

HARBOURSIDE SHOPPING CENTRE

Utilities Report SSDA1 – Stage 1

04 FEBRUARY 2020

Incorporating



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MIRVAC HARBOURSIDE SHOPPING CENTRE

Utilities Report

Stage 1 Development Application (DA) Report

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1 INTRODUCTION

This report provides a response to submissions (as relevant) and assessment of the proposed amended Concept Proposal in relation to the State Significant Development (SSD) Development Application (DA) for the redevelopment of the Harbourside Shopping Centre (Harbourside) (SSD 7874).

The SSD DA was publicly exhibited for a period of 62 days from 15 December 2016 to 14 February 2017. During this time, ten (10) submissions were received from government agencies and City of Sydney Council and over 140 submissions were received from the general public.

This report should be read in conjunction with the original assessment prepared by Arcadis dated 04th November 2016 to support the Harbourside Concept Proposal Square (SSD 7874).

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Despite its success, with an annual pedestrian visitation of around 13 million people, Harbourside is now outdated and in decline.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.

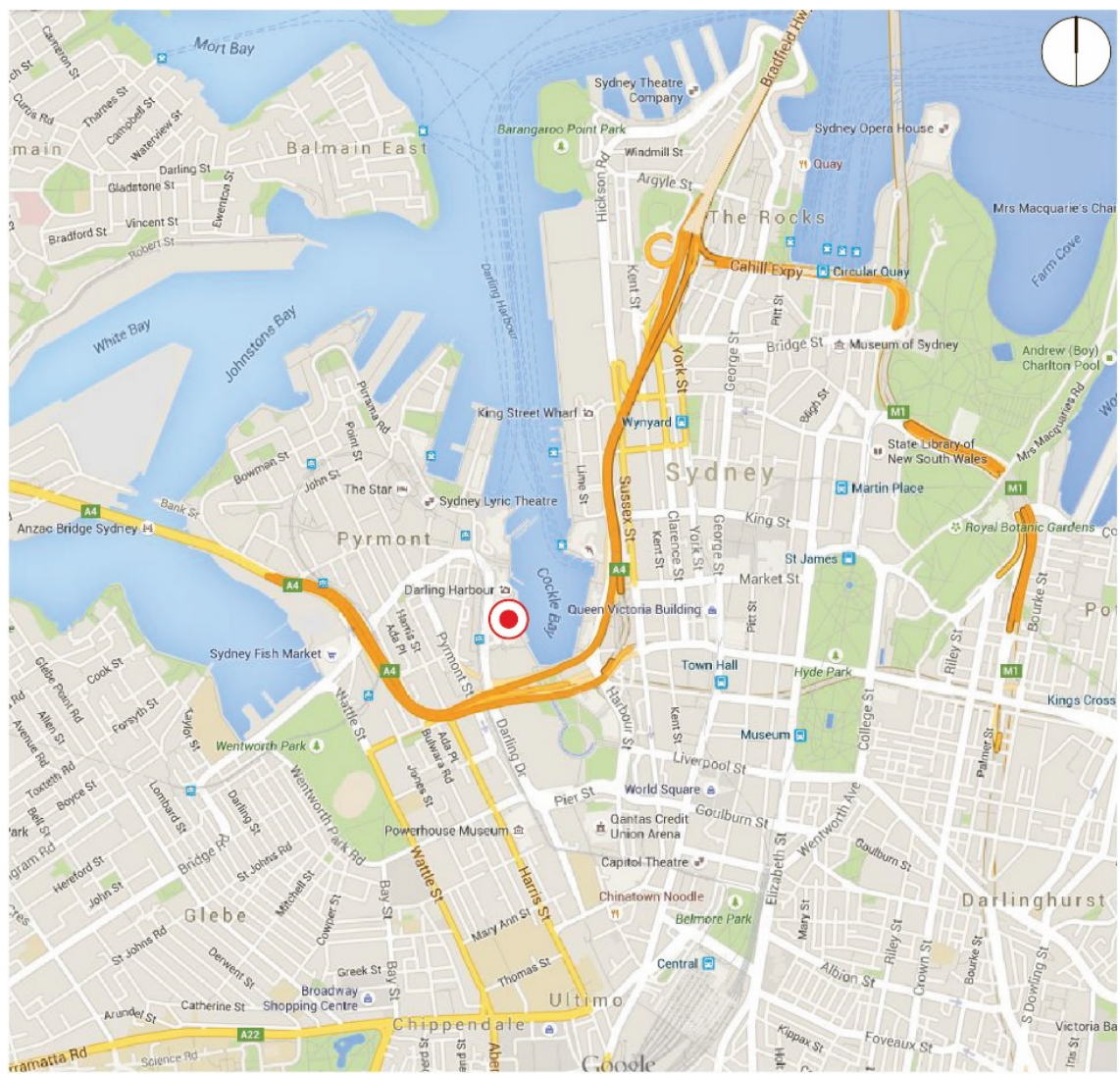
1.2 Site Description

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)

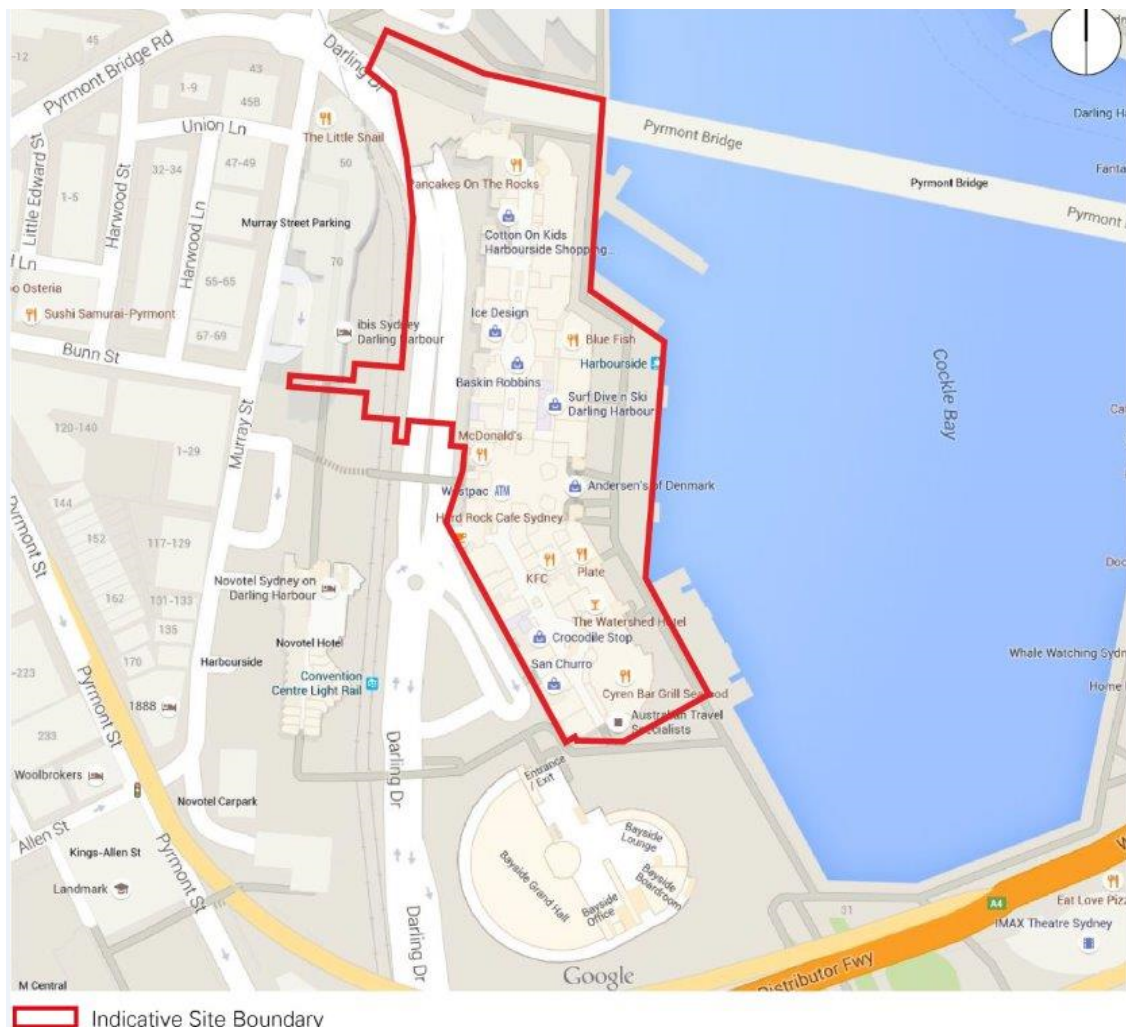


Figure 2: Site Location Plan (Source: Google Maps)

1.3 Proposed Amended Development

Since exhibition of the proposal and given the nature and range of submissions made from agencies and the public, Mirvac has been reviewing the overall approach and elements of the Concept Proposal. This has accordingly led to developing an Amended Concept Proposal. The final Concept Proposal therefore includes substantial amendments made by Mirvac pursuant to Clause 55 of the Environmental Planning & Assessment Regulation, in the main to address matters raised in the submissions and deliver an overall significantly improved outcome on the site and for the broader Darling Harbour precinct.

The following key amendments have been made to the proposal:

Relocation of the Tower

The tower element of the Concept Proposal has been relocated from the north of the site to the centre of the site (the widest part of the site) to allow for an increased setback from the heritage listed Pymont Bridge, improved relationship to the waterfront and ICC Hotel, to minimise view impacts from 50 Murray Street, together with reducing overshadowing impacts on the public domain and improved solar amenity to the northern end of the retail centre.

Reduction in Height of the Tower

The height of the tower has also been reduced from RL 166.35 to RL 153.75. The reduction in the height will minimise overshadowing impacts to the public domain as well better relate to the height of the ICC Hotel.

Reduction in Height of the Podium

A portion of the podium height at its northern extent has been partly reduced from 30.5 RL to RL 25. The reduction in height provides for improved view sharing from 50 Murray Street.

Removal of Tower ‘Tail’ element

As part of the relocation of the tower and refinement of the podium, the stepped form of the lower tower element has now been removed. This design move has been made in order to again improve views from adjacent buildings from the west.

Building Footprint of the Tower

The building footprint of the tower has increased in width, to accommodate the floorspace from the reduction in height of the tower and removal of the ‘tail’.

Gross Floor Area / Land Use Mix

The amended proposal retains the same overall 87,000sqm of GFA, however there is a minor adjustment in the split between non-residential and residential:

- Non-residential uses floor space – 49,000sqm; and
- Residential uses floor space – 38,000sqm

In response to market demand and the focus of local and regional strategic planning policies, it is proposed for the podium to include both retail and commercial land uses. Indicatively, comprising ~23,000sqm net lettable area of commercial and ~15,000sqm gross lettable area of retail.

The podium enables large campus sized commercial floor plates that are favoured by large multinational tech, finance and professional services companies.

Apartment numbers

As a result of a review of the mix and sizing of apartments, there is a minor reduction in the indicative number of apartments, from 364 to 357. Note, this yield is on the ‘Indicative Design’ only and will be subject to future design development and a Stage 2 DA. This Stage 1 DA only seeks approval for land uses and the building envelope comprising a total of 87,000sqm GFA.

Car Parking Spaces

The extent of the basement will remain the same, but there has been a minor increase of 11 car parking spaces from 295 spaces to 306 spaces. As above, this is based on the ‘Indicative Design’ only.

A more detailed and comprehensive description of the amended proposal is contained in the Response to Submissions and Amended Concept Proposal prepared by Ethos Urban.

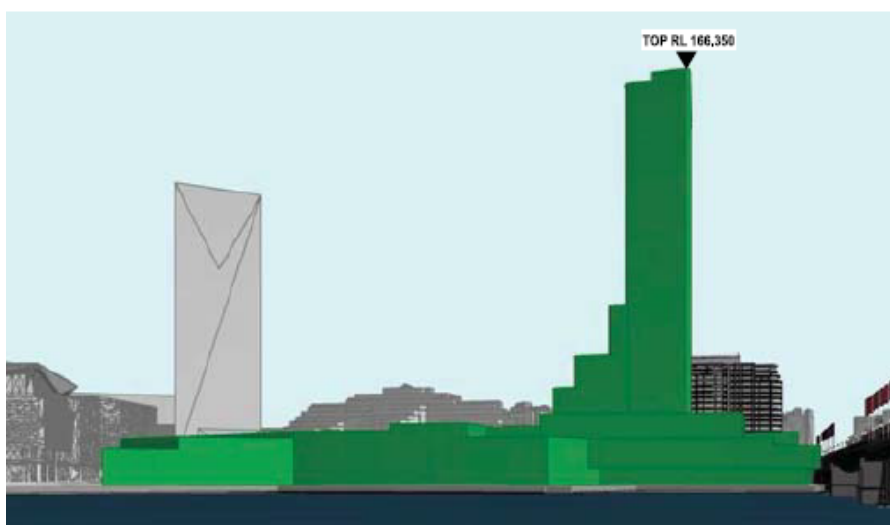


Figure 3: Original submitted Concept Proposal

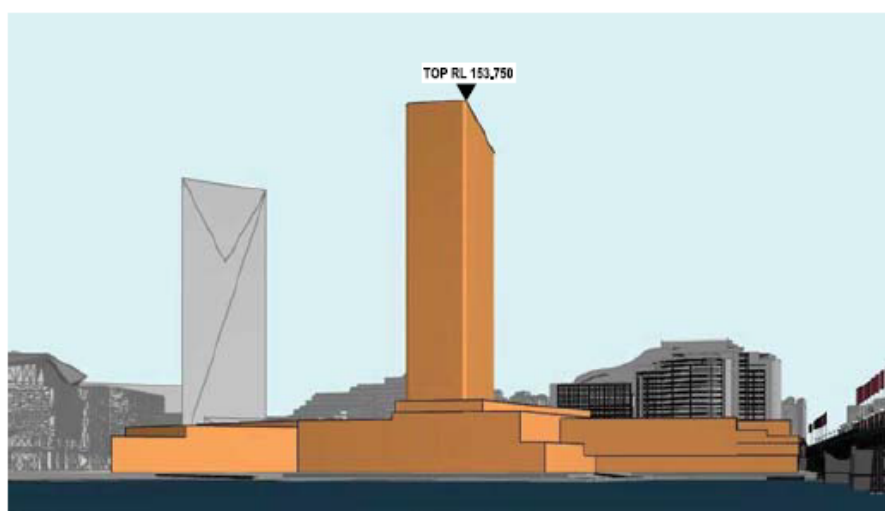


Figure 4: Amended Concept Proposal

Landscaped Open Space and Public Domain

All the key concepts and public benefits as originally proposed are retained under the amended Concept Proposal, with the addition of further landscaping opportunities on the northern rooftop extent of the retail podium, further enhancing views and outlook from 50 Murray Street.

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

- Demolition of existing site improvements, including the Harbourside Shopping Centre, pedestrian bridge link 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 (49,000sqm non-residential and 38,000sqm 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.

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: <ul style="list-style-type: none"> Services and infrastructure report 		

Table 1: SEARs Key Assessment Requirements for Utilities

This report provides a response to submissions received from Sydney Water Corporation (SWC) and Ausgrid in relation to the State Significant Development (SSD) Development Application (DA) for the redevelopment of the Harbourside Shopping Centre (Harbourside) (SSD 7874). A summary of the relevant agency submissions is providing in **Table 2** of this Report. **Appendix A** of this report contains a copy of the received agency submissions relevant to this report.

A meeting was held between the Applicant, civil consultant (Arcadis) and Sydney Water Corporation to outline the concept development proposal. A copy of the meeting minutes from this meeting can be found in **Appendix F** of this Report.

Agency Response to Submission Reference	Agency Response to Submission	Relevant Section in This Report	Comment
Water and wastewater	Strategic Investigations shows that the trunk services are available and are capable of servicing the proposed development.	3.2 & 4.2	Noted.
Water and wastewater	Amplification and/or disuse of some reticulation water and wastewater may be required once the final development is known. These details should be provided in a S73 application.	3.2 & 4.2	Noted. This will be investigated during the Stage 2 DA. A S73 application will be lodged in the detailed design stage.
Water and wastewater	To assist in determination in Sydney Water requirements as part of the S73 application phase a servicing brief covering concept options should be prepared and submitted as part of the application.		Noted. A servicing brief covering concept options will be prepared and submitted as part of the S73 application.
Water and wastewater	These concept options will need to include development layout plans, staging, timing and proposed asset amplifications / adjustments details. The options should take into consideration the needs of the total catchment.		Noted. This will be addressed in the Stage 2 DA and detailed design stages.
Water and wastewater	Depending on the complexity of options due to local conditions a Water Services Coordinator may advise that it is necessary to engage a range of services advisors to complete the concept options documentation.		Noted.
Building Over and Adjacent to Sydney Water asset.	The proposed development as existing will use the existing footprint. The existing structure is presently over an existing Sydney Water 2700 x 1725 RC stormwater channel and proposed redevelopment is also proposed to be constructed over this stormwater channel. The proponent is required to liaise with Sydney Water regarding the measures needed to be taken prior to commencement of any works and the required protection measures which are to be implemented as part of this development.	5.1 & 10	Noted. The proponent has already met with Sydney Water to discuss the build over of this stormwater channel. Further consultation will be undertaken during future design stages of the development.
HV (Ausgrid)	The substation ventilation openings, including substation duct openings and louvered panels, must be separated from building air intake and exhaust openings, natural ventilation openings and boundaries of adjacent allotments, by separation distances which meet the requirements of all relevant authorities, building regulations, BCA and Australian Standards including AS 1668.2: The use of ventilation and air-		Noted. This will be considered during the detailed design stage of the development.

Agency Response to Submission Reference	Agency Response to Submission	Relevant Section in This Report	Comment
	conditioning in buildings - Mechanical ventilation in buildings.		
HV (Ausgrid)	In addition to the above, Ausgrid requires the substation ventilation openings, including duct openings and louvered panels, to be separated from building ventilation system air intake and exhaust openings, including those on buildings on adjacent allotments, by not less than 6 metres. TfNSW would be pleased to consider any further material forwarded from the applicant.		Noted. This will be considered during the detailed design stage of the development.
HV (Ausgrid)	Exterior parts of buildings within 3 metres in any direction from substation ventilation openings, including duct openings and louvered panels, must have a fire rating level (FRL) of not less than 180/180/180 where the substation contains oil-filled equipment. For further details on fire segregation requirements refer to Ausgrid's Network Standard NS113: Site Selection and Construction Design Requirements for Chamber Substations.		Noted. This will be considered during the detailed design stage of the development.
HV (Ausgrid)	Any work undertaken near Overhead Power lines needs to be done in accordance with - WorkCover Document ISSC 23 "Working Near Overhead Power Lines" - Ausgrid Network Standards - Ausgrid Electrical Safety Rules	10	Noted. This will be considered during the detailed design stage and construction stage.
HV (Ausgrid)	The locating of underground cables must be determined using Dial Before You Dig and the developer must comply with the requirements of Ausgrid's Network Standard NS156: Working Near or Around Underground Cables before any excavation works are undertaken.	10	Noted. This will be considered during the construction stage development.
HV (Ausgrid)	Existing Ausgrid easements, leases and/or right of ways must be maintained at all times to ensure 24 hour access. No temporary or permanent alterations to this property tenure can occur without written approval from Ausgrid. For further details refer to Ausgrid's Network Standard NS143: Easements, Leases and Rights of Way.		Noted. This will be considered during the detailed design stage and construction stage.

Table 2 Agency Response to Submissions

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 25th September 2019. **Figure 5** 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.

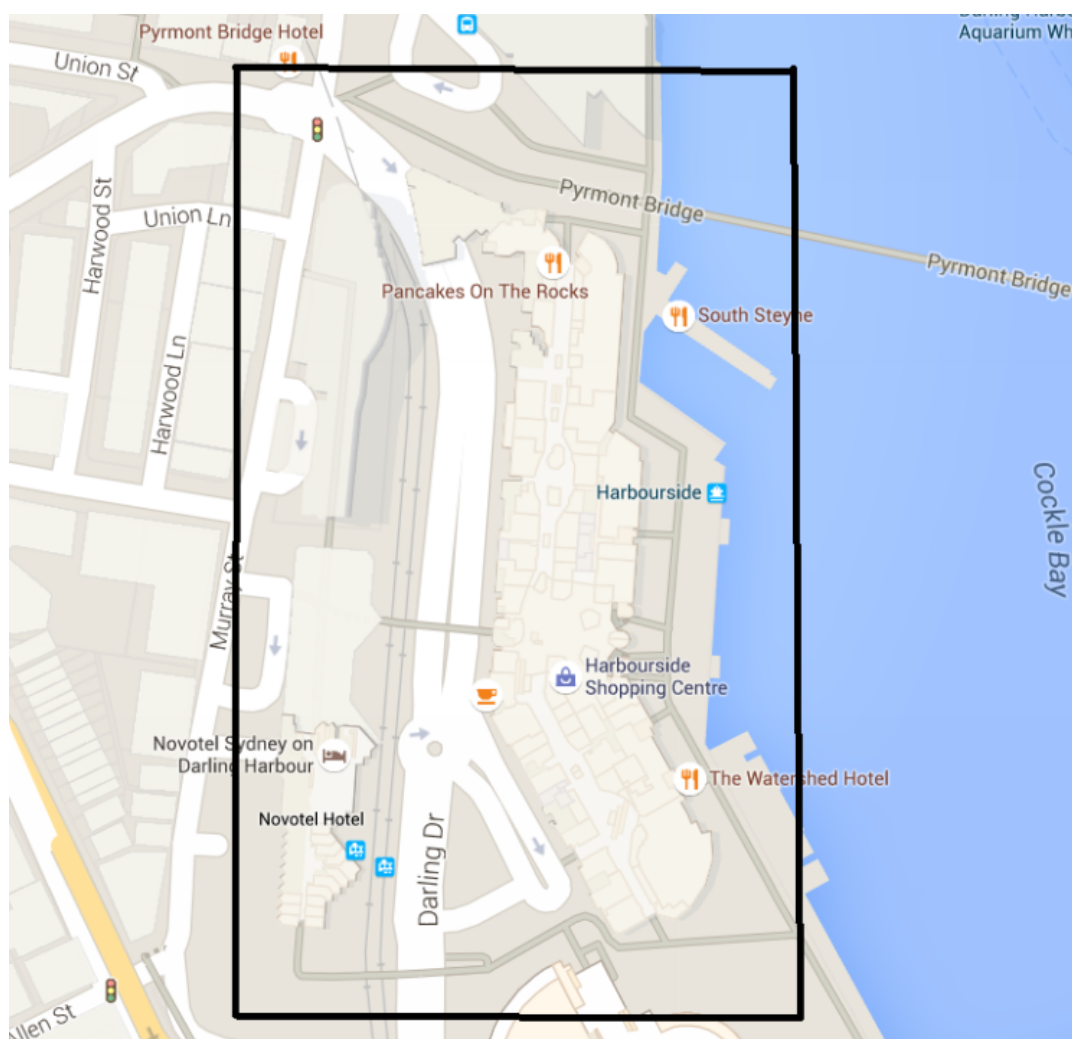


Figure 5: Dial Before You Dig Enquiry Area (Source: Google Maps)

The following asset owners were identified as having an interest in the DBYD enquiry area, which are outlined in **Table 3**.

Authority Name	Directly Impacted – (Yes / No)
AARNet Pty Ltd	No
Ausgrid	Yes

Authority Name	Directly Impacted – (Yes / No)
City of Sydney	Yes
Jemena Gas South	Yes
NBN Co.	No
Nextgen	Yes
Optus and/or Uecomm	No
PIPE Networks	Yes
RailCorp	No
Roads and Maritime Services (RMS)	No
Sydney Water	Yes
Telstra NSW	Yes
TPG	Yes
Verizon Business	Yes
Vocus Fibre Pty Ltd	No

Table 3: 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 49,000 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 B** 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 6** for a plan of the existing sewer network in the vicinity of the Harbourside development.



Figure 6: 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 on the 8th February 2016, where SWC in principle confirmed that the development can be serviced from their existing infrastructure. An updated SWC e-Developer servicing feasibility application was submitted to SWC on the 19th September 2016, to reflect the increased load and changes from Retail/Commercial to Retail/Residential development. The SWC preliminary wastewater investigation was based on supply from the DN 300mm / 375mm sewer constructed under WN 300418/1 located in Darling Drive.

This updated feasibility study enquiry assumed a total peak sewer demand flow of 80 litres/sec.

Updated sewer demand calculations have been undertaken for the revised mixed development proposal containing commercial, retail and residential components to the development. These updated sewer calculations resulted in an average daily sewer flow rate of 8.42 litres/sec, and a peak demand sewer flow rate of 47 litres/sec. The updated peak demand flow rate is a reduction to that previously assumed in the previous feasibility application, which Sydney Water confirmed they had capacity to cater for in their existing sewer network. The updated sewer calculations are based on sewer demands on the methods described in the Water and Sewer Code of Australia (Sydney Water Edition), and the preliminary updated mixed development floor areas.

An updated SWC e-Developer feasibility application was submitted to SWC in Jan 2020 to reflect the current updated mixed use residential, retail and commercial development. It is anticipated that this response will be received from SWC during the public exhibition period. This is contained in **Appendix C**.

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 to the updated mixed use development (residential and retail) was received on the 11th October 2016 and is contained in **Appendix D** of this report. This SWC response states that:

“Strategic investigations shows that the trunk wastewater system has adequate capacity to service this development area.

Determination of sewer facilities has been based on supply from the DN300 wastewater main constructed under WN 300418/1 (located in Darling Drive).

Your Water Servicing Coordinator can assess the reticulation wastewater mains and advise you of any amplification requirements based on your anticipated discharge.”

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 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.

Trade waste will be required for portions of the proposed development. Should the trade waste, pre-treatment for the development exceed 30kl, Sydney Water may require a centralised treatment plant.

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 B** 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 was submitted on the 19th September 2016 to SWC to reflect the increased load and changes from Retail/Commercial to Retail/Residential development. The SWC preliminary potable water investigation was based on supply from the DN 250mm drinking watermain located in Darling Drive.

This previously updated feasibility study enquiry assumed a total peak water flow rate of 140 litres/sec and an estimated fire services domestic usage of 50 litres/sec for retail (combined hydrant and sprinklers), and 25 litres/sec for residential (combined hydrant and sprinklers).

Updated potable water flow rate calculations have been undertaken for the current revised mixed development proposal containing commercial, retail and residential components to the development. These updated potable water calculations resulted in an average daily water

demand of 351 KL, peak daily water demand of 584 KL and a peak water flow rate of 53.7 litres/sec. Updated fire services calculations resulted in a fire sprinkler flow rate of 18 litres/sec and a fire hydrant flow rate of 20 litres/sec. The updated potable water calculations are based on water demands on the methods described in the Water and Sewer Code of Australia (Sydney Water Edition), and the preliminary updated mixed development floor areas. A new feasibility application has been

An updated SWC e-Developer feasibility application was submitted to SWC in Jan 2020 to reflect the current updated mixed use residential, retail and commercial development. It is anticipated that this response will be received from SWC during the public exhibition period. This is contained in **Appendix C**.

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 potable water connections. The SWC feasibility response to the updated mixed use development (residential and retail) was received on the 11th October 2016 and is contained in **Appendix D** of this report. This SWC response states that:

“Strategic investigations shows that the trunk water system has adequate capacity to service the development area.

Determination of water facilities has been based on supply from the existing DN250 drinking water min in Darling Drive.

Your Water Servicing Coordinator can assess the reticulation water mains and advise you of any amplification requirements based on your water connection points. You should also refer to the advice on “Large Water Service Connections”, “Private Water Services, Connection and Metering”, “Fire Services”, “Disused Water Service Sealing” located at the end of this letter and on “Multi Level Individual Metering” located in Section 7 below.”

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.

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.

A Pressure and Flow enquiry was made to Sydney Water on the 21st of January 2020, to determine currently available pressure and flow of drinking water. The Pressure and Flow enquiry response from Sydney Water was received on the 04th of February 2020 and it is contained in **Appendix D**. The pressure and flow data provided indicates that there is sufficient pressure flow available for the proposed development.

It is assumed that a single connection can be made to Sydney Water's potable water main, and the incoming supply will reticulate to a shared water meter room. As required by Sydney Water, a master meter will be provided for each stratum. All valves and equipment (such as pumps, backflow prevention devices and filters) will be downstream of the master meters and a separate reticulation will be provided for each stratum.

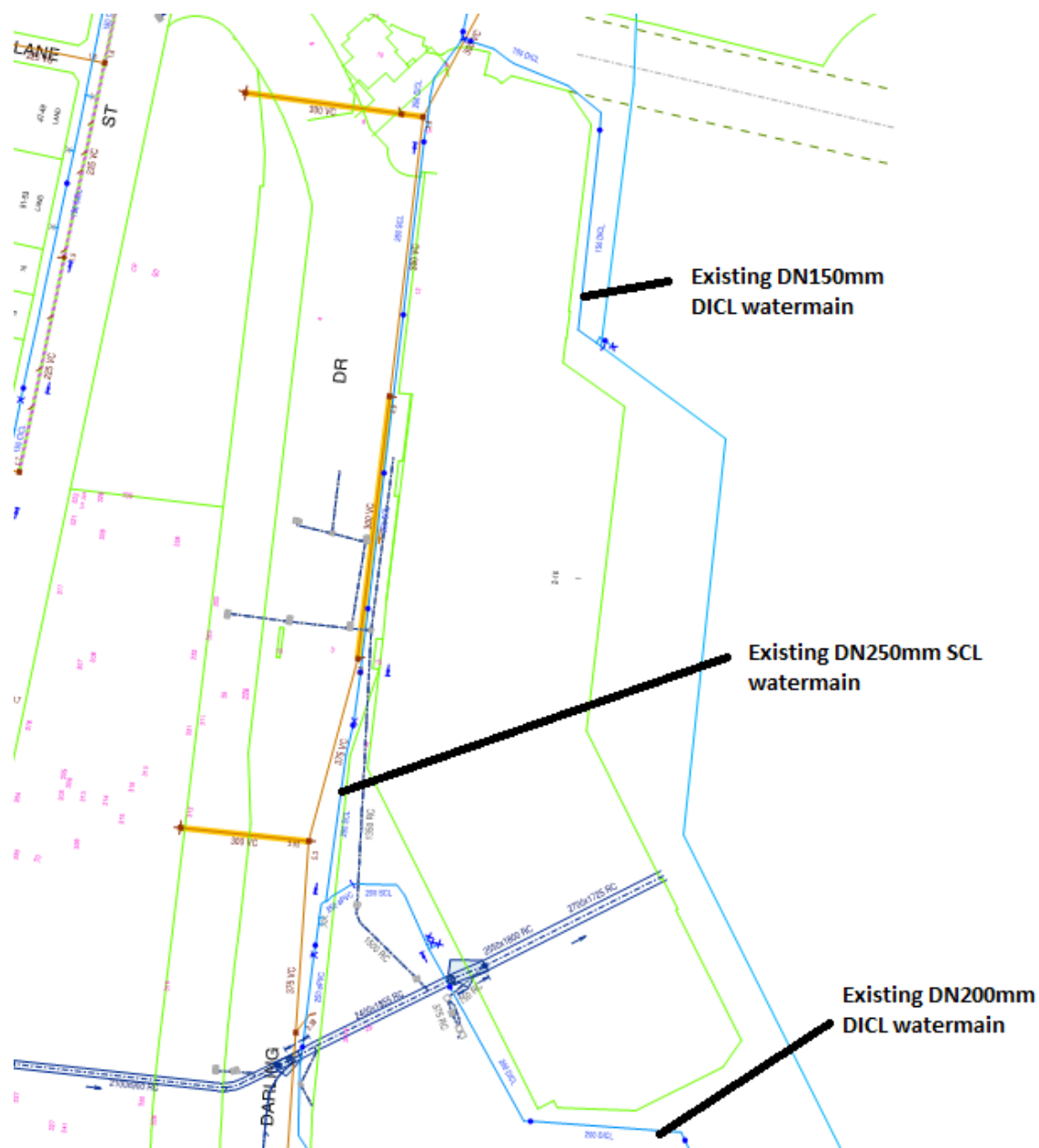


Figure 7: Existing SWC Potable Water Network

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 8** for a location plan of this existing box culvert.

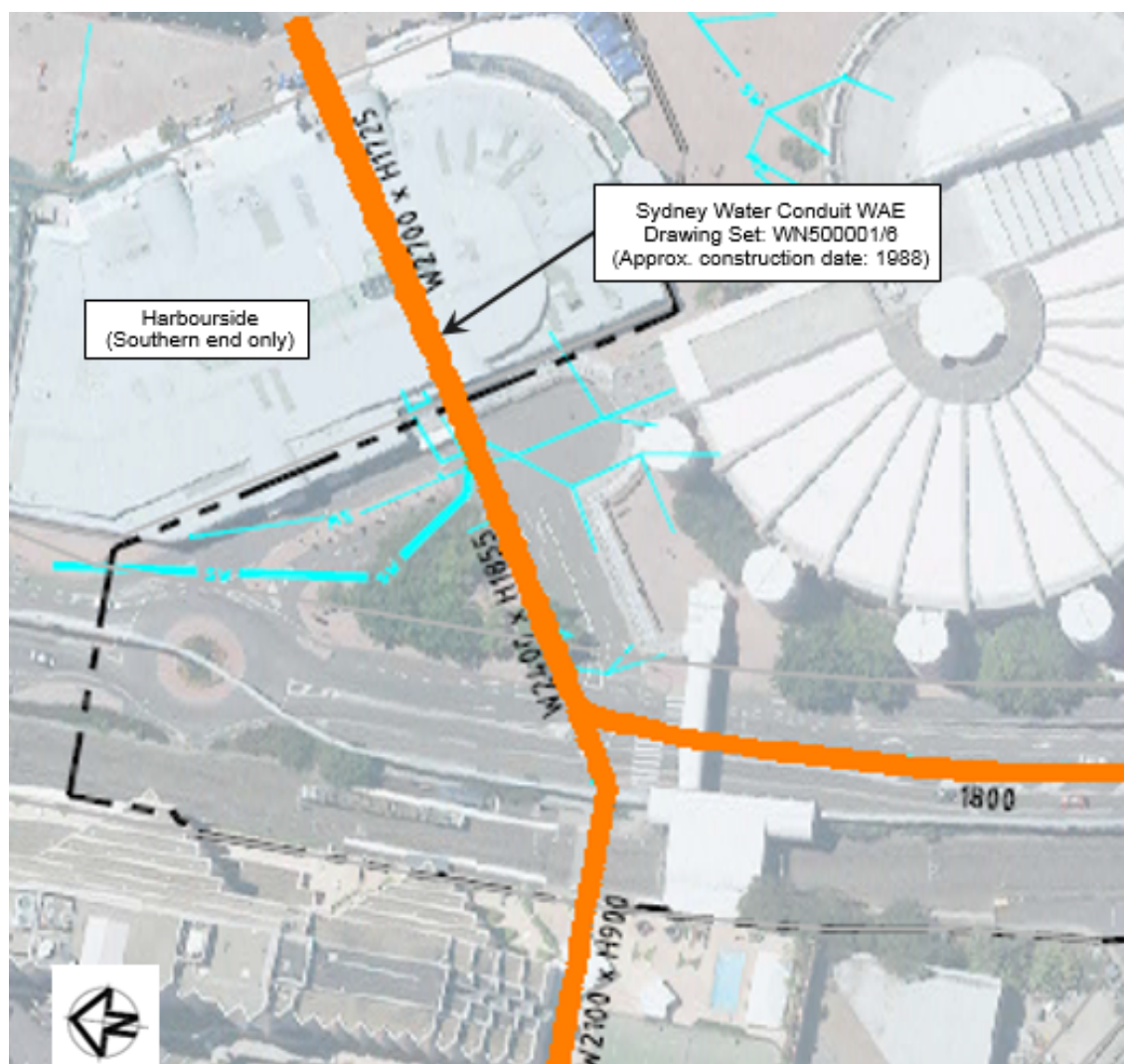


Figure 8: Existing SWC Stormwater Box Culvert

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 Harbourside 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 F** 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 updated feasibility application response received from SWC on the 11th of October 2016 (refer to **Appendix D**) 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 9** for a location plan of existing Ausgrid assets, and to **Appendix G** for a copy of the DBYD search results from Ausgrid.

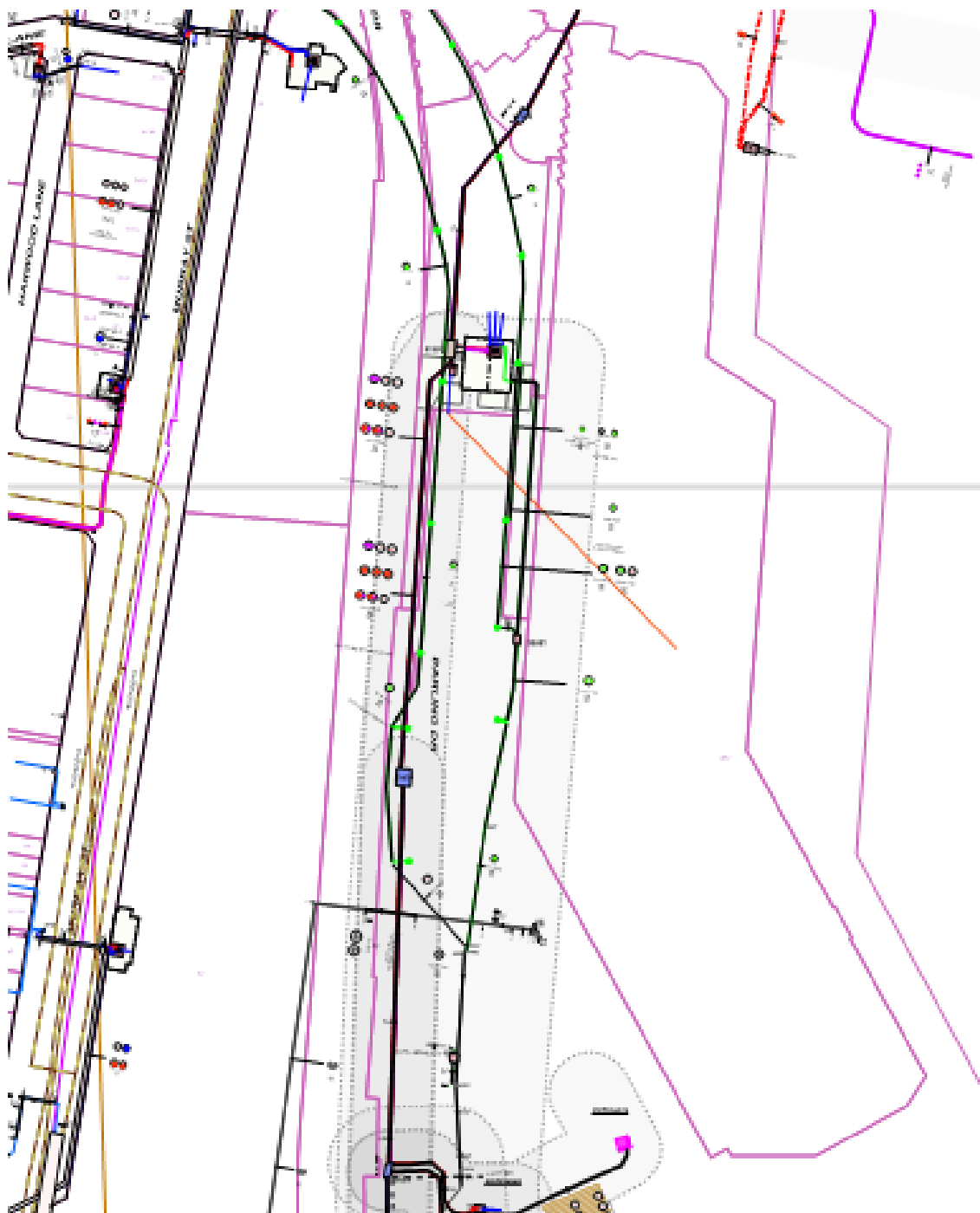


Figure 9: Existing Ausgrid Electrical Infrastructure

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 H** 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 on the 4th of 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, which was dated 12th September 2016 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 H** for a copy of the September 2016 consultation records with Ausgrid.

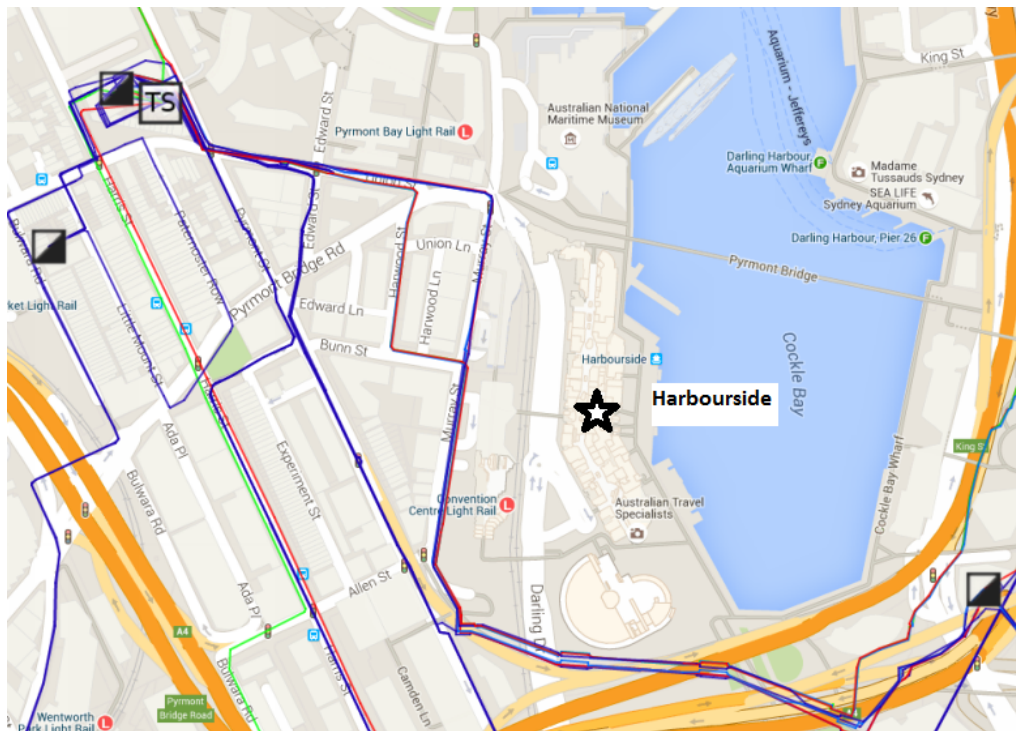


Figure 10: Nearby Transformer Substations, Zone Substations & Transmission Feeders

Electrical demand calculations have been undertaken for the updated mixed use development comprising residential, retail and commercial, based on VA/sq.m allowance and high level area schedule data. The updated proposed development is anticipated to have a maximum demand of 8.7 MVA, which will potentially 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 10** for the location of nearby zone substations based on the Ausgrid GIS mapping information.

A new preliminary enquiry was submitted to Ausgrid on the 24th of January 2020, which is based on the updated proposed development mix. The updated Ausgrid response will be considered in ongoing consultations with Ausgrid and the future design development stages.

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 I** for a copy of the DBYD search results from Jemena.

Figure 11 below outlines the Jemena gas design located in the area of the development site.

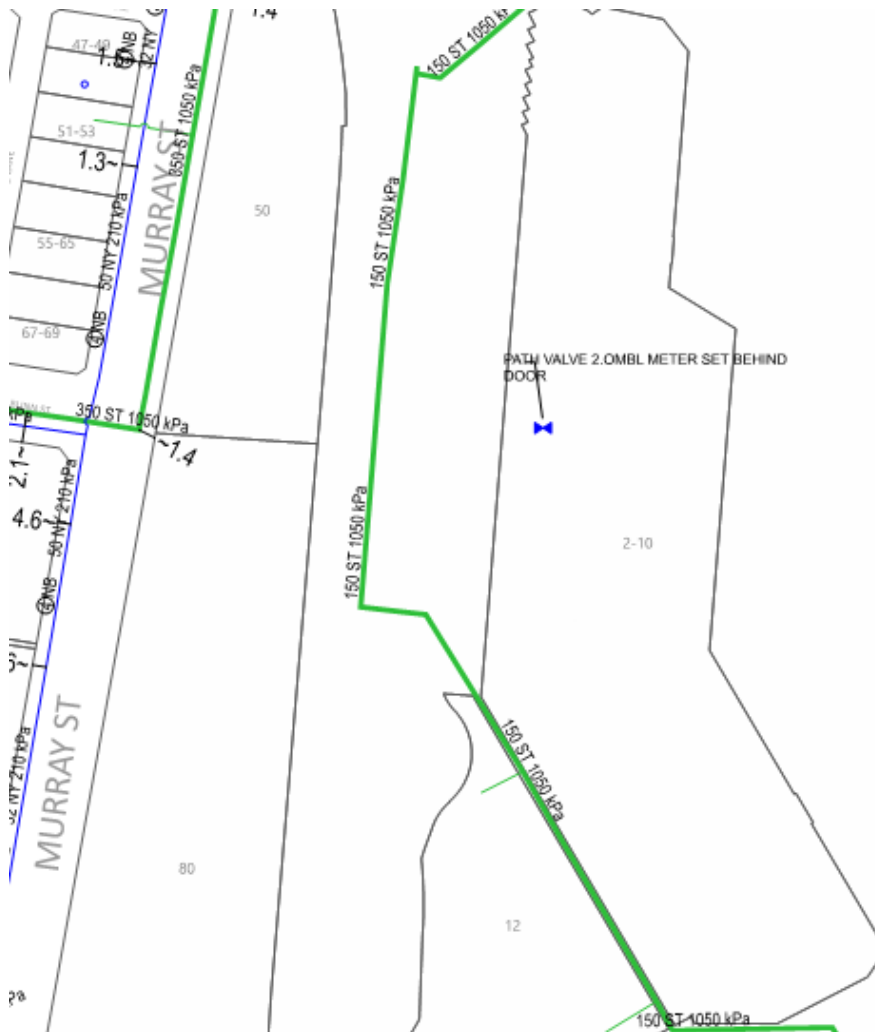


Figure 11: Existing Jemena Gas Infrastructure

7.2 Gas supply to the proposed development

Arcadis Consulting undertook consultation with Jemena on the 05th of February 2016. Jemena provided a response to this enquiry on the 29th of February 2016 and confirmed that natural gas is available in the development area. Jemena also confirmed that the existing DN150 1050KPa main to the west of the site may be able to supply gas to the Harbourside development, subject to the commercial viability of the development. Please refer to **Appendix J** for a copy of this consultation.

It is proposed that a single connection would be made to Jemena's secondary main with a single incoming supply and boundary regulator. Downstream of the boundary regulator the low pressure system (5kPA) would be split into a separation system for each Stratum.

Since the original consultation with Jemena took place the development changed from a commercial/retail to a retail/residential/commercial development. As the development has changed a new consultation was submitted to Jemena on the 24th of January 2020 – refer **Appendix J**. This enquiry relates to the current mixed use residential, commercial and retail development. The current assumed maximum gas demand is calculated at 25,500 MJ/hr. A breakdown of the different development type gas loads is outlined in **Table 4**.

Jemena provided a response to the updated development and enquiry on the 3rd of February and confirmed that the existing steel high pressure main in Darling Drive currently has sufficient capacity to supply the expected load of 25,000MJH. Please refer to **Appendix J** for a copy of this correspondence.

Residential Gas Load (MJ/hr)	Commercial Gas Load (MJ/hr)	Retail Gas Load (MJ/hr)	Total (MJ/hr)
5,500	4,000	16,000	25,500

Table 4 Estimated gas loads for the Harbourside development

Assumptions and clarifications:

Commercial:

- The commercial natural gas demands are based on a 5 Star NABERS rating and an energy mix of 20% natural gas.
- The peak hour gas loads are based on 50% of the average daily demand.

Retail

- The retail is based on an average shopping centre energy intensity of 1,600MJ/m².a. and an energy mix of 5% natural gas (Baseline Energy Consumption and Greenhouse Gas Emissions In Commercial Buildings in Australia, Council of Australian Governments (COAG) National Strategy on Energy Efficiency– 2012)
- The peak load is based on 200% of average daily demand.

Residential

- Residential peak loads are based on 40MJ/hr per apartment (375 off) and a diversity of factor 0.195 with an allowance of 2500MJ/hr. for centralised hot water plant.

The above loads are based on the following area schedule and retail mix:

Area Schedule

Total GBA (m ²)	Residential GFA (m ²)	Number of Apartments	Retail GFA (m ²)	Retail GLAR (m ²)	Commercial GFA (m ²)	Commercial NLA (m ²)
121,202	37,814	357	37,814	15,850	27,268	23,100

Retail Mix

Food & Beverage	Specialty NLA (m ²)
70%	30%

8 TELECOMMUNICATIONS INFRASTRUCTURE

8.1 Existing Telecommunications infrastructure

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

The DBYD search indicated that there are existing NBN Co telecommunications assets located directly within the Harbourside Shopping Centre development boundary. Please refer to **Appendix K** for a copy of the DBYD search results from Telstra and NBN Co, and to **Figures 12 and 13** for a location plan of existing Telstra and NBN Co. telecommunications infrastructure.

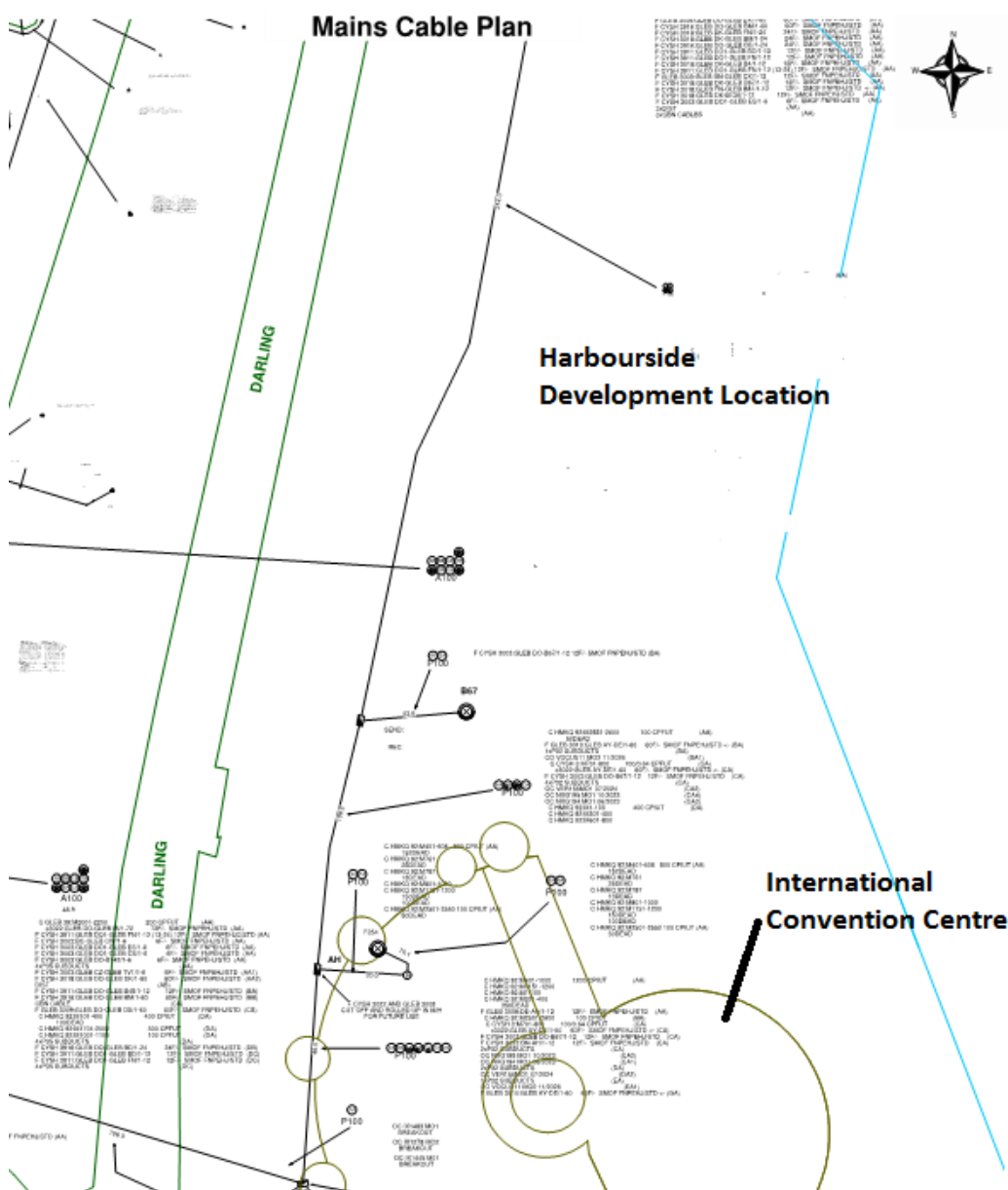


Figure 12: Existing Telstra Infrastructure

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

Telstra have existing telecommunications cables located in Darling Drive. Telstra have capacity to support the site but due to recent changes in the Telecommunications Act, NBN Co have first right of refusal.

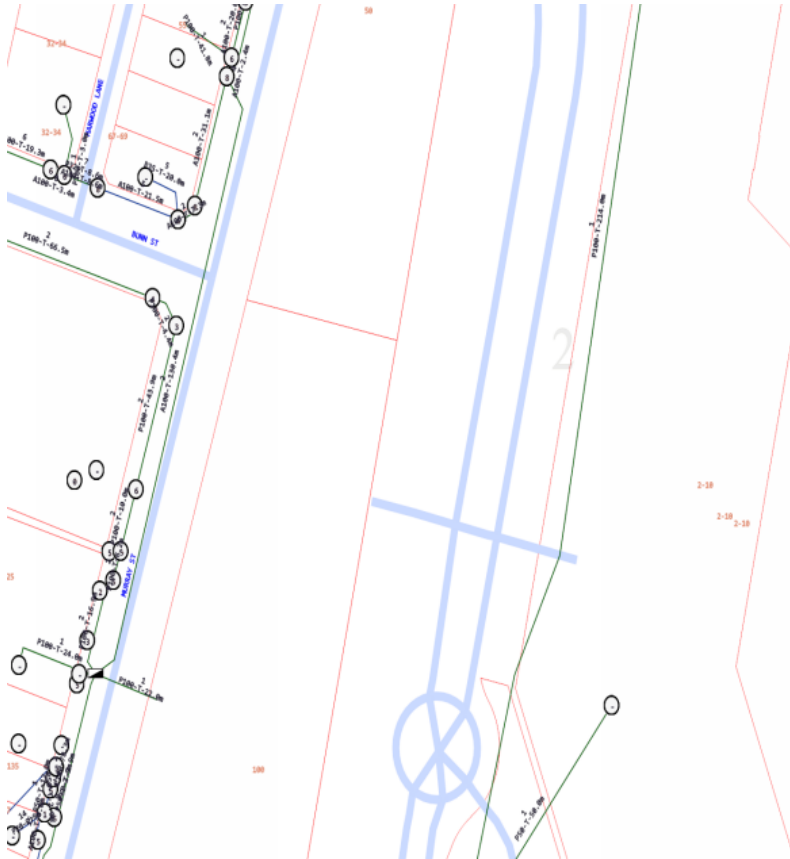


Figure 13: Existing NBN Co. Infrastructure

8.2 Telecommunication supply to the proposed development

A feasibility and development application was submitted to NBN Co in 2016, with regard to future telecommunication service to the proposed retail and residential development. As the proposed development has now changed to a mixed use residential, retail and commercial development a new application enquiry was made to NBN on the 21st of January 2020. Please refer to **Appendix L** for a copy of the updated feasibility and new development registration.

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).

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 M** 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 N** 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 O** 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 14** 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 comprises 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.

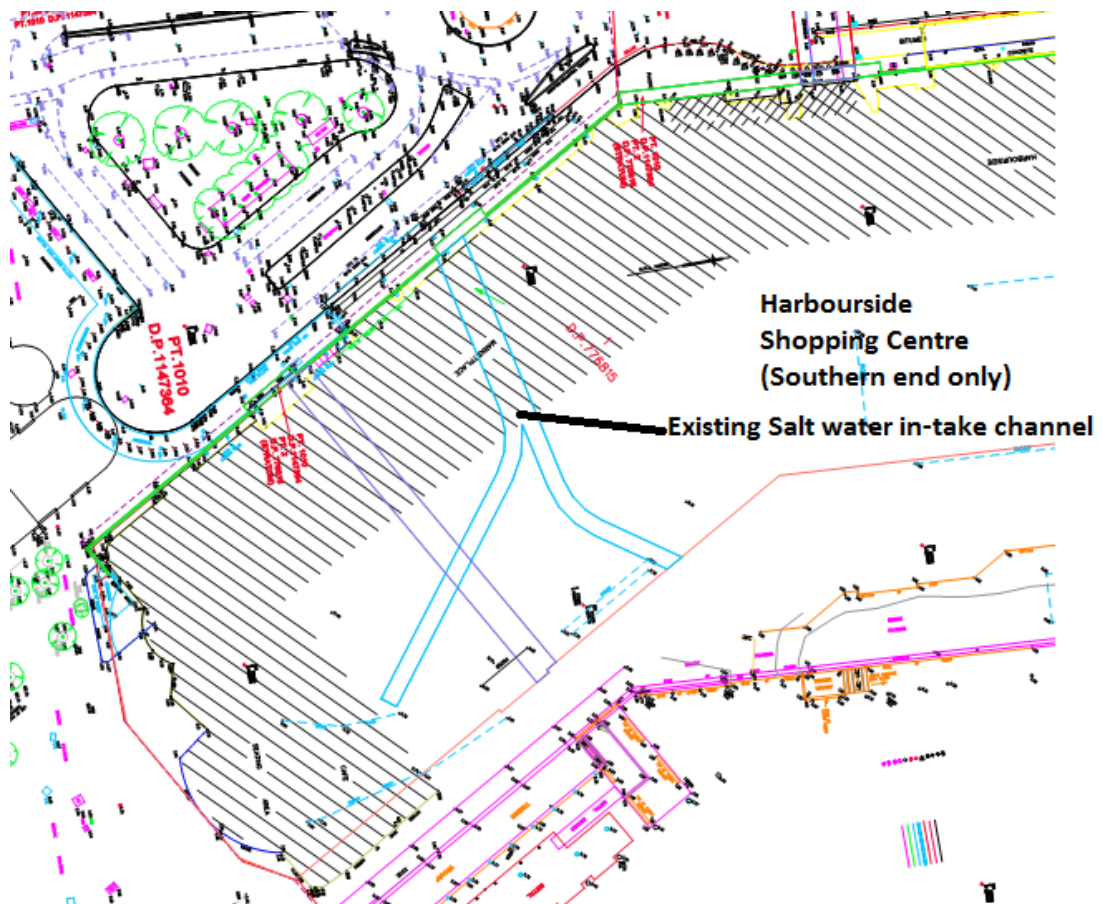


Figure 14: Existing Salt Water In-take Channel location Plan

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

Agency Response to Submissions

20 March 2017

Our Ref 160798

Brendon Roberts
Team Leader
Key Sites Assessment
Department of Planning & Environment
GPO Box 39, Sydney NSW 2001

RE: Redevelopment of Harbourside Shopping Centre SSD 7874

Dear Brandon,

Thank you for notifying Sydney Water of the development application listed above. We have reviewed the application and provide the following comments for your consideration.

Water and Wastewater

- Strategic investigation shows that the trunk services are available and are capable of servicing the proposed development.
- Amplification and/or disuse of some reticulation water and wastewater assets may be required once the final development proposal is known. These details should be provided at Section 73 lodgement.
- To assist in determination of Sydney Waters requirements as part of the Section 73 application phase, a Service Brief covering concept options should be prepared and submitted as part of the application.
- These concept options will need to include development layout plans, staging, timing, and proposed asset amplifications / adjustments details. The options should take into consideration the needs of the total catchment.
- Depending on the complexity of options due to local conditions, a Water Service Coordinator may advise that it is necessary to engage a range of service providers to complete the concept options documentation.
- This advice is not a formal approval of our servicing requirements. Formal requirements for servicing the development will be determined as part of the Section 73 application.

Stormwater

Building Over and Adjacent to Stormwater Channel

- The proposed development as understood will use the existing footprint. The existing structure is presently over an existing Sydney Water 2700 x 1725 RC Stormwater Channel and proposed redevelopment is also proposed to be constructed over this stormwater channel.


- The proponent is required to liaise with Sydney Water regarding the measures need to be taken prior to commencement of any works and the required protection measures which are to be implemented as part of this development.

Sydney Water E-Planning

Sydney Water has an email address for planning authorities to submit statutory or strategic planning documents for review. This email address is urbangrowth@sydneywater.com.au.

Further advice and requirements for this proposal are at attachment 1 (overleaf). If you require any further information, please contact Manwella Hawell of Growth Planning and Development on 02 8849 4354 or e-mail manwella.hawell@sydneywater.com.au.

Yours sincerely,



Paul Mulley
Manager, Growth Planning and Development

Attachment 1

Sydney Water Servicing

A Section 73 Compliance Certificate under the Sydney Water Act 1994 must be obtained from Sydney Water.

The proponent is advised to make an early application for the certificate, as there may be water and wastewater pipes to be built that can take some time. This can also impact on other services and buildings, driveways or landscape designs.

Applications must be made through an authorised Water Servicing Coordinator. For help either visit www.sydneywater.com.au > Plumbing, building and developing > Developing > Land development or telephone 13 20 92.

Building Plan Approval

The developer must have building plans stamped and approved before any construction is commenced. Approval is needed because construction/building works may affect Sydney Water's assets (e.g. Water, sewer and stormwater mains).

For further assistance please telephone 13 20 92 or refer to the Building over or next to assets page on the Sydney Water website (see Plumbing, building and developing then Building over or next to assets).

Attachment 2

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

13 February 2017



Michele Nettlefold
Department of Planning and Environment
22-33 Bridge Street
Sydney NSW 2000

570 George Street
Sydney NSW 2000
All mail to GPO Box 4009
Sydney NSW 2001
T +61 2 131 365
www.ausgrid.com.au

Dear Ms Nettlefold,

Redevelopment of the Harbourside Shopping Centre, Darling Harbour (SSD7874)

I am writing to you in relation to your notice of exhibition for the above project. Ausgrid would like to thank you for seeking input and feedback regarding the Environmental Impact Statement (EIS). As requested Ausgrid has undertaken a review of the EIS and associated information in relation to potential impacts or interfaces with Ausgrid's electricity infrastructure.

Ausgrid has identified the following assets to be affected by the development works:

- Existing substation adjacent to the site and close proximity to overhead and/or underground cable/s on public land
- Overhead and/or underground cable/s in close proximity on public land

Ausgrid requires that due consideration be given to the compatibility of the proposed development with existing Ausgrid infrastructure, particularly in relation to risks of electrocution, fire risks, electric and magnetic fields (EMF), noise, visual amenity and other matters that may impact on Ausgrid or the development.

In general, conditions to be adhered to by the developer include, but are not limited to, the following:

- The substation ventilation openings, including substation duct openings and louvered panels, must be separated from building air intake and exhaust openings, natural ventilation openings and boundaries of adjacent allotments, by separation distances which meet the requirements of all relevant authorities, building regulations, BCA and Australian Standards including AS 1668.2: The use of ventilation and air-conditioning in buildings - Mechanical ventilation in buildings.
- In addition to the above, Ausgrid requires the substation ventilation openings, including duct openings and louvered panels, to be separated from building ventilation system air intake and exhaust openings, including those on buildings on adjacent allotments, by not less than 6 metres.
- Exterior parts of buildings within 3 metres in any direction from substation ventilation openings, including duct openings and louvered panels, must have a fire rating level

(FRL) of not less than 180/180/180 where the substation contains oil-filled equipment. For further details on fire segregation requirements refer to Ausgrid's Network Standard NS113: Site Selection and Construction Design Requirements for Chamber Substations.

- Any work undertaken near Overhead Power lines needs to be done in accordance with
 - WorkCover Document ISSC 23 "Working Near Overhead Power Lines"
 - Ausgrid Network Standards
 - Ausgrid Electrical Safety Rules
- The locating of underground cables must be determined using Dial Before You Dig and the developer must comply with the requirements of Ausgrid's Network Standard NS156: Working Near or Around Underground Cables before any excavation works are undertaken.
- Existing Ausgrid easements, leases and/or right of ways must be maintained at all times to ensure 24 hour access. No temporary or permanent alterations to this property tenure can occur without written approval from Ausgrid. For further details refer to Ausgrid's Network Standard NS143: Easements, Leases and Rights of Way.

Please contact myself on 9269 4252 or hal.hissey@ausgrid.com.au if you have any further questions.

Regards,

A handwritten signature in black ink, appearing to read 'Hal Hissey', with a long horizontal line extending to the right.

Hal Hissey
Senior Area Development Manager
AUSGRID






























































APPENDIX B

Sydney Water Dial Before You Dig Plans

Guide to reading Sydney Water DBYD Plans



Legend

Sewer		Property Details	
Sewer Main (with flow arrow & size type text)		Boundary Line	
Disused Main		Easement Line	
Rising Main		House Number	
Maintenance Hole (with upstream depth to invert)		Lot Number	
Sub-surface chamber		Proposed Land	
Maintenance Hole with Overflow chamber		Sydney Water Heritage Site (please call 132 092 and ask for the Heritage Unit)	
Ventshaft EDUCT			
Ventshaft INDUCT			
Property Connection Point (with chainage to downstream MH)			
Concrete Encased Section			
Terminal Maintenance Shaft			
Maintenance Shaft			
Rodding Point			
Lamphole			
Vertical			
Pumping Station			
Sewer Rehabilitation			
Pressure Sewer		Water	
Pressure Sewer Main		WaterMain - Potable (with size type text)	
Pump Unit (Alarm, Electrical Cable, Pump Unit)		Disconnected Main - Potable	
Property Valve Boundary Assembly		Proposed Main - Potable	
Stop Valve		Water Main - Recycled	
Reducer / Taper		Special Supply Conditions - Potable	
Flushing Point		Special Supply Conditions - Recycled	
Vacuum Sewer		Restrained Joints - Potable	
Pressure Sewer Main		Restrained Joints - Recycled	
Division Valve		Hydrant	
Vacuum Chamber		Maintenance Hole	
Clean Out Point		Stop Valve	
Stormwater		Stop Valve with By-pass	
Stormwater Pipe		Stop Valve with Tapers	
Stormwater Channel		Closed Stop Valve	
Stormwater Gully		Air Valve	
Stormwater Maintenance Hole		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	

Pipe Types

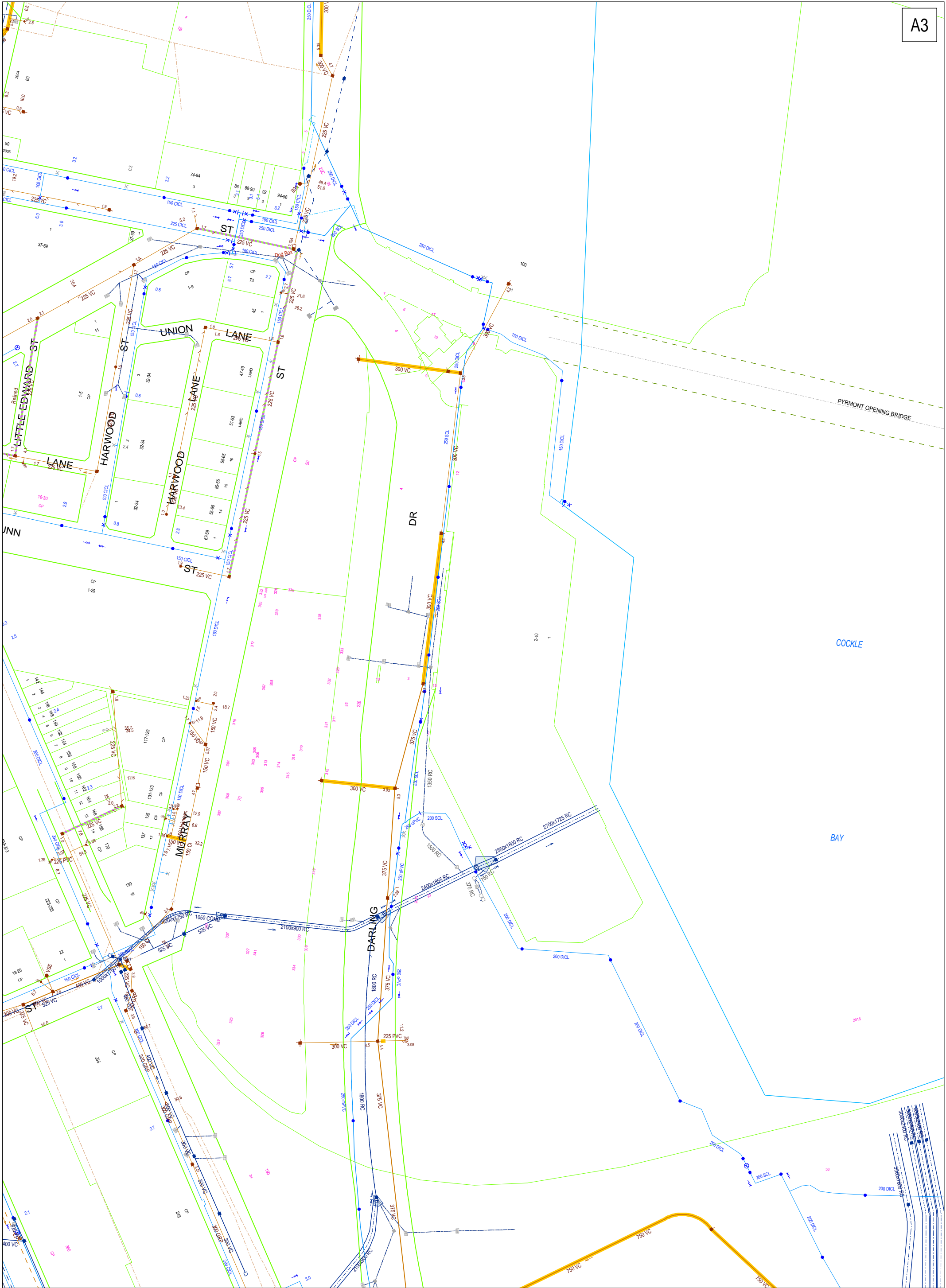
ABS	Acrylonitrile Butadiene Styrene	AC	Asbestos Cement
BRICK	Brick	CI	Cast Iron
CICL	Cast Iron Cement Lined	CONC	Concrete
COPPER	Copper	DI	Ductile Iron
DICL	Ductile Iron Cement (mortar) Lined	DIPL	Ductile Iron Polymeric Lined
EW	Earthenware	FIBG	Fibreglass
FL BAR	Forged Locking Bar	GI	Galvanised Iron
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)



IMPORTANT INFORMATION - DIAL BEFORE YOU DIG

Attention: You must read the information below

The material provided or made available to you by Sydney Water (including on the Sydney Water website) in relation to your Dial Before You Dig enquiry (**Information**) is provided on each of the following conditions, which you are taken to have accepted by using the Information:

- 1 The Information has been generated by an automated system based on the area highlighted in the "Locality Indication Only" window on your Caller Confirmation. It is your responsibility to ensure that the dig site is properly defined when submitting your Dial Before You Dig enquiry and, if the Information does not match the dig site, to resubmit your enquiry for the correct dig site.
- 2 Neither Sydney Water nor Dial Before You Dig make any representation or give any guarantee, warranty or undertaking (express or implied) as to the currency, accuracy, completeness, effectiveness or reliability of the Information. The Information, including Sydney Water plans and work-as-executed diagrams, amongst other things:
 - (a) may not show all existing structures, including Sydney Water's pipelines, particularly in relation to newer developments and in relation to structures owned by parties who do not participate in the Dial Before You Dig service;
 - (b) may be out of date and not show changes to surface levels, road alignments, fences, buildings and the like;
 - (c) is approximate only and is therefore not suitable for scaling purposes; and
 - (d) does not show locations of property services (often called house service lines) belonging to or servicing individual customers, which are usually connected to Sydney Water's structures.
- 3 You are responsible for, amongst other things:
 - (a) exposing underground structures, including Sydney Water's pipelines, by pot-holing using hand-held tools or vacuum techniques so as to determine the precise location and extent of structures before any mechanical means of excavation are used;
 - (b) the safe and proper excavation of and for underground works and structures, including having regard to the fact that asbestos cement pipelines, which can pose a risk to health, may form part of Sydney Water's water and sewerage reticulation systems;
 - (c) protecting underground structures, including Sydney Water's pipelines, from damage and interference;
 - (d) maintaining minimum clearances between Sydney Water's structures and structures belonging to others;
 - (e) ensuring that backfilling of excavation work in the vicinity of Sydney Water's structures complies with Sydney Water's standards contained on its website or otherwise communicated to you;
 - (f) notifying Sydney Water immediately of any damage caused or threat of damage to Sydney Water's structures;
 - (g) ensuring that plans are approved by Sydney Water (usually signified by stamping) prior to landscaping or building over or in the vicinity of any Sydney Water structure; and
 - (h) ensuring that the Information is used only for the purposes for which Sydney Water and Dial Before You Dig intended.

- 4 You acknowledge that you use the Information at your own risk. In consideration for the provision of the Dial Before You Dig service and the Information by Sydney Water and Dial Before You Dig, to the fullest extent permitted by law:
- (a) 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 and to the extent that those statutory guarantees cannot be excluded, the liability of Sydney Water and Dial Before You Dig to you is limited to either of the following as nominated by Sydney Water in its discretion, which you agree is your only remedy:
 - (i) the supplying of the Information again; or
 - (ii) payment of the cost of having the Information supplied again;
 - (b) in no event will Sydney Water or Dial Before You Dig be liable for, and you release Sydney Water and Dial Before You Dig 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:
 - (i) whether arising under statute or in contract, tort or any other legal doctrine, including any negligent act, omission or default (including wilful default) by Sydney Water or Dial Before You Dig; and
 - (ii) regardless of whether Sydney Water or Dial Before You Dig are or ought to have been aware of, or advised of, the possibility of such loss, costs or damages;
 - (c) you will indemnify Sydney Water and Dial Before You Dig against any Loss arising from or in connection with Sydney Water providing incorrect or incomplete information to you in connection with the Dial Before You Dig service; and
 - (d) you assume all risks associated with the use of the Dial Before You Dig and Sydney Water websites, including risk to your computer, software or data being damaged by any virus, and you release and discharge Sydney Water and Dial Before You Dig from all Loss which might arise in respect of your use of the websites.
- 5 **“Sydney Water”** means Sydney Water Corporation and its employees, agents, representatives and contractors. **“Dial Before You Dig”** means Dial Before You Dig Incorporated and its employees, agents, representatives and contractors. References to **“you”** include references to your employees, agents, representatives, contractors and anyone else using the Information. References to **“Loss”** include 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). To the extent of any inconsistency, the conditions in this document will prevail over any other information provided to you by Sydney Water and Dial Before You Dig.

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

Further information and guidance is available in the Building Development and Plumbing section of Sydney Water's website at www.sydneywater.com.au, where you will find the following documents under 'Dial Before You Dig':

- Avoid Damaging Water and Sewer Pipelines
- Water Main Symbols
- Depths of Mains
- Guidelines for Building Over/Adjacent to Sydney Water Assets
- Clearances Between Underground Services

Or call **13 20 92** for Customer Enquires.

Note: The lodging of enquiries via **www.1100.com.au** will enable you to receive colour plans in PDF format 24 hours a day, 7 days a week via email.

This communication is confidential. If you are not the intended recipient, please destroy all copies immediately. Sydney Water Corporation prohibits unauthorised copying or distribution of this communication.

APPENDIX C

Updated Sydney Water Feasibility Application

APPLICATION ENTRY

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

CASE INFORMATION

Application Number	182788
Application Type	
<i>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.</i>	
Associated Cases	
Agent Contact	Mai Lam
Agent Contact Phone	0289079182
Agent Reference	

DEVELOPER SAME AS THE APPLICANT?

Is the developer the same as the applicant?

Yes ☒ No

APPLICANT INFORMATION

Search Type			
Name	ARCADIS AUSTRALIA PACIFIC PTY LTD	ABN	76104485289
Address	Level 16 580 George Street, SYDNEY 2000	Phone	

DEVELOPER INFORMATION

Search Type			
Name	MIRVAC	ABN	
Address	Level 26, 60 Margaret Street, SYDNEY 2000	Phone	9080 8055

HYDRA DATA AUTO POPULATION

Hydra Download Number	2001310819	Auto-Populate
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LEAD ADDRESS

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

Suburb	<input type="text"/>	Comment	<input type="text"/>
Cross Street	<input type="text"/>		
LGA	<input type="text"/>	Comment	<input type="text"/>
UBD Edition	<input type="text"/>		
UBD Map	<input type="text"/>	UBD Reference	<input type="text"/>
Plan Number (s)	<input type="text"/> ?	Lot Number (s)	<input type="text"/>

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)	<input type="text"/>	Comment	<input type="text"/>
Total Number of Lot/Portion Nos flagged for Development	<input type="text"/>	Comment	<input type="text"/>

PROPERTY USE	
Lot Status	<input type="text"/>

Current Property Type	Delete	Comment
COMMERCIAL	<input type="text"/>	<input type="text"/>
<input type="text"/>	Add Current Property Type	
Describe Current and Proposed Development:		
<input type="text"/>		

PROPOSED DEVELOPMENT	
Development Type	<input type="text"/>
Development sub type	<input type="text"/>
Is it 'Serviced apartments'?	● Yes No
Strata/Stratum Subdivision	● Yes No
Development contains multi-level building	● Yes No
Number of multi-level buildings	<input type="text"/>
No. of levels in tallest building	<input type="text"/>

No. of levels in tallest building	<input type="text"/>
Stage Number	<input type="text"/> of <input type="text"/>
Stage Name	<input type="text"/>
Subdivision required?	Yes <input type="radio"/> No <input checked="" type="radio"/>
Total Dwellings	<input type="text"/>
Attach Subdivision Plan	<input type="text"/>
Attach Development Plan	<input type="text"/>
Attach Additional Application Information Form	<input type="text"/>

CONSENT INFORMATION

Consent Authority	<input type="text"/>
Development Consent Number	<input type="text"/>
Consent Date	<input type="text"/> 
Attach Consent Document	<input type="text"/>
Attach Stormwater Analysis	<input type="text"/>
Total Impervious Surface Area	<input type="text"/>

RESIDENTIAL/COMMERCIAL/INDUSTRIAL MIXED DEVELOPMENT

Number of Residential Units	<input type="text"/>
Residential Footprint	<input type="text"/> sqm
Commercial Footprint	<input type="text"/> sqm

EXPECTED REQUIREMENTS FOR THE PROPOSED DEVELOPMENT

Water	
Maximum demand	<input type="text"/> 584 KL/Day
Average demand	<input type="text"/> 351 KL/Day
Peak demand	<input type="text"/> 53.7 L/Sec
Recycled Water	
Maximum demand	<input type="text"/> KL/Day
Average demand	<input type="text"/> KL/Day
Peak demand	<input type="text"/> L/Sec
Waste Water	
Maximum discharge	<input type="text"/> 467 KL/Day
Average discharge	<input type="text"/> 281 KL/Day

Peak simultaneous discharge	<input type="text" value="47"/>	L/Sec
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Irrigation Systems

Maximum demand	<input type="text"/>	L/Day
----------------	----------------------	-------

Average demand	<input type="text"/>	L/Day
----------------	----------------------	-------

Peak demand	<input type="text"/>	L/Sec
-------------	----------------------	-------

Automatic Timer	<input type="checkbox"/>
-----------------	--------------------------

Proposed Pattern of Usage:

Process Water

Maximum demand	<input type="text"/>	L/Day
----------------	----------------------	-------

Average demand	<input type="text"/>	L/Day
----------------	----------------------	-------

Peak demand	<input type="text"/>	L/Sec
-------------	----------------------	-------

Proposed Pattern of Usage:

Other Requirements

Air-conditioning make-up water	<input type="text"/>	L/Sec
--------------------------------	----------------------	-------

Proposed meter size	<input type="text"/>	mm
---------------------	----------------------	----

Any other relevant information affecting usage:

Fire Fighting Requirements

Fire Hose Reel	<input type="text"/>	Number
----------------	----------------------	--------

Fire Hydrant	<input type="text"/>	L/Sec
--------------	----------------------	-------

Fire Sprinkler	<input type="text"/>	L/Sec
----------------	----------------------	-------

Wall Drencher	<input type="text"/>	L/Sec
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APPENDIX D

Previous Sydney Water Correspondence

Case Number: **157413**

11 October 2016

MIRVAC PROJECTS PTY LTD
c/- Cardno (NSW/ACT) Pty Ltd

FEASIBILITY LETTER

Developer: MIRVAC PROJECTS PTY LTD
Development: Lot 1 DP 776815 (No's. 2-10) Darling Drive, Sydney
Development Description: Redevelopment of existing harbourside shopping precinct into a 40 storey retail/residential development
Your application date: 19 September 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.

You have made an application for specific information. Sydney Water's possible requirements are set out on the following pages:

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 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

4.1 Water

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

Sydney Water has assessed the details accompanying your application and found that:

- Strategic investigation shows that the trunk water system has adequate capacity to service this development area.
- Determination of water facilities has been based on supply from the existing DN250 drinking water main in Darling Drive.
- Your Water Servicing Coordinator can assess the reticulation water mains and advise you of any amplification requirements based on your water connection points. You should also refer to the advice on “Large Water Service Connections”, “Private Water Services, Connection and Metering”, “Fire Services”, “Disused Water Service Sealing” located at the end of this Letter and on “Multi Level Individual Metering” located in Section 7 below.
- This advice is not a formal approval of our servicing requirements. Formal requirements for servicing the development will be determined as part of the Section 73 application phase. More information about the Section 73 application process is available on Sydney Water’s web page in the *Land Development Manual*.

4.2 Sewer

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

Sydney Water has assessed the details accompanying your application and found that:

- Strategic investigation shows that the trunk wastewater system has adequate capacity to service this development area.
- Determination of sewer facilities has been based on supply from the DN300 waste water main constructed under WN 300418/1 (located in Darling Drive).
- Your Water Servicing Coordinator can assess the reticulation wastewater mains and advise you of any amplification requirements based on your anticipated discharge.
- This advice is not a formal approval of our servicing requirements. Formal requirements for servicing the development 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*.

4.3 Stormwater

It is assumed that the proposed development will utilise the existing footprint. The existing structure is presently over an existing Sydney Water 2700 x 1725 RC Stormwater Channel and the proposed redevelopment is also proposed to be constructed over this stormwater channel.

Sydney Water has determined the following conditions;

1. Protection of Asset (ie; 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 guideline 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 must 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 this 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. **[##]** SW
[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 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**

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

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

Sydney Water seeks acknowledgement to the above to ensure the proposed building meets our requirements.

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*.**

7. Additional Requirement

Multi-level individual metering requirements

Your development must either allow for or provide individual metering. This means that you must:

1. comply at all times and in all respects with the requirements of Sydney Water's "*Multi-level Individual Metering Guide*" (version 6 dated 1 July 2015);
2. provide and install plumbing and space for individual metering in accordance with Sydney Water's "*Multi-level Individual Metering Guide*";
3. if and when you implement a strata/ stratum plan (or strata/ stratum subdivide) you must:
 - a. engage an Accredited Metering Supplier ("**AMS**") to provide individual metering in accordance with the "*Multi-level Individual Metering Guide*" and meet the cost of the meters and metering system;
 - b. transfer the meters and metering system to Sydney Water once the Testing Certificate has been issued by Sydney Water to the AMS and the AMS has

confirmed that payment for the meters and metering system has been paid in full.

Before the Section 73 Certificate can be issued, you will be required to sign an undertaking to show that you understand and accept these metering requirements and associated costs.

Visit www.sydneywater.com.au > Plumbing, Building & Developing > Plumbing > Meters & metered standpipes to see the *Multi-level individual metering guide* and find out more.

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.

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 inTM 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 DN250 water main in Darling Drive may be available to provide your development with a domestic supply. The size of your development means that you will need a connection larger than the standard domestic 20 mm size.

To get approval for your connection, you will need to lodge an application with Sydney Water Tap in™. You, or your Hydraulic Consultant, may need to supply the following:

- A plan of the hydraulic layout;
- A list of all the fixtures/fittings within the property;
- A copy of the fireflow pressure inquiry issued by Sydney Water;
- A pump application form (if a pump is required);
- 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 firefighting purposes for your development. We cannot guarantee that this water supply will meet your Council's firefighting 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 Sydney Water Tap in™. We will then tell you about any requirements you need to meet. Visit www.sydneywater.com.au > Plumbing, building & developing > Building > Sydney Water Tap in™ 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:

- plumbing and drainage inspection costs;
- the installation of backflow prevention devices;
- trade waste requirements;
- large water connections and
- Council firefighting requirements. (It will help you to know what the firefighting 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

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	<input type="text"/>
<i>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.</i>	
Associated Cases	<input type="text" value="152030"/>
Agent Contact	Gabriel Sciannimanica
Agent Contact Phone	4228 4133
Agent Reference	<input type="text"/>

DEVELOPER SAME AS THE APPLICANT?

Is the developer the same as the applicant?

Yes ☐ No ☒

APPLICANT INFORMATION

Search Type	<input type="text"/>		
Name	Cardno (NSW/ACT) Pty Ltd	ABN	95001145035
Address	Level 1 47 Burelli Street, Wollongong 2500	Phone	4228 4133

DEVELOPER INFORMATION

Search Type	<input type="text"/>		
Name	MIRVAC PROJECTS PTY LTD	ABN	72001069245
Address	Level 26 60 Margaret St, SYDNEY 2000	Phone	

HYDRA DATA AUTO POPULATION

Hydra Download Number	<input type="text" value="1609151415"/>	<input type="button" value="Auto-Populate"/>
-----------------------	---	--

LEAD ADDRESS

Section Number	<input type="text"/>	Street Number	<input type="text" value="2-10"/>
Street Name	<input type="text" value="DARLING DR"/>	Comment	<input type="text"/>
Suburb	<input type="text"/>	Comment	<input type="text"/>
Cross Street	<input type="text"/>		

LGA	<input type="text"/>	Comment	<input type="text"/>
UBD Edition	<input type="text"/>		
UBD Map	<input type="text"/>	UBD Reference	<input type="text"/>
Plan Number (s)	<input type="text"/> ?	Lot Number (s)	<input type="text"/>

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)	<input type="text"/>	Comment	<input type="text"/>
Total Number of Lot/Portion Nos flagged for Development	<input type="text"/>	Comment	<input type="text"/>

PROPERTY USE

Lot Status	<input type="text"/>
------------	----------------------

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	<input type="text"/>
Development sub type	<input type="text"/>
Is it 'Serviced apartments'?	<input checked="" type="radio"/> Yes <input type="radio"/> No
Strata/Stratum Subdivision	<input checked="" type="radio"/> Yes <input type="radio"/> No
Development contains multi-level building	<input checked="" type="radio"/> Yes <input type="radio"/> No
Number of multi-level buildings	<input type="text"/>
No. of levels in tallest building	<input type="text"/>
Stage Number	<input type="text"/> of <input type="text"/>
Stage Name	<input type="text"/>
Subdivision required?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Total Dwellings	<input type="text"/>
Attach Subdivision Plan	
Attach Development Plan	

Attach Additional Application Information Form	
--	--

CONSENT INFORMATION

Consent Authority	<input style="width: 90%;" type="text"/>
Development Consent Number	<input style="width: 80%;" type="text"/>
Consent Date	<input style="width: 40%;" type="text"/>
Attach Consent Document	<div style="border: 1px solid black; height: 100px;"></div>
Attach Stormwater Analysis	
Total Impervious Surface Area	

RESIDENTIAL/COMMERCIAL/INDUSTRIAL MIXED DEVELOPMENT

Number of Residential Units	<input style="width: 80%;" type="text"/>
Residential Footprint	<input style="width: 80%;" type="text"/> sqm
Commercial Footprint	<input style="width: 80%;" type="text"/> sqm

EXPECTED REQUIREMENTS FOR THE PROPOSED DEVELOPMENT

Water	
Maximum demand	<input style="width: 80%;" type="text"/> KL/Day
Average demand	<input style="width: 80%;" type="text"/> KL/Day
Peak demand	<input style="width: 80%;" type="text"/> L/Sec

Recycled Water	
Maximum demand	<input style="width: 80%;" type="text"/> KL/Day
Average demand	<input style="width: 80%;" type="text"/> KL/Day
Peak demand	<input style="width: 80%;" type="text"/> L/Sec

Waste Water	
Maximum discharge	<input style="width: 80%;" type="text"/> KL/Day
Average discharge	<input style="width: 80%;" type="text"/> KL/Day
Peak simultaneous discharge	<input style="width: 80%;" type="text"/> L/Sec

Irrigation Systems	
Maximum demand	<input style="width: 80%;" type="text"/> L/Day
Average demand	<input style="width: 80%;" type="text"/> L/Day
Peak demand	<input style="width: 80%;" type="text"/> L/Sec
Automatic Timer	

Proposed Pattern of Usage:

--

Process Water

Maximum demand	<input type="text"/>	L/Day
Average demand	<input type="text"/>	L/Day
Peak demand	<input type="text"/>	L/Sec

Proposed Pattern of Usage:

--

Other Requirements

Air-conditioning make-up water	<input type="text"/>	L/Sec
Proposed meter size	<input type="text"/>	mm

Any other relevant information affecting usage:

--

Fire Fighting Requirements

Fire Hose Reel	<input type="text"/>	Number
Fire Hydrant	<input type="text"/>	L/Sec
Fire Sprinkler	<input type="text"/>	L/Sec
Wall Drencher	<input type="text"/>	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

<ul style="list-style-type: none"> 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, 135,000sqm residential ground floor and 40 storey residential development
<ul style="list-style-type: none"> Are there other types of lots? (eg residue, public reserve, open space, restricted development) If yes, specify details (including lot numbers) 	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> Does the Council require further consent for the residue land? 	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> Are there any previous Consents referred to in the Consent? If yes, specify details 	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> Is there a condition in the Consent for the consolidation of lots? If yes, specify details. 	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> Are there any conditions for road works in the Consent? (eg closure of roads, slip lanes, widening) If yes, specify details. 	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> Are there any conditions in the Consent relating to Sydney Water stormwater requirements? If yes, specify details. 	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<ul style="list-style-type: none"> 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>

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 E

Sydney Water Build Over Policy

Guidelines for building over or adjacent to Sydney Water stormwater assets



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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*

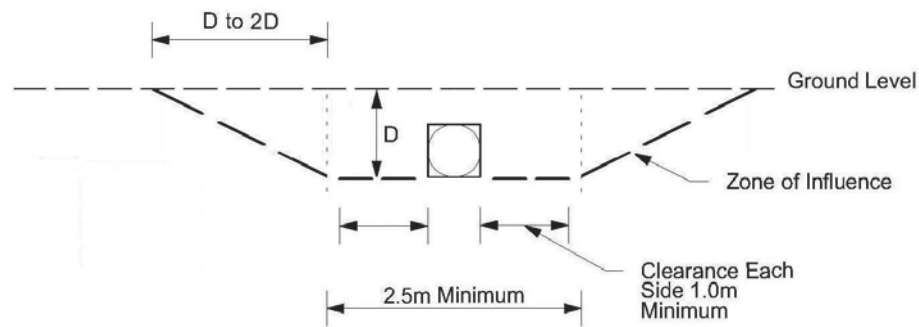
Services Protection Report

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
<p>Submit building plans and structural details to Sydney Water for approval, with clearances between the building, footings, piers and Sydney Water assets clearly marked.</p> <p>These plans must certify that the building and asset design will meet all of Sydney Water's requirements, including:</p> <ul style="list-style-type: none"> • 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
<p>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.</p> <p>The customer will recommend a preferred constructor for Sydney Water's acceptance.</p>	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. piling) 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. piercing) 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. piercing) 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).

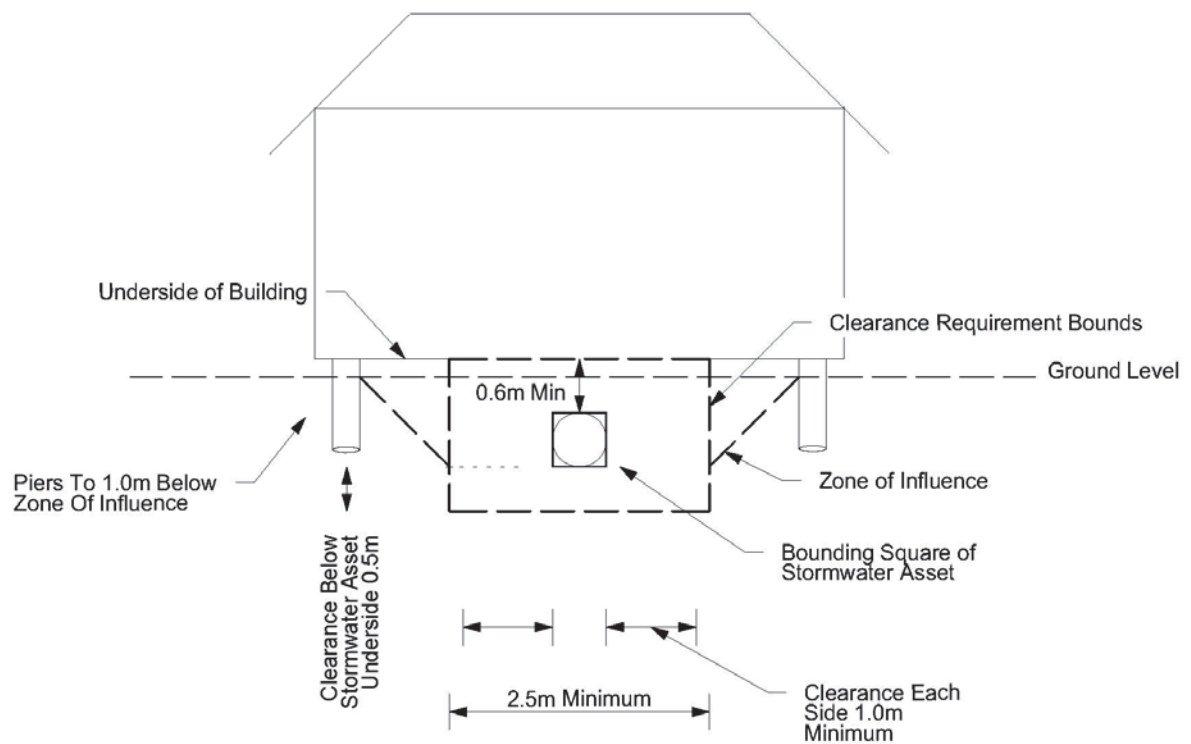
4.2 Build over clearance requirements

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



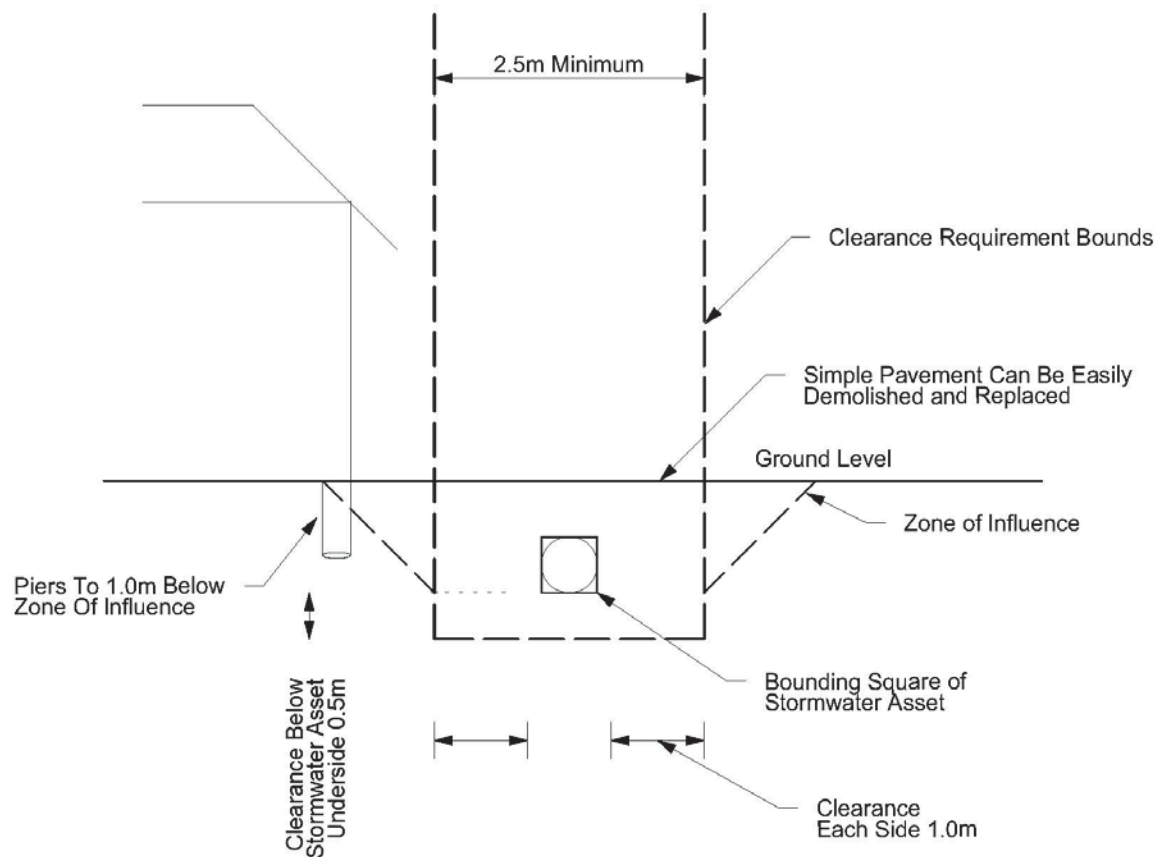
4.3 Build adjacent clearance requirements

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	<p>A private company that is accredited by Sydney Water to do work on Sydney Water assets.</p> <p>Lists of accredited providers for a number of different functions are available on Sydney Water's website, under: <i>Sydney Water > Building and developing > Provider information</i></p>
Build Adjacent Clearance Requirements	<p>The reservation of space about the stormwater asset for adjacent structures, being one metre horizontally from the outside edges of the asset.</p> <p>Refer to Figure 3.</p>
Build Over Clearance Requirements	<p>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.</p> <p>Refer to Figure 2.</p>
Expected life	<p>The total lifespan expected for an asset, based on a structural assessment of the asset's condition.</p>
Flood Impact Assessment Report	<p>A report detailing the impacts of flooding on the proposed development, and the impacts of the proposed development on local flooding.</p> <p>This document needs to have been completed within the past two years.</p>
Overland flow paths	<p>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.</p>
Project Completion Package	<p>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.</p>
Reasonable development	<p>A development that either:</p> <ul style="list-style-type: none"> 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	<p>The expected life of a stormwater asset, minus its consumed life.</p>
Service Protection Report	<p>A report accurately locating all Sydney Water assets in the vicinity in order to design appropriate asset protection measures.</p> <p>This document needs to have been completed within the past two years.</p>
Stormwater assets	<p>Includes open and covered channels, oviforms, pipes and box culverts, constructed from a variety of materials.</p>

Term	Definition
Stormwater Deviation Report	<p>A report detailing the feasibility of constructing a new stormwater asset around the proposed development.</p> <p>This document needs to have been completed within the past two years.</p>
‘Template 14’ format	<p>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.</p> <p>Since there is no corresponding template for stormwater works, ‘Template 14’ must be modified to suit any specific differences between wastewater and stormwater construction.</p>
Water Servicing Coordinator	<p>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.</p> <p>A list of Water Servicing Coordinators is available from Sydney Water’s website, under: <i>Sydney Water > Building and developing > Developing your land > Water Servicing Coordinators</i></p>
Zone of influence	<p>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).</p>

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.

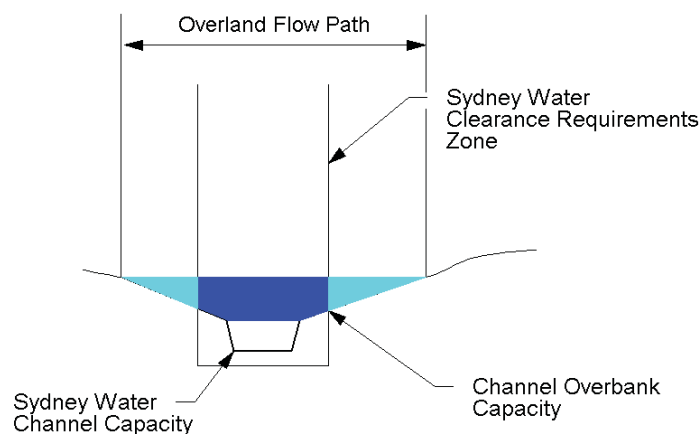
Annexure A – Rationale

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'.

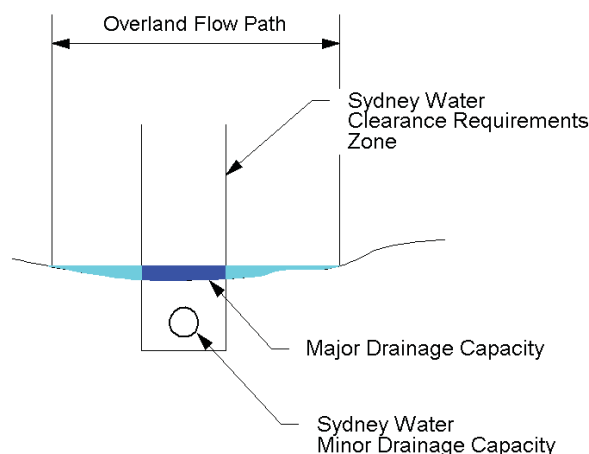
Figure 4 – Open channel drainage capacity



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 F

Sydney Water Meeting Minutes

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 G

Ausgrid Dial Before You Dig Records

If further information is required, please contact:
Ausgrid DBYD
Phone: (02) 4951 0899
Fax: (02) 4951 0729



Emergency Phone Number 131388

Underground Cable Location Search Advice

-- Ausgrid Assets Affected including **TRANSMISSION** --

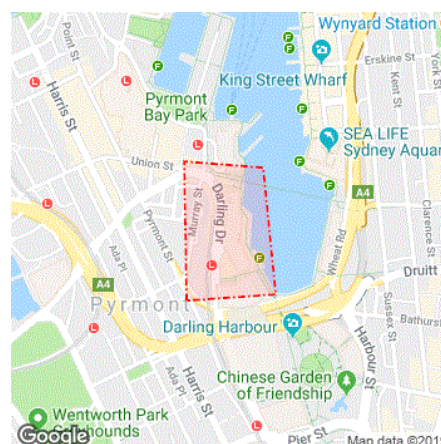
If you are working within 2 metres of **TRANSMISSION** cables you are required to have an Ausgrid Supervisor on site. The number to call to organise this is **49519200** and can also be found at the top of the supplied Transmission plan(s) in **RED**. Note: The Transmission Team requires **2 weeks notice** if required on site.

To:	Ms Michelle Fletcher Arcadis Level 16 580 George Street Sydney NSW 2000	Phone No:	0421170753
		Issue Date:	27/09/2019

In response to your enquiry, Sequence No: 89401484 the records of Ausgrid disclose that there **are** Ausgrid underground cables in the defined search location and relevant Ausgrid plans have been provided.

This search is based on the geographical position of the dig site as denoted in the Dial Before You Dig caller confirmation sheet and an overview is provided:

Address:	Darling Drive Sydney NSW 2000
Job #:	18175578



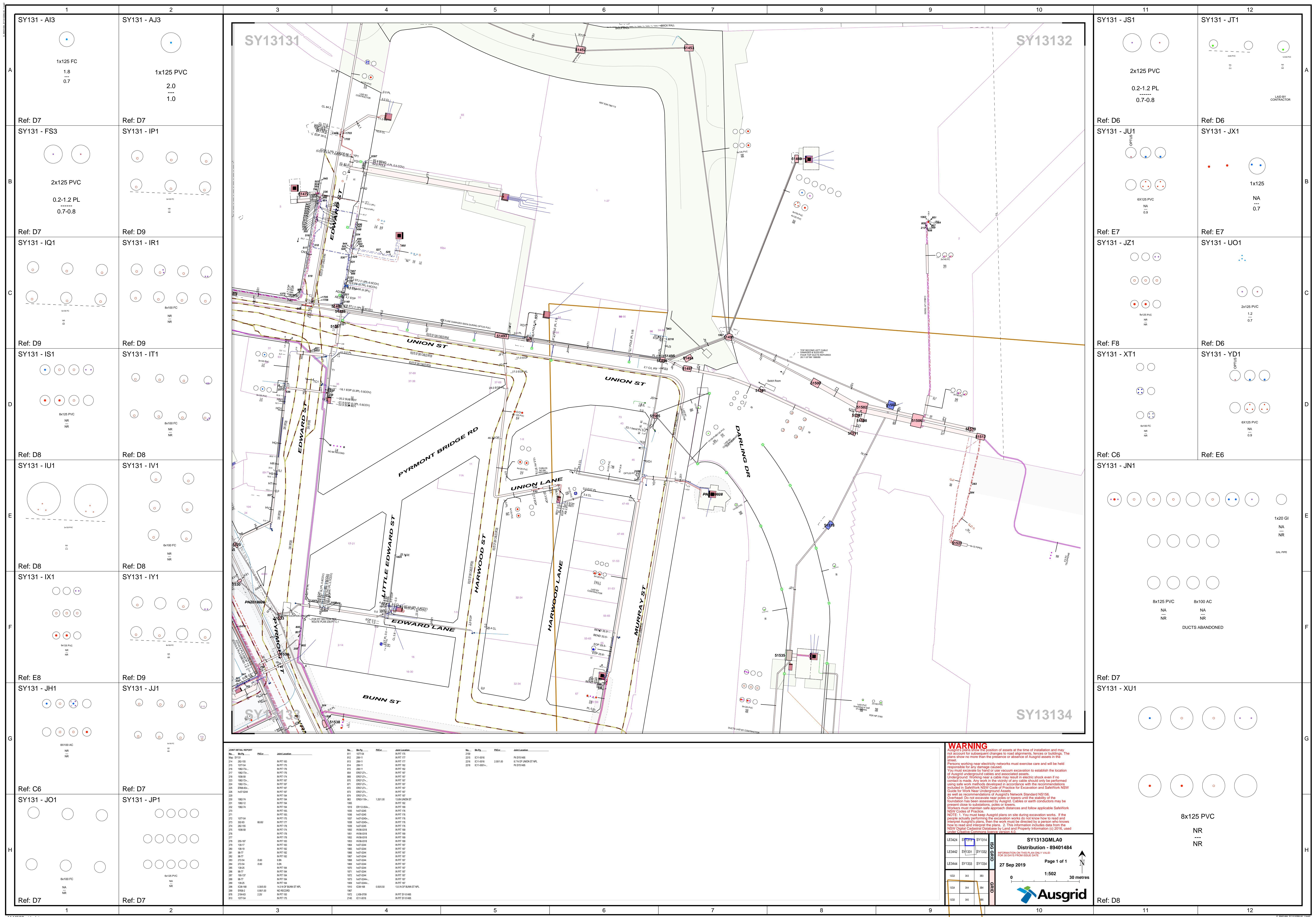
****Important****

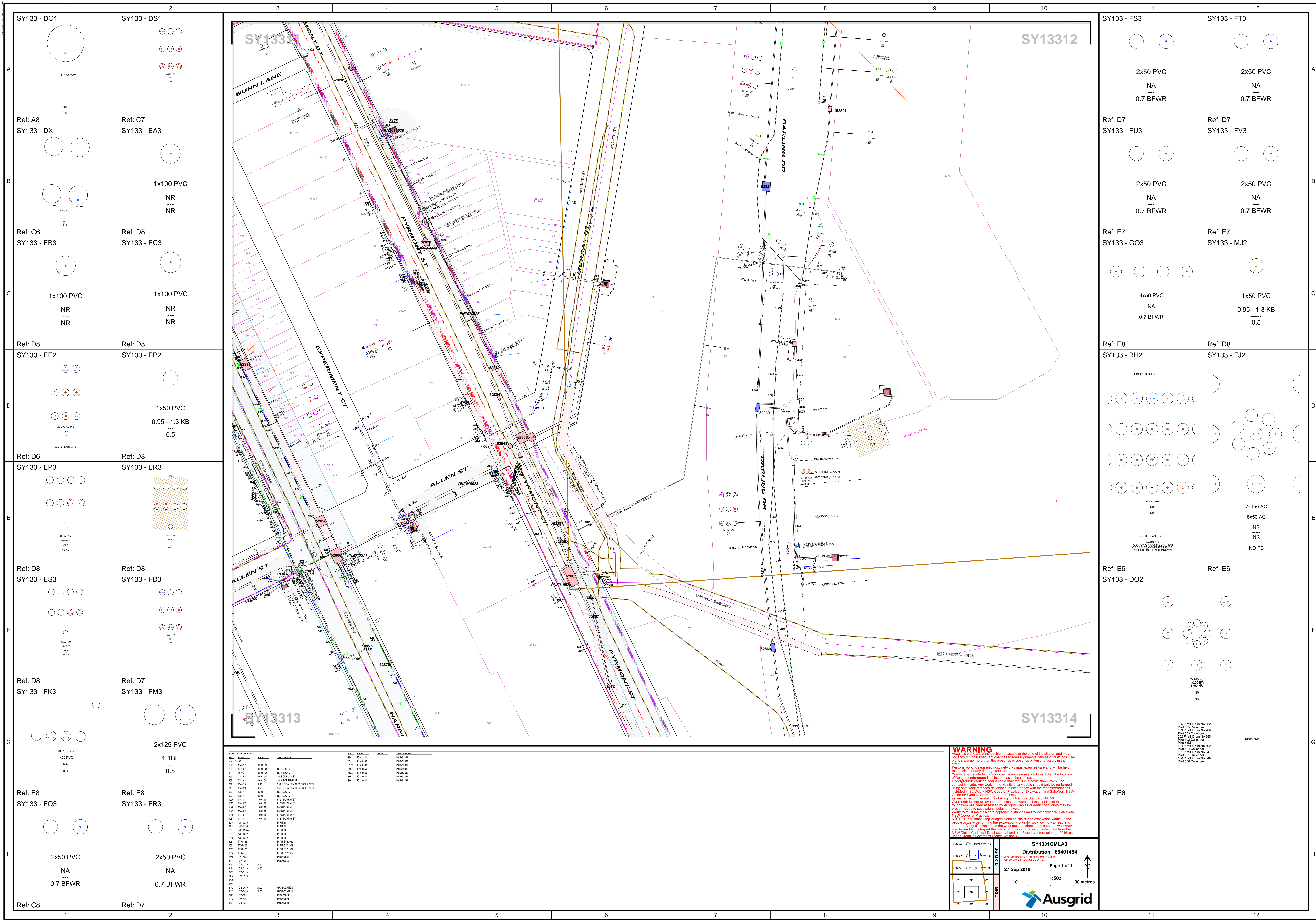
- All information provided to you is **ONLY VALID FOR 30 DAYS** from the date of issue
- You must keep Ausgrid plans on site during excavation works. If the people actually performing the excavation works do not know how to read and interpret Ausgrid's plans, then the work must be directed by a person who knows how to read and interpret plans.
- If you require a full size print of A0 plans and don't have the resources to do so please contact our office on 49510899 to request a hard copy to be posted. **Please allow 3 working days for delivery.**
- Please note you will ONLY receive portions of your search area that contain Ausgrid Underground Assets

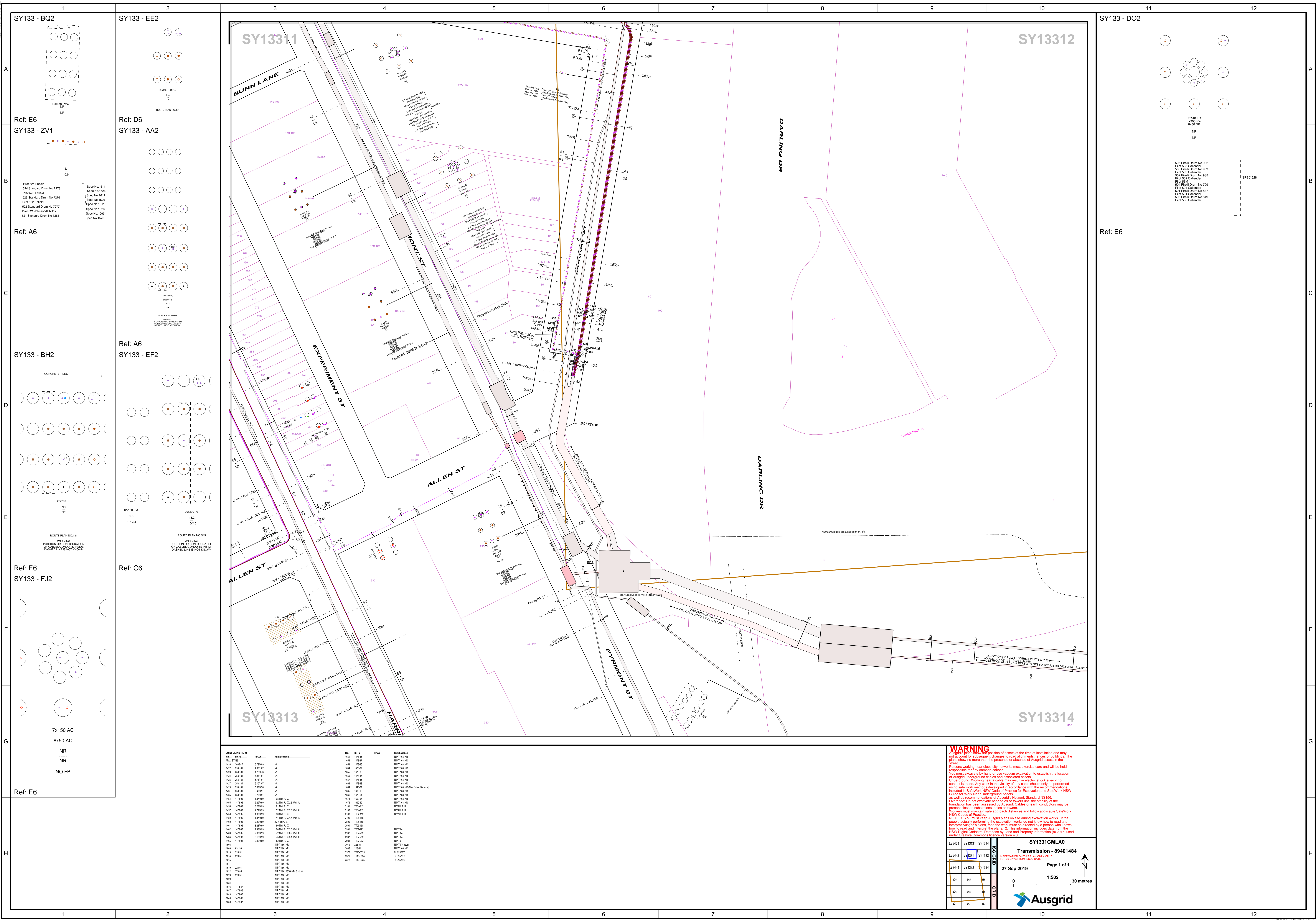
YOU MUST READ AND UNDERSTAND THE SUPPLEMENTARY MATERIAL CONTAINED IN THIS ADVICE BEFORE PROCEEDING WITH ANY WORKS.

Summary of Supplementary Information:

Material	Purpose	Location
Important Information.pdf	Details important information	Attached
Working near Ausgrid Cables.pdf	Summary of NS156	Attached
COMN0119 How To Read Ausgrid Plans.pdf	Details how to read Ausgrid plans	Attached
SafeWork NSW "Work near underground assets: Guide"	To assist you in deciding appropriate measures to eliminate or control risks when working near underground assets.	Web Link [Click Here]
Ausgrid's Network Standard NS156	For important information for work near or around underground cables	Web Link [Click Here]
Ausgrid's Network Standard NS199	"This Network Standard applies to specific work on Ausgrid Low Voltage Underground Assets"	Web Link [Click Here]
Working in Confined Spaces	For important information when working in confined spaces	Web Link [Click Here]







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).

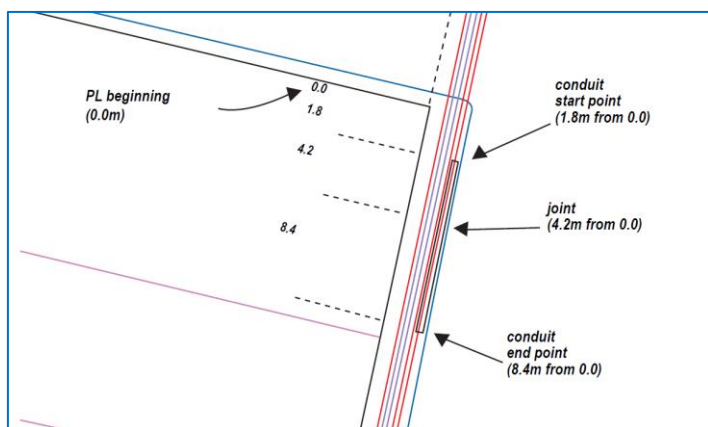


Figure 2

3 Cross Sections

A “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).

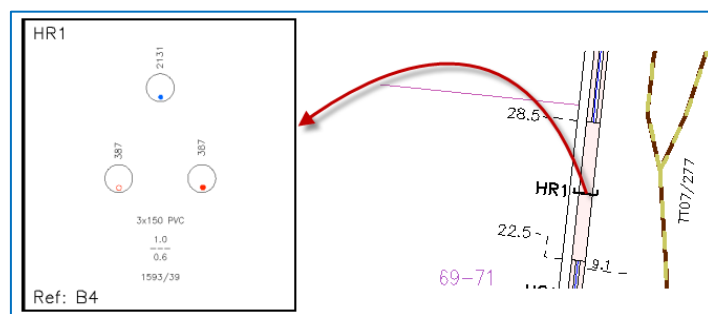


Figure 3

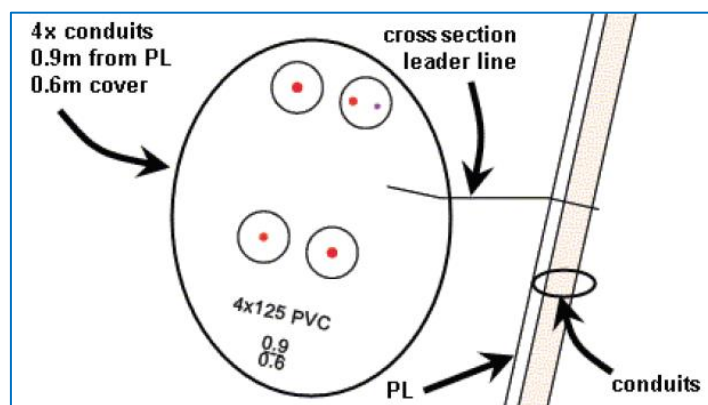


Figure 4

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).

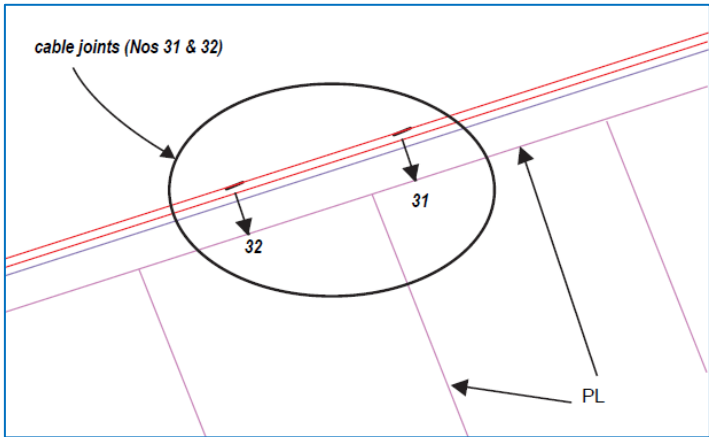


Figure 5

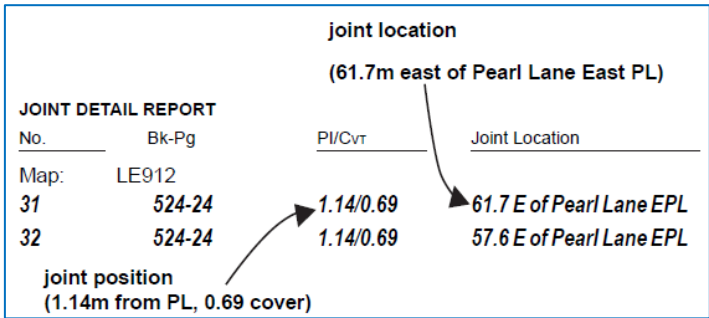


Figure 6

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.

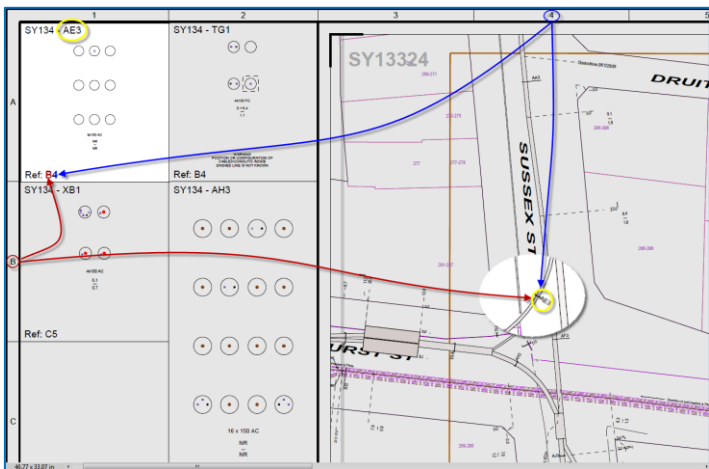


Figure 7

“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 (refer figure 8).

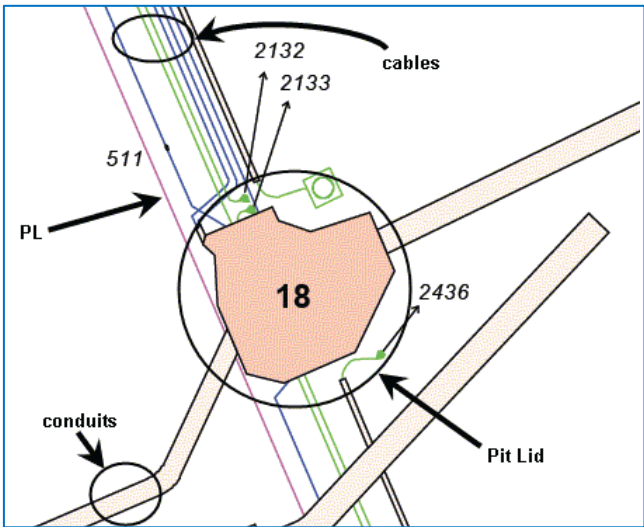


Figure 8

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).

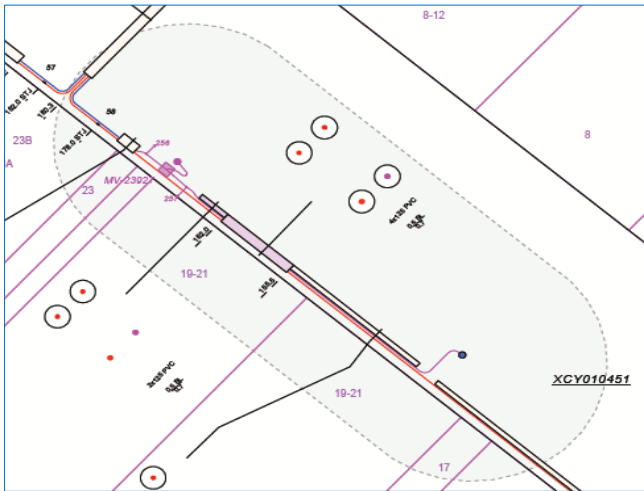
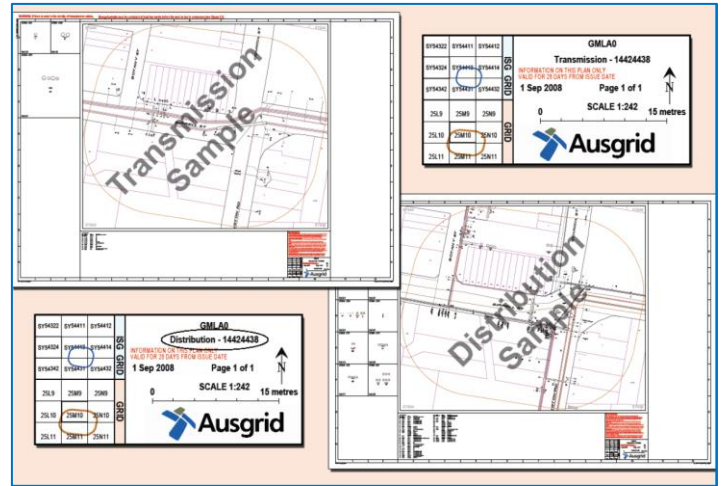


Figure 9



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).

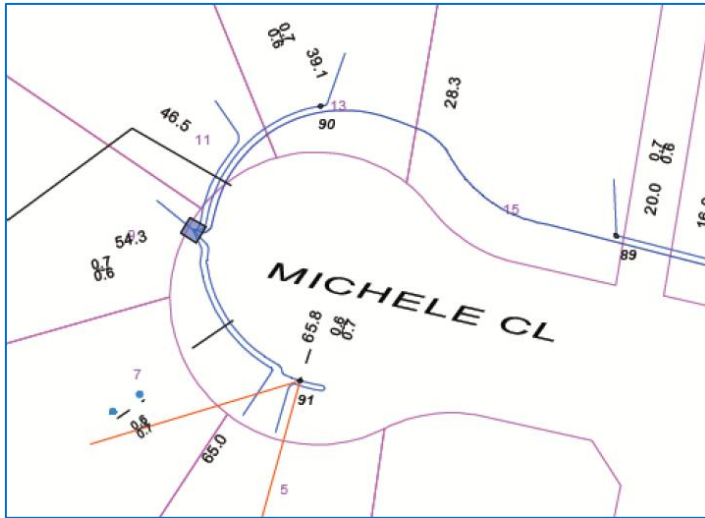


Figure 12

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

12 Aluminium Single Core Cables – Specific Excavation Hazard

Certain cables specifically illustrated in figures 14 and 15 below are susceptible to deterioration that may pose a risk of electric shock when working near them, particularly in damp ground.

For all work on or near Ausgrid’s network (where workers have been trained in Ausgrid’s “Work Near Underground Power Lines” course) the work practices outlined in NS199 “Safe Electrical Work on Low Voltage Underground Assets” Section 7 for work near low voltage aluminium single core cable must be adhered to.

All other persons must contact Ausgrid before excavating near these cables to arrange for appropriate precautions to be applied.

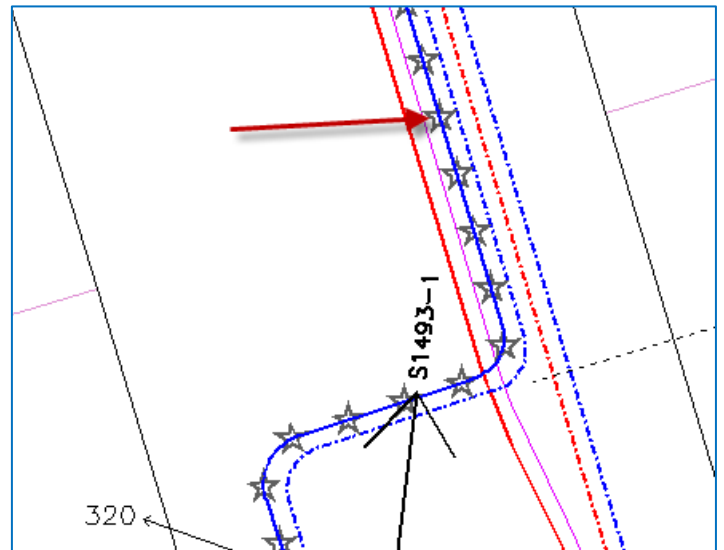


Figure 14

The “**star**” symbols over the cable indicate that it is susceptible to this deterioration.

Cables that are in duct lines have this symbology covered so an at-risk cable is indicated only within a cross section by a “#” appended to its cable code as illustrated below.

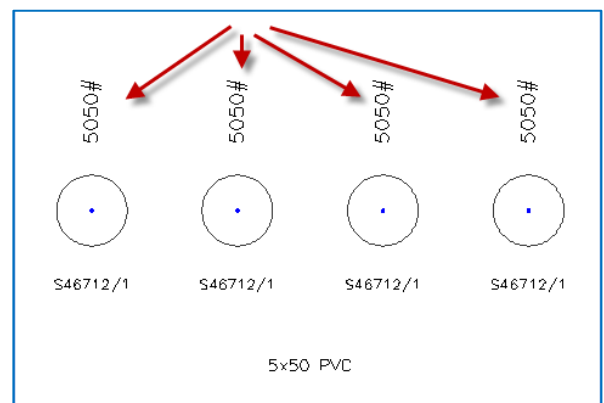















































Figure 15

Ausgrid Underground Map Symbology

NOTE: Please note symbology is subject to change. This document provides underground (UG) related objects only. In cases where you are unsure of the data presented, please contact Ausgrid's DBYD for clarification *prior* to any planning/excavation works.

Object		Symbol
HV Cable	HV (High Voltage) 5kV-22kV	In Service  Out of Service 
	TR (Transmission) 33kV – 330kV	In Service  Out of Service 
LV Cable (Low Voltage)	Mains (Dark blue)	In Service  Out of Service  In Service Risk 
	Street Lighting (Green) Note: Mains Connector also used as Street Lighting (dark blue)	In Service  Out of Service 
	Service (Light blue)	In Service  Out of Service  In Service Risk 
	Unknown	
Auxiliary Cable	Data	
	Comms	In Service 
	Telco	
	Protection	Out of Service 
	Fibre Optic	
	Pilot	

Object	Symbol
HV UG Joint	Straight Through, Parallel Branch or Tee 
	Switchgear, End Box or Transition 
HV UG Termination	Sealed end 
	Pot End 
	UGOH 
HV Cable Repair	5kV-330kV (HV & TR) 
LV UG Joint	Straight Through, Parallel Branch, Tee or Service 
	Network Box 
LV UG Termination	Switchgear, End Box or Transition 
	Sealed end 
	Pot End 
	UGOH 

Object	Symbol
Auxiliary Fix	Pilot Window 
Auxiliary Joint	Straight Through, Parallel Branch or Tee 
Auxiliary Termination	UGOH or Pole Termination 
	Pilot 
	UGOP-ADSS Termination 
Cable Pit (Can be various shapes)	Auxiliary 
	Distribution 
	Transmission 
LV Pillar	Distribution 
	Switch  1-3 WAY  4-WAY
	SL Pillar  NO SLCP  SLCP
	SL Cubicle 
	Fargo 
	Private 
LV Auxiliary Pillar	All Types 
LV Link Box	2 Way & 4 Way 

Ausgrid Underground Map Symboly

Object	Symbol
Substation	Cottage & Chamber
	Ground & Subtransmission Ground
	Kiosk & Subtransmission Kiosk
	Zone
	Transmission
	Bulk Supply Point
	Metering Station & Subtransmission Metering
Switching Station	Isolating & Earth
	Other – OH & UG
	Ring Main Unit
Earthing	UG Earth Cable
	Earth Point
Frequency Marker	Distribution and Transmission Power Ball or Disc Type Marker
	Auxiliary Communications Ball or Disc Type Marker
	Distribution and Transmission Power Tape Marker
	Auxiliary Communications Tape Marker

Object	Symbol
Trench	Centreline
Conduit (Can be various shapes)	Coverage (Distribution)
	Coverage (Transmission)
	Coverage (Underbore – cross hatched)
Cross Section	Marker (Staple)
	User Line
Measurement Point	
Miscellaneous Point Feature	Cable Clamp
	Cable Core split (Trifurcation)
	Cable Marker
	Electrolysis Point
	End Of Pipe
	Frequency Injection Unit
	Gas Charger
	Gas Control Cabinet
	Gas Control Kiosk
	Gas Control Point
	Gas Control Valve
	Gatic Pit lid

Object	Symbol
Miscellaneous Point Feature	Inspection Box
	Link point
	Oil Control Valve
	Oil Gauge
	Oil Tank
	Sniffer Box
	Thermocouple Box
	Transmission Cable Marker
	Transmission Link Point
Miscellaneous Linear Feature	All Geometries
Map Note	Location & Text Text about note
Dimension Feature	Placement Change

IMPORTANT INFORMATION

YOU MUST BE AWARE THAT:

1. There may be underground cables owned by other utilities, in the vicinity of your work, about which Ausgrid has no information.
2. Ausgrid does not usually keep plans of privately owned underground cables or its underground service cables on private property. (Refer NS 156 for further information.)

YOU MUST MAKE YOUR OWN ENQUIRIES IN RESPECT OF THESE CABLES.

YOU MUST UNDERSTAND THAT:

1. Ausgrid takes all reasonable care in providing details of its underground cables. However, owing to changes in road and footway alignments and levels, and the age and incompleteness of some records, it is not possible to conclusively specify the location of all of Ausgrid's underground cables. The accuracy and completeness of the information provided to you cannot be guaranteed. It is intended to be indicative only. It must not be **solely** relied upon when undertaking underground works.
2. Except to the extent that liability may not be capable of lawful exclusion, Ausgrid, its servants and agents will be under no liability whatsoever to any person for loss or damage (including indirect or consequential loss or damage) however caused (including without limitation, for breach of contract, negligence and breach of statute) which may be suffered or incurred from or in connection with the advice provided.
3. Due to the inherent dangers associated with excavation in the vicinity of underground cables, precautions must always be taken when undertaking any underground works. Ausgrid's Network Standard NS 156 specifies standards for working in the vicinity of underground cables. It is deemed to be part of this Advice, and it must be read by you.

YOU MUST READ NETWORK STANDARD NS 156, *WORKING NEAR OR AROUND UNDERGROUND CABLES*. IT IS PART OF THIS ADVICE.

APPENDIX H

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.	
<p>This is the party that will be billed and responsible for payment.</p> <p>If you are signing on behalf of a third party, we require their details for invoicing</p>	_____ 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 I

Jemena Dial Before You Dig Plans

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 Jemena Representative)** to arrange a survey. For all works in the vicinity of High Pressure Gas Mains you must arrange for a Jemena Representative 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.

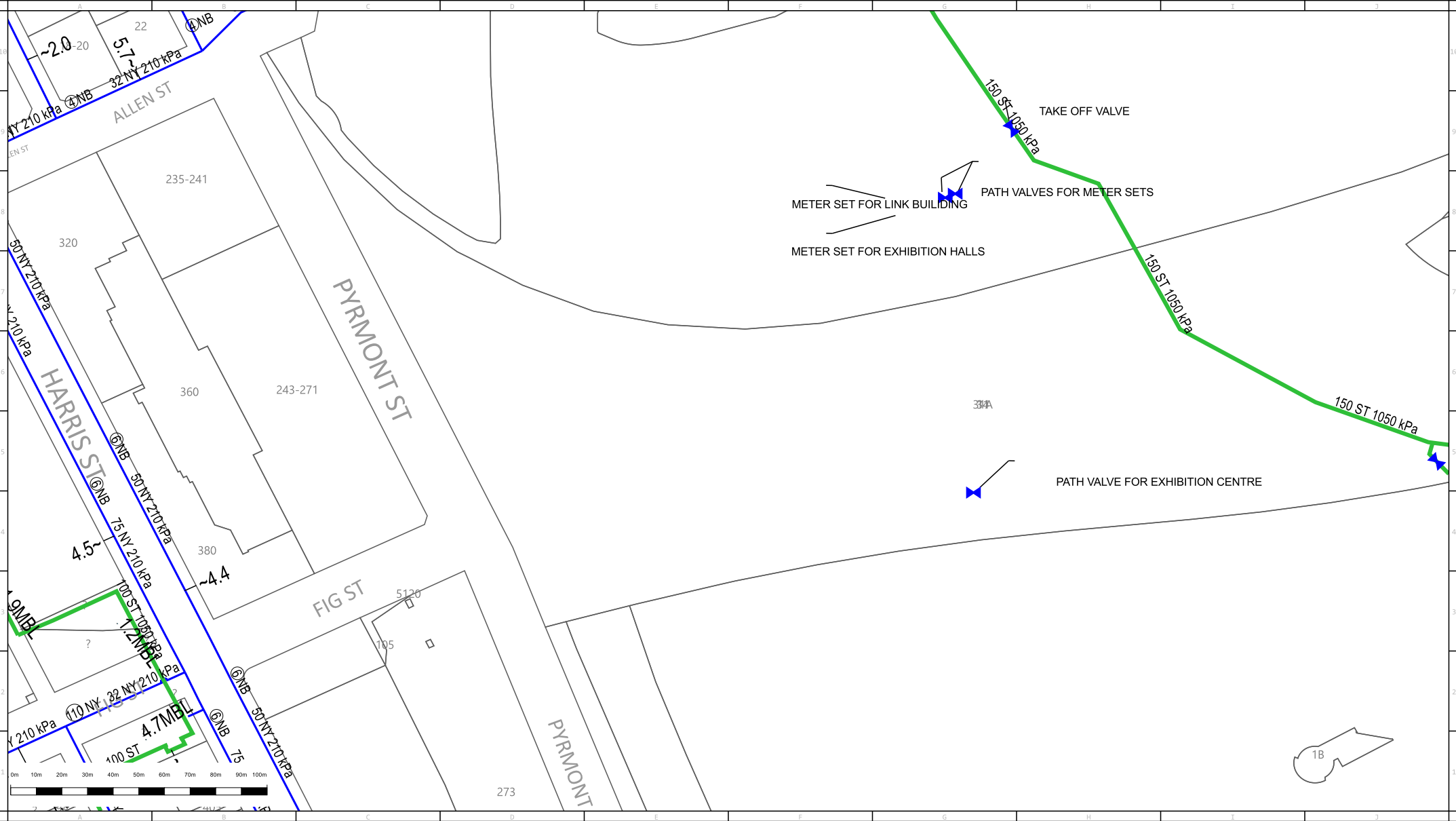
A copy of this Guideline is available at: www.safework.nsw.gov.au


KEY						
Main	In Service	Proposed	High Pressure Main & Pipeline	In Service	Proposed	Fittings, Valves & Regulators
Unknown Pressure	—	- - - -	Critical Main Treat as High Pressure Main	●—●—●—		Regulator Set 
Distribution - 2 kPa	—	- - - -	Secondary - 1050 kPa	—	- - - -	Regulator Station 
Distribution - 7 kPa	—	- - - -	Secondary Service - 1050kPa	—	- - - -	Automatic Line Break Valve 
Distribution - 30 kPa	—	- - - -	Primary - 3500 kPa	—		Valve 
Distribution - 100 kPa	—	- - - -	JGN Trunk - 4000 to 14500 kPa	—	- - - -	Siphon 
Distribution - 210 kPa	—	- - - -	Transmission	—	- - - -	
Distribution - 300 kPa	—	- - - -				
Distribution - 400 kPa	—	- - - -	50mm Nylon main inserted into 6 inch (Nominal Bore) Cast Iron Main	⑥NB 50MM NY		
Proposed Isolate (coloured according to kPa)	—	- - - -	32mm Nylon main inserted into 50mm Steel Main	⑤0MM 32MM NY		
Conduit or Casing Size & Material	100 PVC		~1.5 = Distance in metres of Main from Boundary Line MBK = Metres Back of Kerb MFL = Metres from Fence Line			
(PL - Plastic, PVC, PE, NY, ST)						

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 Jemena Representative to confirm the location of Jemena's main and installations. This must also be performed by you under the supervision of a Jemena Representative 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





ABN 87 003 004 322

Main	In Service	Proposed	Main	In Service	Proposed	High Pressure Main & Pipeline	In Service	Proposed	Fittings, Valves & Regulators
Unknown Pressure	—	- - - -	Distribution - 300 kPa	—	- - - -	Critical Main	—	—	Siphon
Distribution - 2 kPa	—	- - - -	Distribution - 400 kPa	—	- - - -	Treat as High Pressure Main	—	—	Valve
Distribution - 7 kPa	—	- - - -				Secondary - 1050 kPa	—	—	Distance in metres of Main from Boundary Line ~ 1.5
Distribution - 30 kPa	—	- - - -	Proposed Isolate (coloured according to kPa)	—	—	Secondary Service	—	—	MBK = Metres Back of Kerb
Distribution - 100 kPa	—	- - - -	Conduit or Casing (Size & Material)	—	—	Primary - 3500 kPa	—	—	MFL = Metres from Fence Line
Distribution - 210 kPa	—	- - - -	100 PVC	—	—	JGN Trunk - 7000 kPa	—	—	Regulator Set
						Transmission	—	—	Regulator Station
									Automatic Line Break Valve



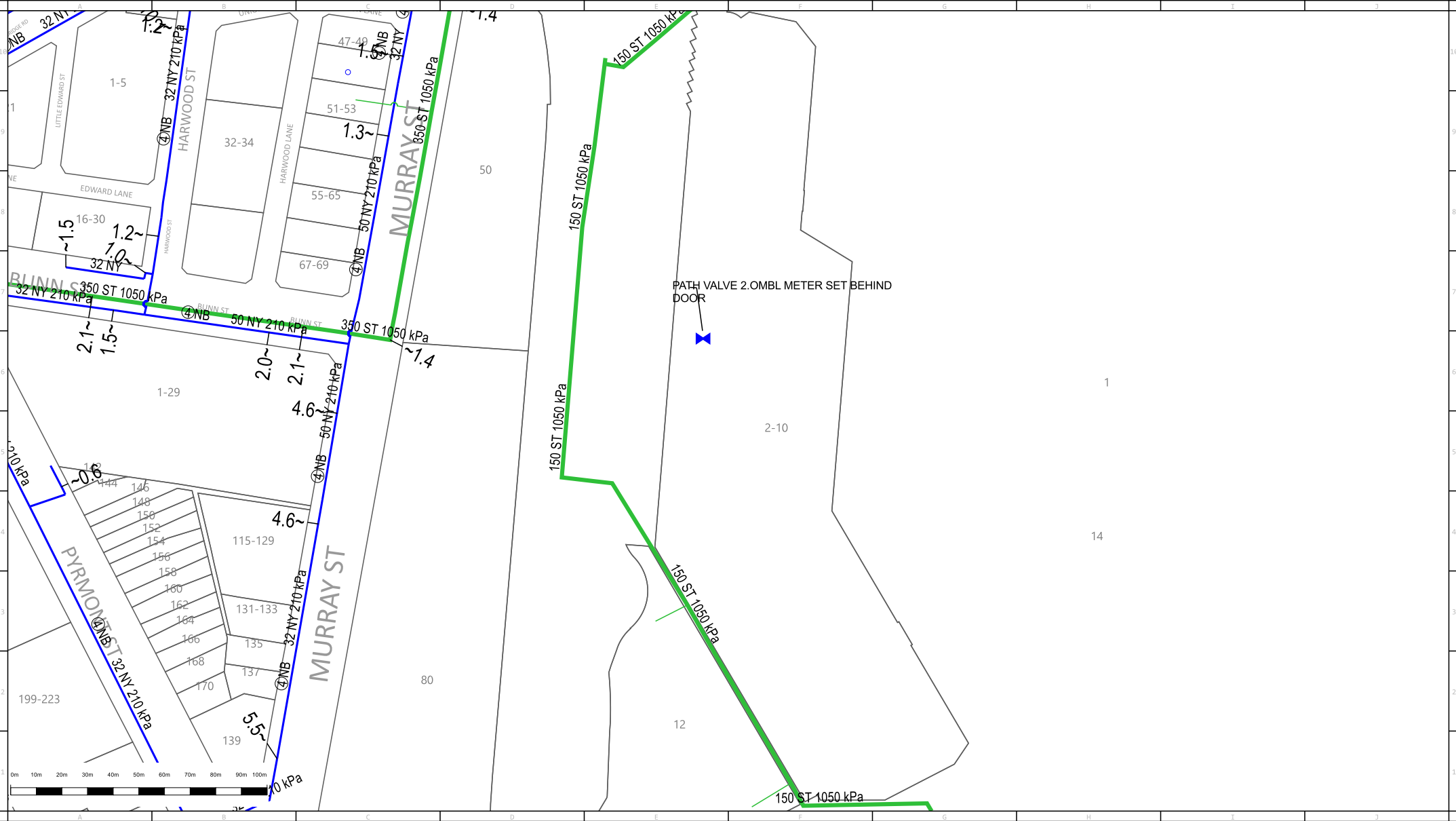
Scale: 1:2000


Issue Date: 25/09/2019

DBYD Seq No: 89401487

DBYD Job No: 18175578


WARNING: This is a representation of Jemena Gas Networks underground assets only and may not indicate all assets in the area. It must not be used for the purpose of exact asset location in order to undertake any type of excavation. This plan is diagrammatic only, and distances scaled from this plan may not be accurate. Please read all conditions and information on the attached information sheet. This extract is subject to those conditions. The information contained on this plan is only valid for 28 days from the date of issue.





ABN 87 003 004 322

Main	In Service	Proposed	Main	In Service	Proposed	High Pressure Main & Pipeline	In Service	Proposed	Fittings, Valves & Regulators			
Unknown Pressure	-----	-----	Distribution - 300 kPa	-----	-----	Critical Main	-----	-----	Siphon	●	Regulator Set	⚡
Distribution - 2 kPa	-----	-----	Distribution - 400 kPa	-----	-----	Treat as High Pressure Main	-----	-----	Valve	⋈	Regulator Station	⚡
Distribution - 7 kPa	-----	-----				Secondary - 1050 kPa	-----	-----	Distance in metres of Main from Boundary Line	~ 1.5	Automatic Line Break Valve	⚡
Distribution - 30 kPa	-----	-----	Proposed Isolate (coloured according to kPa)	-----	-----	Secondary Service	-----	-----	MBK = Metres Back of Kerb			
Distribution - 100 kPa	-----	-----	Conduit or Casing (Size & Material)	-----	-----	Primary - 3500 kPa	-----	-----	MFL = Metres from Fence Line			
Distribution - 210 kPa	-----	-----	100 PVC	-----	-----	JGN Trunk - 7000 kPa	-----	-----				
						Transmission	-----	-----				



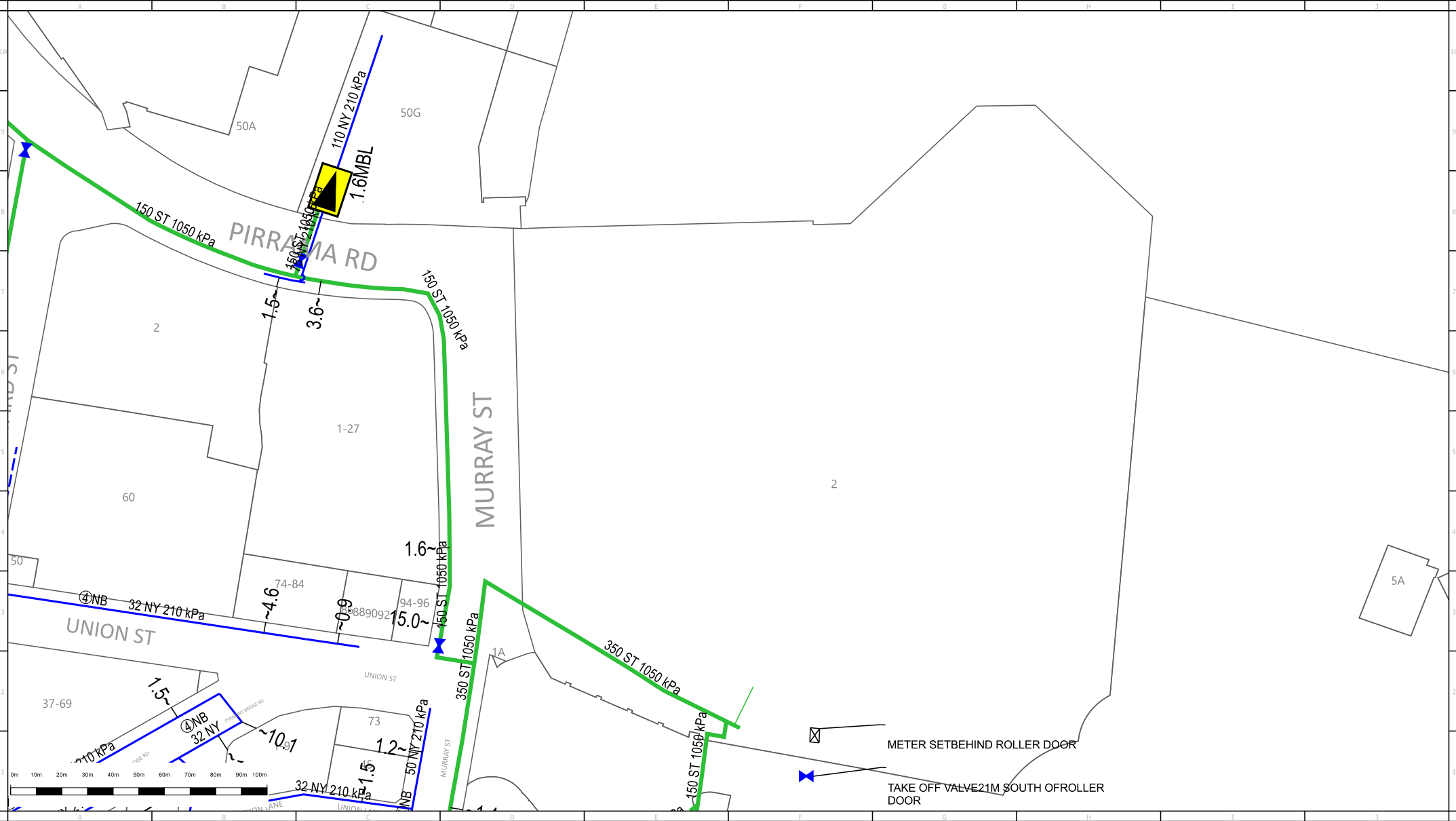
Scale: 1:2000


Issue Date: 25/09/2019

DBYD Seq No: 89401487

DBYD Job No: 18175578


WARNING: This is a representation of Jemena Gas Networks underground assets only and may not indicate all assets in the area. It must not be used for the purpose of exact asset location in order to undertake any type of excavation. This plan is diagrammatic only, and distances scaled from this plan may not be accurate. Please read all conditions and information on the attached information sheet. This extract is subject to those conditions. The information contained on this plan is only valid for 28 days from the date of issue.





ABN 87 003 004 322

Main	In Service	Proposed	Main	In Service	Proposed	High Pressure Main & Pipeline	In Service	Proposed	Fittings, Valves & Regulators
Unknown Pressure	---	---	Distribution - 300 kPa	---	---	Critical Main	---	---	Siphon
Distribution - 2 kPa	---	---	Distribution - 400 kPa	---	---	Treat as High Pressure Main	---	---	Valve
Distribution - 7 kPa	---	---				Secondary - 1050 kPa	---	---	Distance in metres of Main from Boundary Line ~ 1.5
Distribution - 30 kPa	---	---	Proposed Isolate (coloured according to kPa)	---	---	Secondary Service	---	---	MBK = Metres Back of Kerb
Distribution - 100 kPa	---	---	Conduit or Casing (Size & Material)	---	---	Primary - 3500 kPa	---	---	MFL = Metres from Fence Line
Distribution - 210 kPa	---	---	100 PVC	---	---	JGN Trunk - 7000 kPa	---	---	Regulator Set
						Transmission	---	---	Regulator Station
									Automatic Line Break Valve



Scale: 1:2000

Issue Date: 25/09/2019

DBYD Seq No: 89401487

DBYD Job No: 18175578

WARNING: This is a representation of Jemena Gas Networks underground assets only and may not indicate all assets in the area. It must not be used for the purpose of exact asset location in order to undertake any type of excavation. This plan is diagrammatic only, and distances scaled from this plan may not be accurate. Please read all conditions and information on the attached information sheet. This extract is subject to those conditions. The information contained on this plan is only valid for 28 days from the date of issue.

APPENDIX J

Jemena Consultation Correspondence

Heydon, Joe

From: Zachary Kennett <Zachary.Kennett@jemena.com.au>
Sent: Monday, 3 February 2020 2:26 PM
To: Heydon, Joe
Subject: RE: Harbourside Shopping Centre - Darling Harbour

Hi Joe,

I can confirm that the existing steel high pressure main in Darling Drive currently has sufficient capacity to supply the expected load of 25,000MJH as per your proposal.

Please note that Jemena does not reserve capacity on the network until a formal application is submitted and an offer made on the connection.

Please let me know if you need any additional information regarding this project.

Regards,

Zachary Kennett

Network Development Specialist – I&C

Jemena

99 Walker Street, North Sydney NSW 2060

PO Box 1220, North Sydney NSW 2059

Tel: 02 9867 7182 | 0409 608 399

www.jemena.com.au



This is a confidential message intended for the named recipient only. The contents herein are privileged to the sender and the use thereof is restricted to the intended purpose. If you have received this e-mail in error, please secure its contents and reply to the sender. Thank you.

From: Heydon, Joe <Joe.Heydon@arcadis.com>
Sent: Friday, 31 January 2020 9:33 AM
To: Zachary Kennett <Zachary.Kennett@jemena.com.au>; Brad Gee <Brad.Gee@jemena.com.au>
Subject: RE: Harbourside Shopping Centre - Darling Harbour

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and are expecting the content or attachment from the sender.

Hi Zac,

Much appreciated.

Kind Regards,

Joe

Joe Heydon | Principal Engineer – Urban Development & Regeneration | BE Civil Eng. | joe.heydon@arcadis.com

Arcadis | Level 16, 580 George Street, Sydney | NSW 2060 | Australia

T. + 61 2 8907 9149 | M. + 61 468 745 425

www.arcadis.com





Be green, leave it on the screen.



Registered office: Level 16, 580 George Street, Sydney NSW 2060, Australia ABN 76 104 485 289

From: Zachary Kennett <Zachary.Kennett@jemena.com.au>
Sent: Friday, 31 January 2020 9:28 AM
To: Heydon, Joe <Joe.Heydon@arcadis.com>; Brad Gee <Brad.Gee@jemena.com.au>
Subject: RE: Harbourside Shopping Centre - Darling Harbour

Hi Joe,

No problems, I have sent this off to our engineers to confirm there is sufficient capacity for the new proposal and will provide an update as soon as possible.

Thanks,

Regards,
Zachary Kennett
Network Development Specialist – I&C
Jemena
99 Walker Street, North Sydney NSW 2060
PO Box 1220, North Sydney NSW 2059
Tel: 02 9867 7182 | 0409 608 399
www.jemena.com.au



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From: Heydon, Joe <Joe.Heydon@arcadis.com>
Sent: Friday, 31 January 2020 9:08 AM
To: Brad Gee <Brad.Gee@jemena.com.au>; Zachary Kennett <Zachary.Kennett@jemena.com.au>
Subject: RE: Harbourside Shopping Centre - Darling Harbour

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and are expecting the content or attachment from the sender.

Hi Brad,

Thank you for your assistance.

Zac – if you need anything further from me, please let me know.

Kind Regards,

Joe

Joe Heydon | Principal Engineer – Urban Development & Regeneration | BE Civil Eng. | joe.heydon@arcadis.com

Arcadis | Level 16, 580 George Street, Sydney | NSW 2060 | Australia

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Registered office: Level 16, 580 George Street, Sydney NSW 2060, Australia ABN 76 104 485 289

From: Brad Gee <Brad.Gee@jemena.com.au>

Sent: Wednesday, 29 January 2020 3:42 PM

To: Zachary Kennett <Zachary.Kennett@jemena.com.au>

Cc: Heydon, Joe <Joe.Heydon@arcadis.com>

Subject: RE: Harbourside Shopping Centre - Darling Harbour

Hi Zac

Can you please assist Joe with the below request.

Brad Gee

Commercial Manager – Key Accounts

Jemena

Level 14, 99 Walker Street, North Sydney, NSW 2060

02 9867 7134 | 0429 363 835

brad.gee@jemena.com.au | www.jemena.com.au



From: Heydon, Joe <Joe.Heydon@arcadis.com>
Sent: Wednesday, 29 January 2020 3:00 PM
To: Brad Gee <Brad.Gee@jemena.com.au>
Subject: RE: Harbourside Shopping Centre - Darling Harbour

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and are expecting the content or attachment from the sender.

Hi Bradley,

I'm unsure if you're still the right person at Jemena to contact. Please feel free to pass to a more relevant colleague if required.

I originally contacted you a number of years ago regarding the redevelopment of Harbourside Shopping Centre, Darling Harbour.

That development proposal was submitted for a Stage 1 DA but then was put on hold for a number of years. The Developer has since responded to the submissions made during the planning phase and made amendments to their concept design. They now wish to submit another Stage 1 DA for the mended proposal.

I need to update my original DA utilities report. Part of that report update requires me to recontact all of the Statutory Authorities. As such, I am providing a Memo attached that outlines the revised anticipated gas demand.

Can Jemena please review this Memo and provide any advice with regard to existing natural gas supply in the vicinity of the development, point of connection and any potential augmentation of the existing gas network that may be required, in order to service the proposed development.

I would be happy to meet and discuss the proposal in more detail if needed.

Kind Regards,

Joe

Joe Heydon | Principal Engineer – Urban Development & Regeneration | BE Civil Eng. | joe.heydon@arcadis.com
Arcadis | Level 16, 580 George Street, Sydney | NSW 2060 | Australia
T. + 61 2 8907 9149 | M. + 61 468 745 425
www.arcadis.com





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Registered office: Level 16, 580 George Street, Sydney NSW 2060, Australia ABN 76 104 485 289

From: Brad Gee <Brad.Gee@jemena.com.au>
Sent: Monday, 29 February 2016 4:36 PM
To: Joe Heydon <Joe.Heydon@arcadis.com>
Subject: RE: Harbourside Shopping Centre - Darling Harbour

Hi Joe

The below loads seem low at this stage, based on similar buildings. Once final designs and plant have been selected this will firm up the proposed loads.

Please find attached an initial response to the proposed development.

Bradley Gee
Network Development Manager I&C
Jemena
Level 14, 99 Walker Street, North Sydney, NSW 2060
02 9867 7134 | 0429 363 835
bradley.gee@jemena.com.au | www.jemena.com.au
www.gonaturalgas.com.au



From: Joe Heydon [<mailto:Joe.Heydon@arcadis.com>]
Sent: Friday, 5 February 2016 3:10 PM
To: Gregory Knight
Subject: Harbourside Shopping Centre - Darling Harbour

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



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Registered office: Level 5, 141 Walker Street, Sydney NSW 2060, Australia ABN 76 104 485 289

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Date 24/01/2020
To Bradley Gee
From Joe Heydon
Subject Harbourside Shopping Centre

Hi Bradley,

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, Darling Harbour, Sydney.

Since our last correspondence (refer to **Appendix A**) the Harbourside development has been amended to include:

- Demolition of the existing centre
- 87,000sqm gross floor area (GFA) comprising:
 - 49,000sqm GFA non-residential
 - 38,000sqm GFA residential
- ~38,000sqm floor area non-residential comprising:
 - ~23,000sqm net lettable area of commercial
 - ~15,000sqm gross lettable area of retail
- Car-parking (Note: To accommodate 306 cars for residential use only, over 3 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
- Change from retail podium only to a mixed retail and commercial podium
- Car-parking provision has reduced from 320 to 306 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 / commercial mix development.

Residential Gas Load (MJ/hr)	Commercial Gas Load (MJ/hr)	Retail Gas Load (MJ/hr)	Total (MJ/hr)
5,500	4,000	16,000	25,500

Table 1 Estimated gas loads for the Harbourside development

Assumptions and clarifications:

Commercial:

- The commercial natural gas demands are based on a 5 Star NABERS rating and an energy mix of 20% natural gas.
- The peak hour gas loads are based on 50% of the average daily demand.

Retail

- The retail is based on an average shopping centre energy intensity of 1,600MJ/m².a. and an energy mix of 5% natural gas (Baseline Energy Consumption and Greenhouse Gas Emissions In Commercial Buildings in Australia, Council of Australian Governments (COAG) National Strategy on Energy Efficiency– 2012)
- The peak load is based on 200% of average daily demand.

Residential

- Residential peak loads are based on 40MJ/hr per apartment (375 off) and a diversity of factor 0.195 with an allowance of 2500MJ/hr. for centralised hot water plant.

The above loads are based on the following area schedule and retail mix:

Area Schedule

Total GBA (m ²)	Residential GFA (m ²)	Number of Apartments	Retail GFA (m ²)	Retail GLAR (m ²)	Commercial GFA (m ²)	Commercial NLA (m ²)
121,202	37,814	357	37,814	15,850	27,268	23,100

Retail Mix

Food & Beverage	Specialty NLA (m ²)
70%	30%

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

Appendix A – Previous Correspondence

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



Be green, leave it on the screen.

29/02/2016



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

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

Attention: Joe Heydon

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

A handwritten signature in black ink, appearing to read "Bradley Gee".

Bradley Gee
Network Development Manager



APPENDIX K

Telstra and NBN Co. Dial Before You Dig Plans

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.

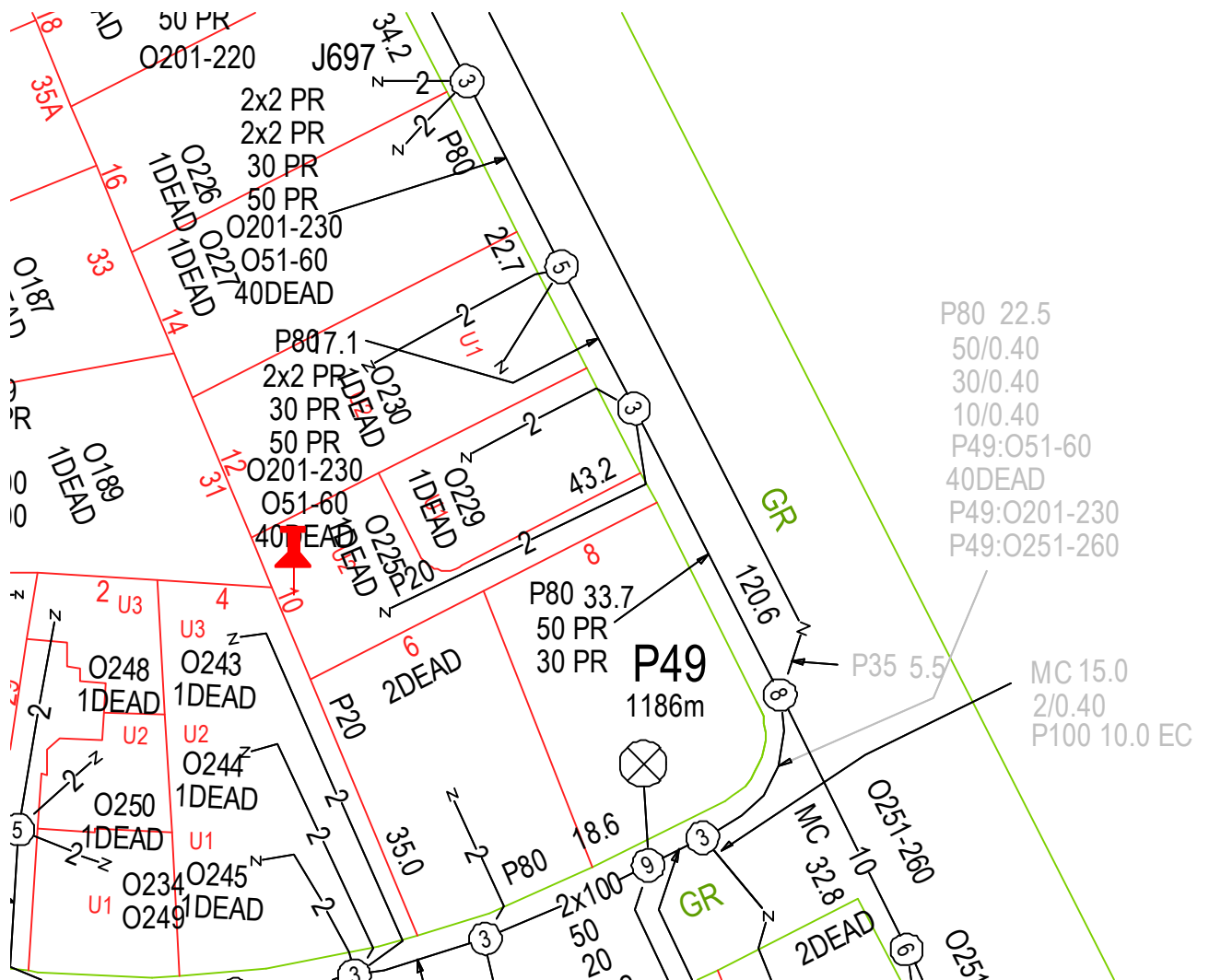
Additional Information

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



To: Ms Michelle Fletcher
Phone: Not Supplied
Fax: Not Supplied
Email: michelle.fletcher@arcadis.com

Dial before you dig Job #:	18175578	 DIAL BEFORE YOU DIG www.1100.com.au
Sequence #	89401490	
Issue Date:	25/09/2019	
Location:	Darling Drive , Sydney , NSW , 2000	Some impact. No onsite action required.

Information

The area of interest requested by you contains one or more assets.

nbn Assets	Search Results
Communications	Asset identified
Electricity	No assets

In this notice **NBN Facilities** means *underground fibre optic, telecommunications and/or power facilities, including but not limited to cables, owned and controlled by nbn*

Location of Underground Power Facilities

We thank you for your enquiry. In relation to your enquiry at the above address:

- **nbn's** records indicate that there **ARE nbn** Facilities in the vicinity of the location identified above ("Location").
- **nbn** 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 **nbn** Facilities shown on the Plan/s.
- In particular, the fact that the Indicative Plans 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.
- You should note that, at the present time, the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables. As such, consistent with the notes below, particular care must be taken by you to make your own enquiries and investigations to precisely locate any power cables and manage the risk arising from such cables accordingly.
- 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** 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 are planning to excavate and require further information, please contact **nbn** on 1800 626 329. For any enquiries related to moving assets or Planning and Design activities, please visit the **nbn** [Commercial Works](#) website to complete the online application form.

Notes:

1. You are now aware that there are **nbn** Facilities in the vicinity of the above property that could be damaged as a result of 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* (CoA) which deals with the consequences of interfering or tampering with a telecommunications facility. Only persons authorised by **nbn** can interact with **nbn's** network facilities.
3. Any information provided is valid only for **28 days** from the date of issue set out above.

Referral Conditions

The following are conditions on which **nbn** 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** does not accept any responsibility for any inaccuracies of its plans including the Indicative Plans. You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators at your expense to locate **nbn** Facilities during any activities you carry out on site).
2. You acknowledge that **nbn** has specifically notified you above that the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables.
3. You should not assume that **nbn** Facilities follow straight lines or are installed at uniform 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.
4. In carrying out any works in the vicinity of **nbn** 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.
 - Adherence to clearances as directed by other asset owner's instructions and take into account any uncertainty for power cables.
5. You are aware that there are inherent risks and dangers associated with carrying out work in the vicinity of underground facilities (such as **nbn** fibre optic, copper and coaxial cables, and power cable feed to **nbn** assets). Damage to underground electric cables may result in:
 - Injury from electric shock or severe burns, with the possibility of death.
 - Interruption of the electricity supply to wide areas of the city.
 - Damage to your excavating plant.
 - Responsibility for the cost of repairs.
6. You must take all reasonable precautions to avoid damaging **nbn** 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** immediately.
 - All personnel must be properly briefed, particularly those associated with the use of earth-moving equipment, trenching, boring and pneumatic equipment.
 - The safety of the public and other workers must be ensured.
 - All excavations must be undertaken in accordance with all relevant legislation and regulations.
7. You will be responsible for all damage to **nbn** 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** as a result of any such damage.
8. You must immediately report any damage to **nbn**TM network that you are/become aware of. Notification may be by telephone - 1800 626 329.
9. Except to the extent that liability may not be capable of lawful exclusion, **nbn** and its servants and agents and the related bodies corporate of **nbn** 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(including Indicative Plans) attached hereto. Except as expressly provided to the contrary in this information sheet or the attached plans(including Indicative Plans), all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

All works undertaken shall be in accordance with all relevant legislations, acts and regulations applicable to the particular state or territory of the Location. The following table lists all relevant documents that shall be considered and adhered to.

State/Territory	Documents
National	Work Health and Safety Act 2011
	Work Health and Safety Regulations 2011
	Safe Work Australia - Working in the Vicinity of Overhead and Underground Electric Lines (Draft)
	Occupational Health and Safety Act 1991
NSW	Electricity Supply Act 1995
	Work Cover NSW - Work Near Underground Assets Guide
	Work Cover NSW - Excavation Work: Code of Practice
VIC	Electricity Safety Act 1998
	Electricity Safety (Network Asset) Regulations 1999
QLD	Electrical Safety Act 2002
	Code of Practice for Working Near Exposed Live Parts
SA	Electricity Act 1996
TAS	Tasmanian Electricity Supply Industry Act 1995
WA	Electricity Act 1945
	Electricity Regulations 1947
NT	Electricity Reform Act 2005
	Electricity Reform (Safety and Technical) Regulations 2005
ACT	Electricity Act 1971

Thank You,

Network Operations Centre - Assurance




Date: 25/09/2019

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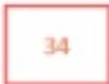




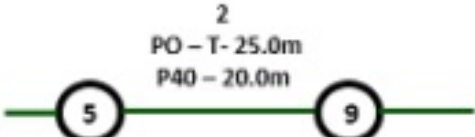
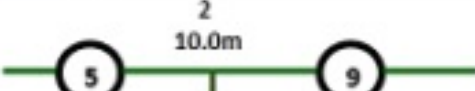





Indicative Plans

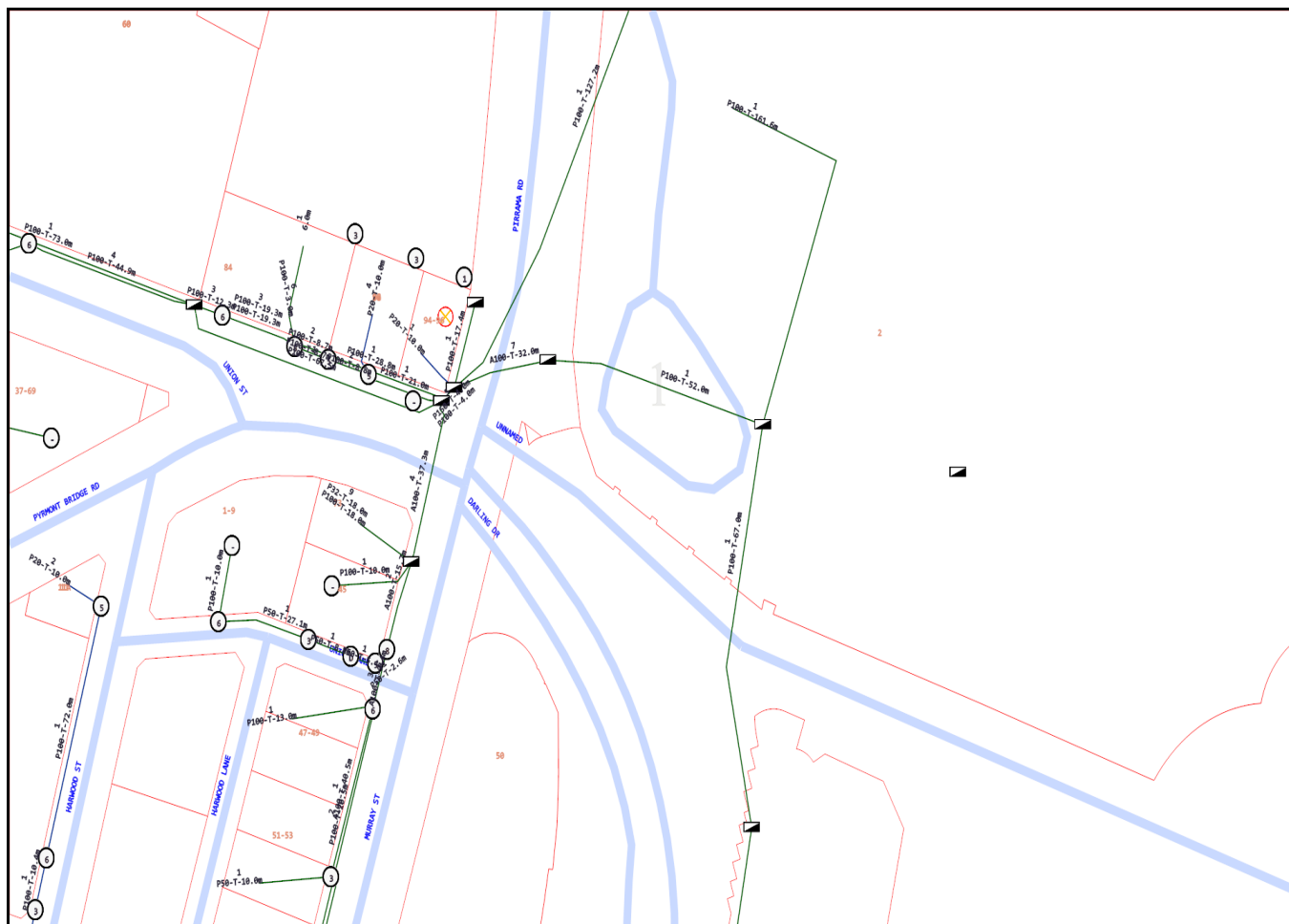
Issue Date:	25/09/2019	 DIAL BEFORE YOU DIG www.1100.com.au
Location:	Darling Drive , Sydney , NSW , 2000	

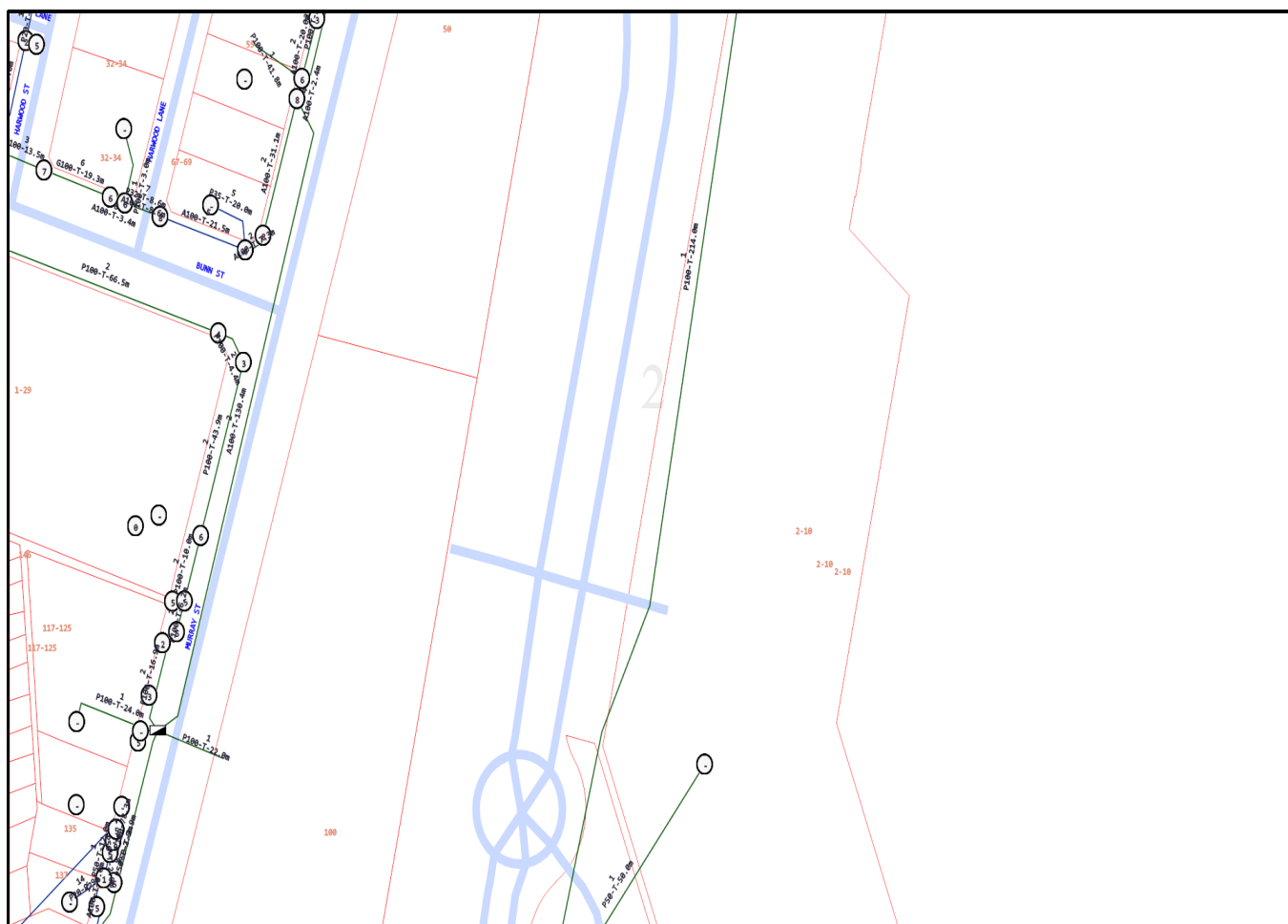




LEGEND

	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
	2 Direct buried cables between pits of sizes, "5" and "9" are 10.0m apart.
	Trench containing any INSERVICE/CONSTRUCTED (Copper/RF/Fibre) cables.
	Trench containing only DESIGNED/PLANNED (Copper/RF/Fibre/Power) cables.
	Trench containing any INSERVICE/CONSTRUCTED (Power) cables.
	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000 1 cm equals 20 m 





You must immediately report any damage to **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.



Working near **nbn**TM cables

nbn has partnered with Dial Before You Dig to give you a single point of contact to get information about **nbn** underground services owned by **nbn** and other utility/service provider in your area including communications, electricity, gas and other services. Contact with underground power cables and gas services can result in serious injury to the worker, and damage and costly repairs. You must familiarise yourself with all of the Referral Conditions (meaning the referral conditions referred to in the DBYD Notice provided by **nbn**).

Practice safe work habits

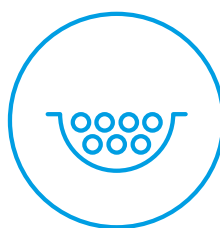
Once the DBYD plans are reviewed, the Five P's of Excavation should be adopted in conjunction with your safe work practices (which must be compliant with the relevant state Electrical Safety Act and Safe Work Australia "Excavation Work Code of Practice", as a minimum) to ensure the risk of any contact with underground **nbn** assets are minimised.



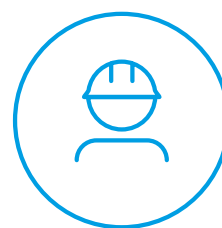
Plan: Plan your job ensuring the plans received are current and apply to the work to be performed. Also check for any visual cues that may indicate the presence of services not covered in the DBYD plans.



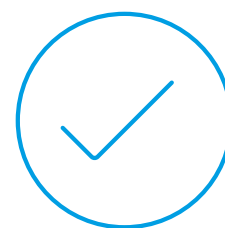
Prepare: Prepare for your job by engaging a DBYD qualified Plant Locator to help interpret plans and identify on-site assets. Contact **nbn** should you require further assistance.



Pothole: Non-destructive potholing (i.e. hand digging or hydro excavation) should be used to positively locate **nbn** underground assets with minimal risk of contact and service damage.

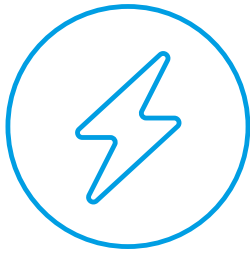


Protect: Protecting and supporting the exposed **nbn** underground asset is the responsibility of the worker. Exclusion zones for **nbn** assets are clearly stated in the plan and appropriate controls must be implemented to ensure that encroachment into the exclusion zone by machinery or activities with the potential to damage the asset is prevented.

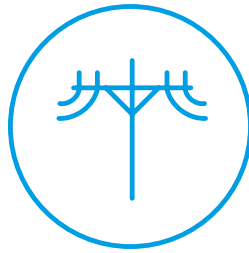


Proceed: Proceed only when the appropriate planning, preparation, potholing and protective measures are in place.

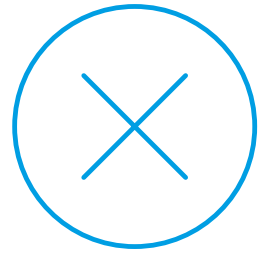
Working near **nbn**TM cables



Identify all electrical hazards, assess the risks and establish control measures.



When using excavators and other machinery, also check the location of overhead power lines.



Workers and equipment must maintain safety exclusion zones around power lines.

Once all work is completed, the excavation should be re-instated with the same type of excavated material unless specified by **nbn**. Please note:

- Construction Partners of **nbn** may require additional controls to be in place when performing excavation activities.
- The information contained within this pamphlet must be used in conjunction with other material supplied as part of this request for information to adequately control the risk of potential asset damage.

Contact

In the event of the **nbn**TM network facility damage please call 1800 626 329

Disclaimer

This brochure is a guide only. It does not address all the matters you need to consider when working near our cables. You must familiarise yourself with other material provided (including the Referral Conditions) and make your own inquiries as appropriate.

nbn will not be liable or responsible for any loss, damage or costs incurred as a result of reliance on this brochure.

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APPENDIX L

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 M

RMS Dial Before You Dig Records

Legislation

Survey marks are protected under the *Surveying and Spatial Information Act 2002 (NSW) Section 24*. The following penalties and orders apply for unauthorised removal, damage or disturbance of survey marks:

- Maximum penalty of 25 units, currently **\$2,750** per mark; and
- up to **\$10,000** per mark in compensation to the Surveyor-General towards the cost of reinstatement of each survey mark; and
- up to **\$10,000** per mark in compensation to any other person towards any loss or damage suffered by that person as a consequence of the offence.

If works are likely to impact a survey mark, an application under the *Surveying and Spatial Information Regulation 2017 Clause 90* must be lodged with the Surveyor-General.

Why are survey marks important?

Survey marks are a State asset and provide a wealth of important information to a wide range of people in the community. They are used to support the surveying of property boundaries and easements, and are important for engineering, road building, mapping and other land surveys.

The loss of survey marks can significantly degrade the integrity of the legal property boundaries and impact on the costs of development projects that depend upon position and height.

How do I preserve survey marks?

Surveyor-General's Direction No.11 – Preservation of Survey Infrastructure provides directions on how to comply with the Legislation.

You can find the Direction on the following link:
http://spatialservices.finance.nsw.gov.au/_data/assets/pdf_file/0005/217094/SG_Directon_No11_Final4.pdf

A Registered Land Surveyor will be able to provide advice about the preservation of survey infrastructure. A list of Registered Land Surveyors is available from the Board of Surveying and Spatial Information website:
http://www.bossi.nsw.gov.au/about/find_a_registered_surveyor

Additional information to assist with best practice guidelines for road infrastructure development can be found in Roads and Maritime Services QA Specification G71 – *Construction Surveys* by following the link: <http://www.rms.nsw.gov.au/business-industry/partners-suppliers/documents/specifications/g071.pdf>

Types of survey marks

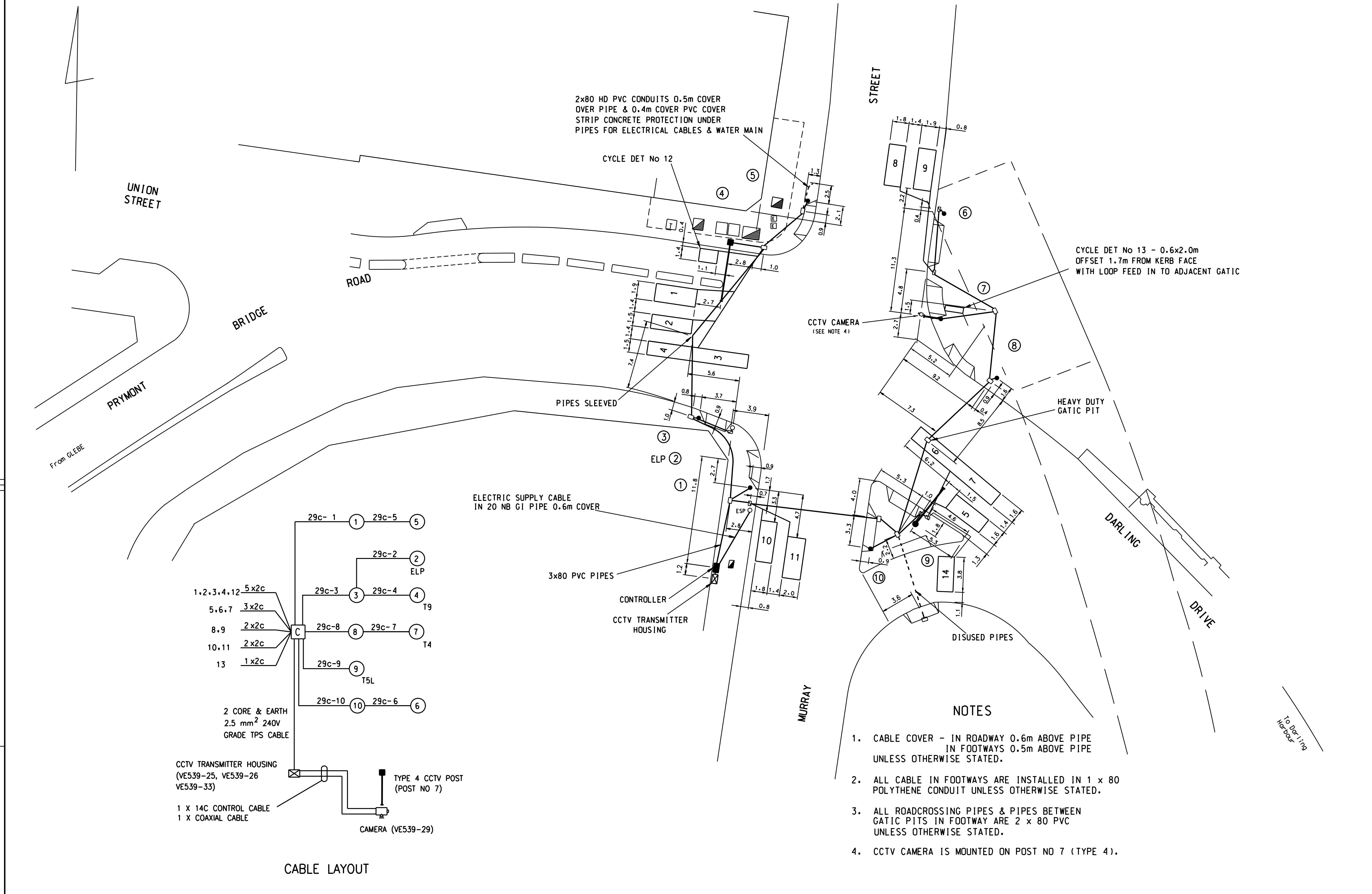
There are many types of survey marks used for various purposes. Many are buried and may only be identified by a Registered Land Surveyor. Some examples of common survey marks can be seen below.



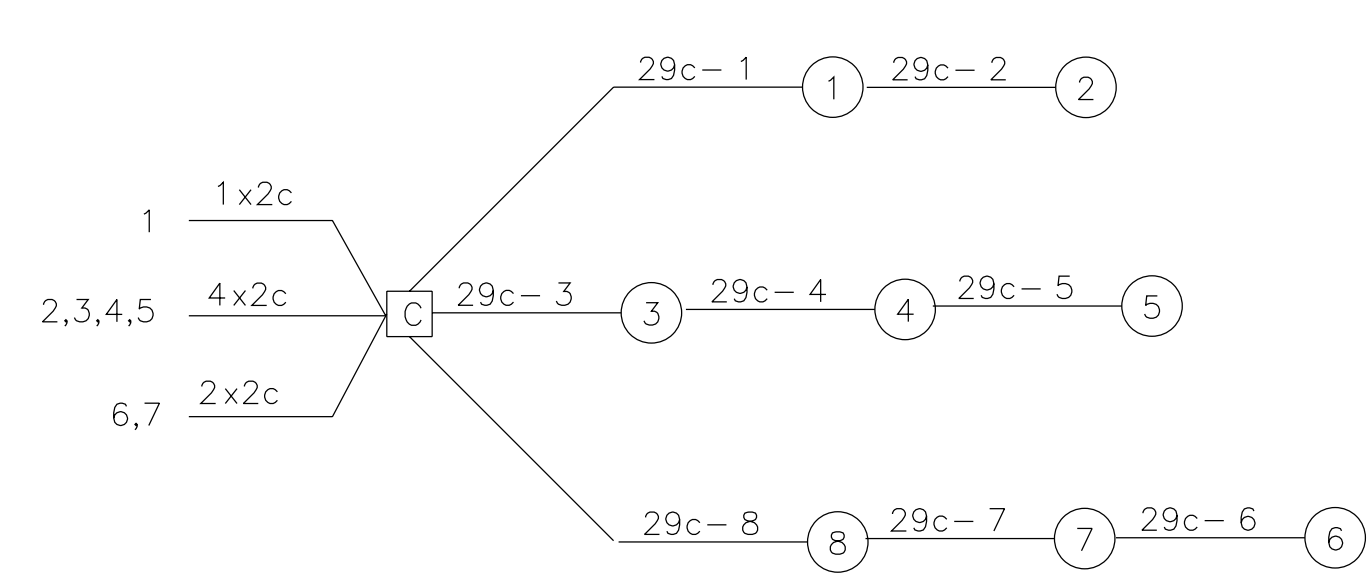
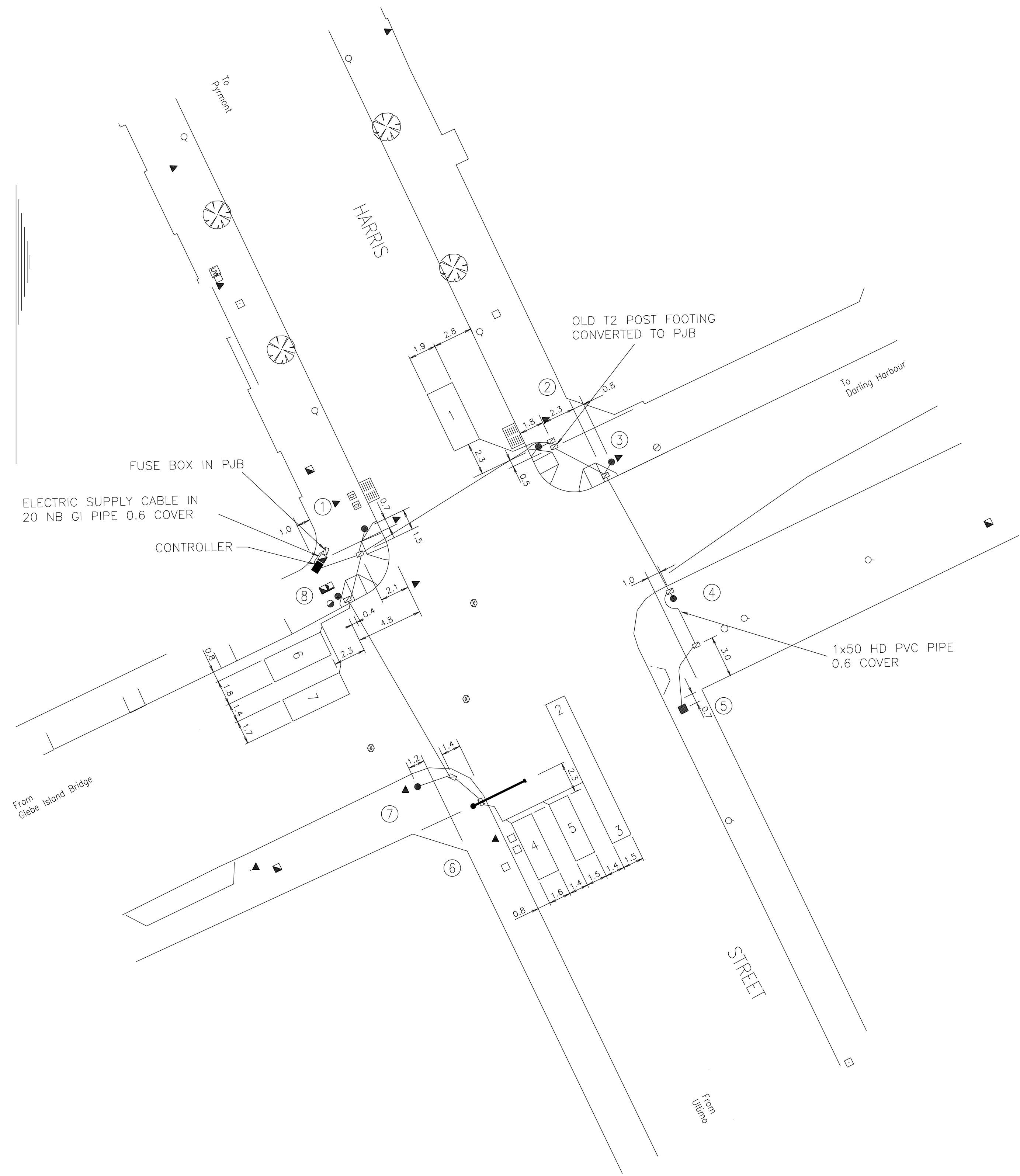
More information

For more information or to obtain advice on compliance with Legislation, please forward your enquiry to:
Surveyor-General-Approvals@finance.nsw.gov.au

Applications to remove a Survey Mark can be lodged here: http://spatialservices.finance.nsw.gov.au/surveying/surveying_services/forms_and_applications/survey_marks_removal



A ORIGINAL ISSUE	PUBLIC UTILITY LEGEND		REFERENCE PLANS		U.B.D. Ref. MAP 12 04		APPROVED		ROADS AND MARITIME SERVICES		EXISTING <input checked="" type="checkbox"/> PROPOSED <input type="checkbox"/>	
	HYDRANT <input type="checkbox"/>		SYMBOLS/ABBS. VD003-6		I.S.G. E: 318210 CO-ORDS N: 1250835		 ELECT DESIGN MANAGER		CITY OF SYDNEY DARLING DRIVE, MURRAY STREET PYRMONT BRIDGE ROAD PYRMONT		CADD FILE: W2834_9A_INS.DGN	
	STOP VALVE <input type="checkbox"/>		STD. POSIT. VD001-5		DESIGNED CORRIGAN						SCALE 5 0 (1:200) 5 10	
	GAS VALVE <input type="checkbox"/>		DET. SCHED. EXP. VD018-10		CHECKED		FILE 412 TS 498		SUPERSEDES SHEET/ISSUE 6B		ISSUE A	
	SEWER MANHOLE <input type="checkbox"/>		PRES. DETECT. VC005-17		B. DANIEL 10-03-2012 SITE CHECKED		08-04-2014 DATE		REGN. 7000.412.VV.2834		SHEET 9	
TELECOM PIT <input type="checkbox"/>		SSG DIS. SEQ. VD018-8		I. HAYES 07-04-2014 RECOMMENDED				CABLE INSTALLATION TCS No 2834		© COPYRIGHT ROADS AND TRAFFIC AUTHORITY		
ELECT. LIGHT POLE <input type="checkbox"/>		DESIGN SHEET 8										
POWER POLE <input type="checkbox"/>		CABLE CHART SHEET 10										
STAY POLE <input type="checkbox"/>												
TELEPHONE BOX <input type="checkbox"/>												
TELECOM PILLAR <input type="checkbox"/>												



CABLE LAYOUT

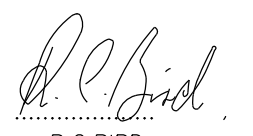
NOTES

- 1. CABLE COVER – IN ROADWAY 0.60m ABOVE PIPE
IN FOOTWAYS 0.5m ABOVE PIPE
UNLESS OTHERWISE STATED.
- 2. ALL CABLES IN FOOTWAYS ARE INSTALLED IN 1x80 HD PVC PIPE OR 1x90 POLYTHENE PIPE UNLESS OTHERWISE STATED.
- 3. ALL ROADWAY CONDUITS ARE 2x80 HD PVC PIPES.

A ORIGINAL ISSUE

PUBLIC UTILITY LEGEND		REFERENCE PLANS		U.B.D. Ref. MAP 12 7-P	
HYDRANT	□	SYMBOLS/ABBS.	VD003-6	I.S.G. E:	318033
STOP VALVE	▲	STD. POSIT.	VD001-5	CO-ORDS N:	1250399
ELECTRICAL PIT	ⓔ	DET. SCHED EXP	VD018-10	DESIGNED	CNJ
SEWER MANHOLE	Ⓢ	PRES. DETECT	VC005-17	CHECKED	
TELECOM PIT	Ⓣ	SSG DIS. SEQ.	VD018-8	SITE CHECKED	
ELECT LIGHT POLE	Ⓛ	DESIGN LAYOUT	SHT 1	RECOMMENDED	
POWER POLE	Ⓚ	CABLE CHART	SHT 7		
DRAINAGE GULLY PIT	ⓖ				
DRAINAGE JUNCTION PIT	ⓙ	SURVEYOR: HARD & FORESTER			
TELECOM PILLAR	Ⓣ	DATE : APRIL 1995			

APPROVED


R.C.BIRD
ELECTRICAL DESIGN MANAGER
16/06/98
DATE

Roads and Traffic Authority,N.S.W

CITY OF SYDNEY

MR170 HARRIS ST AND ALLEN ST

AT PYRMONT – STAGE 2

CABLE INSTALLATION

TCS No 2839

SYDNEY TECHNICAL SERVICES-DESIGN OFFICE PARRAMATTA

CAD DRAWING FILE: VV2839_6A_INS.dgn

SCALE 5 0 (1:200) 5 10

FILE 412 TS 486

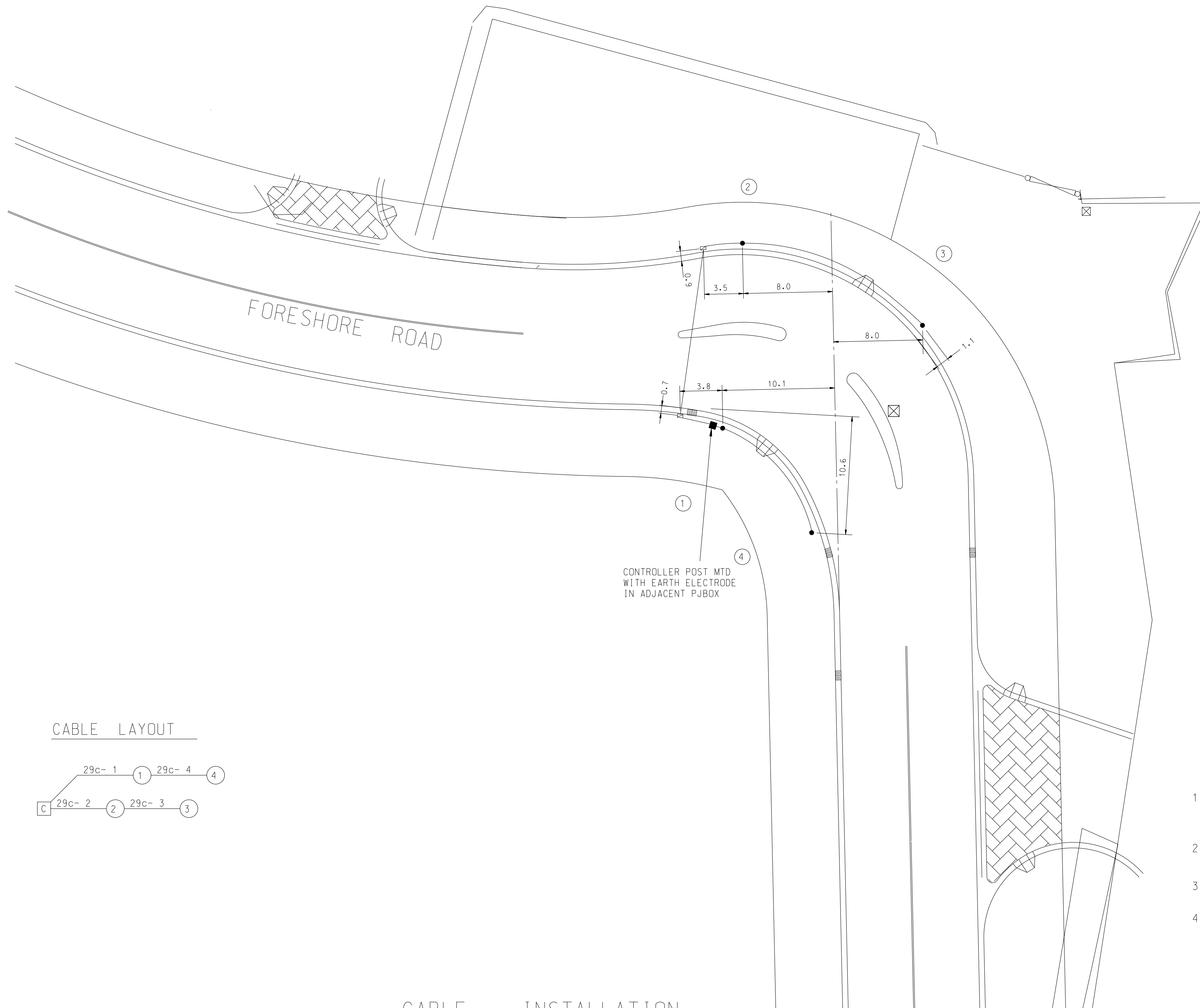
REGN. 0170.412.VV.2839

ISSUE A

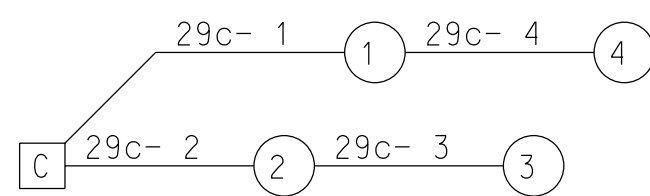
SHEET 6

7000.412.VV.2921

DRAWN USING CAD
DO NOT AMEND MANUALLY



CABLE LAYOUT

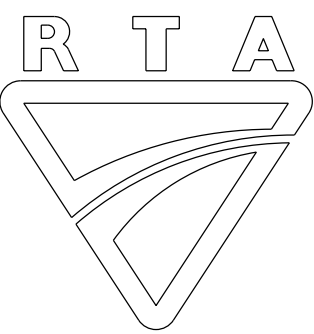


NOTES

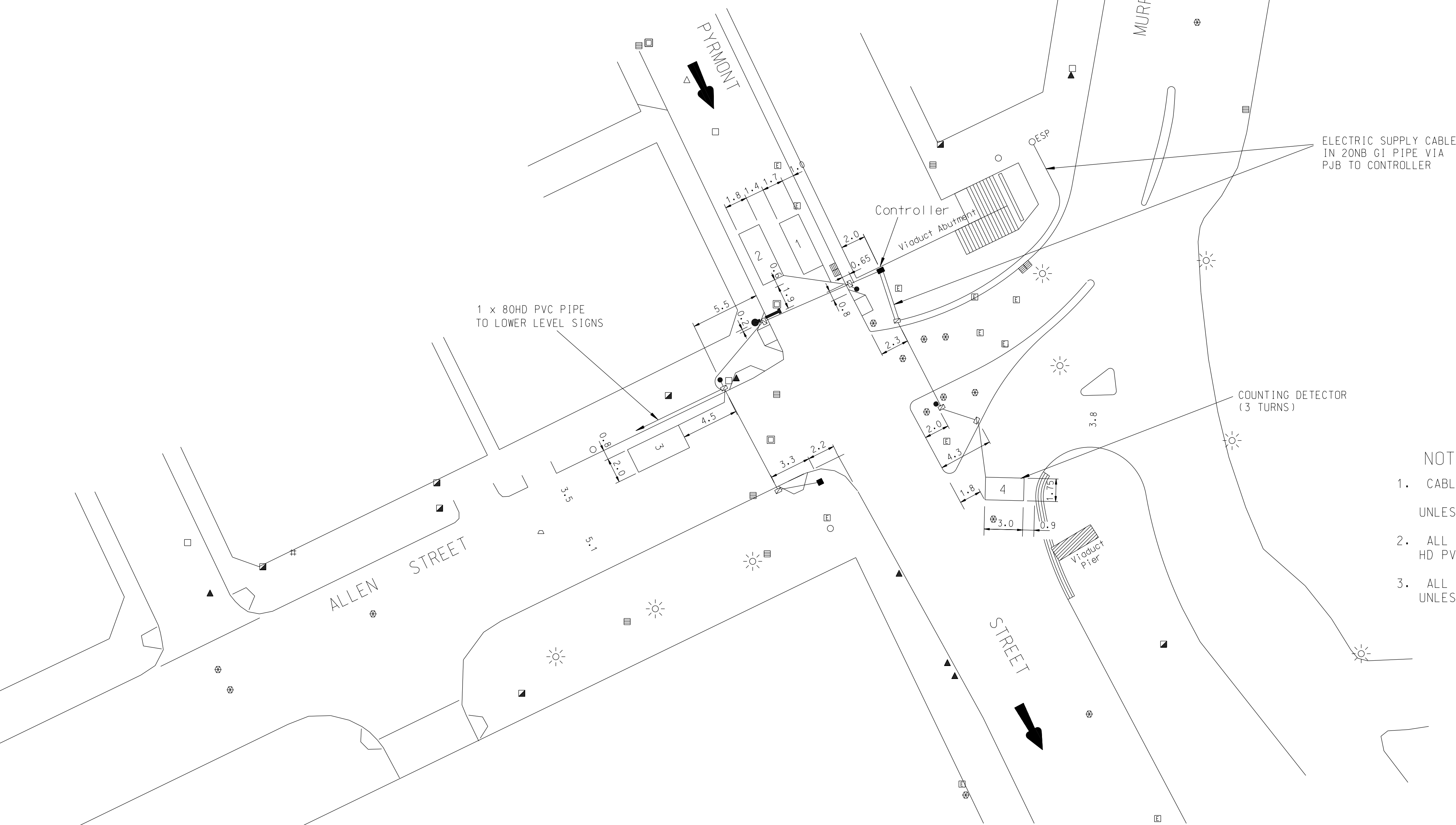
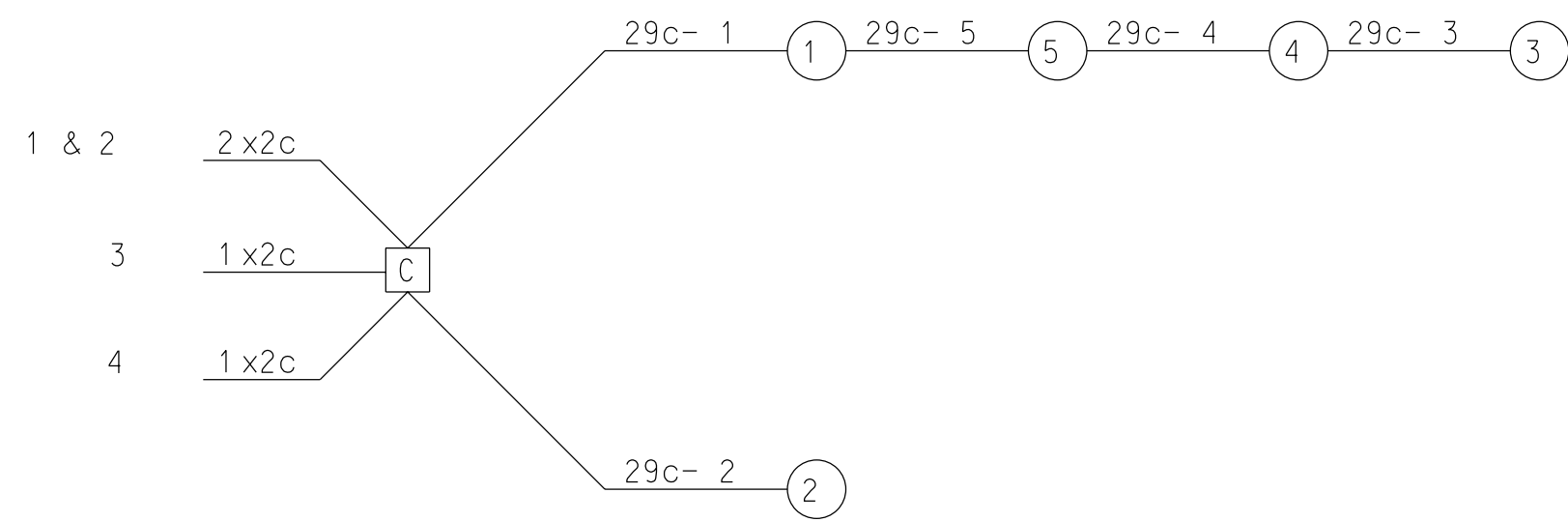
1. CABLE COVER - IN ROADWAY 0.75m ABOVE PIPE
IN FOOTWAYS 0.5m ABOVE PIPE
UNLESS OTHERWISE STATED.
2. ALL CABLE IN FOOTWAYS ARE INSTALLED IN 1 x 100
HD PVC CONDUIT UNLESS OTHERWISE STATED.
3. ALL ROADCROSSING CONDUITS ARE 1 x 100 HD PVC.
4. SUPPLY AND ABOVE GROUND COMPONENTS NOT
INSTALLED AT THIS SITE.

CABLE INSTALLATION

A ORIGINAL ISSUE	PUBLIC UTILITY LEGEND		REFERENCE PLANS		U.B.D. Ref. MAP 6 N14		APPROVED		Roads and Traffic Authority, N.S.W.		REGION: SYDNEY		BRANCH: CONSULTANT SERVICES			
	HYDRANT <input type="checkbox"/>		SYMBOLS/ABBS. VD003-6		I.S.G. E: 318120		 R.C. BIRD ELECTRICAL DESIGN MANAGER		CITY OF SYDNEY		LOGIN: ELECTA		DOGS DRAWING FILE: VV2921_2A.INS			
	STOP VALVE <input type="checkbox"/>		STD. POSIT. VD001-5		CO-ORDS. N: 1,250,970						SCALE 5 0 (1:200) 5 10		ISSUE			
	GAS VALVE <input type="checkbox"/>		# DET. SCHED. EXP. VD018-10		DESIGNED CNJ		04/04/95 DATE		FORESHORE ROAD AND MURRAY STREET PYRMONT		FILE 412.TS.573		SUPERSEDES SHEET/ISSUE -		A	
	SEWER MANHOLE <input type="checkbox"/>		PRES. DETECT. VC005-17		CHECKED						REGN. 7000.412.VV.2921		SHEET 2			
TELECOM PIT <input type="checkbox"/>		SSG DIS. SEQ. VD018-9		SHEET 1		TCS No 2921										
ELECT. LIGHT POLE <input type="checkbox"/>		DESIGN		SHEET 1												
POWER POLE <input type="checkbox"/>		CABLE CHART		VD006-18												
STAY POLE <input type="checkbox"/>																
TELEPHONE BOX <input type="checkbox"/>		SURVEYOR: PUBLIC WORKS														
TELECOM PILLAR <input type="checkbox"/>		DATE														



CABLE LAYOUT



ELECTRIC SUPPLY CABLE
IN 20NB GI PIPE VIA
PJB TO CONTROLLER

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.

CABLE INSTALLATION

A ORIGINAL ISSUE

"B" ISSUE UPDATED TO WAE

PUBLIC UTILITY LEGEND		REFERENCE PLANS		U.B.D. Ref. 12 0 6	
HYDRANT	□	SYMBOLS/ABBS.	VD003-6	1.S.G.	E: 318120
STOP VALVE	▲	STD. POSIT.	VD001-5	CO-ORDS	N: 1250438
GAS VALVE	⊕	DET. SCHED. EXP.	VD018-10	DESIGNED	CORRIGAN
SEWER MANHOLE	⊗	PRES. DETECT.	VCO05-17	CHECKED	C.Z.
TELECOM PIT	⊠	SSG DIS. SEQ.	VD018-8		
ELECT. LIGHT POLE	○	DESIGN	SHT 1		
POWER POLE	○	CABLE CHART	SHT 3		
STAY POLE	○				
TELEPHONE BOX	⊞	SURVEYOR: HARDFORESTER			
TELECOM PILLAR	●	DATE: APRIL 1995			

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	DOGS 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

© COPYRIGHT ROADS AND TRAFFIC AUTHORITY

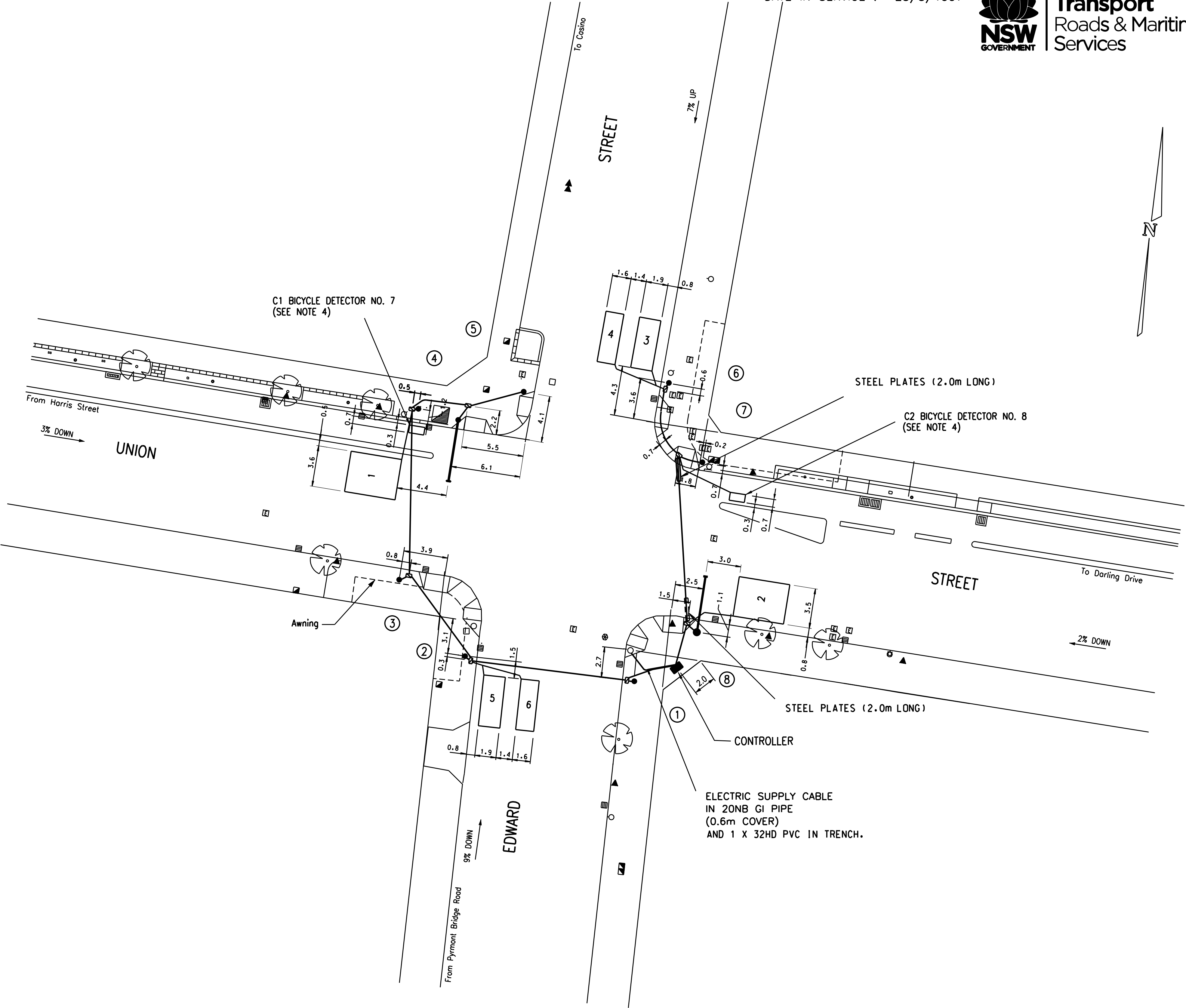
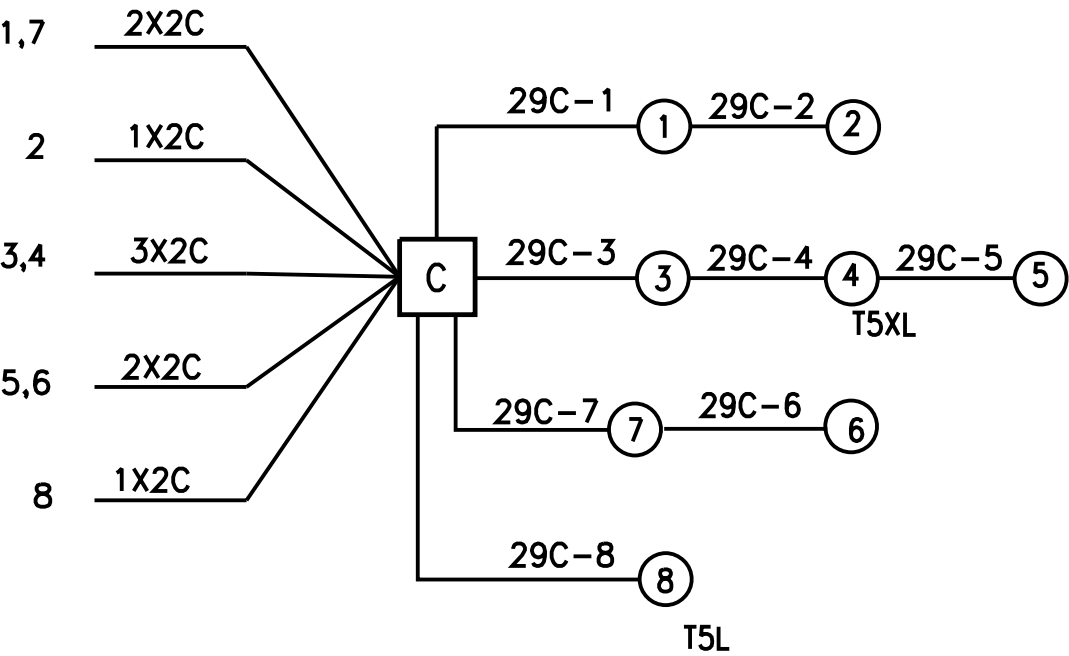
DRAWN BY CADD
DO NOT AMEND MANUALLY

DATE IN SERVICE : 23/5/1997

NOTES

1. CABLE COVER: IN ROADWAYS 0.75m ABOVE PIPE. IN FOOTWAYS 0.5m ABOVE PIPE UNLESS OTHERWISE STATED.
2. ALL CABLES IN FOOTWAYS ARE INSTALLED IN 1 X 80 HD PVC CONDUIT UNLESS OTHERWISE STATED.
3. ALL ROADCROSSING PIPES ARE 2 X 80 HD PVC CONDUIT.
4. BICYCLE DETECTORS ARE INSTALLED AS A FIGURE 8 SINGLE LOOP AND DISARMED.

CABLE LAYOUT



A ORIGINAL ISSUE

18' ISSUE -WAE
Plan amended to suit design
base. Bicycle lane on north
side and posts 4 and 5 are
new.
CORRIGANS 04/ 2013

PUBLIC UTILITY LEGEND	
HYDRANT	□
STOP VALVE	▲
GAS VALVE	■
SEWER MANHOLE	⊗
TELECOM PIT	⊙
ELECT LIGHT POLE	○
POWER POLE	○
STAY POLE	○
TELEPHONE BOX	⊞
TELECOM PILLAR	⊞

REFERENCE PLANS	
SYMBOLS/ABBS.	VD003-6
STD POSIT.	VD001-5
DET. SCHED EXP.	VD018-10
PRES. DETECT	VC005-17
SSG DIS. SEQ.	VD018-8
DESIGN LAYOUT	VV3202-6
CABLE CHART	VV3202-7

U.B.D. Ref996 Map 12 P3	I.S.G. E: 318 040 CO-ORDS N: 1 250 810
DESIGNED R.W.A. 17/1/01	CHECKED D.C. 17/1/01
C. L. R. BIRD	SITE CHECKED
C. L. R. BIRD	RECOMMENDED

APPROVED

R.C. Bird

R.C. BIRD
ELECTRICAL DESIGN MANAGER

DATE 17/1/01

ROADS AND MARITIME SERVICES

SYDNEY CITY COUNCIL AREA

TRAFFIC SIGNALS AT THE INTERSECTION OF
EDWARD STREET AND UNION STREET
PYRMONT

CABLE INSTALLATION

EXISTING <input checked="" type="checkbox"/>	PROPOSED <input type="checkbox"/>
CADD FILE: VV3202_4B_INS.dgn	ISSUE B
SCALE 5 0 (1:200) 5 10	SUPERSEDES SHEET/ISSUE 4A
FILE 412 TS 584	SHEET 4
REGN. 7000.412.W.3202	

APPENDIX N

RailCorp Dial Before You Dig Records

Transport Sydney Trains
477 Pitt Street
Sydney, NSW, 2000

To:

Arcadis - Ms Michelle Fletcher
Level 16 580 George Street
Sydney NSW 2000

This is an **AFFECTED** Response – Please get in contact with **Sydney Trains** before any work including **pot hole** is undertaken using email: DBYD-Stage2works@transport.nsw.gov.au

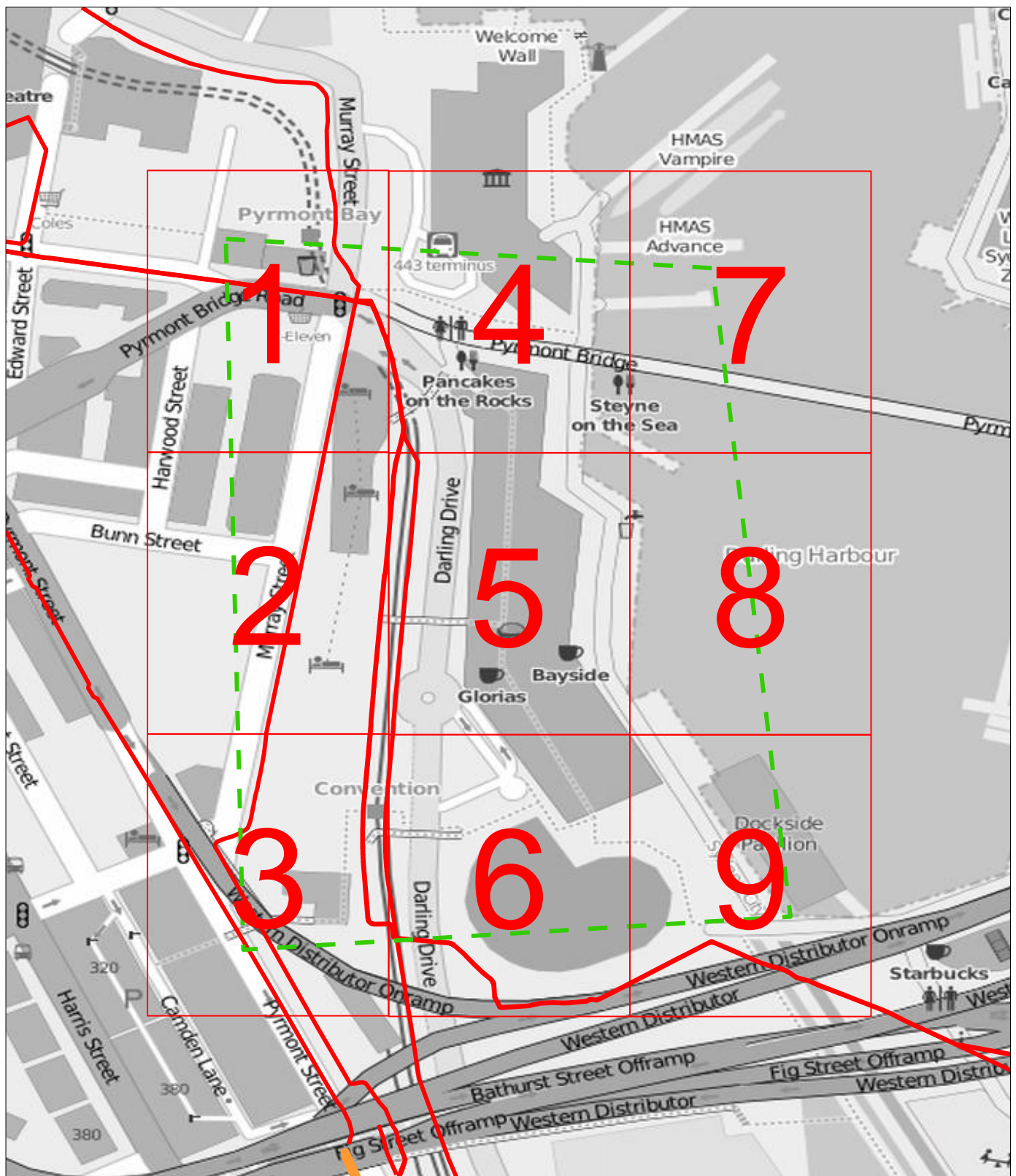
Enquiry Details	
Utility ID	30205 - Central
Sequence Number	89401481
Job Number	18175578
Enquiry Date	25/09/2019 13:21
Response	AFFECTED
Address	Darling Drive Sydney
Location in Road	CarriageWay, Footpath, Nature Strip
Activity	Planning & Design

Enquirer Details			
Customer ID	1749191		
Contact	Ms Michelle Fletcher		
Company	Arcadis		
Email	michelle.fletcher@arcadis.com		
Phone	0421170753	Mobile	Not Supplied

Overview Map

Sequence No: 89401481

Darling Drive Sydney



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.

Greyscale basemaps sourced from [OpenStreetMaps](https://www.openstreetmap.org/)

LEGEND:

1

Detail Map



Affected DBYD
Work Area



Greyscale basemaps sourced from [OpenStreetMaps](https://www.openstreetmap.org/)

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.

LEGEND:



Affected DBYD Work Area



Tunnel

— HV Cable

— Communications



Greyscale basemaps sourced from [OpenStreetMaps](https://openstreetmap.org/)

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.

LEGEND:



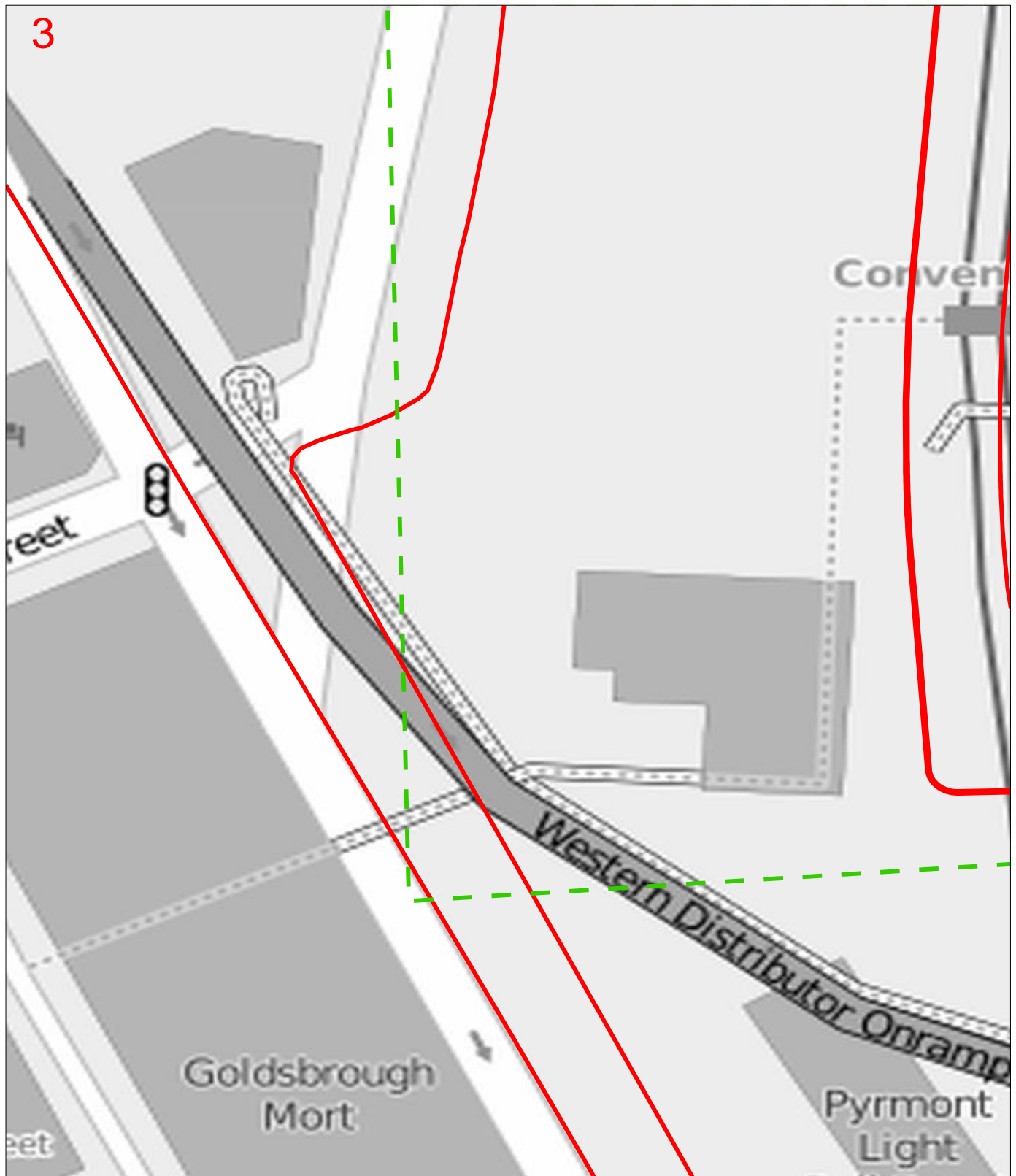
Affected DBYD Work Area



Tunnel

 HV Cable

 Communications



Greyscale basemaps sourced from [OpenStreetMaps](https://www.openstreetmap.org/)

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.

LEGEND:



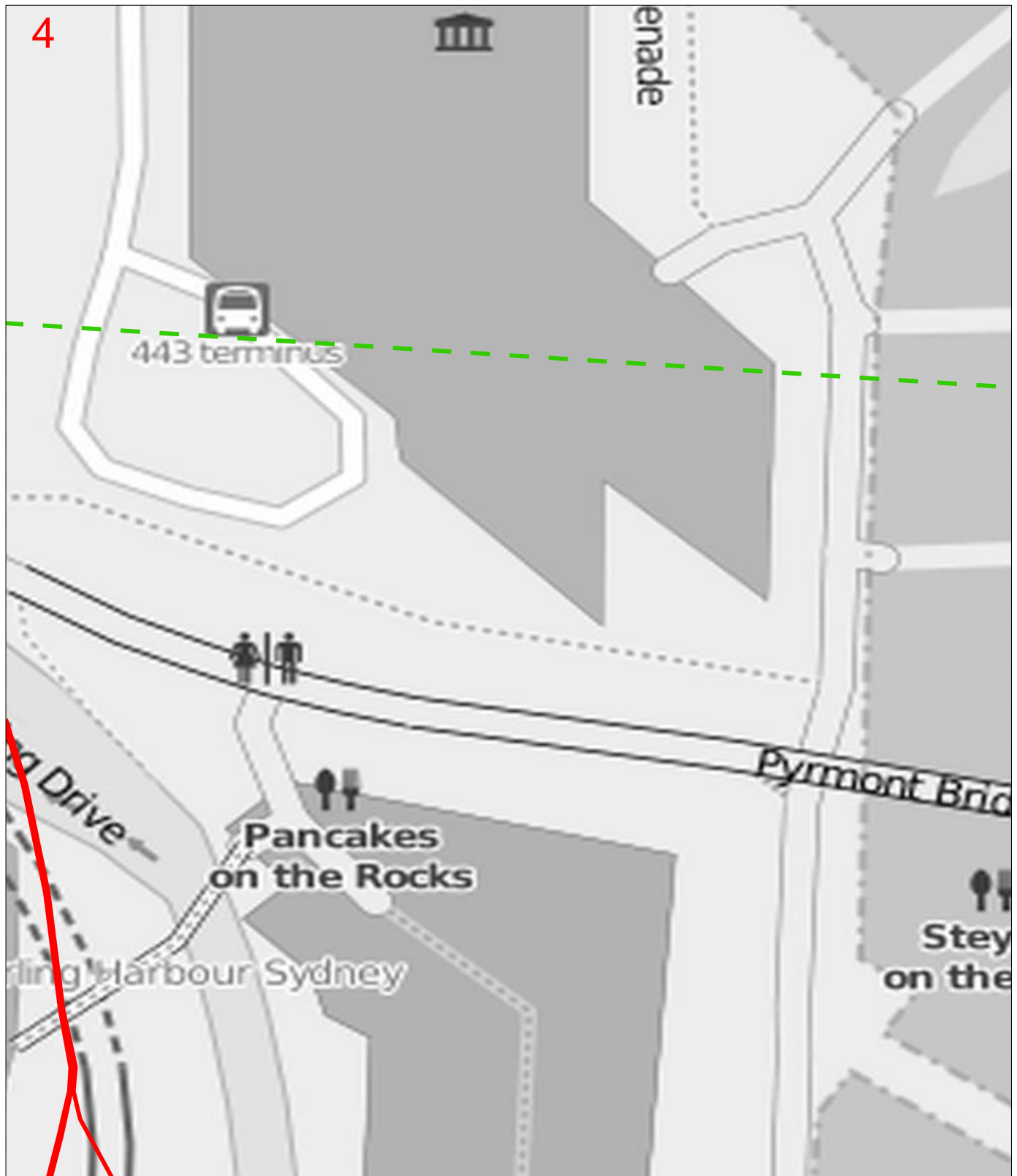
Affected DBYD Work Area



Tunnel

— HV Cable

— Communications



Greyscale basemaps sourced from [OpenStreetMaps](https://www.openstreetmap.org/)

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.

LEGEND:



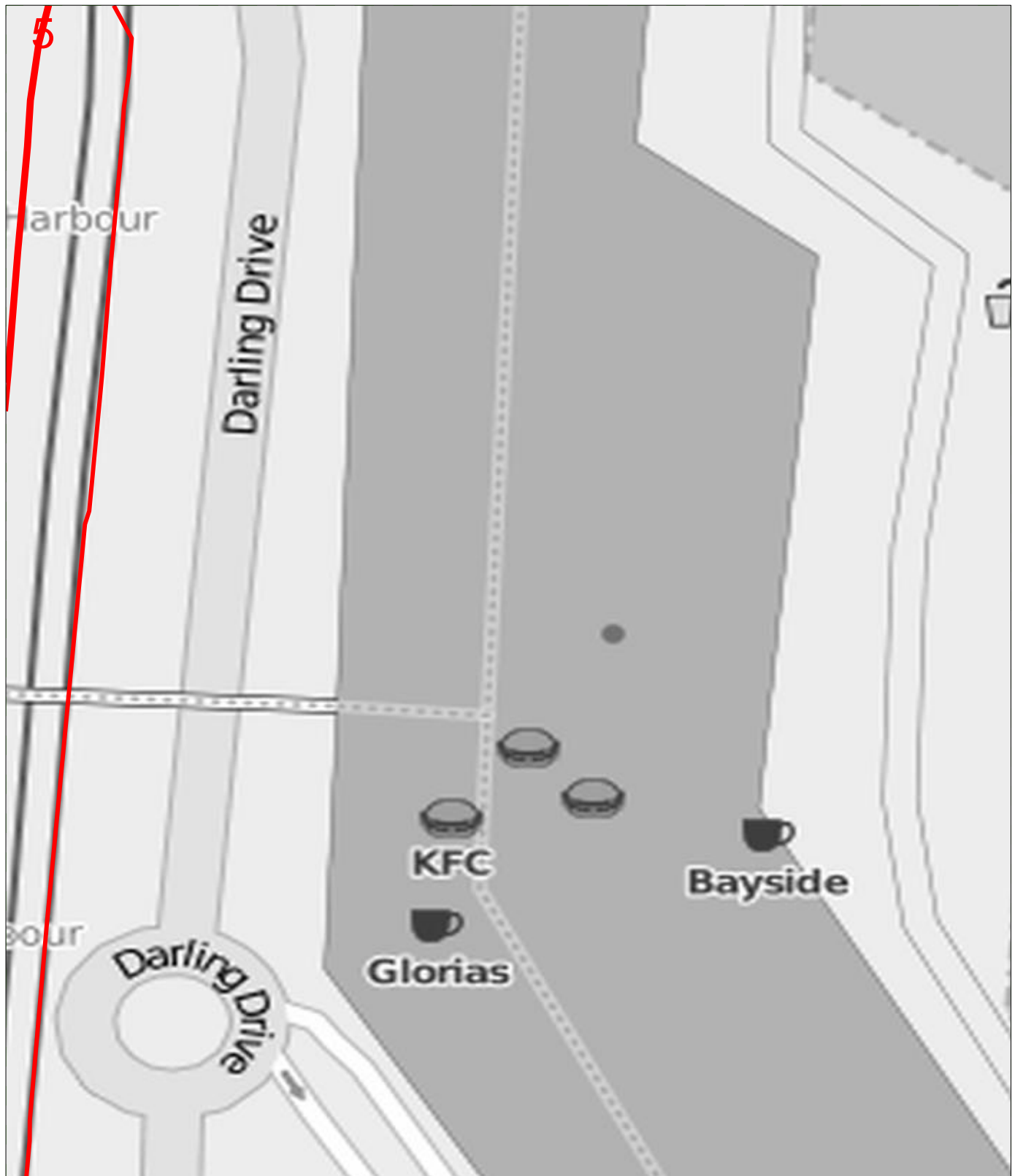
Affected DBYD Work Area



Tunnel

 HV Cable

 Communications



Greyscale basemaps sourced from [OpenStreetMaps](https://www.openstreetmap.org/)

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.

LEGEND:



Affected DBYD Work Area

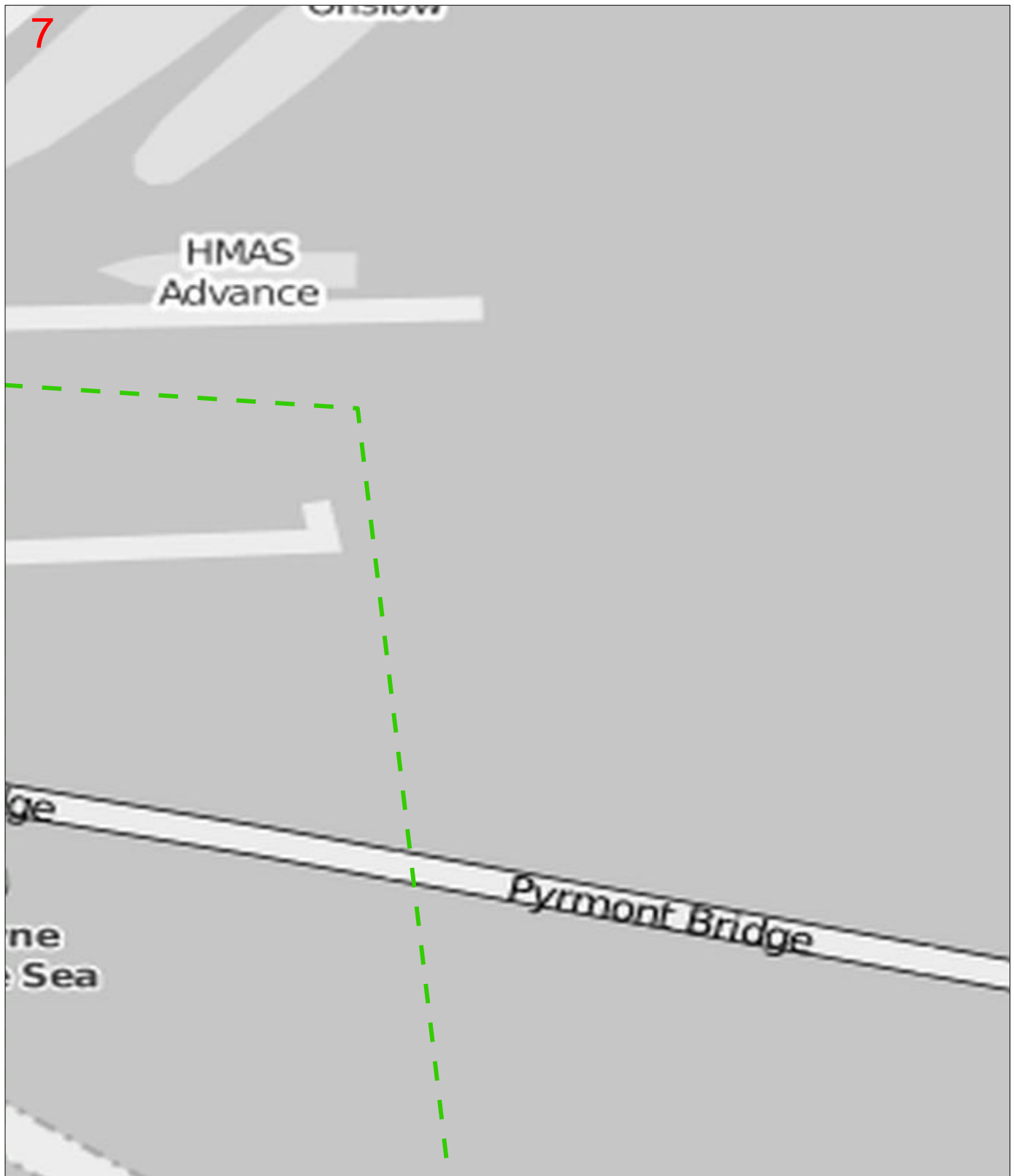


Tunnel

 HV Cable

 Communications





Greyscale basemaps sourced from [OpenStreetMaps](https://www.openstreetmap.org/)

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.

LEGEND:



Affected DBYD Work Area



Tunnel

 HV Cable

 Communications



Greyscale basemaps sourced from [OpenStreetMaps](https://www.openstreetmap.org/)

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.

LEGEND:



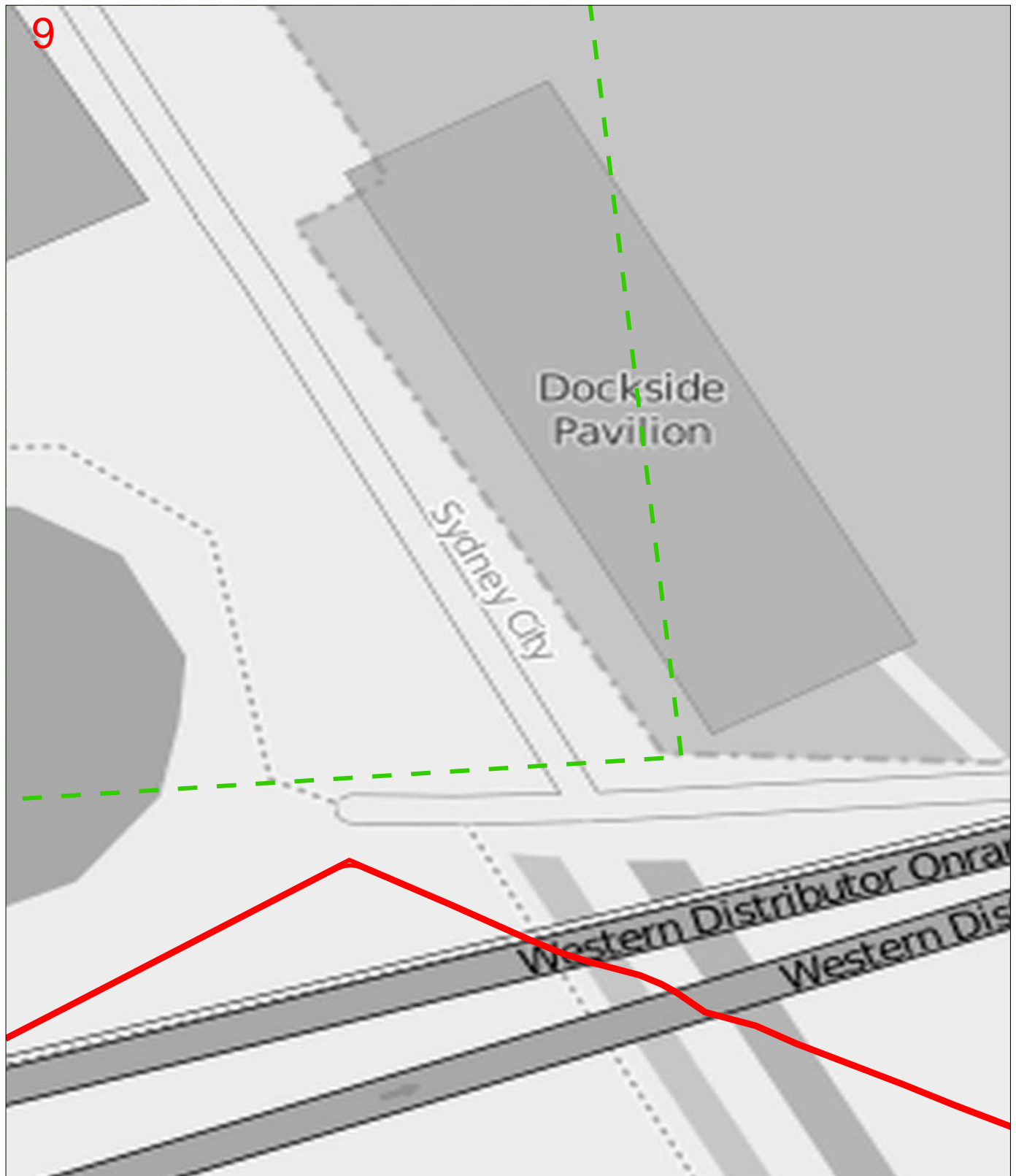
Affected DBYD Work Area



Tunnel

 HV Cable

 Communications



Greyscale basemaps sourced from [OpenStreetMaps](https://www.openstreetmap.org/)

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.

LEGEND:



Affected DBYD Work Area



Tunnel

 HV Cable

 Communications

APPENDIX O

City of Sydney Dial Before You Dig Records

Dial Before You Dig (DBYD): Asset Location Response

Arcadis - Ms Michelle Fletcher
Level 16 580 George Street
Sydney NSW 2000
michelle.fletcher@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	89401478
Enquiry Date	25/09/2019 13:21
Response	AFFECTED
Address	Darling Drive Sydney
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.

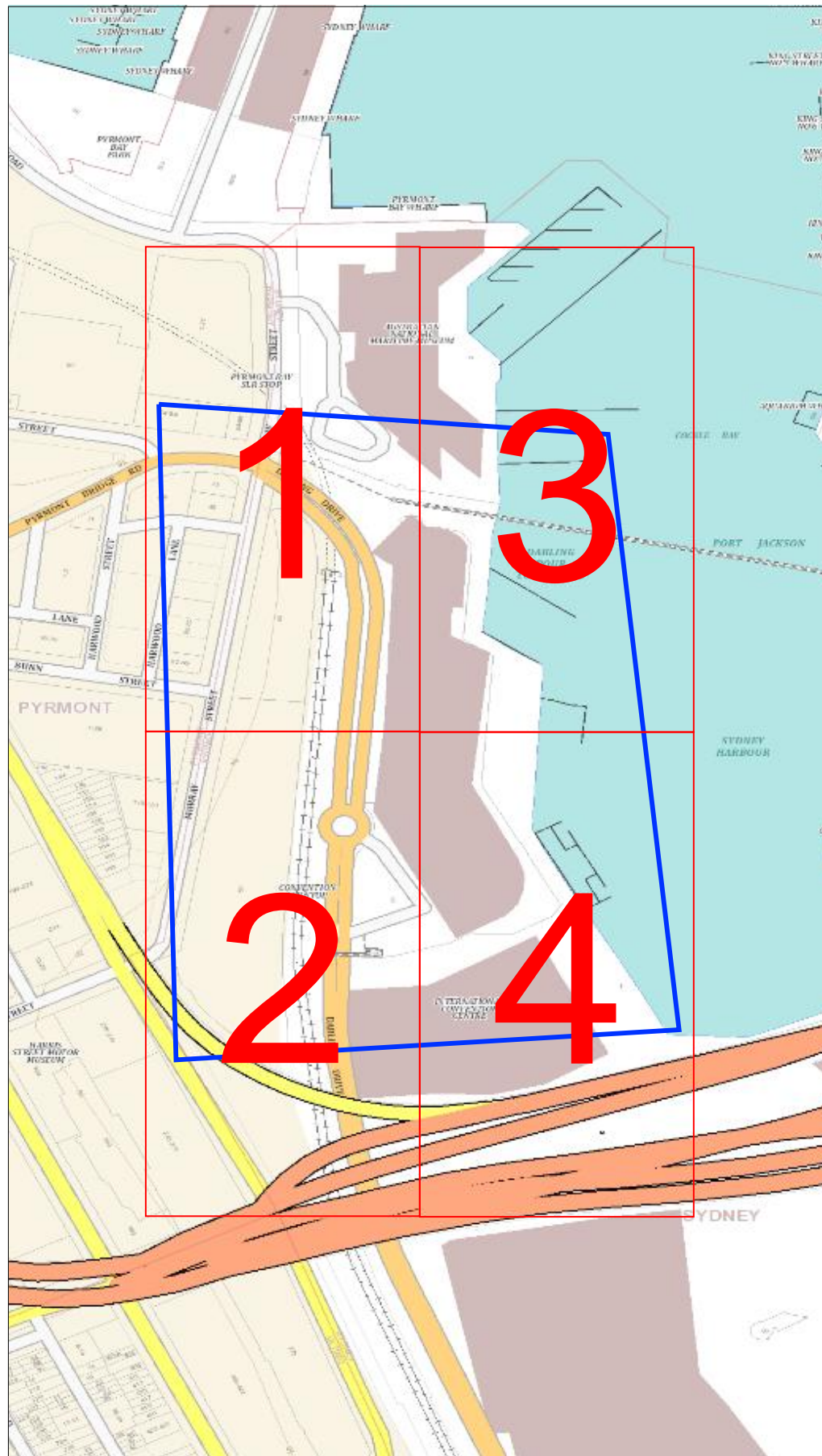
"City Assets" mean those items that are under the ownership, care or control of the City

"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).

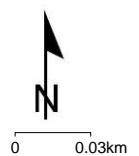
If you have any further enquiries in regards to assets affected in this referral, please contact the following:

- For **Survey Infrastructure** contact Don Urquhart or Paul Corry via email Surveyors@cityofsydney.nsw.gov.au or phone: (02) 9265 9333.
- For **Stormwater** contact Peter Garland or Shah Alam via email Stormwater@cityofsydney.nsw.gov.au or phone (02) 9265 9333.
- For **Electrical** contact Frank Morosin or Malik Huda via email Electrical@cityofsydney.nsw.gov.au or phone (02) 9265 9333.



LEGEND:

- Affected DBYD Work Area
- 1 Detail Map

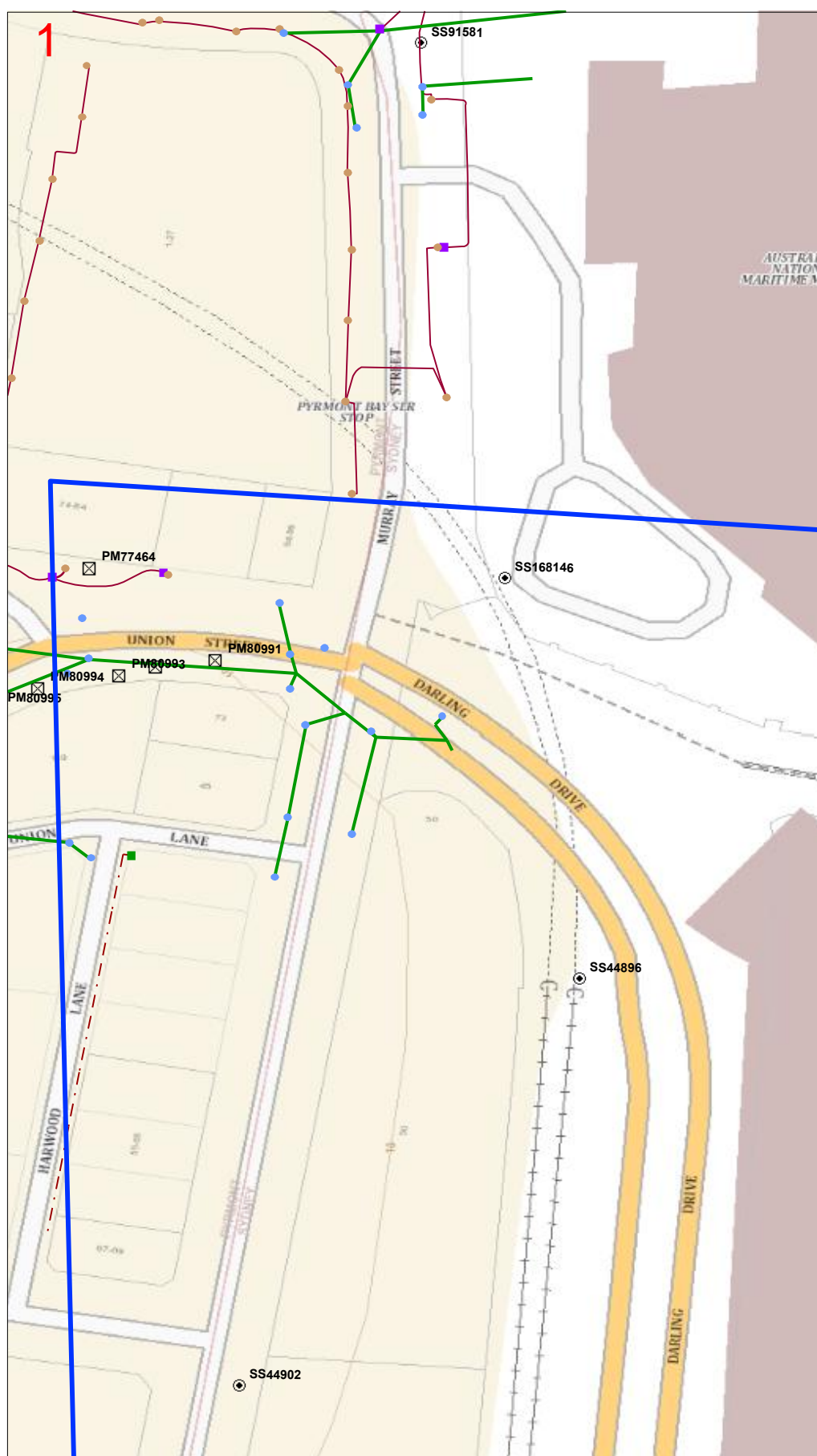


Disclaimer:

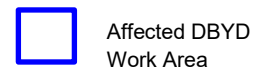
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LEGEND:



Survey Infrastructure

- ☒ Permanent Mark
- △ Trigonometrical Station
- ⊙ State Survey Mark
- ✚ Miscellaneous Mark
- ◇ Cadastral Reference Mark

Stormwater

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

Electrical

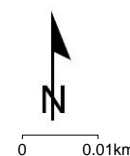
- Lightning Points
- Smart Poles

Electrical Services

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

Electrical Conduits & Cables

- Underground
- - - Building
- . - . Aerial

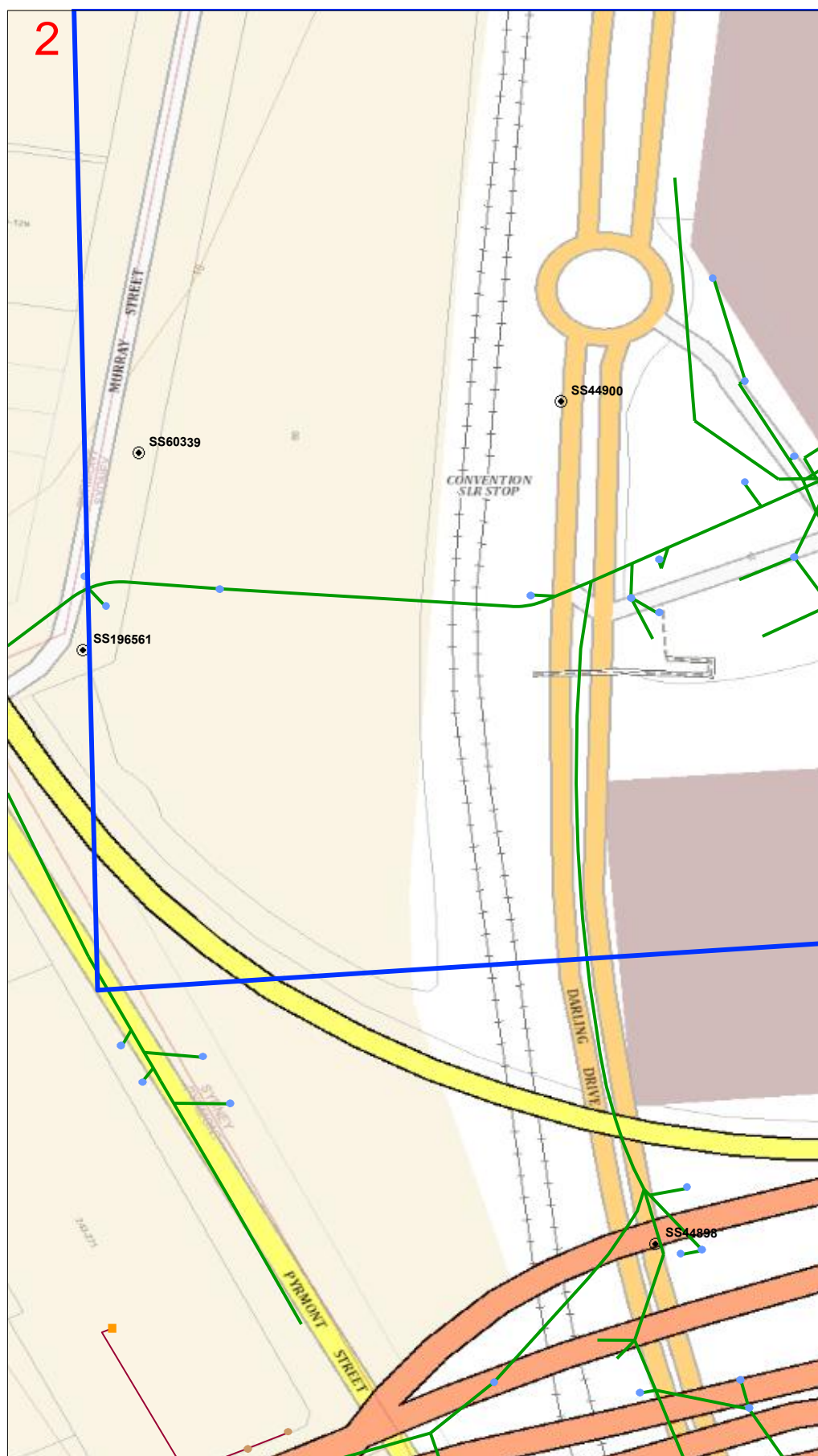


Disclaimer:

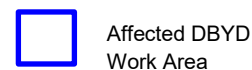
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LEGEND:



Affected DBYD Work Area

Survey Infrastructure

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- ◇ Cadastral Reference Mark

Stormwater

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

Electrical

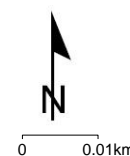
- Lightning Points
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Electrical Services

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- Special Small Service
- Electrical Pit
- Supply Feature
- ▲ Other

Electrical Conduits & Cables

- Underground
- - - Building
- ... Aerial

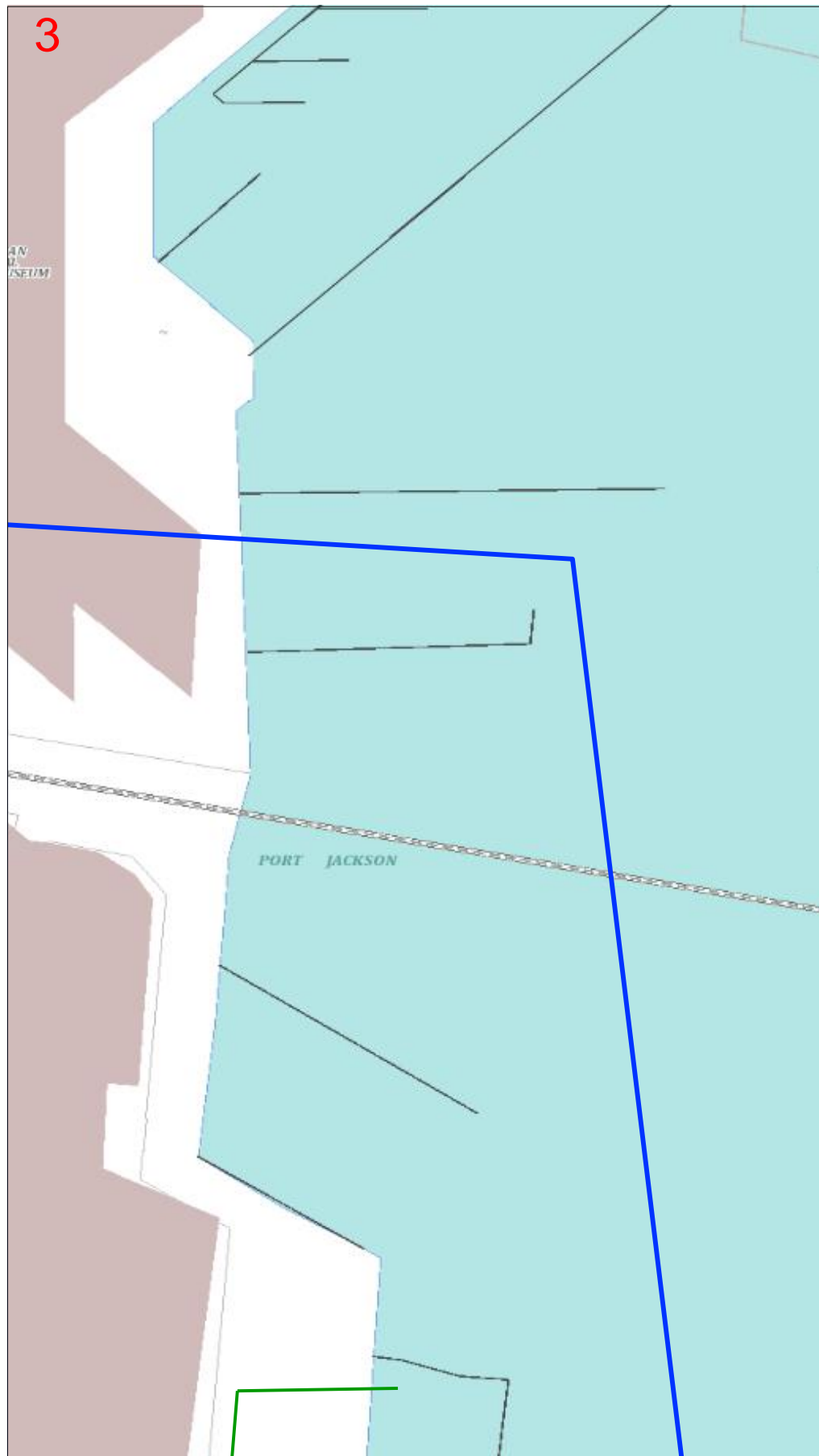


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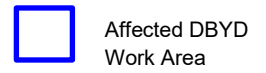
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LEGEND:





Survey Infrastructure

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







Stormwater

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




Electrical

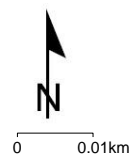
-  Lightning Points
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Electrical Services

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

Electrical Conduits & Cables

-  Underground
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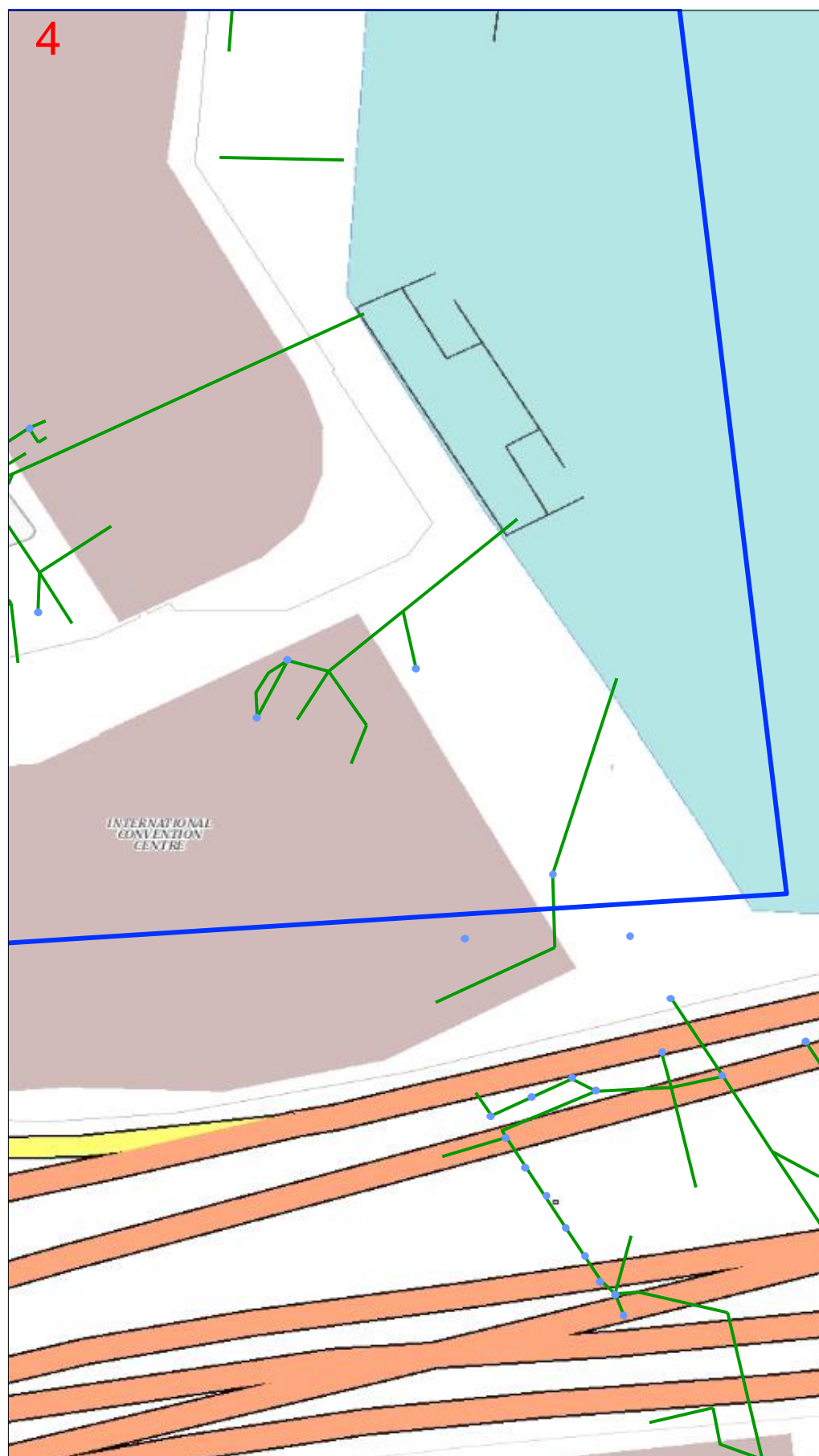


Disclaimer:

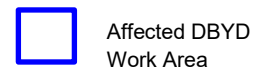
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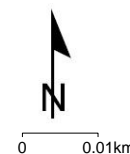
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Electrical Services

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Electrical Conduits & Cables

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