

# APPENDIX E

Engineering Report prepared by Westera Partners

brazier motti



# Engineering Services Report

## Proposed Retirement Living Development

99 Hogarth Drive, Bohle Plains

For: Ruby Developments Pty Ltd

2 August 2024

Ref: S24-020



A QUALITY ASSURED COMPANY

CERTIFIED QUALITY ASSURANCE – ISO AS/NZS 9001, 4801 & 14001

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**DOCUMENT INFORMATION****Project Name:** 99 Hogarth Drive, Bohle Plains**Westera Partners Ref:** S24-020**Westera Partners Contact:****Jared Hill** Phone: (07) 3852 4333  
Email: jaredh@westerapartners.com.au**Certified for Issue by:****Jared Hill** RPEQ 19891  
2 August 2024**Document Control:**

Revision	Author	Approved for Issue	Date
Rev A	P. Baxter	J. Hill RPEQ 19891	2/08/2024

*This report has been prepared for Ruby Developments Pty Ltd for the purpose of accompanying a development application to Townsville City Council. This report must only be used by Ruby Developments Pty Ltd for this purpose and must not be used or relied upon by any other person for any other purpose.*

*The assessment, conclusions or recommendations in this report are based on conditions encountered and information received at the time of preparing the report and may not be relied upon as site conditions or operations vary over time.*

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## 1 INTRODUCTION

Westera Partners Pty Ltd has been commissioned by Ruby Developments Pty Ltd to prepare an Engineering Services Report to accompany a development application for a proposed retirement living development.

The development application involves the construction of 292 retirement living dwellings, including facilities, parking and landscaping. Access to the site is to be provided from Hogarth Drive.

This report documents how the site will be serviced in accordance with Townsville City Council requirements.

## 2 SITE DESCRIPTION

### 2.1 Location and Land Use

The proposed development site is located at 99 Hogarth Drive, Bohle Plains also known as Lot Plan 1002 on SP340654. The site area is approximately 13.67Ha, and the development proposal will occur over approximately 13.01Ha. The site is primarily vacant and covered by light cover bushland and grass. The northern portion of the site currently falls towards a mapped waterway close to the northern boundary which ultimately discharges to Three Mile Creek, and the southern portion falls towards the southern boundary via multiple mapped waterways located within the site, which then ultimately discharge towards existing infrastructure on Hogarth Dr.

The proposed development site is bound by Three Mile Creek to the north, urban residential development to the east and south, and The Ring Road to the west. Refer to Figure 1 for an indicative site location.



**Figure 1** – Indicative development footprint (Nearmaps, 2024)

### 3 EXTERNAL ROADWORKS

The site will gain entry from Hogarth Drive. The main site entry will be from the northern round about (not yet constructed) with a secondary emergency exit to the southern round about. Minimal external roadworks will be required, limited to what will be required to tie in with the existing road network to provide the site access points.

### 4 STORMWATER DISCHARGE

Stormwater drainage for the proposed development shall ensure no adverse impact on upstream, downstream or adjoining properties. The proposed lawful points of discharge for the development shall be the existing mapped waterways. The southern catchment of the proposed development is to discharge to an existing mapped waterway located within the adjoining easement (EMT H RP739629) which then flows beneath Hogarth Dr via an existing culvert. The northern portion of the site and RV compound area are proposed to discharge to an existing mapped waterway which then connects to Three Mile Creek. New on-site stormwater infrastructure shall be constructed to direct stormwater to the lawful point of discharge to ensure no adverse impacts on adjacent properties.

The overland flow analysis prepared by Engeny has determined no adverse impacts off site as a result of the increase in impervious area fraction from the development. Stormwater detention is therefore not considered to be required. Refer to separate overland flow investigation for further information.

The proposed development is required to meet the Queensland Government's State Planning Policy (July 2017) and TCC requirements as the site exceeds the 2,500m<sup>2</sup> minimum site area. To ensure compliance stormwater treatment is proposed to be managed on-site through primary treatment from filter basket inserts into the field inlets on the road and tertiary treatment from ATLAN filter cartridges in the treatment tanks. MUSIC modelling has been undertaken to demonstrate runoff from the development site achieves the water quality pollution load reduction targets of the TCC & State Planning Policy

Refer to detailed Stormwater Report prepared by Westera Partners Pty Ltd and engineering drawings contained within Appendix C for further information on proposed stormwater works for the development.

All stormwater works shall be in accordance with Townsville City Council's standards and specifications.

### 5 SEWER RETICULATION

The current site survey and as-constructed information (Appendix E) provided indicate existing sewer infrastructure throughout the site, with a sewer reticulation main located in the northern portion of the site and an extension of the sewer network installed into the proposed development site near the southern boundary. It is to be noted that Townsville mapping does not reflect the current arrangement of these services, with all sewer services within the proposed development on the mapping marked as future gravity mains in different locations, indicating mapping has yet to be updated. For the proposed development, two sewer connection points will be utilised to service the site. The southern portion of the site is to be serviced by a 150mm property connection connected to the sewer extension located toward the southern boundary, which then connects to existing sewer mains. For the northern portion of the site, a 150mm property connection will be installed from the existing sewer main which then connects to an existing 225mm sewer main.

All sewer reticulation works shall be in accordance with Townsville City Council standards and specifications and the CTM code.

## 6 WATER RETICULATION

As-constructed data provided also indicated that there is an existing 300mm trunk main water located within the verge of Hogarth Drive, which then has a 150mm service extending towards the proposed development site, which is capped at the property boundary. For the proposed development, this existing water service will be utilised, with the development service size to be finalised at the detailed design phase of the project to suit the development's hydraulic demand. Refer to Appendix B for further information regarding the proposed water works.

All water reticulation works shall be in accordance with Townsville City Council standards and specifications and the CTMC ode.

## 7 FLOODING

The proposed development site is impacted by Townsville's flood overlay mapping. The overlay identifies various defined flood levels throughout. To ensure flood immunity throughout the site, the building floor levels are set to ensure a 300mm freeboard is achieved in line with the TCC flood requirements. Refer to the separate flood report completed by Engeny for further information.

## 8 EARTHWORKS

Earthworks operations for the proposed development will involve earthworks over the entire development footprint to establish building sites for future homes, achieve necessary flood immunity and manage stormwater appropriately. An acid sulphate soil investigation is not considered necessary as excavation will not extend below 5.0m AHD.

All earthworks shall be in accordance with Townsville City Council standards and specifications.

## 9 GAS, ELECTRICITY & COMMUNICATIONS

There is no gas main within close proximity to the proposed development.

Telstra and NBN services are located with Hogarth Drive.

There is below ground electrical infrastructure within Hogarth Drive. Refer to Appendix D & E for further information.

## 10 CONCLUSION

This engineering services report establishes that the proposed development can be adequately serviced by the existing sewer, water, and other infrastructure services surrounding the site.

The proposed lawful point of discharge for the development shall be the existing mapped waterways, with the southern portion of the site discharging towards existing culverts and the northern portion of the site to ultimately discharge to Three Mile Creek. Stormwater detention is not required for the site. The site is required to meet the water quality requirements as the site exceeds the 2,500m<sup>2</sup> minimum site area. To ensure compliance stormwater treatment is proposed through primary treatment from filter basket inserts into the field inlets and tertiary treatment from ATLAN filter cartridges. MUSIC modelling has been undertaken to demonstrate the site achieve the pollution load reduction targets.

The existing sewer infrastructure within the site will be utilised to service the proposed development. The southern portion of the site will connect to the existing sewer main extension via a 150mm property

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connection, whilst for the northern portion of the site, a 150mm property connection will be installed from the existing sewer main.

A new water service shall be constructed to service the site from the existing water service which is connected to the trunk main located within Hogarth Dr and centrally to the proposed development. The development service size will be finalised at the detailed design phase of the project to suit the hydraulic demand.

The site is impacted by flooding events, and minimum levels have been set throughout the proposed development to ensure building immunity from flooding and compliance with TCC requirements.

Earthworks shall be undertaken across the development site to establish building pads, achieve required levels of shared access roads, and appropriately manage stormwater.

Final details regarding stormwater, sewer, water and other services can be addressed during the detail design stage.

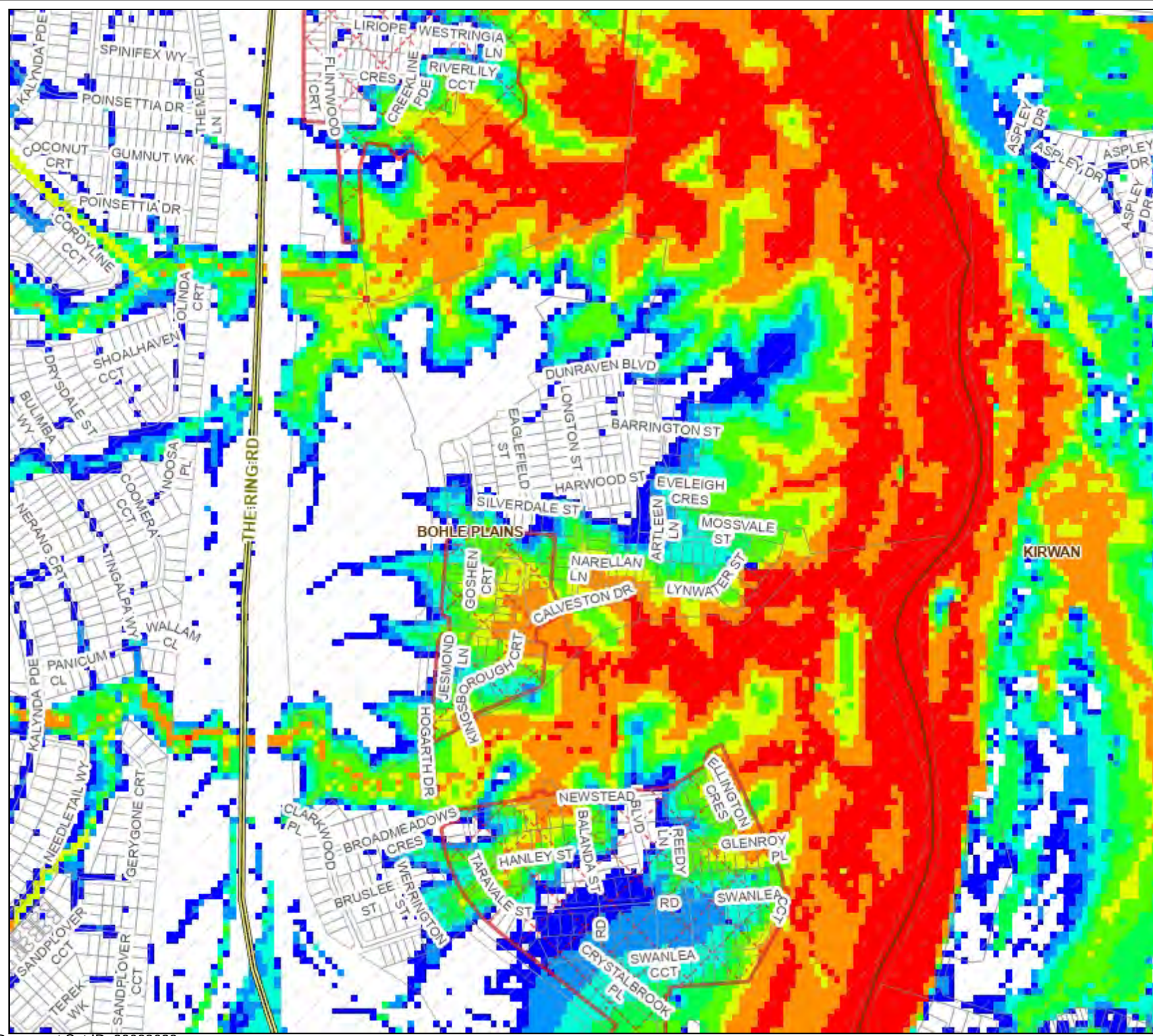


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**11 APPENDICES**

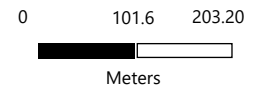
**Appendix A – Townsville City Council Flood Overlay**

# Flooding Layout



## Legend

- Properties
- Suburbs
- FLOOD STUDY AREAS  
November 2014 to Present
- WATER HEIGHT (1:250 - 1:5000)  
2% AEP Height
- 1% AEP Height
- 1% AEP & 2% AEP DEPTH (1:250 - 1:5,000)  
Water Depth: 0.01 - 0.3m
- Water Depth: 0.3 - 0.5m
- Water Depth: 0.5 - 0.75m
- Water Depth: 0.75 - 1.0m
- Water Depth: 1.0 - 1.5m
- Water Depth: 1.5 - 2.0m
- Water Depth: 2.0 - 3.0m
- Water Depth: 3.0 - 25.0m



Date: 23/7/2024 12:31 PM  
Scale 1: 8,000


DISCLAIMER: The information shown on this map has been produced from the Townsville City Council's digital database. There is no warranty implied or expressed regarding the accuracy or completeness of the data. The data has been compiled for information and convenience only, and it is the responsibility of the user to verify all information before placing reliance on it. For accurate service locations please contact the Customer Service Centre on 13 48 01. This is not a legal document and is published for information and convenience only. The Townsville City Council takes no responsibility for any errors or omissions herein or for any acts that may occur due to its use.

DISCLAIMER: Visible Scale - 1: 250 - 1 :5,000. The flooding contained in this map does not in itself indicate whether any particular property has or has not been affected by floods. The flooding information depicted shows inundation resulting from rainfall of river flows resulting from rainfall and does not include inundation due to Storm Tide. The council considers that the information presented in the map is the best available at the time of preparation. However the modelling results contained in this map are based upon projections, assumptions and analysis is about circumstances that may not eventuate, or may eventuate in different combinations and with different outcomes. Because of that, the information in the map is not provided with the intention that persons will rely upon its accuracy or completeness for the purpose of making decisions with financial or legal implications. Neither the council nor its officers will be liable in contract, negligence or otherwise for the consequences of any deficiency, inaccuracy or error in the map or for the consequences of any person relying upon the map. The Flood Study Areas layer indicates the date of the flood study that has generated the flood map data. Infrastructure constructed since the completion of a flood study has the potential to alter flood levels and extents to those shown.



**Appendix B – Before You Dig Information**

[Review responses online](#) ↗



Received 6 of 6 responses  
**All responses received**

99 Hogarth Drive, Bohle Plains QLD 4817

Job dates  
 17/04/2024 → 17/04/2024

These plans expire on  
 15 May 2024

Lodged by  
 Edoardo Baroni

Authority	Status	Page
✉ BYDA Confirmation		2
🏠 APA Group Gas Networks (70715)	Received	4
🏠 Dept Of Defence	Received	13
🏠 Ergon QLD	Received	24
🏠 NBN Co Qld	Received	50
🏠 Telstra QLD Regional	Received	70
🏠 Townsville City Council	Received	80



Contact Details

<b>Contact</b> Edoardo Baroni	<b>Contact number</b> (07) 5391 3777	<b>Company</b> Westera Partners	<b>Enquirer ID</b> 3538054
<b>Email</b> edoardob@westerapartners.com.au		<b>Address</b> Unit 27 13 Norval Court Maroochydore QLD 4558	

Job Site and Enquiry Details

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

<b>Enquiry date</b> 17/04/2024	<b>Start date</b> 17/04/2024	<b>End date</b> 17/04/2024	<b>On behalf of</b> Other Westera Partners	<b>Job purpose</b> Excavation	<b>Locations</b> Private	<b>Onsite activities</b> Mechanical Excavation
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Check that the location of the job site is correct. If not, you must submit a new enquiry.

If the scope of works change or plan validity dates expire, you must submit a new enquiry.

Do NOT dig without plans. Safe excavation is your responsibility. If you don't understand the plans or how to proceed safely, please contact the relevant asset owners.

<b>User Reference</b> 99 Hogarth Drive	<b>Address</b> 99 Hogarth Drive Bohle Plains QLD 4817	<b>Notes/description</b> -
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Your Responsibility and Duty of Care

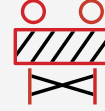
- **Lodging an enquiry does not authorise project commencement.** Before starting work, you must obtain all necessary information from all affected asset owners.
- If you don't receive plans within 2 business days, contact the asset owner & quote their sequence number.
- Always follow the 5Ps of Safe Excavation (page 2), and locate assets before commencing work.
- Ensure you comply with State legislative requirements for Duty of Care and safe digging.
- If you damage an underground asset, you MUST advise the asset owner immediately.
- By using the BYDA service, you agree to the [Privacy Policy](#) and [Term of Use](#).
- For more information on safe digging practices, visit [www.byda.com.au](http://www.byda.com.au)

Asset Owner Details

Below is a list of asset owners with underground infrastructure in and around your job site. It is your responsibility to identify the presence of these assets. Plans issued by Members are indicative only unless specified otherwise. Note: not all asset owners are registered with BYDA. You must contact asset owners not listed here directly.

Referral ID (Seq. no)	Authority Name	Phone	Status
238059701	APA Group Gas Networks (70715)	1800 085 628	NOTIFIED
238059700	Dept Of Defence	0472 724 745	NOTIFIED
238059704	Ergon QLD	13 10 46	NOTIFIED
238059699	NBN Co Qld	1800 687 626	NOTIFIED
238059702	Telstra QLD Regional	1800 653 935	NOTIFIED
238059703	Townsville City Council	1300 878 001	NOTIFIED

END OF UTILITIES LIST



## Plan

Plan your job. Use the BYDA service at least one day before your job is due to begin, and ensure you have the correct plans and information required to carry out a safe project.

## Prepare

Prepare by communicating with asset owners if you need assistance. Look for clues onsite. Engage a skilled Locator.

## Pothole

Potholing is physically sighting the asset by hand digging or hydro vacuum extraction.

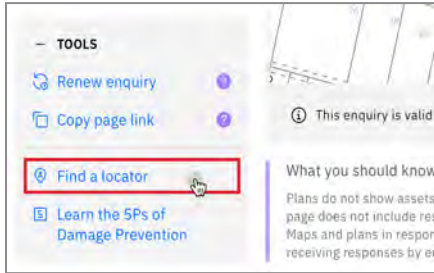
## Protect

Protecting and supporting the exposed infrastructure is the responsibility of the excavator. Always erect safety barriers in areas of risk and enforce exclusion zones.

## Proceed

Only proceed with your excavation work after planning, preparing, potholing (unless prohibited), and having protective measures in place.

## Engage a skilled Locator



When you lodge an enquiry you will see skilled Locators to contact

Visit the Certified Locator website directly and search for a locator near you

[bydlocator.com/certified-locating-organisation](https://bydlocator.com/certified-locating-organisation)

## Book a FREE BYDA Session



BYDA offers two different sessions to suit you and your organisation's needs. The free sessions are offered in two different formats - online and face-to-face:

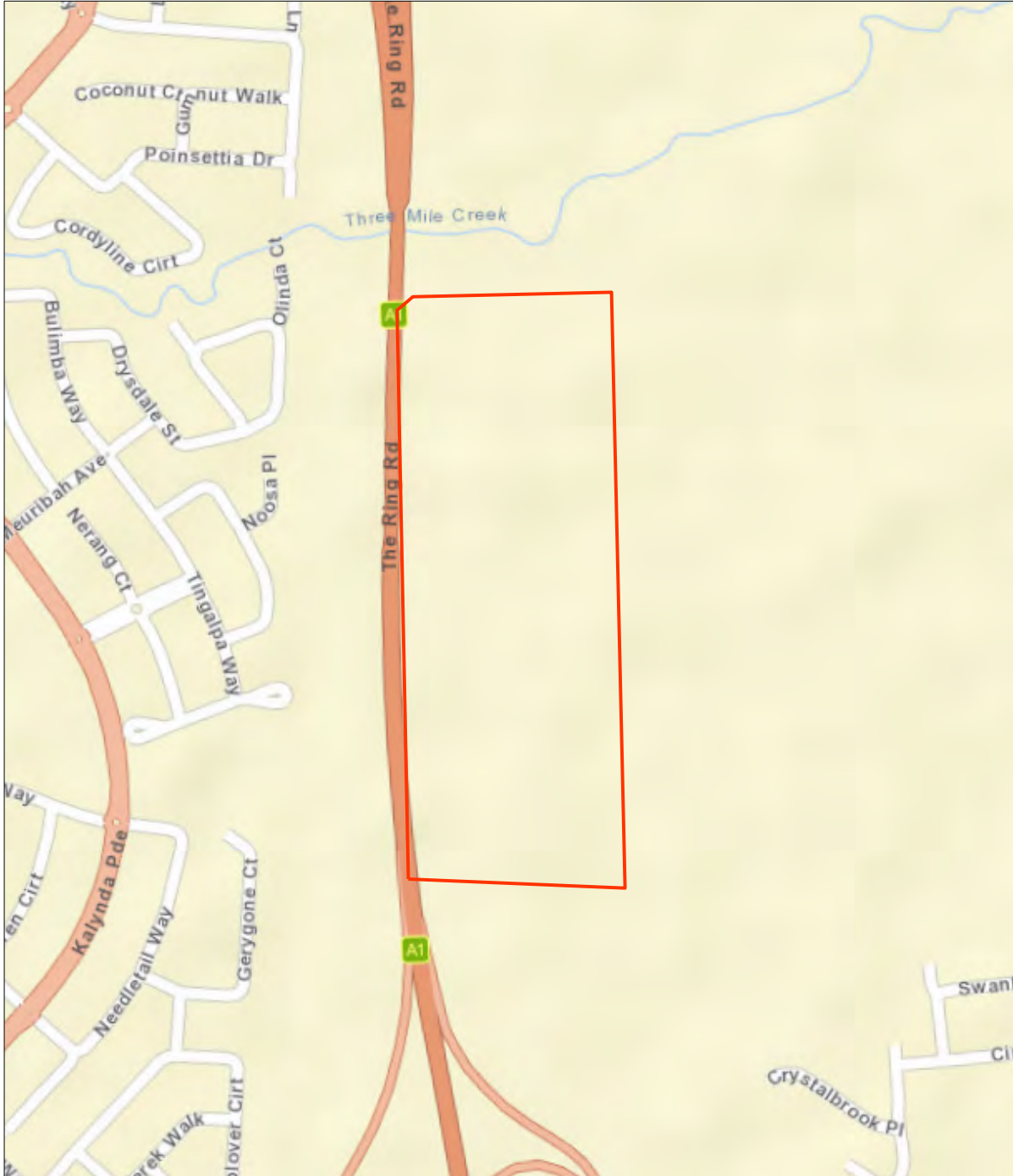
- Awareness Session:** Understand the role of BYDA, safe excavation practices, complying with asset-owner instructions, and the consequences of damages. Learn how to mitigate and avoid potential damage and harm and ensure a safe work environment.
- Plan Reading Session:** Develop the skills to interpret asset owners' plans, legends, and symbols effectively. Understand the complexities of plan interpretation to ensure smooth project execution.

To book a session, visit:




[byda.com.au/contact/education-awareness-enquiry-form/](https://byda.com.au/contact/education-awareness-enquiry-form/)

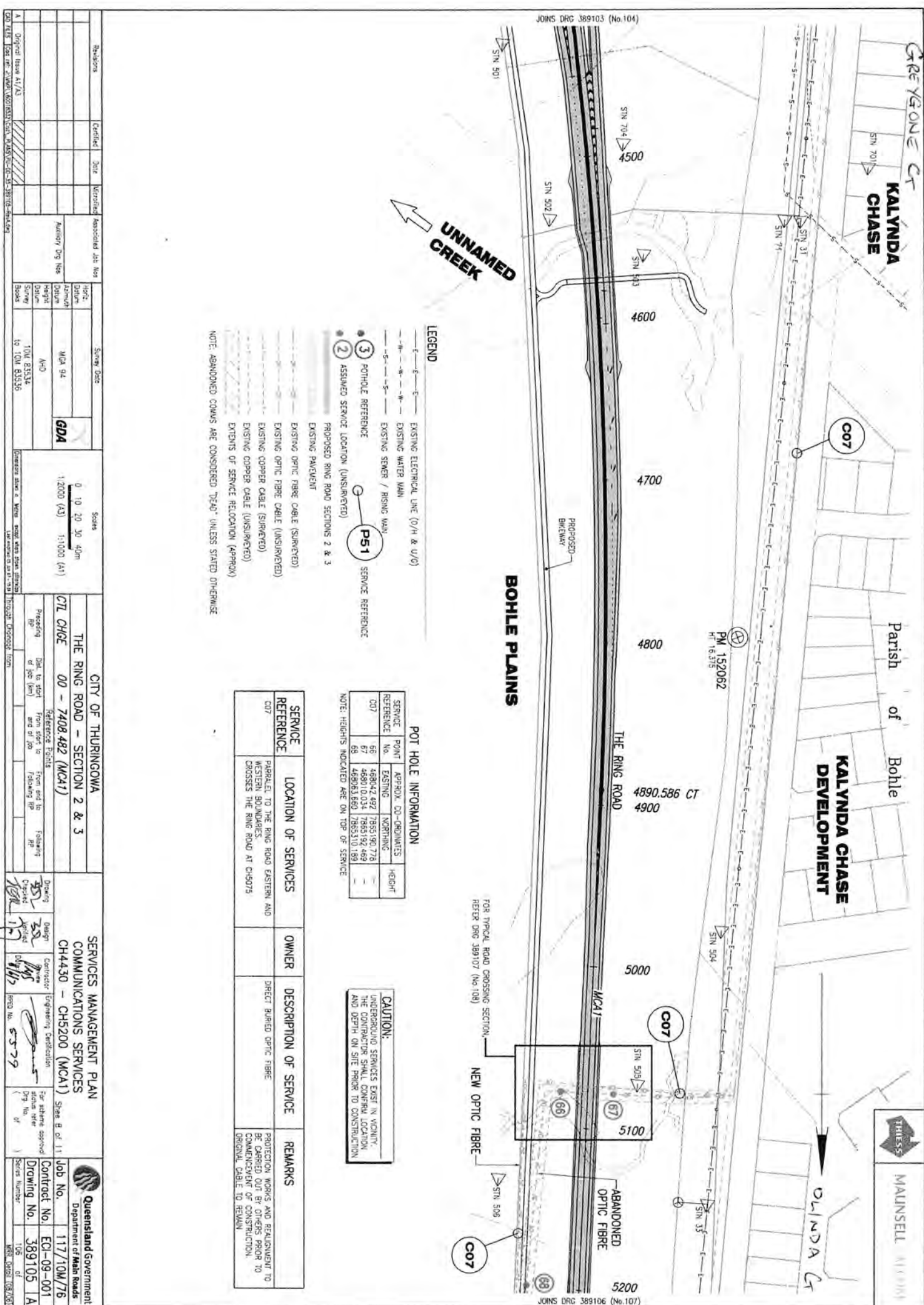
**BOOK NOW**

Site Address	99 Hogarth Drive Bohle Plains 4817	Sequence No	238059701
Name	Edoardo Baroni		
Email	edoardob@westerapartners.com.au		



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

Scale 1: 6000		Enquiry Area  Map Key Area 
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**UNNAMED CREEK**

**BOHLE PLAINS**

**KALYNDIA CHASE**

**KALYNDIA CHASE DEVELOPMENT**



MAUNSELL (11/2024)

**LEGEND**

- EXISTING ELECTRICAL LINE (O/H & U/O)
- EXISTING WATER MAIN
- EXISTING WATER MAIN
- EXISTING SEWER / RISING MAIN
- EXISTING OPTIC FIBRE CABLE (SURVEYED)
- EXISTING OPTIC FIBRE CABLE (INSURVEYED)
- EXISTING COPPER CABLE (SURVEYED)
- EXISTING COPPER CABLE (INSURVEYED)
- EXTENTS OF SERVICE RELOCATION (APPROX)
- P51 SERVICE REFERENCE
- C07 SERVICE REFERENCE
- P51 SERVICE REFERENCE
- C07 SERVICE REFERENCE

NOTE: ABANDONED COWMS ARE CONSIDERED 'DEAD' UNLESS STATED OTHERWISE

**POT HOLE INFORMATION**

SERVICE REFERENCE	POINT NO.	APPROX. CO-ORDINATES	HEIGHT
		EASTING	NORTHING
C07	66	489042.482	17855.180.778
	67	489010.034	17868.181.448
	68	489063.680	17865.110.189

NOTE: HEIGHTS INDICATED ARE ON TOP OF SERVICE

**CAUTION:**

UNDERGROUND SERVICES EXIST IN VICINITY. THE CONTRACTOR SHALL CONFIRM LOCATION AND DEPTH ON SITE PRIOR TO CONSTRUCTION.

SERVICE REFERENCE	LOCATION OF SERVICES	OWNER	DESCRIPTION OF SERVICE	REMARKS
C07	PARALLEL TO THE RING ROAD EASTERN AND WESTERN BOUNDARIES. WESTERN BOUNDARIES. CROSSES THE RING ROAD AT CH5075	DIRECT BURIED OPTIC FIBRE	DIRECT BURIED OPTIC FIBRE	PROTECTION WORKS AND RE-ALIGNMENT TO BE CARRIED OUT BY OTHERS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ORIGINAL CABLE TO REMAIN

Revision	Certified	Date	Recorded	Associated Job No.	Drawn	Checked	Design	Contractor	Engineering Certification	For technical approval	Scale	Sheet No. of	Job No.	Contract No.	ECI-09-001	117/10W/76	108 of	389105	1A
Scale		0 10 20 30 40m		1:2000 (A3)		1:1000 (A1)		GDA		MGA 94		AND		10M 83534		to 10M 83536			
City of Thuringowa		THE RING ROAD - SECTION 2 & 3		CTI CHGE		00 - 7408 482 (MCA1)		Reference Points		From start to end of job		From end to following RP		Drawing		Design			
Services Management Plan		COMMUNICATIONS SERVICES		CH4430 - CH5200 (MCA1)		Sheet B of 11		Job No.		117/10W/76		Contract No.		389105		1A			
Queensland Government		Department of Main Roads																	

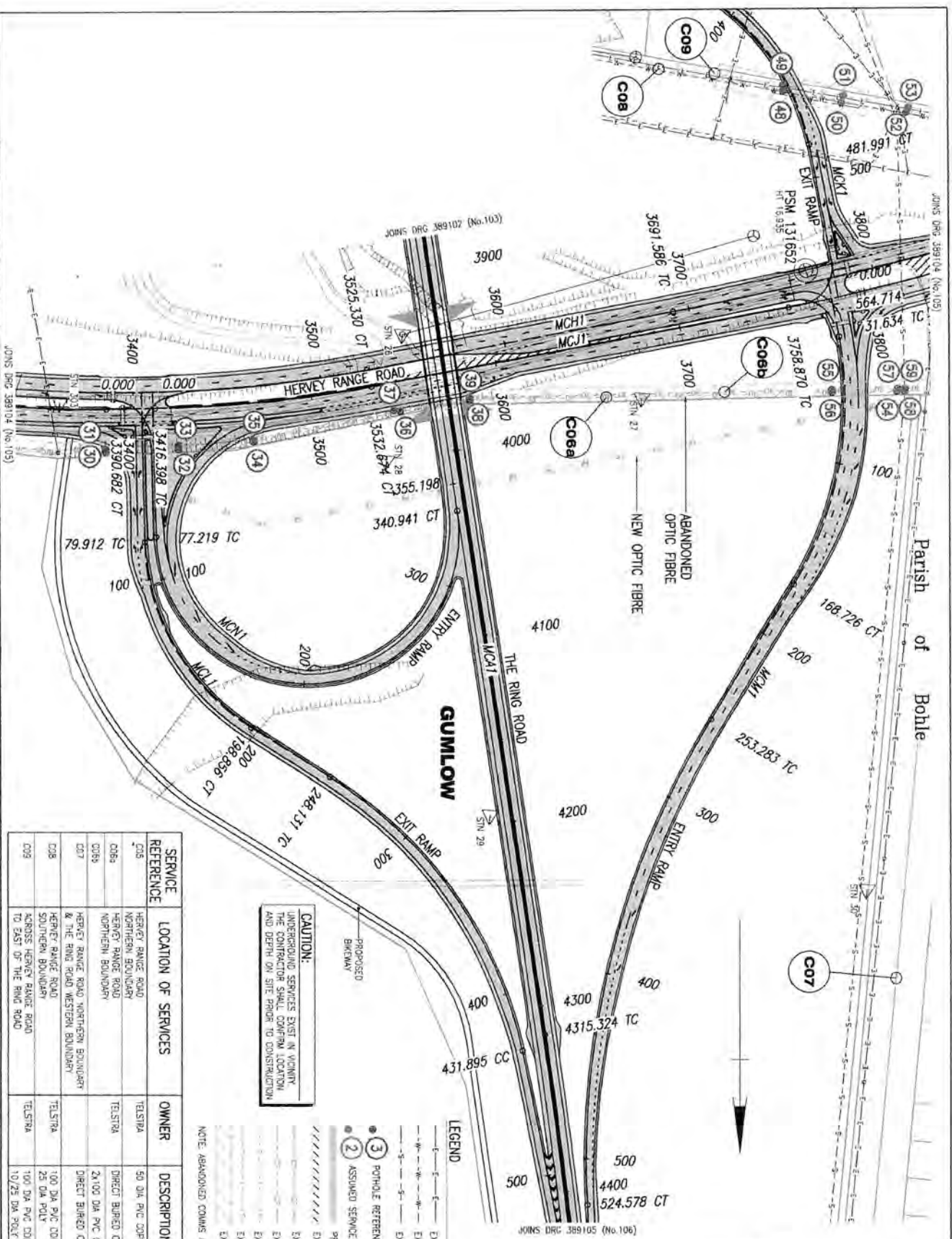




JOINS DRG 389104 (No.105)

Parish of Bole

MAUNSELL GROUP



POT HOLE INFORMATION

SERVICE REFERENCE	POINT No.	APPROX. CO-ORDINATES	HEIGHT	
		EASTING	NORTHING	
C06a	30	468280.457	7864119.761	14.743
C06b	31	468280.678	7864117.900	15.031
C06c	32	468284.831	7864118.028	14.888
C06d	33	468284.730	7864116.244	14.942
C06e	34	468200.883	7864114.344	14.980
C06f	35	468202.087	7864113.028	15.031
C06g	36	468123.518	7864099.460	15.253
C06a	37	468126.919	7864097.811	15.253
C06b	38	468088.238	7864092.581	14.424
C06c	39	468098.845	7864093.838	16.037
C06d	40	467918.920	7863928.017	16.153
C06e	41	467888.290	7863933.461	16.14
C06f	42	467887.270	7863933.920	16.17
C06g	43	467881.999	7863937.146	16.288
C06a	44	467863.278	7863940.220	16.393
C06b	45	467858.860	7864088.840	15.74
C06c	46	467843.277	7864087.931	15.797
C06d	47	467833.302	7864089.451	15.710
C06e	48	467829.470	7864087.330	15.810
C06f	49	467824.641	7864086.796	15.818
C06g	50	467824.466	7864087.263	16.016

NOTE: HEIGHTS INDICATED ARE ON TOP OF SERVICE

LEGEND

- EXISTING ELECTRICAL LINE (O/H & U/O)
- EXISTING WATER MAIN
- EXISTING SEWER / RISING MAIN
- P51 SERVICE REFERENCE
- ③ POT HOLE REFERENCE
- ② ASSIGNED SERVICE LOCATION (UNSURETED)
- PROPOSED SERVICE LOCATION (UNSURETED)
- PROPOSED RING ROAD SECTIONS 2 & 3
- ////// EXISTING PAVEMENT
- EXISTING OPTIC FIBRE CABLE (SURFACED)
- EXISTING OPTIC FIBRE CABLE (UNSURETED)
- EXISTING COPPER CABLE (SURFACED)
- EXISTING COPPER CABLE (UNSURETED)
- EXISTING OF SERVICE RELOCATION (APPROX)

NOTE: ABANDONED COMMS ARE CONSIDERED 'DEAD' UNLESS STATED OTHERWISE

SERVICE REFERENCE	LOCATION OF SERVICES	OWNER	DESCRIPTION OF SERVICE	REMARKS
C05	HERVEY RANGE ROAD NORTHERN BOUNDARY	TELSTRA	50 DIA PVC COPPER CABLE	EXISTING TO REMAIN.
C06a	HERVEY RANGE ROAD NORTHERN BOUNDARY	TELSTRA	DIRECT BURIED OPTIC FIBRE	PROTECTION REQUIRED AT NEW TURNOUT
C06b	HERVEY RANGE ROAD NORTHERN BOUNDARY	TELSTRA	2x100 DIA PVC OPTIC FIBRE	TELSTRA TO RELOCATE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
C06c	HERVEY RANGE ROAD NORTHERN BOUNDARY & THE RING ROAD WESTERN BOUNDARY	TELSTRA	DIRECT BURIED OPTIC FIBRE	EXISTING TO REMAIN
C06d	HERVEY RANGE ROAD NORTHERN BOUNDARY	TELSTRA	100 DIA PVC COPPER CABLE	TELSTRA TO LOWER PIPES TO COMMENCEMENT OF CONSTRUCTION.
C06e	HERVEY RANGE ROAD NORTHERN BOUNDARY	TELSTRA	25 DIA POLY 10/25 DIA PVC COPPER CABLE	TELSTRA TO LOWER PIPES TO COMMENCEMENT OF CONSTRUCTION.

Revisions

Date	Description	By	Checked

Scale: 0 10 20 30 40m

City of Thurlingowa  
 THE RING ROAD - SECTION 2 & 3  
 CIL CHGE 00 - 7408 482 (MCA1)

Services Management Plan  
 COMMUNICATIONS SERVICES  
 CH3900 - CH4430 (MCA1)

Job No. 117/10M/76  
 Contract No. ECI-09-001  
 Drawing No. 389103/A

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

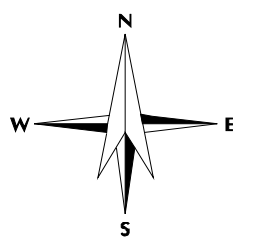
For Emergency Situations please call 13 16 70



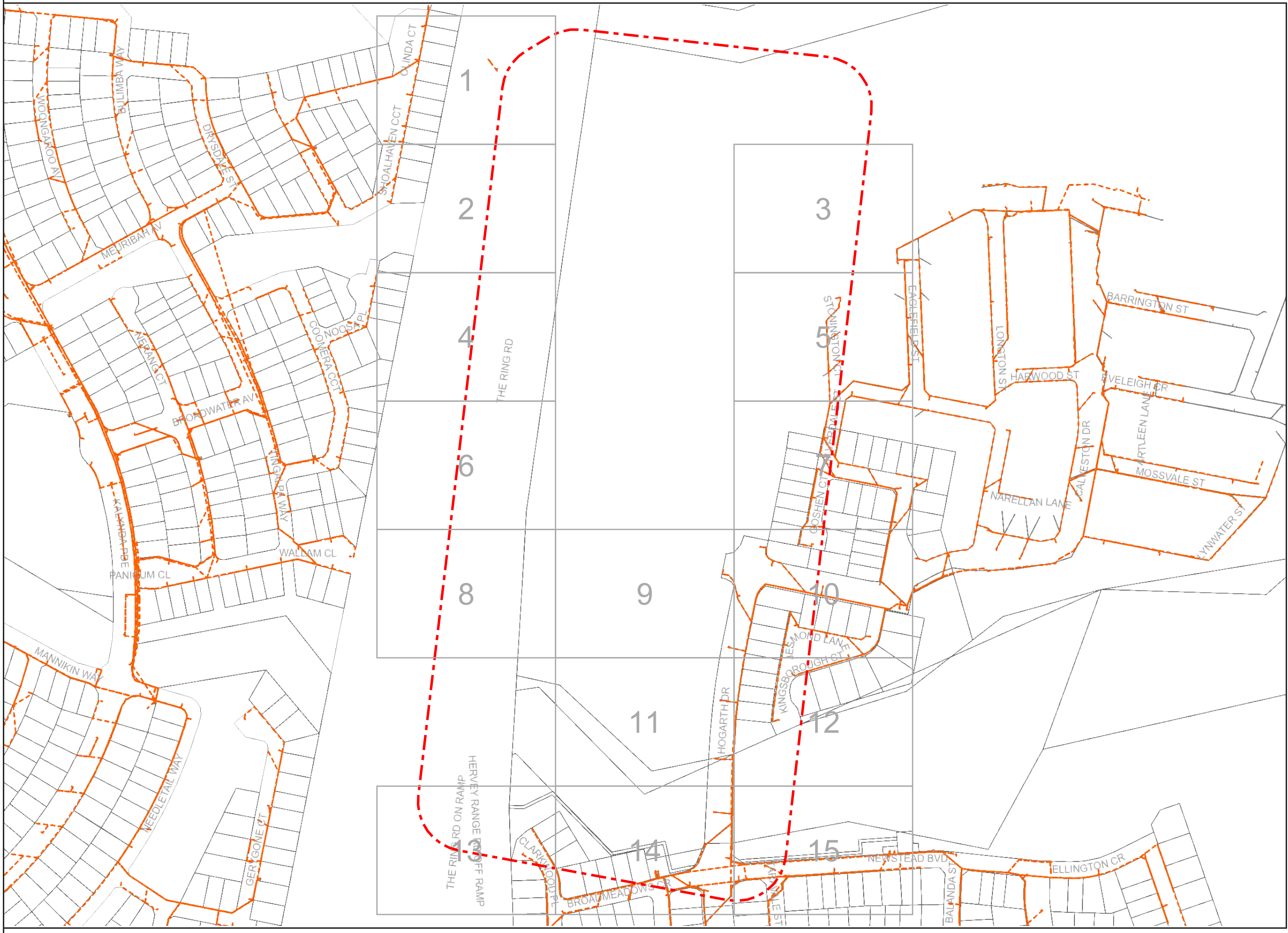
Sequence: 238059704  
Date: 17/04/2024  
Scale: 1:3588  
**OVERVIEW**

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

**AS5488 Category "D" Plan**



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



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

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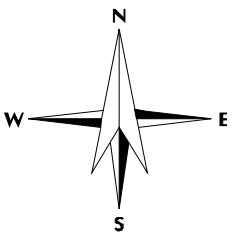
For Emergency Situations  
please call 13 16 70



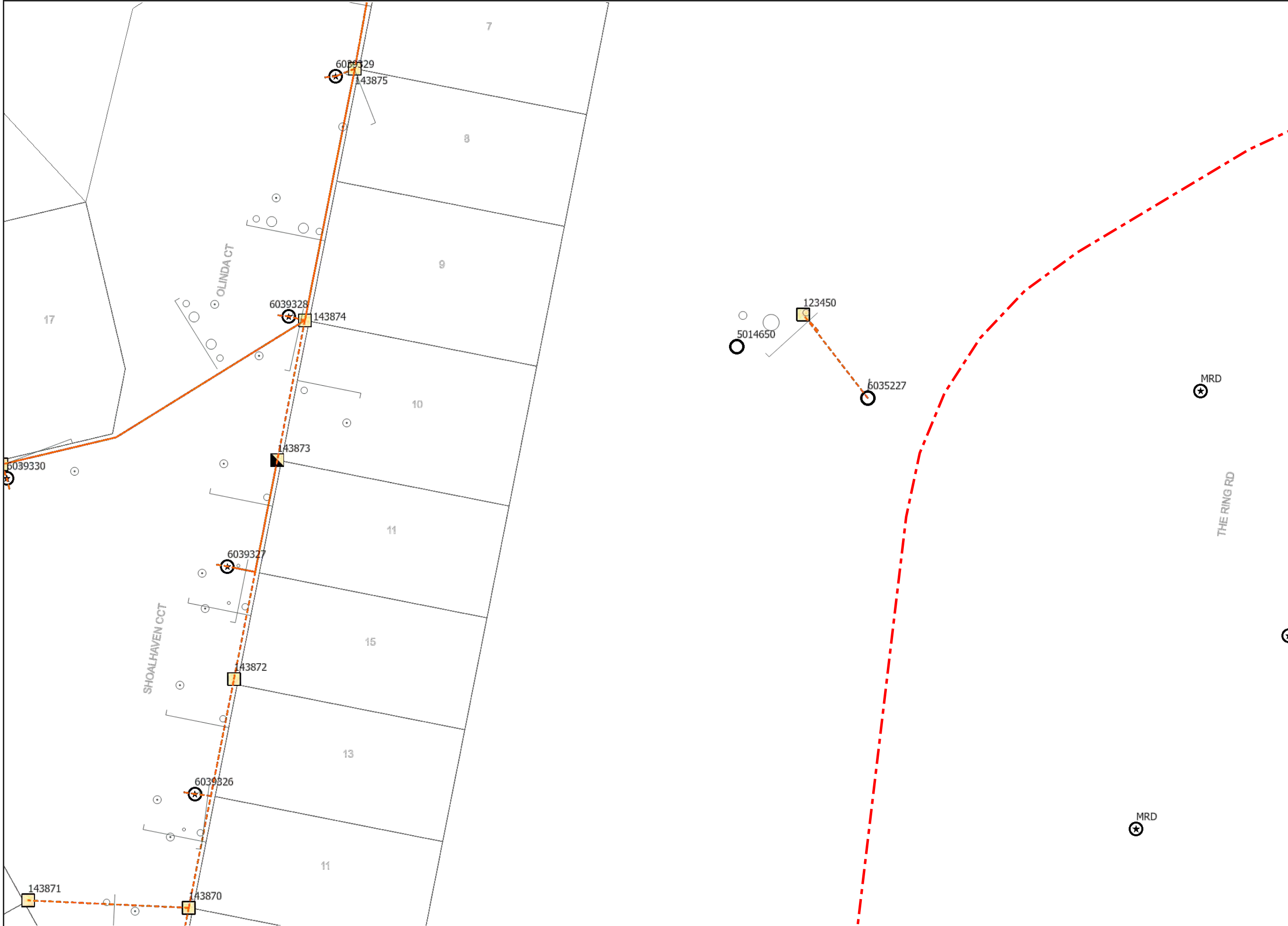
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Date: 17/04/2024  
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Tile No: 1

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

**AS5488 Category "D" Plan**



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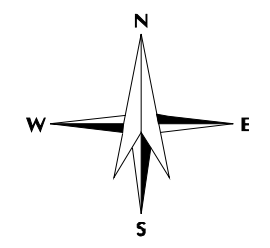
For Emergency Situations  
please call 13 16 70



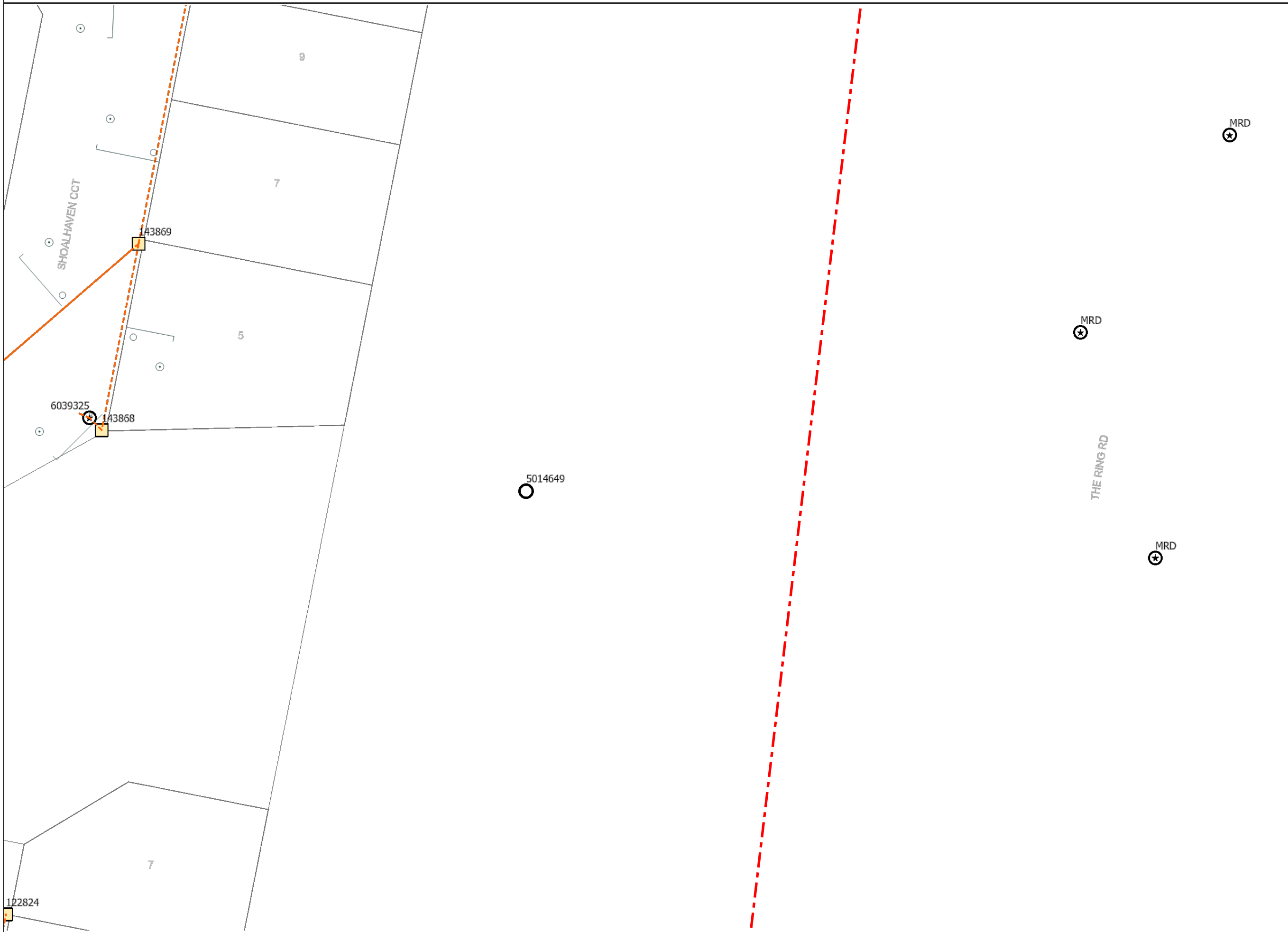
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Date: 17/04/2024  
Scale: 1:500  
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For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan



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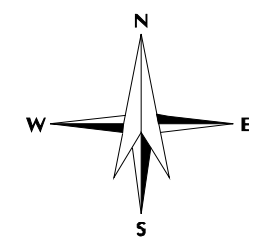
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please call 13 16 70



Sequence: 238059704  
Date: 17/04/2024  
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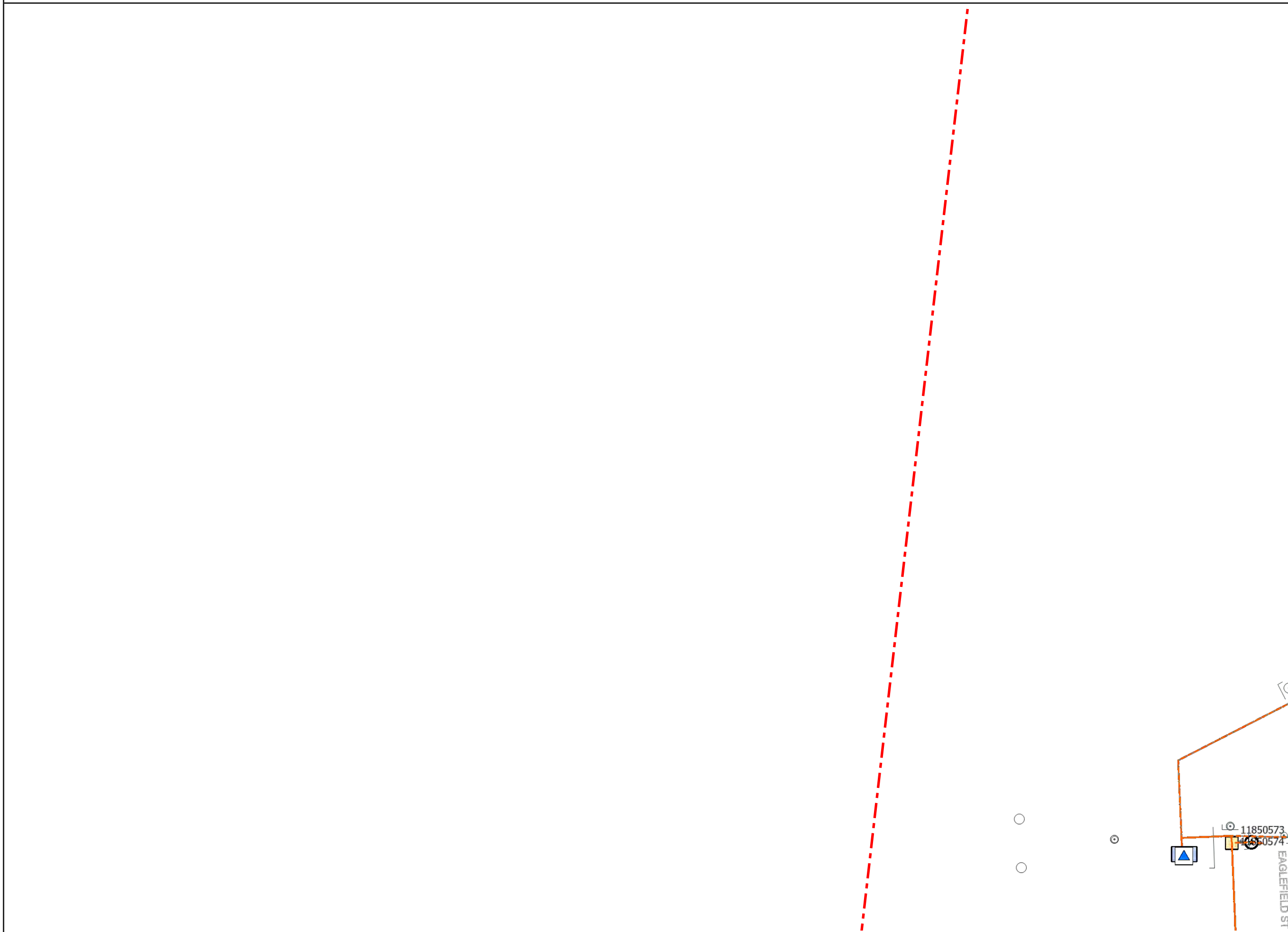
**For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page**

**AS5488 Category "D" Plan**



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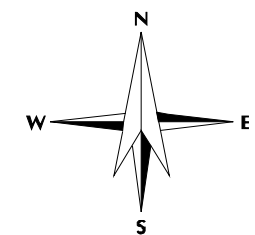
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Sequence: 238059704  
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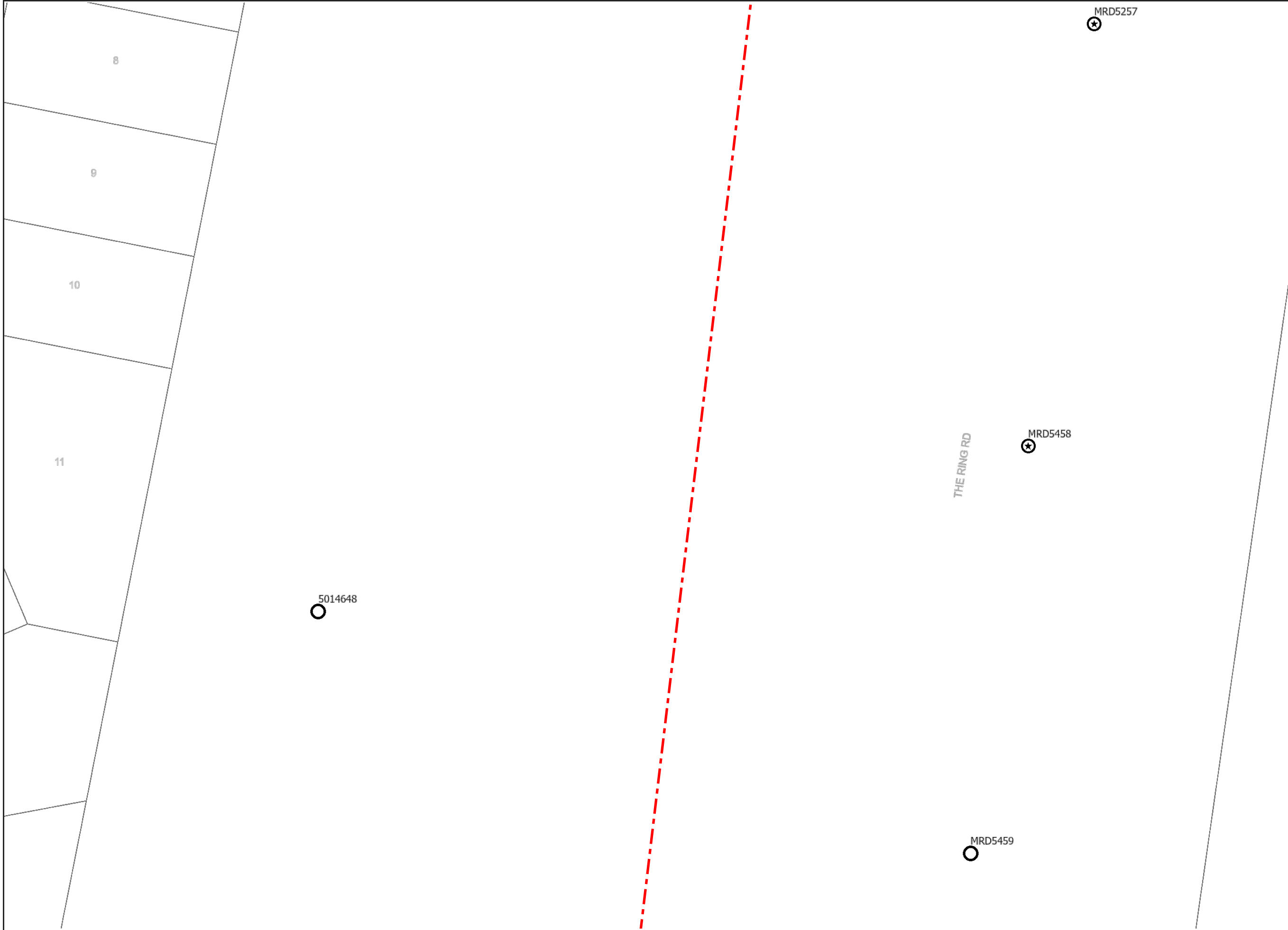
**For a full list of Map  
Symbols, please  
refer to the supplied  
BYDA Symbology  
Legend page**

**AS5488 Category "D" Plan**



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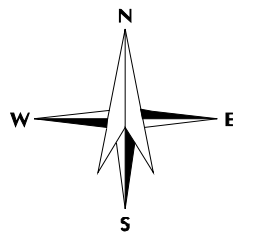
For Emergency Situations  
please call 13 16 70



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Date: 17/04/2024  
Scale: 1:500  
Tile No: 5

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

AS5488 Category "D" Plan



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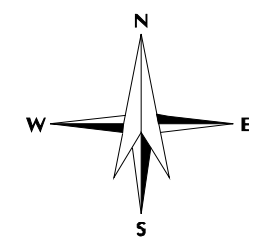
For Emergency Situations please call 13 16 70



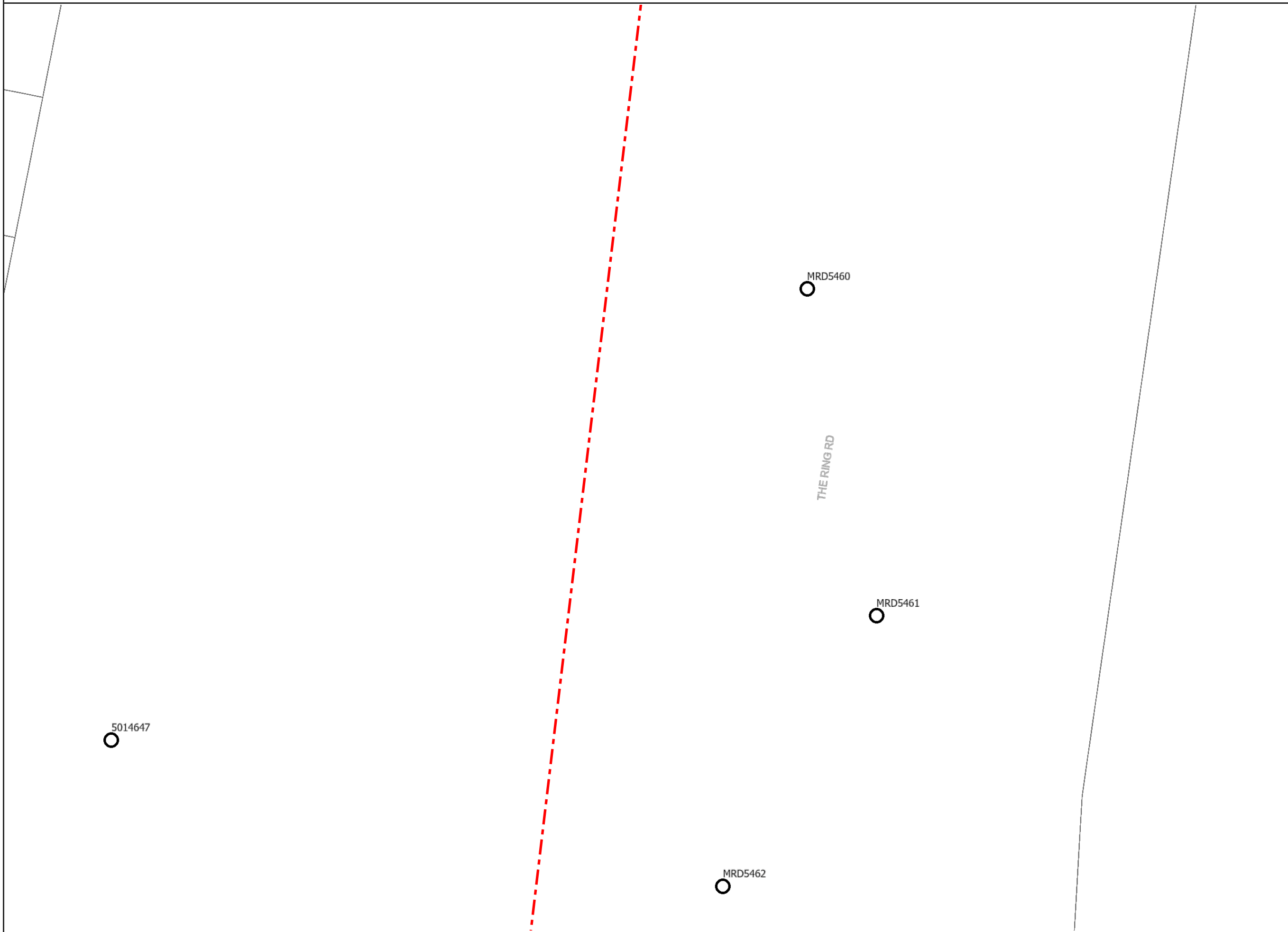
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Date: 17/04/2024  
Scale: 1:500  
Tile No: 6

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

**AS5488 Category "D" Plan**



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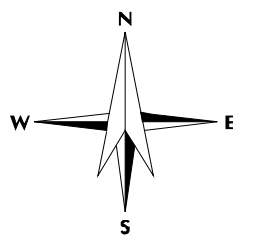


For Emergency Situations  
please call 13 16 70

Sequence: 238059704  
Date: 17/04/2024  
Scale: 1:500  
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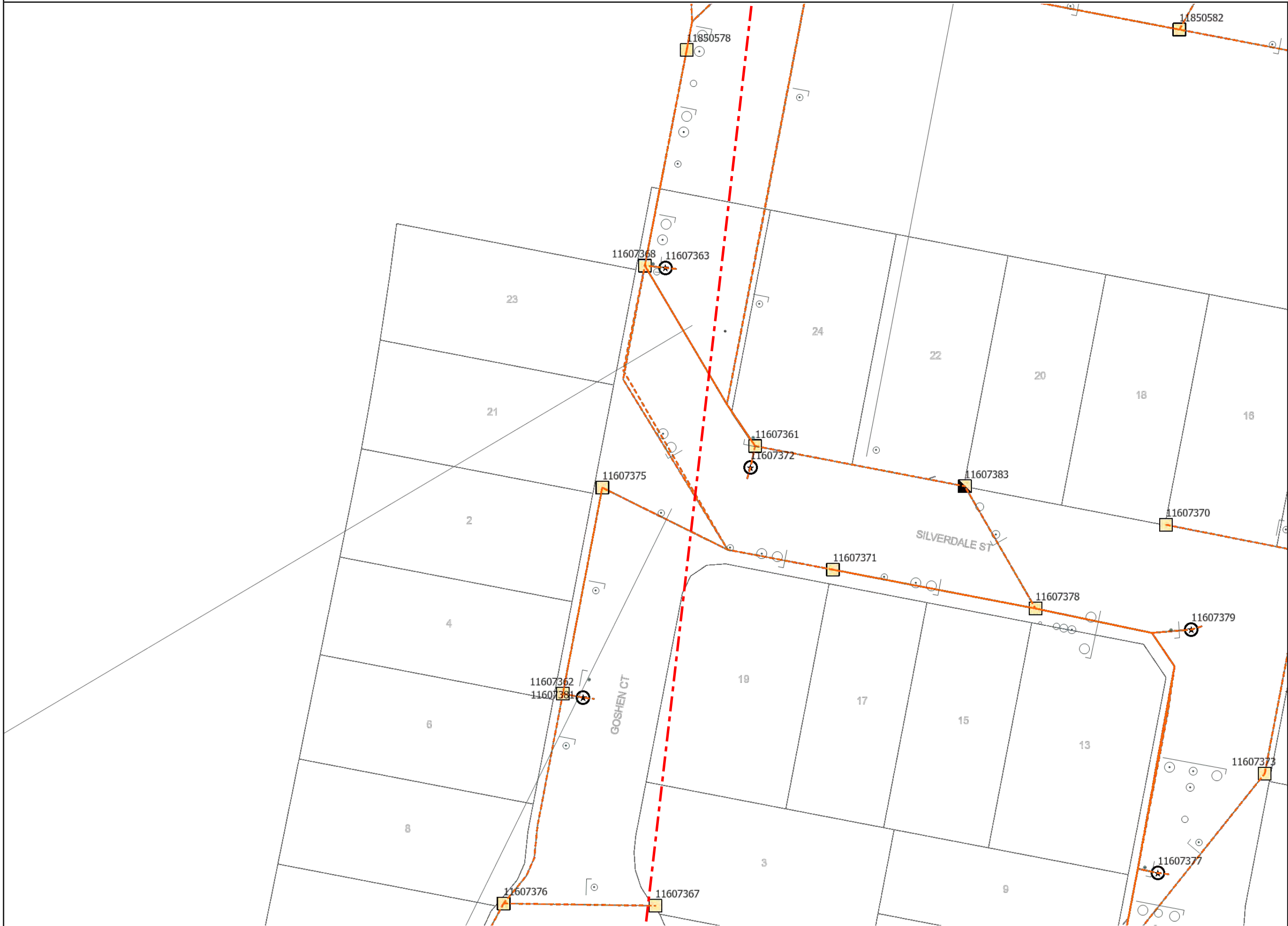
For a full list of Map  
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AS5488 Category "D" Plan



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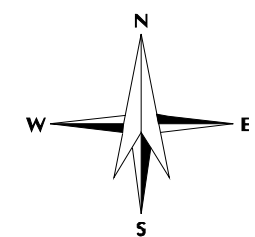
For Emergency Situations  
please call 13 16 70



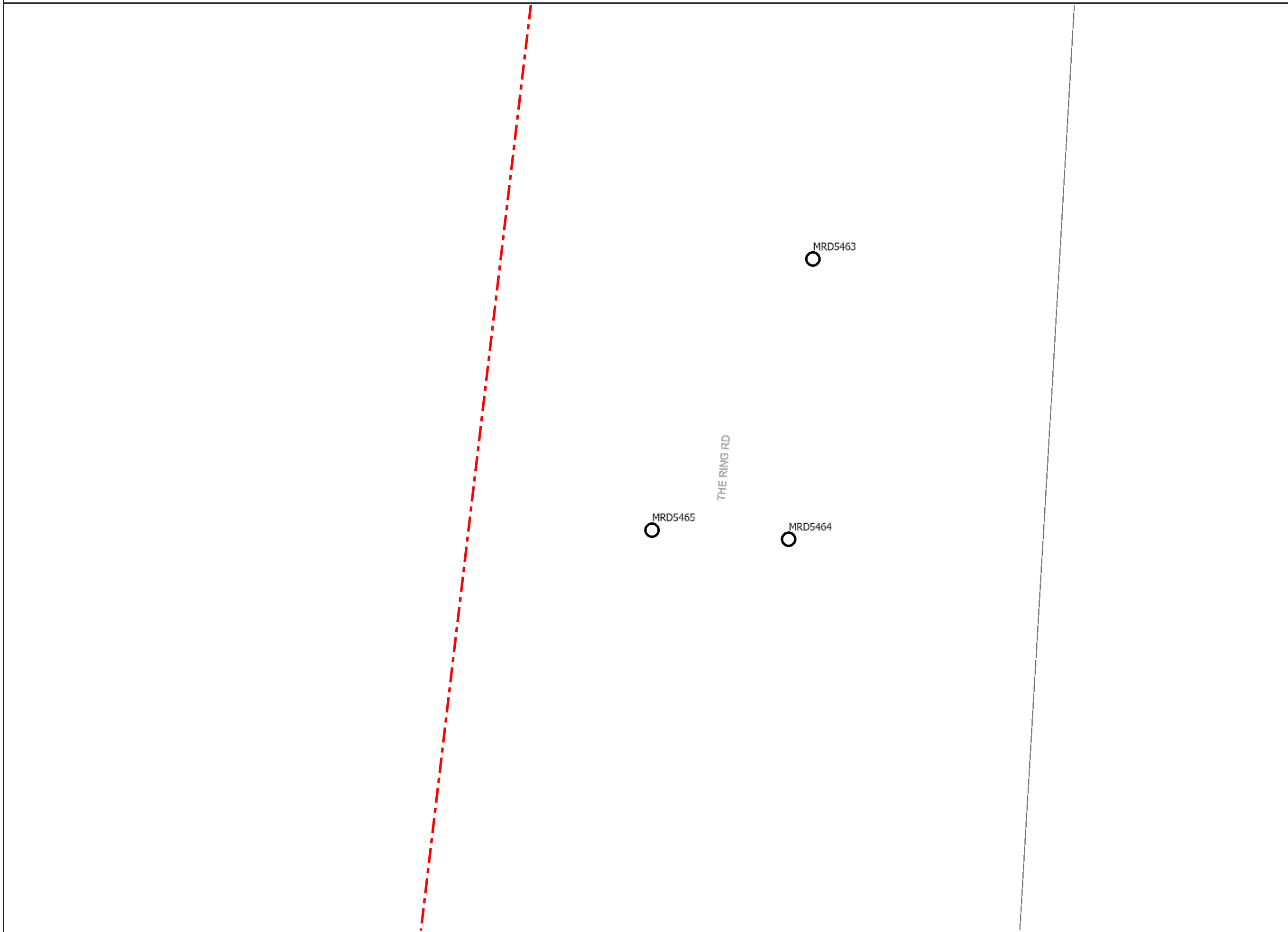
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Date: 17/04/2024  
Scale: 1:500  
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**For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page**

**AS5488 Category "D" Plan**



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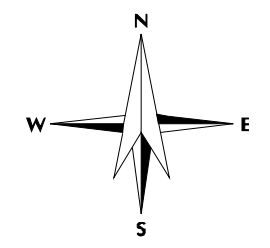
For Emergency Situations  
please call 13 16 70



Sequence: 238059704  
Date: 17/04/2024  
Scale: 1:500  
Tile No: 9

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

**AS5488 Category "D" Plan**



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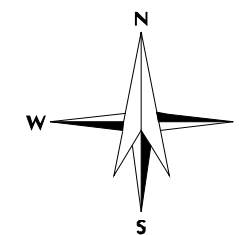
For Emergency Situations please call 13 16 70



Sequence: 238059704  
Date: 17/04/2024  
Scale: 1:500  
Tile No: 10

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

AS5488 Category "D" Plan



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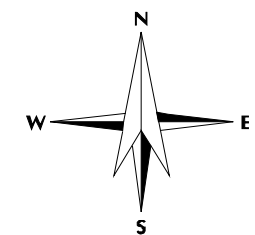
For Emergency Situations  
please call 13 16 70



Sequence: 238059704  
Date: 17/04/2024  
Scale: 1:500  
Tile No: 11

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

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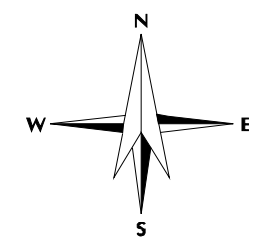
For Emergency Situations please call 13 16 70



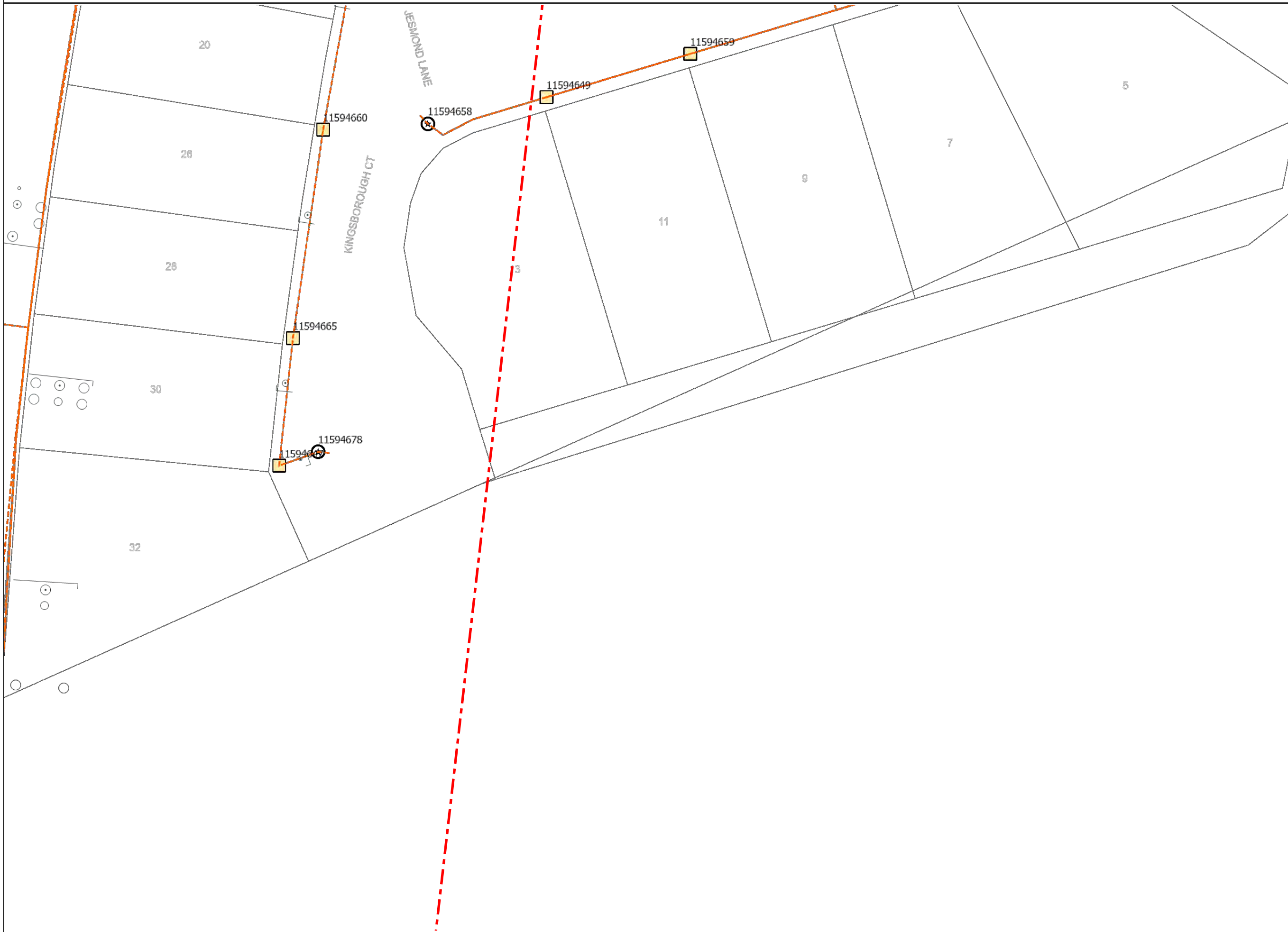
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For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

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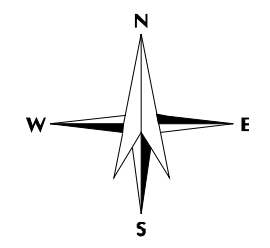
For Emergency Situations  
please call 13 16 70



Sequence: 238059704  
Date: 17/04/2024  
Scale: 1:500  
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For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

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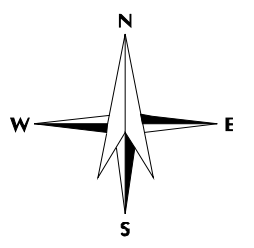
For Emergency Situations please call 13 16 70



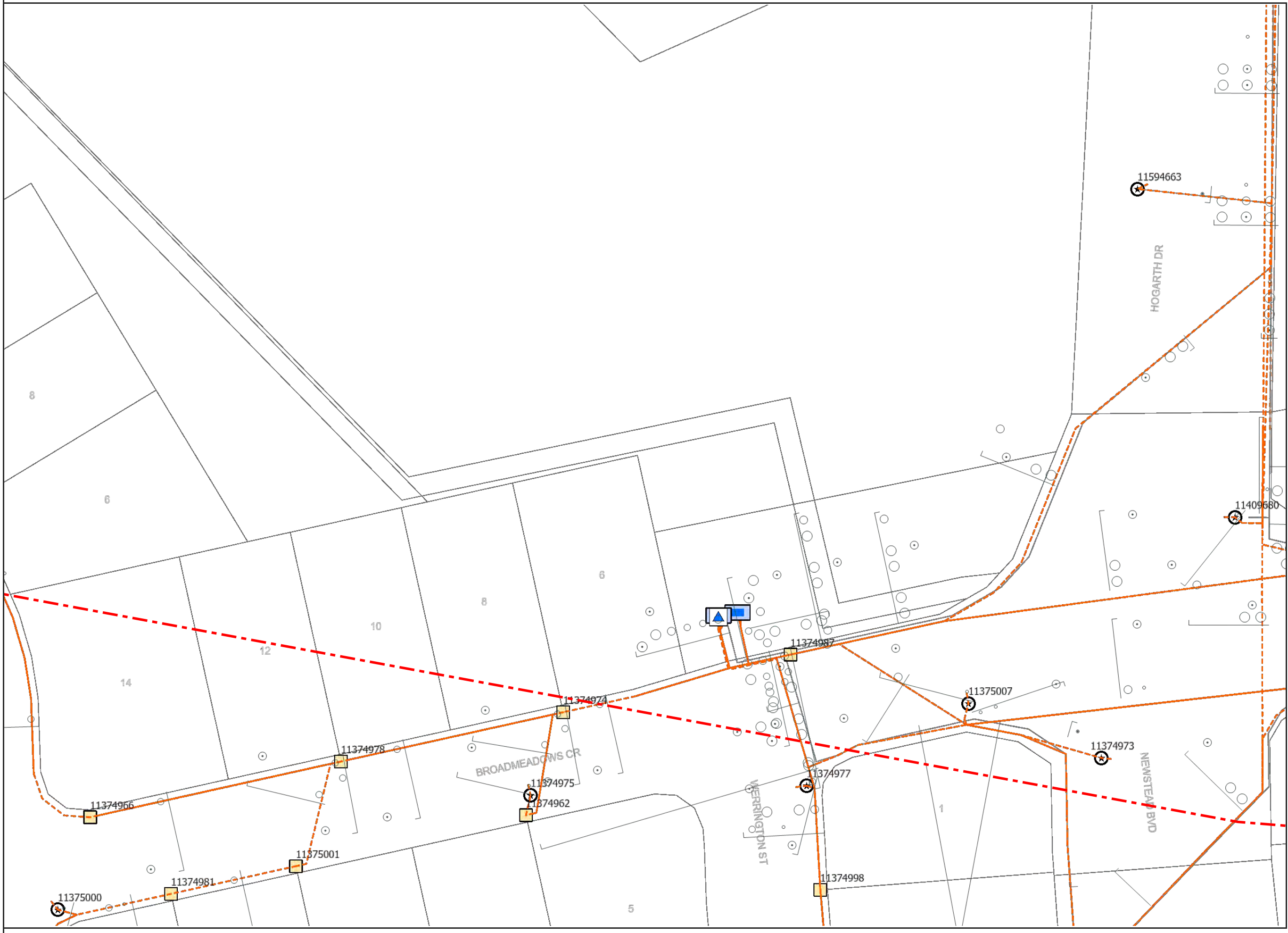
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For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

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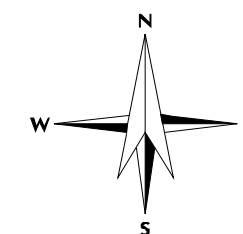
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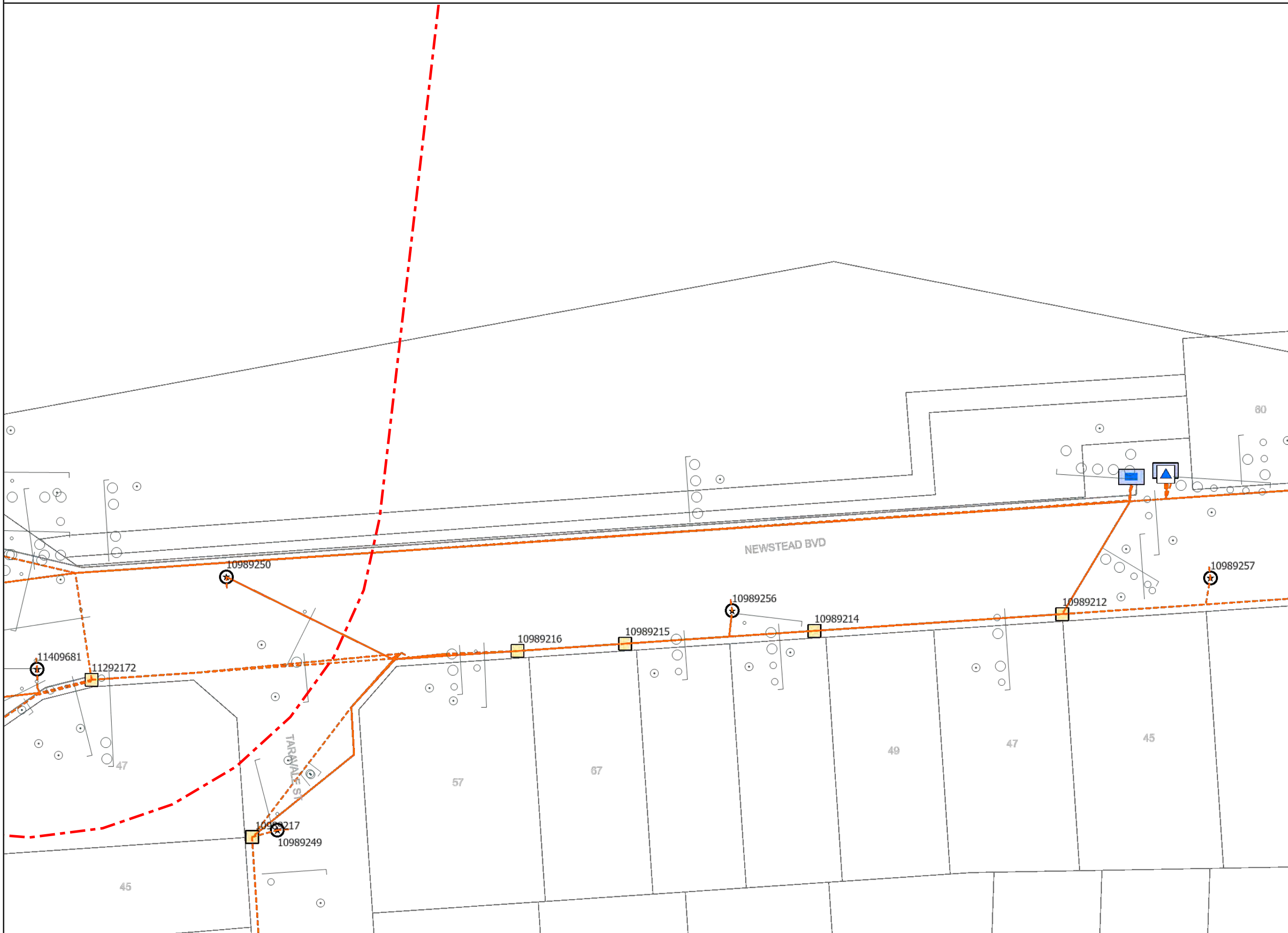
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Date: 17/04/2024  
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For a full list of Map Symbols, please refer to the supplied BYDA Symbology Legend page

AS5488 Category "D" Plan



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# BYDA terms and conditions

## Duty of care for everyone

The following matters must be considered when working near Ergon Energy electrical equipment:

The PCBU must ensure, so far as is reasonably practicable, that no person, plant or thing at the workplace comes within an unsafe distance of an underground electric line (see section 68 of the [Electrical Safety Regulation 2013](#))

1. It is the responsibility of the architect, consulting engineer, developer, and head contractor in the project planning stages to design for minimal impact and protection of Ergon Energy electrical equipment.
2. It is the constructor's responsibility to:
  - a) Anticipate and request plans of Ergon Energy electrical equipment for a location at a reasonable time before construction begins.
  - b) Visually locate Ergon Energy electrical equipment by hand or vacuum excavation where construction activities may damage or interfere with Ergon Energy electrical equipment.
  - c) To notify Ergon Energy if the information provided is found to be not accurate or assets are found on site that are not recorded on the Ergon Energy BYDA plans.
  - d) Read and understand all the information and disclaimers provided.

**Note:** A constructor may include but not limited to a PCBU, Designer, Project Manager, Installer, Contractor or a Civil Contractor

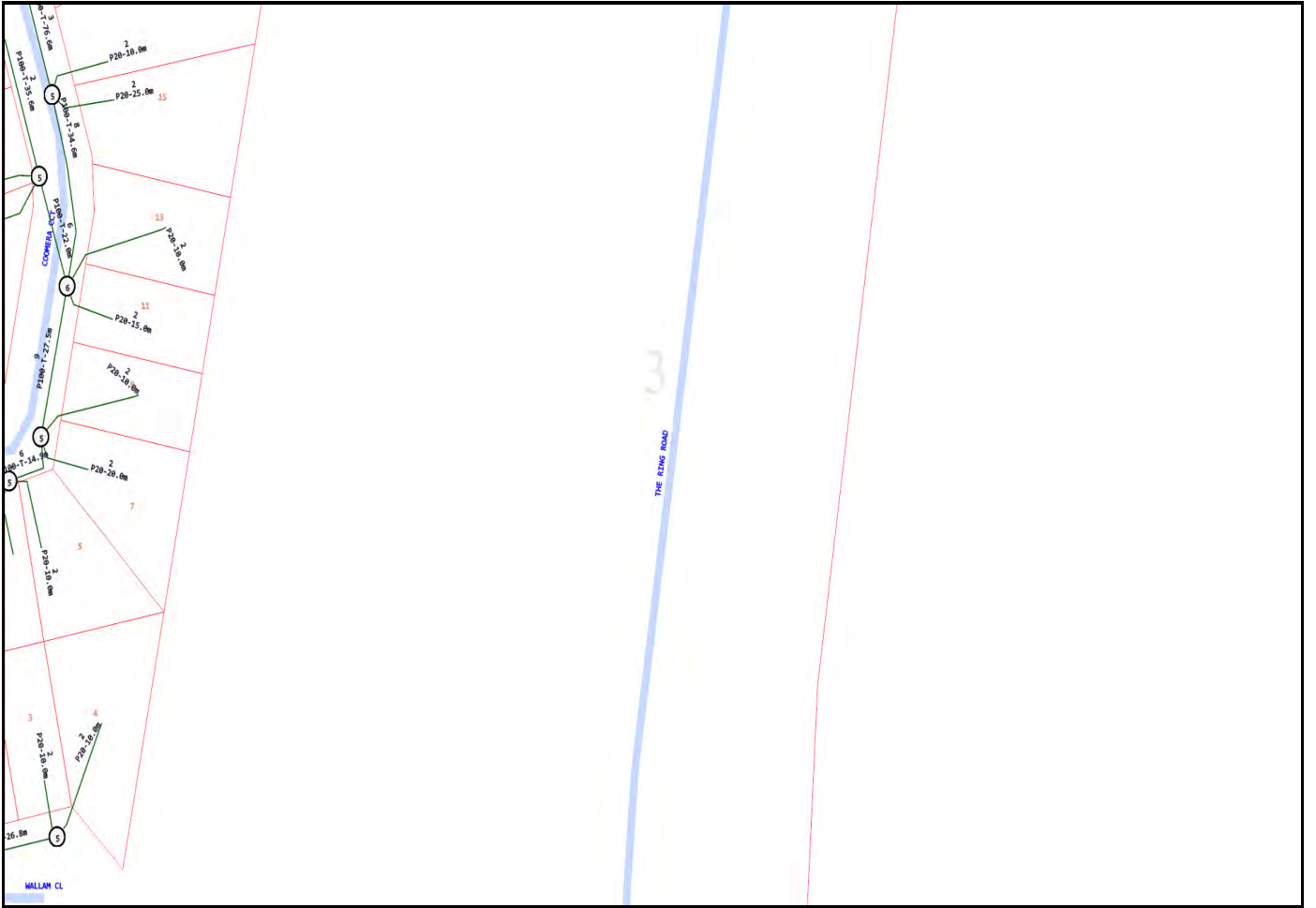
3. Comply with applicable work health and safety and electrical safety codes of practice including but not limited to:
  - a) Working near overhead and underground electric lines – [Electrical safety codes of practice 2020](#)
  - b) Managing electrical risk in the workplace – [Electrical safety code of practice 2013](#)
  - c) Managing the risks of plant in the workplace – [Electrical safety code of practice 2013](#)
  - d) Excavation work – [Electrical safety code of practice 2013](#)

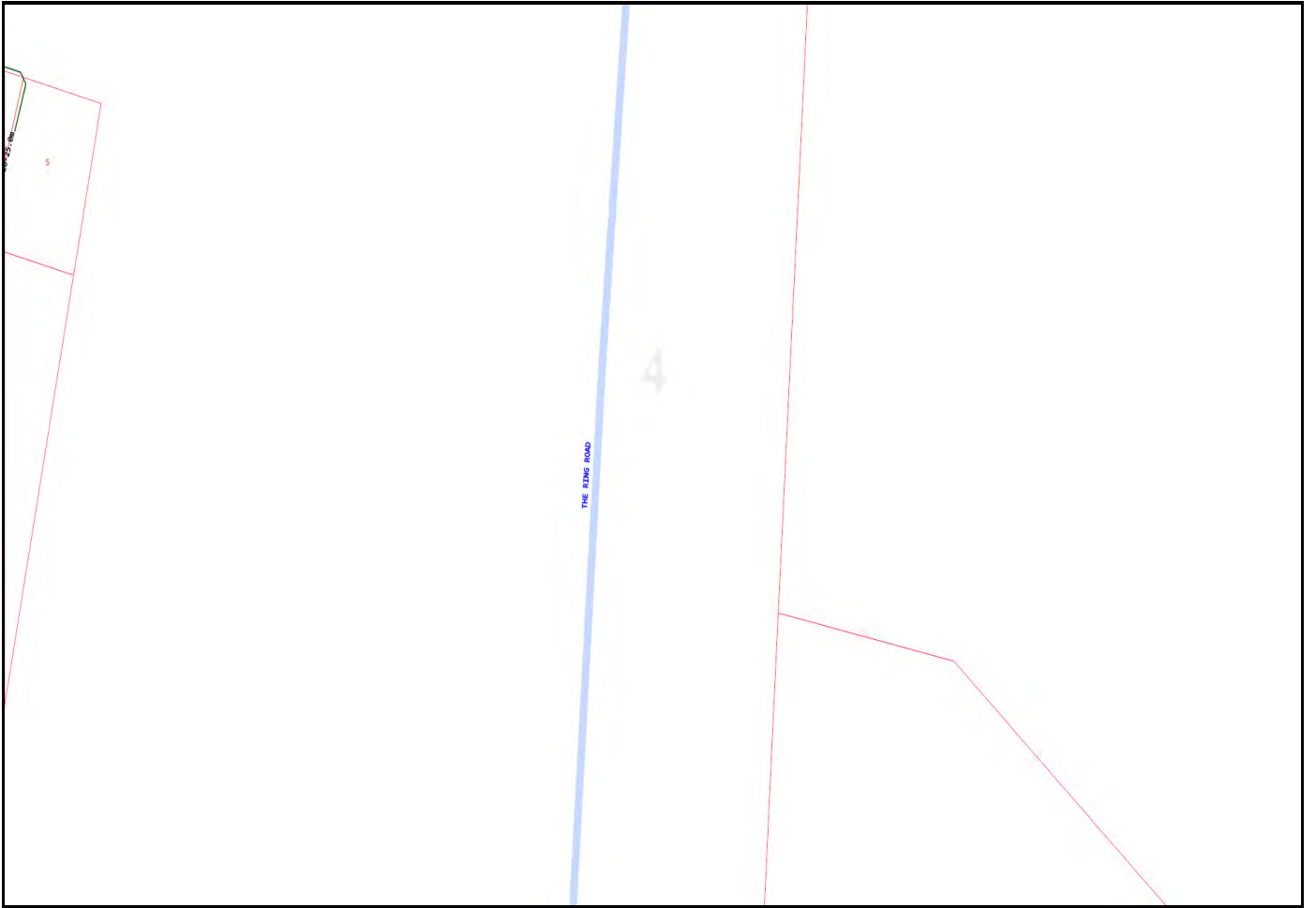
### IMPORTANT NOTES:

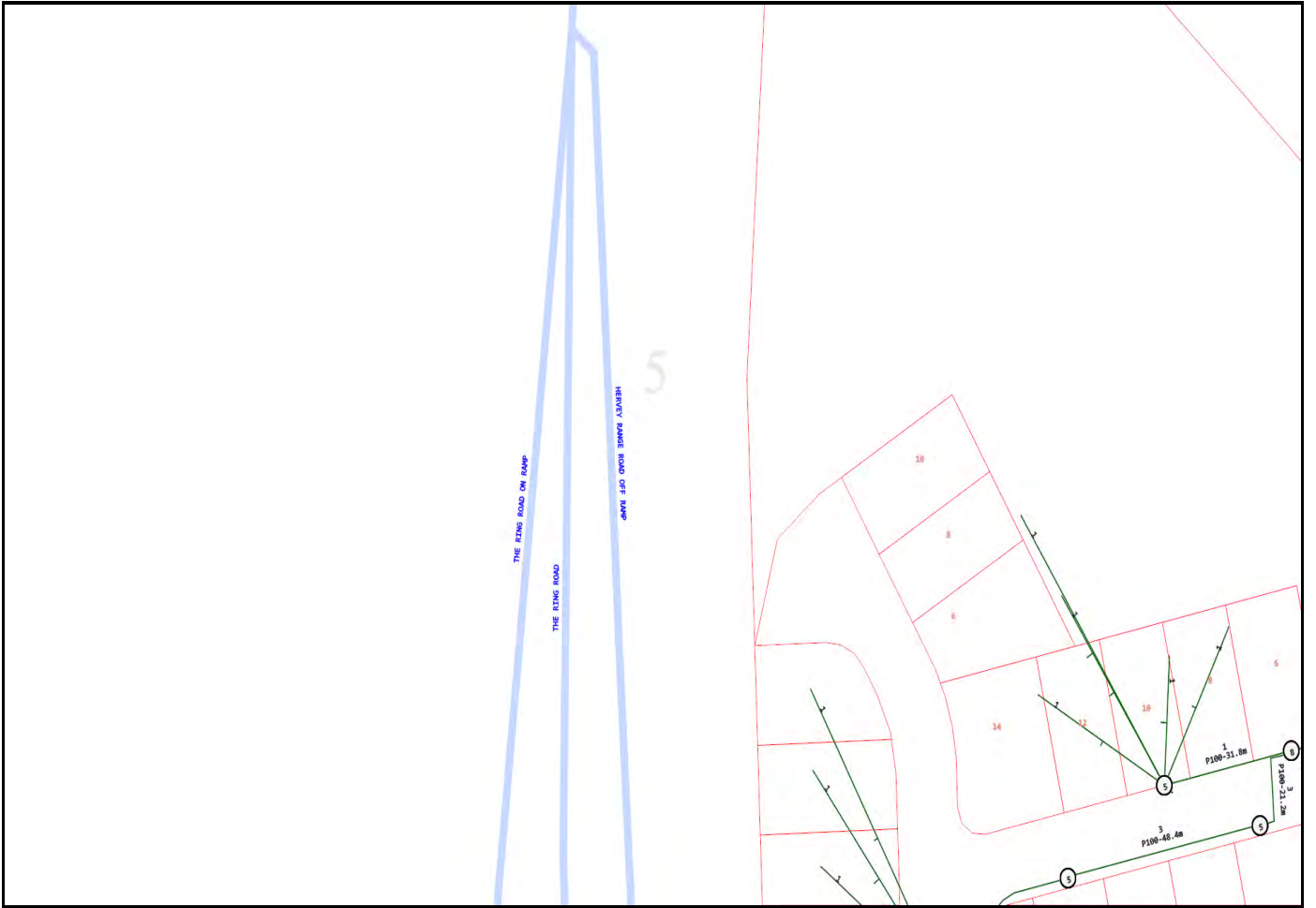
- As the alignment and boundaries of roadways with other properties (and roads within roadways) frequently change, the alignments and boundaries contained within Ergon Energy plans and maps will frequently differ from present alignments and boundaries “on the ground”. Accordingly, in every case where it appears that alignments and boundaries have shifted, or new roadways have been added, the constructor should obtain confirmation of the actual position of Ergon Energy cables and other electrical equipment under the roadways. In no case should the constructor rely on statements of third parties in relation to the position of Ergon Energy cables and pipelines. It is the applicant's responsibility to accurately locate all services as part of the design and/or prior to excavation.
- Ergon Energy does not provide information on private underground installations, including consumers' mains that may run from Ergon Energy mains onto private property. Assets located on private property are the responsibility of the owner for identification and location.
- Ergon Energy plans are circuit diagrams or pipe indication diagrams only and indicate the presence of plant in the general vicinity of the geographical area shown. Exact ground cover and alignments cannot be given with any certainty; as such levels can change over time.
- All underground conduits are presumed to contain asbestos. Refer to “Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018 (2005)] - [https://www.safeworkaustralia.gov.au/system/files/documents/1702/codeofpracticeformanagementcontrolofasbestosintheworkplace\\_nohsc2018-2005](https://www.safeworkaustralia.gov.au/system/files/documents/1702/codeofpracticeformanagementcontrolofasbestosintheworkplace_nohsc2018-2005)
- Plans provided by Ergon Energy do not show the presence of any Overhead Network.
- In addition to underground cables marked on attached plan there maybe underground Earth Conductors in the vicinity of the nominated work area(s) that are not marked on the plans.
- There may also be other buried assets such as tanks for fluid filled cables that do not appear on GIS plots but are shown on detailed as constructed drawings.
- Being aware of your obligations in [s 304] Excavation work— underground essential services information under the [Work Health and Safety Regulation 2011](#), Chapter 6 Construction work, Part 6.3 Duties of person conducting business or undertaking. This includes but is not limited to taking reasonable steps to obtain the current information and providing this information to persons engaged to carry out the excavation work. For further information please refer to: - <http://www.legislation.qld.gov.au/LEGISLTN/SLS/2011/11SL240.pdf>
- Ergon Energy plans are designed to be printed in colour and as an A4 Landscape orientation



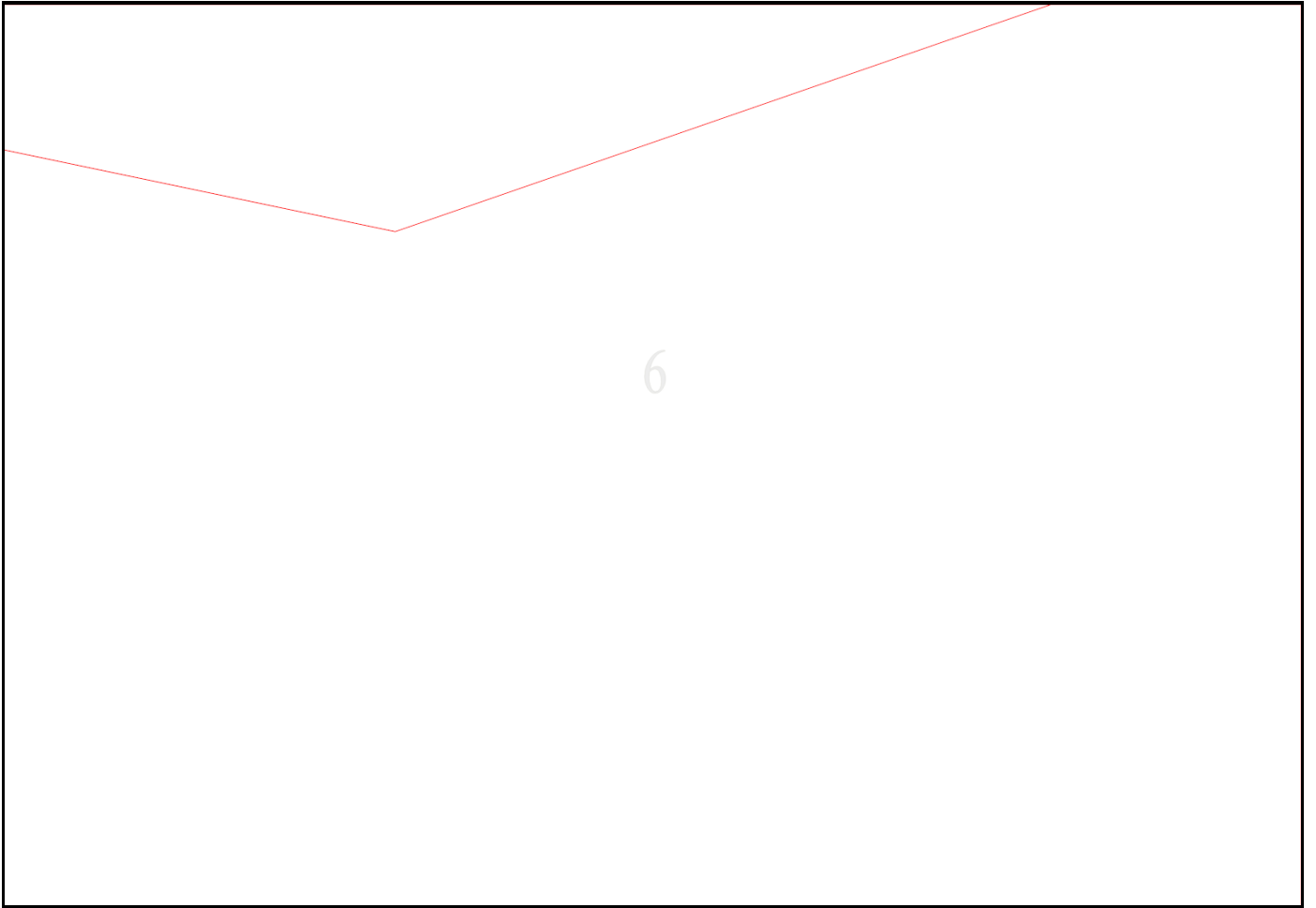


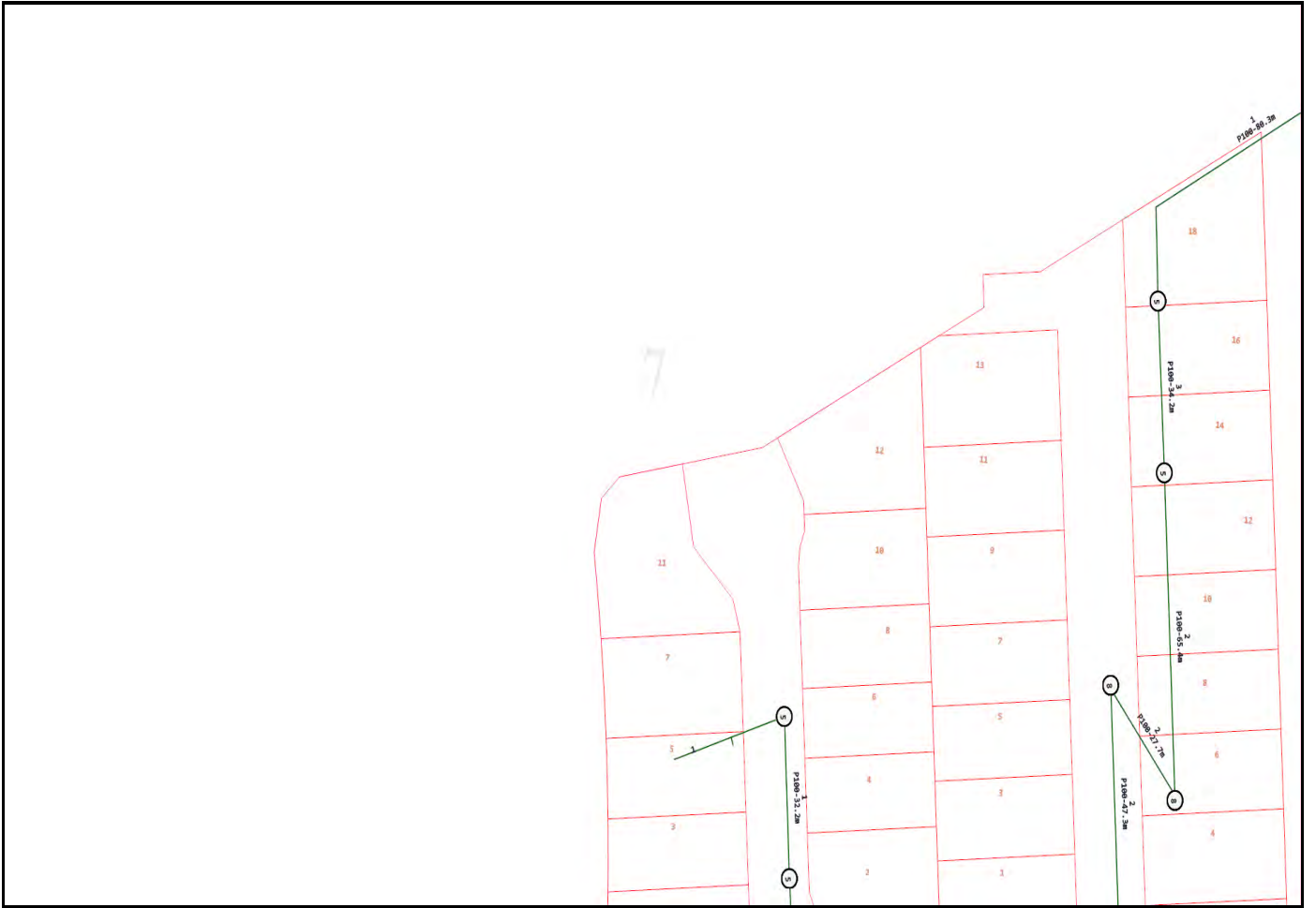




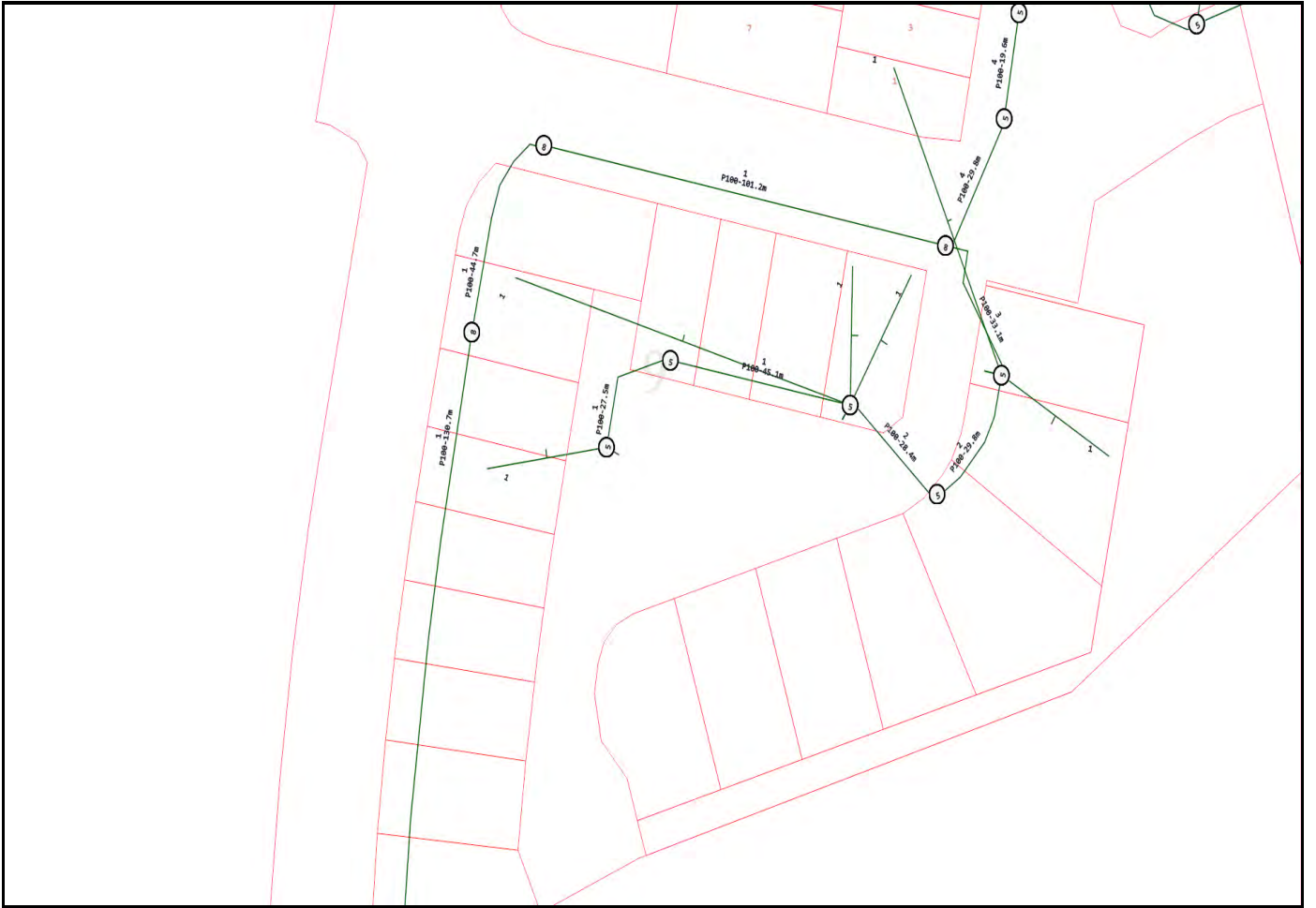


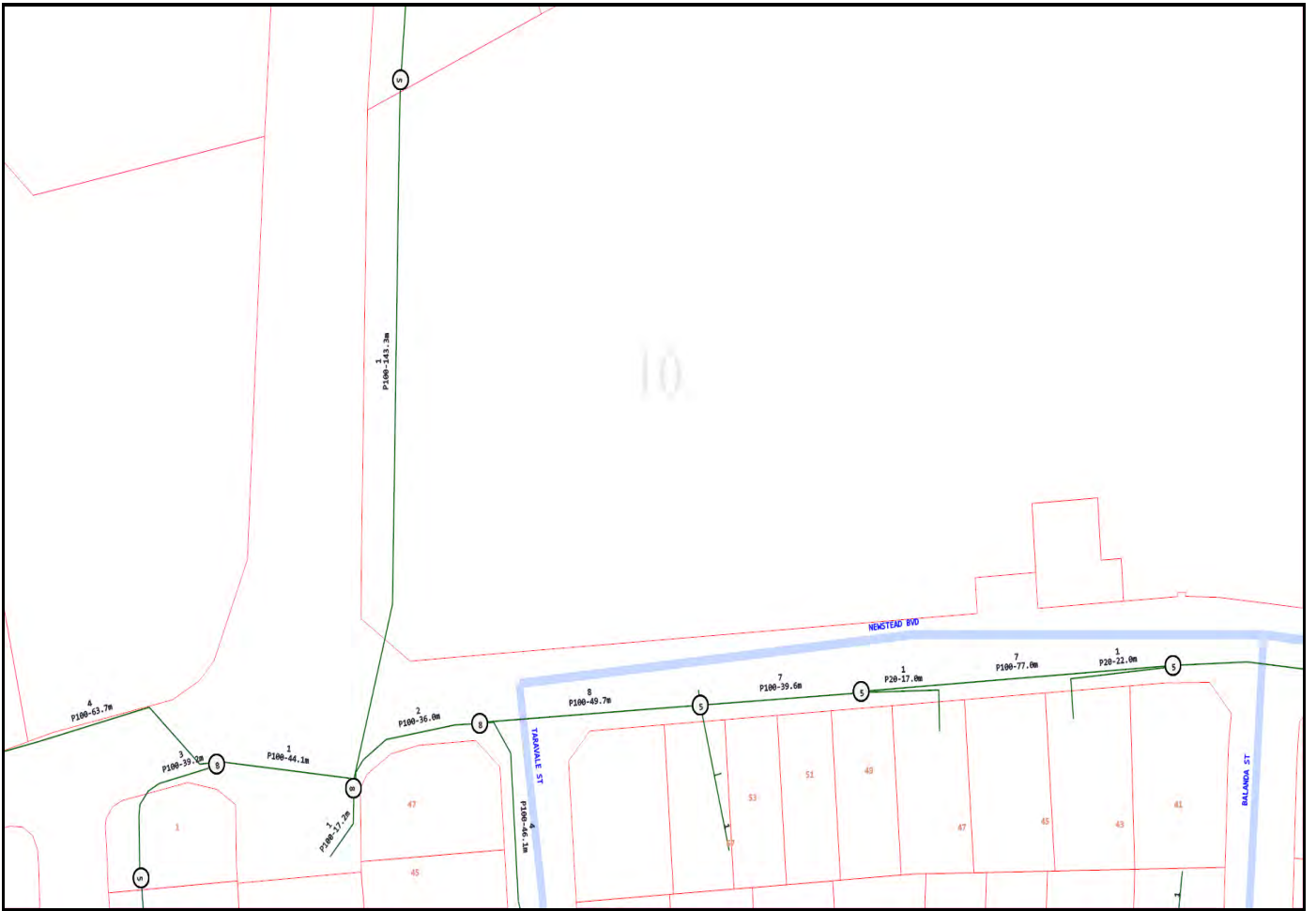












## Emergency Contacts

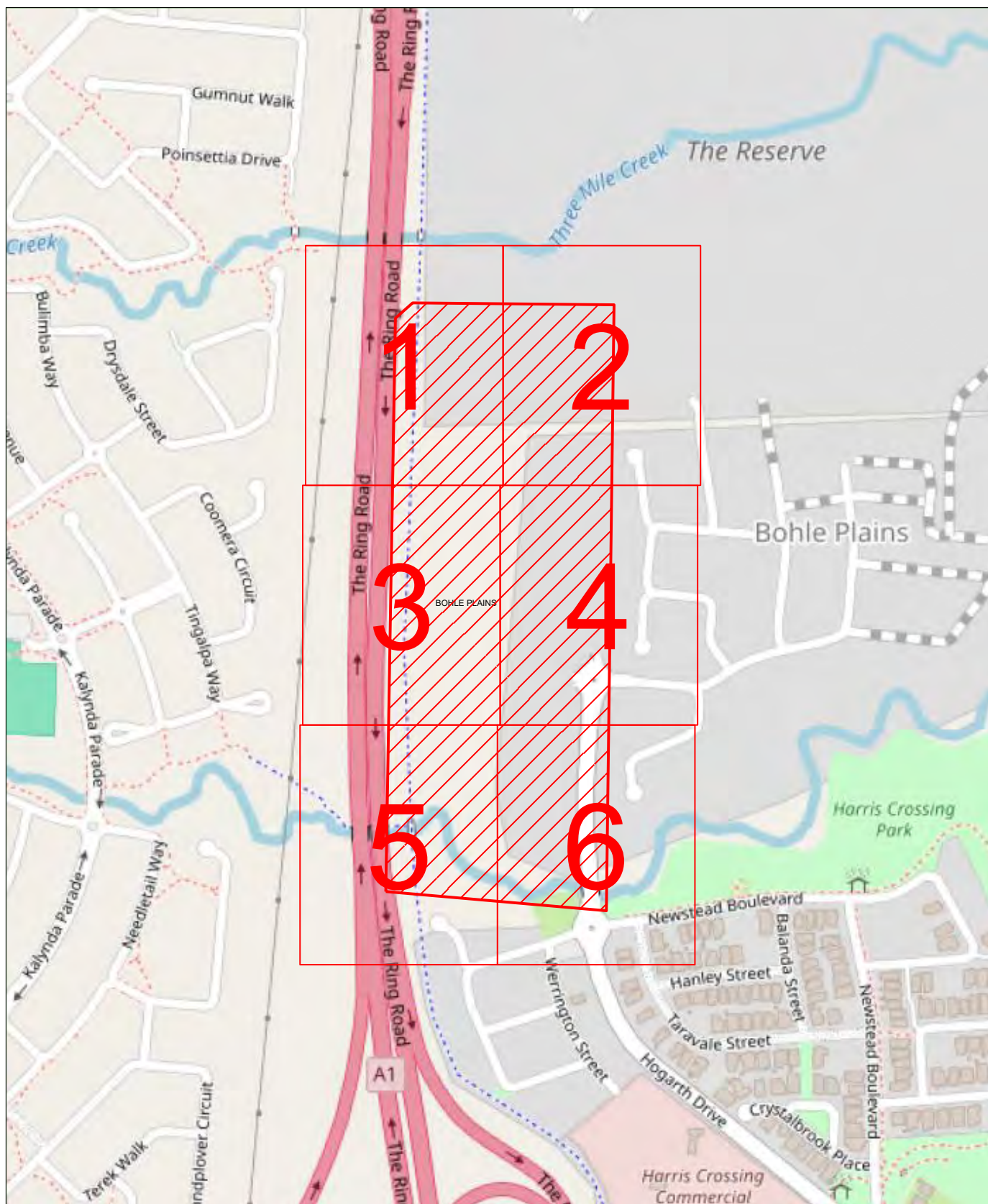
You must immediately report any damage to the **nbn**™ network that you are/become aware of. Notification may be by telephone - 1800 626 329.



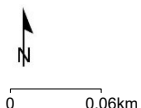
# Overview Map

## Sequence No: 238059703

99 Hogarth Drive Bohle Plains






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Imagery sourced from Open StreetMaps

### LEGEND:

**1** Detail Map

-  Council Boundary
-  Suburb
-  Affected BYDA Work Area

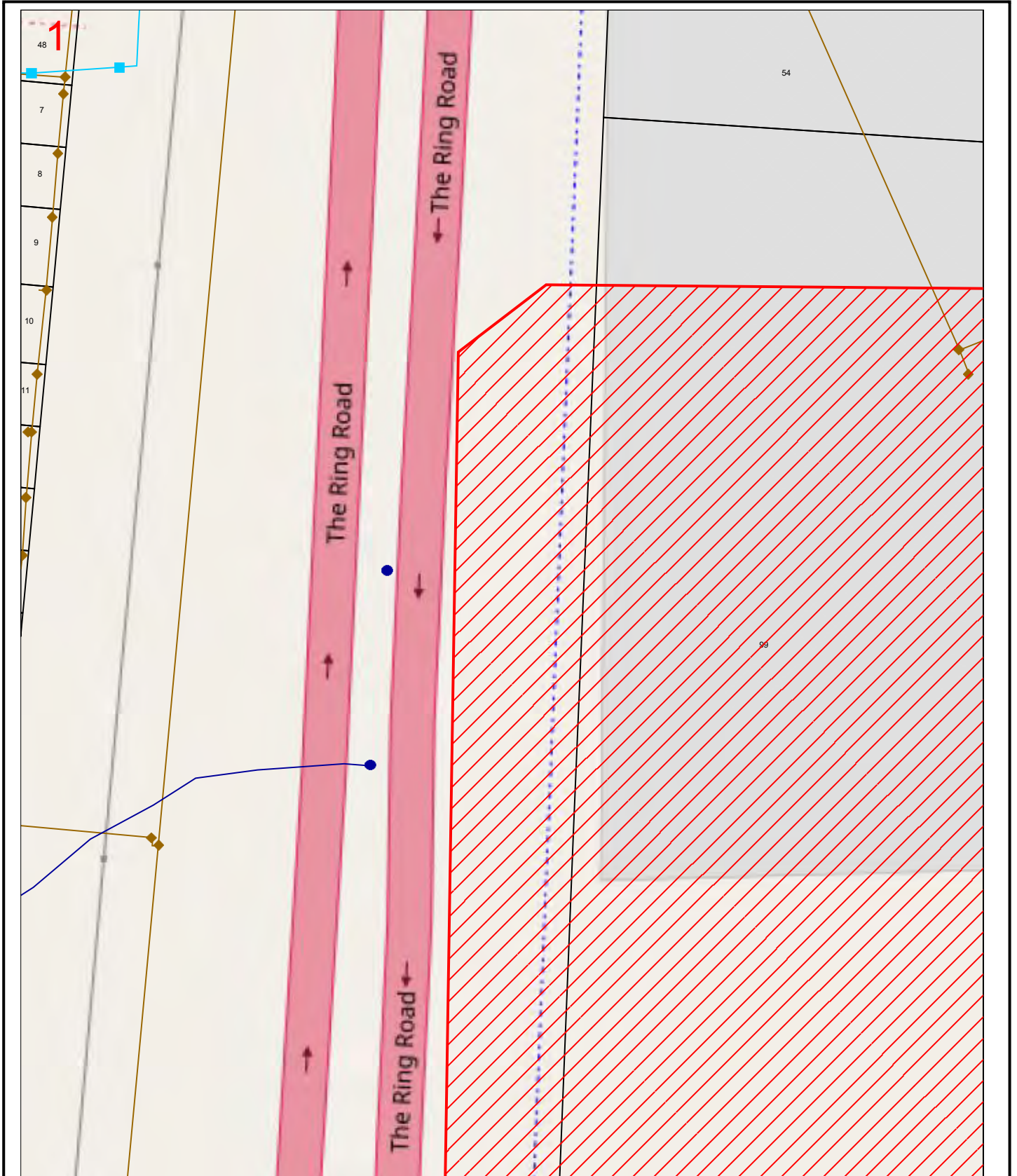




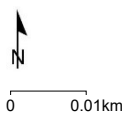
# Map 1

## Sequence No: 238059703

### 99 Hogarth Drive Bohle Plains



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Imagery sourced from Open StreetMaps

#### LEGEND:

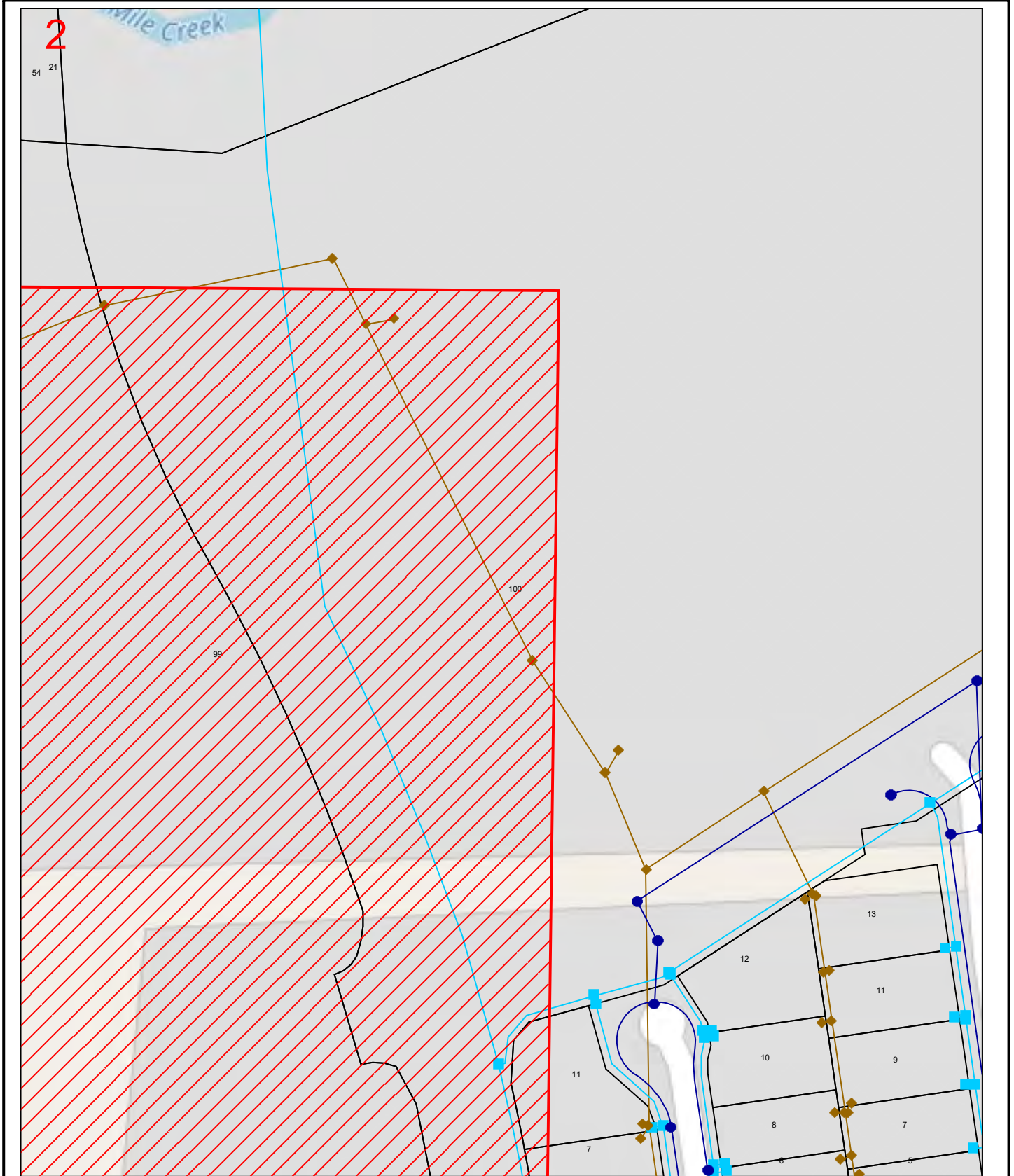
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|--|-------------------------|--|--------------------|
|  | Council Boundary        |  | Stormwater         |
|  | Suburb                  |  | Water              |
|  | Property                |  | Waste Water        |
|  | Affected BYDA Work Area |  | Fibre Optics (TCC) |



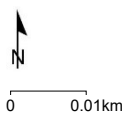
# Map 2

## Sequence No: 238059703

### 99 Hogarth Drive Bohle Plains



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Imagery sourced from Open StreetMaps

#### LEGEND:

- |  |                         |  |                    |
|--|-------------------------|--|--------------------|
|  | Council Boundary        |  | Stormwater         |
|  | Suburb                  |  | Water              |
|  | Property                |  | Waste Water        |
|  | Affected BYDA Work Area |  | Fibre Optics (TCC) |





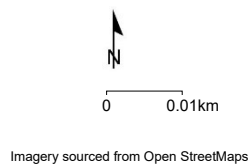
# Map 3

## Sequence No: 238059703

### 99 Hogarth Drive Bohle Plains



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#### LEGEND:

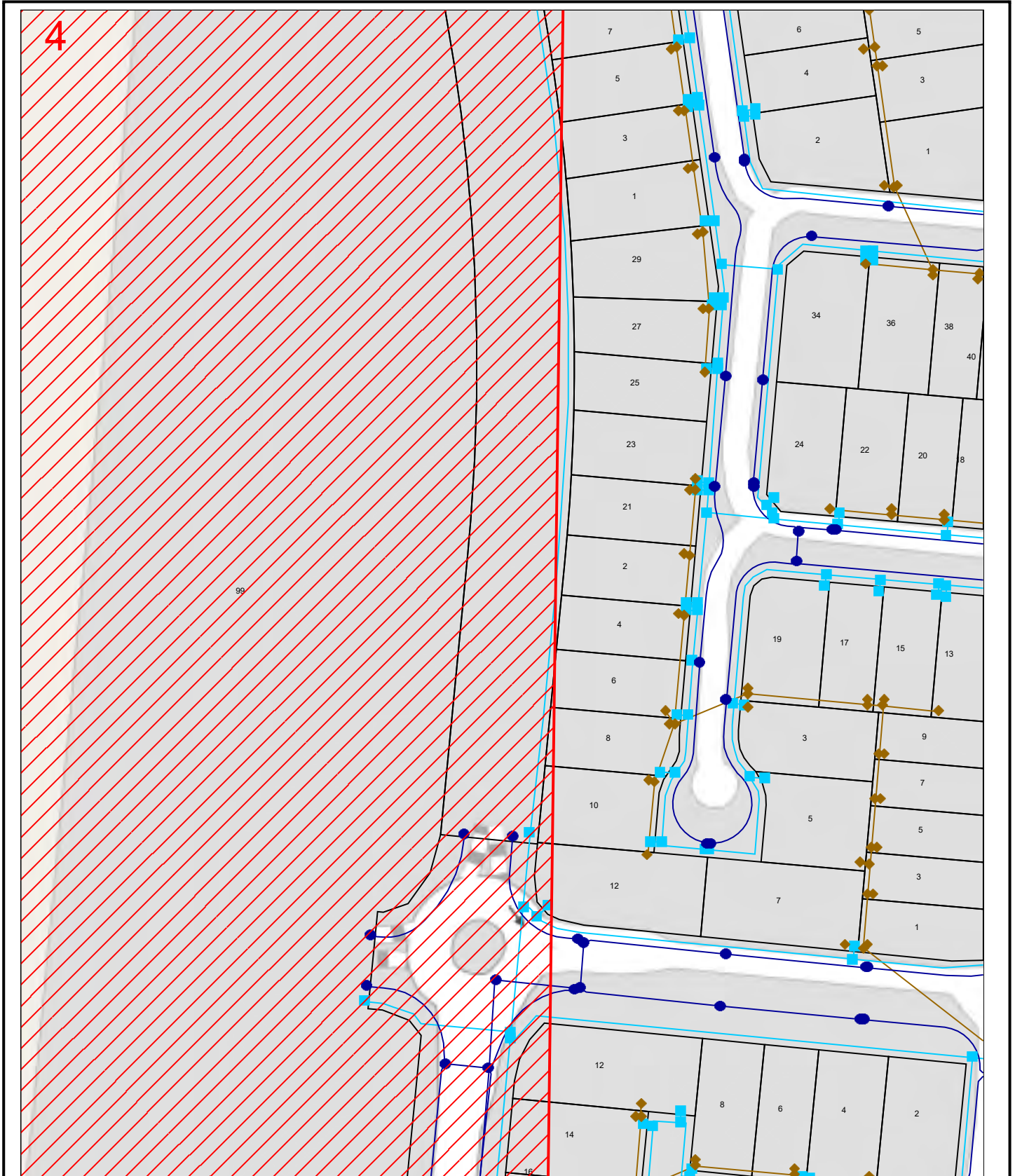
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|--|-------------------------|--|--------------------|
|  | Council Boundary        |  | Stormwater         |
|  | Suburb                  |  | Water              |
|  | Property                |  | Waste Water        |
|  | Affected BYDA Work Area |  | Fibre Optics (TCC) |



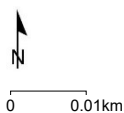
# Map 4

Sequence No: 238059703

99 Hogarth Drive Bohle Plains



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Imagery sourced from Open StreetMaps

### LEGEND:

- |  |                         |  |                    |
|--|-------------------------|--|--------------------|
|  | Council Boundary        |  | Stormwater         |
|  | Suburb                  |  | Water              |
|  | Property                |  | Waste Water        |
|  | Affected BYDA Work Area |  | Fibre Optics (TCC) |

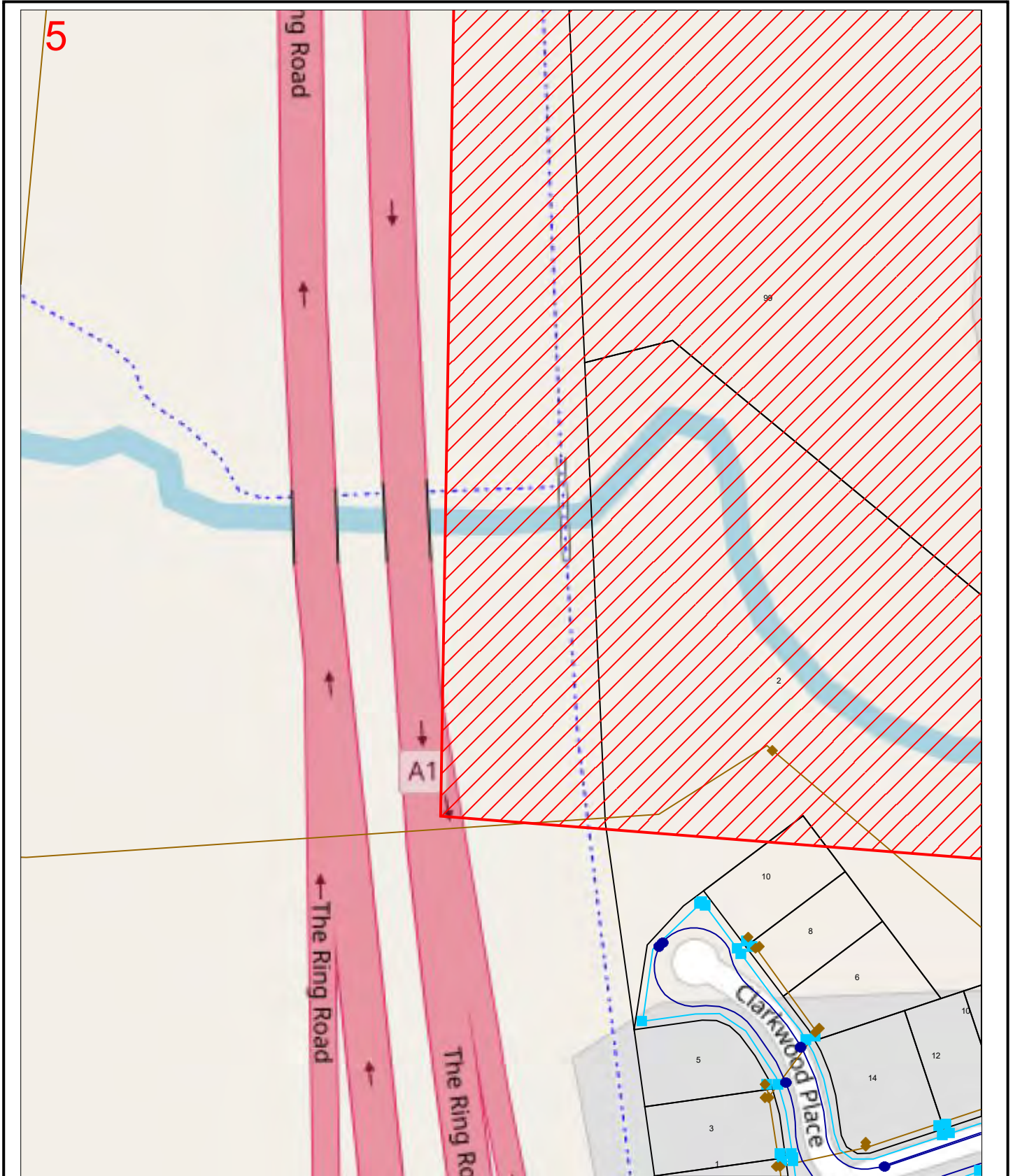




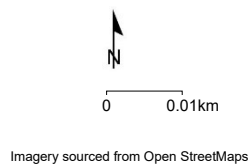
# Map 5

Sequence No: 238059703

99 Hogarth Drive Bohle Plains



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### LEGEND:

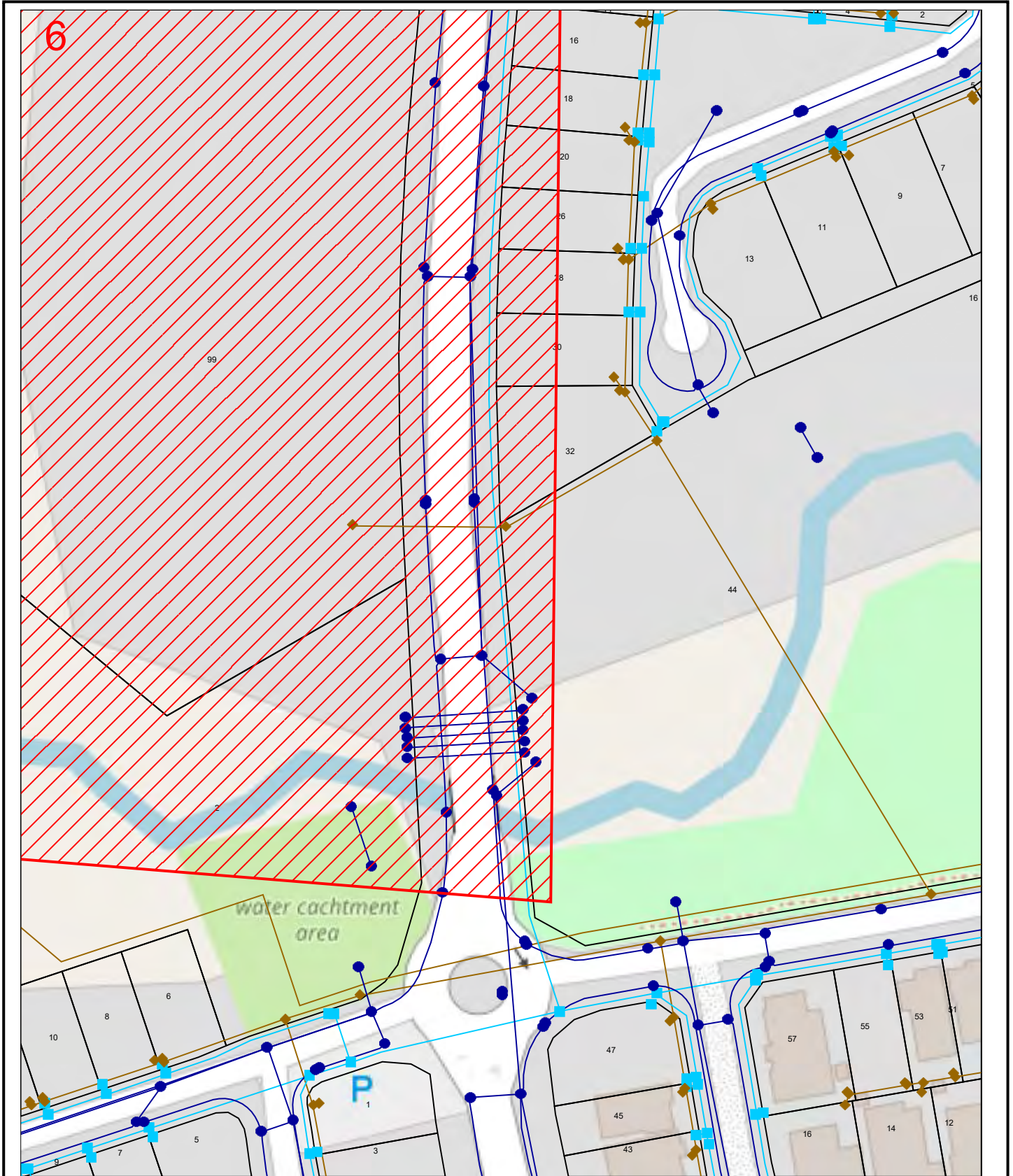
- |  |                         |  |                    |
|--|-------------------------|--|--------------------|
|  | Council Boundary        |  | Stormwater         |
|  | Suburb                  |  | Water              |
|  | Property                |  | Waste Water        |
|  | Affected BYDA Work Area |  | Fibre Optics (TCC) |



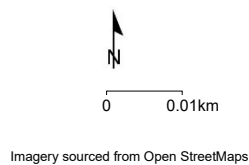
# Map 6

## Sequence No: 238059703

### 99 Hogarth Drive Bohle Plains



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#### LEGEND:

- |  |                         |  |                    |
|--|-------------------------|--|--------------------|
|  | Council Boundary        |  | Stormwater         |
|  | Suburb                  |  | Water              |
|  | Property                |  | Waste Water        |
|  | Affected BYDA Work Area |  | Fibre Optics (TCC) |



**Appendix C – Engineering Plans**

# PROPOSED RETIREMENT LIVING DEVELOPMENT

## 99 HOGARTH DRIVE, BOHLE PLAINS

## RUBY DEVELOPMENTS PTY LTD

Project Number: S24-020

### INDEX OF DRAWINGS

GENERAL DRAWINGS  
S24-020-PG01 COVER SHEET

PRELIMINARY CIVIL DRAWINGS  
S24-020-PC01 CIVIL NOTES & LEGEND  
S24-020-PC02 SITE PLAN  
S24-020-PC03 CATCHMENT PLAN  
S24-020-PC04 PRELIMINARY SERVICES PLAN 1 of 2  
S24-020-PC05 PRELIMINARY SERVICES PLAN 2 of 2  
S24-020-PC06 STORMWATER DETAILS

PRELIMINARY EARTHWORKS DRAWINGS  
S24-020-PE01 PRELIMINARY EARTHWORKS PLAN  
S24-020-PE02 PRELIMINARY EARTHWORKS SECTIONS



LOCALITY PLAN  
NOT TO SCALE

						DESIGNED S.C.M		 <p><b>WESTERA PARTNERS</b> STRUCTURAL+CIVIL+ENVIRONMENTAL ENGINEERS www.westerapartners.com.au   ABN 52 097 417 975</p>		BRISBANE T 07 3852 4333 E brisbane@westerapartners.com.au GOLD COAST T 07 5571 1599 E goldcoast@westerapartners.com.au SUNSHINE COAST T 07 5391 3777 E sunshinecoast@westerapartners.com.au NORTHERN NSW T 02 8674 8047 E nsw@westerapartners.com.au CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au		SURVEYOR <b>BRAZIER MOTTI</b> PHONE 07 4772 1144 DATUM A.H.D. PSM 95569 R.L. 17.143		PROJECT <b>PROPOSED RETIREMENT LIVING DEVELOPMENT</b> LOCATION LOT 1002 ON SP340654 99 HOGARTH DRIVE, BOHLE PLAINS TITLE COVER SHEET CLIENT RUBY DEVELOPMENTS PTY LTD		DRAWING STATUS PRELIMINARY N.F.C. DRAWING NUMBER <b>S24-020-PG01</b> SHEET NUMBER 01 OF 01 REVISION	
						DRAWN J.J.D											
						CHECKED J.M.H											
						APPROVED J.M.H											
						DATE JULY 2024		For and on behalf of WESTERA PARTNERS PTY. LTD.									
No.	DATE	REVISIONS				DES	DRN	CHK	APD	DOCUMENT CONTROL	APPROVED						

## GENERAL NOTES

- G1 WESTERA PARTNERS HAS LIMITED CONTROL OR INPUT TO LOCAL GOVERNMENT OR OTHER LEGISLATED APPROVALS UNLESS SPECIFICALLY ENGAGED BY IT'S CLIENT. ANY CHANGES TO APPROVAL REQUIREMENTS (INCLUDING ORDERS FOR SUSPENSION OF WORKS ETC) SHOULD BE COMMUNICATED TO WESTERA PARTNERS AND ALL OTHER RELEVANT DESIGNERS TO ALLOW ASSESSMENT OF POTENTIAL RISKS AND ENSURE DESIGN AND SAFETY COMPLIANCE.
- G2 ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LOCAL AUTHORITIES STANDARD DRAWINGS & SPECIFICATIONS AND COMPLETED TO THE SATISFACTION OF THE SUPERINTENDENT AND LOCAL AUTHORITY.
- G3 UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
- G4 PRIOR TO THE COMMENCEMENT OF CONSTRUCTION THE CONTRACTOR MUST LOCATE ALL EXISTING SERVICES AND PROMPTLY PROVIDE THE LOCATION DATA TO THE DESIGN ENGINEER TO ASSESS IMPACTS ON THE DESIGN.
- G5 ALL CONNECTIONS TO EXISTING SEWERS AND WATER MAINS ARE TO BE CONSTRUCTED BY THE LOCAL AUTHORITY OR AN APPROVED CONTRACTOR. THE CONTRACTOR IS TO ALLOW IN HIS CONTRACT SUM FOR THE COST OF ANY PROPOSED CONNECTIONS.
- G6 ALL SEWERS ARE TO BE 150MM DIA. U.P.V.C. CLASS SN8 RUBBER RING JOINTED AND PROPERTY CONNECTIONS ARE TO BE 100MM DIA. U.P.V.C CLASS SN6 UNLESS NOTED OTHERWISE
- G7 THE PAVEMENT DEPTHS SHOWN ARE PRELIMINARY ONLY AND ARE TO BE VERIFIED FOLLOWING SUB-SOIL TESTS OF THE SUB-GRADE MATERIAL.
- G8 ALL ROOFWATER CONNECTIONS FROM KERB ADAPTERS ARE TO BE 100MM DIA CLASS SN10 AT A MIN GRADE OF 1.0% UNLESS SHOWN OTHERWISE. ROOFWATER CONNECTIONS FROM FIELD INLETS OR GULLY PITS ARE TO BE 150MM DIA CLASS SN8 AT A MIN GRADE OF 1.0% UNLESS NOTED OTHERWISE.
- G9 ALL U.P.V.C. STORMWATER DRAINAGE PIPES ARE TO BE CLASS SN8 (U.N.O.)  
ALL R.C. PIPES ARE TO BE CLASS 3 (U.N.O.)  
< 900 $\phi$  = USE SPIGOT AND SOCKET PIPES WITH RUBBER RING JOINTS  
900 $\phi$  < PIPES < 1050 $\phi$  = USE FLUSH JOINTED PIPES WITH EXTERNAL ELASTOMERIC BAND  
1050 $\phi$  < PIPES = USE FLUSH JOINTED PIPES WITH EXTERNAL ELASTOMERIC BAND AND INTERNAL CEMENT MORTAR JOINT  
ALL F.R.C. PIPES ARE TO BE FRCPipe+ CLASS 4 (U.N.O.) AND SHALL BE DUAL RUBBER RING JOINT WITH COLLAR. PIPES SHALL BE FROM 225 $\phi$  TO 600 $\phi$  ONLY.  
POLYPROPYLENE/POLYETHYLENE STORMWATER PIPE MINIMUM CLASS SN8 (U.N.O.) SUBJECT TO ACCEPTANCE BY CERTIFYING ENGINEER AND LOCAL AUTHORITY. CONSTRUCTION AND EMBEDMENT TO BE IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
- G10 WATER PIPES SHALL BE:  
- P.V.C.-M WATER PIPES ARE TO BE SERIES 2 PN16 SN10 R.R.J.  
- D.I.C.L. WATER PIPES ARE TO BE PN35 WITH ALL FITTINGS TO BE FUSION BONDED POLYMERIC COATED.  
- PE WATER PIPES ARE TO BE PN16 SDR11 PE100. DN25 AND DN32 WATER SERVICES SHALL BE PE80B.
- G11 ALL "AS CONSTRUCTED" INFORMATION IS TO BE RECORDED AS REQUIRED BY THE LOCAL AUTHORITY AND SUBMITTED TO THE SUPERINTENDENT IMMEDIATELY AFTER COMPLETION OF THE WORKS.
- G12 ALL ALLOTMENTS ARE TO BE GRADED AT A MINIMUM GRADE OF 1 IN 200.

## CONCRETE NOTES

- C1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600 CONCRETE STRUCTURES CODE AND THE REFERENCED STANDARDS THEREIN.
- C2 THE CONCRETE STRENGTH GRADE AND THE COVER TO REINFORCEMENT FOR THE VARIOUS CONCRETE ELEMENTS SHALL BE AS LISTED BELOW:  
- CLIMATE ZONE: **TROPICAL** **TEMPERATE** **ARID**  
- LOCATION: **COASTAL** **NEAR COASTAL** **INLAND**

ELEMENT	EXPOSURE CLASSIFICATION	STRENGTH GRADE	MINIMUM COVER
MANHOLES	B1	N32	40
	C2	S50	65
FIELD INLET PITS	B1	N32	40
	C2	S50	65
HEADWALLS	B1	N32	40
	C2	S50	65
INTERNAL ROADS	B1	N32	40
KERB/CHANNEL	B1	N32	-
FOOTPATHS	B1	N32	40
RETAINING WALL PANELS	B1	N32	30*
	C2	S50	60*
BORED PIERS	B1	N32	40
	C2	S50	65

\*RIGID FORMWORK & INTENSE COMPACTION

- C3 CONCRETE TO HAVE A MAXIMUM AGGREGATE SIZE OF 20mm WITH 80mm MAXIMUM SLUMP. A WATER/CEMENT RATIO OF NOT GREATER THAN 0.65 AND A MAXIMUM FINAL BASIC DRYING SHRINKAGE STRAIN OF 800 x 10<sup>-6</sup> UNLESS APPROVED OTHERWISE.
- C4 NO ADDITIVES SHALL BE ADDED OF APPLIED TO THE CONCRETE MIX WITHOUT THE APPROVAL OF THE ENGINEER.

- C5 THE MAXIMUM PERMISSIBLE TRANSPORT TIME FOR CONCRETE BETWEEN BATCHING AND PLACEMENT ON SITE SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE.

AMBIENT AIR TEMPERATURE	MAX. BATCHING TO PLACEMENT TIME
10° - 24°C	120 MINUTES
25° - 27°C	90 MINUTES
28° - 30°C	60 MINUTES
31° - 33°C	45 MINUTES
34° - 36°C	30 MINUTES
37°C+	NO PLACEMENT OF CONCRETE UNLESS CHILLED WATER OR ICE IN MIX

- C6 ALL CONCRETE SHALL BE MECHANICALLY VIBRATED. VIBRATORS SHALL NOT BE USED TO SPREAD CONCRETE.
- C7 ALL CONCRETE SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH AS1379 ADOPTING THE PROJECT ASSESSMENT METHOD FOR COMPRESSIVE STRENGTH AND SLUMP COMPLIANCE. THE RESULTS OF ALL TESTS SHALL BE PROMPTLY SUBMITTED TO THE ENGINEER FOR REVIEW.
- C8 WHEN THE AIR TEMPERATURE EXCEEDS 30°C, ALIPHATIC ALCOHOL SHALL BE APPLIED TO THE CONCRETE SURFACE OF SLABS IMMEDIATELY AFTER THE INITIAL SCREED AND AGAIN AFTER BULL FLOATING.
- C9 CURING OF ALL CONCRETE SURFACES SHALL COMMENCE IMMEDIATELY AFTER COMPLETING CONCRETE FINISHING AND SHALL CONTINUE FOR 7 DAYS. CONTRACTOR TO CONFIRM METHOD OF CURING WITH ENGINEER PRIOR TO USE.
- C10 SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
- C11 BEAM DEPTHS ARE WRITTEN FIRST AND INCLUDE SLAB THICKNESS, IF ANY.
- C12 NO HOLES, CHASES OR EMBEDDED ITEMS OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE ENGINEER. CONDUITS, PIPES ETC. SHALL NOT BE PLACED IN THE COVER THICKNESS OF THE CONCRETE.
- C13 WHERE SERVICE PIPES PENETRATE CONCRETE ELEMENTS, PROVISION SHOULD BE MADE TO ALLOW FOR MOVEMENT OF THE ELEMENT.
- C14 FORMWORK SHALL BE DESIGNED, CONSTRUCTED AND STRIPPED IN ACCORDANCE WITH AS3610 FORMWORK CODE, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- C15 REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY SHOWN IN TRUE PROJECTION OR SCALE.
- C16 ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED IN ITS CORRECT POSITION ON PLASTIC BAR CHAIRS, GENERALLY AT NOT GREATER THAN 800mm CENTRES IN BOTH DIRECTIONS.
- C17 WELDING AND HEATING OF REINFORCEMENT SHALL NOT BE PERMITTED WITHOUT APPROVAL OF THE ENGINEER.
- C18 ALL STEEL REINFORCEMENT IN CONCRETE ELEMENTS SHALL BE INSPECTED BY THE ENGINEER AND PASSED PRIOR TO POURING OF ANY CONCRETE.
- C19 LAP REINFORCEMENT ONLY AT LOCATIONS SHOWN ON THE DRAWINGS OR AS APPROVED BY THE ENGINEER.
- C20 SLAB FABRIC SHALL BE LAPPED ONE FULL PANEL OF FABRIC PLUS 50mm SO THAT THE TWO OUTERMOST TRANSVERSE WIRES OF ONE SHEET OVERLAP THE TWO OUTERMOST TRANSVERSE WIRES OF THE SHEET BEING LAPPED BY 50mm.
- C21 BAR REINFORCEMENT SHALL BE LAPPED IN ACCORDANCE WITH THE FOLLOWING TABLE.

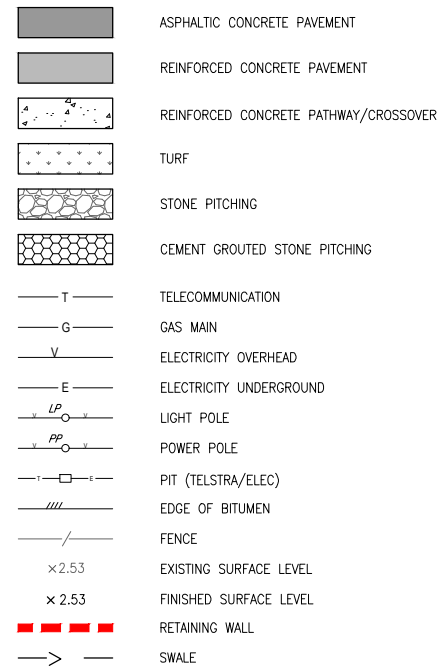
TYPICAL BAR REINFORCEMENT LAP LENGTHS		
BAR	LAP LENGTH UNO	HORIZONTAL BARS WITH GREATER THAN 300mm OF CONCRETE CAST BELOW THEM
N12	550	750
N16	800	1100
N20	1100	1400
N24	1250	1600
N28	1400	1800
N32	1600	2100
N36	2000	2500

WHERE LAPS ARE SHOWN ON THE DRAWINGS THE ABOVE LAP LENGTHS SHALL BE ADOPTED UNLESS NOTED OTHERWISE. WHERE BARS OF DIFFERENT DIAMETER ARE SHOWN LAPPED, ADOPT THE LAP LENGTH APPROPRIATE TO THE SMALLER DIAMETER BAR.

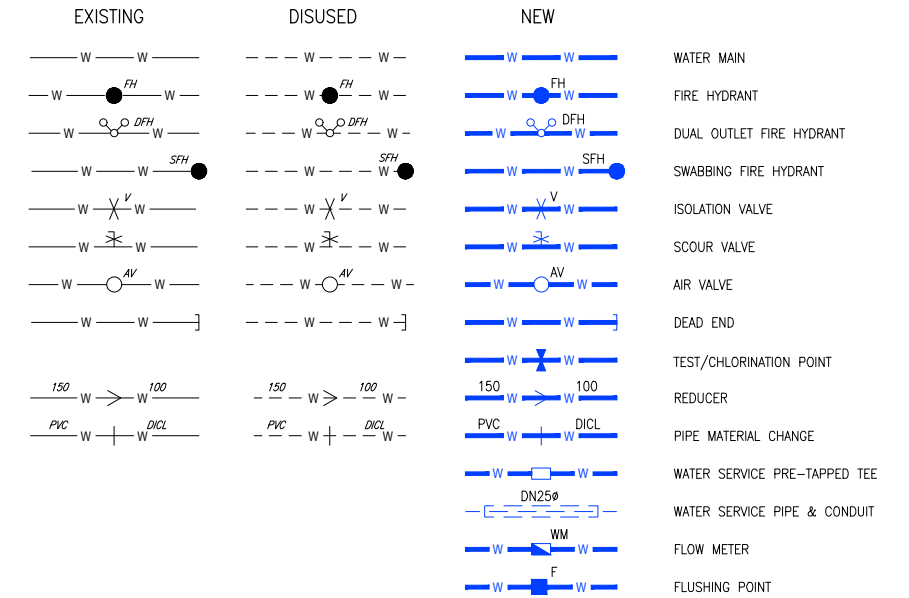
- C22 A VAPOUR BARRIER OF 0.2mm (200um) MINIMUM THICK POLYTHENE SHEETING SHALL BE PLACED BENEATH SLABS ON GROUND UNLESS NOTED OTHERWISE.

## LEGEND

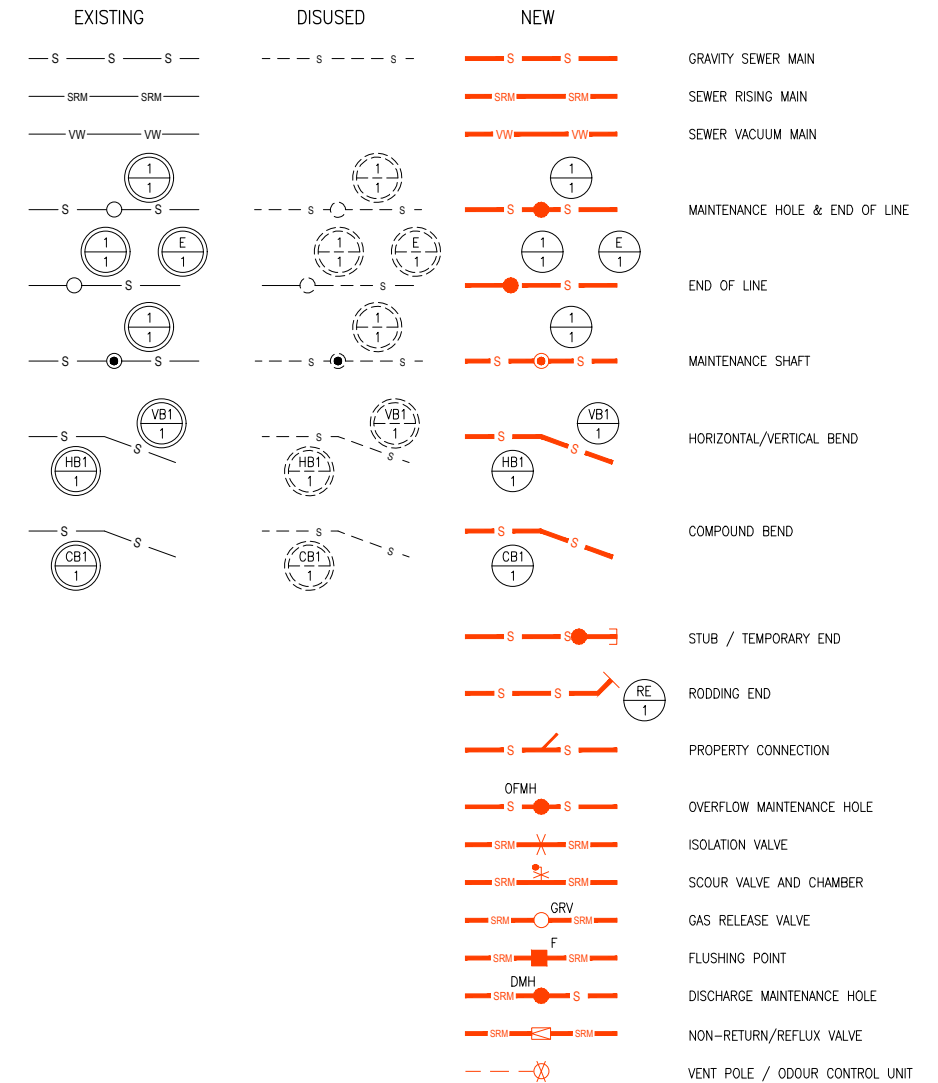
### GENERAL



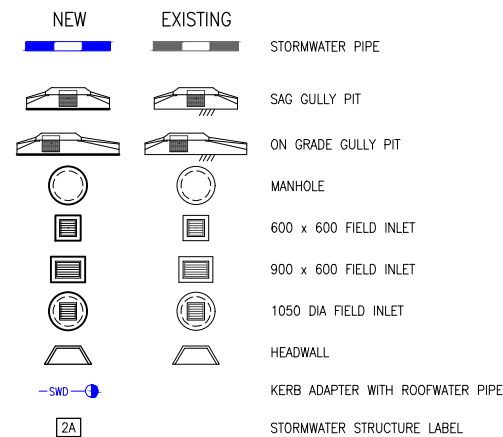
### WATER



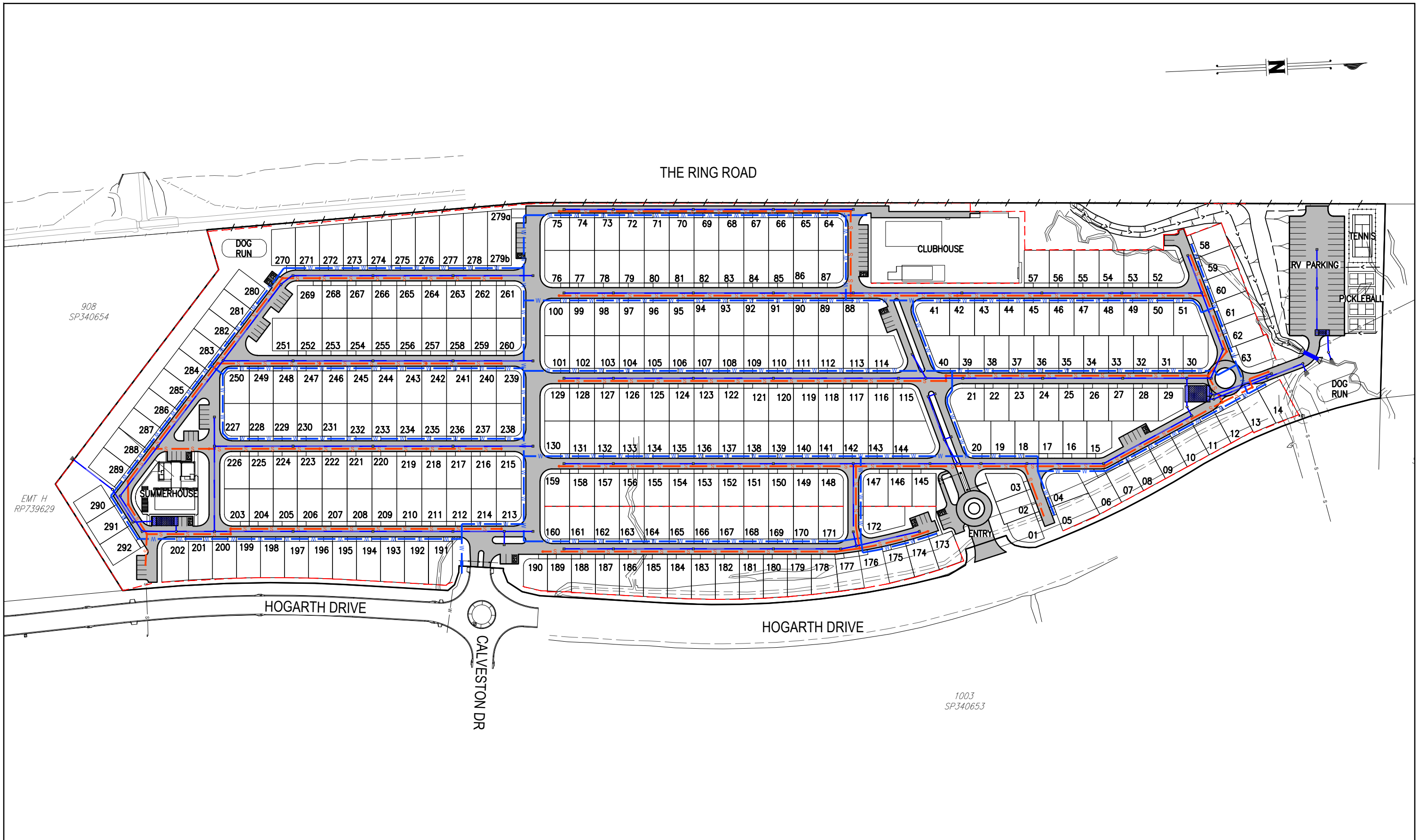
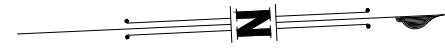
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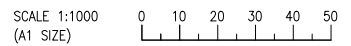
### STORMWATER DRAINAGE



DESIGNED S.C.M				BRISBANE T 07 3852 4333 E. brisbane@westerapartners.com.au		SURVEYOR BRAZIER MOTTI PHONE 07 4772 1144		DATUM A.H.D. PSM 95669 R.L. 17.143		PROJECT LOCATION		PROPOSED RETIREMENT LIVING DEVELOPMENT LOT 1002 ON SP340654 99 HOGARTH DRIVE, BOHLE PLAINS		DRAWING STATUS PRELIMINARY N.F.C.			
DRAWN J.J.D				GOLD COAST T 07 5571 1599 E. goldcoast@westerapartners.com.au		SUNSHINE COAST T 07 5391 3777 E. sunshinecoast@westerapartners.com.au		NORTHERN NSW T 02 6674 8047 E. nsw@westerapartners.com.au		CENTRAL VICTORIA T 03 5441 0922 E. centralvic@westerapartners.com.au		TITLE CLIENT		CIVIL NOTES AND LEGEND RUBY DEVELOPMENTS PTY LTD		DRAWING NUMBER S24-020-PC01	
CHECKED J.M.H				APPROVED J.M.H		DATE JULY 2024		For and on behalf of WESTERA PARTNERS PTY. LTD.		APPROVED		SHEET NUMBER 01 OF 06		REVISION			
No.	DATE	REVISIONS		DES	DRN	CHK	APD	DOCUMENT CONTROL		APPROVED							



**SITE PLAN**



DESIGNED	S.C.M.
DRAWN	J.J.D.
CHECKED	J.M.H.
APPROVED	J.M.H.
DATE	JULY 2024
DOCUMENT CONTROL	
APPROVED	

For and on behalf of  
WESTERA PARTNERS PTY. LTD.



**BRISBANE** T 07 3852 4333  
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**NORTHERN NSW** T 02 6674 8047  
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**CENTRAL VICTORIA** T 03 5441 0922  
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**SURVEYOR**  
**BRAZIER MOTTI**  
PHONE 07 4772 1144

DATUM A.H.D.  
PSM 95569  
R.L. 17.143

USE FIGURED DIMENSIONS ONLY. DO NOT SCALE. IF A DISCREPANCY ARISES CHECK WITH THE PROJECT ENGINEER AND/OR SUPERVISING AUTHORITY. DO NOT WORK FROM REDUCED SCALE DRAWINGS (A1-A3 SIZE PAPER). COPYRIGHT OF ALL DRAWINGS & WORKS EXECUTED FROM THEM IS VESTED IN WESTERA PARTNERS AND USE OF THERE FORE WITHOUT PERMISSION IS STRICTLY PROHIBITED IT IS THE BUILDERS RESPONSIBILITY TO ENSURE ALL WORKS ARE CARRIED OUT WITH DUE CARE AND DILIGENCE TO COMPLY WITH THE CONTRACT DOCUMENTS.

**PROJECT LOCATION**  
PROPOSED RETIREMENT LIVING DEVELOPMENT  
LOT 1002 ON SP340654  
99 HOGARTH DRIVE, BOHLE PLAINS

**TITLE**  
SITE PLAN

**CLIENT**  
RUBY DEVELOPMENTS PTY LTD

<b>DRAWING STATUS</b>	PRELIMINARY N.F.C.
<b>DRAWING NUMBER</b>	S24-020-PC02
<b>SHEET NUMBER</b>	02 OF 06
<b>REVISION</b>	





**EXISTING CATCHMENT PLAN**

SCALE 1:2000 (A1 SIZE)

**DEVELOPED CATCHMENT PLAN**

SCALE 1:2000 (A1 SIZE)

DESIGNED	S.C.M.						
DRAWN	J.J.D.						
CHECKED	J.M.H.						
APPROVED	J.M.H.						
DATE	JULY 2024						
REVISIONS							
No.	DATE	DES	DRN	CHK	APD	DOCUMENT CONTROL	APPROVED

For and on behalf of WESTERA PARTNERS PTY. LTD.

**WESTERA PARTNERS**  
STRUCTURAL+CIVIL+ENVIRONMENTAL ENGINEERS  
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SUNSHINE COAST T 07 5391 3777  
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NORTHERN NSW T 02 6674 8047  
E nsw@westerapartners.com.au  
CENTRAL VICTORIA T 03 5441 0922  
E centralvic@westerapartners.com.au

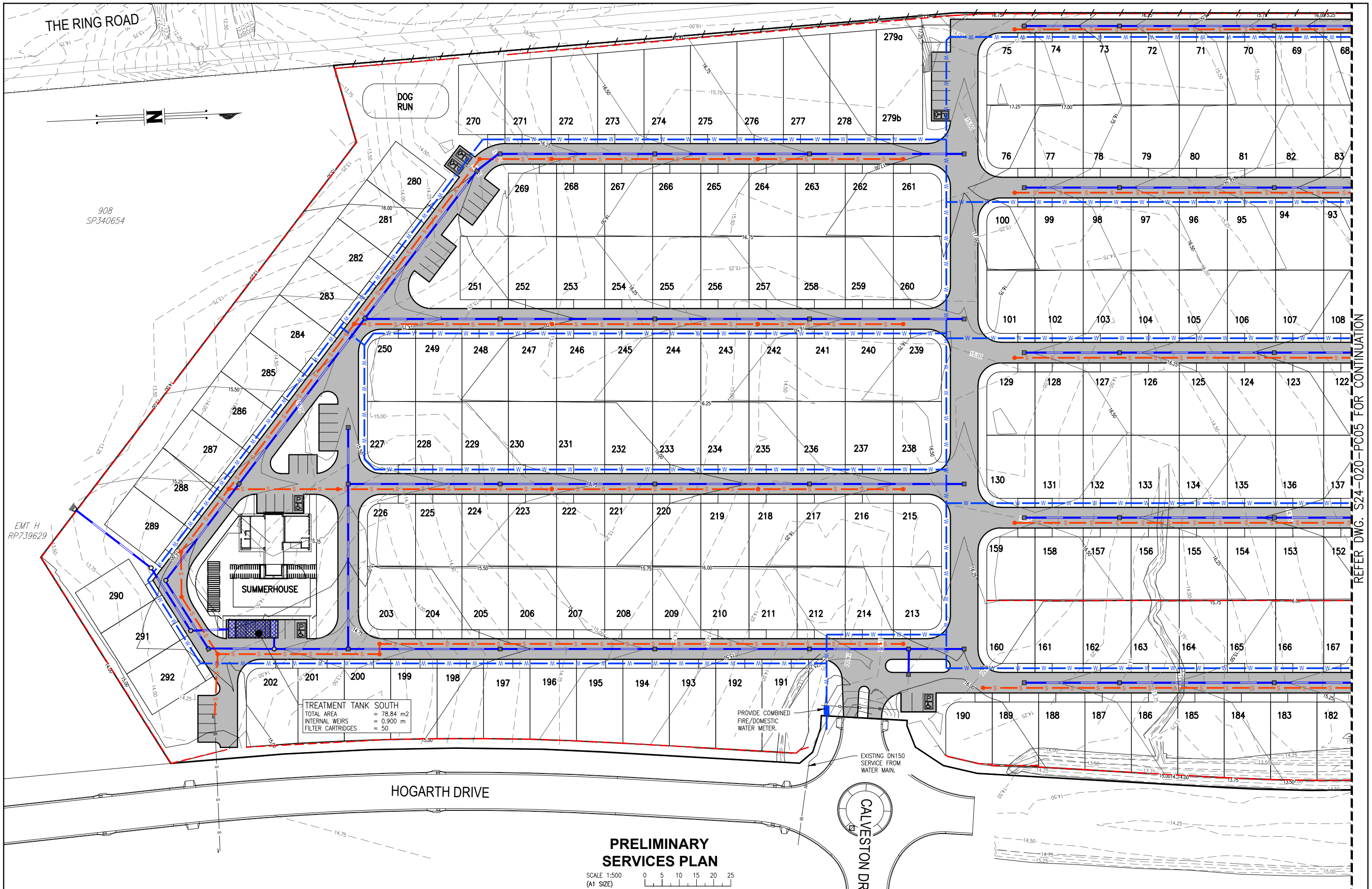
SURVEYOR  
**BRAZIER MOTTI**  
PHONE 07 4772 1144

DATUM A.H.D.  
PSM 95669  
R.L. 17.143

USE FIGURED DIMENSIONS ONLY. DO NOT SCALE. IF A DISCREPANCY ARISES CHECK WITH THE PROJECT ENGINEER AND/OR SUPERVISING AUTHORITY. DO NOT WORK FROM REDUCED SCALE DRAWINGS (A1-A3 SIZE PAPER). COPYRIGHT OF ALL DRAWINGS & WORKS EXECUTED FROM THEM IS VESTED IN WESTERA PARTNERS AND USE OF THERE FORE WITHOUT PERMISSION IS STRICTLY PROHIBITED IT IS THE BUILDERS RESPONSIBILITY TO ENSURE ALL WORKS ARE CARRIED OUT WITH DUE CARE AND DILIGENCE TO COMPLY WITH THE CONTRACT DOCUMENTS.

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT  
LOCATION LOT 1002 ON SP340654  
99 HOGARTH DRIVE, BOHLE PLAINS  
TITLE CATCHMENT PLAN  
CLIENT RUBY DEVELOPMENTS PTY LTD

DRAWING STATUS PRELIMINARY N.F.C.  
DRAWING NUMBER S24-020-PC03  
SHEET NUMBER 03 OF 06  
REVISION



REFER DWG. S24-020-PC05 FOR CONTINUATION

**PRELIMINARY SERVICES PLAN**

SCALE 1:500 (A1 SIZE)

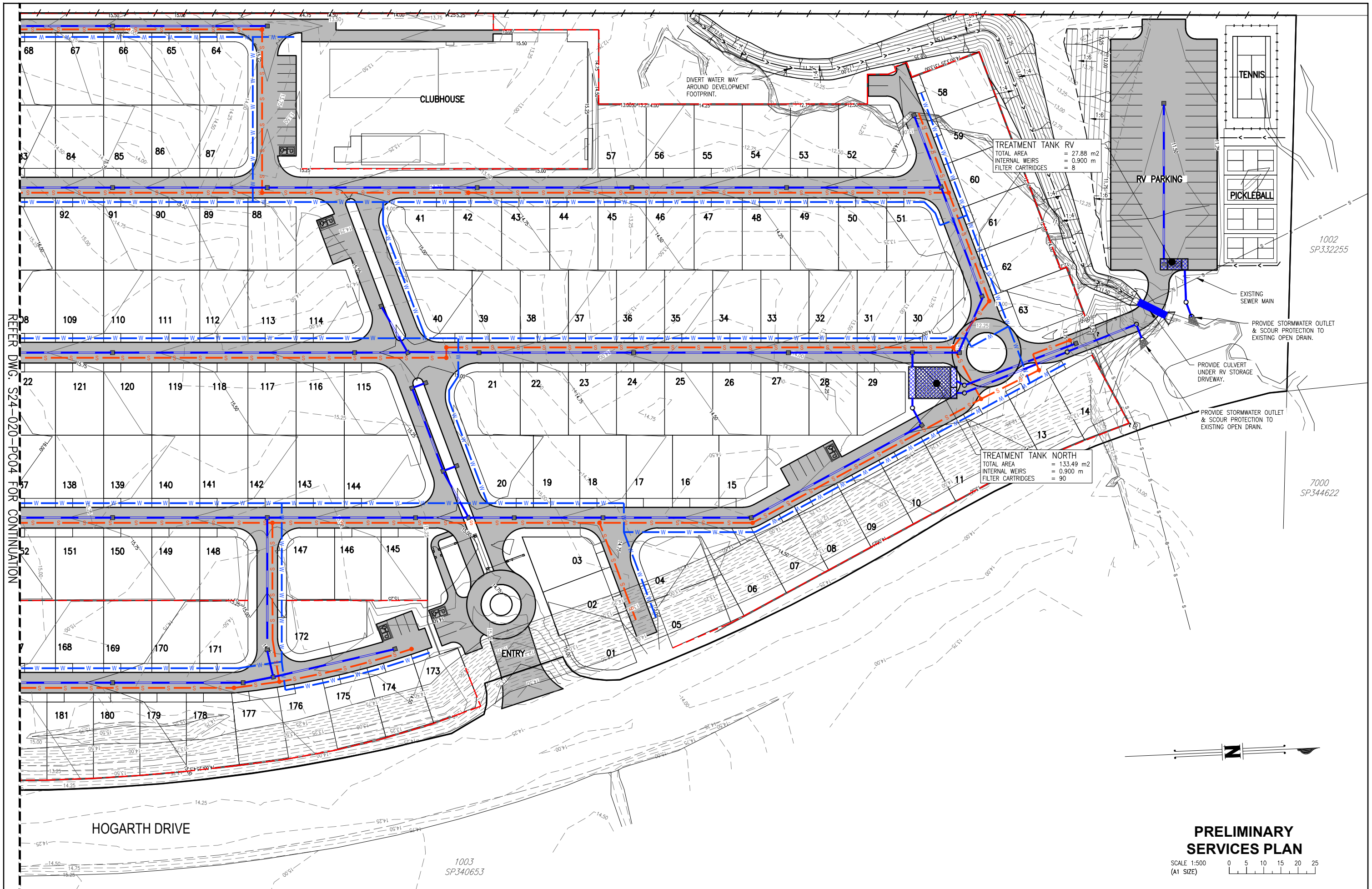
No.	DATE	REVISIONS	DES	DRN	CHK	APD	DOCUMENT CONTROL	APPROVED

DESIGNED	S.C.M
DRAWN	J.J.D
CHECKED	J.M.H
APPROVED	J.M.H
DATE	JULY 2024

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 STRUCTURAL+CIVIL+ENVIRONMENTAL ENGINEERS  
 www.westerapartners.com.au | ABN 52 097 417 975

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 E brisbane@westerapartners.com.au  
**GOLD COAST** T 07 5571 1599  
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**SUNSHINE COAST** T 07 5391 3777  
 E sunshinecoast@westerapartners.com.au  
**NORTHERN NSW** T 02 6674 8047  
 E nsw@westerapartners.com.au  
**CENTRAL VICTORIA** T 03 5441 0922  
 E centralvic@westerapartners.com.au

SURVEYOR	<b>BRAZIER MOTTI</b> PHONE 07 4772 1144	DATUM A.H.D.	PSM 95569	R.L.	17.143	
PROJECT LOCATION	<b>PROPOSED RETIREMENT LIVING DEVELOPMENT</b> LOT 1002 ON SP340654 99 HOGARTH DRIVE, BOHLE PLAINS					
TITLE	<b>PRELIMINARY SERVICES PLAN 1 of 2</b>					
CLIENT	<b>RUBY DEVELOPMENTS PTY LTD</b>					
DRAWING STATUS	<b>PRELIMINARY N.F.C.</b>				DRAWING NUMBER	<b>S24-020-PC04</b>
SHEET NUMBER	<b>04 OF 06</b>				REVISION	



REFER DWG. S24-020-PC04 FOR CONTINUATION

**PRELIMINARY SERVICES PLAN**

SCALE 1:500 (A1 SIZE)

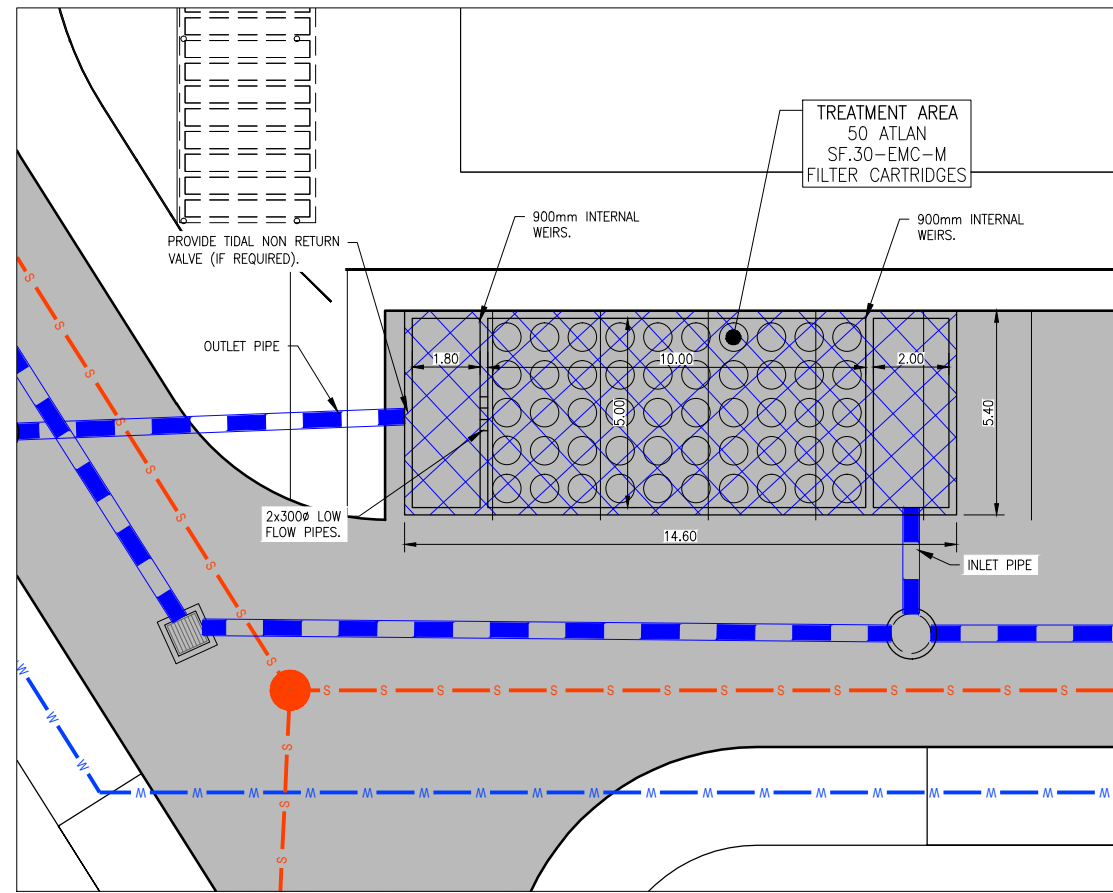
No.	DATE	REVISIONS	DES	DRN	CHK	APD	DOCUMENT CONTROL	APPROVED

DESIGNED	S.C.M
DRAWN	J.J.D
CHECKED	J.M.H
APPROVED	J.M.H
DATE	JULY 2024

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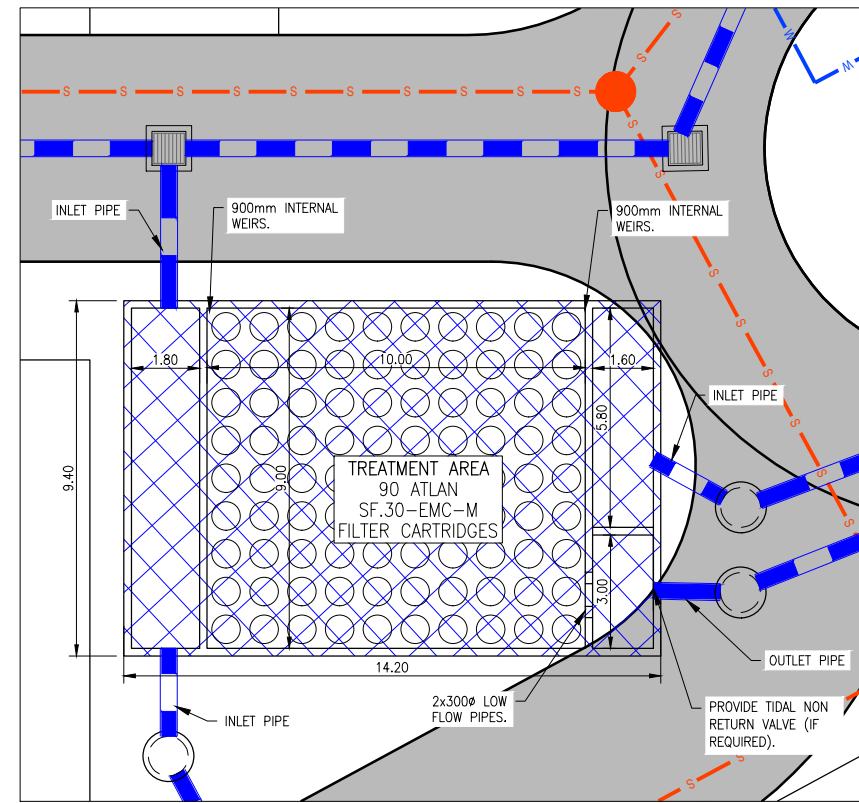
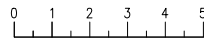
**BRISBANE** T 07 3852 4333  
 E brisbane@westerapartners.com.au  
**GOLD COAST** T 07 5571 1599  
 E goldcoast@westerapartners.com.au  
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 E sunshinecoast@westerapartners.com.au  
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 E nsw@westerapartners.com.au  
**CENTRAL VICTORIA** T 03 5441 0922  
 E centralvictoria@westerapartners.com.au

PROJECT LOCATION	PROPOSED RETIREMENT LIVING DEVELOPMENT LOT 1002 ON SP340654 99 HOGARTH DRIVE, BOHLE PLAINS	DRAWING STATUS	PRELIMINARY N.F.C.
TITLE	PRELIMINARY SERVICES PLAN 2 of 2	DRAWING NUMBER	S24-020-PC05
CLIENT	RUBY DEVELOPMENTS PTY LTD	SHEET NUMBER	05 OF 06
		REVISION	



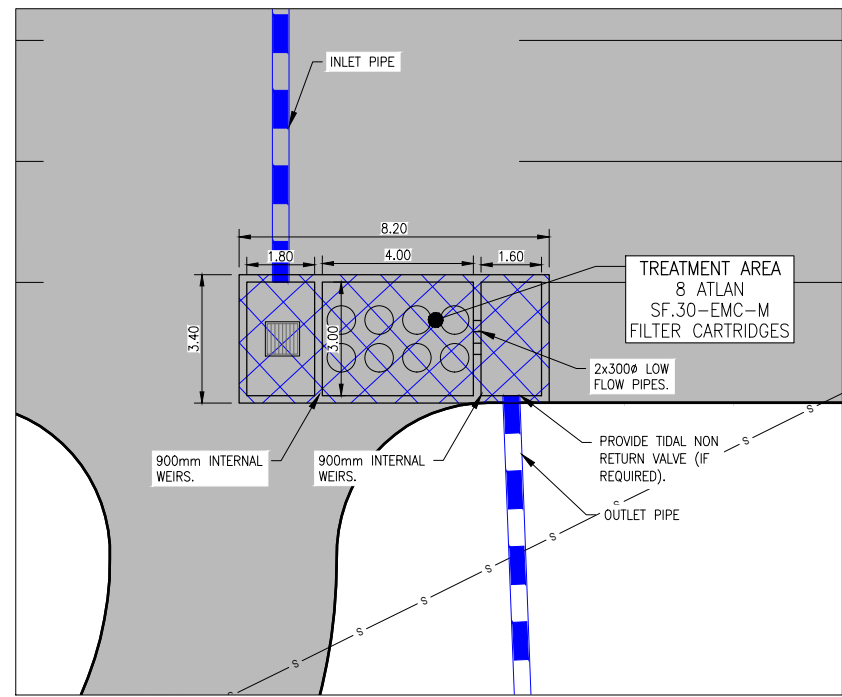
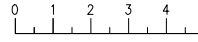
**SOUTH TREATMENT TANK**

SCALE 1:100 (A1 SIZE)



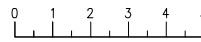
**NORTH TREATMENT TANK**

SCALE 1:100 (A1 SIZE)



**RV PARKING TREATMENT TANK**

SCALE 1:100 (A1 SIZE)



No.	DATE	REVISIONS	DES	DRN	CHK	APD	DOCUMENT CONTROL	APPROVED

DESIGNED	S.C.M
DRAWN	J.J.D
CHECKED	J.M.H
APPROVED	J.M.H
DATE	JULY 2024

For and on behalf of WESTERA PARTNERS PTY. LTD.

**WESTERA PARTNERS**  
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**CENTRAL VICTORIA** T 03 5441 0922  
E centralvic@westerapartners.com.au

**SURVEYOR**  
**BRAZIER MOTTI**  
PHONE 07 4772 1144

DATUM A.H.D.  
PSM 95569  
R.L. 17.143

**PROJECT LOCATION**  
PROPOSED RETIREMENT LIVING DEVELOPMENT  
LOT 1002 ON SP340654  
99 HOGARTH DRIVE, BOHLE PLAINS

**TITLE**  
STORMWATER DETAILS

**CLIENT**  
RUBY DEVELOPMENTS PTY LTD

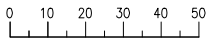
DRAWING STATUS	PRELIMINARY N.F.C.
DRAWING NUMBER	S24-020-PC06
SHEET NUMBER	06 OF 06
REVISION	



EARTHWORKS SUMMARY	
CUT VOLUME	= 9,792 m <sup>3</sup>
CUT AREA	= 38,792 m <sup>2</sup>
FILL VOLUME	= 102,554 m <sup>3</sup>
FILL AREA	= 205,634 m <sup>2</sup>

**PRELIMINARY EARTHWORKS PLAN**

SCALE 1:1000  
(A1 SIZE)



- GENERAL NOTES:**
1. IN CASE OF DOUBT - ASK!
  2. ALL LEVELS TO AHD, DIMENSIONS IN METERS U.N.O
  3. ALL LIAISON WITH LOCAL, STATE & STATUTORY AUTHORITIES IS THE CONTRACTOR'S RESPONSIBILITY.
  4. THE LOCATION OF EXISTING SERVICES IS FOR CONTRACTOR'S INFORMATION ONLY, THE LOCATION OF SERVICES WILL BE CONFIRMED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORKS.
  5. ANY DAMAGE CAUSED TO THE EXISTING SERVICE WILL BE MADE GOOD AT THE CONTRACTORS EXPENSE.
  6. EARTHWORKS PROCEDURES ARE TO BE CARRIED OUT IN ACCORDANCE WITH AS 3798 - 2007 "GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS".
  7. EARTHWORKS OPERATIONS ARE TO BE CARRIED OUT IN GENERAL ACCORDANCE WITH THE GEOTECHNICAL REPORT.
  8. WORKS NOT SPECIFICALLY REFERRED TO, ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GENERAL DRAWINGS AND SPECIFICATIONS OF THE LOCAL AUTHORITY.
  9. THE CONTRACTOR IS TO ALLOW FOR ALL FEES AND HAULAGE COSTS ASSOCIATED WITH DISPOSAL OF MATERIAL FROM THE SITE.
  10. ALL COSTS ASSOCIATED WITH NOISE AND DUST SUPPRESSION FOR SITE WORKS ARE DEEMED THE CONTRACTOR'S RESPONSIBILITY.
  11. COMPACTION STANDARDS  
 -"MODIFIED" TO AS 1289 TEST 5.2.1  
 -"STANDARD TO AS 1289 TEST 5.1.1
  12. PRIOR TO COMMENCEMENT OF WORKS THE CONTRACTOR WILL PROVIDE SCOUR AND EROSION PROTECTION INCLUDING PROVISION OF SILT TRAPS AND FENCES TO MINIMISE DEPOSITION OF MATERIAL DOWNSTREAM OF THE PROPERTY.
  13. NO BLASTING WILL BE PERMITTED.
  14. THE LOCATION OF THE SITE SHEDS, SITE OFFICE AND AMENITIES BUILDING WILL BE LOCATED TO SUIT TEMPORARY UTILITY SERVICES OR AS AGREED WITH THE MANAGER.
  15. TESTING FREQUENCY AS 3798 - 2007 SECTION 8.0 OR AS APPROVED BY THE GEOTECHNICAL ENGINEER.
  16. AT COMPLETION OF CONSTRUCTION THE CONTRACTOR SHALL ARRANGE FOR AN INDEPENDENT LICENSED SURVEYOR TO CARRY OUT A "WORKS AS CONSTRUCTED" SURVEY AND SUBMIT THE DETAIL PLAN TO THE MANAGER.
  17. THE LOCATION OF TEMPORARY STOCKPILES DURING CONSTRUCTION IS TO BE AGREED WITH THE MANAGER.

**EARTHWORKS LEGEND**

DEPTH OF CUT TABLE		DEPTH OF FILL TABLE	
0.0m - 0.25m		0.0m - 0.25m	
0.25m - 0.5m		0.25m - 0.5m	
0.5m - 0.75m		0.5m - 0.75m	
0.75m - 1.0m		0.75m - 1.0m	
1.0m - 1.25m		1.0m - 1.25m	
1.25m - 1.5m		1.25m - 1.5m	
1.5m - 1.75m		1.5m - 1.75m	
1.75m - 2.0m		1.75m - 2.0m	
2.0m - 2.25m		2.0m - 2.25m	
2.25m - 2.5m		2.25m - 2.5m	
> 2.5m		2.5m - 3.5m	
		> 3.5m	

DESIGNED	S.C.M
DRAWN	J.J.D
CHECKED	J.M.H
APPROVED	J.M.H
DATE	JULY 2024
DOCUMENT CONTROL	APPROVED

For and on behalf of  
WESTERA PARTNERS PTY. LTD.



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E: centralvic@westerapartners.com.au

SURVEYOR  
BRAZIER MOTTI  
PHONE 07 4772 1144  
DATUM A.H.D.  
PSM 95569  
R.L. 17.143

PROJECT LOCATION  
TITLE  
CLIENT

PROPOSED RETIREMENT LIVING DEVELOPMENT  
LOT 1002 ON SP340654  
99 HOGARTH DRIVE, BOHLE PLAINS  
PRELIMINARY EARTHWORKS PLAN  
RUBY DEVELOPMENTS PTY LTD

DRAWING STATUS	PRELIMINARY N.F.C.
DRAWING NUMBER	S24-020-PE01
SHEET NUMBER	01 OF 02
REVISION	

THE RING ROAD

HOGARTH DRIVE

**SECTION A**  
 SCALE A1 - 1 : 500  
 A3 - 1 : 1000

THE RING ROAD

HOGARTH DRIVE

**SECTION B**  
 SCALE A1 - 1 : 500  
 A3 - 1 : 1000

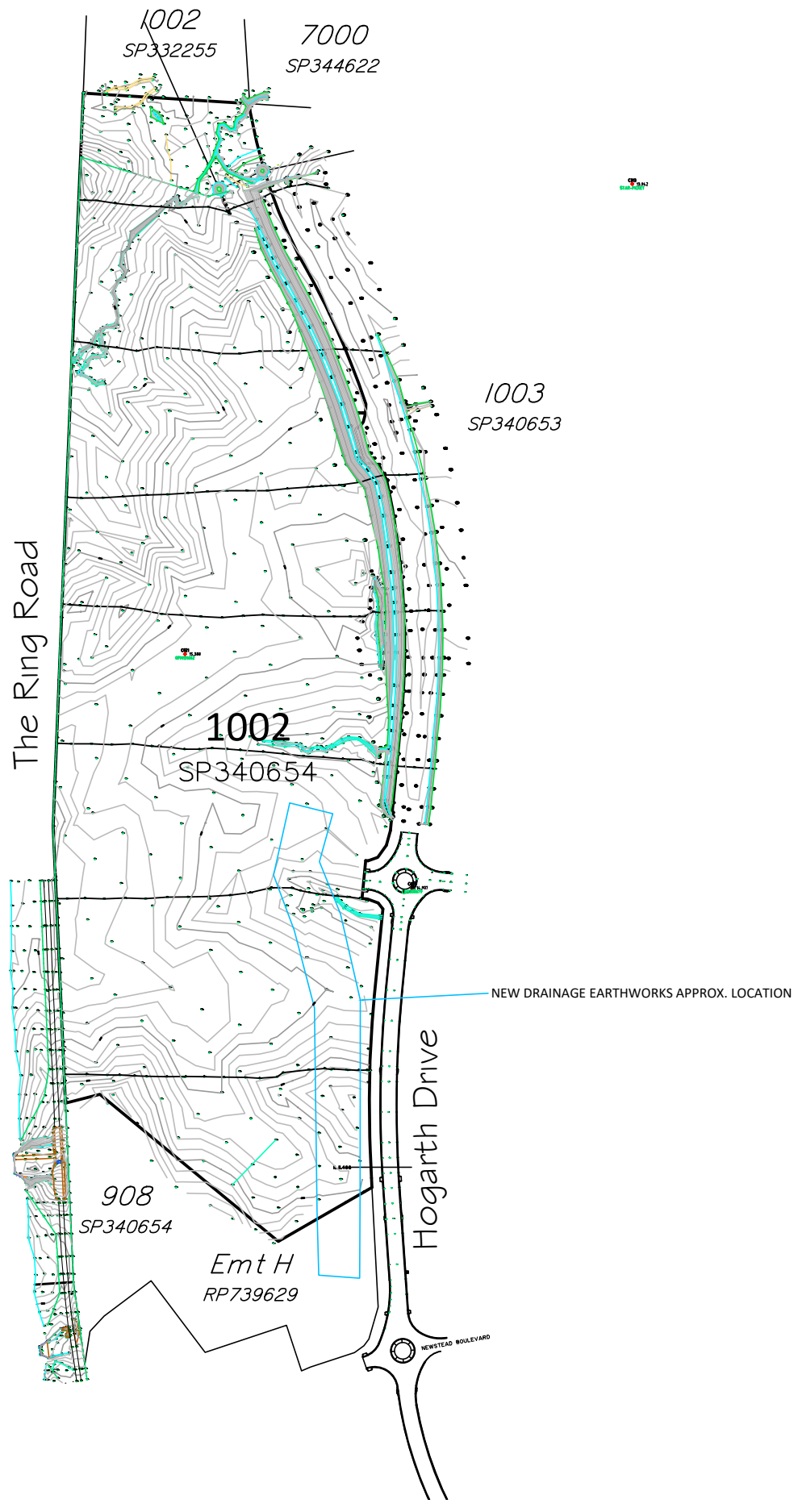
908  
 SP340654

RV PARKING

**SECTION C**  
 SCALE A1 - 1 : 1000  
 A3 - 1 : 2000

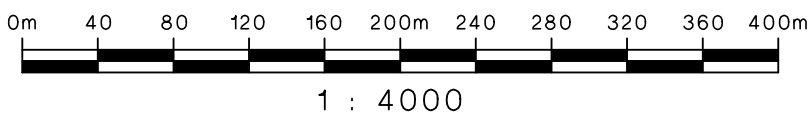
		DESIGNED S.C.M				 <p><b>WESTERA PARTNERS</b>          STRUCTURAL+CIVIL+ENVIRONMENTAL ENGINEERS          www.westerapartners.com.au   ABN 52 097 417 975</p>	BRISBANE T 07 3852 4333 E brisbane@westerapartners.com.au GOLD COAST T 07 5571 1599 E goldcoast@westerapartners.com.au SUNSHINE COAST T 07 5391 3777 E sunshinecoast@westerapartners.com.au NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au		SURVEYOR <b>BRAZIER MOTTI</b> PHONE 07 4772 1144 DATUM A.H.D. PSM 95569 R.L. 17.143		PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT LOCATION LOT 1002 ON SP340654 99 HOGARTH DRIVE, BOHLE PLAINS TITLE PRELIMINARY EARTHWORKS SECTIONS CLIENT RUBY DEVELOPMENTS PTY LTD		DRAWING STATUS PRELIMINARY N.F.C. DRAWING NUMBER S24-020-PE02 SHEET NUMBER 02 OF 02 REVISION	
		DRAWN J.J.D												
		CHECKED J.M.H												
		APPROVED J.M.H												
		DATE JULY 2024				For and on behalf of WESTERA PARTNERS PTY. LTD. APPROVED								
No.	DATE	REVISIONS				DES	DRN	CHK	APD	DOCUMENT CONTROL				

**Appendix D – Survey and Architectural Drawing**



**Note:**  
 This plan represents a combination of surveys undertaken 06/08/2020, 17/05/2021 and 18/06/2024. A combined surface model has been created from these different surveys and is subject to survey. All levels to be verified prior to commencement of any design

The title boundaries as shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey. No attempt has been made to locate any services. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.



Level Datum: AHD Der.  
 B.M. Used: PSM95569 RL.17.143  
 Coordinate Projection: MGA Zone 55  
 Coordinate Datum: MGA94  
 Origin of Coordinates: PSM131662 E: 468140.991  
 Meridian: MGA Zone 55 N: 7865023.405  
 Map Reference:  
 Contour Interval: Surveyed by: BM  
 Job No: 43793/002-01 Drawn: MJM  
 File No: 43793\_001B.dwg Approved:

Client: **RUBY DEVELOPMENTS PTY LTD**  
 Project: **SKETCH PLAN OF COMBINED SURVEYS  
 LOT 1002 ON SP340654  
 HARRIS CROSSING**  
 Local Authority: Townsville City Council      Locality: Bohle Plains

Date: 10th July, 2024  
 Sheet 1 of 2 Sheets  
 Scale: 1:4000      A3  
 Plan No: 43793/001 B

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 SURVEYING  
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 MAPPING & GIS



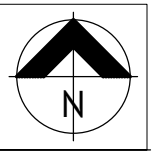
brazier motti





**Appendix E – As-Constructed Information**

# HARRIS CROSSING - HOGARTH DRIVE EXTENSION PART B HERVEY RANGE ROAD, BOHLE PLAINS FOR MAIDMENT LAND PTY LTD

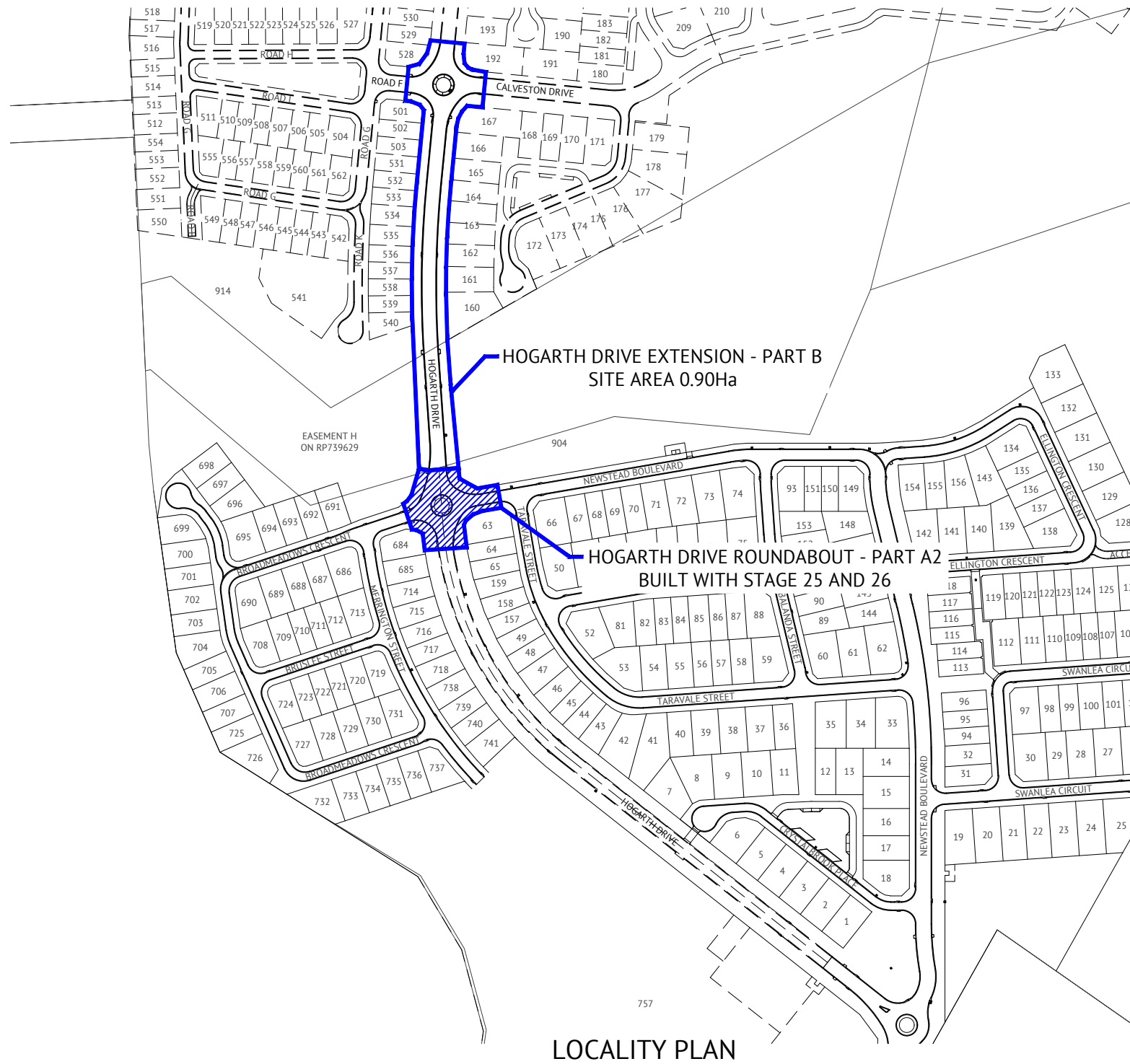


TOWNSVILLE EARTHMOVING DO HEREBY CERTIFY THAT THE WORKS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS AND CONTRACT DOCUMENTS APPROVED BY COUNCIL FOR THE CONSTRUCTION OF THE PROJECT.

AUTHORISED DELEGATE .....  
DATE 15/04/21

PREMISE DO HEREBY CERTIFY THAT THE WORKS AS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS REFLECT ANY CHANGES THAT WERE MADE DURING THE COURSE OF CONSTRUCTION.

RPEQ 13231 .....  
DATE 16/04/21



DRAWING SCHEDULE	
Sheet Number	Sheet Title
195	LOCALITY PLAN AND DRAWING SCHEDULE
196	ROADWORKS AND STORMWATER DRAINAGE PLAN
197	HOGARTH DRIVE LONGITUDINAL SECTION
198	HOGARTH DRIVE TYPICAL CROSS SECTIONS
199	ROADWORKS AND LINEMARKING DETAILS PLAN
200	Q2 STORMWATER LONGITUDINAL SECTION
201	Q2 AND Q5 STORMWATER LONGITUDINAL SECTION
202	CULVERT DETAIL PLAN
203	WATER AND SEWERAGE RETICULATION PLAN

### SURVEY ORIGIN

AHD (DERIVED)  
PSM152062  
E: 86443.441  
N: 67956.110  
ORIGIN OF COORDINATES

### REAL PROPERTY DESCRIPTION

LOT 1001 ON SP300778 & LOT 1003 ON SP278255



LOCALITY PLAN

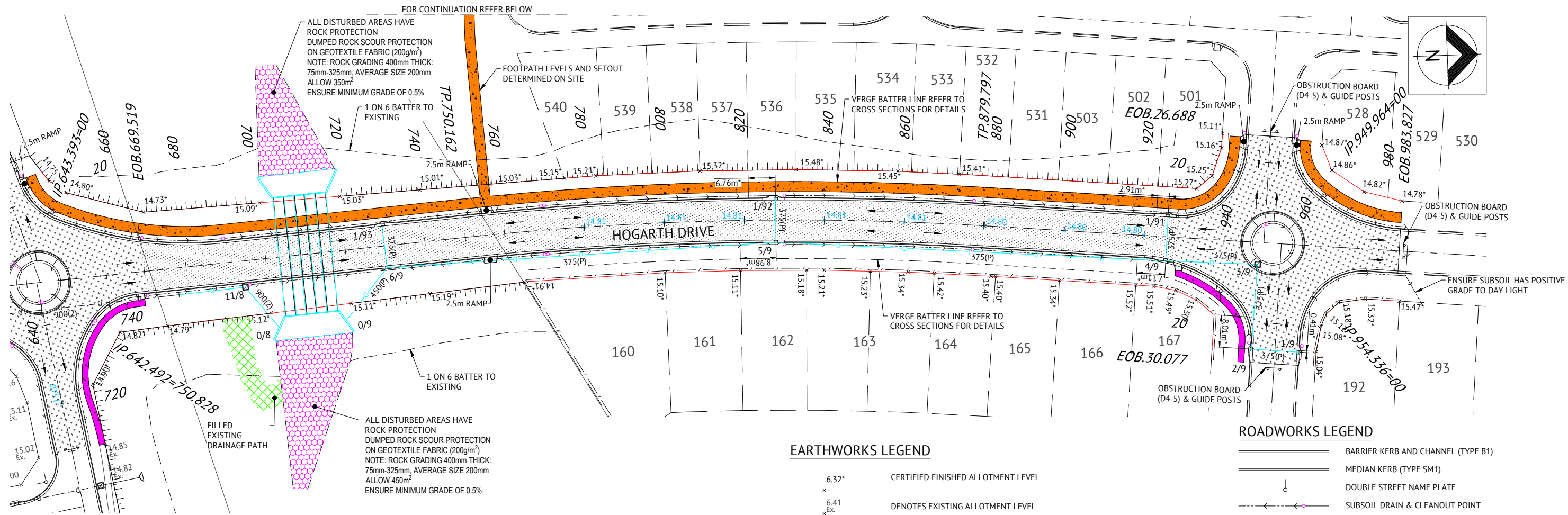
Revisions			
No.	Date	Details	Check
A	15.04.21	AS-CONSTRUCTED ISSUE	GEO

Level Datum: A.H.D  
B.M. Used: PSM200738 RL: 13.973  
Coordinate Projection: Plane Rectangular  
Coordinate Datum: Arbitrary  
Origin of Coordinates: E: -  
Meridian: MGA94 (Zone 55) N: -  
Map Reference: 8259-31233  
Contour Interval:  
Job No: 40450-098-01  
File No: 40540\_195A.dwg

Surveyed by: BM  
Drawn: MJM  
Approved:

Client:	MAIDMENT LAND PTY LTD
Project:	HOGARTH DRIVE EXTENSION - PART B HOGARTH DRIVE - HERVEY RANGE ROAD LOCALITY PLAN AND DRAWING SCHEDULE
Local Authority:	Townsville City Council
Locality:	Bohle Plains

Date:	15th April, 2021
Sheet:	1 of 1 Sheets
Scale:	AS SHOWN A1
Plan No:	40540/195 A
braziermotti.com.au	
SURVEYING TOWNPLANNING PROJECT MANAGEMENT MAPPING & GIS	



### ROADWORKS LEGEND

	BARRIER KERB AND CHANNEL (TYPE B1)
	MEDIAN KERB (TYPE SM1)
	DOUBLE STREET NAME PLATE
	SUBSOIL DRAIN & CLEANOUT POINT
	SOLID PIPE SN10
	50mm THICK ASPHALT REFER PAVEMENT DESIGN FOR DETAILS
	50mm THICK POLYMER MODIFIED ASPHALT REFER PAVEMENT DESIGN FOR DETAILS
	1.5m WIDE KERB RAMP, UNLESS NOTED OTHERWISE
	1.5m WIDE CONCRETE PATH REFER TO COUNCIL STANDARD DRAWING SD-070
	2.5m WIDE CONCRETE PATH REFER TO COUNCIL STANDARD DRAWING SD-070

### EARTHWORKS LEGEND

	CERTIFIED FINISHED ALLOTMENT LEVEL
	DENOTES EXISTING ALLOTMENT LEVEL
	DENOTES Q100 FLOOD LEVEL
	TOP OF BATTER
	BOTTOM OF BATTER
	DIRECTION OF KERB & CHANNEL FLOW

- ### EARTHWORKS NOTES
- ALL EARTHWORKS OPERATIONS ARE UNDERTAKEN IN ACCORDANCE WITH THE PROJECT SPECIFICATION.
  - ALLOTMENTS GRADED EVENLY BETWEEN LEVELS SHOWN.

### STORMWATER LEGEND

	STORMWATER DRAINAGE LINE
	STORMWATER MANHOLE (MANHOLE NO./LINE NO.)
	KERB INLET PIT (PIT NO./LINE NO.)
	EXISTING STORMWATER DRAINAGE LINE
	EXISTING STORMWATER MANHOLE (MANHOLE NO./LINE NO.)
	EXISTING KERB INLET PIT (PIT NO./LINE NO.)

- ### STORMWATER NOTES
- ALL WORKS CONSTRUCTED IN ACCORDANCE WITH RELEVANT LATEST ISSUE COUNCIL STANDARD DRAWINGS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE.
  - FOR STORMWATER LEVELS, PIPE LENGTHS, PIPE CLASS AND STRUCTURE TYPES, REFER STORMWATER LONGITUDINAL DRAWINGS.
  - ALL PIPE AND BOX CULVERT CUTS MADE USING A MASONRY SAW.
  - ALL TRENCHES UNDER ROAD PAVEMENT (INCLUDING FUTURE) BACKFILLED WITH CRUSHER DUST TO SUBGRADE LEVEL. REFER PROJECT SPECIFICATION FOR COMPACTION AND COMPLIANCE TESTING REQUIREMENTS.
  - FOR REVEGETATION DETAILS REFER TO PROJECT SPECIFICATION.
  - REFER DETAILS FOR TYPICAL SUBSURFACE DRAINAGE TO STORMWATER MANHOLES, KERB INLET TRANSITION & RRJ STORMWATER PIPE MANHOLE CONNECTION DETAIL.
  - FOR STORMWATER CULVERT DETAILS, REFER DRAWING 202.

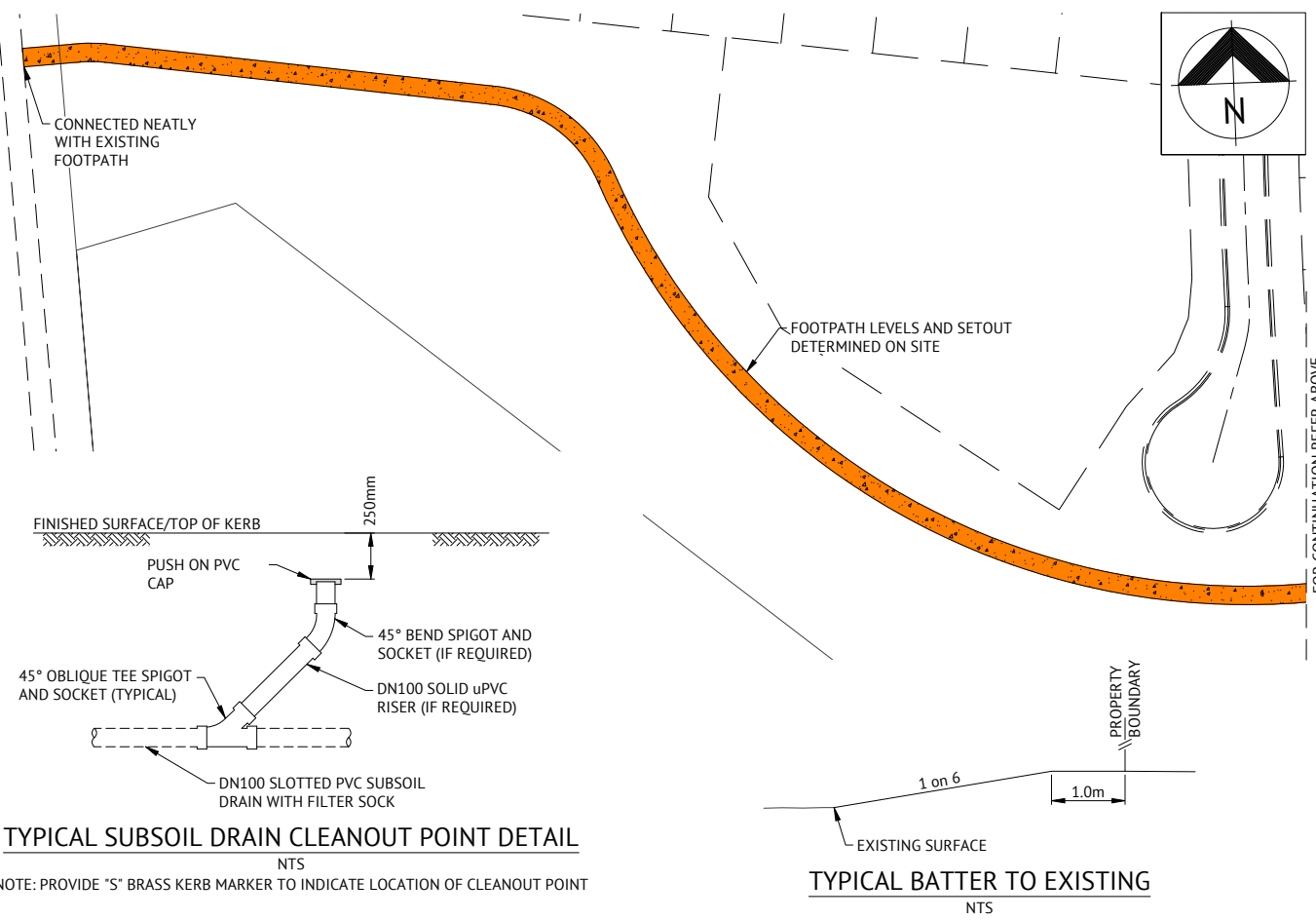
- ### ROADWORKS NOTES
- ALL WORKS CONSTRUCTED IN ACCORDANCE WITH RELEVANT LATEST ISSUE COUNCIL STANDARD DRAWINGS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE.
  - FOR ROAD GRADING, LEVELS AND TYPICAL SECTIONS, REFER ROAD LONGITUDINAL/CROSS SECTION AND ROADWORKS DETAILS DRAWINGS.
  - FOR SUBSOIL DRAIN DETAILS, REFER TYPICAL SUBSOIL DRAIN CLEANOUT POINT DETAIL ON SHEET 2, AND PAVEMENT & KERBING DETAIL.
  - ALL SUBSOIL DRAINS GRADED AT MINIMUM 0.5% FROM HIGH POINT TO OUTLET, UNLESS NOTED OTHERWISE.
  - SUBSOIL DRAIN REVERSE GRADED AT MINIMUM 0.5% TO ENSURE POSITIVE GRADE.

TOWNSVILLE EARTHMOVING DO HEREBY CERTIFY THAT THE WORKS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS AND CONTRACT DOCUMENTS APPROVED BY COUNCIL FOR THE CONSTRUCTION OF THE PROJECT.

AUTHORISED DELEGATE \_\_\_\_\_  
DATE: 15/04/21

PREMISE DO HEREBY CERTIFY THAT THE WORKS AS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS REFLECT ANY CHANGES THAT WERE MADE DURING THE COURSE OF CONSTRUCTION.

RPEQ 13231  
DATE: 16/04/21



**TYPICAL SUBSOIL DRAIN CLEANOUT POINT DETAIL**  
NTS

NOTE: PROVIDE "S" BRASS KERB MARKER TO INDICATE LOCATION OF CLEANOUT POINT

**TYPICAL BATTER TO EXISTING**  
NTS

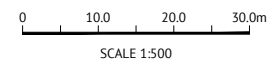
No.	Date	Details	Check
A	15.04.21	AS-CONSTRUCTED ISSUE	GEO

Level Datum: A.H.D  
B.M. Used: PSM200738 RL: 13.973  
Coordinate Projection: Plane Rectangular  
Coordinate Datum: Arbitrary  
Origin of Coordinates: E:  
Meridian: MGA94 (Zone 55) N:  
Map Reference: 8259-31233  
Contour Interval:  
Job No: 40450-098-01  
File No: 40540\_196A.dwg

Surveyed by: BM  
Drawn: MJM  
Approved:

BRAZIER MOTTI PTY LTD (ACN 066 411 041), 595 Flinders Street, Townsville hereby certify that this Drawing accurately and correctly describes and records the nature and location of the works depicted by asterisks (\*) and that they have been constructed for subdivision.

Date: 15-04-21



Client: MAIDMENT LAND PTY LTD

Project: HOGARTH DRIVE EXTENSION - PART B  
HOGARTH DRIVE - HERVEY RANGE ROAD  
ROADWORKS AND STORMWATER DRAINAGE PLAN

Local Authority: Townsville City Council | Locality: Bohle Plains

Date: 15th April, 2021  
Sheet 1 of 1 Sheets  
Scale: AS SHOWN | A1  
Plan No: 40540/196 A

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TOWNPLANNING  
PROJECTMANAGEMENT  
MAPPING&GIS

**APPROVED PAVEMENT DESIGN**  
**HOGARTH DRIVE PART CH.669.519 - CH.983.827**

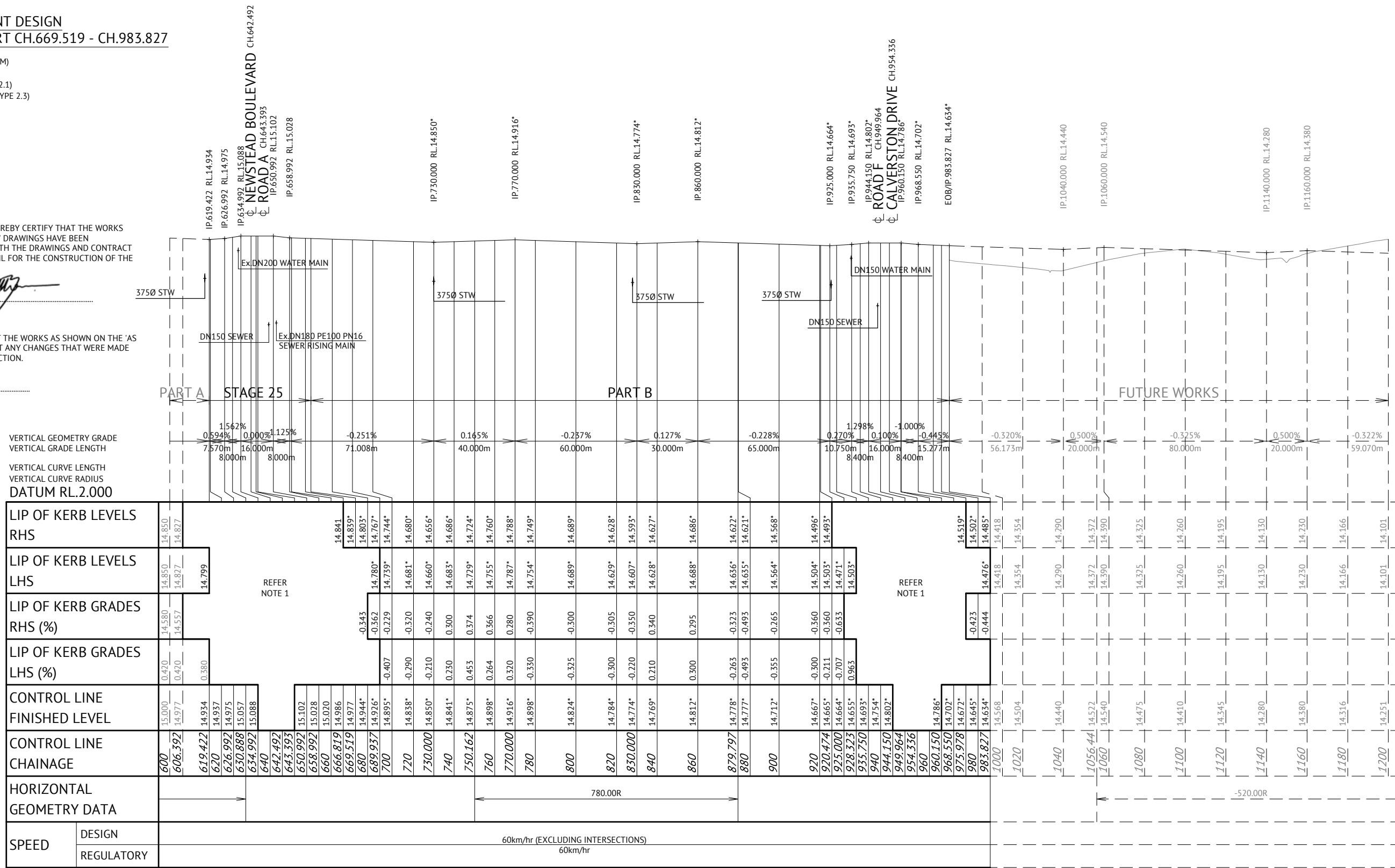
50mm ASPHALT SURFACING (AC10M)  
 PRIME COAT 1.1L/m<sup>2</sup> (AMCO)  
 125mm BASE COURSE (DMR TYPE 2.1)  
 250mm SUB BASE COURSE (DMR TYPE 2.3)

TOWNSVILLE EARTHMOVING DO HEREBY CERTIFY THAT THE WORKS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS AND CONTRACT DOCUMENTS APPROVED BY COUNCIL FOR THE CONSTRUCTION OF THE PROJECT.

AUTHORISED DELEGATE  
 DATE 15/04/21

PREMISE DO HEREBY CERTIFY THAT THE WORKS AS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS REFLECT ANY CHANGES THAT WERE MADE DURING THE COURSE OF CONSTRUCTION.

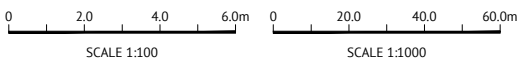
RPEQ .13231  
 DATE 16/04/21



**HOGARTH DRIVE LONGITUDINAL SECTION**  
 SCALE 1:1000 HORIZONTAL, SCALE 1:100 VERTICAL

**ROAD LONGITUDINAL SECTION NOTES**

- FOR LEVEL INFORMATION REFER ROADWORKS DETAILS PLAN.
- FOR TYPICAL SECTIONS REFER TO RELEVANT ROAD CROSS SECTION PLAN.



No.	Date	Details	Check
A	15.04.21	AS-CONSTRUCTED ISSUE	GEO

Level Datum: A.H.D  
 B.M. Used: PSM200738 RL:13.973  
 Coordinate Projection: Plane Rectangular  
 Coordinate Datum: Arbitrary  
 Origin of Coordinates: E:  
 Meridian: MGA94 (Zone 55) N:  
 Map Reference: 8259-31233  
 Contour Interval:  
 Job No: 40450-098-01  
 File No: 40540\_197A.dwg

Surveyed by: BM  
 Drawn: MJM  
 Approved:

BRAZIER MOTTI PTY LTD (ACN 066 411 041), 595 Flinders Street,  
 Townsville hereby certify that this Drawing accurately and correctly  
 describes and records the nature and location of the works depicted by  
 asterisks (\*) herein as they have been constructed for subdivision.

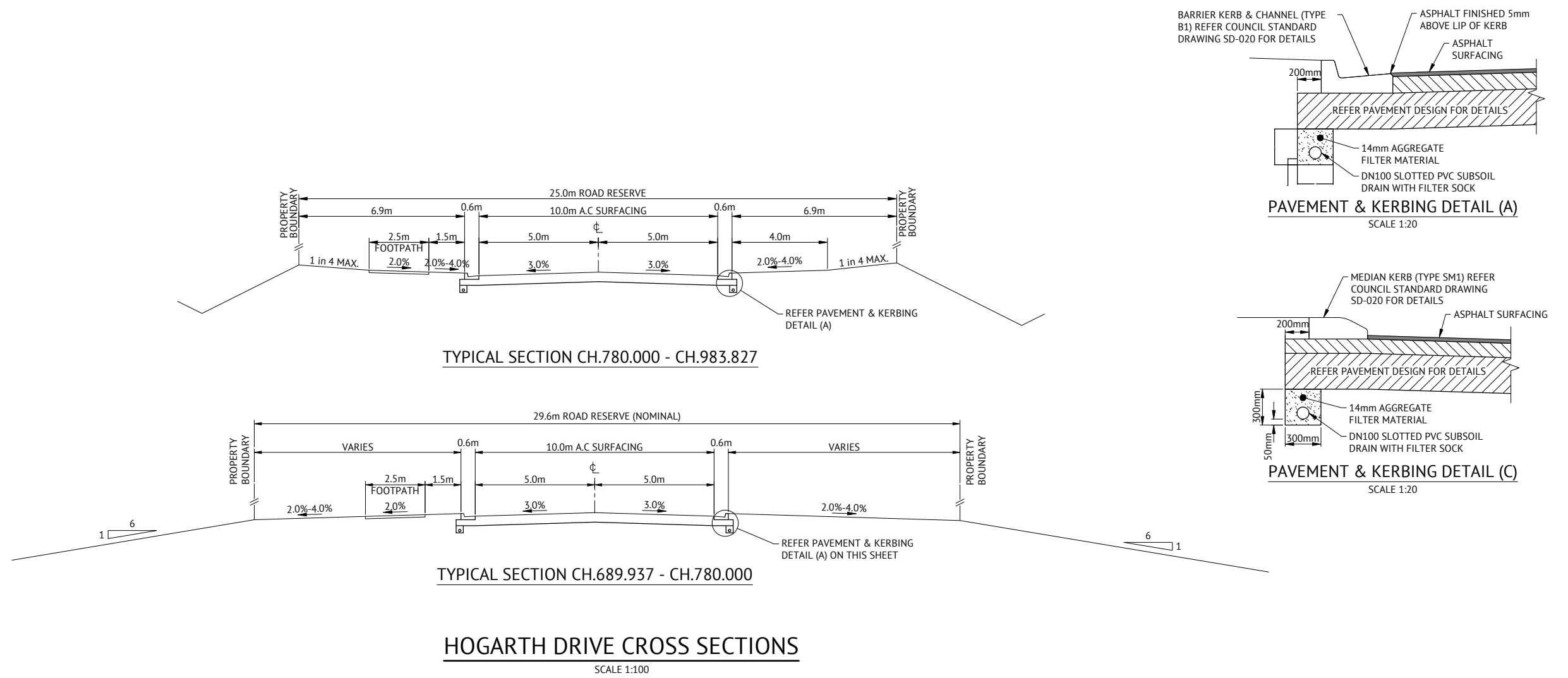
Director  
 Date 15-04-21

Client: MAIDMENT LAND PTY LTD  
 Project: HOGARTH DRIVE EXTENSION - PART B  
 HOGARTH DRIVE - HERVEY RANGE ROAD  
 HOGARTH DRIVE LONGITUDINAL SECTION

Date: 15th April, 2021  
 Sheet 1 of 1 Sheets  
 Scale: AS SHOWN  
 Plan No: 40540/197 A

Local Authority: Townsville City Council  
 Locality: Bohle Plains

Local Authority: Townsville City Council  
 Locality: Bohle Plains



TOWNSVILLE EARTHMOVING DO HEREBY CERTIFY THAT THE WORKS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS AND CONTRACT DOCUMENTS APPROVED BY COUNCIL FOR THE CONSTRUCTION OF THE PROJECT.

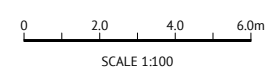
AUTHORISED DELEGATE .....  
DATE 15/04/21

PREMISE DO HEREBY CERTIFY THAT THE WORKS AS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS REFLECT ANY CHANGES THAT WERE MADE DURING THE COURSE OF CONSTRUCTION.

RPEQ 13231 .....  
DATE 16/04/21

No.	Date	Details	Check
A	15.04.21	AS-CONSTRUCTED ISSUE	GEO

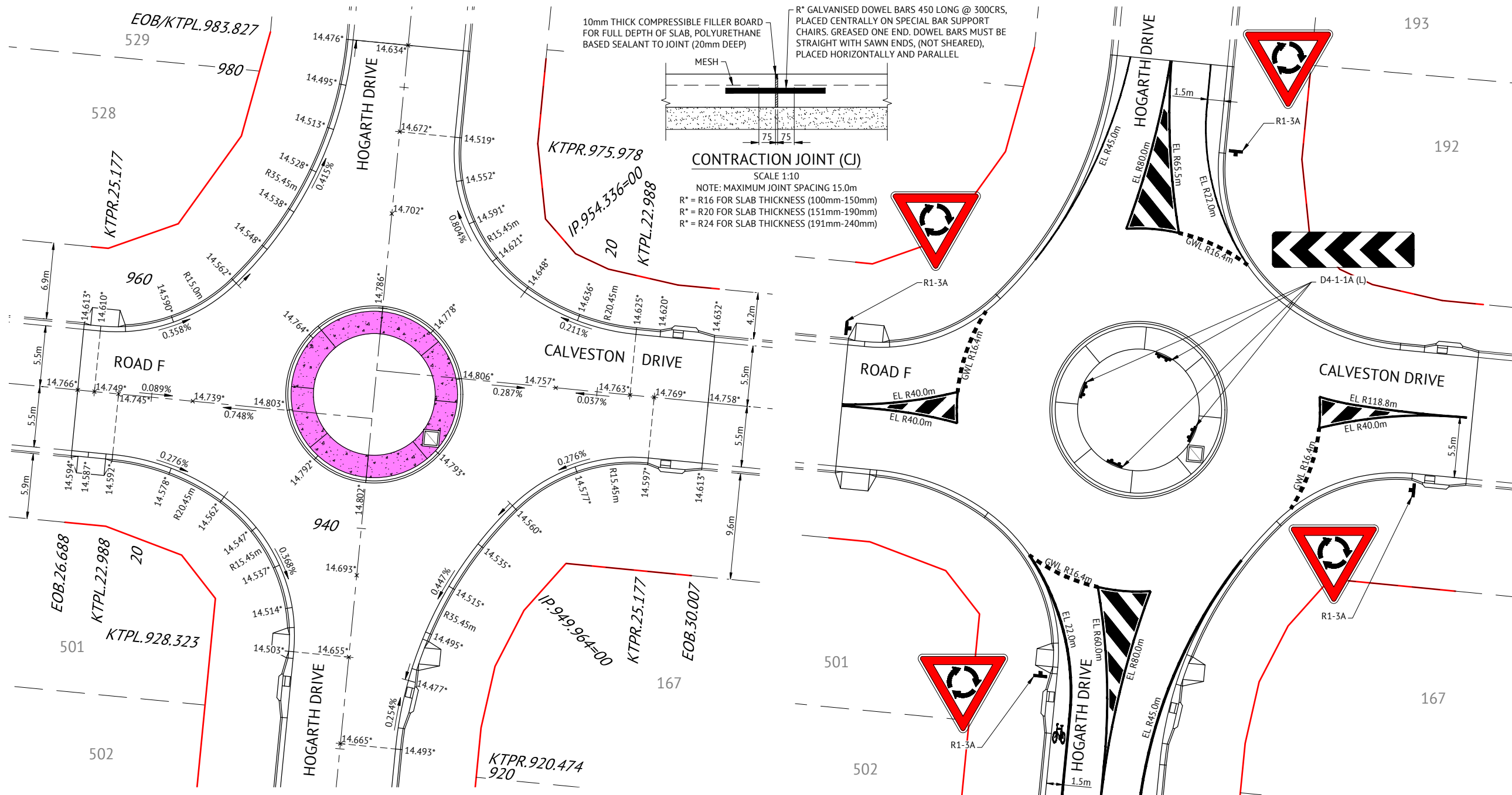
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B.M. Used: PSM200738 RL:13.973  
Coordinate Projection: Plane Rectangular  
Coordinate Datum: Arbitrary  
Origin of Coordinates: E: -  
Meridian: MGA94 (Zone 55) N: -  
Map Reference: 8259-31233  
Contour Interval: Surveyed by: BM  
Job No: 40450-098-01 Drawn: MJM  
File No: 40540\_198A.dwg Approved:



Client:	<b>MAIDMENT LAND PTY LTD</b>
Project:	<b>HOGARTH DRIVE EXTENSION - PART B HOGARTH DRIVE - HERVEY RANGE ROAD HOGARTH DRIVE TYPICAL CROSS SECTIONS</b>
Local Authority: Townsville City Council	Locality: Bohle Plains

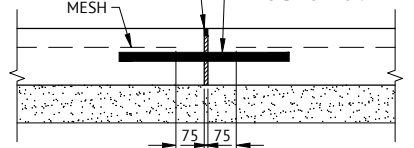
Date: 15th April, 2021	Sheet 1 of 1 Sheets
Scale: AS SHOWN	A1
Plan No: 40540/198 A	

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MAPPING&GIS



10mm THICK COMPRESSIBLE FILLER BOARD FOR FULL DEPTH OF SLAB, POLYURETHANE BASED SEALANT TO JOINT (20mm DEEP)

R\* GALVANISED DOWEL BARS 450 LONG @ 300CRS, PLACED CENTRALLY ON SPECIAL BAR SUPPORT CHAIRS. GREASED ONE END. DOWEL BARS MUST BE STRAIGHT WITH SAWN ENDS, (NOT SHEARED), PLACED HORIZONTALLY AND PARALLEL



**CONTRACTION JOINT (CJ)**

SCALE 1:10  
NOTE: MAXIMUM JOINT SPACING 15.0m  
R\* = R16 FOR SLAB THICKNESS (100mm-150mm)  
R\* = R20 FOR SLAB THICKNESS (151mm-190mm)  
R\* = R24 FOR SLAB THICKNESS (191mm-240mm)

TOWNSVILLE EARTHMOVING DO HEREBY CERTIFY THAT THE WORKS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS AND CONTRACT DOCUMENTS APPROVED BY COUNCIL FOR THE CONSTRUCTION OF THE PROJECT.

AUTHORISED DELEGATE  
DATE 15/04/21

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RPEQ 13231  
DATE 16/04/21

**ROADWORKS DETAILS LEGEND**

- BARRIER KERB & CHANNEL (TYPE B1)
- MEDIAN KERB (TYPE SM1)
- ROUNDABOUT ANNULUS REFER DETAIL THIS SHEET

**ROADWORKS DETAILS NOTES**

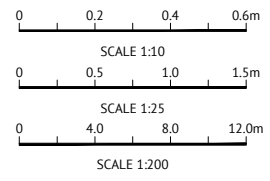
1. ALL WORKS CONSTRUCTED IN ACCORDANCE WITH RELEVANT LATEST ISSUE COUNCIL STANDARD DRAWINGS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE.
2. ALL RADII, LEVEL INFORMATION IS TO LIP OF KERB UNLESS NOTED OTHERWISE.

**LINEMARKING LEGEND**

- GIVE WAY LINE
- EDGE LINE
- BROKEN LANE LINE
- BICYCLE SYMBOL

**LINEMARKING NOTES**

1. ALL LINEMARKING, SIGNAGE AND PLACEMENT OF RRPMS IN ACCORDANCE WITH M.U.T.C.D.
2. ALL LINEMARKING IS WHITE PAINT UNLESS NOTED OTHERWISE.



No.	Date	Details	Check
A	15.04.21	AS-CONSTRUCTED ISSUE	GEO

Level Datum: A.H.D  
B.M. Used: PSM200738 RL: 13.973  
Coordinate Projection: Plane Rectangular  
Coordinate Datum: Arbitrary  
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Meridian: MGA94 (Zone 55) N:  
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Contour Interval:  
Job No: 40450-098-01  
File No: 40540\_199A.dwg

Surveyed by: BM  
Drawn: MJM  
Approved:

BRAZIER MOTTI PTY LTD (ACN 066 411 041), 595 Flinders Street, Townsville hereby certify that this Drawing accurately and correctly describes and records the nature and location of the works depicted by asterisks (\*) and they have been constructed for subdivision.

Director  
Date 15-04-21

Client: MAIDMENT LAND PTY LTD  
Project: HOGARTH DRIVE EXTENSION - PART B  
HOGARTH DRIVE - HERVEY RANGE ROAD  
ROADWORKS AND LINEMARKING DETAILS PLAN  
Local Authority: Townsville City Council  
Locality: Bohle Plains

Date: 15th April, 2021  
Sheet 1 of 1 Sheets  
Scale: AS SHOWN A1  
Plan No: 40540/199 A  
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STRUCTURE NAME
STRUCTURE DESCRIPTION

**STORMWATER NOTES**

1. ALL WORKS CONSTRUCTED IN ACCORDANCE WITH RELEVANT LATEST ISSUE COUNCIL STANDARD DRAWINGS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE.
2. STRUCTURE LENGTH IS TO CENTRE OF MANHOLE OR CENTRE OF STANDARD KERB INLET CHAMBER.
3. FOR STORMWATER ALIGNMENT, REFER TO STORMWATER LAYOUT DRAWING.
4. ALL RCP DRAINAGE PIPES ARE FLUSH JOINTED WITH EXTERNAL RUBBER BAND, UNLESS NOTED OTHERWISE.
5. ALL POLYPROPYLENE DRAINAGE PIPES IN ACCORDANCE WITH ASS065.
6. REFER DETAIL FOR TYPICAL SUBSURFACE DRAINAGE TO STORMWATER MANHOLES & KERB INLET TRANSITION.
7. PIPE CLASS: (3) - RCP CLASS 3 (SP) - POLYPROPYLENE (SEWERPRO)

**PIPE SIZE**mm (Class)

**PIPE GRADE %**

**PIPE SLOPE 1 in X**

**FULL PIPE FLOW VELOCITY (m/s)**

**PART FULL FLOW VELOCITY (m/s)**

**WATER LEVEL IN STRUCTURE**

**HYDRAULIC GRADE LEVEL**

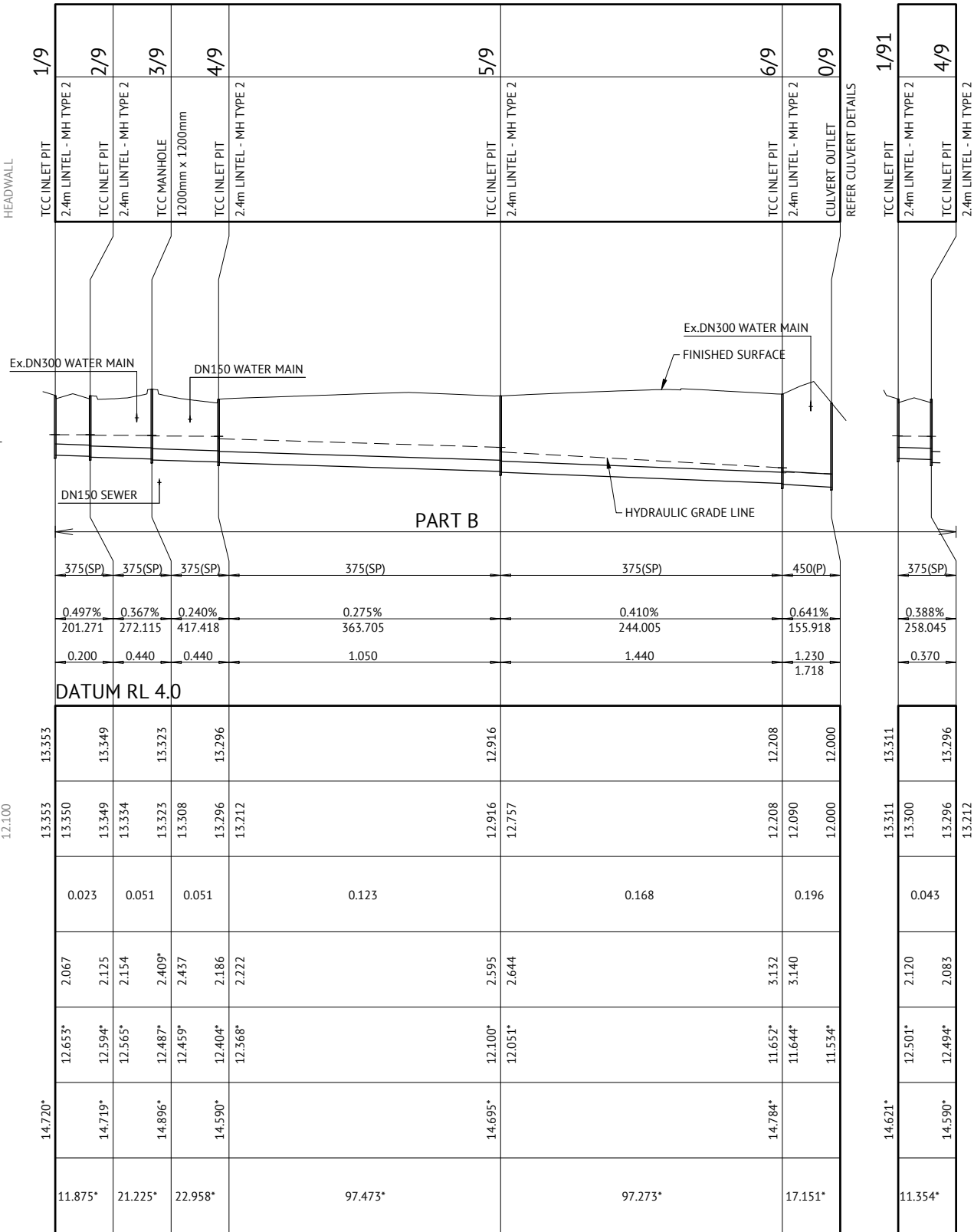
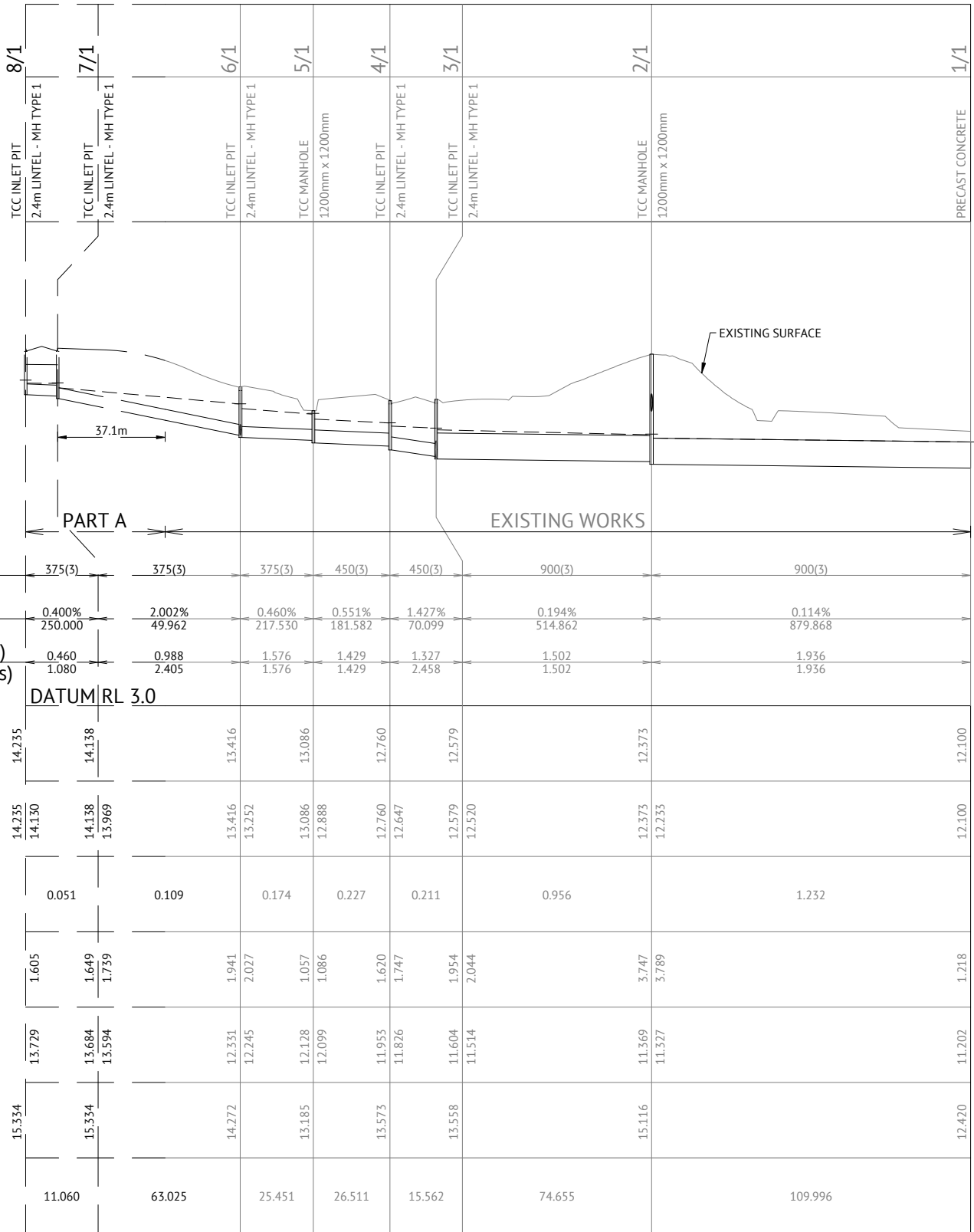
**PIPE FLOW (Cumecs)**

**DEPTH TO INVERT**

**INVERT LEVEL OF DRAIN**

**FINISHED SURFACE LEVEL**

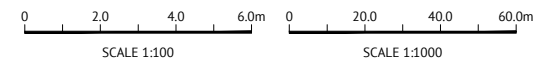
**PIPE LENGTH**



LINE 1 9 91

**Q2 STORMWATER LONGITUDINAL SECTION**

SCALE 1:1000 HORIZONTAL, SCALE 1:100 VERTICAL

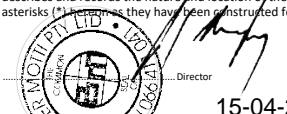


Revisions			
No.	Date	Details	Check
A	15.04.21	AS-CONSTRUCTED ISSUE	GEO

Level Datum: A.H.D	B.M. Used: PSM200738 RL:13.973
Coordinate Projection: Plane Rectangular	Coordinate Datum: Arbitrary
Origin of Coordinates: -	E: -
Meridian: MGA94 (Zone 55)	N: -
Map Reference: 8259-31233	Contour Interval: -
Job No: 40450-098-01	Surveyed by: BM
File No: 40540_200A.dwg	Drawn: MJM
	Approved: -

BRAZIER MOTTI PTY LTD (ACN 066 411 041), 595 Flinders Street, Townsville hereby certify that this Drawing accurately and correctly describes and records the nature and location of the works depicted by asterisks (\*) inasmuch as they have been constructed for subdivision.



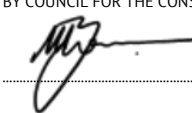
Director  
Date: 15-04-21

PREMISE DO HEREBY CERTIFY THAT THE WORKS AS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS REFLECT ANY CHANGES THAT WERE MADE DURING THE COURSE OF CONSTRUCTION.

RPEQ 13231  
DATE 16/04/21

TOWNSVILLE EARTHMOVING DO HEREBY CERTIFY THAT THE WORKS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS AND CONTRACT DOCUMENTS APPROVED BY COUNCIL FOR THE CONSTRUCTION OF THE PROJECT.


AUTHORISED DELEGATE  
DATE 15/04/21



Client:	<b>MAIDMENT LAND PTY LTD</b>
Project:	<b>HOGARTH DRIVE EXTENSION - PART B HOGARTH DRIVE - HERVEY RANGE ROAD Q2 STORMWATER LONGITUDINAL SECTION</b>
Local Authority: Townsville City Council	Locality: Bohle Plains

Date: 15th April, 2021	Sheet 1 of 1	Sheets
Scale: AS SHOWN		A1
Plan No: 40540/200 A		

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STRUCTURE NAME
STRUCTURE DESCRIPTION

**STORMWATER NOTES**

- ALL WORKS CONSTRUCTED IN ACCORDANCE WITH RELEVANT LATEST ISSUE COUNCIL STANDARD DRAWINGS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE.
- STRUCTURE LENGTH IS TO CENTRE OF MANHOLE OR CENTRE OF STANDARD KERB INLET CHAMBER. FOR STORMWATER ALIGNMENT, REFER TO STORMWATER LAYOUT DRAWING.
- ALL RCP DRAINAGE PIPES ARE FLUSH JOINTED WITH EXTERNAL RUBBER BAND, UNLESS NOTED OTHERWISE.
- ALL POLYPROPYLENE DRAINAGE PIPES IN ACCORDANCE WITH ASS065.
- REFER DETAIL FOR TYPICAL SUBSURFACE DRAINAGE TO STORMWATER MANHOLES & KERB INLET TRANSITION.
- PIPE CLASS: (3) - RCP CLASS 3 (SP) - POLYPROPYLENE (SEWERPRO)

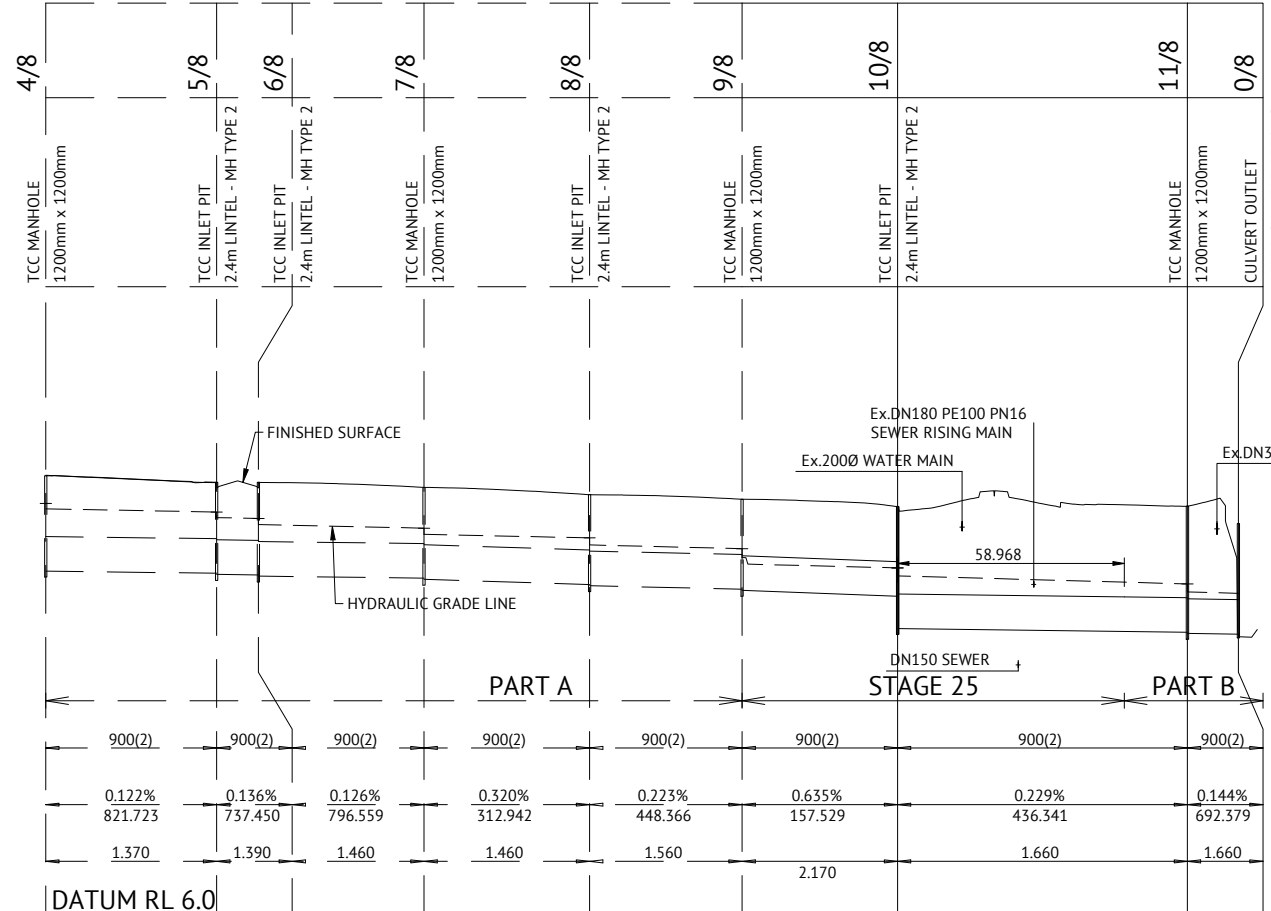
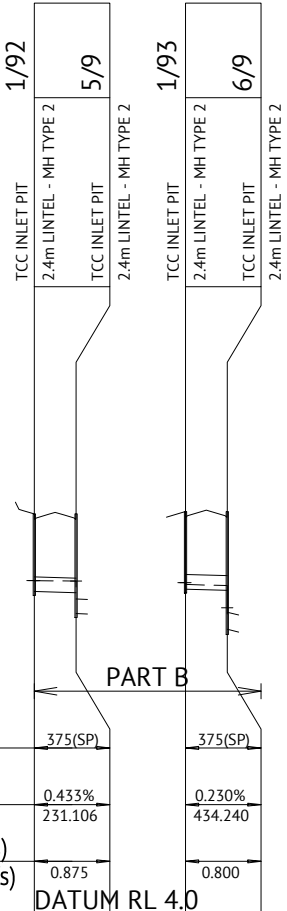
PIPE SIZEmm (Class)	375(SP)	375(SP)
PIPE GRADE %	0.433%	0.230%
PIPE SLOPE 1 in X	231.106	434.240
FULL PIPE FLOW VELOCITY (m/s)	0.875	0.800
PART FULL FLOW VELOCITY (m/s)		

WATER LEVEL IN STRUCTURE	12.926	12.916
HYDRAULIC GRADE LEVEL	12.918	12.916
PIPE FLOW (Cumecs)	0.029	0.026
DEPTH TO INVERT	2.114	2.124
INVERT LEVEL OF DRAIN	12.618*	12.571*
FINISHED SURFACE LEVEL	14.732*	14.695*
PIPE LENGTH	10.862*	10.856*

LINE 92 93

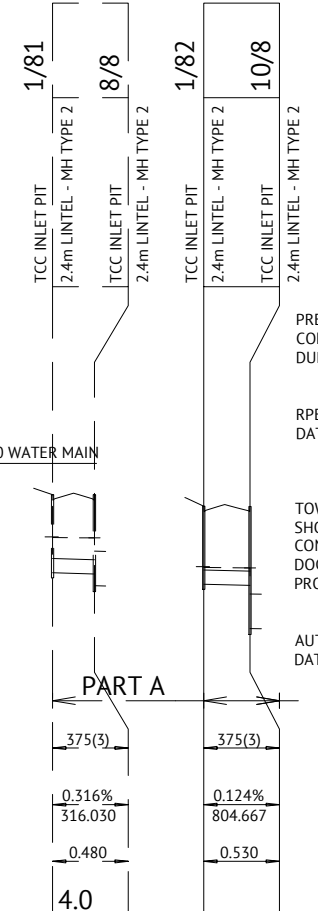
**Q2 STORMWATER LONGITUDINAL SECTION**

SCALE 1:1000 HORIZONTAL, SCALE 1:100 VERTICAL

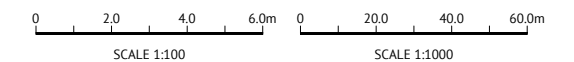


**Q5 STORMWATER LONGITUDINAL SECTION**

SCALE 1:1000 HORIZONTAL, SCALE 1:100 VERTICAL



LINE 81 82



PREMISE DO HEREBY CERTIFY THAT THE WORKS AS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS REFLECT ANY CHANGES THAT WERE MADE DURING THE COURSE OF CONSTRUCTION.

RPEQ 13231  
DATE 16/04/21

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AUTHORISED DELEGATE  
DATE 15/04/21

No.	Date	Details	Check
A	15.04.21	AS-CONSTRUCTED ISSUE	GEO

Level Datum: A.H.D  
B.M. Used: PSM200738 RL:13.973  
Coordinate Projection: Plane Rectangular  
Coordinate Datum: Arbitrary  
Origin of Coordinates: E:  
Meridian: MGA94 (Zone 55) N:  
Map Reference: 8259-31233  
Contour Interval:  
Job No: 40450-098-01  
File No: 40540\_201A.dwg

Surveyed by: BM  
Drawn: MJM  
Approved:

BRAZIER MOTTI PTY LTD (ACN 066 411 041), 595 Flinders Street,  
Townsville hereby certify that this Drawing accurately and correctly  
describes and records the nature and location of the works depicted by  
asterisks for the purposes they have been constructed for subdivision.


  
Date: 15-04-21

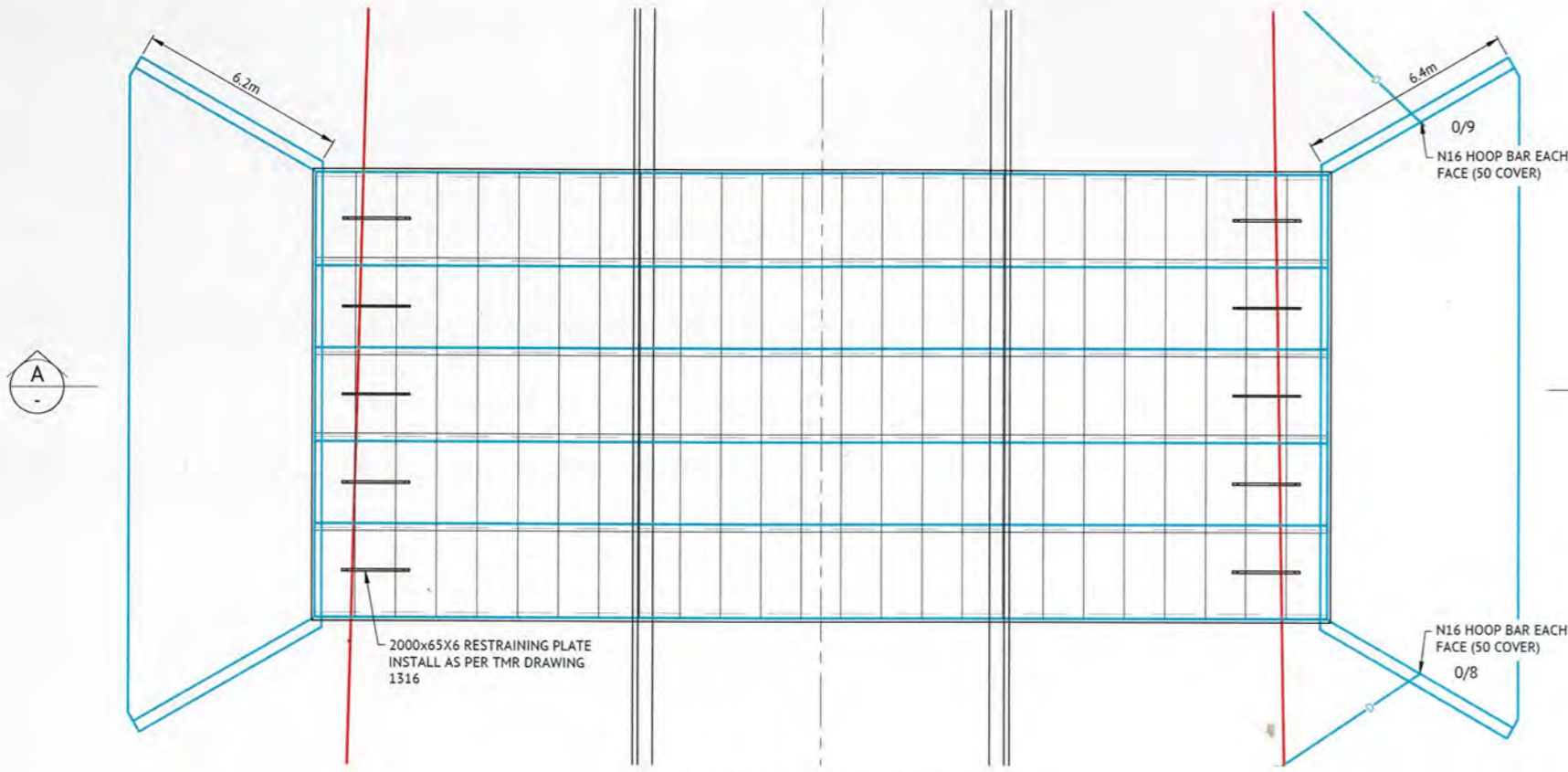
Client:	MAIDMENT LAND PTY LTD
Project:	HOGARTH DRIVE EXTENSION - PART B HOGARTH DRIVE - HERVEY RANGE ROAD Q2 AND Q5 STORMWATER LONGITUDINAL SECTION
Local Authority:	Townsville City Council
Locality:	Bohle Plains

Date:	15th April, 2021
Sheet:	1 of 1 Sheets
Scale:	AS SHOWN
Plan No:	40540/201 A

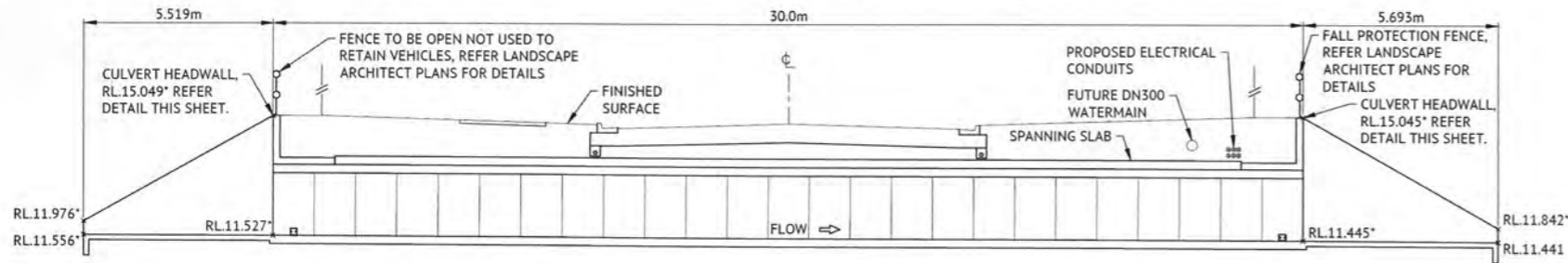
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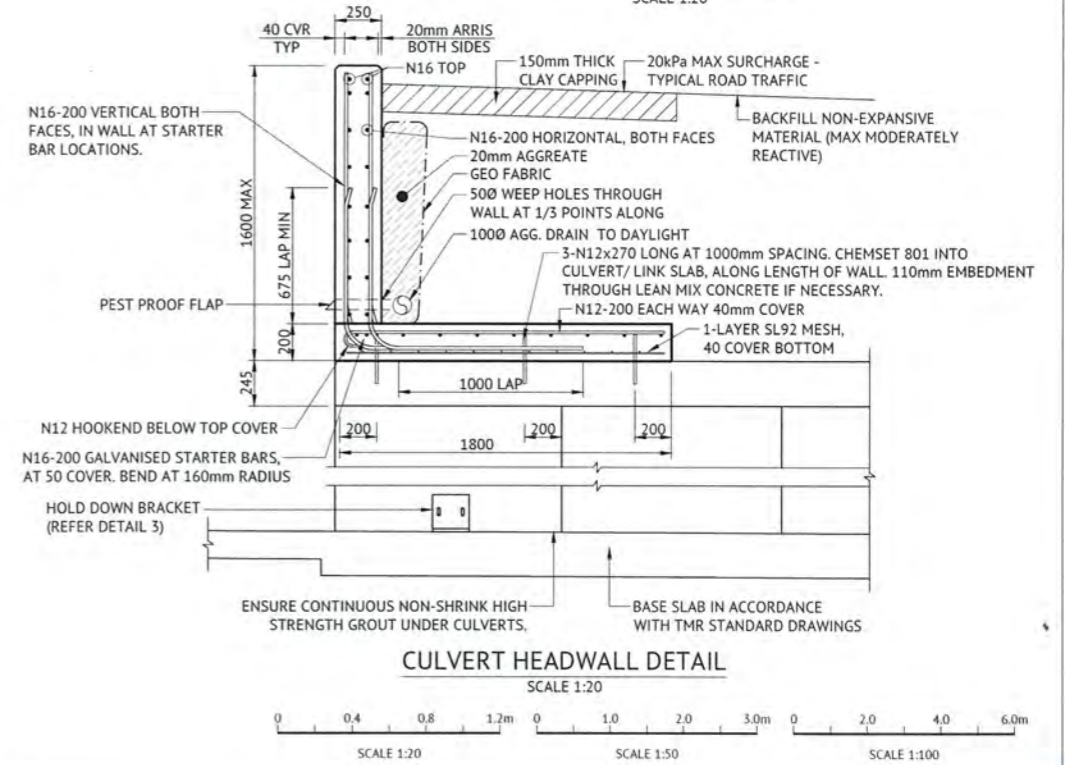
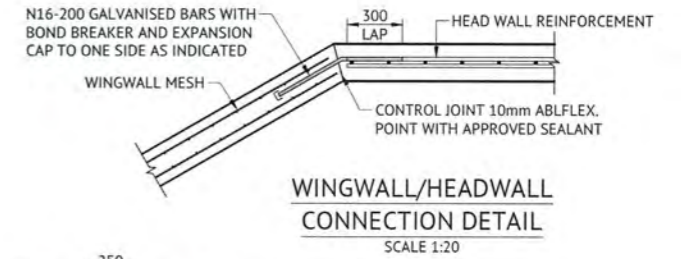
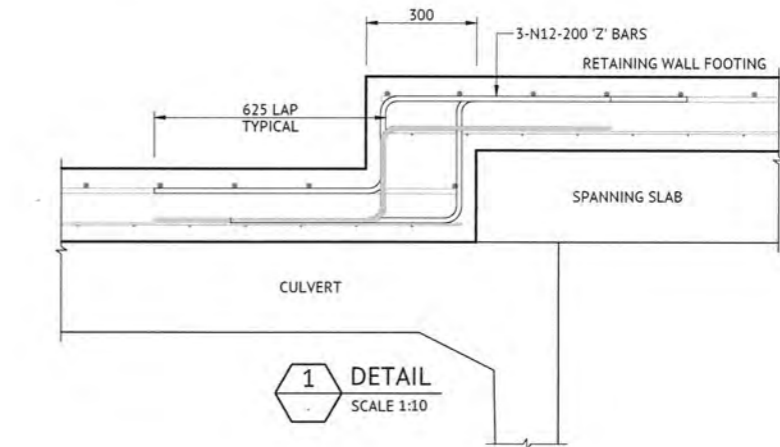
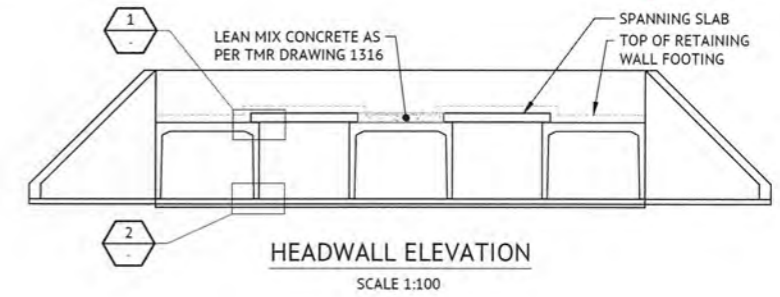
**CULVERT A - 5/2400x1800 SLBC**  
 HOGARTH DRIVE CH.710.000  
 SCALE 1:100



**SECTION A**  
 SCALE 1:100

**NOTES:**

- FOR CULVERT CONSTRUCTION DETAILS, REFER TO DMR STD DRAWINGS 1303, 1316, 1317 AND 1359.
- IF THERE ARE ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND DMR STANDARD DRAWINGS PLEASE CONTACT SUPERINTENDENT FOR CLARIFICATION.
- REINFORCEMENT COVER = 40mm UNLESS NOTED OTHERWISE.
- RECTANGULAR MESH MAIN BAR DIRECTION:  
 WALLS = VERTICAL, FOOTING = PERPENDICULAR TO WALL.
- DESIGN SURCHARGE LOAD BEHIND WALL: 20kPa
- ALL WEEP HOLES/SUBSOIL OUTLETS FITTED WITH PEST PROOF FLAPS TO PREVENT INGRESS OF WATER
- WALLS HAVE BEEN DESIGNED BASED ON GRANULAR RETAINED MATERIAL WITH THE FOLLOWING PROPERTIES:
  - INTERNAL FRICTION = 28°
  - COHESION = 0kPa
  - BULK UNIT WEIGHT = 19kN/m<sup>3</sup>
  - REACTIVITY = SLIGHTLY REACTIVE.
  - CLASS 2 CONTROLLED FILL IN ACCORDANCE WITH AS4678
- IT IS THE BUILDERS RESPONSIBILITY TO ENSURE THE MINIMUM PROPERTIES WERE ACHIEVED.
- THE CONTRACTOR ENGAGED A N.A.T.A. ACCREDITED GEOTECHNICAL TESTING LABORATORY TO SHOW THAT THE SUBGRADE HAS ACHIEVED A MINIMUM BEARING CAPACITY OF 150 kPa. (ALLOWABLE)
- ALL CONCRETE N32



No.	Date	Details	Check
A	15.04.21	AS-CONSTRUCTED ISSUE	GEO

Level Datum: A.H.D.  
 B.M. Used: PSM200738 RL.13.973  
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 Coordinate Datum: Arbitrary  
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 Meridian: MGA94 (Zone 55)  
 Map Reference: 8259-31233  
 Contour Interval:  
 Job No: 40450-098-01  
 File No: 40540\_202A.dwg

Surveyed by: BM  
 Drawn: MIM  
 Approved:

BRAZIER MOTTI PTY LTD (ACN 066 411 041), 595 Flinders Street, Townsville hereby certify that this Drawing accurately and correctly describes and records the nature and location of the works depicted by asterisks (\*) if they have been constructed for subdivision.

*[Signature]*  
 Director  
 Date: 15-04-21

PREMISE DO HEREBY CERTIFY THAT THE WORKS AS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS REFLECT ANY CHANGES THAT WERE MADE DURING THE COURSE OF CONSTRUCTION.

RPEQ 13231  
 DATE 16/04/21

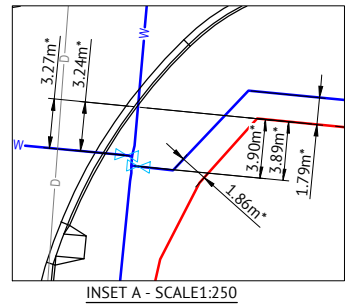
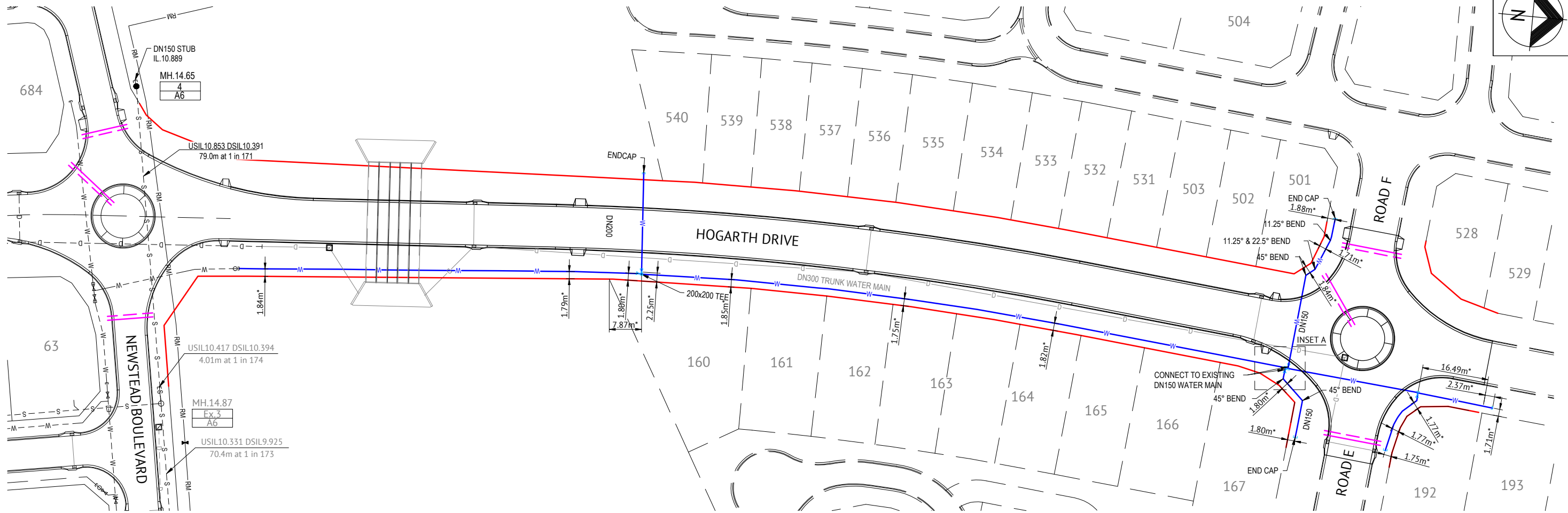
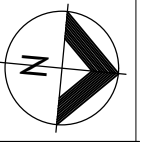
MAIDMENT LAND PTY LTD DO HEREBY CERTIFY THAT THE WORKS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS AND CONTRACT DOCUMENTS APPROVED BY COUNCIL FOR THE CONSTRUCTION OF THE PROJECT.

AUTHORISED DELEGATE  
 DATE 16-4-21 *[Signature]*

Client: MAIDMENT LAND PTY LTD  
 Date: 15th April, 2021  
 Sheet 1 of 1  
 Scale: AS SHOWN  
 Plan No: 40540/202 A

Local Authority: Townsville City Council  
 Locality: Bohle Plains

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**WATER LEGEND**

- DN150 WATER MAIN AND DIAMETER
- FH SV FIRE HYDRANT, VALVE AND REDUCER
- EXISTING WATER MAIN, VALVE AND HYDRANT

**IRRIGATION CONDUITS LEGEND**

- DN100 CONDUIT
- DN150 CONDUIT

**WATER NOTES**

- ALL WORKS CONSTRUCTED IN ACCORDANCE WITH RELEVANT LATEST ISSUE COUNCIL STANDARD DRAWINGS AND PROJECT SPECIFICATION.
- ALL WATER MAINS ARE LOCATED ON A 1.8m ±0.1m ALIGNMENT OFFSET FROM PROPERTY BOUNDARIES, UNLESS NOTED OTHERWISE.
- ALL uPVC MAINS ARE CLASS PN16 SERIES 2 COMPATIBLE TO AS 1477 RUBBER RING JOINTED, WITH SOCKETED DICL FITTINGS UNLESS NOTED OTHERWISE.
- ALL TRENCHES UNDER ROAD PAVEMENT BACKFILLED WITH CRUSHER DUST TO SUBGRADE LEVEL. REFER PROJECT SPECIFICATION FOR COMPACTION AND COMPLIANCE TESTING REQUIREMENTS.
- CONNECTION TO EXISTING WATER MAINS CARRIED OUT BY COUNCIL AT THE CONTRACTORS EXPENSE.
- REFER TCC STANDARD DRAWING SD-315 FOR PVC TO PE SERVICE MAIN CONNECTION DETAIL.

TOWNSVILLE EARTHMOVING DO HEREBY CERTIFY THAT THE WORKS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS AND CONTRACT DOCUMENTS APPROVED BY COUNCIL FOR THE CONSTRUCTION OF THE PROJECT.

AUTHORISED DELEGATE DATE 19/04/21

**SEWER LEGEND**

- STORMWATER DRAINAGE LINE
- SEWER MAIN AND MANHOLE (MH)
- EXISTING SEWER MAIN AND MANHOLE
- TYPE & INDICATIVE TOP OF MANHOLE LEVEL MANHOLE NUMBER LINE NUMBER

**SEWER NOTES**

- ALL WORKS CONSTRUCTED IN ACCORDANCE WITH RELEVANT LATEST ISSUE COUNCIL STANDARD DRAWINGS AND PROJECT SPECIFICATION
- ALL SEWERAGE MAINS LOCATED ON 1.5m ±0.1m ALIGNMENT OFFSET FROM THE PROPERTY BOUNDARIES, UNLESS NOTED OTHERWISE.
- ALL SEWERAGE MAINS DN150, UNLESS NOTED OTHERWISE.
- ALL DN150 AND DN225 SEWERAGE MAINS uPVC DWV SN8, UNLESS NOTED OTHERWISE.
- ALL TRENCHES UNDER ROAD PAVEMENT BACKFILLED WITH CRUSHER DUST TO SUBGRADE LEVEL. REFER PROJECT SPECIFICATION FOR COMPACTION AND COMPLIANCE TESTING REQUIREMENTS.
- CONNECTION/ALTERATIONS TO EXISTING SEWERAGE INFRASTRUCTURE CARRIED OUT BY COUNCIL AT THE CONTRACTORS EXPENSE.
- ALL MANHOLE INTERNAL DROP 'CORES' ARE NOT LOCATED WITHIN 150mm OF PRECAST WALL JOINTS.
- TOP OF MANHOLE LEVELS PROVIDED ARE INDICATIVE, REFER TCC STANDARD DRAWING SD-475 FOR FINISHED LEVELS OF MANHOLE COVERS.
- ALL STUBS TO BE HUMESAL WATERTIGHT COUPLINGS.

PREMISE DO HEREBY CERTIFY THAT THE WORKS AS SHOWN ON THE 'AS CONSTRUCTED' DRAWINGS REFLECT ANY CHANGES THAT WERE MADE DURING THE COURSE OF CONSTRUCTION.

RPEQ 13231 DATE 19/04/21

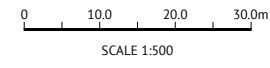
No.	Date	Details	Check
A	15.04.21	AS-CONSTRUCTED ISSUE	GEO
B	19.04.21	ADDITIONAL WATER ADDED	GEO

Level Datum: A.H.D  
 B.M. Used: PSM200738 RL:13.973  
 Coordinate Projection: Plane Rectangular  
 Coordinate Datum: Arbitrary  
 Origin of Coordinates: E:  
 Meridian: MGA94 (Zone 55) N:  
 Map Reference: 8259-31233  
 Contour Interval:  
 Job No: 40450-098-01  
 File No: 40540\_203B.dwg

Surveyed by: BM  
 Drawn: MJM  
 Approved:

BRAZIER MOTTI PTY LTD (ACN 066 411 041), 595 Flinders Street,  
 Townsville hereby certify that this Drawing accurately and correctly  
 describes and records the nature and location of the works depicted by  
 asterisks (\*) if they have been constructed for subdivision.

Date: 19-4-21



Client: MAIDMENT LAND PTY LTD  
 Project: HOGARTH DRIVE EXTENSION - PART B  
 HOGARTH DRIVE - HERVEY RANGE ROAD  
 WATER AND SEWERAGE RETICULATION PLAN

Date: 15th April, 2021  
 Sheet 1 of 1 Sheets  
 Scale: AS SHOWN A1  
 Plan No: 40540/203 B

Local Authority: Townsville City Council  
 Locality: Bohle Plains

braziermotti.com.au  
 SURVEYING  
 TOWNPLANNING  
 PROJECT MANAGEMENT  
 MAPPING & GIS