Monarch Glen Precincts 101 and 102

Monarch Glen No 1 Pty Limited

Engineering Services Report

22-0408.ESR-V5

11 September 2025

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government

AMENDED IN RED

By: Brandon Bouda

Date: 29/10/2025

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Document Control

22-0408.ESR-V5

Version	Date	Details	Prepared	Checked	Approved
1	16/12/2024	For Approval	LVM	DC	DC
2	19/03/2025	For Approval	NG	DC	DC
3	28/03/2025	For Approval	NG	DC	DC
4	04/04/2025	For Approval	NG	DC	DC
5	11/09/2025	For Approval	NG	DC	DC

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1. Executive Summary

This Engineering Services Report (ESR) has been produced to support the Reconfiguration of a Lot application (DA) for a 575 lot residential subdivision at Precinct 101 & 102 of Monarch Glen. The site forms part of the wider master planned community, which is expected to yield 7,339 residential lots

This report will demonstrate that the proposed infrastructure is in general accordance with endorsed Infrastructure Master Plans (IMP's) to allow the assessment of the Precinct 101 and 102 to progress, such as:

- Earthworks (Reference 16547 C R004 Rev 03)
- Sewer (Reference 16457 C R002 Rev 04)
- Water (Reference 16457 C R001 Rev 03)

However, Updated IMP's are being prepared to match the amendments made to the Endorsed Context Plan (Reference DEV2012/248/7), and the amended Context Plan has been submitted to accompany this application.

Clearing and erosion and sediment control approvals have already been provided across Precinct 101 & 102 under approval DEV2021/1168 dated 17 March 2022

There is a shallow rock level (varies from 0.25-1.95m) across the site that geophysical assessments have indicated should be rippable by a D11R dozer. Rock blasting, crushing & processing may be required in areas of hard rock and managed on site accordingly. The site earthworks strategy has been developed to respond to the sites natural topography and implements road grading and lot benching with retaining walls to respond to the site characteristics.

A series of trunk and neighbourhood roads (DCOP Reference R045A & B and R056), the largest of which is 32m wide 4-lane arterial that quickly tapers down to a 2-lane road. Where necessary access driveways have been proposed to service some lots.

A proposed trunk wastewater line travels through Precinct 101 & 102 (DCOP reference GM033 & GM034). The wastewater reticulation servicing the proposed lots will ultimately connect into the trunk main that discharges to the north of the site.

An extension of a trunk watermain east of the site is required along the future Homestead Drive corridor (DCOP reference WM044, WM043, WM0412 & WM047). The individual lots will be serviced by reticulation watermain that will connect to this trunk extension. A water booster pump station is required to service lots above

The stormwater management strategy relies on end of line bio & detention basin that discharge to the Sandy Creek waterway. Stormwater treatment devices have been modelled and sized to suit the proposed development requirements.

This report is accompanied with the relevant code responses, concept engineering drawings and supporting documentation to demonstrate that the development can be adequately serviced in accordance with EDQ's standards and guidelines including other authority standards where relevant including but not limited to Logan City Council standard drawings, WSAA & SEQ Code, Australian Standards, Austroads, Queensland Streets etc.

We therefore request EDQ approval of the engineering components for the proposed development with reasonable and relevant conditions.

2. Introduction

Colliers Engineering & Design has been engaged by Monarch Glen No 1 Pty Limited to prepare this Civil Engineering Services Report to support the DA submission for a 575 lot residential subdivision called Monarch Glen Precincts 101 and 102 (the Site) located at Homestead Drive, Monarch Glen on land described as Lot 2 on SP351245. Monarch Glen is located in the Flagstone Priority Development Area and is close to the western boundary of the City of Logan as shown in **Figure 1** and Precincts 101 and 102 are located in the northeast corner of proposed Monarch Glen master planned community as shown in **Figure 2.**

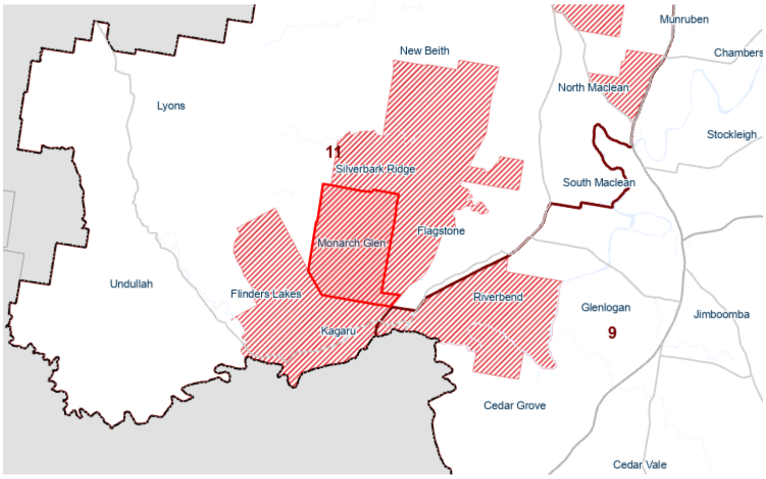


Figure 1: Monarch Glen Location in context to the Flagstone Priority Development Area

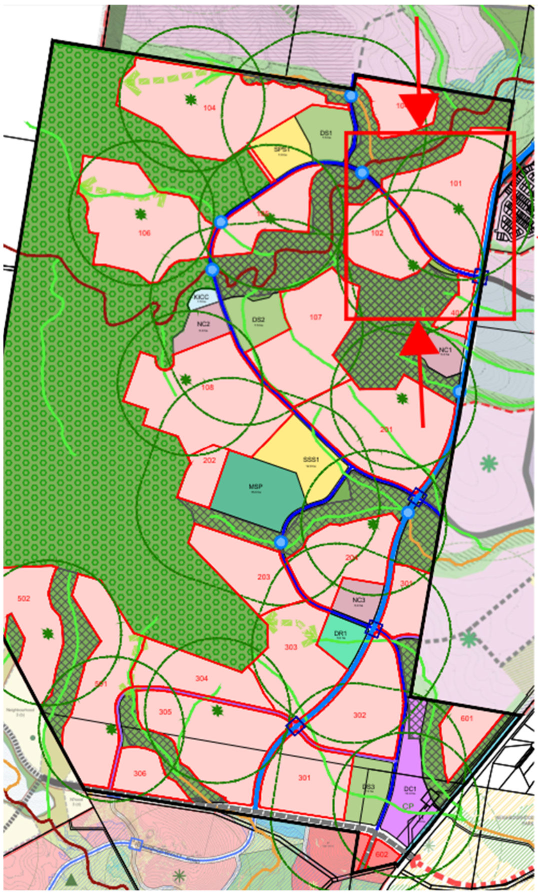


Figure 2: Precinct 101 and 102 Location as per the proposed Context Plan

This report covers the following civil infrastructure:

- Earthworks
- Sediment and Erosion Control
- Roadworks
- Sewerage Reticulation
- Water Supply
- Stormwater Quality and Quantity
- Utilities

This report will confirm that the proposed development can be adequately serviced and comply with:

- PDA Guideline No. 1 - Residential 30 (May 2015)
- PDA Guideline No. 6 - Street and Movement Network (February 2019)
- PDA Guideline No. 12 - Park Planning and Design (May 2015)
- PDA Guideline No. 13 - Engineering Standards (September 2017)
- PDA Guideline No. 15 - Protection from Flood and Storm Tide Inundation (May 2015)
- PDA Guideline No. 18 - Development Interfaces (May 2015)
- Logan City Council Planning Scheme Policy
- WSAA & SEQ Code
- Australian Standards
- Austroads & Queensland Streets

3. Consistent Difference Between Proposal & Endorsed IMP's.

An updated whole of site Context Plan has been submitted as part of this approval, the amendments to the endorsed Context Plan and IMP's in Precinct 101 & 102 are outlined in **Figure 3,** as follows.

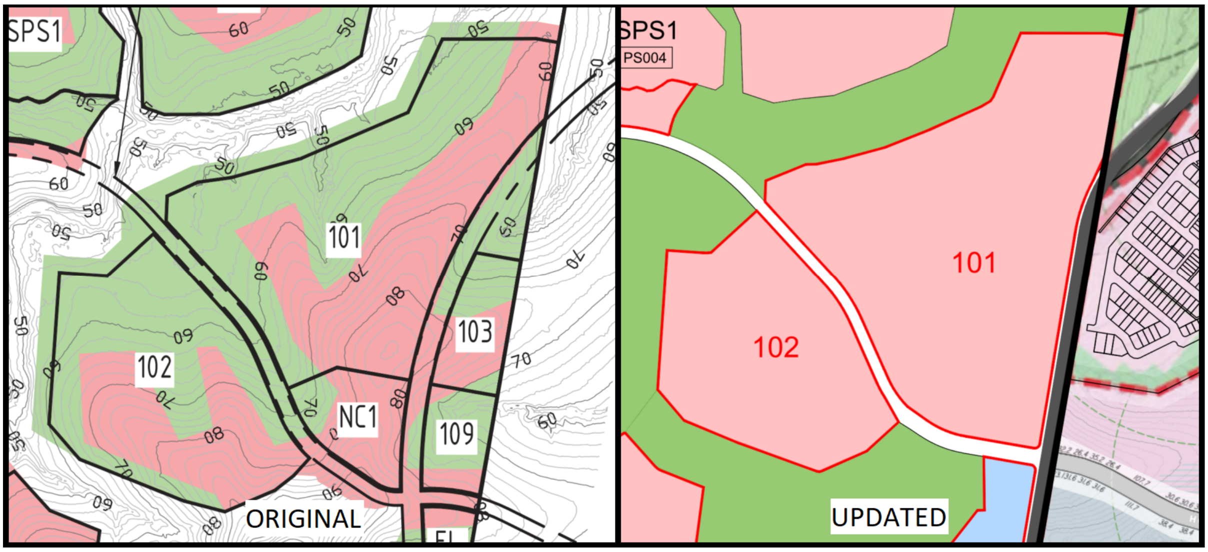


Figure 3: Amendments to Precinct 101 & 102 Compared to the Endorsed Context Plan & IMP's

The endorsed IMP's didn't align with the endorsed context plan. Revised IMP's have been submitted in alignment to the proposed Context Plan. Generally the proposed layout for ROL04 and engineering strategies are generally in accordance with the endorsed IMP's and in accordance with new IMP's to be submitted under compliance assessment.

In summary, Precincts 101 & 102 have been expanded to remove Precincts NC1, 103, & 109. The general arrangement of everything else has stayed the same.

Throughout the report herein, "amendments to the Site" references this section.

4. Earthworks

For approved earthworks, refer DEV2025/1659

The site generally grades from south-east to north-west at a grade of approximately 10-12% towards Sandy Creek. The western boundary of the site has some more gradual grades of approximately 4.5%. A knoll on the eastern side of the site will need to be cut and a gully to the southeast and northwest filled to enable practicable grades for development. While the grades across the site will be reduced through earthworks, the topography will be generally maintained and tied back into the natural topography around the edges of the site.

The development will consist of civil earthworks in accordance with AS3798-2007. Approximate 982,043m³ of cut to fill is proposed across the site. Cut and fill depths range from 10m to 10m respectively. The intension is to achieve an earthworks balance through the construction process. Where spoil is generated, it shall be disposed of in a lawful manner, in a location requiring import and not to landfill. Haul Routes will be determined at the time of construction.

The proposed cut fill extent across the site is in general accordance with the endorsed Earthworks IMP for the site that has been included in Appendix A. An updated Earthworks IMP will be submitted at a later time for compliance assessment. An updated cut fill depth hatching plan of the cut and fill locations is shown in **Figure 4.**

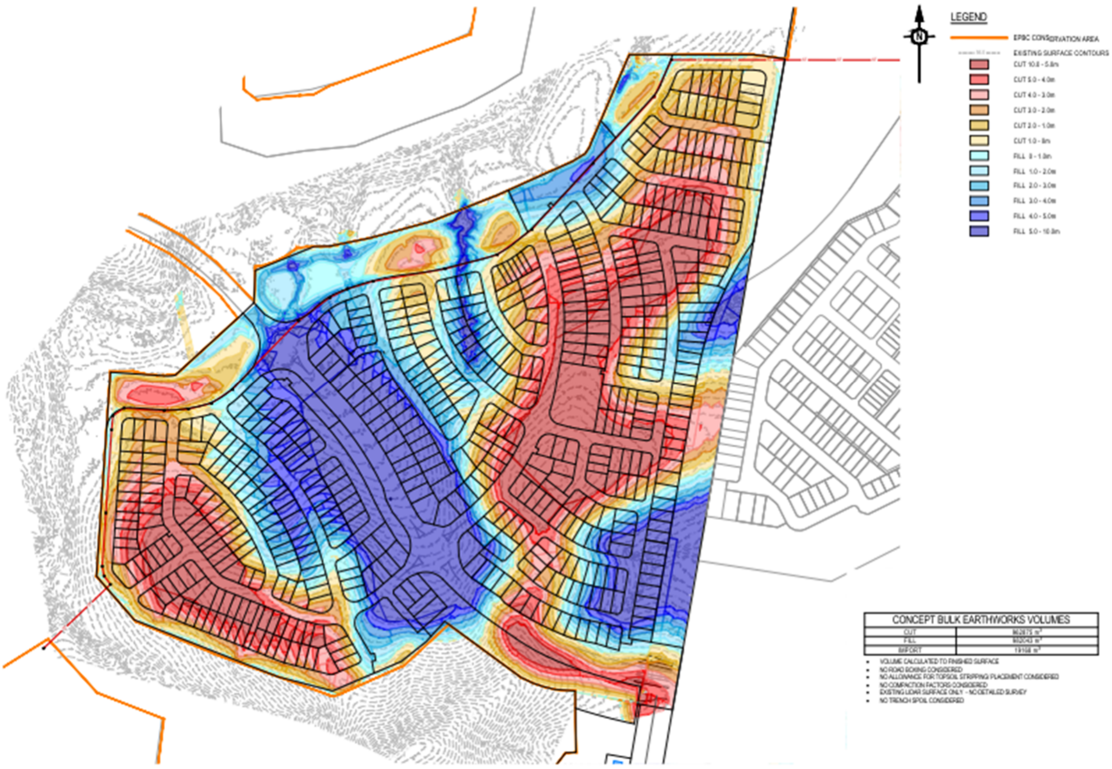


Figure 4: Cut Fill Depth Hatching Plan

A Geotechnical Report has been prepared by Qualtest (Ref. 4420 – 23-378) to accompany this application. The report covers previous investigations that had occurred on site that indicated a shallow rock level (bores ranged from 0.25m to 1.95m deep before refusal on sandstone) and very limited ground water.

The report also covered the results of geophysical testing that was performed as access to the site was too limited to allow test pits to be dug. Results of a rippability assessment on the geophysical testing data indicated material would typically be rippable to around 2m below ground level with a D9R, but up to 10m with a D11R in all locations tested.

Prior to works commencing the Contractor shall produce a Waste Management Plan for pre-construction, civil works, and construction phases of the project.

The site will be cleared in accordance with Operation Works Approval DEV2021/1168 that is referred to as Tranche 1a. Tranche 1a also includes Precincts NC1 & 401 which will be cleared to accommodate the water booster pump station.

Topsoil is to be stripped from most of the development area and stockpiled on site to enable earthworks to be completed. Wherever possible, stockpiles shall be no more than 1.5m high with maximum 1:2 batter and once stockpiling is completed, covered with a green cover crop to avoid erosion, desiccation, and solarisation.

Proposed retaining wall heights have been minimised as much as possible with isolated locations requiring higher walls to address the areas of steeper topography. The site has significant natural slopes of up to 12% thought the site and largely grades from Southeast to Northwest broadly across the precinct. The site is surrounded by a ridgeline with protected vegetation to the south, and fronting waterway corridors to the west and the north. The proposed earthworks grading enables the site to generally grade to interface with the protected vegetation and waterways at the edges of the development and enable the site to grade towards the northern waterway corridor to facilitate the stormwater management strategy. Generally, lots will be provided as flat benched pads with proposed retaining wall heights have been minimised as much as possible. Where retaining walls are required to address the topography, these will be designed at a maximum 2.5m height to the rear, and 2m height to the side boundaries. The bulk earthworks and retaining walls will be formalised through the detailed design at the EDQ Compliance Assessment and Pre-Construction Package submissions phase as necessary.

Upon respreading of topsoil access to site by vehicles should be restricted to nominated roadways and parking areas where possible to minimise compaction and upon completion of works compacted topsoil shall be ripped.

The proposed earthworks drawings are included in Appendix A and demonstrate how the steep topography is appropriately addressed through sound engineering practises. For areas of greater cut, slope stability will be satisfied through the provision of a geotechnical assessment by a suitably qualified professional.

5. Sediment & Erosion Control

Sediment and erosion control shall be installed, operated and maintained in accordance with Operational Works Approval DEV2021/1168.

Sediment and erosion control will generally comprise of clean and dirty water diversion drains, temporary sediment basin as appropriate, silt fences, early stabilisation of disturbed areas where possible and other control measures as appropriate and/or required to meet Logan City Council requirements. Mulch from the clearing of the site shall be used to achieve stabilisation wherever possible. High level concept erosion and sediment control plans have been included in Appendix A.

The civil works undertaken by the contractor will implement a site management plan to incorporate and achieve compliance with the sediment and erosion control strategy at the time of construction. This will involve the preparation of a site-specific erosion and sediment control plan, certified by an RPEQ or CPESC.

6. Roadworks

The development is proposed to be accessed via an extension to Homestead Drive to the east. The Homestead Drive extension (identified in the DCOP as Ref R010A, R012A & R011A) has approval for reconfiguring a lot (RoL) for a road under DEV2017/907. The delivery of Homestead Drive will be managed through compliance assessment applications to satisfy conditions of the aforementioned RoL.

The proposed road network will consist of a range of road typologies, from Trunk Connector and Neighbourhood Connector through to Neighbourhood Access Street and Neighbourhood Laneway generally aligning with the EDQ Street and Movement Network Guideline 6. A road hierarchy sketch plan including typical sections is included in the civil engineering drawings in Appendix A. Concrete driveways will be used where necessary to provide access to lots that are not able to be serviced from the roads. **Figure 5** below shows the general arrangement and hierarchy of the proposed road network.

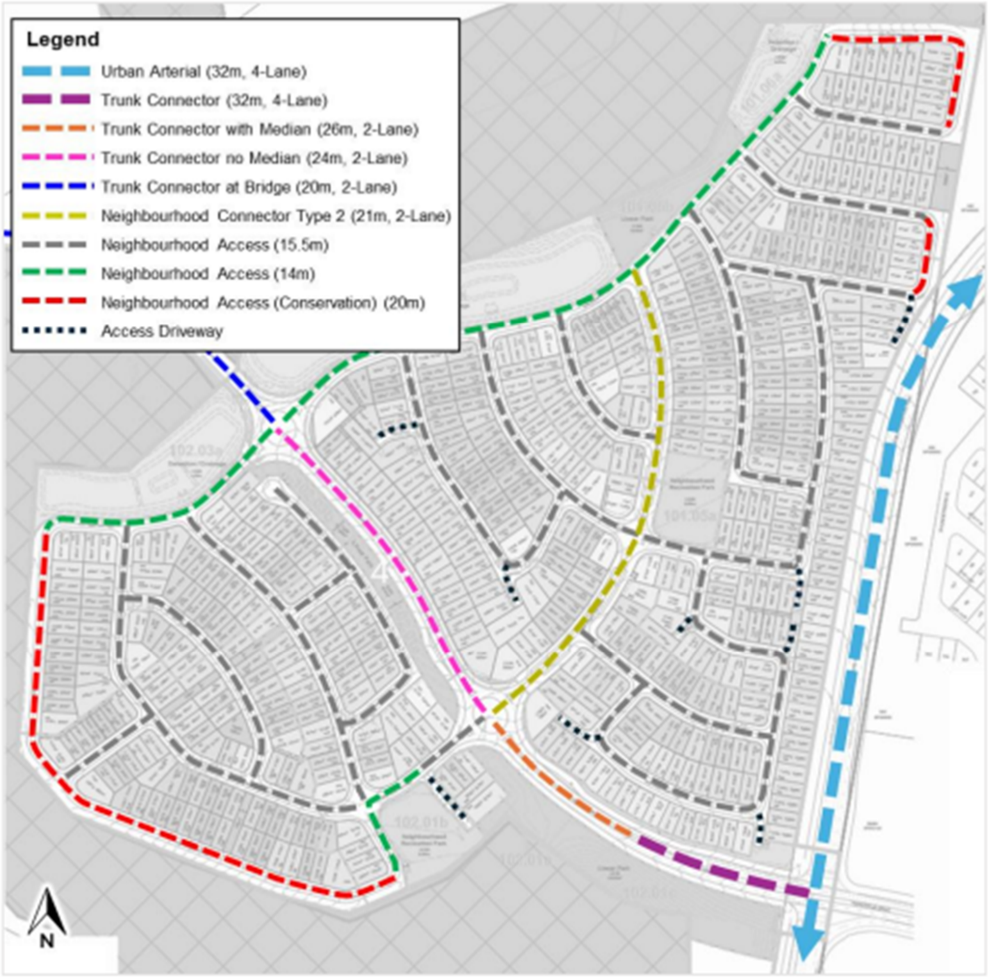


Figure 5: Road Hierarchy From Bitzios Report

All roads will be designed generally in accordance with Councils planning scheme, provide access to all dwellings and allow sufficient width for turfed verges which will provide service corridors for sewerage, water, electrical and telecommunication. The proposed typical road cross section across Precinct 101 & 102 have been summarised in the below. Typical road layouts and cross sections are shown in Appendix A.

Two roundabouts will be located along this stretch of Homestead Drive to facilitate traffic movements into the residential areas and swept path analysis has been undertaken and demonstrated in Appendix A. Active transport links are proposed throughout the development and bus stops are proposed along Homestead Drive to facilitate public transport requirements.

A Traffic Impact Assessment has been prepared for this application by Bitzios (Ref. P6607.006R). The report indicates that the proposed development is in general accordance with the endorsed Movement Network IMP, updated IMP's are being prepared to match the amendments to the site, which will be submitted at a later time for compliance assessment. Please refer to this report for further detail.

All roads are proposed to be flexible pavements with an asphalt finish. Access driveways are proposed to a concrete finish.

All roads will provide access immunity to lots in accordance with the Queensland Urban Drainage Manual. Further details are outlined in the Stormwater Management Plan

The proposed roadworks drawings are included in Appendix A. It is anticipated that intersection functional layout designs will be required to be submitted as part of the detailed design phase.

7. Sewerage Reticulation

The proposed wastewater reticulation that will service the lots is a RIGGS gravity system. The reticulation will primarily be located within the public road reserve, but in a few select locations it will be located in the back of the lot to enable the lots to be serviced. This alignment is proposed when the lot falls away from the road due the natural topography restraints.

This reticulation ultimately discharges into a proposed RIGGS gravity trunk main, identified in the DCOP ID GM033 & GM034 that travels through site in a northeast direction. The alignment of the proposed trunk main is in general accordance with the endorsed Sewer IMP and the DCOP mapping and a Precinct Network Plan has been prepared and can be found in Appendix B confirming capacity for the proposed development. Updated IMP's have been submitted to match the amendments to the site.

The trunk main, TRK-01 as referred to in the endorsed Sewer IMP, ultimately connects to another main, FL-GM-153, to discharge north (then east) of the site as shown in **Figure 6** below.

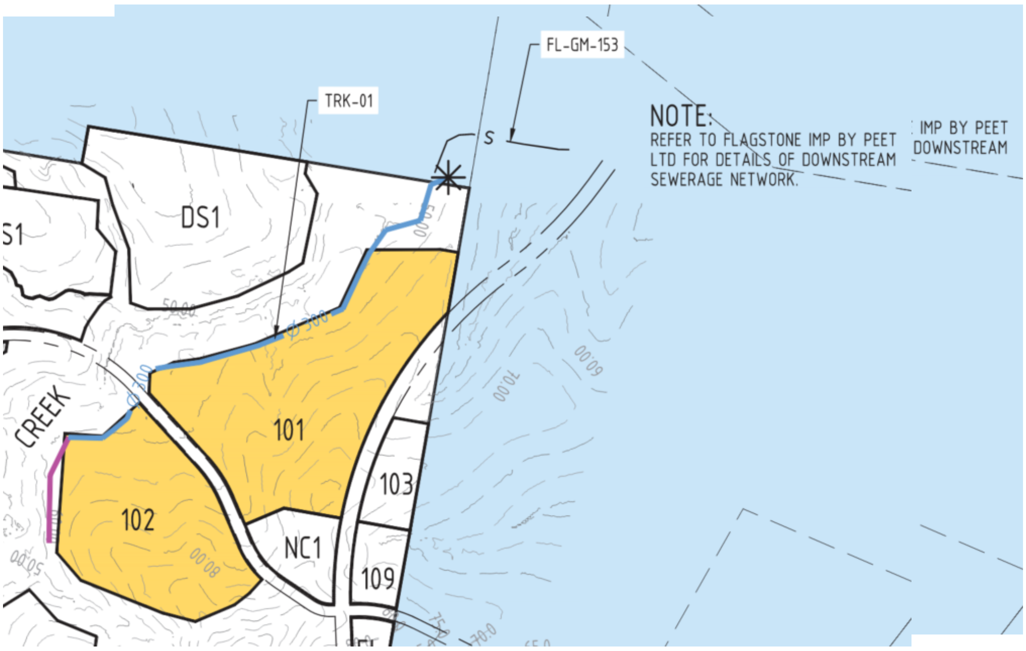


Figure 6: Endorsed Sewer IMP Servicing Strategy for Precinct 101 & 102

All PVC material installed will be ISO 14001 certified.

The proposed connection points and internal sewerage reticulation network is outlined in Appendix A. The internal sewerage reticulation network will be designed in accordance with the SEQ Code to connect to the main trunk sewer lines and will be formalised through detailed design at the Operational Works phase. A standalone application for the downstream trunk sewer connection will be submitted for approval in due course. A sewer precinct network plan has been prepared and can be found in Appendix B, a summary of this analysis is as follows:

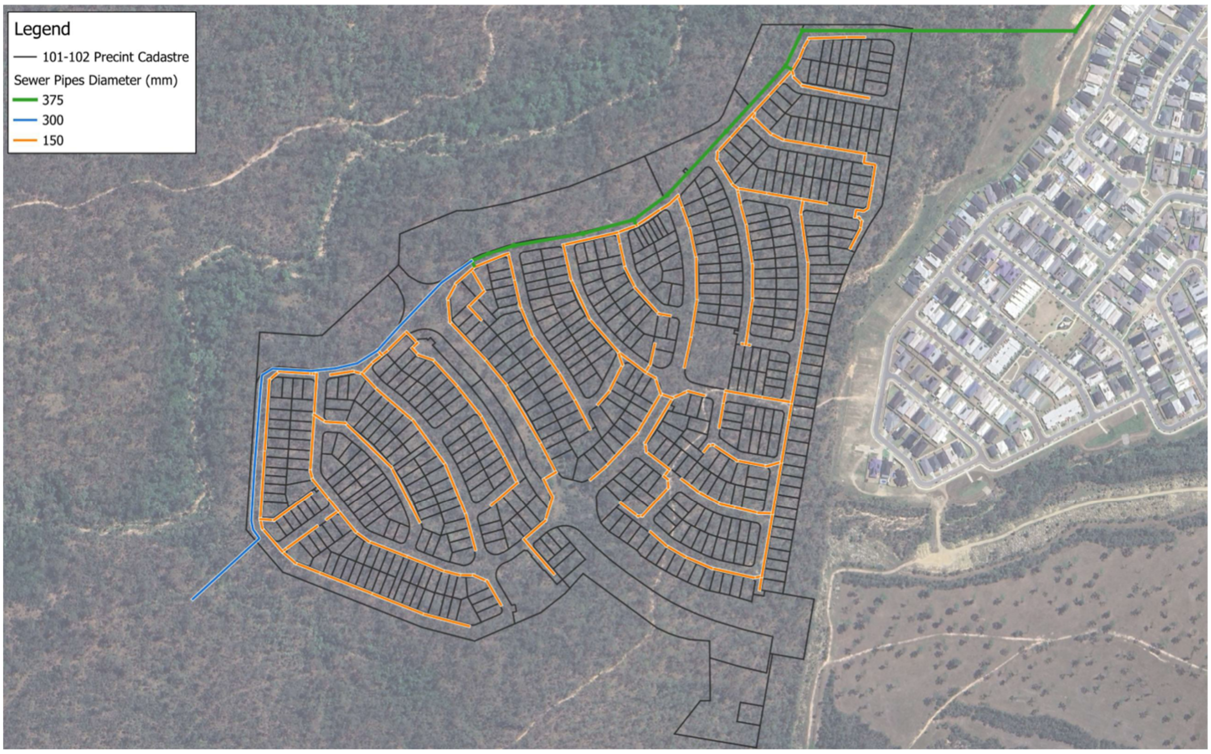


Figure 7: Sewer Precinct Network Plan

8. Water Supply

The Site is proposed to be serviced by the extension of the 250mm trunk watermain, identified in the DCOP ID WM044, WM043, WM042 & WM047 proposed down the future Homestead Drive extension east of the site. A Water Booster Pump Station is required to meet minimum pressure requirements for properties above 70m elevation and 60m elevation in 2031. It is noted that the endorsed IMP identified an interim reservoir to service Precinct 101 & 102, however through our updated modelling utilising Logan Water's latest models this is no longer required and instead a water booster pump station in its place. The endorsed Water IMP servicing summary is shown in **Figure 8**.

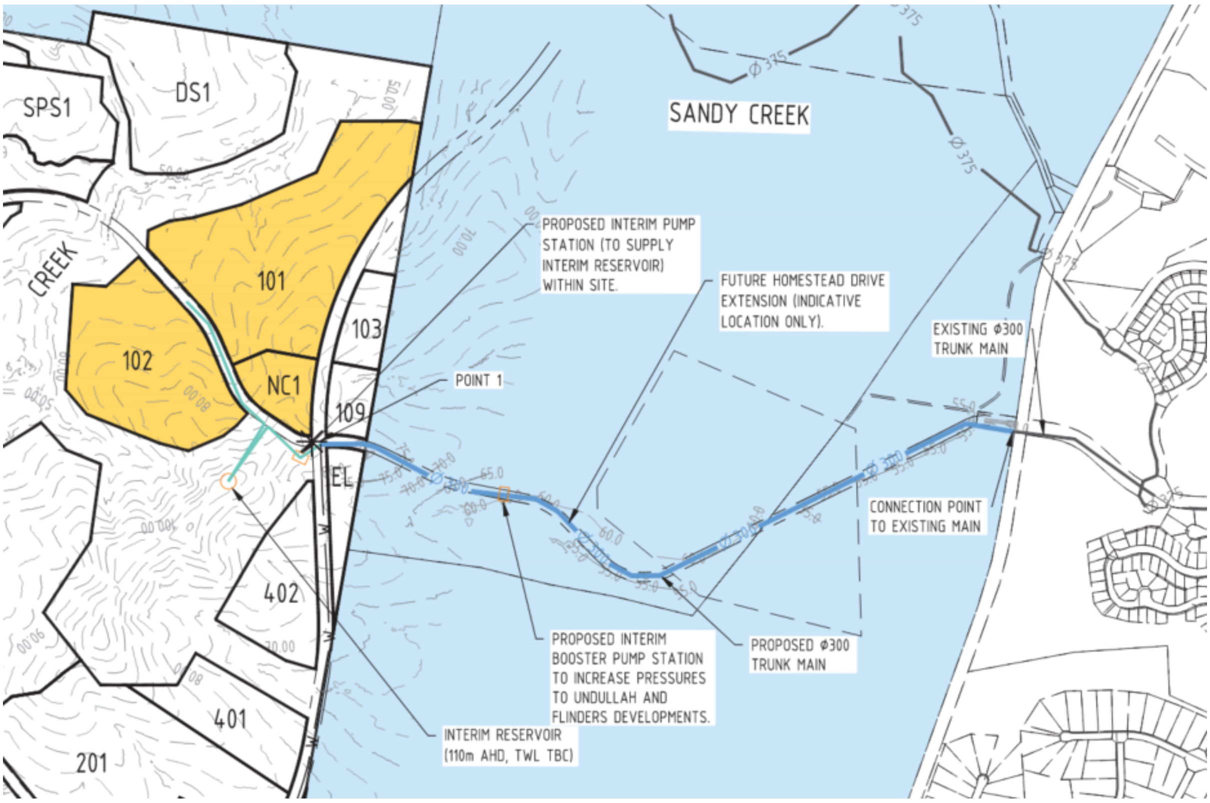


Figure 8: Trunk Watermain Location as per Endorsed IMP

The proposed catchment being serviced is general accordance with the endorsed Water IMP and the DCOP mapping and a Precinct Network Plan has been prepared and can be found in Appendix C confirming the servicing strategy for the proposed development. A Water Booster Pump Station is required to service allotments above the elevation of 70m AHD and 60m AHD in 2031. Updated IMP's have been submitted to match the amendments to the site.

All PVC material installed will be ISO 14001 certified.

The proposed connection points and internal water network is outlined in Appendix A and will be formalised, including documentation in accordance with the South East Queensland Water Supply and Sewerage Design and Construction Code (SEQ D&C Code), through detailed design at the Operational Works phase.

A precinct network analysis plan for Logan Water has been prepared and can be found in Appendix C, a summary of this analysis is as follows:

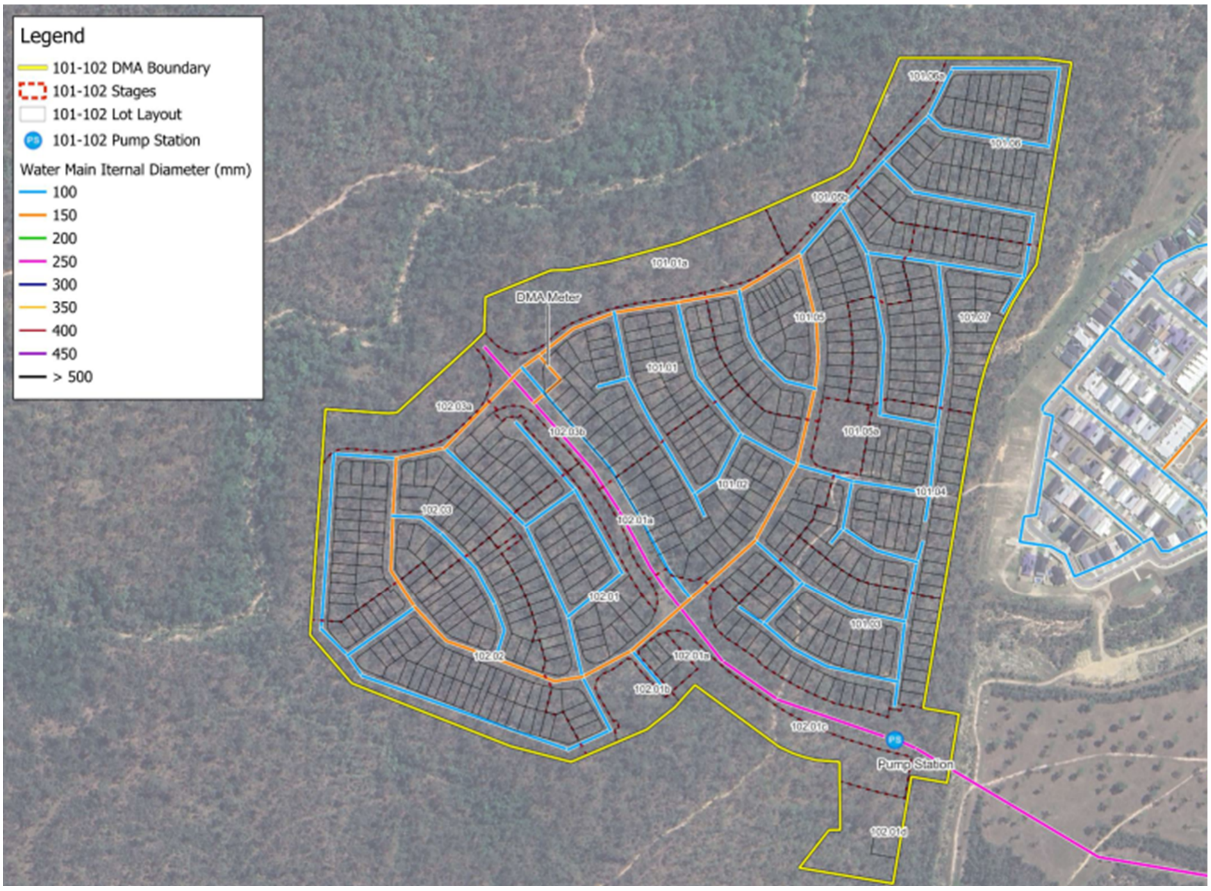


Figure 9: Water Precinct Network Plan

9. Stormwater Quality & Quantity

A Site Based Stormwater Management Plan has been prepared by Engeny (Ref. BBNE00356_0016-REP-001-2) to accompany this application. The stormwater management plan has outlined the reduction in the number of basins required to service Precinct 101 & 102 from 9 in the endorsed IMP down to 3 as well as how the proposal complies with the relevant criteria for the ROL 04 development.

The proposed drainage system is generally concrete pipes located in the public road reserve. In a few locations drainage has been located in the rear of lots to ensure lots that fall away from the road are serviceable. The drainage system discharges to downstream end of line basins for stormwater quality treatment and stormwater quantity detention purposes.

It is noted that there is a small undeveloped catchment south of the entry road which bypasses the proposed stormwater network and discharges downstream. This will bypass the stormwater bio-retention treatment as it is an undeveloped catchment and therefore not be require detention or stormwater quality treatment.

For further details with respect to Stormwater Management, please refer to the Stormwater Management Report prepared by Engeny.

10. Utilities

The site will be serviced with electrical and telecommunication reticulation with agreements entered into by the relevant service providers. Adequate service corridors will be provided to enable service connection with designs being undertaken in accordance with a suitably qualified electrical consultant at the Operational Works/Building Application phase as necessary.

11. Conclusion

This report is accompanied with the relevant code responses, concept engineering drawings and supporting documentation to demonstrate that the development can be adequately serviced in accordance with EDQ and Council's standards and guidelines

We therefore request EDQ approval of the engineering components for the proposed development with reasonable and relevant and lawful conditions.

Appendices

Appendix A Colliers Civil Engineering Drawings

PROPOSED RESIDENTIAL DEVELOPMENT

HOMESTEAD DRIVE, MONARCH GLEN

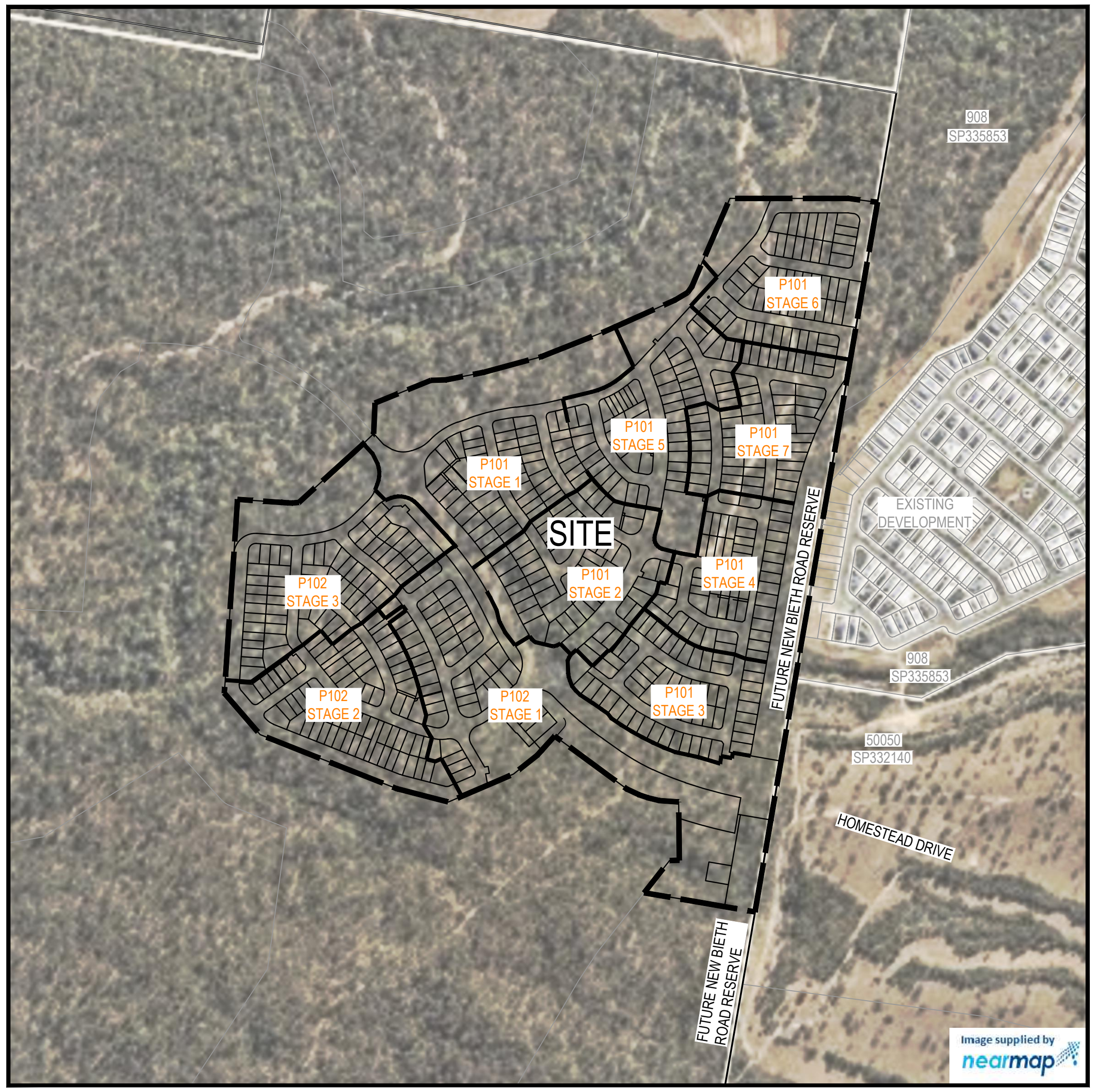
FOR 'MIRVAC'

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government



N

LOCALITY PLAN
SCALE 1:5000 (A1)
SCALE 1:10000 (A3)

PROJECT INFORMATION SUMMARY:
No. OF LOTS = 575
AREA OF SITE = 47.27 ha
RP DESCRIPTION LOT 3 ON RP45236
DATUM LEVEL AND LOCATION P.S.M - LOCATED
LOCAL AUTHORITY: ECONOMIC DEVELOPMENT QUEENSLAND
COUNCIL REFERENCE NUMBER:

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN
DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:5000 100 50 0 100 200 A1
1:10000 A3

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
COVER PLAN

PROJECT No.	DRAWING No.	REVISION
24-0750	DA-0001	C

PLOT - 04 Apr 2025 09:32 AM

DRAWING LIST

EARTHWORKS

24-0750-DA-0001 COVER PLAN
24-0750-DA-0002 DRAWING LISTS
24-0750-DA-0005 OVERALL STAGE LAYOUT PLAN
24-0750-DA-0010 OVERALL LAYOUT PLAN
~~24-0750-DA-0050 BULK EARTHWORKS DEPTH RANGE PLAN~~
~~24-0750-DA-0100 BULK EARTHWORKS OVERALL LAYOUT~~
~~24-0750-DA-0101 BULK EARTHWORKS LAYOUT PLAN SHEET 1 OF 12~~
~~24-0750-DA-0102 BULK EARTHWORKS LAYOUT PLAN SHEET 2 OF 12~~
~~24-0750-DA-0103 BULK EARTHWORKS LAYOUT PLAN SHEET 3 OF 12~~
~~24-0750-DA-0104 BULK EARTHWORKS LAYOUT PLAN SHEET 4 OF 12~~
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~~24-0750-DA-0150 BULK EARTHWORKS SECTIONS SHEET 1 OF 3~~
~~24-0750-DA-0151 BULK EARTHWORKS SECTIONS SHEET 2 OF 3~~
~~24-0750-DA-0152 BULK EARTHWORKS SECTIONS SHEET 3 OF 3~~
~~24-0750-DA-0153 BULK EARTHWORKS TYPICAL RETAINING WALL DETAILS~~
~~24-0750-DA-0160 EROSION & SEDIMENT CONTROL LAYOUT PLAN PHASE 1 - SHEET 1 OF 2~~
~~24-0750-DA-0161 EROSION & SEDIMENT CONTROL LAYOUT PLAN PHASE 2 - SHEET 2 OF 2~~
~~24-0750-DA-0162 TYPICAL DETAILS FOR EROSION AND SEDIMENT CONTROL~~

For approved earthworks, refer DEV2025/1659

ROADWORKS AND DRAINAGE

24-0750-DA-0201 ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 1 OF 12
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24-0750-DA-0212 ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 12 OF 12
24-0750-DA-0250 ROAD TYPES LAYOUT
24-0750-DA-0251 ROAD HIERARCHY TYPICAL DETAIL
24-0750-DA-0300 MAJOR ROAD AND ENTRY ROAD LAYOUT PLAN
24-0750-DA-0301 ROAD 1 AND ENTRY ROAD LONGITUDINAL SECTION SHEET 1 OF 2
24-0750-DA-0302 ROAD 1 AND ENTRY ROAD LONGITUDINAL SECTION SHEET 2 OF 2
24-0750-DA-0400 CONCEPT BIO RETENTION OVERALL LAYOUT PLAN

SEWERAGE AND WATER RETICULATION

24-0750-DA-0501 SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 1 OF 12
24-0750-DA-0502 SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 2 OF 12
24-0750-DA-0503 SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 3 OF 12
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24-0750-DA-0505 SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 5 OF 12
24-0750-DA-0506 SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 6 OF 12
24-0750-DA-0507 SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 7 OF 12
24-0750-DA-0508 SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 8 OF 12
24-0750-DA-0509 SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 9 OF 12
24-0750-DA-0510 SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 10 OF 12
24-0750-DA-0511 SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 11 OF 12
24-0750-DA-0512 SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 12 OF 12

AMENDED IN RED
By: Brandon Bouda
Date: 29/10/25
Queensland Government

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL
Approval no: DEV2025/1612
Date: 31 October 2025
Queensland Government

PLOT - 04 Apr 2025 09:32 AM LOCATION - \\anz.corp.local\SpringHill\Projects\22\22-0408 Undullah (Jotown). Flagstone\Design\Acad\ROL 4\24-0750-DA-P101-0001-COVER PLAN.dwg

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN
DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED DANIEL COLLINS RPEQ 18631 DATE 4.04.25
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
DRAWING LISTS

PROJECT No. 24-0750
DRAWING No. DA-0002
REVISION C

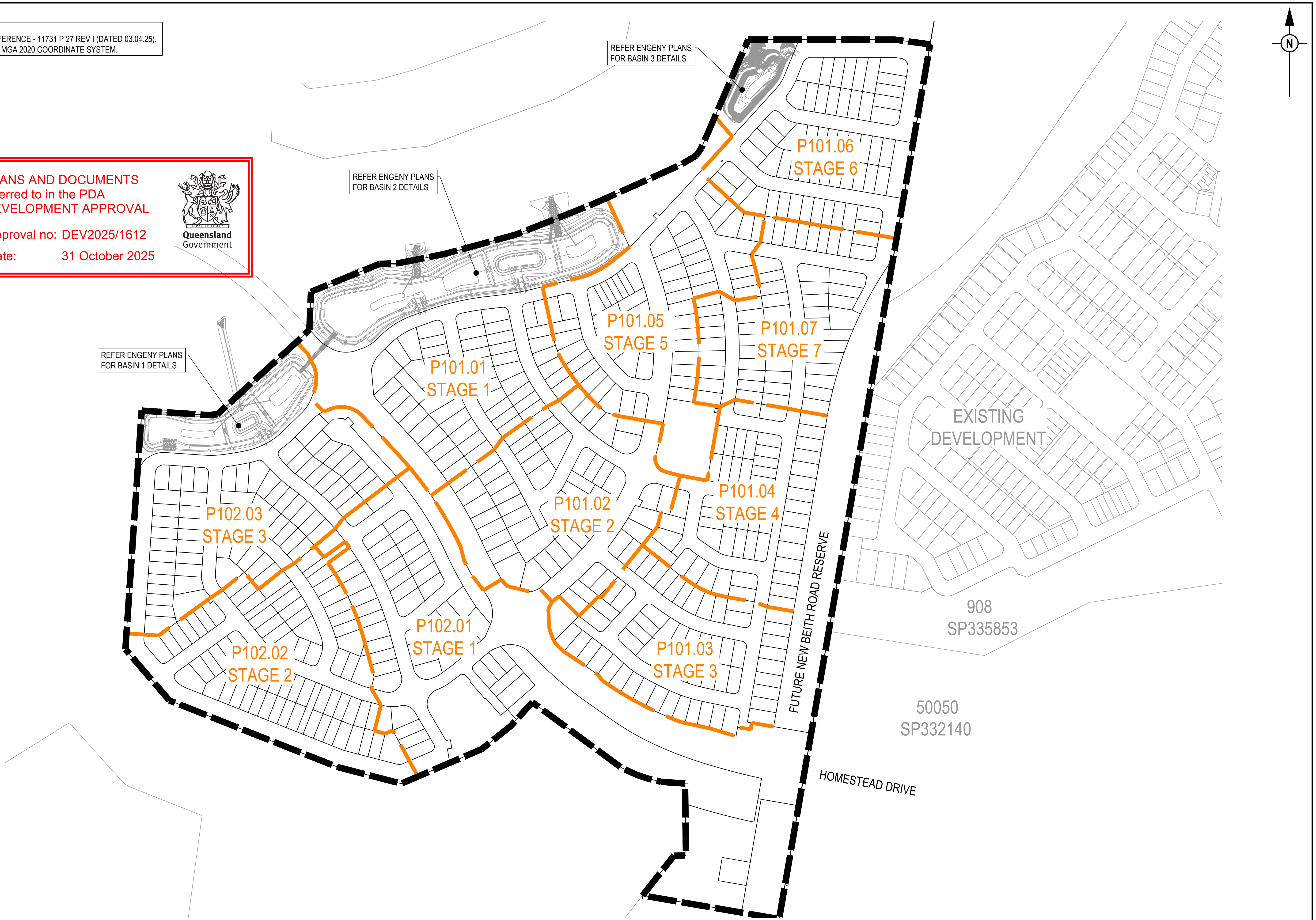
NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government



REV	DATE	DESIGN	DRAWN	REVISION DETAILS
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B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN

DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631
DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:2000 A1
1:4000 A3
20 0 20 40 60 80 100

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
OVERALL STAGE LAYOUT PLAN

PROJECT No. **24-0750**

DRAWING No. **DA-0005**

REVISION **C**

PLOT - 04 Apr 2025 09:33 AM

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN

DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:2500 A1
1:5000 A3
50 0 50 100

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD

R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

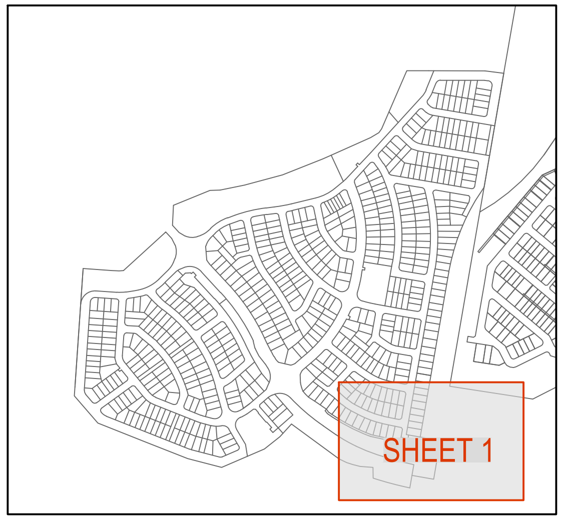
DRAWING TITLE
OVERALL LAYOUT PLAN

PROJECT No. 24-0750

DRAWING No. DA-0010

REVISION C

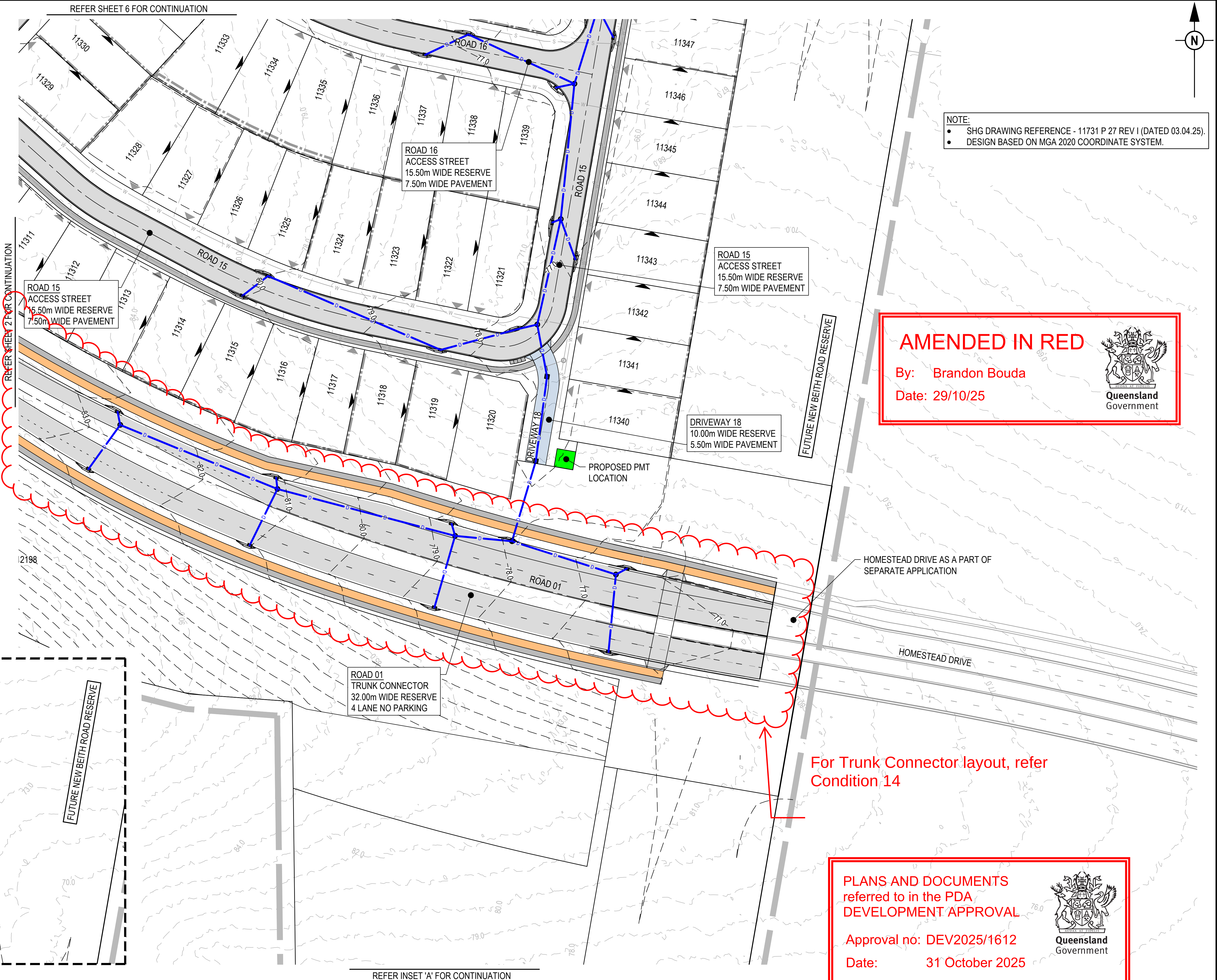
PLOT - 04 Apr 2025 09:33 AM LOCATION - \\anz.corp.local\SpringHill\Projects\...\OVERALL.dwg



KEY PLAN
SCALE 1:8000 (A1)
SCALE 1:16000 (A3)

LEGEND

- PROPOSED AREA OF WORKS
- 58.0 FINISHED SURFACE CONTOUR
- PROPOSED RETAINING WALL
- PROPOSED STORMWATER DRAINAGE PIPE
- PROPOSED DRAINAGE SWALE
- PROPOSED ROOFWATER DRAINAGE PIPE
- PROPOSED CONCRETE PATH AND PRAM RAMP
- PROPOSED CYCLE WAY
- PROPOSED NEW ROAD PAVEMENT
- PROPOSED NEW FOOTPATH
- INDICATIVE DRIVEWAY LOCATION
- ZERO LOT BOUNDARY
- PROPOSED DRIVEWAY
- PROPOSED RMU AND PMT LOCATIONS
- PROPOSED PMT LOCATIONS
- WATER BOOSTER PUMP
- PROPOSED PLANTING AREA



NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

AMENDED IN RED
By: Brandon Bouda
Date: 29/10/25
Queensland Government

INSET "A"

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL
Approval no: DEV2025/1612
Date: 31 October 2025
Queensland Government

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.12.24	NK	TP	AMENDED DRIVEWAY AND BTB
C	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
D	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN / DESIGN

STATUS: FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: 1:500 (A1), 1:1000 (A3) — 10 5 0 10 20

CLIENT: mirvac

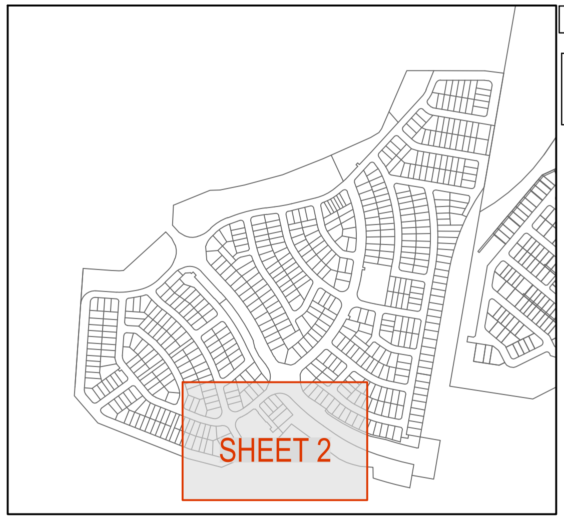
ASSOCIATED CONSULTANT: ENGENY, saunders havill group

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE: ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 1 OF 12

PROJECT No.: 24-0750
DRAWING No.: DA-0201
REVISION: D

PLOT - 04 Apr 2025 09:49 AM LOCATION - \\anz.corp.local\Spring\Projects\22\22-0408 Undullah (Jetown), Flagstone\Design\Acad\ROL 4\24-0750-DA-P101-0200-RW&D.dwg



KEY PLAN
SCALE 1:8000 (A1)
SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0201

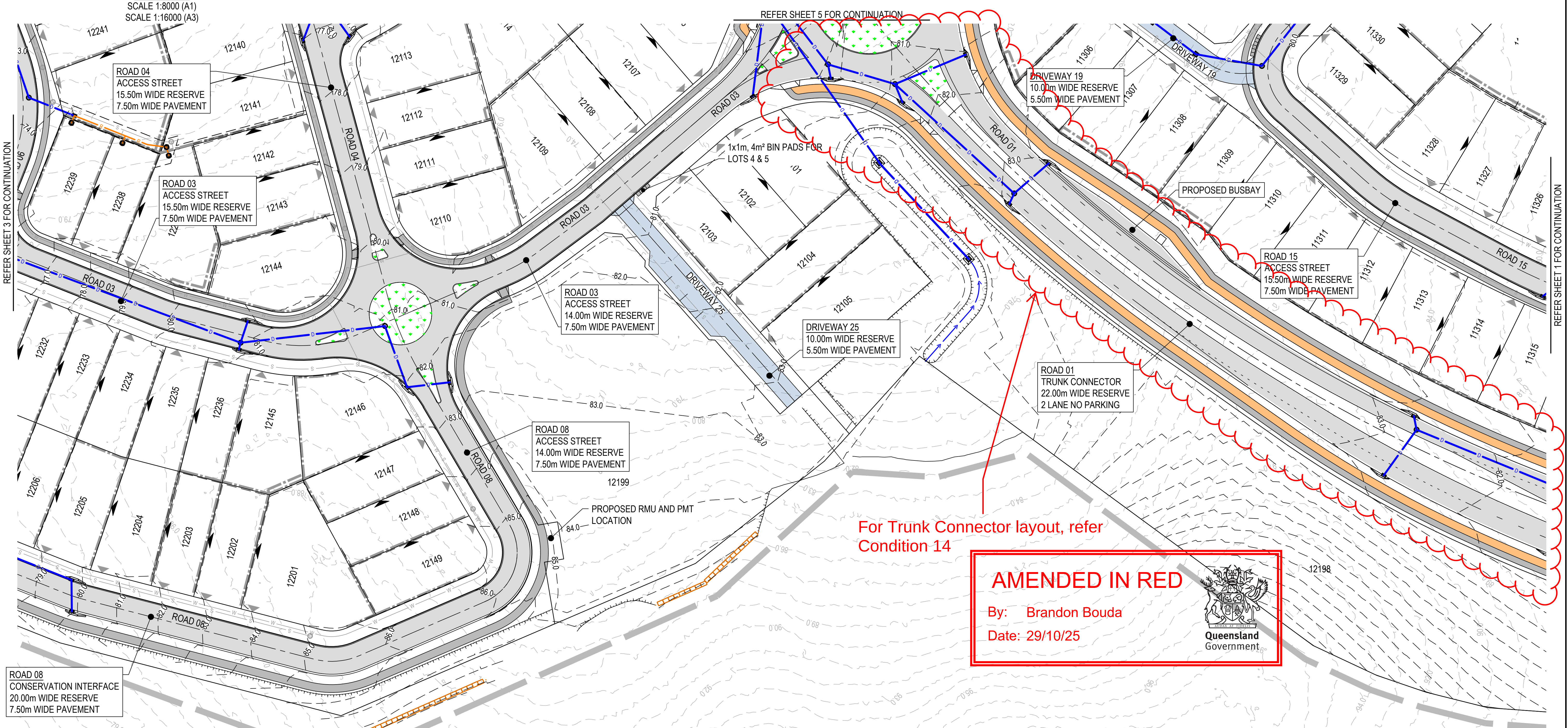
NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government



AMENDED IN RED

By: Brandon Bouda

Date: 29/10/25

Queensland Government

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.12.24	NK	TP	AMENDED DRIVEWAY AND BTB
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D	04.04.25	NK	TP	DRAWINGS AMENDED

STATUS: FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: 1:500 A1, 1:1000 A3

CLIENT: mirvac

ASSOCIATED CONSULTANT: ENGENY, saunders havill group

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

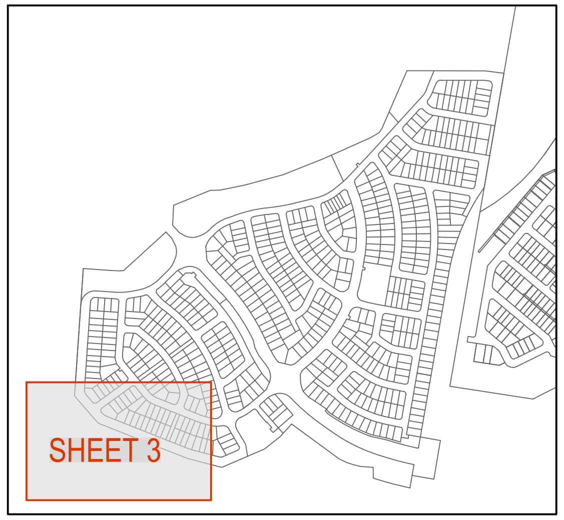
DRAWING TITLE: ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 2 OF 12

PROJECT No. 24-0750

DRAWING No. DA-0202

REVISION D

REFER SHEET 4 FOR CONTINUATION



KEY PLAN

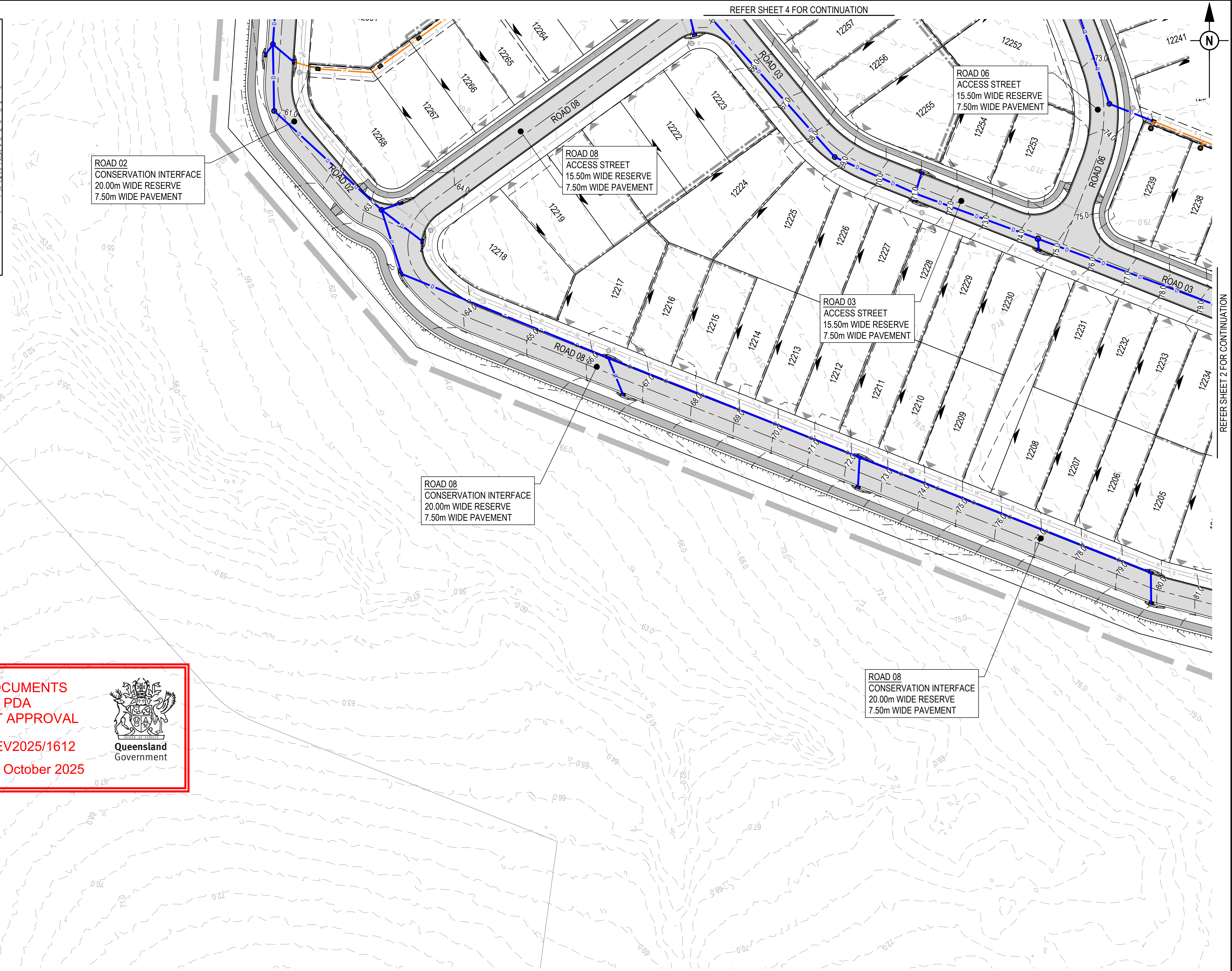
SCALE 1:8000 (A1)

SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0201

NOTE:

- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.



PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.12.24	NK	TP	AMENDED DRIVEWAY AND BTB
C	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
D	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN

DESIGN

STATUS: FOR DEVELOPMENT APPLICATION NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE 1:500 (A1) 1:1000 (A3)

CLIENT: mirvac

ASSOCIATED CONSULTANT: ENGENY, saunders havill group

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD

R.O.L. 4 HOMESTEAD DRIVE MONARCH GLEN

DRAWING TITLE: ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 3 OF 12

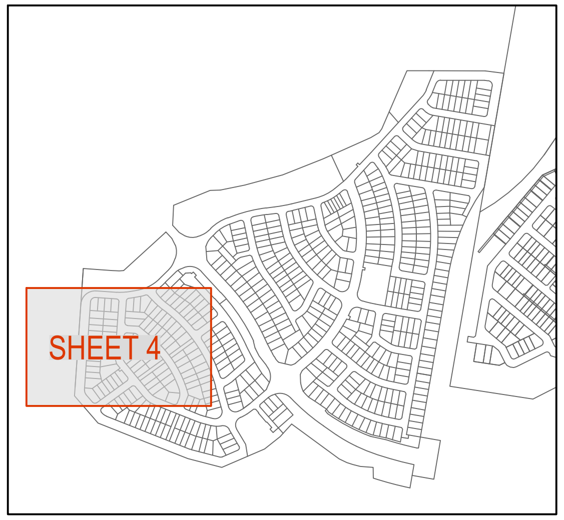
PROJECT No. 24-0750

DRAWING No. DA-0203

REVISION D

PLOT - 04 Apr 2025 09:50 AM LOCATION - \\anz.corp.local\SpringHill\P...

REFER SHEET 7 FOR CONTINUATION



KEY PLAN

SCALE 1:8000 (A1)
SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0201

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government

REFER SHEET 3 FOR CONTINUATION

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.12.24	NK	TP	AMENDED DRIVEWAY AND BTB
C	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
D	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN
DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:500 1:1000 10 5 0 10 20 A1 A3

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 4 OF 12

PROJECT No. 24-0750
DRAWING No. DA-0204
REVISION D

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

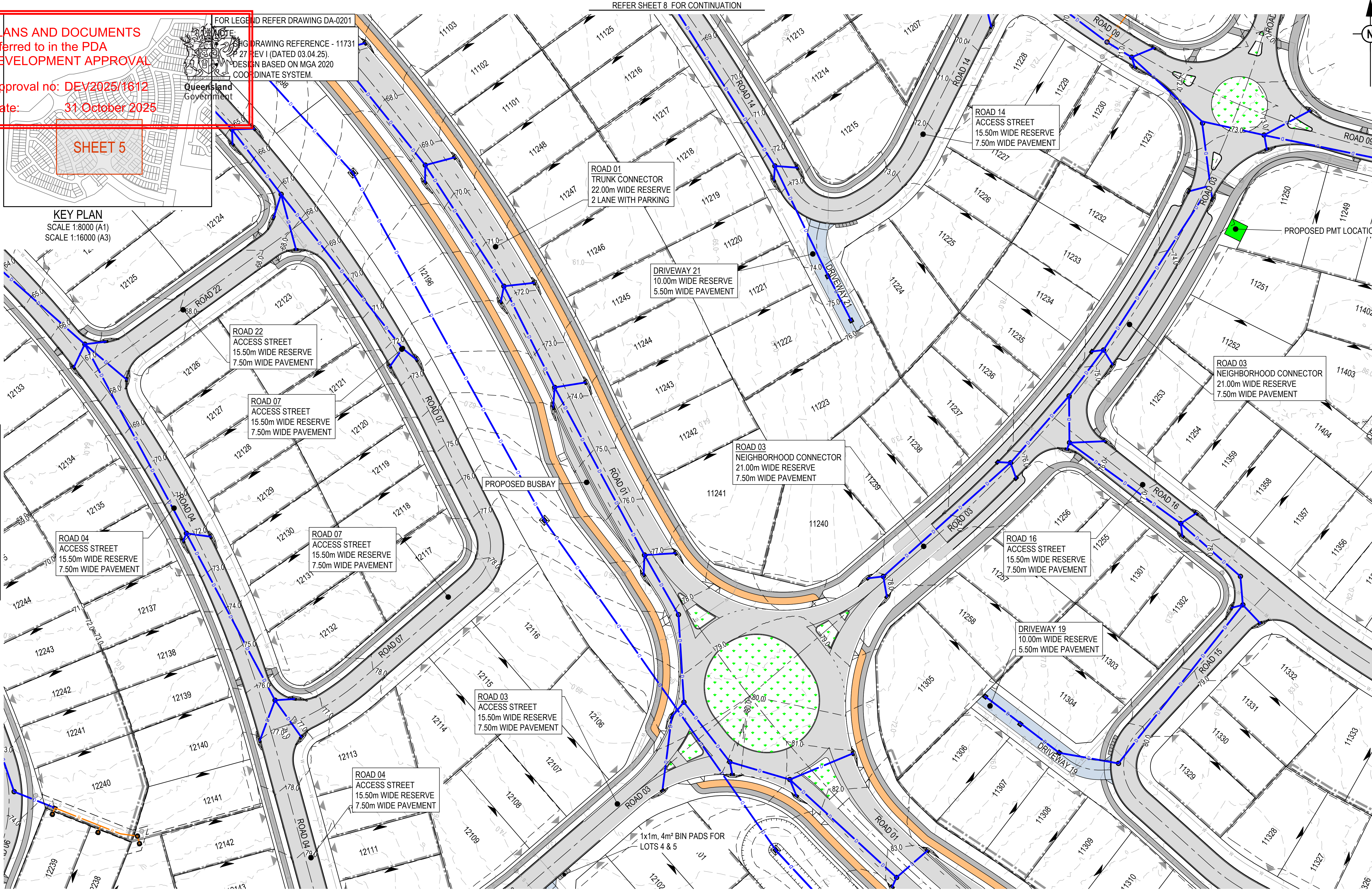
Approval no: DEV2025/1612

Date: 31 October 2025

REFER SHEET 8 FOR CONTINUATION

FOR LEGEND REFER DRAWING DA-0201

NOTE:
SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.



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C	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
D	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN
DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:500 1:1000 A1 A3

CLIENT
mirvac

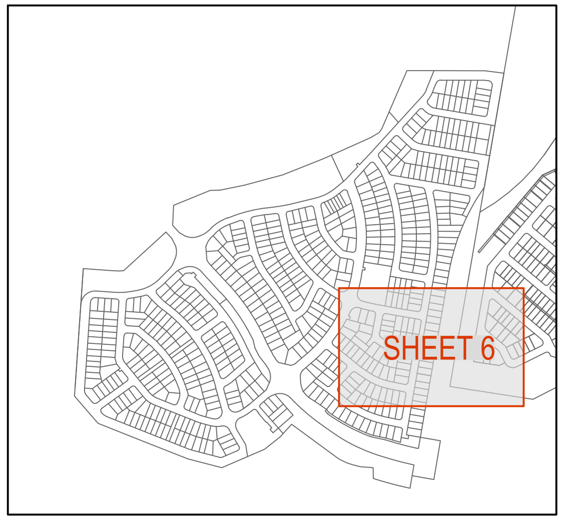
ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 5 OF 12

PROJECT No.	DRAWING No.	REVISION
24-0750	DA-0205	D

PLOT - 04 Apr 2025 09:51 AM



KEY PLAN

SCALE 1:8000 (A1)
SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0201

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612
Date: 31 October 2025

Queensland Government

REFER SHEET 9 FOR CONTINUATION

REFER SHEET 5 FOR CONTINUATION

REFER SHEET 1 FOR CONTINUATION

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.12.24	NK	TP	AMENDED DRIVEWAY AND BTB
C	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
D	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN / DESIGN

STATUS: FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS — RPEQ 18631 — DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: 1:500 / 1:1000 — 10 5 0 10 20 — A1 / A3

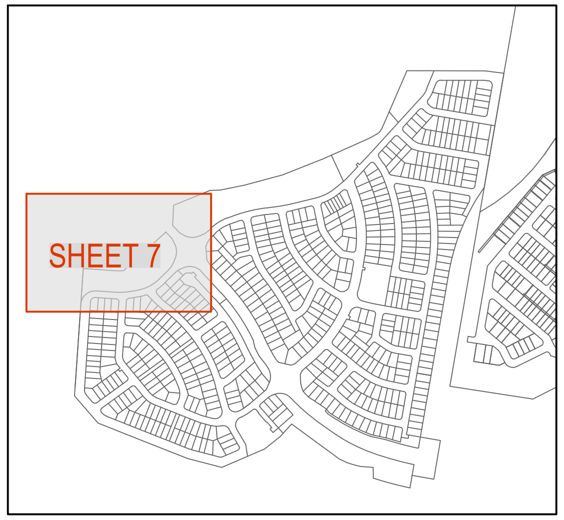
CLIENT: mirvac

ASSOCIATED CONSULTANT: ENGENY; saunders havill group

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE: ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 6 OF 12

PROJECT No. 24-0750 | DRAWING No. DA-0206 | REVISION D



KEY PLAN

SCALE 1:8000 (A1)

SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0201

NOTE:

- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
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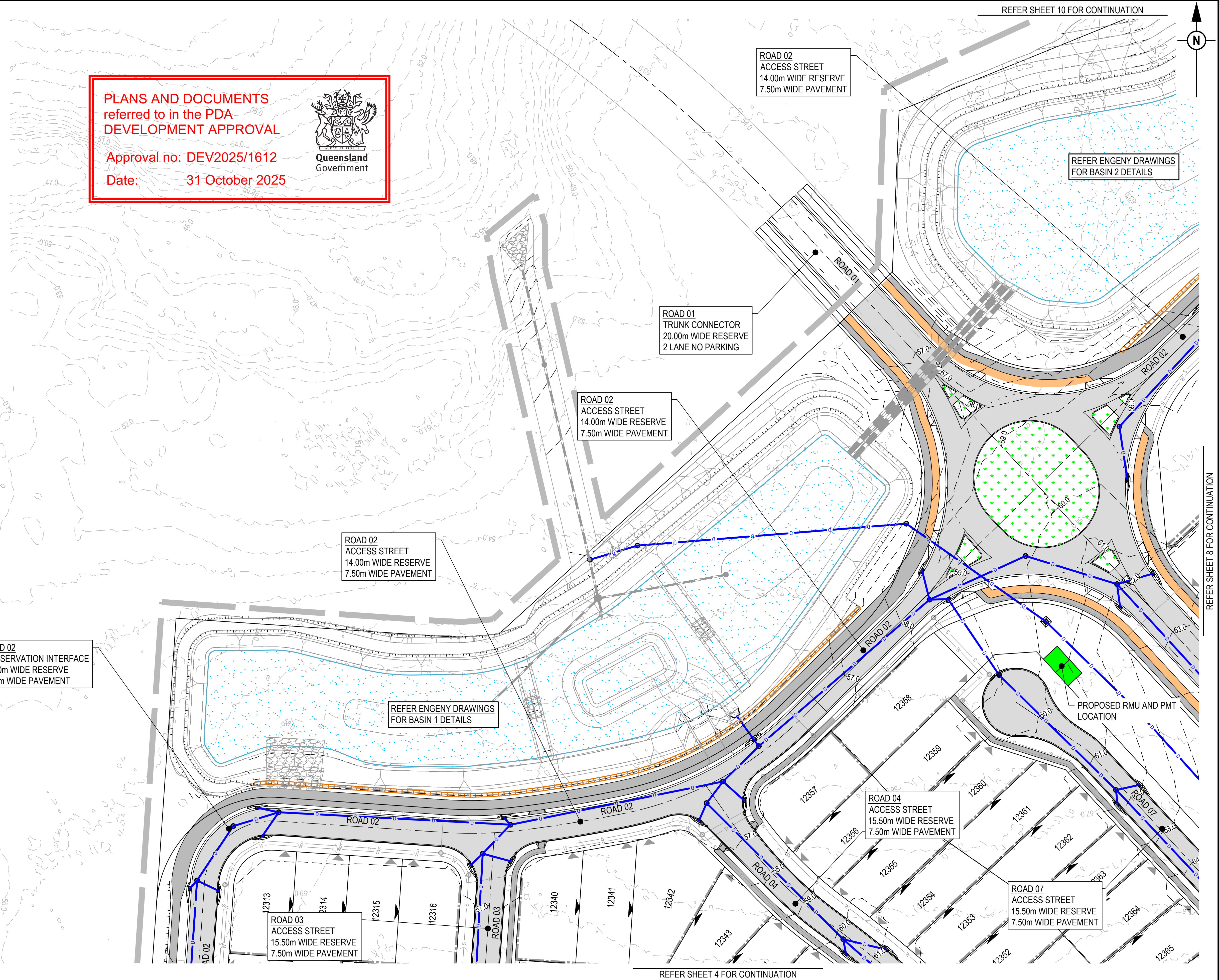
PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government



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D	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN

DESIGN

STATUS

FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE 1:500 (A1) 1:1000 (A3)

CLIENT: mirvac

ASSOCIATED CONSULTANT: ENGENY, saunders havill group

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD

R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE: ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 7 OF 12

PROJECT No.	DRAWING No.	REVISION
24-0750	DA-0207	D

PLOT - 04 Apr 2025 09:52 AM

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

SHEET 8

Queensland Government

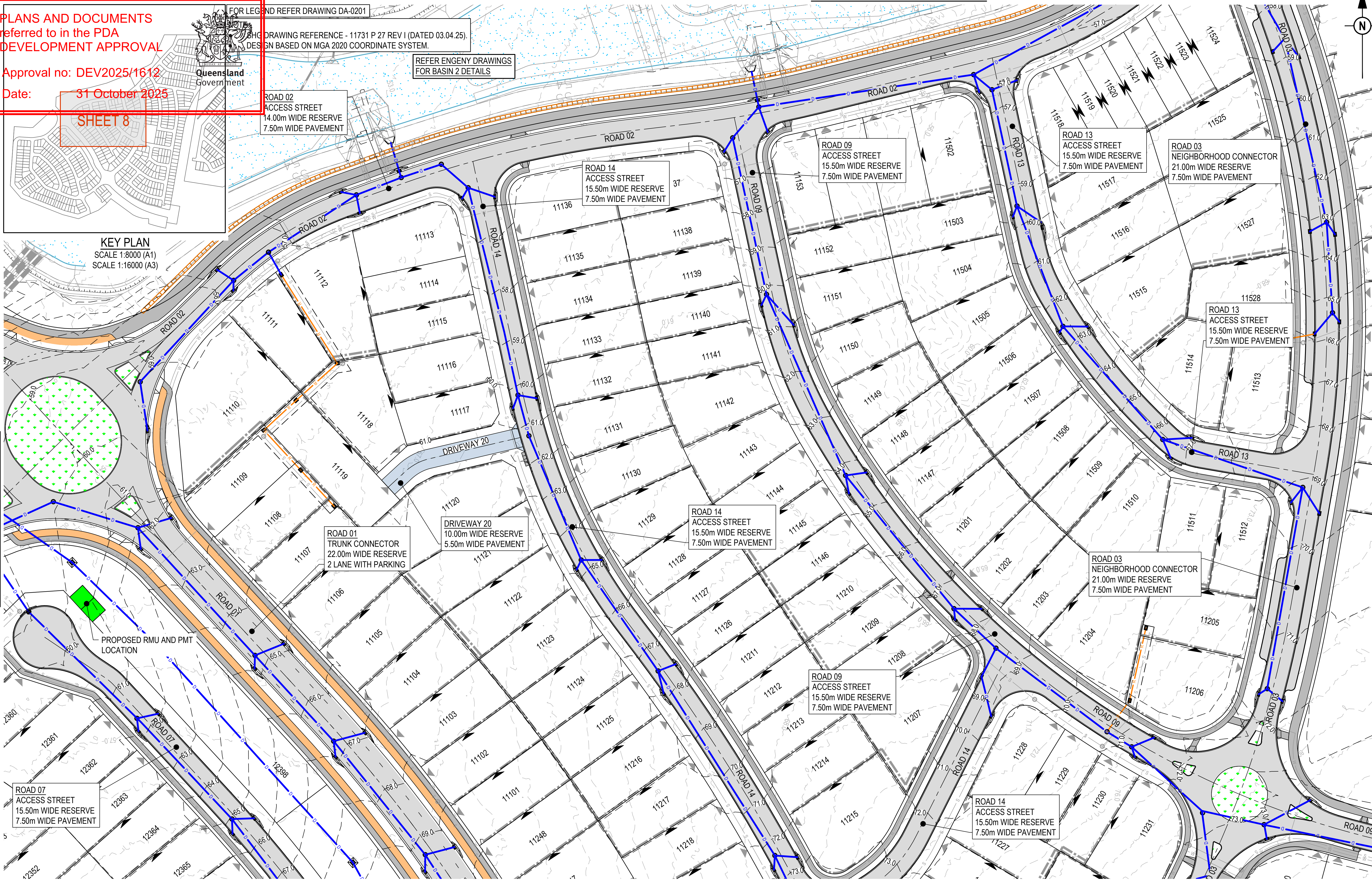
KEY PLAN
SCALE 1:8000 (A1)
SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0201

NOTE:
1. SHC DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
2. DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

REFER ENGENY DRAWINGS
FOR BASIN 2 DETAILS

REFER SHEET 10 FOR CONTINUATION



REFER SHEET 7 FOR CONTINUATION

REFER SHEET 9 FOR CONTINUATION

REFER SHEET 5 FOR CONTINUATION

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
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B	20.12.24	NK	TP	AMENDED DRIVEWAY AND BTB
C	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
D	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN
DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:500 10 5 0 10 20 A1
1:1000 A3

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

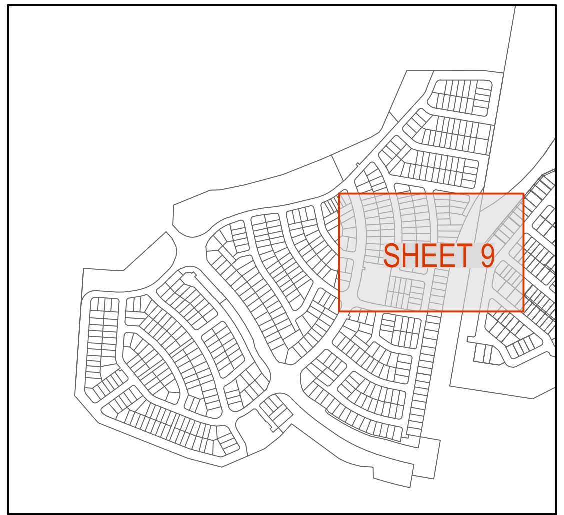
PROJECT NAME
MONARCH GLEN No. 1 PTY LTD

R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
ROADWORKS AND DRAINAGE
LAYOUT PLAN SHEET 8 OF 12

PROJECT No.	DRAWING No.	REVISION
24-0750	DA-0208	D

PLOT - 04 Apr 2025 09:53 AM



KEY PLAN

SCALE 1:8000 (A1)
SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0201

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government

REFER SHEET 11 FOR CONTINUATION

REFER SHEET 8 FOR CONTINUATION

REFER SHEET 6 FOR CONTINUATION

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
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B	20.12.24	NK	TP	AMENDED DRIVEWAY AND BTB
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D	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN

DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631

DATE
4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:500 10 5 0 10 20 A1
1:1000 A3

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD

R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
ROADWORKS AND DRAINAGE
LAYOUT PLAN SHEET 9 OF 12

PROJECT No. 24-0750

DRAWING No. DA-0209

REVISION D

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

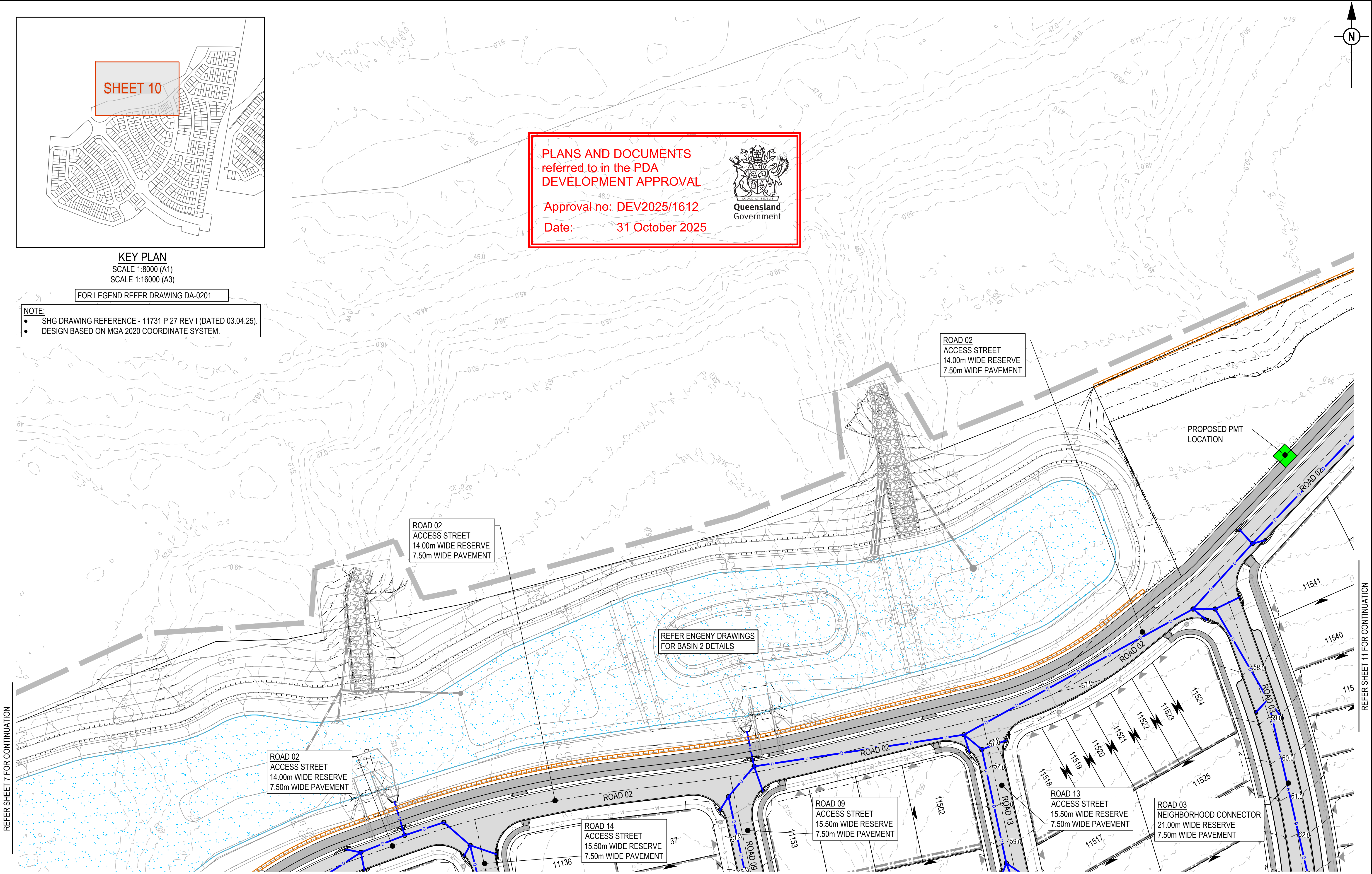
Date: 31 October 2025

Queensland Government

KEY PLAN
SCALE 1:8000 (A1)
SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0201

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.



REFER SHEET 8 FOR CONTINUATION

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B	20.12.24	NK	TP	AMENDED DRIVEWAY AND BTB
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STATUS: FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE 1:500 (A1) 1:1000 (A3)

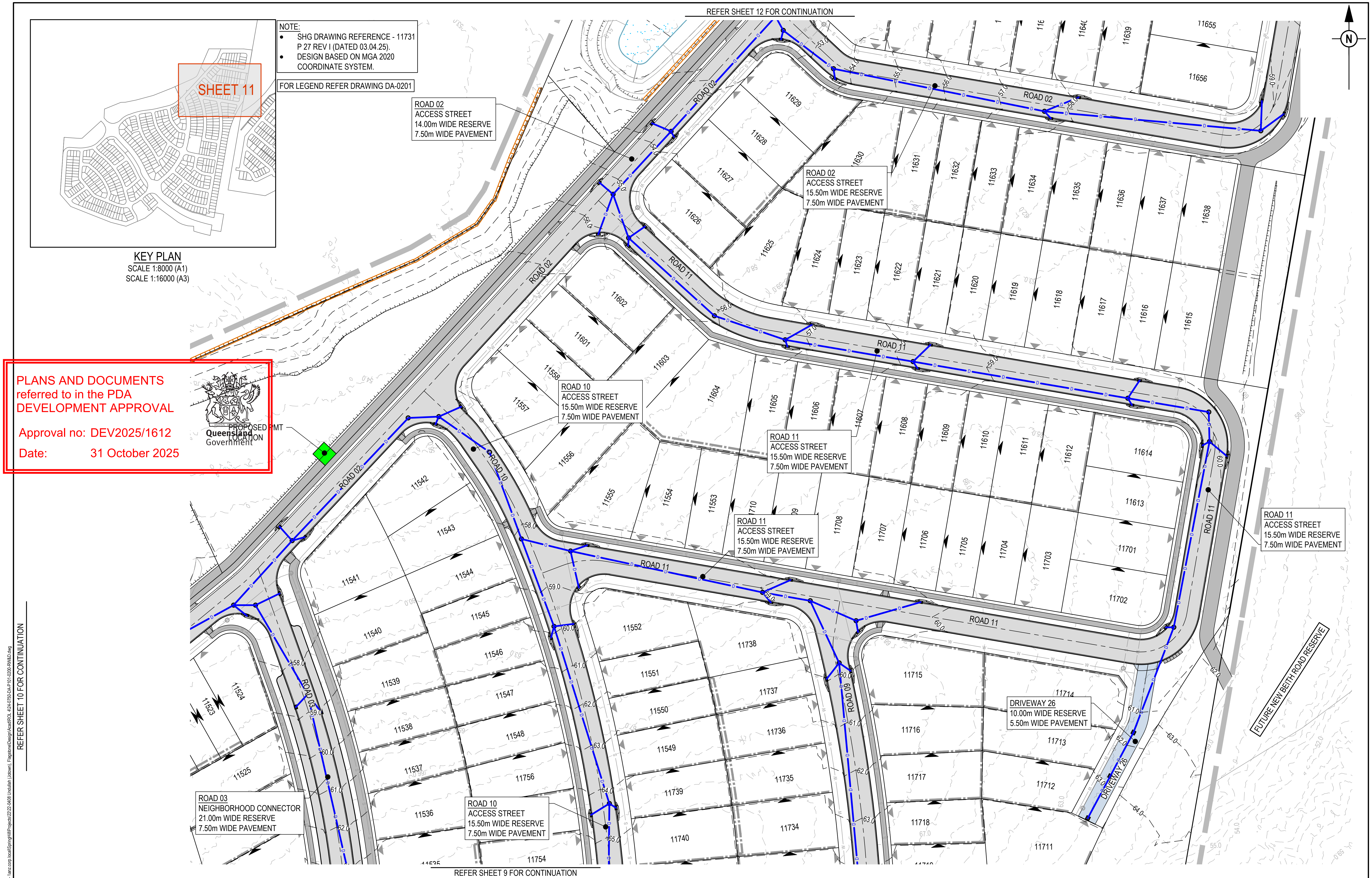
CLIENT: mirvac

ASSOCIATED CONSULTANT: ENGENY, saunders havill group

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE: ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 10 OF 12

PROJECT No.	DRAWING No.	REVISION
24-0750	DA-0210	D



PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.12.24	NK	TP	AMENDED DRIVEWAY AND BTB
C	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
D	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN

DESIGN

STATUS

FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE 1:500 A1, 1:1000 A3 (10 5 0 10 20)

CLIENT: mirvac

ASSOCIATED CONSULTANT: ENGENY, saunders havill group

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD

R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

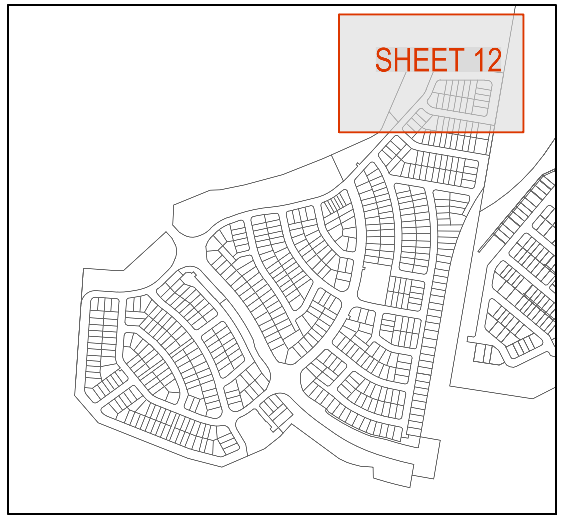
DRAWING TITLE: ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 11 OF 12

PROJECT No. 24-0750

DRAWING No. DA-0211

REVISION D

PLOT - 04 Apr 2025 09:55 AM LOCATION - \\arcc.corp.local\Spring\Hill\Projects\22\22-0408 Undullah (Jotown) Flagstone\Design\Acad\ROL 4\24-0750-DA-P101-0200-RW&D.dwg

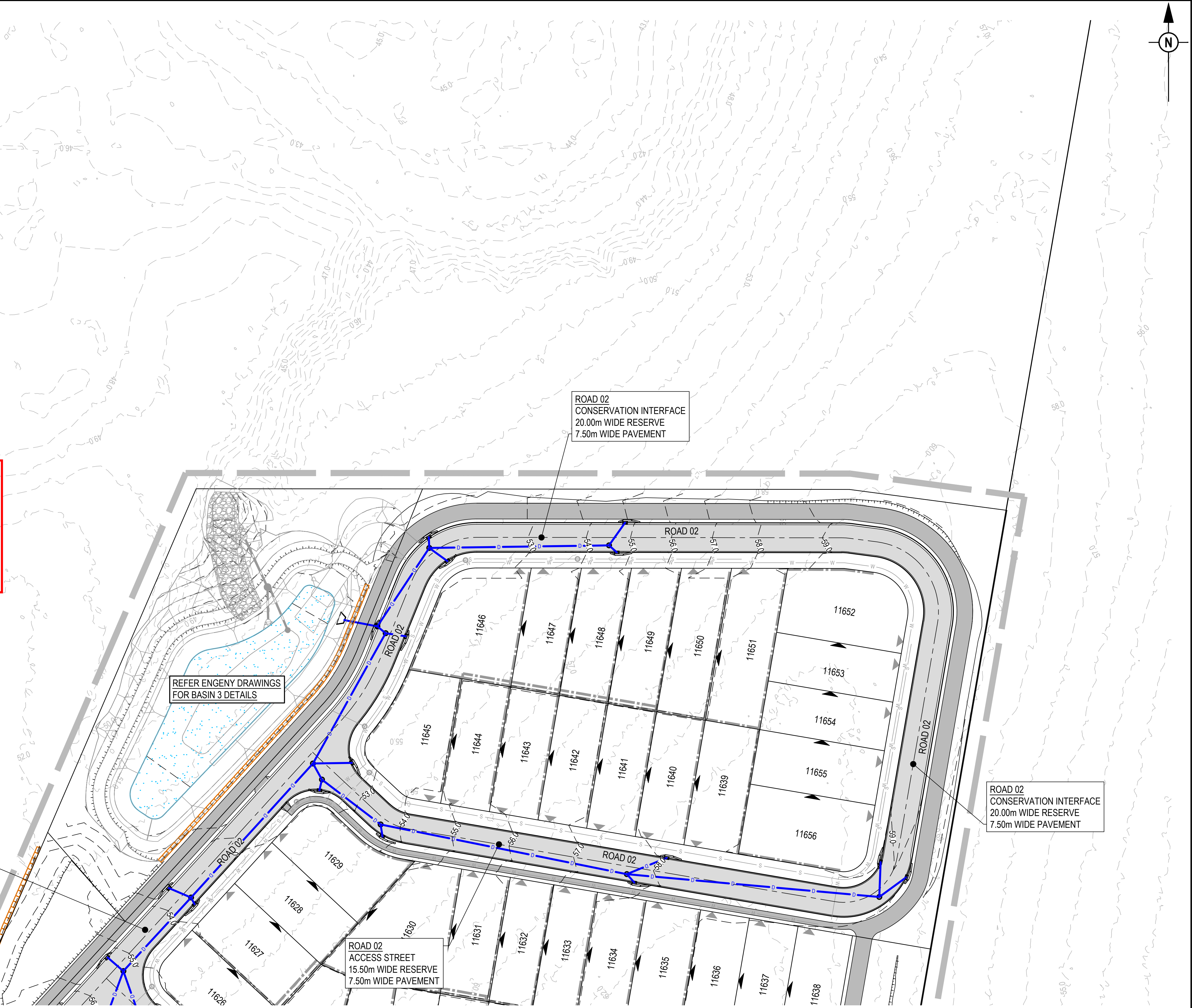


KEY PLAN
SCALE 1:8000 (A1)
SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0201

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL
Approval no: DEV2025/1612
Date: 31 October 2025
Queensland Government



REFER SHEET 11 FOR CONTINUATION

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.12.24	NK	TP	AMENDED DRIVEWAY AND BTB
C	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
D	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN
DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:500 10 5 0 10 20 A1
1:1000 A3

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
ROADWORKS AND DRAINAGE LAYOUT PLAN SHEET 12 OF 12

PROJECT No.	DRAWING No.	REVISION
24-0750	DA-0212	D

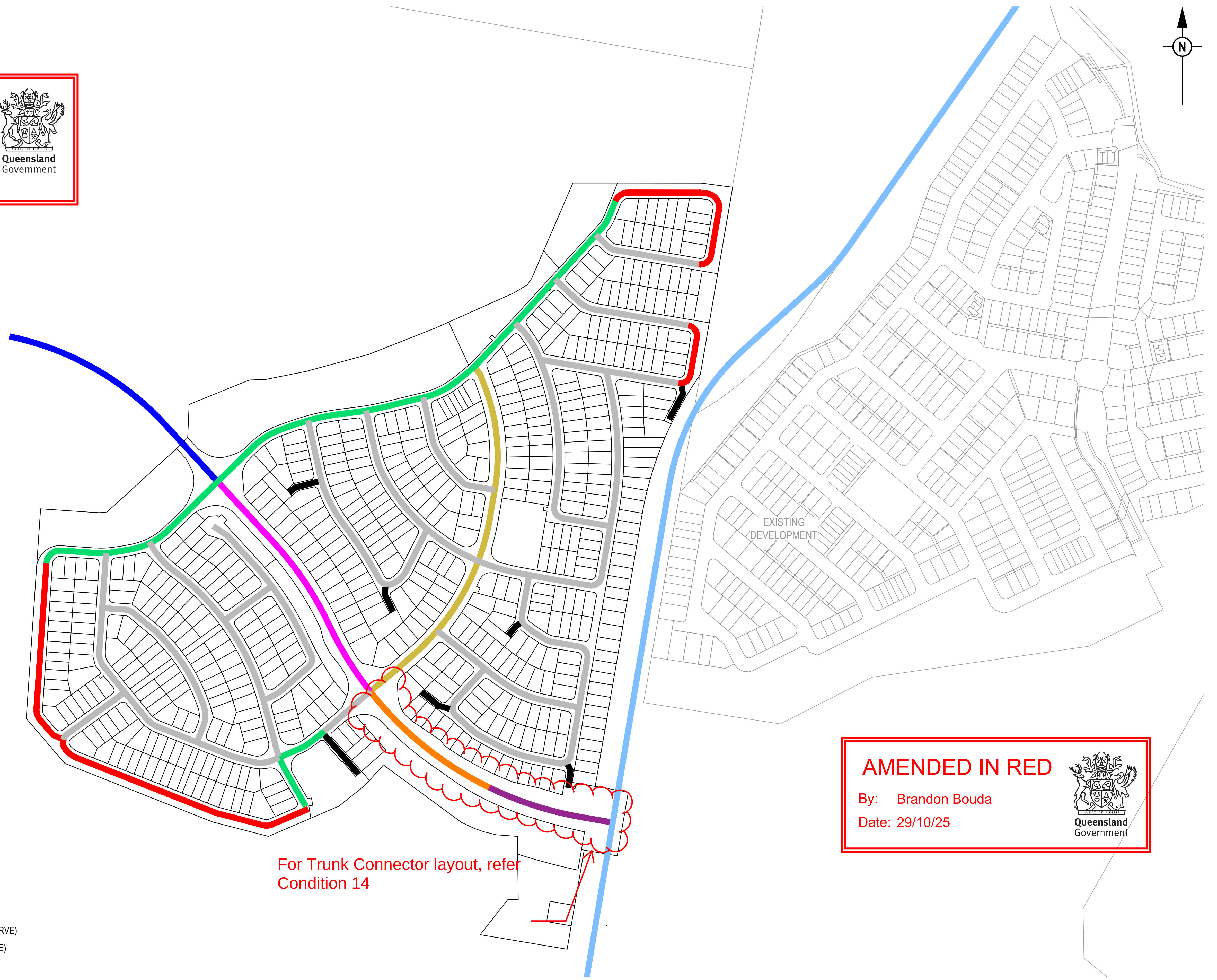
PLOT - 04 Apr 2025 09:55 AM LOCATION - \\ianz.corp.local\Spring\MI\Projects\2222-0408 Undullah (Jotwn), Flagstone\Design\Acad\ROL 4\24-0750-DA-P101-0200-RWAD.dwg

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government



NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

LEGEND

- CONCEPT URBAN ARTERIAL (4 LANE)
- CONCEPT TRUNK CONNECTOR (4 LANE NO PARKING)
- CONCEPT TRUNK CONNECTOR (2 LANE NO PARKING)
- CONCEPT TRUNK CONNECTOR (2 LANE WITH PARKING)
- CONCEPT TRUNK CONNECTOR BRIDGE (2 LANE NO PARKING)
- CONCEPT CONSERVATION INTERFACE
- CONCEPT NEIGHBORHOOD CONNECTOR 2
- CONCEPT ACCESS STREET (15.50m ROAD RESERVE)
- CONCEPT ACCESS STREET (14m ROAD RESERVE)
- CONCEPT DRIVEWAY RESERVE (10.00m)

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN

DESIGN

STATUS
FOR DEVELOPMENT APPLICATION NOT FOR CONSTRUCTION

APPROVED DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE 1:2000 A1 / 1:4000 A3 — 20 0 20 40 60 80 100

CLIENT mirvac

ASSOCIATED CONSULTANT ENGENY; saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

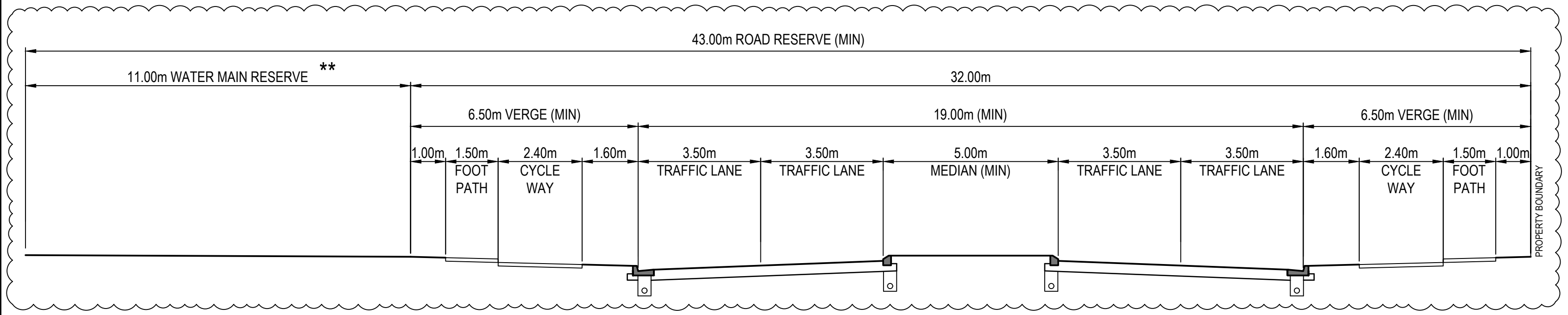
DRAWING TITLE
ROAD TYPES LAYOUT

PROJECT No. 24-0750 | DRAWING No. DA-0250 | REVISION C

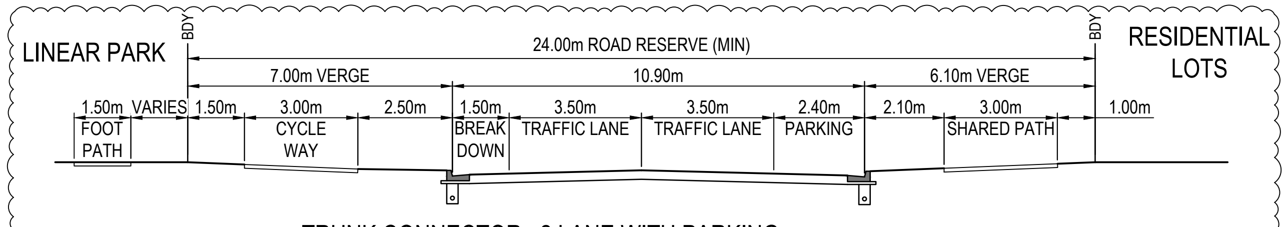
PLOT - 04 Apr 2025 09:56 AM LOCATION - \\anz.corp.local\SpringHill\Projects\2022-0408 Undullah (Jotown)_Flagstone\Design\Acad\ROL 4\24-0750-DA-P101-0250-ROAD LAYOUT.dwg

GENERAL NOTES:

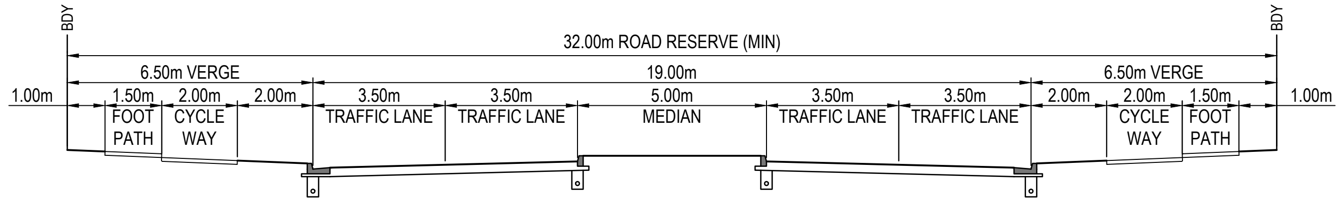
ADD 2m LANDSCAPE BUFFER IF INTERFACING WITH ACOUSTIC FENCE.
IF => 15m LINEAR PARK ADJACENT: REDUCE VERGE TO 4m AND MOVE PATHS TO PARK
REFER TO MONARCH GLEN ROAD CROSS SECTION ASSESSMENT DOCUMENT FOR MORE



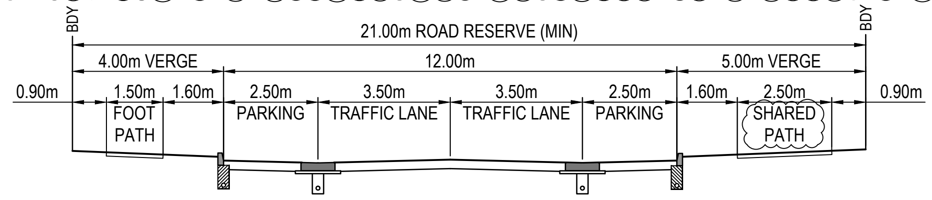
URBAN ARTERIAL : 4 LANE (NEW BEITH ROAD)
SCALE 1:100 (A1)
SCALE 1:200 (A3)



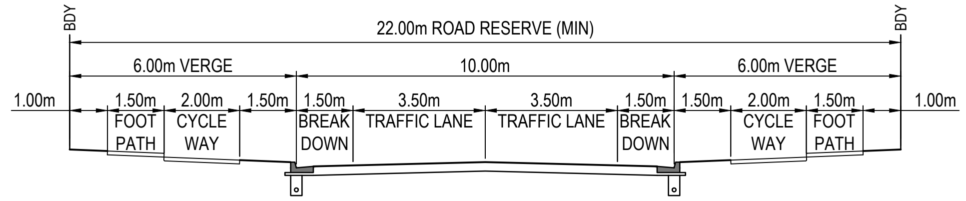
TRUNK CONNECTOR : 2 LANE WITH PARKING
SCALE 1:100 (A1)
SCALE 1:200 (A3)



TRUNK CONNECTOR : 4 LANE (NO PARKING)
SCALE 1:100 (A1)
SCALE 1:200 (A3)



NEIGHBOURHOOD CONNECTOR 1
SCALE 1:100 (A1)
SCALE 1:200 (A3)



TRUNK CONNECTOR : 2 LANE NO PARKING (NO MEDIAN)
SCALE 1:100 (A1)
SCALE 1:200 (A3)

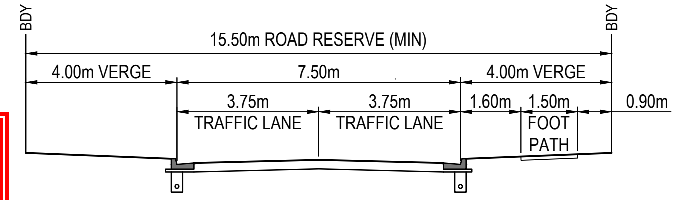
For the entry road trunk connector, refer condition 14.

AMENDED IN RED

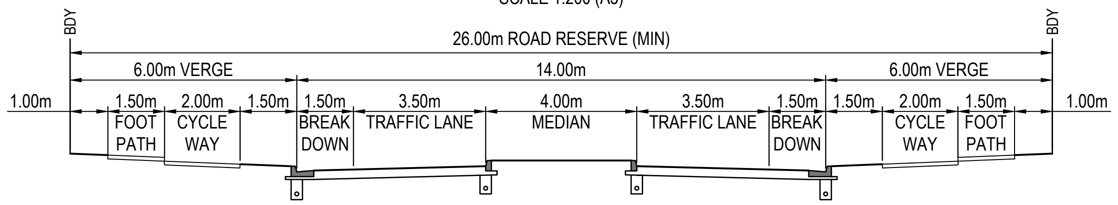
By: Brandon Bouda

Date: 29/10/25

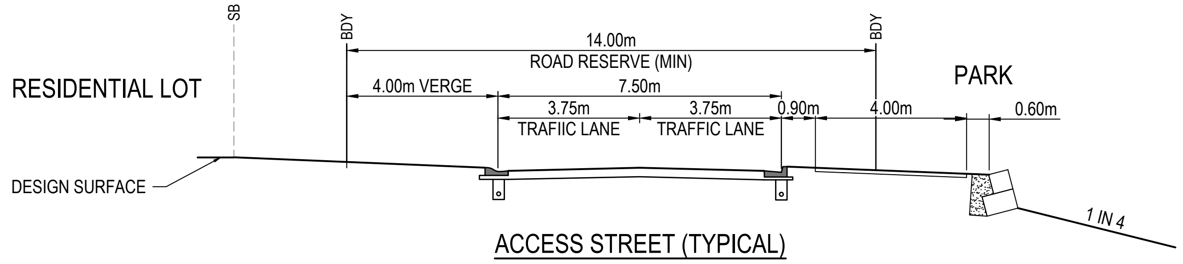
Queensland Government



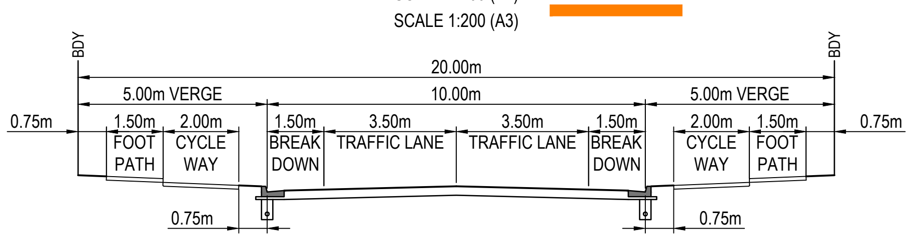
ACCESS STREET (TYPICAL)
SCALE 1:100 (A1)
SCALE 1:200 (A3)



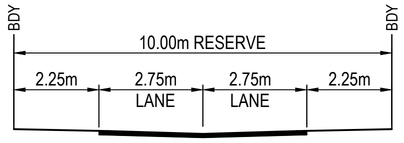
TRUNK CONNECTOR : 2 LANE NO PARKING (MEDIAN)
SCALE 1:100 (A1)
SCALE 1:200 (A3)



ACCESS STREET (TYPICAL)
SCALE 1:100 (A1)
SCALE 1:200 (A3)



TRUNK CONNECTOR : 2 LANE NO PARKING (BRIDGE - NO MEDIAN)
SCALE 1:100 (A1)
SCALE 1:200 (A3)



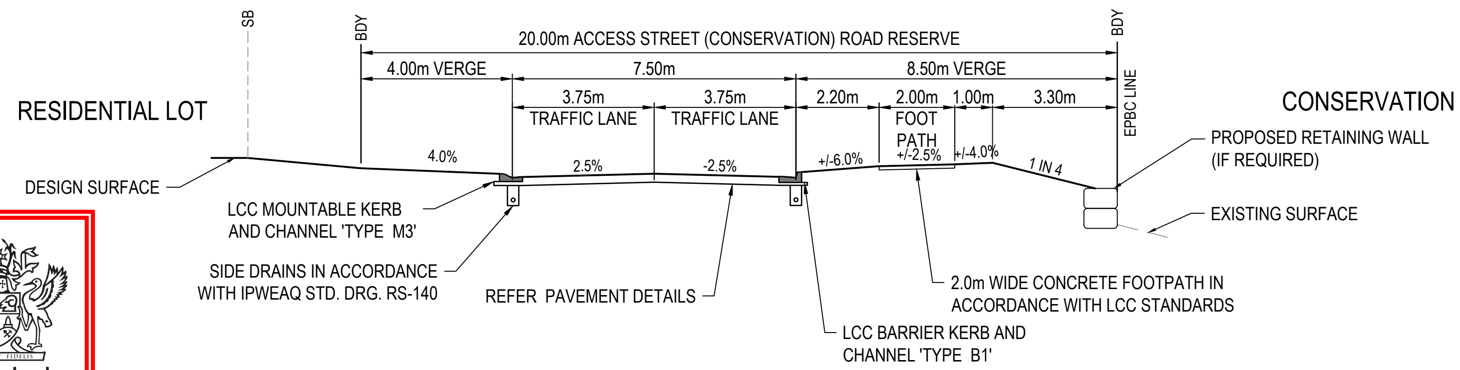
DRIVEWAY RESERVE (TYPICAL)
1:100 (A1)
1:200 (A3)

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government



ACCESS STREET (CONSERVATION) - TYPICAL CROSS SECTION
SCALE 1:100 (A1)
SCALE 1:200 (A3)

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED
D	11.09.25	KN	DH	UPDATED TYPICAL SECTION

DRAWN
DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 11.09.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE 1:100 0 1 2 3 4 5 A1
1:200 A3

CLIENT: mirvac

ASSOCIATED CONSULTANT: ENGENY; saunders havill group

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE: ROAD HIERARCHY TYPICAL DETAIL

PROJECT No. 24-0750 | DRAWING No. DA-0251 | REVISION D

PLOT - 11 Sep 2025 05:44 PM LOCATION - H:\2\22-0408 Undullah (Jodam) Flagstone\Design\Acad\ROL 4\24-0750-DA-P101-0250-ROAD LAYOUT.dwg

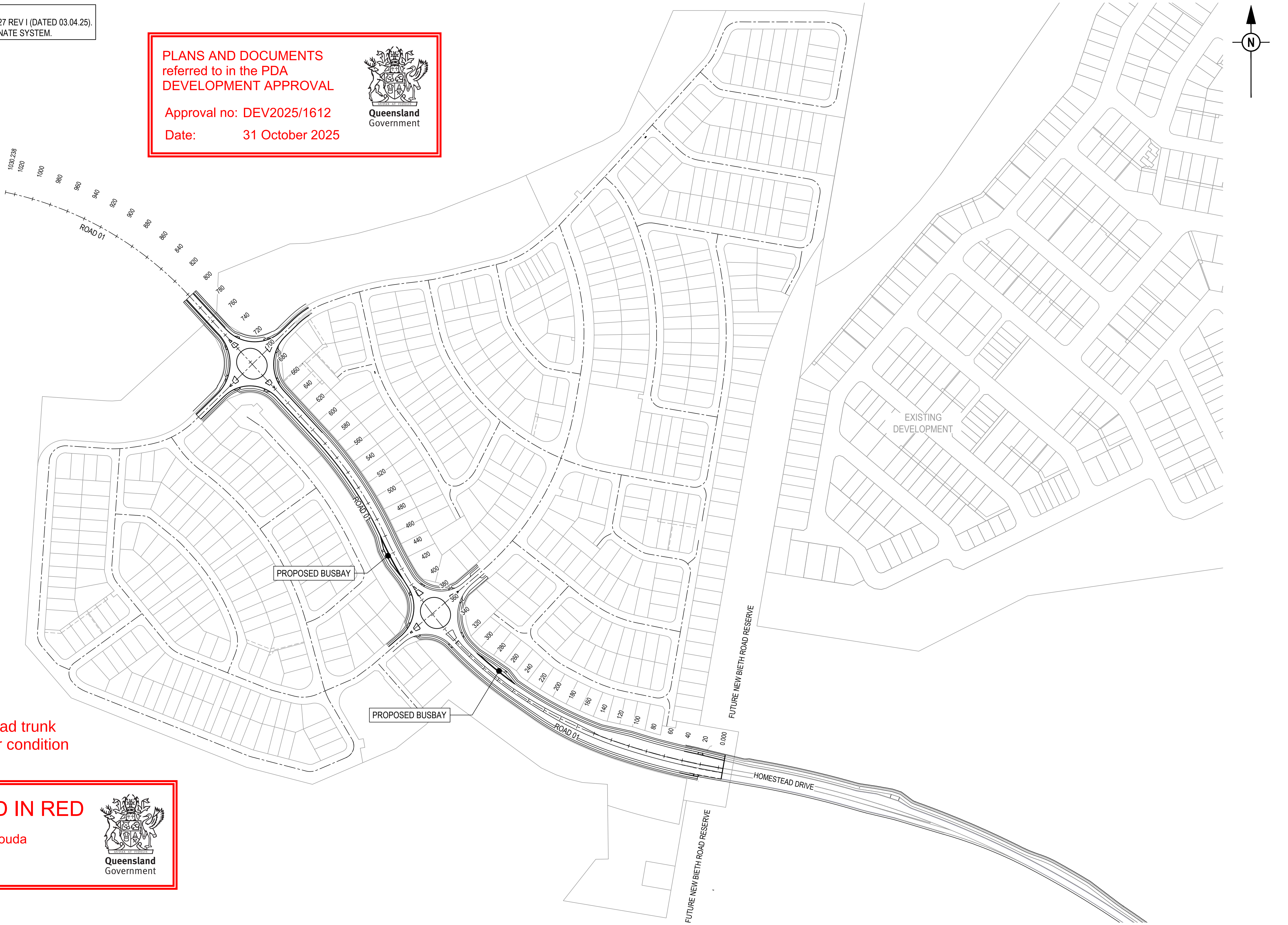
NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government



For the entry road trunk connector, refer condition 14.

AMENDED IN RED

By: Brandon Bouda

Date: 29/10/25

Queensland Government

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

STATUS: FOR DEVELOPMENT APPLICATION NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE 1:2000 1:4000 (20 0 20 40 60 80 100) A1 A3

CLIENT: mirvac

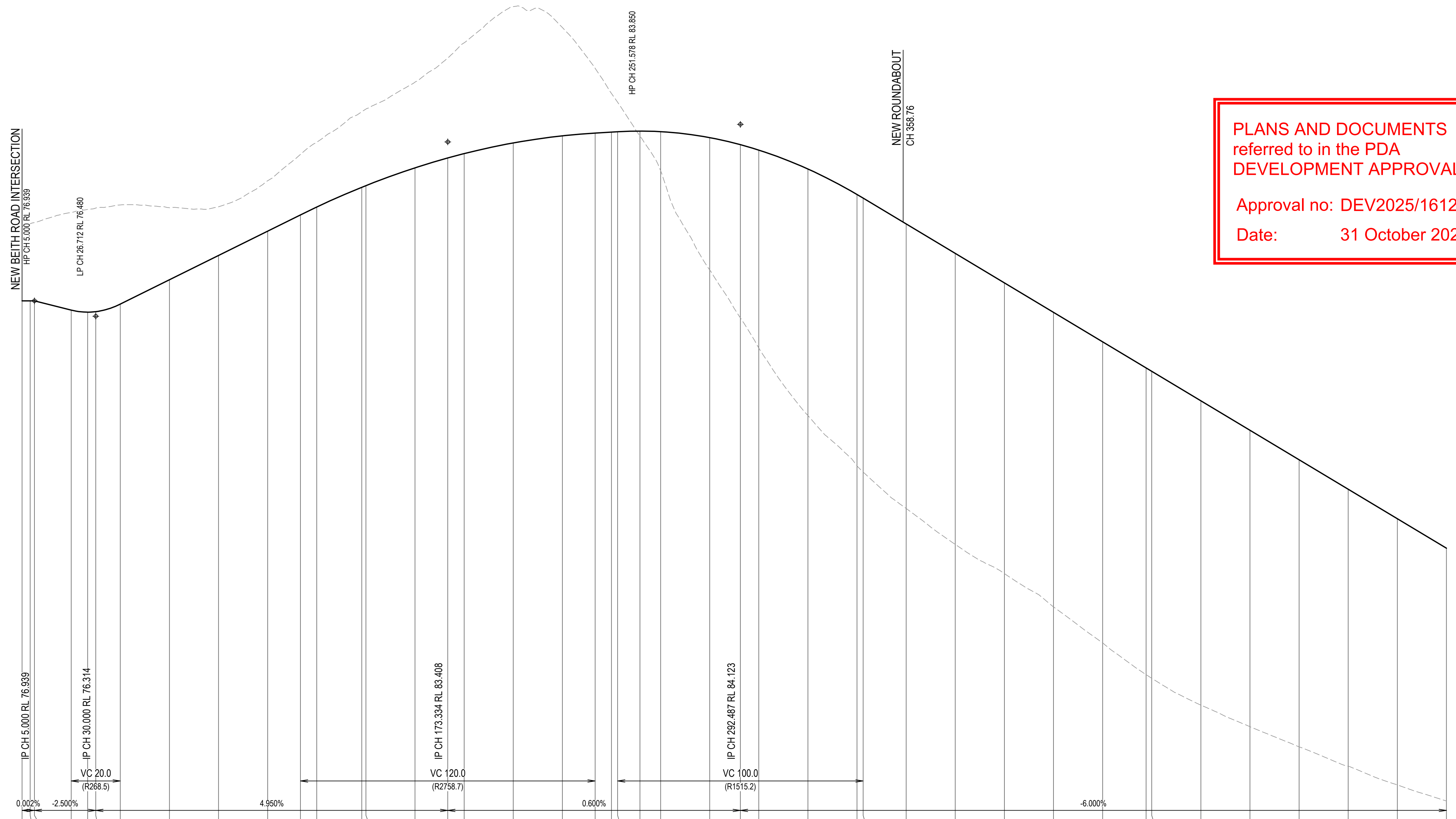
ASSOCIATED CONSULTANT: ENGENY, saunders havill group

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD

R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE: MAJOR ROAD AND ENTRY ROAD LAYOUT PLAN

PROJECT No. 24-0750 | DRAWING No. DA-0300 | REVISION C



PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government

DATUM RL 55.0

CUT (-) / FILL	-3.030	-3.139	-3.188	-3.973	-4.183	-4.217	-4.035	-2.930	-1.980	-2.050	-2.460	-2.640	-3.074	-3.118
LHS LIP LEVEL							76.509	77.478	78.455	79.441	80.103	80.427	81.241	81.309
RHS LIP LEVEL							76.545	77.556	78.559	79.553	80.244	80.588	81.438	81.505
DESIGN SURFACE	76.938	76.938	76.939	76.564	76.480	76.500	76.808	77.798	78.788	79.778	80.438	80.760	81.563	81.629
EXISTING SURFACE	79.969	80.077	80.126	80.537	80.663	80.717	80.843	80.729	80.768	81.829	82.899	83.401	84.637	84.747
CHAINAGES	0.000	3.302	5.000	20.000	26.712	30.000	40.000	60.000	80.000	100.000	113.334	120.000	138.338	140.000
HORIZONTAL CURVES								R700.000						

CUT (-) / FILL	-3.487	-4.067	-4.511	-5.548	-4.408	-2.640	-1.574	-1.204	0.200	1.589	5.386	7.051	8.057	10.036
LHS LIP LEVEL	82.053	82.470	82.657	83.116	83.431	83.556	83.599	83.615	83.645	83.625	83.387	83.102	82.884	82.115
RHS LIP LEVEL	82.225	82.625	82.802	83.235	83.524	83.630	83.668	83.682	83.705	83.679	83.431	83.140	82.920	82.146
DESIGN SURFACE	82.354	82.756	82.933	83.367	83.656	83.768	83.808	83.823	83.850	83.827	83.584	83.298	83.077	82.306
EXISTING SURFACE	85.840	86.823	87.444	88.915	88.064	86.408	85.382	85.027	83.650	82.238	78.198	76.248	75.020	72.269
CHAINAGES	160.000	173.334	180.000	200.000	220.000	233.334	240.000	242.487	251.578	260.000	280.000	292.487	300.000	320.000
HORIZONTAL CURVES													R410.000	

CUT (-) / FILL	11.045	11.152	11.583	11.845	11.831	11.989	12.254	12.483	12.494	12.387	12.062	11.683	11.272	10.833	10.289
LHS LIP LEVEL	81.090	80.951	79.944	78.770	77.572	76.366	75.157	74.087	73.948	72.747	71.547	70.347	69.147	67.947	66.747
RHS LIP LEVEL	81.102	80.951	79.881	78.682	77.500	76.307	75.115	74.062	73.925	72.725	71.525	70.325	69.125	67.925	66.725
DESIGN SURFACE	81.270	81.123	80.072	78.872	77.672	76.472	75.272	74.210	74.072	72.872	71.672	70.472	69.272	68.072	66.872
EXISTING SURFACE	70.225	69.971	68.490	67.028	65.841	64.483	63.018	61.727	61.579	60.486	59.611	58.790	58.000	57.240	56.584
CHAINAGES	340.000	342.487	360.000	380.000	400.000	420.000	440.000	457.702	460.000	480.000	500.000	520.000	540.000	560.000	580.000
HORIZONTAL CURVES											R-420.000				

ROAD 1

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN

DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:1000 1:2000 A1 A3 HORIZONTAL
1:100 1:200 A1 A3 VERTICAL

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
ROAD 1 AND ENTRY ROAD LONGITUDINAL SECTION SHEET 1 OF 2

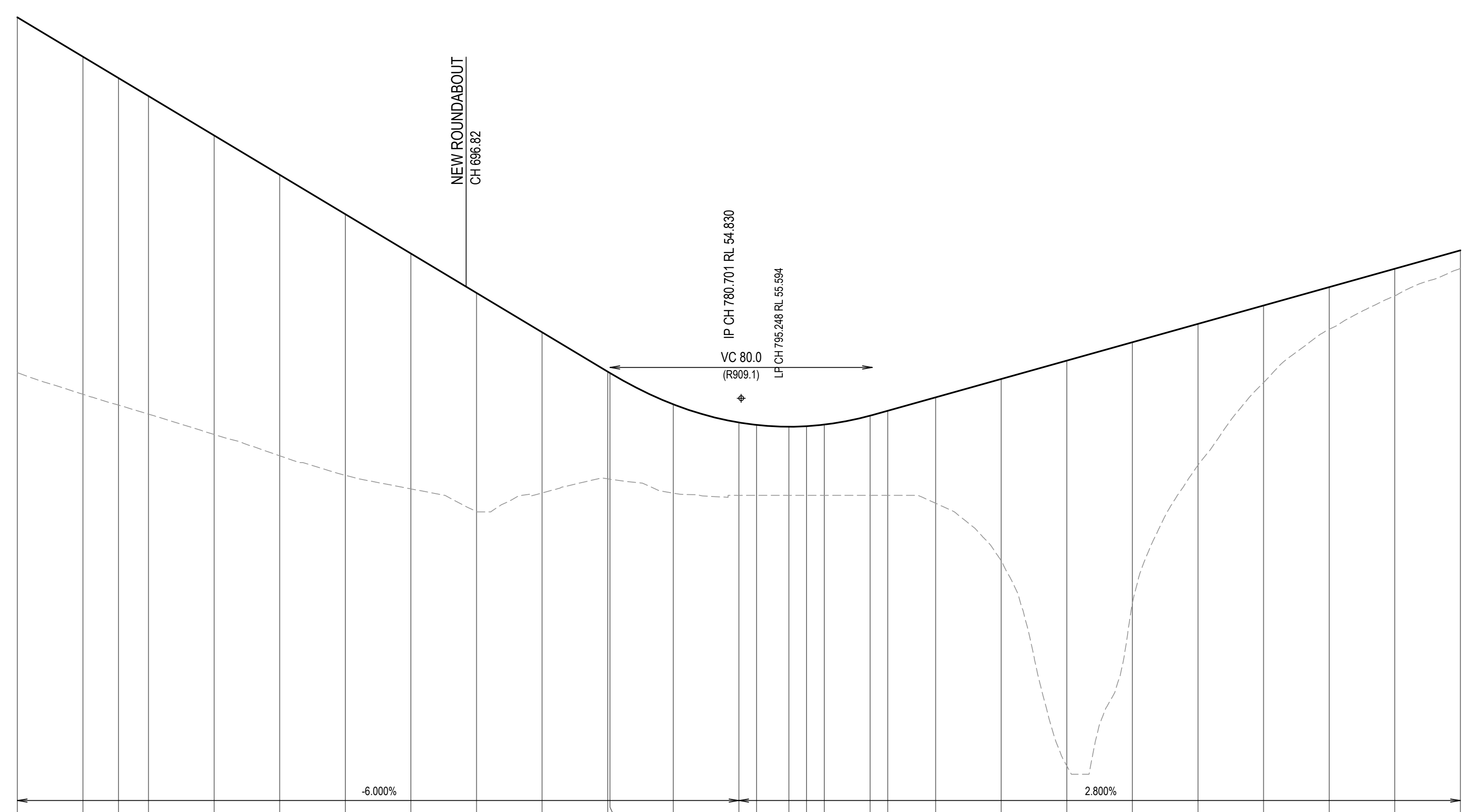
PROJECT No. 24-0750
DRAWING No. DA-0301
REVISION C

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government



DATUM RL 43.0

CUT (-) / FILL	10.833	10.289	9.969	9.695	9.114	8.565	7.958	7.173	6.664	4.898
LHS LIP LEVEL	67.947	66.747	66.098	65.547	64.347	63.147	61.947	60.747	59.547	58.347
RHS LIP LEVEL	67.925	66.725	66.075	65.525	64.325	63.125	61.925	60.730	59.538	58.346
DESIGN SURFACE	68.072	66.872	66.223	65.672	64.472	63.272	62.072	60.872	59.672	58.472
EXISTING SURFACE	57.240	56.584	56.254	55.977	55.359	54.708	54.114	53.700	53.009	53.575
CHAINAGES	560.000	580.000	590.829	600.000	620.000	640.000	660.000	680.000	700.000	720.000

CUT (-) / FILL	3.266	3.234	2.707	2.222	2.210	2.094	2.095	2.106	2.431	2.450
LHS LIP LEVEL	57.147	57.105	56.152							
RHS LIP LEVEL	57.147	57.105	56.152							
DESIGN SURFACE	57.272	57.230	56.277	55.722	55.710	55.594	55.595	55.606	55.931	55.950
EXISTING SURFACE	54.006	53.996	53.571	53.500	53.500	53.500	53.500	53.500	53.500	53.500
CHAINAGES	740.000	740.701	760.000	780.000	780.701	795.248	796.888	800.000	820.000	820.701

CUT (-) / FILL	3.228	5.544	12.355	7.944	4.305	2.352	1.286	0.826	0.550
LHS LIP LEVEL									
RHS LIP LEVEL									
DESIGN SURFACE	56.491	57.051	57.611	58.170	58.730	59.290	59.850	60.410	60.970
EXISTING SURFACE	53.262	51.506	45.255	50.227	54.425	56.938	58.564	59.584	60.420
CHAINAGES	840.000	860.000	880.000	900.000	920.000	940.000	960.000	980.000	1000.000

HORIZONTAL CURVES: R-420.000 (560.000–590.829); R-375.000 (795.248–1000.000)

ROAD 1

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN / DESIGN

STATUS: FOR DEVELOPMENT APPLICATION NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: 1:1000 / 1:2000 HORIZONTAL (10 0 10 20 30 40 50) A1 / A3; 1:100 / 1:200 VERTICAL (2 1 0 2 4) A1 / A3

CLIENT: mirvac

ASSOCIATED CONSULTANT: ENGENY; saunders havill group

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD

R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

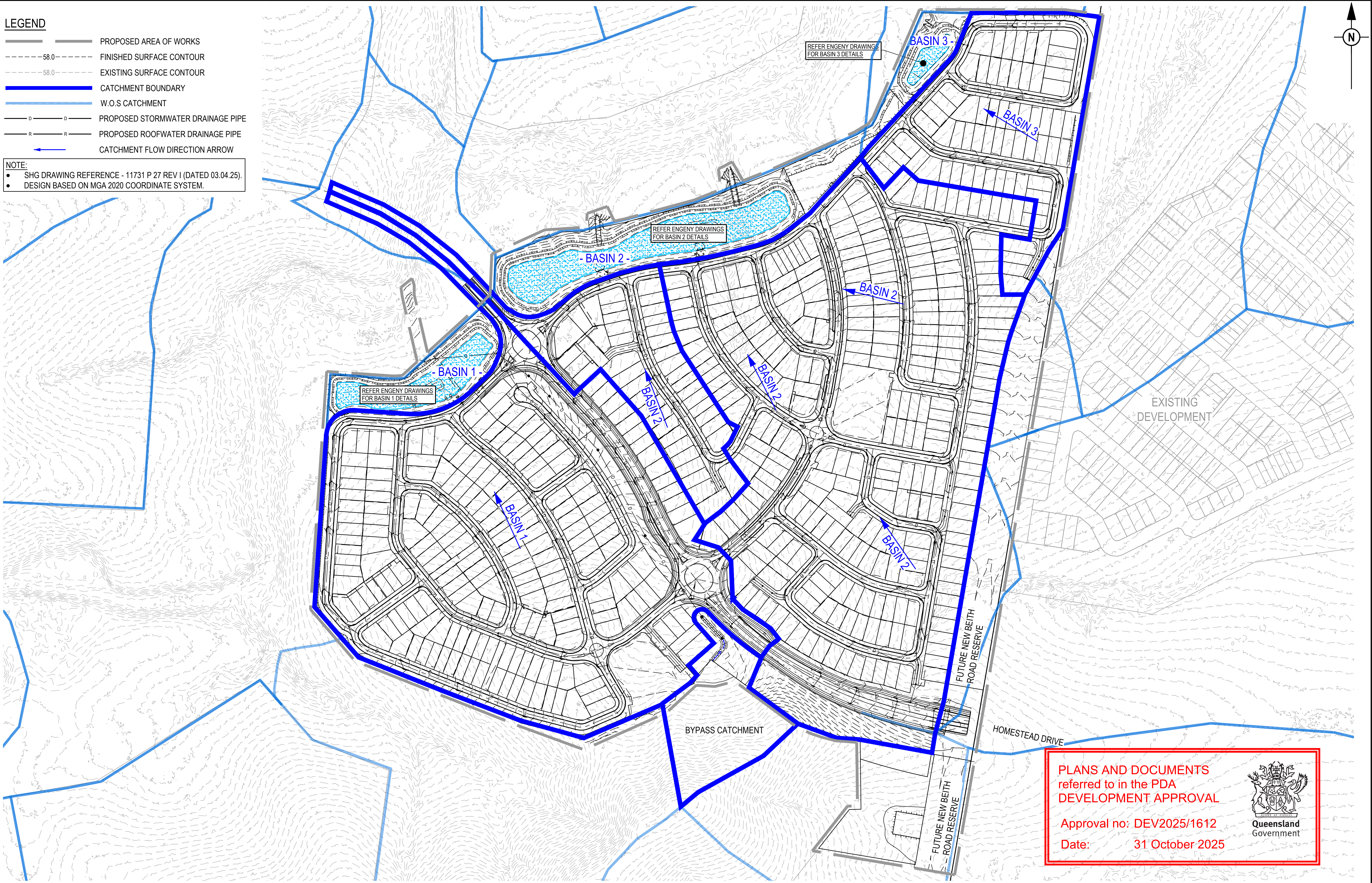
DRAWING TITLE: ROAD 1 AND ENTRY ROAD LONGITUDINAL SECTION SHEET 2 OF 2

PROJECT No. 24-0750 | DRAWING No. DA-0302 | REVISION C

LEGEND

- PROPOSED AREA OF WORKS
- 58.0 — FINISHED SURFACE CONTOUR
- 58.0 — EXISTING SURFACE CONTOUR
- CATCHMENT BOUNDARY
- W.O.S CATCHMENT
- D — D — PROPOSED STORMWATER DRAINAGE PIPE
- R — R — PROPOSED ROOFWATER DRAINAGE PIPE
- CATCHMENT FLOW DIRECTION ARROW

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.



PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

PLOT - 04 Apr 2025 09:57 AM LOCATION - \\anz.corp.local\SpringHill\Projects\...

DRAWN

DESIGN

STATUS
FOR DEVELOPMENT APPLICATION NOT FOR CONSTRUCTION

APPROVED DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE 1:2000 A1, 1:4000 A3 — 20 0 20 40 60 80 100

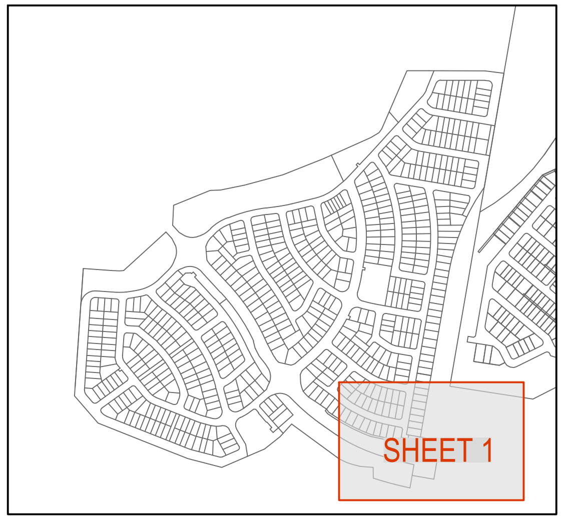
CLIENT: mirvac

ASSOCIATED CONSULTANT: ENGENY; saunders havill group

PROJECT NAME: **MONARCH GLEN No. 1 PTY LTD**
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE: **CONCEPT BIO RETENTION OVERALL LAYOUT PLAN**

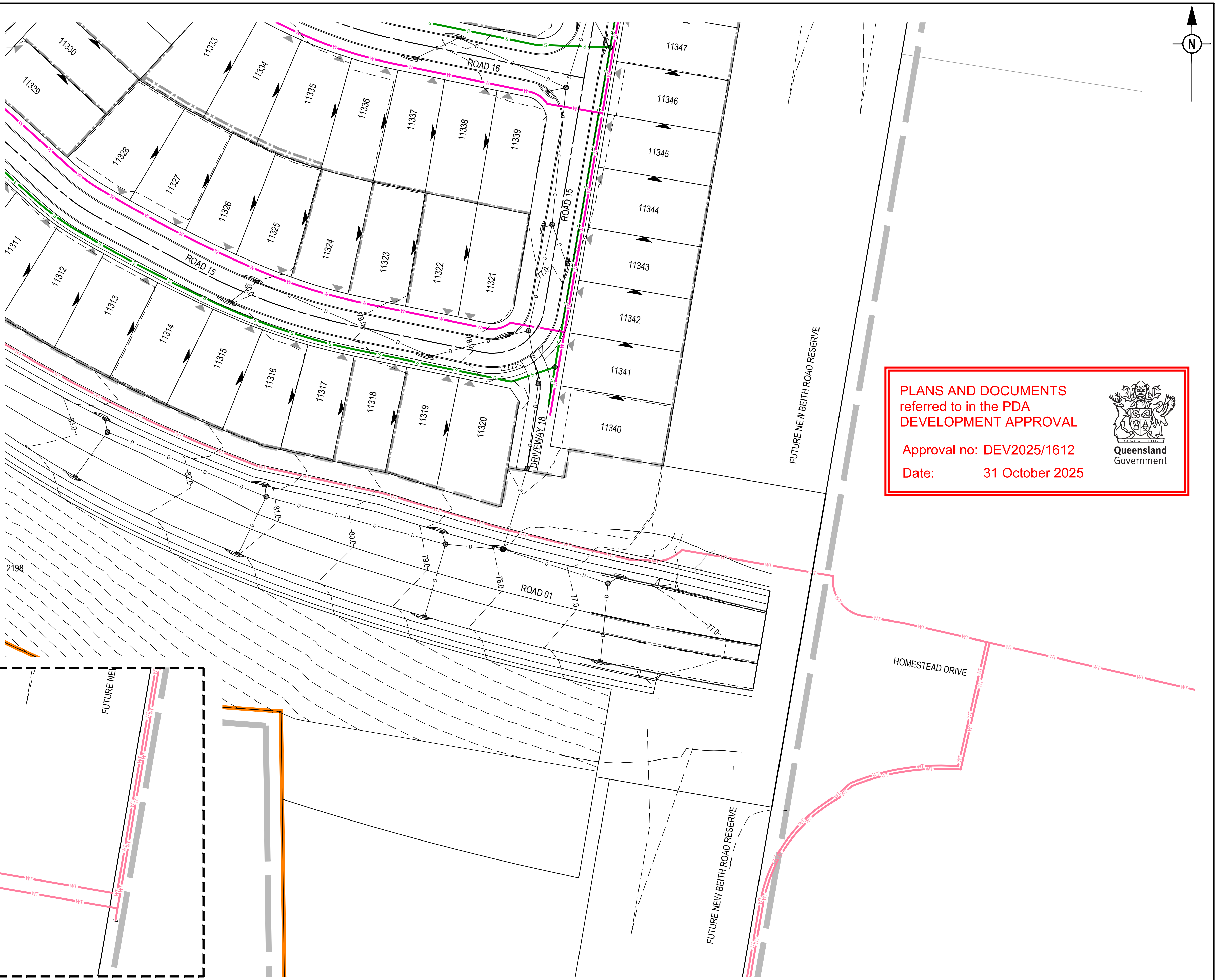
PROJECT No.	DRAWING No.	REVISION
24-0750	DA-0400	C



KEY PLAN
SCALE 1:8000 (A1)
SCALE 1:16000 (A3)

LEGEND
- PROPOSED AREA OF WORKS
- PROPOSED SEWER MAIN (DN150)
- PROPOSED SEWER TRUNK (REFER 600 SERIES)
- PROPOSED WATER MAIN (DN100)
- PROPOSED WATER MAIN (DN150)
- PROPOSED TRUNK WATER (DN250)
- 58.0 FINISHED SURFACE CONTOUR
- PROPOSED RETAINING WALL
- PROPOSED ROCK RETAINING WALL
- PROPOSED TOP OF BATTER
- EPBC CONSERVATION AREA
- INDICATIVE DRIVEWAY LOCATION
- ZERO LOT BOUNDARY
- WATER BOOSTER PUMP

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

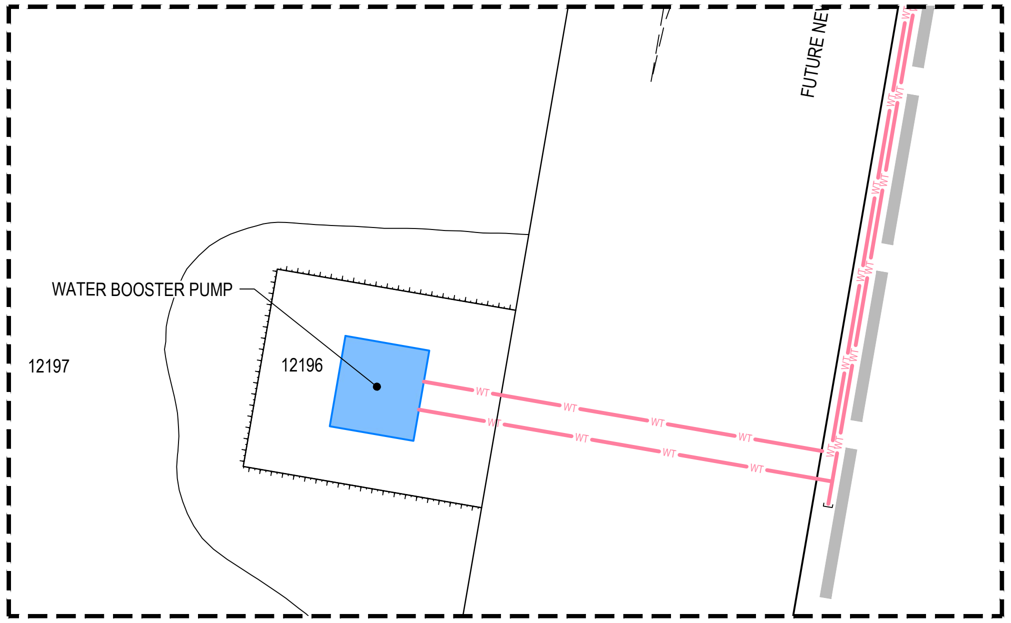


PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government



INSET "A"

REFER INSET 'A' FOR CONTINUATION

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B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN

DESIGN

STATUS
FOR DEVELOPMENT APPLICATION NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:500 (A1) 1:1000 (A3) 10 5 0 10 20

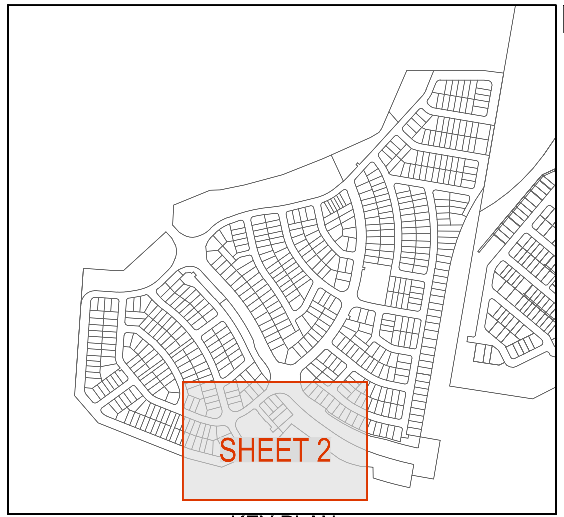
CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 1 OF 12

PROJECT No.	DRAWING No.	REVISION
24-0750	DA-0501	C



KEY PLAN
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SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0501

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government

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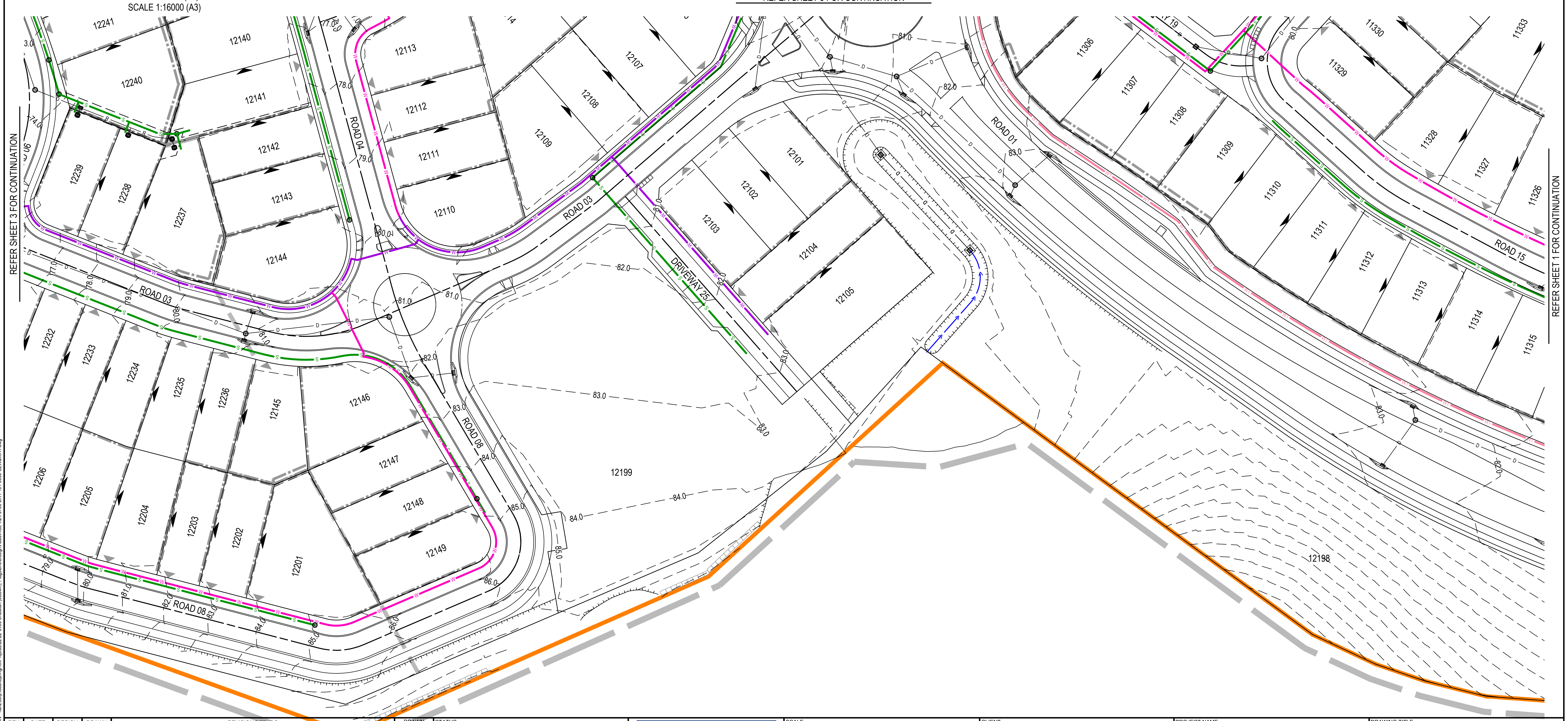
REFER SHEET 5 FOR CONTINUATION



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B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN

DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631
DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
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1:1000 A3

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD

R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

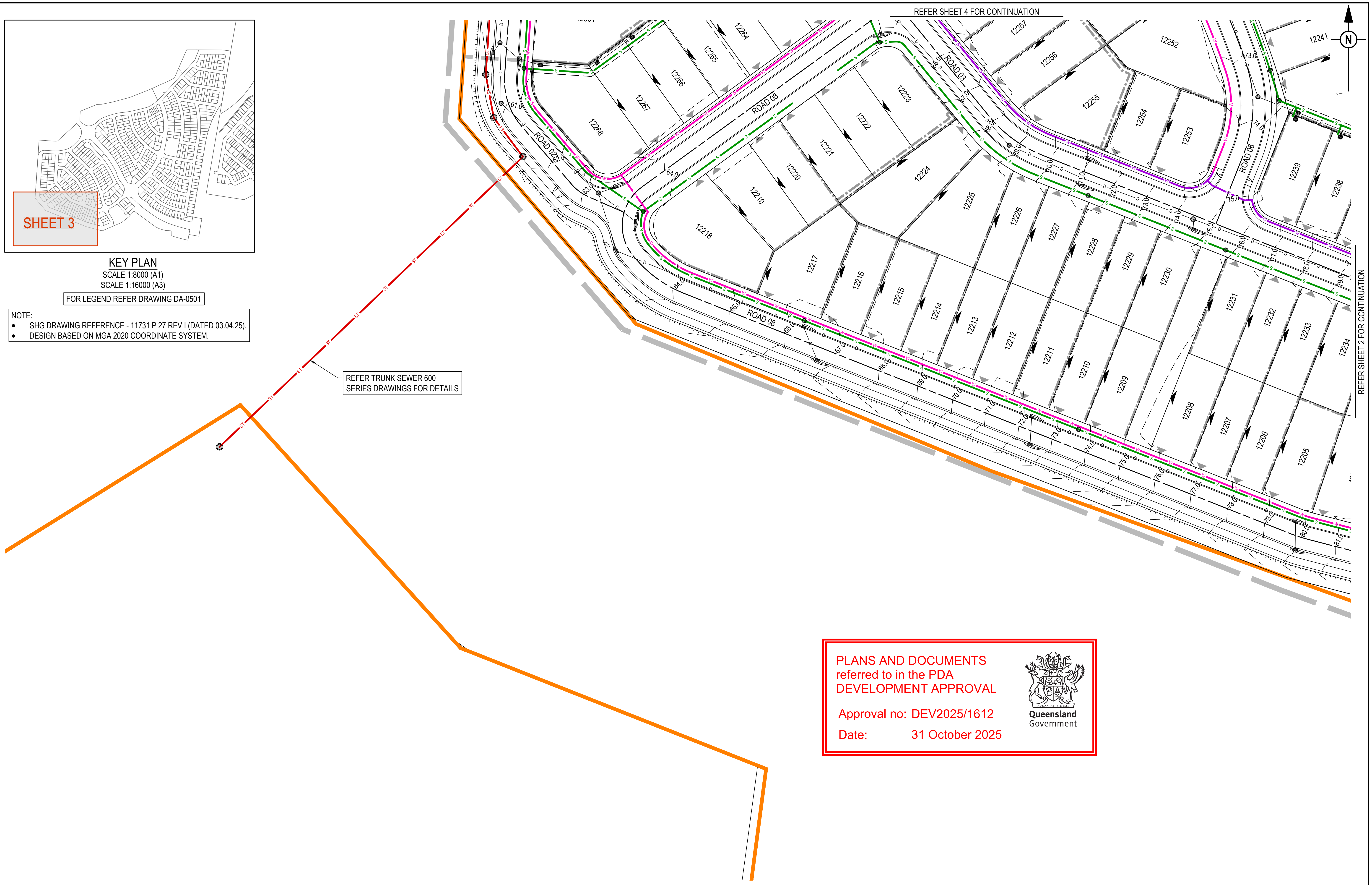
DRAWING TITLE
SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 2 OF 12

PROJECT No. 24-0750

DRAWING No. DA-0502

REVISION C

PLOT - 04 Apr 2025 09:58 AM LOCATION - \\anz.corp.local\Spring\Projects\22\22-0408 Undullah (Jetown) Flagstone\Design\Acad\ROL 4\24-0750-DA-P101-0500-SEW&WAT.dwg



KEY PLAN
SCALE 1:8000 (A1)
SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0501

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL
Approval no: DEV2025/1612
Date: 31 October 2025
Queensland Government

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

STATUS: FOR DEVELOPMENT APPLICATION NOT FOR CONSTRUCTION
APPROVED: DANIEL COLLINS RPEQ 18631 DATE 4.04.25
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

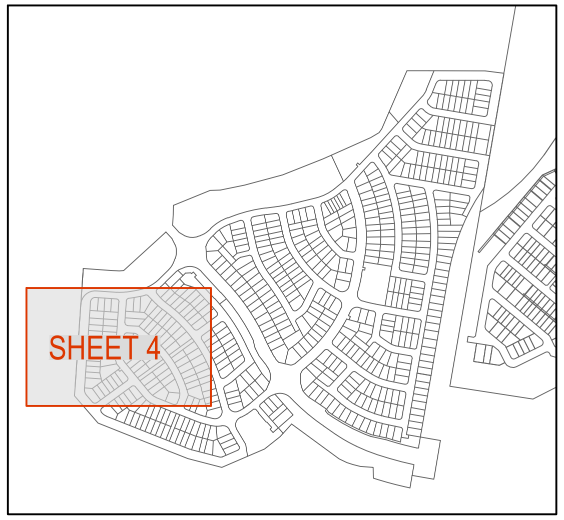
Colliers

SCALE 1:500 / 1:1000 — 10 5 0 10 20 — A1 / A3

CLIENT: mirvac
ASSOCIATED CONSULTANT: ENGENY, saunders havill group

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE: SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 3 OF 12
PROJECT No. 24-0750
DRAWING No. DA-0503
REVISION C



KEY PLAN

SCALE 1:8000 (A1)
SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0501

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

REFER TRUNK SEWER 600 SERIES DRAWINGS FOR DETAILS

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL
Approval no: DEV2025/1612
Date: 31 October 2025
Queensland Government

REFER SHEET 7 FOR CONTINUATION

REFER SHEET 5 FOR CONTINUATION

REFER SHEET 3 FOR CONTINUATION

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN
DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS — RPEQ 18631 — DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE 1:500 / 1:1000 — 10 5 0 10 20 — A1 / A3

CLIENT: mirvac

ASSOCIATED CONSULTANT: ENGENY — saunders havill group

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

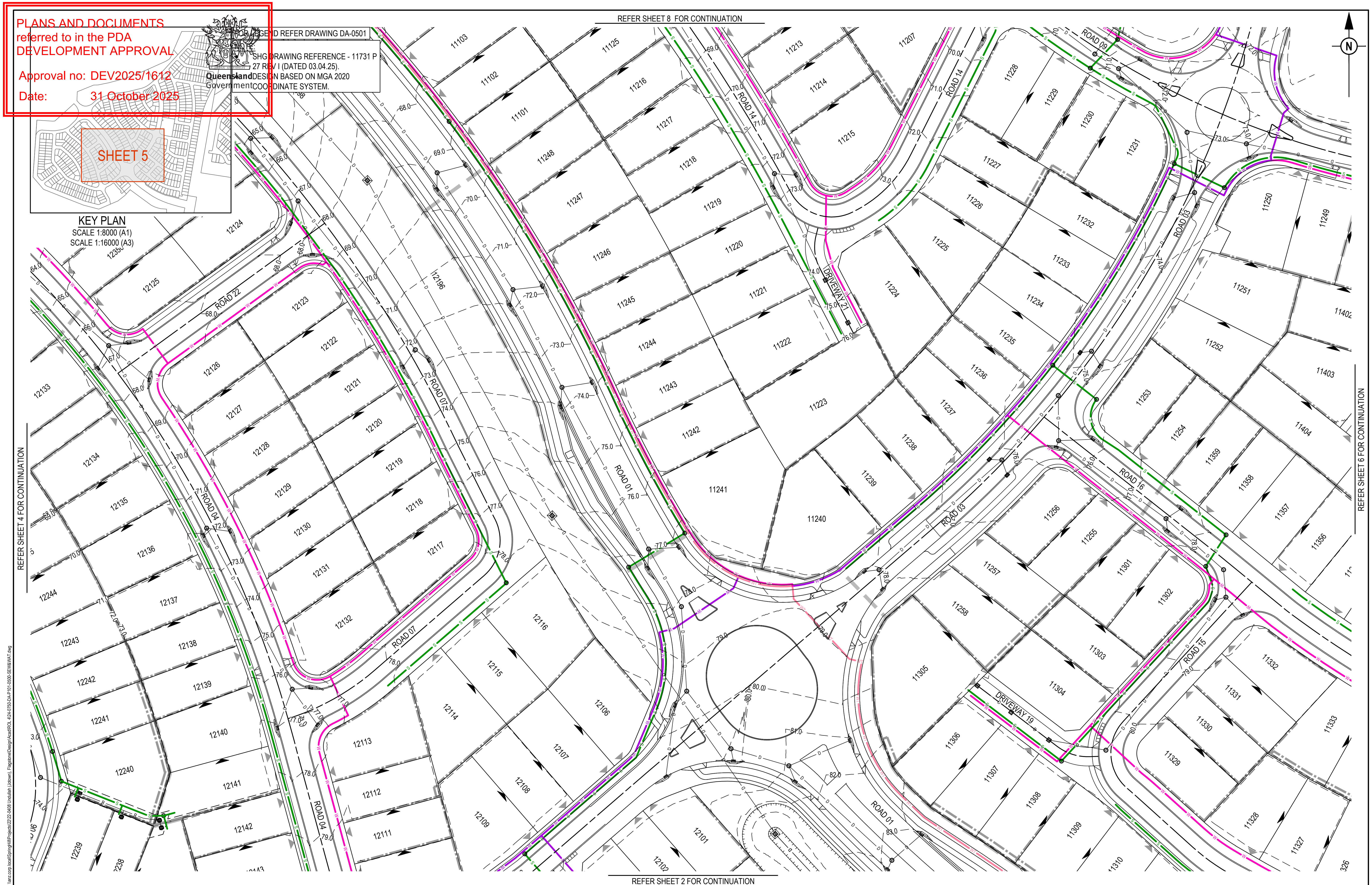
DRAWING TITLE: **SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 4 OF 12**

PROJECT No.	DRAWING No.	REVISION
24-0750	DA-0504	C

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025



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B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN

DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
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1:1000 A3

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD

R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
SEWERAGE AND WATER RETICULATION LAYOUT PLAN
SHEET 5 OF 12

PROJECT No.	DRAWING No.	REVISION
24-0750	DA-0505	C

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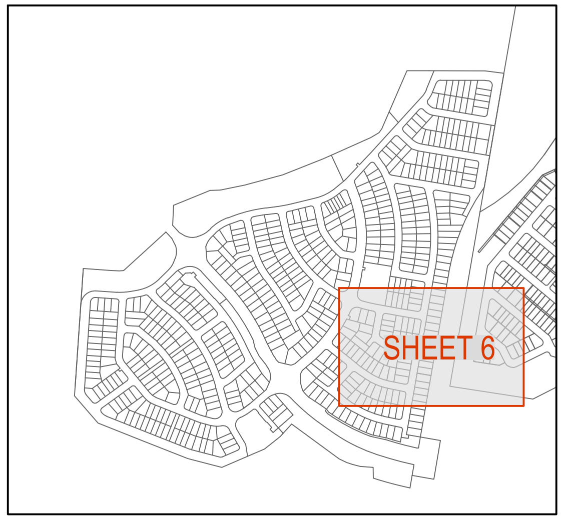

KEY PLAN
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SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0501

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

REFER SHEET 9 FOR CONTINUATION

REFER SHEET 5 FOR CONTINUATION

REFER SHEET 6 FOR CONTINUATION

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
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C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN

DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631
DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:500 A1
1:1000 A3
10 5 0 10 20

CLIENT
mirvac

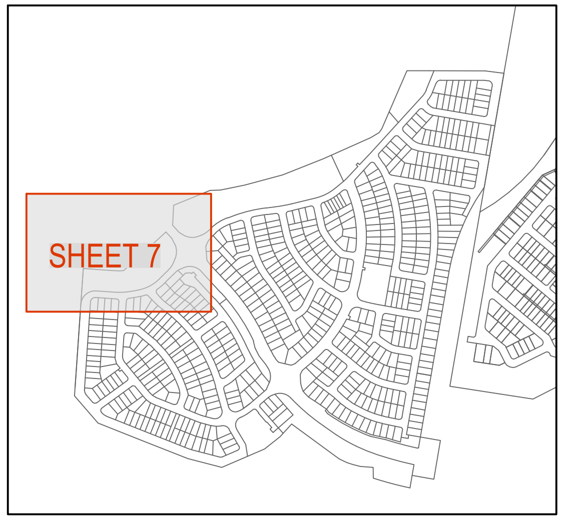
ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD

R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
SEWERAGE AND WATER RETICULATION LAYOUT PLAN
SHEET 6 OF 12

PROJECT No.	DRAWING No.	REVISION
24-0750	DA-0506	C



KEY PLAN
SCALE 1:8000 (A1)
SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0501

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

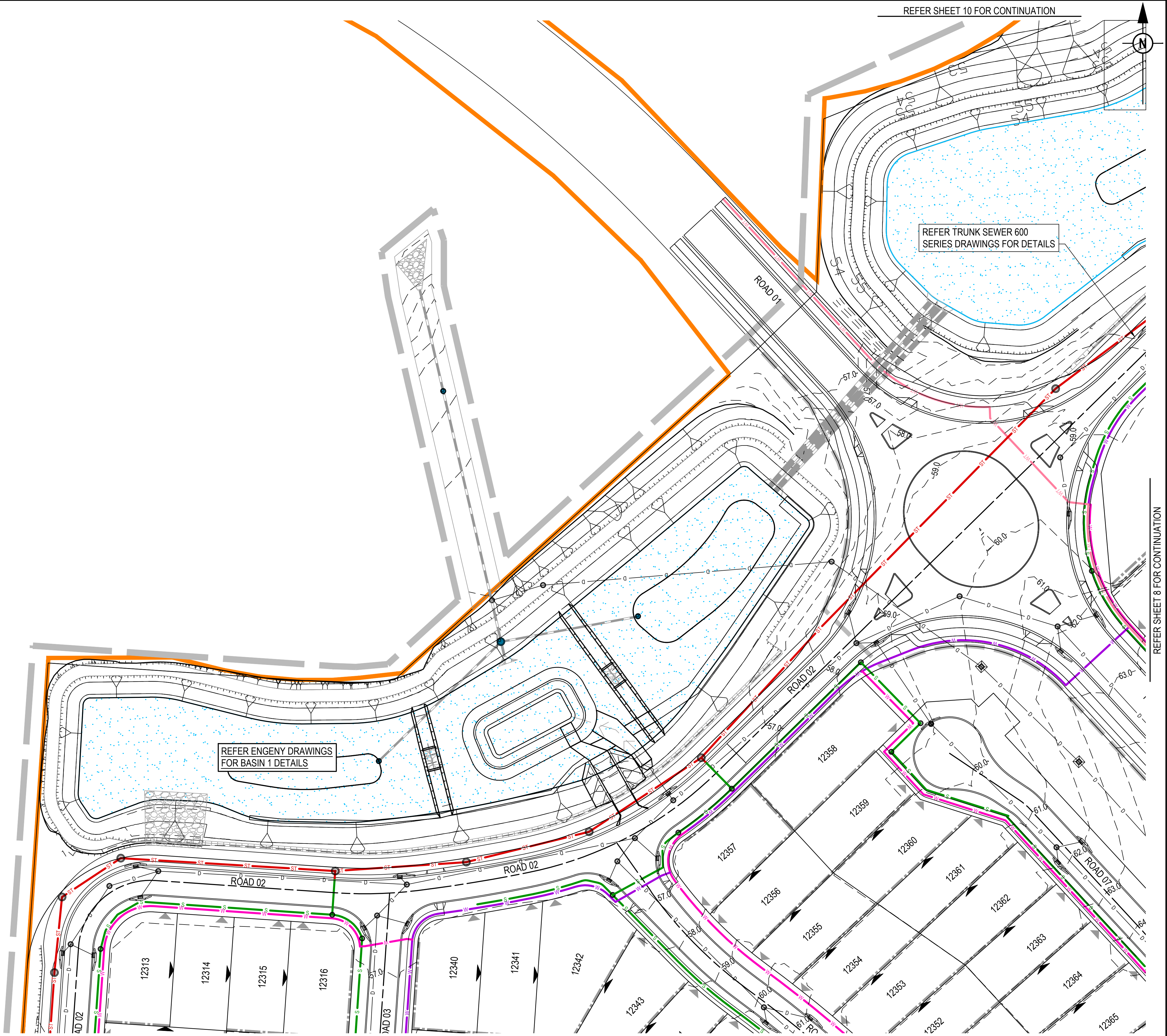
PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government

REFER SHEET 10 FOR CONTINUATION



REFER SHEET 8 FOR CONTINUATION

REFER SHEET 4 FOR CONTINUATION

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B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN
DESIGN

STATUS
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NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:500 10 5 0 10 20 A1
1:1000 A3

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
SEWERAGE AND WATER
RETICULATION LAYOUT PLAN
SHEET 7 OF 12

PROJECT No. 24-0750
DRAWING No. DA-0507
REVISION C

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government

NOTE:
SHG DRAWING REFERENCE - 11731 P 27 REV I (DATED 03.04.25).
DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

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DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631
DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:500 10 5 0 10 20 A1
1:1000 A3

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
SEWERAGE AND WATER RETICULATION LAYOUT PLAN
SHEET 8 OF 12

PROJECT No. 24-0750
DRAWING No. DA-0508
REVISION C

PLOT - 04 Apr 2025 09:59 AM LOCATION - \\arc.corp.local\Spring\Hill\Projects\22\02-0408 Undullah (Jaliwn) Fitzgibbon\Design\Acad\ROL 4\24-0750-DA-P101-0500-SEW&WAT.dwg

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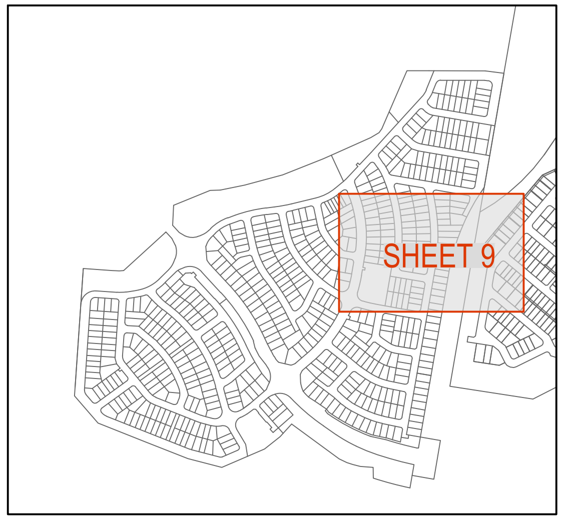

KEY PLAN
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FOR LEGEND REFER DRAWING DA-0501

NOTE:
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- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612
Date: 31 October 2025

Queensland Government

REFER SHEET 5 FOR CONTINUATION

REFER SHEET 6 FOR CONTINUATION

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.12.24	NK	TP	ORIGINAL ISSUE
B	20.03.25	NK	TP	LOTS AND EASEMENTS AMENDED
C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN
DESIGN

STATUS
FOR DEVELOPMENT APPLICATION
NOT FOR CONSTRUCTION

APPROVED
DANIEL COLLINS RPEQ 18631
DATE 4.04.25
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
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1:1000 A3

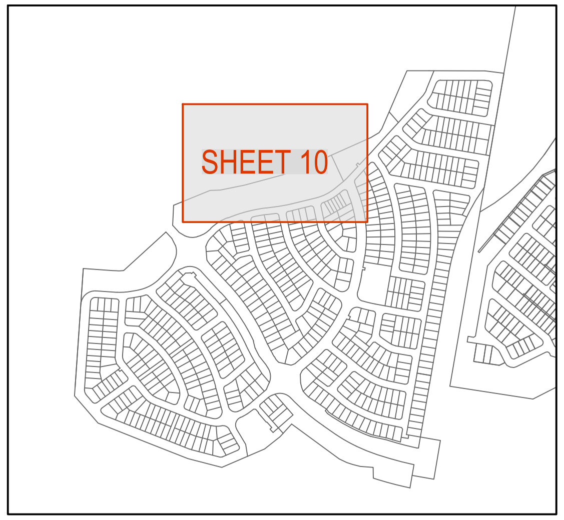
CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
SEWERAGE AND WATER RETICULATION LAYOUT PLAN
SHEET 9 OF 12

PROJECT No. 24-0750
DRAWING No. DA-0509
REVISION C



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SCALE 1:16000 (A3)

FOR LEGEND REFER DRAWING DA-0501

NOTE:
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PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL
Approval no: DEV2025/1612
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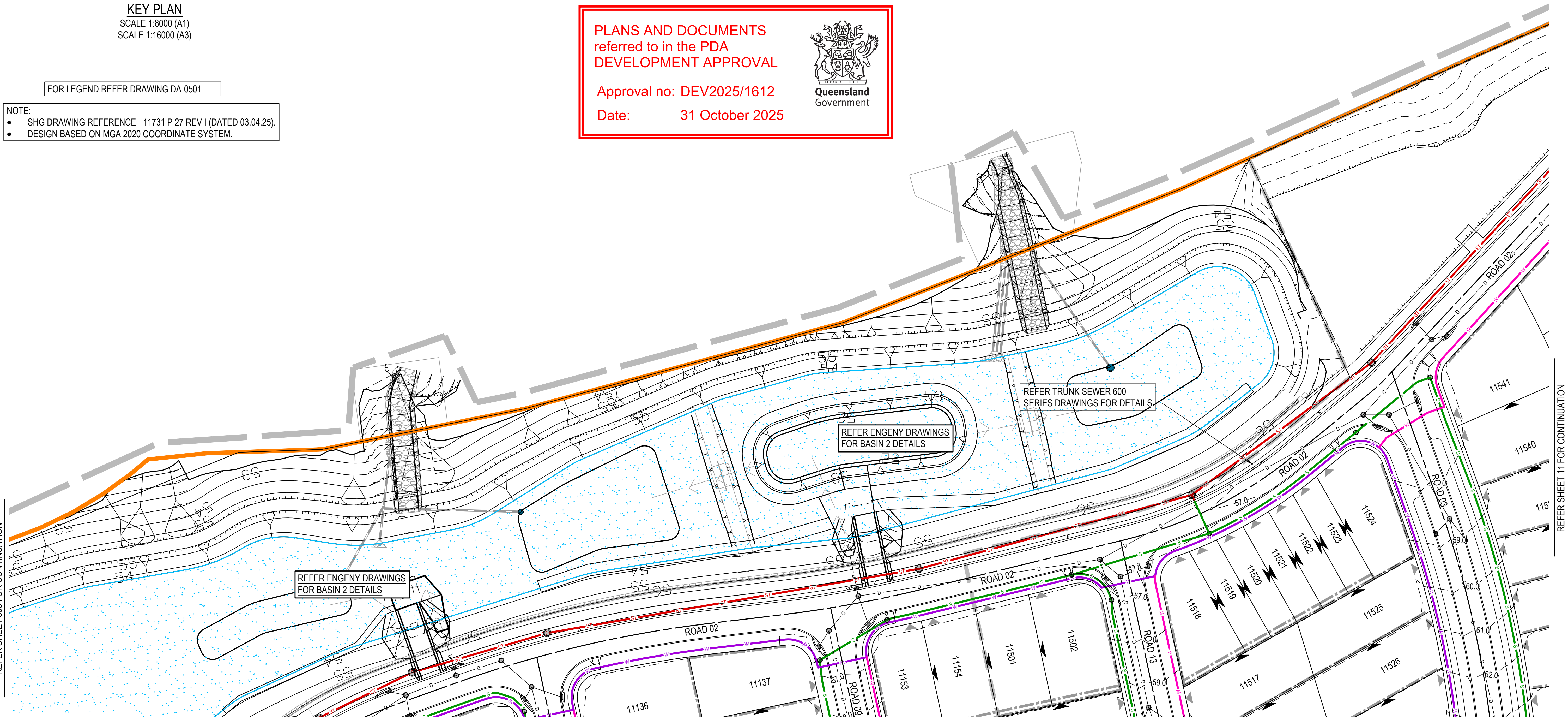

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C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN
DESIGN

STATUS
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APPROVED
DANIEL COLLINS RPEQ 18631
DATE 4.04.25
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:500 1:1000 A1 A3

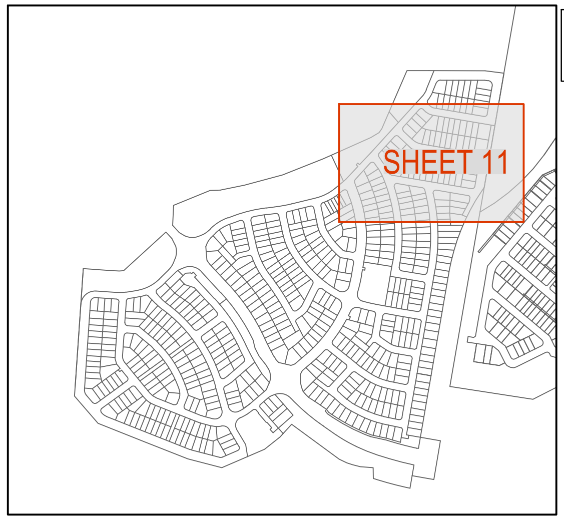
CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
SEWERAGE AND WATER RETICULATION LAYOUT PLAN
SHEET 10 OF 12

PROJECT No.	DRAWING No.	REVISION
24-0750	DA-0510	C



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FOR LEGEND REFER DRAWING DA-0501

NOTE:
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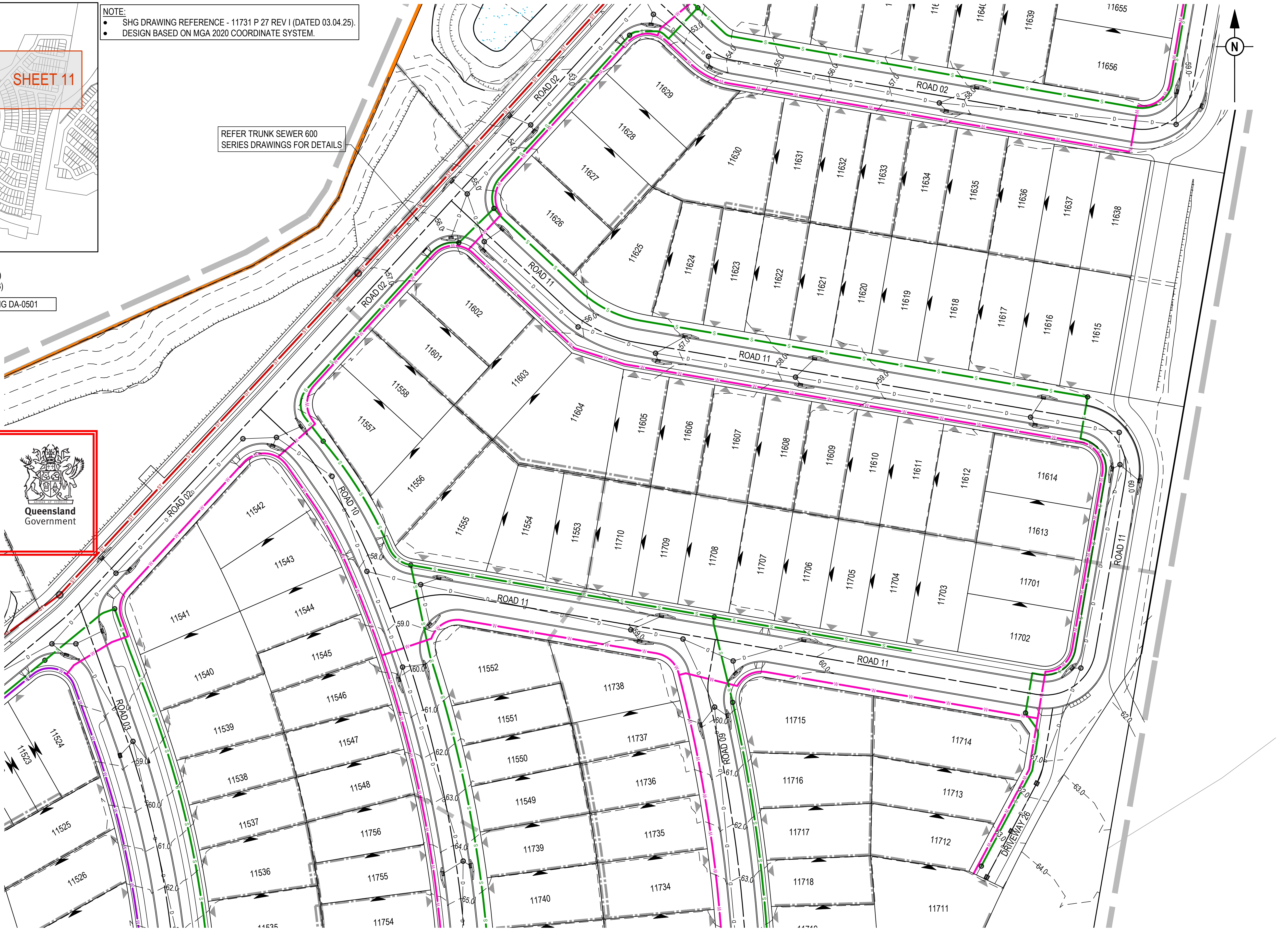
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.

REFER TRUNK SEWER 600 SERIES DRAWINGS FOR DETAILS

REFER SHEET 12 FOR CONTINUATION



REFER SHEET 10 FOR CONTINUATION

REFER SHEET 9 FOR CONTINUATION

PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
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C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN
DESIGN

STATUS
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APPROVED
DANIEL COLLINS RPEQ 18631
DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
1:500 10 5 0 10 20 A1
1:1000 A3

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
SEWERAGE AND WATER RETICULATION LAYOUT PLAN
SHEET 11 OF 12

PROJECT No.	DRAWING No.	REVISION
24-0750	DA-0511	C

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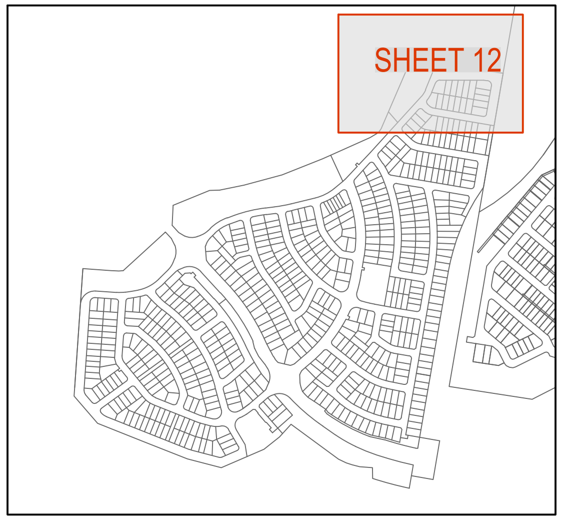
PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland Government



KEY PLAN
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FOR LEGEND REFER DRAWING DA-0501

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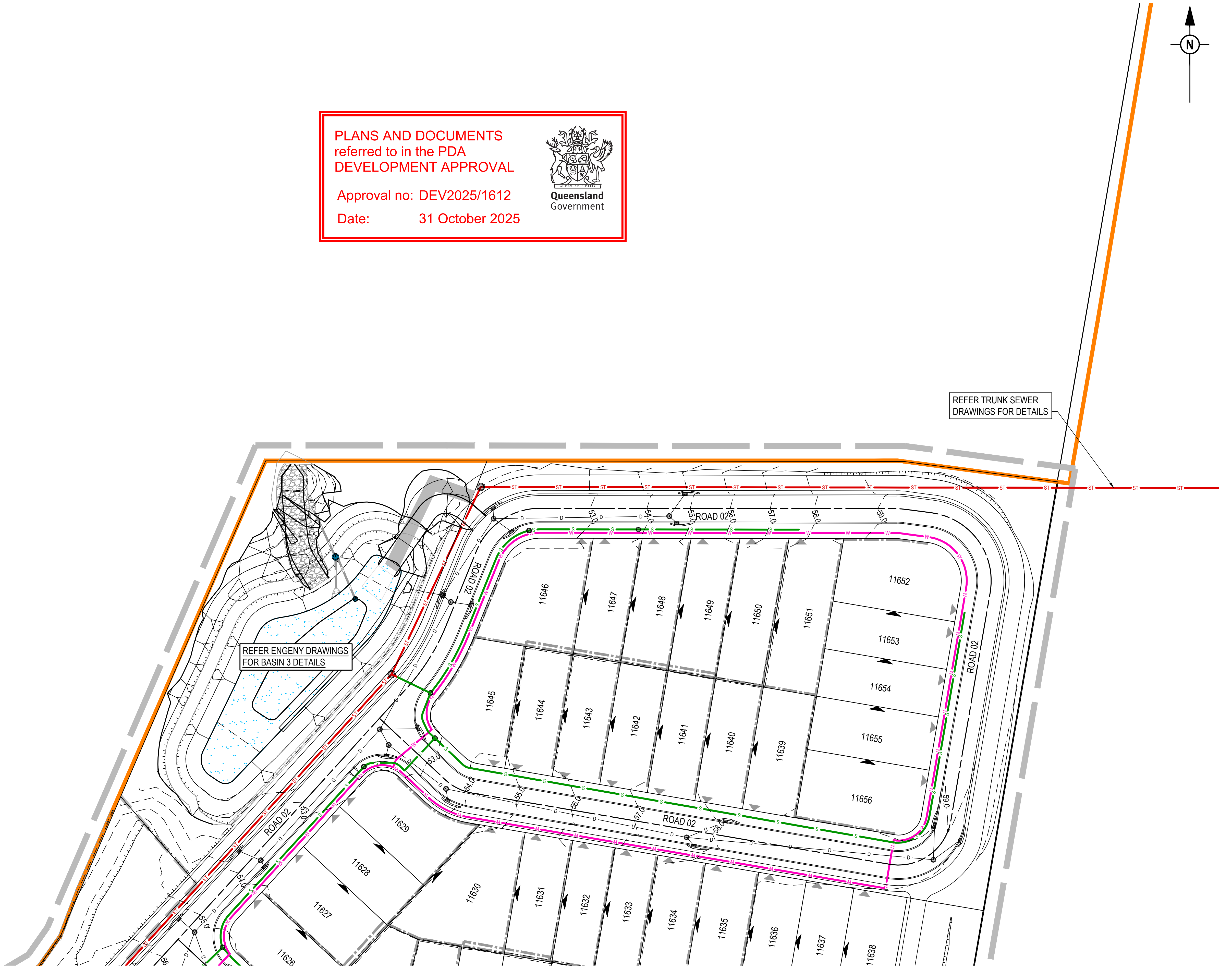

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C	04.04.25	NK	TP	DRAWINGS AMENDED

DRAWN

DESIGN

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DANIEL COLLINS RPEQ 18631 DATE 4.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE
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1:1000 A3

CLIENT
mirvac

ASSOCIATED CONSULTANT
ENGENY
saunders havill group

PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
R.O.L. 4
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE
SEWERAGE AND WATER RETICULATION LAYOUT PLAN SHEET 12 OF 12

PROJECT No. 24-0750
DRAWING No. DA-0512
REVISION C

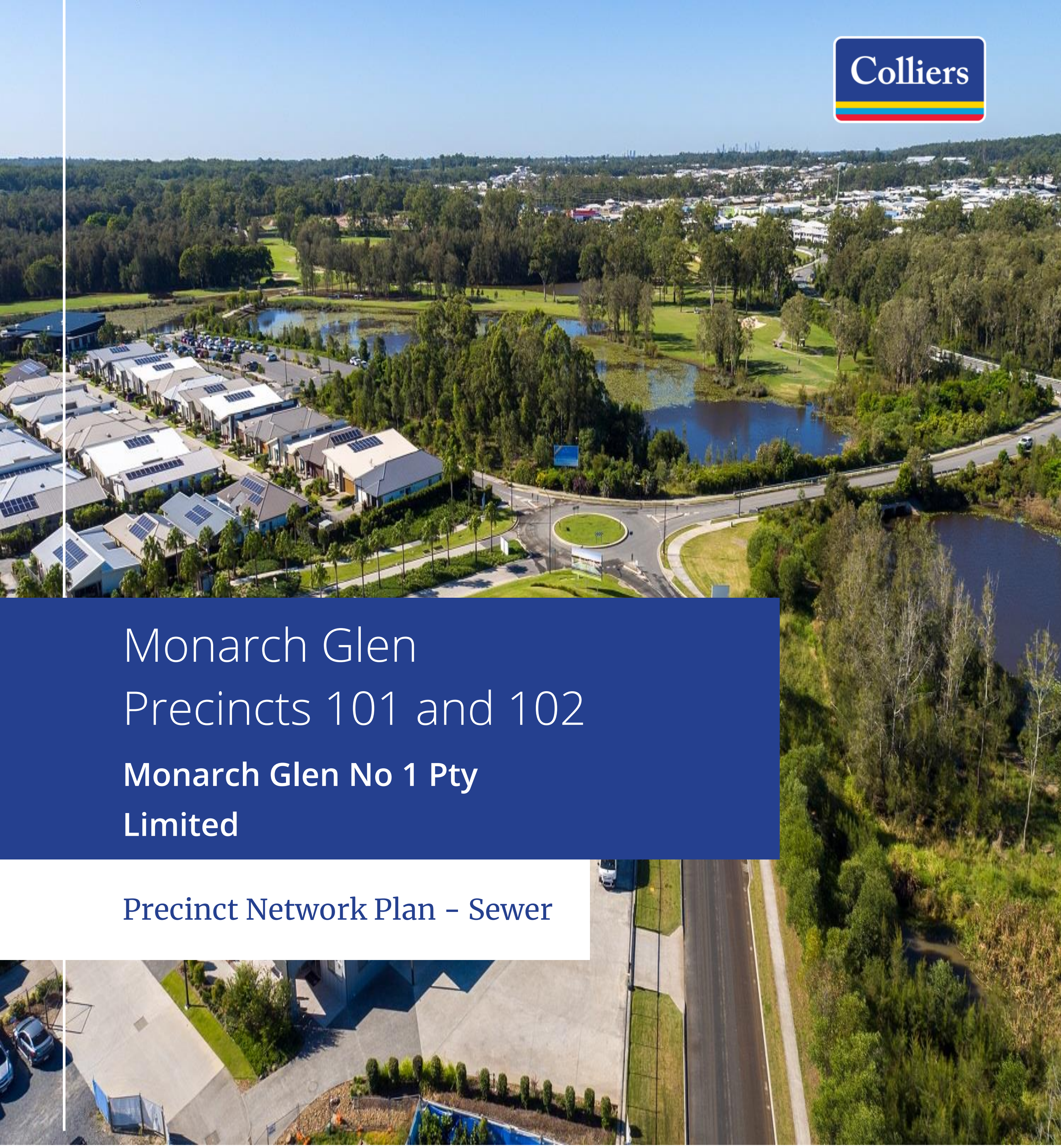
Appendix B Sewer Precinct Network Plan

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1612

Date: 31 October 2025

Queensland
Government



Monarch Glen Precincts 101 and 102

Monarch Glen No 1 Pty Limited

Precinct Network Plan - Sewer

22-0408-R004

April 2025

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Limitations

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This report is prepared with information supplied by the client and possibly others which is presumed to be accurate and complete. No responsibility is accepted for information that is withheld, incorrect or that is inaccurate, nor for changes to the conditions over the passage of time or from latent circumstance or conditions. No warranty or guarantee is made in relation to the data, findings and conclusions expressed in this report.

This report has been compiled at the level of detail specified in the report and no responsibility is accepted for interpretations made at more detailed levels than so indicated.

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Document Control

22-0408-R004

Version	Date	Details	Prepared	Checked	Approved
01	28/11/2024	Draft for Review	B. Robinson	T. Wager	D. Collins
02	12/12/2024	Final	B. Robinson	T. Wager	D. Collins
03	24/03/2025	Revised for EDQ Comments	T. Wager	T. Wager	D. Collins
04	28/03/2025	Revised for Updated Table	T. Wager	T. Wager	D. Collins
05	03/04/2025	For Approval	T. Wager	T. Wager	D. Collins

1. Introduction

Colliers Engineering & Design have been engaged by Monarch Glen No 1 Pty Ltd to assist in developing a sewer precinct network plan for Precincts 101 and 102 of the Monarch Glen development. These precincts are proposed to include:

- 575 Residential Allotments
- 1.026 ha of Local Park / Open Space
- 2.926 ha of Stormwater Detention / Drainage Areas

The aim of this assessment is to determine the sizing of the required sewer reticulation network to service the development while aligning with Logan City Council's (LCC) design standards

1.1. Background and Context

The Monarch Glen development consists of residential precincts and other land-use areas, including district and local centres, educational facilities, sports areas, a transport interchange, and community precincts. Precincts 101 and 102 represent the first two residential precincts of the larger Monarch Glen development. Logan City Council (LCC) is the water supply and sewerage SEQ Distributor Retailer Authority servicing the subject area.

1.2. Development Site Location

The Monarch Glen development is located on Lot 2 on SP351245 in Monarch Glen (Formerly Undullah) adjoined by Rice, Wyatt and Dairy Roads, respectively. The site is presently designated by Economic Development Queensland (EDQ) as a part of the Priority Development Area (PDA). The water authority for the proposed development site is Logan City Council. Figure 1-1 shows the location and extents of the development.

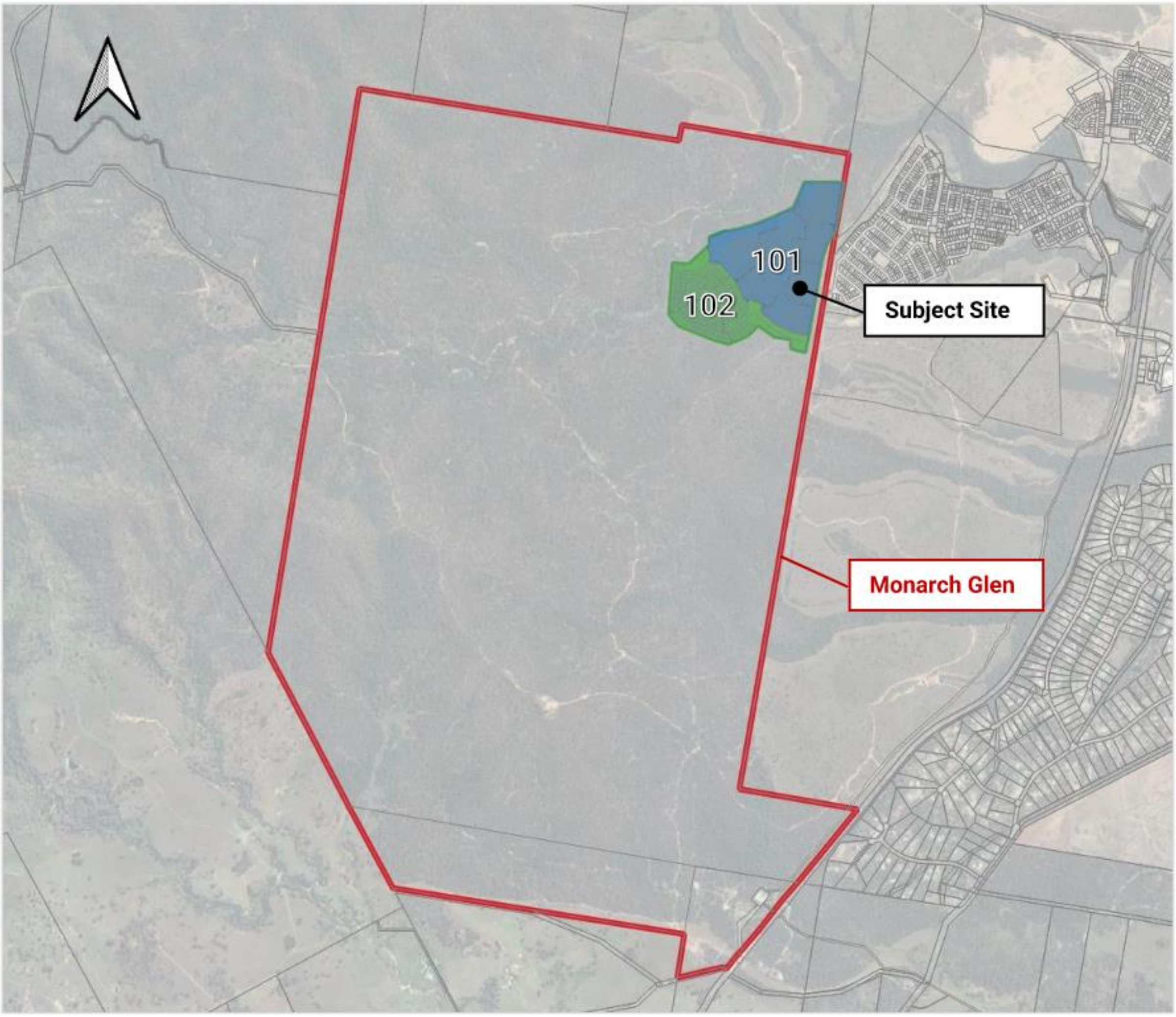

Figure 1-1: Monarch Glen Precinct 101 & 102 overview (Extracted from DWS Precinct Network Plan)

1.3. Development Population and Flows

LCC uses Equivalent Persons (EP) as the basis for their sewerage master planning. Precincts 101 and 102 have a total residential EP yield of 1,610 EP. The loading for each precinct was calculated using the latest version of the LCC DSS.

Precinct	No of Dwellings	Residential EP	ADWF (L/s)	PDWF (L/s)	PWWF (L/s)
101	393	1100	2.10	7.12	12.74
102	182	510	0.97	3.69	5.90
Total		**1610**	**3.07**	**10.80**	**18.63**

2. Population Projections and Flows

2.1. Proposed Site Service Strategy

Precincts 101 and 102 are proposed to connect to a DN375 trunk main from the adjacent Flagstone City development. The trunk main will collect flows from both precincts at various locations along the trunk main. The trunk main ranges in diameter from DN300 to DN375, with installation depths varying between 2.8 meters and 8.7 meters.

2.2. Proposed Sewer Reticulation

The site generally slopes southward and eastward, directing flow toward the trunk main located on the northern side of the development. As such, this requires precinct 101 to be split into 3 sub-catchments, 101A, 101B and 101C. Precinct 102 to be split into 2 sub-catchments, 102A & 102B. This natural gradient enables the installation of a gravity-based sewer network, eliminating the need for lift stations. The reticulation network for each sub-catchment was sized based on the flows from each respective sub-catchment.

Precinct	No of Dwellings	Residential EP	ADWF (L/s)	PDWF (L/s)	PWWF (L/s)
101A	225	630	1.20	4.07	7.28
101B	112	314	0.60	2.03	3.63
101C	67	188	0.36	1.21	2.17
102A	60	168	0.32	1.22	1.94
102B	111	311	0.59	2.25	3.60
Total			**3.07**	**10.78**	**18.62**

AMENDED IN RED
By: Brandon Bouda
Date: 29/10/2025
Queensland Government

For Trunk Sewer, refer DEV2025/1653 and DEV2025/1683

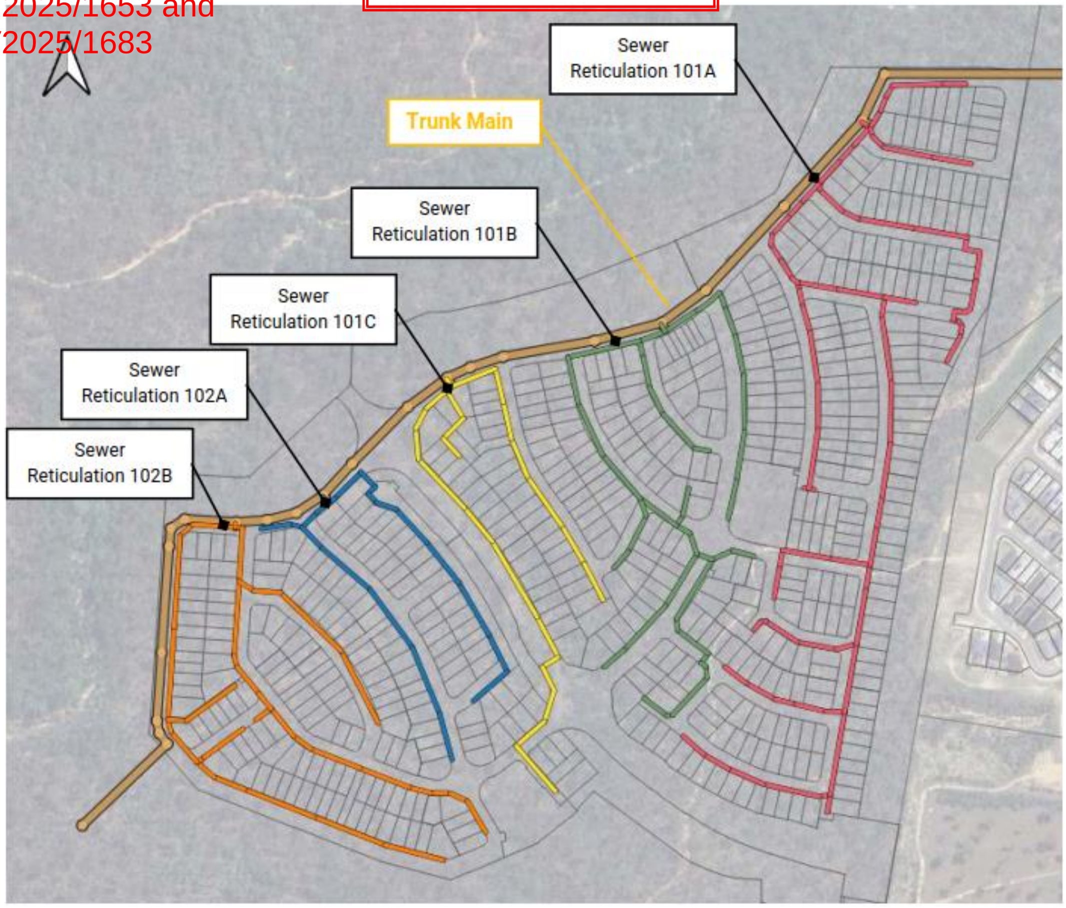

Figure 2-2: Monarch Glen Precinct 101 & 102 Sub-Catchment Reticulation Plan (Extracted from DWS Precinct Network Plan)

3. Summary

Based on the assessment, the proposed sewer reticulation network can adequately service Precincts 101 and 102. Key conclusions include:

- Precincts 101 and 102 represent an EP yield of 1,610 EP.
- A DN300/375 trunk main is proposed for the northern side of the precincts to collect flows from each sub-catchment.
- The reticulation network for each sub-catchment was sized according to the design criteria and was found to require only DN150 pipes.
- The available gradient across the site provides ample flexibility to adjust pipe alignments and avoid conflicts with other services.

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Appendix A Monarch Glen Sewer Precinct Network Plan (Digital Water Solutions, April 2025)

MONARCH GLEN SEWER NETWORK SERVICING ASSESSMENT REPORT

Precincts 101 and 102 Precinct Network Plan (PNP)

Colliers

March 2025

Digital Water Solutions

Approval

This report has been prepared under the DWS Quality Management System, to comply with ISO 9001 (Quality Management)

Approved by:

Con Strydom

Managing Director

Project Quality/Information

Project:	**Precincts 101 and 102 Precinct Network Plan (PNP)**
Prepared for:	Colliers
Represented by:	Thomas Wager
Project Manager:	Scott Gerke
Quality Supervisor:	Wessel Wagner
Project Number:	J0000345
Approval Date:	3 April 2025
Revision:	5
Classification:	Confidential - this document is only accessible to the project team members, and sharing it outside the project team is subject to the clients' approval.

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List of Figures

1 Executive Summary

This report presents a sewer network servicing assessment for Precincts 101 and 102 of the Monarch Glen development. Digital Water Solutions (DWS) was commissioned by Colliers to develop a Precinct Network Plan (PNP) for these areas, which form the initial stages of a larger residential precinct development. Precincts 101 and 102 will include 575 residential allotments and open space. The aim of this assessment is to determine the sizing of the required sewer reticulation network to service the development while aligning with Logan City Council's (LCC) design standards.

LCC's Desired Standards of Service (DSS) were used to model and size the sewer network, with an EP loading rate of 2.8 EP per dwelling applied for Precincts 101 and 102. The combined residential EP yield for both precincts is 1,610 EP. Using LCC's design criteria, flows were estimated, including an Average Dry Weather Flow (ADWF) of 3.07L/s, Peak Dry Weather Flow (PDWF) of 10.80 L/s, and Peak Wet Weather Flow (PWWF) of 18.63 L/s.

The existing site is currently undeveloped, located at the uppermost part of the catchment. A DN300/375 trunk main, running along the northern side of the development, is proposed to convey flows from both precincts. The site's natural gradient allows for a gravity-based sewer system, eliminating the need for lift stations. The reticulation network for each sub-catchment was designed with DN150 mains, sized according to the estimated flows, and offers flexibility to adjust pipe alignments to avoid clashes with stormwater and other utilities.

This assessment concludes that the proposed sewer reticulation network can adequately service Precincts 101 and 102.

2 Introduction

Digital Water Solutions (DWS) has been commissioned by Colliers to develop a sewer precinct network plan for Precincts 101 and 102 of the Monarch Glen development. These precincts are proposed to include:

- 575 Residential Allotments
- 1.026 ha of Local Park / Open Space

Figure 2-1 shows the extent of the entire Monarch Glen development and the subject site. Appendix A includes the town planning overview of the subject site.

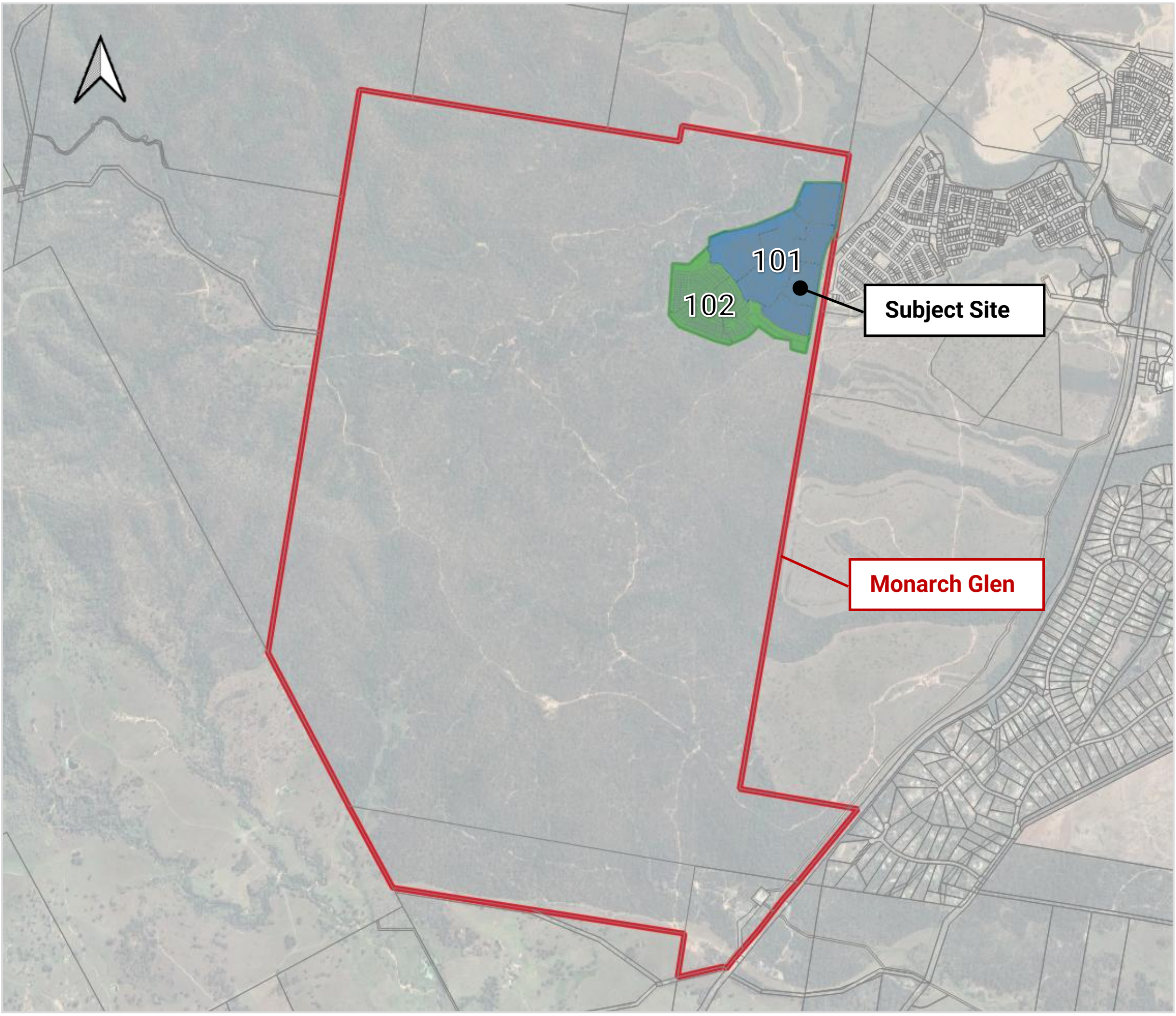

FIGURE 2-1 MONARCH GLEN PRECINCT 101 AND 102 OVERVIEW

2.1 Background and Context

The proposed Monarch Glen development consists of various residential precincts and other land-use areas, including district and local centres, educational facilities, sports areas, a transport interchange, and community precincts. The subject area, Precincts 101 and 102, represents the first two residential precincts of the larger Monarch Glen development.

Logan City Council (LCC) is the water supply and sewerage SEQ Distributor Retailer Authority servicing the subject area. Relevant planning information, such as the previous wastewater master plan (2021), has been sourced from LCC to ensure consistency with future infrastructure planning.

Previous assessments have outlined how the larger Monarch Glen development will be serviced, focusing primarily on the trunk infrastructure. However, these assessments did not include details on the internal wastewater reticulation networks within the individual precincts.

2.2 Existing Site Features

The site's topography varies significantly, with high points exceeding 160 m AHD in the west and north, and a low point of 35 m AHD in the southeast. Several ridges traverse the site, dividing it into three main catchments. These catchments direct drainage through natural waterways flowing south, east, and northeast, as illustrated in Figure 2-2.

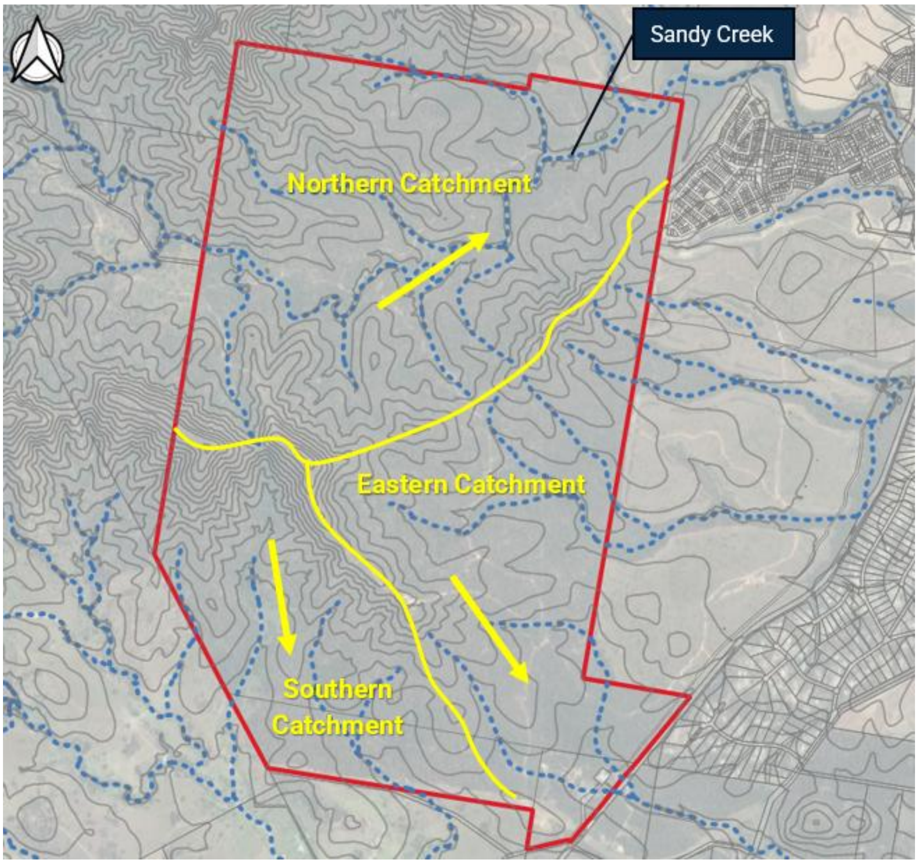

FIGURE 2-2 EXISTING SITE FEATURES

3 Assumptions

This section details the key assumptions adopted for this wastewater reticulation network assessment.

3.1 Design Criteria

The design criteria from the latest version of LCC's Desired Standards of Service (DSS) were adopted for this assessment. An extract of the key elements of LCC's DSS is provided in Table 1, with the full design criteria included in Appendix B for reference.

TABLE 1 - KEY DESIGN CRITERIA

WASTEWATER NETWORK DSS		
Parameter	**Criteria**	
Sewage load		
ADWF	165 L/EP/day	
PDWF	Use actual flow data; or *d x 165 L/EP/d or;* *d x 0.00191 x EP L/s* *Where:* *$d = 0.01(\log A)^4 - 0.19(\log A)^3 + 1.4(\log A)^2 - 4.66\log A + 7.57$* *d = dry weather peaking factor* *A = gross plan area of development catchment, in hectares* *Refer to WSAA Sewerage Code of Australia; Part 1 Planning and Design*	
Overflow Frequency Standard for assessment of existing networks and planning and design of augmentations for existing networks This standard is only to be used by Council and their consultants	Master Planning; • Manholes: Maximum of 1 overflow per year • Sewer designated outlet: Maximum of 2 overflows per year Detailed Planning: • Acceptable network overflow frequency standard to be determined using a risk or effects based approach. The standard is to be determined in consultation with Council.	
PWWF For planning and design of wastewater networks servicing greenfield development This standard is to be used by developers, Council and their consultants	Residential	1000 L/EP/d (6.1xADWF)
	Non-residential	840 L/EP/d (5xADWF)
	High density residential (minimum 3 storey development)	PDWF+0.2 L/s/Ha
	Common Effluent Drainage	660 L/EP/d (4xADWF)
Gravity sewer design		
Flow equation	Colebrook White to be used for all applications – design and modelling	
Pipe roughness general	Colebrook White k = 1.5mm	
Maximum velocity @ PWWF	3 m/s	
Depth of flow @ PWWF - Existing	Up to 1m below MH surface level and no spillage through overflow structures	
Depth of flow @ PWWF - Proposed/ new sewers	75% of pipe depth	
Depth of flow @ PDWF – Existing and new sewers	Maximum 60% of pipe depth	

3.2 Network Planning

3.2.1 Hydraulic Network Model

Logan City Council provided the following model in InfoWorks ICM (Version 2025.2) to support this assessment.

- IP0022 Logan South Master Plan.icmt – Master Planning Model

It has been assumed that the model is an accurate representation of the Logan South Wastewater Network, which discharges at the Cedar Grove Wastewater Treatment Plant (WWTP). Based on discussions with Logan representatives on 4 November 2024 the following were noted:

- Some areas of the sewer network in the Peet development, located adjacent to the northeastern side of Monarch Glen, require updating.
- Most of the sewer infrastructure for Monarch Glen depends on downstream developments being completed first.

Identifying and resolving any existing network deficiencies are outside the scope of this investigation and are assumed to be addressed by LCC.

4 Development Population and Flows

4.1 Development Population Projections

LCC uses Equivalent Persons (EP) as the basis for their sewerage master planning. As a result, an EP loading model has been developed for Precincts 101 and 102. LCC has specified that a rate of 2.8 EP per dwelling should be applied for this assessment. Precincts 101 and 102 have a total residential EP yield of 1,610 EP, with no non-residential EP allocated to these precincts. A breakdown of the yield for each precinct is provided in Table 2 below.

TABLE 2 - PRECINCT 101 & 102 EP PROJECTIONS

Precinct	Land Use	Gross Area (ha)	No of Dwellings	EP per Dwelling	Residential EP
101	Residential	29.2	393	2.8	1100
102	Residential	14.9	182	2.8	510
				Total Residential EP	**1610**

4.2 Development Population flows

The loading for each precinct was calculated using the latest version of the LCC DSS, as outlined in Section 3.1. Based on the projected EP, the Average Dry Weather Flow (ADWF), Peak Dry Weather Flow (PDWF), and Peak Wet Weather Flow (PWWF) were calculated as 3.13 L/s, 11.01 L/s, and 18.99 L/s, respectively. A breakdown of the flows for each precinct is provided in Table 3.

TABLE 3 - PRECINCT 101 & 102 SEWAGE FLOWS

Precinct	No of Dwellings	Residential EP	ADWF (L/s)	PDWF (L/s)	PWWF (L/s)
101	393	1100	2.10	7.12	12.74
102	182	510	0.97	3.69	5.90
		Total flows	**3.07**	**10.80**	**18.63**

5 Sewer Network Planning

5.1 Existing Infrastructure

The site is currently an undeveloped greenfield area. The site is presently not serviced by a sewerage network. The Monarch Glen development is located at the uppermost part of a larger sewer catchment and is dependent on downstream developments to install appropriately sized infrastructure that will accommodate flows from the Monarch Glen development.

A trunk sewer downstream of Monarch Glen has been constructed along the southern embankment of Sandy Creek, servicing Flagstone City Context Area 1. This trunk sewer will cater for planned development for a portion of Monarch Glen including all of Precincts 101 and 102.

5.2 Proposed Site Service Strategy

Precincts 101 and 102 are located in the northeast corner of Monarch Glen and are proposed to connect to a DN375 trunk main from the adjacent Flagstone City development. The trunk main is proposed to be extended through Precincts 101 and 102, and will collect flows from both precincts at various locations along the trunk main. The trunk main is planned to run along the northern side of the development, positioned between the residential lots and the linear parks. The trunk main ranges in diameter from DN300 to DN375, with installation depths varying between 2.8 meters and 8.7 meters. Additional information regarding the trunk main’s alignment, depth, and size is provided in Appendix C.

5.3 Proposed Sewer Reticulation

The proposed site generally slopes northward and westward, directing flow toward the trunk main located on the northern side of the development. This natural gradient enables the installation of a gravity-based sewer network to service the entire area, eliminating the need for lift stations.

The site's topography has been used to divide the area into five sub-catchments, with each sub-catchment connecting to the trunk main at distinct locations. Given the depth of the trunk main, the aim was to minimise the number of connections to it. The extent of each sub-catchment, the trunk main, and the locations of each connection to the trunk main are shown in Figure 5-1.

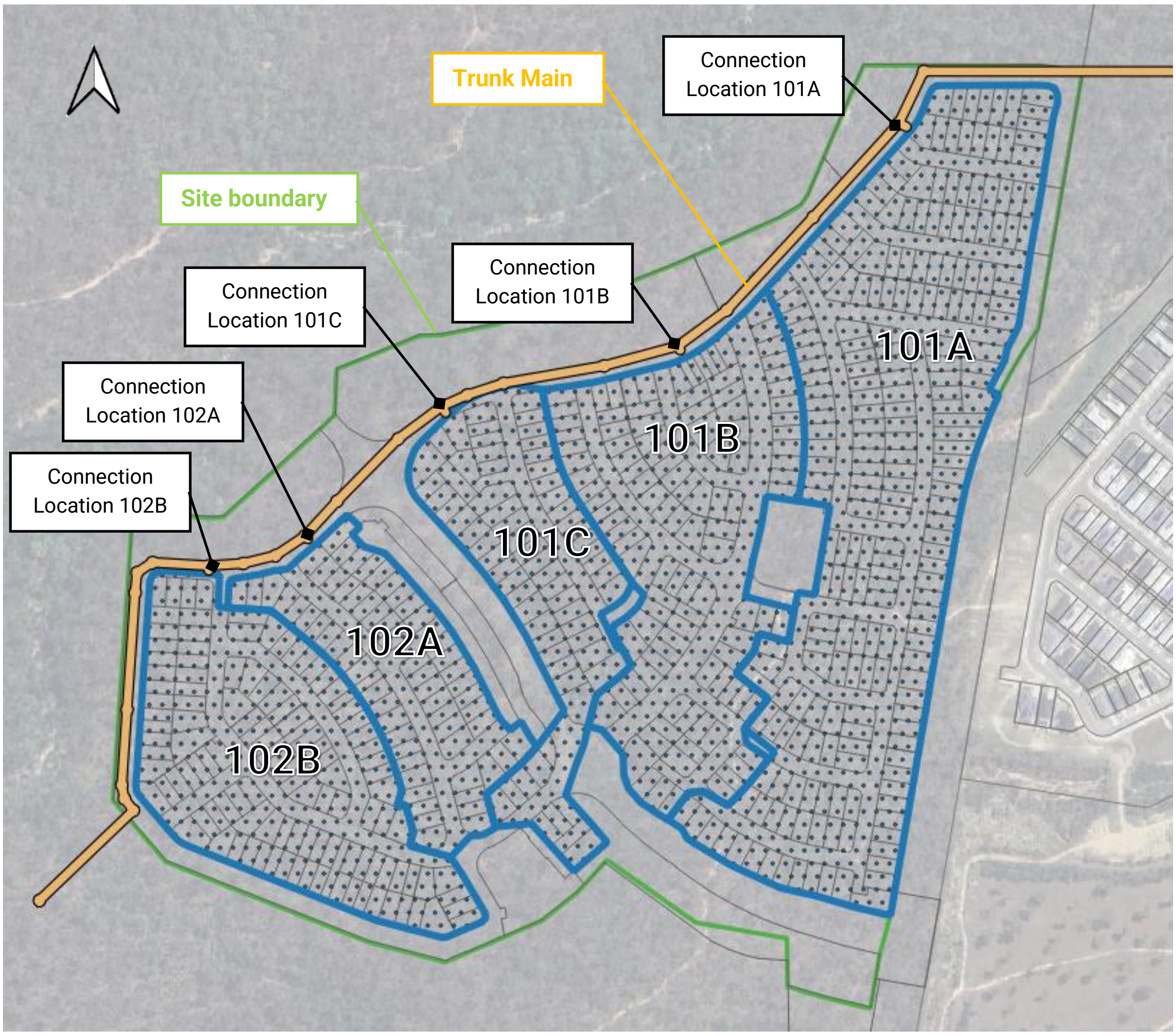

FIGURE 5-1 SUB-CATCHMENTS AND TRUNK MAIN LOCATION

The reticulation network for each sub-catchment was sized based on the flows from each respective sub-catchment. The design flows for each sub-catchment are provided in Table 4 below.

TABLE 4 - SUB-CATCHMENT DESIGN FLOWS

Precinct	No of Dwellings	Residential EP	ADWF (L/s)	PDWF (L/s)	PWWF (L/s)
101A	225	630	1.20	4.07	7.28
101B	112	314	0.60	2.03	3.63
101C	67	188	0.36	1.21	2.17
102A	60	168	0.32	1.22	1.94
102B	111	311	0.59	2.25	3.60
		Total flows	**3.07**	**10.78**	**18.62**

Reticulation pipe sizes were determined based on the design criteria outlined in Section 3.1. The analysis concluded that DN150 pipes are adequate to convey the PWWF while still adhering to the design requirements. As a result, the reticulation network for each sub-catchment is composed of DN150 mains.

It is important to note that potential clashes with the stormwater network and other utilities were not considered during the pipe sizing process. These conflicts could potentially impact the final pipe sizes. However, given the available gradient across the site, there is ample flexibility to adjust pipe alignments to avoid conflicts with other services without compromising the design.

The horizontal alignment of the reticulation networks has generally been selected to follow the berm, with manholes placed at intervals of no more than 90 meters and at points where there are changes in either the horizontal or vertical alignment.

The vertical alignment of the reticulation networks has been designed to maintain a minimum slope of 1 in 180 for DN150 mains while ensuring minimum cover is maintained where possible. A minimum cover of 0.8 meters has been adopted for pipe sizing purposes. The slope of the uppermost sections of each branch has been set at 1 in 80, with a 50 mm drop across manholes. The reticulation network for each sub-catchment is shown in Figure 5-2 below. A map showing the pipe diameters for Precincts 101 and 102 are shown in Appendix D.

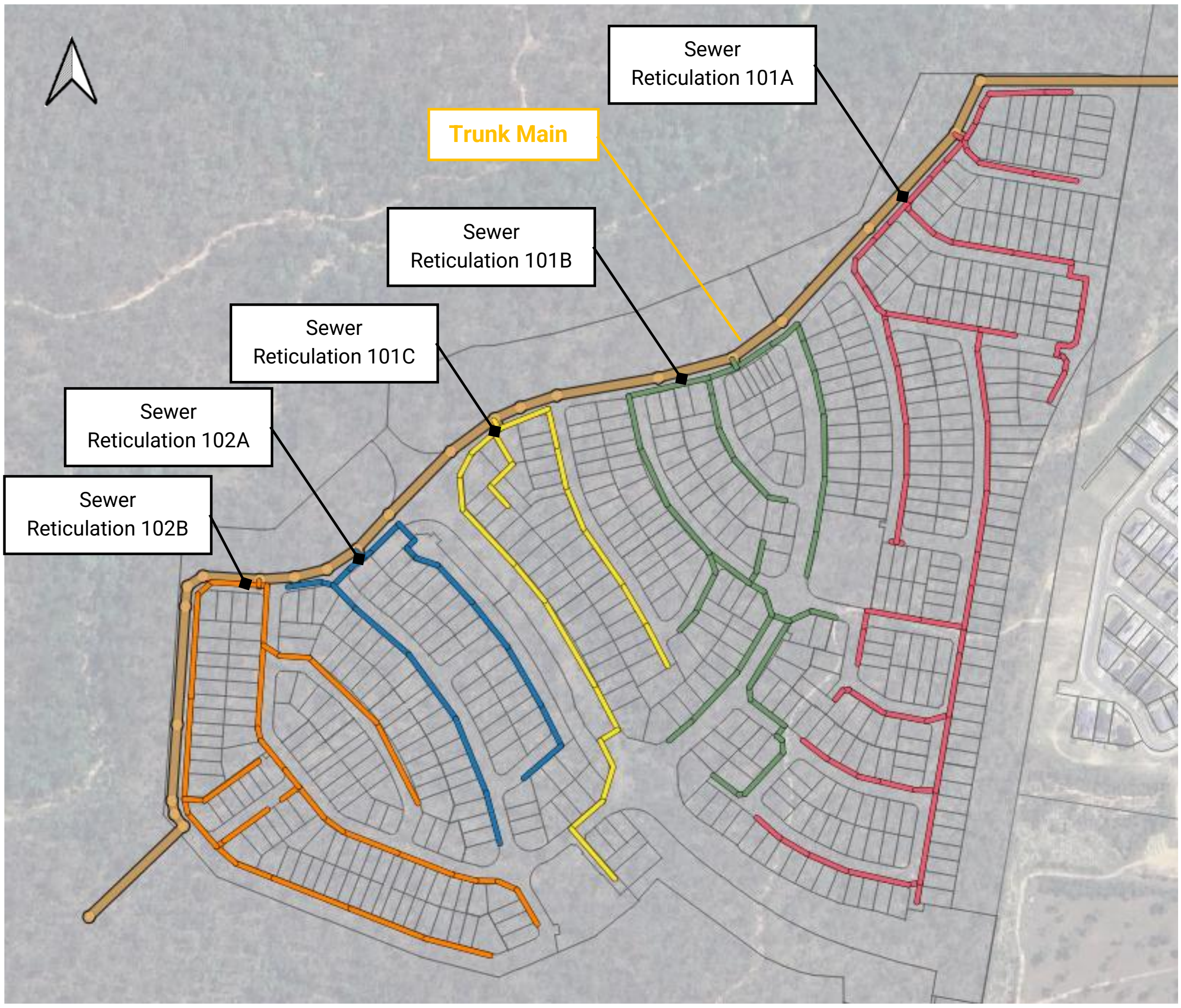

FIGURE 5-2 RETICULATION NETWORKS

6 Conclusions and Recommendations

6.1 Conclusions

Based on the work undertaken for this wastewater reticulation network assessment for Precincts 101 and 102 of the Monarch Glen development the following is concluded:

- Precinct 101 and 102 of the Monarch Glen development represent an EP yield of 1610 EP. This is divided in the following breakdown per Precinct:
    - Precinct 101: 1100 EP
    - Precinct 102: 510 EP
- Precinct 101 has been further divided into three sub-catchments; 101A, 101B, and 101C.
- Precinct 102 has been further divided into two sub-catchments, 102A and 102B.
- Precincts 101 and 102 have a combined PWWF of 18.63 L/s. This is divided in the following breakdown per sub-catchment:
    - Precinct 101A: 7.28 L/s
    - Precinct 101B: 3.63 L/s
    - Precinct 101C: 2.17 L/s
    - Precinct 102A: 1.94 L/s
    - Precinct 102B: 3.60 L/s
- A DN300/375 trunk main is proposed for the northern side of the precincts to collect flows from each sub-catchment.
- The trunk main is proposed to be installed at sufficient depth to allow gravity connections from the reticulation network of each sub-catchment.
- The reticulation network for each sub-catchment was sized according to the design criteria in Section 3.1 and was found to require only DN150 pipes.
- Although potential clashes with other services were not considered in the reticulation sizing, the available gradient across the site provides ample flexibility to adjust pipe alignments and avoid conflicts.
- Details of the reticulation network discussed in this assessment is for planning purposes only and should not be used for construction.

7 Qualifications

In preparing this report, Digital Water Solutions (DWS) has applied the level of skill, care, and diligence expected of members in the engineering profession, adhering to established engineering principles and practices.

DWS has made every effort to understand the project's parameters and ensure accuracy and comprehensiveness based on available information, including third-party sources that may not have been independently verified.

This report is based on assumptions and project parameters provided by the client and other third-party sources. DWS assumes no responsibility for outcomes affected by deviations from these assumptions or unanticipated dependencies outside our scope.

The scope of this report is limited to the defined project parameters. Any use of this report beyond this scope is at the client's risk, and DWS accepts no responsibility for any consequences arising from such use.

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All limitations of liability extend to DWS, its employees, agents, and representatives.

Conclusions, recommendations, and findings are based on the conditions and information available at the time of preparation. DWS has no responsibility to update this report due to subsequent events or new information that may arise.

Recommendations are intended to inform relevant planning or decision-making processes, acknowledging that some may not be implemented if they fall outside the project scope or conflict with other project elements.

This report does not constitute legal advice.

Digital Water Solutions

APPENDIX A – Proposed Reconfiguration of Lot Plan

ROL 4: PRECINCT 101 & 102

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NOTES

This plan was prepared as a conceptual layout only. The information on this plan is not suitable for any other purpose.

Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions.

No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

Pavements and centrelines shown are indicative only and are subject to Engineering Design.

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Net residential density means the total number of dwellings divided by the combined area of residential lots, Neighbourhood Recreation Parks, internal local roads and half the width of local roads bordering the site.
Average net residential density means net residential density calculated for a whole neighbourhood.

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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LEGEND

- Site Boundary
- ROL 4 Boundary

RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:10000 @A3 1:20000 - LENGTHS ARE IN METRES
100 0 100 200 300 400 500 600 700 800 900 1000 1100 1200

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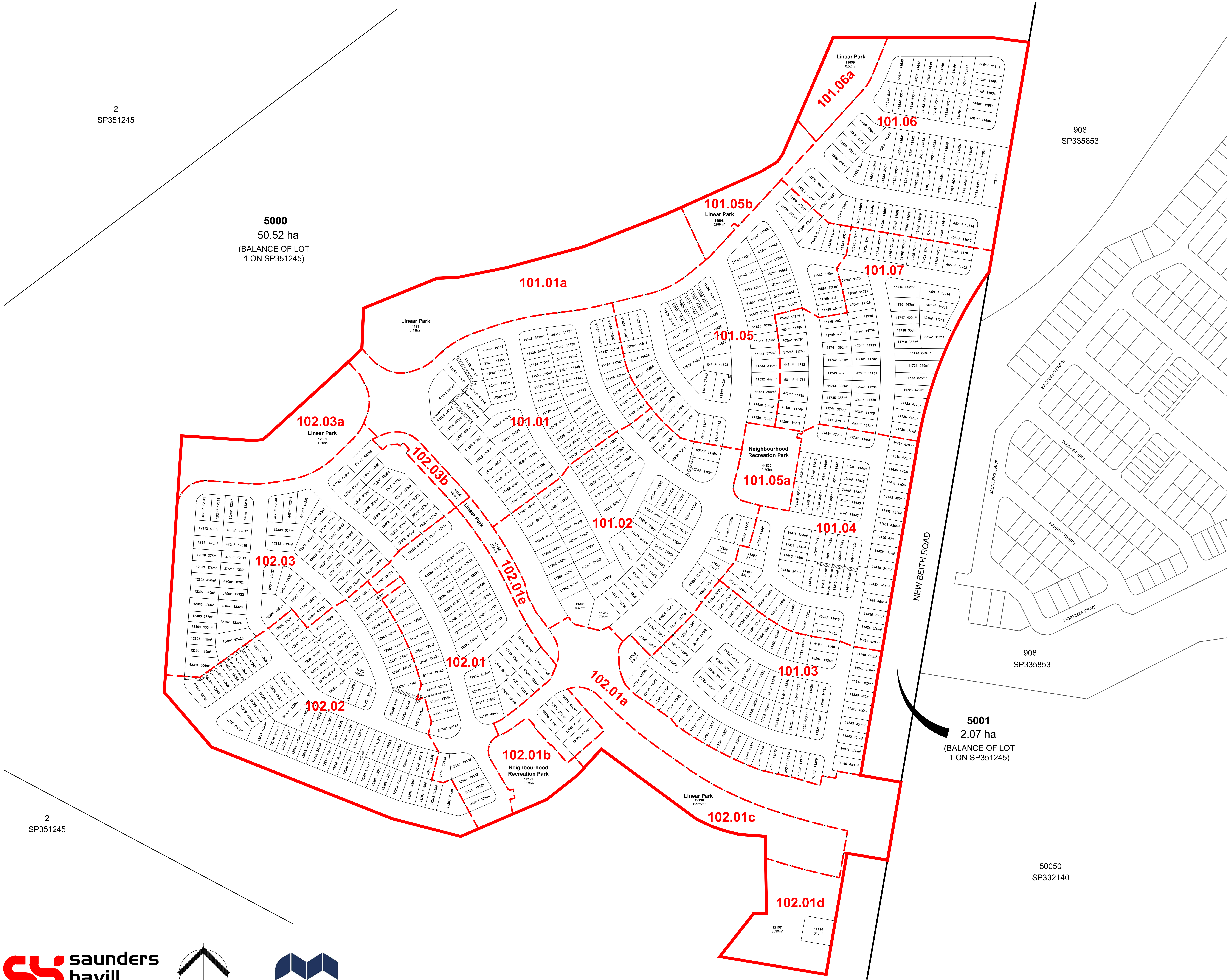
HOMESTEAD DRIVE, MONARCH GLEN 03/04/2025 11731 P 27 Rev I - PRO 01

ROL 4: PRECINCT 101 & 102 - PRELIMINARY SUB-PRECINCT PLAN



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Average net residential density means net residential density calculated for a whole neighbourhood.

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DATED 20/03/2025

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LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement

RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:2000 @A3 1:4000 - LENGTHS ARE IN METRES

20 0 20 40 60 80 100 120 140 160 180 200 220

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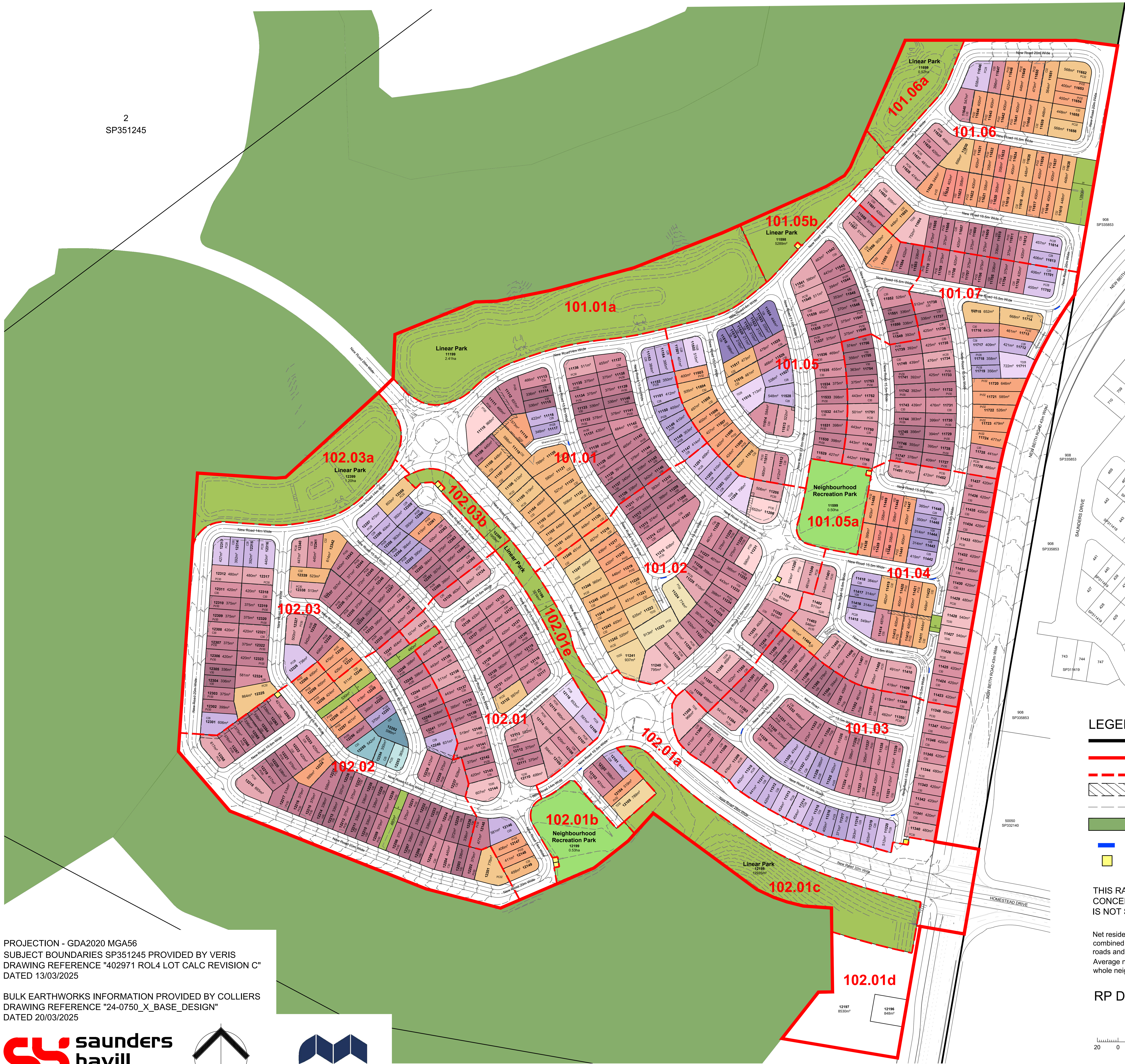
HOMESTEAD DRIVE, MONARCH GLEN ▪ 03/04/2025 ▪ 11731 P 27 Rev I - PRO 02

ROL 4: RECONFIGURATION OF A LOT PLAN



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Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions.

No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

Pavements and centrelines shown are indicative only and are subject to Engineering Design.

Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
25m Deep Lots					
Villa	V25	11.2m	1	0.2%	0.059 ha
Courtyard	C25	14m	2	0.3%	0.089 ha
Premium Courtyard	PC25	16m	1	0.2%	0.039 ha
Sub Total			4	0.7%	0.187 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
28m Deep Lots					
Terrace - Front Loaded	T28	7.5m	7	1.2%	0.191 ha
Villa	V28	11.2m	4	0.7%	0.126 ha
Premium Villa	PV28	12.5m	17	3.0%	0.636 ha
Courtyard	C28	14m	32	5.6%	1.396 ha
Premium Courtyard	PC28	16m	14	2.4%	0.719 ha
Traditional	TD28	18m	4	0.7%	0.266 ha
Premium Traditional	PT28	20m	1	0.2%	0.065 ha
Sub Total			79	13.7%	3.399 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
30m Deep Lots					
Villa	V30	11.2m	48	8.3%	1.651 ha
Premium Villa	PV30	12.5m	136	23.7%	5.431 ha
Courtyard	C30	14m	115	20.0%	5.140 ha
Premium Courtyard	PC30	16m	50	8.7%	2.548 ha
Traditional	TD30	18m	11	1.9%	0.684 ha
Premium Traditional	PT30	20m	5	0.9%	0.343 ha
Sub Total			365	63.5%	15.797 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
32m Deep Lots					
Villa	V32	11.2m	9	1.6%	0.333 ha
Premium Villa	PV32	12.5m	57	9.9%	2.484 ha
Courtyard	C32	14m	41	7.1%	2.008 ha
Premium Courtyard	PC32	16m	14	2.4%	0.863 ha
Traditional	TD32	18m	4	0.7%	0.295 ha
Premium Traditional	PT32	20m	2	0.3%	0.169 ha
Sub Total			127	22.1%	6.152 ha
Total Allotments			575	100%	25.535 ha

Land Budget	Area (Ha)	%
Area of Subject Site / Stage	48.211 ha	—
Net Residential Allotments	25.535 ha	53.0%
Linear Park / Pedestrian Linkage	6.762 ha	14.0%
Neighbourhood Recreation Park	1.026 ha	2.1%
Local Road Areas	10.983 ha	22.8%
Major Road Areas	2.967 ha	6.2%
Balance Lot 12196	0.085 ha	0.2%
Balance Lot 12197	0.853 ha	1.8%
Total Area	48.211 ha	100%
Average Lot Size (m²)	444.1 m²	
Net Density (dw/ha)	15.3 dw/ha	

LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Design Contour (1.0m Interval) - Colliers 19/03/2025
- Conservation Area
- Indicative Bin Pad location
- Indicative PMT / RMU Site

THIS RAL & POD PACKAGE WAS PREPARED AS A CONCEPTUAL LAYOUT ONLY. THE INFORMATION HEREON IS NOT SUITABLE FOR ANY OTHER PURPOSE.

Net residential density means the total number of dwellings divided by the combined area of residential lots, Neighbourhood Recreation Parks, internal local roads and half the width of local roads bordering the site.
Average net residential density means net residential density calculated for a whole neighbourhood.

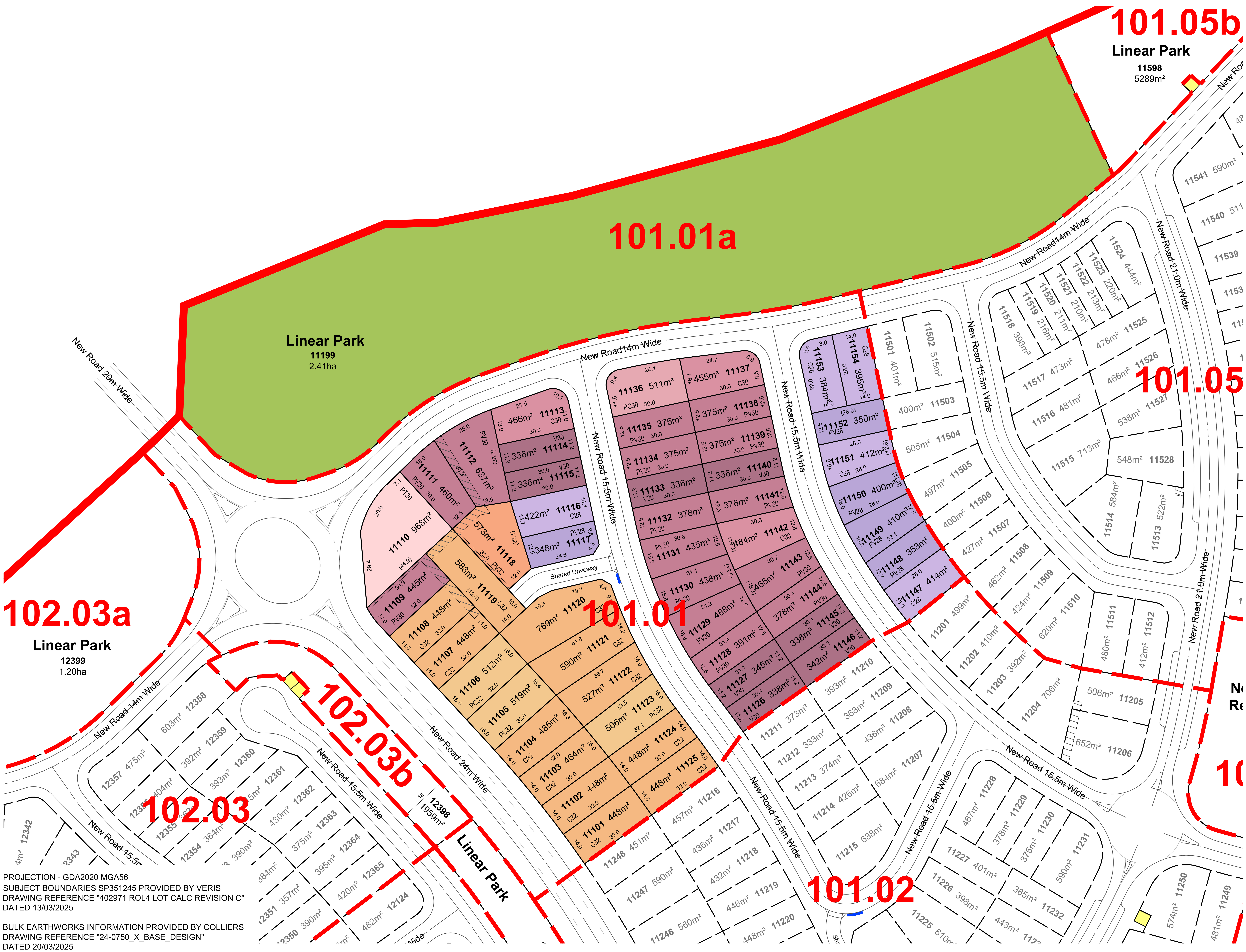
RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:2000 @A3 1:4000 - LENGTHS ARE IN METRES

20 0 20 40 60 80 100 120 140 160 180 200 220

HOMESTEAD DRIVE, MONARCH GLEN 03/04/2025 11731 P 27 Rev I - ROL 01

ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.01



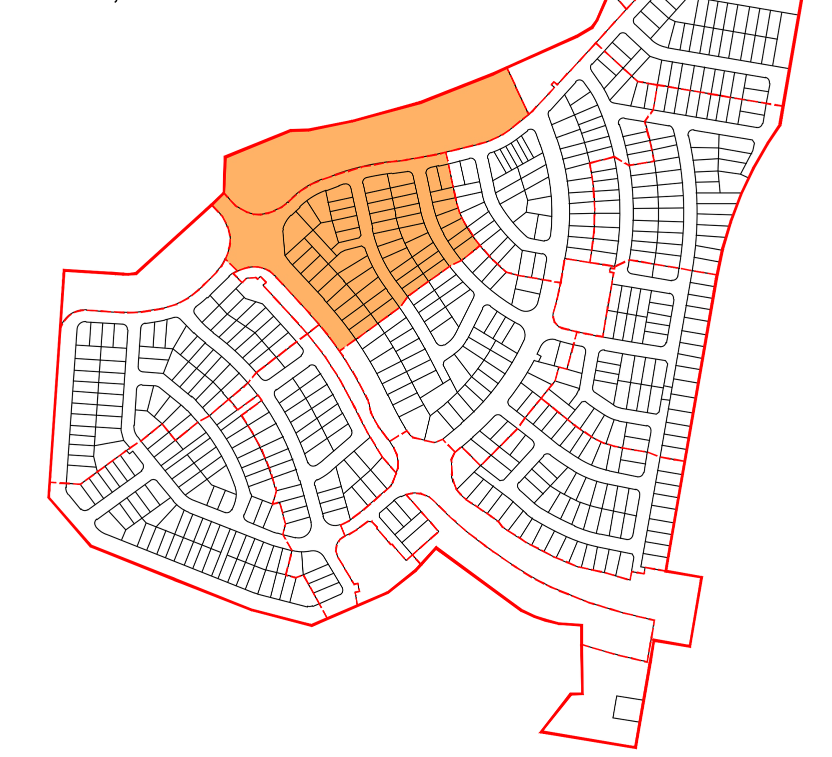
LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
28m Deep Lots					
Premium Villa	PV28	12.5m	5	9.3%	0.186 ha
Courtyard	C28	14m	5	9.3%	0.202 ha
Sub Total			10	18.5%	0.388 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
30m Deep Lots					
Villa	V30	11.2m	8	14.8%	0.271 ha
Premium Villa	PV30	12.5m	15	27.8%	0.639 ha
Courtyard	C30	14m	3	5.6%	0.140 ha
Premium Courtyard	PC30	16m	1	1.9%	0.051 ha
Premium Traditional	PT30	20m	1	1.9%	0.097 ha
Sub Total			28	51.9%	1.198 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
32m Deep Lots					
Premium Villa	PV32	12.5m	1	1.9%	0.058 ha
Courtyard	C32	14m	12	22.2%	0.611 ha
Premium Courtyard	PC32	16m	3	5.6%	0.154 ha
Sub Total			16	29.6%	0.823 ha
Total Allotments			54	100%	2.409 ha

Land Budget	Area (Ha)	%
Area of Subject Site / Stage	6.370 ha	—
Net Residential Allotments	2.409 ha	37.8%
Linear Park / Pedestrian Linkage	2.409 ha	37.8%
Local Road Areas	0.773 ha	12.1%
Major Road Areas	0.779 ha	12.2%
Total Area	6.370 ha	100%

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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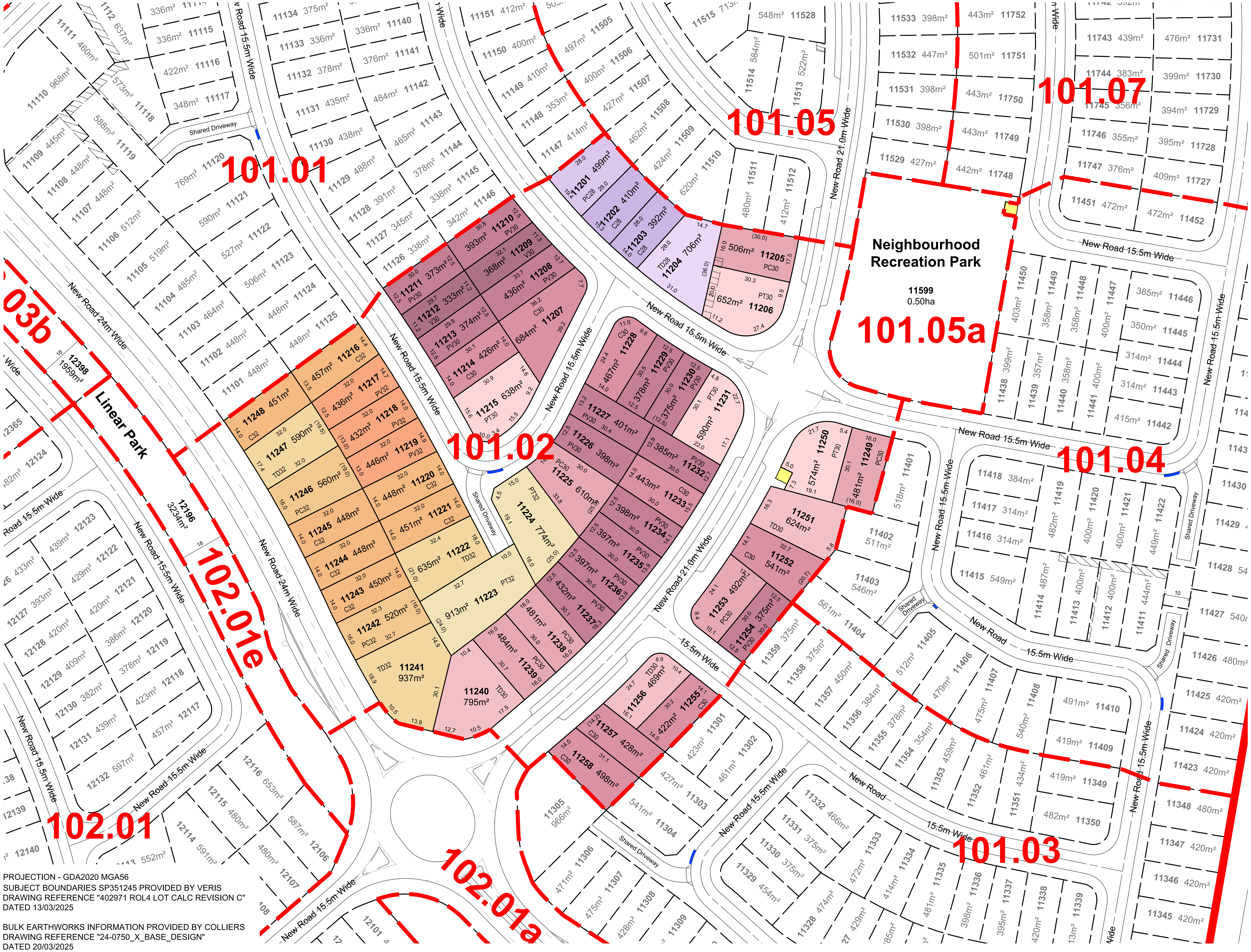
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.02



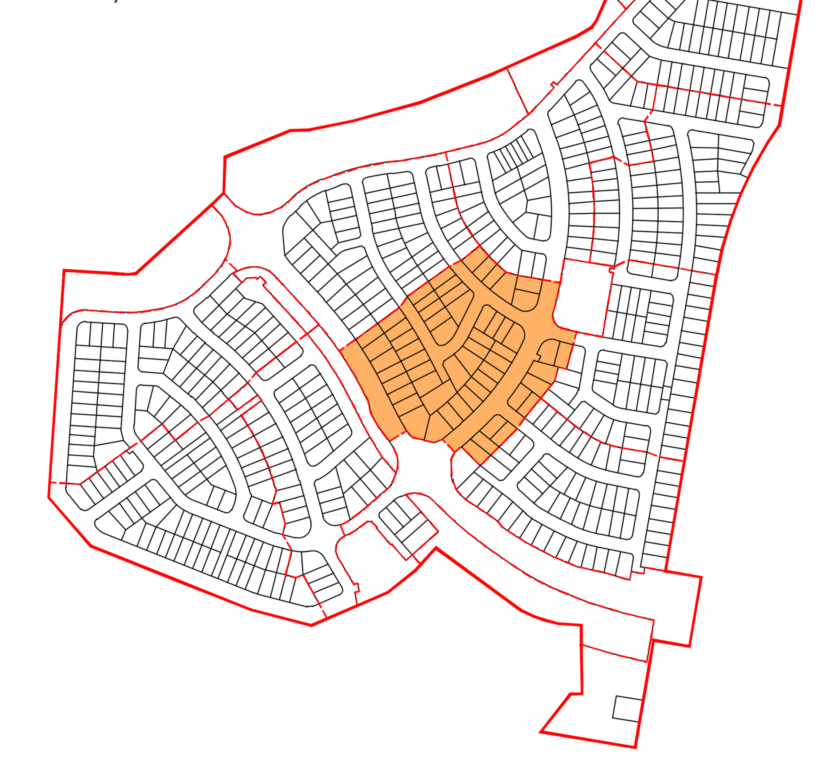
LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS				
RESIDENTIAL ALLOTMENTS	Typical Width	No. Lots	%	Net Area
28m Deep Lots				
Courtyard — C28	14m	2	3.4%	0.080 ha
Premium Courtyard — PC28	16m	1	1.7%	0.050 ha
Traditional — TD28	18m	1	1.7%	0.071 ha
Sub Total		4	6.9%	0.201 ha
RESIDENTIAL ALLOTMENTS	Typical Width	No. Lots	%	Net Area
30m Deep Lots				
Villa — V30	11.2m	2	3.4%	0.070 ha
Premium Villa — PV30	12.5m	14	24.1%	0.551 ha
Courtyard — C30	14m	8	13.8%	0.391 ha
Premium Courtyard — PC30	16m	6	10.3%	0.305 ha
Traditional — TD30	18m	3	5.2%	0.189 ha
Premium Traditional — PT30	20m	4	6.9%	0.246 ha
Sub Total		37	63.8%	1.752 ha
RESIDENTIAL ALLOTMENTS	Typical Width	No. Lots	%	Net Area
32m Deep Lots				
Premium Villa — PV32	12.5m	3	5.2%	0.131 ha
Courtyard — C32	14m	7	12.1%	0.315 ha
Premium Courtyard — PC32	16m	2	3.4%	0.108 ha
Traditional — TD32	18m	3	5.2%	0.216 ha
Premium Traditional — PT32	20m	2	3.4%	0.169 ha
Sub Total		17	29.3%	0.939 ha
Total Allotments		58	100%	2.892 ha

Land Budget	Area (Ha)	%
Area of Subject Site / Stage	4.280 ha	—
Net Residential Allotments	2.892 ha	67.6%
Local Road Areas	1.081 ha	25.3%
Major Road Areas	0.307 ha	7.2%
Total Area	4.280 ha	100%

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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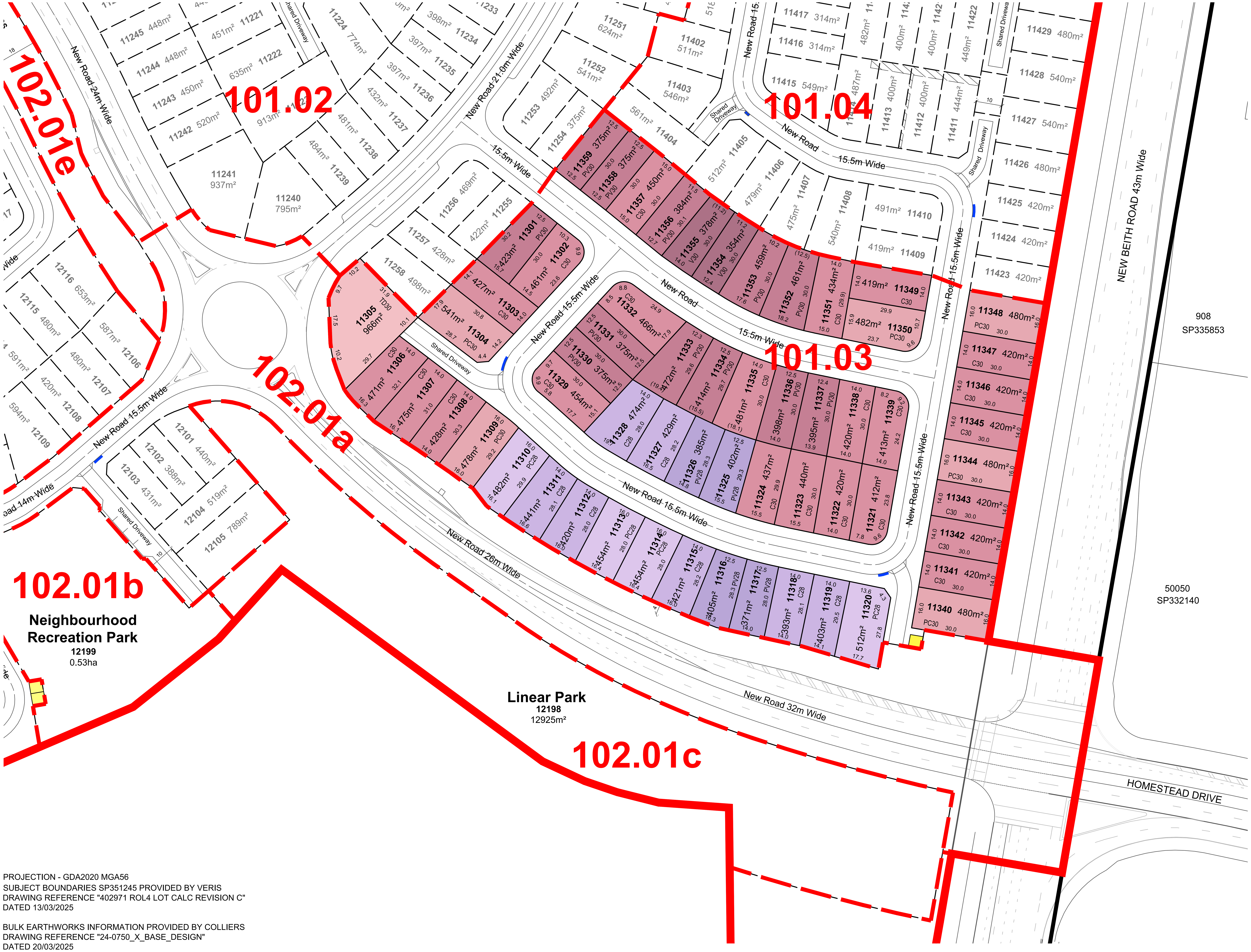
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.03



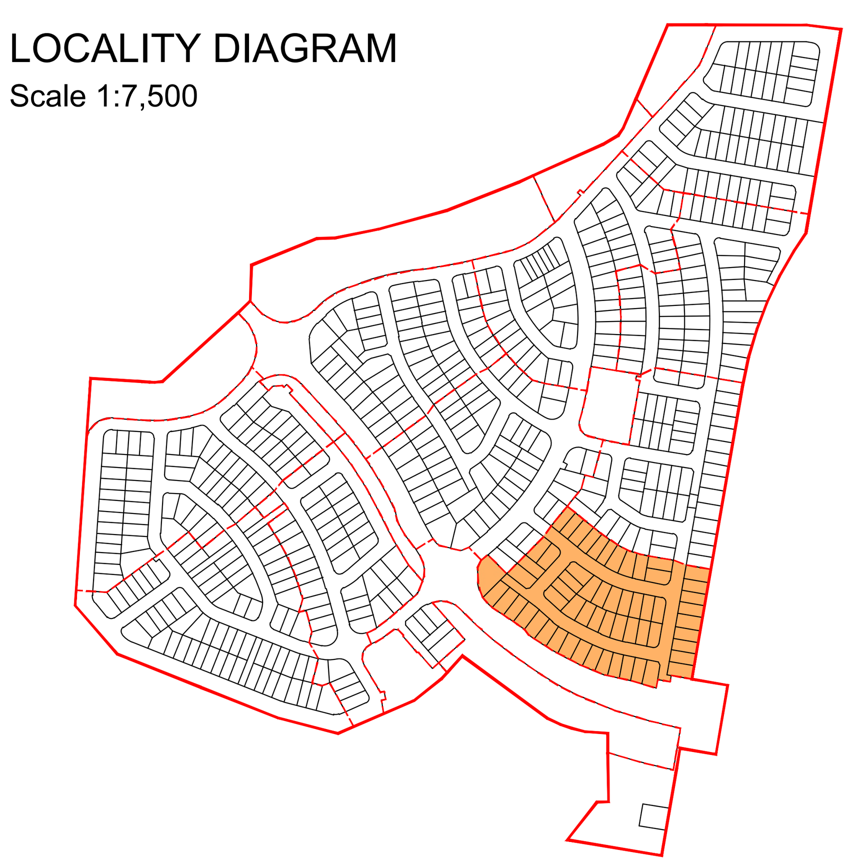
LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
28m Deep Lots					
Premium Villa	PV28	12.5m	4	6.8%	0.156 ha
Courtyard	C28	14m	7	11.9%	0.298 ha
Sub Total			15	25.4%	0.644 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
30m Deep Lots					
Villa	V30	11.2m	2	3.4%	0.073 ha
Premium Villa	PV30	12.5m	12	20.3%	0.491 ha
Courtyard	C30	14m	23	39.0%	1.003 ha
Premium Courtyard	PC30	16m	6	10.2%	0.294 ha
Traditional	TD30	18m	1	1.7%	0.097 ha
Sub Total			44	74.6%	1.958 ha
Total Allotments			59	100%	2.602 ha

Land Budget	Area (Ha)	%
Area of Subject Site / Stage	3.462 ha	—
Net Residential Allotments	2.602 ha	0.752 ha
Local Road Areas	0.860 ha	24.8%
Total Area	3.462 ha	100%

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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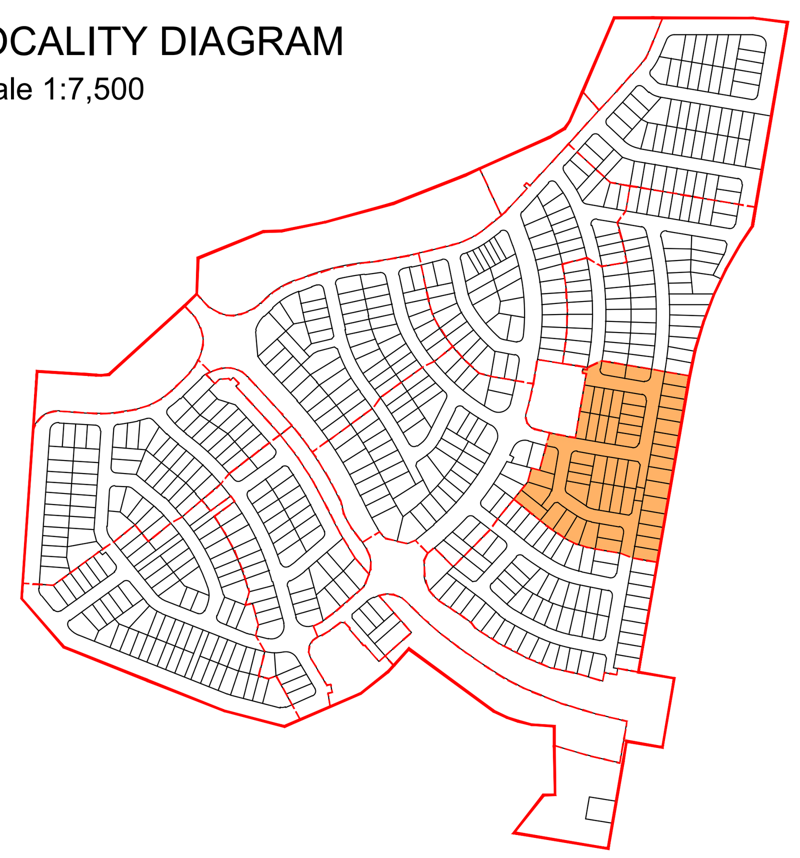
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.04

LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Villa	V28	11.2m	4	7.7%	0.126 ha
Premium Villa	PV28	12.5m	1	1.9%	0.035 ha
Courtyard	C28	14m	3	5.8%	0.118 ha
Premium Courtyard	PC28	16m	1	1.9%	0.055 ha
Sub Total			**9**	**17.3%**	**0.334 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Courtyard	C30	14m	14	26.9%	0.606 ha
Premium Courtyard	PC30	16m	10	19.2%	0.499 ha
Traditional	TD30	18m	3	5.8%	0.159 ha
Sub Total			**27**	**51.9%**	**1.264 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
32m Deep Lots					
Villa	V32	11.2m	4	7.7%	0.143 ha
Premium Villa	PV32	12.5m	8	15.4%	0.320 ha
Courtyard	C32	14m	4	7.7%	0.194 ha
Sub Total			**16**	**30.8%**	**0.657 ha**
Total Allotments			**52**	**100%**	**2.255 ha**
Land Budget			**Area (Ha)**	**%**	
Area of Subject Site / Stage			**3.111 ha**	**—**	
Net Residential Allotments			2.255 ha	72.5%	
Linear Park / Pedestrian Linkage			0.016 ha	0.5%	
Local Road Areas			0.840 ha	27.0%	
Total Area			**3.111 ha**	**100%**	

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES
10 0 10 20 30 40 50 60 70 80 90

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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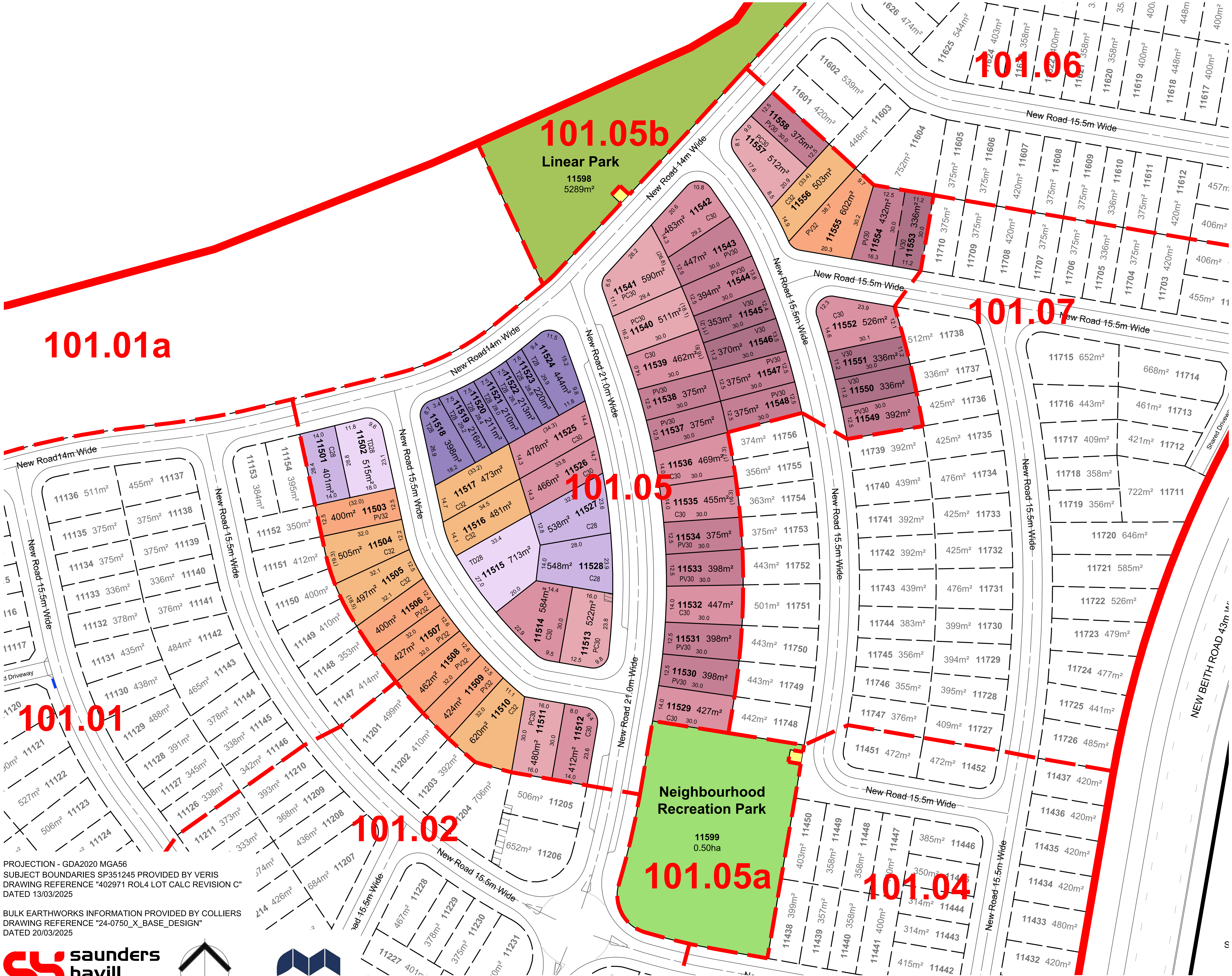
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.05



LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

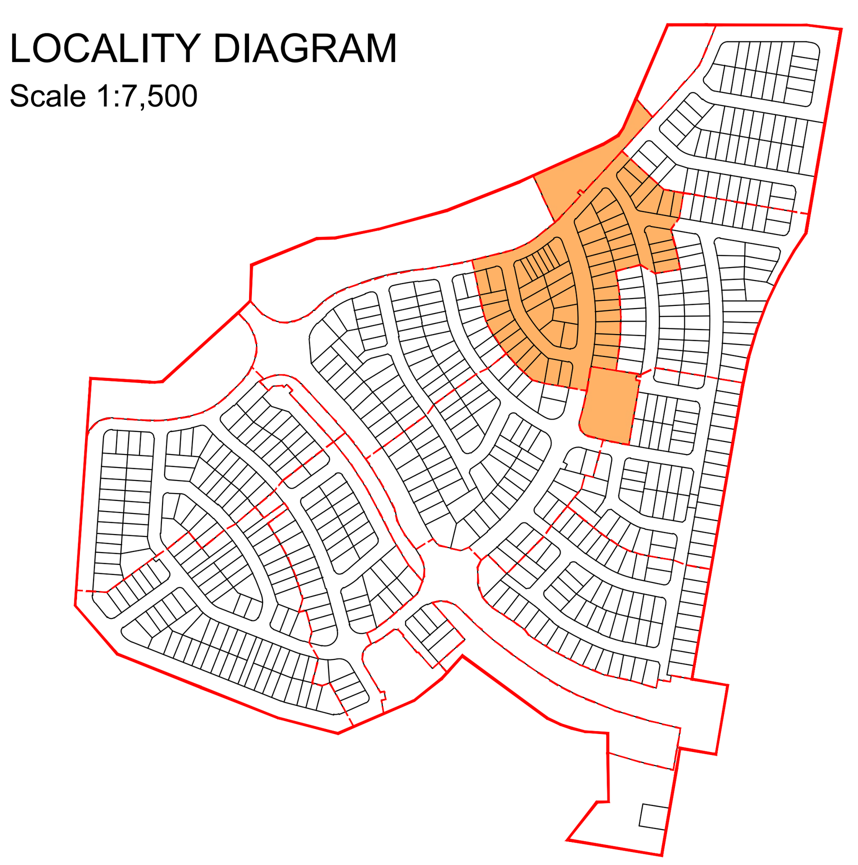
DEVELOPMENT STATISTICS

RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
28m Deep Lots					
Terrace - Front Loaded	T28	7.5m	7	12.1%	0.191 ha
Courtyard	C28	14m	3	5.2%	0.149 ha
Traditional	TD28	18m	2	3.4%	0.123 ha
Sub Total			12	20.7%	0.463 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
30m Deep Lots					
Villa	V30	11.2m	5	8.6%	0.173 ha
Premium Villa	PV30	12.5m	13	22.4%	0.511 ha
Courtyard	C30	14m	11	19.0%	0.521 ha
Premium Courtyard	PC30	16m	5	8.6%	0.262 ha
Sub Total			34	58.6%	1.467 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
32m Deep Lots					
Premium Villa	PV32	12.5m	6	10.3%	0.271 ha
Courtyard	C32	14m	6	10.3%	0.308 ha
Sub Total			12	20.7%	0.579 ha
Total Allotments			58	100%	2.509 ha

Land Budget	Area (Ha)	%
Area of Subject Site / Stage	4.760 ha	—
Net Residential Allotments	2.509 ha	52.7%
Linear Park / Pedestrian Linkage	0.529 ha	11.1%
Neighbourhood Recreation Park	0.500 ha	10.5%
Local Road Areas	1.222 ha	25.7%
Total Area	4.760 ha	100%

LOCALITY DIAGRAM

Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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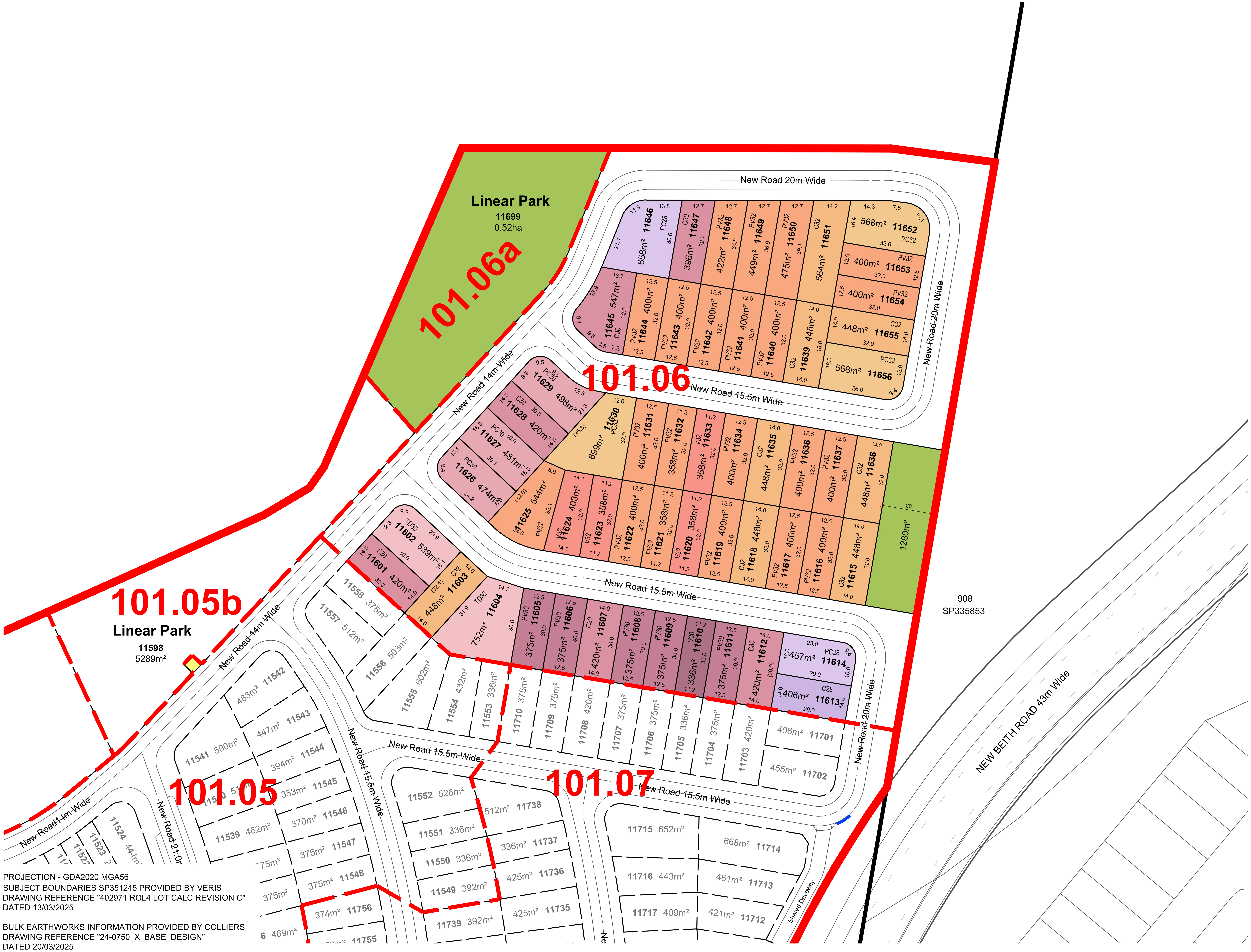
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.06

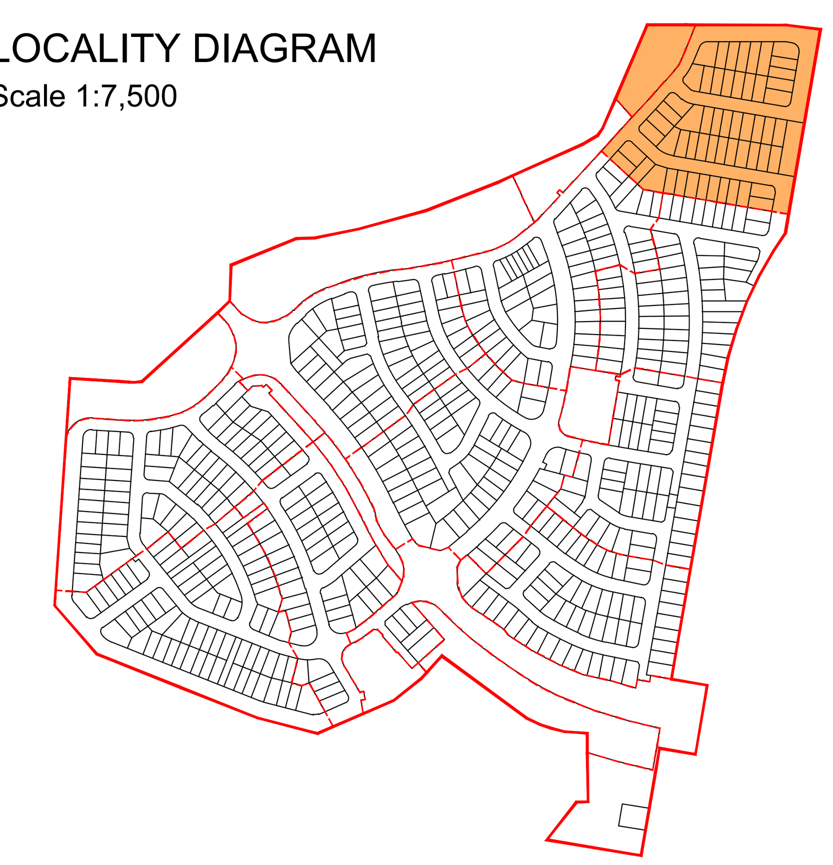


LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Courtyard	C28	14m	1	1.8%	0.041 ha
Premium Courtyard	PC28	16m	2	3.6%	0.111 ha
Sub Total			**3**	**5.4%**	**0.152 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Villa	V30	11.2m	1	1.8%	0.034 ha
Premium Villa	PV30	12.5m	5	8.9%	0.188 ha
Courtyard	C30	14m	6	10.7%	0.262 ha
Premium Courtyard	PC30	16m	3	5.4%	0.145 ha
Traditional	TD30	18m	2	3.6%	0.129 ha
Sub Total			**17**	**30.4%**	**0.758 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
32m Deep Lots					
Villa	V32	11.2m	4	7.1%	0.148 ha
Premium Villa	PV32	12.5m	21	37.5%	0.861 ha
Courtyard	C32	14.0m	8	14.3%	0.370 ha
Premium Courtyard	PC32	16.0m	3	5.4%	0.184 ha
Sub Total			**36**	**64.3%**	**1.563 ha**
Total Allotments			**56**	**100%**	**2.473 ha**
Land Budget			**Area (Ha)**	**%**	
Area of Subject Site / Stage			**4.444 ha**	**—**	
Net Residential Allotments			2.473 ha	76.5%	
Linear Park / Pedestrian Linkage			0.644 ha	19.9%	
Local Road Areas			1.327 ha	41.1%	
Total Area			**4.444 ha**	**138%**	

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES
10 0 10 20 30 40 50 60 70 80 90

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.07

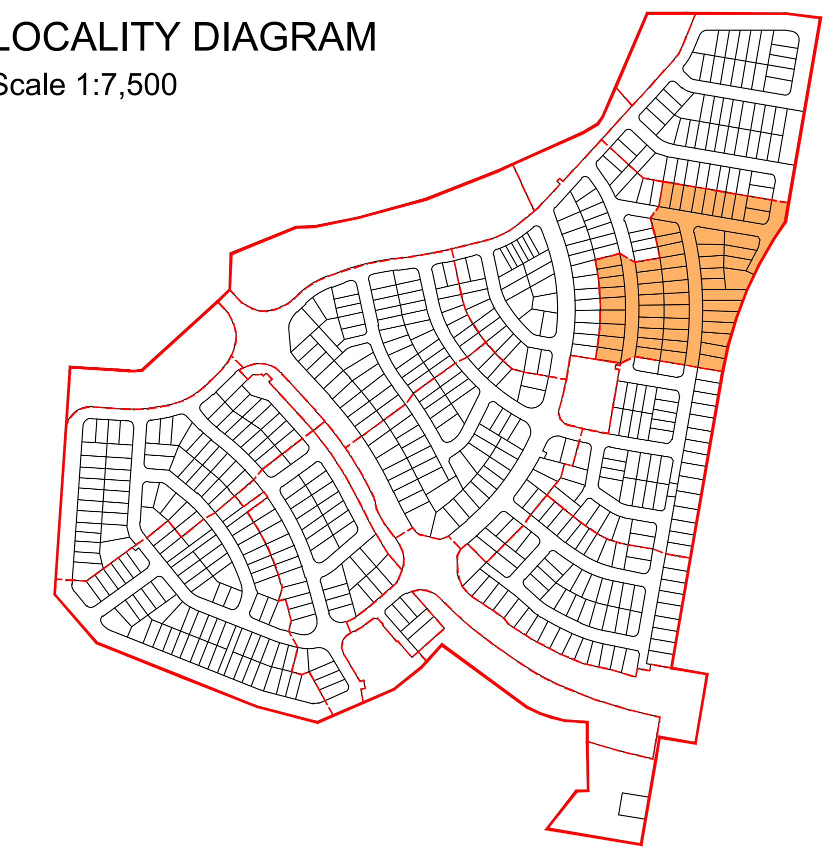
LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Premium Villa	PV28	12.5m	2	3.6%	0.071 ha
Courtyard	C28	14m	3	5.4%	0.124 ha
Premium Courtyard	PC28	16m	1	1.8%	0.046 ha
Traditional	TD28	18m	1	1.8%	0.072 ha
Sub Total			**7**	**12.5%**	**0.313 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Villa	V30	11.2m	7	12.5%	0.248 ha
Premium Villa	PV30	12.5m	17	30.4%	0.663 ha
Courtyard	C30	14m	14	25.0%	0.621 ha
Premium Courtyard	PC30	16m	3	5.4%	0.146 ha
Sub Total			**41**	**73.2%**	**1.678 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
32m Deep Lots					
Premium Villa	PV32	12.5m	6	10.7%	0.317 ha
Premium Courtyard	PC32	16m	2	3.6%	0.132 ha
Sub Total			**8**	**14.3%**	**0.449 ha**
Total Allotments			**56**	**100%**	**2.440 ha**
Land Budget			**Area (Ha)**	**%**	
Area of Subject Site / Stage			**3.232 ha**	**—**	
Net Residential Allotments			2.440 ha	54.9%	
Local Road Areas			0.792 ha	17.8%	
Total Area			**3.232 ha**	**73%**	

LOCALITY DIAGRAM

Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

10 0 10 20 30 40 50 60 70 80 90

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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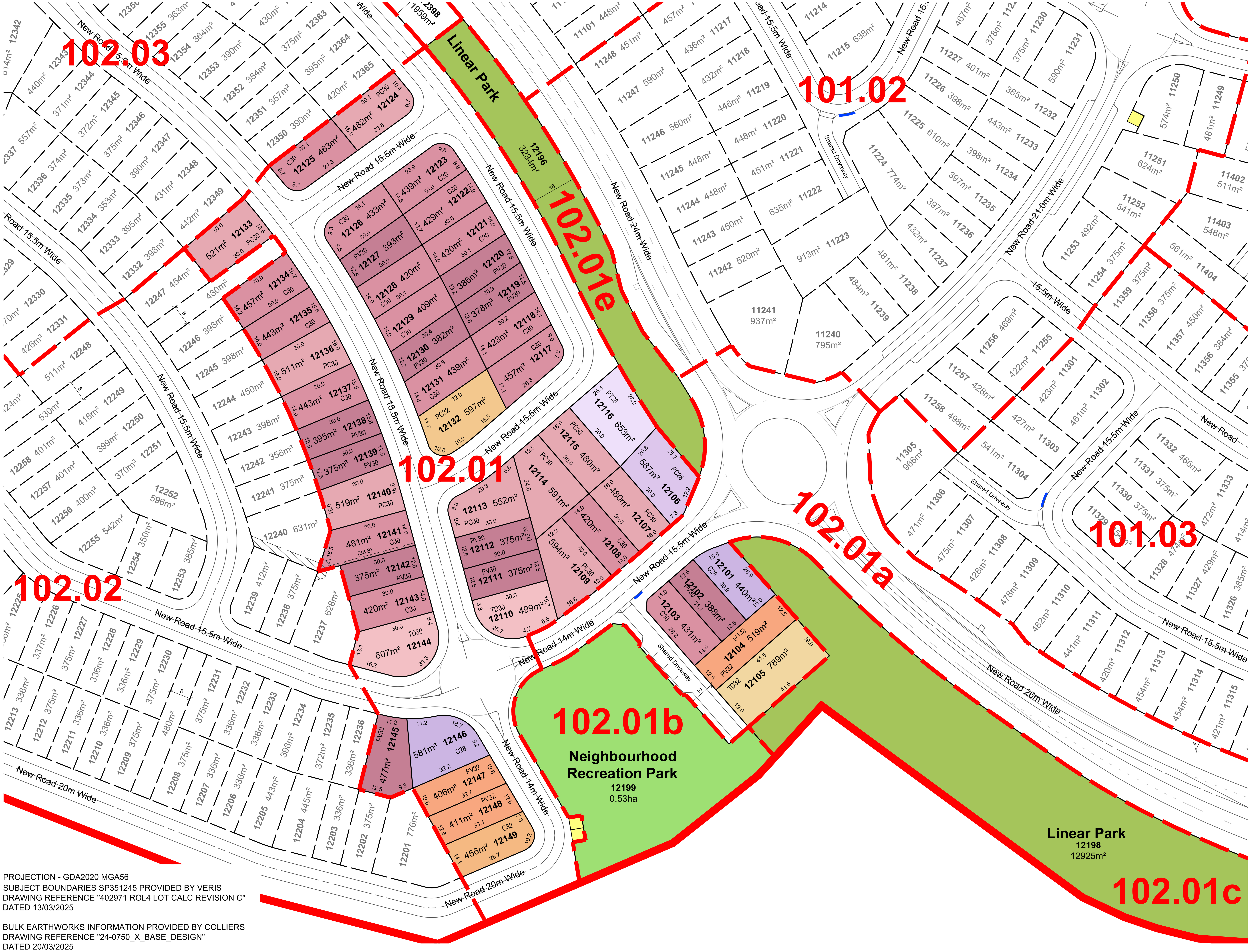
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 102.01



Joins sheet STG 102.01-2

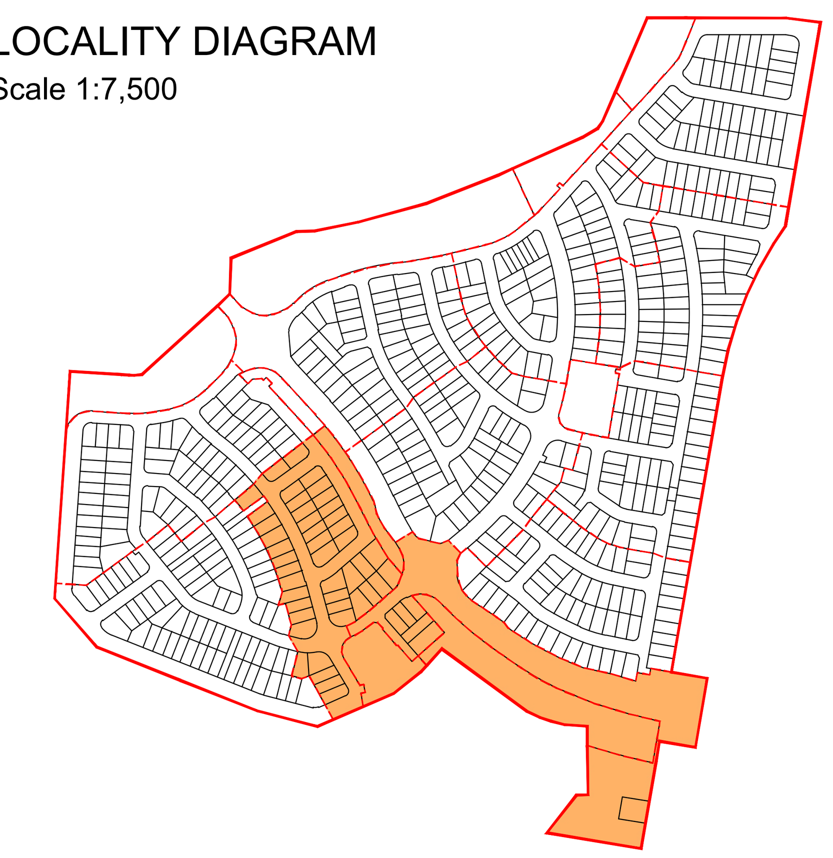
LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Courtyard	C28	14m	2	4.1%	0.102 ha
Premium Courtyard	PC28	16m	1	2.0%	0.059 ha
Premium Traditional	PT28	20m	1	2.0%	0.065 ha
Sub Total			**4**	**8.2%**	**0.226 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Premium Villa	PV30	12.5m	11	22.4%	0.430 ha
Courtyard	C30	14m	17	34.7%	0.743 ha
Premium Courtyard	PC30	16m	9	18.4%	0.473 ha
Traditional	TD30	18m	2	4.1%	0.110 ha
Sub Total			**39**	**79.6%**	**1.756 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
32m Deep Lots					
Premium Villa	PV32	12.5m	3	6.1%	0.133 ha
Courtyard	C32	14m	1	2.0%	0.046 ha
Premium Courtyard	PC32	16m	1	2.0%	0.060 ha
Traditional	TD32	18m	1	2.0%	0.079 ha
Sub Total			**6**	**12.2%**	**0.318 ha**
Total Allotments			**49**	**100%**	**2.300 ha**
Land Budget			**Area (Ha)**	**%**	
Area of Subject Site / Stage			**8.497 ha**	**—**	
Net Residential Allotments			2.300 ha	27.1%	
Linear Park / Pedestrian Linkage			1.616 ha	19.0%	
Neighbourhood Recreation Park			0.526 ha	6.2%	
Local Road Areas			1.236 ha	14.5%	
Major Road Areas			1.881 ha	22.1%	
Balance Lot 12196			0.085 ha	1.3%	
Balance Lot 12197			0.853 ha	13.4%	
Total Area			**8.497 ha**	**104%**	

LOCALITY DIAGRAM

Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

10 0 10 20 30 40 50 60 70 80 90

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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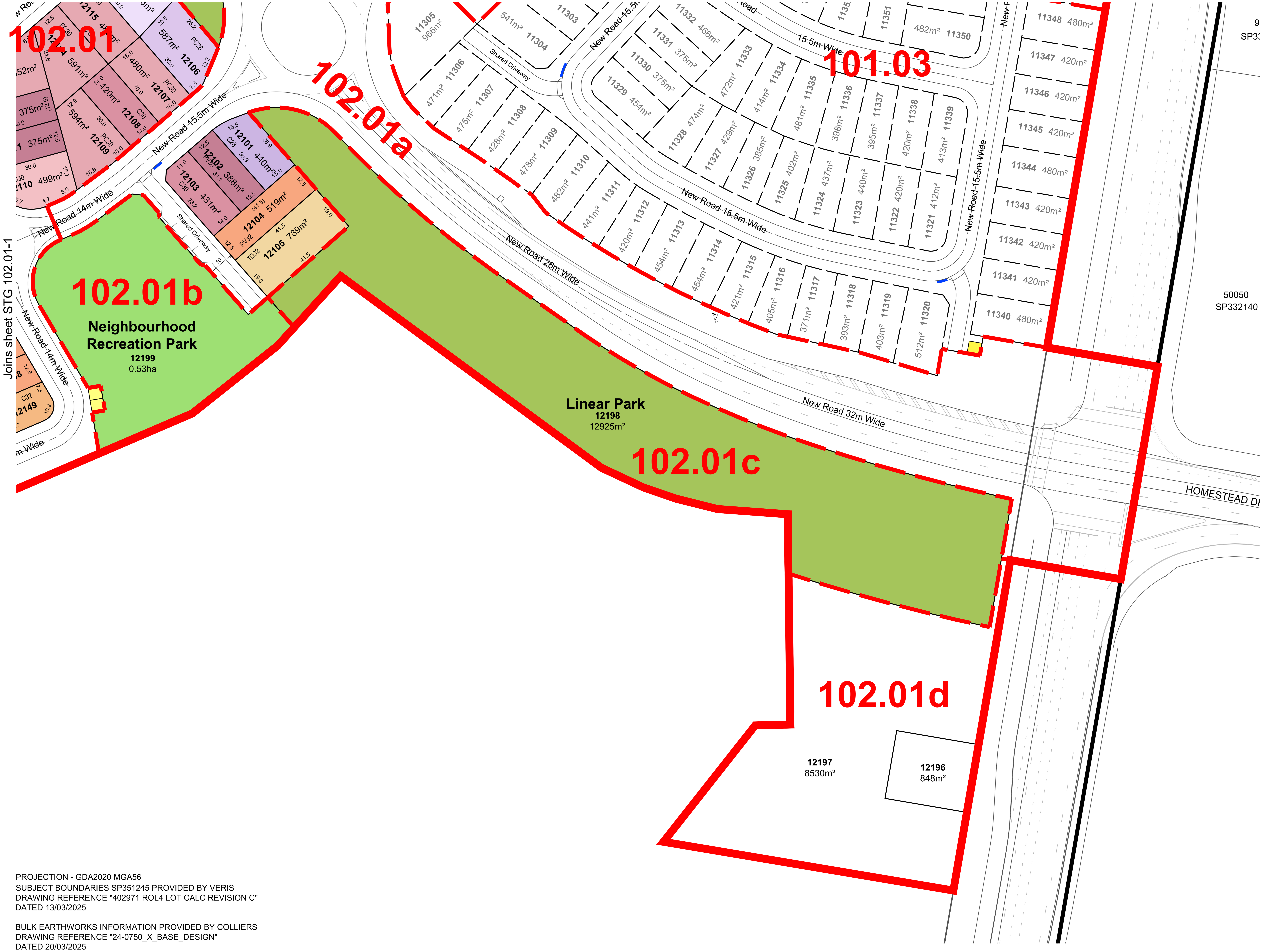
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 102.01



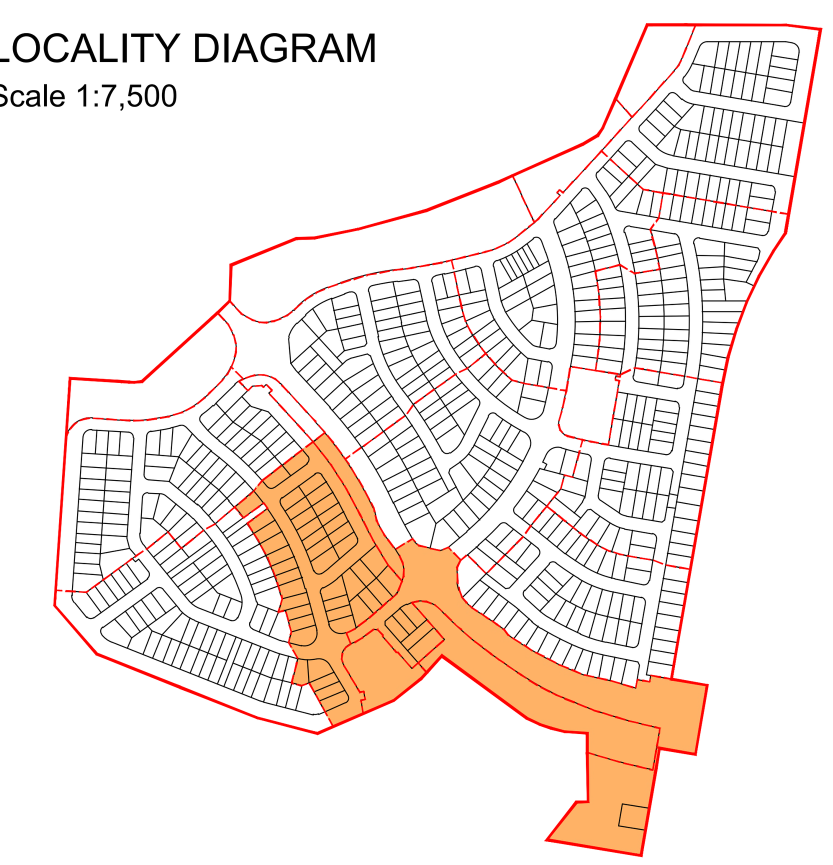
LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
28m Deep Lots					
Courtyard	C28	14m	2	4.1%	0.102 ha
Premium Courtyard	PC28	16m	1	2.0%	0.059 ha
Premium Traditional	PT28	20m	1	2.0%	0.065 ha
Sub Total			4	8.2%	0.226 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
30m Deep Lots					
Premium Villa	PV30	12.5m	11	22.4%	0.430 ha
Courtyard	C30	14m	17	34.7%	0.743 ha
Premium Courtyard	PC30	16m	9	18.4%	0.473 ha
Traditional	TD30	18m	2	4.1%	0.110 ha
Sub Total			39	79.6%	1.756 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
32m Deep Lots					
Premium Villa	PV32	12.5m	3	6.1%	0.133 ha
Courtyard	C32	14m	1	2.0%	0.046 ha
Premium Courtyard	PC32	16m	1	2.0%	0.060 ha
Traditional	TD32	18m	1	2.0%	0.079 ha
Sub Total			6	12.2%	0.318 ha
Total Allotments			49	100%	2.300 ha

Land Budget	Area (Ha)	%
Area of Subject Site / Stage	8.497 ha	—
Net Residential Allotments	2.300 ha	27.1%
Linear Park / Pedestrian Linkage	1.616 ha	19.0%
Neighbourhood Recreation Park	0.526 ha	6.2%
Local Road Areas	1.236 ha	14.5%
Major Road Areas	1.881 ha	22.1%
Balance Lot 12196	0.085 ha	1.3%
Balance Lot 12197	0.853 ha	13.4%
Total Area	8.497 ha	104%

LOCALITY DIAGRAM
Scale 1:7,500



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SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

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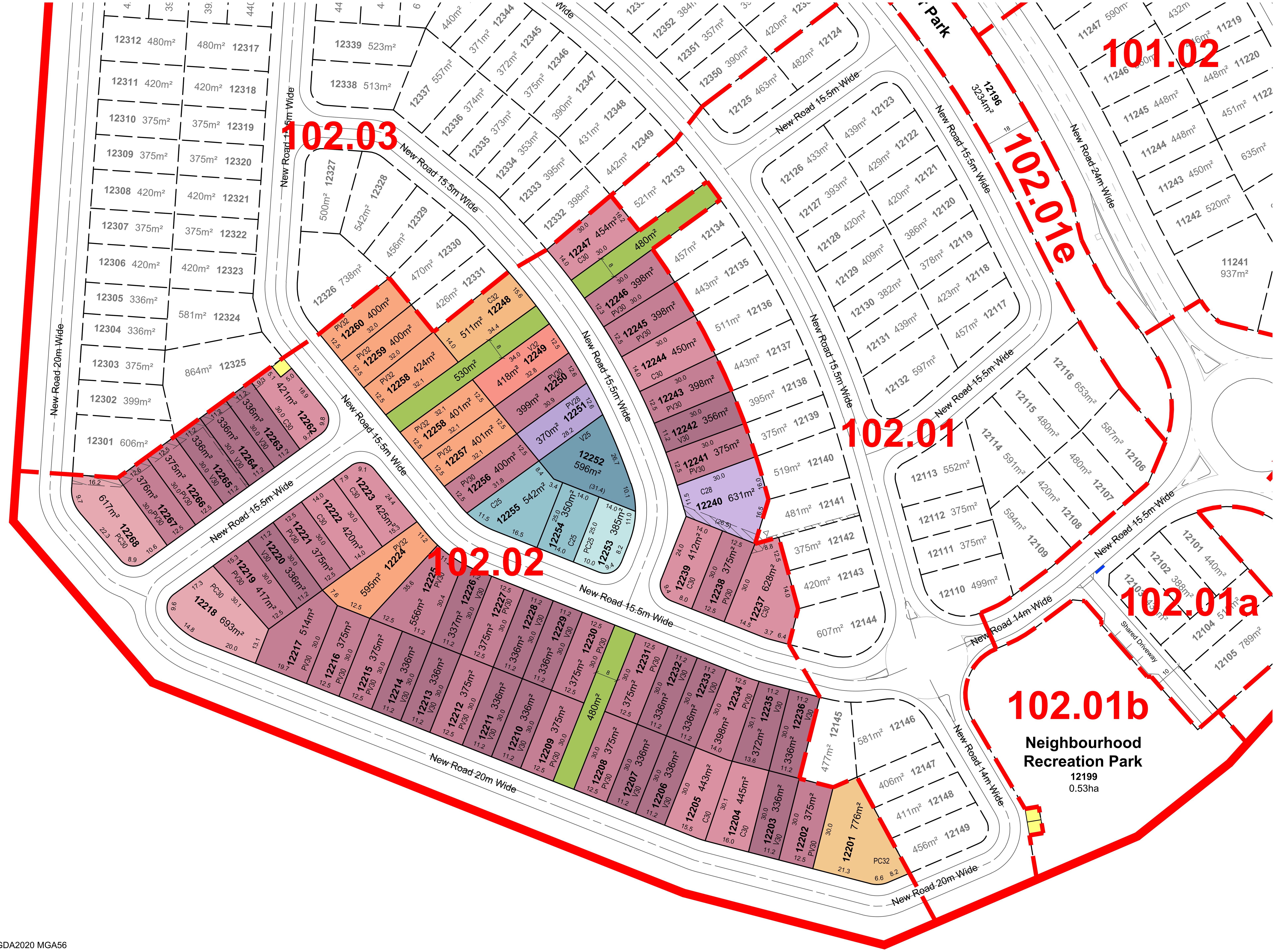
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 102.02

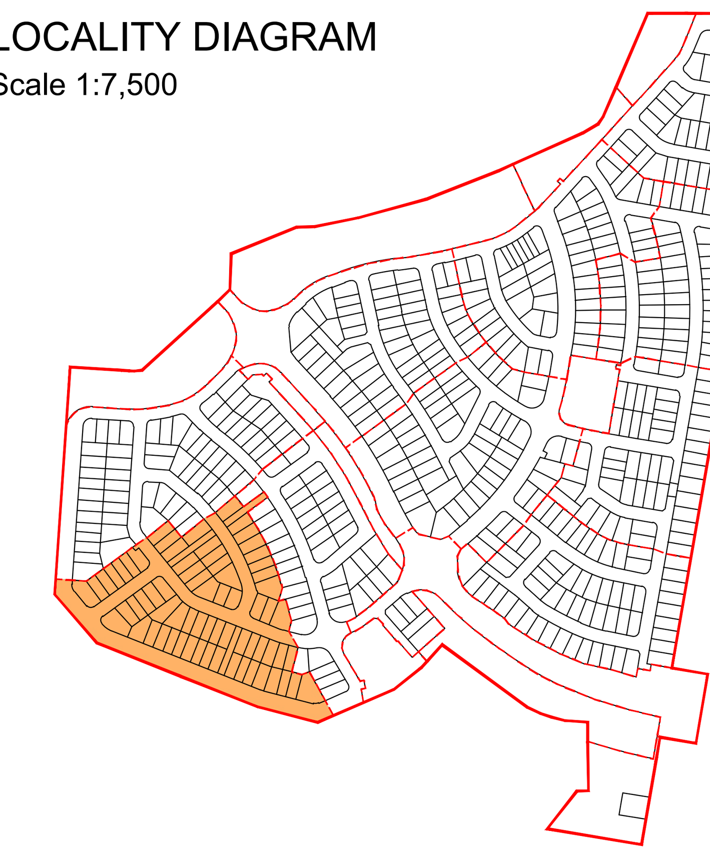


LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Neighbourhood Recreation Park
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
25m Deep Lots					
Villa	V25	11.2m	1	1.5%	0.059 ha
Courtyard	C25	14m	2	2.9%	0.089 ha
Premium Courtyard	PC25	16m	1	1.5%	0.039 ha
Sub Total			**4**	**5.9%**	**0.187 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Premium Villa	PV28	12.5m	1	1.5%	0.037 ha
Courtyard	C28	14m	1	1.5%	0.063 ha
Sub Total			**2**	**2.9%**	**0.100 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Villa	V30	11.2m	19	27.9%	0.644 ha
Premium Villa	PV30	12.5m	23	33.8%	0.913 ha
Courtyard	C30	14m	9	13.2%	0.410 ha
Premium Courtyard	PC30	16m	2	2.9%	0.131 ha
Sub Total			**53**	**77.9%**	**2.098 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
32m Deep Lots					
Villa	V32	11.2m	1	1.5%	0.042 ha
Premium Villa	PV32	12.5m	6	8.8%	0.262 ha
Courtyard	C32	14m	1	1.5%	0.051 ha
Premium Courtyard	PC32	16m	1	1.5%	0.078 ha
Sub Total			**9**	**13.2%**	**0.433 ha**
Total Allotments			**68**	**100%**	**2.818 ha**
Land Budget			**Area (Ha)**	**%**	
Area of Subject Site / Stage			**4.405 ha**	**—**	
Net Residential Allotments			2.818 ha	64.0%	
Linear Park / Pedestrian Linkage			0.149 ha	3.4%	
Local Road Areas			1.438 ha	32.6%	
Total Area			**4.405 ha**	**100%**	

LOCALITY DIAGRAM
Scale 1:7,500



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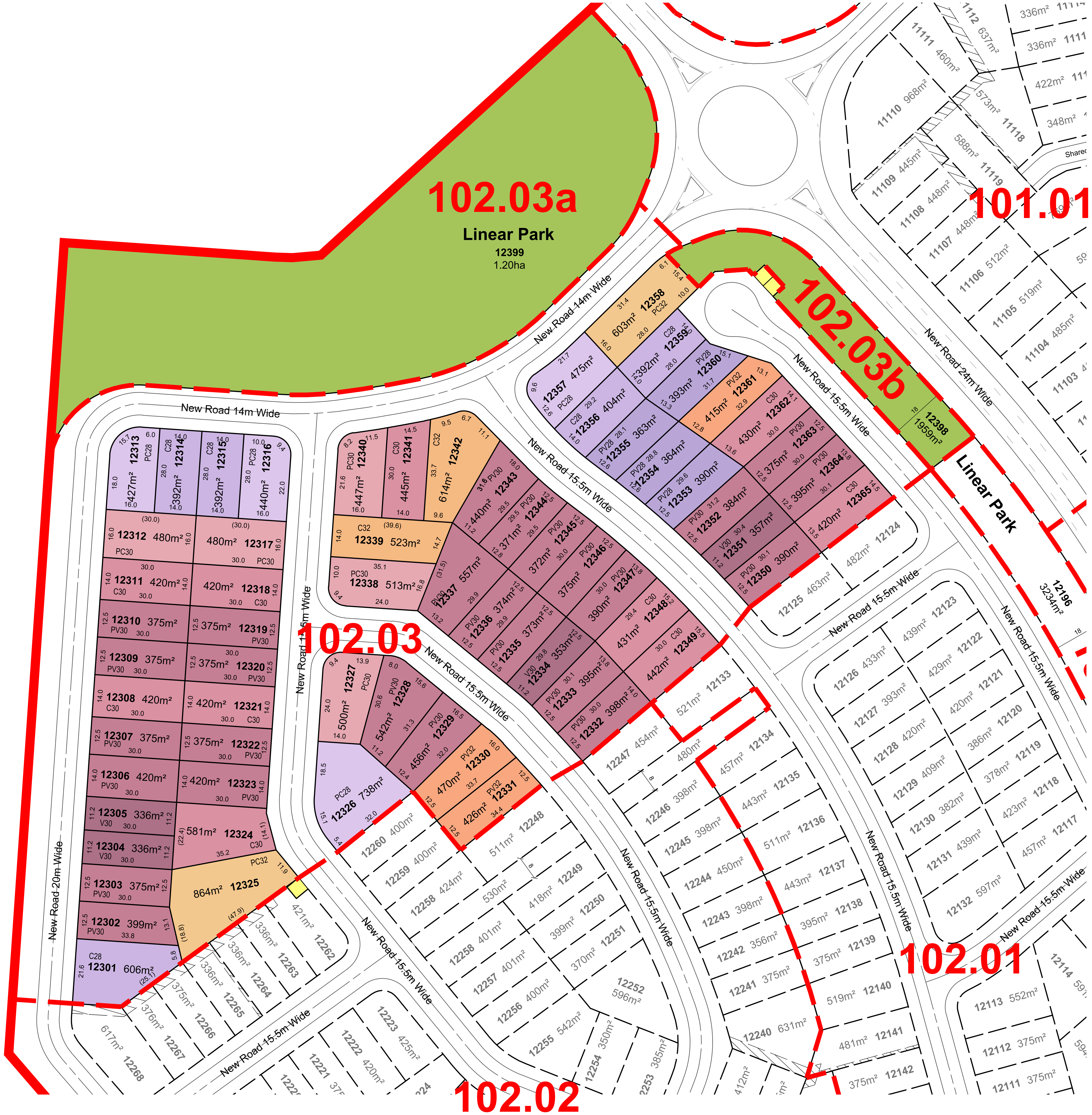
HOMESTEAD DRIVE, MONARCH GLEN ■ 03/04/2025 ■ 11731 P 27 Rev I - STG 102.02

ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 102.03



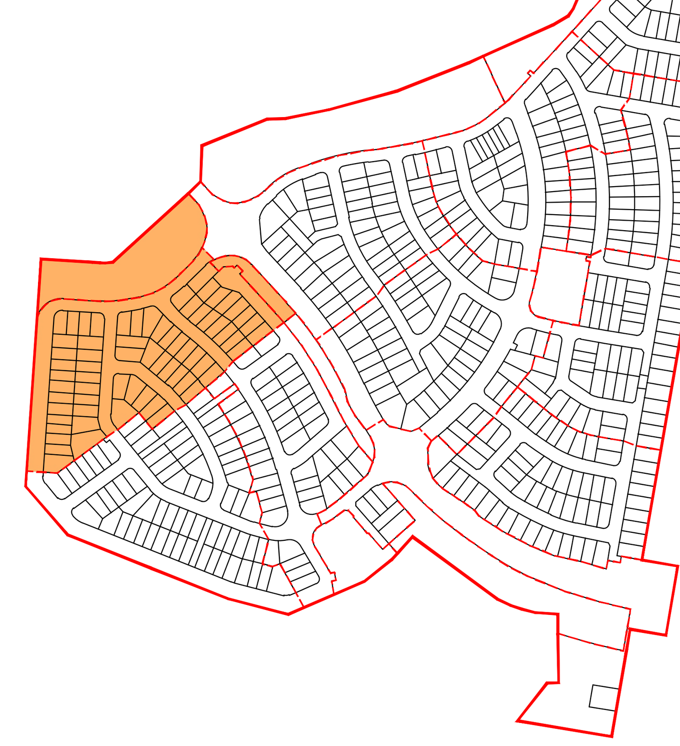
LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Premium Villa	PV28	12.5m	4	6.2%	0.151 ha
Courtyard	C28	14m	5	7.7%	0.219 ha
Premium Courtyard	PC28	16m	4	6.2%	0.208 ha
Sub Total			**13**	**20.0%**	**0.578 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Villa	V30	11.2m	4	6.2%	0.138 ha
Premium Villa	PV30	12.5m	26	40.0%	1.045 ha
Courtyard	C30	14m	10	15.4%	0.443 ha
Premium Courtyard	PC30	16m	5	7.7%	0.242 ha
Sub Total			**45**	**69.2%**	**1.868 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
32m Deep Lots					
Premium Villa	PV32	12.5m	3	4.6%	0.131 ha
Courtyard	C32	14m	2	3.1%	0.113 ha
Premium Courtyard	PC32	16m	2	3.1%	0.147 ha
Sub Total			**7**	**10.8%**	**0.391 ha**
Total Allotments			**65**	**100%**	**2.837 ha**
Land Budget			**Area (Ha)**	**%**	
Area of Subject Site / Stage			**5.650 ha**	**—**	
Net Residential Allotments			2.837 ha	50.2%	
Linear Park / Pedestrian Linkage			1.399 ha	24.8%	
Local Road Areas			1.414 ha	25.0%	
Total Area			**5.650 ha**	**100%**	

LOCALITY DIAGRAM

Scale 1:7,500



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SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

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ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA

NOTES

Planning Context

- In accordance with the provisions of the Greater Flagstone Urban Development Area Development Scheme (Development Scheme), building work and operational work are exempt development where in accordance with, or associated with, this Plan of Development (PoD).
- All relevant provisions of this PoD must be satisfied prior to the issuance of a Building Approval.
- The provisions of the Development Scheme will apply where development does not comply with all provisions of the Plan of Development.
- The Development Scheme definitions prevail over all other planning instruments to the extent of any inconsistency.

General

1. All development is to be undertaken in accordance with Development Approval, and Queensland Development Code (QDC), except as varied below.
2. Nominated building location envelopes may be constrained by future easements and/or services.
3. Buildings shall be constructed in accordance with the approved Bushfire Report.
4. Where allotments are so marked on Plan of Development - Envelope Plans, residential buildings must be designed and constructed to comply with the approved Noise Impact Assessment.
5. In the case where stormwater services draining to the road are located within a proposed driveway location, it is the responsibility of the lot owner to relocate or install a new stormwater outlet, refer to standard kerb adaptor drawing for compliance.
6. Driveway locations have been predetermined to ensure there is no clash with any services, street trees or street lights. If a lot owner submits a covenant application and a conflict arises out of its assessment, the Developer will not be responsible to facilitate the relocation the services or the costs associated with it.

Setbacks

7. Setbacks are as the relevant approved Plan of Development Table, unless specified otherwise on this plan.
8. The permitted location of built to boundary walls are indicated on the Plan of Development.
9. Where built to boundary walls are not adopted, side setbacks shall be in accordance with the requirements of the Non-Built to Boundary Setbacks nominated in Plan Of Development Table.
10. All boundary setbacks are measured to the external face of the wall of the structure.
11. The dwelling and associated projections (gutters etc.) must be located wholly within the subject lot, unless encroachment rights are secured by way of easement (or other suitable mechanism).
12. Other than built to boundary walls, the outside face of the fascia, or the roof structure where there is no fascia, or attached sunhoods or the like (not including retractable blinds, fixed screens, rainwater fittings, or ornamental attachments) is permitted to extend 600mm within the prescribed setback, however cannot encroach closer than 450mm from the boundary.
13. The length of the built to boundary walls shall be no more than:
    - 75% of the boundary length for a house on a lot width of 7.5m - 9.5m
    - 50% of the boundary length for a house on a lot width of 11.2m or greater
14. Walls over 8m in length facing either the primary or secondary street without windows or articulation are not permitted.
15. A lot can have only one primary frontage. Primary frontages are nominated as per driveway frontages, unless specified otherwise on the Plan of Development - Envelope Plans;
16. The primary street frontage elevation is to be articulated to reduce the mass of the building by one or more of the following:
    a. Windows recessed into the façade
    b. Balconies, porches or verandahs
    c. Shadow lines created on the building through minor changes in the façade (100mm minimum).
17. Entrance porticoes may be located closer to the property boundary than stated in POD Table, provided that the portico:
    a. Is located no less than 1.4m from the front property boundary,
    b. Does not exceed maximum height of 4.5m,
    c. Does not exceed a depth of 2.5m; and
    d. The portico remains open and not enclosed.

Corner Lot Setback

18. A corner lot is a lot that adjoins the intersection of two streets (collector, access street or access place). This excludes those lots that abut a shared access driveway, pedestrian link /connection / threshold, landscape buffer &/or open space.
19. Corner lots are interpreted as having a Primary and Secondary frontage and two side boundaries for the purposes of determining building setbacks (ie. No rear boundary setback applies).
20. For corner lots (excluding a corner intersecting with a laneway), no building or structure over 2m high is built within a 6m x 6m truncation at the corner of two road frontages (refer Plan of Development Table).

Building Height

21. The maximum building height is 9.0m.
22. Buildings must have no more than 2 storeys.
23. Maximum height of any structure to the built to boundary wall is 3.5m from finish ground level.

Site Cover

24. Site cover means the portion of the site, expressed as a percentage, that will be covered by a building or structure, measured to its outermost projection, after the development is carried out, other than a building or structure, or part of a building or structure, that is--
    a. in a landscaped or open space area, including, for example, a gazebo or shade structure; or
    b. a basement that is completely below ground level and used for car parking; or
    c. the eaves of a building; or
    d. a sun shade.

Private Open Space and Amenity

25. Each house / dwelling unit has a clearly defined outdoor living space which:
    a. Has an area of at least:
        - 12m² with a minimum dimension of 2.4m for a 3 or more bedroom house / dwelling unit;
        - 9m² with a minimum dimension of 2.4m for a 2 bedroom house / dwelling unit; or
        - 5m² with a minimum dimension of 1.2m for a 1 room or 1 bedroom house / dwelling unit.
    b. Is accessible from a living area; and
    c. Has a ground slope of not more than 1 in 10;

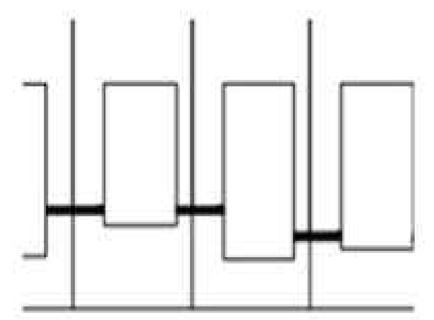
Parking and Driveways

26. A minimum of two on-site car parking spaces must be provided for each dwelling, one of which must be within a garage.
27. Garages:
    a. A single storey dwelling on a lot with a primary frontage equal to or greater than 10m and less than 12.5m must adhere to the following criteria:
        - The front facing building wall, which comprises the garage door, to not exceed an external width of 5.7m
        - The garage door:
            - Width does not exceed 4.8m; and
            - Has a minimum 450mm eave above it; and
            - Garages are to be setback 0.5m behind the main face of the dwelling.
            - Setback a minimum of 240mm behind the pillar of the garage door; and
            - Has a sectional, tilt (if accommodating architectural cladding or elements) or roller door.
        - The front façade of the dwelling is to be forward of the alignment of the garage wall, and include the following:
            - A front entrance door with glass inserts and / or windows or with a sidelight where the front door is solid. ; or
            - A front verandah, portico or porch located over the front entrance, which extends a minimum of 1600mm forward of the entrance door. The verandah, portico or porch is to include front piers with distinct materials and/or colours of sufficient mass to compliment the overall facade design.
    b. A double storey dwelling on a lot with a primary frontage equal to or greater than 10m and less than 12.5m must adhere to the following criteria:
        - The front facing building wall, which comprises the garage door, to not exceed an external width of 5.7m
        - The garage door:
            - Width does not exceed 4.8m; and
            - Garages are to be setback 1.0m behind the main face of the dwelling at the ground floor.
            - Setback a minimum of 240mm behind the pillar of the garage door; and
            - Has a sectional, tilt (if accommodating architectural cladding or elements) or roller door.
        - The front entrance door is to be visible and identifiable from the street.
    c. A dwelling on a lot with a primary frontage of 12.5m or greater must adhere to the following criteria:
        - Must have a garage door not exceeding 40% of the lot frontage
        - Double garages are to be setback 1.0m behind the main face of the dwelling at the ground floor.For a dwelling on a lot with a primary frontage less than 10.0m the garage door width must not exceed 3.0m for single storey.
28. The maximum width of a driveway at the lot boundary shall be:
    a. 4.8m for a dwelling with a double garage with a lot frontage of 12.5m or greater;
    b. 3.5m for a dwelling with a double garage with a lot frontage equal to or greater than 10m and less than 12.5m; or
    c. 3.0m for a dwelling with single or tandem garage on any lot frontage.
29. Garages are to be located as nominated on the Plan of Development - Envelope Plans, or in an alternate location subject to confirmation that there is no conflict with proposed/existing services.
30. A maximum of one driveway per dwelling is permitted.
31. The driveway finish must not be plain concrete.
32. Driveways are to be:
    a. a minimum distance of 6m from an intersection of one street with another street; and
    b. designed and constructed in accordance with approval / permit requirements of Logan City Council.

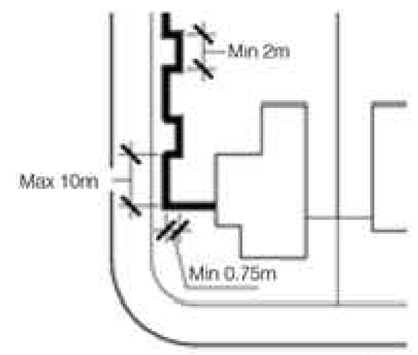
Retaining Walls

33. Other than walls erected by the developer, retaining walls:
    a. must be tiered 1m vertical and 1m horizontal where forward of the building line to any street, park or lane and visible from the public realm; and
    b. cannot exceed 1.5m in height without stepping elements incorporated.
    c. cannot be constructed out of timber or timber elements
    d. if visible from the street, concrete sleeper must not be grey concrete colour finish.
    e. retaining wall must contribute to a coherent and visually pleasing experience with architecture design of home.
34. Where on a lot with a rear retaining wall exceeding 2.0m above ground level (or where identified on the Plan of Development - Envelope Plans), the Rear Setback is as per Table 4.
35. All retaining walls over 1.0m in height must be certified by an RPEQ.

Fencing



PRIMARY FRONTAGE



PRIMARY FRONTAGE

36. Primary frontage requirements:
    a. The maximum fence height is 1.8m;
    b. Fences are not permitted along road frontages forward of the building; and
    c. Side boundary fences are to be recessed at least 1m behind the wall addressing the primary road frontage (as per diagram).
37. For rear loaded terrace lots the primary frontage requirement are as follows
    - A maximum fence height of 1.5m;
    - Fences are permitted along the Primary Frontage and the side boundaries forward of the facade facing the Primary Frontage: and
    - Fences must be a least 50% transparent.
    - Fences on the primary frontage must not be constructed using timber
    - Street numbers and letterboxes must be intergrated into the fencing construction
38. Within laneways, 1.8m high fences are permitted to screen private open space, car parking and servicing area. Any fencing area above 1.5m in height to be at least 50% transparent.
39. Secondary frontage requirements:
    a. Fences to Secondary Frontages (Side) of Corner Lots may extend beyond the face of the secondary facade only on the basis the fencing visible from the public area is:
        - A maximum fence height of 1.8m;
        - Solid up to a height of 1.5m with any fencing above 1.5m in height being at least 50% transparent or the fence can be at least 25% transparent overall where the transparency is consistent across the full area of the fence (ie. transparent sections cannot be located solely at ground level); and
        - Does not extend for lengths greater than 10m without a landscaped recess 2m in length and 0.75m deep (as per diagram).
40. Pedestrian link requirements:
    a. Fences to pedestrian links:
        - A maximum fence height of 1.8m; and
        - Solid up to a height of 1.5m with any fencing above 1.5m in height being at least 50% transparent or the fence can be at least 25% transparent overall where the transparency is consistent across the full area of the fence (i.e. transparent sections cannot be located solely at ground level).

Letterboxes

41. Letterboxes for the dwelling shall be located on the primary street frontage. Letterboxes are not permitted in laneways.

Structures and Services

42. All ancillary structure (e.g. garden sheds, gazebos, pools, airconditioning units) can be located within setback area, but it is required to be suitably located or screened to minimise detrimental visual impact from public spaces or neighbouring residential allotments, with the exception of solar panels and solar hot water systems which may be located where most efficient.
43. Where an ancillary structure is located within the setback, zone of influence of any walls will need to be considered.
44. It is the lot owner's responsibility to manage surface water and ensuring that no water is directed toward neighbouring properties or structures.
45. Screened drying areas are to be located behind the main face of the dwellings.
46. Rubbish bin areas are to be located behind the main face of the dwellings or stored so as to not be visible from the public realm.
47. All building and structures (including pools) are to be clear of PMT buffer zones in accordance with authority requirements.

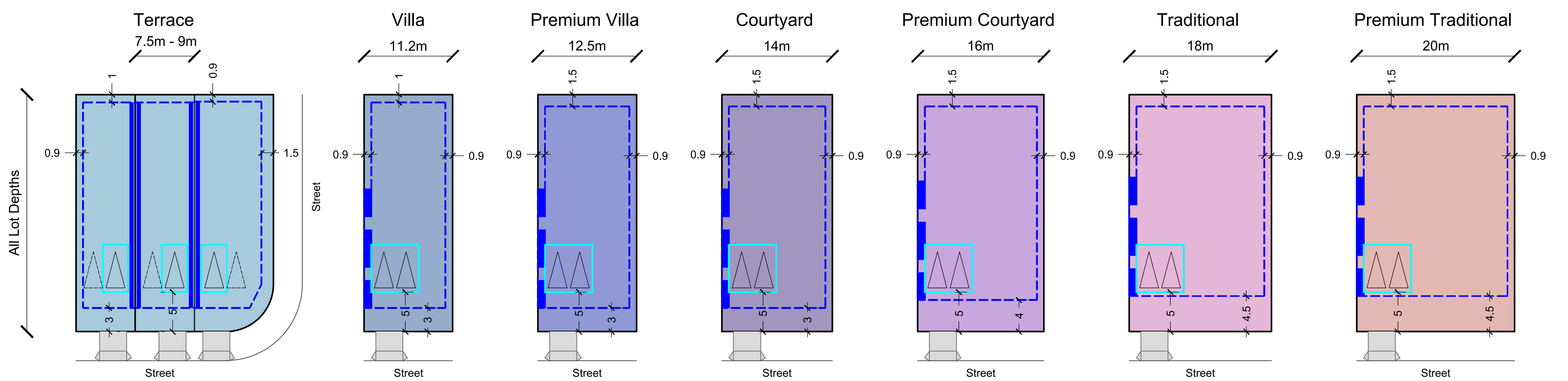
Secondary Dwelling

48. A secondary dwelling is only permitted where:
    a. The lot is 400m² or more;
    b. The lot frontage is 12.5m or more; and
    c. It complies with the applicable self assessable provisions in Schedule 3 of the Development Scheme where not inconsistent with the provisions of this PoD.
49. There is to be no more than one secondary dwelling on a lot.
50. Floor area is maximum 45m² GFA (note: GFA excludes the garage and a 4m² size covered entry porch area only)
51. Design and siting of buildings and structures to be in accordance with this Plan of Development. Where not on a corner lot, the dwelling/secondary dwelling must have the design effect of one (1) single residential dwelling from the road/street frontage or within public view.
52. Materials, detailing colours and roof form are consistent with those of the primary house.
53. Outdoor living space is a minimum 9m² with a minimum dimension of 3m and directly accessible from a main living area.
54. Car Parking and Garaging is minimum one space in addition to the primary dwelling requirement - with minimum dimensions of 5m x 3m.
55. Shared minimum driveway with the primary house.
56. If the lot is on a corner the dedicated pedestrian entry and door are visible from and addressing the secondary street.
57. Street Surveillance - on a single street frontage the secondary dwelling entry must be hidden from view from the street so as to give the effect that the home is one (1) single residential dwelling.
58. Any Secondary Dwelling is not permitted its own letterbox and must be shared with the primary dwelling.
59. Any Secondary Dwelling is unable to be separately titled to the primary dwelling.
60. No separate infrastructure servicing to the secondary dwelling is permitted (ie. water, gas, electricity).

PLAN OF DEVELOPMENT TABLE

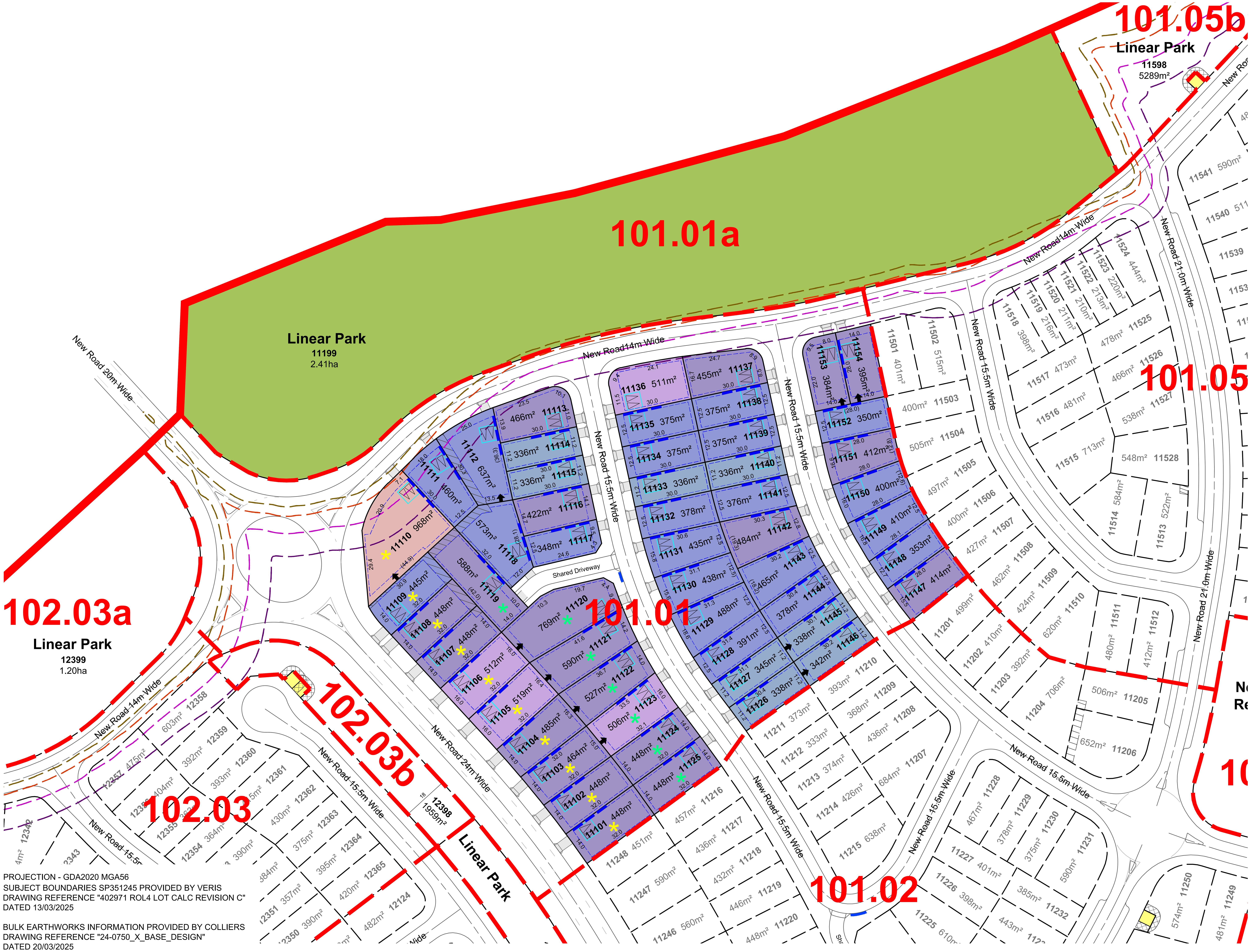
ALLOTMENT TYPE			Terrace	Villa	Premium Villa	Courtyard	Premium Courtyard	Traditional	Premium Traditional
			7.5 - 9.5m	11.2m	12.5m	14m	16m	18m	20m
FRONT SETBACKS									
Primary Frontage		To Wall (Ground Floor)	3.0m	3.0m	3.0m	3.0m	4.0m	4.5m	4.5m
		To Wall (First Floor)	3.0m	3.0m	3.0m	3.0m	4.0m	4.5m	4.5m
		To Garage Door	5.0m	5.0m	5.0m	5.0m	5.0m	5.0m	5.0m
Secondary Frontage		To Wall (Ground Floor)	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m
		To Wall (First Floor)	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m
		To Garage Door	N/A	5.0m	5.0m	5.0m	5.0m	5.0m	5.0m
SIDE / REAR SETBACKS									
From any part of the side or rear boundary of a lot where: - on the low side of a retaining wall; and - the total wall height at that part of the side or rear boundary is greater than 2.0m total height. Note: Where a retaining wall is less than or equal to 2.0m on any part of the side or rear boundary of a lot, standard setback provisions apply for that part of the side or rear boundary of a lot.		To Wall (Ground Floor)	2.5m	2.5m	2.5m	2.5m	2.5m	2.5m	2.5m
		To Wall (First Floor)	2.5m	2.5m	2.5m	2.5m	2.5m	2.5m	2.5m
For all other side / rear boundaries	Rear Setback	To Wall (Ground Floor)	1.0m	1.0m	1.5m	1.5m	1.5m	1.5m	1.5m
		To Wall (First Floor)	1.0m	1.0m	2.0m	2.0m	2.0m	2.0m	2.0m
	Side Setback – Built to Boundary	To Wall (Ground Floor)	0 - 0.3m	0 – 0.3m	0 – 0.3m	0 – 0.3m	0 – 0.3m	0 – 0.3m	0 – 0.3m
		To Wall (First Floor)	0.9m	0.9m	0.9m	0.9m	0.9m	0.9m	0.9m
	Side Setback – Non-Built to Boundary	To Wall (Ground Floor)	0.9m	0.9m	0.9m	0.9m	0.9m	0.9m	0.9m
		To Wall (First Floor)	0.9m	0.9m	0.9m	0.9m	0.9m	0.9m	0.9m
Site Cover			75%	65%	65%	60%	60%	60%	60%
Note: Additional Setbacks may be required to ensure the building envelope does not encroach past the Bushfire Reach of BAL29									

TYPICAL LOT DIAGRAM



HOMESTEAD DRIVE, MONARCH GLEN ■ 03/04/2025 ■ 11731 P 27 Rev I - POD 01

ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.01



LEGEND

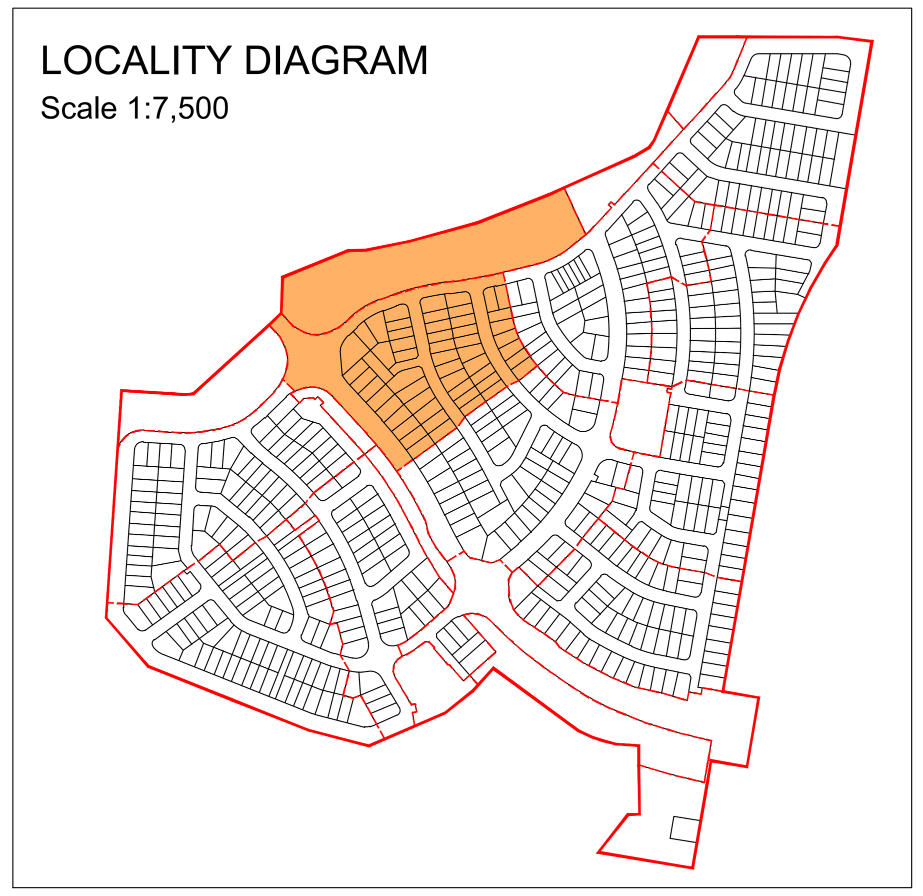
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
- Indicative Garage Location
- Indicative Driveway Location
- Lots which require increased setbacks
- Buildings which require acoustic design to upper floors only
- Buildings which require acoustic design to ground and upper floors
- Extent of bushfire Radiant Heat Flux 12.5kW/m2
- Extent of bushfire Radiant Heat Flux 19kW/m2
- Extent of bushfire Radiant Heat Flux 29kW/m2
- Extent of bushfire Radiant Heat Flux 40kW/m2

RESIDENTIAL ALLOTMENTS

- Terrace (7.5m - 9m typical width)
- Villa (11.2m typical width)
- Premium Villa (12.5m typical width)
- Courtyard (14m typical width)
- Premium Courtyard (16m typical width)
- Traditional (18m typical width)
- Premium Traditional (20m typical width)

THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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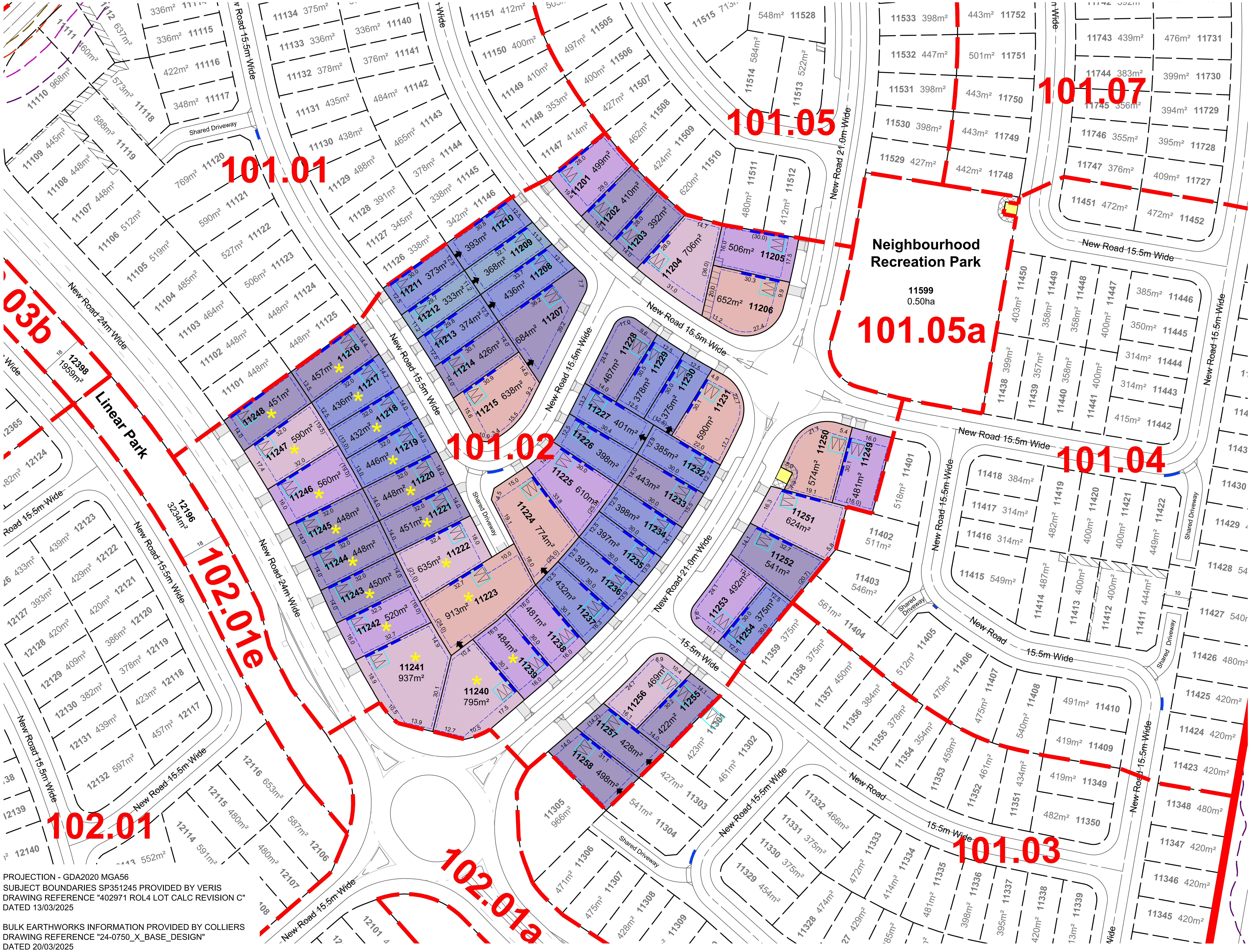
ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.02



LEGEND

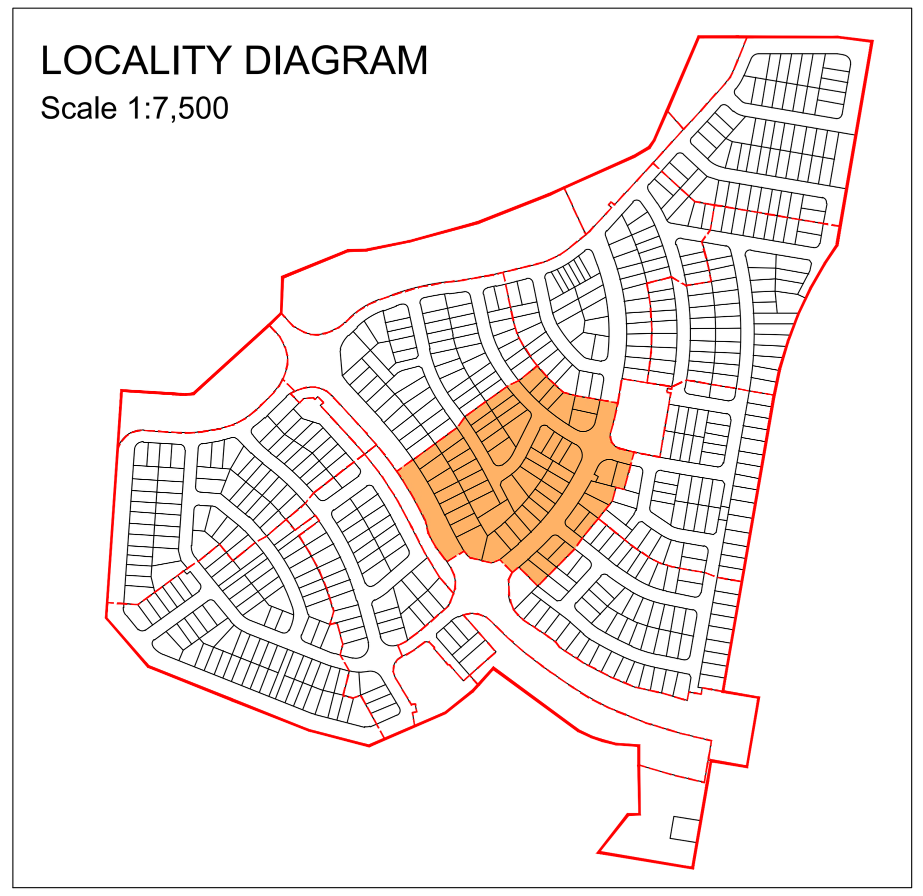
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
- Indicative Garage Location
- Indicative Driveway Location
- Lots which require increased setbacks
- Buildings which require acoustic design to upper floors only
- Buildings which require acoustic design to ground and upper floors
- Extent of bushfire Radiant Heat Flux 12.5kW/m2
- Extent of bushfire Radiant Heat Flux 19kW/m2
- Extent of bushfire Radiant Heat Flux 29kW/m2
- Extent of bushfire Radiant Heat Flux 40kW/m2

RESIDENTIAL ALLOTMENTS

- Terrace (7.5m - 9m typical width)
- Villa (11.2m typical width)
- Premium Villa (12.5m typical width)
- Courtyard (14m typical width)
- Premium Courtyard (16m typical width)
- Traditional (18m typical width)
- Premium Traditional (20m typical width)

THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES
10 0 10 20 30 40 50 60 70 80 90

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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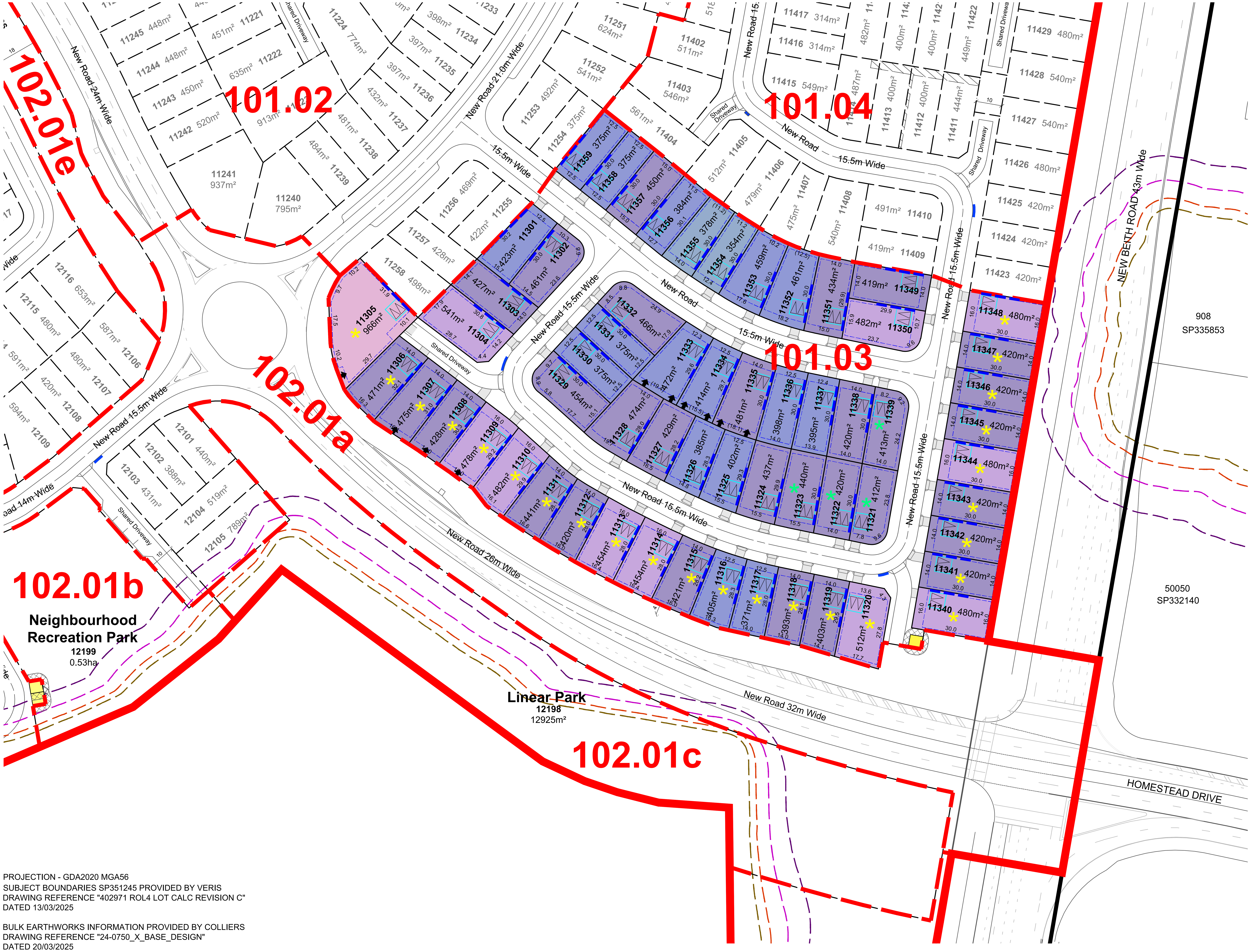
ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.03



LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
- Indicative Garage Location
- Indicative Driveway Location
- Lots which require increased setbacks
- Buildings which require acoustic design to upper floors only
- Buildings which require acoustic design to ground and upper floors
- Extent of bushfire Radiant Heat Flux 12.5kW/m2
- Extent of bushfire Radiant Heat Flux 19kW/m2
- Extent of bushfire Radiant Heat Flux 29kW/m2
- Extent of bushfire Radiant Heat Flux 40kW/m2

RESIDENTIAL ALLOTMENTS

- Terrace (7.5m - 9m typical width)
- Villa (11.2m typical width)
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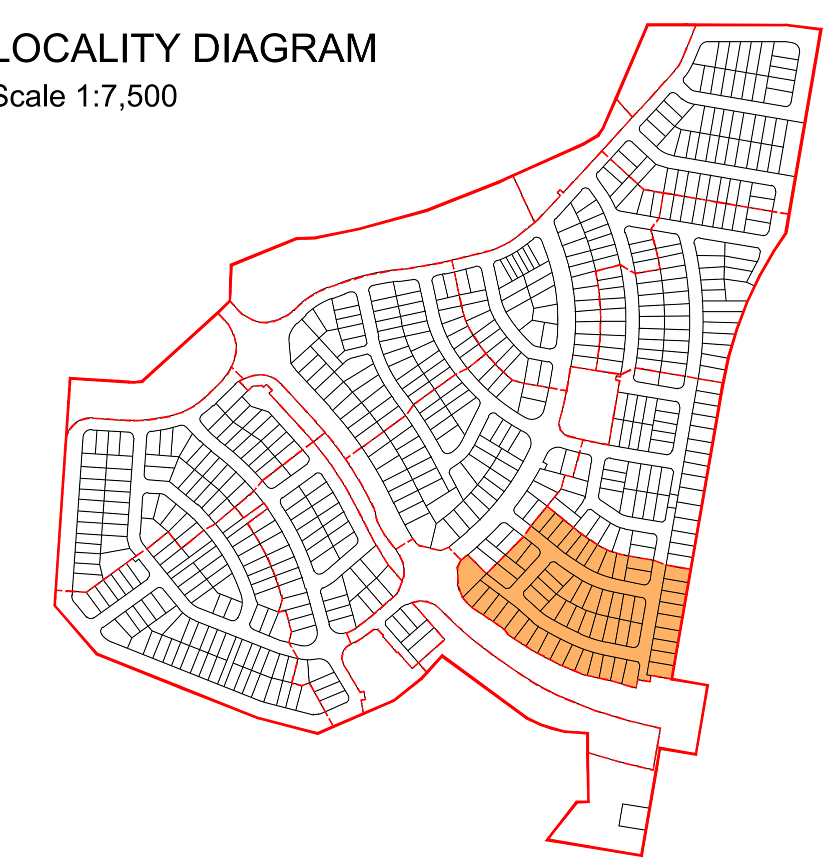
- Courtyard (14m typical width)
- Premium Courtyard (16m typical width)
- Traditional (18m typical width)
- Premium Traditional (20m typical width)

THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

10 0 10 20 30 40 50 60 70 80 90

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
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DATED 20/03/2025

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ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.04

LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
- Indicative Garage Location
- Indicative Driveway Location
- Lots which require increased setbacks
- Buildings which require acoustic design to upper floors only
- Buildings which require acoustic design to ground and upper floors
- Extent of bushfire Radiant Heat Flux 12.5kW/m2
- Extent of bushfire Radiant Heat Flux 19kW/m2
- Extent of bushfire Radiant Heat Flux 29kW/m2
- Extent of bushfire Radiant Heat Flux 40kW/m2

RESIDENTIAL ALLOTMENTS

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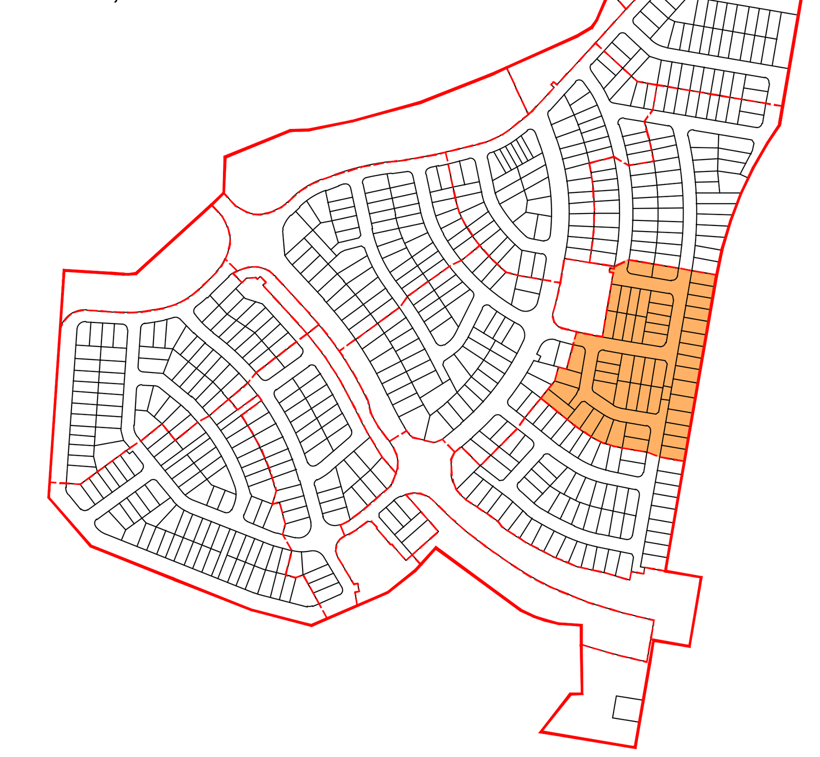
- Courtyard (14m typical width)
- Premium Courtyard (16m typical width)
- Traditional (18m typical width)
- Premium Traditional (20m typical width)

THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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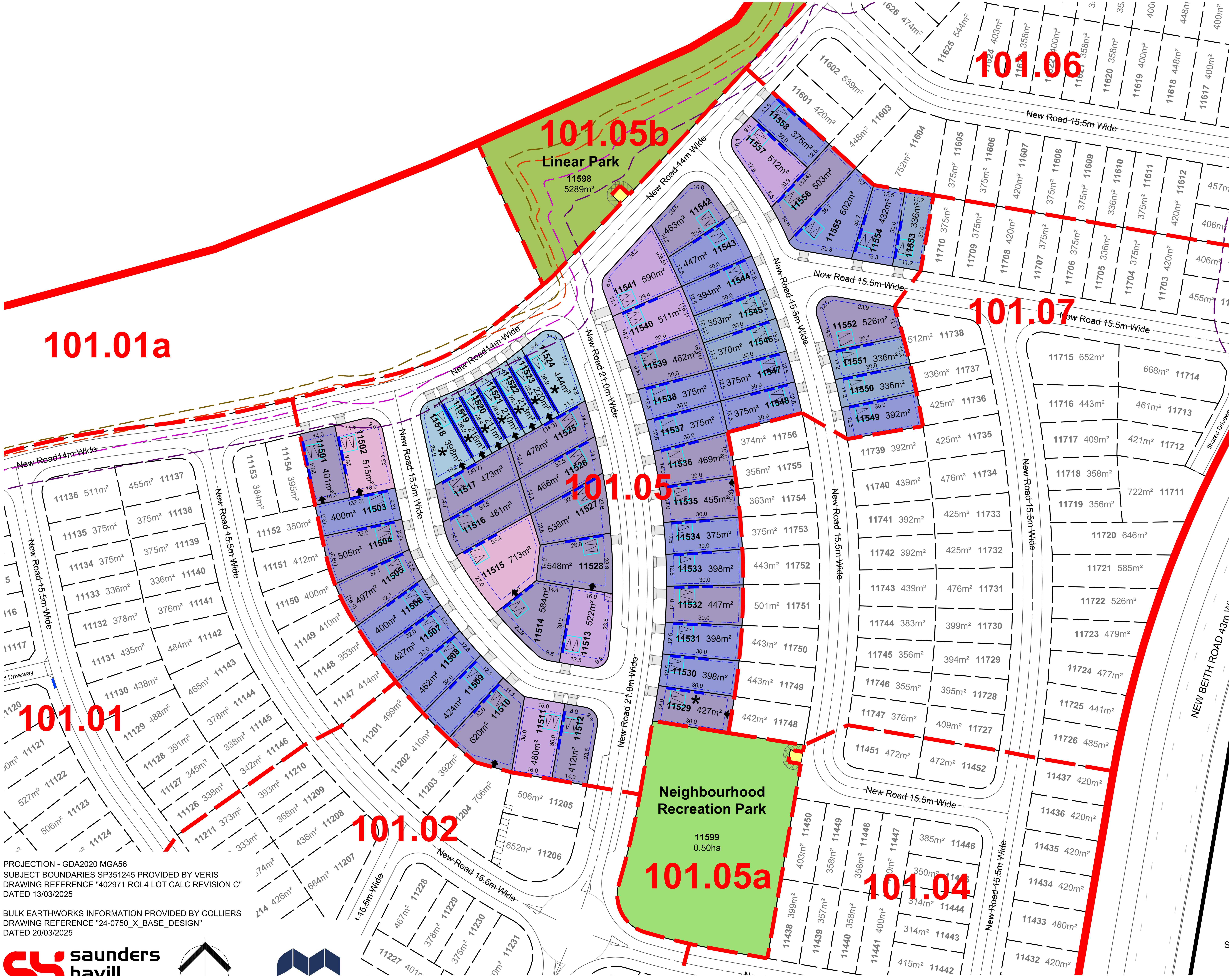
ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.05



LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Neighbourhood Recreation Park
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
- Indicative Garage Location
- Indicative Garage Location (potential additional carpark where meeting specified criteria)
- Indicative Driveway Location
- Lots which require increased setbacks
- Mandatory Two Storey Dwelling Lot
- Buildings which require acoustic design to upper floors only
- Buildings which require acoustic design to ground and upper floors
- Extent of bushfire Radiant Heat Flux 12.5kW/m2
- Extent of bushfire Radiant Heat Flux 19kW/m2
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- Extent of bushfire Radiant Heat Flux 40kW/m2

RESIDENTIAL ALLOTMENTS

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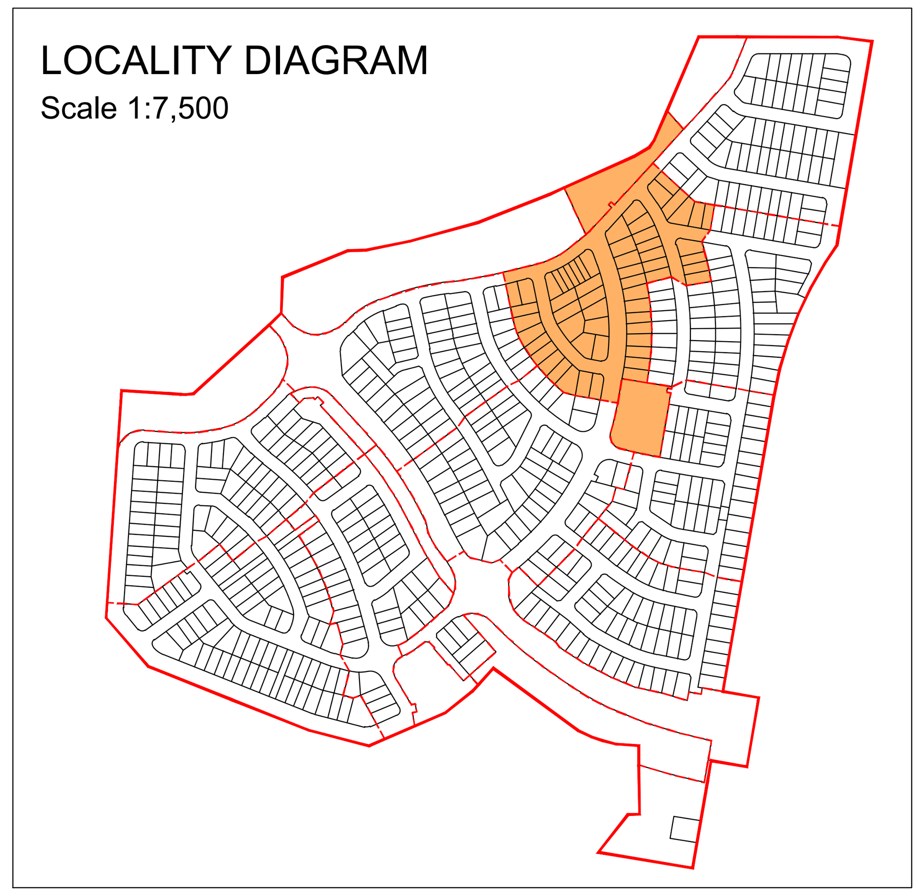
THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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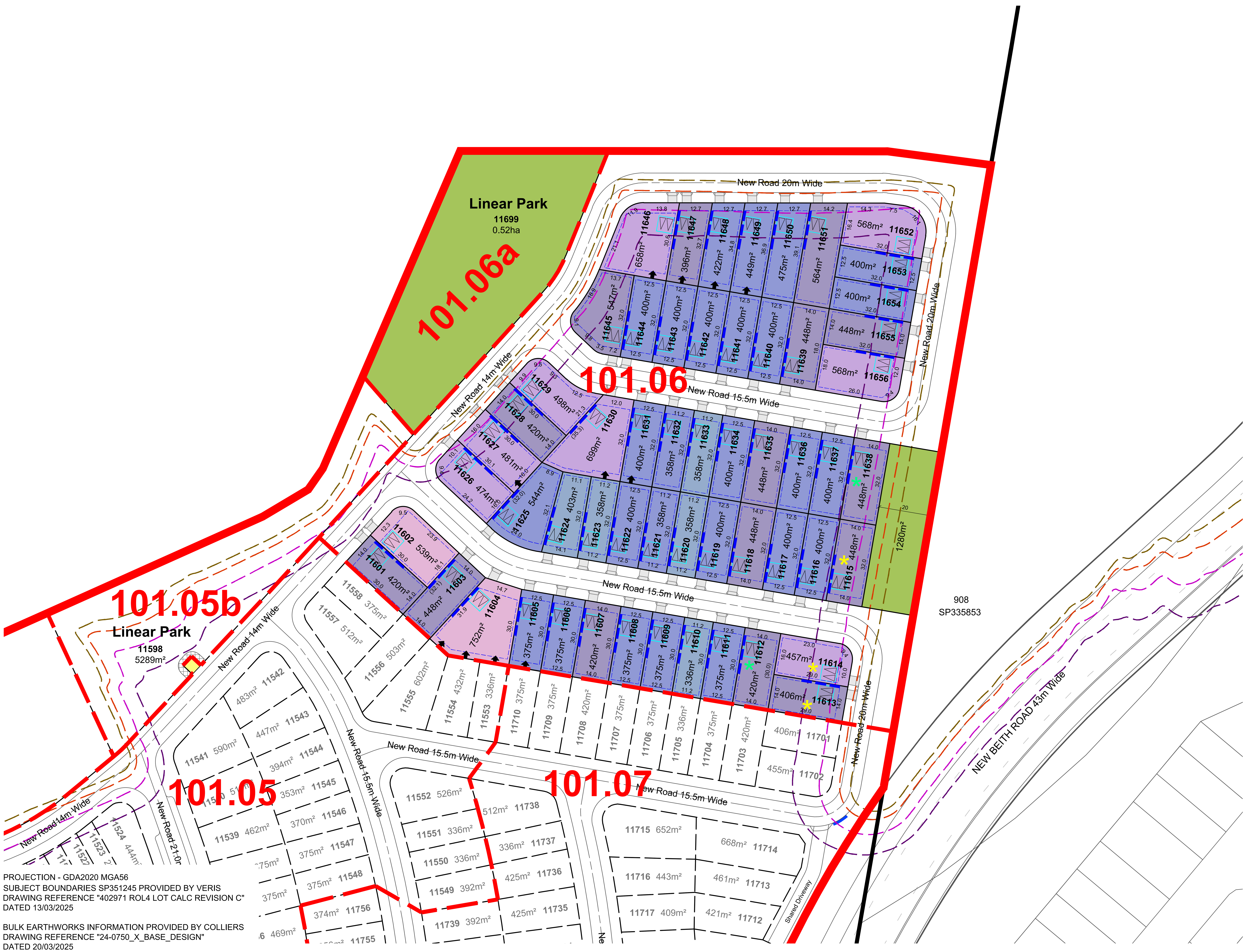
ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.06



LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Indicative Bin Pad location
- Indicative PMT / RMU Site
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- Extent of bushfire Radiant Heat Flux 19kW/m2
- Extent of bushfire Radiant Heat Flux 29kW/m2
- Extent of bushfire Radiant Heat Flux 40kW/m2

RESIDENTIAL ALLOTMENTS

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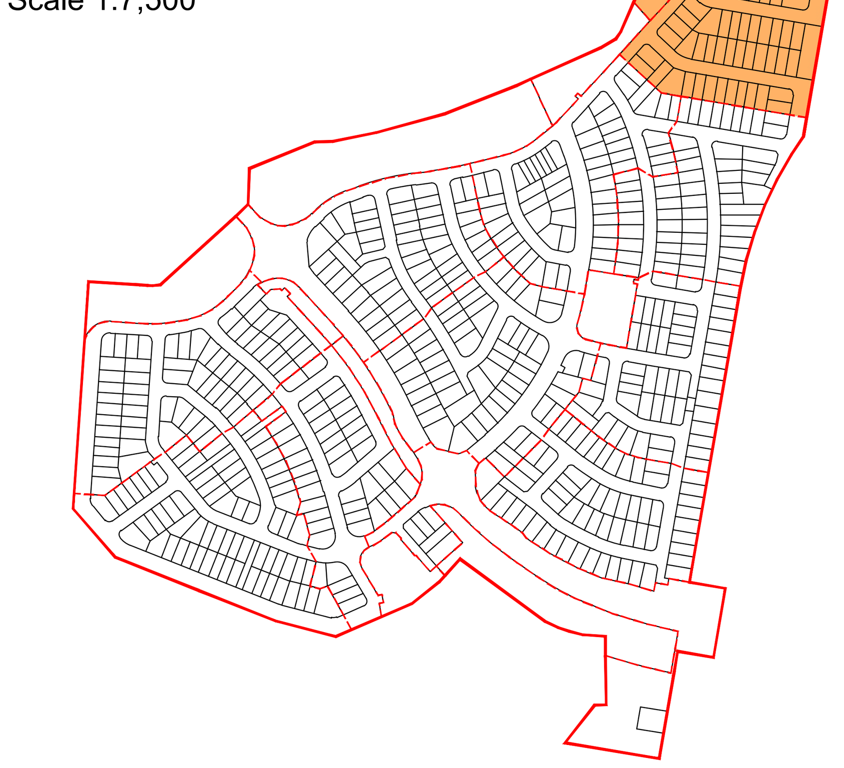
- Premium Traditional (20m typical width)

THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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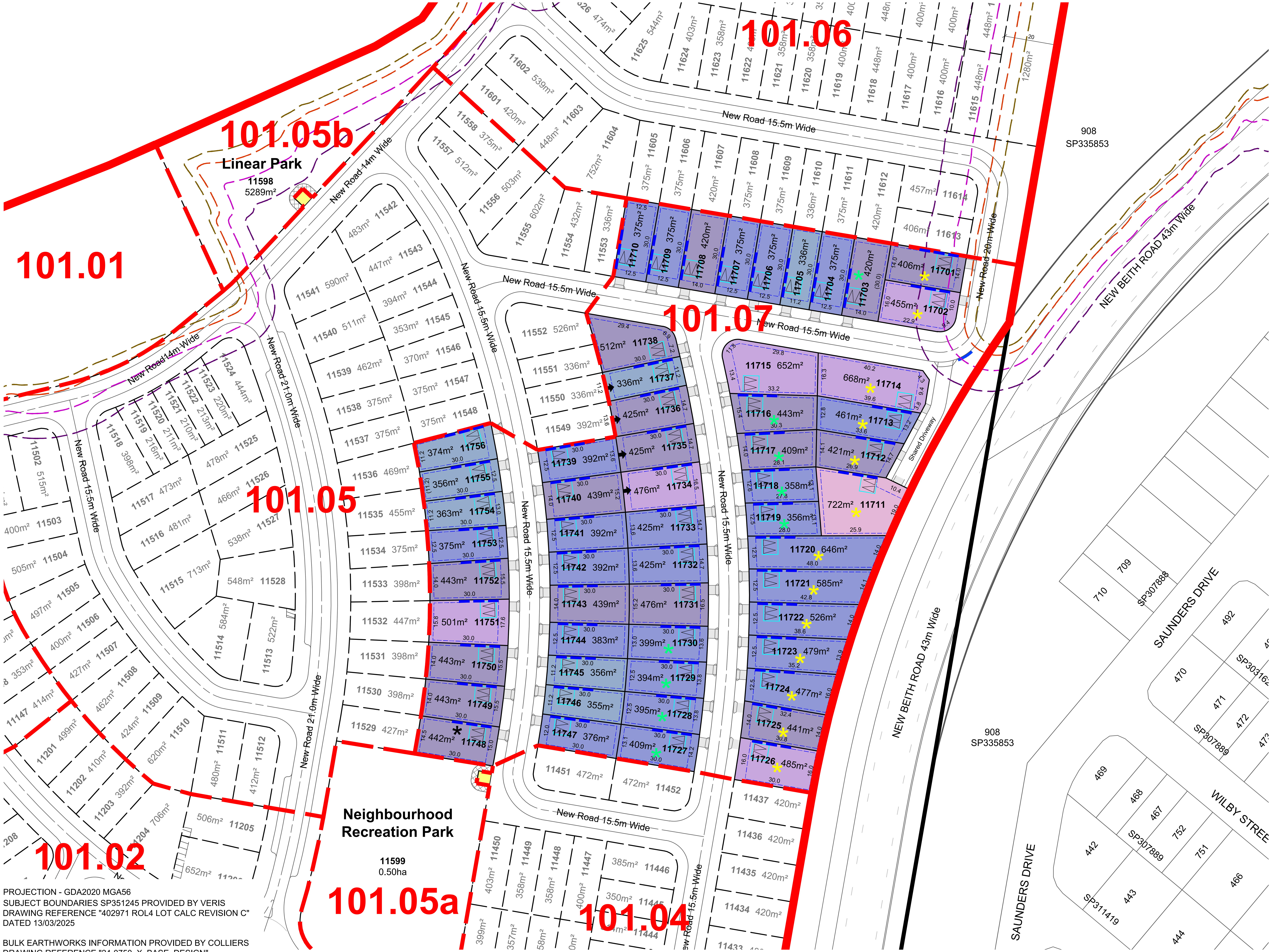
ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.07



LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
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RESIDENTIAL ALLOTMENTS

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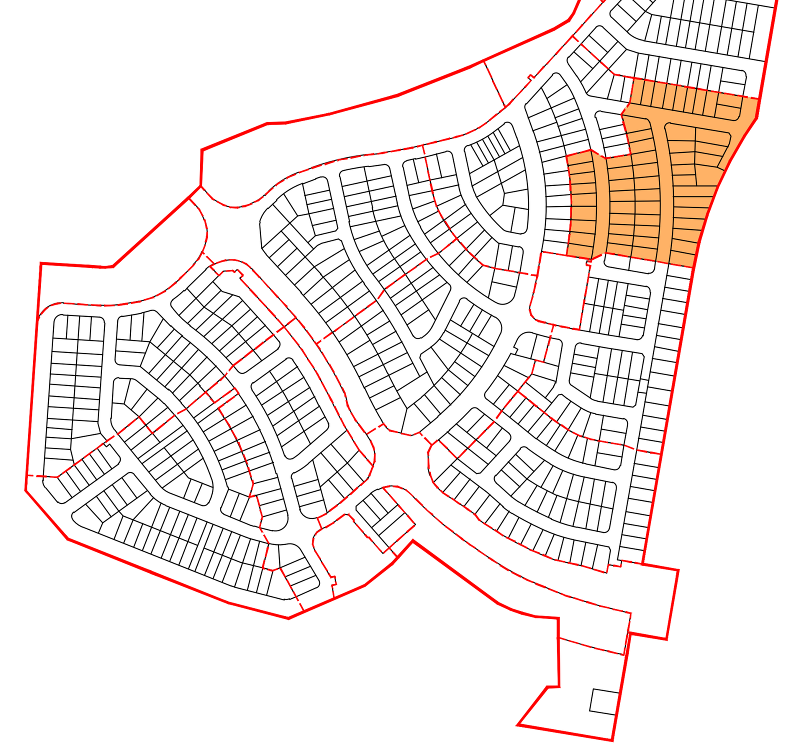
LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
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DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
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DATED 20/03/2025

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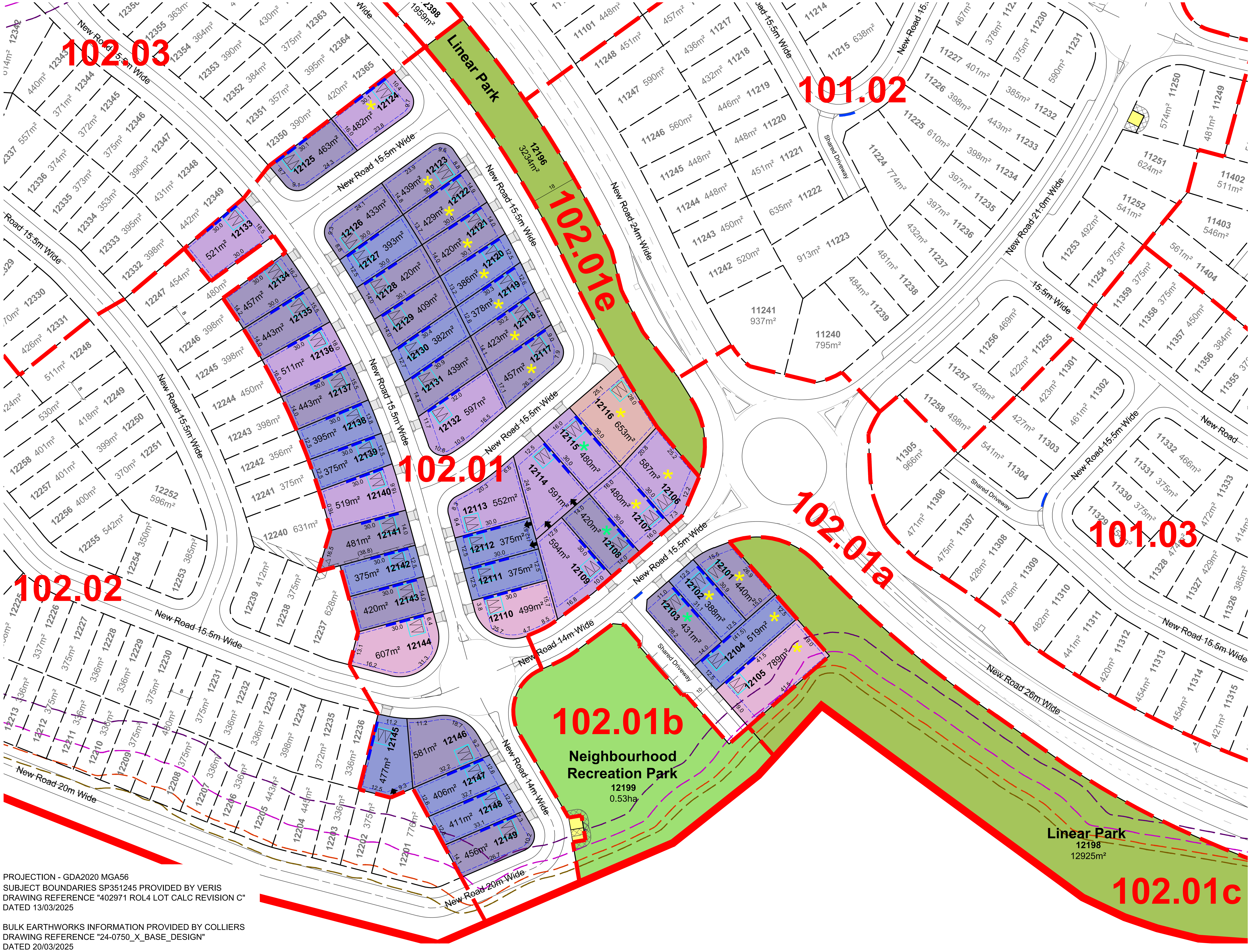
HOMESTEAD DRIVE, MONARCH GLEN ■ 03/04/2025 ■ 11731 P 27 Rev I - POD 101.07

ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 102.01



LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Neighbourhood Recreation Park
- Indicative Bin Pad location
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RESIDENTIAL ALLOTMENTS

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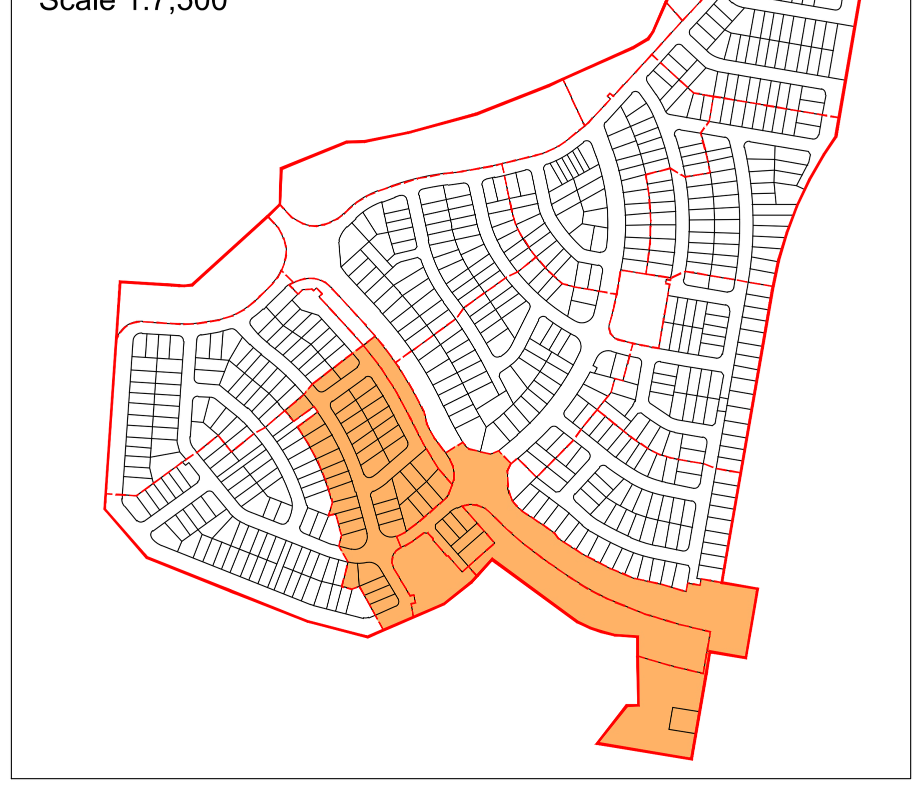
LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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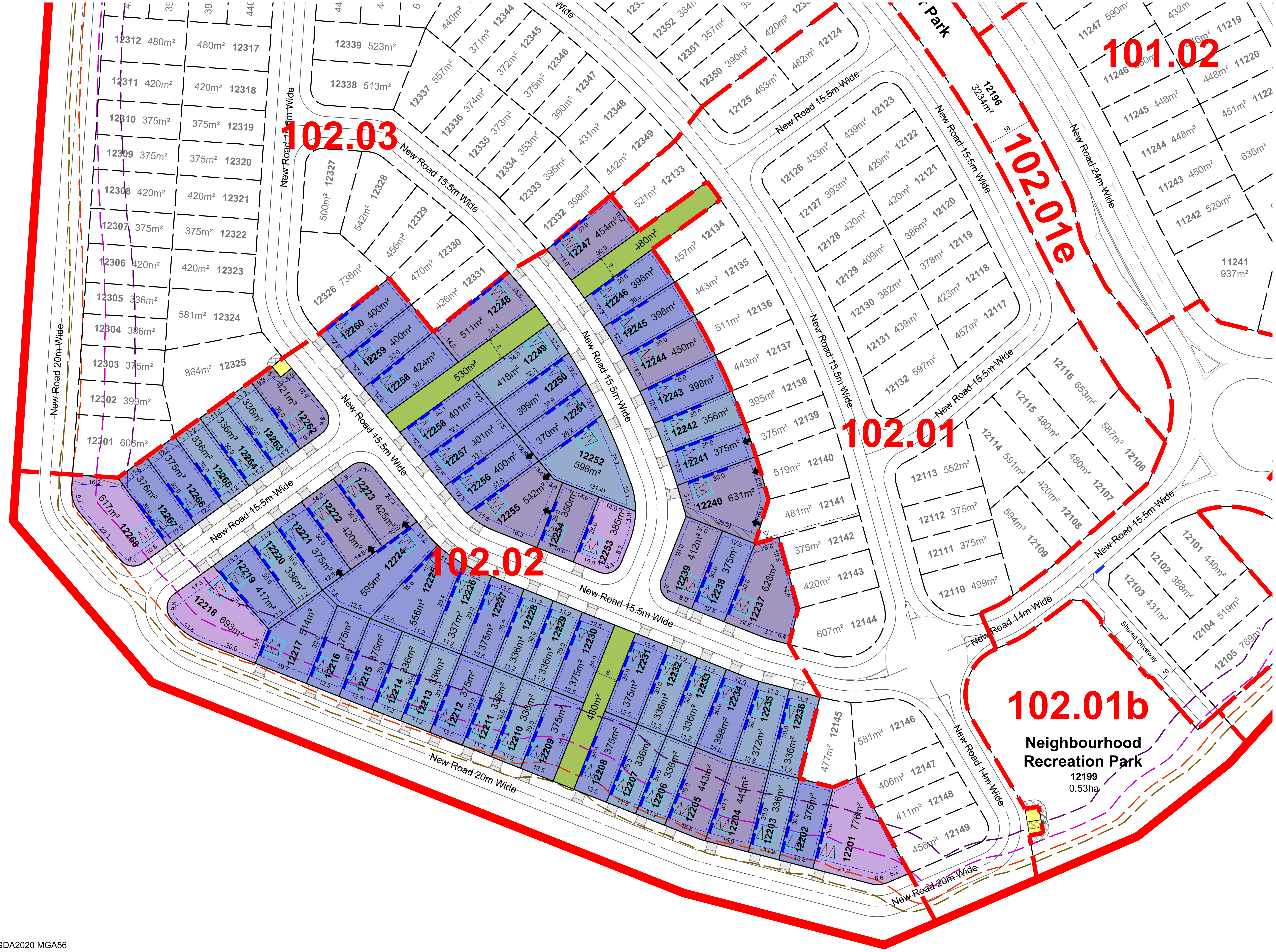
ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 102.02



LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
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- Extent of bushfire Radiant Heat Flux 29kW/m2
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RESIDENTIAL ALLOTMENTS

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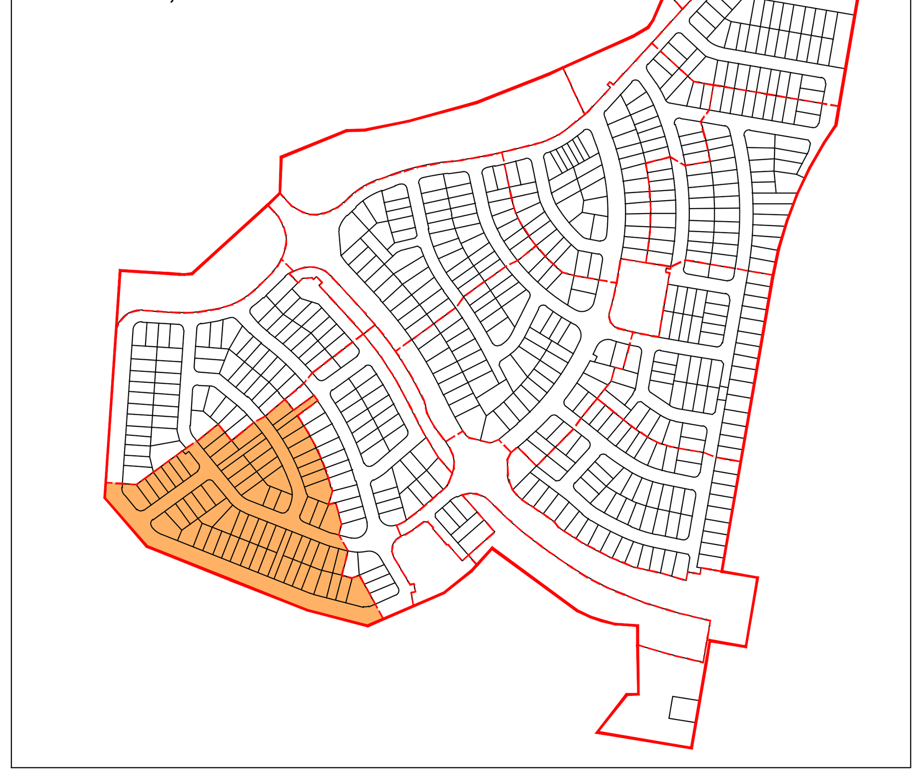
LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES
10 0 10 20 30 40 50 60 70 80 90

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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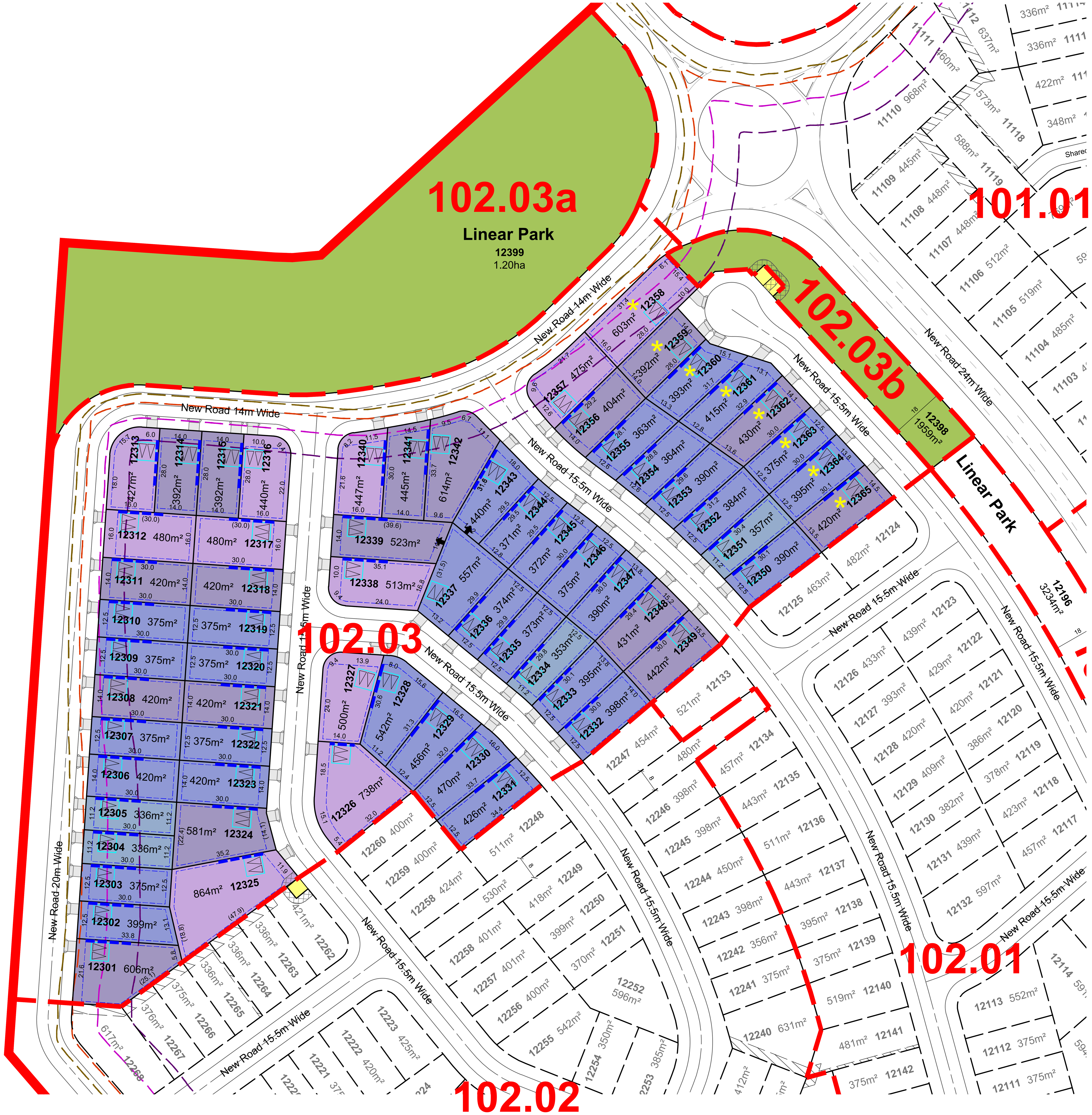
ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 102.03

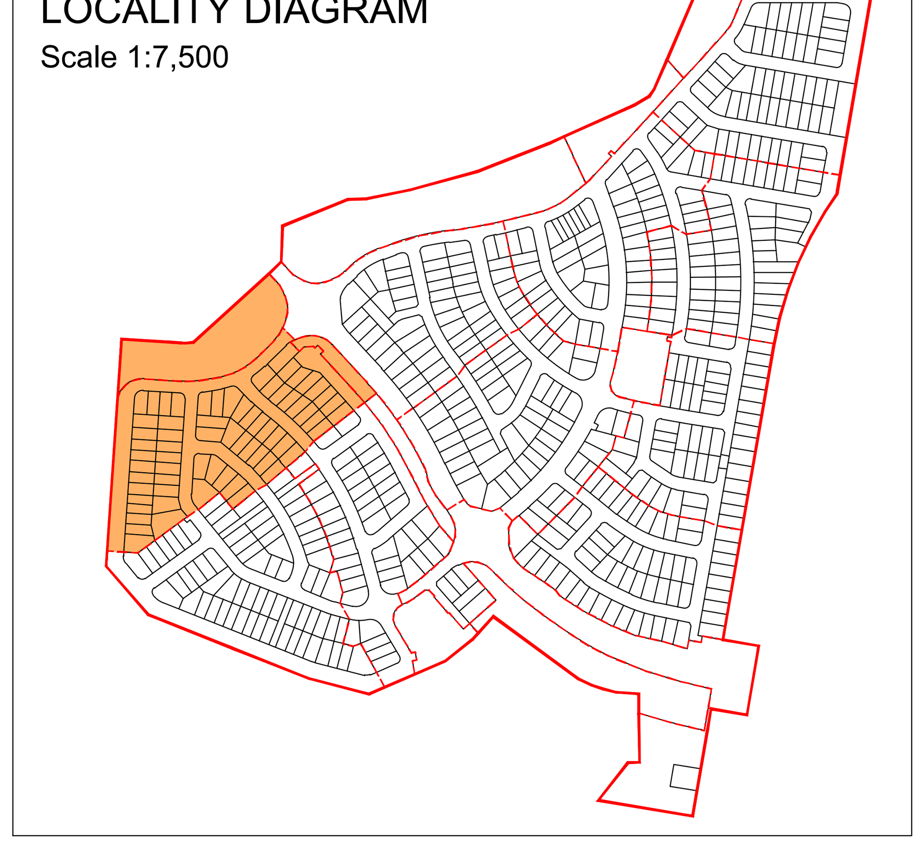


LEGEND
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
- Indicative Garage Location
- Indicative Driveway Location
- Lots which require increased setbacks
- Buildings which require acoustic design to upper floors only
- Buildings which require acoustic design to ground and upper floors
- Extent of bushfire Radiant Heat Flux 12.5kW/m2
- Extent of bushfire Radiant Heat Flux 19kW/m2
- Extent of bushfire Radiant Heat Flux 29kW/m2
- Extent of bushfire Radiant Heat Flux 40kW/m2

RESIDENTIAL ALLOTMENTS
- Terrace (7.5m - 9m typical width)
- Villa (11.2m typical width)
- Premium Villa (12.5m typical width)
- Courtyard (14m typical width)
- Premium Courtyard (16m typical width)
- Traditional (18m typical width)
- Premium Traditional (20m typical width)

THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

saunders havill group

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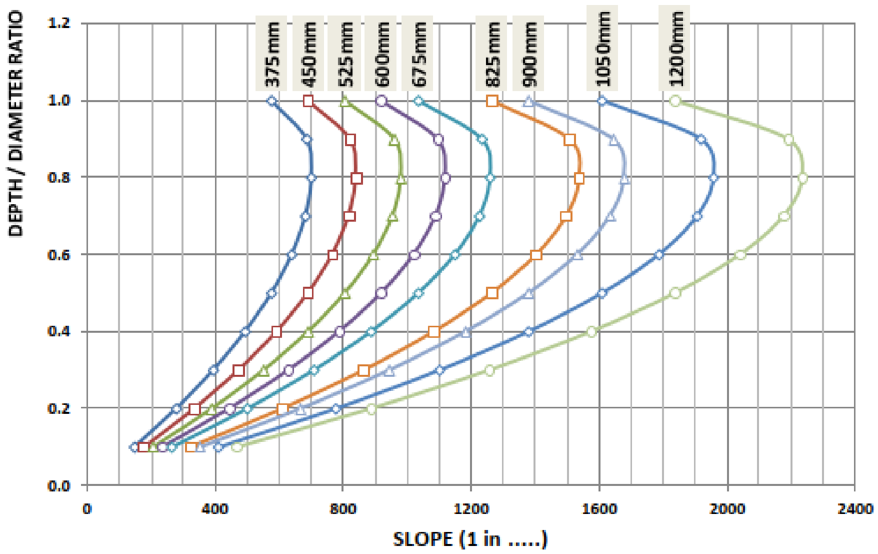
APPENDIX B – Planning Criteria

<table>
<tr><th colspan="3">WASTEWATER NETWORK DSS</th></tr>
<tr><th>Parameter</th><th colspan="2">Criteria</th></tr>
<tr><td colspan="3">Sewage load</td></tr>
<tr><td>ADWF</td><td colspan="2">165 L/EP/day</td></tr>
<tr><td>PDWF</td><td colspan="2">Use actual flow data; or
d x 165 L/EP/d or;
d x 0.00191 x EP L/s
Where:
d = 0.01(log A)⁴-0.19(log A)³+1.4(log A)²-4.66log A+7.57
d = dry weather peaking factor
A = gross plan area of development catchment, in hectares
Refer to WSAA Sewerage Code of Australia; Part 1 Planning and Design</td></tr>
<tr><td>Overflow Frequency Standard for assessment of existing networks and planning and design of augmentations for existing networks
This standard is only to be used by Council and their consultants</td><td colspan="2">Master Planning;
• Manholes: Maximum of 1 overflow per year
• Sewer designated outlet: Maximum of 2 overflows per year
Detailed Planning:
• Acceptable network overflow frequency standard to be determined using a risk or effects based approach. The standard is to be determined in consultation with Council.</td></tr>
<tr><td rowspan="4">PWWF
For planning and design of wastewater networks servicing greenfield development
This standard is to be used by developers, Council and their consultants</td><td>Residential</td><td>1000 L/EP/d (6.1xADWF)</td></tr>
<tr><td>Non-residential</td><td>840 L/EP/d (5xADWF)</td></tr>
<tr><td>High density residential (minimum 3 storey development)</td><td>PDWF+0.2 L/s/Ha</td></tr>
<tr><td>Common Effluent Drainage</td><td>660 L/EP/d (4xADWF)</td></tr>
<tr><td colspan="3">Gravity sewer design</td></tr>
<tr><td>Flow equation</td><td colspan="2">Colebrook White to be used for all applications – design and modelling</td></tr>
<tr><td>Pipe roughness general</td><td colspan="2">Colebrook White k = 1.5mm</td></tr>
<tr><td>Maximum velocity @ PWWF</td><td colspan="2">3 m/s</td></tr>
<tr><td>Depth of flow @ PWWF - Existing</td><td colspan="2">Up to 1m below MH surface level and no spillage through overflow structures</td></tr>
<tr><td>Depth of flow @ PWWF - Proposed/ new sewers</td><td colspan="2">75% of pipe depth</td></tr>
<tr><td>Depth of flow @ PDWF – Existing and new sewers</td><td colspan="2">Maximum 60% of pipe depth</td></tr>
<tr><td>Minimum shear stress</td><td colspan="2">Minimum grades are to be based on achieving self-cleansing shear stress of 1.6 Pa at 75% of PDWF.
Self-cleansing shear stress should be met within 5 years of constructing a pipeline in a greenfield area. The designer must consider the operational implications of not meeting self-cleansing shear over any timeframe.</td></tr>
</table>

<table>
<tr><td>Slime Stripping shear stress</td><td colspan="2">It is desirable where gradients permit to achieve slime stripping. A wall shear of 3.35Pa is required to achieve slime stripping.
Slime stripping shear should be achieved at PWWF. Where gravity mains are constructed in greenfield areas, the operational implications of not meeting slime stripping shear in the early years of growth are to be considered.</td></tr>
<tr><td rowspan="5">Minimum grades for self cleansing</td><td>Diameter (mm)</td><td>Grades (mm, 1 in X)</td></tr>
<tr><td>150</td><td>180 (80 in last section between last manholes or to an end)</td></tr>
<tr><td>225</td><td>300</td></tr>
<tr><td>300</td><td>400</td></tr>
<tr><td>375 - 1200</td><td>Minimum Grades are to be based on achieving Self Cleansing Shear Stress of 1.6 Pa at 75% PDWF, refer formula and figure below.

$$S_{min} = \frac{\tau}{\rho . g . R_p}$$

Where:
S_{min} = Minimum Grade
τ = Self Cleansing Shear Stress = 1.6 Pa
τ = Slime Stripping Shear Stress = 3.85 Pa
ρ = Density of Water = 1000 kg/m^3
g = Gravitational constant = 9.8 m^2/s
R_p = Hydraulic Radius Partial Full Pipe (m) = Wetted Perimeter / Cross sectional flow area



Note: Depth/Diameter ratio is based on flow conditions at PDWF</td></tr>
</table>

Gravity sewer design	
Flow criticality	If the gradient of a pipeline creates super critical flow conditions consideration must be given to appropriate manhole design to ensure flow disturbances do not occur. Flow criticality is determined by the Froude number: Fr<1.0 sub critical Fr= 1.0 critical Fr>1.0 super critical Where $Fr = \frac{v}{\sqrt{g\,D}}$ v=velocity m/s g=gravity m^2/s D=hydraulic depth (m)
Sewerage pump stations	
Wet well operating requirements	V (kL) = 0.9 x pump rate (L/s) N Where N is the acceptable number of starts per hour Pump Rate (L/s) = capacity of the largest duty pump N = 12 for motors <= 15 kW N = 8 for motors 15kW - 200 kW N = 5 for motors > 200 kW Control levels shall be based on Table 5.1 of WSA04-2005. The minimum depth between duty start and duty off is 100mm and ideally should be 300mm or greater.
Emergency storage	Emergency storage volume requirement to be based on containment of 2 hours of PDWF. Where actual measured flow data is available, then volume should be based on containing 2 hrs measured PDWF provided it takes into account any future growth. Except where otherwise specified to meet the requirements of the overflow risk assessment If there is an overflow pipe - storage in the system is measured between the high level alarm and overflow pipe invert level. If there is no overflow pipe - storage is measured between the high level alarm and 300mm below the lowest upstream manhole or top of wet well.
Pump capacity Guidance Note: As pump stations (PS) are typically categorised as trunk infrastructure this standard shall also apply to pump stations in RIGS networks.	If PWWF <20L/s, then 2 pumps (duty/standby arrangement) shall be provided, with each pump being capable of delivering PWWF. If PWWF >20L/s and <200L/s, then 2 pumps (duty/duty assist arrangement) shall be provided, with each pump being sized such that the two pumps running in parallel are capable of delivering PWWF. The minimum single pump capacity shall be not less than the calculated PDWF, where PDWF is a minimum of 2.5xADWF. If calculated PDWF has a peaking factor <2.5xADWF then 2.5 shall be used. All pump stations with a capacity greater than 200 L/s are to be designed on a case by case basis in consultation with Logan City Council. Pump stations that discharge directly to a WWTP are to be designed to minimise flow variability in wet and dry weather conditions.
NPSH	***Refer Clause 6.4 of WSA04-2005***

Rising mains	
Flow equation	Colebrook White to be used for all applications
Friction mains	For preliminary design a Colebrook White Roughness (k) of 0.6 mm is to be used. For detailed design, roughness shall be based on velocity and pipe roughness at end of pump design life. However, pumps should be able to operate (not necessarily meet design flow) for Colebrook White roughness's between manufacturers specified roughness for new pipes and 0.6 mm
Minimum velocity	Minimum Velocity to be based on: • achieving an absolute minimum self cleansing shear stress of 1.6 Pa at single pump flow • achieving slime stripping shear stress of 3.85 Pa at the greater of PWWF or maximum pump station pumping capacity • If slime stripping shear cannot be met with single pump flow a regular flushing regime is required to prevent slime build up. The wall shear is to be calculated using the following equation: **$\tau = \rho.g .(D/4) \times (HL/L)$** Where: τ = Wall Shear Stress (minimum of 1.6 Pa required for self cleansing) HL =Frictional loss over main length of L based on Colebrook White (m) L =Length of main (m) ρ = Density of Water = 1000 kg/m^3 g =Gravitational constant = 9.8 m^2/s D =Internal Diameter of Pipe (m)
Maximum velocity	3.0 m/s proposed systems Manufacturer's specifications for new systems
Max detention time	Maximum time of detention in pressure main and SPS wet well is 6 hours [2 hours in wet well and 4 hours in rising main] (based on daily average flows) to minimise potential for odour / hydrogen sulphide generation. Where high retention times are likely to occur, odour / sulphide control measures will be required to the satisfaction of Logan City Council. ***(Refer WSA 07-2007-1.1 section 3.15)***
Reduced infiltration gravity sewers (RIGS) & NuSewers	
NuSewer	Are not permitted without Logan City Council approval
RIGS Design	Refer to ***SEQ WS&S D&C Code Section 6.7.2 Design Parameters***
Low pressure sewers / vacuum pumps	
Low pressure sewers / vacuum pumps	Are not preferred and will only be allowed subject to approval from Logan City Council.
Private pump stations and rising mains	
Private pump stations and rising mains	Private pump stations and rising mains are permitted for single users only and no connection or sharing will be permitted without approval from Logan City Council.
Common effluent drainage	
Common effluent drainage (CED)	Not permitted without approval from Logan City Council.

APPENDIX C – Trunk Main Details

PROPOSED RESIDENTIAL DEVELOPMENT
HOMESTEAD DRIVE, MONARCH GLEN
TRUNK SEWER (PACKAGE 1)

DRAWING LIST

TRUNK SEWER MAIN

24-0750-0600	TRUNK SEWER COVER PLAN
24-0750-0601	TRUNK SEWER GENERAL NOTES
24-0750-0602	TRUNK SEWER MAIN MH CONSTRUCTION NOTES SHEET 1 OF 2
24-0750-0603	TRUNK SEWER MAIN MH CONSTRUCTION NOTES SHEET 2 OF 2
24-0750-0605	TRUNK SEWER KEY PLAN
24-0750-0610	TRUNK SEWER MAIN LAYOUT PLAN SHEET 1 OF 2
24-0750-0611	TRUNK SEWER MAIN LAYOUT PLAN SHEET 2 OF 2
24-0750-0612	TRUNK SEWER LONGITUDINAL SECTIONS
24-0750-0613	TRUNK SEWER MICROTUNNELING DETAIL

REFERENCE DRAWINGS

LW-SEW-DWG-2000 (B)	COVER SHEET AND DRAWING LIST
LW-SEW-DWG-2050 (A)	TYPICAL INTERNALLY LINED MAINTENANCE HOLE DETAILS SHEET 1 OF 3
LW-SEW-DWG-2051 (A)	TYPICAL INTERNALLY LINED MAINTENANCE HOLE DETAILS SHEET 2 OF 3
LW-SEW-DWG-2052 (A)	TYPICAL INTERNALLY LINED MAINTENANCE HOLE DETAILS SHEET 3 OF 3
LW-SEW-DWG-2053 (A)	TYPICAL TYPE 'D' MAINTENANCE HOLE MODIFIED P3 MAINTENANCE HOLE
LW-SEW-DWG-2100 (A)	TYPICAL MAINTENANCE STRUCTURE DETAILS ON EXISTING GRAVITY SEWER
LW-SEW-DWG-2101 (A)	MISCELLANEOUS CONNECTION DETAILS
LW-SEW-DWG-2102 (A)	PE TO PVC CONNECTION DETAILS
LW-SEW-DWG-2103 (A)	TYPICAL DIAMETER SEWER CONNECTION TO EXISTING
LW-SEW-DWG-2120 (A)	MAINTENANCE HOLE TYPICAL PVC INTERNAL DROP DETAILS

LOCALITY PLAN
SCALE 1:5000 (A1)
SCALE 1:10000 (A3)

PROJECT INFORMATION SUMMARY:
RP DESCRIPTION LOT 1 ON SP35125
DATUM LEVEL AND LOCATION P.S.M. ### RL ##.## AHD LOCATED ##
LOCAL AUTHORITY: LOGAN CITY COUNCIL
LOGAN WATER REFERENCE NUMBER: TBC

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV D (DATED 18.12.24).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.
- SURVEY - VERIS DTM 10/02/25

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.03.25	BR	BR	ORIGINAL ISSUE
B	02.04.25	BR	BR	CLIENT UPDATES

STATUS: NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 2.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: 1:2500 (A1) 1:5000 (A3) — 50 0 50 100

CLIENT: mirvac

ASSOCIATED CONSULTANT

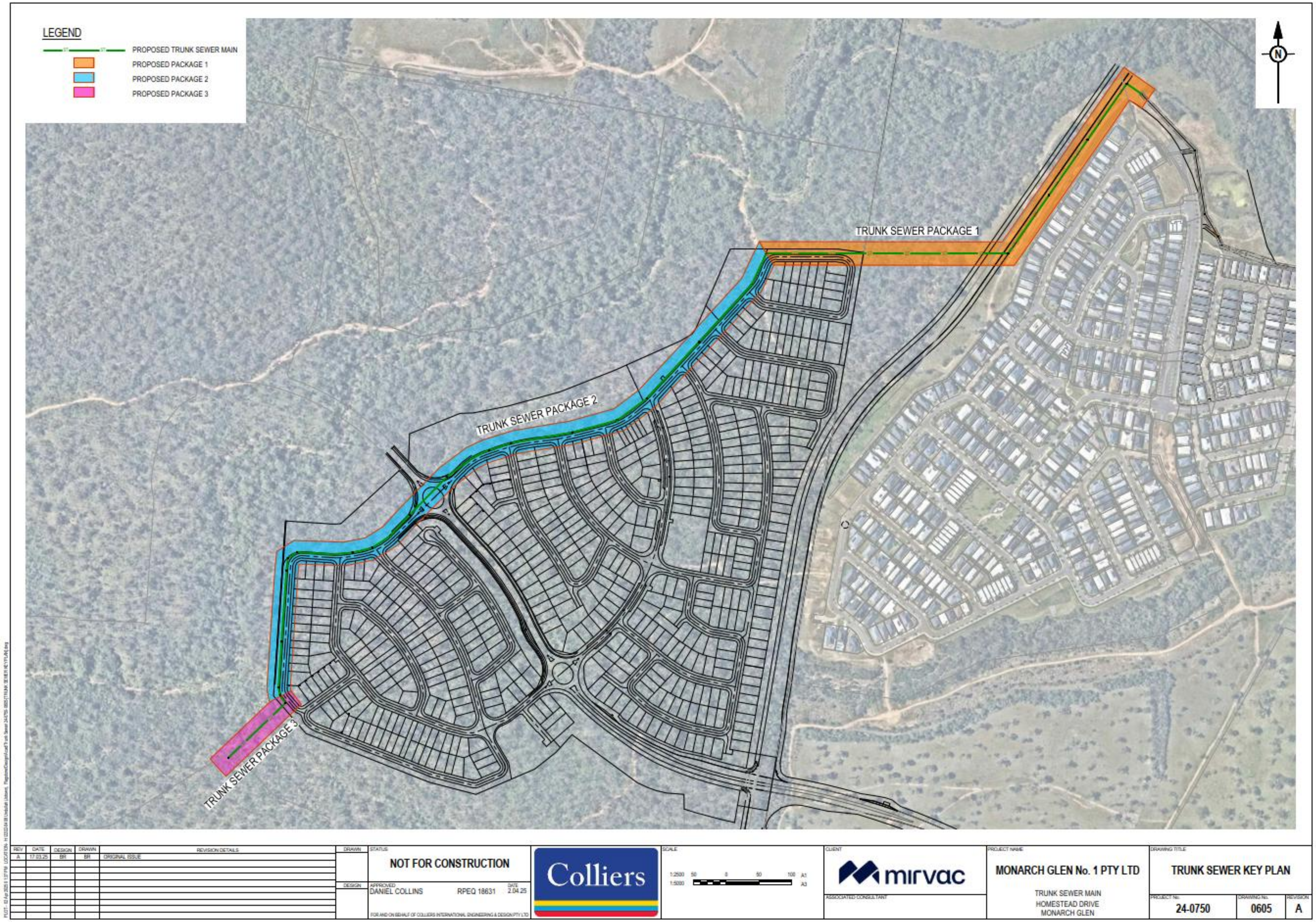
PROJECT NAME: MONARCH GLEN No. 1 PTY LTD
TRUNK SEWER MAIN
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE: TRUNK SEWER COVER PLAN

PROJECT No.	DRAWING No.	REVISION
24-0750	0600	B

: 5

Digital Water Solutions


LEGEND
PROPOSED TRUNK SEWER MAIN
PROPOSED PACKAGE 1
PROPOSED PACKAGE 2
PROPOSED PACKAGE 3
N
TRUNK SEWER PACKAGE 1
TRUNK SEWER PACKAGE 2
TRUNK SEWER PACKAGE 3
REV
DATE
DESIGN
DRAWN
REVISION DETAILS
A
17.03.25
BR
BR
ORIGINAL ISSUE
DRAWN
DESIGN
STATUS
NOT FOR CONSTRUCTION
APPROVED
DANIEL COLLINS
RPEQ 18631
DATE
2.04.25
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD
Colliers
SCALE
1:2500
1:5000
50
0
50
100
A1
A3
CLIENT
mirvac
ASSOCIATED CONSULTANT
PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
TRUNK SEWER MAIN
HOMESTEAD DRIVE
MONARCH GLEN
DRAWING TITLE
TRUNK SEWER KEY PLAN
PROJECT No.
24-0750
DRAWING No.
0605
REVISION
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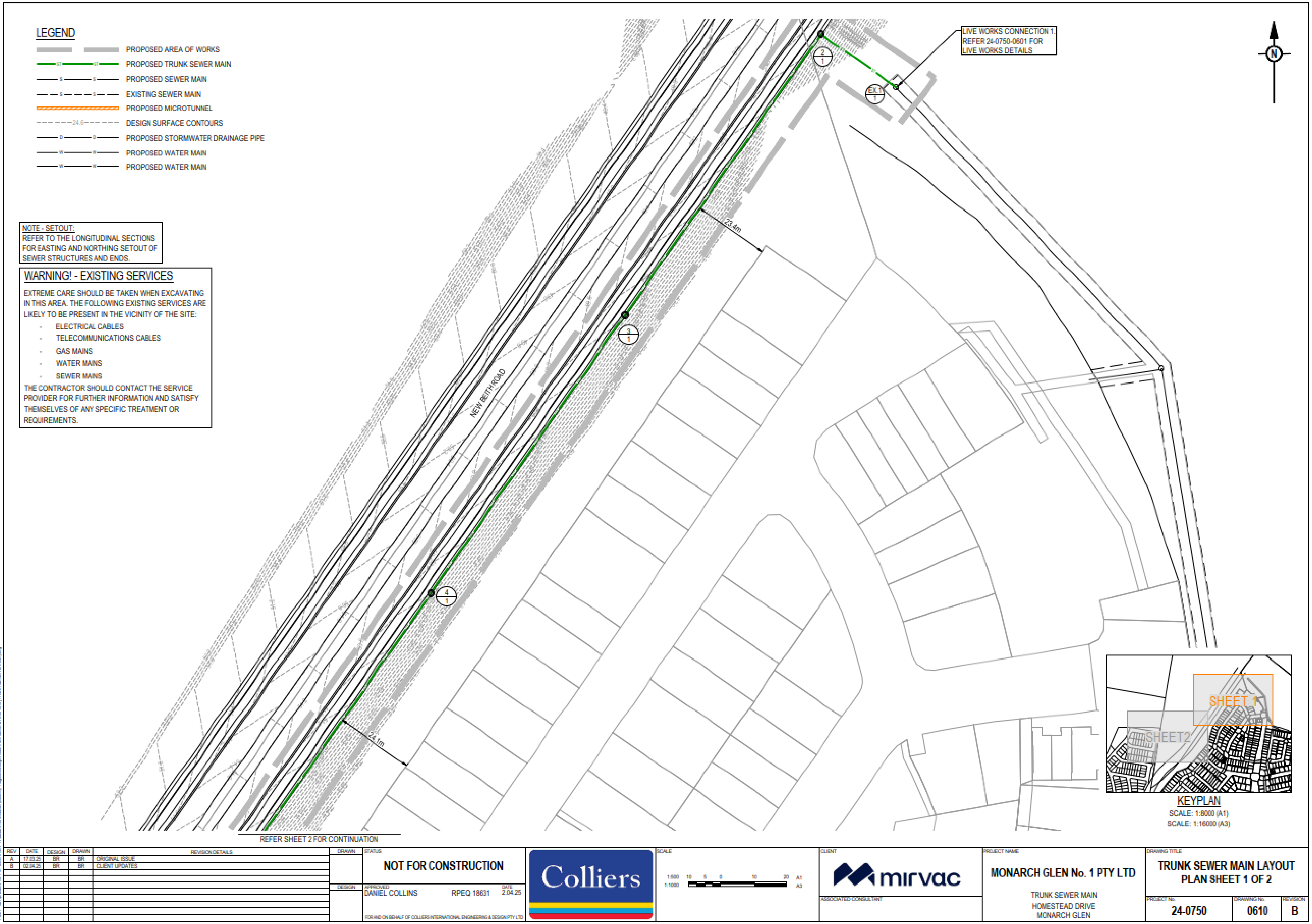
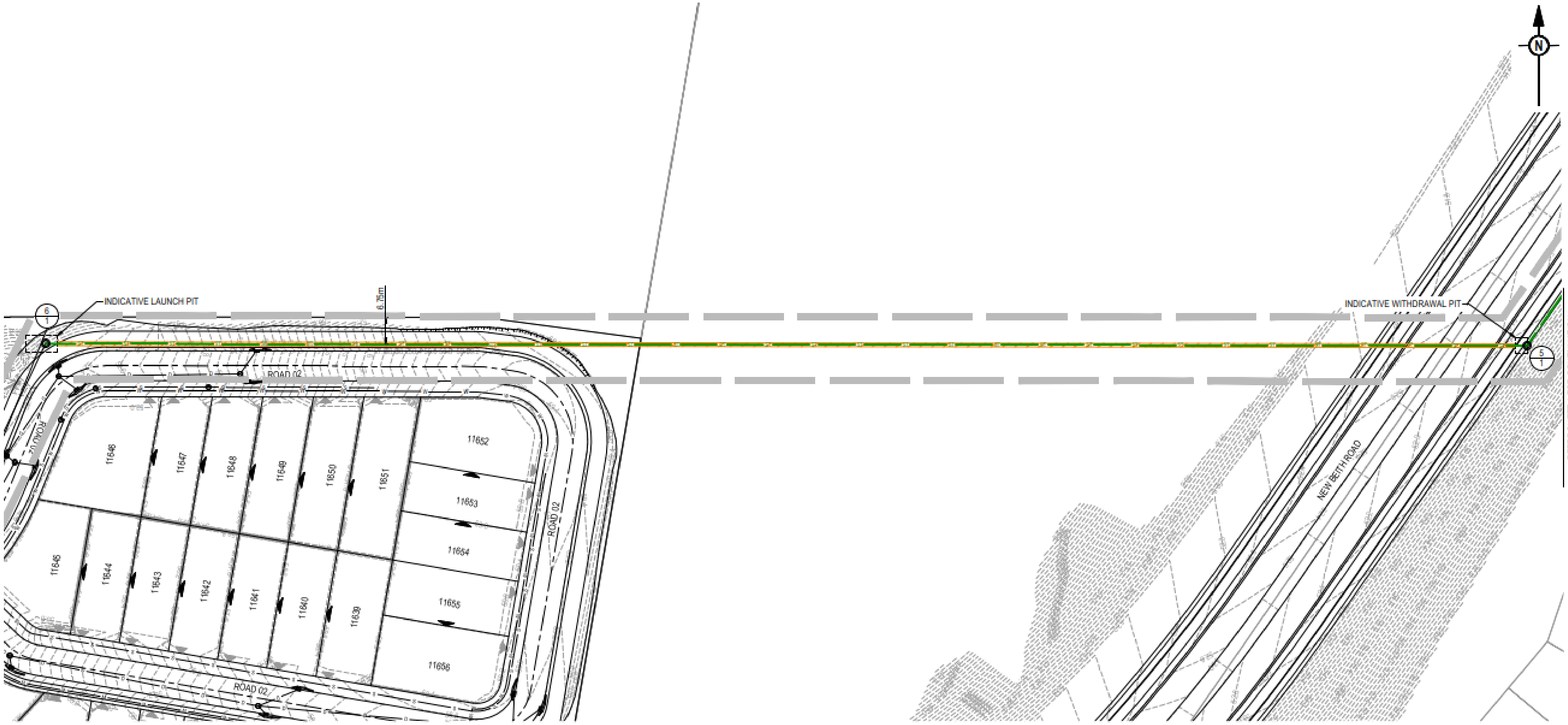

LEGEND
PROPOSED AREA OF WORKS
PROPOSED TRUNK SEWER MAIN
PROPOSED SEWER MAIN
EXISTING SEWER MAIN
PROPOSED MICROTUNNEL
DESIGN SURFACE CONTOURS
PROPOSED STORMWATER DRAINAGE PIPE
PROPOSED WATER MAIN
PROPOSED WATER MAIN
NOTE - SETOUT:
REFER TO THE LONGITUDINAL SECTIONS FOR EASTING AND NORTHING SETOUT OF SEWER STRUCTURES AND ENDS.
WARNING! - EXISTING SERVICES
EXTREME CARE SHOULD BE TAKEN WHEN EXCAVATING IN THIS AREA. THE FOLLOWING EXISTING SERVICES ARE LIKELY TO BE PRESENT IN THE VICINITY OF THE SITE:
ELECTRICAL CABLES
TELECOMMUNICATIONS CABLES
GAS MAINS
WATER MAINS
SEWER MAINS
THE CONTRACTOR SHOULD CONTACT THE SERVICE PROVIDER FOR FURTHER INFORMATION AND SATISFY THEMSELVES OF ANY SPECIFIC TREATMENT OR REQUIREMENTS.
LIVE WORKS CONNECTION 1. REFER 24-0750-0601 FOR LIVE WORKS DETAILS
N
NEW BEITH ROAD
23.4m
24.1m
EX 1
KEYPLAN
SHEET 1
SHEET2
SCALE: 1:8000 (A1)
SCALE: 1:16000 (A3)
REFER SHEET 2 FOR CONTINUATION
REV | DATE | DESIGN | DRAWN | REVISION DETAILS
A | 17.03.25 | BR | BR | ORIGINAL ISSUE
B | 02.04.25 | BR | BR | CLIENT UPDATES
DRAWN
DESIGN
STATUS
NOT FOR CONSTRUCTION
APPROVED
DANIEL COLLINS
RPEQ 18631
DATE
2.04.25
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD
Colliers
SCALE
1:500 10 5 0 10 20 A1
1:1000 A3
CLIENT
mirvac
ASSOCIATED CONSULTANT
PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
TRUNK SEWER MAIN
HOMESTEAD DRIVE
MONARCH GLEN
DRAWING TITLE
TRUNK SEWER MAIN LAYOUT PLAN SHEET 1 OF 2
PROJECT No.
24-0750
DRAWING No.
0610
REVISION
B

5



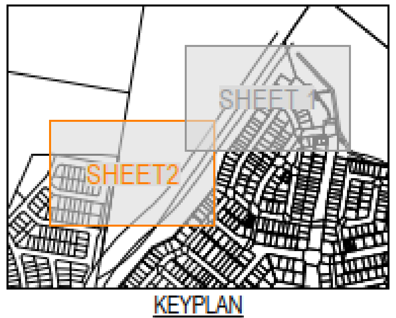
NOTE - SETOUT:
REFER TO THE LONGITUDINAL SECTIONS FOR EASTING AND NORTHING SETOUT OF SEWER STRUCTURES AND ENDS.

WARNING! - EXISTING SERVICES

EXTREME CARE SHOULD BE TAKEN WHEN EXCAVATING IN THIS AREA. THE FOLLOWING EXISTING SERVICES ARE LIKELY TO BE PRESENT IN THE VICINITY OF THE SITE:

- ELECTRICAL CABLES
- TELECOMMUNICATIONS CABLES
- GAS MAINS
- WATER MAINS
- SEWER MAINS

THE CONTRACTOR SHOULD CONTACT THE SERVICE PROVIDER FOR FURTHER INFORMATION AND SATISFY THEMSELVES OF ANY SPECIFIC TREATMENT OR REQUIREMENTS.



KEYPLAN
SCALE: 1:8000 (A1)
SCALE: 1:16000 (A3)

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.03.25	BR	BR	ORIGINAL ISSUE
B	02.04.25	BR	BR	CLIENT UPDATES

DRAWN
DESIGN

STATUS: NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS RPEQ 18631 DATE: 2.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: 1:500 A1, 1:1000 A3 (10 5 0 10 20)

CLIENT: mirvac

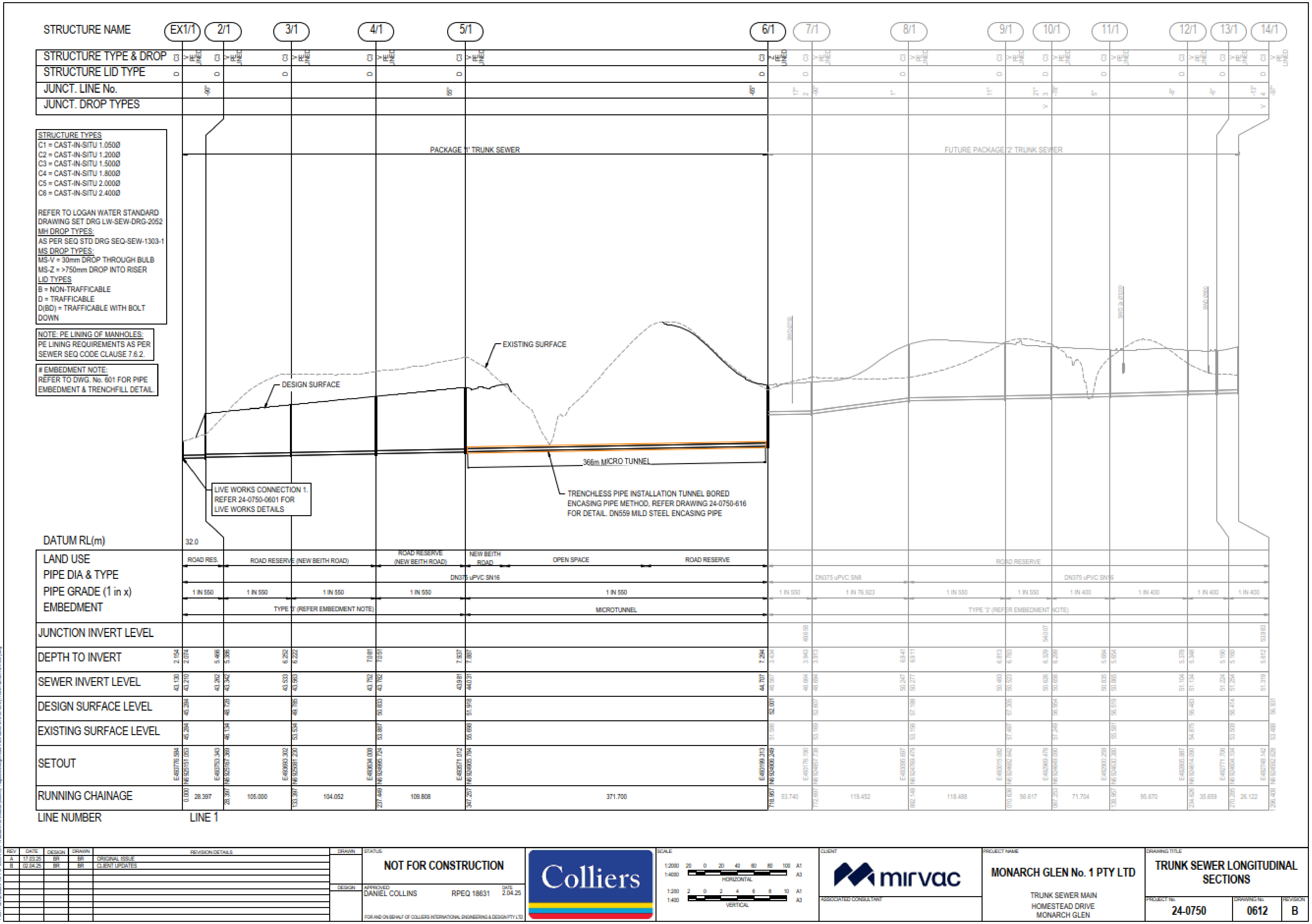
ASSOCIATED CONSULTANT

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD
TRUNK SEWER MAIN
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE: TRUNK SEWER MAIN LAYOUT PLAN SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
24-0750	0611	B

5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2/1
3/1
4/1
5/1
6/1
7/1
8/1
9/1
10/1
11/1
12/1
13/1
14/1
STRUCTURE TYPE & DROP
STRUCTURE LID TYPE
JUNCT. LINE No.
JUNCT. DROP TYPES
STRUCTURE TYPES
C1 = CAST-IN-SITU 1.050Ø
C2 = CAST-IN-SITU 1.200Ø
C3 = CAST-IN-SITU 1.500Ø
C4 = CAST-IN-SITU 1.800Ø
C5 = CAST-IN-SITU 2.000Ø
C6 = CAST-IN-SITU 2.400Ø
REFER TO LOGAN WATER STANDARD DRAWING SET DRG LW-SEW-DRG-2052
MH DROP TYPES:
AS PER SEQ STD DRG SEQ-SEW-1303-1
MS DROP TYPES:
MS-V = 30mm DROP THROUGH BULB
MS-Z = >750mm DROP INTO RISER
LID TYPES
B = NON-TRAFFICABLE
D = TRAFFICABLE
D(BD) = TRAFFICABLE WITH BOLT DOWN
NOTE: PE LINING OF MANHOLES:
PE LINING REQUIREMENTS AS PER SEWER SEQ CODE CLAUSE 7.6.2.
EMBEDMENT NOTE:
REFER TO DWG. No. 601 FOR PIPE EMBEDMENT & TRENCHFILL DETAIL.
PACKAGE '1' TRUNK SEWER
FUTURE PACKAGE '2' TRUNK SEWER
EXISTING SURFACE
DESIGN SURFACE
368m MICRO TUNNEL
LIVE WORKS CONNECTION 1. REFER 24-0750-0601 FOR LIVE WORKS DETAILS
TRENCHLESS PIPE INSTALLATION TUNNEL BORED ENCASING PIPE METHOD, REFER DRAWING 24-0750-616 FOR DETAIL. DN559 MILD STEEL ENCASING PIPE
DATUM RL(m)
32.0
LAND USE
ROAD RES.
ROAD RESERVE (NEW BEITH ROAD)
ROAD RESERVE (NEW BEITH ROAD)
NEW BEITH ROAD
OPEN SPACE
ROAD RESERVE
PIPE DIA & TYPE
DN375 uPVC SN16
DN375 uPVC SN8
PIPE GRADE (1 in x)
1 IN 550
1 IN 76.923
1 IN 400
EMBEDMENT
TYPE '3' (REFER EMBEDMENT NOTE)
MICROTUNNEL
JUNCTION INVERT LEVEL
DEPTH TO INVERT
SEWER INVERT LEVEL
DESIGN SURFACE LEVEL
EXISTING SURFACE LEVEL
SETOUT
RUNNING CHAINAGE
28.397
105.000
104.052
109.808
371.700
53.740
119.452
118.488
56.617
71.704
95.670
35.659
26.122
LINE NUMBER
LINE 1
REV
DATE
DESIGN
DRAWN
REVISION DETAILS
A
17.03.25
BR
BR
ORIGINAL ISSUE
B
02.04.25
BR
BR
CLIENT UPDATES
STATUS
NOT FOR CONSTRUCTION
APPROVED
DANIEL COLLINS
RPEQ 18631
2.04.25
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD
Colliers
SCALE
HORIZONTAL
VERTICAL
CLIENT
mirvac
ASSOCIATED CONSULTANT
PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
TRUNK SEWER MAIN
HOMESTEAD DRIVE
MONARCH GLEN
DRAWING TITLE
TRUNK SEWER LONGITUDINAL SECTIONS
PROJECT No.
24-0750
DRAWING No.
0612
REVISION
B

5

PROPOSED RESIDENTIAL DEVELOPMENT

HOMESTEAD DRIVE, MONARCH GLEN

TRUNK SEWER (PACKAGE 2)

TRUNK SEWER MAIN

24-0750-1600	TRUNK SEWER COVER PLAN
24-0750-1601	TRUNK SEWER GENERAL NOTES
24-0750-1602	TRUNK SEWER MAIN MH CONSTRUCTION NOTES SHEET 1 OF 2
24-0750-1603	TRUNK SEWER MAIN MH CONSTRUCTION NOTES SHEET 2 OF 2
24-0750-1605	TRUNK SEWER KEY PLAN
24-0750-1610	TRUNK SEWER MAIN LAYOUT PLAN SHEET 1 OF 4
24-0750-1611	TRUNK SEWER MAIN LAYOUT PLAN SHEET 2 OF 4
24-0750-1612	TRUNK SEWER MAIN LAYOUT PLAN SHEET 3 OF 4
24-0750-1613	TRUNK SEWER MAIN LAYOUT PLAN SHEET 4 OF 4
24-0750-1614	TRUNK SEWER LONGITUDINAL SECTIONS SHEET 1 OF 3
24-0750-1615	TRUNK SEWER LONGITUDINAL SECTIONS SHEET 2 OF 3
24-0750-1616	TRUNK SEWER LONGITUDINAL SECTIONS SHEET 3 OF 3

REFERENCE DRAWINGS

LW-SEW-DWG-2000 (B)	COVER SHEET AND DRAWING LIST
LW-SEW-DWG-2050 (A)	TYPICAL INTERNALLY LINED MAINTENANCE HOLE DETAILS SHEET 1 OF 3
LW-SEW-DWG-2051 (A)	TYPICAL INTERNALLY LINED MAINTENANCE HOLE DETAILS SHEET 2 OF 3
LW-SEW-DWG-2052 (A)	TYPICAL INTERNALLY LINED MAINTENANCE HOLE DETAILS SHEET 3 OF 3
LW-SEW-DWG-2053 (A)	TYPICAL TYPE 'D' MAINTENANCE HOLE MODIFIED P3 MAINTENANCE HOLE
LW-SEW-DWG-2100 (A)	TYPICAL MAINTENANCE STRUCTURE DETAILS ON EXISTING GRAVITY SEWER
LW-SEW-DWG-2101 (A)	MISCELLANEOUS CONNECTION DETAILS
LW-SEW-DWG-2102 (A)	PE TO PVC CONNECTION DETAILS
LW-SEW-DWG-2103 (A)	TYPICAL DIAMETER SEWER CONNECTION TO EXISTING
LW-SEW-DWG-2120 (A)	MAINTENANCE HOLE TYPICAL PVC INTERNAL DROP DETAILS

LOCALITY PLAN
SCALE 1:5000 (A1)
SCALE 1:10000 (A3)

PROJECT INFORMATION SUMMARY:
RP DESCRIPTION LOT 1 ON SP35125
DATUM LEVEL AND LOCATION P.S.M. ### RL ##.## AHD LOCATED ##
LOCAL AUTHORITY: LOGAN CITY COUNCIL
LOGAN WATER REFERENCE NUMBER: TBC

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV D (DATED 18.12.24).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.
- SURVEY - VERIS DTM 10/02/25

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.03.25	BR	BR	ORIGINAL ISSUE
B	02.04.25	BR	BR	CLIENT UPDATES

STATUS: NOT FOR CONSTRUCTION
APPROVED: DANIEL COLLINS RPEQ 18631 DATE 2.04.25
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: 1:2500 (A1) 1:5000 (A3) 50 0 50 100

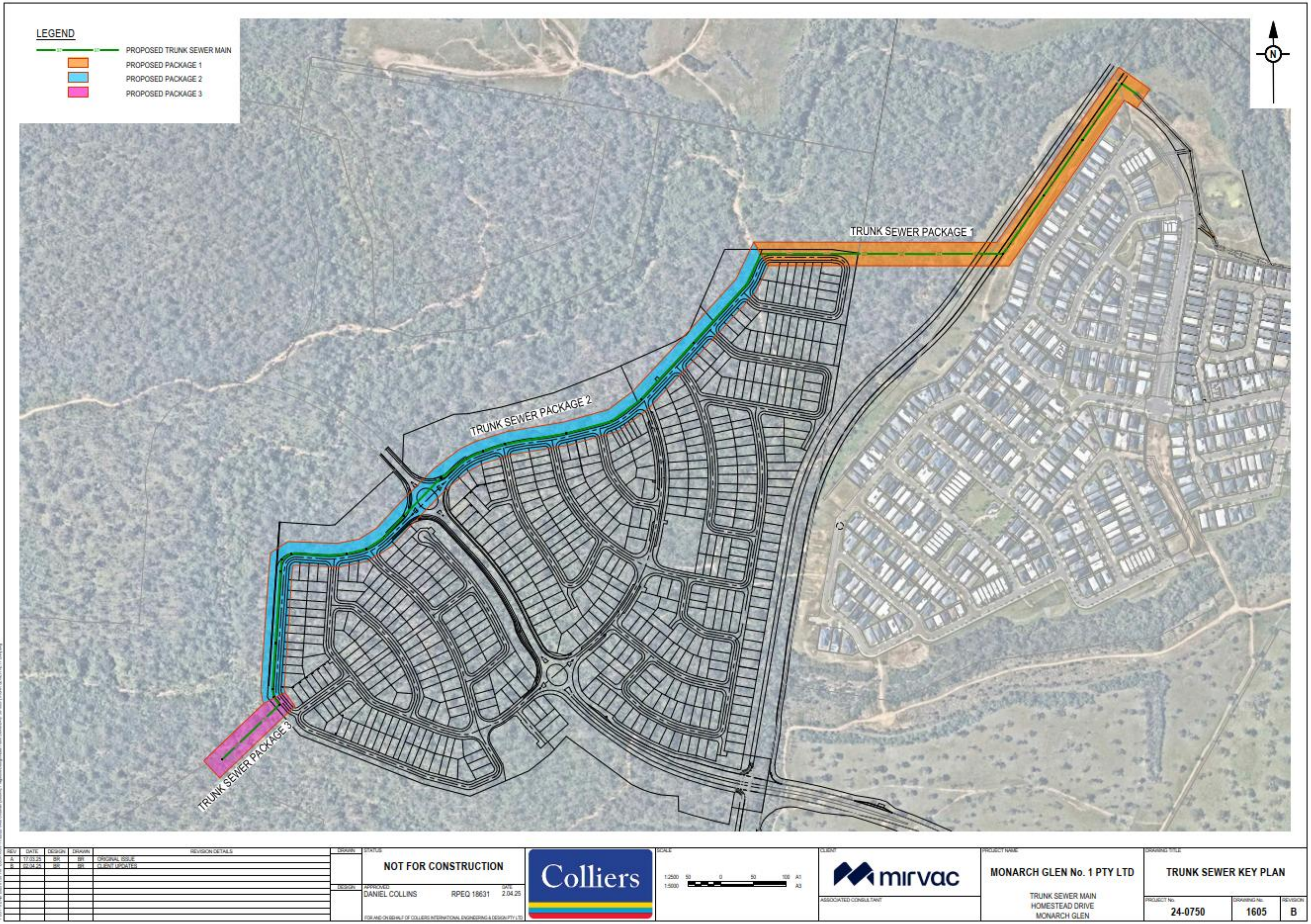
CLIENT: mirvac

ASSOCIATED CONSULTANT

PROJECT NAME: MONARCH GLEN No. 1 PTY LTD
TRUNK SEWER MAIN
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE: TRUNK SEWER COVER PLAN

PROJECT No.	DRAWING No.	REVISION
24-0750	1600	B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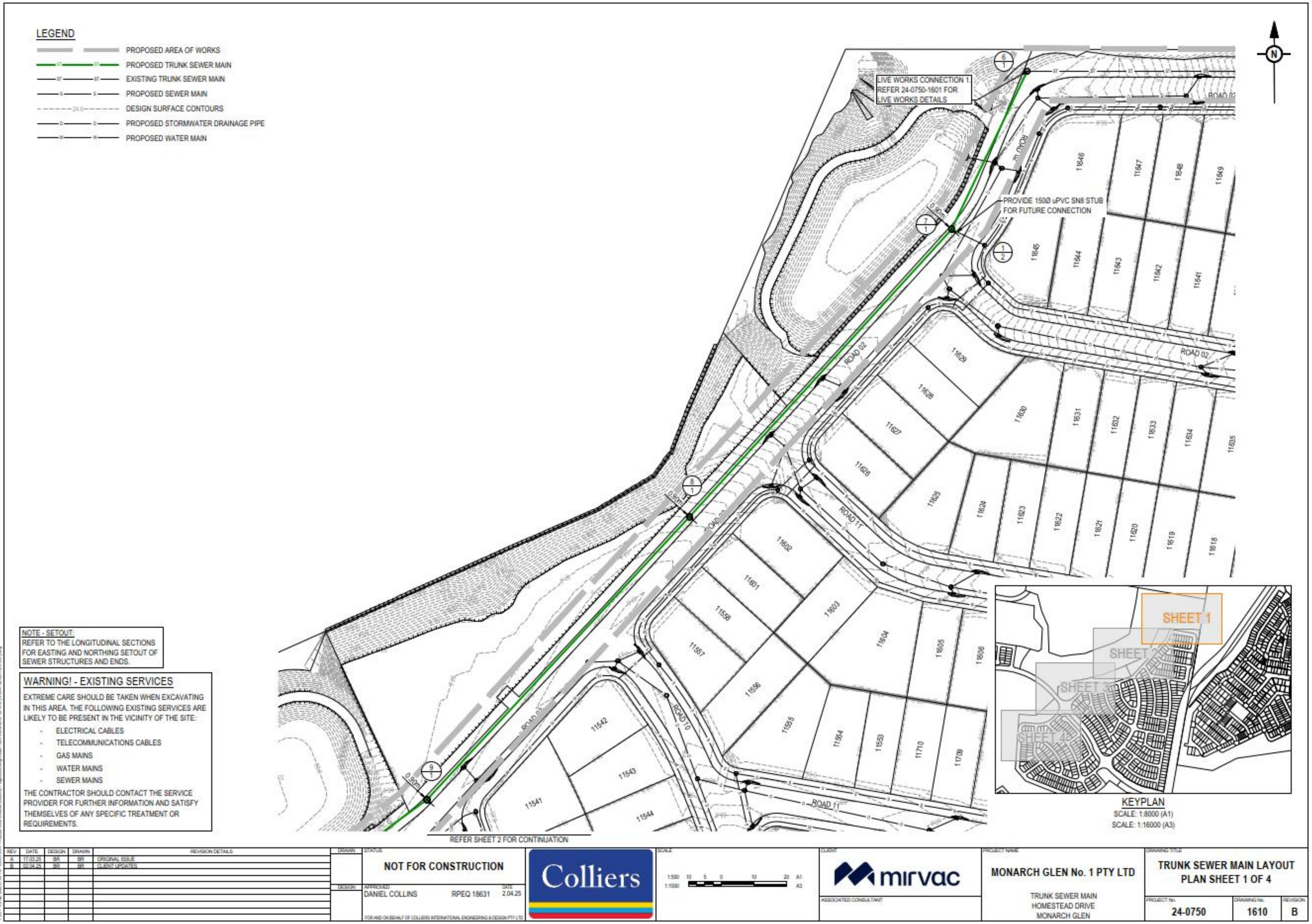
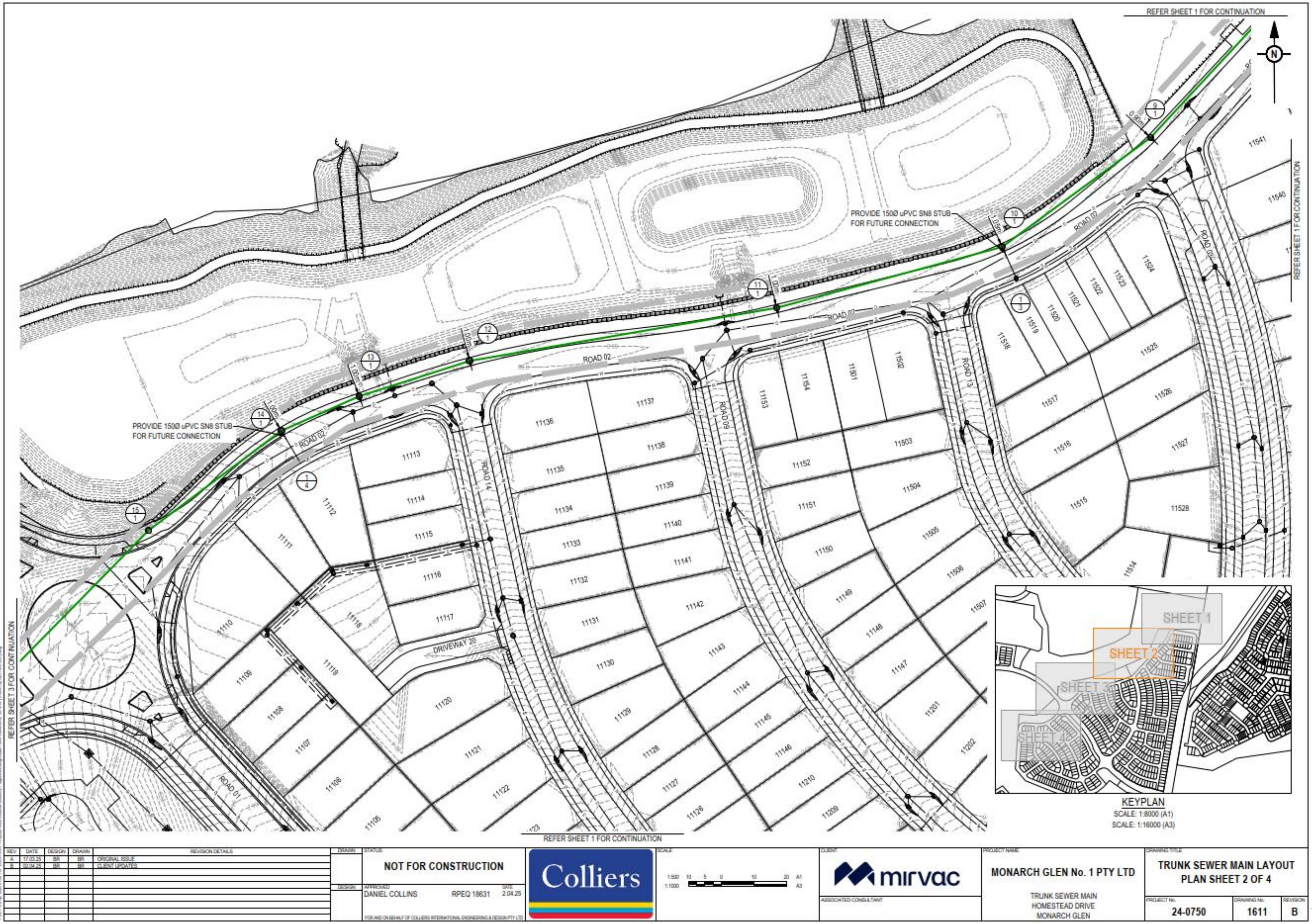
PROPOSED TRUNK SEWER MAIN
PROPOSED PACKAGE 1
PROPOSED PACKAGE 2
PROPOSED PACKAGE 3
N
TRUNK SEWER PACKAGE 1
TRUNK SEWER PACKAGE 2
TRUNK SEWER PACKAGE 3
REV
DATE
DESIGN
DRAWN
REVISION DETAILS
A 17.03.25 BR BR ORIGINAL ISSUE
B 02.04.25 BR BR CLIENT UPDATES
DRAWN
DESIGN
STATUS
NOT FOR CONSTRUCTION
APPROVED
DANIEL COLLINS
RPEQ 18631
DATE
2.04.25
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD
Colliers
SCALE
1:2500
1:5000
50 0 50 100
A1
A3
CLIENT
mirvac
ASSOCIATED CONSULTANT
PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
TRUNK SEWER MAIN
HOMESTEAD DRIVE
MONARCH GLEN
DRAWING TITLE
TRUNK SEWER KEY PLAN
PROJECT No.
24-0750
DRAWING No.
1605
REVISION
B

5


LEGEND
PROPOSED AREA OF WORKS
PROPOSED TRUNK SEWER MAIN
EXISTING TRUNK SEWER MAIN
PROPOSED SEWER MAIN
DESIGN SURFACE CONTOURS
PROPOSED STORMWATER DRAINAGE PIPE
PROPOSED WATER MAIN
LIVE WORKS CONNECTION 1. REFER 24-0750-1601 FOR LIVE WORKS DETAILS
PROVIDE 150Ø uPVC SN8 STUB FOR FUTURE CONNECTION
ROAD 02
ROAD 10
ROAD 11
NOTE - SETOUT: REFER TO THE LONGITUDINAL SECTIONS FOR EASTING AND NORTHING SETOUT OF SEWER STRUCTURES AND ENDS.
WARNING! - EXISTING SERVICES
EXTREME CARE SHOULD BE TAKEN WHEN EXCAVATING IN THIS AREA. THE FOLLOWING EXISTING SERVICES ARE LIKELY TO BE PRESENT IN THE VICINITY OF THE SITE:
- ELECTRICAL CABLES
- TELECOMMUNICATIONS CABLES
- GAS MAINS
- WATER MAINS
- SEWER MAINS
THE CONTRACTOR SHOULD CONTACT THE SERVICE PROVIDER FOR FURTHER INFORMATION AND SATISFY THEMSELVES OF ANY SPECIFIC TREATMENT OR REQUIREMENTS.
REFER SHEET 2 FOR CONTINUATION
KEYPLAN
SHEET 1
SHEET 2
SHEET 3
SHEET 4
SCALE: 1:8000 (A1)
SCALE: 1:16000 (A3)
REV A 17.03.25 BR BR ORIGINAL ISSUE
REV B 02.04.25 BR BR CLIENT UPDATES
NOT FOR CONSTRUCTION
APPROVED DANIEL COLLINS RPEQ 18631 2.04.25
Colliers
mirvac
MONARCH GLEN No. 1 PTY LTD
TRUNK SEWER MAIN
HOMESTEAD DRIVE
MONARCH GLEN
TRUNK SEWER MAIN LAYOUT PLAN SHEET 1 OF 4
PROJECT No. 24-0750
DRAWING No. 1610
REVISION B



REFER SHEET 1 FOR CONTINUATION
REFER SHEET 1 FOR CONTINUATION
REFER SHEET 3 FOR CONTINUATION
PROVIDE 150Ø uPVC SN8 STUB FOR FUTURE CONNECTION
PROVIDE 150Ø uPVC SN8 STUB FOR FUTURE CONNECTION
ROAD 02
ROAD 01
ROAD 09
ROAD 13
ROAD 14
DRIVEWAY 20
KEYPLAN
SHEET 1
SHEET 2
SHEET 3
SHEET 4
SCALE: 1:8000 (A1)
SCALE: 1:16000 (A3)
NOT FOR CONSTRUCTION
DANIEL COLLINS
RPEQ 18631
2.04.25
Colliers
mirvac
MONARCH GLEN No. 1 PTY LTD
TRUNK SEWER MAIN
HOMESTEAD DRIVE
MONARCH GLEN
TRUNK SEWER MAIN LAYOUT PLAN SHEET 2 OF 4
24-0750
1611
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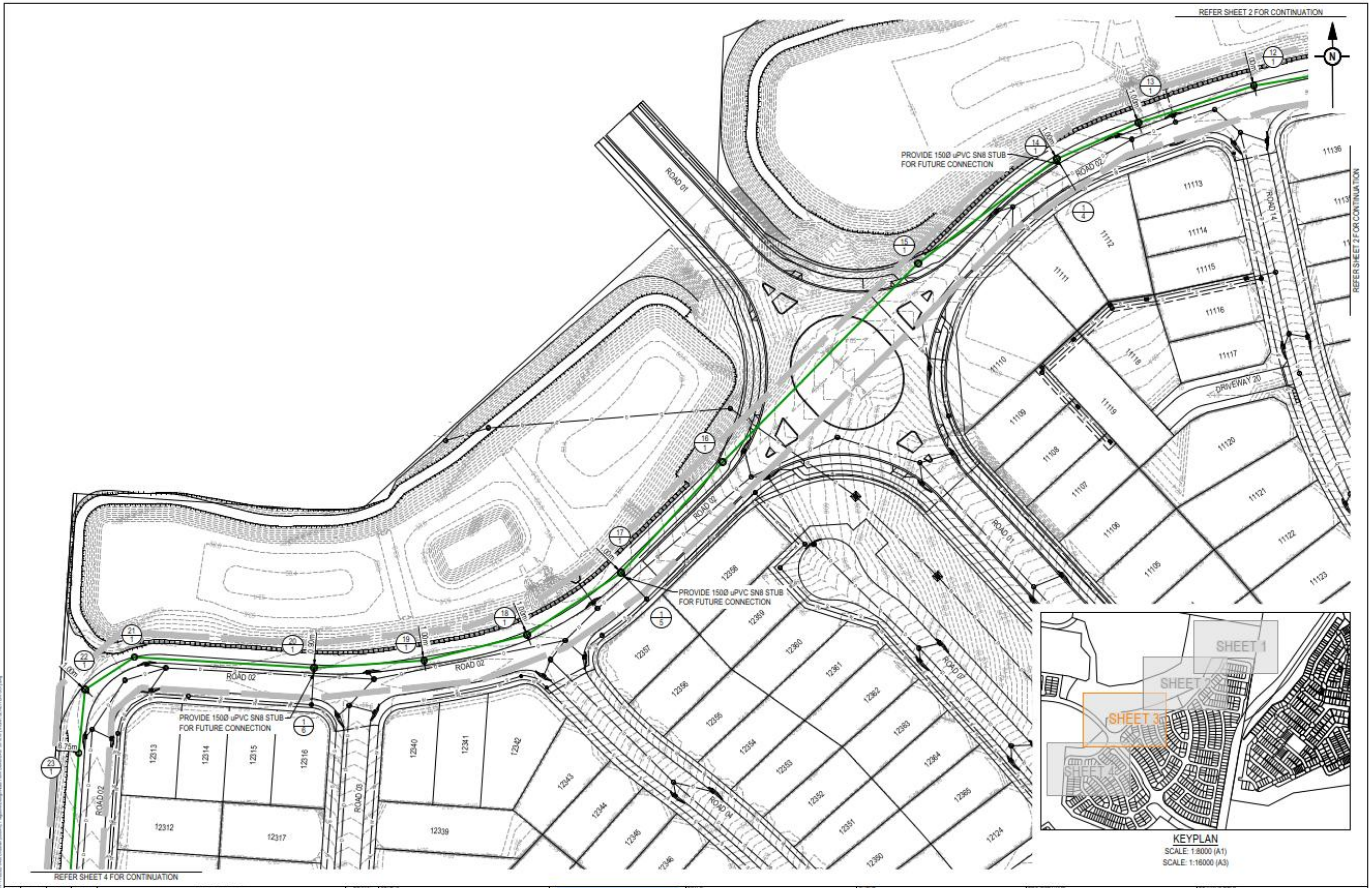
A 17.03.25 ORIGINAL ISSUE
B 02.04.25 CLIENT UPDATES



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A	17.03.25	BR	BR	ORIGINAL ISSUE
B	02.04.25	BR	BR	CLIENT UPDATES

NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 2.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE 1:500 (A1) 1:1000 (A3)

CLIENT: mirvac

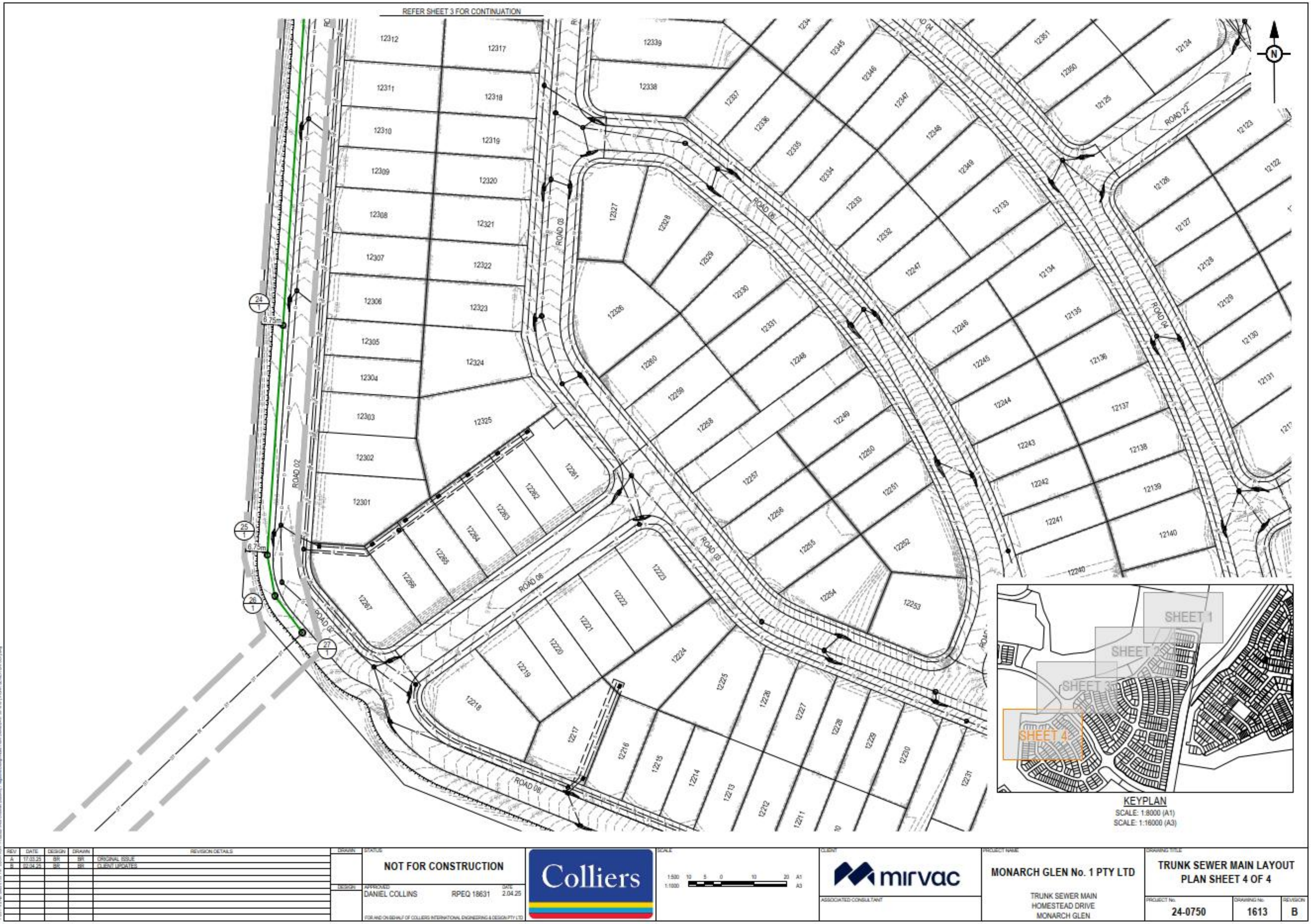
MONARCH GLEN No. 1 PTY LTD

PROJECT NAME: TRUNK SEWER MAIN HOMESTEAD DRIVE MONARCH GLEN

DRAWING TITLE: TRUNK SEWER MAIN LAYOUT PLAN SHEET 3 OF 4

PROJECT No.	DRAWING No.	REVISION
24-0750	1612	B

5


REFER SHEET 3 FOR CONTINUATION
ROAD 02
ROAD 03
ROAD 06
ROAD 04
ROAD 08
ROAD 22
6.75m
KEYPLAN
SCALE: 1:8000 (A1)
SCALE: 1:16000 (A3)
SHEET 1
SHEET 2
SHEET 3
SHEET 4
REV | DATE | DESIGN | DRAWN | REVISION DETAILS
A | 17.03.25 | BR | BR | ORIGINAL ISSUE
B | 02.04.25 | BR | BR | CLIENT UPDATES
STATUS
NOT FOR CONSTRUCTION
APPROVED
DANIEL COLLINS
RPEQ 18631
DATE
2.04.25
FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD
Colliers
SCALE
1:500 A1
1:1000 A3
CLIENT
mirvac
ASSOCIATED CONSULTANT
PROJECT NAME
MONARCH GLEN No. 1 PTY LTD
TRUNK SEWER MAIN
HOMESTEAD DRIVE
MONARCH GLEN
DRAWING TITLE
TRUNK SEWER MAIN LAYOUT
PLAN SHEET 4 OF 4
PROJECT No.
24-0750
DRAWING No.
1613
REVISION
B

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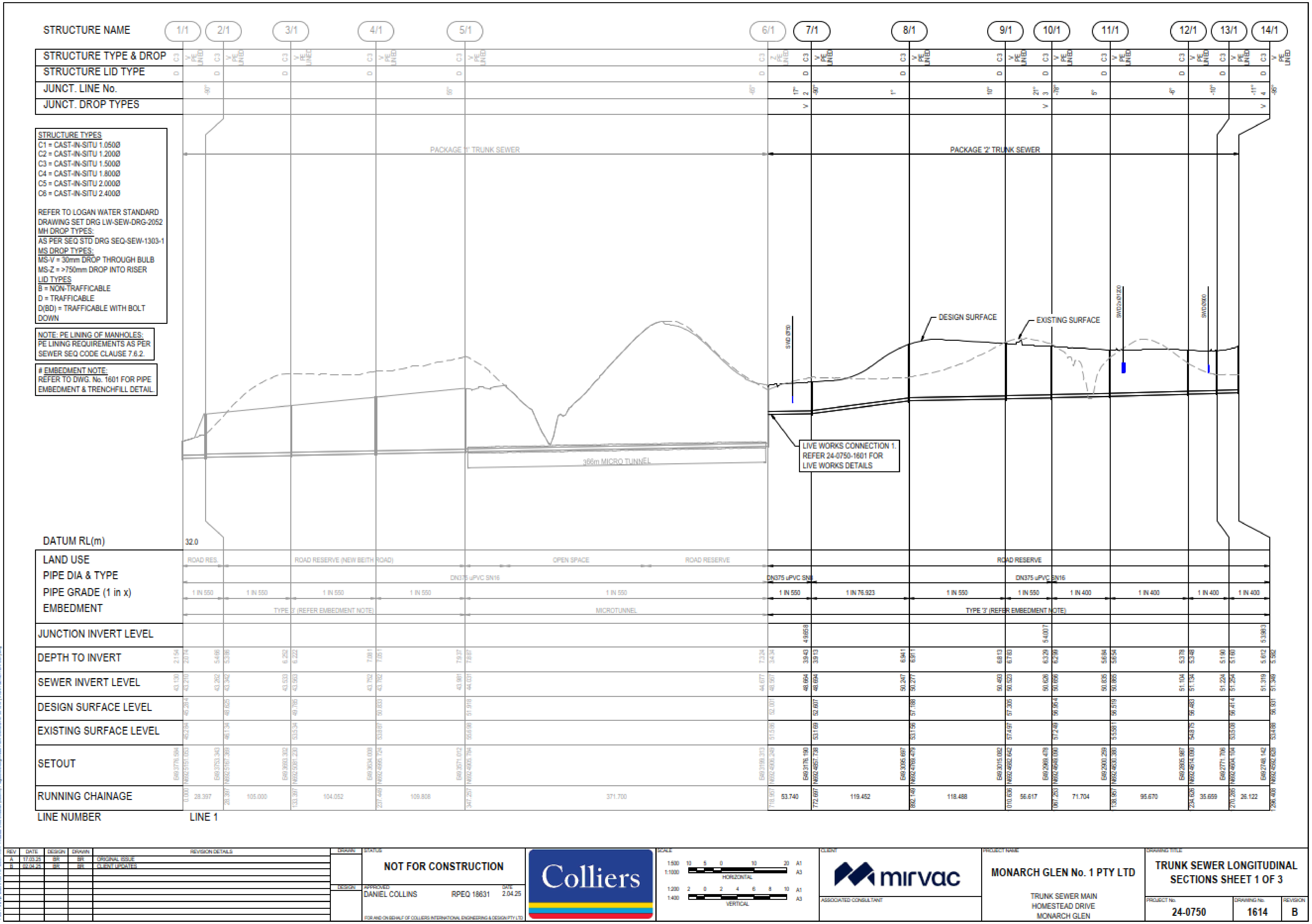
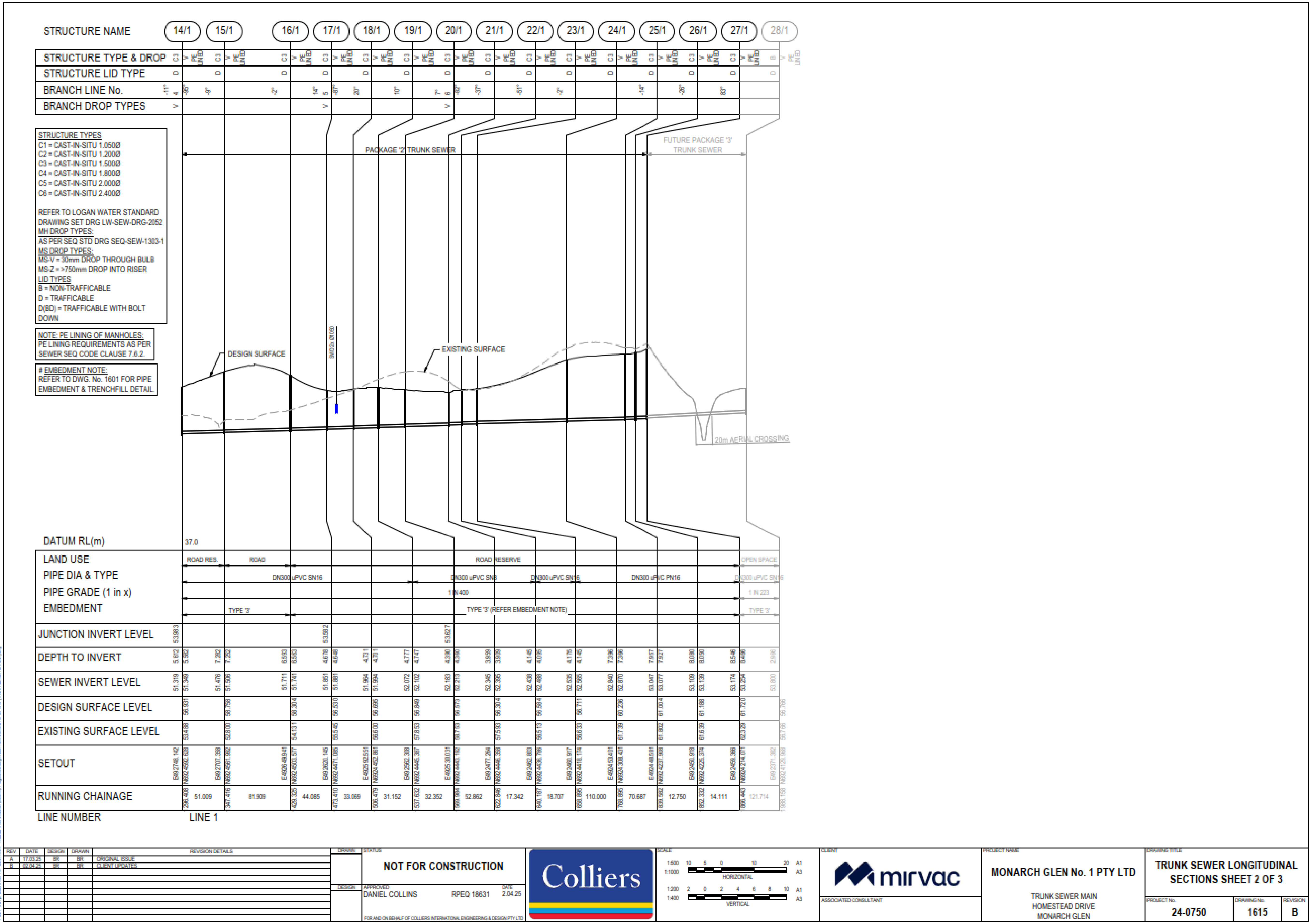
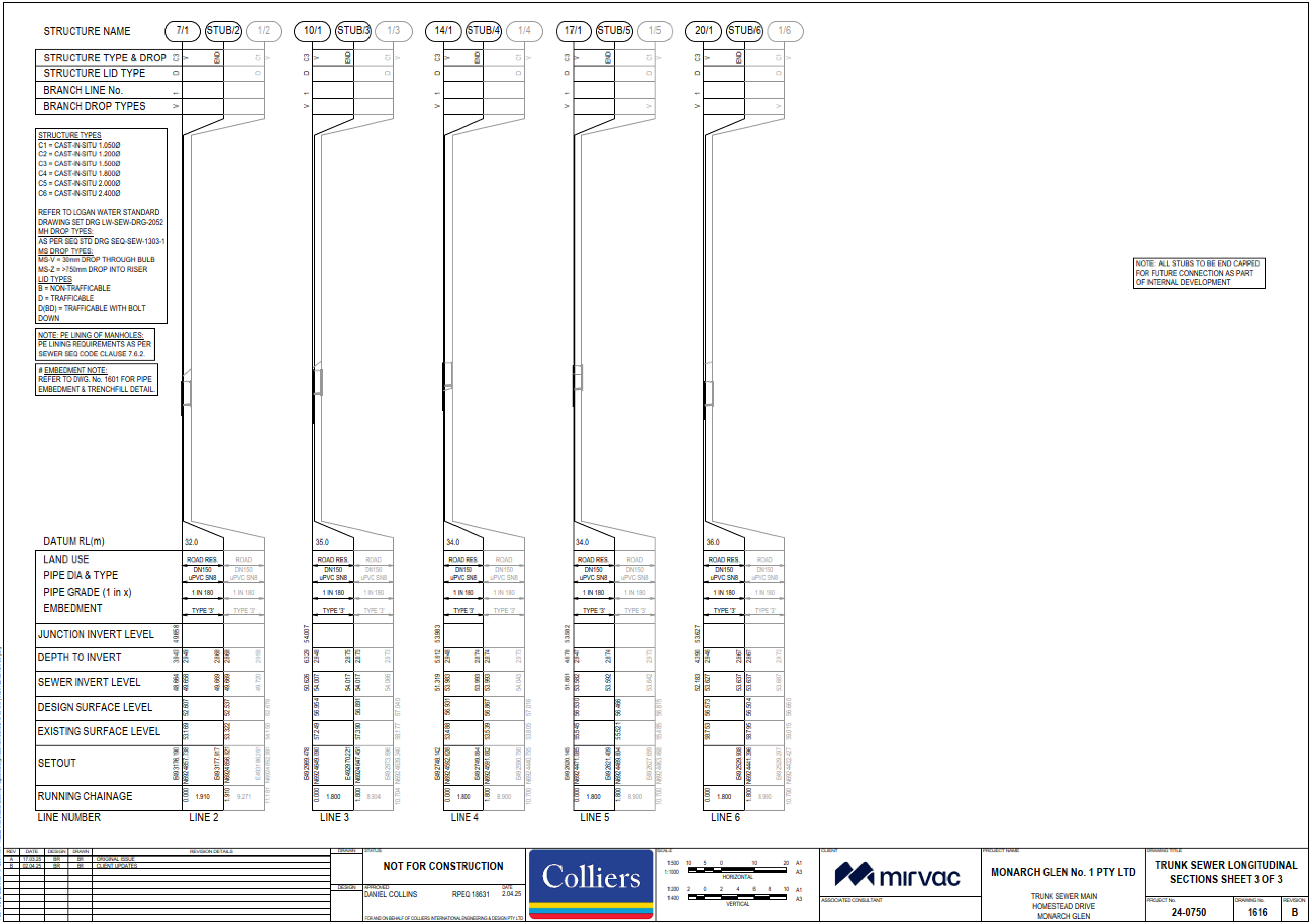


Digital Water Solutions



Digital Water Solutions



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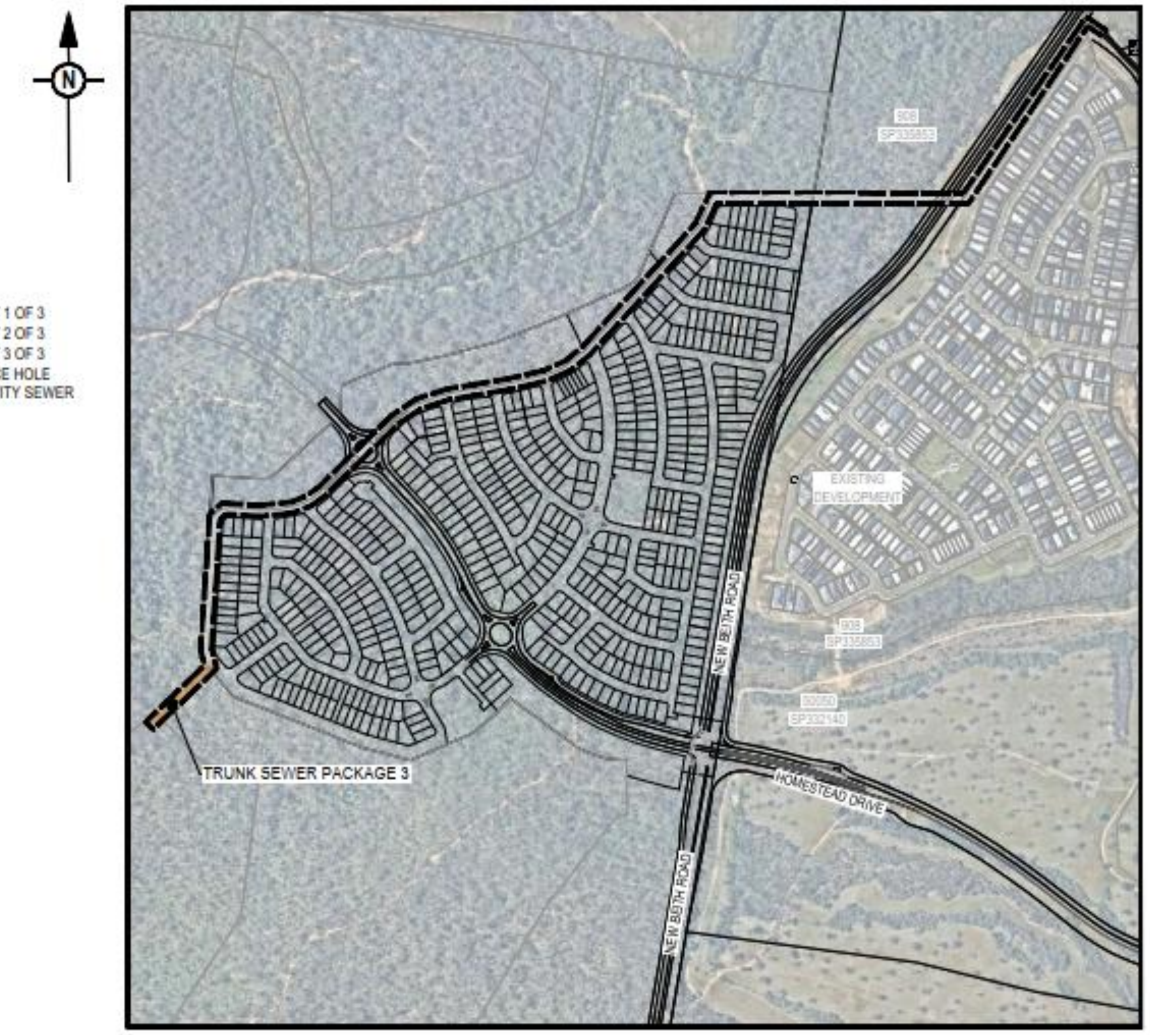
PROPOSED RESIDENTIAL DEVELOPMENT
HOMESTEAD DRIVE, MONARCH GLEN
TRUNK SEWER (PACKAGE 3)

TRUNK SEWER MAIN

24-0750-2600	TRUNK SEWER COVER PLAN
24-0750-2601	TRUNK SEWER GENERAL NOTES
24-0750-2602	TRUNK SEWER MAIN MH CONSTRUCTION NOTES SHEET 1 OF 2
24-0750-2603	TRUNK SEWER MAIN MH CONSTRUCTION NOTES SHEET 2 OF 2
24-0750-2605	TRUNK SEWER KEY PLAN
24-0750-2610	TRUNK SEWER MAIN LAYOUT PLAN
24-0750-2611	TRUNK SEWER LONGITUDINAL SECTION

REFERENCE DRAWINGS

LW-SEW-DWG-2000 (B)	COVER SHEET AND DRAWING LIST
LW-SEW-DWG-2050 (A)	TYPICAL INTERNALLY LINED MAINTENANCE HOLE DETAILS SHEET 1 OF 3
LW-SEW-DWG-2051 (A)	TYPICAL INTERNALLY LINED MAINTENANCE HOLE DETAILS SHEET 2 OF 3
LW-SEW-DWG-2052 (A)	TYPICAL INTERNALLY LINED MAINTENANCE HOLE DETAILS SHEET 3 OF 3
LW-SEW-DWG-2053 (A)	TYPICAL TYPE 'D' MAINTENANCE HOLE MODIFIED P3 MAINTENANCE HOLE
LW-SEW-DWG-2100 (A)	TYPICAL MAINTENANCE STRUCTURE DETAILS ON EXISTING GRAVITY SEWER
LW-SEW-DWG-2101 (A)	MISCELLANEOUS CONNECTION DETAILS
LW-SEW-DWG-2102 (A)	PE TO PVC CONNECTION DETAILS
LW-SEW-DWG-2103 (A)	TYPICAL DIAMETER SEWER CONNECTION TO EXISTING
LW-SEW-DWG-2120 (A)	MAINTENANCE HOLE TYPICAL PVC INTERNAL DROP DETAILS



LOCALITY PLAN
SCALE 1:5000 (A1)
SCALE 1:10000 (A3)

PROJECT INFORMATION SUMMARY:
RP DESCRIPTION LOT 1 ON SP35125
DATUM LEVEL AND LOCATION P.S.M. ### RL ##.## AHD LOCATED ##
LOCAL AUTHORITY: LOGAN CITY COUNCIL
LOGAN WATER REFERENCE NUMBER: TBC

NOTE:
- SHG DRAWING REFERENCE - 11731 P 27 REV D (DATED 18.12.24).
- DESIGN BASED ON MGA 2020 COORDINATE SYSTEM.
- SURVEY - VERIS DTM 10/02/25

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
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B	02.04.25	BR	BR	CLIENT UPDATES

STATUS: NOT FOR CONSTRUCTION

APPROVED: DANIEL COLLINS RPEQ 18631 DATE 2.04.25

FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD

Colliers

SCALE: 1:2500 (A1) 1:5000 (A3) 50 0 50 100

CLIENT: mirvac

ASSOCIATED CONSULTANT

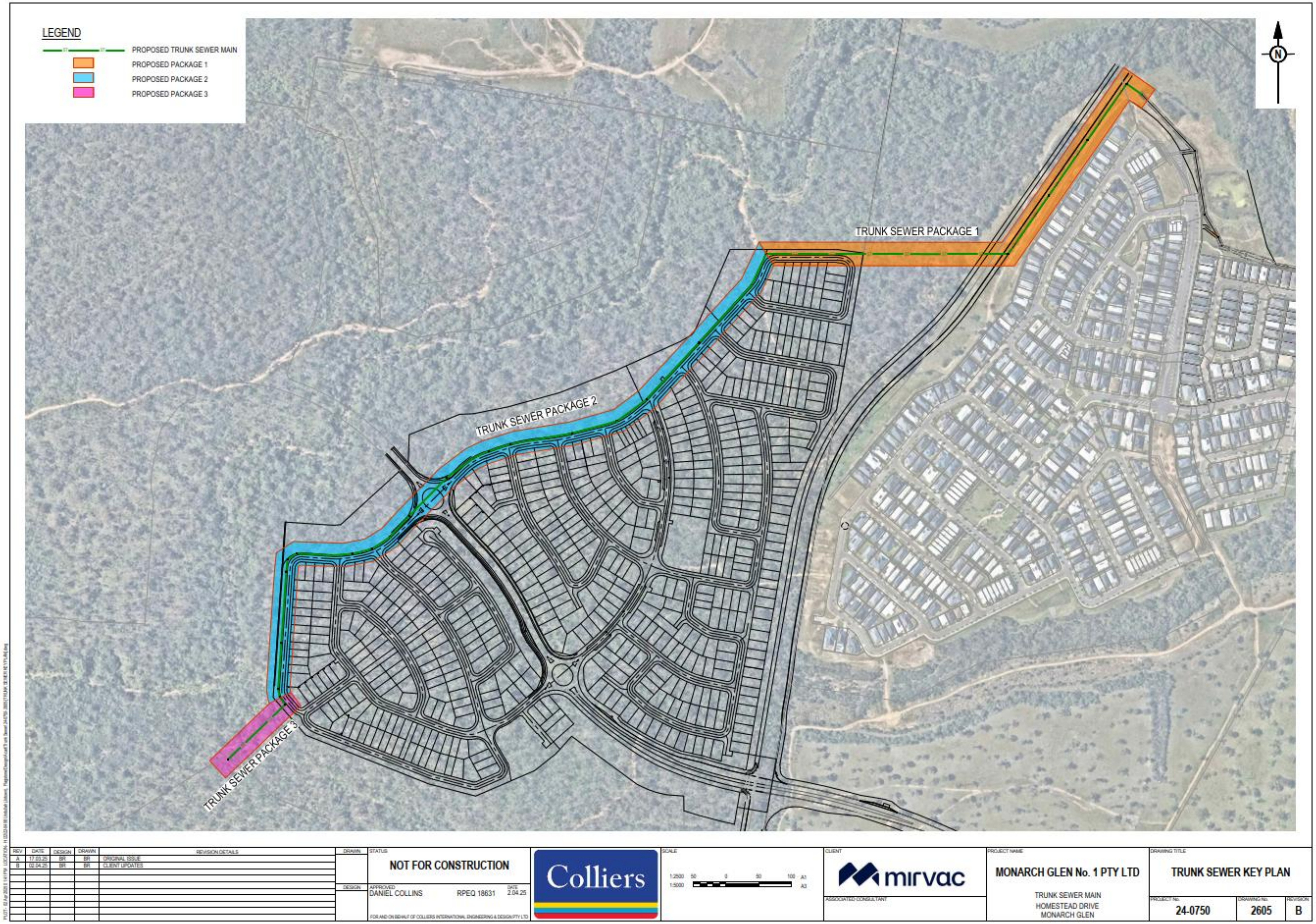
PROJECT NAME: MONARCH GLEN No. 1 PTY LTD
TRUNK SEWER MAIN
HOMESTEAD DRIVE
MONARCH GLEN

DRAWING TITLE: TRUNK SEWER COVER PLAN

PROJECT No. 24-0750 | DRAWING No. 2600 | REVISION B

: 5

Digital Water Solutions



r: 5

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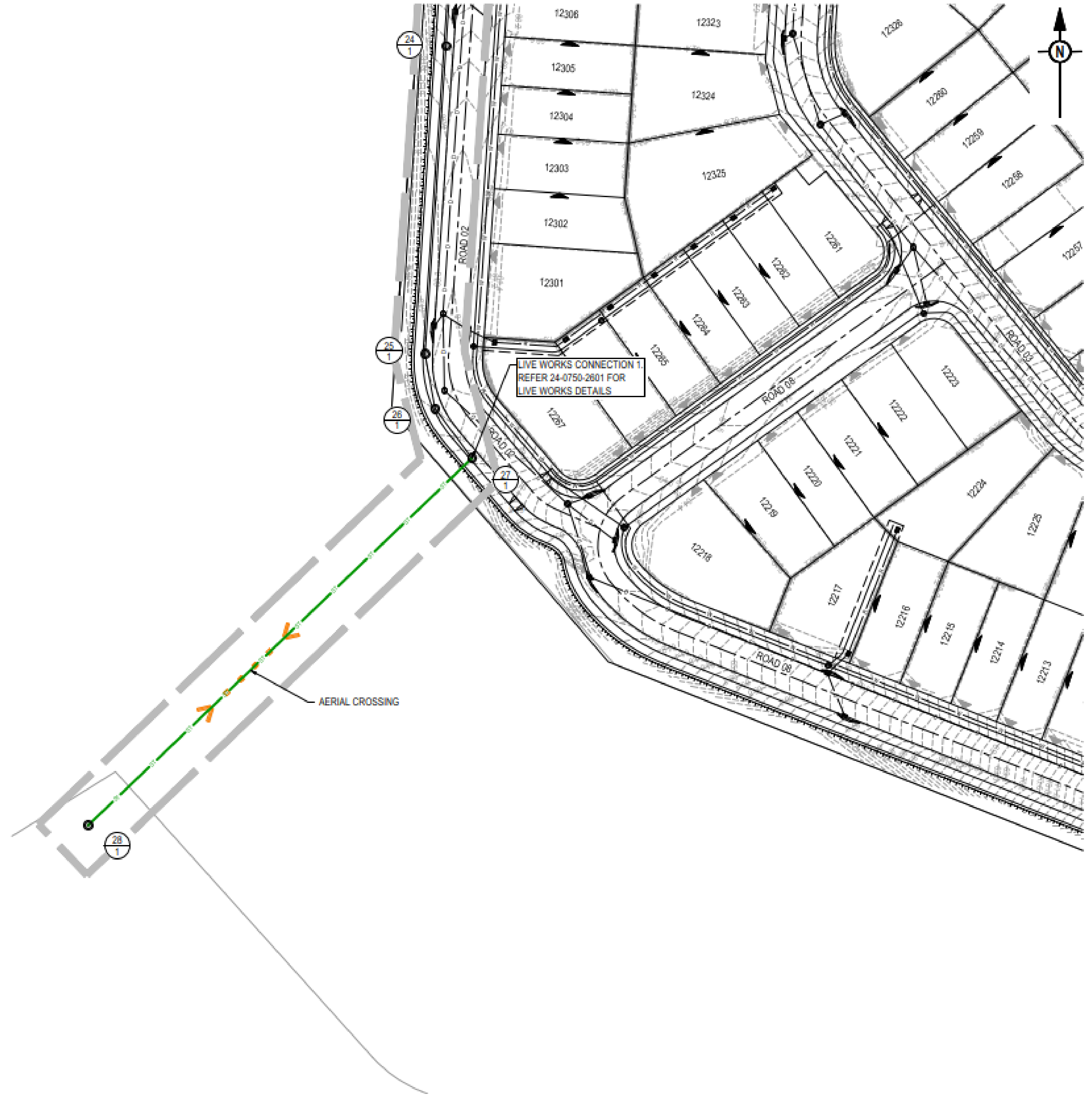
LEGEND

- PROPOSED AREA OF WORKS
- PROPOSED TRUNK SEWER MAIN
- EXISTING TRUNK SEWER MAIN
- PROPOSED SEWER MAIN
- DESIGN SURFACE CONTOURS
- PROPOSED STORMWATER DRAINAGE PIPE
- PROPOSED WATER MAIN



NOTE - SETOUT:
REFER TO THE LONGITUDINAL SECTIONS FOR EASTING AND NORTHING SETOUT OF SEWER STRUCTURES AND ENDS.

WARNING! - EXISTING SERVICES

EXTREME CARE SHOULD BE TAKEN WHEN EXCAVATING IN THIS AREA. THE FOLLOWING EXISTING SERVICES ARE LIKELY TO BE PRESENT IN THE VICINITY OF THE SITE:

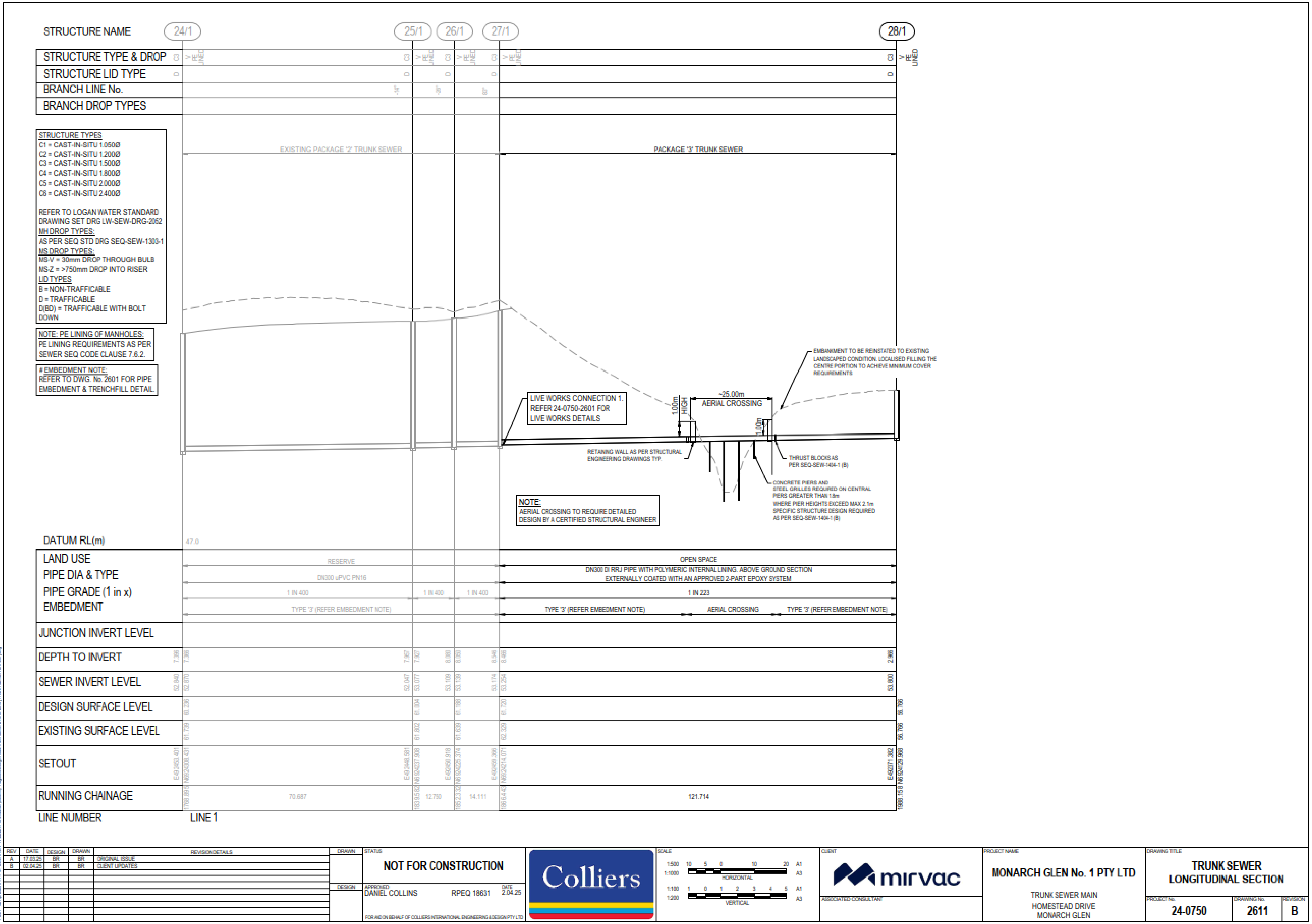
- ELECTRICAL CABLES
- TELECOMMUNICATIONS CABLES
- GAS MAINS
- WATER MAINS
- SEWER MAINS

THE CONTRACTOR SHOULD CONTACT THE SERVICE PROVIDER FOR FURTHER INFORMATION AND SATISFY THEMSELVES OF ANY SPECIFIC TREATMENT OR REQUIREMENTS.

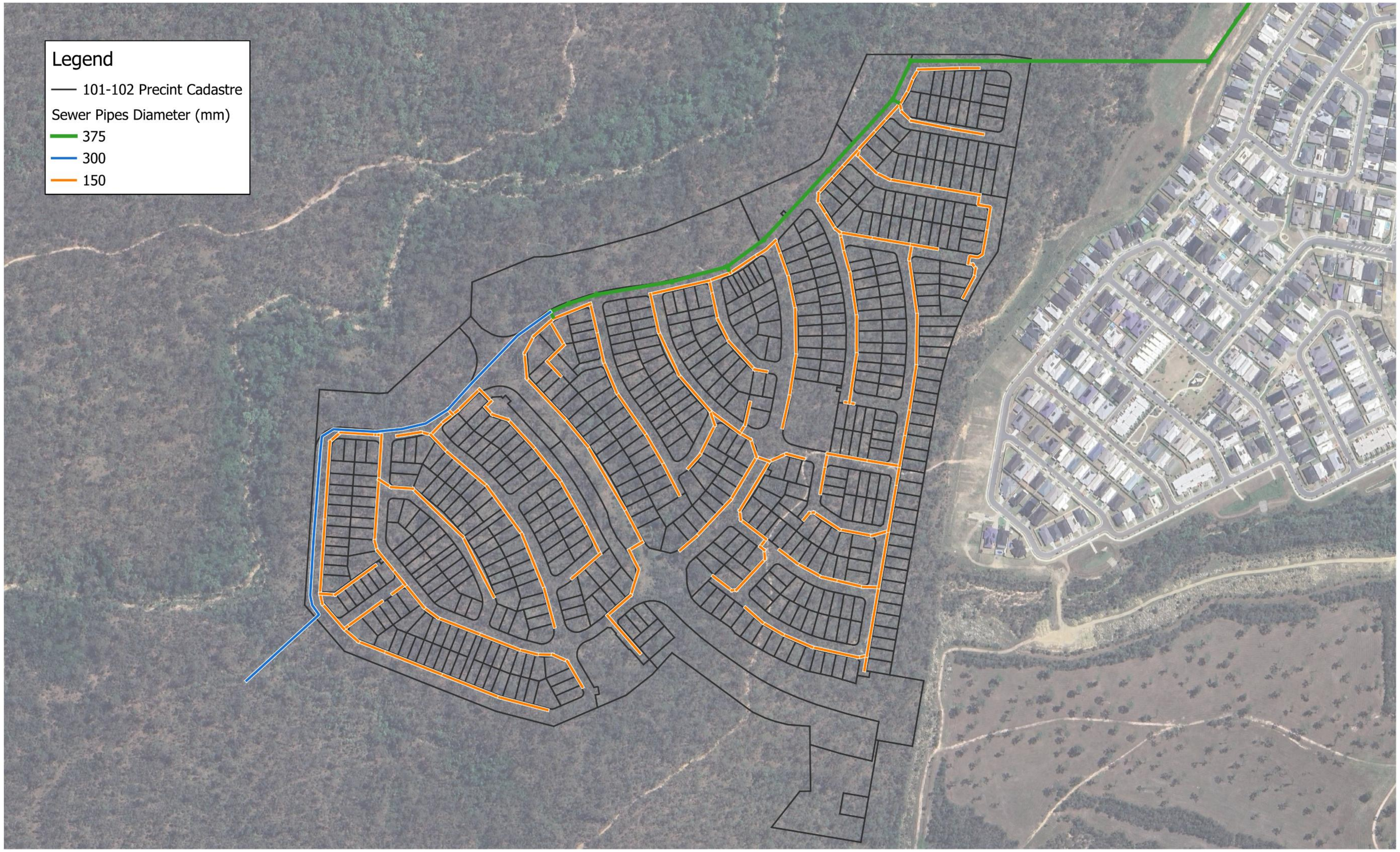
REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	17.03.25	BR	BR	ORIGINAL ISSUE
B	02.04.25	BR	BR	CLIENT UPDATES

STATUS	NOT FOR CONSTRUCTION
APPROVED	DANIEL COLLINS RPEQ 18631 DATE 2.04.25
	FOR AND ON BEHALF OF COLLIERS INTERNATIONAL ENGINEERING & DESIGN PTY LTD
SCALE	1:500 A1, 1:1000 A3
CLIENT	mirvac
PROJECT NAME	MONARCH GLEN No. 1 PTY LTD TRUNK SEWER MAIN HOMESTEAD DRIVE MONARCH GLEN
DRAWING TITLE	TRUNK SEWER MAIN LAYOUT PLAN
PROJECT No.	24-0750
DRAWING No.	2610
REVISION	B

Digital Water Solutions


STRUCTURE NAME
24/1
25/1
26/1
27/1
28/1
STRUCTURE TYPE & DROP
STRUCTURE LID TYPE
BRANCH LINE No.
BRANCH DROP TYPES
STRUCTURE TYPES
C1 = CAST-IN-SITU 1.050Ø
C2 = CAST-IN-SITU 1.200Ø
C3 = CAST-IN-SITU 1.500Ø
C4 = CAST-IN-SITU 1.800Ø
C5 = CAST-IN-SITU 2.000Ø
C6 = CAST-IN-SITU 2.400Ø
REFER TO LOGAN WATER STANDARD DRAWING SET DRG LW-SEW-DRG-2052
MH DROP TYPES:
AS PER SEQ STD DRG SEQ-SEW-1303-1
MS DROP TYPES:
MS-V = 30mm DROP THROUGH BULB
MS-Z = >750mm DROP INTO RISER
LID TYPES
B = NON-TRAFFICABLE
D = TRAFFICABLE
D(BD) = TRAFFICABLE WITH BOLT DOWN
NOTE: PE LINING OF MANHOLES:
PE LINING REQUIREMENTS AS PER SEWER SEQ CODE CLAUSE 7.6.2.
EMBEDMENT NOTE:
REFER TO DWG. No. 2601 FOR PIPE EMBEDMENT & TRENCHFILL DETAIL.
EXISTING PACKAGE '2' TRUNK SEWER
PACKAGE '3' TRUNK SEWER
EMBANKMENT TO BE REINSTATED TO EXISTING LANDSCAPED CONDITION. LOCALISED FILLING THE CENTRE PORTION TO ACHIEVE MINIMUM COVER REQUIREMENTS
LIVE WORKS CONNECTION 1. REFER 24-0750-2601 FOR LIVE WORKS DETAILS
~25.00m
AERIAL CROSSING
1.00m HIGH
1.00m
RETAINING WALL AS PER STRUCTURAL ENGINEERING DRAWINGS TYP.
THRUST BLOCKS AS PER SEQ-SEW-1404-1 (B)
CONCRETE PIERS AND STEEL GRILLES REQUIRED ON CENTRAL PIERS GREATER THAN 1.8m
WHERE PIER HEIGHTS EXCEED MAX 2.1m SPECIFIC STRUCTURE DESIGN REQUIRED AS PER SEQ-SEW-1404-1 (B)
NOTE:
AERIAL CROSSING TO REQUIRE DETAILED DESIGN BY A CERTIFIED STRUCTURAL ENGINEER
DATUM RL(m)
47.0
LAND USE
RESERVE
OPEN SPACE
PIPE DIA & TYPE
DN300 uPVC PN16
DN300 DI RRJ PIPE WITH POLYMERIC INTERNAL LINING. ABOVE GROUND SECTION EXTERNALLY COATED WITH AN APPROVED 2-PART EPOXY SYSTEM
PIPE GRADE (1 in x)
1 IN 400
1 IN 400
1 IN 400
1 IN 223
EMBEDMENT
TYPE '3' (REFER EMBEDMENT NOTE)
TYPE '3' (REFER EMBEDMENT NOTE)
AERIAL CROSSING
TYPE '3' (REFER EMBEDMENT NOTE)
JUNCTION INVERT LEVEL
DEPTH TO INVERT
SEWER INVERT LEVEL
DESIGN SURFACE LEVEL
EXISTING SURFACE LEVEL
SETOUT
RUNNING CHAINAGE
70.687
12.750
14.111
121.714
LINE NUMBER
LINE 1
NOT FOR CONSTRUCTION
APPROVED
DANIEL COLLINS
RPEQ 18631
2.04.25
Colliers
mirvac
MONARCH GLEN No. 1 PTY LTD
TRUNK SEWER MAIN
HOMESTEAD DRIVE
MONARCH GLEN
TRUNK SEWER LONGITUDINAL SECTION
24-0750
2611
B

APPENDIX D – Figures



Digital Water Solutions

Digital Water Solutions makes no warranties and accepts no liability regarding the completeness or accuracy of the maps, which may depend on the completeness and accuracy of the input data and the agreed-upon scope of work.

Job Number: J0000345	
Map No: PIPE_DIA	
Author: CS	
Reviewed By: DR	
Date: 24/3/2025	

0 100 200 m

CRS: GDA2020 / MGA Zone 56

Monarch Glen Development Precinct 101 and 102
Sewer Main Layout and Internal Diameters

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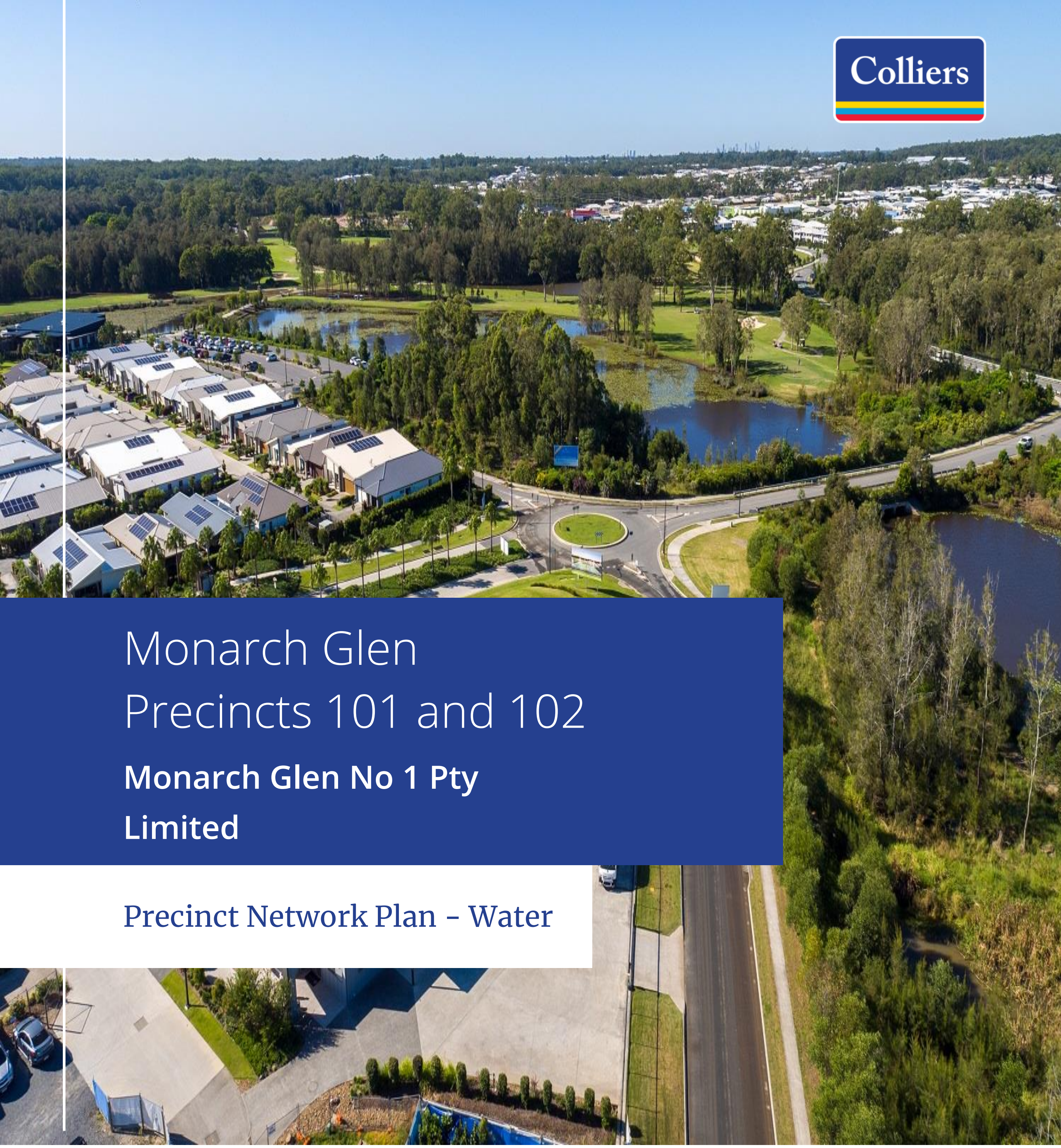
Appendix C Water Precinct Network Plan



Monarch Glen Precincts 101 and 102

Monarch Glen No 1 Pty Limited

Precinct Network Plan – Water

22-0408-R003

April 2025

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Limitations

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Report Contact:

Name:	Thomas Wager
Position	Director, Water & Wastewater
Email:	Thomas.Wager@colliers.com

Document Control

22-0408-R003

Version	Date	Details	Prepared	Checked	Approved
01	29/11/2024	Draft for Review	B. Robinson	T. Wager	D. Collins
02	12/12/2024	Final	B. Robinson	T. Wager	D. Collins
03	24/03/2025	Revised for EDQ Comments	T. Wager	T. Wager	D. Collins
04	28/03/2025	Revised for Submission	T. Wager	T. Wager	D. Collins
05	03/04/2025	For Approval	T. Wager	T. Wager	D. Collins

1. Introduction

This memorandum summarizes the water supply servicing assessment for Precincts 101 and 102 of the Monarch Glen development. Colliers Engineering & Design have been engaged by Monarch Glen No 1 Pty Ltd to develop a water supply network plan, with the network modelling prepared by Digital Water Solutions (DWS). The primary objective is to determine the sizing and supply operation of the required water reticulation network to service the development while aligning with Logan City Council's (LCC) design standards.

1.1. Development Overview

- **Precincts**: 101 and 102
- **Total Residential Allotments**: 575
- **Open Space**: 1.026 hectares
- **Equivalent Population (EP – 2.8 EP per dwelling)**: 1,630.6 (1,610 EP Residential + 20.6 EP Local Park/Open Space)

1.2. Site Location

The Monarch Glen development, specifically Precincts 101 and 102, is situated within the Greater Flagstone Priority Development Area (PDA) in Logan City, Queensland on land described as Lot 2 SP351245. This area is currently an undeveloped greenfield site, characterized by its natural terrain and lack of existing infrastructure. The key details regarding the proposed development site are as follows:

- **Location and Boundaries**: The site is located within the Greater Flagstone PDA, which is a significant growth area identified by the Queensland Government. The boundaries of Precincts 101 and 102 are defined by the planned residential and open space developments.

- **Topography**: The contours within stages 101 and 102 range from 88 meters to 53 meters above sea level. Earthworks are planned to modify these contours, potentially altering elevations by up to 10 meters. The current contours have been used as a worst-case scenario for planning purposes.

- **Land Use**: The site is designated for residential development, with Precincts 101 and 102 planned to include 575 residential allotments and 1.026 hectares of Local Park / Open Space. This development is part of a larger residential precinct that will eventually include multiple stages and additional amenities.

- **Existing Conditions**: As an undeveloped greenfield site, there is currently no existing water or sewer infrastructure servicing the area. The site is primarily natural terrain, with vegetation and open spaces that will be transformed as part of the development process.

- **Surrounding Infrastructure**: The Greater Flagstone PDA has been analysed for water supply and sewerage infrastructure needs as part of the Logan City Council's (LCC) infrastructure planning. The existing Round Mountain reservoir and associated water mains are key components of the current and future water supply strategy for the area.

- **Environmental Considerations**: The development will need to consider environmental impacts, including the management of stormwater and the preservation of natural features where possible. Open spaces and local parks are integrated into the development plan to provide recreational areas and maintain some natural elements.

- **Future Development**: The Monarch Glen development is part of a broader plan that includes 20 residential precincts and 13 district/local centres, educational, sports, transport, and community precincts. This comprehensive development strategy aims to create a well-rounded and sustainable community within the Greater Flagstone PDA.

For a visual overview of the site, refer to Figure 1-1. This figure illustrates the layout and key features of the subject site, providing context for the planned development and its integration into the surrounding area.

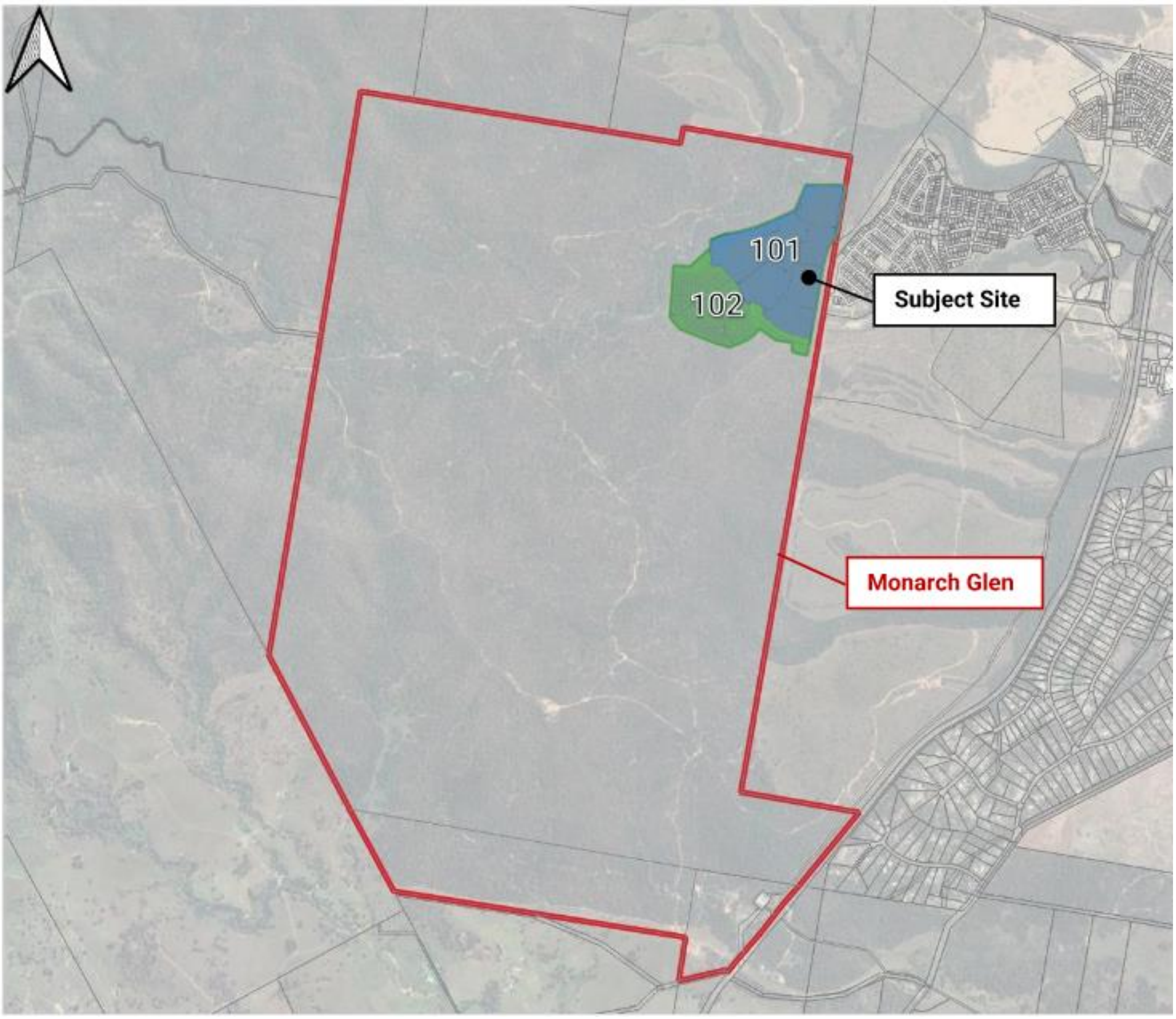

Figure 1-1: Proposed development site

2. Population Projections and Flows

2.1. Proposed development

The supply to the first stages (101 and 102) will connect from the 375mm near Flagstone Water Play Park via a new roadway with a new 250mm ID watermain laid. Delivery of this main to the boundary of the site is conditioned in the Homestead Drive extension reference DEV2017/907. A pump station is required to ensure levels of service are met to properties at elevations above 70m. By 2036, a new reservoir is proposed to be installed within the Monarch Glen site towards the south (Lower Flagstone Reservoirs), sourced from the new Wyaralong WTP. For an overview of the future supply strategy, refer to the Water Infrastructure Management Plan 22-0408-R001.

The development population projections for stages 1-7 and Stages 1-3, which are detailed in Table 2-1.

Table 2-1: Development population for precincts 101 & 102 across development stages

Stages	Lot Type	Precinct 101	Precinct 102	Total
1	Residential	151.2	137.2	
1	Local Park / Open Space	10.6	-	
2	Residential	162.4	190.4	
3	Residential	165.2	182.0	
4	Residential	145.6	-	
5	Residential	162.4	-	
5	Local Park / Open Space	10	-	
6	Residential	156.8	-	
7	Residential	156.8	-	
Total		1,121.0	509.6	1,630.6

For sketch of proposed alignments please refer to Figure 2-1.

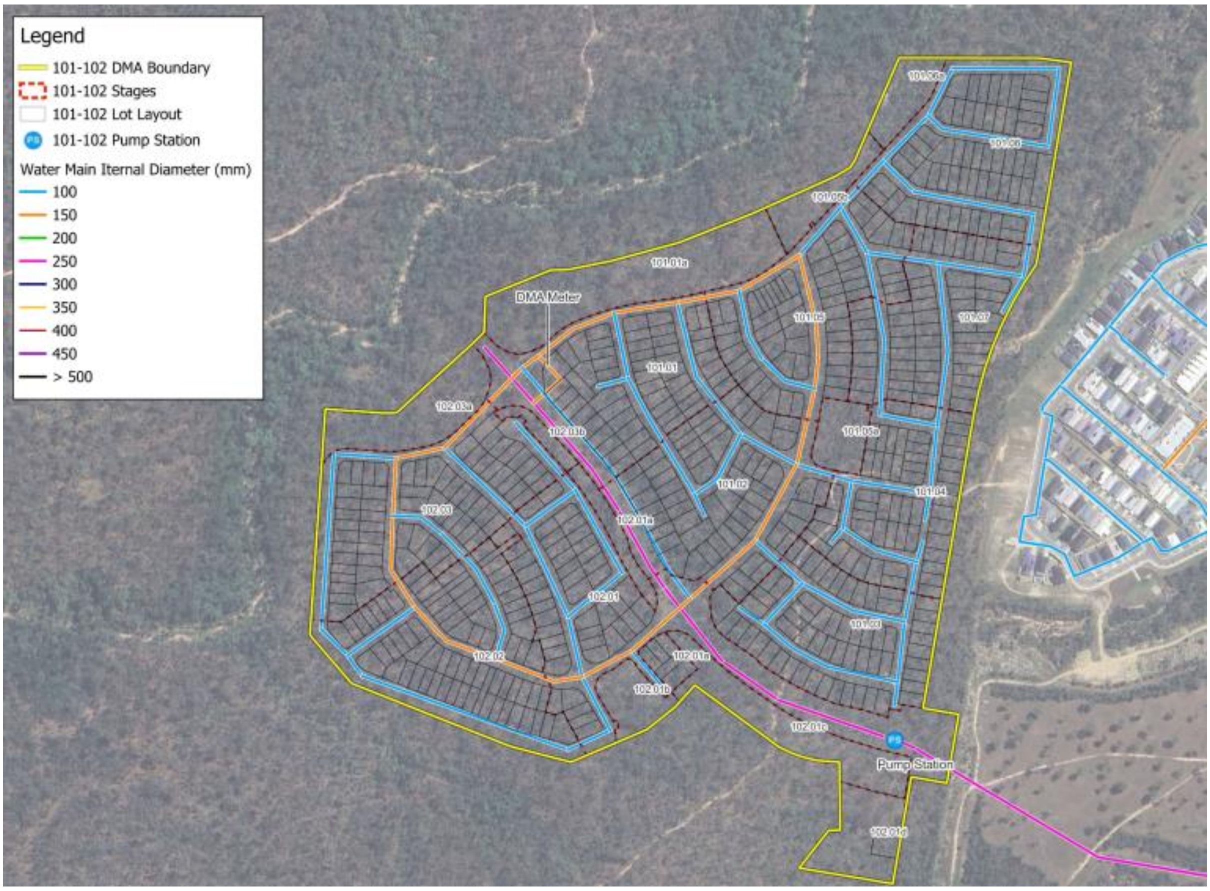

Figure 2-1: Proposed Network Infrastructure

With the corresponding flows for the proposed development are detailed in Table 2-2 below.

Table 2-2: Proposed development flows

Precinct	Stage	AD (L/s)	AD (ML/d)	MD (L/s)	MD (ML/d)	PHD (L/s)
101	1	0.3	0.03	0.5	0.05	0.9
	2	0.4	0.03	0.6	0.05	1.0
	3	0.4	0.03	0.6	0.05	1.0
	4	0.3	0.03	0.5	0.04	0.9
	5	0.4	0.03	0.6	0.05	1.0
	6	0.3	0.03	0.6	0.05	1.0
	7	0.3	0.03	0.6	0.05	1.0
102	1	0.3	0.03	0.5	0.04	0.9
	2	0.4	0.04	0.7	0.06	1.2
	3	0.4	0.03	0.6	0.06	1.1
Total		3.5	0.3	5.7	0.5	10.0

3. Summary

In conclusion, the proposed water reticulation network can adequately service Precincts 101 and 102. The assessment has proposed a new pump station to ensure all minimum pressure requirements are met. The water reticulation network for the precincts were sized according to the design criteria and was found to require DN250, DN150, and DN100 pipes.

- EP Yield: Precinct 101 (1,121 EP) and Precinct 102 (509.6 EP)
- Water Demand:
  - Precinct 101: AD 2.4 L/s, MD 4.0 L/s, PHD 6.8 L/s
  - Precinct 102: AD 1.1 L/s, MD 1.7 L/s, PHD 3.2 L/s
- Supply Strategy: New 250mm ID watermain connected to the existing 375mm watermain on Flagstonian Drive.
- Pump Station: Required to meet minimum pressure requirements for properties above 70m elevation and 60m elevation in 2031.

Appendix A Monarch Glen Water Precinct Network Plan (Digital Water Solutions, March 2025)

MONARCH GLEN WATER SUPPLY SERVICING ASSESSMENT REPORT

Precincts 101 and 102 Precinct Network Plan (PNP)

Colliers

April 2025

Digital Water Solutions

Approval

This report has been prepared under the DWS Quality Management System, to comply with ISO 9001 (Quality Management)

Approved by:

Con Strydom

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Project Quality/Information

Project:	**Precincts 101 and 102 Precinct Network Plan (PNP)**
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Project Number:	J0000345
Approval Date:	24 March 2025
Revision:	7.0
Classification:	Confidential - this document is only accessible to the project team members, and sharing it outside the project team is subject to the clients' approval.

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1 Executive Summary

This report presents a water network servicing assessment for Precincts 101 and 102 of the Monarch Glen development. Digital Water Solutions (DWS) was commissioned by Colliers to develop a Precinct Network Plan (PNP) for these areas, which form the initial stages of a larger residential precinct development. Precincts 101 and 102 will include 575 residential allotments, along with open space and stormwater detention areas. The aim of this assessment is to determine the sizing and supply operation of the required water reticulation network to service the development while aligning with Logan City Council's (LCC) design standards.

LCC's Desired Standards of Service (DSS) were used to model and size the water network, with an EP loading rate of 2.8 EP per dwelling applied for Precincts 101 and 102. The combined residential EP yield for both precincts is 1,610 EP Residential and 20.6 EP for Local Park giving a total of 1,630.6 EP. Using LCC's design criteria, flows were estimated, including an Average Day (AD) of 3.5 L/s, Peak Day (PD) of 5.7 L/s and Peak Hour Day (PHD) of 10.0 L/s.

The existing site is currently undeveloped. Water for the site is to be initially sourced (till 2036) from the existing Round Mountain reservoir which transfers water south via the existing 600mm watermain which then reduces to a 400mm and then 375mm which feeds westerly back along Flagstonian Drive. It is proposed the supply to the first stages (101 and 102) will offtake the 375mm near Flagstone Water Play Park via a new roadway with a new 250mm ID watermain laid.

The adopted contours and elevations adopted within stages 101 and 102 are based on the latest design contours. With the available grade of the system having a maximum static head of 105m (Top Water Level of Round Mountain Reservoir) and pipe losses towards the development it was identified that a pump station is required to ensure levels of service are met to properties at elevations in the development particularly above 70m in the 2026 horizon, however with further upstream losses (10m) the contour would reduce to 60m incorporating the majority of precinct 101 and 102. The assessment has considered a pump station with a grade of 113m which would supply all of 101 and 102 located at the entrance to the development.

Based on consultation with LCC it is understood that several new assets are already proposed or installed and have been included within the assessment within the modelled scenarios. One consideration is a recent pump station installed in the neighbouring development to the east with an opportunity for this to be extended into the Monarch 101 and 102 to supply properties located above the 70m contour after final contours are realised. However, due to insufficient upstream, downstream (100mm watermains) and pump capacity to support the Monarch Glen development including the Monarch Glen service area is 10m higher. A viable initial consideration but easily dismissed as feasible or acceptable given the impacts and scale of upgrades required in a recently completed community. Currently this assessment includes a new pump station as a worse case with investigations recommended for the existing station. An alternative solution could be linked to the proposed town centre development (east) and possible need for a pump station also therefore this will can be considered within the IMP.

The internal water reticulation network was designed with a mixture of DN100, DN150 and DN250 mains, sized according to the estimated flows.

This assessment concludes that the proposed water reticulation network can adequately service Precincts 101 and 102.

2 Introduction

Digital Water Solutions (DWS) has been commissioned by Colliers to develop a water supply network plan for the Monarch Glen development – Precinct 101 and 102 and are proposed to include:

- 575 residential allotments
- 1.026 ha of Local Park / Open Space

Figure 2-1 Illustrates the subject site. Appendix A includes the town planning overview.

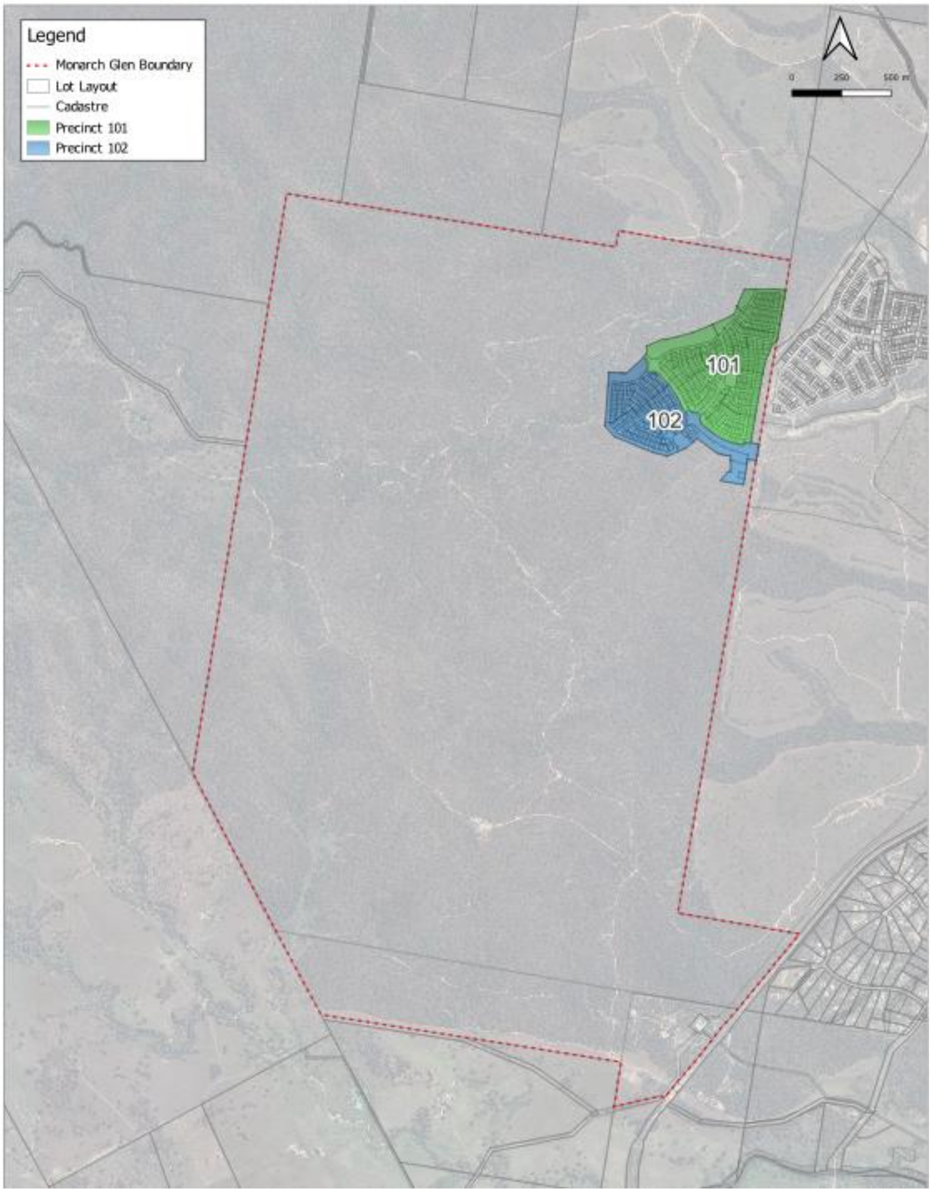

FIGURE 2-1 MONARCH GLEN PRECINCT 101 AND 102 OVERVIEW

A preliminary precinct plan and sub-precincts are shown in Figure 2-2.

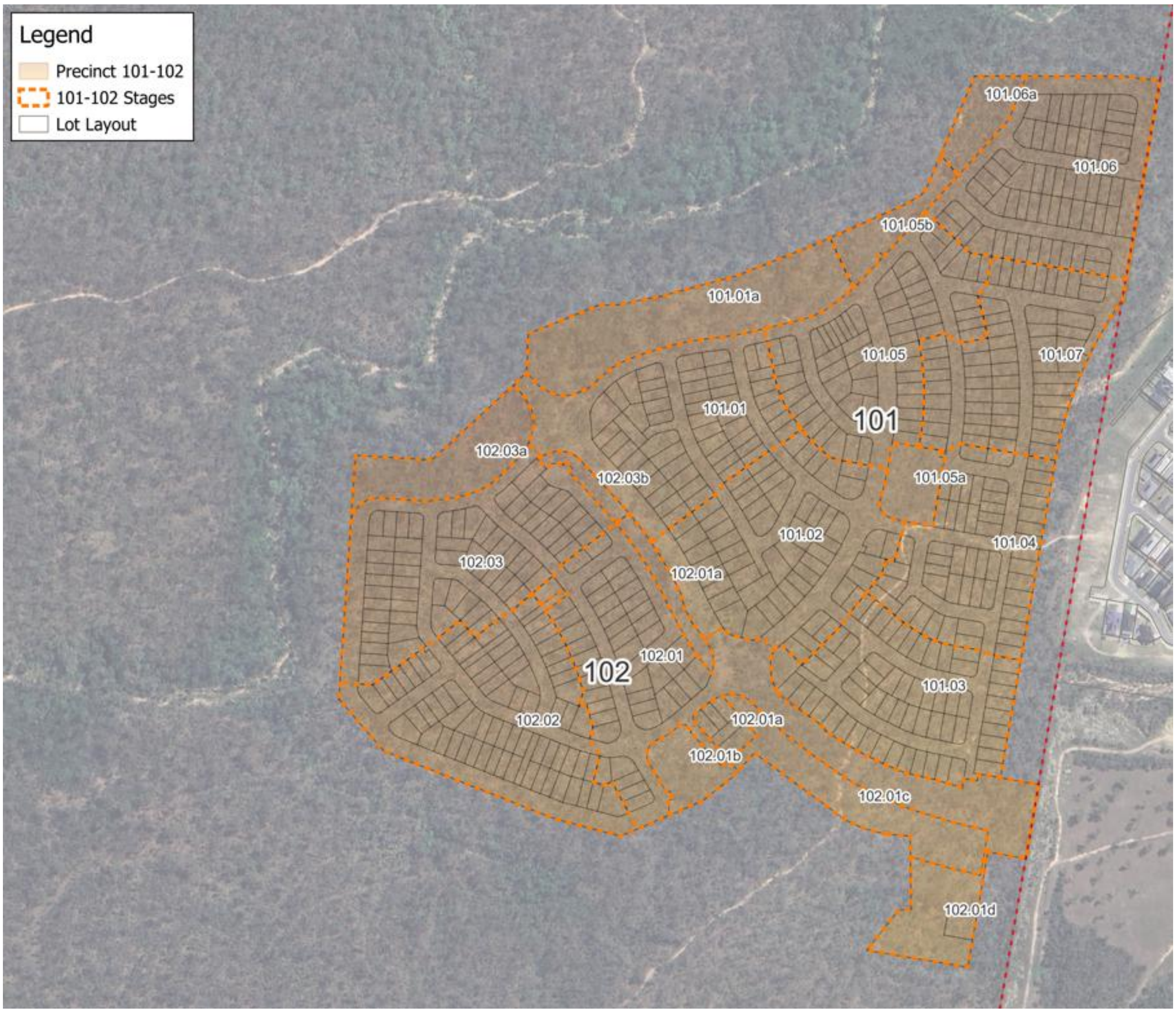

FIGURE 2-2 PRECINCT 101 AND 102 SUB-PRECINCT PLAN

2.1 Background and context

The subject stages for the Monarch Glen development water supply assessment are the first Precincts 101 and 102. There are current proposed residential precincts and District / Local Centre, Educational, Sports, Transport and Community Precincts proposed for the broader Monarch Glen development.

Logan City Council (LCC) is the water supply and sewerage SEQ Distributor Retailer Authority servicing the subject area. Relevant planning information has been sourced from LCC to ensure consistency.

The Greater Flagstone PDA (Greater Flagstone) has previously been analysed in terms of water supply and sewerage infrastructure for the preparation of the LCC infrastructure planning. The previous assessment, Water Infrastructure Master Plan (IMP) 2016, considered the design criteria and strategies.

Digital Water Solutions Pty Ltd (DWS) was engaged by Colliers to update the Water Infrastructure Master Plan for Monarch Glen (former name Undullah) in parallel with this assessment to align with LCC revised requirements around code of practice and current planning strategies.

3 Assumptions

This section details the key assumptions adopted for this water supply network assessment.

3.1 Design Criteria

The design criteria adopted for this assessment was provided by LCC. An extract of the key elements is detailed in Table 1. Key design criteria with the full criteria provided in Appendix B for reference.

TABLE 1 KEY DESIGN CRITERIA

Water Network Desired Standards of Service (DSS)				
Parameter	**Criteria**			
Water demand				
Average Day Demand (ADD)	On demand areas - 190 L/EP/d. Based on 165 L/EP/d residential consumption + allowance for leakage/losses (25 L/EP/d).			
	Constant flow areas -190 L/EP/d. Based on 165 L/EP/d residential consumption + allowance for leakage/losses (25 L/EP/d).			
Peaking factors	**Category**	**MDMM/AD**	**MD/AD**	**PH/AD**
Guidance Note: Peaking factors are to be applied to the residential component of demand, i.e. 165 L/EP/d. Leakage /loss levels will remain constant throughout all demand categories and should only be appended after any peaking escalation has occurred.	Residential detached	1.3	1.7	3.1
	Residential attached	1.3	1.6	2.6
	Rural residential / Constant flow	1	1	1.5
	Commercial	1.2	1.3	2.0
	Industry	1.2	1.3	1.7
	Parks / Open space	1.2	1.3	1.7
System planning				
Bulk supply and reticulation	3 days of MDMM. Reservoirs to have a net positive inflow and capable of continuous operation and not fall below the emergency level. 3 days of MD. Reservoirs should not fall below the emergency level. 5 days of AD. Reservoirs should fill from empty to full.			
Service pressures				
Minimum operating pressure at PH	On demand areas – 22m at the property boundary based on reservoir at minimum operating level (MOL). MOL defined as 15% of storage height or top of emergency storage.			
	Constant flow areas – 10m at the property boundary based on reservoir at minimum operating level (MOL) MOL defined as 15% of storage height or top of emergency storage.			
Maximum operating pressure	80 m at the property boundary based on the reservoir at TWL			
Target maximum operating pressure	55 m at the property boundary based on the reservoir level at TWL			
Fire fighting				
System pressure	On demand areas	12 m minimum at property boundary		
	Constant flow areas	no fire service provided		
Fire flow	Constant flow areas	no fire service provided		
	Rural Residential	7.5 L/s for 2 hrs		
	Rural Commercial / Industrial	15 L/s for 2 hrs		
	Residential	15 L/s for 2 hrs		
	Commercial & Industrial	30 L/s for 4 hrs		
	Special risk / hazard	to be advised by Logan City Council (LCC)		
Background demand	2/3 PH (as per DEWS requirements)			
Reservoir level	Minimum Operating Level (MOL)			

3.2 Network Planning

3.2.1 Hydraulic Network Model

Logan City Council provided the following model, in the InfoWorks WS Pro (Version 2025.3).

- PL-2022-01.wspt – Master Planning Model

The model is assumed to be an accurate representation of the Logan Water Network for the Flagstone Region at the present times. Based on discussions with Logan representatives (30th October 2024) the following changes were made:

- Chambers Flat to Travis Rd transfer main (2026 introduction).
- Wyaralong Dam (delayed to 2032).
- Amendments to the Monarch Glen Whole Site layout and demands (part of IMP update).

Existing network deficiencies are outside of the scope of this work and are to be addressed by LCC.

The adopted contours and elevations within stages 101 and 102 are based on the latest design contours.

4 Development Population and Flows

4.1 Development Population Projections

Based on the design criteria adopted in Section 2, an equivalent person (EP) population model (Table 2) has been developed for the site. An EP has been attributed to all residential and non- residential lots. In addition, an allowance for open spaces has been included to allow for the provision of drinking fountains and toilets. Irrigation flow rates have not been considered.

Stages 1-7 and 1-3 represents a total EP yield of 1630.6 EP. This includes approximately 98% residential and 2% parks / open space.

TABLE 2 STAGES 1-7 & STAGES 1-3 EQUIVALENT PERSON PROJECTIONS

	Precincts										
	101							102			Total
Stages* *Lot Type	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**1**	**2**	**3**	
Residential	151.2	162.4	165.2	145.6	162.4	156.8	156.8	137.2	190.4	182.0	**1,610**
** Local Park*	-	10.6	-	-	10	-	-	-	-	-	**20.6**
Cumulative	***151.2***	***324.2***	***489.4***	***635.0***	***807.4***	***964.2***	***1121.0***	***1258.2***	***1448.6***	***1630.6***	

* Parks 20 EP per unit – unit Gross hectare

4.2 Development Population flows

Based on the projected EP a design flow of 10.0 L/s at peak hour is estimated for the development. The water supply demand for Precinct 101 (Stages 1-7) and 102 (Stages 1-3) is detailed in Table 3.

TABLE 3 STAGES 1-7 & STAGES 1-3 WATER SUPPLY DEMAND

Precinct	Stage	AD (L/s)	AD (ML/d)	MD (L/s)	MD (ML/d)	PHD (L/s)
101	1	0.3	0.03	0.5	0.05	0.9
	2	0.4	0.03	0.6	0.05	1.0
	3	0.4	0.03	0.6	0.05	1.0
	4	0.3	0.03	0.5	0.04	0.9
	5	0.4	0.03	0.6	0.05	1.0
	6	0.3	0.03	0.6	0.05	1.0
	7	0.3	0.03	0.6	0.05	1.0
102	1	0.3	0.03	0.5	0.04	0.9
	2	0.4	0.04	0.7	0.06	1.2
	3	0.4	0.03	0.6	0.06	1.1
TOTAL		**3.5**	**0.3**	**5.7**	**0.5**	**10.0**

5 Water Supply Network Planning

5.1 Existing Infrastructure

The site is currently an undeveloped greenfield area. The site is presently not serviced by a water network. LCC has a proposed supply strategy for the area which will change and develop over time as new infrastructure comes online. Currently water for the site is to be initially sourced (till 2036) from the existing Round Mountain reservoir which transfers water south via the existing 600mm watermain which then reduces to a 400mm and then 375mm which feeds westerly back along Flagstonian Drive (Figure 5-1). It is proposed the supply to the first stages (precincts 101 and 102) will offtake the 375mm near Flagstone Water Play Park via a new roadway with a new 250mm ID watermain laid. This 375mm will cater for planned development for a portion of Monarch Glen including Precincts 101 and 102.

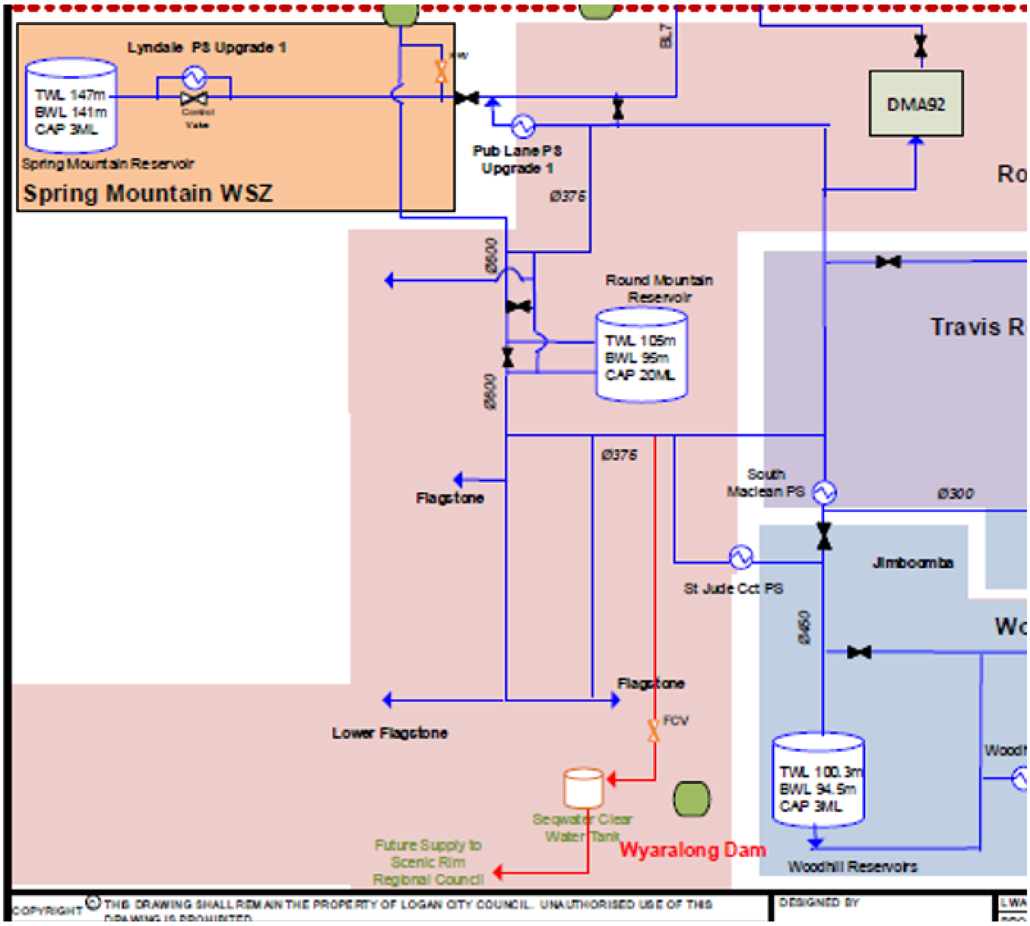

FIGURE 5-1 2026 LCC SUPPLY STRATEGY

5.2 Future Supply Strategy

By 2036 it is proposed that a new reservoir is to be installed within the Monarch Glen site towards the south (Lower Flagstone Reservoirs). This will be sourced from the new Wyaralong WTP and will supply most of the Monarch Glen area. Sizing and supply to precinct 101 and 102 has been considered under this network change.

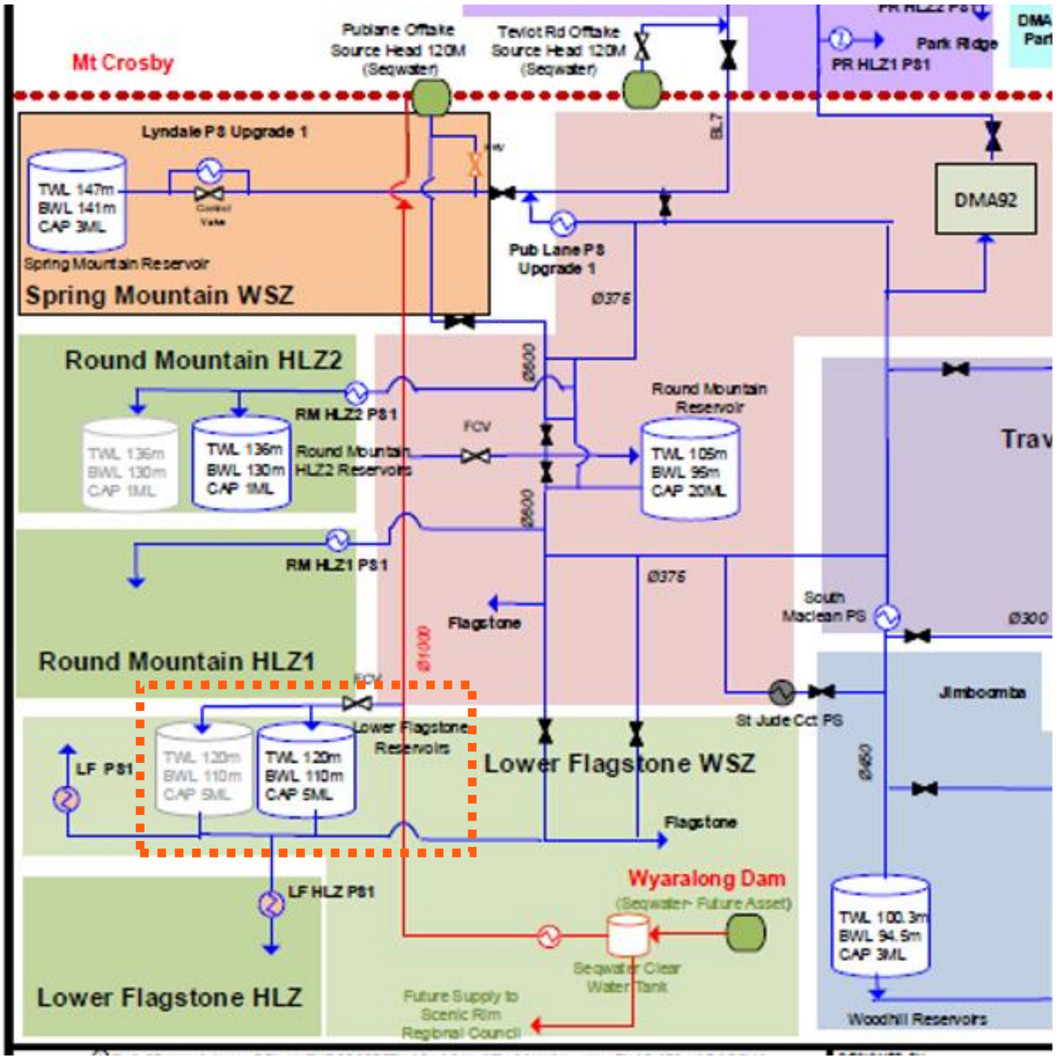

FIGURE 5-2 2036 LCC SUPPLY STRATEGY

5.3 Hydraulic Modelling Assessment

This section outlines the results from the modelling undertaken. The planned demand for this area has been incorporated into the LCC planning horizons. LCC undertakes network planning at five (5) year intervals post 2021 (e.g. 2026, 2031 etc). It is expected that the precinct stages will see construction before the 2026 horizon. To ensure capacity is sufficient and or identified required upgrades the following scenarios have been assessed:

- 2026 – Current
- 2031
- Ultimate (new reservoirs introduced).

The adopted contours and elevations within stages 101 and 102 are based on the latest design contours as shown in Figure 5-3 and range from 53 m to 86 m. Precincts 101 and 102 could support the creation of a District Metered Area (DMA). Consideration to the future stages and external development profile will be required to ensure optimal configuration of any future DMAs. This should be considered in the whole of site Infrastructure Master Plan (IMP).

Appendix C includes the results of the hydraulic modelling and an overview of the identified water supply network.

5.3.1 2026 Assessment

To service precincts 101 and 102 within the 2026 scenario a new 250mm ID watermain is proposed from the existing 375mm on Flagstonian Drive. The available grade of the system having a maximum static head of 105m (Top Water Level of Round Mountain Reservoir) and pipe losses towards the development it was identified that a pump station is required to ensure levels of service are met to properties at elevations in the development particularly above 70 m AHD (2026) and 60 m AHD (2031). The assessment has considered a pump station with a grade of 113m which would supply all of 101 and 102 located at the entrance to the development. On assessing the planning model, the new proposed temporary pump station on the 400mm was operating throughout the day therefore scenarios were run with and without the PS to determine the worst case HGL to the site as under 2026 the 375mm offtake is located on the downstream of the pump station providing an improved supply when operating. However, with discussions with LCC this pump station will operate depending on supply delivered to Scenic Rim Regional Council.

An additional option for servicing of future developments that fall below the 60 m AHD contour, which do not require pumping would be laying a parallel watermain connected from the suction side of the pump station. This would allow gravity supply to run parallel with the boosted main for future connections to additional precinct properties low level and can be maintained by Round Mountain reservoir grade (105 m AHD).

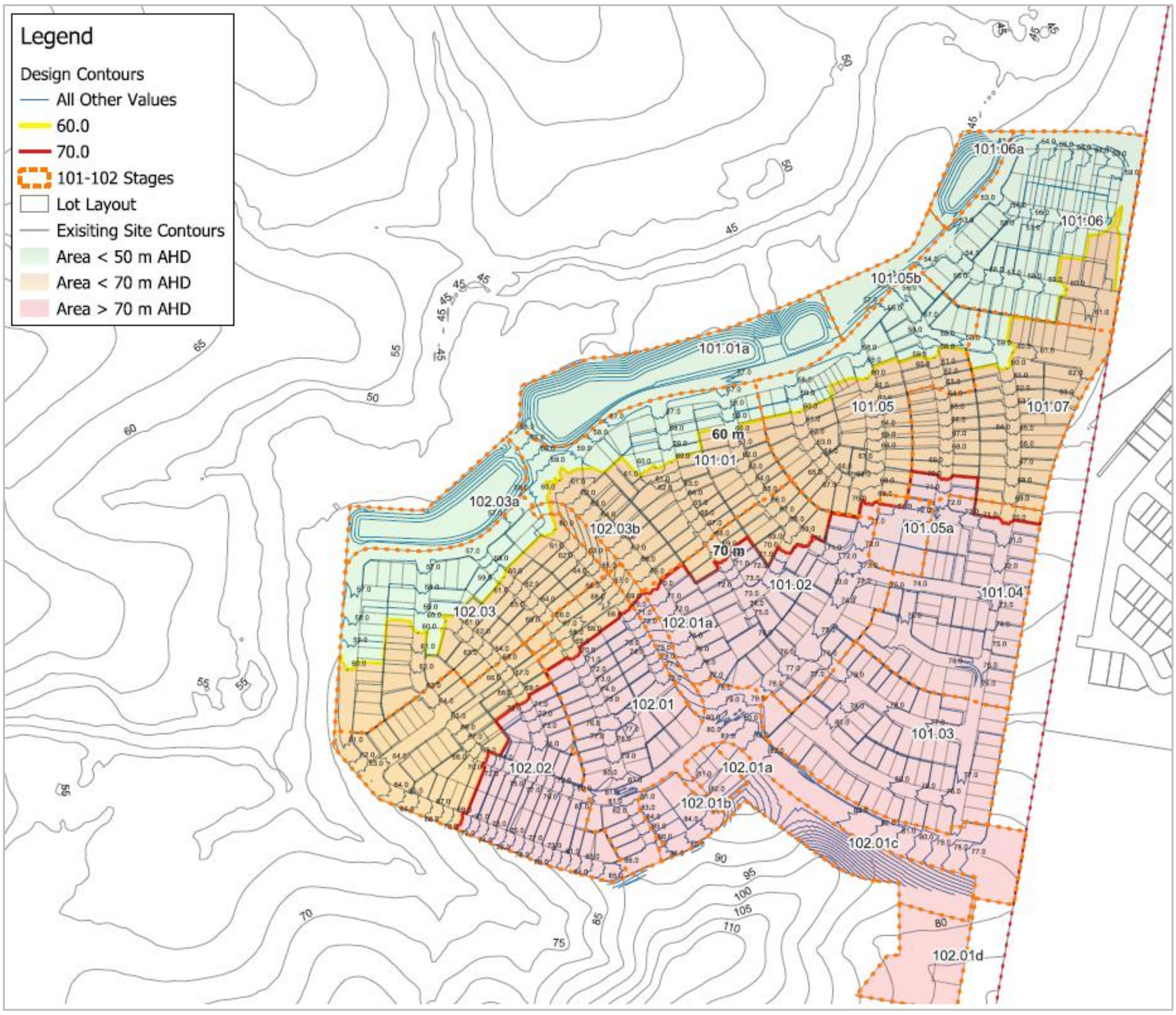

FIGURE 5-3 POTENTIAL PROPERTIES REQUIRING BOOSTING >60M CONTOUR

Figure 5-3 illustrates the change in HGL to the development depending on the pump station upstream. This identified that the HGL could fall as low as 92 m AHD (and lower in 2031, 82 m AHD) when the upstream pump station is operational, therefore triggering the need of the pump station for Precinct 101 and 102.

With the pump station added to supply precincts 101 and 102, the water network reticulation was developed with a mixture of 250mm (considering the wider Monarch Glen stages), 150mm and 100mm watermains as shown in Figure 5-4. Following Logan requirements, a new DMA has been proposed which would operate under short and long term. A proposed single 150mm offtake (flow meter) is proposed from the new 250mm watermain located in the northwest of the site (as detailed in Figure 5-4). This will enable the proposed 250mm to operate in both directions in the future when the future stages and reservoir are installed while maintaining the DMA supply arrangement. Due to current optimised pressures based on the pump station operation and future reservoir grade no pressure reducing valve is expected.

These were assessed against the design criteria including pipe capacity, pressures and fire flow requirements. The development stages within precincts 101 and 102 were considered to ensure fire flow requirements could be met without full development and fully constructed reticulation main loops.

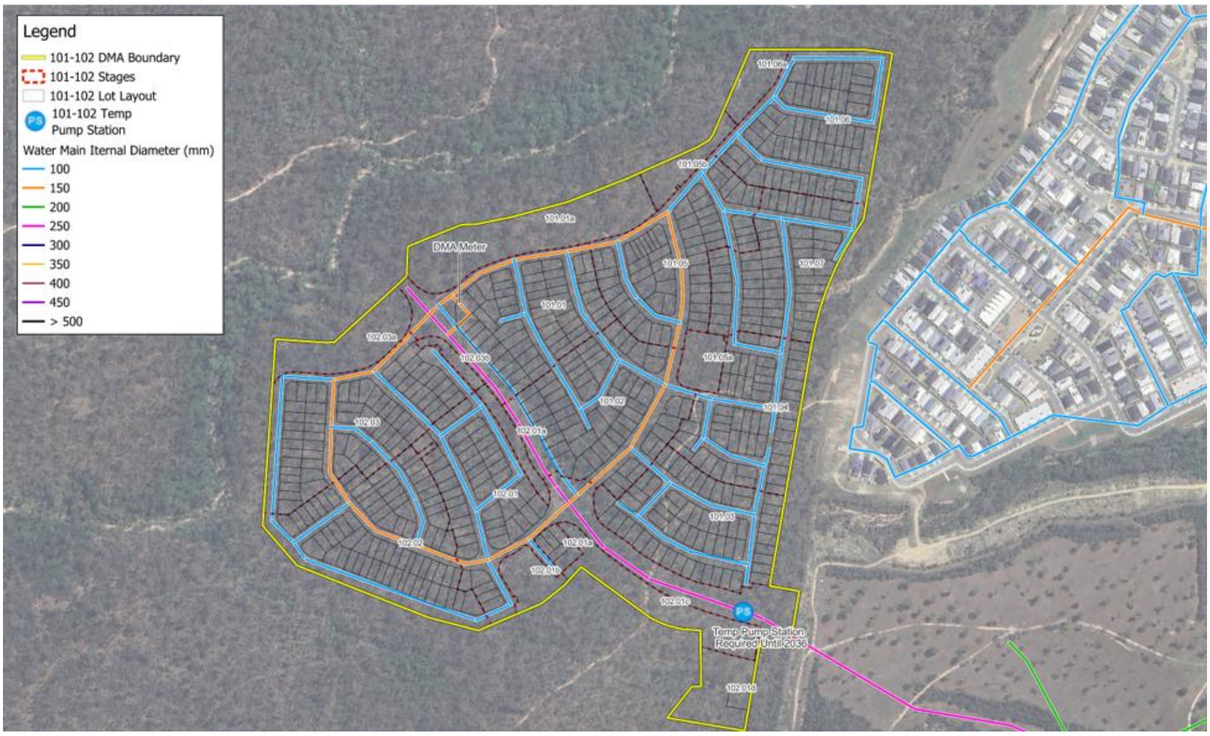

FIGURE 5-4 PRECINCT 101 AND 102 INTERNAL PIPE DIAMETERS.

Development pressures are expected to range from between minimum 26m to 60 m under 2026 scenario until the introduction of the new Lower Flagstone Reservoirs.

With a peak hour demand of only 10.2 l/s the development does not exacerbate any of the existing pipe velocities or head losses.

5.3.2 2031 Assessment

An assessment was undertaken on the revised 2031 LCC Planning Model (Wyaralong WTP delayed) to confirm supply grade to the proposed development pump station. In Figure 5-5 and Figure 5-6 a considerable head drop is observed in 2026 and 2031 respectively when the upstream pump station is not operational. Discussions with LCC reveal that their pump station will not run constantly and there are periods where the pump is off. This is because its primary function is to transfer water West towards Beaudesert, so the modelling has considered this worst case scenario. Figure 5-6 illustrates that the HGL will degrade by 2031 to 82 m AHD

When assessing the pump performance, it was observed that the suction pressure falls as low as 6 m in 2031 when the upstream pump is off (Worst case scenario). This pressure is low and therefore consideration of the pumps Net Positive Suction Head (NPSH) requirements is crucial.

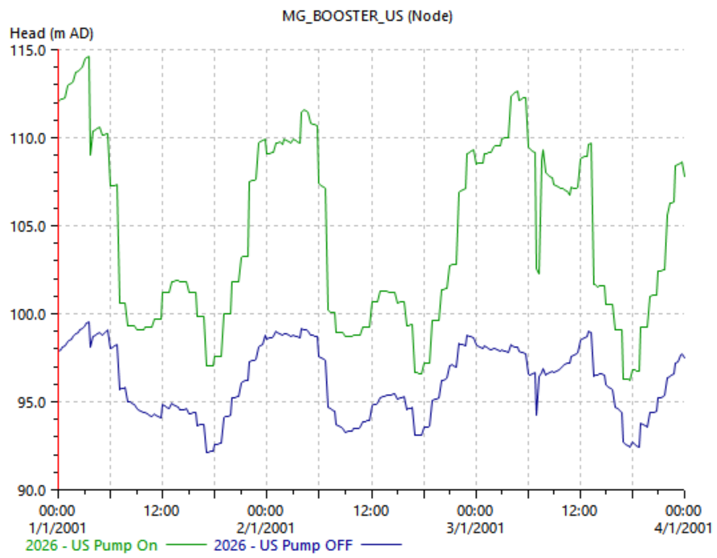

FIGURE 5-5 HGL TO DEVELOPMENT 2026

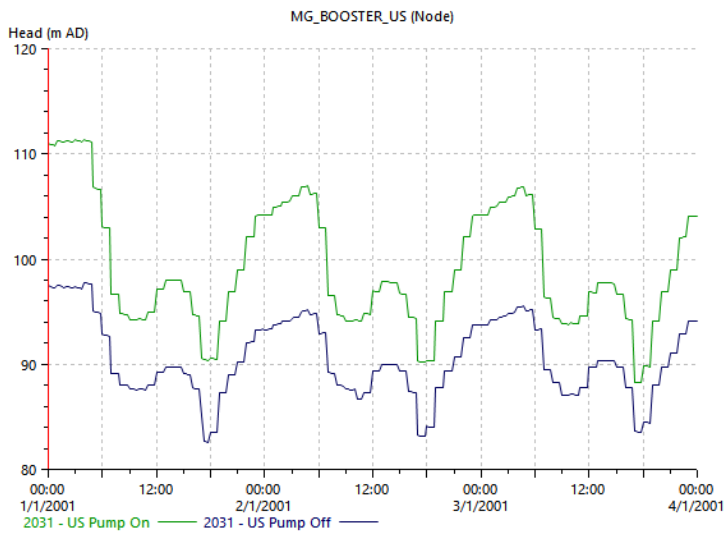

FIGURE 5-6 HGL TO DEVELOPMENT 2031

Pressures are expected to range from between minimum 26 m to 60 m under the 2031 scenario until the introduction of the new Lower Flagstone Reservoirs.

5.3.3 Ultimate Scenario Assessment

As detailed it is expected that the supply arrangement to Precincts 101 and 102 will change with the introduction of the Lower Flagstone Reservoirs with flow direction and pressure changes. The development was assessed under this revised arrangement. It was confirmed that all previous sizing was adequate meeting design criteria with supply from the reservoirs based at 120m TWL. Pressures are expected to range from between minimum 26m to 66m under Ultimate scenario.

5.3.4 Fire Flow Analysis

A Peak Day fire simulation was undertaken using a 2/3 Peak Hour flow (8pm). The hydraulic assessment has shown that the specified water network for the proposed development satisfies the DSS fire requirements (residential) for the 2026, 2031 and Ultimate planning scenarios.

5.3.5 Pump Station Requirements

Table 4 detailed modelled flows and pressures derived and observed from the modelling assessment. It should be noted these are linked to the utilised Logan Planning Model and developed for the supply of the precinct 101 and 102 only. It is recommended that these requirements are revised at design change linked to revised changes to the assumptions used within this report.

TABLE 4 PROPOSED PUMP STATION REQUIREMENTS

Parameter	2026	2031
Minimum Suction Pressure (m)	17.1	7.6
Maximum Suction Pressure (m)	24.5	22.8
Minimum Suction HGL (m AHD)	92.1	82.6
Maximum Suction HGL (m AHD)	99.5	97.8
Delivery Pressure (m)	38	
Delivery HGL (m AHD)	113	
Minimum Flow (l/s)	1.2	
Maximum Flow (l/s)	9.7	
Average Flow (l/s)	5.3	
Volume per Day (ML/d)	0.46	

6 Conclusions and Recommendations

6.1 Conclusions

Based on the work undertaken for this water reticulation network assessment for Precincts 101 and 102 of the Monarch Glen development the following is concluded:

- Precinct 101 and 102 of the Monarch Glen development represent an EP yield of 1,610 EP. This is divided in the following breakdown per Precinct:
  - Precinct 101: 1,100 EP
  - Precinct 102: 510 EP
- Precincts 101 and 102 have a combined AD 3.5 L/s, MD 5.7 L/s and PHD 10.0 L/s. This is divided in the following breakdown per stage:

	AD	***MD***	***PHD***
Precinct 101:	2.4 L/s	3.9 L/s	6.8 L/s
Precinct 102:	1.1 L/s	1.8 L/s	3.2 L/s

- The precincts are proposed to be supplied from a new 250mm ID watermain connected to the existing 375mm watermain on Flagstonian Drive.
- Supply from the Round Mountain reservoir is limited due to the available HGL and areas of high elevation at the proposed development. This highlighted the need for areas of the development to be supplied through a pump station to meet relevant minimum pressure requirements based on LCC's guidelines for water supply.
- The assessment has proposed a new station to pump all properties within precinct 101 and 102 to ensure all minimum pressure requirements are met. This option would potentially provide flexibility in the event future precincts required interim measures to meet minimum pressure requirements prior to the transition of supply from the existing Round Mountain reservoir (TWL: 105m AHD) to the proposed Lower Flagstone reservoir (TWL:120m AHD).
- Consultation with LCC identified a recent pump station installed in the neighbouring development to the east. However, due to insufficient upstream, downstream (100mm watermains) and pump capacity to support the Monarch Glen development including the Monarch Glen service area is 10m higher. A viable initial consideration but easily dismissed as feasible or acceptable given the impacts and scale of upgrades required in a recently completed community. Currently this assessment includes a new pump station as a worse case with investigations recommended for the existing station.
- An alternative solution could be linked to the proposed town centre development (east) and possible need for a pump station also therefore this can be considered within the IMP.
- The water reticulation network for the precincts were sized according to the design criteria in Section 3.1 and was found to require DN250, DN150 and DN100 pipes.
- Details of the pump station and reticulation network discussed in this assessment is for planning purposes only and should not be used for construction.
- For connection to the future low lying western precincts an option is a parallel watermain alongside the boosted delivery water main connected upstream of the pump station with the temporary pump station only supplying precinct 101 and 102.

7 Qualifications

In preparing this report, Digital Water Solutions (DWS) has applied the level of skill, care, and diligence expected of members in the engineering profession, adhering to established engineering principles and practices.

DWS has made every effort to understand the project's parameters and ensure accuracy and comprehensiveness based on available information, including third-party sources that may not have been independently verified.

This report is based on assumptions and project parameters provided by the client and other third-party sources. DWS assumes no responsibility for outcomes affected by deviations from these assumptions or unanticipated dependencies outside our scope.

The scope of this report is limited to the defined project parameters. Any use of this report beyond this scope is at the client's risk, and DWS accepts no responsibility for any consequences arising from such use.

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All limitations of liability extend to DWS, its employees, agents, and representatives.

Conclusions, recommendations, and findings are based on the conditions and information available at the time of preparation. DWS has no responsibility to update this report due to subsequent events or new information that may arise.

Recommendations are intended to inform relevant planning or decision-making processes, acknowledging that some may not be implemented if they fall outside the project scope or conflict with other project elements.

This report does not constitute legal advice.

Digital Water Solutions

APPENDIX A – Proposed Reconfiguration of Lot Plan

ROL 4: PRECINCT 101 & 102

NOT TO BE USED FOR ENGINEERING DESIGN OR CONSTRUCTION

NOTES

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No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

Pavements and centrelines shown are indicative only and are subject to Engineering Design.

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* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

Net residential density means the total number of dwellings divided by the combined area of residential lots, Neighbourhood Recreation Parks, internal local roads and half the width of local roads bordering the site.
Average net residential density means net residential density calculated for a whole neighbourhood.

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

THIS RAL & POD PACKAGE WAS PREPARED AS A CONCEPTUAL LAYOUT ONLY. THE INFORMATION HEREON IS NOT SUITABLE FOR ANY OTHER PURPOSE.

LEGEND

Site Boundary
ROL 4 Boundary

RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:10000 @A3 1:20000 - LENGTHS ARE IN METRES
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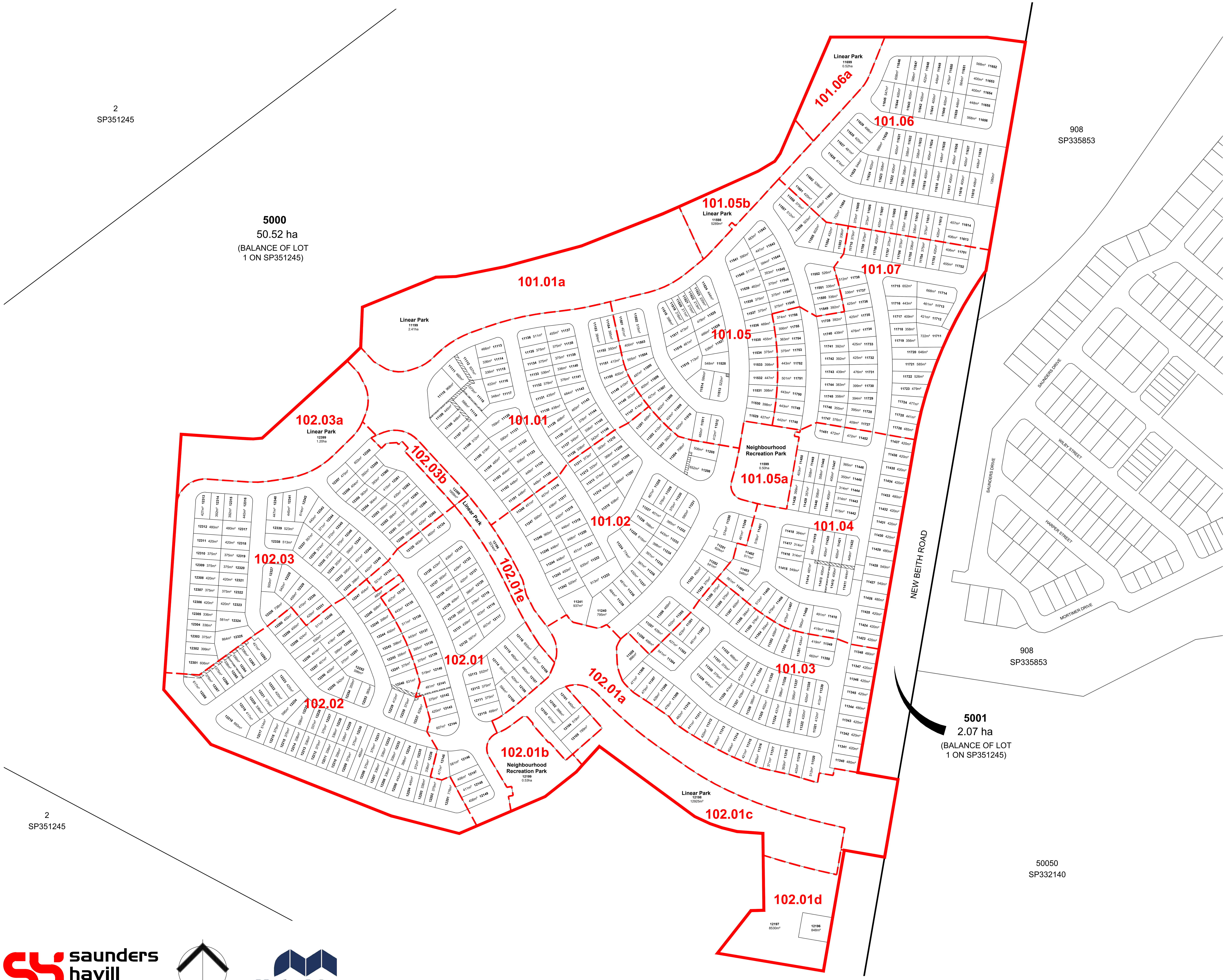
ROL 4: PRECINCT 101 & 102 - PRELIMINARY SUB-PRECINCT PLAN



NOT TO BE USED FOR ENGINEERING DESIGN
OR CONSTRUCTION

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Average net residential density means net residential density calculated for a whole neighbourhood.

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

THIS RAL & POD PACKAGE WAS PREPARED AS A CONCEPTUAL LAYOUT ONLY. THE INFORMATION HEREON IS NOT SUITABLE FOR ANY OTHER PURPOSE.

LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement

RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:2000 @A3 1:4000 - LENGTHS ARE IN METRES
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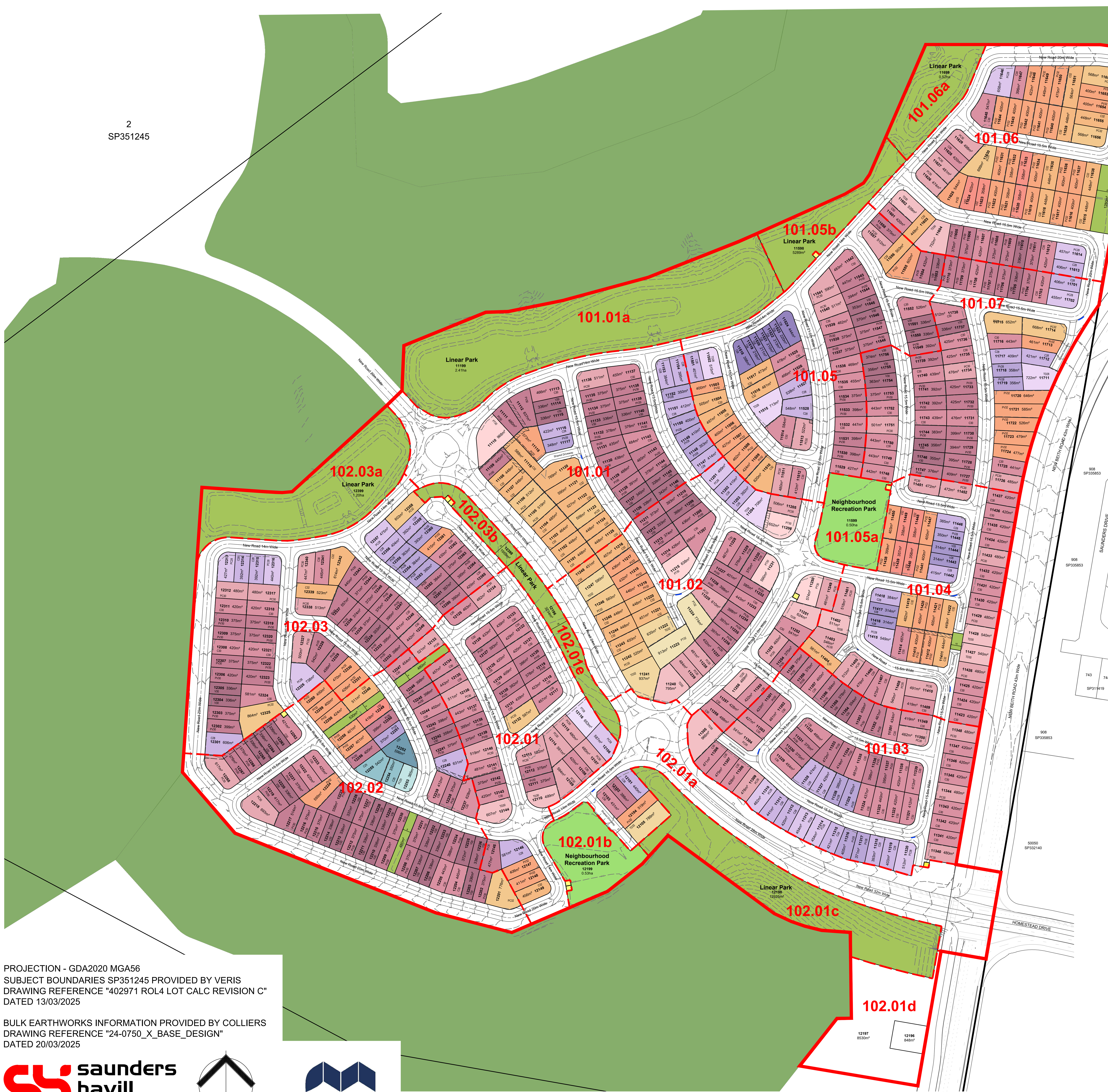
ROL 4: RECONFIGURATION OF A LOT PLAN



PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Design Contour (1.0m Interval) - Colliers 19/03/2025
- Conservation Area
- Indicative Bin Pad location
- Indicative PMT / RMU Site

THIS RAL & POD PACKAGE WAS PREPARED AS A CONCEPTUAL LAYOUT ONLY. THE INFORMATION HEREON IS NOT SUITABLE FOR ANY OTHER PURPOSE.

Net residential density means the total number of dwellings divided by the combined area of residential lots, Neighbourhood Recreation Parks, internal local roads and half the width of local roads bordering the site.
Average net residential density means net residential density calculated for a whole neighbourhood.

RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:2000 @A3 1:4000 - LENGTHS ARE IN METRES
20 0 20 40 60 80 100 120 140 160 180 200 220

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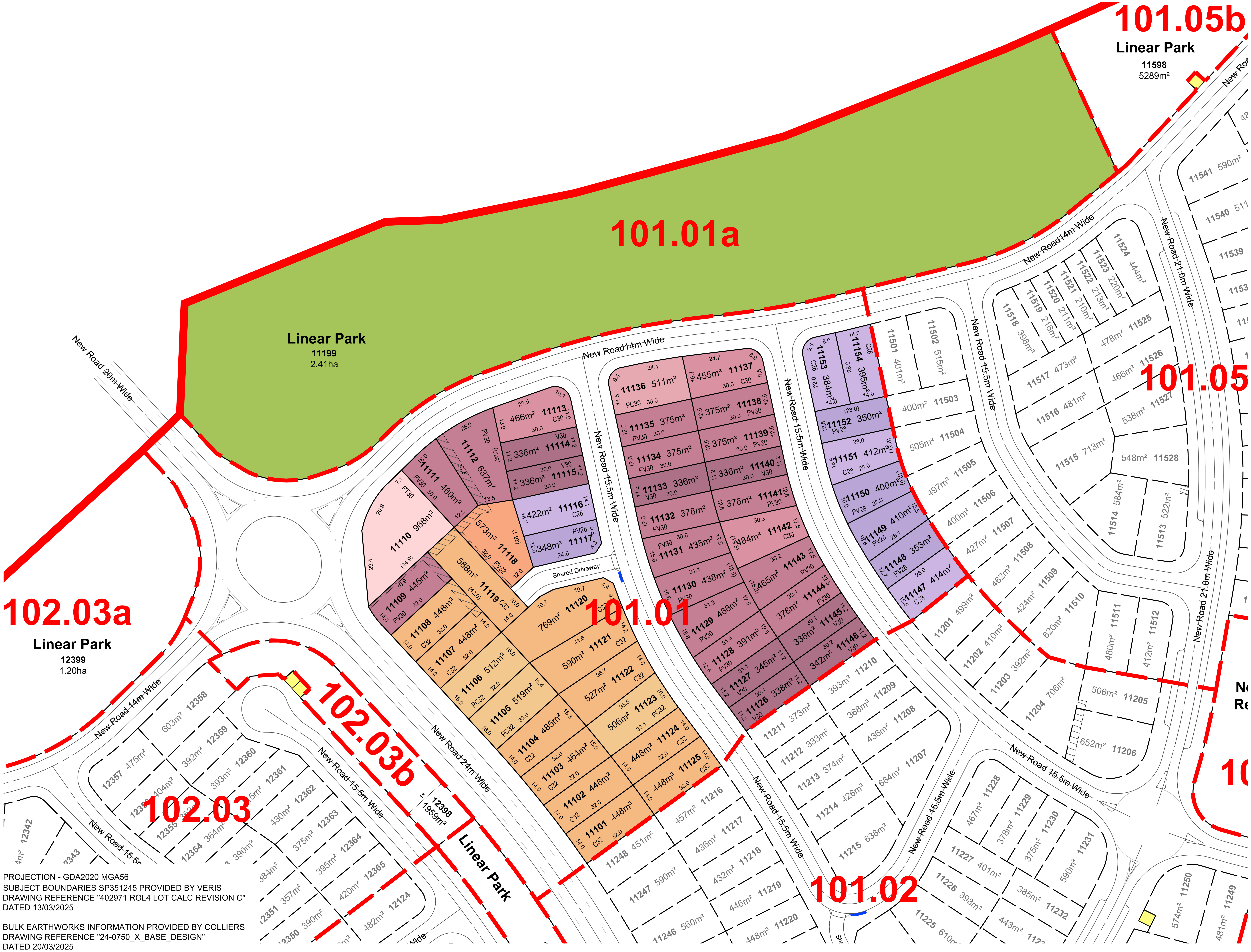
DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
25m Deep Lots					
Villa	V25	11.2m	1	0.2%	0.059 ha
Courtyard	C25	14m	2	0.3%	0.089 ha
Premium Courtyard	PC25	16m	1	0.2%	0.039 ha
Sub Total			**4**	**0.7%**	**0.187 ha**
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
28m Deep Lots					
Terrace - Front Loaded	T28	7.5m	7	1.2%	0.191 ha
Villa	V28	11.2m	4	0.7%	0.126 ha
Premium Villa	PV28	12.5m	17	3.0%	0.636 ha
Courtyard	C28	14m	32	5.6%	1.396 ha
Premium Courtyard	PC28	16m	14	2.4%	0.719 ha
Traditional	TD28	18m	4	0.7%	0.266 ha
Premium Traditional	PT28	20m	1	0.2%	0.065 ha
Sub Total			**79**	**13.7%**	**3.399 ha**
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
30m Deep Lots					
Villa	V30	11.2m	48	8.3%	1.651 ha
Premium Villa	PV30	12.5m	136	23.7%	5.431 ha
Courtyard	C30	14m	115	20.0%	5.140 ha
Premium Courtyard	PC30	16m	50	8.7%	2.548 ha
Traditional	TD30	18m	11	1.9%	0.684 ha
Premium Traditional	PT30	20m	5	0.9%	0.343 ha
Sub Total			**365**	**63.5%**	**15.797 ha**
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
32m Deep Lots					
Villa	V32	11.2m	9	1.6%	0.333 ha
Premium Villa	PV32	12.5m	57	9.9%	2.484 ha
Courtyard	C32	14m	41	7.1%	2.008 ha
Premium Courtyard	PC32	16m	14	2.4%	0.863 ha
Traditional	TD32	18m	4	0.7%	0.295 ha
Premium Traditional	PT32	20m	2	0.3%	0.169 ha
Sub Total			**127**	**22.1%**	**6.152 ha**
Total Allotments			**575**	**100%**	**25.535 ha**

Land Budget	Area (Ha)	%
Area of Subject Site / Stage	**48.211 ha**	—
Net Residential Allotments	**25.535 ha**	53.0%
Linear Park / Pedestrian Linkage	6.762 ha	14.0%
Neighbourhood Recreation Park	1.026 ha	2.1%
Local Road Areas	10.983 ha	22.8%
Major Road Areas	2.967 ha	6.2%
Balance Lot 12196	0.085 ha	0.2%
Balance Lot 12197	0.853 ha	1.8%
Total Area	**48.211 ha**	**100%**
Average Lot Size (m²)	**444.1 m²**	
Net Density (dw/ha)	**15.3 dw/ha**	

ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.01

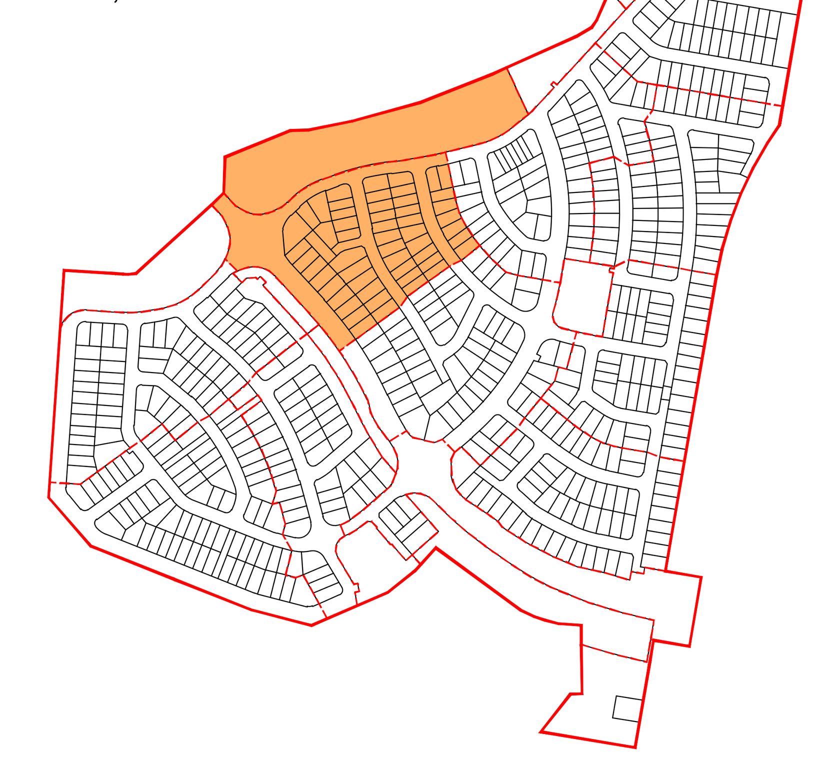


LEGEND
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
28m Deep Lots					
Premium Villa	PV28	12.5m	5	9.3%	0.186 ha
Courtyard	C28	14m	5	9.3%	0.202 ha
Sub Total			10	18.5%	0.388 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
30m Deep Lots					
Villa	V30	11.2m	8	14.8%	0.271 ha
Premium Villa	PV30	12.5m	15	27.8%	0.639 ha
Courtyard	C30	14m	3	5.6%	0.140 ha
Premium Courtyard	PC30	16m	1	1.9%	0.051 ha
Premium Traditional	PT30	20m	1	1.9%	0.097 ha
Sub Total			28	51.9%	1.198 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
32m Deep Lots					
Premium Villa	PV32	12.5m	1	1.9%	0.058 ha
Courtyard	C32	14m	12	22.2%	0.611 ha
Premium Courtyard	PC32	16m	3	5.6%	0.154 ha
Sub Total			16	29.6%	0.823 ha
Total Allotments			54	100%	2.409 ha

Land Budget	Area (Ha)	%
Area of Subject Site / Stage	6.370 ha	—
Net Residential Allotments	2.409 ha	37.8%
Linear Park / Pedestrian Linkage	2.409 ha	37.8%
Local Road Areas	0.773 ha	12.1%
Major Road Areas	0.779 ha	12.2%
Total Area	6.370 ha	100%

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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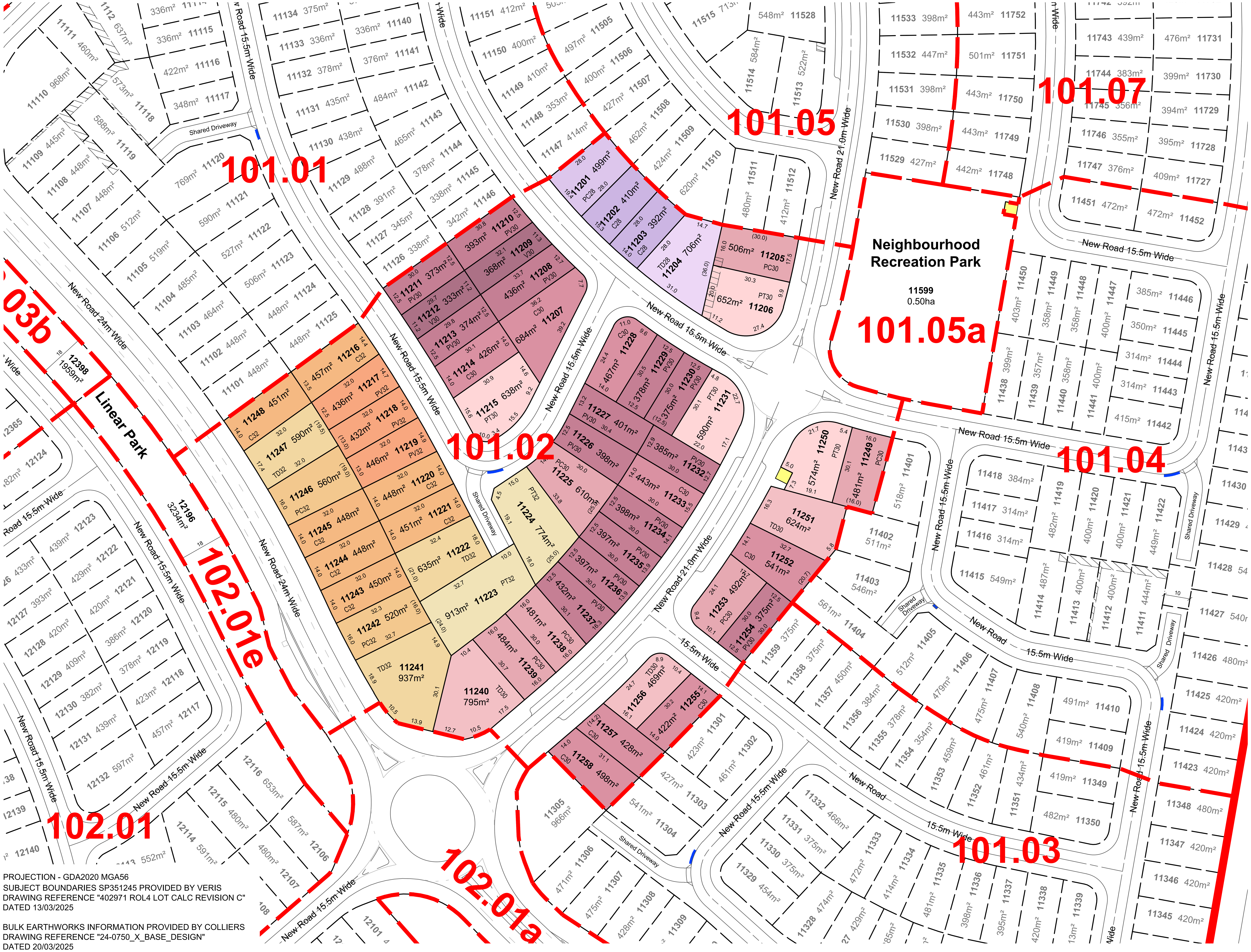
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.02



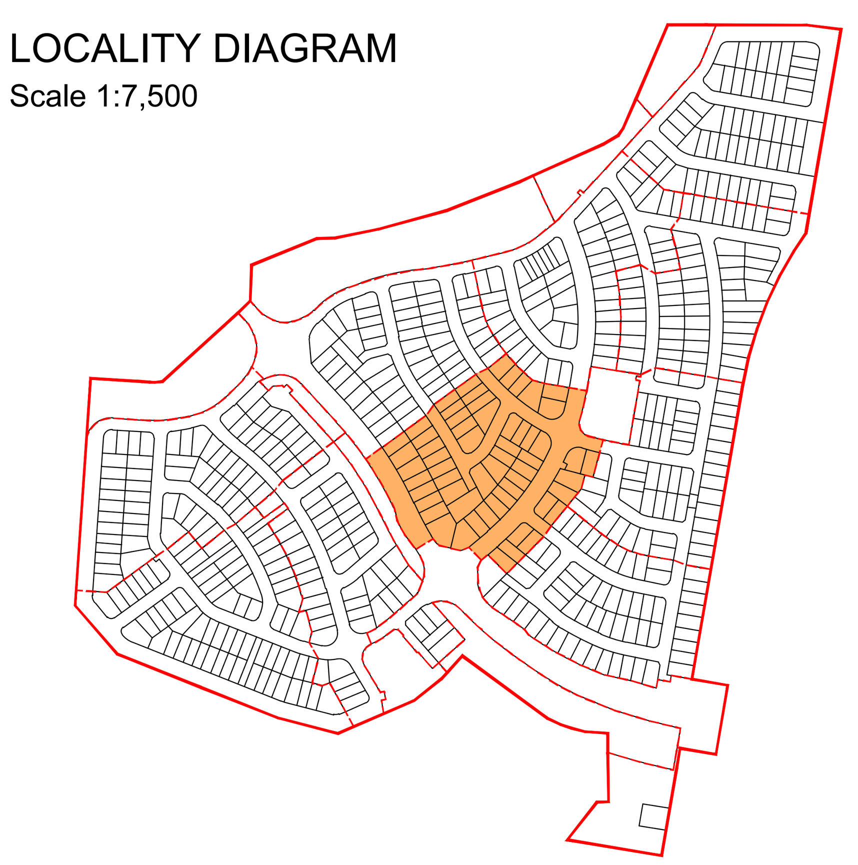
LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Courtyard	C28	14m	2	3.4%	0.080 ha
Premium Courtyard	PC28	16m	1	1.7%	0.050 ha
Traditional	TD28	18m	1	1.7%	0.071 ha
Sub Total			**4**	**6.9%**	**0.201 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Villa	V30	11.2m	2	3.4%	0.070 ha
Premium Villa	PV30	12.5m	14	24.1%	0.551 ha
Courtyard	C30	14m	8	13.8%	0.391 ha
Premium Courtyard	PC30	16m	6	10.3%	0.305 ha
Traditional	TD30	18m	3	5.2%	0.189 ha
Premium Traditional	PT30	20m	4	6.9%	0.246 ha
Sub Total			**37**	**63.8%**	**1.752 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
32m Deep Lots					
Premium Villa	PV32	12.5m	3	5.2%	0.131 ha
Courtyard	C32	14m	7	12.1%	0.315 ha
Premium Courtyard	PC32	16m	2	3.4%	0.108 ha
Traditional	TD32	18m	3	5.2%	0.216 ha
Premium Traditional	PT32	20m	2	3.4%	0.169 ha
Sub Total			**17**	**29.3%**	**0.939 ha**
Total Allotments			**58**	**100%**	**2.892 ha**

Land Budget	Area (Ha)	%
Area of Subject Site / Stage	**4.280 ha**	**—**
Net Residential Allotments	2.892 ha	67.6%
Local Road Areas	1.081 ha	25.3%
Major Road Areas	0.307 ha	7.2%
Total Area	**4.280 ha**	**100%**

LOCALITY DIAGRAM
Scale 1:7,500



PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES
10 0 10 20 30 40 50 60 70 80 90

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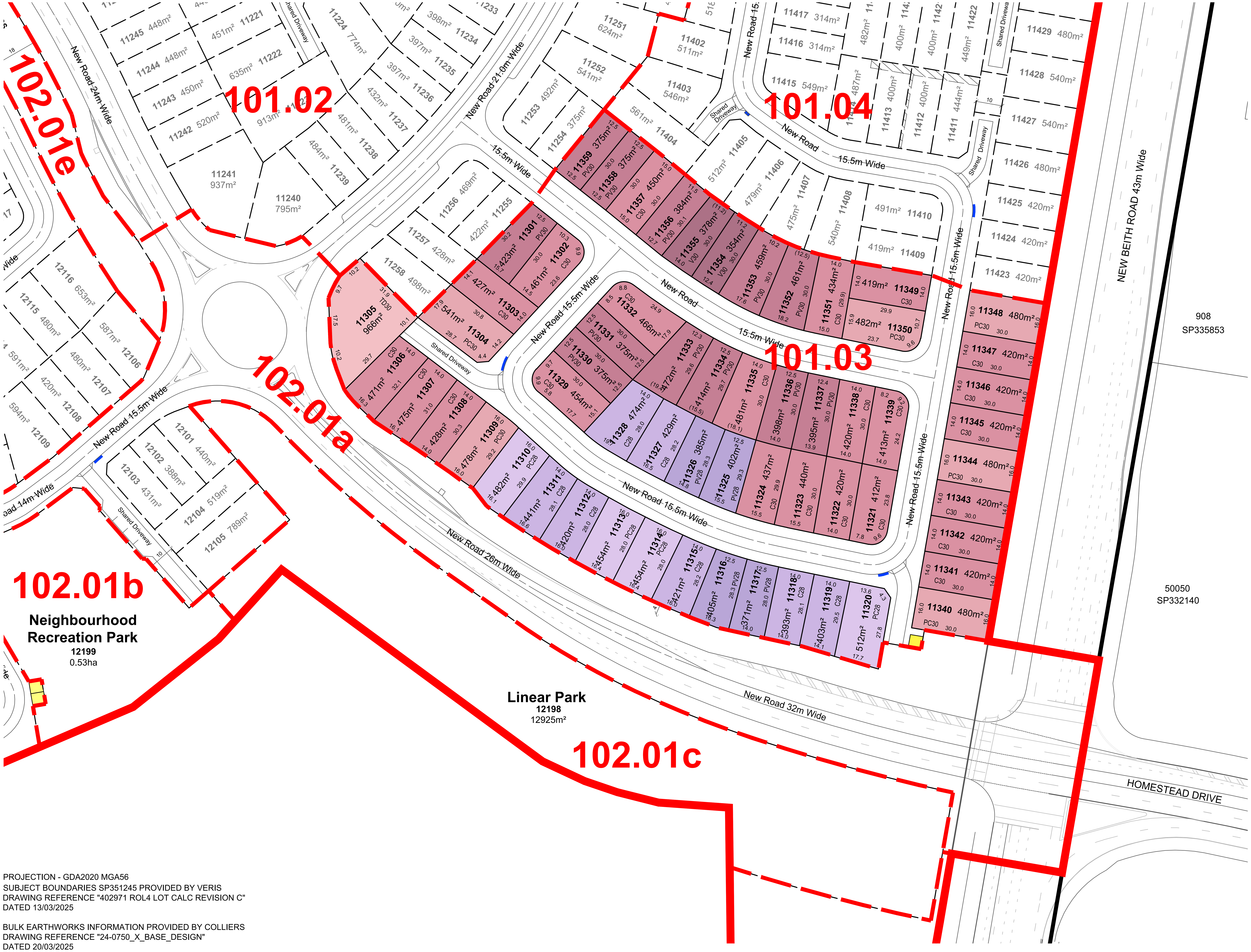
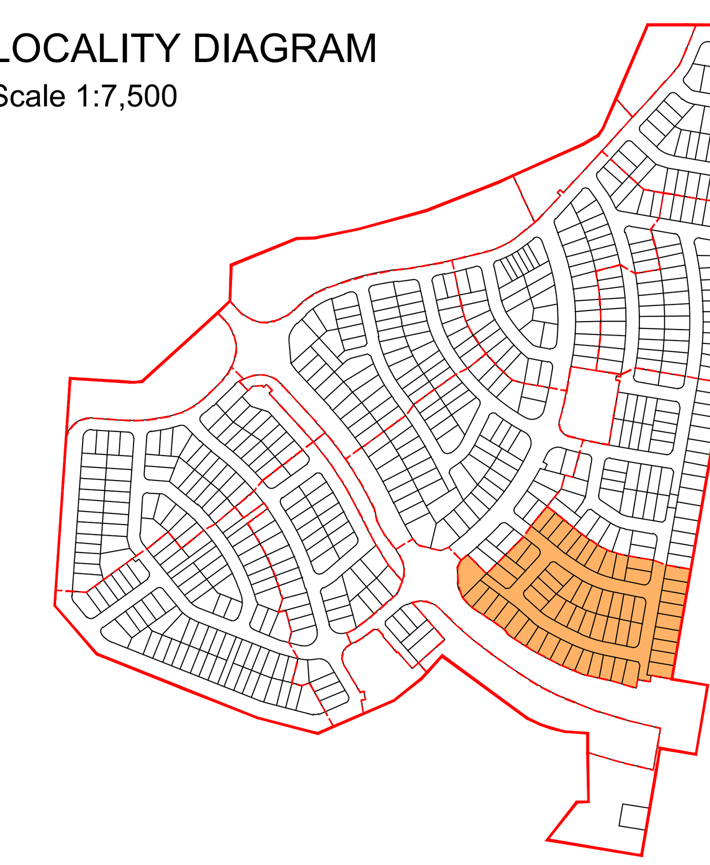
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.03



LEGEND
- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Premium Villa	PV28	12.5m	4	6.8%	0.156 ha
Courtyard	C28	14m	7	11.9%	0.298 ha
Sub Total			**15**	**25.4%**	**0.644 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Villa	V30	11.2m	2	3.4%	0.073 ha
Premium Villa	PV30	12.5m	12	20.3%	0.491 ha
Courtyard	C30	14m	23	39.0%	1.003 ha
Premium Courtyard	PC30	16m	6	10.2%	0.294 ha
Traditional	TD30	18m	1	1.7%	0.097 ha
Sub Total			**44**	**74.6%**	**1.958 ha**
Total Allotments			**59**	**100%**	**2.602 ha**
Land Budget			**Area (Ha)**	**%**	
Area of Subject Site / Stage			**3.462 ha**	**—**	
Net Residential Allotments			2.602 ha	0.752 ha	
Local Road Areas			0.860 ha	24.8%	
Total Area			**3.462 ha**	**100%**	

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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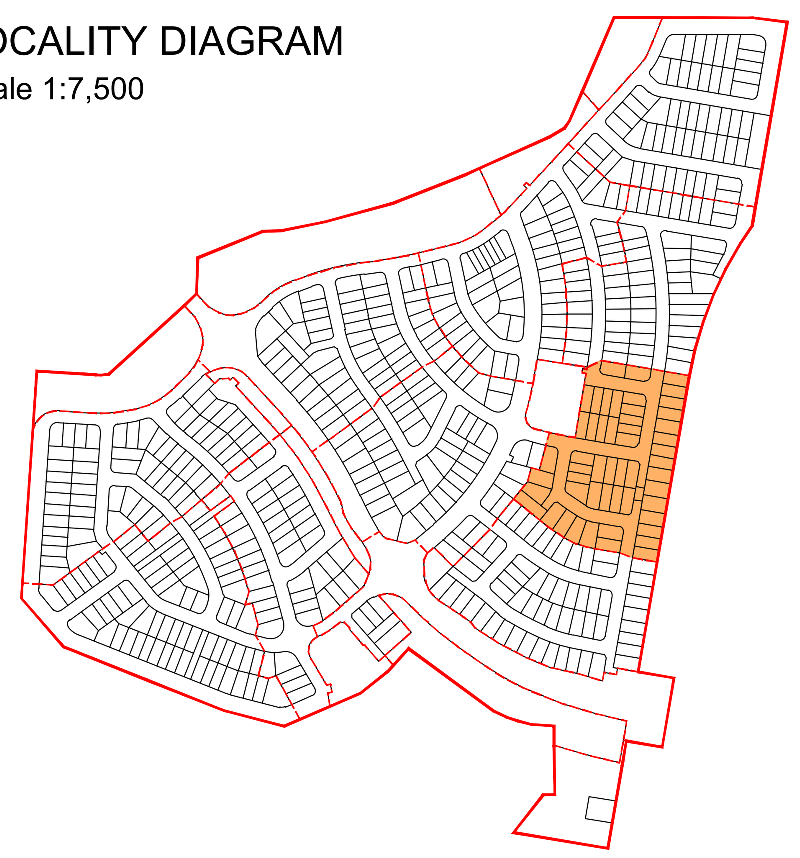
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.04

LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Villa	V28	11.2m	4	7.7%	0.126 ha
Premium Villa	PV28	12.5m	1	1.9%	0.035 ha
Courtyard	C28	14m	3	5.8%	0.118 ha
Premium Courtyard	PC28	16m	1	1.9%	0.055 ha
Sub Total			**9**	**17.3%**	**0.334 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Courtyard	C30	14m	14	26.9%	0.606 ha
Premium Courtyard	PC30	16m	10	19.2%	0.499 ha
Traditional	TD30	18m	3	5.8%	0.159 ha
Sub Total			**27**	**51.9%**	**1.264 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
32m Deep Lots					
Villa	V32	11.2m	4	7.7%	0.143 ha
Premium Villa	PV32	12.5m	8	15.4%	0.320 ha
Courtyard	C32	14m	4	7.7%	0.194 ha
Sub Total			**16**	**30.8%**	**0.657 ha**
Total Allotments			**52**	**100%**	**2.255 ha**
Land Budget			**Area (Ha)**	**%**	
Area of Subject Site / Stage			**3.111 ha**	**—**	
Net Residential Allotments			2.255 ha	72.5%	
Linear Park / Pedestrian Linkage			0.016 ha	0.5%	
Local Road Areas			0.840 ha	27.0%	
Total Area			**3.111 ha**	**100%**	

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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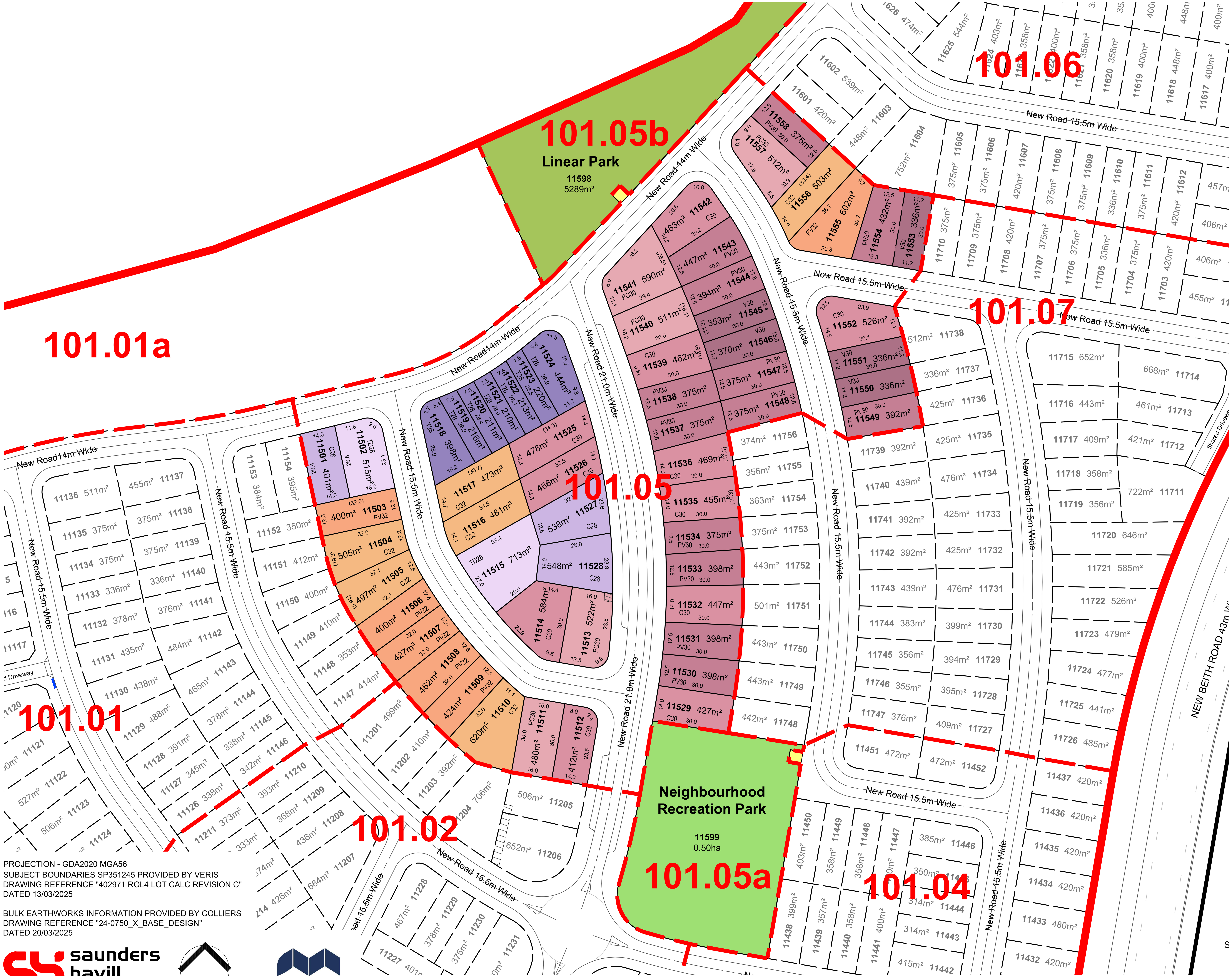
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.05



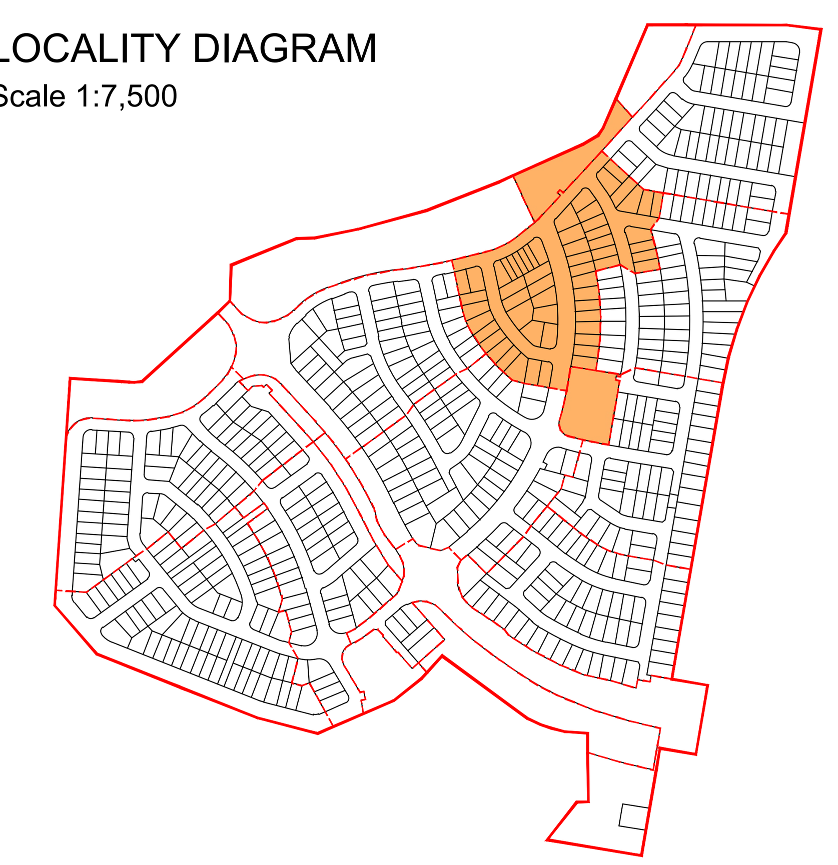
LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Terrace - Front Loaded	T28	7.5m	7	12.1%	0.191 ha
Courtyard	C28	14m	3	5.2%	0.149 ha
Traditional	TD28	18m	2	3.4%	0.123 ha
Sub Total			**12**	**20.7%**	**0.463 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Villa	V30	11.2m	5	8.6%	0.173 ha
Premium Villa	PV30	12.5m	13	22.4%	0.511 ha
Courtyard	C30	14m	11	19.0%	0.521 ha
Premium Courtyard	PC30	16m	5	8.6%	0.262 ha
Sub Total			**34**	**58.6%**	**1.467 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
32m Deep Lots					
Premium Villa	PV32	12.5m	6	10.3%	0.271 ha
Courtyard	C32	14m	6	10.3%	0.308 ha
Sub Total			**12**	**20.7%**	**0.579 ha**
Total Allotments			**58**	**100%**	**2.509 ha**
Land Budget			**Area (Ha)**	**%**	
Area of Subject Site / Stage			**4.760 ha**	**—**	
Net Residential Allotments			**2.509 ha**	52.7%	
Linear Park / Pedestrian Linkage			0.529 ha	11.1%	
Neighbourhood Recreation Park			0.500 ha	10.5%	
Local Road Areas			1.222 ha	25.7%	
Total Area			**4.760 ha**	**100%**	

LOCALITY DIAGRAM

Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

10 0 10 20 30 40 50 60 70 80 90

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
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DATED 20/03/2025

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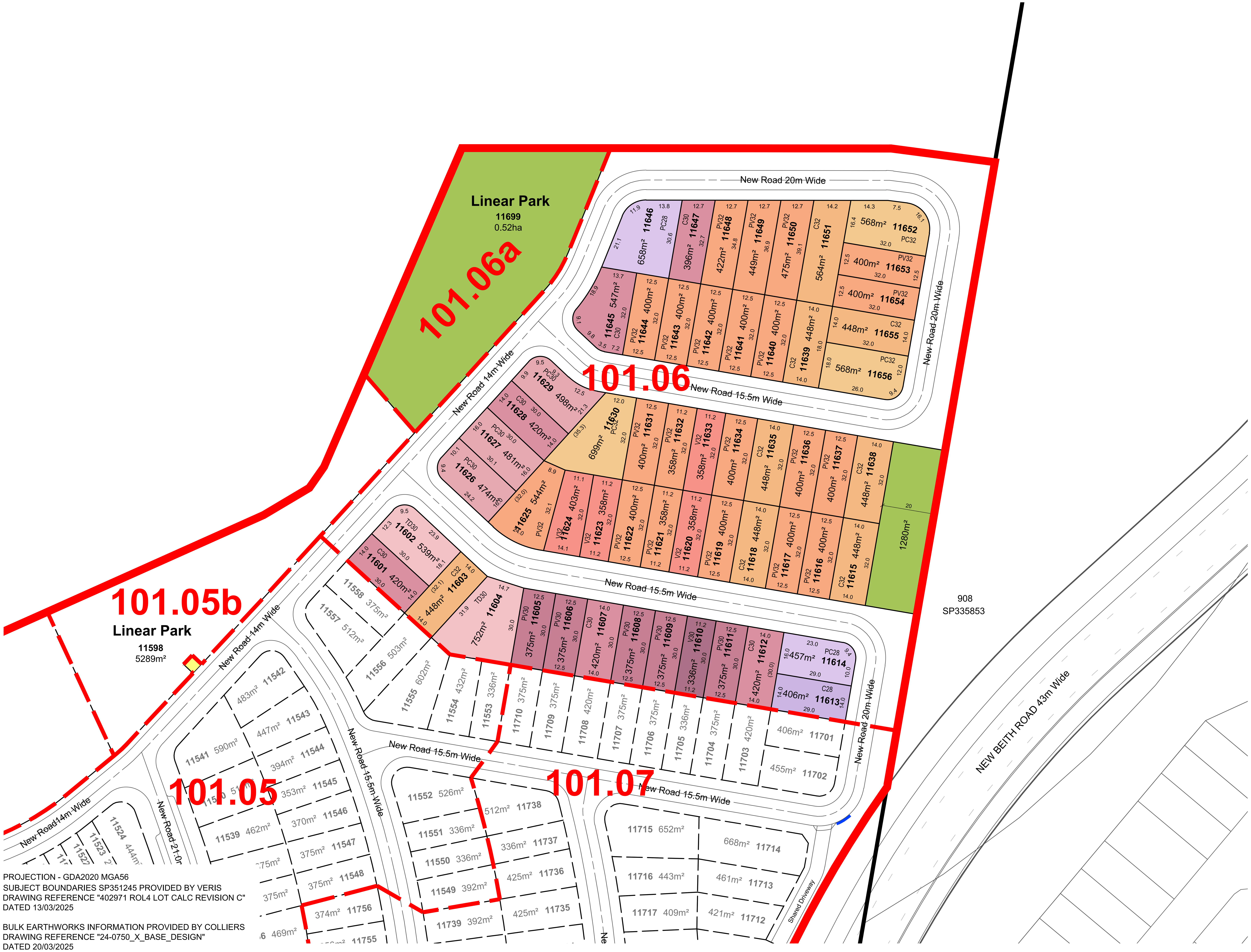
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.06

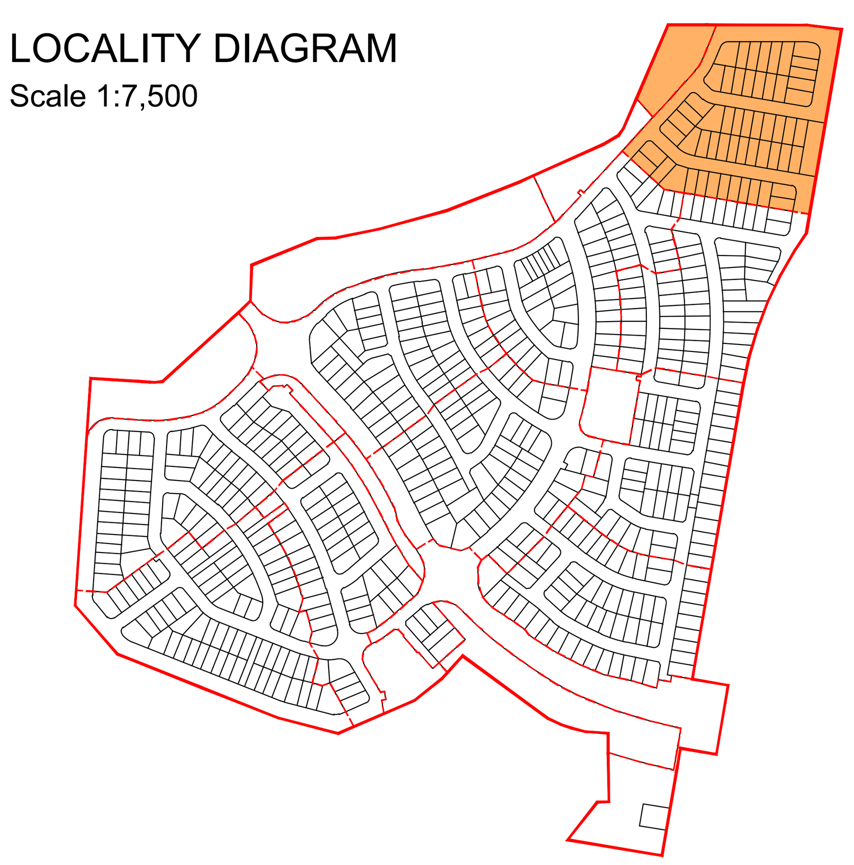


LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Courtyard	C28	14m	1	1.8%	0.041 ha
Premium Courtyard	PC28	16m	2	3.6%	0.111 ha
Sub Total			**3**	**5.4%**	**0.152 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Villa	V30	11.2m	1	1.8%	0.034 ha
Premium Villa	PV30	12.5m	5	8.9%	0.188 ha
Courtyard	C30	14m	6	10.7%	0.262 ha
Premium Courtyard	PC30	16m	3	5.4%	0.145 ha
Traditional	TD30	18m	2	3.6%	0.129 ha
Sub Total			**17**	**30.4%**	**0.758 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
32m Deep Lots					
Villa	V32	11.2m	4	7.1%	0.148 ha
Premium Villa	PV32	12.5m	21	37.5%	0.861 ha
Courtyard	C32	14.0m	8	14.3%	0.370 ha
Premium Courtyard	PC32	16.0m	3	5.4%	0.184 ha
Sub Total			**36**	**64.3%**	**1.563 ha**
Total Allotments			**56**	**100%**	**2.473 ha**
Land Budget			**Area (Ha)**	**%**	
Area of Subject Site / Stage			**4.444 ha**	**—**	
Net Residential Allotments			2.473 ha	76.5%	
Linear Park / Pedestrian Linkage			0.644 ha	19.9%	
Local Road Areas			1.327 ha	41.1%	
Total Area			**4.444 ha**	**138%**	

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 101.07

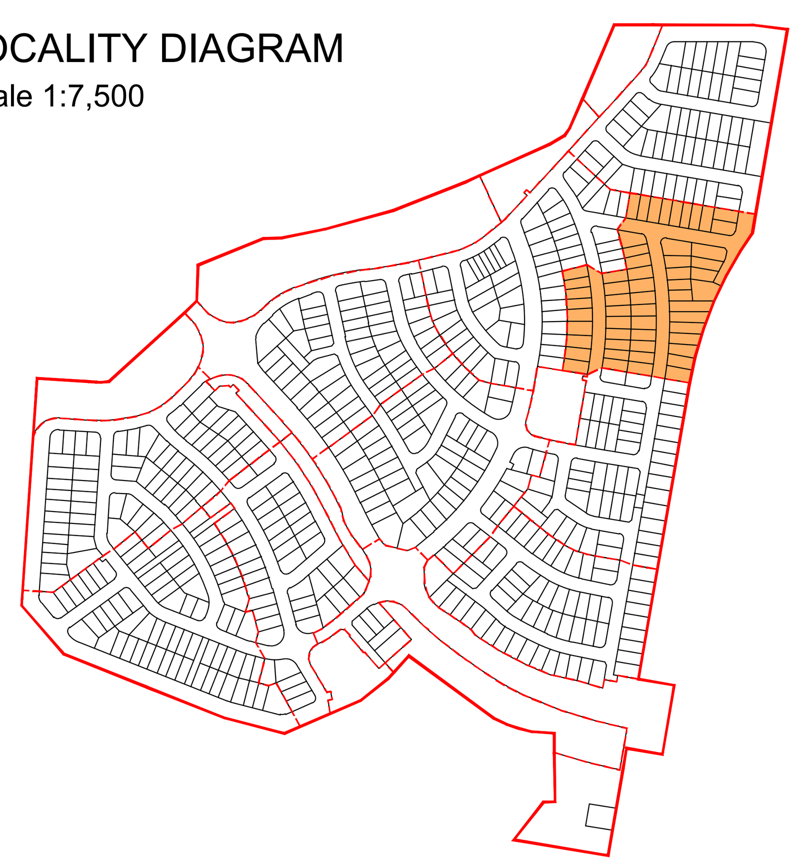
LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Premium Villa	PV28	12.5m	2	3.6%	0.071 ha
Courtyard	C28	14m	3	5.4%	0.124 ha
Premium Courtyard	PC28	16m	1	1.8%	0.046 ha
Traditional	TD28	18m	1	1.8%	0.072 ha
Sub Total			**7**	**12.5%**	**0.313 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Villa	V30	11.2m	7	12.5%	0.248 ha
Premium Villa	PV30	12.5m	17	30.4%	0.663 ha
Courtyard	C30	14m	14	25.0%	0.621 ha
Premium Courtyard	PC30	16m	3	5.4%	0.146 ha
Sub Total			**41**	**73.2%**	**1.678 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
32m Deep Lots					
Premium Villa	PV32	12.5m	6	10.7%	0.317 ha
Premium Courtyard	PC32	16m	2	3.6%	0.132 ha
Sub Total			**8**	**14.3%**	**0.449 ha**
Total Allotments			**56**	**100%**	**2.440 ha**
Land Budget			**Area (Ha)**	**%**	
Area of Subject Site / Stage			**3.232 ha**	**—**	
Net Residential Allotments			2.440 ha	54.9%	
Local Road Areas			0.792 ha	17.8%	
Total Area			**3.232 ha**	**73%**	

LOCALITY DIAGRAM

Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

10 0 10 20 30 40 50 60 70 80 90

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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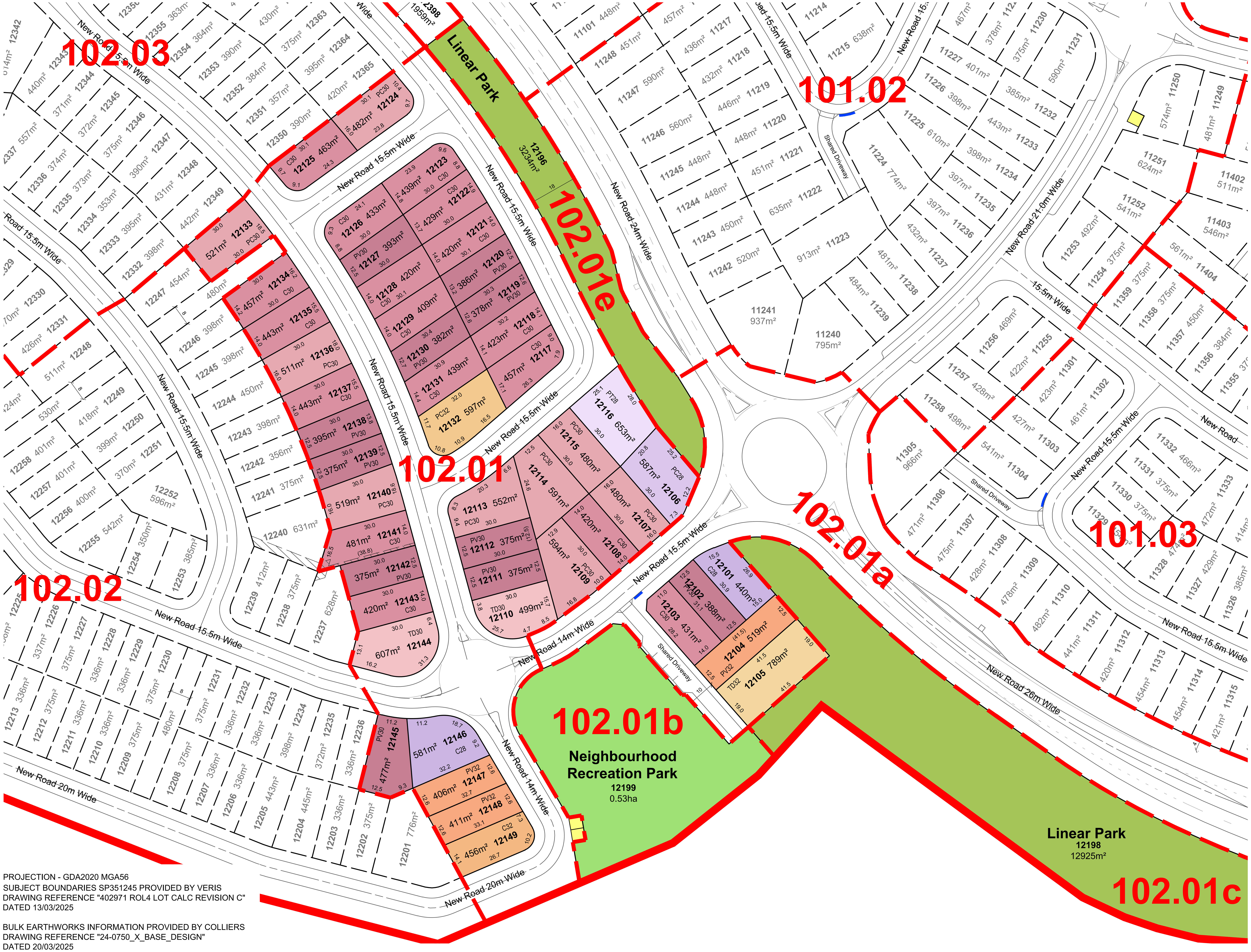
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 102.01



LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
28m Deep Lots					
Courtyard	C28	14m	2	4.1%	0.102 ha
Premium Courtyard	PC28	16m	1	2.0%	0.059 ha
Premium Traditional	PT28	20m	1	2.0%	0.065 ha
Sub Total			4	8.2%	0.226 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
30m Deep Lots					
Premium Villa	PV30	12.5m	11	22.4%	0.430 ha
Courtyard	C30	14m	17	34.7%	0.743 ha
Premium Courtyard	PC30	16m	9	18.4%	0.473 ha
Traditional	TD30	18m	2	4.1%	0.110 ha
Sub Total			39	79.6%	1.756 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
32m Deep Lots					
Premium Villa	PV32	12.5m	3	6.1%	0.133 ha
Courtyard	C32	14m	1	2.0%	0.046 ha
Premium Courtyard	PC32	16m	1	2.0%	0.060 ha
Traditional	TD32	18m	1	2.0%	0.079 ha
Sub Total			6	12.2%	0.318 ha
Total Allotments			49	100%	2.300 ha
Land Budget			Area (Ha)	%	
Area of Subject Site / Stage			8.497 ha	—	
Net Residential Allotments			2.300 ha	27.1%	
Linear Park / Pedestrian Linkage			1.616 ha	19.0%	
Neighbourhood Recreation Park			0.526 ha	6.2%	
Local Road Areas			1.236 ha	14.5%	
Major Road Areas			1.881 ha	22.1%	
Balance Lot 12196			0.085 ha	1.3%	
Balance Lot 12197			0.853 ha	13.4%	
Total Area			8.497 ha	104%	

LOCALITY DIAGRAM

Scale 1:7,500

RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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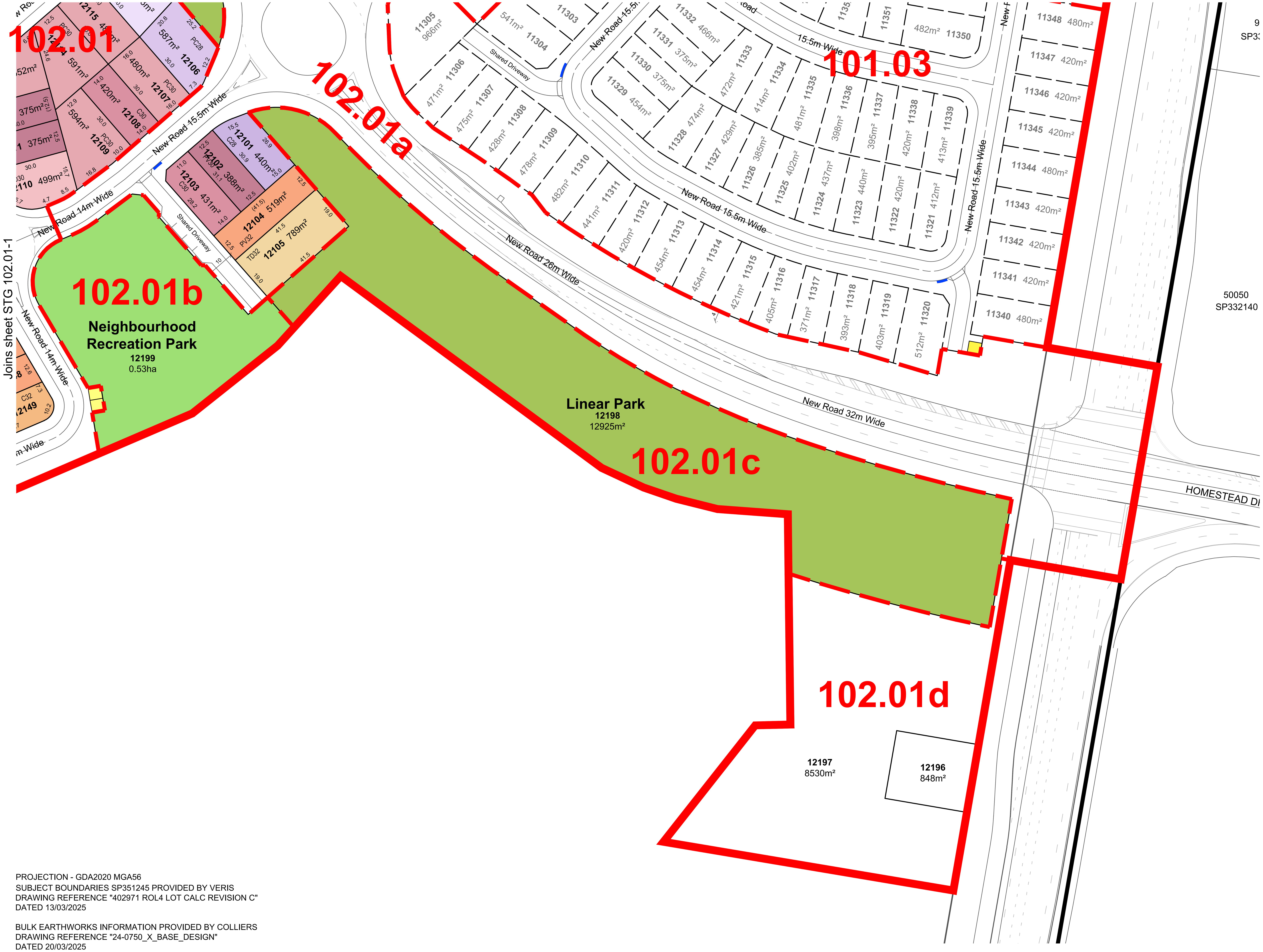
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 102.01



LEGEND

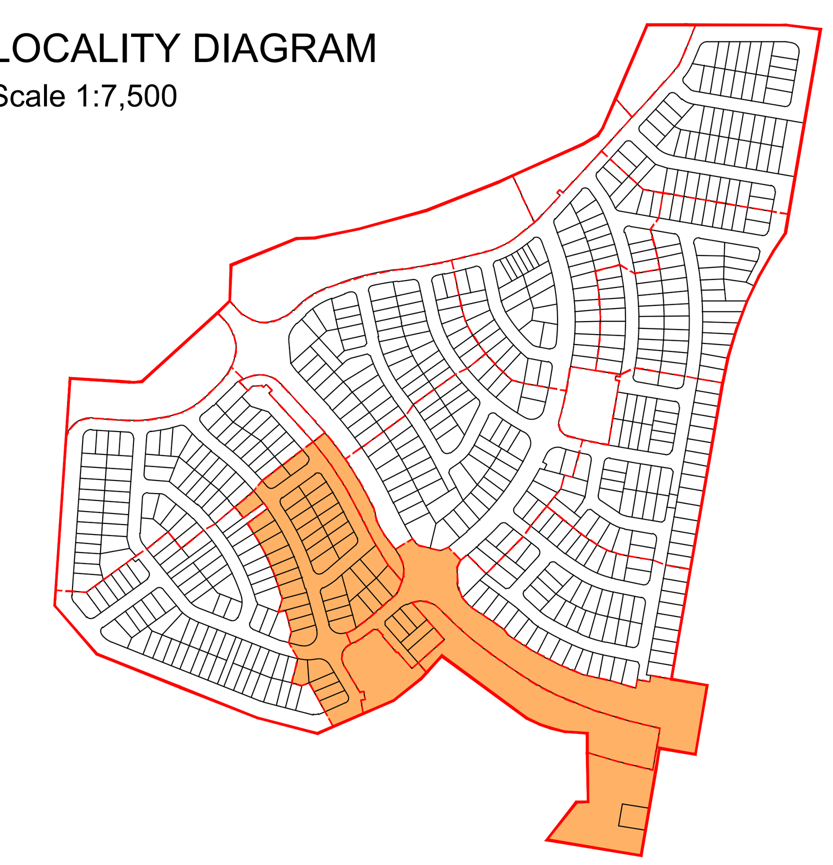
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Courtyard	C28	14m	2	4.1%	0.102 ha
Premium Courtyard	PC28	16m	1	2.0%	0.059 ha
Premium Traditional	PT28	20m	1	2.0%	0.065 ha
Sub Total			**4**	**8.2%**	**0.226 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Premium Villa	PV30	12.5m	11	22.4%	0.430 ha
Courtyard	C30	14m	17	34.7%	0.743 ha
Premium Courtyard	PC30	16m	9	18.4%	0.473 ha
Traditional	TD30	18m	2	4.1%	0.110 ha
Sub Total			**39**	**79.6%**	**1.756 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
32m Deep Lots					
Premium Villa	PV32	12.5m	3	6.1%	0.133 ha
Courtyard	C32	14m	1	2.0%	0.046 ha
Premium Courtyard	PC32	16m	1	2.0%	0.060 ha
Traditional	TD32	18m	1	2.0%	0.079 ha
Sub Total			**6**	**12.2%**	**0.318 ha**
Total Allotments			**49**	**100%**	**2.300 ha**

Land Budget	**Area (Ha)**	**%**
Area of Subject Site / Stage	**8.497 ha**	**—**
Net Residential Allotments	2.300 ha	27.1%
Linear Park / Pedestrian Linkage	1.616 ha	19.0%
Neighbourhood Recreation Park	0.526 ha	6.2%
Local Road Areas	1.236 ha	14.5%
Major Road Areas	1.881 ha	22.1%
Balance Lot 12196	0.085 ha	1.3%
Balance Lot 12197	0.853 ha	13.4%
Total Area	**8.497 ha**	**104%**

LOCALITY DIAGRAM

Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

10 0 10 20 30 40 50 60 70 80 90

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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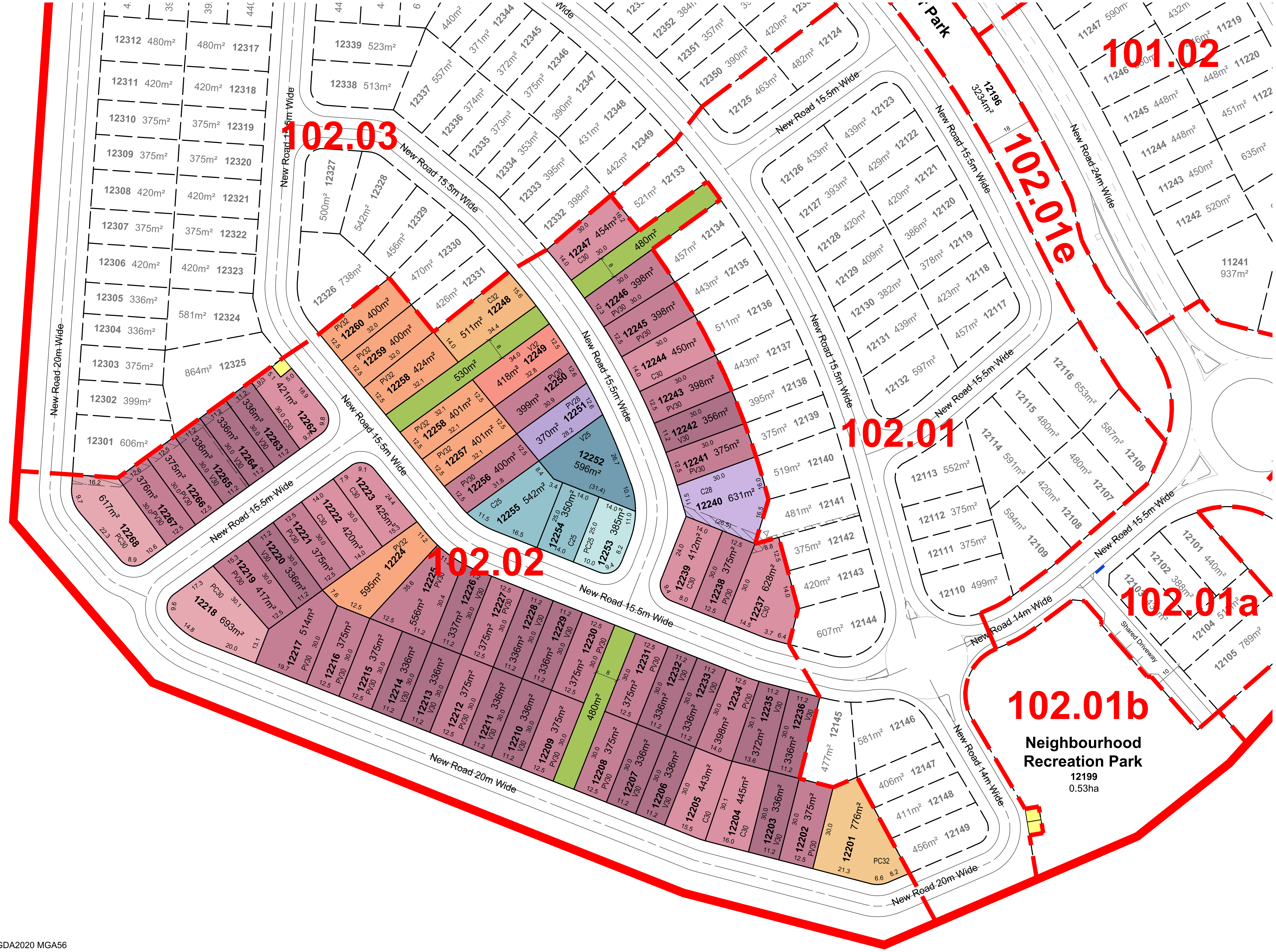
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 102.02



LEGEND

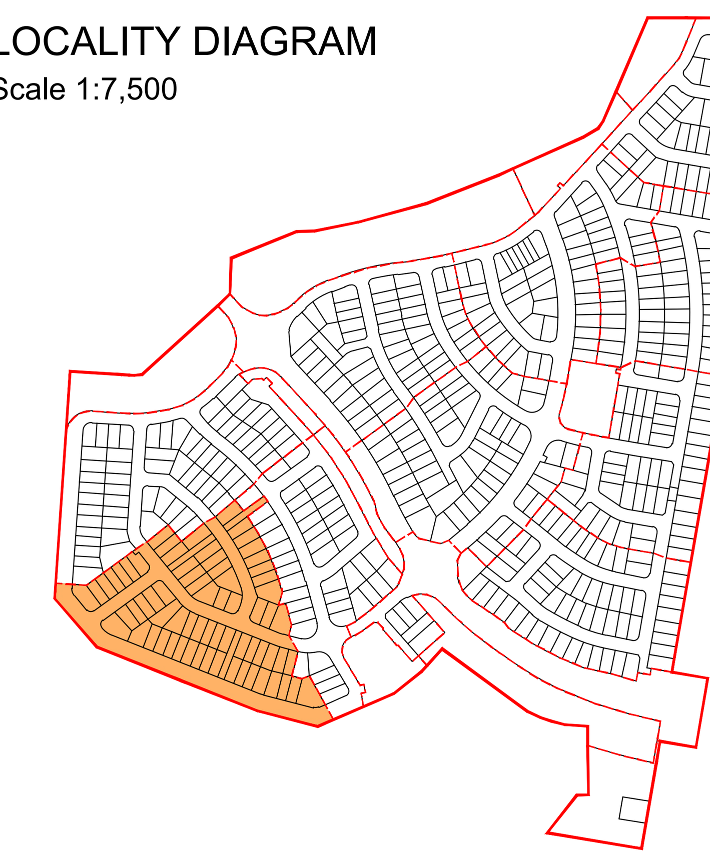
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Neighbourhood Recreation Park
- Indicative Bin Pad location
- Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
25m Deep Lots					
Villa	V25	11.2m	1	1.5%	0.059 ha
Courtyard	C25	14m	2	2.9%	0.089 ha
Premium Courtyard	PC25	16m	1	1.5%	0.039 ha
Sub Total			**4**	**5.9%**	**0.187 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
28m Deep Lots					
Premium Villa	PV28	12.5m	1	1.5%	0.037 ha
Courtyard	C28	14m	1	1.5%	0.063 ha
Sub Total			**2**	**2.9%**	**0.100 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
30m Deep Lots					
Villa	V30	11.2m	19	27.9%	0.644 ha
Premium Villa	PV30	12.5m	23	33.8%	0.913 ha
Courtyard	C30	14m	9	13.2%	0.410 ha
Premium Courtyard	PC30	16m	2	2.9%	0.131 ha
Sub Total			**53**	**77.9%**	**2.098 ha**
RESIDENTIAL ALLOTMENTS		**Typical Width**	**No. Lots**	**%**	**Net Area**
32m Deep Lots					
Villa	V32	11.2m	1	1.5%	0.042 ha
Premium Villa	PV32	12.5m	6	8.8%	0.262 ha
Courtyard	C32	14m	1	1.5%	0.051 ha
Premium Courtyard	PC32	16m	1	1.5%	0.078 ha
Sub Total			**9**	**13.2%**	**0.433 ha**
Total Allotments			**68**	**100%**	**2.818 ha**

Land Budget	**Area (Ha)**	**%**	
Area of Subject Site / Stage	**4.405 ha**	**—**	
Net Residential Allotments	2.818 ha	64.0%	
Linear Park / Pedestrian Linkage	0.149 ha	3.4%	
Local Road Areas	1.438 ha	32.6%	
Total Area	**4.405 ha**	**100%**	

LOCALITY DIAGRAM

Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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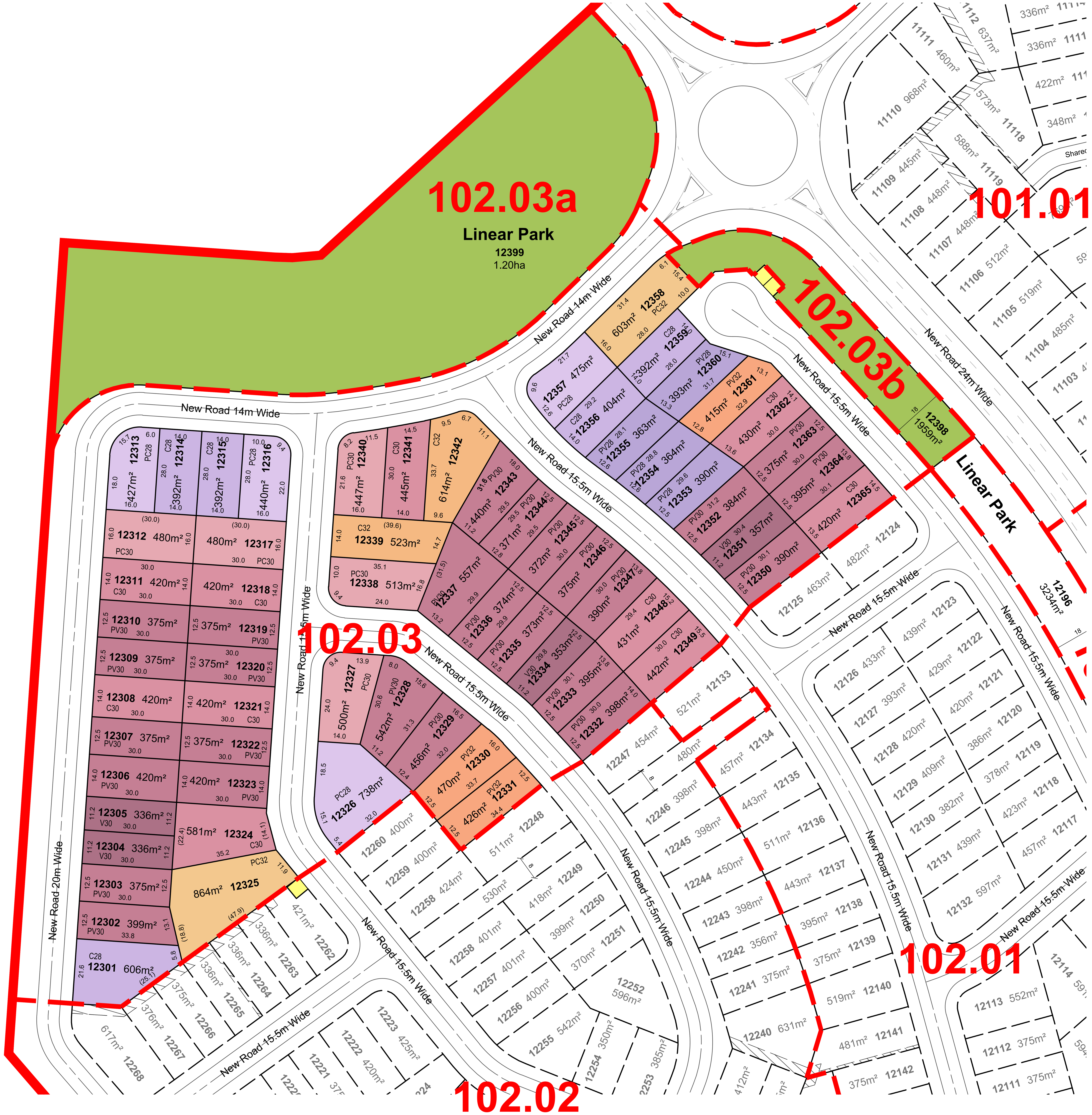
ROL 4: RECONFIGURATION OF A LOT PLAN - SUB-PRECINCT 102.03

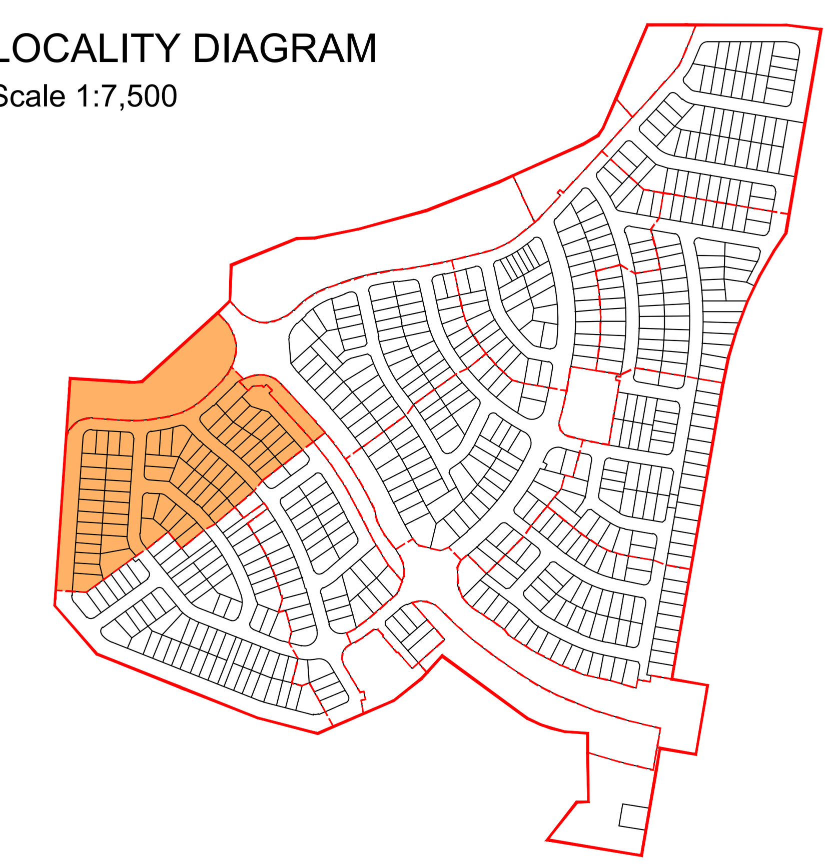


LEGEND	
	ROL 4 Boundary
	Sub-precinct Boundary
	Proposed Easement
	Indicative Bin Pad location
	Indicative PMT / RMU Site

DEVELOPMENT STATISTICS					
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
28m Deep Lots					
Premium Villa	PV28	12.5m	4	6.2%	0.151 ha
Courtyard	C28	14m	5	7.7%	0.219 ha
Premium Courtyard	PC28	16m	4	6.2%	0.208 ha
Sub Total			13	20.0%	0.578 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
30m Deep Lots					
Villa	V30	11.2m	4	6.2%	0.138 ha
Premium Villa	PV30	12.5m	26	40.0%	1.045 ha
Courtyard	C30	14m	10	15.4%	0.443 ha
Premium Courtyard	PC30	16m	5	7.7%	0.242 ha
Sub Total			45	69.2%	1.868 ha
RESIDENTIAL ALLOTMENTS		Typical Width	No. Lots	%	Net Area
32m Deep Lots					
Premium Villa	PV32	12.5m	3	4.6%	0.131 ha
Courtyard	C32	14m	2	3.1%	0.113 ha
Premium Courtyard	PC32	16m	2	3.1%	0.147 ha
Sub Total			7	10.8%	0.391 ha
Total Allotments			65	100%	2.837 ha

Land Budget	Area (Ha)	%
Area of Subject Site / Stage	5.650 ha	—
Net Residential Allotments	2.837 ha	50.2%
Linear Park / Pedestrian Linkage	1.399 ha	24.8%
Local Road Areas	1.414 ha	25.0%
Total Area	5.650 ha	100%

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA

NOTES

Planning Context

- In accordance with the provisions of the Greater Flagstone Urban Development Area Development Scheme (Development Scheme), building work and operational work are exempt development where in accordance with, or associated with, this Plan of Development (PoD).
- All relevant provisions of this PoD must be satisfied prior to the issuance of a Building Approval.
- The provisions of the Development Scheme will apply where development does not comply with all provisions of the Plan of Development.
- The Development Scheme definitions prevail over all other planning instruments to the extent of any inconsistency.

General

1. All development is to be undertaken in accordance with Development Approval, and Queensland Development Code (QDC), except as varied below.
2. Nominated building location envelopes may be constrained by future easements and/or services.
3. Buildings shall be constructed in accordance with the approved Bushfire Report.
4. Where allotments are so marked on Plan of Development - Envelope Plans, residential buildings must be designed and constructed to comply with the approved Noise Impact Assessment.
5. In the case where stormwater services draining to the road are located within a proposed driveway location, it is the responsibility of the lot owner to relocate or install a new stormwater outlet, refer to standard kerb adaptor drawing for compliance.
6. Driveway locations have been predetermined to ensure there is no clash with any services, street trees or street lights. If a lot owner submits a covenant application and a conflict arises out of its assessment, the Developer will not be responsible to facilitate the relocation the services or the costs associated with it.

Setbacks

7. Setbacks are as the relevant approved Plan of Development Table, unless specified otherwise on this plan.
8. The permitted location of built to boundary walls are indicated on the Plan of Development.
9. Where built to boundary walls are not adopted, side setbacks shall be in accordance with the requirements of the Non-Built to Boundary Setbacks nominated in Plan Of Development Table.
10. All boundary setbacks are measured to the external face of the wall of the structure.
11. The dwelling and associated projections (gutters etc.) must be located wholly within the subject lot, unless encroachment rights are secured by way of easement (or other suitable mechanism).
12. Other than built to boundary walls, the outside face of the fascia, or the roof structure where there is no fascia, or attached sunhoods or the like (not including retractable blinds, fixed screens, rainwater fittings, or ornamental attachments) is permitted to extend 600mm within the prescribed setback, however cannot encroach closer than 450mm from the boundary.
13. The length of the built to boundary walls shall be no more than:
    - 75% of the boundary length for a house on a lot width of 7.5m - 9.5m
    - 50% of the boundary length for a house on a lot width of 11.2m or greater
14. Walls over 8m in length facing either the primary or secondary street without windows or articulation are not permitted.
15. A lot can have only one primary frontage. Primary frontages are nominated as per driveway frontages, unless specified otherwise on the Plan of Development - Envelope Plans;
16. The primary street frontage elevation is to be articulated to reduce the mass of the building by one or more of the following:
    a. Windows recessed into the façade
    b. Balconies, porches or verandahs
    c. Shadow lines created on the building through minor changes in the façade (100mm minimum).
17. Entrance porticoes may be located closer to the property boundary than stated in POD Table, provided that the portico:
    a. Is located no less than 1.4m from the front property boundary,
    b. Does not exceed maximum height of 4.5m,
    c. Does not exceed a depth of 2.5m; and
    d. The portico remains open and not enclosed.

Corner Lot Setback

18. A corner lot is a lot that adjoins the intersection of two streets (collector, access street or access place). This excludes those lots that abut a shared access driveway, pedestrian link /connection / threshold, landscape buffer &/or open space.
19. Corner lots are interpreted as having a Primary and Secondary frontage and two side boundaries for the purposes of determining building setbacks (ie. No rear boundary setback applies).
20. For corner lots (excluding a corner intersecting with a laneway), no building or structure over 2m high is built within a 6m x 6m truncation at the corner of two road frontages (refer Plan of Development Table).

Building Height

21. The maximum building height is 9.0m.
22. Buildings must have no more than 2 storeys.
23. Maximum height of any structure to the built to boundary wall is 3.5m from finish ground level.

Site Cover

24. Site cover means the portion of the site, expressed as a percentage, that will be covered by a building or structure, measured to its outermost projection, after the development is carried out, other than a building or structure, or part of a building or structure, that is--
    a. in a landscaped or open space area, including, for example, a gazebo or shade structure; or
    b. a basement that is completely below ground level and used for car parking; or
    c. the eaves of a building; or
    d. a sun shade.

Private Open Space and Amenity

25. Each house / dwelling unit has a clearly defined outdoor living space which:
    a. Has an area of at least:
       - 12m² with a minimum dimension of 2.4m for a 3 or more bedroom house / dwelling unit;
       - 9m² with a minimum dimension of 2.4m for a 2 bedroom house / dwelling unit; or
       - 5m² with a minimum dimension of 1.2m for a 1 room or 1 bedroom house / dwelling unit.
    b. Is accessible from a living area; and
    c. Has a ground slope of not more than 1 in 10;

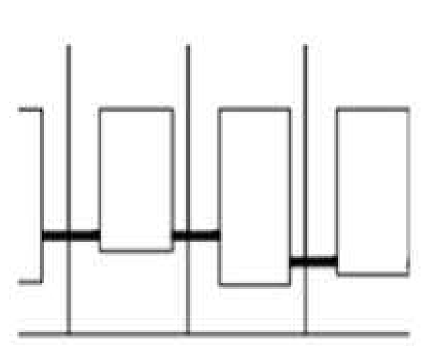
Parking and Driveways

26. A minimum of two on-site car parking spaces must be provided for each dwelling, one of which must be within a garage.
27. Garages:
    a. A single storey dwelling on a lot with a primary frontage equal to or greater than 10m and less than 12.5m must adhere to the following criteria:
       - The front facing building wall, which comprises the garage door, to not exceed an external width of 5.7m
       - The garage door:
         - Width does not exceed 4.8m; and
         - Has a minimum 450mm eave above it; and
         - Garages are to be setback 0.5m behind the main face of the dwelling.
         - Setback a minimum of 240mm behind the pillar of the garage door; and
         - Has a sectional, tilt (if accommodating architectural cladding or elements) or roller door.
       - The front façade of the dwelling is to be forward of the alignment of the garage wall, and include the following:
         - A front entrance door with glass inserts and / or windows or with a sidelight where the front door is solid. ; or
         - A front verandah, portico or porch located over the front entrance, which extends a minimum of 1600mm forward of the entrance door. The verandah, portico or porch is to include front piers with distinct materials and/or colours of sufficient mass to compliment the overall facade design.
    b. A double storey dwelling on a lot with a primary frontage equal to or greater than 10m and less than 12.5m must adhere to the following criteria:
       - The front facing building wall, which comprises the garage door, to not exceed an external width of 5.7m
       - The garage door:
         - Width does not exceed 4.8m; and
         - Garages are to be setback 1.0m behind the main face of the dwelling at the ground floor.
         - Setback a minimum of 240mm behind the pillar of the garage door; and
         - Has a sectional, tilt (if accommodating architectural cladding or elements) or roller door.
       - The front entrance door is to be visible and identifiable from the street.
    c. A dwelling on a lot with a primary frontage of 12.5m or greater must adhere to the following criteria:
       - Must have a garage door not exceeding 40% of the lot frontage
       - Double garages are to be setback 1.0m behind the main face of the dwelling at the ground floor.For a dwelling on a lot with a primary frontage less than 10.0m the garage door width must not exceed 3.0m for single storey.
28. The maximum width of a driveway at the lot boundary shall be:
    a. 4.8m for a dwelling with a double garage with a lot frontage of 12.5m or greater;
    b. 3.5m for a dwelling with a double garage with a lot frontage equal to or greater than 10m and less than 12.5m; or
    c. 3.0m for a dwelling with single or tandem garage on any lot frontage.
29. Garages are to be located as nominated on the Plan of Development - Envelope Plans, or in an alternate location subject to confirmation that there is no conflict with proposed/existing services.
30. A maximum of one driveway per dwelling is permitted.
31. The driveway finish must not be plain concrete.
32. Driveways are to be:
    a. a minimum distance of 6m from an intersection of one street with another street; and
    b. designed and constructed in accordance with approval / permit requirements of Logan City Council.

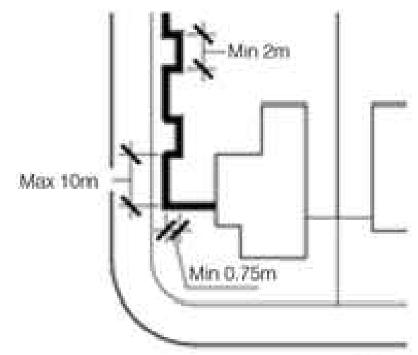
Retaining Walls

33. Other than walls erected by the developer, retaining walls:
    a. must be tiered 1m vertical and 1m horizontal where forward of the building line to any street, park or lane and visible from the public realm; and
    b. cannot exceed 1.5m in height without stepping elements incorporated.
    c. cannot be constructed out of timber or timber elements
    d. if visible from the street, concrete sleeper must not be grey concrete colour finish.
    e. retaining wall must contribute to a coherent and visually pleasing experience with architecture design of home.
34. Where on a lot with a rear retaining wall exceeding 2.0m above ground level (or where identified on the Plan of Development - Envelope Plans), the Rear Setback is as per Table 4.
35. All retaining walls over 1.0m in height must be certified by an RPEQ.

Fencing



PRIMARY FRONTAGE



PRIMARY FRONTAGE

36. Primary frontage requirements:
    a. The maximum fence height is 1.8m;
    b. Fences are not permitted along road frontages forward of the building; and
    c. Side boundary fences are to be recessed at least 1m behind the wall addressing the primary road frontage (as per diagram).
37. For rear loaded terrace lots the primary frontage requirement are as follows
    - A maximum fence height of 1.5m;
    - Fences are permitted along the Primary Frontage and the side boundaries forward of the facade facing the Primary Frontage: and
    - Fences must be a least 50% transparent.
    - Fences on the primary frontage must not be constructed using timber
    - Street numbers and letterboxes must be intergrated into the fencing construction
38. Within laneways, 1.8m high fences are permitted to screen private open space, car parking and servicing area. Any fencing area above 1.5m in height to be at least 50% transparent.
39. Secondary frontage requirements:
    a. Fences to Secondary Frontages (Side) of Corner Lots may extend beyond the face of the secondary facade only on the basis the fencing visible from the public area is:
       - A maximum fence height of 1.8m;
       - Solid up to a height of 1.5m with any fencing above 1.5m in height being at least 50% transparent or the fence can be at least 25% transparent overall where the transparency is consistent across the full area of the fence (ie. transparent sections cannot be located solely at ground level); and
       - Does not extend for lengths greater than 10m without a landscaped recess 2m in length and 0.75m deep (as per diagram).
40. Pedestrian link requirements:
    a. Fences to pedestrian links:
       - A maximum fence height of 1.8m; and
       - Solid up to a height of 1.5m with any fencing above 1.5m in height being at least 50% transparent or the fence can be at least 25% transparent overall where the transparency is consistent across the full area of the fence (i.e. transparent sections cannot be located solely at ground level).

Letterboxes

41. Letterboxes for the dwelling shall be located on the primary street frontage. Letterboxes are not permitted in laneways.

Structures and Services

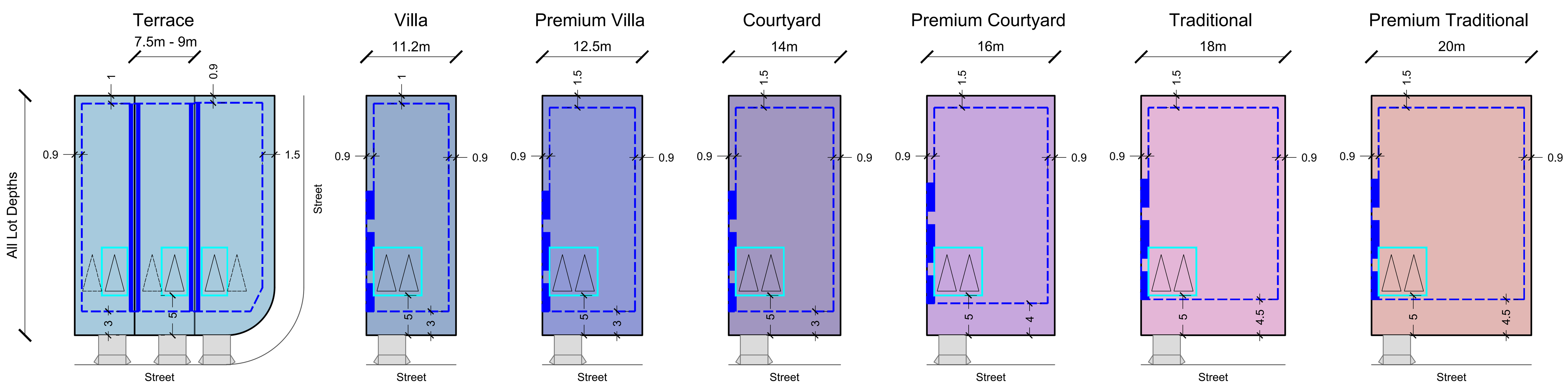
42. All ancillary structure (e.g. garden sheds, gazebos, pools, airconditioning units) can be located within setback area, but it is required to be suitably located or screened to minimise detrimental visual impact from public spaces or neighbouring residential allotments, with the exception of solar panels and solar hot water systems which may be located where most efficient.
43. Where an ancillary structure is located within the setback, zone of influence of any walls will need to be considered.
44. It is the lot owner's responsibility to manage surface water and ensuring that no water is directed toward neighbouring properties or structures.
45. Screened drying areas are to be located behind the main face of the dwellings.
46. Rubbish bin areas are to be located behind the main face of the dwellings or stored so as to not be visible from the public realm.
47. All building and structures (including pools) are to be clear of PMT buffer zones in accordance with authority requirements.

Secondary Dwelling

48. A secondary dwelling is only permitted where:
    a. The lot is 400m² or more;
    b. The lot frontage is 12.5m or more; and
    c. It complies with the applicable self assessable provisions in Schedule 3 of the Development Scheme where not inconsistent with the provisions of this PoD.
49. There is to be no more than one secondary dwelling on a lot.
50. Floor area is maximum 45m² GFA (note: GFA excludes the garage and a 4m² size covered entry porch area only)
51. Design and siting of buildings and structures to be in accordance with this Plan of Development. Where not on a corner lot, the dwelling/secondary dwelling must have the design effect of one (1) single residential dwelling from the road/street frontage or within public view.
52. Materials, detailing colours and roof form are consistent with those of the primary house.
53. Outdoor living space is a minimum 9m² with a minimum dimension of 3m and directly accessible from a main living area.
54. Car Parking and Garaging is minimum one space in addition to the primary dwelling requirement - with minimum dimensions of 5m x 3m.
55. Shared minimum driveway with the primary house.
56. If the lot is on a corner the dedicated pedestrian entry and door are visible from and addressing the secondary street.
57. Street Surveillance - on a single street frontage the secondary dwelling entry must be hidden from view from the street so as to give the effect that the home is one (1) single residential dwelling.
58. Any Secondary Dwelling is not permitted its own letterbox and must be shared with the primary dwelling.
59. Any Secondary Dwelling is unable to be separately titled to the primary dwelling.
60. No separate infrastructure servicing to the secondary dwelling is permitted (ie. water, gas, electricity).

PLAN OF DEVELOPMENT TABLE										
ALLOTMENT TYPE			Terrace	Villa	Premium Villa	Courtyard	Premium Courtyard	Traditional	Premium Traditional
			7.5 - 9.5m	11.2m	12.5m	14m	16m	18m	20m
FRONT SETBACKS									
Primary Frontage		To Wall (Ground Floor)	3.0m	3.0m	3.0m	3.0m	4.0m	4.5m	4.5m
		To Wall (First Floor)	3.0m	3.0m	3.0m	3.0m	4.0m	4.5m	4.5m
		To Garage Door	5.0m	5.0m	5.0m	5.0m	5.0m	5.0m	5.0m
Secondary Frontage		To Wall (Ground Floor)	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m
		To Wall (First Floor)	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m	1.5m
		To Garage Door	N/A	5.0m	5.0m	5.0m	5.0m	5.0m	5.0m
SIDE / REAR SETBACKS									
From any part of the side or rear boundary of a lot where: - on the low side of a retaining wall; and - the total wall height at that part of the side or rear boundary is greater than 2.0m total height. Note: Where a retaining wall is less than or equal to 2.0m on any part of the side or rear boundary of a lot, standard setback provisions apply for that part of the side or rear boundary of a lot.		To Wall (Ground Floor)	2.5m	2.5m	2.5m	2.5m	2.5m	2.5m	2.5m
		To Wall (First Floor)	2.5m	2.5m	2.5m	2.5m	2.5m	2.5m	2.5m
For all other side / rear boundaries	Rear Setback	To Wall (Ground Floor)	1.0m	1.0m	1.5m	1.5m	1.5m	1.5m	1.5m
		To Wall (First Floor)	1.0m	1.0m	2.0m	2.0m	2.0m	2.0m	2.0m
	Side Setback – Built to Boundary	To Wall (Ground Floor)	0 - 0.3m	0 – 0.3m	0 – 0.3m	0 – 0.3m	0 – 0.3m	0 – 0.3m	0 – 0.3m
		To Wall (First Floor)	0.9m	0.9m	0.9m	0.9m	0.9m	0.9m	0.9m
	Side Setback – Non-Built to Boundary	To Wall (Ground Floor)	0.9m	0.9m	0.9m	0.9m	0.9m	0.9m	0.9m
		To Wall (First Floor)	0.9m	0.9m	0.9m	0.9m	0.9m	0.9m	0.9m
Site Cover			75%	65%	65%	60%	60%	60%	60%
Note: Additional Setbacks may be required to ensure the building envelope does not encroach past the Bushfire Reach of BAL29									

TYPICAL LOT DIAGRAM



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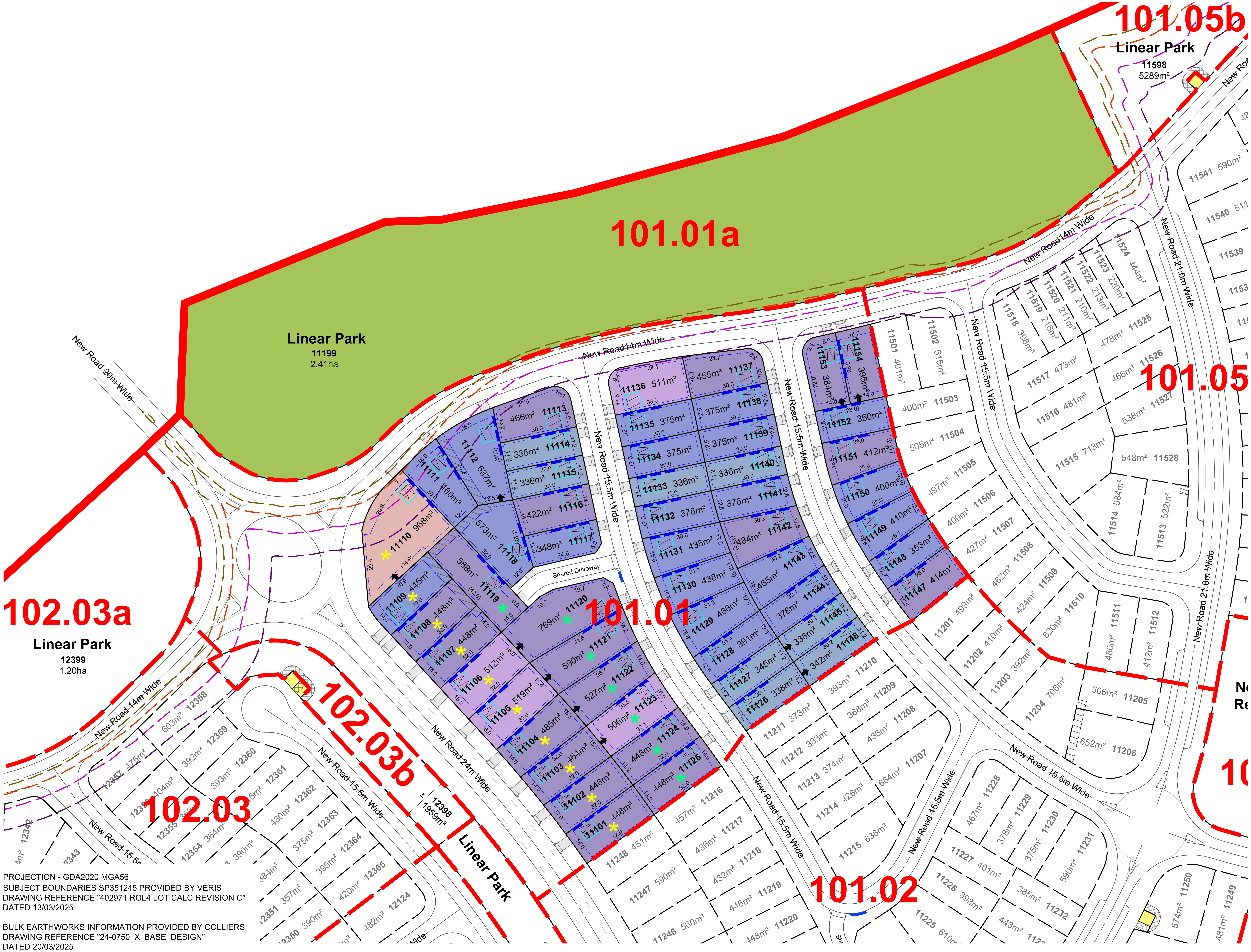
ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.01



LEGEND

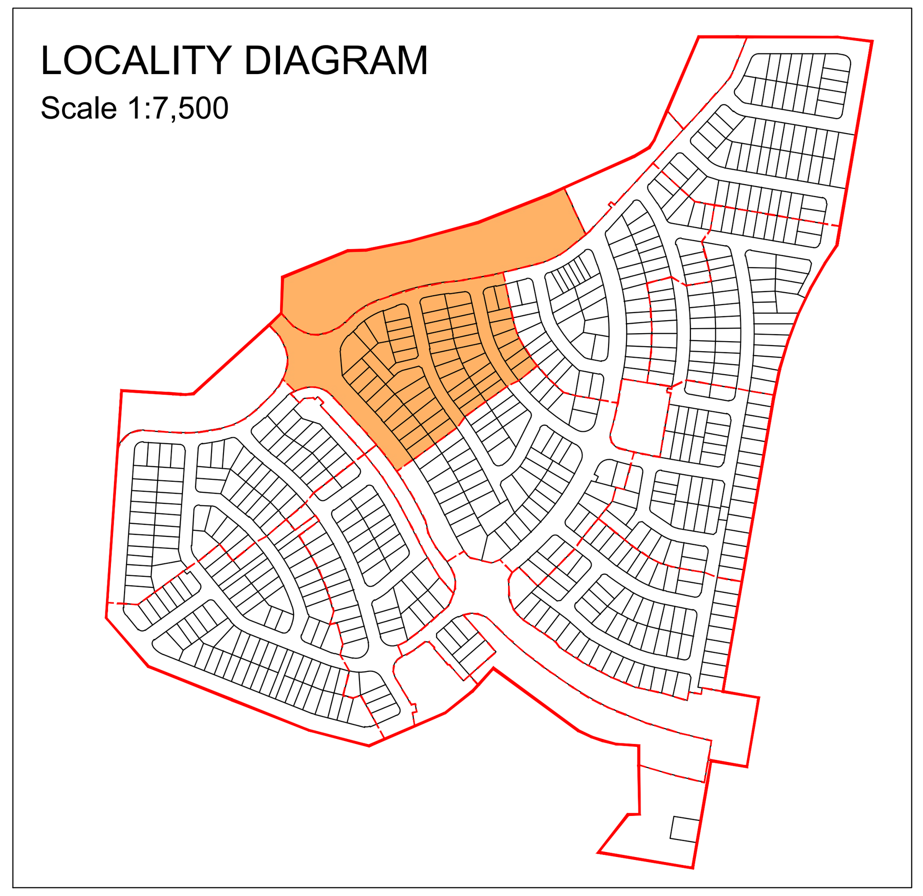
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
- Indicative Garage Location
- Indicative Driveway Location
- Lots which require increased setbacks
- Buildings which require acoustic design to upper floors only
- Buildings which require acoustic design to ground and upper floors
- Extent of bushfire Radiant Heat Flux 12.5kW/m2
- Extent of bushfire Radiant Heat Flux 19kW/m2
- Extent of bushfire Radiant Heat Flux 29kW/m2
- Extent of bushfire Radiant Heat Flux 40kW/m2

RESIDENTIAL ALLOTMENTS

- Terrace (7.5m - 9m typical width)
- Villa (11.2m typical width)
- Premium Villa (12.5m typical width)
- Courtyard (14m typical width)
- Premium Courtyard (16m typical width)
- Traditional (18m typical width)
- Premium Traditional (20m typical width)

THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)

LOCALITY DIAGRAM
Scale 1:7,500



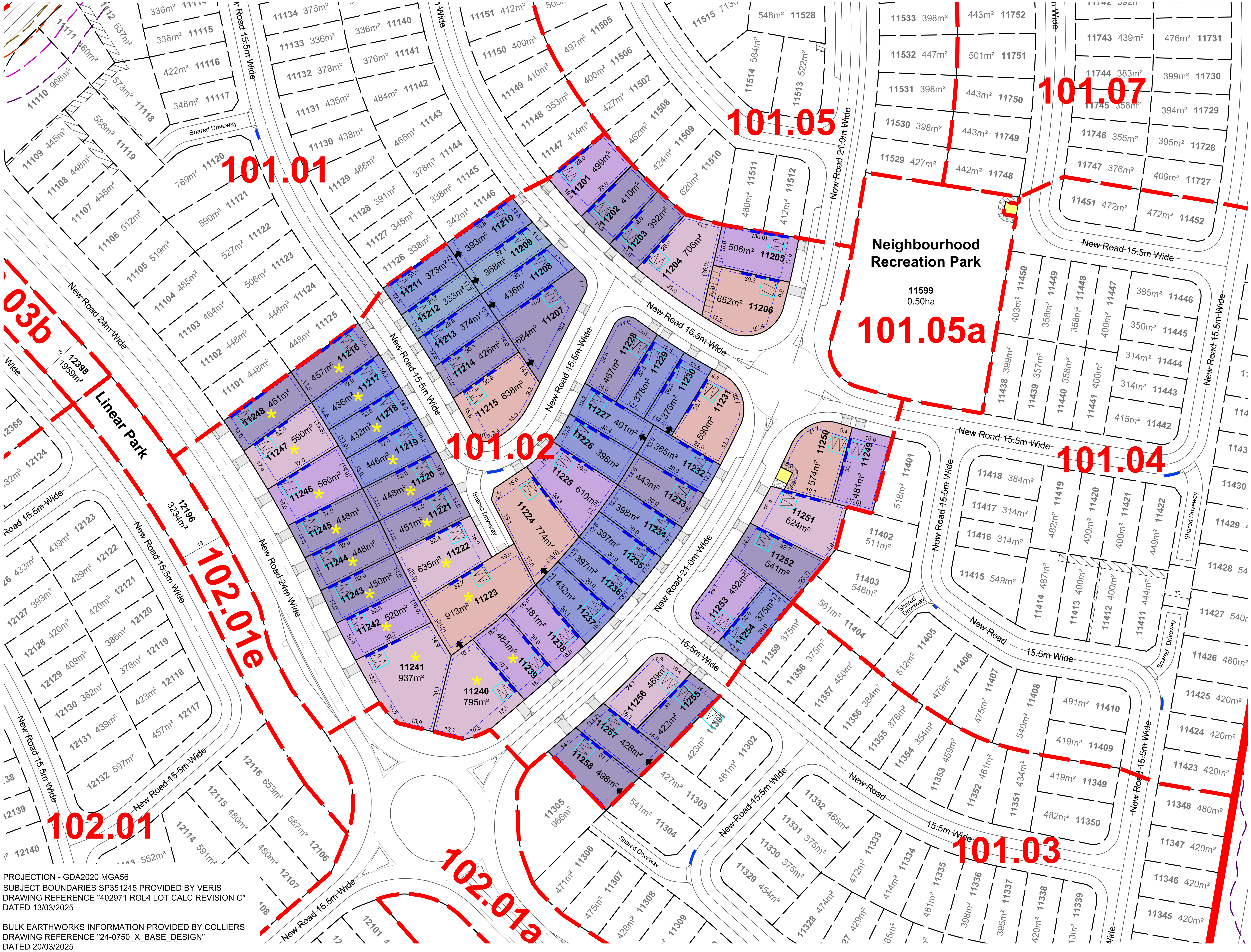
RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.02



LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
- Indicative Garage Location
- Indicative Driveway Location
- Lots which require increased setbacks
- Buildings which require acoustic design to upper floors only
- Buildings which require acoustic design to ground and upper floors
- Extent of bushfire Radiant Heat Flux 12.5kW/m2
- Extent of bushfire Radiant Heat Flux 19kW/m2
- Extent of bushfire Radiant Heat Flux 29kW/m2
- Extent of bushfire Radiant Heat Flux 40kW/m2

RESIDENTIAL ALLOTMENTS

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- Premium Courtyard (16m typical width)
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- Premium Traditional (20m typical width)

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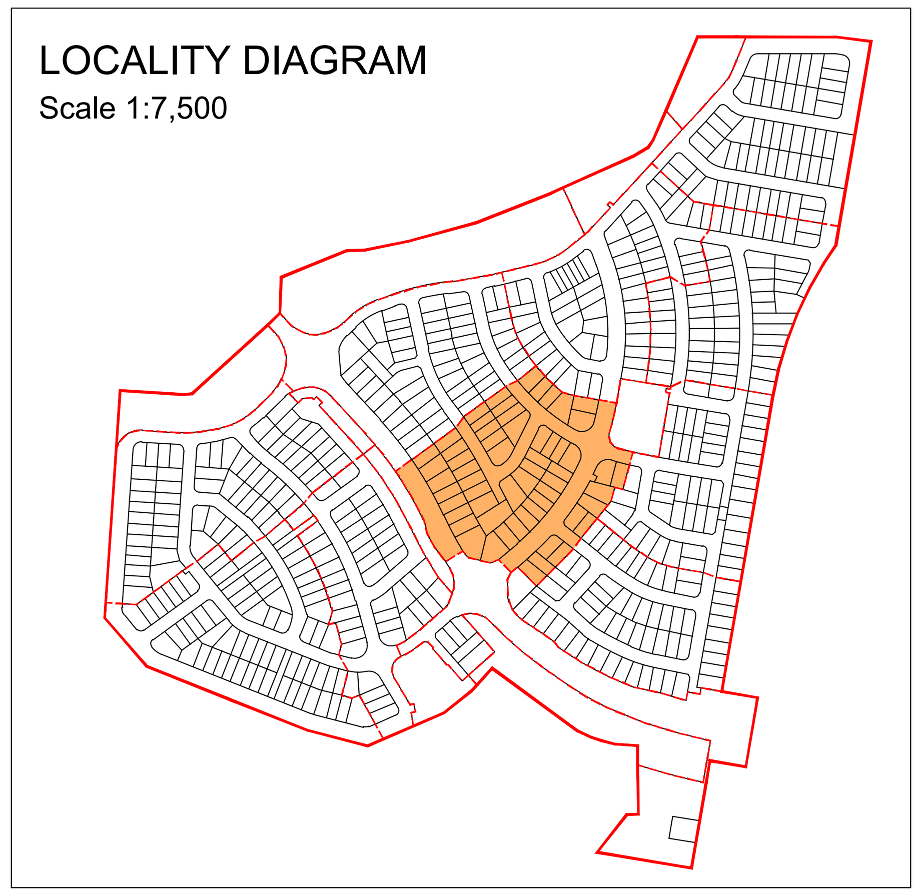
LOCALITY DIAGRAM

Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

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PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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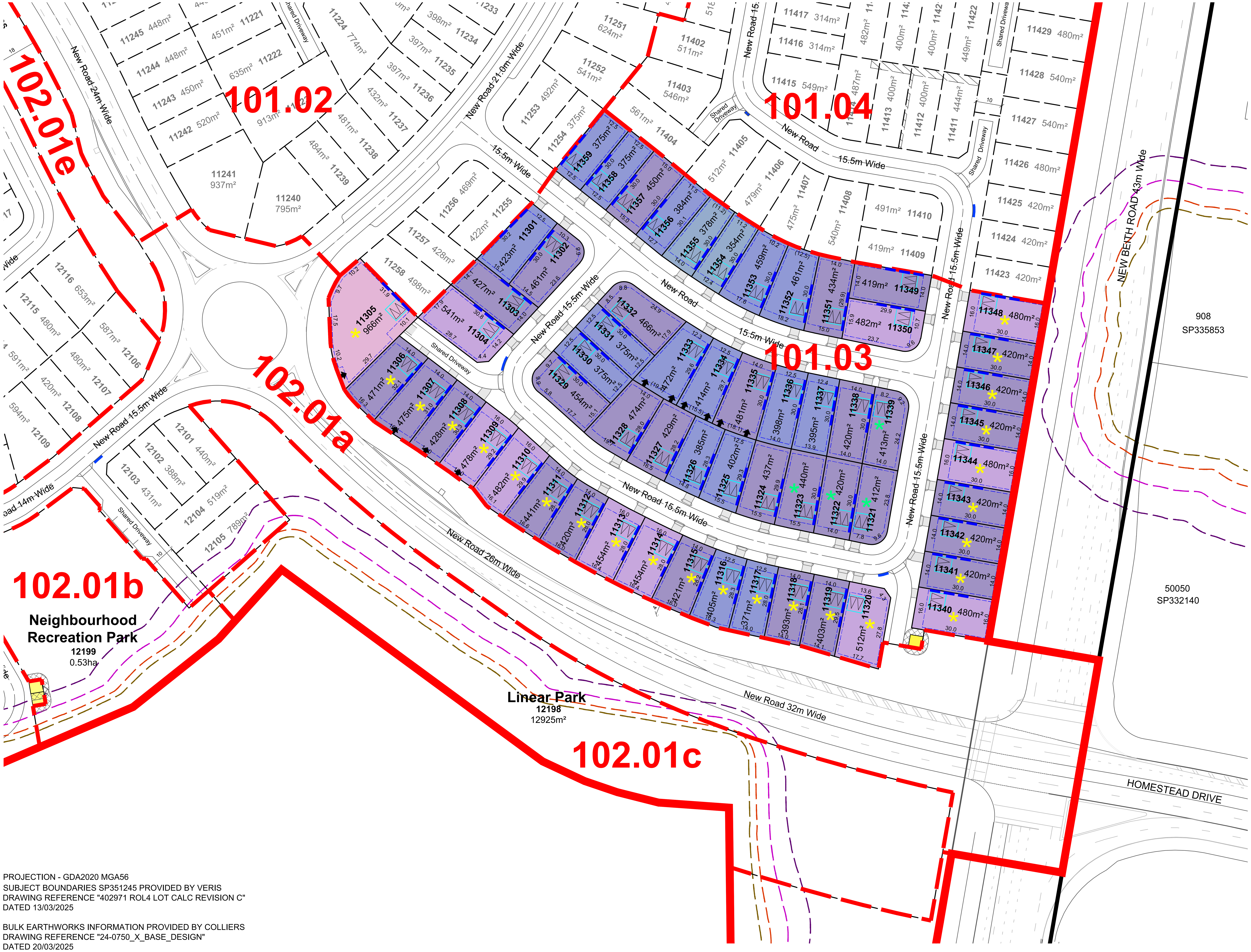
ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.03



LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
- Indicative Garage Location
- Indicative Driveway Location
- Lots which require increased setbacks
- Buildings which require acoustic design to upper floors only
- Buildings which require acoustic design to ground and upper floors
- Extent of bushfire Radiant Heat Flux 12.5kW/m2
- Extent of bushfire Radiant Heat Flux 19kW/m2
- Extent of bushfire Radiant Heat Flux 29kW/m2
- Extent of bushfire Radiant Heat Flux 40kW/m2

RESIDENTIAL ALLOTMENTS

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- Premium Courtyard (16m typical width)
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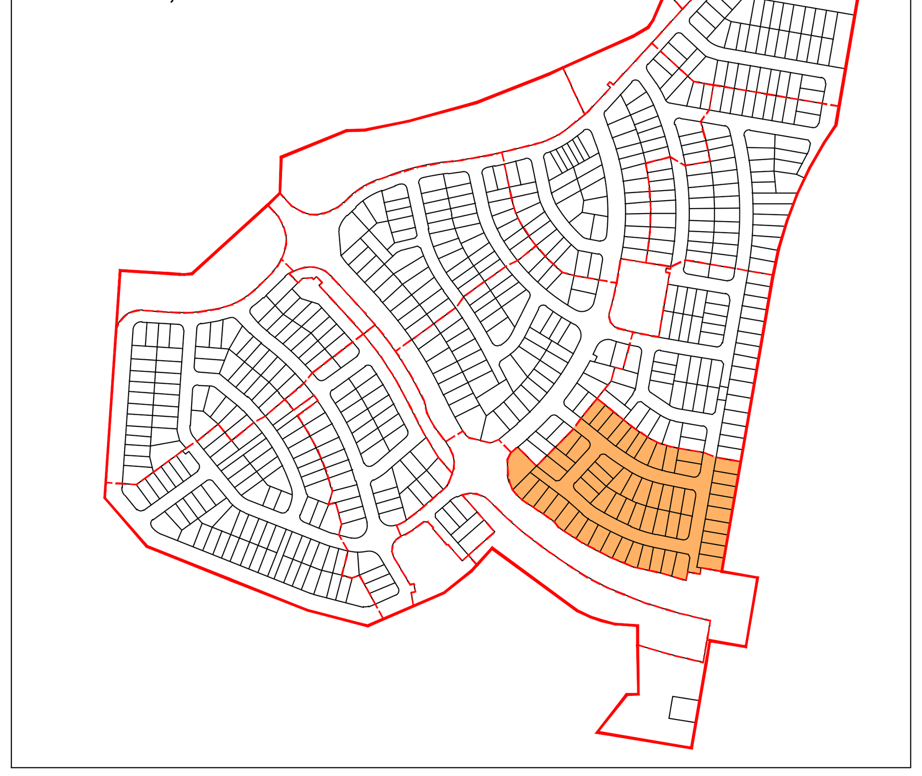
- Premium Traditional (20m typical width)

THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.04

LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
- Indicative Garage Location
- Indicative Driveway Location
- Lots which require increased setbacks
- Buildings which require acoustic design to upper floors only
- Buildings which require acoustic design to ground and upper floors
- Extent of bushfire Radiant Heat Flux 12.5kW/m2
- Extent of bushfire Radiant Heat Flux 19kW/m2
- Extent of bushfire Radiant Heat Flux 29kW/m2
- Extent of bushfire Radiant Heat Flux 40kW/m2

RESIDENTIAL ALLOTMENTS

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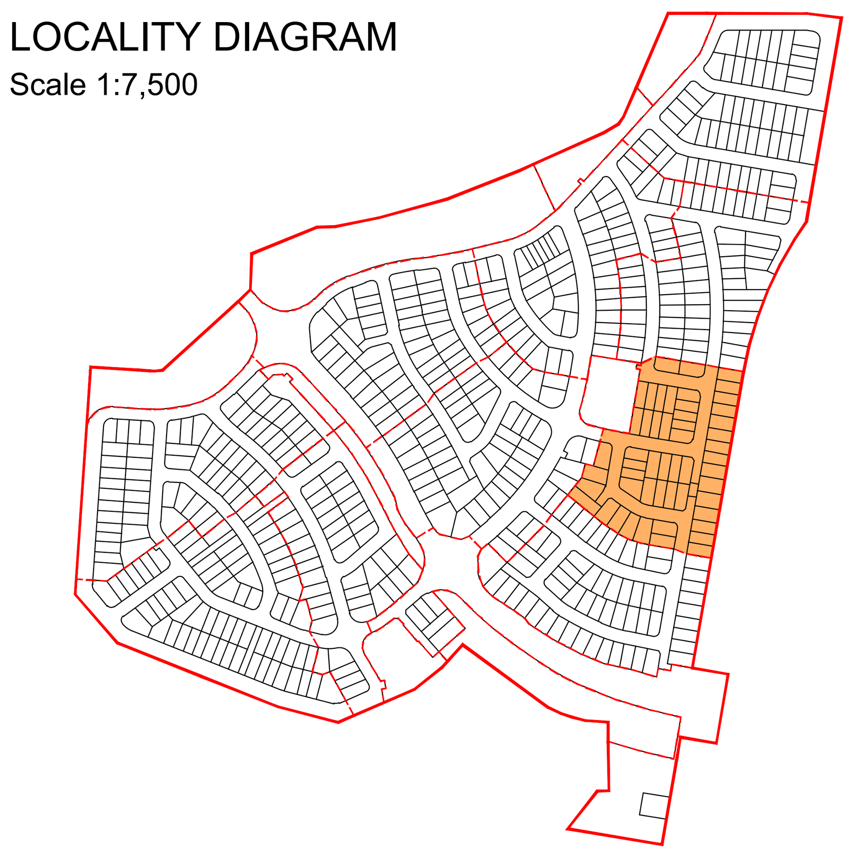
- Premium Courtyard (16m typical width)
- Traditional (18m typical width)
- Premium Traditional (20m typical width)

THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

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PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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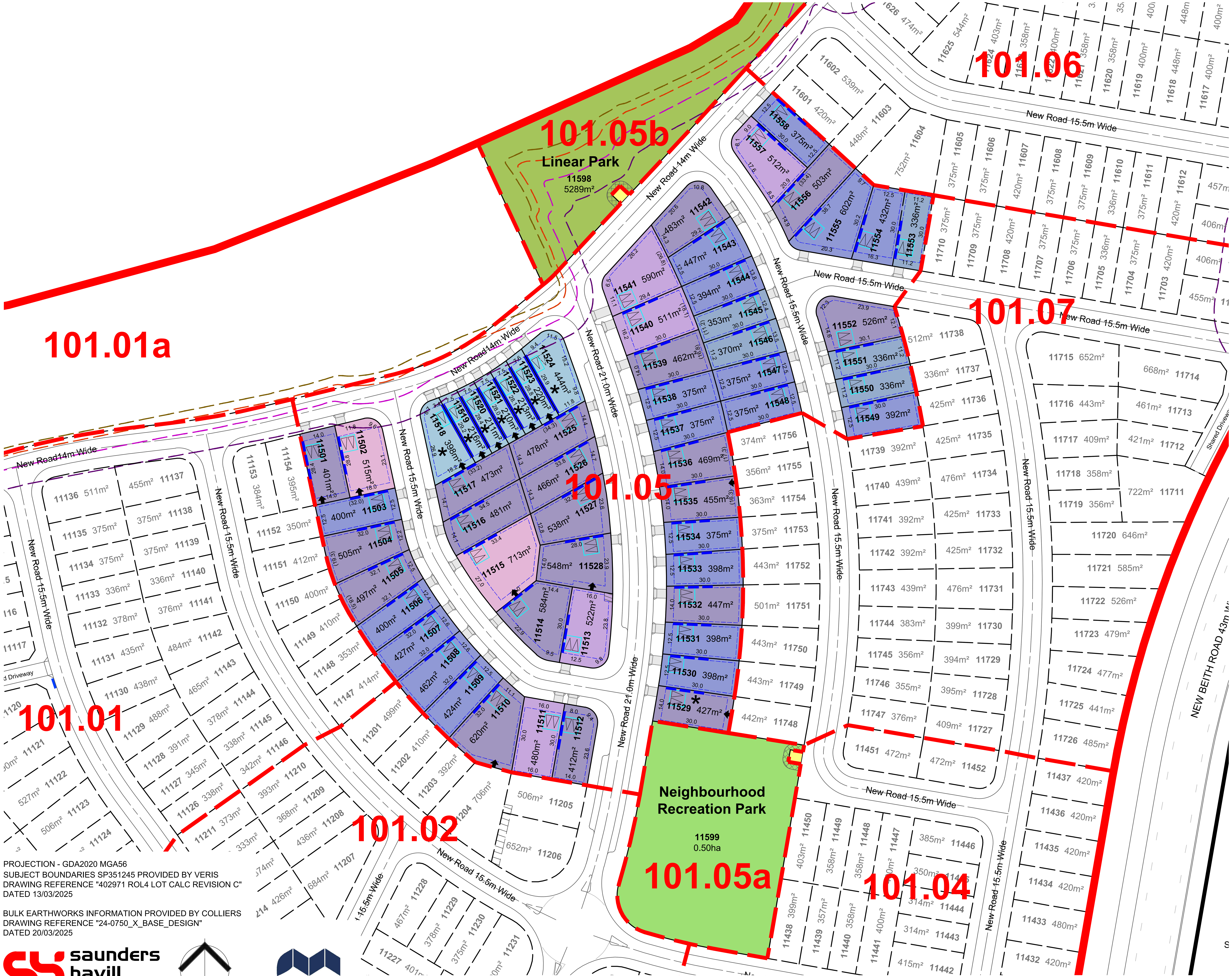
ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.05



LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Neighbourhood Recreation Park
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
- Indicative Garage Location
- Indicative Garage Location (potential additional carpark where meeting specified criteria)
- Indicative Driveway Location
- Lots which require increased setbacks
- Mandatory Two Storey Dwelling Lot
- Buildings which require acoustic design to upper floors only
- Buildings which require acoustic design to ground and upper floors
- Extent of bushfire Radiant Heat Flux 12.5kW/m2
- Extent of bushfire Radiant Heat Flux 19kW/m2
- Extent of bushfire Radiant Heat Flux 29kW/m2
- Extent of bushfire Radiant Heat Flux 40kW/m2

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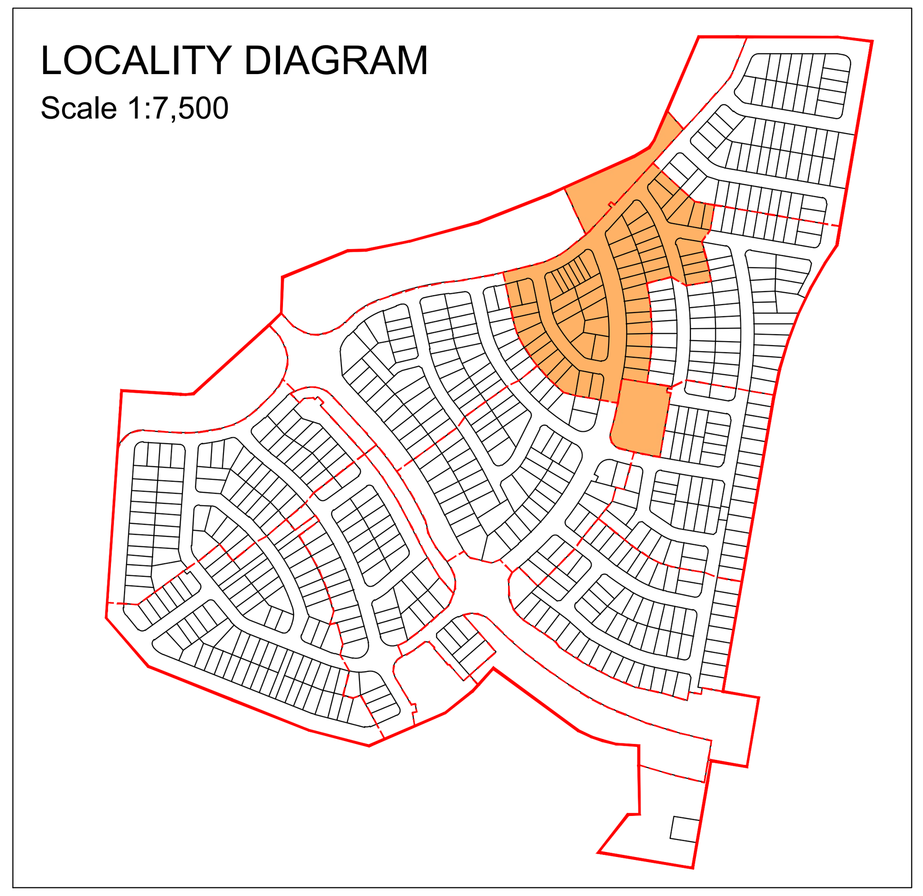
LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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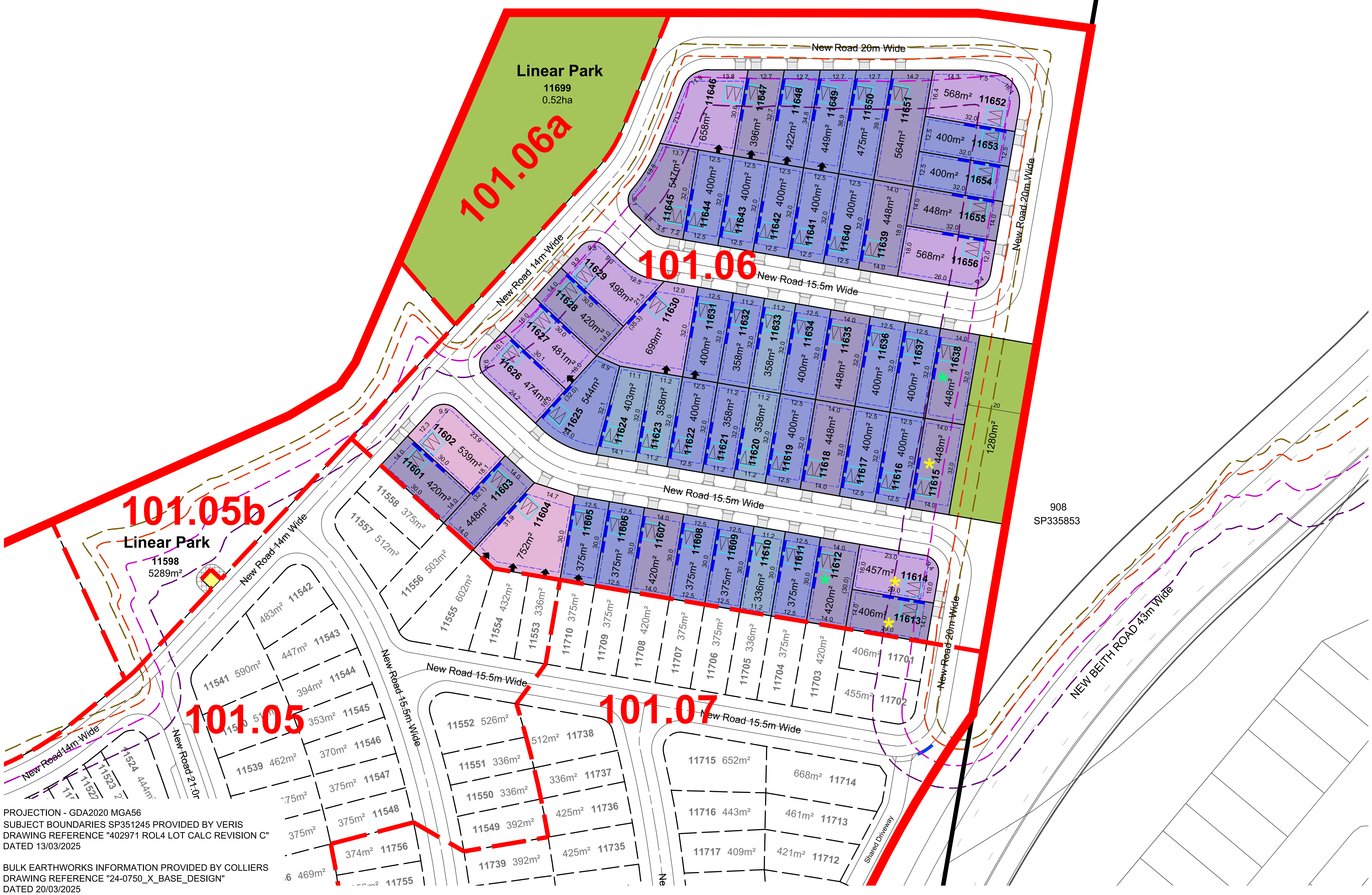
HOMESTEAD DRIVE, MONARCH GLEN ■ 03/04/2025 ■ 11731 P 27 Rev I - POD 101.05

ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.06



LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Indicative Bin Pad location
- Indicative PMT / RMU Site
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- Indicative Building Envelope
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- Extent of bushfire Radiant Heat Flux 40kW/m2

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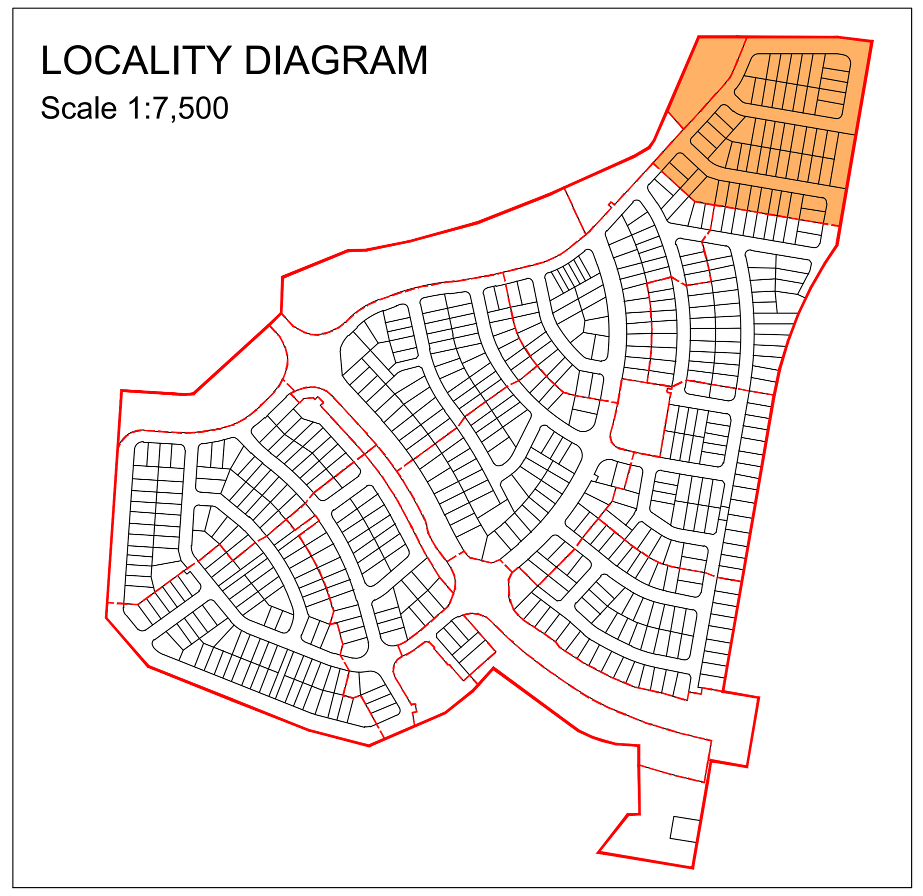
THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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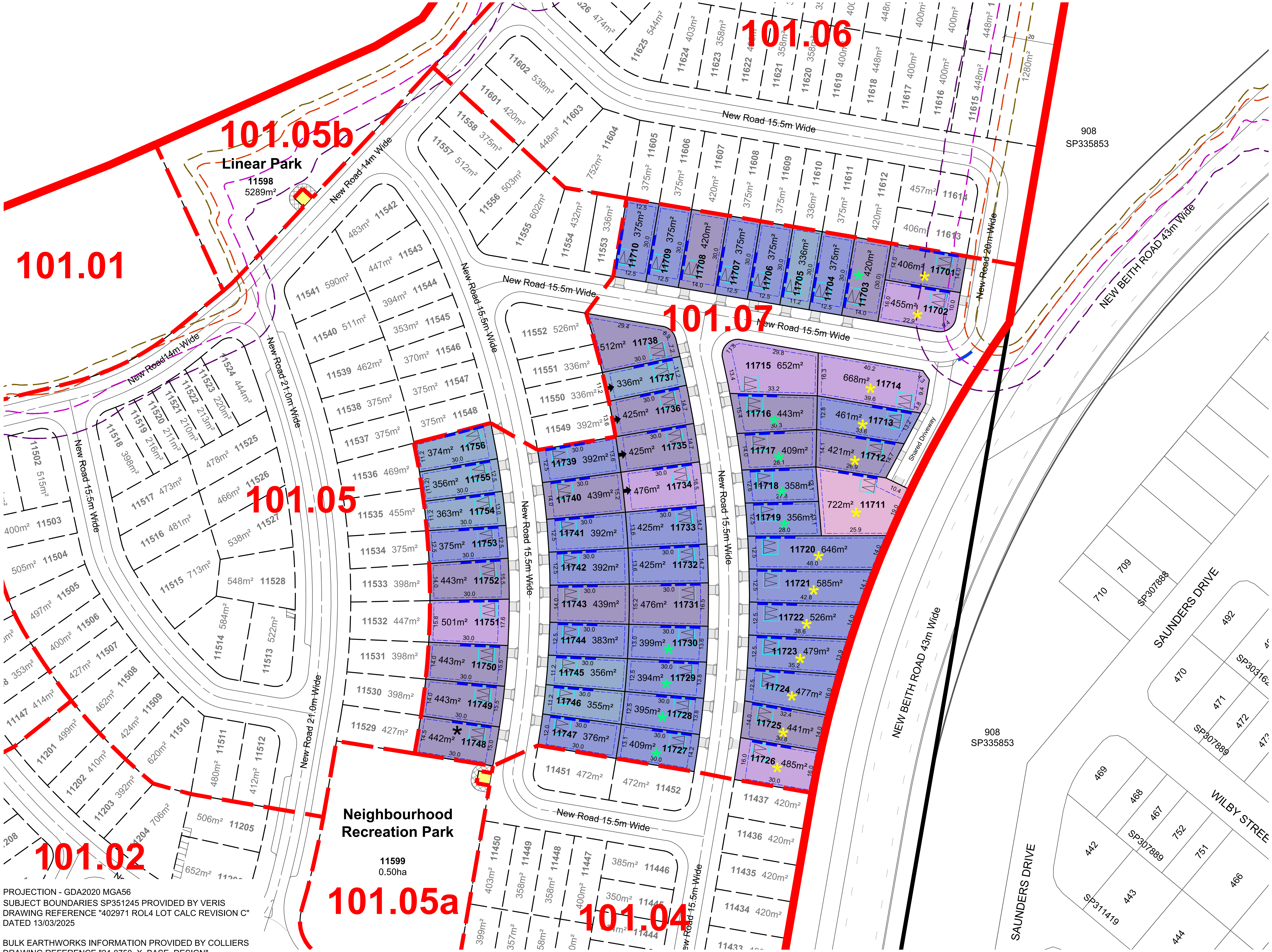
ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 101.07



LEGEND

- Site Boundary
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
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- Indicative Driveway Location
- Lots which require increased setbacks
- Mandatory Two Storey Dwelling Lot
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- Buildings which require acoustic design to ground and upper floors
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RESIDENTIAL ALLOTMENTS

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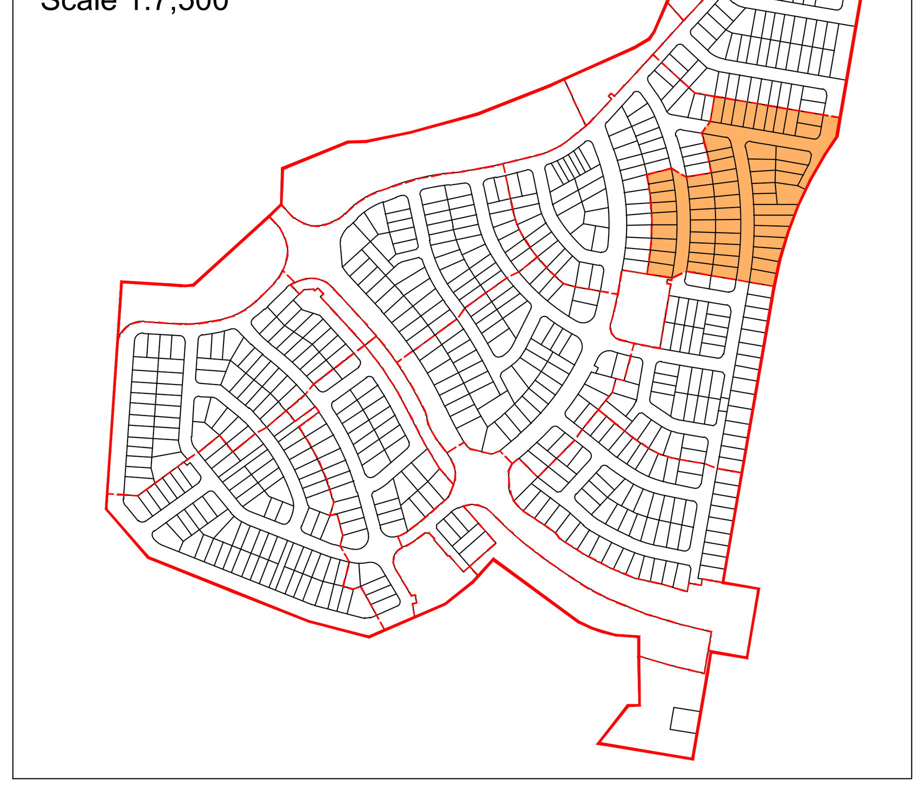
LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

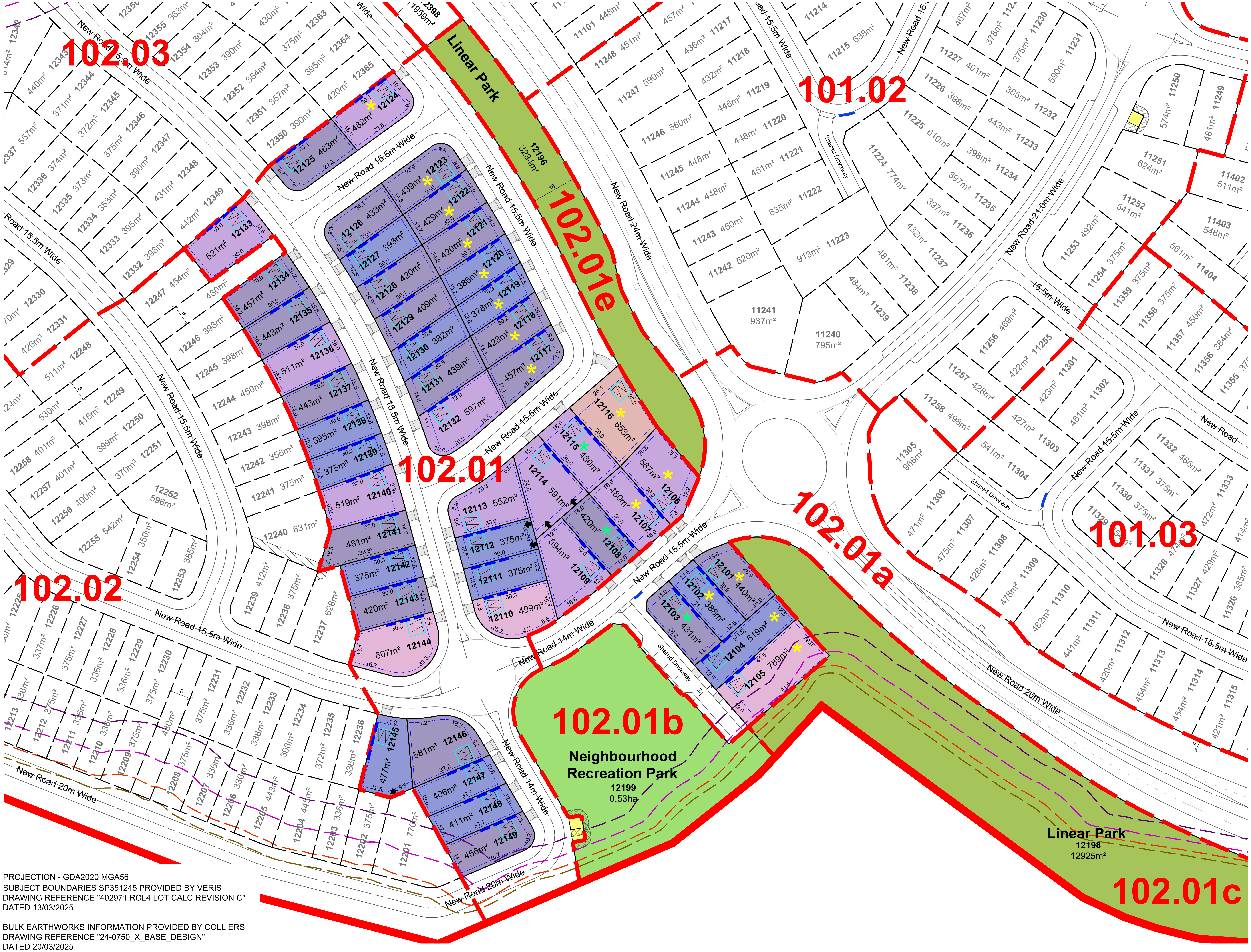
PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

saunders havill group

mirvac

ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 102.01



LEGEND

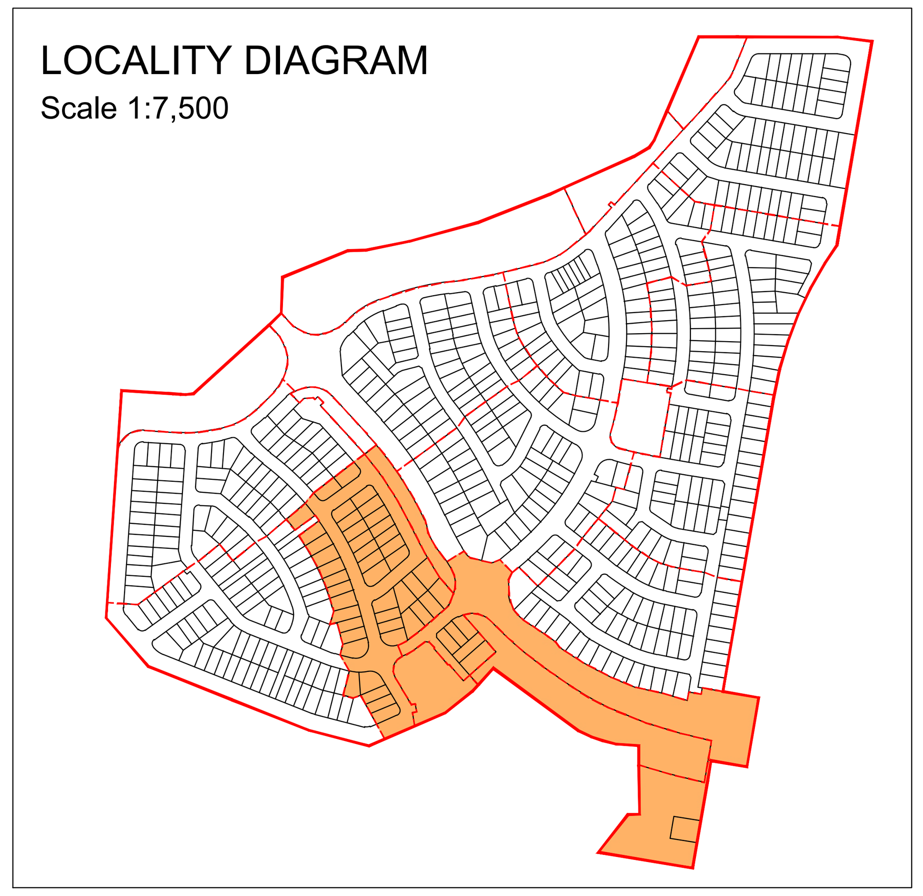
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Neighbourhood Recreation Park
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
- Indicative Garage Location
- Indicative Driveway Location
- Lots which require increased setbacks
- Buildings which require acoustic design to upper floors only
- Buildings which require acoustic design to ground and upper floors
- Extent of bushfire Radiant Heat Flux 12.5kW/m2
- Extent of bushfire Radiant Heat Flux 19kW/m2
- Extent of bushfire Radiant Heat Flux 29kW/m2
- Extent of bushfire Radiant Heat Flux 40kW/m2

RESIDENTIAL ALLOTMENTS

- Terrace (7.5m - 9m typical width)
- Villa (11.2m typical width)
- Premium Villa (12.5m typical width)
- Courtyard (14m typical width)
- Premium Courtyard (16m typical width)
- Traditional (18m typical width)
- Premium Traditional (20m typical width)

THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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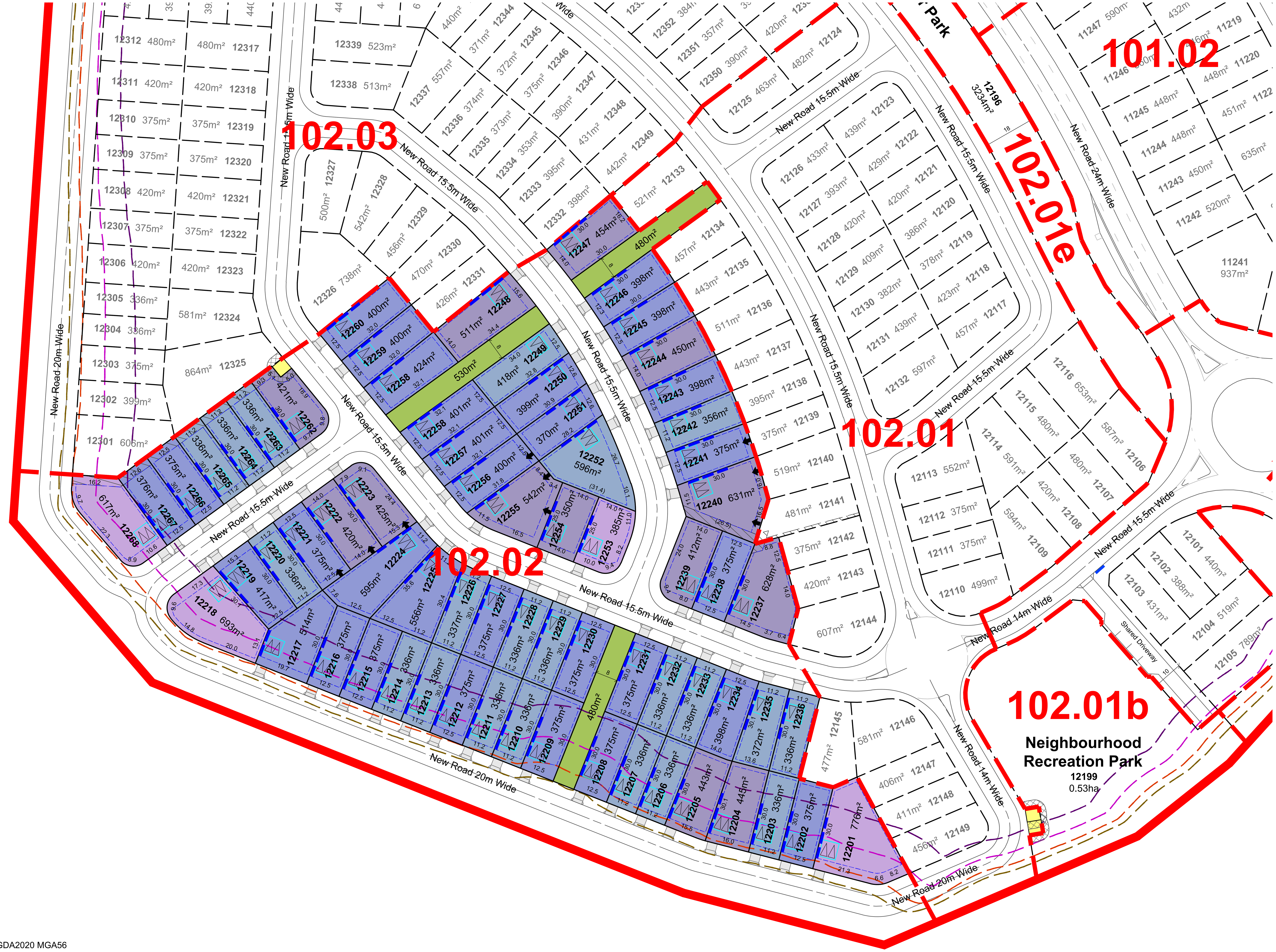
ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 102.02



LEGEND

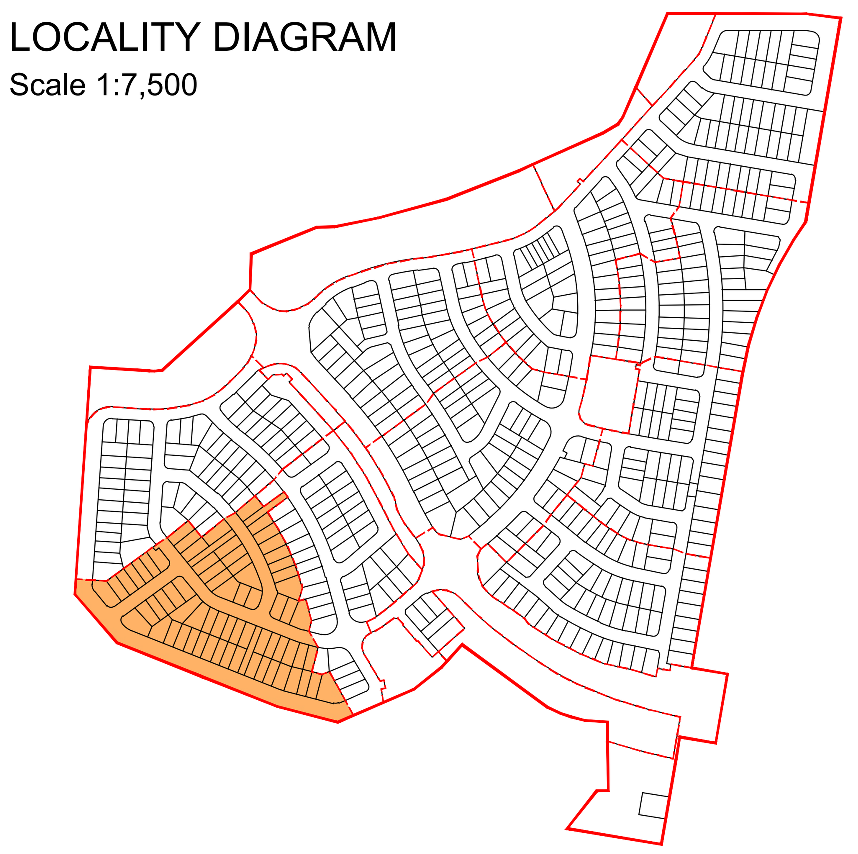
- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
- Indicative Garage Location
- Indicative Driveway Location
- Lots which require increased setbacks
- Extent of bushfire Radiant Heat Flux 12.5kW/m2
- Extent of bushfire Radiant Heat Flux 19kW/m2
- Extent of bushfire Radiant Heat Flux 29kW/m2
- Extent of bushfire Radiant Heat Flux 40kW/m2

RESIDENTIAL ALLOTMENTS

- Terrace (7.5m - 9m typical width)
- Villa (11.2m typical width)
- Premium Villa (12.5m typical width)
- Courtyard (14m typical width)
- Premium Courtyard (16m typical width)
- Traditional (18m typical width)
- Premium Traditional (20m typical width)

THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES
10 0 10 20 30 40 50 60 70 80 90

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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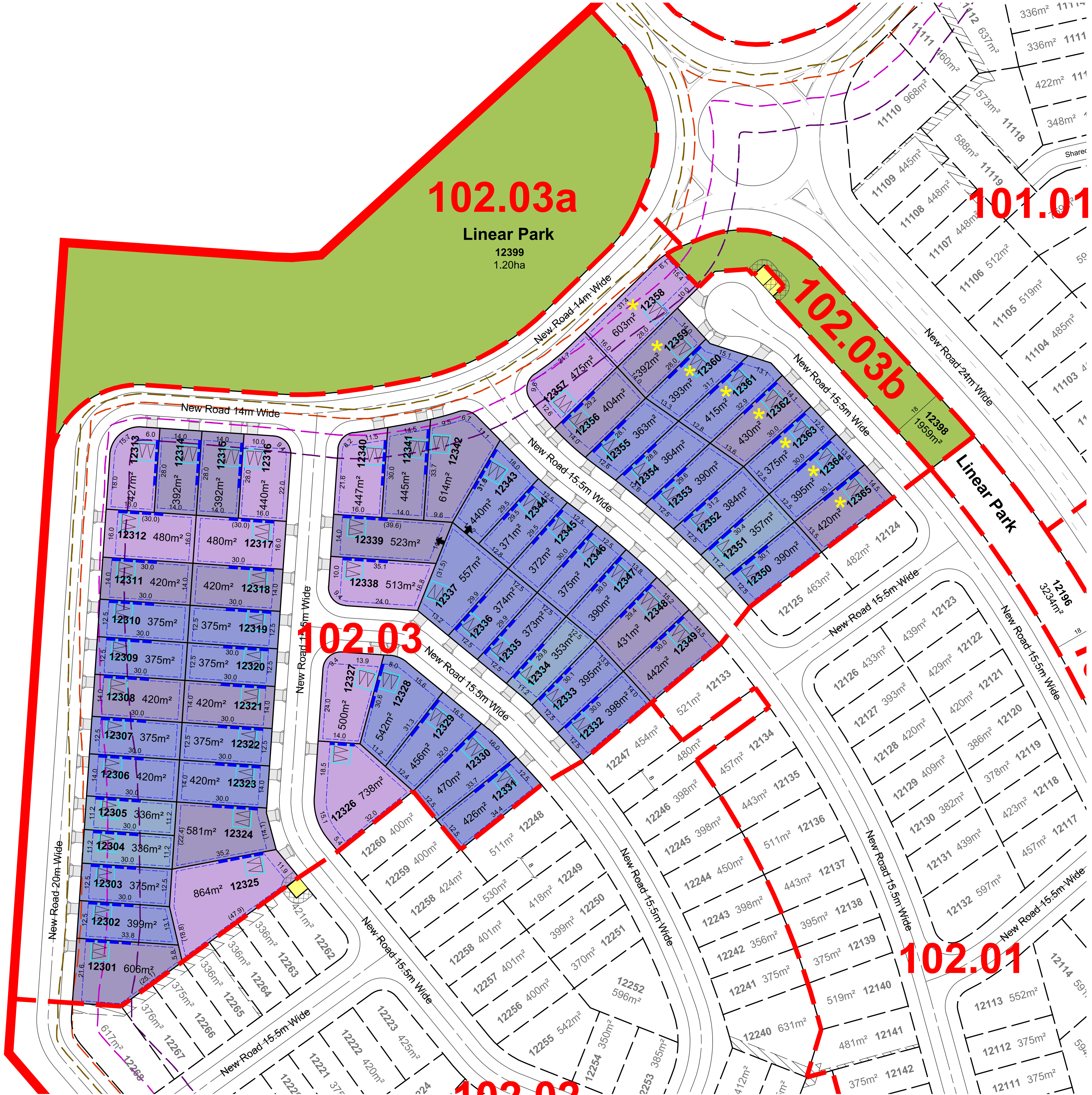
ROL 4: PLAN OF DEVELOPMENT - ENVELOPE PLAN - SUB-PRECINCT 102.03



LEGEND

- ROL 4 Boundary
- Sub-precinct Boundary
- Proposed Easement
- Linear Park / Pedestrian Linkage
- Indicative Bin Pad location
- Indicative PMT / RMU Site
- Built to Boundary Wall location
- Indicative Building Envelope
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- Lots which require increased setbacks
- Buildings which require acoustic design to upper floors only
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RESIDENTIAL ALLOTMENTS

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- Premium Villa (12.5m typical width)
- Courtyard (14m typical width)
- Premium Courtyard (16m typical width)
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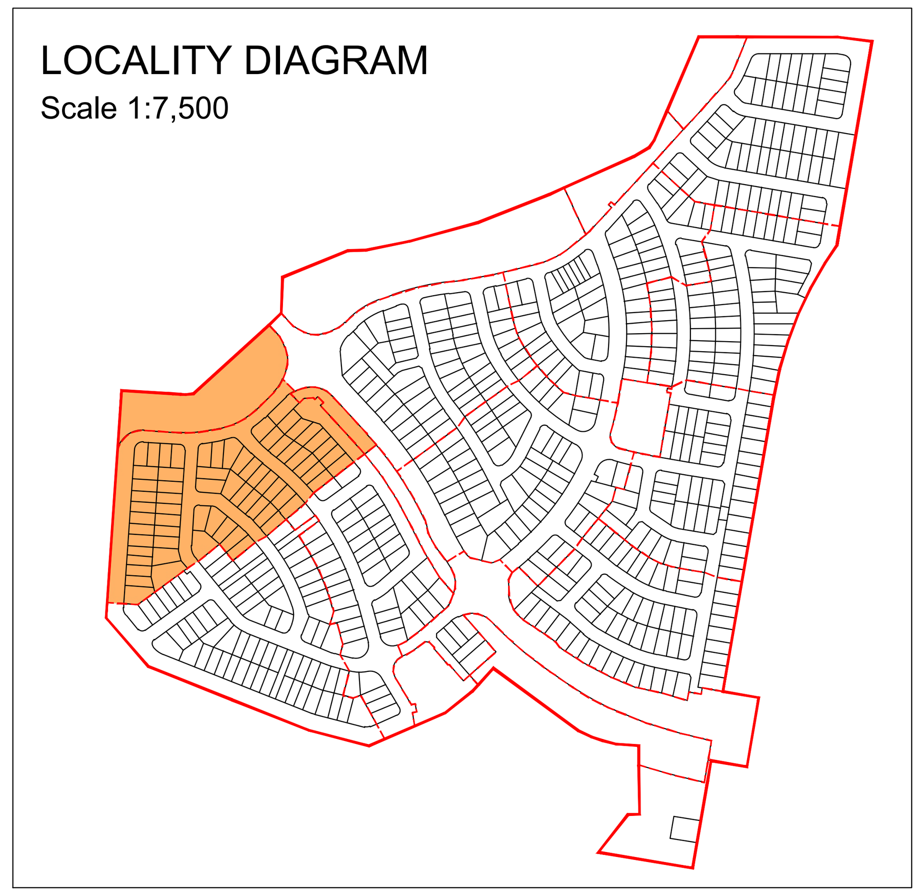
- Premium Traditional (20m typical width)

THIS PLAN MUST BE READ IN CONJUNCTION WITH ROL 4: PLAN OF DEVELOPMENT - DESIGN CRITERIA (11731 P 27 Rev I - POD 01)

LOCALITY DIAGRAM
Scale 1:7,500



RP DESCRIPTION: Lots 1-3 on SP351245

SCALE @A1 1:750 @A3 1:1500 - LENGTHS ARE IN METRES

10 0 10 20 30 40 50 60 70 80 90

PROJECTION - GDA2020 MGA56
SUBJECT BOUNDARIES SP351245 PROVIDED BY VERIS
DRAWING REFERENCE "402971 ROL4 LOT CALC REVISION C"
DATED 13/03/2025

BULK EARTHWORKS INFORMATION PROVIDED BY COLLIERS
DRAWING REFERENCE "24-0750_X_BASE_DESIGN"
DATED 20/03/2025

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APPENDIX B – Planning Criteria

Water Network Desired Standards of Service (DSS)				
Parameter	**Criteria**			
Water demand				
Average Day Demand (ADD)	On demand areas - 190 L/EP/d. Based on 165 L/EP/d residential consumption + allowance for leakage/losses (25 L/EP/d).			
	Constant flow areas -190 L/EP/d. Based on 165 L/EP/d residential consumption + allowance for leakage/losses (25 L/EP/d).			
Peaking factors	**Category**	**MDMM/AD**	**MD/AD**	**PH/AD**
Guidance Note: Peaking factors are to be applied to the residential component of demand, i.e. 165 L/EP/d. Leakage /loss levels will remain constant throughout all demand categories and should only be appended after any peaking escalation has occurred.	Residential detached	1.3	1.7	3.1
	Residential attached	1.3	1.6	2.6
	Rural residential / Constant flow	1	1	1.5
	Commercial	1.2	1.3	2.0
	Industry	1.2	1.3	1.7
	Parks / Open space	1.2	1.3	1.7
System planning				
Bulk supply and reticulation	3 days of MDMM. Reservoirs to have a net positive inflow and capable of continuous operation and not fall below the emergency level. 3 days of MD. Reservoirs should not fall below the emergency level. 5 days of AD. Reservoirs should fill from empty to full.			
Service pressures				
Minimum operating pressure at PH	On demand areas – 22m at the property boundary based on reservoir at minimum operating level (MOL). MOL defined as 15% of storage height or top of emergency storage.			
	Constant flow areas – 10m at the property boundary based on reservoir at minimum operating level (MOL) MOL defined as 15% of storage height or top of emergency storage.			
Maximum operating pressure	80 m at the property boundary based on the reservoir at TWL			
Target maximum operating pressure	55 m at the property boundary based on the reservoir level at TWL			
Fire fighting				
System pressure	On demand areas	12 m minimum at property boundary		
	Constant flow areas	no fire service provided		
Fire flow	Constant flow areas	no fire service provided		
	Rural Residential	7.5 L/s for 2 hrs		
	Rural Commercial / Industrial	15 L/s for 2 hrs		
	Residential	15 L/s for 2 hrs		
	Commercial & Industrial	30 L/s for 4 hrs		
	Special risk / hazard	to be advised by Logan City Council (LCC)		
Background demand	2/3 PH (as per DEWS requirements)			
Reservoir level	Minimum Operating Level (MOL)			

<table>
<tr><td colspan="2">Water quality</td></tr>
<tr><td>Drinking water quality</td><td>Drinking water to comply with the NHMRC Australian Drinking Water Guidelines</td></tr>
<tr><td colspan="2">Reservoir storage</td></tr>
<tr><td>Ground level storage capacity</td><td>3 (MD - MDMM) + (Emergency storage)

Emergency Storage = 4 hr MDMM demand in zone or 0.5 ML whichever is greater.</td></tr>
<tr><td>Elevated storage capacity

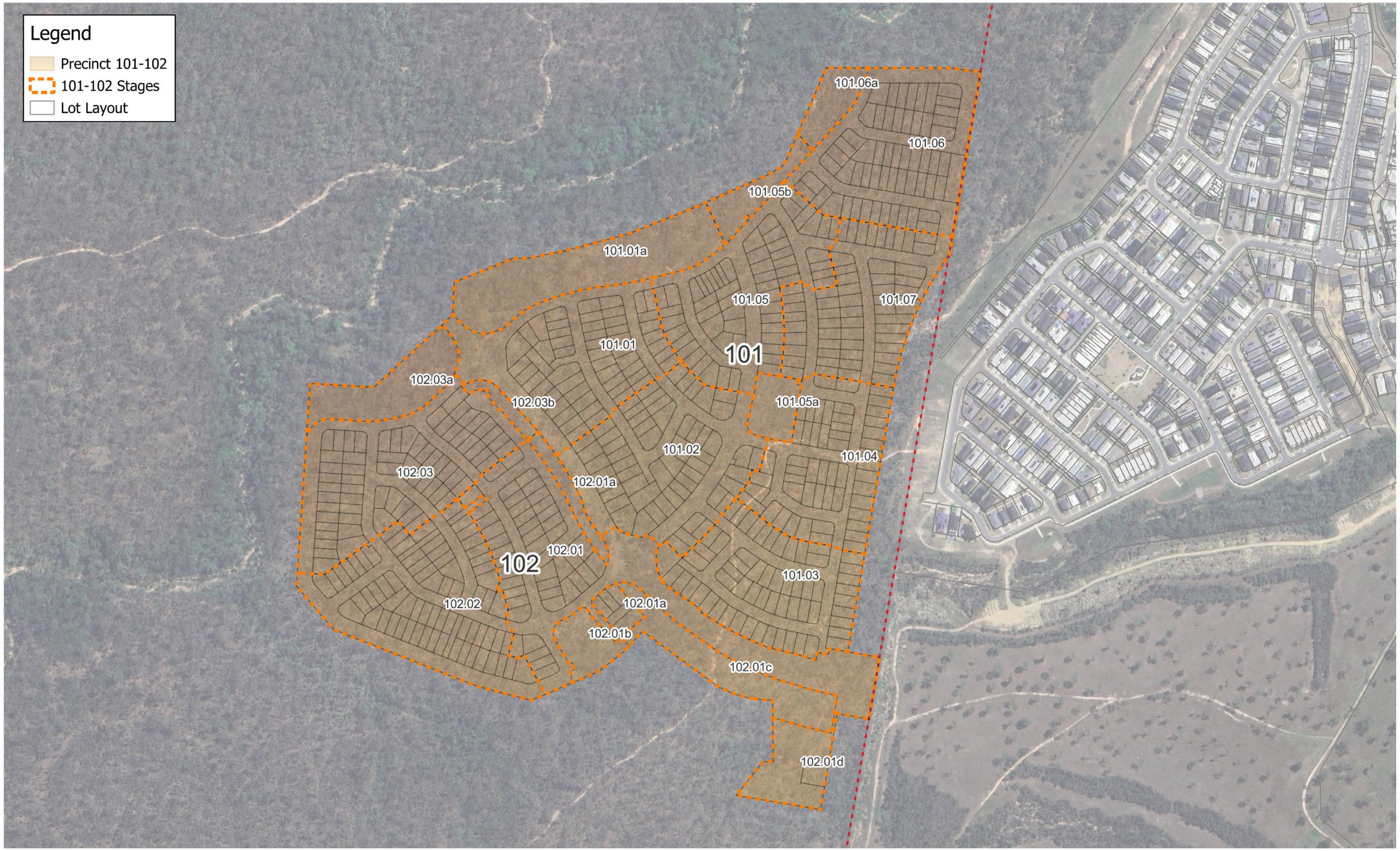
Guidance Note:
In-line pressure booster pumping without high-level storage shall be considered where satisfactory pressures can be provided by gravity flow during low demand periods or booster failure can be mitigated to an acceptable level (risk assessment required) and where there is no other feasible means of providing adequate pressure.</td><td>6 (PH - 1/12 MDMM) + minimum firefighting reserve.
Fire Fighting reserve =
> 4800EP:
• rural residential 0.11 ML
• industry 0.54 ML
• otherwise 0.22 ML
< 4800 EP:
• rural residential 0.05 ML
• industry 0.43 ML
• otherwise 0.11 ML</td></tr>
<tr><td colspan="2">Pumping capacity</td></tr>
<tr><td>Pump supplying a ground level reservoir</td><td>MDMM over 20 hrs</td></tr>
<tr><td>Pump supplying an elevated reservoir</td><td>(6PH – operating volume) / (6 x 3600)

Operating volume =
Elevated reservoir capacity - fire fighting reserve</td></tr>
<tr><td>Standby pump capacity</td><td>To match duty, except where more than one duty pump or as determined by risk assessment.</td></tr>
<tr><td>Reticulation booster pumps/pumped system</td><td>PH + fire flow</td></tr>
<tr><td colspan="2">Pipeline assessment & design</td></tr>
<tr><td>Main capacity</td><td>Raw water mains & trunk feeding ground level reservoir:
MDMM for a gravity supply and MDMM over 20hrs for a pumped supply
Trunk Mains feeding elevated reservoir: capacity of pumps:
Reticulation Mains: PH + fire flow.</td></tr>
<tr><td>Mains size
Guidance Note:
New CF areas are not permitted by LCC.</td><td>Constant flow areas - where mains terminate in short runs such as cu- de-sacs minimum sizes that may be acceptable are:
DN 63 up to 150 m from main
DN 80 up to 350 m from main

On demand areas - minimum reticulation main 100mm in residential areas and 150mm in commercial and industrial areas.</td></tr>
<tr><td>Friction default value</td><td>
<table>
<tr><td>Existing Infrastructure</td><td>Future Infrastructure</td></tr>
<tr><td>Colebrook White k values (mm)
<table>
<tr><th rowspan="2">Pipe Material</th><th colspan="3">Pipeline Age (years)</th></tr>
<tr><th>< 10</th><th>10 to 25</th><th>> 25</th></tr>
<tr><td>Asbestos Cement</td><td>0.15</td><td>0.3</td><td>0.3</td></tr>
<tr><td>Plastic (UPVC, MDPE, Hobas, etc)</td><td>0.06</td><td>0.06</td><td>0.15</td></tr>
<tr><td>MSCL/DICL</td><td>0.3</td><td>0.3</td><td>0.6</td></tr>
<tr><td>CICL</td><td>0.3</td><td>0.3</td><td>0.6</td></tr>
</table></td>
<td>The design shall be conducted to achieve less than the following head losses:
a) 5 m head/km for ≤DN 150 (CIOD) or ≤DN 180 (ISO).
b) 3 m head/km for ≥DN 200 (CIOD) or ≥DN 250 (ISO).
c) Head loss shall be calculated using computer models or hydraulic formulas.</td></tr>
</table></td></tr>
<tr><td>Maximum velocity</td><td>2.5 m/s
At peak hour for trunk mains and at peak hour including fire flow for reticulation.</td></tr>
</table>

<table>
<tr><th colspan="2">Standpipe and Hydrant Filling Points</th></tr>
<tr><td rowspan="2">Hydraulic model</td><td><u>Planning Scenario</u>
All designated and planned standpipes and hydrant filling points are to be modelled at either anticipated flowrates or recorded flows from SCADA or field test (hourly patterns).</td></tr>
<tr><td><u>Operational Scenario</u>
Operational scenario to be modelled at 15 min time steps to highlight actual likely impacts on network.</td></tr>
<tr><td colspan="2"><u>Augmentation</u> – In general significant network augmentations would not be considered prudent to support new hydrant filing points. Alternate strategies such as relocation or management of hydrant filing point flows (while maintaining suitable service levels) should be considered to maintain DSS. Suitable service levels should be agreed with Council's Water Business & Customer Management team.</td></tr>
</table>

APPENDIX C – Figures



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Job Number: J0000345

Map No: Layout_Plan

Author: CS

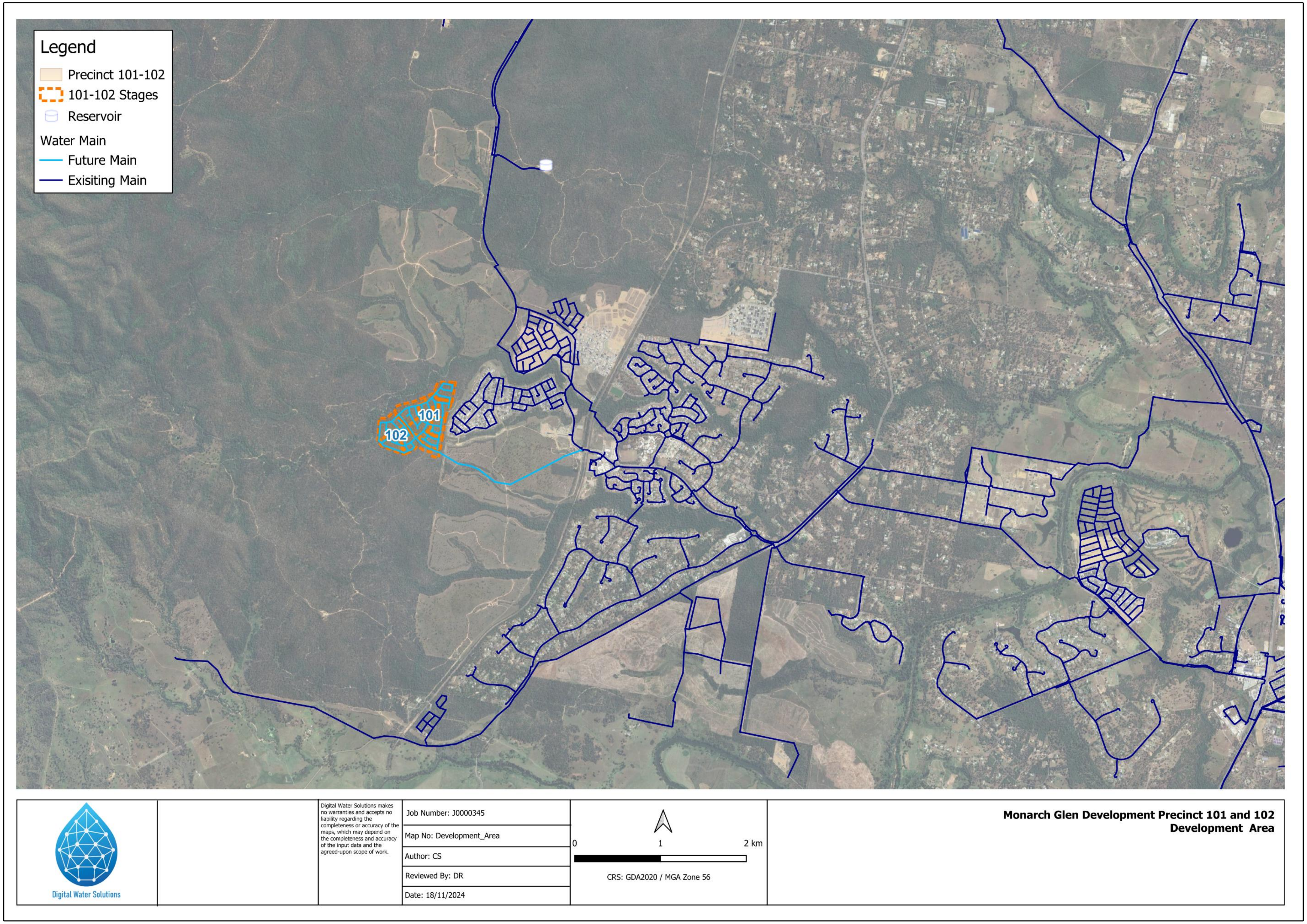
Reviewed By: DR

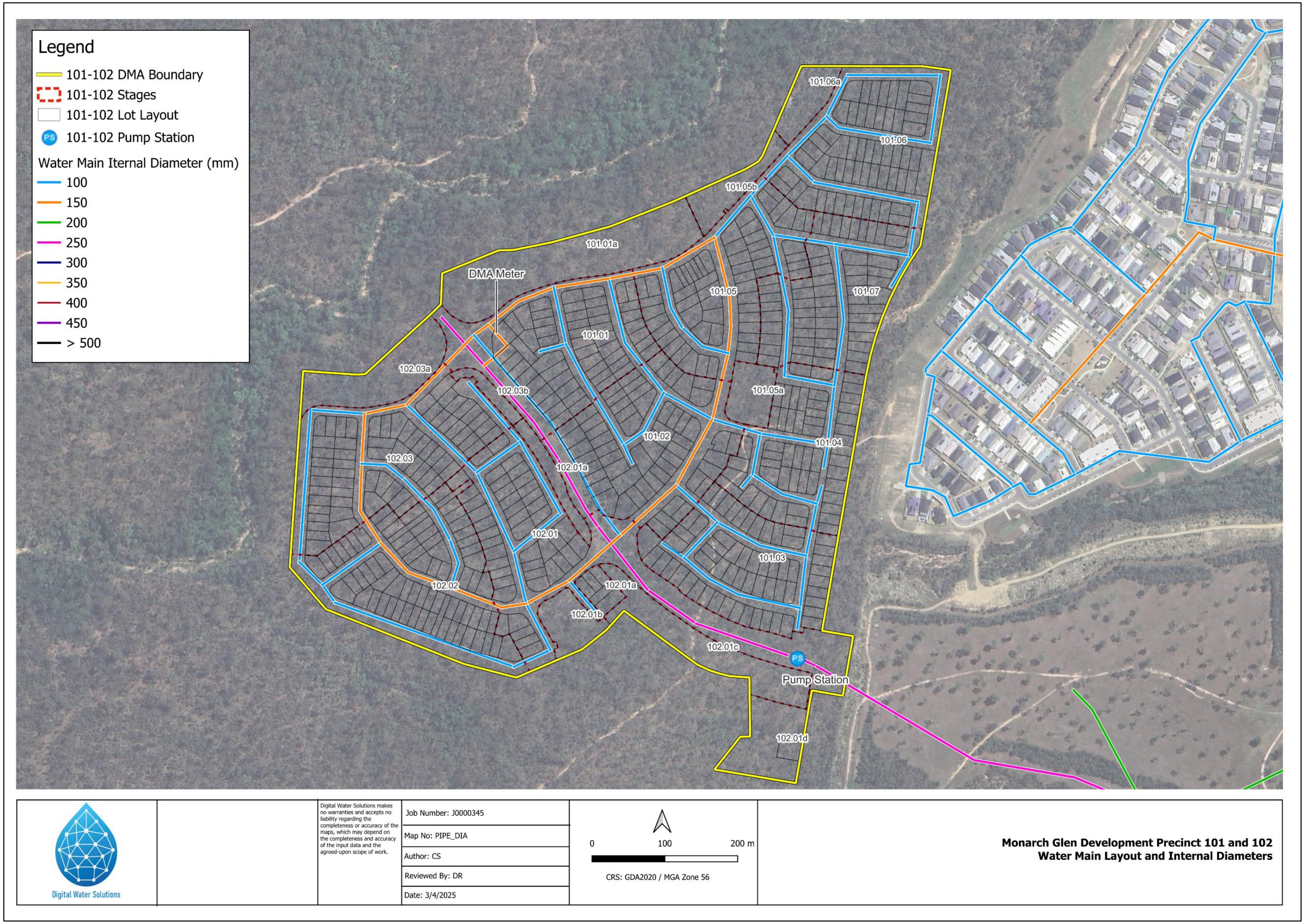
Date: 24/3/2025

0 100 200 m

CRS: GDA2020 / MGA Zone 56

Monarch Glen Development Precinct 101 and 102 Layout Plan


Legend
Precinct 101-102
101-102 Stages
Reservoir
Water Main
Future Main
Exisiting Main
101
102
Digital Water Solutions
Digital Water Solutions makes no warranties and accepts no liability regarding the completeness or accuracy of the maps, which may depend on the completeness and accuracy of the input data and the agreed-upon scope of work.
Job Number: J0000345
Map No: Development_Area
Author: CS
Reviewed By: DR
Date: 18/11/2024
0
1
2 km
CRS: GDA2020 / MGA Zone 56
Monarch Glen Development Precinct 101 and 102
Development Area


Legend
101-102 DMA Boundary
101-102 Stages
101-102 Lot Layout
101-102 Pump Station
Water Main Iternal Diameter (mm)
100
150
200
250
300
350
400
450
> 500
101.06a
101.06
101.05b
101.01a
DMA Meter
101.05
101.07
101.01
102.03a
102.03b
101.05a
101.02
101.04
102.03
102.01a
102.01
101.03
102.02
102.01a
102.01b
102.01c
PS
Pump Station
102.01d
Digital Water Solutions
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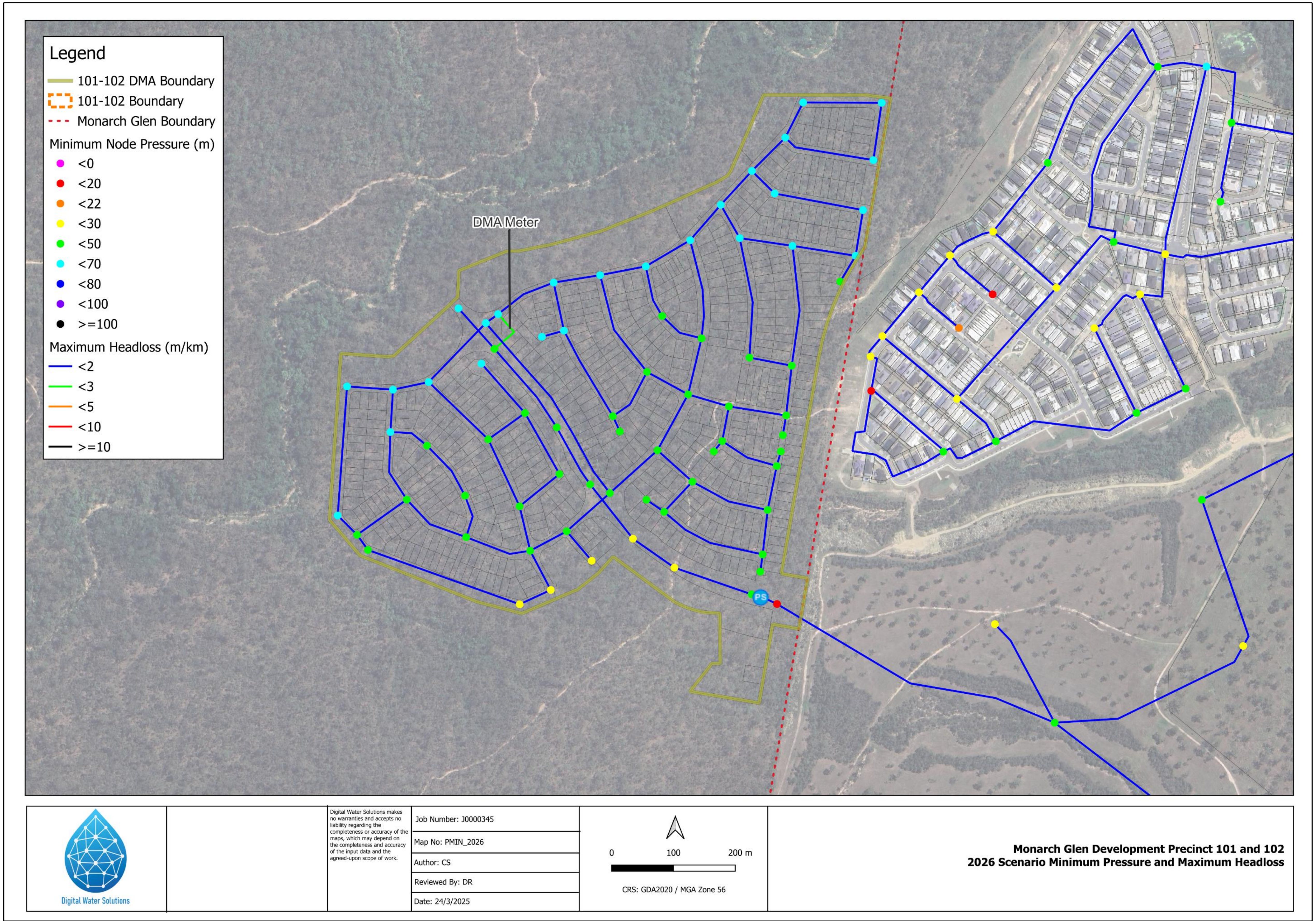
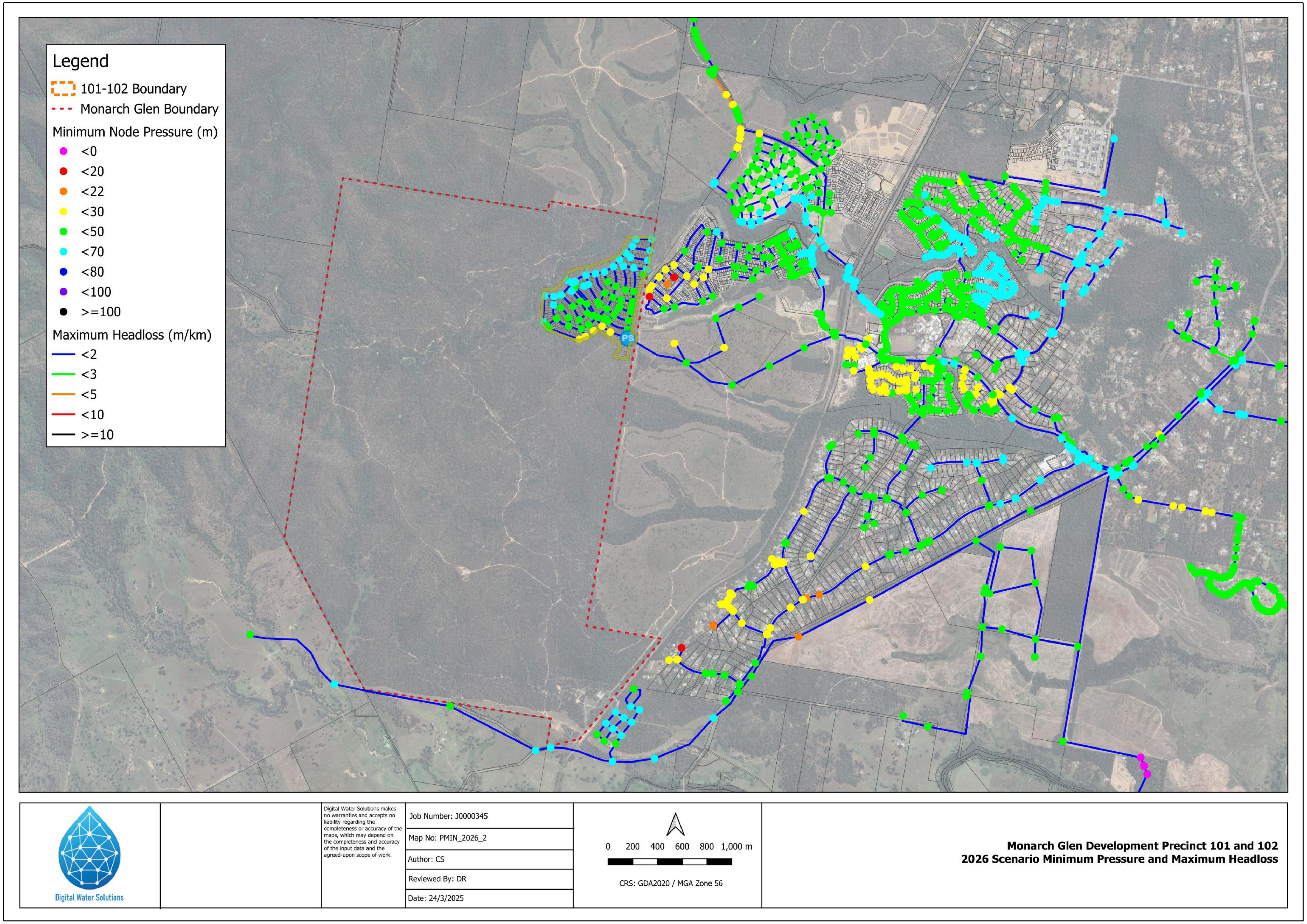
Job Number: J0000345
Map No: PIPE_DIA
Author: CS
Reviewed By: DR
Date: 3/4/2025
0
100
200 m
CRS: GDA2020 / MGA Zone 56
Monarch Glen Development Precinct 101 and 102
Water Main Layout and Internal Diameters


Legend
101-102 DMA Boundary
101-102 Boundary
Monarch Glen Boundary
Minimum Node Pressure (m)
<0
<20
<22
<30
<50
<70
<80
<100
>=100
Maximum Headloss (m/km)
<2
<3
<5
<10
>=10
DMA Meter
PS
Digital Water Solutions
Digital Water Solutions makes no warranties and accepts no liability regarding the completeness or accuracy of the maps, which may depend on the completeness and accuracy of the input data and the agreed-upon scope of work.
Job Number: J0000345
Map No: PMIN_2026
Author: CS
Reviewed By: DR
Date: 24/3/2025
0
100
200 m
CRS: GDA2020 / MGA Zone 56
Monarch Glen Development Precinct 101 and 102
2026 Scenario Minimum Pressure and Maximum Headloss


Legend
101-102 Boundary
Monarch Glen Boundary
Minimum Node Pressure (m)
<0
<20
<22
<30
<50
<70
<80
<100
>=100
Maximum Headloss (m/km)
<2
<3
<5
<10
>=10
PS
Digital Water Solutions
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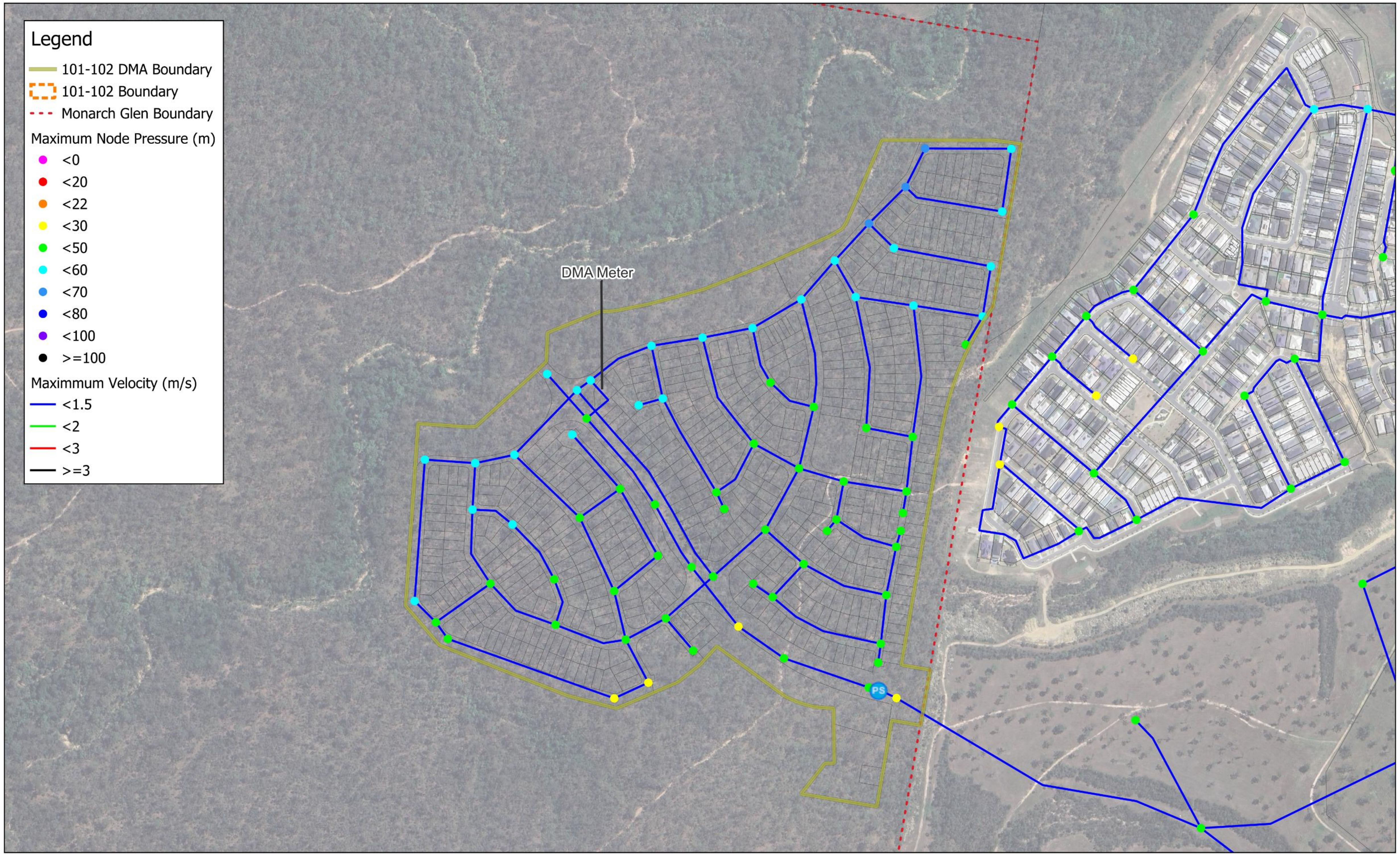
Job Number: J0000345
Map No: PMIN_2026_2
Author: CS
Reviewed By: DR
Date: 24/3/2025
0 200 400 600 800 1,000 m
CRS: GDA2020 / MGA Zone 56
Monarch Glen Development Precinct 101 and 102
2026 Scenario Minimum Pressure and Maximum Headloss



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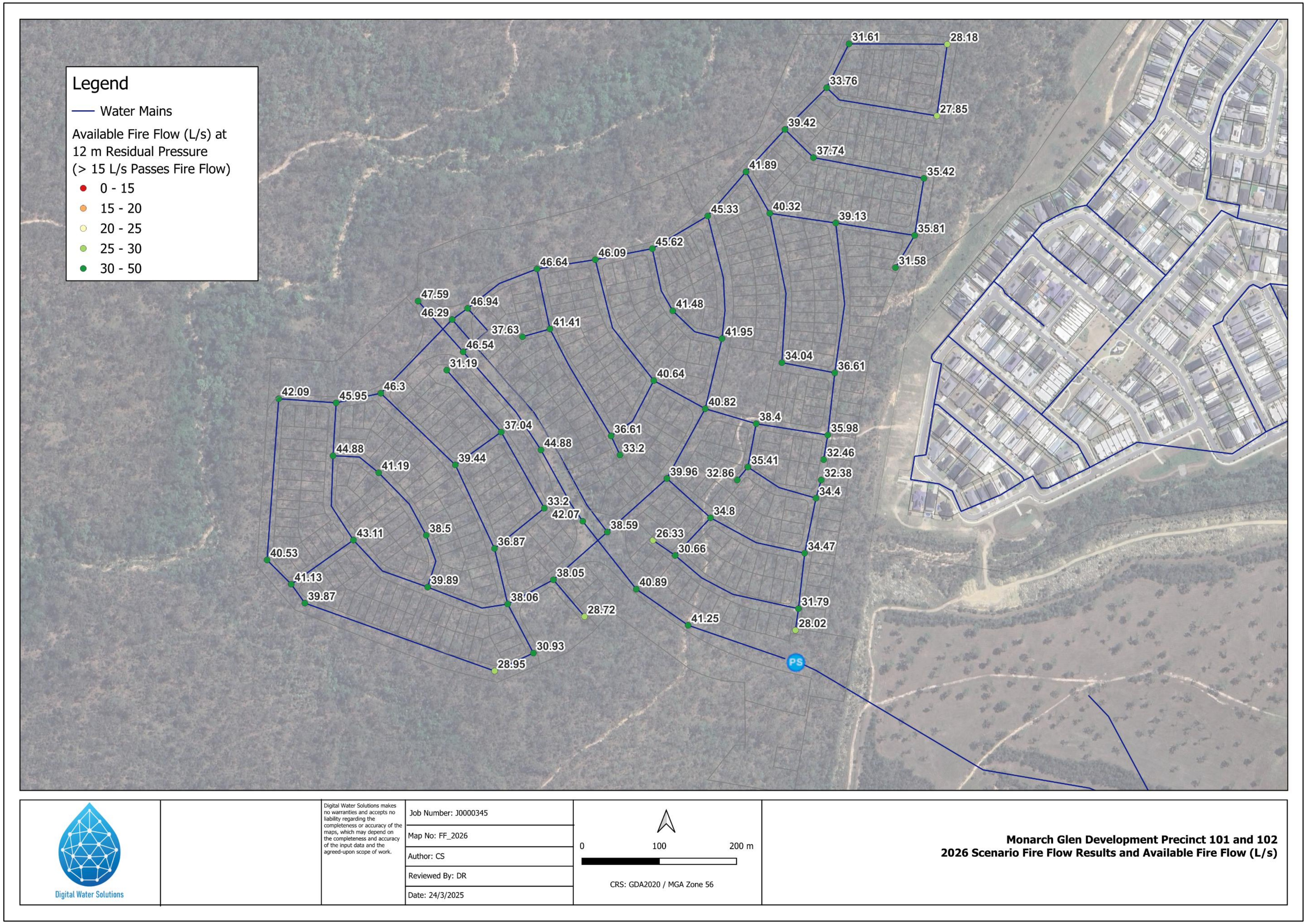
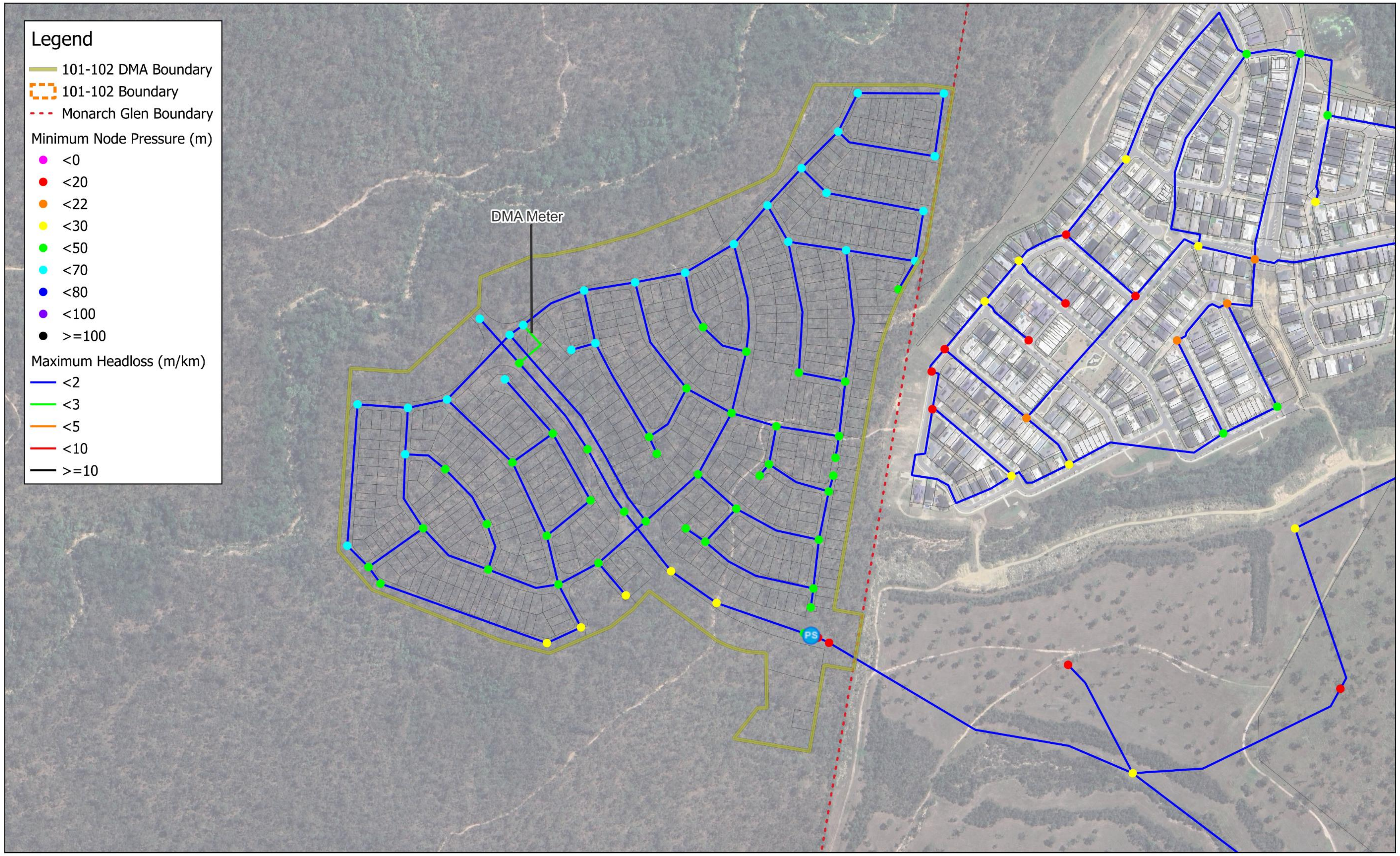
Job Number: J0000345
Map No: PMAX_2026
Author: CS
Reviewed By: DR
Date: 24/3/2025

0 100 200 m

CRS: GDA2020 / MGA Zone 56

Monarch Glen Development Precinct 101 and 102
2026 Scenario Maximum Pressure and Maximum Velocity


Legend
Water Mains
Available Fire Flow (L/s) at
12 m Residual Pressure
(> 15 L/s Passes Fire Flow)
0 - 15
15 - 20
20 - 25
25 - 30
30 - 50
31.61
28.18
33.76
27.85
39.42
37.74
35.42
41.89
45.33
40.32
39.13
35.81
45.62
31.58
46.64
46.09
47.59
46.94
46.29
41.48
37.63
41.41
41.95
46.54
34.04
31.19
36.61
40.64
42.09
45.95
46.3
40.82
38.4
37.04
36.61
35.98
44.88
44.88
33.2
32.46
39.44
41.19
39.96
32.86
35.41
32.38
34.4
33.2
42.07
34.8
38.5
38.59
43.11
26.33
36.87
30.66
34.47
40.53
41.13
38.05
39.89
40.89
39.87
38.06
31.79
28.72
41.25
28.02
30.93
28.95
PS
Digital Water Solutions
Digital Water Solutions makes no warranties and accepts no liability regarding the completeness or accuracy of the maps, which may depend on the completeness and accuracy of the input data and the agreed-upon scope of work.
Job Number: J0000345
Map No: FF_2026
Author: CS
Reviewed By: DR
Date: 24/3/2025
0
100
200 m
CRS: GDA2020 / MGA Zone 56
Monarch Glen Development Precinct 101 and 102
2026 Scenario Fire Flow Results and Available Fire Flow (L/s)



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Job Number: J0000345

Map No: PMIN_2031

Author: CS

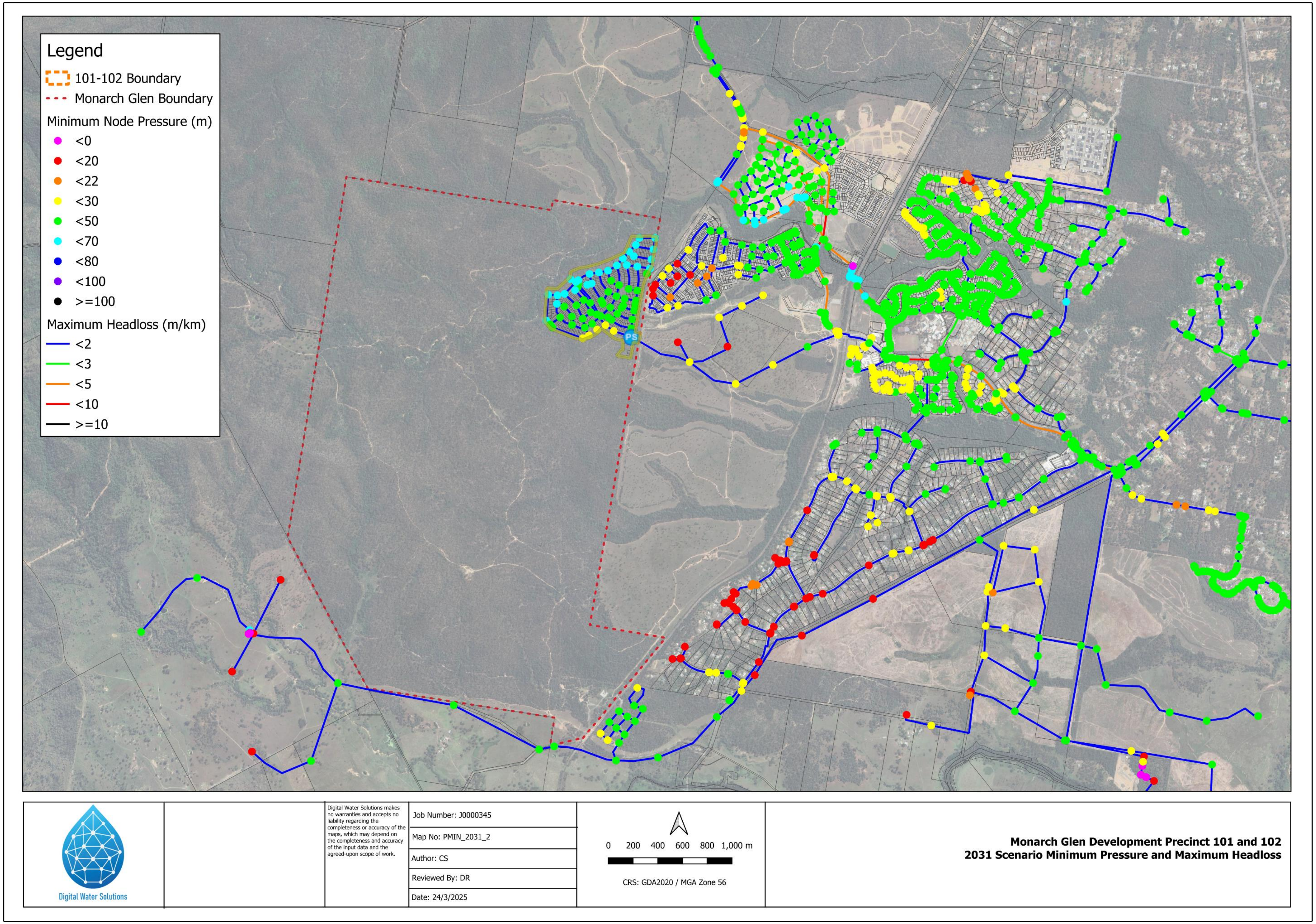
Reviewed By: DR

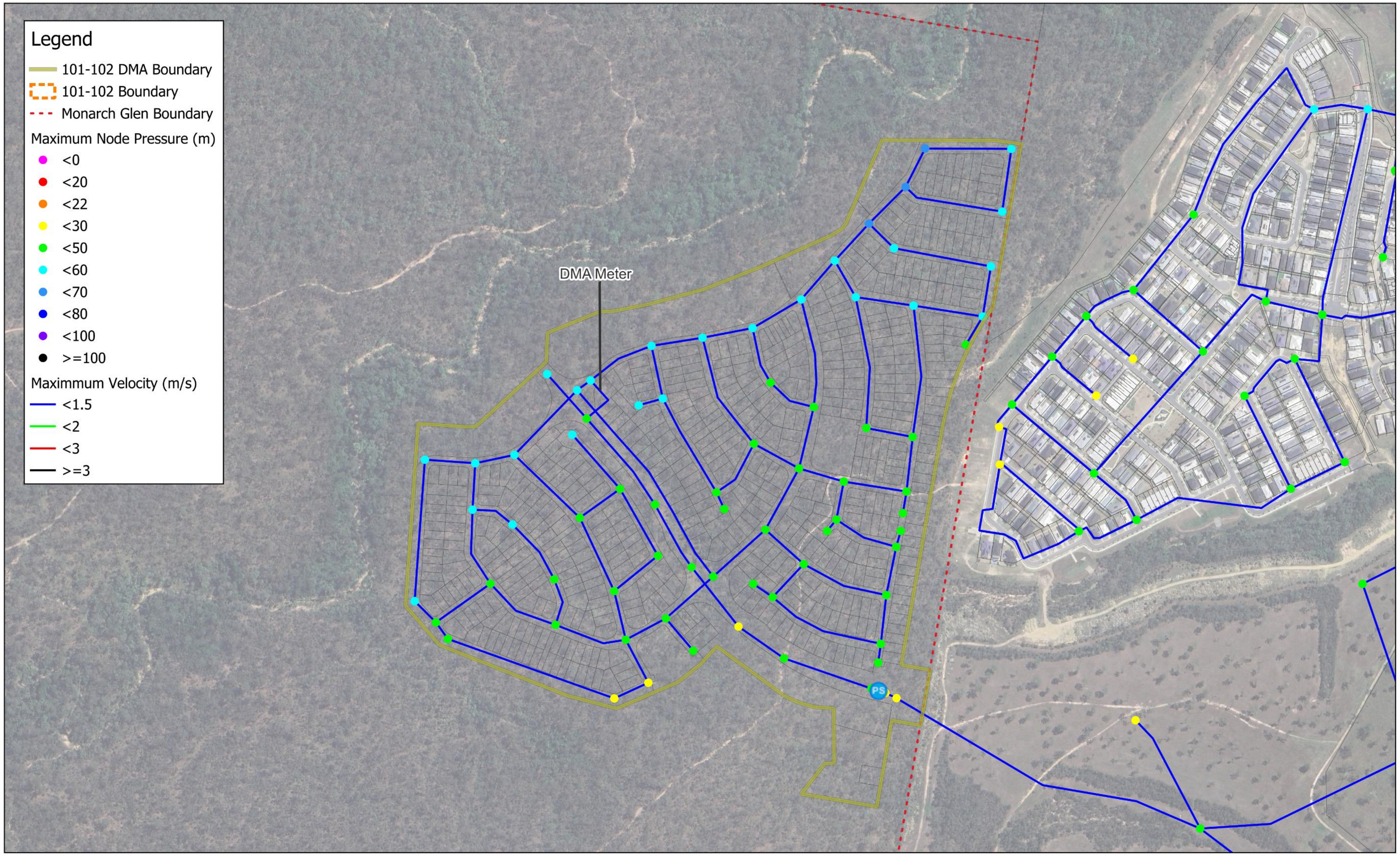
Date: 24/3/2025

0 100 200 m

CRS: GDA2020 / MGA Zone 56

Monarch Glen Development Precinct 101 and 102
2031 Scenario Minimum Pressure and Maximum Headloss


Legend
101-102 Boundary
Monarch Glen Boundary
Minimum Node Pressure (m)
<0
<20
<22
<30
<50
<70
<80
<100
>=100
Maximum Headloss (m/km)
<2
<3
<5
<10
>=10
PS
Digital Water Solutions
Digital Water Solutions makes no warranties and accepts no liability regarding the completeness or accuracy of the maps, which may depend on the completeness and accuracy of the input data and the agreed-upon scope of work.
Job Number: J0000345
Map No: PMIN_2031_2
Author: CS
Reviewed By: DR
Date: 24/3/2025
0 200 400 600 800 1,000 m
CRS: GDA2020 / MGA Zone 56
Monarch Glen Development Precinct 101 and 102
2031 Scenario Minimum Pressure and Maximum Headloss



Digital Water Solutions

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Job Number: J0000345

Map No: PMAX_2031

Author: CS

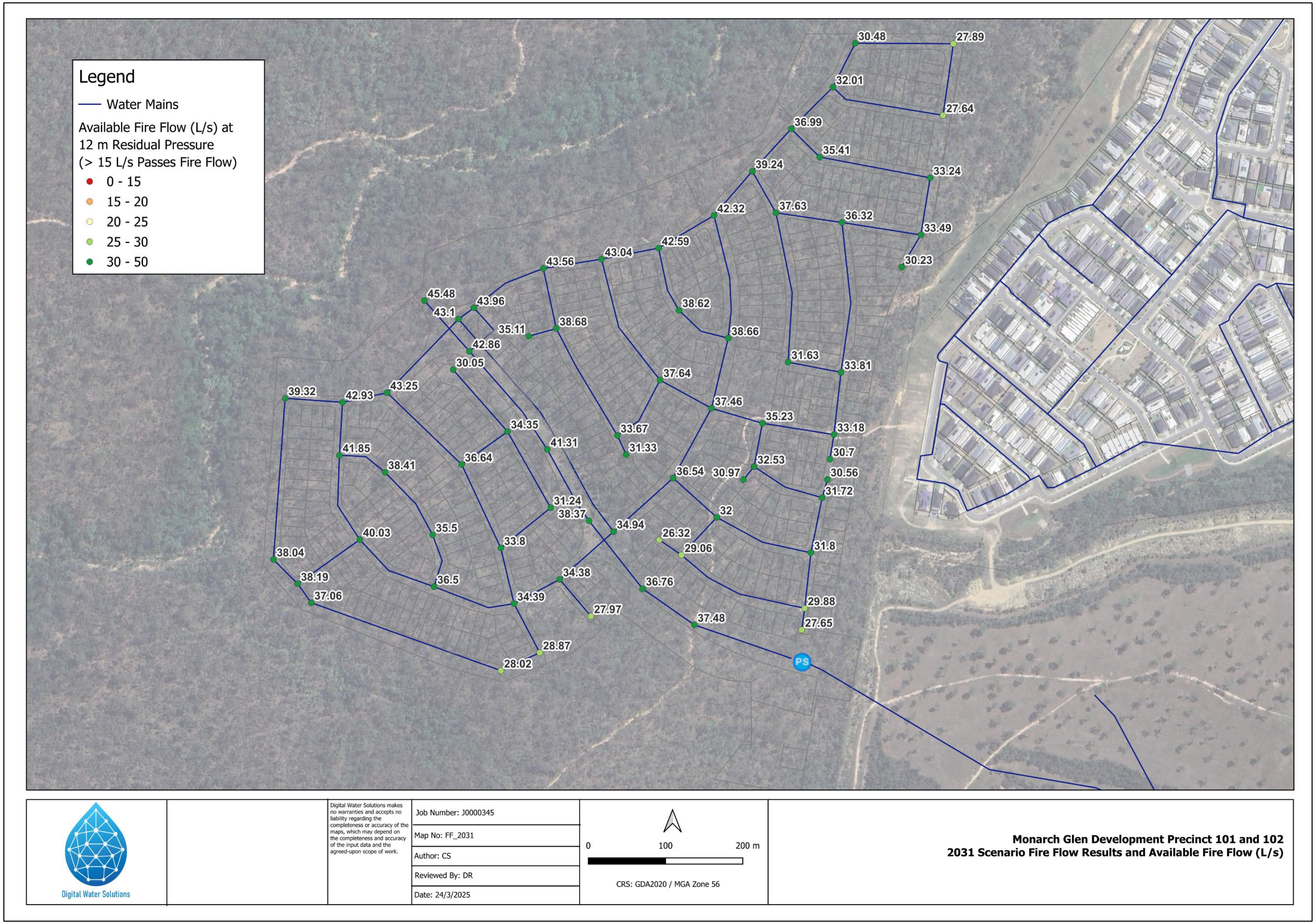
Reviewed By: DR

Date: 24/3/2025

0 100 200 m

CRS: GDA2020 / MGA Zone 56

Monarch Glen Development Precinct 101 and 102
2031 Scenario Maximum Pressure and Maximum Velocity


Legend
Water Mains
Available Fire Flow (L/s) at
12 m Residual Pressure
(> 15 L/s Passes Fire Flow)
0 - 15
15 - 20
20 - 25
25 - 30
30 - 50
30.48
27.89
32.01
27.64
36.99
35.41
39.24
33.24
37.63
42.32
36.32
33.49
42.59
43.04
43.56
30.23
45.48
43.96
38.62
43.1
35.11
38.68
38.66
42.86
30.05
31.63
33.81
37.64
39.32
42.93
43.25
37.46
35.23
33.18
34.35
33.67
41.31
31.33
30.7
41.85
38.41
36.64
32.53
36.54
30.97
30.56
31.72
31.24
38.37
32
40.03
35.5
34.94
26.32
38.04
33.8
29.06
31.8
34.38
38.19
36.5
36.76
37.06
34.39
29.88
27.97
37.48
27.65
28.87
28.02
PS
Digital Water Solutions
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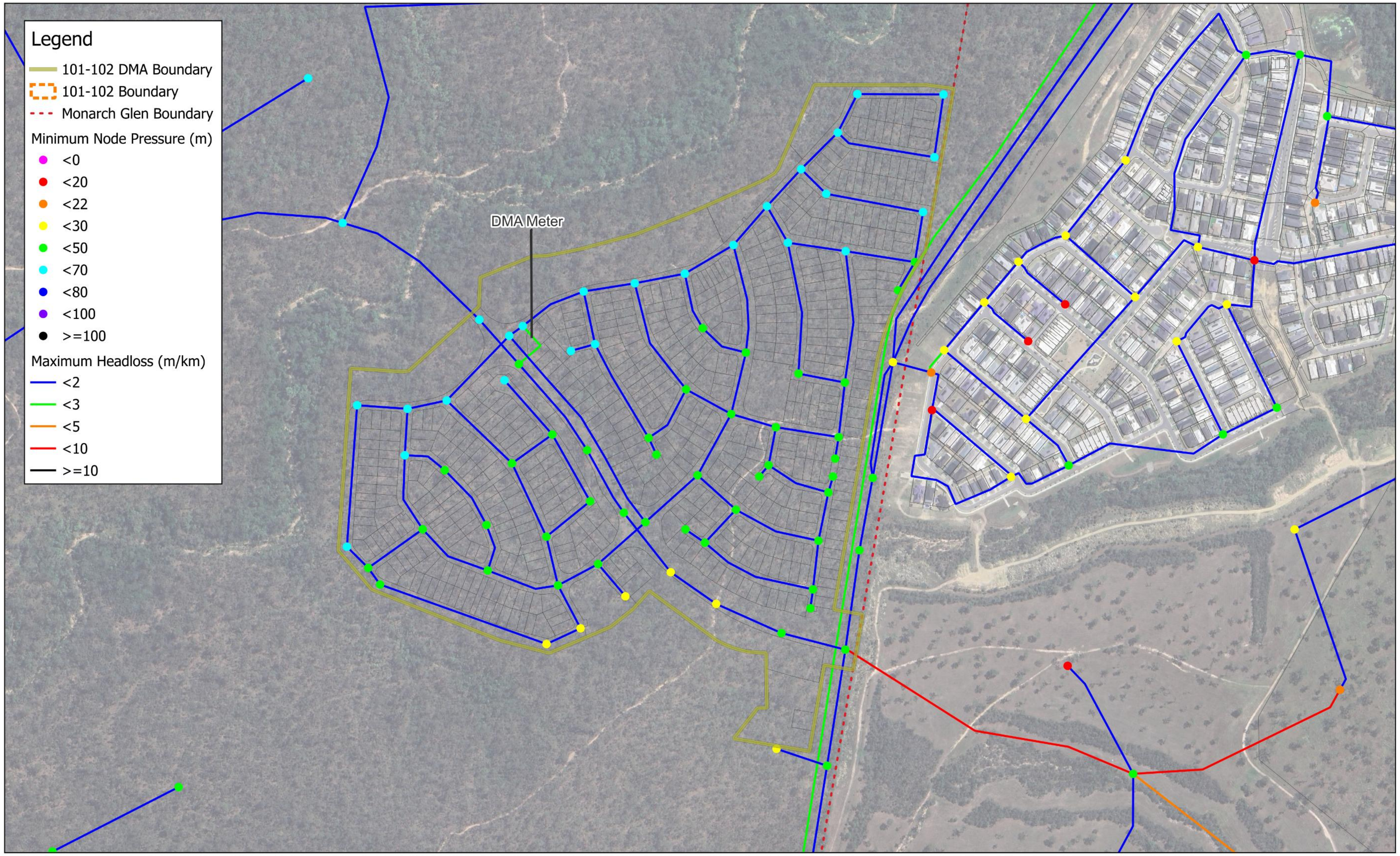
Job Number: J0000345
Map No: FF_2031
Author: CS
Reviewed By: DR
Date: 24/3/2025
0
100
200 m
CRS: GDA2020 / MGA Zone 56
Monarch Glen Development Precinct 101 and 102
2031 Scenario Fire Flow Results and Available Fire Flow (L/s)



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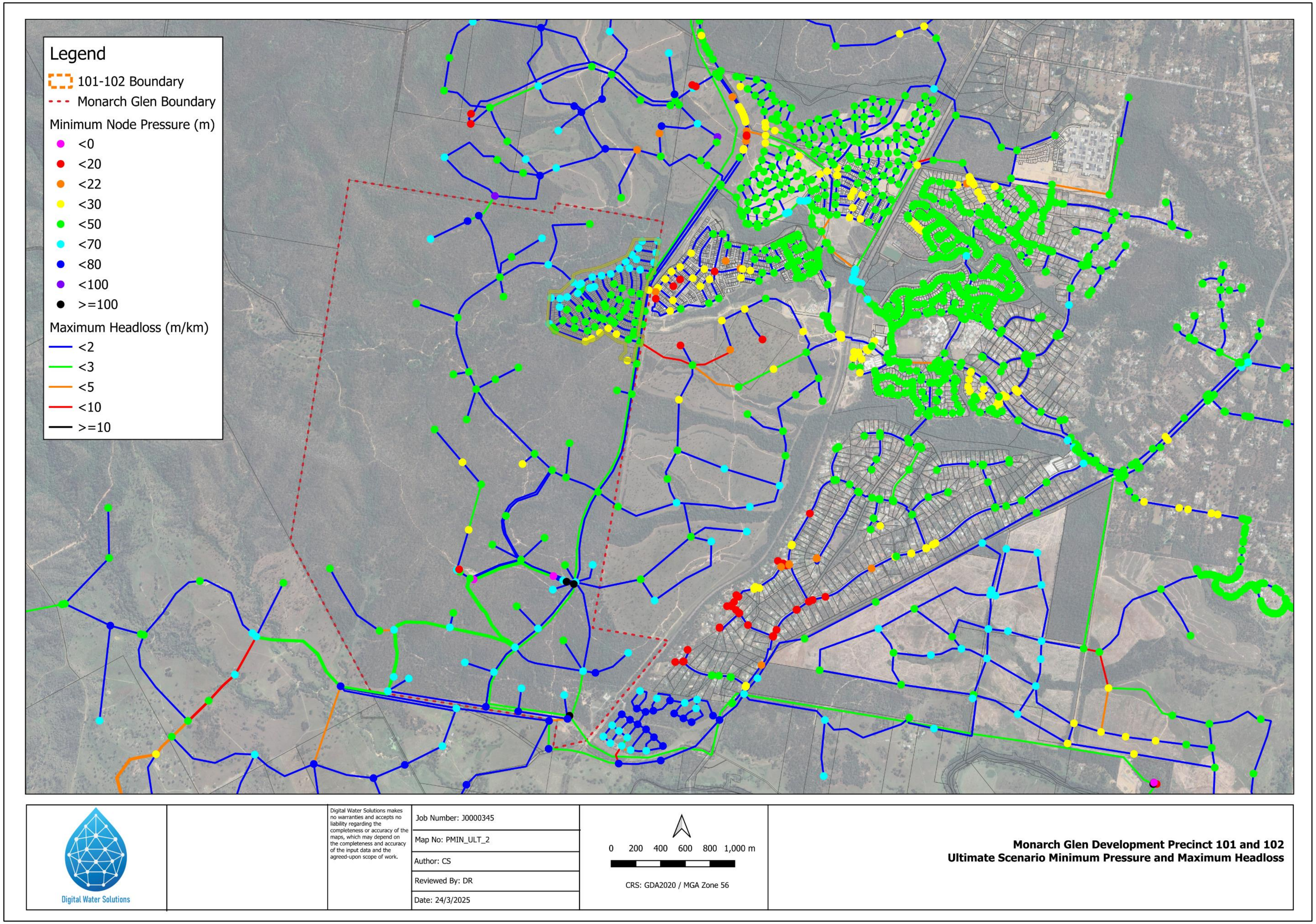
Job Number: J0000345
Map No: PMIN_ULT
Author: CS
Reviewed By: DR
Date: 24/3/2025

0 100 200 m

CRS: GDA2020 / MGA Zone 56

Monarch Glen Development Precinct 101 and 102
Ultimate Scenario Minimum Pressure and Maximum Headloss


Legend
101-102 Boundary
Monarch Glen Boundary
Minimum Node Pressure (m)
<0
<20
<22
<30
<50
<70
<80
<100
>=100
Maximum Headloss (m/km)
<2
<3
<5
<10
>=10
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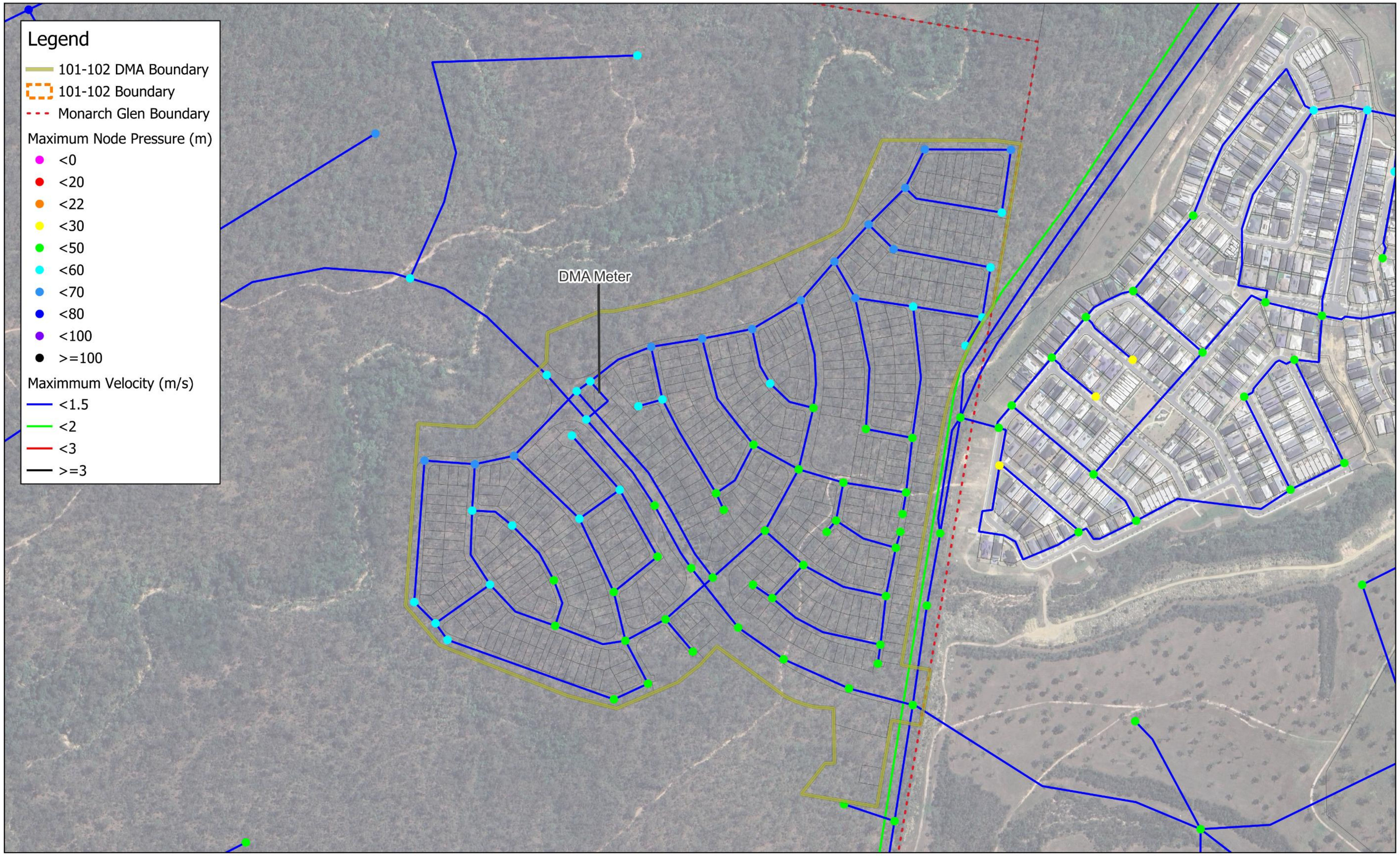
Job Number: J0000345
Map No: PMIN_ULT_2
Author: CS
Reviewed By: DR
Date: 24/3/2025
0 200 400 600 800 1,000 m
CRS: GDA2020 / MGA Zone 56
Monarch Glen Development Precinct 101 and 102
Ultimate Scenario Minimum Pressure and Maximum Headloss



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Job Number: J0000345

Map No: PMAX_ULT

Author: CS

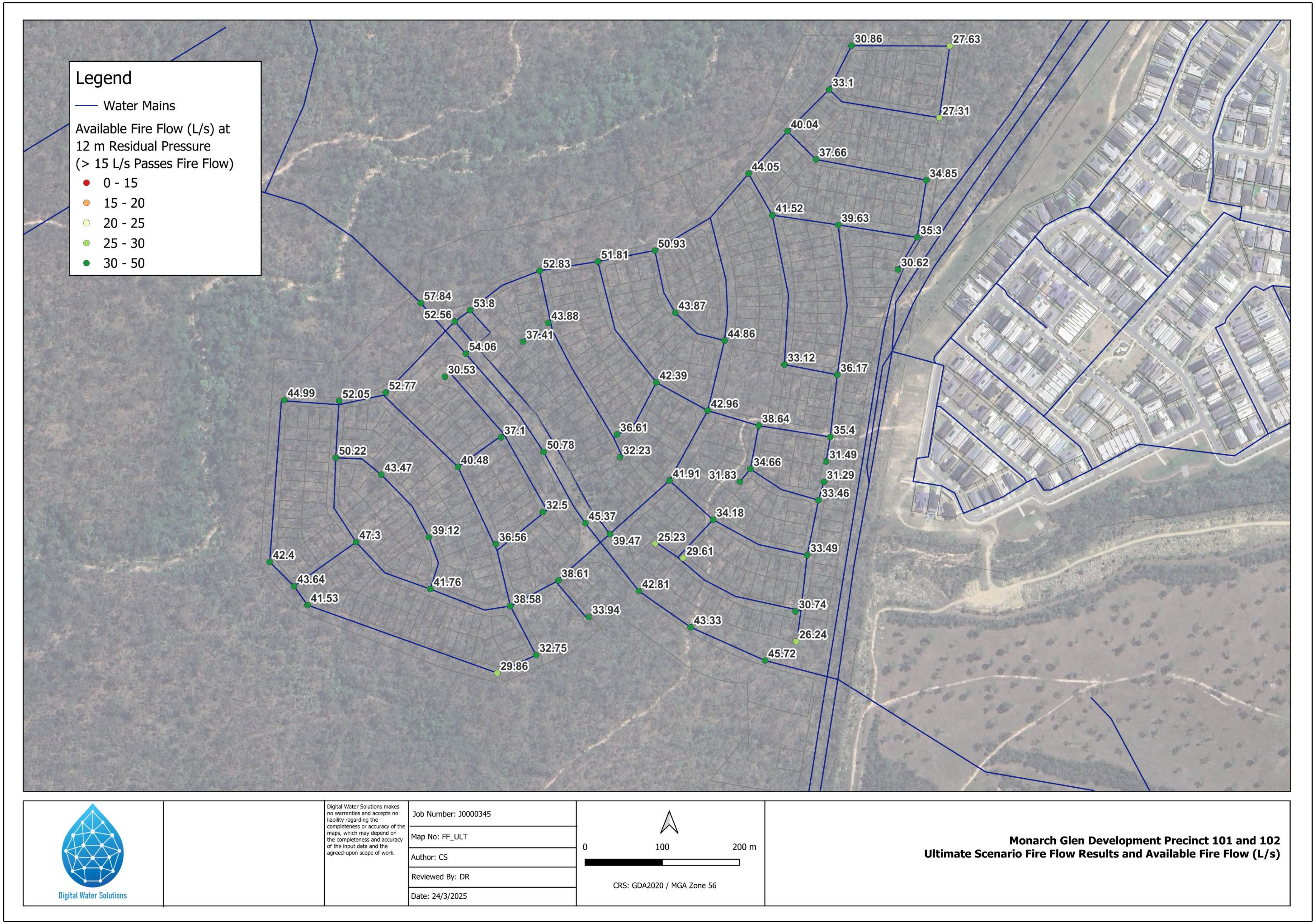
Reviewed By: DR

Date: 24/3/2025

0 100 200 m

CRS: GDA2020 / MGA Zone 56

Monarch Glen Development Precinct 101 and 102
Ultimate Scenario Maximum Pressure and Maximum Velocity


Legend
Water Mains
Available Fire Flow (L/s) at
12 m Residual Pressure
(> 15 L/s Passes Fire Flow)
0 - 15
15 - 20
20 - 25
25 - 30
30 - 50
30.86
27.63
33.1
27.31
40.04
37.66
34.85
44.05
41.52
39.63
35.3
50.93
51.81
52.83
30.62
57.84
53.8
52.56
43.88
43.87
44.86
37.41
54.06
33.12
36.17
30.53
42.39
44.99
52.05
52.77
42.96
38.64
37.1
36.61
35.4
50.78
50.22
43.47
40.48
32.23
31.49
34.66
41.91
31.83
31.29
33.46
32.5
34.18
45.37
47.3
39.12
36.56
39.47
25.23
29.61
33.49
42.4
38.61
43.64
41.76
42.81
38.58
30.74
41.53
33.94
43.33
26.24
45.72
32.75
29.86
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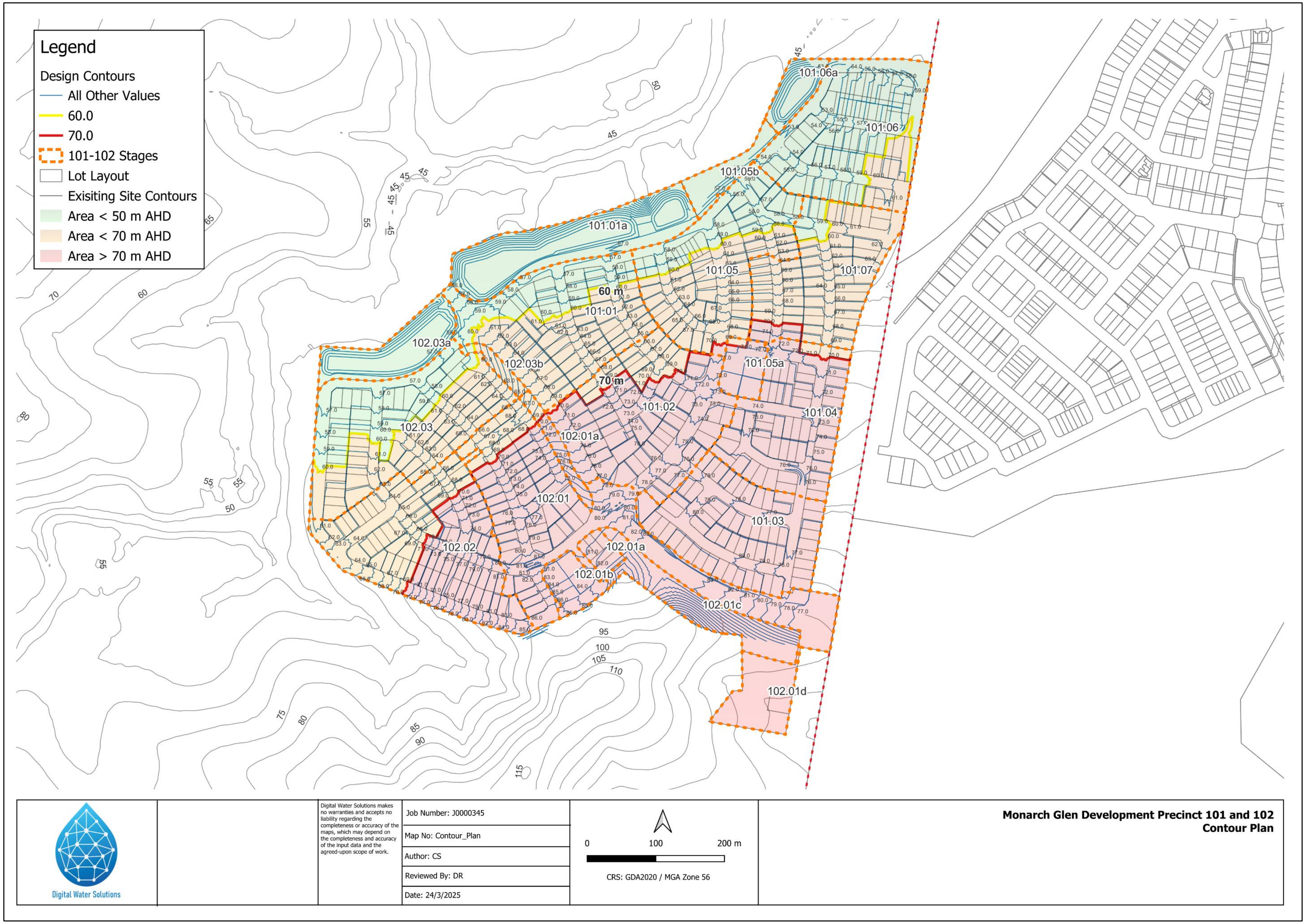
Job Number: J0000345
Map No: FF_ULT
Author: CS
Reviewed By: DR
Date: 24/3/2025
0
100
200 m
CRS: GDA2020 / MGA Zone 56
Monarch Glen Development Precinct 101 and 102
Ultimate Scenario Fire Flow Results and Available Fire Flow (L/s)


Legend
Design Contours
All Other Values
60.0
70.0
101-102 Stages
Lot Layout
Exisiting Site Contours
Area < 50 m AHD
Area < 70 m AHD
Area > 70 m AHD
101.06a
101.06
101.05b
101.01a
101.05
101.07
101.01
60 m
102.03a
102.03b
70 m
101.05a
101.02
101.04
102.03
102.01a
102.01
101.03
102.02
102.01a
102.01b
102.01c
102.01d
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Job Number: J0000345
Map No: Contour_Plan
Author: CS
Reviewed By: DR
Date: 24/3/2025
0
100
200 m
CRS: GDA2020 / MGA Zone 56
Monarch Glen Development Precinct 101 and 102
Contour Plan

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