

# Technical Memorandum

February 17, 2023

<b>To</b>	Mr Jonathan Moss		
<b>Copy to</b>	Ricky Bligh, Dale Lovett		
<b>From</b>	Ruan Wolfaardt	<b>Tel</b>	+61 2 9239 7209
<b>Subject</b>	Proposed development 28 – 32 Bourke Rd, Alexandria Reticulated sewer network performance during dry and wet weather operation	<b>Project no.</b>	12603487

## 1. Introduction

Alexandria Property Development Pty Ltd are proposing to develop a multi-purpose health facility at Lot 1 DP324707 28-32 Bourke Rd, Alexandria NSW. It is understood the facility will include a mental health facility and medical centre.

Johnstaff Projects (NSW) Pty Ltd has engaged GHD Pty Ltd to assist with informing stakeholders on the expected operation of wastewater services for the proposed development during design flood events.

A Sydney Water Notice of Requirements (NOR) dated 28 November 2022 (Attachment 1), has been received by the developer for the proposed development, in accordance with the requirement of the Section 73 Subdivider/Compliance Certificate (Sydney Water Act 1994). The notice provides conditions by which the proposed development can connect to the existing Sydney Water reticulated sewer network.

Based on information provided by consultants performing stormwater investigations for the development, it is understood that the proposed development site may have high water levels in an adjacent roadway during a 1% AEP flood event, as shown in Figure 1.

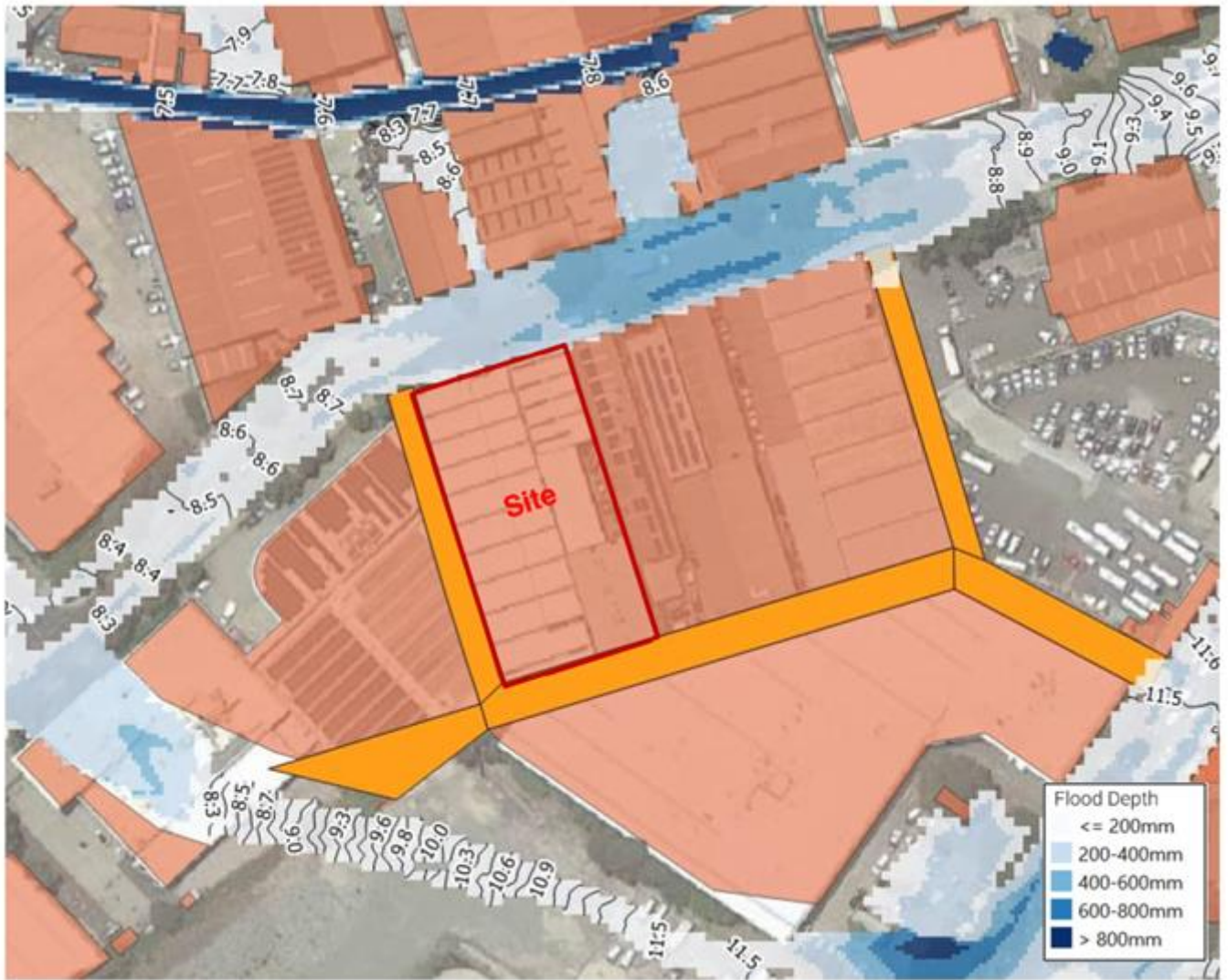


Figure 1 Modelled flood depth for 1% AEP event around proposed development site

## 1.1 Purpose of this Memorandum

The purpose of this Technical Memorandum (Tech Memo) is to inform the reader on the typical design and operation of wastewater services (building services and reticulated sewers) during wet weather events and how it relates to the Sydney region, and proposed development in Alexandria. This Tech Memo documents:

1. Review of the Sydney Water Notice of Requirements (NOR) for Sewer Connection for the proposed development.
2. High level comment on:
  - Typical reticulated sewer network operation.
  - Typical building services regarding wastewater servicing.
  - Relevant standards and guidelines used in engineering design.

The client also requested high level comment on drinking water supply to the proposed development during wet weather events. This Tech Memo documents:

3. Review of the Sydney Water Notice of Requirements (NOR) for Water Connection for the proposed development.
4. High level comment on:
  - Typical reticulated drinking water network operation.
  - Typical building services regarding drinking water servicing.
  - Relevant standards and guidelines used in engineering design.

## 1.2 Scope and limitations

This memorandum has been prepared by GHD for Johnstaff Projects (NSW) Pty Ltd based on relevant standards and guidelines for connection to reticulated sewer services in Sydney and an overview on typical sewer design.

This memorandum is limited to only providing the reader insight into typical sewer design and operation including in wet weather events. No engineering design was undertaken.

*This memorandum: has been prepared by GHD for Johnstaff Projects (NSW) Pty Ltd and may only be used and relied on by Johnstaff Projects (NSW) Pty Ltd for the purpose agreed between GHD and Johnstaff Projects (NSW) Pty Ltd as set out in section of this memorandum.*

*GHD otherwise disclaims responsibility to any person other than Johnstaff Projects (NSW) Pty Ltd arising in connection with this memorandum. GHD also excludes implied warranties and conditions, to the extent legally permissible.*

*The services undertaken by GHD in connection with preparing this memorandum were limited to those specifically detailed in the memorandum and are subject to the scope limitations set out in the memorandum.*

*The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the memorandum. GHD has no responsibility or obligation to update this memorandum to account for events or changes occurring subsequent to the date that the memorandum was prepared.*

*The opinions, conclusions and any recommendations in this memorandum are based on assumptions made by GHD described in this memorandum (refer section(s) 1.2). GHD disclaims liability arising from any of the assumptions being incorrect.*

## 2. Wastewater and drinking water servicing

Sanitary wastewater systems in Australia are separate from the stormwater system. They are designed to convey wastewater (typically bathroom, laundry, kitchen etc) from the building via sanitary plumbing (refer to Section 2.1 for typical building services details) to the relevant water authority's reticulated sewer network (see Figure 2). Rainfall and stormwater runoff is conveyed via a separate stormwater system.

The authority responsible for sewer services for the proposed development is Sydney Water, under the Sydney Water Act 1994 (see Section 3 for details of sewer network planning and design).

The authority responsible for drinking water services for the proposed development is Sydney Water, under the Sydney Water Act 1994 (see Section 4 for details of reticulated water network planning and design).

The Sydney Water Customer Contract (Operating Licence Schedule 4) sets out the rights and obligations of customers and sets out the minimum standards of customer service that can be expected.

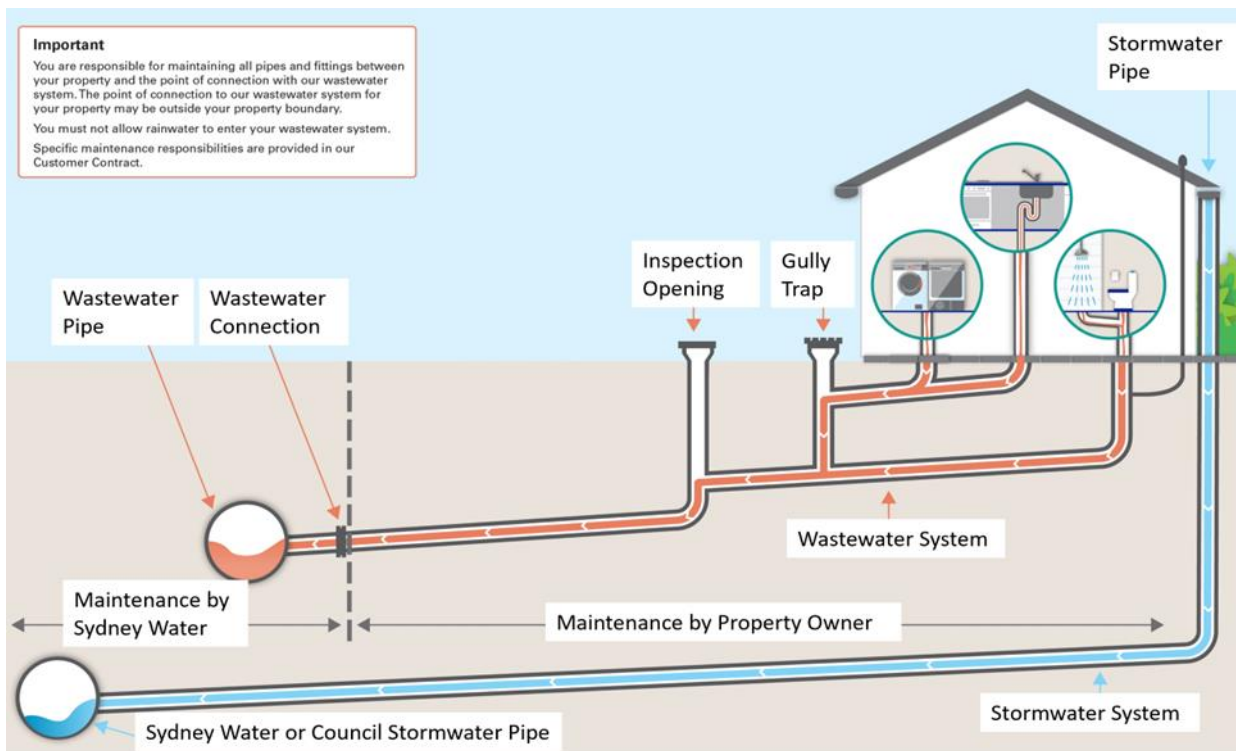


Figure 2 Typical connection of building wastewater services to authority sewer system (Sydney Water 2022)

## 2.1 Building services

### Wastewater

The in ground sewer system located within the confines of the property boundary is known as 'Sanitary Drainage'. The property sanitary drainage system collects wastewater from ablution, laundry, kitchen and treated trade waste areas and generally discharges to a single connection point to the utility sewer network. For Alexandria, this is the Sydney Water network.

Sanitary drainage connected to the Sydney Water network is required to be designed and installed to the requirements of the National Construction Code (NCC) Volume 3 – The Plumbing Code of Australia, AS/NZS 3500.2 and any Sydney Water requirements.

To protect the building from a sewer surcharge in the event of blockage or overloading, possibly caused by excess stormwater ingress in a flood event, every sanitary drainage system is required to be fitted with an overflow relief gully. The top of the overflow gully should be located externally to the building and at least 150mm below the ground floor level of the building, thereby preventing sewage from surcharging within the building.

Sometimes it is not possible to install an overflow relief gully. This would occur most often in inner city or built-up areas where buildings are built up to the property boundary. There are alternative provisions nominated in AS/NZS 3500.2, where these cannot be met, ground floor fixtures only may discharge through a reflux/non-return valve to the sewer by gravitation.

In designated flood affected areas, the top of the overflow gully riser is required to be finished at a level not less than 150 mm above the declared flood level or sealed with a removable watertight cover with a vent of the same size as the gully, terminating at a level not less than the declared flood level. Where either of these requirements cannot be achieved, no sanitary drain may gravitate to the network utility operator's sewer.

Where buildings have floor levels located below ground, the sanitary drainage from these fixtures will normally discharge to a pump well. The contents are then pumped to the ground level sanitary drainage system for gravitational discharge to the network sewer. Discharge to the sewer network is normally limited by the utility operator to approximately 2 L/s.

In older Sydney Water administered areas a boundary trap is required before the connection to the sewer network. This is a below ground gully trap to prevent sewer gases entering the sanitary drainage system.

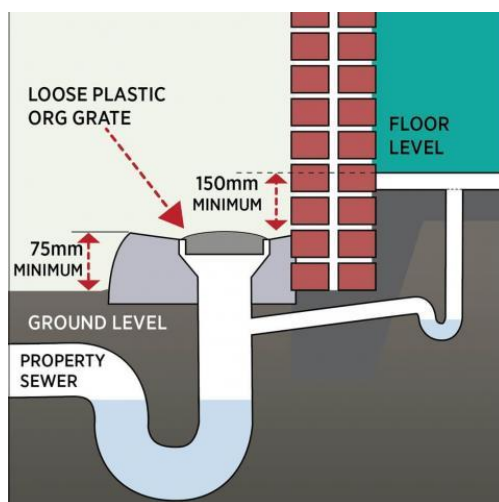


Figure 3 Typical overflow relief gully location and clearance dimensions (QBCC 2020)

## Freshwater

The building will be supplied by a metered freshwater connection to the Sydney Water main with appropriate backflow mitigation.

The building reticulated water system is required to be designed and installed to the requirements of the National Construction Code (NCC) Volume 3 – The Plumbing Code of Australia, AS/NZS 3500.1 and any Sydney Water requirements.

Where the available pressure within the town main is insufficient to meet the desired residual pressure at the hydraulically most remote point of the system, a pressure boost pump set will be required.

The pressure boost pumps are powered by electric motors and controlled by an adjacent switchboard. The pumps and associated electrical equipment are at risk of failure in a flood event if located at a level below the flood line. Water supply may still be maintained at levels within the building that the residual town main pressure has capacity to reach. The pressure experienced at upper floor levels may be reduced or non-existent without the assistance of the pumps.

## 3. Planning and design of sewer networks in Sydney

Reticulated sewer networks are designed to convey wastewater from the property connection point to the treatment plant (see Figure 4). The Water Services Association of Australia Gravity Sewerage Code states that the “overall objective is to provide a functional system that meets Water Agency obligations under applicable legislation, acts and/or regulations, its operating licence, and its customer contract for provision of sewerage services.”

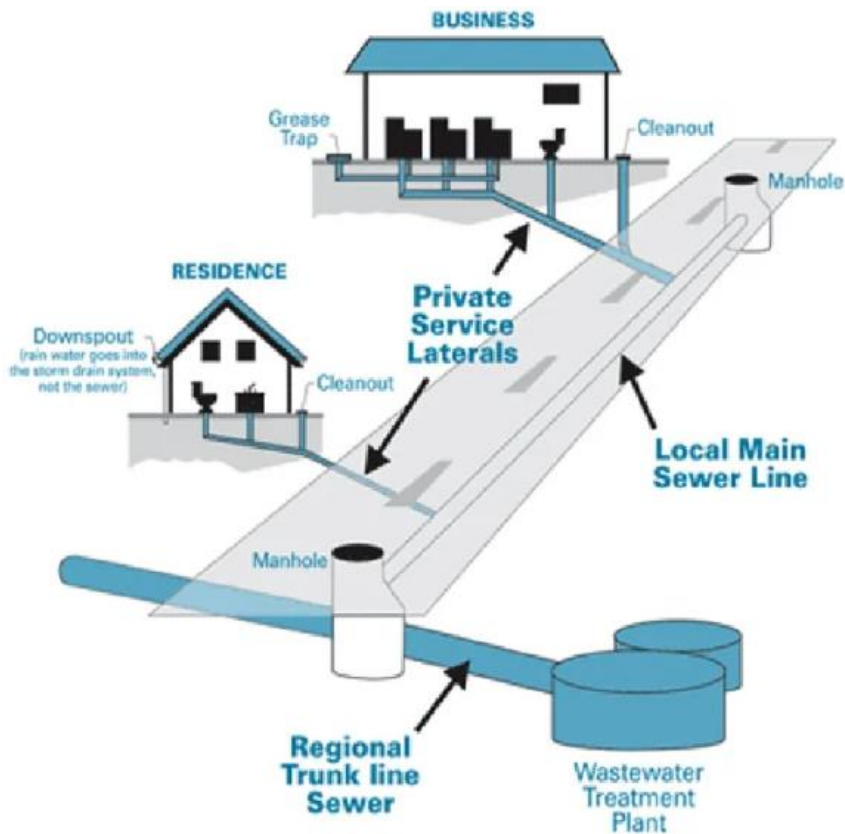


Figure 4 Typical sewer system design (extracted from: Design of Sewer System – Civil Engineers PK)

The typical wastewater system conveys sewage towards a wastewater treatment plant under gravity, where the difference from high to low elevation naturally facilitates flow. When a gravity-based alignment is not possible, it is common for wastewater to be forced uphill through a sewage pumping station (see Figure 5).

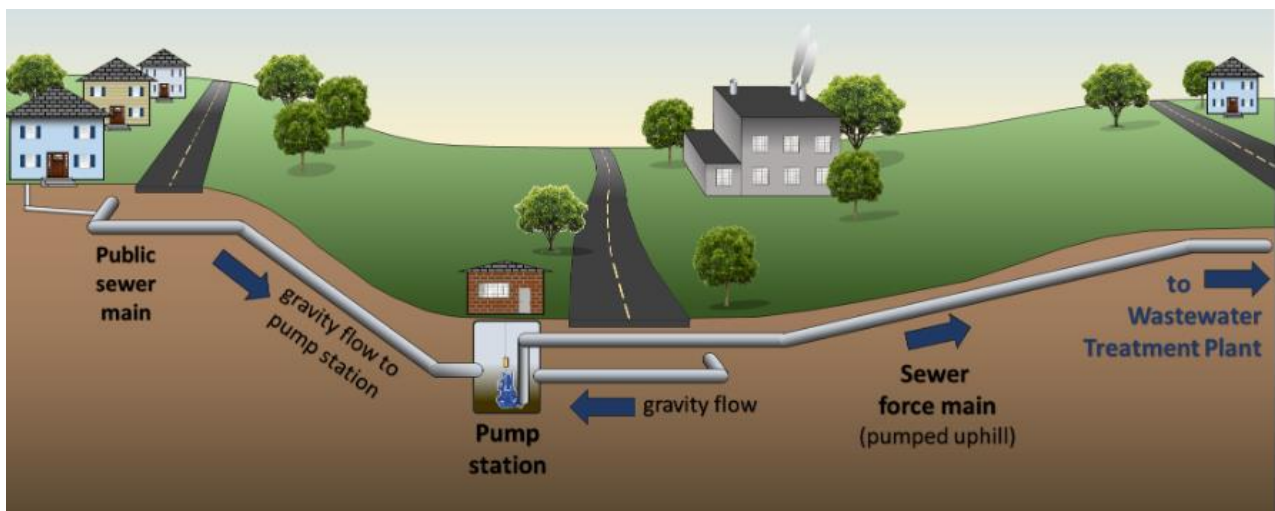


Figure 5 Typical wastewater system overview (extracted from Des Moines Metropolitan Wastewater Reclamation Authority)

Gravity sewer systems in Sydney are designed in accordance with the Water Services Association of Australia Gravity Sewerage Code of Australia (WSA 02-2014 V 3.1) and applicable Sydney Water codes, standards and guidelines. Where pump stations are required, they are to be designed to the Sewage Pumping Station Code of Australia (WSA 04-2005 V 2.1) and applicable Sydney Water codes, standards and guidelines.

As detailed in WSA Gravity Sewerage Code, the total sewer system is made up of transport, treatment, and disposal / reuse. The transportation process consists of three functional elements, namely trunk, branch, and reticulation subsystems (see Figure 6). Each of these subsystems may comprise a network of sewers, storage structures and sewage pump stations (SPSs) that collect and transport sewage from households, businesses, and industries to a sewage treatment plant for treatment and disposal of effluent and other by-products.

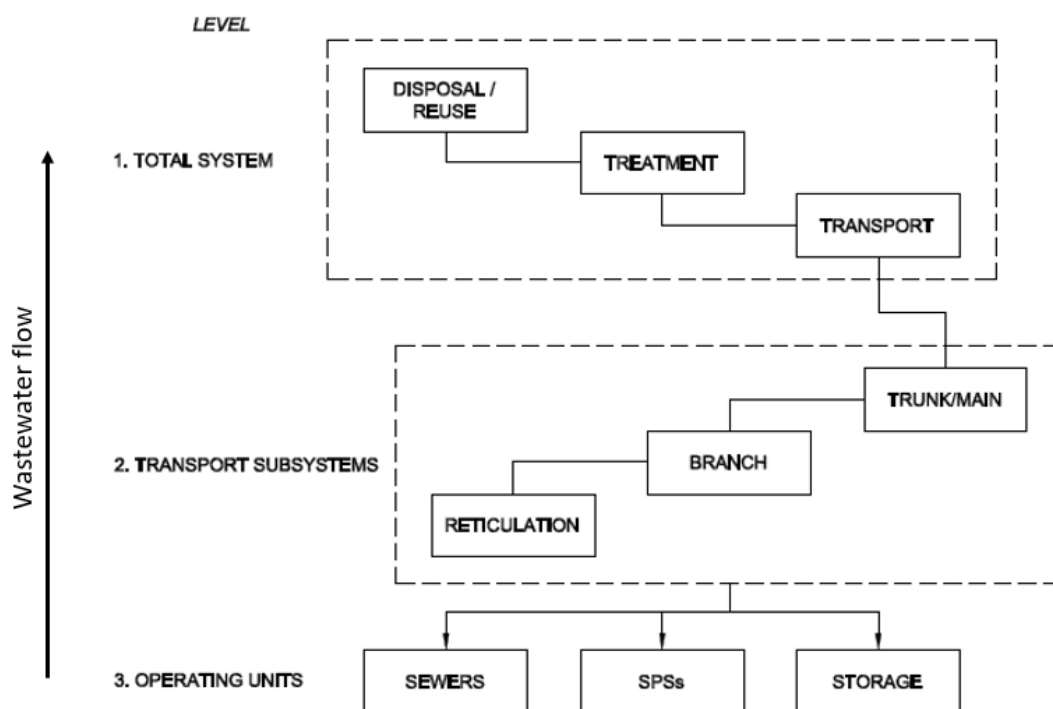


Figure 6 Disaggregation model for transportation subsystems (extracted from WSA 02-2014 V 3.1)

Each sewer is comprised of pipes and any associated fittings, ventilation, and maintenance structures. Reticulation sewer pipes, including property connection sewers, transfer sewage away from residential, commercial, and industrial properties. Reticulation pipes within a reticulation area are then connected by branch sewers, which are typically of larger diameter. The sewage then reaches a treatment facility through even larger trunk sewers.

Overflow or emergency relief structures (ERSs) within the sewer network allow controlled overflow from the wastewater system. This protects public health by reducing the risk of raw sewage being discharged from maintenance holes, gully traps and internal fittings such as floor wastes, sinks and toilets. ERSs aid in allowing continuous operation of sewer infrastructure including the use of toilets etc during wet weather.

Sewer systems are designed to operate separately from any stormwater system, and ideally no rainwater should enter the system. However, sewers can over time develop faults, such as cracks and separated joints. These faults and intrusions may allow rainwater and groundwater to enter, or infiltrate, during and following wet weather. Given this, sewer infrastructure is typically designed to accommodate additional wet weather flow (design wet weather flow).

Therefore, a sewerage transport network (reticulated sewer) is designed to transfer Design Flow i.e., all dry weather flows and design wet weather flows (includes additional flows generated by inflow and infiltration (I/I)), as shown in Figure 7).

$$\text{Design flow} = \text{PDWF} + \text{GWI} + \text{RDI}$$

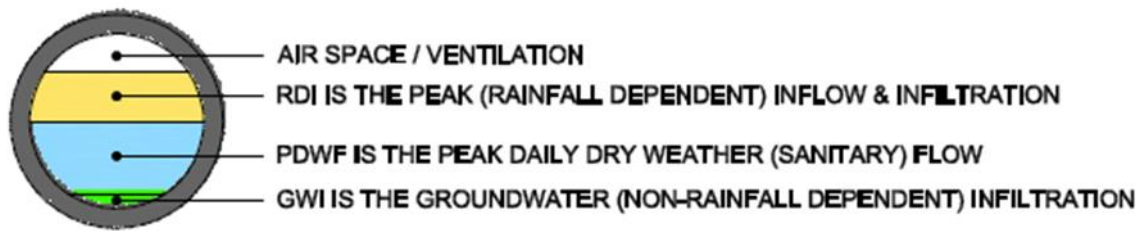


Figure 7 Flow components in a gravity system (extracted from WSA WSA 02-2014 V 3.1)

Rainfall derived infiltration and inflow (RDII) models are commonly used in characterising wet weather responses in the reticulated sewer system. The components of flow in sewers in response to wet weather events is generally accepted as comprising of the following, as represented in Figure 8 below:

- groundwater infiltration (GWI) component related to antecedent moisture conditions preceding wet weather events,
- a base wastewater flow (BWF), otherwise known as dry weather flow, component, and
- rainfall derived infiltration and inflow (RDII).

It is noted that there is often a time difference between the peak in rainfall event/flooding event and the peak of wet weather flow in the sewer system, depending on where storm event has occurred and the characteristics of the individual sewer network.

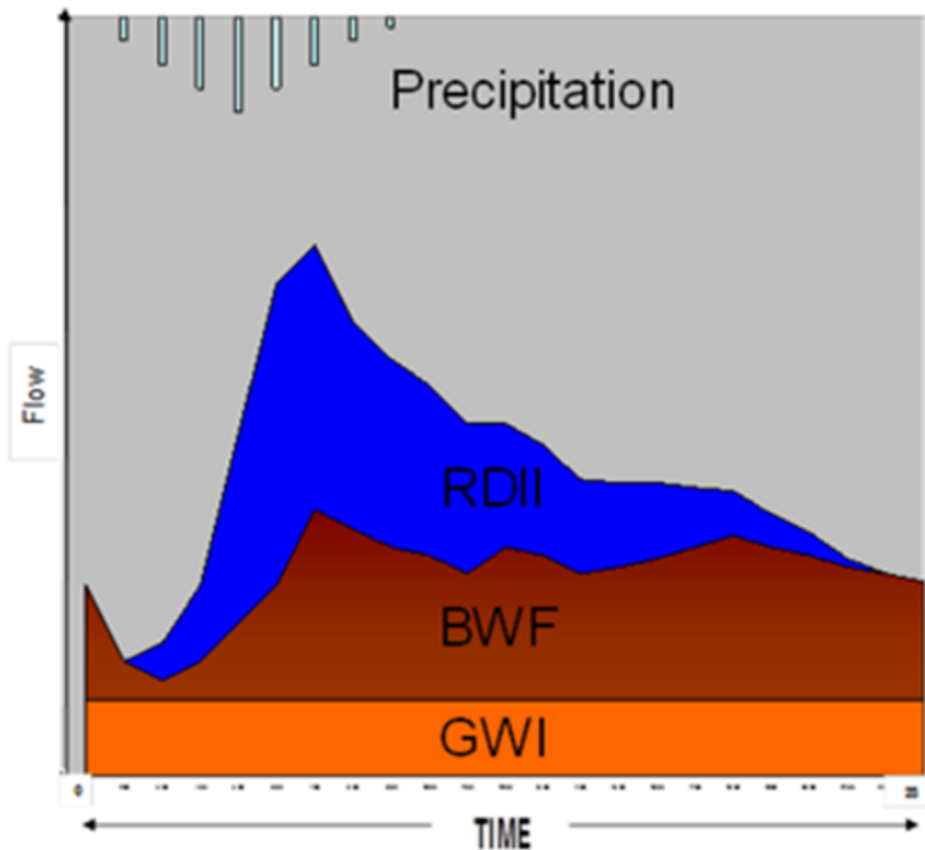


Figure 8 Components of wet-weather wastewater flow during a rainfall event (US EPA, 2007)

Sewer networks are designed so that if flows exceed the design capacity there are points in the network where the sewage is discharged at controlled points (ERS's) rather than backing up in the system and causing uncontrolled wastewater overflows.

Sydney Water's wastewater system is designed to have additional capacity to contain the extra flows entering the system during and after heavy rainfall. Though in extreme wet weather events, wastewater flows can exceed the system's capacity. As a safety measure ERS's are used to help prevent wastewater overflows from being released through maintenance holes or private plumbing connections.

### **3.1 Connection of proposed development to Sydney Water sewer**

The Sydney Water NOR for the proposed development (Section 3.2) states that the Section 73 application had been assessed "... and found that:

- *The existing 225 mm CL sewer main will serve the development.*
- *You must construct a waste water main extension to serve your development...."*

It is understood from the information provided in email on behalf of Johnstaff Projects, dated 03 February 2023, that the proposed ground floor of the building finished floor level (FFL) is 10.40 mAHD (to be above the PMF flood event), with a basement below which is protected from flooding up to 10.40 mAHD. The provided survey plan of detail (Attachment 2) indicates that ground level along Bourke Road is around 8.50 mAHD.

Based on available GIS information the Sydney Water 225 mm gravity sewer main fronts the proposed development site in Bourke Road and is part of the Malabar Wastewater System (refer to Figure 9 and Figure 10). The available information shows that the 225 mm gravity reticulation sewer connects to a 375 mm branch gravity sewer, with downstream surface levels as shown in Figure 10. The gravity branch sewer conveys the wastewater to sewerage pump station SP0039 (5.23 mAHD), where it is then forced under pressure into a large trunk main.

An overflow weir (ERS) located towards the end of the 375 mm branch sewer (upstream of SP0039) is recorded as having an overflow level of 4.26 mAHD and provides an overflow point to Sheas Creek.

Based on sewer network design principals, the available levels of the proposed development and Sydney Water overflow point (ERS), it is expected that the proposed development wastewater services would continue to operate effectively during wet weather events.

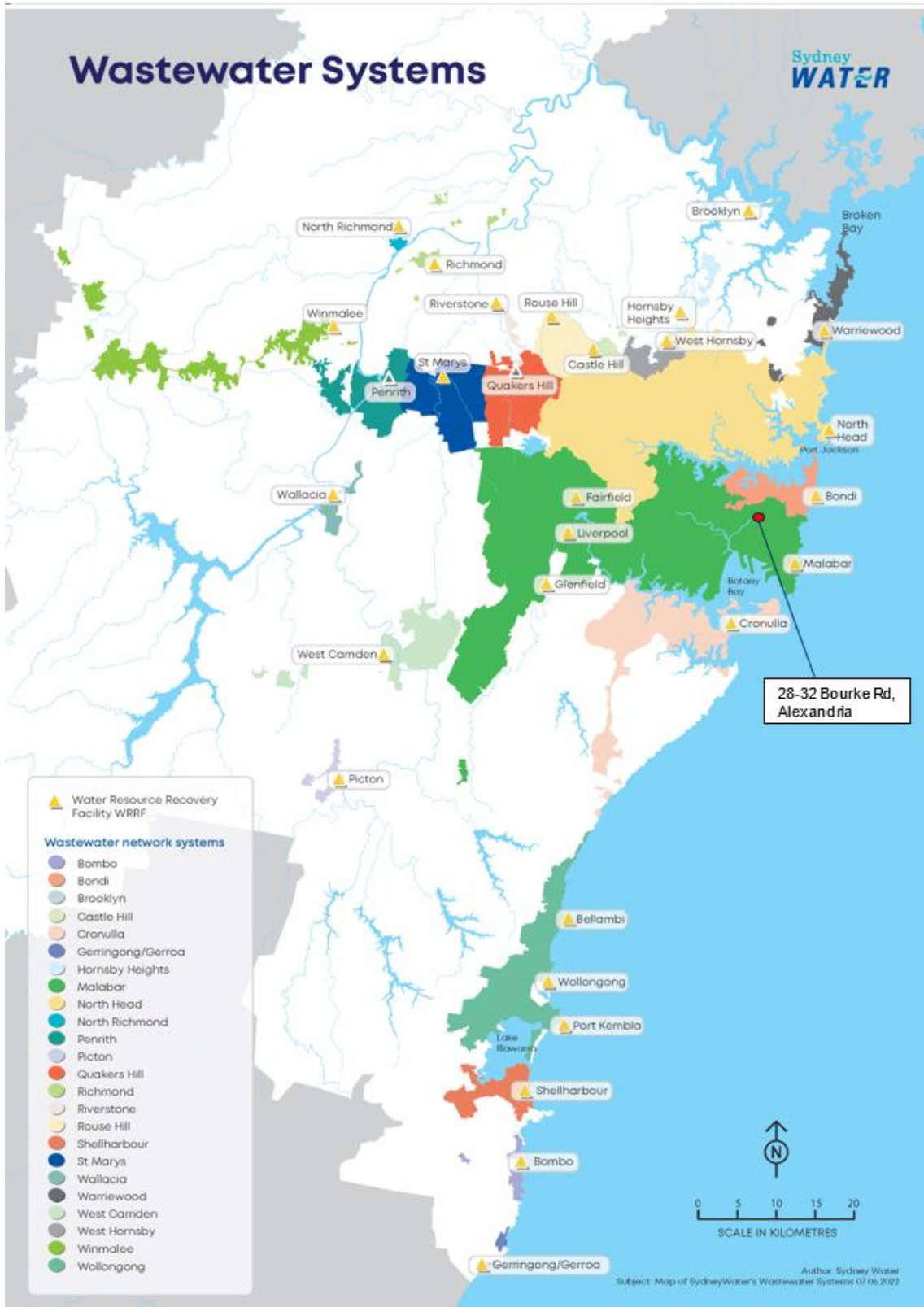


Figure 9 Sydney Water wastewater systems



Figure 10 Available existing sewer network servicing proposed development site details

## 4. Planning and design of reticulated drinking water systems in Sydney

Drinking water networks are designed to transfer potable water safely from treatment plants/service reservoirs to customer connections (see Figure 11). The Water Services Association of Australia Water Supply Code states the overall objective as "... a water supply system that meets the Water Agency's obligations under its operating licence and customer contract for water quality, continuity of supply and pressure at the draw-off point."

The Sydney Water Customer Contract sets out conditions and minimum service standards for the supply of water:

- Drinking water quality (CI 3.1.2)
  - To comply with the health related guidelines provided in the Australian Drinking Water Guidelines except to the extent otherwise specified by NSW Health, as required by the Operating Licence.
- Drinking water pressure (CI 3.1.4)
  - Minimum of 15 metres head of pressure at the point of connection to Sydney Water's water system (recognised as suitable for residential customers and non-residential customers).

The Sydney Water Drinking Water Manual is the overarching manual for the Drinking Water Quality Management System required under Sydney Water's Operating Licence, and describes the method for assuring the quality and quantity of drinking water supplied to customers.

Drinking water systems in Sydney are designed in accordance with the Water Services Association of Australia Water Supply Code of Australia (WSA 03-2011 V 3.1 Sydney Water Edition 2014) and applicable Sydney Water codes, standards and guidelines.

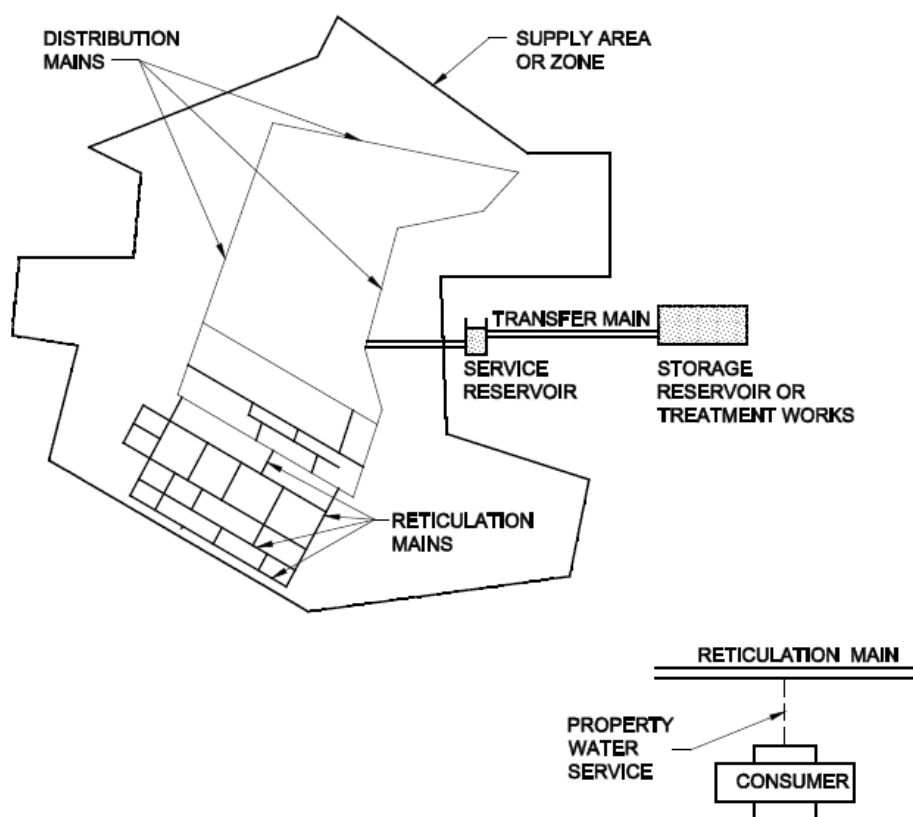


Figure 11 Typical water supply system (extracted from WSA 03-2011 V 3.1 – Sydney Water Edition 2014)

Drinking water systems are generally designed to reticulate from a service reservoir to customer connection points within a water supply zone. Some areas are pressure boosted as and when required. The network is

designed to meet minimum pressure requirements and continuity of supply based on storage and demand during design peak demand periods.

Drinking water supply systems are designed to be completely separate from other systems (such as stormwater and drainage) and are not expected to be compromised or interrupted during wet weather events.

#### 4.1 Connection of proposed development to Sydney Water’s water supply

The Sydney Water NOR for the proposed development (Section 3.1) states that the Section 73 application had been assessed for connection to the reticulated water network “... and found that:

- The existing 200 mm CICL has capacity to service this development...”

A schematic of the overall Sydney Water water supply system is provided in Figure 12. The proposed development is part of the Potts Hill distribution system (circled in blue in Figure 12 and shown in Figure 13), within the Botany Gravity Water Supply Zone.

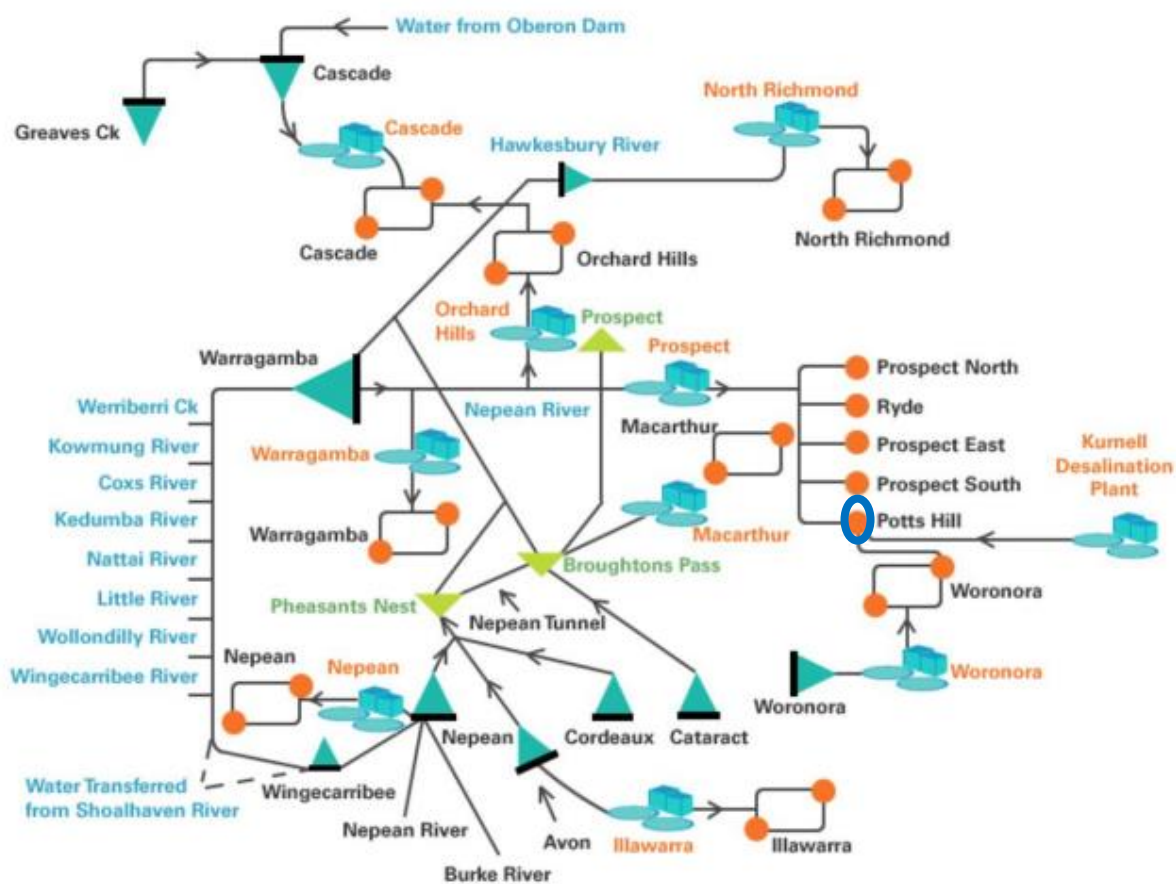


Figure 12 Schematic of the Sydney Water’s water supply system (extracted from: Sydney Water Drinking Water Manual)

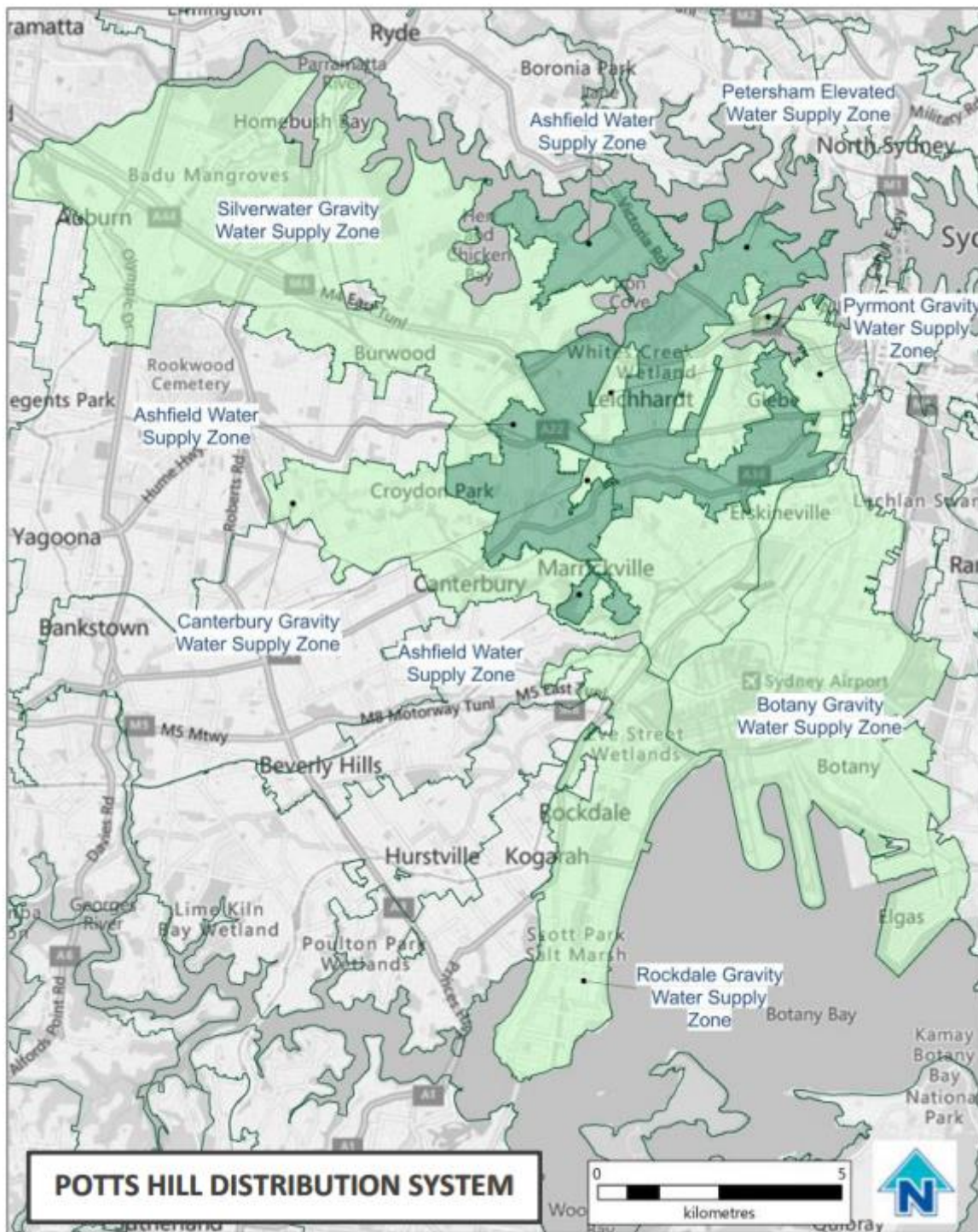


Figure 13 Potts Hill Water Distribution System (extracted from: Sydney Water Potts Hill Water Distribution Network Capacity Report)

Based on available information it is understood the proposed development is within the area supplied by the Petersham and Crown Street Reservoirs (refer to Figure 14). As previously stated, it is understood from the information provided that the proposed ground floor of the building finished floor level (FFL) is 10.40 mAHD.

Predicted actual network pressure for the proposed development during a designated design demand period would need to be checked using Sydney Water hydraulic network models. It is noted that water systems are designed for peak demand, which are not normally expected to occur during wet weather events.

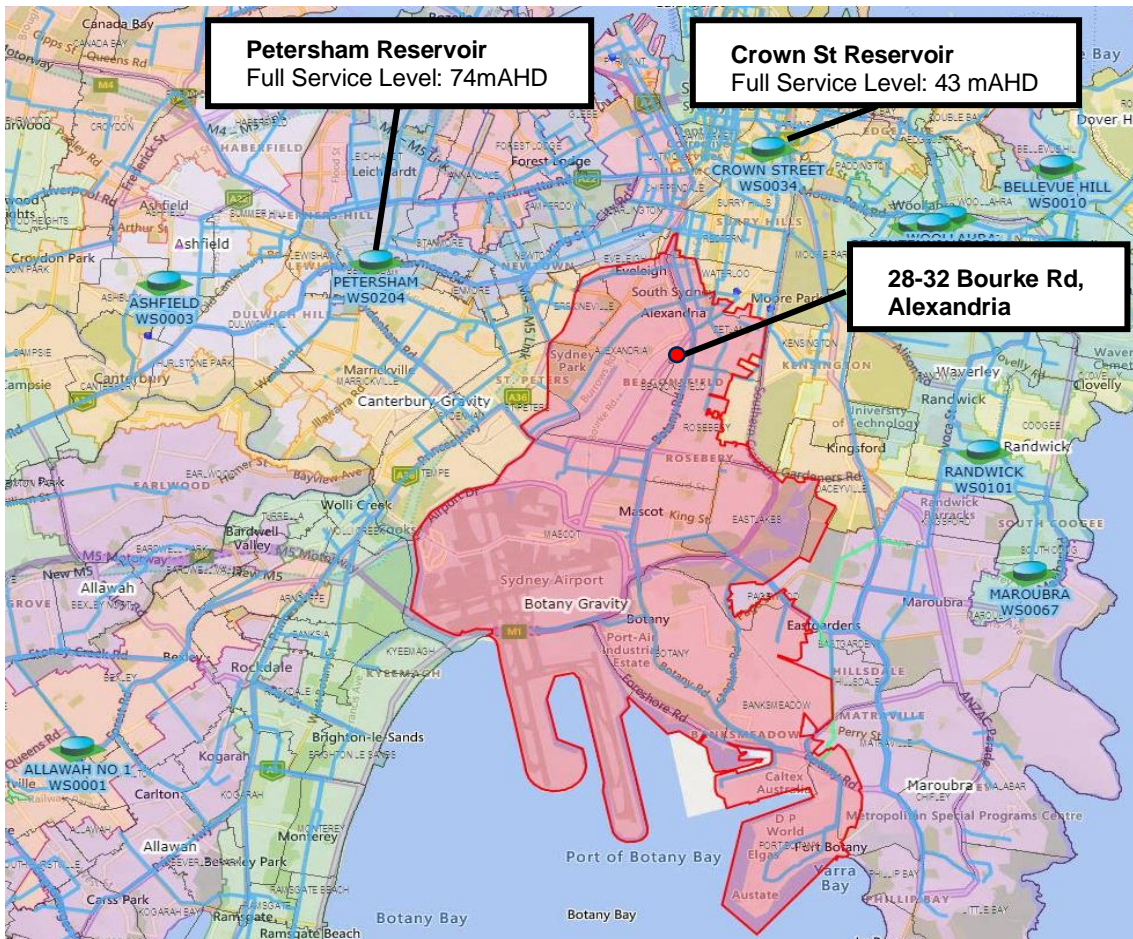


Figure 14 Botany Gravity Water Supply Zone with Reservoirs understood to supply the proposed development site

## 5. Summary

Wastewater servicing of the development is designed to safely convey wastewater from building fixtures to the water authority sewer network. Reticulated sewer networks are designed to transport wastewater away for treatment and disposal.

Sydney Water's wastewater system is designed to have additional capacity to contain the extra flows entering the system during and after heavy rainfall. Though in unlikely extreme wet weather events, wastewater flows can exceed the system's capacity. ERSs are used to help prevent wastewater overflows from being released through maintenance holes or private plumbing connections.

It is expected that the proposed development wastewater services will continue to operate effectively during wet weather events. This is based on engineering design principals for sewer network design and the that the FFL of the proposed development is at 10.4 mAHD (6 m higher than the recorded overflow weir level of 4.26 mAHD).

Hydraulic modelling using Sydney Water sewer system models would be required for detailed prediction as to how the sewer network may be impacted by a designated design rainfall event.

Sydney Water's drinking water system is designed to meet system demand and can be reasonably expected to continue to operate effectively during wet weather events.

Regards

**Ruan Wolfaardt**  
Senior Civil Engineer

# Attachments

# **Attachment 1**

**Sydney Water Notice of requirements**

Case number 202367

November 28, 2022

Alexandria Property Development Pty Ltd  
c/ - WARREN SMITH & PARTNERS PTY LTD

## Notice of requirements

### SECTION 73 SUBDIVIDER/COMPLIANCE CERTIFICATE (Sydney Water Act 1994, Part 6, Division 9)

<b>Developer:</b>	<b>Alexandria Property Development Pty Ltd</b>
<b>Your reference:</b>	<b>7515000</b>
<b>Development:</b>	<b>Lot 1 DP324707 28-32 BOURKE RD, Alexandria</b>
<b>Development Description:</b>	<b>Concept proposal for a multi-purpose health facility including a mental health hospital and medical centre space to be occupied by allied health providers.</b>
<b>Council Consent No:</b>	<b>by Dept of Planning and Infrastructure of</b>
<b>Your application date:</b>	<b>November 1, 2022</b>

Dear Applicant

We've assessed your application for a Section 73 Compliance Certificate for the development shown above. Before we can issue the Certificate you must meet our requirements set in this notice.

You have until **November 28, 2023** to accept our requirements, have your deeds executed, design endorsed and have a construction commencement notice (CCN) submitted. If you don't you'll have to reapply and pay another application fee and you'll receive another notice. The notice may change, and you may have new requirements.

Your Water Servicing Coordinator (WSC) will be your point of contact with us. They can answer questions you might have on our developer process and charges, or you can visit our websites [Plumbing, building & developing](#) page. We also have a [Developer application progress](#) so you can see the status of your application, just enter your case number and your email address, you'll receive a response right away.

## **What you need to do to get your Section 73 Certificate**

### **Summary**

You'll need to do the following:

1. Engage a Water Servicing Coordinator (WSC) before you sign the enclosed Developer Works Deed.
2. Sign both the original copies of the enclosed Developer Works Deed.
3. After you have signed the Deeds, build the required sewer works at your cost.
4. Meet any ancillary requirements detailed in section 4.
5. Have your building plans approved because what you are building may be over or near our pipes and we need to check your property building plans. Excavation and building works cannot commence until you have approval. Your WSC can tell you more about this and help with the approval
6. Complete any special requirements from Section 6.

### **Other things you might have to do:**

There may be other things you might need to do but are not a requirement of the Certificate. You must read these requirements to see if any of them are required as a result of your development. They're detailed at the end of this notice.

## Your requirements in detail

### 1. Water Servicing Coordinator (WSC)

You need to engage your current or another authorised WSC to manage and construct the works that you are required to service your development. If you choose to engage another WSC you need to let us know in **writing**.

You'll find a list of WSC's at [Listed providers](#) page on our website.

**Your WSC will give you a quote and information about our costs for services, works and our costs.**

### 2. Developer Works Deed

**After** you engage a WSC, you must engage other Developer Infrastructure Providers (Providers) to carry out, where needed, the design and construction of the works. They must all have the appropriate capability. Your WSC can assist you.

You and your Providers will need to enter into an agreement with us. To do this you need to sign and lodge **both originals** of the enclosed Developer Works Deed (Deed) with your nominated WSC. You will then need to work with your WSC to have the other Providers sign the Deed.

Before signing the Deed, each party must also read and understand the conditions of the agreement that are set out in the Developer Works Deed – Schedule 1: Standard Terms document. That document as well as information about it are available at Developer deeds and standard terms ([sydneywater.com.au](http://sydneywater.com.au)) where you can find more about Developer deeds & standard terms.

The Deed and the Standard Terms set out for this development all parties' roles and responsibilities as well as other information.

**You must do all the things that we ask you to do in the Deed.** This is because your development does not have sewer services and you must construct and pay for the following works extensions under this Deed to provide these services.

### 3. Water and sewer works

### 3.1 Water

Your development must have a frontage to a water main that is the right size and can be used for connection.

We've assessed your application and found that:

- The existing 200 mm CICL has capacity to service this development.
- Refer to Large water service connection

### 3.2 Sewer

Your development must have a sewer main that is the right size and can be used for connection. That sewer must also have a connection point within your development's boundaries.

We've assessed your application and found that:

- The existing 225 mm CL sewer main will serve the development.
- **You must construct a waste water main extension to serve your development.** The terms of the Deed define this extension as 'Minor Works', which means that they are designed and constructed under a simpler process. Your WSC will be able to provide further advice about this.

## 4. Ancillary matters

### 4.1 Flow Management and Isolation of our assets

The above works are constructed with a connection/cut-in to our water, wastewater, or stormwater assets. To ensure it complies with Occupational and Safety and Environment legislation, you can talk to your WSC about the timely submission to us of a request for flow management and asset isolation requirements.

### 4.2 Asset adjustments

After we've issued this Notice (and more detailed designs are available), we might require the watermain/sewer main/stormwater located in the footway/your property be adjusted/deviated. If this happens, you'll need to do this work as well as the extension we have detailed above at your cost. The work must meet the conditions of this Notice and you will need to complete it **before we can issue the Certificate.**

We need to see the completed designs for the work, and you'll have to lodge a security. The security will be refunded once the work is completed.

### 4.3 Entry onto neighbouring property

If you need to enter a neighbouring property, you must have written permission from all relevant property owners and tenants. You'll have to use our **Permission to enter' form(s)** for this. You can get copies of these from your WSC. They can also negotiate on your behalf to obtain permission. Please address all items on the form(s) including payment of compensation and whether there are other ways of designing and constructing that could avoid or reduce impacts on neighbouring properties. You're responsible for all costs of mediation involved in resolving any disputes that may occur. You need to allow enough time in case there are entry issues that need to be resolved.

### 4.4 Costs

Construction of these works means you'll have to pay project management, survey, design and construction costs directly to your providers. Additional costs payable to us might include:

- Design and construction audit fees
- Contract administration, operational area charge (Cut-In, Connection and Chlorination costs can average \$2,800 for each service) and customer redress before you finalise the development
- Creation or alteration of easements
- Additional fees for re-issuing a Notice of Requirements or Advice letter, or for updating the requirements where you have provided additional or amended information regarding your development
- Additional fees for reviewing alternate servicing option(s) for Minor or Major works
- If we engaged or will engage specialist consultants to review your proposal, we will pass that direct cost back to you as part of the Contract Administration costs. E.g. costs incurred from our Engineering Panel

**Note:** Payment of any goods and services including customer redress provided by us will be required prior to the issue of the Certificate or applicable a bank guarantee or cash bond.

Your WSC can talk you about these costs.

## 5. Approval of your Building Plans

You must have your building plans approved by a WSC **before the Certificate can be issued. In any case, building construction work MUST NOT commence until we have granted approval.** Approval is needed because construction/building works may affect our assets (e.g. water, sewer, and stormwater mains). If our stormwater channel, pipe, or culvert is located within ten (10) metres of your development site your WSC must refer your building plans to us for a detailed review.

Your WSC can tell you about the approval process including:

- Your provision, if required, of a “Services Protection Report” (also known as a “pegout”). This is needed to check whether the building and engineering plans show accurately where our assets are located in relation to your proposed building work. Your WSC will then either approve the plans or make requirements to protect those assets before approving the plans
- Possible requirements
- Their Costs
- Timeframes.

If your building plans need to be referred to us for detailed review you’ll be required to pay us for the costs associated with the detailed review.

You can also find information about this process (including technical specifications) on our [Plumbing, building & developing](#) page on our website or call us on 13 20 92.

**Notes:**

- **The Certificate will not be issued until the plans have been approved and, if required, our assets are altered or deviated**
- **You can only remove, deviate, or replace any of our pipes using temporary pipework if you have written approval from us. You must engage your WSC to arrange this approval**
- **You must obtain our written approval before you do any work on our systems. We’ll take action to have work stopped on the site if you do not have that approval. We will apply Section 44 of the *Sydney Water Act 1994*.**

## 6. Special Requirements

### The Final Development Consent

This application is based on the development and consent shown on Page 1. You must give us the **final** Development Consent before we issue the Certificate so we can make sure that the development is the same.

If the development is the same and all the requirements of this Notice have been met, we will issue the Certificate. If the development is NOT the same you must reapply (and pay another application fee) and we will issue another Notice. The requirements and charges may change in that Notice.

### **Other things you need to do**

**The requirements in this Notice relate only to your** development and are not a requirement for the Certificate. There could be other requirements we ask from you. You must read them before you go any further.

#### **Disused Sewerage Service Sealing**

Please do not forget that you must pay to disconnect all disused private sewerage services and seal them at the point of connection to our sewer main. This work must meet our standards in the Plumbing Code of Australia (the Code) and be done by a licensed drainer. The licensed drainer must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

#### **Soffit Requirements**

Please be aware that floor levels must be able to meet our soffit requirements for property connection and drainage.

#### **Requirements for Business Customers for Commercial and Industrial Property Developments**

If this property is to be developed for Industrial or Commercial operations, it may need to meet the following requirements:

#### **Trade Wastewater Requirements**

If this development is going to generate trade wastewater, the property owner must submit an application requesting permission to discharge trade wastewater to Sydney Water's sewerage system. You must wait for approval of this permit before any business activities can commence.

The permit application should be emailed to Sydney Water's Business Customer Services at [businesscustomers@sydneywater.com.au](mailto:businesscustomers@sydneywater.com.au)

It is illegal to discharge Trade Wastewater into the Sydney Water sewerage system without permission.

A **Boundary Trap** is required for all developments that discharge trade wastewater where arrestors and special units are installed for trade wastewater pre-treatment.

If the property development is for Industrial operations, the wastewater may discharge into a sewerage area that is subject to wastewater reuse. Find out from Business Customer Services if this is applicable to your development.

### **Backflow Prevention Requirements**

Backflow is when there is unintentional flow of water in the wrong direction from a potentially polluted source into the drinking water supply.

All properties connected to Sydney Water's supply must install a testable **Backflow Prevention Containment Device** appropriate to the property's hazard rating. Property with a high or medium hazard rating must have the backflow prevention containment device tested annually. Properties identified as having a low hazard rating must install a non-testable device, as a minimum.

Separate hydrant and sprinkler fire services on non-residential properties, require the installation of a testable double check detector assembly. The device is to be located at the boundary of the property.

Before you install a backflow prevention device:

1. Get your hydraulic consultant or plumber to check the available water pressure versus the property's required pressure and flow requirements.

2. Conduct a site assessment to confirm the hazard rating of the property and its services. Contact PIAS at NSW Fair Trading on **1300 889 099**.

For installation you will need to engage a licensed plumber with backflow accreditation who can be found on the Sydney Water website:

<http://www.sydneywater.com.au/Plumbing/BackflowPrevention/>

### **Water Efficiency Recommendations**

Water is our most precious resource and every customer can play a role in its conservation. By working together with Sydney Water, business customers are able to reduce their water consumption. This will help your business save money, improve productivity and protect the environment.

Some water efficiency measures that can be easily implemented in your business are:

- Install water efficiency fixtures to help increase your water efficiency, refer to WELS (Water Efficiency Labelling and Standards (WELS) Scheme, <http://www.waterrating.gov.au/>
- Consider installing rainwater tanks to capture rainwater runoff, and reusing it, where cost effective. Refer to <http://www.sydneywater.com.au/Water4Life/InYourBusiness/RWTCalculator.cfm>
- Install water-monitoring devices on your meter to identify water usage patterns and leaks.
- Develop a water efficiency plan for your business.

It is cheaper to install water efficiency appliances while you are developing than retrofitting them later.

### **Contingency Plan Recommendations**

Under Sydney Water's [customer contract](#) Sydney Water aims to provide Business Customers with a continuous supply of clean water at a minimum pressure of 15meters head at the main tap. This is equivalent to 146.8kpa or 21.29psi to meet reasonable business usage needs.

Sometimes Sydney Water may need to interrupt, postpone or limit the supply of water services to your property for maintenance or other reasons. These interruptions can be planned or unplanned.

Water supply is critical to some businesses and Sydney Water will treat vulnerable customers, such as hospitals, as a high priority.

Have you thought about a **contingency plan** for your business? Your Business Customer Representative will help you to develop a plan that is tailored to your business and minimises productivity losses in the event of a water service disruption.

For further information please visit the Sydney Water website at:

<http://www.sydneywater.com.au/OurSystemsandOperations/TradeWaste/> or contact Business Customer Services on **1300 985 227** or [businesscustomers@sydneywater.com.au](mailto:businesscustomers@sydneywater.com.au)

## **Fire Fighting**

Definition of fire fighting systems is the responsibility of the developer and is not part of the Section 73 process. It is recommended that a consultant should advise the developer regarding the fire fighting flow of the development and the ability of our system to provide that flow in an emergency. Sydney Water's Operating Licence directs that our mains are only required to provide domestic supply at a minimum pressure of 15 m head.

A report supplying modelled pressures called the Statement of Available pressure can be purchased through [Sydney Water Tap in](#)™ and may be of some assistance when defining the fire fighting system. The Statement of Available pressure may advise flow limits that relate to system capacity or diameter of the main and pressure limits according to pressure management initiatives. If mains are required for fire fighting purposes, the mains shall be arranged through the water main extension process and not the Section 73 process.

## **Large Water Service Connection**

A water main are available to provide your development with a domestic supply. The size of your development means that you will need a connection larger than the standard domestic 20 mm size.

To get approval for your connection, you will need to lodge an application with [Sydney Water Tap in](#)<sup>TM</sup>. You, or your hydraulic consultant, may need to supply the following:

- a plan of the hydraulic layout
- a list of all the fixtures/fittings within the property
- a copy of the fireflow pressure inquiry issued by us
- a pump application form (if a pump is required)
- all pump details (if a pump is required).

You'll have to pay an application fee.

We don't consider whether a water main is adequate for fire fighting purposes for your development. We can't guarantee that this water supply will meet your Council's fire fighting requirements. The Council and your hydraulic consultant can help.

### **Disused Water Service Sealing**

You must pay to disconnect all disused private water services and seal them at the point of connection to our water main. This work must meet our standards in the Plumbing Code of Australia (the Code) and be done by a licensed plumber. The licensed plumber must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

### **Other fees and requirements**

We may be involved in other aspects of your development and there will be other fees and requirements. These include:

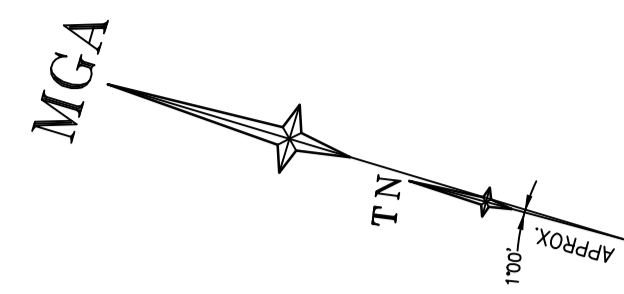
- the installation of backflow prevention devices, your plumber will advise you about this,
- trade waste requirements

- large water connections and
- Council firefighting requirements (it will help you if you know what the firefighting requirements are for your development as soon as possible, your hydraulic consultant can help you with this).

**END OF NOTICE**

# **Attachment 2**

**Plan of Detail and Levels over Lots 1, 2  
& 3 in DP324707 known as 28-32  
Bourke Road, Alexandria**

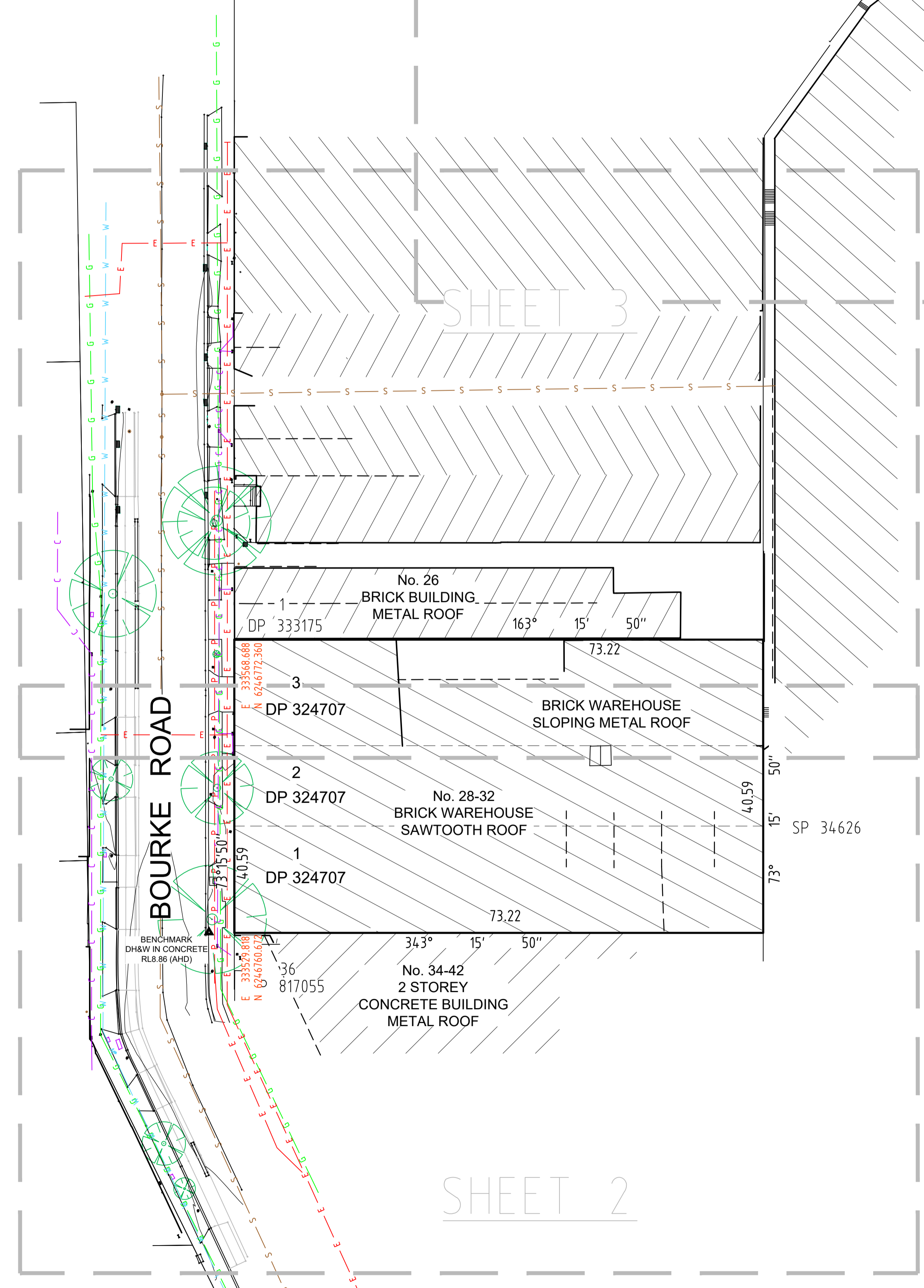


SHEET 4

O'RIORDAN STREET

SP 34626

SHEET 3



SHEET 2

**LEGEND**

BENCH MARK	▲
COMMS PIT	■ COM
ELECTRIC LIGHT POLE	● ELP
STREET SIGN	⊠ SS
HYDRANT	■ HYD
WATER METER	⊠ WM
GAS VALVE	⊠ GAS
PIT WITH METAL LID	□ MLID
BOLLARD	○ BOL
GRATED INLET PIT	■ GIP
KERB INLET PIT	■ KIP
STOP VALVE	⊠ SV
SEWER INSPECTION POINT	○ SIP
SEWER MANHOLE	○ SMH
GATE	⊠
VEHICLE CROSSING (VC)	⊠ (VC)
GAS (DBYD)	— G —
COMMUNICATIONS (DBYD)	— C —
WATER (DBYD)	— W —
SEWER (DBYD)	— S —
ELECTRICITY (OVERHEAD)	— P —

**NOTES**

1. THE BOUNDARIES HAVE NOT BEEN MARKED ON GROUND
2. ALL AREAS AND DIMENSIONS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE BY NSW LAND REGISTRY SERVICES AND ARE SUBJECT TO FINAL SURVEY
3. ORIGIN OF LEVELS ON A.H.D. IS TAKEN FROM SSM24974 R.L. 8.337 (A.H.D.) IN BOURKE ROAD
4. CONTOUR INTERVAL 0.5 m
5. CONTOURS ARE INDICATIVE ONLY. ONLY SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION
6. ONLY SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION
7. KERB LEVELS ARE TO THE TOP OF KERB UNLESS SHOWN OTHERWISE
8. FLOOR LEVELS SHOWN ARE THRESHOLD LEVELS. NO INVESTIGATION OF INTERNAL FLOOR LEVELS HAS BEEN UNDERTAKEN
9. NO INVESTIGATION OF UNDERGROUND SERVICES HAS BEEN MADE. SERVICES HAVE BEEN PLOTTED FROM RELEVANT AUTHORITIES INFORMATION AND HAVE NOT BEEN SURVEYED. ALL RELEVANT AUTHORITIES SHOULD BE NOTIFIED PRIOR TO ANY EXCAVATION ON OR NEAR THE SITE
10. B/4/7 DENOTES TREE SPREAD OF 8m, TRUNK DIAMETER OF 0.4m & APPROX HEIGHT OF 7m
11. BEARINGS SHOWN ARE MGA (MAP GRID OF AUSTRALIA) ADD APPROX. 1°00' FOR TRUE NORTH



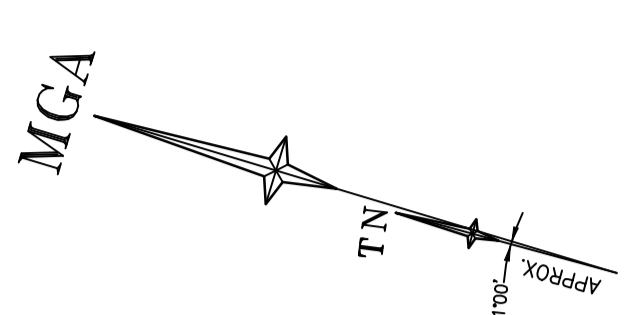
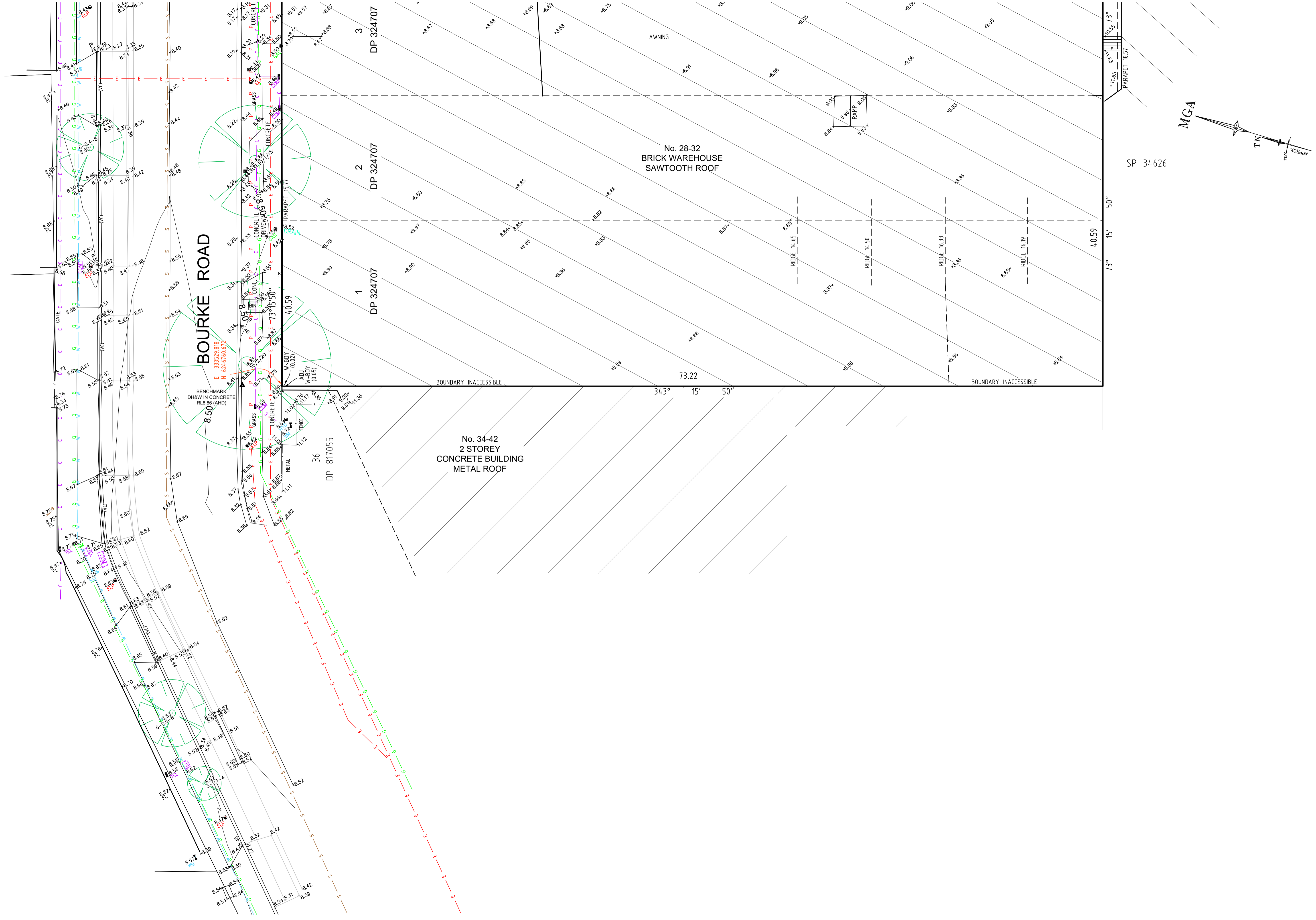
Revision	Date	Description	Reference	Revision	Date	Description	Reference
H	00/00/00	—	00	D	00/00/00	—	00
G	00/00/00	—	00	C	20/07/22	MGA COORDINATES ADDED	002
F	00/00/00	—	00	B	13/05/22	ADDITIONAL DETAIL ADDED	002
E	00/00/00	—	00	A	08/03/22	ADDITIONAL DETAIL ADDED	001



THIS IS THE PLAN REFERRED TO IN MY LETTER DATED: *Matthew Silk* Registered Surveyor NSW ID: 8650

Client JOHNSTAFF  
Drawing title PLAN OF DETAIL AND LEVELS OVER LOTS 1,2&3 IN DP324707  
KNOWN AS 28-32 BOURKE ROAD, ALEXANDRIA

datum AHD  
site Area 2972m<sup>2</sup>  
LGA SYDNEY  
reference number 51596 001DT  
scale 1:400 @A1  
date of survey 02/12/2021  
SHEET 4 OF 1



SP 34626

73° 15' 50"

40.59

73.22

No. 34-42  
2 STOREY  
CONCRETE BUILDING  
METAL ROOF

No. 28-32  
BRICK WAREHOUSE  
SAWTOOTH ROOF

BOURKE ROAD

1 DP 324707  
2 DP 324707  
3 DP 324707

36 DP 817055

BENCHMARK  
DH&W IN CONCRETE  
RL8.86 (AHD)

**DIAL BEFORE YOU DIG**  
www.1100.com.au

**GDA2020**

SCALE 1:150 @ A1

Revision	Date	Description	Reference	Revision	Date	Description	Reference
H	00/00/00		00	D	00/00/00		00
G	00/00/00		00	C	20/07/22	MGA COORDINATES ADDED	002
F	00/00/00		00	B	13/05/22	ADDITIONAL DETAIL ADDED	002
E	00/00/00		00	A	08/03/22	ADDITIONAL DETAIL ADDED	001

**LTS**  
CONFIDENCE TOGETHER

www.lts.com.au | P 1300 587 000

THIS IS THE PLAN REFERRED TO IN MY LETTER DATED:

Client JOHNSTAFF

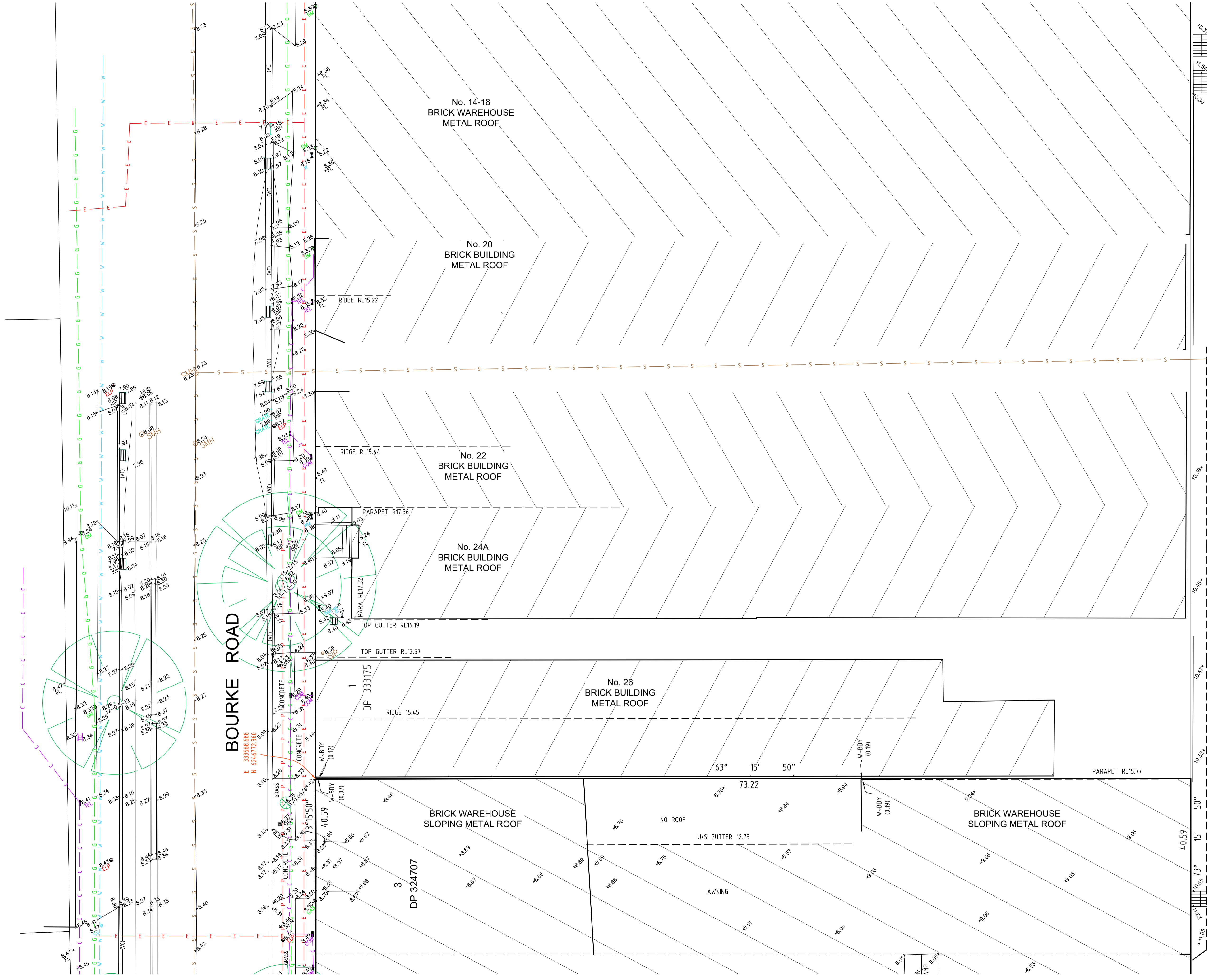
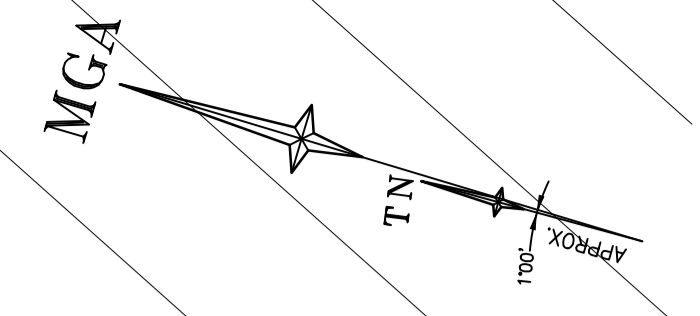
Drawing title  
PLAN OF DETAIL AND LEVELS OVER LOTS 1,2&3 IN DP324707  
KNOWN AS 28-32 BOURKE ROAD, ALEXANDRIA

Registered Surveyor NSW  
ID: 8450

datum AHD  
site Area 2972m<sup>2</sup>  
LGA SYDNEY

reference number 51596 001DT  
scale 1:150 @A1  
date of survey 02/12/2021

SHEET 2  
OF 4



**BOURKE ROAD**

**DIAL BEFORE YOU DIG**  
www.1100.com.au

**GDA2020**

SCALE 1:150 @ A1

Revision	Date	Description	Reference	Revision	Date	Description	Reference
H	00/00/00		00	D	00/00/00		00
G	00/00/00		00	C	20/07/22	MGA COORDINATES ADDED	002
F	00/00/00		00	B	13/05/22	ADDITIONAL DETAIL ADDED	002
E	00/00/00		00	A	08/03/22	ADDITIONAL DETAIL ADDED	001

**LTS**  
CONFIDENCE TOGETHER

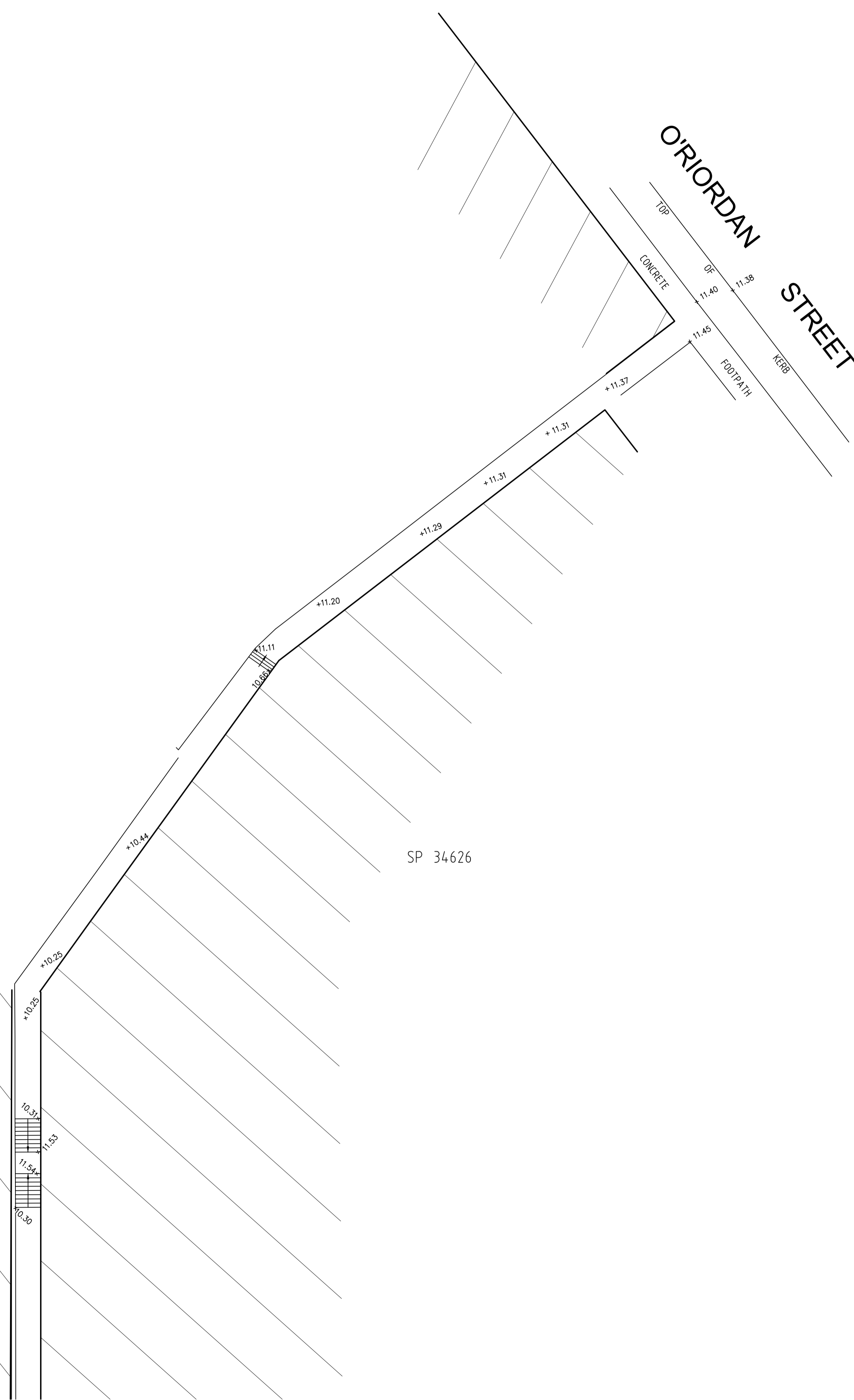
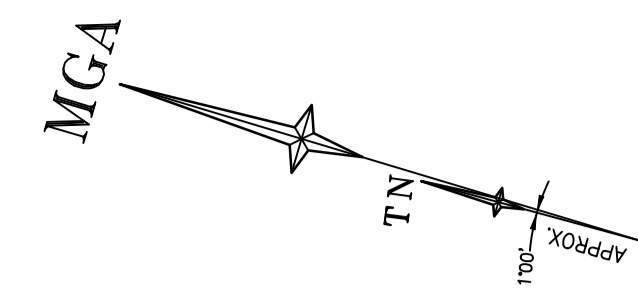
THIS IS THE PLAN REFERRED TO IN MY LETTER  
DATED:  
Registered Surveyor NSW  
ID: 8450

Client **JOHNSTAFF**  
Drawing title  
**PLAN OF DETAIL AND LEVELS OVER LOTS 1,2&3 IN DP324707 KNOWN AS 28-32 BOURKE ROAD, ALEXANDRIA**

datum AHD  
site Area 2972m<sup>2</sup>  
LGA SYDNEY

reference number 51596 001DT  
scale 1:150 @A1  
date of survey 02/12/2021

SHEET 3  
OF 4



**DIAL BEFORE YOU DIG**  
www.1100.com.au

**GDA2020**

SCALE 1:150 @ A1

Revision	Date	Description	Reference	Revision	Date	Description	Reference
H	00/00/00	-	00	D	00/00/00	-	00
G	00/00/00	-	00	C	20/07/22	MGA COORDINATES ADDED	002
F	00/00/00	-	00	B	13/05/22	ADDITIONAL DETAIL ADDED	002
E	00/00/00	-	00	A	08/03/22	ADDITIONAL DETAIL ADDED	001

**LTS**  
CONFIDENCE TOGETHER

www.lts.com.au | P 1300 587 000

THIS IS THE PLAN REFERRED TO IN MY LETTER DATED: *Matthew Hill*  
Registered Surveyor NSW  
ID: 8450

Client JOHNSTAFF  
Drawing title  
PLAN OF DETAIL AND LEVELS OVER LOTS 1,2&3 IN DP324707  
KNOWN AS 28-32 BOURKE ROAD, ALEXANDRIA

datum AHD  
site Area 2972m<sup>2</sup>  
LGA SYDNEY

reference number 51596 001DT  
scale 1:150 @A1  
date of survey 02/12/2021

SHEET 4 OF 4

