



CONCEPTUAL SITE BASED STORMWATER MANAGEMENT PLAN

1 into 2 Lot Subdivision – 81-83 Winnetts Rd, Loganholme

Project Reference #C19-071

Prepared for: D G Shah c/- Norris Clarke & O'Brien Pty Ltd

June 2020



DOCUMENT INFORMATION

Report Title	Conceptual Site Based Stormwater Management Plan
Prepared for	D G Shah c/- Norris Clarke & O'Brien Pty Ltd
Project Name	1 into 2 Lot Subdivision – 81-83 Winnetts Rd, Loganholme
Project Reference #	C19-071
Certifier	Max Hooper (RPEQ 16633)
Date	June 2020

DOCUMENT CONTROL

Version	Date	Author	Description
A	27/04/2020	Anthony Simonetta	Issued for Approval
B	11/06/2020	Anthony Simonetta	Issued for Approval

CERTIFICATION

I certify that this report has been prepared under my direct supervision, on behalf of Formation Consulting Pty Ltd (trading as Formation Civil):

June 2020

Company Authorised Representative Signature

Date

Mr Maxim L Hooper – MBA, BEng (Civil), CPEng, RPEQ (No. 16633)

Full Name and Qualifications

Disclaimer:

This report is a professional opinion based on the information available at the time of writing. It is not intended as a quote, guarantee or warranty and does not cover any latent defects.

This report has been prepared specifically for the aforementioned client, site and project. It has been written solely for the purpose of providing engineering advice on the above issues for Council for this development site. Please note that this report has been compiled based on the information that is current at the time of report printing, and that the recommendations supplied within this report are based solely on the above.

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1. INTRODUCTION

Formation Civil have been commissioned by D G Shah c/- Norris Clarke & O'Brien Pty Ltd (referred to as the "Client" hereafter) to prepare a Conceptual Site Based Stormwater Management Plan to be submitted to Logan City Council to support a material change of use development application.

1.1 Report Basis

This report has been compiled based on, and with consideration given to:

- a. Council Information Request (Ref: RL/79/2019), dated 22nd November 2019;
- b. Proposed subdivision plan (10646PP, Issue A) prepared by NCOB;
- c. Discussions between Formation Civil and the consultant team,
- d. Detailed site survey (Job No: 1701845) prepared by Axis Surveys Pty Ltd,
- e. Concept House Plans for Subject Lot (Job No: FC0816) prepared by Dixon Homes, and
- f. Site layout

It is to be noted that this report has been compiled based on information current at the time of report printing and the recommendations supplied within this report are based solely on the above.



2. PURPOSE & CONSTRAINTS

2.1 Purpose

The purpose of this Site Based Stormwater Management Plan (SBSMP) is to demonstrate that the new lot and dwelling can be developed without causing actionable nuisance for surrounding residents.

This report deals with analysis of **Stormwater Quantity only**. Given the nature of the development, under the State Planning Policy (SPP) the development is “low-risk” in terms of Stormwater Quality. As a result, the site does not exceed the SPP triggers and **no further analysis of Stormwater Quality is required**.

2.2 Constraints

Key constraints for the proposed development include the following:

- ▲ The landform of the proposed lot currently falls away from the street frontage and does not have a suitable lawful point of discharge at the rear of the lot. Furthermore, the downstream neighbour has not provided their permission to construct infrastructure within their property to allow for a piped connection to the proposed development.
- ▲ The slope of the existing surface is quite significant for a residential property appears on the landslide hazard council overlay. As such, filling the rear of the property for the purpose of obtaining a lawful point of discharge and constructing large retaining walls at approximately 2.5m high would be an inappropriate and costly outcome.



3. SITE CHARACTERISTICS

3.1 Location & Description

The development site exists as a single property and is land described as Lot 59 on SP 268614. The development site has a total area of 958m² and comprises of a single existing residential dwelling.

It is proposed to subdivide the property (1 into 2 Lots). The site is currently under zoning regulations for Logan City Council as Low Density Residential - Suburban. Adjacent land use comprises mixture of low-density residential properties.

The site location is shown in **Figure 1** below. Refer to **Appendix A** for proposed Site Layout.

The site is currently Zoned RLSU00 – Low Density Residential – Suburban.

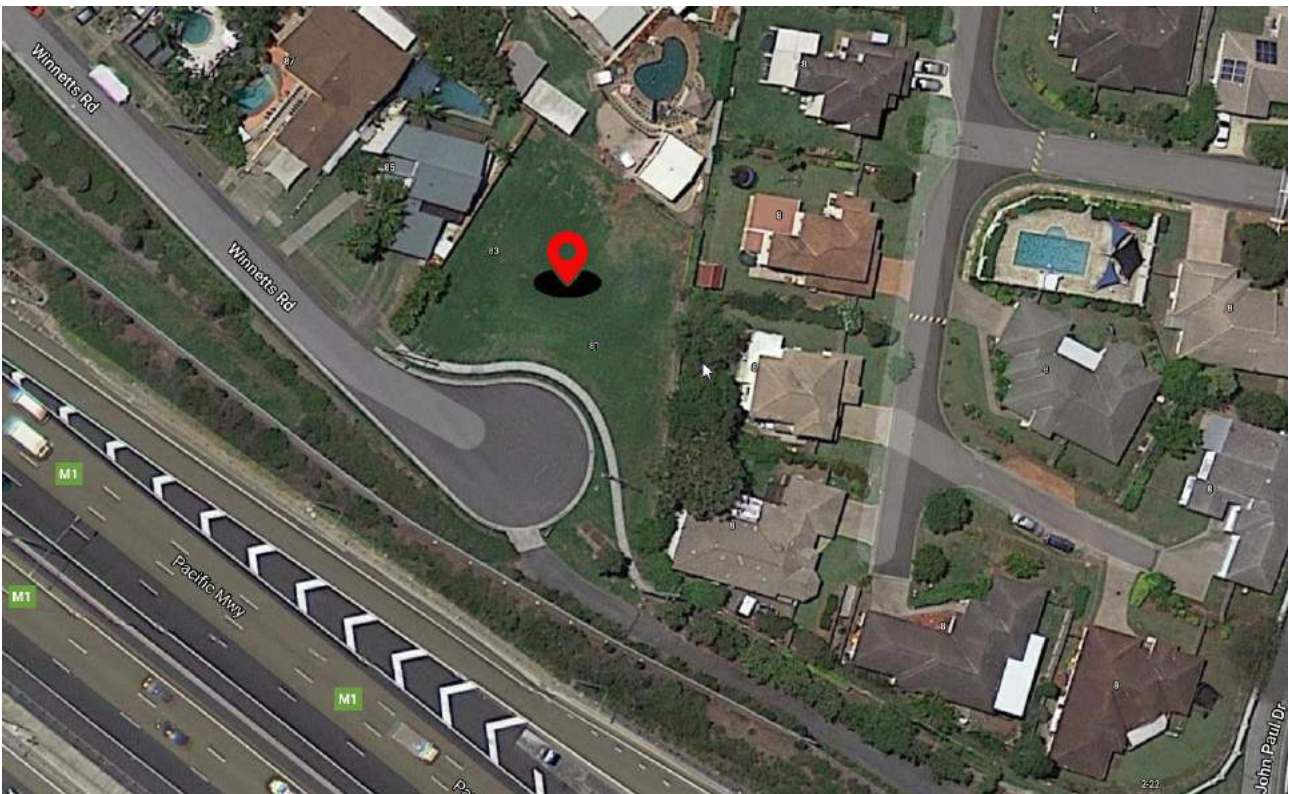


Figure 1 Locality Plan (source: QLD Globe 2.0)

3.2 Topography

The site in its current condition can be classified as a low-density residential property. The site is sloping from the Winnetts Road frontage to the rear of the development. There is approximately 2m fall from south to north.

3.3 Soils

A geotechnical investigation is not available at the time of preparing this report; however, one will be undertaken prior to commencement of site works and building works.

Soil conditions are expected to reflect existing classifications in the area and have a potential for erosion. Specific Erosion and Sediment control measures will be put in place during construction and will be monitored by the supervising engineer.



3.4 Acid Sulphate Soils

According to Council overlay mapping, the site is located within OM-01.01 – potential and actual sulphate soils (>5m AHD <=20m AHD) zone, however ASS's are normally found in Holocene sediments and are generally found at levels lower than 5.0 m AHD. The minimum level of the site is at approximately 17.5m AHD, and there is minimal deep trench excavation or ground disturbance proposed. Therefore, it is not expected that actual ASS will be encountered. However, if acid sulphate soils are encountered on the site, a suitable Acid Sulphate Soils Management Plan will be developed by an appropriately qualified consultant. In addition, management of the acid sulphate soil will be required by the principal contractor in accordance with the requirements of the State Planning Policy involving ASS's.

3.5 Contaminated Soils

It is not expected that contaminated soils will be encountered on the site. If contaminated soils are suspected of being present further protective measures may be required.

3.6 Erosion and Sediment Control

Erosion and sediment control (ESC) measures will be required to be established and maintained in accordance with Logan City Council's standards of best practice. Preparation of a detailed ESC plan showing how ESC will be managed during the construction phase of the project will be required. It will be the responsibility of the Principal contractor to implement, and update as necessary, the requirements of the ESC plan during the construction phase.

3.7 Flooding

The latest Logan City Council's Interactive Mapping (current at the time of this report) shows that the property is not flood affected. The property has no flood levels or flags for building or development purposes.

3.8 Compliance with Development Code & Servicing Requirements

The newly created lot is serviceable with respect to adjacent utility services infrastructure, and likely to comply with Council Planning Scheme development codes. Code compliance will be outlined in the Town Planning Report, prepared by Norris, Clarke & O'Brien (NCOB).

With regards to infrastructure servicing, we note the following:

- ▲ **Stormwater** – A pumped stormwater discharge solution is proposed for Lot 62, to discharge to the existing stormwater manhole located at the head of the Winnetts Road cul-de-sac. It is proposed to retain the existing roofwater plumbing for the existing dwelling to be retained on proposed Lot 61, which is plumbed into the existing soakage pit on that property.
- ▲ **Sewer** – An existing sewer traverses the site from the western boundary and appears to terminate inside Lot 62 (to be confirmed on-site or with detailed survey). A new house connection can be finalised for Lot 62 whilst the house connection for the existing dwelling on Lot 61 shall be retained
- ▲ **Water** – A water reticulation main exists under the road pavement on Winnetts Road and crosses the site frontage. It is proposed to retain the existing water meter for the existing dwelling on Lot 61 and install a new property connection and water meter to service proposed Lot 62.
- ▲ **Electricity** – Existing overhead power lines exist on the opposite side (i.e. southern verge) of Winnetts Road. A new property pole will be required for proposed Lot 62, whilst the property pole for the existing dwelling on Lot 61 is to be retained.
- ▲ **Telecommunications** – Existing underground telecommunications and pits exist on the Winnetts Road verge crossing the property. A new connection to Lot 62 will be possible and Lot 61 is already connected.



4. STORMWATER QUANTITY MANAGEMENT

4.1 Runoff Characteristics & Lawful Point of Discharge

4.1.1 Catchments

There is a small existing catchment of approximately 2,000m² east of the development site. By contour analysis, this catchment appears to affect the eastern portion of the site, however a site inspection has revealed no evidence to suggest that the catchment enters the site. Local undulation appears to direct the catchment in a western direction on to Winnetts Road. This is due to sheet flow conditions created by the level surface across the pedestrian link path. This sheet flow is pushed toward Winnetts Road at an approximate grade of 5% and local vegetation assists in directing the sheet flow away from the development. The Winnetts Road frontage of the development site has kerb and channel to direct any flows away from the site in a westerly direction. A more pronounced bund could be introduced alongside the pedestrian path to further aid the desired direction of runoff.



4.1.2 Existing Runoff

Based on detailed site survey, it is evident that the existing runoff is allowed to sheet flow downstream. No existing drainage infrastructure exists within the development site.

4.1.3 Existing Dwelling, Retention of Existing Soakage Pit

It is noted that the stormwater analyses and pumped discharge calculations are provided for the newly created lot only (Lot 62). It is proposed to retain the existing roofwater plumbing for the existing dwelling to be retained on proposed Lot 61, which is plumbed into the existing soakage pit on that property.

The soakage pit was approved by Logan City Council as part of the Material Change of Use application (MCUC/20/2018) for the construction of the new dwelling. Logan Council have confirmed that the reuse of the soakage pit for the existing dwelling on proposed Lot 61 is acceptable. Details are included in **Appendix E**.



4.1.4 Proposed Runoff

Roof water flows from the future buildings shall be captured by gutters and discharged via downpipes to a below ground tank, this tank will be used to attenuate flows such as to achieve no worsening from the pre-development scenario in the post-development condition. The inflow from the tank will be pumped to the lawful point of discharge being an existing stormwater manhole within Winnetts Rd.

Any excess runoff from ground and surface areas in the catchment, not captured by the pit and pipe system will be allowed to sheet flow overland to the rear of the property, as is currently the case.

4.1.5 Lawful Point of Discharge

The Queensland Urban Drainage Manual (QUDM) 4th Edition 2017, defines a two-point test that can be used to assess whether a lawful point of discharge exists at a particular location, consisting of:

1. The location of the discharge is under the lawful control of the local government or other statutory authority from whom permission to discharge has been received. This will include a park, drainage or road reserve, or stormwater drainage easement.
2. In discharging to that location, the discharge will not cause an actionable nuisance (i.e. a nuisance for which the current or some future neighbouring proprietor may bring an action or claim for damages arising out of the nuisance) or environmental or property damage.

The landform of the proposed lot currently falls away from the street frontage and does not have a suitable lawful point of discharge at the rear of the lot. Furthermore, the downstream neighbour has not provided their permission to construct infrastructure within their property to allow for a piped connection to the proposed development.

Filling the rear of the property for the purpose of obtaining a lawful point of discharge to the kerb and channel and constructing large retaining walls at approximately 2.5m high would be an inappropriate and costly outcome.

As a gravity solution is unattainable, it is appropriate that a pumped solution be adopted to manage the discharge of stormwater from the property.

Pump Systems shall discharge directly to a gully, maintenance structure, or drainage line. It is not recommended to discharge directly to the kerb and channel. Where the kerb and channel is the only lawful point of discharge, the outlet from the pump must feed to a storage maintenance hole which then drains by gravity to the kerb and channel.

The discharge of stormwater from the pumped system will be to an existing manhole within Winnetts Rd.

4.2 Stormwater Discharge (calculated using the Rational Method)

A preliminary assessment of stormwater discharge has been undertaken using The Rational Method in accordance with Council's engineering planning scheme policies and QUDM.

Rational method calculations have been attached in **Appendix B**.

The findings are presented in the below sections.

4.2.1 Pre-Development Stormwater Discharge

Table 1 Pre-Development Catchments (Rational)

Development Site Area (m ²)	Pre-Development Impervious Area (m ²) (%)	Pre-Development Pervious Area (m ²) (%)
384 m ² (Lot 62 Only)	0%	100%

Time of Concentration = 8 Minutes

Recommended roof drainage travel times; QUDM V4 Table 4.6.2.



C₁₀ Runoff Coefficient = 0.71

QUDM V4, Table 4.5.3 – Table of C₁₀ Values

Table 2 Pre-Development Discharge (calculated using the Rational Method)

ARI (yr)	AEP	C	I (mm/hr)	Pre-Development Discharge (m ³ /s)
1	63%	0.57	97	0.006
2	39%	0.60	110	0.007
5	18%	0.67	150	0.011
10	10%	0.71	176	0.013
20	5%	0.75	202	0.016
50	2%	0.82	236	0.021
100	1%	0.85	262	0.024

4.2.2 Post-Development Stormwater Discharge

Table 3 Post-Development Catchment (Rational)

Development Site Area (m ²)	Post-Development Impervious Area (m ²) (%)	Post-Development Pervious Area (m ²) (%)
384 m ² (Lot 62 Only)	75%	25%

Time of Concentration = 5 Minutes

Recommended roof drainage travel times; QUDM V4 Table 4.6.3.

C₁₀ Runoff Coefficient = 0.78

QUDM V3, Table 4.5.3 – Table of C₁₀ Values

Table 4 Post-Development Discharge – Unmitigated (calculated using the Rational Method)

ARI (yr)	AEP	C	I (mm/hr)	Post-Development Discharge (m ³ /s)
1	63%	0.62	104	0.007
2	39%	0.66	118	0.008
5	18%	0.74	162	0.013
10	10%	0.78	192	0.016
20	5%	0.82	221	0.019
50	2%	0.90	259	0.025
100	1%	0.94	288	0.029



4.2.3 Pre vs Post Comparison

From the calculations undertaken, a comparison of pre-development and post-development stormwater discharge is presented in **Table 5** below.

Table 5 Comparison of Pre & Post-Development Discharge (calculated using the Rational Method)

Catchment	ARI (yr)	AEP	Total Site Discharge			
			Pre-Development Discharge (m ³ /s)	Post-Development Discharge (m ³ /s)	Difference + / - (m ³ /s)	Difference + / - (%)
Site	1	63%	0.006	0.007	+0.001	+16.7
	2	39%	0.007	0.008	+0.001	+14.3
	5	18%	0.011	0.013	+0.002	+18.2
	10	10%	0.013	0.016	+0.003	+23.1
	20	5%	0.016	0.019	+0.003	+18.8
	50	2%	0.021	0.025	+0.004	+19.0
	100	1%	0.024	0.029	+0.005	+20.8

4.2.4 Summary of Preliminary Assessment

As can be identified in **Table 5**, there is an increase in post-development stormwater discharge. This increase in post-development discharge will adversely affect surrounding properties and existing infrastructure.

Detailed hydraulic modelling and analysis will be undertaken to develop a suitable stormwater management plan where peak post development discharge rates are mitigated to the peak pre-development discharge rates. The solution will be a pumped system with a maximum allowable discharge capacity limited to the pre-development minor (2 yr ARI / 39% AEP) flow. These calculations are detailed in **Section 5**.



5. PUMP SYSTEM DESIGN

As the proposed development incorporates a material change of use application with Logan City Council a pumped solution has been adopted as a gravity solution is unavailable.

5.1 Pump Storage and Design Parameters

- 1) The design of any pump well storage and pump design must be in accordance with AS3500.3 Plumbing and Drainage – Stormwater Drainage.
- 2) The tank should be sized to be no-less than the run-off from a 120minute duration 5% AEP storm. This will necessitate approximately 9,500L of storage per 100m² of roof area.
- 3) Pump Systems shall discharge directly to a gully, maintenance structure, or drainage line. It is not recommended to discharge directly to the kerb and channel. Where the kerb and channel is the only lawful point of discharge, the outlet from the pump must feed to a storage maintenance hole which then drains by gravity to the kerb and channel.
- 4) All pump systems must provide an overflow (in case of failure) to a soakage trench located along the boundary of the lowest part of the site.
- 5) The pump well design must consider the following factors:
 - a) minimise deposition of solids;
 - b) excessive foaming and air entrainment (usually caused by stormwater dropping from a high-level inlet pipe) in the wet well to be avoided;
 - c) structural design to resist uplift, soil and water pressures;
 - d) suitable openings to enable pump removal, and for electrical and pipe work access;
 - e) sufficient space provided around the chamber for maintenance access and sufficient headroom for lifting tackle to be erected so as to raise the pumps if necessary.
- 6) The pump design must consider the following factors:
 - a) in addition to the operating duty pump, an equivalent standby pump (i.e. of equal size to duty pump) must be installed to safeguard against mechanical failure;
 - b) in order to assure reliability of the standby pump, the pumping system must be set up by automatic rotation to ensure that the hours run by both the duty and standby pumps are approximately similar;
 - c) a submersible wet well centrifugal-type pump normally employed in the wastewater industry is to be adopted;
 - d) the inclusion of uninterrupted power supply.
- 7) The property owner is responsible for all costs associated with installation, operation and maintenance and is liable for all damages as a result of system malfunction.



5.2 Pump Well and Pump Design Calculations

The design of the pump well should adopt the minimum parameters as set out in section 5.1 above. However, the tank and pumped solution in this scenario is designed for two functions. As well as pumping captured runoff, there is need to limit the pump flow rate to the 39% AEP pre-development flow to maintain pre-development discharge rates. An experienced pump designer shall consider these design input values when selecting a pump and calculating the specific friction losses. Formation Civil should be contacted to determine the exact pump well storage at time of detailed design.

Roof Area	150m ² Maximum
Maximum Discharge Rate	7l/s or 25m ³ /hr
Minimum Tank Size	14,250L



6. CONCLUSION

This conceptual Site Based Stormwater Management Plan (SBSMP) has been prepared by Formation Civil.

The Rational Method was used to calculate the pre-development and post development runoff. Any increases in post-development stormwater discharge were identified. Rational method calculations are attached in **Appendix B**.

A gravity stormwater solution is not available for the proposed development.

A pumped system is to be adopted for the management of stormwater discharge from the development site.

The lawful point of discharge is to an existing maintenance structure located within Winnetts Road.

As a result, the development complies with the requirements of the Queensland Urban Drainage Manual (QUDM) 4th Edition 2017 and Logan City Council Planning Scheme Policy (PSP) No. 5 – Infrastructure.

Formation Civil believe sufficient information has been provided in order for Logan City Council to approve the development.



7. REFERENCES

Logan City Council, 2016. Logan Planning Scheme 2015 Version 5.1 Planning Scheme Policy (PSP) 5 – Infrastructure

Logan City Council, 2016. Logan Planning Scheme 2015 Version 5.1 Part 9 – Development Codes; Filling and Excavation Code, Infrastructure Code and Service, Access and Parking Code

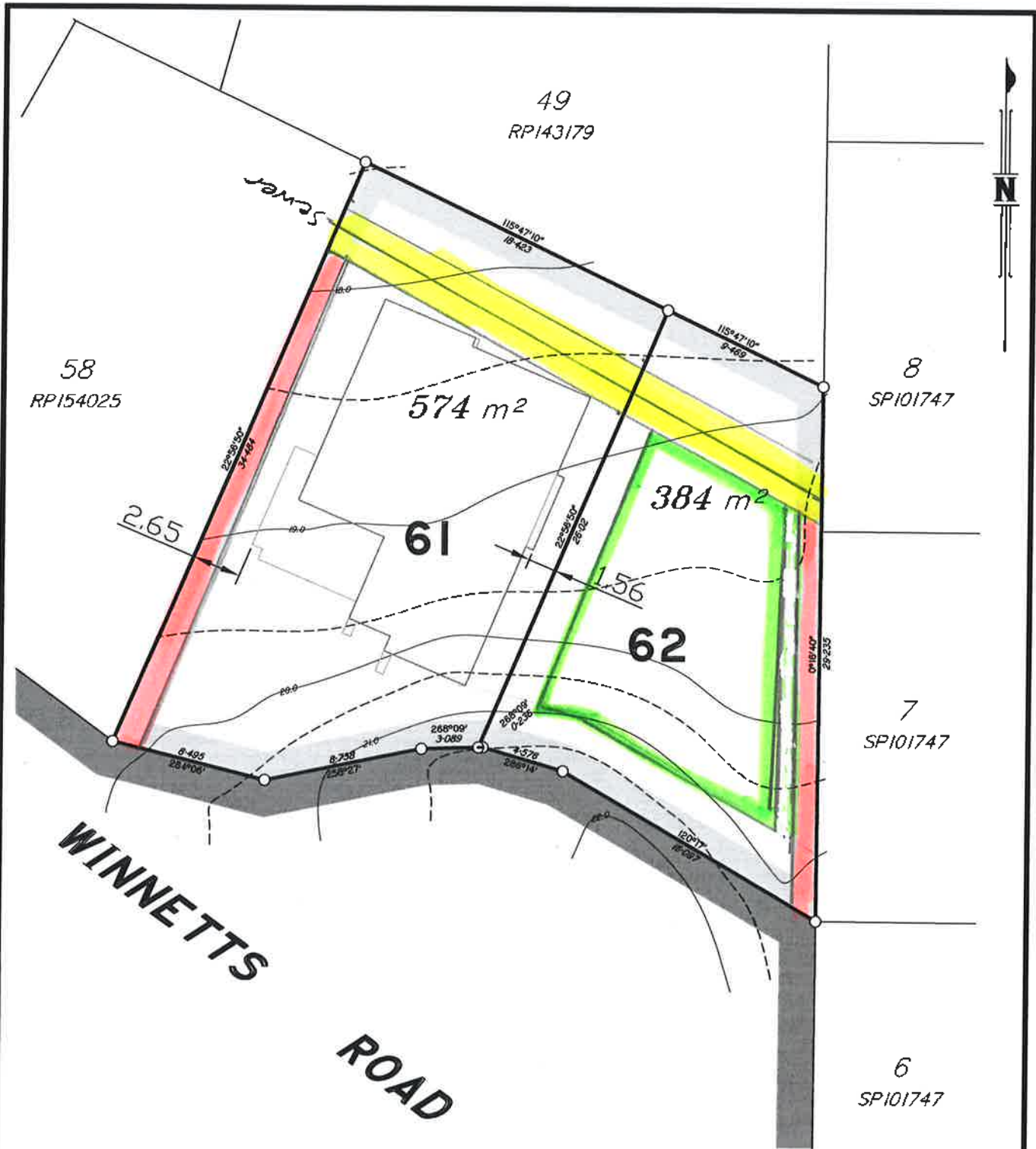
Brisbane City Council, 2014, Brisbane City Plan, Schedule 6, Planning Scheme Policies, Infrastructure Design PSP, Chapter 7 Stormwater Drainage.

Department of Energy and Water Supply, Queensland Urban Drainage Manual 4th Edition 2017. Queensland Government, Queensland.

Department of Infrastructure, Local Government and Planning, State Planning Policy, July 2017, Queensland Government, Queensland.

APPENDIX A
PROPOSAL PLAN, SITE SURVEY &
HOUSE PLAN





Proposed Lots 61 & 62 are residential lots.
Contours from field survey supplied.

TOTAL AREA 958 m²
No. of Lots 2

ISSUE	AMENDMENTS	DATE
A	ORIGINAL ISSUE	25/09/19

NOTE:
This plan is of a Proposed Subdivision to accompany a Subdivision Application and should not be used for any other purpose. The dimensions, areas and total number of lots shown hereon are subject to field survey and also to the requirements of Council and any other authority which may have requirements under any relevant legislation. In particular, no reliance should be placed on the information on this plan for any financial dealings involving the land.

PROPOSED SUBDIVISION

LOTS 61 & 62

Cancelling Lot 59 on SP268614
81-83 WINNETTS ROAD, DAISY HILL
Logan City Council

Scale in Metres **1:300 at A4**

Norris Clarke & O'Brien Pty Ltd
Licensed Surveyors
Town Planners
Development Consultants

NCB
Level 1 - Aldi Centre, 12 Bishop Street
Kelvin Grove QLD 4059
ph: 07 3012 0000 fax: 07 3012 0099
email: info@ncob.com.au
ACN 056 870 770 ABN 15 058 870 770

Date 20/09/19 Dwg. 10646PP-A.DWG
Ref. **10646PP** Issue **A**

EARTHWORKS
GL: 19.6 approx
FFL: 19.9 approx

Equal Cut & Fill

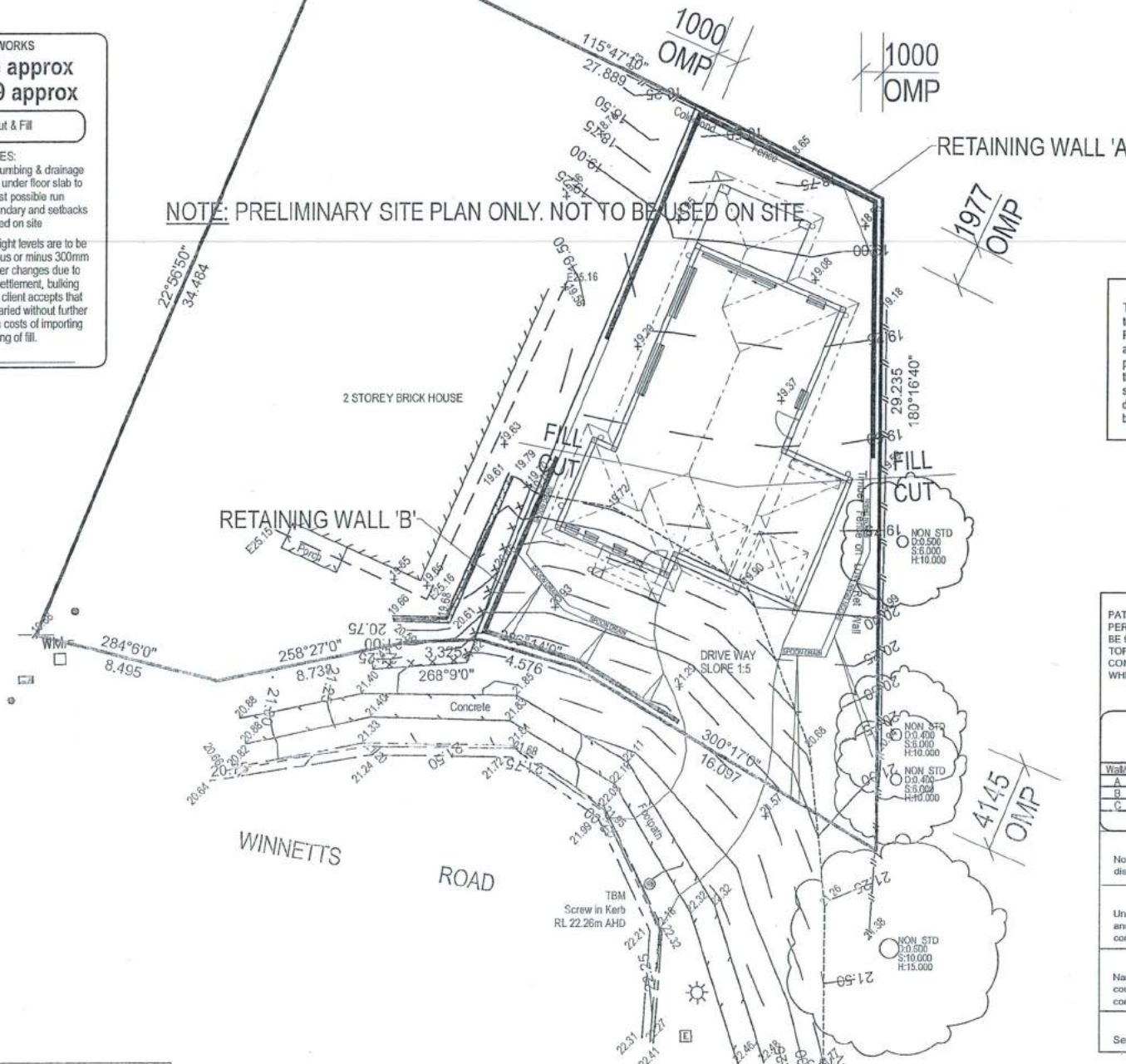
NOTES:

- * When preparing plumbing & drainage plan, position pipes under floor slab to allow for shortest possible run
- * All dimensions, boundary and setbacks to be verified on site

The pad and slab height levels are to be read as that stated plus or minus 300mm and subject to further changes due to moisture content, settlement, bulking and / or similar. The client accepts that those levels will be varied without further notice to avoid extra costs of importing or disposing of fill.

CLIENT _____

NOTE: PRELIMINARY SITE PLAN ONLY. NOT TO BE USED ON SITE



LEGEND

- Valve
- Slam Water
- MH
- Sewer MH
- Water Meter
- Comms Pit
- Electric Box
- Roof Outlet
- Fire Hydrant
- Survey Stn
- Survey Stn

EARTHWORKS

GL: _____ approx/FFL

- Equal Cut & Fill
- Unequal Cut & Fill
- Side Scrape & Compact to provide

NOTES:

- * When preparing plumbing and drainage plan, position pipes under floor slab to allow for shortest possible run
- * All dimensions, boundary and setbacks to be verified on site.

CLIENT: _____

ROOFWATER

- To Street Channel or Gully
- To Connection Point
- To Dispersion Pads
- To Rubble Pits (Min 6m from house & 1.5m from Body)
- To Water Tanks

CLIENT _____

CLIENT _____

DATE _____

BUILDER _____

DATE _____

PATH OR PAD AGAINST PERIMETER OF HOUSE TO BE 90mm MINIMUM BELOW TOP OF EXPOSED EDGE CONCRETE OR WEEP HOLES WHEN APPLICABLE

75 GARAGE DOOR
 90mm STEP
 Path
 Driveway

NOT TO BE MODIFIED WITHOUT WRITTEN AUTHORITY

RETAINING WALLS

Retaining walls by Owner
 Batter Earthworks to Suit

Walls	Max Height (mm)	Timber	Block	Cut	Fill
A	1000				
B	1000				
C					

NOTE

No work to commence on site or at the builders discretion until retaining walls are complete.

NOTE

Underground service locations are approximate only and should be verified by local authority prior to construction.

NOTE

Natural surface levels supplied may differ from councils definition of natural surface levels. Please contact us if further clarification is necessary.

NOTE

Sewer Information not provided by Dixon Homes

BATTER ANGLES

Batter angles are to comply with local government requirements and are to conform as follows:

- CLAY BASED SOILS -
 - 1 Vertical to 1 Horizontal
- SANDY SOILS -
 - 1 Vertical to 2 Horizontal
- WEATHER ROCK -
 - 1 Vertical to 1.5 Horizontal
- MASSIVE ROCK -
 - Almost Vertical

SERVICES NOTE

Services shown hereon have been located where possible by field survey. If not able to be located, services have been plotted from the records of the relevant authorities where available. Prior to any excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services.

FLOOD LEVELS

Spencer Surveys have not performed a flood level search on this property. If required please contact this office for further information.

SERVICES

Sewerage	yes
Stormwater	yes
Water	yes
Electricity	overhead
Telephone	overhead
Gas	no
Road	bitumen
Kerb	non mountable
Footpath	concrete
Flood Affected	check council
Soil	sandy clay
Grass	yes Coverage 40%

Scale 1:200 - Lengths are in Metres.

A = Apex Level
 R = Roof/Eave Level

Datum for Levels AHD
 Levelled from GNSS.....RL AHD

ISSUE	DESCRIPTION	DATE	SIGNED	ISSUE	DESCRIPTION	DATE	SIGNED
	A			Original		13/05/2020	

CLIENT: Dixon Homes

NOTES:
 ALL FEATURES AND SERVICES VISIBLE AT TIME OF SURVEY HAVE BEEN LOCATED BY FIELD MEASUREMENT. WHERE SERVICES HAVE BEEN PLOTTED FROM DIMENSIONS TAKEN FROM SERVICE PROVIDERS RECORDS A NOTATION HAS BEEN MADE ON FACE OF PLAN. WHERE ANY CONSTRUCTION WORK IS TO OCCUR NEAR SERVICES EXACT LOCATIONS NEED TO BE DETERMINED TO ENSURE APPROPRIATE CLEARANCES ARE ACHIEVED PRIOR TO EXCAVATION CONSTRUCTION. THIS NOTE FORMS AN INTEGRAL PART OF THIS PLAN.
 SEE AUTOCAD LAYER HGT-OFF FOR LEVELS THAT ARE NOT SHOWN

Surveyor: ADW
 Datum: AHD

Drawn: ADW
 Checked: MBS

Description: Detail Survey

Lot 59
 81-83 Winnetts Road, Daisy Hill

Logan City Council
 m

Scale in Metres: 200 at A3

SPENCER
 surveys

1300 185 040
 martin@spencersurveys.com.au
 PO BOX 519 CANNON HILL Q 4170

COMP FILE 145903 DTM
 F.B.

ISSUE: 13/05/2020 Ref. 145903

Ref: 145903 DTM

Ref: 145903 DTM

APPENDIX B
STORMWATER CALCULATIONS
(RATIONAL METHOD)



RATIONAL METHOD CALCULATIONS

Pre-Development

Project: 81-83 Winnetts Road, Shailer Park
Location of Discharge: Logan City Council
Catchment Condition: Local Catchment (Site Only)
Other Comments: -

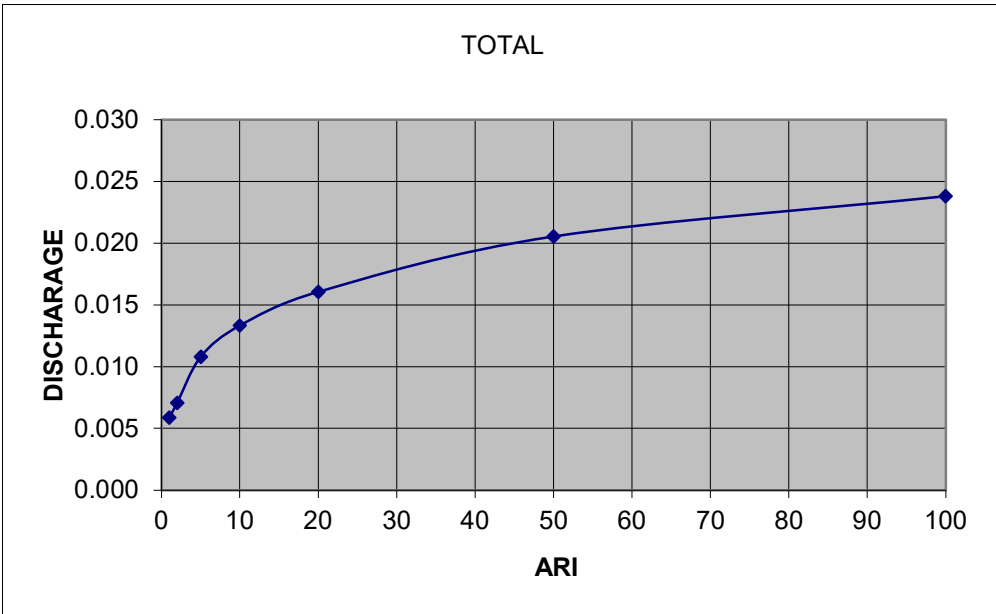
Time of Concentration:	8.0	minutes	
	Site	External	Total
Sub-Catchment Areas (ha)	0.038	0.00	0.04 ha
C10 Runoff Coefficients	0.71	0.00	

ARI (years)	Rainfall		F _y	Runof Coefficient			Discharges (cumecs)			TOTAL
	Intensity (mm/hr)	Depth (mm)		Site	External	0	Site	Ext.	0	
1	97	13	0.80	0.57	0.00	0.0	0.006	0.000	0.0	0.006
2	110	15	0.85	0.60	0.00	0.0	0.007	0.000	0.0	0.007
5	150	20	0.95	0.67	0.00	0.0	0.011	0.000	0.0	0.011
10	176	23	1.00	0.71	0.00	0.0	0.013	0.000	0.0	0.013
20	202	27	1.05	0.75	0.00	0.0	0.016	0.000	0.0	0.016
50	236	31	1.15	0.82	0.00	0.0	0.021	0.000	0.0	0.021
100	262	35	1.20	0.85	0.00	0.0	0.024	0.000	0.0	0.024

<u>Friend's Equation for shallow overland flow</u>		
Travel Length:		metres
Fall:		metres
Cathcment Slope:		%
Horton's roughness value (n)		
Travel Time - from QUDM V3 Section 4.6.6 (c)	0.0	min
<u>Pipe and Channel Flow</u>		
Flow Distance:	-	metres
Fall of Pipe/Channel	-	m
Flow Time from QUDM V3 Fig. 4.8 lookup	0.0	min
<u>Standard Inlet Times</u>		
Inlet Time from QUDM V3 Table 4.6.2	0.0	min
TIME OF CONCENTRATION	8.0	min

ARI	% of Q100
1	22%
2	30%
5	44%
10	53%
20	65%
50	85%
100	100%

Frequent Discharge		
ARI's	% of Q1	
1mth	0.165	25%
2mth	0.264	40%
3mth	0.330	50%
4mth	0.396	60%
6mth	0.495	75%
9mth	0.594	90%
12mth	0.660	100%



HORTON'S 'n'	
Paved Surface	0.015
Bare Soil	0.0275
Poorly Grassed	0.035
Average Grassed	0.045
Densely Grassed	0.06

RATIONAL METHOD CALCULATIONS

Post Development

Project: 81-83 Winnetts Road, Shailer Park
Location of Discharge: Logan City Council
Catchment Condition: Local Catchment (Site Only)
Other Comments: -

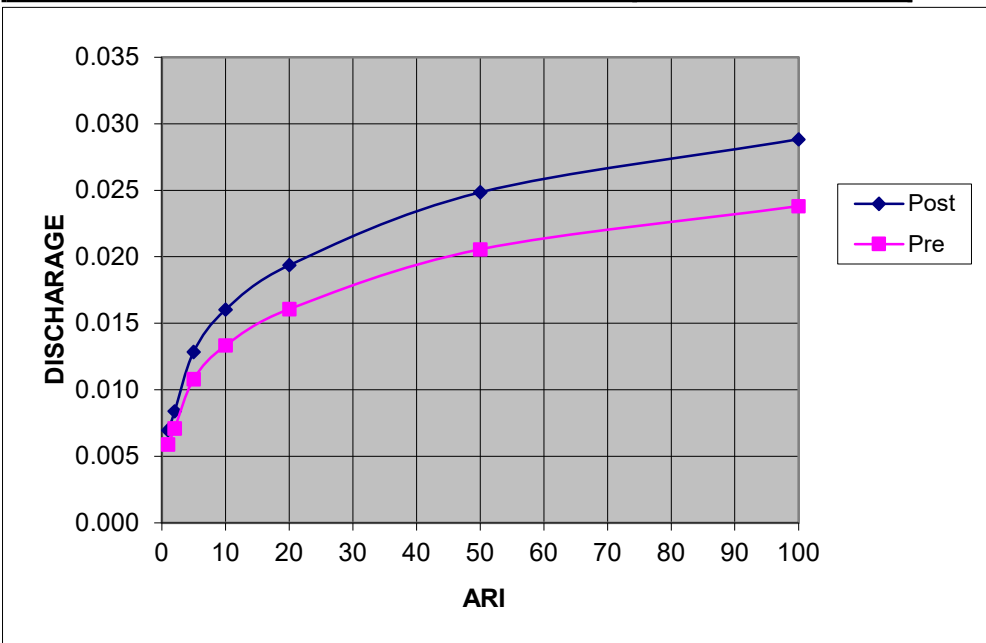
Time of Concentration:	6.0	minutes	
	Site	External	Total
Sub-Catchment Areas (ha)	0.039	0.00	0.04 ha
C10 Runoff Coefficients	0.78	0.00	

ARI (years)	Rainfall Intensity Depth		F _y	Runof Coefficient			Discharges (cumecs)			TOTAL
	(mm/hr)	(mm)		Site	External	0	Site	Ext.	0	
1	104	10	0.80	0.62	0.00	0.0	0.007	0.000	0.0	0.007
2	118	12	0.85	0.66	0.00	0.0	0.008	0.000	0.0	0.008
5	162	16	0.95	0.74	0.00	0.0	0.013	0.000	0.0	0.013
10	192	19	1.00	0.78	0.00	0.0	0.016	0.000	0.0	0.016
20	221	22	1.05	0.82	0.00	0.0	0.019	0.000	0.0	0.019
50	259	26	1.15	0.90	0.00	0.0	0.025	0.000	0.0	0.025
100	288	29	1.20	0.94	0.00	0.0	0.029	0.000	0.0	0.029

<u>Friend's Equation for shallow overland flow</u>	
Travel Length:	metres
Fall:	metres
Catchment Slope:	%
Horton's roughness value (n)	
Travel Time - from QUDM V3 Section 4.6.6 (c)	0.0 min
<u>Pipe and Channel Flow</u>	
Flow Distance:	0.0 metres
Fall of Pipe/Channel	0.0 m
Flow Time from QUDM V3 Fig. 4.8 lookup	0.0 min
<u>Standard Inlet Times</u>	
Inlet Time from QUDM V3 Table 4.6.2	0.0 min
TIME OF CONCENTRATION	6.0 min

ARI	% of Q100
1	22%
2	30%
5	44%
10	53%
20	65%
50	85%
100	100%

Frequent Discharge		
ARI's	% of Q1	
1mth	0.165	25%
2mth	0.264	40%
3mth	0.330	50%
4mth	0.396	60%
6mth	0.495	75%
9mth	0.594	90%
12mth	0.660	100%



HORTON'S 'n'	
Paved Surface	0.015
Bare Soil	0.0275
Poorly Grassed	0.035
Average Grassed	0.045
Densely Grassed	0.06

APPENDIX C
DIAL BEFORE YOU DIG (DBYD)





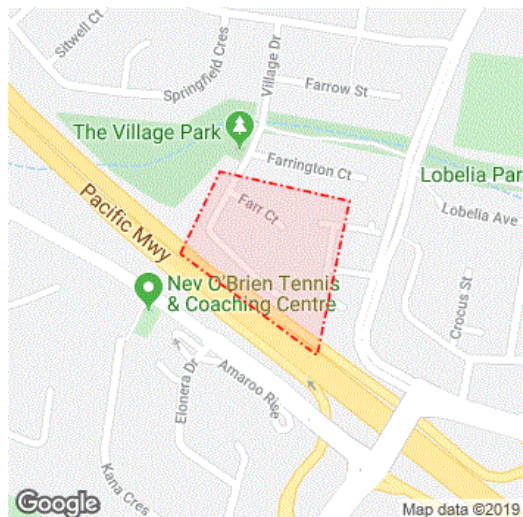
Caller Details

Contact: Mr Max Hooper
Company: Hooper Civil
Address: 33 Beaton Street
Coopers Plains QLD 4108

Caller Id: 1846581
Phone: 0413 690 705
Mobile: 0413 690 705
Fax: Not Supplied
Email: max@hoopercivil.com.au

Dig Site and Enquiry Details

WARNING: The map below only displays the location of the proposed dig site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.



User Reference: Not Supplied
Working on Behalf of: Private
Enquiry Date: 16/12/2019
Start Date: 11/03/2020
End Date: 20/05/2020

Address:
81 Winnetts Road
Daisy Hill QLD 4127

Job Purpose:
Excavation

Location of Workplace:
Both

Onsite Activity:
Mechanical Excavation
Location in Road:
CarriageWay, Footpath

- Check the location of the dig site is correct. If not submit a new enquiry.
- If the scope of works change, or plan validity dates expire, resubmit your enquiry.
- Do NOT dig without plans. Safe excavation is your responsibility. If you do not understand the plans or how to proceed safely, please contact the relevant asset owners.

Notes/Description of Works:

Your Responsibilities and Duty of Care

- The lodgement of an enquiry does not authorise the project to commence. You must obtain all necessary information from any and all likely impacted asset owners prior to excavation.
- If plans are not received within 2 working days, contact the asset owners directly & quote their Sequence No.
- ALWAYS perform an onsite inspection for the presence of assets. Should you require an onsite location, contact the asset owners directly. Please remember, plans do not detail the exact location of assets.
- Pothole to establish the exact location of all underground assets using a hand shovel, before using heavy machinery.
- Ensure you adhere to any State legislative requirements regarding Duty of Care and safe digging requirements.
- If you damage an underground asset you MUST advise the asset owner immediately.
- By using this service, you agree to Privacy Policy and the terms and disclaimers set out at www.1100.com.au
- For more information on safe excavation practices, visit www.1100.com.au

Asset Owner Details

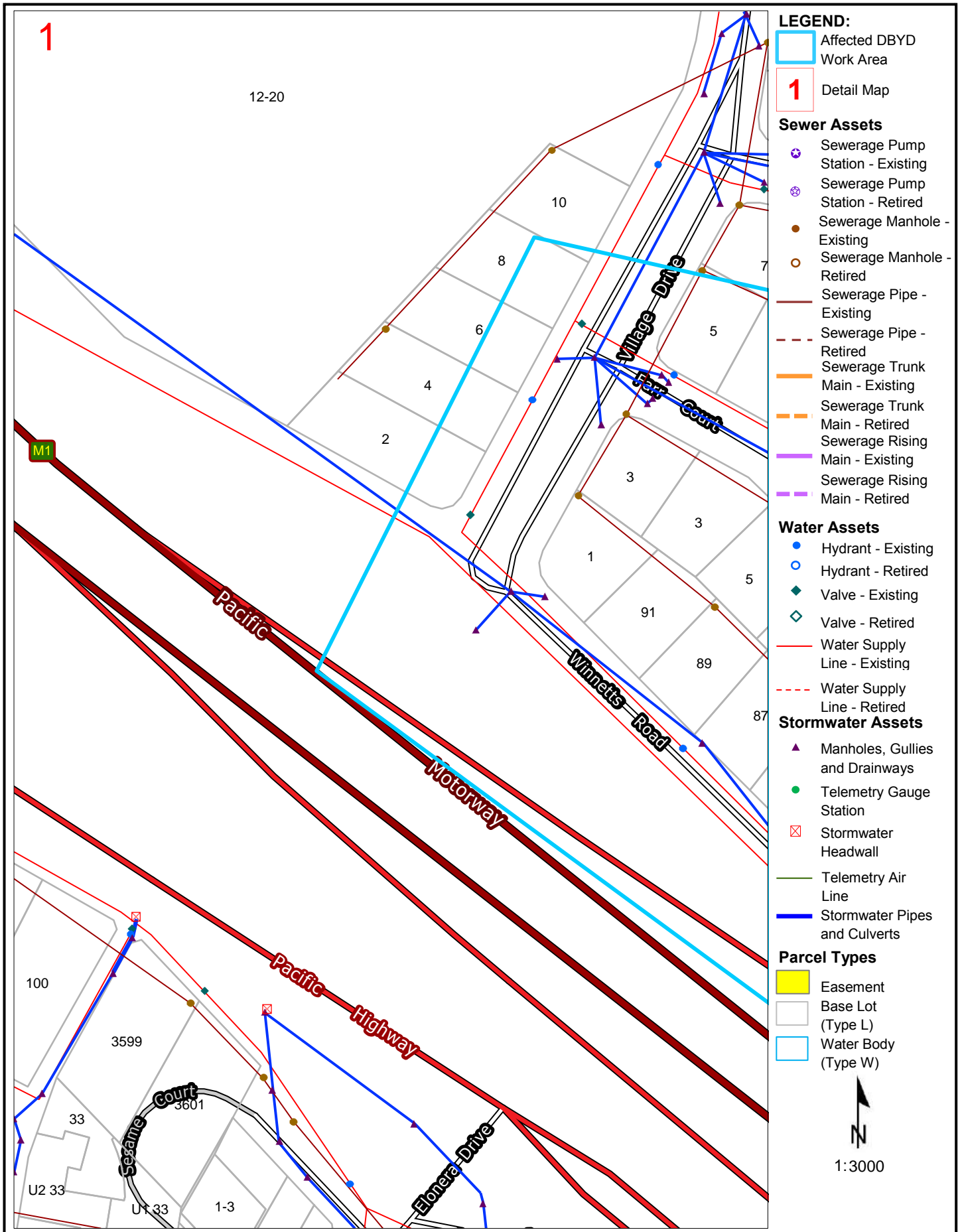
The assets owners listed below have been requested to contact you with information about their asset locations within 2 working days. Additional time should be allowed for information issued by post. It is **your responsibility** to identify the presence of any underground assets in and around your proposed dig site. Please be aware, that not all asset owners are registered with the Dial Before You Dig service, so it is **your responsibility** to identify and contact any asset owners not listed here directly.

** Asset owners highlighted by asterisks ** require that you visit their offices to collect plans.

Asset owners highlighted with a hash require that you call them to discuss your enquiry or to obtain plans.

Seq. No.	Authority Name	Phone	Status
93184712	AAPT / PowerTel, QLD	1800786306	NOTIFIED
93184716	Energex, Electricity (Qld)	0736645400	NOTIFIED
93184715	Logan City	0734124482	NOTIFIED
93184719	NBN Co, Qld	1800626329	NOTIFIED
93184714	Nextgen, NCC - QLD	1800032532	NOTIFIED
93184718	Optus and/or Uecomm, Qld	1800505777	NOTIFIED
93184713	PIPE Networks, Qld	1800201100	NOTIFIED
93184720	SEQ Water	0730355677	NOTIFIED
93184717	Telstra QLD, FA	1800653935	NOTIFIED

END OF UTILITIES LIST



LEGEND:

- Affected DBYD Work Area
- 1 Detail Map

Sewer Assets

- ☆ Sewerage Pump Station - Existing
- ⊗ Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- - - Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- - - Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- - - Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- ◆ Valve - Existing
- ◇ Valve - Retired
- Water Supply Line - Existing
- - - Water Supply Line - Retired

Stormwater Assets

- ▲ Manholes, Gullies and Drainways
- Telemetry Gauge Station
- ⊠ Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

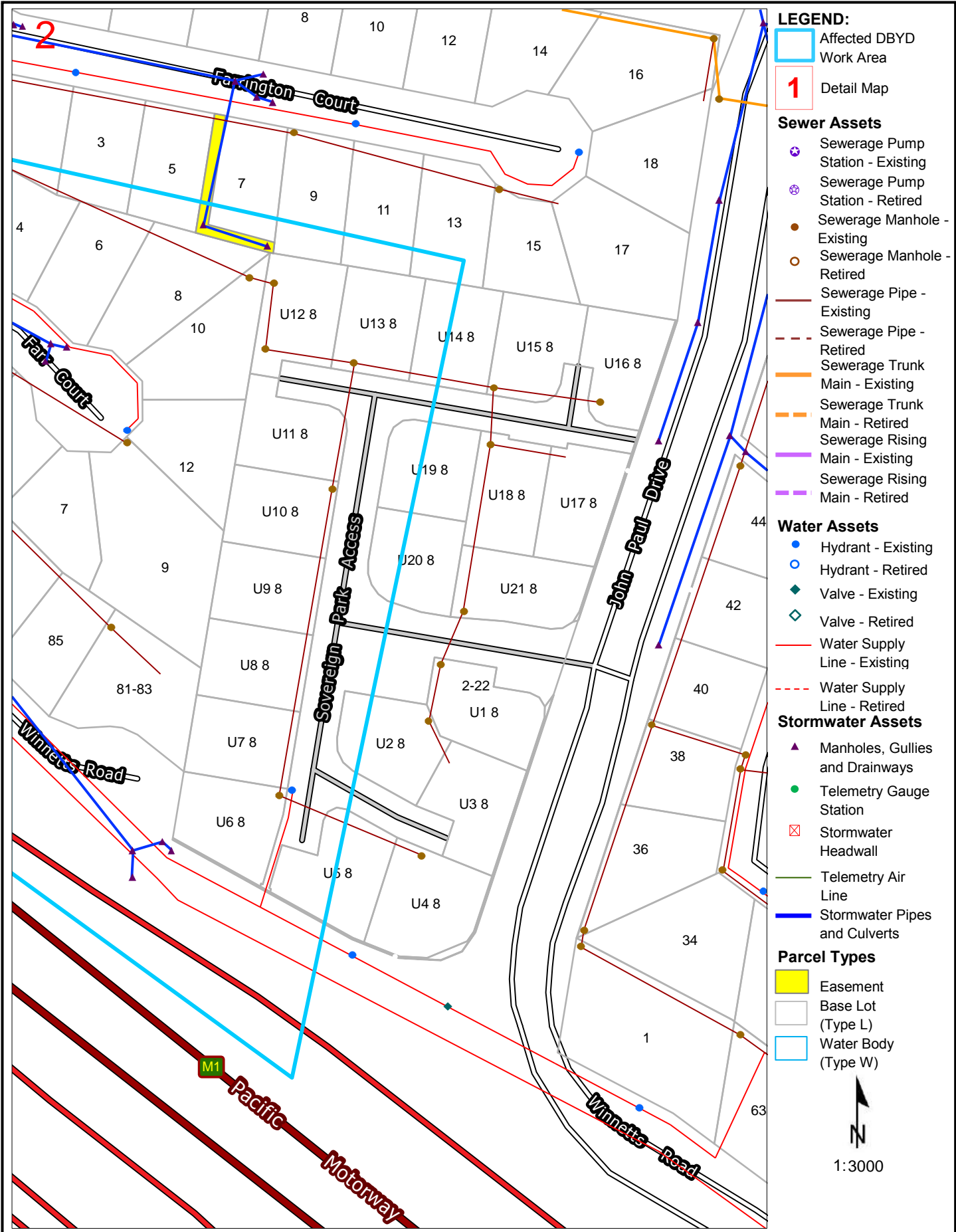
Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

N
1:3000

Disclaimer: The plans are indicative only and while all reasonable care has been taken in producing this information, Logan City Council does not warrant the accuracy, completeness or currency of this information and accepts no responsibility for, or in connection with any loss or damage suffered as a result of any inaccuracies, errors or omissions or your reliance on this information. Base material reproduced with permission of the Director-General, Department of Natural Resources and Mines. The State of Queensland (Department of Natural Resources and Mines).

Logan City Council's infrastructure dates back over many years and may include manufactured materials containing asbestos. You are solely responsible for ensuring that appropriate care is taken at all times and that you comply with all mandatory requirements relating to such matters, including but not limited to "workplace health and safety".



LEGEND:

- Affected DBYD Work Area
- 1 Detail Map

Sewer Assets

- ✱ Sewerage Pump Station - Existing
- ✱ Sewerage Pump Station - Retired
- Sewerage Manhole - Existing
- Sewerage Manhole - Retired
- Sewerage Pipe - Existing
- - - Sewerage Pipe - Retired
- Sewerage Trunk Main - Existing
- - - Sewerage Trunk Main - Retired
- Sewerage Rising Main - Existing
- - - Sewerage Rising Main - Retired

Water Assets

- Hydrant - Existing
- Hydrant - Retired
- ◆ Valve - Existing
- ◇ Valve - Retired
- Water Supply Line - Existing
- - - Water Supply Line - Retired

Stormwater Assets

- ▲ Manholes, Gullies and Drainways
- Telemetry Gauge Station
- ⊠ Stormwater Headwall
- Telemetry Air Line
- Stormwater Pipes and Culverts

Parcel Types

- Easement
- Base Lot (Type L)
- Water Body (Type W)

1:3000

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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: 16 Dec 19 Time: 08.05.39
Requested By: DBYD

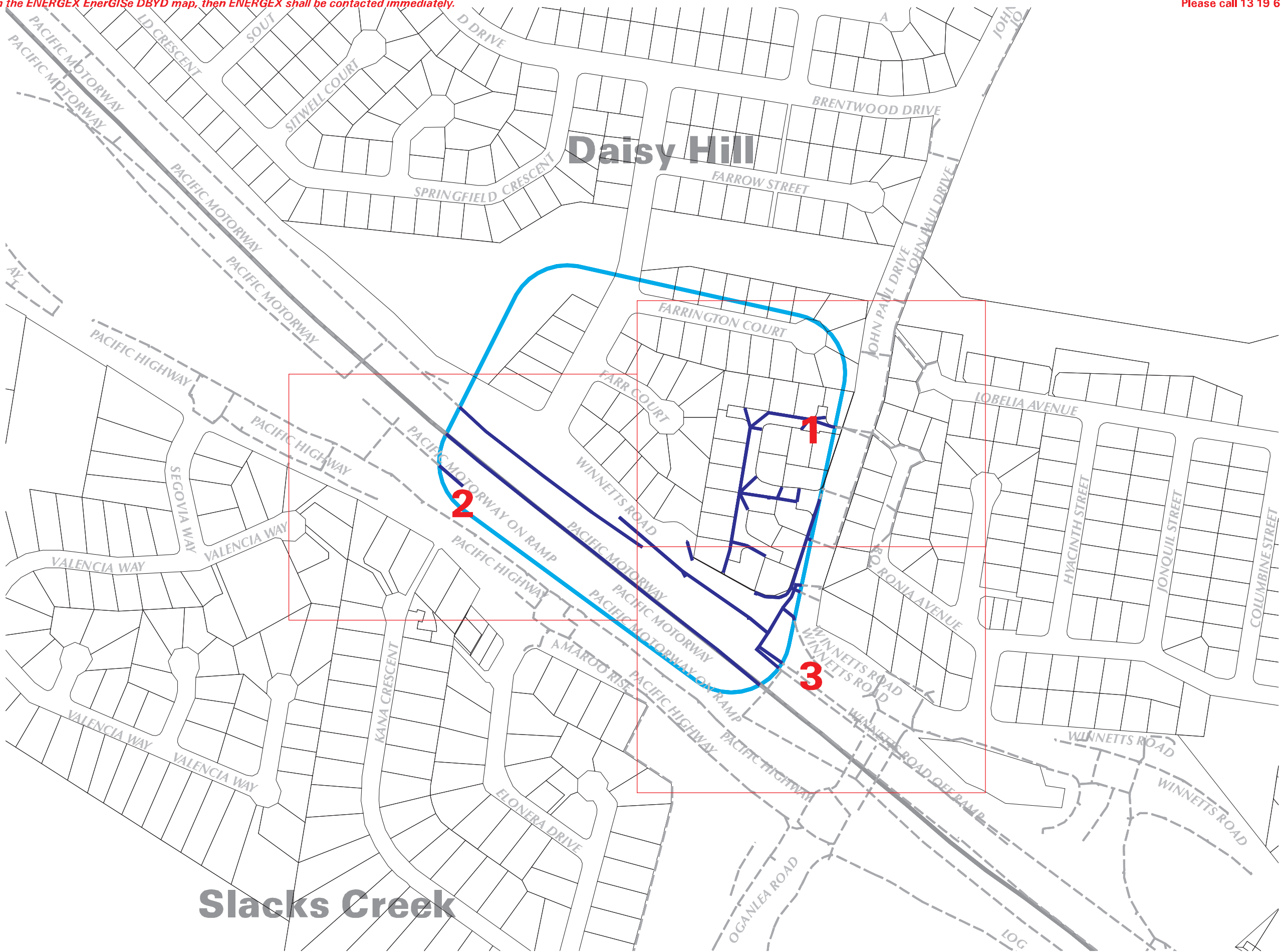
NOT TO SCALE



Enquiry No: 93184716

KEY MAP

 Enquiry Area



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.

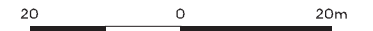
For Emergency Situations
Please call 13 19 62



**EnerGISE
DBYD**

Date: 16 Dec 19 Time: 08.05.52
Requested By: DBYD

SCALE 1:1000



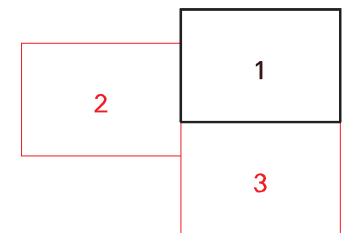
Enquiry No: 93184716

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



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UNCONTROLLED COPY

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: 16 Dec 19 Time: 08.06.14
Requested By: DBYD

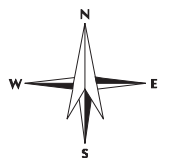
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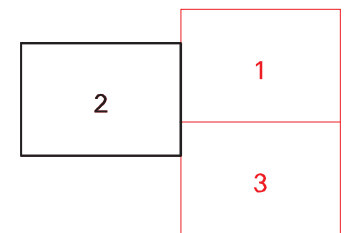
Enquiry No: 93184716

STRIP No: 2

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



INDEX TO SHEETS



LOCALITY DIAGRAM



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UNCONTROLLED COPY

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: 16 Dec 19 Time: 08.06.38
Requested By: DBYD

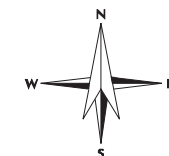
SCALE 1:1000



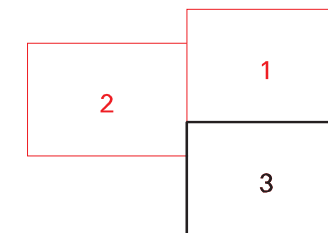
Enquiry No: 93184716

STRIP No: 3

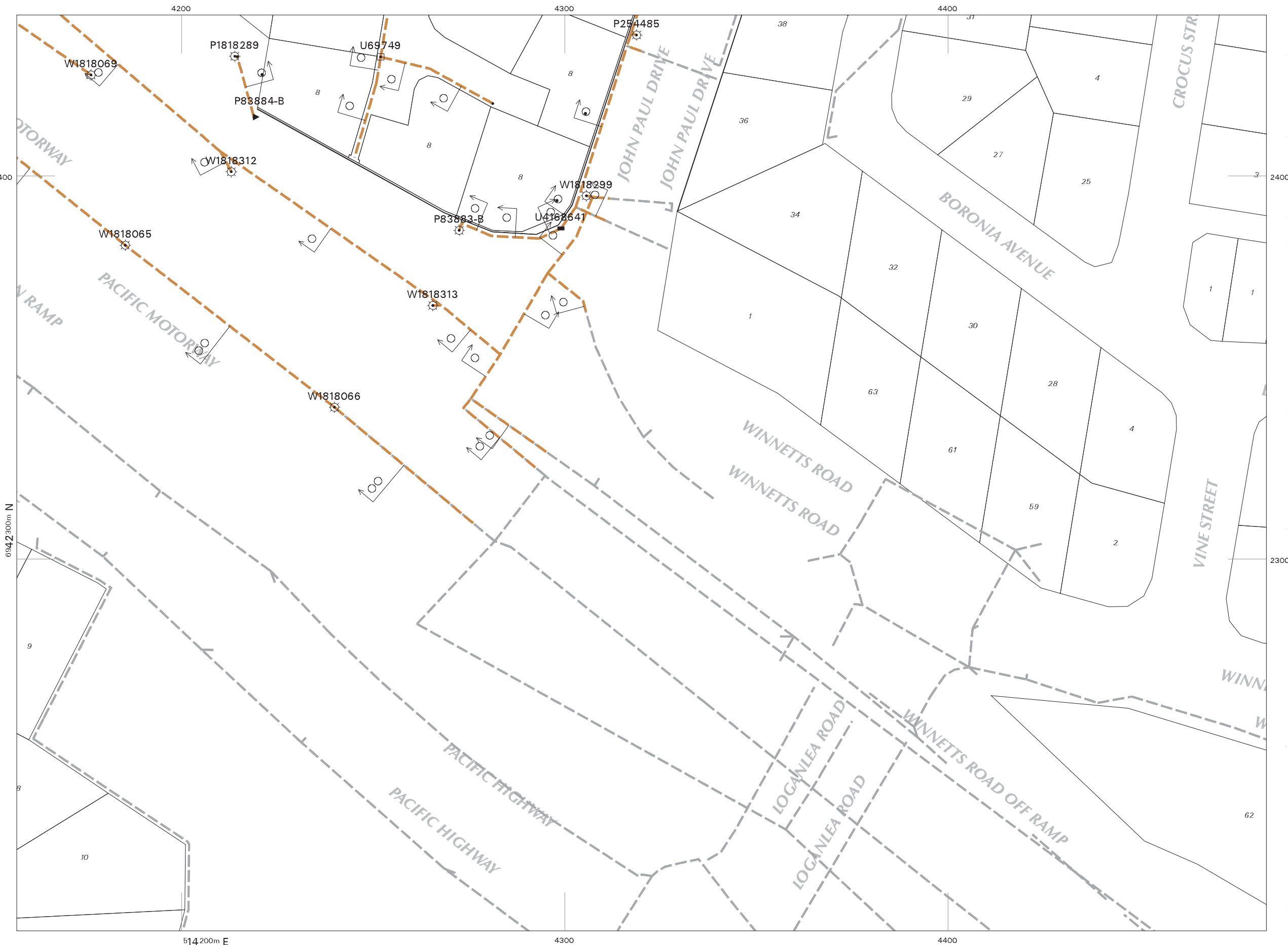
- Ground Transformer
- Cubicle Transformer
- Ring Main Unit
- Metering Unit
- Link Pillar
- Service Pillar
- Junction Pillar
- Pit
- Cable Joint
- Cable Termination
- Cable Marker
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- Cable Tray
- Tunnel



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LOCALITY DIAGRAM

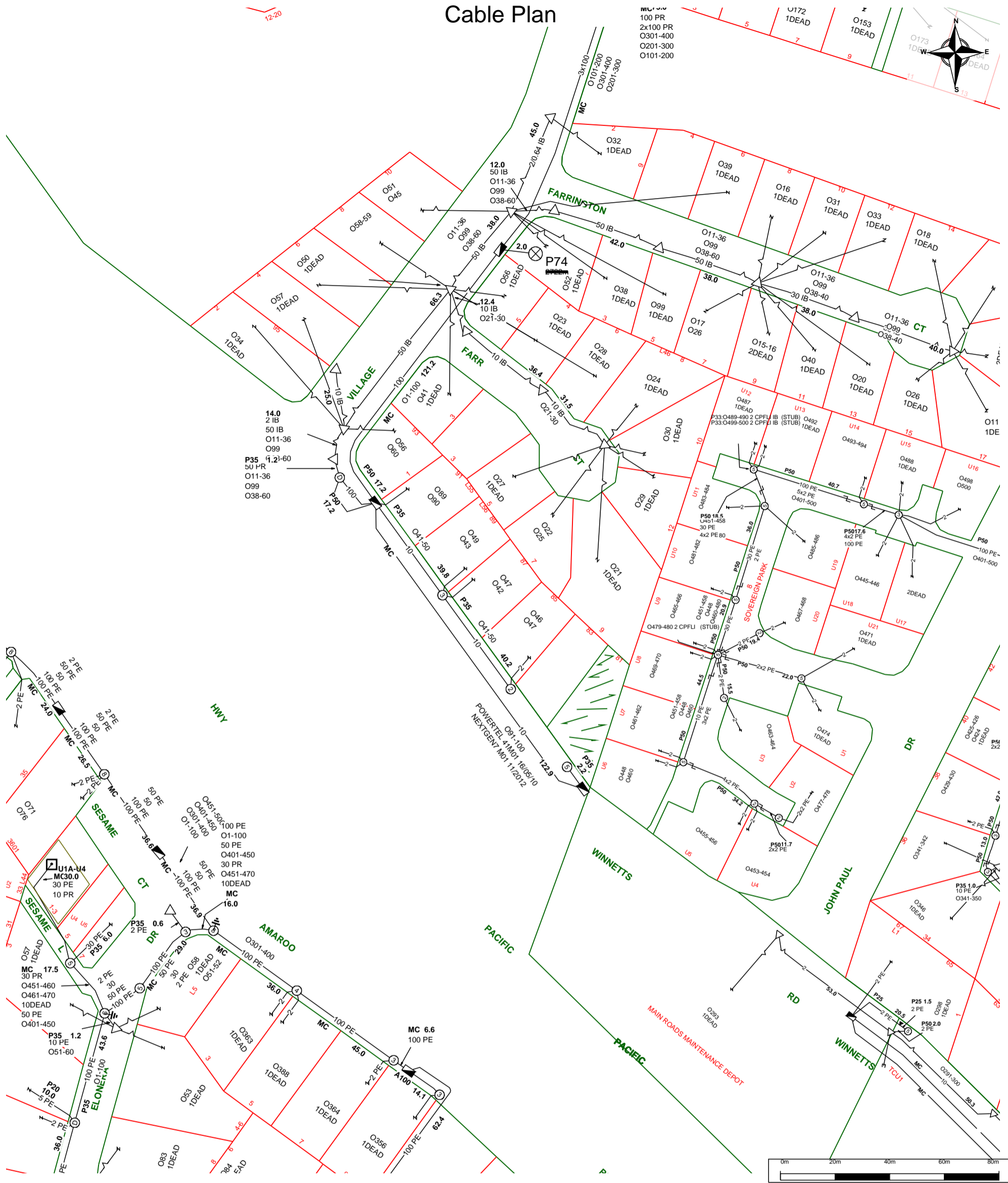


This output provides details of the ENERGEX electrical network. As variations may exist no responsibility is incurred by ENERGEX for the accuracy or completeness of the information provided. Exact positions of cables and electrical connectivity should be confirmed on site.

UNCONTROLLED COPY

Cable Plan

MC 100 PR
2x100 PR
O301-400
O201-300
O101-200



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: 93184717

**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 16/12/2019 09:07:33

The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

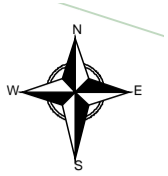
WARNING - Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information supplied can not be guaranteed as property boundaries, depths 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.

Mains Cable Plan



200TRAPPED IN DUCT 200/0.81 APIUT (CA)
 1003:DA-DB/1-96 96F/- SMOF FNPEHJ/STD (CA)
 3007:CA-CS/1-24 24F/- SMOF FNPEHJ/STD (CA)
 3001:DA-DB/1-16 16F/- SMOF FNPEHJ/STD (CA)
 4607:DA-DB/1-312 312F/- SMOF FNPEHJ/STD (CC)
 c18:M1601-1700 200/0.64 CPEIUT (CC)
 100DEAD (CC)
 [22mm]

c6:M801-1200 400/0.64 PIUT (AA)
 4601:YY-BV/1-312 312F/- SMOF FNPEHJ/STD (AA)
 F LNHE 1005:DB-DA/1-120 120F/- SMOF FNPEHJ/STD <- (AA)
 1003:DA-DB/1-96 96F/- SMOF FNPEHJ/STD (AA)
 3007:CA-CS/1-24 24F/- SMOF FNPEHJ/STD (AA)
 3001:DA-DB/1-16 16F/- SMOF FNPEHJ/STD (AA)
 OC[22mm] (AA)
 1xP32 SUBDUCTS (AA)
 OC IX15007 D01 03/2034 (AA1)
 4607:DA-DB/1-312 312F/- SMOF FNPEHJ/STD (AB)
 c20:M1-200 200/0.64 CPEIUT (BA)
 1xP32 SUBDUCTS (BA)
 POWERTEL 41M01 16/05/10 (BA1)
 3007:CS-B20/1-12 12F/- SMOF FNPEHJ/STD <- (BB)
 1xP32 SUBDUCTS (BB)
 NEXTGEN7 M01 11/2012 (BB1)
 200TRAPPED IN DUCT 200/0.81 APIUT (CA)
 1xP32 SUBDUCTS (CA)
 OC IX3914 DBOR01 05/2032 (CA1)
 c18:M1201-1600 400/0.64 PIUT (CB)
 c18:M1601-1700 200/0.64 CPEIUT (CC)
 100DEAD (CC)

c6:M801-1200 400/0.64 PIUT (AB)
 F LNHE 1005:DB-DA/1-120 120F/- SMOF FNPEHJ/STD <- (AB)
 4601:YY-BV/1-312 312F/- SMOF FNPEHJ/STD (BA)
 c20:M1-200 200/0.64 CPEIUT (BA)
 OC[22mm] (BA)
 3xP32 SUBDUCTS (BA)
 OC IX3914 DBOR01 05/2032 (BA2)
 POWERTEL 41M01 16/05/10 (BA1)
 OC IX15007 D01 03/2034 (BA3)
 3007:CS-B20/1-12 12F/- SMOF FNPEHJ/STD <- (BB)
 1xP32 SUBDUCTS (BB)
 NEXTGEN7 M01 11/2012 (BB1)
 c18:M1201-1600 400/0.64 PIUT (BC)
 200TRAPPED IN DUCT 200/0.81 APIUT (CA)
 1003:DA-DB/1-96 96F/- SMOF FNPEHJ/STD (CA)
 3007:CA-CS/1-24 24F/- SMOF FNPEHJ/STD (CA)
 3001:DA-DB/1-16 16F/- SMOF FNPEHJ/STD (CA)
 4607:DA-DB/1-312 312F/- SMOF FNPEHJ/STD (CC)
 c18:M1601-1700 200/0.64 CPEIUT (CC)
 100DEAD (CC)

2xDIST CABLES-OC (AA)
 2xCBN CABLES-OC (AB)
 3xDIST (AA)
 2xP32 SUBDUCTS (AB)
 UET 306M01 8/2010 (AB2)
 c1:M1-1400 1400/0.64 CPEIUT (BA)
 3007:CS-B20/1-12 12F/- SMOF FNPEHJ/STD (BA)
 OC[22mm] (AB)
 1xP32 SUBDUCTS (AB)
 OC IX15007 D01 03/2034 (AB1)
 3007:CS-B20/1-12 12F/- SMOF FNPEHJ/STD (BB)
 4xDIST (BB)
 3007:CS-B20/1-12 12F/- SMOF FNPEHJ/STD (AB)
 4xDIST (AB)
 OC[22mm] (AB)
 4607:DA-DB/1-312 312F/- SMOF FNPEHJ/STD (BC)
 3007:CS-B20/1-12 12F/- SMOF FNPEHJ/STD (AA)
 3xDIST (AA)

c1:M1-1400 1400/0.64 CPEIUT (AA)
 1xP32 SUBDUCTS (AB)
 UET 306M01 8/2010 (AB1)
 1xP32 SUBDUCTS (BA)
 OC IX15007 D01 03/2034 (BA1)
 4607:DA-DB/1-312 312F/- SMOF FNPEHJ/STD (AA)
 DIST (AA)
 2xCBN CABLES-OC(AA)
 c1:M801-1400 800/0.64 CPEIUT (AA)
 200DEAD (AA)
 OC[22mm] (AA)
 1xP32 SUBDUCTS (AB)
 UET 306M01 8/2010 (AB1)
 c1:M1-800 800/0.64 CPEIUT (BA)
 DIST (BB)

c18:M1201-1400 200 PIUT (AB)
 DIST (AB)
 2xCBN CABLES-OC (AB)
 A100

P74 300/900
 c18:M1501-1600 2722m DA74
 HUB IN MANHOLE
 3007:CT-SA75/1-8 8F/- SMOF FNPEHJ/STD (STUB)
 c6:M1001-1200 400/0.64 PIUT (AA)
 c6:M801-900 100DEAD (AA)
 c18:M1501-1600 2722m DA74 (AA)
 3007:CS-CT/1-12 12F/- SMOF FNPEHJ/STD (AA)
 DIST (AA)
 c18:M1201-1400 200 PIUT (AB)

c6:M801-1000 400/0.52 PIUT (AA)
 c18:M1401-1500 100DEAD (AA)
 1xP32 SUBDUCTS (AA)
 OC IX15007 D01 03/2034 (AA1)
 4601:YY-BV/1-312 312F/- SMOF FNPEHJ/STD (AB)
 F LNHE 1005:DB-DA/1-120 120F/- SMOF FNPEHJ/STD <- (AB)
 1003:DA-DB/1-96 96F/- SMOF FNPEHJ/STD (AB)
 3001:DA-DB/1-16 16F/- SMOF FNPEHJ/STD (AB)
 3007:CS-CU/1-12 12F/- SMOF FNPEHJ/STD (AB)
 3007:CS-HU/1-12 12F/- SMOF FNPEHJ/STD (AB)
 1xP32 SUBDUCTS (AB)
 NEXTGEN7 M01 11/2012 (AB1)
 c18:M1601-1700 200/0.64 CPEIUT (AC)
 100DEAD (AC)
 200TRAPPED IN DUCT 200/0.81 APIUT (BA)
 1xP32 SUBDUCTS (BA)
 OC IX3914 DBOR01 05/2032 (BA1)
 c20:M1-200 200/0.64 CPEIUT (BB)
 1xP32 SUBDUCTS (BB)
 POWERTEL 41M01 16/05/10 (BB1)
 4607:DA-DB/1-312 312F/- SMOF FNPEHJ/STD (BC)
 DIST (BC)

c1:M1-1400 1400/0.64 CPEIUT (AA)
 1xP32 SUBDUCTS (BA)
 UET 306M01 8/2010 (BA1)
 OC[22mm] (AB)
 1xP32 SUBDUCTS (AB)
 OC IX15007 D01 03/2034 (AB1)
 3007:CS-B20/1-12 12F/- SMOF FNPEHJ/STD (BB)
 4xDIST (BB)

c1:M1-1400 1400/0.64 CPEIUT (AA)
 1xP32 SUBDUCTS (AB)
 UET 306M01 8/2010 (AB1)
 1xP32 SUBDUCTS (BA)
 OC IX15007 D01 03/2034 (BA1)
 4607:DA-DB/1-312 312F/- SMOF FNPEHJ/STD (AA)
 DIST (AA)
 2xCBN CABLES-OC(AA)

c1:M801-1400 800/0.64 CPEIUT (AA)
 200DEAD (AA)
 OC[22mm] (AA)
 1xP32 SUBDUCTS (AB)
 UET 306M01 8/2010 (AB1)
 c1:M1-800 800/0.64 CPEIUT (BA)
 DIST (BB)



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: 93184717

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

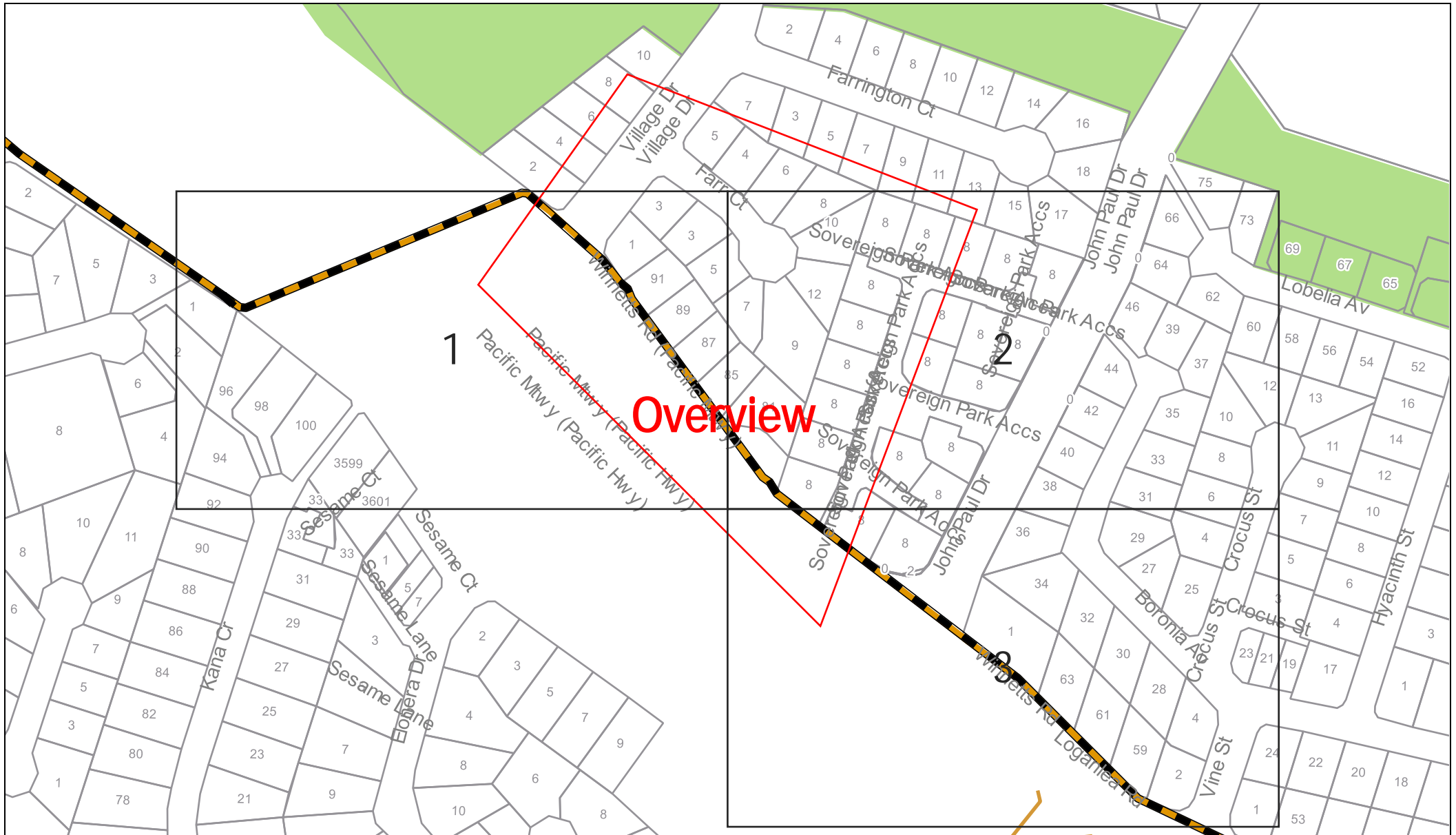
Generated On 16/12/2019 09:07:35

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.



Sequence Number: 93184714

Date: 16/12/2019

DISCLAIMER: THIS DRAWING SHOULD NOT BE SCALED TO LOCATE CABLES. NO WARRANTY IS GIVEN THAT THE INFORMATION IS ACCURATE OR COMPLETE. IF YOU REQUIRE INFORMATION REGARDING LOCATING THE CABLE PLEASE CALL NEXTGEN. THIS DOCUMENT HAS BEEN PREPARED SOLELY FOR DIAL BEFORE YOU DIG USE. THIS PLAN CONTAINS COMMERCIALLY SENSITIVE INFORMATION AND IS TO BE TREATED ACCORDINGLY. NO SUCH INFORMATION IS TO BE PASSED ONTO OTHER PARTIES WITHOUT WRITTEN CONSENT FROM NEXTGEN PTY LTD.



LEGEND

Digsite



Area

Assets



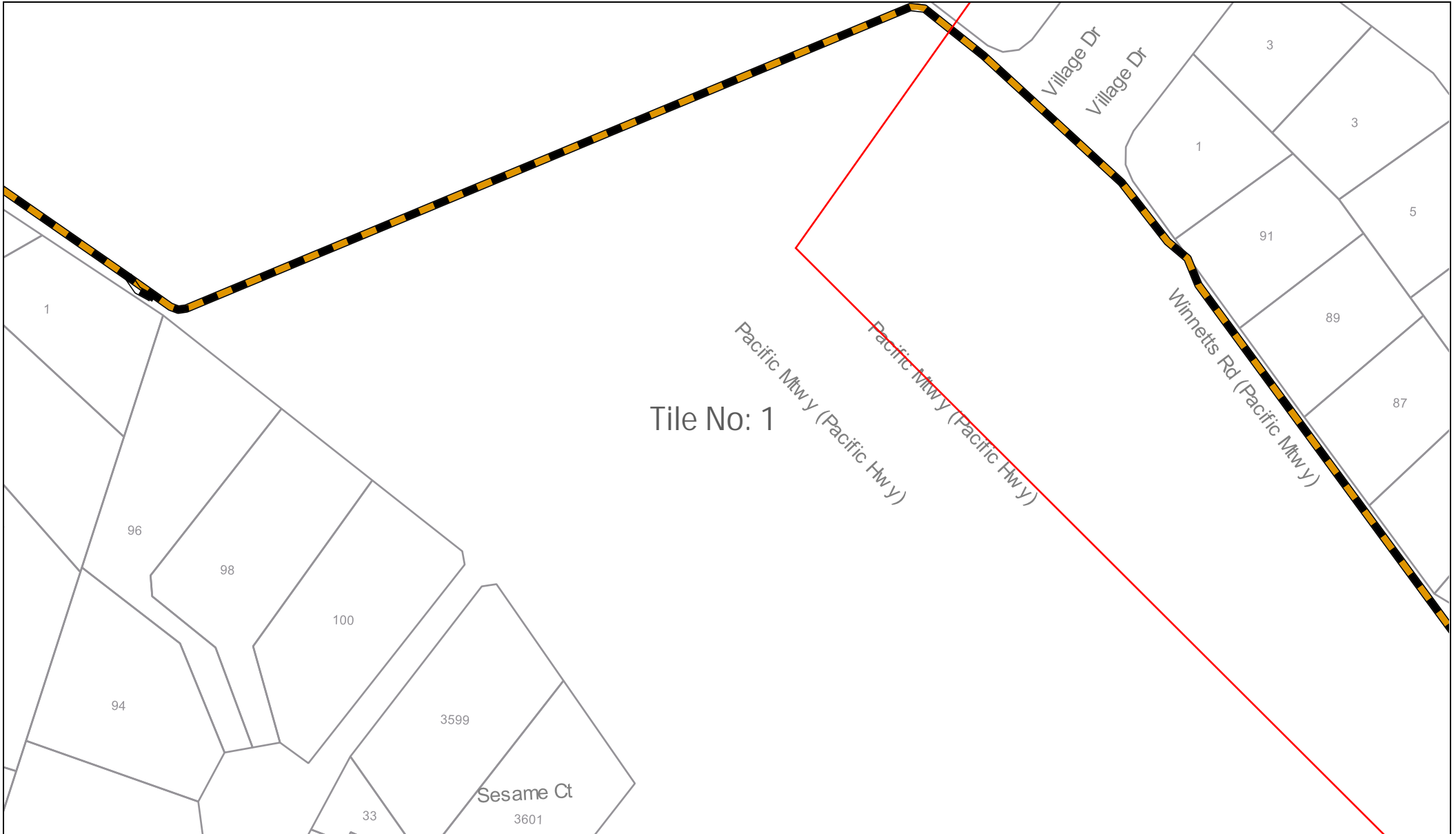
Cable



3rd Party Duct



Marker Post



Sequence Number: 93184714

Date: 16/12/2019

DISCLAIMER: THIS DRAWING SHOULD NOT BE SCALED TO LOCATE CABLES. NO WARRANTY IS GIVEN THAT THE INFORMATION IS ACCURATE OR COMPLETE. IF YOU REQUIRE INFORMATION REGARDING LOCATING THE CABLE PLEASE CALL NEXTGEN. THIS DOCUMENT HAS BEEN PREPARED SOLELY FOR DIAL BEFORE YOU DIG USE. THIS PLAN CONTAINS COMMERCIALLY SENSITIVE INFORMATION AND IS TO BE TREATED ACCORDINGLY. NO SUCH INFORMATION IS TO BE PASSED ONTO OTHER PARTIES WITHOUT WRITTEN CONSENT FROM NEXTGEN PTY LTD.



LEGEND

Digsite



Area

Assets



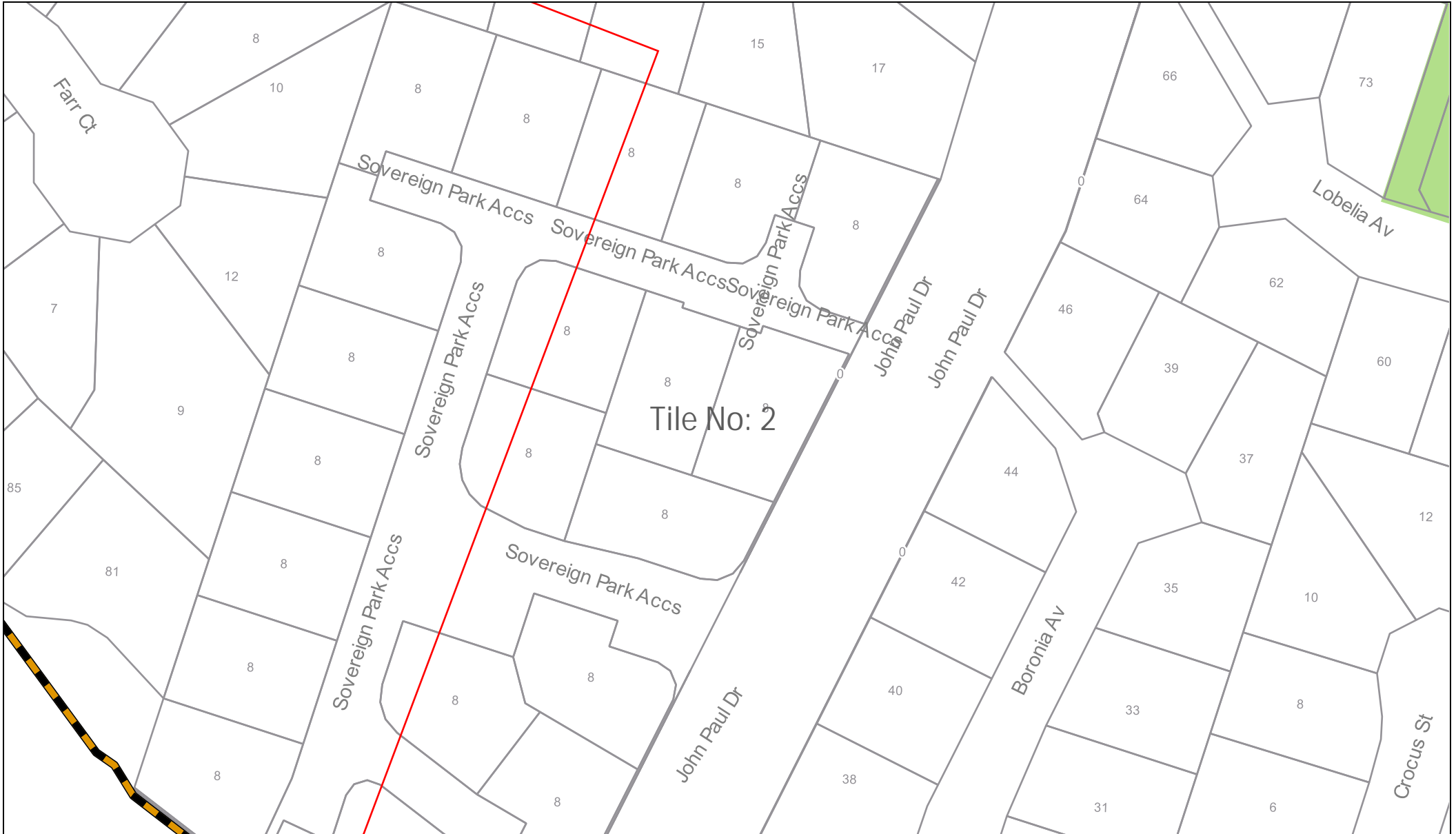
Cable



3rd Party Duct



Marker Post



Sequence Number: 93184714

Date: 16/12/2019

DISCLAIMER: THIS DRAWING SHOULD NOT BE SCALED TO LOCATE CABLES. NO WARRANTY IS GIVEN THAT THE INFORMATION IS ACCURATE OR COMPLETE. IF YOU REQUIRE INFORMATION REGARDING LOCATING THE CABLE PLEASE CALL NEXTGEN. THIS DOCUMENT HAS BEEN PREPARED SOLELY FOR DIAL BEFORE YOU DIG USE. THIS PLAN CONTAINS COMMERCIAL SENSITIVE INFORMATION AND IS TO BE TREATED ACCORDINGLY. NO SUCH INFORMATION IS TO BE PASSED ONTO OTHER PARTIES WITHOUT WRITTEN CONSENT FROM NEXTGEN PTY LTD.



LEGEND

- | Digsite | Assets |
|---------|----------------|
| Area | Cable |
| | 3rd Party Duct |
| | Marker Post |



Sequence Number: 93184714

Date: 16/12/2019

DISCLAIMER: THIS DRAWING SHOULD NOT BE SCALED TO LOCATE CABLES. NO WARRANTY IS GIVEN THAT THE INFORMATION IS ACCURATE OR COMPLETE. IF YOU REQUIRE INFORMATION REGARDING LOCATING THE CABLE PLEASE CALL NEXTGEN. THIS DOCUMENT HAS BEEN PREPARED SOLELY FOR DIAL BEFORE YOU DIG USE. THIS PLAN CONTAINS COMMERCIALY SENSITIVE INFORMATION AND IS TO BE TREATED ACCORDINGLY. NO SUCH INFORMATION IS TO BE PASSED ONTO OTHER PARTIES WITHOUT WRITTEN CONSENT FROM NEXTGEN PTY LTD.

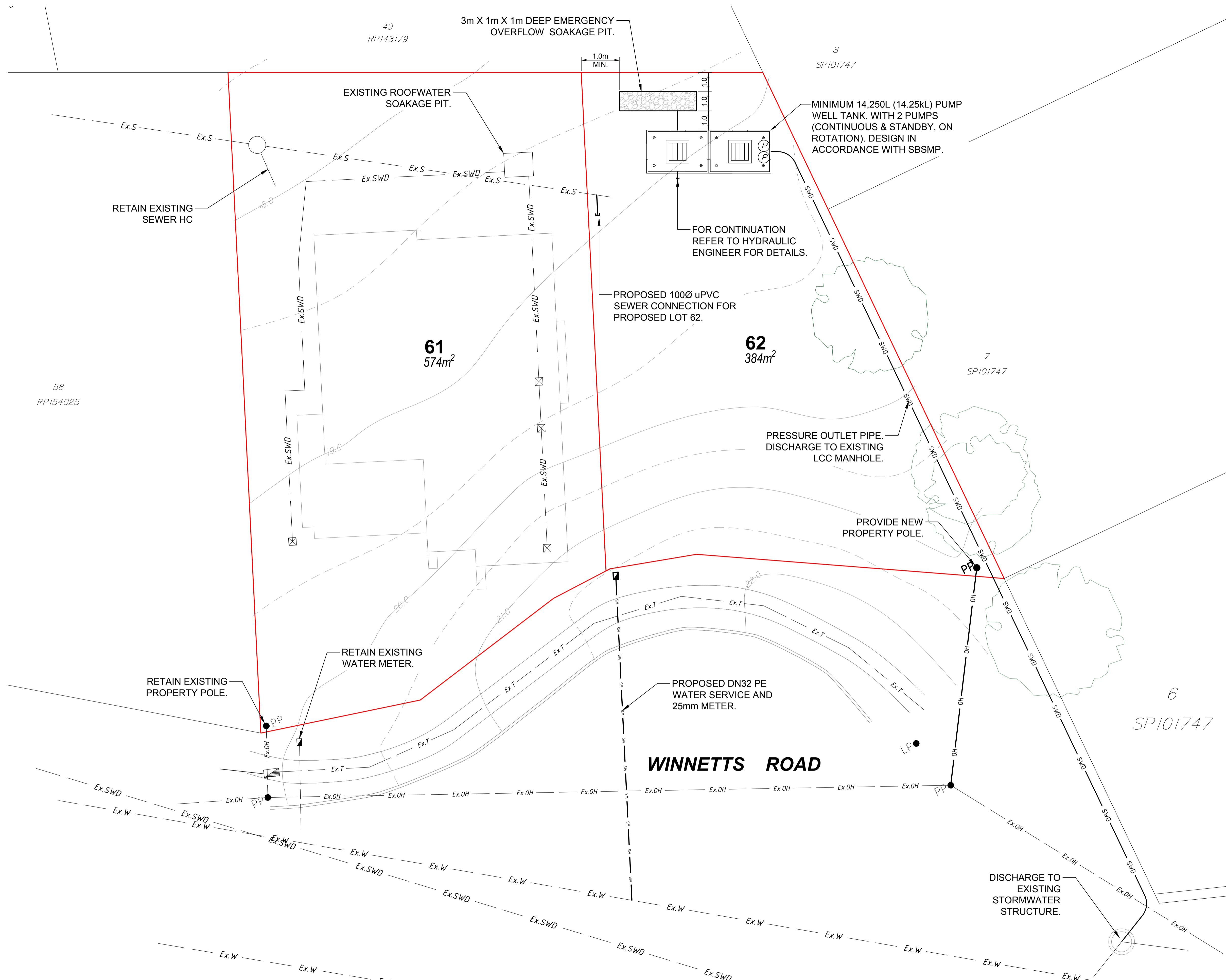


LEGEND

- | Digsite | Assets |
|---------|----------------|
| Area | Cable |
| | 3rd Party Duct |
| | Marker Post |

APPENDIX D
CIVIL SERVICES SKETCH PLAN





LEGEND

- Ex.S — EXISTING SEWER (FROM RECORDS)
- Ex.W — EXISTING WATER (FROM RECORDS)
- Ex.SWD — EXISTING STORMWATER (FROM RECORDS)
- EXISTING CONTOURS (MINOR - DASHED)
- EXISTING TREE
- S — PROPOSED SEWER (PROPERTY CONNECTION)
- W — PROPOSED WATER SERVICE
- SWD — PROPOSED STORMWATER
- PROPOSED SOAKAGE PIT
- PROPOSED STORMWATER PUMP WELL (TANK) WITH 900SQ. ACCESS LID TO SURFACE.

FOR APPROVAL

<table border="1"> <thead> <tr> <th>REV</th> <th>DESCRIPTION</th> <th>BY</th> <th>APP</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>ISSUE FOR APPROVAL</td> <td>MXH</td> <td>MXH</td> <td>27.04.2020</td> </tr> <tr> <td>B</td> <td>ISSUE FOR APPROVAL</td> <td>MXH</td> <td>MXH</td> <td>11.06.2020</td> </tr> </tbody> </table>		REV	DESCRIPTION	BY	APP	DATE	A	ISSUE FOR APPROVAL	MXH	MXH	27.04.2020	B	ISSUE FOR APPROVAL	MXH	MXH	11.06.2020	<p>SCALE BAR</p>	<p>CLIENT LOGO</p>	<p>RPEQ CERTIFICATION</p> <p>Max Hooper, BEng (CIVIL), RPEQ 16633 Certified on 11/06/2020</p>	<table border="1"> <tr> <td>DESIGNER_NAME A. Simonetta</td> <td>CHECKER_NAME M. Hooper</td> </tr> <tr> <td>SURVEYOR_NAME AXIS Surveys</td> <td>SURVEY_DATE 27.04.17 / J26971</td> </tr> <tr> <td colspan="2">Survey Datum</td> </tr> <tr> <td>MGA (GDA 94) Zone 56 SF 0.9996 Horizontal</td> <td>AHD Vertical</td> </tr> </table>	DESIGNER_NAME A. Simonetta	CHECKER_NAME M. Hooper	SURVEYOR_NAME AXIS Surveys	SURVEY_DATE 27.04.17 / J26971	Survey Datum		MGA (GDA 94) Zone 56 SF 0.9996 Horizontal	AHD Vertical	<p>FORMATION CIVIL Formation Consulting Pty Ltd, t/as 'Formation Civil'</p>	<p>A.C.N. 623 328 236 31 Beaton Street Coopers Plains QLD 4000 T: +61 7 3700 6903 M: 0413 690 705 E: max@formationcivil.com.au W: formationcivil.com.au © Copyright</p>	<p>CLIENT D G SHAH (c/- NCOB)</p>	<p>PROJECT PROPOSED 1 INTO 2 LOT SUBDIVISION LOT 62 81-83 WINNETTS ROAD, SHAILER PARK</p>	<p>PROJECT NORTH</p>
REV	DESCRIPTION	BY	APP	DATE																													
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MGA (GDA 94) Zone 56 SF 0.9996 Horizontal	AHD Vertical																																
		<p>TITLE CONCEPT CIVIL SERVICES LAYOUT PLAN</p>		<p>STATUS FOR APPROVAL NOT FOR CONSTRUCTION</p>		<table border="1"> <tr> <td>DESIGNED MXH</td> <td>DRAWN MXH</td> <td>APPROVED MXH</td> <td>DATE 11.06.20</td> </tr> <tr> <td>PROJECT No C19-071</td> <td>DRAWING No C01</td> <td>REV B</td> <td>SHEET 1 of 1</td> </tr> </table>	DESIGNED MXH	DRAWN MXH	APPROVED MXH	DATE 11.06.20	PROJECT No C19-071	DRAWING No C01	REV B	SHEET 1 of 1																			
DESIGNED MXH	DRAWN MXH	APPROVED MXH	DATE 11.06.20																														
PROJECT No C19-071	DRAWING No C01	REV B	SHEET 1 of 1																														

DWG FILE D:\PROJECTS\1912\20\01\01 - 81-83 Winnetts Road, Shailer Park, Design\01 - IMH\LOT TIME 11 Jun 2020 10:55pm

APPENDIX E
RETENTION OF EXISTING SOAKAGE PIT



Max Hooper

From: John Creagan <john@ncob.com.au>
Sent: Monday, 6 April 2020 2:08 PM
To: Max Hooper
Cc: Darshan Shah
Subject: FW: RFI RL/79/2019 -81-83 Winnetts Road, Daisy Hill

Hi Max,

A Minor Change to include an MCU component can be lodged, but will need a concept stormwater management plan to be lodged with it.

Kind regards,

John Creagan RPIA
Principal Town Planner



Norris Clarke & O'Brien Pty Ltd
Registered Land Surveyors
Town Planners
Development Consultants

Direct (07) 3012 0011 | Phone (07) 3012 0000 | Fax (07) 3012 0099
PO Box 3448, Newmarket QLD 4051 | Level 1 - Aldi Centre, 12 Bishop Street, Kelvin Grove QLD 4059
Email john@ncob.com.au | Office Email info@ncob.com.au | Web www.ncob.com.au



[Click here for disclaimer](#)

From: Hardy, William <WilliamHardy@logan.qld.gov.au>
Sent: Monday, 6 April 2020 1:49 PM
To: Darshan Shah <drdarshanshah@gmail.com>; John Creagan <john@ncob.com.au>
Subject: FW: RFI RL/79/2019 -81-83 Winnetts Road, Daisy Hill

Good afternoon Max,

Following up on the below, Council's Engineers have reviewed the request and agree that as the rubble pit was approved under MCUC/20/2018 it does not need to be amended.

In this instance the proposed new lot will need to discharge as per the requirements of Sc6.2.5 Planning Scheme Policy 5 – Infrastructure. As consent from downstream owners cannot be achieved, stormwater discharge directly into the manhole within Winnetts Road (IL18.85 in the manhole) is the preferable option. However Council Officers agree that extensive fill within the proposed lot will not be supported to enable direct discharge to the kerb and channel and the stormwater design will need to take into consideration the existing overland flow traversing the eastern boundary of the site, as stipulated in the information request.

As discussed the other day, if above-ground stormwater detention tanks are proposed to be utilised as part of the stormwater management plan, a Material Change of Use component will need to be introduced into the application via a Minor Change, where a new Confirmation Notice will need to be issued and timeframes started again.

If you have any questions on the above items, please let me know.

Kind regards,

Will Hardy | Planning Officer – Planning Assessment Team | **Logan City Council**

Phone: 07 3412 5919 | PO Box 3226 Logan City DC Qld 4114 | WilliamHardy@logan.qld.gov.au
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From: Hardy, William

Sent: Friday, 3 April 2020 4:20 PM

To: Max Hooper <max@formationcivil.com.au>

Cc: Darshan Shah <drdarshanshah@gmail.com>; John Creagan <john@ncob.com.au>

Subject: RE: RFI RL/79/2019 -81-83 Winnetts Road, Daisy Hill

Hi Max,

Thanks for the chat this afternoon on the stormwater requirements for the proposed subdivision at Winnetts Road, Daisy Hill. I will send this through to our Development Engineers and review the options suggested. If you have any queries in the meantime please let me know.

Kind regards,

Will Hardy | Planning Officer – Planning Assessment Team | **Logan City Council**

Phone: 07 3412 5919 | PO Box 3226 Logan City DC Qld 4114 | WilliamHardy@logan.qld.gov.au
logan.qld.gov.au | facebook.com/logancitycouncil | twitter.com/logancc

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From: Max Hooper <max@formationcivil.com.au>

Sent: Friday, 3 April 2020 1:37 PM

To: Hardy, William <WilliamHardy@logan.qld.gov.au>

Cc: Darshan Shah <drdarshanshah@gmail.com>; John Creagan <john@ncob.com.au>

Subject: RE: RFI RL/79/2019 -81-83 Winnetts Road, Daisy Hill

Importance: High

Hi William,

Trying again as the last email bounced back.

From: Max Hooper
Sent: Friday, 3 April 2020 1:33 PM
To: willhardy@logan.qld.gov.au
Cc: Darshan Shah <drdarshanshah@gmail.com>; John Creagan <john@ncob.com.au>
Subject: RE: RFI RL/79/2019 -81-83 Winnetts Road, Daisy Hill

Hi Will,

Trust is all is well in these challenging days!

I phoned the council switch and spoke to Chris who informed me you are working from home, as am I.

I'm following up on the stormwater component of the attached RFI (attached). We investigated the option of connecting through downstream properties to discharge to kerb adaptor on Farr Ct, however we couldn't secure agreement with the downstream owners.

I mentioned that the next option was likely a tank and pumped connection to the kerb, or a charged system. I see in the advice note under 2.2 that "soakage or rubble pits are not permitted in urban residential areas".

The owner notes that a soakage pit was approved (stamped by council – also attached) and installed as part of the construction of the new house. The owner wishes me to follow up to find out if this arrangement can be maintained as is on the lot containing the house, and potentially duplicated on the new lot being created?

My phone numbers are in the footer below, please feel free to call to clarify anything.

Do not hesitate to contact me directly should you wish to further discuss.

Regards,

Max Hooper
Director (MBA, BEng, CPEng, RPEQ, NER)



31 Beaton Street, Coopers Plains QLD 4108
P: (07) 3700 6903
M: 0413 690 705
E: max@formationcivil.com.au
W: formationcivil.com.au

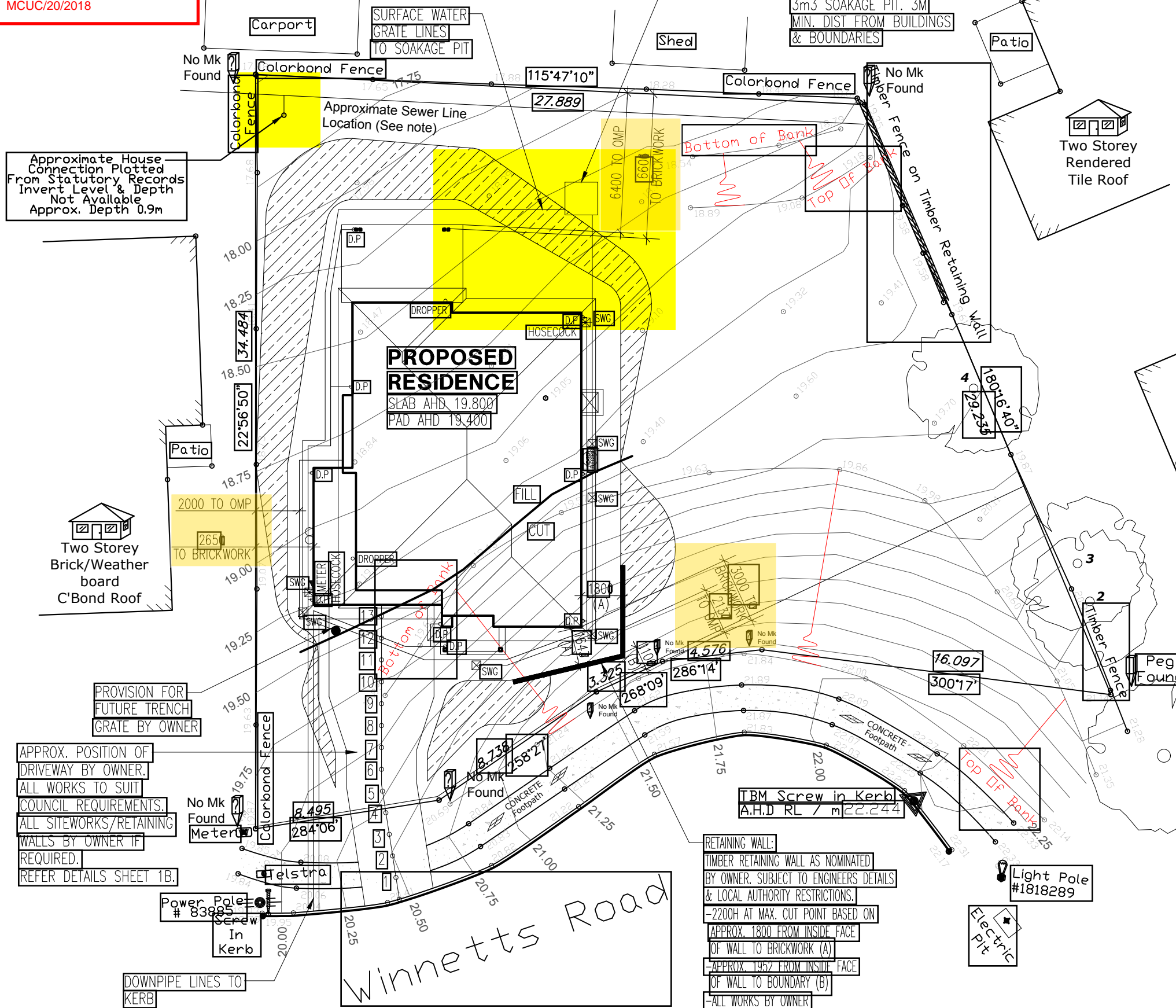
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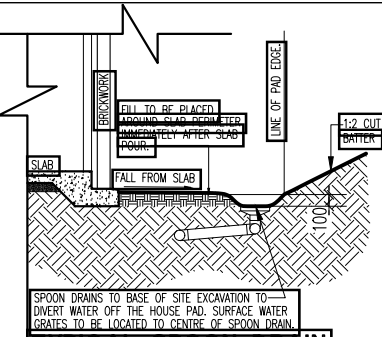
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LOGAN CITY COUNCIL
APPROVED PLAN OF DEVELOPMENT
 This is the approved plan of development for Development Application
 MCUC/20/1818



- NOTE: - EARTHEN SPOON DRAIN
- NOTE: - SEDIMENT FENCE TO OUTSIDE OF FILL
- NOTE: - TEMPORARY FENCING
- NOTE: - SURFACE WATER GRATES TO BE LOCATED TO CENTRE OF SPOON DRAIN
- NOTE: - PLACE FILL AROUND THE PERIMETER OF THE CONCRETE SLAB (IMMEDIATELY FOLLOWING SLAB POUR) TO DIVERT WATER AWAY FROM FOUNDATIONS.



SITE COST OPTION: -17-11-17

PROPERTY DESCRIPTION
 LOT 59 ON SP 268614
 WINNETTS ROAD
 SUBURB: DAISY HILL
 LOCAL AUTH: LOGAN C.C.

AREAS
 LAND: 958 M²
 SITE COVERAGE: 18.7%

SITWORKS
 CUT: - 1.80
 FILL: - 1.40
 PAD AHD: 19.40
 SLAB AHD: 19.80

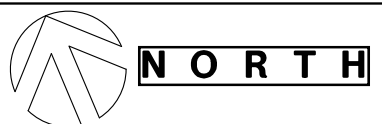
LEGEND
 DENOTES 100mm DIA P.V.C STORM-WATER PIPE.
 DENOTES 250 x 250 SURFACE WATER GRATE CONNECTED TO SEPARATE STORMWATER PIPE.

NOTE: PLATFORM HEIGHT & RETAINING CAN VARY DUE TO SITE CONDITIONS.

CRITICAL PAD LEVEL

NO YES

REQUIRED DUE TO FALL REQUIREMENTS OF STORMWATER GRATES



NOTE: ALL BUILDING WORKS ARE TO COMPLY WITH THE BUILDING CODE OF AUSTRALIA.
 WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE.
 SURVEYOR No. - 1701845

CORAL HOMES

OBCC 50792/1014053
 OFT 62084C

CLIENTS: D. SHAH
 LOT 59 WINNETTS ROAD, DAISY HILL

CHECKED: NLU TENDER LETTER: 29-NOV-17

DRAWING: SITE PLAN LAYOUT REFERENCE No.: J26971

SCALE: 1:200 DATE: 11-06-17
 DRAWN: NLU CP: 17-11-17
 VO.2: 22-12-17

SHEET: 1A OF 20

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NOTES
 SETBACK DISTANCES ARE FROM THE OUTSIDE OF THE FASCIA TO THE BOUNDARY. FAVE WIDTH TO OUTSIDE OF FASCIA IS 650mm MAX.

FINAL SIGNED COPY
 I/WE ACCEPT THAT THESE PLANS ARE THE FINAL WORKING DRAWINGS THAT SUPERSEDE PRELIMINARY PLANS & I/WE HAVE CHECKED THAT ANY ALTERATIONS OR ADDITIONS ARE SHOWN.
 THESE PLANS ALSO FORM PART OF OUR CONTRACT BETWEEN THE PROPRIETOR & CORAL HOMES.

PROPRIETOR SIGNATURE: [Signature]
 PROPRIETOR SIGNATURE: [Signature]
 BUILDERS SIGNATURE: [Signature]

S I T E P L A N



ELEVATION 1. (SOUTH)

140x140 PAINTED
TIMBER POST ON G.I BRACKET
FIXED TO FOOTING.
DETAILS, SHEET 12.

LOGAN CITY COUNCIL
APPROVED PLAN OF DEVELOPMENT
This is the approved plan of development for Development Application
MCUC/20/2018

DESIGNER
BAHAMA 37

NOTES

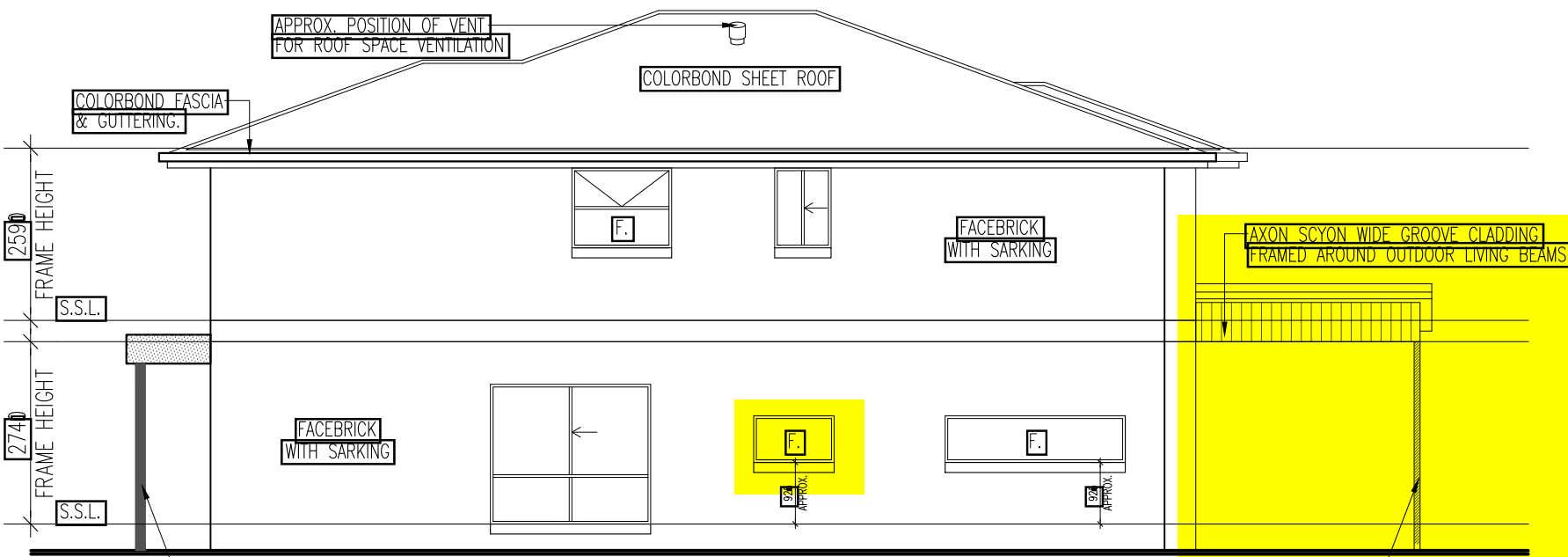
ROOF PITCHED AT 20° WITH
600 WIDE EAVES UNLESS
NOTED OTHERWISE.
N.G.L. = NATURAL GROUND LINE
A.J. = ARTICULATION JOINT
S.S.L. = STRUCTURAL SURFACE LEVEL
LYSAGHT TRIMLINE SLOTTED
GUTTERING TO SUIT 30m2 PER
DOWNPIPE ROOF AREA

IMPORTANT NOTICE:
ALL WINDOWS TO FLOOR LEVELS WHICH
ARE 2m OR MORE ABOVE THE SURFACE
BENEATH MUST HAVE A BARRIER AT A
HEIGHT NO LESS THAN 865mm AND THE
OPENING PANEL ABOVE BE RESTRICTED
TO A MAXIMUM OF 125mm OR HAVE A
BARRIER WHICH CAN RESIST A MINIMUM
OF 250N OF OUTWARD HORIZONTAL
ACTION.

IMPORTANT NOTICE:
THERE ARE NO ATYPICAL DESIGN
FEATURES IN THIS CONSTRUCTION THAT
PRESENT UNUSUAL WORKPLACE, HEALTH
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& CORAL HOMES.

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ELEVATION 2. (EAST)

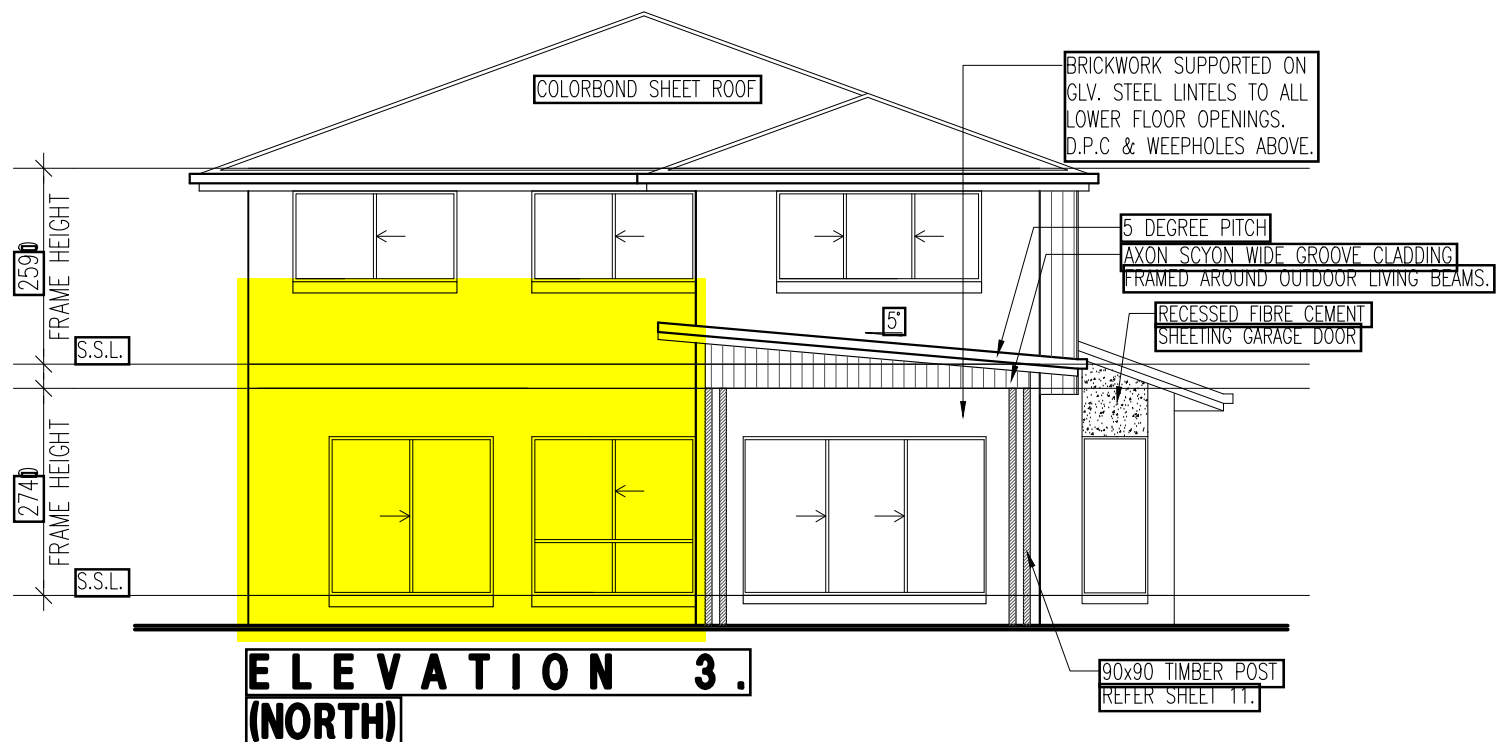
140x140 PAINTED
TIMBER POST ON G.I BRACKET
FIXED TO FOOTING.
DETAILS, SHEET 12.

90x90 TIMBER POST
REFER SHEET 11.

CORAL HOMES

QBCC 50792/1014053
OFT 62084C

CLIENTS D. SHAH LOT 59 WINNETTS ROAD, DAISY HILL	
CHECKED NLU	TENDER LETTER 29-NOV-17
DRAWING ELEVATIONS	REFERENCE No. J26971
SCALE: 1:100	DATE: TL: 06-06-17
DRAWN: NLU	CP: 17-11-17
	VO.2: 22-12-17
SHEET 4 OF 20	
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**ELEVATION 3.
(NORTH)**



ELEVATION 4. (WEST)

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APPROVED PLAN OF DEVELOPMENT
 This is the approved plan of development for Development Application
 MCUC/20/2018

DESIGNER

BAHAMA 37

NOTES

ROOF PITCHED AT 20° WITH 600 WIDE EAVES UNLESS NOTED OTHERWISE.
 N.G.L. = NATURAL GROUND LINE
 A.J. = ARTICULATION JOINT
 S.S.L. = STRUCTURAL SURFACE LEVEL
 LYSAGHT TRIMLINE SLOTTED GUTTERING TO SUIT 30m2 PER DOWNPIPE ROOF AREA

IMPORTANT NOTICE:
 ALL WINDOWS TO FLOOR LEVELS WHICH ARE 2m OR MORE ABOVE THE SURFACE BENEATH MUST HAVE A BARRIER AT A HEIGHT NO LESS THAN 865mm AND THE OPENING PANEL ABOVE BE RESTRICTED TO A MAXIMUM OF 125mm OR HAVE A BARRIER WHICH CAN RESIST A MINIMUM OF 250N OF OUTWARD HORIZONTAL ACTION.

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CORAL HOMES

**QBCC 50792/1014053
OFT 62084C**

CLIENTS D. SHAH LOT 59 WINNETTS ROAD, DAISY HILL	
CHECKED NLU	TENDER LETTER 29-NOV-17
DRAWING ELEVATIONS	REFERENCE No. J26971
SCALE: 1:100	DATE: TL: 06-06-17
DRAWN: NLU	CP: 17-11-17
	VO.2: 22-12-17
SHEET 5 OF 20	
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**FORMATION
CIVIL**

ABN 58 623 328 236

31 Beaton Street, Coopers Plains QLD 4108

(07) 3700 6903

0413 690 705

max@formationcivil.com.au