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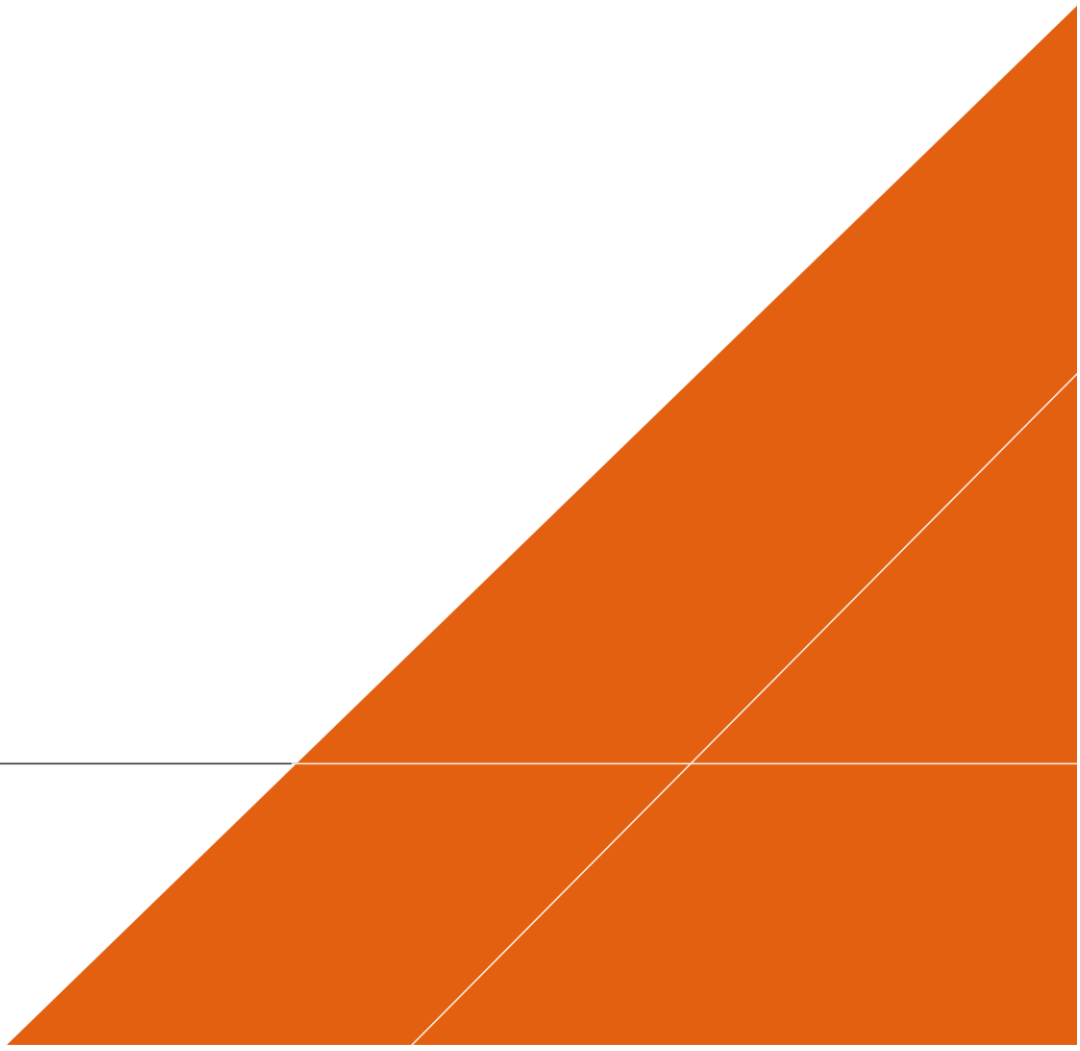
HARBOURSIDE SHOPPING CENTRE

Utilities Report SSDA1 – Stage 1

27 SEPTEMBER 2016



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MIRVAC
HARBOURSIDE SHOPPING CENTRE

Utilities Report

Stage 1 Development Application (DA) Report

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REVISIONS

Revision	Date	Description	Prepared by	Approved by
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1 INTRODUCTION

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

Mirvac Projects Pty Ltd (Mirvac) is seeking to secure approval to establish concept proposal details for the redevelopment of the Harbourside Shopping Centre (Harbourside), including a new retail shopping centre, residential apartment tower and substantial public domain improvements.

The project supports the realisation of the NSW State Government's vision for an expanded 'cultural ribbon' spanning from Barangaroo, around to Darling Harbour and Pyrmont. The project importantly will add further renewed diversity in tourism and entertainment facilities to reinforce Sydney's CBD being Australia's pre-eminent tourist destination.

1.1 Background

Mirvac acquired Harbourside, a key location within the Darling Harbour precinct, in November 2013. Harbourside, which was opened in 1988 as part of the Bicentennial Program, has played a key role to the success of Darling Harbour as Australia's premier gathering and entertainment precinct.

Despite its success, with an annual pedestrian visitation of around 13 million people, Harbourside is now outdated and in decline. The building lacks a quality interface to the Darling Harbour public domain and Cockle Bay and does not integrate well with the major transformation projects underway and planned for across Darling Harbour.

Harbourside is at risk of being left behind and undermining the significant investment being made in Darling Harbour that will see it return to the world stage as a destination for events and entertainment.

Accordingly, Mirvac are taking a carefully considered and staged approach to the complete revitalisation of the site and its surrounds.

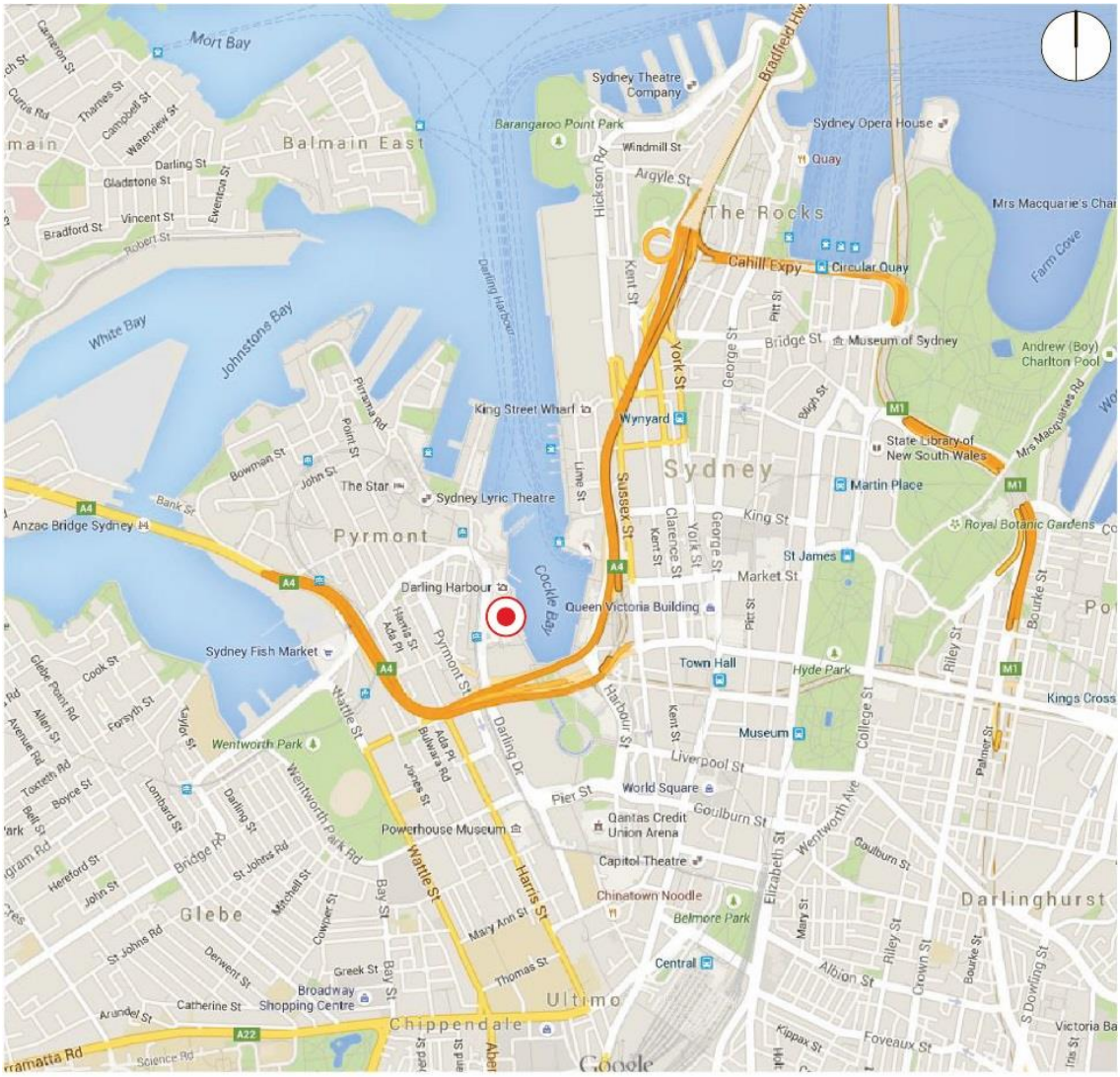
1.2 Site Description

The Site is located within Darling Harbour. Darling Harbour is a 60 hectare waterfront precinct on the south-western edge of the Sydney Central Business District that provides a mix of functions including recreational, tourist, entertainment and business.

More generally the site is bound by Pyrmont Bridge to the north, the Sydney International Convention, Exhibition and Entertainment Centre Precinct (SICEEP) to the south, Darling Drive and the alignment of the Light Rail to the west and Cockle Bay to the east.

A locational context area plan and location plan are provided at Figures 1 and 2 below.

The Darling Harbour precinct is undergoing significant redevelopment as part of the SICEEP, Darling Square, and IMAX renewal projects. The urban, built form and public transport / pedestrian context for Harbourside will fundamentally change as these developments are progressively completed.



The Site

Figure 1: Location Context Area Plan (Source: Google Maps)

1.3 Overview of Proposed Development

The proposal relates to a staged development application and seeks to establish concept proposal details for the renewal and re-imagining of Harbourside.

The concept proposal establishes the vision and planning and development framework which will be the basis for the consent authority to assess future detailed development proposals.

The Harbourside site is to be developed for a mix of non-residential and residential uses, including retail and restaurants, residential apartments, and open space.

The Concept Proposal seeks approval for the following key components and development parameters:

- Demolition of existing site improvements, including the Harbourside Shopping Centre, pedestrian bridge links across Darling Drive, obsolete monorail infrastructure, and associated tree removal;
- A network of open space areas and links generally as shown within the Public Domain Concept Proposal, to facilitate re-integration of the site into the wider urban context;

- Building envelopes;
- Land uses across the site, non-residential and residential uses;
- A maximum total Gross Floor Area (GFA) across the Harbourside site of 87,000m2 for mixed use development (non-residential and residential development);
- Basement car parking;
- Car parking rates to be utilised in subsequent detailed (Stage 2) Development Applications);
- Urban Design and Public Realm Guidelines to guide future development and the public domain; and
- Strategies for utilities and services provision, drainage and flooding, and ecological sustainable development.

A more detailed and comprehensive description of the proposal is contained in the Environmental Impact Statement (EIS) prepared by JBA.

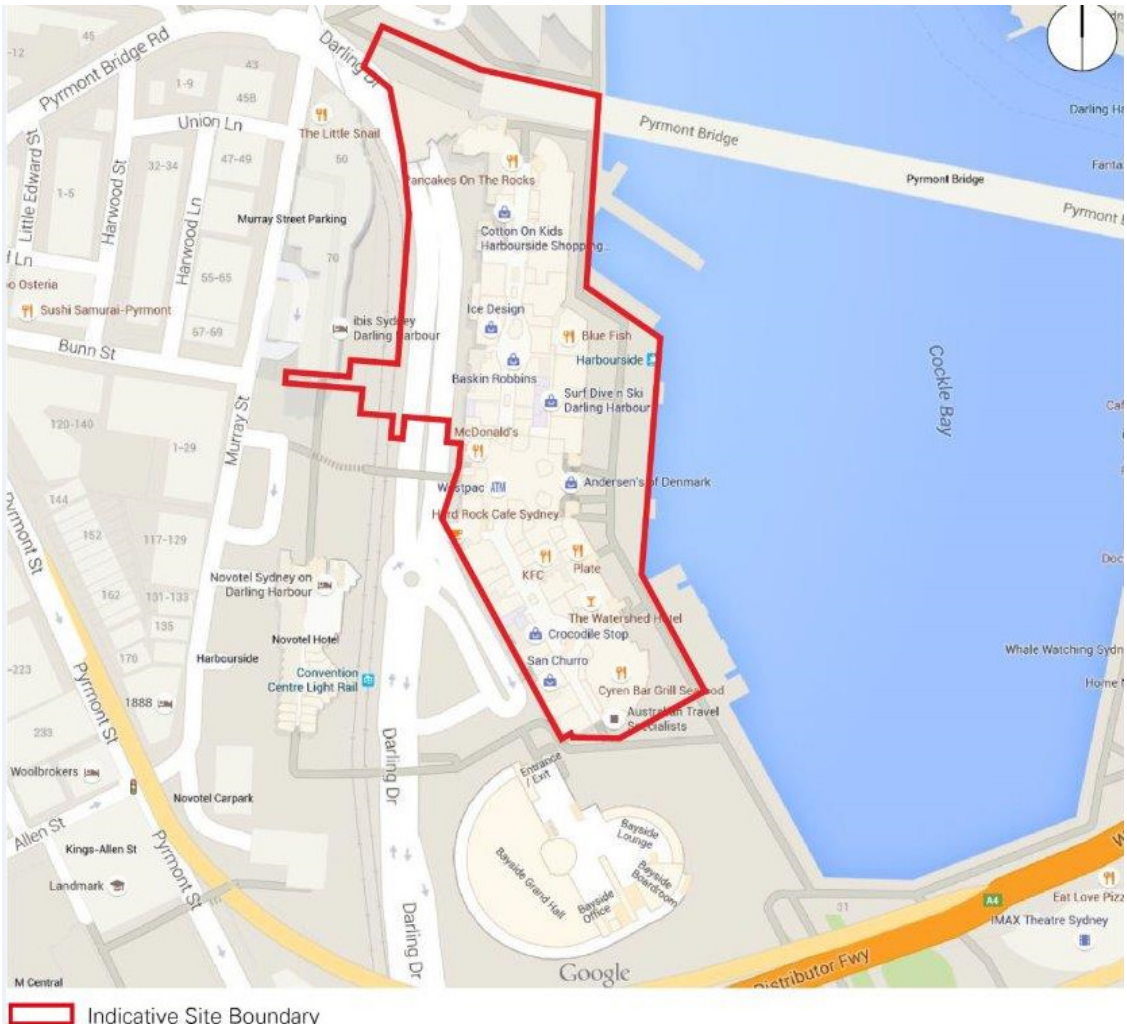


Figure 2: Site Location Plan (Source: Google Maps)

1.4 Planning Approvals Strategy

The Site is located within the Darling Harbour precinct, which is identified as a State Significant Site in Schedule 2 of State Environmental Planning Policy (State and Regional Development) 2011. As the proposed development will have a capital investment exceeding $10 million, it is declared to be State Significant Development (SSD) for the purposes of the Environmental

Planning and Assessment Act 1979 (EP&A Act), with the Minister for Planning the consent authority for the project.

This State Significant Development Application (DA) is a staged development application made under section 83B of the EP&A Act. It seeks approval for the concept proposal for the entire site and its surrounds.

More specifically this staged DA includes establishing land uses, gross floor area, building envelopes, public domain concept, pedestrian and vehicle access and circulation arrangements and associated car parking provision.

Detailed development application/s (Stage 2 DAs) will accordingly follow seeking approval for the detailed design and construction of all or specific aspects of the proposal in accordance with the approved staged development application.

The Department of Planning and Environment provided the Secretary's Environmental Assessment Requirements (SEARs) to the applicant for the preparation of an Environmental Impact Statement for the proposed development on 30 August 2016. This report has been prepared having regard to the SEARs as relevant.

2 PURPOSE OF THIS REPORT

This report has been prepared to accompany the Stage 1 DA for the Harbourside Shopping Centre. It addresses the relevant requirements of the public authorities response to the request for SEARs for the Harbourside Shopping Centre (SSD 7874), and the submissions received from the public authorities, issued 30th August 2016. A summary of the relevant SEARs is listed below in **Table 1**.

2.1 Secretary's Environmental Assessment Requirements

SEARs Reference	Key Assessment	Relevant Section in This Report	Comments
10. Utilities	In consultation with relevant agencies, address the existing capacity and any augmentation requirements of the development for the provision of utilities, including staging of infrastructure	Sections 3, 4, 5, 6, 7, & 8	Discussions and negotiations with relevant services infrastructure authorities has been undertaken and is ongoing.
10. Utilities	Provide details of how infrastructure assets of various utilities stakeholders will be protected or relocated during the demolition and construction of the project.	Sections 5 & 9	Construction methodology and process is described however will be the subject of continuous adjustment to suit staging, site conditions and authority requirements.
Plans and Documents	The EIS must include the following: • Services and infrastructure report		

Table 1: SEARs Key Assessment Requirements for Utilities

2.2 Desk Top Investigation

This report details the investigation of existing utilities in the vicinity of the development, the likely points of future connection to the utilities; and associated potential upgrades or augmentation that may be required.

The basis for the investigation of the existing utilities in the vicinity of the site was a 'Dial before You Dig' enquiry that was undertaken on 11th January 2016. **Figure 3** depicts the area subject to the DBYD enquiry. This report does not consider any utility infrastructure outside the enquiry boundary and its' potential relationship to, or impact on the supply of utility services to the site.

While preliminary development staging and sequencing information has formed the basis of consultation with utility providers to date, the final staging of utility works and the protection of assets is dependent on detailed construction staging and shall be developed in detail at a later stage of the planning and design process.

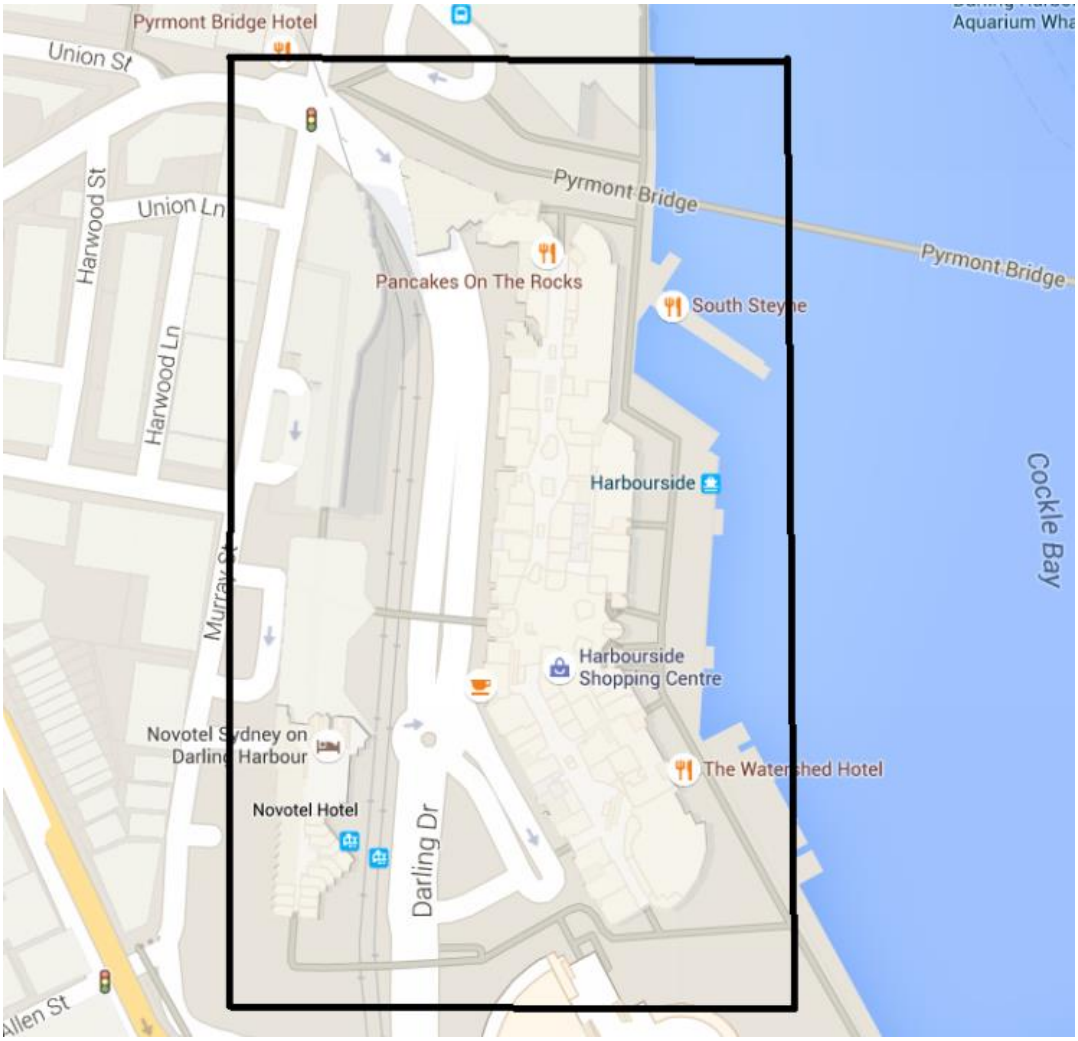


Figure 3: Dial Before You Dig Enquiry Area (Source: Google Maps)

The following asset owners were identified as having an interest in the DBYD enquiry area, which are outlined in **Table 2**.

Authority Name	Directly Impacted – (Yes / No)
AARNet Pty Ltd	No
Amcom Pty Ltd	No
Ausgrid	Yes
City of Sydney	Yes
Jemena Gas South	Yes
NBN Co.	No
Nextgen	Yes
Optus and/or Uecomm	No

Authority Name	Directly Impacted – (Yes / No)
PIPE Networks	Yes
RailCorp	No
Roads and Maritime Services (RMS)	No
Sydney Water	Yes
Telstra NSW	Yes
Verizon Business	Yes
Vocus Fibre Pty Ltd	No

Table 2: Asset Owners identified in DBYD

This report only details the investigations undertaken in relation to the services infrastructure belonging to Ausgrid, Telstra, NBN Co / Telstra, Jemena, Sydney Water, as required to supply the Harbourside Shopping Centre development, and any potential impacts to statutory stakeholders such as the RMS, City of Sydney and RailCorp.

The Report findings and all discussions with service authorities are based on the current development GFA of 52,000 of non-residential development.

3 SEWER INFRASTRUCTURE

3.1 Existing Sewer Infrastructure

The Harbourside Shopping Centre development is located in the Sydney Water Corporation (SWC) service area, and is located within the existing urban sewer collection network. The DBYD search indicated that there are existing Sydney Water sewer assets located directly within the Harbourside development boundary. Please refer to **Appendix A** for a copy of the DBYD search results from Sydney Water.

All gravity sewer mains in the vicinity of the site drain to Sewerage Pumping Station No. 1 (SP0001), which is located to the immediate west of the site, at the corner of William Henry Street and Pyrmont Street in Ultimo. SP0001 is of historic, aesthetic and technical/research significance (SWC 2012) being one of the original sewerage pumping stations constructed to serve the city of Sydney in the late 19th century.

There is an existing DN300mm / DN375mm gravity sewer that is located to the west of the Harbourside development, which is concrete encased over a section of the sewer adjacent to the Harbourside development. Please refer to **Figure 4** for a plan of the existing sewer network in the vicinity of the Harbourside development.

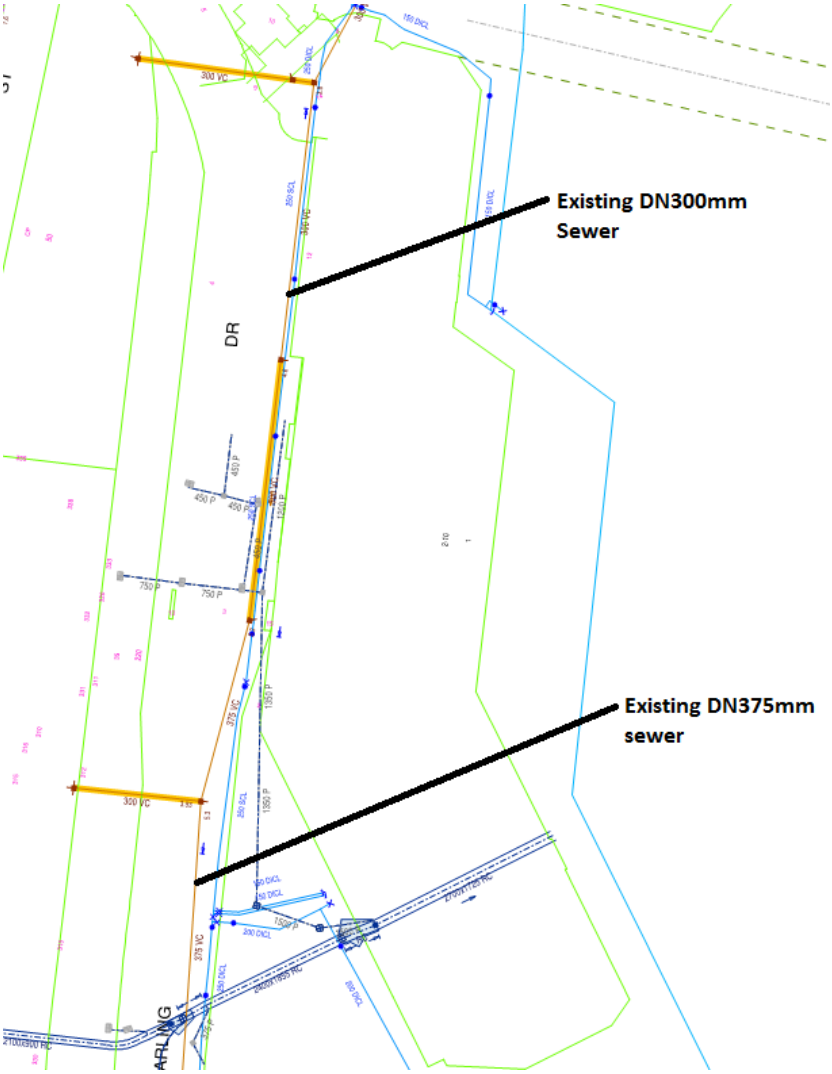


Figure 4: Existing SWC Sewer Network

It is very likely that all existing sanitary sewerage flows connect into this existing DN300mm / DN375mm sewer main, from the existing Harbourside Shopping Centre development.

This sewer flows to the south and connects into a DN750mm sewer before enlarging into a 1.3m x 1.75m unlined rock channel along Darling Drive towards and into SP0001

A 600mm rising (pressure) main runs from SP0001 directly to the east and through the Public Realm area of Darling Harbour, located to the south of the site.

3.2 Sewer Service to the Precinct

The Harbourside development can connect by gravity to the existing DN300mm / DN375mm sewer located directly to the west and adjacent to the proposed development. Any new connections will require a new manhole to be built over the connection point to the existing sewer network. However, there are four existing sewer manholes located along the DN 300mm / DN375mm sewer in the vicinity of the proposed development that will likely be suitable for future sewer connections.

Subject to detailed design development and further consultation with the utility authorities, some existing sewer mains may need to be augmented to enable supply to the development. Based on the current proposed development building envelope, it is not expected that any existing Sydney Water sewerage assets in the vicinity of the site will be adversely impacted upon by the proposed development.

Consultation with SWC has commenced regarding servicing the development with sanitary sewer infrastructure. A preliminary meeting regarding the retail/commercial scheme was held with SWC on 4th February 2016, further to this a SWC e-Developer servicing feasibility application was submitted to SWC where SWC in principle confirmed that the development can be serviced from their existing infrastructure. An updated SWC e-Developer servicing feasibility application has been submitted to SWC to reflect the increased load and changes from Retail/Commercial to Retail/Residential development. We are still awaiting SWC's response – refer **Appendix B.**

Previous correspondence from SWC on the previous scheme has indicated that subject to commercial negotiation and confirmation of developer charges, SWC will be able to supply the site with the required sanitary water connections. The SWC feasibility response states that:

"Strategic investigations shows that the trunk water and wastewater systems have adequate capacity to service the development area".

SWC developer charges and amplification costs cannot be advised until a formal application is made to SWC. This cannot occur until a more detailed development concept has been completed

The SWC preliminary wastewater investigation was based on supply from the DN 300mm / 375mm sewer constructed under WN 300418/1 located in Darling Drive. Please refer to **Appendix C** of this Report for a copy of the previous correspondence received from SWC.

As noted above, an updated SWC e-Developer servicing feasibility application has been submitted to SWC to reflect the increased load and changes from Retail/Commercial to Retail/Residential development. We are still awaiting SWC's response – refer **Appendix B.**

The new sewer collection system shall be designed and constructed in accordance with SWC requirements. Grease arrestors will be required for any Food & Beverage element of the proposed development, prior to discharge into the sewer network.

Further consultation with SWC regarding the proposed development in the form of a Section 73 Application will be required prior to commencement of detailed design.

4 POTABLE WATER INFRASTRUCTURE

4.1 Existing Potable Water Infrastructure

The Harbourside Shopping Centre development is located in the Sydney Water Corporation (SWC) service area, and is located within the existing urban sewer collection network. The DBYD search indicated that there are existing Sydney Water sewer assets located directly within the Harbourside development boundary. Please refer to **Appendix A** for a copy of the DBYD search results from Sydney Water.

There are a number of existing SWC watermains located in the vicinity of the proposed development. These include an existing:

- DN150mm DICL watermain located to the east of the northern section of the proposed development located in the vicinity of Pyrmont Pedestrian Bridge;
- DN250mm SCL watermain located along the western side of the proposed development; and
- DN200mm DICL watermain located to the South-West corner of the proposed development, between the Harbourside Shopping Centre and the future International Convention Centre (ICC) Hotel.

Please refer to **Figure 5** for a plan of the existing potable watermain network in the vicinity of the Harbourside development

4.2 Potable Water service to the development

It is proposed that private water services will be taken off either the DN200mm DICL and / or the DN250mm DICL water mains to supply potable water and fire requirements to the proposed Harbourside development.

This new reticulation pipework shall be installed to suit the development scheme planning. The reticulation pipework shall be designed in accordance with Water Supply Code of Australia (WSA 03) – Sydney Water edition 2014, suitable for the water loading and fire requirements for the development.

Subject to detailed design development and further consultation with the utility authorities, some existing water mains may need to be augmented to enable supply to the development. Based on the current proposed development building envelope, it is not expected that any existing Sydney Water potable water assets in the vicinity of the site will be adversely impacted upon by the proposed development.

Consultation with SWC has commenced regarding servicing the development with potable water and fire water infrastructure. A preliminary meeting regarding the retail/commercial scheme was held with SWC on the 4th February 2016, further to this a SWC e-Developer servicing feasibility application was submitted to SWC. SWC confirmed in principle that the development can be serviced from their existing infrastructure. An updated SWC e-Developer servicing feasibility application has been submitted to SWC to reflect the increased load and changes from Retail/Commercial to Retail/Residential development. We are still awaiting SWC's response – refer **Appendix B.**

Previous correspondence from SWC has indicated that subject to commercial negotiation and confirmation of developer charges, SWC will be able to supply the site with the required potable water connections. The SWC feasibility response states that:

"Strategic investigations shows that the trunk water and wastewater systems have adequate capacity to service the development area".

SWC developer charges and amplification costs cannot be advised until a formal application is made to SWC. This cannot occur until a more detailed development concept has been completed.

The SWC preliminary potable water investigation was based on supply from the DN 250mm drinking watermain located in Darling Drive. Please refer to **Appendix C** of this Report for a copy of the correspondence received from SWC.

An updated SWC e-Developer servicing feasibility application has been submitted to SWC to reflect the changes from Retail/Commercial to Retail/Residential development, which has an increased potable water load. We are still awaiting SWC's response – refer **Appendix B**

Further consultation with SWC regarding the proposed development in the form of a Section 73 Application will be required prior to commencement of detailed design.

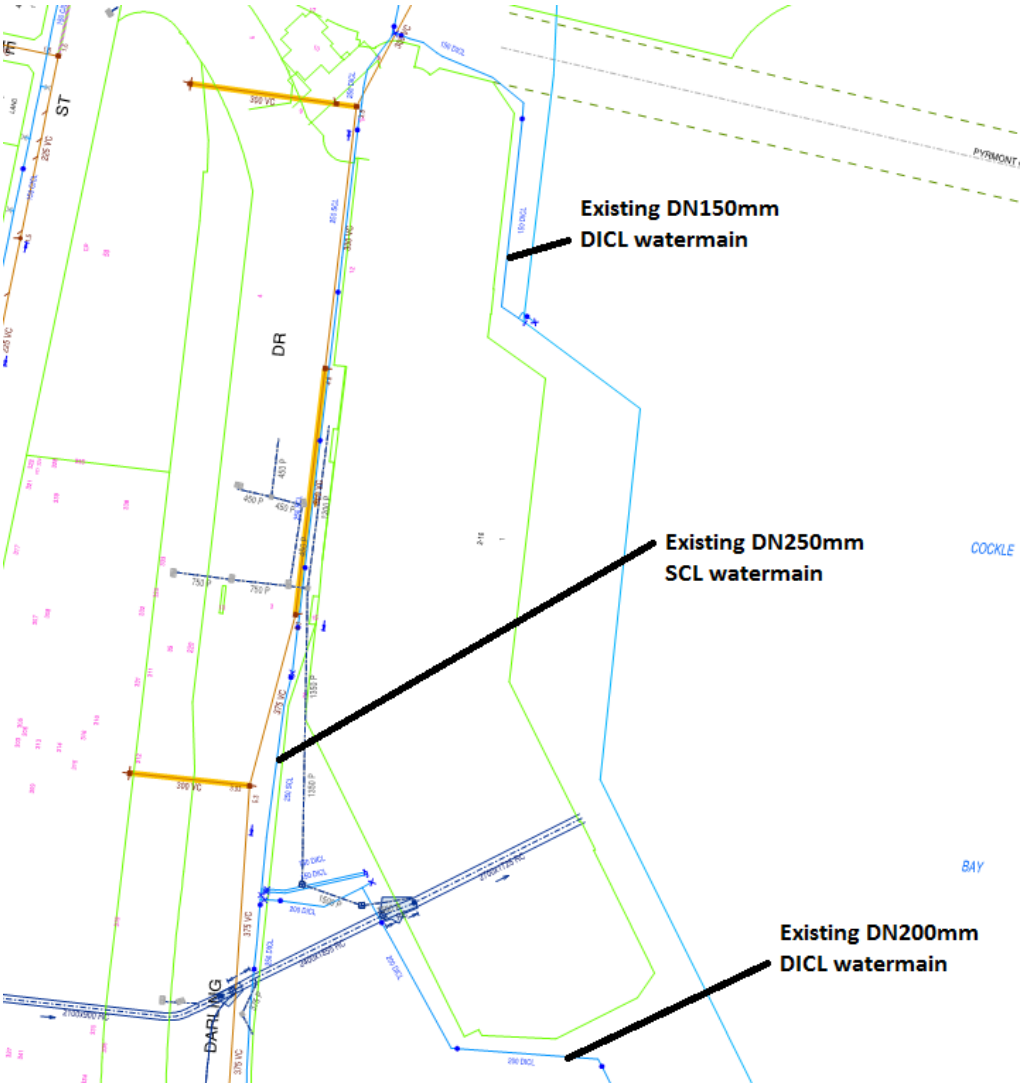


Figure 5: Existing SWC Potable Water Network

5 STORM WATER INFRASTRUCTURE

Stormwater overland flows and roof flows currently drain into the existing SWC and City of Sydney Council (CoS) / Sydney Harbour Foreshore Authority (SHFA) stormwater pit and pipe network, before discharging into the nearby Cockle Bay. The proposed stormwater strategy to service the development is discussed in more detail under the Stormwater, Flooding and WSUD report.

However, there is an existing SWC stormwater asset that is discussed within the report for the purpose of addressing the following SEARs requirement:

"Provide details of how infrastructure assets of various stakeholders will be protected during the demolition and construction of the project."

5.1 SWC Build-Over Policy

There is an existing SWC stormwater 2700mm x 1725mm box culvert that passes below the existing Harbourside Shopping Centre building footprint. Please refer to **Figure 6** for a location plan of this existing box culvert.

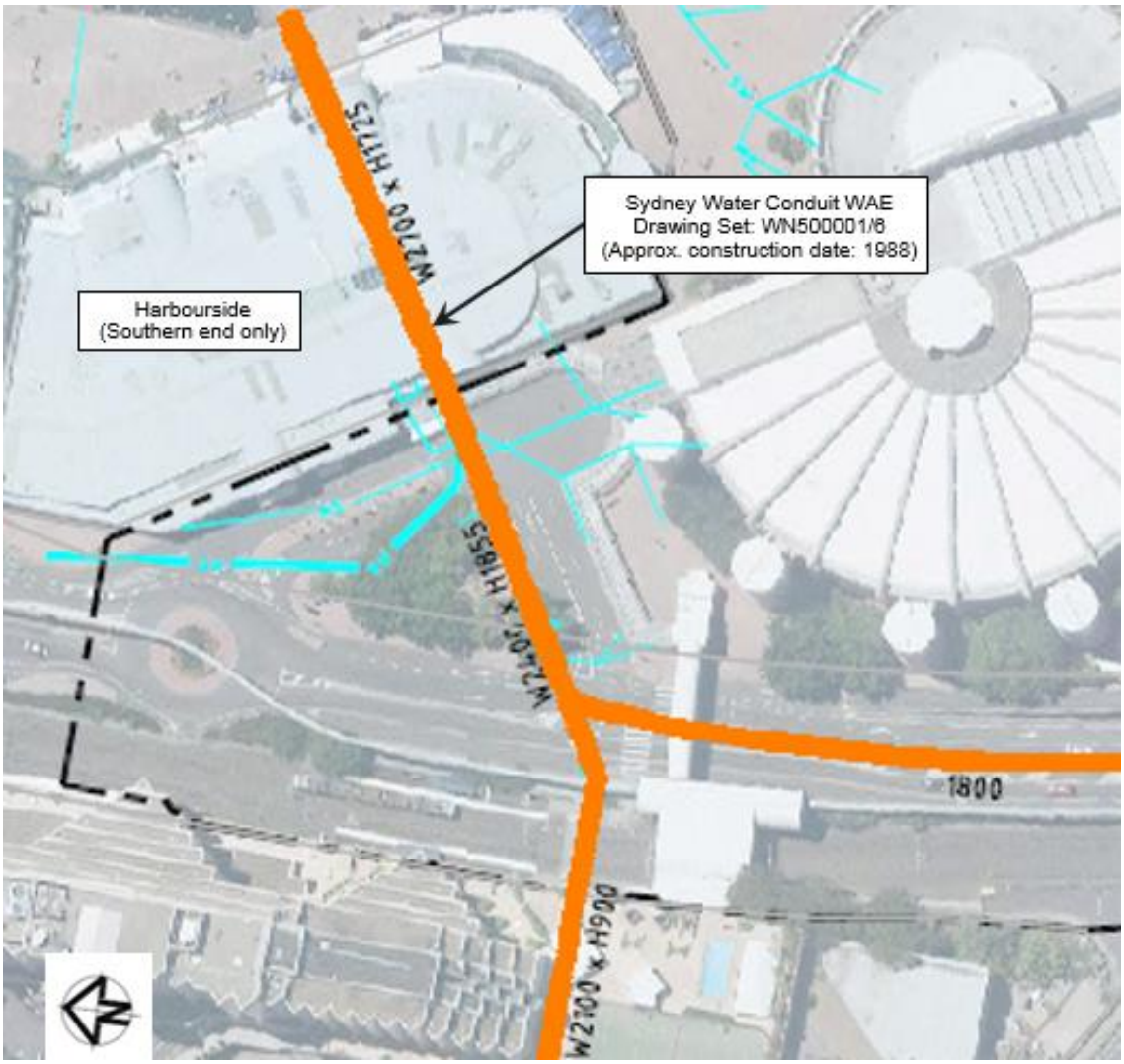


Figure 6: Existing SWC Stormwater Box Culvert

The proposed development will result in the demolition of the existing building and the construction of a new shopping centre development in its place. However, the extent of building footprint that is

directly located over the box culvert will be reduced relative to existing conditions, which will result in some form of betterment compared to current conditions.

It is proposed that the future Harbourside development will be built over the existing culvert. An initial consultation was undertaken with SWC on the 5th of February 2016, to discuss the potential for the future build over of this SWC asset.

At this meeting SWC confirmed the following:

- The existing box culvert is in reasonable condition to allow it to remain its current location for the present time;
- SWC has requested that an easement is provided as part of the ICC Hotel development under the SICEEP Local Area Servicing plan (LASP), for the potential diversion of this box culvert;
- This easement is located to the south of the Harbourisde Shopping Centre development between it, the future ICC hotel and the International Convention Centre;
- As such, SWC confirmed in principle for the future build-over of this box culvert as part of the redevelopment of the Harbourside Shopping Centre;
- SWC confirmed that all works are to be undertaken in accordance with their build-over policy; and
- SWC may request that an additional access chamber be constructed as part of the Harbourside development, which would be located to the east of the development, and some form of pollution treatment be installed on this stormwater outlet.

Please refer to **Appendix D** of this Report for a copy of the meeting minutes with SWC. Please refer to **Appendix E** of this Report for a copy of the SWC stormwater build-over policy. Consultation with SWC with regard to the build over of their asset will be ongoing throughout the design and construction phases of the development.

Where the proposed Harbourside development building crosses over the existing stormwater culvert, the building structure will need to be designed to ensure that building loads are not supported by the culvert and the culvert is not affected in terms of structural integrity and function. In addition, a construction methodology will be developed to ensure excessive temporary construction loadings are not imposed on the existing culvert.

The feasibility application response received from SWC (refer to **Appendix C**) also references the existing SWC stormwater culvert, build over policy and LASP easement.

6 ELECTRICAL INFRASTRUCTURE

6.1 Existing Electrical Infrastructure

The DBYD search indicated that there are existing Ausgrid electrical assets located directly within the Harbourside development boundary. Please refer to **Figure 7** for a location plan of existing Ausgrid assets, and to **Appendix F** for a copy of the DBYD search results from Ausgrid.

Figure 7: Existing Ausgrid Electrical Infrastructure

There is existing HV infrastructure in-ground directly adjacent to the site location and some minor LV (street lighting) located within the site boundary which will be made redundant as a result of the new development. However, in the event that live services are identified, they will be protected / relocated in accordance with Ausgrid requirements.

The existing Harbourside Shopping Centre is powered by two substations, which are located to the west of the existing building.

6.2 Electrical service to the development

Mirvac has commenced negotiations for supply to the site with Ausgrid. These negotiations include network design / impact, identification of redundant services and potential relocations as well as site specific (substation) servicing arrangements. A "Preliminary Enquiry" was submitted to Ausgrid on the 22nd of January 2016, with regard to future power supply to the development.

Ausgrid confirmed the following in their response to the 'Preliminary Enquiry': Please refer to **Appendix G** for a copy of the consultation records with Ausgrid.

"The existing 11kV network would not be able to support a load of 11MVA without extensive network augmentation, and more than likely a new set of feeders from a zone substation, most likely Darling Harbour, but a full application submission (NECF03) would be required to provide this information. The existing substations on site and details are:

- *S.6445 (3 x 1500kVA TX substation, Max Loading approximately 4700A (between 2010-2015), Substation rated at 5300A*
- *S.3092 (1 x 1500KVA TX Substation, Max Loading approximately 1900A (between 2010-2015). Substation rated at 2392A*

Based on the above, the proposed site will require new substation infrastructure (3 x 1500kVA substations), and more than likely a new feeder direct from a Zone/or large scale 11kV network Augmentation."

Following the above correspondence and changes in scheme to provide a retail/residential development. A full NECF03 application was submitted to Ausgrid the 4 August 2016.

Ausgrid have conducted a preliminary assessment of the Harbourside application and advice that the proposal requires a certified design and associated certification number for the application to be complete. For now Ausgrid's preliminary assessment has determined that

'The following works are likely to be required to connect your development.

- *'Establishment Of 3x1500kva Surface Chamber Substation, And Extension Of 11kv Network*

These works are classified as contestable, which means that you are required to fund the design and some or all of the construction works. In this regard, if you have not already done so, you will need to engage and manage suitably qualified contractors, known as Accredited Service Providers (ASPs) to undertake the design and construction in accordance with Ausgrid's policies and standards.

Once the works have been satisfactorily completed and electrified, the premises connection assets will be owned and maintained by Ausgrid as part of our electricity distribution network. The timeframe for the works will vary depending on factors such as the complexity and the way in which you manage your ASPs.'

Please refer to **Appendix G** for a copy of the consultation records with Ausgrid.

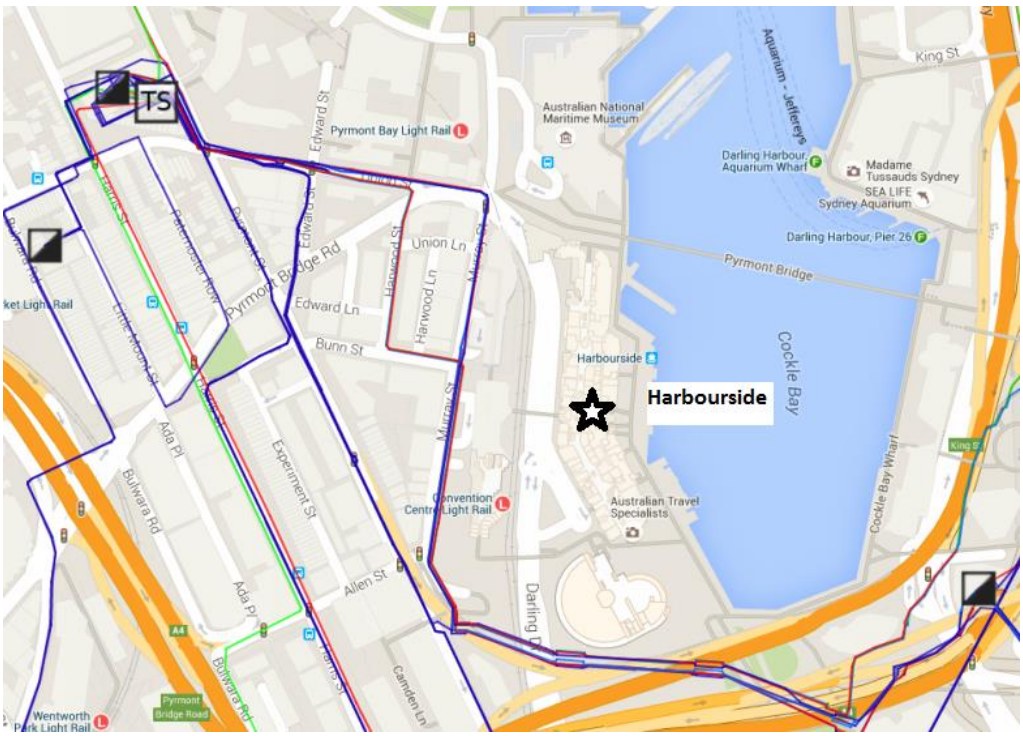


Figure 8: Nearby Transformer Substations, Zone Substations & Transmission Feeders

As such, the site is anticipated to have a maximum demand of 8.5 MVA which will be serviced by the two existing substations and an additional new single surface chamber substation containing 3x1500kVA transformers, associated HV and LV switchgear. Connection of this substation is proposed either via new in-ground pit and pipe infrastructure from the new substation to the adjacent existing 11kV network in Darling Drive, or more than likely via new in-ground pit and pipe infrastructure to one of the nearby zone substations. Please refer to **Figure 8** for the location of nearby zone substations based on the Ausgrid GIS mapping information.

A Level 3 Accredited Service Providers (ASPs) will be engaged to undertake the design and construction in accordance with Ausgrid's policies and standards past SSDA1.

7 GAS INFRASTRUCTURE

7.1 Existing Gas Infrastructure

The Harbourside development is located in the Jemena service area for gas supply.

The DBYD search indicated that there is an existing 150mm diameter 1050KPa secondary Jemena gas main located directly within the Precinct D development boundary. Please refer to **Appendix H** for a copy of the DBYD search results from Jemena.

Figure 9 below outlines the Jemena gas design located in the area of the development site.

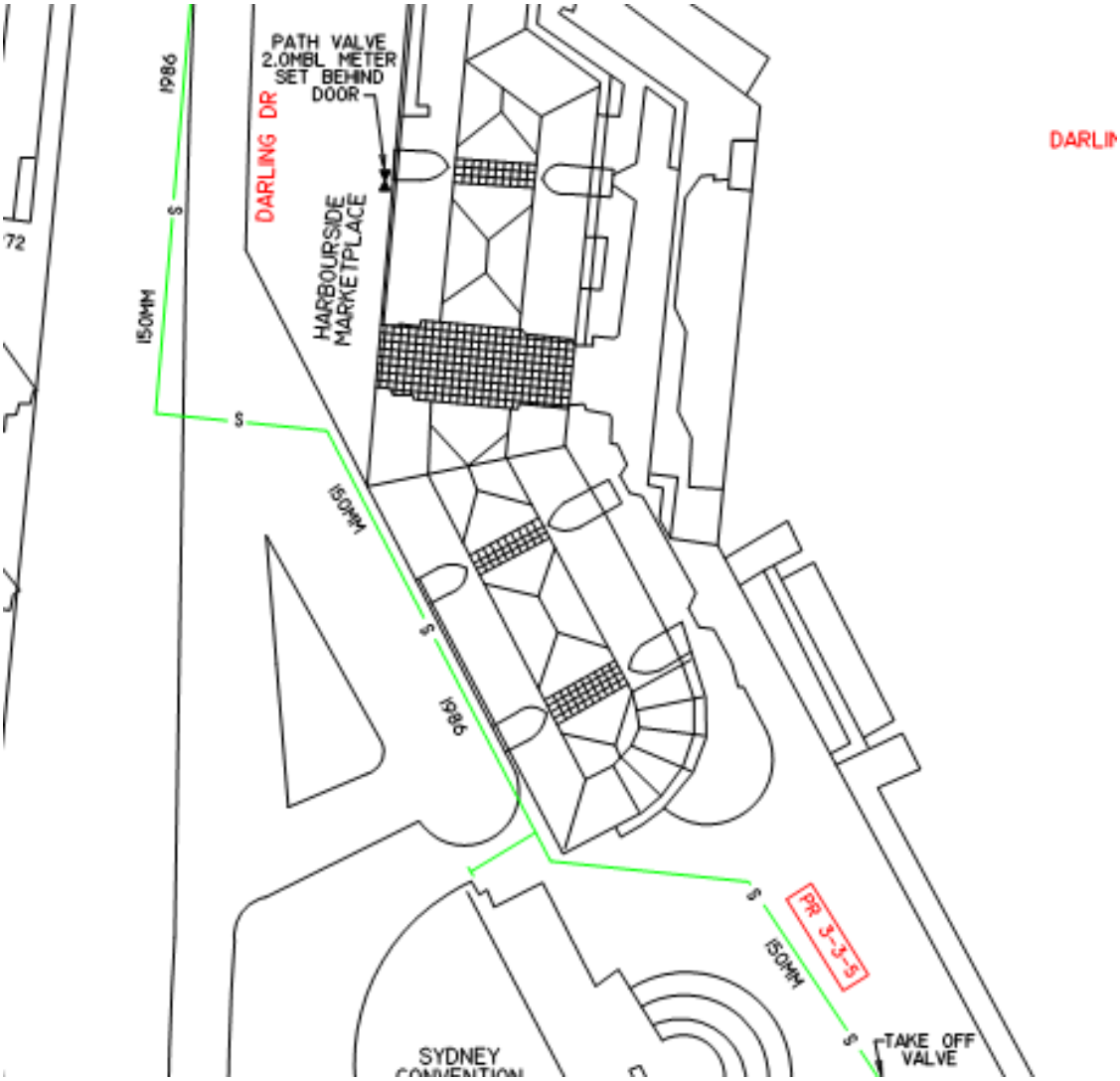


Figure 9: Existing Jemena Gas Infrastructure

7.2 Gas supply to the proposed development

Arcadis Consulting undertook consultation with Jemena on the 05th of February 2016. In this consultation Jemena confirmed that natural gas is available in the development area. Please refer to **Appendix I** for a copy of this consultation. Since this correspondence too place the development has changed from a commercial/retail to a retail/residential development.

It is proposed that the retail component the Harbourside development will be made by way of regulator set and connection to the existing DN150 1050KPa main to the west of the site. Jemena have previously confirmed that this main may be able to supply gas to the Harbourside development, subject to the commercial viability of the development.

The residential part of the development will require a gas main extension to be provided as there is no gas mains located in the vicinity to the tower. We would expect the pipe main to be in the order of 65mm, subject to Jemena requirements. The main will need to be installed and owned by Jemena.

An updated application reflecting the retail/residential development have been submitted to Jemena for confirmation of the gas mains capacity – refer **Appendix I.**

8 TELECOMMUNICATIONS INFRASTRUCTURE

8.1 Existing Telecommunications infrastructure

Telecommunication services infrastructure in the vicinity of the site is owned and operated by Telstra, Optus, Nextgen, Pipe Networks and Verizon.

The DBYD search indicated that there are no existing NBN Co telecommunications assets located directly within the Harbourside Shopping Centre development boundary, with the nearest NBN Co. infrastructure located to the south of the development site. Please refer to **Appendix J** for a copy of the DBYD search results from Telstra and NBN Co, and to **Figures 10 and 11** for a location plan of existing Telstra and NBN Co. telecommunications infrastructure.

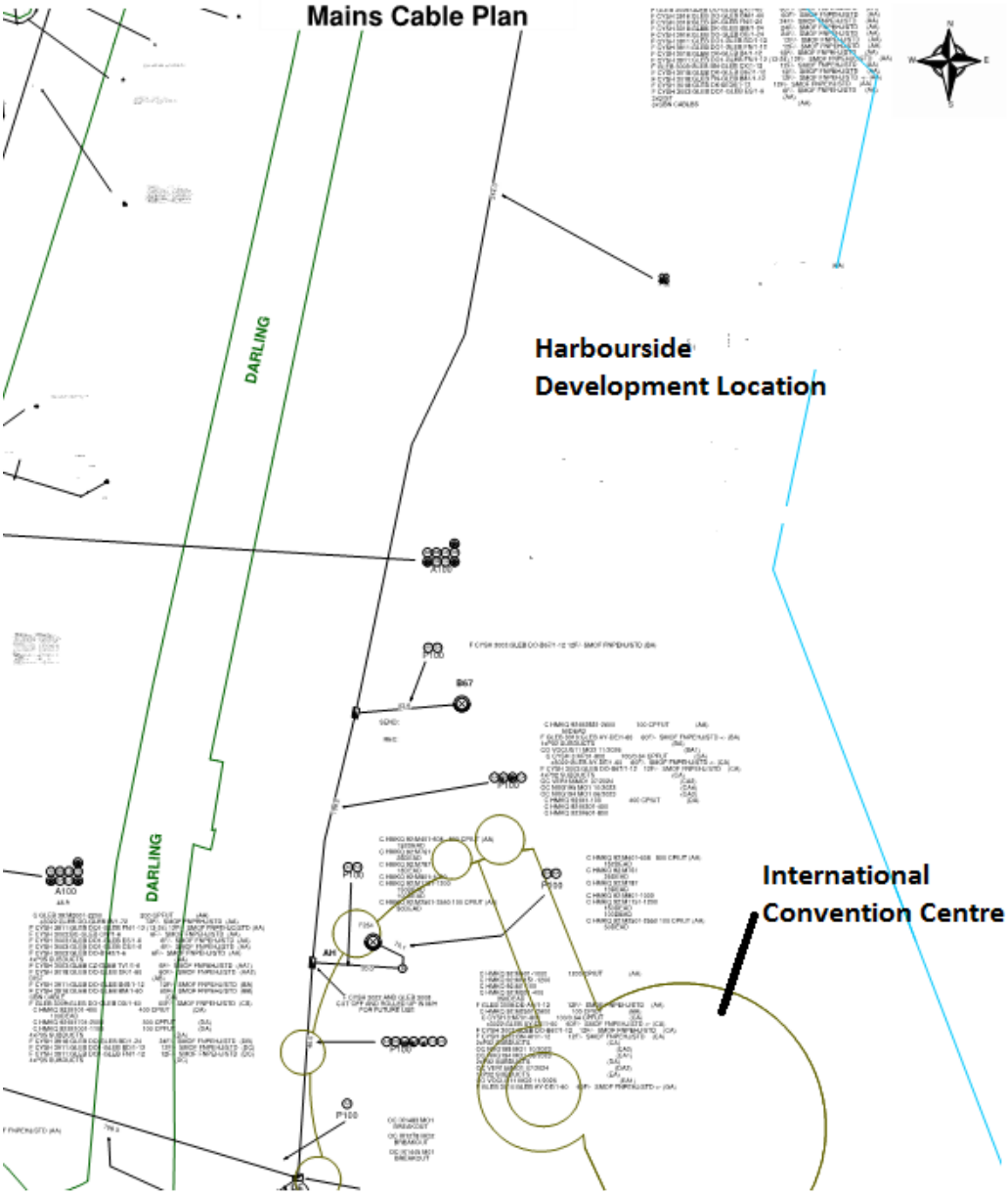


Figure 10: Existing Telstra Infrastructure

Telstra has indicated that there are existing Telstra infrastructure located in the vicinity of the proposed development.

Telstra have existing telecommunications cables located in Darling Drive, which are been diverted within Darling Drive, as part of the Sydney International Convention Exhibition and Entertainment Precinct (SICEEP) project.

Telstra have capacity to support the site but due to recent changes in the Telecommunications Act, NBN Co have first right of refusal.

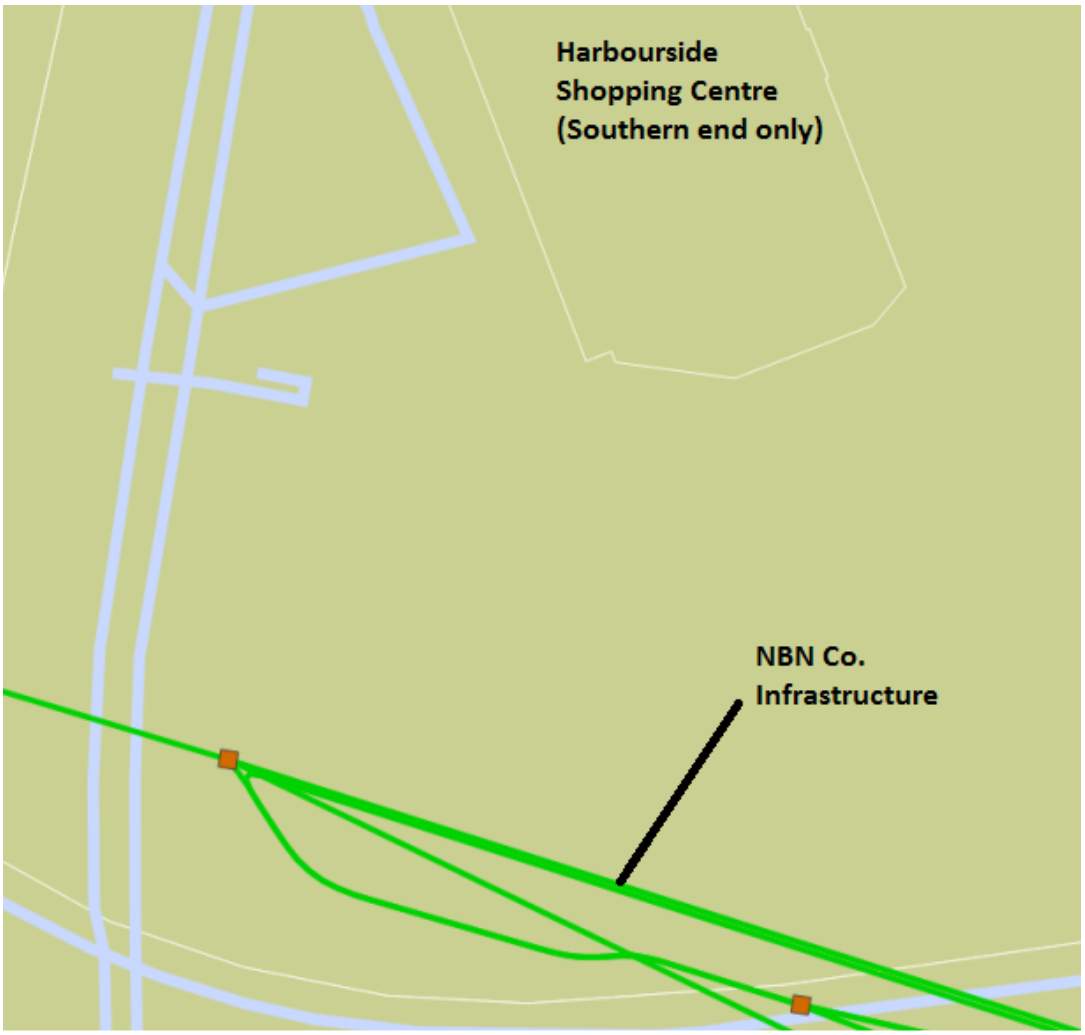


Figure 11: Existing NBN Co. Infrastructure

It is understood that NBN Co indicated that they would be interested in supporting the adjacent SICEEP project and issued an Early Certificate determining that the development is within the NBN fibre footprint and subject to agreeing to their terms and conditions, NBN Co has agreed to procure the installation of fibre infrastructure at the development. As such, it is likely that there will be NBN Co. telecommunications infrastructure in place in the vicinity of the proposed development, prior to construction of the Harbourside development.

8.2 Telecommunication supply to the proposed development

Prior to the submission of the SICEEP DA, consultation with NBN Co confirmed their intention to supply essential communications infrastructure to the entire SICEEP development precinct including the ICC Hotel, which is located adjacent to the Harbourside development.

There is no NBN Co infrastructure currently in the vicinity of the site. However, during previous consultation with NBN Co they confirmed that they would deliver all lead-in infrastructure to the

SICEEP precinct. The delivery strategy is currently being developed with NBN Co. It is expected that NBN Co infrastructure will supply the site from Darling Drive (lead-in from the south). Trenching of the NBN Co infrastructure will incorporate the relocated Telstra infrastructure identified above.

New infrastructure and lead-in locations from the NBN Co. infrastructure will be required into the Harbourside development site. Additional designs will be required for the MDU site (High-rise buildings). These designs will be completed under future projects (NBN Co MDU pathway designs).

A feasibility and development application was submitted to NBN Co. with regard to future telecommunication service to the proposed development. Please refer to **Appendix K** for a copy of the feasibility and new development registration.

NBN Co. has confirmed that the relevant telecommunication infrastructure will be in place prior to the construction completion date of proposed development. As such, the proposed development is expected to be catered for with regard to future telecommunications services – refer **Appendix K** for the new development registration.

9 ADDITIONAL STATUTORY UTILITIES

This Report also investigates additional utility infrastructure such as utility assets associated with Statutory Authorities and an existing salt water in-take channel that may be impacted by the proposed development. The Statutory Authorities assessed include:

- RMS;
- RailCorp; and
- City of Sydney

9.1 RMS infrastructure

There are no RMS utility assets located within the proposed development boundary. As such, it not expected that any RMS assets will be impacted as a result of the proposed Harbourside development. Please refer to **Appendix L** for a copy of existing RMS assets.

9.2 RailCorp infrastructure

There are no RailCorp utility assets located directly within the proposed development boundary. However, there is an existing 33KV electrical conduit located along the eastern boundary of the light rail land, which bounds the existing vehicular access to the development site. Please refer to **Appendix M** for a copy of the RailCorp assets provided during the DBYD search.

Consideration of this asset will be required for any interface works associated with any access designs to the proposed development site, which will be undertaken during the detailed design phase. Consideration of the demolition of the existing pedestrian bridge and the construction of the proposed pedestrian bridge linking the development with Bunn Street will also require consideration of RailCorp assets during the detailed design phase.

Arcadis Consulting met with RailCorp and the Department of Transport on the 10th of February 2016 to inform them of the proposed development.

9.3 City of Sydney Infrastructure

There are no City of Sydney assets that are impacted directly by the proposed development other than existing stormwater pits and pipes. This existing stormwater network will be considered as part of the proposed detailed design of the development. Please refer to **Appendix N** for a copy of the City of Sydney assets provided during the DBYD search.

9.4 Existing salt water in-take channel

There is an existing salt water in-take system, which is located below the footprint of the existing Harbourside Shopping Centre, and there is an existing easement associated with this structure. Please refer to **Figure 12** of this Report for a location plan of the existing salt water in-take channel.

It is understood that this infrastructure was completed circa 1928 and provided cooling water from Darling Harbour to the Ultimo Power House (now known as Power Museum). This infrastructure is included in the SHFA Heritage and Conservation Register.

The intake channel comprise of twin 1.8m diameter pipes, which run parallel until approximately 50m prior to the Harbour, where they diverge. It is not believed that this infrastructure still provides any cooling benefit to any development and that this system is currently redundant.

Further consultation will be required during the next stages of the proposed development to determine if this system can be capped or not. However, at a minimum the future design of the

proposed development will need to consider the location of this system, with respect to potential impacts and damage.

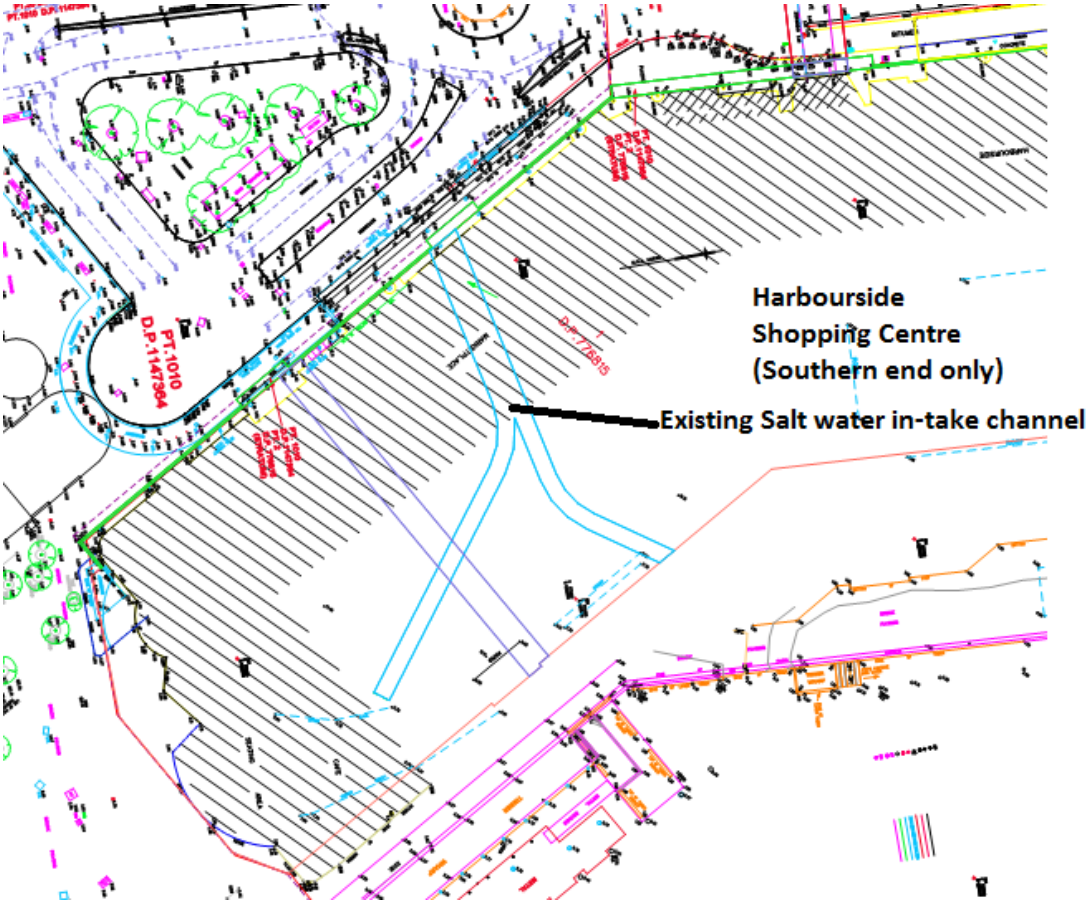


Figure 12: Existing Salt Water In-take Channel location Plan

10 PROTECTION OF EXISTING UTILITY INFRASTRUCTURE

The following process will be followed to ensure existing utilities infrastructure is protected:

- A desk-top investigation of existing services will be undertaken using Dial Before You Dig information and site observations;
- Site survey will be undertaken to accurately locate existing infrastructure assets where practical;
- Site exploration works will be undertaken where considered necessary to more accurately locate existing infrastructure assets and test for unknown services;
- Consultation will be undertaken with utility providers to confirm location of services and to obtain all necessary consents to work in their vicinity;
- Utility technical and hazard requirements will be incorporated into the design and construction documentation;
- Safe work methods statements and inspection and test plans will be prepared by accredited contractors;
- Pre-start work checklists will be implemented and recorded;
- Workshops will be conducted with utility providers where diversion of, connection to or construction close to critical assets is required; and
- Field safety inspectors will be present during critical works as determined by each utility provider.

As design progresses or as new information becomes available, the above process will be adjusted or supplemented as required to ensure existing infrastructure assets are adequately protected.

APPENDIX A

Sydney Water Dial Before You Dig Plans

Guide to reading Sydney Water DBYD Plans

February 2015

Asset Information

Legend

Sewer

Sewer Main (with flow arrow & size type text) — 225 PVC
Disused Main
Rising Main
Maintenance Hole (with upstream depth to invert) — 1.7
Sub-surface chamber
Maintenance Hole with Overflow chamber
Ventshalft EDUCT — VSE
Ventshaft INDUCT — VS
Property Connection Point (with chainage to downstream MH) — 10.5
Concrete Encased Section — Concrete Encased
Terminal Maintenance Shaft — TMS
Maintenance Shaft — MS
Rodding Point — RP
Lamphole
Vertical — VERT
Pumping Station — SP0882
Sewer Rehabilitation

Pressure Sewer

Pressure Sewer Main
Pump Unit (Alarm, Electrical Cable, Pump Unit) — A
Property Valve Boundary Assembly
Stop Valve
Reducer / Taper
Flushing Point — FP

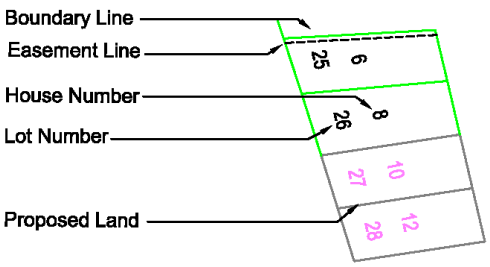
Vacuum Sewer

Pressure Sewer Main
Division Valve
Vacuum Chamber
Clean Out Point

Stormwater

Stormwater Pipe
Stormwater Channel
Stormwater Gully
Stormwater Maintenance Hole

Property Details



Sydney Water Heritage Site (please call **132 092** and ask for the **Heritage Unit**)

Water

WaterMain - Potable (with size type text) — 200 PVC
Disconnected Main - Potable
Proposed Main - Potable
Water Main - Recycled
Special Supply Conditions - Potable
Special Supply Conditions - Recycled
Restrained Joints - Potable
Restrained Joints - Recycled
Hydrant
Maintenance Hole
Stop Valve
Stop Vale with By-pass
Stop Valve with Tapers
Closed Stop Valve
Air Valve
Valve
Scour
Reducer / Taper
Vertical Bends
Reservoir
Recycled Water is shown as per Potable above. Colour as indicated

Private Mains

Potable Water Main
Recycled Water Main
Sewer Main
Symbols for Private Mains shown grey

Asset Information

Pipe Types

ABS	Acrylonitrile Butadiene Styrene	**AC**	Asbestos Cement
BRICK	Brick	**CI**	Cast Iron
CICL	Cast Iron Cement Lined	**CONC**	Concrete
COPPER	Copper	**DI**	Ductile Iron
DICL	Ductile Iron Cement (mortar) Lined	**DIPL**	Ductile Iron Polymeric Lined
EW	Earthenware	**FIBG**	Fibreglass
FL BAR	Forged Locking Bar	**GI**	Galvanised Iron
GRP	Glass Reinforced Plastics	**HDPE**	High Density Polyethylene
MS	Mild Steel	**MSCL**	Mild Steel Cement Lined
PE	Polyethylene	**PC**	Polymer Concrete
PP	Polypropylene	**PVC**	Polyvinylchloride
PVC - M	Polyvinylchloride, Modified	**PVC - O**	Polyvinylchloride, Oriented
PVC - U	Polyvinylchloride, Unplasticised	**RC**	Reinforced Concrete
RC-PL	Reinforced Concrete Plastics Lined	**S**	Steel
SCL	Steel Cement (mortar) Lined	**SCL IBL**	Steel Cement Lined Internal Bitumen Lined
SGW	Salt Glazed Ware	**SPL**	Steel Polymeric Lined
SS	Stainless Steel	**STONE**	Stone
VC	Vitrified Clay	**WI**	Wrought Iron
WS	Woodstave		

Further Information

Please consult the Dial Before You Dig enquiries page on the Sydney Water website

For general enquiries please call the Customer Contact Centre on **132 092**

In an emergency, or to notify Sydney Water of damage or threats to its structures, call 13 20 90 (24 hours, 7 days)

A3

UNION LANE
LITTLE EDWARD ST
HARWOOD ST
MURRAY ST
DARLING DR
BUNN ST
PYRMONT OPENING BRIDGE
COCKLE BAY

DBYD Address:
n/a Union Lane
Pyrmont NSW 2009

DBYD Job No: 10115729

DBYD Sequence No: 50033102

Scale: 1:1500

Date of Production: 06/01/2016

Plan 1 of 1

N

0m 7m 14m 21m 28m

APPENDIX B

Updated Sydney Water Feasibility Application

e-Developer

APPLICATION ENTRY

An application fee will be charged as per standard schedule of charges. Additional charges may also be incurred.

CASE INFORMATION	
Application Number	**157413**
Application Type	
This is not a formal application. Sydney Water will issue an advice letter "Guidance Note for Proposed Development" in due course. The advice is provided as a guide only, is current at the date of issue and may be subject to change.	
Associated Cases	152030
Agent Contact	Gabriel Sciannimanica
Agent Contact Phone	4228 4133
Agent Reference	

DEVELOPER SAME AS THE APPLICANT?

Is the developer the same as the applicant?

Yes ● No

APPLICANT INFORMATION

Search Type			
Name	Cardno (NSW/ACT) Pty Ltd	ABN	95001145035
Address	Level 1 47 Burelli Street, Wollongong 2500	Phone	4228 4133

DEVELOPER INFORMATION

Search Type			
Name	MIRVAC PROJECTS PTY LTD	ABN	72001069245
Address	Level 26 60 Margaret St, SYDNEY 2000	Phone	

HYDRA DATA AUTO POPULATION

Hydra Download Number	1609151415	Auto-Populate

LEAD ADDRESS

Section Number		Street Number	2-10
Street Name	DARLING DR	Comment	
Suburb		Comment	
Cross Street			

LGA		Comment	
UBD Edition			
UBD Map		UDB Reference	
Plan Number (s)	?	Lot Number (s)	

DEVELOPMENT LOCATIONS

Property Number	Lot or Portion Number	Section Number	Plan Type and Number	Lot Area Sq m	Street Number	Street Name	Suburb	Lead Address
4707209	1		DP776815	14378.07	2-10	DARLING DR	Sydney	●

Total Calculated Area (Sq M)		Comment	
Total Number of Lot/Portion Nos flagged for Development		Comment	

PROPERTY USE

Lot Status	

Current Property Type | Delete | Comment

Add Current Property Type

Describe Current and Proposed Development:

Redevelopment of existing harbourside shopping precinct into a 40 Storey retail/residential development

PROPOSED DEVELOPMENT

Development Type	
Development sub type	
Is it 'Serviced apartments'?	● Yes No
Strata/Stratum Subdivision	● Yes No
Development contains multi-level building	● Yes No
Number of multi-level buildings	
No. of levels in tallest building	
Stage Number	of
Stage Name	
Subdivision required?	Yes ● No
Total Dwellings	
Attach Subdivision Plan	
Attach Development Plan	

Attach Additional Application Information Form	

CONSENT INFORMATION

Consent Authority	
Development Consent Number	
Consent Date	
Attach Consent Document	
Attach Stormwater Analysis	
Total Impervious Surface Area	

RESIDENTIAL/COMMERCIAL/INDUSTRIAL MIXED DEVELOPMENT

Number of Residential Units		
Residential Footprint		sqm
Commercial Footprint		sqm

EXPECTED REQUIREMENTS FOR THE PROPOSED DEVELOPMENT

Water

Maximum demand		KL/Day
Average demand		KL/Day
Peak demand		L/Sec

Recycled Water

Maximum demand		KL/Day
Average demand		KL/Day
Peak demand		L/Sec

Waste Water

Maximum discharge		KL/Day
Average discharge		KL/Day
Peak simultaneous discharge		L/Sec

Irrigation Systems

Maximum demand		L/Day
Average demand		L/Day
Peak demand		L/Sec
Automatic Timer		

Proposed Pattern of Usage:

Process Water

Maximum demand		L/Day
Average demand		L/Day
Peak demand		L/Sec

Proposed Pattern of Usage:

Other Requirements

Air-conditioning make-up water		L/Sec
Proposed meter size		mm

Any other relevant information affecting usage:

Fire Fighting Requirements

Fire Hose Reel		Number
Fire Hydrant		L/Sec
Fire Sprinkler		L/Sec
Wall Drencher		L/Sec


ADDITIONAL APPLICATION INFORMATION

Case Number: **157413** Date: **19/09/2016**

[Complete by either scanning the relevant sections of the Consent or by completing the details below]

Section 1 – Additional DA Consent Information

• How many levels are there in the development and what is their use? (eg 6 storey development comprising 5 residential and 1 basement)	Mixed use development with 52,000sqm ground floor retail area, 35,000sqm residential ground floor and 40 storey residential development
• Are there other types of lots? (eg residue, public reserve, open space, restricted development) If yes, specify details (including lot numbers)	**Yes** ☐ **No** ☒
• Does the Council require further consent for the residue land?	**Yes** ☐ **No** ☒
• Are there any previous Consents referred to in the Consent? If yes, specify details	**Yes** ☐ **No** ☒
• Is there a condition in the Consent for the consolidation of lots? If yes, specify details.	**Yes** ☐ **No** ☒
• Are there any conditions for road works in the Consent? (eg closure of roads, slip lanes, widening) If yes, specify details.	**Yes** ☐ **No** ☒
• Are there any conditions in the Consent relating to Sydney Water stormwater requirements? If yes, specify details.	**Yes** ☐ **No** ☒
• Are there any other conditions that impact upon existing or proposed Sydney Water services? (e.g. Heritage items, environmental constraints) If yes, specify details.	**Yes** ☐ **No** ☒

Section 2 – Future Connection Requirements

Provide a description of any existing services that are to be retained on property or need to be removed (if required):

Sewer	DN300 VC located to the east of the proposed development lot
Drinking Water	DN250 SCL located to the east and DN150 DICL to the west of the proposed development lot
Recycled Water	
Stormwater	

Section 3 – General Comments

Redevelopment of the Harbourside Shopping Precinct to expand the retail ground for to 52,000sqm with a 40 Level Residential Development. Car-parking provision has reduced from 320 to 295 car-spaces

Estimated sewer and water loads for the Harbourside development;
-Towns Water Domestic - 140l/s
-Sewer - 80l/s
An Expected a monthly saving of water usage 70kL/month from roof water collection.

Estimated Fire Services Towns Water Domestic usage;
-Retail combined Hydrant and Sprinklers - 50l/s
-Residential combined Hydrant and Sprinklers - 25l/s

APPENDIX C

Previous Sydney Water Correspondence

Case Number: **152030**

18 March 2016

Joe Heydon
C/- Cardno (NSW/ACT) Pty Ltd

FEASIBILITY LETTER

Developer:	**Joe Heydon**
Your reference:	**8201607701**
Development:	**Lot 1 DP 776815 (No. 2-10) Darling Drive, Sydney**
Development Description:	**Redevelopment of the existing Harbourside Shopping Precinct to a 34 storey retail/commercial development**
Your application date:	**8 February 2016**

Dear Applicant,

This Feasibility Letter (Letter) is a guide only. It provides general information about what Sydney Water's requirements could be if you applied to us for a Section 73 Certificate (Certificate) for your proposed development. **The information is accurate at today's date only.**

If you obtain development consent for that development from your consent authority (this is usually your local Council) they will require you to apply to us for a Section 73 Certificate. You will need to submit a new application (and pay another application fee) to us for that Certificate by using your current or another Water Servicing Coordinator (Coordinator).

Sydney Water will then send you either a:

- Notice of Requirements (Notice) and Developer Works Deed (Deed) or
- Certificate.

These documents will be the definitive statement of Sydney Water's requirements.

There may be changes in Sydney Water's requirements between the issue dates of this Letter and the Notice or Certificate. The changes may be:

- if you change your proposed development eg the development description or the plan/ site layout, after today, the requirements in this Letter could change when you submit your new application; and

- if you decide to do your development in stages then you must submit a new application

(and pay another application fee) for each stage.

Sydney Water's possible requirements, based on the information you have included with this Application, are:

Water and Sewer Facilities

This information is provided to assist in planning for the future servicing needs of the development;

- Strategic investigation shows that the trunk water and wastewater systems have adequate capacity to service this development area.

- A preliminary water servicing investigation is based on supply from the existing DN250 drinking water main in Darling Drive. A preliminary wastewater investigation was based on supply from the DN300/DN375 sewer constructed under WN 300418/1, located in Darling Drive.

- Your Water Servicing Coordinator can assess the water/wastewater mains and advise you of any amplification requirements based on your connection points and corresponding discharge points.

- This advice is not a formal approval of our servicing requirements. Formal requirements for servicing the developments will be determined as part of the Section 73 application phase. More information about the Section 73 application process is available on our web page in the Land Development Manual.

Stormwater

Based on information provided with this Application, it is understood that the proposed development will use the existing footprint. The existing structure is presently over an existing Sydney Water 2700 x 1725 RC Stormwater Channel and the proposed redevelopment is apparently also expected to be constructed over this stormwater channel.

Sydney Water could approve this Feasibility application subject to the following conditions;

1. **Protection of Asset (No impacts to stormwater asset)**

Sydney Water needs to ensure the existing stormwater channel is protected and operational. Please refer to Sydney Water's Guidelines for constructing buildings over or adjacent to stormwater assets. This document outlines the process and design requirements for such activities.

As per the guidelines, you are advised of the following:

- Ensure the proposed redevelopment structure is independent of the stormwater channel. There must be no loading on the channel. A CCTV inspection /asset condition assessment of the asset will be required before and after construction to ensure it has

not been damaged or disturbed for it to be fully operational..

- No building or permanent structure is to be constructed within **1m** from the outside wall of the stormwater asset. This should be demonstrated in a detailed survey plan showing all the existing services and proposed culvert amplification. The plans should indicate:
    - Ø existing and new building footprints
    - Ø detailed existing infrastructure and services.
    - Ø at least three X-Sections along the route of the proposed culvert (X-Sections for each connection point and midpoint where it is considered the closest or highest hazard to the proposed building).

Proposals to build over, or adjacent to, Sydney Water stormwater assets will be consistent with the Building Over and Adjacent to Stormwater Assets policy and guidelines, unless otherwise agreed. Proposals to build over and adjacent to stormwater assets will be developed, assessed and agreed with Sydney Water before plans are lodged or building construction commences.

2. Connection to our stormwater asset

To connect to our stormwater channel, please refer to Sydney Water's "Asset adjustment and protection manual". In addition consider the following to connect to our stormwater channel:

- All drawings showing detailed connections to existing stormwater assets are to be submitted in AutoCad to the Water Servicing Coordinator. The title of the drawings shall be as follows**:**

    [Suburb] **Drainage**
    Case No. 152030SW
    [Catchment Name] **SWC** ***[##]***
    Highlight connections with clear specification details

- A qualified structural engineer is required to design the connection with a structural engineer's certificate is to be attached with the design drawings.
- Proposed connections that are less than 300mm in diameter can use Sydney Water's standard drawings to design the connection drawings.
- Connection angles are to be no greater than 45 degrees in the direction of the channel flow.
- Plans showing X-Sections of connections with detailed designs fit for construction.
- Plan specifications must include protection of existing infrastructure and assets particularly the existing stormwater culverts along Hay Street.

3. Flooding Impacts

As per the development adjacent to your property (SICEEP), Lend Lease needs to comply with an approved Local Area Servicing Plan. This plan provides our requirements to their development. One of the conditions of this development which will apply to this redevelopment is to ensure there is no adverse flooding to adjoining properties, proposed public domains and the development itself. If there is adverse flooding we require flood mitigation options to be identified.

We seek the proponent to evaluate the development on the existing flood model used for SICEEP (modelled by Arcadis ex Hyder) and assess the existing flooding impacts for the same

rainfall events.

4. **Operation and Maintenance**

Sydney Water will require appropriate or improved access to the stormwater channel for operations and maintenance. It is recommended this be carried out in consultation with Sydney Water.

5. **Stormwater Easement**

For SICEEP, the development adjacent to your property, the Local Area Servicing Plan requires a new stormwater easement to be be created on the southern side of your development in favour of Sydney Water. Based on the life and condition of the stormwater channel, the stormwater easement will be used for Sydney Water to divert the existing stormwater channel. Further advice can be provided as this is presently being addressed with Lend Lease.

6. **Other agency notification**

Applicant is reminded that other agencies are informed of this work e.g. City of Sydney, Roads and Maritime Services, Sydney Harbour Foreshore Authority and their endorsement/approval is sought.

Sydney Water should be consulted for each for each stage of the development.

WHAT YOU MUST DO TO GET A SECTION 73 CERTIFICATE IN THE FUTURE

To get a Section 73 Certificate you must do the following things. You can also find out about this process by visiting www.sydneywater.com.au > Plumbing, building & developing > Developing > Land development.

1. **Obtain Development Consent from the consent authority for your development proposal.**

2. **Engage a Water Servicing Coordinator (Coordinator).**

   You must engage your current or another authorised Coordinator to manage the design and construction of works that you must provide, at your cost, to service your development. If you wish to engage another Coordinator (at any point in this process) you must write and tell Sydney Water.

   For a list of authorised Coordinators, either visit www.sydneywater.com.au > Plumbing, building & developing > Developing > Providers > Lists or call **13 20 92.**

   The Coordinator will be your point of contact with Sydney Water. They can answer most questions that you might have about the process and developer charges and can give you a quote or information about costs for services/works (including Sydney Water costs).

3. **Developer Works Deed**

   After the Coordinator has submitted your new application, they will receive the Sydney Water Notice and Developer Works Deed. You and your accredited Developer

Infrastructure Providers (Providers) will need to sign and lodge both copies of the Deed with your nominated Coordinator. After Sydney Water has signed the documents, one copy will be returned to the Coordinator.

The Deed sets out for this project:

- your responsibilities;
- Sydney Water's responsibilities; and
- the Provider's responsibilities.

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

Note: The Coordinator must be fully authorised by us for the whole time of the agreement.

4. Water and Sewer Works

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

5. Ancillary Matters

5.1 Asset adjustments

After Sydney Water issues this Notice (and more detailed designs are available), Sydney Water may require that the water main/sewer main/stormwater located in the footway/your property needs to be adjusted/deviated. If this happens, you will 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**. Sydney Water will need to see the completed designs for the work and we will require you to lodge a security. The security will be refunded once the work is completed.

5.2 Entry onto neighbouring property

If you need to enter a neighbouring property, you must have the written permission of the relevant property owners and tenants. You must use Sydney Water's **Permission to Enter** form(s) for this. You can get copies of these forms from your Coordinator or the Sydney Water website. Your Coordinator can also negotiate on your behalf. Please make sure that you address all the items on the form(s) including payment of compensation and whether there are other ways of designing and constructing that could avoid or reduce their impacts. You will be responsible for all costs of mediation involved in resolving any disputes. Please allow enough time for entry issues to be resolved.

5.3 Costs

Construction of these **future** works will require you to pay project management, survey, design and construction costs **directly to your suppliers**. Additional costs payable to Sydney Water may include:

- water main shutdown and disinfection;
- connection of new water mains to Sydney Water system(s);
- design and construction audit fees;
- contract administration, Operations Area Charge & Customer Redress prior to project finalisation;
- creation or alteration of easements etc; and
- water usage charges where water has been supplied for building activity purposes prior to disinfection of a newly constructed water main.

Note: Payment for any Goods and Services (including Customer Redress) provided by Sydney Water will be required prior to the issue of the Section 73 Certificate or release of the Bank Guarantee or Cash Bond.

Your Coordinator can tell you about these costs.

6. Approval of your Building Plans

You must have your building plans approved **before the Certificate can be issued. Building construction work MUST NOT commence until Sydney Water has granted approval.** Approval is needed because construction/building works may affect Sydney Water's assets (e.g. water and sewer mains).

Your Coordinator 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 Sydney Water's assets are located in relation to your proposed building work. Your Coordinator will then either approve the plans or make requirements to protect those assets before approving the plans;
- Possible requirements;
- Costs; and
- Timeframes.

You can also find information about this process (including technical specifications) if you either:

- visit www.sydneywater.com.au > Plumbing, building & developing > Building > Building over or next to assets. Here you can find Sydney Water's *Technical guidelines - Building over and adjacent to pipe assets*; or
- call 13 20 92.

Notes:

- **The Certificate will not be issued until the plans have been approved and, if required, Sydney Water's assets are altered or deviated;**
- **You can only remove, deviate or replace any of Sydney Water's pipes using temporary pipework if you have written approval from Sydney Water's Urban**

Growth Business. You must engage your Coordinator to arrange this approval; and

- **You must obtain our written approval before you do any work on Sydney Water's systems. Sydney Water will 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*.**

OTHER THINGS YOU MAY NEED TO DO

Shown below are other things you need to do that are NOT a requirement for the Certificate. They may well be a requirement of Sydney Water in the future because of the impact of your development on our assets. 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 a Sydney Water sewer main. This work must meet Sydney Water's 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 Sydney Water's 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

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

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 Sydney Water's system to provide that flow in an emergency. Sydney Water's Operating Licence directs that Sydney Water's 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

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™. You, or your hydraulic consultant, may need to supply the following:

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

You will have to pay an application fee.

Sydney Water does not consider whether a water main is adequate for fire fighting purposes for your development. We cannot guarantee that this water supply will meet your Council's fire

fighting requirements. The Council and your Hydraulic Consultant can help.

Private Water Services Connection and Metering

To provide domestic water to the total development you will need to connect to the Sydney Water main. You must lodge an application for this connection at a Quick Check agent. We will then tell you about any requirements you need to meet. Visit www.sydneywater.com.au > Plumbing, building & developing > Building > Quick Check agents to find out more.

Visit www.sydneywater.com.au > Plumbing, building & developing > Plumbing > Meters & metered standpipes to find out more about our metering requirements for your development.

Disused Water Service Sealing

You must pay to disconnect all disused private water services and seal them at the point of connection to a Sydney Water water main. This work must meet Sydney Water's 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

The requirements in this Notice relate to your Certificate application only. Sydney Water may be involved with other aspects of your development and there may be other fees or requirements. These include:

- Ø plumbing and drainage inspection costs;
- Ø the installation of backflow prevention devices;
- Ø trade waste requirements;
- Ø large water connections and
- Ø Council fire fighting requirements. (It will help you to know what the fire fighting requirements are for your development as soon as possible. Your Hydraulic Consultant can help you here.)

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

END

APPENDIX D

Sydney Water Build Over Policy

Sydney WATER

Guidelines for building over or adjacent to Sydney Water stormwater assets

Contents

1 When to use these guidelines

These Guidelines support the implementation of Sydney Water's *Building Over or Adjacent to Sydney Water Stormwater Assets Policy*, and provide details on the requirements for building over or adjacent to Sydney Water stormwater assets.

When planning your development, you need to contact 'Dial Before You Dig' or a Quick Check agent to find out if there are any existing Sydney Water stormwater assets near your proposed building. You can also purchase a service location diagram from a Quick Check agent. Before you start building, your building plans must be approved by Sydney Water.

If a stormwater asset is located on or within 10 metres of your site, your building plans can only be approved by Sydney Water through a Water Servicing Coordinator and you must follow these Guidelines to design your building.

The Coordinator will work with Sydney Water to review your plans and assess any requirements. The Coordinator will tell you about any requirements and help you meet them.

1.1 Reports may be required

Depending on the proposal and its impacts upon the stormwater asset, the Water Servicing Coordinator can help you prepare the following reports:

- *Services Protection Report*
- *Stormwater Deviation Report*
- *Flood Impact Assessment Report*

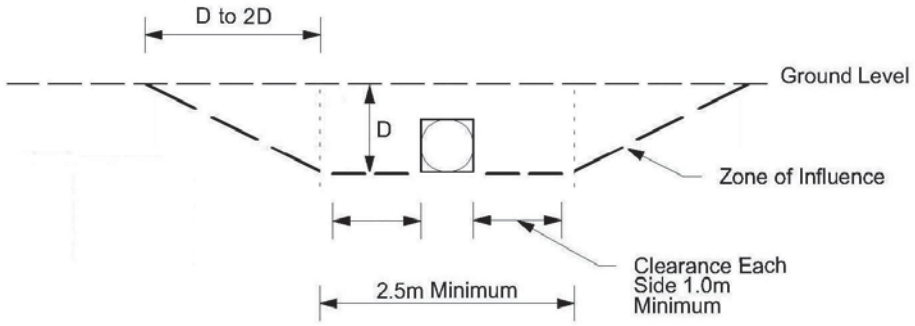
Services Protection Report

As part of the development, the asset must be accurately located to design the appropriate asset protection requirements. This information must be presented in a *Services Protection Report*.

The report will accurately locate the size, alignment and depth of all Sydney Water assets in the vicinity (i.e. water, sewer, stormwater) within the zone of influence of the existing or proposed stormwater asset. This area may include the subject property, adjoining properties and dedicated road reserve (including footpath area). Figure 1 depicts the zone of influence from Sydney Water's clearance requirements.

A condition assessment of the asset is to be included in the report. Where available, Sydney Water will provide a recent condition assessment from its scheduled inspection program.

Figure 1 – Zone of influence



Stormwater Deviation Report

Buildings over stormwater assets interfere with our ability to maintain and reconstruct these assets. In order to avoid increased public costs to maintain and reconstruct assets, Sydney Water may require the asset to be deviated around the proposed building, where it is possible to do so.

Options to deviate the asset around the proposed building must be presented in a *Stormwater Deviation Report*. This report needs to examine the feasibility of constructing a new stormwater asset, including:

- Any changes to the slope of the stormwater asset.
- Consideration of all existing services, structures, etc. that are within the deviation route.

The report is to include cost estimates for each deviation option and for the 'base case' of reconstructing the asset to its existing alignment and length.

Flood Impact Assessment Report

Floodplain risks should be managed by using the floodplain in a manner that is compatible with the flood hazard and at a level of risk that is accepted by the community. The control and management of land use provides the most effective means of managing the consequences of floods and minimising flood risks. This approach to managing flood risk is in line with the NSW Government's Flood Policy as described in the Floodplain Development Manual.

Sydney Water will require the submission of a *Flood Impact Assessment Report* in support of applications to build over or adjacent to a stormwater asset. Refer to Appendix 1 for further details.

2 Building Over Stormwater Assets

Sydney Water will consider proposals to locate building structures over its stormwater assets where existing buildings are located over these assets, and building over the asset is the only feasible solution to facilitate reasonable development of the property.

Build over proposals must meet the requirements of these Guidelines.

2.1 Asset may require deviation or reconstruction

Sydney Water will assess the remaining life of the stormwater asset, and may require deviation or reconstruction of the asset in circumstances where:

- The remaining life of the asset is less than the expected life of the proposed building.
- The proposed building will intersect the asset.
- The type of asset is not suitable for building over.

If Sydney Water advises that the asset must be deviated or reconstructed as part of the development, the Water Servicing Coordinator will first explore options to deviate the stormwater asset around the proposed building and present these in a *Stormwater Deviation Report*.

After reviewing the *Stormwater Deviation Report*, Sydney Water will determine whether:

- The asset must be deviated around the proposed building (refer to section 2.2).
- The asset must be reconstructed to permit building over (refer to section 2.2).
- The asset does not require deviation or reconstruction to permit building over (refer to section 2.3).

Designer and constructor of new assets

Where a development requires deviation or reconstruction of the stormwater asset, the works will be managed by a Water Servicing Coordinator, with a designer and constructor selected by the customer and approved by Sydney Water (unless this approach is impractical).

Sydney Water will work with the customer to determine the most appropriate means of delivering the works.

2.2 Deviation or reconstruction required by Sydney Water

After reviewing the *Stormwater Deviation Report*, Sydney Water may require:

- Deviation of the stormwater asset around the proposed building.
- Reconstruction of the stormwater asset below the proposed building.

These activities must be carried out before the proposal's building works.

The Water Servicing Coordinator (WSC) will undertake the following key steps depending on whether or not reconstructing the stormwater asset is included in their responsibilities (as decided between Sydney Water and the customer under section 2.1):

Action	Deviation or reconstruction is managed by WSC	Deviation or reconstruction is managed by Sydney Water
Engage a suitably qualified and experienced designer to design the new stormwater asset.	Yes	N/A
Submit full stormwater design drawings to Sydney Water for approval.	Yes	N/A
Submit a Services Protection Report for the asset location prepared by an accredited provider or a registered surveyor.	Yes	Yes
Submit building plans and structural details to Sydney Water for approval, with clearances between the building, footings, piers and Sydney Water assets clearly marked. These plans must certify that the building and asset design will meet all of Sydney Water's requirements, including: • Structural independence between the building and the stormwater asset (refer to section 4.1). • For reconstruction – 'Build Over Clearance Requirements' are met (refer to section 4.2). • For deviation – 'Build Adjacent Clearance Requirements' are met (refer to section 4.3). • The building is outside any easement in favour of, or land owned by, Sydney Water.	Yes	Yes
HOLD POINT: Sydney Water must approve the plans before any further work may commence.	Yes	Yes
Seek and obtain three written quotations (in 'Template 14' format, with modifications to suit stormwater construction work) from qualified and experienced contractors capable of constructing the approved design. The customer will recommend a preferred constructor for Sydney Water's acceptance.	Yes	N/A
HOLD POINT: Sydney Water must accept the constructor before any further work may commence.	Yes	N/A
Supervise construction of the stormwater asset.	Yes	N/A
Supervise construction of the stormwater asset protection requirements (e.g. piering) in accordance with these Guidelines (refer to section 4).	Yes	Yes (after new asset constructed)
Submit the Project Completion Package upon completion of the works.	Yes	Yes

2.3 Deviation or reconstruction not required

Where Sydney Water has determined that reconstruction of the asset is not required to permit the building over proposal, the Water Servicing Coordinator will undertake the following key steps:

- Submit a Services Protection Report prepared by an accredited provider.
- Submit building plans and structural details to Sydney Water for approval, with clearances between the building, footings, piers and Sydney Water assets clearly marked.

  These plans must certify that the building and asset design will meet all Sydney Water's requirements, including:

  – Structural independence between the building and the stormwater asset (refer to section 4.1).

  – 'Build Over Clearance Requirements' (refer to section 4.2).

  – The building is outside any easement in favour of, or land owned by, Sydney Water.
- Submit a pre-construction closed circuit television (CCTV) or dilapidation survey report carried out by an accredited provider.

HOLD POINT: Sydney Water must approve the plans before any further work may commence.

- Supervise construction of the stormwater asset protection requirements (e.g. piering) in accordance with these Guidelines (refer to section 4).
- Submit the Project Completion Package upon completion of the work.

  The Project Completion Package must include a post-construction CCTV or dilapidation survey report carried out by an accredited provider.

3 Building Adjacent to Stormwater Assets

Sydney Water will approve a proposal to construct a building adjacent to a stormwater asset where the proposal meets the requirements of these Guidelines.

The Water Servicing Coordinator will undertake the following key steps:

- Submit a Services Protection Report prepared by an accredited provider or a registered surveyor.
- Submit building plans and structural details to Sydney Water for approval, with clearances between the building structures, footings, piers and Sydney Water assets clearly marked.

  These plans must certify that the building design will meet all Sydney Water's requirements, including:

  – Structural independence between the building and the stormwater asset (refer to section 4.1).

  – 'Build Adjacent Clearance Requirements' (refer to section 4.3).

  – The building is outside any easement in favour of, or land owned by, Sydney Water.
- Submit a pre-construction CCTV or dilapidation survey report carried out by an accredited provider.

HOLD POINT: Sydney Water must approve the plans before any further work may commence.

- Supervise construction of the stormwater asset protection requirements (e.g. piering) in accordance with these Guidelines (refer to section 4).
- Submit the Project Completion Package upon completion of the work.

  The Project Completion Package must include a post-construction CCTV or dilapidation survey report carried out by an accredited provider.

4 Asset Protection Requirements

Sydney Water requires clearances between stormwater assets and other structures for the purposes of inspecting, maintaining and reconstructing the stormwater asset when required.

4.1 Structural independence requirements

For any build over or build adjacent proposal, the customer will need to ensure the continued structural integrity and independence of both the building and the stormwater asset. Building foundations are to be designed and certified by a structural engineer and must meet the following requirements:

- The building is to be supported on pier foundations so that no load is transferred to the stormwater asset.
- The building needs to be fully supported in the event of structural failure and collapse of the stormwater asset.
- Piers are to be bored, not driven.
- Piers are to extend to at least one metre below the zone of influence of the stormwater asset, in order to provide some support should a stormwater asset failure during a storm may cause substantial erosion beneath the building.

  The gradient of the zone of influence commences at the minimum horizontal clearance from Sydney Water's assets and needs to be determined by a geotechnical or structural engineer based on their assessment of local soil conditions (typically 1H:1V in clay or 2H:1V in sand).

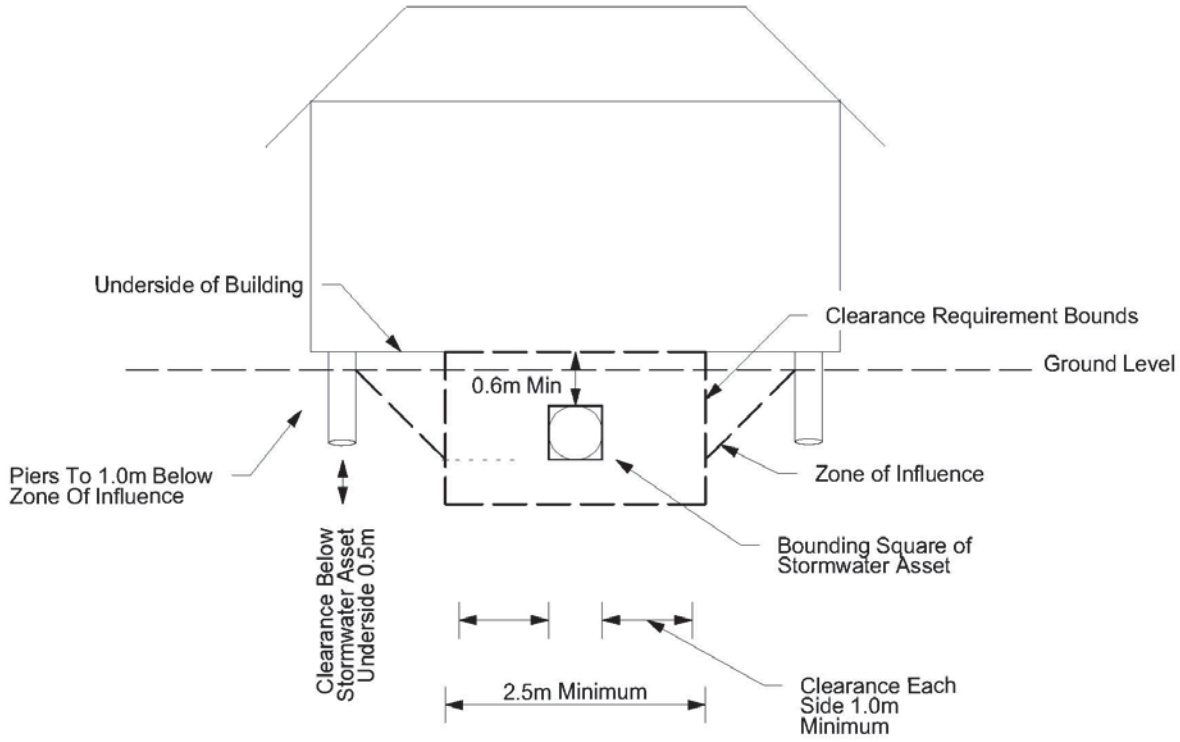
4.2 Build over clearance requirements

Sydney Water's clearance requirements for building over stormwater assets are:

- 1 metre from the outside edges of the asset to the adjacent structure.
- 0.6 metres from the outside edge of the asset to the overlying structure.

Figure 2 depicts the clearance requirements when building over a Sydney Water stormwater asset.

Figure 2 – Build over clearance requirements



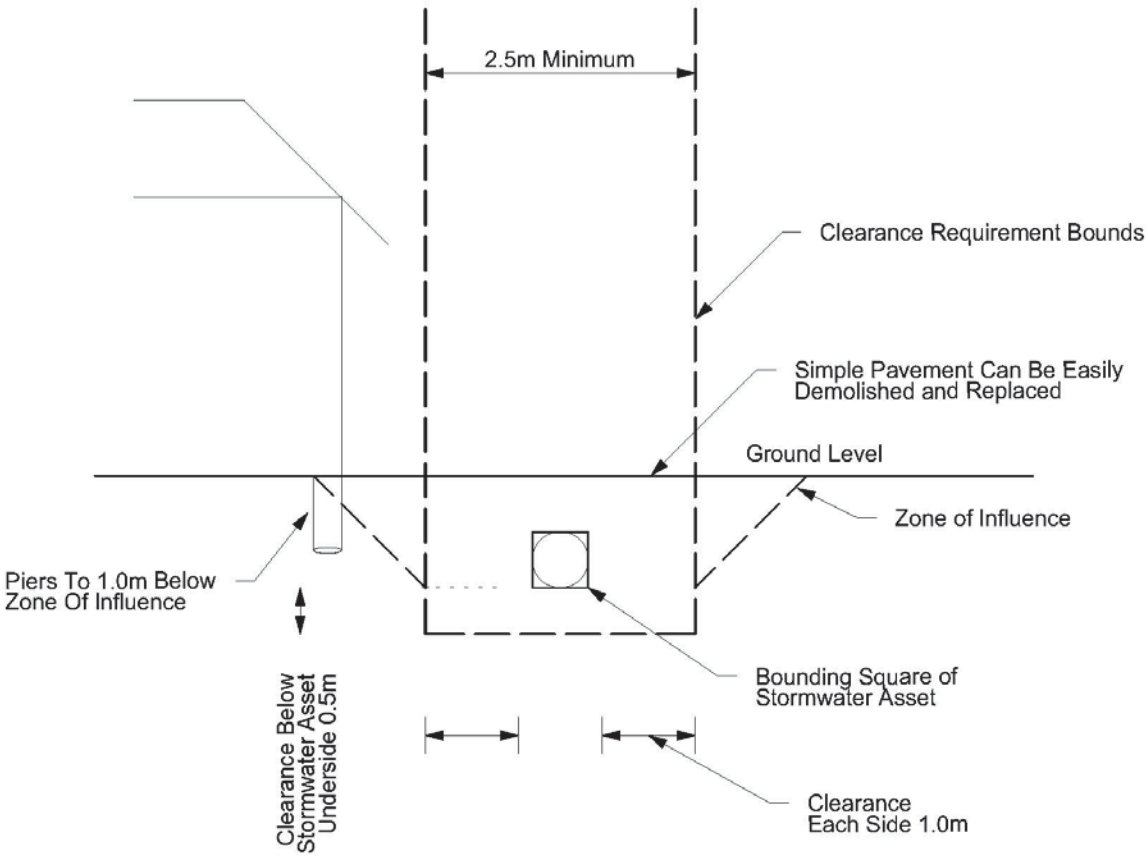
4.3 Build adjacent clearance requirements

Sydney Water's clearance requirements for building adjacent to stormwater assets are:

- 1 metre from the outside edges of the asset to the adjacent structure.
- No structure above the asset.

Figure 3 depicts the clearance requirements when building adjacent to a Sydney Water stormwater asset.

Figure 3 – Build adjacent clearance requirements



5 Context

5.1 Definitions

Term	Definition
Accredited provider	A private company that is accredited by Sydney Water to do work on Sydney Water assets. Lists of accredited providers for a number of different functions are available on Sydney Water's website, under: *Sydney Water > Building and developing > Provider information*
Build Adjacent Clearance Requirements	The reservation of space about the stormwater asset for adjacent structures, being one metre horizontally from the outside edges of the asset. Refer to Figure 3.
Build Over Clearance Requirements	The reservation of space about the stormwater asset for overlying structures, being one m horizontally and 0.6 m vertically from the outside edges of the asset. Refer to Figure 2.
Expected life	The total lifespan expected for an asset, based on a structural assessment of the asset's condition.
Flood Impact Assessment Report	A report detailing the impacts of flooding on the proposed development, and the impacts of the proposed development on local flooding. This document needs to have been completed within the past two years.
Overland flow paths	Land that carries surface stormwater flows when the volume of stormwater either exceeds that of the stormwater assets, or the flows cannot enter the assets due to topography or asset configuration.
Project Completion Package	A suite of information required under Sydney Water's e-Developer process for the completion of work and the take-over of developer works by Sydney Water. The package includes such elements as Work As Constructed drawings, completed field tests, etc.
Reasonable development	A development that either: • complies with the relevant planning controls (e.g. Local Environment Plan, Development Control Plan, State Environmental Planning Policy) or • is approved by both the relevant consent authority (e.g. Council) and Sydney Water's stormwater planning / strategy team.
Remaining life	The expected life of a stormwater asset, minus its consumed life.
Service Protection Report	A report accurately locating all Sydney Water assets in the vicinity in order to design appropriate asset protection measures. This document needs to have been completed within the past two years.
Stormwater assets	Includes open and covered channels, oviforms, pipes and box culverts, constructed from a variety of materials.

Term	Definition
Stormwater Deviation Report	A report detailing the feasibility of constructing a new stormwater asset around the proposed development. This document needs to have been completed within the past two years.
'Template 14' format	This template is called 'Schedule of rates – Wastewater mainlaying'. It is a template used for providing a complete breakdown of costs for wastewater construction works. Water Servicing Coordinators have this template. Since there is no corresponding template for stormwater works, 'Template 14' must be modified to suit any specific differences between wastewater and stormwater construction.
Water Servicing Coordinator	A private company contracted to Sydney Water to be the point of contact with customers for the provision of advice, project management and Quality Assurance in relation to the construction and protection of Sydney Water assets. A list of Water Servicing Coordinators is available from Sydney Water's website, under: *Sydney Water > Building and developing > Developing your land > Water Servicing Coordinators*
Zone of influence	The envelope within which building works (both above and below the ground level) will exert an influence on an asset. The zone of influence must be determined by a geotechnical or structural engineer based on local soil conditions (refer to section 4.1).

Appendix 1 – Flood Impact Assessment Report

Most developments in a floodplain modify existing flood behaviour. This may adversely impact the surrounding environment, including existing properties and assets. The proposed development itself is also exposed to flood risk, including risk to life and property. Sydney Water will require a Flood Impact Assessment Report whenever a development is proposed in the floodplain adjacent to or over one of its assets.

It is worth noting that both open channel and pipe/enclosed systems have associated floodplains. A brief description of the typical flooding scenario for both these cases is presented in Annexure A.

The latest version of the NSW Government Floodplain Development Manual (FDM) should be used to guide the assessment and management of flood risks.

Consideration of the flood risk

All development proposing to build over or adjacent to the Sydney Water stormwater assets should consider the assessment and management of flood risk associated with the development. Where available, local council guidelines should be followed while preparing the Flood Impact Assessment Report.

In the absence of any guidance, Sydney Water requires the following requirements to be met and relevant information presented in the report as a minimum:

1. Details of the proposed development including survey of the stormwater asset/s and the existing site and its surrounds
2. Catchment definition and the description of existing stormwater drainage system.
3. Details of the existing flood behaviour, including flood level, discharge and velocity for at least the 100 year Average Recurrence Interval (ARI) design flood. Data for other design floods may be requested depending on the nature of the development.
4. Impact of debris blockage of the stormwater asset should be considered in deriving the design flood events.
5. Flood planning level to be determined by adding 500 mm freeboard to the peak 100 year ARI flood level
6. Habitable floor levels to be at the flood planning level
7. Floor levels carport/parking space/garage may be considered at a reduced freeboard provided an acceptable level of risk to damage and safety can be demonstrated
8. Entry to below ground or basement car park would be required at the Probable Maximum Flood (PMF) level or the flood planning level, whichever is higher. Evacuation issues in the event of basement flooding should be addressed.
9. Various uses within the development should be consistent with the flood hydraulic hazard as defined in the FDM.
10. Evacuation strategies in the event of 100 year ARI and the PMF event need to be identified.
11. For significant increase in the number of occupants of the development, a Flood Emergency Response Plan would be required. The Plan should address the evacuation issues associated with the basement car parks.

12. The structural integrity of the development should be ensured by considering the floodwater flow velocity for the 100 year ARI or the PMF event, depending on the risk level. Impact of floating debris may also need to be considered where required.
13. Flood proofing strategies should be provided for various services such as electrical equipment, wiring, fuel lines and other services proposed to be connected to the development. Placement of these services should be considered above the PMF level.
14. Appropriate storage places, above the PMF level, should be identified for the hazardous material in the development.

The required information for the Flood Impact Assessment Report may not be readily available and appropriate flood modelling would be required to prepare this report.

Further advice can be obtained through Sydney Water's Liveable City Program unit.

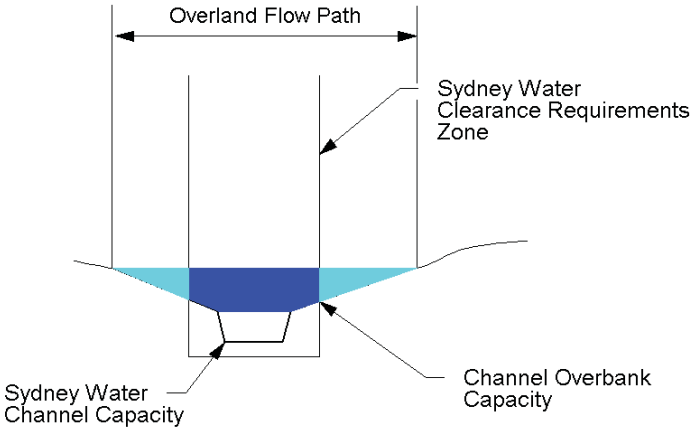
Annexure A – Rationale

When the capacity of stormwater systems is not sufficient to contain storm flows, overland flows and localised flooding occur. Stormwater assets are often located along the alignment of original watercourses (such as creeks or rivers). Building over open or enclosed stormwater assets is generally not permitted because of the adverse impacts on capacity and flow behaviour that are usually associated with building across overland flow paths.

Open channels

When the capacity of an open stormwater channel is not sufficient to convey stormwater flows, the water level rises above the top of the banks. This 'overbank flow' substantially increases the total open stormwater capacity for only moderate increases in flow depth. Figure 4 depicts the drainage capacity of an open stormwater asset, consisting of the channel flows and the 'overbank flow'.

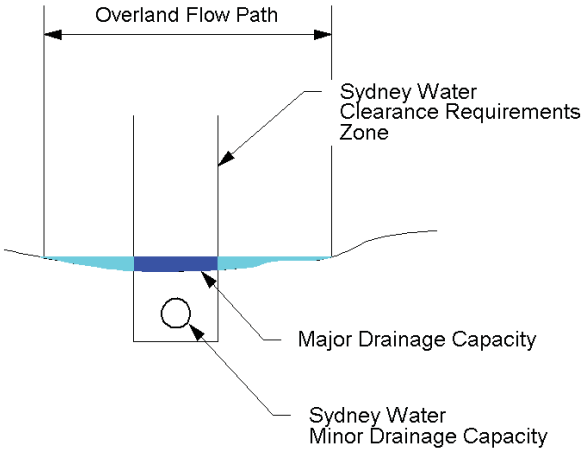
Figure 4 – Open channel drainage capacity



Enclosed assets

In contrast, the capacity of the enclosed stormwater system usually can only increase marginally over the pipe or culvert, due to the asset being buried. Figure 5 depicts the drainage capacity of an enclosed stormwater asset, consisting of the minor flows within the pipe / culvert and the major flows overland.

Figure 5 – Enclosed asset drainage capacity



APPENDIX E

Sydney Water Meeting Minutes

MINUTES

ARCADIS Design & Consultancy for natural and built assets

Issue date	5/02/2016
Issue to	Fernando Ortega – Sydney Water (FO)
Issued by	Joe Heydon – Arcadis (JH)
Subject	Harbourside Shopping Centre – Culvert Build over
Reference	Harbourside-MM-001
Client	Mirvac
Meeting date	4/02/2016
Time	10:00am
Location	Sydney Water, 39 St Martin Place
Present	Joe Heydon (JH) – Arcadis Fernando Ortega (FO) – Sydney Water Lachlan Attiwell – Mirvac (LA)
Copy to	David Hogendijk – Mirvac

ITEM	COMMENTS	ACTION
1	JH and LA introduced the proposed development to FO	
2	JH informed FO that Rob Dowey of Cardno was acting as WSC	
3	JH outlined the existing build-over that was required by the ICC Hotel	
4	JH outlined the proposed build over associated with Harbourside to FO	
5	FO explained that SW has requested that the ICC Hotel provide an easement located to the south of Harbourside for potential future diversion of the culvert	
6	FO explained that SW has in the past requested NSW State funding to divert this culvert but this request was denied at this moment as the existing culvert is in reasonable condition	
7	FO explained that the ICC Hotel team undertook a dilapidation report on the condition of the existing culvert and it was deemed to be in reasonable condition	
8	FO explained that at the moment Sydney Water would permit the future build over on condition that Sydney Water polices are adhered to and no direct load placed on culvert, and any damage during construction be rectified.	
9	FO recommended that Mirvac undertake their own dilapidation report or discuss with Lend Lease potential for using recent LL one with regard to copyright etc.	

10	FO suggested that Sydney Water may impose some conditions on DA for Mirvac to provide Sydney Water with additional access pit to the culvert in space located between eastern building façade and harbour.
11	FO suggested that Sydney Water may also condition the DA that some form of mesh be installed after culvert outlet to mitigate pollution e.g. plastic bottles etc. entering the harbour. This detail would be similar to that imposed on Lend Lease at Barangaroo.
12	LA confirmed that those requests are reasonable and Mirvac would consider in future.
13	LA and JH agreed to keep FO informed in future of any related issues to this culvert.

APPENDIX F

Ausgrid Dial Before You Dig Records

Reading Ausgrid Plans

COMN0119

1 Property Lines

"property line" (PL), sometimes referred to as **"building line" (BL)**, is the standard dimensioning reference point on all Ausgrid plans and represents property boundaries.

Typically the PL is the boundary between private property and local council's footpath area or nature reserve. Most residential fences and office blocks are erected along the PL.

"kerb line" (KL) is less frequently referred to on Ausgrid plans, and where used will be identified clearly as KL.

Numbers listed within property boundaries should correspond to recognised "street numbers". (refer to figure 1)

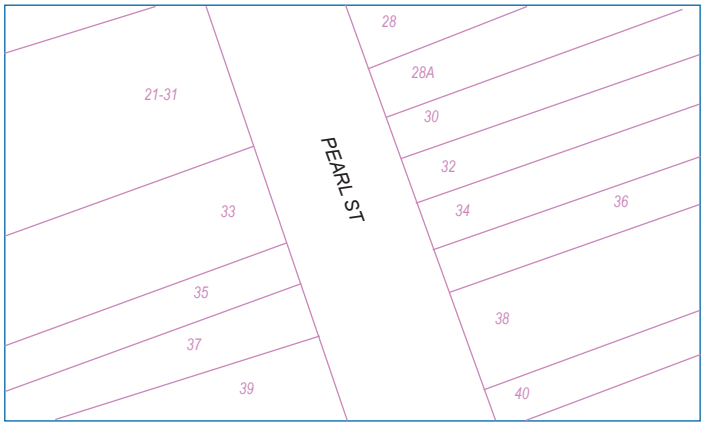


Figure 1

2 Datum References

"datum references" identify distances (in metres) from significant features (such as corners of property boundaries) to reference points such as Ausgrid assets (eg: **"conduits", "cables", "joints"**). (refer to figure 2)

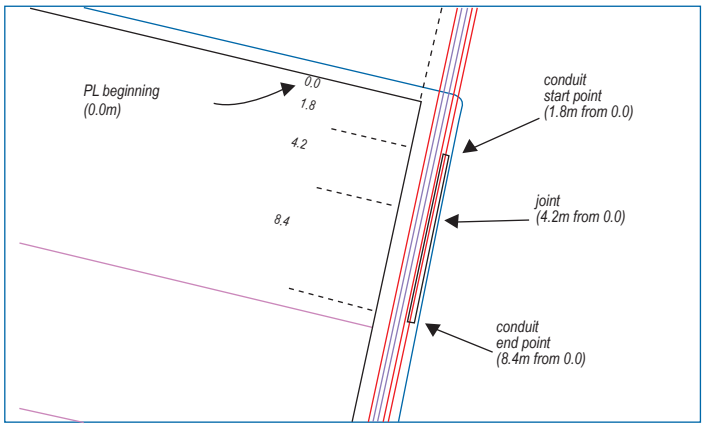


Figure 2

3 Cross Sections

"cross sections" displayed on Ausgrid plans detail information relating to the relative position (ie: distance from the **"property line"**, and the depth of **"cover"**) of Ausgrid assets.

"cover" is a term used to refer to the depth of cables underground.

A "cross section" leader line will be drawn indicating the location of the displayed **"cable"** or **"conduit"** information on Ausgrid plans.

The distance from **"property line"** (in metres) and depth of **"cover"** (in metres) references are displayed as; ie: 0.6 metres from PL and 0.5 metres underground).

Where distance and cover are not recorded, they will be clearly marked as **"NR"**.

NOTE: Distance and cover where indicated may be different to the actual position of the cables (eg: fill may have been placed at site that has changed the ground level).

"PL" distance shown in cross sections is an indicative measure to the centre of the trench allocation from the adjacent property line.

On some plans the "cross sections" may also be shown with a specific number (eg: HR1). This number will match with a cross-section detail found in the border of the plot or on a separate plot page. (refer to figures 3 and 4)

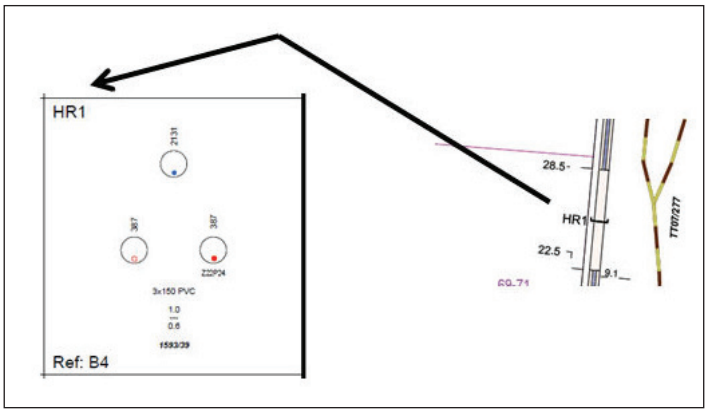


Figure 3

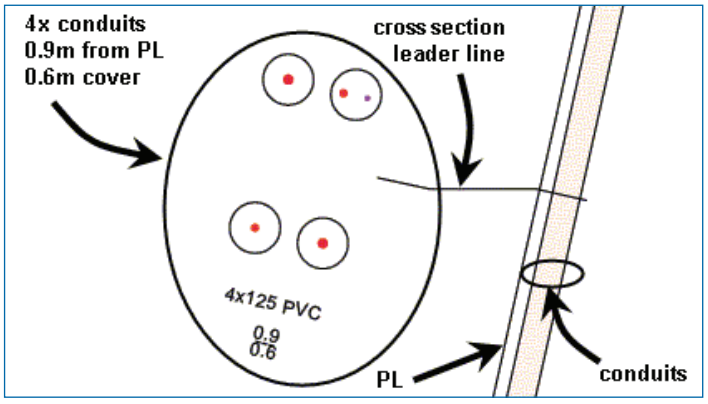


Figure 4

4 Cable Joints and Joint Reports

"cable joints" (numbered individually) and **"joint reports"** (attached to Ausgrid plans) can provide information relating to the relative position of Ausgrid assets, distance from the "property line" (in metres), and the depth of "cover" (in metres). (refer to figures 5 and 6)

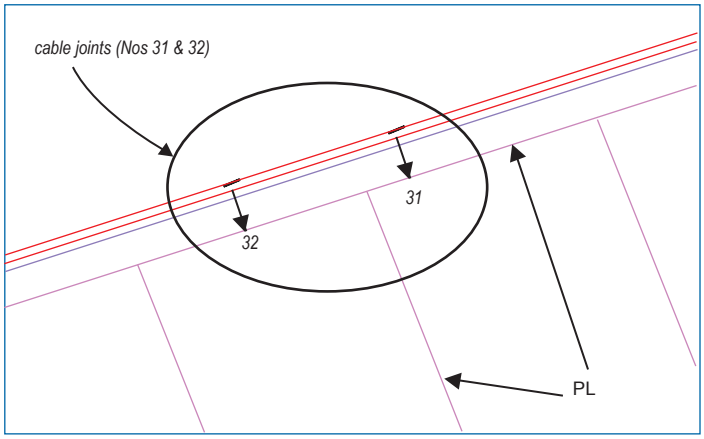


Figure 5

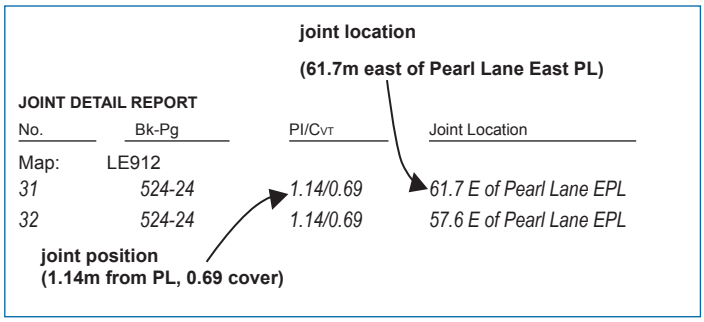


Figure 6

5 Cross Section Detail Boxes

"cross section" *detail boxes* on the sides of an Ausgrid plan are used when there is insufficient room to display **"cable"** and/or "conduit" information on the Ausgrid plan.

Ausgrid plans (refer to figure 7) are bordered by numeric identifiers along the *top and bottom borders* and alpha identifiers along the *side borders*.

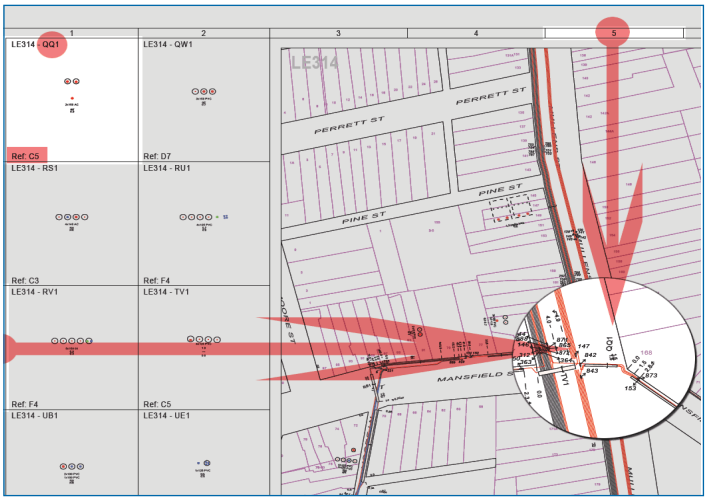


Figure 7

A **"cross section"** *leader line* and annotation is drawn on the Ausgrid plan for a reference to **"cable"** and/or **"conduit"** information in the **"cross section"** *detail boxes*.

6 Pits

Underground **"pits"** are numbered on Ausgrid plans, positioned relative to the **"property line" (PL)**, and can be found on either the footpath (nature strip) or the road (see figure 8).

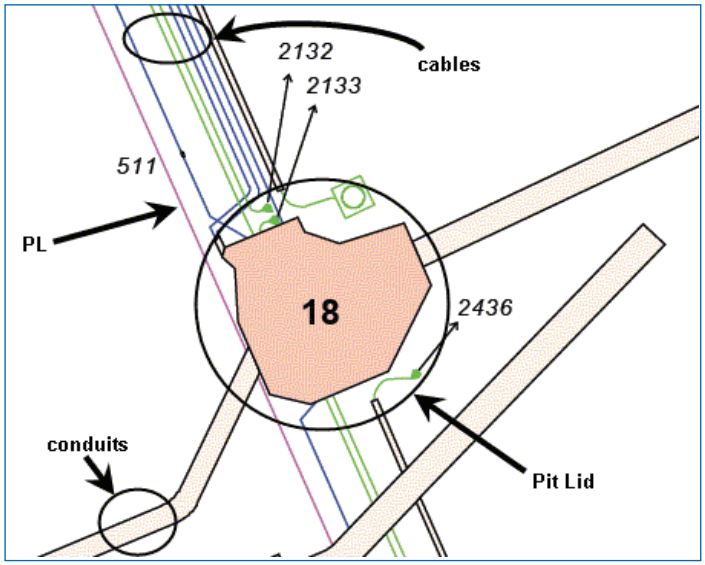


Figure 8

7 Proposal Areas

There are areas where underground work may have been issued for construction by Ausgrid, but details are not yet completely displayed on Ausgrid plans. In such cases a shaded **"proposal area"** is displayed on the Ausgrid plan, indicating underground work may have commenced in the vicinity but is not yet complete.

In some instances cables and other assets within the shaded **"proposal area"** will be shown in a **bright magenta** colour, indicating that the proposed new work displayed within the shaded area is based on initial planning documentation. (refer to figure 9)

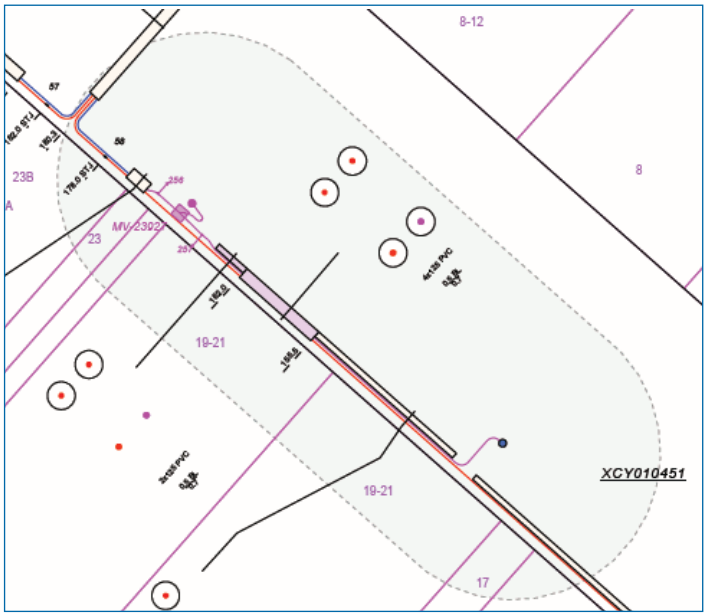


Figure 9

In other instances the shaded **"proposal area"** itself may be shown as a **blue** colour, indicating that the new work displayed within the shaded area on the Ausgrid plan is yet to include details regarding final depths and dimensioning. (refer to figure 10)

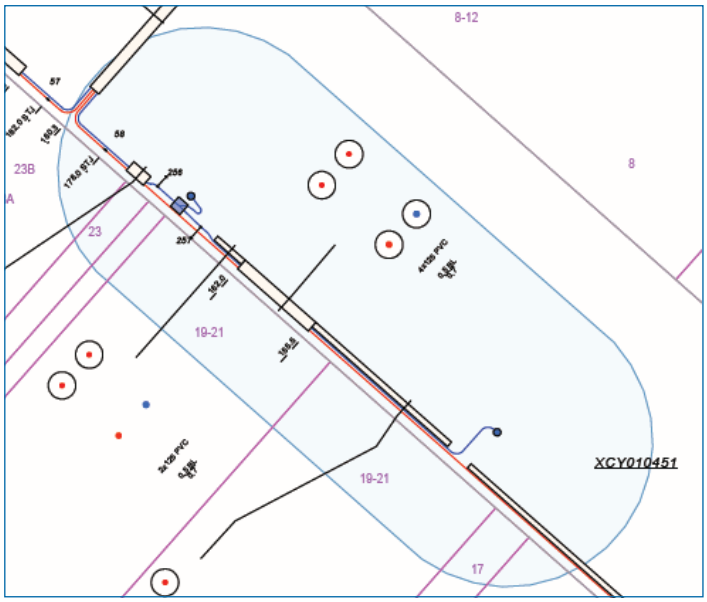


Figure 10

NOTE: In cases where these shaded **"proposal areas"** are displayed on Ausgrid plans.

"Ausgrid's design plans showing the proposed position of its underground cables, overhead lines and structures have been prepared solely for Ausgrid's own planning use. They show the proposed position of such underground cables, overhead lines and structures as proposed at the time of planning and have not necessarily been corrected to take into account any changes to road widths, road levels, fences and buildings subsequent to proposed installation.

Actual installations may vary from proposed installations as it may be necessary to take account of unforeseen above ground or subterranean constructions. Therefore, Ausgrid does not hold out that the design plans show more than the proposed presence or absence of its underground cables, overhead lines and structures in the street and will accept no liability for inaccuracies in the information shown on such design plans from any cause whatsoever."

Any further information regarding information displayed for **"proposal areas"** can be obtained by contacting the Ausgrid DBYD office at the number indicated on the response to your DBYD enquiry for further information.

8 Ausgrid (ISG) Map Grid

The pale grey line indicates the **1:1000 Ausgrid (ISG) map grid** *border*.

The pale grey annotation located in the corners of the Ausgrid plan window, indicates the 1:1000 Ausgrid (ISG) map grid reference.

The **1:1000 Ausgrid (ISG) map grid** *border and reference* on Ausgrid plans should be used when reading the **"joint report"** (see part 4 of this document for more detail) to accurately locate underground cables.

The buffer area shown on the plan should relate to the area requested on the original Dial Before you Dig request.

The **grid index box** can be used for reference where necessary (located in the bottom right corner of the Ausgrid plans), and will also indicate the buffer area shown on the plan.

9 Ausgrid "Distribution" and "Transmission" Plans

The Ausgrid plans supplied may identify both **"distribution"** and **"transmission"** voltage assets for the area defined in the DBYD request. (refer to figure 11)

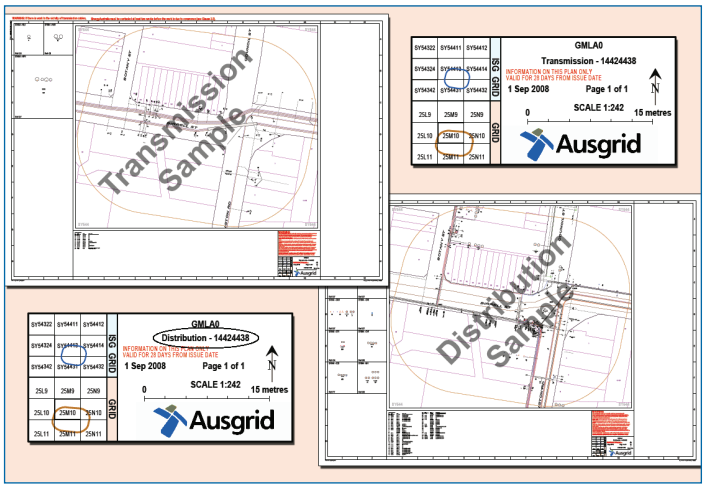


Figure 11

In the Sydney region, the Ausgrid plans are separately labelled as **"Distribution – nnnnnnn"** and **"Transmission – nnnnnnn"**, where "nnnnnnn" refers to the DBYD sequence number quoted.

In the Hunter region, the Ausgrid plans show combined **"distribution"** and **"transmission"** voltage assets, and are clearly labelled as **"Distr + Trans – nnnnnnn"** where "nnnnnnn" refers to the DBYD sequence number.

In the Hunter region, some DBYD requests are covered by PENGUIN grid references. In such cases, the Ausgrid Plans show the grid quoted with a cross-reference to a corresponding Ausgrid (ISG) map grid (eg: PENGUIN 136B3 – DP711, where DP711 is the Ausgrid (ISG) grid) to optimise the legibility of plans due to PENGUIN grid scale.

Some Hunter plans may have transmission cables in the area, when these cables are present there will be a warning printed at the top of the plan supplied:

> **WARNING: If there is work in the vicinity of transmission cables, Ausgrid must be contacted at least two weeks before the work is due to commence.**

10 "Shifting Land Base" on Ausgrid Distribution and Transmission Plans

In some instances, the plans supplied may indicate road or property outlines that appear to have shifted in relation to the Ausgrid assets displayed. (refer to figure 12)

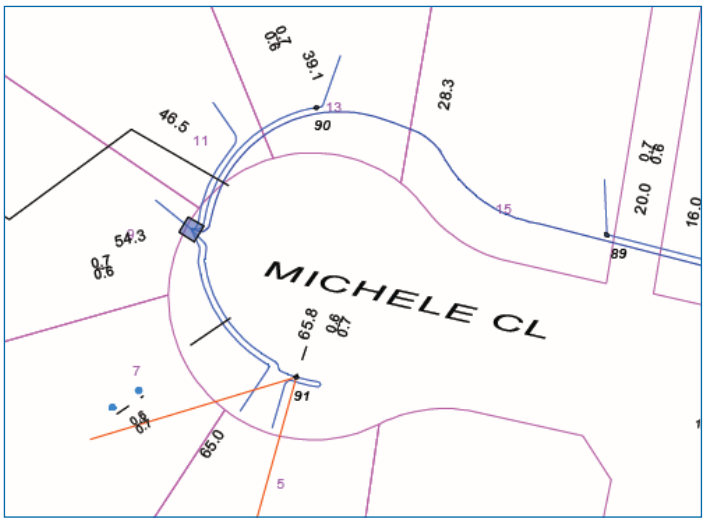


Figure 12

In such instances, always refer to the **"property line"** (in metres) and depth of **"cover"** (in metres) references displayed on the nearest relevant **"cross sections"** to obtain Ausgrid asset location information (see Reading Ausgrid Plans, clause 3, Cross Sections for more detail).

11 "Underground Earthing Infrastructure"

In some instances, the plans supplied may also indicate the presence of underground earthing infrastructure associated with underground and/or overhead Ausgrid assets.

The "Earth Point" symbol (refer to figure 13) will be shown on plans to minimize risk of disturbance or damage to any Ausgrid underground earthing infrastructure in the vicinity.

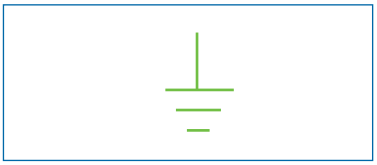
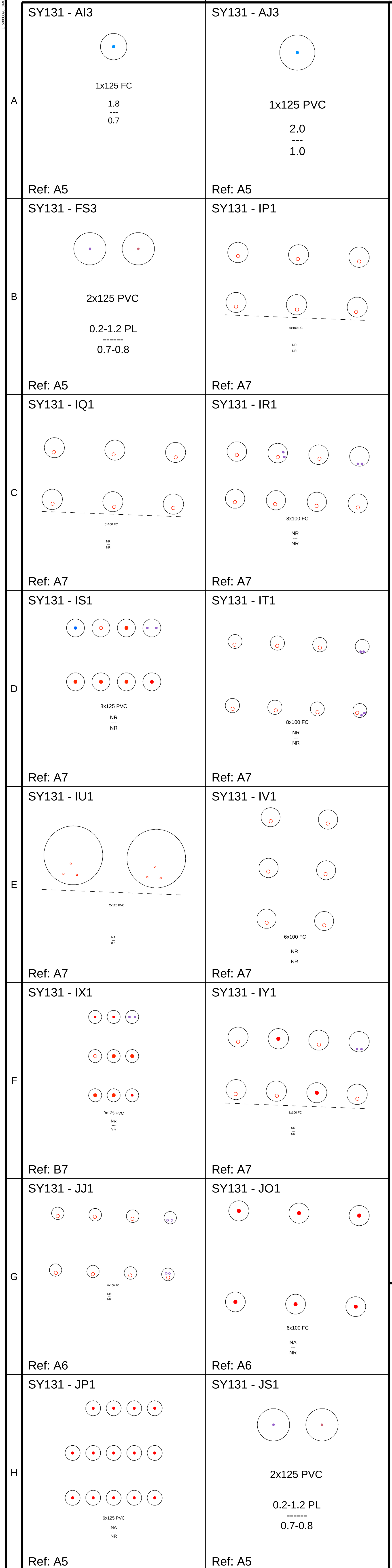
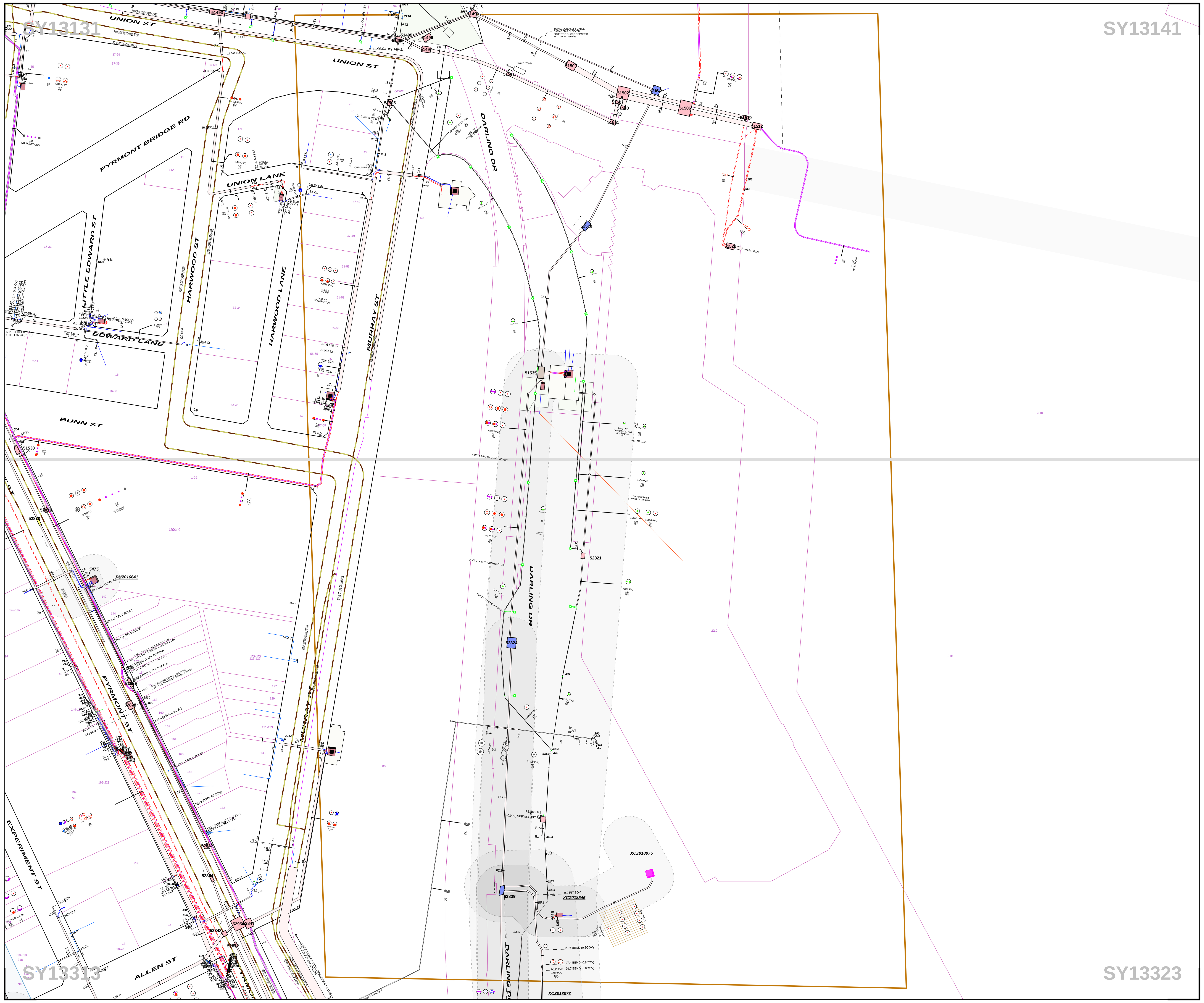
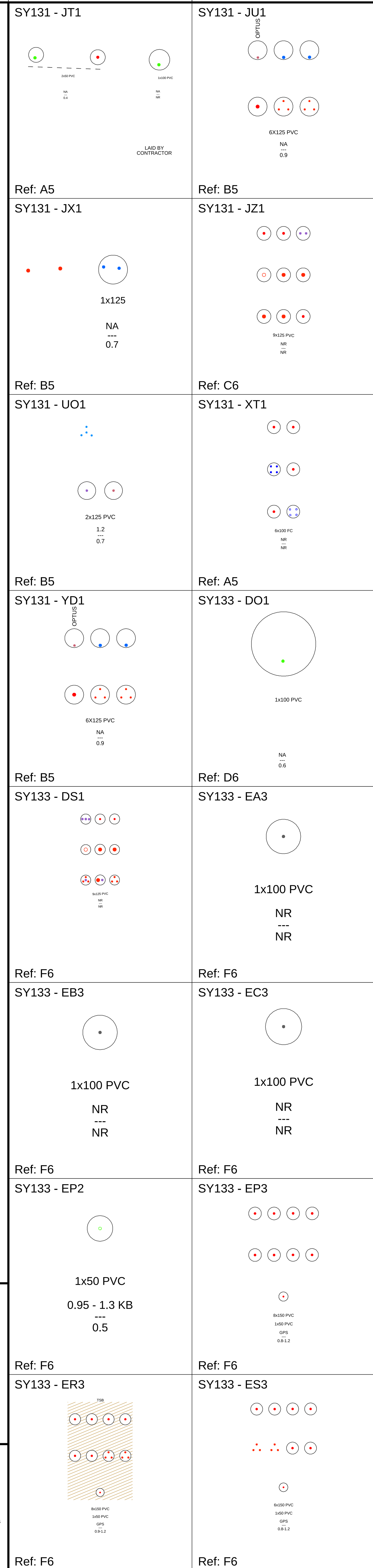


Figure 13







JOINT DETAIL REPORT

No.	Bk-Pg	Pl/Cvr	Joint Location
Map: SY131			
214	282-155		IN PIT 183
215	1077-54		IN PIT 175
216	1982-73+...		IN PIT 176
217	1982-73+...		IN PIT 176
218	1936-58		IN PIT 174
229			IN PIT 194
230	1982-74		IN PIT 194
231	1982-12		IN PIT 194
232	1982-74		IN PIT 194
270			IN PIT 183.
271			IN PIT 183.
272	1077-54		IN PIT 175
273	302-83	66.60/	IN PIT 177
274	282-155		IN PIT 178
275	1936-58		IN PIT 174
276			IN PIT 178
277			IN PIT 178
278	255-187		IN PIT 183
279	139-17		IN PIT 183
280	108-19		IN PIT 182
281	98-77		IN PIT 182
282	98-77		IN PIT 182
283	272-54	/0.60	9.9N
284	272-54	/0.60	5.0N
285	139-25		IN PIT 184
286	98-77		IN PIT 184
287	190-137		IN PIT 184
288	98-77		IN PIT 184
289	139-25		IN PIT 184
298	IC08-168	0.30/0.50	14.3 N OF BUNN ST NPL
299	ER58-2	0.90/1.00	NO RECORD
676	2184-63	2.20/	IN PIT 193
810	1077-54		IN PIT 175
811	1077-54		IN PIT 175
812	299-11		IN PIT 177
813	299-11		IN PIT 177
814	299-11		IN PIT 182
815	299-11		IN PIT 182
854	ER57-27+...		IN PIT 187
870	ER57-27+...		IN PIT 187
871	ER57-27+...		IN PIT 187
872	ER57-27+...		IN PIT 187
873	ER57-27+...		IN PIT 187
874	ER57-27+...		IN PIT 187
1065			IN PIT 182
1819	ER112-054+...		IN PIT 189
1835	hv07-0245		IN PIT 176
1836	hv07-0245		IN PIT 176
1837	hv07-0245+...		IN PIT 176
1838	hv07-0245+...		IN PIT 176
1839	hv07-0245		IN PIT 176
1850	HV06-0318		IN PIT 189
1851	HV06-0318		IN PIT 189
1852	HV06-0318		IN PIT 189
1853	HV06-0318		IN PIT 189
1871	hv07-0244		IN PIT 187
1872	hv07-0244		IN PIT 187
1910	IC08-168	0.50/0.50	13.5 N OF BUNN ST NPL
1972	LV06-0709		IN PIT SY-51495
2145	IC11-0016		IN PIT SY-51495
2159			
2215	IC11-0016		Pit SY51495
2216	IC11-0016	2.00/1.00	8.7 N OF UNION ST NPL
2218	IC11-0001+...		Pit SY51495
Map: SY133			
289	1840-37	99.99/1.20	
290	1840-37	99.99/1.20	NO RECORD
291	1840-37	99.99/1.20	NO RECORD
295	2183-63	0.50/1.00	101S OF BUNN ST
296	2183-63	0.50/1.00	101.5S OF BUNN ST
969	1983-11	99.99/	NO RECORD
970	1983-11	99.99/	NO RECORD
2887	hv07-0242		IN PIT 51
2888	hv07-0242		IN PIT 51
3410	IC14-1057		Pit SY52839
3411	IC14-1057		Pit SY52839
3431	IC15-0119	/0.60	
3432	IC15-0119	/0.60	
3433	IC15-0119		
3434	IC15-0119		
3439			
3442	IC15-0430	/0.50	GPS LOCATION
3443	IC15-0430	/0.50	GPS LOCATION
3467	IC15-0691		Pit SY52839
3468	IC15-0691		Pit SY52839
3472	IC15-0691		Pit SY52824
3504	IC15-1331		Pit SY52824
3507	IC15-1331		Pit SY52824
3508	IC15-1331		Pit SY52824

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 show no 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 excavate by hand or use vacuum excavation to establish the location of Ausgrid underground cables and associated assets.
Underground: Working near a cable may result in electric shock even if no 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
as well as recommendations of Ausgrid's Network Standard NS156.
Overhead: Do not excavate near poles or towers until the stability of the foundation has been assessed by Ausgrid. Cables or 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 Ausgrid plans on site during excavation works. If the people actually performing the excavation works do not know how to read and interpret Ausgrid's plans, then the work must be directed by a person who knows how to read and interpret the plans.

LE3424	SY1313	SY1314	ISG GRID
LE3442	SY1331	SY1332	
LE3444	SY1333	SY1334	
12Q4	3A4	3B4	GRID
12Q5	3A5	3B5	
12Q6	3A6	3B6	

GMLA0

Distribution - 50033098

INFORMATION ON THIS PLAN ONLY VALID FOR 30 DAYS FROM ISSUE DATE

6 Jan 2016

1:624

0 — 37 metres

N

Ausgrid

A0 MOCS_std_plot

SY133 - FD3

Ref: F6

SY133 - MJ2

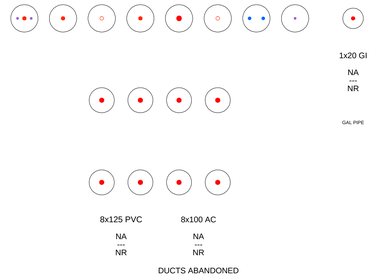
1x50 PVC

0.95 - 1.3 KB

0.5

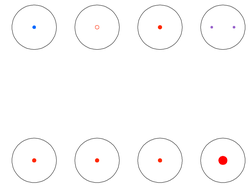
Ref: F6

SY131 - JN1



Ref: A6

SY131 - XU1



8x125 PVC

NR

NR

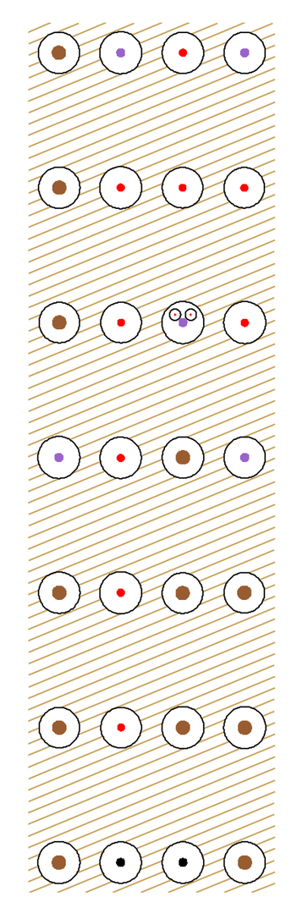
Ref: A6

You are working near Transmission Cables. You must contact Ausgrid on (02) 4951 9200 at least two weeks before work commences. See Ausgrid Network Standard NS156.

SY133 - ZV1

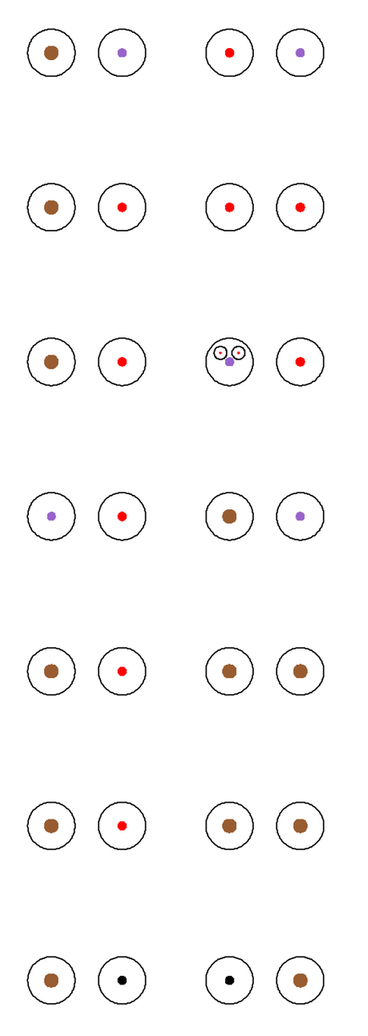
Ref: D5

SY131 - JR1



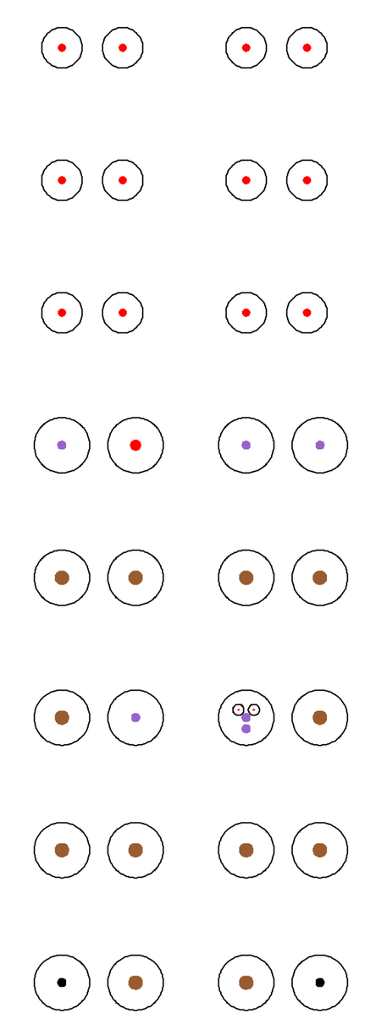
Ref: A5

SY131 - TS1



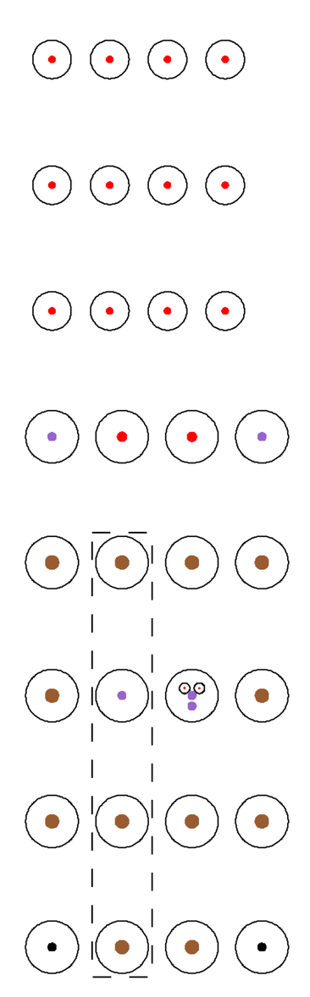
Ref: C5

SY131 - WI1

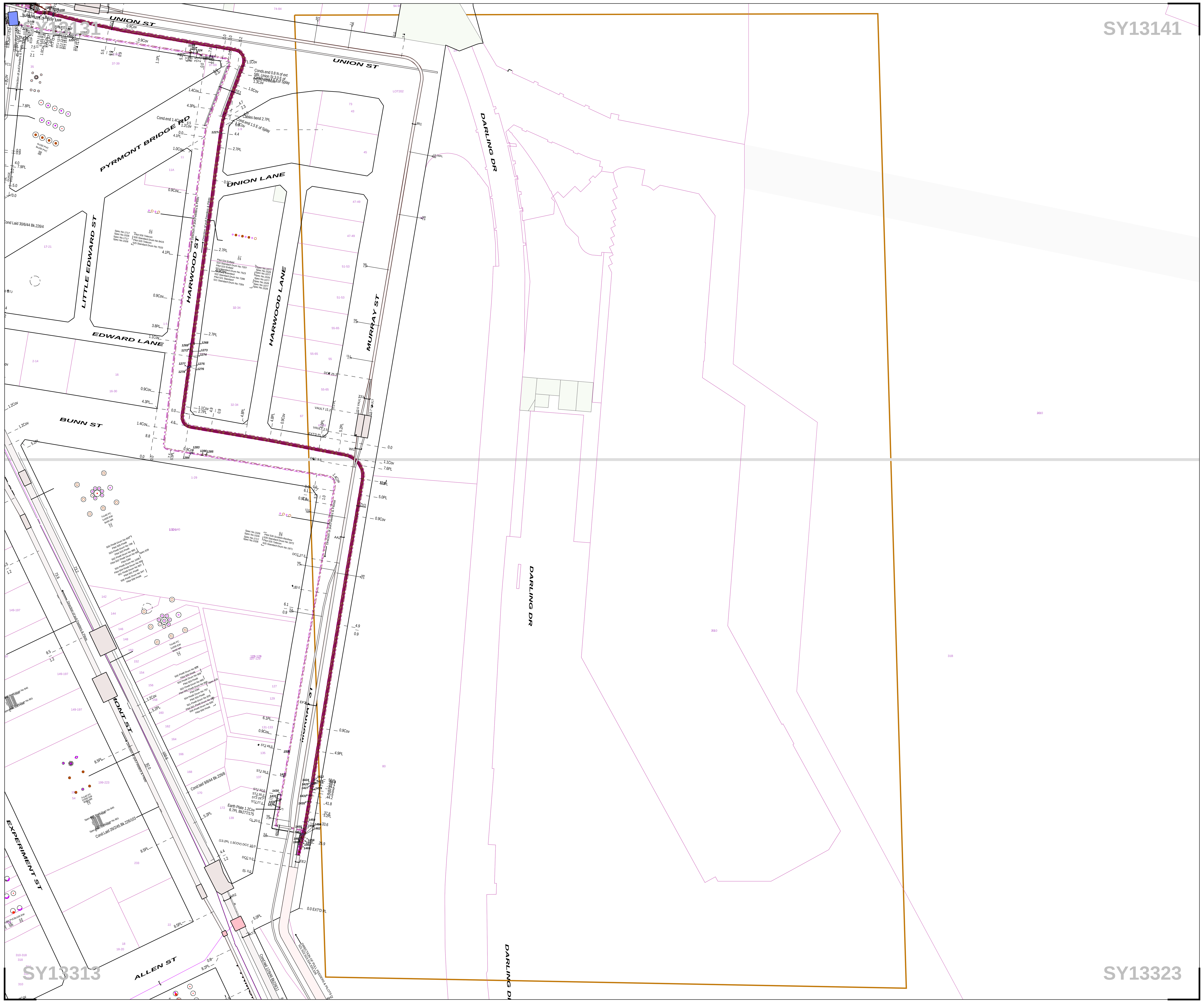


Ref: C5

SY133 - AA2



Ref: D5



JOINT DETAIL REPORT

No.	Bk-Pg	Pl/Cvr	Joint Location
Map: SY131			
1281			IN PIT 219. In Vault A Approx 6.8 N of ext PL
1567	TT04-082		In Vault 12
1568	TT04-082		In Vault 12
1569	TT04-082		In Vault 12
2543	TT15-0094		Pit SY51560
2544	TT15-0094		Pit SY51560
2545	TT15-0094		Pit SY51560

WARNING

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as well as recommendations of Ausgrid's Network Standard NS156.
Overhead: Do not excavate near poles or towers until the stability of the foundation has been assessed by Ausgrid. Cables or 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 Ausgrid plans on site during excavation works. If the people actually performing the excavation works do not know how to read and interpret Ausgrid's plans, then the work must be directed by a person who knows how to read and interpret the plans.

ISG GRID

LE3424	SY1313	SY1314
LE3442	SY1331	SY1332
LE3444	SY1333	SY1334

GRID

12Q4	3A4	3B4
12Q5	3A5	3B5
12Q6	3A6	3B6

GMLA0

Transmission - 50033098

INFORMATION ON THIS PLAN ONLY VALID FOR 30 DAYS FROM ISSUE DATE

6 Jan 2016

Page 1 of 1

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1:624

0 — 37 metres

Ausgrid

A0 TR_MOCS_std_plot

TR_E_50033098_GMLA0_1.hpgl2

APPENDIX G

Ausgrid Assessment Response

Address all relevant correspondence to:

Ausgrid Contestability Section
Level 1, Building 4, 130 Joynton Avenue
Zetland NSW 2017

E: Contestability@ausgrid.com.au
F: 02 96639499

12 September 2016

ARCADIS
Attention: John Walsh
32/140 William St,
MELBOURNE VIC 3000

Email: john.walsh@arcadis.com

Reference Number: 1900065901

Dear John

Electricity Network Connection Application at: 2-10 Darling Dr, Sydney

We have received your Connection Application dated 04.08.2016, and assigned it reference number 1900065901.

We have made a preliminary assessment of your application and wish to advise that your application is not complete because your proposal requires a certified design and associated certification number which must be specified in the Connection Application. This letter provides guidance on how to obtain a certified design and associated number to enable Ausgrid to further consider and process your Connection Application.

Scope of Network Alterations

Ausgrid's assessment has determined that the following works are likely to be required to connect your development.

- ❑ Establishment Of 3x1500kva Surface Chamber Substation, And Extension Of 11kv Network

These works are classified as contestable, which means that you are required to fund the design and some or all of the construction works. In this regard, if you have not already done so, you will need to engage and manage suitably qualified contractors, known as Accredited Service Providers (ASPs) to undertake the design and construction in accordance with Ausgrid's policies and standards.

Once the works have been satisfactorily completed and electrified, the premises connection assets will be owned and maintained by Ausgrid as part of our electricity distribution network. The timeframe for the works will vary depending on factors such as the complexity and the way in which you manage your ASPs.

Contract for Design Related Services

This letter is an offer to enter into a Contract for Design Related Services. It remains open for acceptance for 45 business days. A copy of the Contract for Design Related Services is available for your review on our website *http://www.ausgrid.com.au* at the following link: http://www.ausgrid.com.au/Common/Industry/Accredited-service-providers/~/media/Files/Connections/Contracts/Design/Design%20Contract%20for%20Connection%20Assets%20ASP3.pdf.

No work will be undertaken by Ausgrid until a Design Contract is in place.

Design Stage

You or the person you represent must engage an Accredited Service Provider Level 3 (ASP/3) to design the necessary network alterations. Ausgrid has classified the design information for connection as ***complex***. Therefore, for this connection, Ausgrid will need to prepare the Design Information – Site Specific Terms and Conditions. Your ASP/3 will then use this document to prepare and submit a design that is certifiable.

To proceed, you or the person you represent must now engage an Accredited Service Provider Level 3 (ASP/3) to design the necessary contestable works. You will also need to enter into a Contract for Design Related Services with Ausgrid. This Contract sets out the rights and obligations of Ausgrid and yourself with respect to certification of the design by Ausgrid.

Once the design has been certified by Ausgrid, your Connection Application will be complete and you may use the design certification number to request that your Connection Application proceed to a connection offer or expedited connection, provided you assure Ausgrid that the development has not materially changed since you submitted your original Connection Application.

Acceptance Fees

The acceptance fees relating to the Contract for Design Related Services are payable upon acceptance. In this regard, Ausgrid will invoice you once we receive your signed acceptance form. The Contract will not commence until you pay the invoiced Acceptance Fee.

These fees are an estimate for the Ausgrid services required, further fees may apply for any additional services required and these will be quoted on each occasion. Ausgrid's published rates for our services are amended from time to time in our Connection Policy – Connection Charges publication, and in accordance with the Contract, Ausgrid reserves the right to charge the rates that are applicable at the time the service is provided.

The Acceptance Fee will be calculated as follows (GST inclusive). These fees and rates are set by the Australian Energy Regulator:

Design Information	$4,091.02
Design Certification	$7,457.60
Administration	$624.78
Facilitation	$472.50
TOTAL	$12,645.89

General

Standard Ausgrid documents mentioned in this letter, including those enclosed, are available on Ausgrid website *www.ausgrid.com.au*. If you do not have access to the web and would like to read any of the documents mentioned in this letter they may be obtained by contacting the phone number below.

Should you require any further information please contact me on the phone number or email address detailed below.

What to do next

- ❑ Read the Contract for Design Related Services on our website. To accept our offer to enter into a Contract for Design Related Services,
  - Complete and sign the Acceptance of Offer in the space provided below and return it to Ausgrid. Note that a tax invoice will be generated based on the details provided on the form.
  - You will also need to pay Ausgrid's fees as detailed above. An invoice for the above total amount will be forwarded to you on acceptance of the contract.

- ❑ Engage the services of an ASP/3 to submit a design to Ausgrid for certification. Note that Ausgrid will not accept the design for certification until the Contract for Design Related Services is in place.

Yours sincerely,

David Tomlin
Team Leader – Sydney East & CBD Region
Contestable Connections
AUSGRID

Direct Telephone Number: 02 9663 9526
Mobile: 0407 278 470
Facsimile: 02 9663 9949
Email: dtomlin@ausgrid.com.au

Encl: Acceptance of Offer Form
Contestable Connection or Relocation flowchart

Acceptance of Offer

Design Offer Expiry Date: 15.11.2016

Ausgrid - MC Reference Number: 1900065901
Ausgrid – AP/AE Reference Number: 800127888
Ausgrid - Trim Reference Number: B16/12203

Premises: 2-10 DARLING DR, SYDNEY

The Connection Applicant accepts the above Ausgrid's offer of a Contract for Design Related Services in relation to the design of connection assets at the above premises.

Please note that a tax invoice will be generated based on the details provided on this form. Changes to this information following invoice processing will result in additional charges.

Details of Person or Company to invoice for the payment of Ausgrid Fees and Charges.	
This is the party that will be billed and responsible for payment. If you are signing on behalf of a third party, we require their details for invoicing	_____ print name of person or company _____ ABN _____ postal address - line 1 _____ postal address – line 2 _____ contact name _____ contact phone number _____ email address _____ purchase order number

Signed by the Connection Applicant

_____ signature

_____ print name of signatory

_____ print position of signatory

_____ date

_____ company name

_____ ABN

_____ email address

_____ contact phone number

AUSGRID USE ONLY: Date of Receipt : _____

APPENDIX H

Jemena Dial Before You Dig Plans

Network Protection

High Pressure - Assets Affected

In reply to your enquiry, there are **High Pressure Gas Mains** in the vicinity of your intended work, as generally illustrated on the attached map. There may also be other mains or services at the location, as discussed in the warning below. For an explanation of the map, please see the key below.
The following excavations guidelines apply:

Excavation Guidelines:

Prior to **any** excavations in this area, you ***must*** contact the High Pressure Response Coordinator on **1300 665 380**. ***(Appointments will be coordinated with availability of a Pipeline Technician)*** to arrange a survey. For all works in the vicinity of High Pressure Gas Mains you must arrange for a Pipeline Technician to attend and supervise all excavations. Charges apply for attendance of any works outside the hours of 7am to 4pm, Monday to Friday ("**Standard Business Hours**") and for any attendance during Standard Business Hours that is longer than 2 hours.
In accordance with clause 34(5) of the Gas Supply (Safety and Network Management) Regulation 2013 (NSW), you should be informed that all excavation, (including pot-holing by hand to confirm the location of pipes) should be performed in accordance with "***Work Near Underground Assets Guideline"*** *published in 2007 by the Work Cover Authority.*
A copy of this Guideline is available at: www.workcover.nsw.gov.au

KEY

	MAX ALLOWABLE OPERATING PRESSURE	
T	TRUNK PIPELINE	7000 kPa
P	PRIMARY MAIN	3500 kPa
S	SECONDARY MAIN	1050 kPa
400	NETWORK MAIN	400 kPa
	NETWORK MAIN	300 kPa
	NETWORK MAIN	210 kPa
100	NETWORK MAIN	100 kPa
30	NETWORK MAIN	30 kPa
	NETWORK MAIN	7 kPa
	NETWORK MAIN	2 kPa
	PROPOSED MAINS	

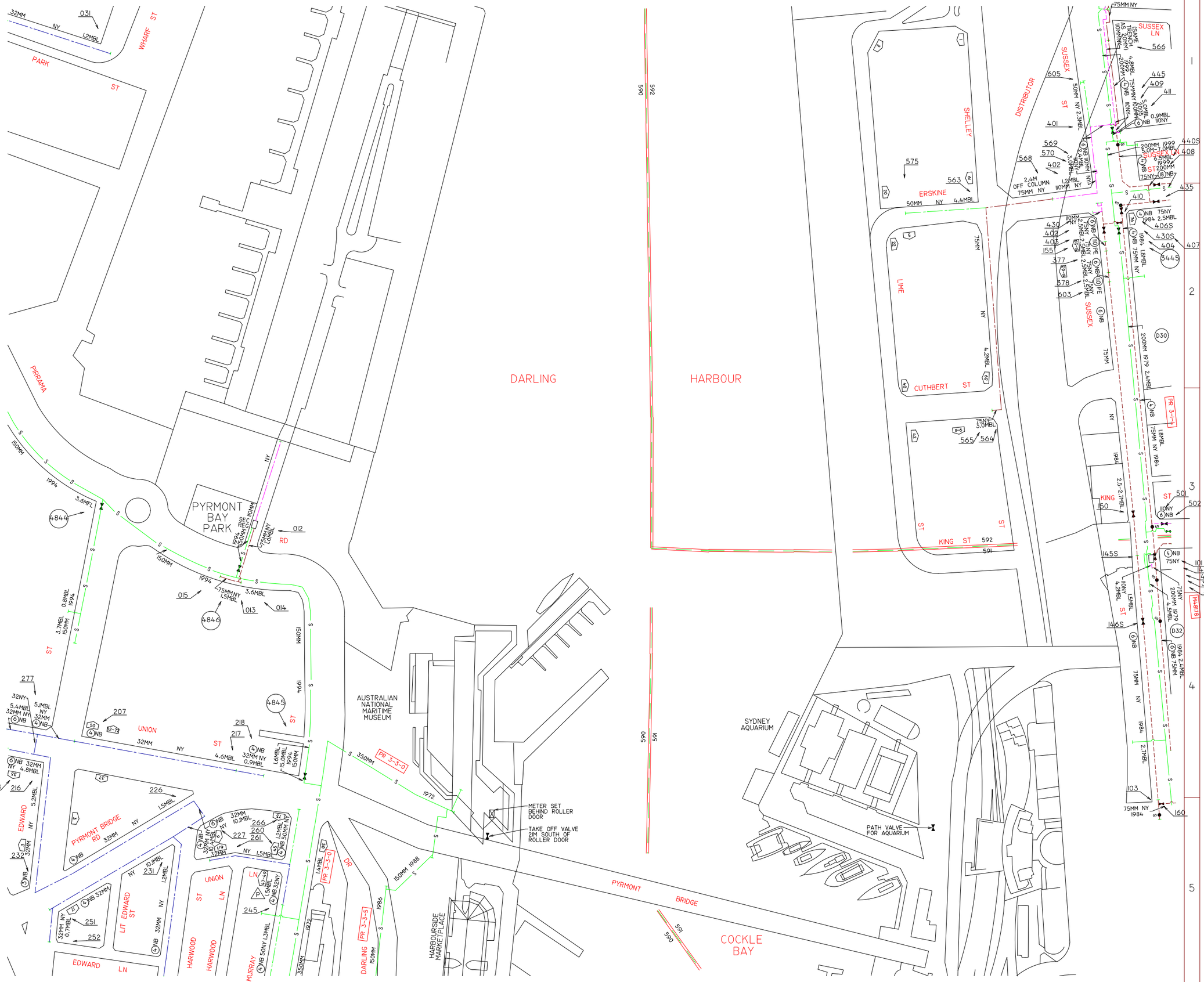
	VALVE
S	SYSTEM PRESSURE REGULATOR
	SIPHON
123	NETWORK NODE
123S	NETWORK VALVE NODE
1298	VALVE NUMBER
6NB	6 INCH CAST IRON MAIN
150MM	150MM STEEL MAIN
110MM PE/NY	110MM POLYETHYLENE/NYLON MAIN
6 NB 50MM NY	50MM NYLON INSERTED INTO 6NB CAST IRON MAIN
1.2MBL	DISTANCE IN METRES OF MAIN FROM BOUNDARY LINE
1957	YEAR LAID
123	HOUSE NUMBER
P	PRESSURE MONITORING STATION
	MUNICIPALITY BOUNDARY
	NETWORK BOUNDARY
PR 11-2 3	STEEL MAIN PROJECT NUMBER

Warning: The enclosed plans show the position of Jemena Gas Networks (NSW) Ltd's underground gas mains and installations in public gazetted roads only. **Individual customers' services and services belonging to other third parties are not included** on these plans. These plans have been prepared solely for the use of Jemena Gas Networks (NSW) Ltd and Jemena Asset Management Pty Ltd (together "**Jemena**") and any reliance placed on these plans by you is entirely at your own risk. The plans may show the position of underground mains and installations relative to fences, buildings etc., as they existed at the time the mains etc were installed. The plans may not have been updated to take account of any subsequent change in the location or style of those features since the time at which the plans were initially prepared. Jemena makes no warranty as to the accuracy or completeness of the enclosed plans and does not assume any duty of care to you nor any responsibility for the accuracy, adequacy, suitability or completeness of the plans or for any error, omission, lack of detail, transmission failure or corruption in the information provided. Jemena does not accept any responsibility for any loss that you or anyone else may suffer in connection with the provision of these plans, however that loss may arise (including whether or not arising from the negligence of Jemena, its employees, agents, officers or contractors). The recipient of these plans must use their own care and diligence in carrying out their works and must carry out further surveys to locate services at their work site. Persons excavating or carrying out other earthworks will be held responsible for any damage caused to Jemena's underground mains and equipment. Jemena advises that you may be required to carry out potholing by hand if required by a Pipeline Technician to confirm the location of Jemena's main and installations. This must also be performed by you under the supervision of a Pipeline Technician and be carried out in accordance with the Working Near Underground Assets Guideline published in 2007 by Work Cover Authority

In case of Emergency Phone 131 909 (24 hours)

Admin
1300 880 906

Jemena Asset Management Pty Ltd ABN 53 086 013 461
for and on behalf of Jemena Gas Networks (NSW) Ltd ABN 87 003 004 322



SYDNEY ICA

SCALE 1:1000

25 0 25 50 75 100

THIS MAP UPDATED ON 26/10/12
THIS PLAN IS DIAGRAMATIC ONLY. DISTANCES SCALED FROM THIS PLAN MAY NOT BE ACCURATE.

LE3BD	SIAC	SIAD
LE3DB	SICA	SICB
LE3DD	SICC	SICD

ADJOINING MAPS

590	592	SYDNEY
	591	

NETWORK AREA MUNICIPALITY AREA

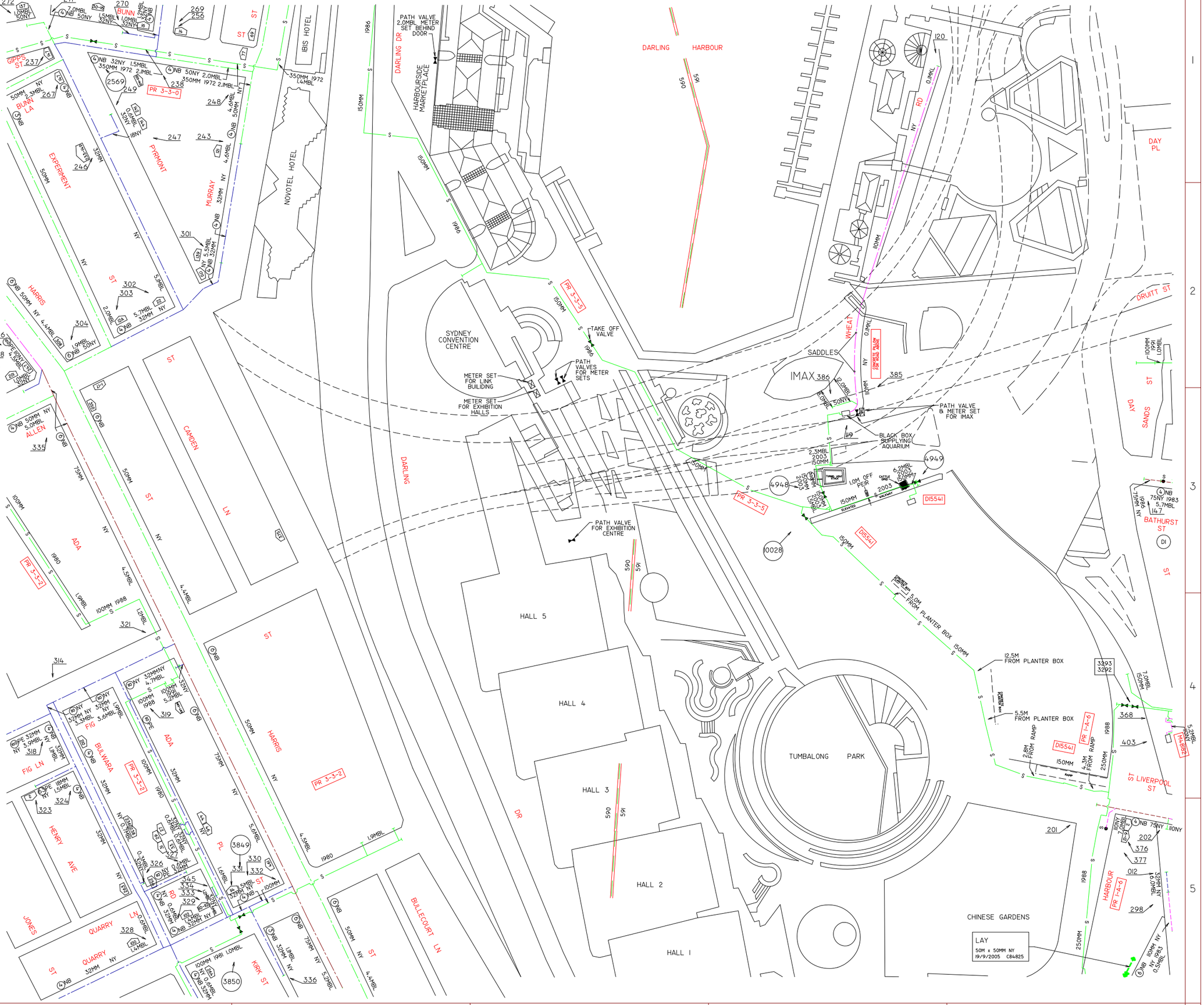
Jemena

KEY

MAX ALLOWABLE OPERATING PRESSURE

T	TRUNK PIPELINE	7000 kPa
P	PRIMARY MAIN	3500 kPa
S	SECONDARY MAIN	1050 kPa
400	NETWORK MAIN	400 kPa
	NETWORK MAIN	300 kPa
	NETWORK MAIN	210 kPa
100	NETWORK MAIN	100 kPa
30	NETWORK MAIN	30 kPa
	NETWORK MAIN	7 kPa
	NETWORK MAIN	2 kPa
	PROPOSED MAINS	
PR 11-2 3	STEEL MAIN PROJECT NUMBER	
P	PRESSURE MONITORING STATION	
	VALVE	
	SYSTEM PRESSURE REGULATOR	
S	SIPHON	
123	NETWORK NODE	
123S	NETWORK VALVE NODE	
298	VALVE NUMBER	
6NB	6 INCH CAST IRON MAIN	
150MM	150MM STEEL MAIN	
110MM PE/NY	110MM POLYETHYLENE/NYLON MAIN	
6NB 50MM NY	50MM NYLON INSERTED INTO 6NB MAIN CAST IRON MAIN	
1.2MBL	DISTANCE IN METRES OF MAIN FROM BOUNDARY LINE	
1957	YEAR LAID	
	MUNICIPALITY BOUNDARY	
	NETWORK BOUNDARY	
123	HOUSE NUMBER	

SYDNEY ICA



SYDNEY ICC

SCALE 1:1000

25 0 25 50 75 100

THIS MAP UPDATED ON 12/09/2014
THIS PLAN IS DIAGRAMATIC ONLY. DISTANCES SCALED FROM THIS PLAN MAY NOT BE ACCURATE.

LE3DB	SICA	SICB
LE3DD	SICC	SICD
LE6BB	S4AA	S4AB

ADJOINING MAPS

590	591

NETWORK AREA

SYDNEY

MUNICIPALITY AREA

Jemena

KEY

MAX ALLOWABLE OPERATING PRESSURE

T	TRUNK PIPELINE	7000 kPa
P	PRIMARY MAIN	3500 kPa
S	SECONDARY MAIN	1050 kPa
400	NETWORK MAIN	400 kPa
	NETWORK MAIN	300 kPa
	NETWORK MAIN	210 kPa
100	NETWORK MAIN	100 kPa
30	NETWORK MAIN	30 kPa
	NETWORK MAIN	7 kPa
	NETWORK MAIN	2 kPa
	PROPOSED MAINS	

PR II-2 3	STEEL MAIN PROJECT NUMBER
P	PRESSURE MONITORING STATION
	VALVE
	SYSTEM PRESSURE REGULATOR
S	SIPHON
123	NETWORK NODE
123S	NETWORK VALVE NODE
298	VALVE NUMBER
6NB	6 INCH CAST IRON MAIN
150MM	150MM STEEL MAIN
110MM PE/NY	110MM POLYETHYLENE/NYLON MAIN
6NB 50MM NY	50MM NYLON INSERTED INTO 6NB MAIN CAST IRON MAIN
1.2MBL	DISTANCE IN METRES OF MAIN FROM BOUNDARY LINE
1957	YEAR LAID
	MUNICIPALITY BOUNDARY
	NETWORK BOUNDARY
123	HOUSE NUMBER

SYDNEY ICC

APPENDIX I

Jemena Consultation Correspondence

MEMO

ARCADIS Design & Consultancy for natural and built assets

Date	15/09/2016
To	Gregory Knight
From	Karin Wallin
Copy to	Cameron Hay
Subject	Harbourside Shopping Centre

Greg,

We have been engaged by Mirvac to provide civil and utilities engineering consultancy services to support the Stage 1 DA for the redevelopment of the Harbourside Shopping Centre.

Since our last correspondence (29/02/2016) the Harbourside development has been amended to include:

- Demolition of the existing centre
- 87,000sqm gross floor area (GFA) compromising:
  - 52,000sqm GFA retail
  - 35,000sqm GFA residential
- Car-parking (Note: To accommodate 295 cars for residential use only, over 2 levels of basement)
- Public domain

The main amendments from the original proposal (retail / commercial) as per our initial correspondence with Jemena (05/02/2016) are:

- Reduction of GFA from 97,000sqm to 87,000sqm
- Change from commercial tower to residential tower
- Car-parking provision has reduced from 320 to 295 car-spaces

The gas loads for the development have been re-calculated and are substantially larger than initially advised.

We require confirmation from Jemena that the future development can be serviced by the existing gas infrastructure or if additional infrastructure is required.

Any indicative information on future upgrade requirements and supply strategy would be much appreciated.

The below table outlines the estimated gas loads for the proposed Harbourside residential / retail mix development.

Table 1 Estimated gas loads for the Harbourside development

Application	Total Gas load (MJ/Hr)	Assumed diversity factor	Diversified load (MJ/hr)
Retail			
Gas load for F&B and retail areas (As per Mirvac services matrix)	37,700	0.80	30,160
Retail Hot water plant (MJ/Hr)	200		200
EOT hot water (MJ/Hr)	800		800
Sub-total	38,700		31,160
Residential			
Gas Cooking (MJ/Hr)	4,600	0.1	1,460
Residential Hot Water (MJ/Hr)	3,600		3,600
Pool plant (MJ/Hr)	1740		1,740
Sub-total	19,940		6,800
Total (MJ/Hr)	58,640		37,960

Please let us know if you need anything else. Happy to come and meet with you or the relevant person within your team.

Joe Heydon

From: Joe Heydon
Sent: 5 February 2016 3:08 PM
To: 'Gregory Knight'
Subject: Harbourside Shopping Centre - Darling Harbour
Attachments: Attachment A Preliminary Concept 5 Nov 2015.pdf; 160128 MVHS Update.zip; S1CC_HIGH_PRESSURE_SECONDARY.pdf; S1CA_HIGH_PRESSURE_SECONDARY.pdf

Hi Greg,

We have been engaged by Mirvac to provide civil engineering consultancy services to support the Stage 1 DA for the redevelopment
of the Harbourside Shopping Centre. As such, I require confirmation from Jemena that the future development can be serviced by existing gas infrastructure
or if additional infrastructure is required. I assume the development would tap into the existing gas main supply in a similar location to existing.

Any indicative information on future upgrade requirements and supply strategy would be much appreciated.

Please see attached some concept plans, floor schedules and design flows.

The proposed development consists of 4 floors of retail and a commercial tower (27 floors).

There is 26,000m2 Gross Lease Area for the retail element of which approx. 66% is proposed as Food & Beverage.
There is a 40,000m2 NLA / 27 story commercial tower.

Please see below the predicted future gas loads.

We will use 300 Mj/hr for each F&B tenancy

Total F&B 32 no. x 300Mj/ hr x 0.25 = 2400 say 2500 Mj/hr

Gas heating mechanical Load = 50 Mj/hr each floor x 26 = 1300 Mj/hr

Total Say 4,000 to 5,000 Mj/hr

Please let me know if you require anything else. Happy to come and meet with you or relevant person in your team if necessary.

Kind Regards,

Joe

Joe Heydon | Principal Engineer | BE Civil Eng. | joe.heydon@arcadis.com
Arcadis | Level 5/141 Walker Street, North Sydney | NSW 2060 | Australia
T. + 61 2 8907 9149 | M. + 61 468 745 425
www.arcadis.com

29/02/2016

Arcadis
Level 5/141 Walker Street,
North Sydney
NSW 2060

Attention: Joe Heydon

Jemena Gas Networks (NSW) Ltd
ABN 87 003 004 322

Level 9-15
99 Walker St
North Sydney NSW 2060
PO Box 1220
North Sydney NSW 2059
T 1300 137 078
F +61 2 9867 7453
www.jemena.com.au

RE: Harbourside Shopping Centre, Darling Harbour

Natural Gas is available in the vicinity and could supply this proposal.

Our policy is to supply all developments wherever possible, depending upon economic viability.

In consideration of our shareholders' interests and under NSW regulation, Jemena Gas Networks (NSW) Ltd is required to ensure that any connection to the natural gas distribution system is commercially viable and therefore must assess each request for supply on an individual basis.

Upon the provision of the final layout and load configurations for the development a full economic evaluation can be undertaken to determine the availability of natural gas to the site.

A contribution may be required to assist in the economic viability of the proposal.

To assist in the planning of supply to the development

- I can confirm that the nearest gas mains are located in Darling Drive and it may be able supply the proposed development at this site, depending upon its commercial viability.
- To enable a thorough economic evaluation to be undertaken we would require an accurate breakdown of the total yield envisaged for the site and hydraulic plans, including metering configuration once all approvals and zonings are in place.

Thank you for your enquiry. If further information or assistance is required, please do not hesitate to contact me on 0429 363 835.

Yours faithfully

Bradley Gee
Network Development Manager

APPENDIX J

Telstra and NBN Co. Dial Before You Dig Plans

TELCO
SEARCHES PTY LTD

t. 1300 557 114 f. 1300 557 113
e. info@telcocablesearches.com.au
w. www.telcocablesearches.com.au
a. PO BOX 286 YAMBA NSW 2464

27th May, 2013

K and L Gates
C/- SAI Global Property
PO Box A2151
Sydney South NSW 1235

Our Ref: S13537ss
Your Ref:13949860:27170328

Dear Sir / Madam,

RE: 10 Darling Drive Central, Sydney, NEW SOUTH WALES
Lot 2 DP 776815

In response to your request for property information, searches of the records show the following:

- The property has provision for a communications service.
- Communication network cables exist outside the property boundary located in the footpath/road reserve area.
- Care will need to be taken if you/your client undertake any earth works outside the property boundary.
- No other cables cross the property.
- Plans Supplied: YES – Telstra.

General Information

Please note that communication carriers have strict security and privacy policies. This may prevent any additional information regarding the property being released in the course of a search. Plans may or may not be supplied upon request. If supplied, they are intended to assist you/your client in the prevention of damage to an underground telecommunication plant. Telco Cable Searches does not guarantee the accuracy of the information supplied to it by the communication carriers. Please note that if you/your client choose to perform earth works on the property, it is performed at your/your client's own risk.

Telco Cable Searches is not a conveyancer nor does it intend to act as such. Telco Cable Searches is a plan interpretation service which informs you/your client of potential risks within the property boundary. Please note the plans supplied are only valid for a period of 30 days from date of letter.

This report is based on the information supplied from the carriers which is current at time of request. If the location of any specific cabling is significant to you/your client, then you/your client should call Telco Cable Searches on 1300 557 114 for further assistance.

Additional Information

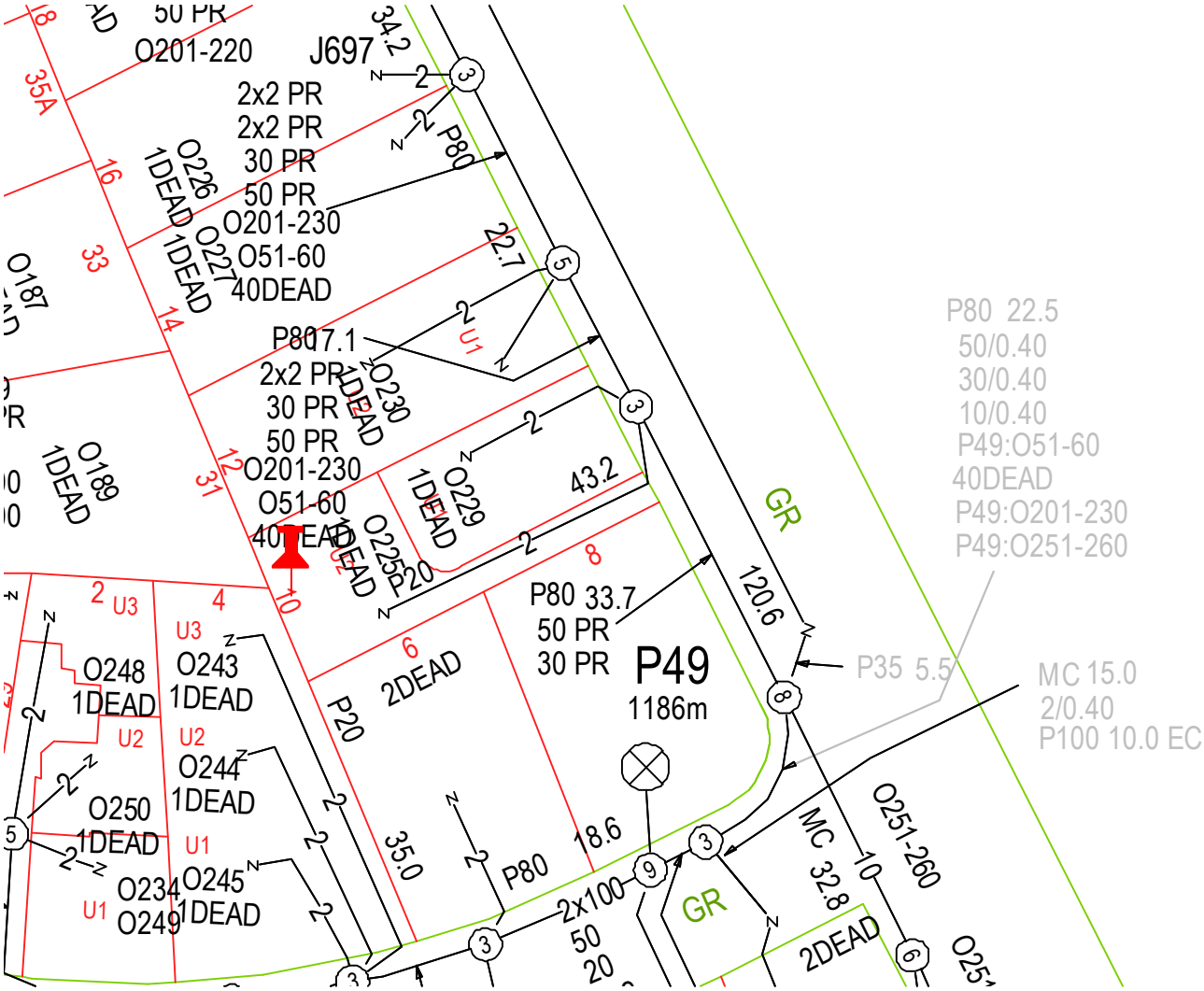
Under Clause 7 of Schedule 3 of the Telecommunications Act 1997, a general telecommunications carrier has rights to enter private property for the maintenance or continued operation of the telephone service.

The carrier will object to any additional structure being erected on the property or over its cables, or any landscaping or earthworks which would: (a) prevent the carrier from performing its functions above or; (b) reduce the security of its cables, making them more prone to damage.

Prior to earthworks being conducted on or in the vicinity of the property, we recommend that you/your client contact Telco Cable Searches for information regarding how to avoid cable damage. In the event that cable damage does occur from earthworks, you/your client will be responsible for the cost of repairs.

Due to the nature of underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all plant from any carrier'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. The carriers do 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 underground plant by careful hand pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation.

.



Local Cable Plan
Lot 2 DP 776815

Broadbanding Australia

NBNCo
Bringing broadband to life

To: Mr Jason Ko
Phone: 02 8907 2604
Fax: Not Supplied
Email: jason.ko@arcadis.com

Location of Underground Fibre Optic Cable Information Sheet

IMPORTANT: Please read all information and conditions below:

Dial before you dig Job #:	10115729
Sequence #	50033104
Issue Date:	01/06/2016
Location:	Union Lane,Pyrmont,NSW-2009

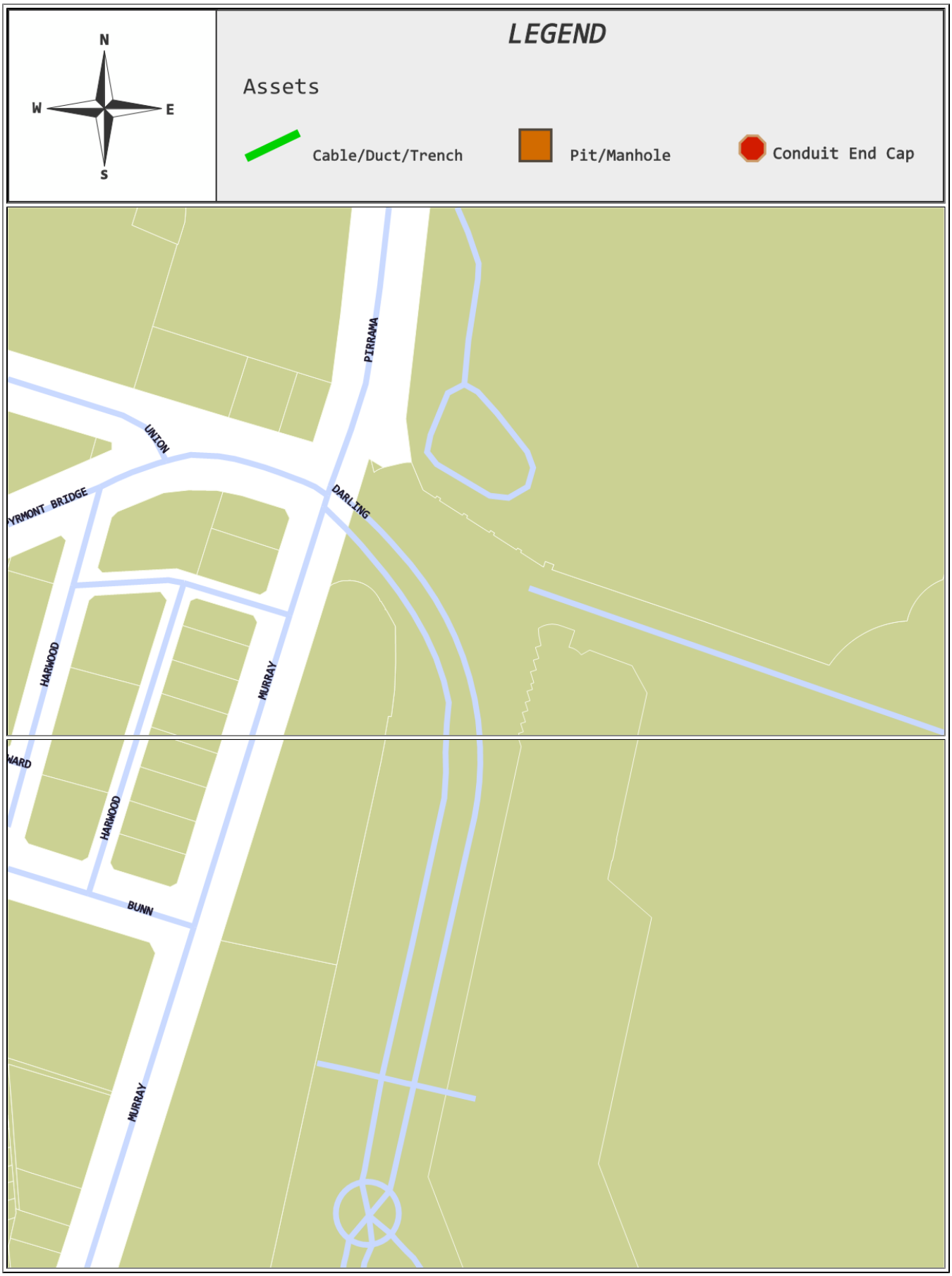
In relation to your enquiry at the above address:

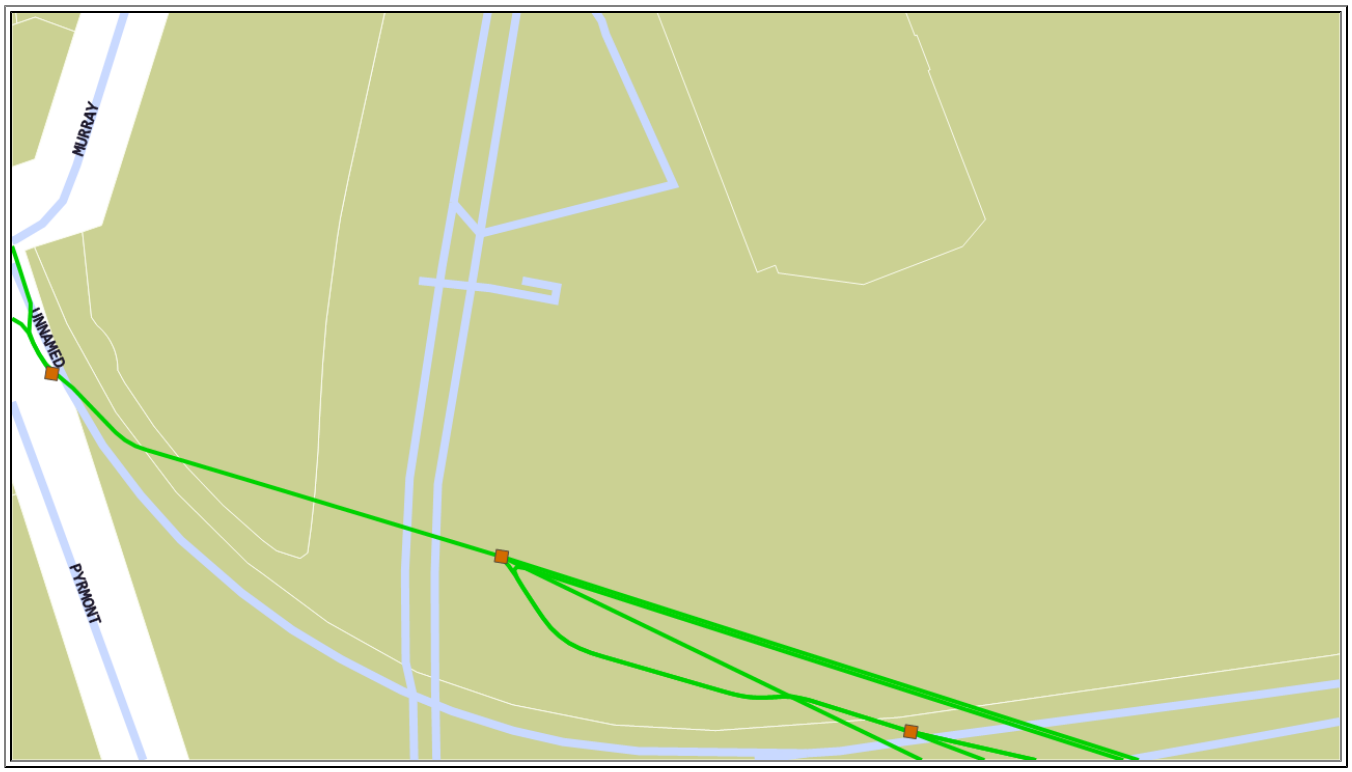
- NBN Co's records indicate that there ARE underground fibre optic/telecommunications facility/facilities (owned or controlled by NBN Co) in the vicinity of the location identified above ("Location").
- NBN Co indicative plan/s are attached with this notice ("Indicative Plans").
- The Indicative Plan/s show general depth and alignment information only and are not an exact, scale or accurate depiction of the location, depth and alignment of the fibre optic/telecommunications facilities shown on the plan/s.
- In particular, the fact that the Indicative Plan/s show that a facility is installed in a straight line, or at uniform depth along its length cannot be relied upon as evidence that the facility is, in fact, installed in a straight line or at uniform depth.
- You should read the Indicative Plans in conjunction with this notice and in particular, the notes below.
- The information contained in the Indicative Plan/s is valid for 28 days from the date of issue set out above.You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators at your cost to locate NBN Co telecommunications facilities during any activities you carry out on site.)

We thank you for your enquiry and appreciate your continued use of the Dial Before You Dig Service. If you require further information please contact NBN Co on **1800 626 762.**

Notes:

1. You are now aware that there are items of telecommunications facilities in the vicinity of the above property that could be damaged as a result activities carried out (or proposed to be carried out) by you in the vicinity of the Location.
2. You should have regard to section 474.6 and 474.7 of the Criminal Code Act 1995 (Cth) which deals with the consequences of interfering or tampering with a telecommunications facility. Only persons authorised by NBN Co Limited can interact with NBN Co's network facilities.
3. Any information provided is valid only for **28 days** from the date of issue set out above.


LEGEND
Assets
Cable/Duct/Trench
Pit/Manhole
Conduit End Cap
N
W
E
S
PIRRAMA
UNION
DARLING
HARWOOD
MURRAY
BUNN



Conditions

The following are conditions on which NBN Co provides you with the Indicative Plans. By accepting the plans, you are agreeing to these conditions. These conditions are in addition (and not in replacement of) any duties and obligations you have under applicable law.

1. NBN Co does not accept any responsibility for any inaccuracies of its plans. You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators at your cost to locate NBN Co telecommunications facilities during any activities you carry out on site).
2. You should not assume that fibre optic cables follow straight lines or are installed at uniformed depths along their lengths, even if they are indicated on plans provided to you. Careful onsite investigations are essential to locate the exact position of cables.
3. In carrying out any works in the vicinity of NBN Co facilities, you must maintain the following minimum clearances:
    - 300mm when laying assets inline, horizontally or vertically
    - 500mm when operating vibrating equipment, for example: jackhammers or vibrating plates
    - 1000mm when operating mechanical excavators.
4. You are aware that there are inherent risks and dangers associated with carrying out work in the vicinity of underground facilities (such as NBN Co's optic fibre cables). You must take all reasonable precautions should to avoid damaging NBN Co's facilities. These precautions may include (but not limited to) the following:

- All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs if present must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the likelihood of damage to the cable, for example: the blades of hand equipment should be aligned parallel to the line of the cable rather than digging across the cable.
- If any undisclosed underground cables are located, notify NBN Co immediately.
- All personnel must be properly briefed, particularly those associated with the use of earth-moving equipment, trenching, boring and pneumatic equipment.
- All excavations must be undertaken in accordance with all relevant legislation and regulations.

5. You will be responsible for all damage to NBN Co facilities that are connected (whether directly, or indirectly) with work you carry out (or work that is carried out for you or on your behalf) at the Location. This will include (without limitation) all losses expenses incurred by NBN Co as a result of any such damage.
6. You immediately must report any damage to NBN Co's network that you are/become aware of. Notification may be by telephone to the inquiries number listed above.
7. Except to the extent that liability may not be capable of lawful exclusion, NBN Co and its servants and agents and the related bodies corporate of NBN Co Limited and their servants and agents shall be under no liability whatsoever to any person for any loss or damage (including indirect or consequential loss or damage) however caused (including, without limitation, breach of contract negligence and/or breach of statute) which may be suffered or incurred from or in connection with this information sheet or any Plans attached hereto. Except as expressly provided to the contrary in this information sheet or the attached Indicative Plans, all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

IMPORTANT

This document is intended for the use of the named recipient only. Unauthorised use is prohibited. If you have it in error, please notify us and destroy this document.

Thank You,

Network Operations Centre - Assurance

Date: 01/06/2016

Please consider our environment before printing

APPENDIX K

Telstra and NBN Co. Consultation Correspondence

Phone: 1800 881 816
URL: www.nbn.com.au/NewDevelopments
Email: DeveloperLiaison@nbnco.com.au
(Please quote your development reference)

New development registration

Development reference: **AYCA-3HTAFC**
Your internal reference: **Consultant**

Developer

ABN:	92003280699
Registered entity name:	MIRVAC LIMITED

Development details

Development name:	Harbourside Development
Development location:	1A Darling Dr, Sydney NSW 2000 Australia
Approximate total number of stages in your development:	3
Total number of premises/lots in your overall development:	335
Premises/lots to be serviced by nbn:	335
Total number of premises/lots already developed:	0
Real property description (e.g. Lot/Plan):	Mixed Residential and Retail

External roadwork

Are you aware of any external utility works being planned or roads being built/upgraded to serve this development:	No

Authorised Signatory Details

Name:	Norm Chow
Email address:	norm.chow@mirvac.com
Office:	02 9080 8485
Mobile:	0437 406 679
Postal address:	Level 28, 200 George Street, Sydney, NSW 2000

Consultant contact

Name:	Nirul Singh
Email address:	nirul.singh@arcadis.com
Office:	07 3337 0839
Mobile:	0405 940 812
Postal address:	Level 7, 199 Grey St, South Brisbane, QLD 4101

Attachments

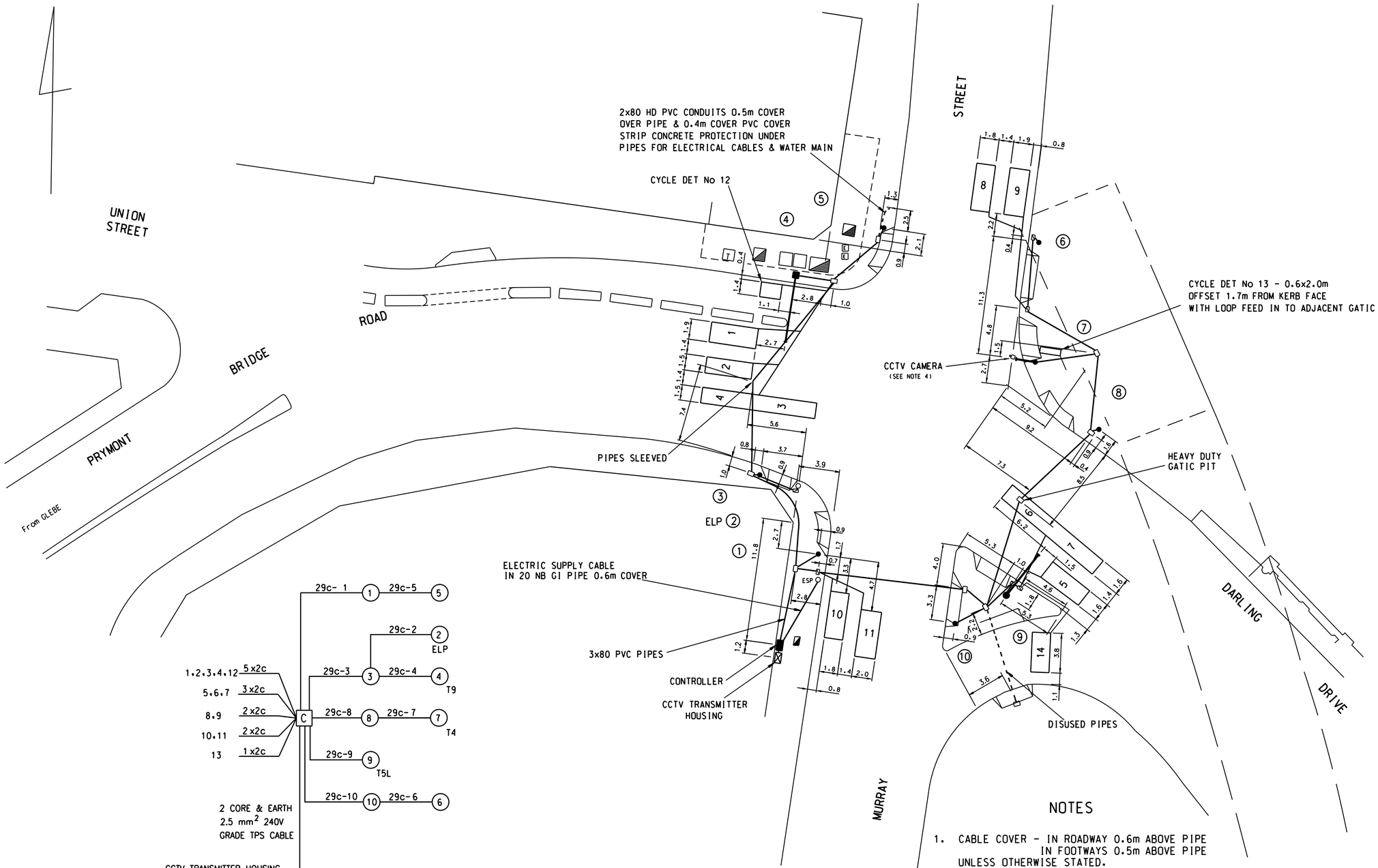
Darling Harbour - Masterplan.pdf (Master plan)

Additional information

Still in early stages but as more information is provided and the job progresses this information will be updated.

APPENDIX L

10.1 RMS Dial Before You Dig Records



CABLE LAYOUT

NOTES

1. CABLE COVER - IN ROADWAY 0.6m ABOVE PIPE
   IN FOOTWAYS 0.5m ABOVE PIPE
   UNLESS OTHERWISE STATED.
2. ALL CABLE IN FOOTWAYS ARE INSTALLED IN 1 x 80 POLYTHENE CONDUIT UNLESS OTHERWISE STATED.
3. ALL ROADCROSSING PIPES & PIPES BETWEEN GATIC PITS IN FOOTWAY ARE 2 x 80 PVC UNLESS OTHERWISE STATED.
4. CCTV CAMERA IS MOUNTED ON POST NO 7 (TYPE 4).

A ORIGINAL ISSUE

PUBLIC UTILITY LEGEND		REFERENCE PLANS	
HYDRANT	□	SYMBOLS/ABBS.	VD003-6
STOP VALVE	▲	STD POSIT	VD001-5
GAS VALVE	#	DET SCHED EXP	VD018-10
SEWER MANHOLE	⊕	PRES. DETECT	VC005-17
TELECOM PIT	◪	SSG DIS. SEQ.	VD018-8
ELECT LIGHT POLE	☼	DESIGN	SHEET 8
POWER POLE	○	CABLE CHART	SHEET 10
STAY POLE	⊘		
TELEPHONE BOX	☎	SURVEYOR :	
TELECOM PILLAR	◒	DATE :	

U.B.D. Ref. MAP 12 04
I.S.G. CO-ORDS E: 318210 N: 1250835
DESIGNED CORRIGAN
CHECKED
B. DANIEL 10-03-2012 SITE CHECKED
I. HAYES 07-04-2014 RECOMMENDED

APPROVED
ELECT DESIGN MANAGER
08-04-2014 DATE

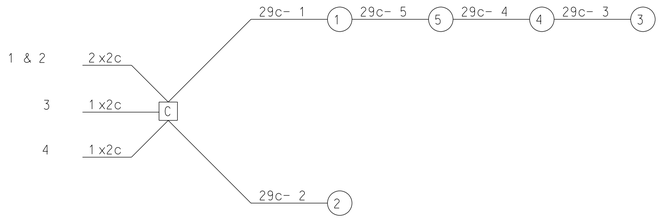
ROADS AND MARITIME SERVICES

CITY OF SYDNEY
DARLING DRIVE, MURRAY STREET
PYRMONT BRIDGE ROAD
PYRMONT
CABLE INSTALLATION TCS No 2834

EXISTING ☒ PROPOSED ☐
CADD FILE: VV2834_9A_INS.DGN
SCALE 5 0 (1:200) 5 10
ISSUE A
FILE 412 TS 498
SUPERSEDES SHEET/ISSUE 6B
REGN. 7000.412.VV.2834
SHEET 9

R T A

CABLE LAYOUT



CABLE INSTALLATION

NOTES

1. CABLE COVER - IN ROADWAY 0.75m ABOVE PIPE
   IN FOOTWAYS 0.5m ABOVE PIPE
   UNLESS OTHERWISE STATED.
2. ALL CABLE IN FOOTWAYS ARE INSTALLED IN 1 x 80 HD PVC CONDUIT UNLESS OTHERWISE STATED.
3. ALL ROADCROSSING CONDUITS ARE 1 x 80 HD PVC UNLESS OTHERWISE STATED.

A ORIGINAL ISSUE
"B" ISSUE UPDATED TO WAE

PUBLIC UTILITY LEGEND		REFERENCE PLANS	
HYDRANT	□	SYMBOLS/ABBS.	VD003-6
STOP VALVE	▲	STD POSIT	VD001-5
GAS VALVE	#	DET SCHED EXP	VD018-10
SEWER MANHOLE	⊛	PRES. DETECT	VC005-17
TELECOM PIT	◪	SSG DIS. SEQ.	VD018-8
ELECT LIGHT POLE	☼	DESIGN	SHT 1
POWER POLE	○	CABLE CHART	SHT 3
STAY POLE	⊘		
TELEPHONE BOX	T	SURVEYOR: HARD&FORESTER	
TELECOM PILLAR	◕	DATE : APRIL 1995	

U.B.D. Ref. 12 0 6
I.S.G. CO-ORDS E: 318120 N: 1250438
DESIGNED CORRIGAN
CHECKED C.Z.
SITE CHECKED
RECOMMENDED

APPROVED
R.C.BIRD
ELECTRICAL DESIGN MANAGER
11/95
DATE

Roads and Traffic Authority, N.S.W

CITY OF SYDNEY
PYRMONT ST, ALLEN ST, AND MURRAY ST
AT PYRMONT

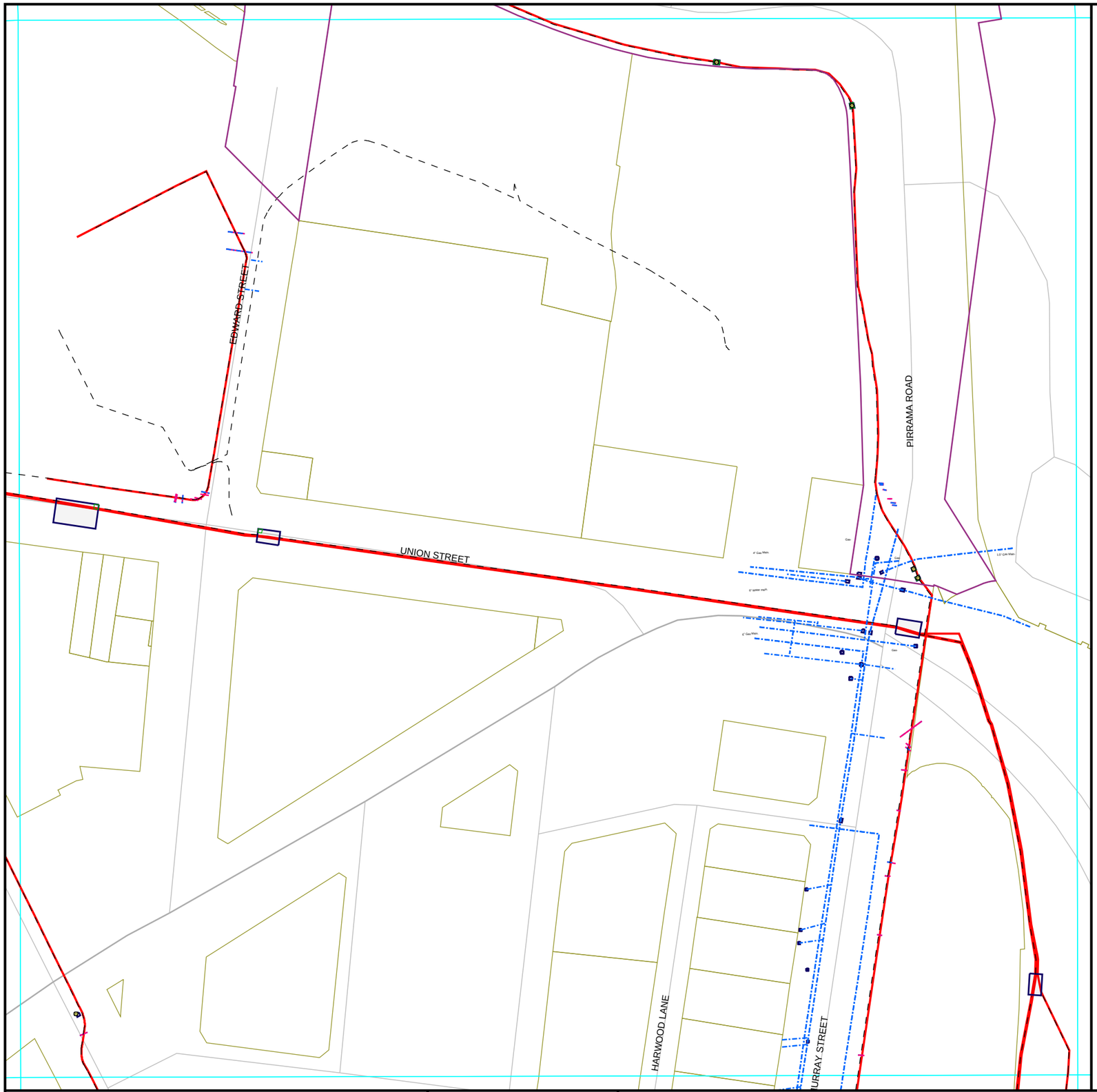
TCS No 3201

REGION: SYDNEY	BRANCH: CONSULTANT SERVICES
LOGIN: ELECTA	DGGS DRAWING FILE: VV3201_2B.INS
SCALE 5 0 (1:200) 5 10	ISSUE B
FILE 412 TS 577	SUPERSEDES SHEET/ISSUE ---
REGN. 7000.412.VV.3201	SHEET 2

VV3201_2B_INS.dgn 12/12/2008 4:21:43 PM

APPENDIX M

10.2 RailCorp Dial Before You Dig Records



THIS PLAN IS NOT VALID UNLESS PRINTED IN COLOUR
SYDNEY TRAINS Dial Before You Dig Service Search

PLOTTED DATE: 24/07/2015

This plan is to be read in conjunction with Sydney Trains' Dial Before you Dig Terms & Conditions.

- External Agency Service Crossing.Centreline - underground
- HV Cable.11kV Location
- HV Cable.33kV Location
- HV Cable.abandoned location
- Track Segment.Centreline Active
- Pipeline.Centreline
- Pit.Location
- Pit.Pit Access Lid
- Pit.Pit Outline
- Trench/Tunnel/Trough.Location
- UBD Map Grid.Coverage
- Road Segment.Arterial Road Centreline
- Road Segment.Local Road Centreline
- Lot.Coverage Standard
- Easement.Coverage Current

The precision of the location of the services on this plan varies depending on the source and method of capture.
This plan should be used as a guide only.
This plan shows only Sydney Trains electrical cables and tunnels located outside of the rail corridor.
Contact for further information:
Sydney Trains External Interface Manager Ph. 9847 8914
Airport Line Maintainance Manager Ph. 9669 8602

Exposure of or suspected damage to Sydney Trains' services must be reported immediately to Electrical Systems Operations
Ph. 9379 4911 or 1800 060 015

Transport Sydney Trains
WhereInfo ... dis
PRODUCED BY SYDNEY TRAINS GIS FROM MAPPED DATA

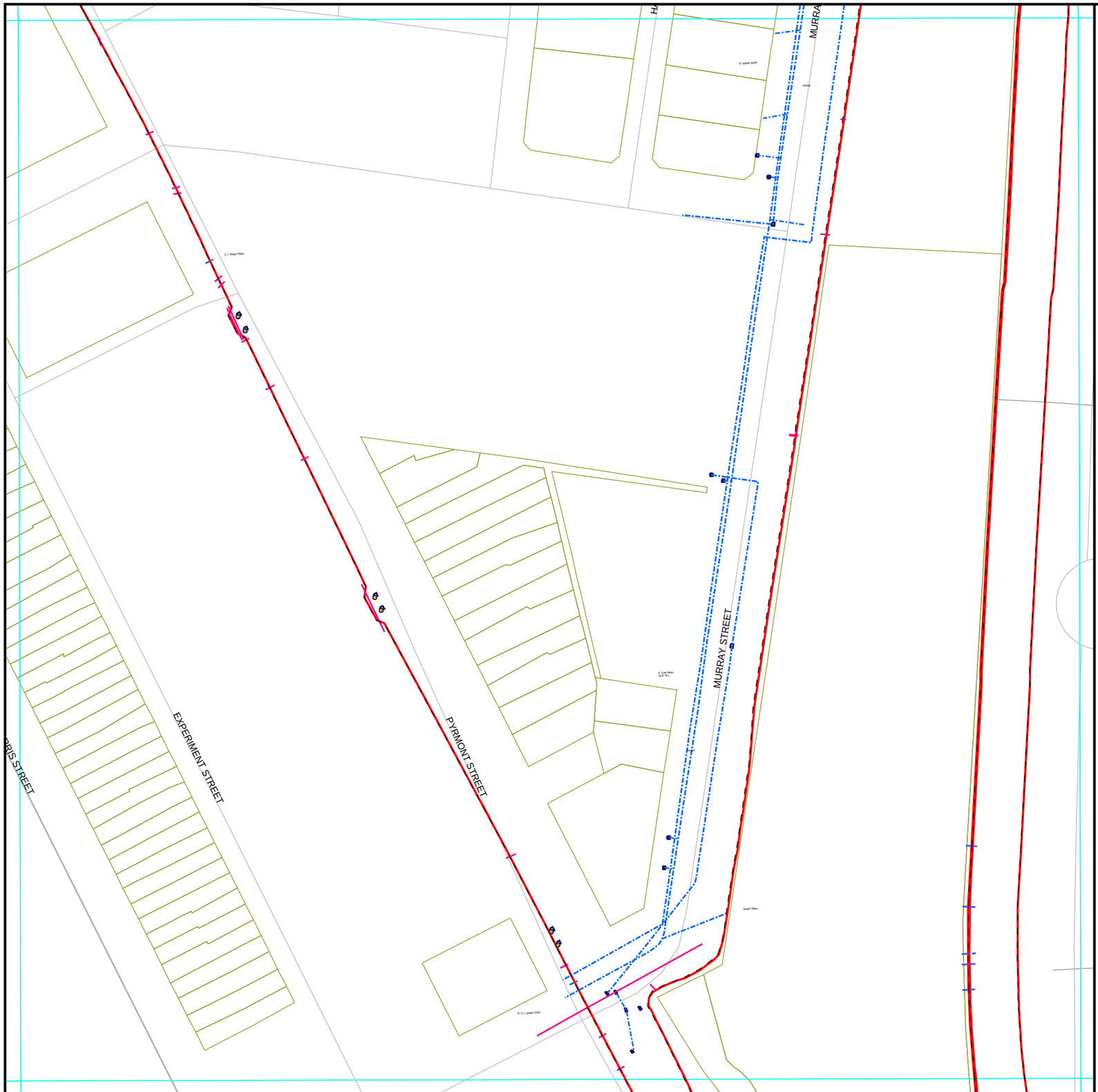
UBD: Sydney 235 Q10

SYDNEY TRAINS HIGH VOLTAGE ELECTRICAL SERVICES SEARCH

N

PLOTTED DATE: 24/07/2015

PLOTTED BY: dgrimshaw



THIS PLAN IS NOT VALID UNLESS PRINTED IN COLOUR
SYDNEY TRAINS Dial Before You Dig Service Search

PLOTTED DATE: 24/07/2015

This plan is to be read in conjunction with Sydney Trains' Dial Before you Dig Terms & Conditions.

- External Agency Service Crossing.Centreline - underground
- HV Cable.11kV Location
- HV Cable.33kV Location
- Track Segment.Centreline Active
- Pipeline.Centreline
- Pit.Location
- Pit.Pit Outline
- Trench/Tunnel/Trough.Location
- UBD Map Grid.Coverage
- Road Segment.Arterial Road Centreline
- Road Segment.Centreline
- Road Segment.Local Road Centreline
- Lot.Coverage Standard
- Easement.Coverage Current

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Transport Sydney Trains
WhereInfo... dis
PRODUCED BY SYDNEY TRAINS GIS FROM MAPPED DATA

UBD: Sydney 235 Q11

SYDNEY TRAINS HIGH VOLTAGE ELECTRICAL SERVICES SEARCH

N

PLOTTED DATE: 24/07/2015

PLOTTED BY: dgrimshaw

THIS PLAN IS NOT VALID UNLESS PRINTED IN COLOUR
SYDNEY TRAINS Dial Before You Dig Service Search

PLOTTED DATE: 24/07/2015

This plan is to be read in conjunction with Sydney Trains' Dial Before you Dig Terms & Conditions.

- Bridge.Coverage
- HV Cable.11kV Location
- HV Cable.33kV Location
- Track Segment.Centreline Active
- Trench/Tunnel/Trough.Location
- UBD Map Grid.Coverage
- Road Segment.Centreline
- Road Segment.Local Road Centreline
- Lot.Coverage Standard
- Easement.Coverage Current

The precision of the location of the services on this plan varies depending on the source and method of capture.
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Exposure of or suspected damage to Sydney Trains' services must be reported immediately to Electrical Systems Operations
Ph. 9379 4911 or 1800 060 015

Transport Sydney Trains
WhereInfo... ais
PRODUCED BY SYDNEY TRAINS GIS FROM MAPPED DATA

UBD: Sydney 236 A10

SYDNEY TRAINS HIGH VOLTAGE ELECTRICAL SERVICES SEARCH

N

PLOTTED DATE: 24/07/2015

PLOTTED BY: dgrimshaw

THIS PLAN IS NOT VALID UNLESS PRINTED IN COLOUR
SYDNEY TRAINS Dial Before You Dig Service Search

PLOTTED DATE: 24/07/2015

This plan is to be read in conjunction with Sydney Trains' Dial Before you Dig Terms & Conditions.

- Bridge.Coverage
- HV Cable.11kV Location
- HV Cable.33kV Location
- Track Segment.Centreline Active
- Trench/Tunnel/Trough.Location
- UBD Map Grid.Coverage
- Road Segment.Centreline
- Road Segment.Local Road Centreline
- Road Segment.Motorway Centreline
- Lot.Coverage Standard
- Easement.Coverage Current

The precision of the location of the services on this plan varies depending on the source and method of capture.
This plan should be used as a guide only.
This plan shows only Sydney Trains electrical cables and tunnels located outside of the rail corridor.
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Transport Sydney Trains
WhereInfo ... ais
PRODUCED BY SYDNEY TRAINS GIS FROM MAPPED DATA

UBD: Sydney 236 A11

SYDNEY TRAINS HIGH VOLTAGE ELECTRICAL SERVICES SEARCH

N

PLOTTED DATE: 24/07/2015

PLOTTED BY: dgrimshaw

APPENDIX N

10.3 City of Sydney Dial Before You Dig Records

GPO Box 1591 Sydney NSW 2001 • Town Hall House, 456 Kent Street Sydney NSW 2000
p (02) 9265 9333• **f** (02) 9265 9222 • **e** council@cityofsydney.nsw.gov.au • www.cityofsydney.nsw.gov.au

Dial Before You Dig (DBYD): Asset Location Response

Arcadis - Mr Jason Ko
Level 5 141 Walker Street
North Sydney NSW 2060
jason.ko@arcadis.com

City of Sydney has been advised that you have placed an enquiry through the Dial Before You Dig service. Our records indicate the enquiry with the following details are affecting City of Sydney asset(s) as per the attached plans.

Enquiry Details	
Sequence Number	50033092
Enquiry Date	06/01/2016 15:40
Response	**AFFECTED**
Address	Union Lane Pyrmont
Location in Road	CarriageWay,Footpath,Nature Strip
Activity	Planning & Design

It is important to read and understand all the information and disclaimers provided below and the responsibilities outlined in the attachment prior to commencing work(s)

Due to the nature and the age of assets and records, the accuracy and/or completeness of the information in the attached plan(s) cannot be guaranteed. The City does not make any representation or give any guarantee, warranty or undertaking as to the accuracy, currency, completeness, effectiveness or reliability of the information.

Plan(s) are indicative only and all information needs to be verified through field survey including the use of appropriately qualified personnel and equipment.

This information has been generated by an automated system based on the information specified by the Enquirer. It is the Enquirer's responsibility to ensure that the work site has been properly identified and is accurately reflected in the information provided by the City. If the information does not match the work site, resubmit your enquiry for the correct site.

To the extent of any inconsistency, the information contained in this document will prevail over any other information provided to you by the City and Dial Before You Dig.

Duty of Care

When working in the vicinity of City Assets you have a "duty of care" that must be observed.

Works or proposed works should be planned to allow for minimal impact and appropriate protection of City Assets.

Locating Assets

It is the Enquirer's responsibility to:

- Request plans of City Assets for a particular location at a reasonable time before work begins. If you have any doubts as to the exact location of City Assets, we strongly recommend that you engage the service of a suitably qualified locator; and
- Visually locate City Assets. For buried assets this should be done by hand digging or using non-destructive methods such as water jetting (pot holing) where construction activities may damage or interfere with City Assets.

Damage of Assets

Damage to City Assets must be reported immediately to 02 9265 9333 or council@cityofsydney.nsw.gov.au anytime, any day.

Enquirers and other parties undertaking works will be held responsible for all damage that occurs or impacts City Assets as a result of the works. This includes interfering with City Assets, conducting unauthorised modification works and interfering with City Assets in a way that prevents the City or a third party from accessing or using City Assets in the future.

The City reserves all rights to recover compensation for any Loss (including consequential losses).

Relevant Approvals

Relevant approval must be obtained prior to commencement of works on or near City Assets. The Enquirer is responsible to ensure that all requisite approvals have been obtained prior to works and that all works are undertaken in accordance with the requirements of any approval.

There is a variety of legislation, regulation and City policies that govern requirements for approval to install or modify City Assets. These requirements will also vary depending on the type of asset. Additional guidance may be provided in subsequent sections of this document. This is intended for guidance purposes only and is not comprehensive. It should also be acknowledged that standards may vary from time to time and the information supplied regarding approvals or standards may be out of date or superseded.

User Risk

The Enquirer acknowledges that they use the information at their own risk. In consideration of the information provided by the City to the fullest extent permitted by law:

- All conditions and guarantees concerning the information (whether as to quality, outcome, fitness, care, skill or otherwise) expressed or implied by statute, common law, equity, trade, custom or usage or otherwise are expressly excluded. To the extent that those statutory guarantees cannot be excluded, the liability of the City to the Enquirer is limited to the supplying of the information again;
- In no event will the City be liable for, and the Enquirer releases the City from, any Loss arising from or in connection with the information, including the use of or inability to use the information and delay in the provision of the information;
- The Enquirer will indemnify the City against any Loss arising from or in connection with the information and the works; and
- The Enquirer assumes all risks associated with the use of the Dial Before You Dig and City websites, including risk to the Enquirer's computer, software or data being damaged by any virus, and release and discharge the City from all Loss which might arise in respect of your use of the websites.

Glossary

"City" *means The Council of the City of Sydney.*

"City Assets" *mean those items that are under the ownership, care or control of the City*

"Enquirer" *is the person(s) or organisation(s) requesting or using the information.*

"Loss" *includes any loss, cost, expense, claim, liability or damage (including arising in connection with personal injury, death or any damage to or loss of property and economic or consequential loss, lost profits, loss of revenue, loss of management time, opportunity costs or special damages).*

If you have any further enquiries in regards to assets affected in this referral, please contact the following:

- For Survey infrastructure: Don Urquhart, Principal Surveyor via email Surveyors@cityofsydney.nsw.gov.au or phone: (02) 9265 9819.
- For Stormwater: Terry Kefalianos, Principal Engineer Water Assets via email Stormwater@cityofsydney.nsw.gov.au or phone (02) 9246 7859.
- For Electrical: Paul Gowans, Principal Engineer Electrical & Furniture via email Electrical@cityofsydney.nsw.gov.au or phone (02) 9246 7226.

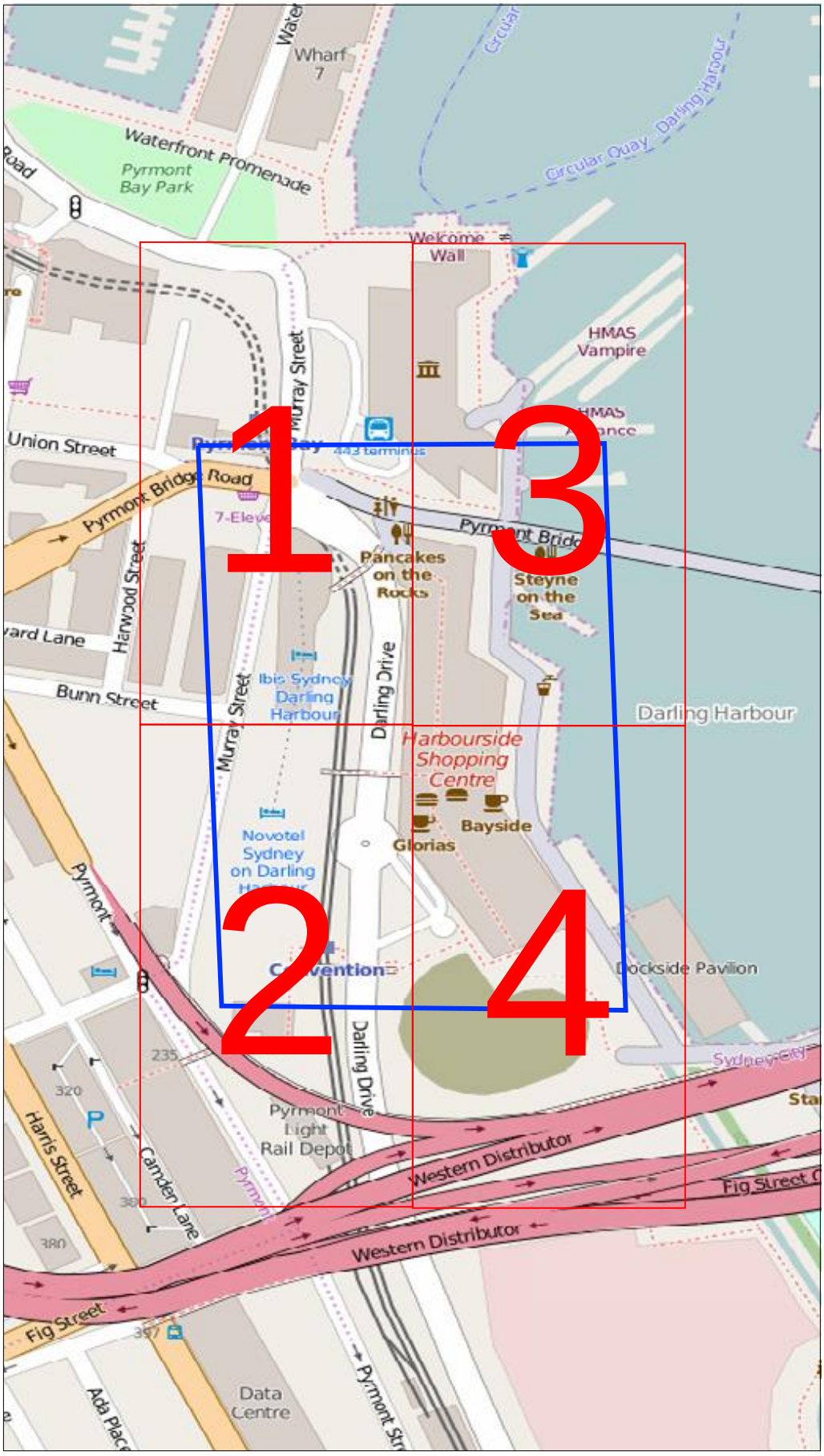
Yours sincerely,

Don Urquhart
Principal Surveyor

Overview Map

Sequence No: 50033092

Union Lane Pyrmont



LEGEND:

Affected DBYD Work Area

1 Detail Map

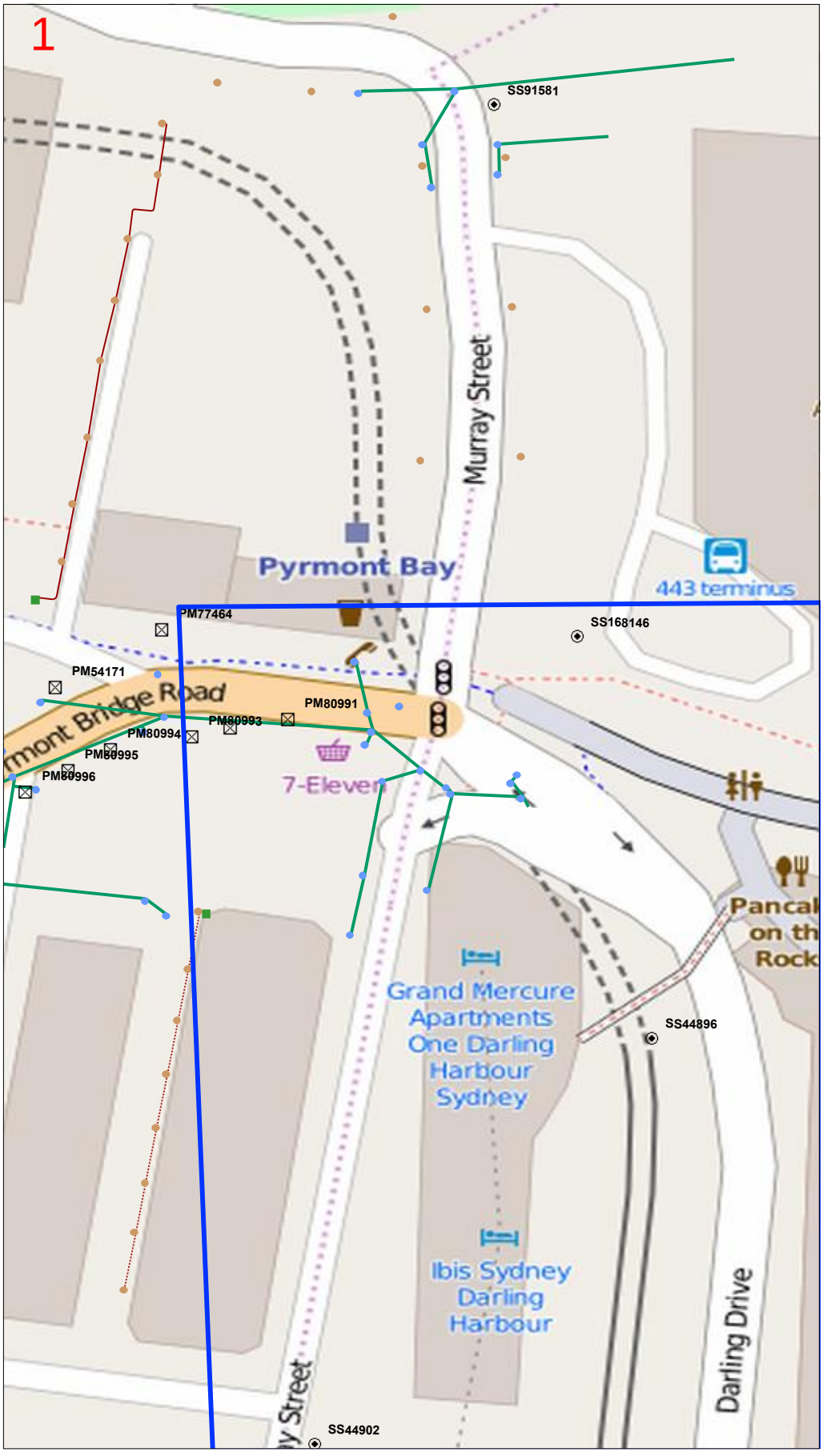
N

0 0.03km

Map 1

Sequence No: 50033092

Union Lane Pyrmont



LEGEND:

Affected DBYD Work Area

Survey Infrastructure

- Permanent Mark
- Trigonometrical Station
- State Survey Mark
- Miscellaneous Mark

Stormwater

- Stormwater Gross Pollutant Traps
- Stormwater Structures
- Stormwater Conduit
- Stormwater Raingardens

Electrical

- Lightning Points
- Smart Poles

Electrical Services

- Main Switch Board
- Distribution Board
- Special Small Service
- Electrical Pit
- Supply Feature
- Other

Electrical Conduits & Cables

- Underground
- Building
- Aerial

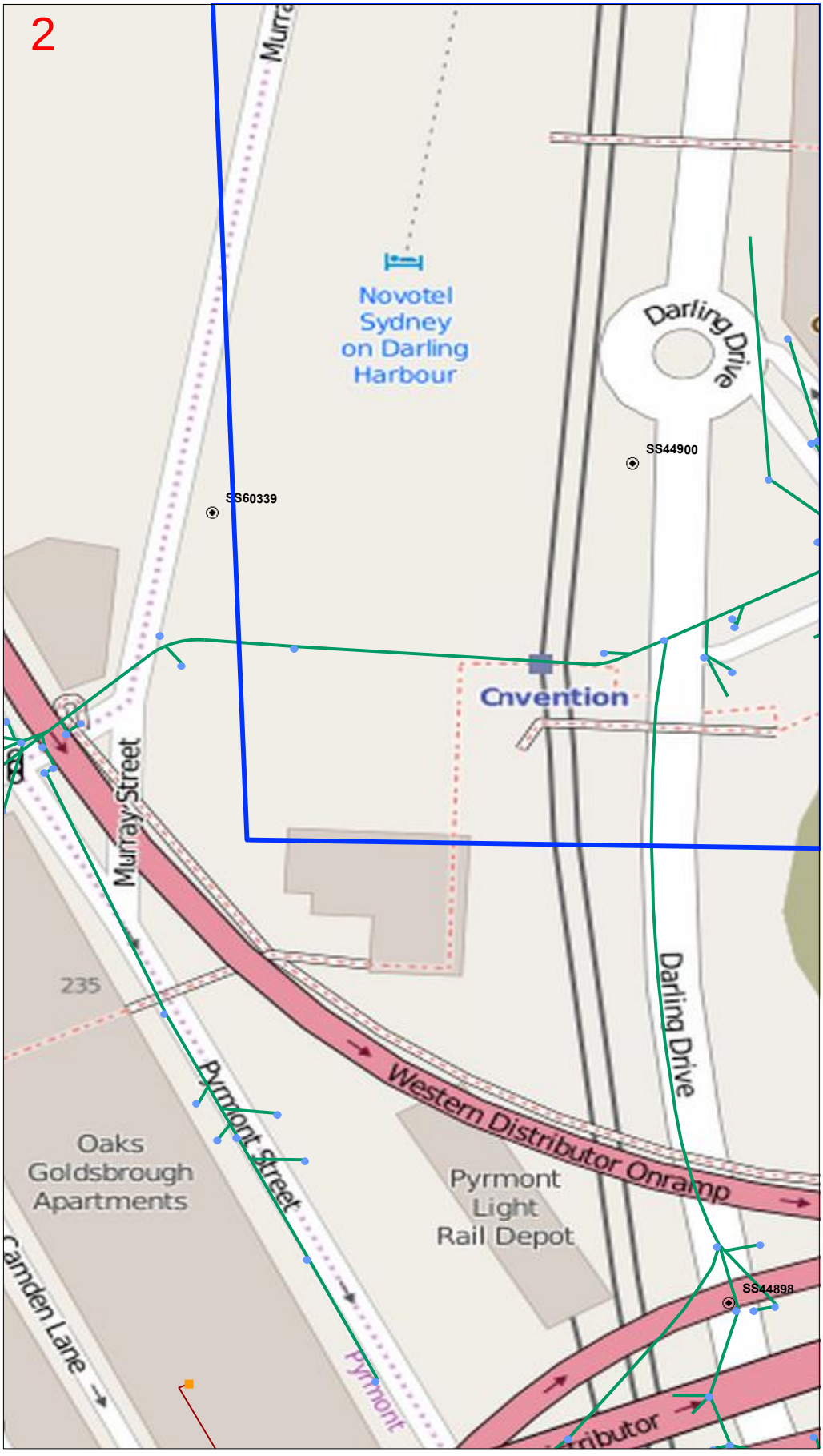
N

0 0.01km

Map 2

Sequence No: 50033092

Union Lane Pyrmont



LEGEND:

- Affected DBYD Work Area

Survey Infrastructure

- Permanent Mark
- Trigonometrical Station
- State Survey Mark
- Miscellaneous Mark

Stormwater

- Stormwater Gross Pollutant Traps
- Stormwater Structures
- Stormwater Conduit
- Stormwater Raingardens

Electrical

- Lightning Points
- Smart Poles

Electrical Services

- Main Switch Board
- Distribution Board
- Special Small Service
- Electrical Pit
- Supply Feature
- Other

Electrical Conduits & Cables

- Underground
- Building
- Aerial

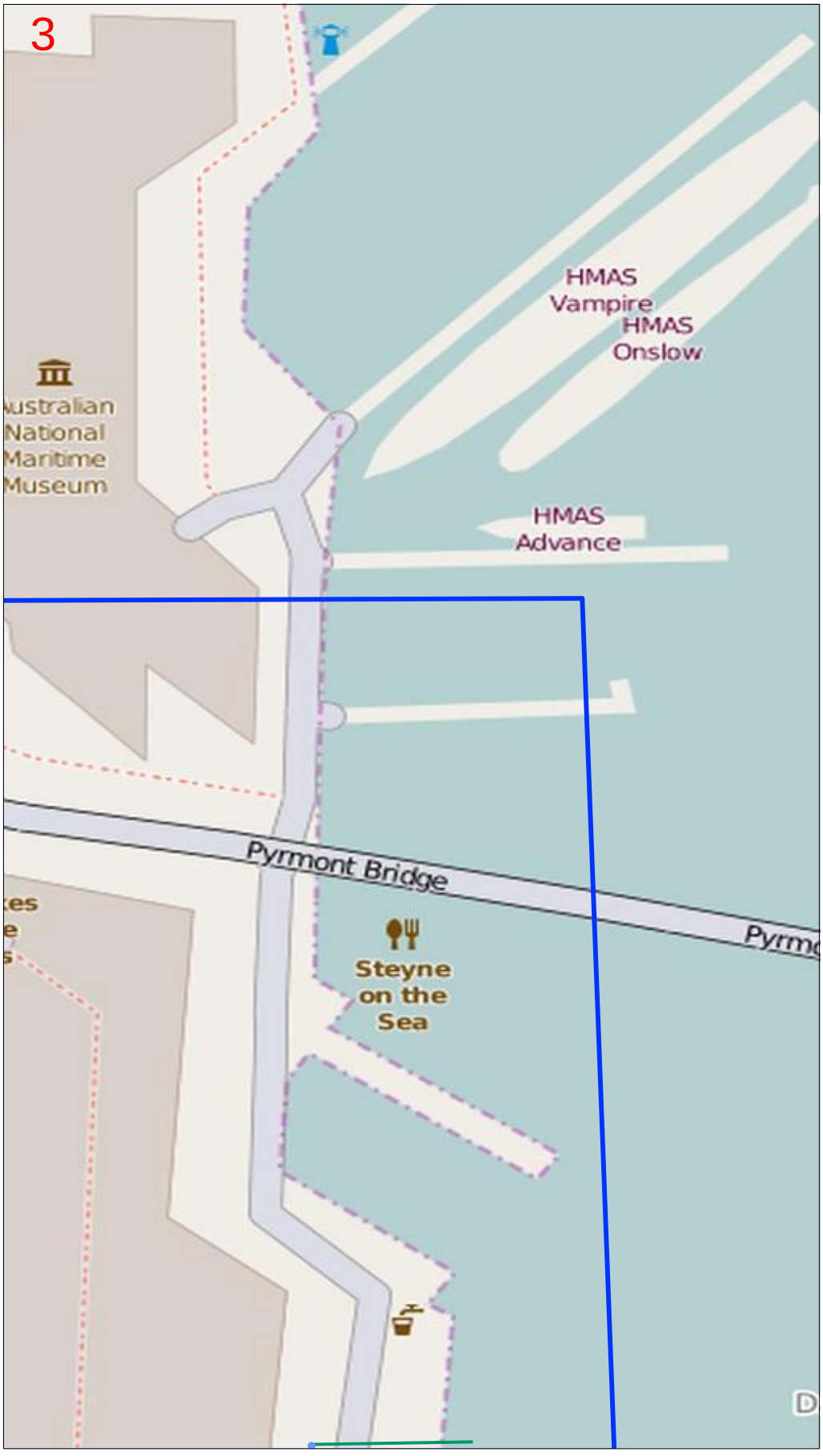
N

0 0.01km

Map 3

Sequence No: 50033092

Union Lane Pyrmont



LEGEND:

Affected DBYD Work Area

Survey Infrastructure

- Permanent Mark
- Trigonometrical Station
- State Survey Mark
- Miscellaneous Mark

Stormwater

- Stormwater Gross Pollutant Traps
- Stormwater Structures
- Stormwater Conduit
- Stormwater Raingardens

Electrical

- Lightning Points
- Smart Poles

Electrical Services

- Main Switch Board
- Distribution Board
- Special Small Service
- Electrical Pit
- Supply Feature
- Other

Electrical Conduits & Cables

- Underground
- Building
- Aerial

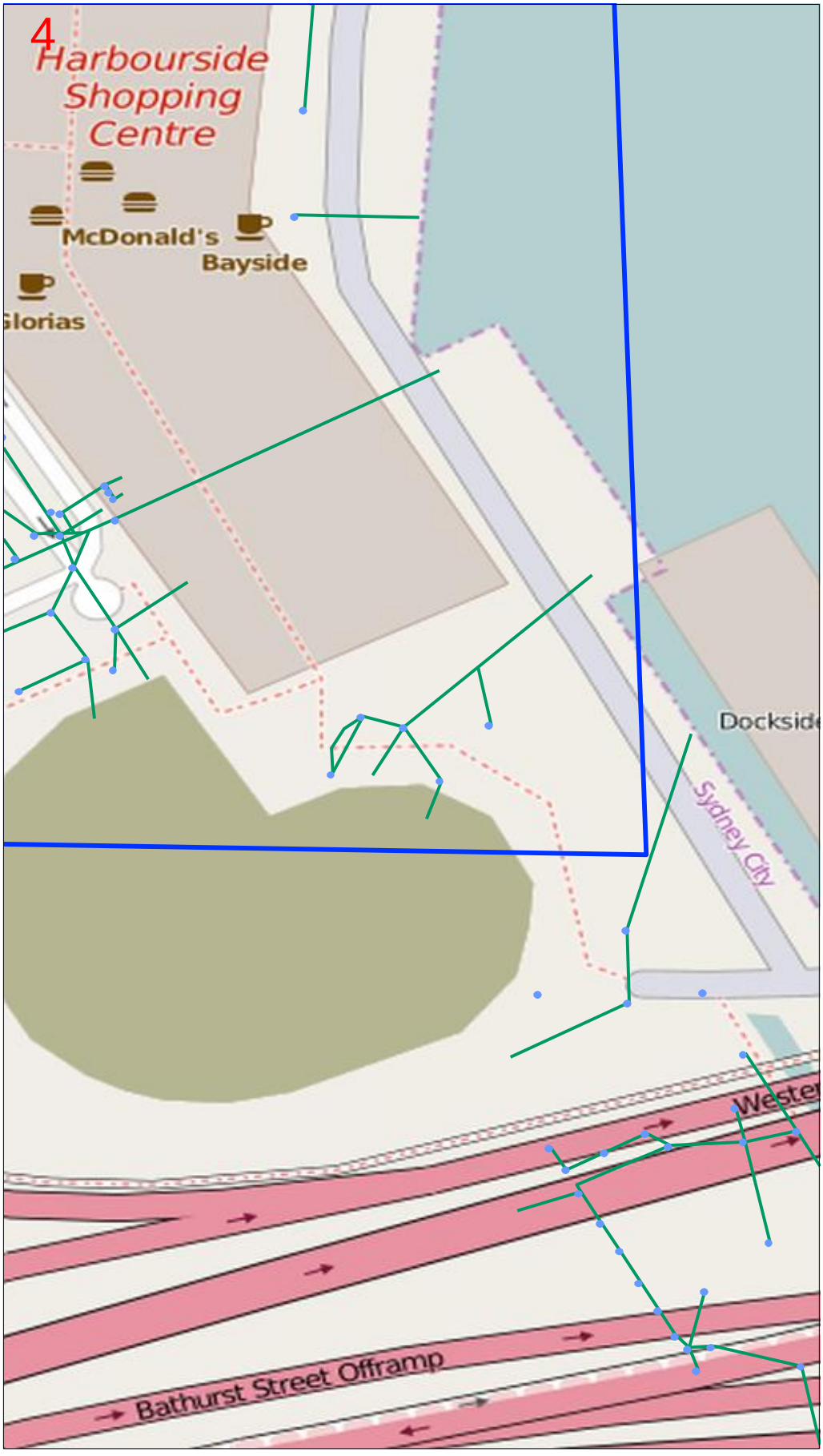
N

0 0.01km

Map 4

Sequence No: 50033092

Union Lane Pyrmont



LEGEND:

Affected DBYD Work Area

Survey Infrastructure

- Permanent Mark
- Trigonometrical Station
- State Survey Mark
- Miscellaneous Mark

Stormwater

- Stormwater Gross Pollutant Traps
- Stormwater Structures
- Stormwater Conduit
- Stormwater Raingardens

Electrical

- Lightning Points
- Smart Poles

Electrical Services

- Main Switch Board
- Distribution Board
- Special Small Service
- Electrical Pit
- Supply Feature
- Other

Electrical Conduits & Cables

- Underground
- Building
- Aerial

N

0 0.01km

ARCADIS Design & Consultancy for natural and built assets