



New South Wales

## **WATER INDUSTRY COMPETITION ACT 2006 (NSW)**

### **Section 10(5)**

#### **Notice of Decision - Application for a network operator's licence From Discovery Point Water Factory Pty Ltd**

I, Andrew Constance, Minister for Finance and Services, under section 10(5) of the *Water Industry Competition Act 2006* (NSW) (the Act), have considered and accepted the advice and recommendations made by IPART in its report to me regarding the application from Discovery Point Water Factory Pty Ltd (142 392 541) (the Applicant) for a network operator's licence under the Act. I attach IPART's report (Attachment A).

Based on my consideration and acceptance of IPART's report:

- (a) I am satisfied that the Applicant is not a disqualified corporation as required under section 10(3) of the Act;
- (b) I am satisfied as to each of the criteria set out in section 10(4) of the Act; and
- (c) I have had regard to the licensing principles set out in section 7 of the Act in determining whether or not to grant a licence and what conditions should be imposed on any such licence granted.

I have determined to grant a network operator's licence to the Applicant subject to the conditions set out in licence number 13\_025, the Act and the *Water Industry Competition (General) Regulation 2008* (NSW). I hereby attach the licence (Attachment B).

A handwritten signature in blue ink, appearing to read 'A Constance', followed by a dotted line.

Minister for Finance and Services

Dated this 4th day of December 2013



**NEW SOUTH WALES  
GOVERNMENT**

***WATER INDUSTRY COMPETITION ACT 2006  
(NSW)***

**NETWORK OPERATOR'S LICENCE**

**Discovery Point Water Factory Pty Ltd  
(ACN 142 392 541)**



**New South Wales**

***Water Industry Competition Act 2006 (NSW)***

**Grant of network operator's licence  
Licence no. 13\_025**

I, Andrew Constance MP, Minister for Finance and Services, under section 10 of the *Water Industry Competition Act 2006 (NSW)*, grant a network operator's licence to:

*Discovery Point Water Factory Pty Ltd (ACN 142 392 541)*

to construct, maintain and operate water industry infrastructure, subject to:

- (i) the conditions imposed by the *Water Industry Competition Act 2006 (NSW)*;
- (ii) the conditions imposed by reg 9 and set out in Parts 1, 2 and 3 of Schedule 1 to the *Water Industry Competition (General) Regulation 2008 (NSW)*;
- (iii) the conditions imposed by the Minister in the attached Schedule A, being special Ministerially-imposed licence conditions for Discovery Point Water Factory Pty Ltd's network operator's licence; and
- (iv) the conditions imposed by the Minister in the attached Schedule B, being standard Ministerially-imposed licence conditions for all licensed network operators.

  
.....

Minister for Finance and Services

Dated this

4<sup>th</sup> day of December 20 13



## **SCHEDULE A - SPECIAL MINISTERIALLY-IMPOSED LICENCE CONDITIONS FOR DISCOVERY POINT WATER FACTORY PTY LTD'S NETWORK OPERATOR'S LICENCE**

This schedule sets out the conditions which the Minister imposes pursuant to section 13(1)(b) of the Act. In addition to these special Ministerially-imposed conditions, the Licensee is subject to obligations imposed by the Act, the Regulation and the standard Ministerially-imposed licence conditions set out in Schedule B. The Minister may vary the conditions in this schedule or impose new conditions, provided there is no inconsistency with the conditions imposed on the Licensee by the Act or the Regulation.

### **A1 Activities authorised - non-potable water supply**

A1.1 This Licence authorises the Licensee and any authorised persons specified in Table 1.1:

- a) to construct, maintain and operate the water industry infrastructure specified in Table 1.2;
  - b) for the authorised purposes specified in Table 1.3;
  - c) within the area of operations specified in Table 1.4,
- subject to the conditions imposed by or under the Act, the Regulation and this Licence.

**Table 1.1 Authorised persons**

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Flow Systems Pty Ltd (ABN 28 136 272 298)  
Permeate Partners Pty Ltd (ABN 54 130 112 257)

---

**Table 1.2 Water infrastructure**

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Infrastructure for the production, filtration, treatment, storage, transport and reticulation of non-potable water.

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**Table 1.3 Authorised purposes**

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Toilet flushing, unrestricted irrigation, clothes washing, car washing, general wash-down and water features (landscape architecture).

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**Table 1.4 Area of operations**

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The land the subject of the approval granted on 5 May 2011 under section 75O of the *Environmental Planning and Assessment Act 1979* (NSW) by the Director-General, Department of Planning & Infrastructure for application Major Project MP 10\_0003; and

The land the subject of the approval granted on 19 March 2012 under section 75J of the *Environmental Planning and Assessment Act 1979* (NSW) by the Deputy Director General, Development Assessment and Systems Performance, Department of Planning & Infrastructure for application Major Project MP 10\_0030.

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### **A2 [Not applicable]**

- (v) a reference to a clause is to a clause in this Schedule A;
- (vi) a reference to a schedule is to a schedule to this Licence;
- (vii) a reference to a law or statute includes regulations, rules, codes and other instruments under it, and consolidations, amendments, re-enactments or replacements of them; and
- (viii) explanatory notes do not form part of this Licence, but in the case of uncertainty may be relied on for interpretation purposes.

## Definitions

Expressions used in this Schedule A that are defined in the Act or the Regulation have the meanings set out in the Act or the Regulation.

In this Schedule A:

Act	means the <i>Water Industry Competition Act 2006</i> (NSW).
Licence	means this network operator's licence granted under section 10 of the Act.
Licensee	means the person to whom this Licence is granted under section 10 of the Act.
Minister	means the Minister responsible for Part 2 the Act.
Regulation	means the <i>Water Industry Competition (General) Regulation 2008</i> (NSW).

- *when IPART has reason to believe that there may be a change in the type or level of insurance held by the Licensee in relation to activities authorised under this Licence;*
- *where there is a change in the type or extent of activities authorised under this Licence; or*
- *when IPART or an approved auditor has reason to believe that the type or level of insurance held by the Licensee may not be appropriate for the size and nature of the activities authorised under this Licence.]*

#### **B4 Complying with NSW Health requirements**

- B4.1 The Licensee must carry out the activities authorised by this Licence in compliance with any requirements of NSW Health that:
- a) IPART has agreed to; and
  - b) are notified from time to time to the Licensee by IPART in writing.

#### **B5 Complying with Audit Guidelines from IPART**

- B5.1 The Licensee must comply with any Audit Guidelines issued by IPART.

#### **B6 Reporting in accordance with the Reporting Manual**

- B6.1 The Licensee must prepare and submit reports in accordance with the Reporting Manual.

#### **B7 Reporting information in relation to the Register of Licences**

- B7.1 Within 14 days of any change in relation to the following, the Licensee must notify IPART, and provide details, of the change in accordance with the Reporting Manual:
- a) any source from which the water handled by the Specified Water Industry Infrastructure is derived;
  - b) the Authorised Purposes of the water handled by the Specified Water Industry Infrastructure;
  - c) the identity of each licensed retail supplier or public water utility that has access to the infrastructure services provided by the Specified Water Industry Infrastructure for the purpose of supplying water to its customers;
  - d) any other water infrastructure to which the Specified Water Industry Infrastructure is connected;
  - e) the identity of each licensed retail supplier or public water utility that has access to infrastructure services provided by the Specified Water Industry Infrastructure for the purpose of providing sewerage services to its customers;
  - f) any other sewerage infrastructure to which the Specified Water Industry Infrastructure is connected;
  - g) the arrangements for the disposal of waste from the Specified Water Industry Infrastructure.

#### **B8 Monitoring**

- B8.1 The Licensee must undertake any monitoring that is required for the purposes of this Licence, any Plan, the Act or the Regulation in accordance with this clause B8.
- B8.2 The Licensee must keep the following records of any samples taken for monitoring purposes specified in the Water Quality Plan:

B11.1 If the Licensee proposes to operate the Specified Water Industry Infrastructure to supply water for an end-use which is not set out in the most recent Water Quality Plan provided to IPART, the Licensee must notify IPART in writing at least 3 months before commencing such operation.

## **B12 Notification of changes to Authorised Person**

B12.1 If an Authorised Person ceases, proposes to cease, or receives notification to cease providing any of the services relating to the activities authorised by this Licence, the Licensee must provide IPART with written notice as soon as practicable but no later than 28 days before the date of cessation of the services. The written notice must include details of how the services previously undertaken by the Authorised Person will continue to be undertaken.

## **B13 Notification of commercial operation**

B13.1 This clause B13 applies each time the Licensee has brought any of the Specified Water Industry Infrastructure into commercial operation.

B13.2 The Licensee must:

- a) notify IPART in accordance with the Reporting Manual that it has brought the relevant Specified Water Industry Infrastructure into commercial operation; and
- b) provide such notification within 10 days after it has brought the relevant Specified Water Industry Infrastructure into commercial operation.

## **INTERPRETATION AND DEFINITIONS**

### **Interpretation**

In this Schedule B, unless the context requires otherwise:

- (i) the singular includes the plural and vice versa;
- (ii) headings are used for convenience only and do not affect the interpretation of this Schedule B;
- (iii) a reference to a document includes the document as modified from time to time and any document replacing it;
- (iv) a reference to a "person" includes a natural person and any body or entity whether incorporated or not;
- (v) a reference to a clause is to a clause in this Schedule B;
- (vi) a reference to a schedule is to a schedule to this Licence;
- (vii) a reference to a law or statute includes regulations, rules, codes and other instruments under it, and consolidations, amendments, re-enactments or replacements of them; and
- (viii) explanatory notes do not form part of this Licence, but in the case of uncertainty may be relied on for interpretation purposes.

### **Definitions**

Expressions used in this Schedule B that are defined in the Act or the Regulation have the meanings set out in the Act or the Regulation.

In this Schedule B:

Industry	(i) Schedule A, clause A1, Table 1.2;
Infrastructure	(ii) Schedule A, clause A2, Table 2.2; and
	(iii) Schedule A, clause A3, Table 3.2.
Verification Monitoring	means verification monitoring as described in the document entitled "Australian Drinking Water Guidelines" or the document entitled "Australian Guidelines for Water Recycling" as the case may be.
Water Quality Plan	means the water quality plan that the Licensee is required to prepare under the Regulation.



BROOKFIELD PIH PTY LIMITED  
Level 22  
135 King Street  
SYDNEY NSW 2000

Remove this top section if desired before framing



## Certificate of Registration on Change of Name

This is to certify that

**WATER FACTORY COMPANY PTY LTD**

**Australian Company Number 136 272 298**

did on the twenty-fifth day of June 2013 change its name to

**FLOW SYSTEMS PTY LTD**

**Australian Company Number 136 272 298**

The company is a proprietary company.

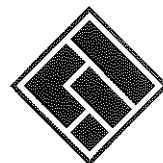
The company is limited by shares.

The company is registered under the Corporations Act 2001 and  
is taken to be registered in New South Wales and the date  
of commencement of registration is the twenty-seventh day of March, 2009.

Issued by the  
Australian Securities and Investments Commission  
on this twenty-fifth day of June, 2013.

A handwritten signature in black ink, appearing to read 'G. Medcraft'.

Greg Medcraft  
Chairman



CERTIFICATE

# Water Servicing Strategy

Discovery Point

NA82013091

Prepared for Discovery Point Pty Ltd and  
Discovery Point Water Pty Ltd

February 2014



## Document Information

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## Document Control

### Cardno/Discovery Point/Discovery Point Water Approval

Version	Date	Author	Author Initials	Reviewer	Reviewer Initials
1	19/06/13	Sombath Lam	SL	.	.
2	14/02/2014	Luke Dean	LJD		<i>L Dean</i>
3	21/02/2014	Luke Dean	LJD		<i>L Dean</i>

### Discovery Point/Discovery Point Water Approval

Version	Date	Author	Author Initials	Reviewer	Reviewer Initials

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# 1 Introduction

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## 1.1 General Overview

Discovery Point Pty Ltd has engaged Cardno to prepare a Water Servicing Strategy for the Discovery Point development site, Brodie Spark Drive, Arncliffe, Sydney.

## 1.2 Structure of this Report

This report is structured as follows:

- > **Section 2** describes the scale of the development, expected building occupancy rates, total retail and commercial space. Background is also provided regarding the ownership of the land.
- > **Section 3** describes the proposed development in terms of general water and sewerage supply and provides the expected rates of water consumption and sewerage discharge if supplied by Sydney Water.
- > **Section 4** describes the service strategy should the Recycled Water Plant be operational and Discovery Point Water supply services to the development.
- > **Section 5** describes the service strategy should the Recycled Water Plant not be operational and Sydney Water supplies services to the development.
- > **Section 6** provided a delineation of responsibilities and details of the asset ownership under both operational options

### Development Overview

The Discovery Point development is divided into three main portions of work as indicated in **Figure 1.1**. The as built precinct consists of three existing buildings (Vine, Verge and Green Bank). The southern precinct will consist of 9 buildings and the northern precinct will consist of 7 buildings.



**Figure 1-1 Discovery Point Development**

### 1.3 Discovery Point Sustainability Initiatives

When completed, the Discovery Point precinct will be a sustainable water community. A key component of the development objectives includes implementation of the following sustainability initiatives:

- > Installation of water efficient fixtures and fittings,
- > Reduction of potable water use through an onsite recycled water plant and reticulation of recycled water throughout the Discovery Point development,
- > Offsite export of recycled water to irrigate Council lands;

It is intended to provide capability for treatment and export of an amount of recycled water that is not less than the amount of potable water used. In order to meet this objective it is proposed to:

- a. capture, treat and recycle waste water from within the development,
- b. capture sewage flows generated from the Southern and Northern Precinct and existing Vine, Verge and Green Bank buildings, and
- c. export recycled water offsite.

Captured wastewater will be treated by an onsite “Recycled Water Plant” (RWP), and subsequently distributed for non-potable water uses within and external to the Discovery Point Development.



## 2 Description of Development

Discovery Point is a residential community located above Wolli Creek train station at Tempe. The site is split into a Northern and Southern Precinct by the south coast rail line. There is road access to the site via a signalled intersection on the Princes Highway and Brodie Spark Drive. Currently the site has three building, Greenbank, Verge and Vine, constructed. All three buildings are located to the Southern Precinct. In total the site will have 16 multiple story buildings which will comprise of 1,901 residential units and 6,827m<sup>2</sup> of non-residential area. Refer to Table 2.1 for a building schedule.

Table 2.1 summarises the Building Occupancy for the overall Discovery Point Development.

**Table 2-1 Discovery Point Building Schedule**

Discovery Point Building Schedule					
BUILDING	BUILDING	No. of Units	Retail Floor Area (m <sup>2</sup> )	Expected Occupancy	Population
Existing	GreenBank	135	1,291	338	402
Existing	Verge	88	900	220	265
Existing	Vine	70		175	175
Proposed	Building 1B	5	2,387	13	132
Proposed	Building 1C (LINC)	121		303	303
Proposed	Building 6 (ARC)	88		220	220
Proposed	Building 7	74		185	185
Proposed	Building 2	200	775	500	539
Proposed	Building 3	99	892	248	292
Proposed	Building 4	70		175	175
Proposed	Building 5	162	582	405	434
Proposed	Building 8	156		390	390
Proposed	Building 10	167		418	418
Proposed	Building 11	118		295	295
Proposed	Building 12	128		320	320
Proposed	Building 13	220		550	550
	<b>Totals</b>	1,901	6,827	4,753	5,095

Buildings within each of the Precincts will be linked by a basement level car park.

Multi-level basement car parks will link the buildings within each of the precincts. There is a bridge on Brodie Spark Drive which links the northern and southern precincts.

## **2.2 Site Ownership and Responsibility**

Discovery Point Pty Ltd is delivering the Discovery Point Development.

## **2.3 Title Strategy**

The Title Strategy calls for each building to be created as its own lot extending vertically from the basement through the podium level and the tower buildings. A DRAFT Title Strategy is provided in Appendix B.

## **2.4 Road Ownership Strategy**

The Road Ownership Strategy is outlined in the documentation attached in Appendix C. It is expected the roads at surface level are to be part of a cooperative lot and will become private roads. This will be achieved through the use of a structural "fold" in the ground plane slab creating a zone above the slab for construction of road pavement, footpaths and services.

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## 3 Generic Service Strategy

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### 3.1 General Water Supply Strategy

#### 3.1.1 Location of Available Water Connection

Water supply to Discovery Point is available from the DN300 main located within Brodie Spark Drive.

#### 3.1.2 Potable Water Supply Design

Application for extensions of the existing Sydney Water watermain will be submitted to Sydney Water to extend the existing main to service the Development. Watermains will be located within the private roadways of the development. These mains will be laid in an allocated service trench which will provide traditional surface access for maintenance and replacement. Easements will be created over each of the mains to allow Sydney Water access for maintenance and replacement purposes.

Hydrants for firefighting will be placed on the mains within the road alignments with large watermain connections on each of the buildings supplying the sprinkler and hydrant booster services.

#### 3.1.3 Metering Arrangements

It is proposed that each lot, and therefore each building, within the development would have a separate connection and meter in line with current Sydney Water metering policy.

Individual Apartments will be metered and remote electronic data transfer remotely.

#### 3.1.4 Fire Supply

Sydney Water has previously provided pressure/flow outputs indicating in excess of 30m head at 100l/s being available from the DN300 main within Brodie Spark Drive.

Statement of Available Pressure Applications are to be submitted to Sydney Water for each respective large service connections required.

### 3.2 General Sewer Supply Strategy

#### 3.2.1 Location of Available Connection

Sewer supply to Discovery Point is available from the DN300 main located within Brodie Spark Drive.

#### 3.2.2 Sewer Supply Design

Sewer from each of the buildings will be reticulated through the development by a private main which will be owned by Discovery Point Pty Ltd and maintained by Discovery Point Water. The Southern Precinct will discharge to the DN300 main in Brodie Spark Drive. This connection will occur in the basement of the existing building and the Northern Precinct will connect to the existing DN300 main via the maintenance hole between Buildings 6 and 7.

### 3.3 Calculation of Anticipated Demand

#### 3.3.1 Potable Water

Total water demand for the development has been determined using the "Average daily water use by property type", published by Sydney Water, as the basis for determination of peak hourly rates, in accordance with WSA guidance.

### 3.3.2 Wastewater

Sydney Water edition of WSA 02-2002-2.2 have been used to calculate the wastewater discharge flows from the development and is summarised on the flow schedule in Appendix B for information.

It is noted however that the methods for determining wastewater flows using WSA provides estimates that are too conservative and is not suited for this type of development. A more direct approach has been used to estimate waste water flow.

### 3.4 Staging of Anticipated Demand

Loading from Discovery Point is presented in a series of stages as each building is constructed and occupied. This information is tabulated in Table 3.1

**Table 3-1 Detailed Anticipated Water and Sewer Programme Milestones**

MILESTONE	BUILDING	OCCUPATION DATE	TOTAL WATER DEMAND				WASTE WATER GENERATION	
			Avg. Day (KL/d)	Max. Day (KL/d)	Max. Hr (WSA) (KL/h)	Max. Hr (Expected) (KL/h)	Avg KL/day	Max. Hr kL
	Building 1B -5 Units	June 2015	1.42	2.70	0.225	0.16	1.28	0.14
	Building 1C (LINC) – 121 Units	June 2015	30.31	57.60	4.8	3.54	27.38	3.19
	Building 2 (SUMMIT) – 200 Units	June 2015	50.10	95.19	7.9	5.84	45.09	5.26
	Building 6 (ARC) – 88 Units	June 2015	22.04	41.88	3.49	2.57	19.84	2.31
	Building 7 – 74 Units	June 2015	18.54	35.23	2.93	2.16	16.69	1.94
	1B Commercial/Retail Space (6827m <sup>2</sup> )	June 2015	16.93	32.16	2.68	1.97	15.23	1.77
	<b>Total for Milestone 1</b>	June 2015	<b>139.34</b>	<b>264.76</b>	<b>22.02</b>	<b>16.24</b>	<b>125.51</b>	<b>14.61</b>
<b>MILESTONE 1: 300kL Recycled Water Plant On Line</b>								
	Building 3 – 99 Units	May 2017	24.75	47.03	3.92	2.88	22.28	2.59
	Building 4 – 70 Units	May 2017	17.50	33.25	2.77	2.04	15.75	1.83
	Building 5 – 162 Units	May 2017	40.50	76.95	6.41	4.71	36.45	4.24
	Building 8 – 156 Units	May 2017	39.00	74.10	6.17	4.54	35.10	4.08
	Building 10 – 167 Units	May 2017	41.75	79.33	6.60	4.86	37.58	4.37
	Building 11 – 118 Units	May 2017	29.50	56.05	4.67	3.43	26.55	3.09
	Building 12 – 128 Units	May 2017	32.00	60.80	5.06	3.72	28.80	3.35
	Building 13 – 220 Units	May 2017	55.00	104.50	8.70	6.40	49.50	5.75



MILESTONE	BUILDING	OCCUPATION DATE	TOTAL WATER DEMAND				WASTE WATER GENERATION	
			Avg. Day (KL/d)	Max. Day (KL/d)	Max. Hr (WSA) (KL/h)	Max. Hr (Expected) (KL/h)	Avg KL/day	Max. Hr kL
Subtotal	1573 units	May 2017	280.00	532.00	44.30	32.59	252.00	29.29
MILESTONE 2: Ultimate Development	Total Ultimate Development	May 2017	418.93	795.96	66.27	48.76	377.03	43.82

### 3.5 Water and Sewer Supply Options

Based on Discovery Points water sustainability there are two options for water and sewer supply for the development and hope to operate a recycled water plant.

Discovery Point has two options for water and sewer supply for the site

#### Option 1 – Discovery Point Water Pty Ltd

Discovery Point Water will operate a private recycled water plant located on the Southern Precinct. Sewer from the development will be diverted to the plant to allow the creation of recycled water. Discovery Point Water will then control the supply of Potable and Recycled Water to the development. Discovery Point Water will also be responsible for Sewer Services for the site.

#### Option 2 – Sydney Water

Sydney Water will supply traditional Potable Water and Sewer Services for the site. Should Discovery Point Water obtain their licence or be offline.

The following sections detail the operational and logistical requirements for both of the above options.

### 3.6 Water Balance Assessment

Discovery Point Water has undertaken a Water Balance assessment of the site to determine the feasibility of the treatment plant. The plant was assessed in the below scenarios for both the initial commissioning and at final operation.

- > Routine RWP operation without off site RW use @ summer & winter demand conditions
- > Routine RWP operation with off site RW use @ summer & winter demand conditions

**Table 3-2 Water Balance Scenarios**

OPERATING SCENARIO: ROUTINE RWP OPERATION WITHOUT OFF-SITE RW USE (SUMMER)					
		Drinking Water demand (kL/day)	Recycled Water demand (kL/day)	Wastewater generated (kL/day)	Wastewater discharged to sewer (kL/day)
a)	Milestone 1 (RWP commissioning)	95	108	102	5.1
b)	Milestone 2 (ultimate development)	363	358	461	103

OPERATING SCENARIO: ROUTINE RWP OPERATION WITHOUT OFF-SITE RW USE (WINTER)					
		Drinking Water demand (kL/day)	Recycled Water demand (kL/day)	Wastewater generated (kL/day)	Wastewater discharged to sewer (kL/day)
a)	Milestone 1 (RWP commissioning)	95	38	102	65
b)	Milestone 2 (ultimate development)	363	288	461	174

OPERATING SCENARIO: ROUTINE RWP OPERATION WITH OFF-SITE RW USE (SUMMER)					
		Drinking Water demand (kL/day)	Recycled Water demand (kL/day)	Wastewater generated (kL/day)	Wastewater discharged to sewer (kL/day)
a)	Milestone 1 (RWP commissioning)	95	353	102	5.1
b)	Milestone 2 (ultimate development)	363	603	461	23.1

OPERATING SCENARIO: ROUTINE RWP OPERATION WITH OFF-SITE RW USE (WINTER)					
		Drinking Water demand (kL/day)	Recycled Water demand (kL/day)	Wastewater generated (kL/day)	Wastewater discharged to sewer (kL/day)
a)	Milestone 1 (RWP commissioning)	95	38	102	65
b)	Milestone 2 (ultimate development)	363	288	461	174

The estimated quantity of waste by-products to sewer is 5% of wastewater generated. During periods of minimum irrigation demand (winter), the total quantity of wastewater discharged to sewer increases from the 5% by-products/residuals to also include the surplus volume of generated wastewater over and above the Recycled Water demand.

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The estimated quality of waste by-products to sewer is:

Ave Discharge TSS:	<1,000 mg/l
Max Discharge TSS:	<10,000 mg/l
Max Discharge TDS:	3,500 mg/l
Max Discharge Screenings size:	<10mm

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It is anticipated that the treatment plant will be down for major preventative maintenance not more than one day every 6 months. During these periods the ultimate treatment plant capacity of 600kL/day will be reduced to 300KL/day based on only one of the two 300kL/day bioreactors being down at any time.

Should a process failure occur the plant would be expected to be operation again with a 24 hour period including the process start-up.

## 4 Discovery Point Water Service Strategy

### 4.1 Services Delivered by Discovery Point Water

Discovery Point Water is in the process of obtaining a Network Operators Licence in accordance with the Water Industry Competition Act Prior to subdivision. This licence will allow Discovery Point Water to operate the Recycled Water Plant. Discovery Point Water will provide Potable Water, Recycle Water and Sewerage services to the development.

During periods when the recycled water plant is offline the waste water will discharge directly to the Sydney Water sewer traversing through the common car park, situated between the Greenbank and Verge buildings. The proposed connection is a gravity connection, and the method for determining discharge volumes during these events will be part of the Trade Waste agreement to be negotiated between Discovery Point Water and Sydney Water.

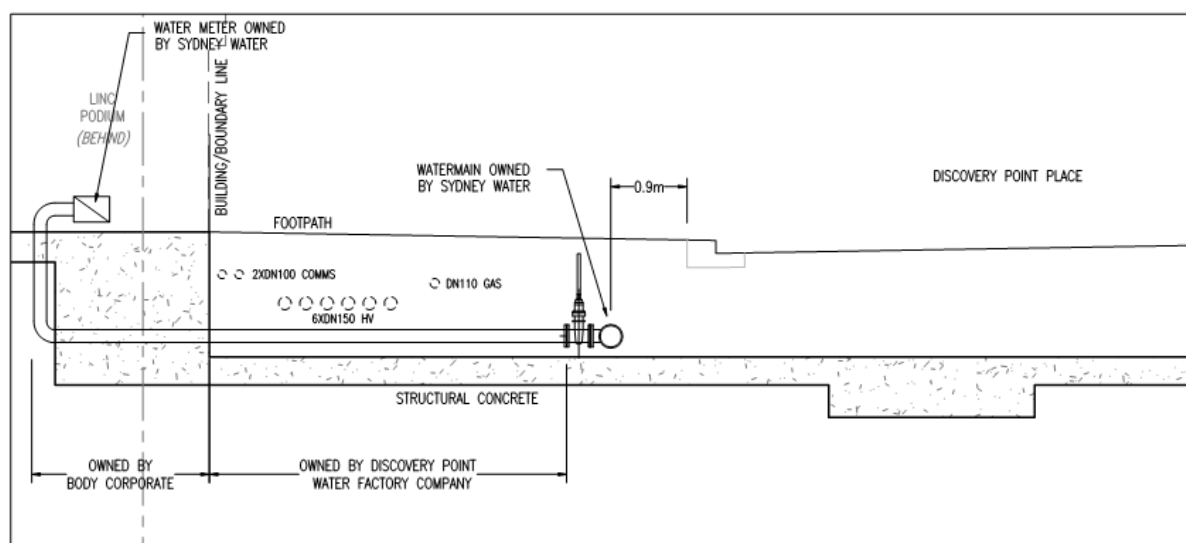
### 4.2 Potable Water Supply Design

Application for extensions of existing Sydney Water watermains have been submitted to Sydney Water to extend the existing main to service the Development.

It is noted however that Discovery Point Water seeks to become the licensed private water utility for Discovery Point, with Sydney Water acting as the retailer of last resort.

To accommodate this arrangement and to satisfy the requirements of WIC Act, Discovery Point Water is required to own a physical asset that is connected to the customer. In this regard the following ownership model will be adopted.

- i) Water (supply) mains in the street will be owned by Sydney Water;
- ii) Water services from the mains in the street, up to the building/boundary line will be owned by Discovery Point Water;
- iii) Water services beyond within the building/boundary will be owned by the Body Corporate;
- iv) Water meter will be owned by Sydney Water.



**Figure 4-1 Proposed Ownership Arrangement for Water Service**



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## **4.3 Sewer Servicing Strategy**

### **4.3.1 Outline of Sewage Collection Strategy**

In general terms sewage shall be collected from the entire development and diverted to the Recycled Water Plant (RWP) via a flow balancing tank. The Northern precinct will drain via an existing DN300 sewer, with collection of the Southern Precinct accomplished through reticulation of a private sewer network.

The sewage collection system on the site will discharge to a central Recycled Water Plant (RWP) located in the basement structure of Discovery Point, via a flow balancing tank, also situated within the basement. A bypass overflow from the flow balancing tank connection shall be provided, connecting the Development to the existing Sydney Water Sewer traversing through the proposed sewer extension under Case 130270.

When the RWP is offline or there is surplus recycled water available for the needs of the buildings, then the wastewater shall be diverted to discharge directly to the Sydney Water. It is proposed to discharge the waste by-products from the RWP system to the Sydney Water sewer. This is addressed further in trade waste discussion provided in Section 7 of this document.

All private sewers will remain as part of the cooperative, with a single connection point to the flow balancing tank, which serves as the connection to the Recycled Water Plant. The flow balancing tank and RWP will be owned by Discovery Point Pty Ltd, operated and maintained by Discovery Point Water, acting as the Service Authority.

All discharge, including excess recycled water and RWP process by-products to the Sydney Water sewer system from the RWP will be facilitated by a Utility Services Agreement between Discovery Point Water and Sydney Water. Discussions with Sydney Water have commenced and are ongoing to address this requirement.

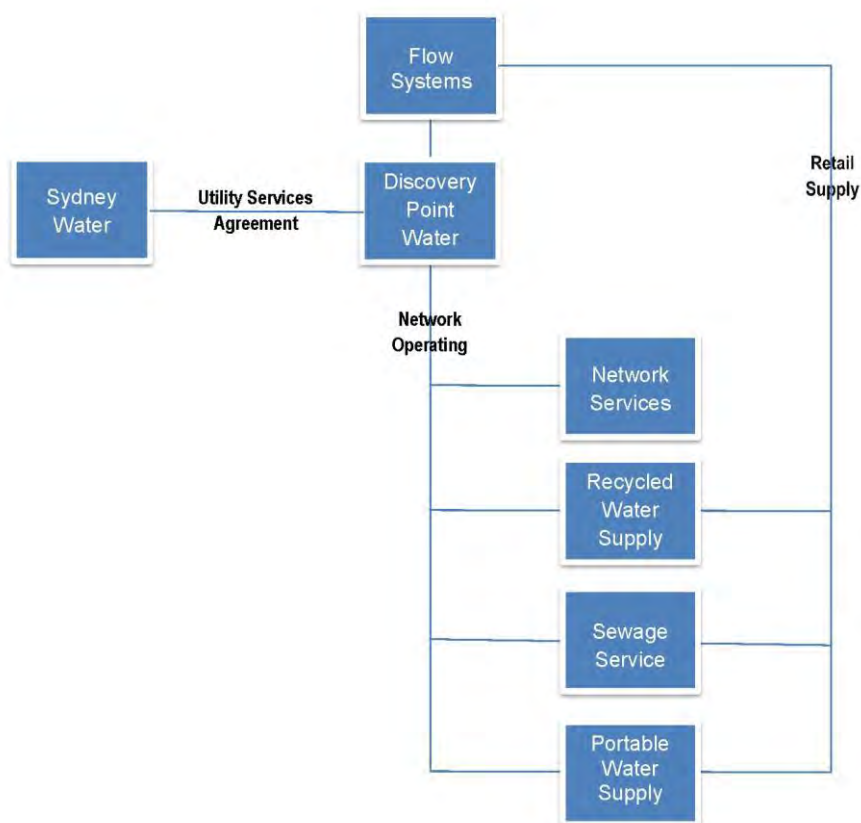
It is noted that as the Northern Precinct will be draining through an existing DN300 Sydney Water Sewer, which is also serving Vine and Verge buildings, the Development will require an off take to collect all waste water flowing through this conduit, from the Northern Precinct and existing buildings.

Discussions with Sydney Water have commenced in this respect with preliminary agreement as part of the Utility Services Agreement with Flow and Sydney Water. Of relevance to this, it is noted that it has been proposed to construct the offtake with the connection point from Discovery Point to the Sydney Water sewer under CN130270.

The Recycled Water Plant has been approved and Construction Certificate issued. It is acknowledged that a license to construct and operate the RWP will be required under the provisions of the Water Industry Competition Act (WICA).

#### 4.4 Services Operational Management

The figure below shows a high-level diagram of the services proposed to be privately owned versus ownership by traditional public authorities at Discovery Point



**Figure 4-2 Proposed Utility Ownership**

It is proposed that Discovery Point Water will be the licensed private water utility for potable water, non-potable water (recycled water) and wastewater. Sydney Water will act as the retailer of last resort

#### 4.5 Anticipated Service Requirements

Table 4.1 Below summaries the expected Potable Water, Recycled Water and Sewer demands for the development. Potable Water demand and wastewater discharge have been determined generally in accordance with the Sydney Water Edition of WSA 03-2011-3.1 WSA 02-2002-2.2, respectively. Demands and discharge figures as result of the operation of the recycling plant have been provided from Water Factory Company Pty Ltd.

As detailed in Section 3.

**Table 4-1 Detailed Anticipated Water and Sewer Programme Milestones RWP**

MILESTONE	BUILDING	OCCUPATION DATE	POTABLE WATER DEMAND WITH RWP UNDER NORMAL OPERATION			Waste Water Generation/Discharge	
			Avg. kL/day	Peak Hr kL		Avg. kL/day	Max. Hr kL
	Building 1B -5 Units	June 2015	0.83	0.10		1.28	0.14
	Building 1C (LINC) – 121 Units	June 2015	17.73	2.07		27.28	3.19
	Building 2 (SUMMIT) – 200 Units	June 2015	29.31	3.42		45.09	5.26
	Building 6 (ARC) – 88 Units	June 2015	12.89	1.50		19.84	2.31
	Building 7 – 74 Units	June 2015	10.85	1.27		16.69	1.94
	1B Commercial/Retail Space (6827m <sup>2</sup> )	June 2015	7.62	0.90		15.23	1.78
<b>MILESTONE 1: 300kL Recycled Water Plant On Line</b>	<b>Total for Milestone 1</b>	June 2015	<b>79.23</b>	<b>9.26</b>		<b>125.41</b>	<b>14.62</b>
	Building 3 – 99 Units	May 2017	14.67	1.70		22.58	2.62
	Building 4 – 70 Units	May 2017	10.37	1.20		15.96	1.85
	Building 5 – 162 Units	May 2017	24.01	2.78		36.95	4.29
	Building 8 – 156 Units	May 2017	23.12	2.68		35.58	4.13
	Building 9 – Units	May 2017	0.00	0.00		0.00	0.00
	Building 10 – 167 Units	May 2017	24.75	2.87		38.09	4.42
	Building 11 – 118 Units	May 2017	17.49	2.03		26.91	3.13
	Building 12 – 128 Units	May 2017	18.97	2.20		29.19	3.39
	Building 13 – 220 Units	May 2017	32.60	3.78		50.18	5.83
<b>Subtotal</b>	<b>1573 units</b>	May 2017	<b>165.97</b>	<b>19.25</b>	<b>0.00</b>	<b>255.44</b>	<b>29.67</b>
<b>MILESTONE 2: Ultimate Development</b>	<b>Total Ultimate Development</b>	<b>May 2017</b>	<b>249.12</b>	<b>28.90</b>	<b>0.00</b>	<b>383.42</b>	<b>44.54</b>

## 4.6 Recycled Water Infrastructure Responsibilities

Discovery Point Water will operate and maintain the RWP and charge consumers for the supply of recycled water to buildings within the Discovery Point Development and also to potential external customers.

A location diagram showing position of the RWP within the Development has been provided in Appendix E.

It is anticipated that the discharge of wastewater from the site will be reduced during operation of the RWP to primarily include waste by-products of the treatment process. However, due to the requirement for maintenance and potential for down time of the RWP, Sydney Water has agreed to accept full site discharge to Sydney Water sewers as outlined in Section 5 of this document. As previously noted, this will require a Utility Service Agreement between the Discovery Point Water and Sydney Water.

## 4.7 Trade Waste

The sources of Trade waste at the Discovery Point Development are categorised into three groups:

**GROUP 1:** Trade Waste discharge from the RWP during normal operations:

- > These are waste streams from the RWP treatment process including de-sludging, discharge of reverse osmosis reject water, and discharge of macerated screenings.

**GROUP 2:** Trade Waste from basement areas where the discharge bypasses the RWP The discharges include flows from plant rooms, car park run-off and waste water from the subsoil collection treatment system deemed not acceptable to discharge to the RWP, because of potential adverse effect on the waste water biological treatment process, or waste water with potential for containing contaminants not suitable for discharges to the proposed RWP.

- > The flows from the car park surface run-off and any flows containing sea water will not be discharged to the Sydney Water sewer system.
- > The flow from a carwash bay will require pre-treatment before discharged to sewer system
- > The flow from sub-soil collection system flow is preferred not to discharge to the Sydney Water sewer system. Further review will be undertaken when the nature of contaminated on the site are understood.

**GROUP 3:** Trade Waste discharge from processes on site discharging into the waste RWP:

- > E.g. Grease Waste Systems. In normal operations these systems do not discharge to the Sydney Water sewer system.

It is proposed the treatment plant will be constructed at the time of the first occupation of Buildings 1B and 1C which is part of Stage 1, along with the Southern Precinct basement superstructure, including the RWP and flow balancing tank.

However, the trade waste agreement may need to address requirements for discharge from the site during the validation and proving period, prior to completion of the RWP. Further negotiations will take place with SWC and Discovery Point Water for completion of the trade waste requirements.

## **4.8 Recycled Water Quality and Approvals**

The quality of the recycled water products will be in accordance with the Australian Guidelines for Water Recycling.

It is understood that Discovery Point Water has submitted an application to IPART for a Network Operating License under the Water Industry Competition Act 2006.

The design intent is for the recycled water and potable water reticulation systems to have a minimum pressure differential as required by the Water Supply Code WSAA 03.

The export recycled water supply will be provided from the RWP. The export recycled water reticulation external to the Discovery Point Development, will be located in public lands.

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## 5 Sydney Water Service Strategy

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### 5.1 Services Delivered by Sydney Water

Sydney Waters Servicing Strategy will be required if Discovery Point Water is unable to obtain a Network Operators Licence in accordance with the Water Industry Competition Act Prior to subdivision.

This servicing strategy will also provide advice to Sydney Water should Discovery Point Water obtain a licence and their ability to services to Discovery Point are interrupted or terminated. Sydney Water will act as the retriever of last resort

Sydney Water will supply the development with traditional Potable Water and Sewer services. Sydney Water will not be required to service the development Recycle Water.

### 5.2 Portable Water Sewer Design

If Sydney Water are required to service the facility it will in accordance with the flows and asset ownership as detailed in Section 3.

### 5.3 Services Operational Management

The future operation of services at Discovery Point will be through a combination of a traditional public utility service and Owners Corporation network service. The Discovery Point Management Plan, Building Management Statements, Easements will be the core governance arrangements adopted by key stakeholders for the ongoing management and operation of Discovery Point.



## 6 Degeneration of Responsibility

### 6.1 Current Application

#### 6.1.1 Current Application submitted to Sydney Water for Discovery Point

- > Case Number 132050      Discovery Point Stage 1 Section 73 Application
- > Case Number 130270WW      Stage 1 Sewer extension Application
- > Case Number 126534PW      Stage 1 Watermain extension Application
- > Case Number 130270WW      Stage 6 Sewer extension Application
- > Case Number 130270PW      Stage 6 Watermain extension Application
- > Case Number 133332      Stage 6/7 Building Plan Approval Application
- > Case Number 133085      Discovery Point Stage 7 Section 73 Application

At the time of writing the Servicing Strategy, the Notice of Requirements (NOR) for CN132050 and the Letter of Approval (LOA) for the extension of the respective water and sewer mains noted above have been issued. These have been provided in Appendix A. It is noted however that the Notice of Requirements for the Section 73 Application 133085 have not yet been released and will be subject to this Servicing Strategy.

### 6.2 Services Responsibility

The principles for ownership and management of water and waste water services for Discovery Point and are outlined below.

**Table 6-1 Option 1 – Discovery Point Water - Service Responsibility**

ASSET	OWNER	OPERATOR
Potable Water	Sydney Water	Discovery Point Water Pty Ltd
Recycled Water	Discovery Point Pty Ltd	Discovery Point Water Pty Ltd
Waste Water	Discovery Point Pty Ltd	Discovery Point Water Pty Ltd
Stormwater within Discovery Point	Discovery Point Pty Ltd	Discovery Point
Stormwater external to Discovery Point	Rockdale City Council	Rockdale City Council

**Table 6-2 Option 2 – Sydney Water - Service Responsibility**

ASSET	OWNER
Potable Water	Sydney Water
Recycled Water	N/A
Waste Water	Sydney Water
Stormwater within Discovery Point	Discovery Point Pty Ltd
Stormwater external to Discovery Point	Rockdale City Council

The provisions and requirements of the Water Industry Competition Act (WICA) will apply to the ownership and operation of Recycled and Waste Water treatment and distribution.

## 6.3 Operating Interface

The following table outlines areas of interface between key service owners.

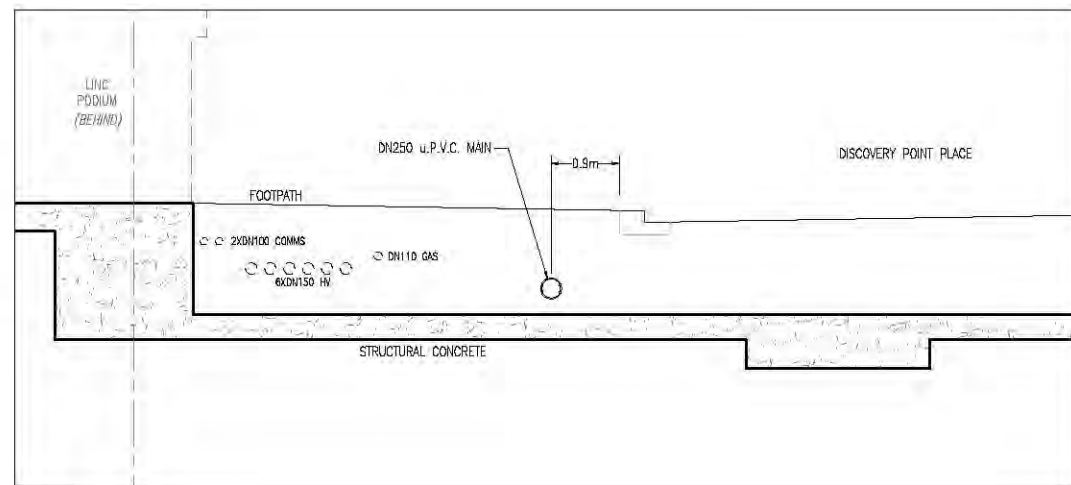
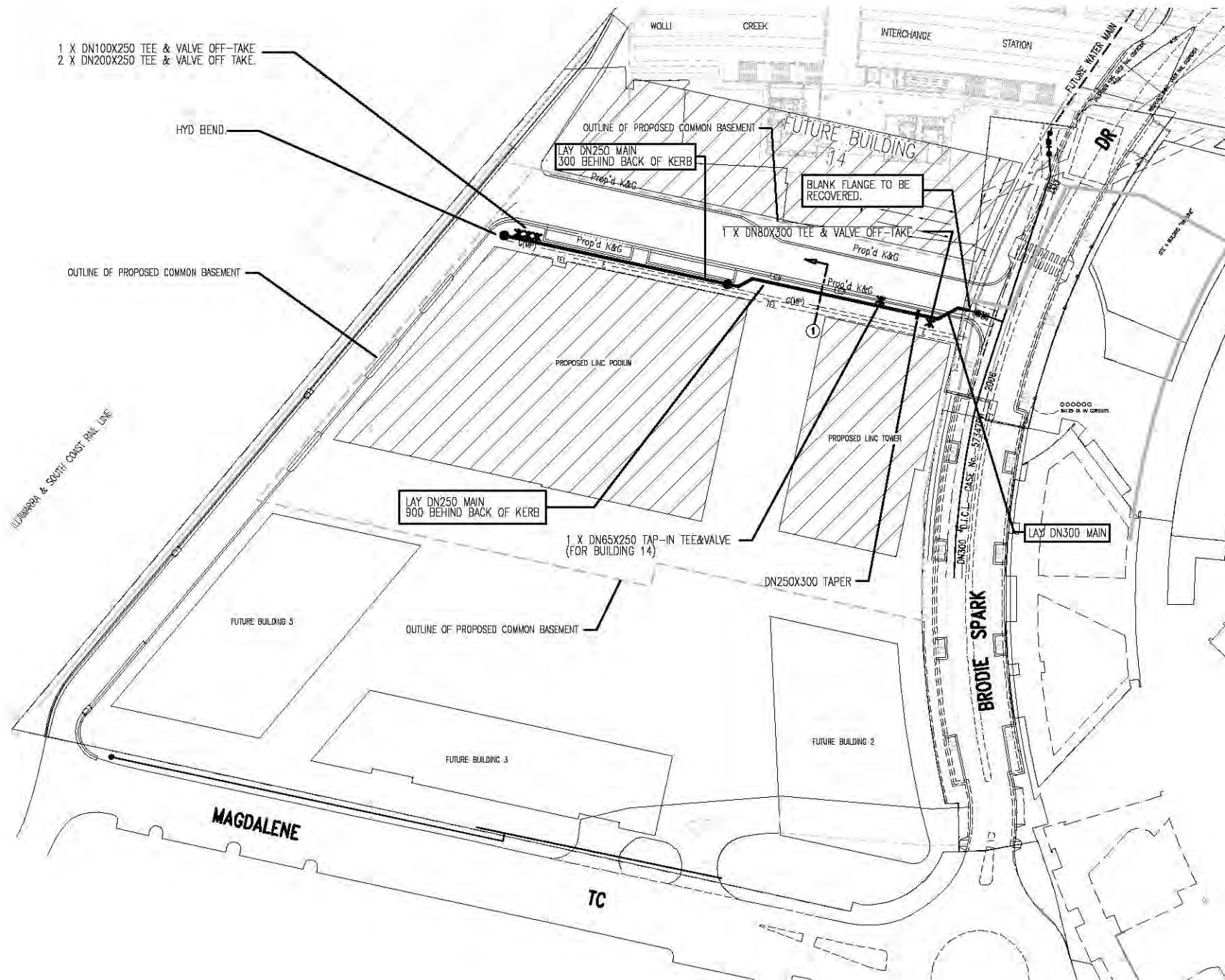
**Table 6-3 Operational Interface**

ASSET	INTERFACE
Potable Water	<p>Potable water for Discovery Point will be supplied by Sydney Water to Discovery Point Water. Ownership of the water mains will be delineated as follows:</p> <ul style="list-style-type: none"> <li>• Reticulation mains in road ways will be owned by Sydney Water;</li> <li>• Water services from the mains in the road up to the building boundary will be owned by Discovery Point Water Pty Ltd;</li> <li>• The water services from the building boundary, up to the water meter will be owned by Body Corporate operated and maintained by Discovery Point Water Pty Ltd;</li> <li>• Water meters will be owned by Sydney Water.</li> </ul> <p>Refer to Section 4 for further details.</p>
Recycled Water	<p>Recycled water will be provided to customers within Discovery Point and to customers external to the Discovery Point development.</p> <p>Reticulation mains, motors, valves between recycled water, plant and each buildings water meter will be operated and maintained by Discovery Point Water Pty Ltd.</p>
Wastewater	<p>The Discovery Point development will collect waste water through a private sewerage network which will discharge to a flow balancing tank which feeds into the Recycled Water Plant located within the basement structure of Discovery Point.</p> <p>It is noted however that an existing DN300 Sydney Water sewer main is currently present within the site, and serves to drain the Northern precinct, in addition to the existing buildings: Vine and Verge.</p> <p>It is understood that Discovery Point Water Pty Ltd is currently in discussion with Sydney Water on agreement for use of this sewer by Water Factory Company. A 3<sup>rd</sup> party Access Agreement would be required to enable this options</p> <p>The current proposal generally involves two options as follows:</p> <ol style="list-style-type: none"> <li>Sydney Water retains owner ship of the sewer and allow flow thorough of all sewerage that will be generated from the Northern Precinct, in addition to the current flows from Vine and Verge to the Discovery Point Water Flow Balance Tank. Formal arrangement of these interfaces will be subject to agreement during negotiation for establishment of an Utility Service Agreement.</li> <li>Discovery Point Water Pty Ltd acquires ownership of the existing sewer from Sydney Water and provides a sewerage service to all buildings connected. The existing Vine and Verge building residents would need to notify their intention to change service provider. Flow would need to show an alternate servicing infrastructure solution and confirm that Sydney Waters asset would become redundant. Discovery Point Water Pty Ltd would then request that Sydney Water transfer the redundant asset to the appropriate body corporate.</li> </ol> <p>In an emergency situation, when the RWP is not operational or during planned maintenance period, partial or full discharge of wastewater from the Development will be discharged in Sydney Water 300mm sewer main located in the basement of Discovery Point, via a gravity overflow connection. In this situation, RWP Operator is to inform Sydney Water Service that the emergency discharge from Discovery Point is required.</p> <p>In addition, an alarm/alert system will be installed such that SWC are made aware of any overflow above normal discharge conditions agreed in the Trade Waste Agreement.</p>

Discovery Point

# APPENDIX A

## CURRENT SYDNEY WATER APPLICATIONS

SECTION 1  
SCALE 1:100 @ A3

## NOTES:

- SURVEY, DESIGN & FINAL PLANS PREPARED BY:  
WSC: CARDINO (NSW) PTY LTD, LEVEL 3, 910 PACIFIC HIGHWAY, GORDON NSW 2072 (PH: 9496 7700)  
FOR DISCOVERY POINT PTY LTD - SUITE 3, LEVEL 2, 8-10 BRODIE SPARK DRIVE, WOLLI CREEK 2205.
- THE PROPOSED WORKS DETAILED HEREON ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE WATER CODE OF AUSTRALIA, SYDNEY WATER EDITION (WSA 03-2002). THE CONTRACTOR MUST HAVE A COPY OF THIS DOCUMENTS ON SITE AT ALL TIMES.
- LAY MAIN GENERALLY LAID AT STANDARD DEPTH, MIN. 750 COVER UNDER FLEXIBLE PAVEMENT, AND MIN. 600 COVER UNDER FOOT PATHS.
- THE CONSTRUCTOR SHALL SUBMIT A SAFE WORK PLAN TO THE WATER SERVICING COORDINATOR FOR REVIEW PRIOR TO COMMENCING THE WORKS.
- THE CONSTRUCTOR SHALL SUBMIT AN ENVIRONMENTAL MANAGEMENT PLAN TO THE WATER SERVICING COORDINATOR FOR REVIEW PRIOR TO COMMENCING THE WORKS.

- MEASURES REQUIRED TO PROTECT THE ENVIRONMENT ARE DETAILED IN REVIEW OF ENVIRONMENTAL FACTORS.
- POSITION OF MAIN TO BE VERIFIED WITH PROJECT MANAGER PRIOR TO COMMENCEMENT OF PIPE LAYING
- LOCATION OF SERVICES SHOWN ARE APPROXIMATE ONLY AND HAVE BEEN LOCATED FROM INFORMATION PROVIDED BY RELEVANT AUTHORITY & FIELD INVESTIGATIONS. THESE MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION WORK TAKING PLACE.
- THE MINIMUM NUMBER OF COMPACTION TESTS REQUIRED TO SATISFY THE WATER SUPPLY CODE OF AUSTRALIA TRENCH FILL: 2

## ENVIRONMENTAL NOTES:-

- AREAS DOWNSLOPE OF CONSTRUCTION ACTIVITY ARE TO BE ADEQUATELY PROTECTED FROM SEDIMENT POLLUTION ETC. SILT TRAP DEVICES ARE TO BE INSTALLED PRIOR TO ANY CONSTRUCTION ACTIVITY, EFFECTIVELY MAINTAINED AND TO BE REMOVED ONLY AFTER THE AREA HAS BEEN SATISFACTORILY REVEGETATED.
- ALL STORMWATER GRATES, OPEN CHANNELS, SWALES, TABLE DRAINS, GULLIES ETC. DOWNSLOPE OF CONSTRUCTION ACTIVITY TO BE ADEQUATELY PROTECTED BY GEOTEXTILE FENCE OR STRAWBALES WRAPPED IN GEOTEXTILE FABRIC.
- THE EXTENT OF CLEARING VEGETATION IS TO BE KEPT TO AN ABSOLUTE MINIMUM NECESSARY TO EFFECT THE WORKS.

**NOT FOR CONSTRUCTION**  
UNLESS STAMPED AND SIGNEDWATERMAIN EXTENSION DISCOVERY POINT PLACE  
WOLLI CREEKGENERAL ARRANGEMENT PLAN  
SHEET 1

4	MINOR AMENDMENTS.	S.L.	13/07/12
3	CONNECTION FOR BUILDING 14 ADDED	S.L.	11/07/12
2	WATER MAIN DEAD END OPTION	S.L.	02/07/12
1	ORIGINAL ISSUE	S.L.	09/11/11

No.	AMENDMENT DESCRIPTION	BY	DATE
4	MINOR AMENDMENTS.	S.L.	13/07/12
3	CONNECTION FOR BUILDING 14 ADDED	S.L.	11/07/12
2	WATER MAIN DEAD END OPTION	S.L.	02/07/12
1	ORIGINAL ISSUE	S.L.	09/11/11

TYPE	DATE	REF.	TYPE	DATE	REF.
PROP. STORMWATER:	SWD		RBC		
GAS: GMP	GMP		DBYD		
TELSTRA: TEL	TEL		DBYD		
ENERGY AUSTRALIA: EA	EA		DBYD		

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

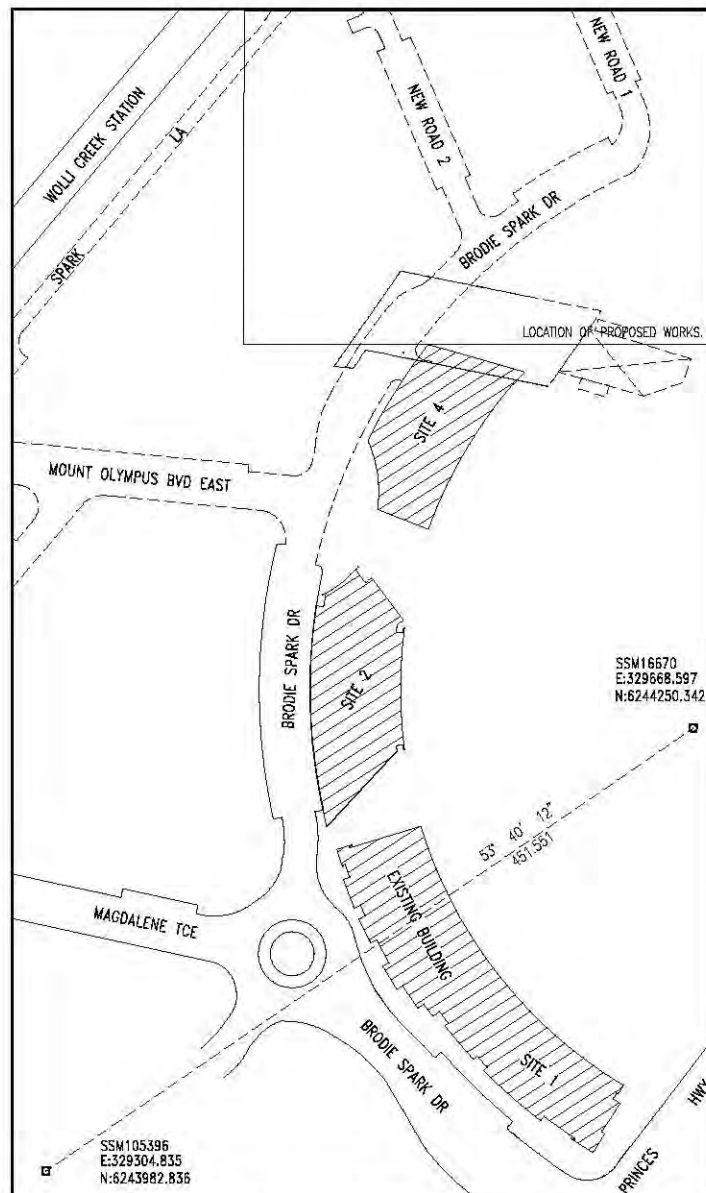
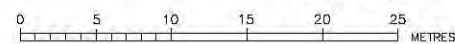
SIZE	TYPE	CLASS	LENGTH	PIPE JOINTING METHOD/NOTES
300	u.P.V.C.	PN18	10.5	RRJ
250	u.P.V.C.	PN18	79	RRJ

DESIGN HEAD	BOUNDARY MARKS
120 m	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.	
U.S. DIRECTORY	MAP 274 P5 (42ND EDITION)
SHEET 1 OF 1	File No. N/A

Sydney WATER	SYDNEY WATER CORPORATION
Case No. 126534PW	
WATERMAIN EXTENSION DISCOVERY POINT PLACE	
ARNCLIFFE	ROCKDALE



LOCALITY DIAGRAM  
(NOT TO SCALE)

## NOTES:

1. SURVEY, DESIGN & FINAL PLANS PREPARED BY:  
WSC: CARDINO (NSW) PTY LTD, LEVEL 9, THE FORUM 203 PACIFIC HIGHWAY, ST. LEONARDS NSW 2065 (PH: 9496 7700)  
FOR DISCOVERY POINT PTY LTD - SUITE 3, LEVEL 2, 8-10 BRODIE SPARK DRIVE, WOLL CREEK 2205.
2. THE PROPOSED WORKS DETAILED HEREON ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE WATER CODE OF AUSTRALIA, SYDNEY WATER EDITION (WSA 03-2002). THE CONTRACTOR MUST HAVE A COPY OF THIS DOCUMENTS ON SITE AT ALL TIMES.
3. THE CONSTRUCTOR SHALL SUBMIT A SAFE WORK PLAN TO THE WATER SERVICING COORDINATOR FOR REVIEW PRIOR TO COMMENCING THE WORKS.
4. THE CONSTRUCTOR SHALL SUBMIT AN ENVIRONMENTAL MANAGEMENT PLAN TO THE WATER SERVICING COORDINATOR FOR REVIEW PRIOR TO COMMENCING THE WORKS.
5. MEASURES REQUIRED TO PROTECT THE ENVIRONMENT ARE DETAILED IN REVIEW OF ENVIRONMENTAL FACTORS.
6. POSITION OF MAIN TO BE VERIFIED WITH PROJECT MANAGER PRIOR TO COMMENCEMENT OF PIPE LAYING.
7. LOCATION OF SERVICES SHOWN ARE APPROXIMATE ONLY AND HAVE BEEN LOCATED FROM INFORMATION PROVIDED BY RELEVANT AUTHORITY & FIELD INVESTIGATIONS. THESE MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION WORK TAKING PLACE.
8. THE MINIMUM NUMBER OF COMPACTION TESTS REQUIRED TO SATISFY THE WATER SUPPLY CODE OF AUSTRALIA.

TRENCH FILL ZONE: 12

3	MINOR AMENDMENTS AND CORRECTIONS	S.L.	13/07/12
2	SWD CROSSING REMOVED	S.L.	11/07/12
1	ISSUE FOR REVIEW	S.L.	15/06/12

No.	AMENDMENT DESCRIPTION	BY	DATE
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: 1199			
ELECTRICITY ENERGY AUSTRALIA PH: 9951 0899			
GAS AGILITY PH: 1300980905			
TELECOMMUNICATIONS TELSTRA PH: 1800653935			
SYDNEY WATER PH: 9350 6744			
GIVING AT LEAST 48 HOURS NOTICE			

UTILITIES					
TYPE	DATE	REF.	TYPE	DATE	REF.
PROP STORMWATER: SWD					
GAS: GMP					
TELSTRA: TEL					
ENERGY AUSTRALIA: EA					

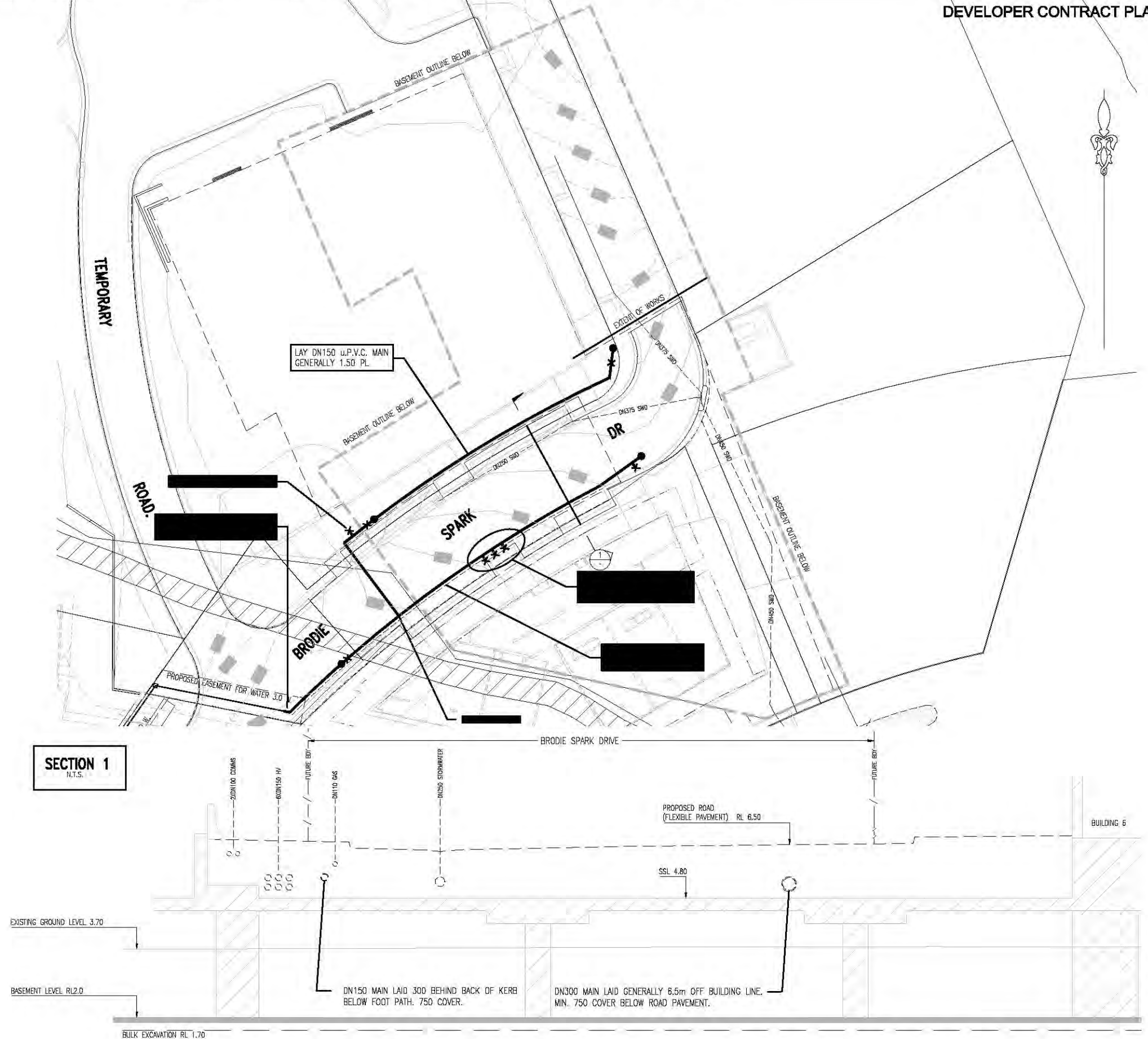
WORK AS CONSTRUCTED CERTIFICATION	
DEVELOPER	WATER SERVICE CO-ORDINATOR
CONSTRUCTOR	COMPLETED
DESIGNER	W.A.C. PREPARED
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS.	

PIPE SCHEDULE					
SIZE DN	TYPE	CLASS	LENGTH	PIPE JOINING METHOD / NOTES	
300	U.P.V.C.	PN16	62		
150	U.P.V.C.	PN16	51		
DESIGN HEAD 120 m					
BOUNDARY ROPS REQUIRED.					

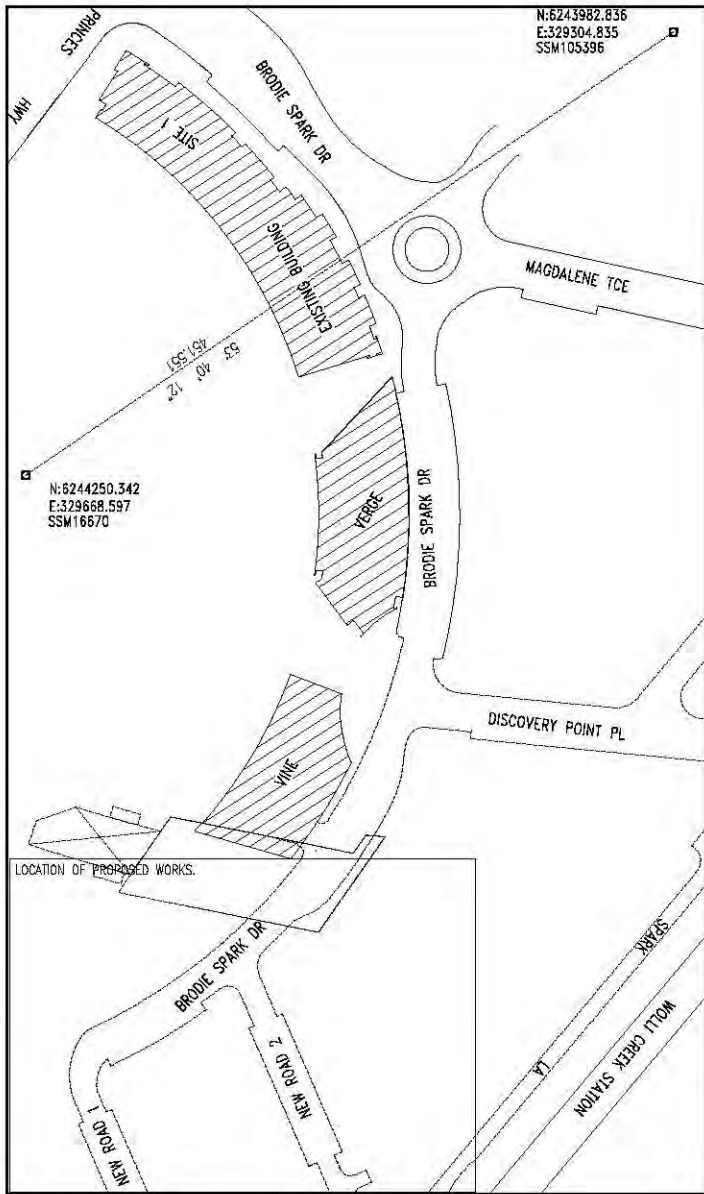
AUSTRALIAN HEIGHT DATUM	
SCALES	
PLAN 1:250	SECTION 1:10
CROSS SECTIONS	NATURAL
LIMITING DEPTHS & LEVELS ARE IN METRES	

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.	
U.S. DIRECTORY	MAP 274 P5 (42ND EDITION)
SHEET 1 OF 1	File No. N/A

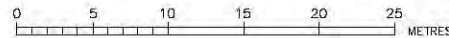
Sydney WATER	SYDNEY WATER CORPORATION
Case No. 130270PW	
WATERMAIN EXTENSION BRODIE SPARK DRIVE ARNCLIFFE ROCKDALE	



A1



LOCALITY DIAGRAM  
(NOT TO SCALE)



NOTES :

1. SURVEY, DESIGN & FINAL PLANS PREPARED BY:  
WSC CARDINO (NSW) PTY LTD, LEVEL 9, THE FORUM 203 PACIFIC HIGHWAY, ST. LEONARDS NSW 2065 (PH: 9496 7700)  
FOR DISCOVERY POINT PTY LTD - SUITE 3, LEVEL 2, 8-10 BRODIE SPARK DRIVE, WOLLU CREEK 2205.
  2. THE PROPOSED WORKS DETAILED HEREON ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE SEWER WATER CODE OF AUSTRALIA, SYDNEY WATER EDITION (WSA 02-2002). THE CONTRACTOR MUST HAVE A COPY OF THIS DOCUMENTS ON SITE AT ALL TIMES.
  3. THE CONSTRUCTOR SHALL SUBMIT A SAFE WORK PLAN TO THE WATER SERVISING COORDINATOR FOR REVIEW PRIOR TO COMMENCING THE WORKS.
  4. THE CONSTRUCTOR SHALL SUBMIT AN ENVIRONMENTAL MANAGEMENT PLAN TO THE WATER SERVISING COORDINATOR FOR REVIEW PRIOR TO COMMENCING THE WORKS.
  5. MEASURES REQUIRED TO PROTECT THE ENVIRONMENT ARE DETAILED IN REVIEW OF ENVIRONMENTAL FACTORS.
  6. POSITION OF MAIN TO BE VERIFIED WITH PROJECT MANAGER PRIOR TO COMMENCEMENT OF PIPE LAYING.
  7. LOCATION OF SERVICES SHOWN ARE APPROXIMATE ONLY AND HAVE BEEN LOCATED FROM INFORMATION PROVIDED BY RELEVANT AUTHORITY & FIELD INVESTIGATIONS. THESE MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION WORK TAKING PLACE.
  8. THE MINIMUM NUMBER OF COMPACTION TESTS REQUIRED TO SATISFY THE WATER SUPPLY CODE OF AUSTRALIA.
- TRENCH FILL ZONE: 12

FILE LOCATION: C:\264287\125515PW

DESIGNED: S.L.

DRAFTED: S.L.

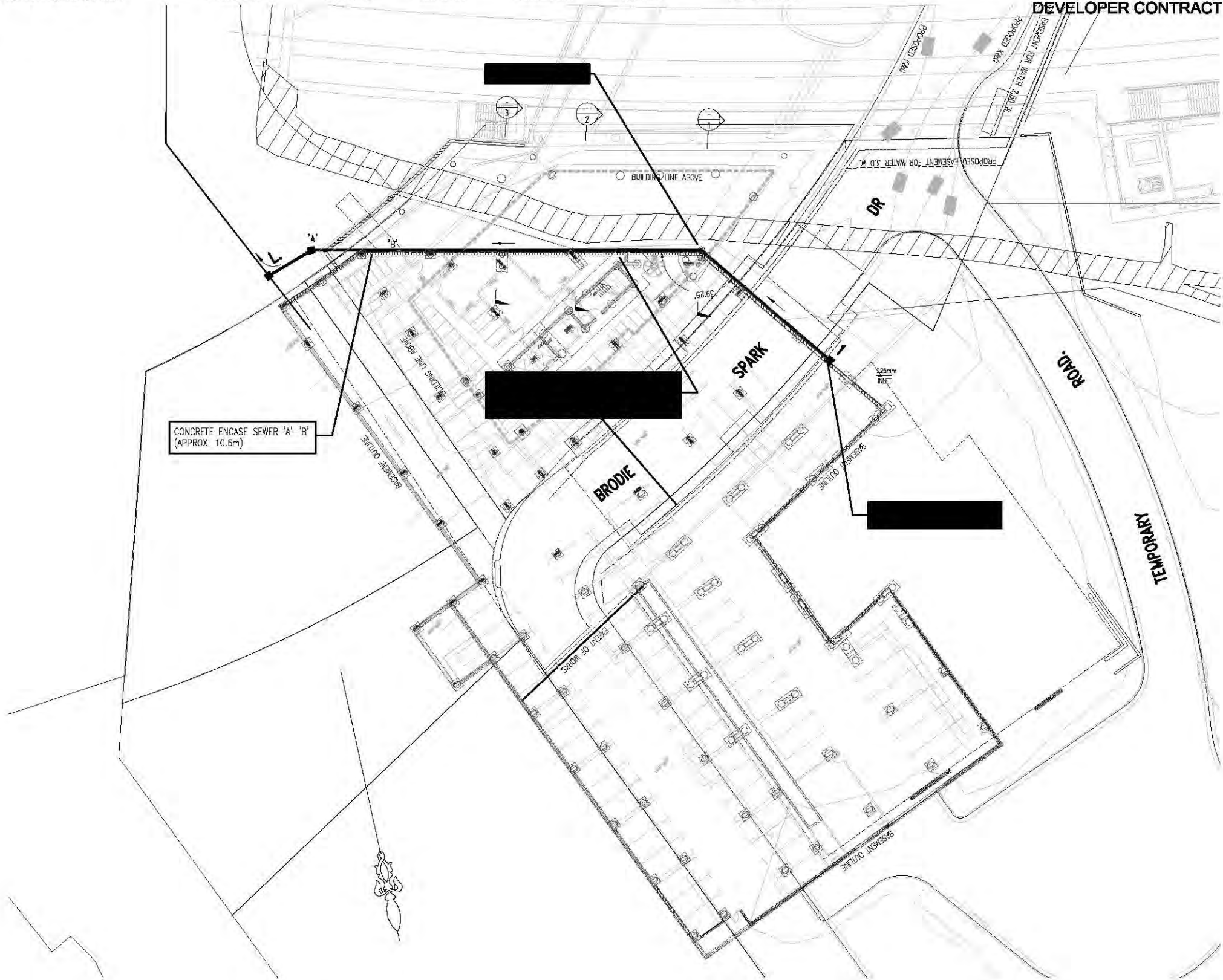
VERIFIED: R.C.

REVIEWED: R.C.

APPROVED:

ISSUED: JUNE 2012

DEVELOPER CONTRACT PLAN



1	ISSUE FOR REVIEW	S.L.	23/07/12
No.	AMENDMENT DESCRIPTION	BY	DATE

UTILITIES					
TYPE	DATE	REF.	TYPE	DATE	REF.
GAS: GWP			GWP		
TELSTRA: TEL			TEL		
ENERGY AUSTRALIA: EA			EA		
PRIOR TO COMMENCEMENT OF EXCAVATION FOR PROPOSED AND EXISTING SERVICES CONTACT:-					
DIAL BEFORE YOU DIG					
ELECTRICITY: ENERGY AUSTRALIA Ph: 1190					
GAS: AGILITY Ph: 4951 0899					
TELECOMMUNICATIONS: TELSTRA Ph: 1300 890905					
SYDNEY WATER Ph: 1800 653635					
GIVING AT LEAST 48 HOURS NOTICE.					

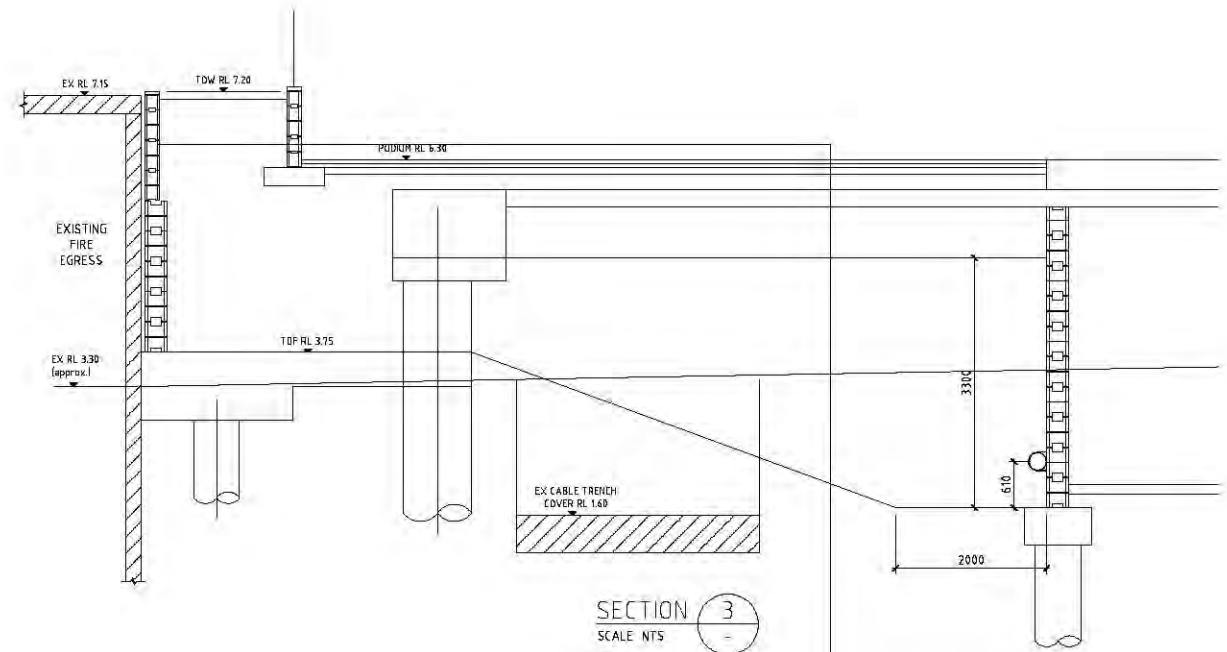
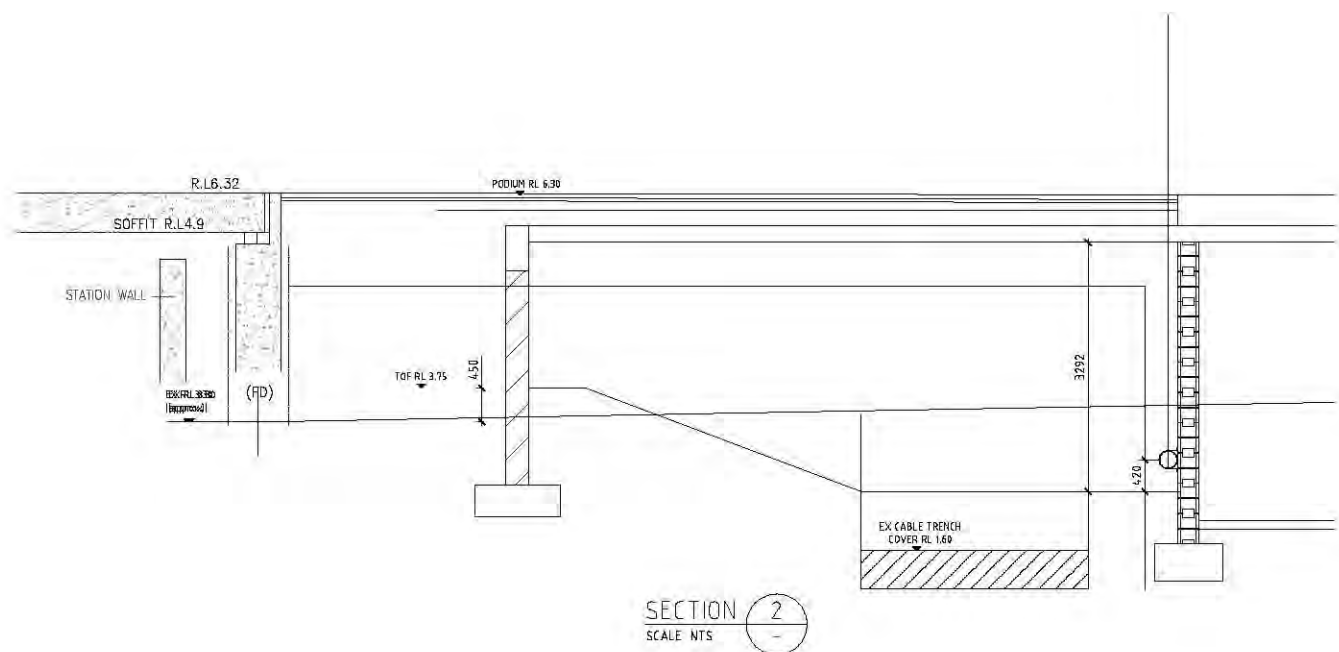
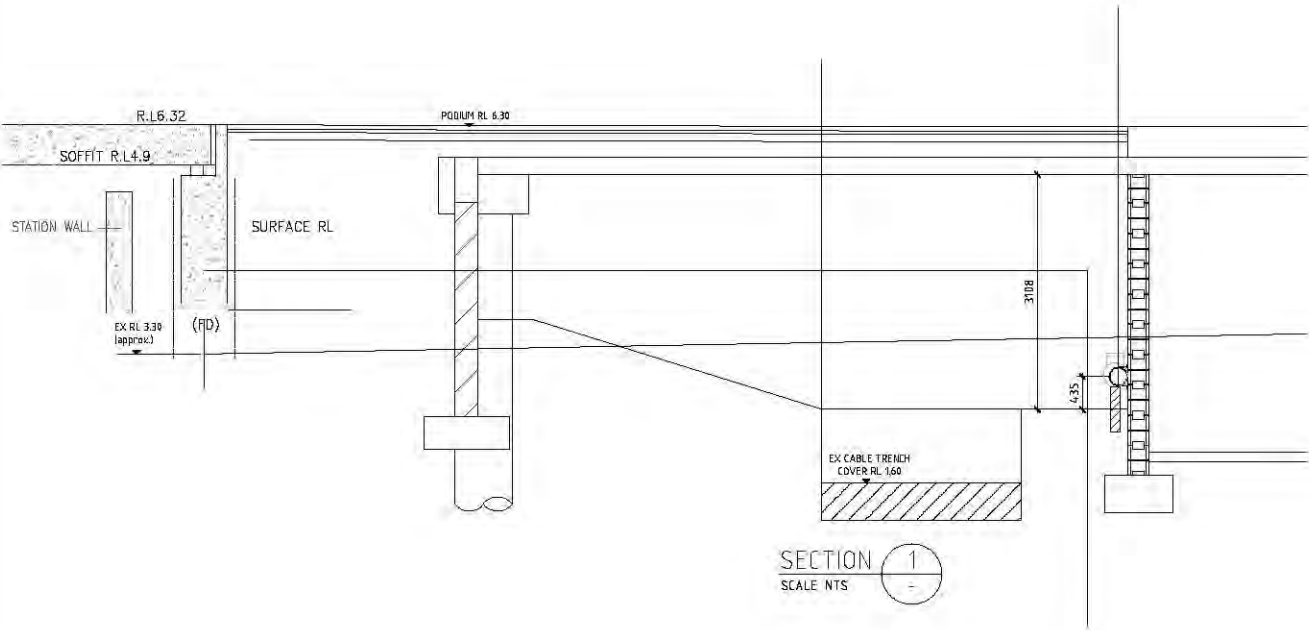
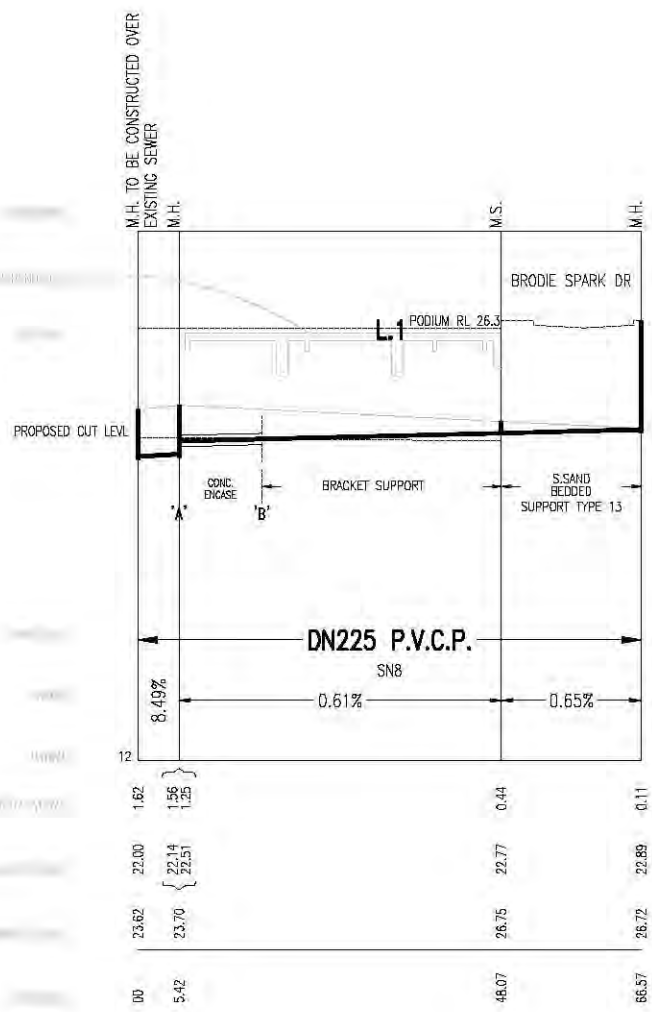
WORK AS CONSTRUCTED CERTIFICATION	
DEVELOPER	WATER SERVICE CO-ORDINATOR
CONSTRUCTOR	COMPLETED
DESIGNER	W.A.C. PREPARED
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS.	

PIPE SCHEDULE				
SIZE DN	TYPE	CLASS	LENGTH	PIPE JOINING METHOD / NOTES
225	U.P.V.C.	SN8	67	
DESIGN HEAD: m				
NO BOUNDARY TRAPS REQUIRED.				

AUSTRALIAN HEIGHT DATUM	
SCALES	
PLAN 1:250	SECTION 1:125
CROSS SECTIONS: NATURAL	
LENGTHS, DEPTHS & LEVELS ARE IN METRES.	

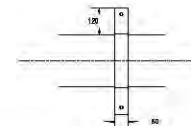
NO AMENDMENTS ARE TO BE MADE TO THIS PLAN WITHOUT REFERENCE TO SYDNEY WATER. THIS PLAN IS NOT NECESSARILY UP TO DATE OR CORRECT AND SYDNEY WATER ACCEPTS NO RESPONSIBILITY.	
U.S. DIRECTORY	MAP 274, P5 (42nd Edition)
SHEET 1 OF 2	File No. N/A

Sydney WATER	SYDNEY WATER CORPORATION
CN130271WW	
ROCKDALE SEWERAGE	
DRAINS TO S.P.S. NO. 99	
S & W.S.O.O.S.	



BRACKET NOTES

- STRAPS TO BE 60mm MIN. WIDE x 2.0 MIN THICK. STAINLESS STEEL GRADE 316 MIN.
- BOLTS TO BE M10 SS GRADE 316 CHEMSET 801 INTO BASEMENT WALL 50mm EMBEDMENT 20mm EDGE DISTANCE MIN.
- EPDM RUBBER TO BE PROVIDED (3mm THICK) TO PROTECT PIPE FROM DAMAGE FROM STRAP.



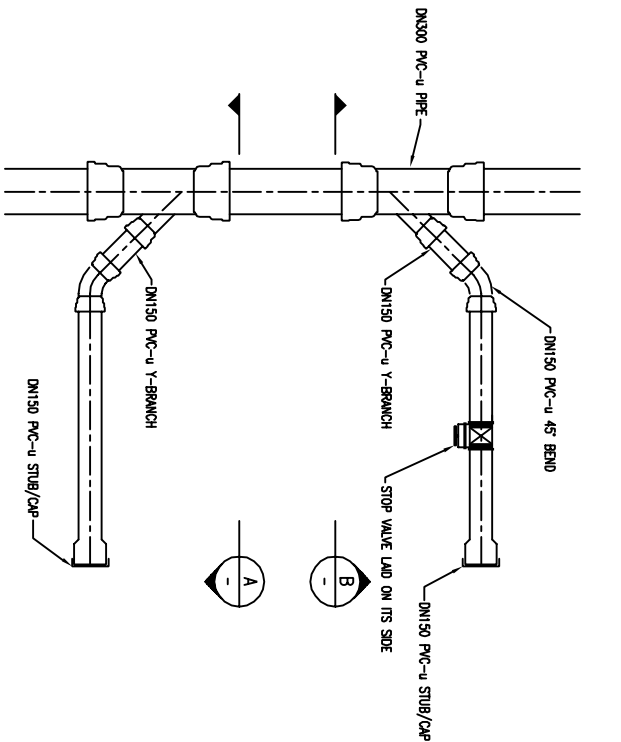
BRACKET DETAIL (TYPICAL)  
(NOT TO SCALE)

WORK AS CONSTRUCTED CERTIFICATION		Sydney WATER	
DEVELOPER	W.S.C.	Case No. 130270WW	
CONSTRUCTOR	COMPLETED	SHT 2 OF 2 SHTS.	
W.A.C. PREPARED		SYDNEY WATER CORPORATION	
DESIGNER		FOR DETAILS OF SERVICES SEE SHEET 1	
CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS			

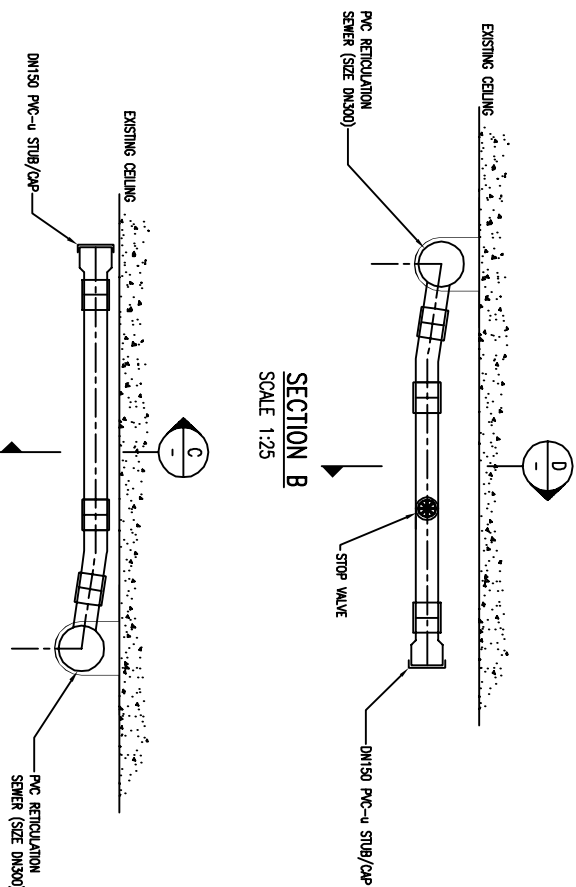








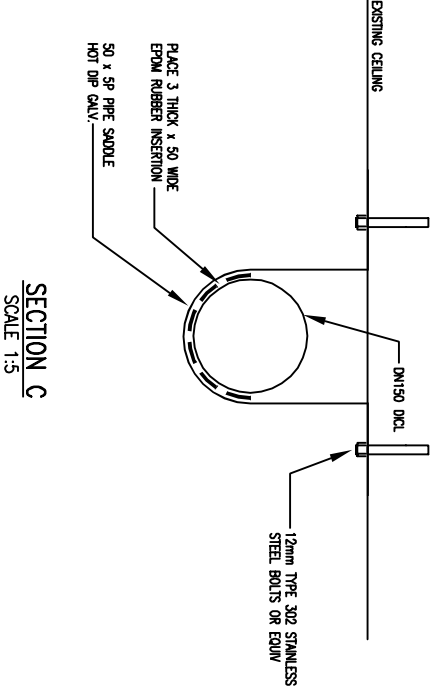
PLAN  
SCALE 1:25



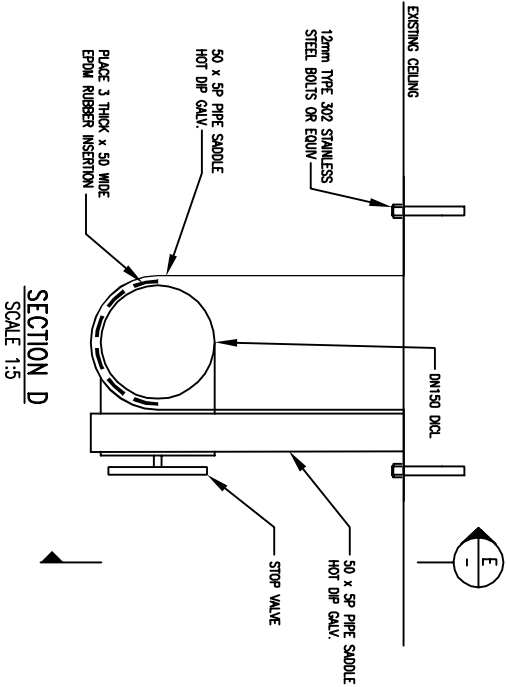
SECTION A  
SCALE 1:25

SECTION B  
SCALE 1:25

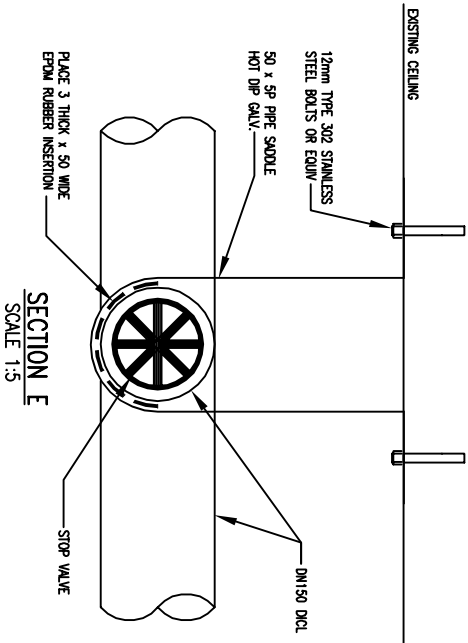
- NOTES:-
1. THE CONSTRUCTION CONTRACTOR SHALL INSTALL THE INSPECTION SHAFT ON BEHALF OF THE LICENSEE. THE LICENSEE SHALL BE RESPONSIBLE FOR CONNECTING THE CSD AND REINSTATING THE INSPECTION SHAFT IF DAMAGED OR TO SUIT FINISHED SURFACE LEVELS.
  2. BOLTED TRAP SCREW AND SURROUND WHERE REQUIRED SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF AS/NZS 3500.2:2003.
  3. LICENSEE SHALL EXCAVATE AND REMOVE PVC-U STUB AND CAP IF DAMAGED OR TO SUIT FINISHED SURFACE LEVELS. THE LICENSEE SHALL NOT CONNECT THE CSD TO THE INSPECTION SHAFT.
  4. ALTERNATE APPROVED FITTINGS MAY BE UTILISED IN THE PCS IN PLACE OF THOSE SHOWN IF APPROVED BY SYDNEY WATER.
  5. DEPTHS ARE FOR GUIDANCE ONLY AND MAY VARY DEPENDING ON LOT SIZE AND TOPOGRAPHY. DEPTH OF THE PCP SHALL BE SUFFICIENT FOR A CSD THAT COMPLES WITH REQUIREMENTS FOR SIGHT, COVER AND GRADE GIVEN BY WSA-02 (SYDNEY WATER EDITION) AND AS/NZS 3500.2:2003.
  6. MAXIMUM DEPTH OF PCP IS 2.5m BELOW FINISHED SURFACE LEVEL. FOR DEEP RETICULATION SEWERS, VERTICAL PE PIPE SHALL BE PROVIDED AS SHOWN TO ENSURE PE-PVC ADAPTOR FITTING IS 2.5m OR LESS BELOW FINISHED SURFACE LEVEL.
  7. PROPERTY CONNECTION SEWERS AND INSPECTION SHAFTS SHALL BE SURROUNDED BY PIPE EMBEDMENT MATERIAL WITH MINIMUM COVER OF 150mm TO ALL COMPONENTS. EMBEDMENT MATERIAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF WSA-42(SYDNEY WATER EDITION).
  8. WHERE A BOUNDARY TRAP IS REQUIRED, SYDNEY WATER WILL PROVIDE A TECHNICAL ADVISORY NOTE.



SECTION C  
SCALE 1:5



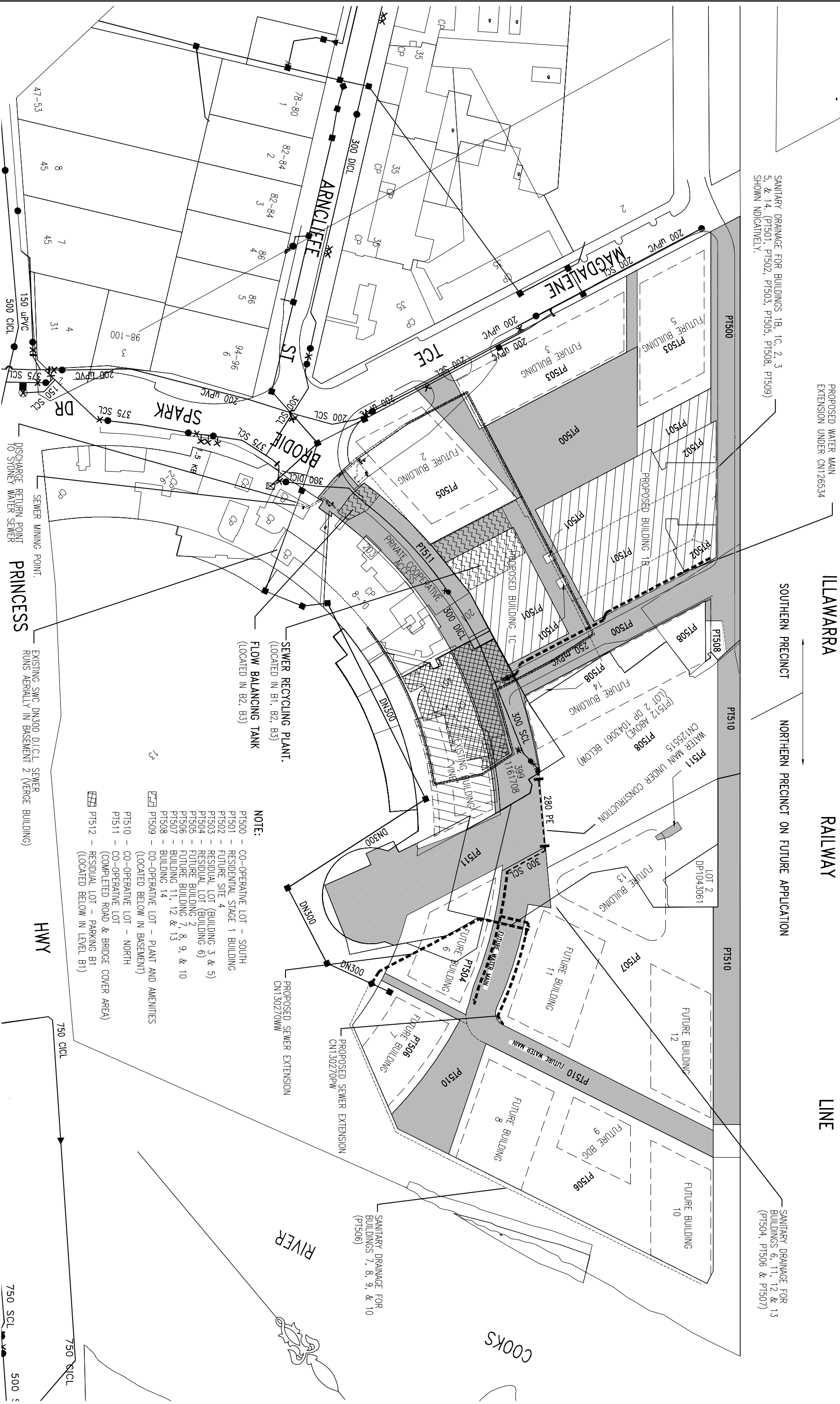
SECTION D  
SCALE 1:5



SECTION E  
SCALE 1:5

No.	AMENDMENT DESCRIPTION	BY	DATE
-			

WORK AS CONSTRUCTED/CERTIFICATION			SYDNEY WATER CORPORATION	
DEVELOPER	AUSTRALAND		<b>Sydney WATER</b>	
W.S.C.	CARNO FORENSIS MGRY PTY LTD			
CONSTRUCTOR				
COMPLETED				
W.A.C. PREPARED			SYDNEY WATER CORPORATION	
DESIGNER	CARNO FORENSIS MGRY PTY LTD			
CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS			FOR DETAILS OF SERVICES SEE SHEET 1	
			Case No. 130271WW	SHT 2 OF 2 SHTS



EXISTING LOTS (Proposed Development (d))		DEVELOPMENT TYPE	NUMBER OF PROPOSED LOTS / UNITS	Water Services Co-Ordinator:
Lot 400	D.P. 1161708	PROPOSED DEVELOPMENT	0  Total Units  126	U & B DIRECTORY MAP 27/4/05 (41st Edition)  CARBONO (NSW) Pty Ltd LVL 9, 203 PACIFIC HWY, ST LEONARDS Ph. (02) 9486 7700 Fax. (02) 9489 8802
Lot 12	D.P. 1062413			
Lot 2	D.P. 1048291			
Lot 13	D.P. 1062413			
Lot 2	D.P. 1043061			
Lot 2	D.P. 1019205			
MUNICIPALITY ROCKDALE				132050 132050

Discovery Point

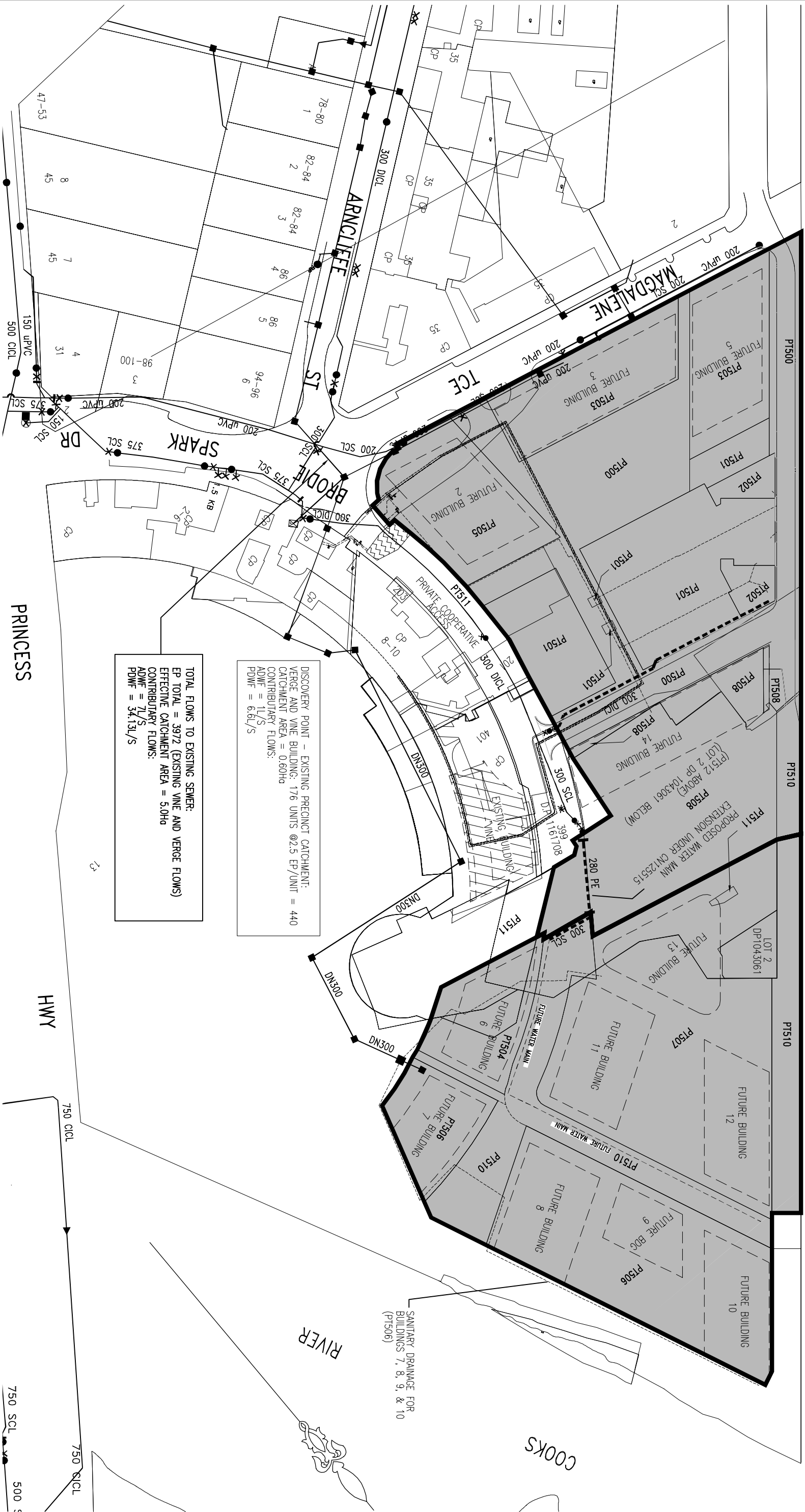
# APPENDIX B

## SEWER FLOW SCHEDULE

DISCOVERY POINT – SOUTH PRECINCT CATCHMENT SUMMARY:  
623 UNITS @ 2.5 EP/UNIT = 1557.5 EP  
RETAIL FLORE AREA = 0.48Ha @ 75EP/Ha = 36EP  
TOTAL EP = 1593.5EP  
CATCHMENT AREA = 2.1Ha  
CONTRIBUTARY FLOWS:  
ADWF = 3L/S  
PDWF = 17.2L/S

ILLAWARRA RAILWAY LINE  
SOUTHERN PRECINCT NORTHERN PRECINCT

DISCOVERY POINT – NORTH PRECINCT CATCHMENT SUMMARY:  
775 UNITS @ 2.5 EP/UNIT = 1937.5 EP  
CATCHMENT AREA = 1.75Ha  
CONTRIBUTARY FLOWS:  
ADWF = 2L/S  
PDWF = 21.92L/S



DISCOVERY POINT – EXISTING PRECINCT CATCHMENT:  
VERGE AND VINE BUILDING: 176 UNITS @2.5 EP/UNIT = 440  
CATCHMENT AREA = 0.60Ha  
CONTRIBUTARY FLOWS:  
ADWF = 1L/S  
PDWF = 6.6L/S

TOTAL FLOWS TO EXISTING SEWER:  
EP TOTAL = 3972 (EXISTING VINE AND VERGE FLOWS)  
EFFECTIVE CATCHMENT AREA = 5.0Ha  
CONTRIBUTARY FLOWS:  
ADWF = 7L/S  
PDWF = 34.13L/S

EXISTING LOTS (Proposed Development of)		DEVELOPMENT TYPE		NUMBER OF PROPOSED LOTS / UNITS		Water Service Co-Ordinator:		
(1) 400	D.P. 1161708	(7)	SEWERAGE FLOW SUMMARY	Total Lots 13	Total Units 0	U.B. DIRECTORY MAP 274/05 (41st Edition)		
(2) 12	D.P. 1062413	(8)				SCALE 1:500		
(3)		(9)					SHEET 1 OF 1	
(4)		(10)						CARDNO (NSW) Pty Ltd LVL 9, 203 PACIFIC HWY, ST. LEONARDS Ph: (02) 9466 7700 Fax: (02) 9466 3802
(5)		(11)						
(6)		(12)						
MUNICIPALITY .....		ROCKDALE .....		Developer Details 127529				

Discovery Point

# APPENDIX C

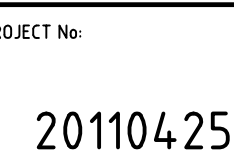
## SERVICES MASTER PLAN





CONTRACTOR MUST CHECK ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK OR PREPARING ANY SHOP DRAWINGS. SHOP DRAWINGS MUST BE SUBMITTED AND APPROVED BEFORE MANUFACTURE. THIS DRAWING IS THE PROPERTY OF BUILDING SERVICES ENGINEERS AND SUBJECT TO RETURN ON REQUEST.

SCALE: 1:500@A0



DATE: 01.02.1

DESIGNED: LJ/RD

DRAWING No:

S01

REF: 20110425-S01

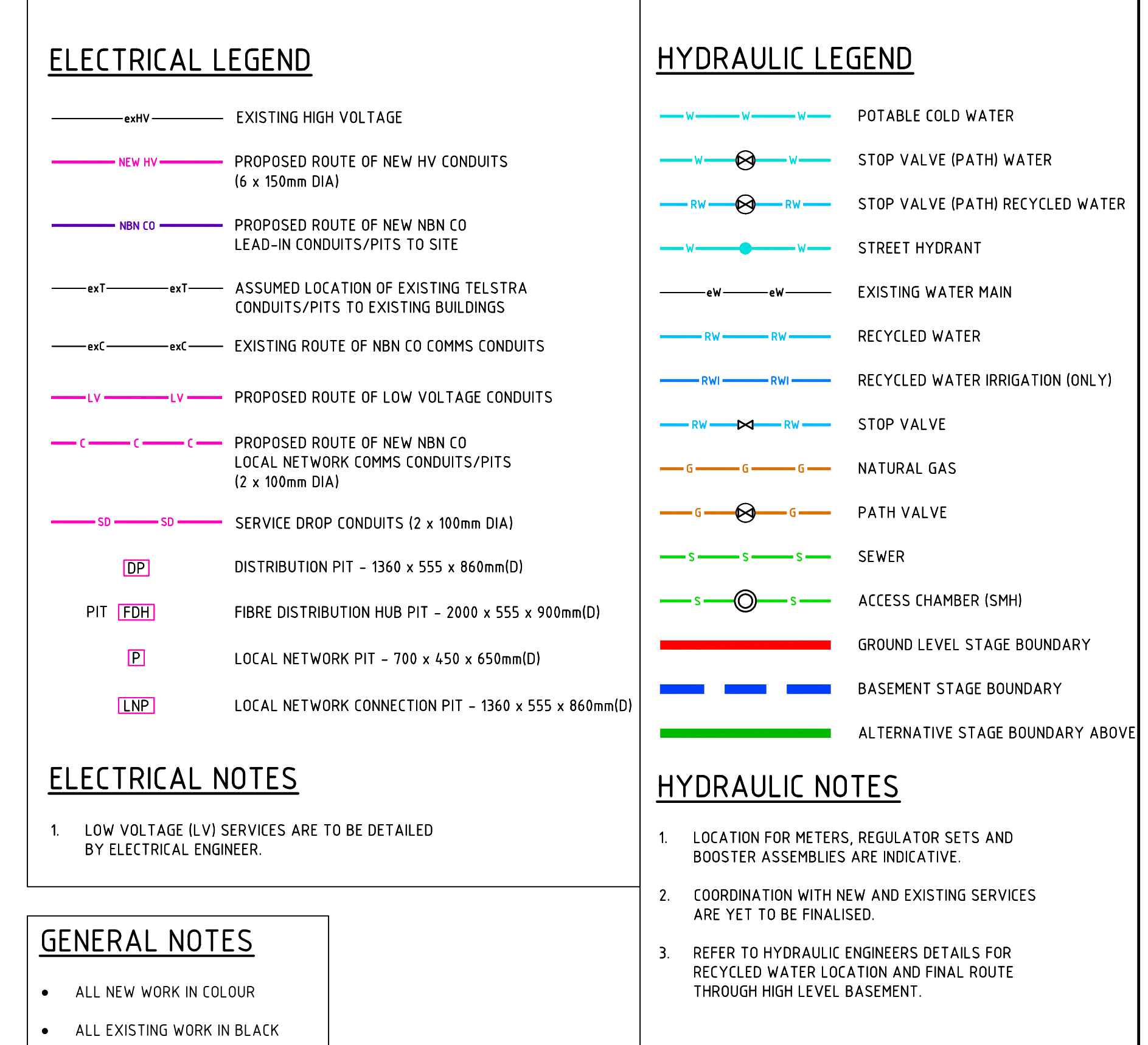










[illegible]



