



Attachment 13 to Item 10.1.1.

Servicing Strategy

Date of meeting: 11 June 2024
Location: Council Chambers
Time: 6:30pm

BELMONT PARK ESTATE

SERVICING STRATEGY REPORT

For THE KAVANAGH FAMILY

2/06/2022

Indesco Reference: 8395

Prepared By: Harry Frederick Date: 30/06/2022

Approved: Matthew Zollinger Date: 23/08/2023

Base Template:	Indesco Servicing Strategy Report – Version B October 2018
-----------------------	--

External Issue

Revision Control Register			
DSR Version No:	Issue Date:	Issued To:	Name:
1 – Servicing Strategy Report – Preliminary	27/10/2021	Seed Projects	Matthew Causley
2 – Servicing Strategy Report – Final	23/03/2022	Seed Projects	Matthew Causley
3 – Servicing Strategy Report – Final – Updated	2/06/2022	Seed Projects	Matthew Causley
4 – Servicing Strategy Report update for new layout	23/08/2023	Seed Projects	Matthew Causley

Table of Contents

1. EXECUTIVE SUMMARY	4
Summary of Options	4
2. INTRODUCTION.....	5
3. SITE CHARACTERISTICS.....	6
4. SERVICING STRATEGIES	7
4.1 Potable Water	7
4.2 Wastewater	9
4.3 Electrical	11
4.4 Telecommunications.....	14
4.5 Gas	15
4.6 Private Wastewater and Recycled Water	15
5. CONCLUSION	15
Appendix A – Existing Wastewater and Potable Water Infrastructure	16
Appendix B – Existing Electrical Infrastructure.....	17

Revision	Date	Description	Prepared	Approved
1.	27/10/2021	Servicing Strategy Report – Preliminary	HF	GO
2.	23/03/2022	Servicing Strategy Report – Final	HF	GO
3.	2/06/2022	Servicing Strategy Report – Final – Updated	HF	GO
4.	23/08/2023	Servicing Strategy Report update for new layout	MZ	MZ

1. EXECUTIVE SUMMARY

This servicing strategy report is intended to support a Planning Proposal application for proposed development of 1, 35, 61 and 63 Grose River Road, North Richmond (the Site).

The site will be primarily developed as low to medium density with an approximate yield of 1,200 residential lots, ~ 120 Ha of open space, and other community facilities.

The purpose of this report is to provide preliminary advice regarding utility infrastructure, including the following:

- Wastewater (sewer);
- Potable Water;
- Electricity;
- Communication;
- Gas; and
- Private Wastewater and Recycled Water Infrastructure.

Liaison has occurred with the following utility authorities:

- Sydney Water
- Endeavour Energy
- Jemena Gas
- NBN Co
- Private Wastewater providers

This has been undertaken to assess:

- Existing infrastructure proximity to the proposed development;
- The capacity of the existing infrastructure to service the proposed development;
- Infrastructure upgrades required to service the proposed development.

The servicing strategy may change due to a variety of factors beyond the control of the Proponent. Refer to summary of options overleaf.

SUMMARY OF OPTIONS

Potable Water

- Option 1 – Water lead in from Grose Vale Road
- Option 2 – Trunk water supply from North Richmond treatment plant and reservoir

Sewer

- Option 1 – Pressure main to North Richmond Waste Water Treatment Plant
- Option 2 – Private Wastewater System (Aquacell)

Electrical

- Option 1 – Interim Feeder for up to 500 lots (extension ER1252 Feeder Cost)
- Option 2 – New 11kV Feeder to North Richmond Zone Sub

Telecommunications

- Existing NBN networks are located within the area and are expected to be able to service this site

Gas

- Jemena do not currently service this area and they may consider supplying the area in future. Gas is not considered an essential service

2. INTRODUCTION

Indesco have been engaged by the Kavanagh Family and SEED Projects (the Proponent) to prepare a Servicing Strategy Report to support the potential development Belmont Park Estate at 1, 35, 61 and 63 Grose River Road, North Richmond (the Site).

This report is intended to support a Planning Proposal for the Site which is located within the Hawkesbury Local Government Area (LGA). The proposed concept master plan layout is shown below in Figure 1.



Figure 1 – Preliminary Concept Masterplan

The overall servicing strategy for the site has been developed in accordance with a maximum dwelling count of 1,200 dwellings. On the basis of an approximate 20% variance, we assume the developed servicing strategy can be implemented in conjunction with the proposed development yield and indicative timing for delivery, as detailed in Table 2.

Table 2: Development Yield

Stage	No. Dwellings	Timing	Area (m ²)	GFA (m ²)
1	150	Q1 2025 – Q1 2026	TBA	TBA
2 - #	150-200	per year after Stage 1	TBA	TBA
TOTAL	1,200		TBA	TBA

The development is expected to be staged from west to east with approximately 150-200 lots envisaged to be released per year, depending on market conditions.

A desktop analysis of the development site and relevant surrounding infrastructure has been conducted in order to assess the likely impacts on existing utility infrastructure as a result of the increase in network demand, imposed by the proposed development. The following services have been assessed:

- Wastewater infrastructure;
- Potable Water infrastructure;
- Recycled Water infrastructure;
- Electrical infrastructure;
- Telecommunications infrastructure;
- Gas infrastructure; and
- Private Wastewater and Recycled Water infrastructure.

Indesco has conducted a Dial Before You Dig investigations and engaged with relevant consultants and authorities to develop the servicing strategy, including:

- Sydney Water Corporation (SWC) – Potable Water and Wastewater infrastructure;
- Endeavour Energy (EE) – Electrical infrastructure;
- Design IT Telco (DIT) – Telecommunications infrastructure;
- Jemena Limited – Gas infrastructure; and
- Permeate Partners, Aquacell and Altogether Group – Private Wastewater and Recycled Water providers.

3. SITE CHARACTERISTICS

The Site being 1, 35, 61 and 63 Grose River Road, North Richmond is shown in Figure 2 below and is bounded by:

- Grose River Road to the west;
- Grose Vale Road to the north;
- Lot 11/DP703300 to the south; and
- Hawkesbury River to the east.



Figure 2 – 1, 35, 61 and 63 Grose River Road, North Richmond

4. SERVICING STRATEGIES

4.1 POTABLE WATER

Information regarding existing Sydney Water Infrastructure proximate to the Site has been sourced from Dial Before You Dig and directly from Sydney Water and is included in Appendix A.

Existing infrastructure is summarised below:

- DN315mm diameter Polyethylene (PE) main in Grose Vale Road.

The above-mentioned main in Grose Vale Road runs past the intersection with Grose River Road. No other infrastructure exists in the vicinity of the Site that would either affect development or serve as suitable receiving infrastructure.

A Feasibility Application was lodged with Sydney Water (SWC) on 13 October 2021 to clarify the servicing requirements for the Site (Sydney Water Case Number 194868). Sydney Water's feasibility letter was received on 27 January 2022. Two potential options to service the site with water are described in further detail below.

Option 1: Water lead in from Grose Vale Road

This option would require a lead in to be constructed from the existing DN315 main in Grose Vale Road located approximately 700m North of the subject site. The existing main in Grose Vale Road is fed from the Kurrabung Reduced Reservoir Zone. Refer below Figure 3 which shows the possible lead in route.



Figure 3: Option 1 - Lead-in from Grose Vale Road

Sydney Water have recommended a hydraulic consultant be engaged to assess the available capacity and pressure of the existing DN315PE watermain in Grose Vale Road.

Option 2: Trunk water supply from North Richmond treatment plant & reservoir

This option would require a trunk water supply to be constructed from North Richmond treatment plant and reservoir to the subject site. Refer Figure 4 below which shows the possible lead in route.



Figure 4: Option 2 – Indicative trunk water supply route to North Richmond Treatment Plant

Option 2 may require hydraulic modelling to determine the required pressure and recommended sizing of the trunk water main. Further discussions with Sydney Water would be required to determine if the North Richmond treatment plant and reservoir has sufficient capacity to service the proposed development.

Pending further investigation and feasibility, it is recommended to proceed with Option 1.

4.2 WASTEWATER

Information regarding existing Sydney Water Infrastructure proximate to the site has been sourced from Dial Before You Dig and directly from Sydney Water.

Existing infrastructure is summarised below:

- DN375 within the nearby Redbank Development.

The sewer main within the Redbank Development is approximately 1.3km from the intersection of Grose Vale Road and Grose River Road. The subject site does not naturally drain to the catchment area.

A Feasibility Application was lodged with Sydney Water on 13 October 2021 to clarify the servicing requirements for the Site (Sydney Water Case Number 194868). Sydney Water's feasibility letter was received on 27 January 2022.

Currently, the North Richmond Wastewater Treatment Plant (WWTP) does not have sufficient capacity to support the proposed development. However, North Richmond Wastewater Treatment Plant (WWTP) and Richmond WRP are proposed to be upgraded which will include a new pressure main approximately 6.9km long to transfer flows from North Richmond WWTP to Richmond WTP. Refer Figure 5 which illustrates the proposed amplification works.



Figure 5: Future North Richmond WWTP Amplification Works

The upgrades are expected to cater for over 85% increase in demand and are planned to be completed by Q2-Q3 2025. It is recommended that further discussions are held with Sydney Water to confirm if the amplification works for the North Richmond WWTP will be able to cater for the subject site.

We understand preference is for the site to be serviced Sydney Water sewer reticulation which will require a Sewer Pumping Station (SPS) and pressure main to North Richmond WWTP, provided spare capacity is available as part of the amplification works. Figure 6 which shows the possible lead in route.

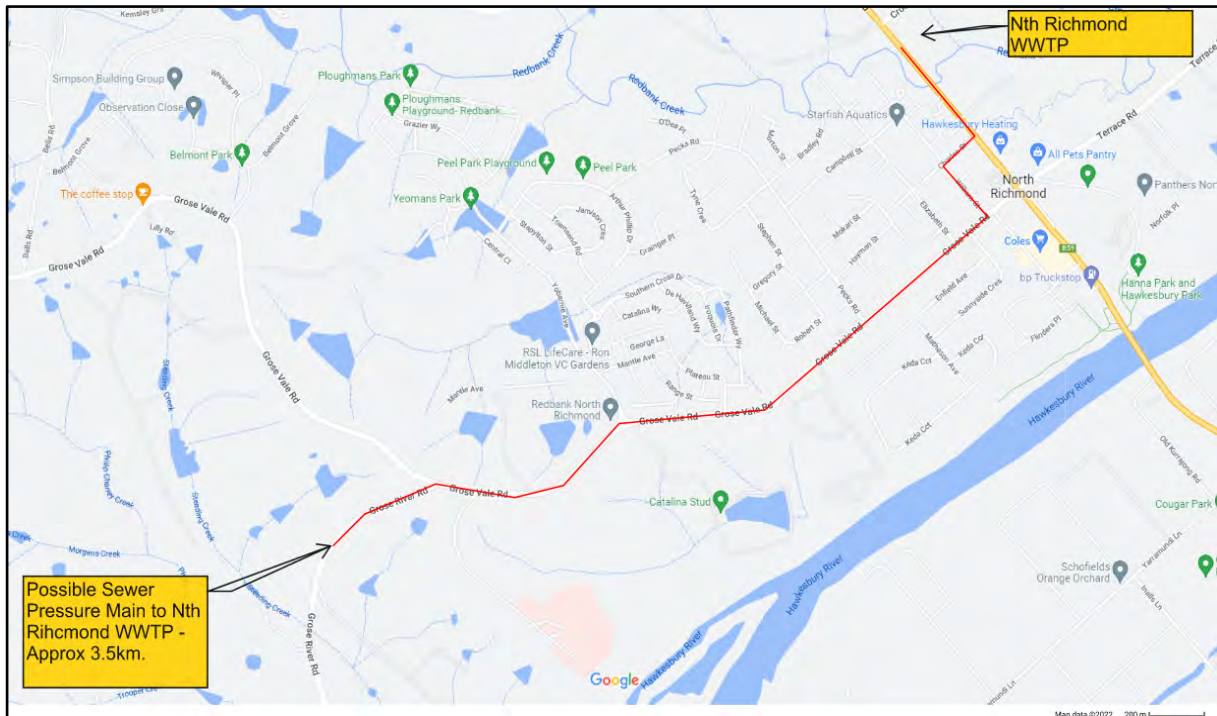


Figure 6: Indicative wastewater pressure main route to North Richmond WWTP

This subject site falls outside of Sydney Water Growth Servicing Plan (GSP). Further discussion with SWC is recommended to clarify reimbursement opportunities and potential inclusion in the GSP, which is programmed up to 2025.

Figure 7 overleaf depicts the sewer catchment for the subject site. The area highlighted in yellow denotes the proposed development site while the area in red outlines the extent of natural catchment not included as part of the proposed development. Currently there are no development applications being assessed by Hawkesbury Council for the sites within the sewer catchment area. Should surrounding sites which sit within the same catchment site as the subject site look to develop, they may be an opportunity to subsidise lead in costs. The sites within the sewer catchment for the area are listed below:

- Lots 437, 2-9/433, 43, 429, 425, 423, 417, 413, 407, 405, 403, 401, 357, 351, 347, 317, 309, 297, 289, 279 and 259 Grose Vale Road; and
- Lots 92, 86, 68, 58, 54 and 40 Grose River Road.

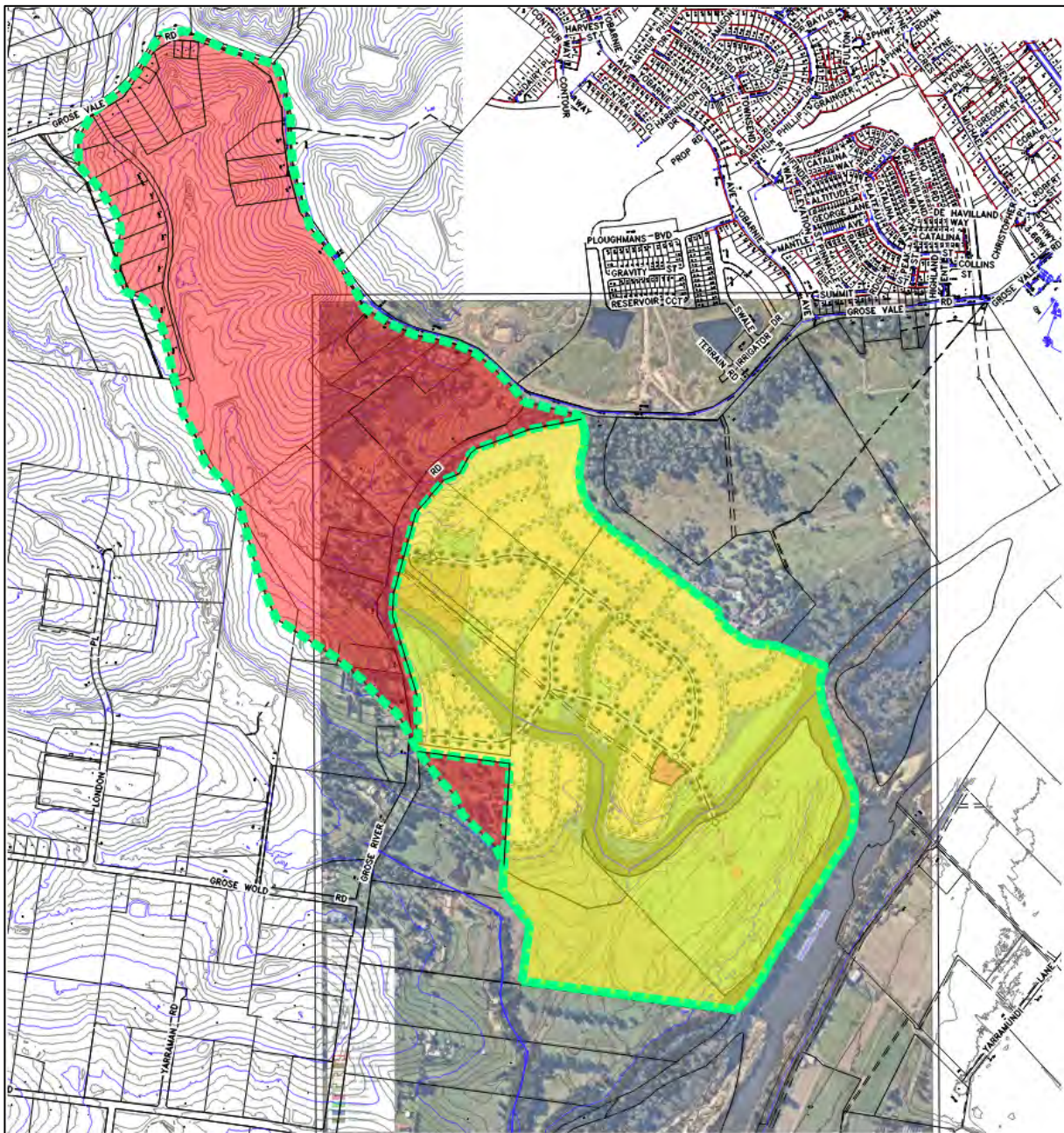


Figure 7: Catchment Plan

Other Options

The sewer amplification for the nearby Redbank development is purely for Redbank and it is unlikely there would be any spare capacity for the subject site.

While the subject site is not included in Sydney Water's Growth Servicing Plan, if any nearby developments fall within the same catchment as the subject site, there may be opportunities to include them in the SPS/pressure main design and thus receive funding from Sydney Water.

It is recommended further discussion are held with Sydney Water through a WSC to enquire as to the capacity of the amplified North Richmond sewerage system to cater for the subject development.

4.3 ELECTRICAL

Information regarding existing Endeavour Energy infrastructure proximate to the site has been sourced from Dial Before You Dig and Endeavour Energy and is included in Appendix B.

There are two zone substations proximate to the site. The zone substations are outlined in Figure 8 and described below:

- The North Richmond Zone Substation located approximately 3km from the site at 90 Pecks Road, North Richmond; and
- The East Richmond Zone Substation located approximately 8km from the site at 56 Blacktown Road, Richmond.



Figure 8 – Endeavour Energy zone substations proximate to the Site

A Technical Review request was lodged with Endeavour Energy on 28 September 2021 to clarify the servicing requirements for the Site (Endeavour Energy Reference ENL4194). A Technical Review from Endeavour Energy was received on 27 October 2021. Edgewater Connections also provided their own Technical Review on 3 December 2021 which includes high-level costings for major infrastructure.

Endeavour has advised the entire development will need to be supplied from the North Richmond Zone Substation by installing a new 11kV feeder from it to the development site. An interim supply from the East Richmond zone substation could supply approx. 500 lots, prior to the new feeder being triggered. Figure's 9 and 10 show possible future lead in routes.



Figure 9: Indicative Feeder Route East Richmond Zone Substation

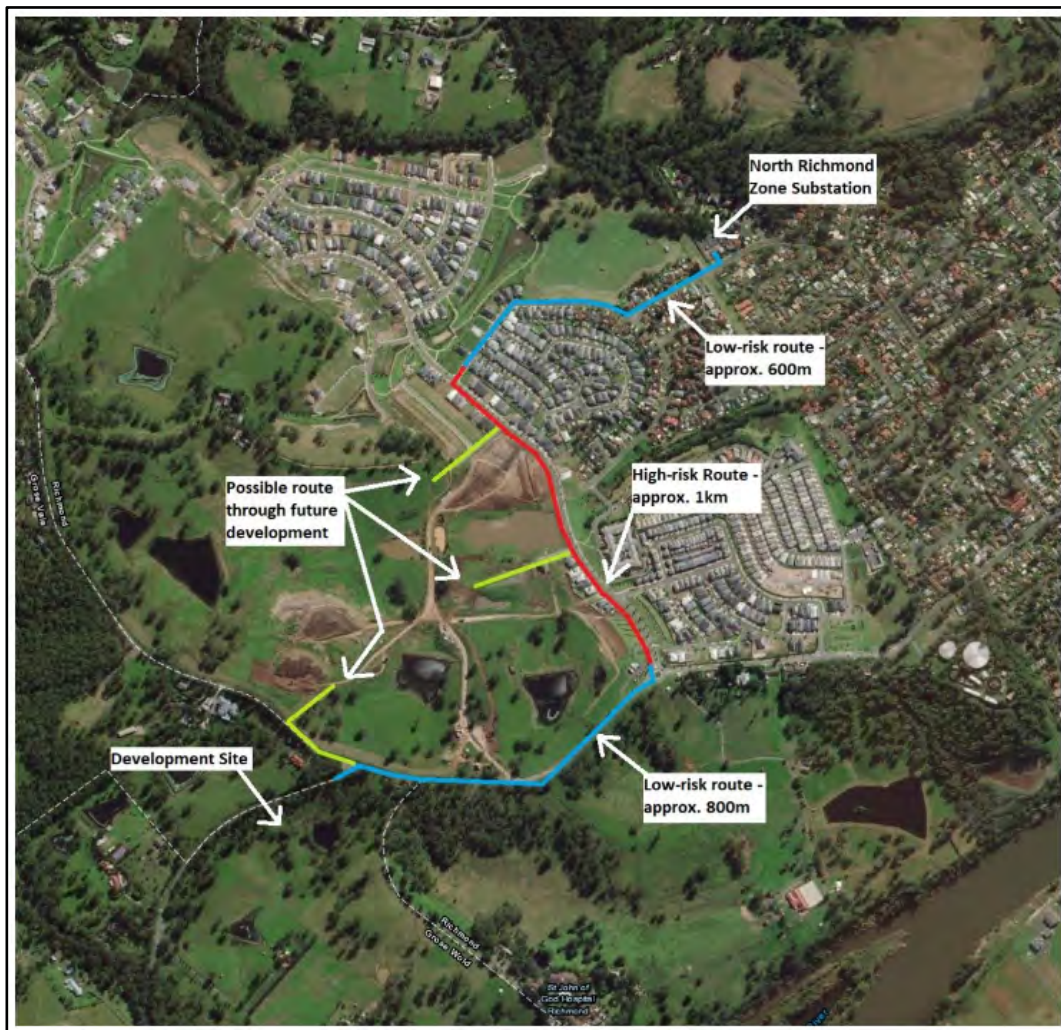


Figure 10: Indicative Feeder Route North Richmond Zone Substation

4.4 TELECOMMUNICATIONS

NBN Co's online services indicate that communications are available at the Site, as shown in Figure 11.

Design It Telco (DIT) Pty Ltd was consulted about the capacity of existing NBN and Telstra networks on 24 September 2021. Below is an extract from the correspondence with DIT confirming:

- NBN shows the area as Fixed Wireless;
- Current NBN and Telstra infrastructure could handle the overall proposed development yield;
- As the development is over 100 lots it will qualify for fibre to premises (FTTP); and
- No back haul charges are expected as the Site is located within 1km of an NBN Co serviced estate (Redbank).

Existing Telstra and NBN Co networks are located within Grose Vale Road. A new estate network to Grose Vale Road will be required to service the proposed development, refer Figure 12 which shows possible NBN lead in route.

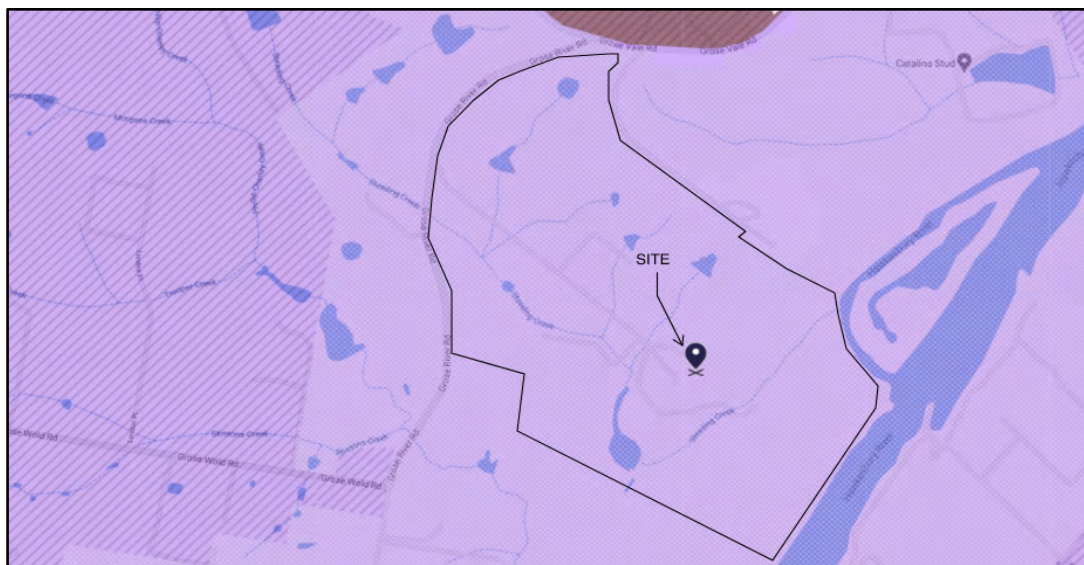


Figure 11: NBN service map indicating communications are available



Figure 12: Indicative NBN lead in route

4.5 GAS

Jemena was consulted about the capacity of the existing Gas networks on 24 September 2021. Below is an extract from the correspondence with Jemena confirming:

- The nearest suitable gas main is located on the corner of Hawkesbury Valley Way and Percival Street;
- To service the Site, Jemena would be required to extend the above-mentioned secondary pressure steel main (1050kPa) approximately 10km's, including crossing the Hawkesbury River.

Jemena have confirmed they do not have plans to extend the gas network across the Hawkesbury River. With the potential re-zoning of the Site along with other surrounding landholding, Jemena may decide to service the area in future. While the provision of gas to land subdivisions is desirable, it is not considered an essential service.

4.6 PRIVATE WASTEWATER AND RECYCLED WATER

The Kavangh Family and SEED projects have undertaken initial consultation with a number of private service providers in relation to the proposal.

These providers have confirmed the project is of sufficient scale and land area to be able to be feasibly serviced by a private on-site waste water treatment facility.

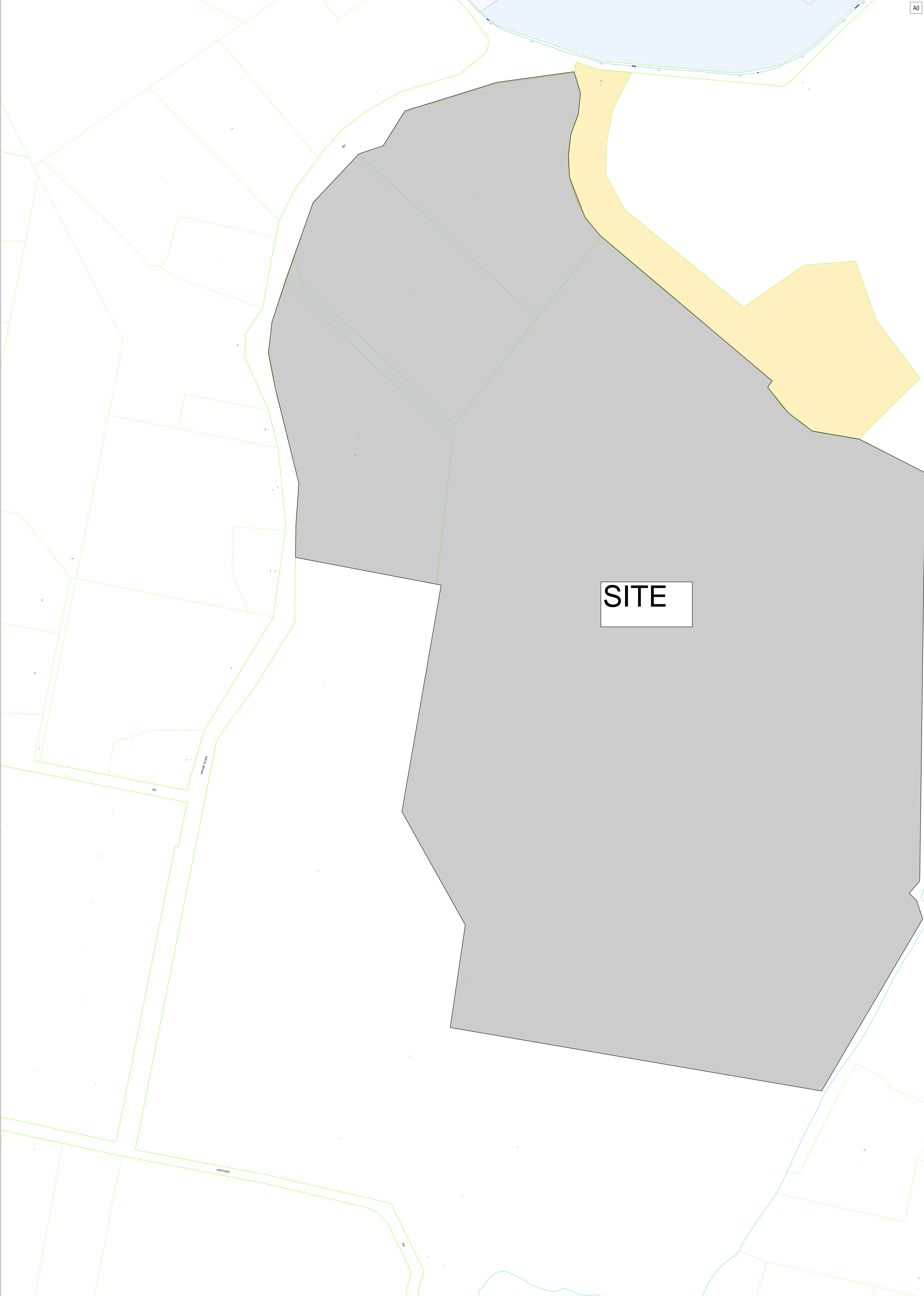
5. CONCLUSION

Having conducted a desktop review of the existing assets, reviewed the existing reports and liaised with service providers and consultants, Indesco are of the opinion that the proposed Grose River Road Development can be serviced, pending modelling and advice further advice from Sydney Water in relation to potable water and wastewater. This servicing can be achieved through a combination of public and private service providers, generally in the following manner:

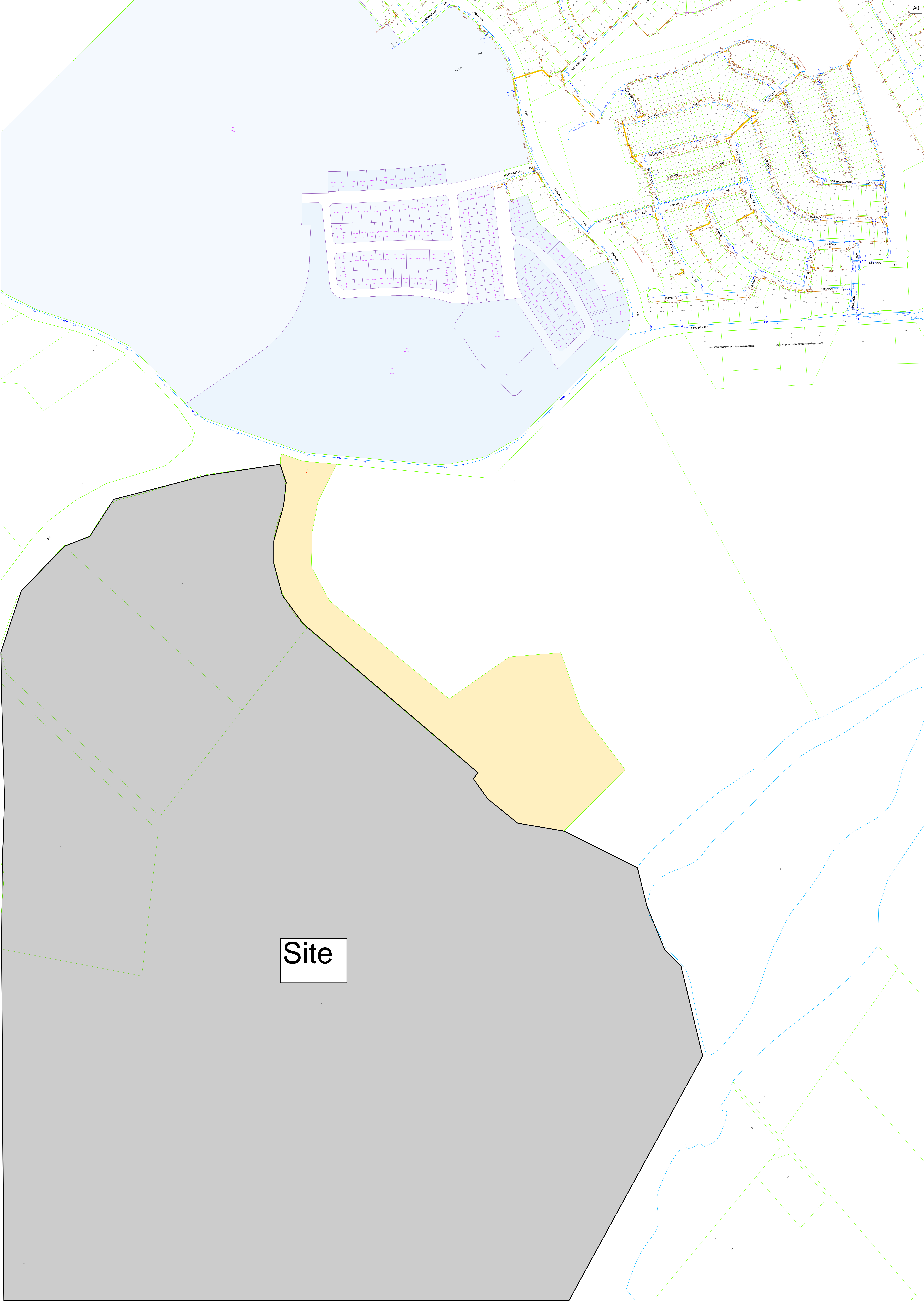
- Potable water and wastewater sourced from the Sydney Water Network;
- Private wastewater collection and treatment within the development. Recycled water used for irrigation and/or by dwellings.
- Electrical provided by Endeavoured Energy. Lead in infrastructure will be required.
- Telecommunications provided by NBN. Lead in infrastructure will be required.

Concept and detailed designs, and delivery strategies will be subject to further discussion with each service provider.

APPENDIX A – EXISTING WASTEWATER AND POTABLE WATER INFRASTRUCTURE



SITE



Site

APPENDIX B – EXISTING ELECTRICAL INFRASTRUCTURE

WARNING

- **All electrical apparatus shall be regarded as live until proved de-energised.** Contact with live electrical apparatus will cause severe injury or death.
- 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 printed and made available at the worksite where excavation is to be undertaken. Plans must be reviewed and understood by the crew on site prior to commencing excavation.

INFORMATION PROVIDED BY ENDEAVOUR ENERGY

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

DISCLAIMER

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

LEGEND

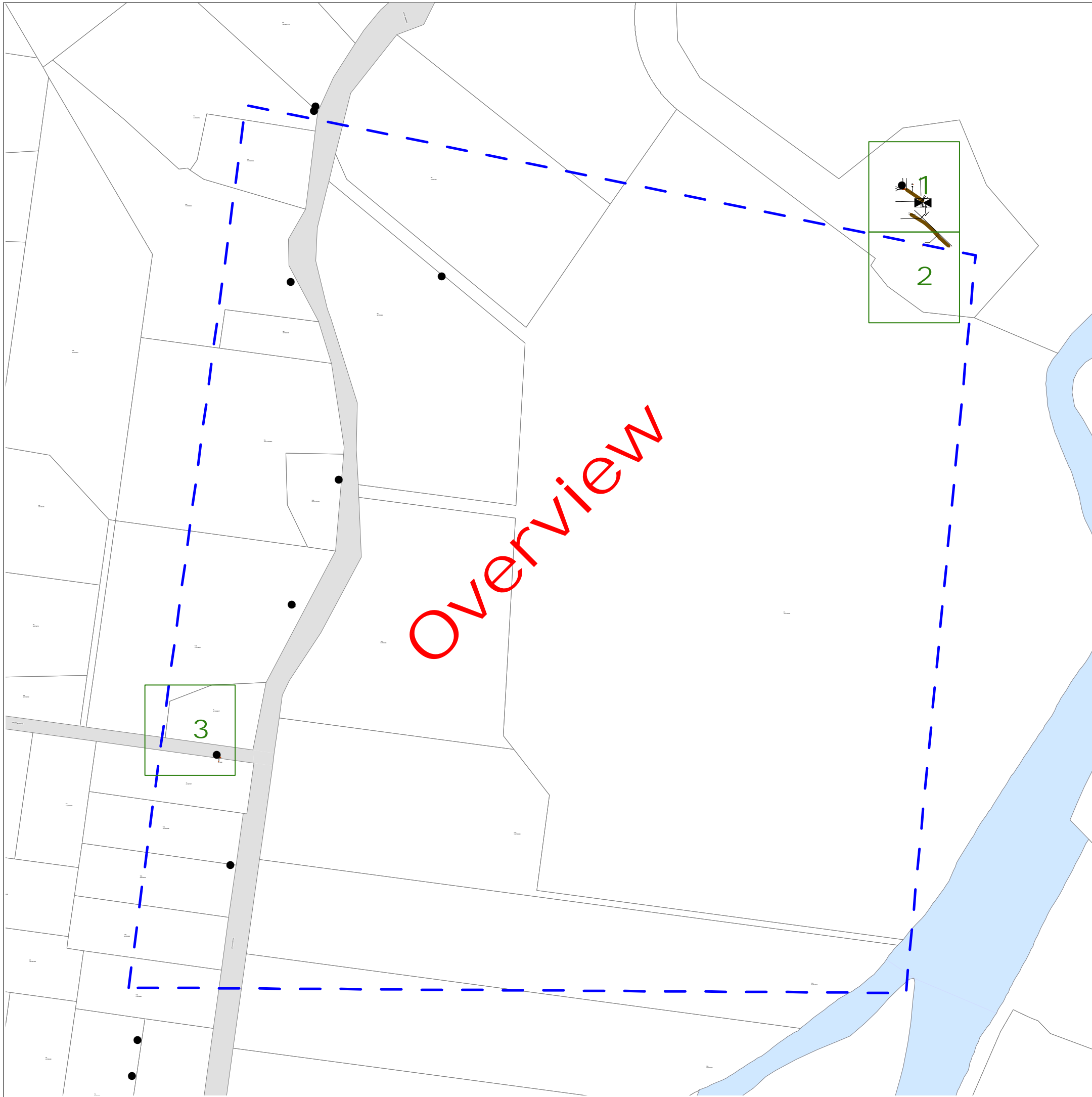
- OR ■ Street light column
- ▭ Padmount substation
- OR ■ Overground pillar (O.G.Box)
- ▭ Underground pit
- ▬ Duct run
- ▬ Cable run
- ⊙ Typical duct section
- ▲ Asbestos warning



NOT TO SCALE

DBYD Sequence No.:	204021801
Issued Date:	13/10/2021

Overview



WARNING

- **All electrical apparatus shall be regarded as live until proved de-energised.** Contact with live electrical apparatus will cause severe injury or death.
- 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 printed and made available at the worksite where excavation is to be undertaken. Plans must be reviewed and understood by the crew on site prior to commencing excavation.











INFORMATION PROVIDED BY ENDEAVOUR ENERGY

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

DISCLAIMER

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

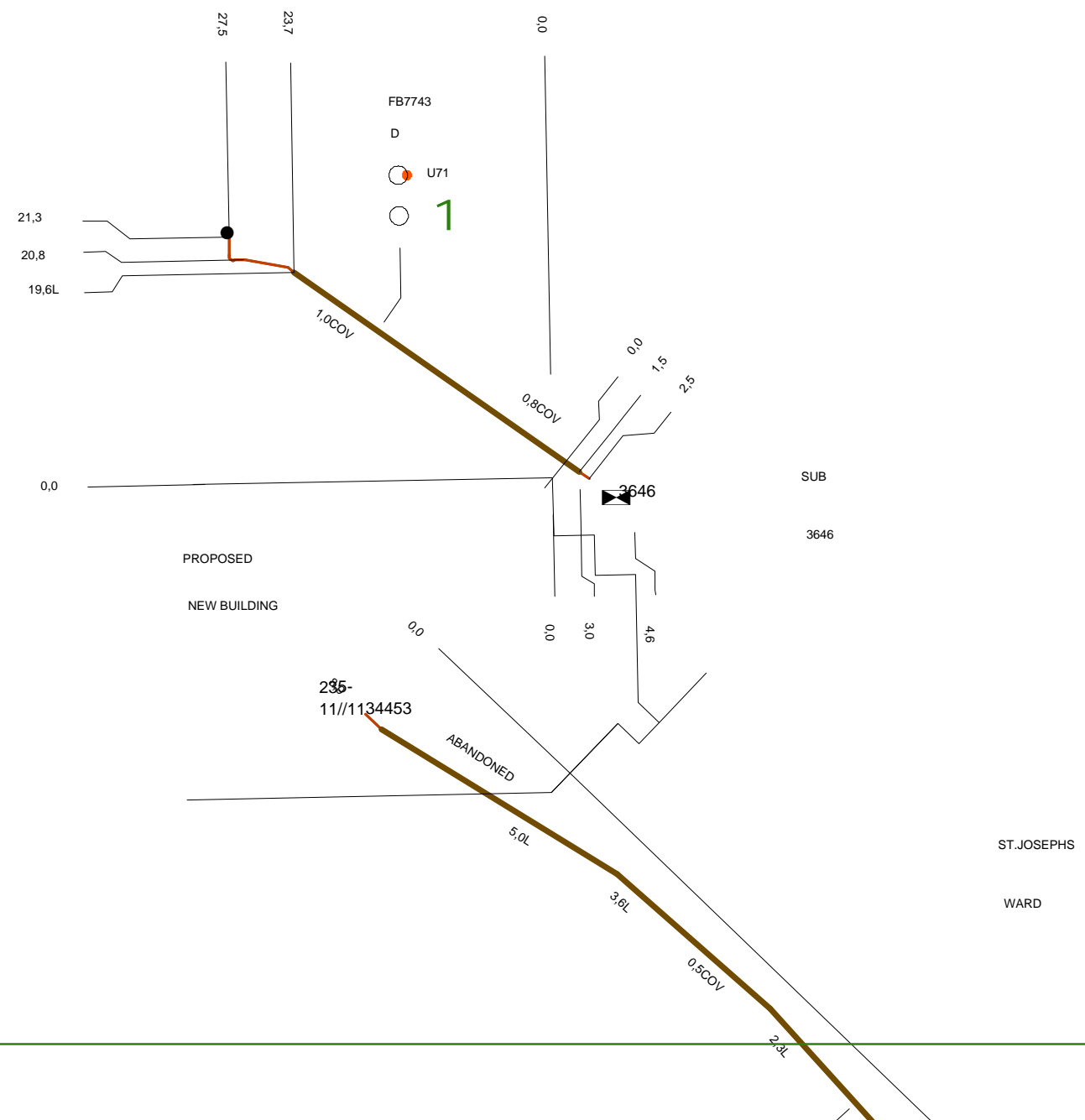
LEGEND

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



NOT TO SCALE

DBYD Sequence No.:	204021801
Issued Date:	13/10/2021



WARNING

- **All electrical apparatus shall be regarded as live until proved de-energised.** Contact with live electrical apparatus will cause severe injury or death.
- 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 printed and made available at the worksite where excavation is to be undertaken. Plans must be reviewed and understood by the crew on site prior to commencing excavation.

INFORMATION PROVIDED BY ENDEAVOUR ENERGY

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

DISCLAIMER

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

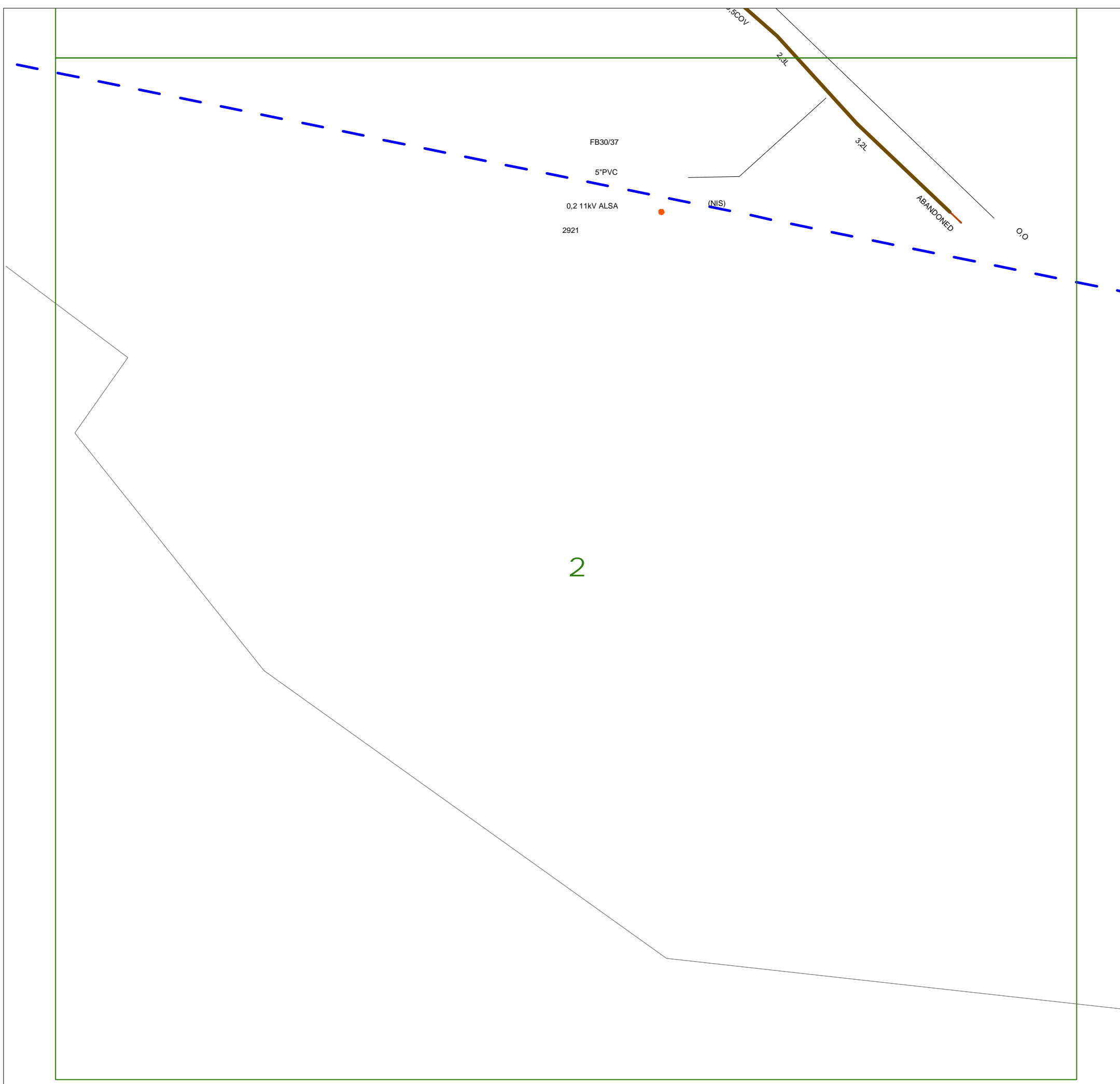
LEGEND

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



NOT TO SCALE

DBYD Sequence No.:	204021801
Issued Date:	13/10/2021



2

WARNING

- **All electrical apparatus shall be regarded as live until proved de-energised.** Contact with live electrical apparatus will cause severe injury or death.
- 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 printed and made available at the worksite where excavation is to be undertaken. Plans must be reviewed and understood by the crew on site prior to commencing excavation.

INFORMATION PROVIDED BY ENDEAVOUR ENERGY

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

DISCLAIMER

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

LEGEND

- OR ■ Street light column
- ▭ Padmount substation
- OR ■ Overground pillar (O.G.Box)
- ▭ Underground pit
- Duct run
- Cable run
- ⊙ Typical duct section
- ▲ Asbestos warning



NOT TO SCALE

DBYD Sequence No.:	204021801
Issued Date:	13/10/2021

