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Woolworths
The fresh food people

INFRASTRUCTURE REPORT
PROPOSED WOOLWORTHS WAREHOUSE AND DISTRIBUTION CENTRE
11-13 PERCY STREET, AUBURN, NSW

Revision 02
SEPTEMBER 2020

Our Job No. 19513

henry&hymas

Table of Contents

1. INTRODUCTION

1.1. Aim of report

Henry & Hymas Consulting Engineers Pty Ltd has been engaged by Woolworths Supermarkets to provide an Infrastructure report to investigate the Authorities services available to service the proposed new Woolworths warehouse and associated carpark development located at 11-13 Percy Street, Auburn.

1.2. Objective

The objective of this infrastructure report is to outline the utility connections required for the proposed development.

1.3. Limitations

The design approach is based upon preliminary estimates of hydraulic and electrical load as defined in the architectural drawings and project findings.

1.4. Source information

This brief is based upon the following information:

1. Dial Before You Dig (DBYD)
    a. Ausgrid (electricity)
    b. Jemena (gas)
    c. NBNCo (telecommunications)
    d. NSW Spatial Services
    e. Optus (telecommunications)
    f. RMS
    g. Sydney Water (water and sewer)
    h. Telstra (telecommunications)
    i. Uecomm (telecommunications)
    j. Architectural Drawings
2. Consultants
    a. BESTEC for Hydraulics and Electrical Services advice
    b. LCI Consultants for Fire Services

1.5. General

The site is located at 11-13 Percy Street, Auburn, within the Haslams Creek catchment which runs along the eastern boundary of the site.

The existing site is located in the Sydney metropolitan suburb of Auburn and is approximately 3.5ha in area. It is bounded by Percy Street along the north-western boundary, it is surrounded by commercial and industrial premises along the north-eastern and south-western sides, while the south-eastern side is bounded by the Haslams Creek.
The locality sketch of the site is shown in Figure 1.

Figure 1 - Locality sketch

2. INFRASTRUCTURE SERVICES

2.1. Electrical Services

The electrical infrastructure connections required for the Woolworths warehouse shall include the following:

- Substation Infrastructure
- Telecommunications
- Street Services

2.1.1. Substation Infrastructure

The services map provided by Ausgrid shows the presence of a high number of both High, Low Voltage and Control cables running along Percy Street, as Figure 2 also shows. Furthermore, the map indicates the presence of conduits directed into the subject site to each of the existing substations.

Figure 2 - Percy Street Frontage, Overhead Services

An existing substation is located on both 11 Percy Street and 13 Percy Street and both are assumed to be dedicated substations for each property address. The location of the existing substations have been marked in Figure 3 below.

Figure 3 - Proposed development site with overlay of existing electrical infrastructure

The substation located on 11 Percy Street is abutting Percy Street, whilst the substation on 13 Percy Street is further set back into the development site.
The 11 Percy street substation (Figure 4) is located within a dedicated Ausgrid Substation room within the existing building and is accessible via the Percy Street Frontage.

Figure 4 - 11 Percy Street, Existing Substation

The existing Substations, HV cabling and conduits will be required to be made redundant and removed from site to allow for the proposed development. All conduits will be required to be adequately sealed outside of the property boundary to meet Ausgrid's specific requirements.

A section of existing HV Conduit within 13 Percy Street has been identified to contain Asbestos Cement; the subject section is highlighted in Figure 5.
The complete map provided by the Ausgrid Authority is attached in Appendix A.

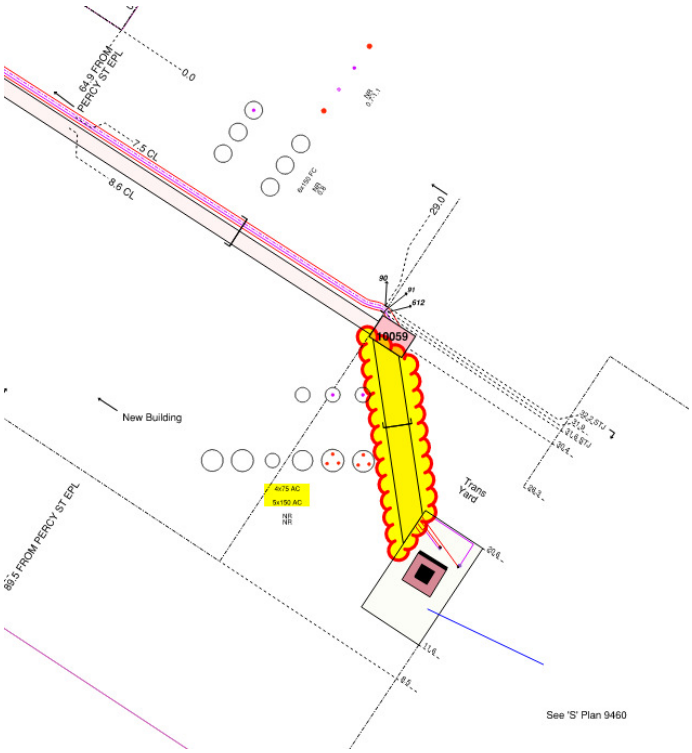


Figure 5 - Conduit identified as asbestos cement

Based on preliminary maximum demand calculations, the site is expected to require 2-off 1MVA transformers, noting that Ausgrid does not provide a sing 2MVA external transformer option.

These transformers will be located adjacent to each other on a single 10.0m x 4.0 m easement. Transformers are to be located at least 3m away from a building structure and 6m (diagonally) from an overhead cable service, as per Ausgrid easement requirements. Refer to Figure 5.

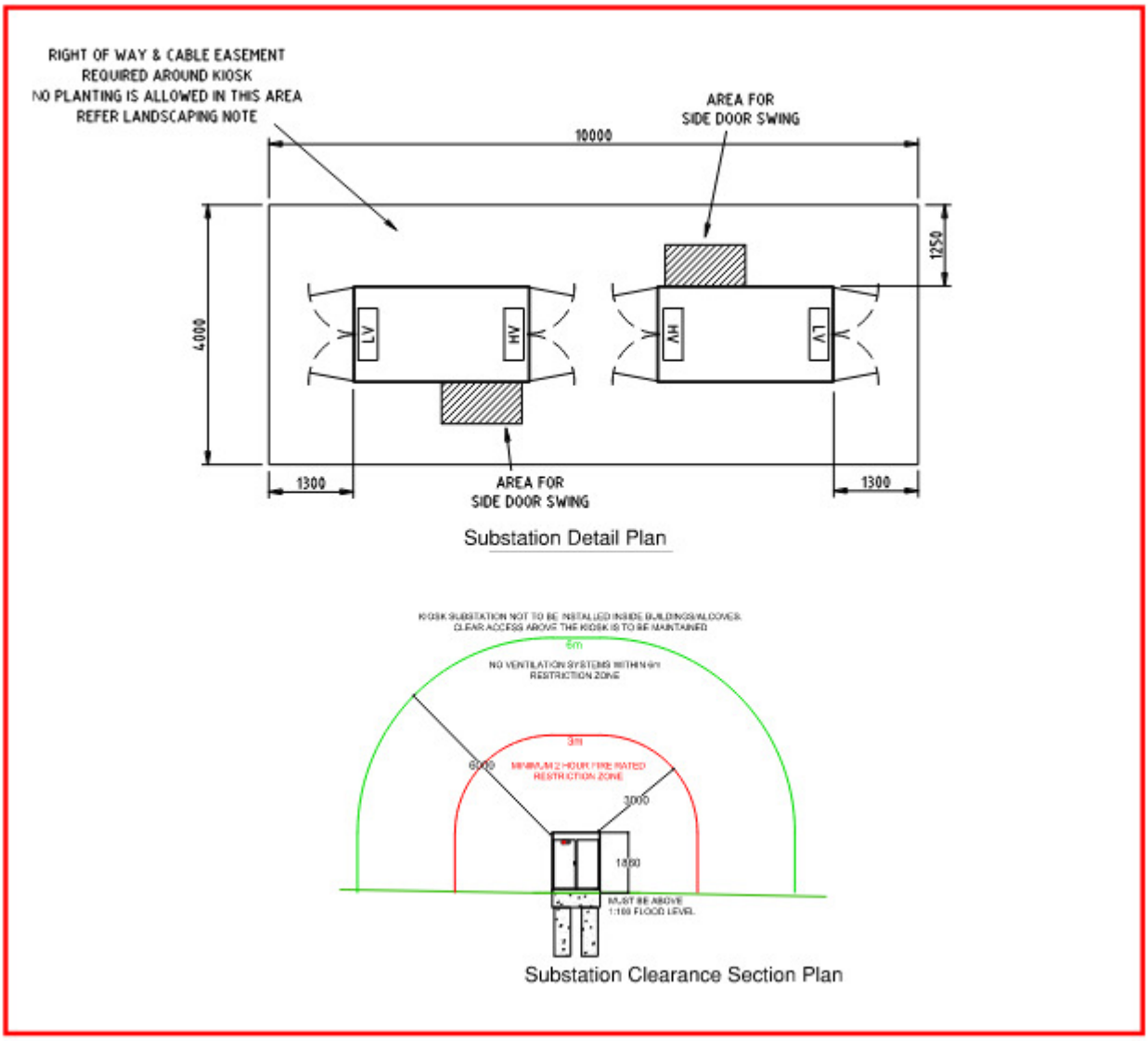


Figure 5 – Ausgrid Easement and Clearance Requirements

To serve the transformers, HV cabling will be required to be extended from Percy Street to the substation locations. Ideally, the cabling is preferred to be located as close as possible to the site boundary whilst abiding by any DA conditions, Easements or SEARs Conditions. It is to be noted that setback requirements with respect to Authority Substations and other Infrastructure are awaiting confirmation from Cumberland City Council. Further discussion with the appropriate authority is required in order to confirm the location of the external substations within the 10m setback zone.

Should the new transformers be located further into the site, an HV cable easement will need to be created to cater for the cables from the street to the transformer. This easement will need to be 2.0m wide.

A low voltage consumer main cable (1 per transformer) from the substation to the new development site Main Switchboards is required.
Whilst it appears that the site is serviceable via the Ausgrid street infrastructure, a Level 3 ASP will need to be engaged to undertake further negotiations with Ausgrid and to prepare the design of the HV connections to the new transformers for Ausgrid review and approval.

2.1.2. Telecommunications

The NBN roll out map indicates that service is readily available via Fibre to the Premises (FTTP). There does not appear to be any significant infrastructure upgrades required to make this connection, with use of existing pits and conduits along Percy Street being the most likely solution.

The services map provided by NBN Co. shows the number of cables along Percy Street and, in front of the property. An NBN lead-in is expected to be installed from an existing NBN pit into the site for connection to the fibre network. The complete NBN map is attached in Appendix B. Figure 6 below also shows that NBN is available as a telecommunication service in the area.

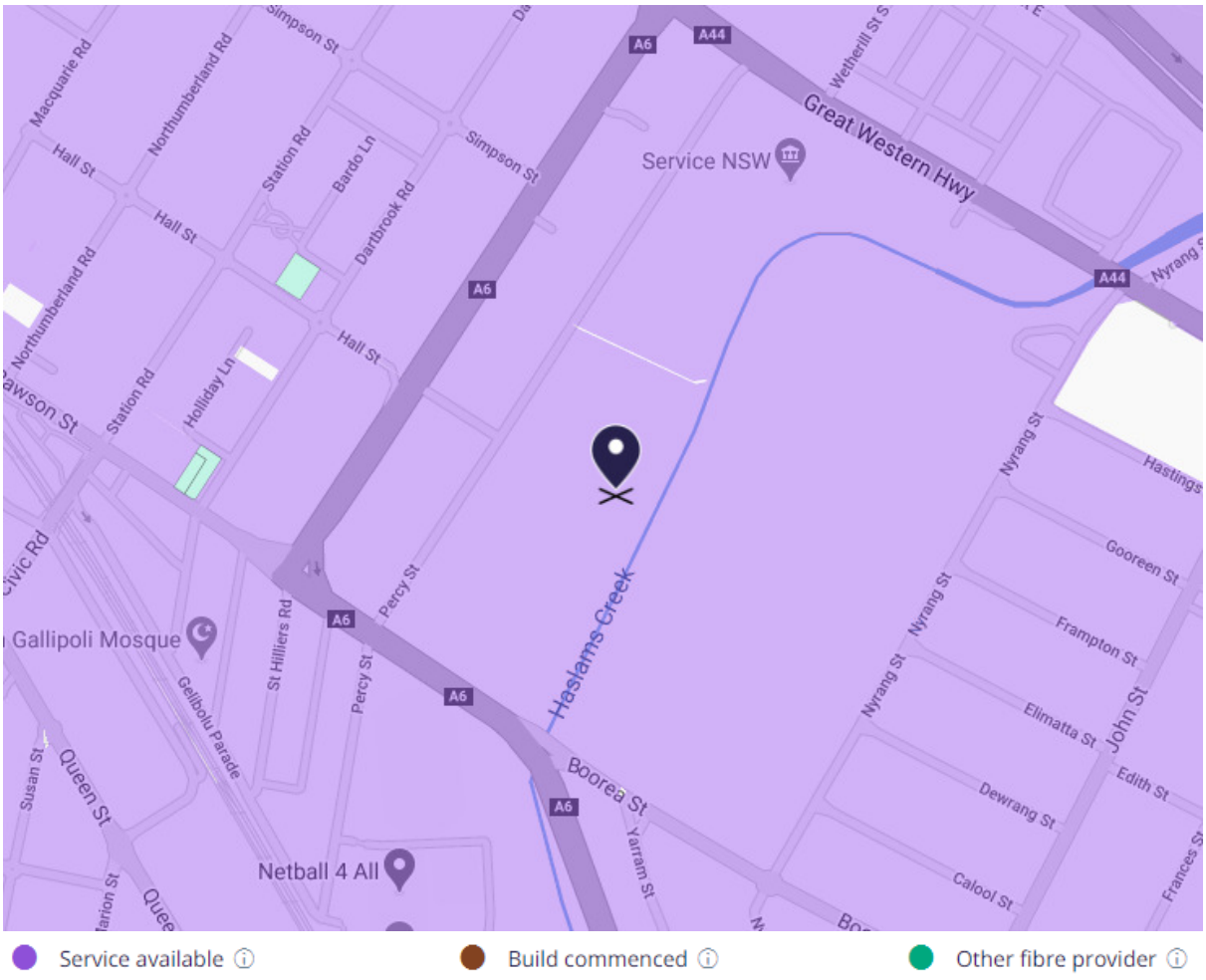


Figure 6 - NBN Availability

The services map provided by Telstra shows telecommunication lines in the along Percy Street, sharing the same pits as NBN. The phone lines can also be expected to be connected to the site from one of the existing pits. The complete Telstra map is attached in Appendix C.

The services map provided by Optus shows the presence of Optus fibre in other utility conduit, most likely owned by Telstra. The complete Optus map is attached in Appendix D.

Any existing connection to the site will need to be removed back to pit, in accordance with the respective authority requirements to enable the new development to occur. A new communications lead in from Percy Street, in accordance with NBN Co. design and installation guidelines, will be required as part of the development works.

In addition, Woolworths IT may elect to provide a secondary fibre data service to the site (Telstra, TPG, Optus etc). This will be reticulated into the site from Percy street via an independent conduit and pit network to the NBN lead in.

2.1.3. Services in the Street

There are currently overhead High Voltage, Low Voltage and Communications Services lines present along the property boundary at Percy Street. These supply services to adjacent properties, such as street lighting and other services, therefore these lines are required to be protected and maintained at all times.

The services are located outside of the property boundary and no works will be required to relocate or modify to suit the new development.

Both the High Voltage and Low Voltage cabling appear to be at a sufficient height for trucks to safely access the subject site, however it is recommended that the exact heights are surveyed at the locations of the proposed driveways and confirmed to be acceptable by Ausgrid.

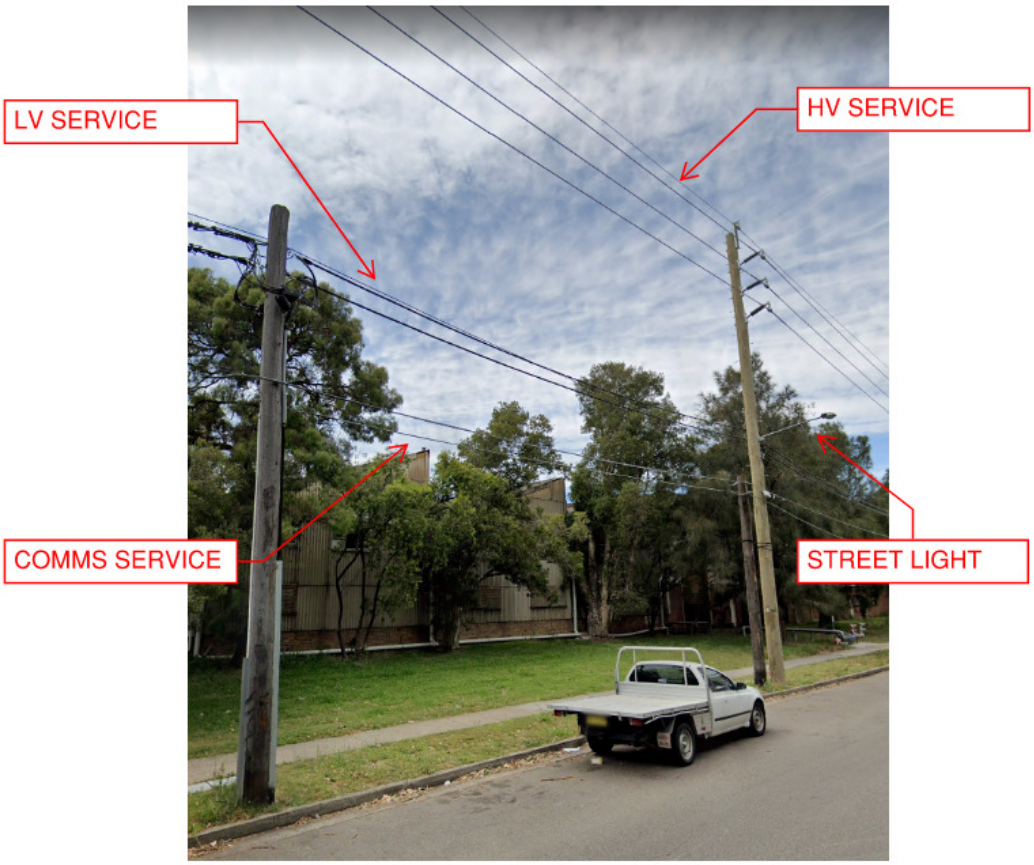


Figure 7 - Conduit identified as asbestos cement

2.2. Hydraulic Services

The hydraulic infrastructure connections required for the Woolworths facility development shall include the following:

- Sewer Drainage (Sydney water)
- Potable Water (Sydney water)
- Stormwater Drainage (Council)
- Gas (Jemena)
- Fire Hydrant (Sydney water)
- Fire Sprinkler (Sydney water)

2.2.1. Sewer Drainage

From services search, Sydney Water has provided a plan depicting all water services surrounding the subject site. A Ø300mm vitrified clay (VC) sewer is located on the western side of Percy Street, across the road from our site, for the entire length of the site frontage. Three maintenance holes are located along the line, respectively near the property at 58 Percy Street, at the intersection with Percy Street and Hall Street, and further north towards the property at 13 Percy Street. These are manholes to be considered for sewer connection of the site.
Since the sewer pipe is found to be located across the street from the site, a 13m long sewer extension will be necessary to serve the site.

The Feasibility Section 73 application to Sydney Water will identify if it will be acceptable for the proposed site to connect into the existing sewer line on Percy Street. The complete Sydney Water map is attached in Appendix E.

Given the proximity of the site to large capacity sewer assets, and given the relatively low rates of sewer outflow from the site, it is not expected that any major sewer services will be required.

2.2.2. Potable Water

The services map provided by Sydney Water shows the presence of a disconnected pipe (line-dashed line) for potable water running parallel to Percy Street. The pipe runs along the front of the site from the intersection of Percy Street with Hall Street and continuing in a northerly direction. Refer to Figure 2 or Appendix B.

The Feasibility Section 73 application to Sydney Water will identify if it will be acceptable for the site to connect into the existing potable water line on Percy Street. Sydney Water will assess from a demand point of view and advise if the existing assets are adequate to serve the potable water demand of the new development.
It is a requirement from Sydney Water for each lot to have a suitably sized watermain, therefore a connection point within the development site is be required. This connection will be identified through the Sydney Water Tap-In application process once the Section 73 Notice of Requirement has been obtained.

We do not anticipate that Sydney Water will require an amplification of the water main for the potable water, however, until a Section 73 application has been submitted for their review, this cannot be guaranteed.

2.2.3. Stormwater

Council's letter "Flood levels at no. 11 Percy Street, Auburn being lot 1 DP 1183821" provides information on the stormwater network along Percy Street in front of the site. A Ø900mm pipe is marked to be running under the road kerb

to an existing pit of RL 6.446m and IL 4.90m. A Ø1050mm pipe is found to be running from this pit along the remaining of the site frontage to connect to the concrete channel further north, outside the subject site, which ultimately discharges into Haslams Creek (refer to flood map on Appendix F). The stormwater connection for the proposed development is connection to the Haslams Creek concrete channel and existing connection on Percy Street.

2.2.4. Natural Gas Services

The services map provided by Jemena Gas shows a secondary – 350ST 1050kPa high pressure main and pipeline running within Percy Street, parallel to the site boundary but on the other side of the road, for the entire length of the site frontage. The map for the site can be found in Appendix G.

As the site is in close proximity to a large bore, high pressure gas main and gas requirements are expected to be relatively small. Therefore, it is not expected that additional gas services will be required.

2.2.5. Fire Hydrant System

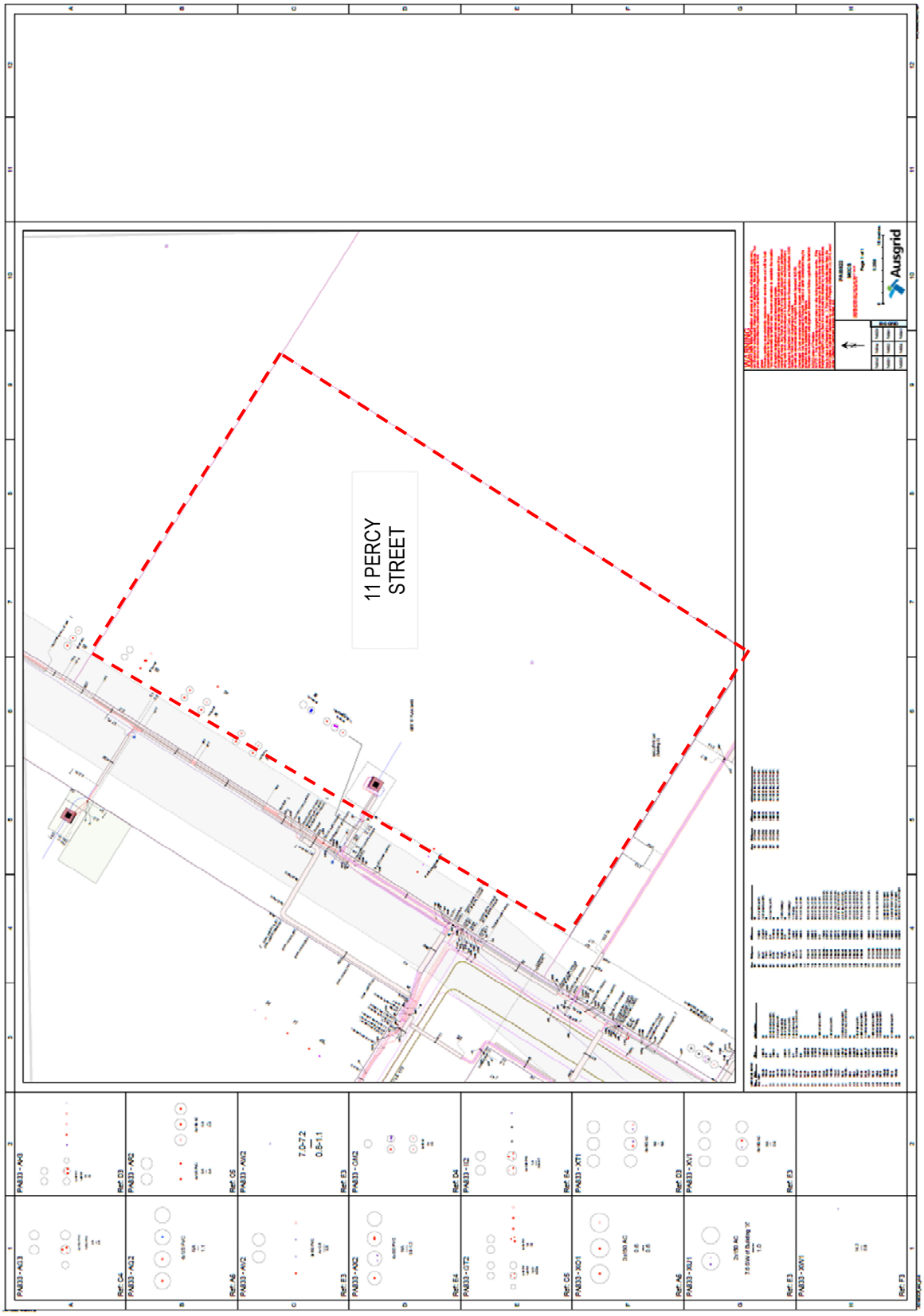
A Section 73 application will need to be submitted to Sydney Water to obtain the requirements for the fire hydrant system and confirm the following preliminary assumptions.
The site has a frontage to the existing Sydney Water main on Percy Street.

A new dedicated 150mm hydrant supply is to be provided from the upgraded Sydney Water authority main in Percy Street. Appropriate backflow prevention to be provided at the boundary. The Sydney Water Pressure Inquiry indicates the street main has enough flow available to avoid needing a hydrant tank. The pressure will need to be boosted by a diesel driven pump set which will then feed a hydrant ring main around the building with a number of branches into the building as required for coverage. At the boundary and within view of the main entry to the site a fire brigade booster will be required complete with a hardstand that a fire truck and setup on and boost the system from. The system is proposed to comply with AS2419.1-2005.

2.2.6. Fire Sprinkler System

Under the NCC fire sprinklers will be required through all areas of the building and the system is proposed to comply with AS2118.1-2017. Given the use and height of the building a high hazard system is proposed. The Sydney Water Pressure Inquiry indicates there is insufficient town main flow to supply for both the fire hydrants and fire sprinkler so a storage tank is proposed for the fire sprinklers. Being a high hazard sprinkler systems the fire pumps will be arranged as a duty standby arrangement. Space will also be required for hardstand should the Fire Brigade need to boost the system. This will need to be near the fire tank and will need to suit three fire trucks subject to detailed design.

APPENDIX A – AUSGRID MAP



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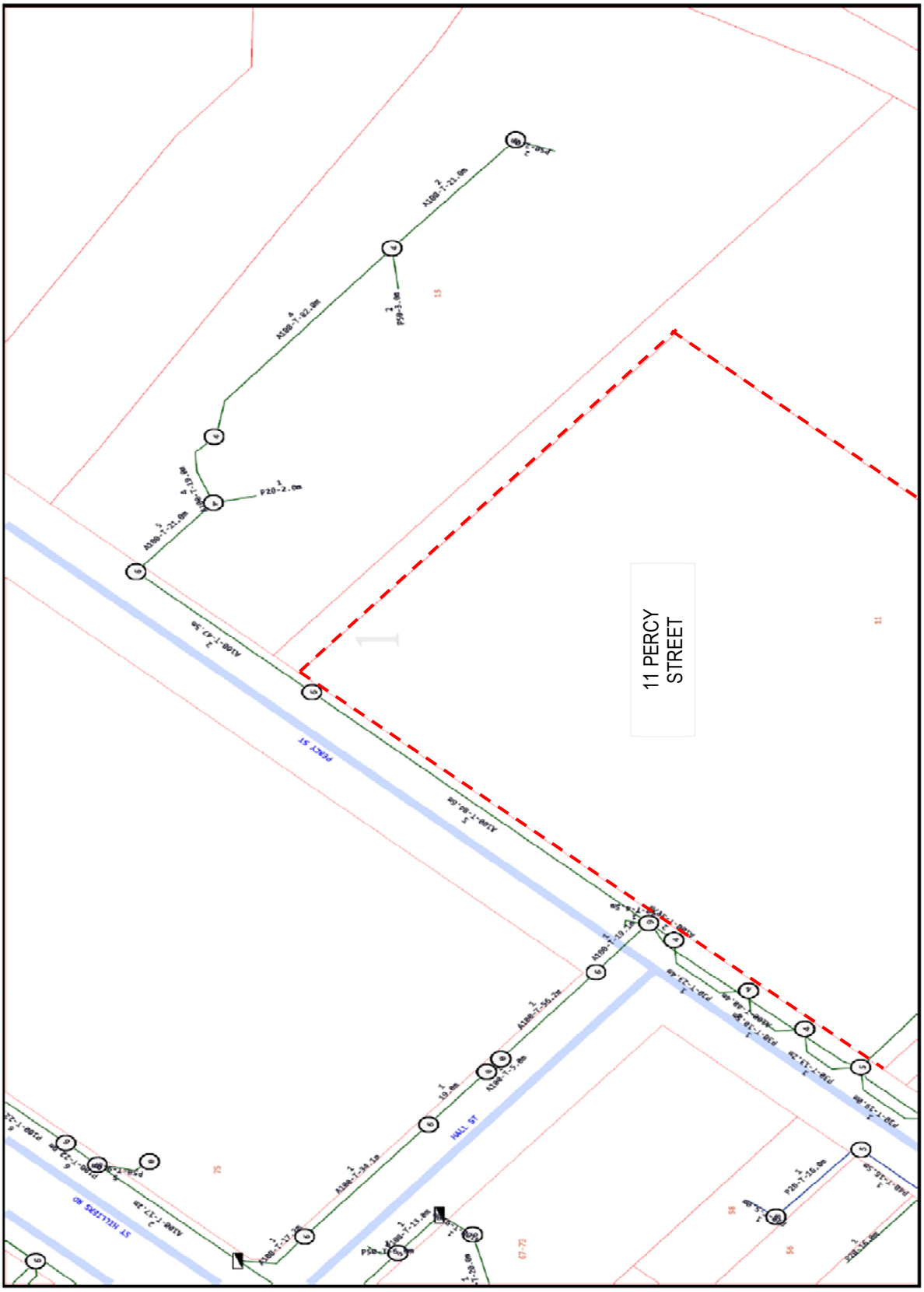
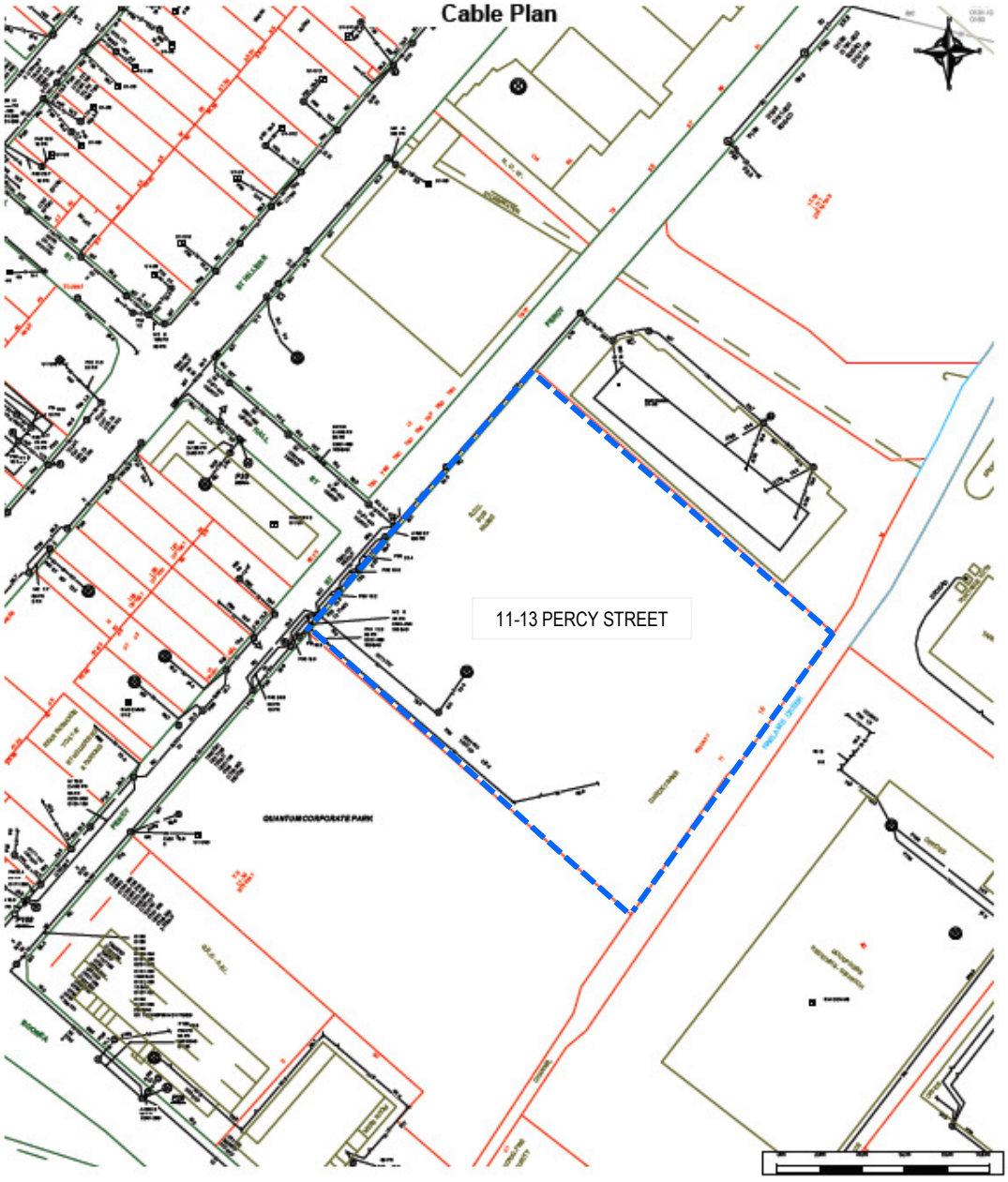
APPENDIX B – NBN



APPENDIX C – TELSTRA



Telstra 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: 84335772
TELSTRA CORPORATION LIMITED A.C.N. 051 775 556	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.
Generated On 12/06/2019 10:43:20	

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.

Page 1 of 2

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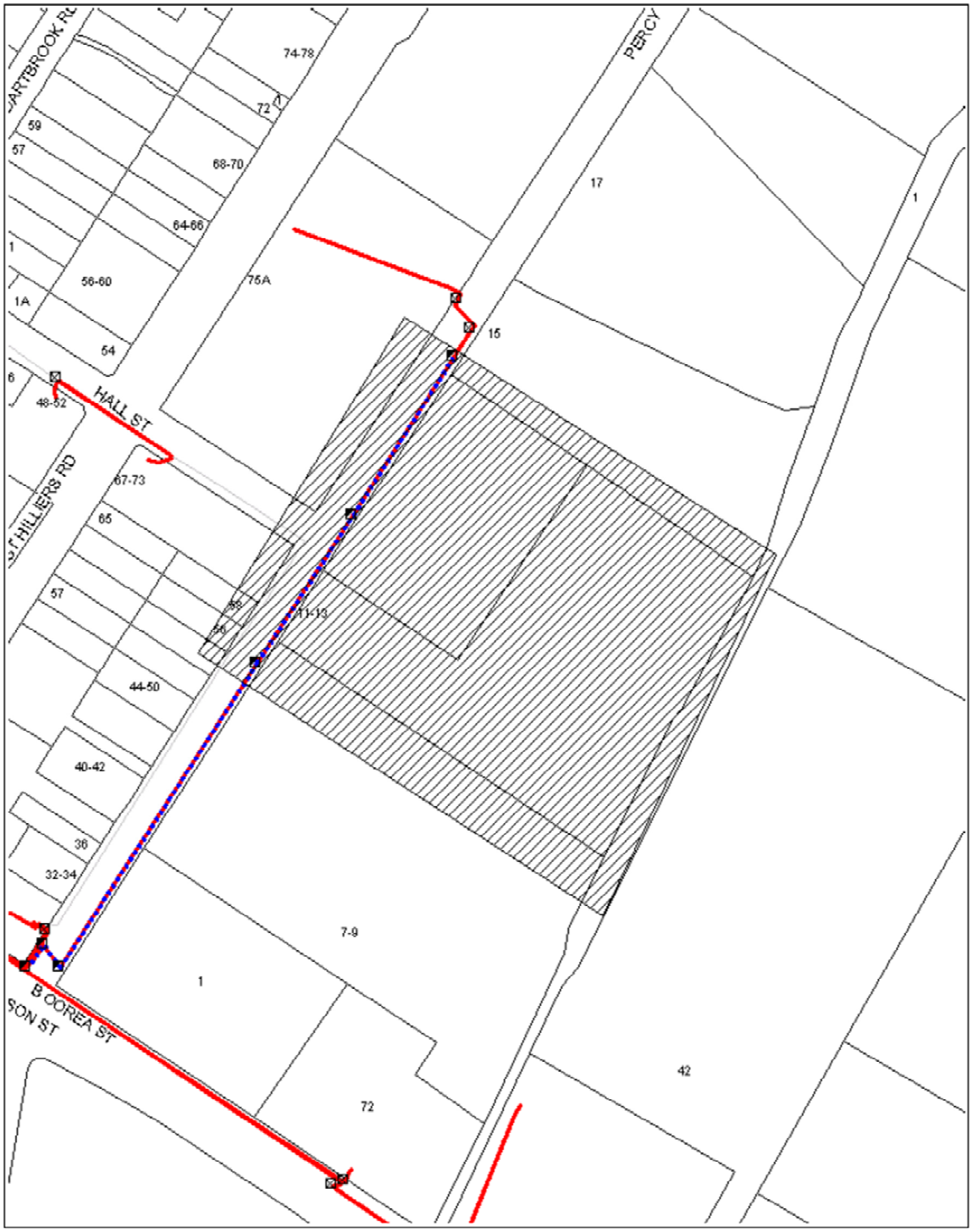
APPENDIX D – OPTUS



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OPTUS yes

For all Optus DBYD plan enquiries –
Email: Fibre.Locations@optus.net.au
For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208

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APPENDIX E – SYDNEY WATER

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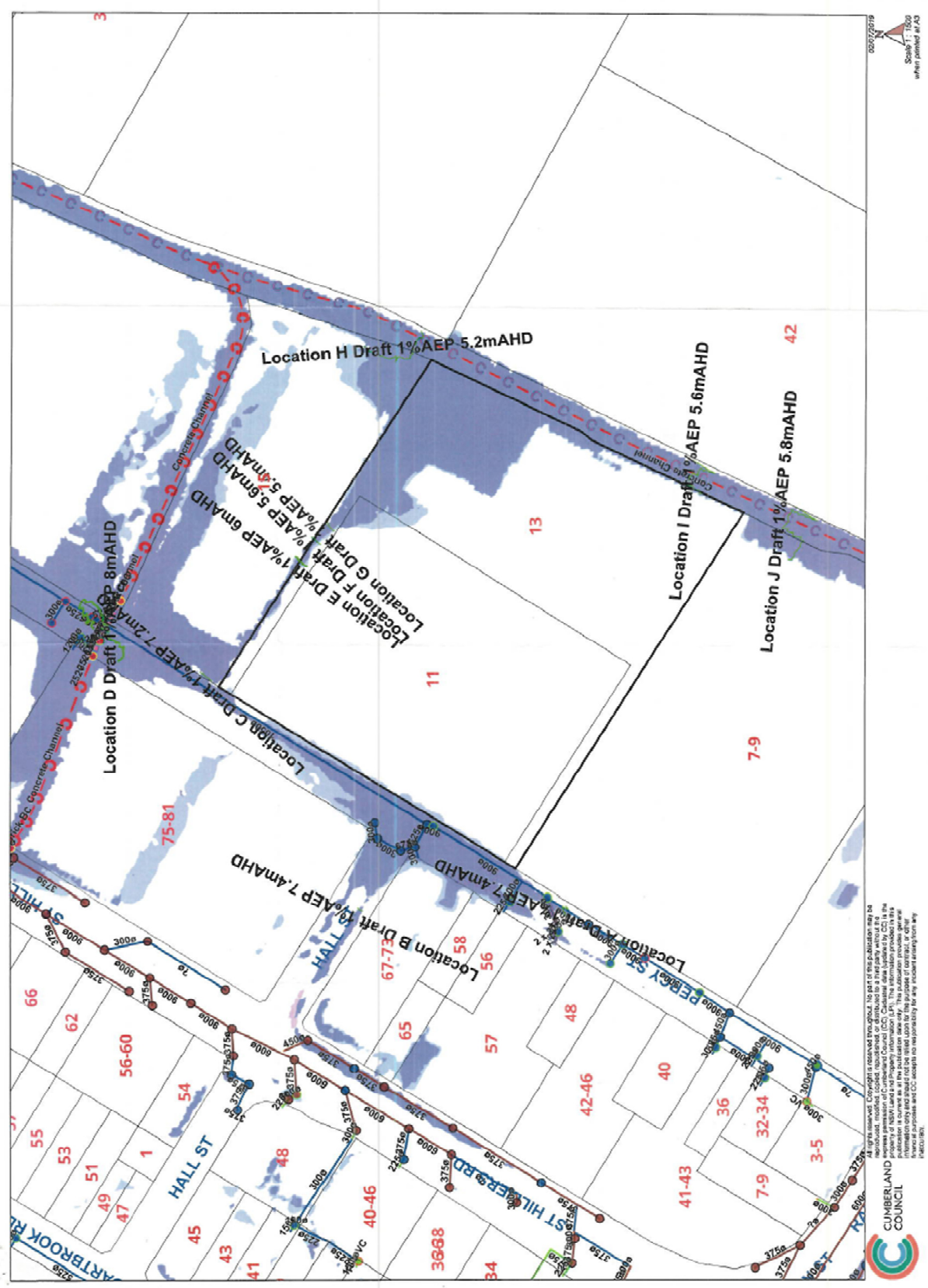
APPENDIX F – FLOOD MAP



APPENDIX G – GAS