Warren Smith & Partners Pty Ltd

Royal Prince Alfred Hospital
North West Precinct
Mental Health & Ambulatory Building
Hydraulic & Fire Services Utilities Report
Prepared for Part 3A Application
Rev B

Health Infrastructure

Warren Smith & Partners
ABN 36 300 430 126
A 1st Floor, 123 Clarence Street,
Sydney 2000 NSW Australia
T 61 2 9299 1312
F 61 2 9290 1295
W www.warrensmith.com.au
E wsp@warrensmith.com.au

1. Introduction

This report briefly outlines the Existing Utilities Infrastructure and its capacity to service the proposed new Mental Health & Ambulatory Building located on the Royal Prince Alfred Hospital site bounding Lucas Street & Brody Street.

2. Potable Cold Water Supply

The Mental Health & Ambulatory Building site is currently fronted by Sydney Water watermains network located as follows:-

- 150mm diameter Sydney Water watermain located in Brody Street;
- 100mm diameter Sydney Water watermain located in Lucas Street;
- 250mm diameter Sydney Water watermain located in Missenden Road.

A new connection will be made to the 250mm diameter watermain in Missenden Road or an amplification of the 100mm watermain in Lucas Street will be evaluated.

Statutory required Fire Services would also be supplied from these Authority watermains.

A Section 73 Application to Sydney Water will be submitted to confirm the adequacy of the Sydney Water mains to supply the new development.

The following water saving conservation devices will be explored for use within the development:-

- 3/4.5 Litre WC cisterns
- 0.8 L/sec automatic urinal flushing
- Water efficient tapware and appliances
- Collection and treating rainwater for sanitary flushing
- Reuse of waste reverse-osmosis water for sanitary flushing
- Reuse of sprinkler and hydrant test water for sanitary flushing
- Water metering of all major water uses and monitoring by the BMCS for leak detection

The potable cold water service will be designed and constructed in accordance with The Plumbing Code of Australia, AS 3500.1, National Plumbing and Drainage Part 1: Water Supply and Sydney Water requirements.

3. Sewer and Trade Waste Discharge

The Mental Health & Ambulatory Building site is currently serviced by a Sydney Water sewer main connection located as follows:-

- 225mm diameter Sydney Water sewer main located in Brody Street.

A new connection will be made to the 225mm diameter sewer main in Brody Street.

A Section 73 Application to Sydney Water will be submitted to confirm the adequacy of the Sydney Water mains to drain the new development.

The sewer drainage systems will be designed and constructed in accordance with The Plumbing Code of Australia, AS 3500.2, National Plumbing and Drainage Part 2: Sanitary Plumbing and Sanitary Drainage and Sydney Water requirements.

All Trade Waste Drainage Systems will be designed and constructed in accordance with The Plumbing Code of Australia, AS 3500.2, National Plumbing and Drainage Code Part 2: Sanitary Plumbing and Sanitary Drainage, Sydney Water and EPA requirements.

4. Natural Gas Supply

The existing Mental Health & Ambulatory Building site currently fronts a 1050 kPa natural gas main. The Jemena owned 1050 kPa natural gas main is located in Missenden Road. The Mental Health & Ambulatory Building site could be supplied by a new connection to the existing natural gas mains but the gas supply for the Mental Health & Ambulatory Building will be supplied by the existing Hospital site gas meter.

An Application to the Gas Retailer & Utility will confirm the adequacy of the existing gas meter assembly.

The gas system will be designed and constructed in accordance with AS 5601.1 Gas Installation Code and Jemena's Gas Fitting Rules.

Our Ref FP-0823-L001

Contact Edward Shin

05 July 2012

Alexis Cella
JBA Urban Planning Pty Ltd
PO Box 375,
North Sydney NSW 2059

C & M Consulting Engineers Pty Ltd
ABN 21 118 134 240
Suite 2, 241-245 Pennant Hills Road
Carlingford NSW 2118
PO Box 2986
Carlingford NSW 2118
Ph: 8209-3846
Fx: 9687-9393
Em: info@cmce.com.au

Dear Alexis,

RPA – NORTH WEST PRECINCT – STORMWATER DESIGN

The stormwater drainage works for the Royal Prince Alfred Hospital (RPAH) North West Precinct Re-development project are as follows:

Stormwater drainage for the site will be designed to collect and convey runoff via a conventional piped stormwater drainage system for storm events up to and including a 1 in 20 year Average Recurrence Interval (ARI) storm event.

Provision will be made for the safe conveyance of storms via overland flow paths for storm events up to the 1 in 100 year ARI storm event.

On-site stormwater detention (OSD) will be provided to the requirement of Sydney Water Corporation and Council.

Stormwater pollution control devices will be incorporated into the site stormwater drainage system to assist with the removal of sediment, oils and hydrocarbons from stormwater runoff from the car park areas.

Yours faithfully

Edward Shin
Civil Engineer – Director
C & M Consulting Engineers Pty Ltd

WOOD & GRIEVE ENGINEERS

Royal Prince Alfred NW Precinct Redevelopment
Electrical Services & Infrastructure

Electrical, ICT and Security Services

11 July 2012

Revision No. 2

Prepared by Rowan Barwood Project Number: 23923-SYD-E
Level 3, 454- 456 Pacific Highway, ST LEONARDS, NSW 2065
Phone +61 2 8484 7000 Fax +61 2 8484 7100 Email sydney@wge.com.au Web www.wge.com.au

Revision

REVISION	DATE	COMMENT	APPROVED BY
2	11 July 2012	Final Issue	RBAR
1	05 July 2012	Updated	RBAR
0	8 June 2012	Preliminary Issue	RBAR

Contents

APPENDICES

1. Introduction

The following information covers the electrical infrastructure and services for the development of the NW Precinct at Royal Prince Alfred.

2. Existing Electrical Infrastructure services in proximity to the site

The Supply Authority for the RPA site is Ausgrid (formally known as Energy Australia). At present the site is serviced from a low voltage supply from the Supply Authority street overhead network located in Lucas Street.

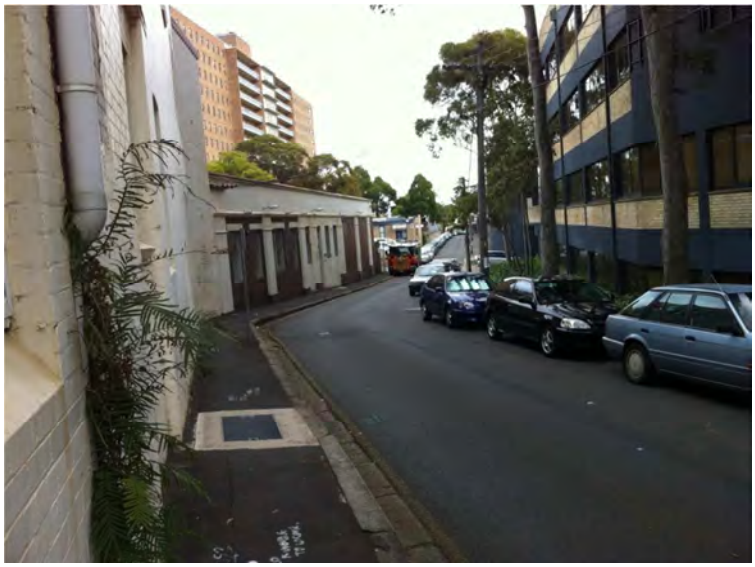


Fig 1 Existing LV overhead supply to site

3. Proposed Electrical Augmentation to the site

The electrical maximum demand calculated for the propose development equates to 1,780A. An application for Connection was lodged with the Supply Authority which confirmed that 2 off L-type kiosk substations (each rated at 1,000kVA) are required for the site. A substation easement of 6m x 5.3m is required for the substations.

A suitable substation easement location is being co-ordinated with the architects. This process may be subject to a separate approval.

4. Standby Generator

A 400kVA standby generator shall be provided for the new development. The generator and fuel tank shall be positioned within the building footprint. The design shall comply to AS 3010 and AS 1668.2. In addition suitable attenuation of the air intake and outlet fans as well a suitable silencer of the engine exhaust shall be provided to meet required council regulations.

5. Carrier Telecommunication services in proximity to the proposed site

An in-ground services survey of the site and close surrounds has been undertaken. This survey, in conjunction with DBYD Authority plans has indicated the following Carrier services in proximity to the site :

4.1 Telstra

The Telstra services are predominately located in Missenden Road pavement adjacent to the site. It is noted that one of the Telstra cabinets is located against the existing structure which is to be demolished.

Fig 2 Carrier services in Missenden Road

There are short sections of Telstra infrastructure in Lucas Street (supplied from Missenden Road) which appear to only provide services to existing site building which is to be demolished.

4.2 Optus

Optus services are located in Missenden Road, along the site boundary in Lucas Street and on the western end of the site (linking Lucas Street to Brodie Street. The current site planning has a new hospital road located on the western end of the site. It would therefore be required to have Optus relocate this service on the western end of the site

Fig 3 Optus service at western end of site

6. Existing RPA services in close proximity to the site and proposed relocation works

From the in-ground survey, there are RPA services located in Brodie Street that supply the Queen Elizabeth Building located in Lucas Street. These services are made up of data, telecommunication and security services. It will be required that these services are relocated in Brodie Street and through the western end of the site.

There is also a requirement to provide power to the proposed relocation of the Oxygen Tank currently located within the site.

7. General Power and Miscellaneous Services

The NW Precinct development will be provided with voice and data provisions, nurse call, duress alarm system, electronic security, access control and CCTV monitoring. Where required these services will be linked to the main services hubs located in the remainder of the RPA campus. Generally services shall be linked via an existing services tunnel which terminates in an adjacent building (Building 12) off Brodie Street. It will be required to provide a conduit link from the services tunnel endpoint to the site.

These services are depicted on attached E-SK-01.

Project Name	Redevelopment of NW Precinct, RPA
Project No	23923-SYD-E
Sketch Title	Electrical Services
Sketch No	E-SK-01
Date	08/06/2012
By	RBAR

WOOD & GRIEVE ENGINEERS
Level 3
454-456 Pacific Hwy
St Leonards NSW 2065
Phone 02 8484 7000
Fax 02 8484 7100

E 24867462 GMLA0_1.hpgl2

LE623 - FL1

Ref: C6

LE623 - HM1

Ref: A5

LE623 - KS1

Ref: A5

LE623 - LS1

Ref: A5

LE623 - LT1

Ref: B5

LE623 - LU1

Ref: A5

LE623 - LV1

Ref: B5

LE623 - LW1

Ref: B5

LE623 - NH1

Ref: A5

LE623 - NI1

Ref: A5

LE641 - AM1

Ref: E8

LE623 - NQ1

Ref: B6

LE641 - MJ1

Ref: E8

LE641 - MK1

Ref: C7

LE641 - ML1

Ref: F9

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 shown are 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 use service by hand or use vacuum excavation to establish the location of Ausgrid underground cables and associated assets.

Underground Working area electricity may result in electric shock event to 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

or walks recommendations of Ausgrid's Network Standard NS156.

Overhead Do not work in any place or have work in the vicinity of the foundation has been assessed by Ausgrid. Cables in 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: You must keep this plan on site during excavation works and have on site a person trained to read this plan.

LE61444	LE62333	LE62334	
LE63222	LE61331	LE64512	GRID
LE63224	LE61113	LE64154	
16B3	16C3	16D3	
16B4	16C4	16D4	GRID
16B5	16C5	16D5	

GMLA0

Distribution - 24867462

INFORMATION THIS PLAN ONLY

VALID FOR 30 DAYS FROM ISSUE DATE

23 Apr 2012 Page 1 of 1

SCALE 1:296 0 18 metres

Ausgrid

A0 MOCS_std_plot

E_24867462_GMLA0_1.hpgl2

Cable Plan

Telstra

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 23/04/2012 12:28:08

Sequence Number: 24867463

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

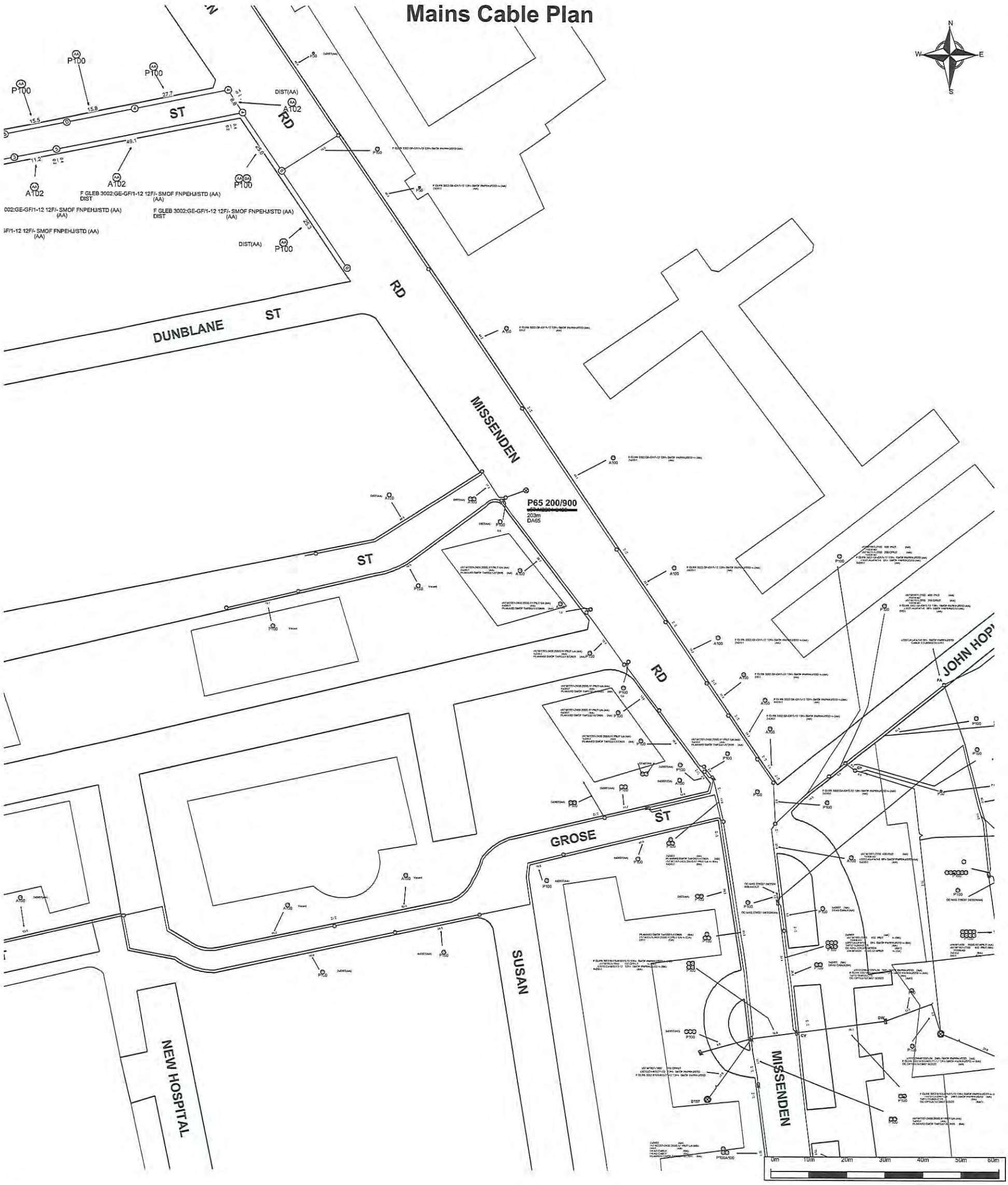
WARNING - Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information supplied can not be guaranteed as property boundaries, depths 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



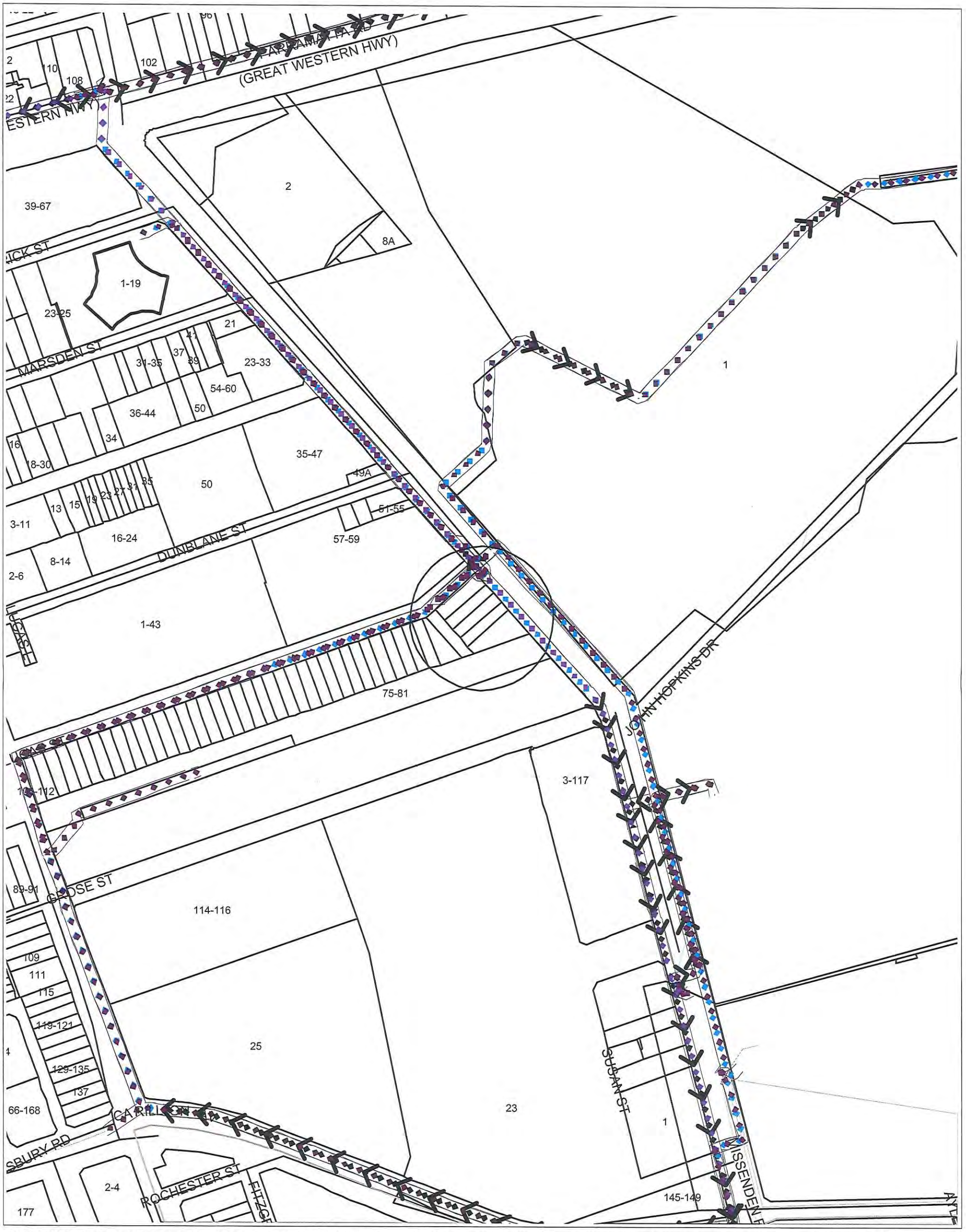
Telstra	For all Telstra DBYD plan enquiries - email - Telstra.Plans@team.telstra.com For urgent onsite contact only - ph 1800 653 935 (bus hrs)
TELSTRA CORPORATION LIMITED A.C.N. 051 775 556	
Generated On 23/04/2012 12:28:22	Sequence Number: 24867463
	CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

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.



WARNING: This document is confidential and may also be privileged. Confidentiality nor privilege is not waived or destroyed by virtue of it being transmitted to an incorrect addressee. Unauthorised use of the contents is therefore strictly prohibited. Any information contained in this document that has been extracted from our records is believed to be accurate, but no responsibility is assumed for any error or omission.
Optus Plans are and information supplied are valid for 30 days from the date of issue. If this timeline has elapsed please raise a new enquiry.

Sequence Number: 24867464

Date Generated: 23/04/2012

'yes' OPTUS

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

DIAL BEFORE YOU DIG www.1100.com.au