



NEILLY GROUP

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PLL CONTRACTORS

COMMUNITY WASTEWATER MANAGEMENT SYSTEM

**CONCEPT FOR NEW DEVELOPMENT FOR ALLOTMENT 39 IN
D93426, RENMARK WEST**

MARCH 2026



Document Control

Details and distribution

Details	
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Revision History

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1	17/10/2025	Adrian Crocetti Aaroehi Singhel	Draft	Adrian Crocetti	Adrian Crocetti
1	27/03/2026	Aaroehi Singhel	Amended to reflect changes to the site layout plan	Estelle O'Donohue	Adrian Crocetti



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1 Introduction

Neilly Group was engaged by PLL Contractors to assist with the Development Application for Allotment 39 in D93426, Renmark West and to support the submission for approval to Renmark Paringa Council and the South Australian Government's Planning Department the Department of Housing and Urban Design (DHUD).

As part of this engagement, Neilly Group identified that the development is situated within the Bookmark Creek Subzone which has been put in place to ensure development does not compromise the quality of groundwater around the River Murray.

To ensure the development achieves this, Neilly Group have developed a concept for an on-site Community Wastewater Management System (CWMS) for the new development. The goal is to design a CWMS that effectively manages drainage and ensures the wastewater is properly contained and disposed of appropriately prior to the Renmark Paringa Council CWMS system upgrade being implemented.

This report presents the Land Division Plan in Appendix A, proposed concept CWMS design and water design in Appendix B and C, separately.

1.1. Project Objectives

The project objectives are to assist PLL Contractors to gain development approval for the site by providing appropriate advice and designs to:

- Ensure the proposed CWMS complies with all relevant legislation and meets water quality standards.
- Implement effective sanitation measures and prevent water contamination.
- Improve public health outcomes.
- Provide opportunities to reuse the treated water, if possible.

1.2. Scope

We have undertaken the following scope of works to ensure an accurate system design is provided:

1. Reviewed the compliance documents and regulatory requirements.
2. Designed the system to provide treated water and water reuse opportunities.

2 Site location

The site is situated at 55 Arumpo Street, Renmark West (Figure 1). In accordance with Planning and Design Code, the site is zoned as Rural Neighbourhood. The development area will be divided into 48 blocks for residential development and with varying areas. The area and dimensions of each block are shown in Appendix A. The development includes 15m wide new road reserves to access each lot.

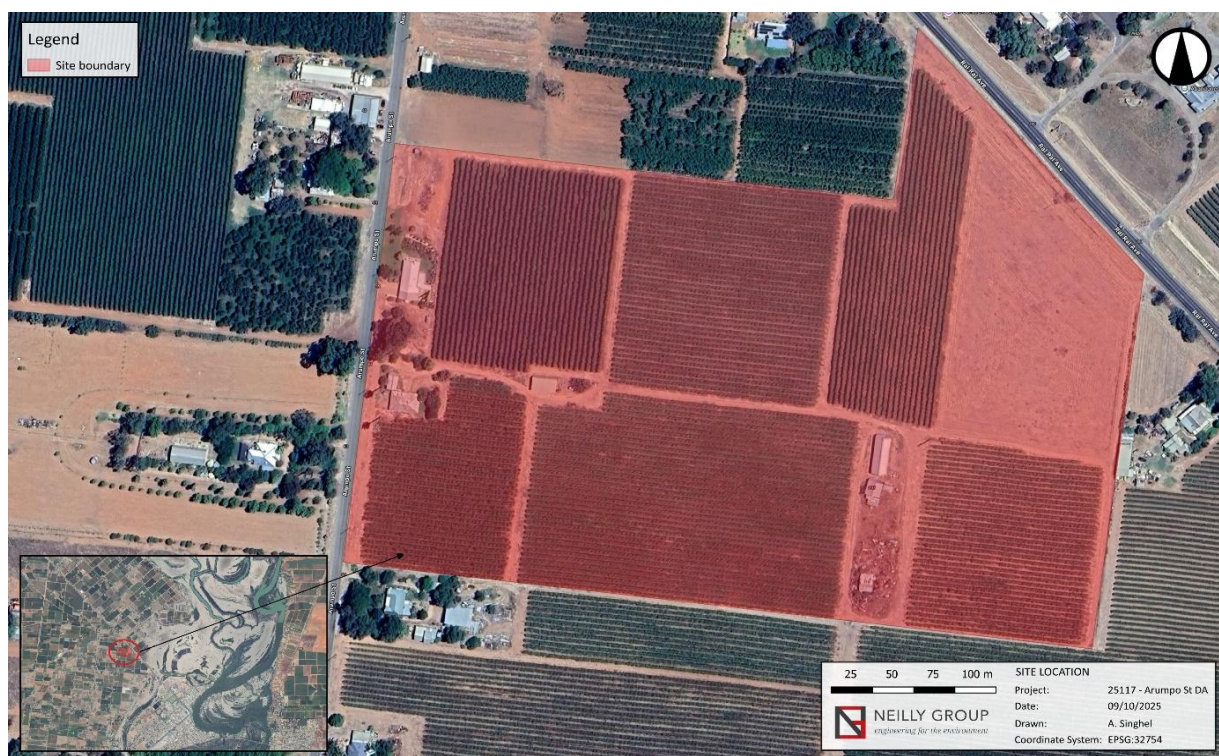


Figure 1. Site location

2.1 Flood assessment

A part of the site lies within the 1956 River Murray flood extents, as provided in the Murray-Darling Basin Authority's shapefile. It is excluded from the River Murray Flood Plain Protection Area, as defined in the Planning and Design Code – see Figure 2.

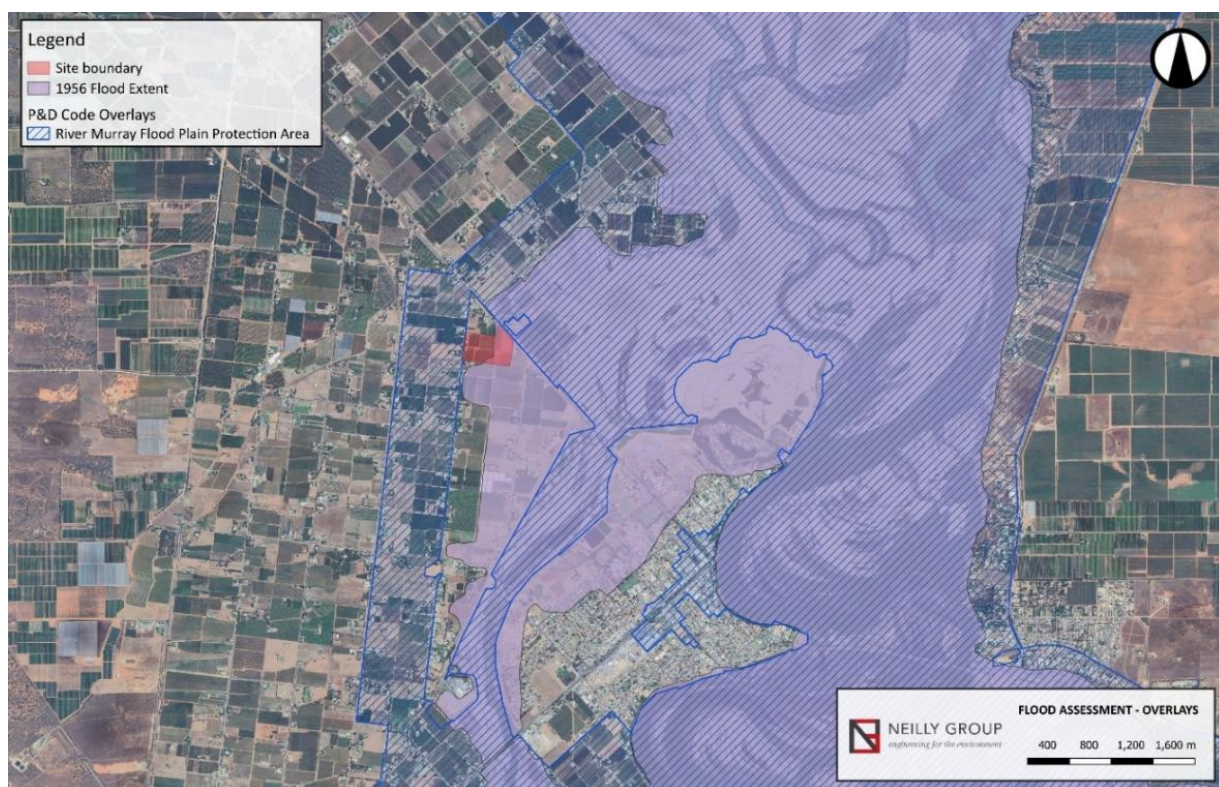


Figure 2. Site location against 1956 flood extent and P&D Code Overlay



The site is protected by flood levees that run adjacent to Bookmark Creek, along Ral Ral Ave and then around the Jane Eliza floodplain. Neilly Group have been separately involved in other projects with Council where they have stated these levees will be maintained as needed to ensure no flooding occurs outside of these Council-maintained flood levees. The site location is shown in Figure 3, highlighting the location of these levees.

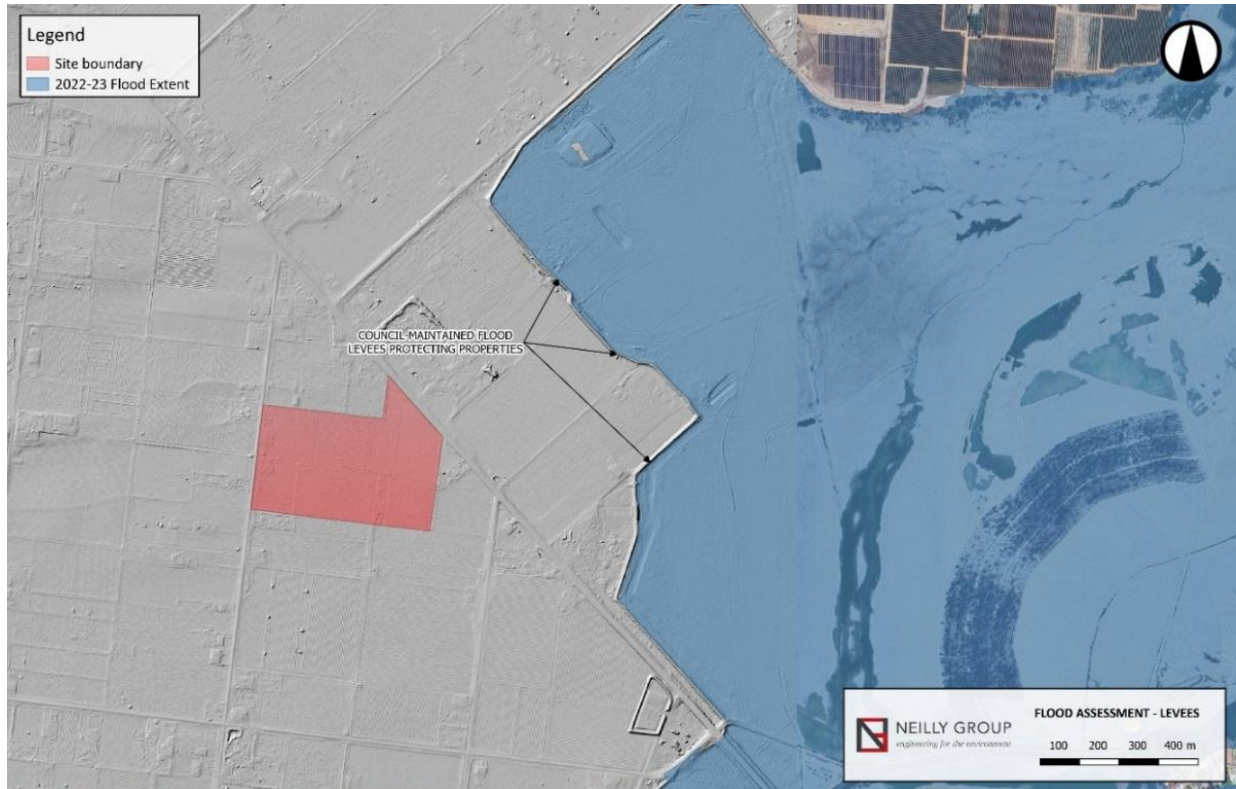


Figure 3. Council-maintained flood levees protected the site during the 2022-23 flood

3 Legislature and Compliance

The following guidelines were reviewed to ensure optimal concept design of CWMS

- National Guidelines for Water Recycling: Managing Health and Environmental Risks, November 2006
- SA Public Health (Wastewater) Regulations, 2013
- Community Wastewater Management Systems Code, April 2013
- On-site Wastewater Management Systems Code, April 2013
- South Australian Public Health Act 2011 (Factsheet)

4 Water Connections

4.1 CWMS System Location

A 15m x 9m area within 'Reserve' area of the subdivision (refer to Appendix B) has been allocated for the CWMS infrastructure, including provision for maintenance and servicing access. This area will accommodate vehicular access, wastewater treatment and holding facilities, and the pump station enclosure.

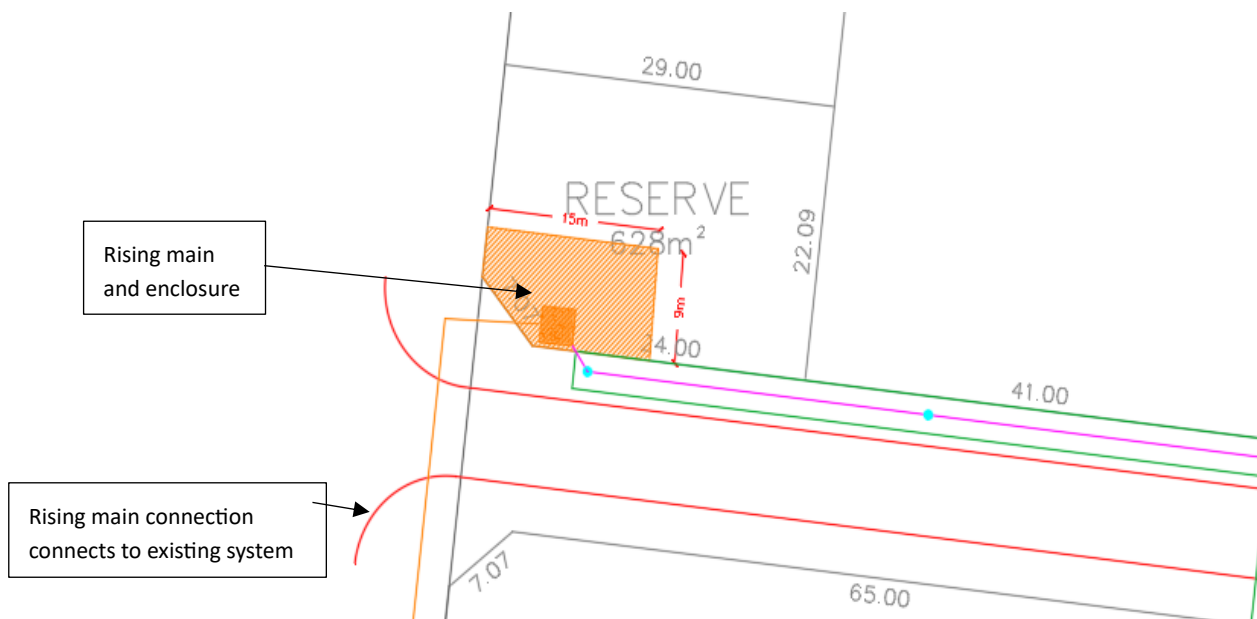


Figure 4. Connections and CWMS location

4.2 Reticulated Water

Each property will require a water connection point from the Renmark Irrigation Trust (RIT) reticulated water line that is located along the Southern Boundary of the development. An additional connection point will be provided for the CWMS Enclosure for washdown, servicing and maintenance of the system. The water is sourced from the nearby River Murray and is unsuitable for human consumption without further filtration, and potable water can be provided through the use of one of these options:

1. Centralised filtration system from the RIT and distributed to each dwelling;
2. Individual filtration for each dwelling, or;
3. Installation of potable water tanks for each dwelling,

All potable options are to be plumbed in separately from the RIT water connection via a common distribution pipe.

4.3 CWMS pipework layout

Each property will have a CWMS connection point at the boundary of each block and be connected to a suitably sized mainline running to the CWMS treatment and holding system. All plumbing will be designed to meet relevant legislation and Australian Plumbing Standards.

Due to the large distances between the properties, the main CWMS line that will transect the property and first two branches off the main line will be upsized to 150mm DWV UPVC sewer pipe to reduce the required fall in the pipe and therefore reduce the depth of the rising main.

4.4 Wastewater Treatment and Storage System

Neilly Group have been in preliminary discussions with RPC were advised that new CWMS pipelines will be installed to connect the Bookmark Creek subzone into the existing CWMS system and the sewer designs provided will provide a straightforward future connection to any centralised system.



The system will be scoped based on the requirements of the Council and an appropriately sized wastewater treatment system will be installed within each individual property before connecting to a common CWMS pipe. The wastewater will then flow into a rising main sump and pump system (approximately 5 metres deep) and pumped to the RPC CWMS pipe at the corner of Arumpo and Ontario Streets. The rising main and pump system will be scoped and designed at detailed design phase.

4.5 Monitoring and Maintenance

The system will contain alarms and telemetry to advise the relevant parties (property owners, nominated maintenance team) of any malfunctions and overflows, and when the tank needs emptying. Any malfunctions should be reported and scheduled for repairs.

Regular inspections of the pipe network, treatment tank, and pumps are essential to maintain optimal performance. An operations manual should be made available for repairs and maintenance procedures. It is advisable to provide lot owners with a copy of the system's operation and maintenance guidelines.

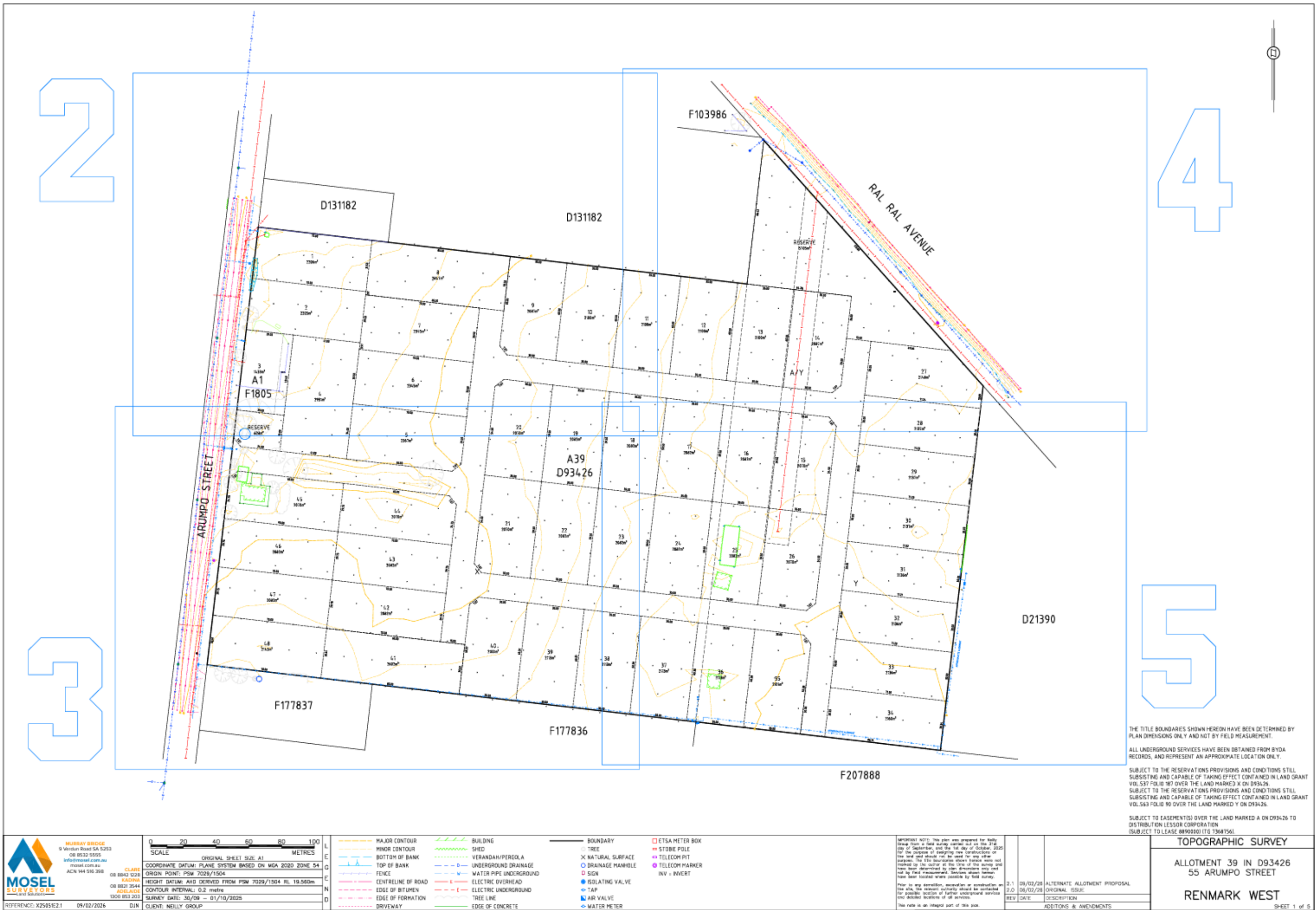
Emergency protocols will be established to ensure adequate planning in case of system failure or unforeseen events, such as heavy rainfall or power outages.

5 Recommendations and Conclusion

1. Wastewater management
 - Ensure treated water meets compliance requirements and disposed of in accordance with environmental regulations and Council's direction.
2. Environmental protection and safety
 - Install rainwater harvesting tanks at housing lots and implement stormwater management strategies to prevent stormwater overflows.
 - Ensure CWMS system is effectively constructed to prevent overloading of system.
 - Ensure sludge and wastewater is disposed of properly to avoid soil and groundwater contamination.
3. Compliance and management
 - Ensure CWMS operations and maintenance comply with local, state and national regulations.
 - Schedule regular inspections of system and quality testing.
 - Keep a record of performance reports and audits.
4. Public safety and engagement
 - Secure CWMS site by fencing and restricted access to reduce risk of accidental exposure the wastewater.
 - Warning signages and clear markings should be used to differentiate potable and non-potable connections. This will prevent cross-contamination.
 - Educate householders about the system's operation and maintenance requirements and spread awareness on potential health risks due to accidental exposure.

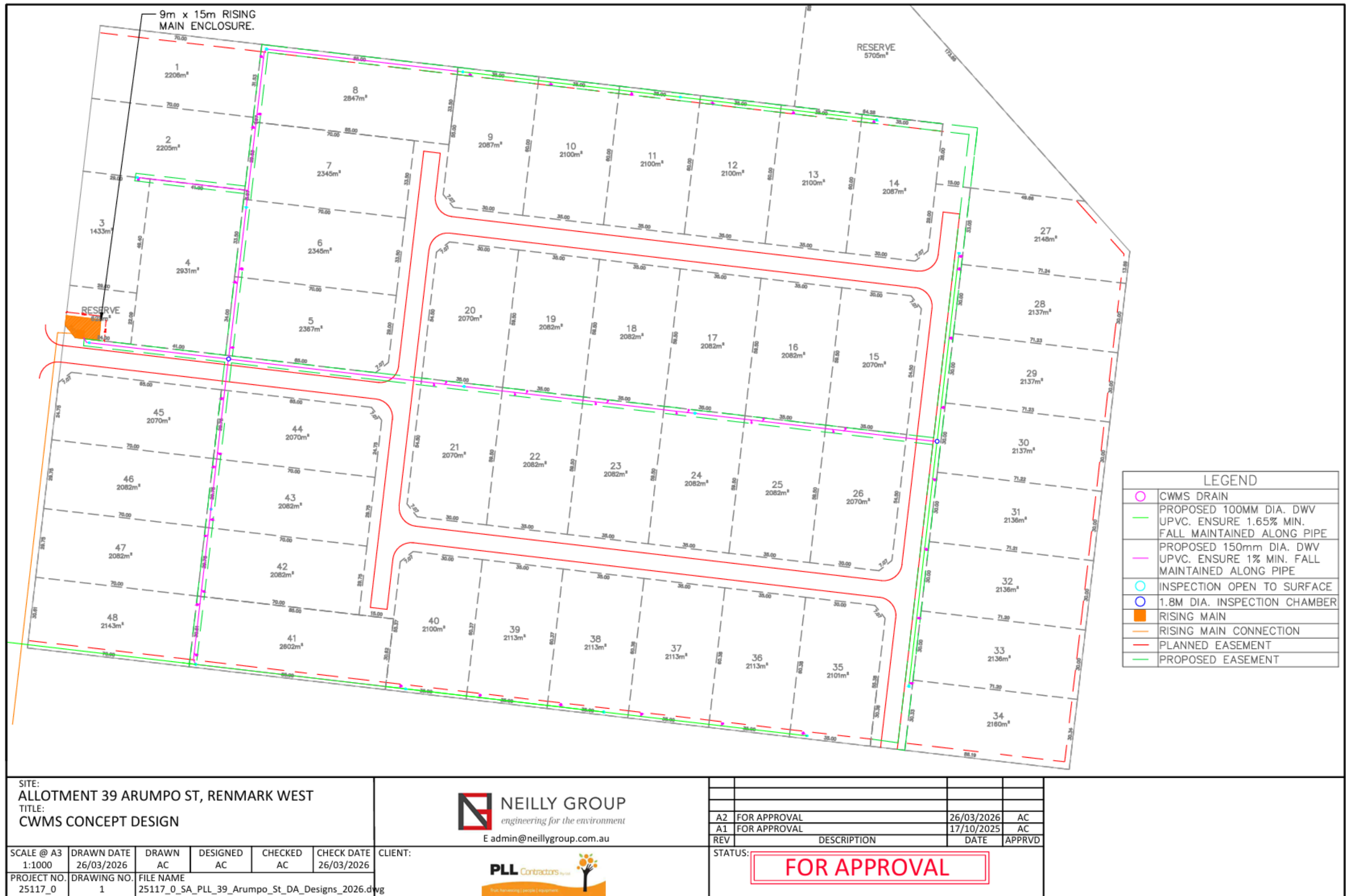


Appendix A: Land Division Plan



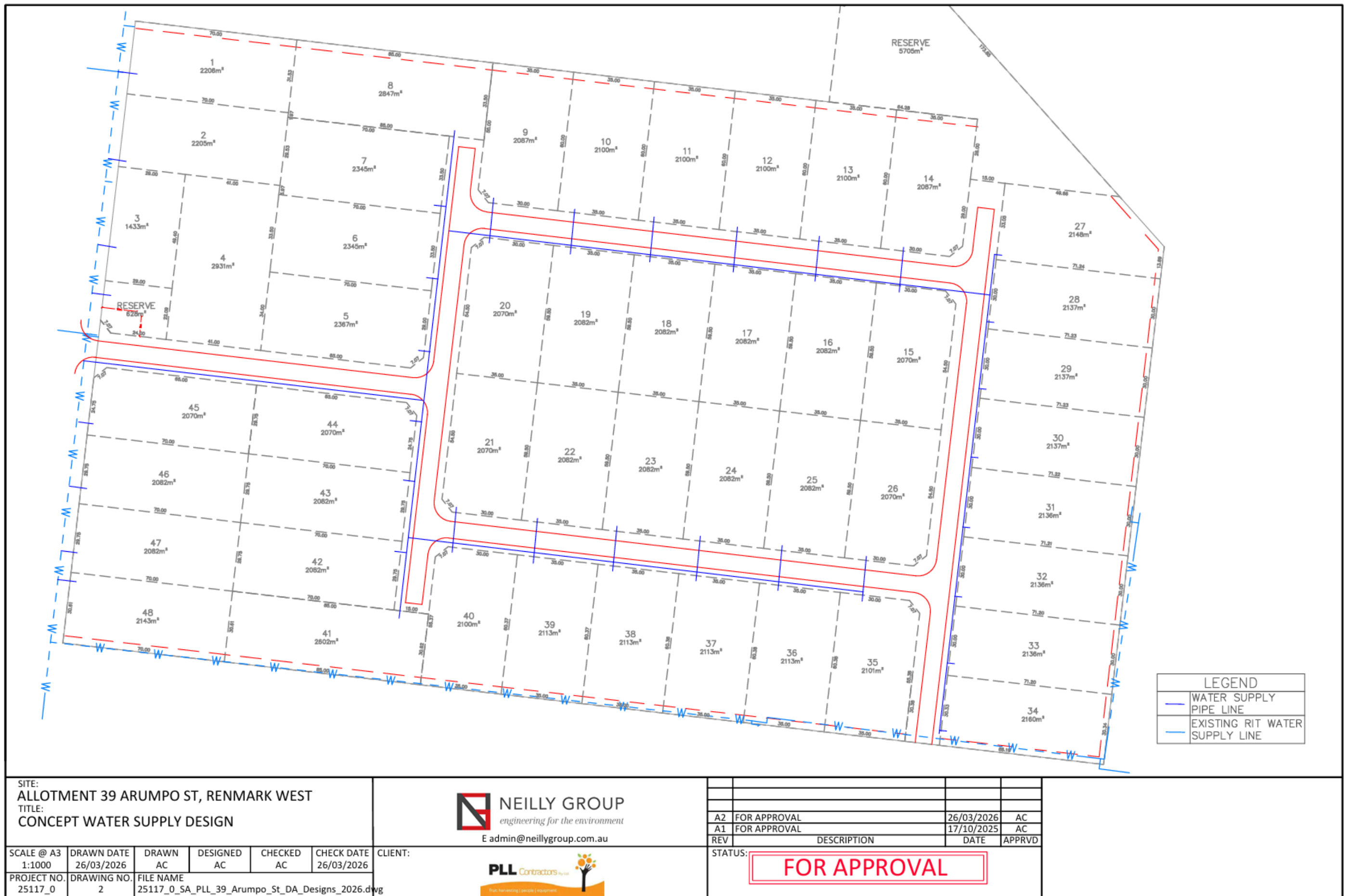


Appendix B: Proposed CWMS Concept Design





Appendix C: Proposed Water Concept Design





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