networks ducts 300mm compact clearance cover before compactor can be used across Nextgen Networks ducts, and 600mm clearance across Nextgen Networks cables in the solid</i>
Boring Equipment (in-line, horizontal and vertical)	<i>Not within 2.0m of actual location Constructor to check depth via vacuum excavation (pot-hole)</i>
Heavy Vehicle Traffic (over 3 tonnes)	<i>Not to be driven across Nextgen Networks ducts with less than 600mm cover. Not to be driven across Nextgen Networks fibre with less than 1.2m cover Constructor to vacuum excavate (pot-hole) and expose plant</i>
Mechanical Excavators, Boring and Tree Removal	<i>Not within 1.0m of actual location Constructor to vacuum excavate (pot-hole) and expose plant</i>

- All Nextgen Networks pits and manholes should be a minimum of 1.2m in from the back of kerb after the completion of your work
- All Nextgen Networks conduit should have the following minimum depth of cover after the completion of your work:

Footway 450mm

Roadway 450mm at drain invert and 600mm below the pavement subgrade level invert

- All Nextgen Networks fibre in the solid should have the following minimum depth of cover after the completion of your work:

Footway 600mm

Roadway 1200mm at drain invert and 1200mm below the pavement subgrade level invert

- For clearance distances relating to Nextgen Networks above ground infrastructure please contact the Network Help Desk (see below for details)

FURTHER ASSISTANCE

Over-the-phone assistance can be obtained by calling the Network Help Desk below.

Nextgen require 5 clear business days notice to conduct an on-site location. The initial on site location visit will not normally incur a charge, but at the discretion of Nextgen subsequent site visits may incur a charge to be applied at an hourly rate.

Where an on-site location is provided, the owner is responsible for all vacuum excavation work (pot-holing) to visually locate and expose Nextgen Networks plant.

If plant location plans or visual location of Nextgen Networks plant by vacuum excavation reveals that the location of Nextgen Networks plan is situated wholly or partly where the owner plans to work, then **Nextgen Networks** must be contacted through the **Network Help Desk** to discuss possible engineering solutions.

The contact number for the **Network Help Desk** is 1800 032 532.

NOTE:

If Nextgen Networks relocation or protection works are part of the agreed solution, then payment to Nextgen Networks for the cost of this work shall be the responsibility of the principal developer. The principal developer will be required to provide Nextgen Networks with the details of their proposed work showing how Nextgen Networks plant is to be accommodated and these details must be approved by the Nextgen National Operations Manager prior to the commencement of site works.

RURAL LANDOWNER - IMPORTANT INFORMATION

Where Nextgen Networks owned cable crosses agricultural land Nextgen Networks will provide a one off free-on-site electronic cable location. Please note that the exact location of cables can only be verified by visual proving by pot holing, which is not covered by this service. The Network Integrity HelpDesk Officer will provide assistance in determining whether a free-on-site location is required. Please ring the Nextgen Network Help Desk as listed above.

PRIVACY NOTE

Your information has been provided to Nextgen Networks by DBYD to enable Nextgen Networks to respond to your DBYD request. Nextgen Networks keeps your information in accordance with its privacy statement entitled 'Protecting Your Privacy' which can be obtained from Nextgen Networks either by calling 1800 032 532 or visiting our website www.nextgenqgroup.com.au

Warning: Nextgen Networks plans show only the presence of cables and plant. They only show their position relative to road boundaries, property fences etc, at the time of installation and Nextgen Networks does not warrant or hold out that such plans are accurate thereafter due to changes that may occur over time.

DO NOT ASSUME DEPTH OR ALIGNMENT of cables or plant as these vary significantly. The customer has A DUTY OF CARE when excavating near Nextgen Networks cables and plant. Before using machine excavators NEXTGEN PLANT MUST FIRST BE PHYSICALLY EXPOSED BY VACUUM EXCAVATION (potholing) to identify its location.

Nextgen Networks will seek compensation for damages caused to its property and losses caused to Nextgen Networks and its customers.

EXPERIENCED PLANT LOCATORS (for your area)

On-site assistance should be sought from an Experienced Plant Locator if the telecommunications plant cannot be located within 2.5 metres of the locations indicated on the drawings provided. On-site advice should be obtained from a suitably qualified contractor highly skilled in locating Nextgen Networks plant. If there is any doubt whatsoever about the actual location of the telecommunications plant, the best method for locating the telecommunications plant or the correct interpretation of the drawings provided. In the case where Nextgen Networks plant is outside a recognised road reserve Nextgen Networks recommends that the **Network Help Desk** is contacted for assistance prior to engaging an Experienced Plant Locator.

For the assistance of customers Nextgen Networks has established strict criteria to assess the skill of contractors that may be engaged by owners requiring Nextgen Networks plant locating services to perform any of the following activities if requested to do so by the owner:

- Review Nextgen Networks plans to assess the approximate location of Nextgen Networks plant
- Advise owners of the approximate location of Nextgen Networks plant according to the plans
- Advise the owners of the best method for locating Nextgen Networks plant
- Advise owners of the hazard of unqualified persons attempting to find the exact location of Nextgen Networks plant and working in the vicinity of Nextgen Networks plant without first locating its exact position
- Perform trial hole explorations by vacuum excavation (pot-holing) to expose Nextgen Networks plant with a high degree of skill, competence and efficiency and utilising all necessary safety equipment

Nextgen Networks does not accept any liability or responsibility for the performance of or advice given by any Plant Locator engaged by you but we will, if requested, recommend suitably qualified plant locators.

GENERAL DISCLAIMER

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

Protecting survey marks

Information Sheet

May 2023

What are survey marks?

Survey marks support billions of dollars of investment, property rights and infrastructure. There are many types of survey marks used for various purposes.

Survey marks – what to look for



Paint

Yellow or white paint on the mark, or surrounding features.



Identification plates

Identification plates in rural areas help to locate permanent survey marks.



Star picket

Painted star pickets in rural areas may indicate a survey mark in the vicinity.



Reference Tree

A blazed tree may indicate a permanent mark or a cadastral boundary corner is located near by. It is most common in rural areas.



Alignment marks

Alignment stones, posts, pins and old stone kerbs are important cadastral marks.

Types of survey marks

Permanent survey marks

Permanent survey marks are fundamental marks that define location for surveying, mapping and engineering projects. Uses include housing developments, new road and bridge construction, improving railways and environmental mapping.



Trig Station



Permanent Mark



State Survey Mark

Cadastral (Boundary) Marks

Cadastral marks are used to mark property corners. Cadastral Reference marks also define property boundaries and are buried approx 100-200mm deep, or placed in the footpath, kerb or gutter.



Concrete Block references boundary corner (peg)



Galvanised Iron Pipe references boundary corner



Drill Hole & Wing in Kerb references adjacent boundary corner



Alignment Pin references road alignment

Why protect survey marks?

Survey marks provide a wealth of important information to a wide range of people in the community. They are used to support the surveying of property boundaries, but are also important to engineering, road building, mapping and other land surveys. The loss of survey marks can significantly degrade the integrity of the legal property boundaries and impact on the costs of development projects that depend on position and height.

How survey marks are lost?

Over the last decade in excess of \$1 million worth of permanent survey marks have been destroyed in NSW per year*. This does not include the loss in value of destroyed cadastral marks or the lost value to the community and industry that survey marks provide. Survey marks are usually destroyed by development activity, particularly:

- road works and footpath construction
- roadside slashing
- shopping mall developments
- street beautification projects
- underground utility upgrade or replacement
 - gas
 - water
 - electricity
 - telecommunication cable installation.

* Based upon cost of mark placement and survey

Survey marks may need to be removed

As a result of construction or development works it may be necessary to remove some survey marks.

There are procedures in place for times when a survey mark has to be removed or replaced. The Surveyor-General has guidelines for the replacement of survey marks. See [Surveyor General's Directions No. 11 Preservation of Survey Infrastructure](#) on the Spatial Services website.



How to protect survey marks?

1. Before Works Commence

Find out if there are survey marks located in the area of interest by:

- 1.1. Viewing the Permanent Survey Mark layer on SIX Maps - maps.six.nsw.gov.au and print the map showing location of survey marks.
- 1.2. Downloading the [Permanent Survey Mark Locality Sketches](#).
- 1.3. Conducting a thorough search of plans on public record (e.g. Deposited Plans) to determine the location of cadastral reference marks. It is recommended a Registered Land Surveyor or a person under their supervision to undertake this task. A registered surveyor should be consulted as early as possible (at the planning stage).
- 1.4. Inspect the site paying particular attention to survey marks located in the footpath, kerb or gutter.
- 1.5. If no survey marks are affected by the proposed works then commence works.

2. If any survey marks could be affected by the works, e.g. disturbed or removed

- 2.1. Submit an [Application for Surveyor General Approval - Survey Mark\(s\) Removal](#).
- 2.2. If only Permanent Survey Marks are affected, a declaration made by a Registered Land Surveyor stating that no Reference Marks are affected needs to be submitted with the application.
- 2.3. Allow 10 working days for a formal response.
- 2.4. Where required contact a registered surveyor to assist with the conditions of approval.

3. Protect survey marks

- 3.1. Comply with the conditions of the approval, place new marks and arrange a survey where required.
- 3.2. Protect adjacent marks from disturbance for the duration of the works. Note that up to 3 weeks may be needed to complete the survey (dependent on the complexity).

Penalties for disturbing survey marks

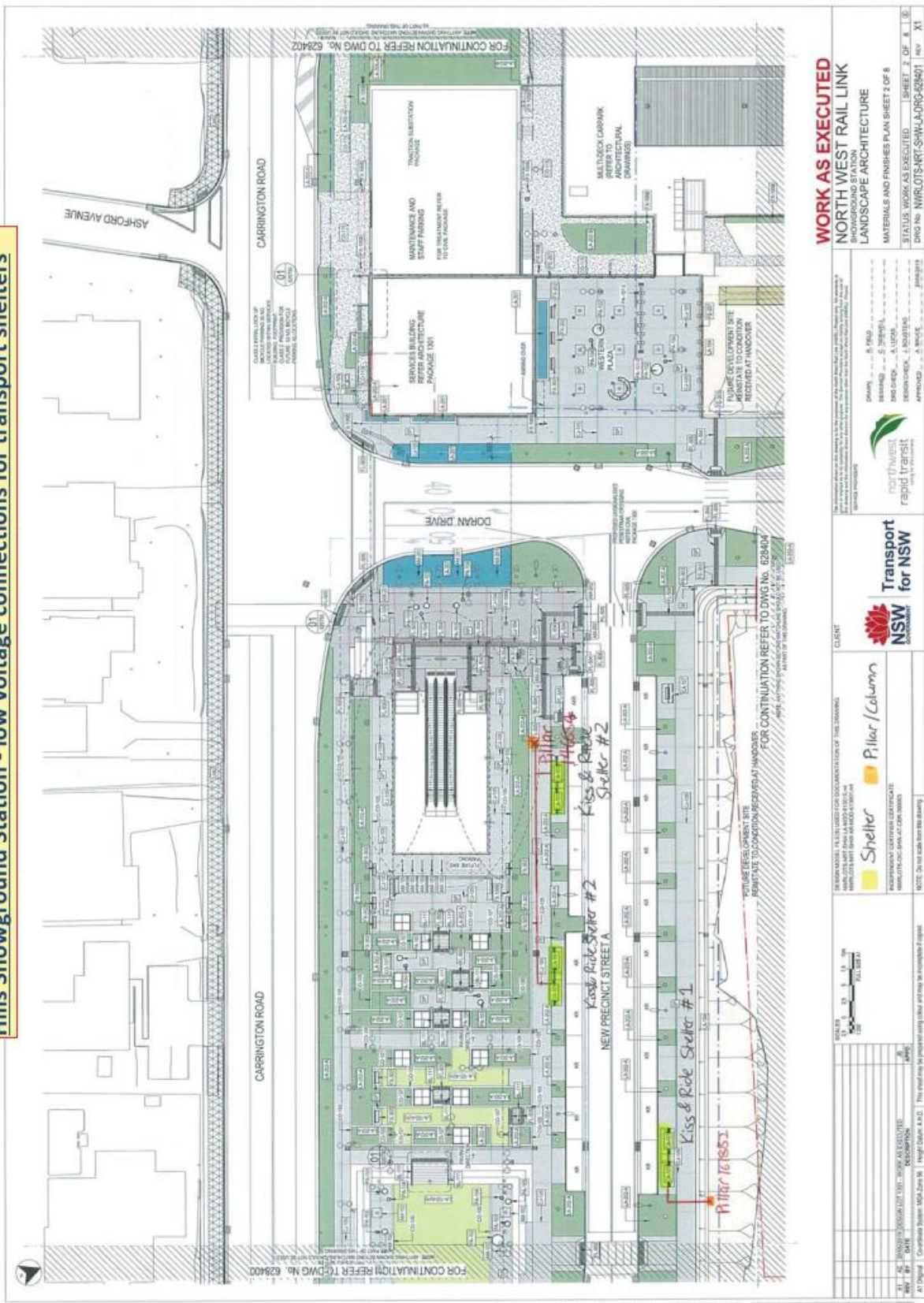
The unauthorised removal, disturbance or destruction of survey marks is costly to the community. Section 24(1) of the Surveying and Spatial Information Act 2002 states a person must not remove, damage, destroy, displace, obliterate or deface any survey mark unless authorised to do so by the Surveyor-General. In addition to a maximum penalty of 25 penalty units (currently \$110 per penalty unit) a person found guilty by a court may be ordered to pay compensation up to \$10,000 towards the cost of reinstatement and up to \$10,000 towards loss or damage suffered.

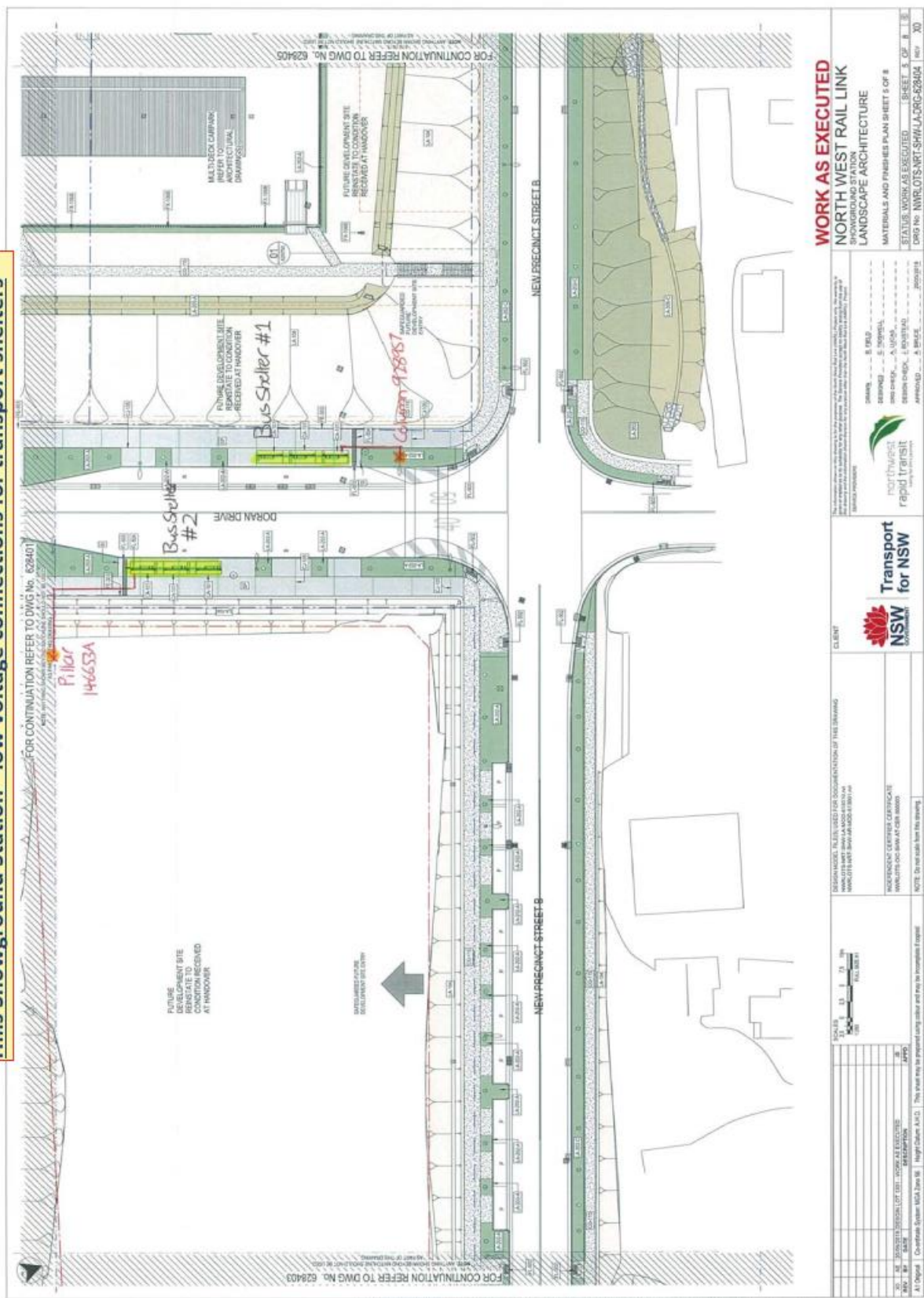
For any enquiries contact [DCS Spatial Services](#).

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Author: DCS NSW Spatial Services





Sydney Metro (Northwest)

Station Ground Anchors - De-Stressing Guidance Note

PROJECT	Sydney Metro (Northwest)	DATE	21 June 2016
GROUP	MP&I	STATUS	FINAL
AUTHOR	Ian Macfarlane	REVISION	1
COMPANY	TfNSW	FILE NUMBER	16/024710
FILE NAME	Station Ground Anchors De-Stressing Guidance Note		

Revision	Revision Date	Status	Brief reason for update	Name/Position/ Company	Author/Reviewer/ Approver	Signature
A	27.04.16	Draft	For Review & Comment	TfNSW		
B	20.05.16	Draft	Content reduced, for Review & Comment	TfNSW		
0	26.05.16	Final	Comments incorporated	TfNSW		
1	21.06.16	Final	TRM Comments incorporated	TfNSW		

The information contained herein is for the purpose of guidance only. No claims are made and no liability is accepted by TfNSW in respect of adoption of the guidance contained within this document. Supplementary professional advice should be sought in respect of the specific issues related to de-stressing and removal of the temporary ground anchors associated with the Sydney Metro North West Stations and Facilities.

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1 Purpose

The purpose of this document is to provide a guidance note for the potential safe de-stressing, cutting and removal (if required) of the temporary ground anchors at cut and cover stations & underground service facilities for Sydney Metro North West. The temporary ground anchors were installed as part of the excavation works prior to construction of the permanent facility structures therein, and become redundant once the permanent facility structure is built. These anchors do not need to be de-stressed as part of the permanent station and facility design and construction works.

This guidance note includes a methodology which is specific for de-stressing and removal of the temporary ground anchors from a position external to the station excavation support wall. The guidance note:

- Identifies the locations of ground anchors in land stratum outside the Sydney Metro Northwest project boundary;
- Provides some general background related to the installed ground anchors;
- Identifies potential hazards, effects and mitigation measures associated with de-stressing and cutting of ground anchors;
- Incorporates relevant advice obtained from ground anchor companies familiar with these types of anchors; and
- Highlights the various approaches that will allow de-stressing of the anchors, or excavating in their vicinity, to occur safely.

2 Background

Temporary ground anchors have been used for the retention of adjacent ground at deep excavations for the Sydney Metro North West stations and facilities. The anchors have a certified design life of 10 years and can be considered as temporary anchors in terms of the station structures which have a design life of 100 years. The ground anchors are up to 35m in length with up to 10m 'fixed' (bonded) anchor lengths (i.e. the extremity of anchors which are bonded to the ground by grout), spaced between 2m – 3m with anchor service loads up to 170T. The anchors have a 'free length' (unbonded) with the strands encapsulated in greased sheathing within a bored anchor hole between the fixed end and the unrestrained anchor head at the face of the excavation – refer Fig 1. Whilst the anchors have a 'temporary' design life of 10 years, the product installed may have an effective design life potentially beyond this timeframe and up to and exceeding 30 years, with the expectation that the locked-in load will gradually be released over this time span.

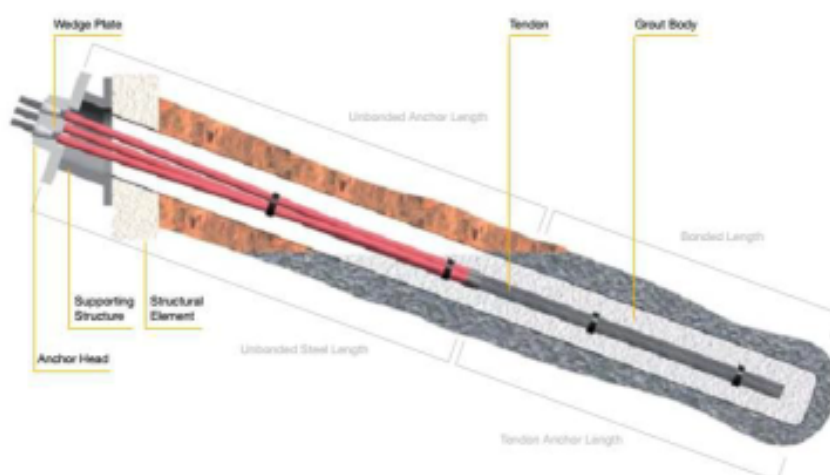


Fig. 1 – Typical Ground Anchor

Some anchors protrude outside of the project site boundary. In most cases the lands in which the anchors are installed have been acquired by TfNSW, but in some cases the land is owned privately or is controlled by Roads and Maritime Services (RMS), a local council or by the State of NSW (Crown land).

The anchors are located in excess of 2m below surface level (and deeper the further from the station structure due to the installed angle of the ground anchors) and as such are generally unlikely to be impacted by the majority of trenching utility excavations. However, should the anchors be damaged or destroyed by intrusive activities such as deep excavations (including for future developments), tunnelling or piling activities, this would have no impact on the adjacent station structures.

The design of the permanent station and services facility works within the excavations is not reliant upon the temporary excavation retaining structure and has been designed to support the relevant ground pressure loads. The permanent structure designs allow for full load transfer from the temporary soldier piled and ground anchor excavation wall structure. Accordingly, there is no need to de-stress the temporary ground anchors as part of the station construction methodology, leaving them in place behind the permanent precast external wall panel structures, except at locations where the anchors need to be removed for permanent works construction, e.g. at Service Buildings or to

3 Prestressed Ground Anchors

3.1 Ground Anchors as Installed

The anchors adopted are prestressed multi strand anchors, incorporating 15.2mm diameter strands, with anchors generally varying from four strands to 13 strands each, taking a range of ultimate design load generally between 34T to 170T. The inclination of the anchors into ground generally varies from 20° to 30° to horizontal, with bonded lengths generally varying from 4m to 10m and unbonded length generally varying from 4m to 29m. The longest anchor adopted is around 35m. The anchors are installed in a 125mm diameter borehole, grout filled.

The WAC (Work As Constructed) drawing for the typical ground anchor installed – NWRLTSC-THY-DN-DRG-325826 is attached in Appendix A.

A typical proprietary prestressed strand ground anchor is shown in Fig. 1 above. The temporary ground anchors as installed consist of three main components:

- **Bonded length** - The anchor is fixed in the borehole using grout (cement mortar) and transfers the forces to the loadbearing soil and / or rock mass via bond and skin friction;
- **Unbonded 'free' length** - Each strand is uncoupled from the borehole using individual ducts such that it freely extends in the unbonded length. This way, tension is applied to the anchor system. The ground anchor drawing indicates that the 'free' length is subsequently filled with grout to just below the anchor head, for corrosion protection purposes – this is confirmed by Note A9 on drawing NWRLTSC-THY-DN-DRG-325804; and
- **Anchor head** - The anchor head transfers the anchor force to the substructure and thus to the temporary excavation retaining wall structure that needs to be anchored. The head of the anchor is formed from a steel bearing assembly, with a proprietary steel anchor head including wedge sockets to lock in the strands.

The temporary excavation works may have up to three rows of ground anchors installed, generally at 3m vertical spacing – refer Fig. 2 for typical plan and section of the soldier piled / shotcrete wall with ground anchor support, and Fig 3 for a typical part-section at a station.

Ground anchors have been installed at the following locations:

- Bella Vista Station – City End
- Norwest Station – full perimeter
- Showground Station – limited areas
- Castle Hill Station – full perimeter
- Cherrybrook Station – full perimeter
- Epping Services Facility – full perimeter.

TfNSW will maintain the as-built record documentation of the works. These will be made available to affected property owners and other interested parties where the temporary ground anchors may extend into land not under ownership of TfNSW.

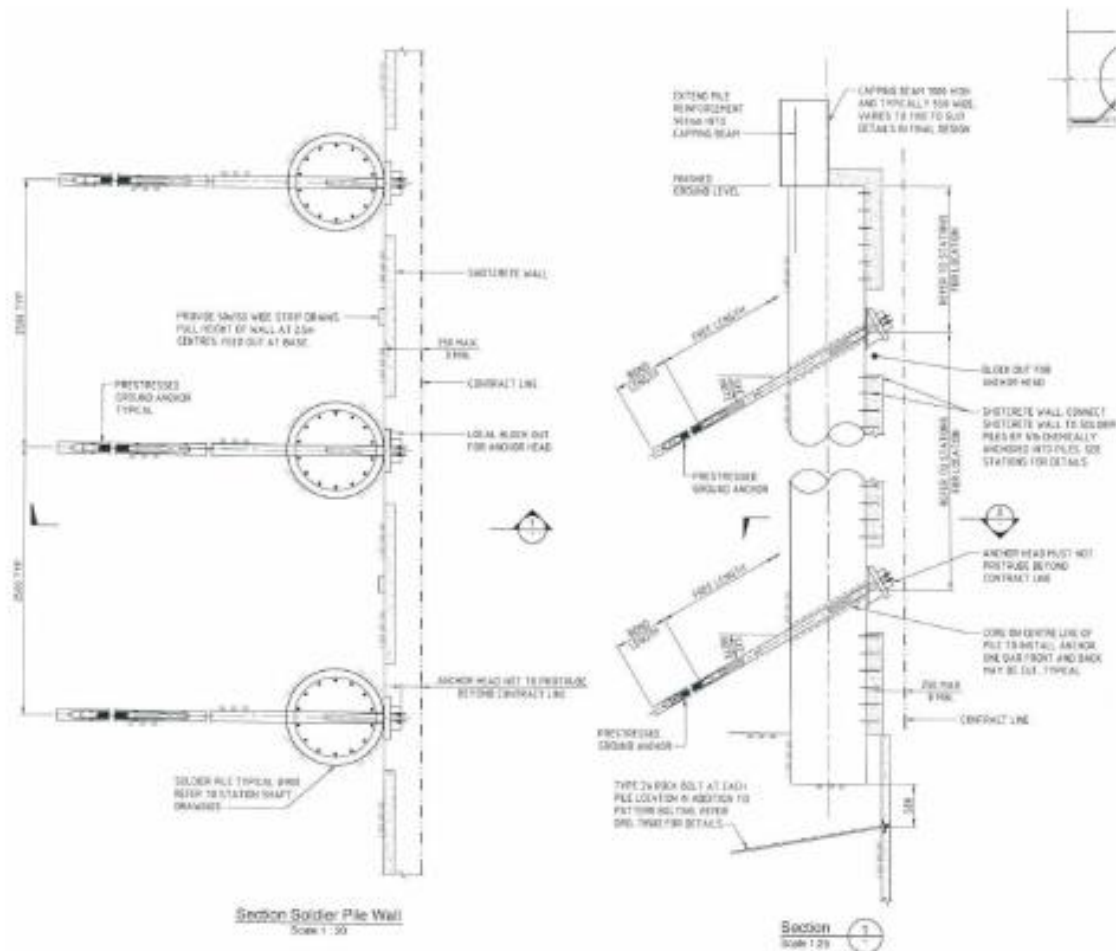


Figure 2 – Typical Plan and Section of Excavation Support System

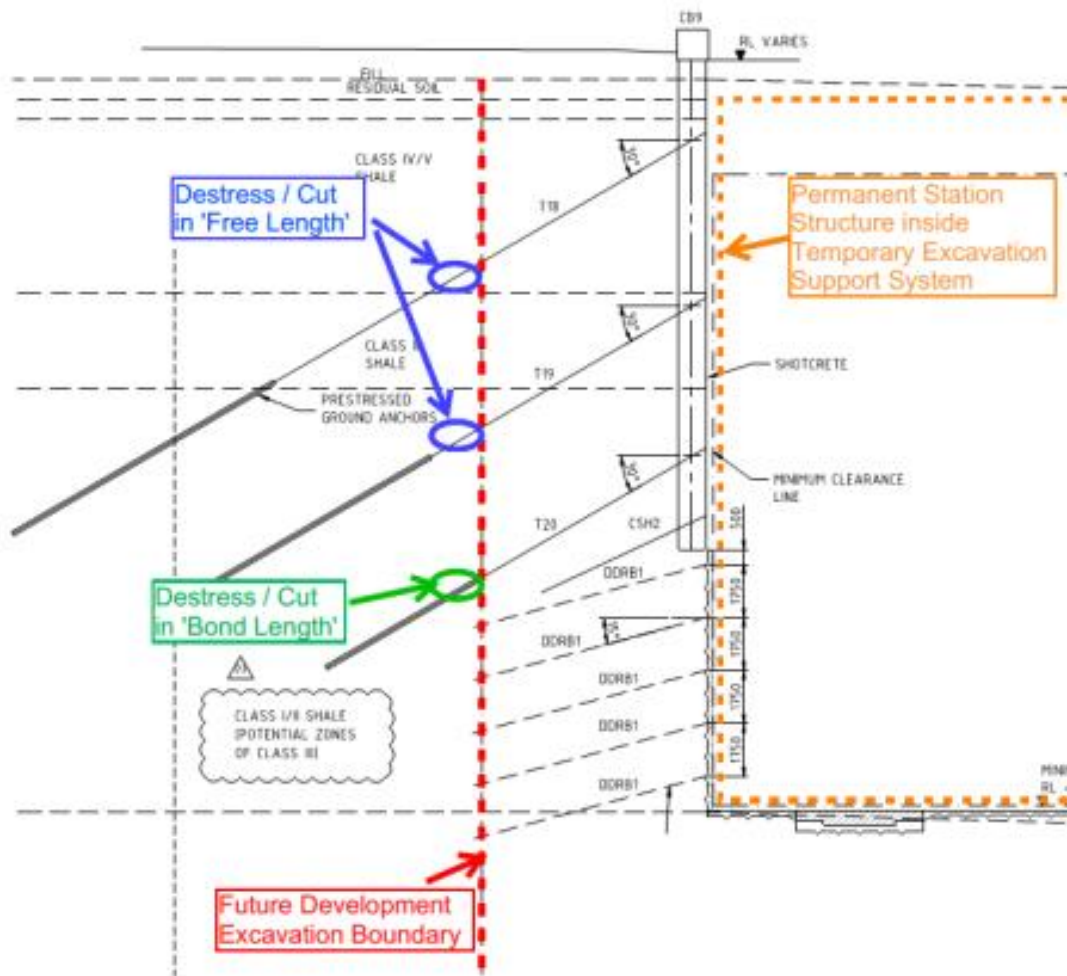


Figure 3 – Typical Part-Section of Excavation Support System at Station indicating location of ground anchors and future development excavation boundary

4 Hazard Identification

The top row of ground anchors are the most likely to be the first encountered. These anchors carry the highest loading and therefore are the anchors that need the greatest consideration by any future developer or contractor undertaking excavation works adjacent to the station structure. Accidental damage or cutting of a ground anchor above the rock grouted section may create a sudden release of load.

The following Table expands on the above and highlights some of the potential mitigation strategies in undertaking piled foundation or excavation works in the vicinity of stressed ground anchors, de-stressing and cutting of ground anchors, either accidentally or planned.

The following assessment is based on any future development works being undertaken after completion of the Sydney Metro Northwest.

Hazard	Potential Effects	Risk Management or Mitigation
Design of future piled retaining wall system in zone of ground anchors.	Piles located through ground anchor locations will hit the anchor.	- Design the piled wall with individual pile locations and width of piles clear of the anchor line – anchors spaced at 2.5m c/s through centre of soldier wall piles. - Use of as-built records.
Construction of future piled retaining wall system in zone of ground anchors.	Piles located through ground anchor locations. Pile boring drill could strike an anchor and sever stressed strands. Strands likely to be released and could wrap around the pile bore drill. Sudden stop of drill piece impacts operating plant at surface level. Drill piece below ground becomes stuck in pile bore hole.	- Where design location cannot be changed, accurately identify anchor locations and depth at pile location, set boring equipment to stop above anchor. Set up smaller core drill rig to probe further and make contact, drill bit to be of adequate hardness and speed to cut through anchor. - Use of as-built records.
Excavation in zone of ground anchors, striking and damaging anchor.	Sudden release of pre-stress energy, anchor becomes detached within anchor borehole and causes restraint loss at head of anchor.	The permanent station structure wall has been designed to withstand sudden impact from released anchor without damage affecting serviceability of wall.
Excavation in zone of ground anchors, striking and damaging or severing an anchor.	Sudden release of prestress energy, personal injury, damage to surrounding area or excavation equipment.	- Accurately identify anchor locations and depth at pile location. Allow tolerance for excavating equipment to avoid striking anchors. Use localised excavation methods when location detected. - Use of as-built records.

Hazard	Potential Effects	Risk Management or Mitigation
Excavation in zone of ground anchors, striking and damaging anchor.	Sudden release of prestress energy, anchor becomes detached within anchor borehole and causes restraint loss at head of anchor.	Follow the methodology for de-stressing anchors within this Guidance Note – refer Section 5.
Exposed anchor as-constructed condition does not match expectations, e.g.: lack of grout surrounding anchor.	Possible release of prestress energy during de-stress heating process, personal injury, and damage to surrounding area.	• Inspection of anchor condition, grout injection within borehole prior to de-stress heating. • Follow the methodology for de-stressing anchors within this Guidance Note – refer Section 5.
Exposed anchor de-stress heating causes snapping of strands under high tension load.	Heating equipment set too high and cuts strands rather than slow heating to de-stress. Unravelling and whipping of strands, personal injury, and damage to surrounding area or equipment.	• Test and set heating equipment for slow heating to ensure yielding, not cutting of strands. Heating process to be undertaken at safe distance - refer Note 1. • Follow the methodology for de-stressing anchors within this Guidance Note – refer Section 5.
Cutting of anchor following heating process causes snapping of strands under high tension load.	Heating of anchor does not fully de-stress the strands. Unravelling and whipping of strands, personal injury, and damage to surrounding area.	• Test and set heating equipment for slow heating to ensure yielding and de-stress occurs. Cutting of anchor to be undertaken at safe distance - refer Note 1. • Follow the methodology for de-stressing and cutting anchors within this Guidance Note – refer Section 5.

Note 1: Safe distance to be risk assessed based on local conditions at site and / or to incorporate suitable protection between the anchor and operative.

5 Methodology for De-Stressing

5.1 General

The methodology is based on the condition that the ground anchors can only be accessed from a future excavation zone adjacent to the Sydney Metro Northwest station or service facility.

In preparation of this Methodology technical advice was obtained from several anchor suppliers located in Sydney. This included DYWIDAG-Systems International Pty Limited, VSL Australia Pty Ltd and SRG Limited.

5.2 Potential De-stressing Methods

Any methodology must recognise that safety measures are paramount and must prevent personnel being close to the exposed anchor location when de-stressing activities are performed.

Options include:

- Controlled heating of the anchor at a confined location, monitored from a remote safe distance, to allow relaxation and de-stress. This option relies on slow heat over an exposed length until significant sagging is observed, which indicates yielding and de-stressing. This option would make use of a containment cover structure. Cutting of the anchor may then take place.
- Controlled torch cutting of the anchor from a remote distance. This option would make use of a containment cover structure. The cutting process may make the strands to whiplash and unravel, with possible damage to the cutting unit.
- Saw cutting of the anchor from a remote distance. This option would make use of a containment cover structure. The cutting process may make the strands to whiplash and unravel, with possible damage to the cutting unit.
- Controlled high pressure water jet cutting of the anchor from a remote distance. This option would make use of a containment cover structure. The cutting process may make the strands to whiplash and unravel, with possible damage to the cutting unit.

In all cases, where the anchor remains an obstruction to any proposed future excavation the anchors will require further cutting into sections as the excavation deepens in order to remove the remaining anchor section.

Taking safety considerations as the principal requirement, it is considered that only controlled heating should be used for de-stressing. Following de-stressing the anchors can be cut by oxy-torch, saw or water jet cutting.

Any relevant party that has a requirement to remove a temporary anchor should obtain appropriate technical advice on the method to be adopted in the particular circumstance.

5.3 Methodology – De-stressing and Cutting of Ground Anchors

A. Preparation

1. Obtain relevant as-built information, and make a technical assessment using appropriately qualified engineering professionals to proceed with any adjacent excavation and de-stressing of ground anchors, subject to submission to Sydney Metro of a detailed methodology, engineering plans, impact assessment and safe work method statement specific to the location.
2. Locate the respective ground anchors on plan and depth / inclination with reference to the as-built documentation of the excavation support structure.
3. Identify any underground utilities and services within the proposed excavation zone and provide relevant protection measures.

B. Excavation

4. General excavation inside future development excavation boundary to a depth not less than 1m above the anchor interface location with the boundary (refer Fig 3).
5. Excavate a 1m wide pocket along the anchor length to expose the top row ground anchor external sheathing – within the 'free length' of the anchor (refer Fig 3 and Note 2 below). This will require controlled excavation closer to the expected depth of the top anchor. It is important to maintain rock cover embedment of the anchor over a length (of around 5m) between the excavated pocket and external face of the station soldier piled wall.
6. Locally excavate by manual / power tool methods around the ground anchor to expose the full steel anchor, removing any grout cover.

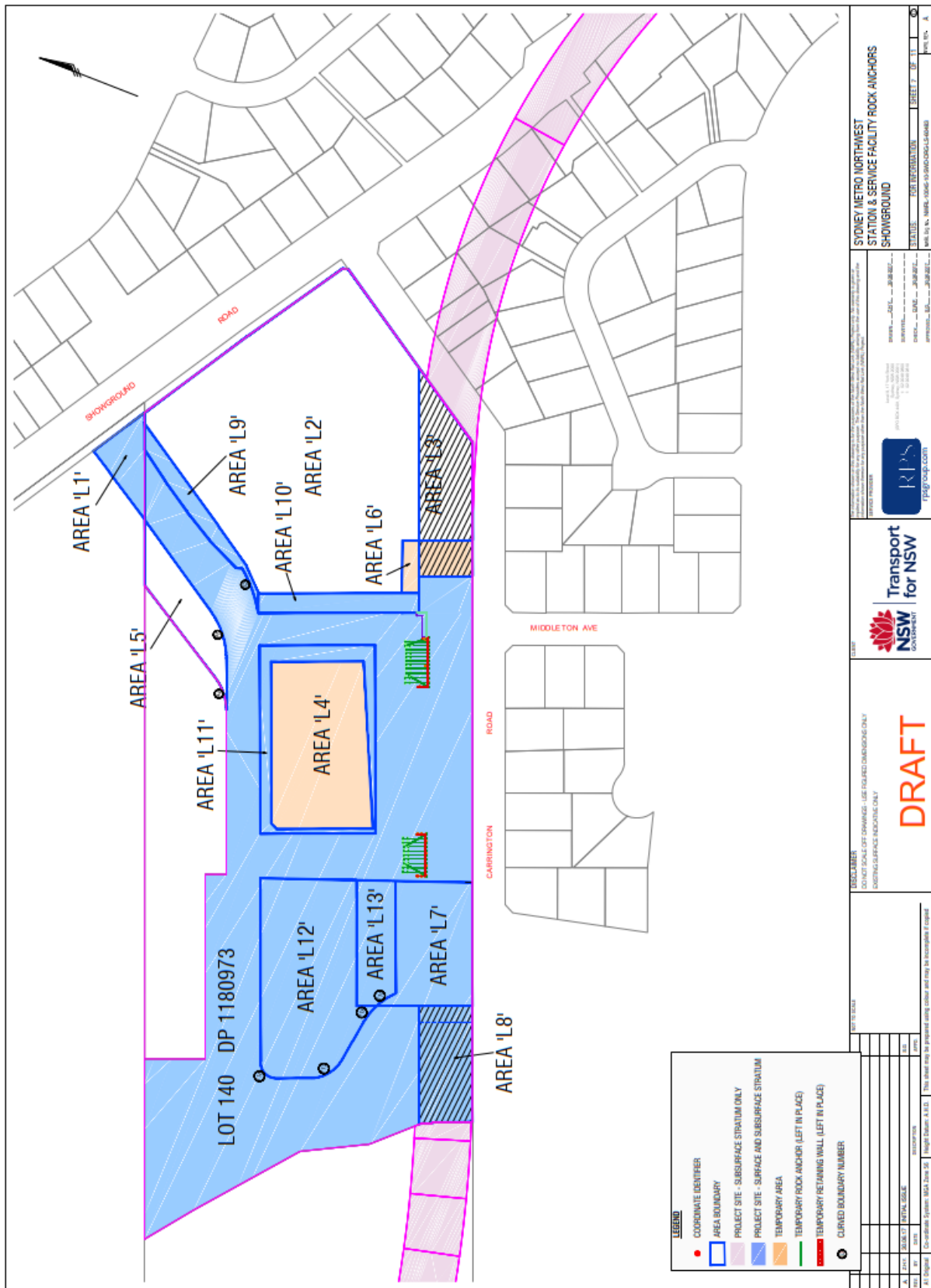
C. De-stressing and Cutting of Anchors

7. Install a protective containment cover structure over the exposed anchor zone, anchored to the exposed rock surface, allowing space for equipment and mobile plant extendable arm.
8. Set up high temperature heating equipment top and bottom of the exposed anchor length and slowly heat the anchor until significant sagging has occurred. This should be remotely monitored from a safe distance. (Note: temperature required likely to be in order of 700°C).
9. Cut the anchor within the sagged length using a mobile plant with extendable arm fitted with either oxy-flame, saw or water jet cutting equipment.
10. Continue the adjacent property excavation along the length, cutting and removing remaining anchor obstructions as the excavation deepens.
11. Where the proposed excavation has a depth below the 2nd or 3rd row of station ground anchors, then the above steps 4 to 10 are repeated.

Note 1: It is recommended that a working trial be conducted initially to assess results against expectations and to allow for adjustments in the methodology.

Note 2: Should the location of future excavation require the anchor to be exposed within its 'bond length' (refer Fig 3 bottom anchor), steps 5 & 6 should be conducted by mobile plant extendable arm. The condition of grouting in the bond length and upper free length should be assessed and where necessary inject additional high-strength flowable grout. Continue the above methodology from step 7.

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SURVEYING AND SPATIAL INFORMATION REGULATION 2006: CLAUSE 61(2) & 35(1)(b)									
MARK	MGA EASTING	MGA NORTHING	CLASS	ORDER	METHOD	ORIGIN	AND	CLASS	ORDER
PM 67220	314 742.214	6 265 781.494	B	2	SCMS	SCMS	125.642	LB	L2
SS 45465	313 796.102	6 266 356.206	C	4	SCMS	SCMS	96.512	LB	L2
SS 54538	313 805.371	6 266 281.534	C	4	SCMS	SCMS	104.394	LB	L2
SS 61336	314 460.129	6 265 678.319	C	4	SCMS	SCMS	112.732	LB	L2
SS 61327	314 132.631	6 266 172.065	C	4	SCMS	SCMS	109.159	LB	L2
SS 62193	313 940.673	6 266 158.938	B	2	SCMS	SCMS	113.114	B	2
SS 62673	313 716.071	6 266 241.368	C	4	SCMS	SCMS	102.359	LB	L2



SSM CONNECTIONS

PM 67220-SSM4293
285°14'27" - 884.188 MGA GRND 'X'-Y'
285°14'27" - 884.1 SURVEY

SSM 61393-SSM 62073
289°55'46" - 238.97 MGA GRND
289°55'57" - 238.965 SURVEY

SSM 62673-SSM 45465
34°53'57" - 133.15 MGA GRND
34°53'57" - 133.15 SURVEY

SSM 45445-SSM 54444
118°56'47" - 154.285 MGA GRND
118°56'47" - 154.288 SURVEY

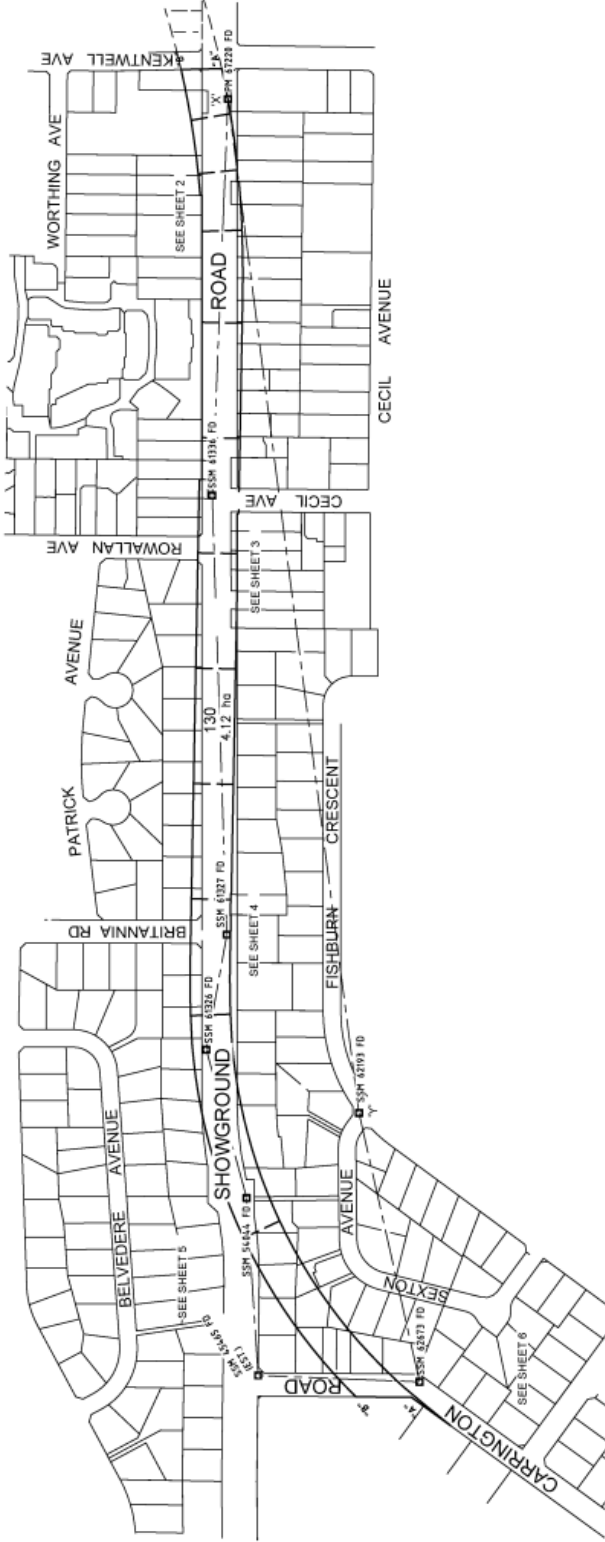
SSM 54444-SSM 61326
107°12'39" - 133.15 MGA GRND
107°12'39" - 133.15 SURVEY

SSM 61326-SSM 61327
132°45'43" - 101.285 MGA GRND
132°45'43" - 101.285 SURVEY

SSM 61327-SSM 61336
129°53'07" - 388.975 MGA GRND
129°53'07" - 388.975 SURVEY

SSM 61336-SSM 67220
124°54'29" - 343.855 MGA GRND
124°54'31" - 343.872 SURVEY

COMBINED SCALE FACTOR = 1.00005
SOURCE: MGA CO-ORDINATES AND SCALE FACTOR ADOPTED FROM SCMS ON THE 4th May 2012



TOTAL AREA LOT 130 - 4.12ha

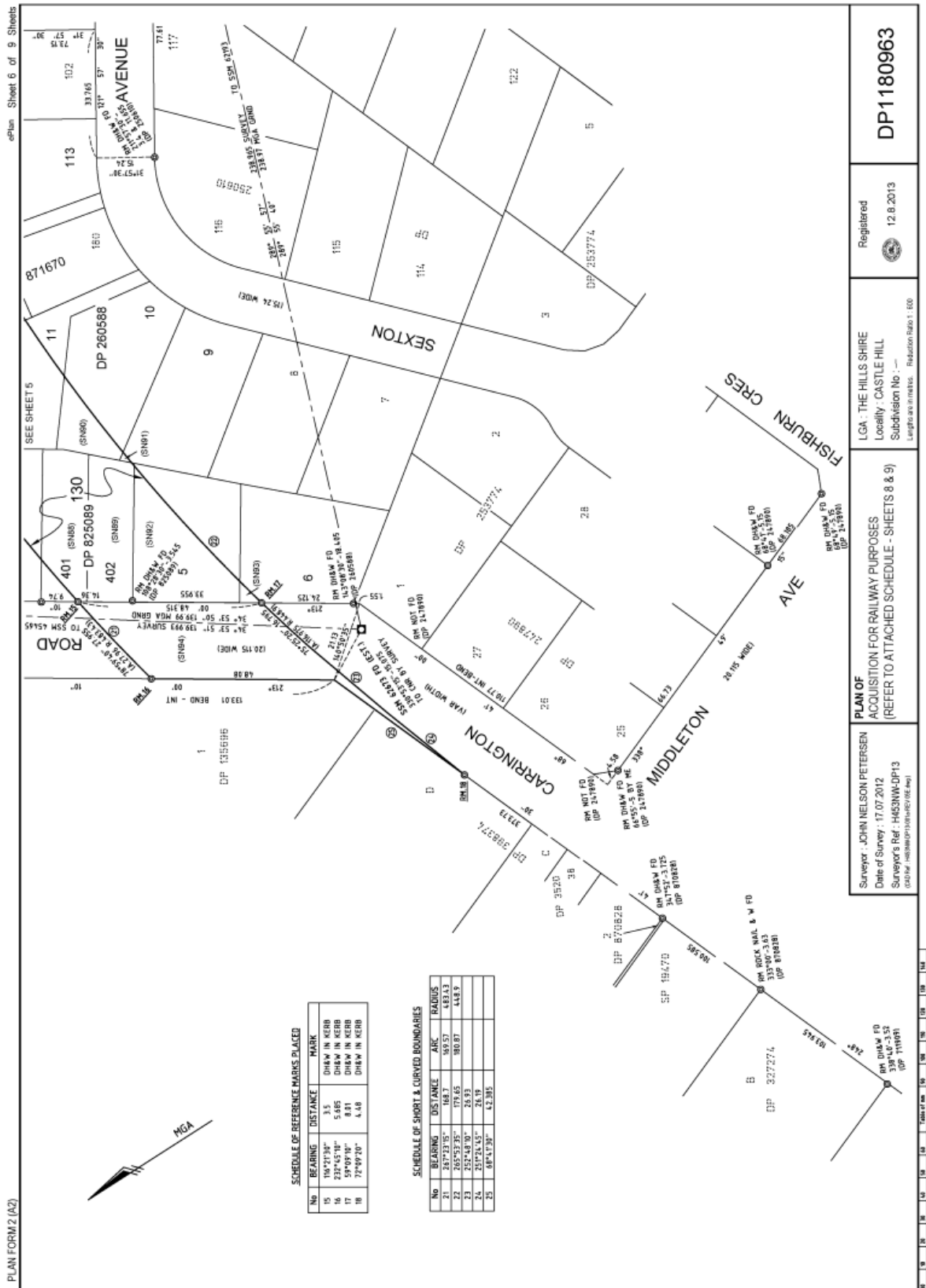
IT IS INTENDED TO ACQUIRE LOT 130

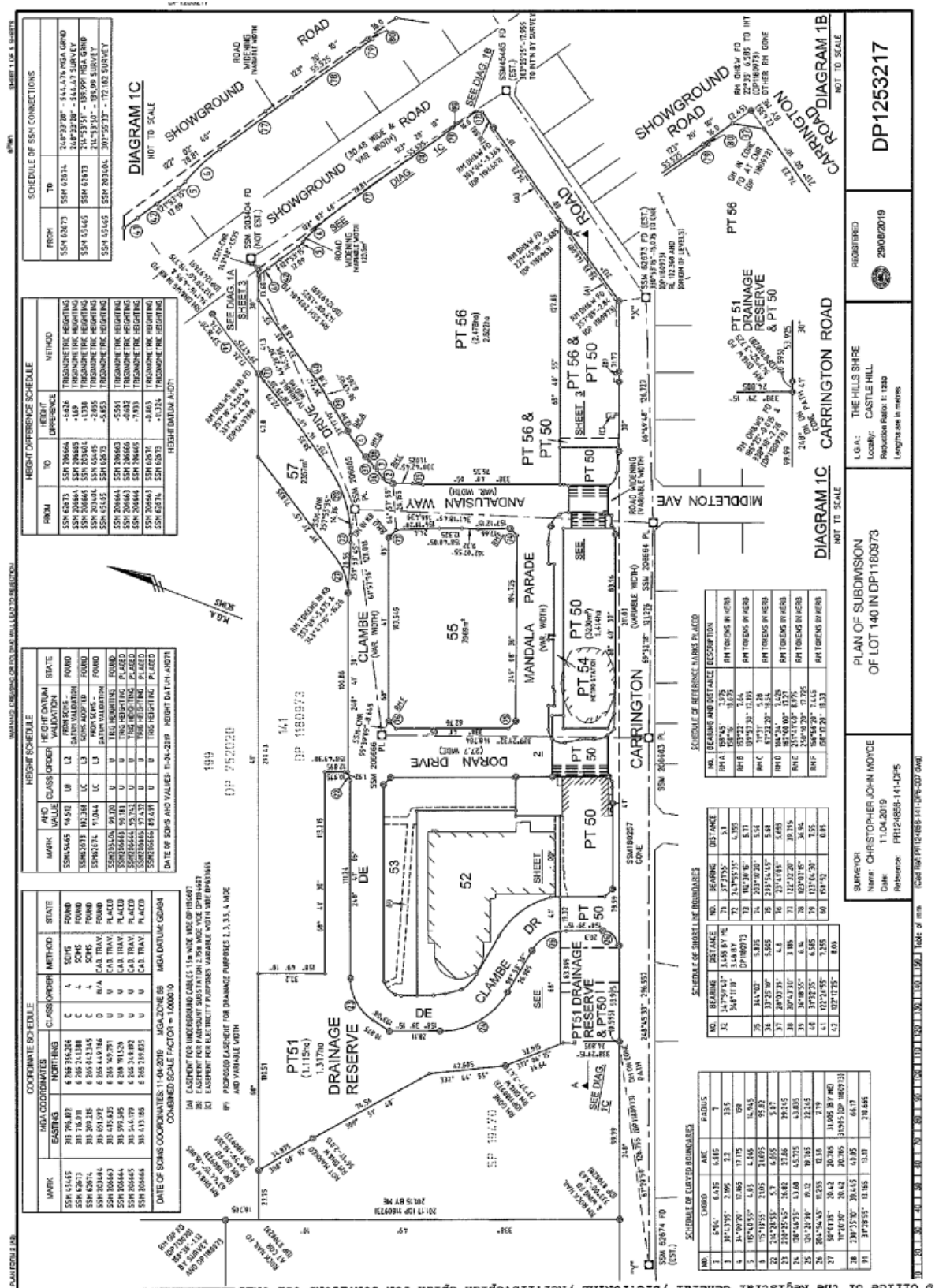
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Date of Survey: 17.07.2012
Surveyor's Ref: H453NW-DP13
(Refer to attached schedule - sheet 8 & 9)

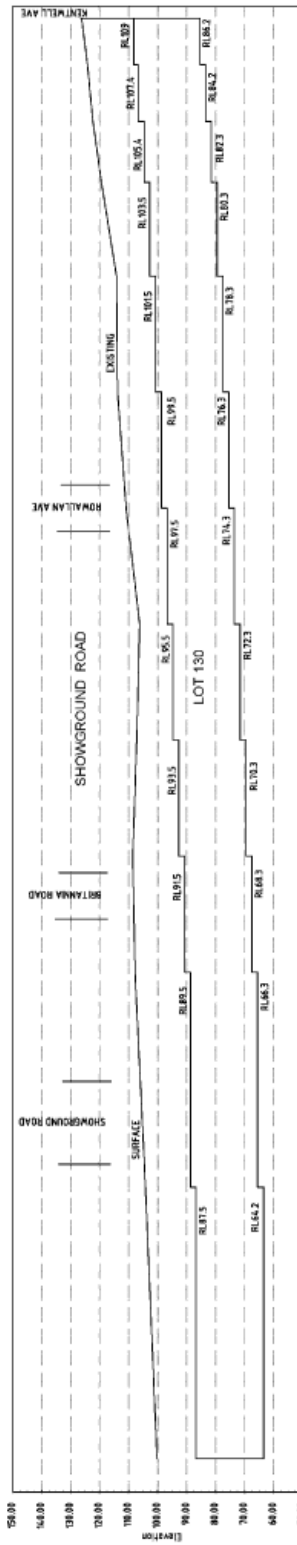
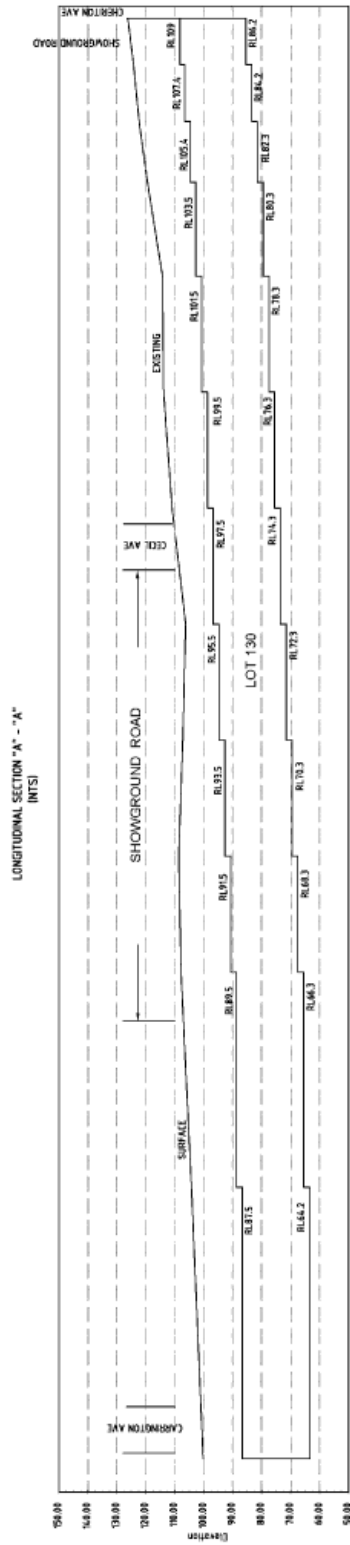
LGA: THE HILLS SHIRE
Locality: CASTLE HILL
Subdivision No: -
Lengths are in metres Reduction Ratio 1:2500

Registered
12.8.2013

DP1180963







Reg:R054952 /Doc:DP 1180963 P /Rev:13-Aug-2013 /Sta:SC OK /Pct:13-Aug-2013 13:04 /Pg:ALT /Seq:7 of 11
Red:stands:loc-plan /For Surveyors Use Only /Src:W

Surveyor: JOHN NELSON PETERSEN Date of Survey: 17.07.2012 Surveyor's Ref: H453NW-DP13 (FORM H453NW-DP13-REV 06-13)	PLAN OF ACQUISITION FOR RAILWAY PURPOSES (REFER TO ATTACHED SCHEDULE - SHEETS 8 & 9)	LGA: THE HILLS SHIRE Locality: CASTLE HILL Subdivision No: --- Lengths in metres	Registered 12.8.2013	DP1180963
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Surveyor: JOHN NELSON PETERSEN Date of Survey: 17.07.2012 Surveyor's Ref: H453NW-0P13 © 2012 JLP. H453NW-0P13 & H21785-001	PLAN OF ACQUISITION FOR RAILWAY PURPOSES (REFER TO ATTACHED SCHEDULE - SHEETS 8 & 9)	LGA: THE HILLS SHIRE Locality: CASTLE HILL Subdivision No: — Locality name and numbers. (Don't add the B.M. 104)	Registered  12.8.2013	DP1180963
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Req:R054952 /Doc:DP 1180963 P /Rev:13-Aug-2013 /Sts:SC.OK /Prt:13-Aug-2013
 Ref:0 and project rep/seq/Foro Surveyors Use Only /Src:W

PLAN FORM ON (Annexure Sheet)

WARNING: Creasing or folding will lead to rejection

GP 1011

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* OFFICE USE ONLY

Dear Sir / Madam,

Dial Before You Dig – Potential impact on Sydney Metro assets

Thank you for your Dial Before You Dig enquiry. We have identified that Sydney Metro assets are located in the vicinity of your enquiry. These assets may include:

- Station structures
- Viaduct structures
- Rock anchors
- Bridges
- Pedestrian underpasses
- Commuter carparks
- Pedestrian shelters
- Electrical, CCTV and communication services
- Fire and water main connections
- Paved plaza areas managed by Sydney Metro

Depending upon the location of your enquiry you may also receive separate notification of other Sydney Metro assets that may also be impacted.

Persons undertaking works outside of the Rail Corridor, but within the vicinity, may be subject to requirements including those detailed in the State Environmental Planning Policy (Infrastructure), Rail Safety National Law and the Industry Code of Practice for Work Near Overhead Power Lines. Guidelines regarding works in the vicinity of Sydney Metro corridors can be found by searching the document library at www.sydnymetro.info for "Corridor Protection".

Accordingly, please make contact with Sydney Metro prior to commencing any of the following works:

- Excavation works greater than 2m in depth within 25m of the Rail Corridor;
- Adjustments to drainage infrastructure to which Sydney Metro may be connected;
- Any works which would involve use of a crane, excavator or other item of construction plant which could approach within 3m of the Rail Corridor under normal operation or in the case of plant failure or collapse;
- Installation of structures within 6m of the Rail Corridor;
- Landscaping works within 6m of the Rail Corridor which includes installation of plants which would have a mature height exceeding 2m; or
- Works which may have an adverse effect on rail safety, or impede Rail Corridor access.

Where the Rail Corridor is defined by the property boundary of the rail corridor lot(s) as shown on the plans attached to this letter.

ATTENTION

- Sydney Metro is an operating railway utilising fully automated electric trains. Access to the rail corridor is not permitted under any circumstances without written authority from the operator, Metro Trains Sydney
- If you are planning on carrying out any works within the rail corridor separate approvals apply, which are in addition to those identified in this letter.
- For any planned works within the rail corridor, please contact Metro Trains Sydney on mtspossessions@metrotrains-sydney.com.au

The general arrangement of any assets are shown on the attached plan(s). These plans are provided subject to the provisions set out below:

- Any reliance placed on these plans by you is entirely at your risk. You must undertake your own investigations and enquiries to confirm the exact locations of underground assets.

- Sydney Metro is not responsible for any loss suffered by you or any other party (including indirect or consequential loss) in connection with the provision of these plans, however that loss may arise (including losses arising as a result of negligence by Sydney Metro and/or its employees, officers, consultants and contractors).
- Whilst Sydney Metro has taken all reasonable steps to ensure that the information contained in the indicative plans is as accurate as possible, Sydney Metro gives no guarantee, warranty or undertaking as to the accuracy, currency, adequacy, suitability or completeness of the plans and does not assume any duty of care to you or any third party nor accept any liability for inaccuracies in the information shown on these plans.

You must:

- provide Sydney Metro with appropriate information to accurately describe the proposed works in accordance with the relevant Sydney Metro Corridor Protection Guidelines and allow sufficient time to accommodate adjustments to meet Sydney Metro's requirements;
- not modify the nature or extent of works in the vicinity of the Sydney Metro assets without prior notification to, and confirmation of no objection by, Sydney Metro;
- exercise due care and take all reasonable precautions in the vicinity where assets are indicated to avoid destroying, damaging or interfering with Sydney Metro assets and infrastructure;
- not relocate, alter or interfere with any Sydney Metro assets or infrastructure under any circumstances;
- immediately notify Sydney Metro of any damage or threat of damage to its infrastructure that occurs as a result of your work, by calling the emergency contact number 02 9854 4805; and
- ensure information provided in this response is printed and available on-site at all times throughout your construction phase.

Due to the inherent dangers associated with excavation in the vicinity of underground assets and infrastructure, precautions should be taken in the undertaking of any excavation or underground works, including, but not limited to the following:

- all personnel must be properly briefed, particularly those associated with the use of earthmoving equipment, trenching, boring and pneumatic equipment; and
- all excavations by you must be undertaken in accordance with all relevant laws and regulations including, in accordance with but not limited to, Work Cover NSW "Work near underground assets: Guide" and Work Cover NSW "Excavation work: Code of practice".

You will be held responsible for any damage to Sydney Metro's assets or other loss caused (including consequential loss) as a result of works by you or on your behalf.

Please contact Sydney Metro via email smnwdbyd@transport.nsw.gov.au if you require further information.

The provision of these drawings does not provide approval for your proposed works or diminish your obligations under NSW legislation. This includes the requirement to contact Sydney Metro prior to any work commencing to discuss necessary safety and design aspects as detailed above.

Yours sincerely,

Sydney Metro

Dear Sir / Madam,

Dial Before You Dig – Potential impact on tunnel assets

Thank you for your Dial Before You Dig enquiry. Sydney Metro has identified underground tunnel assets in the vicinity of the enquiry location. These assets may include, but are not limited to running tunnels, cross passages, cross over caverns and associated services.

Please be aware that damage to these assets could cause serious injury or death as well as major disruption to Sydney Metro rail infrastructure.

A subsurface property stratum has been registered with the Land and Property Information office which describes the space in both plan and reduced level within which the tunnel assets are located. A copy of the relevant stratum plan is attached. The plan is provided subject to the provisions set out below.

- The actual depth of existing tunnel assets may vary significantly from the location shown on the attached plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Any reliance placed on these plans by you is entirely at your risk. You must undertake your own investigations and enquiries to confirm the exact locations of underground assets.
- Sydney Metro is not responsible for any loss suffered by you or any other party (including indirect or consequential loss) in connection with the provision of the plan, however that loss may arise (including losses arising as a result of negligence by Sydney Metro and/or its employees, officers, consultants and contractors).
- Whilst Sydney Metro has taken all reasonable steps to ensure that the information contained in the plan is as accurate as possible, Sydney Metro gives no guarantee, warranty or undertaking as to the accuracy, currency, adequacy, suitability or completeness of the plan and does not assume any duty of care to you or any third party nor accept any liability for inaccuracies in the information shown on these plans.
- Sydney Metro's plans are frequently updated. The attached plans are valid for 6 months from date of issue.

You must review the attached plan(s) to ensure that any proposed works by you are not in conflict with Sydney Metro's assets.

The potential to impact the tunnels will depend upon the nature of works proposed. You must contact Sydney Metro prior to carrying out any works if any of the following apply:

1. your proposed excavation is greater than 2 metres below existing ground level (this includes trenching, bore holes, piles and similar ground penetrations) and is located above or within the property stratum; or
2. significant additional loads are to be placed over the stratum area whether temporarily or permanently; or
3. significant vibration (i.e. driving piles) is to occur over or in the vicinity of the stratum.

In the event that the proposed works trigger any one of the above conditions:

- do not commence works;
- contact Sydney Metro via email smnwdbvd@transport.nsw.gov.au;
- provide sufficient information to Sydney Metro to enable accurate review of the proposed work; and
- await positive confirmation from Sydney Metro that the works are allowed to proceed.

Any further information you may require can be requested during this contact.

You must:

- provide Sydney Metro with information about the proposed works with sufficient time to allow for adjustments to meet Sydney Metro's requirements;
- not modify the extent of work in the vicinity of the tunnels without prior notification to Sydney Metro;
- exercise due care and take all reasonable precautions in the vicinity where underground assets are indicated to avoid destroying, damaging or interfering with Sydney Metro assets and infrastructure;
- not relocate or alter any Sydney Metro tunnel assets or infrastructure under any circumstance;
- immediately notify Sydney Metro of any damage or threat of damage to its infrastructure that occurs as a result of your work, by telephoning the emergency contact number 1800 019 989; and
- ensure information provided in this response is printed and remains available on-site at all times throughout your construction phase.

Due to the inherent dangers associated with excavation in the vicinity of underground tunnel assets, precautions should be taken in the undertaking of any excavation or underground works, including, but not limited to the following:

- all personnel must be properly briefed, particularly those associated with the use of earthmoving equipment, trenching, boring and pneumatic equipment; and
- all excavations by you must be undertaken in accordance with all relevant laws and regulations including, in accordance with but not limited to, Work Cover NSW "Work near underground assets: Guide" and "Work Cover NSW "Excavation work: Code of practice".

You will be held responsible for any damage to any of Sydney Metro's assets or infrastructure or other loss caused (including consequential loss) as a result of excavation or earthworks by you or on your behalf.

The provision of the attached drawing/s does not provide approval for your proposed works or diminish your obligations under NSW legislation. This includes the requirement to contact Sydney Metro prior to any work commencing which could affect our assets to discuss necessary safety and design aspects as detailed above.

Yours sincerely,

Sydney Metro

Date: 03 Mar 2025

To: Sam Haddad

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

Thank you for your BYDA enquiry (referenced below) according to our records your enquiry impacts our infrastructure.

Please ensure that you read the attached documentation, as it contains important information including essential steps that must be undertaken prior to commencing your intended activities.

SEQUENCE NO.:	251725133
JOB NO.:	38772740
LOCATION:	29 Sexton Avenue Castle Hill NSW 2154

WARNING: When working in the vicinity of Sydney Metro's assets you have a legal Duty of Care that must be observed.

If you require further information, please contact Sydney Metro using the email address in the attached letter(s).

To best manage the risk of damage and liability, we recommend that you engage the services of a Certified Locator

Important Notice

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

This response is intended for use only by the addressee. If you have received the enquiry response in error, please let us know by telephone and delete all copies; you are advised that copying, distributing, disclosing or otherwise acting in reliance on the response is expressly prohibited.

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

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



Hi,

Metro Trains Sydney operates underground *High Voltage, Low Voltage, Mechanical Assets* within your defined work area.

These assets MUST be located and identified, by an MTS Approved Location Company, BEFORE ANY excavation works begin.

If you require further information, please email dbyd@metrotrains-sydney.com.au.

Cheers,

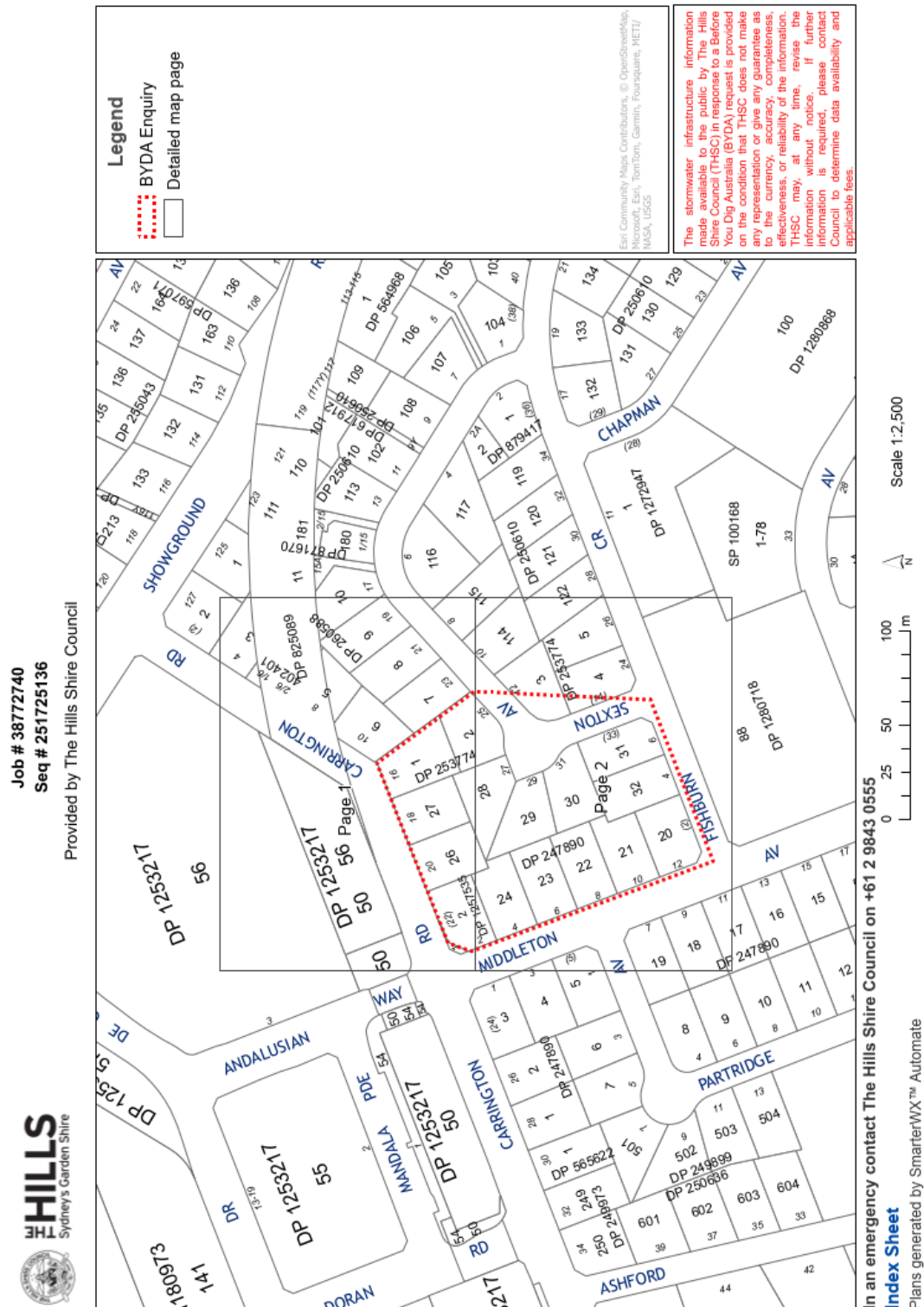
Electrical Network Manager
Metro Trains Sydney Pty Ltd
47 Tallawong Road
Rouse Hill NSW 2155

BEFORE YOU DIG AUSTRALIA
Call 1100
35 Railway Rd, Blackburn VIC 3130

Please be advised the person below has requested information about underground assets in your jurisdiction. You are required to respond within 2 working days and reference the Job Number, Sequence Number and the User Reference (where supplied).

3.11 Hills Shire Council

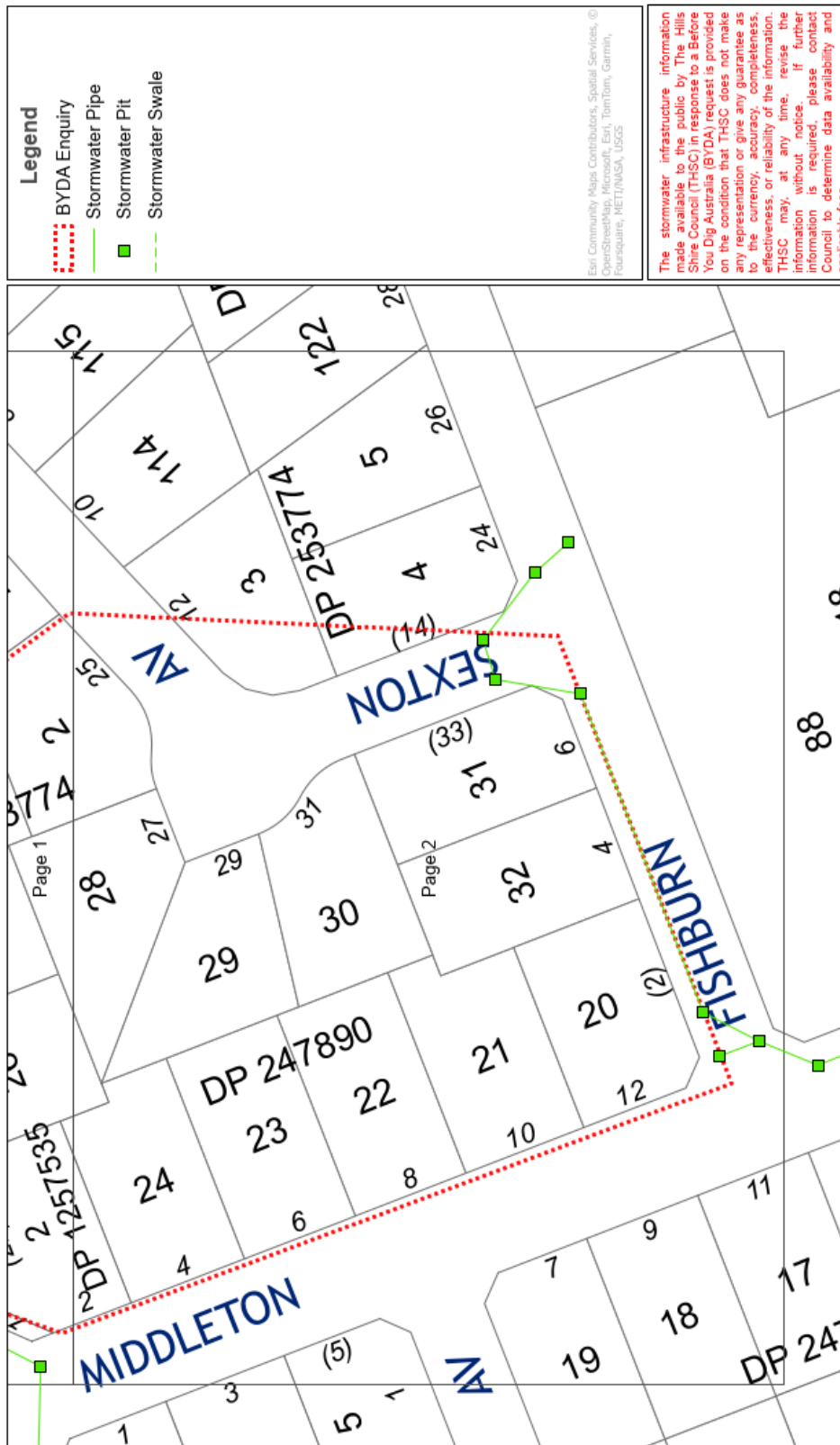
Figure 3.13 Hills Shire Council Plan – Stormwater Assets Plan.





Job # 38772740
Seq # 251725136

Provided by The Hills Shire Council



In an emergency contact The Hills Shire Council on +61 2 9843 0555

03/03/25 (valid for 30 days)

Plans generated by SmarterWX™ Automate

Scale 1:1,000

Table 3.7 Hills Shire Council Assessment

Element	Assessment
Authority	Hills Shire Council Stormwater Infrastructure
Impact to Development	Existing stormwater infrastructure reticulates along the Northwestern boundary in the intersection of Carrington Road and Middleton Avenue with a kerb inlet pits and Junction pits.
Action to Existing	Nil.
Proposed Upgrades	It is proposed to connect the discharge of the proposed development to the existing stormwater infrastructure at the intersection of Carrington Road and Middleton Ave.

4 Infrastructure Delivery and Staging Plan

For the proposed development, all essential infrastructure services, including potable water, wastewater, electricity, gas, and telecommunications, will be appropriately augmented in accordance with the relevant authority applications and design requirements.

A servicing strategy and consultation with the relevant service providers will be undertaken as part of the development process where required.

Consultation with residents in the local area will be a crucial part of the process, ensuring they receive adequate notice and are informed of the maximum timeframes for any proposed shutdowns. These consultations will be aligned with the overall construction program.



A1 Appendix 1

Sydney Water Sewer and Water Infrastructure Report by Hills Consulting



Hills Consulting Engineers Pty Ltd

Sydney Water Sewer and Water Infrastructure Report

16-20 Carrington Rd, Castle Hills

March 2025

Hills Consulting Engineers Pty Ltd (ABN:73 150 376 140)
P.O. Box 2760, North Parramatta NSW 1750
Ph: (02) 9630 8282 Fax: (02) 9683 1670
ISO9001 Quality Management Systems Certified

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Hills Consulting Engineers Pty Ltd

This Document has been prepared for the Party that has commissioned it, for the specific Purposes of this Project (or part thereof). It should not be relied upon by any other Party, or for any other Purpose.

Hills Consulting Engineers Pty Ltd accept no responsibility for any consequences of this being relied upon by any other Party or for any other Purpose, or for any errors or omissions which are due to errors, omissions or incomplete data being supplied to us for this Project.

This Document must not be disclosed to any other Party without the prior consent of Hills Consulting Engineers and from the Party who has commissioned it.

Project Number	CH16CAR_U	Date	24 March 2025
Project Name	16-20 Carrington Rd	Status	Final Draft
Client	ARADA	Revision	A
Author	M.Salatic	Reviewed	P.Chand

16-20 Carrington Rd, Castle Hill – Sewer and Infrastructure

3

1 Introduction

ARADA have engaged Hills Consulting Engineers Pty Ltd (IDC) to prepare technical inputs to support the planning and development proposal for 16-20 Carrington Rd, Castle Hill site. This report will cover the following:

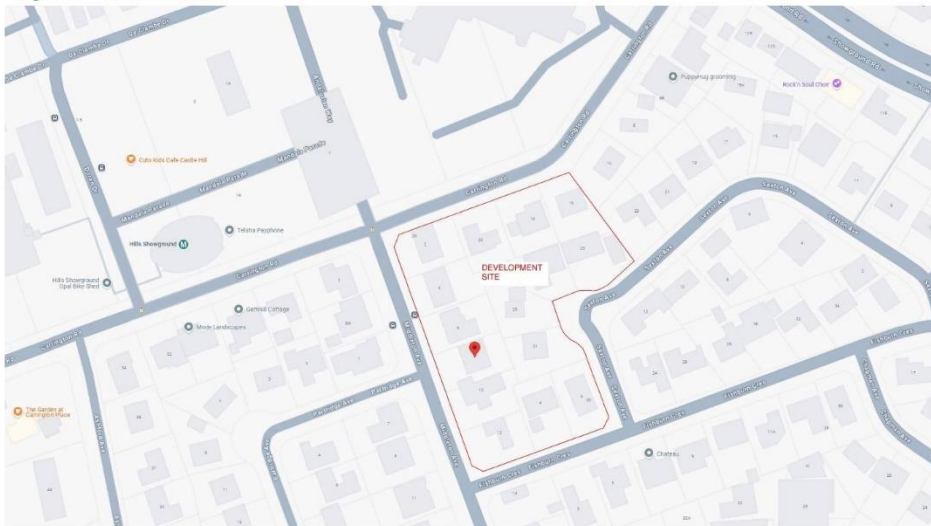
- Sydney Water Sewer and Water

1.1 The Site

The site is approximately 1.406 hectares in size and is bound by Middleton Ave to the east, Fishburn Cres to the south and Sexton Ave to the west and Carrington Rd to the north.

The sites are shown in Figure 1 below.

Figure 1 - Site Location



2 Proposed Development

The sites will provide a development of approximately

- 462 resident units.
- 2 level of basement level car park
- 3 buildings on the site ranging from 11 storeys to 16 storeys, over 25m effective height.

3 Infrastructure

3.1 Water

3.1.1 Existing Infrastructure

Potable water mains extend along the existing roads around the site. Existing uses on the site are supplied potable water via a DN100-200 water mains in Carrington Rd, Middleton and Sexton Ave and Fishburn Cres.

The closest reservoirs to the site is the Castle Hill Reservoir, managed by Sydney Water as part of the Prospect North Delivery Team located near Old Northern Rd. The existing potable water infrastructure within the vicinity of the site is shown in Figure 3.

Figure 3 - Existing Water Infrastructure



3.1.2 Proposed Servicing Strategy

As per the Water Supply Code WSA 03 – 2011 – 3.1 (Sydney Water Edition 2014) Table 3.1 and 3.5 for minimum pipe size for greenfield and infill developments, developments with 8 or more storeys may need a pipe size of DN200/250 or above for cast iron/ISO (steel/PE) pipe respectively.

There may be capacity in the current system, however there is a possibility that mains may need to be upsized. This will need to be determined once Sydney Water issue a Notice of Requirements (NoR) after being supplied detailed hydraulic loads for the development. The extent of the upsizing will be determined in the NoR by Sydney Water.

Detail fire loads will also need to be supplied to Sydney Water to assess the system's capacity to supply incidental fire water supply as well and this will depend on the development hydraulic plans and if they include water storage on site or not among other determining factors.

3.2 Sewer

3.2.1 Existing Infrastructure

The site currently has a DN150 sewer running along the northern and western lot boundaries as well as internally.

The site drains to the north east and continues to flow downstream along Carrington Rd to the west.

Figure 4 – Existing Sewer Infrastructure



3.2.2 Proposed Servicing Strategy

The existing sewer will need to be deviated to accommodate the development and Sydney Water Building Over/Adjacent Guidelines as well as the land consolidation.

A 225mm diameter gravity main will be required to support the proposed development. The proposed development of 462 units will equate to 1155 EP

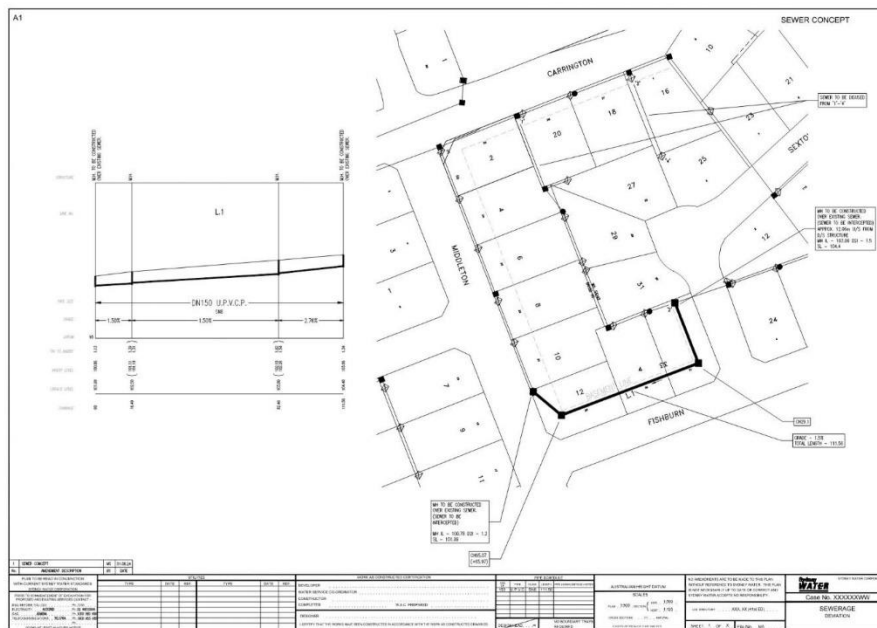
The development is located close to the upstream end of the system and a DN150 generally has a limit of between 500-1050 EP subject to varying factors.

There may be capacity in the current system, however there is a possibility that mains may need to be upsized. This will need to be determined once Sydney Water issue a Notice of Requirements (NoR) after being supplied detailed hydraulic loads for the development. The extent of the upsizing will be determined in the NoR by Sydney Water.

It is expected that should upsizing be required, the upsizing would extent to the nearest larger sewer system which would be the DN300 main in Carrington Rd or further west to Ashford Av
16-20 Carrington Rd, Castle Hill – Sewer and Infrastructure

approximately 180m west of the development.

Figure 5 – Proposed Sewer Infrastructure



4 Conclusions

Water

Due to the development size and height, there is a chance that sewer and or water upsizing is will be required. The extent and details of this will be confirm in a Sydney Water Notice of Requirements.

P: 02 8883 4239

W: www.sgce.com.au

A: Suite 311, Level 3,
480 Pacific Highway,
St Leonards, NSW 2065

