

INFRASTRUCTURE REPORT

64 MACKILLOP DRIVE BAULKHAM HILLS



PREPARED FOR AQUALAND DEE WHY PTY LTD

DOCUMENT CONTROL

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1 Introduction

Calibre has been asked by Aqualand Dee Why Developments Pty Ltd to prepare an Infrastructure Report to support the Planning Proposal for the site at 64 Mackillop Drive, Baulkham Hills. For the purpose of assessing the capacity of the existing infrastructure, an approximate yield of 110 townhouses and 270 apartments has been assumed.

Initial consultations with the servicing authorities suggest that the existing utilities infrastructure can cater for the proposed development. Details of the findings are included as Appendixes to this report.

The information expressed in this report is a guide only and is subject to change due to project and servicing authority requirements. All servicing plans attached are indicative and require confirmation and verification prior to construction

2 Services Infrastructure

2.1 Site Location

The proposed development is located at Lots 1001 and 1002 in DP 1190982 – 64 Mackillop Drive, and Lot 574 in DP 719531 – Salamander Grove, Baulkham. Aqualand's planning proposal is for the rezoning of super lots and lots as follows;

- From R2 Low Density Residential to R3 Medium Density Residential,
- From R3 Medium Density Residential to R4 High Density Residential and,
- From R2 Low Density Residential to RE1 in accordance with the Local Environmental Plan, 2012.

Remaining lots are proposed to remain as R2 Low Density Residential.



Figure 1 Site Location

2.2 Sydney Water

Notice of Anticipated Requirements from Sydney Water dated 1st June 2017 is attached as Appendix A. The following summarises the notice.

2.2.1 Potable Water

Sydney Water has assessed the impact of the proposed yield on the existing infrastructure and concludes the following:

- Construction of the new road under the approved Development Consent 06/2012/JP will link the existing 200mm main in Barina Downs Rd and 100mm main in Mackillop Drive.
- Dwellings subject to planning proposal would be connected to the proposed main described above

2.2.2 Wastewater

Sydney Water has assessed the impact of the proposed yield on the existing infrastructure and concludes the following:

- Existing infrastructure has enough capacity to service the proposed 28 residential lots under the above DA as well as 108 Townhouses and 262 Apartments.

- The subject site falls under two catchments – northern and southern. Northern catchments will drain the apartment blocks to the 225 dia. main in Hillsborough Way while the southern catchment will be connected to the existing 225mm sewer main at Salamander Road.

2.3 Endeavour Energy

Endeavour Energy assessed the impact of the proposed yield on the existing infrastructure and concludes the following:

- Estimated supply load for ultimate site (28 residential lots under DA 06/2012/JP, 108 townhouses and 270 apartments) is 1.5MVA.
- Supply will come from Endeavour Energy's West Castle Hill zone substation via 11kV feeder (No. 27199) located in Barina Dows Road.
- Endeavour Energy's Bella Vista zone substation may be used as a backup feeder.

Technical Review Request Response dated 6th June 2017 is attached as Appendix B.

2.4 NBN Co.

The study concluded that;

- NBN roll out has commenced in the area and it is assumed to have sufficient capacity to service the proposed development.
- NBN Co. has approved application to service residential development pursuant to Development Consent 06/2012/JP and it is intended to install telecommunication services on the roads subject to this DA.

2.5 Jemena

The study concluded that;

- Natural gas can be provided by Jemena, subject to a commercial offer
- It is assumed that connections will be made to existing 110mm main located at Mackillop Drive and 50mm main on Barina Downs Road

2.6 Dial Before You Dig

Results attached in Appendix C.

3 Conclusion

Initial consultations with the servicing authorities suggest that the existing utilities infrastructure can cater for the proposed development. Details of the findings are included as Appendixes to this report.

The information expressed in this report is a guide only and is subject to change due to project and servicing authority requirements. All servicing plans attached are indicative and require confirmation and verification prior to construction.

64 MACKILLOP DRIVE BAULKHAM HILLS

Appendix A Notice Of Anticipated Requirements

AQUALAND DEE WHY PTY LTD

Case Number: 162412

1 June 2017

Tony Pizzolato
c/- CALIBRE CONSULTING (NSW) PTY LTD

**NOTICE OF ANTICIPATED REQUIREMENTS
for
SECTION 73 SUBDIVIDER/DEVELOPER COMPLIANCE CERTIFICATE
(Sydney Water Act 1994, Part 6, Division 9)
PENDING DEVELOPMENT CONSENT**

Developer:	Tony Pizzolato
Your reference:	17-000013
Development:	Lot 1001 DP1190982 MACKILLOP DR, Baulkham Hills
Development Description:	Amendment of staging approved in DC 6/2012/JP in order to facilitate a Stage 1 residential subdivision consisting of 28 residential lots, four (4) residue lots, public reserve dedication as well as the construction of four (4) public roads and two (2) pathways. As such, this modification application will result in the creation of two additional residue lots for future development, removal of bio-retention in the local park and the construction of 4 roads instead of 5 (removing road No.4).
Council:	The Hills Shire Council
Your application date:	11 April 2017

Dear Applicant

Sydney Water has assessed your application for the anticipated requirements of a Section 73 Compliance Certificate (the Certificate) pending development consent for the subdivision shown above. Detailed information on your anticipated requirements is outlined below.

You have until 1 June 2018 to meet those requirements and receive the Certificate. If you have not received the Certificate by then you will have to reapply (and pay another application fee) and Sydney Water will issue you with a new notice. We may have extra requirements and charges may change in the new notice.

The Water Servicing Coordinator (Coordinator) will be your point of contact with Sydney Water. They can answer most questions you might have on our developer process and charges.

This is not a final notice and Sydney Water is not liable for any actions you take as a result of this Notice. You do not have the authority to start construction of works.

Once you receive final development consent you should submit a copy to Sydney Water. Provided that there have been no significant changes to the development, we will send you a Confirmation Letter.

If the development application has been subject to significant change then this anticipated requirements application will be terminated and you must submit a formal Section 73 application.

You can also find out about this process by visiting www.sydneywater.com.au > Plumbing, building & developing > Developing > Land development. If you want to find out the status of your application, simply select 'Developer Application Progress' and enter your case number (shown above) and email address. A response will be sent automatically to you.

What You Must Do To Get A Section 73 Certificate

Summary

This is a summary of Sydney Water's requirements. The detailed list begins on the next page.

You must do all of the following things:

1. Engage a Water Servicing Coordinator (Coordinator) before you sign the enclosed Agreement.
2. Sign both originals of the enclosed Agreement and give them to the Coordinator. You must do all the things that we ask you to do in that Agreement.
3. After you have signed the Agreement you then need to build the required water and sewer works at your own cost.
4. See Section 4 for any Ancillary Matters
5. Complete any special requirements from Section 5.

Other things you need to do:

At the end of this Notice are some other things that you may need to do. They are NOT a requirement to be met before the Certificate can issue but may well be a requirement in the future because of the impact of your subdivision on our assets. You must read them before you go any further.

DETAILED REQUIREMENTS

1. Water Servicing 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 subdivision. 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 > Plumbing, building & developing > Developing > Providers > Lists or call **13 20 92**.

Coordinators will give you a quote or information about costs for services/works, including Sydney Water costs.

2. Developer Works Deed

After you engage a Coordinator, you must engage other Developer Infrastructure Providers (Providers) to carry out, where needed, the design and construction of the works. They must all have the appropriate capability. Your Coordinator can assist you.

You and your Providers will need to enter into an agreement with Sydney Water. To do this you need to sign and lodge **both originals** of the enclosed Developer Works Deed (Deed) with your nominated Coordinator. You will then need to work with your Coordinator to have the other Providers sign the Deed.

If your Coordinator or Providers are different for any of the asset types then you will need to sign separate Deeds.

Before signing the Deed, each party must also read and understand the conditions of the agreement that are set out in the Developer Works Deed – Schedule 1: Standard Terms document. That document as well as information about it are available at sydneywater.com.au > Plumbing, building & developing > Developing > Developer deeds & standard terms

The Deed and the Standard Terms set out for this development all parties' roles and responsibilities as well as other information.

You must do all the things that we ask you to do in the Deed.

This is because lots in your subdivision do not have water and sewer services and you must construct and pay for the following works extensions under this Deed to provide these services.

3. Water and Sewer Works

3.1 Water

Each lot in your subdivision must have:

- a frontage to a drinking water main that is the right size and can be used for connection; and
- its own connection to that water main and a property service (main to meter) that is

available for the fitting of a meter.

Sydney Water has assessed your application and found that:

- An extension of the drinking water system will be required from the 200mm main in Barina Downs Road linking with the 100mm main in Mackillop Drive.
- The proposed drinking water infrastructure for this development will be sized & configured according to the Water Supply Code of Australia (Sydney Water Edition WSA 03-2002).
- **You must construct a water main extension to serve Lots 101 to 128.** These works must be constructed by a constructor with the appropriate capability. Your Coordinator will be able to provide further advice about this.
- **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.**
- This notice does not relate to lots 129 to 133 as the Development Consent has identified the lot as a “residue lot”.

Therefore, Sydney Water will only make a requirement for these lots when an approval (as its defined in Section 69 of the Sydney Water Act 1994) is obtained and an application for a Section 73 Certificate is made.

- **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.

Once you have received your final Development Consent and the WSC has determined there are significant changes to the development that affect your design, your WSC will be required to submit a new application.

3.2 Sewer

Each lot in your subdivision 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 each lot's boundaries.

Sydney Water has assessed your application and found that:

- A wastewater extension is required to service the proposed subdivision. This development generally drains to two different catchments.
- For the purposes of the capability assessment, it has been assumed that the proposed 262 Apartments will drain to the north and that the 108 Townhouses plus 28 Torrens lots will drain to the south.

For the northern catchment, the Developer is to design and construct a wastewater main (connecting to the 225mm main constructed under PRO361414) from the existing dead end at the intersection of Hillsborough Way and Barina Downs Rd, which will provide a point of connection at least 1m inside all the property boundaries.

For the southern catchment, the Developer is to design and construct a wastewater main (connecting to the 225mm main constructed under WN A88859) at the MH located within No. 36 Salamander Grove, which will provide a point of connection at least 1m inside all the property boundaries. **Please note that this pipe size must be confirmed on-site, HYDRA shows a 150mm but WAE drawings show it as 225mm.**

- All internal wastewater services are to connect to the new extended wastewater main.
- The proposed wastewater infrastructure for this development will be sized & configured according to the Sewerage Code of Australia (Sydney Water Edition WSA 02-2002).
- **You must construct a waste water main extension to serve Lots 101 to 128.** The terms of the Deed define this extension as 'Major Works'.
- You must use Sydney Water's new **Technical Specifications for Leak Tight 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).
- This notice does not relate to lots 129 to 133 as the Development Consent has identified the lot as a "residue lot".

Therefore, Sydney Water will only make a requirement for these lots when an approval (as its defined in Section 69 of the Sydney Water Act 1994) is obtained and an application for a Section 73 Certificate is made.

4. Ancillary Matters

4.1 Flow Management and Isolation of Sydney Water's Asset.

The above works will be constructed with a connection/cut-in to Sydney Water's

(wastewater, water and/or stormwater) assets. To see that it complies with Occupational Health and Safety and Environmental legislation you must talk to your coordinator about the timely submission to Sydney Water of a request for flow management and asset isolation requirements.

4.2 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 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.

4.3 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.

4.4 Costs

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

- design and construction audit fees;
- contract administration, Operations Area Charge & Customer Redress prior to project finalisation; and
- creation or alteration of easements etc.

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.

5. Special Requirements

The Final Development Consent

This application is based on the development and consent shown on Page 1. You must give us the **final** Development Consent before we issue the Certificate so we can make sure that the subdivision is the same.

If the subdivision is the same and all the requirements of this Notice have been met, we will issue the Certificate. If the subdivision is NOT the same you must reapply (and pay another application fee) and we will issue another Notice. The requirements and charges may change in that Notice.

OTHER THINGS YOU 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 subdivision on our assets. You must read them before you go any further.

Approval of your building plans

Please note that the building plans must be approved when each lot is developed. This can be done at Sydney Water Tap inTM. Visit www.sydneywater.com.au > Plumbing, building & developing > Building > Sydney Water Tap inTM.

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, building & developing > Plumbing > Backflow prevention.

Fire Fighting

Definition of firefighting 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 firefighting flow of the subdivision 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.

Disused Water Service Sealing

You must pay to disconnect all disused private water services and seal them at the point of connection to a Sydney Water water main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed plumber. The licensed plumber must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Disused Sewerage Service Sealing

Please do not forget that you must pay to disconnect all disused private sewerage services and seal them at the point of connection to a Sydney Water sewer main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed drainer. The licensed drainer must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

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 subdivision and there may be other fees or requirements. These include:

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

END OF NOTICE

After you have submitted the design to comply with the anticipated requirements Sydney Water will review the information and issue you with a partial design package.

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Appendix B Technical Review Request Response

AQUALAND DEE WHY PTY LTD

6 June 2017

Endeavour Energy Ref: ENL2826

Estate Power Design
PO Box 1872
PENRITH BC NSW 2750

Attention: Brian Jude

Technical Review Request response

ENL2826 – Proposed residential lots, town houses and apartment development located on lot 2, DP 817696 Mackillop Drive, BAULKHAM HILLS

I have received your Technical Review Request, subsequent payment of the Request fee regarding the proposed residential development at the above address and I can confirm that the capacity is available on the Endeavour Energy (Endeavour) network to supply the proposed development.

This Request is to confirm the available capacity and possible connection arrangement for the development which is proposed to include 28 residential lots, 108 townhouses and 270 apartments. In order to provide a response Endeavour has estimated the total ultimate load associated with this development to be in the order of 1.5MVA.

Endeavours 11kV feeder 27199 which originates at Endeavours West Castle Hill zone substation has available capacity to supply the total estimated development load. The feeder borders the proposed development at the far north east corner and will require extension into the proposed development - see the Endeavour network overlay figure 1 below.



Figure 1

It is proposed that the 11kV feeder is to be ringed in and around the proposed development as it would provide main supply and back up supplies may be available via adjacent feeders from Endeavours Bella Vista zone substation.

In addition to the proposed 11kV extension it is anticipated that a number of padmount substations, including associated low voltage and street lighting electrical reticulation in order to supply and service the proposed lots and development.

Project staging and road design within the development may determine the location of substations and interconnection with the existing network including the location of substations on the property at appropriate locations to supply each section.

In order to progress the proposed development, the Developer or their representatives are required to submit an application for Provision of an Electricity Network in a Subdivision. The application form is available on Endeavour Energy's web site.

Following application, the Developer or their representatives must engage the services of a Level 3 Accredited Service Provider to prepare and provide an electrical design for the proposed subdivision to Endeavour in accordance with Endeavours Standards. This activity is customer funded contestable works therefore the Developer will be required to fund these works.

A list of the Accredited Service Providers is available at the NSW Trade and Investment website: <http://www.energy.nsw.gov.au/electricity/network-connections/contestable> or can be obtained via phone 13 77 88.

This advice is provided in response to a Technical Review Request only and does not constitute a formal method of supply or reservation of capacity. An application must be submitted and subsequent designs must be certified or approvals granted before Endeavour will reserve capacity on the network.

Should you have any questions regarding this response to your request for technical review, please contact me.

Yours faithfully,

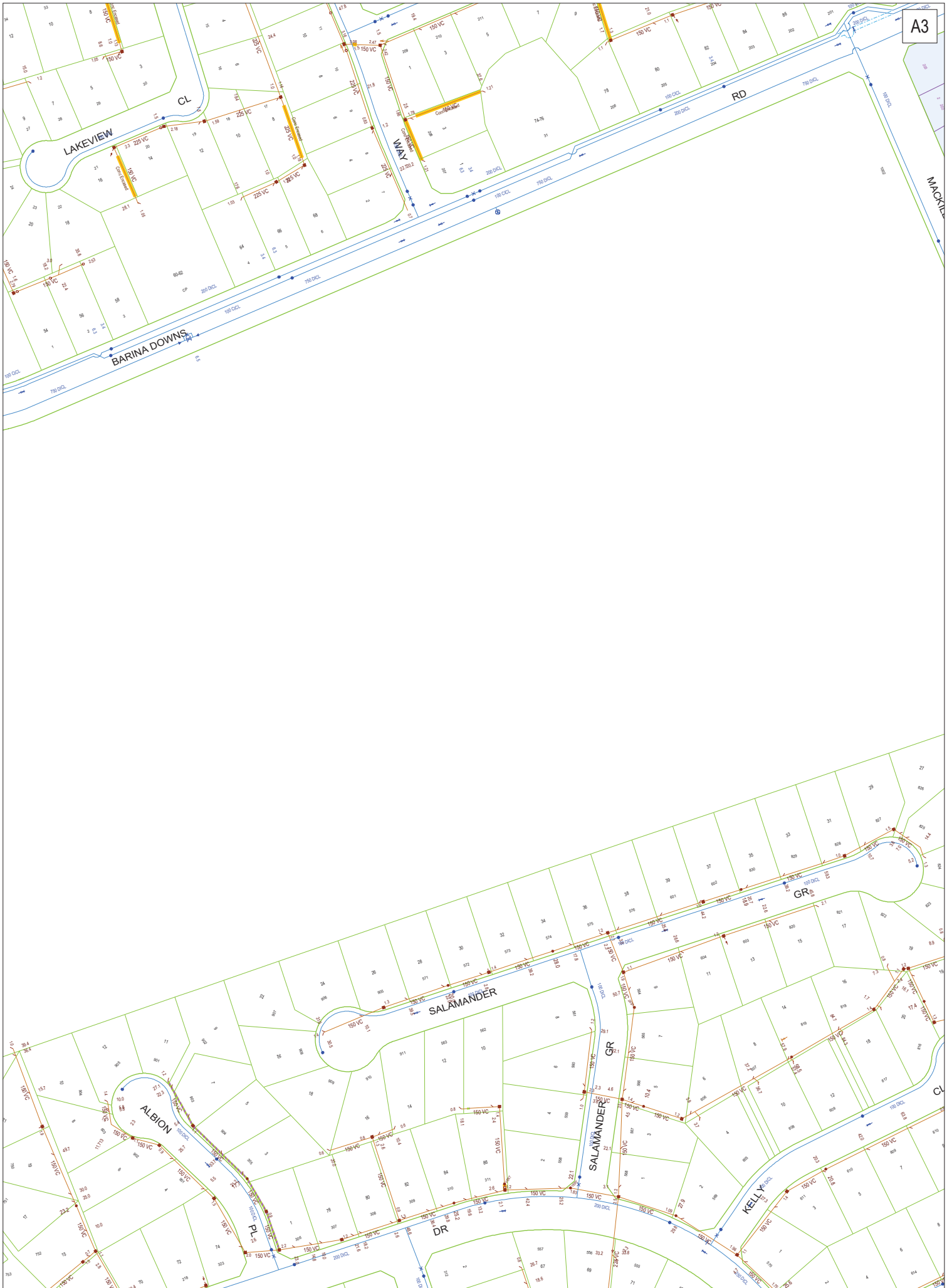


Kevin Nuner
Contestable Project Manager - Strategic
Network Connections
Ph: 9853 7927

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Appendix C Dial Before You Dig Plans

AQUALAND DEE WHY PTY LTD



A3

DBYD Address:
n/a Salamander Grove
Baulkham Hills NSW 2153

DBYD Job No: 12351117
DBYD Sequence No: 61305934

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

Scale: 1:1500
Date of Production: 19/05/2017

Plan 2 of 3
0m 7m 14m 21m 28m



WARNING

- All electrical apparatus shall be regarded as live until proved de-energised. Contact with live electrical apparatus will cause severe injury or death.
- In accordance with the *Electricity Supply Act 1995*, you are obliged to report any damage to Endeavour Energy Assets immediately by calling **131 003**.
- The customer must obtain a new set of plans from Endeavour Energy if work has not been started or completed within twenty (20) working days of the original plan issue date.
- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earth grids may exist and their location **may not** be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Endeavour Energy plans **do not** show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be printed and made available at the worksite where excavation is to be undertaken. Plans must be reviewed and understood by the crew on site prior to commencing excavation.

INFORMATION PROVIDED BY ENDEAVOUR ENERGY

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

DISCLAIMER

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

LEGEND

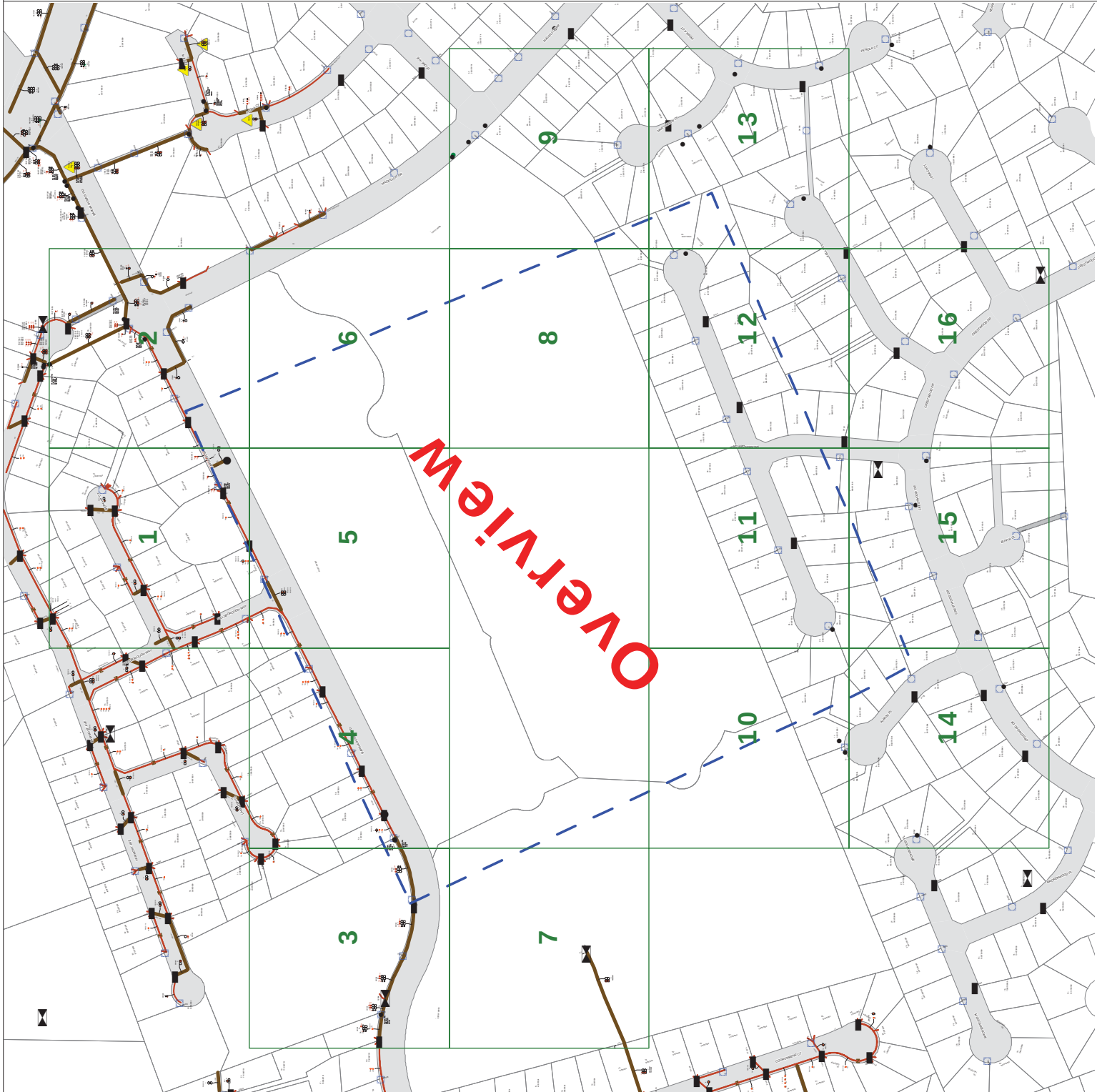
	or		Street light column
	or		Padmount substation
			Overground pillar (O.G. Box)
			Underground pit
			Duct run
			Cable run
			Typical duct section
			Asbestos warning

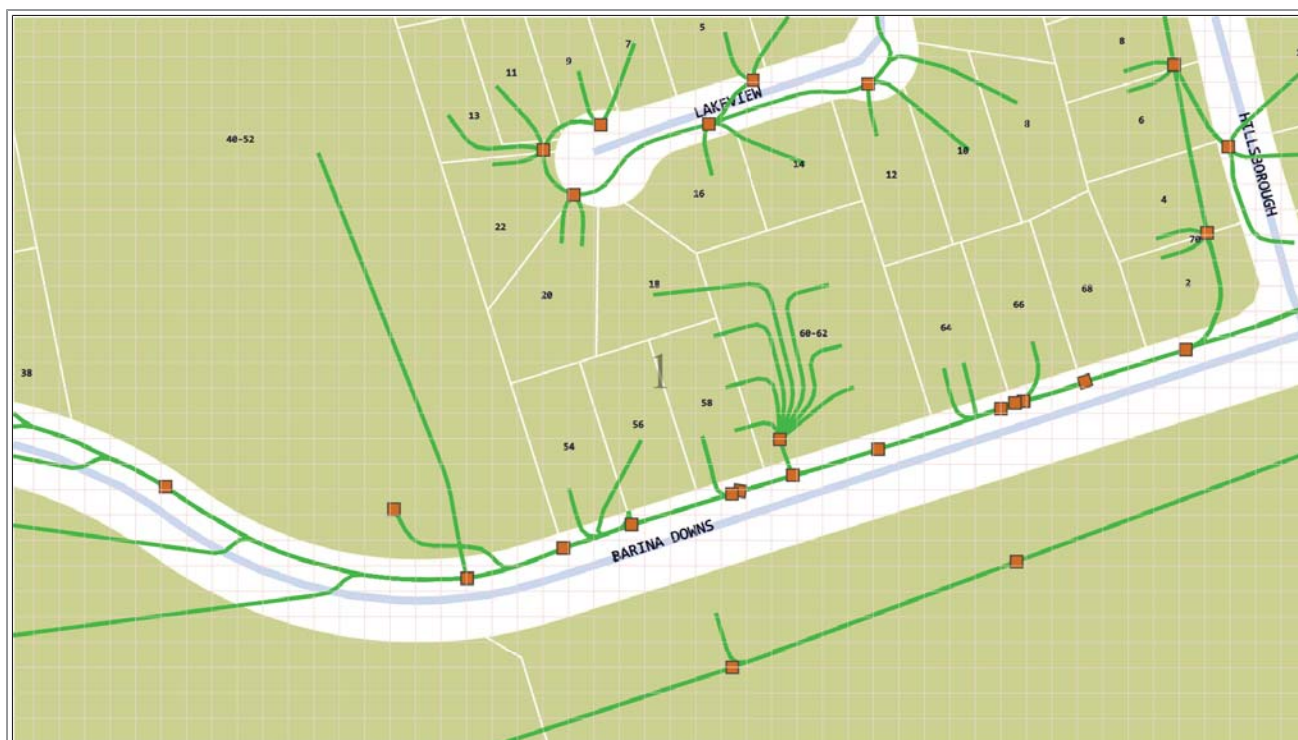


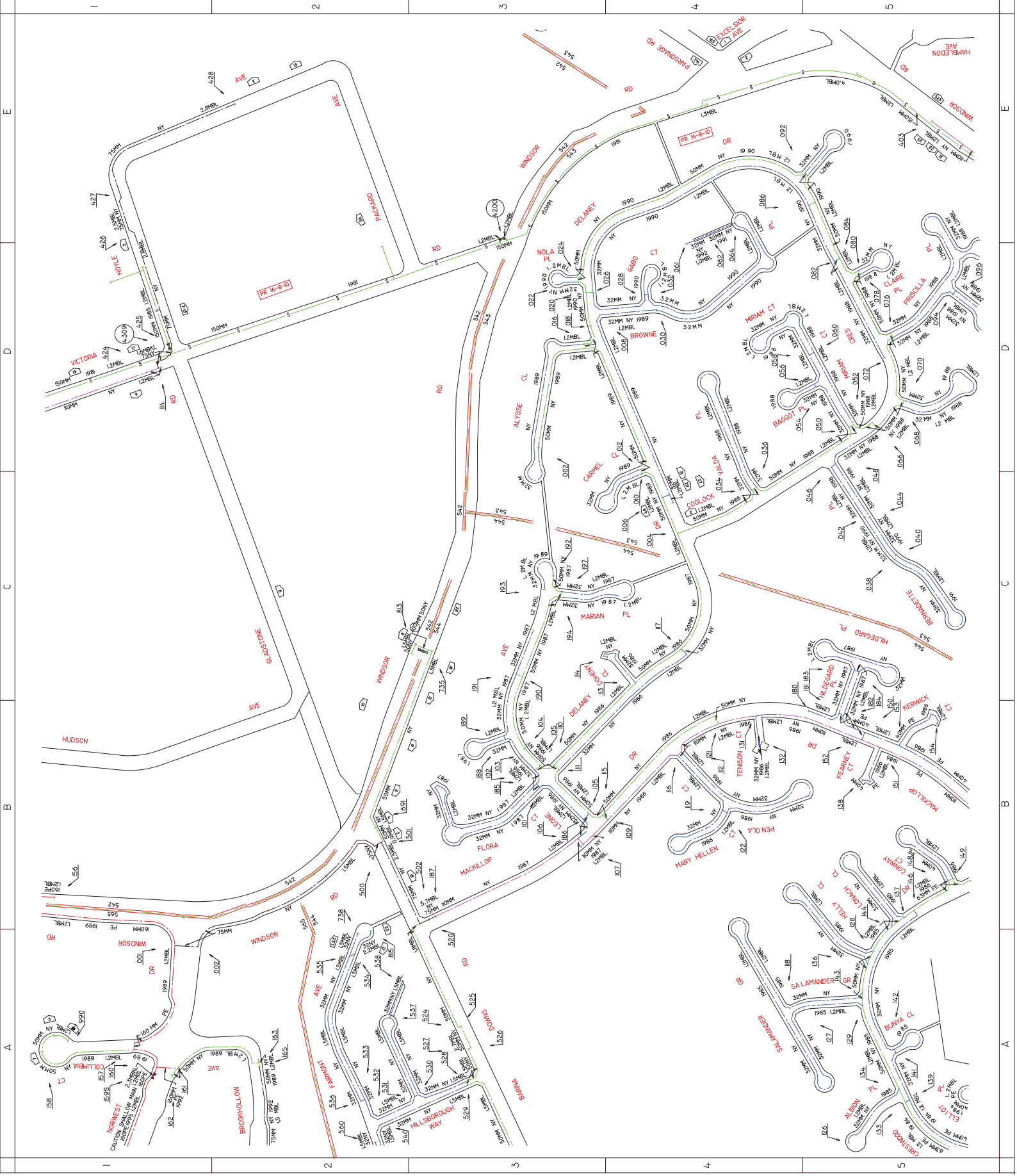
NOT TO SCALE

DBYD Sequence No.: 61305928

Issued Date: 19/05/2017









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