

SERVICEABILITY REPORT

FOR THE PROPOSED FLIPSIDE CIRCUS DEVELOPMENT

LOCATED AT
221 MACARTHUR AVENUE, HAMILTON QLD 4007

PREPARED FOR
ECONOMIC DEVELOPMENT QUEENSLAND (EDQ)

Bornhorst & Ward Pty Ltd

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Bornhorst and Ward Project No: **20431**

If you have any queries regarding this proposal, then please contact: **Angus Livingstone**

Revision	Date	Description	Author	Rev.	App.
A	Jan 2021	Draft Issue	MK	AL	
B	Feb 2021	Issue for Approval	MK	AL	NR
C	Feb2021	Updated based on EDQ comments	AL	NR	NR

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1. INTRODUCTION

Bornhorst and Ward has been commissioned to investigate and report on the serviceability requirements pertaining to the proposed Indoor entertainment and Indoor Sport & Recreation development within the Maritime 3 precinct located at 221 MacArthur Avenue, Hamilton (Lot 302 on SP257483). The proposal consists of a Flipside Circus development. Conceptual Plans of the proposed development can be found in Appendix A.

This document reports on the existing and proposed civil works and infrastructure required as part of the proposed development. The engineering requirements for this proposal shall be in accordance with Engineering Best Management Practices, Brisbane City Council (BCC) Planning Scheme 2014, the State Planning Policy 2017, and EDQ Development Guidelines.

This report provides an investigation into existing site conditions and surrounding infrastructure, while also commenting on potential civil engineering requirements for the proposal.

2. SITE CHARACTERISTICS

2.1 LOCATION AND EXISTING FEATURES

The development site, located at 221 MacArthur Avenue has the following existing characteristics:

- The site is part of the proposed Maritime 3 precinct and is to be bound by the planned Lawn and Tourism Hub development to the south, MacArthur Avenue to the north, a commercial facility to the west, and a planned Think Space development to the east of the site;
- The development site comprises of existing hardstands and bitumen/gravel surfaces. Site access is currently achieved via a crossover from MacArthur Avenue;
- The total area of the proposed development site is approximately 2000 m²;
- The site is currently utilised as part of a log storage facility which extends eastward from the proposed site;
- The site is positioned approximately 90m North of the Brisbane River.

Refer to Figure 1 for locality details.



Figure 1: Site Locality Plan

2.2 PROPOSED DEVELOPMENT

The following points outline information regarding the proposed development:

- The existing site is to be repurposed into a new circus venue adjacent to the other proposed Maritime 3 precinct venues;
- Access to the site will be achieved via the setdown area between MacArthur Avenue and Bincote Street, and also via the internal road through the Maritime 3 precinct;
- The existing cross over from the site to MacArthur Avenue is to be demolished.

Refer to the development drawings in Appendix A for further details of the proposed development.

2.3 TOPOGRAPHY AND CATCHMENT CHARACTERISTICS

The existing topography and catchment characteristics are as follows:

- The development falls from a high point at approximately RL 4m AHD at the south-eastern corner of the site at an approximate grade of 1.4% to a low point of approximately RL 3m AHD at the north-western corner of the site;
- During major storm events, the majority of runoff from the site discharges to MacArthur Avenue;
- The site has no external catchments.

See Appendix C for more information in regards to the topography of the site.

2.4 EXISTING FLOODING CONDITIONS AND FREEBOARD REQUIREMENTS

A BCC Floodwise Report has been obtained for the site and states the following:

- Flood levels range from RL1.9m AHD for a 20% AEP event, to RL2.5m AHD for the 1.0% AEP event;
- The highest source of flooding is from storm tides, producing flood levels of RL2.5m AHD.

Please refer to the Brisbane City Council's Floodwise Property Report in Appendix C and Figure 2 below for more details.

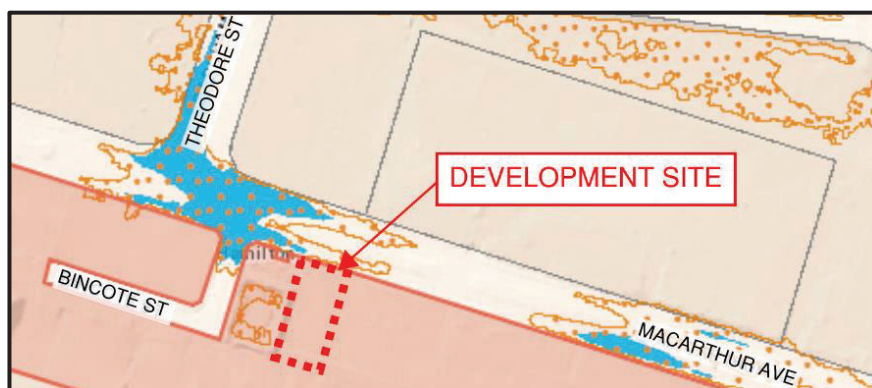


Figure 2: Brisbane City Council Interactive Flood Map

The following table provides a summary of flood information for this property

Table 1: Property Information

PROPERTY INFORMATION	
Minimum Ground Level	0.6m
Maximum Ground Level	6.4m
Min Habitable Floor Level	Contact Council
Defined Flood Event Level	2.5m
Defined Flood Event Level Source	STORMTIDE
Source of Highest Flooding	STORMTIDE
Flooding may also occur from	STORMTIDE,RIVER

The table below displays the peak estimated flood levels by probability for this property.

Table 2: BCC Estimated Peak Flooding Levels

Brisbane City Council Estimated Peak Flooding Level		
Description	Level (mAHD)	Source
20% AEP	1.9m	STORMTIDE
5% AEP	2.1m	STORMTIDE
2% AEP	2.2m	STORMTIDE
1% AEP	2.5m	STORMTIDE
1% AEP	2.4m	RIVER
January 2011	2.2m	RIVER
DFL	2.1m	RIVER
RFL	2.2m	RIVER

Brisbane City Council Freeboard Requirements

Design levels for the buildings must comply with the flood immunity standards specified by Brisbane City Council's City Plan 2014. The development will be assessed against the flood levels determined from our investigations. In accordance with the Brisbane City Council City Plan 2014, the minimum flood freeboard requirements would therefore be in order of:

Table 3: Flood Freeboard Requirements

Development Area	Council Flood Freeboard Requirements (AHD)	Required Development Level (AHD)
Building Floor level	1 % AEP level at 2100	3.1m
Carport or Unroofed Car park	1% AEP flood level	2.5m
Vehicle Access and Manoeuvring Areas	2% AEP flood level	2.2m
Essential Electrical Services	1 % AEP level at 2100	3.1m

Table 8.2.6.3.C, Table 8.2.6.3.D and Table 8.2.6.3.L of the Brisbane City Council's Coastal Hazard Overlay Code were used to determine recommended development levels. The flood immunity levels have been based on a BCA building classification of "5, 6 or 8" within Table 8.2.6.3D. Flood planning level categories associated with this building classification have been deemed as A & C.

Table 3 above states the relevant flood immunity levels for the site. The design will have to consider this flood immunity level and therefore essential infrastructure will have to be built above this level in line, however generally the site levels are already above these requirements. Additional filling is currently being carried out within the site as part of the adjacent Maritime 3 development. This filling will further push levels within the site above the defined flood levels from the BCC floodwise report.

It is noted that MacArthur Avenue is at a lower elevation to the site and is inundated in certain areas during a 1% AEP event. Therefore, evacuation via Macarthur Avenue will be required prior to the site becoming inundated. Other precautions should be considered and implemented where possible. This should include implementing significant controls such as warning/evacuation systems for tenants/users. A flood risk assessment plan is recommended to be completed for the site.

3. EXISTING AND PROPOSED CIVIL WORKS AND INFRASTRUCTURE

3.1 STORMWATER

3.1.1 Existing Infrastructure

A Dial Before You Dig Investigation has been completed, a survey was acquired of the site and the use of the GIS Infrastructure Mapping was used to identify the existing stormwater infrastructure. The following stormwater infrastructure was noted:

- A 1050mm Stormwater pipe runs south along Bincote Street. This pipe enlarges to 1220mm and passes through the site, before discharging through the revetment wall to the Brisbane River;
- Four (4) inlet pits are positioned at the intersection of Bincote Street and MacArthur Avenue which connect to the 1050mm stormwater pipe;
- A 1050mm stormwater pipe exists along the eastern side of the site. This pipe conveys flows from MacArthur Avenue, through the site to the Brisbane River.

Council Asset Plans of the existing stormwater infrastructure and detailed survey can be found in Appendix C of this report.

3.1.2 Proposed Infrastructure

The following points outline the proposed stormwater infrastructure for the development site:

- Surface runoff within the development will be directed to MacArthur Avenue via overland flow;
- Minor and Major events will discharge flows to the Brisbane River via a combination of sheet flow and piped flow (utilising the existing outlets along the revetment wall);
- An upstream roof water drainage connection will be provided at the south-eastern corner of the site and will discharge into the Brisbane River via the existing 450 RCP drainage pipe;
- As there will be a decrease in the impervious area due to the introduction of vegetated areas in the development, there will be a resulting decrease in peak stormwater discharge rates from the site. Therefore, no stormwater detention measures are required;
- Considering the development works area is less than 2500m², there are no stormwater quality requirements under BCC's 2014 City Plan and as a result, no stormwater quality treatment measures are proposed.

Refer to Appendix B for a sketch of the proposed stormwater infrastructure.

3.2 EARTHWORKS

As part of the enabling civil works for the adjacent Maritime 3 precinct, some earthworks will be done within the site. This will include filling to both reduce the volume of earthworks required for the works associated with this development, and to further push surface levels above the flood levels mentioned in section 2.4 above. The earthworks plan showing this additional fill is shown on drawing C0110(L) and is attached in Appendix B.

Minor earthworks will be required to provide level building pads and footings where necessary based on final architectural levels and falls. All earthworks will be carried out in accordance with Brisbane City Council Guidelines.

3.3 EROSION AND SEDIMENT CONTROL PLAN

A comprehensive Erosion and Sediment Control Plan (ESCP) including a construction process will be prepared for this development during the detailed design phase. The ESCP designs will be in accordance with the State Planning Policy 2014 and the Brisbane City Council guidelines.

An Erosion Hazard form has also been included in this application (refer to Appendix E).

3.4 ROADWORKS

There are no roadworks proposed as part of this facility. Surrounding footpaths and access roads will be facilitated as part of adjacent works being carried out by EDQ.

Refer to the architectural drawings in Appendix A for further information.

3.5 SEWER

3.5.1 Existing Infrastructure

The QUU Asset Plans from a Dial Before you Dig investigation indicate the following:

- A 225mm diameter sewer main is positioned within MacArthur Avenue.

QUU Asset Plans of the existing sewer infrastructure can be found in Appendix C of this report.

3.5.2 Proposed Infrastructure

The proposed sewer infrastructure for this development is as follows:

- A new DN160 PE100 type C4 sewer connection to existing manhole (MH150540) within MacArthur Avenue is to be constructed as part of the adjacent Maritime 3 civil works for a new internal plumbing connection.

Refer to Appendix B for the proposed connection to the sewer network.

3.6 WATER

3.6.1 Existing Infrastructure

The QUU Asset Plans from a Dial Before You Dig investigation indicate the following existing water infrastructure:

- An existing 150mm CI water reticulation main within the Bincote Street road reserve;
- A 300mm CI water reticulation main located within MacArthur Avenue verge fronting the site;
- A domestic 150mm water service exists within the development extents from the water main positioned within Bincote Street, to Eat Street Northshore.

QUU Asset Plans of the existing water infrastructure can be found in Appendix C of this report.

3.6.2 Proposed Infrastructure

The proposed water infrastructure for the development is as follows:

- It is expected that the existing water connection will continue servicing the proposed development. All water for the development will be drawn from the internal water main with all works to be in accordance with QUU requirements;
- New internal sub meter connection from the proposed 150mm diameter ductile iron water main positioned along the southern boundary will be constructed to service the development site.

For details of the proposed water connection, refer to Appendix B.

3.7 ELECTRICITY

The Energex Asset Plans from a Dial Before You Dig investigation indicate the following:

- Underground electrical infrastructure is located within the verge adjacent the site parallel to MacArthur Avenue and also travel within the western verge along Bincote Street;
- Overhead electrical infrastructure exists within the verge adjacent the site along MacArthur Avenue.

Energex Asset Plans of the existing electrical infrastructure can be found in Appendix C of this report.

Electrical services required for the proposed development including assessment of the existing infrastructure capacity will be designed and determined by an electrical engineer and will be assessed by Energex during the detailed design phase of the development.

3.8 COMMUNICATIONS

The Telstra and NBN Asset Plans from a Dial Before You Dig investigation indicate the following:

- Telstra and NBN cables are located within the verge adjacent the site parallel to MacArthur Avenue and also travel within the western verge along Bincote Street;
- There are internal Telstra and NBN cables within the property boundary. There is a 100mm conduit which has been laid south from MacArthur Avenue towards the Brisbane River adjacent the eastern side of the development. Another 100mm conduit has been laid in a westerly direction from this eastern line (mentioned above) and connects to infrastructure within Bincote Street.

Refer to the Telstra and NBN Asset Plans in Appendix C for details.

All works required to provide communication services to the proposed development will be undertaken with the relevant service provider's approval and coordination.

3.9 GAS

The APA Asset Plans from a Dial Before You Dig investigation indicate the following:

- High pressure natural gas infrastructure exists within the western verge of Bincote Street.

APA Asset Plans of the existing gas infrastructure can be found in Appendix C of this report. All works required to provide gas services to the proposed development will be undertaken by the appropriate consultant with APA Group's approval and coordination.

4. BRISBANE CITY COUNCIL CODES

The relevant Brisbane City Council Codes with respect to engineering aspects for assessment of the Development Application have been addressed as well as an erosion hazard assessment. The codes will assist in assessing operational works requirements. The codes addressed in this report include: -

- Filling and Excavation Code
- Infrastructure Design Code
- Stormwater Code
- Flood Code
- Coastal Hazard Overlay Code

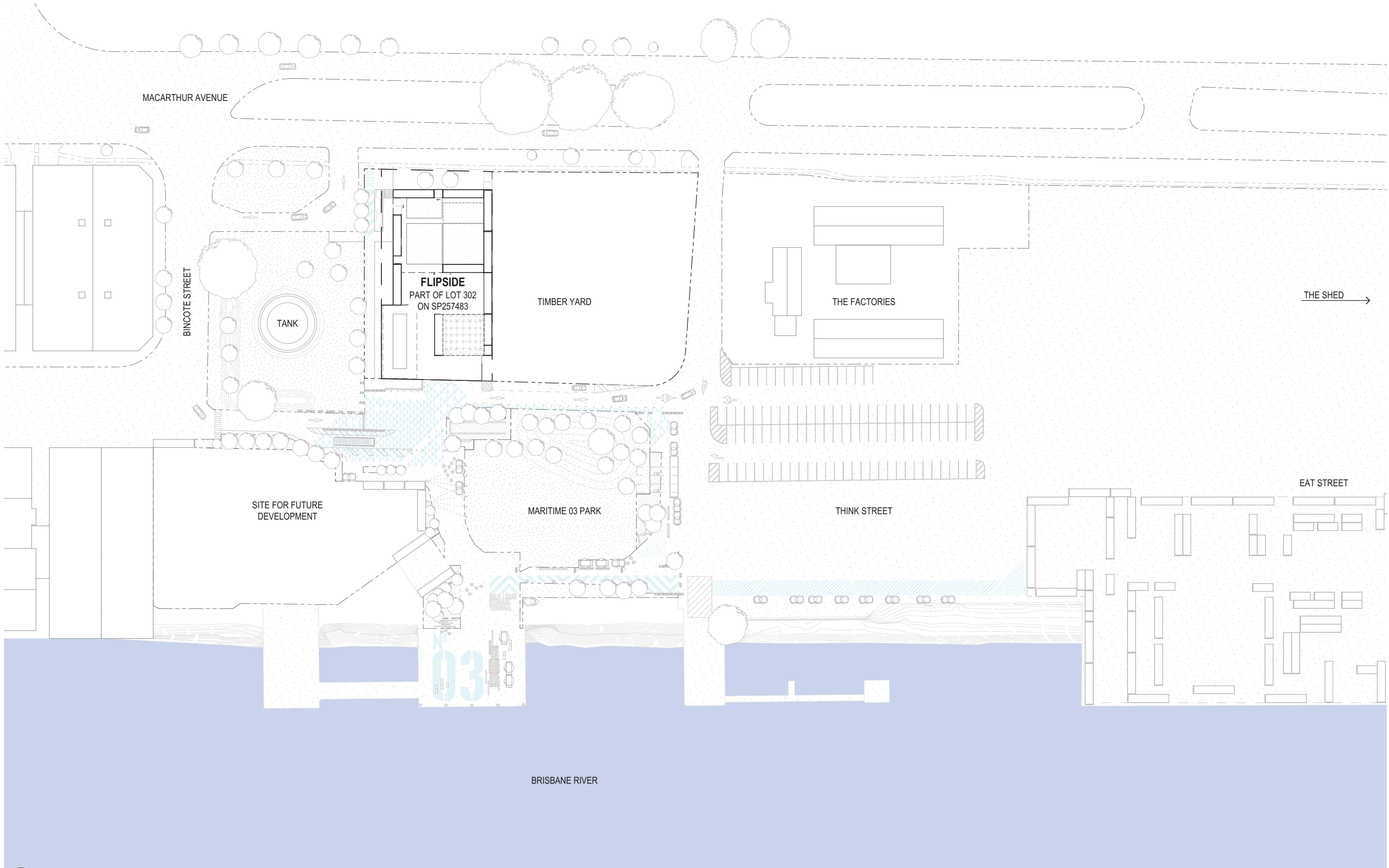
The completed codes can be found attached in Appendix E of this Report.

5. SUMMARY

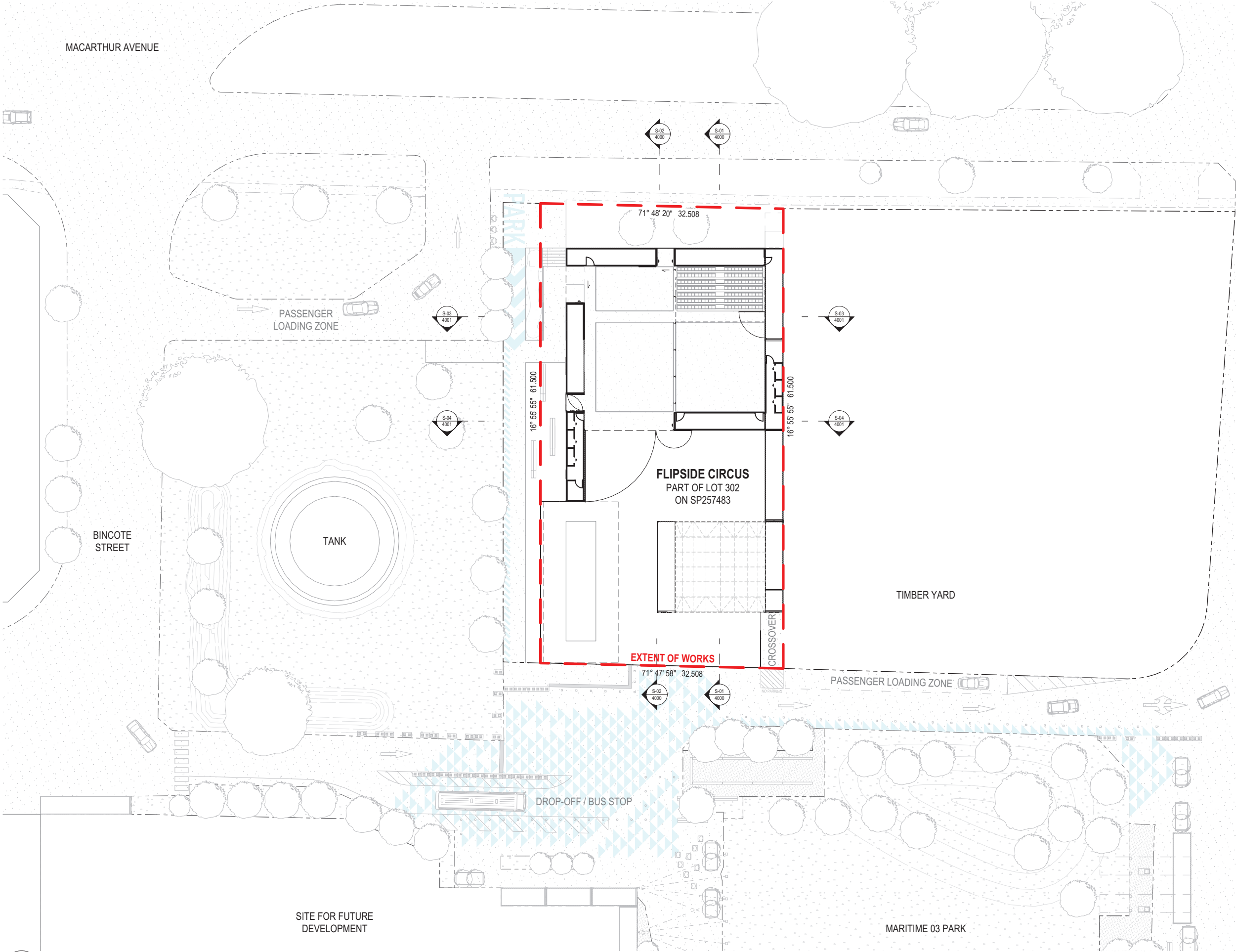
This reporting relating to the proposed Flipside Circus development located at 221 MacArthur Avenue, Hamilton has shown the following:

- The proposed buildings are to comply with the flood levels noted in this report. A flood risk assessment is recommended to be completed for evacuation routes from the site;
- Stormwater will discharge from the site as per existing conditions via sheet flow to MacArthur Avenue. Internal stormwater infrastructure has also been proposed, which will connect to existing infrastructure and discharge through the revetment wall to the Brisbane River;
- No external modifications are proposed to the sewer and water infrastructure. Internal works are required to service the development;
- No stormwater detention or stormwater quality treatment is proposed or required;
- There is existing electrical, gas and telecommunications surrounding the site which may be used to service the development.

APPENDIX A
DEVELOPMENT DRAWINGS

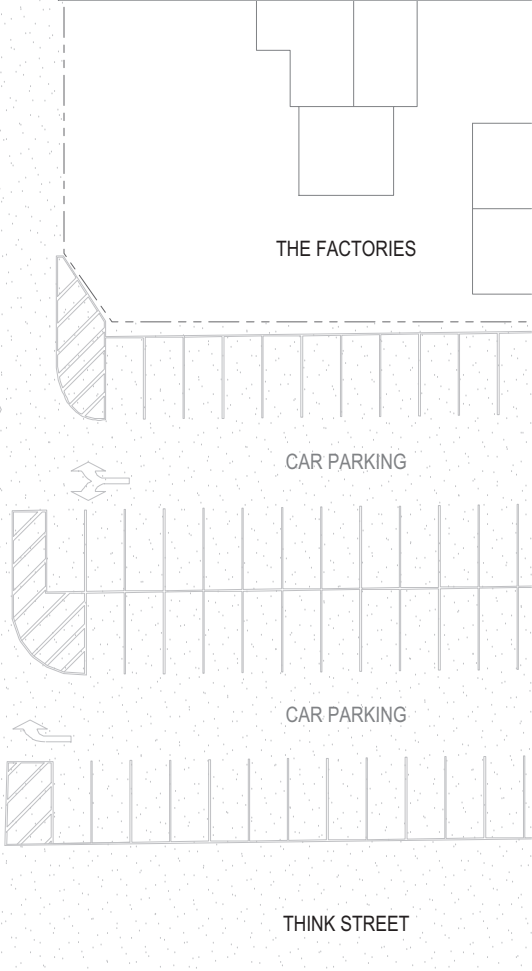


1 LOCALITY PLAN
1:1000



- NOTES:**
1. SITE INFORMATION IS BASED ON LANDPARTNERS DETAIL SURVEY RMM7695-000-4-3 REV 3 ISSUED 06/02/2020 FOR CLIENT EDQ, AND SAUNDERS HAVILL GROUP DETAIL SURVEY PLAN 8171 S 07 DT A. ALL LEVELS AND SITE FEATURES SHALL BE CHECKED AND CONFIRMED ON SITE PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT OF ANY DISCREPANCIES.
 2. BOUNDARIES SHOWN ARE INDICATIVE ONLY. BOUNDARIES WERE NOT MARKED AT THE TIME OF SURVEY AND HAVE BEEN DETERMINED BY PLAN DIMENSIONS AND AERIAL IMAGERY ONLY.
 3. POSITIONS OF ALL UNDERGROUND SERVICES ARE TO BE CONFIRMED.
 4. ALL WORKS OUTSIDE OF FLIPSIDE CIRCUS SITE BOUNDARIES, INCLUDING ADJACENT EASEMENT, ARE BY OTHERS AND ARE INDICATIVE ONLY.

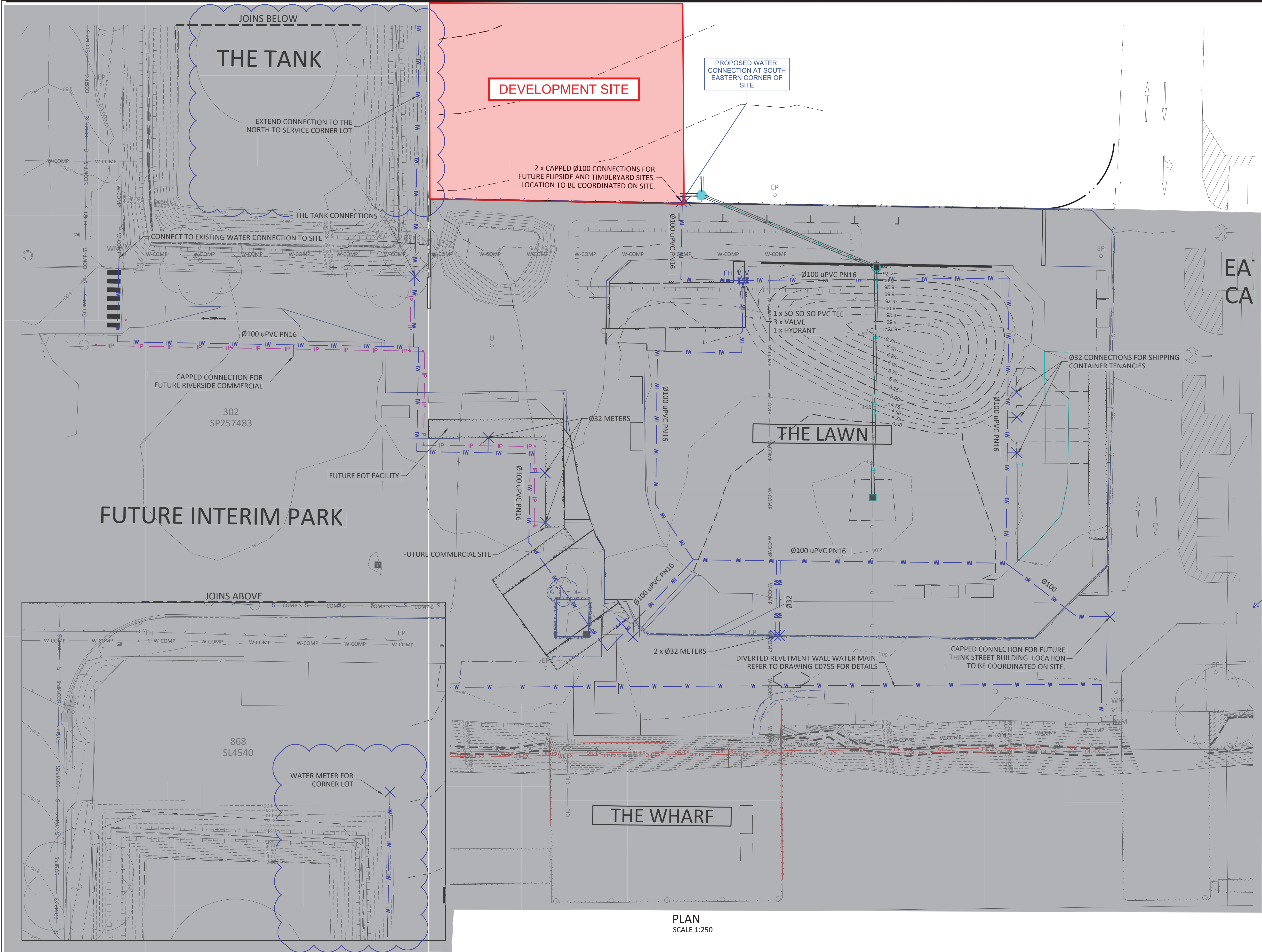
PART OF LOT 302 ON SP257483	
SITE AREA:	2000.0m ²
GROSS FLOOR AREA:	732.4m ²
OUTDOOR USE AREA:	1267.6m ²
SITE COVERAGE:	36.6%
INTERNAL FLOOR AREA:	524.2m ²
INTERNAL CONTAINER FLOOR AREA:	208.2m ²
OUTDOOR DOME FLOOR AREA:	146.3m ²
OUTDOOR CONTAINERS FLOOR AREA:	89.3m ²



1 SITE PLAN
1:500

blok	FLIPSIDE CIRCUS NORTHSHORE	REV	ID	BY	DESCRIPTION	DATE		PROJECT	DRAWING					SCALE: 1:500 @ A3	DRAWING No.	ISSUE
		SK02		MC	MASTER PLAN DRAFT ISSUE FOR REVIEW	2/11/2020		1806	SITE PLAN 1:500					DATE PLOTTED:		
		SK04		MC	CONCEPT DESIGN ISSUED FOR EDQ DA	17/11/2020								Friday, 15 January 2021		
		DD01		MC	EDQ DA UPDATE	18/12/2020										
		DD02			EDQ DA UPDATE	15/01/2021										

APPENDIX B
ENGINEERING DRAWINGS



BCC DRAINAGE PLAN No:
BCC PERMIT No:
SITE ADDRESS:
221 MACARTHUR AVENUE HAMILTON QLD
4007
LOT NUMBERS:
802 ON SP257483

- LEGEND**
- IW — POTABLE WATER
 - IW — RETICULATION MAIN
 - IW — TWIN FIRE HYDRANT PILLAR
 - IW — REDUCER
 - IW — STOP VALVE
 - IW — PROPERTY CONNECTION

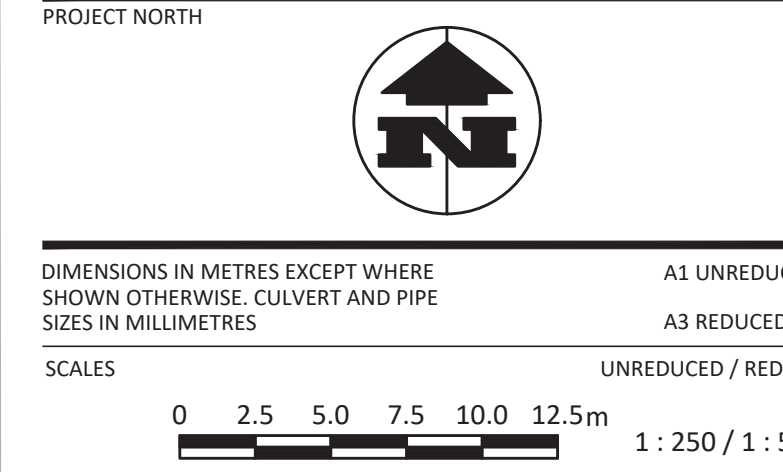
CONSULTANT : BORNHORST + WARD PTY LTD
CONTACT : ANGUS LIVINGSTONE.....
TELEPHONE : (07) 3013 4699

ALL WATER AND SEWERAGE CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF THE QUEENSLAND WORK HEALTH AND SAFETY ACT 2011. CONTACT THE DIVISION OF WORK PLACE HEALTH AND SAFETY FOR INFORMATION.
PH: 1300 362 128

- NOTE:**
- ALL PROPERTY CONNECTIONS TO BE 32PE UNO
 - POTABLE WATER MAIN TO BE PVC (PN16 RATING)

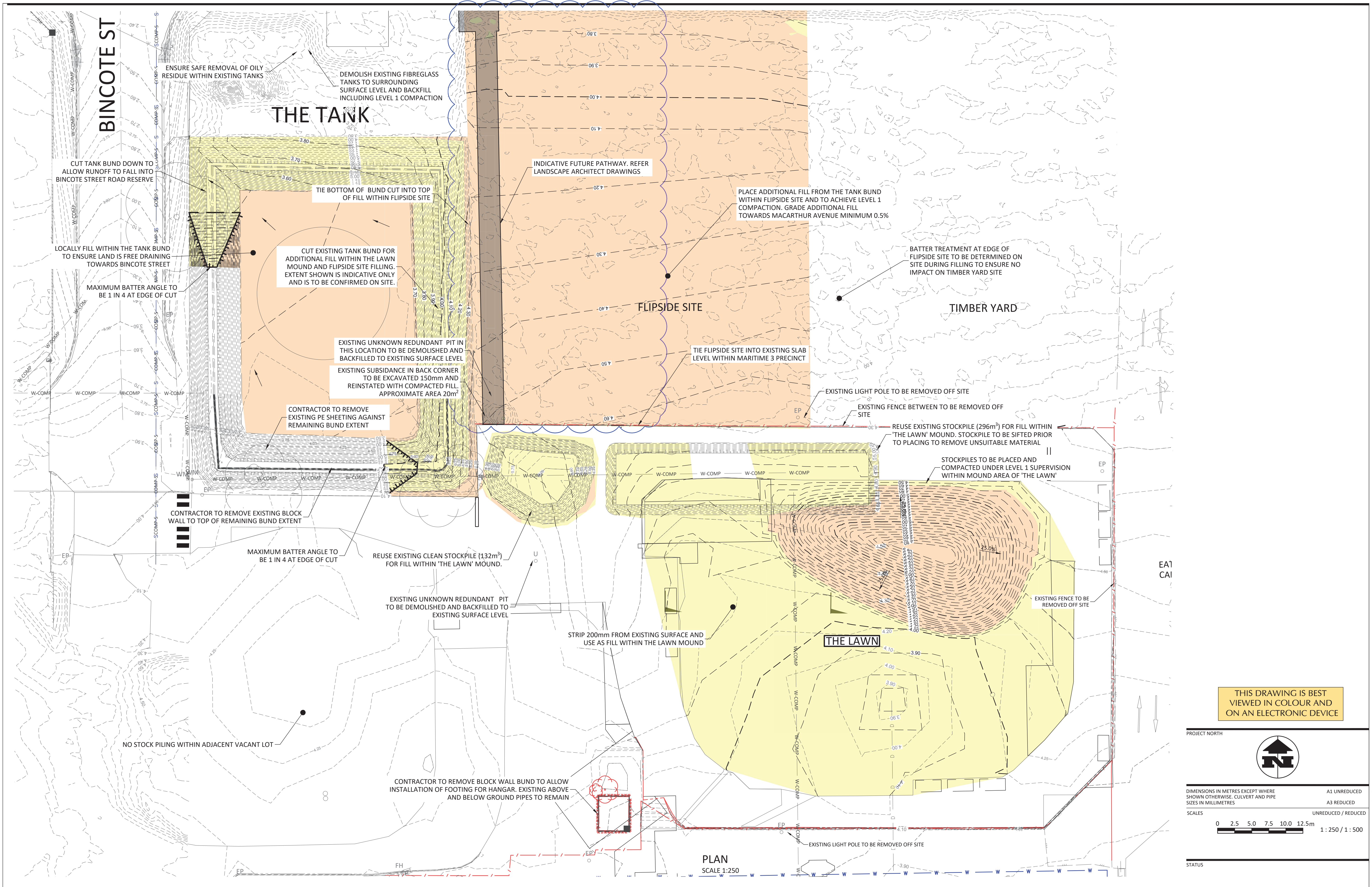
ADJACENT WORKS NOT PART OF THIS APPLICATION

THIS DRAWING IS BEST VIEWED IN COLOUR AND ON AN ELECTRONIC DEVICE



FOR TENDER

SCAN QR CODE TO CONFIRM CURRENT DRAWING REVISION http://docs.bornhorstward.com.au/revision/						ASSOCIATED CONSULTANTS				APPROVED		CHECKED		BORNHORST + WARD		CLIENT		PROJECT		SUBJECT		PROJECT No.	
D	15.10.20	UPDATED TENDER ISSUE	AL	AL																			19070
C	04.09.20	TENDER ISSUE	AL	AL																			
B	02.09.20	UPDATED TENDER ISSUE	AL	AL																			
A	26.08.20	UPDATED CLIENT ISSUE	AL	AL																			
										7729 RPEQ						ECONOMIC DEVELOPMENT QUEENSLAND (EDQ)		NORTHSHORE INTERIM WATERFRONT PRIORITY PROJECT - MARITIME PARK		INTERNAL WATER RETICULATION LAYOUT		DRAWING No.	
										DATE		DATE										C0751	
																						D	



THIS DRAWING IS BEST VIEWED IN COLOUR AND ON AN ELECTRONIC DEVICE

PROJECT NORTH

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES

A1 UNREDUCED
A3 REDUCED

SCALES

UNREDUCED / REDUCED

0 2.5 5.0 7.5 10.0 12.5m

1: 250 / 1: 500

STATUS

SCAN QR CODE TO CONFIRM CURRENT DRAWING REVISION  http://docs.bornhorstward.com.au/revision/		REV	DATE	DESCRIPTION	DWN	DES	CHK	APP	ASSOCIATED CONSULTANTS		ISSUE APPROVED	CHECKED	 +61 (7) 3013 4699 www.bornhorstward.com.au	CLIENT	ECONOMIC DEVELOPMENT QUEENSLAND (EDQ)	PROJECT	NORTHSHORE INTERIM WATERFRONT PRIORITY PROJECT - MARITIME PARK	SUBJECT	EARTHWORKS LAYOUT	PROJECT No.	19070
		L	15.02.21	FUTURE PATH SHOWN FOR CLARITY	AL	AL				 7729 RPEQ	N.ROZIS	DATE 01/02/21		DATE 01/02/21	DRAWING No.	REVISION					
		K	02.02.21	THE TANK EARTHWORKS UPDATED	AL	AL	NR		C0110						L						
		J	13.01.21	FOR CONSTRUCTION	AL	AL	NR	NR													
		H	15.10.20	UPDATED TENDER ISSUE	AL	AL															
		G	11.09.20	UPDATED TENDER ISSUE	AL	AL															

APPENDIX C

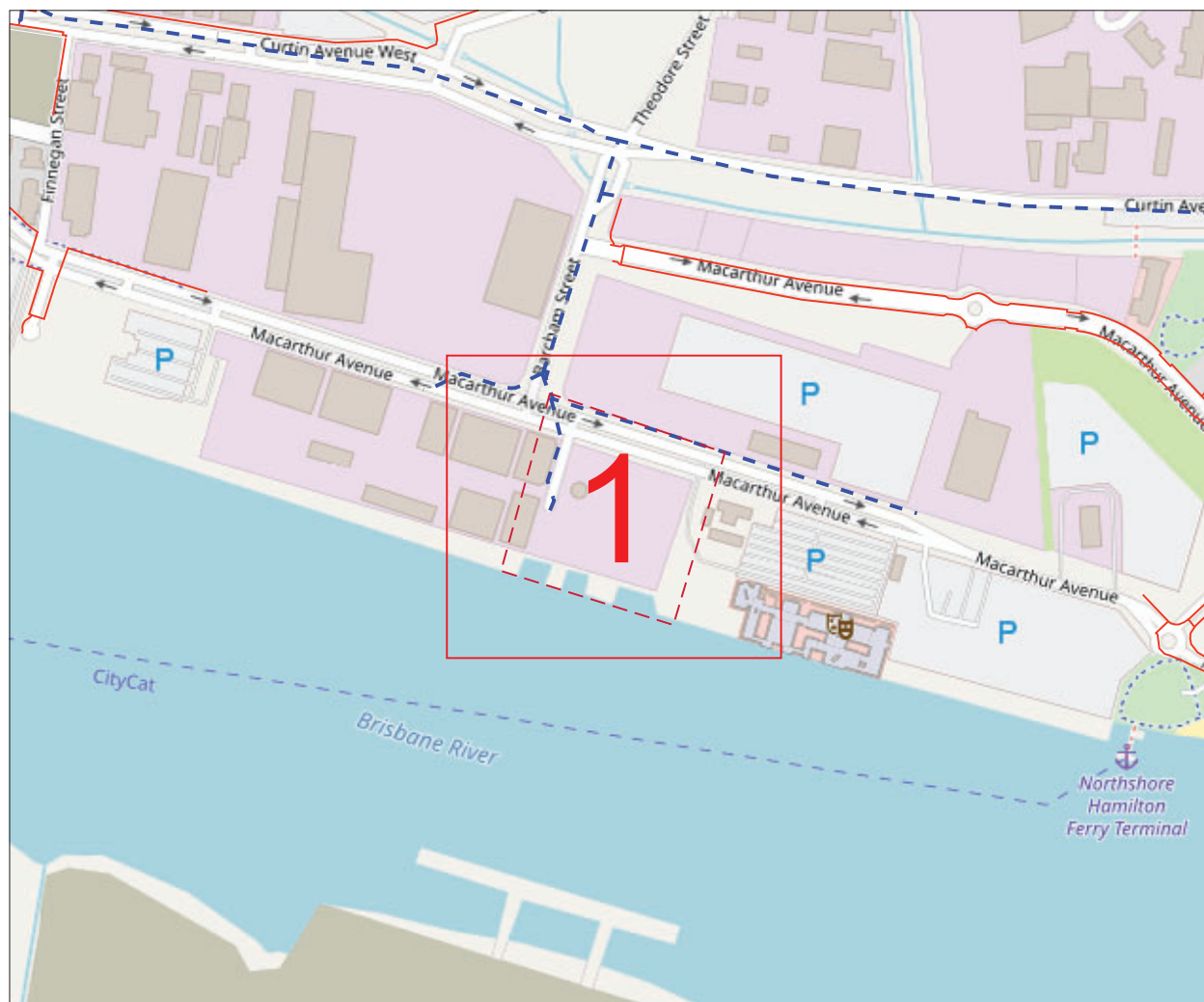
EXISTING SERVICES INFORMATION

05/01/2021

SCALE: DO NOT SCALE

REF NO: 105256339

As work on APA underground plant is ongoing any drawing with an issue date of more than one month previous can no longer be considered valid. All persons planning civil works on any site are advised to contact APA to confirm location. All underground gas pipelines are the property of APA & are not to be accessed by unauthorised persons. All care is taken with preparation of the drawings & no responsibility is accepted for errors or omissions.



105256339

Scale: 1: 6000

0 0.08km



Data Source

Pipeline Data Copyright APA Group, Property Parcels Copyright QLD Government, UBD Imagery – Copyright Sensis, DBYD Dig Location provided by DBYD.

operated by



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

Legend

Distribution Main

- Class 900 Transmission
- Class 600 Transmission
- Class 300 Transmission
- High Pressure Steel
- High Pressure PE Trunk
- High Pressure/ Class 500
- Medium Pressure PE/ Nylon
- Medium Pressure (Allgas)
- Low Pressure
- LPG
- TLP
- Proposed/ Under Construction
- Idle Gas Pipe
- Abandoned Gas Pipe
- Sleeve

(1) Medium Pressure in AGN/ Nylon in Allgas

Gas Assets and Fittings

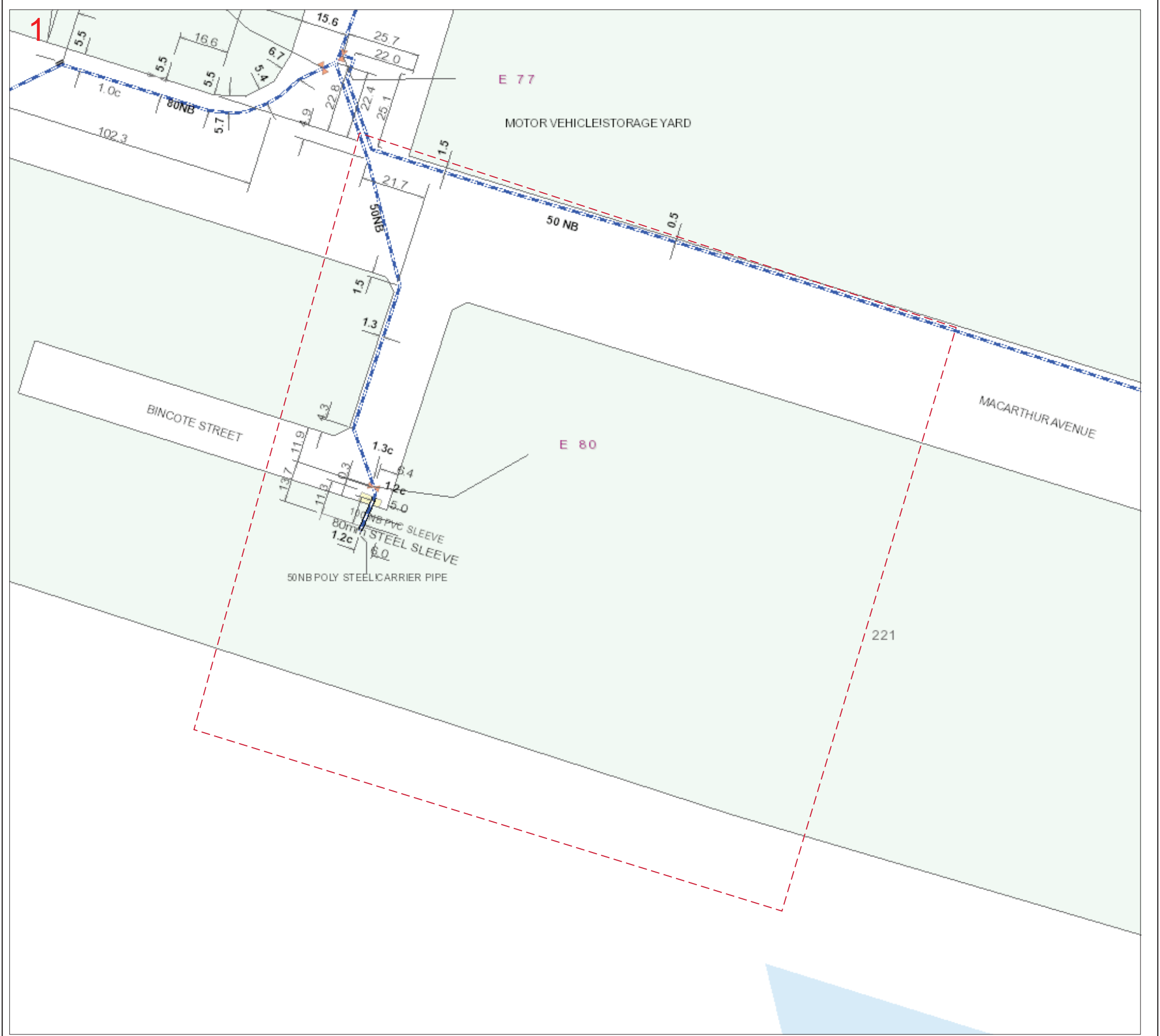
- Gate Station
- Regulator Station
- Block/ Emergency Valve
- Isolation Valve
- Test Point
- Syphon
- Anode
- Pipeline Marker
- Trace Wire Point
- Reducer
- Pipe Connector/ Tee
- Pipe Connector
- End Cap

Pipe Materials

- CI Cast Iron
- CU Copper
- GAL Wrought Galvanised Iron
- PGAL Poly Coated Wrought Galvanised Iron
- ST Steel
- NY/ NY11 Nylon
- PE Polyethylene
- MDPE Medium Density Polyethylene
- HDPE High Density Polyethylene
- DN Nominal Diameter
- OD Outside Diameter

Examples: 40PE in DN80 CI 40mm Polyethylene in an 80mm (Nominal Diameter) Cast Iron Sleeve
63PE INS 63mm Polyethylene inserted in another pipe

Line/ Polygon Request



105256339 Map Sheet: 1

Scale: 1: 1000



Map Key:

1

Legend

Distribution Main	Gas Assets and Fittings	Pipe Materials
Class 900 Transmission	Gate Station	CI Cast Iron
Class 600 Transmission	Regulator Station	CU Copper
Class 300 Transmission	Block/ Emergency Valve	GAL Wrought Galvanised Iron
High Pressure Steel	Isolation Valve	PGAL Poly Coated Wrought Galvanised Iron
High Pressure PE Trunk	Test Point	ST Steel
High Pressure/ Class 500	Syphon	NY/ NY11 Nylon
Medium Pressure PE/ Nylon	Anode	PE Polyethylene
Medium Pressure (Allgas)	Pipeline Marker	MDPE Medium Density Polyethylene
Low Pressure	Trace Wire Point	HDPE High Density Polyethylene
LPG	Reducer	DN Nominal Diameter
TLP	Pipe Connector/ Tee	OD Outside Diameter
Proposed/ Under Construction	Pipe Connector	
Idle Gas Pipe	End Cap	
Abandoned Gas Pipe		
Sleeve		
(1) Medium Pressure in AGN/ Nylon in Allgas		
Examples: 40PE in DN80 CI 40mm Polyethylene in an 80mm (Nominal Diameter) Cast Iron Sleeve		
63PE INS 63mm Polyethylene inserted in another pipe		
Line/ Polygon Request		

Data Source
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Job # 20848880
Seq # 105256336
Provider: Brisbane City Council
Telephone: 07 3403 8888



- Legend**
- DBYD Enquiry
 - Detailed map page

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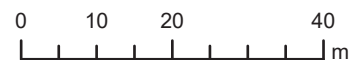
- Legend**
- DBYD Enquiry
 - Stormwater Network**
 - Stormwater Drain
 - Stormwater Gully / Roofwater Connection
 - Stormwater Maintenance Hole
 - Stormwater Gully Pit

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In an emergency contact Brisbane City Council on 07 3403 8888
05/01/21 (valid for 30 days)



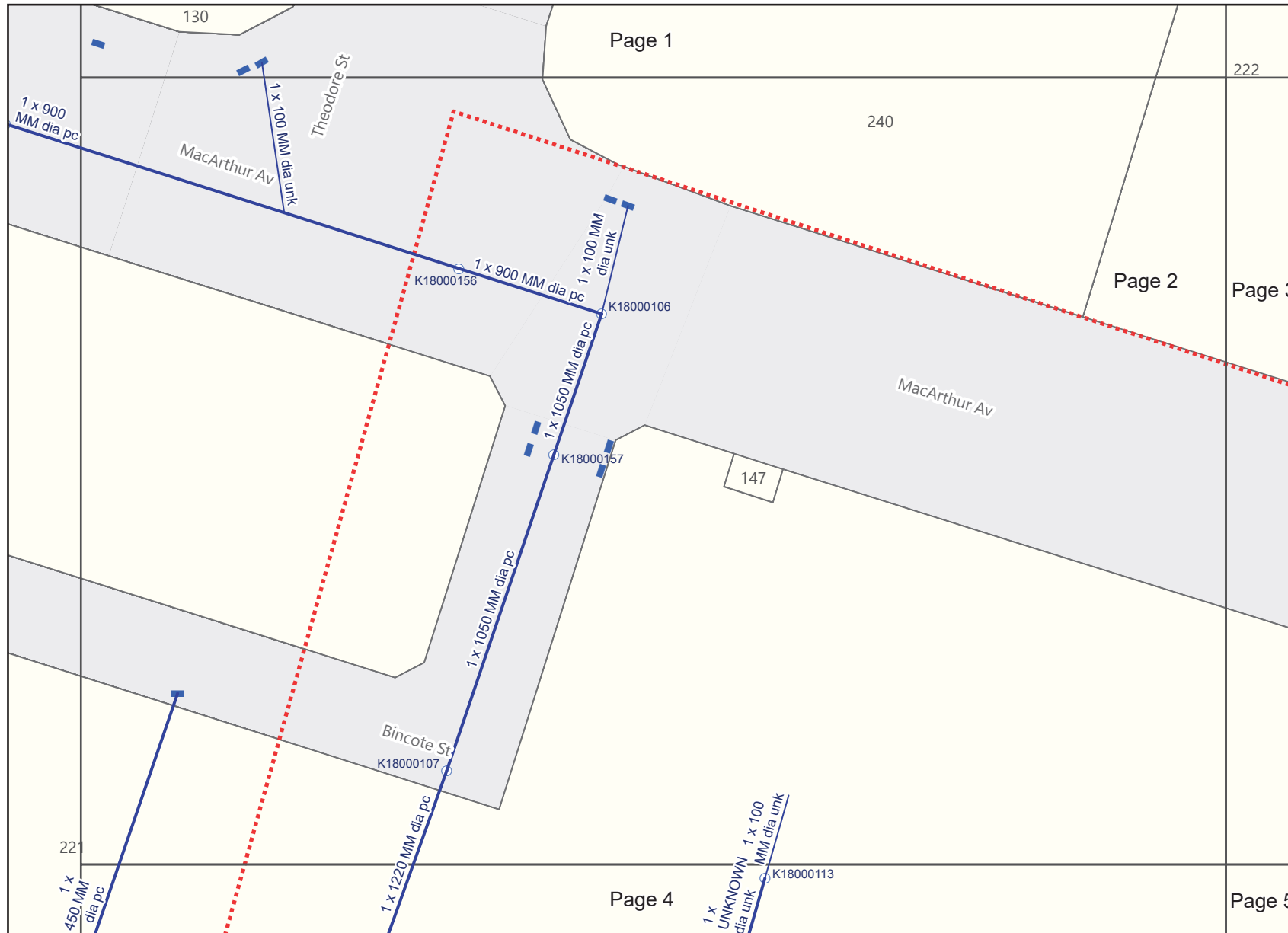
Scale 1:1,000



Plans generated by
SmarterWX™ Automate



Job # 20848880
Seq # 105256336
Provider: Brisbane City Council
Telephone: 07 3403 8888



- Legend**
- DBYD Enquiry
 - Stormwater Network**
 - Stormwater Drain
 - Stormwater Gully / Roofwater Connection
 - Stormwater Maintenance Hole
 - Stormwater Gully Pit

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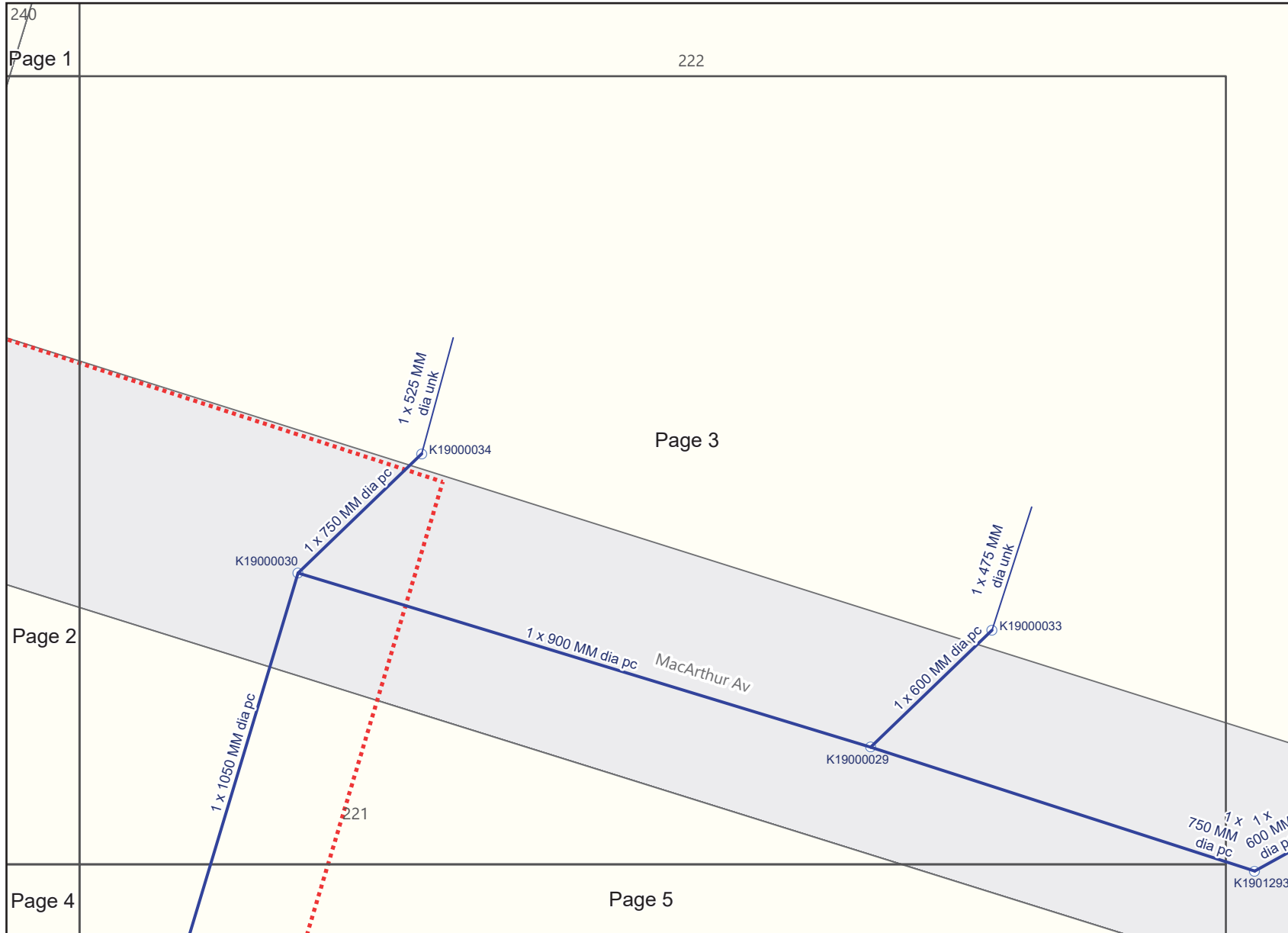
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Job # 20848880
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- Legend**
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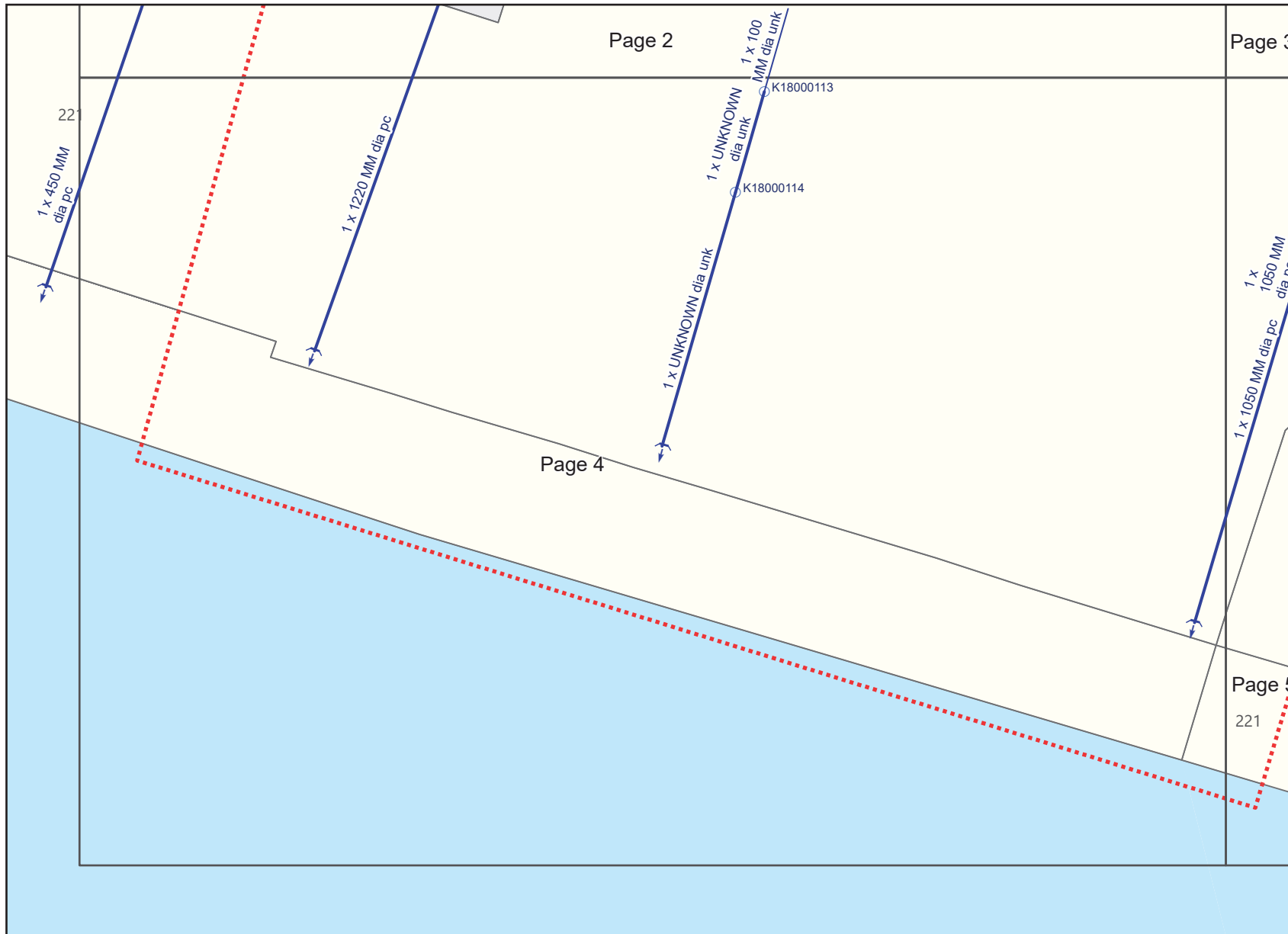
Scale 1:1,000



Plans generated by
SmarterWX™ Automate



Job # 20848880
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Legend

- DBYD Enquiry
- Stormwater Network**
 - Stormwater Drain
 - Stormwater Gully / Roofwater Connection
 - Stormwater Maintenance Hole
 - Pipe End Outlet

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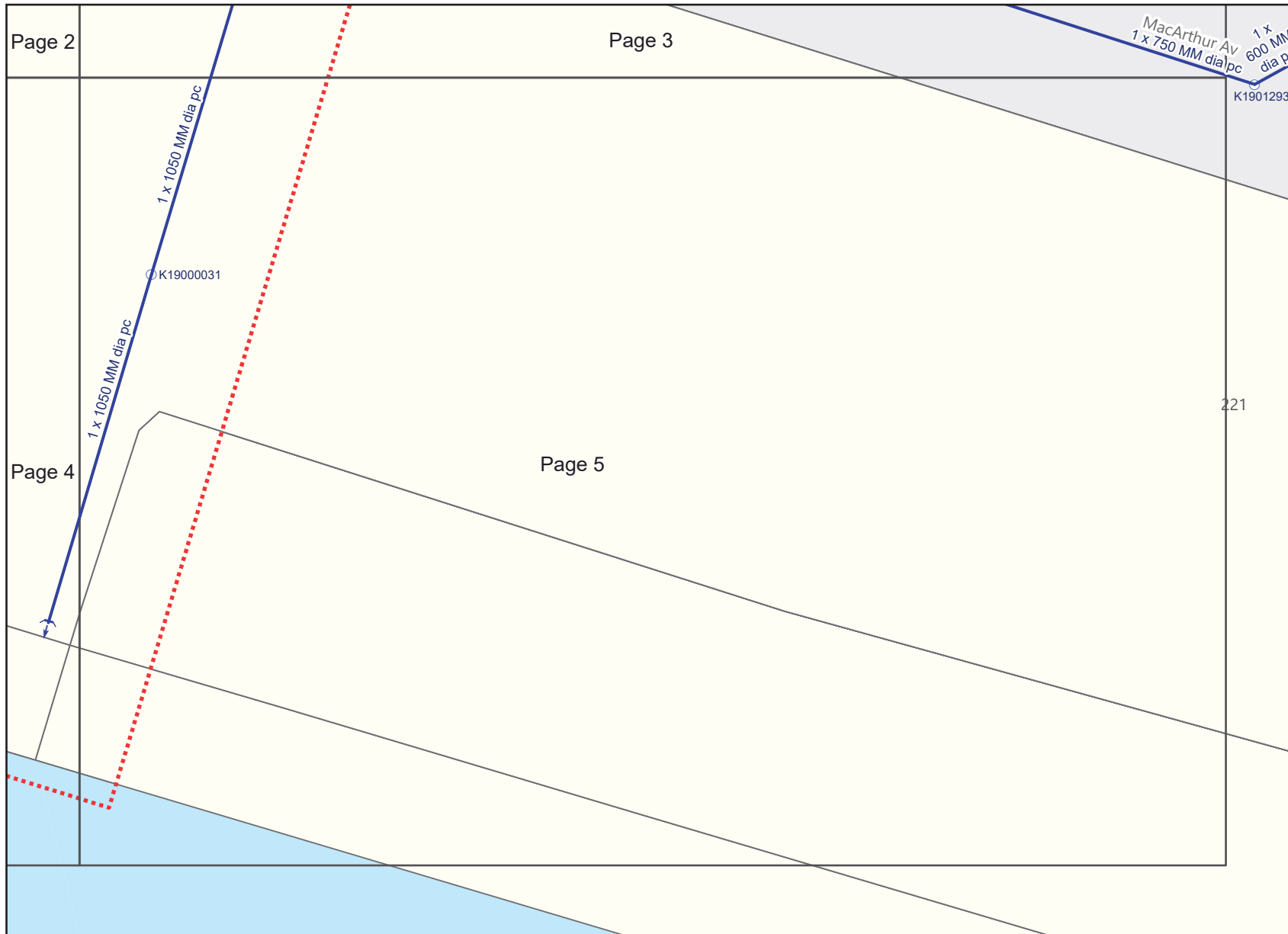
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05/01/21 (valid for 30 days)



Scale 1:1,000



Plans generated by
SmarterWX™ Automate

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

For Emergency Situations
Please call 13 19 62

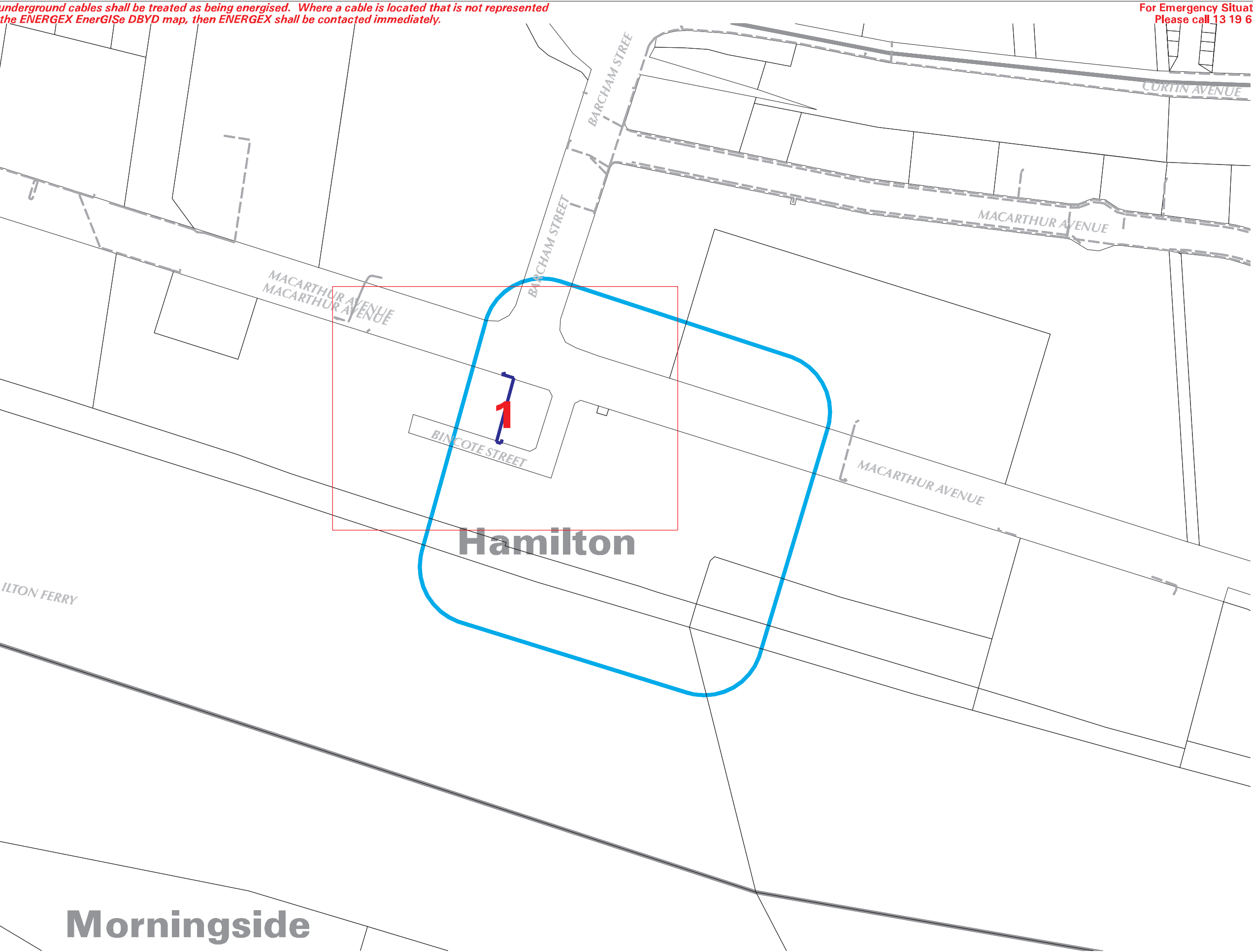


Date: 05 Jan 21 Time: 15.22.12
Requested By: DBYD

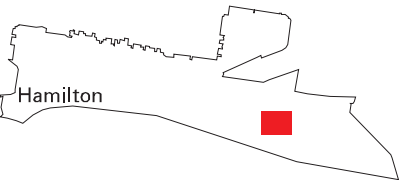
NOT TO SCALE
0 100m

Enquiry No: 105256337
KEY MAP

Enquiry Area



LOCALITY DIAGRAM



UNCONTROLLED COPY

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

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

For Emergency Situations
Please call 13 19 62



Date: 05 Jan 21 Time: 15.22.23
Requested By: DBYD

SCALE 1:1000



Enquiry No: 105256337

STRIP No: 1

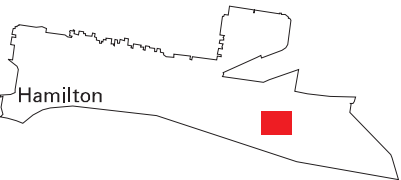
- | | | | |
|--|-------------------------------------|--|------------------------------|
| | Ground Transformer | | Cable Voltage Less Than 33kV |
| | Cubicle Transformer | | Cable Voltage 33kV or Higher |
| | Ring Main Unit | | |
| | Metering Unit | | Direct-Lay Cable |
| | Link Pillar | | Conduit |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



INDEX TO SHEETS



LOCALITY DIAGRAM



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

UNCONTROLLED COPY



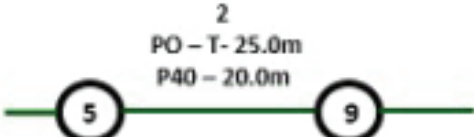
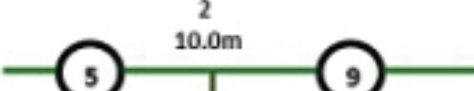
Indicative Plans

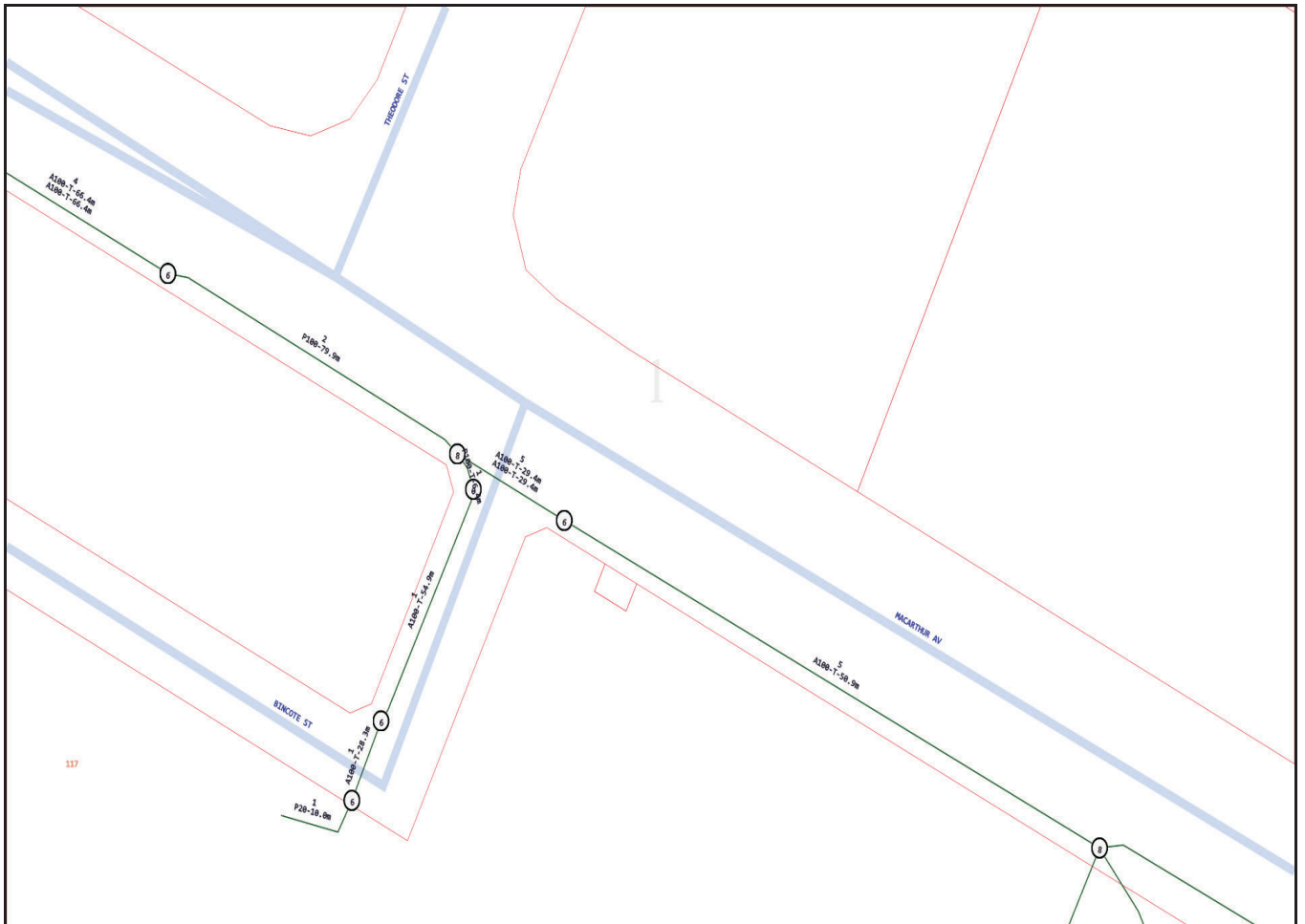
Issue Date:	05/01/2021	 DIAL BEFORE YOU DIG www.1100.com.au
Location:	221 MacArthur Ave , Hamilton , QLD , 4007	

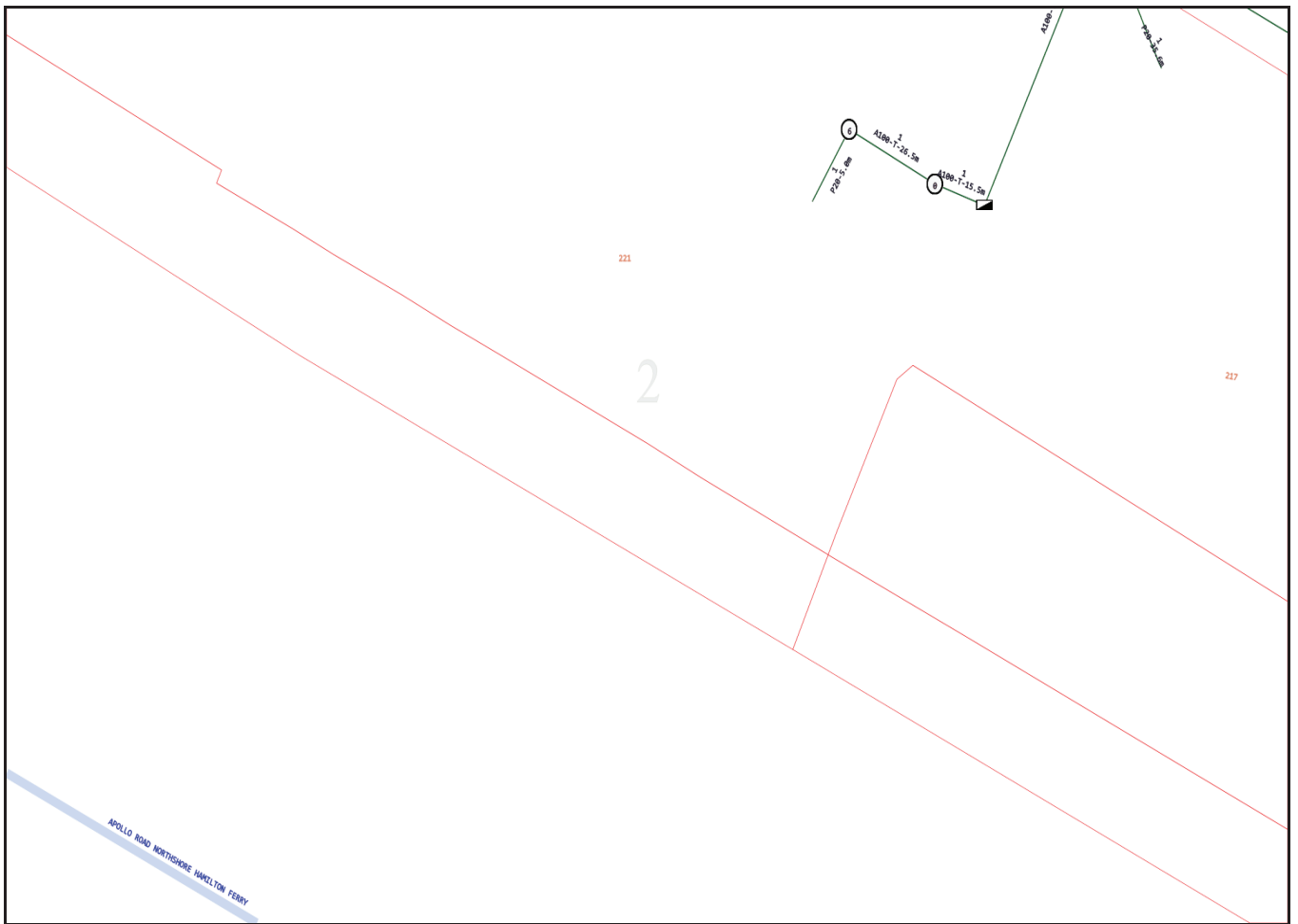




LEGEND

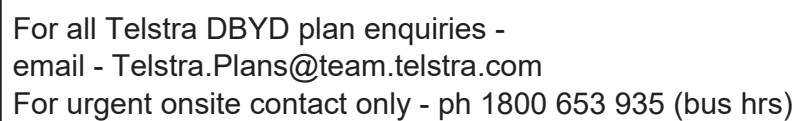
	Parcel and the location
	Pit with size "5"
	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40)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





Emergency Contacts

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

[illegible]

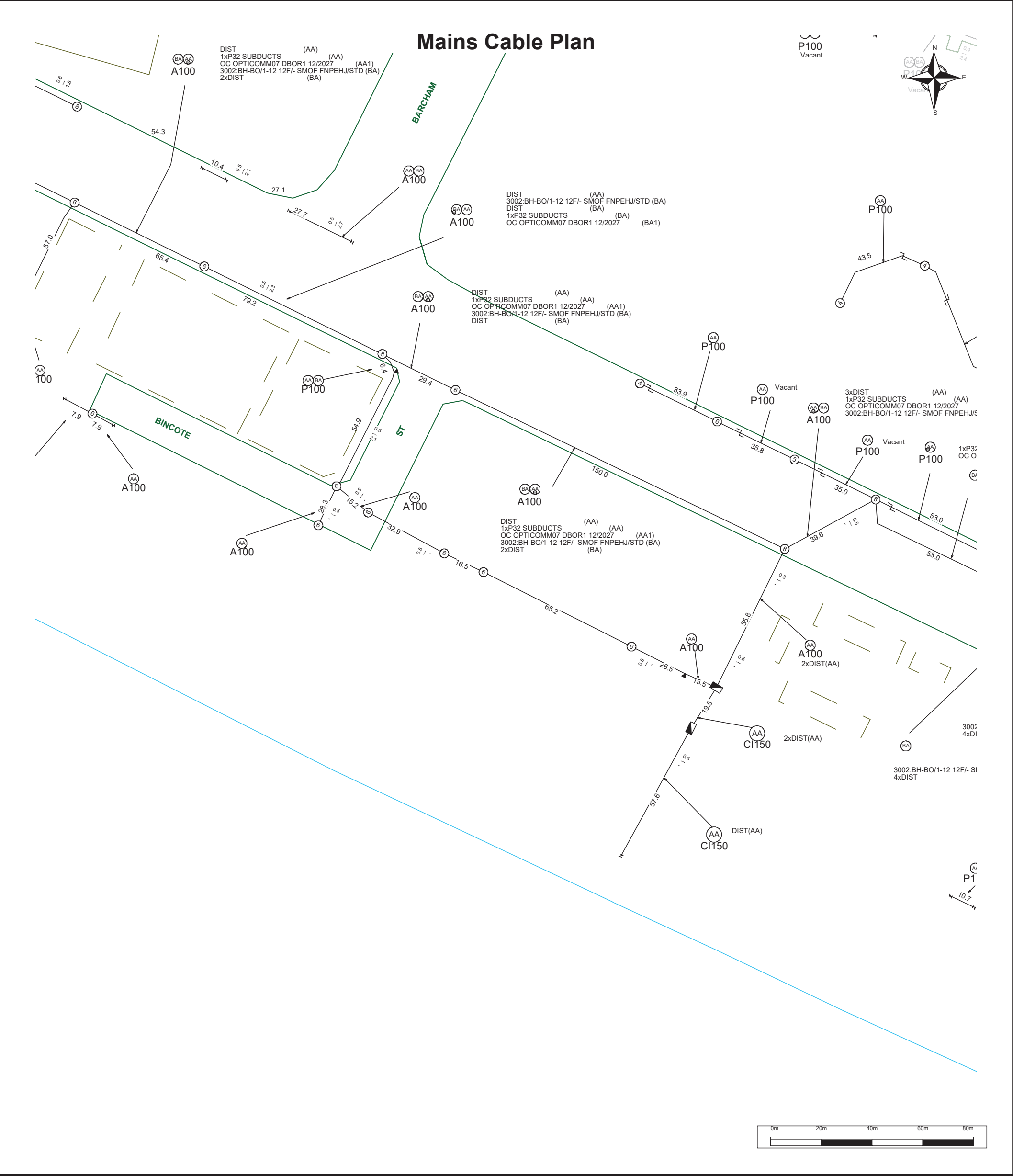
Generated On 05/01/2021 16:23:57

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

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

Page 1 of 2



	For all Telstra DBYD plan enquiries - email - Telstra.Plans@team.telstra.com For urgent onsite contact only - ph 1800 653 935 (bus hrs)	Sequence Number: 105256338
	Generated On 05/01/2021 16:23:58	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.

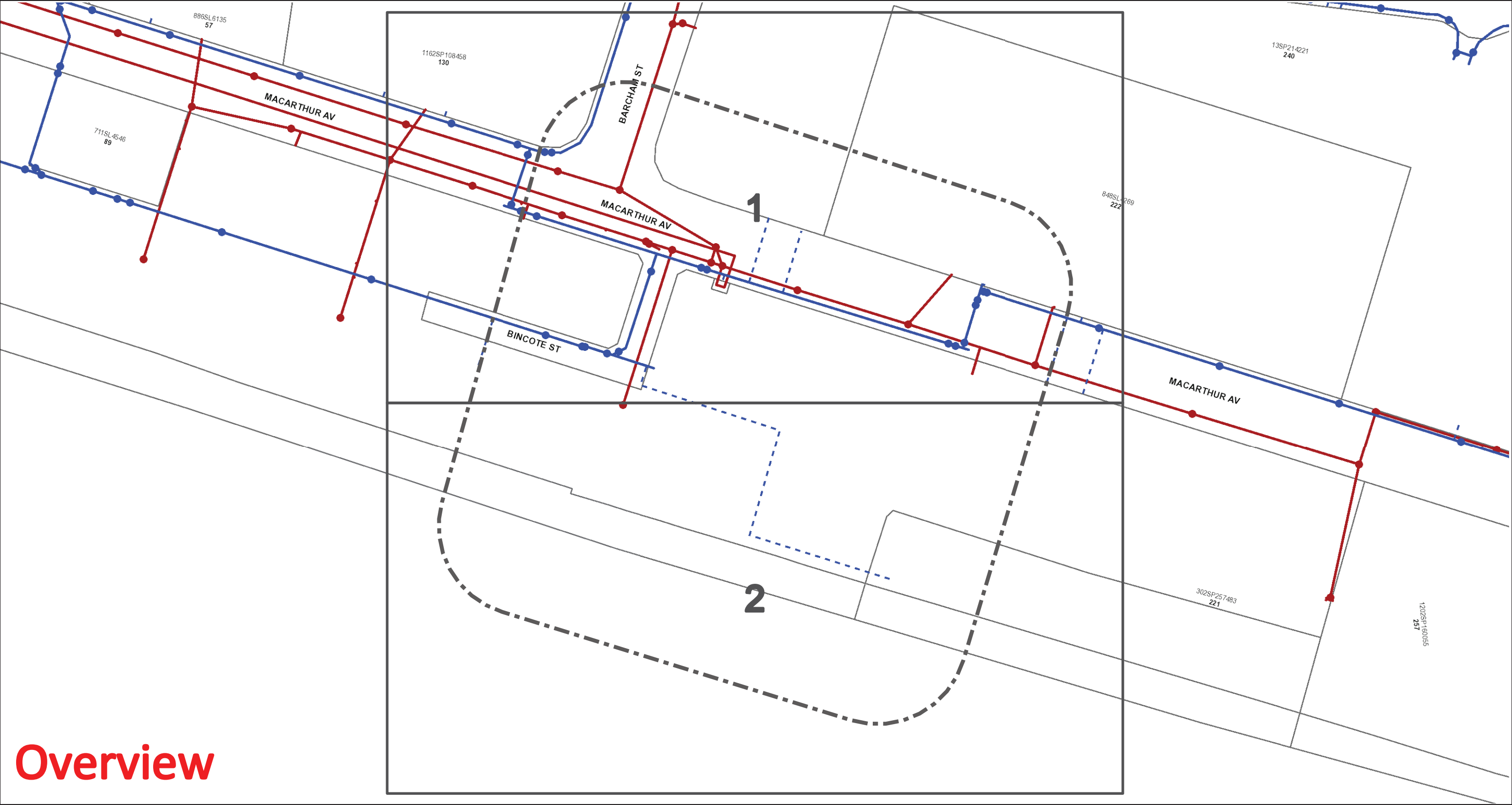
WARNING - Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information supplied can not be guaranteed as property boundaries, depths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

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

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

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

Urban Utilities - Water, Recycled Water and Sewer Infrastructure





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

DBYD Reference No: 105256341

Date DBYD Ref Received: 05/01/2021
Date DBYD Job to Commence: 06/01/2021
Date DBYD Map Produced: 05/01/2021

This Map is valid for 30 days

Produced By: Urban Utilities

Sewer	Water
● Infrastructure	● Infrastructure
◆ Major Infrastructure	◆ Major Infrastructure
— Network Pipelines	— Network Pipelines
▨ Network Structures	▨ Network Structures
	- - - Water Service (Indicative only)



Map Scale
1:2050

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This plan should be used as guide only. Any dimensions should be confirmed on site by the relevant authority.

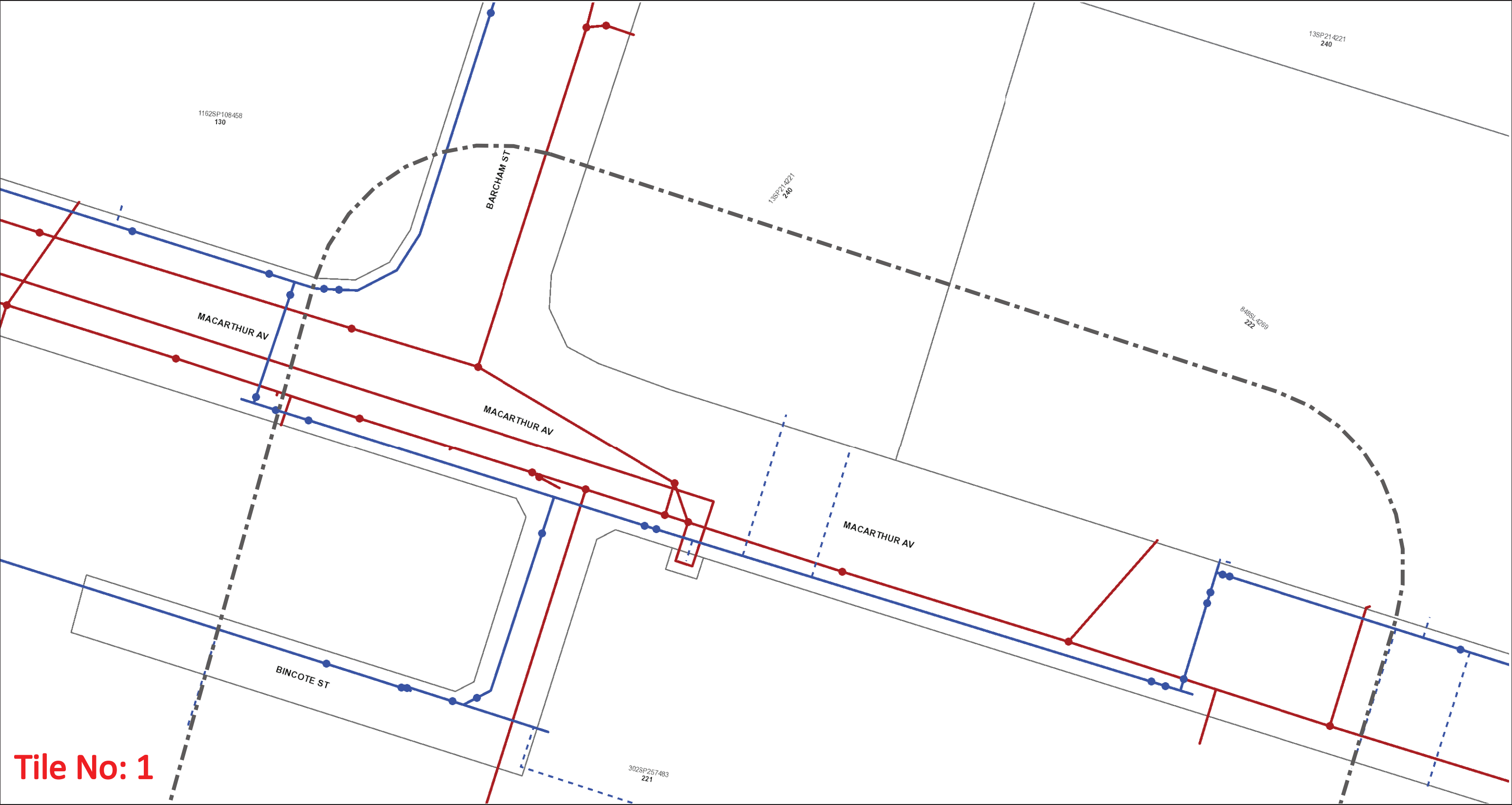
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For further information, please call Urban Utilities on 13 26 57 (8am-6pm weekdays). Faults and emergencies 13 23 64 (24/7).

www.urbanutilities.com.au

ABN 86 673 835 011

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



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

DBYD Reference No: 105256341

Date DBYD Ref Received: 05/01/2021

Date DBYD Job to Commence: 06/01/2021

Date DBYD Map Produced: 05/01/2021

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

1:1000

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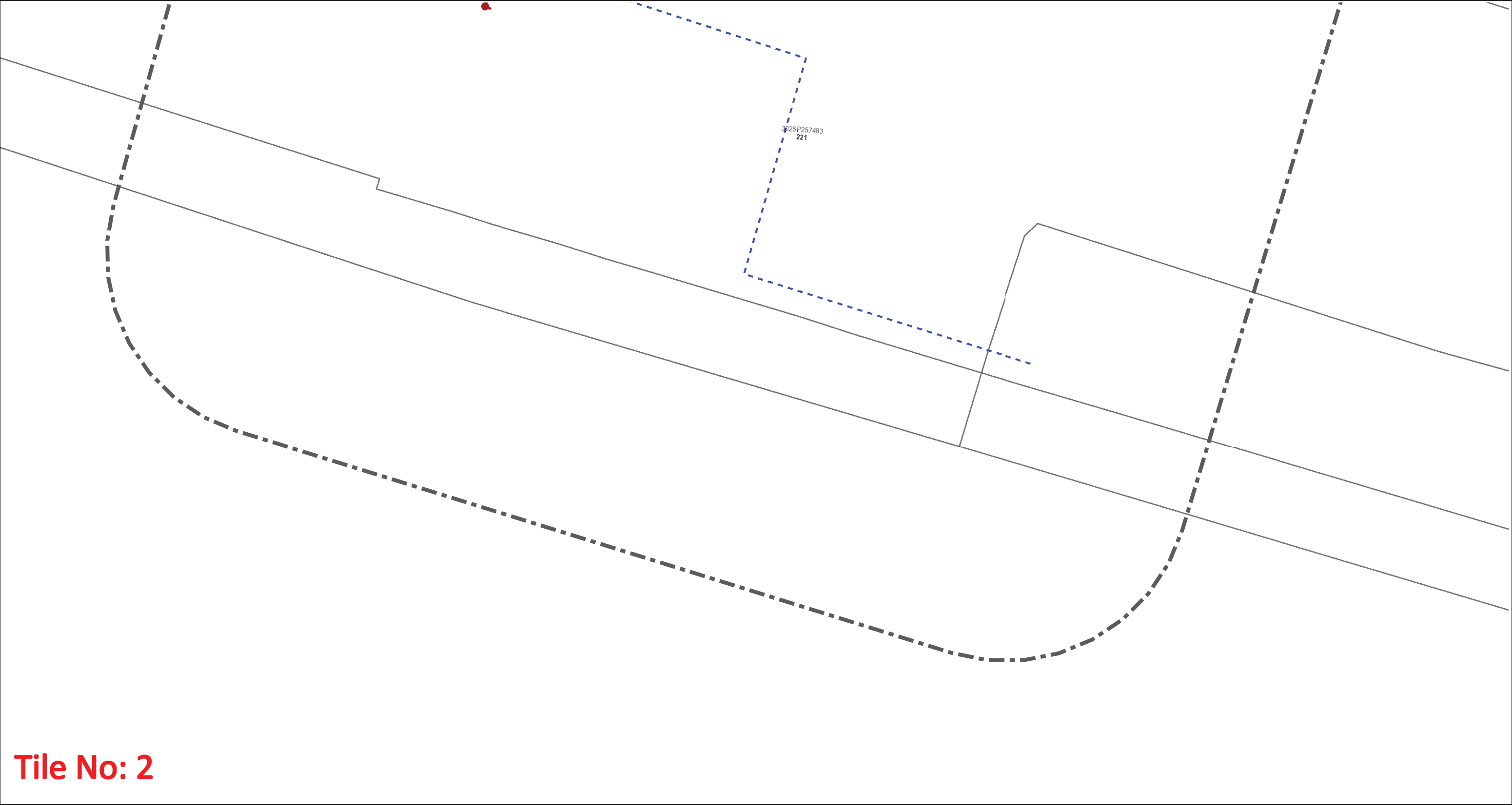
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ABN 86 673 835 011

Urban Utilities - Water, Recycled Water and Sewer Infrastructure



Tile No: 2



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

DBYD Reference No: 105256341

Date DBYD Ref Received: 05/01/2021

Date DBYD Job to Commence: 06/01/2021

Date DBYD Map Produced: 05/01/2021

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)



Map Scale
1:1000

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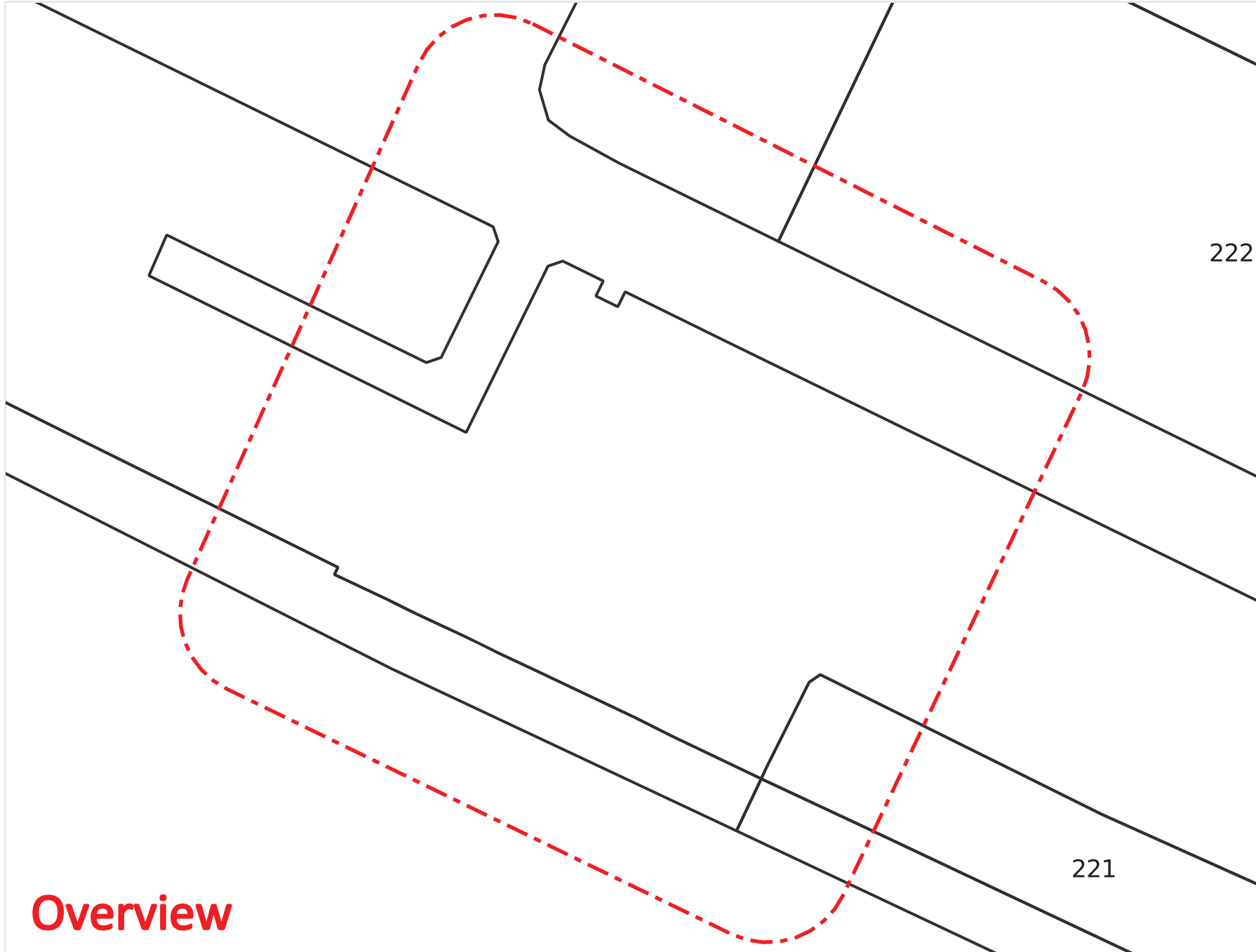
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ABN 86 673 835 011



Legend

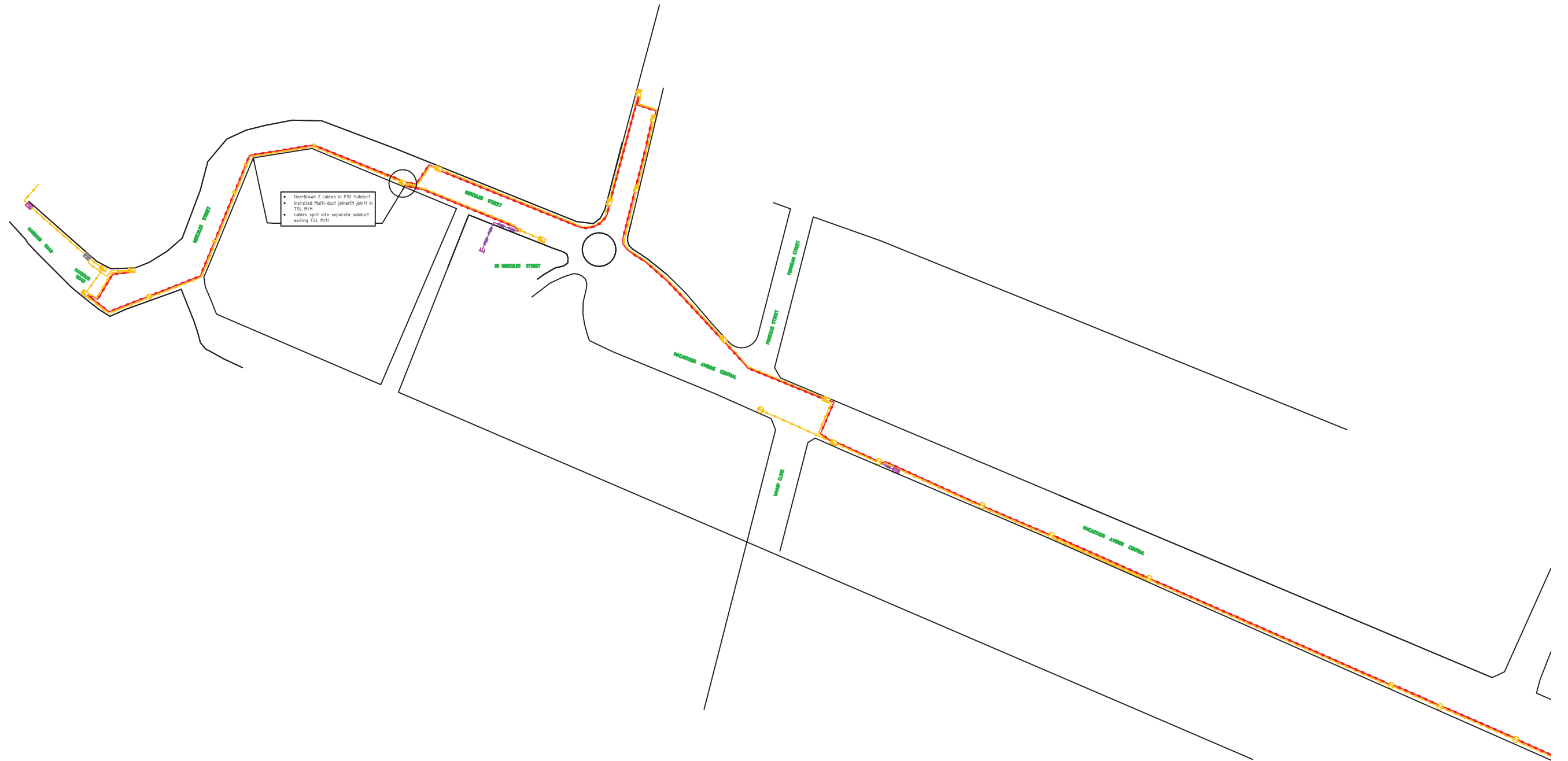
-  Pipes
-  Pits

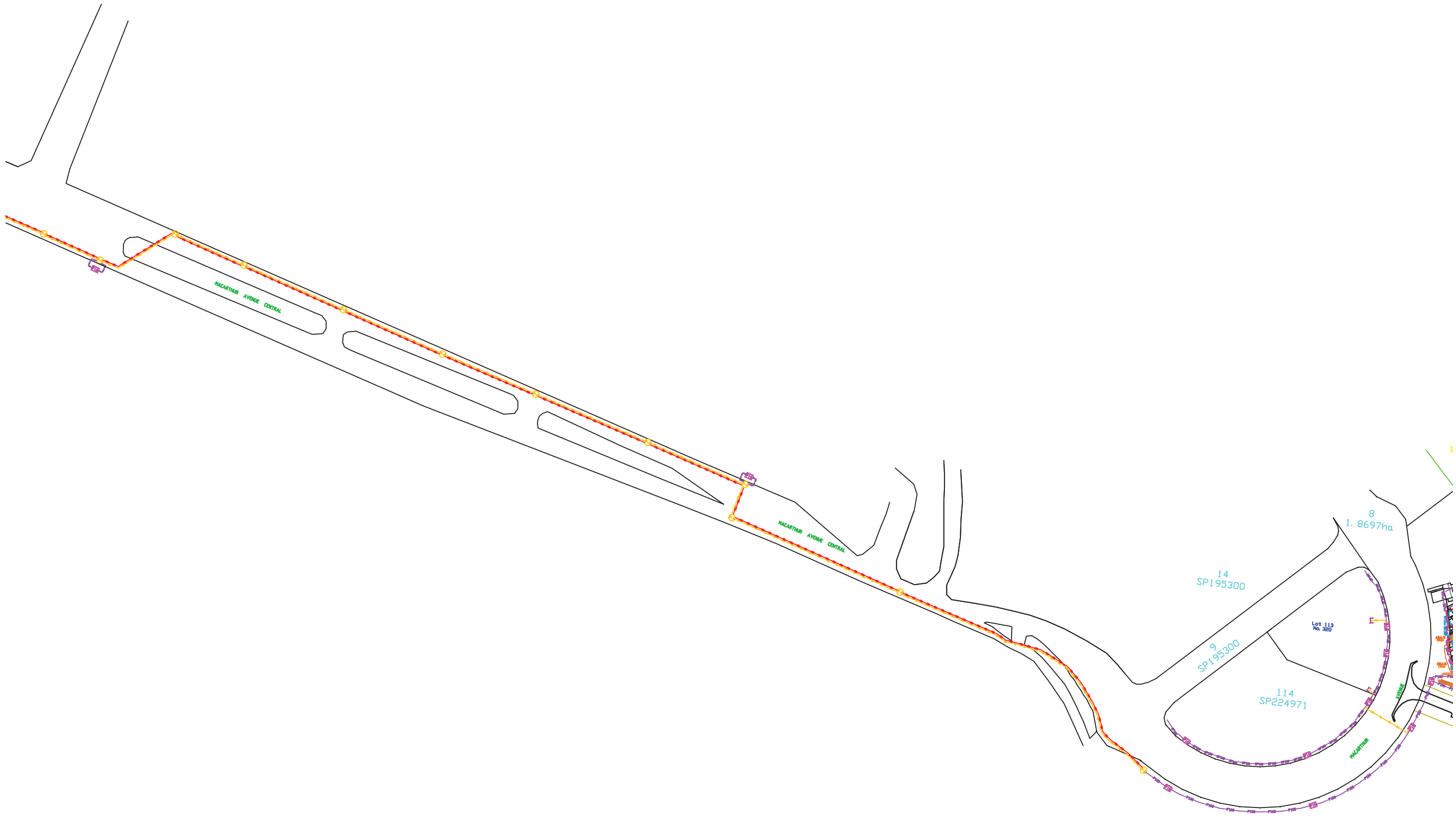


Scale: 1:1899
 Expires: 02 Feb 2021

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Overview







Brisbane City Council FloodWise Property Report

Report Reference

1609889634773

06/01/2021 09:33:54

Dedicated to a better Brisbane

THIS REPORT IS FOR BUILDING AND DEVELOPMENT PURPOSES ONLY

The FloodWise Property Report provides property or lot-based flood information for building and development requirements. This report provides information on estimated flood levels, habitable floor level requirements and more technical information on the four sources of flooding: river, creek / waterway, storm tide and overland flow. Refer to the Useful Definitions section for a glossary of terms.

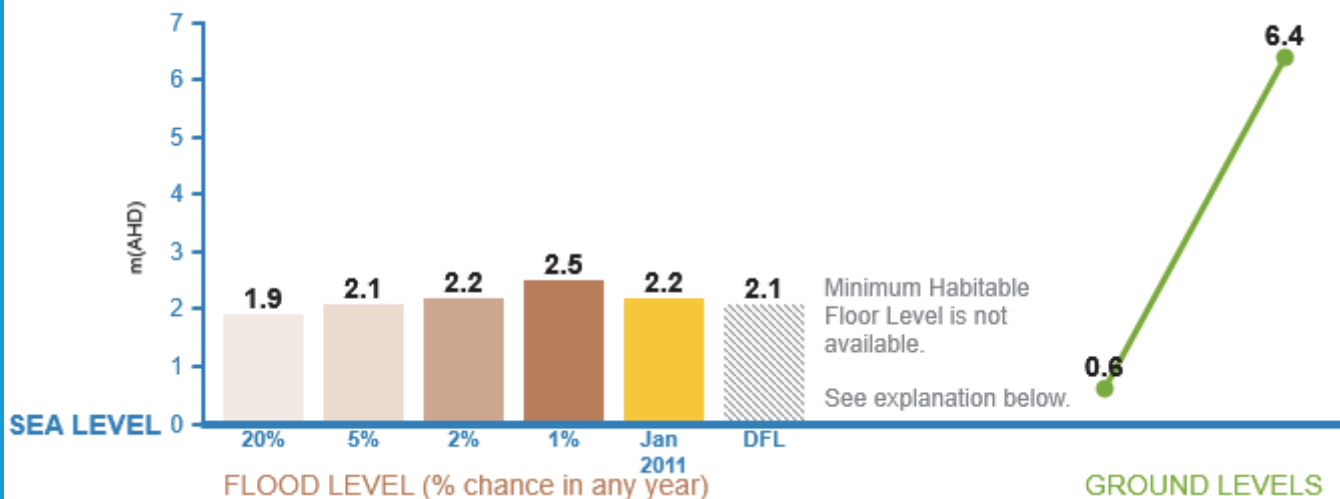
To find out more about how the contents of this report may affect building or development on this property, please visit www.brisbane.qld.gov.au/planning-building. For more general information about understanding your flood risk and how to prepare your property, family or business for potential flooding visit www.brisbane.qld.gov.au/beprepared

THIS IS A REPORT FOR:

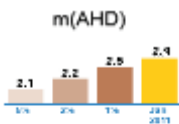
Rateable Address: 89A MACARTHUR AVE, HAMILTON QLD 4007

Lot Details: L.302 SP.257483

FLOOD LEVEL INFORMATION



EXPLANATION



m(AHD) - Metres Australia Height Datum. The level of 0.0m AHD is approximately mean sea level.

Flood Levels - The Flood level bar chart above shows the possible flooding level and percentage chance of that level being reached or exceeded in any year. If an orange bar shows, it is the calculated January 2011 flood level at this address or lot. Refer to 'Useful Definitions' for further information.

Minimum Habitable Floor Level - Applies to residential development only. Please refer to Council's planning scheme to learn how this may affect you. If a property is in an overland flow path, or a large allotment, a minimum habitable floor level cannot be provided. Refer flood and planning development flags below.

Ground Levels - The green line above shows this property's approximate lowest and highest ground levels based on latest available information (2019 airborne laser survey) to Council. If you are building, please confirm with a surveyor.

For further information and definitions please refer to the Useful Definitions page

FLOOD AND PLANNING DEVELOPMENT FLAGS

DEVELOPMENT FLAG(S)

This property may also be affected by one or more flood or property development overlays or flags. These include: LARGE ALLOTMENT, WATERWAY CORRIDOR

Please review the technical summary over page and refer to Council's planning scheme for further information.



Brisbane City Council FloodWise Property Report

Report Reference

1609889634773

06/01/2021 09:33:54

Dedicated to a better Brisbane

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. For more information about building and development in Brisbane please visit www.brisbane.qld.gov.au/planning-building or talk to a Development Assessment Planning Information Officer via Council's Contact Centre on (07) 3403 8888.

THIS IS A REPORT FOR:

Rateable Address: 89A MACARTHUR AVE, HAMILTON QLD 4007

Lot Details: L.302 SP.257483

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)
Minimum Ground Level	0.6
Maximum Ground Level	6.4
Min Habitable Floor Level	Contact Council
Defined Flood Event Level	2.5
Defined Flood Event Level Source	STORMTIDE
Source of Highest Flooding	STORMTIDE
Flooding may also occur from	STORMTIDE,RIVER

ESTIMATED PEAK FLOODING LEVELS

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 Development Information.

Note that the overland flow flooding level maybe higher than the levels below from other sources.

DESCRIPTION	LEVEL (mAHD)	SOURCE
20% AEP	1.9	STORMTIDE
5% AEP	2.1	STORMTIDE
2% AEP	2.2	STORMTIDE
1% AEP	2.5	STORMTIDE
1% AEP	2.4	RIVER
January 2011	2.2	RIVER
DFL	2.1	RIVER
RFL	2.2	RIVER

FLOOD PLANNING 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, which is available from www.brisbane.qld.gov.au/planning-building.

FLOOD PLANNING AREAS (FPA)		OVERLAND FLOW
RIVER	CREEK/WATERWAY	
FPA1		Not Applicable
FPA3		
FPA4		
FPA5		

COASTAL HAZARD OVERLAY CODE

The coastal hazard overlay code of Council's planning scheme uses the following information to provide guidelines when conducting new development. 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 the planning scheme, which is available from www.brisbane.qld.gov.au/planning-building.

COASTAL HAZARD OVERLAY SUB-CATEGORIES

High Storm Tide Inundation Area
Medium Storm Tide Inundation Area
Erosion Prone - Coastal Erosion
Erosion Prone Area - permanent inundation by 2100

NOTE: Where land is identified within one or more flood planning area on the Flood Overlay, or is identified within a Storm Tide Inundation area on the Coastal Hazard Overlay, the assessment criteria that provide the highest level of protection from any source of flooding applies.

PROPERTY DEVELOPMENT FLAGS

Waterway Corridor - This property may also be located within a mapped waterway corridor as identified in the waterway corridors overlay map of Council's planning scheme. Please consider this in conjunction with Council's planning scheme requirements.

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, it is recommended you engage a Registered Professional Engineer of Queensland.



Brisbane City Council FloodWise Property Report

Report Reference

1609889634773

06/01/2021 09:33:54

Dedicated to a better Brisbane

Useful 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.

Defined Flood Level (DFL) - The DFL for Brisbane River flooding is a level of 3.7m AHD at the Brisbane City Gauge based on a flow of 6,800 m³/s.

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 - The minimum level in metres AHD at which habitable areas of development (generally including bedrooms, living rooms, kitchen, study, family and rumpus rooms) must be constructed.

Council's Planning Scheme - The City Plan (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.

Residential Flood Level (RFL) - Residential flood level (RFL) for Brisbane River flooding equates to the flood level applicable to the extent of January 2011 floods as depicted by mapping on the Queensland Reconstruction Authority website or the Council's defined flood level (DFL) for the Brisbane River, whichever is higher.

Rateable Address - A Lot or Property may have more than one street address. The address shown on this report is the address used by Council for the Lot or property selected.

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.

Brisbane City Council's Online Flood Tools

Council provides a number of online flood tools:

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

Planning and Development Online Flood Tools

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

- 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 to talk to a Development Assessment Customer Liaison Officer
- visit www.brisbane.qld.gov.au/planning-building
- visit a Regional Business Centre.

Helping residents and businesses be prepared for flooding

Council has a range of free tools and information to help residents and businesses understand potential flood risks and how to be prepared. This includes:

- Flood Awareness Map
- Flooding in Brisbane – A Guide for Residents
- Flooding in Brisbane – A Guide for Businesses
- Early Warning Alert Service. Visit www.brisbane.qld.gov.au/earlywarning to register for email, home phone or SMS severe weather alert updates.

Note: The Flood Awareness Map shows four levels of flood likelihood from high likelihood (flooding is very likely to occur) through to very low likelihood (very rare and extreme flood events).

For more information on Council's online flood tools for residents and business:

- Visit www.brisbane.qld.gov.au/beprepared
- Phone (07) 3403 8888.



Brisbane City Council FloodWise Property Report

Report Reference

1609889634773

06/01/2021 09:33:54

Dedicated to a better Brisbane

Disclaimer

1. Defined Flood Levels and Residential Flood Levels, and the Minimum Habitable Floor Levels are determined from the best available information to Council at the date of issue. These flood levels, for a particular property, may change if more detailed information becomes available or changes are made in the method of calculating flood levels.
2. Council makes no warranty or representation regarding the accuracy or completeness of a FloodWise Property report. Council disclaims 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 www.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

EROSION HAZARD FORM



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

221 MACARTHUR AVENUE,
HAMILTON

Postcode 4007

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*

ANGUS LIVINGSTONE

Certifier's signature

A. Livingstone

Date

22 / 02 / 2021

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 low risk with respect to erosion and sediment control

If 'Yes' then proceed to Table 2

Table 2: Medium Risk Test

		Yes	No
2.1	is the area of land disturbance > 1 hectare	☐	☒

If 'No' then site is medium risk with respect to erosion and sediment control

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 medium risk with respect to erosion and sediment control

If 'Yes' then site is high risk with respect to erosion and sediment control

APPENDIX E

BRISBANE CITY COUNCIL CODES

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS ¹	COMMENTS	COUNCIL USE ONLY
PO1 Development for filling or excavation minimises visual impacts from retaining walls and earthworks.	AO1 Development ensures that the total height of any cut and fill, whether or not retained, does not exceed: a) 2.5m in a zone in the Industry zones category; b) 1m in all other zones, or if adjoining a sensitive zone.	✓	All earthworks proposed will not cause visual impacts and will not impact adversely on the stability of the land.	
PO2 Development of a retaining wall proposed as a result of filling or excavation: a) Is designed and constructed to be fit for purpose; b) Does not impact adversely on significant vegetation; c) Is capable of easy maintenance Editor's note—A retaining wall also needs to comply with the Building Regulation and embankment gradients will need to comply with the Building Regulation. Note—Guidance on the protection of native vegetation is included in	AO2.1 Development of a retaining structure, including footings, surface drainage and subsoil drainage: a) Is wholly contained within the site; b) If the total height to be retained is greater than 1m, then: 1) The retaining wall at the property boundary is not greater than 1m above the ground level; 2) all further terracing from the 1m high boundary retaining wall is 1 vertical unit:1	✓		

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

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Performance Criteria and Acceptable Solutions

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS ¹	COMMENTS	COUNCIL USE ONLY
the Biodiversity areas planning scheme policy.	horizontal unit; 3) the distance between each successive retaining wall (back of lower wall to face of higher wall) is no less than 1m horizontally to incorporate planting areas. AO2.2 Development of a retaining wall over 1m in height protects significant vegetation on the site and on adjoining land and is designed and constructed in accordance with the structures standards in the Infrastructure design planning scheme policy and certified by a Registered Professional Engineer Queensland. AO2.3 Development provides a retaining wall finish that presents to adjoining land that is maintenance free if the setback is less than 750mm from the boundary.			

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

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS ¹	COMMENTS	COUNCIL USE ONLY
	AO2.4 Development for filling only uses clean fill that does not include any construction rubble or debris.	✓		
PO3 Development ensures that a rock anchor is designed and constructed to be fit for purpose.	AO3 Development ensures that a rock anchor: a) is constructed in accordance with the standards in the Infrastructure design planning scheme policy; b) where it extends beyond the property boundary, is supported by a letter of consent from the adjoining land and building owners.	N/A		
PO4 Development protects all services and public utilities.	AO4 Development protects services and public utilities and ensures that any alteration or relocation of services or public utilities meets the standard design specifications of the responsible service authorities.	✓	Development will protect services and public utilities and will ensure that the alteration or relocation of services or public utilities meets the standard design specifications of the responsible service authorities.	

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

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FILLING AND EXCAVATION CODE**Performance Criteria and Acceptable Solutions****Job Ref No.: 20431**

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS ¹	COMMENTS	COUNCIL USE ONLY
PO5 Development provides surface and sub-surface drainage to prevent water seepage, concentration of run-off or ponding of stormwater on adjacent land.	AO5 Development ensures all flows and subsoil drainage are directed to a lawful point of discharge of a surface water diversion drain, including to the top or toe of a retaining wall in accordance with the stormwater drainage section of the Infrastructure design planning scheme policy.	✓	Development will ensure all flows and subsoil drainage are directed to a lawful point of discharge of a surface water diversion drain in accordance with the stormwater drainage section of the Infrastructure design planning scheme policy.	
PO6 Development ensures that the design and construction of all open drainage works is undertaken in accordance with natural channel design principles, being the development of a stormwater conveyance system for major flows, by using a vegetated open channel or drain that approximates the features and functions of a natural waterway to enhance or improve riparian values of those stormwater conveyance systems. Editor's note—Guidance on natural channel design principles can be found in the Council's publication Natural channel design guidelines.	AO6 No acceptable outcome is prescribed.	N/A	Open channel not proposed for the site	

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 A/S = Alternative Solution
 N/A = Not Applicable to this Proposal

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS ¹	COMMENTS	COUNCIL USE ONLY
PO7 Development for filling or excavation: a) does not degrade water quality or adversely affect environmental values in receiving waters; b) ensures site sediment and erosion control standards are best practice.	PO7.1 Development for filling or excavation provides water quality treatment that complies with the stormwater drainage section of the Infrastructure design planning scheme policy. PO7.2 Development provides erosion and sediment control standards that are in accordance with the stormwater drainage section of the Infrastructure design planning scheme policy.	✓	An erosion and sediment control plan will be produced within the detailed design phase of the project and will be in accordance with Appendix E, Table A (construction phase) in the State Planning Policy and Brisbane City Councils stormwater drainage section of the Infrastructure design planning scheme policy.	
PO8 Development for filling or excavation is conducted such that adverse impacts at a sensitive use due to noise and dust are prevented or minimised. Note—A noise and dust impact management plan prepared in accordance with the Management plans planning scheme policy can assist in demonstrating achievement of this performance outcome.	AO8.1 Development ensures that no dust emissions extend beyond the boundary of the site, including dust from construction vehicles entering and leaving the site. AO8.2 Development for filling or excavation activity only occurs between the hours of 6:30am and 6:30pm Monday to Saturday, excluding public holidays.	✓	Filling or excavation will be conducted such that adverse impacts due to noise and dust are minimised. Filling or excavation activity will only occur between the hours of 6:30am and 6:30pm Monday to Saturday.	

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

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS ¹	COMMENTS	COUNCIL USE ONLY
PO9 Development ensures that vibration generated by the filling or excavation operation does not exceed the vibration criteria in Table 9.4.3.3.D, Table 9.4.3.3.E, Table 9.4.3.3.F and Table 9.4.3.3.G. Note—A noise management report prepared in accordance with the Noise impact assessment planning scheme policy can assist in demonstrating achievement of this performance outcome.	AO9 Development involving filling or excavation does not cause a ground-borne vibration beyond the boundary of the site.	✓	Vibration generated by filling or excavation operations will not exceed the vibration criteria in Table 9.4.3.3.D, Table 9.4.3.3.E, Table 9.4.3.3.F and Table 9.4.3.3.G.	
PO10 Development ensures that heavy trucks hauling material to and from the site do not affect the amenity of established areas and limits environmental nuisance impact on adjacent land.	AO10 Development ensures that heavy trucks hauling material to and from the site: a) occur for a maximum of 3 weeks; b) use a major road to access the site; c) only use a minor road for the shortest-most-direct route that has the least amount of environmental nuisance if there is no major road alternative.	✓	Heavy trucks hauling material to and from the site will not affect the amenity of established areas and will only use Major Roads. Hauling material to and from site will only occur for a maximum of 3 weeks.	

Solution: ✓ = Acceptable Solution
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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS ¹	COMMENTS	COUNCIL USE ONLY
PO11 Development for filling or excavation protects the environment and community health and wellbeing from exposure to contaminated land and contaminated material.	AO11 Development does not involve: a) excavation on land previously occupied by a notifiable activity or on land listed on the Environmental Management Register or the Contaminated Land Register; b) filling with material containing a contaminant.	✓	Excavation works are to be conducted in accordance with a Geotechnical report from a licensed and qualified Geotechnical Engineer.	
PO12 Development provides for: a) landscaping for water conservation purposes; b) water sensitive urban design measures which are employed within the landscape design to maximise stormwater use and to reduce any adverse impacts on the landscape; c) stormwater harvesting to be maximised and any adverse impacts of stormwater minimised.	AO12.1 Development provides landscaping which is designed using the standards in the Landscape design guidelines for water conservation planning scheme policy. AO12.2 Development ensures that the design and requirements for irrigation are in compliance with the standards in the Landscape design guidelines for water conservation planning scheme policy. AO12.3 Development provides areas of pavement, turf and mulched garden beds which are drained. Note—This may be achieved through the	✓ ✓ ✓		

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

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FILLING AND EXCAVATION CODE**Job Ref No.: 20431*****Performance Criteria and Acceptable Solutions***

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS ¹	COMMENTS	COUNCIL USE ONLY
	provision and/or treatment of swales, spoon drains, field gullies, sub-surface drainage and stormwater connections.			

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

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION ¹	COMMENTS	COUNCIL USE ONLY
PO1 Development provides roads, pavement, edging and landscaping which: (a) are designed and constructed in accordance with the road hierarchy; (b) provide for safe travel for pedestrians, cyclists and vehicles; (c) provide access to properties for all modes; (d) provide utilities; (e) provide high levels of aesthetics and amenity, improved liveability and future growth; (f) provide for the amelioration of noise and other pollution; (g) provide a high-quality streetscape; (h) provide a low-maintenance asset with a minimal whole-of-life cost. Note—This can be demonstrated in an engineering report prepared and certified by a Registered Professional Engineer Queensland in accordance with the Infrastructure design planning scheme policy.	AO1 Development provides roads and associated pavement, edging and landscaping which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.	✓	Driveways, pavement and landscaping will be designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy. Services exist within the surrounding road reserves and will be connected to the proposed development.	
PO2 Development provides road pavement surfaces which: (a) are well designed and constructed; (b) durable enough to carry the wheel loads of the intended types and numbers	AO2 Development provides road pavement surfaces which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme	✓		

1. Solution: ✓ = Acceptable Solution
 A/S = Alternative Solution
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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION ¹	COMMENTS	COUNCIL USE ONLY
of travelling and parked vehicles; (c) ensures the safe passage of vehicles, pedestrians and cyclists, the discharge of stormwater run-off and the preservation of all-weather access; (d) allows for reasonable travel comfort.	policy.			
PO3 Development provides a pavement edge which is designed and constructed to: (a) control vehicle movements by delineating the carriageway for all users; (b) provide for people with disabilities by allowing safe passage of wheelchairs and other mobility aids.	AO3 Development provides pavement edges which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.	✓	Development will provide pavement edges which are designed and constructed in compliance with the road corridor design standards in the Infrastructure design planning scheme policy.	
PO4 Development provides verges which are designed and constructed to: (a) provide safe access for pedestrians clear of obstructions and access areas for vehicles onto properties; (b) provide a sufficient area for public utility services; (c) be maintainable by the Council.	AO4 Development provides verges which are designed and constructed in compliance with the road corridor design and streetscape locality advice standards in the Infrastructure design planning scheme policy.	✓	Development will provide verges which are designed and constructed in compliance with the road corridor design and streetscape locality advice standards in the Infrastructure design planning scheme policy.	
PO5 Development provides a lane or laneway identified in a neighbourhood plan which: (a) allows equitable access for all modes;	AO5 Development provides a lane or laneway identified in a neighbourhood plan which is embellished in compliance with the	N/A		

1. Solution: ✓ = Acceptable Solution

A/S = Alternative Solution

N/A = Not applicable to this Proposal

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION ¹	COMMENTS	COUNCIL USE ONLY
(b) is safe and secure; (c) has 24-hour access; (d) is a low-speed shared zone environment; (e) has a high-quality streetscape.	streetscape locality advice standards in the Infrastructure design planning scheme policy.			
PO6 Development of an existing premises provides at the frontage to the site, if not already provided, the following infrastructure to an appropriate urban standard: (a) an effective, high-quality paved roadway; (b) an effective, high-quality roadway kerb and channel; (c) safe, high-quality vehicle crossings over channels and verges; (d) safe, accessible, high-quality verges compatible and integrated with the surrounding environment; (e) safe vehicle access to the site that enables ingress and egress in a forward gear; (f) provision of and required alterations to public utilities; (g) effective drainage; (h) appropriate conduits to facilitate the provision of required street-lighting systems and traffic signals.	AO6 Development of an existing premises provides at the frontage of the site, if not already existing, the following infrastructure to the standard that would have applied if the development involved new premises as stated in the road corridor design standards in the Infrastructure design planning scheme policy: (a) concrete kerb and channel; (b) forming and grading to verges; (c) crossings over channels and verges; (d) a constructed bikeway; (e) a constructed verge or reconstruction of any damaged verge; (f) construction of the carriageway; (g) payment of costs for required alterations to public utility mains, services or installations; (h) construction of and required alterations to public utility mains, services or installations; (i) drainage works; (j) installation of electrical conduits.	✓	Any works required within the adjacent road corridors will be to the standards stated in the Infrastructure design planning scheme policy.	

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

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION ¹	COMMENTS	COUNCIL USE ONLY
PO7 Development provides both cycle and walking routes which: (a) are located, designed and constructed to their network classification (where applicable); (b) provide safe and attractive travel routes for pedestrians and cyclists for commuter and recreational purposes; (c) provide safe and comfortable access to properties for pedestrians and cyclists; (d) incorporate water sensitive urban design into stormwater drainage; (e) provide for utilities; (f) provide for a high level of aesthetics and amenity, improved liveability and future growth; (g) are a low-maintenance asset with a minimal whole-of-life cost; (h) minimise the clearing of significant native vegetation. Note—This can be demonstrated in an engineering report prepared and certified by a Registered Professional Engineer Queensland in accordance with the Infrastructure design planning scheme policy.	AO7 Development provides cycle and walking routes which are located, designed and constructed in compliance with the road corridor design and off-road pathway design standards in the Infrastructure design planning scheme policy.	✓	Development will provide walking routes which are located, designed and constructed in compliance with the road corridor design and off-road pathway design standards in the Infrastructure design planning scheme policy.	

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

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION ¹	COMMENTS	COUNCIL USE ONLY
PO8 Development provides refuse and recycling collection, separation and storage facilities that are located and managed so that adverse impacts on building occupants, neighbouring properties and the public realm are minimised.	AO8.1 Development provides refuse and recycling collection and storage facilities in accordance with the Refuse planning scheme policy. AO8.2 Development ensures that refuse and recycling collection and storage location and design do not have any adverse impact including odour, noise or visual impacts on the amenity of land uses within or adjoining the development. Note—Refer to the Refuse planning scheme policy for further guidance.	✓	Development will provide refuse and recycling collection and storage facilities in accordance with the Refuse planning scheme policy and they will have no adverse impacts.	
PO9 Development ensures that: (a) land used for an urban purpose is serviced adequately with regard to water supply and waste disposal; (b) the water supply meets the stated standard of service for the intended use and fire-fighting purposes.	AO9.1 Development ensures that the reticulated water and sewerage distribution system for all services is in place before the first use is commenced. AO9.2 Development provides the lot with reticulated water supply and sewerage to a standard acceptable to the distributor—retailer.	✓	Development ensures that the reticulated water and sewerage distribution system for all services is in place before the first use is commenced. Connections will be provided as outlined in the Bornhorst and Ward Engineering Serviceability Report.	

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

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION ¹	COMMENTS	COUNCIL USE ONLY
PO10 Development provides public utilities and street lighting which are the best current or alternative technology and facilitate accessibility, easy maintenance, minimal whole-of-life costs, and minimal adverse environmental impacts.	AO10.1 Development provides public utilities and street lighting which are located and aligned to: (a) avoid significant native vegetation and areas identified within the Biodiversity areas overlay map; (b) minimise earthworks; (c) avoid crossing waterways, waterway corridors and wetlands or if a crossing is unavoidable, tunnel-boring techniques are used to minimise disturbance, and a disturbed area is reinstated and restored on completion of the work. Note—Guidance on the restoration of habitat is included in the Biodiversity areas planning scheme policy. AO10.2 Development provides compatible public utility services and street-lighting services which are co-located in common trenching for underground services. AO10.3 Development provides public utilities and street lighting which are designed and constructed in compliance with the public utilities standards in the Infrastructure design planning scheme policy.	✓		

1. Solution: ✓ = Acceptable Solution
A/S = Alternative Solution
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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION ¹	COMMENTS	COUNCIL USE ONLY
PO11 Development ensures that land used for urban purposes is serviced adequately with telecommunications and energy supply.	AO11 Development provides land with the following services to the standards of the approved supplier: (a) electricity; (b) telecommunications services; (c) gas service where practicable.	✓		
PO12 Development ensures that major public projects promote the provision of affordable, high-bandwidth telecommunications services throughout the city.	AO12 Development provides conduits which are provided in all major Council and government works projects to enable the future provision of fibre optic cabling, if: (a) the additional expense is unlikely to be prohibitive; or (b) further major work is unlikely or disruption would be a major concern, such as where there is a limited capacity road; or (c) there is a clear gap in the telecommunications network; or (d) there is a clear gap in the bandwidth available to the area. Editor's note—An accurate, digital 'as built' three-dimensional location plan is to be supplied for all infrastructure provided in a road.	✓		

1. Solution: ✓ = Acceptable Solution
 A/S = Alternative Solution
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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION ¹	COMMENTS	COUNCIL USE ONLY
PO13 Development provides public art identified in a neighbourhood plan or park concept plan which: (a) is provided commensurate with the status and scale of the proposed development; (b) is sited and designed: (i) as an integrated part of the project design; (ii) as conceptually relevant to the context of the location; (iii) to reflect and respond to the cultural values of the community; (iv) to promote local character in a planned and informed manner.	AO13 Development provides public art identified in a neighbourhood plan or park concept plan which is sited and designed in compliance with the public art standards in the Infrastructure design planning scheme policy.	N/A		
PO14 Development provides signage of buildings and spaces which promote legibility to help users find their way.	AO14 Development provides public signage: (a) at public transport interchanges and stops, key destinations, public spaces, pedestrian linkages and at entries to centre developments; (b) which details the location of the key destinations, public spaces and pedestrian linkages in the vicinity, the services available within the development and where they are located. Editor's note—Signage is to be in accordance with Local Law Number 1	N/A		

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

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION ¹	COMMENTS	COUNCIL USE ONLY
	(Control of Advertisements Local Law).			
PO15 Development that provides community facilities which form part of the development is functional, safe, low maintenance, and fit for purpose.	AO15 Development that provides community facilities which form part of the development is designed in compliance with the community facilities standards in the Infrastructure design planning scheme policy.	N/A		
PO16 Development provides public toilets which: (a) are required as part of a community facility or park; (b) are located, designed and constructed to be: (i) safe; (ii) durable; (iii) resistant to vandalism; (iv) able to service expected demand; (v) fit for purpose.	AO16 Development that provides public toilets is designed and constructed in compliance with the public toilets standards in the Infrastructure design planning scheme policy.	N/A		
PO17 Development provides bridges, tunnels, elevated structures and water access structures that are designed and constructed using proven methods, materials and technology to provide for: (a) safe movement of intended users;	AO17 Development that provides bridges, tunnels, elevated structures and water access structures is designed and constructed in compliance with the standards in the Infrastructure design planning scheme policy.	N/A		

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(b) an attractive appearance appropriate to the general surroundings and any adjacent structures; (c) functionality and easy maintenance; (d) minimal whole-of-life cost; (e) longevity; (f) current and future services. Note—All bridges and elevated and associated elements must be designed and certified by a Registered Professional Engineer Queensland in accordance with the Infrastructure design planning scheme policy.				
PO18 Development provides culverts which are designed and constructed using proven methods, materials and technology to provide for: (a) safety; (b) an attractive appearance appropriate to the general surroundings; (c) functionality and easy maintenance; (d) minimal whole-of-life cost; (e) longevity; (f) future widening; (g) current and future services; (h) minimal adverse impacts, such as increase in water levels or flow velocities, and significant change of flood patterns. Note—All culverts and associated elements are to be designed and certified	AO18 Development that provides culverts is designed and constructed in compliance with the structures standards in the Infrastructure design planning scheme policy.	N/A		

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION ¹	COMMENTS	COUNCIL USE ONLY
by a Registered Professional Engineer Queensland in accordance with the applicable design standards.				
PO19 Development provides batters, retaining walls, and seawalls and river walls which are designed and constructed using proven methods, materials and technology to provide for: (a) safety; (b) an attractive appearance appropriate to the surrounding area; (c) easy maintenance; (d) minimal whole-of-life cost; (e) longevity; (f) minimal water seepage. Note—All retaining walls and associated elements are to be designed and certified by a Registered Professional Engineer Queensland in accordance with the applicable design standards.	AO19 Development that provides batters, retaining walls, seawalls and river walls is designed and constructed in compliance with the structures standards in the Infrastructure design planning scheme policy.	N/A		
If for development with a gross floor area greater than 1,000m²				
PO20 Development ensures that construction is managed so that use of public spaces and movement on pedestrian, cyclist and other traffic routes is not unreasonably disrupted and existing landscaping is adequately protected from short- and long-term impacts.	AO20 Development ensures that during construction: (a) the ongoing use of adjoining and surrounding parks and public spaces, such as malls and outdoor dining, is not compromised; (b) adjoining and surrounding	✓		

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Note—The preparation of a construction management plan can assist in demonstrating achievement of this performance outcome. Note—The Transport, access, parking and servicing planning scheme policy provides advice on the management of vehicle parking and deliveries during construction.	landscaping is protected from damage; (c) safe, legible, efficient and sufficient pedestrian, cyclist and vehicular accessibility and connectivity to the wider network are maintained.			
PO21 Development ensures that construction and demolition activities are guided by measures that prevent or minimise adverse impacts including sleep disturbance at a sensitive use, due to noise and dust, including dust from construction vehicles entering and leaving the site. Note—A noise and dust impact management plan prepared in accordance with the Management plans planning scheme policy can assist in demonstrating achievement of this performance outcome.	AO21.1 Development ensures that demolition and construction: (a) only occur between 6:30am and 6:30pm Monday to Saturday, excluding public holidays; (b) do not occur over periods greater than 6 months. AO21.2 Development including construction and demolition does not release dust emissions beyond the boundary of the site. AO21.3 Development construction and demolition does not involve asbestos-containing materials.	✓	Construction is conducted such that adverse impacts due to noise and dust are minimised. Construction activity will only occur between the hours of 6:30am and 6:30pm Monday to Saturday, excluding public holidays.	

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION ¹	COMMENTS	COUNCIL USE ONLY
PO22 Development ensures that: (a) construction and demolition do not result in damage to surrounding property as a result of vibration; (b) vibration levels achieve the vibration criteria in Table 9.4.4.3.B, Table 9.4.4.3.C, Table 9.4.4.3.D and Table 9.4.4.3.E. Note—A vibration impact assessment report prepared in accordance with the Noise impact assessment planning scheme policy can assist in demonstrating achievement of this performance outcome.	AO22 Development ensures that the nature and scale of construction and demolition do not generate noticeable levels of vibration.	✓	Vibration generated by construction will not exceed the vibration criteria in Table 9.4.3.3.B, Table 9.4.3.3.C, Table 9.4.3.3.D and Table 9.4.3.3.E.	

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PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES	SOLUTIONS ¹	COMMENTS	COUNCIL USE ONLY
Section A - If for a material change of use, reconfiguring a lot, operational work or building work Note—Compliance with the performance outcomes and acceptable outcomes in this section should be demonstrated by the submission of a site-based stormwater management plan for high risk development only				
PO1 Development provides a stormwater management system which achieves the integrated management of stormwater to: (a) minimise flooding; (b) protect environmental values of receiving waters; (c) maximise the use of water sensitive urban design; (d) minimise safety risk to all persons; (e) maximise the use of natural waterway corridors and natural channel design principles. <i>Editor's note—The stormwater management system to be developed to address PO1 is not intended to require management of stormwater quality.</i>	A01 Development provides a stormwater management system designed in compliance with the Infrastructure design planning scheme policy.	✓	The proposal complies with the Infrastructure Design Planning Scheme Policy.	

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P02 Development ensures that the stormwater management system and site work does not adversely impact flooding or drainage characteristics of premises which are up slope, down slope or adjacent to the site.	AO2.1 Development does not result in an increase in flood level or flood hazard on up slope, down slope or adjacent premises. AO2.2 Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.	✓	The proposal meets the requirements of Council's Infrastructure design planning scheme policy and does not result in an increase in flood level or flood duration on upstream, downstream or adjacent properties.	
P03 Development ensures that the stormwater management system does not direct stormwater run-off through existing or proposed lots and property where it is likely to adversely affect the safety of, or cause nuisance to properties.	AO3.1 Development ensures that the location of the stormwater drainage system is contained within a road reserve, drainage reserve, public pathway, park or waterway corridor. AO3.2 Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy. AO3.3 Development obtains a lawful point of discharge in compliance with the standards in the Infrastructure design planning scheme policy.	✓ ✓ ✓	The design demonstrates that a drainage network will be provided that will comply with Council's Infrastructure design planning scheme policy. Conceptual drainage requirements for the proposal are identified in the Bornhorst and Ward Serviceability Report.	

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	AO3.4 Where on private land, all underground stormwater infrastructure is secured by a drainage easement.	N/A		
PO4 Development provides a stormwater management system which has sufficient capacity to safely convey run-off taking into account increased run-off from impervious surfaces and flooding in local catchments.	AO4.1 Development provides a stormwater conveyance system which is designed to safely convey flows in compliance with the standards in the Infrastructure design planning scheme policy . AO4.2 Development provides sufficient area to convey run-off which will comply with the standards in the Infrastructure design planning scheme policy .	✓ ✓	The design demonstrates that a drainage network will be provided that will comply with Council's Infrastructure design planning scheme policy to safely convey flows to the waterway corridor.	
PO5 Development designs stormwater channels, creek modification works, bridges, culverts and major drains to protect and enhance the value of the waterway corridor or drainage path for fauna movement.	AO5 Development ensures the design of stormwater channels, creek modifications or other infrastructure, permits terrestrial and aquatic fauna movement.	N/A	The proposed development does not have any channel, creek modification, bridge, culvert or major drain works.	

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PO6 Development ensures that location and design of stormwater detention and water quality treatment: (a) minimises risk to people and property; (b) provides for safe access and maintenance; (c) minimises ecological impacts to creeks and waterways.	AO6.1 Development locates stormwater detention and water quality treatment: (a) outside of a waterway corridor; (b) offline to any catchment not contained within the development.	N/A		
PO7 Development is designed, including any car parking areas and channel works to: (a) reduce property damage; (b) provide safe access to the site during the defined flood event.	AO7.1 Development (including any ancillary structures and car parking areas) is located above minimum flood immunity levels in Table 9.4.9.3.B, Table 9.4.9.3.C, Table 9.4.9.3.D, Table 9.4.9.3.E and Table 9.4.9.3.F. <i>Note—Compliance with this acceptable outcome can be demonstrated by the submission of a hydraulic and hydrology report identifying flood levels and development design levels (as part of a site-based stormwater management plan).</i> AO7.2 Development including the road network provides a stormwater management system that provides safe pedestrian and	✓	The proposed development design provides flood immunity levels in accordance with the Infrastructure design planning scheme policy as discussed in the Bornhorst and Ward Serviceability Report. The proposed development design provides a stormwater management system that ensures the safe pedestrian and vehicle access in accordance with	

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PO9 Development is designed to manage run-off and peak flows by minimising large areas of impervious material and maximising opportunities for capture and re-use.	AO9 No acceptable outcome is prescribed.	✓		
PO10 Development ensures that there is sufficient site area to accommodate an effective stormwater management system. <i>Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.</i>	AO10 No acceptable outcome is prescribed.	✓		
PO11 Development provides for the orderly development of stormwater infrastructure within a catchment, having regard to the: (a) existing capacity of stormwater infrastructure within and external to the site, and any planned stormwater infrastructure upgrades; (b) safe management of stormwater discharge from existing and future up-slope development;	AO11.1 Development with up-slope external catchment areas provides a drainage connection sized for ultimate catchment conditions that is directed to a lawful point of discharge. AO11.2 Development ensures that existing stormwater infrastructure that is undersized is upgraded in compliance with the Priority infrastructure	✓		

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(c) implication for adjacent and down-slope development.	plan and the standards in the Infrastructure design planning scheme policy .			
PO12 Development provides stormwater infrastructure which: (a) remains fit for purpose for the life of the development and maintains full functionality in the design flood event; (b) can be safely accessed and maintained cost effectively; (c) ensures no structural damage to existing stormwater infrastructure.	AO12.1 The stormwater management system is designed in compliance with the Infrastructure design planning scheme policy . AO12.2 Development provides a clear area with a minimum of 2m radius from the centre of an existing manhole cover and with a minimum height clearance of 2.5m.	✓ N/A		
PO13 Development ensures that all reasonable and practicable measures are taken to manage the impacts of erosion, turbidity and sedimentation, both within and external to the development site from construction activities, including vegetation clearing, earthworks, civil construction, installation of services, rehabilitation, revegetation and landscaping to protect: (a) the environmental values and water quality objectives of waters; (b) waterway hydrology; (c) the maintenance and serviceability of stormwater infrastructure.	AO13 No acceptable outcome is prescribed.	✓		

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<i>Note—The Infrastructure design planning scheme policy outlines the appropriate measures to be taken into account to achieve the performance outcome.</i>				
PO14 Development ensures that: (a) unnecessary disturbance to soil, waterways or drainage channels is avoided; (b) all soil surfaces remain effectively stabilised against erosion in the short and long term.	AO14 No acceptable outcome is prescribed	✓	A detailed Erosion Sediment Control Plan will be prepared in accordance with Brisbane City Council Guidelines. The ESCP shall be prepared during the Operational Works phase of the development.	
PO15 Development does not increase: (a) the concentration of total suspended solids or other contaminants in stormwater flows during site construction; (b) run-off which causes erosion either on site or off site.	AO15 No acceptable outcome is prescribed	✓		

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Section B—Additional criteria which apply to high-risk development, being one or more of the following:(a) a material change of use for an urban purpose which involves greater than 2,500m² of land that:

(i) will result in an impervious area greater than 25% of the net developable area; or

(ii) will result in 6 or more dwellings.

(b) reconfiguring a lot for an urban purpose that involves greater than 2,500m² of land and will result in 6 or more lots;(c) operational work for an urban purpose which involves disturbing greater than 2,500m² of land.

PO16 Development ensures that the entry and transport of contaminants into stormwater is avoided or minimised to protect receiving water environmental values. <i>Note—Prescribed water contaminants are defined in the Environmental Protection Act 1994.</i> <i>Note—Compliance with the performance outcome should be demonstrated by the submission of a site-based stormwater management plan for high-risk development only.</i>	AO16 Development provides a stormwater management system which is designed in compliance with the standards in the Infrastructure design planning scheme policy.	N/A		
PO17 Development ensures that: (a) the discharge of wastewater to a waterway or external to the site is avoided; or (b) if the discharge cannot practicably be avoided, the development minimises wastewater discharge through re-use, recycling, recovery and	AO17 No acceptable outcome is prescribed.	N/A		

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treatment. <i>Note—The preparation of a wastewater management plan can assist in demonstrating achievement of this performance outcome. Editor's note—This code does not deal with sewerage which is the subject of the Wastewater code.</i>				
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FLOOD OVERLAY CODE

Performance Criteria and Acceptable Solutions

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PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTION 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 . 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	N/A		

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	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. AO1.2 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.			
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 them to pass predominantly unimpeded through the site; (b) does not concentrate, intensify or divert floodwater onto 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 ote—This undercroft area is not suitable	N/A		

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(c) will not result in a material increase in flood levels or flood hazard on upstream, downstream or adjacent properties.	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) 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			

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	principles within the Flood planning scheme policy and the Infrastructure design planning scheme policy .			
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	AO3 Development for a material change of use complies with Table 8.2.11.3.C .	✓		

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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.				
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 ongoing maintenance costs; (c) efficient recovery after flood events; (d) recreational benefits to the city; (e) availability of suitable land within the park.	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. 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 any creek/waterway or overland flow path; or (b) is located above the 20% AEP flood level of any creek/waterway or overland	N/A		

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	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 . 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	✓	Development complies with the flood planning levels specified in Table 8.2.11.3.D . The development is not located in the Brisbane River flood planning area 1, 2a, or 2b sub-categories, Creek/waterway flood planning area 1 or 2 sub-categories or overland flow flood planning area sub-category.	

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	(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.			
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	✓	The development will ensure that: (a) all areas containing essential electrical services comply with the flood planning levels in Table 8.2.11.3.D;	

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	non-critical electrical services. AO6.2 Development involving a basement that relies on a pumping solution to manage floodwater ingress or for dewatering after a flood provides a redundant pump system with a backup power source for those pumps.			
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	✓	The development will not cause adverse impact to upstream, downstream or adjacent properties. The development will discharge flows as per existing conditions. Bornhorst and Ward's Serviceability Report indicates the development is unlikely to cause adverse impacts on upstream or downstream properties.	

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	design planning scheme policy. AO7.2 Development retains existing overland flow paths and does not rely wholly on piped solutions to manage major flows. AO7.3 Development which creates a new overland flow path 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	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	N/A	Not susceptible to creek/waterway flooding.	

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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.	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.			
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	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		

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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 treatment of ground level in undercroft areas where floodwater conveyance is required underneath development.	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 is free draining; (b) does not involve excavation below ground level of more than 300mm within the undercroft area.			
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.	AO10.1 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.	✓	The development falls under "difficult to evacuate uses" as Macarthur Avenue (road used when travelling to and from the site) is inundated in certain areas during a 1% AEP event due to its low elevation. A flood risk assessment will be required to address the performance outcomes or acceptable solutions which deal with evacuation arrangements.	

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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.	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.			
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. 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	A/S	The development will be evacuated prior to the inundation of certain areas of Macarthur Avenue during a 1% AEP event, due to the road being used for travel to and from the site.	

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	policy .			
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		
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. AO13.1 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 .	✓	Development of cyclist and pedestrian facilities other than on public roads, including those traversing through a park and adjacent to a watercourse and overland flow path, will be located above the 39% AEP (2 year ARI) flood immunity from all flooding sources.	

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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		
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 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;	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 ; (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	N/A		

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(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.	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. 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.			
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	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	N/A		

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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.	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.			

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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 probably maximum flood is relevant to minimising the risk to people. - 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.	AO17.1 Development creating new lots is to comply with Table 8.2.11.3.I. 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 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 N/A N/A		

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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		
	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	N/A		

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	flooding; (b) 1% AEP flood extent for creek/waterway flooding.			

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Section A – If for self-assessable or assessable development for a dwelling house including a secondary dwelling				
PO1 Development involving any habitable or non-habitable part of the dwelling house, including any secondary dwelling, is: a) located and designed to minimise the risk to people and structures from coastal hazards; b) located to minimise amenity impacts, disruption to residents, recovery time and rebuilding and restoration costs after a coastal hazard event.	AO1 Development for a dwelling house including, any secondary dwelling, complies with the flood planning levels in Table 8.2.6.3.B. Editor's note—Information about flooding from storm tide is provided in Council's FloodWise Property Report.	N/A		
Section B – If for a self assessable or assessable development other than for a dwelling house				
PO2 Development other than for a park is located and designed to: (a) minimise the risk to all persons from coastal hazards; (b) minimise flood damages to the development and contents of buildings; (c) provide suitable amenity; (d) minimise disruption to residents, recovery time, and rebuilding	AO2 Development achieves minimum flood planning levels consistent with Table 8.2.6.3.C. Editor's note—Information about flooding from storm tide is provided in Council's FloodWise Property Report.	✓		

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or restoration costs after coastal hazard events.				
PO3 Development for a park ensures that the design of the park and location of structures and facilities responds to coastal hazards and balances the safety of intended users with: a) maintaining continuity of operations; b) impacts of flooding on asset life and ongoing maintenance costs; c) efficient recovery after flood events; d) recreational benefits to the city; e) availability of suitable land within the park. Note—The Infrastructure design planning scheme policy provides more detail on standards and specifications for public assets.	AO3 Development involving a building or structure in a park: a) complies with the minimum flood planning levels in Table 8.2.6.3.C; or b) is not located below the 20% AEP storm-tide level if Table 8.2.6.3.C does not apply to the type of structure.	N/A		
Section C – If assessable development other than for a dwelling				
PO4 Development has access which provides for safe vehicular and pedestrian movement in the development, including emergency services access during and after a coastal hazard event.	AO4 Development locates access points and driveways in the flood free area (or the area of the lowest flood risk) of the site.	✓	Development site will be evacuated prior to inundation of certain areas of the site's access route (Macarthur Avenue) during a 1% AEP event.	

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PO5 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.	AO5 Development for off-road pedestrian and cyclist paths: (a) is not located in the Erosion prone area – coastal erosion subcategory; or (b) complies with the minimum flood planning levels in Table 8.2.6.3.H. Note—If the site is subject to more than 1 type of flooding, the requirement that affords the highest flood planning level will apply.	✓		
PO6 Development does not: (a) impact adversely on the safety or amenity of an adjoining site; (b) impact adversely on the ability of others to implement future coastal hazard adaptation actions.	AO6 Development does not concentrate, intensify or divert floodwater, erosion impacts or cause nuisance ponding onto other premises.	✓		

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PO7 Development involving essential electrical services or a basement storage area is suitably located and designed to ensure public safety and minimise the need for flood recovery and economic consequences of damage during a flood.	PO7.1 Development ensures that: (a) all essential electrical services comply with the flood planning levels in Table 8.2.6.3.C; 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 and all entry points and services are located at or above the relevant flood immunity level in Table 8.2.6.3.C. Note—A basement storage area is a basement-level area for private storage, other than a bike storage room, change room, building maintenance storage and non-critical electrical services. PO7.2 Development involving a basement that relies on a pumping solution to manage floodwater ingress or for dewatering after a flood, provides an appropriately flood protected backup power source for those pumps.	✓	All essential electrical services will comply with the flood planning levels in Table 8.2.6.3.C.	

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PO8 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 against flotation and lateral movement; (c) preventing damage to pipework or entry of floodwater into pipework; (d) preventing damage to or off-site release of packages, drums or containers. Note—A chemical hazards flood risk report prepared in accordance with the Management of hazardous chemicals in flood affected 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.	AO8.1 Development does not include the storage or handling of hazardous chemicals that are equivalent to or exceed the threshold quantities in Table 8.2.6.3.J. AO8.2 Development involving the processes listed in Table 8.2.6.3.F is consistent with the standards contained in the Management of hazardous chemicals in flood affected areas planning scheme policy and can operate without risk of environmental harm during a coastal hazard. Note—The Management of hazardous chemicals in flood affected areas planning scheme policy sets out further information and processes including risk assessment for the management of hazardous chemicals in coastal hazard areas.	✓	Development does not include the storage or handling of hazardous chemicals that are equivalent to or exceed the threshold quantities in Table 8.2.6.3.J	
Additional Criteria for essential community infrastructure				

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PO9 Development involving essential community infrastructure: (a) maintains function during and immediately after a coastal hazard event or is part of a network that is able to maintain the function of the essential community infrastructure without parts of the development which are unable to function during a coastal hazard event; (b) is designed and sited to avoid adverse impacts on the community or the environment due to the impacts of coastal hazard on infrastructure, facilities or access and egress routes; (c) retains site access necessary to maintain function of the development during a coastal hazard event; (d) maintains function or is part of a network which is able to remain functional even when other infrastructure may be compromised in a flood event; (e) contains mitigation measures which are not entirely dependent on human activation to respond to a flood event.	AO9 Development involving essential community infrastructure: (a) is ancillary and is not relied upon for the provision of the essential service during a coastal hazard event; or (b) is located above the flood immunity levels set out in Table 8.2.6.3.E; (c) has access to, or provides, the necessary backup emergency electricity and communications supply in times of flood; (d) if the essential community infrastructure has a city-wide emergency function, that part of the development is not located in an area that becomes isolated by a flood up to the event listed for that development type in Table 8.2.6.3.E.	✓		
Additional Criteria for Vulnerable Uses, difficult to evacuate uses or assembly uses				

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PO10 Development for vulnerable or difficult to evacuate uses and assembly uses optimises vehicular access and efficient evacuation from the development to parts of the road network unaffected by coastal hazard. Note—A coastal hazard risk assessment may be required to address the performance outcome or acceptable solution that deals with evacuation and isolation arrangements, and the ability to take refuge in place. Editor's note—Further guidance for risk assessment is contained in the Coastal hazard planning scheme policy and the Flood planning scheme policy.	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 as specified in Table 8.2.6.3.D; or (b) is supported by a critical route or interim critical route identified in the Critical infrastructure and movement network overlay; or (c) can achieve vehicular evacuation to a suitable coastal hazard-free location. Note—A suitable coastal hazard-free location is of a size and nature appropriate to provide for the size and characteristics of the population likely to need evacuation to that area.	✓	The development falls under "difficult to evacuate uses" as Macarthur Avenue (road used when travelling to and from the site) is inundated in certain areas during a 1% AEP event due to its low elevation. A flood risk assessment will be required to address the performance outcomes or acceptable solutions which deal with evacuation arrangements.	
Section D – If for reconfiguring a lot				
PO11 Development locates and designs all lots and roads resulting from reconfiguring a lot to: (a) ensure the safety of people; (b) minimise damage to property and services; (c) facilitate safe and efficient evacuation;	AO11 a) Development ensures that the road and lot layout does not create new lots isolated by storm-tide flooding at the defined flood event. filling with material containing a contaminant.	N/A		

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(d) avoid isolation during a coastal hazard event; (e) provide suitable amenity in that it is not frequently flooded or subject to tidal inundation, or nuisance ponding. Note— Consideration of the 0.2% AEP flood is relevant to determining an acceptable level of safety for development. Flood warning time is available for storm-tide flooding. Filling for flood immunity cannot be assumed to mitigate the flood hazard for a flood event greater than the defined flood event.	A011.2 Development involving reconfiguring a lot ensures flood immunity for all lots is provided in compliance with Table 8.2.6.3.G.			
PO12 Development that results in 6 lots or less and no new road provides: (a) land with sufficient flood immunity to construct a dwelling house; (b) an open space area that is safe and has suitable amenity in that it is not frequently flooded or subject to tidal inundation, nuisance ponding or seepage; (c) a lot that is not substantially burdened by a stormwater easement or flood mitigation infrastructure; (d) appropriate amenity for any	AO12.1 Development for reconfiguring a lot that results in 6 lots or less and no new road in the High storm-tide inundation area sub-category or the Medium storm-tide inundation area sub-category provides at least 80% of each new lot at or above the flood planning levels in Table 8.2.6.3.G. Note—This is to ensure that each new lot will not be affected by tidal influences up to the highest astronomical tide event with an allowance for 800mm of sea level increase through climate change. The development will still need to meet the relevant flood	N/A		

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adjoining residential area.	immunity standards.			
PO13 Development provides acceptable flood immunity for its purpose that minimises the risk to people from coastal hazard, creates safe access and evacuation routes, minimises damage to property and services, and provides suitable amenity.	AO13 Development involving reconfiguring a lot that results in more than 6 lots or a new road provides flood immunity for: (a) all lots in compliance with Table 8.2.6.3.G; (b) a new road in compliance with Table 8.2.6.3.H; (c) an existing road fronting the development, or providing primary access within 200m of the development, in compliance with Table 8.2.6.3.I. Note—The Flood planning scheme policy contains supporting information about existing roads and serviceability during floods.	N/A		
PO14 Development involving a new road, bridge or culvert is designed to minimise impacts to flood behaviour, minimise disruption to traffic during storm-tide inundation and allow for emergency access and evacuation.	AO14 Development for a new road provides flood immunity in compliance with Table 8.2.6.3.H.			

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

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Performance Criteria and Acceptable Solutions

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS	SOLUTIONS ¹	COMMENTS	COUNCIL USE ONLY
PO15 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.	AO15.1 Development for off-road pedestrian and cyclist paths: (a) are not located in the Erosion prone area – coastal erosion subcategory; or (b) complies with the minimum flood planning levels in Table 8.2.6.3.H. Note—If the site is subject to more than 1 type of flooding, the requirement that affords the highest flood planning level will apply. AO15.2 All new on-road cyclist and pedestrian facilities comply with the road flood immunity and trafficability standards for the applicable category of road in Table 8.2.6.3.H or Table 8.2.6.3.I.	N/A		

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

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