LUCID
CONSULTING AUSTRALIA

BLUE SKY FUNDS - 4-18 DONCASTER AVENUE, KENSINGTON

INFRASTRUCTURE SERVICES ASSESSMENT

PRELIMINARY ISSUE

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PROJECT NO: 15880-008

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1. INTRODUCTION

1.1 OVERVIEW

The Infrastructure Services Assessment Report pertains to the engineering services associated with the new proposed 4 storey student accommodation located at 4-18 Doncaster Avenue, Kensington NSW. 2033.

Figure 1: Proposed Site Location (Google Maps)

1.2 BUILDING DESCRIPTION

The project includes the construction of a new student accommodation building in Kensington NSW to accommodate up to 276 beds. The new development will provide:

- New individual and cluster type accommodation units.
- Core facilities including staff and administration facilities.
- Communal areas.
- Kitchen and dining area.
- Basement carpark.

The effective height of the building is under 25 meters, and it is understood that it falls within the following National Construction Code (NCC) classifications:

- Residential Building – Residential Part of a School - Class 3.

Figure 2: New Proposed Arrangement

1.3 SCOPE OF REPORT

This report has been developed to provide an understanding of the existing site infrastructure, overall requirements, risks and possible impact on construction and operation of the building, associated with the site utilities for the project, as follows: -

- Confirmation of the existing infrastructure on site.
- Identify potential risks on construction and operation of the new proposed building and provide advice to the project team for managing risk.
- Determine the existing capacity and any augmentation requirements for the provision of utilities.
- Confirm Staging of infrastructure and additional Authorities licence/approval requirements.

1.4 BASIS OF REPORT

This report has been prepared based on the following sources of information:

- Architectural drawings - 181207_2309_4_Doncaster Ave_Drawings – dated 07.12.2018.
- Dial Before You Dig documentation – Sydney Water Drawings MAP_7674546015150987 dated 22/10/2018.
- Dial Before You Dig documentation – Jemena Gas Drawings Jemena DBYD Response STD 15150987 76745459_C dated 22/10/2018.
- Sydney Water Statement of Available Pressure and Flow no. 524956 dated 16/11/2018.
- Guidelines for building over or adjacent to Sydney Water assets policy.
- Sydney Water asset stormwater asset deviation case no. 142158SW.
- Randwick City Council – Rainwater Tanks Guidelines - Folder No: F2005/00282 xr F2004/06495.
- Dial Before You Dig documentation – Ausgrid drawings GMLA0 Distribution – 76745456, Transmission – 76745456
- Dial Before You Dig documentation – NBN Co Indicative Plans dated 22/10/18

- Dial Before you Dig documentation – Telstra drawings 76745455 and 76745457

1.5 SCHEDULE OF AUTHORITIES

The following presents a schedule of the authorities applicable to this site:

Authority	Name
Electrical	Ausgrid
Fibre Telecommunications	NBN Co
Water/Sewer/Stormwater	Sydney Water
Gas	Jemena Gas
Fire Services	Fire and Rescue New South Wales (FRNSW)
Council	Randwick City Council

Table 1: Schedule of Authorities

1.6 LIMITATIONS

The accuracy and extent of information included in this report is subject to the following:

- Accuracy and availability of infrastructure as build documentation (DBYD).
- Current architectural drawings as of the date of issue of this report.
- Accuracy of the Sydney Water available pressure and flow statement.
- This report do not include the assessment of below ground stormwater management system.

2. SCOPE OF WORKS

2.1 SCOPE OVERVIEW

This report details site utility connections and statutory requirements for the new proposed development, inclusive of the treatment of existing infrastructure assets and easements within the property.

The following utilities are included within the report:

ELECTRICAL SERVICES

- Ausgrid electricity connection
- Telecommunications Optical Fibre connection (NBN Co.).

HYDRAULIC SERVICES

- Domestic cold water connection.
- Sewer drainage connection.
- Trade Waste drainage.
- Rainwater harvesting and reuse.
- Stormwater main diversion.

FIRE SERVICES

- Fire services water connection.
- Fire services pump station.
- Fire brigade booster arrangement.

2.2 EXISTING UTILITY ARRANGEMENT

The following utilities are located within or in the vicinity of proposed development area. Utility infrastructure will service the development and/or will require treatment to Local Authorities requirements:

Existing Electrical Infrastructure

- **Low Voltage** – Multiple existing low voltage overhead connections supply the existing residential properties on the block, which appear to be a combination of single and three phase. There is no indication on the plans provided as to the size of these, however they are anticipated to be standard domestic connections, which are limited to 80A single phase. Existing underground 400/230V assets run along the front of the property boundary.
- **High Voltage** – Existing overhead high voltage assets in street, which are above and below ground. Services range between 5-22kV. No assets appear to be obstructing the proposed development.

Existing Communications Infrastructure

- **Copper** – Individual underground connections are provided to each existing residential lot via Telstra, which comprise of 2 pair connections to each lot.

- **NBN Co** - NBN Co services are currently located underground along Doncaster Avenue.

- **Optus** - Optus services are currently located underground along Doncaster Avenue.

Existing Hydraulics Infrastructure

- **Sewer Main** - Existing Sydney Water Ø225mm CI (Cast Iron) sewer drainage mains and associated maintenance manholes running within the adjacent property, along the eastern boundary from middle to South side of the site, having several branches for property connection, as indicated on the attached Sydney Water Dial Before You Dig (DBYD) drawings.

- **Stormwater Main #1** - Existing Sydney Water 1676x1676mm Concrete stormwater drainage mains crossing the property from East to West within Lot 4, as indicated on the attached Sydney Water Dial Before You Dig (DBYD) drawings.

- **Stormwater Main #2** - Existing Sydney Water Ø300mm Concrete stormwater drainage mains crossing the property from North to South-West, within Lot 4, as indicated on the attached Sydney Water Dial Before You Dig (DBYD) drawings.

- **Water Main #1** – Existing Sydney Water Ø150mm oPVC (Oriented Polyvinylchloride) potable cold water mains located on Doncaster Avenue, available for potable cold water connection, as indicated on the attached Dial Before You Dig (DBYD) drawings.

- **Water Main #2** – Existing Sydney Water (unknown size) disconnected potable cold water mains located on Doncaster Avenue, not available for potable cold water and fire services water connection, as indicated on the attached Dial Before You Dig (DBYD) drawings.

- **Water Main #3 –** Existing Ø450mm DICL (Ductile Iron Cement Lined) potable cold water trunk mains located on Doncaster Avenue, not available for potable cold water and fire water connection, as indicated on the attached Sydney Water Dial Before You Dig (DBYD) drawings.

- **Natural Gas Main -** Existing Jemena Gas 6NB Ø110mm NY (Nylon Inserted) 210kPa natural gas main located on Doncaster Avenue, available for natural gas connection, as indicated on the attached Dial Before You Dig (DBYD) drawings.

Fire Services Infrastructure

- **Water Main #1** – Existing Sydney Water Ø150mm oPVC (Oriented Polyvinylchloride) potable cold water mains located on Doncaster Avenue, available for fire services water connection, as indicated on the attached Dial Before You Dig (DBYD) drawings.

2.3 EXISTING UTILITIES CONSTRAINTS

Based on the review of existing documentation, as indicated within Section 1.4, we have identified the following local authorities conditions/requirements which need to be considered by the project team and assist in the development approval application stage:

Electrical Services Infrastructure

- **Constraint #1** – Achieving fire segregation and clearance requirement of 3 meters from the transformer kiosk housing to the building which requires the use of fire rated and blast proof building materials/barrier in accordance with Ausgrid requirements. Blast proof construction to be (120/120/120 FRL and 2kPa Blast proof as a minimum).

- **Constraint #2** – Final HV reticulation and connection points associated with installation of a new 1000kVA L-type kiosk substation is pending Ausgrid confirmation.

Communications Services Infrastructure

No existing communications infrastructure constraints have been identified. Existing assets would require to be abolished to allow for new connections associated with the proposed development.

Hydraulic Services Infrastructure

- **Constraint #1** – Preparation and submission of Out of Scope Building Plan Approval with Sydney Water, due to the new buildings proposed to be located above existing Sydney Water stormwater assets, as indicated on Hayball drawing no 2309-TP01.02 Rev2. The engagement of a Water Services Coordinator is required to liaise with Sydney Water and receive all necessary approvals.

- **Constraint #2** – Existing 1676x1676mm concrete stormwater main (Stormwater Main #1) shall be diverted to suit Sydney Water requirement when building adjacent to Authority's assets. A catchment plan and flow management plan will be required should the deviation be required. The engagement of a Water Services Coordinator is required to liaise with Sydney Water and carry out the design and project management of the stormwater main diversion.

- **Constraint #3** – Existing Ø300mm concrete stormwater main (Stormwater Main #2) shall be adjusted/diverted in conjunction with the deviation of Stormwater Main #1, to suit Sydney Water requirement when building adjacent to Authority's assets. A catchment plan and flow management plan will be required should the deviation be required. The engagement of a Water Services Coordinator is required to liaise with Sydney Water and carry out the design and project management of the stormwater main diversion.

- **Constraint #4** – Existing property drainage junctions within the existing Ø225mm Sewer Main, including associated easements, shall be confirmed and located as part of the Section 73 Compliance Certificate, and adjusted to suite new proposed sewer drainage design. The engagement of a Water Services Coordinator is required to liaise with Sydney Water and prepare all necessary documentation to receive the required approvals, including services protection report.

- **Constraint #5** – As advised through the Randwick City Council policy statement F2005/00282 xr F2004/06495, it is a requirement that all new developments (including residential, commercial, and industrial) to install a rainwater tank for the harvesting and re-use of roof rainwater. Hence, it might be required by the City Council to provide a roof rainwater harvesting and reuse system for the project.

- **Constraint #06 -** The waste water discharged from the laundry will consist a high flow of hot water exceeding the maximum temperature of 38°C acceptable by Sydney Water. The waste water from laundry requires treatment prior the discharge into the street sewer mains, to protect the environment and Sydney Water assets. Trade Waste pre-treatment strategy is subject to approval from Sydney Water Trade Waste department.

Fire Services Infrastructure

- **Constraint #07 -** Existing Sydney Water Ø150mm oPVC (Oriented Polyvinylchloride) potable cold water town mains located on Doncaster Avenue, total system operation flows are achievable, however insufficient pressures require the provision of on-site motor driven pump sets (refer **Appendix A – Sydney Water Statement of Available Flow and Pressure**).

2.4 INFRASTRUCTURE SUPPLY CAPACITY

Based on the existing documentation, as indicated within Section 1.4, we have determined the preliminary infrastructure capacity which need to be considered by the project team and assist in development approval application stage:

Electrical Services

The estimated electrical capacity for the site is based on the number of living units, and area of the facilities required to service the development, as summarised in the Lucid Engineering Services Return Brief LCE15880-003.

The allowance currently being made for the electricity capacity to site is 800kVA (1,100 Amps).

The project electrical demand requires an on-site dedicated substation with 1000kVA supply capacity utilising ring main configuration.

Communications Services

The development is within an NBN area currently under build, with services to be available in the street. As a result, the site will qualify for an NBN connection, with pathways to be provided by the Developer and NBN to provide the associated services.

Hydraulic Services

a) Water Services

The estimated water connection for the site has been based on the number of sanitary fixtures as indicated on following architectural drawings: -

- 2309 – TP02.02 – Rev. 6 – GROUND FLOOR PLAN dated 07/12/2018.
- 2309 – TP02.03 - Rev. 5 – LEVEL 1 PLAN dated 07/12/2018.
- 2309 – TP02.04 – Rev. 6 – LEVEL 2 PLAN dated 07/12/2018.

It is estimated that the potable cold water probable simultaneous demand is approx. 9.5 l/s, in accordance with AS3500.1, subject to final sanitary fixtures arrangement, confirmation of water demand associated with any onsite unknown equipment and dripper irrigation demand.

According to the information provided in the Sydney Water Statement of Available Pressure and Flow, it appears there is sufficient capacity for the potable cold water supply to the new proposed buildings, having an available flow of 10.0 l/s @ 360kPa.

b) Sewer Drainage

The estimated domestic wastewater discharge from the site has been based on the number of sanitary fixtures as indicated on the architectural drawings as listed under section 2.4 (a).

The total estimated sewer waste to be discharged into the Authority's main is 2490 Fixture Units, subject to confirmation of discharge from any trade waste pre-treatment equipment or other unknown discharge points.

Based on the Sydney Water DBYD drawings, the existing Ø225mm, described under Section 2.2, appears to be capable for the connection and discharge of sewer waste from the property. Connection works will involve the insertion of minimum two new Ø150mm junctions into the existing Sewer Drain.

c) Natural Gas

The estimated natural gas demand from the site has been based on the number of gas stoves as indicated on the architectural drawings as listed under section 2.4 (a), and the natural gas required for the hot water generation.

It is estimated that the demand for natural gas connection to street main is approx. 1800 MJ/h @ 2.75kPa(undiversified), subject to final gas appliances number and sanitary fixtures arrangement.

Based on the Jemena Gas DBYD drawings, the existing Ø110mm @ 210kPa gas main, described under Section 2.2, appears to have sufficient capacity for the natural gas supply to the new proposed buildings, with and estimated required demand of 1800MJ/h @ 2.75kPa.

Fire Services

Sydney Water flow and pressure test report indicates there is sufficient flow capacity to accommodate fire hydrants, fire hose reel and automatic fire sprinklers arrangements / window drenching fire sprinklers for the proposed works. As such, no on-site fire water storage (tanks) are required, however due to insufficient pressures from the existing Sydney Water town's main infrastructure, on-site motor driven pump sets are required (refer **Appendix B – Sydney Water Statement of Available Flow and Pressure**).

The estimated fire hydrant system requirements are as follows:

- 2 x fire hydrants at 10 litres per second @ 250kPa for attack hydrants unassisted by FRNSW appliance or on-site motor driven pump set.
- 2 x fire hydrants at 5 L/s @ 700kPa for attack hydrants assisted on-site motor driven pump set.
- 2 x fire hydrants at 10 litres per second @ 700kPa for attack hydrants assisted by FRNSW appliance.

The estimated fire sprinkler system requirements are as follows:

- OH2 Hazard classification, 12L/s (936L/min – including in balance factor) required. – 1 hour operation required.

The estimated window drencher system requirements are as follows:

- Maximum 6 sprinklers in one area, 13 L/s (780 L/min – including in balance factor) required. – 2 hour operation required.

Total system flow requirements is 45L/s and can be achieved from existing Sydney Water town mains (refer **Appendix B – Sydney Water Statement of Available Flow and Pressure**).

2.5 CONNECTION APPLICATION PROCESS

2.5.1 AUTHORITIES

Infrastructure services connections application are to be carried out as follows:

Ausgrid
The process for connecting to Ausgrid infrastructure involves formally issuing a preliminary connection application with EMD calculation for loads in accordance with AS 3000:2018. Ausgrid is to consider if the project is to be completed under contestable works which requires engagement of an ASP Level 3 designer for the completion of associated design documentation.

Upon submission of the connection application dated 30/10/2018, Ausgrid has advised that the project is classified as contestable and Lucid is undertaking ASP Level 3 design documentation and complete the certification process with Ausgrid.

Lucid is proposing designing the 1000kVA dedicated kiosk substation at the front of the development utilising 5300mm x 33000 easement. All required High-Voltage cabling is to reticulate underground in conduits at 650mm depth.

Construction work is to be completed by an ASP (Accredited Service Provider) as per certified design completed by Lucid.

Please refer to Appendix A for more details.

NBN

Preliminary advice can be lodged to NBN via the NBN New Developments Portal, to provide upfront notification and programming details.

NBN will request that a formal application be lodged 3 months prior to commencement of construction, which they will respond in 2-4 weeks with a formal offer. On acceptance they would prepare a Master Development Agreement which is a contract between the Developer and NBN.

Sydney Water

Stage 1
Sydney Water Tap In assessment online. Upload files of the proposed structures into the Sydney Water Tap In assessment program. Sydney Water will either approve and no further work required or you will be referred to see a Sydney Water Coordinator for further assessment and undertaking of the stages below.

Stage 2
A Service Protection Report (SPR) will need to be prepared to prepare a sufficient information to allow the architect and structural engineer to make any necessary adjustments to their plans ready for the building plan approval process. The SPR will need to include detail information on the location of Sydney Water's assets in accordance with Sydney Water's requirements.

The location and size of Sydney Water's assets will need to be physically confirmed on site and surveyed by a registered surveyor in a number of locations.

The excavation of Sydney Water assets where required, will need to be undertaken by a Sydney Water accredited locator. Sydney Water may also request a dilapidation / CCTV survey be undertaken prior to works being undertaken on site.

Stage 3
Sydney Water assessment charge for "Out of Scope" - this is required when the Sydney Water asset is a Sewer larger than 300mm, Stormwater infrastructure within 10m of property boundary, Sydney Water easement on the property, excavations below 3m, retaining walls over 1m, dewatering.

Lead time approximate 6-8 weeks for Sydney Water to review the project and respond with requirements. Sydney Water may request additional plans, sections, reports, CCTV to be undertaken prior to resubmission / approval.

Stage 4
Building plan approval - final architectural and structural plans to be issued to Sydney Water to provide "Out of Scope" approval. A Subject to Requirements letter needs to accompany the stamped plans outlining any provisions needed to protect the Sydney Water asset affected by the proposed building works.

Stage 5
Stormwater diversion, concrete encasement inspection and issue of certificate including junction insertion certificate if required this would only necessary if the proposed building is directly over the sewer or closer than 600mm - this will be noted in the subject to requirements letter. Please note that if the concrete encasement is greater than 25m it will require a Major Works design and process. This would be clarified once the service protection report has been completed and the extent of the work identified.

Pier validation inspection and issue certificate if required - this is required where the proposed building works are located in the Zone of Influence of the Sydney Water asset - this will be noted in the subject to requirements letter.
Submission of final package to Sydney Water upon completion of all conditions.

Sewer drainage connection - Application by Water Servicing Coordinator through Section 73 Certificate, during design phase.

The timing of the application and issue of Section 73 Compliance Certificate is subject to review by Sydney Water with a response time of 4-6 weeks depending on their work load.

Domestic cold water connection – Application by Head Contractor/Builder prior to start of construction stage, through online Tap-in portal.

Fire Services water connection – Application by Head Contractor/Builder prior to start of construction stage, through online Tap-in portal.
Please refer to Appendix A for more details.

Jemena Gas

Natural Gas connection - Application by Head Contractor/Builder prior to start of construction stage, through online gas connection portal.
Please refer to Appendix A for more details.

2.5.2 COST

Ausgrid
The cost of this application process may vary depending on the location of the proposed substation and time allocation for Ausgrid to assess ASP Level 3 Design documentation and provide commentary upon submission for certification purposes. Preliminary assessment form Ausgrid is indicating the fee of $5531.32 is required to be finalised as part of the 'Contract for Design Related Services'. The final cost will be based on the design provided, required transformer and any upgrades or modifications to existing infrastructure which is to be confirmed by Ausgrid once the 'Proposed Design Scope' is submitted and Ausgrid releases 'Design Information Package'.

Please refer to Appendix A for more details.

NBN Co

The cost for NBN services would be in the order of $4,000.00 + GST. As the services are in the street there will be no backhaul charge, and the only charges applicable would be the final connection of the NTD's.

Sydney Water
Please refer to Appendix A for more details.

Jemena Gas
Please refer to Appendix A for more details.

2.5.3 LEAD TIME

Ausgrid
Based on past experience, lead time for formal offers range from four to twelve weeks. A potential cause for delay to this application process may be due to insufficient capacity of the existing overhead electrical

infrastructure, leading to increased lead times and costs. Lead time can also vary due to constraints listed under section 2.3.

Please refer to Appendix A for more details.

NBN Co

NBN will develop a programme for connection of services based on the project programme.

Sydney Water
Please refer to Appendix A for more details.

Jemena Gas
Please refer to Appendix A for more details.

3. APPENDICIES

APPENDIX A – SITE SERVICES MATRIX

Project:	BLUE SKY FUNDS - 4 -18 DONCASTER AVENUE, KENSINGTON
Project No:	15880
Engineer:	AM
Revision	P1
Spreadsheet:	Site Services
Date:	18.12.2018

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DRAFT

Site Services Connections

Service	Authority/Retailer	Application/Liaison for Authority Assessment:	Application fee to be paid by:	Application Payment Due:	Final Application for connection:	Connection Fee to be paid by:	Connection Est. value of fees:	Payment Due:	Connection to street infrastructure and extension onto project site:	Connection of service on project site:	Leadtime from time of payment:	Comments:
Communications	NBN Co.	Hydraulic Consultant	Blue Sky Fund	TBC	Electrical Contractor	Electrical Contractor	TBC by Authority	Prior to Start of Construction	NBN Co.	NBN Co.	Concurrently with construction programme	Pathways will be provided by Developer.
Power	Ausgrid	Hydraulic Consultant	Blue Sky Fund	TBC	ASP Contractor	ASP Contractor	TBC by Authority	Prior to Start of Construction	ASP Contractor	ASP Contractor	4-12 weeks	ASP Contractor to utilise existing Ausgrid infrastructure for installtion of kiosk substation to provide supply to site
Fire water	Sydney Water	Water Servicing Coordinator	Sub-contractor/ Blue Sky funds	At design submission	Fire Services/Hydraulic Contractor	Fire Services/Hydraulic sub-contractor	TBC by Authority	Prior to start of construction phase	Sydney Water approved contractor	Fire Services/Hydraulic sub-contractor	4 weeks	Fire Services to utilise Ø150 mm oPVC (Oriented Ployvinvylchloride connection) street main connection.
Fire monitoring	Fire and Rescue NSW	Sub-contractor/Blue Sky Funds	Sub-contractor/ Blue Sky Funds	TBC	Fire Contractor	Sub-contractor/Blue Sky Funds	TBC by Authority	Upon Completion of Fire Works	NA	Fire Services Contractor	4 weeks	Direct brigade alarm and monitoring with Fire and Rescue NSW.
Trade Waste	Sydney Water	Hydraulic Consultant	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4 weeks	Connection into site sewer drainage system, Ø150mm.
Sewer & Stormwater Diversion	Sydney Water	Water Servicing Coordinator	Sub-contractor/ Blue Sky funds	At design submission	Hydraulic sub-contractor	Hydraulic sub-contractor	TBC by Authority	Prior to start of construction phase	Sydney Water approved contractor	Hydraulic sub-contractor	4-6 weeks if out of scope	#1 - Connection into Eastern Ø225mm existing Authority sewer mains, connection size Ø150mm. #2 - Connection into Eastern Ø225mm existing Authority sewer mains, connection size Ø150mm.
Water	Sydney Water	Water Servicing Coordinator	Sub-contractor/ Blue Sky funds	At design submission	Hydraulic Contractor	Hydraulic sub-contractor	TBC by Authority	Prior to start of construction phase	Sydney Water approved contractor	Hydraulic sub-contractor	4 weeks	1 x Water Meter to serve whole building, connect into Ø150mm water main on Doncaster Avenue.
Building Plan Assessment	Sydney Water	Water Servicing Coordinator	Sub-contractor/ Blue Sky funds	At design submission	N/A	N/A	N/A	N/A	N/A	N/A	6-8 week depending of SW workload	Subject to engagement of a Water Servicing Coordinator
Services Protection Report	Sydney Water	Water Servicing Coordinator	Sub-contractor/ Blue Sky funds	Once Final development plans are available	N/A	N/A	N/A	N/A	N/A	N/A	1 week	Subject to engagement of a Water Servicing Coordinator
Section 73 Compliance Certificate	Sydney Water	Water Servicing Coordinator	Sub-contractor/ Blue Sky funds	at DA submission	N/A	N/A	N/A	N/A	N/A	N/A	4-6 weeks	Subject to engagement of a Water Servicing Coordinator
Natural Gas	Jemena Gas	Sub-contractor	Sub-contractor/ Blue Sky funds	prior to Construction	Hydraulic sub-contractor	Hydraulic sub-contractor	TBC by Authority	Prior to start of construction phase	Jemena Gas approved contractor	Hydraulic sub-contractor	4-6 weeks	1 x Gas Meter to serve whole building, connect into Ø110mm gas main on Doncaster Avenue.

APPENDIX B – SYDNEY WATER FLOW AND PRESSURE TEST

Statement of Available Pressure and Flow

Sydney WATER

Zarah Copeland
12-16 Chippen St
Chippendale, 2008

Attention: Zarah Copeland Date: 16/11/2018

Pressure & Flow Application Number: 524956
Your Pressure Inquiry Dated: 2018-09-14
Property Address: 4 Doncaster Ave, Kensington 2033

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Doncaster Avenue	Side of Street: West
Distance & Direction from Nearest Cross Street	30 metres South from Abbotford Street
Approximate Ground Level (AHD):	30 metres
Nominal Size of Water Main (DN):	150 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	55 metre head
Minimum Pressure	33 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	33
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5	37
	10	36
	15	36
	20	36
	26	36
	30	36
	40	35
	50	34
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	5	33
	10	32
	15	32
	20	32
	26	31
	30	31
	40	31
	50	30
Maximum Permissible Flow	67	28

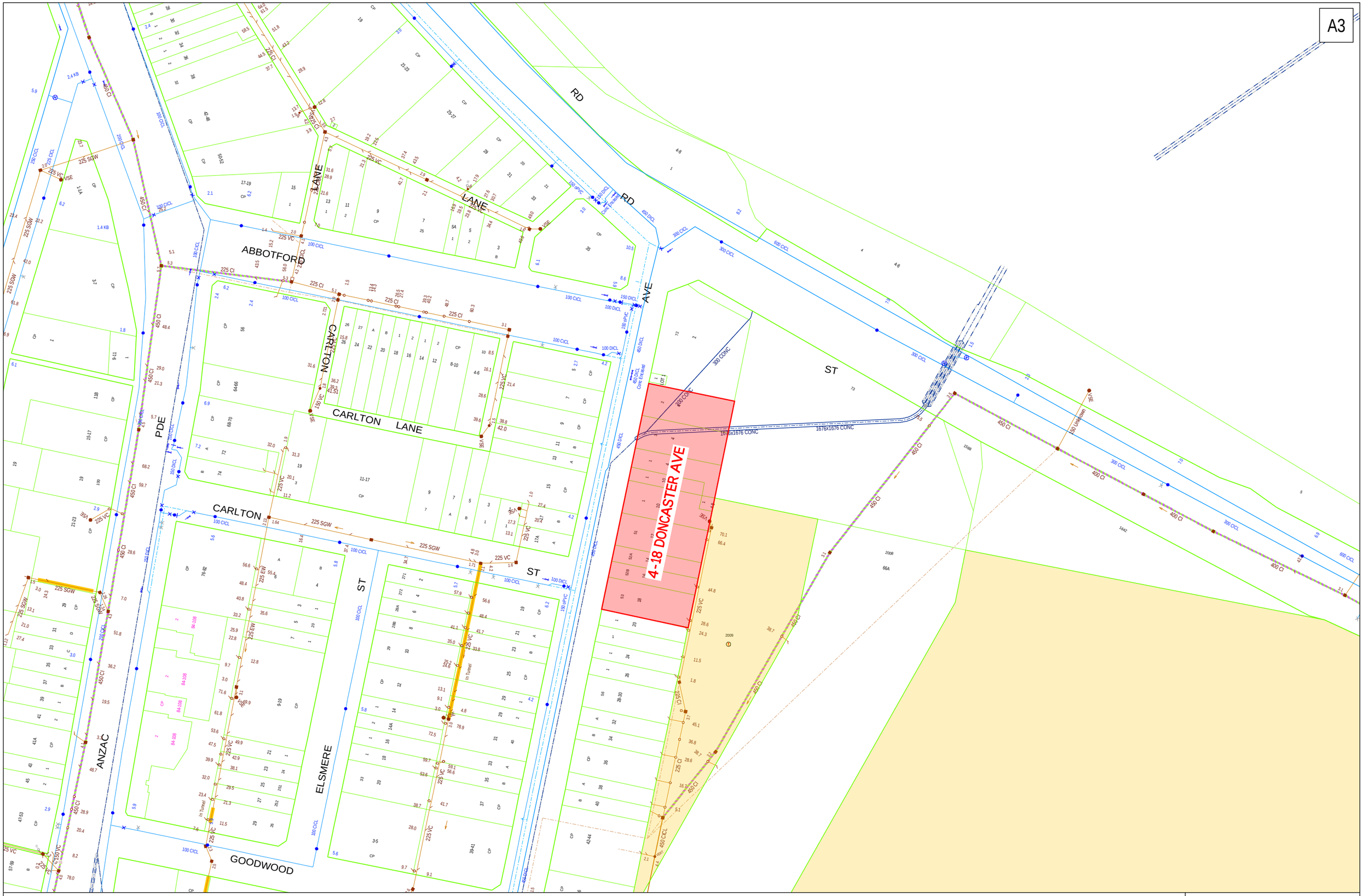
(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :

swtapin@sydneywater.com.au

APPENDIX C – SYDNEY WATER DIAL BEFORE YOU DIG DRAWINGS

A3



DBYD Address:
4 Doncaster Ave
Kensington NSW 2033

DBYD Job No: 15150987

DBYD Sequence No: 76745460

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SYDNEY WATER CORPORATION

Scale: 1:1500

Date of Production: 22/10/2018

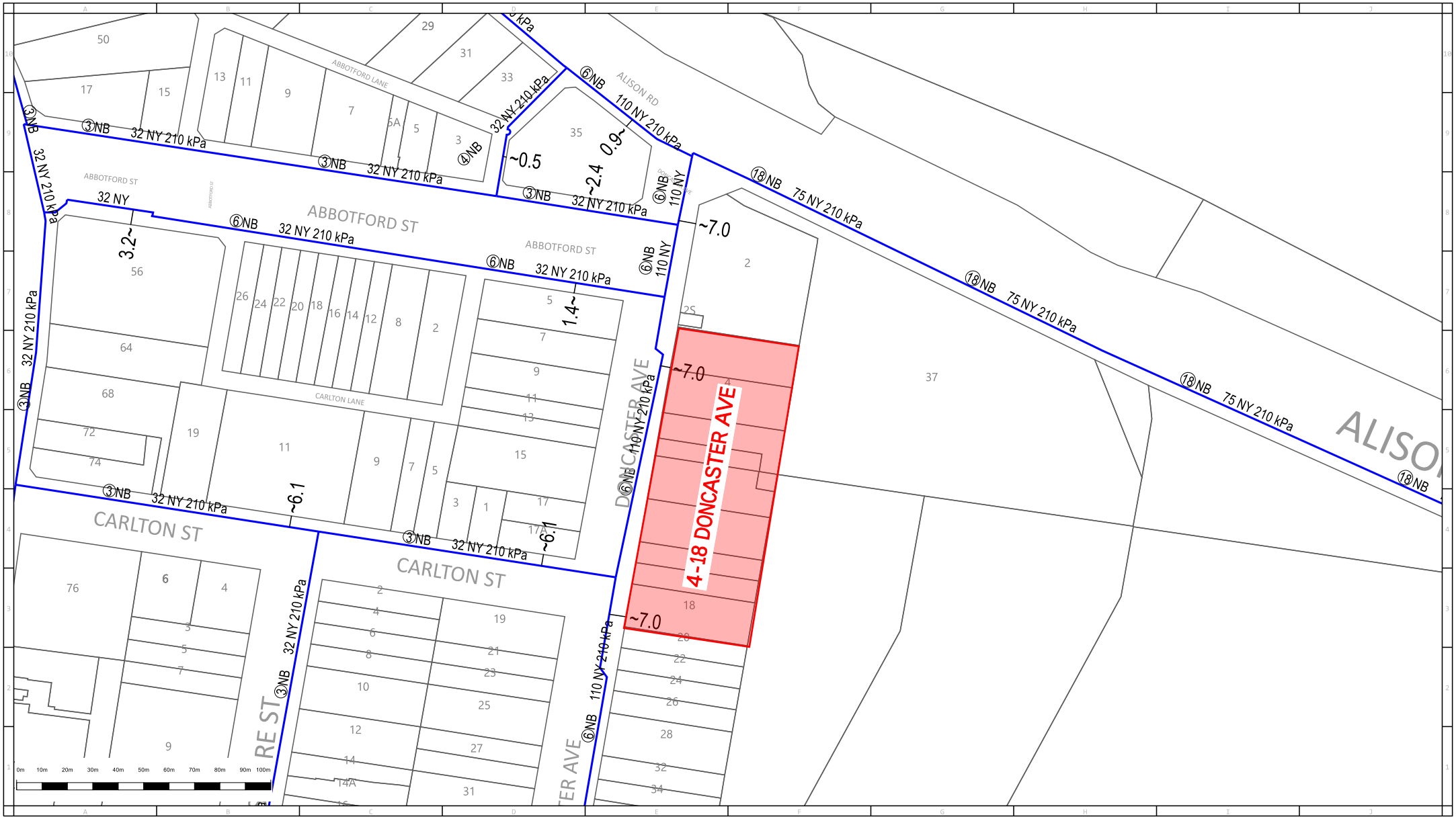
Plan 1 of 1

N

0m 9m 18m 27m 36m

APPENDIX D – JEMENA GAS DIAL BEFORE YOU DIG DRAWINGS

DBYD Authority: Jemena Gas Networks (NSW) **DBYD Location:** 4 Doncaster Ave Kensington NSW, 2033



Jemena
ABN 87 003 004 322

Main	In Service	Proposed
Unknown Pressure		
Distribution - 2 kPa		
Distribution - 7 kPa		
Distribution - 30 kPa		
Distribution - 100 kPa		

Main	In Service	Proposed
Distribution - 210 kPa		
Distribution - 300 kPa		
Distribution - 400 kPa		

High Pressure Main & Pipeline	In Service	Proposed
Secondary - 1050 kPa		
Secondary Service		
Primary - 3500 kPa		
JGN Trunk - 7000 kPa		
Transmission		

Fittings, Valves & Regulators: Siphon; Valve; Distance in metres of Main from Boundary Line ~ 1.5; MBK = Metres Back of Kerb; MFL = Metres from Fence Line; Regulator Set; Regulator Station; Automatic Line Break Valve

N W E S

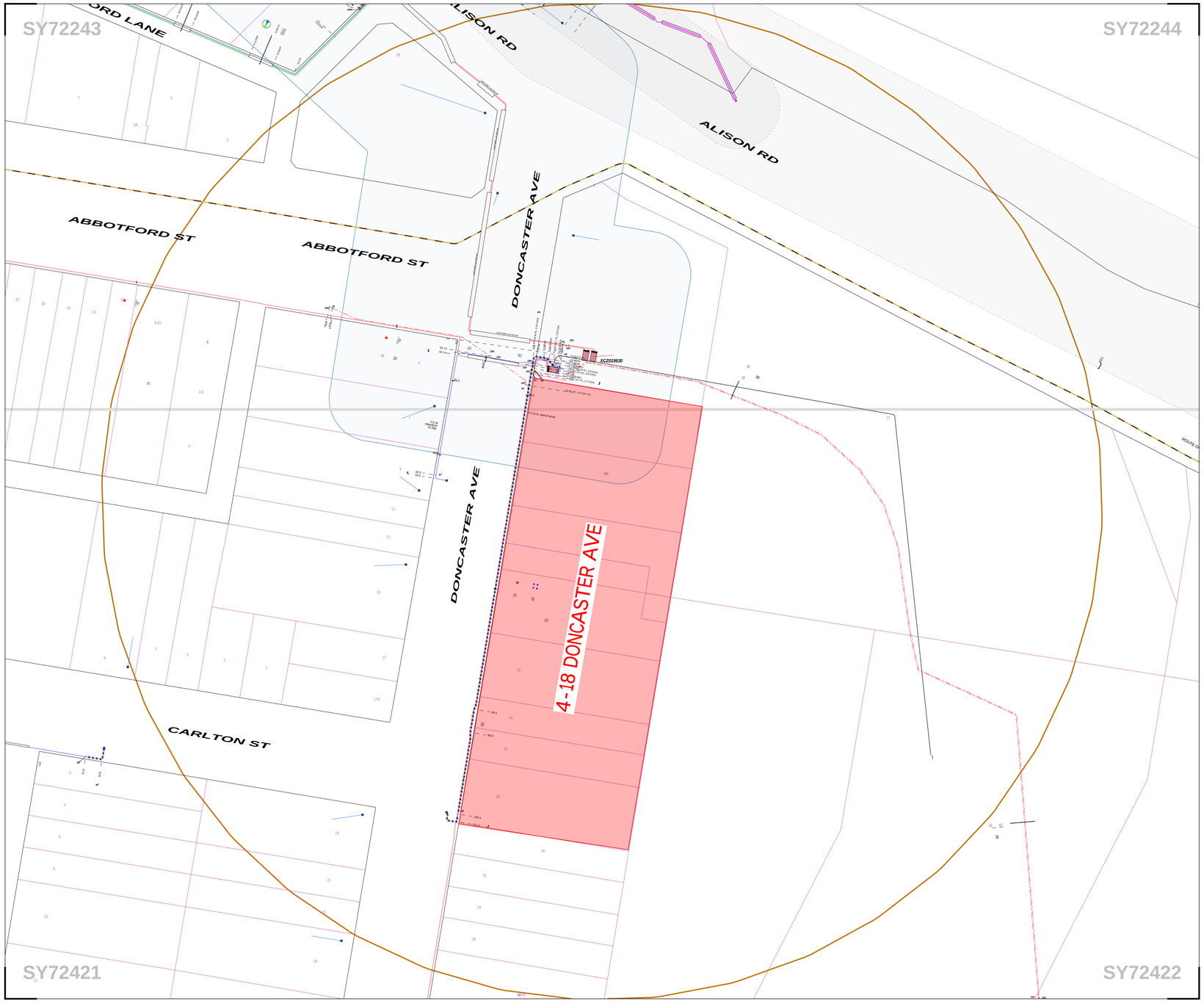
Scale: 1:2000

Issue Date: 22/10/2018
DBYD Seq No: 76745459
DBYD Job No: 15150987

WARNING: This is a representation of Jemena Gas Networks underground assets only and may not indicate all assets in the area. It must not be used for the purpose of exact asset location in order to undertake any type of excavation. This plan is diagramatic only, and distances scaled from this plan may not be accurate. Please read all conditions and information on the attached information sheet. This extract is subject to those conditions. The information contained on this plan is only valid for 28 days from the date of issue.

APPENDIX E – AUSGRID DIAL BEFORE YOU DIG DRAWINGS

SY722 - BL1	SY722 - BV1
0.6-0.8 --- 0.5-0.7 Ref: C6	1.0 / 0.7 0.5 / 0.6 Ref: C6
SY722 - BW1	**SY724 - AD1**
4x100 FC NA / 1.1-1.2 Ref: C6	0.6-0.8 --- 0.5-0.7 Ref: C5



JOINT DETAIL REPORT

No....	Ht-Pg.....	PSCx/.....	Joint Location.....
Map:	SY722		
16	259-132	2.360.76	30.6 W OF DONCASTER AVE WBL
24	1651-63	1.090.51	7.7 S OF N SIDE OF CP
39	304-22	99.990.48	11.N OF KIOSK & 0.3 W OF KIOSK EBL
90	819-49	66.6766.67	NA
91	819-49	/0.76	2.0 S OF CP NBL & 4.6 W OF KIOSK W WALL
181	ES07-758	0.705.70	4.6 S OF ABBOTSFORD ST S EXT D PL
182	ES07-758	2.000.80	3.5 S OF ABBOTSFORD ST S EXT D PL
183	ES07-758	4.200.50	2.7 S OF ABBOTFORD ST S EXT P L
188	ES07-773	0.780.75	3.5 S OF ABBOTFORD ST S EXT P L
189	ES08-250	2.800.50	31.1 W OF DONCASTER AVE WPL
190	ES08-250	8.400.00	2.6 S OF ABBOTFORD ST SPL
191	ES08-250	9.500.00	3.0 S OF ABBOTFORD ST SPL
192	ES08-250	1.400.00	7.8 S OF ABBOTFORD ST SPL
291			CAPTURED AS PER NP
292			CAPTURED AS PER NP
Map:	SY724		
67	258-172	1.966.61	32.5 S OF ABBOTFORD ST SBL
68	1706-47	2.598.67	1.3 S OF CARLTON ST SBL

WARNING

Ausgrid's plans show the position of assets at the time of installation and may not account for subsequent changes to road alignments, fences or buildings. The plans show no more than the presence or absence of Ausgrid assets in the street.
Persons working near electricity networks must exercise care and will be held responsible for any damage caused.
You must excavate by hand or use vacuum excavation to establish the location of Ausgrid underground cables and associated assets.
Underground cables are live and can result in serious injury or electric shock even if no contact is made. Any work in the vicinity of any cable should only be performed using safe work methods developed in accordance with the recommendations included in WorkCover Code of Practice for Excavation and WorkCover Guide for Work near Underground Assets.
as well as recommendations of Ausgrid's Network Standard NS156.
Overhead: Do not excavate near poles or towers until the stability of the foundation has been assessed by Ausgrid. Cables or earth conductors may be present close to substations, poles or towers.
Workers must maintain safe approach distances and follow applicable WorkCover Codes of Practice.
NOTE: 1. You must keep Ausgrid plans on site during excavation works. If the people actually performing the excavation works do not know how to read and interpret Ausgrid's plans, then the work must be directed by a person who knows how to read and interpret the plans. 2. This information includes data from the NSW Digital Cadastral Database by Land and Property Information (c) 2016, used under a Limited Commercial Licence.

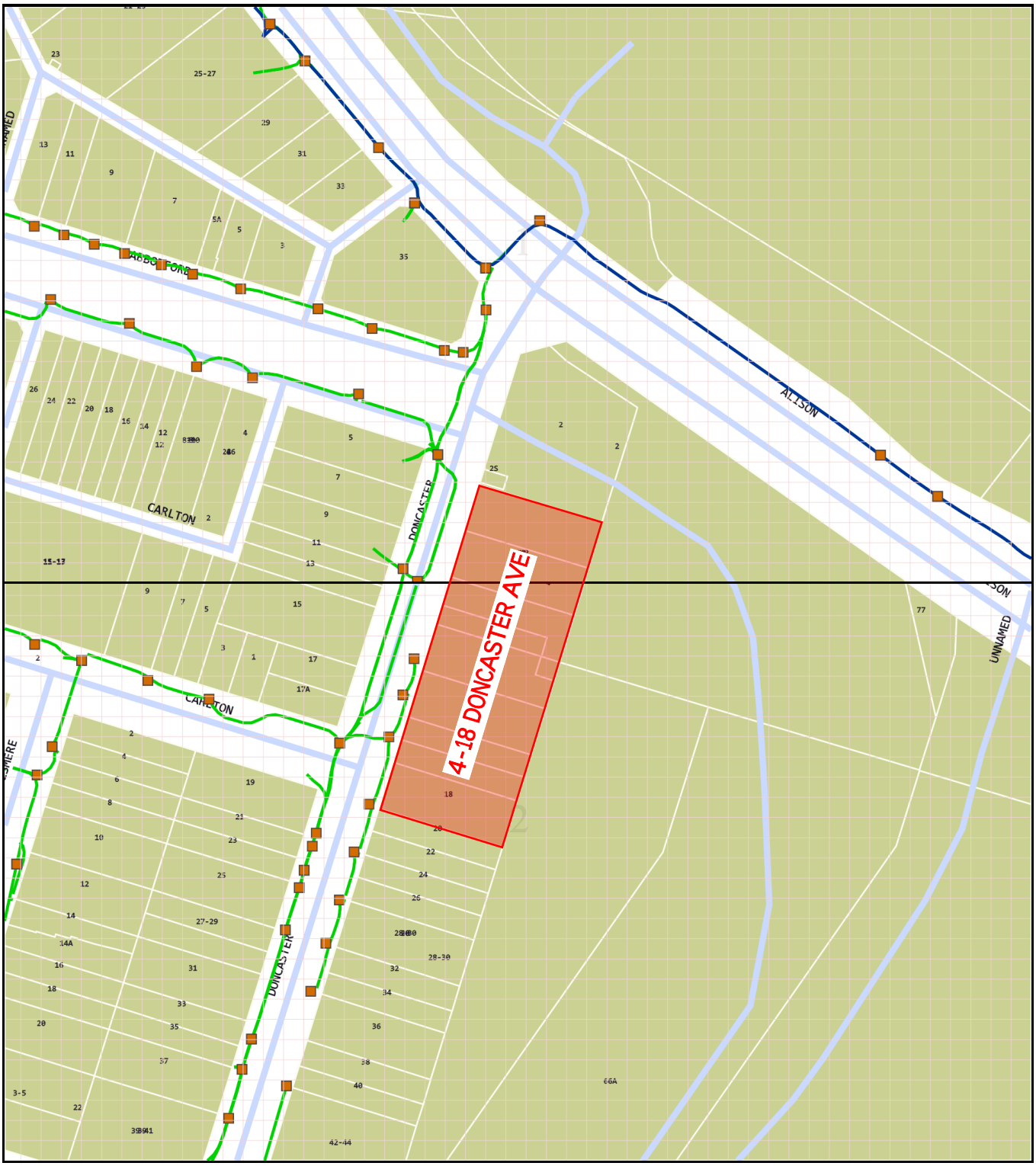
SY72241	SY78034	SY81133	SS GRID
SY72321	SY72422	SY81311	
SY72423	SY72424	SY81313	
20G1	20G2	20H2	GRID
20G3	20G3	20H3	
20F4	20G4	20H4	

GMLA0
Distribution - 76745456
INFORMATION ON THIS PLAN ONLY VALID FOR 30 DAYS FROM ISSUE DATE
23 Oct 2018
Page 1 of 1
1:375
0 — 23 metres
N

Ausgrid

A0 MOCS_std_plot

APPENDIX F – NBN DIAL BEFORE YOU DIG DRAWINGS



LEGEND

Type: Telco

Technology: Copper/Coaxial/Fibre

Assets

IN-SERVICE: Cable/ Duct/ Trench

DESIGNED/CONSTRUCTED: Cable/ Duct/ Trench

Pit/Manhole

Scale 0 20 40 60 Meters 1:2000

1 cm equals 20 m

APPENDIX G – TELSTRA DIAL BEFORE YOU DIG DRAWINGS

Cable Plan

For all Telstra DBYD plan enquiries -
email - Telstra.Plans@team.telstra.com
For urgent onsite contact only - ph 1800 653 935 (bus hrs)

TELSTRA CORPORATION LIMITED A.C.N. 051 775 556

Generated On 22/10/2018 22:59:04

Sequence Number: 76745457

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

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

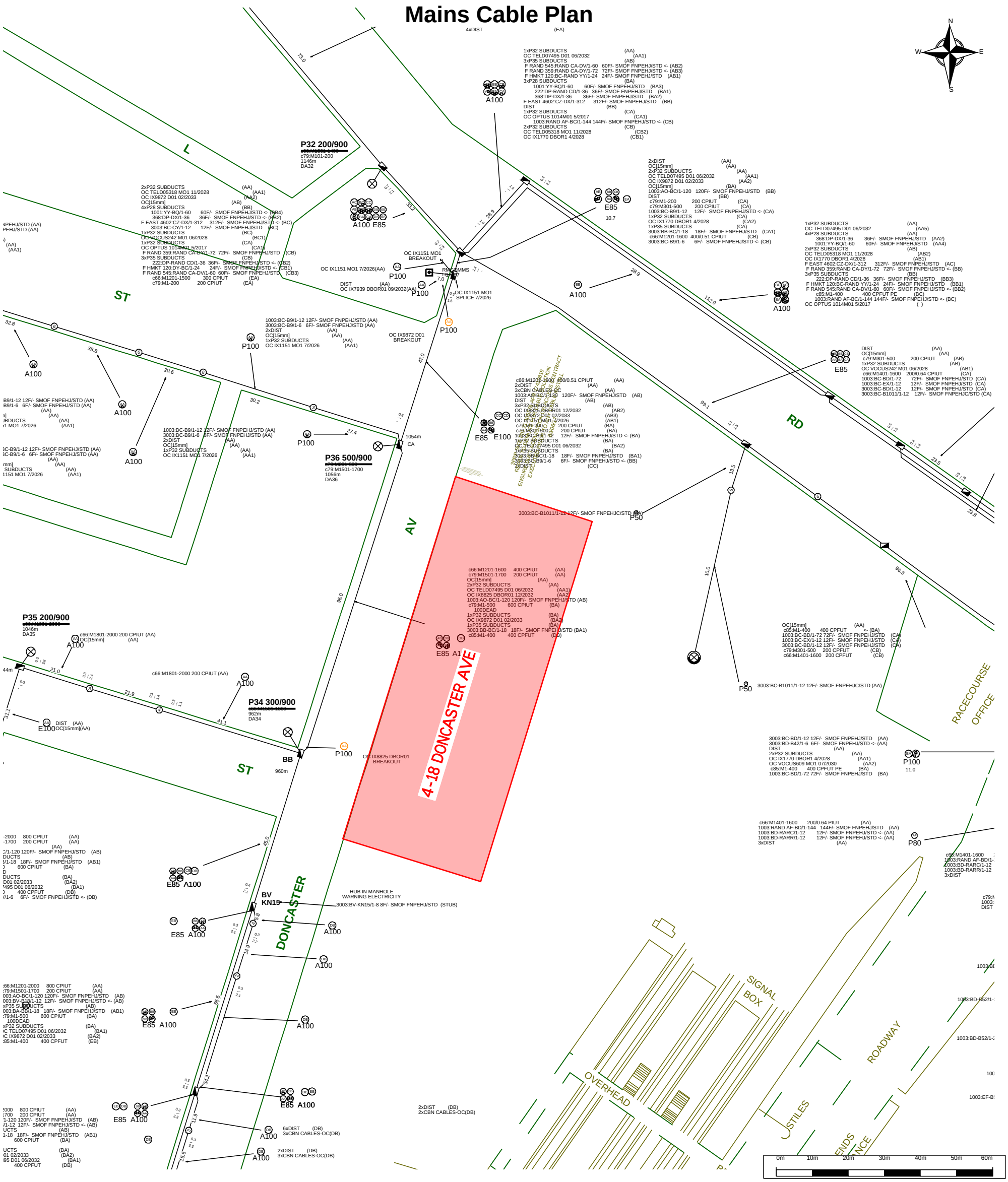
WARNING - Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information supplied can not be guaranteed as property boundaries, depths and other natural landscape features may change over time, and accordingly the plans are indicative only. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans.

It is your responsibility to locate Telstra's underground plant by careful hand pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation.

Please read and understand the information supplied in the duty of care statement attached with the Telstra plans. TELSTRA WILL SEEK COMPENSATION FOR LOSS CAUSED BY DAMAGE TO ITS PLANT.

Telstra plans and information supplied are valid for 60 days from the date of issue. If this timeframe has elapsed, please reapply for plans.

Mains Cable Plan



For all Telstra DBYD plan enquiries -
email - Telstra.Plans@team.telstra.com
For urgent onsite contact only - ph 1800 653 935 (bus hrs)

Sequence Number: 76745457

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

TELSTRA CORPORATION LIMITED A.C.N. 051 775 556

Generated On 22/10/2018 22:59:07

WARNING - Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information supplied can not be guaranteed as property boundaries, depths and other natural landscape features may change over time, and accordingly the plans are indicative only. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans.

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