

# CYBER

CIVIL & HYDRAULICS

891 Kingston Rd,  
Waterford West  
Child Care Centre



## Engineering Services Report

Prepared for

N. Newman

8 December 2018

## Contact Information

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## Document Information

Prepared for N. Newman  
891 Kingston Rd  
Waterford West 4133

Project Name Engineering Services Plan

Job Ref: 18123C

Date Approved 09/12/2018

Revision No: 1

## Document History

Revision	Date	Description	Prepared by	Reviewed by
1	08/12/2018	Client Review	C.A.P	C.M.T.
2	11/12/2018	Issued for approval	C.A.P.	C.M.T.

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# 1 Introduction

## 1.1 Scope and Limitations

Cyber Civil and Hydraulics has been commissioned by N.Newman to prepare and engineering services report incorporating a stormwater management plan for the proposed development at 891 Kingston Rd, Waterford West (the subject site). This report will support the development application submitted for the proposed development. Refer to appendix A for proposed site layout and elevations.

This report addresses stormwater management, both quality and quantity during construction and operational phases of the development. It also investigates and demonstrates how the proposed development may be connected to council infrastructure for sewer and water. Concept levels and corresponding earthworks have also been investigated.

Detailed design for the services infrastructure will be subject to Logan City Council (LCC) conditions (if required) attached to the development approval to be provided by Logan City Council.

The report references and is prepared in accordance with the following (but is not limited to):

- The State Planning Policy (SPP) July 2017
- Queensland Urban Drainage Manual (QUDM) 2013
- Logan Planning Scheme (LPS) Version 5.1 2015.

This report is based on the following information:

- 000423\_detail - Detail Survey of Lot 9 on RP889224 - Rev B prepared by B Planned & Surveyed attached in Appendix B;
- Logan City Council's As Constructed plans attached in Appendix E
- Dial Before you Dig (DBYD) information attached in Appendix E
- Architectural plans 1 to 4 for job number 18123 prepared by Cyber Drafting and Design attached in Appendix A



### 3 Site Characteristics

The subject site real property description is defined in the table below.

Lot and RP	Lot 9 on RP889224
Address	891 Kingston Rd, Waterford West
Land area	0.424Ha

#### 3.1 Location

The subject site is located in Waterford West approximately 26.8km south of Brisbane City. The site area listed on LCC pd online is 4240m<sup>2</sup> and is located in the Low Density Suburban zone. An aerial image is shown in Figure 2 below, dated 4<sup>th</sup> November 2018, the site is marked with a green pin

The site is surrounded by residential property to the east, Kingston Rd to the north, Taigum Lagoon to the south, and residential property / aged care to the west.



Figure 2 - Aerial Image dated 04.11.2018

## 3.2 Topography

The subject site levels vary from approximately 15.30m AHD in the north west corner to 10.46m AHD in the south west corner. There is currently a double storey dwelling on the site towards the frontage with a shed at the rear of the dwelling. The block has a gentle slope from the north to south of approximately 1.5% for the first 85m, then falls away at 5% for the remainder. Refer to Appendix B for detail survey.

## 3.3 Public Utility Plant

Existing public utility plant have been located through Logan City Council online mapping and Dial Before You Dig (DBYD) records. These have been used to determine the location of infrastructure connections for the proposed development. Refer to Appendix E for DBYD and Logan City Council As Constructed records.

### 3.3.1 Water

Existing water mains are located on both the northern and southern sides of Kingston Rd, and the site is currently serviced via a 20mm water connection and meter on the western side of the frontage. Note, this information has been obtained from DBYD records.

### 3.3.2 Sewer

Existing sewer mains are located at the Kingston Rd frontage and on the western boundary. The site is currently serviced via a 100mm property connection located on the western boundary 65.5m from the frontage at a depth of 1.80m. Note, this information has been obtained from Logan City Council As Constructed plan No. 01392 Revision F

### 3.3.3 Stormwater

Existing stormwater infrastructure located under the kerb and channel on Kingston Rd collects runoff and discharges this via a pipe network into the Taigum Lagoon south of the subject site. The existing site discharges stormwater via sheet flow to Taigum Lagoon at the south of the site.

### 3.3.4 Electricity and Communications

Along the property frontage on Kingston Rd the following additional public utility plant have been identified.

- NBNco optical fibre cable.
- Energex low and high voltage overhead power lines
- Pipe Networks infrastructure located within the Telstra duct network.
- UEComm optical fibre cable
- Telstra communications conduit (50mm)

These services have been identified via DBYD and have not been physically located on site.

## 4 Stormwater Management

### 4.1 Codes and Policies

Several codes and policies apply to the subject sites stormwater quality and quantity aspects. The development shall comply with the following codes and policies.

- State Planning Policy July 2017 regarding stormwater quality:
  - As the proposed development is less than 2500m<sup>2</sup>, the site is not considered a high risk development with regards to stormwater quantity or quality.
  - The proposed development therefore does not require on site stormwater detention or water quality treatment measures.
- Logan Planning Scheme – Infrastructure Planning Scheme Policy
  - The proposed development must achieve the principle of “no worsening” as per the Queensland Urban Drainage Manual (QUDM) and the provisions of the Planning Scheme Policy.

### 4.2 Objectives

The hydrological objectives have been set by the above codes and policies including but not limited to:

- The proposed development shall ensure that all stormwater drainage is directed to a lawful point of discharge in accordance with QUDM Section 3.4 (2013);
- No adverse impact on adjoining or downstream properties; and
- Best practice solution with regards to water quality has been designed and certified by an RPEQ.

### 4.3 Lawful Point of Discharge

In its existing state the subject site drains to the south into Taigum Lagoon. No kerb adaptors were identified in the kerb and channel indicating roof water currently discharges to ground and sheet flows to the south. The proposed development aims to maintain its stormwater discharge as sheet flow to the south into Taigum Lagoon as the lawful point of discharge.

### 4.4 Stormwater Quantity

The existing site currently contains a single residential dwelling with associated ancillary infrastructure (driveway, paths, sheds etc). The existing detail survey indicates an impervious area (roof area and hardstand only) of 867m<sup>2</sup>, which equates to approximately 20.4% of the total site. (Refer Appendix B for detail survey).

The proposed development as shown on architectural drawings in Appendix A demonstrates an increased impervious area of 1927.5 m<sup>2</sup> which is approximately 45.4% of the total site area. The tables below demonstrate the existing and developed catchment breakdown.

Catchment Area	Existing Case	Developed Case
Roof (m <sup>2</sup> )	446.0	931.5
Hardstand (m <sup>2</sup> )	421.0	996.0
Ground (m <sup>2</sup> )	3376.0	2312.5
Total Area (m <sup>2</sup> )	4240.0	4240.0
Fraction Impervious (%)	20.4	45.4

Table 1 - Existing and Developed Catchment Areas

#### 4.4.1 Peak Flow Rates

Hydrological modelling has been undertaken to ascertain any increased stormwater runoff generated between pre and post development. The modelling has been undertaken using “Drains” software by Watercom.

The Intensity Frequency Data (IFD) for the calculations was generated using the Bureau of Meteorology IFD chart based on the approximate latitude (27°41'30"S) and longitude (153° 07'54"E) of the site.

Existing case time of concentration was calculated using Friends Equation as per LCC planning scheme 5.1 CL 3.6.5.1. with a maximum overland flow length of 80m.

#### Calculation of Pre-Development Flows

Determining the Time of Concentration T<sub>c</sub> using Friends Equation (as below)

n	0.045				Channel Flow
L	80	m	$t_c = \frac{107nL^{0.333}}{S^{0.2}}$	L	55 m
S	3.3	%		Fall	1.5 m
T <sub>c</sub> (overland)	16.3	minutes		T <sub>c</sub> (channel)	0.7 minutes
T <sub>c</sub> (total)	17.0	minutes			
C <sub>10</sub> =	0.74				

The tables below summarise the existing development stormwater discharge from the subject site as calculated by both the rational method and Drains.

**Existing Peak Flows  
Rational Method  
Tc – 17min**

ARI	Coefficient	Area	Intensity	Peak Flow(L/s)
1	0.59	4240	72.3	<b>50</b>
2	0.63	4240	92.1	<b>68</b>
5	0.70	4240	114.3	<b>95</b>
10	0.74	4240	127.1	<b>111</b>
20	0.78	4240	144.7	<b>133</b>
50	0.85	4240	167.8	<b>168</b>
100	0.89	4240	185.4	<b>194</b>

Table 2 - Existing rational method peak flows

**Existing case**

ARI	Rational Peak Flow (L/s)	Drains Peak Flow (L/s)	Difference
1	<b>50</b>	<b>58</b>	+8
2	<b>68</b>	<b>85</b>	+17
5	<b>95</b>	<b>115</b>	+20
10	<b>111</b>	<b>133</b>	+22
20	<b>133</b>	<b>157</b>	+24
50	<b>168</b>	<b>181</b>	+13
100	<b>194</b>	<b>206</b>	+12

Table 3 - Rational and Ilisax method comparison

4.4.2 Drains Model

The drains model for the proposed development comprises two catchments: one for the area of works, and a second for the rear portion of the site that will continue to discharge as sheet flow. Figure 3 below shows the model layout.

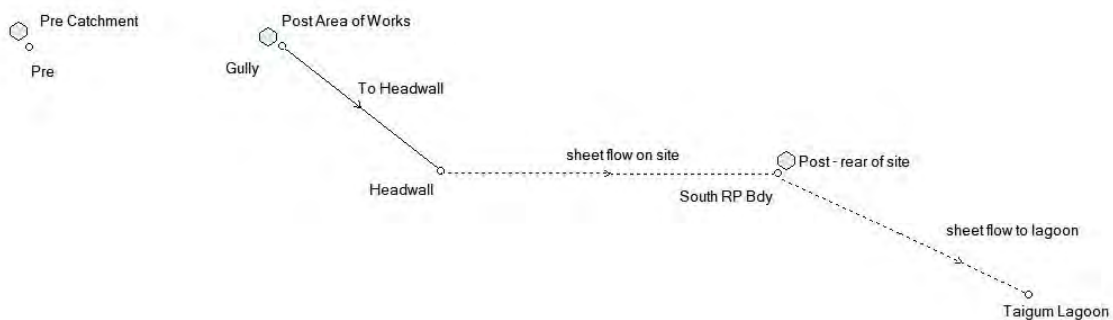


Figure 3 - Drains model

#### 4.4.3 Drains Model Results

The table below summaries the results for the drains model. The peak storm duration is 25min.

<b>Drains Model Results</b>					
<b>ARI</b>	<b>Pre Development (L/s)</b>		<b>Post Development (L/s)</b>		<b>Difference</b>
1	<b>58</b>		<b>91</b>		+33
2	<b>85</b>		<b>127</b>		+42
5	<b>115</b>		<b>168</b>		+53
10	<b>133</b>		<b>187</b>		+52
20	<b>157</b>		<b>223</b>		+66
50	<b>181</b>		<b>240</b>		+59
100	<b>206</b>		<b>270</b>		+64

*Table 4 - Drains results*

While there is an increase in peak flows resulting from the development, as the lawful point of discharge already provides significant detention, it is proposed that no further stormwater detention is required for the site. The increase in peak flows at the worst case represents an overall increase in sheet flow height of approximately 7mm across a 10m section. This negligible increase is unlikely to cause any significant erosion or safety issues.

#### 4.5 Stormwater Quality

As the proposed development does not cover an area greater than 2500m<sup>2</sup>, the stormwater quality treatment will comprise of best practice measures. Best practice water quality treatment methods are proposed only where implementation is easily achieved.

First flush diverters shall capture roofwater runoff and divert to soft landscaped areas away from the building foundations. This is achieved by installing either an above ground or in ground diversion system which directs the first 20 litres of water per 100m<sup>2</sup> via a ball float to landscaped areas. This serves as a primary treatment to roof water runoff.

Driveway and landscaped stormwater grated inlet pits will be fitted with an appropriate basket filter (enviropod, stormsack or equivalent) to effectively capture any gross pollutants, litter and debris.

## 5 Filling and Excavation

Once adequate pre construction erosion and sediment control measures have been implemented, the existing house and ancillary structures will be removed from the site. Earthworks will be required to shape the block to facilitate the carpark and proposed child care centre. Any retaining walls required will be constructed from concrete sleeper or blockwork and will not be greater than 1m in height.

The proposed pad level for the child care centre is RL14.100 and will require a maximum of approximately 1m of cut to achieve the pad levels.

The proposed car park will require no greater than 1m of cut to achieve the required levels, and will grade away from Kingston Rd. Refer to Appendix C for Concept Bulk Earthwork Plan (SK03) showing cut and fill locations.

In any situation where earthworks are required and natural ground is to be disturbed, sediment and erosion control measures will be implemented in accordance with:

- Relevant LCC Sediment and Erosion Control Guidelines;
- International Erosion Control Association (IECA) Sediment and Erosion Control Guidelines;
- Australian Standard AS 3798-2007.

Given the site does not propose excavations below RL5.000, acid sulphate soils are not likely to be encountered and as such are not identified as a risk.

## 6 Services Infrastructure

### 6.1 Sewerage Reticulation

As the fixture unit rating for the proposed development is 73 (refer architectural plans in Appendix A), and under 165, it is proposed the existing sewer connection on the western boundary is to be located, checked and reused if in a serviceable condition.

If the development requires any external sewer works they will be designed in accordance with:

- SEQ WS&S D&C Code – Amendments to Sewerage Code of Australia and SEQCode standard drawings.
- Water Association of Australia (WSAA) Sewerage Code of Australia guidelines and standard drawings.

Please note the suitability of the existing property connection will be determined at operational works stage once the development application has been approved by Logan City Council.

Should they be required detailed sewerage reticulation drawings will be provided as part of the future operational works application.

Refer Appendix C for services layout drawing.

### 6.2 Water Reticulation

It is proposed the existing water connection is to be sealed and removed. An upgraded connection will be required to service the proposed development.

The proposed water reticulation works will be designed in accordance with:

- SEQ WS&S D&C Code – Amendments to Water Code of Australia and SEQCode standard drawings.
- Water Association of Australia (WSAA) Water Code of Australia guidelines and standard drawings.

Detailed water reticulation drawings will be provided as part of the future operational works application. Any works proposed to Logan City Council infrastructure will be carried out by Logan City Council at the applicant's expense.

Refer to Appendix C for services layout drawing.

### 6.3 Electricity and Communications

Electrical and communications services are located in the verge at the property frontage. Whilst no investigation has been undertaken to determine the suitability of these services, it is anticipated they will have scope and capacity to service the proposed development.

## 7 Conclusion and Recommendations

This report has assessed the stormwater management, earthworks and public utility plant requirements to service the proposed development at 891 Kingston Rd, Waterford West.

Erosion and sediment control solutions required on site can be performed using common and accepted methods. Retaining walls on the site will be no greater than 1m high.

Stormwater management has identified the following items:

- Stormwater quality treatment will be with best practice measures including first flush diverters and gross pollutant traps.
- On site detention will not be required due to site runoff discharging directly into a regional detention basin.
- The lawful point of discharge has been identified as Taigum Lagoon to the south of the site.

Sewer and water connections have been identified and can be constructed without any infrastructure works. Electricity and communications services are located within close proximity to the subject site, thus not presenting any major issues with connection.

Vehicle access and pedestrian needs have been considered during the architectural design and have been addressed within the development safely.

## Appendix A – Architectural Drawings

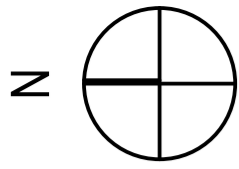


DRAWING SCHEDULE	
Sheet No.	Sheet Name
	COVER PAGE
1	PROPOSED SITE PLAN
2	LOCALITY PLAN
3	PROPOSED FLOOR PLAN
4	PROPOSED ELEVATIONS

## PROPOSED CHILD CARE

N. Newman  
891 Kingston Road, Waterford West QLD 4133 QLD





**property description**

site: Lot 9  
 number: 891  
 street: Kingston Road  
 locality: Waterford West QLD 4133  
 parish: Mackenzie  
 county: Stanley  
 rp: 889224  
 area: 4240m<sup>2</sup>

**notes:**

Use written dimensions only. Do not scale drawings from plans

Building zone is to be cleared of any vegetation and trees to suit - check on site.

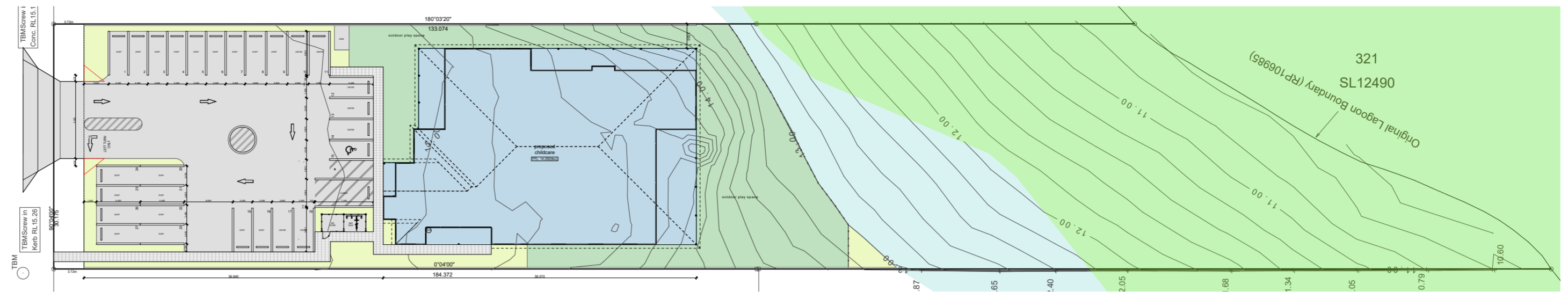
All survey data taken from DWG/PDF copy by others. Cyber Drafting & Design take no responsibility of any discrepancies in the proposed slab & pad levels due to the possibility of in-accuracy of the disclosure plan.

Verify all bearing and dimensions on site prior to construction.  
 All missing pegs to be re-instated prior to any construction.  
 Notify head contractor immediately of any discrepancies in setout dimensions. Do not start construction until all boundaries are confirmed.

Ensure all drawings and accompanying details and/or specifications have been stamped as 'Approved' by the relevant local authorities prior to use.

All site drainage to be graded to rubble pits or approved site drainage pits at a min grade of 1:100 (1%) and connected to legal point of discharge in compliance with AS/NZ 3500 &/or NCC BCA vol. 2, parts 3.1.2 & 3.5.2

PRELIMINARY DRAWINGS - NOT FOR CONSTRUCTION.



**Overall Site Plan**  
 Scale 1:500

**SITE COVERAGE:** 868.73sqm 20.49%  
 GFA: 691.12sqm  
**IMPERVIOUS SURFACE:** 1013.81sqm 23.91%  
**LANDSCAPING (exclude play):** 228.63sqm 5.39%

**CAR PARKING REQUIRED:** 27 SPACES  
 GENERAL - 2.6x5.4m min - 9  
 ACCESSIBLE - 2.4x5.4m min - 1  
 STAFF - 2.4x5.4m min - 9  
 LOADING - 3.4x7.2m min - 1  
**TOTAL SPACES:** 27 + 1

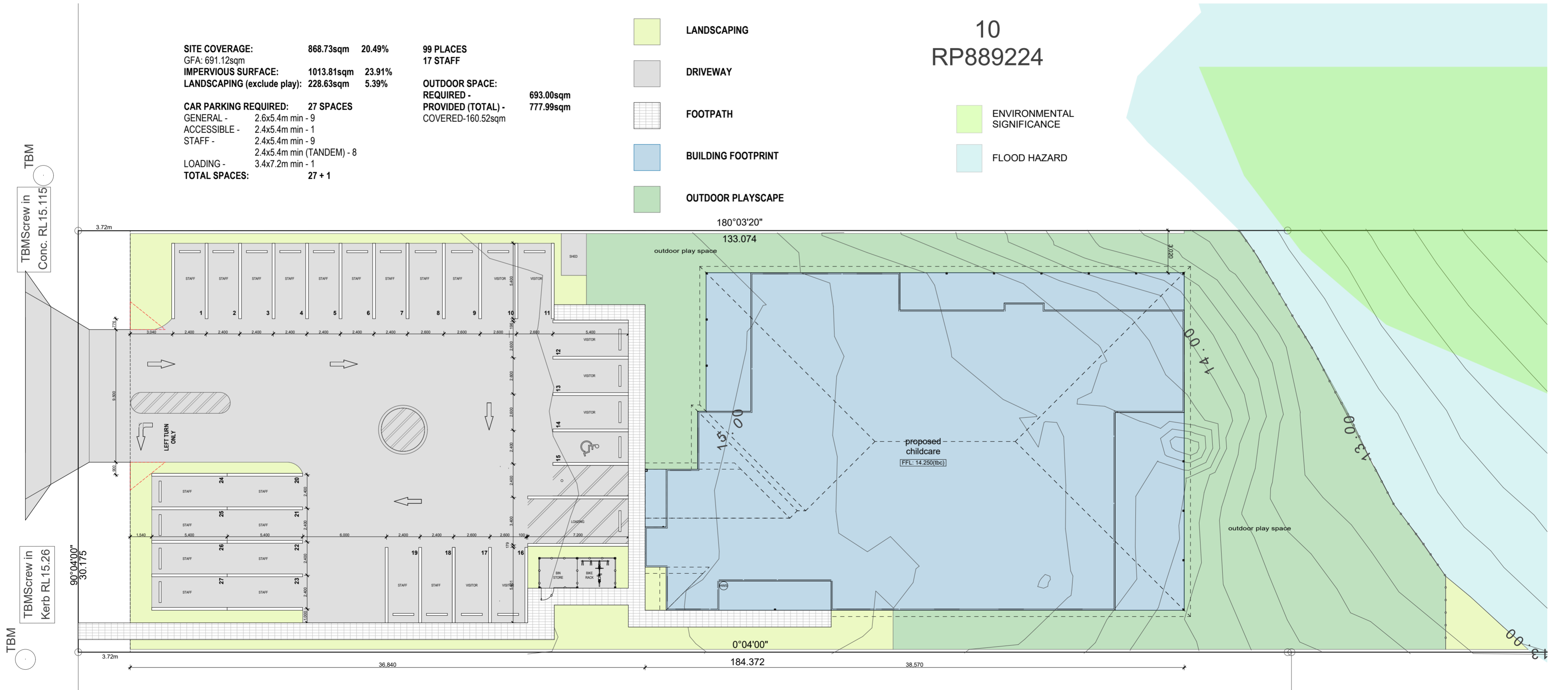
**99 PLACES**  
 17 STAFF

**OUTDOOR SPACE:**  
 REQUIRED - 693.00sqm  
 PROVIDED (TOTAL) - COVERED-160.52sqm

- LANDSCAPING
- DRIVEWAY
- FOOTPATH
- BUILDING FOOTPRINT
- OUTDOOR PLAYSCAPE

10  
 RP889224

- ENVIRONMENTAL SIGNIFICANCE
- FLOOD HAZARD



**Proposed Site Plan**  
 Scale 1:200

rev.	date	description	I/ WE APPROVE THESE DRAWINGS TO BE CORRECT AS PER CONTRACT
B	20/08/18	Preliminary Plans	SIGNATURE _____ DATE _____
C	14/09/18	DA Plans	SIGNATURE _____ DATE _____
D	19/09/18	Car Park labelling updated	SIGNATURE _____ DATE _____
E	01/11/18	Survey Added	SIGNATURE _____ DATE _____

JODIE MARK  
 e. jodie@cyberdrafting.com.au  
 p. 07 3393 9159

Dimensions shall not be obtained by scaling. All dimensions are in millimeters unless noted otherwise. Setout dimensions shall be verified on site prior to any work being carried out. Any problems shall be directed to the builder for clarification & correction



N. Newman  
 891 Kingston Road  
 Waterford West QLD 4133

orientation	wind rating	facade type
RP- 889224	local council: Logan City	

PROPOSED SITE PLAN

18123

A2	as shown
1/11/2018	1 of 2
designer: CLIENT	drawn: JM
checked: RT	sheets in set



- 1. 891 Kingston Road Waterford West PROPOSED CHILDCARE CENTRE
- 2. John Street Waterford West WATERFORD WEST STATE SCHOOL

- 3. 881 Kingston Road Waterford West SEASONS AGED CARE

- 5. EXISTING TOWNHOUSE DEVELOPMENTS
- 6. ESTABLISHED PARK
- 7. BUS STOP
- 8. SERVICE STATION
- 9. RETAIL PRECINCT

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rev.	date	description	I/ WE APPROVE THESE DRAWINGS TO BE CORRECT AS PER CONTRACT
B	20/08/18	Preliminary Plans	SIGNATURE _____ DATE _____
C	14/09/18	DA Plans	SIGNATURE _____ DATE _____
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E	01/11/18	Survey Added	SIGNATURE _____ DATE _____

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 e. jodie@cyberdrafting.com.au  
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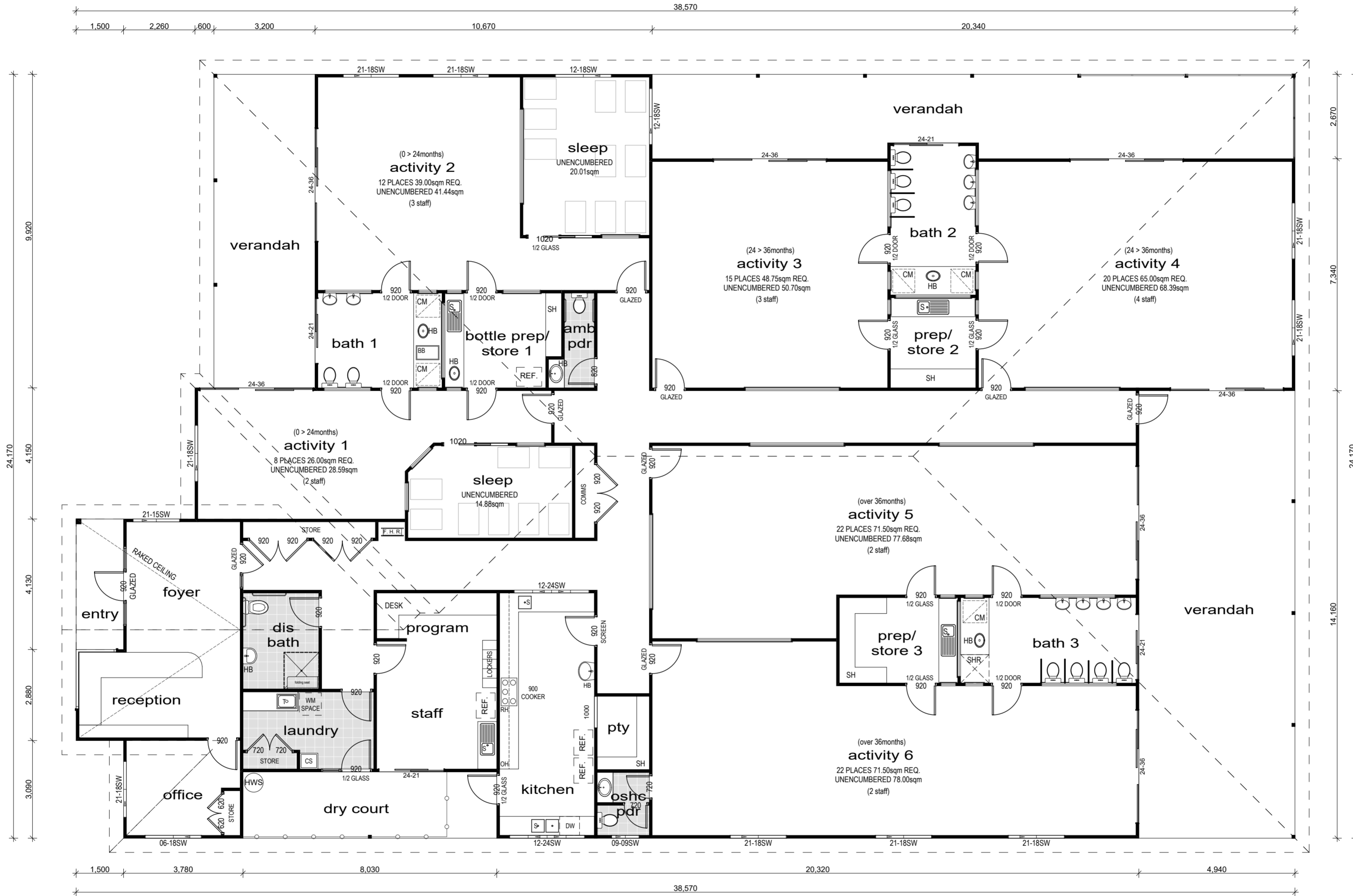
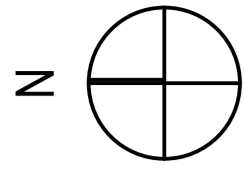
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N. Newman  
 891 Kingston Road  
 Waterford West QLD 4133

orientation	wind rating	facade type	drawing title
RP- 889224	local council: Logan City		LOCALITY PLAN

18123	A2	as shown
drawing job number	Sheet Size	drawing scales
designed: CLIENT	1/11/2018	2 of 2
drawn: JM	drawn date:	drawn by:
checked: RT	checked:	checked:
		sheets in set



AREA	
ID	Area
Centre	691.12
Verandah	154.56
Dry Court	16.86
Entry	6.19
<b>868.73 m<sup>2</sup></b>	

**Proposed Floor Plan**  
Scale 1:100



rev.	date	description	I/WE APPROVE THESE DRAWINGS TO BE CORRECT AS PER CONTRACT
B	20/08/18	Preliminary Plans	SIGNATURE _____ DATE _____
C	14/09/18	DA Plans	SIGNATURE _____ DATE _____
D	19/09/18	Car Park labelling updated	SIGNATURE _____ DATE _____
E	01/11/18	Survey Added	SIGNATURE _____ DATE _____

JODIE MARK  
e. jodie@cyberdrafting.com.au  
p. 07 3393 9159

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N. Newman  
891 Kingston Road  
Waterford West QLD 4133

orientation	wind rating	facade type
RP- 889224	local council: Logan City	

**PROPOSED FLOOR PLAN**

**18123**

A2	as shown
1/11/2018	3 of 2
designed: CLIENT	drawn: JM
checked: RT	sheets in set





## Appendix B – Survey Plan



- LEGEND**
- WM Water Meter
  - WV Water Valve
  - FH Fire Hydrant
  - ⊞ GT Gully Trap
  - ELP Elect Light Pole
  - PIL Elect Pillar
  - △<sup>STN</sup> Survey Station
  - <sup>PSM</sup> Survey Marker
  - ⊞<sup>TMH</sup> Telstra Pit
  - <sup>SM</sup> Sewer Manhole

**NOTE:**  
 This plan has been prepared for Neville Newman, from a combination of field survey and existing records for the purpose of designing new constructions on the land and should not be used for any other purpose.

The spot heights shown represent the existing features in general only.

The title boundaries shown hereon have been compiled from RP889224 and are for plotting purposes only.

Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of underground services and detailed locations of all services.

This note is an integral part of this plan/file

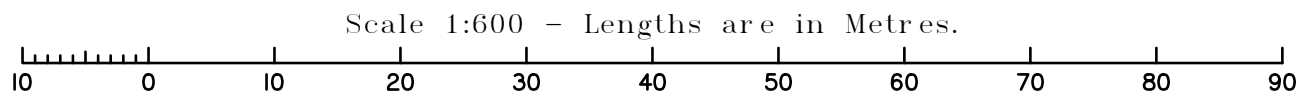
Brisbane P. 07 3161 1501  
 Gold Coast P. 07 5594 4469  
 admin@bsurveyed.com.au

TOWN PLANNING  
 SURVEYING  
 DEVELOPMENT  
 CONSULTANTS

**DETAIL SURVEY**  
 of Lot 9 on RP889224.  
 891 Kingston Road, Waterford West.

Client - Neville Newman.

L.A.	Logan C. C.
LOCALITY	Waterford West
CONTOUR INT	0.2m
MERIDIAN	RP889224
LEVEL ORIGIN	OPM 128213
DATUM	RL 15.304m AHD
SURVEYOR	JIB/TJHR
CHECKED BY	JAH
SCALE	1:600 @ A3
DATE	27/11/2018
SHEET	1 of 1



DRAWING No. **000423\_detail**  
 REV B

## Appendix C – Concept Civil Works Drawings



**SERVICES LEGEND**

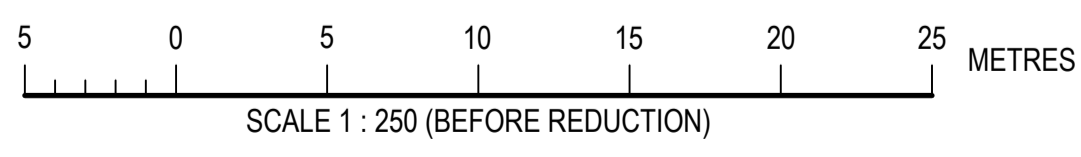
	EXISTING
COMMUNICATIONS	C(*)
DRAINAGE	⊙
ELECTRICITY	E(*)
O/H ELECTRICITY	⌵
SEWERAGE	S(*)
WATER MAIN	W(*)

(\*) - DENOTES QUALITY LEVEL AS PER A.S. 5488-2013.

**LEGEND:**

- PROPOSED SURFACE LEVEL
- PROPOSED RETAINING WALL
- EXISTING RP BOUNDARY
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- AREA OF CUT
- AREA OF FILL

**CONCEPT EARTHWORKS LAYOUT PLAN**  
SCALE 1:250



**ISSUED FOR APPROVAL**  
NOT FOR CONSTRUCTION WITHOUT AGENCY APPROVAL

DESIGN	DESIGN CHECK	DRAWN	DRAWN CHECK	AUTHORISED FOR ISSUE
CAP	CMT	CAP	BEP	CHING MENG TAN RPEQ11311

REV	DATE	DESCRIPTION
A	04/12/18	PRELIMINARY ISSUE

**CYBER**  
CIVIL & HYDRAULICS

6/1631 WYNNUM ROAD, TINGALPA QLD 4173 ABN: 56 579 734 459  
PH: (07) 3393 9159

RICH TEMPLETON  
e. rich@cyberservicesgroup.com.au  
p. 07 3393 9159

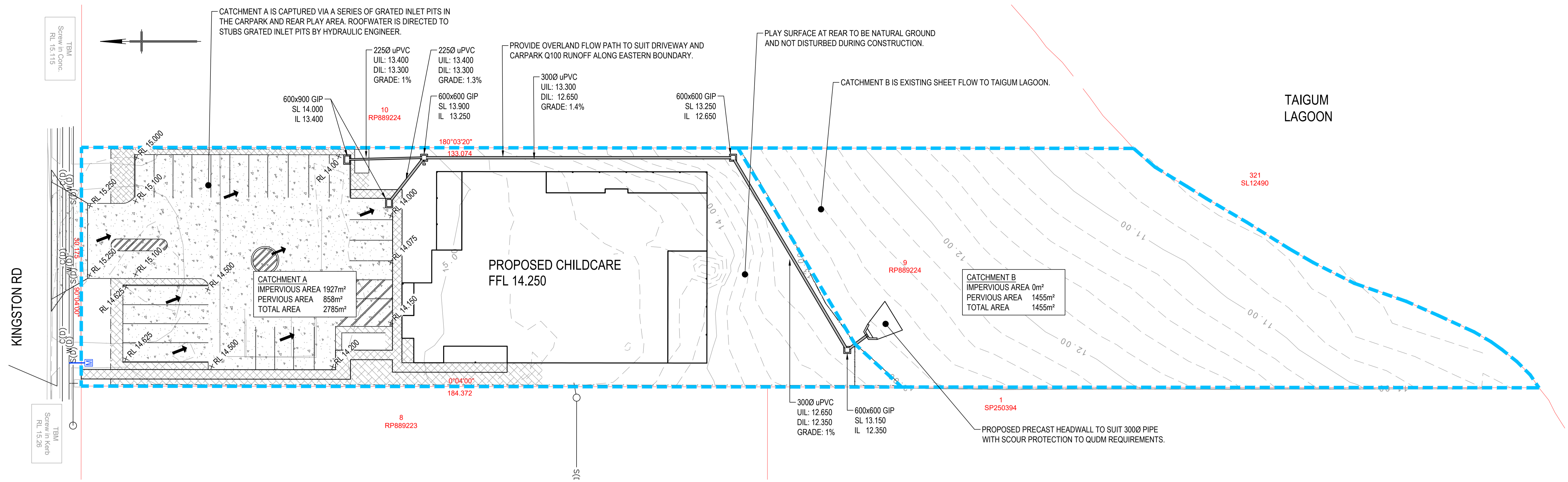
Dimensions shall not be obtained by scaling. All dimensions are in millimeters unless noted otherwise. Setout dimensions shall be verified on site prior to any work being carried out. Any problems shall be directed to the builder for clarification & correction

CLIENT  
**891 KINGSTON RD,  
WATERFORD WEST**  
RP: Lot 9 RP889224 local council: LCC

DRAWING:  
**CONCEPT BULK EARTHWORKS  
LAYOUT PLAN**  
AS SHOWN @ A1

JOB No.  
**18123C**  
DATE:  
04/12/2018

SHEET  
**SK01**



**CONCEPT SITE STORMWATER LAYOUT PLAN**  
SCALE 1:250

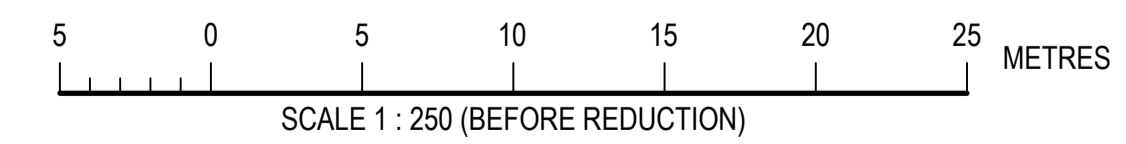
**SERVICES LEGEND**

	EXISTING
COMMUNICATIONS	C(*)
DRAINAGE	○
ELECTRICITY	E(*)
O/H ELECTRICITY	▽
SEWERAGE	S(*)
WATER MAIN	W(*)
	PROPOSED
DRAINAGE	○

(\*) - DENOTES QUALITY LEVEL AS PER A.S. 5488-2013.

**LEGEND:**

- BROOM FINISHED CONCRETE
- CONCRETE PATHWAY
- LANDSCAPING
- STORMWATER CATCHMENT
- SURFACE FLOW ARROW
- PROPOSED SURFACE LEVEL
- PROPOSED GRATED INLET PIT



**ISSUED FOR APPROVAL**  
NOT FOR CONSTRUCTION WITHOUT AGENCY APPROVAL

DESIGN	DESIGN CHECK	DRAWN	DRAWN CHECK	AUTHORISED FOR ISSUE
CAP	CMT	CAP	BEP	CHING MENG TAN RPEQ11311

REV	DATE	DESCRIPTION
A	08/12/18	PRELIMINARY ISSUE
B	11/12/18	STORMWATER UPDATED

**CYBER**  
CIVIL & HYDRAULICS

6/1631 WYNNUM ROAD, TINGALPA QLD 4173 ABN: 56 579 734 459  
PH: (07) 3393 9159

RICH TEMPLETON  
e. rich@cyberservicesgroup.com.au  
p. 07 3393 9159

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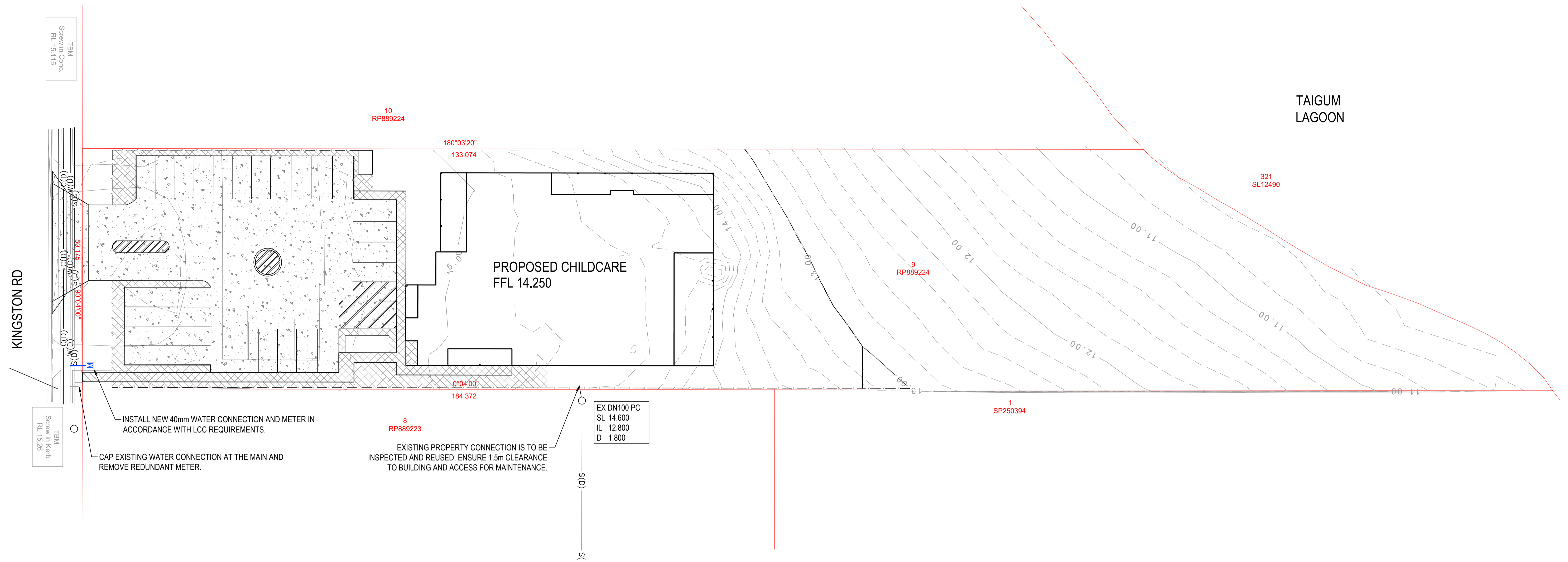
CLIENT  
**891 KINGSTON RD,  
WATERFORD WEST**

RP: Lot 9 RP889224 local council: LCC

DRAWING:  
**CONCEPT SITE STORMWATER  
CATCHMENT AND LAYOUT PLAN**  
AS SHOWN @ A1

JOB No.  
**18123C**  
DATE:  
04/12/2018

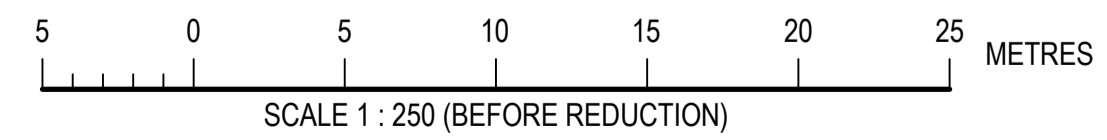
SHEET  
**SK02**



**SERVICES LEGEND**

EXISTING	
COMMUNICATIONS	C(*)
DRAINAGE	○
ELECTRICITY	E(*)
O/H ELECTRICITY	Λ
SEWERAGE	S(*)
WATER MAIN	W(*)
PROPOSED	
WATER CONNECTION	—W—

(\*) - DENOTES QUALITY LEVEL AS PER A.S. 5488-2013.



**ISSUED FOR APPROVAL**  
NOT FOR CONSTRUCTION WITHOUT AGENCY APPROVAL

DESIGN	DESIGN CHECK	DRAWN	DRAWN CHECK	AUTHORISED FOR ISSUE
CAP	CMT	CAP	BEP	CHING MENG TAN RPEQ11311

REV	DATE	DESCRIPTION
A	04/12/18	PRELIMINARY ISSUE

**CYBER**  
CIVIL & HYDRAULICS

6/1631 WYNNUM ROAD, TINGALPA QLD 4173 ABN: 56 579 734 459  
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CLIENT  
**891 KINGSTON RD,  
WATERFORD WEST**

RP: Lot 9 RP889224 local council: LCC

DRAWING:  
**CONCEPT SERVICES  
LAYOUT PLAN**

AS SHOWN @ A1

JOB No.  
**18123C**  
DATE:  
04/12/2018

SHEET  
**SK03**

## Appendix D – Code Assessments

## Part 9 Development codes

### 9.4 Other development codes

#### 9.4.2 Filling and excavation code

##### 9.4.2.1 Assessment benchmarks for assessable development and requirements for accepted development

##### Part A—Requirements for accepted development (subject to requirements) and assessment benchmarks for assessable development

Table 9.4.2.1.1—Filling and excavation code: accepted development (subject to requirements) and assessable development

Performance outcomes	Acceptable outcomes	Comments
<b>For accepted development (subject to requirements) and assessable development</b>		
<b>Protection of natural processes and ecosystems</b>		
<b>PO1</b> The discharge of sediments and pollutants from filling or excavation does not adversely affect a waterway or the stormwater network.	<b>AO1</b> The discharge of sediments and pollutants to a waterway or stormwater network complies with part 3.3—Filling and excavation standards in planning scheme policy 5—Infrastructure.	Erosion and sediment control measures will be implemented during and post construction.
<b>PO2</b> Topsoil and spoil stockpiled on the premises do not adversely affect natural processes and ecosystems.	<b>AO2</b> Topsoil and spoil is stockpiled to comply with part 3.3—Filling and excavation standards in planning scheme policy 5—Infrastructure.	N/A
<b>PO3</b> Filling is carried out using stable, solid and clean earth, free of organic and putrescible waste, rubbish and refuse material.	<b>AO3</b> Filling complies with part 3.3—Filling and excavation standards in planning scheme policy 5—Infrastructure.	Very little filling is proposed for the site, any that is will comply with part 3.3 of PSP 5

Performance outcomes	Acceptable outcomes	Comments
<b>Protection of existing and planned infrastructure</b>		
<b>PO4</b> Filling or excavation works do not adversely affect infrastructure, including any services.	<b>AO4</b> Filling or excavation works comply with part 3.3– Filling and excavation standards in planning scheme policy 5–Infrastructure.	No filling or cutting proposed in proximity to existing services. Refer <b>Appendix C</b> for Concept Earthwork plans.
<b>Protection and enhancement of personal health and safety and premises</b>		
<b>PO5</b> Filling or excavation works do not adversely affect personal health and safety.	<b>AO5</b> Filling or excavation works comply with part 3.3– Filling and excavation standards in planning scheme policy 5–Infrastructure.	No personal health and safety issues identified within the proposed works.
<b>Surface water flow</b>		
<b>PO6</b> Surface water drainage does not cause any of the following: (a) ponding on any premises; or (b) a hazard or adversely affect personal health and safety and premises; or (c) diversion or concentration of flow from or onto adjoining premises or infrastructure.	<b>AO6</b> Surface water drainage complies with part 3.3– Filling or excavation standards in planning scheme policy 5–Infrastructure.	Surface water is proposed within the Engineering Services Report to discharge directly to Taigum Lagoon, therefore not causing any nuisance to upstream or downstream properties.
<b>Batters</b>		
<b>PO7</b> A batter: (a) does not adversely affect the natural physical processes and ecosystems; (b) protects existing and planned infrastructure; (c) is safe, stable and easily maintained; (d) is landscaped to enhance visual amenity.	<b>AO7</b> A batter is designed and constructed to comply with the standards specified in section 3.3.6– Batters and retaining walls in planning scheme policy 5–Infrastructure.	Batters will comply with standards in section 3.3.6 of PSP 5.

Performance outcomes	Acceptable outcomes	Comments
<b>Retaining walls</b>		
<p><b>PO8</b> A retaining wall:</p> <ul style="list-style-type: none"> <li>(a) is not constructed of timber and are not located on existing or proposed lot boundaries, or movement networks;</li> <li>(b) does not adversely affect the natural physical processes and ecosystems;</li> <li>(c) is located to avoid conflict with adjoining premises;</li> <li>(d) is located such that existing and planned infrastructure is not adversely affected;</li> <li>(e) protects the visual amenity of adjoining premises or a public open space;</li> <li>(f) is located within the premises that is being filled;</li> <li>(g) is located within the premises that is cut and is designed to take any surcharge loading allowable on the uphill lot;</li> <li>(h) is safe and stable;</li> <li>(i) enables easy access for maintenance.</li> </ul>	<p><b>AO8</b> A retaining wall is designed and constructed to comply with the standards specified in section 3.3.6.2–Retaining walls in planning scheme policy 5–Infrastructure.</p>	<p>Proposed retaining walls will be constructed in accordance with section 3.3.6.2 of PSP 5 and Australian Standards.</p>
<b>Filling of a dam</b>		
<p><b>PO9</b> The filling of a dam:</p> <ul style="list-style-type: none"> <li>(a) does not adversely affect the natural physical processes and ecosystems;</li> <li>(b) creates a safe and stable surface;</li> <li>(c) is integrated into the landscape.</li> </ul>	<p><b>AO9</b> The filling of a dam complies with part 3.3–Filling and excavation standards in planning scheme policy 5–Infrastructure.</p>	<p>No dams identified as part of this development.</p>

## Part 9 Development codes

### 9.4 Other development codes

#### 9.4.3 Infrastructure code

##### 9.4.3.1 Assessment benchmarks for assessable development and requirements for accepted development

##### Part A—Requirements for accepted development (subject to requirements) and assessment benchmarks for assessable development

Table 9.4.3.1.1—Infrastructure code: accepted development (subject to requirements) and assessable development

Performance outcomes	Acceptable outcomes	Comments
<b>For accepted development (subject to requirements) and assessable development</b>		
<b>Provision, design, construction and location of infrastructure</b>		
<b>PO1</b> Development is demonstrated to be capable of being serviced by necessary infrastructure.	<b>AO1</b> Reports, plans and drawings are provided in accordance with part 2 of planning scheme policy 5—Infrastructure.	Engineering Services Report has identified the development can be serviced by infrastructure in accordance with council standards.
<b>PO2</b> Development: <ul style="list-style-type: none"> <li>(a) provides necessary infrastructure to service the development;</li> <li>(b) provides that the design, construction and location of necessary infrastructure:               <ul style="list-style-type: none"> <li>(i) protects existing and planned infrastructure networks;</li> <li>(ii) services proposed development;</li> <li>(iii) integrates with existing and planned infrastructure networks;</li> <li>(iv) delivers a standard of service that is efficient and equitable;</li> </ul> </li> </ul>	<b>AO2</b> Development: <ul style="list-style-type: none"> <li>(a) in a water supply service area connects to the water network in accordance with the SEQ Water Supply and Sewerage Design and Construction Code;</li> <li>(b) not in a water supply service area provides a tank with a minimum storage capacity of 45,000 litres;</li> <li>(c) in a sewerage supply service area connects to the waste water network in accordance with the SEQ Water Supply and Sewerage Design and Construction Code;</li> </ul>	Water and sewer connections are readily available in the area and there is sufficient capacity to accommodate this development.

Performance outcomes	Acceptable outcomes	Comments
<ul style="list-style-type: none"> <li>(v) minimises the cost to the community for the life of the infrastructure by providing a suitable design life, ease of maintenance and ease of replacement;</li> <li>(vi) protects personal health, safety and premises;</li> <li>(vii) protects environmental values.</li> </ul>	<ul style="list-style-type: none"> <li>(d) not in a sewerage supply service area complies with part 1 of the Queensland Plumbing and Wastewater Code;</li> <li>(e) provides stormwater infrastructure in accordance with part 3.6 of planning scheme policy 5—Infrastructure;</li> <li>(f) provides a movement network infrastructure in accordance with part 3.4 of planning scheme policy 5—Infrastructure;</li> <li>(g) provides parks in accordance with part 3.12 of planning scheme policy 5—Infrastructure;</li> <li>(h) provides road lighting in accordance with part 3.5 of planning scheme policy 5—Infrastructure;</li> <li>(i) provides electricity reticulation in accordance with part 3.8 of planning scheme policy 5—Infrastructure;</li> <li>(j) provides gas and telecommunications reticulation in accordance with part 3.9 of planning scheme policy 5—Infrastructure.</li> </ul> <p>Editor's note—The delivery of any part of a network identified in the plans for trunk infrastructure is governed by Part 4—Local government infrastructure plan.</p>	
<b>Location of development</b>		
<p><b>PO3</b></p> <p>Development is located to protect existing and planned infrastructure networks.</p>	<p><b>A03</b></p> <p>Development is located outside:</p> <ul style="list-style-type: none"> <li>(a) planned widening of a road or a new road identified in Table 7.3.1.1—Road encroachment maps of planning scheme policy 5—Infrastructure;</li> <li>(b) planned public transport network identified on Figure 3.4.1.3.1—Public transport network in planning scheme policy 5—Infrastructure;</li> </ul>	<p>No changes to verge and carriageway have been identified as part of the development.</p>

Performance outcomes	Acceptable outcomes	Comments
	(c) a planned cycle network identified on Figure 3.4.1.2.1—Cycle network in planning scheme policy 5—Infrastructure; (d) a planned network identified in Local government infrastructure plan map—LGIP-07.00 Plan for trunk parks infrastructure in Schedule 3—Local government infrastructure plan mapping and tables.	
<b>Fire fighting</b>		
<b>PO4</b> Development in a water service area accessed by common private title provides: (a) fire hydrant infrastructure; (b) unimpeded access for emergency services vehicles.  Editor's note—The term common private title refers to areas such as access roads in community title developments or strata title unit access, which are private and under group or body corporate control.	<b>AO4</b> Development in a water service area accessed by common private title complies with the Acceptable outcomes of the SPP code: Fire services in developments accessed by common private title in Appendix 1 of the state planning policy.	N/A
<b>PO5</b> Development not in a water service area provides sufficient water storage with adequate pressure, volume and flow to service development for fire fighting purposes.	<b>AO5</b> Development: (a) is connected to a reticulated water supply scheme that has sufficient flow and pressure characteristics for fire fighting purposes at all times with a minimum pressure and flow of 10 litres per second at 200kPa; or (b) has an on-site water storage in accordance with Table 9.4.3.1.2—Water storage for fire fighting, dedicated or retained for fire fighting purposes that is made of fire resistant materials and is: (i) a separate tank; or (ii) a reserve section in the bottom part of the main water supply tankwater tank .	N/A

Performance outcomes	Acceptable outcomes	Comments
<b>Disposal of trade waste</b>		
<p><b>PO6</b> The disposal of trade waste in a sewerage supply service area does not adversely affect the sewerage network.</p>	<p><b>A06</b> The disposal of trade waste in a sewerage supply service area complies with the sewer admission standards in section 3.2.6–Sewer admission standards in planning scheme policy 3–Environmental management.</p>	N/A
<b>Roof water drainage and surface water drainage</b>		
<p><b>PO7</b> Development provides stormwater infrastructure for the drainage of the premises so as not to cause any of the following: (a) ponding of stormwater on the premises; (b) a hazard to personal health and safety; (c) damage to premises; (d) an increased risk of flooding to premises within the catchment.</p>	<p><b>A07</b> Development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5–Infrastructure.</p>	Stormwater is proposed to discharge directly into Taigum Lagoon as sheet flow. Refer to Concept Stormwater Plan SK02 in <b>Appendix C</b>
<b>Natural flow of surface water</b>		
<p><b>PO8</b> Development provides that the natural flow of surface water is: (a) not altered so as to cause a risk to personal health and safety or damage to property; (b) not increased in intensity, velocity or frequency; (c) not concentrated onto adjoining premises.</p>	<p><b>A08</b> Development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5–Infrastructure.</p>	Non worsening to adjoining private properties has been achieved.

Performance outcomes	Acceptable outcomes	Comments
<b>Water sensitive urban design</b>		
<p><b>PO9</b> Development which provides stormwater infrastructure incorporates water sensitive urban design principles having regard to:</p> <ul style="list-style-type: none"> <li>(a) protecting existing natural features and ecological processes;</li> <li>(b) protecting the natural hydrologic behaviour of catchments;</li> <li>(c) protecting the existing natural flow and water quality regimes of waterways;</li> <li>(d) protecting water quality of surface and ground waters;</li> <li>(e) minimising demand on the water network;</li> <li>(f) minimising sewage discharges to the natural environment;</li> <li>(g) integrating water into the landscape to enhance visual and ecological values.</li> </ul>	<p><b>AO9</b> Development complies with the standards for stormwater infrastructure specified in part 3.6 of planning scheme policy 5—Infrastructure.</p>	<p>Best practice measures have been identified in the Engineering Services Report and will be implemented during the development.</p>
<b>Movement network</b>		
<p><b>PO10</b> The projected traffic levels for a use do not adversely affect the planned standards of service for a road or intersection.</p>	<p><b>AO10</b> Development does not cause or contribute to projected traffic levels:</p> <ul style="list-style-type: none"> <li>(a) exceeding the maximum vehicle trips per day in Table 3.4.1.4.2 in planning scheme policy 5—Infrastructure; or</li> <li>(b) exceeding the maximum control delays through intersections in peak periods in Table 3.4.1.4.3 in planning scheme policy 5—Infrastructure.</li> </ul>	<p>N/A</p>

Performance outcomes	Acceptable outcomes	Comments
<b>Integrated movement concept report</b>		
<p><b>PO11</b> Development which generates more than 3,000 vehicle trips per average weekday is designed to integrate the movement network to minimise the transportation costs required to service the use.</p>	<p><b>AO11</b> Development which generates more than 3,000 vehicle trips per average weekday provides an integrated movement concept report which integrates the planning of the movement network in accordance with part 2 and 3 of planning scheme policy 5—Infrastructure.</p>	N/A
<b>For assessable development only</b>		
<b>Land use and transport integration</b>		
<p><b>PO12</b> Development within 400 metres of existing or future public passenger transport facilities where the total site area is 5,000m<sup>2</sup> or more:</p> <ul style="list-style-type: none"> <li>(a) supports a road hierarchy which facilitates efficient, safe and accessible bus services connecting to existing and future public passenger transport facilities;</li> <li>(b) enhances connectivity between existing and future public passenger transport facilities and other transport modes;</li> <li>(c) optimises the walkable catchment to existing and future public passenger transport facilities;</li> <li>(d) provides for direct and safe access to and use of existing or future public passenger transport facilities.</li> </ul> <p>Note—SPP code: Land use and transport integration in Appendix 4 of the state planning policy provides guidance to achieve this outcome.</p>	<p><b>AO12</b> No acceptable outcome provided.</p>	N/A

**Table 9.4.3.1.2—Water storage for fire fighting**

<b>Column 1 Lot size / use type</b>	<b>Column 2 Water requirement</b>
For each residential lot:	
(a) less than 1,000m <sup>2</sup>	5,000 litres
(b) between 1,000m <sup>2</sup> and less than 1 hectare	10,000 litres
(c) greater than 1 hectare	20,000 litres
Multiple dwelling	5,000 litres per dwelling up to a maximum of 20,000 litres
A use other than Multiple dwelling	5,000 litres or the prevailing rural fire brigade standard

## Appendix E – As Constructed and DBYD records



**LEGEND:**

B.P.	Branch Pipe
B.V.	Branch Vent
D.G.	Disconnector Gully
F.D.P.	Fixture Discharge Pipe
G.I.T.	Grease Interceptor Trap
I.C.	Inspection Chamber
I.J.	Inspection Junction
I.O.	Inspection Opening
I.P.	Inspection Pipe
O.R.G.	Overflow Relief Gully
R.V.	Relief Vent
S.	Stack
S.V.	Stack Vent Pipe
T.V.	Trap Vent
V.	Vent
P.J.C.	Plain Junction Cap
T.G.	Test Gate
E.C.	Expansion Coupling

**LOGAN CITY COUNCIL**

**HOUSE CONNECTION PLAN**

H.C. Plan No. C88-157

**891**

Map No. C

Owner's Name L. TREADWELL

R J S Beales

Address of Premises No. 891 KINGSTON RD, WATERFOORD

Real Property Description Lot 28 R.P. 106985

Scale: 1:200

Approx. Depth of Sewer Connection 1.80

Drawn By a.r.a.

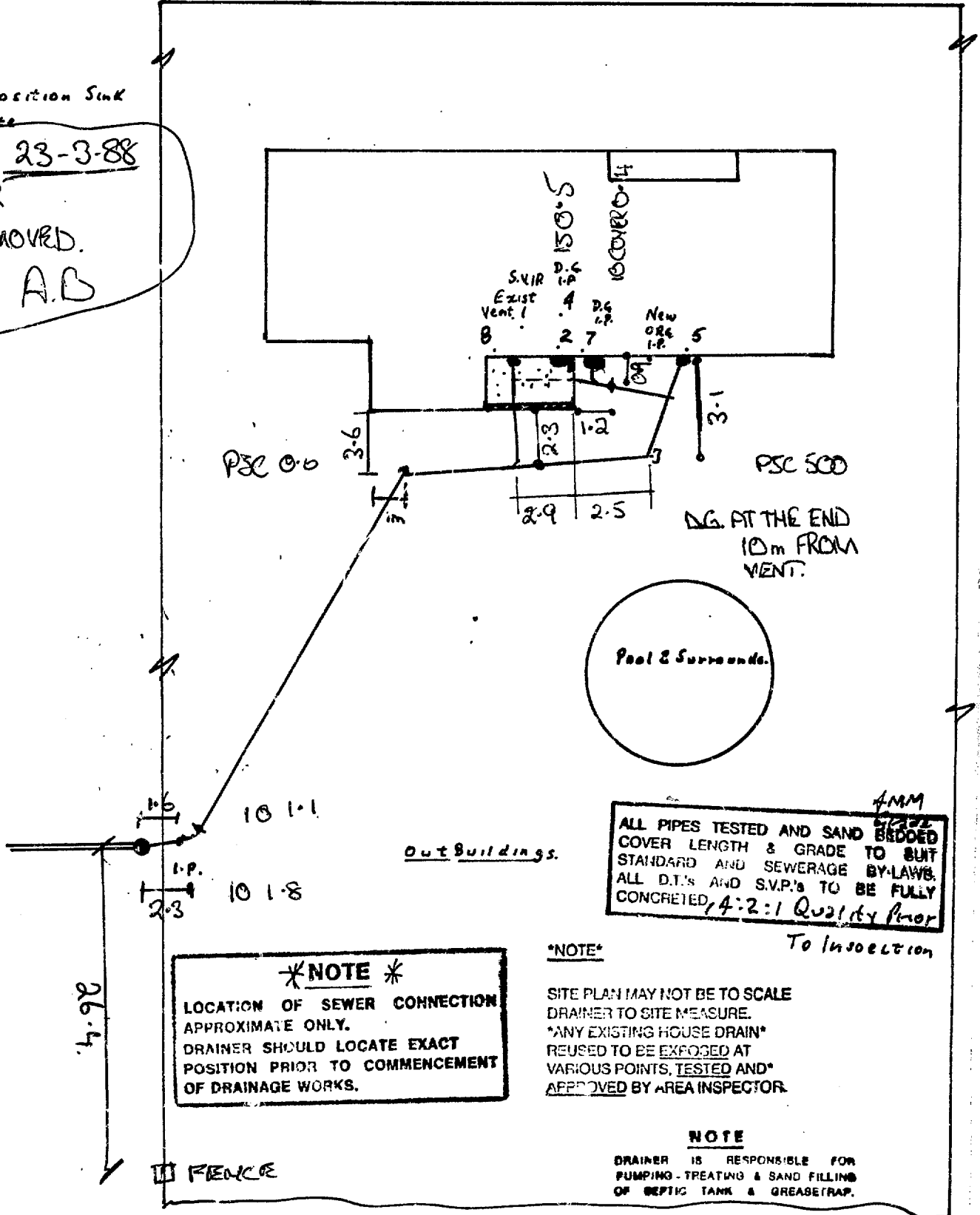
KINGSTON RD.

Date 15-3-88

DKT 16001 = 1

NOTE Reposition Sink  
Waste

23-3-88  
**INHIBITOR  
REMOVED.  
A.B**



**ALL PIPES TESTED AND SAND BEDDED  
COVER LENGTH & GRADE TO SUIT  
STANDARD AND SEWERAGE BY-LAWS.  
ALL D.T.'s AND S.V.P.'s TO BE FULLY  
CONCRETED, 4:2:1 Quality Mortar**

**\*NOTE\***  
LOCATION OF SEWER CONNECTION  
APPROXIMATE ONLY.  
DRAINER SHOULD LOCATE EXACT  
POSITION PRIOR TO COMMENCEMENT  
OF DRAINAGE WORKS.

**\*NOTE\***  
SITE PLAN MAY NOT BE TO SCALE  
DRAINER TO SITE MEASURE.  
"ANY EXISTING HOUSE DRAIN"  
REUSED TO BE EXPOSED AT  
VARIOUS POINTS, TESTED AND  
APPROVED BY AREA INSPECTOR.

**NOTE**  
DRAINER IS RESPONSIBLE FOR  
PUMPING - TREATING & SAND FILLING  
OF SEPTIC TANK & GREASETRAP.

1. Basin
2. Bath
3. Floor Waste Gully
4. Shower
5. Sink
6. Urinal
7. Wash Tubs
8. Water Closet

All drainage and plumbing work must be done by licensed workmen only and carried out strictly in accordance with Schedule 1 of "THE SEWERAGE, and WATER SUPPLY ACT AMENDMENT ACT 1981."

The possession of this plan does not entitle the holder to connect the drains to the Council's sewers. Application for the Council's consent to such connection must be made on the proper forms, and such consent received before drainage work shown hereon is commenced. Notice of commencement of work must be given and no work is to be covered up until examined and passed by the Council's Inspector. Rain or surface water must not be discharged into the sewers.



## ENERGEX DBYD RESPONSE "ASSETS FOUND - EXISTING"

**Our search has revealed there is existing ENERGEX Underground Assets within the nominated search area. They are shown on the attached plan.**

<b>To:</b> Mr Craig Pomplun	<b>DBYD Sequence No:</b> 78131406		
<b>Company:</b> Not Supplied	<b>Date of Response:</b> 30-Nov-2018		
<b>Address:</b> Glenalva Tce Enoggera QLD 4051	<b>Period of Plan Validity:</b> 28 Days		
<b>Email Address:</b> admin@whdd.com.au	<b>Phone:</b> 0457065044	<b>Mobile:</b> Not Supplied	<b>Fax:</b> Not Supplied

**Location of Search:** 891 Kingston Road  
Waterford West QLD 4133

**UBD Map Ref:** 262H10,262H9

**External Comments (if any):**

**It is important that you note:**

1. Immediately report life threatening emergencies to ENERGEX on **13 19 62**.
2. Please read and understand all the information and disclaimers provided – including the Terms and Conditions on the attached pages.
3. We have only searched the area which has been nominated in the request. If this nominated area is not what you require, please resubmit another enquiry with DBYD.
4. Plans provided by ENERGEX are only an indication of the presence of underground assets within the nominated area. Locations provided are approximate and the plans are not suitable for scaling purposes, as exact ground cover and alignments cannot be provided.
5. Plans provided by ENERGEX do not show the presence of any overhead Network.
6. In addition to underground cables marked on attached plan, there could be underground earth conductors or private underground cables (inc. consumers' mains that may run from ENERGEX mains onto private property) in the vicinity of the nominated work area(s) that are not marked on the plans.
7. Independent underground cable locators can be found via the DBYD Certified Locator website via <http://www.dbydlocator.com/certified-locators/>
8. The ENERGEX Dial Before You Dig information map(s) provide the vicinity of underground cable and will not be adequate for conveyancing purposes. A Request for Search (Property Search) can be arranged through ENERGEX.
9. The attached plans are only valid for a period of 28 days from receipt. In the event that excavation does not commence within 28 days, a new plan should be obtained.
10. Cable support for 33kV/110kV: Allow a minimum of 20 working days advance notice for Energex scheduling for investigations. Please contact the ENERGEX DBYD team on the details listed below to arrange the required investigation work
11. The Energex DBYD map (named maps.pdf) may contain shaded area(s), indicating the location of planned work(s). This polygon will note the planned work project number in the centre of the shaded area(s). This number will correspond with additional pdf attachments, if they have been included. Should you find a planned worksplan not attached that you believe may affect your planned work(s), please contact the Energex DBYD team on the details listed below.

Contact **ENERGEX DBYD Monday to Friday from 7 am to 3:30 pm on (07) 3664 5400 or [dbyd@energex.com.au](mailto:dbyd@energex.com.au)**  
[www.energex.com.au](http://www.energex.com.au)

ENERGEX Limited - ABN 40 078 849 055  
26 Reddacliff Street Newstead QLD 4006  
GPO Box 1461 Brisbane Queensland 4001

24 Hour Loss of Supply **13 62 62**  
**24 Hour Emergencies 13 19 62**  
General Enquires **13 12 53**

To resubmit or change the nominated search area contact DBYD via Phone 1100 or [www.1100.com.au](http://www.1100.com.au)

All underground cables shall be treated as being energised. Where a cable is located that is not represented on the ENERGEX EnerGISE DBYD map, then ENERGEX shall be contacted immediately.

For Emergency Situations  
Please call 13 19 62



**EnerGISE  
DBYD**

Date: 30 Nov 18 Time: 16:17.00  
Requested By: DBYD

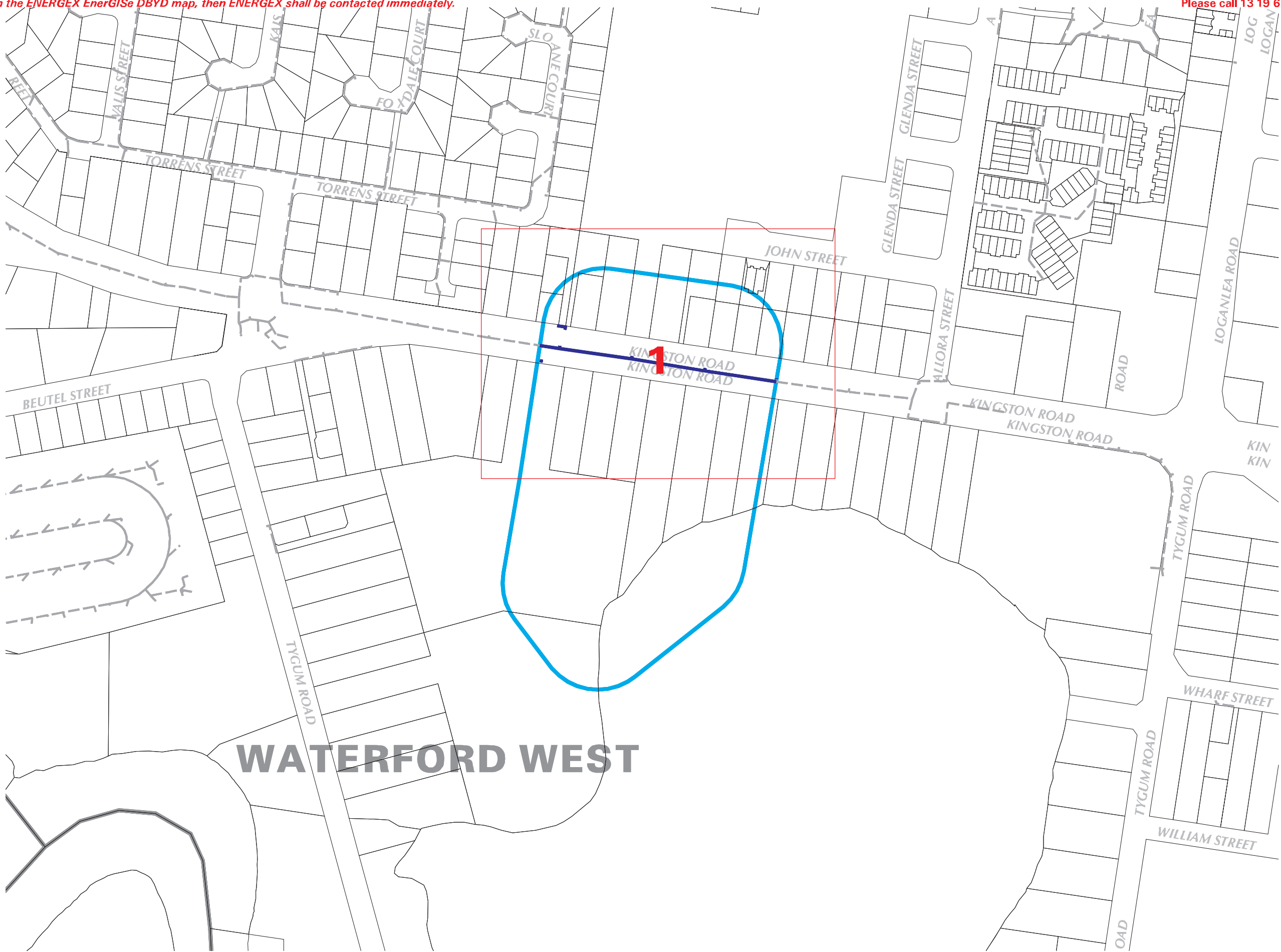
NOT TO SCALE



**Enquiry No: 78131406**

**KEY MAP**

 Enquiry Area

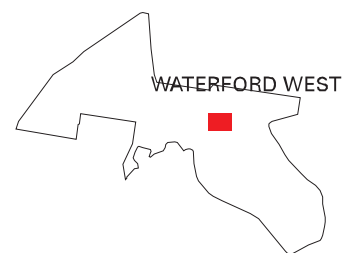


**WATERFORD WEST**

This output provides details of the ENERGEX electrical network. As variations may exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.

**UNCONTROLLED COPY**

**LOCALITY DIAGRAM**



All underground cables shall be treated as being energised. Where a cable is located that is not represented on the ENERGEX EnerGISE DBYD map, then ENERGEX shall be contacted immediately.

For Emergency Situations  
Please call 13 19 62



**EnerGISE  
DBYD**

Date: 30 Nov 18 Time: 16.17.09  
Requested By: DBYD

SCALE 1:1000



Enquiry No: 78131406

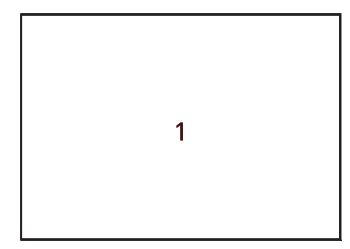
STRIP No: 1



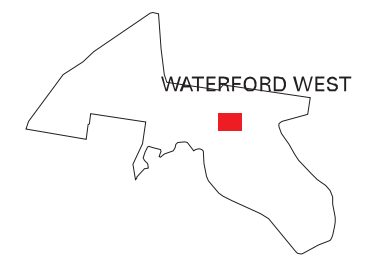
- Ground Transformer
- Cubicle Transformer
- Ring Main Unit
- Metering Unit
- Link Pillar
- Service Pillar
- Junction Pillar
- Pit
- Cable Joint
- Cable Termination
- Cable Marker
- Street Light Pole
- Earth
- Planned Work labelled by Work Order
- Cable Voltage Less Than 33kV
- Cable Voltage 33kV or Higher
- Direct-Lay Cable
- Conduit
- Multi-Section Duct
- Trench
- Cable Tray
- Tunnel



INDEX TO SHEETS



LOCALITY DIAGRAM



This output provides details of the ENERGEX electrical network. As variations may exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.

UNCONTROLLED COPY



Level 17, PIPE Networks House, 127 Creek Street, Brisbane 4000  
PH:(07) 3233 9895 FAX:(07) 3233 9885

**DBYD ENQUIRY RETURN:**

PIPE Networks **DOES** own or operate telecommunications network infrastructure within the request area detailed above.

The affected network infrastructure is contained within the **Telstra** duct network and can be found listed on the appropriate **Telstra** duct Network plans.

THIS NETWORK IS VITAL TO OUR OPERATIONS AND AS SUCH, IT IS CRITICAL THAT **NO WORKS** COMMENCE WITHIN THE AREA UNTIL YOU HAVE RECEIVED AND APPRAISED THE TELSTRA DUCT PLANS FOR THIS AREA.


Due to continued network expansion, this network information can only be considered valid and accurate for 28 days from issue.

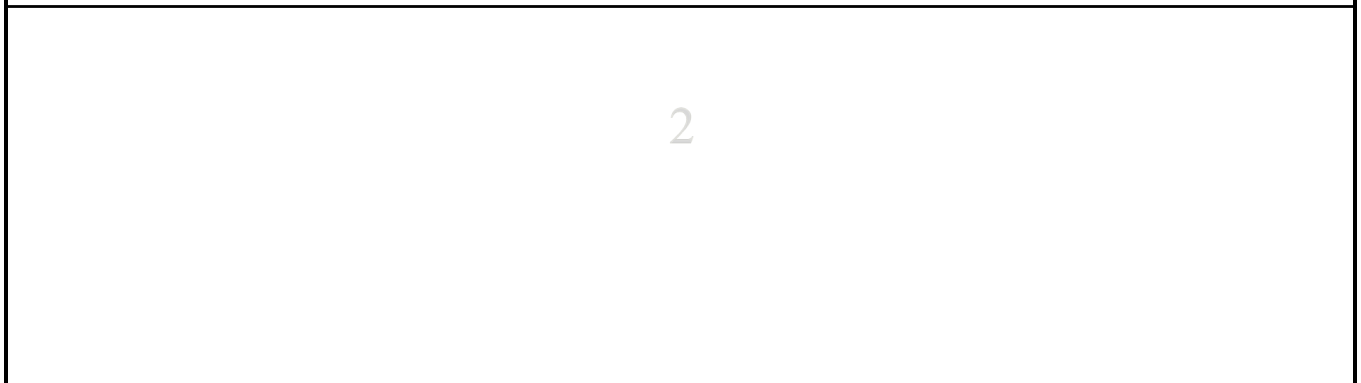
PIPE Networks will seek compensation for any damage to its network through negligence or ignorance of your duty of care.






PIPE NETWORKS  
Ph (07) 3233 9895  
Email: dbyd@pipenetworks.com  
(for information specifically on this job only)

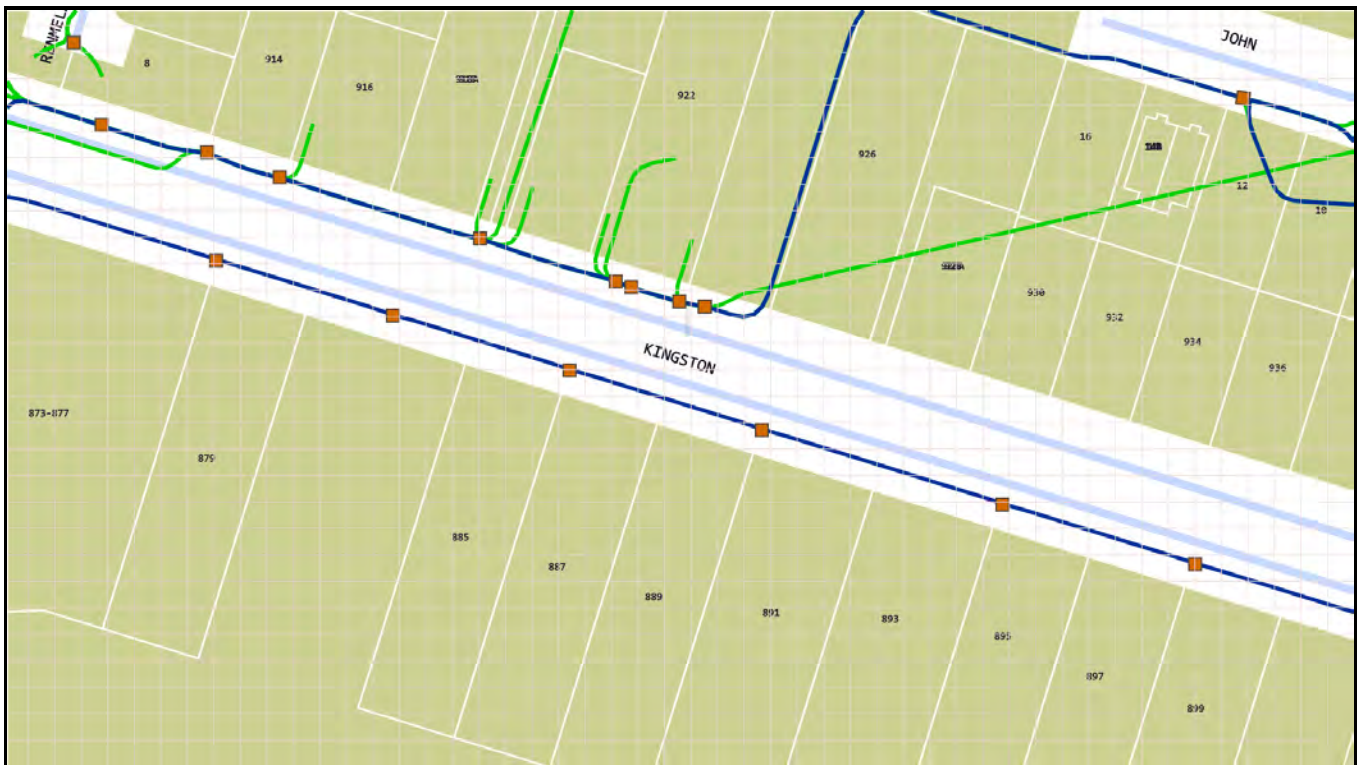


## Indicative Plans

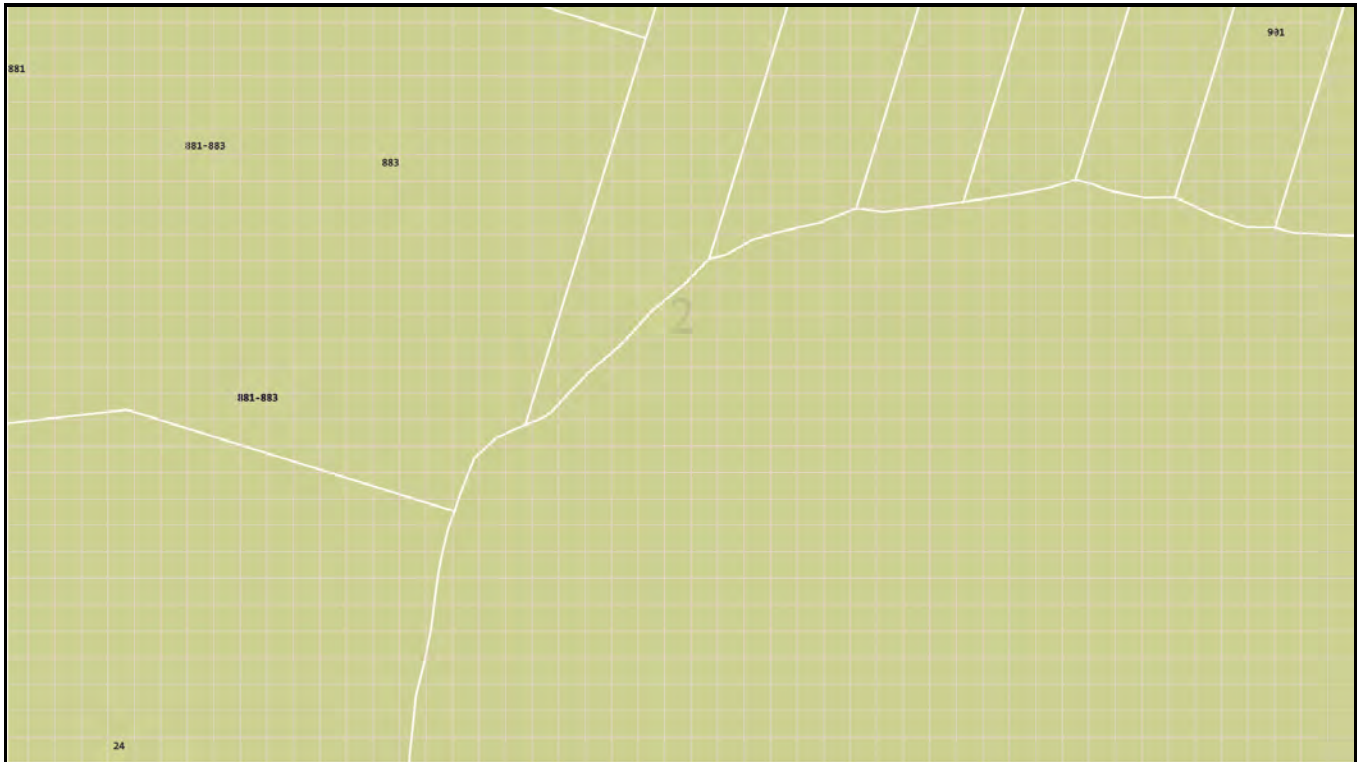
<b>Issue Date:</b>	30/11/2018	
<b>Location:</b>	891 Kingston Road , Waterford West , QLD , 4133	



	<b>LEGEND</b>	
	Type: Telco Technology: Copper/Coaxial/Fibre	<b>Scale</b> 0 20 40 60 Meters 1:2000 1 cm equals 20 m
<b>Assets</b>	 IN-SERVICE: Cable/ Duct/ Trench	 Pit/Manhole
	 DESIGNED/CONSTRUCTED: Cable/ Duct/ Trench	



	<b>LEGEND</b>		
	Type: Telco Technology: Copper/Coaxial/Fibre		
<b>Assets</b>			
	IN-SERVICE: Cable/ Duct/ Trench		Pit/Manhole
	DESIGNED/CONSTRUCTED: Cable/ Duct/ Trench		
		<b>Scale</b> 0 20 40 60 Meters 1:2000 1 cm equals 20 m	



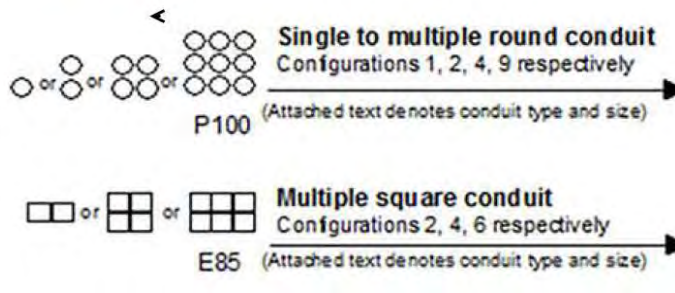
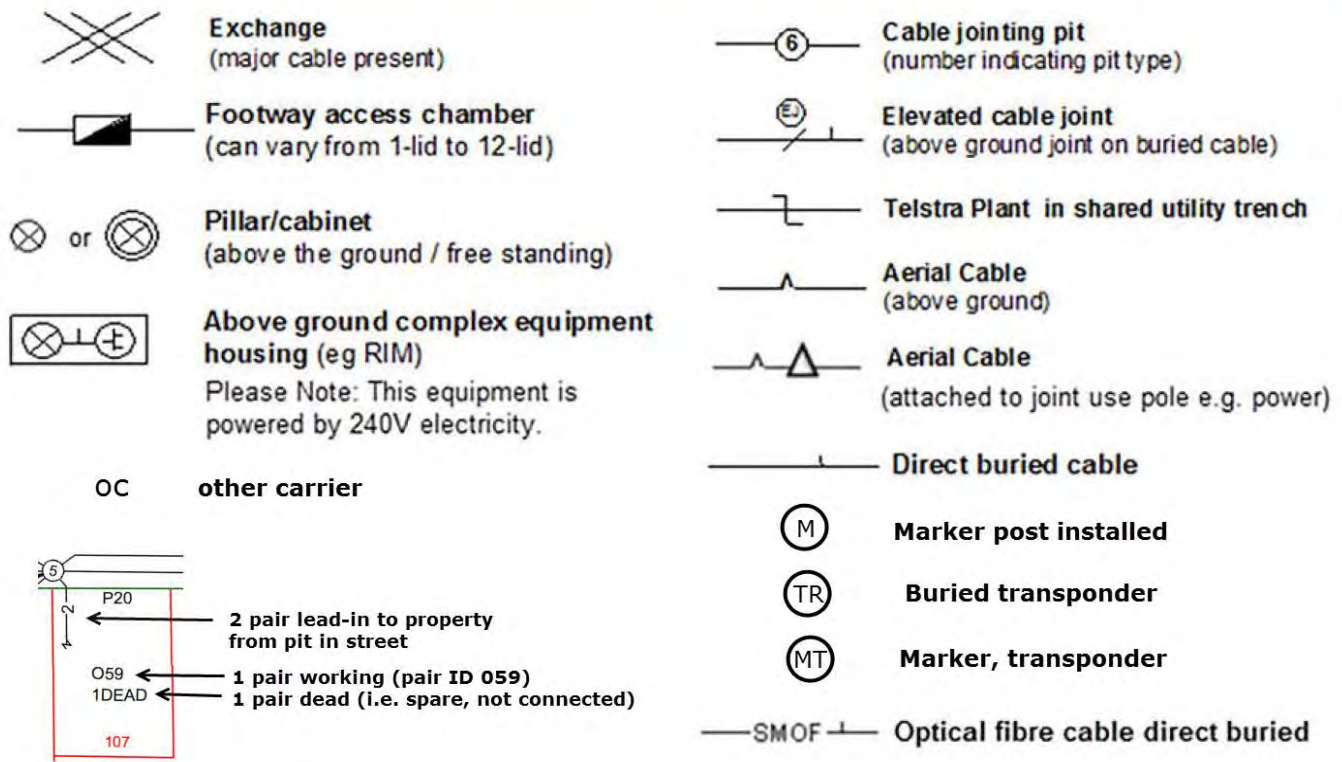
	<b>LEGEND</b>		
	Type: Telco Technology: Copper/Coaxial/Fibre		
<b>Assets</b>			
	IN-SERVICE: Cable/ Duct/ Trench		Pit/Manhole
	DESIGNED/CONSTRUCTED: Cable/ Duct/ Trench		
		<b>Scale</b> 0 20 40 60 Meters 1:2000 1 cm equals 20 m	

## Emergency Contacts

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



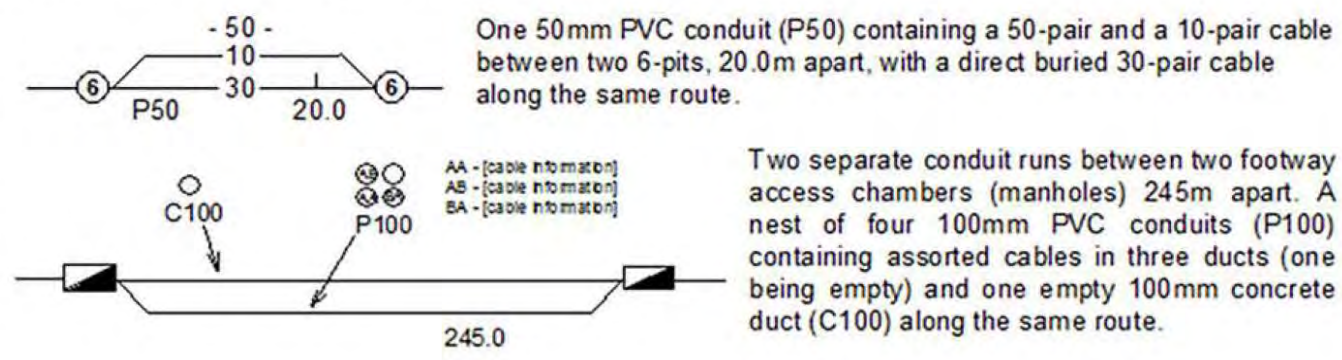
For more info contact a Telstra Accredited Locator or Telstra Plan Services 1800 653 935



**Some examples of conduit type and size:**  
A - Asbestos cement, P - PVC / plastic, C - Concrete, GI - Galvanised iron, E - Earthenware.  
Conduit sizes *nominally* range from 20mm to 100mm.

P50	50mm PVC conduit
P100	100mm PVC conduit
A100	100mm asbestos cement conduit
E 85	85mm square earthenware conduit

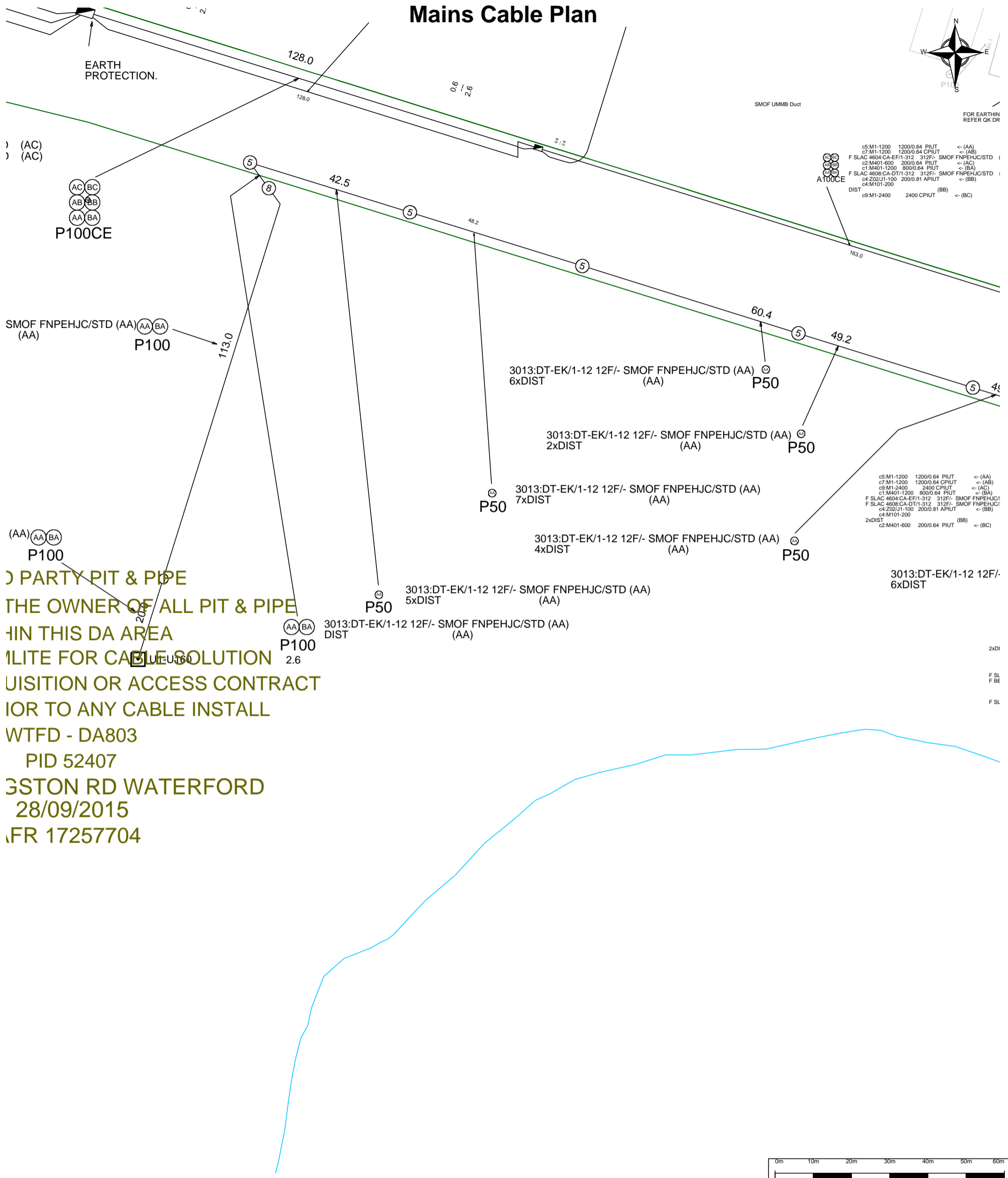
**Some examples of how to read Telstra plans:**



**WARNING:** Telstra plans and location information conform to Quality Level 'D' of the Australian Standard AS 5488 - Classification of Subsurface Utility Information. As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D. Refer to AS 5488 for further details. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans. **FURTHER ON SITE INVESTIGATION IS REQUIRED TO VALIDATE THE EXACT LOCATION OF TELSTRA PLANT PRIOR TO COMMENCING CONSTRUCTION WORK.** A plant location service is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works. The exact position of Telstra assets can only be validated by physically exposing it. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers.



# Mains Cable Plan



**3 PARTY PIT & PIPE**  
**THE OWNER OF ALL PIT & PIPE**  
**IN THIS DA AREA**  
**WILLITE FOR CABLE SOLUTION**  
**POSITION OR ACCESS CONTRACT**  
**BEFORE TO ANY CABLE INSTALL**  
**WTFD - DA803**  
**PID 52407**  
**35 STON RD WATERFORD**  
**28/09/2015**  
**REFR 17257704**



For all Telstra DBYD plan enquiries -  
 email - Telstra.Plans@team.telstra.com  
 For urgent onsite contact only - ph 1800 653 935 (bus hrs)

Sequence Number: 78131407

**CAUTION: Critical Network Route in plot area.**  
**DO NOT PROCEED with any excavation prior to**  
**seeking advice from Telstra Plan Services on :**  
**1800 653 935**

TELSTRA CORPORATION LIMITED A.C.N. 051 775 556

Generated On 30/11/2018 17:17:15

WARNING - Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information supplied can not be guaranteed as property boundaries, depths and other natural landscape features may change over time, and accordingly the plans are indicative only. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans.

It is your responsibility to locate Telstra's underground plant by careful hand pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation.

Please read and understand the information supplied in the duty of care statement attached with the Telstra plans. TELSTRA WILL SEEK COMPENSATION FOR LOSS CAUSED BY DAMAGE TO ITS PLANT.

Telstra plans and information supplied are valid for 60 days from the date of issue. If this timeframe has elapsed, please reapply for plans.

To: Mr Craig Pomplun

Glenalva Tce  
Enoggera, QLD, 4051



Uecomm Pty Limited  
ABN 56 079 083 195

Building 8, 658 Church St,  
Richmond, VIC 3121  
Ph: (03) 9221 4100  
Fax: (03) 9221 4193  
Ah: 1800 707 447

## LOCATION OF UNDERGROUND FIBRE OPTIC CABLE INFORMATION SHEET

**IMPORTANT: PLEASE READ ALL INFORMATION AND CONDITIONS BELOW AND THE NOTICE ON THE REVERSE SIDE OF THE PLAN/S.**

**"Dial Before You Dig" Sequence No 78131408**  
**Customer ID 1750084**

**Issue Date: 30/11/2018**  
**Issue By:**

Location: **891 Kingston Road, Waterford West, QLD 4133**  
Map Ref: **262H10, 262H9**  
Uecomm Asset Location No. **78131408**  
Dial Before You Dig Job No. **15392582**

In relation to your enquiry at the above address, Uecomm advises as follows:

**The records of Uecomm Limited disclose that there ARE underground FIBRE OPTIC / TELECOMMUNICATIONS cables in the vicinity of the above enquiry as per attached plan/s.**

- The underground cables referred to in this advice are defined as the underground communications cables owned or controlled by Uecomm Pty Limited.
- The person/company responsible for submitting the inquiry should take care to ensure all plans listed above have been received. For any plan listed above but not received please contact **1800 707 447**.
- Any information provided is valid only for **30 days** from the date of issue set out above.
- If the work operations extends beyond this period, or if the designs are altered in any way, you are requested to resubmit your proposal for reassessment.
- Further assistance may be obtained if necessary by telephoning **1800 707 447**.

### **PLEASE READ ALL INFORMATION AND DISCLAIMERS BELOW:**

1. Due to the nature of underground cables and the age of some cables and records, it is impossible to conclusively ascertain the location of all cables. The accuracy and/or completeness of the information cannot be guaranteed and, accordingly, they are intended to be indicative only and, as a result, Uecomm does not accept any responsibility for any inaccuracies of its plans. They should not be solely relied upon when undertaking underground works. It is also inaccurate to assume that fibre optic cables follow straight lines and careful on-site investigations are essential to locate its exact position.
2. The following minimum clearances must be maintained:
  - 300mm when laying asset's inline, horizontal or vertical.
  - 500mm when operating vibrating equipment, e.g., jackhammers or vibrating plates.
  - 1000mm when operating mechanical excavators.
3. Due to the inherent dangers associated with excavation in the vicinity of underground cables, precautions should be taken in the undertaking of any underground works, including (but not limited to) the following:
  - All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs if present must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the likely hood of damage to the cable, e.g., blades of hand equipment should be orientated parallel to the line of the cable rather than digging across the cable.
  - If any undisclosed underground cables are located, Uecomm Limited should be notified immediately.
  - All personnel must be properly briefed, particularly those associated with the use of earthmoving equipment, trenching, boring and pneumatic equipment.
  - All excavations must be undertaken in accordance with the relevant legislation and regulations.

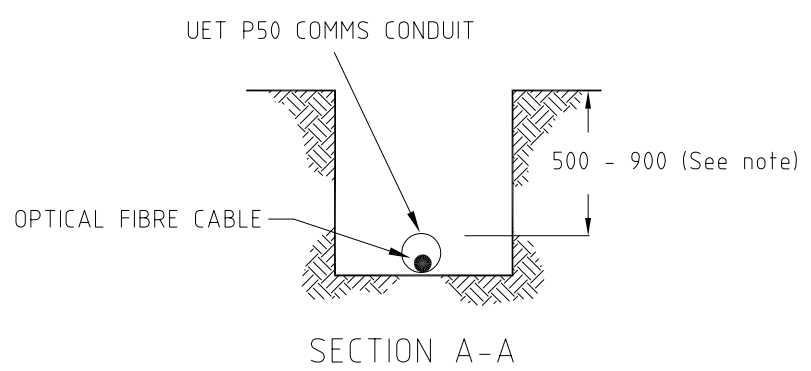
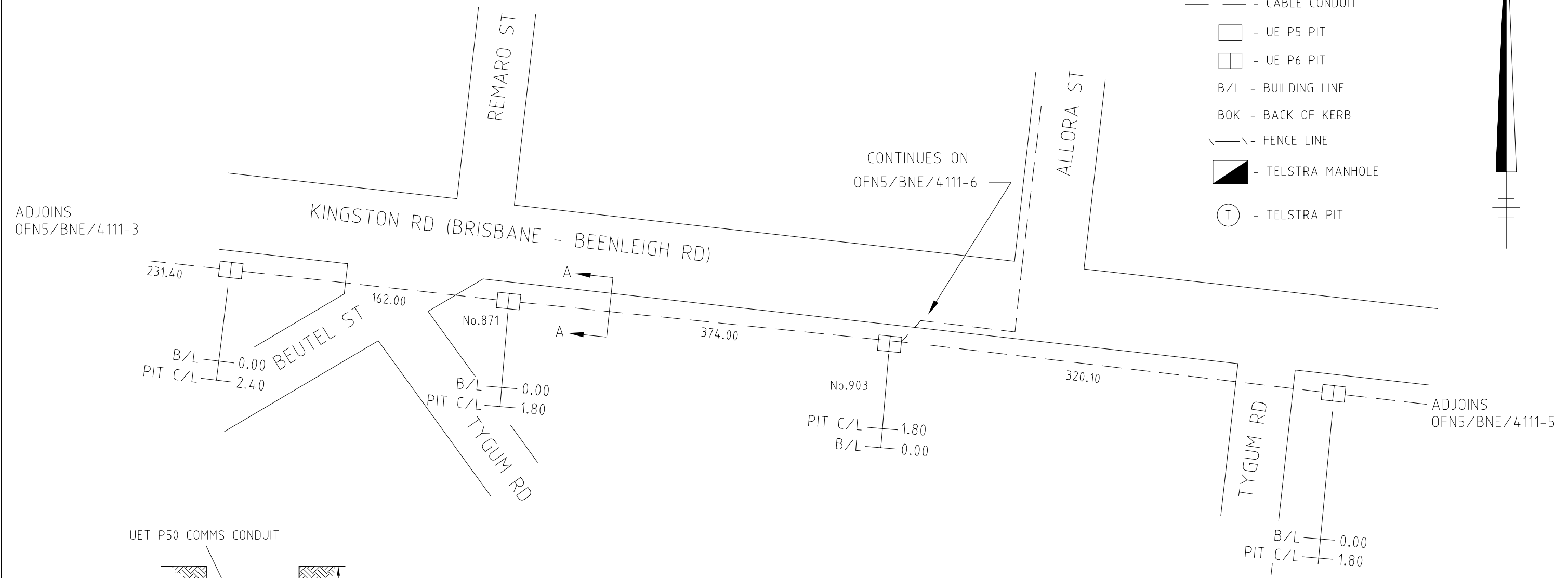
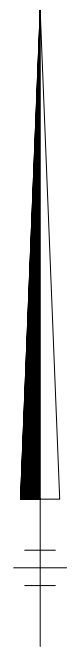
4. **DAMAGE. ANY DAMAGE TO UECOMM'S NETWORK MUST BE REPORTED IMMEDIATELY TO 1800 707 447.**
5. Uecomm recommends using Uecomm approved location contractors to provide on-site location services for Uecomm plant. You can arrange Uecomm on-site visits by calling Uecomm on 1800 707 447 and Uecomm or its approved representative will attend your site to provide guidance to the location of the Uecomm assets (the "*Uecomm Asset Alignment*"). **Uecomm requires 3 clear business days notice to conduct an on-site location.** The initial on-site visit by Uecomm will not normally incur a charge, but at the discretion of Uecomm, subsequent site visits may incur a charge to be applied at an hourly rate.
6. Uecomm will hold the relevant party responsible for any damage to Uecomm plant and all expenses incurred by Uecomm as a result of asset damage.
7. Except to the extent that liability may not be capable of lawful exclusion, Uecomm Pty Limited and its servants and agents and the related bodies corporate of Uecomm Pty Limited and their servants and agents shall be under no liability whatsoever to any person for any loss or damage (including indirect or consequential loss or damage) however caused (including, without limitation, breach of contract negligence and/or breach of statute) which may be suffered or incurred from or in connection with this information sheet or any Plans attached hereto. Except as expressly provided to the contrary in this information sheet or the attached Plans, all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

We thank you for your enquiry and appreciate your continued use of the Dial Before You Dig Service and/or Uecomm Asset Analysis Service. If you require further information please contact Uecomm on **1800 707 447**.

**IMPORTANT** *This document may be confidential and privileged. Unauthorised use is prohibited. If you have it in error, please notify us and shred this document. Thank you.*

**LEGEND**

- - ELECTRICITY POLE
- - FIBRE OPTIC CABLE
- - CABLE CONDUIT
- - UE P5 PIT
- ▤ - UE P6 PIT
- B/L - BUILDING LINE
- BOK - BACK OF KERB
- - - - - FENCE LINE
- ◼ - TELSTRA MANHOLE
- ⊙ - TELSTRA PIT



Note:  
Conduit depths quoted are approximate only and may change due to unforeseen circumstances. Excavate by hand until conduit depth is determined.

DRAWING NOT TO SCALE

REVISIONS				
11.04.07	A	ADDED QHTHB-155		
27.06.01	-	REDRAWN FROM AUSCABLE DRG CAP 004	GRQ	

**Uecomm**  
Comalco Building  
Level 13  
12 Creek Street  
Brisbane, QLD 4000  
Phone: (07) 3815 9000  
Facsimile: (07) 3211 8960

**Uecomm**<sup>TM</sup>  
MAKING THE CONNECTION  
ACN 079 083 195

DRAWN *G.R.Quin*  
27.06.01

APPROVED  
*D.Alexander*  
27.06.01

UBD REF.  
262-G9,H9,J9,K10

DRG No. OFN5/BNE/4111-4

U/G OPTICAL FIBRE CABLE RUN  
BEUTEL ST TO TYGUM RD VIA  
KINGSTON RD (BRISBANE - BEENLEIGH RD)  
WATERFORD WEST QLD 4133

A

A3