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Proposed Residential Subdivision
Old Peterborough Road, Peterborough

Engineering Services Report

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Project Number: 22-158
Date: 30th August 2023
Client: [redacted]

Revision	Description	Date
-	ERS Submission	30/8/2023

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CONTENTS

1. INTRODUCTION

This report provides engineering infrastructure servicing advice for the proposed residential subdivision at Old Peterborough Road, Peterborough.

Shown in the locality map below (*Figure 1*), the proposed development is situated on Old Peterborough Road. The northern perimeter borders the neighbouring farmland, the eastern boundary fronts the Old Peterborough Road reserve, the southern boundary back onto the existing subdivision (Antares Estate), and the western boundary backs onto the existing subdivision (Caravan Park Subdivision). This site is zoned general residential zoned (GRZ1) with the northern perimeter bordering the farmland zoned area.

FIGURE 1: LOCALITY PLAN

2. ROADWORKS

This development site will contain three council managed two-way access roads with access via a proposed intersection with the Old Peterborough Road.

Old Peterborough Road is aligned north-south which connects on both ends to the Great Ocean Road. The Old Peterborough Road is a rural living collector road with a 40m road reserve and a 6m sealed width. There is a posted speed limit of 60km/hr in this area of Old Peterborough Road.

An approval for Works Within Road Reserves will need to be provided from Moyne Shire Council for any works proposed in the road reserve.

Appendix A (Figure 10) shows the internal road network and lot layout.

Photos below show Old Peterborough Road (Figure 2) at the access points for the subdivision.

FIGURE 2: OLD PETERBOROUGH ROAD ACCESS AREA FOR PROPOSED INTERNAL ROAD (LOOKING WEST)

[redacted]

3. DRAINAGE.

The Moyne Shire Council is the responsible authority for stormwater discharge. A Stormwater Management Plan for the site will be required as part of the Planning Permit conditions.

The subdivision falls 2.6% from the south-west to the north-east corner of the development. Hence drainage will be directed to the north-east corner of the development.

At the north east boundary, the stormwater runoff will be discharged at predevelopment flows into the neighbouring swale drain in the northern farmland. In order to convey the stormwater from the development site to the proposed discharge point, the existing underground pipe network will be utilised through the development as it was designed to do.

Calculations on the pre-development and post-development flows for both the minor and major storm events will be given in the Stormwater Management Plan to detail the stormwater runoff as well as the volume of onsite storage required for the minor storm event. A treatment system will need to be installed to achieve best practice Water Sensitive Urban Design (WSUD) guidelines. The treatment system will include a sedimentation basin and retention pond.

FIGURE 3: OUTFALL LOCATION IN COMPARISON TO THE DEVELOPMENT SITE

[redacted]

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3.1 MINOR STORM EVENTS (20% AEP).

A stormwater network will be designed to cater for the 20% AEP storm event. Sufficient capacity is required in the stormwater network to collect and convey the flows, preventing both stormwater damage to properties and reducing the quantity and frequency of surface water to an acceptable level.

This site will use a pit and pipe system sized to collect and convey the minor storm event through the development site.

To achieve WSUD as well as detain any excess stormwater, a stormwater sedimentation basin and retention pond will collect water from the roof of each dwelling along with collecting runoff from the road reserve, designed to treat the water onsite while releasing stormwater at the pre-development storm water flow rate.

3.2 MAJOR STORM EVENTS (1% AEP).

In accordance with the Moyne Shire Council design standards, all road design and construction for the development must ensure that the 1% AEP storm event can pass through the road reserve network without entering private property, ensuring privately owned assets are protected from inundation and flooding during and after the major storm event.

The 1% AEP storm flows will be conveyed through the road network, down to the development's low areas and discharged off site into existing stormwater infrastructure. Calculations and safety checks will be required for the 1% AEP storm event to ensure the water is conveyed offsite in an appropriate way for a fully developed site.

NEW PIT AND PIPE NETWORK TO BE CONSTRUCTED THROUGHOUT THE DEVELOPMENT TO CONNECT INTO THE EXISTING STORMWATER NETWORK THAT HAS BEEN CONSTRUCTED THROUGH THE PROPOSED DEVELOPMENT.

FIGURE 4: LOCATION OF OUTFALL COMPONETS FOR PLANNED STORMWATER DISCHARGE

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4. SEWERAGE

Wannon Water is the responsible authority for the provision of sewerage facilities to the site.

There is a gravity sewer network situated along the southern boundary of the proposed development that can service the site. As the exact depths of this sewer are currently unknow, further investigations will be required to determine the extents that the existing gravity sewer can service. It is likely that in order for the development to be serviced by the existing gravity sewer, discussion will need to be undertaken with Wannon Water to determine the parameters for the site. As this site is difficult to service by gravity, special consideration by Wannon Water may need to be requested for a gravity sewer system to be achieved. Due to expected earthworks on the site, it is anticipated that even the low areas (once filled) will be able to be serviced by the existing gravity sewer network and a pressurised system may be avoided. The new gravity sewer mains can be extended throughout the development where house connections can be joined directly into. These new mains can connect into the existing sewer mains located in Old Peterborough Road as demonstrated in the figure below. For lot layout refer to Appendix A (Figure 10).

Supply would be subject to normal supply policy and a development agreement with Wannon Water.

FIGURE 5: POSSIBLE SEWER RETICULATION CONNECTION POINTS

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[redacted]

FIGURE 6: POSSIBLE SEWER RETICULATION CONNECTION POINT

5. WATER SUPPLY

Wannon Water is the responsible authority for the provision of water supply facilities to the development.

Currently there is pressurised water supply in the area to service the site. The development can be supplied from the front of the development on Old Peterborough Road via the existing 100mm AC reticulation water service. As shown in figure below (Figure 7). A new water reticulated main will need to be extended from this location and constructed in the road reserve of the proposed subdivision.

The selected connection location is subject to further authority approval with engagement between the design engineering consultant and Wannon Water required to detail the connection point for water supply to the development.

As there are a proposed 57 lots being created, Wannon Water will determine if the existing 100mm AC watermain will have sufficient capacity to service these lots. If Wannon Water deem the capacity of the existing watermain to be insufficient, a watermain upgrade maybe required to service this site.

Supply would be subject to normal supply policy and a development agreement with Wannon Water.

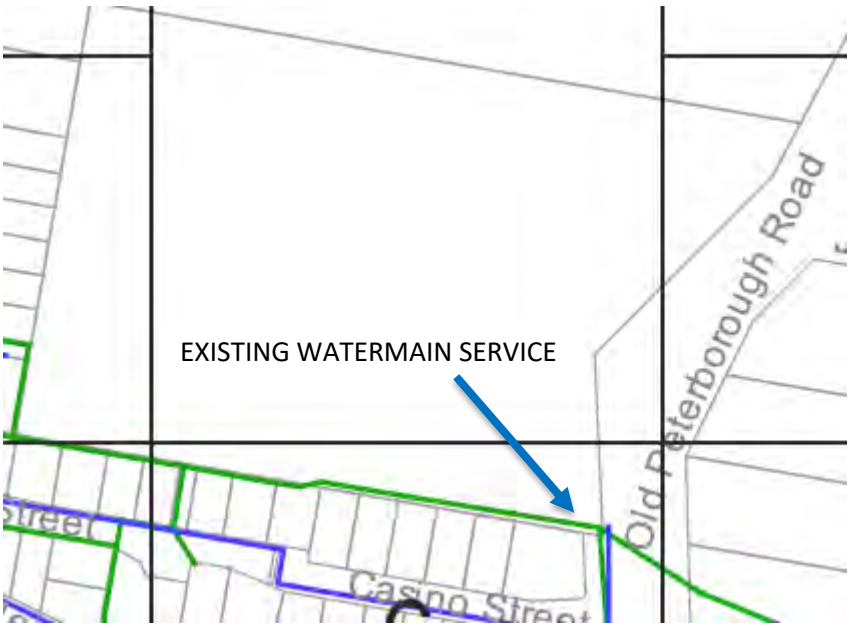

FIGURE 7: CURRENT WANNON WATER WATERMAIN ASSETS

6. ELECTRICITY

PowerCor is the responsible authority for the provision of electrical supply to service this development.

There is currently overhead electricity going through the proposed development. Electricity supply can be provided to the site from existing overhead low voltage power supply. This will need to be brought down the poles and into the development by an underground service extension.

A substation or power kiosk may require installation in order to serve the proposed development. The installation of substations would be included as part of the subdivisional works completed during the civil construction phase of the development.

Supply would be subject to normal supply policy and a development agreement with PowerCor.

FIGURE 8: POWER CONNECTION POINTS

7. TELECOMMUNICATIONS

National Broadband Network Company (NBNCo) is the responsible authority for the provision and management of new telecommunication facilities to service the proposed development.

There is a Telstra / NBNCo line that runs along the east side of Old Peterborough Road, parrarell to the proposed development. There is also a service brought to the intersection of Casino Street and Old Peterborough Road that could also be ultisied if boring under Old Peterborough Road is not favourable.

Supply would be subject to normal supply policy and a development agreement with NBNCo.

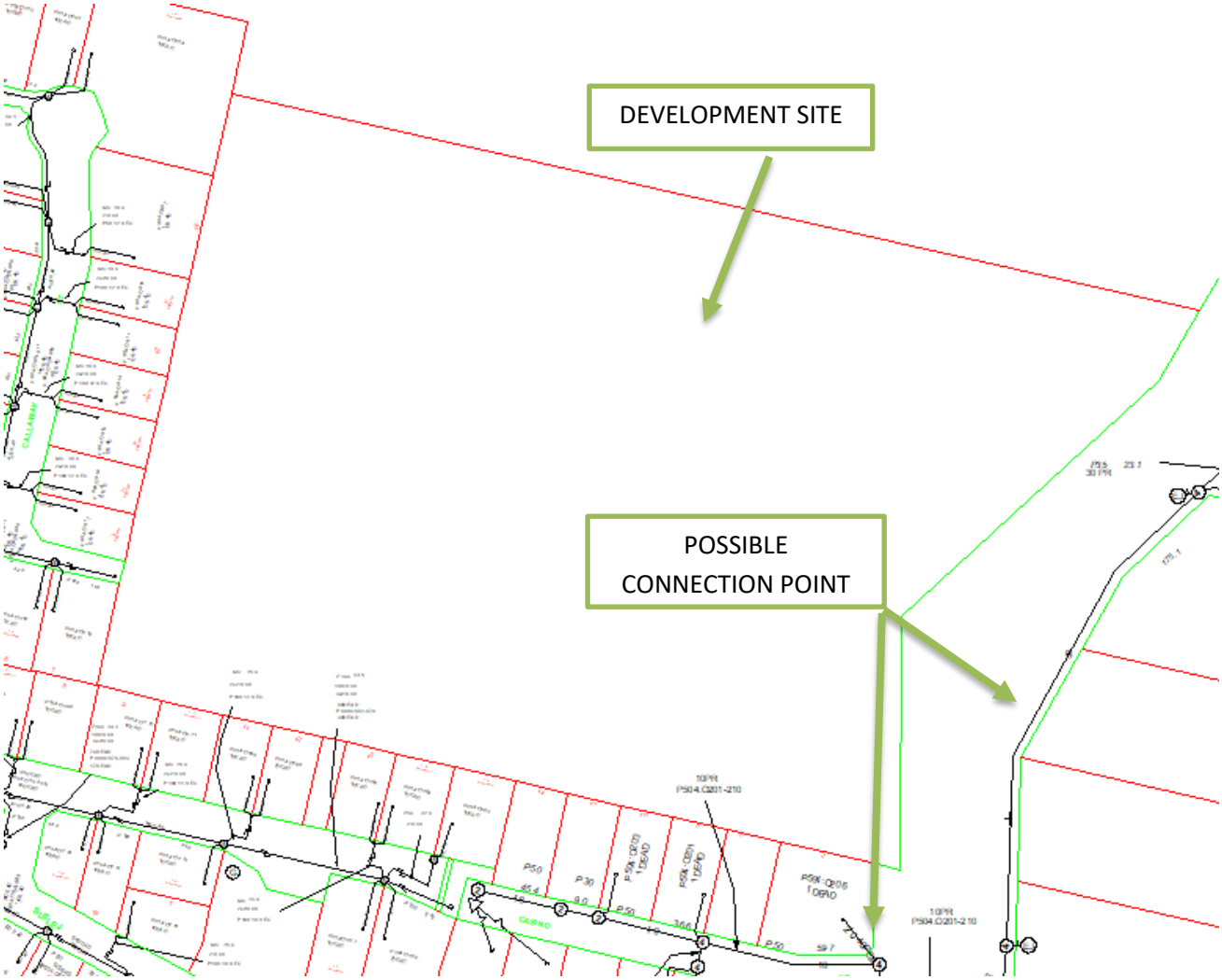

FIGURE 9: POSSIBLE COMMUNICATIONS CONNECTION POINT

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8. GAS SUPPLY

Ausnet Services is the principal provider of natural gas to the Southwest region.

Currently there is no gas supply to the Peterborough area.

If gas is required, the new homeowners can make an agreement with a bottle gas company.

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9. APPENDIX

FIGURE 10: PROPOSED LOT LAYOUT

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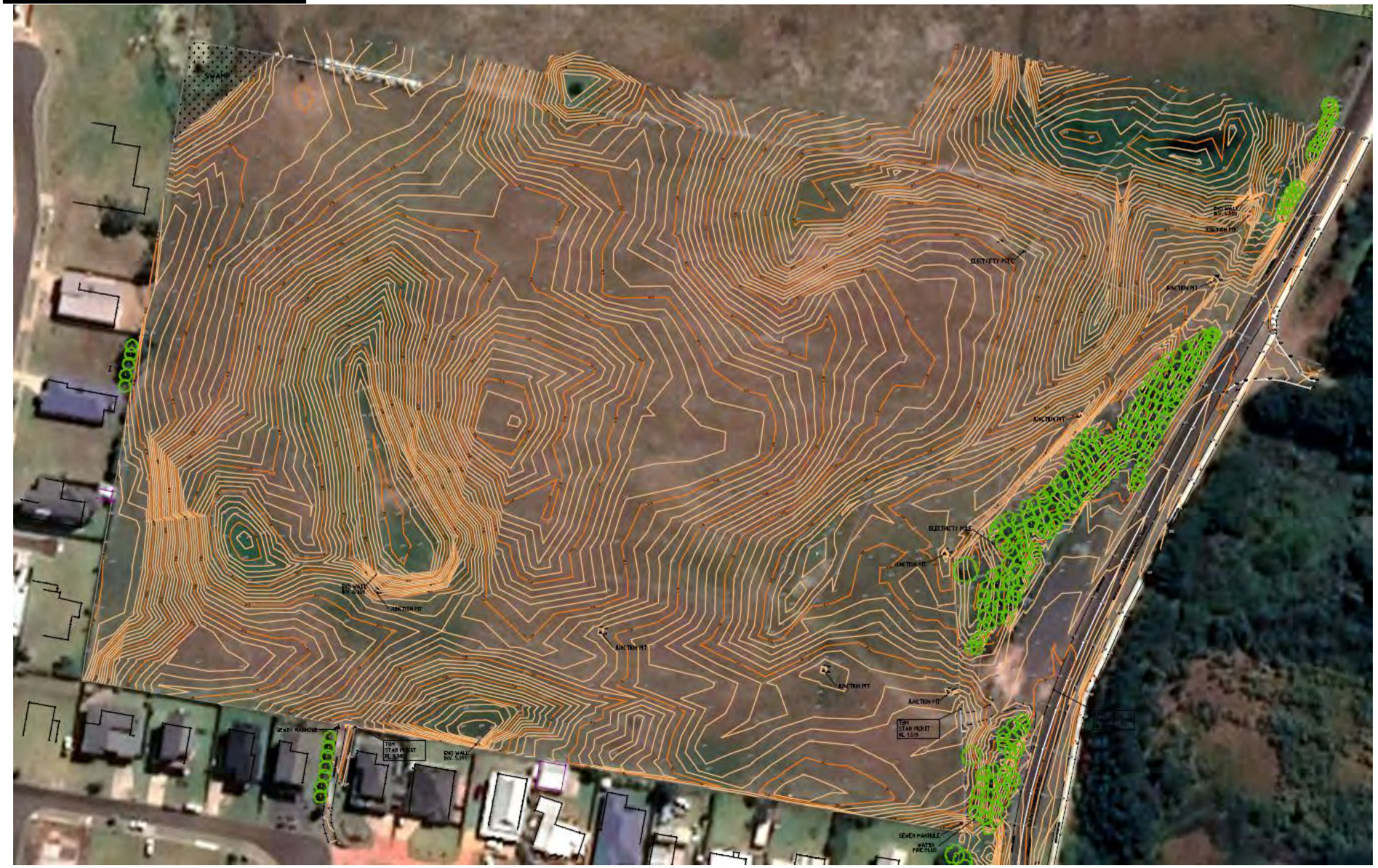

FIGURE 11: FEATURE AND LEVEL SURVEY WITH BACKGROUND PHOTO

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