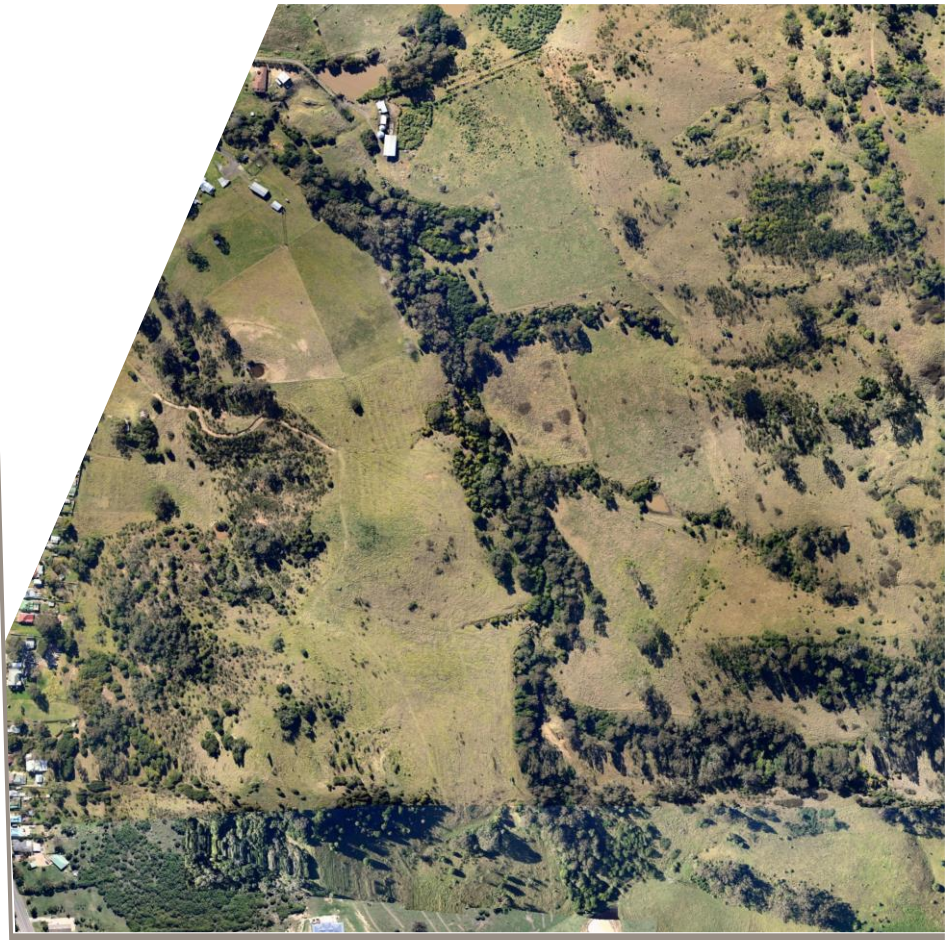
Services Assessment

Reeves Creek - Rezoning



Prepared for Dartanyon Pty Ltd
August 2014

Cardno
Shaping the Future

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Executive Summary

Michael Brown Planning Strategies, on behalf of Dartanyon Pty. Ltd. has engaged Cardno Pty. Ltd to prepare a Services Assessment to satisfy Section 5.8 of Wollondilly Shire Councils Specialist Study Requirements. Cardno's assessment is based on information provided in a Dial Before You Dig application, as well as discussion with various utilities providers.

Potable Water

The existing infrastructure is not suitable to service the complete development. It is estimated that the following upgrades may be required:

- Linking existing 150mm potable water mains across Prince Street Rail overpass;
- Extending existing 250mm trunk main down Argyle Street and Margaret Street to the site boundary; or
- Amplification of the 150mm main from Tahmoor to a 300mm main (approximate length of 3.7 km).

Supply of potable water to the proposed development can be achieved and this should not prevent rezoning.

Waste Water

The existing trunk infrastructure has adequate capacity to service the proposed development. The proposed development falls outside the Picton Service Scheme boundaries. Cardno recommends an application is made to Sydney Water and the Department of Planning in order to modify the existing Servicing Scheme boundaries. This application may be made following rezoning.

Gas

There are no existing gas assets in the Picton area. Provision of gas services is demand driven, and at this time Cardno does not know of any future plans to provide gas to the proposed development. As gas is not an essential service this will not prevent rezoning.

Power

There are high-voltage power assets in close proximity to the site, it is anticipated that these can be utilised to service the site. Through ongoing discussions with Endeavour Energy a more definitive servicing strategy will be developed, however the outcome of these discussions will not prevent rezoning.

Telecommunications

There are Telstra assets in close proximity to the site boundaries which will be able to service the site. Further to this there are also existing NBN assets in Argyle Street that can be extended to service the proposed development. It is recommended discussions with telecom providers is initiated early following rezoning to ensure there is adequate time to plan the servicing of the proposed development. These discussions should not prevent rezoning of the proposed area.

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1 Introduction

Cardno has been commissioned by Michael Brown Planning on behalf of Dartanyon Pty. Ltd. to prepare a Services Assessment to satisfy Section 5.8 of Wollondilly Shire Councils Specialist Study Requirements.

1.1 The Site

The site comprises an area of approximately 39ha of variable land located near Picton Town Centre, within the Wollondilly Local Government Area. The Site comprises a series of allotments in two principal ownerships. It includes parcels of land at 1735 Remembrance Drive (Lot 106 DP 1111043), 108-114 and 116-118 Menangle Street (Lot 2 DP 229679 and Lot 9 DP 233840 respectively), Picton. The application is to rezone the land use from rural landscape to low density residential area, medium density residential area and public recreation area.

The site is bound by Menangle Street to the west and faces onto Margaret Street in the north. It is anticipated that the site has a potential yield of up to 350 dwellings.

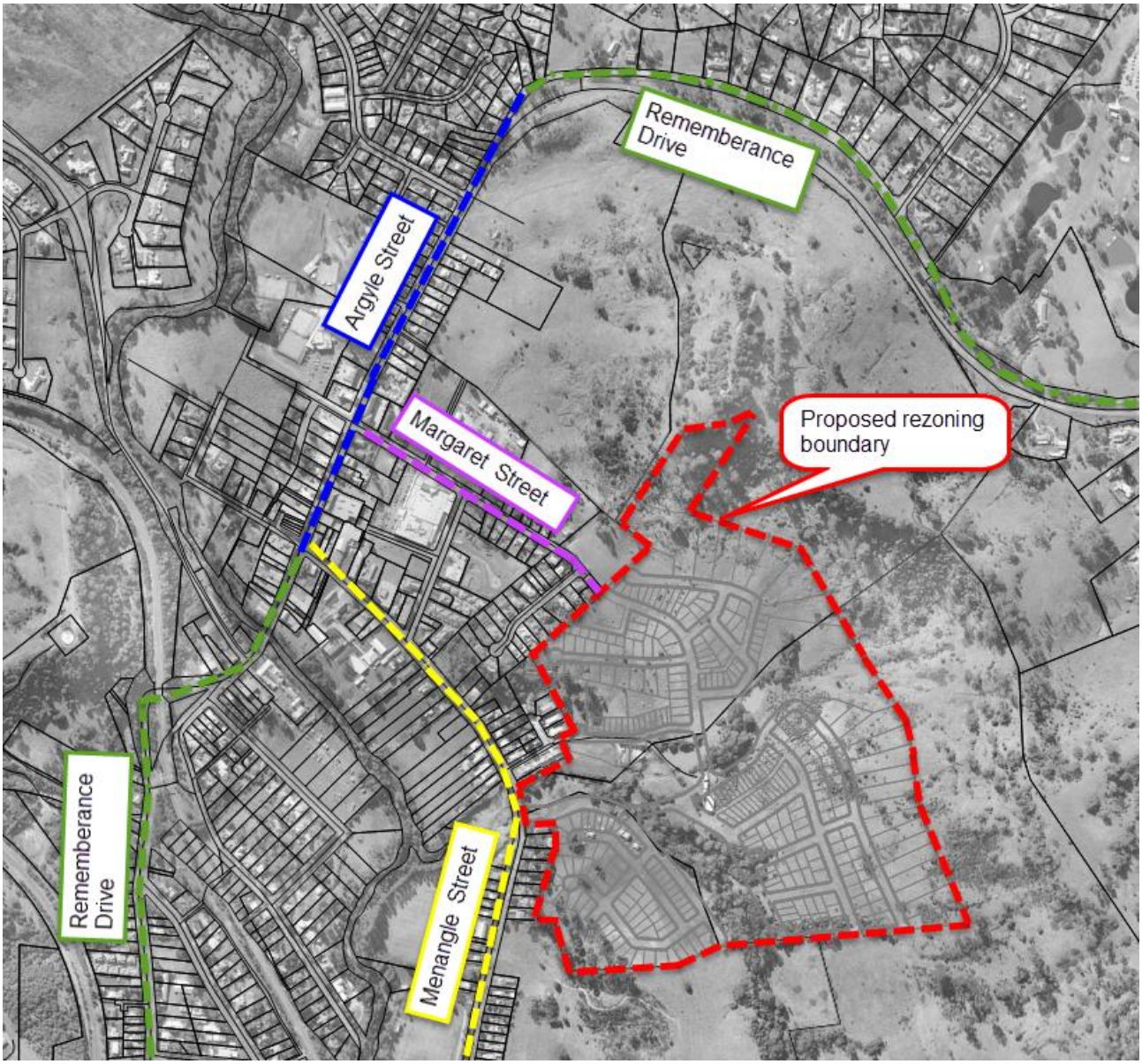


Figure 1-1 Locality Plan of Rezoning Proposal

1.2 The Proposal

The Reeves Creek design strategy seeks to integrate a mix of residential uses with riparian environmental areas and public open space. Medium density housing is centrally located at the heart of the community, with good accessibility to transport and services. This area has high amenity as it overlooks the creeks and the proposed village green. It is characterised by flatter land that can ensure greater flexibility in form, design, diversity and affordability of housing.

The ‘village green’ is proposed to be located in the heart of the proposed development and is to be designed to act as a focal public open space for the future community. This park will respect and integrate the environmental attributes of the creek corridor, create a formal parkland setting for adjacent housing and provide a mix of active and passive open space.

An Environmental Conservation (E2) zone is proposed for the two riparian creek lines. An Environmental Management (E3) area proposed for the hilltop located in the south western part of the site. This area seeks to retain and manage the environmental values of the group of mature trees located on the top of the spur running along the eastern side of the site.

The proposed zoning plan is represented by the plan in Figure 1-2.

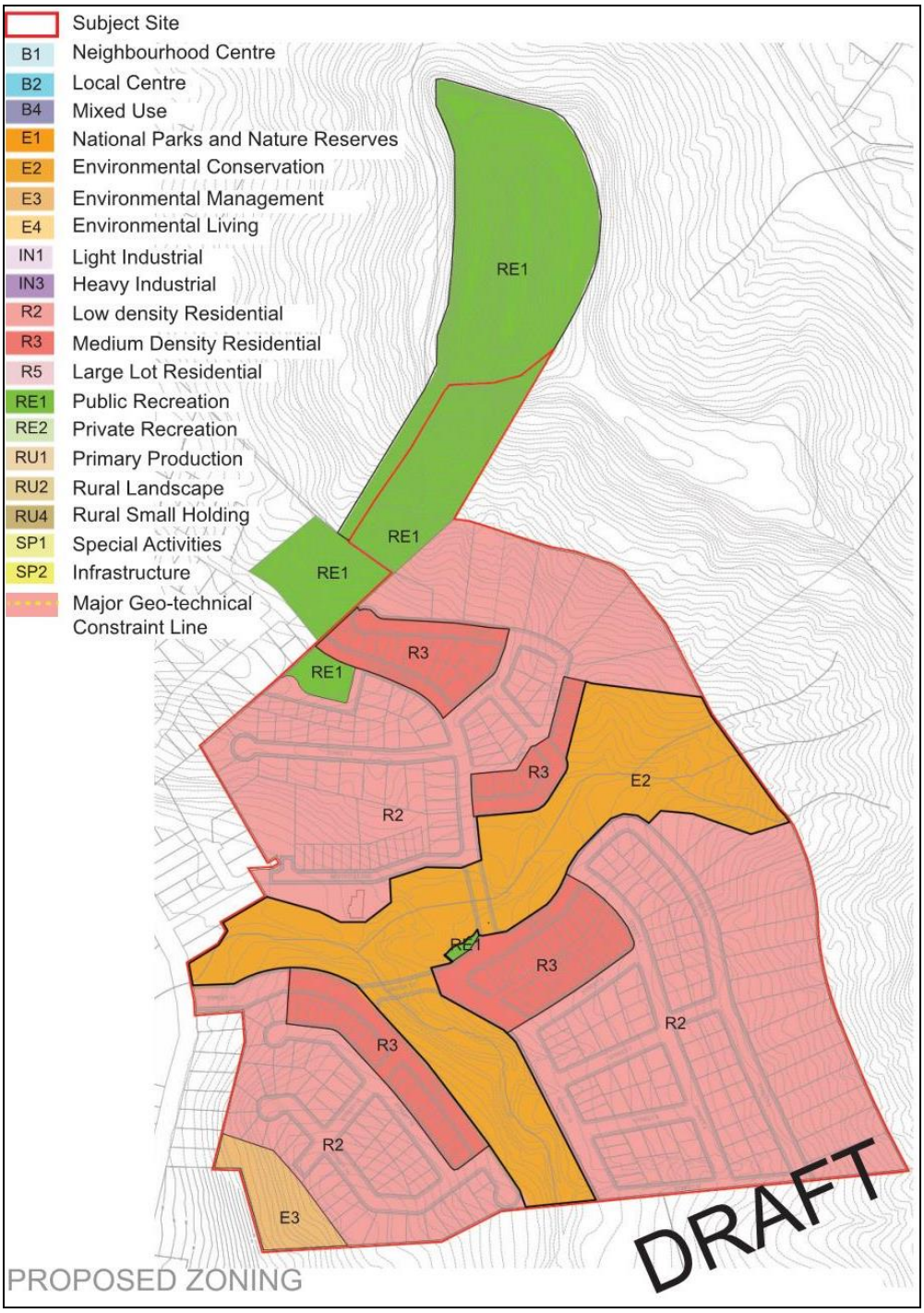


Figure 1-2 Overview of Rezoning Proposal

2 Potable Water Servicing

2.1 Existing Potable Water Infrastructure network

There are 150mm diameter potable water mains at both the Argyle Street and Menangle Street interface of the site. In a feasibility letter prepared by Sydney Water on 4th December 2012 it was determined that the existing potable water infrastructure in the area would require some upgrades to service the development. Sydney Water determined that a 150mm diameter link main in Prince Street would enable rezoning in this area. The main would extend approximately 55m across the existing railway corridor.

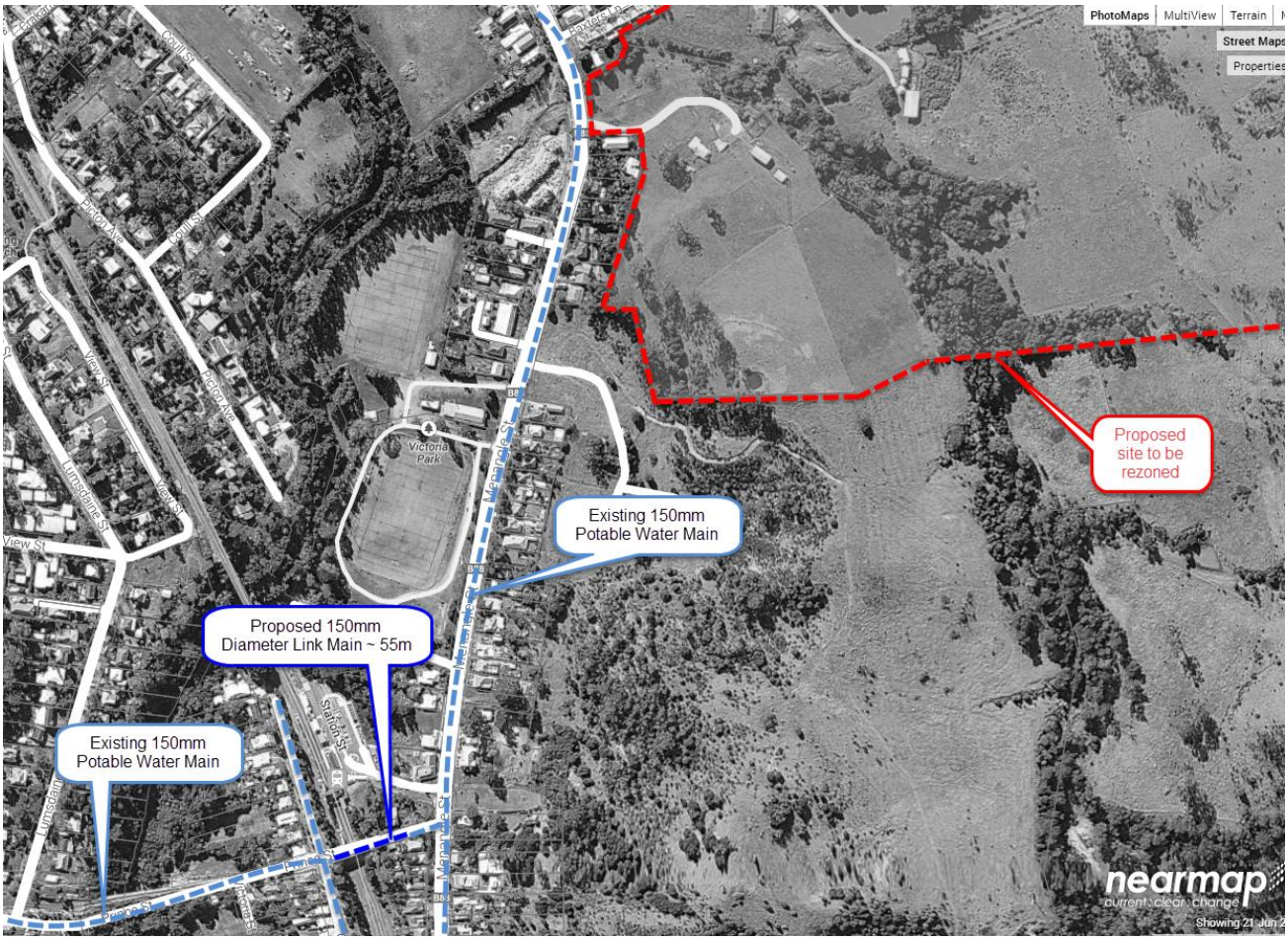


Figure 1-3 Existing potable water infrastructure

2.2 Future Potable Water Demands

Potable water design demands are calculated based on the WSAA code. The estimates below are only initial and based on the assumed future dwelling yields as specified in the Reeves Creek Study Area Planning Report.

Based on an expected yield of 350 dwellings for the proposed development Cardno estimates a Maximum Daily Demand Flow Rate of **1,312 kL/day**.

2.3 Potable Water System Requirements

Sydney Water's advice letter from 4th of December 2012 states that an amplification from the existing 150mm to a 300mm diameter main would be required from the existing 300mm diameter trunk main in Remembrance Drive (near York Street in Tahmoor) to the boundary of the Site (approximately 3.7 kilometres). It should be noted that the Sydney Water Feasibility Study was based on a larger development (total of 567 lots).

Cardno has also reviewed the available Sydney Water Assets in the area and determined that – subject to a capacity assessment – there may be an opportunity to service the development from the existing 250mm trunk main which terminates at the corner of Menangle Street and Argyle Street. This option would require extension of the existing 250mm potable water main over a length of approximately 720 metres (along Argyle Street and Margaret Street) to the boundary of the proposed development. It is proposed that a capacity assessment for this trunk main is carried out, in consultation with Sydney Water.

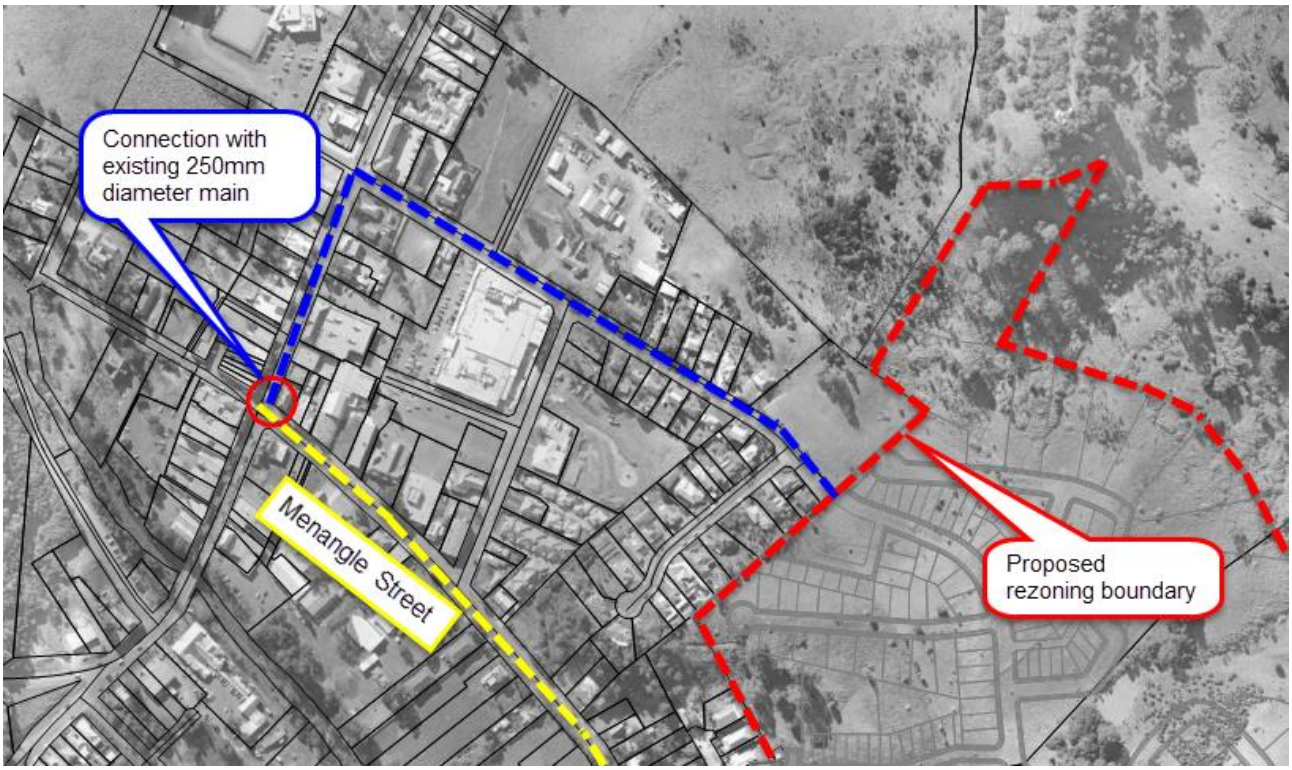


Figure 1-4 Potential alternate connection strategy for potable water

Further to this Cardno recommends a further assessment of existing 150mm diameter mains in Menangle Street and Argyle Street to determine if the first stages of the proposed development can be directly serviced by existing infrastructure.

As discussed above Sydney Water determined that a 150mm diameter link main in Prince Street would enable rezoning in this area. It is Cardno's recommendation that planning and design of the link main be undertaken following rezoning of the site.

3 Wastewater Servicing

3.1 Existing Wastewater Infrastructure

There are various sewer mains that run close to the boundary of the proposed development. These include 150mm diameter mains in Menangle Street, Margaret Street and Argyle Street. These mains are all understood to drain to different (sub)catchment areas. The Sydney Water feasibility letter notes that there is adequate capacity to service the proposed development.

3.2 Future Wastewater Demands

Wastewater demands are based on equivalent persons (EP) for a particular area. Using the maximum proposed future dwellings (350) and assuming an Occupancy Ratio of 3.0 persons per dwelling (Elton Social Planning Study – June 2014); the EP for the site is estimated to be **1,050 EP**.

3.3 Wastewater System Requirements

A feasibility letter prepared by Sydney Water on 4th December 2012 indicated that the existing trunk system had adequate capacity to service the proposed development. This feasibility letter assumed a total yield of 567 lots, which is significantly more than the maximum proposed lots yield for the proposed development.

The proposed development is outside the Picton Wastewater System and can only be serviced if the current Picton Sewerage Scheme boundary modification is approved by the Department of Planning (DoP). Cardno recommends that – following rezoning – a servicing strategy is prepared for Sydney Water review and approval. Following this a formal application will need to be made to DoP to modify the Picton Servicing Scheme boundaries.

Following approval of the Servicing Scheme Boundaries this modification the developer will be required to prepare a servicing scheme plan and carry out a capacity assessment to ensure that ensure that flows from future connections would be less than the approved Scheme capacity and that the Scheme's Environmental Protection Licence (EPL) conditions can be met when considering connection requests.

Further to the above it should be noted that, as the Site has various sub-catchments and various locations at which to connect into the existing wastewater system, that each connection should be assessed independently. This will further inform the developments waste water strategy and staging plan.

4 Gas Servicing

4.1 Existing Gas Infrastructure

A Dial Before You Dig enquiry has indicated that there are no existing gas assets within or around the site.

4.2 Gas Network Demands

Supply of Gas is demand driven, as it is not an essential service. As such will be subject to an assessment of the demand whether Jemena will deliver gas to the proposed development, and indeed the wider Picton area. Cardno does not currently know of any plans to construct infrastructure to the proposed development.

4.3 Gas Network Requirements

The gas utility Jemena provides the design and installation of infrastructure up to the point of connection at the site boundary. It is recommended that discussions with Jemena commence well in advance of design and construction activities commencing.

5 Power Servicing

5.1 Existing Power Infrastructure

Currently there are 11kV overhead power lines running along Remembrance Drive, Argyle Street, Menangle Street and Margaret Street. Further to this there is an 11kV overhead line servicing the Telstra service tower on Vault Hill (to the north of the site, an existing overhead pole mounted substation on Margaret Street and a pad mounted substation on Menangle Street.

Information received following a Dial Before You Dig application has shown that there are spare underground conduits which lead up-to the site boundary on Margaret Street.

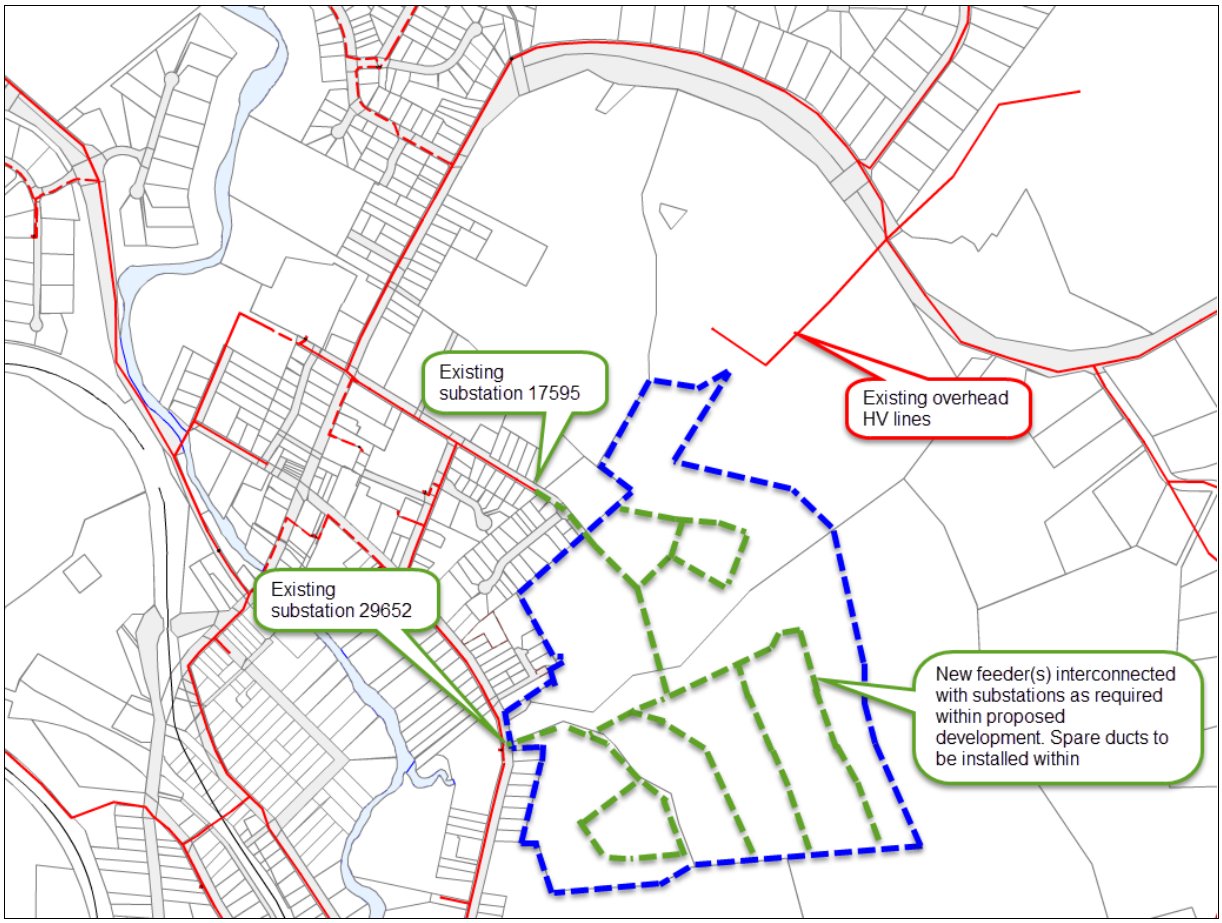


Figure 1-5 Overview of Endeavour Energy connection opportunities Reeves Creek

5.2 Power Networks Demands

Cardno is currently in communication with Endeavour Energy regarding the servicing strategy for the site.

The demand estimated for 350 dwellings is approximately **2,100 kVA**, provided there is sufficient capacity in the existing network this could be serviced off the existing infrastructure. The proposed servicing strategy includes a connection between Margaret Street and Menangle Street.

5.3 Power Infrastructure Requirements

Future requirements will be determined further as part of an ongoing discussion with Endeavour Energy. It is not anticipated there will be a requirement for significant upgrades or extensive relocation of assets.

Further to this Cardno anticipates that there will be a requirement to install sufficient substations within the development as well as spare ducts to allow for future connections.

It is possible some of the assets may need to be relocated as part of the development.

6 Telecommunications Servicing

6.1 Existing Telecommunications Infrastructure

The National Broadband Network (NBN) is an upgrade to Australia's existing telecommunications network. The national rollout plans to connect developments within the next few years, preferentially connecting communities in regional areas and new developments in city centres.

Currently there is limited service available in the Picton Area. A Dial Before You Dig Assessment has shown that there are NBN assets installed in Argyle Street. Installing new conduits along Margaret Street may present the best opportunity to connect with these existing NBN assets.

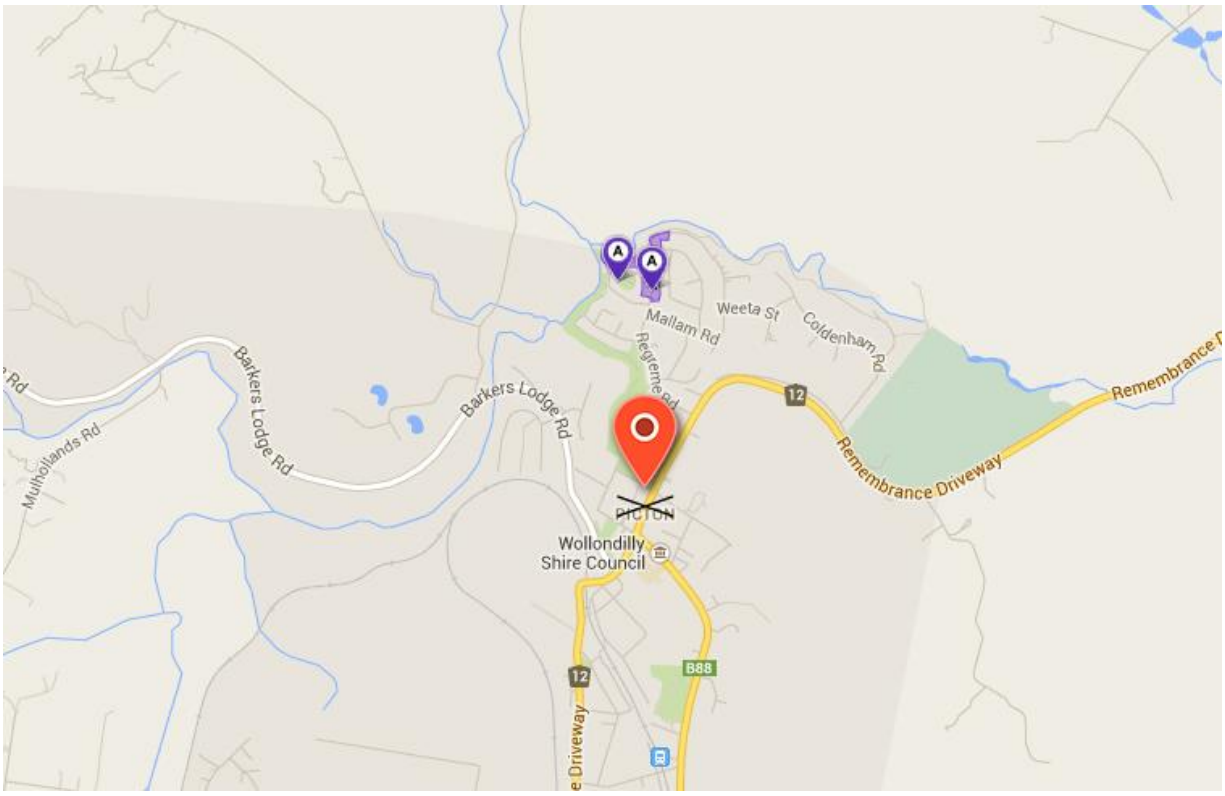


Figure 1-6 Overview of NBN rollout Picton Area

Telstra infrastructure extends to the site boundaries at both Menangle Street and Margaret Street. It is anticipated that this infrastructure will be sufficient to provide telecommunication service to the Site.

Further to this there is a tower owned by Telstra on the top of Vault Hill to the north of the site. The tower provides mobile coverage across the proposed area for rezoning.

6.2 Telecommunication Infrastructure Demands

As per the fibre in new development (FIND) policy, NBN Co is responsible for the installation of fibre at the development stage, for all premises in NBN Cos long term fibre footprint in new developments of 100 or more premises.

6.3 Telecommunications Infrastructure Requirements

The process for applying for a connection and connecting into the National Broadband Network is shown below.

Starting with pre-application, the developer needs to provide development details, including a project timeline, critical dates and a development Masterplan. Following receipt of this information, NBN will consider the application, and if approved, will issue a Master Development Agreement (MDA).

When requesting new fibre infrastructure NBN Co. requires at least three months' notice from developers prior to the commencement of construction/civil works. This is to ensure that NBN Co can deliver fibre infrastructure in line with developer timelines.

Multi Dwelling Units (MDUs) - Fibre Application Process

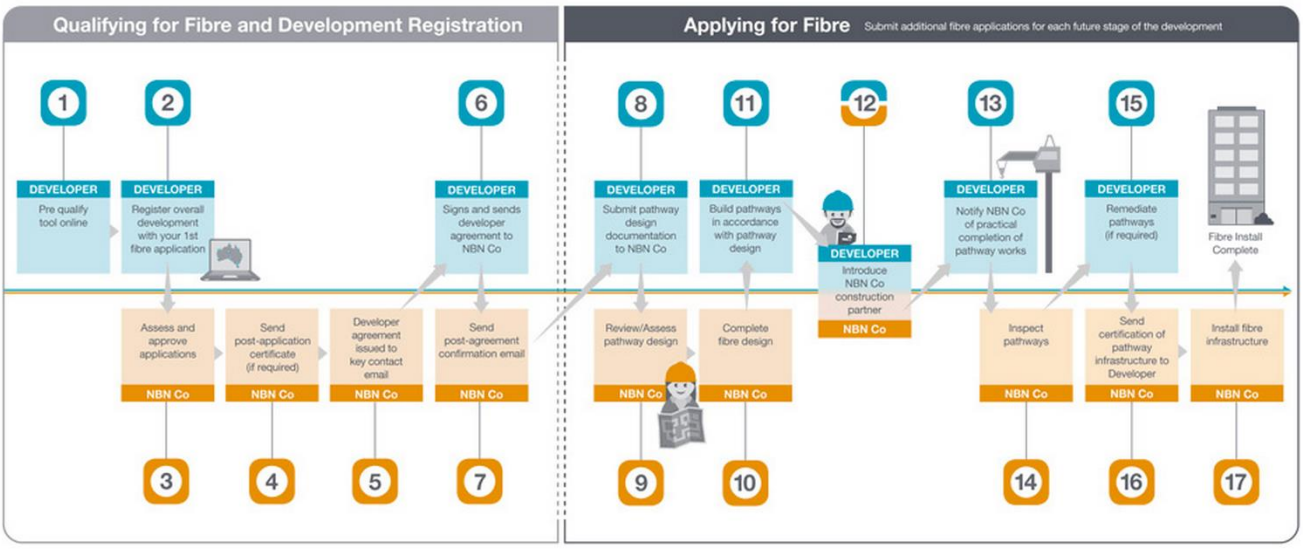


Figure 1-7 Overview of NBN

7 Conclusion

There are multiple potential connection strategies for the essential utilities which are required for development. Cardno has reviewed available utilities data and has not found any issues that would prevent rezoning.

Cardno recommends that further discussions with the utility authorities are initiated early to ensure that connection opportunities are developed and defined in line with expected project timeframes.

Reeves Creek - Rezoning

APPENDIX A

POTABLE AND WASTEWATER INFRASTRUCTURE

Cardno
Shaping the Future

Case Number: 130747

4 December 2012

DARTANYON PTY LTD
c/- JOHN M DALY & ASSOCIATES

FEASIBILITY LETTER

Developer:	**DARTANYON PTY LTD**
Your reference:	**12122**
Development:	**Lot Menangle St, Picton**
Development Description:	**subdivision of 4 lots into 546 residential lots and 21 rural lots**
Your application date:	**2 November 2012**

Dear Applicant

This Feasibility Letter (Letter) is a guide only. It provides general information about what Sydney Water's requirements could be if you applied to us for a Section 73 Certificate (Certificate) for your proposed development. **The information is accurate at today's date only.**

If you obtain development consent for that development from your consent authority (this is usually your local Council) they will require you to apply to us for a Section 73 Certificate. You will need to submit a new application (and pay another application fee) to us for that Certificate by using your current or another Water Servicing Coordinator (Coordinator).

Sydney Water will then send you either a:

- Notice of Requirements (Notice) and Developer Works Deed (Deed) or
- Certificate.

These documents will be the definitive statement of Sydney Water's requirements.

There may be changes in Sydney Water's requirements between the issue dates of this Letter and the Notice or Certificate. The changes may be:

- if you change your proposed development eg the development description or the plan/ site layout, after today, the requirements in this Letter could change when you submit your new application; and

- if you decide to do your development in stages then you must submit a new application

(and pay another application fee) for each stage.

What You Must Do To Get A Section 73 Certificate In The Future.

To get a Section 73 Certificate you must do the following things. You can also find out about this process by visiting www.sydneywater.com.au > Building and Developing > Developing Your Land.

1. **Obtain Development Consent from the consent authority for your development proposal.**

2. **Engage a Water Servicing Coordinator (Coordinator).**

   You must engage your current or another authorised Coordinator to manage the design and construction of works that you must provide, at your cost, to service your development. If you wish to engage another Coordinator (at any point in this process) you must write and tell Sydney Water.

   For a list of authorised Coordinators, either visit www.sydneywater.com.au > Building and Developing > Developing Your Land or call **13 20 92.**

   The Coordinator will be your point of contact with Sydney Water. They can answer most questions that you might have about the process and developer charges and can give you a quote or information about costs for services/works (including Sydney Water costs).

3. **Developer Works Deed**

   After the Coordinator has submitted your new application, they will receive the Sydney Water Notice and Developer Works Deed. You and your accredited Developer Infrastructure Providers (Providers) will need to sign and lodge both copies of the Deed with your nominated Coordinator. After Sydney Water has signed the documents, one copy will be returned to the Coordinator.

   The Deed sets out for this project:

   - your responsibilities;
   - Sydney Water's responsibilities; and
   - the Provider's responsibilities.

   You must do all the things that we ask you to do in that Deed. This is because your development does not have water and sewer services and you must construct and pay for the following works extensions under this Deed to provide these services.

   Note: The Coordinator must be fully authorised by us for the whole time of the agreement.

4. **Water and Sewer Works**

   4.1 **Water**

   Your development must have a frontage to a water main that is the right size and can be used for connection.

- Preliminary investigation indicates that the trunk system does not have adequate capacity to service the proposed redevelopment.
- Approximately 3.7km of watermain in Remembrance Dr will be required to be amplified to 300mm.
- A 150mm link main in Prince St Picton will enable rezoning of this area.
- Further amplifications in Menangle Rd will also be needed.
- The developer will be required to provide an overall concept-servicing scheme for the ultimate development, at their expense. This will include but not be limited to:
    - Scheme plan showing the proposed connection to the existing Sydney water system.
    - Water modelling may be required subject to a review of the concept scheme plan.
- The servicing scheme plan will be assessed to define any additional works necessary to service the proposed development i.e. local amplifications or alternate connection points.
- Detailed requirements will be provided at the Section 73 application phase

.

- **You must provide a water service connection and property service (also known as a "property service (main to meter)") at your cost for all lots off the water main construction required above and your Coordinator must manage the work. See section below for details.**

- **Property Service (Main to Meter) Installation Details**

The property service connection must be carried out by a Sydney Water listed Driller and the installation of the property service must either be carried out or supervised by a licensed plumber. They must meet the:

(a) Administrative requirements of the New South Wales Code of Practice for Plumbing and Drainage; and
(b) Sydney Water Property Service (Main to Meter) Installations Technical Requirements.

Before the Certificate can issue, your Coordinator must give Sydney Water:

- All the "Work as Constructed" information that shows what was constructed; and
- Certification that the property service works comply with Sydney Water's requirements.

4.2 **Sewer**

Your development must have a sewer main that is the right size and can be used for

connection. That sewer must also have a connection point within your development's boundaries.

Sydney Water has assessed your application and found that:

- Preliminary investigation indicates that the trunk system has adequate capacity to service the proposed redevelopment.
- The developer will be required to provide an overall concept-servicing scheme for the ultimate development, at their expense. This will include but not be limited to:
    - Scheme plan showing the proposed connection to the existing Sydney wastewater system
    - Wastewater modelling may be required subject to a review of the concept scheme plan.
- The servicing scheme plan will be assessed to define any additional works necessary to service the proposed development i.e. local amplifications or alternate connection points.
- Detailed requirements will be provided at the Section 73 application phase

The Proposed sub division Development is outside of Picton waste water system.

The proposed development can be serviced only if the current Picton Sewerage Scheme boundary modification submission is approved by Department of Planning (DOP).

The proposed development is not in the 2010/11 MDP. Picton waste water amplification detailed planning project did not consider this development in the planning study.

Once the boundary modification approval is obtained, future connections will be based on the following criteria:

1. Property owners/developers must be willing to comply with Sydney Water's connection requirements.
2. Property owners/developers must have an existing relevant planning approval obtained under the Environmental Planning and assessment (EP&A) Act 1979.
3. Sydney Water would ensure that flows from future connections would be less than the approved Scheme capacity of the plant and farm and that the Scheme's Environmental Protection Licence (EPL) conditions can be met when considering connection requests.

The developer needs to carry out capacity assessment to ensure the criteria 3 is met.

- You must use Sydney Water's **Technical Specifications for Low Infiltration Sewer Systems** to plan, design and construct the sewer. This specification must be used in conjunction with (and have precedence over) the Sewerage Code of Australia, WSA02-

2002 (Sydney Water Edition). A Defect Liability Period of 12 months will apply to the works following their completion and acceptance by Sydney Water. Sydney Water will carry out Validation Testing one month prior to the expiry of that period. If we find any defects we will tell you. It will be your responsibility to rectify any notified defects.

- Any tender called by you for the works will need to provide for the above requirements.

Funding of works
Under Sydney Water's 'Funding of infrastructure to service growth' policy we may agree to contribute towards a portion of the cost of the works you are required to build. Your Water Service Coordinator can advise you in relation to this policy, the likelihood of Sydney Water sharing a portion of the cost and the process you need to satisfy Sydney Water's probity requirements.

The funding assessment will be made at the detailed design stage, prior to any construction works commencing. A firm commitment would not be made by Sydney Water until we:

- Have reviewed the detailed design and;
- Have reviewed the detailed construction quotations needed to meet our probity requirements and;
- Come to an agreement on the amount.

5. Ancillary Matters

5.1 Asset adjustments

After Sydney Water issues this Notice (and more detailed designs are available), Sydney Water may require that the water main/sewer main/stormwater located in the footway/your property needs to be adjusted/deviated. If this happens, you will need to do this work as well as the extension we have detailed above at your cost. The work must meet the conditions of this Notice and you will need to complete it **before we can issue the Certificate**. Sydney Water will need to see the completed designs for the work and we will require you to lodge a security. The security will be refunded once the work is completed.

5.2 Entry onto neighbouring property

If you need to enter a neighbouring property, you must have the written permission of the relevant property owners and tenants. You must use Sydney Water's **Permission to Enter** form(s) for this. You can get copies of these forms from your Coordinator or the Sydney Water website. Your Coordinator can also negotiate on your behalf. Please make sure that you address all the items on the form(s) including payment of compensation and whether there are other ways of designing and constructing that could avoid or reduce their impacts. You will be responsible for all costs of mediation involved in resolving any disputes. Please allow enough time for entry issues to be resolved.

5.3 Costs

Construction of these **future** works will require you to pay project management, survey, design and construction costs **directly to your suppliers**. Additional costs payable to Sydney Water may include:

- water main shutdown and disinfection;
- connection of new water mains to Sydney Water system(s);
- design and construction audit fees;
- contract administration, Operations Area Charge & Customer Redress prior to project finalisation;
- creation or alteration of easements etc; and
- water usage charges where water has been supplied for building activity purposes prior to disinfection of a newly constructed water main.

Note: Payment for any Goods and Services (including Customer Redress) provided by Sydney Water will be required prior to the issue of the Section 73 Certificate or release of the Bank Guarantee or Cash Bond.

Your Coordinator can tell you about these costs.

OTHER THINGS YOU MAY NEED TO DO

Shown below are other things you need to do that are NOT a requirement for the Certificate. They may well be a requirement of Sydney Water in the future because of the impact of your development on our assets. You must read them before you go any further.

Stamping and approval of your building plans

Please note that the building plans must be stamped and approved when each lot is developed. This can be done at a Quick Check agency. For an agency list visit www.sydneywater.com.au > Building and Developing > Quick Check or call 13 20 92).

This is not a requirement for the Certificate but the approval is needed because the construction/building works may affect Sydney Water's assets (e.g. water, sewer and stormwater mains).

Where a Sydney Water stormwater channel, pipe or culvert is located within ten (10) metres of your development site it must be referred to Sydney Water for further assessment.

Your Coordinator can tell you about the approval process including:

- Possible requirements;
- Costs; and
- Timeframes.

Note: You must obtain our written approval before you do any work on Sydney Water's systems. Sydney Water will take action to have work stopped on the site if you do not have that approval. We will apply Section 44 of the *Sydney Water Act 1994.*

Backflow Prevention Water supply connections

A backflow prevention containment device appropriate to the property's hazard rating must be installed at the property boundary. The device is to be installed on all water supplies entering the property, regardless of the supply type or metering arrangements. It is needed to reduce the risk of contamination by backflow from these supplies.

A licensed plumber with backflow accreditation can advise you of the correct requirements for your property. To view a copy of Sydney Water's Backflow Prevention Policy and a list of backflow accredited plumbers visit www.sydneywater.com.au **>** Plumbing **>** BackflowPrevention.

The water service for your development

Sydney Water does not consider whether the existing water main(s) talked about above is adequate for fire fighting purposes for your development. We cannot guarantee that this water supply will meet your Council's fire fighting requirements. The Council and your hydraulic consultant can help.

You must make sure that each dwelling/lot has its own 20mm meter.

When access to the water supply is required, the property owner or agent must apply to Sydney Water online. Sydney Water must install a water meter before any water is used. It is illegal for anyone other than a Sydney Water employee to remove the locking mechanism on the water meter.

The online application can be found by visiting our website www.sydneywater.com.au **>** Plumbing. The applicant will need to have the:

1. Account (Property) Number which can be obtained from the Coordinator; and
2. Serial Number which can be found on the metal tag on your property service.

You can find more information by using the "Ask Sydney Water" section of our website.

Fire Fighting

Definition of fire fighting systems is the responsibility of the developer and is not part of the Section 73 process. It is recommended that a consultant should advise the developer regarding the fire fighting flow of the development and the ability of Sydney Water's system to provide that flow in an emergency. Sydney Water's Operating Licence directs that Sydney Water's mains are only required to provide domestic supply at a minimum pressure of 15 m head.

Soffit Requirements

Please be aware that floor levels must be able to meet Sydney Water's soffit requirements for property connection and drainage.

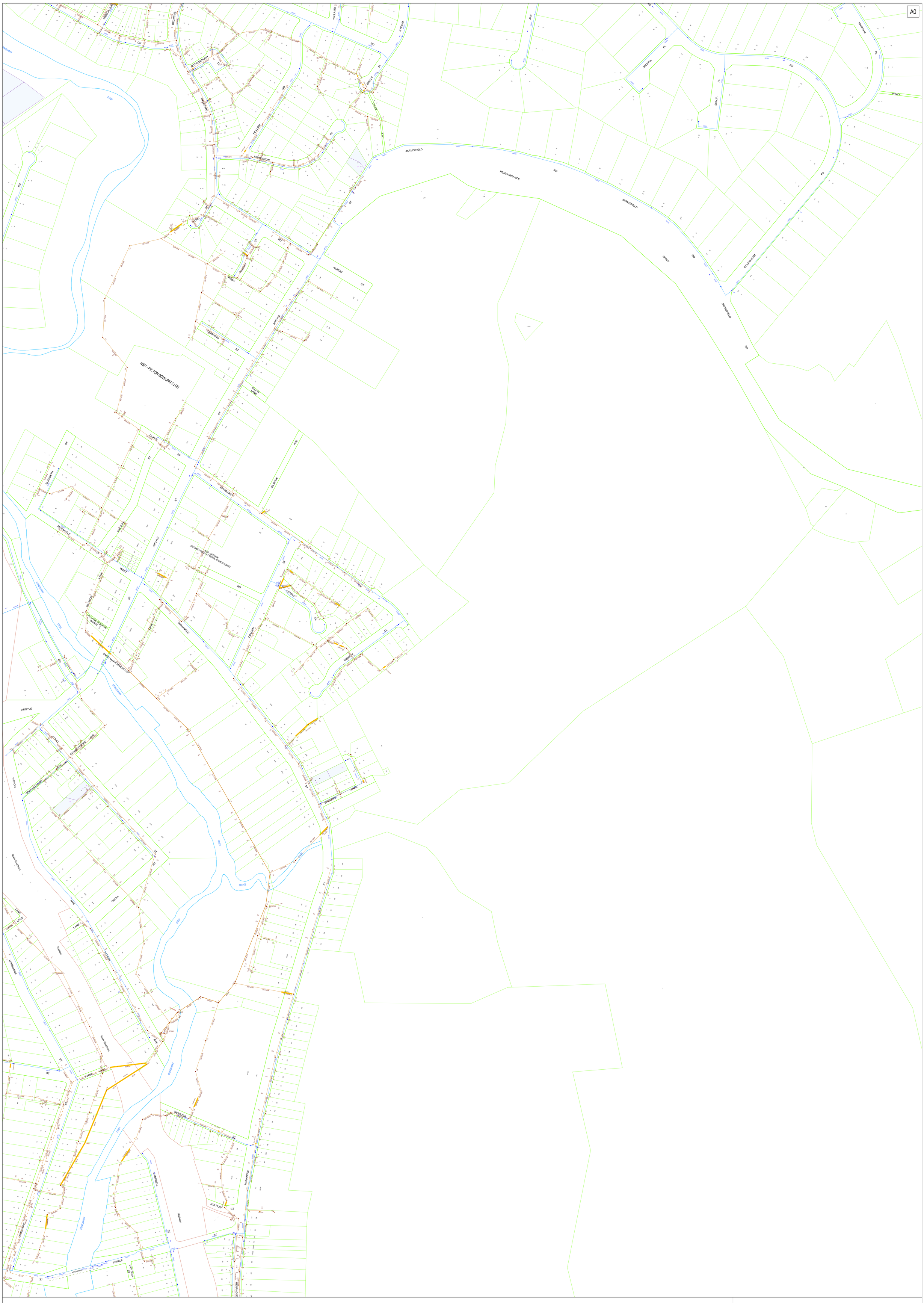
Other fees and requirements

The requirements in this Notice relate to your Certificate application only. Sydney Water may be involved with other aspects of your development and there may be other fees or requirements. These include:

- plumbing and drainage inspection costs;
- the installation of backflow prevention devices; and
- council fire fighting requirements. (It will help you to know what the fire fighting requirements are for your development as soon as possible. Your hydraulic consultant can help you here.)

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

END



DBYD Address:
108 Menangle Street
Picton NSW 2571

DBYD Job No: 8254214

DBYD Sequence No: 41198178

Copyright Reserved Sydney Water 2014

No warranty is given that the information shown is complete or accurate.

SYDNEY WATER CORPORATION

Scale: 1:2000

Date of Production: 25/08/2014

N

Plan 1 of 1

0m 30m 60m 90m 120m 150m

Guide to reading Sydney Water DBYD Plans

January 2014

Asset Information

Legend

Sewer

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

Pressure Sewer

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

Vacuum Sewer

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

Stormwater

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

Property Details

- Boundary Line
- Easement Line
- House Number
- Lot Number
- INFORMATION ELSEWHERE see Guide ref 12345 (work-as-executed diagram available via website)
- Proposed Land
- Sydney Water Heritage Site (please call **132 092** and ask for the **Heritage Unit**)

Water

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

Private Mains

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

Pipe Types

ABS	Acrylonitrile Butadiene Styrene	**AC**	Asbestos Cement
BRICK	Brick	**CI**	Cast Iron
CICL	Cast Iron Cement Lined	**CONC**	Concrete
COPPER	Copper	**DI**	Ductile Iron
DICL	Ductile Iron Cement (mortar) Lined	**DIPL**	Ductile Iron Polymeric Lined
EW	Earthenware	**FIBG**	Fibreglass
FL BAR	Forged Locking Bar	**GI**	Galvanised Iron
GRP	Glass Reinforced Plastics	**HDPE**	High Density Polyethylene
IBL	Internal Bitumen Lined	**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
SGW	Salt Glazed Ware	**SPL**	Steel Polymeric Lined
SS	Stainless Steel	**STONE**	Stone
VC	Vitrified Clay	**WI**	Wrought Iron
WS	Woodstave		

Further Information

Please consult the Dial Before You Dig enquiries page on the Sydney Water website

For general enquiries please call the Customer Contact Centre on **132 092**

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

Reeves Creek -
Rezoning

APPENDIX B
GAS INFRASTRUCTURE

Cardno
Shaping the Future

Network Protection

No Assets Affected

In reply to your enquiry. Jemena has no gas mains at the location of your intended work. However, other utilities may have mains in this area and we advise that you check with your local authority.

Jemena DBYD Administration - 1300 880 906

KEY

MAX ALLOWABLE OPERATING PRESSURE

T	TRUNK MAIN	7000 kPa
P	PRIMARY MAIN	3500 kPa
S	SECONDARY MAIN	1050 kPa
		300 kPa
		210 kPa
		7 kPa
400		400 kPa
100		100 kPa
		2 kPa
	PROPOSED MAINS	

	VALVE
	SYSTEM PRESSURE REGULATOR
S	SIPHON
123	NETWORK NODES
123S	ITEM DETAIL SKETCH AVAILABLE
125B	VALVE NUMBER (OLD NUMBERING)
6NB	6 INCH CAST IRON MAIN
150MM	150MM STEEL MAIN
110MM PE/NY	110MM POLYETHYLENE/NYLON MAIN
6 NB 50MM NY	50MM NYLON INSERTED INTO 6NB MAIN CAST IRON MAIN
1.2MBL	DISTANCE IN METRES OF MAIN FROM BUILDING LINE (TOLERANCE OF 0.4M)
1957	YEAR LAID
	MUNICIPALITY BOUNDARY
	NETWORK BOUNDARY
123	HOUSE NUMBER
PR 11-23	STEEL MAIN PROJECT NUMBER
P	PRESSURE MONITORING STATION

In Case of Emergency please phone: 131 909 24 Hrs

Admin
1300 880 906

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

Reeves Creek -
Rezoning

APPENDIX C
POWER INFRASTRUCTURE

Cardno
Shaping the Future

IMPORTANT INFORMATION
READ BEFORE EXCAVATING

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.

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.

Any plans provided to you are made available subject to the provisions set out below.

It is very important that you read and understand all the information and disclaimers provided below before making a request for plans.

Information Provided by Endeavour Energy

- Any plans provided pursuant to this service are intended to show the approximate location of underground cables relative to fixtures when cables were laid.
- 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.

CUSTOMER REQUESTS AND RESPONSIBILITIES:

- If you intend to undertake any excavation work in Endeavour Energy's distribution area, it is your responsibility to contact **1100 – Dial Before You Dig or www.1100.com.au** and request plans, at least three working days prior to the proposed excavation date.
- Endeavour Energy expects to be able to provide relevant plans within 48 hours after a request is made.
- Endeavour Energy plans are frequently updated to record changes to underground assets. All plans are valid for **20** working days only from the date of issue therefore excavation should take place as soon as possible after the plans have been received. All plans provided by Endeavour Energy are subject to the warning set out below.
- Endeavour Energy retains copyright over all plans and details provided in response with customer's request.
- Persons excavating are expected to exercise all due care in the vicinity where cables 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 hand digging (pot holing).

- **Any damage to Endeavour Energy's assets must be reported to it on 131003 immediately.**

Further Information:

- Individual customer service cables are not shown on Endeavour Energy's plans.
- For further clarification on cable locations or the correct interpretation of the plan or for assistance with printing plans, please contact **02 98534161** between 8.00am – 4.30pm, Monday to Friday.
- For information concerning proposed works affecting your property contact Endeavour Energy's Contestable Works Administrators nearest Service Centre.

WARNING:

Endeavour Energy's plans show only the presence of cables and their position relative to road boundaries, property fences and other structures at the time of installation. Endeavour Energy does not warrant or hold that such plans are accurate.

A person who undertakes excavation work is subject to duties and responsibilities under the *Work Health and Safety Act 2011 (NSW)*. The WorkCover Authority has prepared the *Work Near Underground Assets Guideline*, which contains practical advice for working near underground utility services and guidance as to how to meet the requirements of the *Work Health and Safety Act 2011 (NSW)* when carrying out excavation work.

DO NOT ASSUME DEPTH OR ALIGNMENT of cables as these vary significantly as a result of changes to road widths, road levels, fences or buildings subsequent to installation.

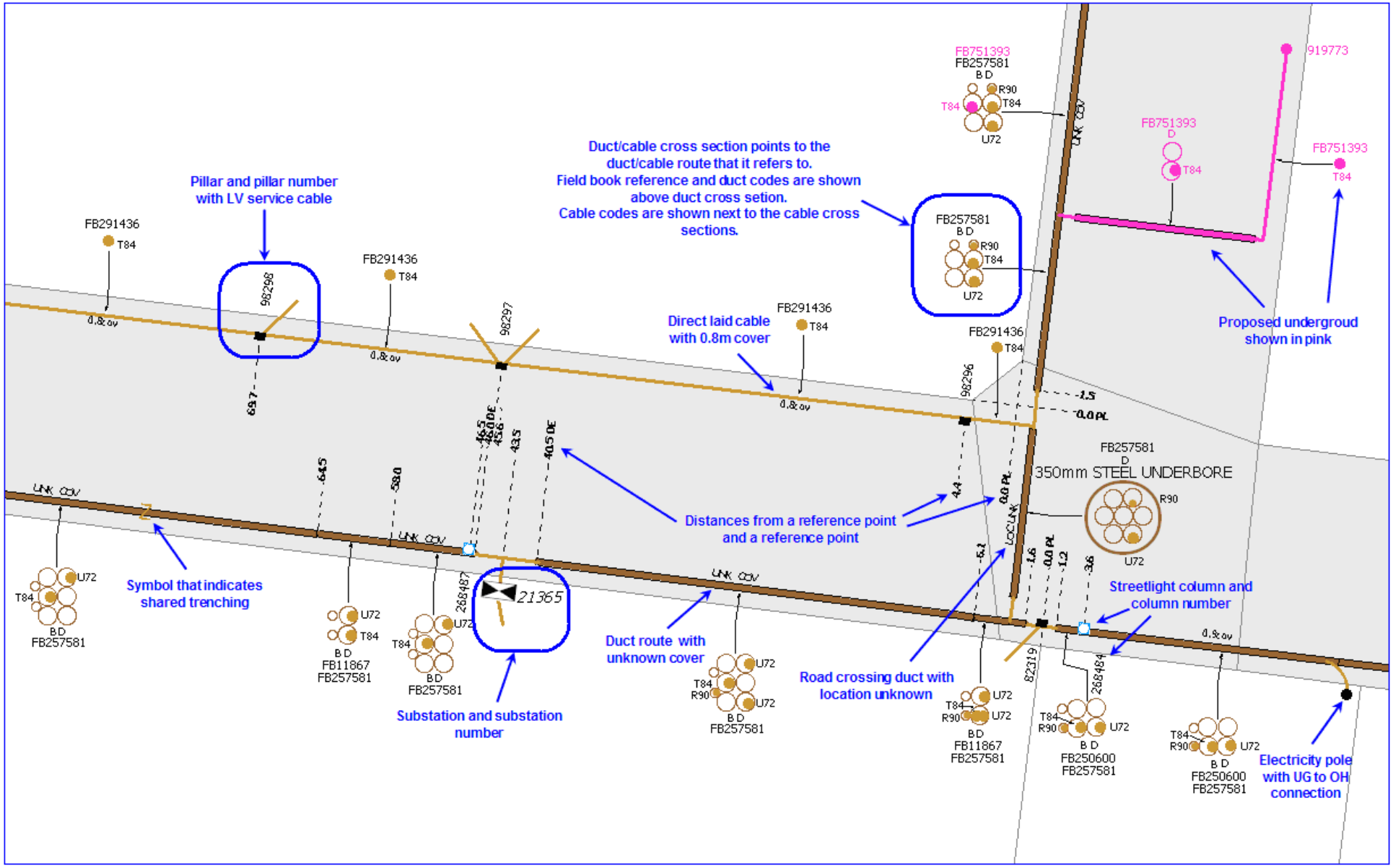
Persons excavating have a DUTY OF CARE when excavating near Endeavour Energy's cables. Before using machine excavators, Endeavour Energy's cables MUST FIRST BE PHYSICALLY EXPOSED BY SOFT DIG (pot holing) to identify its location.

Those excavating near Endeavour Energy's cables should be aware that asbestos or asbestos-containing material may be present in Endeavour Energy's underground assets and that Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches. Please refer below (pages 4 & 5) for the method for identifying asbestos ducts.

ALL ELECTRICAL APPARATUS SHALL BE REGARDED AS LIVE UNTIL PROVED DE-ENERGISED. Contact with live electrical apparatus will cause severe injury or death.

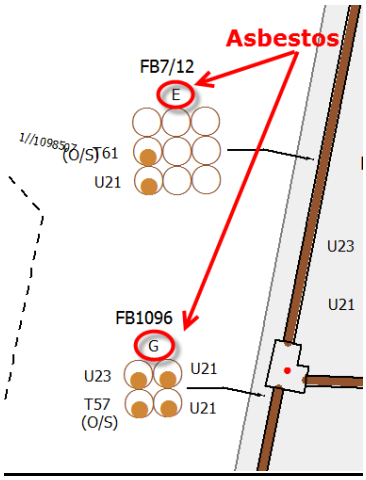
In all cases of electric shock or suspected electric shock the victim shall immediately be transported to hospital or medical centre for treatment.

EXAMPLE OF HOW TO READ ENDEAVOUR ENERGY PLANS



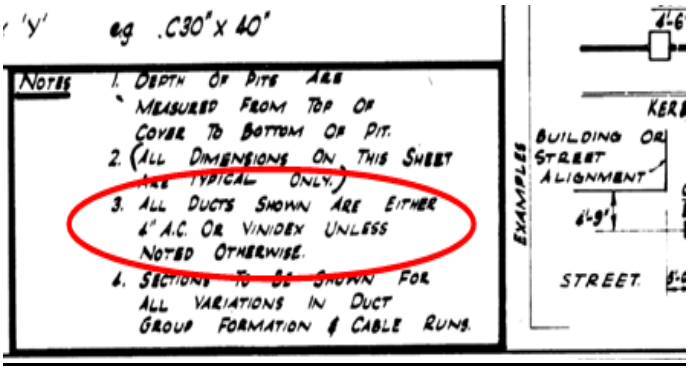
ASBESTOS DUCTS

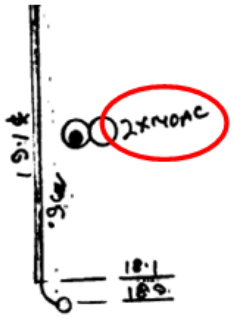
1. Duct codes of **E, F** and **G** identify Fibro Conduit

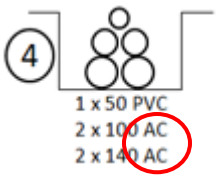


If underground details have not been captured and drawings are used, the method for identifying asbestos ducts and standards are different for the different utilities that amalgamated with Endeavour Energy. Using Reticulation Drawings, there are numerous ways to determine if a duct route has asbestos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

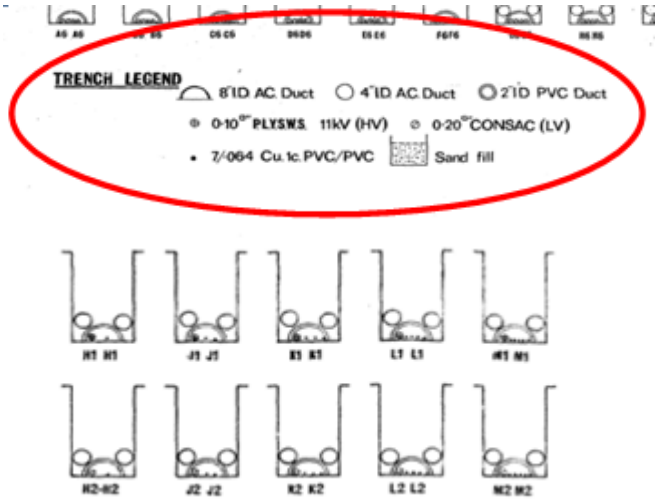
2. **AC** (Asbestos Cement) acronym



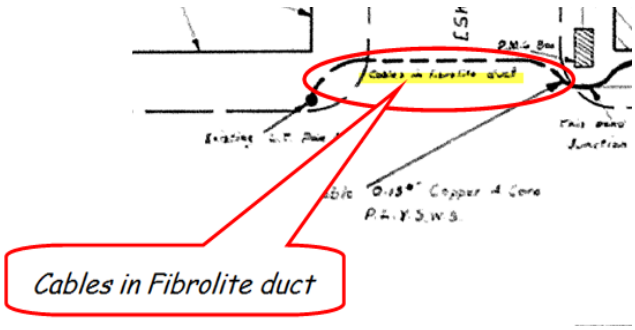




3. The duct codes **G,H,J,K,L.M Q,R,S,T,U,V,W & X** under each configuration is used on old Blue Mountains drawings to represent Asbestos.



4. **Fibrolite** (asbestos) ducts



If you are NOT able to identify the material used assume that it contains ASBESTOS and if further clarification is required, call 02 9853 4161 for assistance.

STANDARD UNDERGROUND SYMBOLS / LABELS

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

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

STJ, PBJ

STJ Straight through joint

PBJ Parallel branch 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

Z — Shared trenching

Service point of attachment

DUCT CODE LABLES

B = 50 mm PVC

D = 125mm PVC

E = 100mm Fibro Conduit (Asbestos)

F = 140mm Fibro Conduit (Asbestos)

G = 150mm Fibro Conduit (Asbestos)

DEPTH & LOCATION LABELS

0.5- 0.7 COV = 500mm – 700mm Standard Depth (Not Shown on Plans)

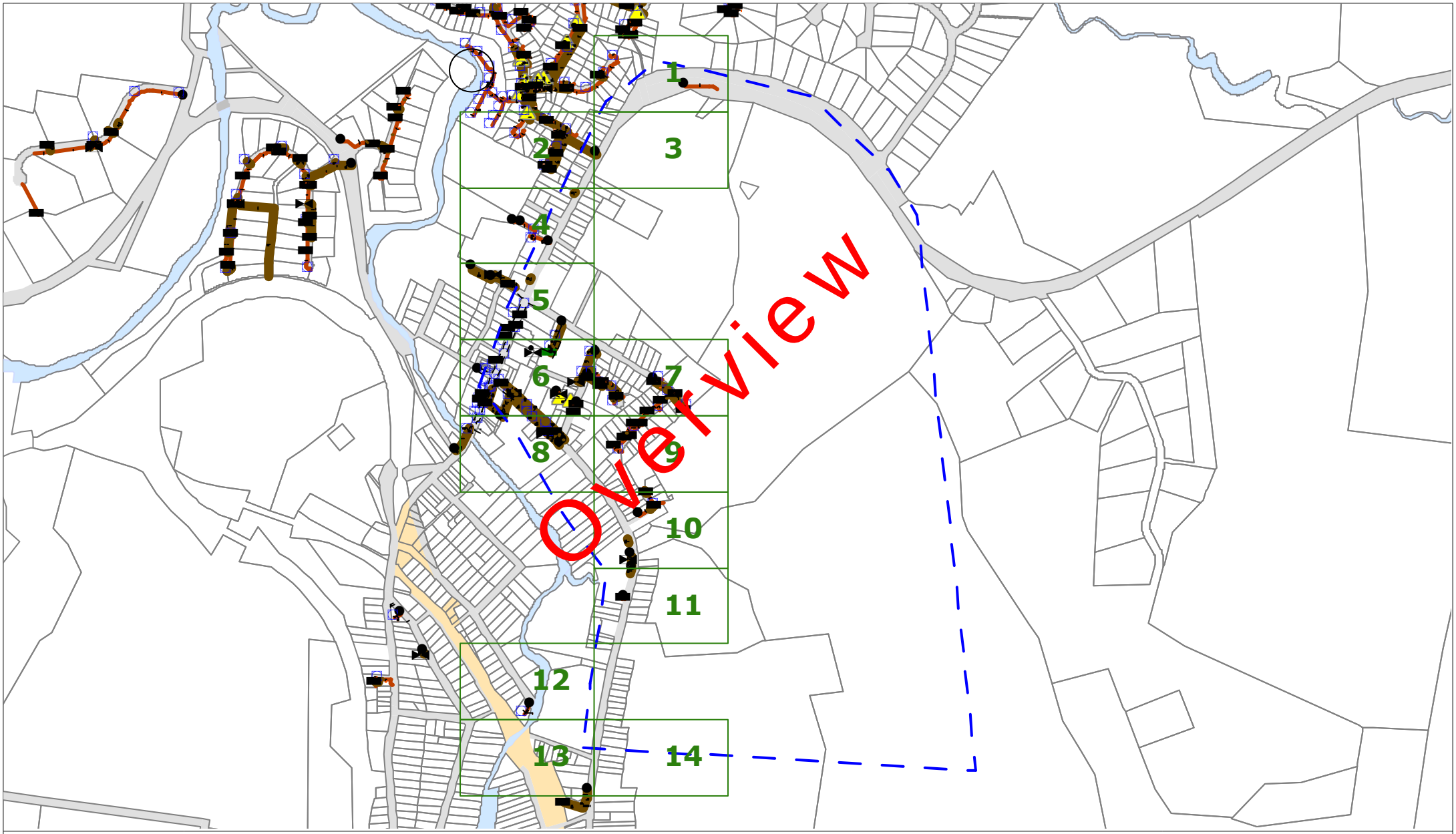
0.9 COV = 900mm Depth

UNK COV = Depth Unknown

LOC UNK = Location Unknown

0.6 PL = Standard Location 600mm from Property Line (Not Shown on Plans)

0.9 PL = Located 900mm from Property Line



Endeavour Energy

WARNING
ASBESTOS

ENDEAVOUR ENERGY WARNING

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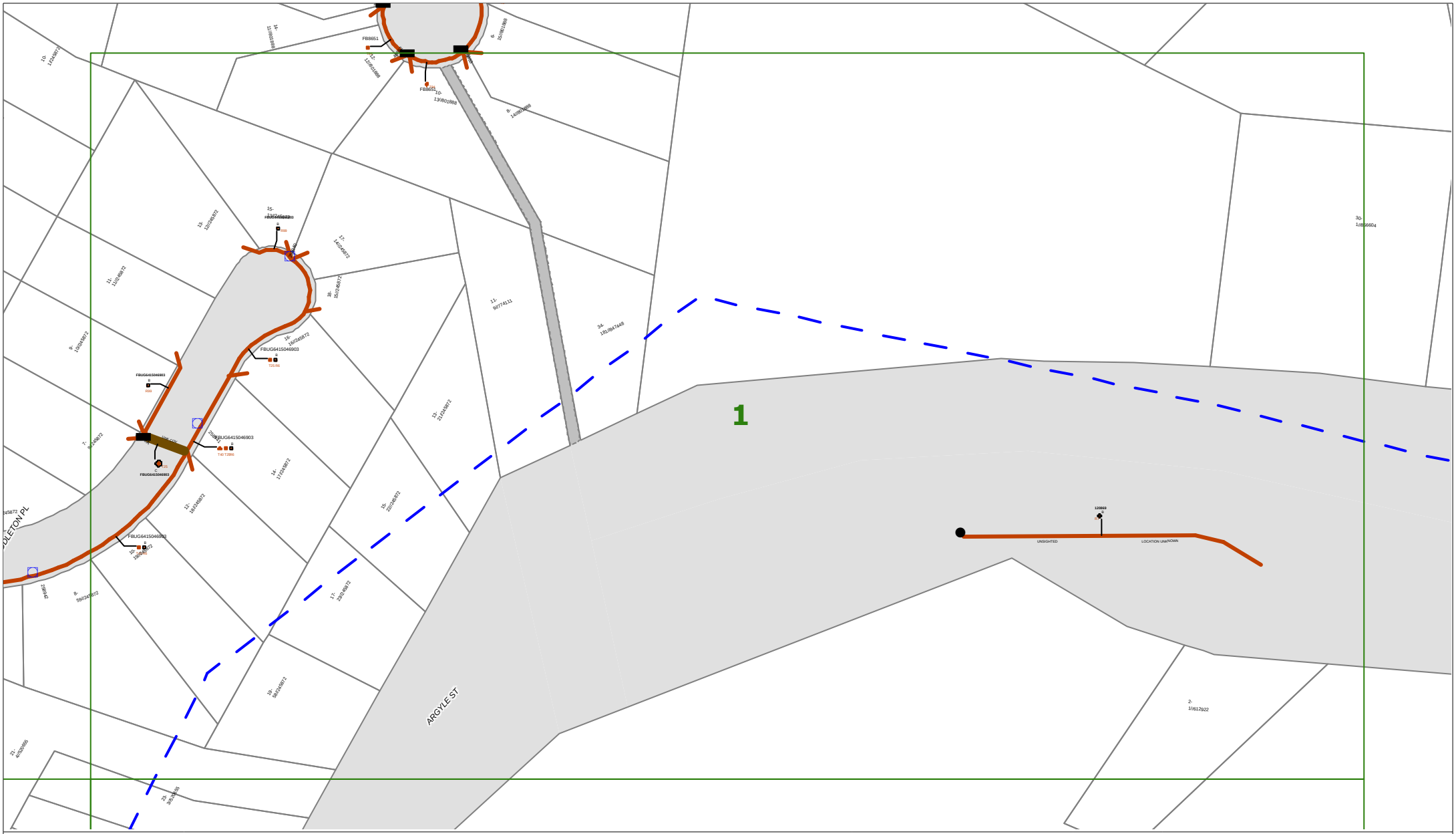
ALL ELECTRICAL APPARATUS SHALL BE CONSIDERED LIVE UNTIL PROVED DE-ENERGISED.
Contact with live electrical apparatus will cause severe injury or death.

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

N

DO NOT SCALE

DBYD Sequence Number:	41198175
Issued Date:	26/08/2014



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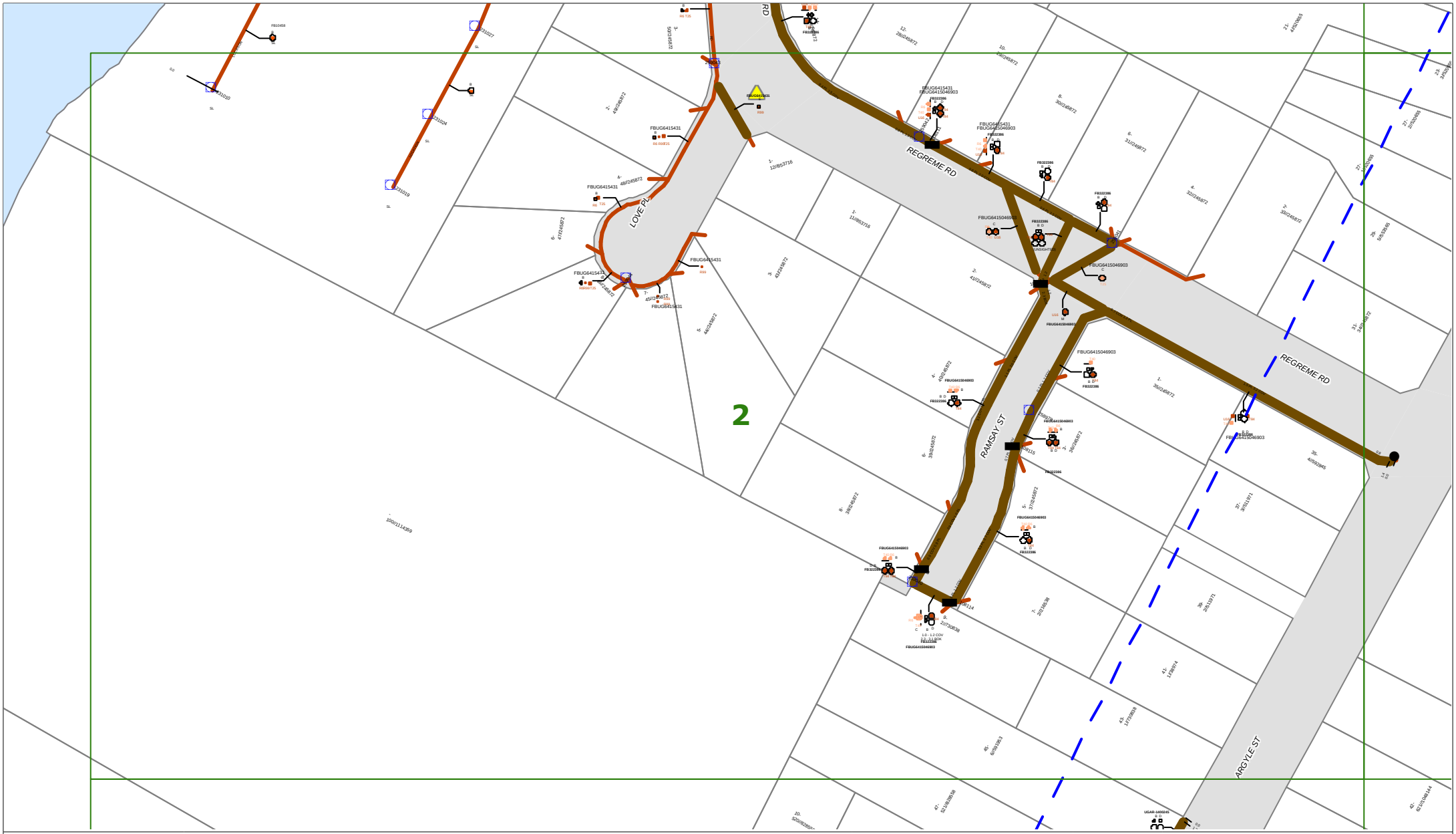

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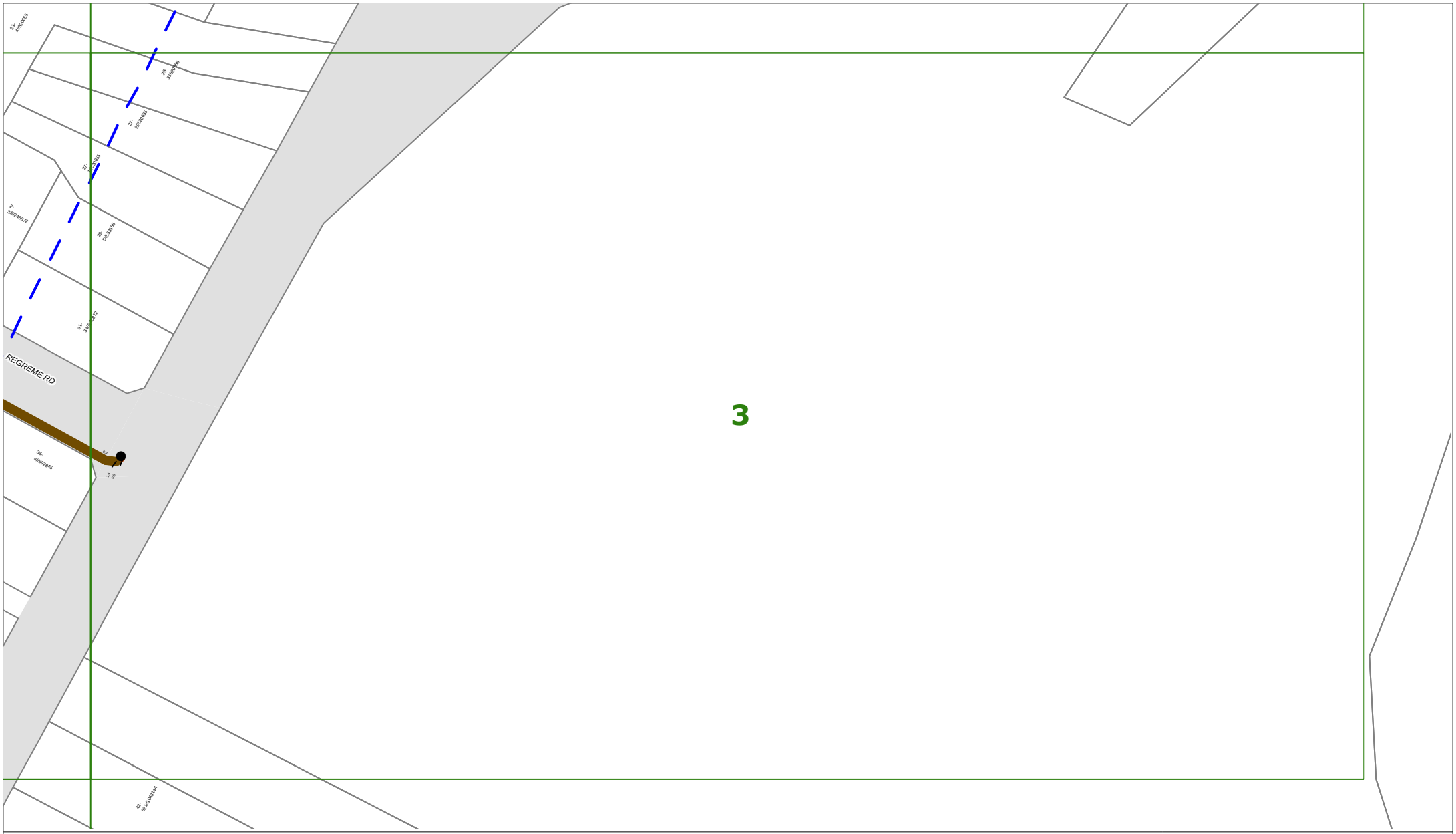

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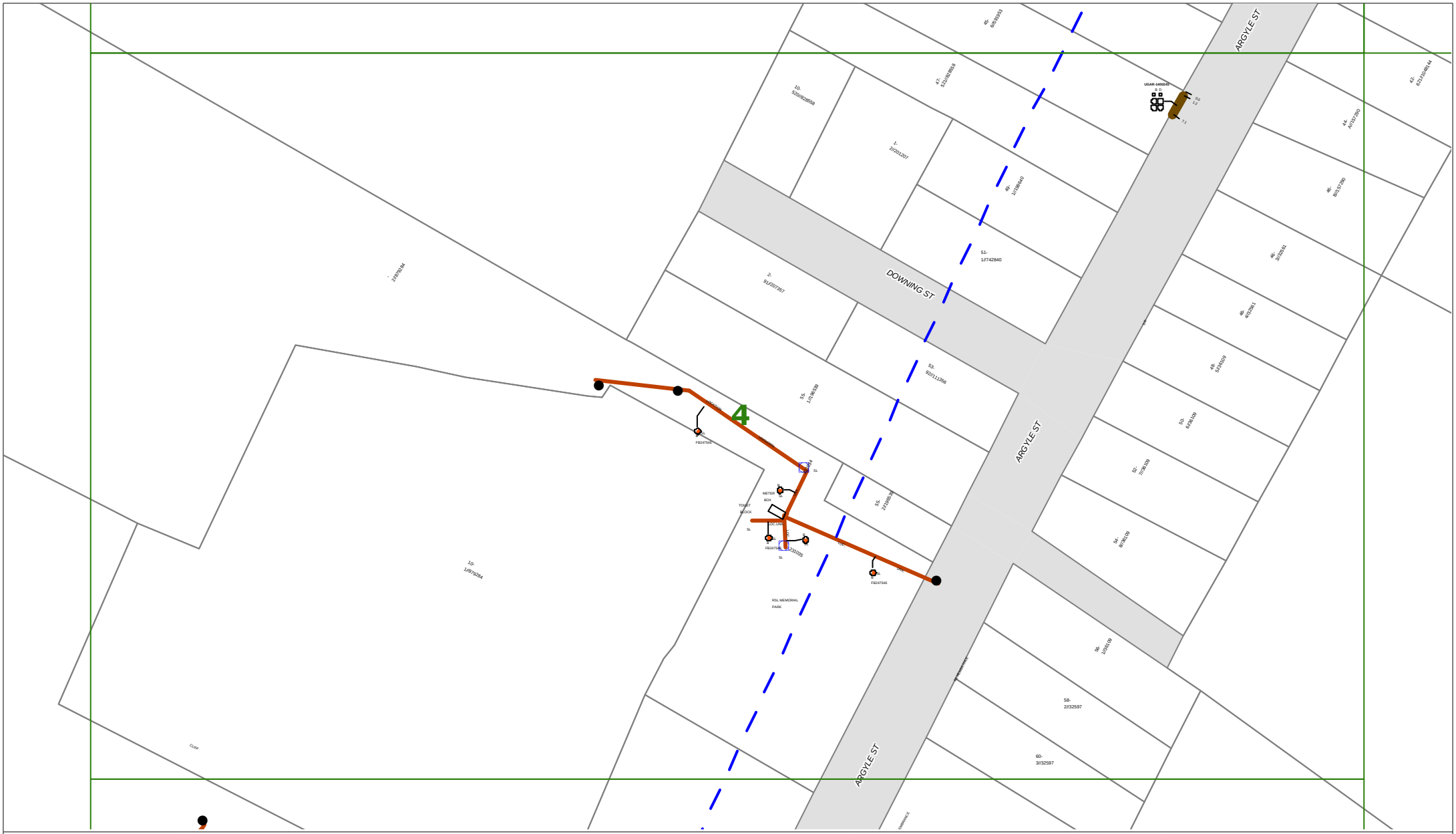

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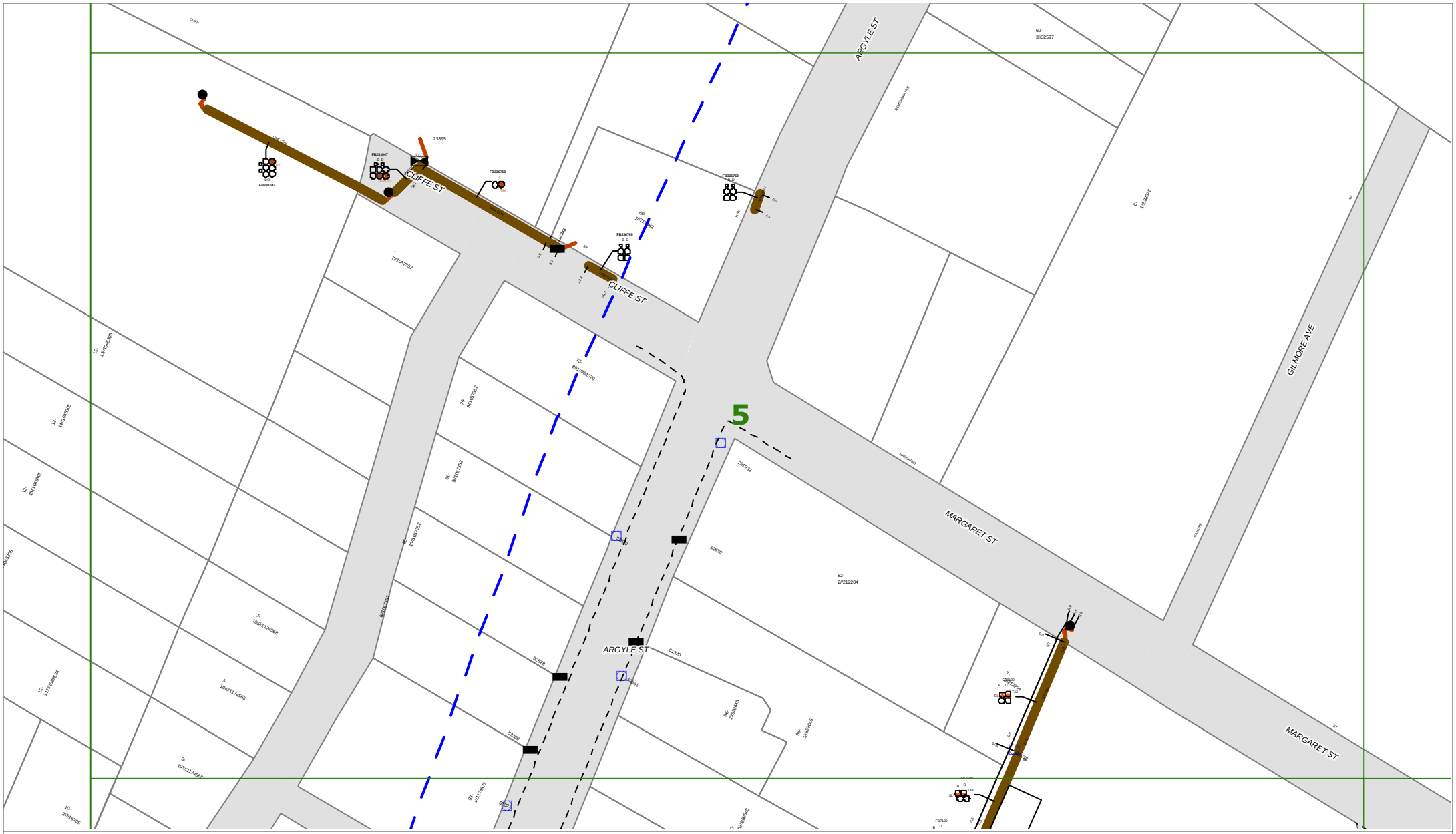

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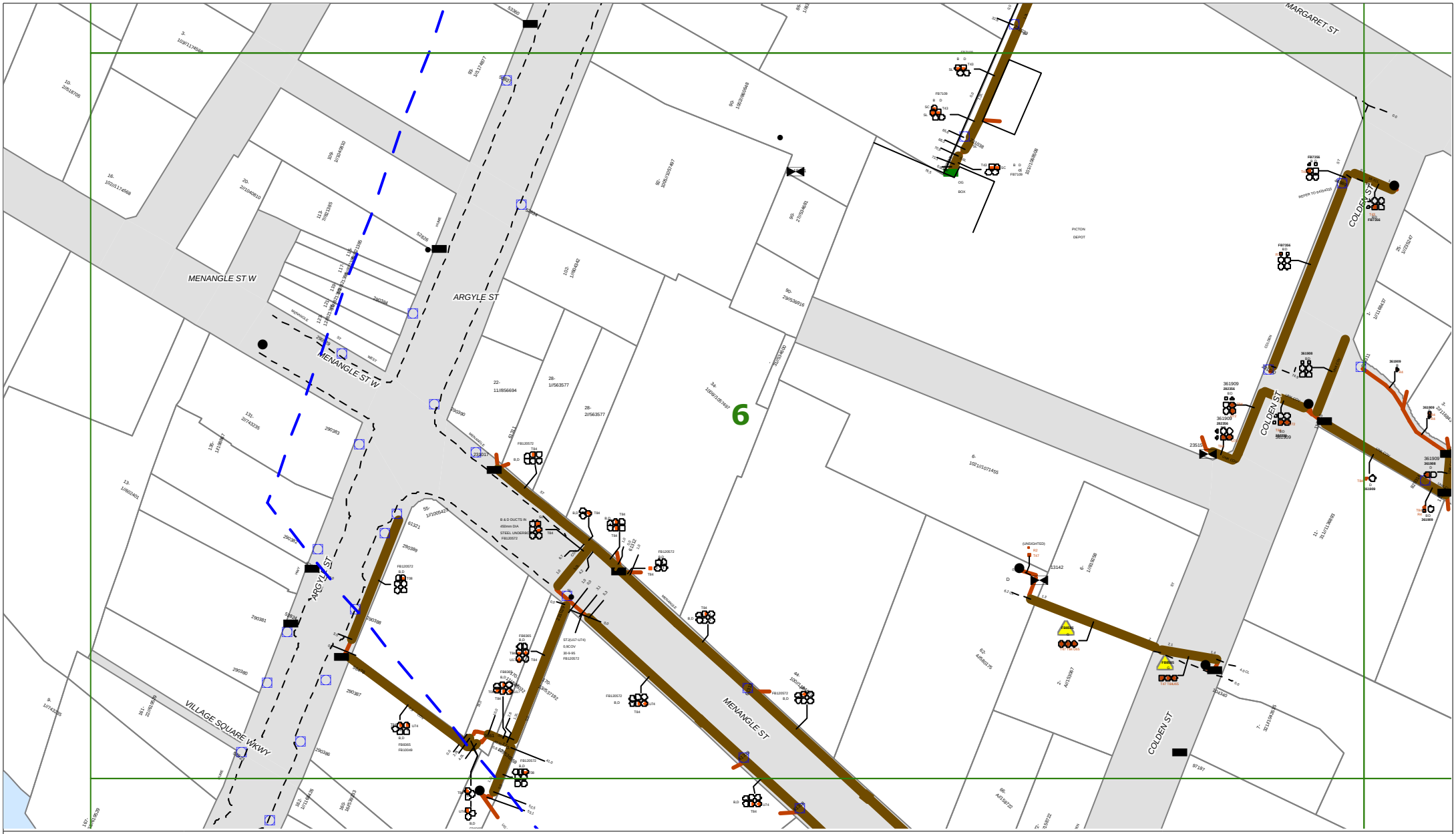

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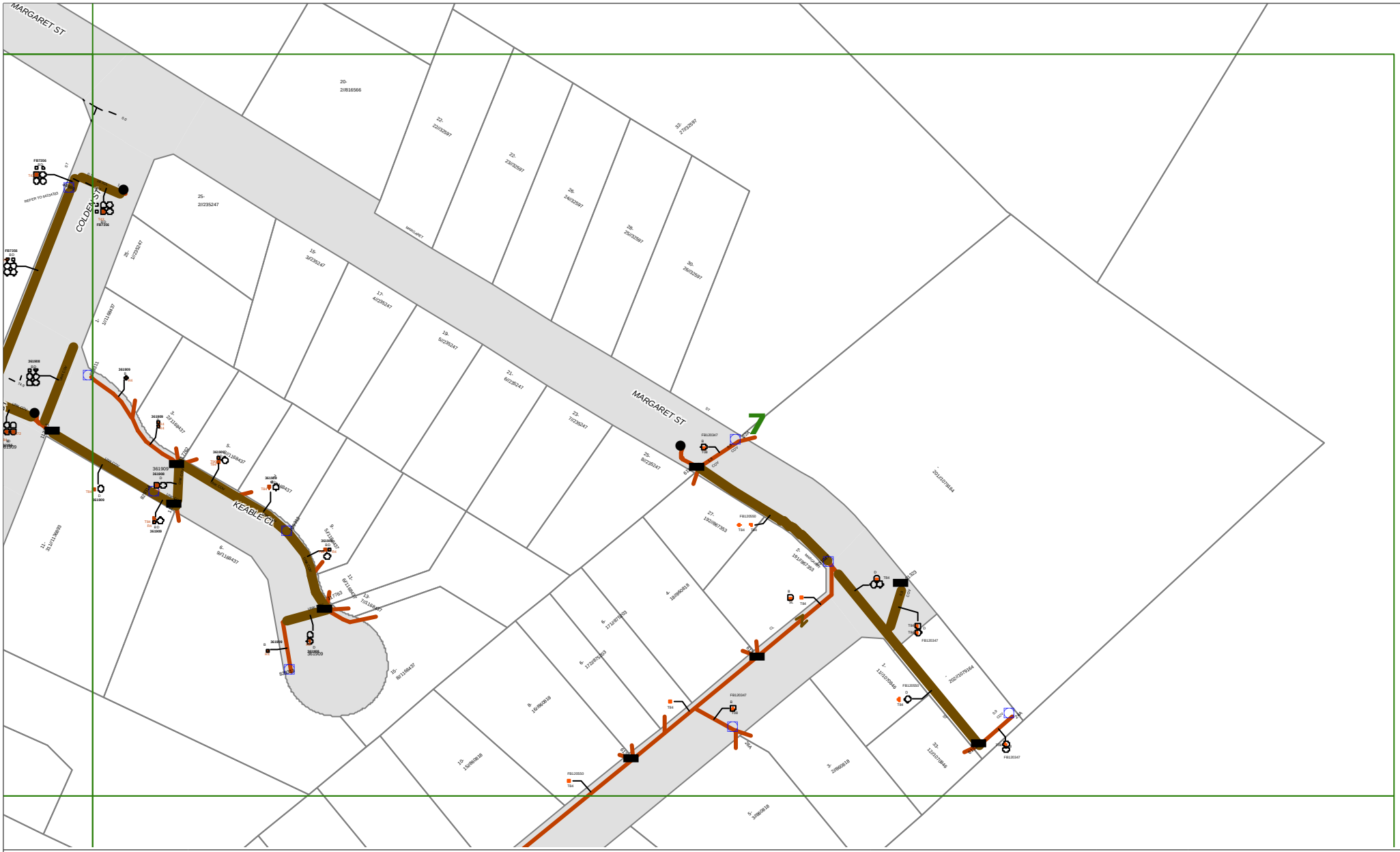

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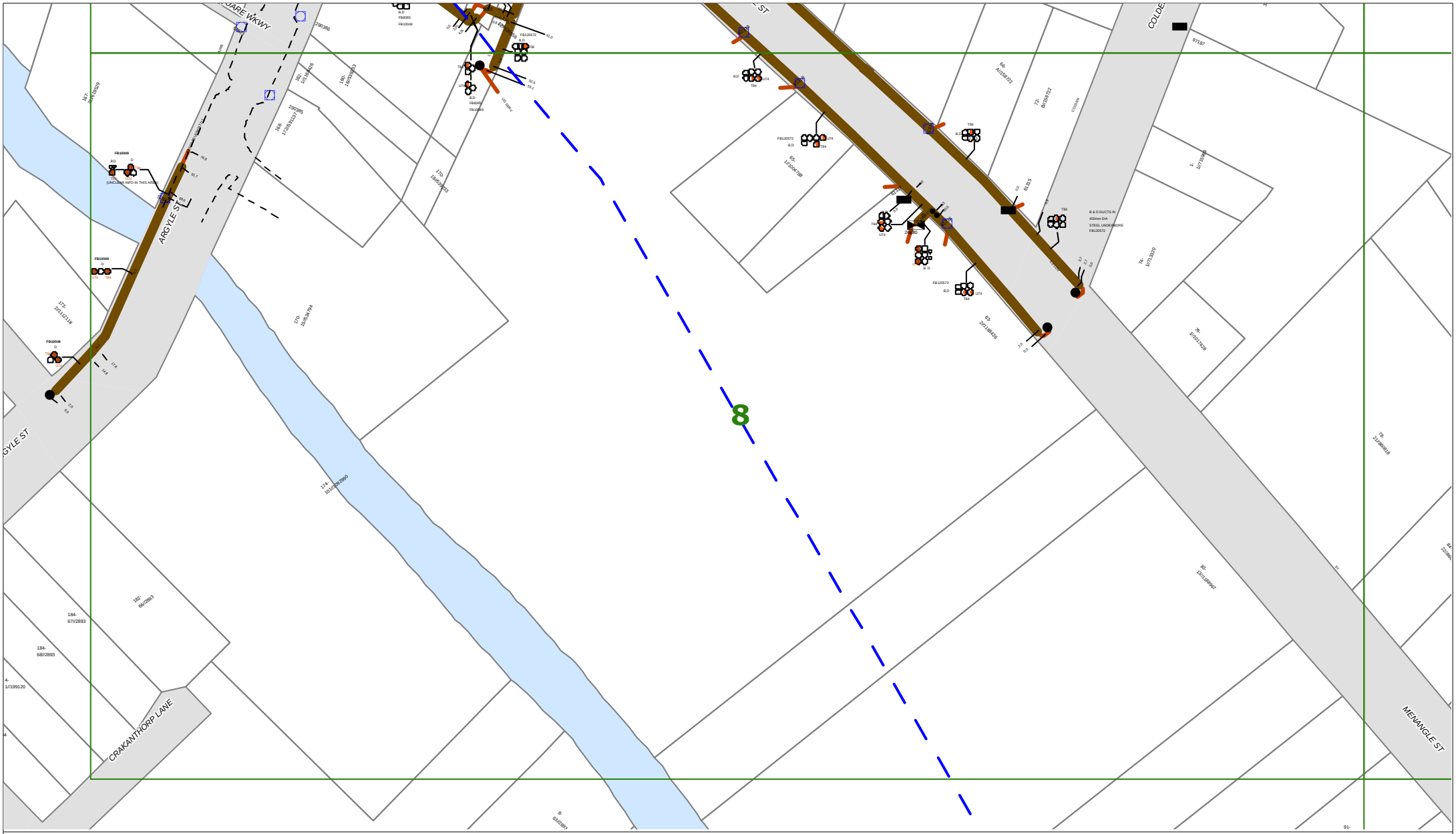
WARNING
ASBESTOS

N

DO NOT SCALE

DBYD Sequence Number:	41198175
Issued Date:	26/08/2014



Endeavour Energy

WARNING
ASBESTOS

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ALL ELECTRICAL APPARATUS SHALL BE CONSIDERED LIVE UNTIL PROVED DE-ENERGISED.
Contact with live electrical apparatus will cause severe injury or death.

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

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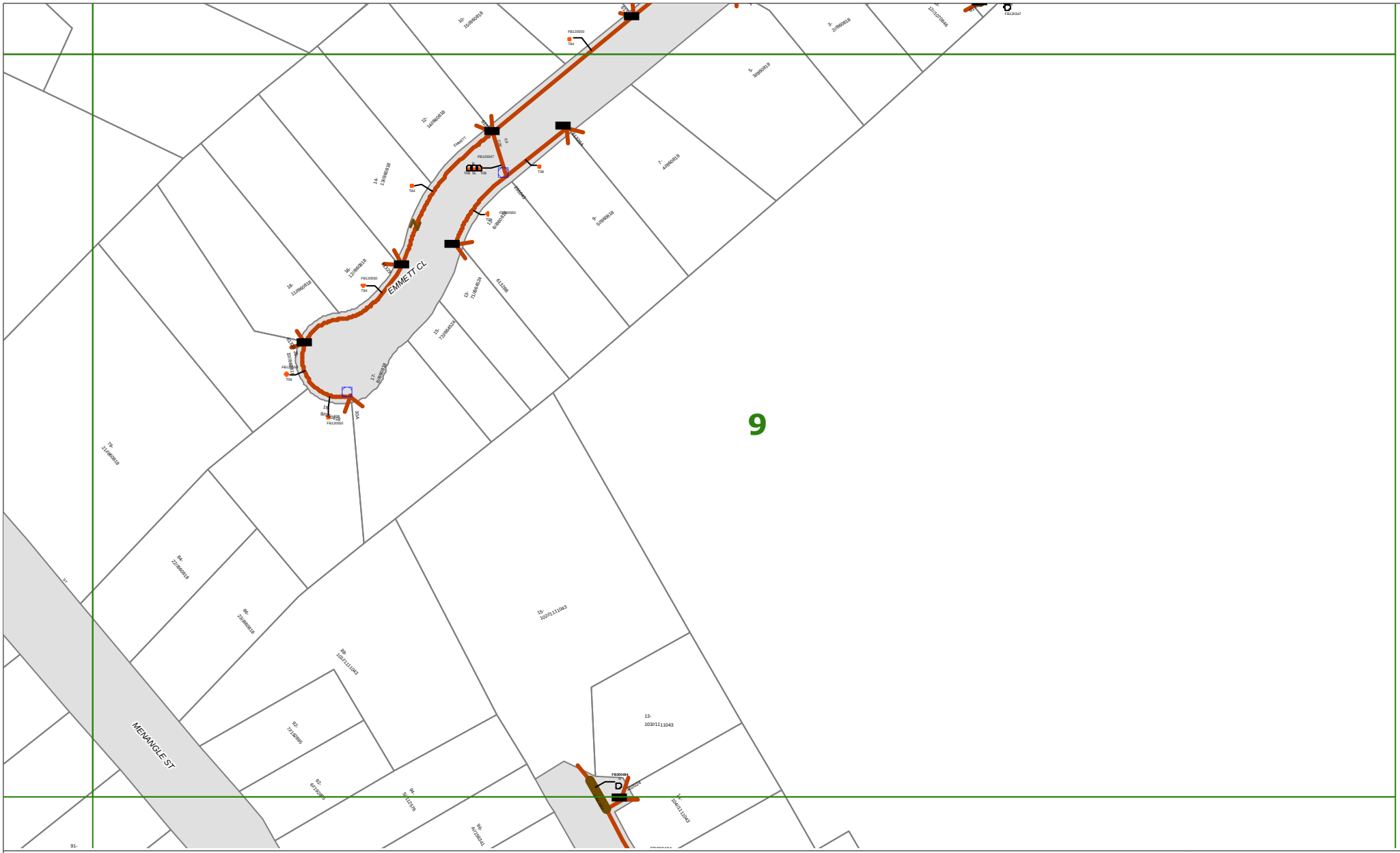

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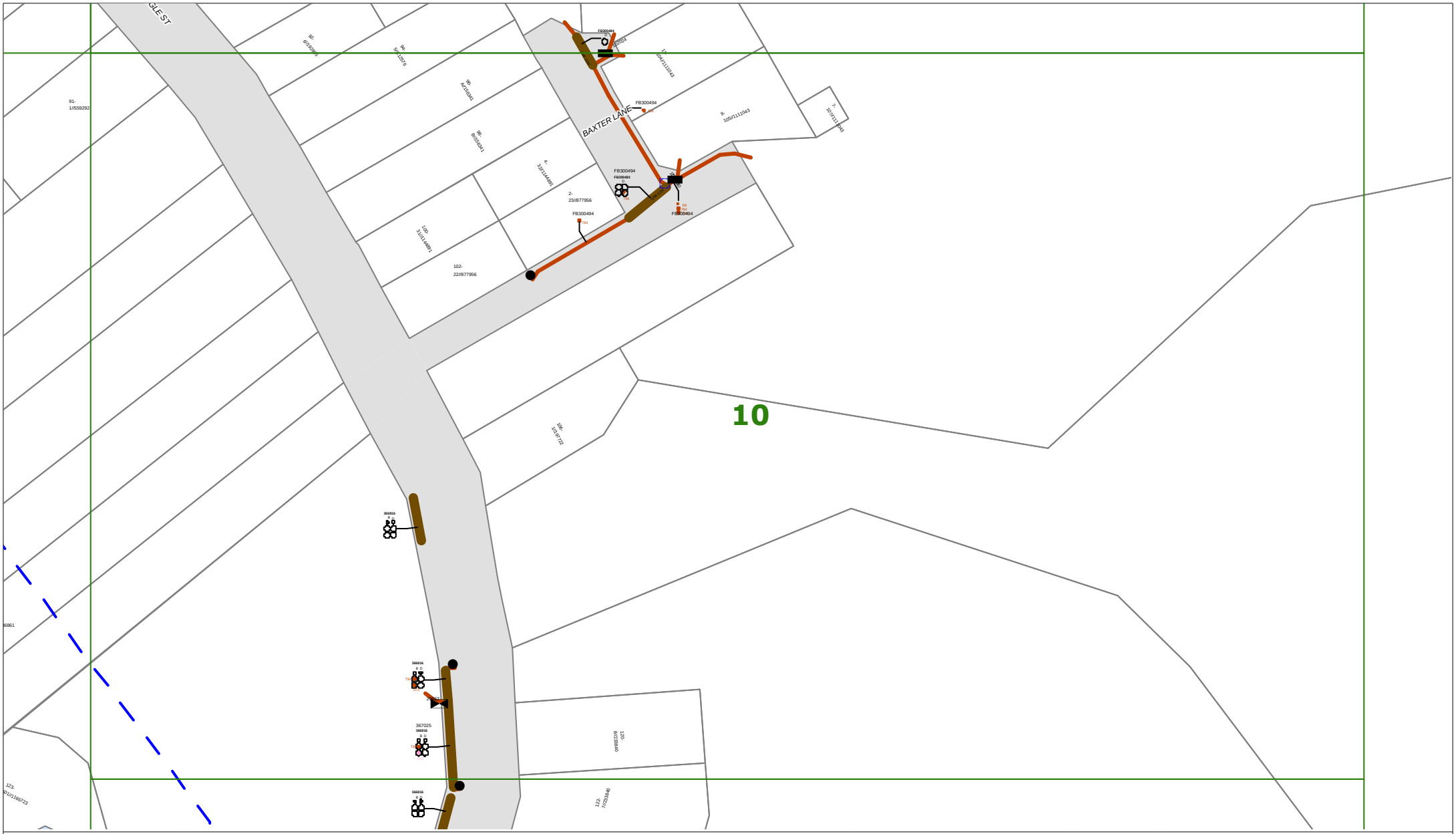

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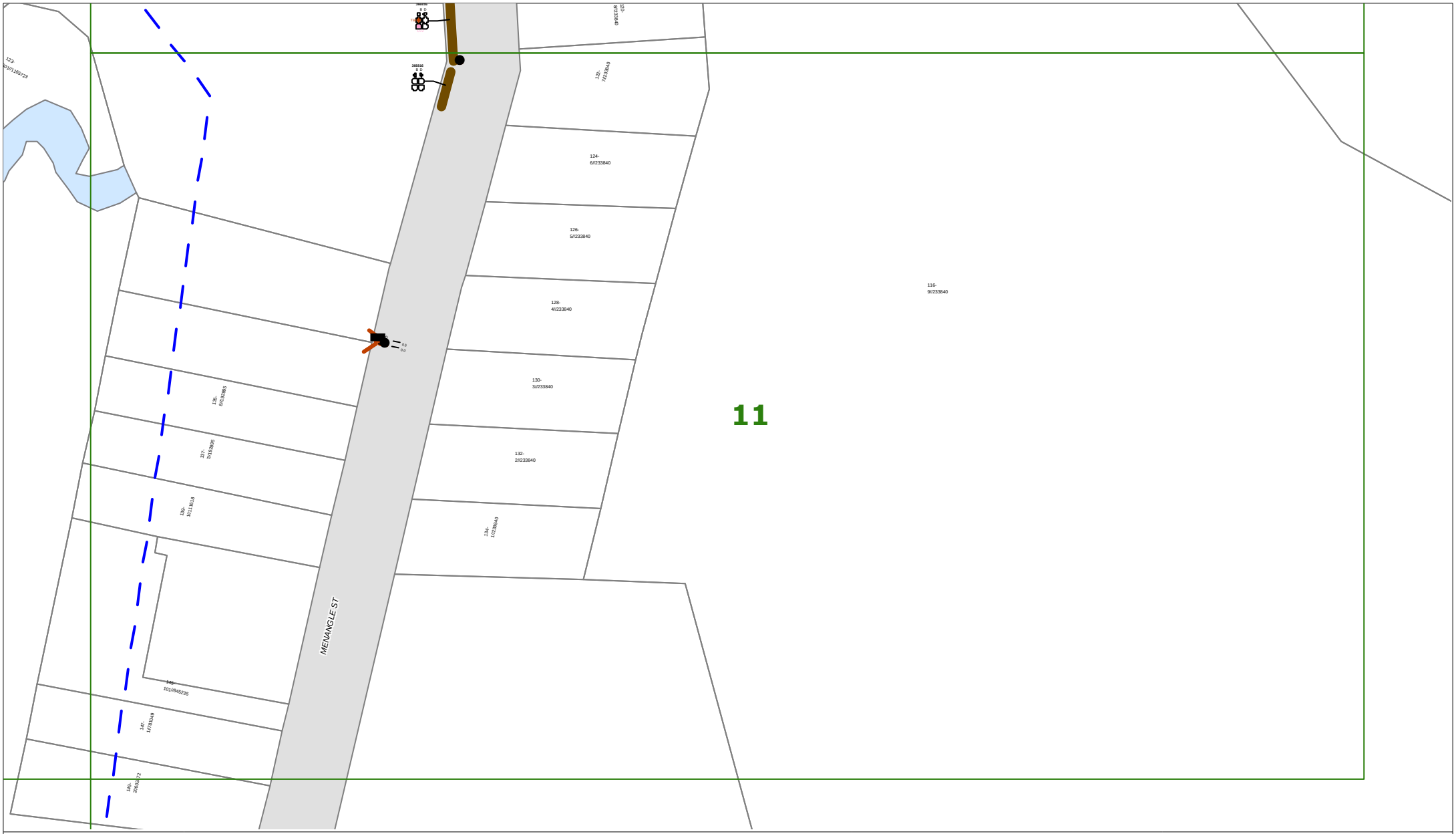

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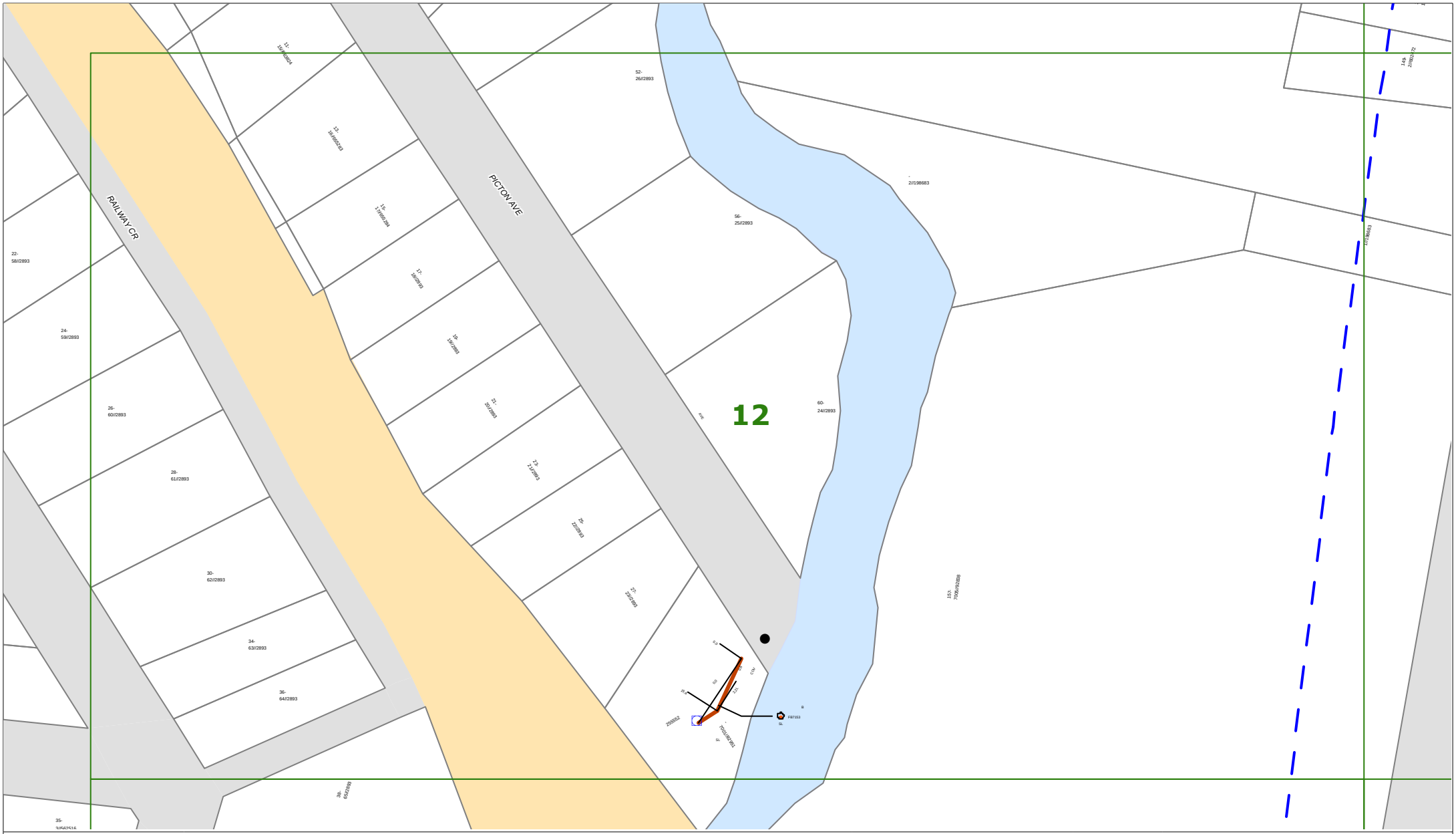

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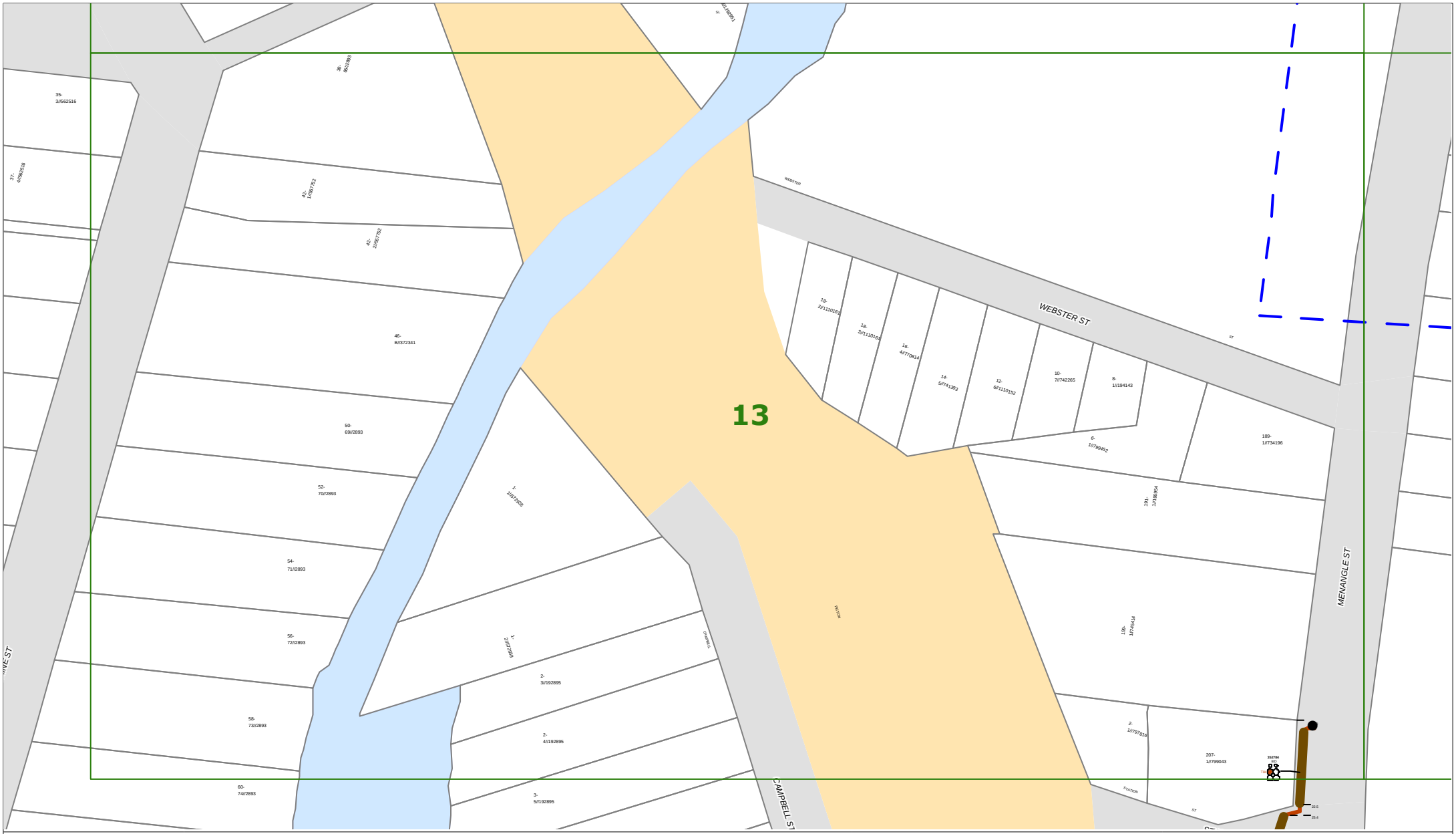

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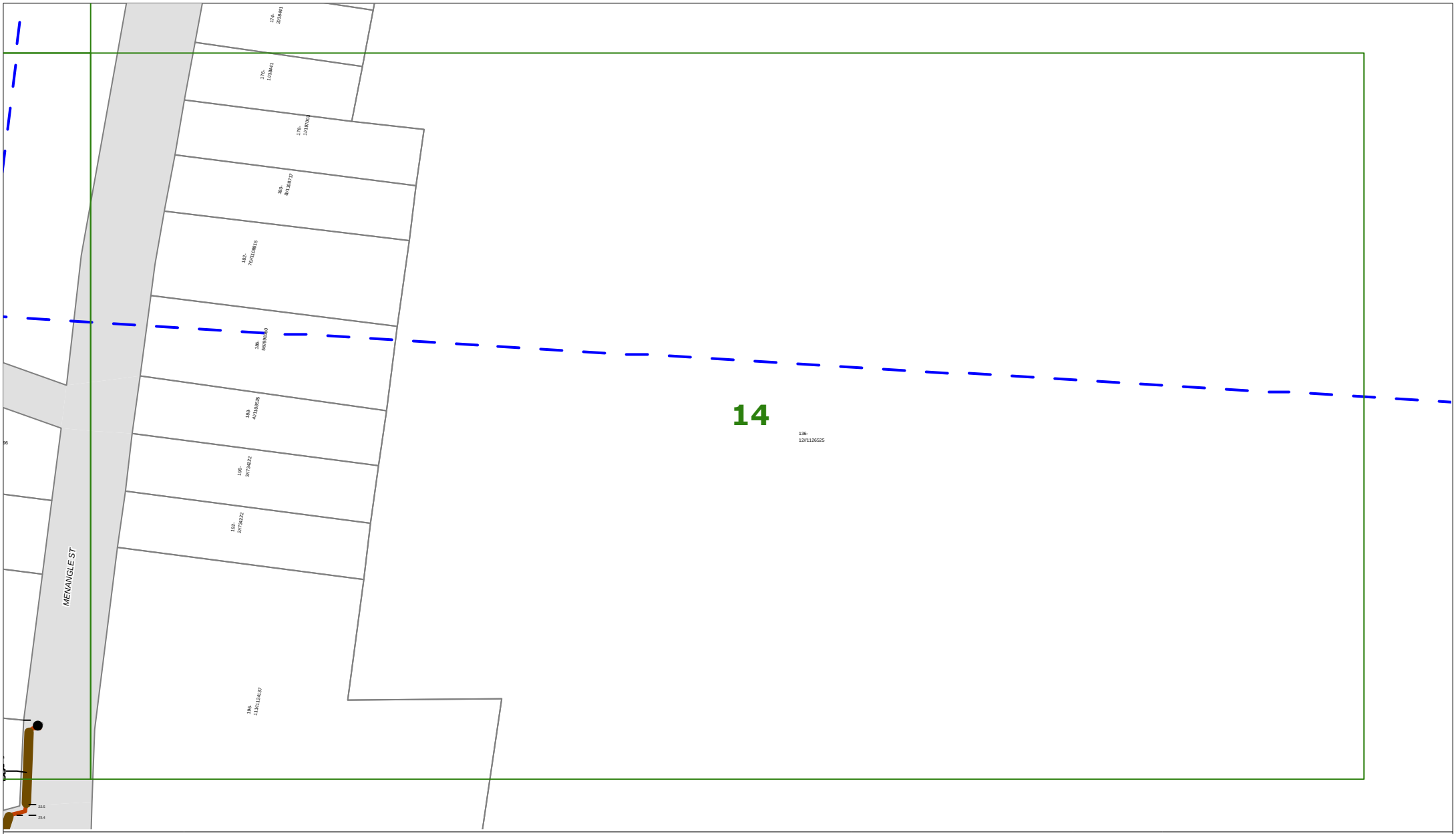

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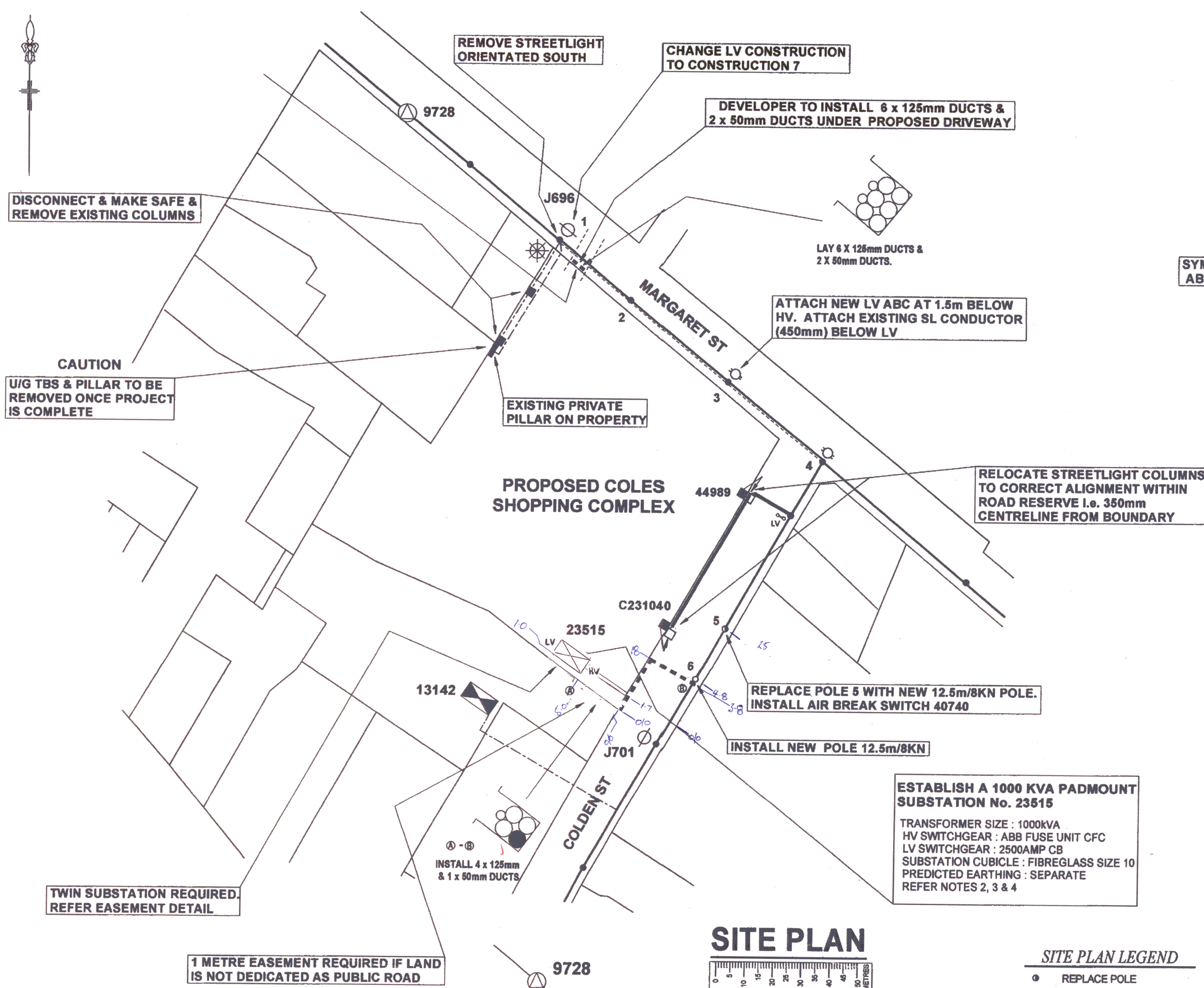


ESTABLISH A 1000 KVA PADMOUNT SUBSTATION No. 23515

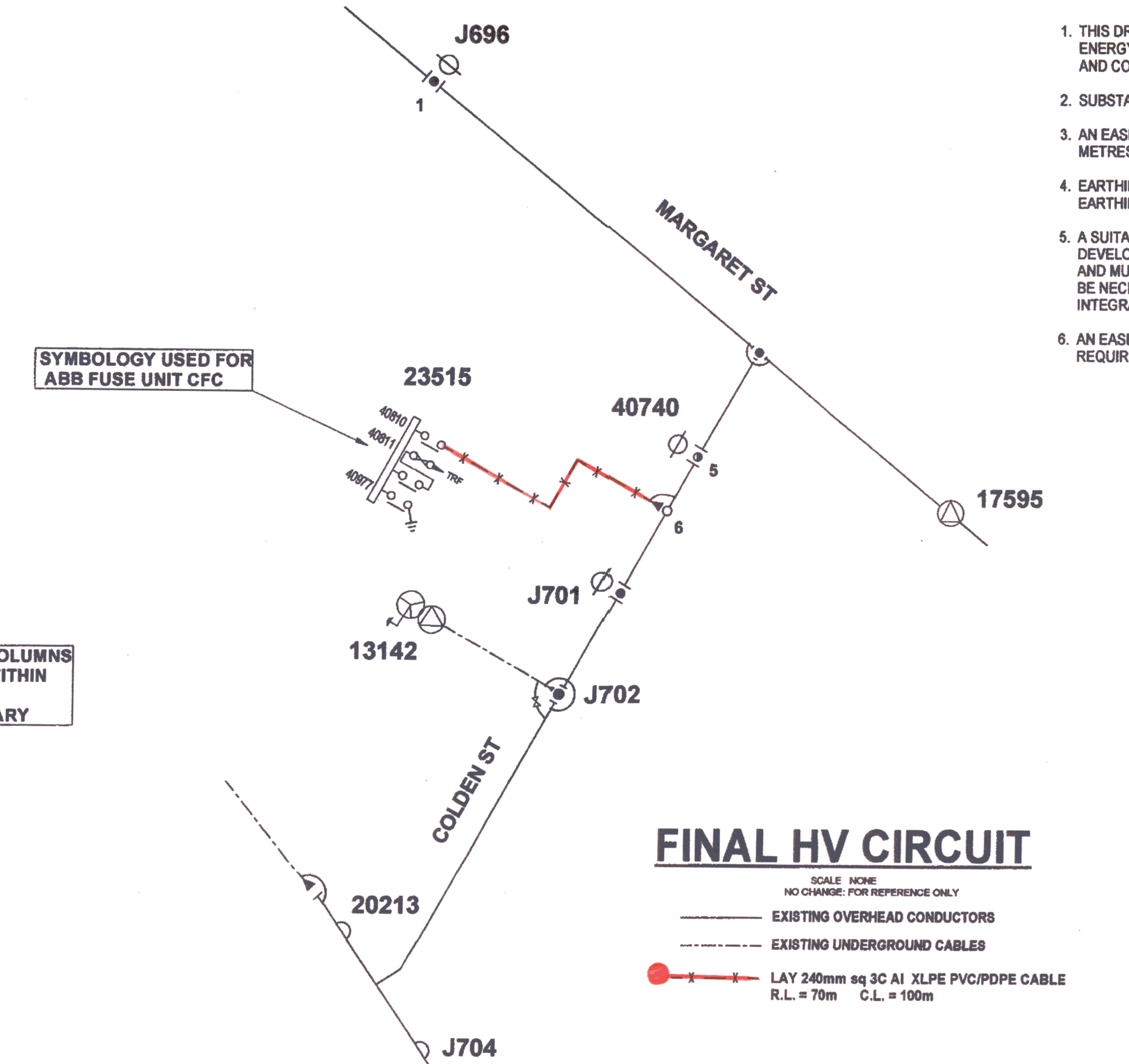
TRANSFORMER SIZE : 1000kVA
HV SWITCHGEAR : ABB FUSE UNIT CFC
LV SWITCHGEAR : 2500AMP CB
SUBSTATION CUBICLE : FIBREGLASS SIZE 10
PREDICTED EARTHING : SEPARATE
REFER NOTES 2, 3 & 4

SITE PLAN

ORIGINAL SCALE - 1:1000

SITE PLAN LEGEND

- REPLACE POLE
- EXISTING POLE SUBSTATION
- EXISTING AERIAL MAINS
- EXISTING POLE
- NEW POLE
- HV ISOLATION POINT - ABS (AIR BREAK SWITCH)
- LOW VOLTAGE ISOLATION SWITCH
- EXISTING SUBSTATION
- NEW PROPOSED SUBSTATION
- EXISTING UNDERGROUND CABLES
- EXISTING DUCTS
- PROPOSED TRENCHING
- SPARE DUCT
- DUCT WITH NEW CABLE
- DUCT WITH EXISTING CABLE
- EXISTING STREETLIGHT COLUMN
- NEW STREELIGHT COLUMN
- NEW WORKS
- REMOVE LANTERN



FINAL HV CIRCUIT

SCALE NONE
NO CHANGE: FOR REFERENCE ONLY

- EXISTING OVERHEAD CONDUCTORS
- EXISTING UNDERGROUND CABLES
- LAY 240mm sq 3C Al XLPE PVC/PDPE CABLE R.L. = 70m C.L. = 100m

NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH INTEGRAL ENERGY'S NETWORK STANDARDS AND THE GENERAL TERMS AND CONDITIONS FOR INDUSTRIAL/COMMERCIAL DEVELOPMENTS.
2. SUBSTATION TO BE INSTALLED IN ACCORDANCE WITH SDI 104.
3. AN EASEMENT FOR TWIN SUBSTATION OF A MINIMUM OF 5.5 METRES x 5.0 METRES IS REQUIRED OVER THE SUBSTATION SITE.
4. EARTHING TO BE IN ACCORDANCE WITH SDI 100. REFER TYPICAL EARTHING DIAGRAM.
5. A SUITABLE RETAINING WALL MAY BE REQUIRED TO BE BUILT BY THE DEVELOPER. THIS WALL IS TO MEET LOCAL COUNCIL REQUIREMENTS AND MUST BE BUILT OUTSIDE THE SUBSTATION EASEMENT. IT MAY BE NECESSARY TO ADJUST THE EASEMENT LOCATION. REFER TO INTEGRAL ENERGY'S SDI 104 FOR DETAILS.
6. AN EASEMENT FOR THE UNDERGORUND CABLES 1 METRE WIDE IS REQUIRED.

ATTENTION

SERVICE PROVIDER TO NOTIFY INTEGRAL ENERGY'S NETWORK DATA DAILY WHEN CABLE WORK IS IN PROGRESS. TELEPHONE : 131 081

Design Compliance and Indemnity

This design complies with Integral Energy's relevant standards as current at this time and as listed on the Integral Energy Accredited Service Provider's Internet site. These standards include, but are not limited to:

GT&C: General Terms and Conditions
EMS: Environmental Management Standard
MCI: Mains Construction Instruction
MDI: Mains Design Instruction
PDI: Protection Design Instruction
SDI: Substation Design Instruction
SAD 0001: Design Drawing Standard
MMI: Mains Maintenance Instruction
SMI: Substation Maintenance Instruction

Additionally, where relevant, the design complies with C(b) -1 "Guideline for Design and Maintenance of Overhead Distribution and Transmission Lines" published by ESAA and other relevant Australian Standards.

Connect Design Pty Ltd indemnifies Integral Energy for any loss or damage resulting from non-compliance of the design with the above standards.

Signed.............................. Name..............................
Service Provider Number - 1104 Date......./......./.......

WARNING

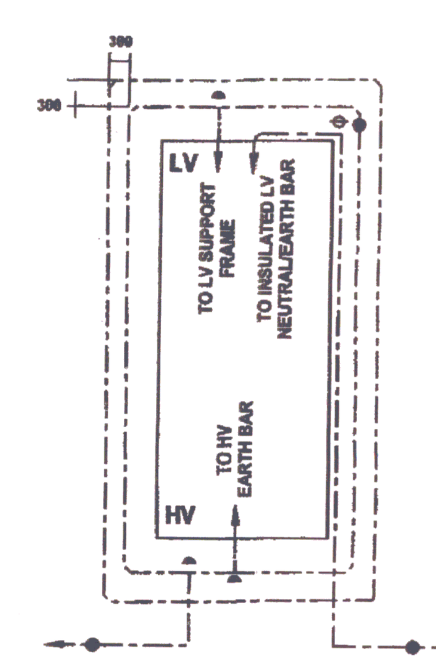
SERVICES IN THIS AREA. PLEASE CONTACT 'DIAL BEFORE YOU DIG' BEFORE YOU EXCAVATE. TELEPHONE 1100 FOR SERVICES TWO DAYS PRIOR TO EXCAVATION

ATTENTION

ALL SERVICE SEARCHES MUST BE CHECKED BEFORE CONSTRUCTION

ATTENTION

THE PREPARATION OF THIS DESIGN, HAS BEEN UNDERTAKEN GIVING DUE DUE CONSIDERATION TO THE EXISTING SERVICES. THE PROJECT CONSTRUCTOR IS, HOWEVER, WHOLLY RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF EXISTING SERVICES AND PERMANENT SURVEY MARKS BEFORE CONSTRUCTION COMMENCES, AND NO RESPONSIBILITY NOR LIABILITY WILL BE ACCEPTED BY THE DESIGNER OF THIS PROJECT FOR DAMAGE TO EXISTING SERVICES AS A RESULT OF THIS DESIGN.



SUBSTATION SEPARATE EARTHING DIAGRAM

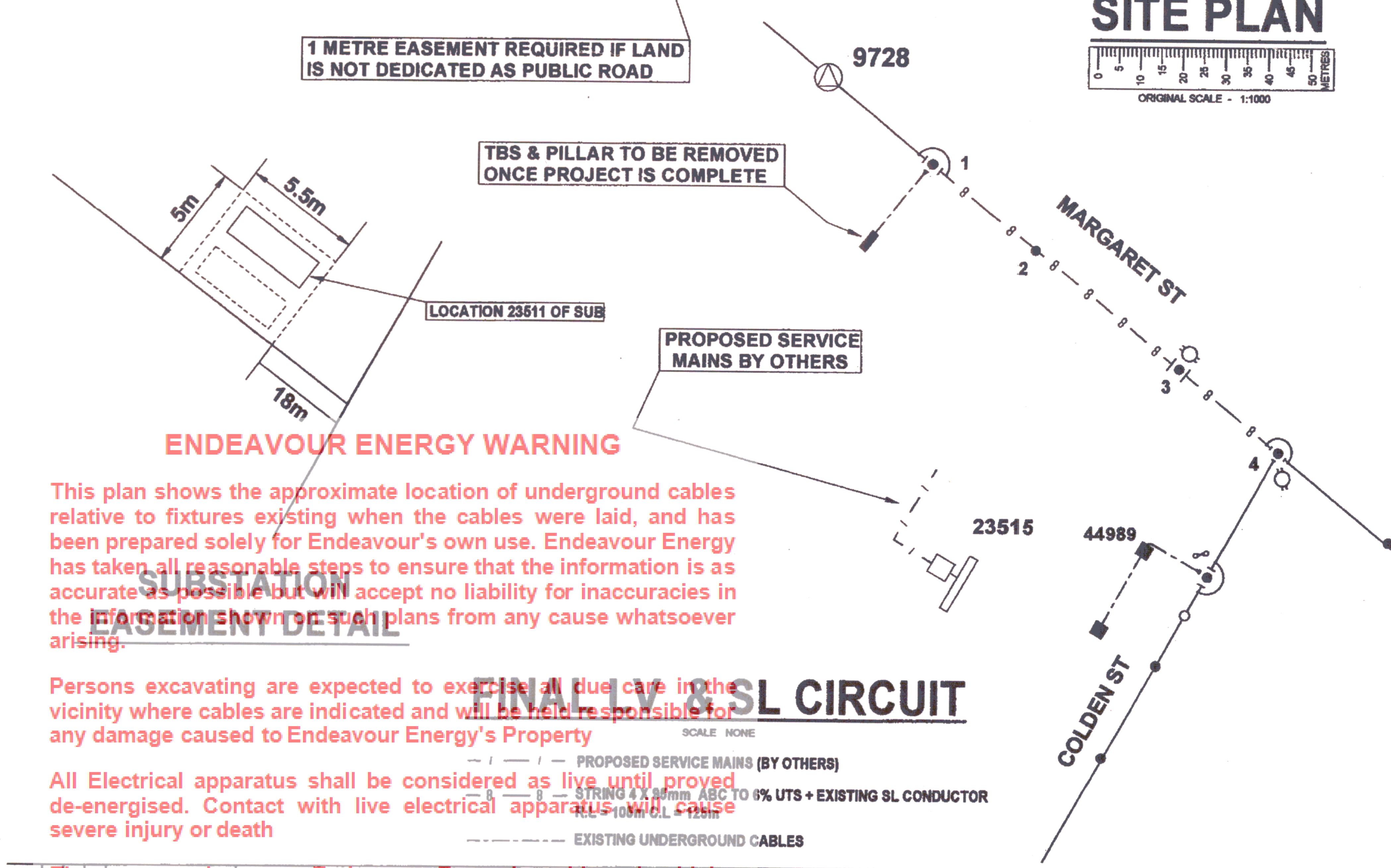
FIELD BOOK 282356
COMM. 26/3/04 COMP. 5/4/04
UG MAP No.
DUCT DWG.
RECORDED BY C. JARRETT
INSTALLED BY PICTON POWER

NOTE

THIS EARTHING DIAGRAM IS A GUIDE ONLY AND SHOWS A MINIMUM REQUIREMENT. ADDITIONAL EARTHING MAY BE REQUIRED TO MEET THE REQUIRED MAXIMUM EARTH RESISTANCE MEASUREMENTS AS STATED IN INTEGRAL ENERGY SDI 100.

SCOPE OF WORKS

WORKS BY LEVEL 1 SERVICE PROVIDER		OTHER WORKS BY CUSTOMER
INTEGRAL ENERGY FUNDED OR SUPPLIED COMPONENT	CUSTOMER FUNDED COMPONENT	*Includes but not limited to:*
Non - Contestable (performed by Integral Energy only)	*Non - Contestable*	
- Nil	- Switching, inspection & commissioning costs (paid by way of fees)	- Pegging of easements, property boundaries & infrastructure locations - Registering of easements - Providing site access - Own service & service conenction - Installation only of driveway ducts
Contesable work reimbursed by Integral Energy	*Contesable*	
- Nil	- The balance of work	
Supplied free		
- supply 1000KVA transformer - supply only of driveway ducts		



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FINAL LV & SL CIRCUIT

SCALE NONE

- PROPOSED SERVICE MAINS (BY OTHERS)
- STRING 4 x 95mm ABC TO 6% UTS + EXISTING SL CONDUCTOR R.L. = 100m C.L. = 50m
- EXISTING UNDERGROUND CABLES

NOTE

DESIGN CERTIFICATION SHALL LAPSE WHERE:
(I) NOTICE OF INTENT HAS NOT BEEN RECEIVED WITHIN SIX (6) MONTHS OF THIS CERTIFICATION, OR
(II) CONSTRUCTION HAS BEEN INTERRUPTED FOR MORE THAN SIX (6) MONTHS.

WHERE DESIGN CERTIFICATION HAS LAPSED, THE DESIGN MUST BE RESUBMITTED FOR CERTIFICATION BY THE ACCREDITED LEVEL 3 SERVICE PROVIDER.

WORKS COMPLETED
CONSTRUCTED BY ....
WORKS COMPLETED .... SIGNED NAME DATE
INSPECTED BY .... SIGNED NAME DATE
FORWARDED TO CONTESTABLE WORKS ADMINISTRATION (CWA)
LOCATION .... SIGNED NAME DATE

AUTHORISATION OF INTEGRAL ENERGY FUNDING
Signed ....
Print Name ....
Service Number 22969
Date 1/12/03

FIELD POLE NUMBER	LANTERNS: EXISTING	REPLACE		MOUNTING HEIGHT (m)	BRACKET	CONSTRUCTION: SPAN LENGTH m	LINE DEV DEGREES	HV	LV	HOLE: DIAMETER mm	DEPTH m	POLE: TYPE	STAY	FOOTING	RELOCATE	REPLACE	NEW	EXISTING	REMOVE	NUMBER
						20		21 + UGOH	1	600	1.85	12.5/8		C			X			6
						67		29	1	600	1.85	12.5/8		C		X				5
						44		EXIST	EXIST + 1021									X		4
						44		EXIST	1082									X		3
						32		EXIST	1001									X		2
								EXIST	7 + 1021									X		1

connect
Connect Engineering Pty Ltd
Connect Design Pty Ltd
Electrical Infrastructure Consultancy, Design & Construction
Tel : 02 9826 9907
Fax : 02 9826 9915

connect REF. NUMBER C335
CLIENT: CORBETT CONSTRUCTIONS

CERTIFIED BY INTEGRAL ENERGY
Certification No. .... Amend ....
Date Approved 1-12-03
Examiner's Signature ....

REFERENCE DRAWINGS

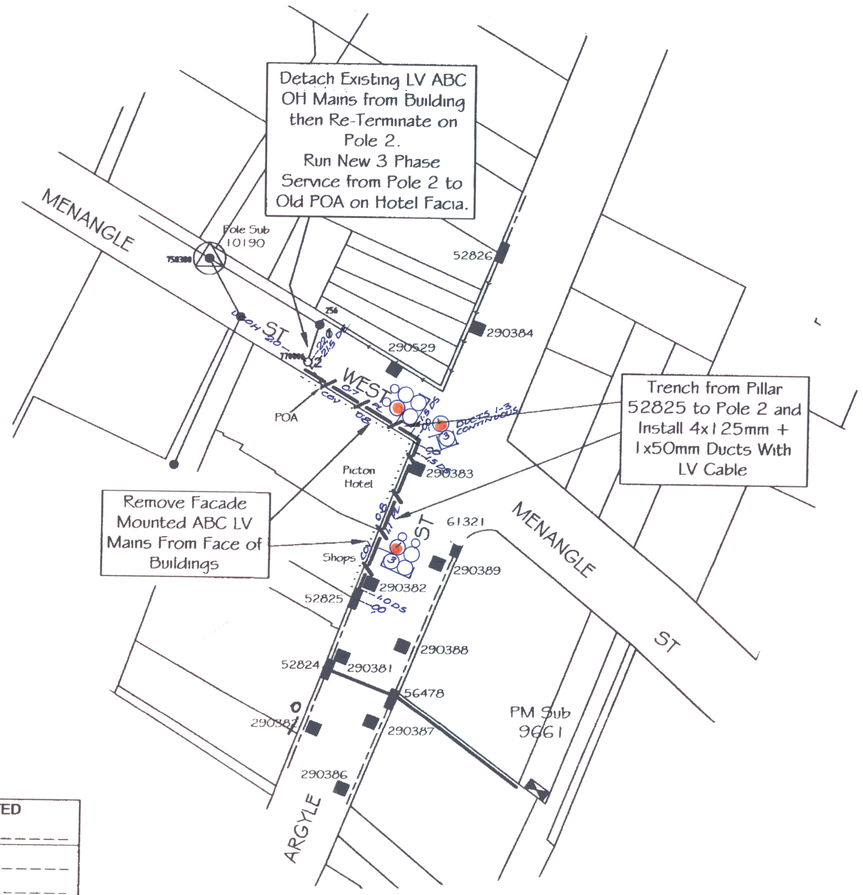
ORIGINAL SCALE 1:1000 OR AS SHOWN
DRAWN M.G. 24-11-03
CHECKED V.L.
DESIGN M.G.

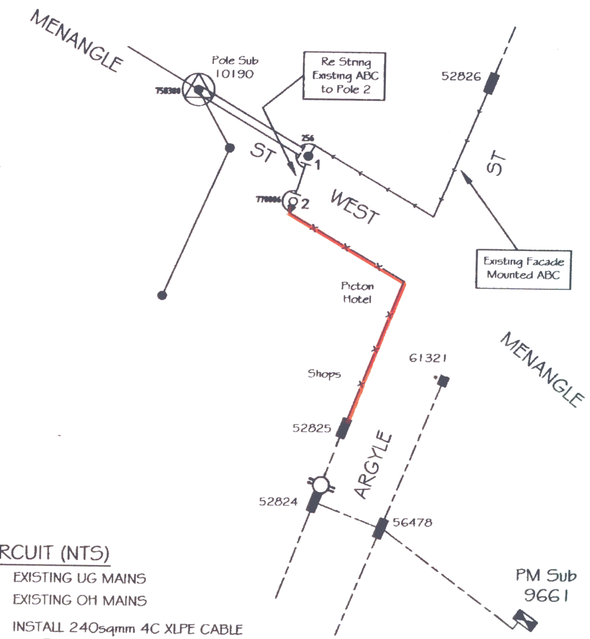
GIS MAP No
SHEET 1 OF 1
A1
UBD REF MAP 368 REF M3
LG AREA PICTON
IE REGION
HV DP DIAG MALDON L8

I.E. DRG No. 282356 B

MARGARET ST
PICTON
UCL1619
ELECTRICITY SUPPLY TO COMMERCIAL DEVELOPMENT

Issue Date: 26/08/2014, DBYD Sequence No: 41198175





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SAD 0001 : Project Drawing Standard
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SMI: Substation Maintenance Instructions

Additionally, where relevant, the design complies with C(b)-1 "Guidelines for Design and Maintenance of Overhead Distribution and Transmission Lines" published by ESAA and other relevant Australian Standards.

Signed: W. English Service Provider Number: 1149

Name: W. English Date: 23/08/05

OPERATIONAL LIMITATIONS

Unless approved otherwise, interruptions to any customer's supply must be avoided. The following alternatives should be considered:

- Mobile generators or substations
- Live line work
- Design alternatives
- Work practices/standards
- Low voltage parallels

The cost to be funded by the customer/developer.

CONTACT TELSTRA/VISIONSTREAM & OPTUS COMMUNICATIONS TO ARRANGE FOR RELOCATION OF ASSETS IN CONJUNCTION WITH THIS WORK.
TELSTRA/NDC-MCC NATIONAL FAULT CENTRE
Ph 1800 047 909 Fax 1800 807 573
OPTUS-RON HARRISON
Ph 02 9737 5625 Fax 02 9737 5615 Mobile 0412 256 282.

WORKS COMPLETED

CONSTRUCTED BY
WORKS COMPLETED NAME
SIGNED DATE
INSPECTED BY NAME
SIGNED DATE
FORWARDED TO CONTESTABLE WORKS ADMINISTRATOR (CWA)
LOCATION
SIGNED DATE

PLAN LEGEND
Scale - 1:1000

- EXISTING UG MAINS
- EXISTING OH MAINS
- EXISTING DUCTS
- TRENCH
- EXISTING FACADE MOUNTED OVERAWNING MAINS

LV CIRCUIT (NTS)

- EXISTING UG MAINS
- EXISTING OH MAINS
- INSTALL 240sqmm 4C XLPE CABLE RL 65m CL 80m
- EXISTING FACADE MOUNTED OVERAWNING MAINS

TRENCH LENGTH

HV - 70m
LV - NIL

AUTHORISATION OF ESTIMATED VALUE OF INTEGRAL ENERGY FUNDED ASSETS

Signed: Mwebb
Print Name: Matt Webb
Service Number: 27588
Funding Amount: $ 62,561.35
Date: 30/9/05

FIELD BOOK 295784
COMM. 21/11/05 COMP. 9/12/05
UG MAP No.
DUCT DWG.
RECORDED BY GHCNbay
INSTALLED BY MM

NEW FIELD POLE NUMBER	FIELD POLE NUMBER	REMOVE	EXISTING	BRACKET	SPAN LENGTH	LINE DEV DEGREES	HV	LV	DIA mm	DEPTH m	TYPE	STAY	FOOTING	RELOCATE	REPLACE	NEW	EXISTING	REMOVE	NUMBER
770006								1021	750	1.55	9.5/8		C			X			2
	256							Existing									X		1
LANTERNS					CONSTRUCTION				HOLE		POLE								

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FROM ORIGINAL ISSUE

REFERENCE DRAWING					
		SAMP No	DS004C	FILE No.	
		IE PROJ. No.	DSC00005	LG AREA	Wollondilly
		HV SWITCHING		HV GEO MAP	6415-43
		OVERHEAD MAINS		GIS MAP No	6415-43
		UNDERGROUND MAINS		UBD REF	368 L3
		SUBSTATIONS		HV OP DIAG	

ORIGINAL SCALE As Shown
DRAWN Bill E
DATE 22/08/05
CH'D
DO NOT SCALE DIMENSIONS IN METRES
DESIGN Bill E

INTEGRAL ENERGY

ARGYLE ST/MENANGLE ST WEST
PICTON
DSC00005
REPLACE LV MAINS

A2 | 295784 | A

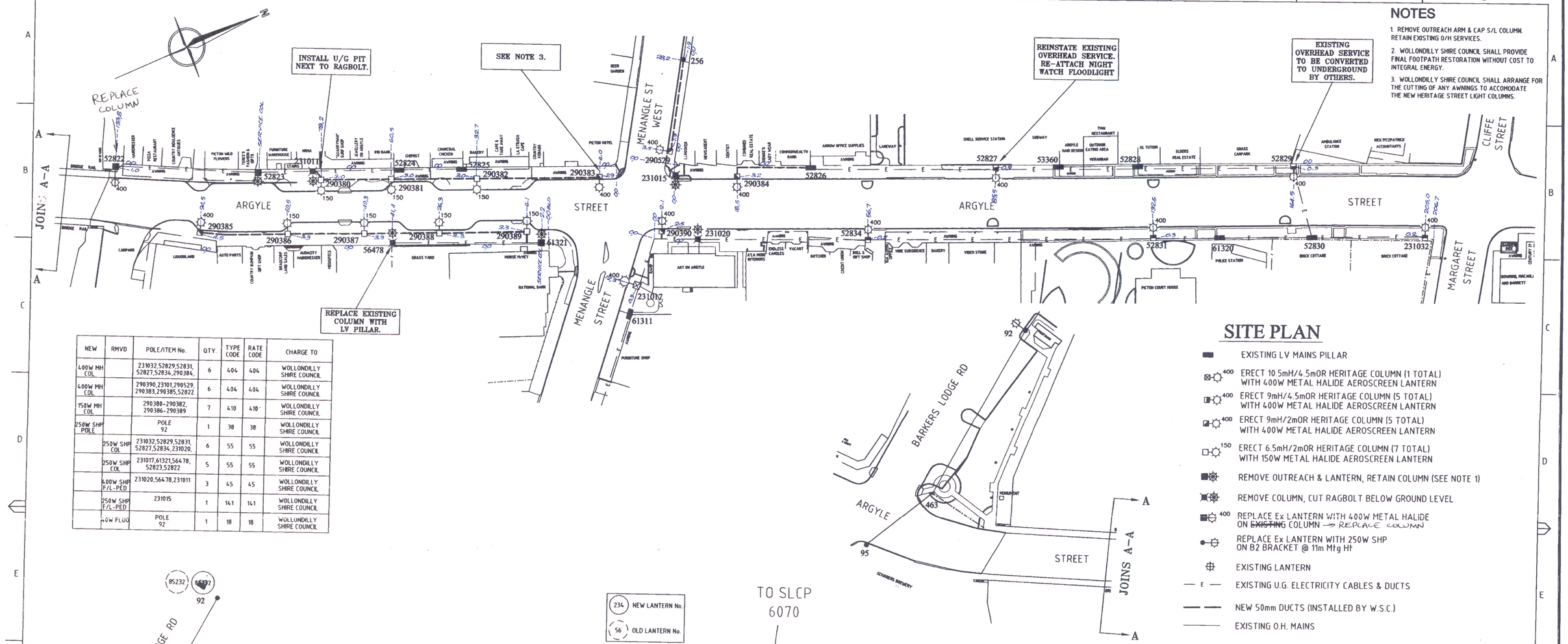
SHEET No 1 OF 1 SHEETS

FB-0510775 CH 13/1/06

295784

NOTES

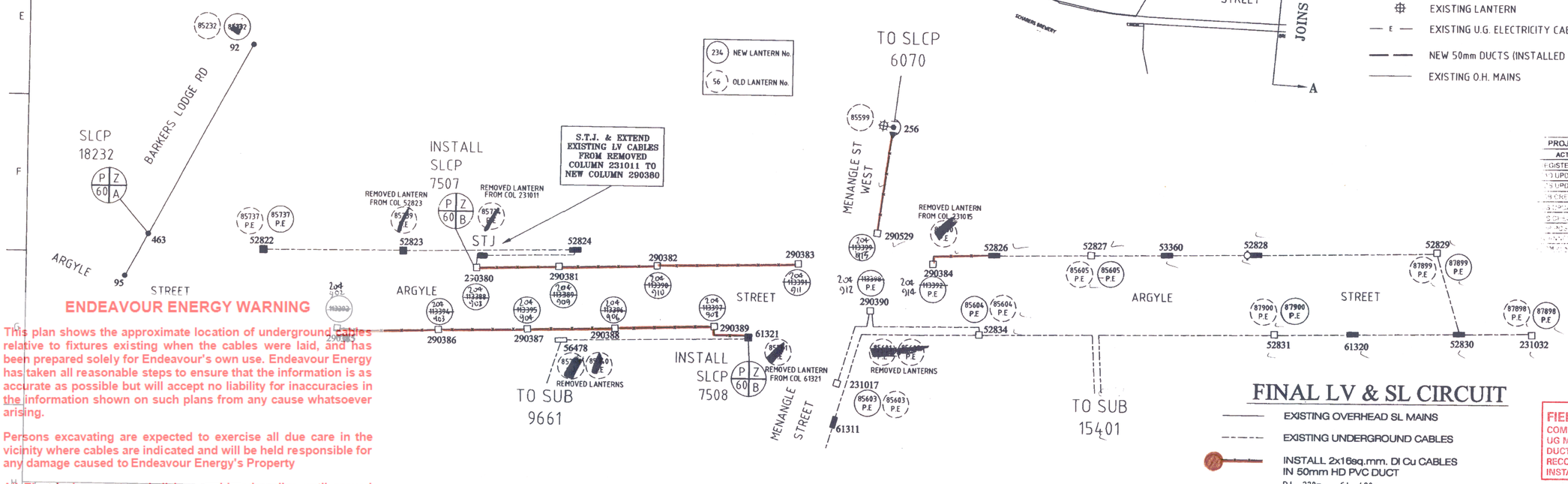
1. REMOVE OUTREACH ARM & CAP S/L COLUMN. RETAIN EXISTING O/H SERVICES.
2. WOLLONDILLY SHIRE COUNCIL SHALL PROVIDE FINAL FOOTPATH RESTORATION WITHOUT COST TO INTEGRAL ENERGY.
3. WOLLONDILLY SHIRE COUNCIL SHALL ARRANGE FOR THE CUTTING OF ANY AWNINGS TO ACCOMODATE THE NEW HERITAGE STREET LIGHT COLUMNS.



NEW	RMVD	POLE/ITEM No.	QTY.	TYPE CODE	RATE CODE	CHARGE TO
400W MH COL		231032,52829,52831, 52827,52834,290384,	6	404	404	WOLLONDILLY SHIRE COUNCIL
400W MH COL		290390,23101,290529, 290383,290385,52822	6	404	404	WOLLONDILLY SHIRE COUNCIL
150W MH COL		290380-290382 290386-290389	7	410	410	WOLLONDILLY SHIRE COUNCIL
250W SHP POLE		POLE 92	1	38	38	WOLLONDILLY SHIRE COUNCIL
	250W SHP COL	231032,52829,52831, 52827,52834,231020,	6	55	55	WOLLONDILLY SHIRE COUNCIL
	250W SHP COL	231017,61321,56478, 52823,52822	5	55	55	WOLLONDILLY SHIRE COUNCIL
	400W SHP F/L-PED	231020,56478,231011	3	45	45	WOLLONDILLY SHIRE COUNCIL
	250W SHP F/L-PED	231015	1	141	141	WOLLONDILLY SHIRE COUNCIL
	40W FLUO	POLE 92	1	18	18	WOLLONDILLY SHIRE COUNCIL

SITE PLAN

- EXISTING LV MAINS PILLAR
- 400 ERECT 10.5mH/4.5mOR HERITAGE COLUMN (1 TOTAL) WITH 400W METAL HALIDE AEROSCREEN LANTERN
- 400 ERECT 9mH/4.5mOR HERITAGE COLUMN (5 TOTAL) WITH 400W METAL HALIDE AEROSCREEN LANTERN
- 400 ERECT 9mH/2mOR HERITAGE COLUMN (5 TOTAL) WITH 400W METAL HALIDE AEROSCREEN LANTERN
- 150 ERECT 6.5mH/2mOR HERITAGE COLUMN (7 TOTAL) WITH 150W METAL HALIDE AEROSCREEN LANTERN
- REMOVE OUTREACH & LANTERN, RETAIN COLUMN (SEE NOTE 1)
- REMOVE COLUMN, CUT RAGBOLT BELOW GROUND LEVEL
- 400 REPLACE Ex LANTERN WITH 400W METAL HALIDE ON ~~EXISTING~~ COLUMN → REPLACE COLUMN
- REPLACE Ex LANTERN WITH 250W SHP ON B2 BRACKET @ 11m Mtg Ht
- EXISTING LANTERN
- E EXISTING U.G. ELECTRICITY CABLES & DUCTS
- NEW 50mm DUCTS (INSTALLED BY W.S.C.)
- EXISTING O.H. MAINS



FINAL LV & SL CIRCUIT

- EXISTING OVERHEAD SL MAINS
- EXISTING UNDERGROUND CABLES
- INSTALL 2x16sq.mm. DI Cu CABLES IN 50mm HD PVC DUCT
  R.L. 220m C.L. 480m

PROJECT TRACKING & AM MAINTENANCE

ACTIVITY	NAME		DATE
REGISTERED			5/1/05
UPDATED			5/1/05
UPDATED	NA		
CREATED			8/12/05
			7/1/06
			10/1/06
			10/1/06

FIELD BOOK 280163 2/2
COMM. 18/2/05 COMP. 22/2/05
UG MAP No.
DUCT DWG.
RECORDED BY. GMCMALLY
INSTALLED BY. AM

ENDEAVOUR ENERGY WARNING

This plan shows the approximate location of underground cables relative to fixtures existing when the cables were laid, and has been prepared solely for Endeavour's own use. Endeavour Energy has taken all reasonable steps to ensure that the information is as accurate as possible but will accept no liability for inaccuracies in the information shown on such plans from any cause whatsoever arising.

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REFERENCE DRAWING					
T2347 (W.S.C.)	TOWN CENTRE IMPROVEMENTS	CAP No.		FILE No.	
		IE PROJ. No.	LC3R076	LG AREA	WOLLONDILLY
		HV SWITCHING		HV GEO MAP	
		OVERHEAD MAINS		GIS MAP No	
		UNDERGROUND MAINS	LC3R076C	UBD REF	
		SUBSTATIONS		HV OP DIAG	

ORIGINAL SCALE 1:500 | DRAWN BJH, FM | DATE 25/5/03 | CH'D | DO NOT SCALE DIMENSIONS IN METRES | DESIGN W.H.

INTEGRAL ENERGY

ARGYLE ST, PICTON
TOWN CENTRE LIGHTING UPGRADE
NEW STREET LIGHT COLUMN LOCATIONS

A1 | 280163 | A

SHEET No 2 OF 2 SHEETS

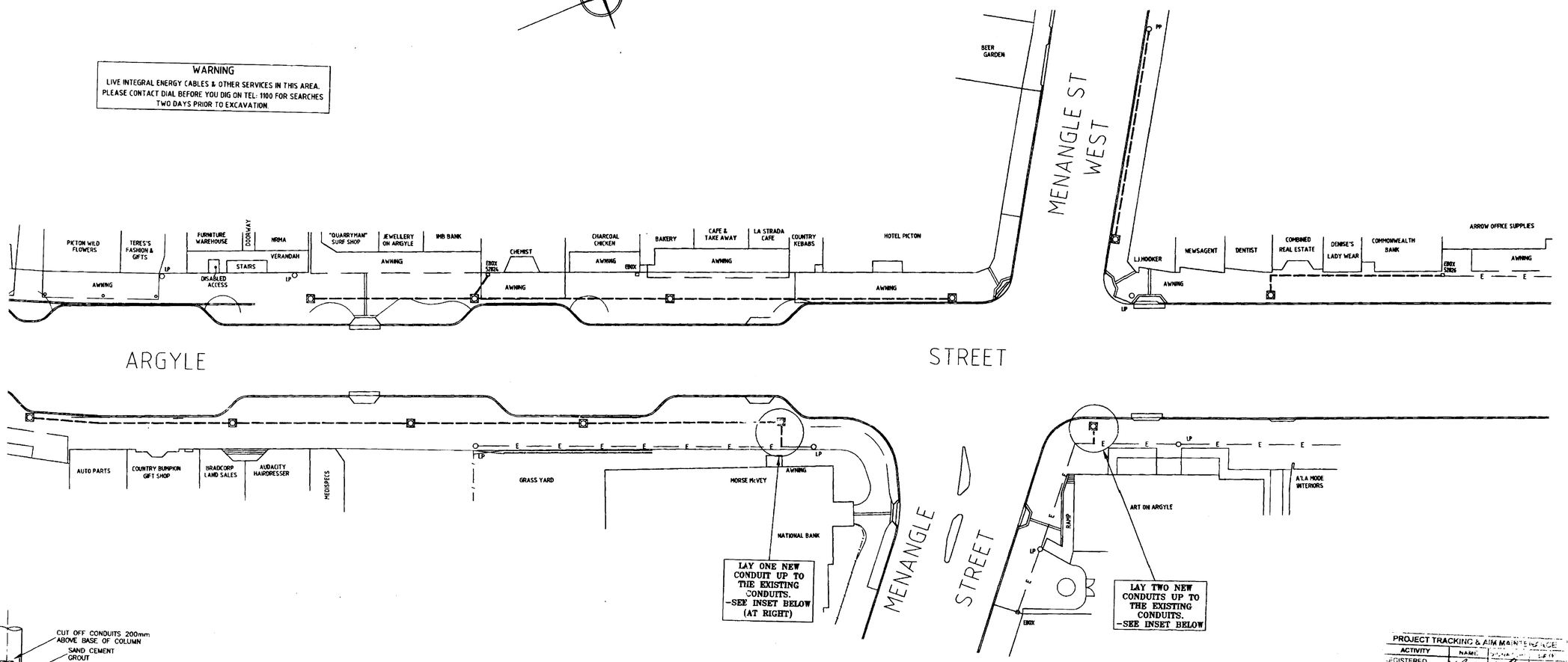
Issue Date: 26/08/2014, DBYD Sequence No: 41198175

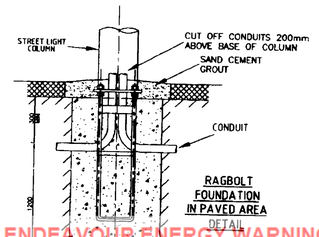
NOTES

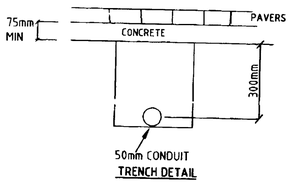
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH INTEGRAL ENERGY'S MDI 0020 DOCUMENT.
2. ..... W.S.C. ..... SHALL PEG ALL BOUNDARIES, CHAINAGES & ESTABLISH FINAL LEVELS PRIOR TO COMMENCEMENT OF WORKS.
3. NEW RAGBOLTS ARE TO BE INSTALLED AT 700mm CENTRELINE FROM FACE OF KERB (WHERE APPLICABLE).
4. W.S.C. TO INSTALL RAGBOLTS AND STREET LIGHTING CONDUITS PRIOR TO COMMENCEMENT OF NEW LIGHTING COLUMN INSTALLATION.

INTEGRAL ENERGY CONTACT
DESIGN: STEVEN SIMOS PHONE: 0418 475 625
CONST: GLEN MITCHELL PHONE: 0417 252 674

WARNING
LIVE INTEGRAL ENERGY CABLES & OTHER SERVICES IN THIS AREA. PLEASE CONTACT DIAL BEFORE YOU DIG ON TEL: 1100 FOR SEARCHES TWO DAYS PRIOR TO EXCAVATION.

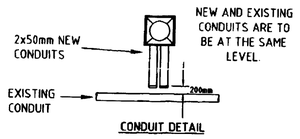






LEGEND

- PP — EXISTING TIMBER POWER POLE
- LP — EXISTING STREETLIGHT COLUMN
- EBOX — EXISTING ELECTRICITY SUPPLY PILLAR
- NEW RAGBOLT LOCATION (SEE NOTE 3)
- — E — EXISTING UNDERGROUND DUCTS & CABLE
- NEW LOCATION OF STREET LIGHTING CONDUIT



PROJECT TRACKING & ATM MAINTENANCE			
ACTIVITY	NAME		DATE
REGISTERED	W.RAN	W	21-7-04
ADJUSTED	W.RAN	W	21-7-04
UPDATED	NA		
CREATED	Kaw	KW	8/12/04
[illegible]	[illegible]	[illegible]	7/1/05
[illegible]	KW	KW	10/1/05
[illegible]	KW	KW	10/1/05

COMPLETED
G Mann. 55875
28/6/04

NOTE: SEE SHEET 2 FOR DETAILS

FIELD BOOK 280163 1/2
COMM. 18/12/25 COMP. 22/12/25
UG MAP No.
DUCT DWG.
RECORDED BY. GARENDUP
INSTALLED BY. A.M.

ENDEAVOUR ENERGY WARNING

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REFERENCE DRAWING							
T2347 (W.S.C.)	TOWN CENTRE IMPROVEMENTS	CAP No.		FILE No.		ORIGINAL SCALE 1:250	DO NOT SCALE
		IE PROJ. No.	LE3R076	LG AREA		DRAWN Frank Muscat	DIMENSIONS IN METRES
		HV SWITCHING		HV GEO MAP		DATE 6-6-03	
		OVERHEAD MAINS		GIS MAP No		CH'D	DESIGN B.H.
		UNDERGROUND MAINS		UBD REF	368 M3		
		SUBSTATIONS		HV OP DIAG			

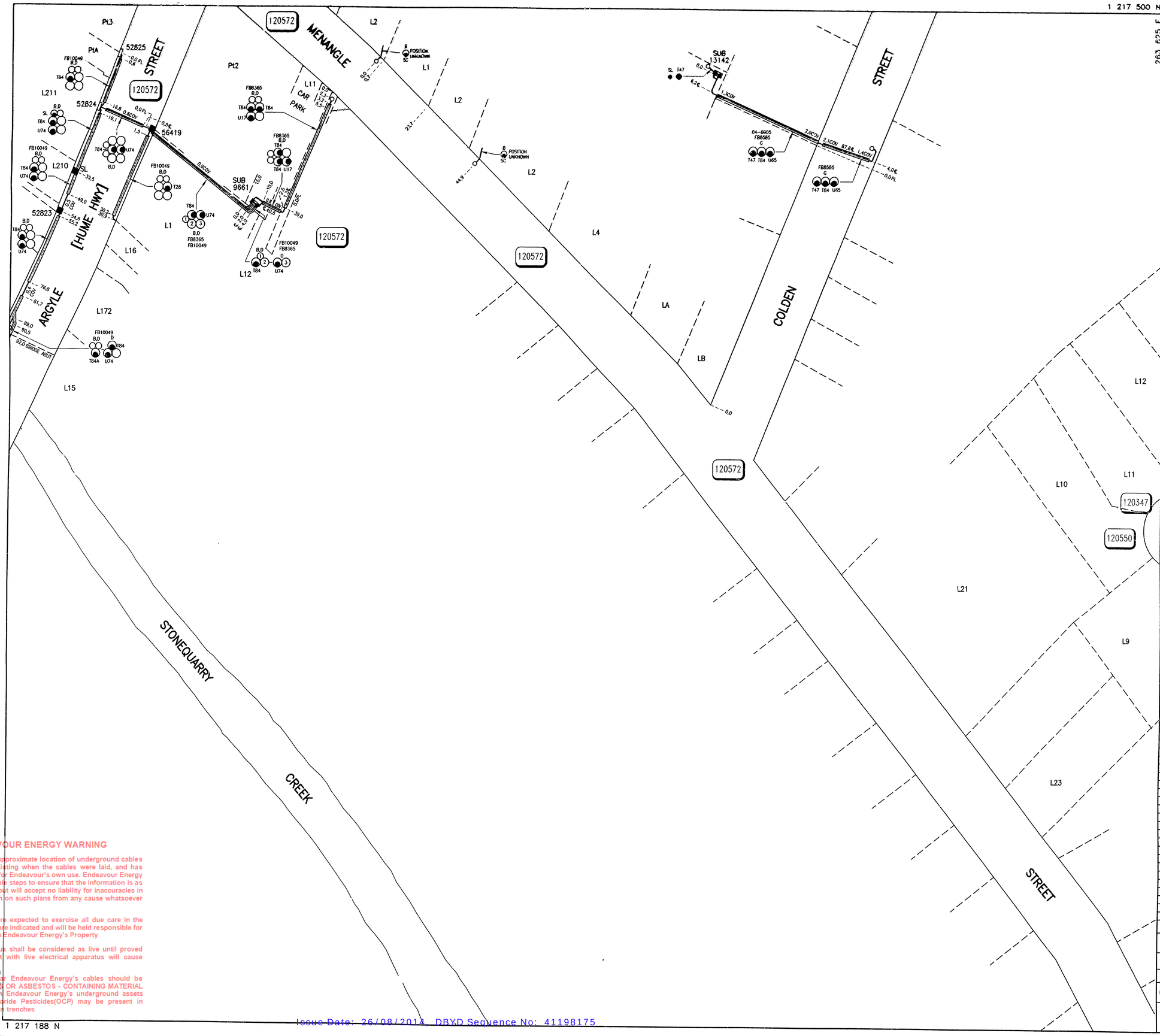
INTEGRAL ENERGY

ARGYLE STREET, PICTON
TOWN CENTRE LIGHTING UPGRADE
STREET LIGHTING DUCT AND RAGBOLT DETAILS

A1 | 280163 | A

SHEET No 1 OF 2 SHEETS

Issue Date: 26/08/2014, DBYD Sequence No: 41198175



NOTES

1. CABLES 0.6 FROM PROPERTY LINE, 0.7 COVER UNLESS OTHERWISE SHOWN.
2. LENGTHS IN METRES.

DUCT LEGEND		CABLE LEGEND	
B	50 PVC CONDUIT	SL	STREET LIGHT CONDUCTOR
C	100 PVC CONDUIT	SC	SERVICE CABLE
D	125 PVC CONDUIT	-2-	TELECOM SHARED TRENCHING
E	100 FIBRO CONDUIT		
F	140 FIBRO CONDUIT		
G	150 FIBRO PIPE		

CABLE SCHEDULE

CODE	TYPE	CODE	TYPE
U03	1 SQ. IN. 11kV AL PLYSWS	T08	25mm LV CU PVC / PVC
U11	120mm 11kV AL PLYSWS	T11	35mm LV CU PVC / PVC
U12	150mm 11kV AL PLYSWS	T25	.15 SQ. IN. LV AL CONSAC
U13	150mm 11kV AL XLPE	T28	50mm LV PVC / PVC
U15	185mm 11kV AL PLYSWS	T36	.2 SQ. IN. LV AL CONSAC
U17	240mm 11kV AL PLYSWS	T38	150mm LV AL XLPE
U18	.4 SQ. IN. 11kV AL PLYSWS	T39	150mm LV AL CONSAC
U24	300mm 11kV AL PLYSWS	T40	.25 SQ. IN. LV AL CONSAC
U25	300mm 11kV AL SCREENED PLYSWPVC	T42	.3 SQ. IN. LV AL CONSAC
U65	185mm 11kV AL PLYSWS	T43	185mm LV AL XLPE
U74	240mm 11kV AL PLYHDPE	T47	185mm LV AL CONSAC
U75	300mm 11kV AL PLYHDPE	T52	240mm LV AL XLPE
U76	300mm 11kV CU PLYHDPE	T53	240mm LV AL XLPE (CON. NEUT)
U77	240mm 11kV CU XLPE	T57	240mm LV AL PLYSWS
U99	UNKNOWN 11kV	T64	4 SQ. IN. LV AL PLYSWS
		T84	240mm LV AL XLPE
		T99	UNKNOWN LV

SCANNED

0 5 10 15 20 25 30 35 40 45 50m

ISSUE DATE: 25.7.96

CHECKED

F.B.	LOCATION	DR'N	CH'D	DATE
10049	ARGYLE STREET	L.B.	WK	18/01/94

AMENDMENTS

PROSPECT ELECTRICITY

U.G. RETICULATION PICTON

DRAWN L.B. CH'D WK S.C.D. MAPPING DATE 28.10.93

ORIGINAL SCALE 1:500

6415-7.1.1.1 M

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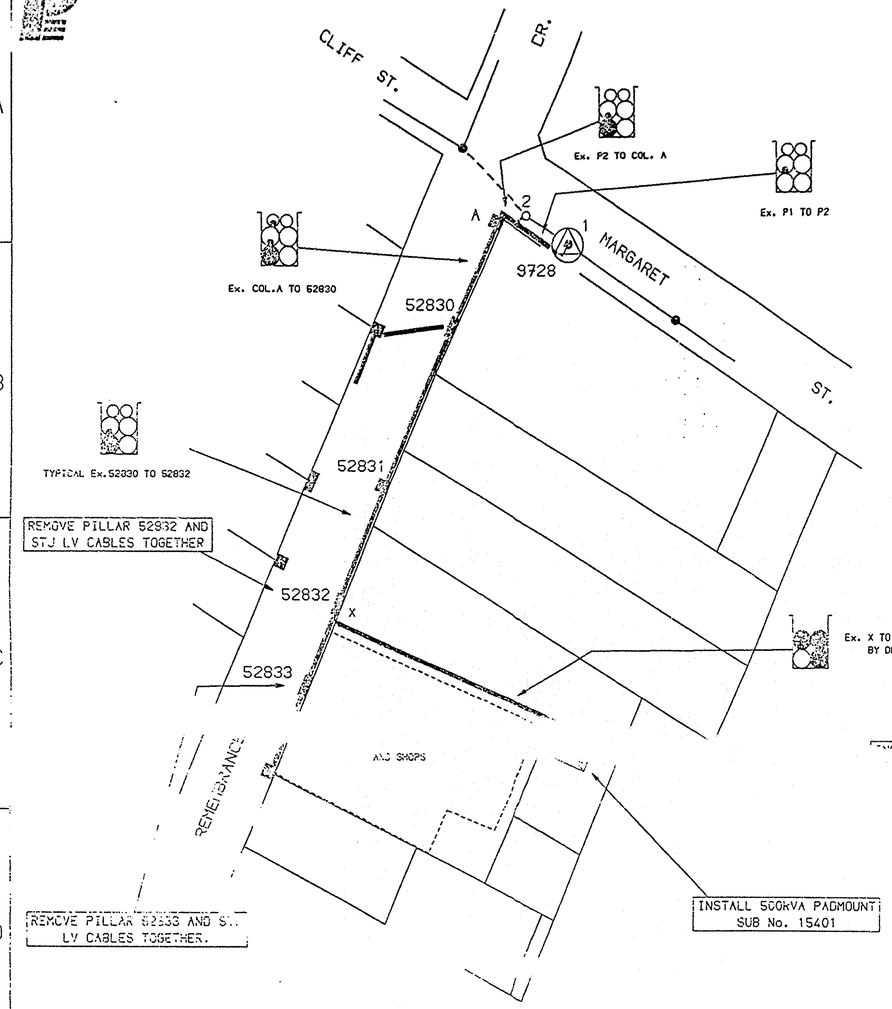
Issue Date: 26/08/2014. DBYD Sequence No: 41198175

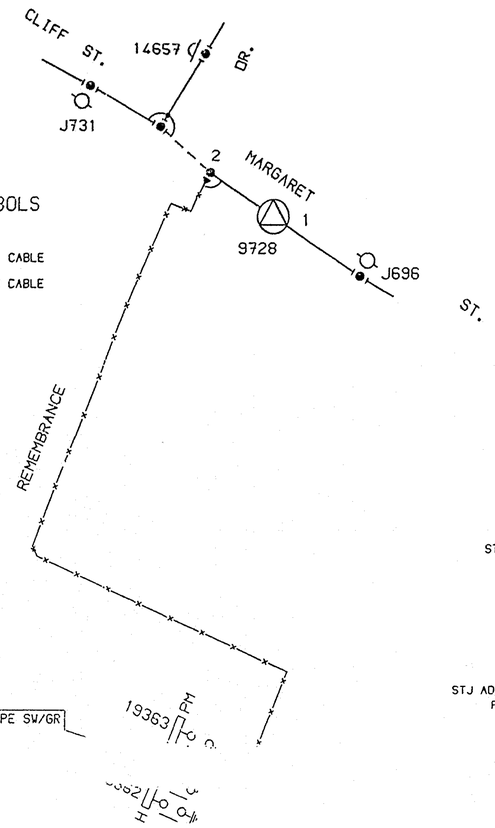
NOTES



SITE PLAN

PLAN SYMBOLS

- SPARE DUCT
- DUCT WITH EX. CABLE
- DUCT WITH NEW CABLE



FINAL H.V. CIRCUIT

- EXISTING O.H. MAINS.
- LAY 240 SQ.mm. Al. 3C. PLY-HDPE CABLE. C.L. 200m
- EXTEND 7/4.50 AAC TO S.T. 1

N

ATTENTION

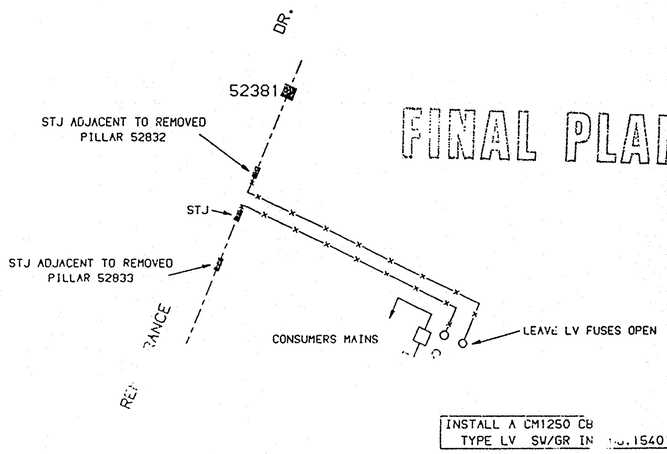
DISTRICT STAFF TO NOTIFY HEAD OFFICE DRAWING OFFICE DAILY WHEN CABLE WORK IS IN PROGRESS
PHONE:EXT - 9864

"IMPORTANT"

1. ALL alterations to this Project Drawing by the Construction Crews MUST be marked in RED daily by the responsible Foreman on the 'Works in Progress' drawing held in the Construction Office.

2. A FINAL field inspection with the above Drawing was carried out and is built as shown.

Name _____ Date _____ Foreman O/H
please print please sign
Name _____ Date _____ Foreman U/G
please print please sign
Name _____ Date _____ Foreman Subs
please print please sign



FINAL PLAN

FINAL LV CIRCUIT

- EXISTING U.G. CABLE.
- LAY 240 SQ.mm.Al.4C. XLPE CABLE. C.L. 150m

FB 119304

COMMENCED:

COMPUTED: 11-11-94

SHT 6415-4.3.3.3(S)

RECORDED BY GMcNally

LABELS

'R'-COLUMN 52831
'S'-COLUMN 52834
'T'-CONSUMERS MAINS

ATTENTION:
ALL SERVICES SEARCHES MUST BE CHECKED BEFORE CONSTRUCTION.

ITEM	REQUIRED	NOT REQ'D	COMPLETED
SERVICES SEARCH	X		SENT 7-10-94
LINE PEGGED			11-10-94
S.T.S. 1 FORM		XX	XX
STS 3:A FORM	XX		10-10-94

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THIS PROJECT DISCUSSED WITH LEADING HAND
1. MR. R. GRIMSON
2. MR. W. TRAVERS
3. MR. G. NANCE

WARNING P.E. U.G. CABLES TO BE LOCATED PRIOR TO DIGGING

FIELD POLE NUMBER	LANTERNS			CONSTRUCTION						HOLE		POLE						
		EXISTING	BRACKET	SPAN LENGTH	LINE DEV DEGREES	HV	LV	DIA mm	DEPTH m	TYPE	STAY	FOOTING	REPLACE	NEW	EXISTING	REMOVE	NUMBER
236				12	20	11	1001	600	1.85	12.5/8		C		X			2
															X		1

	W/O No.	LETTER No		LG AREA	WOLLONDILLY	ORIGINAL SCALE 1:1000	REGIONAL MANAGER
SUPERVISION		NOAL No	94/79/A	REGION	MACARTHUR		
DESIGN	WN5129	DATE	26/4/94	HV GEO DIA	6407-A REF E1	DRAWN PJS	DESIGN
OVERHEAD MAINS	WN5131	FILE No	91/00713	LV MAP	6407-11	CH'D	CUSTOMER DESIGN MANAGER
UNDERGROUND MAINS	WN5132	DESIGN No	MA 4005	HV SCHEM	MALDON1 REF L9		
SUBSTATIONS	WN5133						

PROSPECT ELECTRICITY

ARGYLE STREET
PICTON
UG HV EXTENSION AND PM SUBSTATION

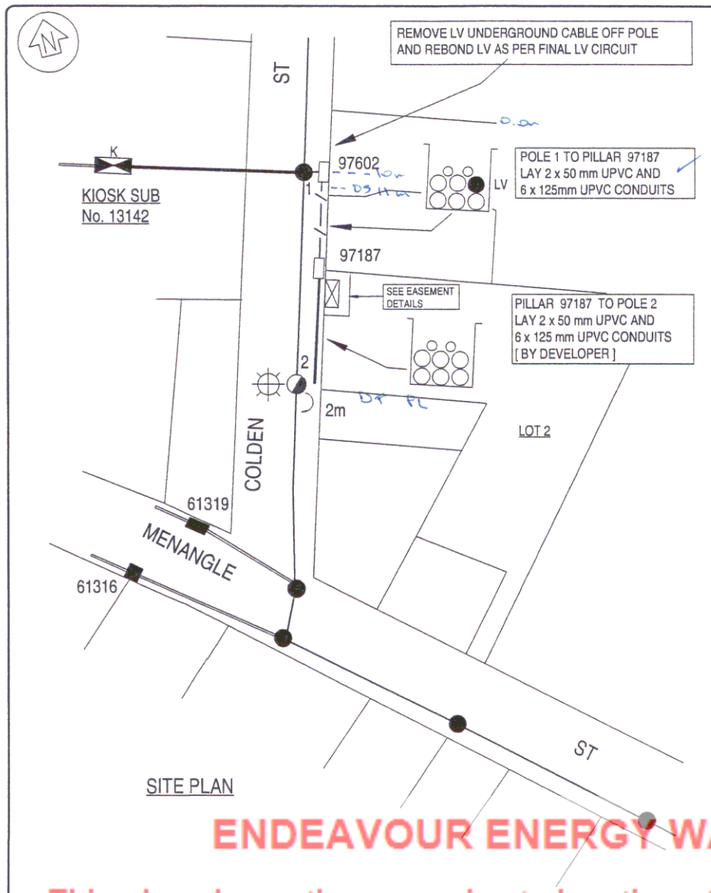
GENERAL MANAGER NETWORK

A2 119304 A

SHEET No 1 OF 1 SHEETS

DATE: 08-10-94

Issue Date: 26/08/2014 DBYD Sequence No: 41198175



SITE PLAN

SITE PLAN LEGEND

- EXISTING KIOSK SUBSTATION
- EXISTING PILLAR
- EXISTING STREET LIGHT COLUMN
- INSTALL LV PILLAR WITH UEP7 SWITCHBOARD
- EXISTING POLE
- REPLACE POLE
- NEW RETICULATION DUCT
- EXISTING RETICULATION DUCTS
- HV TRENCHING
- SPARE DUCT
- DUCT WITH NEW CABLE
- EXISTING LANTERN

WORK COMPLETED

CONSTRUCTED BY _____

WORK COMPLETED _____ NAME _____
SIGNED _____ DATE _____

INSPECTED BY _____ NAME _____
SIGNED _____ DATE _____

FORWARDED TO CONTESTABLE WORKS ADMINISTRATION (CWA) _____ LOCATION _____
SIGNED _____ DATE _____

DESIGN COMPLIANCE AND INDEMNITY

THIS DESIGN COMPLIES WITH THE INTEGRAL ENERGY'S RELEVANT STANDARDS AS CURRENT AT THIS TIME AND AS LISTED ON THE INTEGRAL ENERGY ACCREDITED SERVICE PROVIDER'S INTERNET SITE.
THESE STANDARDS INCLUDE, BUT ARE NOT LIMITED TO:

GT&C : GENERAL TERMS AND CONDITIONS
EMS : ENVIRONMENTAL MANAGEMENT STANDARD
CE : MAINS CONSTRUCTION STRUCTURE
MDI : MAINS DESIGN INSTRUCTION
PDI : PROTECTION DESIGN INSTRUCTION
SDI : SUBSTATION DESIGN INSTRUCTION
SAS 1001 : DISTRIBUTION SUBSTATION STANDARD
MMI : MAINS MAINTENANCE INSTRUCTION
SMI : SUBSTATION MAINTENANCE INSTRUCTION

WHERE RELEVANT, THE DESIGN COMPLIES WITH:
C(3)-1 "GUIDELINE FOR DESIGN AND MAINTENANCE OF OVERHEAD DISTRIBUTION AND TRANSMISSION LINES"
THE REQUIREMENTS OF THE RELEVANT AUSTRALIAN STANDARDS.

PICTON POWER LINES PTY LTD INDEMNIFIES INTEGRAL ENERGY FOR ANY LOSS OR DAMAGE RESULTING FROM NON COMPLIANCE OF THE DESIGN WITH THE ABOVE STANDARDS.

SIGNED: G Beaton NAME GARRY BEATON
SERVICE PROVIDER NUMBER [illegible]

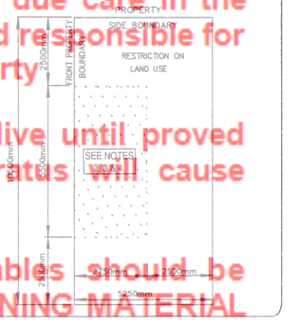
ATTENTION
SERVICE PROVIDER TO NOTIFY NETWORK DATA DAILY WHEN WORK IS IN PROGRESS
PHONE 9852 4184

ATTENTION
PERMANENT SURVEY MARKS MAY EXIST IN THIS AREA. THESE ARE TO BE LOCATED PRIOR TO COMMENCEMENT OF WORK

AUTHORISATION OF INTEGRAL FUNDING
Signed _____
Name _____
Service Number _____
Date 25/8/2004

INTERUPTION TO SUPPLY
NO SUPPLY OUTAGE WILL BE GIVEN AS PART OF THIS APPLICATION.
GENERATORS NEED TO BE UTILISED TO MAINTAIN SUPPLY TO CUSTOMERS.
GENERATOR COST IS TO BE FUNDED BY THE CUSTOMER/DEVELOPER.

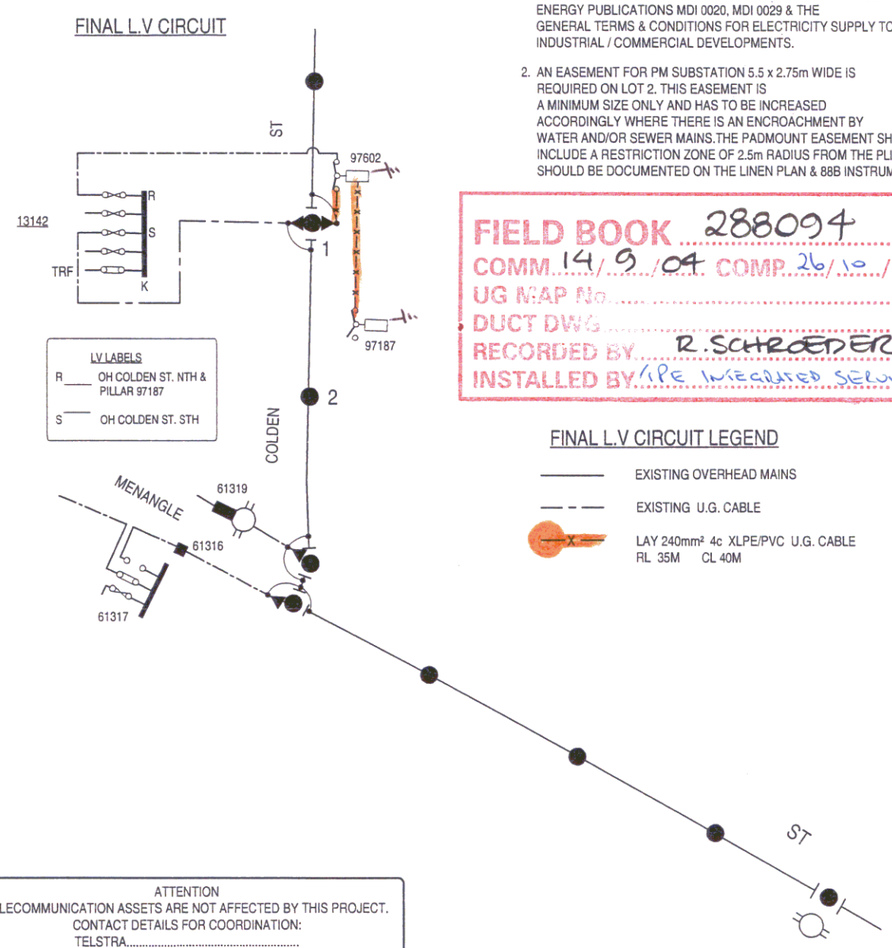
PAD MOUNT SUBSTATION EASEMENT DETAILS



WARNING
LIVE INTEGRAL ENERGY CABLES & OTHER SERVICES IN THIS AREA.
PLEASE CONTACT DIAL BEFORE YOU DIG ON TELEPHONE 1100 FOR SEARCHES TWO DAYS PRIOR TO CONSTRUCTION.

ATTENTION
A GENERIC EMS0001 IS PART OF THIS PROJECT
ALL THE REQUIREMENTS OF THE ENVIRONMENTAL PROTECTION AUTHORITY POLLUTION CONTROL LEGISLATION IS TO BE STRICTLY ADHERED TO.

FINAL L.V CIRCUIT



LV LABELS
R — OH COLDEN ST. NTH & PILLAR 97187
S — OH COLDEN ST. STH

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH INTEGRAL ENERGY PUBLICATIONS MDI 0020, MDI 0029 & THE GENERAL TERMS & CONDITIONS FOR ELECTRICITY SUPPLY TO INDUSTRIAL / COMMERCIAL DEVELOPMENTS.
2. AN EASEMENT FOR PM SUBSTATION 5.5 x 2.75m WIDE IS REQUIRED ON LOT 2. THIS EASEMENT IS A MINIMUM SIZE ONLY AND HAS TO BE INCREASED ACCORDINGLY WHERE THERE IS AN ENCROACHMENT BY WATER AND/OR SEWER MAINS.THE PADMOUNT EASEMENT SHOULD INCLUDE A RESTRICTION ZONE OF 2.5m RADIUS FROM THE PLINTH THIS SHOULD BE DOCUMENTED ON THE LINEN PLAN & 88B INSTRUMENT.

FIELD BOOK 288094
COMM 14/9/04 COMP 26/10/04
UG MAP No.
DUCT DWG
RECORDED BY R.SCHROEDER
INSTALLED BY IPE INTEGRATED SERVICES

FINAL L.V CIRCUIT LEGEND

- EXISTING OVERHEAD MAINS
- EXISTING U.G. CABLE
- LAY 240mm² 4c XLPE/PVC U.G. CABLE RL 35M CL 40M

ATTENTION
TELECOMMUNICATION ASSETS ARE NOT AFFECTED BY THIS PROJECT.
CONTACT DETAILS FOR COORDINATION:
TELSTRA.....
OPTUS.....

SCOPE OF WORKS

INTEGRAL ENERGY	CUSTOMER FUNDED	WORKS BY CUSTOMER
NON-CONTESTABLE	NON-CONTESTABLE	ALL WORK SHOWN ON PROJECT DRAWING EXCEPT WORK DESCRIBED IN THE INTEGRAL ENERGY SUPPLIED BOX OF THIS TABLE.
NIL	SUBSTATION INSPECTION, COMMISIONING & NETWORK SWITCHING	
REIMBURSED/ SUPPLIED	CONTESTABLE	
150M OF 125MM DUCT @ $8.00 /M	ALL WORK	

THIS DRAWING SUPPLIES 13 NEW STRATA RESIDENTIAL UNITS

CAP NUMBER	FILE NUMBER	LOT NOS	NO OF LOTS	DEVELOPER	DEVELOPER' S REP.	PHONE NUMBER
UML3668		2	1	HOLMWOOD BUILDERS	MATT URBAN	46 482607

ABC HOOK HT.	FIELD POLE NO	LANTERNS			CONSTRUCTION				HOLE		POLE							
				EXISTING	SPAN m	DEV deg	HV	LV	DIA. mm	DEPTH m	TYPE	STAY	FOOTING	REPLACE	EXISTING	NEW	REMOVE	NUMBER
	10			X	55M		21	1	600	1.9	12.5/ 4			X				2
	9						EX	EX							X			1

REFERENCE DRAWINGS	
HV OP DIAG	
GIS MAP	5515
UBD REF	MAP 368 REF M3
LG AREA	WOLLONDILLY
FILE NO	
REGION	CENTRAL

ORIGINAL SCALE 1 : 1000 (0 10 25 Metres)

DESIGN	D.J.C.
DRAWN	D.J.C
CHECKED	G.K.B.
DATE	28 / 05 / 04

A2 288094/A SHEET No 1 OF 1

76 MENANGLE ST.
PICTON
UML3668
CONNECTION OF LOAD

AMENDMENTS
A ORIGINAL ISSUE

CERTIFIED BY INTEGRAL ENERGY
Amend
Date Approved 25/8/2004
Examiner's signature: _____

This Certification is subject to Integral Energy's Standard Certification Terms.
Design certification shall lapse where:-
i) Notice of Intent has not been received within six (6) months of this certification, or
ii) Construction has been interrupted for more than six (6) months.
Where design certification has lapsed the design must be Resubmitted for certification by accredited designer.

Accreditation Numbers
1461 Level 1 Construction
1308 Level 2 Services
1286 Level 3 Design
Excellence in Underground & Overhead Electrical Design & Construction

PICTON POWER LINES PTY LIMITED
2785 Remembrance Drive
TAHMOOR NSW 2573
PO Box 11
TAHMOOR NSW 2573
Telephone: (02) 4683 1174
Facsimile: (02) 4683 1066
Email: [illegible]@tmu.com

ENDEAVOUR ENERGY WARNING

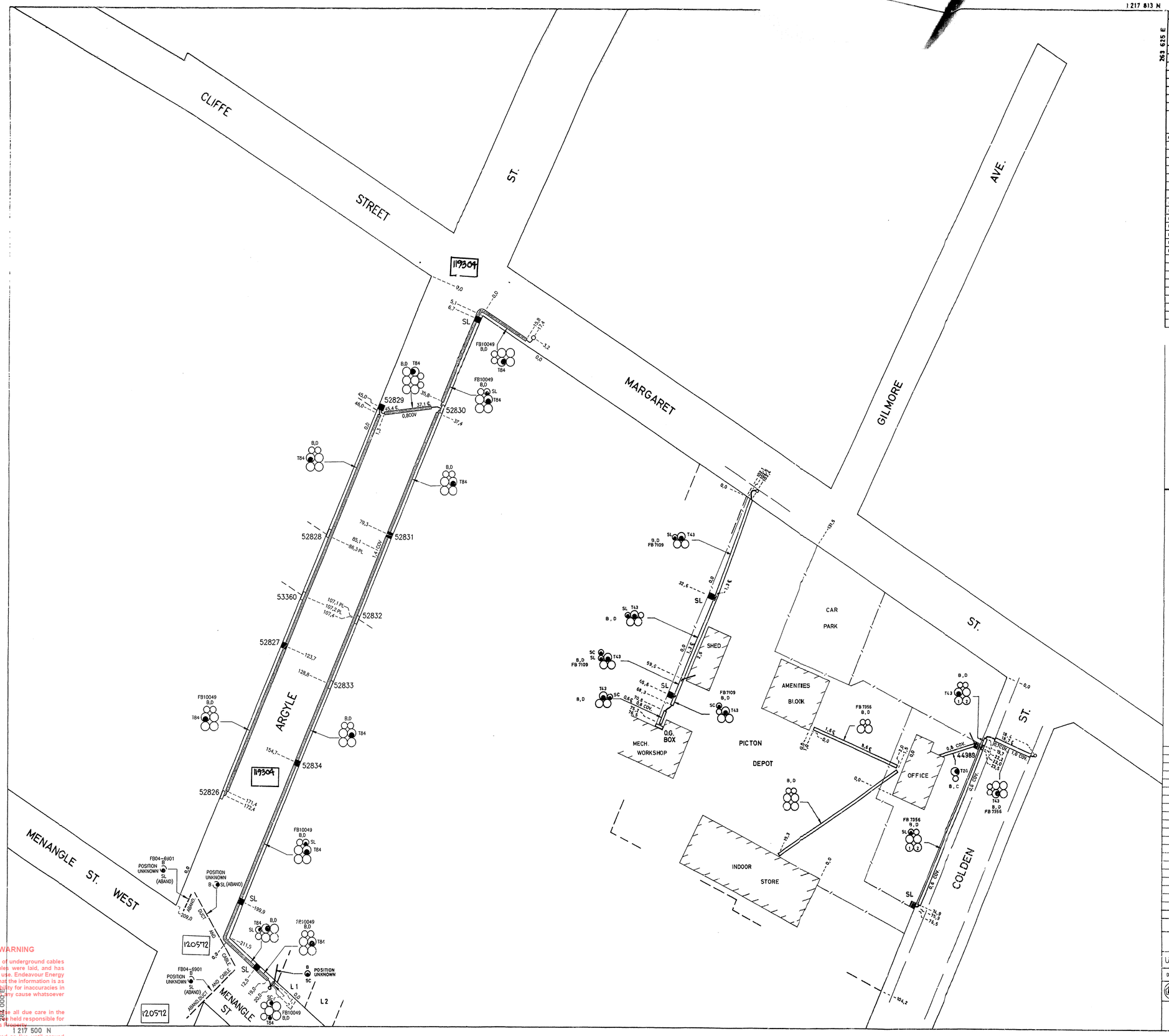
This plan shows the approximate location of underground cables relative to fixtures existing when the cables were laid. This plan has been prepared solely for Endeavour's own use. Endeavour Energy has taken all reasonable steps to ensure that the information is as accurate as possible but will not be liable for inaccuracies in the information shown on such plans from any cause whatsoever arising.

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

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

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

Issue Date: 26/08/2004, DB Sequence No: 41198175



NOTES

1. CABLES 0.6 FROM PROPERTY LINE, 0.7 COVER UNLESS OTHERWISE SHOWN.
2. LENGTHS IN METRES.

DUCT LEGEND		CABLE LEGEND	
B	50 PVC CONDUIT	SL	STREET LIGHT CONDUCTOR
C	100 PVC CONDUIT	SC	SERVICE CABLE
D	125 PVC CONDUIT	-2-	TELECOM SHARED TRENCHING
E	100 FIBRO CONDUIT		
F	140 FIBRO CONDUIT		
G	150 FIBRO PIPE		

CABLE SCHEDULE

CODE	TYPE	CODE	TYPE
U12	.1 SQ. IN. 11kV AL PLYSWS	T08	25mm LV Cu PVC / PVC
U11	120mm 11kV AL PLYSWS	T11	35mm LV Cu PVC / PVC
U12	150mm 11kV AL PLYSWS	T25	.15 SQ. IN. LV AL CONSAC
U13	150mm 11kV AL XLPE	T28	50mm LV Cu PVC / PVC
U15	185mm 11kV AL PLYSWS	T36	.2 SQ. IN. LV AL CONSAC
U17	240mm 11kV AL PLYSWS	T38	150mm LV AL XLPE
U18	.4 SQ. IN. 11kV AL PLYSWS	T39	150mm LV AL CONSAC
U24	300mm 11kV AL PLYSWS	T40	.25 SQ. IN. LV AL CONSAC
U25	300mm 11kV AL SCREENED PLYSWPVC	T42	.3 SQ. IN. LV AL CONSAC
U74	240mm 11kV AL PLYHDPE	T43	185mm LV AL XLPE
U75	300mm 11kV AL PLYHDPE	T47	185mm LV AL CONSAC
U76	300mm 11kV Cu PLYHDPE	T52	240mm LV AL XLPE
U77	240mm 11kV Cu XLPE	T53	240mm LV AL XLPE (CON. NEUT)
U99	UNKNOWN 11kV	T57	240mm LV AL PLYSWS
		T64	.4 SQ. IN. LV AL PLYSWS
		T84	240mm LV AL XLPE
		T99	UNKNOWN LV

SCANNED

0 5 10 15 20 25 30 35 40 45 50m

ISSUE DATE: 25.2.94
1-9-95

CHECKED

F.B.	LOCATION	DR'N	CH'D	DATE
10049	ARGYLE STREET	L.B.	W.R.	18.01.94

AMENDMENTS

PROSPECT ELECTRICITY

U.G. RETICULATION PICTON

DRAWN	G.Sm.	CH'D	J.M.V.	SUP D'MAN		DATE	7/7/89

ORIGINAL SCALE 1 : 500

6415 – 4·3·3·3 M

ENDEAVOUR ENERGY WARNING

This plan shows the approximate location of underground cables relative to fixtures existing when the cables were laid, and has been prepared solely for Endeavour's own use. Endeavour Energy has taken all reasonable steps to ensure that the information is as accurate as possible but will accept no liability for inaccuracies in the information shown on such plans from any cause whatsoever arising.

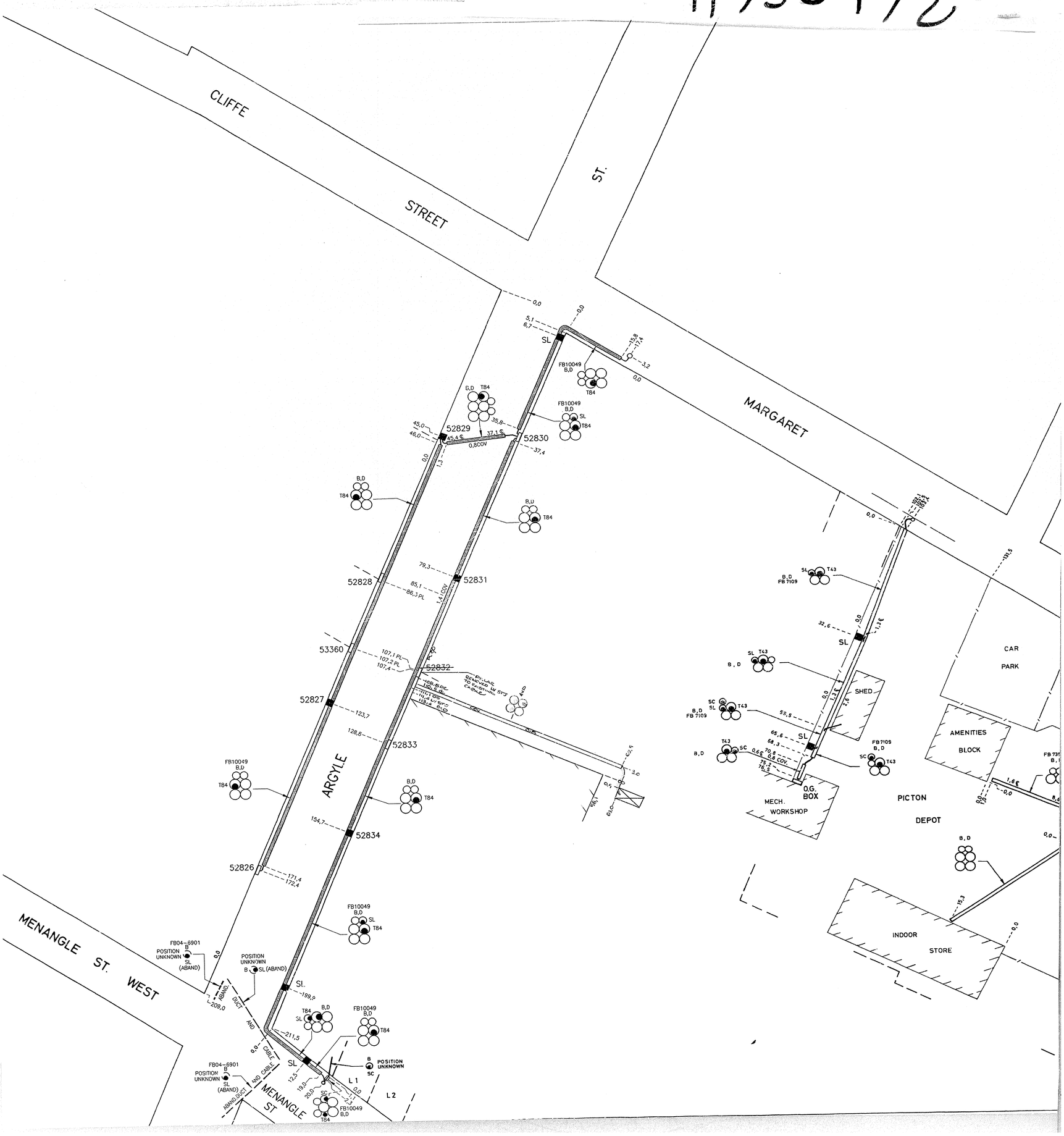
Persons excavating are expected to exercise all due care in the vicinity where cables are indicated and will be held responsible for any damage caused to Endeavour Energy's Property.

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

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

Issue Date: 26/08/2014, DBYD Sequence No: 41198175

119304/2



Issue Date: 26/08/2014, DBYD Sequence No: 41198175

ENDEAVOUR ENERGY WARNING

This plan shows the approximate location of underground cables relative to fixed features existing at the date the plan was prepared solely for Endeavour's own use. Endeavour Energy has taken all reasonable steps to ensure that the information is as accurate as possible but will accept no liability for inaccuracies in the information shown or as such plans from any cause whatsoever arising.

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

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

Those excavating near Endeavour Energy's cables should be aware that ASBESTOS OR ASBESTOS - CONTAINING MATERIAL MAY BE PRESENT in Endeavour Energy's underground ducts and that Organo-Chlorite Pesticides(OCP) may be present in some sub-transmission trenches

Head Office: 51 Huntingwood Drive Huntingwood NSW 2148

ENDEAVOUR ENERGY

DBYD Underground Search Report

Date: 26/08/2014

DBYD Sequence No: 41198175 **DBYD Job No:** 8254214

To:	Mr Gijs Roeffen		Company:	Cardno	
Address:	Level 9 203 Pacific Highway, St Leonards, NSW 2065				
Cust. ID:	1422516	Email:	gijs.roeffen@cardno.com.au		
Phone:	0290247163	Mobile:	Not Supplied	Fax:	Not Supplied
Enquiry Location: 108 Menangle Street, Picton, NSW 2571					

Our Search has shown that:

UNDERGROUND CABLES 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 DBYD customer confirmation sheet.

In conjunction with the disclaimer as shown on our plan, persons are expected to exercise all due care especially in the vicinity of Padmount and Pole Substation, Transmission Poles and Towers as Underground Earth Grids may exist but are not shown on our plans.

WARNING:
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.

All electrical apparatus shall be regarded as live until proved de-energised. Contact with live electrical apparatus will cause severe injury or death.

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

In accordance with the Electricity Supply Act 1995, YOU ARE OBLIGED TO REPORT ANY DAMAGE TO ENDEAVOUR ENERGY'S ASSETS IMMEDIATELY BY CALLING 131003.

NOTE:
For the safety of our customers, plans are provided as a free service and if further clarification of information is required, call 02 9853 4161.

Endeavour Energy's assets are generally located in the road reserve. Endeavour Energy's plan does not show any underground customer service mains or information relating to service mains within private property.

All plans must be printed and made available at the worksite where excavation is to be undertaken. These plans must be reviewed and understood by the crew on site prior to excavation commencing.

The excavator must carry out work in accordance with the WorkCover Authority's 'Work Near Underground Asset Guideline'. This guideline can be downloading at http://www.workcover.nsw.gov.au/formspublications/publications/Pages/WC01419_WorkNearUndergroundAssets.aspx

If you are unable to print the plans, call 02 9853 4161 for assistance and arrange for plans to be collected from Head Office. Endeavour Energy does not mail the hard copy of plans.

Endeavour Energy thanks you for your assistance in the protection of Critical Infrastructure and your DBYD enquiry

Technical Review Request

Endeavour Energy

Please return completed form along with all attachments to: Endeavour Energy, PO Box 811 Seven Hills NSW 1730
Email: cwadmin@endeavourenergy.com.au | **Fax:** 02 9853 7925 | For enquiries about this form, please contact 02 9853 7977

This form can be used for requesting technical assistance to determine preliminary connection requirements prior to lodging a formal application for large or complex developments including master planning for major projects or subdivisions, embedded networks, asset relocations and embedded generator connections.

Site Details

Lot / DP No. Lot 106 DP 1111043, Lot 2 DP 229679, Lo9 DP233840 Street No. _____ Street Name 1735 Rememberance Dr., 108-114 Menangle Street, 116-118 Menangle Street

Suburb/Town Picton Postcode 2571 UBD Ref _____

Nearest Substation: PM Substation 29652 Pole/Pillar _____ Cross Street Baxters Lane

Retailer NMI for Existing Sites: _____ (Can be found on your electricity bill)

Retail Customer or Developer Details

Name / Company Dartanyon Pty Ltd Contact Person attn. Greg Kelner

Street No. Suite 5, Level 1 Street Name Fairwater Drive

PO Box _____ Suburb / Town Harrington Plaza Harrington Park Post Code NSW 2567

Phone _____ Mobile _____ Fax _____

Email: greg@dartanyon.com.au

Applicant / Applicant's Representative Details

Name / Company Cardno Contact Person Gijs Roeffen

Street No. Level 9, 203 Street Name Pacific Highway

PO Box _____ Suburb / Town St. Leonards Post Code 2065

Phone 9024 7163 Mobile _____ Fax _____

Email: gijs.roeffen@cardno.com.au

Preferred method of contact: ☒ Mail ☐ Phone ☐ Email

Nature of Request

The developer is seeking to rezone the area as per the marked up plan. The Developer has projected a development of up-to 350 dwellings.

In terms of the electrical infrastructure the developer would seek to connect as per the attached plan. With a new feeder connecting Substation 29652 and Pole mounted substation 17595.

- We request that Endeavour please confirm if there is capacity in the existing HV network and if not, what possible works would be required to make supply available to the development -

Please Note:
Please provide detailed information describing your development as attachments to support your request including harmonic loads, excessive motor starting or other types of load that may cause quality of supply issues on the network.

The Customer/Developer is the Landowner: ☒ Yes ☐ No

☒ I am authorised by the customer/proponent to make enquiry to Endeavour Energy for this development.

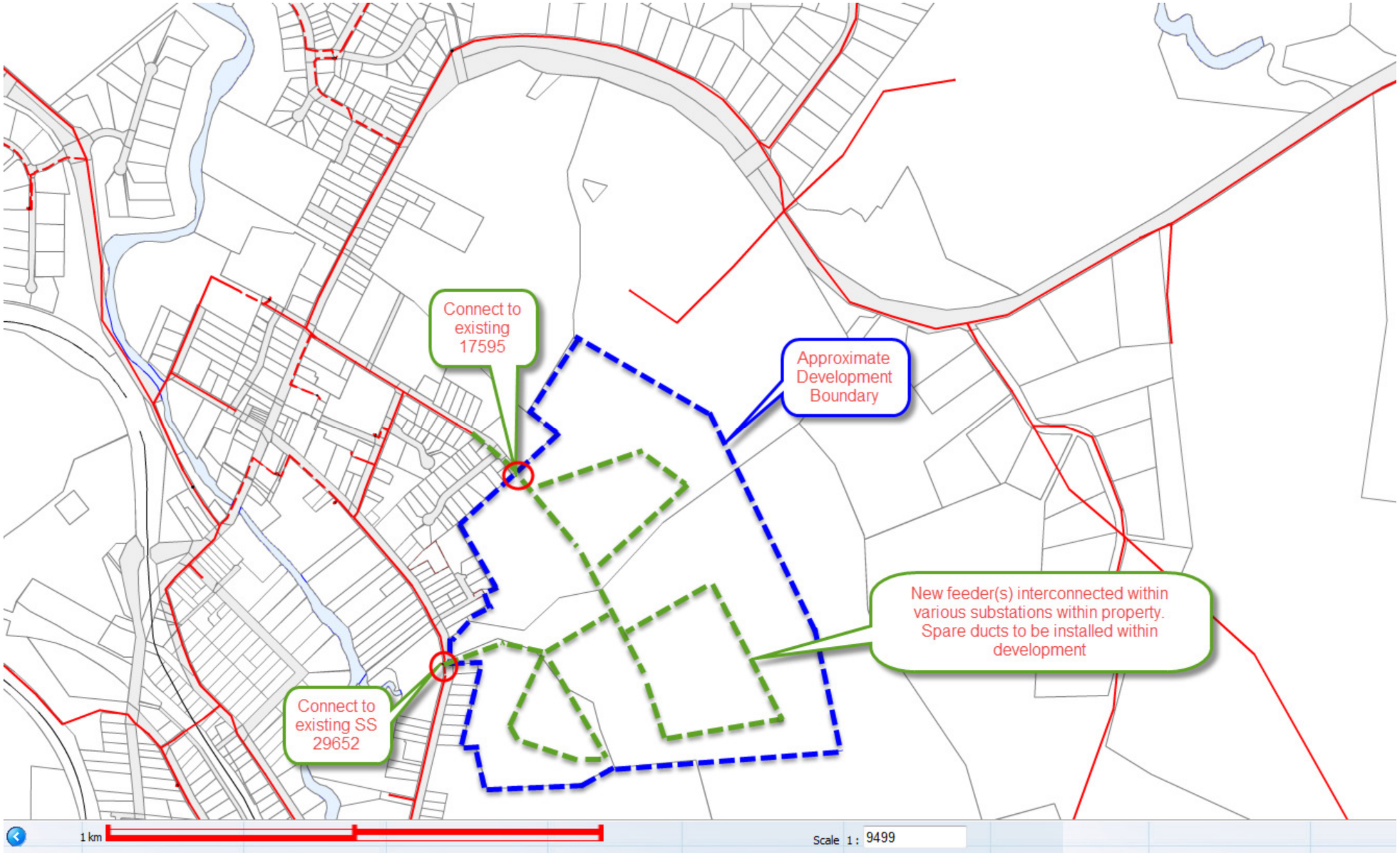
Gijs Roeffen

From: Gijs Roeffen
Sent: Monday, 25 August 2014 11:57 AM
To: David Tombling
Subject: RE: menangle picton HV supply options [Filed 25 Aug 2014 11:56]
Attachments: 2014.08.25 - Technical Review Request.pdf

David,

Please see my application attached.

Figure below.



Gijs Roeffen
PROJECT MANAGER
CARDNO

Cardno
Shaping the Future

Phone +61 2 9496 7700 Fax +61 2 9439 5170 Direct +61 2 9024 7163
Address Level 9 - The Forum, 203 Pacific Highway, St Leonards, NSW 2065 Australia

Email Gijs.Roeffen@cardno.com.au Web www.cardno.com

Cardno is the proud winner of the 2013 Infrastructure & Construction Award at the 51st Australian Export Awards and a winner of the 2013 BRW Client Choice Awards.

Cardno operates a quality management system that has been certified to ISO 9001.

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From: David Tombling
Sent: Monday, 25 August 2014 9:58 AM
To: Gijs Roeffen
Subject: menangle picton HV supply options

David Tombling
DESIGN ENGINEER
CARDNO

Cardno
Shaping the Future

Phone +61 2 9496 7700 Fax +61 2 9439 5170 Direct +61 2 9496 7813 Mobile 0438 854 255
Address Level 9 - The Forum, 203 Pacific Highway, St Leonards, NSW 2065 Australia
Postal PO Box 19, St Leonards NSW 1590
Email david.tombling@cardno.com.au Web www.cardno.com

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Reeves Creek - Rezoning

APPENDIX D

TELECOMMUNICATIONS INFRASTRUCTURE

Cardno
Shaping the Future

Broadbanding Australia

To: Mr Gijs Roeffen

Phone: 0290247163

Fax: Not Supplied

Email: gijs.roeffen@cardno.com.au

Location of Underground Fibre Optic Cable Information Sheet

IMPORTANT: Please read all information and conditions below:

Dial before you dig Job	8254214	DIAL BEFORE YOU DIG www.1100.com.au Some impact. No onsite action required.
Sequence #	41198179	
Issue Date:	08/25/2014	
Location:	108 Menangle Street,Picton,NSW-2571	

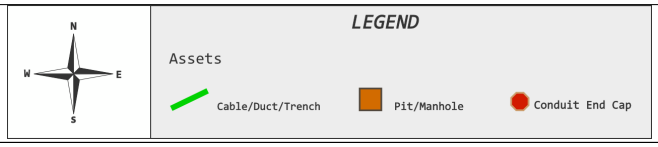
In relation to your enquiry at the above address:

- NBN Co's records indicate that there ARE underground fibre optic/telecommunications facility/facilities (owned or controlled by NBN Co) in the vicinity of the location identified above ("Location").
- NBN Co indicative plan/s are attached with this notice ("Indicative Plans").
- The Indicative Plan/s show general depth and alignment information only and are not an exact, scale or accurate depiction of the location, depth and alignment of the fibre optic/telecommunications facilities shown on the plan/s.
- In particular, the fact that the Indicative Plan/s show that a facility is installed in a straight line, or at uniform depth along its length cannot be relied upon as evidence that the facility is, in fact, installed in a straight line or at uniform depth.
- You should read the Indicative Plans in conjunction with this notice and in particular, the notes below.
- The information contained in the Indicative Plan/s is valid for 28 days from the date of issue set out above.You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators at your cost to locate NBN Co telecommunications facilities during any activities you carry out on site.)

We thank you for your enquiry and appreciate your continued use of the Dial Before You Dig Service. If you require further information please contact NBN Co on **1800 626 762 OPTION 5 then 4.**

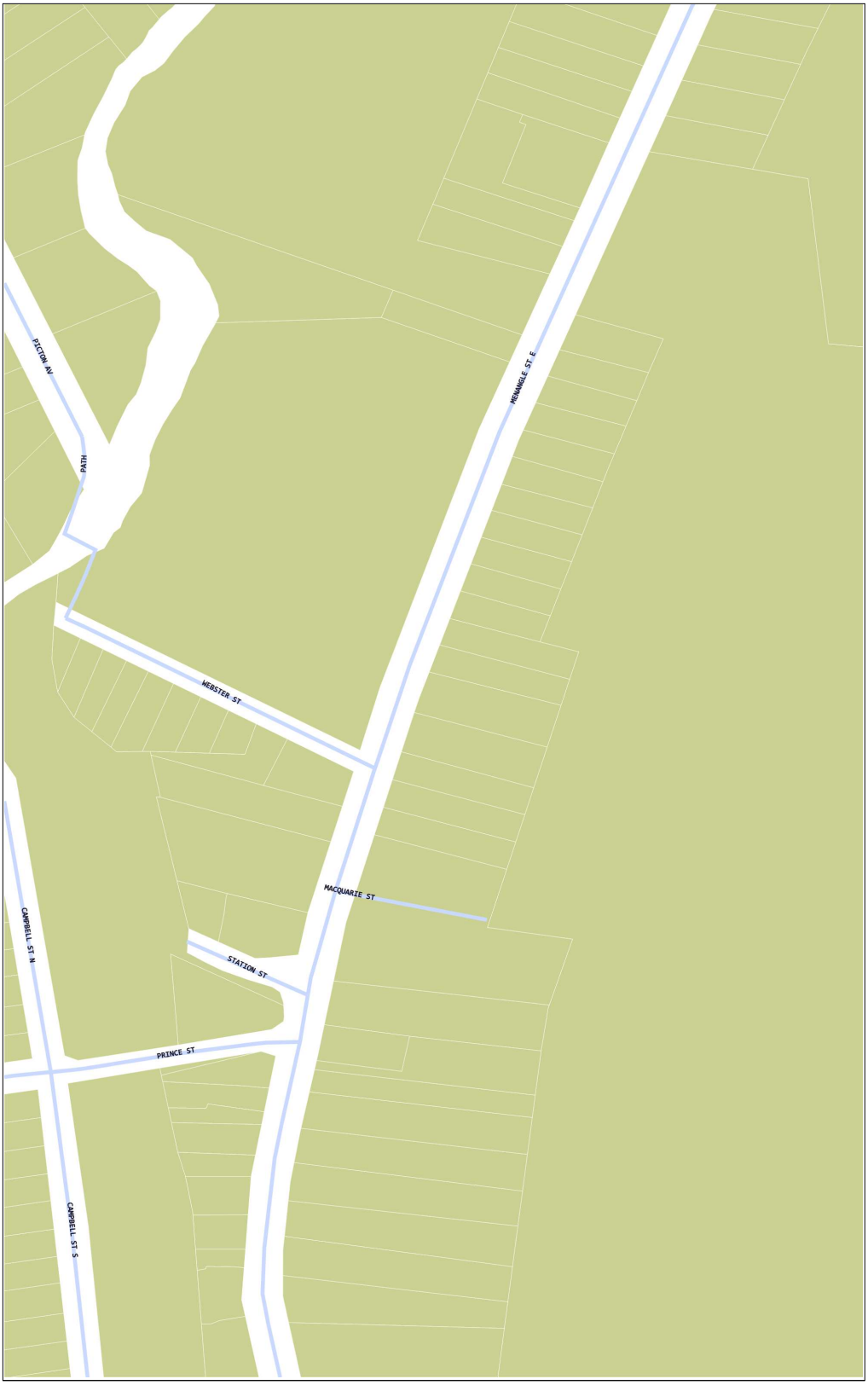
Notes:

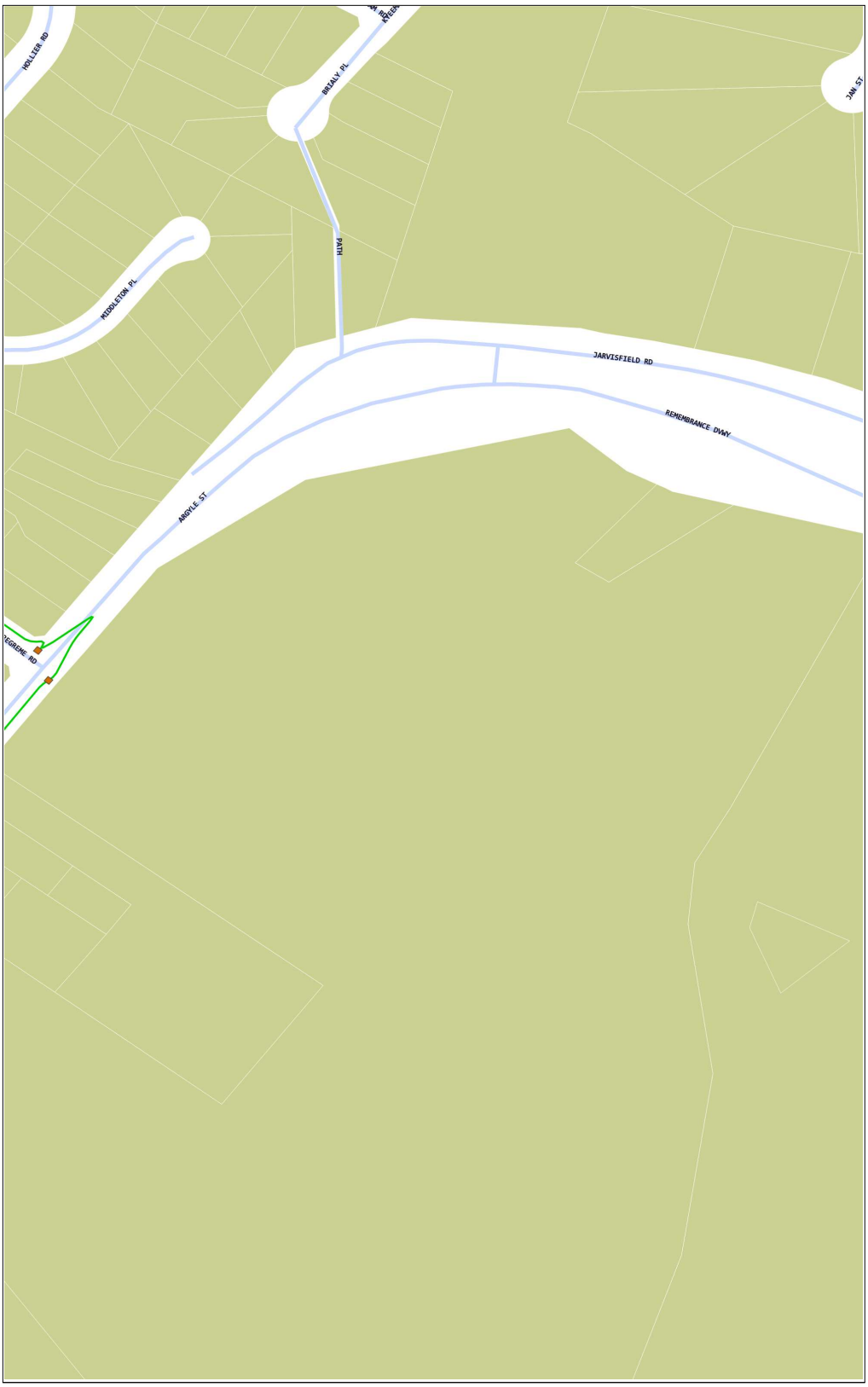
1. You are now aware that there are items of telecommunications facilities in the vicinity of the above property that could be damaged as a result activities carried out (or proposed to be carried out) by you in the vicinity of the Location.
2. You should have regard to section 474.6 and 474.7 of the Criminal Code Act 1995 (Cth) which deals with the consequences of interfering or tampering with a telecommunications facility. Only persons authorised by NBN Co Limited can interact with NBN Co's network facilities.
3. Any information provided is valid only for **28 days** from the date of issue set out above.

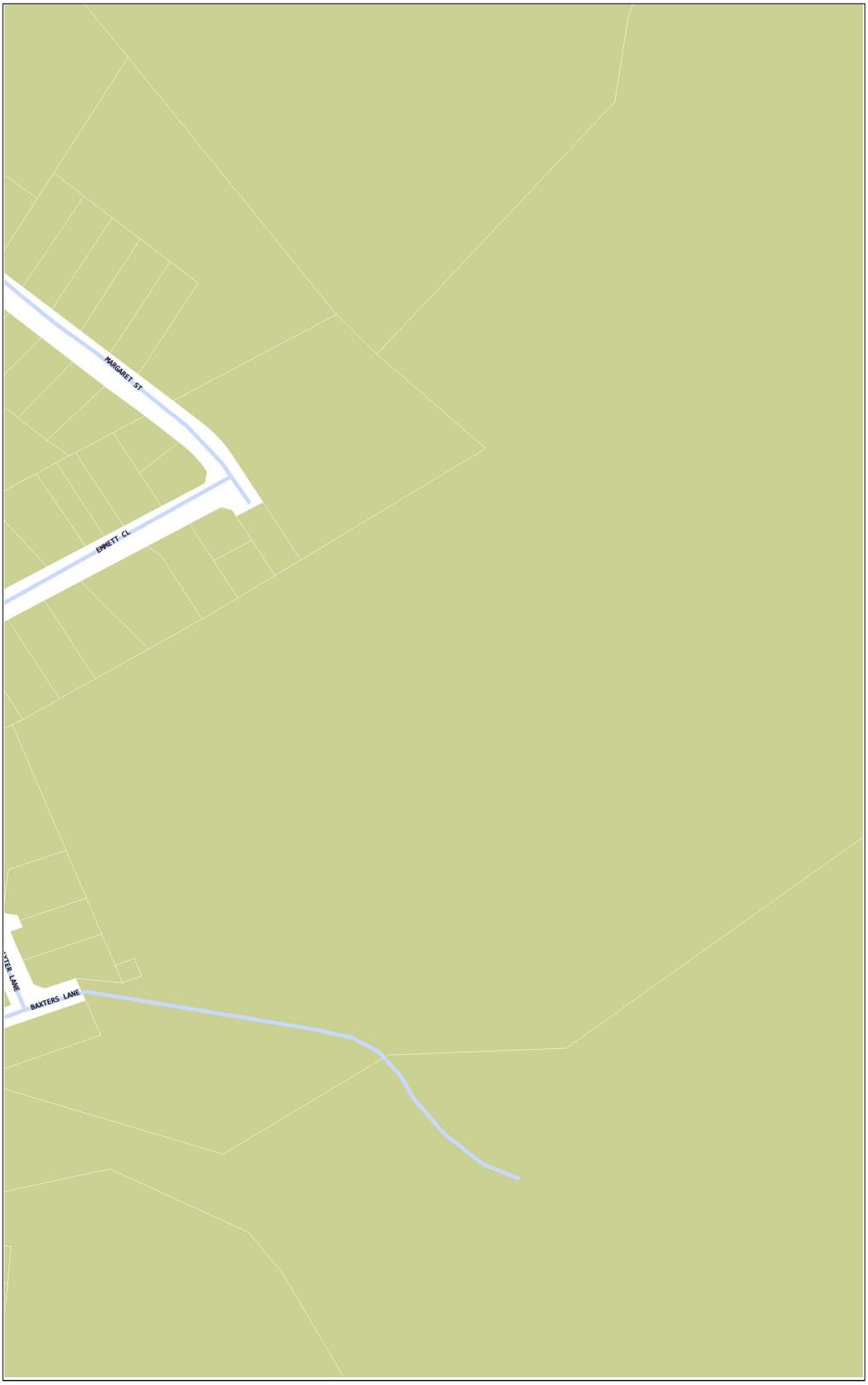


RESERVE RD
HOLLIER RD
MIDDLETON PL
LOVE PL
RANEAU ST
ARGYLE ST
DOWNING ST
ROAD
CLIFFE ST
MARGARET ST
GELMORE AV

MARGARET ST
GILMORE AV
ARGYLE ST
MALTON LANE
DAVIDSON LANE
HENNIKER ST W
MANOLIS LANE
VILLAGE SQ WAY
COLDEN ST
EMMETT CL
HENNIKER ST E
BAXTER LANE
BAXTERS LANE
COULL ST


PICTON AV
PATH
WEBSTER ST
MEHANGLE ST E
MACQUARIE ST
STATION ST
CAMPBELL ST N
PRINCE ST
CAMPBELL ST S


HOLLIER RD
BREALY PL
JAN ST
PATH
MIDDLETON PL
JARVISFIELD RD
REMEMBRANCE DRWY
ARGYLE ST
LEGRENE RD


MARGARET ST
BARNETT CL
BAXTERS LANE

JAN ST
JACINTA PL
SONJA PL
JANUSFEELD RD
REMEMBRANCE DWY
COLDENHAM RD
ROAD

REMEMBRANCE DWY

Conditions

The following are conditions on which NBN Co provides you with the Indicative Plans. By accepting the plans, you are agreeing to these conditions. These conditions are in addition (and not in replacement of) any duties and obligations you have under applicable law.

1. NBN Co does not accept any responsibility for any inaccuracies of its plans. You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators at your cost to locate NBN Co telecommunications facilities during any activities you carry out on site).
2. You should not assume that fibre optic cables follow straight lines or are installed at uniformed depths along their lengths, even if they are indicated on plans provided to you. Careful onsite investigations are essential to locate the exact position of cables.
3. In carrying out any works in the vicinity of NBN Co facilities, you must maintain the following minimum clearances:
   - 300mm when laying assets inline, horizontally or vertically
   - 500mm when operating vibrating equipment, for example: jackhammers or vibrating plates
   - 1000mm when operating mechanical excavators.
4. You are aware that there are inherent risks and dangers associated with carrying out work in the vicinity of underground facilities (such as NBN Co's optic fibre cables). You must take all reasonable precautions should to avoid damaging NBN Co's facilities. These precautions may include (but not limited to) the following:
   - All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs if present must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the likelihood of damage to the cable, for example: the blades of hand equipment should be aligned parallel to the line of the cable rather than digging across the cable.
   - If any undisclosed underground cables are located, notify NBN Co immediately.
   - All personnel must be properly briefed, particularly those associated with the use of earth-moving equipment, trenching, boring and pneumatic equipment.
   - All excavations must be undertaken in accordance with all relevant legislation and regulations.
5. You will be responsible for all damage to NBN Co facilities that are connected (whether directly, or indirectly) with work you carry out (or work that is carried out for you or on your behalf) at the Location. This will include (without limitation) all losses expenses incurred by NBN Co as a result of any such damage.
6. You immediately must report any damage to NBN Co's network that you are/become aware of. Notification may be by telephone to the inquiries number listed above.

7. Except to the extent that liability may not be capable of lawful exclusion, NBN Co and its servants and agents and the related bodies corporate of NBN Co 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 Indicative Plans, all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

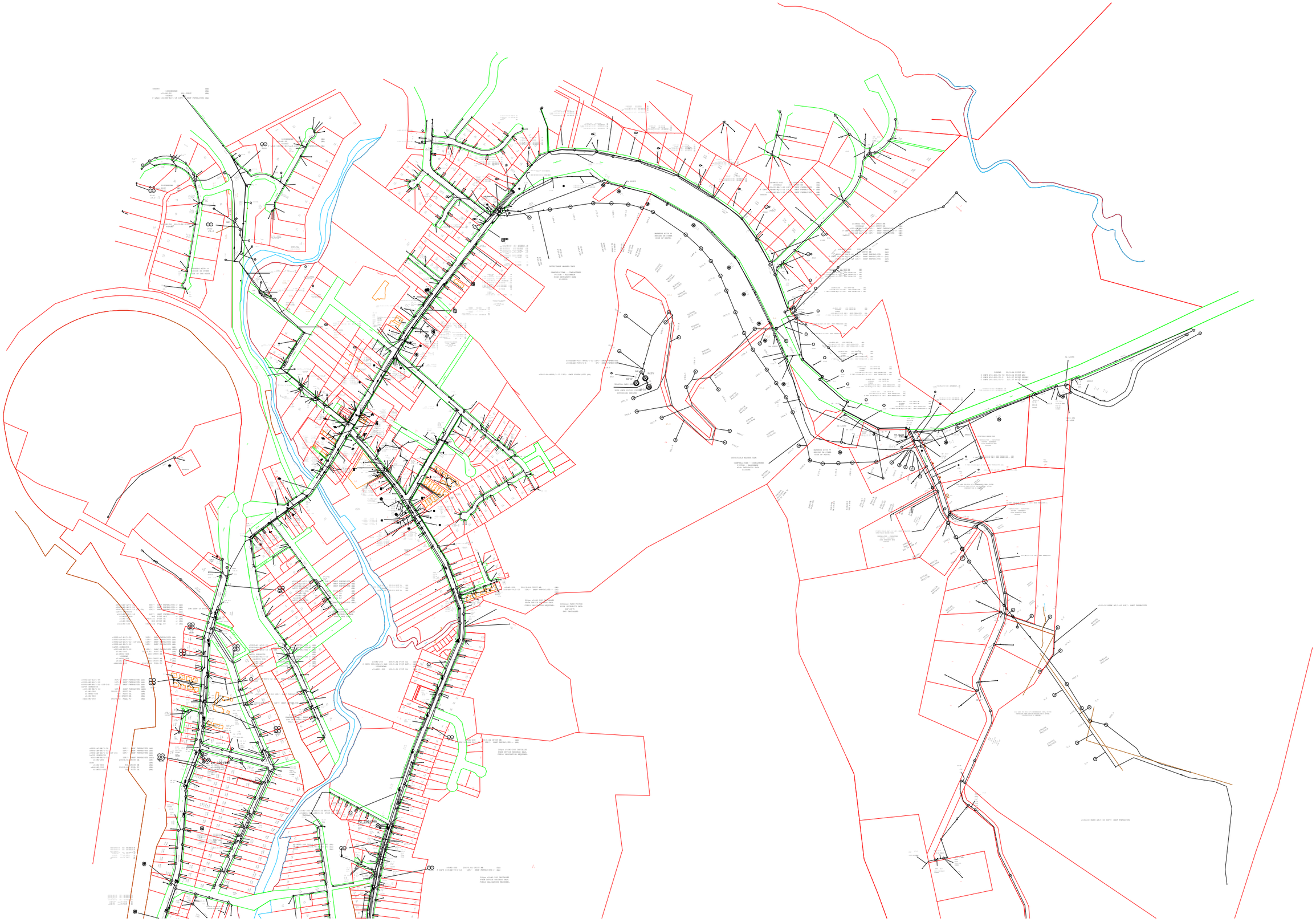
IMPORTANT

This document is intended for the use of the named recipient only. Unauthorised use is prohibited. If you have it in error, please notify us and destroy this document.

Thank You,

Ann Maree Tytler
Manager Customer Support, Network & Service Operations

Date: 08/25/2014

Please consider our environment before printing

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