PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2024/1529/2

Date: 07 March 2025

Queensland Government

AMENDED IN RED

By: Elrico Koeberg

Date: 14 February 2025

Queensland Government

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Civil Engineering Report

Rockpool North Shore Aged Care Facility

330 MacArthur Avenue, Hamilton

Prepared for: McNab Developments (QLD)

Project no: NA240703

Revision no: 02

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Revisions

Revision	Description	Date	Prepared by	Approved by
01	Draft for discussion	11/06/2024	Georgia Mamalis	Juan Castro
02	Updated for discussion	22/07/2024	Georgia Mamalis	Juan Castro

Review Panel

Division/ office	Name

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1 Introduction

ACOR Consultants (QLD) Pty. Ltd. were engaged by McNab Developments (Client) to prepare a Civil Engineering Report CER to support the proposed development of the Rockpool Aged Care Facility North Shore located at 330 MacArthur Avenue, Hamilton 4007.

1.1 Scope

This report outlines and addresses the following items;

- Site information
- Existing services
- Earthworks requirements
- Roadworks
- Flood conditions
- Stormwater Management
  - ✓ Lawful point of discharge for the development
  - ✓ Stormwater quantity management.
  - ✓ Stormwater quality management.

1.2 Criteria

This report has been compiled based on:

- Proposed development plans prepared by GJG Architects (Architect)
- Discussions with the Client and the consultant team
- Digital Elevation Data obtained through LiDAR
- Information obtained from Council's online mapping system and DBYD search results

2 Site Information

2.1 Location and Description

The proposed development is located at 330 MacArthur Avenue, Hamilton 4007, over part of Lot 5 on SP337697 (Site). Figure 1 provides an aerial locality of the subject site which is currently vacant.

The development area is only a portion of the entire Lot as detailed on attached architectural drawings.

There is an undeveloped lot to the south-west of the Site, and residential lots across the north-east boundary.

The south-east boundary follows Angora Road.

The remaining extent of the Site will be developed in the future as part of the overall proposed masterplan for this subdivision.

The Site is zoned as EC (Emerging Community).

The Development Area is fully contained within Brisbane City Council. The site has a total approximate area of 7,000 m^2.

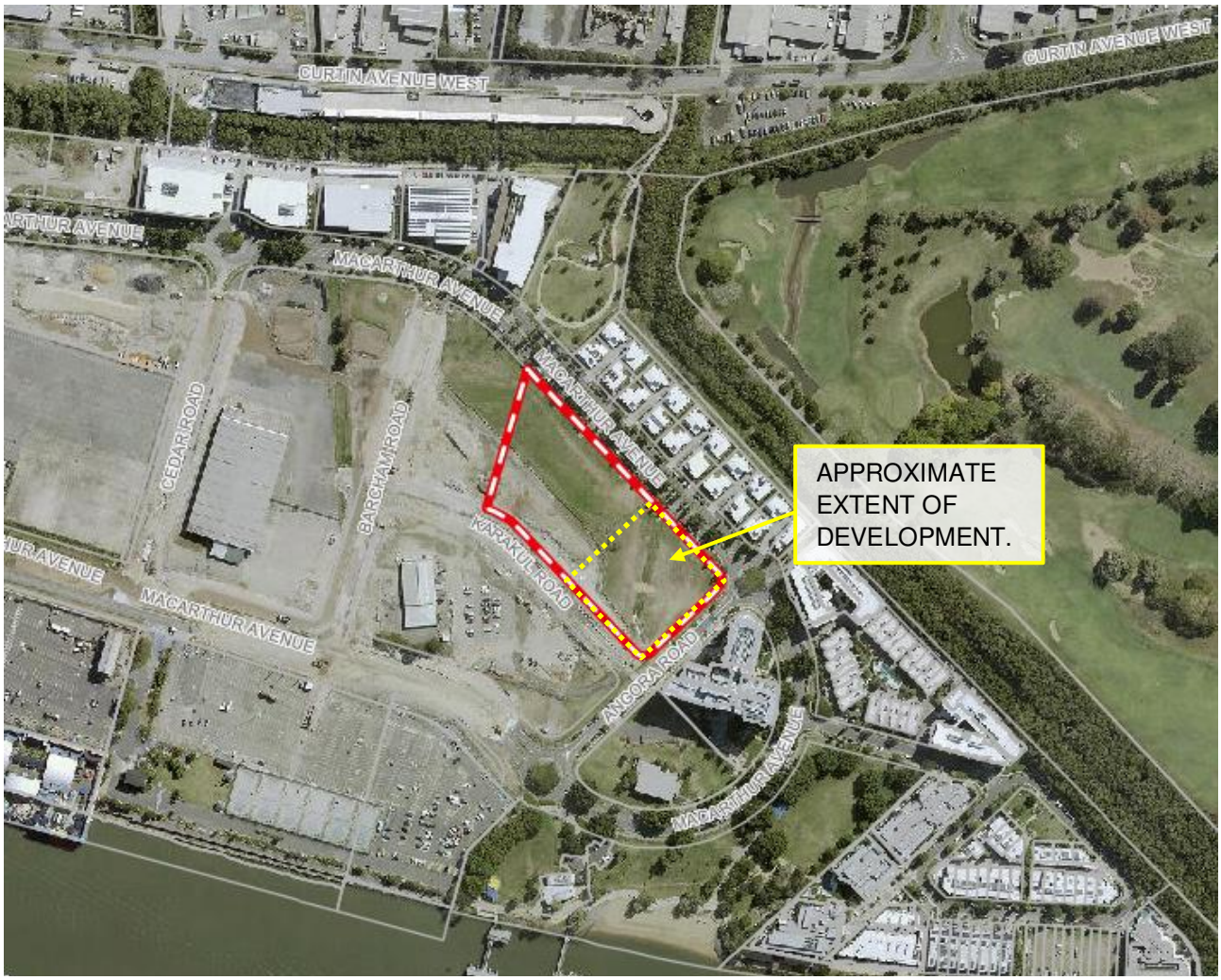


Figure 1: Site Locality (Brisbane City Plan, 2023)

2.2 Watercourses and Topography

The Site has a minimal grade toward the north-east boundary.

The site levels range between around 6.04m AHD at the south-west boundary along Karakul Rd, 4.5m AHD at the south-east boundary with Angora Rd, and 3.73m AHD at the north-east boundary with MacArthur Avenue.

Ground elevations at time of survey (6 October 2022 by Land Partners Consultants) on the site are lower than the boundary elevations, and show a swale drain aligned south-north through the site.

The Brisbane River is approximately 220m south of the site.

Please Refer to **Appendix A** for detailed survey.

2.3 Easements and Encumbrances

Current cadastral information indicates the site does not present any easements or encumbrances, however the survey drawing completed by Land Partners Consultants indicate there is an easement proposed along the Karakul Road at the south of the site. It is understood the purpose of this easement is to cover the existing batters to protect the stability of the road. The proposed works will require works within this area.

2.4 Existing Land Use and Proposed Development

The site is currently undeveloped. It is being proposed to undergo development to construct an aged care facility. The development will include 6 storey 150 bed residential building with associated parking and landscaping areas.

Refer to **Appendix B** for the proposed Development Plans.

2.5 Flooding conditions

BCC's Flood wise report (included in **Appendix C**) indicates that the site not affected by flooding from Brisbane River in the 1% AEP (100 year average recurrence interval) flood event.

BCC's report indicates the site is flagged for overland flow path.

BCC's GIS Flood Mapping shown in figure 2 below, indicates the overland flow flag is related to the existing open channel and the existing sag at the property, which means this can be easily addressed by raising the site levels as proposed under the development works.

BCC flood mapping figure also shows that the existing overland flow at MacArthur Avenue is related to the inundation at the road sag. It is anticipated the development of the site will not change existing overland flow conditions.

The proposed development will be well above existing flood levels in BCC's GIS Flood mapping. Table 1 below shows a summary of the flood levels applicable for the site (BCC's GIS Flood Mapping).

Table 1: Flood Levels (BCC's Flood GIS Flood Mapping)

Source and likelihood	Elevation (m AHD)
Brisbane River 1% AEP	2.50m
Brisbane River January 2011	2.00m
Brisbane River 0.5% AEP	2.60m*
Brisbane River 0.05% AEP	3.86m*
Overland flow path 2% AEP	3.50m*

* From lidar contours

It is understood EDQ is in the process of undertaking new flood modelling for area to stablish the overland flow conditions for the EDQ developments at Hamilton.

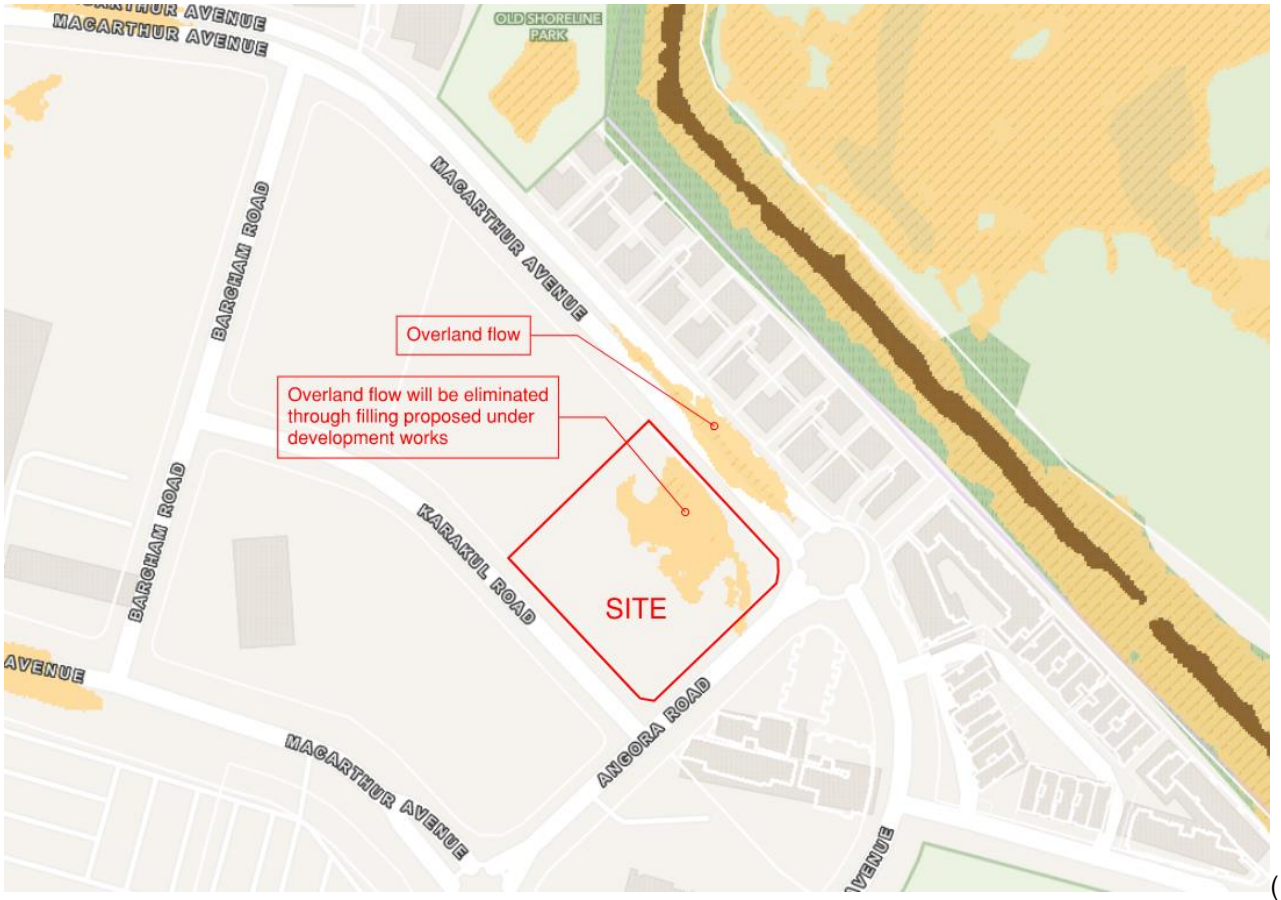


Figure 2: Overland Flow (BCC's GIS Flood Mapping, 2024)

2.6 Soils / Geotechnical Conditions / Acid Sulphate Soil

A detailed geotechnical report has not yet been prepared for the site.

Potential acid sulphate soils exist at the site as indicated on Councils potential and actual acid sulphates soils mapping. Further investigation will be required if excavation below existing surface levels is required.

Further detailed geotechnical investigations will be undertaken through detailed design stages.

2.7 Fire Ants

The site is located in ant Biosecurity zone 2 of the National Fire Ant Eradication Program. Restrictions on the movement of soil offsite are placed on properties in this zone. Exporting soil off site will need to meet Biosecurity Obligations. Refer to National Fire Ant Eradication Program (fireants.org.au) for further details.

3 Existing Services

3.1 Sewer

Based off information obtained from Urban Utilities' online mapping system, there are two sewer gravity mains in at the north and east of the site. The sewer main to the north consist of a 275mm GRP running to the northwest under MacArthur Avenue. The sewer main at the east consist of a 225mm GRP running north under Angora Road.

Records indicate there is a sewer manhole at the east of the site. This manhole discharges into the sewer main at Angora Road through a 160mm PE pipe. It is proposed to use this manhole to service the site. Sewer connection works will be subject to UU approval at detail design stage.

Refer to Appendix D for the civil schematic design.

3.2 Water Supply

Based off information obtained from Urban Utilities' online mapping system, there are various water mains in the vicinity of the site, all connected to the same local water network. There is a 180mm PE main at the southern verge of Karakul Road. There is a 180mm PE main at the site frontage at Angora Road. This main then changes to 150mm uPVC at the MacArthur Avenue site frontage.

Records indicate the site has an existing 20mm diameter water property connection at the northern corner. This connection is not adequate to service the site and will be disconnected and capped.

The development is proposing to connect to the 150mm water main at MacArthur Avenue. Two water meters 150 and 100mm dia will be required for fire and domestic services respectively. Water connection works will be subject to UU approval at detail design stage.

Refer to Appendix D for the civil schematic design.

3.3 Electrical Services

Before You Dig (BYD, formerly dial before you dig) and survey records indicate there is existing underground electricity infrastructure at the site frontage at MacArthur Avenue, Angora and Karakul Roads. It is anticipated a suitable electrical service supply is available for the site. This will be confirmed at detail design stage.

Refer to Appendix E for information obtained from BYD search.

3.4 Communications Services

BYD and survey records indicate there are existing underground telecommunication infrastructure at the site frontage at MacArthur Avenue. It is anticipated a suitable electrical service supply is available for the site. This will be confirmed at detail design stage.

Refer to Appendix E for information obtained from BYD search.

3.5 Existing drainage

BYD, survey and site inspection records indicate there is drainage infrastructure servicing the roads network adjacent to the site.

The site presents two field inlet pits, one located at a high point at the south and other at a low point at the north. The site presents an open channel that flows to the north towards the lower pit. It is anticipated that the southern pit will be demolished/blocked as it will be redundant for the development. The site drainage will

discharge into the pit located to the north. It is anticipated the existing drainage infrastructure downstream of the site had been designed and constructed with sufficient capacity to serve the developed site.

4 Proposed Development

The development consists of the construction of an age care facility. The development includes a 6 storey building with 150 beds, associated parking and landscaping areas. Refer to **Appendix B** for the proposed Development Plans.

4.1 Earthworks

The development will require earthworks to fill to stablish the proposed development levels. Minor cut and retaining walls (up to 1.5m high) will be required along Karakul Road. It is understood works within the batter easement will be subject to operation works / compliance application.

4.2 External infrastructure

The proposed development will provide a new access driveway off Karakul Road. These works will require changes to the existing parallel parking arrangement, footpaths and the garden within the road verge. Relocation of streetlight pole will also be required.

Main pedestrian access to the facilities is through Angora Road. Existing verge footpath does not extend along the Angora Road frontage. The existing footpath will need to be extended to link MacArthur Avenue, Angora and Karakul Roads.

5 Stormwater Design Objectives

This chapter outlines the relevant stormwater management design objectives for site.

5.1 Stormwater Quality Objectives

Stormwater quality is to be managed in accordance with the State Planning Policy.

5.2 Hydrologic Objectives

5.2.1 Frequent Flows

There are no relevant frequent flow, or low flow objectives for this site, as the downstream waterways are heavily impaired by existing urban development.

5.2.2 Storm and Flood Flows

Storm and flood flow objectives are to:

a. Avoid any increase in flood levels to adjacent properties due to afflux caused by the development.
b. Avoid any nuisance flooding onto adjacent properties, and avoid any increase in flooding to downstream properties associated with increased impervious surfaces.
c. Ensure safe conveyance of overland flows through the site.
d. Ensure existing hydraulic hazard conditions in the area are not worsen due to the
e. development works.

5.2.3 Water Saving Targets

There are no mandatory water savings targets currently in place. Any water conservation or reuse would be voluntary.

5.3 Construction Phase Objectives

Stormwater run-off from land development and infrastructure development sites has a high potential to cause water contamination and/or environmental harm. This is regulated under the EP Act 1994.

Under S440ZG it is an offence to unlawfully deposit a prescribed water contaminant to waters. Prescribed contaminants are listed in Schedule 9 of the Environmental Protection Regulation 2008 (EP Reg), and include: ashes, clay, gravel, sediment, stones and similar organic or inorganic matter, as well as building and construction materials and waste.

Under S 319 persons in Queensland carrying out activities which may cause environmental harm must comply with the 'general environmental duty' (GED). This requires that all reasonable and practicable measures must be adopted to prevent and minimise environmental harm. Although not being able to demonstrate compliance against GED is not an offence, demonstrating that all reasonable and practicable measures have been adopted is a defence for offences such as water contamination. For instance, under chapter 10, s493A of the EP Act, where a person deposits a prescribed water contaminant to waters or causes unlawful environmental harm, it is a defence to demonstrate compliance with the GED. Demonstrating that all reasonable and practicable measures have been conceived and implemented should encompass:

- thorough and ongoing site assessments
- consideration of, and adaptation for site specific erosion risk factors including topography, soil type, climate and season
- design, installation, operation, management, maintenance and monitoring of control measures as identified in the erosion and sediment control plan.

Erosion Hazard Assessment

Based on Brisbane City Council's Erosion Hazard Assessment – June 2014, the site is a medium risk site. Refer to the Erosion Hazard Assessment form included as Attachment F to this report.

5.4 Erosion and Sediment Control Strategy

A detailed erosion and sediment control strategy will be submitted with the operational works application.

The site should be able to be effectively managed through conventional erosion and sediment control practices, including:

- timing of ground works to avoid wet weather,
- capture of runoff with filter fences,
- Avoiding stockpiling of material within the overland flow paths,
- rapid stabilization of bare soil using mulch or turf, or geo-fabric as a temporary measure,
- appropriate vehicle wash-down at entry/exit points.

It is not expected that sediment basin/s will be needed.

The following tasks shall be undertaken as part of the detailed design:
1. Hydraulic calculations for the proposed stormwater drainage system.
2. Ensure the site's stormwater runoff will be connected to the lawful point of discharge/s by gravity.
3. Ensure QUDM's overland flow safety requirements are not compromised.
4. Ensure the Stormwater Quality Improvement Devices are in accordance with the Brisbane City Council accepted requirements.
5. Ensure the stormwater drainage infrastructure complies with MP 1.4 - Building over or near relevant infrastructure.

6 Stormwater Management Strategy

6.1 Lawful point of Discharge, stormwater quantity control and actionable nuisance

Currently the site runoff is collected by the field inlet located at the north of the site. This field inlet discharges into the external drainage system at MacArthur Avenue. This field inlet is current lawful point of discharge.

The development proposes to reuse existing point of discharge. The new internal pipe drainage system (with 10% AEP capacity + climate change) will discharge into the field inlet. Flows exceeding the capacity of the proposed pipe drainage system will be managed through an overland flow path to be discharged as concentrated overland flows at MacArthur Avenue.

The site **is not** proposing to implement any flow control/mitigation (flow detention tanks) measures as it is assumed the existing drainage infrastructure downstream of the site had been designed and constructed with sufficient capacity to serve the developed site. Based on this, it is considered the development will not create actionable nuisance to any properties located upstream or downstream.

Refer to Appendix D for the civil schematic design.

AMENDED IN RED
By: Elrico Koeberg
Date: 14 February 2025

6.2 Stormwater Quality

As noted in section 5.1 the development will be required to comply with the requirements of the State Planning Policy. Refer to the State Planning Policy July, 2017, Part E State Interest – Water Quality (p46).

6.2.1 Pollutant Export Modelling

The Model for Urban Stormwater Improvement Conceptualisation (MUSIC) Version 6.3.0 was used to analyse the proposed development. The model was setup in accordance with Water by Design MUSIC Modelling Guidelines. An industrial land use was assigned to the site in order to determine the recommended MUSIC rainfall-runoff parameters. The split catchment approach in which separate roof and road source nodes are modelled has been used to generate pollutant export parameters. Rainfall data was obtained from Brisbane Airport. Rainfall data from 1/01/1985 to 13/04/1992 with a 6 minute modelling time

6.2.2 Treatment Train

The proposed treatment train consist of end-of-line Stormwater Quality Improvement Device (SQID). Detail of the treatment train are included in table 2 below.

Table 2: Proposed treatment Train

Catchment	Catchment area (m^2)	Fraction Impervious	Treatment
Roof	2,300	100%	Enviro G45 – Off-line configuration
Ground (roads, paths and landscape)	4,300	70%	
Ground by-pass (paths and landscape around building)	400	30%	By-pass

In addition to the above, the development is also proposing to implement roof water harvesting for irrigation purposes. This will be incorporated to the treatment train in the final revision of this report.

Table 3 below provides the details of the proposed proprietary devices based on the product manufactured recommendations.

Table 3: Proposed proprietary devices

Proprietary device	High Flow by pass (m^3/s)	Concentration based capture Efficiency (mg/L) (Input-Output)			
		Gross pollutants	Total Phosphorus	Total Nitrogen	Total Suspended solids
Enviro G45 Off-line configuration	0.066	0 – 0 15 - 0	0 – 0 100 – 0.001	0 – 0 100 – 0.001	0 – 0 100 – 0.001

6.2.3 Model Results

Water quality treatment train effectiveness for the total developed scenario is summarised in Table 4.

Table 4: MUSIC results

	Source Load	Residual Load	% Achieved Reduction	% Required Reduction
Flow (ML/yr)	4.42	4.42	0	N/A
TSS (kg/yr)	1.36E+03	244	82.1	80
TP (kg/yr)	2.34	0.454	80.6	60
TN (kg/yr)	10.3	4.95	52.1	45
Gross Pollutants (kg/yr)	110	5.15	95.3	90

The above results show that the proposed treatment train meet the treatment targets and there are expected to be effective in reducing post-developed average annual pollutant loads in accordance with State Planning Policy and Brisbane City Council development guidelines.

6.3 Climate Change Resilience

The civil design for the facility will implement measures to reduce/manage the impacts of the increase of extreme weather. Design will be completed in consideration of the Interim Climate Change Factors outlined on Australian Rainfall and Runoff Hub for the 2090 horizon. This anticipates that the rainfall intensities will increase by 19.7% by 2090.

Underground Drainage Conveyance

Underground drainage will be designed with conveyance capacity to manage 10% AEP storm event + 19.7%.

BOM $I_{10\text{-}5min}$ 208 mm/hr (5 minute time of concentration)

Factored intensity = 249 mm/hr

Overland Flow path conveyance

Overland flow paths will be designed with conveyance capacity in excess of 100% AEP storm event + 19.7%.

BOM $I_{100\text{-}5min}$ 310 mm/hr (5 minute time of concentration)

Factored intensity = 371 mm/hr

7 Conclusions

Rockpool is proposing to develop an age care facility on the property identified as Lot 5 SP337697 located at 330 MacArthur Avenue, Hamilton.

The site is considered suitable for the proposed development. Site constraints can be accommodated and further resolved during detailed design. No other issues have been identified that would prevent the development from being approved by Council.

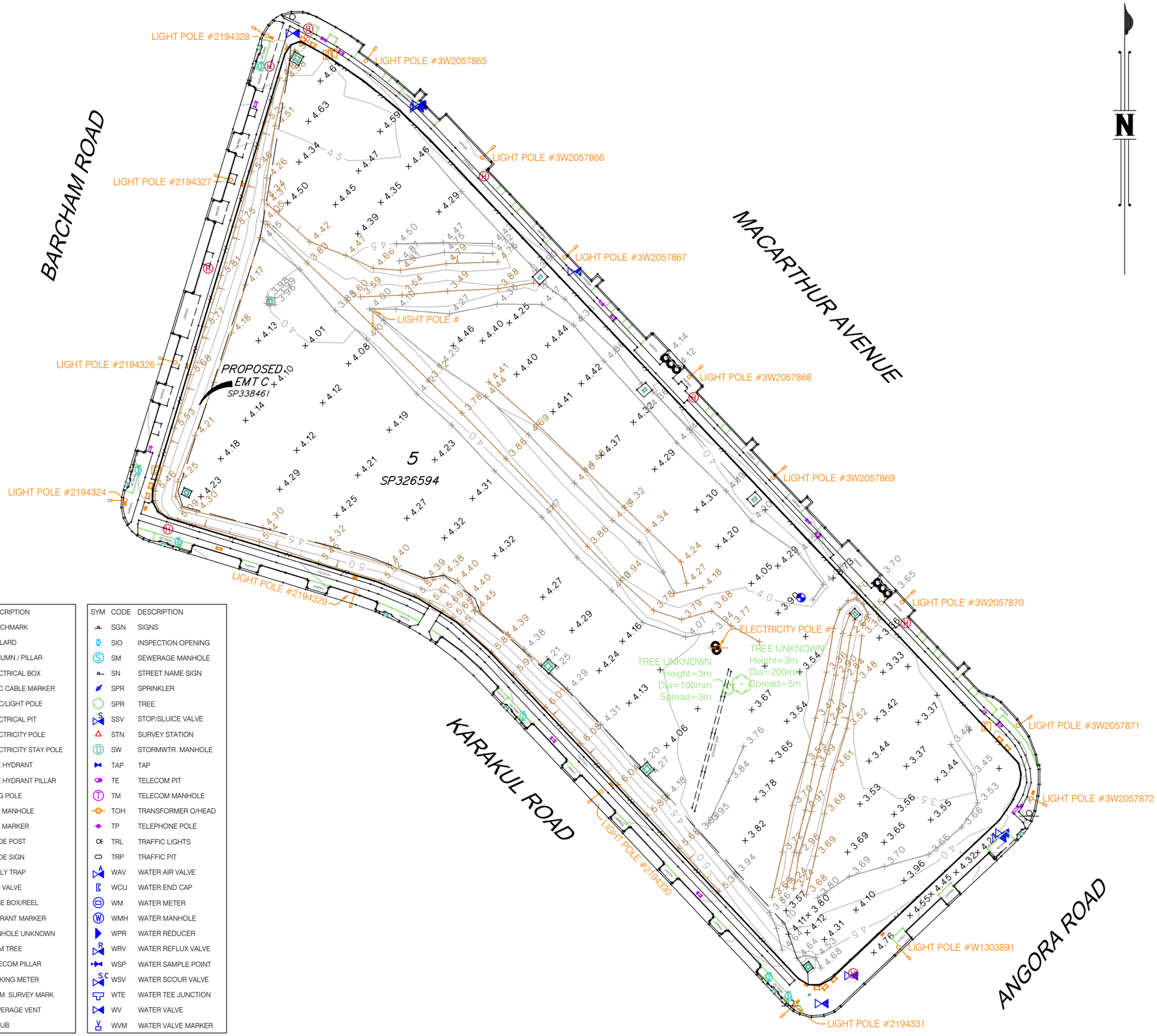
The proposed development addressed these issues as follows:

- There is existing sewer, water, electricity and communication infrastructure in the vicinity of the site and adequate connection points are readily available.
- The development is not affected by flooding and a lawful point of discharge is readily available.
- No stormwater detention is proposed as it is assumed the downstream drainage was designed and constructed with sufficient capacity to serve the developed site.
- The proposed stormwater quality treatment train will achieve the required pollutant reduction targets.
- The site is not affected by flooding from Brisbane River nor creek flooding. Overland flow path at MacArthur Avenue will not impose any constraint ion the development of the site.

8 References

- Brisbane City Council CityPlan 2014
- Department of Environment and Resource Management (2017), Queensland Urban Drainage Manual
- International Erosion Control Association (IECA) Best Practice Erosion and Sediment Control
- State Planning Policy July 2017 [QLD]

Appendix A Site Survey Plan, Lands Partners Consultants dated 06/10/2022



SYM	CODE	DESCRIPTION
	BM	BENCHMARK
	BOL	BOLLARD
	CP	COLUMN / PILLAR
	EBX	ELECTRICAL BOX
	ECM	ELEC CABLE MARKER
	ELP	ELEC/LIGHT POLE
	EM	ELECTRICAL PIT
	EP	ELECTRICITY POLE
	ESP	ELECTRICITY STAY POLE
	FH	FIRE HYDRANT
	FHP	FIRE HYDRANT PILLAR
	FP	FLAG POLE
	GMH	GAS MANHOLE
	GMK	GAS MARKER
	GP	GUIDE POST
	GS	GUIDE SIGN
	GT	GULLY TRAP
	GV	GAS VALVE
	HB	HOSE BOX/REEL
	HM	HYDRANT MARKER
	MHU	MANHOLE UNKNOWN
	PLM	PALM TREE
	PIL	TELECOM PILLAR
	PKM	PARKING METER
	PSM	PERM. SURVEY MARK
	SEV	SEWERAGE VENT
	SHB	SHRUB

SYM	CODE	DESCRIPTION
	SGN	SIGNS
	SIO	INSPECTION OPENING
	SM	SEWERAGE MANHOLE
	SN	STREET NAME SIGN
	SPR	SPRINKLER
	SPR	TREE
	SSV	STOP/SLUICE VALVE
	STN	SURVEY STATION
	SW	STORMWTR. MANHOLE
	TAP	TAP
	TE	TELECOM PIT
	TM	TELECOM MANHOLE
	TOH	TRANSFORMER O/HEAD
	TP	TELEPHONE POLE
	TRL	TRAFFIC LIGHTS
	TRP	TRAFFIC PIT
	WAV	WATER AIR VALVE
	WCU	WATER END CAP
	WM	WATER METER
	WMH	WATER MANHOLE
	WPR	WATER REDUCER
	WRV	WATER REFLUX VALVE
	WSP	WATER SAMPLE POINT
	WSV	WATER SCOUR VALVE
	WTE	WATER TEE JUNCTION
	WV	WATER VALVE
	WVM	WATER VALVE MARKER

NOTE: ALL DIMENSIONS AND AREAS ON THIS PLAN ARE SUBJECT TO SURVEY AND REQUIREMENTS FOR LODGEMENT OF SURVEY PLANS IN THE DEPARTMENT RESOURCES.

CLIENT
Economic Development Queensland

LOT LAYOUT
DETAIL SURVEY

REAL PROPERTY DESCRIPTION
Proposed
Lot 5 on SP326594

NOTES

i) This plan has been prepared for the exclusive use of EDQ and their consultants for design purposes and is not to be used for any other purpose or by any other entity without the express permission of LandPartners Pty Ltd.

ii) The title boundaries as shown hereon were not marked or surveyed at the time of survey and have been determined from the dimensions shown on plans of survey registered in the Department of Resources.

iii) The boundaries may change subject to survey, engineering design or council requirements.

iv) Services shown hereon have been located where visible by field survey. No investigation or location of underground services has been undertaken. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

v) This data should not be used for construction purposes without confirmation by LandPartners Pty Ltd.

vi) This data should not be reproduced in any way without the permission of LandPartners Pty Ltd. Any reproduction of this data must contain these notes

SCALE BAR
10m 0 20 50m

SCALE 1:1000 (A3)

1	AJG	6/10/2022	INITIAL ISSUE

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ISO 9001 Quality Management
ISO 9001: FS 533063

HEIGHT DATUM AHD D	LOCAL AUTHORITY BRISBANE C.C.
HEIGHT ORIGIN PSM186779 RL 4.325m	SCALE 1:1000 (A3)
MERIDIAN SP326594	DRAWN AJG / DATE 6/10/2022
CO-ORD SYSTEM Arbitrary Plane	CHECKED MLM / DATE 6/10/2022
CAD FILE BRMM7695-000-240-2	APPROVED MLM / DATE 6/10/2022

UDN
BRMM7695-000-244-1

Appendix B Proposed Development Plan. GJG Architects

Appendix C Flood Wise Property report (Brisbane City Council)

FloodWise Property Report

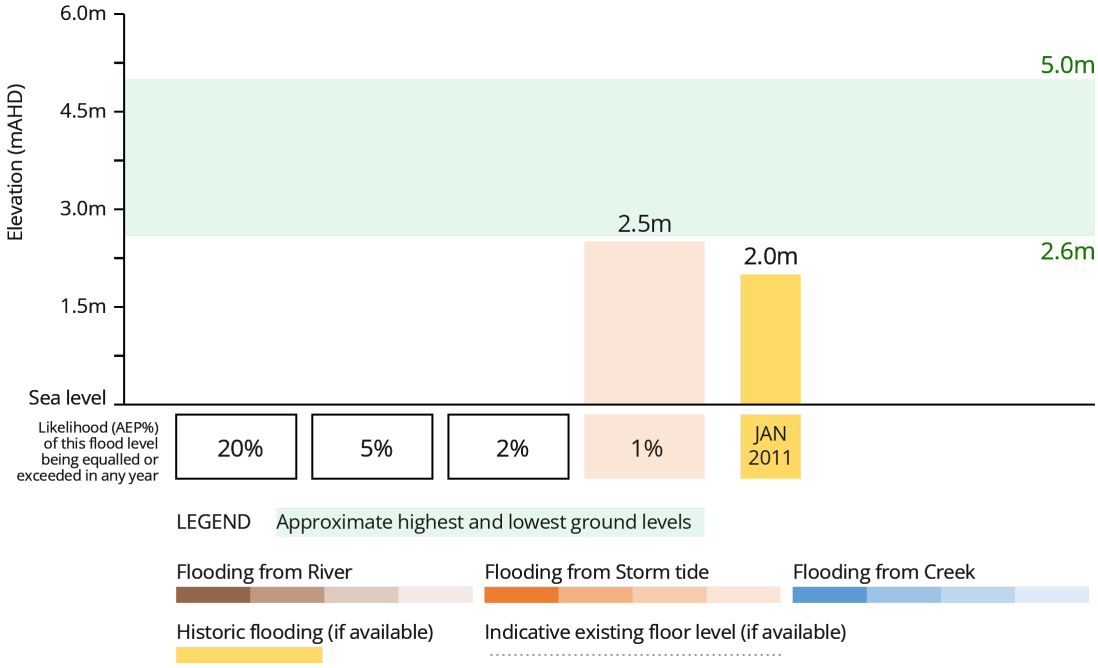
330 MACARTHUR AVE, HAMILTON 4007
Lot 5 on SP337697

Dedicated to a better Brisbane

THE PURPOSE OF THIS REPORT IS FOR BUILDING AND DEVELOPMENT

Brisbane City Council's FloodWise Property Report **provides technical flood planning information** including estimated flood levels, habitable floor level requirements and more. **This report uses the adopted flood planning information in Brisbane City Plan 2014**, that guides how land in Brisbane is used and developed for the future. Find out more about planning and building. To understand how to be **resilient and prepare for floods**, visit Council's Be Prepared webpage. Find more information about how to read a FloodWise Property Report.

Graph showing only the highest source/type of flooding for 1%, 2%, 5% and 20% likelihoods. Also shows historic flood levels. Other flood types and levels may be present and will be listed in the Flood Planning Information table below. This graph does not include overland flow flooding. If applicable, overland flow information is shown in the Planning and Development Information section below.
NOTE: See Useful Definitions section to explain terminology.



Combined 1% AEP for river, creek and storm tide flood extent (if applicable) from the adopted Brisbane City Plan 2014.
Read more about Brisbane City Plan 2014.

Are you resilient and ready for flood?

- Sign up to the Brisbane Severe Weather Alert at **brisbane.qld.gov.au/beprepared**
- Visit bom.gov.au for the latest weather updates.
- Have an evacuation plan, emergency kit and important phone numbers ready.
- Observe where water flows from and to during heavy rain.
- Consider how flood-resilient building techniques will have you home faster and with less damage.

Life threatening emergencies **000** Police/fire/ambulance (mobiles **000** and **112**)

State Emergency Service (SES) **132 500**
Energex **13 19 62**
Brisbane City Council **3403 8888**

Technical Summary

This section of the FloodWise Property Report contains more detailed flood information for this property so **surveyors, builders, certifiers, architects, and engineers can plan and build** in accordance with Council's planning scheme.

Find more information about planning and building in Brisbane or talk to a Development Services Planning Information Officer via Council's Contact Centre on (07) 3403 8888.

Property Information Summary

The following table provides a summary of flood information for this property. More detailed flood level information is provided in the following sections of this report.

Property Summary	Level (mAHD) / Comment	Data Quality Code
Minimum ground level	2.6	C
Maximum ground level	5.0	C
Source of highest flooding	Storm tide	

Flood Planning Information

The table below displays the peak estimated flood levels by probability for this property. Estimated flood level data should be used in conjunction with applicable planning scheme requirements - Refer to Flood Planning and Development Information section below for further information.

Note this table does not include overland flow. If overland flow is applicable to this property, refer to the Flood Planning and Development section below for further information.

Likelihood / Description	Level (mAHD)	Source
20%	N/A	
5%	N/A	
2%	N/A	
1%	2.5	Stormtide (Moreton Bay)
0.2%	N/A	
January 2011	2.0	River (Brisbane River)
Minimum Habitable Floor Level (dwelling house)	N/A*	

* Council may not have this data available. Customers are recommended to engage a Registered Professional Engineer of QLD (RPEQ) for further advice. For information on seeking Planning Advice, please visit www.brisbane.qld.gov.au/planning-and-building.

Flood Planning and Development Information

This section of the FloodWise Property Report contains information about Council's planning scheme overlays. Overlays identify areas within the planning scheme that reflect distinct themes that may include constrained land and/or areas sensitive to the effects of development.

Flood overlay code

The Flood overlay code of Council's planning scheme uses the following information to provide guidelines when developing properties. The table below summarises the flood planning areas (FPAs) that apply to this property. Development guidelines for the FPAs are explained in **Council's planning scheme**.

Flood planning areas (FPA)		
River	**Creek / waterway**	**Overland flow**
		Applicable

To find more information about Council's flood planning areas (FPAs) for Brisbane River and Creek/waterway flooding to guide future building and development in flood prone areas, please review **Council's Flood Planning Provisions**.

Coastal hazard overlay code

The Coastal hazard overlay code of Council's planning scheme uses the following information to provide guidelines when conducting new developments. The table below summarises the coastal hazard categories that apply to this property. Development guidelines for the following Coastal hazard overlay sub-categories are explained in Council's **planning scheme**.

Coastal hazard overlay sub-categories
There are currently no Coastal hazard overlay sub-categories that apply to this property.

Note: Where land is identified within one for more flood planning areas on the Flood overlay or is identified within one of the Storm tide inundation area sub-categories on the Coastal hazard overlay, the assessment criteria that provides the highest level of protection from any source of flooding applies.

Property development flags
Overland flow path - Mapping indicates this property may be located within an overland flow path. Overland flow flooding usually occurs when the capacity of the underground piped drainage system is exceeded and/or when the overland flow path is blocked. It is recommended you consult a Registered Professional Engineer of Queensland (RPEQ) to determine this property's habitable floor level and flooding depth. Please refer to Council's planning scheme for further information.
Large allotment - This property is either a Large Allotment of over 1000 square metres or is located within a Large Allotment. Flood levels may vary significantly across allotments of this size. Further investigations may be warranted in determining the variation in flood levels and the minimum habitable floor level across the site. For more information or advice, please consult a Registered Professional Engineer of Queensland (RPEQ).

Useful Flood Information Definitions

Australian Height Datum (AHD) - The reference level for defining ground levels in Australia. The level of 0.0m AHD is approximately mean sea level.

Annual Exceedance Probability (AEP) - The probability of a flood event of a given size occurring in any one year, usually expressed as a percentage annual chance.

- **0.2% AEP** - A flood event of this size is considered rare but may still occur. A flood of size or larger has a 1 in 500 chance or a 0.2% probability of occurring in any year.
- **1% AEP** - A flood of this size or larger has a 1 in 100 chance or a 1% probability of occurring in any year.
- **2% AEP** - A flood of this size or larger has a 1 in 50 chance or a 2% probability of occurring in any year.
- **5% AEP** - A flood of this size or larger has a 1 in 20 chance or a 5% probability of occurring in any year.
- **20% AEP** - A flood of this size or larger has a 1 in 5 chance or a 20% probability of occurring in any year.

Data quality

- **Data Quality Code A** - Level data based on recent surveyor report or approved as-constructed drawings.
- **Data Quality Code B** - Level data based on ground-based mobile survey or similar.
- **Data Quality Code C** - Level data derived from Airborne Laser Scanning or LiDAR information.

Defined Flood Level (DFL) - The DFL is used for commercial and industrial development. The Defined flood level (DFL) for Brisbane River flooding is a level of 3.7m AHD at the Brisbane City Gauge based on a flow of 6,800 m/s. DFL is only applicable for non-residential uses affected by Brisbane River flooding.

Flood planning area (FPA) - Council has developed five Flood planning areas (FPAs) as part of Brisbane City Plan 2014 Flood overlay mapping for Brisbane River, Creek/waterway flooding and Overland flow to guide future building and development in flood prone areas. Storm tide flooding is mapped separately. The FPAs are designed to recognise the flood hazard for different flooding types. Flood hazard is a combination of frequency of flooding, the flood depth, and the speed at which the water is travelling. **Find more information here**.

Maximum and minimum ground level - Highest and lowest ground levels on the property based on available ground level information. A Registered Surveyor can confirm exact ground levels.

Minimum habitable floor level (dwelling house) - The minimum level in metres AHD at which habitable areas of development (generally induding bedrooms, living rooms, kitchen, study, family, and rumpus rooms) must be constructed as required by the Brisbane City Plan 2014.

Indicative existing floor level - The approximate level in metres AHD of the lowest habitable floor in the existing building (exduding apartments). The data is sourced from a range of sources with varying accuracy levels.

Property - A property will contain 1 or more lots. The multiple lot warning is shown if you have selected a property that contains multiple lots.

Residential flood level (RFL) - This flood level for the Brisbane River equates to the 1% annual exceedance probability (AEP) flood level.

To learn more, visit **Brisbane City Council's Flood Information Hub**

Brisbane City Council's Online Flood Tools

Council provides several online flood tools:

- to guide planning and development
- to help residents and businesses understand their flood risk and prepare for flooding.

Council's online flood tools for planning and development purposes indude:

- **FloodWise Property Report**
- **Flood Overlay Code**

For more information on Council's planning scheme and online flood tools for planning and development:

- phone (07) 3403 8888 and ask to talk to a Development Services Planning Information Officer

- visit brisbane.qld.gov.au/planning-building

Council's Planning Scheme - The Brisbane City Plan 2014 (planning scheme) has been prepared in accordance with the Sustainable Planning Act as a framework for managing development in a way that advances the purpose of the Act. In seeking to achieve this purpose, the planning scheme sets out the Council's intention for future development in the planning scheme area, over the next 20 years.

Disclaimer

1. Defined flood levels and residential flood levels, minimum habitable floor levels and indicative existing floor levels are determined from the best available information to Council at the date of issue. These levels, for a particular property, may change if more detailed information becomes available or changes are made in the method of calculating levels.
2. Council makes no warranty or representation regarding the accuracy or completeness of a FloodWise Property Report. Council disdaims any responsibility or liability in relation to the use or reliance by any person on a FloodWise Property Report.

Planning to build or renovate?

For information, guidelines, tools and resources to help you track, plan or apply for your development visit brisbane.qld.gov.au/planning-building

You can also find the Brisbane City Plan 2014 and Neighbourhood Plans as well as other information and training videos to help, with your building and development plans.

Appendix D Civil Schematic Design

MacArthur Avenue

Existing stormwater field inlet (site discharge - lawful point of discharge)

Authority meter and backflow valve set 5.0ml x 0.6mw x 1.5mh, allow 1.0m clearance in front of meter & backflow set. 150ø fire service, 100ø domestic service

Existing sewer gravity main (225mm dia)

Existing sewer manhole. Proposed sewer connection

Overland flow path

Roofwater tanks

Grades to back of existing kerb

Stormwater quality chamber EnviroAustralis G45

RL 4.4m

RL 3.9m

RL 4.5m

RL 4.4m

RL 4.5m

RL 4.5m

Angora Road

New footpath at Angust Road. Details to be confirmed

Overland flow path

Existing piped drainage (from site observation). Grading to be confirmed.

Driveway details to be confirmed

Overland flow path

Streetlight pole to be relocated

Retaining wall at boundary

Karakul Road

SITE PLAN - SCHEMATIC CIVIL
NA240703-SK-C1
DATE: 11/06/2024

ACOR CONSULTANTS

Scale 1:400 @A3

N

Appendix E Before You Dig records (BYD)

Job # 36868948
Seq # 240344423
Provider: Brisbane City Council
Telephone: 07 3403 8888

Legend

BYDA Enquiry

Detailed map page

In an emergency contact Brisbane City Council on 07 3403 8888

Index Sheet

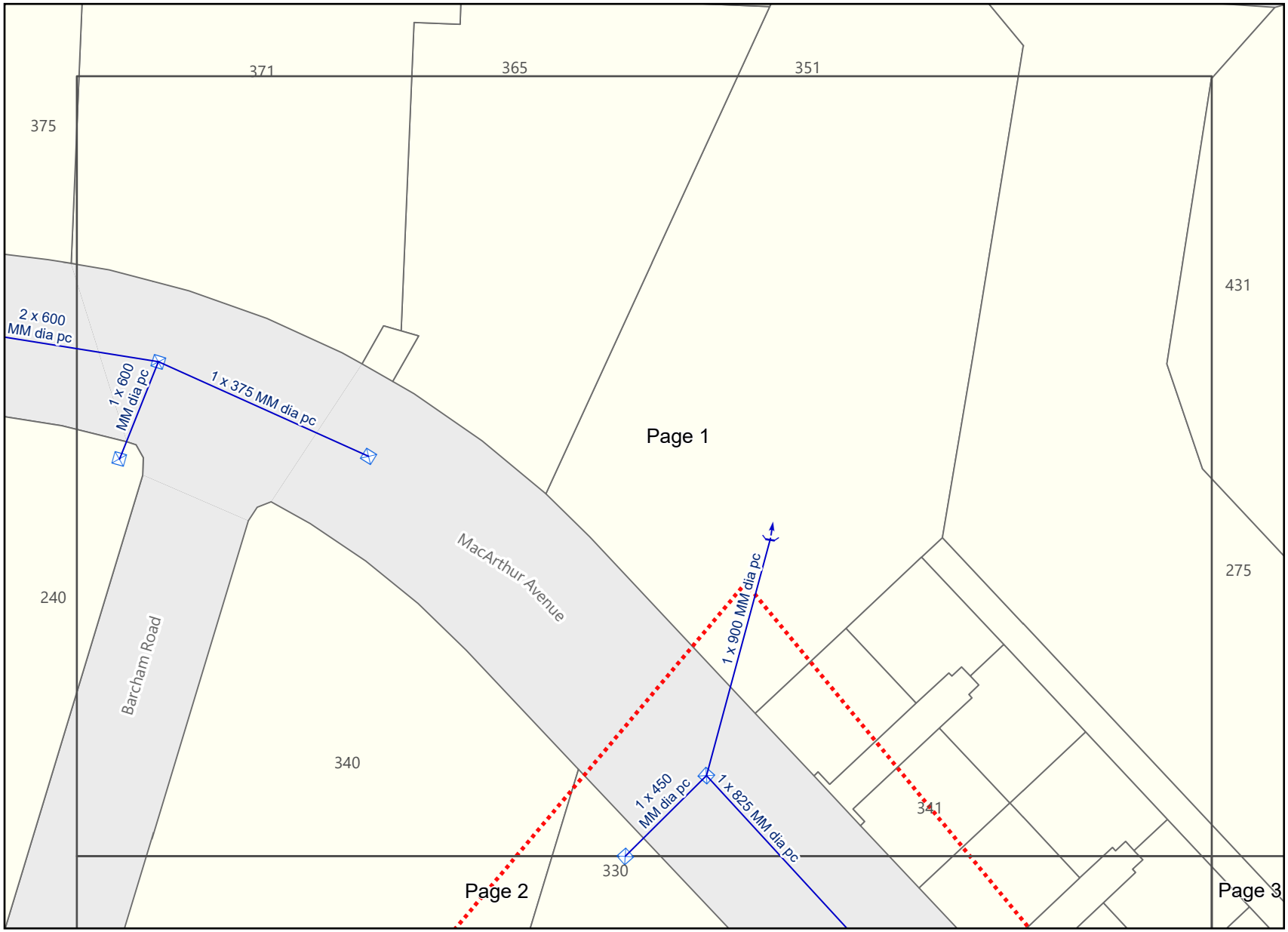
0 37.5 75 150 m

Scale 1:3,500

N

Plans generated by SmarterWX™ Automate

Job # 36868948
Seq # 240344423
Provider: Brisbane City Council
Telephone: 07 3403 8888



Legend

BYDA Enquiry

Stormwater Network

- Stormwater Gully / Roofwater Connection
- Stormwater Field Inlet
- Pipe End Outlet

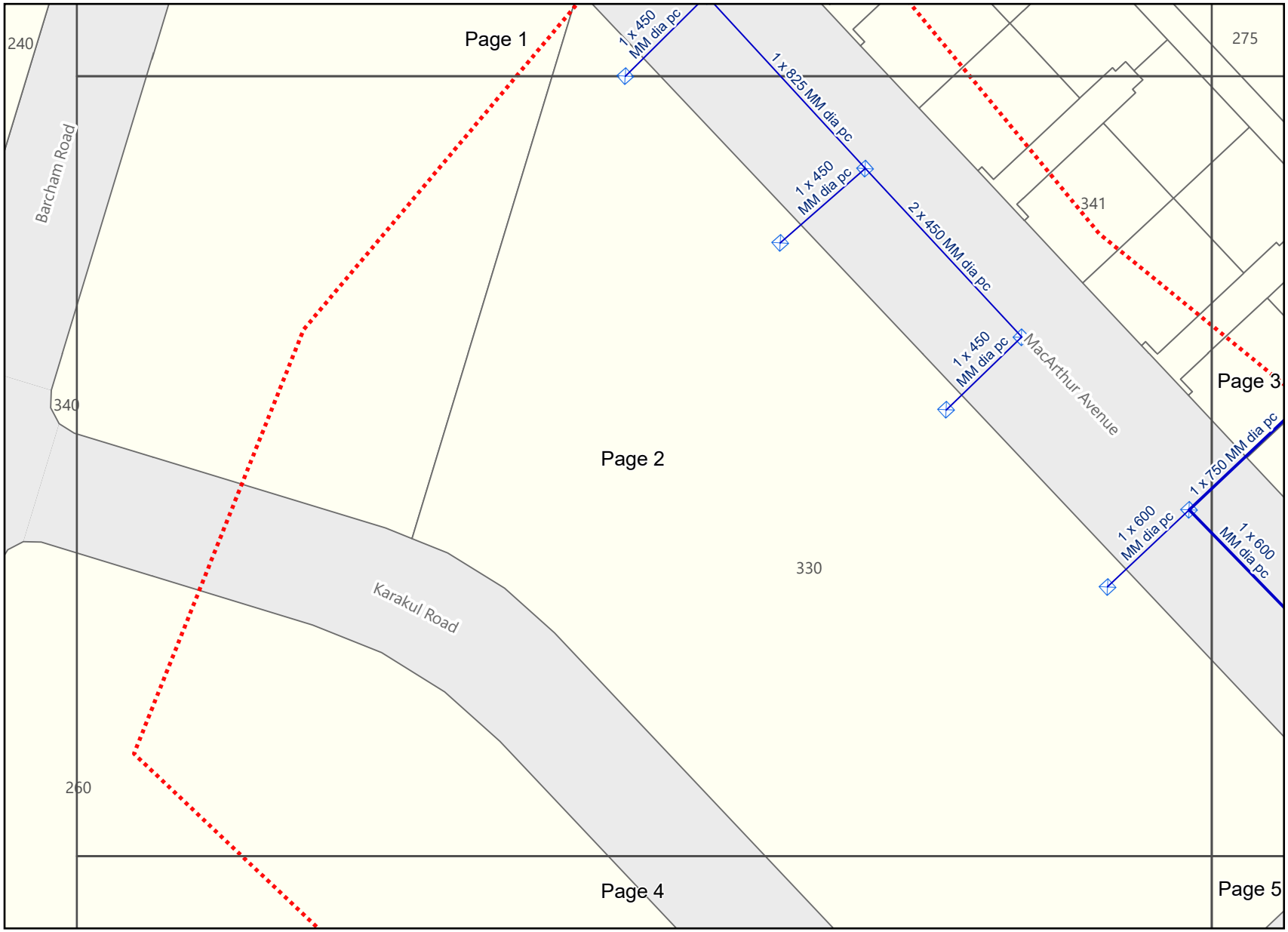
In an emergency contact Brisbane City Council on 07 3403 8888
10/06/24 (valid for 30 days)

0 10 20 40 m

Scale 1:1,000

Plans generated by SmarterWX™ Automate

Job # 36868948
Seq # 240344423
Provider: Brisbane City Council
Telephone: 07 3403 8888



Legend

BYDA Enquiry

Stormwater Network

- Stormwater Drain
- Stormwater Gully / Roofwater Connection
- Stormwater Field Inlet

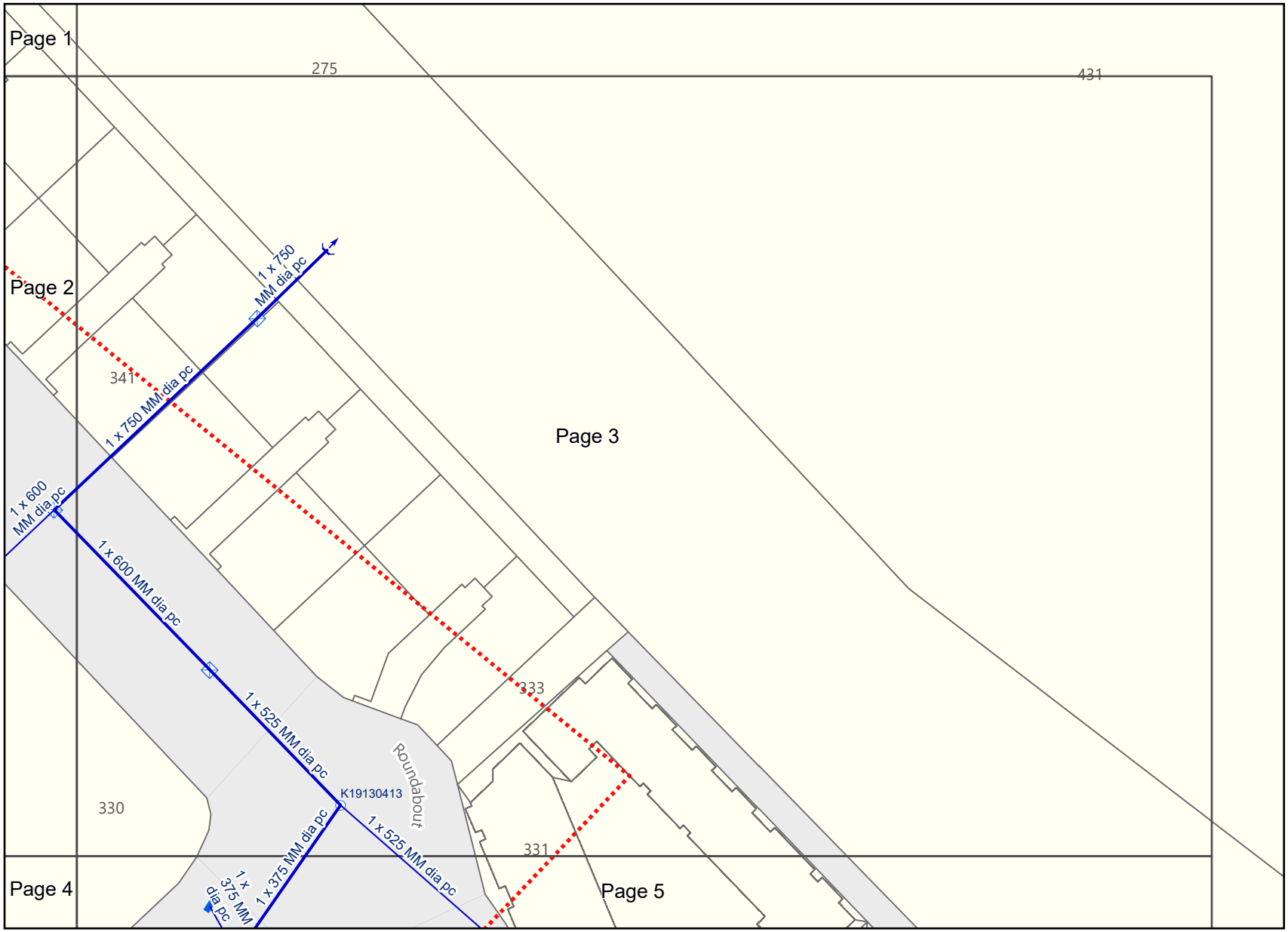
In an emergency contact Brisbane City Council on 07 3403 8888
10/06/24 (valid for 30 days)

0 10 20 40 m

Scale 1:1,000

Plans generated by SmarterWX™ Automate

Job # 36868948
Seq # 240344423
Provider: Brisbane City Council
Telephone: 07 3403 8888



Legend

BYDA Enquiry

Stormwater Network

- Stormwater Drain
- Stormwater Gully / Roofwater Connection
- Stormwater Maintenance Hole
- Stormwater Gully Pit
- Stormwater Field Inlet
- Pipe End Outlet

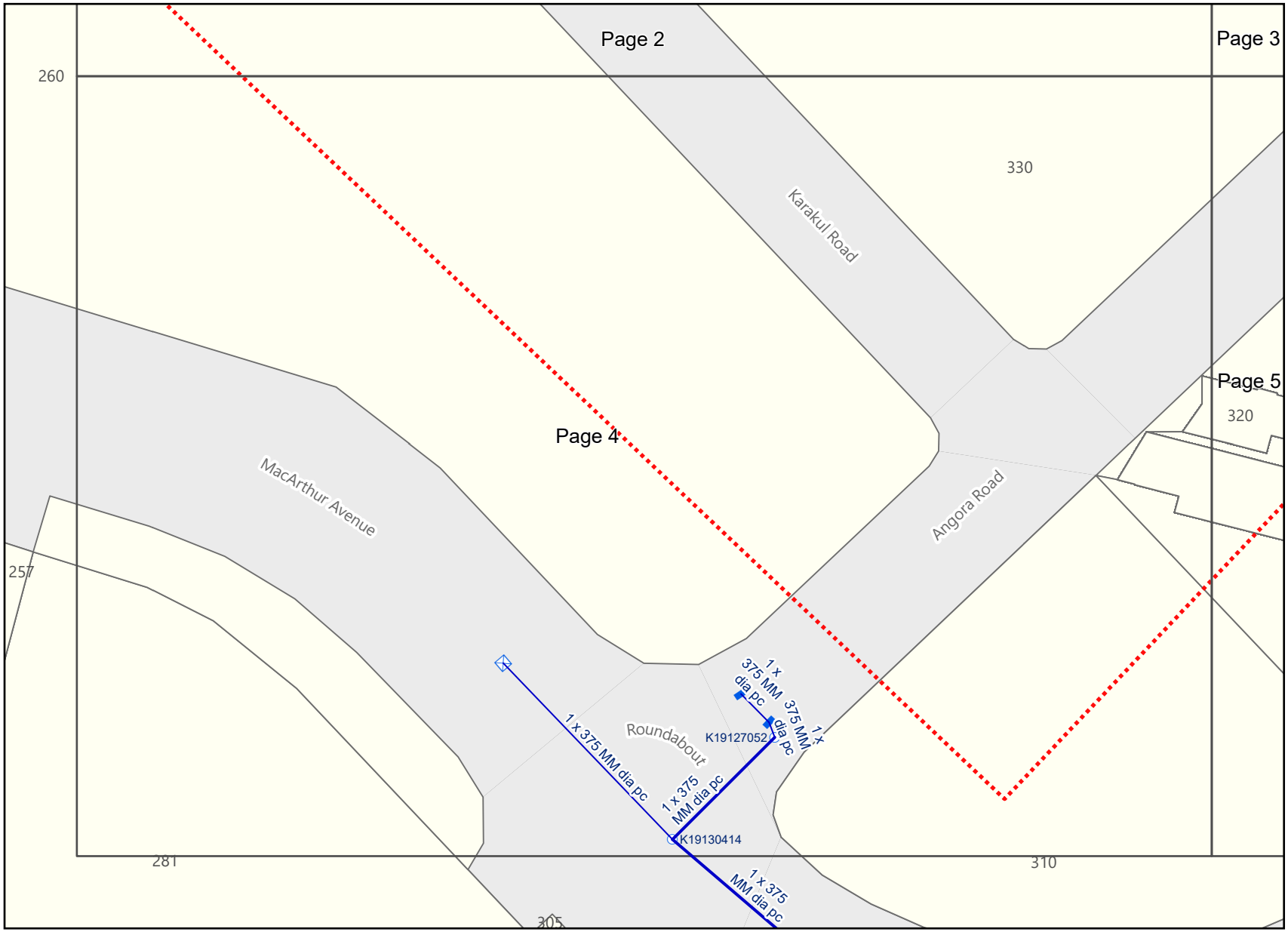
In an emergency contact Brisbane City Council on 07 3403 8888
10/06/24 (valid for 30 days)

0 10 20 40 m

Scale 1:1,000

Plans generated by SmarterWX™ Automate

Job # 36868948
Seq # 240344423
Provider: Brisbane City Council
Telephone: 07 3403 8888



Legend

BYDA Enquiry

Stormwater Network

- Stormwater Drain
- Stormwater Gully / Roofwater Connection
- Stormwater Maintenance Hole
- Stormwater Gully Pit
- Stormwater Field Inlet

In an emergency contact Brisbane City Council on 07 3403 8888
10/06/24 (valid for 30 days)

0 10 20 40 m

Scale 1:1,000

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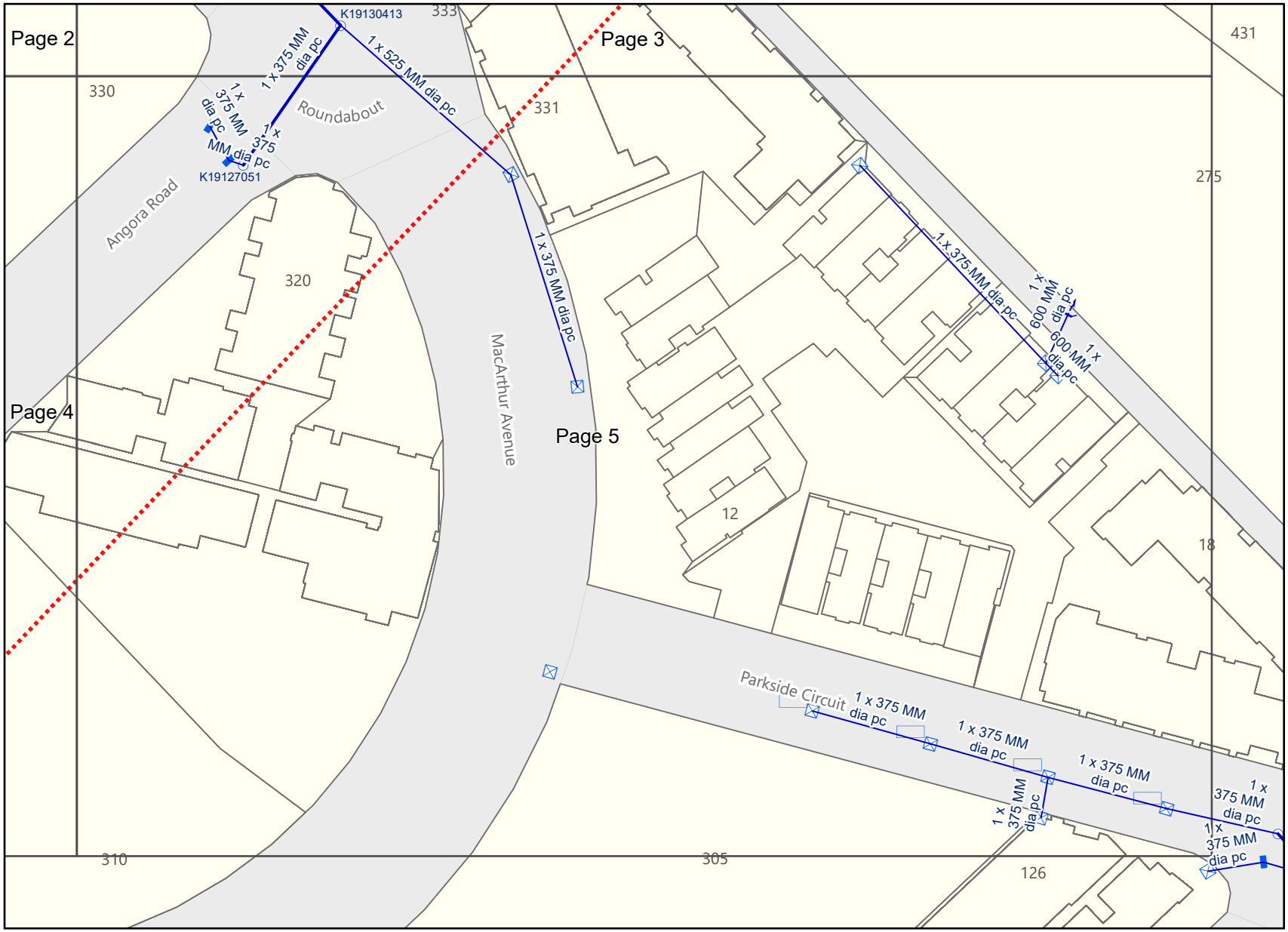


Legend

BYDA Enquiry

Stormwater Network

- Stormwater Drain
- Stormwater Gully / Roofwater Connection
- Stormwater Maintenance Hole
- Stormwater Gully Pit
- Stormwater Field Inlet
- Stormwater Quality Improvment Device
- Pipe End Outlet

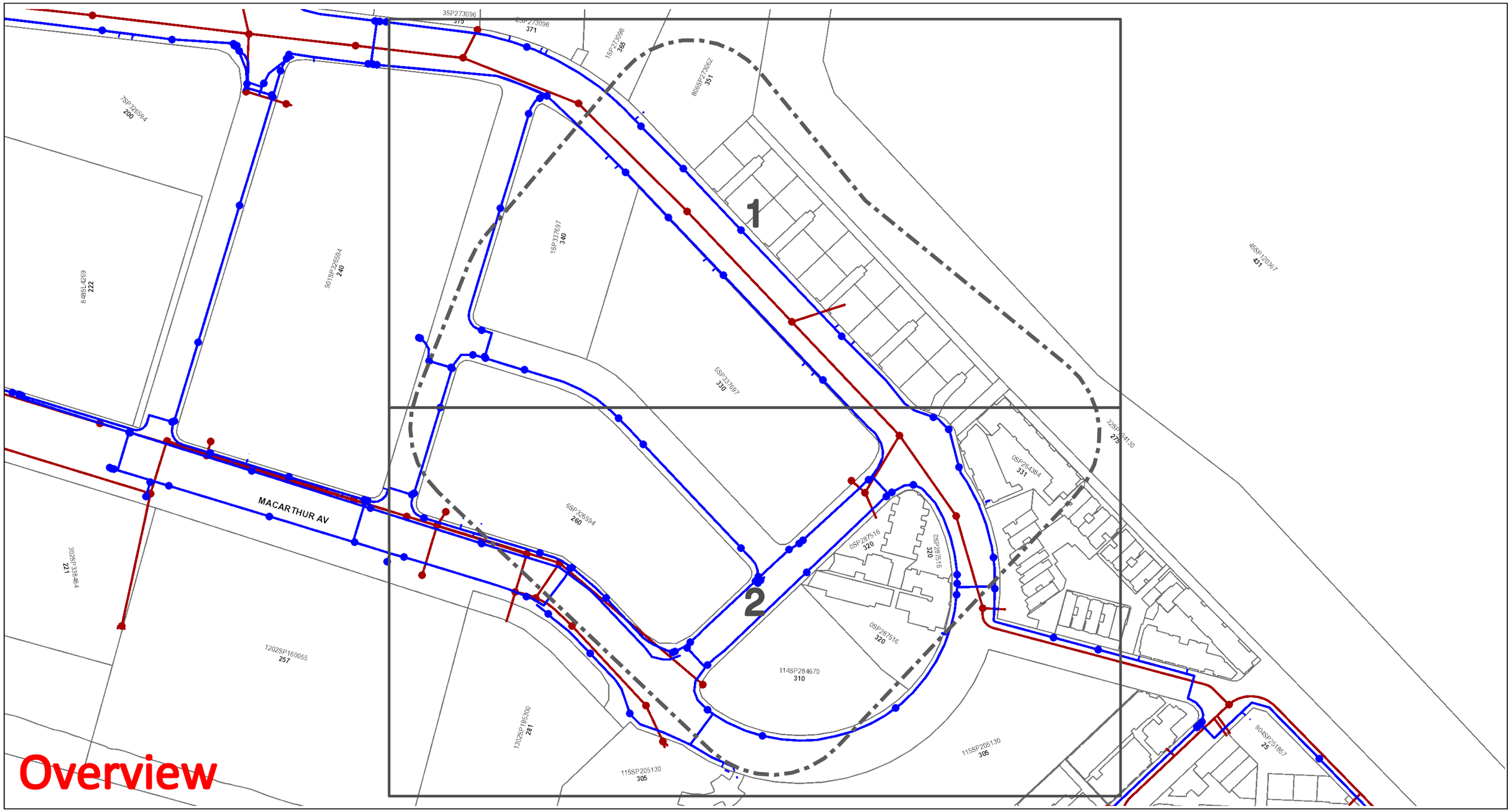
In an emergency contact Brisbane City Council on 07 3403 8888
10/06/24 (valid for 30 days)

0 10 20 40 m

Scale 1:1,000

Plans generated by SmarterWX™ Automate

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



Before You Dig Australia - Urban Utilities Water, Recycled Water and Sewer Infrastructure

BYDA Reference No: **240344425**

Date BYDA Ref Received: 10/06/2024

Date BYDA Job to Commence: 11/06/2024

Date BYDA Map Produced: 10/06/2024

This Map is valid for 30 days Produced By: Urban Utilities

Sewer

- Infrastructure
- Major Infrastructure
- Network Pipelines
- Network Structures

Water

- Infrastructure
- Major Infrastructure
- Network Pipelines
- Network Structures
- Water Service (Indicative only)

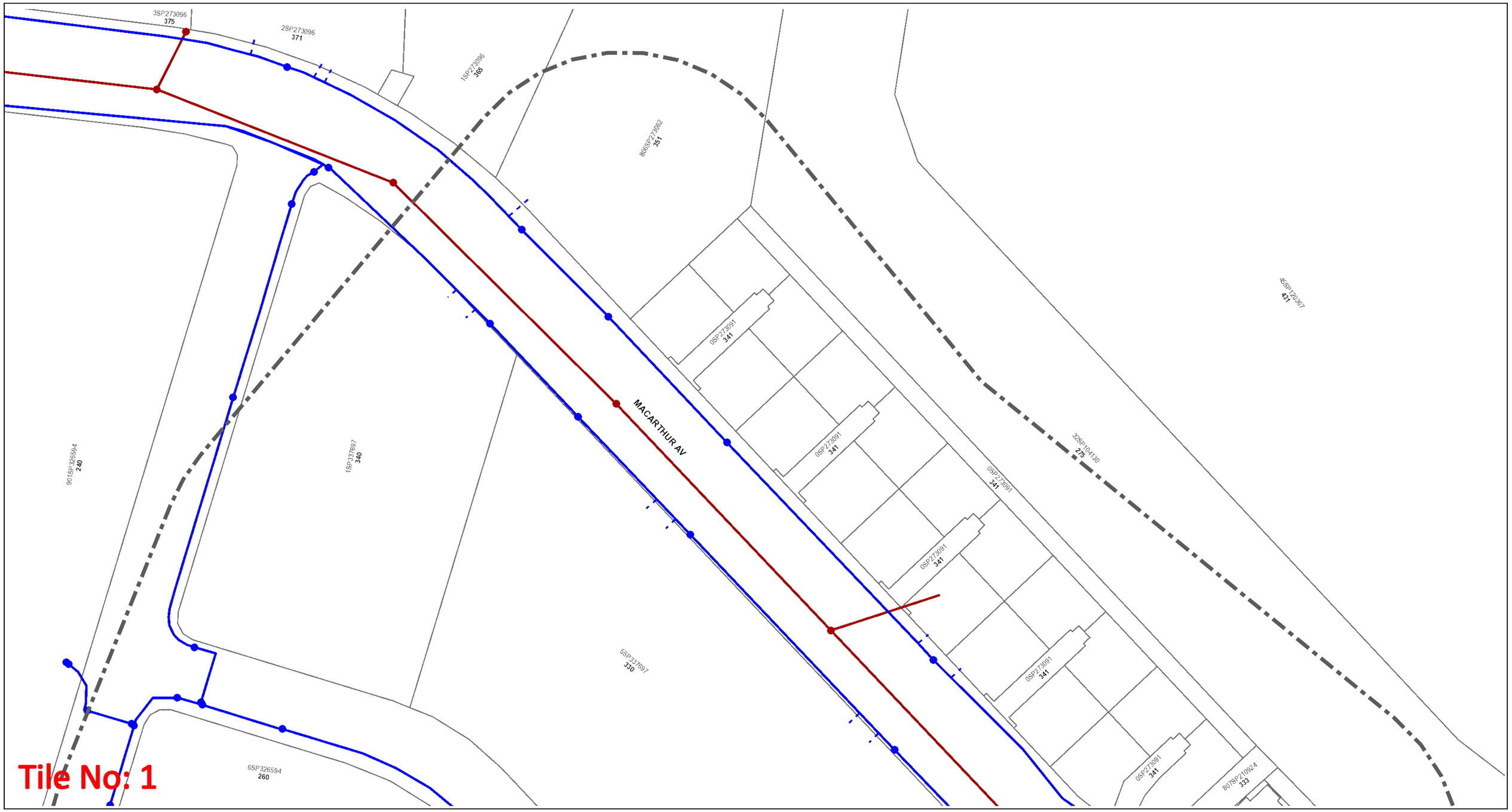
N

Map Scale
1:2050

For further information, please call Urban Utilities on 13 26 57 (8am-6pm weekdays). Faults and emergencies 13 23 64 (24/7).

www.urbanutilities.com.au ABN 86 673 835 011

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



Tile No: 1

Before You Dig Australia - Urban Utilities Water, Recycled Water and Sewer Infrastructure

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- Infrastructure
- Major Infrastructure
- Network Pipelines
- Network Structures

Water

- Infrastructure
- Major Infrastructure
- Network Pipelines
- Network Structures
- Water Service (Indicative only)

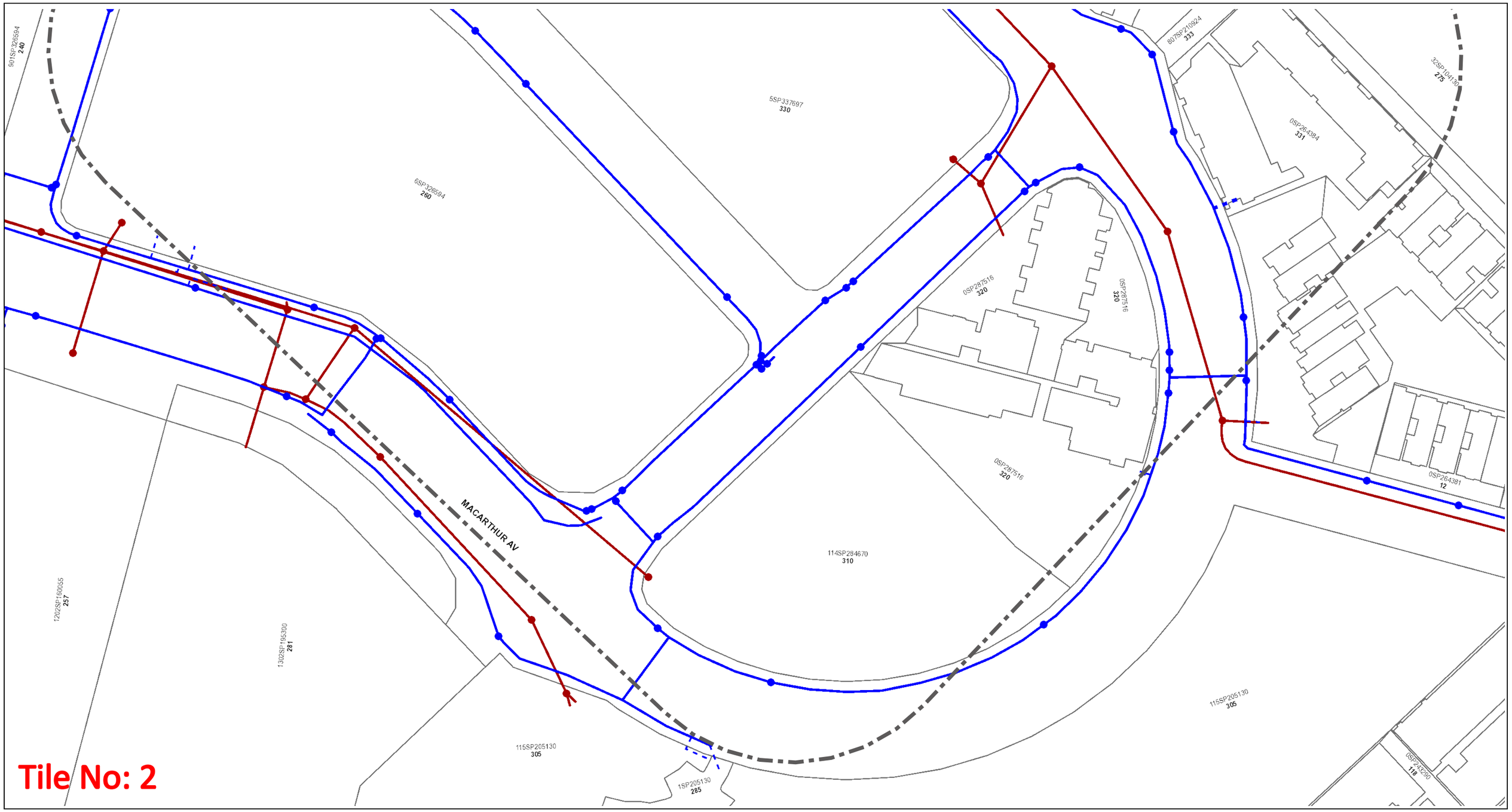
N

Map Scale 1:1000

For further information, please call Urban Utilities on 13 26 57 (8am-6pm weekdays). Faults and emergencies 13 23 64 (24/7).

www.urbanutilities.com.au ABN 86 673 835 011

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



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N

Map Scale 1:1000

For further information, please call Urban Utilities on 13 26 57 (8am-6pm weekdays). Faults and emergencies 13 23 64 (24/7).

www.urbanutilities.com.au ABN 86 673 835 011

APA Group
PO Box 6014 Halifax Street,
South Australia 5000

For your immediate information THERE IS A CRITICAL GAS PIPELINE OR INFRASTRUCTURE (Gas Assets) located in close vicinity to your works.

10/06/2024

Company: ACOR
Juan Castro
104 Melbourne Street
South Brisbane
QLD 4101

jblanco@acor.com.au

Dear Juan Castro

Sequence Number: 240344421
Worksite Address: 280 Macarthur Avenue
Hamilton
QLD 4007

Thank you for your Before You Dig enquiry regarding the location of Gas Assets.

We confirm there are CRITICAL Gas Assets located in close vicinity of the above location. Damage to gas assets may result in explosion, fire and personal injury.

You are hereby notified before you commence any works you are required to complete the Work In The Vicinity Of Critical Gas Assets request form and forward this to APA as soon as practicable.

Any work activity in vicinity of Critical Gas Assets operated by APA requires an **Authority to Work Permit** and may require attendance by an APA Site Watch representative whilst work is in progress. Please ensure you read and comply with all the relevant requirements contained in this response to your enquiry.

Contacts – APA Group	
Enquiry	**Contact Numbers**
General enquiries or feedback regarding this information or gas assets. QLD Only All other States	**APA - Before You Dig Officer** Phone: 1800 085 628 Email: PermitsQld@apa.com.au Phone: 1800 085 628 Email: DBYDNetworksAPA@apa.com.au
Gas Emergencies	Phone: 1800 GAS LEAK (1800 427 532)

Please find below the following information:

1. **Duty of Care** - If you are unclear of your obligations under these requirements please contact the Before You Dig officer for clarification.
2. **An overview map** highlighting the area of your intended works.
3. **Map(s) showing APA operated Gas Assets** within the area of your intended works.
4. **Work In The Vicinity Of Critical Gas Assets request form** - Please complete and forward to APA as soon as practicable via email DBYDNetworksAPA@apa.com.au or PermitsQld@apa.com.au (QLD only), or the address at the top of this document. **A minimum of three (3) business days in advance of any work commencement** is required to process Authority To Work Request applications and provide a response.
5. **Site Watch** – Following consideration of the information received by APA in the Work In The Vicinity Of Critical Gas Assets request form, we may require an APA Site Watch representative to be present on site whilst some or all of the proposed site works are undertaken. Refer information for Site Watch in the Duty of Care section of this document.

Important Information:

- This information is valid for 30 days from the date of this response.
- This information shall be available on site whilst conducting works.
- This information has been generated by an automated system based on the area highlighted in your BYDA request and has not been independently verified. Please check the maps represent the area you requested. If they do not, please contact the APA - Before You Dig officer.
- For some BYDA enquiries, you may receive two (2) responses from APA. Please read both responses carefully as they relate to different assets.

Yours Faithfully,

APA Group

Duty of Care - Working Around Gas Assets

General Conditions

- BYDA enquiries are valid for 30 days. If your works commence after 30 days from the date of this response a new enquiry is required to validate location information.

- The location information supplied in this document shall be used as a guide only. APA does not guarantee the accuracy or completeness of the map and does not make any warranty about the data. APA is not under any liability to the user for any loss or damage (including consequential loss or damage) which the user may suffer resulting from the use of this information or maps.

- It is the responsibility of the excavator to expose all Gas Assets by hand digging**.** Gas Asset depths may vary according to ground conditions.

- Gas (inlet) Services connecting Gas Assets in the street to the gas meter on the property are not marked on the map. South Australia Only - If a meter box is installed on the property, a sketch of the gas service location may be found inside the gas meter box. APA does not guarantee the accuracy or completeness of these sketches.

- Road authorities, council's, and their authorised contractors and agents are responsible to pot-hole or use other suitable methods to verify the location and depth of all gas assets, including Gas (inlet) Services, prior to commencing any works.

- The location and depth of underground mains & services, including those in the road corridor and footpath, may vary in alignment and depth of cover, as a result of changes to road, footpath or surface levels subsequent to installation.

- Some Gas Assets may be installed inside a casing. Locations where a Gas Asset changes from being located within, to being located outside a casing may not be marked on the maps provided.

- The use of hydro-vacuum excavation in vicinity to Gas Assets is permitted under the following conditions:
  - Maximum water pressure of 1000psi unless otherwise advised.
  - A minimum distance of 100mm shall be maintained between the end of the pressure wand nozzle and gas assets.
  - Vertical movements of the pressure wand nozzle or inserting the nozzle in vicinity of the gas asset prohibited
  - The use of root cutting heads is prohibited.

  Where a gas asset has been exposed via hydro-vacuum excavation a visual check must be undertaken to ensure no damage has occurred to the pipe or it's coating. If any damage has occurred notify the APA Before You Dig Officer.

Critical Gas Assets - Conditions

It is your responsibility to follow these important conditions when working in vicinity of Critical Gas Assets

- A Work In The Vicinity Of Critical Gas Assets request form must be submitted to APA Group prior to any work commencing.

- Prior to any works commencing in the vicinity of Critical Gas Assets the person undertaking the work must receive from APA an Authority to work permit.

- The work in the vicinity of Critical Gas Assets will require attendance by an APA Site Watch representative whilst work is in progress unless stated otherwise on the Authority to work permit.

- Penalties apply to excavators commencing work in the vicinity of Critical Gas Assets prior to receiving an APA Group 'Authority to Work' permit and/or if an APA Site Watch representative is not in attendance where required.

Site Watch / Locate Services

Site Watch - A condition of an APA Authority To Work permit is for an APA Site Watch representative be present on site whilst conducting works. The purpose is to monitor works and protect gas assets in the vicinity from potential damage by the works.

Locate – This service is available on request, where an APA representative will visit your work site before work commencement to electronically locate and mark on the ground surface all gas assets in vicinity of the work site.

These services are provided under the following conditions:

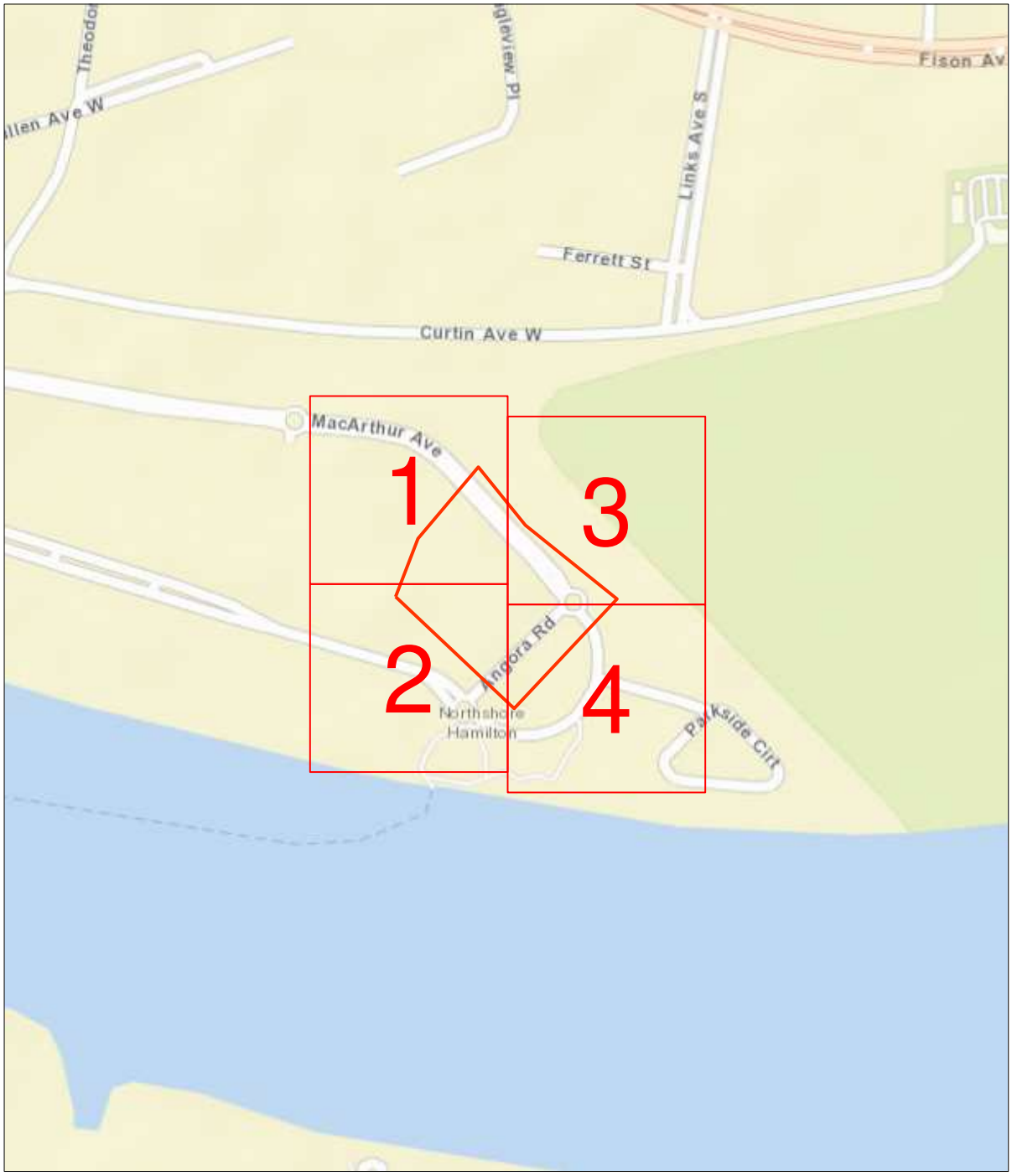
- Contact APA - Before You Dig officer to make a booking. Contact details in the table above.
- The following rates are chargeable for these services:

Item	Rate (excl. gst)
Site Watch – Business Hours	$143.42 per hour
Site Watch - After Hours	$175.06 per hour
Electronic Locate – Business Hours	$143.42 per hour
Electronic Locate – After Hours	$175.06 per hour
Cancellation Fee	2 hrs Business Hours rate (where cancellations received after 12pm (midday) 1 business day prior to the booking)
Mains Proving	Quoted on request

Notes:

- 1hr minimum charge applies.
- A Cancellation Fee applies where cancellations are received after 12pm (midday) one(1) business day prior to the booked Site Watch / Locate service
- Contact APA - Before You Dig officer for state specific hours of business.

Site Address	280 Macarthur Avenue Hamilton 4007	**Sequence No**	240344421
Name	Juan Castro		
Email	jblanco@acor.com.au		

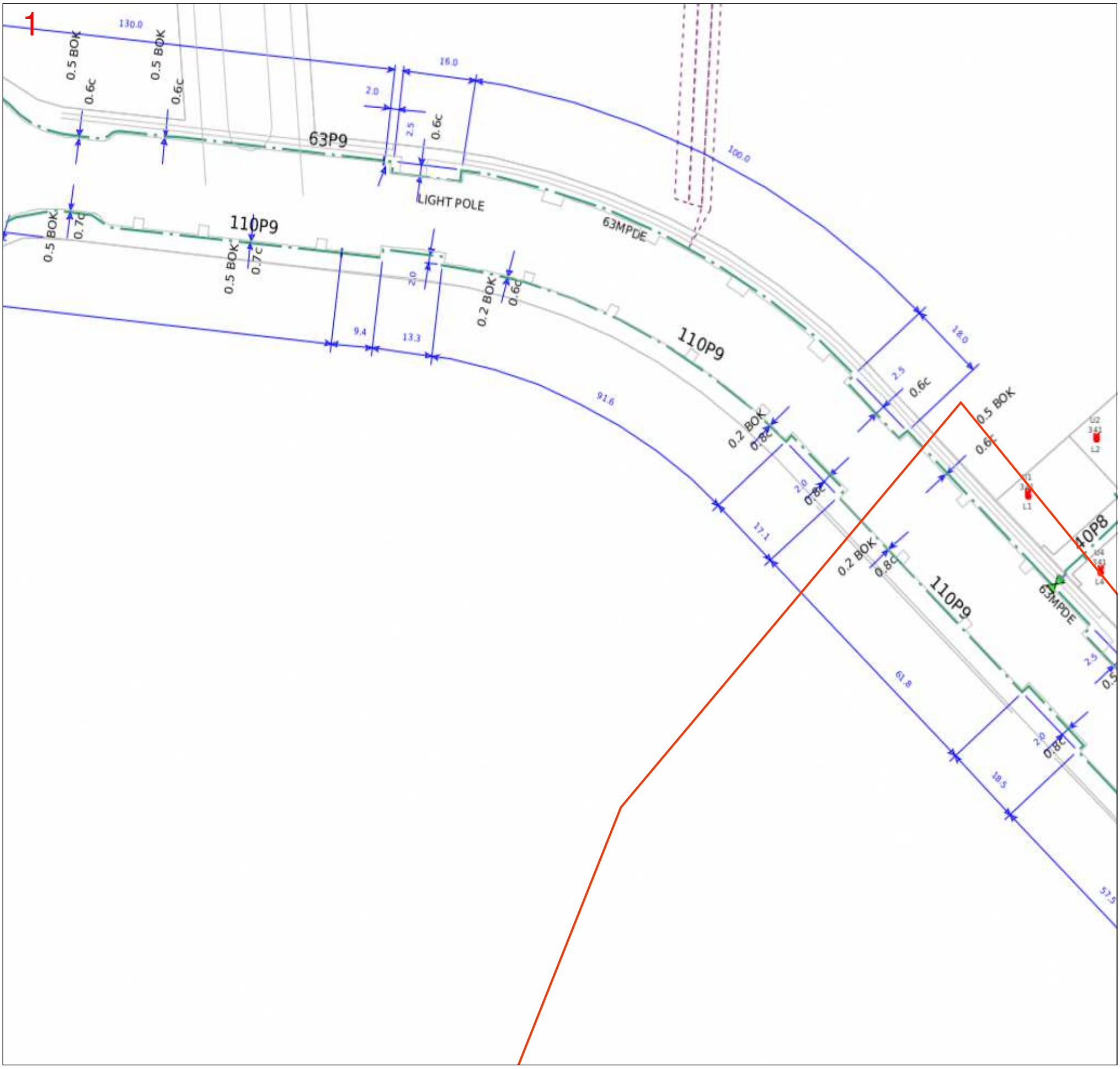


Map Sources: Esri, Garmin, HERE, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Scale 1: 6000	N	Enquiry Area / Map Key Area

Site Address	280 Macarthur Avenue Hamilton 4007	Sequence No	240344421

Before you commence any works you are required to complete the attached 'Work In The Vicinity Of Critical Gas Assets' request form and forward this to APA as soon as practicable.



LEGEND

PIPE AND BOUNDARIES	PIPE CODE / MATERIALS		OBJECTS or TERMS	
LOW PRESSURES	C# *(e.g. C2)*	Cast Iron	VALVES	
MEDIUM PRESSURES	CU	Copper	BURIED VALVES	
HIGH PRESSURES	N2	Nylon	REGULATORS	
TRANSMISSION PRESSURES	P# *(e.g. P6)*	Polyethylene (PE)	GAS SUPPLIED = YES	
PRIORITY MAIN (BEHIND PIPE)	P6,P7,P9-P12	Medium Density PE	CP RECTIFIER UNIT	
PROPOSED (COLOUR BY PRESSURE)	P2,P4,P8	High Density PE	CP TEST POINT/ ANODE	/
LPG (COLOUR BY PRESSURE)	S# *(e.g. S8)*	Steel	SYPHON	
ABANDONED	W2	Wrought Galv. Iron	TRACE WIRE POINT	
IDLE	W3	Poly Coat Wrought Galv. Iron	PIPELINE MARKER	
SLEEVE	*Pipe diameter in millimetres is shown before pipe code e.g. 40P6 = 40mm nominal diameter*		NOT TIED IN	N.T.I.
CASING / SPLIT (BEHIND PIPE)			DEPTH OF COVER	C
EASEMENT/ JURISDICTION			BACK / FRONT OF KERB	Bok Fok

EXAMPLES

40P6 in 80C2 — 40mm High Pressure Medium Density Polyethylene in an 80mm Cast Iron Casing

63S8 — 63mm Medium Pressure Steel

This map is created in colour and shall be printed in colour

Line / Polygon Request

Map Key

1 3
2 4

Scale 1:700

0 0.009km

N

Site Address	280 Macarthur Avenue Hamilton 4007	Sequence No	240344421

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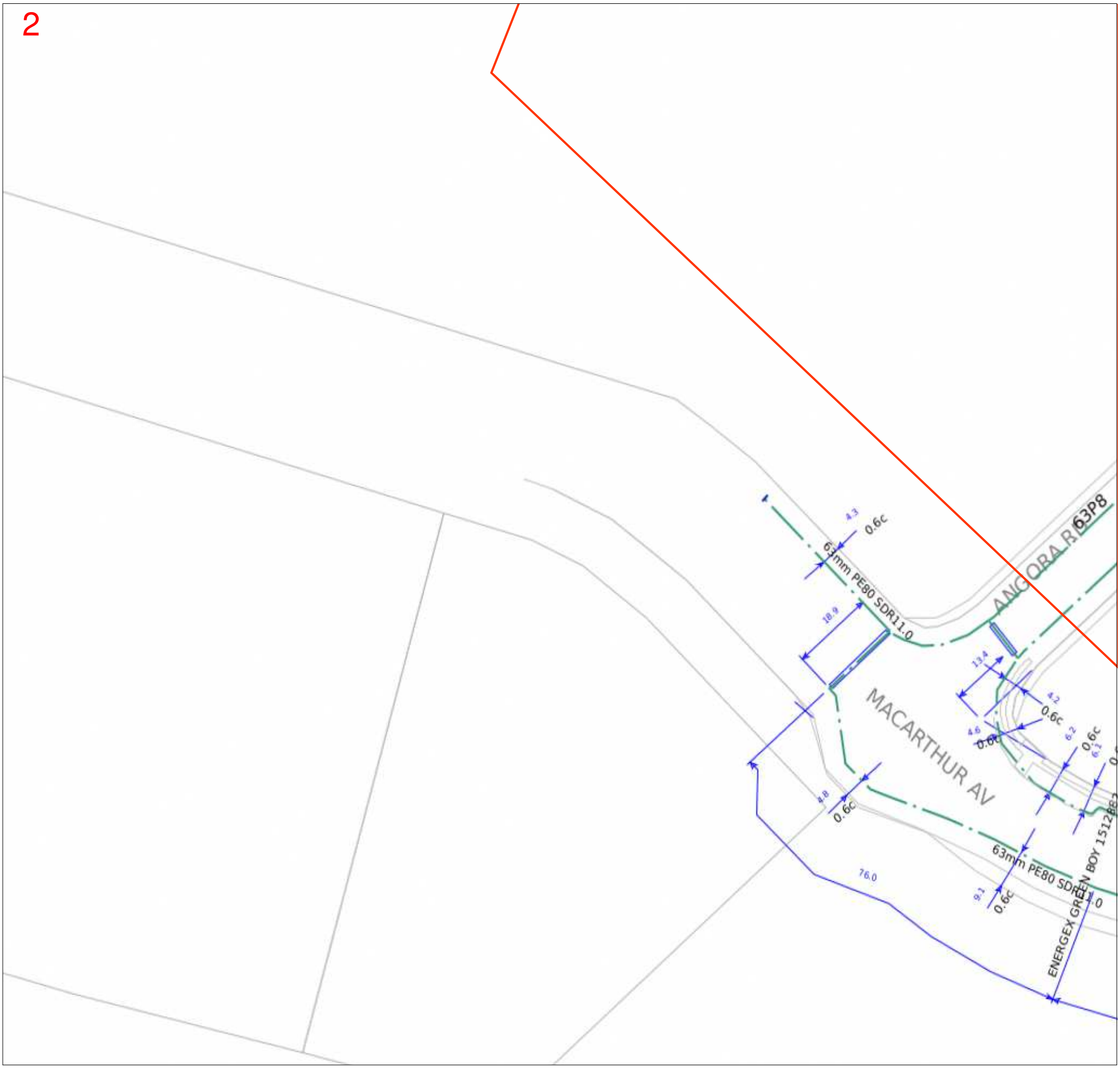

LEGEND

PIPE AND BOUNDARIES		PIPE CODE / MATERIALS		OBJECTS or TERMS	
LOW PRESSURES		C# *(e.g. C2)*	Cast Iron	VALVES	
MEDIUM PRESSURES		CU	Copper	BURIED VALVES	
HIGH PRESSURES		N2	Nylon	REGULATORS	
TRANSMISSION PRESSURES		P# *(e.g. P6)*	Polyethylene (PE)	GAS SUPPLIED = YES	
PRIORITY MAIN (BEHIND PIPE)		P6,P7,P9-P12	Medium Density PE	CP RECTIFIER UNIT	
PROPOSED (COLOUR BY PRESSURE)		P2,P4,P8	High Density PE	CP TEST POINT/ ANODE	T / A
LPG (COLOUR BY PRESSURE)		S# *(e.g. S8)*	Steel	SYPHON	
ABANDONED		W2	Wrought Galv. Iron	TRACE WIRE POINT	
IDLE		W3	Poly Coat Wrought Galv. Iron	PIPELINE MARKER	
SLEEVE		*Pipe diameter in millimetres is shown before pipe code e.g. 40P6 = 40mm nominal diameter*		NOT TIED IN	N.T.I.
CASING / SPLIT (BEHIND PIPE)				DEPTH OF COVER	C
EASEMENT/ JURISDICTION				BACK / FRONT OF KERB	Bok Fok

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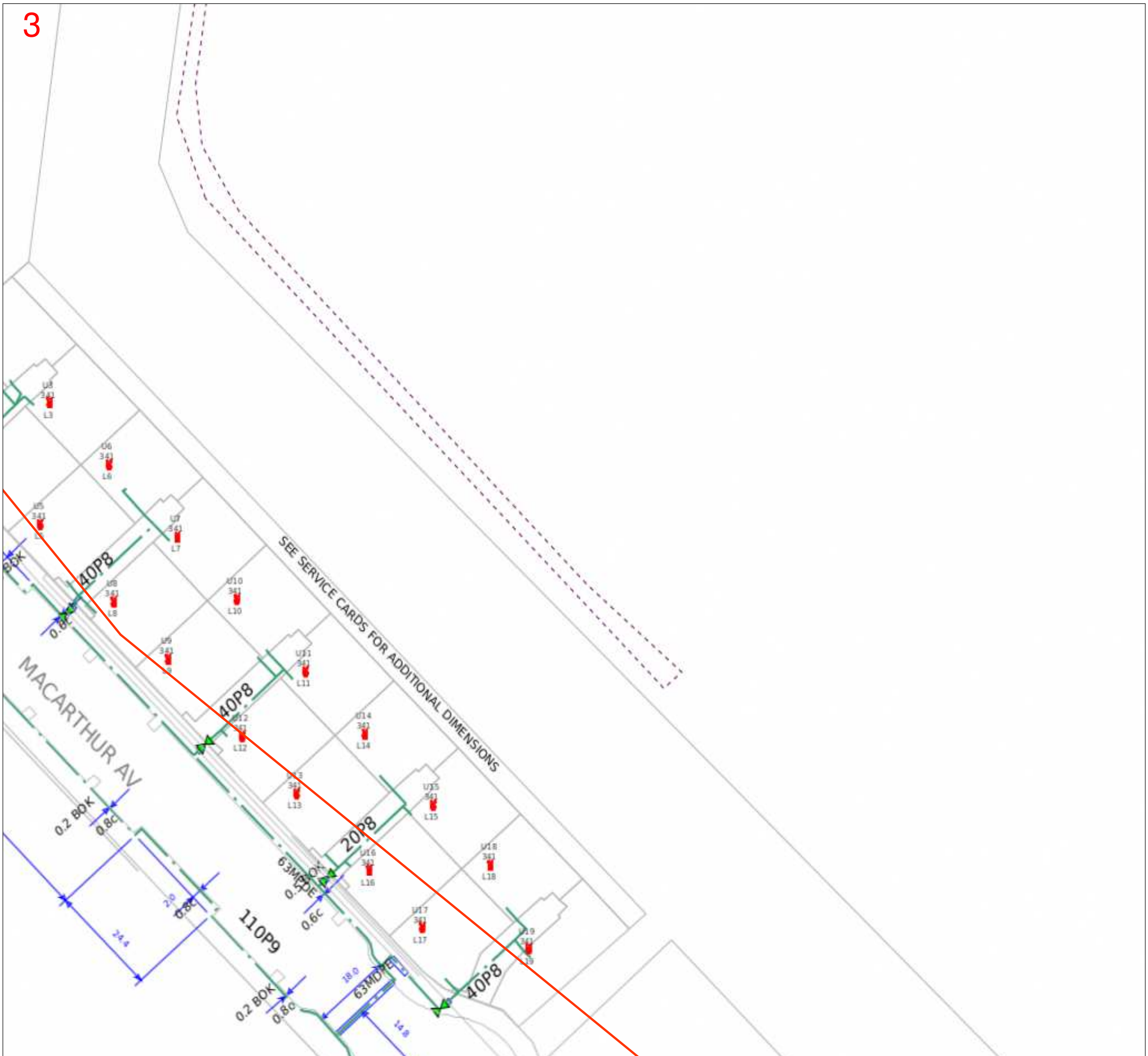


LEGEND

PIPE AND BOUNDARIES		PIPE CODE / MATERIALS		OBJECTS or TERMS	
LOW PRESSURES		C# *(e.g. C2)*	Cast Iron	VALVES	
MEDIUM PRESSURES		CU	Copper	BURIED VALVES	
HIGH PRESSURES		N2	Nylon	REGULATORS	
TRANSMISSION PRESSURES		P# *(e.g. P6)*	Polyethylene (PE)	GAS SUPPLIED = YES	
PRIORITY MAIN (BEHIND PIPE)		P6,P7,P9-P12	Medium Density PE	CP RECTIFIER UNIT	
PROPOSED (COLOUR BY PRESSURE)		P2,P4,P8	High Density PE	CP TEST POINT/ ANODE	/
LPG (COLOUR BY PRESSURE)		S# *(e.g. S8)*	Steel	SYPHON	
ABANDONED		W2	Wrought Galv. Iron	TRACE WIRE POINT	
IDLE		W3	Poly Coat Wrought Galv. Iron	PIPELINE MARKER	
SLEEVE		*Pipe diameter in millimetres is shown before pipe code* *e.g. 40P6 = 40mm nominal diameter*		NOT TIED IN	N.T.I.
CASING / SPLIT (BEHIND PIPE)	/			DEPTH OF COVER	C
EASEMENT/ JURISDICTION				BACK / FRONT OF KERB	Bok Fok

EXAMPLES

40P6 in 80C2 — 40mm High Pressure Medium Density Polyethylene in an 80mm Cast Iron Casing

63S8 — 63mm Medium Pressure Steel

This map is created in colour and shall be printed in colour

Line / Polygon Request

Map Key

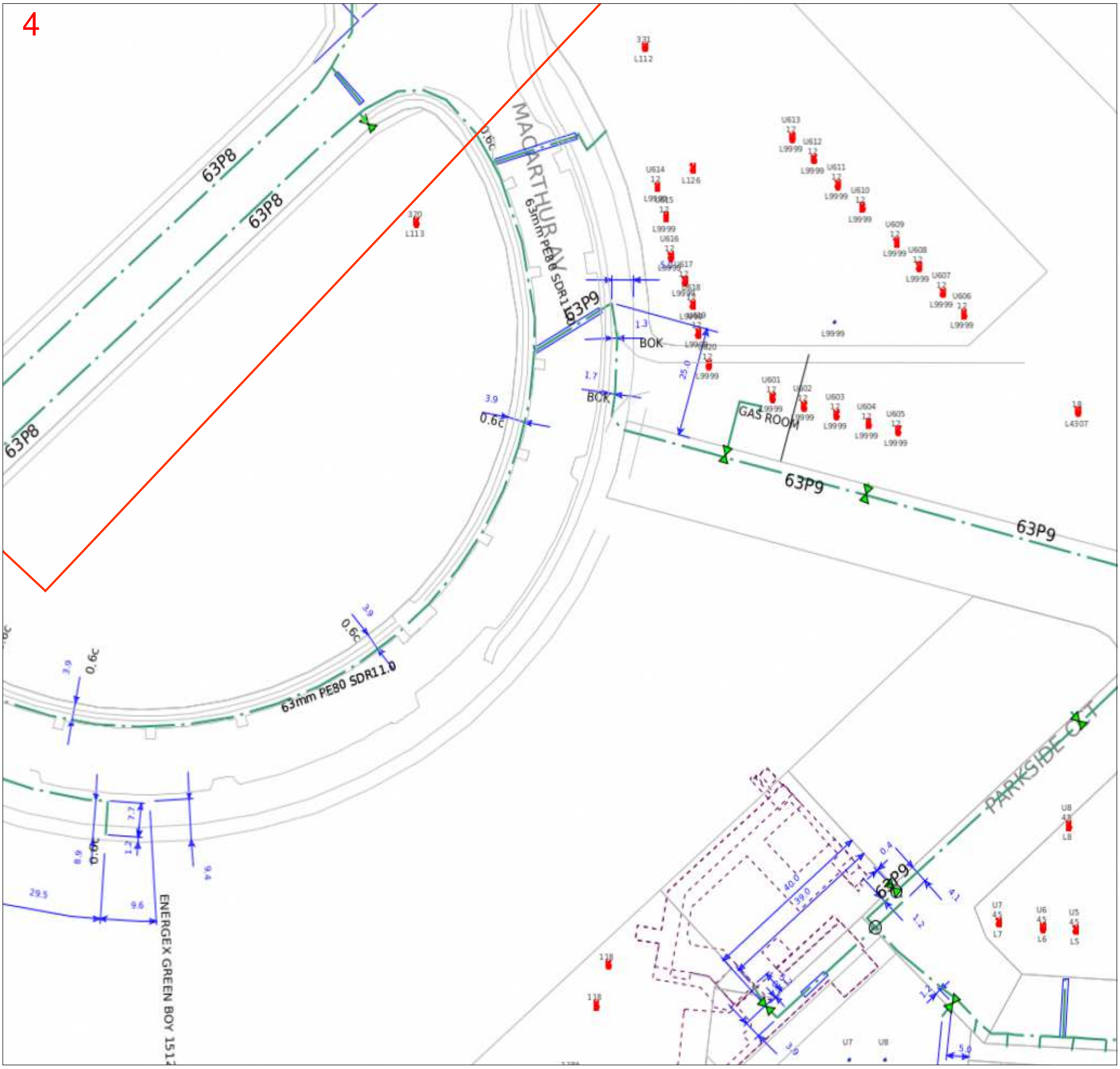
Scale 1:700

0 0.009km

N

Site Address	280 Macarthur Avenue Hamilton 4007	Sequence No	240344421

Before you commence any works you are required to complete the attached 'Work In The Vicinity Of Critical Gas Assets' request form and forward this to APA as soon as practicable.



LEGEND

PIPE AND BOUNDARIES		PIPE CODE / MATERIALS		OBJECTS or TERMS	
LOW PRESSURES		C# *(e.g. C2)*	Cast Iron	VALVES	
MEDIUM PRESSURES		CU	Copper	BURIED VALVES	
HIGH PRESSURES		N2	Nylon	REGULATORS	
TRANSMISSION PRESSURES		P# *(e.g. P6)*	Polyethylene (PE)	GAS SUPPLIED = YES	
PRIORITY MAIN (BEHIND PIPE)		P6,P7,P9-P12	Medium Density PE	CP RECTIFIER UNIT	
PROPOSED (COLOUR BY PRESSURE)		P2,P4,P8	High Density PE	CP TEST POINT/ ANODE	
LPG (COLOUR BY PRESSURE)		S# *(e.g. S8)*	Steel	SYPHON	
ABANDONED		W2	Wrought Galv. Iron	TRACE WIRE POINT	
IDLE		W3	Poly Coat Wrought Galv. Iron	PIPELINE MARKER	
SLEEVE		*Pipe diameter in millimetres is shown before pipe code e.g. 40P6 = 40mm nominal diameter*		NOT TIED IN	N.T.I.
CASING / SPLIT (BEHIND PIPE)				DEPTH OF COVER	C
EASEMENT/ JURISDICTION				BACK / FRONT OF KERB	Bok Fok

EXAMPLES

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63S8 — 63mm Medium Pressure Steel

This map is created in colour and shall be printed in colour

Line / Polygon Request

Map Key

Scale 1:700

0 0.009km

REQUEST TO WORK IN THE VICINITY OF CRITICAL GAS ASSETS CONDITIONS

It is the proponent's* responsibility to read these conditions and complete the request form

1. **A minimum of three (3) business days** in advance of any work commencement is required to process Authority To Work Request applications and provide a response.
2. This request form must be accompanied by a detailed schedule of works.
3. For any gas leak related work this request form must include a detailed sequence of events, outlining all aspects of work. Work is not permitted to proceed until an APA Authority to Work permit has been issued.
4. When an APA Authority to Work permit is issued, the permit will provide any applicable conditions whilst conducting excavation or work in vicinity of the Gas Assets.
5. APA Group Site Watch may be required to be on site during the proposed excavation or work.
6. When an APA Authority to Work permit is issued, the proponent is responsible for complying with all permit conditions.
7. Where applicable, excavation or work must not commence until the requestor has received an APA Authority to Work Permit.
8. Where applicable, penalties apply to excavators commencing work in the vicinity of Critical Gas Assets prior to receiving an APA Group 'Authority to Work Permit'. For further information, as relevant, refer to:
    - NSW Gas Supply Act 1996 – Sec 64 C, Requirements in relation to carrying out of certain excavation work.
    - NSW Gas Supply Act 1996 Sec 50A, Excavation work affecting gas work.
    - Victoria: Pipelines Act 2005 – Section 118, Digging near pipelines and Section 119, Interference with pipeline.
    - South Australia: Gas Act 1997 – Section 83, Notice of work that may affect gas infrastructure.
    - Northern Territory: Energy Pipelines Act as in force at 14 October 2015 Section 66, Threat to pipeline.
    - QLD: Gas Supply Act 2003 – 90, 91 Requirement to consult if gas infrastructure affected.

** Person or company requesting to undertake works in proximity to critical gas assets.*

WORK IN THE VICINITY OF CRITICAL GAS ASSETS REQUEST FORM

Return this form to: DBYDNetworksAPA@apa.com.au or (QLD only) PermitsQld@apa.com.au

Enquiries: Contact APA Before You Dig officer - 1800 085 628

Work / Excavation Site Details

Number:	Street:
Suburb:	State:
Sequence Number / 240344421 :	
Requestors Name:	
Company Name:	
Name of Authorised Company Site Representative:	
Email:	
Phone:	Mobile:
Signature:	

Description of Work / Excavation

Activity/Excavation Details:			
Tick Applicable			
Excavation		Change to surface level	
Service crossing		Boring	
Proving		Other *(provide details)*	
Earthworks			
Excavator Size, Tooth Type & Tooth Size *(provide details)*			

Work / Excavation Drawings Attached (circle) Yes No

Proposed Work Dates and Times

From			To	
Excavation	**Date**	**Time**	**Date**	**Time**
	/ /	am/pm	/ /	am/pm
Backfill	**Date**	**Time**	**Date**	**Time**
	/ /	am/pm	/ /	am/pm

Work Classification Self-Assessment (circle)

Class 1		**Class 2**		**Class 3**	
Works crossing a critical gas asset		Works within 3m of a critical gas asset		Works involving large excavations, vibrations or blasting beyond 3m of the critical gas asset	

Insurer and Policy Details

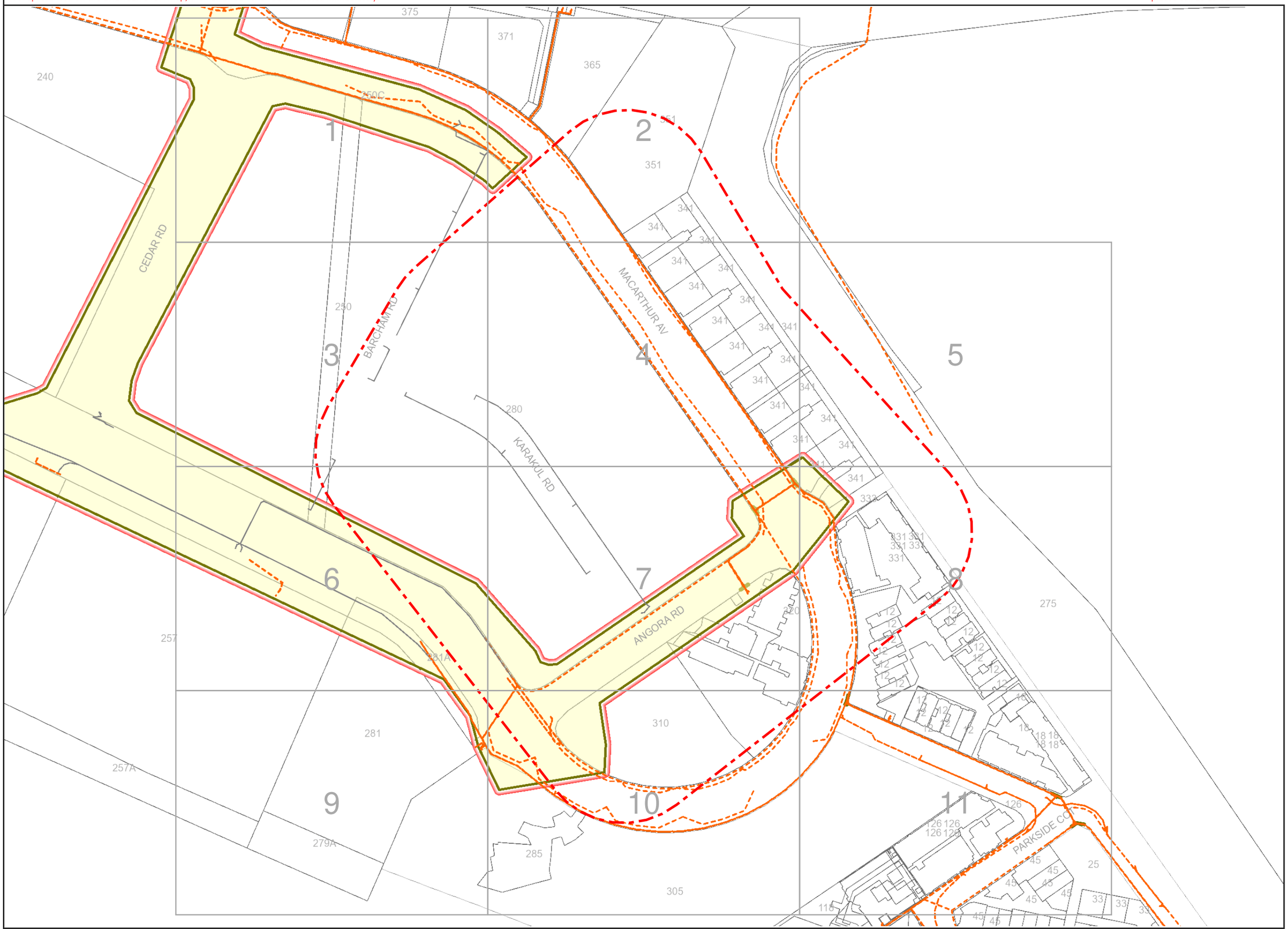
Policy Number		**Policy Expiry Date**	
Insurance Cover – Current Level ($)			

*Requestor / Billing Details – Mandatory Information

Company / Requestor Name:	
Address:	
Purchase Order:	Email:
Phone:	
Requestor Name:	Requestor Signature:

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

For Emergency Situations please call 13 19 62



This output provides details of the ENERGEX electrical network. As variations map 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.

energex

BYDA

Sequence: 240344424
Date: 10/06/2024

Scale: 1:2050
OVERVIEW

For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan

N
W
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S

DISCLAIMER: While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Energex nor PelicanCorp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information contained in it or the completeness or accuracy of such information. Use of such information is subject to and constitutes acceptance of these terms.

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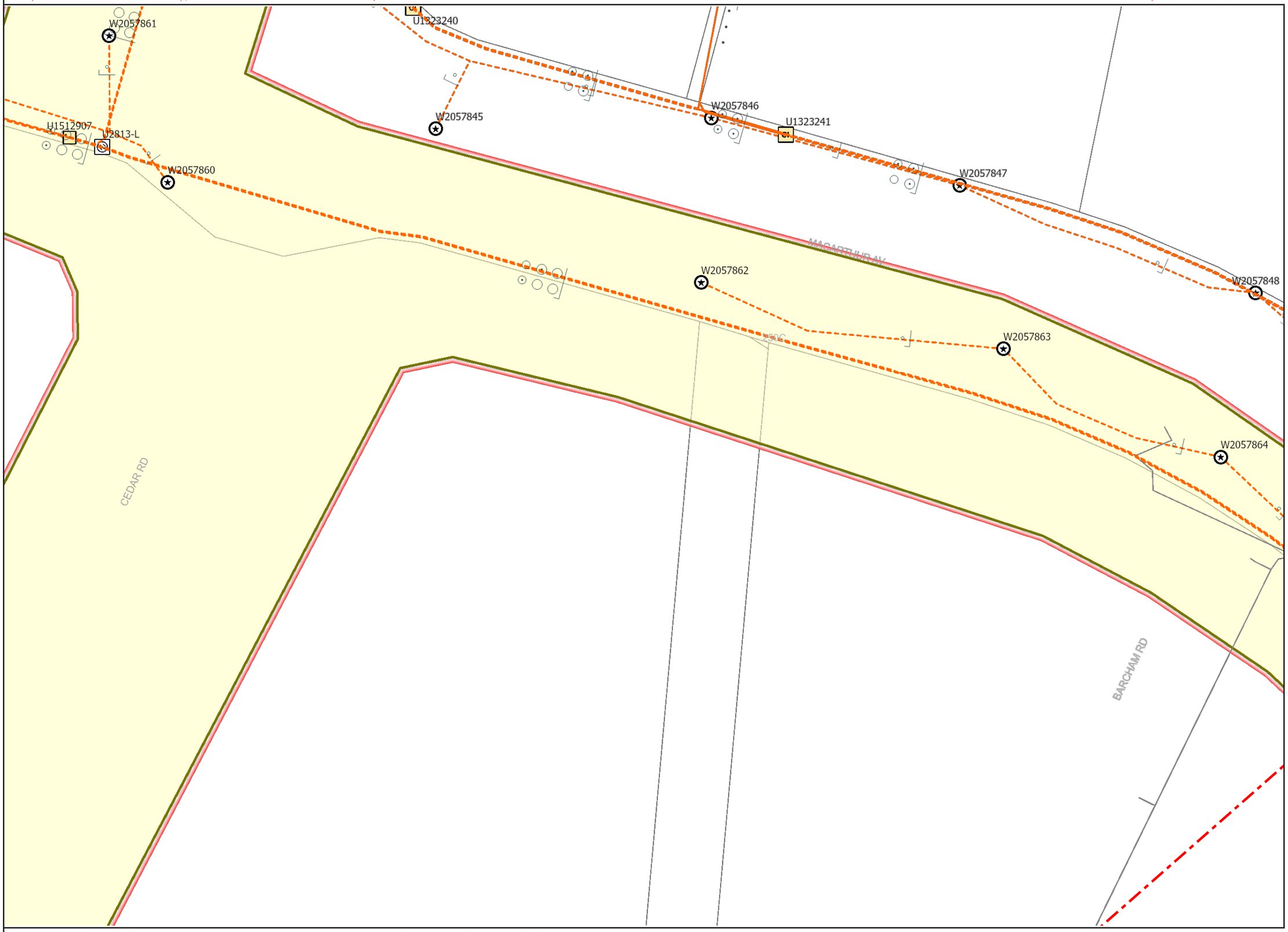

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energex

BYDA

Sequence: 240344424
Date: 10/06/2024

Scale: 1:500
Tile No: 1

For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan

N
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S

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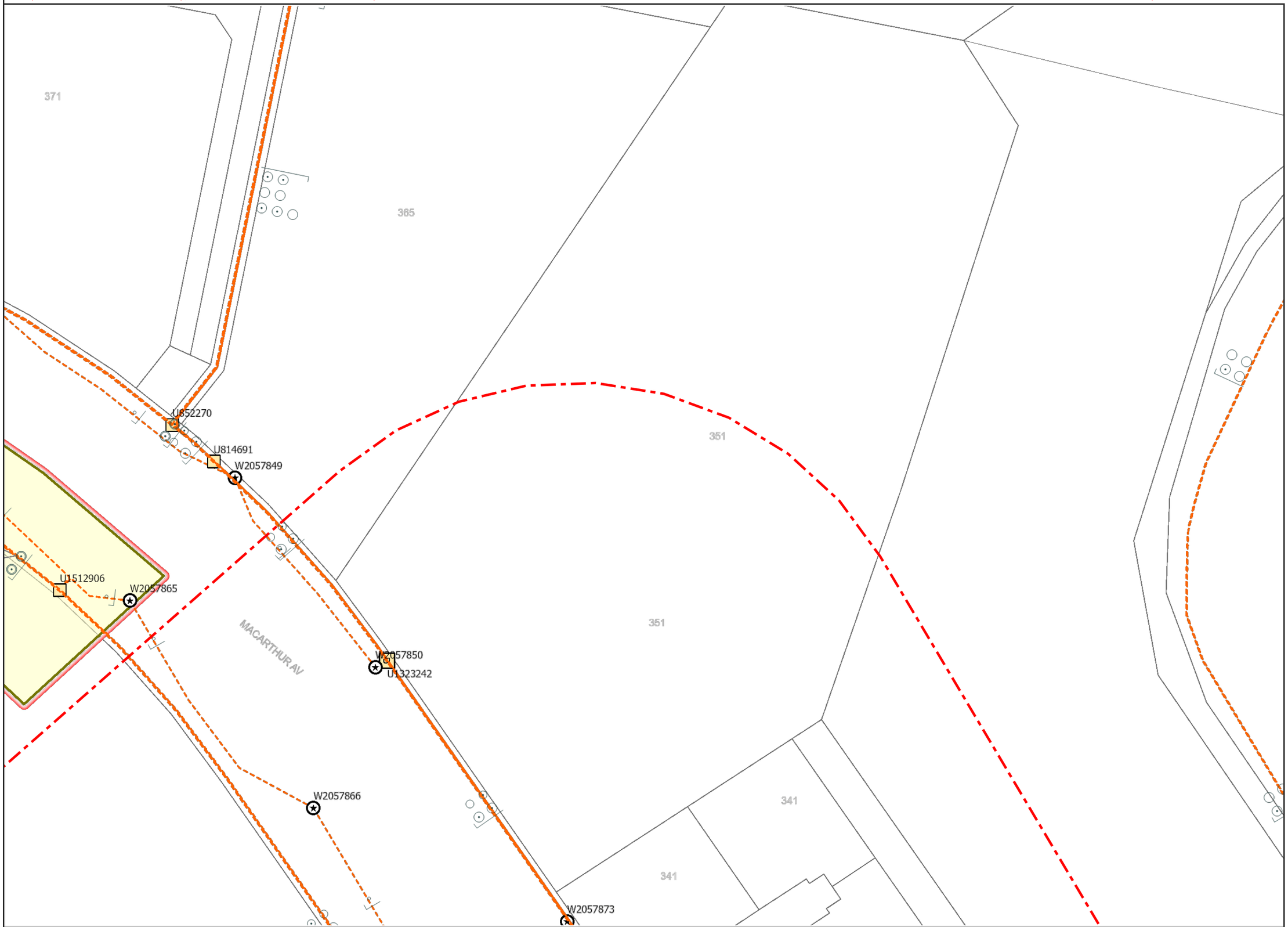

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BYDA

Sequence: 240344424
Date: 10/06/2024

Scale: 1:500
Tile No: 2

For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan

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energex

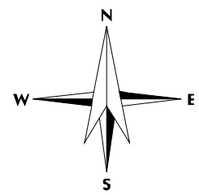
BYDA

Sequence: 240344424
Date: 10/06/2024

Scale: 1:500
Tile No: 3

For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan



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For Emergency Situations please call 13 19 62

energex

BYDA

Sequence: 240344424
Date: 10/06/2024

Scale: 1:500
Tile No: 4

For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan

N
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S

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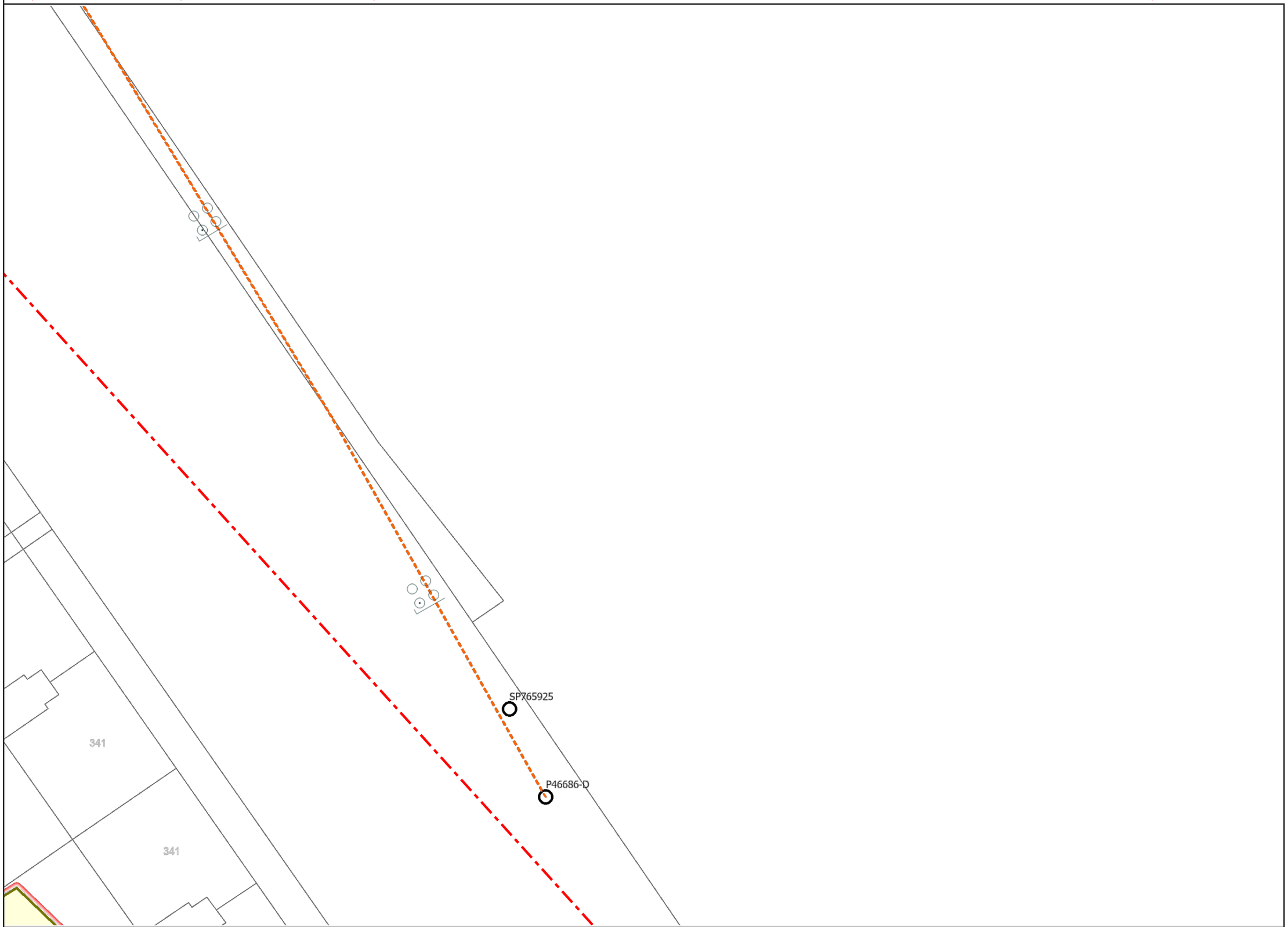

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BYDA

Sequence: 240344424
Date: 10/06/2024

Scale: 1:500
Tile No: 5

For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan

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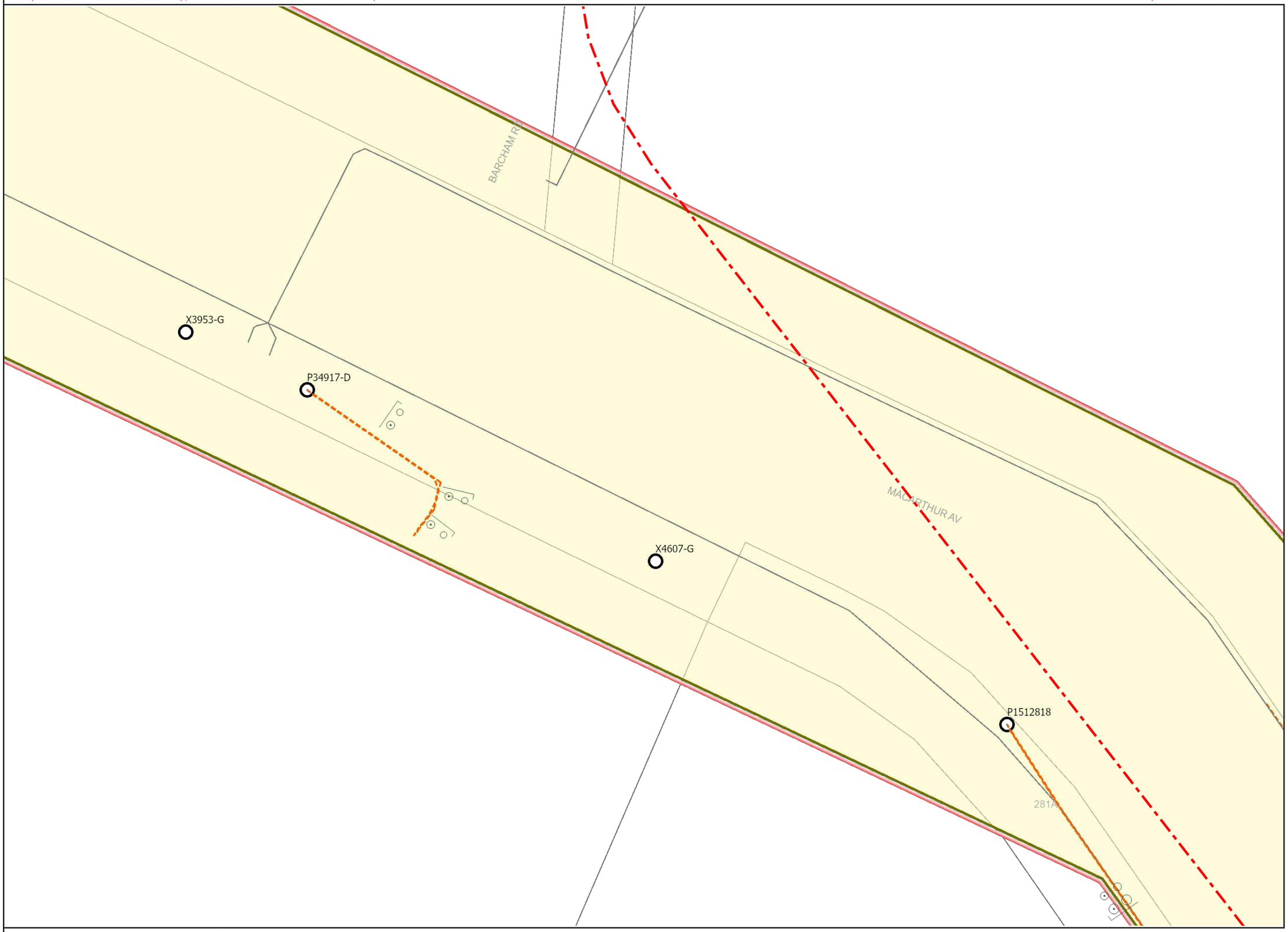

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energex

BYDA

Sequence: 240344424
Date: 10/06/2024

Scale: 1:500
Tile No: 6

For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan

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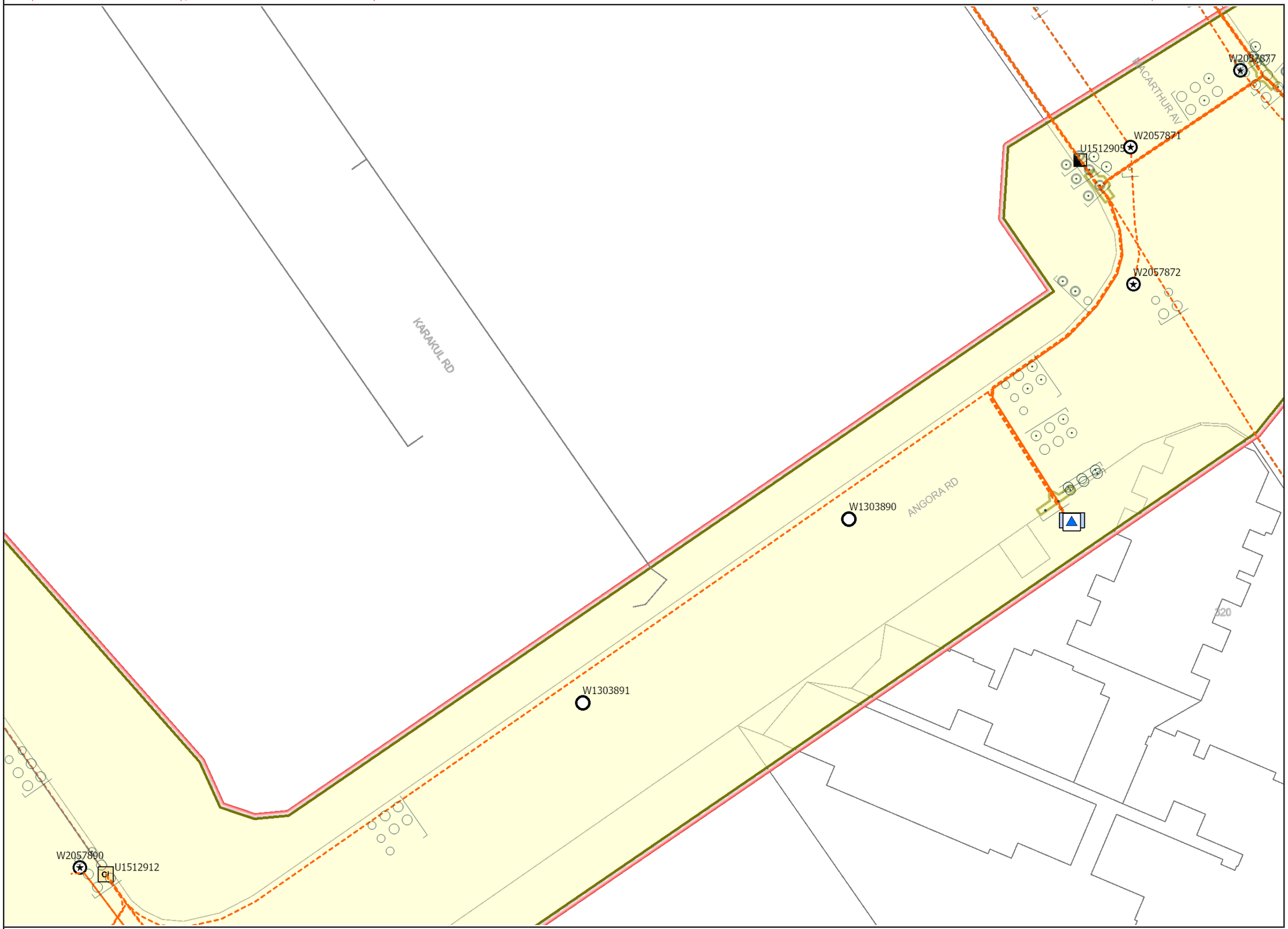

energex

BYDA

Sequence: 240344424
Date: 10/06/2024

Scale: 1:500
Tile No: 7

For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan

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For Emergency Situations please call 13 19 62

energex

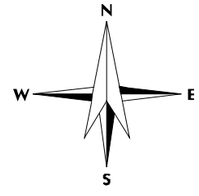
BYDA

Sequence: 240344424
Date: 10/06/2024

Scale: 1:500
Tile No: 8

For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan



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energex

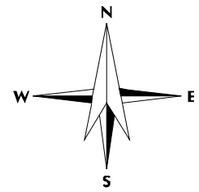
BYDA

Sequence: 240344424
Date: 10/06/2024

Scale: 1:500
Tile No: 9

For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan



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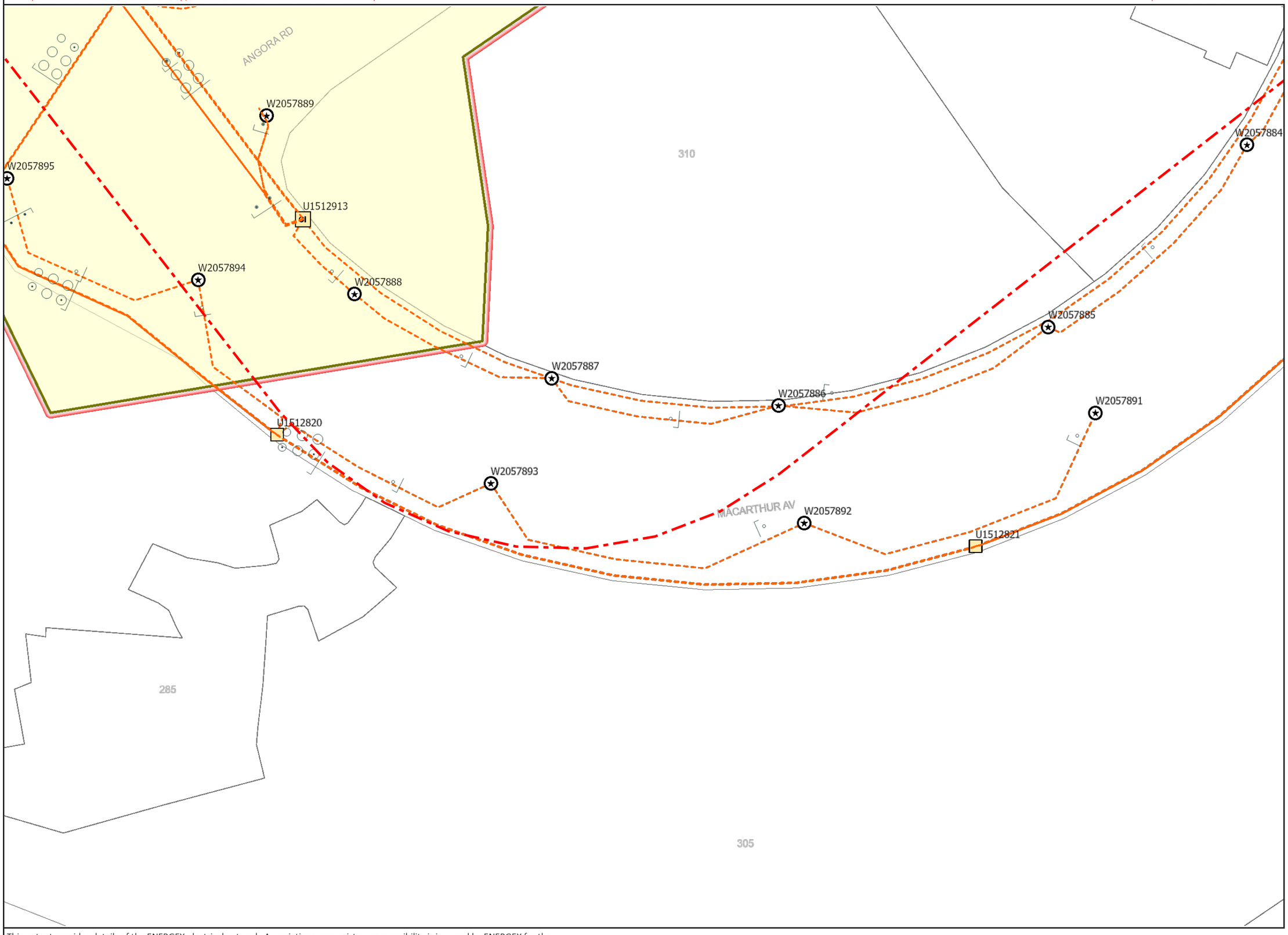

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energex

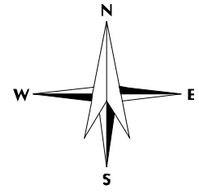
BYDA

Sequence: 240344424
Date: 10/06/2024

Scale: 1:500
Tile No: 10

For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan



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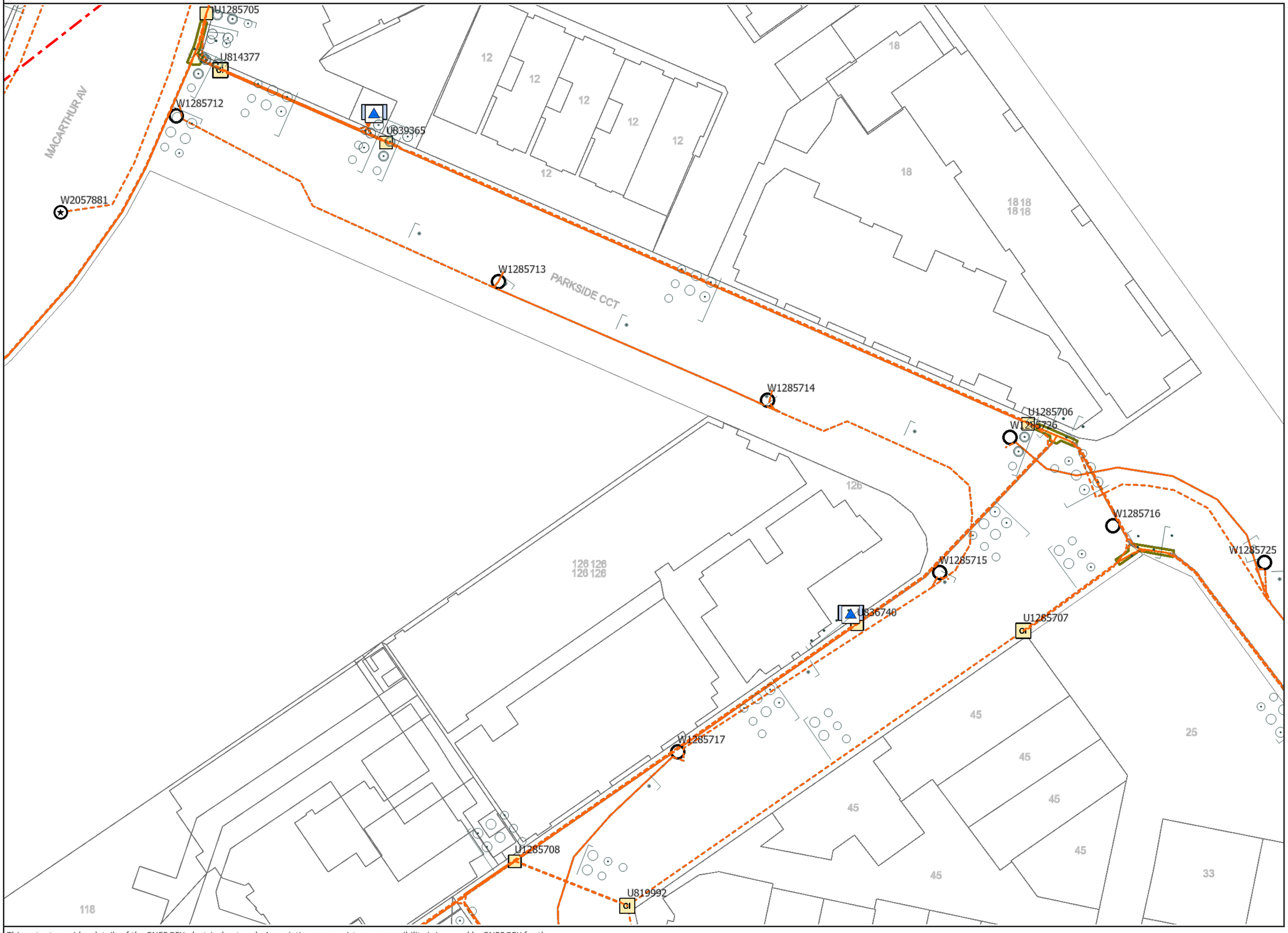

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BYDA

Sequence: 240344424
Date: 10/06/2024

Scale: 1:500
Tile No: 11

For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan

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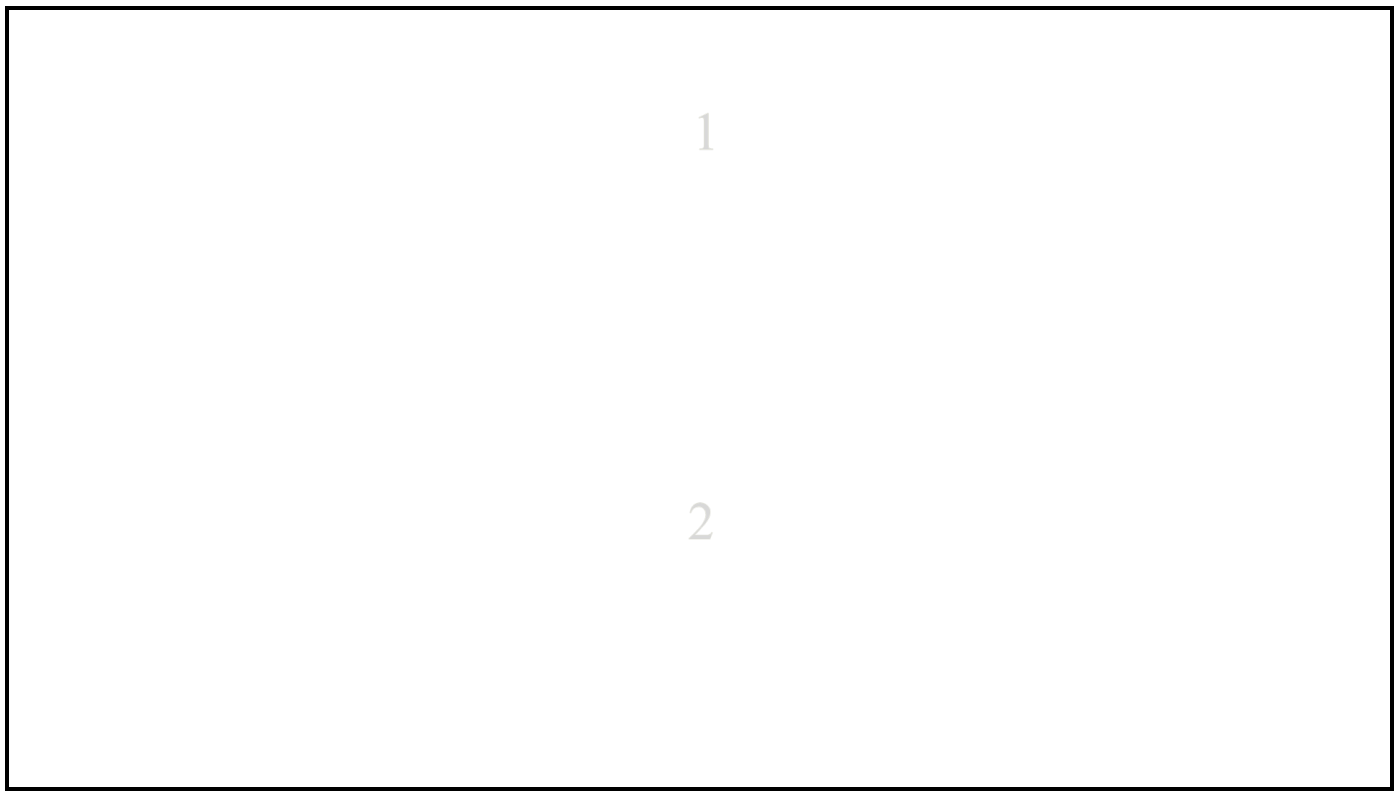
To:	Juan Castro
Phone:	Not Supplied
Fax:	Not Supplied
Email:	jblanco@acor.com.au

Dial before you dig Job #:	36868948
Sequence #	240344420
Issue Date:	10/06/2024
Location:	280 Macarthur Avenue , Hamilton , QLD , 4007

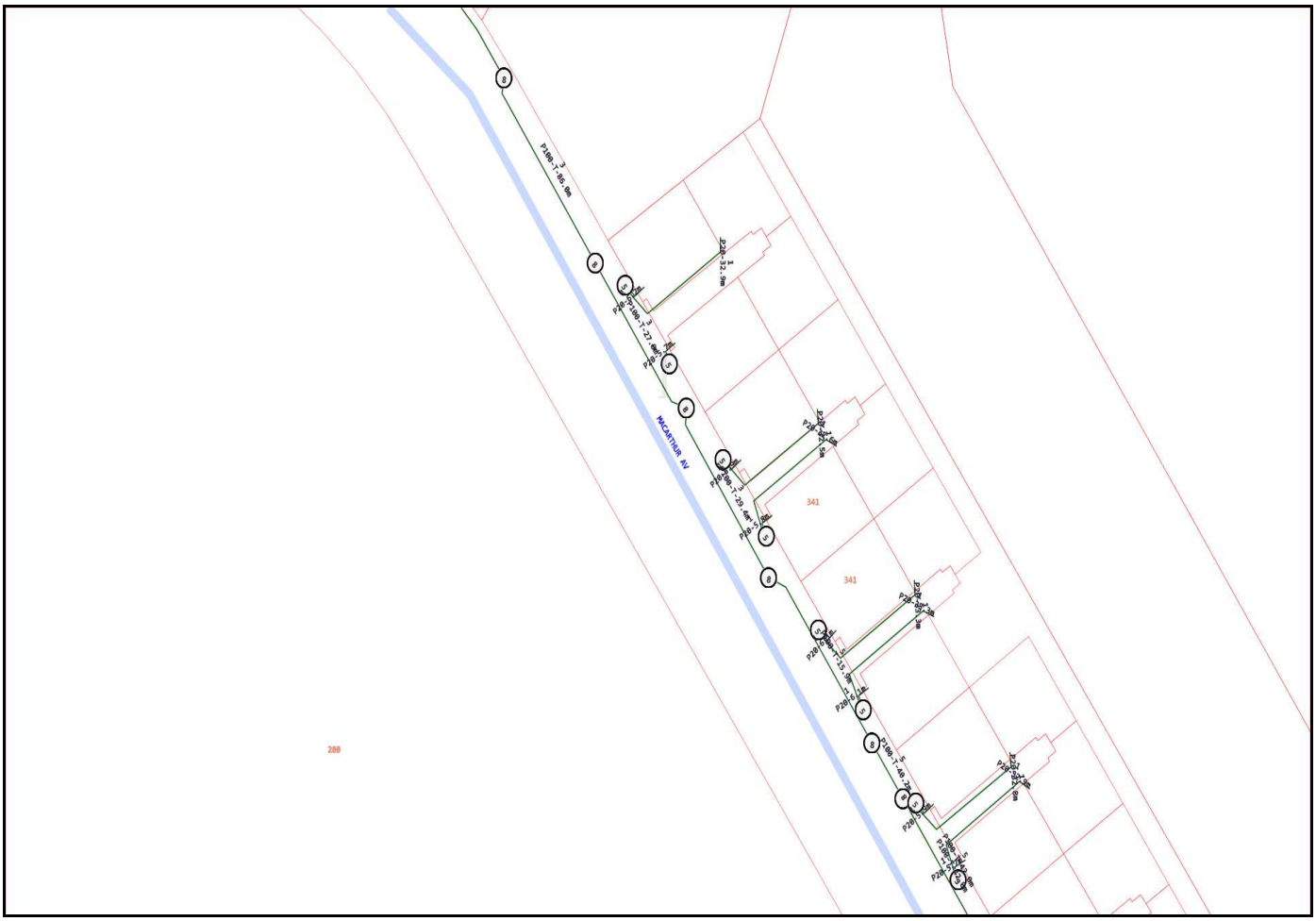
BEFORE YOU DIG www.byda.com.au Zero Damage - Zero Harm

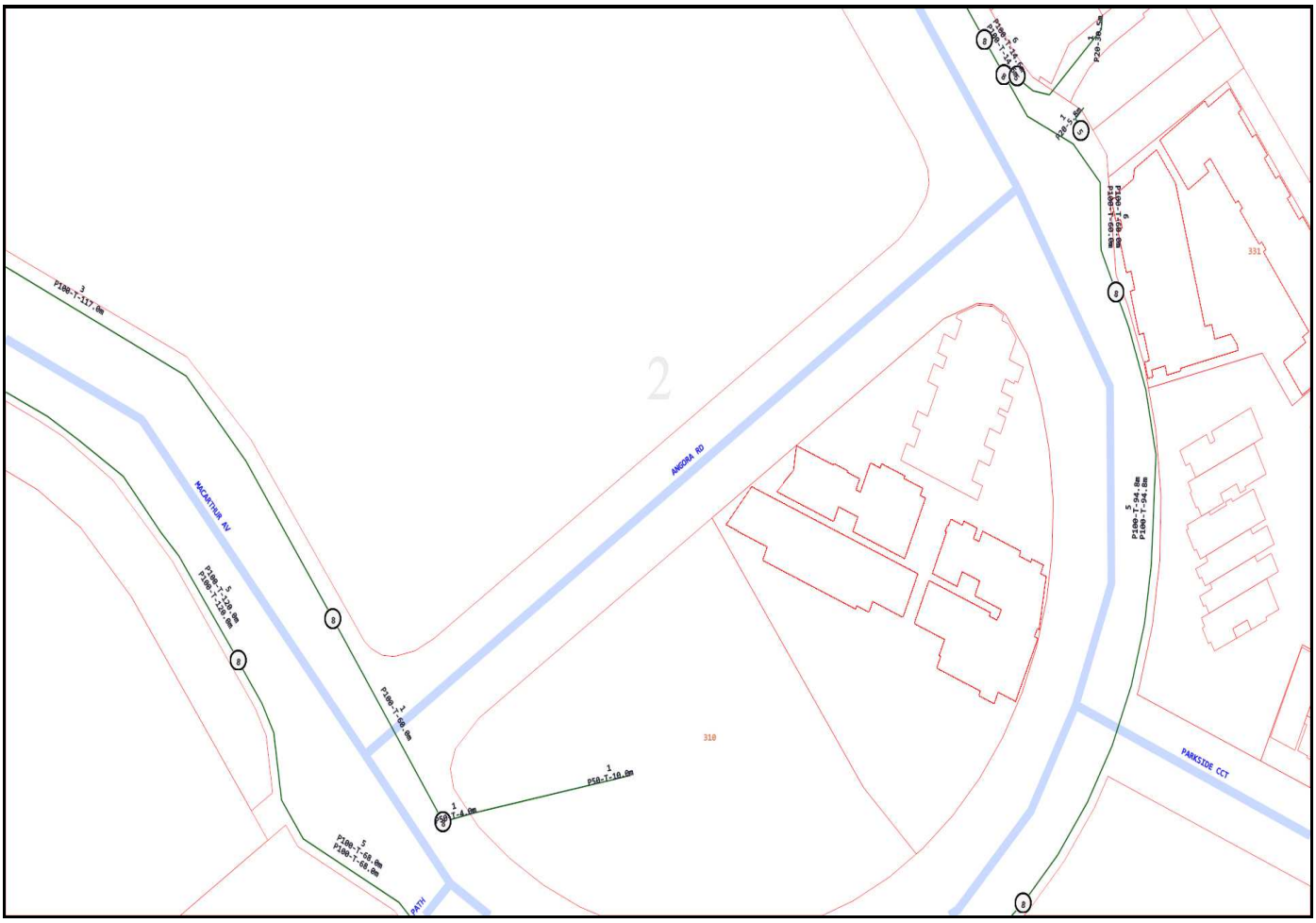
Indicative Plans are tiled below to demonstrate how to layout and read nbn asset plans



LEGEND

34	Parcel and the location
5	Pit with size "5"
2E	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
2 PO – T- 25.0m P40 – 20.0m 5 9	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
2 10.0m 5 9	2 Direct buried cables between pits of sizes ,"5" and "9" are 10.0m apart.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Copper/RF/Fibre) cables.
5 9	Trench containing only DESIGNED/PLANNED (Copper/RF/Fibre/Power) cables.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Power) cables.
BROADWAY ST	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000 1 cm equals 20 m

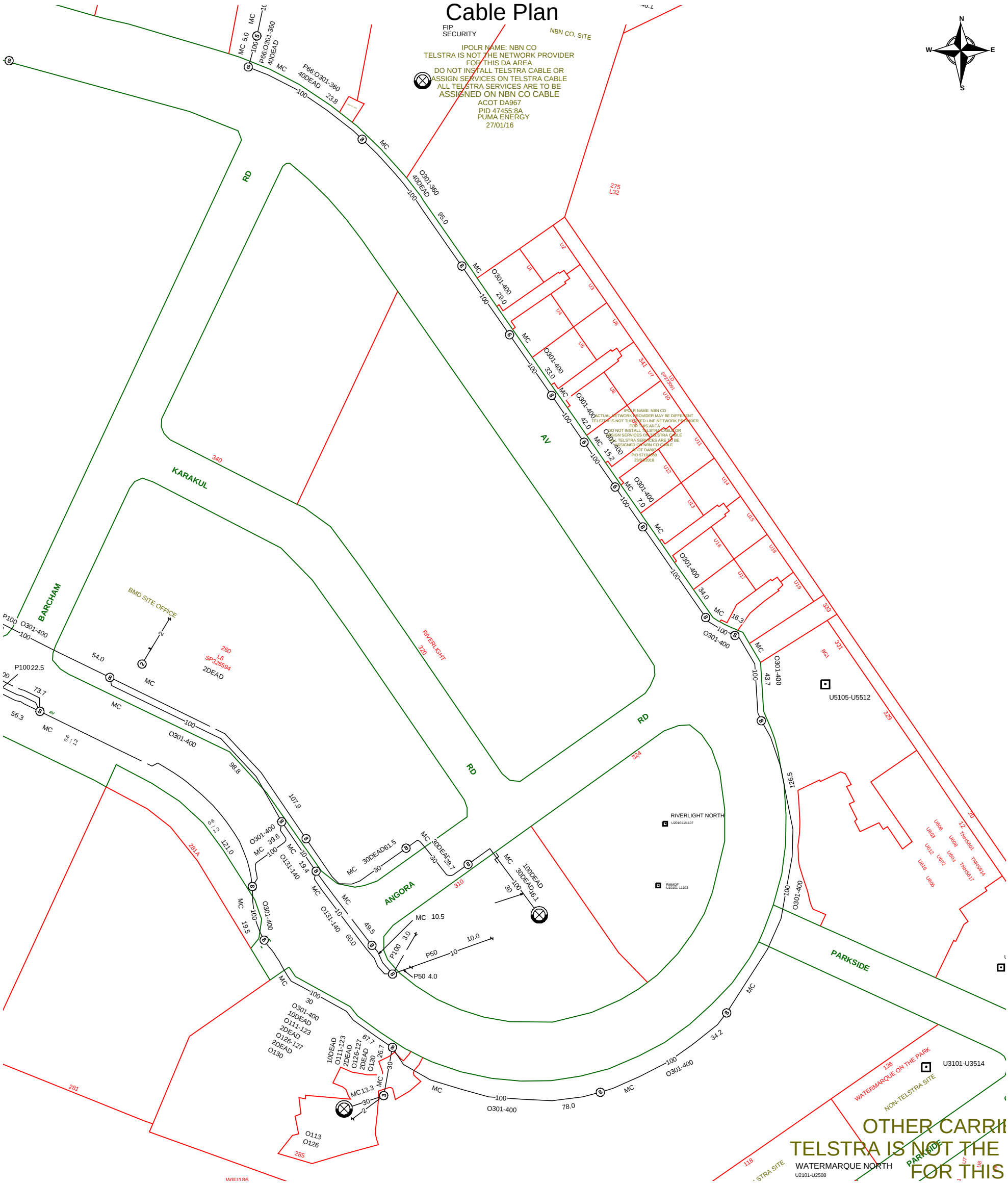

MACARTHUR AV
341
341
289



Emergency Contacts

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

Cable Plan



Report Damage: https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-equipment
Ph - 13 22 03
Email - Telstra.Plans@team.telstra.com
Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries

TELSTRA LIMITED A.C.N. 086 174 781

Generated On 10/06/2024 15:59:16

Sequence Number: 240344422

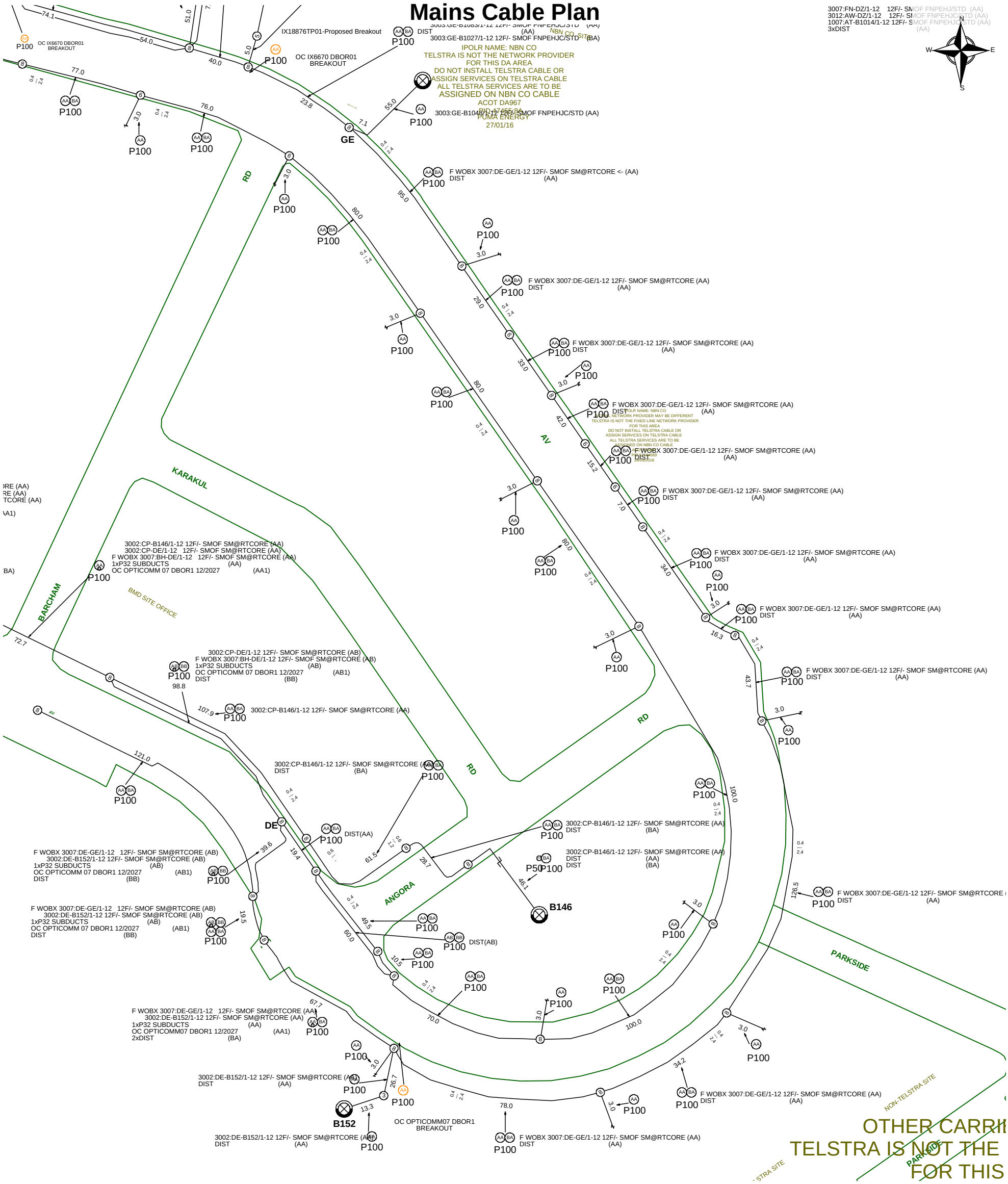
CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

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

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. The exact position of Telstra assets can only be validated by physically exposing it.
Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy.
Further on site investigation is required to validate the exact location of Telstra plant prior to commencing construction work.
A Certified Locating Organisation 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.

See the Steps- Telstra Duty of Care that was provided in the email response.

Mains Cable Plan



Report Damage: https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-equipment
Ph - 13 22 03
Email - Telstra.Plans@team.telstra.com
Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries

TELSTRA LIMITED A.C.N. 086 174 781

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Sequence Number: 240344422

CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

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. The exact position of Telstra assets can only be validated by physically exposing it.
Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy.
Further on site investigation is required to validate the exact location of Telstra plant prior to commencing construction work.
A Certified Locating Organisation 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.

See the Steps- Telstra Duty of Care that was provided in the email response.

Appendix F Brisbane City Council Erosion Hazard Assessment

BRISBANE CITY COUNCIL ABN 72 002 765 795

Erosion Hazard Assessment - June 2014

Brisbane City Council (BCC), *Erosion Hazard Assessment* form must be read in conjunction with the *Erosion Hazard Assessment- Supporting Technical Notes* (June 2014 or later version) for explanatory terms and Certification information.

What is an Erosion Hazard Assessment?
Soil erosion and sediment from urban development, particularly during construction activities, is a significant source of sediment pollution in Brisbane's waterways. The Erosion Hazard Assessment determines whether the risk of soil erosion and sediment pollution to the environment is 'low' , 'medium' or 'high'.

When is the EHA required?
An *Erosion Hazard Assessment* form must be completed and lodged with BCC for any Development Application (ie MCU or ROL) that will result in soil disturbance OR Operational Works or Compliance Assessment Application for 'Filling' or Excavation.

Failure to submit this form during lodgement of an application may result in assessment delays or refusal of the application.

Privacy Statement
The personal information collected on this form will be used by Brisbane City Council for the purposes of fulfilling your request and undertaking associated Council functions and services. Your personal information will not be disclosed to any third party without your consent, unless this is required or permitted by law.

Assessment Details

1 Please turn over and complete the erosion hazard assessment.

2 Based on the erosion hazard assessment overleaf, is the site:

☐ ***A 'low' risk site***

Best practice erosion and sediment control (ESC) must be implemented but no erosion and sediment control plans need to be submitted with the development application. Factsheets outlining best practice ESC can be found at http://www.waterbydesign.com.au/factsheets

☐ ***A 'medium' risk site***

If the development is approved, the applicant will need to engage a Registered Professional Engineer (RPEQ) or Certified Professional in Erosion and Sediment Control (CPESC) to prepare an ESC Program and Plan and supporting documentation — in accordance with the requirements of the Infrastructure Design Planning Scheme Policy.

☐ ***A 'high' risk site***

If the development is approved, the applicant will need to engage a RPEQ and CPESC to prepare an ESC Program and Plan and supporting documentation — in accordance with the requirements of the Infrastructure Design Planning Scheme Policy. The plans and program will need to be certified by a CPESC.

3 Site Information and Certification

Application number (if known)

Site address

Postcode

I certify that:

☐ I have made all relevant enquiries and am satisfied no matters of significance have been withheld from the assessment manager.

☐ I am a person with suitable qualifications and/or experience in erosion and sediment control.

☐ The Erosion Hazard Assessment was completed in accordance with the Erosion Hazard Assessment Supporting Technical Notes and the BCC Infrastructure Design Planning Scheme Policy.

☐ The Erosion Hazard Assessment accurately reflects the site's overall risk of soil erosion and sediment pollution to the environment.

☐ I acknowledge and accept that the BCC, as assessment manager, relies, in good faith, on this certification as part of its development assessment process and the provision of false or misleading information to the BCC constitutes an offence for which BCC may take punitive steps/ action against me/ enforcement action against me.

Certified by *Print name*

Certifier's signature

Date

/ /

Stock Code no. 262006

Assessment Table

Table 1: Low Risk Test

		Yes	*No*
1.1	is the area of land disturbance > 1000 m^2	☐	☐
1.2	does any land disturbance occur in a BCC mapped waterway corridor	☐	☐
1.3	is there any slope on site (longer than three metres in length) before, during or after construction that is steeper than 5%	☐	☐
1.4	does any land disturbance occur below 5 m AHD	☐	☐
1.5	does development involve endorsement of a staging plan	☐	☐
1.6	is there an upstream catchment passing through the site > 1 hectare	☐	☐

Have you answered 'yes' to any of the questions in Table 1?	*Yes*	*No*	**If '*No*' then site is <u>low risk</u> with respect to erosion and sediment control**
	☐	☐	

If '*Yes*' then proceed to Table 2

Table 2: Medium Risk Test

		Yes	*No*	**If '*No*' then site is <u>medium risk</u> with respect to erosion and sediment control**
2.1	is the area of land disturbance > 1 hectare	☐	☐	

If '*Yes*' then proceed to Table 3

Table 3: High Risk Test

3.1	is there an upstream catchment passing through the site > 1 hectare	☐	☐
3.2	does any land disturbance occurs in a BCC mapped waterway corridor	☐	☐
3.3	is there any slope on site (longer than three metres in length) before, during or after construction that is steeper than 15%	☐	☐

Have you answered 'yes' to any of the questions in Table 3?	*Yes*	*No*	**If '*No*' then site is <u>medium risk</u> with respect to erosion and sediment control**
	☐	☐	

If '*Yes*' then site is <u>high risk</u> with respect to erosion and sediment control

Appendix G Brisbane City Council Overlay Codes Responses

G.1 Flood Overlay Code

The following table assesses whether the specified table of the Brisbane City Council Flood Overlay Code is applicable to the proposed land use.

Table 5: Assessment of applicability of BCC Flood Overlay Code tables to proposed land use

Table of Brisbane City Council Flood Overlay Code	Applicable to proposed land use (Yes/No)	Comments
Table 8.2.11.3.A	Yes	Section B applicable (PO3 to PO4). Section C applicable (PO5 to PO14). Refer to Appendix G for response.
Table 8.2.11.3.B	No	Dwelling house is not proposed.
Table 8.2.11.3.C	Yes	Proposed Aged Care Facility falls within 'Residential care facility'. Overland flow flood planning sub-category applies to subject lot. Brisbane River and Creek/waterway flood planning areas sub-categories do not apply to subject lot.
Table 8.2.11.3.D	No	Proposed building is Building Class 9c (aged care facility). Even though only the overland flow flood planning sub-category applies to the subject lot, the proposed development has been assessed against this Table 8.2.11.3.D.
Table 8.2.11.3.E	No	Undercroft not proposed.
Table 8.2.11.3.F	No	New road not proposed.
Table 8.2.11.3.G	No	Essential community infrastructure not proposed.
Table 8.2.11.3.H	No	Processes in table not proposed.
Table 8.2.11.3.I	No	Reconfiguring a lot not proposed.
Table 8.2.11.3.J	No	Reconfiguring a lot not proposed.
Table 8.2.11.3.K	Yes	Karakul Road and Angora Road are local roads and are above the 5% AEP flood level (Brisbane River). MacArthur Ave is a neighbourhood road and is: ▪ Deemed to be above the 2% AEP flood level (Brisbane River), as the 1% AEP flood level does not impact the lot. ▪ Below the 5% AEP flood level (overland flow) of 3.78 m AHD. Note, proposed vehicle access to the site is via Karakul Road frontage, not MacArthur Ave frontage, which is considered acceptable and deemed compliant.
Table 8.2.11.3.L	Yes	This table is a reference table only for Table 8.2.11.3.D.
Table 8.2.11.3.M	No	Hazardous chemicals are not proposed for storage.

G.2 Flood Overlay Code response

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS[1]	COMMENTS	COUNCIL USE ONLY
Section A—If for self-assessable or assessable development for a dwelling house including any secondary dwelling Note — Development for a dwelling house does not require assessment against any other sections of this code.				
PO1 Development involving any habitable or non-habitable part of a dwelling house, including any secondary dwelling, is located and designed to: a) minimise the risk to people from flood hazard; b) achieve acceptable flood immunity; c) minimise property impacts from a flood event up to and including the defined flood event; d) minimise disruption to residents, recovery time and rebuilding or restoration costs after a flood event up to and including the defined flood event.	**AO1.1** Development for a dwelling house including any secondary dwelling: a. is not located in the Brisbane River flood planning area 1, 2a or 2b sub-categories or the Creek/waterway flood planning area 1 or 2 sub-categories; or b. is only located in these sub-categories, if a Registered Professional Engineer Queensland certifies that the dwelling house and any secondary dwelling are structurally designed to be able to resist hydrostatic and hydrodynamic loads associated with flooding up to and including the defined flood event.	**N/A**	Proposed development is not for a dwelling house	
	AO1.2 Development for a dwelling house and any secondary dwelling complies with the minimum flood planning levels in Table 8.2.11.3.B. Note — If located in an area that has no flood level information available from the Council such as an overland flow path, a Registered Professional Engineer of Queensland with expertise in undertaking flood studies is to certify that the flood level and development levels for the dwelling house and any secondary dwelling achieve the required flood planning levels in Table 8.2.11.3.B.	**N/A**	Proposed development is not for a dwelling house	
	AO1.3 Development involving a building undercroft complies with the minimum clearance requirements in Table 8.2.11.3.E. Editor's note — For creek/waterway, storm-tide and river flooding, applicable flood planning information is available from Council's FloodWise Property Report. Note — The Flood planning scheme policy provides guidance on undercroft design.	**N/A**	Proposed development is not for a dwelling house	

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS[1]	COMMENTS	COUNCIL USE ONLY
PO2 Development within the Creek/waterway flood planning area sub-categories or Overland flow flood planning area sub-category: a) maintains the conveyance of flood waters to allow flow and debris to pass predominantly unimpeded through the site; b) does not concentrate, intensify or divert floodwater onto upstream, downstream or adjacent properties; c) will not result in a material increase in flood levels or flood hazard on upstream, downstream or adjacent properties.	**AO2** Development: a. is not located within the Creek/waterway flood planning area 1, 2 or 3 sub-categories or the Overland flow flood planning area sub-category; or b. provides an open undercroft area from natural ground level to habitable floor level for any area inundated by the defined flood event; or Note—This undercroft area is not suitable for providing non-habitable rooms, secure storage of valuables, or future enclosing for storage or car parking. The clear area may include structural elements such as columns and floor substructure. The Flood planning scheme policy provides guidance on undercroft design. Editor's note—An open undercroft design may be achieved through a 'valance' treatment around the perimeter of an otherwise internally clear undercroft. Editor's note—For Creek/waterway, storm-tide and river flooding, applicable flood planning information is available from Council's FloodWise Property Report. c. a report from a Registered Professional Engineer Queensland certifies that the development in the Creek/waterway flood planning area or Overland flow flood planning area sub-categories will not result in a material increase in flood level or flood hazard on upstream, downstream or adjacent properties. Note — Flood studies demonstrate that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy.	**N/A**	Proposed development is not for a dwelling house	

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS[1]	COMMENTS	COUNCIL USE ONLY
Section B—If self-assessable or assessable development other than for a dwelling house or reconfiguring a lot Note—If self-assessable development complies with the acceptable outcomes of this part, no further assessment against this code is required.				
PO3 Development: a) is compatible with flood hazard in a defined flood event; b) minimises the risk to people from flood hazard; c) does not reduce the ability of evacuation resources including emergency services to access and evacuate the site in a flood emergency, with consideration to the scale of the development; d) minimises impacts on property from flooding; e) minimises disruption to residents, business or site operations and recovery time due to flooding; f) minimises the need to rebuild structures after a flood event greater than the defined flood event. Note — Where Table 8.2.11.3.C identifies that a flood risk assessment is required, compliance with this performance outcome can be achieved by submitting a flood risk assessment, which may be included within a flood study, addressing the criteria within this performance solution. Preparing flood risk assessments and flood studies is required to be in accordance with the Flood planning scheme policy. Note — An emergency management plan prepared in accordance with the Flood planning scheme policy, which sets out procedures for evacuation due to flooding may be used to demonstrate compliance with this performance outcome.	**AO3** Development for a material change of use is identified in Table 8.2.11.3.C as compatible with the flood hazard in the relevant flood planning area.	✓	In accordance with Table 8.2.11.3.C, the development location is identified as being subject to a flood risk assessment as the Overland flow flood planning area applies to the lot. The development is considered compatible with the characteristics of overland flow in MacArthur Avenue as the proposed minimum floor level (4.5 m AHD) of the development is 650 mm above the MacArthur Avenue 0.2% AEP overland flow level at the site frontage.	
PO4 Development for a park ensures that the design of a park and location of structures and facilities responds to the flood hazard and balances the safety of intended users with: a) maintaining continuity of operations; b) impacts of flooding on asset life and	**AO4.1** Development involving a building or structure in a park complies with the flood planning levels specified in Table 8.2.11.3.D	N/A	Proposed development does not include a park	
	AO4.2 Development involving a building or structure where Table 8.2.11.3.D does not apply: a. is not located within the 20% AEP flood extent of	N/A	Proposed development does not include a park	

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS[1]	COMMENTS	COUNCIL USE ONLY
ongoing maintenance costs; c) efficient recovery after flood events; d) recreational benefits to the city; e) availability of suitable land within the park.	any creek/waterway or overland flow path; or b. is located above the 20% AEP flood level of any creek/waterway or overland flow path.			
Section C—If for assessable development other than for a dwelling house				
PO5 Development is located and designed to: a) minimise the risk to people from flood hazard on the site; b) minimise flood damage to the development and contents of buildings up to the defined flood event; c) provide suitable amenity; d) minimise disruption to residents, recovery time and the need to rebuild structures after a flood event up to and including the defined flood event.	**AO5.1** Development complies with the flood planning levels specified in Table 8.2.11.3.D. Note — If located in an area with no Council-derived flood levels such as an overland flow path, a Registered Professional Engineer Queensland with expertise in undertaking flood studies is to derive the applicable flood level and certify that the development meets the required flood planning levels in Table 8.2.11.3.D. The study is to demonstrate that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy.	✓	The levels of the proposed development meet the requirements set out in Table 8.2.11.3.D.	
	AO5.2 Development is: a. not located in the: i. Brisbane River flood planning area 1, 2a, or 2b sub-categories; ii. Creek/waterway flood planning area 1 or 2 sub-categories; iii. Overland flow flood planning area sub-category; or b. only located in these sub-categories if a Registered Professional Engineer Queensland with expertise in undertaking flood studies certifies that: i. the development design, siting and any mitigation measures will ensure the development is structurally adequate to resist hydrostatic, hydrodynamic and debris impact loads associated with flooding up to the defined flood event; and ii. the risk to people is managed to an acceptable level.	A/S	The development area is: • not located within Brisbane River Flood Planning Area sub-category 1, 2a, or 2b. • not located within Creek/waterway Flood Planning Area sub-categories. • located within the overland flow Flood Planning Area sub-category. The pre-development conditions flood hazard (d.v. product) on the subject lot in the 2% AEP (Source: BCC open data) is less than 0.1 m^2/s and is classified as low hazard. The overland flow hazard on the site only exists due to the lot area being low lying under pre-development conditions. The lot will be filled and overland flow on the lot will not apply in developed conditions. Overland flow will not pose a risk to people in developed conditions.	

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS[1]	COMMENTS	COUNCIL USE ONLY
PO6 Development involving essential electrical services or a basement storage area is suitably located and designed to ensure public safety and minimise flood recovery and economic consequences of damage during a flood.	**AO6.1** Development ensures that: a. all areas containing essential electrical services comply with the flood planning levels in Table 8.2.11.3.D; or b. if a basement contains essential electrical services or a private basement storage area, the basement is a waterproof structure with walls and floors impermeable to the passage of water with all entry points and services located at or above the relevant flood planning level in Table 8.2.11.3.D. Note — A basement storage area does not include a bike storage room, change room, building maintenance storage and non-critical electrical services.	✓	Essential electrical services comply with flood planning levels in Table 8.2.11.3.D (refer to report). Basement is not proposed.	
	AO6.2 Development involving a basement that relies on a pumping solution to manage floodwater ingress or for dewatering after a flood provides a secondary pump system with a backup power source for the pump.	N/A	Basement is not proposed.	
PO7 Development does not directly or indirectly create a material adverse impact on flood behaviour or drainage on properties that are upstream, downstream or adjacent to the development.	**AO7.1** Development: a. does not block, or divert floodwaters for any area affected by creek/waterway or overland flow flooding, excluding storm-tide flooding and Brisbane River flooding sources; or b. does not result in a material increase in flood level or hydraulic hazard on upstream, downstream or adjacent properties. Note — Compliance with this acceptable solution can be demonstrated by the submission of a flood study by a Registered Professional Engineer of Queensland with expertise in undertaking flood studies demonstrating that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy.	✓	Acceptable outcome met. The overland flow hazard on the site only exists due to the lot area being low lying under pre-development conditions. The existing stormwater drainage network downstream of the site has been designed to convey the developed conditions discharge.	
	AO7.2 Development retains existing overland flow paths and does not rely wholly on piped solutions to manage major flows.	A/S	The overland flow hazard on the site only exists due to the lot area being low lying under pre-development conditions.	
	AO7.3 Development which creates a new overland flow path	N/A	Proposed works does not create a new overland flow path.	

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS[1]	COMMENTS	COUNCIL USE ONLY
	or significantly modifies an existing overland flow path via earthworks does not materially worsen hydraulic hazard on the site from existing conditions. Note — Compliance with this acceptable solution can be demonstrated by the submission of a flood study by a Registered Professional Engineer of Queensland with expertise in undertaking flood studies demonstrating that the development and engineering design methods conform to the principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy.			
PO8 Development for filling or excavation in an area affected by creek/waterway flooding does not directly, indirectly or cumulatively cause any material increase in flooding or hydraulic hazard or involve significant redistribution of flood storage from high to lower areas in the floodplain. Note — This can be demonstrated by undertaking earthworks in compliance with the Compensatory earthworks planning scheme policy. Note — This part of the code applies to all development other than a dwelling house and any secondary dwelling which involves filling or excavation, whether or not the development application comprises a separate development application for operational work involving filling or excavation.	**AO8** Development ensures that no filling or excavation greater than 100mm is located in the Creek/waterway flood planning area 1, 2 or 3 sub-categories if contained in the 5% AEP flood extent of any Creek/waterway flood planning area sub-category for which no waterway corridor has been mapped in the Waterway corridors overlay.	✓	Acceptable outcome met.	
PO9 Development ensures that the building and site design: (a) maintains the conveyance capacity of existing overland flow paths and creek/waterways; (b) ensures floodwaters and flood debris can pass predominantly unimpeded under a structure or building to minimise property or building damage, including for a flood larger than the defined flood event; (c) mitigates flood impacts by ensuring that filling, excavation and location of services are designed to allow for the conveyance of floodwater across the site. Note—The Flood planning scheme policy provides guidance on relevant considerations in determining minimum undercroft clearances and	**AO9**.1 Development involving a building undercroft in the Creek/waterway flood planning area sub-categories or the Overland flow flood planning area sub-category: a. complies with the minimum building undercroft clearance requirements in Table 8.2.11.3.E; b. not located directly above any part of a waterway corridor as mapped in the Waterway corridors overlay.	N/A	Proposed development does not propose a building undercroft.	
	AO9.2 Development involving a building undercroft in the Creek/waterway flood planning area sub-categories or the Overland flow flood planning area sub category: a. has a ground level within the undercroft area that is free draining; b. does not involve excavation below ground level of more than 300mm within the undercroft area.	N/A	Proposed development does not propose a building undercroft.	

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS[1]	COMMENTS	COUNCIL USE ONLY
treatment of ground level in undercroft areas where floodwater conveyance is required underneath development.				
PO10 Development for vulnerable uses, difficult to evacuate uses or assembly uses optimises vehicular access and efficient evacuation from the development to parts of the road network unaffected by flood hazard, in order to: a) protect safety of users and emergency services personnel; b) support efficient emergency services access and site evacuation with consideration to the scale of development. Note — A flood risk assessment may be required to address the performance outcomes or acceptable solutions which deal with evacuation and isolation arrangements, and the ability to take refuge. The Flood planning scheme policy provides information for undertaking flood risk assessments.	**AO10** Development for vulnerable uses, difficult to evacuate uses or assembly uses: a. is not isolated in any event up to the relevant flood planning level specified in Table 8.2.11.3.L; or b. has direct vehicle access to a critical route or interim critical route in the Critical infrastructure and movement network overlay for evacuation in a flood; or c. can achieve vehicular evacuation to a suitable flood-free location. Note — A suitable flood-free location is of a size and nature sufficient to provide for the size and characteristics of the population likely to need evacuation to that area.	✓	Even though the site will not be directly affected in a river flood up to the 0.2% AEP, the site will be isolated in the flood planning level specified in Table 8.2.11.3.L. Refer to ACOR's Flood Emergency Management Plan that has been prepared to mitigate possible impacts caused by isolation during flooding.	
PO11 Development has access which, having regard to hydraulic hazard, provides for safe vehicular and pedestrian movement and emergency services access to adjoining roads.	**AO11.1** Development provides an access or driveway into the site which is: a. trafficable during the defined flood event; b. not located in the Creek/waterway flood planning area 1 sub-category; c. not located in the Overland flow flood planning area sub-category if the hydraulic hazard is unsafe in the defined flood event; d. the access or driveway is not inundated by a 10% AEP flood.	✓	Acceptable outcome met.	
	AO11.2 Development located in the Creek/waterway flood planning area 1, 2, 3 or 4 sub-categories locates any disabled access in the highest part of the site. Note — explanation of hydraulic hazard provided in the Flood planning scheme policy.	N/A	Proposed development works are not within the creek/waterway flood planning areas.	

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS[1]	COMMENTS	COUNCIL USE ONLY
PO12 Development involving a new road, a bridge or culvert is designed to minimise impacts to flood behaviour, minimise disruption to traffic during a flood and allow for emergency access.	**AO12** Development involving a new road complies with the flood planning levels in Table 8.2.11.3.F.	N/A	Proposed development does not involve any new roads.	
PO13 Development for pedestrian and cyclist paths: a) provides a suitable level of trafficability; b) manages the impacts of flooding on asset life and ongoing maintenance costs; c) balances route availability with recreational and transport connectivity benefits to the city.	**AO13.1** Development for cyclist and pedestrian facilities other than on public roads, including those traversing through a park and adjacent to a watercourse and overland flow path, are located above the 39% AEP (2 year ARI) flood immunity from all flooding sources. Note — If the site is subject to more than one type of flooding, the requirement that affords the greatest level of protection will apply.	N/A	Not applicable.	
	AO13.2 All new on-road cyclist and pedestrian facilities comply with the flood planning levels and trafficability standards for the applicable category of road in Table 8.2.11.3.F or Table 8.2.11.3.K.	N/A	The proposed development does not involve any on-road facilities.	
PO14 Development which increases the residential population within the Brisbane River flood planning area sub-categories minimises the risk to people in all flood events with consideration to flood hazard, including warning time.	**AO14** Development in the Brisbane River flood planning area sub-categories in areas where the residential flood level is greater than 12.8m AHD involving: a. an increase in the number of residential dwellings; or b. additional residential lots; or c. is not subject to an unsafe hydraulic hazard in the 0.2% AEP flood event. Note — Explanation of a hydraulic hazard is provided in the Flood planning scheme policy.	N/A	The proposed development is not residential, nor at a level greater than 12.8m AHD.	
Additional criteria for essential community infrastructure				
PO15 Development involving essential community infrastructure: a) remains functional to serve community need during and immediately after a flood event, or is part of a network that is able to maintain the function of the essential	**AO15** Development involving essential community infrastructure: a. is ancillary to and not relied upon for the provision of the essential service during a flood; or b. is located above the flood planning levels in Table 8.2.11.3.G;	N/A	The proposed development is not "essential community infrastructure".	

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS[1]	COMMENTS	COUNCIL USE ONLY
community infrastructure when parts of the development are unable to function during or after a flood; b) is designed, sited and operated to avoid adverse impacts on the community or the environment due to the impacts of flooding on infrastructure, facilities or access and egress routes; c) is able to remain functional or is part of a network which is able to remain functional even when other infrastructure or services (such as electricity supply) may be compromised in a flood event; d) contains mitigation measures which are not entirely dependent on human activation to respond to a flood event. Note — Protection of function is required up to and including the flood event in Table 8.2.11.3.G.	c. has access to or provides the necessary back-up emergency electricity and communications supply in times of flood; d. is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by the flood event listed for the development type in Table 8.2.11.3.G; e. that services a local area: i. is able to be accessed in times of flood to service local community needs up to the event listed for that development type in Table 8.2.11.3.G; or ii. has a service continuity plan that demonstrates the continued provision of service during the relevant flood event.			

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS[1]	COMMENTS	COUNCIL USE ONLY
Additional criteria if development involves the processes in Table 8.2.11.3.H				
PO16 Development involving the storage and handling of hazardous materials avoids or minimises risks to public health and safety and the environment, by: a) protecting underground tanks for hazardous materials against the forces of buoyancy, velocity flow and debris impacts; b) securing above-ground tanks for hazardous materials against flotation and lateral movement; c) preventing damage to hazardous materials pipework or entry of floodwater into hazardous materials pipework; d) preventing damage to or off-site release of packages, drums or containers storing hazardous materials. Note — A chemical hazards flood risk report prepared in accordance with the Management of hazardous chemicals in flood prone areas planning scheme policy can assist in demonstrating achievement of this performance outcome. Note — A pump drainage system is not an acceptable measure to meet the performance outcome.	**AO16** a. Development does not include the storage or handling of hazardous chemicals that are equivalent to or exceed the threshold quantities in Table 8.2.11.3.M. b. Development involving the processes listed in Table 8.2.11.3.H: i. where located in the Flood overlay area, occurs only in the Creek/waterway flood planning area 5 sub-category or the Brisbane River flood planning area 5 sub-category; or ii. is consistent with the standards contained in the Management of hazardous chemicals in flood prone areas planning scheme policy and can operate without risk of environmental harm during a flood event. Note — The Management of hazardous chemicals in flood prone areas planning scheme policy sets out further information and processes including risk assessment for the management of hazardous chemicals in flood planning areas.	N/A	The proposed development does not involve processes in Table 8.2.11.3.H	
Additional criteria for reconfiguring a lot				
PO17 Development locates and designs all lots resulting from reconfiguring a lot to: a) minimise the risk to people from flood hazard; b) minimise damage to property from flood hazard; c) facilitate safe and efficient evacuation. Note: • Consideration of all floods up to the probable maximum flood is relevant to minimising the risk to people.	**AO17**.1 Development creating new lots is identified in Table 8.2.11.3.I as suitable within the relevant flood planning area.	✓	Complies with relevant flood planning area.	
	AO17.2 Development provides for reconfiguring a lot design that achieves a road and lot layout which: a. provides trafficable vehicular egress for evacuation during a defined flood event; b. optimises hazard-free movement away from	✓	Complies with relevant flood planning area.	

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS[1]	COMMENTS	COUNCIL USE ONLY
• Flood warning time is not considered sufficient in the Creek/waterway planning area sub-categories or the Overland flow flood planning area sub-category. • Filling above the flood planning level for a flood event greater than the defined flood event cannot be assumed to mitigate the flood hazard.	sources of flood hazard within the development. Note — Further advice on road and lot layout is contained in the Flood planning scheme policy.			
	AO17.3 Development which creates a new residential lot in an area subject to Brisbane River flooding, if the residential flood level is greater than 12.8m AHD is not subject to a hydraulic hazard greater than 0.6m2/s DV or 0.6m deep in a 0.2% AEP flood. Note — Refer to the Flood planning scheme policy for further explanation on the 0.2% AEP flood.	N/A	-	
PO18 Development involving reconfiguring a lot: a) minimises the risk to people from flood hazard; b) creates safe evacuation routes or avoids isolation of the development during a flood greater than the defined flood event; c) minimises damage to property and services; d) provides lots and roads that are not frequently flooded or subject to nuisance ponding or seepage; e) ensures lots created for park or private open space minimise the risk to people from flood hazard and are fit for purpose; f) provides a lot that is not substantially burdened by flood mitigation infrastructure.	**AO18.1** Development involving reconfiguring a lot ensures: a. all lots comply with the flood planning levels in Table 8.2.11.3.J; b. a new road complies with the flood planning levels in Table 8.2.11.3.F.	N/A	Complies with relevant flood planning area.	
	AO18.2 Development involving reconfiguring a lot creating more than 6 residential lots or a lot for industry ensures the flood planning levels of a dedicated road fronting the development or providing primary access within 200m of the development: a. complies with Table 8.2.11.3.K; or b. has acceptable trafficability in accordance with the requirements in the Flood planning scheme policy and the Queensland Urban Drainage Manual. Note — The Flood planning scheme policy contains supporting information about trafficability on existing roads and serviceability during floods.	N/A	-	
	AO18.3 Development protects the conveyance of flood hazard area by providing an easement over the: a. 2% AEP flood extent for overland flow flooding; b. 1% AEP flood extent for creek/waterway flooding.	N/A	-	

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal

G.3 Critical infrastructure and movement network overlay code

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS[1]	COMMENTS	COUNCIL USE ONLY
Access to air service, detention facilities, emergency services, hospital, port service or residential care facility				
PO1 Development ensures that air service, detention facilities, emergency services, hospital, port service and residential care facilities maintain essential functions and retain transport connections necessary for their function during a natural disaster event.	**AO1** Development for air service, detention facilities, emergency services, hospital, port service or residential care facilities: a. has direct vehicular access to a critical route or an interim critical route; or b. has a hazard-free route (up to and including a 0.05% AEP (2000 year ARI) flood event) to a critical route or an interim critical route during a natural disaster event; or c. includes upgrades to infrastructure to enable access to a critical route or an interim critical route during a natural disaster event; or d. where the development cannot access a critical route or an interim critical route during a natural disaster event, the development: i. demonstrates that it services a local/district catchment and can continue to service and access that catchment during a natural disaster event; ii. includes a business continuity plan for the operation of the use or throughout the natural disaster event.	**A/S**	Even though the site will not be directly affected in a river flood up to the 0.05% AEP, the site will be isolated in this flood event. Refer to ACOR's Flood Emergency Management Plan that has been prepared to mitigate possible impacts caused by isolation during flooding.	
Access to telecommunications facility, major electricity infrastructure, substation, renewable energy facility, transport depot or utility installation				
PO2 Development ensures that a telecommunications facility, major electricity infrastructure, substation, renewable energy facility, transport depot or utility installation which support a disaster response activity retains necessary access during a natural disaster event to ensure its continued operation.	**AO2** Development for a telecommunications facility, major electricity infrastructure, substation, renewable energy facility, transport depot or utility installation: a. has direct vehicular access to a critical route or an interim critical route; or	**N/A**	Categories are not applicable to this development.	

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS[1]	COMMENTS	COUNCIL USE ONLY
	b. has a hazard-free route to a critical route or an interim critical route during a natural disaster event; or c. includes upgrades to infrastructure to enable access to a critical route or an interim critical route during a natural disaster event; or d. has been designed to operate in all flood events without human intervention.			

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
N/A = Not Applicable to this Proposal