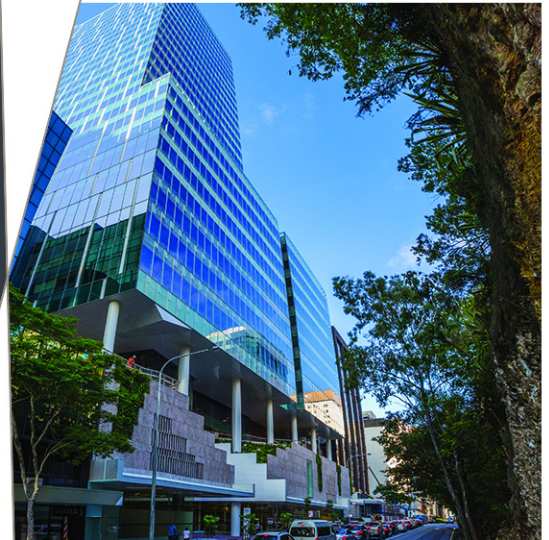


# Infrastructure Concept Plan

Barangaroo South -State Significance  
Development Planning Submission

NA50613044



Prepared for  
NSW Department of Planning, Industry and  
Environment  
3 August 2021



## Contact Information

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## Document Information

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Effective Date 3/08/2021

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Manager - Civil

Date Approved 3/08/2021

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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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# 1 Project Appreciation

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## 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 stratum:
  - 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.

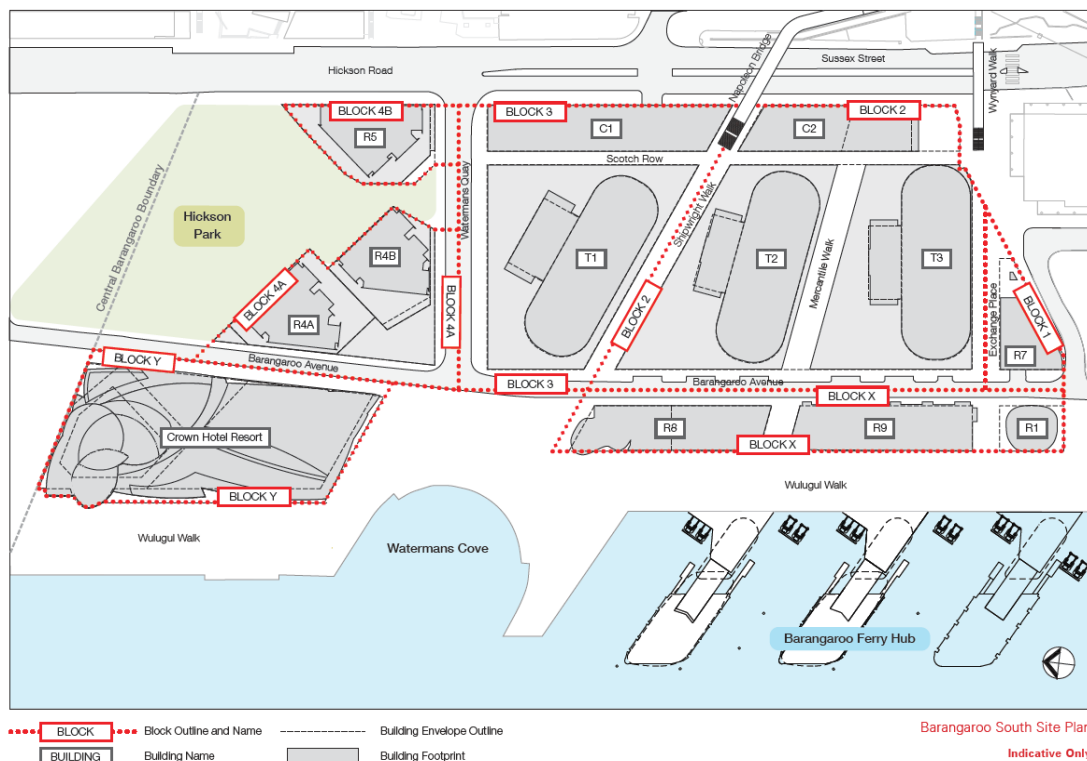
The following general comments apply:

- A 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
- 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

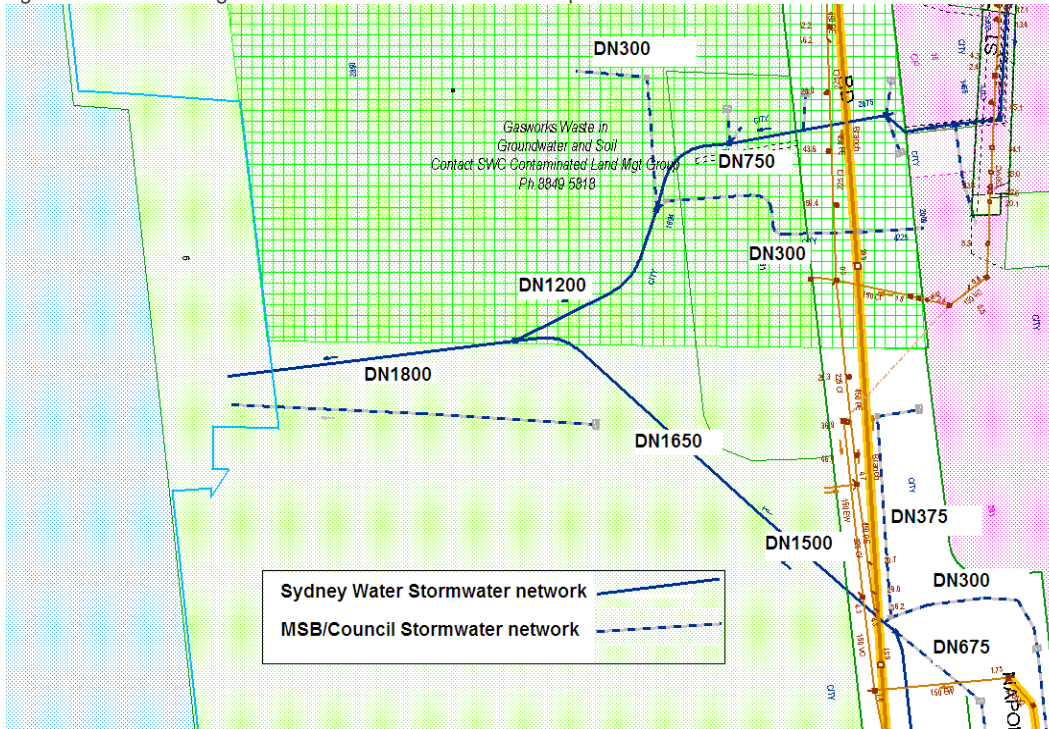


Figure 2-1 Existing stormwater network before development work

## 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 60,000m<sup>2</sup> 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

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### 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 de commissioned". 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

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### 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

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### 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

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### 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

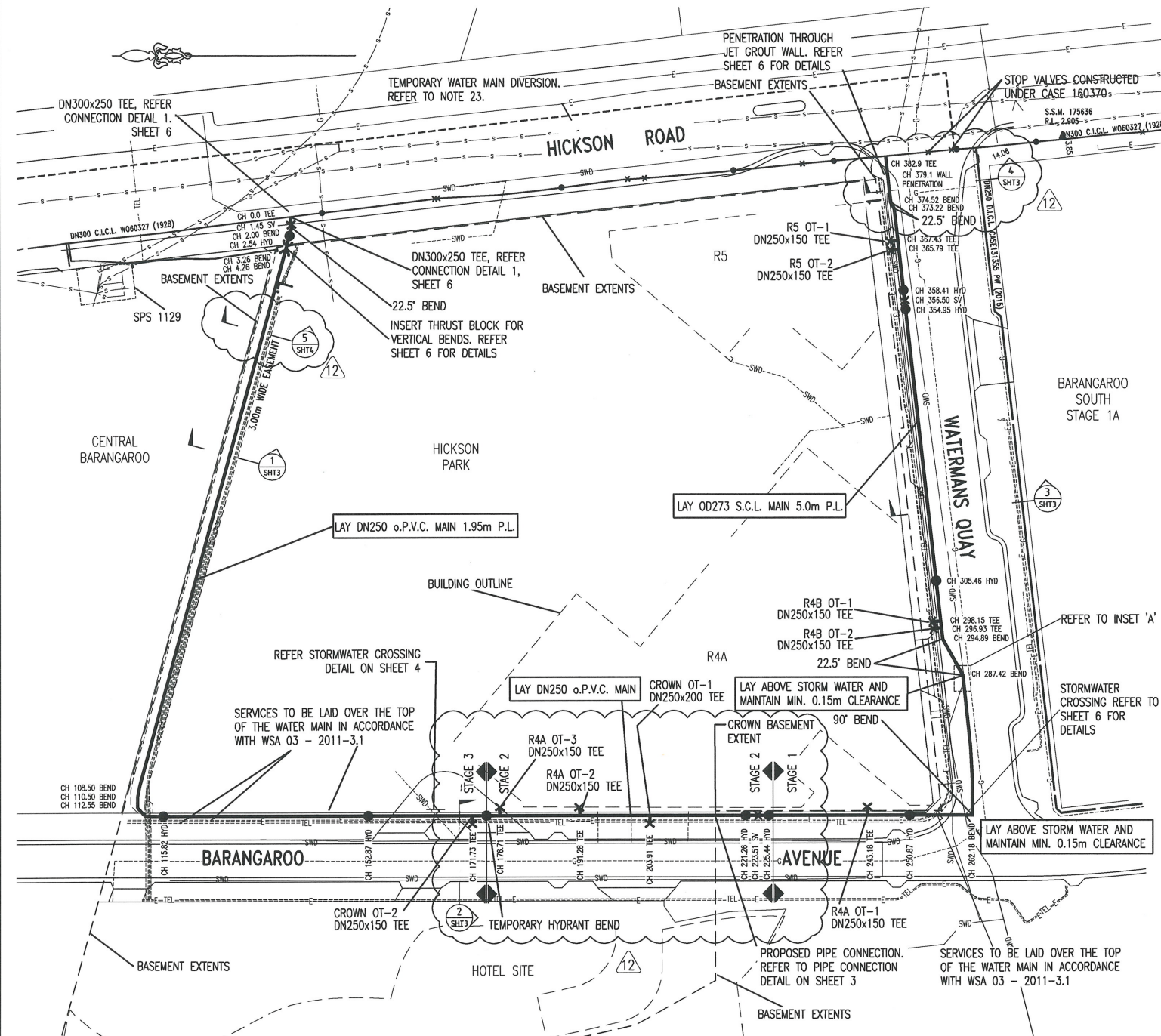
A

RELEVANT DRAWINGS









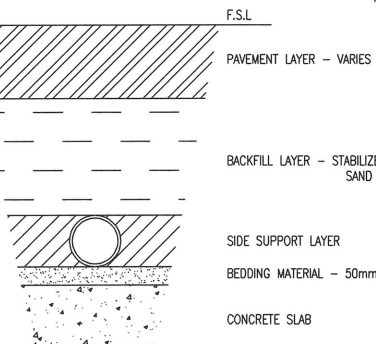
## NOTE:

- LARGE WATER MAIN CONNECT APPLICATIONS TO BE DONE AS PART OF FUTURE BUILDING APPLICATIONS.
- TEES AND VALVES INSTALLED UP FRONT TO AVOID FUTURE UNDER PRESSURE CUT-INS OR MAIN SHUTDOWNS.
- DEVELOPER TO ENSURE THERE ARE NO TREES, LIGHT POLES OR ANY OTHER STRUCTURE WITHIN THE EASEMENT OR PLACED NEAR THE MAIN THAT MAY CAUSE DAMAGE TO THE SYDNEY WATER ASSET.
- DEVELOPER TO ENSURE NOTHING OVER HANGING THE AREA ABOVE THE MAIN THAT MAY MAKE IT DIFFICULT FOR EQUIPMENT TO CONDUCT MAINTENANCE WORK.
- DEVELOPER TO ENSURE NO FLOWER BEDS OVER WATER MAIN.

10	PENETRATION THROUGH JETGROUT WALL	AC	23/08/18
9	UPDATE LONG SECTION	AC	21/06/18
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	19/01/17
3	STORMWATER CROSSING AMENDMENT	AC	16/10/17
2	DRAFTING UPDATES TO SHEET 1	AC	01/08/17
1	ISSUE FOR APPROVAL	AC	15/06/17

**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.

No.	AMENDMENT DESCRIPTION	BY	DATE	11	SECTIONS AND STAGING AMENDED	LM	19/12/18
1	ISSUE FOR APPROVAL	AC	15/06/17	12	SECTIONS AND STAGING AMENDED	LM	19/12/18
2	DRAFTING UPDATES TO SHEET 1	AC	01/08/17	13	WALL PENETRATION UPDATED	AC	09/10/18

UTILITIES	DATE	REF.	DATE	REF.
PROP. STORMWATER SWD	01/07/18	(CDNO)	01/07/18	CARDNO
PROP. GAS	01/07/18	(CDNO)	01/07/18	CARDNO
PROP. TELSTRA	01/07/18	(CDNO)	01/07/18	CARDNO
PROP. ELECTRICAL	01/07/18	(CDNO)	01/07/18	CARDNO
WATER	01/07/18	(CDNO)	01/07/18	CARDNO

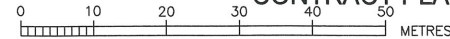
PIPE SCHEDULE	DATE	REF.	DATE	REF.
250 o.p.v.c. PN16	23/16	RRJ		
OD273 S.C.L.	SPL	137.31	WELD	
250 D.I.C.L. PN35	6.66	RRJ		
300 D.I.C.L. PN35	2.4	RRJ/GIBALTY		

DESIGN HEAD, 120 m	BOUNDARY TRAPS REQUIRED

NO AMENDMENTS ARE TO BE MADE TO THIS PLAN WITHOUT REFERENCE TO SYDNEY WATER. THIS PLAN IS NOT NECESSARILY UP TO DATE OR CORRECT AND SYDNEY WATER ACCEPTS NO RESPONSIBILITY.	SYDNEY WATER CORPORATION
	CASE154199PW
	WATERMAIN EXTENSION
	BARANGAROO STAGE 1B
	BARANGAROO CITY OF SYDNEY

U.S. DIRECTORY	SYDNEY 41st ED MAP C L13
SHEET 1 OF 6	File No. N/A

## CONTRACT PLAN



## 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
- THE WORKS DETAILED HEREON TO BE CONSTRUCTED IN ACCORDANCE WITH THE WATER SUPPLY CODE OF AUSTRALIA WS03-2011-3.1 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.
- 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)

COMPACTION TEST NUMBERS ABOVE TO BE USED AS A GUIDE ONLY. NUMBER OF TESTS TO BE CONFIRMED BY A SUITABLY QUALIFIED FIELD TESTER. STABILISED SAND TO BE USED FOR TRENCH FILL IN ALL LOCATIONS

- HORIZONTAL BENDS IN IN-SITU AREAS (DN300 OR LESS) TO BE ANCHORED IN ACCORDANCE WITH DTC-1110 OR DTC-1111
- VERTICAL BENDS & HYDRANT BENDS IN IN-SITU AREAS (DN150 OR LESS) TO BE ANCHORED IN ACCORDANCE WITH DTC-1114.
- TEES IN IN-SITU AREAS (DN300 OR LESS) TO BE ANCHORED IN ACCORDANCE WITH DTC-1113.
- 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 CONSTRUCTOR SHALL SUBMIT A SAFE WORK PLAN TO THE WATER SERVICING COORDINATOR FOR REVIEW PRIOR TO COMMENCING THE WORKS.

9. THE CONSTRUCTOR 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 CONSTRUCTOR 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.

16. CONTRACTOR TO VERIFY EXACT LOCATION OF ALL EXISTING SERVICES WITH RELEVANT AUTHORITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE PROJECT MANAGER. ANY DAMAGE TO EXISTING SERVICES TO BE RECTIFIED AT THE CONTRACTOR'S EXPENSE.

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. CONSTRUCTOR TO PROVIDE WORK AS CONSTRUCTED INFORMATION IN DIGITAL FORMAT AND RED PEN 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 W060327 UNTIL THE 10P IS DECOMMISSIONED.

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

DTC No.	DESCRIPTION
DTC 1110	THRUST BLOCK DETAILS DICT AND PVC WATER MAINS <300. HORIZONTAL BENDS TYPE 1. REV A
DTC 1111	THRUST BLOCK DETAILS DICT AND PVC WATER MAINS <300. HORIZONTAL BENDS TYPE 2. REV B
DTC 1113	THRUST BLOCK DETAILS DICT AND PVC WATER MAINS <300. TEES. REV B
DTC 1115	ANCHORAGE DETAILS DICT AND PVC WATER MAINS < DN300. 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 150-DN<1200 STEEL PIPE JOINTING. WELDED - PLAIN ENDS. REV A

## CONSTRUCTION STAGING NOTES:

- HYDRANT BENDS TO BE INSTALLED AT ENDS OF STAGES 1 & 2 AS PER TEMPORARY FLUSHING BEND DETAIL ON SHEET 3.
- 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 - 226.28
STAGE 3 - EST. COMMISSION MAY 2020	CH 0.00 - 174.38

## BARANGAROO STAGE 1B - WATERMAIN EXTENSION



# 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
  - G GAS SERVICES
  - SW STORMWATER SERVICES
  - RS RTA SERVICES
  - EXISTING SYDNEY WATER STORMWATER

SERVICES DENOTED BY "S" HAS BEEN COMPILED FROM "CARDNO A.U.S." INFORMATION.  
SEWER DENOTED BY "H" HAS BEEN COMPILED BY "RYGATE SURVEYORS".  
STORMWATER DENOTED BY "S" 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

- 1 PROPOSED COMMUNICATIONS
- 2 PROPOSED WIRELESS ACCESS POINT
- DS PROPOSED DIGITAL SIGN
- CP PROPOSED COMMUNICATIONS PIT
- ICN PROPOSED ICN RACK
- PROPOSED POTABLE WATER
- PROPOSED FIRE
- PROPOSED WATER ACCESS POINT
- PROPOSED STORMWATER
- PROPOSED GAS (BY OTHERS)
- PROPOSED RECYCLED WATER
- PROPOSED NATURAL GAS
- PROPOSED FIRE SERVICE
- PROPOSED DISTRICT COOLING PLANT WATER
- PROPOSED LIGHTING CONTROL CABLEWAY
- PROPOSED SEWER
- PROPOSED IRRIGATION LINE PIPEWORK
- PROPOSED IRRIGATION OUTLET
- PROPOSED IRRIGATION OUTLET
- 63 PROPOSED RECYCLED WATER IRRIGATION LINE
- DEC PROPOSED IRRIGATION DECODER CABLE
- C50 PROPOSED IRRIGATION CONDUIT
- C100 PROPOSED IRRIGATION CONDUIT
- 75 PROPOSED IRRIGATION POTABLE WATER
- PROPOSED ELECTRICAL AND LIGHTING
- PROPOSED ELECTRICAL DISTRIBUTION BOARD
- PROPOSED LIGHTING
- PROPOSED ELECTRICAL OUTLET
- EP PROPOSED ELECTRICAL PIT
- DF PROPOSED ELECTRICAL DRINKING FOUNTAIN
- PROPOSED SOIL ACCESS PIT

# FOR INFORMATION ONLY

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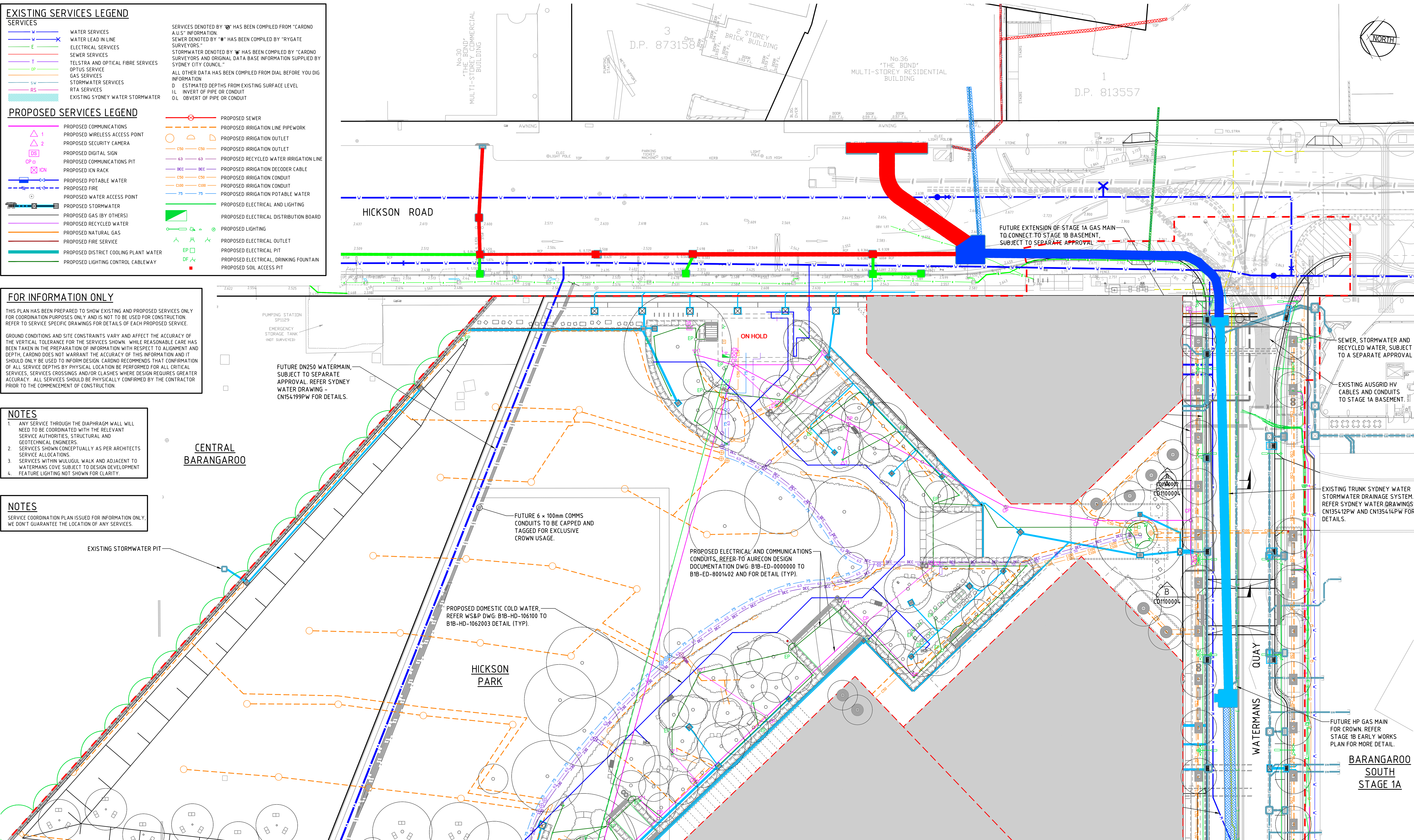
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# NOTES

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

# NOTES

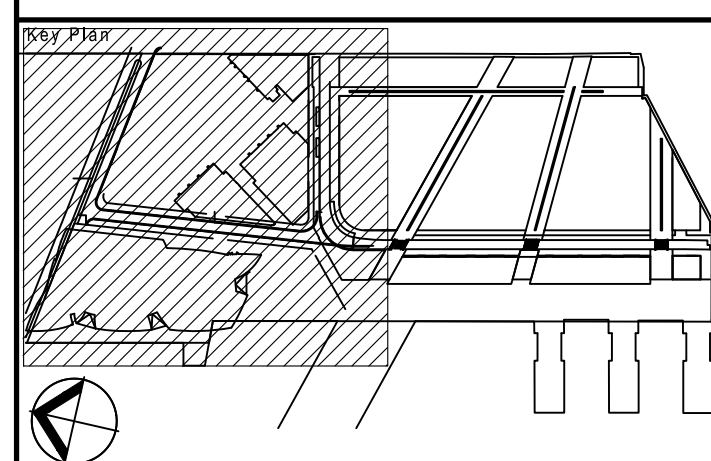
SERVICE COORDINATION PLAN ISSUED FOR INFORMATION ONLY. WE DON'T GUARANTEE THE LOCATION OF ANY SERVICES.



**NOTE:**  
REFER DRAWING PACKAGE DWG: B1B CD1000000 TO B1B CD1800012 FOR CONSTRUCTED EARLY WORKS SERVICES

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

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Rev	Item	Revision Description	Date	Rev	Item	Revision Description	Date
14		95% IFT (FOR COORDINATION)	12.03.19				
13		ISSUED FOR INFORMATION	28.02.19				
12		90% IFT (RE-ISSUED)	19.12.18				
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02		INCORPORATING CLIENT REVIEW	15.11.16	16	100% IFT		22.03.19
01		ISSUE FOR SSD 7944	25.10.16	15	95% IFT (RE-ISSUED FOR COORDINATION)		15.03.19

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Collaborating Architects	Lend Lease Graham W Jones   Principal Architect FRAIA NSW ARB 4005 ABN 97 000 098 162
Consultant	

Principal	Lend Lease
Developer	Lend Lease
Project Management & Construction	Lend Lease
Design	Lend Lease
30 The Bond 30 Hickson Road Millers Point NSW 2000	www.lendlease.com

Project	BARANGAROO SOUTH
MP	

STAGE 1B - PUBLIC DOMAIN WORKS SERVICE COORDINATION PLAN SHEET 1	
Drawn By: MDH Designed: MV Checked: GN Approved By: [Signature] Date: OCT'16	
Scale: 1:250	
Project No: 161804 Site No: B1B Drawing No: CD2100001 Revision: 18	



EXISTING SERVICES LEGEND

W	WATER SERVICES
V	WATER LEAD IN LINE
E	ELECTRICAL SERVICES
T	SEWER SERVICES
OP	TELSTRA AND OPTICAL FIBRE SERVICES
SW	OPTUS SERVICE
RS	GAS SERVICES
	STORMWATER SERVICES
	RTA SERVICES
	EXISTING SYDNEY WATER STORMWATER

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D ESTIMATED DEPTHS FROM EXISTING SURFACE LEVEL  
IL INVERT OF PIPE OR CONDUIT  
OL OVERTOP OF PIPE OR CONDUIT

PROPOSED SERVICES LEGEND

1	PROPOSED COMMUNICATIONS
2	PROPOSED WIRELESS ACCESS POINT
DS	PROPOSED SECURITY CAMERA
CP	PROPOSED DIGITAL SIGN
ICN	PROPOSED COMMUNICATIONS PIT
	PROPOSED ICN RACK
	PROPOSED POTABLE WATER
	PROPOSED FIRE
	PROPOSED WATER ACCESS POINT
	PROPOSED STORMWATER
	PROPOSED GAS (BY OTHERS)
	PROPOSED RECYCLED WATER
	PROPOSED NATURAL GAS
	PROPOSED FIRE SERVICE
	PROPOSED DISTRICT COOLING PLANT WATER
	PROPOSED LIGHTING CONTROL CABLEWAY
	PROPOSED SEWER
	PROPOSED IRRIGATION LINE PIPEWORK
	PROPOSED IRRIGATION OUTLET
C50	PROPOSED IRRIGATION OUTLET
63	PROPOSED RECYCLED WATER IRRIGATION LINE
DEC	PROPOSED IRRIGATION DECODER CABLE
C50	PROPOSED IRRIGATION CONDUIT
C100	PROPOSED IRRIGATION CONDUIT
75	PROPOSED IRRIGATION POTABLE WATER
	PROPOSED ELECTRICAL AND LIGHTING
	PROPOSED ELECTRICAL DISTRIBUTION BOARD
	PROPOSED LIGHTING
EP	PROPOSED ELECTRICAL OUTLET
	PROPOSED ELECTRICAL PIT
	PROPOSED ELECTRICAL DRINKING FOUNTAIN
	PROPOSED SOIL ACCESS PIT

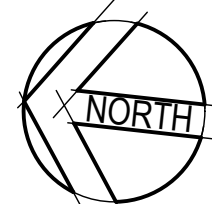
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4. FEATURE LIGHTING NOT SHOWN FOR CLARITY.



REFER DRAWING B1B CD2100001 FOR CONTINUATION

HICKSON PARK

R1

BARANGAROO AVENUE

PROPOSED ELECTRICAL AND COMMUNICATIONS CONDUITS, REFER TO AURECON DESIGN DOCUMENTATION DWG: B1B-ED-0000000 TO B1B-ED-80014.02 AND FOR DETAIL (TYP).

CROWN SYDNEY HOTEL

FORMER SPIRIT OF TASMANIA DOCK

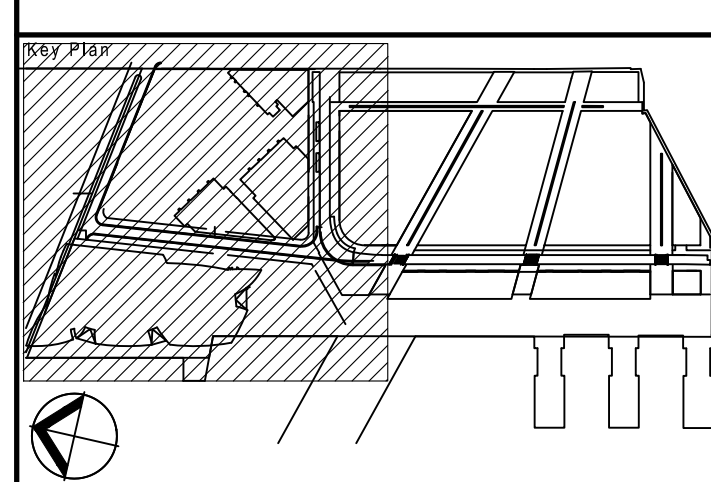
PROPOSED DOMESTIC COLD WATER, REFER WS&P DWG: B1B-HD-106100 TO B1B-HD-1062003 DETAIL (TYP).

REFER DRAWING B1B CD2100003 FOR CONTINUATION

NOTE:  
REFER DRAWING PACKAGE DWG: B1B CD1000000 TO B1B CD1800012 FOR CONSTRUCTED EARLY WORKS SERVICES

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SCALE 1:250 @B1

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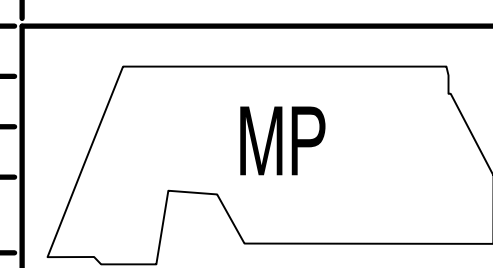


16	95% IFT (FOR COORDINATION)	12.03.19			
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Rev	Item	Revision Description	Date	Rev	Item

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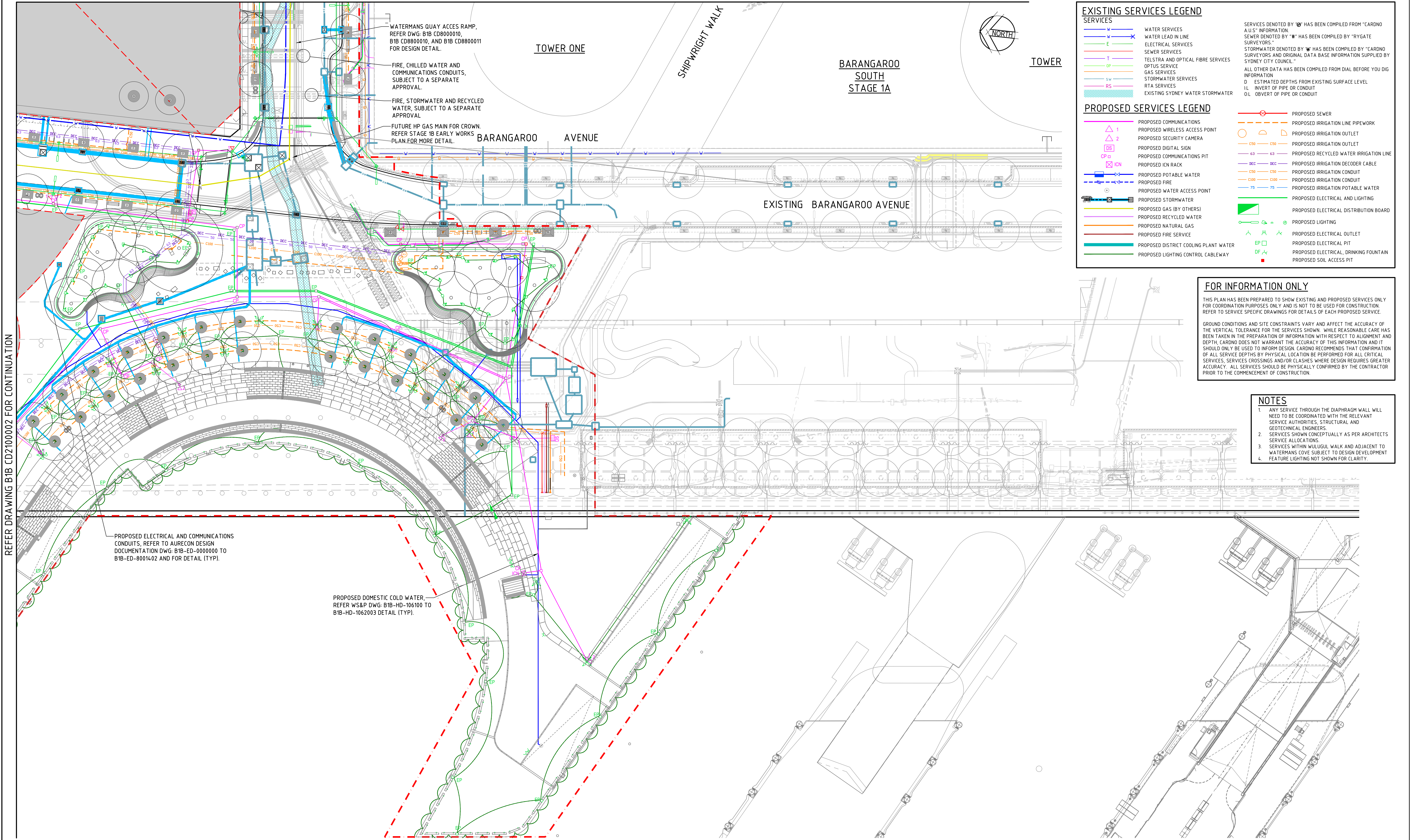
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Lead Architects	RSHP Australia Pty Ltd Ivan Harbord   Principal Architect RAIA NSW ARB 9484 Sydney NSW 2000	Principal	lendlease	Project	BARANGAROO SOUTH
Collaborating Architects	Lend Lease Graham W Jones   Principal Architect FRAIA NSW ARB 4005 ABN 97 000 098 162	Developer	Lend Lease	Project Management & Construction	Lend Lease
Consultant		Design	Lend Lease		



Drawn By	Designed By	Checked By	Approved By	Date
MDH	MV	GN		0CT'16
Scale	1:250			
Project No.	161804	Site No.	B1B CD2100002	Revision
				18





EXISTING SERVICES LEGEND

SERVICES		
W	WATER SERVICES	SERVICES DENOTED BY "D" HAS BEEN COMPILED FROM "CARDNO A.U.S" INFORMATION.
W	WATER LEAD IN LINE	SEWER DENOTED BY "S" HAS BEEN COMPILED BY "RYGATE SURVEYORS".
E	ELECTRICAL SERVICES	STORMWATER DENOTED BY "SW" HAS BEEN COMPILED BY "CARDNO SURVEYORS AND ORIGINAL DATA BASE INFORMATION SUPPLIED BY SYDNEY CITY COUNCIL."
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T	TELSTRA AND OPTICAL FIBRE SERVICES	D ESTIMATED DEPTHS FROM EXISTING SURFACE LEVEL.
CP	OPTUS SERVICE	IL INVERT OF PIPE OR CONDUIT.
SW	GAS SERVICES	OL OVERT OF PIPE OR CONDUIT.
SW	STORMWATER SERVICES	
RS	RTA SERVICES	
	EXISTING SYDNEY WATER STORMWATER	

PROPOSED SERVICES LEGEND

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

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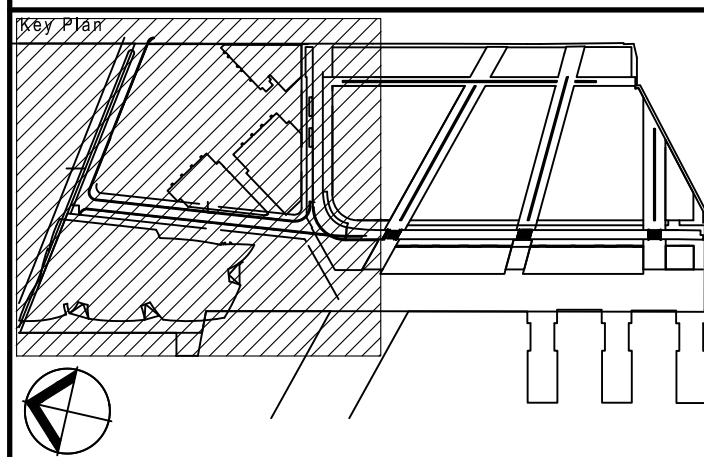
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NOTE:  
REFER DRAWING PACKAGE DWG: B1B CD1000000 TO B1B CD18000012 FOR CONSTRUCTED EARLY WORKS SERVICES

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

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Collaborating Architects	Lend Lease Graham W Jones (Principal Architect) FRAIA NSW ARB 4005 ABN 97 000 098 162
Consultant	

Principal	Lend Lease
Developer	Lend Lease
Project Management & Construction	Lend Lease
Design	Lend Lease

Project	BARANGAROO SOUTH
Stage	STAGE 1B - PUBLIC DOMAIN WORKS
Service	SERVICE COORDINATION PLAN
Sheet	SHEET 3
Drawn By	MDH
Designed By	MV
Checked By	GN
Approved By	
Date	0CT'16
Scale	1:250
Project No.	161804
Site No.	B1B
Drawing No.	CD2100003
Revision	18