JORDAN SPRINGS PUBLIC SCHOOL

SITE INFRASTRUCTURE OVERVIEW

JANUARY 2018

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Jordan Springs Public School
Site Infrastructure Overview

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02	11/01/2019	02

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Approved by:	Raymond Gorgi	11/01/2019	R Gorgi

1 PROJECT BACKGROUND

1.1 INTRODUCTION

This site infrastructure report has been prepared by WSP on behalf of the Schools Infrastructure NSW (the Applicant). It accompanies an Environmental Impact Statement (EIS) in support of State Significant Development Application (SSD 18_9354) for the new Jordan Springs Public School at 14-28 Cullen Avenue, Jordan Springs (the site).
The new school will cater for approximately 1,000 primary school students and 70 full-time staff upon completion. The proposal seeks consent for:

- Construction of a 2-storey library, administration and staff building (Block A) comprising:
  - School administrative spaces including reception;
  - Library with reading nooks, makers space and research pods;
  - Staff rooms and offices;
  - Special programs rooms;
  - Amenities;
  - Canteen;
  - Interview rooms; and
  - Presentation spaces.
- Construction of three 2-storey learning hubs containing 42 homebases comprising:
  - Collaborative learning spaces;
  - Learning studios;
  - Covered outdoor learning spaces;
  - Practical activity areas; and
  - Amenities.
- Construction of a single storey assembly hall (Block C) with a performance stage and integrated covered outdoor learning area (COLA). The assembly hall will have OOSH facilities and store room areas;
- Associated site landscaping and open space including associated fences throughout and sporting facilities;
- Pick-up and drop-off zone from Cullen Avenue;
- Pedestrian access points along both Cullen Avenue and Lakeside Parade;
- Construction of an at-grade carpark containing 62 spaces accessible from Lakeside Parade and 2 spaces accessible from Cullen Avenue;
- School signage to the front entrance; and
- New substation fronting Cullen Avenue.

All proposed school buildings will be connected by a double storey covered walkway providing integrated covered outdoor learning areas (COLAs).

The purpose of this site infrastructure report is to provide a review of the existing Electrical, Mechanical, Hydraulic and Fire protection services (MEP Services) site infrastructure services at Jordan Springs Public School as part of the schematic design

This site a green field site and our review is based on the available information from Dial Before You Dig (DBYD) and relevant Arch. drawings and master planning.

1.2 CONSULTANT SCOPE

WSP/PB will provide a high-level summary of the existing site MEP services and proposed services to the site.

1.3 ASSUMPTIONS AND CONSTRAINTS

This report will only review the school site infrastructure and the associated plant.

The review has been carried out using available DBYD information and relevant available drawings.

As part of this review, as a minimum, Educational Facilities Standards and Guidelines (EFSG) have been considered.

The followings constraints have been identified following the site visit and initial review;

- Further detail review of the Authority infrastructure is required to identify the exact locations and capacity of the Authority mains.
- Augmentation or upgrade of the Authority infrastructure – Subject to further coordination and confirmation with relevant Authorities and application.

2 Property Review

This site is currently a green field site (vacant land) with a childcare centre directly to its south.

Figure 2-1: Site Plan

3 Services Review

3.1 ELECTRICAL SERVICES

3.1.1 POWER SUPPLY

There is an existing Endeavour Energy Pad Mounted substation (No. 29687) located on Lakeside Road near the proposed school carpark. The existing substation is serving the adjacent properties and does not have sufficient spare capacity to serve the new school. A new 1,000kVA Endeavour Energy Pad Mounted substation will be installed along Cullen Avenue adjacent to the new carpark area to provide power to the site. The final substation location and particulars are subject to assessment and approval by Endeavour Energy. The existing substation serving the adjacent properties will remain as installed.

Underground consumer mains cabling will connect the substation to a new main switchboard located in the Hall building. The main switchboard will supply power to sub-distribution boards located in the various site buildings for power provisions to final lighting, power and mechanical sub-circuits. All submains cabling will be reticulated by means of underground conduits. Refer to the electrical site plan sketch for further details (issued as a separate document).

3.1.2 COMMUNICATION SERVICES

A new telecommunications fibre connection will be provided to the school. Preliminary investigations indicate that Opticomm is the telecommunications provider within the area. The connection will be taken from Cullen Ave near the main school entry. Further investigation and survey works may be required to confirm the exact connection location.

The main communications room will be provided in the Library building and will provide telecommunication services to the various site buildings using a star topology. Each site building will be provided with a local building communication room for termination of field data outlets.

All incoming cabling and inter-building cabling will be reticulated by means of underground conduits. Refer to the electrical site plan sketch for further details (issued as a separate document).

3.1.3 LIGHTING

3.1.3.1 INTERNAL LIGHTING

Internal access lighting to illuminate circulation areas such as foyers, entry vestibules, corridors and stairs. Functional lighting to illuminate classroom, office, library, communal hall and etc. Illumination level to comply with AS1680 and Department of Education design guide.

LED light source is proposed to achieve energy saving target.

3.1.3.2 EXTERNAL LIGHTING

External lighting to illuminate building entrances, footpaths, sheltered walkways, roadways and car park. Illumination level to comply with AS1158.3.1.

Categories are:

Area /pathway lighting P3

Car parks P11b

Access roads P3

Lighting pole locations are to be selected to avoid light spill and pollution to neighbourhood. Obtrusive light control to comply with AS4282.

Weather proof and vandal-resistant type lighting poles and fittings are proposed in campus to achieve long term reliability. LED light source is proposed to achieve energy saving target.

3.1.3.3 LIGHTING CONTROL

Intelligent programmable lighting control system to be proposed to achieve automatic switch, timer control, dimer control, daylight harvesting and integration with period bell alarm.

3.1.3.4 EMERGENCY LIGHTING

Emergency lighting system including single point emergency light fitting, exit sign to be provided to comply with NCC and AS2293. The system will be computer monitored.

3.1.4 SECURITY SYSTEM

Department of Education School Security Unit shall be consulted at design development stage.

3.1.4.1 CCTV CAMERA SURVEILLANCE

CCTV camera to be proposed at campus high risk area such as carpark, main entry, sick bay, library and etc. CCTV network video recorder is proposed in main communication room and CCTV monitors are to be in administration area.

3.1.4.2 ACCESS CONTROL

Access control to be provided at high duty area such as main communication room, building entry door and etc.

3.1.4.3 ALARM SYSTEM

Alarm system to be proposed at library, sick bay, access shower/toilet and etc.

3.1.5 PHOTOVOLTAIC SYSTEM

PV solar power grid-connect rooftop system to be provided to offset power consumption. The PV system will be designed by others.

3.1.6 CEILING FANS AND WALL MOUNTED FANS

Ceiling / wall fans and associated fan speed controllers will be provided as required by the EFSG.

3.2 HYDRAULIC SERVICES

Based on the DBYD information review (Section 4.1) Sydney Water, water service and sewer service mains, and Jemena gas main are located within the site vicinity.

3.2.1 WATER MAINS

There are two water mains surrounding the site:

The first water main is located along Lakeside Parade. This water main is a 150 mm Polyvinylchloride (uPVC) on the Western shoulder of the road.

The second water main is located along Cullen Avenue. This water main is a 200mm Polyvinylchloride (mPVC) on the southern shoulder of the road.

The incoming water supply is proposed from the 200mm water main within Cullen Ave. It is proposed to install an authority water meter adjacent to the main entrance. (Refer to Fig. 3-3)

Pressure and flows are under review to Lakeside Parade for possible connection.

3.2.2 SEWER MAINS

There are two sewer mains surrounding the site. One sewer main appears to reticulate north to south on the eastern boundary of the site the second sewer main appears to reticulate west to east along the southern boundary of the site. Both sewer mains discharge into a junction pit prior to continuing east along Cullen Avenue.

The sewer main reticulating north to south is a 300mm polypropylene (PP). This sewer main reticulating west to east is a 225 mm polyvinylchloride (PVC).

The proposed discharge point for the internal site sewer system is via the 225mm sewer main within Cullen Ave. (Refer to Fig 3-3)

3.2.3 GAS MAINS

Gas main is located along Cullen Avenue. This gas main is a 110 mm, 200kPa gas main on the Southern shoulder of the road.

It is proposed that a connection be made to this gas main within Cullen Avenue with an authority gas meter to be located adjacent to the main entrance. (Refer Fig 3-3)

3.2.4 SITE SERVICES

As this is a green field site there are no known services within the site.

3.3 MECHANICAL SERVICES

Generally the following mechanical systems are provided to the school buildings

3.3.1 COMFORT SYSTEMS

3.3.1.1 AIR-CONDITIONING SYSTEM

Spilt type air-conditioning system is provided to the communications and building distribution rooms in each block as applicable.
In general, the split type air conditioning unit is reverse cycle type and will be allowed to operate in either cooling / heating mode.

3.3.1.2 HEATING SYSTEMS

Heating is to be provided to learning, library, canteen and administration areas by way of free standing gas heating units with a low surface temperature. Access toilets to be provided with heating.

3.3.2 VENTILATION SYSTEMS

3.3.2.1 NATURAL VENTILATION

Homebases and learning areas ventilation is achieved by naturally ventilating the spaces, with cross flow assistance measures where applicable, ceiling fans are also to be provided.

The admin and library buildings are to be naturally ventilated where possible, with cross flow assistance measures where applicable, ceiling fans are also to be provided.

The hall is to be provided with ceiling fans and roof ventilators for ventilation. The OOSH areas are to be naturally ventilated where possible.

3.3.2.2 MECHANICAL VENTILATION SYSTEM

The student toilets are generally ventilated naturally via external louvres or by mechanical ventilation via exhaust air fan.

In general, staff and access toilets is provided by mechanical ventilation via exhaust air fans.

The chemical and cleaners store room is provided with mechanical ventilation via in-line type exhaust air fan.

3.3.2.3 DUST EXTRACTION SYSTEM

Independent duct extraction system complete with duct extractor, exhaust extraction ductwork and exhaust system is provided for the Maker Space.

3.3.2.4 CANTEEN

A mechanical supply and exhaust system to be provided for the kitchen, kitchen consultant advice to be provided at a later stage.

3.4 FIRE PROTECTION SERVICES

We understand that there is no requirement for sprinkler protection and building occupant warning system in accordance with deemed to satisfy BCA requirements.

Smoke detection will not be provided unless an automatic shut-down of a mechanical system as per BCA in accordance with AS1668.1 is required subject to further confirmation during detailed design stage.

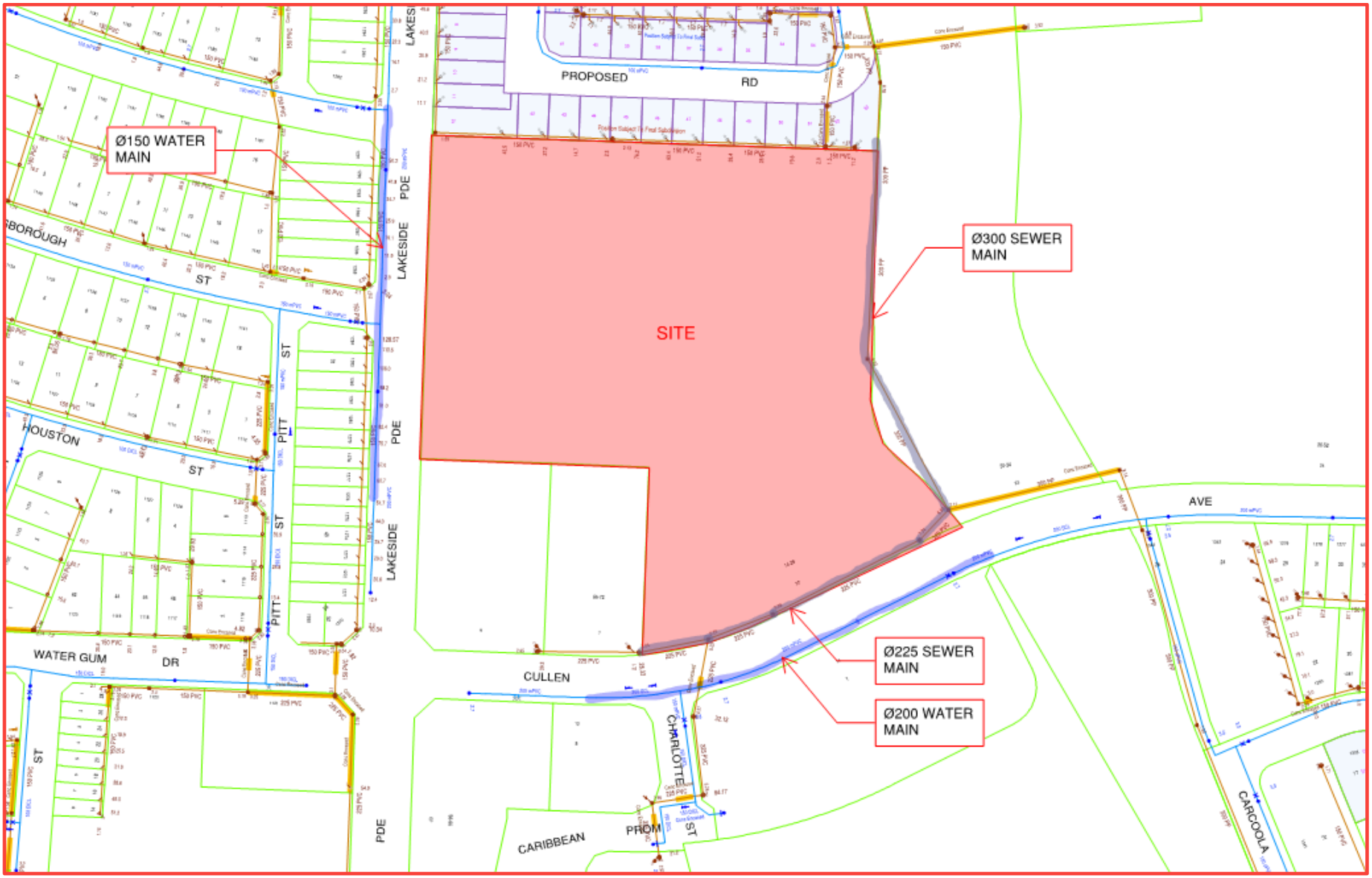
Portable fire extinguishers will be provided throughout the school in accordance with AS2441 and BCA requirements.

Further confirmation for Fire protection services will be confirmed during detail design phase in consultation with the project Principle Certifying Authority (PCA) and Fire Safety engineer in order to establish minimum requirements for compliance to the relevant Australian Standards and Building Code of Australia.

4 INFO / DATA PROVIDED TO THE CONSULTANT

4.1 DBYD INFORMATION

Drawings to be continued;



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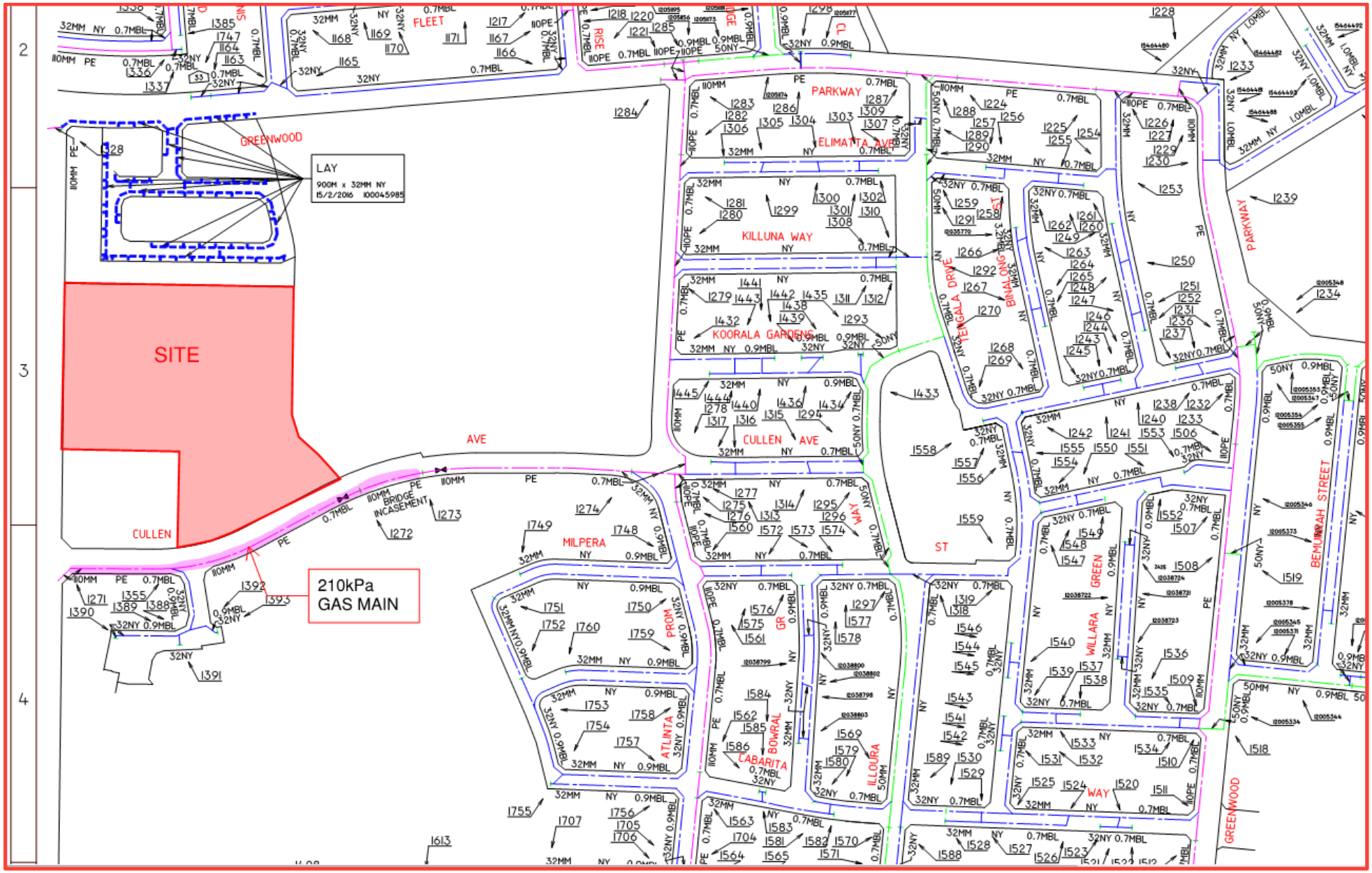
SITE
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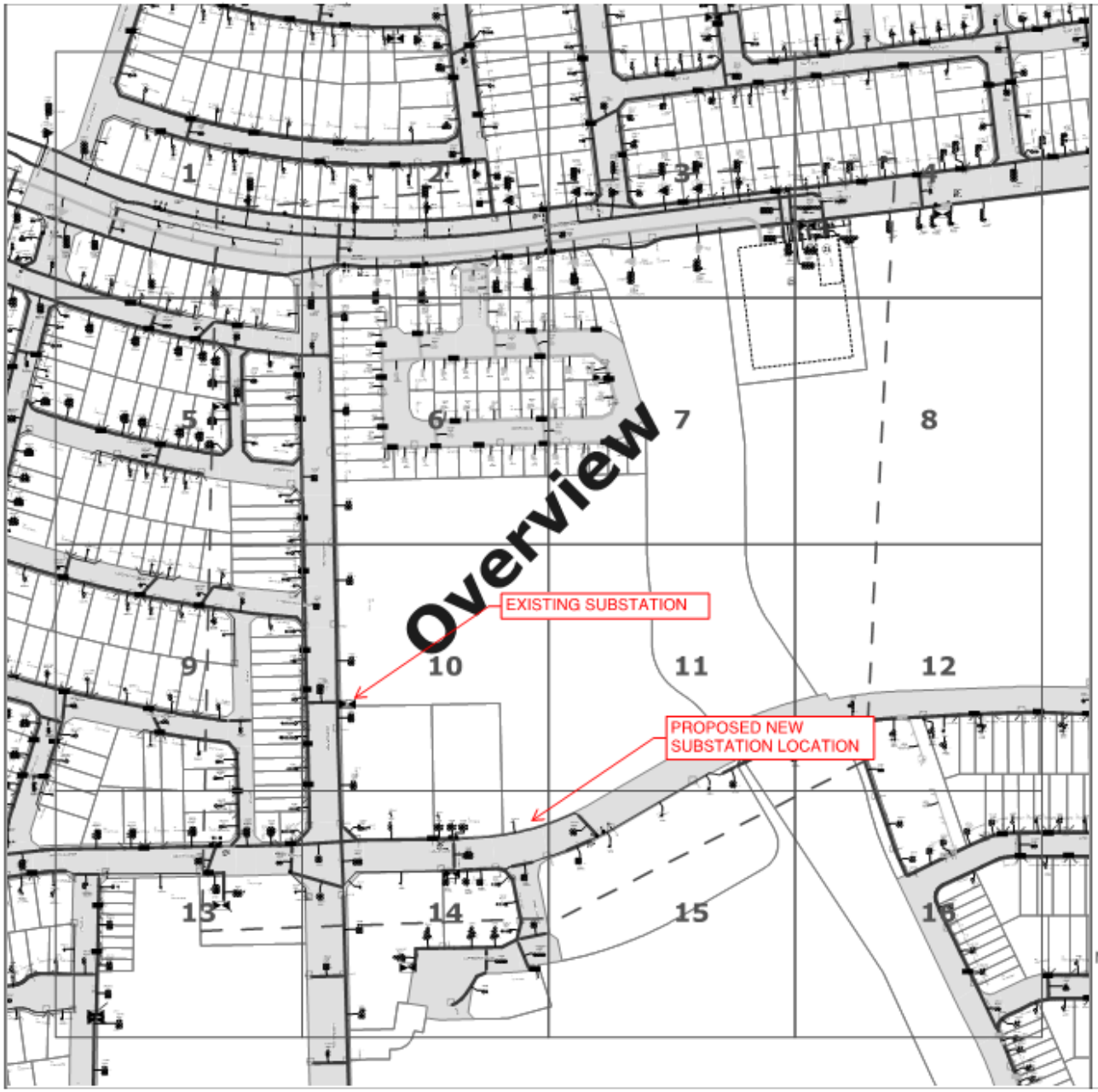
LAY
900M x 32MM NY
15/2/2016 I00045985
210kPa
GAS MAIN
CULLEN
AVE
BRIDGE
INCASEMENT
MILPERA
PROM
ATLINTA
GR
BOWRAL
CABARITA
ILLOURA
KOORALA GARDENS
KILLUNA WAY
ELIMATTA AVE
PARKWAY
TENGALA DRIVE
BINALONG ST
WILLARA GREEN
BEMURRAH STREET
GREENWOOD
WAY
ST
FLEET
RISE



Endeavour Energy

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.

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PLEASE RING 9853 7121 or 1800 467 460 626
4 WORKING DAYS BEFORE COMMENCING WORK

LEGEND

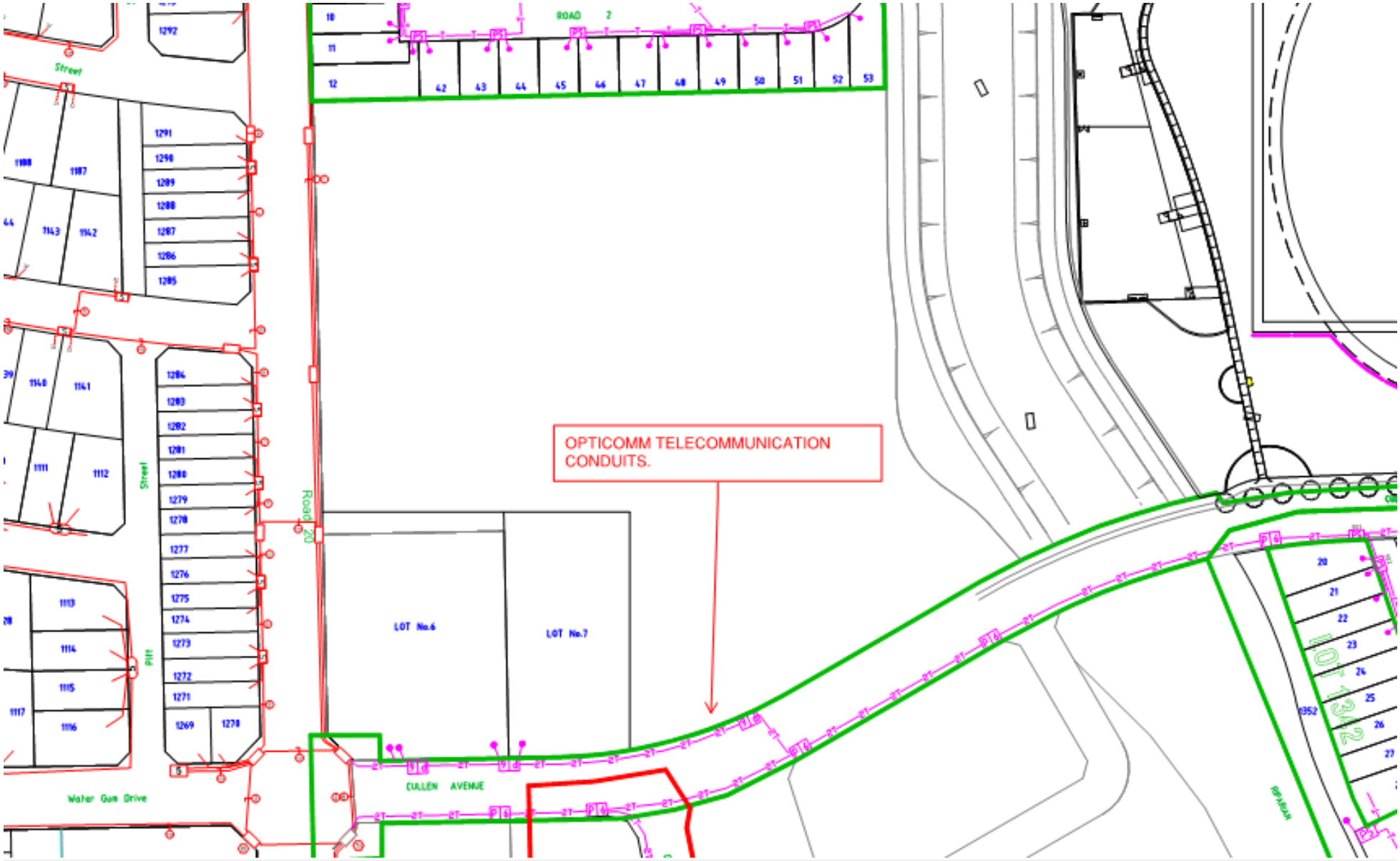
- Street light column
- Padmount substation
- Overground pillar (O.G.Box)
- Underground pit
- Duct run
- Cable run
- Typical duct section
- Asbestos warning

N

NOT TO SCALE

DBYD Sequence No.:	76913670
Issued Date:	26/10/2018

Cadastre: © Land and Property Information 2015, 2016


OPTICOMM TELECOMMUNICATION CONDUITS.
ROAD 2
LOT No.6
LOT No.7
CULLEN AVENUE
Water Gum Drive
Pitt Street
Road 20