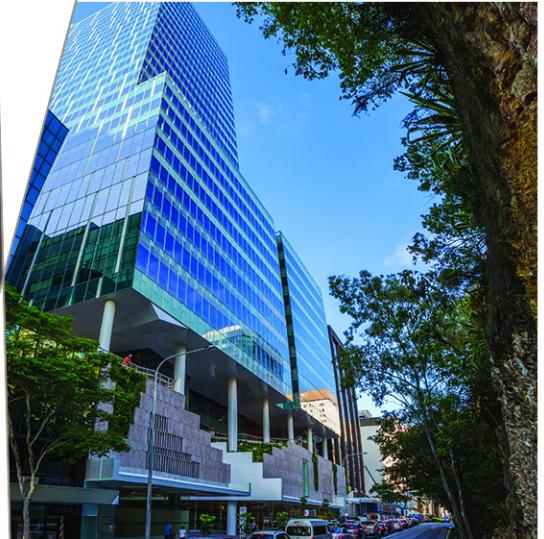


Infrastructure Concept Plan

Barangaroo South -State Significance
Development Planning Submission

NA50613044



Prepared for

NSW Department of Planning, Industry and
Environment

3 August 2021

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Prepared for

NSW Department of
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Significance Development
Planning Submission

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Author(s):

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Senior Civil Engineer

Approved By:

Matthew Zollinger

Date Approved

3/08/2021

Manager - Civil

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Our report is based on information made available by the client. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Cardno is both complete and accurate. Whilst, to the best of our knowledge, the information contained in this report is accurate at the date of issue, changes may occur to the site conditions, the site context or the applicable planning framework. This report should not be used after any such changes without consulting the provider of the report or a suitably qualified person.

Document History

Version	Effective Date	Description of Revision	Prepared by	Reviewed by
1	16/09/2019	Issued for Approval	PL	GN
2	25/09/2019	Minor amendment in Section 1, Issued for Approval	PL	GN
3	27/09/2019	Minor amendment in Section 1, Issued for Approval	PL	GN
4	10/12/2019	Issued for Approval	PL	GN
5	12/12/2019	Issued for Approval	PL	GN
6	31/01/2020	Issued for Approval	PL	GN
7	3/8/2021	Issued for Approval	PL	MZ

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Appendix A Relevant drawings

1 Project Appreciation

1.1 Introduction

This report supports a State Significant Development (SSD) Development Application (DA) submitted to the Department of Planning, Infrastructure and Environment (DPIE) pursuant to part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The SSD DA seeks approval for the staged subdivision of residual Lot 500 to create eight new lots relating to Residential Buildings R4A, R4B and R5, which are currently under construction at Barangaroo South. These stratum lots will be for residential and retail uses, as well as the creation of a new residual lot.

1.2 Background

Four separate SSD development consents have been granted in relation to the subdivision of Barangaroo, namely:

- SSD6381, identified as Stage 1 (approved 16 December 2014) for the:
 - consolidation of lots 3, 5 and 6 in DP 876514;
 - subdivision of the consolidated lots into Lot 100 (being Barangaroo South) and Lot 101 (being Barangaroo Central and the Headland Park); and
 - staged stratum subdivision of Lot 100 into nine allotments according with approved buildings and infrastructure within Stage 1A of Barangaroo South and a residual lot (Lot 214).
- SSD7478, identified as Stage 2 (approved 26 September 2017) for the:
 - staged stratum subdivision of the residual lot (Lot 214) into seven allotments according with approved buildings and infrastructure within Stage 1A, future Sydney Metro allotments and residue allotment (Lot 300) for the remainder of Barangaroo South.
- SSD8997, identified as Stage 3 (approved 10 October 2019) for the creation of the following strata:
 - Lot 401 – subdivision of Residue Lot 300 to create a lot for proposed Building C1, including parking and end of trip facilities.
 - Lot 402 – subdivision of Residue Lot 300 and Lot 205 in DP 1204694 (bicycle and amenities lot) to adjust boundaries in response to proposed Building C1.
 - Lot 403 – subdivision of Residue Lot 300 and Lot 213 in DP 12210736 (Tower 1 lot) to adjust boundaries to allocate 12 basement car spaces for Tower 1 and basement plant room not included in previous subdivision.
 - Lot 404 - subdivision of Residue Lot 300 and Lot 205 in DP 1204694 (bicycle and amenities lot) to adjust boundaries in response to changes in part of EOT Lobby (Area removed from Bicycle/ Amenities)
 - Lot 400 –residue allotment.
- SSD9758 – identified as Stage 4 (approved 20 December 2019) for the following:
 - Staged subdivision of residual Lot 400 to create Lot 501 (relating to Crown Hotel Resort Sydney) and Lot 500 (the current residual lot).

The stratum subdivision proposed in the SSD DA relates to Residential Buildings R4A, R4B and R5, collectively known as One Sydney Harbour.

1.3 Overview of Proposed Modification

The proposed SSD DA will seek development consent for the staged subdivision of residual Lot 500 to create eight new lots relating to Residential Buildings R4A, R4B and R5, which are currently under construction at Barangaroo South. These stratum lots will be for residential and retail uses and include a new residual lot.

No physical works are proposed as part of the SSD DA.

1.4 Purpose of this Report

The aim of this report is to support a State Significant Development (SSD) Development Application (DA) submitted to the Department of Planning, Infrastructure and Environment (DPIE) pursuant to part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This document should be used as reference during the detailed design development of utilities provision to the Barangaroo South development including buildings and public domain. Future and separate project applications will be required to address service provision to each building or development area.

The following general comments apply:

- a. A desktop services investigation (Dial Before You Dig), survey and Ground Penetrating Radar (GPR) have been used as source data for the information contained in this document, and
- b. The attached plans, refer **Appendix A**, are to be developed through consultation with the appropriate utilities providers.

1.5 Site Location

Barangaroo is located on the north western edge of the Central Sydney, bounded by Sydney Harbour to the west and north, the historic precinct of Millers Point (for the northern half), The Rocks and the Sydney Harbour Bridge approach to the east; and bounded to the south by a range of new development containing large commercial tenants.

The Barangaroo site has been divided into three distinct redevelopment areas (from north to south) – the Headland Park, Barangaroo Central and Barangaroo South. The Stage 1B (Fifth Stage) Subdivision relates to the residual lot area approved under the earlier Stage 4 Subdivision at Barangaroo, SSD 9758, being Lot 500 and specifically the land areas within this for future Residential Buildings R4A, R4B and R5. Lot 500 was registered on 25 June 2020.

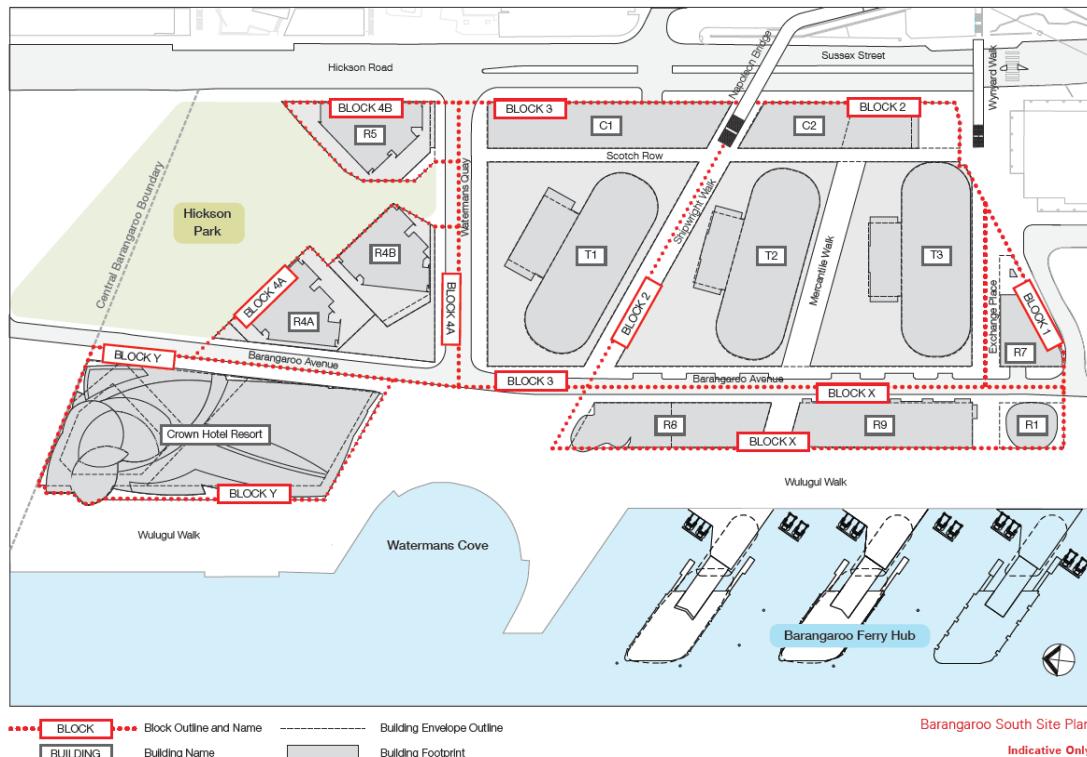


Figure 1 Block 4A and 4B in relation to Barangaroo South

Source: Lendlease

1.6 Relevant Report and Documentations

This report shall be read in conjunction with the following documents:

1. Infrastructure Concept Plan, Barangaroo South – Mod8 Planning Submission (MP06_0162 MOD8), March 2015, prepared by Cardno;
2. Stormwater Concept Report, Barangaroo South – MOD8 Planning Submission (MP06_0162 MOD8), September 2014, prepared by Cardno;
3. Mod 10 Masterplan SEPP Maps – Building Envelop Maps (Drawing B10_AMP_08_0071);
4. Mod 10 Masterplan SEPP Maps – Building Envelop Development Block 4A (Drawing B10_AMP_09_0093);
5. Mod 10 Masterplan SEPP Maps – Building Envelop Development Block 5 (Drawing B10_AMP_09_0094);
6. Barangaroo South Concept Plan Mod 10 - Indicative Staging Plan (Drawing BB2_ASK_DD_CO_0226);
7. Stormwater Management and Infrastructure Servicing prepared for Residential Building R4B State Significant Development Application (SSD 6965) by Cardno (2016); and
8. Stormwater Management and Infrastructure Servicing prepared for Residential Building R5 State Significant Development Application (SSD 6966) by Cardno (2016).

The relevant drawings are shown in Appendix A and outlined below:

- B1B CD 2000002 (14) – Stage 1B Public Domain Works General Arrangement Plan;
- Sheet 1 Case Number 154199PW – Watermain Extension Barangaroo Stage 1B;
- B1B CD 2100001 (18) – Stage 1B Public Domain Works Service Coordination Plan Sheet 1;
- B1B CD 2100001 (18) – Stage 1B Public Domain Works Service Coordination Plan Sheet 2;
- B1B CD 2100001 (18) – Stage 1B Public Domain Works Service Coordination Plan Sheet 3;

2 Stormwater Services

2.1 Existing stormwater services

The existing stormwater network is characterised by a series of in ground piped stormwater systems (typically between 300mm to 1200mm in diameter) draining Hickson Road and other external catchments through the Barangaroo site directly to the Harbour. Refer **Figure 2-1** for details.

Figure 1-1 Existing Stormwater Network Before Development Work

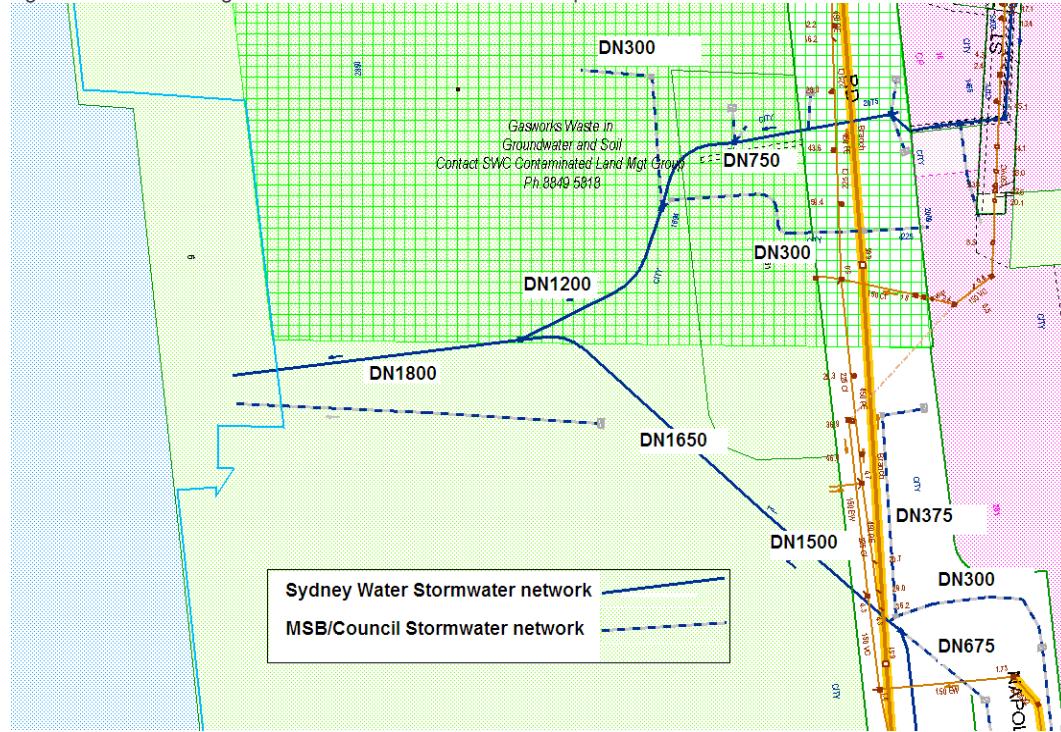


Figure 2-1 Existing stormwater network before development work

2.2 Recently constructed stormwater services

Diversion of the existing stormwater assets traversing the Barangaroo South site has been designed with input from Sydney Water Corporation and the Infrastructure NSW (acting as the Roads Authority for Hickson Road). These works include the following main components:

- Stage 1A Deviation Works: A concrete pipe and box culvert diversion to the south with 100 year ARI capacity to improve existing flooding to Hickson Road in the vicinity of the Sussex Hotel.
- Stage 1B Deviation Works: A concrete pipe and box culvert diversion to the south under Watermans Quay with 100 year ARI capacity to convey stormwater runoff in Hickson Road in the vicinity of The Bond Residential building and The Bond Commercial building.

The Stage 1A and Stage 1B stormwater deviation works have been constructed and are in operation. There are no physical changes to the land use associate with the proposed development application, there will not be any changes to the stormwater diversion strategy.

3 Potable Water Services

3.1 Existing potable water services

A Sydney Water owned 300mm watermain is located on the western side of Hickson Road and extends for the full frontage of the Barangaroo South development. Sydney Water has confirmed, through approval of the "Site Servicing Strategy – Barangaroo South" prepared by Cardno and dated March 2013, this main has adequate capacity to provide potable water to the development.

All existing supplies to the development site, serving buildings and other structures that have been demolished, are to be capped off and disused or removed.

3.2 Proposed potable water services

Supply of potable water to the development has been addressed through the Site Servicing Strategy as agreed with Sydney Water.

Connections will be made to the existing 300mm watermain described above. From these connections:

Stage 1A, a 250mm potable water main will be constructed along Shelley St, Lime Street, and Globe Street to provide potable water supply to the Stage 1A Barangaroo South development. The new potable water main has been laid above the podium level structural slab. It is intended Sydney Water will own and maintain the new assets.

Stage 1B, a 250mm potable main will be constructed along Watermans Quay, Barangaroo Ave to provide potable water supply to the Stage 1B Barangaroo development. The potable watermain has been designed and approved by Sydney Water.

There are no physical works proposed in this development application and will not change the water demand. There will be no changes to the design of the proposed potable main in Stage 1B.

A design of the Stage 1B potable watermain is shown in Appendix A – Sheet 1 Barangaroo Stage 1B – Watermain Extension

4 Recycled Water Services

4.1 Existing recycled water services

The recycled water sources for Barangaroo South are supplied from a central Recycled Water Treatment Plant (RWP) treating waste water from Barangaroo and waste water sourced through mining Sydney Water sewer in Hickson Road. The water is treated in compliance with Australian Recycled Water guidelines and reticulated through Barangaroo for non-potable use.

The system is operating with a backup water supply connected to the Sydney Water potable water supply system serving Barangaroo South. At Barangaroo South, the recycled water mains are generally to be located within the Barangaroo South Basements; reticulating to customer recycled water meters located within the basement and extending to a termination point at the northern boundary of the Stage 1B site for future extension to service the Barangaroo Central development to a maximum of 60,000m² GFA.

The recycled water system for the Barangaroo South development has been constructed as part of Barangaroo Stage 1A works.

4.2 Proposed recycled water services

There are no changes to the land use with the proposed development application, hence no changes to the recycled water services.

5 Wastewater services

5.1 Existing wastewater services

The local sewerage network is owned by Sydney Water and consists of 225mm and 450mm gravity drainage in Hickson Road. This network drains to existing Sydney Water owned Sewage Pump Station SP1129 located north of Barangaroo South.

The existing pump station serves catchments extending to Sussex Street, Kent Street and includes the catchment served by SP0014 located at Barangaroo Reserve. SP0014 will be disused as part of the approved Barangaroo Reserve works with flows diverted to SP1129.

All existing supplies to the development site, serving buildings and other structures that have been demolished, are to be capped off and disused or removed.

5.2 Proposed wastewater services

Provision of wastewater services to the development has been addressed through the Site Servicing Strategy as agreed with Sydney Water. Internal sewerage reticulation within Barangaroo South will be privately owned.

A RWP has been installed within the Barangaroo South development. The RWP is owned and operated under the Water Industry Competition Act. The RWP provides recycled water to the Barangaroo South development and, through sewer mining, it has been designed to provide sufficient recycled product for export to external customers.

Additional storage within the local sewerage network is required to offset the peak load from the development if the RWP is offline. This has been achieved through re-use of the Stage 1A temporary stormwater diversion pipework as emergency wastewater storage.

The proposed development application will not alter the wastewater services.

6 Electrical services

6.1 Existing electrical services

Existing electrical services in Hickson Road include:

- Disused Railcorp 33KV feeder 746 and 745. Advice has been received confirming these assets "...are old gas cables and no longer required for Railcorp's rail network purposes and are to be decommissioned". Railcorp have advised that these assets are to be treated as live. This service is located in close proximity to the eastern kerb alignment of Hickson Road;
- Existing HV supply and concrete encased bank of conduits feeding "The Bond". The bank of conduits is believed to consist of 150mm conduits laid in 4 rows of 4 conduits generally between 0.8m and 1.2m depth;
- Existing HV supplies to substations serving the previous site use which are to be disused and removed;
- Existing temporary HV supplies to temporary substations providing construction supply; and
- Various LV services for street lighting, parking ticket machines and other purposes.

6.2 Proposed electrical services

The number of buildings and the GFA are to be remained consistent with the previous concept plan, hence there will not be any changes to the peak load.

The proposed development application will not alter the electrical services.

7 Telecommunications services

7.1 Existing telecommunications services

The Kent Street telephone exchange is located relatively close to the site. A number of telecommunications carriers have existing cables in the vicinity of the site.

All telecommunications infrastructure previously existing within the basement footprint has now been capped off at the boundary and removed.

7.2 Proposed telecommunications services

Future development under the Concept Plan will be provided with telecommunications services through a pit and pipe network to allow multiple carriers to access the site at two diverse entry points; from Shelley Street at the south and from Hickson Road at the north. This may be via NBN Co services or those of another telecommunications network provider. Connection point(s) will be the subject of detailed design, which will be covered by future applications and approvals under the Concept Plan.

Reticulation within the site will generally be in dedicated carrier cable trays at a high level in the basements and will provide diverse paths from site entry points to individual building node rooms to allow for a high level of network resilience. Cable tray and conduit zones are subject to detailed design.

The proposed development application will not alter the electrical services.

8 Natural gas services

8.1 Existing natural gas services

There is an existing 110mm low pressure 7kPa nylon gas main along Hickson Road and a high pressure gas main located at the corner of Sussex and Napoleon Streets. There is no existing high pressure main connection serving the Barangaroo site, however there are small low pressure connections. These connections shall be decommissioned and capped off at the site footprint boundary and removed.

8.2 Proposed natural gas services

Natural gas service is provided by Jemena, who have deemed it suitable to offer a low pressure (maximum 7kPa) service to Barangaroo South. Subject to a separate application and approval by Jemena, there is also potential to connect the site or part of the site to a high pressure service should it be required. This could be delivered throughout the site via services within existing and proposed roads.

The proposed development application will not alter the natural gas services.

9 Chilled water services

9.1 Existing chilled water services

The Harbour Heat Rejection Plant (HHR) and associated reticulation of chilled water, was approved in August 2013 as part of the MP10_0023 MOD5 planning application.

Subsequently, the District Cooling Plant (DCP) and the HHR have been constructed as part of the Barangaroo Stage 1A development. Chilled water is reticulated throughout the Barangaroo South development within a privately owned pipework.

9.2 Proposed chilled water services

The HHR and DCP in Barangaroo Stage 1A site have also been designed to service the proposed Stage 1B Barangaroo Development. Chilled water reticulation pipes will be constructed to service the proposed development site. The assessment also considered the carbon parity of the HHR that supports the DCP.

The proposed development application will not increase the thermal load, hence, there will not be any changes to the chilled water services design.

10 Conclusion

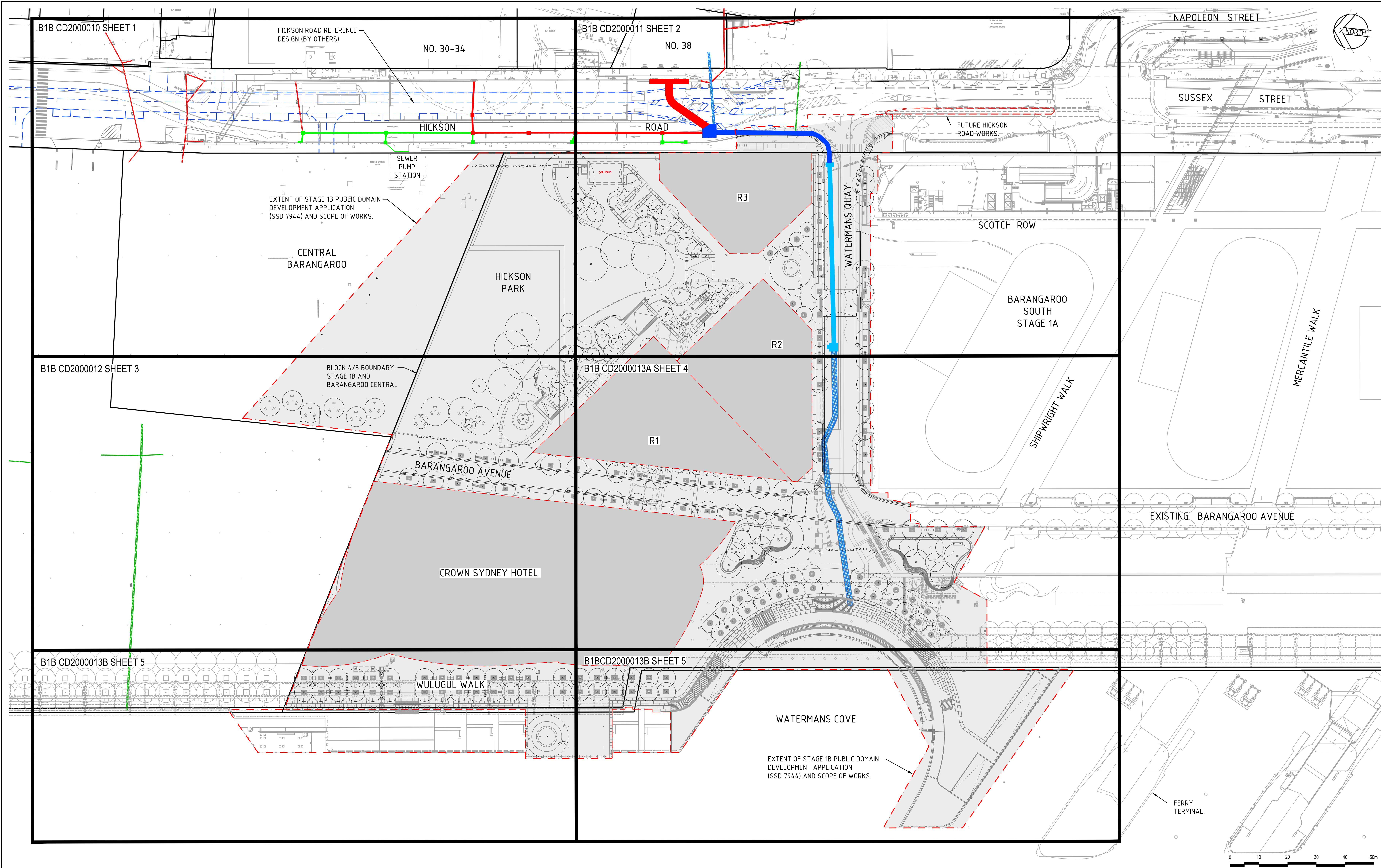
This report has been prepared to describe the infrastructure management strategy for the Barangaroo South development to support for the staged subdivision of residual Lot 500 to create eight new lots relating to Residential Buildings R4A, R4B and R5, which are currently under construction at Barangaroo South.

The proposed development application does not involve any design changes to the land use and the approved buildings, therefore, there are no amendments to the proposed services strategy.

APPENDIX

A

RELEVANT DRAWINGS



Rev. Item	Revision Description	Date	Rev. Item	Revision Description	Date
0.1	ISSUE FOR SSD 7944	25/10/16			
0.2	INCORPORATING MINOR AMENDMENTS	30/11/16			
0.3	NOT INCORPORATING (CLIENT) REVIEW	15/11/16			
0.4	ISSUED FOR APPROVAL	25/10/16			

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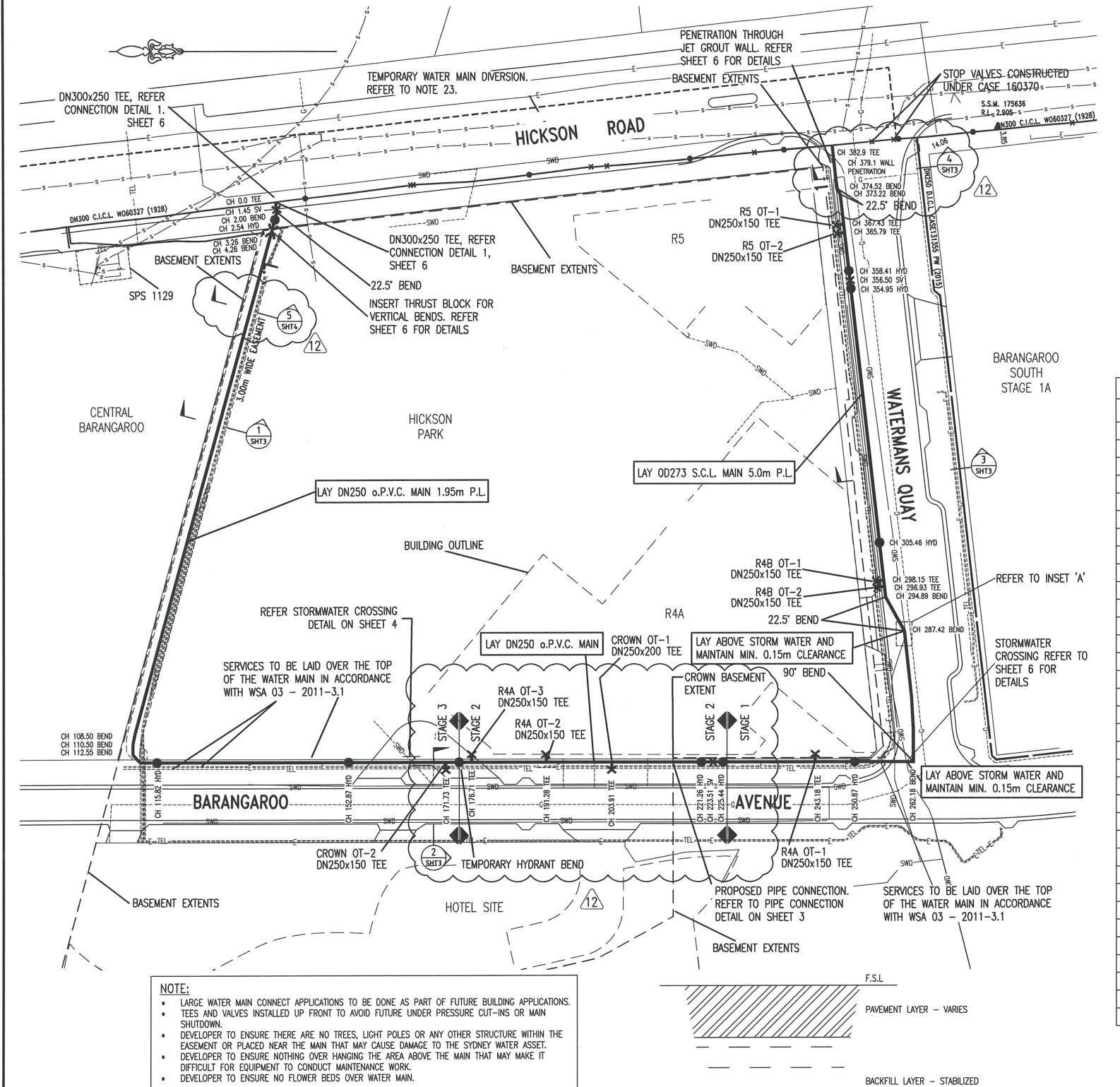
STAGE 1B - PUBLIC DOMAIN WORKS GENERAL ARRANGEMENT PLAN					
Drawn By	Designed By	Checked By	Approved By	Date	Comments
MDH	MV	TM		05/11/16	
Scale					
1:500					
Project No.	Site No.	Drawing No.	Revision		
161804	B1B CD200002	14			

FOR APPROVAL

NOT TO BE USED FOR CONSTRUCTION PURPOSES



A1



10	PENETRATION THROUGH JETGROUT WALL	AC	23/08/18
9	UPDATE LONG SECTION	AC	21/08/18
8	UPDATE FITTING LOCATIONS	TC	05/03/18
7	INSET A ADDED TO SHEET 1	AC	14/02/18
6	AMENDED NOTES	AC	13/02/18
5	HYDRANT ADDED	AC	09/02/18
4	THRUST BLOCK & STRUCTURAL SLAB REMOVED	AC	19/01/18
3	STORMWATER CROSSING AMENDMENT	AC	16/10/17
2	DRAFTING UPDATES TO SHEET 1	AC	01/08/17
1	ISSUE FOR APPROVAL	AC	15/08/17
No.	AMENDMENT DESCRIPTION	BY	DATE
		12	SECTIONS AND STAGING AMENDED
		11	WALL PENETRATION UPDATED
			LM 19/12/18
			AC 09/10/18

Cardno (NSW/ACT) Pty Ltd
ABN 95 001 145 035
PLAN FOR CONSTRUCTION
Date 14/01/19

TRENCH ARRANGEMENT TO BE IN ACCORDANCE WITH WAT-1201

TYPICAL TRENCH DETAIL—OVER STRUCTURAL SLAB

N.T.S.

PLAN TO BE READ IN CONJUNCTION
 WITH CURRENT SYDNEY WATER STANDARDS
 SYDNEY WATER CORPORATION

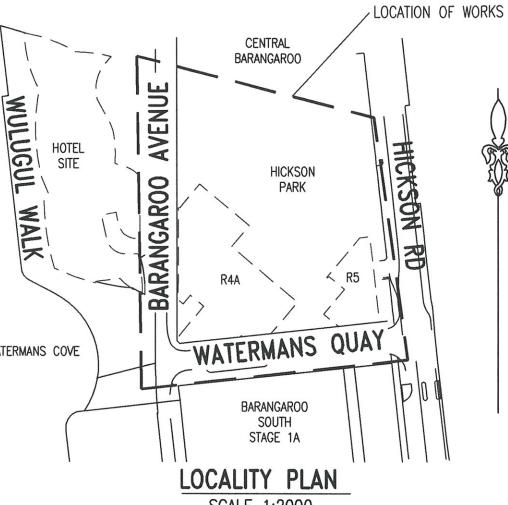
PRIOR TO COMMENCEMENT OF EXCAVATION FOR
 PROPOSED AND EXISTING SERVICES CONTACT -
 DIAL BEFORE YOU DIG Ph. 1100

ELECTRICITY Ph.
 GAS Ph.
 TELECOMMUNICATIONS Ph.
 GIVING AT LEAST 48 HOURS NOTICE

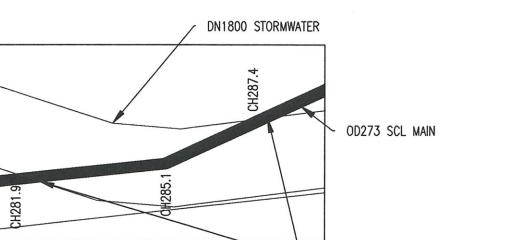
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PROP. GAS	G	01/07/16	(CDNO)
PROP. ELECTRICAL	TEL	01/07/16	(CDNO)
WATER	W	01/07/16	(CDNO)

I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS.

WORK AS CONSTRUCTED CERTIFICATION	
DEVELOPER
WATER SERVICE CO-ORDINATOR
CONTRACTOR
COMPLETED
DESIGNER
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS.	



CHAINAGE	EASTING	NORTHING	DESCRIPTION
0.00	333750.090	6251660.977	DN300x250 TEE
1.45	333748.655	6251660.808	STOP VALVE
2.00	333748.106	6251660.744	22.5° BEND
2.54	333747.585	6251660.886	HYDRANT
3.26	333746.890	6251661.077	22.5° VERTICAL BEND
4.26	333745.926	6251661.341	22.5° VERTICAL BEND
108.50	333645.289	6251688.793	11.25° BEND
110.50	333643.289	6251688.793	45° BEND
112.55	333641.799	6251687.380	45° BEND
115.82	333641.797	6251684.104	HYDRANT
152.87	333641.784	6251647.049	HYDRANT
171.73	333641.777	6251628.192	DN250x150 TEE
176.71	333641.775	6251623.209	DN250x150 TEE
191.28	333641.770	6251608.638	DN250x150 TEE
203.91	333641.766	6251596.007	DN250x200 TEE
221.26	333641.759	6251578.655	HYDRANT
223.51	333641.759	6251576.403	STOP VALVE
225.44	333641.758	6251547.463	HYDRANT
243.18	333641.751	6251556.715	DN250x150 TEE
250.87	333641.749	6251549.021	HYDRANT
262.18	333641.745	6251537.703	90° BEND
287.42	333666.911	6251539.357	22.5° BEND
294.89	333673.478	6251542.973	22.5° BEND
296.93	333675.512	6251543.192	DN250x150 TEE
298.15	333676.733	6251543.334	DN250x150 TEE
305.46	333684.004	6251544.136	HYDRANT
354.95	333733.200	6251549.595	HYDRANT
356.50	333734.732	6251549.758	STOP VALVE
358.41	333736.642	6251549.991	HYDRANT
365.79	333743.982	6251550.800	DN250x150 TEE
367.43	333745.620	6251550.979	DN250x150 TEE
373.22	333751.379	6251551.622	22.5° BEND
374.52	333752.521	6251552.248	22.5° BEND
382.90	333760.855	6251553.135	DN300x250 TEE



OD273 SCL MAIN IS LAID OVER
 STORMWATER BETWEEN CH281.9 –
 CH287.4. ENSURE MAIN IS LAID MIN.
 0.15m ABOVE STORMWATER

CONTRACT PLAN

0 10 20 30 40 50 METRES

NOTES:

- WATER SERVICE COORDINATOR & DESIGNER: CARDNO (NSW/ACT) PTY LTD LEVEL 1, 47 BURELL STREET, PO BOX 1285 WOLLONGONG NSW 2500 PH: (02) 4228 4133
- DEVELOPER: LEND LEASE MILLERS POINT P/L 30 HICKSON ROAD MILLERS POINT NSW 2000 PH: (02) 9263 6800

3. THE WORKS DETAILED HEREON TO BE CONSTRUCTED IN ACCORDANCE WITH THE WATER SUPPLY CODE OF AUSTRALIA WSA03-2011-3.1 SYDNEY WATER EDITION 2014 & SYDNEY WATER POTABLE WATER DEEMED TO COMPLY DRAWINGS. THE CONTRACTOR MUST HAVE A COPY OF THESE DOCUMENTS ON SITE AT ALL TIMES.

4. THE MINIMUM NUMBER OF FIELD COMPACTION TESTS COMPLETED TO SATISFY SECTION 19.3.3 & 19.3.4 OF THE STANDARD SPECIFICATION.
 NOTE: IF TRENCH IS BACKFILLED WITH STABILISED SAND NO COMPACTION TESTS REQUIRED PIPE EMBEDMENT ZONE - 2
 TRENCH FILL ZONE - 0 (TRAFFICABLE)
 TRENCH FILL ZONE - 0 (NON-TRAFFICABLE)

5. i) HORIZONTAL BENDS IN IN-SITU AREAS (DN300 OR LESS) TO BE ANCHORED IN ACCORDANCE WITH DTC-1110 OR DTC-1111
 ii) VERTICAL BENDS & HYDRANT BENDS IN IN-SITU AREAS (DN150 OR LESS) TO BE ANCHORED IN ACCORDANCE WITH DTC-1114.
 iii) TEES IN IN-SITU AREAS (DN300 OR LESS) TO BE ANCHORED IN ACCORDANCE WITH DTC-1113.
 iv) THRUST BLOCKS IN IN-SITU AREAS OTHER THAN THOSE DETAILED ON PLANS SHALL BE PROVIDED FOR ALL UNSECURED BENDS, TAPERS AND TEES IN ACCORDANCE WITH DTC-1110 & 1114, U.N.O.

6. THE CONTRACTOR SHALL SUBMIT A SAFE WORK PLAN TO THE WATER SERVICING COORDINATOR FOR REVIEW PRIOR TO COMMENCING THE WORKS.

9. THE CONTRACTOR SHALL SUBMIT AN ENVIRONMENTAL MANAGEMENT PLAN TO THE WATER SERVICING COORDINATOR FOR REVIEW PRIOR TO COMMENCING THE WORKS.

11. POSITION AND LEVEL OF EXISTING MAIN TO BE VERIFIED WITH PROJECT MANAGER PRIOR TO COMMENCEMENT OF PIPE LAYING.

15. THE CONTRACTOR SHALL COORDINATE WITH THE CIVIL WORKS CONTRACTOR TO ENSURE ALL SURFACE FITTINGS ARE SUITABLE FOR THE PROPOSED FINISHED SURFACE AND ARE INSTALLED TO SYDNEY WATER'S REQUIREMENTS. REFER WAT-1303-V & WAT-1304-V AND WAT-1305-V & WAT-1306-V.

16. LOCATION OF SERVICES SHOWN ARE APPROXIMATE ONLY AND HAVE BEEN LOCATED FROM INFORMATION PROVIDED BY RELEVANT AUTHORITY & FIELD INVESTIGATIONS AND DESIGNS. THESE MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION WORK TAKING PLACE.

18. PRIOR TO COMMENCEMENT OF WORK, 2 WORKING DAYS NOTICE SHALL BE GIVEN TO WSC & SYDNEY WATER.

19. THE NOMINATED CONSTRUCTION COMPANY MUST HAVE AN ACCREDITED/APPROVED PERSON ON SITE AT ALL TIMES DURING CONSTRUCTION.

20. 1% SOLUTION OF SODIUM OR CALCIUM HYPOCHLORITE TO BE USED ON ALL JOINTS IMMEDIATELY PRIOR TO INSTALLATION DURING CONNECTION OF MAIN.

21. CONTRACTOR TO PROVIDE WORK AS CONSTRUCTED INFORMATION IN DIGITAL FORMAT AND RED MARKUP TO THE SATISFACTION OF THE WSC, PRIOR TO COMMISSIONING INSPECTIONS WITH SYDNEY WATER.

22. ALL CONCRETE TO BE 40MPa IN ACCORDANCE WITH SYDNEY WATER'S CIVIL SPECIFICATIONS.

23. TEMPORARY ABOVE GROUND DN150PE MAIN CONSTRUCTED UNDER CASE 160370 TO FACILITATE REMEDIATION ACTIVITIES. CASE 154199PW CANNOT CONNECT TO THE EXISTING DN300 CONSTRUCTED UNDER W06327 UNTIL THE IOP IS DECOMMISSIONED.

24. THE FOLLOWING DTC'S ARE TO BE USED FOR CONSTRUCTION OF THE MAIN:-

DTC No. DESCRIPTION

DTC 1110 THRUST BLOCK DETAILS DCL AND PVC WATER MAINS <300, HORIZONTAL BENDS TYPE 1. REV A

DTC 1111 THRUST BLOCK DETAILS DCL AND PVC WATER MAINS <300, HORIZONTAL BENDS TYPE 2. REV B

DTC 1113 THRUST BLOCK DETAILS DCL AND PVC WATER MAINS <300, TEES. REV B

DTC 1115 ANCHORAGE DETAILS DCL AND PVC WATER MAINS <300, STOP VALVES. REV B

DTC 1145 WATER MAIN PN16 FLANGE CONNECTION DETAILS. DN100 TO DN750 - SHEET 1 OF 2. REV A

DTC 1146 WATER MAIN PN16 FLANGE CONNECTION DETAILS. DN100 TO DN750 - SHEET 2 OF 2. REV A

DTC 1151 STEEL WATER MAINS 150xDN1200 STEEL PIPE JOINTING, WELDED - PLAIN ENDS. REV A

CONSTRUCTION STAGING NOTES:

1. HYDRANT BENDS TO BE INSTALLED AT ENDS OF STAGES 1 & 2 AS PER TEMPORARY FLUSHING BEND DETAIL ON SHEET 3.

2. STAGES TO BE TESTED AND CHLORINATED SEPARATELY.

CONSTRUCTION STAGING TABLE

STAGE 1 – EST. COMMISSION APRIL 2019	CH 226.28 – 382.90
STAGE 2 – TEMP PROTECTION – EST. COMMISSION APRIL 2019	CH 174.38 – 2

EXISTING SERVICES LEGEND	
SERVICES	
W	WATER SERVICES
W →	WATER LEAD IN LINE
E	ELECTRICAL SERVICES
T	SEWER SERVICES
OP	TELSTRA AND OPTICAL FIBRE SERVICES
OPTUS	OPTUS SERVICE
GAS	GAS SERVICES
SW	STORMWATER SERVICES
RS	RTA SERVICES
EXISTING SYDNEY WATER STORMWATER	
SERVICES DENOTED BY 'W' HAS BEEN COMPILED FROM "CARDNO AUS" INFORMATION	
SEWER DENOTED BY "W" HAS BEEN COMPILED BY "RYGATE SURVEYORS."	
STORMWATER DENOTED BY '*' HAS BEEN COMPILED BY "CARDNO SURVEYORS AND ORIGINAL DATA BASE INFORMATION SUPPLIED BY SYDNEY CITY COUNCIL."	
ALL OTHER DATA HAS BEEN COMPILED FROM DIAL BEFORE YOU DIG INFORMATION	
D ESTIMATED DEPTHS FROM EXISTING SURFACE LEVEL	
IL INVERT OF PIPE OR CONDUIT	
OL OBVERT OF PIPE OR CONDUIT	

PROPOSED SERVICES LEGEND	
PROPOSED COMMUNICATIONS	PROPOSED SEWER
1 PROPOSED WIRELESS ACCESS POINT	PROPOSED IRRIGATION PIPEWORK
2 PROPOSED SECURITY CAMERA	PROPOSED IRRIGATION OUTLET
DS PROPOSED DIGITAL SIGN	PROPOSED IRRIGATION OUTLET
CP a PROPOSED ICN RACK	PROPOSED RECYCLED WATER IRRIGATION LINE
ICON PROPOSED ICN RACK	PROPOSED IRRIGATION DECODER CABLE
PROPOSED POTABLE WATER	PROPOSED IRRIGATION CONDUIT
PROPOSED FIRE	PROPOSED IRRIGATION CONDUIT
PROPOSED WATER ACCESS POINT	PROPOSED IRRIGATION POTABLE WATER
PROPOSED STORMWATER	PROPOSED ELECTRICAL AND LIGHTING
PROPOSED GAS (BY OTHERS)	PROPOSED ELECTRICAL DISTRIBUTION BOARD
PROPOSED RECYCLED WATER	PROPOSED LIGHTING
PROPOSED NATURAL GAS	PROPOSED ELECTRICAL OUTLET
PROPOSED FIRE SERVICE	PROPOSED ELECTRICAL PIT
PROPOSED DISTRICT COOLING PLANT WATER	PROPOSED ELECTRICAL, DRINKING FOUNTAIN
PROPOSED LIGHTING CONTROL CABLEWAY	PROPOSED SOIL ACCESS PIT

FOR INFORMATION ONLY

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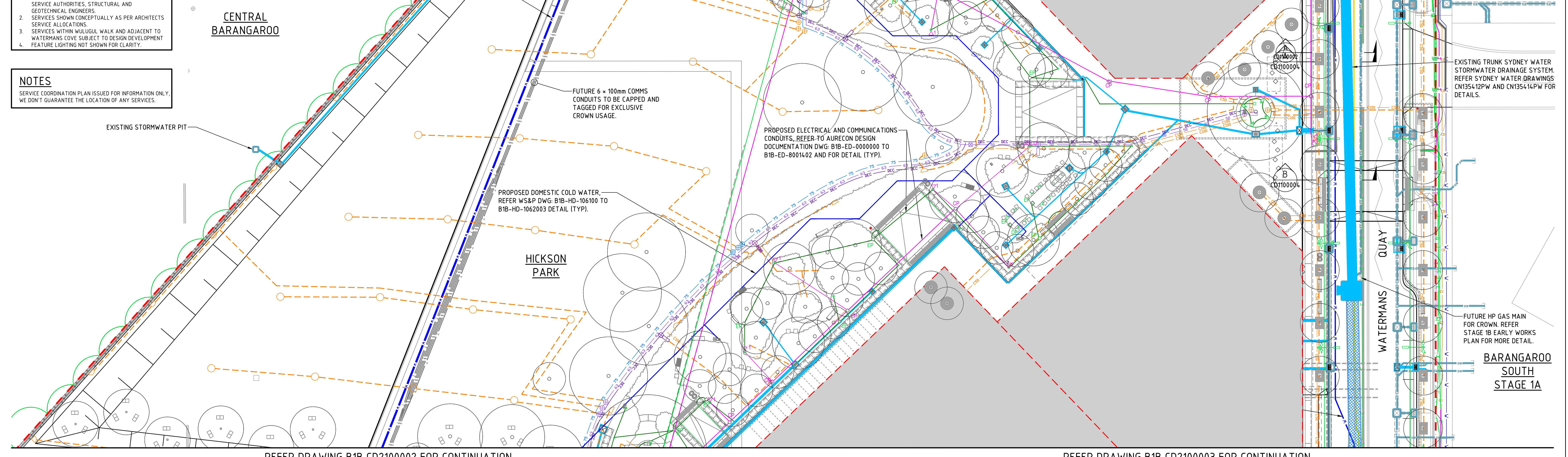
GROUND CONDITIONS AND SITE CONSTRAINTS VARY AND AFFECT THE ACCURACY OF THE VERTICAL TOLERANCE FOR THE SERVICES SHOWN. WHILE REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF INFORMATION WITH RESPECT TO ALIGNMENT AND DEPTH, CARDNO DOES NOT WARRANT THE ACCURACY OF THIS INFORMATION AND IT SHOULD ONLY BE USED TO INFORM DESIGN. CARDNO RECOMMENDS THAT CONFIRMATION OF SERVICE LOCATIONS AND ALIGNMENT BE PERFORMED FOR ALL CRITICAL SERVICES. SERVICES CROSSINGS AND/OR CLASHES WHERE DESIGN REQUIRES GREATER ACCURACY. ALL SERVICES SHOULD BE PHYSICALLY CONFIRMED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

NOTES

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- 2 SERVICES SHOWN CONCEPTUALLY AS PER ARCHITECTS SERVICE ALLOCATIONS.
- 3 SERVICES WITHIN WULULUG WALK AND ADJACENT TO WATERMANS COVE SUBJECT TO DESIGN DEVELOPMENT FEATURE LIGHTING NOT SHOWN FOR CLARITY.

NOTES

SERVICE COORDINATION PLAN ISSUED FOR INFORMATION ONLY, WE DON'T GUARANTEE THE LOCATION OF ANY SERVICES.



NOTE:
REFER DRAWING PACKAGE DWG: B1B CD100000 TO
B1B CD100012 FOR CONSTRUCTED EARLY WORKS SERVICES

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SCALE 1:250
@B1

FOR APPROVAL

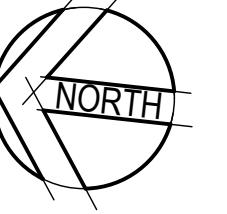
NOT TO BE USED FOR CONSTRUCTION PURPOSES
STAGE 1B - PUBLIC DOMAIN WORKS
SERVICE COORDINATION PLAN
SHEET 1
Drawn By: MDH
Designed By: MV
Checked By: JN
Approved By: DCY
Date: 16/07/16
Scale: 1:250
Project No.: 161804
Site No.: B1B CD210001
Drawing No.: 18
Revision: 18

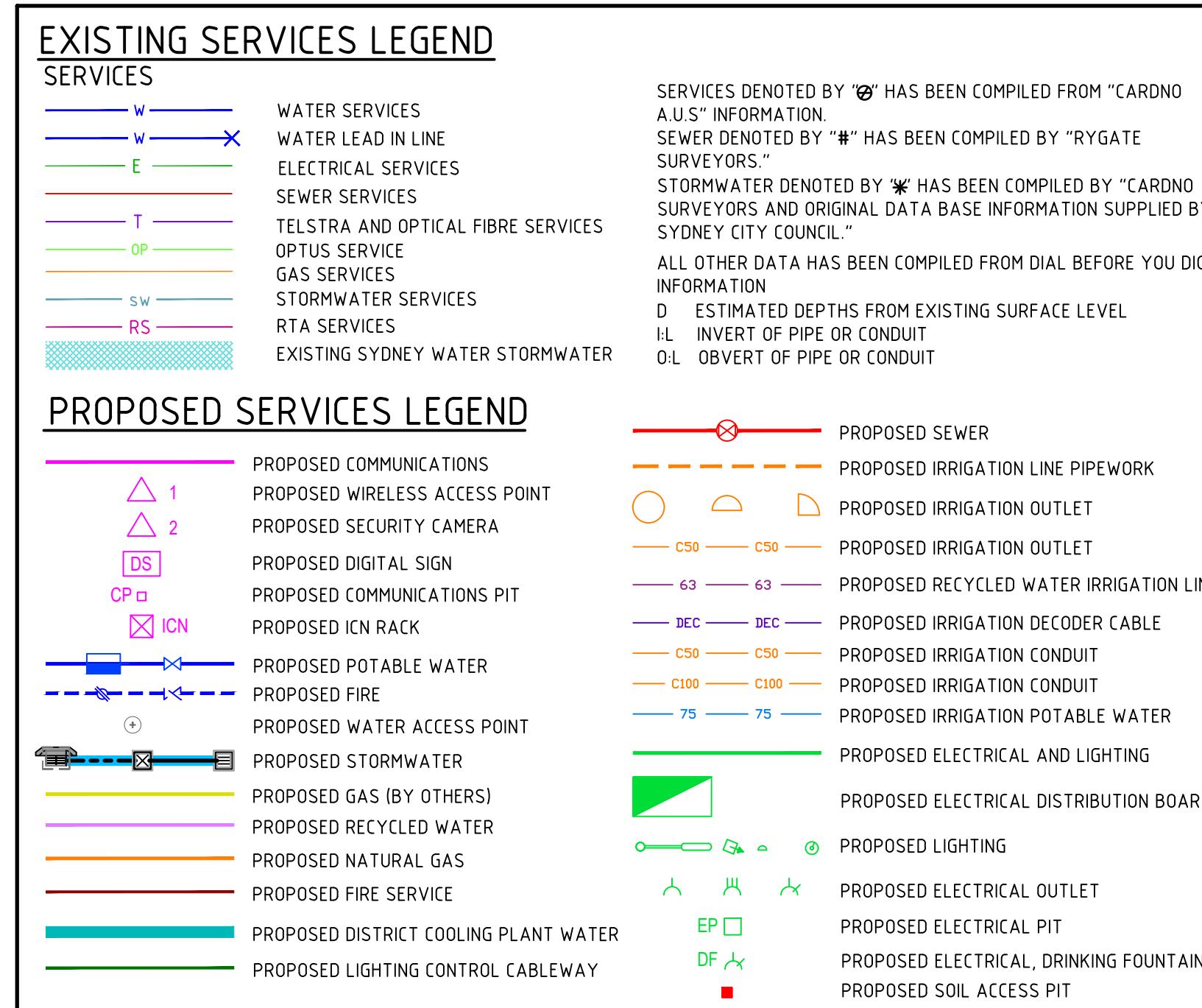
Rev.	Item	Description	Date	Rev.	Item	Description	Date
16.	95% IFT (FOR COORDINATION)		02/03/16				
13.	ISSUED FOR INFORMATION		28/02/16				
12.	90% IFT (RE-ISSUED)		19/12/16				
11.	50% IFT		05/10/16				
10.	30% IFT		03/10/16				
09.	STAGE 1A ISSUE		13/04/16				
07.	1ST DRAFT ISSUE		06/04/16				
07.	RE-ISSUED FOR DEVELOPMENT APPLICATION		20/04/17				
06.	RE-ISSUED FOR DEVELOPMENT APPLICATION		12/04/17				
05.	ISSUED FOR DEVELOPMENT APPLICATION		17/03/17				
04.	INCORPORATING MINOR AMENDMENTS		14/12/16	18	AFC ISSUE		19/08/28
03.	INCORPORATING MINOR AMENDMENTS		30/11/16	17	AFC ISSUE		19/07/19
01.	ISSUE FOR SSO 1944		25/10/16	15	100% IFT (RE-ISSUED FOR COORDINATION)		22/03/19
							25/03/19

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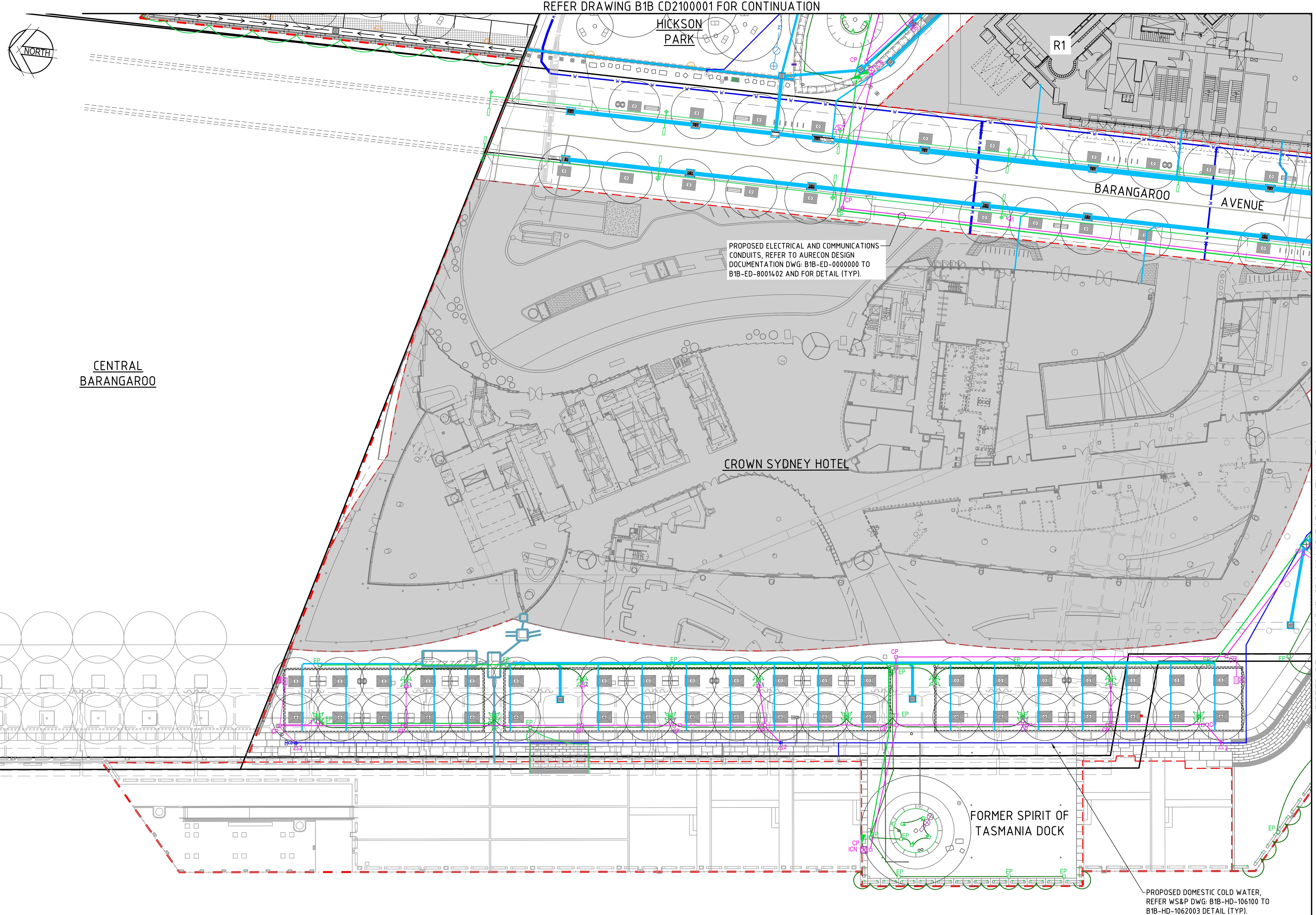
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GROUND CONDITIONS AND SITE CONSTRAINTS VARY AND AFFECT THE ACCURACY OF THE TOPICAL TOPOS. FOR SERVICES SHOWN AS EXISTING, REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF INFORMATION WITH RESPECT TO ALIGNMENT AND DEPTH. CARDNO DOES NOT WARRANT THE ACCURACY OF THIS INFORMATION AND IT SHOULD ONLY BE USED TO INFORM DESIGN. CARDNO RECOMMENDS THAT CONFIRMATION OF ALL SERVICE DEPTHS BY PHYSICAL LOCATION BE PERFORMED FOR ALL CRITICAL SERVICES. SERVICES CROSSINGS AND/OR CLASHES WHERE DESIGN REQUIRES GREATER ACCURACY. ALL SERVICES SHOULD BE PHYSICALLY CONFIRMED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

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3. SERVICES WITHIN THE WALK AND ADJACENT TO WATERMANS COVE SUBJECT TO DESIGN DEVELOPMENT FEATURE LIGHTING NOT SHOWN FOR CLARITY.



NOTE:
REFER DRAWING PACKAGE DWG: B1B CD1000000 TO
B1B CD1000012 FOR CONSTRUCTED EARLY WORKS SERVICES

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SCALE 1:250
@B1

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Rev.	Item	Description	Date	Rev.	Item	Description	Date
16.	95% IFT (FOR COORDINATION)		02/03/19				
13.	ISSUED FOR INFORMATION		28/02/19				
12.	90% IFT (RE-ISSUED)		19/12/18				
11.	50% IFT		05/10/18				
10.	50% IFT		03/10/18				
09.	STAGE 4A ISSUE		13/04/18				
07.	STAGE 4A DRAFT ISSUE		06/04/18				
07.	RE-ISSUED FOR DEVELOPMENT APPLICATION		20/04/17				
06.	RE-ISSUED FOR DEVELOPMENT APPLICATION		12/04/17				
05.	ISSUED FOR DEVELOPMENT APPLICATION		17/03/17				
04.	INCORPORATING MINOR AMENDMENTS		14/12/16	18	AFC ISSUE		19/08/28
03.	INCORPORATING MINOR AMENDMENTS		30/11/16	17	AFC ISSUE		19/07/19
01.	ISSUE FOR SSO 1944		15/10/16	16	100% IFT (RE-ISSUED FOR COORDINATION)		22/03/19
01.	ISSUE FOR SSO 1944		25/10/16	15	95% IFT (RE-ISSUED FOR COORDINATION)		25/03/19

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Sydney NSW 2000

Principal

lendlease
Sydney NSW 2000

Project
BARANGAROO SOUTH
SHEET 2

Drawn By
MDH
Scale
1:250

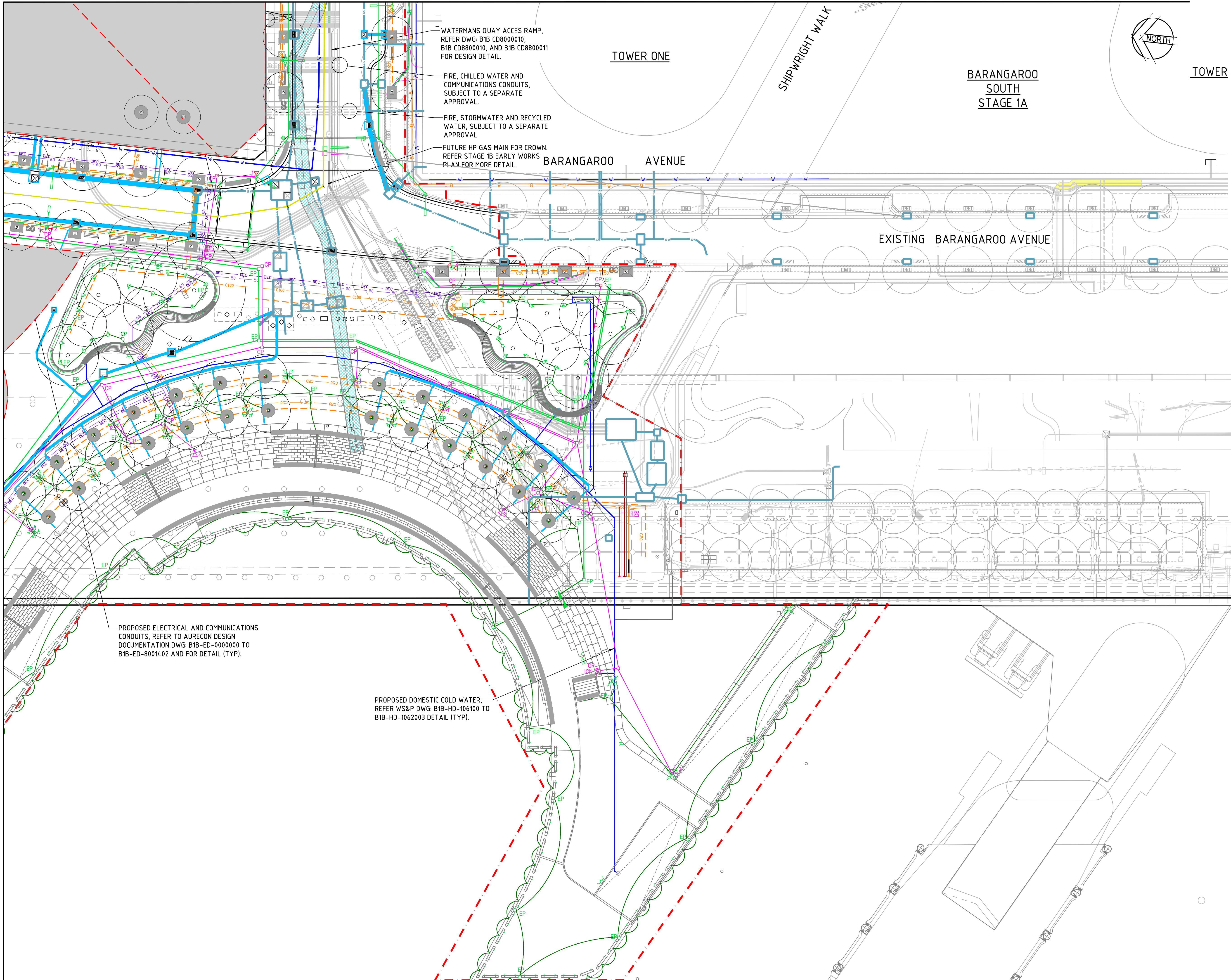
Designed
MV
Approved By
DC116

Checked
JN
Revision
18

STAGE 1B - PUBLIC DOMAIN WORKS
SERVICE COORDINATION PLAN
SHEET 2

MP

161804 B1B CD2100002



EXISTING SERVICES LEGEND	
SERVICES	
W	WATER SERVICES
W	WATER LEAD IN LINE
E	ELECTRICAL SERVICES
S	SEWER SERVICES
T	TELSTRA AND OPTICAL FIBRE SERVICES
OP	OPTUS SERVICE
SW	GAS SERVICES
RS	STORMWATER SERVICES
	RTA SERVICES
	EXISTING SYDNEY WATER STORMWATER
SERVICES DENOTED BY 'W' HAS BEEN COMPILED FROM "CARDNO AUS" INFORMATION SEWER DENOTED BY 'W' HAS BEEN COMPILED BY "RYGATE SURVEYS." STORMWATER DENOTED BY '*' HAS BEEN COMPILED BY "CARDNO SURVEYORS AND ORIGINAL DATA BASE INFORMATION SUPPLIED BY SYDNEY CITY COUNCIL." ALL OTHER DATA HAS BEEN COMPILED FROM DIAL BEFORE YOU DIG INFORMATION	
D ESTIMATED DEPTHS FROM EXISTING SURFACE LEVEL IL INVERT OF PIPE OR CONDUIT OL OBVERT OF PIPE OR CONDUIT	
PROPOSED SERVICES LEGEND	
PROPOSED SEWER	PROPOSED IRRIGATION LINE PIPEWORK
PROPOSED IRRIGATION OUTLET	PROPOSED IRRIGATION OUTLET
C50 C50	PROPOSED IRRIGATION CONDUIT
63 63	PROPOSED RECYCLED WATER IRRIGATION LINE
DEC DEC	PROPOSED IRRIGATION DECODER CABLE
CP CP	PROPOSED IRRIGATION CONDUIT
ICON ICON	PROPOSED IRRIGATION CONDUIT
PROPOSED POTABLE WATER	PROPOSED POTABLE WATER
PROPOSED FIRE	PROPOSED FIRE
PROPOSED WATER ACCESS POINT	PROPOSED WATER ACCESS POINT
PROPOSED STORMWATER	PROPOSED STORMWATER
PROPOSED GAS (BY OTHERS)	PROPOSED GAS (BY OTHERS)
PROPOSED RECYCLED WATER	PROPOSED RECYCLED WATER
PROPOSED NATURAL GAS	PROPOSED NATURAL GAS
PROPOSED FIRE SERVICE	PROPOSED FIRE SERVICE
PROPOSED DISTRICT COOLING PLANT WATER	PROPOSED DISTRICT COOLING PLANT WATER
PROPOSED ELECTRICAL AND LIGHTING	PROPOSED ELECTRICAL AND LIGHTING
PROPOSED ELECTRICAL DISTRIBUTION BOARD	PROPOSED ELECTRICAL DISTRIBUTION BOARD
PROPOSED LIGHTING	PROPOSED LIGHTING
PROPOSED ELECTRICAL OUTLET	PROPOSED ELECTRICAL OUTLET
PROPOSED ELECTRICAL PIT	PROPOSED ELECTRICAL PIT
PROPOSED ELECTRICAL, DRINKING FOUNTAIN	PROPOSED ELECTRICAL, DRINKING FOUNTAIN
PROPOSED SOIL ACCESS PIT	PROPOSED SOIL ACCESS PIT

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4. FEATURE LIGHTING NOT SHOWN FOR CLARITY.

NOTE:
REFER DRAWING PACKAGE DWG: B1B CD1000000 TO
B1B CD1000012 FOR CONSTRUCTED EARLY WORKS SERVICES

0 5 10 15 20 25m
SCALE 1:250
@B1

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KEY PLAN	16. 95% IFT (FOR COORDINATION)	17. ISSUED FOR INFORMATION	18. 90% IFT (RE ISSUED FOR CO-ORDINATION)	19. 90% IFT (RE-ISSUED)	20. 50% IFT	21. 10% IFT	22. STAGE 4A ISSUE	23. STAGE 4A DRAFT ISSUE	24. RE-ISSUED FOR DEVELOPMENT APPLICATION	25. ISSUED FOR DEVELOPMENT APPLICATION	26. INCORPORATING MINOR AMENDMENTS	27. INCORPORATING MINOR AMENDMENTS	28. INCORPORATING (CLIENT) REVIEW	29. ISSUE FOR SSO 1944	
	12/03/19	28/02/19	28/12/18	19/12/18	05/10/18	03/10/18	13/04/18	06/04/18	20/04/17	17/03/17	14/12/12	18	AFC ISSUE	19/08/28	
															100% IFT (RE-ISSUED FOR COORDINATION)
															100% IFT (RE-ISSUED FOR COORDINATION)
															35% IFT (RE-ISSUED FOR COORDINATION)

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Lend Lease
Project Management & Construction
Lend Lease
Design
Lend Lease

Consultant
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Millers Point NSW 2000
ABN 97 000 098 162
www.lendlease.com

Project
BARANGAROO SOUTH
Service Coordination Plan
Sheet 3
Scale 1:250
Drawn By MDH
Designed MV
Checked JN
Approved DC
Date 05/16

MP
Project No. 161804
Site No. B1B CD2100003
Drawing No. 18
Revision B1
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