



loretonormanhurst

# *Loreto Normanhurst*

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*Amended Master Plan Concept Proposal & Stage  
1 - State Significant Development Application*

*Hydraulic Services Infrastructure Assessment*



## **Prepared for:**

*Client Name:*  
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*Date:* 03.12.2020

## **Prepared by:**

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*Project Number:* 6597

# Revision

Revision	Date	Comment	Approved by
000	18.12.18	Client Review	MB
001	04.12.20	Client Review	DC

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## **Introduction**

This report supports a State Significant Development Application (SSDA) submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

This application is SSD by way of clause 8 and schedule 1 under State Environmental Planning Policy (State and Regional Development) 2011 on the basis that the development is for the purpose of an existing school and has a Capital Investment Value of more than \$20 million.

Specifically, this application relates to a staged SSDA within the meaning of Section 4.12 of the EP&A Act, with this application being the Concept Proposal for a new site wide masterplan for the existing Loreto Normanhurst School at 91 – 93 Pennant Hills Road, Normanhurst. In addition, consent is also sought for the Stage 1 detailed design works for a new on campus student boarding facility, landscaping works, new carparks, a through site link and some demolition works to the buildings between Mary Ward and existing dining room building and associated works to make good existing.

This report is to be read in conjunction with the planning report prepared by Ethos Urban and amended consultant documents.

## **Background**

### **Need for a Campus Masterplan**

Loreto Normanhurst is an independent, Catholic day and boarding school for girls from Years 5 to 12. The existing school campus was established in 1897 and has evolved in an organic and ad-hoc manner across the span of 120 years.

A new campus wide planning approach offers the opportunity to strategically review and plan for the campus' future in a sustainable and efficient manner such that the campus' unique aesthetic and ecological values are best preserved. The preparation of a campus wide masterplan is also consistent with the School's 'Loreto Normanhurst 2016 - 2020 Strategic Plan' which identified the need for a broader strategic plan to coordinate renewal and orderly development in a feasible and staged manner.

### **Overview of Proposed Amendments**

Loreto Normanhurst has worked closely with the consultant design team to make reasonable amendments to the SSDA that respond to the questions and concerns of the DPE and community. Careful consideration has been made to ensure the amendments maintain the viability of the Stage 1 works the fundamental ambitions of the Concept Master Plan to guide and shape the development of the school campus over the next 30 years.

Loreto Normanhurst is located within the suburb of Normanhurst on Sydney's Upper North Shore approximately 3km south of Hornsby and 25km north of Sydney CBD. The school is located in the local government area of Hornsby Shire Council, approximately 750m south of the Normanhurst Railway Station. The locational context of the site is illustrated at Figure 1.

The site comprises the existing campus grounds of the Loreto Normanhurst school at 91 – 93 Pennant Hills Road, Normanhurst. The northern part of the site accommodates much of the school's existing built form, while the rear extent consists of the school's sporting fields, and a portion of largely undeveloped land covered in remnant vegetation.

The campus itself is bound by Pennant Hills Road (to the north), Osborn Road (to the west) and Mount Pleasant Avenue (to the east). Detached dwellings on individual residential lots about the southern boundary of the site. An aerial photograph of the site is provided at Figure 2 below.

Figure 2 provides an aerial map of the site and its immediate surrounds.

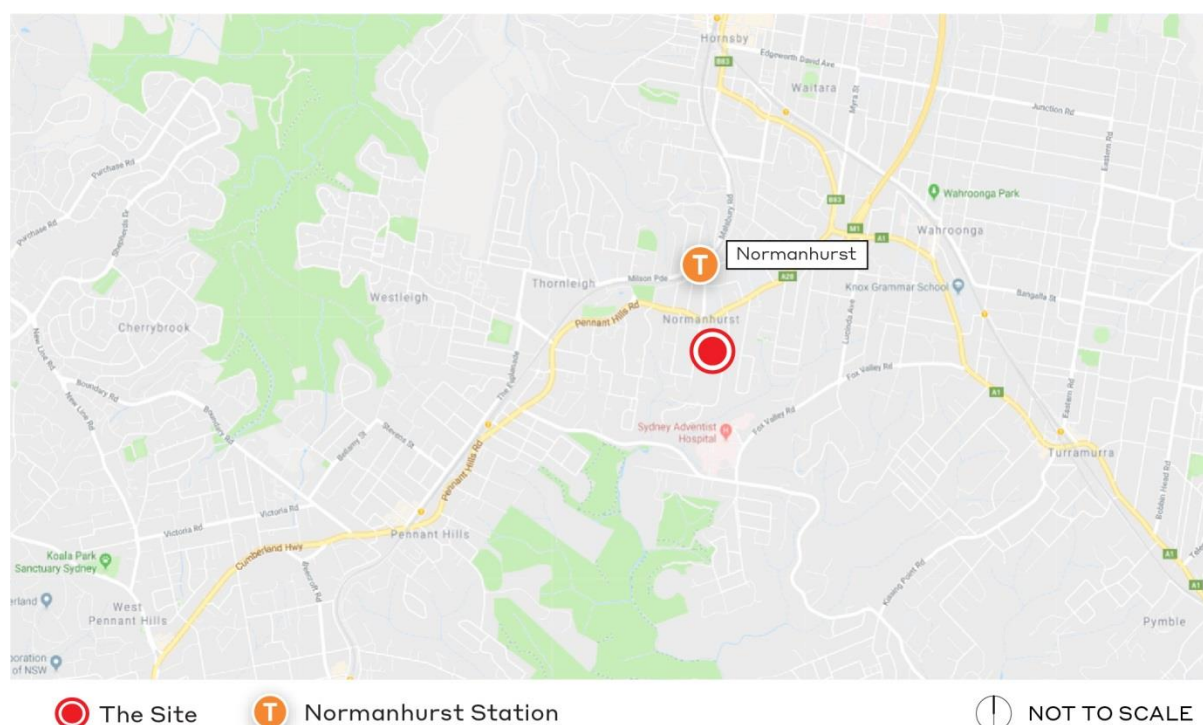


Figure 1 – Loreto Normanhurst Campus Location Context Plan



Figure 2 – Aerial Map of the Loreto Normanhurst Campus

### Legal Description and Ownership

The campus comprises several allotments, the legal descriptions of which are provided in Table 1 below. The existing campus has a site area of approximately 13.02ha. The site in its entirety is owned by the Trustees of the Loreto Property Association.

Table 1 Legal Description

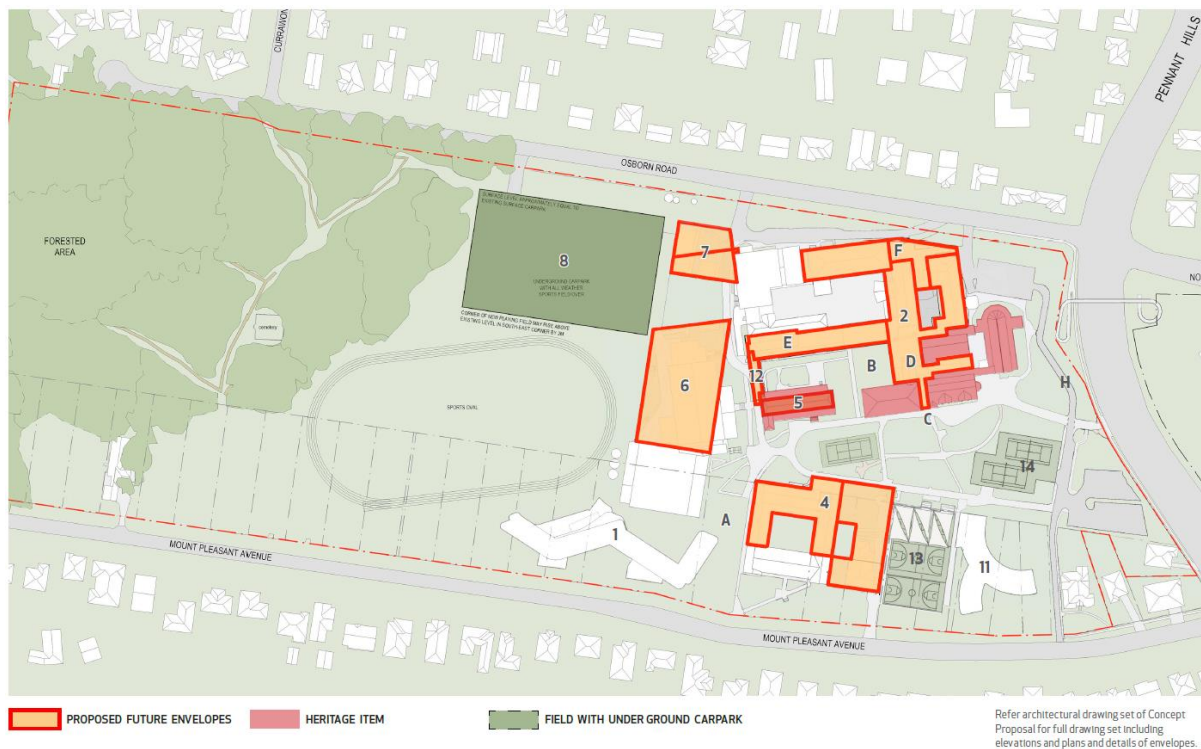
Address	Lot	Plan
16 Mount Pleasant Avenue	Lot 5	DP 1218765
	Lot 16	DP 6612
30 – 62 Mount Pleasant Avenue	Lots 20 – 23 and 25 – 36	DP 6612
	Lot 1	DP 34834
91 – 93 Pennant Hills Road	Lot 1	DP 114580
	Lot 3	DP 1217496
	Lot 1 – Lot 3	DP 1218765
	Lot B	DP327538
24 – 28 Mount Pleasant Avenue	Lot 1	DP 809066
4 Mount Pleasant Avenue	Lot D	DP 366271
6 Mount Pleasant Avenue	Lot C	DP 366271
14 Mount Pleasant Avenue	Lot 4	DP1218765
89 Pennant Hills Road	Lot 1	DP136156



## Overview of Proposed Development

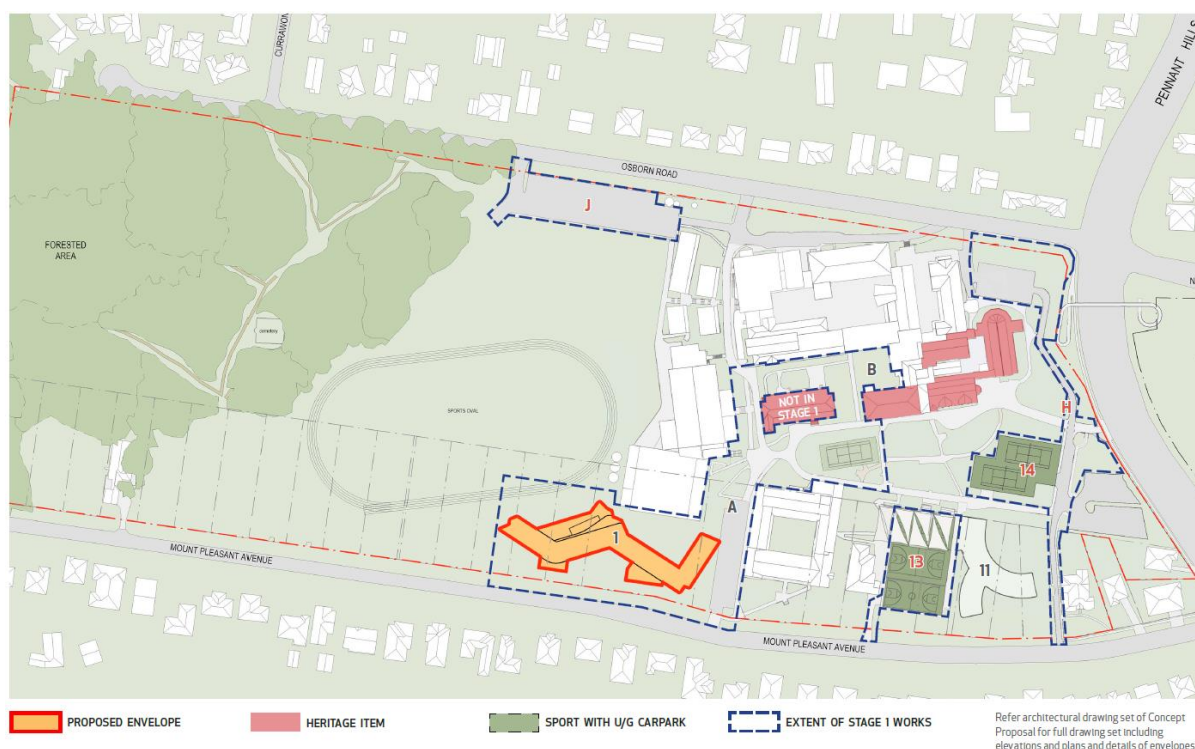
This application sets out a new campus masterplan for the existing school campus that will guide and shape the development of the school campus for the next 30 years. This SSDA also includes detailed plans for the first stage of the concept proposal (Stage 1 works).

- The concept proposal amendment, including:
  - Envelopes – Campus Wide;
  - Project F – Deirdre Rofe Extension
  - Envelope 7 – Gonzaga Barry Performance Arts Centre
  - Envelope 5 – Mary Ward Building Envelope
  - Envelope 8 – All-weather Field with Underground Carpark
  - Project C&D – New Works Between Heritage Listed Buildings



- The Stage 1 amendments, including:
  - Envelope 1 – Boarding House
  - Project A – Garden Plaza
  - Project H – Osborn Road to Mt Pleasant Ave Ling Road

- Project J (Envelope 8) – Interim Osborn Rd Surface Carpark
- Envelope 13 – Sports Courts & Underground Carpark
- Envelope 14 – Tennis Courts & Underground Carpark



## Scope of Services

Authority Hydraulic Services included within this assessment are as follows:

Service	Authority
Sewer Drainage	Sydney Water Corporation
Potable Cold Water	Sydney Water Corporation
Fire Services	Sydney Water Corporation
Gas (Natural)	Jemena



**Concept Proposal Plan - Section 13 Utilities**

***Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure.***

Concept proposal plan for hydraulics services will connect to the school internal potable cold water, fire services and gas services mains for the proposed buildings hydraulic demands.

**Sydney Water**

Potable Cold Water – The potable cold water supply connections for the concept proposal plan will be taken from school internal water mains, any alterations and additions as part of the concept proposal plan will be in accordance with the relevant Australian Standards.

Fire Services – The fire services supply connections for the concept proposal plan will be taken from school internal water mains, any alterations and additions as part of the concept proposal plan will be in accordance with the relevant Australian Standards.

Sewer – The sewer system connections for the concept proposal plan will be taken from school internal sanitary drainage system, any alterations and additions as part of the concept proposal plan will be in accordance with the relevant Australian Standards.

**Envelope 1 - Boarding House**

***Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure.***

A new Boarding House development will require the following infrastructure services.

**Sydney Water**

Potable Cold Water – It requires individual connection to the Authority water main (150mm) on Mount Pleasant Ave Normanhurst to reticulate to Boarding House to serve sanitary fixtures (amenities, commercial kitchen, hot water plant and laundry), the rainwater reuse tank top up and the fire hose reels in the carpark area.

Due to inadequate available pressure from Sydney Water main located within Mt Pleasant Ave, a new pressure pump is required in accordance with relevant Australian Standards.

Fire Services – Fire hydrant system requires an extension from school internal hydrant mains, any alterations and upgrade of an existing hydrant pumpset as part of the concept proposal plan will be in accordance with the relevant Australian Standards.

Fire sprinkler system requires an individual connection to the Authority water main (150mm) on Mount Pleasant Ave Normanhurst to reticulate to Boarding House to serve fire sprinkler services. Due to inadequate available flow from Sydney Water main located within Mt Pleasant Ave, a new sprinkler booster assembly, a pressure pump and a storage tank are required in accordance with relevant Australian Standards.

**Sewer** – Due to the location and proposed floor finish levels, an existing 150mm Authority sewer main located on Mount Pleasant Ave is not feasible. The sewer main is higher than the proposed floor finish levels. Sewer drainage requires a new sewer pumping station located on basement level and the sewer pumpout line shall discharge sewage back to school internal sewer drainage system. The estimated size of a new sewer pumping station is approximately 20,000L based on the total number bedrooms.

## **Iemena**

**Gas** – It requires an individual connection to the Authority gas main (32mm @210kpa) on Mount Pleasant Ave Normanhurst to reticulate to Boarding House for the gas service to serve to gas mechanical plant, hot water plant and commercial kitchen in accordance with relevant Australian Standards (Refer to Appendix C).

## **Rainwater Harvesting and reuse**

***Prepare an Integrated Water Management Plan Detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water and water sensitive urban design.***

Approximately 1490m<sup>2</sup> of the roof shall be collected and conveyed to a rainwater harvesting tank for the development. Once the rainwater reuse tank is full, the overflow from the tank will discharge in stormwater line through the detention tank.

The installation of rainwater reuse tank sized at 120KL is to serve the development irrigation requirements and potable cold water to rainwater tank top up will be required only to serve in periods when there is no rainfall. (Refer to Appendix C)

Job No: 6262

Job Name: Loreto Boarding House

Title: Rainwater Harvesting Sizing

Date: 21/09/2018

INSTRUCTIONS <hold cursor over>

Total Roof/Catchment Area1260 m2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean monthly rainfall - mm	102.3	117.6	130.9	128.5	118.6	133.2	96.6	80.7	67.9	76.4	83.8	77.6
Monthly Average Catchment (KL)	122.5	140.8	156.7	153.8	142.0	159.4	115.6	96.6	81.3	91.5	100.3	92.9
Cumulative Average Catchment (KL)	122.5	263.2	419.9	573.7	715.7	875.1	990.8	1087.4	1168.6	1260.1	1360.4	1453.3
Monthly Average Demand (KL)	192.0	144.0	96.0	96.0	76.8	76.8	76.8	76.8	96.0	144.0	144.0	192.0
Cumulative Average Demand (KL)	192.0	336.0	432.0	528.0	604.8	681.6	758.4	835.2	931.2	1075.2	1219.2	1411.2
Monthly Average Demand over a year (KL)	117.6 KL											
Lowest Month catchment (KL)	81.3 KL											
Average monthly rainfall	121.1 KL											
Available Rainfall Contribution to Average Demand	0.0 %											
Optimised Tank Size for Rainwater Usage	117.6 KL											

0 KL

Actual Tank Size selected

Irrigation Area Demand

Irrigation Area	2400 m <sup>2</sup>
Irrigation Quantity (L/m <sup>2</sup> )	4 L/m <sup>2</sup>

Building Irrigation Demand	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Number of days Irrigated per month	20	15	10	10	8	8	8	8	10	15	15	20
Monthly Irrigation Demand (KL)	192.0	144.0	96.0	96.0	76.8	76.8	76.8	76.8	96.0	144.0	144.0	192.0

### ***Envelope 13 – Sports Courts & Underground Carpark***

***Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure.***

A new Sports Courts and Underground Carpark development will require the following infrastructure services.

#### **Sydney Water**

Potable Cold Water –It requires an extension from school internal water services for existing basketball courts to reticulate to The Sports Courts and Underground Carpark to serve wash downs and fire hose reels. Due to inadequate available pressure from Sydney Water main located within Mt Pleasant Ave, a new pressure pump is required in accordance with relevant Australian Standards.

Fire Services – Fire hydrant and fire drencher systems require an extension from school internal hydrant mains, any alterations and upgrade of an existing hydrant pumpset as part of the concept proposal plan will be in accordance with the relevant Australian Standards.

### ***Envelope 14 – Tennis Courts & Underground Carpark***

***Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure.***

A new Tennis Courts and Underground Carpark development will require the following infrastructure services.

#### **Sydney Water**

Potable Cold Water –It requires an extension from school internal water services for existing basketball courts to reticulate to The Sports Courts and Underground Carpark to serve wash downs and fire hose reels. Due to inadequate available pressure from Sydney Water main located within Mt Pleasant Ave, a new pressure pump is required in accordance with relevant Australian Standards.

Fire Services – Fire hydrant system requires an extension from school internal hydrant mains, any alterations and upgrade of an existing hydrant pumpset as part of the concept proposal plan will be in accordance with the relevant Australian Standards.

# Appendix A

## *Sydney Water Dial Before You Dig*

Boarding House Site

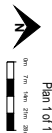
150mm Water  
connection for Potable  
Cold Water and Fire  
Services

DB/D Address:  
88 Pennant Hills Road  
Normanhurst NSW 2076

DB/D Job No: 1443948  
DB/D Sequence No: 75551082

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SYDNEY WATER CORPORATION

Scale 1:1500  
Date of Production: 17/09/2018



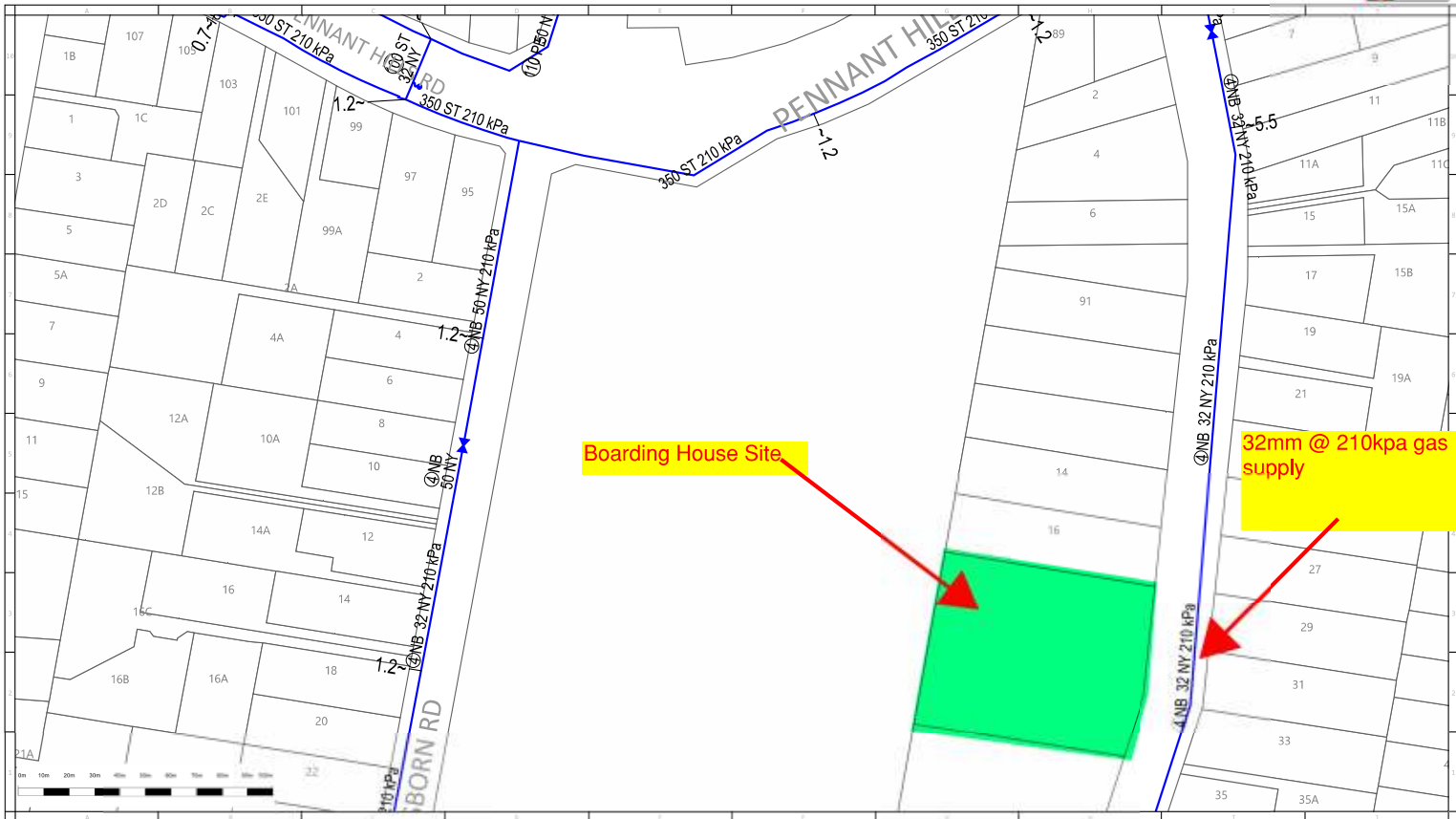
Plan 1 of 1

A3



# Appendix B

*Jemena Dial Before You Dig*



<p>AS/NZS 87 023 GSA 122</p>	<p><b>Utility - In Service - Proposed</b></p> <p>Underground Pressure</p> <p>Distribution - 2 kPa</p> <p>Distribution - 75 kPa</p> <p>Distribution - 30 kPa</p> <p>Distribution - 180 kPa</p>	<p><b>Main - In Service - Proposed</b></p> <p>Distribution - 310 kPa</p> <p>Distribution - 300 kPa</p> <p>Distribution - 400 kPa</p>	<p><b>High Pressure Main &amp; Pipeline - In Service - Proposed</b></p> <p>Secondary - 1080 kPa</p> <p>Secondary Service</p> <p>Primary - 3000 kPa</p> <p>JGN Trunk - 7000 kPa</p> <p>Transmission</p>	<p><b>Fittings, Valves &amp; Regulations</b></p> <p>Stopcock</p> <p>Valve</p> <p>Distance in metres of Main from Boundary Line</p> <p>100M = Metres Back of Kerb</p> <p>MPL = Metres from Pipeline</p> <p>Regulator Set</p> <p>Regulator Station</p> <p>Automatic Line Break Valve</p>	<p><b>Issue Date:</b> 14/09/2018</p> <p><b>DBYD Seq No:</b> 75537088</p> <p><b>DBYD Job No:</b> 14939759</p> <p><b>Scale:</b> 1:2000</p>
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**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 diagrammatic 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.