

CIVIL INFRASTRUCTURE REPORT



Drury West Crossing Ramarama

Fast Track Referral

PROJECT INFORMATION

CLIENT: Drury West Crossing Limited

PROJECT: 231014

DOCUMENT CONTROL

DATE OF ISSUE: 10 June 2026

REVISION: A

AUTHOR

A handwritten signature in blue ink, appearing to read 'T. Mandeno'.

Toby Mandeno
Principal

REVIEWED BY

A handwritten signature in blue ink, appearing to read 'Y. Wansong'.

Yotsak Wansong
Technical Lead Stormwater

APPROVED BY

A handwritten signature in blue ink, appearing to read 'T. Mandeno'.

Toby Mandeno
Project Manager

© Maven Associates Limited 2018

This document is and shall remain the property of Maven Ltd. The document may only be used for the purposes for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

Level 1, 5 Owens Road
Epsom, 1023
Auckland
New Zealand
Phone 09 571 0050
www.maven.co.nz

Table of Contents

PROJECT INFORMATION	I
DOCUMENT CONTROL	I
1. OVERVIEW.....	3
1.1 PROJECT	3
1.2 LEGAL DESCRIPTION	4
1.3 SITE DESCRIPTION.....	4
1.4 PROPOSED DEVELOPMENT	5
2. EARTHWORKS.....	6
2.1 GENERAL	6
2.2 GEOTECH AND REPORTING AND DESIGN.....	6
3. FLOODING AND OVERLAND FLOW.....	7
3.1 OVERLAND FLOWPATHS ('OLFPS')	7
3.2 FLOODING	7
3.3 PRE-APPLICATION MEETING MINUTES.....	10
4. STORMWATER.....	10
4.1 STORMWATER RETICULATION	10
4.1.1 <i>Existing Interim Stormwater Design</i>	10
4.1.2 <i>Proposed Stormwater Reticulation</i>	10
4.4.1 <i>Stormwater Treatment – Public Roads</i>	11
4.4.2 <i>Stormwater Treatment – Private Accessways and Lots</i>	11
5. WASTEWATER	12
5.1 WASTEWATER OVERVIEW	12
5.2 WASTEWATER TREATMENT	12
5.3 PUBLIC WASTEWATER EXTENSIONS AND CONNECTIONS	13
6. WATER SUPPLY	14
6.1 WATER OVERVIEW	14
6.2 FIRE FIGHTING SUPPLY	15
6.3 PUBLIC SUPPLY	15
7. OTHER SERVICES.....	15
8. ROADING.....	16
8.1 ROADING OVERVIEW.....	16
9. CONCLUSIONS	17
10. APPENDICES	18
10.i Appendix A – Engineering Plans	18

1. OVERVIEW

1.1 Project

The purpose of this report is to provide an assessment of the infrastructure associated with the proposed Fast Track proposal at Ramarama, known as Drury West Crossing, which is a proposed Industrial development that will provide a significant employment node in southern Auckland. Drury West Crossing is a proposed industrial development that will provide a significant employment node in southern Auckland. Drury West Crossing will consist of the following:

1. A 111.9ha light industrial precinct that will provide approximately 350,000m² of industrial GFA;
2. Up to 5,000m² of supporting commercial services to provide for the day-to-day needs of employees and visitors potentially including a petrol station, gym, café and convenience retail;
3. Up to six electronic billboards;
4. A green network incorporating existing ecological areas and features, stormwater management, landscape buffers and public open spaces; and
5. Associated infrastructure including upgrades and new transport, stormwater, wastewater, water supply, electricity and telecommunications infrastructure.

The proposed development is shown below in Figure 1, as an extract from the Masterplan prepared by Barker and Associates:

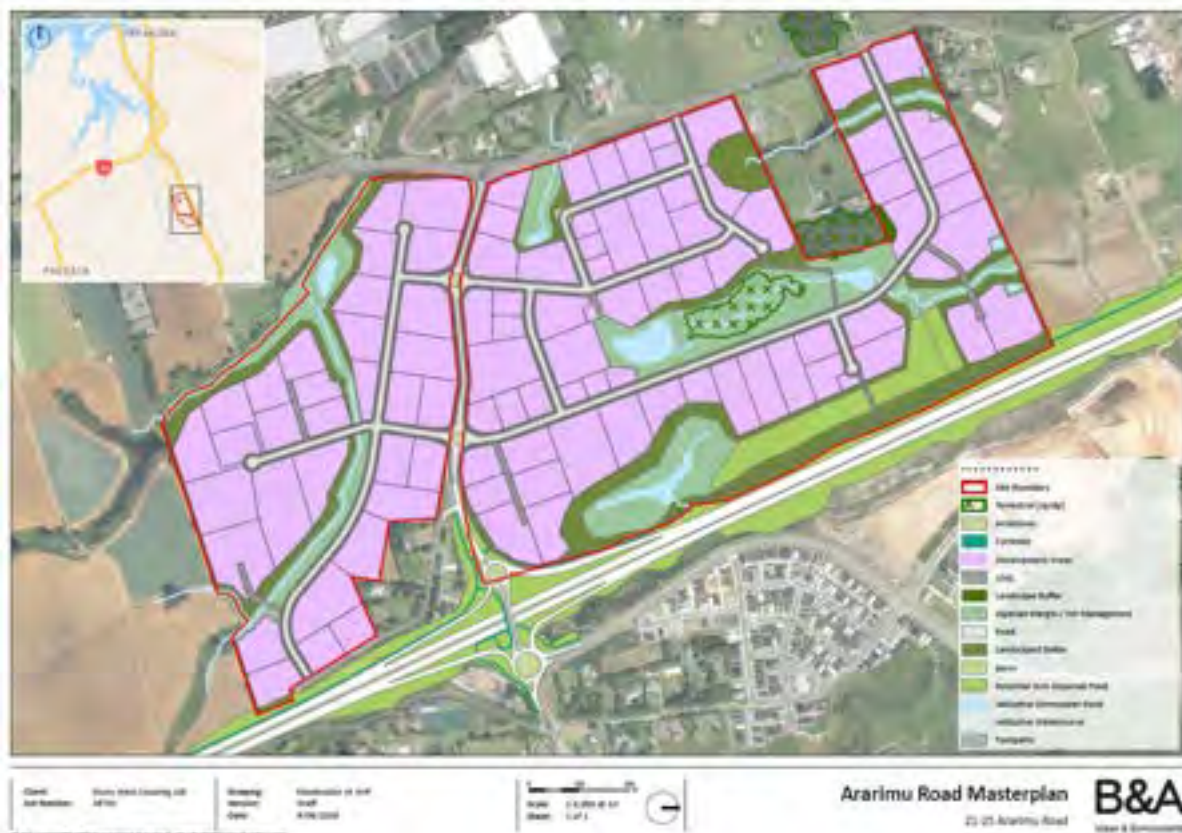


Figure 1: Drury West Crossing Masterplan

The information provided herein relates to stormwater, wastewater, stormwater, water supply, and other service infrastructure and the potential capacity to service the proposed development.

This report provides information in support of the Fast Track referral application, and further reporting and engineering design will be required before lodgement of a substantive application.

The calculations and assessments included in this report are 'desktop' analysis and are preliminary in nature based on information available at time of issue.

1.2 Legal Description

Applicant	Drury West Crossing Limited
Legal Description	Refer Barker and Associates Reporting for details, site covers circa 30 underlying titles
Site Area	112 ha (approximately)

1.3 Site Description

The subject site is located on the western side of the Ramarama Offramp which directly adjoins State Highway 1 (SH1). The site is bounded by Great South Road (to the west), SH1 to the east, and is dissected by Ararimu Road which connects SH1 to Great South Road. The site is supported by approximately 30 underlying titles, with the total combined area approximately 123ha in size. The location of the subject site is shown below within Figure 2:



Figure 2: Site Locality Plan - Approximate Site Boundaries shown in Red. Source: NEARMAPS

The land contained within the wider site supports a combination of rural and commercial uses, and there are ongoing earthwork operations to the north of Ararimu Road, enabled by existing consents granted by Auckland Council (BUN60431828 and LUC60398151-A). The commercial uses are for the most part contained along or near to the Ararimu Road / Great South Road intersection.

The site features gentle to moderately sloping contour. There are steeper contours which exist around the streams and wetland features in the northern parts of the site. For the most part these features have been retained in the earthworks completed and have been allowed for within the design of the masterplan and associated earthworks.

The site is well connected having direct connection to SH1, via the existing roundabout (eastern side) and existing offramp and onramps on the western side of SH1. Vehicle access north and south is also possible via Great South Road, and Ararimu Valley Road has an existing overbridge that provides direct connections to Drury Crossing and the Drury South Industrial precinct. The SH1 designation falls over the eastern edge of the site. This has been allowed for within the masterplan, and the proposed roundabout on the western side of the interchange is included in the masterplan for context.

The site is contained within two stormwater catchments – the northern and eastern watercourses (x2) flow to Hingaia stream before discharging into the Coastal Marine Area. The western watercourses (x2) flow to the Ngakaroa stream and then discharge into the Coastal Marine Area.

There are existing power and communications network present within or nearby. The site is, however, not serviced by reticulated water, wastewater, or stormwater networks.

1.4 Proposed Development

Drury West Crossing will consist of the following:

1. A 111.9ha light industrial precinct that will provide approximately 350,000m² of industrial GFA;
2. Up to 5,000m² of supporting commercial services to provide for the day-to-day needs of employees and visitors potentially including a petrol station, gym, café and convenience retail;
3. Up to six electronic billboards;
4. A green network incorporating existing ecological areas and features, stormwater management, landscape buffers and public open spaces; and
5. Associated infrastructure including upgrades and new transport, stormwater, wastewater, water supply, electricity and telecommunications infrastructure.

Potable and non-potable water demand will be provided through a combination of bore and roof-caught water. A storage reservoir, treatment, and reticulated network will provide water supply to lots and firefighting supply. The network will be owned and operated by an infrastructure company.

Wastewater disposal will be via a private, centralised wastewater treatment plant (WWTP), with disposal of treated effluent to land. GWE Consultant engineers have been engaged to provide specialist wastewater and water advice to the proposal, and a copy of their memo (Reference J8131) is appended.

There are no existing public stormwater networks within the site. A new stormwater network will be constructed, and this will accord as required with the requirements of the Stormwater Code of Practice, Region wide NDC and the underlying discharge consent (DIS60350470). Treatment and SMAF mitigation will be provided for all impervious areas.

A new public roading network will be provided within the site. This is based on a 23.6m legal width. The existing public roads (Ararimu Valley and Great South Road (eastern side only)) will also be upgraded as part of the proposal, including footpaths, catchpits and footpaths/shared paths.

2. EARTHWORKS

2.1 General

Earthworks will be required to form the building platforms, and for the construction of roads and infrastructure. Bulk earthworks have already been undertaken in part of the site (north of Ararimu Road) enabled by approved consents LUC60329185 & DIS60341390, and LUC60398151 (BUN60398089). The platforms are visible in Figure 2 (above) and the as-builts have formed the basis of the masterplan and civil design.

All future building platforms will be elevated above and removed from the streams and/or identified overland flowpaths and flood hazards. This minimises sediment risk to the receiving catchments. Any future substantive application will need to be supported by sediment and erosion control drawings, which will demonstrate how the earthworks will be managed as to comply with GD05.

Resource consent will require that erosion and sediment control measures are implemented and maintained in accordance with the Engineering Drawings.

Silt control measures will need to be installed onsite prior to or during (as specified) earthworks commencement. All silt control measures will be checked and confirmed acceptable by the Engineer before relevant earthworks commence.

2.2 Geotech and Reporting and Design

Geotech Reporting has been done by Ground Consulting Limited, and observations and Geotech Completion Reports have been provided for the work completed to date.

Further Geotech reporting will be provided in support of any future substantive application. A review and assessment of the earthwork drawings and design will be undertaken by the Geotech engineer, and the final design will include any recommendations.

Conditions of any consent granted will also require Geotech supervision and the provision of a Geotech Completion Report (GCR) at the completion of any stage of the development.

3. FLOODING AND OVERLAND FLOW

3.1 Overland Flowpaths ('OLFPs')

The overland flowpaths within the site are largely contained to the streams, gullies and associated margins. For the most part these are removed from the development areas and will be maintained as required by the future development, as per the Masterplan and engineering drawings prepared to date. The location of the existing OLFPs is shown below within Figure 3:



Figure 3: Existing OLFPs (site in red). Source: AC GEOMaps

All building platforms and future buildings will be provided with minimum floor levels that comply with the Stormwater Code of Practice and the New Zealand building code as required. Minor redirection of overland flowpaths will occur within the development areas, with OLFPs conveyed away from future building platforms, and within road corridors before discharge to the OLFPs and existing streams.

There are multiple existing culverts that cross the streams and/or overland flowpaths. These will be upgraded in support of the new road connections and JOALs. The culverts will be sized and constructed in accordance with best engineering practice, and the NES, unless where these culverts will serve an attenuation function to ensure there is no downstream effects.

3.2 Flooding

There is known downstream flooding in both the Hingaia and Ngakaroa catchments. Downstream effects have been considered by Tonkin and Taylor as part of the underlying SMP and Discharge consent (DIS60350470). There is also known flooding within the site, which is for the most part is contained within stream margins, and lower areas which pond in larger rain events where their respective culverts under SH1 and Great South Road are undersized. The existing flood plains are indicated below within Figure 4:



Figure 4: Existing 1% AEP Flood Plains (site in red). Source: AC GEOMaps

3.2.1 Tonkin and Taylor SMP and Flood Modelling

In support of DIS60350470, Tonkin and Taylor modelled the pre and post development flood plains. Tonkin and Taylor's report confirms that post development, there will be minor increases to the existing flood plains within the site, but that these increases are for the most part limited to the existing watercourses and their margins.

In terms of downstream flooding, the post development effects were modelled by Tonkin and Taylor as part of their comprehensive Hingaia Catchment. This modelling confirmed that there were no downstream effects, with additional flooding limited to the existing watercourses. As the site is located within the lower reaches of the Hingaia Catchment, it was recommended that future discharge of stormwater should be done without any attenuation. This is summarised below within Figure 5, as an extract from the Tonkin and Taylor SMP.

The following stormwater constraints and opportunities have been identified within the proposed development site.

Flood risk	Distribution: Auckland Council 1 copy Tonkin & Taylor Ltd (FILE) 1 copy	Minor floodplains and overland flow paths exist through the site.
	Opportunities	- Development can occur outside of the 100 year floodplain within the constraints of the AUP. Proposed developments should allow for conveyance of overland flow. - The site is in the lower Hingia catchment, and discharge of stormwater without attenuation (2-100 year events) before the main flood peak is the preferred approach to managing the flood risks to others. - Opportunities for water sensitive design to include floodplains which coincide with stream margins, to have riparian planting to improve ecological value.
Hydrological mitigation	Constraints	- Potential for loss of streams and/or wetlands as part of the proposed development, which may affect stormwater attenuation within the site. - Presence of clay-loam soil on site may limit the use of infiltration devices to manage stormwater in some areas.

Figure 5: Extract from Tonkin and Taylor SMP

3.2.2 Post-Development Flood Modelling outside of DIS60350470

As the existing discharge consent and SMP does not cover the full development site, Maven Associates will provide additional flood modelling in support of any future substantive application. We have assumed for the purpose of the preliminary civil design, that additional storage for 100-yr mitigation will be required, and suitable areas have been set aside in the Masterplan and civil design to allow for this.

Maven has built a TUFLOW model for the catchment, and further design progression is underway to ensure the proposal does not create any downstream effects. The modelling is being undertaken in accordance with Auckland Council Stormwater Code of Practice approach referenced in Section 3.8 and Auckland Council's current 3.8°C climate change guidance. Catchment wide solutions for flood mitigation will be required as needed.

Final design and layout of any attenuation will be detailed in support of the future substantive application, and including reporting (Flood Modelling Report and Stormwater Management Plan)

3.3 Pre-Application Meeting Minutes

Discussion with representative from Healthy Waters was undertaken as part of the pre-application meeting held. This confirmed the need for specific flood modelling to be undertaken in support of any future substantive application. It was also agreed that Maven would confirm parameters and approach with Healthy Waters in advance of undertaking this design work, upon successful referral.

4. STORMWATER

The Auckland Council Stormwater Code of Practice sets out design and construction standards for stormwater and requires all land development projects to be provided with a means of stormwater disposal and treatment.

The site is not located within the Rural Urban Boundary (RUB) and thus, the site is not bound by the Region Wide Network Discharge Consent (NDC). Part of the site benefits from an existing Discharge Consent (Council Ref: DIS60350470). The discharge consent remains live and provides the design framework for the area of the site contained within. For areas outside of DIS60350470, consideration of the Stormwater CoP V4 and consideration of suitable NDC drivers has influenced the civil design.

4.1 Stormwater Reticulation

There is no existing stormwater network in the vicinity of the development area, aside from existing culverts which convey flows both west under Great South Road, and/or east under SH1. Stormwater discharge within the development sites, is largely via sheet-flows to existing overland flowpaths and or streams.

4.1.1 Existing Interim Stormwater Design

Part of the site covered by the existing discharge consent (DIS60350470), is in the process of being developed for interim storage and hard stand uses. The stormwater design has been undertaken in accordance with the Tonkin and Taylor SMP and Condition 10 of DIS60350470. It is proposed to convey flows from the hardstand areas via grass swales for treatment, with SMAF mitigation provided through dry basins, and within the man-made pond in the centre of the site, which will be fitted with a specific outfall structure to control the permanent water level. No public infrastuture is proposed in support of these interim consents/uses.

4.1.2 Proposed Stormwater Reticulation

A new stormwater network will be constructed in support of the development. This will provide a means of disposal for all impervious areas including public roads, common accessways, driveways and buildings. This will also see public stormwater lines provided in the existing Ararimu Road corridor, with catchpits provided for the road catchment as part of the required upgrades.

A new public stormwater network will be provided within the public roads, and this will provide a means of stormwater disposal for each lot created within the development. The pipe network will discharge into the various overland flowpaths, streams and/or ponds within the site, and will largely accord with the existing catchments and recommendations of the Tonkin and Taylor SMP.

It is assumed that the network will be subject to future Engineering Plan Approval from Auckland Council and that the network will be vested to Auckland Council (Healthy Waters). Please refer to the appended Stormwater plans within Appendix A for further detail.

4.2 Stormwater Capacity

The proposed stormwater connections and private stormwater network will be subject to future Engineering Approval / Building Consent and will be designed to have capacity for the 10-year rainfall event, as is required for Auckland Council. The sizing will be undertaken as part of the developed design process.

Any public network associated with the public roads, will also be sized to convey 10-yr rainfall and will be designed to comply with Auckland Transport's TDM.

4.3 Stormwater Mitigation – SMAF

As future discharge is into streams and overland flowpaths, SMAF mitigation is required to comply with both the Region Wide NDC and the underlying SMP and Condition 10 of DIS60350470. This will be provided through a combination of catchment raingardens, wetland and treepits (public roads) and through a combination of wetlands, and tanks in support of the private accessways and lots. For private accessways not benefited by a catchment-wide solution, tanks will provide extended detention only.

4.4 Stormwater Quality

As the site is not bound by the NDC, treatment would instead be required by the AUP. In this instance, however, there is an underlying discharge consent which covers part of the site, and any stormwater discharge within this area must accord with Condition 10 of DIS60350470, and the Tonkin and Taylor SMP which requires treatment of all impervious areas.

As the stormwater network is likely being vested to Healthy Waters, concept stormwater design has been done to accord with the Region Wide NDC, that being treatment of all impervious areas. Indicative treatment means and locations are provided within the appended stormwater plans.

4.4.1 Stormwater Treatment – Public Roads

Although the final design and arrangement of treatment will be subject to detailed design at the future substantive stage, treatment for public roads will be provided through a combination of the following solutions:

- Catchment Raingardens (road only)
- Wetland (central catchment, roads and lots)
- Treepits and/or raingardens within the roads

4.4.2 Stormwater Treatment – Private Accessways and Lots

Although the final design and arrangement of treatment will be subject to detailed design at the future substantive stage, treatment for private accessways and lots will be provided through a combination of the following solutions:

- Wetland (for central catchment)
- Proprietary devices for JOALs and/or lots which are not serviced by catchment devices.

5. WASTEWATER

The Watercare Code of Practice sets out the design principles for wastewater drainage and requires any development project to be provided with a means of wastewater disposal.

5.1 Wastewater Overview

There is no existing reticulated wastewater network within the site, with the nearest public network consisting of the vacuum system that services Drury Crossing to the east of SH1. The site is in the rural zone, and thus, there are currently no long-term plans by Watercare to service the development site.

The Fast Track proposal will therefore be supported by a private, centralised wastewater treatment plant (WWTP), with disposal of treated effluent to land. GWE Consultant engineers have been engaged to provide specialist wastewater and water advice to the proposal, and a copy of their memo (Reference J8131) is appended to this memo.

Consideration of the potential public connections and extensions are also outlined within Section 5.3.

5.2 Wastewater Treatment

As per the GWE memo, A Membrane Bioreactor (MBR) or hybrid Membrane Aerated Biofilm Reactor (MABR-MBR) system is recommended to provide treatment for the proposal.

A MBR or hybrid MABR/MBR system is scalable over time to encompass the staged development of industrial buildings and activities within the site. This means the treatment and land application systems and/or discharge to water can be future proofed for the final design volume, with its modular technology matching the treatment technology required with actual demand for wastewater treatment.

The communal treatment and disposal area for any village/community areas will be subject to future design, inclusive of emergency storage, and disposal areas. This will be undertaken by GWE consulting engineers, and details will be provided in support of any future substantive application(s).

5.2.1 Wastewater Reticulation

At this stage, the preferred reticulation approach is not yet known. A decision will be made at the Substantive phase and will likely be either a Low-Pressure Sewer (LPS) System or a conventional gravity network with wastewater pump stations. Other options noted within GWE's reporting includes Vacuum Sewer System (as per Drury Crossing to the east of SH1) or a Septic Tank Effluent Pumping/Gravity (STEP/STEG).

The options will be evaluated in more detail at the concept design stage and once detailed development plans are available and on the following specific key factors that will include:

- Ease of Construction.
- Site topography.
- Operational Complexity.
- Reliability.
- Requirement for Separate Pumpstations.
- Potential for Infiltration and Inflow (I&I).

5.2.2 Wastewater Capacity and Design

GWE has estimated wastewater flows and loads by applying a suitable daily occupancy per unit area. It has been assumed that wastewater will be domestic-type and only generated from ablution blocks, showers and kitchen areas. The water source for all buildings will be from either roof water, or from a pressurised network, supplied by a bore.

GWE have used a flow allowance of 40 Litres/hd/day on the assumption that full water saving devices are installed. GWE have also allowed for up to 40 persons (staff and visitors) per 10,000 m² warehouse on the basis that smaller warehouses would have a pro rata occupancy e.g. 20 persons for a 5,000 m² warehouse.

To estimate the number of warehouses (or floor area), GWE assumed that 50% of the land is attributed to warehouse storage and we assume all are 10,000 m² (noting that we can pro-rata occupancy if buildings are smaller). Therefore, the total floor area across the site is approximately 35 hectares. The balance of the land on each site will be used for roads, access, fire storage tanks and other infrastructure.

An additional allowance of 10 m³/day has been included to cover other ancillary commercial activities like cafes, dairies, service stations, etc. to service the Project Area. We note that relevant pre-treatment devices will need to be installed in these ancillary activities prior to connection to the reticulated network to the WWTP. These will include measures such as grease traps, API separators, etc.

5.2.3 Wastewater Discharge

The total design wastewater flow for the proposal is as follows:

- Warehouses will be 35Ha x 40 litres/hd/day x 40 occupants - 56m³/day.
- Allowance for all other wastewaters generated across the Project Area (café's, dairies, service stations, etc) – 10m³/day.
- The total wastewater volume is estimated to be – 66 m³/day.

Treated effluent will be disposed to ground, via the indicated PCDI land application areas, a low conservative loading rate of 3mm/day would be suitable for discharge into the centralised landscaped areas. Assuming a peak design flow allowance of 66,000 litres/day, this would require a primary disposal area of approximately 2.2 Ha and a 1.1 Ha (50%) reserve area.

5.3 Public Wastewater Extensions and Connections

As part of underlying development proposals, a possible connection to the Drury Crossing Vacuum system has been floated, and a draft Heads of Agreement was drafted between Drury South Limited, Ramarama Foodhub Limited and Watercare Services Limited in 2020. Tonkin and Taylor provided a draft plan indicating a pump station and rising main under the motorway.

We do, however, acknowledge that this draft agreement was dated 2020, and was never formalised, and Maven is now aware of capacity issues in the public wastewater network, and that pump station upgrades are needed to service the Drury Stage 3 Future Urban Area (the FUA), which the proposal is located within proximity to, but not located within, being rural zoned.

Several bulk infrastructure pre-requisites are listed in the FDS for the nearby FUA, which are outlined within the Southern Auckland Wastewater Service Scheme, including, but not necessarily limited to,

an upgrade of the Hingaia wastewater pump station and rising main; upgrades to the gravity pipes and wastewater pump station at Bremner Road, and the new Drury West transmission sewer.

The possibility of a future connection, and/or desire for possible public connection is an ongoing consultation piece with Watercare, however, the proposal is not reliant upon this possible outcome.

6. WATER SUPPLY

The Watercare code of Practice sets out the design principles for water supply and requires assessment against SNZPAS 4509:2008 NZ Fire Service Fire Fighting Water Supply Code of Practice.

6.1 Water Overview

The 1200mm Ø trunk main (Waikato 1 Watermain) is located to the north of the proposed development site. Watercare is currently undertaking works on the Waikato 1 Watermain near Quarry Road, which is known as the Bulk Supply Point (BSP). This provides a possible public connection point, however, as the site is rural zoned, there is no planned network extension, and any connection to this network would require Watercare approval.

As such, the development will be supported by a private water network which will be owned and operated by an infrastructure company. Bore water will be the primary means of water generation, and this will be supplemented as required by roof-caught water within the lots.

There will be raw and treated water storage, a series of pumps and a reticulated pipe network will be constructed within the roads to vest. Provision has been made within the masterplan for the required infrastructure and has been located nearby to the existing bore and pump shed.

6.1.1 Water Demand

Preliminary assessments indicate an average potable water demand of approximately 86 m³/day across the proposed development area. The final demand will be confirmed at future substantive stage.

6.1.2 Bore Supply and Treatment

Preliminary assessments indicate that groundwater is likely available within the area, subject to detailed bore testing and hydrogeological assessment. There is existing water take consents and volumes in the site which exceed the required demand.

Potable water supply is anticipated to be provided via communal bore water supply and treatment infrastructure, supplemented by roof water harvesting where appropriate.

The proposed servicing approach is intended to support a staged warehousing/light industrial development together with ancillary commercial activities.

A conservative approach has been taken with respect to compliance, and we have assumed the future design will need to follow the Drinking Water Quality Assurance Rules 2022 (DWQAR) - Networked supply category - large supply size. This allows for a total population more than 500 people.

This compliance pathway offers the possibility of providing drinking water by a centralised water treatment system to an unlimited number of buildings through a reticulated distribution network. By adopting this compliance pathway, the supply must demonstrate compliance against the General, Source S3, Treatment T3 and Distribution D3 rule modules of the DWQAR.

In addition, the preparation of a Water Safety Plan (WSP) and Source Water Risk Management Plan (SWRM) will also be required. Note that, to comply with the Distribution D3 rule module, residual disinfection will be required, therefore chlorination of the treated water will be necessary.

Further reporting would be provided in support of the substantive application; however, the bulk of the required reporting and compliance will only be required at the building consent stage.

6.1.3 Roof Caught Water

Preliminary roof water harvesting assessments indicate that full roof connection scenarios may yield approximately 791 m³/day of rainwater collection, while an indicative 30% connected-roof scenario may yield approximately 237 m³/day, demonstrating the potential for roof water harvesting to significantly supplement the communal bore supply and reduce potable water abstraction demand.

6.2 Fire Fighting Supply

The Watercare Code of Practice for Land Development and Subdivision sets out the design principles for potable water and firefighting supply and requires assessment against SNZPAS 4509:2008 NZ Fire Service Fire Fighting Water Supply Code of Practice.

The Fire Hazard Classification (FHC) for light industrial development including manufacturing, and processing will be FHC 3 OR FHC4 depending on the bulk storage.

According to the floor areas of the largest fire cell of the buildings within the future developed sites, the firefighting water supply category for the proposed development will be FW7. Referring to the firefighting water supplies code of practice, the firefighting water supply demand for FW7 needs to be specified by a fire engineer.

The reticulated fire network and hydrants have been included to ensure compliance with SNZPAS 4509:2008. Flow testing and detailed design will require fire engineering input at substantive design stage. It is noted that if a reticulated network is not desired, that separate storage by way of tanks can be provided within each site; and this can also achieve compliance with SNZPAS 4509:2008.

6.3 Public Supply

The bulk supply point near Quarry Road would provide a possible public connection point to the development. Confirmation of supply and capacity has been received for a nearby Plan Change proposal by Watercare. Theoretically, sufficient water supply does exist. Consultation to this effect is ongoing, but the proposal does not rely upon a public connection.

7. OTHER SERVICES

Telecommunications in the area are managed by Chorus, Power supply in the area is managed by Counties Power. It is understood that services are available, however, upgrades will be required to service the development. Underground services will be supplied to each lot.

8. ROADING

8.1 Roothing Overview

The development site is benefited by an existing roading network, upgrades to these existing public roads will be provided, alongside a public roading network within the development site. Please refer to the Transport Memo prepared by Commute Transportation Consultants for further detail; however, high-level details are provided below.

The site is subject to the Notice of Restriction (NoR) relative to the proposed widening of SH1, and Ramarama Interchange upgrade, which includes a roundabout on the western side of SH1. The location and design of the roundabout are shown in the Masterplan and within Maven's civil drawings.

8.1.1 Ararimu Road

Ararimu Road will be upgraded to an urban standard. This will feature 3.5m traffic lanes in each direction, curb and channel, pedestrian and cycling provisions (likely shared paths) to Great South Road and into the development site. Two roundabouts are proposed to provide legal and physical access to the roading network within the development. The roundabout locations and design have been worked through with Commute.

8.1.2 Great South Road

The eastern side of Great South Road will be upgraded along the frontage of the development site. This will likely result with shoulder widening, curb and channel and footpath and/or bicycle provisions. Final design will be subject to Auckland Transport input and will be outlined as part of the future substantive application.

8.1.3 Local Roothing Network

The internal roading network will feature a legal width of the public road will be 23.6m wide, and the indicative cross-section is detailed below within Figure 4, which show widened traffic lanes, on street parking (both sides) and complying front and rear berm details.

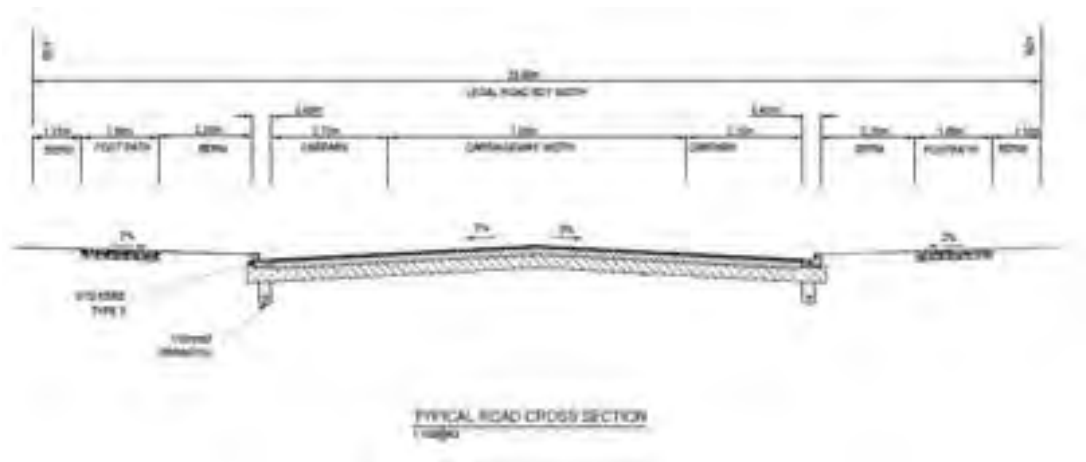


Figure 6: Local Roothing Network Cross-section

9. CONCLUSIONS

The report outlines the high-level civil servicing strategy for the intended Fast Track development known as Drury West Crossing.

The masterplan outlines that approximately 350,000GFA will be delivered over the 112 Ha site, along with other complementary uses.

Earthworks will be required in support of any future proposal to allow for the construction of building platforms, accessways, roads and services. The final design will be subject to Geotech input, and stability assessment. Specific details relative to sediment and erosion control will be provided in support of any future substantive Fast Track application(s).

A new stormwater network will need to be constructed, and this will provide a means of stormwater conveyance for all impervious areas within the site. Although the site is not subject to the NDC, it is still considered that the bulk of the stormwater networks will be public and will be vested to Auckland Council (Healthy Waters).

Treatment although not strictly necessary under the AUP is being proposed, however, confirmation from Auckland Transport and Healthy Waters will be sought, before confirming the desired approach at substantive stage. Treatment will be via way of catchment raingardens and/or treepits within the public roads.

As discharge is to streams, SMAF mitigation will be provided in support of the development. This remains consistent with the underlying discharge consent (DIS60350470) which benefits part of the site.

Potable and non-potable water supply for all lots within the development will be provided primarily from bore water, which will be treated and reticulated through the development. The network will be owned and operated by an infrastructure company. This network will also provide the required fire hydrants to accord with the requirements of SNZPAS 4509:2008.

Roof caught water will likely supplement bore supply throughout the development. This will help reduce the need for ground water and to improve resilience and environmental benefits. This will likely result in increased reuse (retention) volumes within the lots above that expressly required under SMAF.

There is known flooding and overland flowpaths within the development area, which are largely contained to the gullies and stream margins. All building platforms will be provided with freeboard in accordance with the NZBC and developable areas are removed from these hazards. Maven has developed a TUFLOW flood model which has supported the initial civil design. Attenuation and flood mitigation design will be needed to ensure no downstream effects. DIS60350470 covers part of the site; and the civil design accords with the requirements of Condition 10.

Suitable wastewater disposal can be provided for the development. Wastewater will be treated by a private, centralised wastewater treatment plant (WWTP), with disposal of treated effluent to land, as per the location shown on the appended drawings.

A telecommunications, power and gas network are present in the surrounding area, and it is anticipated that service can be made available to the proposed development, subject to upgrades.

Information gathered to-date confirms the site is suitable for the proposed development from a civil engineering and infrastructure perspective.



10. APPENDICES

10.i APPENDIX A – ENGINEERING PLANS



EARTHWORKS WITHIN GAS EASEMENTS REQUIRE
PRIOR APPROVAL FROM FIRST GAS. EXISTING GAS
LINES SHALL BE RENEWED WHERE PROPOSED
EARTHWORKS RESULT IN CUT OR FILL EXCEEDING
300 MM OVER THE GAS INFRASTRUCTURE

- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL STANDARDS.
 2. COORDINATES IN TERMS OF NZ GEODETIC DATUM MT EDEN 2000
 3. LEVELS IN TERMS OF THE AUCKLAND VERTICAL DATUM 1946.
 4. ORIGIN OF LEVELS = SM XXXX SO XXXX(XXXX) PUBLISHED RL=XX.XX, SOURCED FROM THE LINZ DIGITAL GEODETIC DATABASE.
 5. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY THEIR OPERATIONS.
 6. THE CONTRACTOR SHALL COMPLY WITH ALL RELEVANT HEALTH AND SAFETY REQUIREMENTS.
 7. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVAL FROM UTILITY OPERATORS BEFORE COMMENCING WORK UNDER OR NEAR THEIR SERVICES.
 8. SEDIMENT CONTROL SHALL BE INSTALLED AND OPERATIONAL BEFORE EARTHWORKS START ONSITE IN ACCORDANCE WITH COUNCIL STANDARDS.
 9. CONTRACTOR SHALL PROVIDE AS-BUILT OF WORKING SEDIMENT CONTROL DEVICES AND CONFIRMATION OF POND/DECENT VOLUMES TO ENGINEER.
 10. SEDIMENT CONTROL TO COMPLY WITH GD05 STANDARDS.

LEGEND

---	EX BDY
---	SITE BDY
---	PROP BDY
---	EX MAJOR CONTOUR
---	EX MINOR CONTOUR
---	PR MAJOR CONTOUR
---	PR MINOR CONTOUR
---	PROP EXTENT WORK
---	GAS EASEMENT

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
NORTHERN PART
EARTHWORKS PLAN**

Project no.	231001		
Scale	1:4000 @ A3		
Cad file	C200-NORTH.DWG		
Drawing no.	C200-1	Rev	A

FOR INFORMATION

DATE: 05/08/2025 FILE: 231001-1 PLAN: ARARIMU ROAD DRURY WEST CROSSING LTD. NORTH.DWG



EARTH WORKS (SURFACE EGL-200mm COMPARISON WITH SURFACE PGL-300mm)

CUT VOLUME 439,390 m³
FILL VOLUME 436,875 m³
NET CUT 2,515 m³

TOPSOIL STRIPPED (200mm) = 70,880 m³
EARTHWORKS AREA = 354,400m² / 35.4 Ha

NOTE: NO ALLOWANCE FOR SERVICES TRENCHES, VOLUMES ARE UNFACTORED AND IN SITU

EARTHWORKS WITHIN GAS EASEMENTS REQUIRE PRIOR APPROVAL FROM FIRST GAS. EXISTING GAS LINES SHALL BE RENEWED WHERE PROPOSED EARTHWORKS RESULT IN CUT OR FILL EXCEEDING 300 MM OVER THE GAS INFRASTRUCTURE

NOTES
REFER TO DRAWING C200-1

LEGEND

---	EX BDY
---	SITE BDY
---	PROP BDY
---	EX MAJOR CONTOUR
---	EX MINOR CONTOUR
---	PR MAJOR CONTOUR
---	PR MINOR CONTOUR
---	PROP EXTENT WORK
---	GAS EASEMENT

Cut/Fill Table			
Number #	Minimum Elevation	Maximum Elevation	Color
1	-12.000	-10.000	
2	-10.000	-8.000	
3	-8.000	-6.000	
4	-6.000	-4.000	
5	-4.000	-2.000	
6	-2.000	0.000	
7	0.000	2.000	
8	2.000	4.000	
9	4.000	6.000	
10	6.000	8.000	
11	8.000	10.000	

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
		By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
NORTHERN PART
CUT AND FILL PLAN**

Project no.	231001
Scale	1:2000 @ A3
Cad file	C200-NORTH.DWG
Drawing no.	C220-1
Rev	A

FOR INFORMATION



EARTHWORKS WITHIN GAS EASEMENTS REQUIRE
PRIOR APPROVAL FROM FIRST GAS. EXISTING GAS
LINES SHALL BE RENEWED WHERE PROPOSED
EARTHWORKS RESULT IN CUT OR FILL EXCEEDING
300 MM OVER THE GAS INFRASTRUCTURE

- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL STANDARDS.
 2. COORDINATES IN TERMS OF NZ GEODETIC DATUM MT EDEN 2000
 3. LEVELS IN TERMS OF THE AUCKLAND VERTICAL DATUM 1946.
 4. ORIGIN OF LEVELS = SM XXXX SO XXXX(XXXX) PUBLISHED RL=XX.XX, SOURCED FROM THE LINZ DIGITAL GEODETIC DATABASE.
 5. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY THEIR OPERATIONS.
 6. THE CONTRACTOR SHALL COMPLY WITH ALL RELEVANT HEALTH AND SAFETY REQUIREMENTS.
 7. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVAL FROM UTILITY OPERATORS BEFORE COMMENCING WORK UNDER OR NEAR THEIR SERVICES.
 8. SEDIMENT CONTROL SHALL BE INSTALLED AND OPERATIONAL BEFORE EARTHWORKS START ONSITE IN ACCORDANCE WITH COUNCIL STANDARDS.
 9. CONTRACTOR SHALL PROVIDE AS-BUILT OF WORKING SEDIMENT CONTROL DEVICES AND CONFIRMATION OF POND/DECENT VOLUMES TO ENGINEER.
 10. SEDIMENT CONTROL TO COMPLY WITH GD05 STANDARDS.

LEGEND


 EX BDY
 SITE BDY
 PROP BDY
 EX MAJOR CONTOUR
 EX MINOR CONTOUR
 PR MAJOR CONTOUR
 PR MINOR CONTOUR
 PROP EXTENT WORK
 GAS EASEMENT

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
	By	Date	
Survey			
Design	JAW	03/2026	
Drawn	JAW	03/2026	
Checked	TM	03/2026	



Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
SOUTHERN PART
EARTHWORKS PLAN**

Project no.	231001		
Scale	1:4000 @ A3		
Cad file	C200-SOUTH.DWG		
Drawing no.	C200-2	Rev	A



EARTH WORKS (SURFACE EGL-200mm COMPARISON WITH SURFACE PGL-300mm)

CUT VOLUME 287,000 m³
FILL VOLUME 292,850 m³
NET FILL 5,850 m³

TOPSOIL STRIPPED (200mm) = 63,080 m³
EARTHWORKS AREA = 315,400m² /31.5 Ha

NOTE: NO ALLOWANCE FOR SERVICES TRENCHES, VOLUMES ARE UNFACTORED AND IN SITU

EARTHWORKS WITHIN GAS EASEMENTS REQUIRE PRIOR APPROVAL FROM FIRST GAS. EXISTING GAS LINES SHALL BE RENEWED WHERE PROPOSED EARTHWORKS RESULT IN CUT OR FILL EXCEEDING 300 MM OVER THE GAS INFRASTRUCTURE

NOTES
REFER TO DRAWING C200-2

LEGEND

---	EX BDY
---	SITE BDY
---	PROP BDY
---	EX MAJOR CONTOUR
---	EX MINOR CONTOUR
---	PR MAJOR CONTOUR
---	PR MINOR CONTOUR
---	PROP EXTENT WORK
---	GAS EASEMENT

Cut/Fill Table			
Number #	Minimum Elevation	Maximum Elevation	Color
1	-7.000	-5.000	
2	-5.000	-3.000	
3	-3.000	-1.000	
4	-1.000	1.000	
5	1.000	3.000	
6	3.000	5.000	
7	5.000	7.000	

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
		By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026

M **Maven Associates**
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
SOUTHERN PART
CUT AND FILL PLAN**

Project no.	231001
Scale	1:2000 @ A3
Cad file	C200-SOUTH.DWG
Drawing no.	C220-2
Rev	A

FOR INFORMATION

DATE: 07/03/2025 FILEPATH: F:\MCM\PROJECTS\231001\24_25\ARARIMU ROAD DRURY\DWG\C200 SOUTH.DWG



LEGEND

- EX BDY
- SITE EXTENT
- PROP LOT BDY
- ROAD CENTER LINE
- EX GAS EASEMENT
- EX POWER TRANSMISSION

- NOTES**
1. ALL WORKS TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL STANDARDS.
 2. CONTRACTOR IS TO AVOID USING GPS FOR SET OUT OF THE KERB LEVELS WHERE GRADIENTS LESS THAN 1%.
 3. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY HIS OPERATIONS.
 4. THE CONTRACTOR SHALL COMPLY WITH ALL RELEVANT HEALTH AND SAFETY REQUIREMENTS.
 5. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVAL FROM UTILITY OPERATORS BEFORE COMMENCING WORK UNDER OR NEAR THEIR SERVICES.
 6. FINAL PAVEMENT DESIGN SUBJECT TO CBR/BEM TESTS ON SUBGRADE MATERIAL.
 7. SETOUT SCHEDULE WITH CO-ORDINATES OF CHAINAGE POINTS ALONG ROAD CENTRELINE TO BE SUPPLIED TO THE CONTRACTOR PRIOR TO CONSTRUCTION.
 8. REFER TO LONG SECTION FOR FINISHED CENTRELINE LEVELS. REFER TO TYPICAL CROSS SECTIONS TO OBTAIN LEVELS FOR OTHER LOCATIONS
 9. ALL DUCTS SHALL HAVE LOCATIONS MARKED ON KERB LINES IN ACCORDANCE WITH SPECIFICATION.
 10. PRAM CROSSINGS ARE TO BE FLUSH TO THE CHANNEL WITH NO LIP.
 11. ALL KERB AND CHANNEL TO HAVE SAWCUTS AT MAX. 4M CENTRES.
 12. ALL KERBING, CHANNELS AND EDGE BEAMS SHALL HAVE 4KG BLACK OXIDE.
 13. ALL SIGNAGE AND PAVEMENT MARKINGS TO BE IN ACCORDANCE WITH NZTA MOTSAM STANDARDS AND THE ATCOP TCDM.
 14. ALL STREET NAME SIGNS SHALL FOLLOW ATCOP GUIDELINES IN TERMS OF LAYOUT, CLEARANCES, AND CONSTRUCTION DETAILS.
 15. ALL LINE MARKINGS TO BE REFLECTORISED IN ACCORDANCE WITH MOTSAM STANDARDS.
 16. THE MINIMUM VERTICAL AND LATERAL CLEARANCES FOR SIGNAGE SHALL BE IN ACCORDANCE WITH MOTSAM STANDARDS.
 17. STREET LIGHTING SHALL BE DESIGNED IN ACCORDANCE WITH ALL APPLICABLE NEW ZEALAND STANDARDS INCLUDING BUT NOT RESTRICTED TO THE CURRENT VERSION OF AS/NZS 1158 LIGHTING FOR ROADS AND PUBLIC SPACES SERIES OF STANDARDS.
 18. ALL NEW, MODIFIED OR UPGRADED PRAM CROSSINGS MUST BE IN ACCORDANCE WITH RTS 14 GUIDELINES FOR FACILITIES FOR BLIND AND VISION-IMPAIRED PEDESTRIANS AND NZS/AS 1428.4 AND MUST COMPLY WITH THE DETAILS PROVIDED IN AT'S STANDARD PLAN NO.FP009.

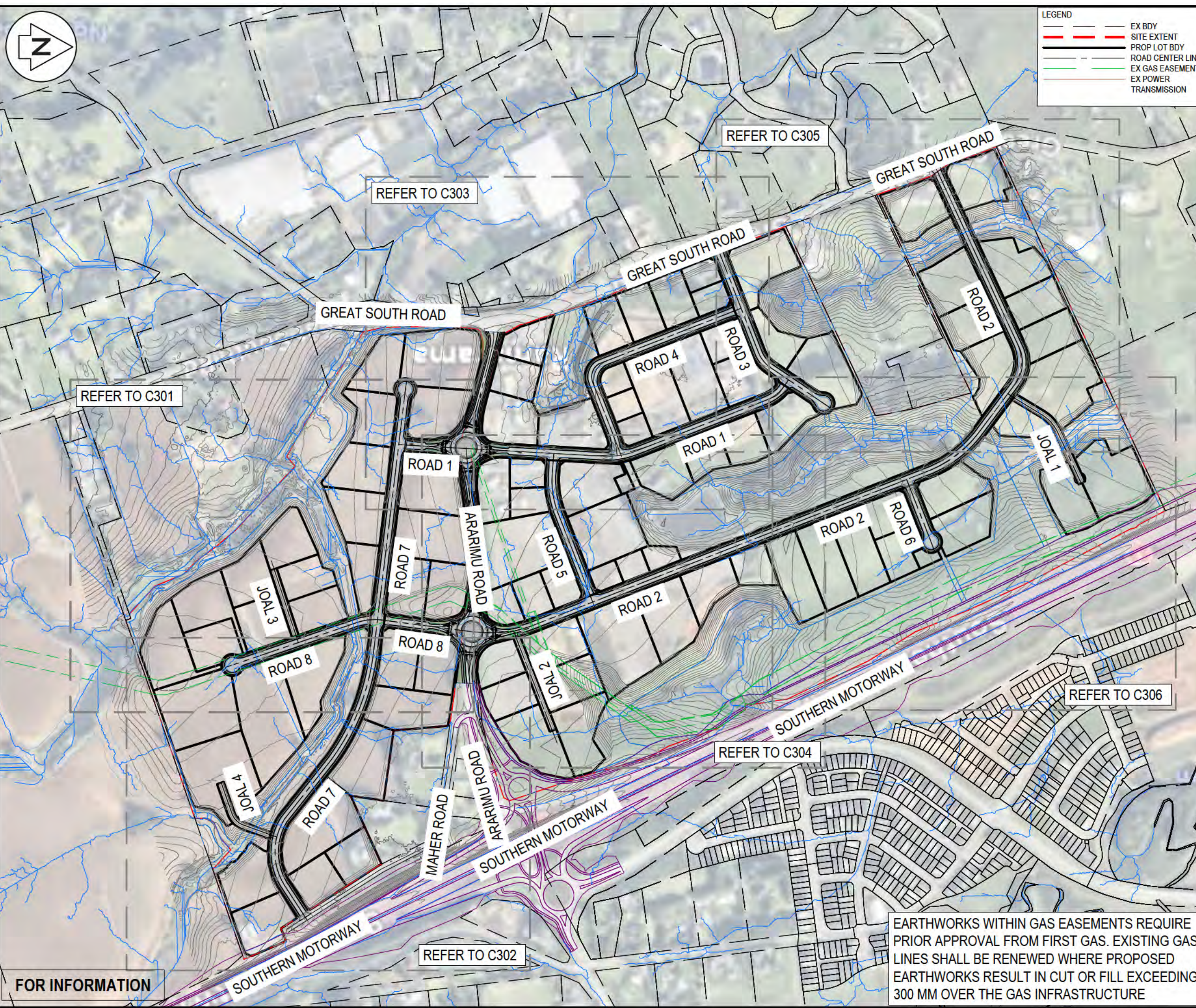
A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026

M **Maven Associates**
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
ROADING
OVERVIEW PLAN**

Project no.	231001
Scale	1:6000 @ A3
Cad file	C300-MASTER.DWG
Drawing no.	C300
Rev	A



EARTHWORKS WITHIN GAS EASEMENTS REQUIRE PRIOR APPROVAL FROM FIRST GAS. EXISTING GAS LINES SHALL BE RENEWED WHERE PROPOSED EARTHWORKS RESULT IN CUT OR FILL EXCEEDING 300 MM OVER THE GAS INFRASTRUCTURE

FOR INFORMATION

DATE: 01/03/2026



NOTES : REFER TO C300

LEGEND	
	EX BDY
	SITE EXTENT
	PROP LOT BDY
	ROAD CENTER LINE
	EX GAS EASEMENT
	EX POWER
	TRANSMISSION

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Survey	JAW		03/2026
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
ROADING
PLAN**

Project no.	231001
Scale	1:2000 @ A3
Cad file	C300-MASTER.DWG
Drawing no.	C301
Rev	A

FOR INFORMATION



NOTES : REFER TO C300

LEGEND	
	EX BDY
	SITE EXTENT
	PROP LOT BDY
	ROAD CENTER LINE
	EX GAS EASEMENT
	EX POWER
	TRANSMISSION

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
		By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



Maven Associates
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
ROADING
PLAN**

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C300-MASTER.DWG		
Drawing no.	C302	Rev	A

FOR INFORMATION

DATE: 01/02/26



NOTES : REFER TO C300

LEGEND	
	EX BDY
	SITE EXTENT
	PROP LOT BDY
	ROAD CENTER LINE
	EX GAS EASEMENT
	EX POWER
	TRANSMISSION

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Survey	JAW		03/2026
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
ROADING
PLAN**

Project no.	231001
Scale	1:2000 @ A3
Cad file	C300-MASTER.DWG
Drawing no.	C303
Rev	A

FOR INFORMATION

DATE: 01/02/26



NOTES : REFER TO C300

LEGEND	
	EX BDY
	SITE EXTENT
	PROP LOT BDY
	ROAD CENTER LINE
	EX GAS EASEMENT
	EX POWER
	TRANSMISSION

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



Maven Associates
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
ROADING
PLAN**

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C300-MASTER.DWG		
Drawing no.	C304	Rev	A

FOR INFORMATION

DATE: 07/02/26



NOTES : REFER TO C300



LEGEND	
	EX BDY
	SITE EXTENT
	PROP LOT BDY
	ROAD CENTER LINE
	EX GAS EASEMENT
	EX POWER TRANSMISSION
	EX WATER EASEMENT

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
ROADING
PLAN**

Project no.	231001
Scale	1:2000 @ A3
Cad file	C300-MASTER.DWG
Drawing no.	C305
Rev	A

FOR INFORMATION



NOTES : REFER TO C300

LEGEND	
	EX BDY
	SITE EXTENT
	PROP LOT BDY
	ROAD CENTER LINE
	EX GAS EASEMENT
	EX POWER
	TRANSMISSION

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Survey	JAW		03/2026
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026

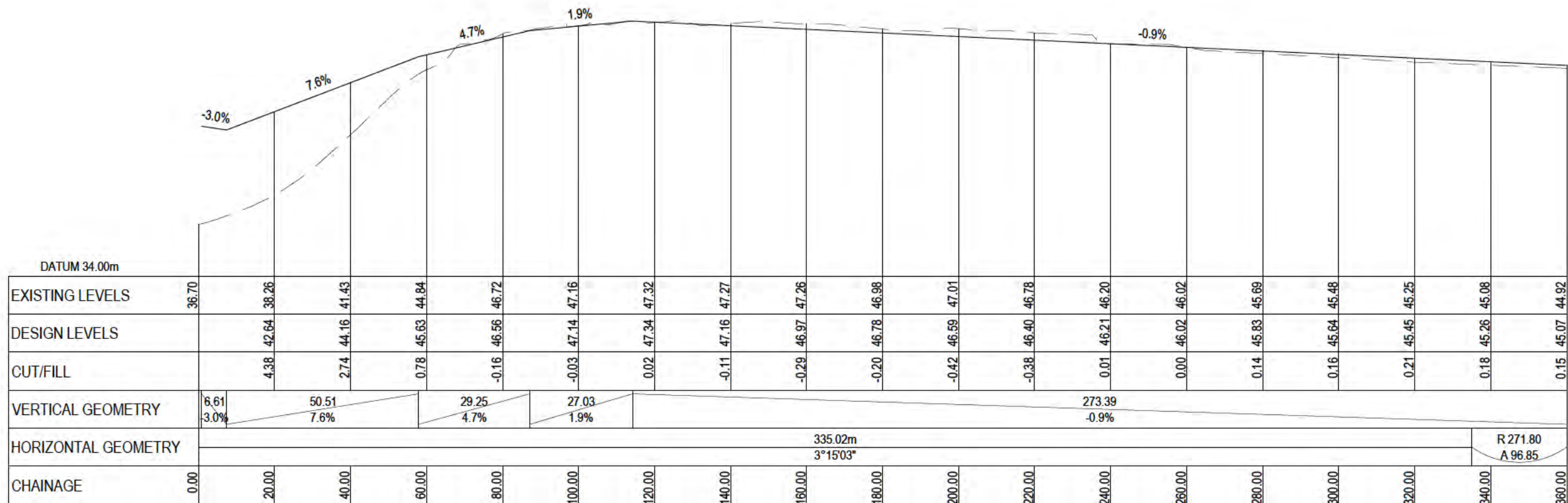
M **Maven Associates**
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

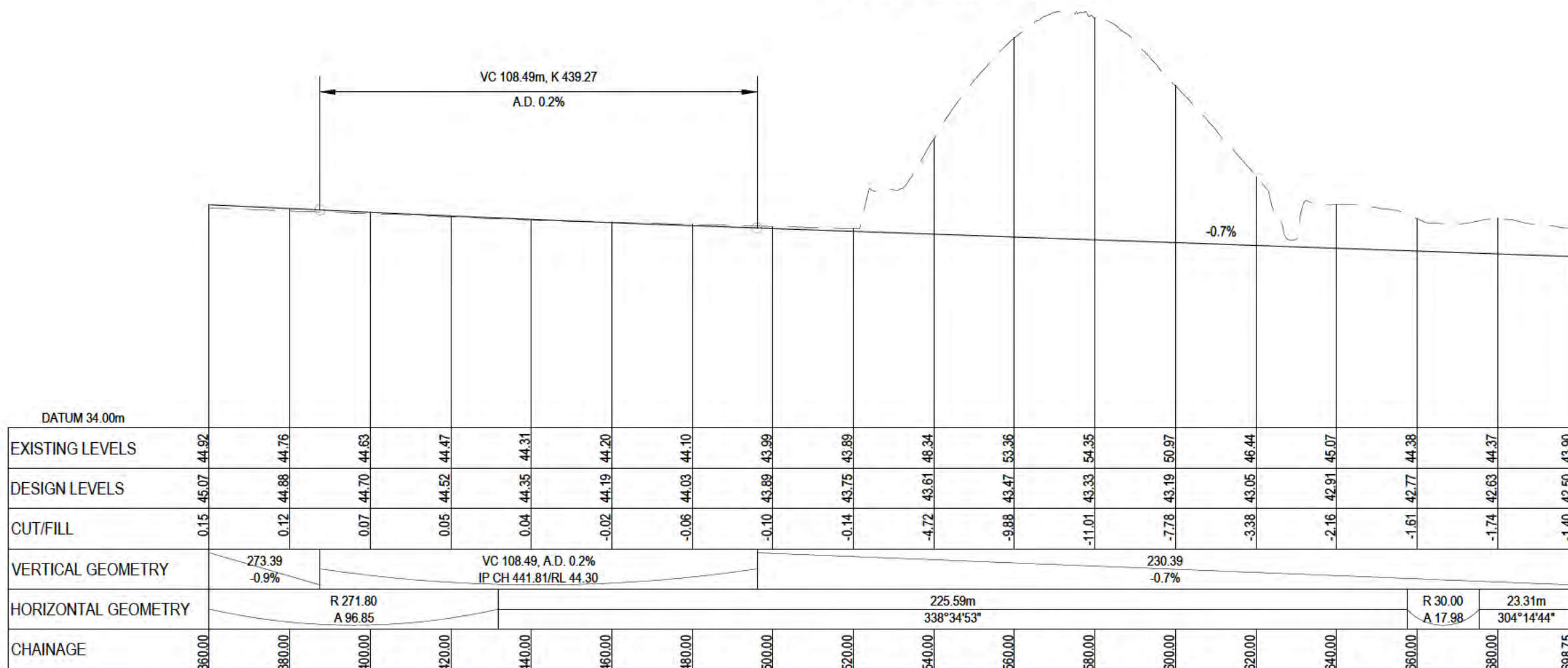
Title
**PROPOSED
ROADING
PLAN**

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C300-MASTER.DWG		
Drawing no.	C306	Rev	A

FOR INFORMATION



ROAD 1 LONG SECTION (1 OF 2)
SCALE: HORI 1:1000 VERT 1:200



FOR INFORMATION

ROAD 1 LONG SECTION (2 OF 2)
SCALE: HORI 1:1000 VERT 1:200

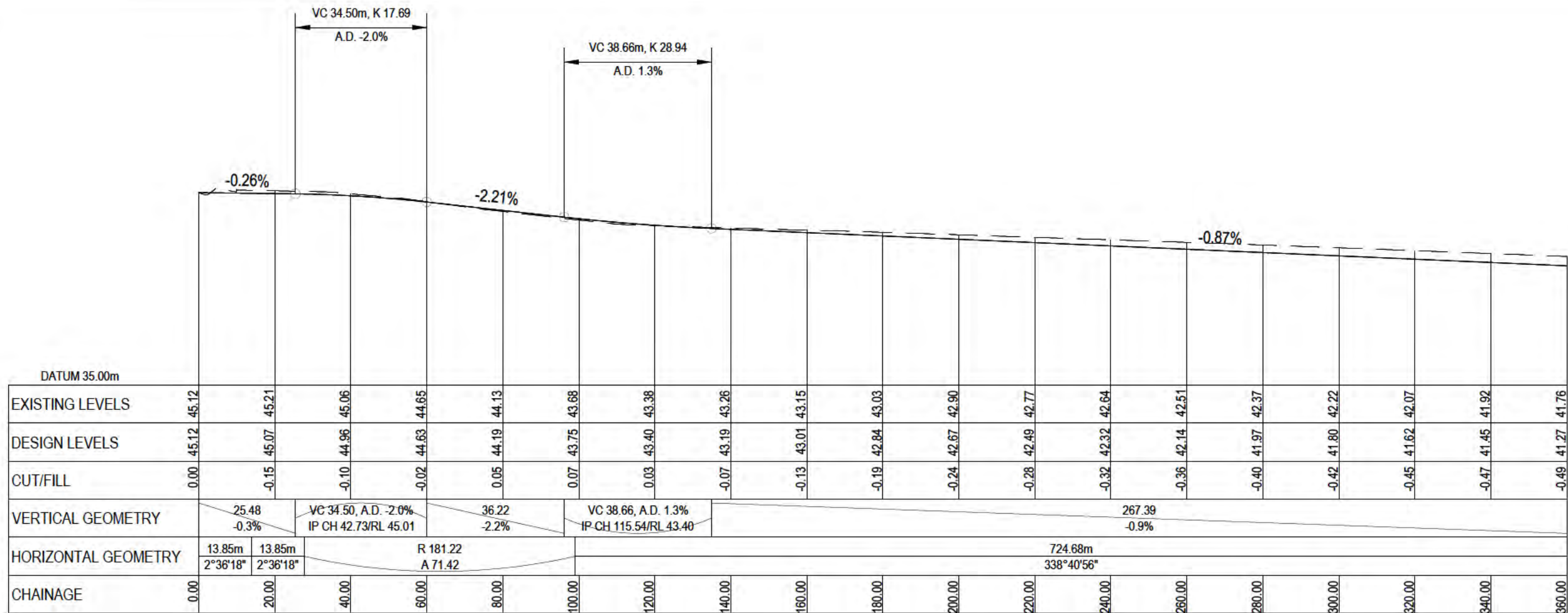
A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



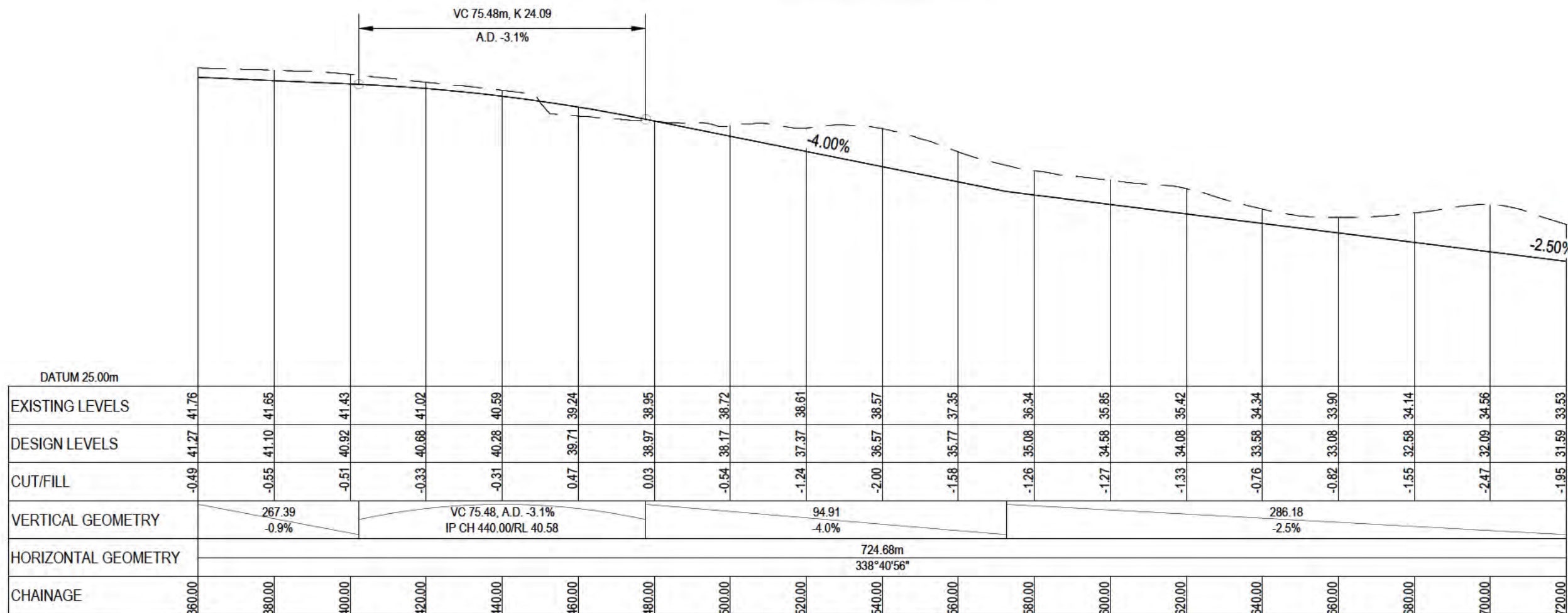
Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
ROADING
LONG SECTION**

Project no.	231001
Scale	AS SHOWN
Cad file	C300-MASTER.DWG
Drawing no.	C310
Rev	A



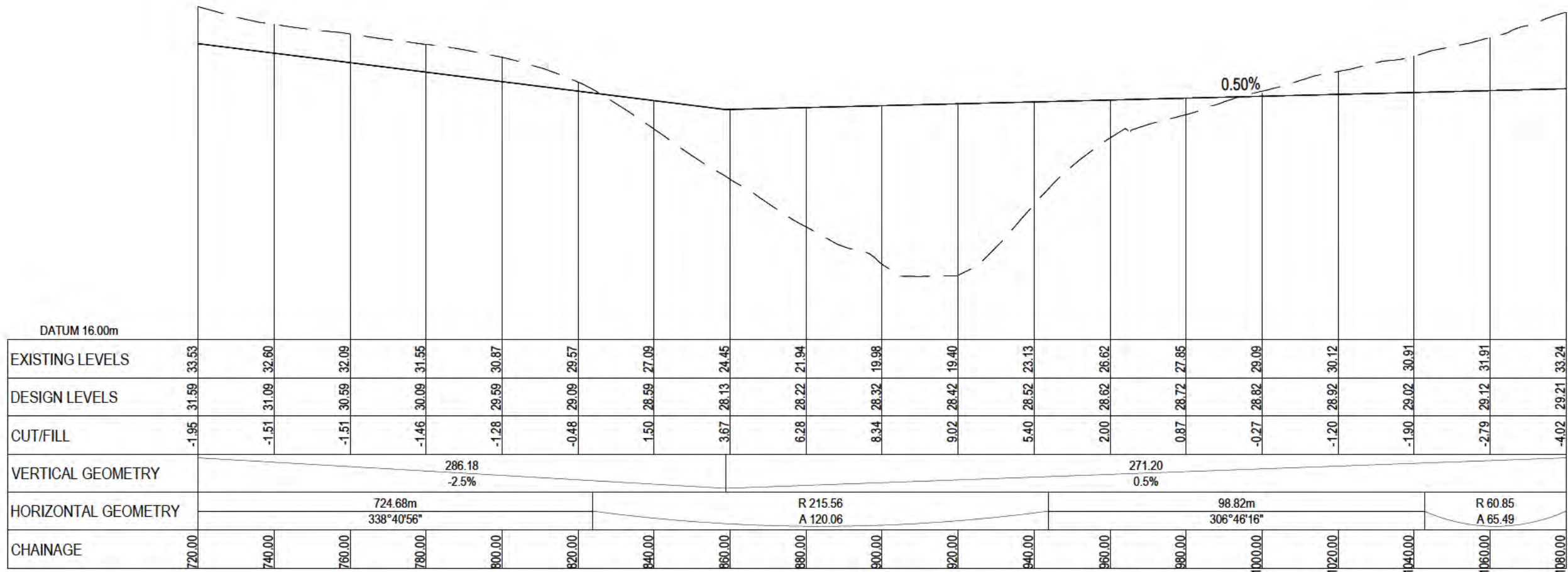
ROAD 2 LONG SECTION (1 OF 4)
SCALE: HORI 1:1000 VERT 1:200



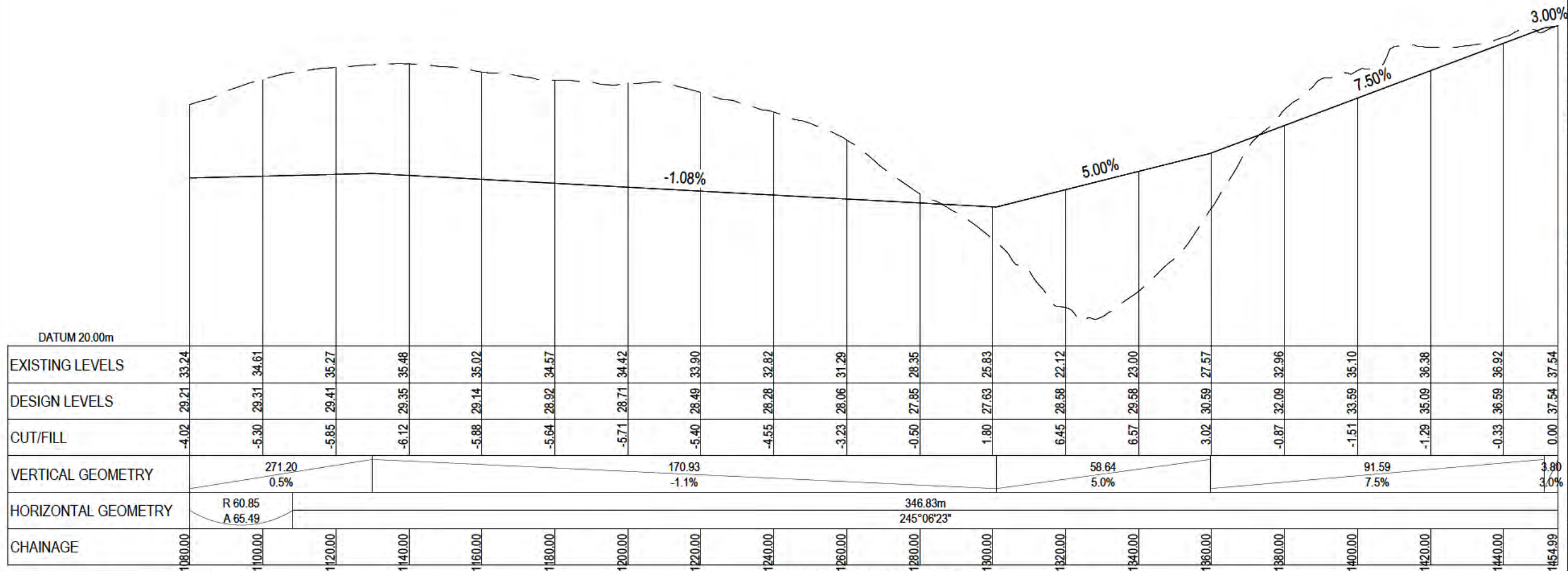
ROAD 2 LONG SECTION (2 OF 4)
SCALE: HORI 1:1000 VERT 1:200

FOR INFORMATION

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
		By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026
M MAVEN Maven Associates 09 571 0050 info@maven.co.nz www.maven.co.nz 5 Owens Road, Epsom Auckland 1023			
Project PROPOSED SUBDIVISION ARARIMU ROAD DRURY FOR DRURY WEST CROSSING LTD.			
Title PROPOSED ROADING LONG SECTION			
Project no.	231001		
Scale	AS SHOWN		
Cad file	C300-MASTER.DWG		
Drawing no.	C311	Rev	A



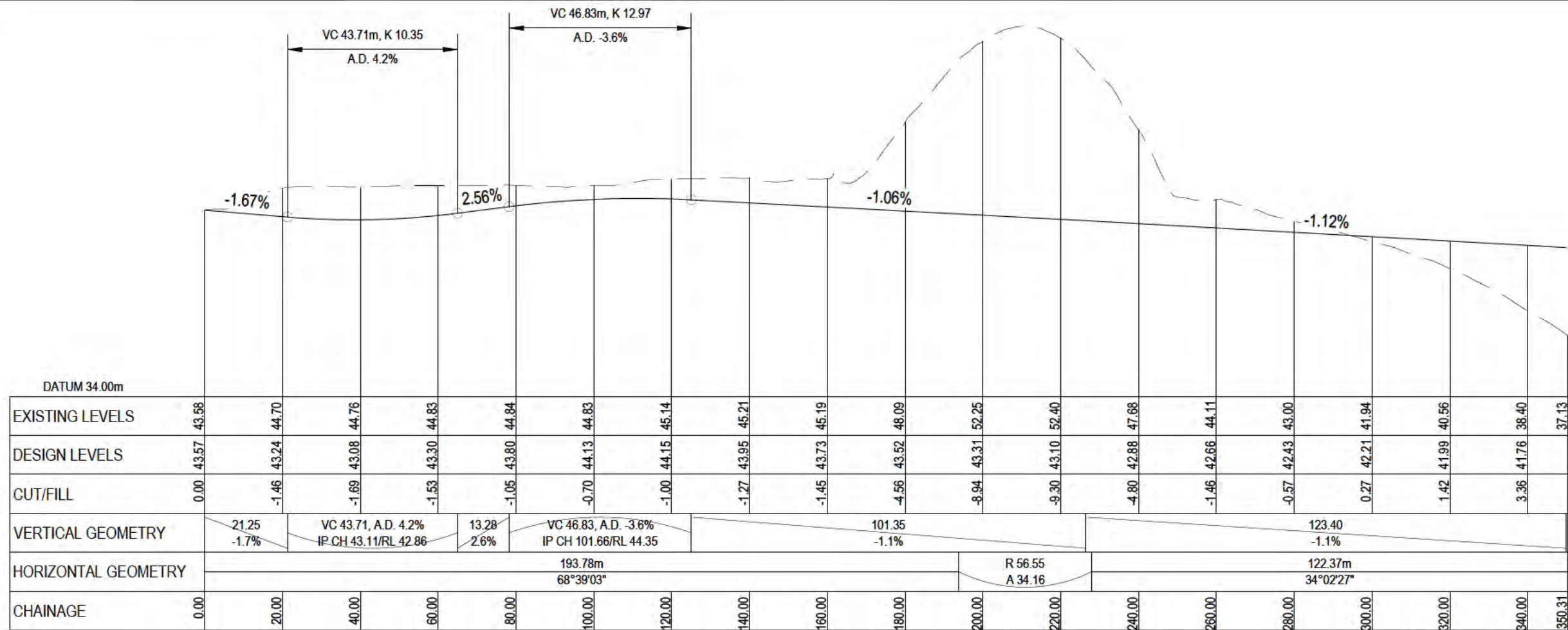
ROAD 2 LONG SECTION (3 OF 4)
SCALE: HORI 1:1000 VERT 1:200



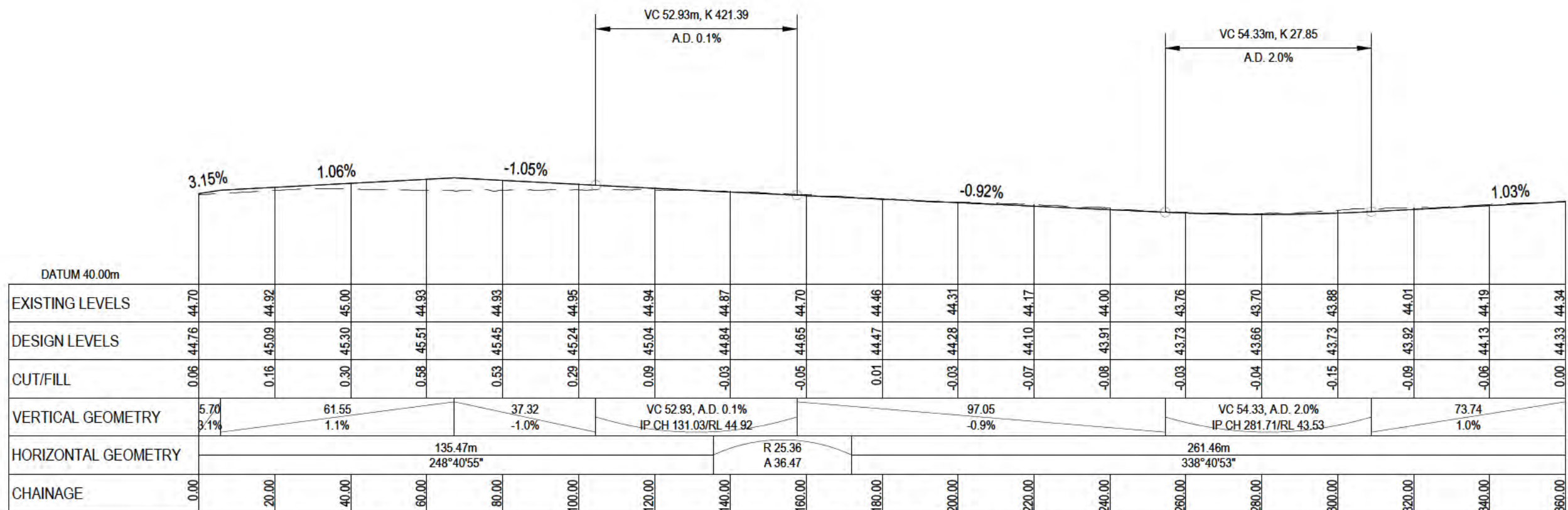
ROAD 2 LONG SECTION (4 OF 4)
SCALE: HORI 1:1000 VERT 1:200

FOR INFORMATION

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026
M Maven Associates 09 571 0050 info@maven.co.nz www.maven.co.nz 5 Owens Road, Epsom Auckland 1023			
Project PROPOSED SUBDIVISION ARARIMU ROAD DRURY FOR DRURY WEST CROSSING LTD.			
Title PROPOSED ROADING LONG SECTION			
Project no.	231001		
Scale	AS SHOWN		
Cad file	C300-MASTER.DWG		
Drawing no.	C312	Rev	A



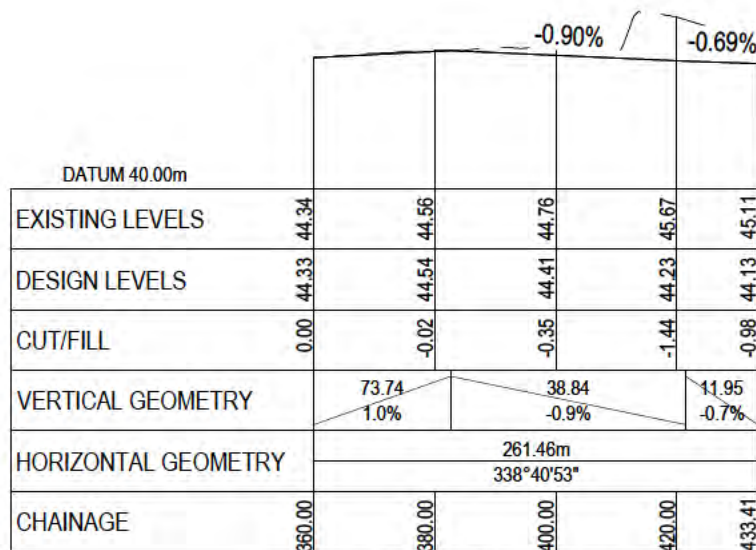
ROAD 3 LONG SECTION
SCALE: HORI 1:1000 VERT 1:200



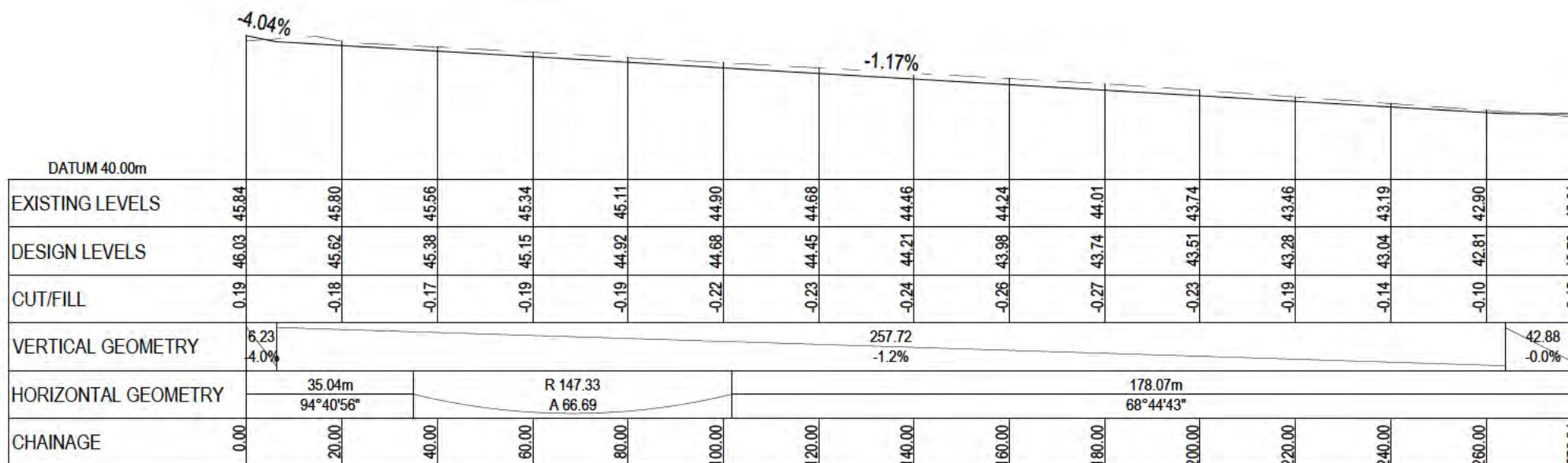
FOR INFORMATION

ROAD 4 LONG SECTION (1 OF 2)
SCALE: HORI 1:1000 VERT 1:200

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
		By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026
M Maven Associates 09 571 0050 info@maven.co.nz www.maven.co.nz 5 Owens Road, Epsom Auckland 1023			
Project PROPOSED SUBDIVISION ARARIMU ROAD DRURY FOR DRURY WEST CROSSING LTD.			
Title PROPOSED ROADING LONG SECTION			
Project no.	231001		
Scale	AS SHOWN		
Cad file	C300-MASTER.DWG		
Drawing no.	C313	Rev	A



ROAD 4 LONG SECTION (2 OF 2)
SCALE: HORI 1:1000 VERT 1:200



ROAD 5 LONG SECTION
SCALE: HORI 1:1000 VERT 1:200

FOR INFORMATION

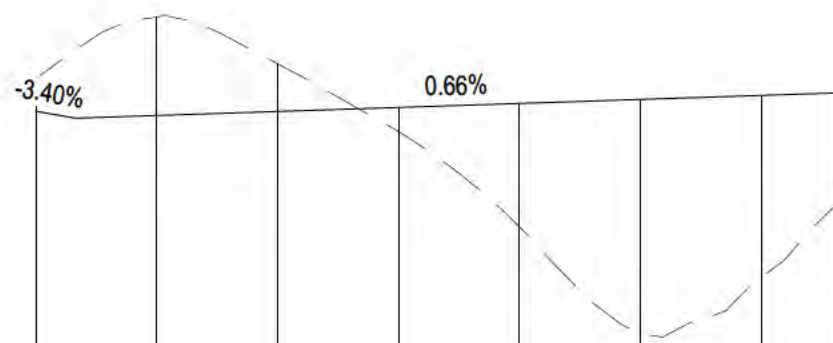
A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
	Survey		
	Design	JAW	03/2026
	Drawn	JAW	03/2026
	Checked	TM	03/2026



Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

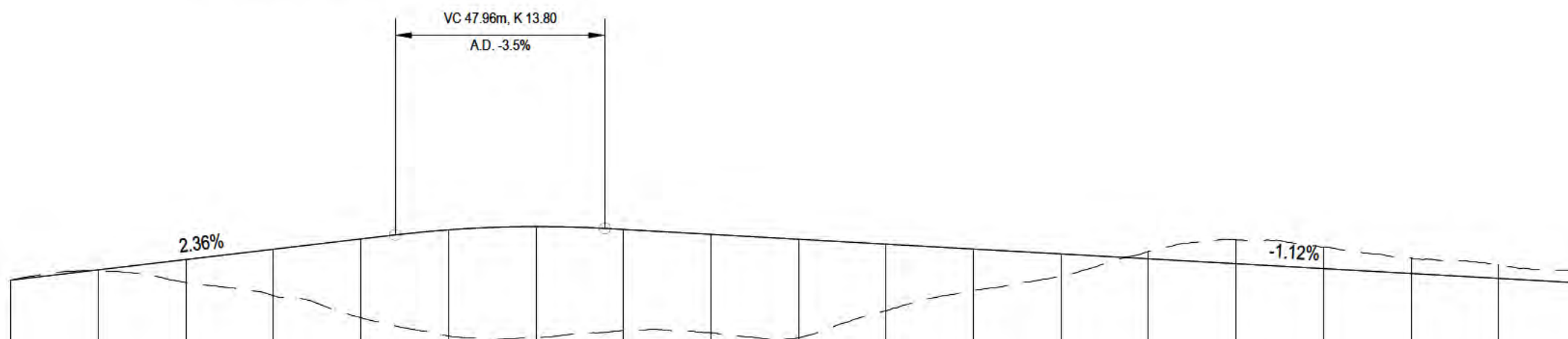
Title
**PROPOSED
ROADING
LONG SECTION**

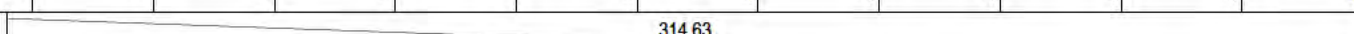
Project no.	231001
Scale	AS SHOWN
Cad file	C300-MASTER.DWG
Drawing no.	C314
Rev	A



DATUM 20.00m									
EXISTING LEVELS	31.28	33.33	31.78	29.54	26.38	22.88	24.73	27.15	
DESIGN LEVELS	30.21	30.07	30.20	30.34	30.47	30.60	30.74	30.82	
CUT/FILL	-1.07	-3.25	-1.57	0.80	4.09	7.73	6.01	3.67	
VERTICAL GEOMETRY	9.79 3.4%	125.89 0.7%							
HORIZONTAL GEOMETRY	132.49m 68°40'56"								
CHAINAGE	0.00	20.00	40.00	60.00	80.00	100.00	120.00	132.49	

ROAD 6 LONG SECTION
SCALE: HORI 1:1000 VERT 1:200

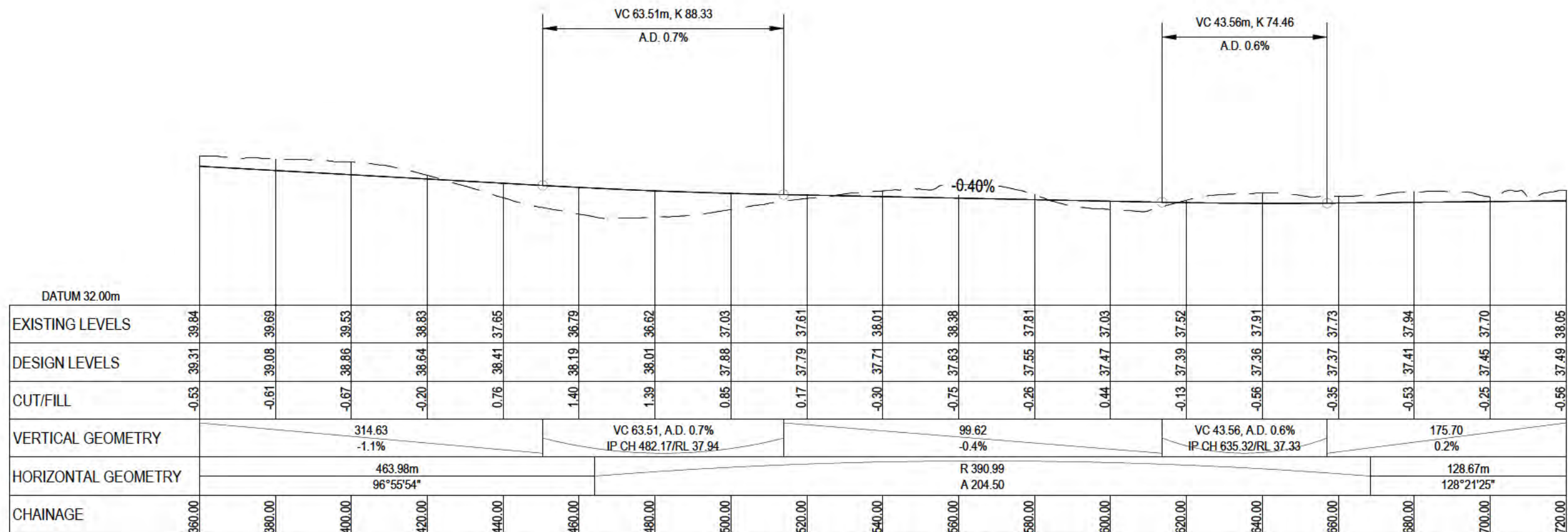


DATUM 32.00m																				
EXISTING LEVELS	39.45	39.89	39.34	38.74	37.73	36.90	36.82	37.16	37.05	36.81	38.05	38.96	39.67	40.77	41.29	40.97	40.46	40.15	39.84	
DESIGN LEVELS	39.45	39.92	40.39	40.86	41.33	41.75	41.90	41.77	41.54	41.32	41.10	40.87	40.65	40.43	40.20	39.98	39.75	39.53	39.31	
CUT/FILL	0.00	0.03	1.05	2.12	3.60	4.86	5.08	4.61	4.50	4.51	3.05	1.91	0.98	-0.34	-1.09	-0.99	-0.70	-0.62	-0.53	
VERTICAL GEOMETRY	 87.82 2.4%					VC 47.96, A.D. -3.5% IP CH 111.80/RL 42.08					 314.63 -1.1%									
HORIZONTAL GEOMETRY																				
CHAINAGE	0.00	20.00	40.00	60.00	80.00	100.00	120.00	140.00	160.00	180.00	200.00	220.00	240.00	260.00	280.00	300.00	320.00	340.00	360.00	

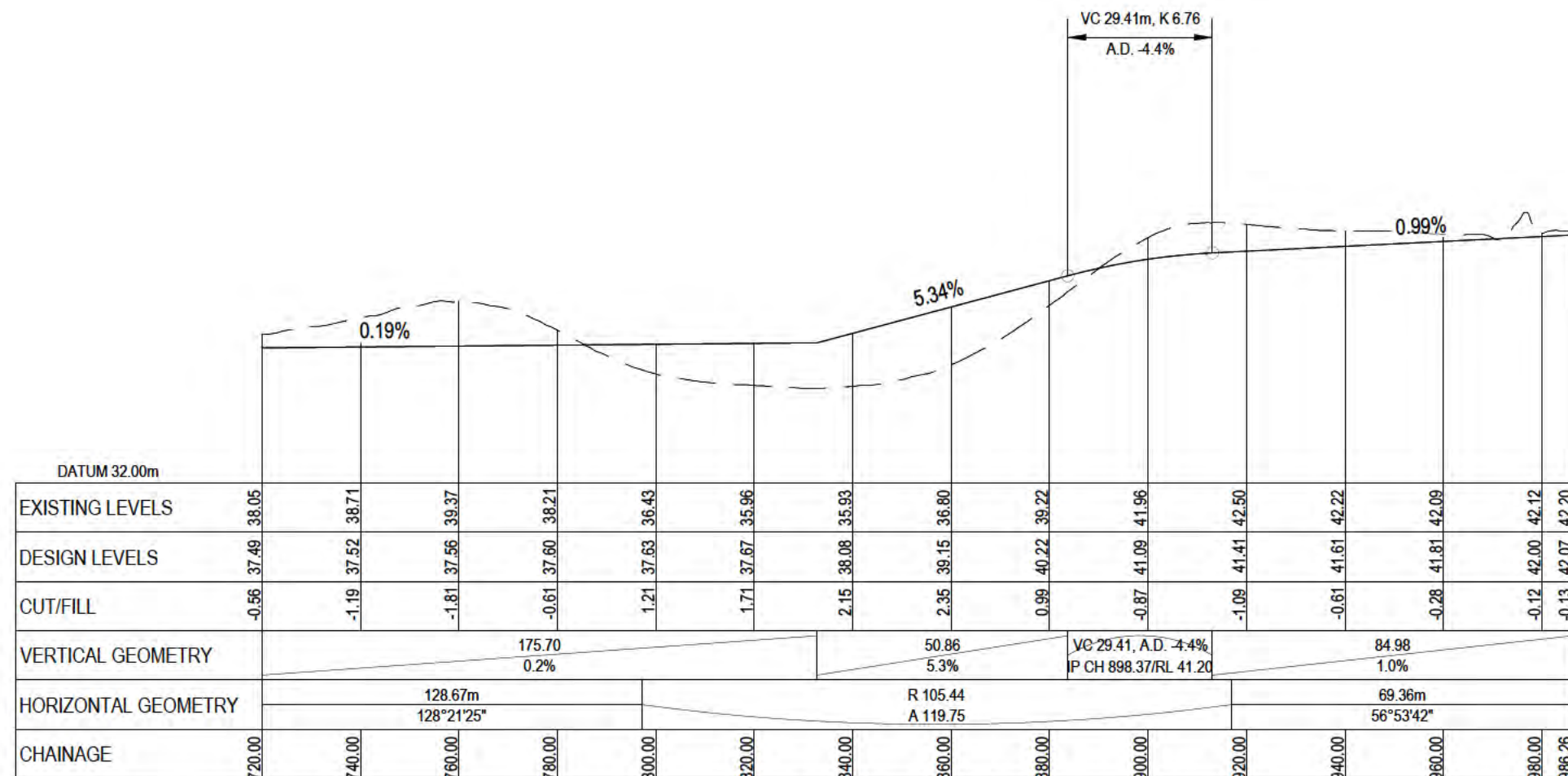
ROAD 7 LONG SECTION (1 OF 3)
SCALE: HORI 1:1000 VERT 1:200

FOR INFORMATION

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
		By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026
M Maven Associates 09 571 0050 info@maven.co.nz www.maven.co.nz 5 Owens Road, Epsom Auckland 1023			
Project PROPOSED SUBDIVISION ARARIMU ROAD DRURY FOR DRURY WEST CROSSING LTD.			
Title PROPOSED ROADING LONG SECTION			
Project no.	231001		
Scale	AS SHOWN		
Cad file	C300-MASTER.DWG		
Drawing no.	C315	Rev	A



ROAD 7 LONG SECTION (2 OF 3)
SCALE: HORI 1:1000 VERT 1:200



ROAD 7 LONG SECTION (3 OF 3)
SCALE: HORI 1:1000 VERT 1:200

FOR INFORMATION

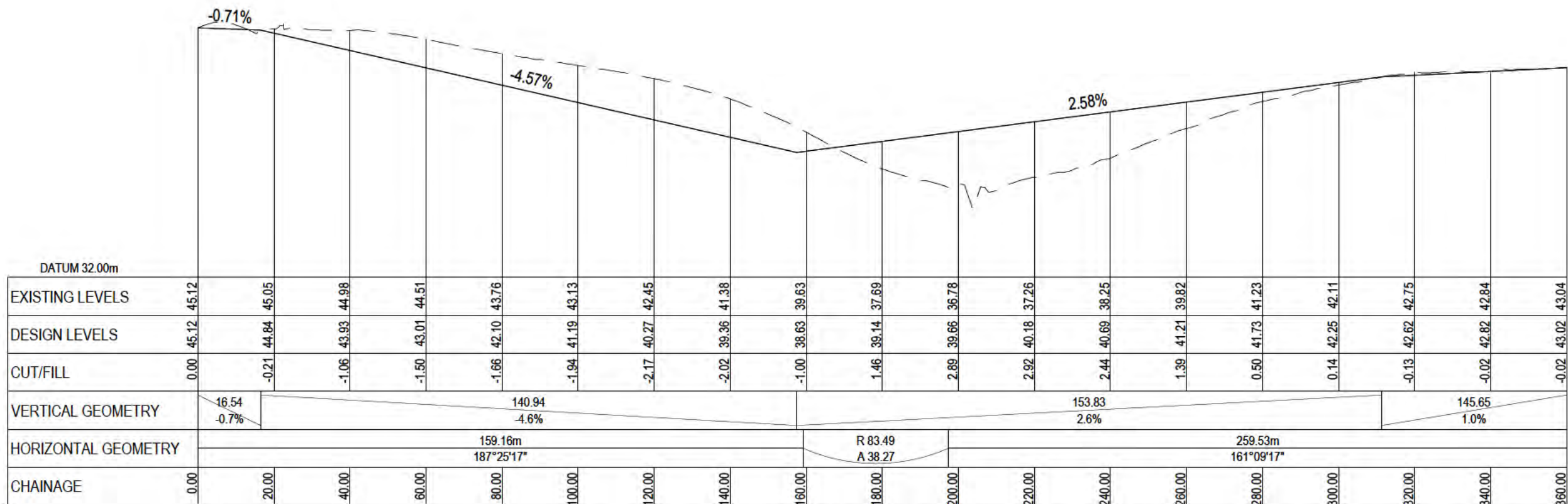
A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



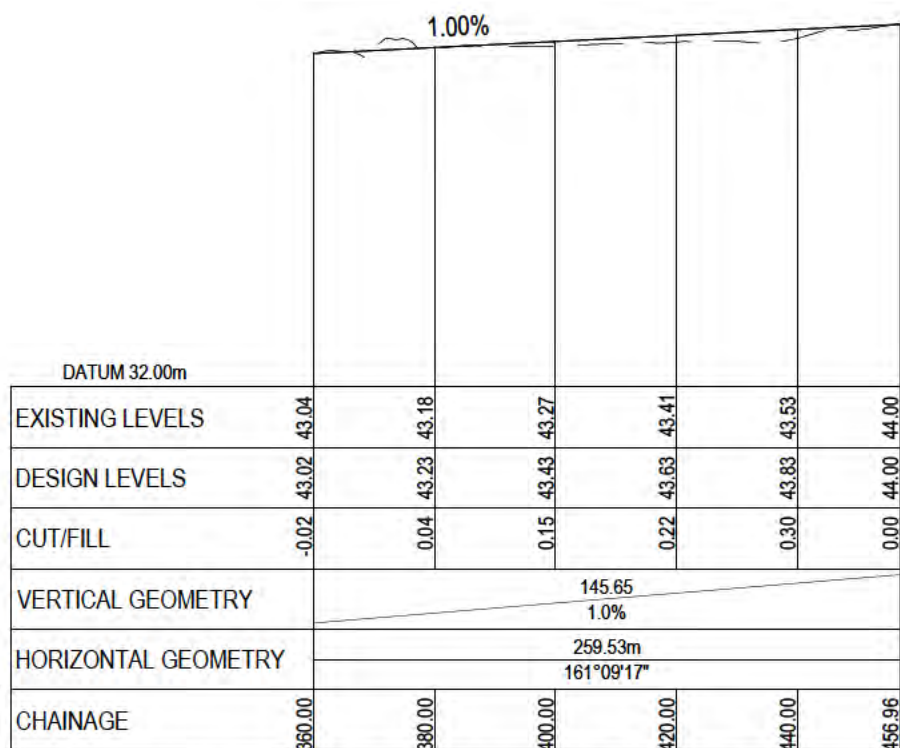
Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
ROADING
LONG SECTION**

Project no.	231001
Scale	AS SHOWN
Cad file	C300-MASTER.DWG
Drawing no.	C316
Rev	A



ROAD 8 LONG SECTION (1 OF 2)
SCALE: HORI 1:1000 VERT 1:200



FOR INFORMATION

ROAD 8 LONG SECTION (2 OF 2)
SCALE: HORI 1:1000 VERT 1:200

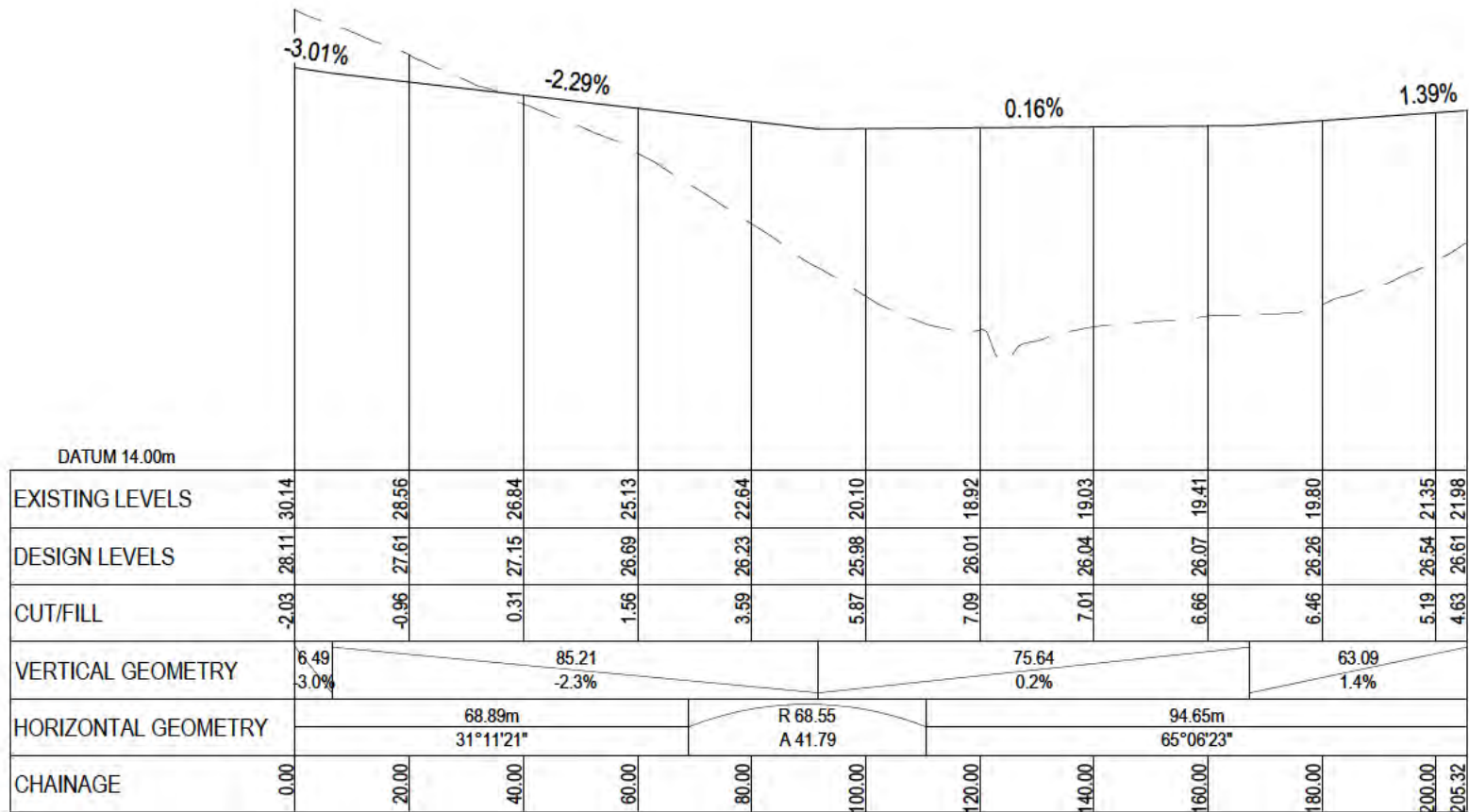
A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
		By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



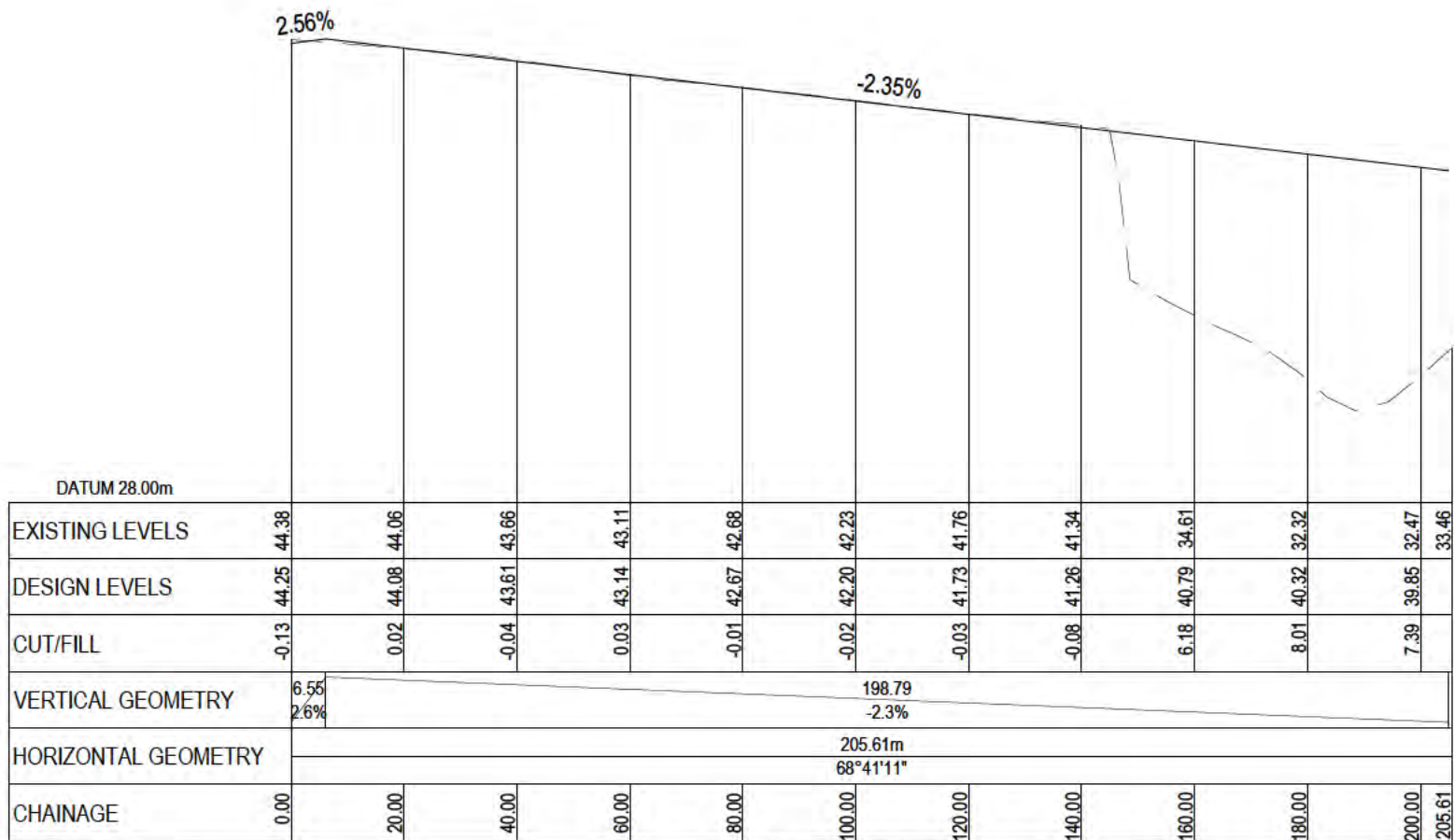
Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
ROADING
LONG SECTION**

Project no.	231001		
Scale	AS SHOWN		
Cad file	C300-MASTER.DWG		
Drawing no.	C317	Rev	A



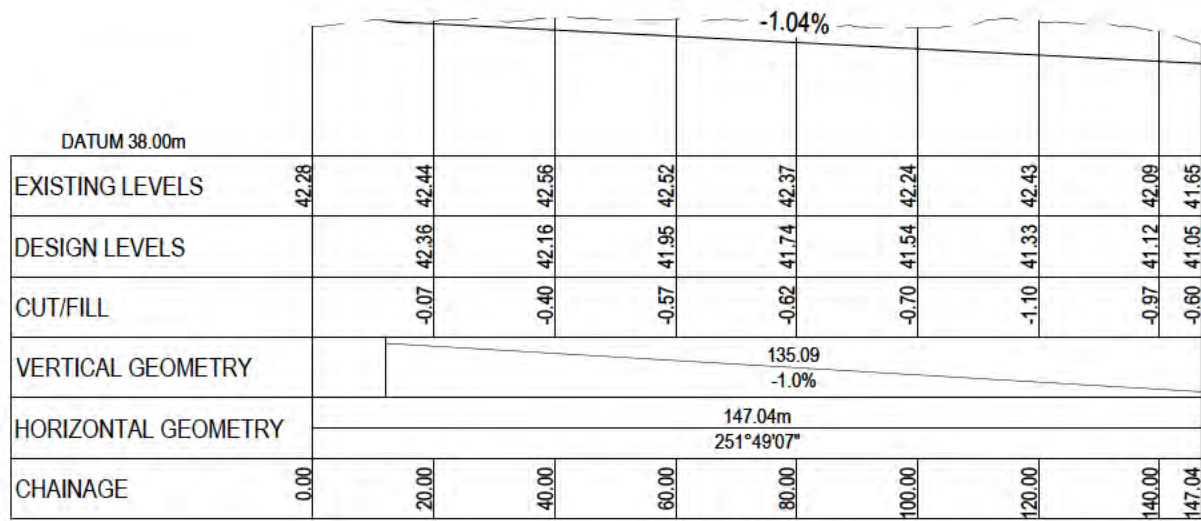
JOAL 1 LONG SECTION
SCALE: HORI 1:1000 VERT 1:200



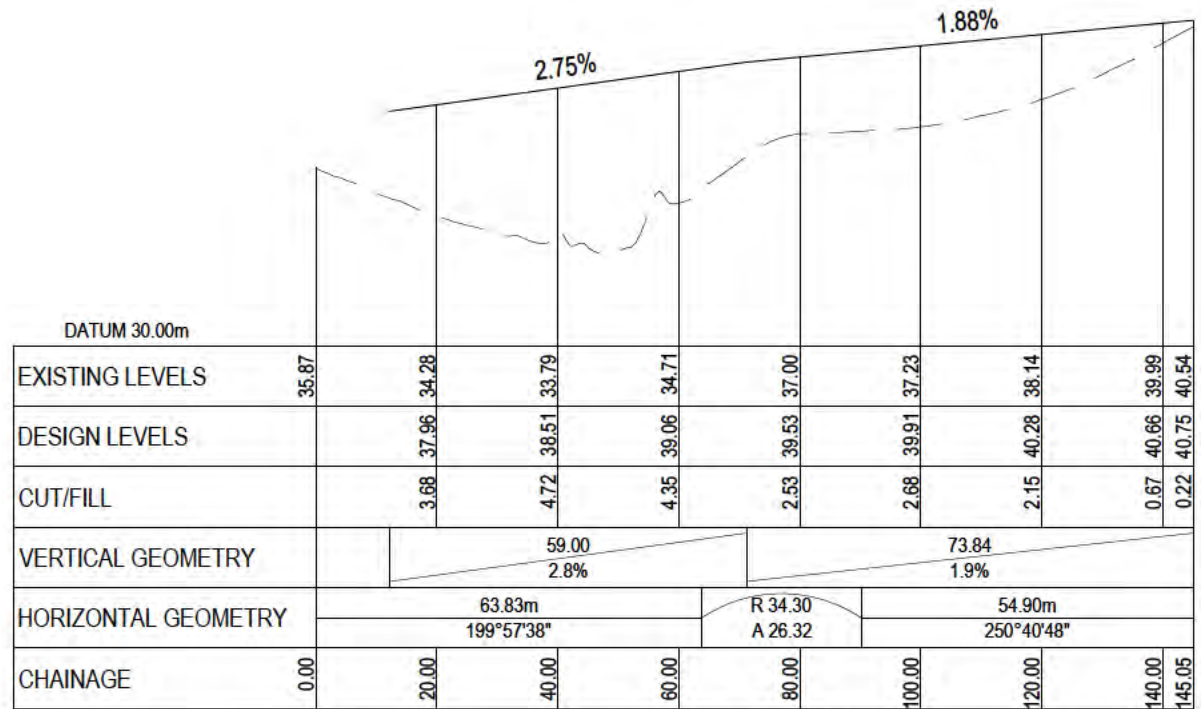
JOAL 2 LONG SECTION
SCALE: HORI 1:1000 VERT 1:200

FOR INFORMATION

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
	Survey		
	Design	JAW	03/2026
	Drawn	JAW	03/2026
	Checked	TM	03/2026
M Maven Associates 09 571 0050 info@maven.co.nz www.maven.co.nz 5 Owens Road, Epsom Auckland 1023			
Project			
PROPOSED SUBDIVISION			
ARARIMU ROAD			
DRURY			
FOR DRURY WEST			
CROSSING LTD.			
Title			
PROPOSED			
JOAL			
LONG SECTION			
Project no.	231001		
Scale	AS SHOWN		
Cad file	C300-MASTER.DWG		
Drawing no.	C318	Rev	A



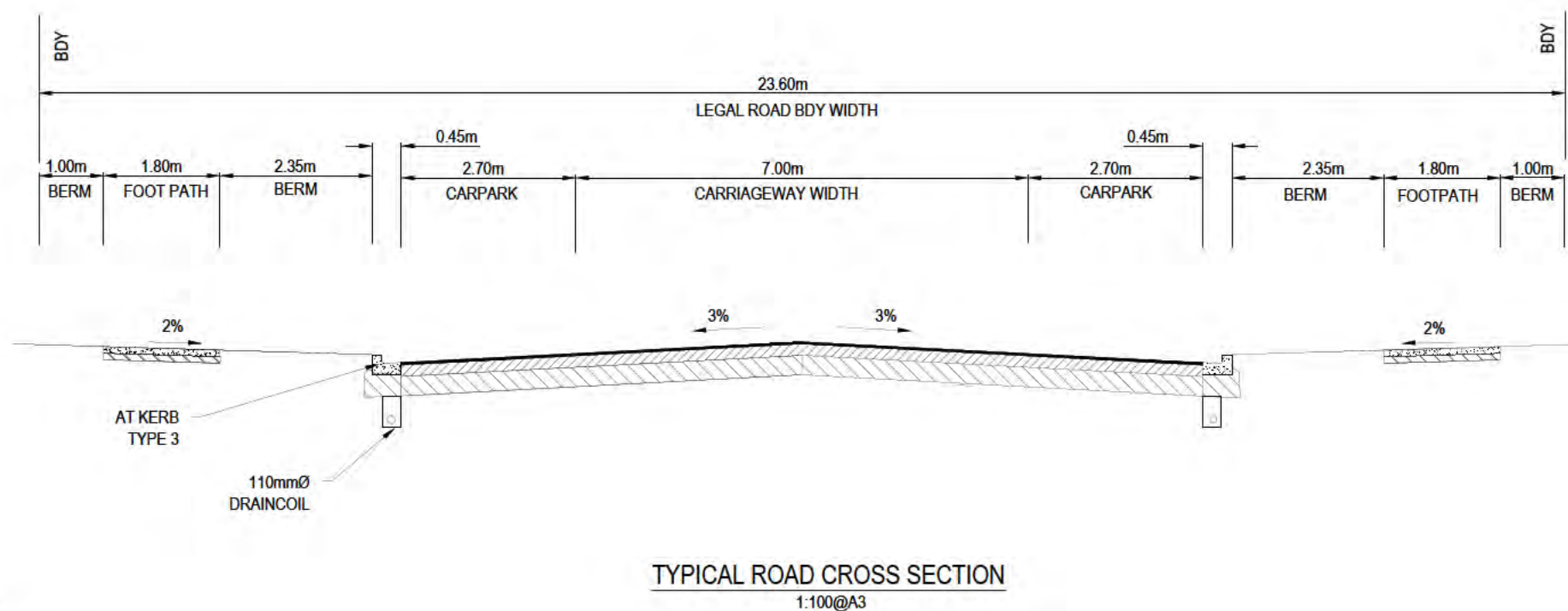
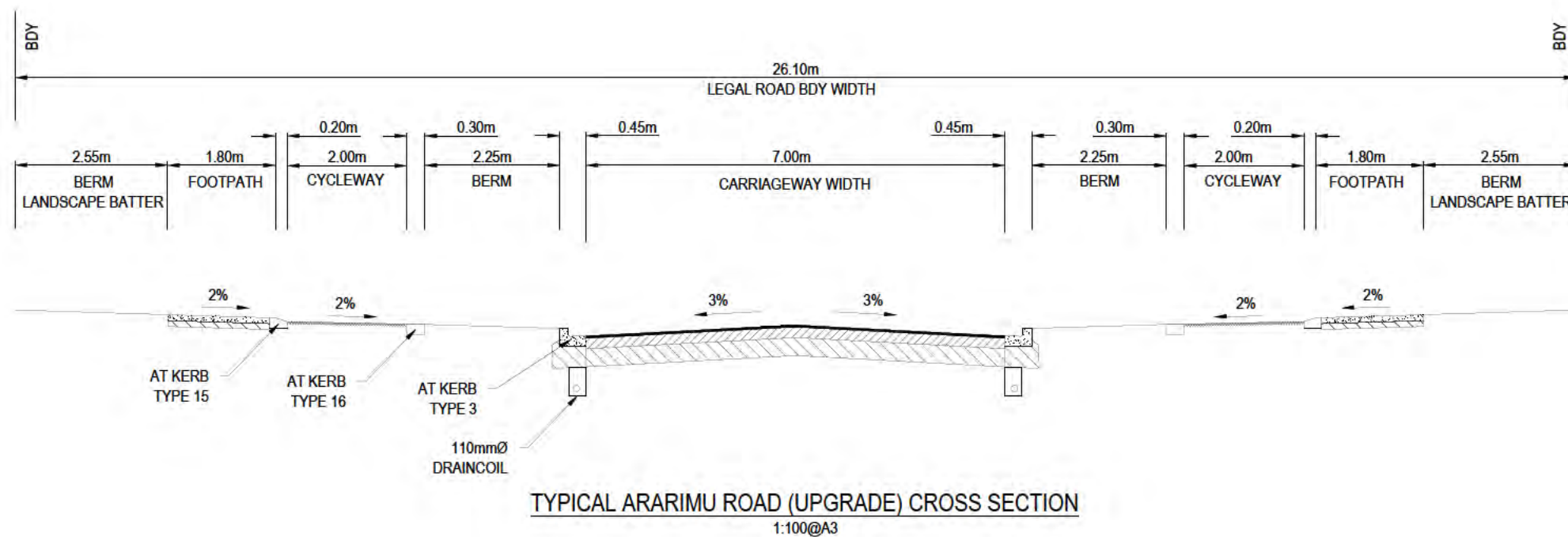
JOAL 3 LONG SECTION
SCALE: HORI 1:1000 VERT 1:200



JOAL 4 LONG SECTION
SCALE: HORI 1:1000 VERT 1:200

FOR INFORMATION

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
	Survey	By	Date
	Design	JAW	03/2026
	Drawn	JAW	03/2026
	Checked	TM	03/2026
M Maven Associates 09 571 0050 info@maven.co.nz www.maven.co.nz 5 Owens Road, Epsom Auckland 1023			
Project			
PROPOSED SUBDIVISION			
ARARIMU ROAD			
DRURY			
FOR DRURY WEST			
CROSSING LTD.			
Title			
PROPOSED			
JOAL			
LONG SECTION			
Project no.	231001		
Scale	AS SHOWN		
Cad file	C300-MASTER.DWG		
Drawing no.	C319	Rev	A



FOR INFORMATION

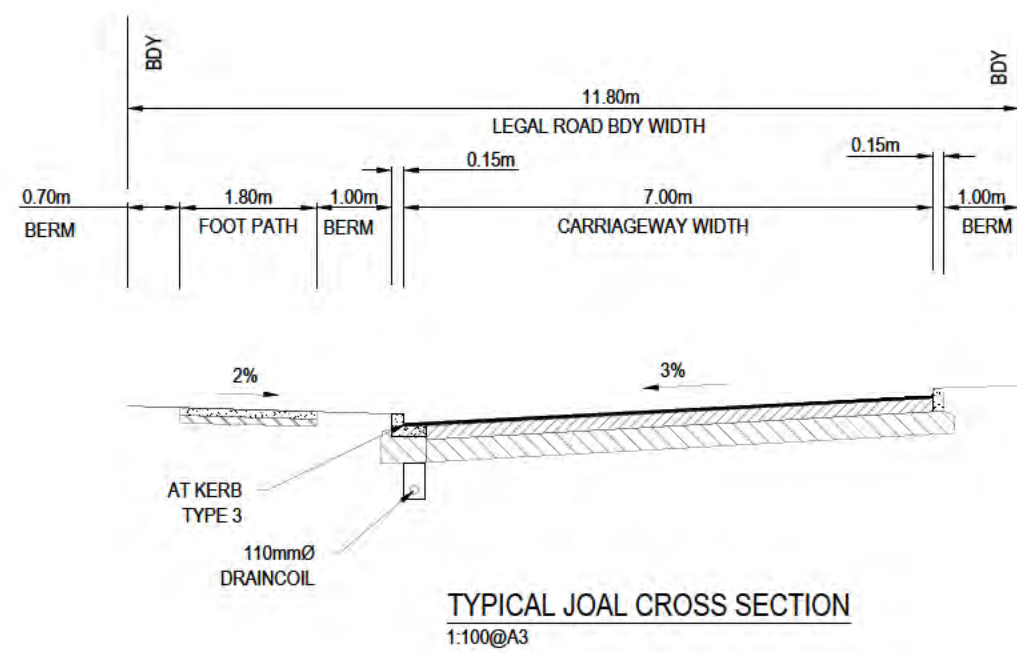
A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
ROADING
LONG SECTION**

Project no.	231001
Scale	AS SHOWN
Cad file	C300-MASTER.DWG
Drawing no.	C330
Rev	A



FOR INFORMATION

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
	Survey		
	Design	JAW	03/2026
	Drawn	JAW	03/2026
	Checked	TM	03/2026
M Maven Associates 09 571 0050 info@maven.co.nz www.maven.co.nz 5 Owens Road, Epsom Auckland 1023			
Project PROPOSED SUBDIVISION ARARIMU ROAD DRURY FOR DRURY WEST CROSSING LTD.			
Title PROPOSED ROADING LONG SECTION			
Project no.	231001		
Scale	AS SHOWN		
Cad file	C300-MASTER.DWG		
Drawing no.	C331	Rev	A



- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL STANDARDS.
 2. COORDINATES IN TERMS OF NZ GEODETIC DATUM MT EDEN 2000. LEVELS IN TERMS OF THE AUCKLAND VERTICAL DATUM 1946.
 3. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY THEIR OPERATIONS.
 4. PIPE BEDDING: 0 - 10% GRANULAR BEDDING, 10 - 20% WEAK CONCRETE BEDDING, GREATER THAN 20% WEAK CONCRETE BEDDING (7MPA PLUS ANTI SCOUR BLOCKS AT 6M CRS).
 5. EACH CONNECTION SHALL BE MARKED BY A 50MMx50MM TREATED PINE STAKE EXTENDING 600MM ABOVE GROUND LEVEL WITH THE TOP PAINTED. THIS MARKER POST SHALL BE PLACED ALONGSIDE A TIMBER MARKER INSTALLED AT THE TIME OF PIPELAYING AND EXTENDING FROM THE CONNECTION TO 150MM BELOW FINISHED GROUND LEVEL. CONNECTIONS SHALL BE ACCURATELY INDICATED ON "AS BUILT" PLANS.
 6. APPROVED HARDFILL IS TO BE USED IN BACKFILLING OF ALL ROAD CROSSINGS AND VEHICLE CROSSINGS TO COUNCIL STANDARDS.
 7. HEAVY DUTY MANHOLE LIDS AND FRAMES TO BE USED IN TRAFFICKED AREAS.
 8. ALL MANHOLES ARE TO BE 1050MM Ø PRECAST CONCRETE UNLESS SHOWN OTHERWISE.
 9. ALL CATCHPIT LEADS SHALL HAVE MIN COVER 1.0M.
 10. ALL LINES TO BE ABANDONED SHALL BE SEALED AT EACH END. TIMING OF ALL SEALING TO BE COORDINATED WITH COUNCIL STAFF.
 11. ALL LOT CONNECTION TO BE MIN 100mm uPVC SN16 UNLESS SHOWN OTHERWISE.

- LEGEND
- EX BDY
 - PR BDY
 - EX STORMWATER
 - PR STORMWATER
 - EX/PR SWMH
 - PR PROPRIETARY DEVICE
 - PR SWCP SINGLE
 - PR SWCP DOUBLE
 - PR LOT CONN
 - PR RAIN GARDEN (TREATMENT)
 - PR RAIN GARDEN (TREATMENT + SMF)

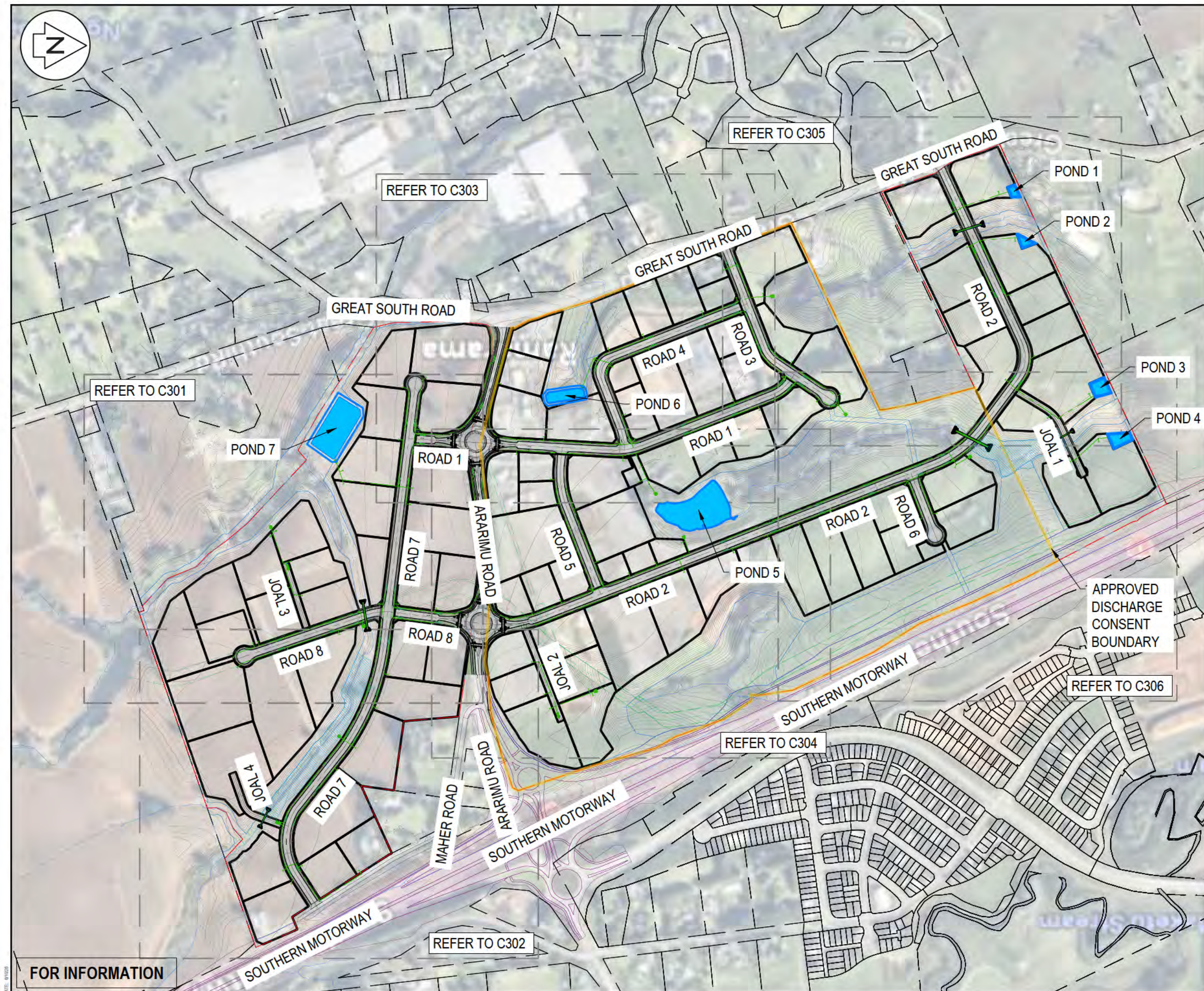
A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	OQ		03/2026
Drawn	OQ		03/2026
Checked	TM		03/2026



Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
STORMWATER
OVERVIEW PLAN**

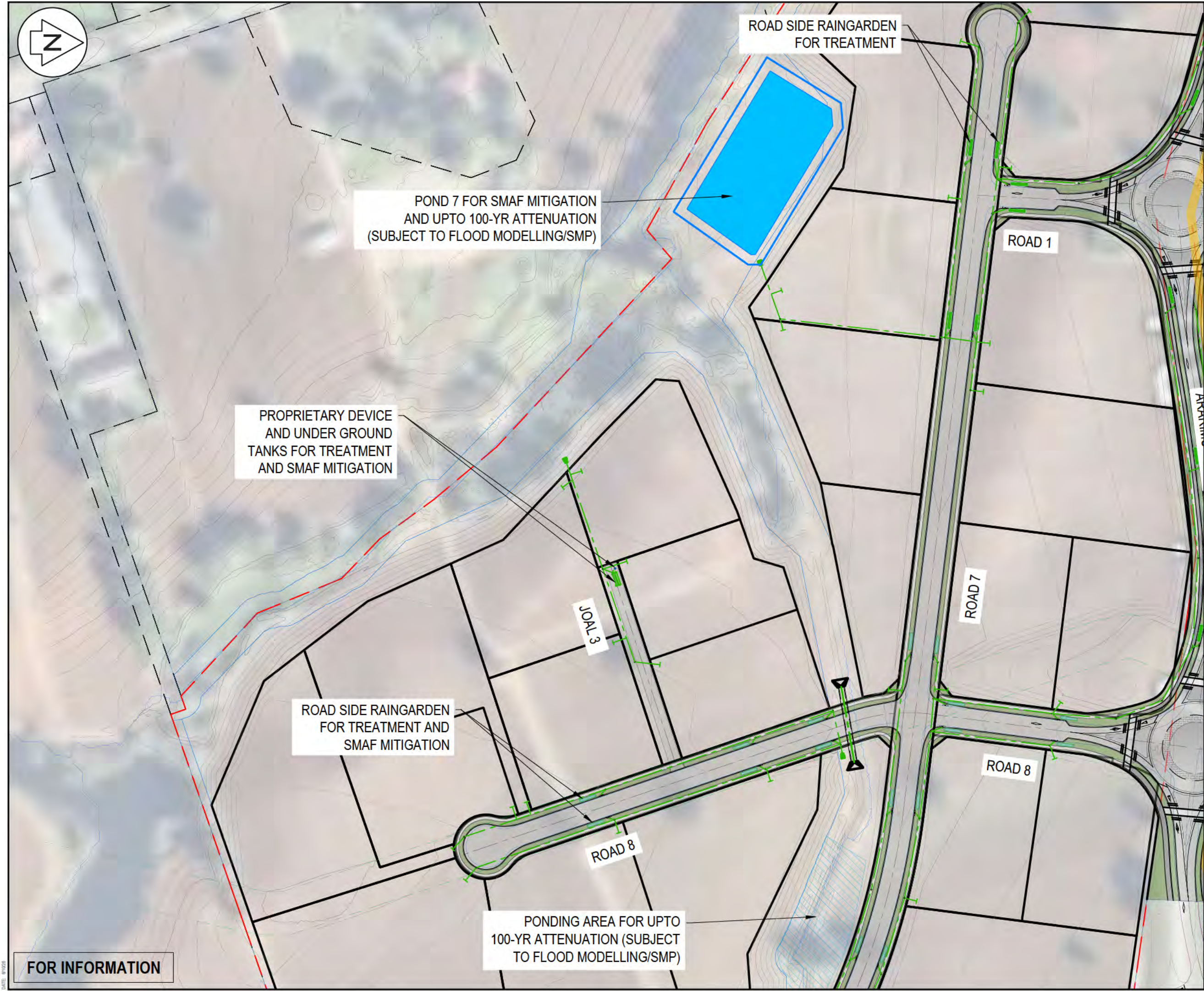
Project no.	231001
Scale	1:6000 @ A3
Cad file	C400-MASTER.DWG
Drawing no.	C400
Rev	A



FOR INFORMATION



NOTES : REFER TO C400



LEGEND

- EX BDY
- PR BDY
- EX STORMWATER
- PR STORMWATER
- EX/PR SWMH
- PR PROPRIETARY DEVICE
- PR SWCP SINGLE
- PR SWCP DOUBLE
- PR LOT CONN
- PR RAIN GARDEN (TREATMENT)
- PR RAIN GARDEN (TREATMENT + SMAF)

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	OQ		03/2026
Drawn	OQ		03/2026
Checked	TM		03/2026

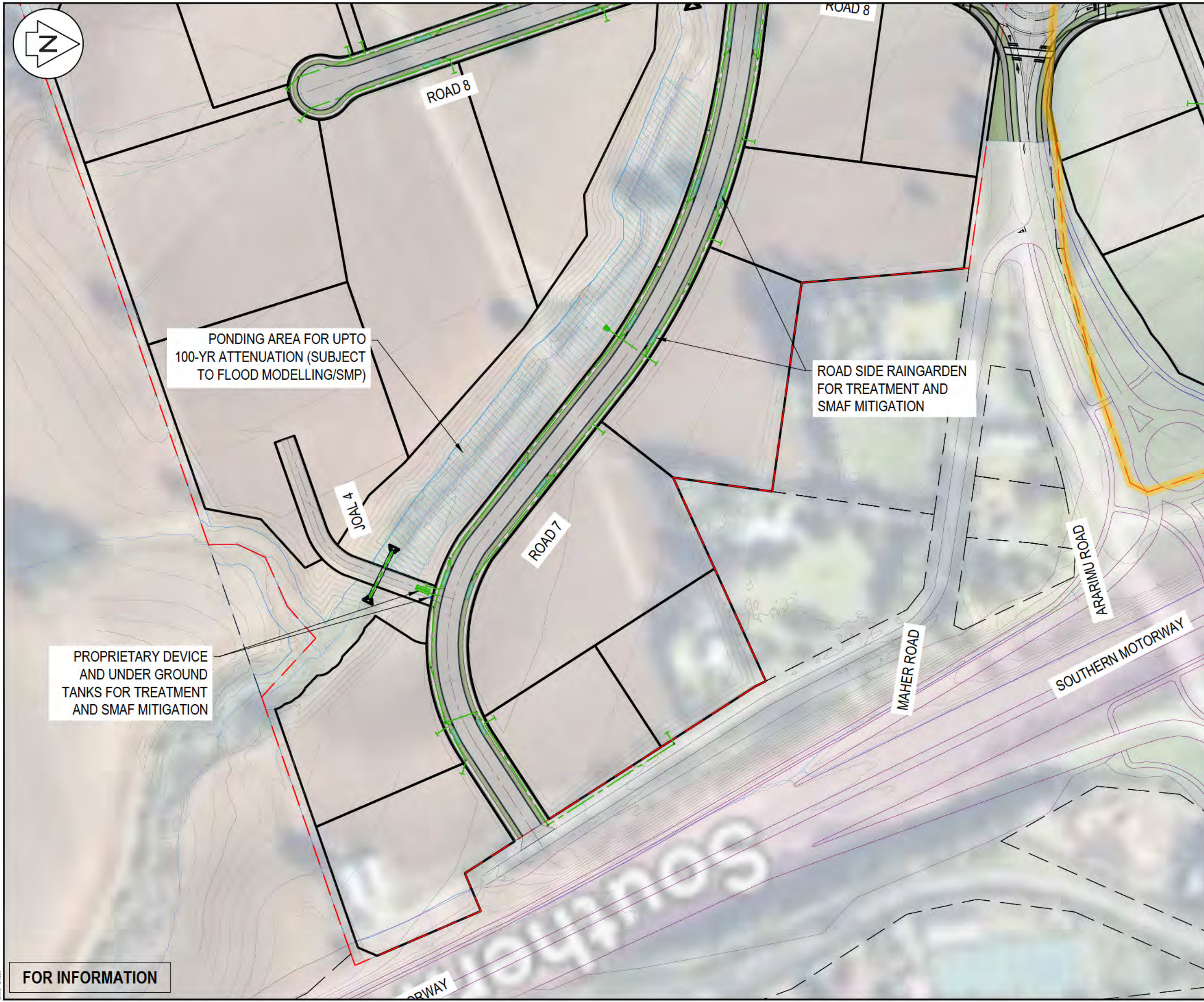


Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
STORMWATER
PLAN**

Project no.	231001
Scale	1:2000 @ A3
Cad file	C400-MASTER.DWG
Drawing no.	C401
Rev	A

FOR INFORMATION



NOTES : REFER TO C400

LEGEND

EX BDY

PR BDY

EX STORMWATER

PR STORMWATER

EX/PR SWMH

PR PROPRIETARY DEVICE

PR SWCP SINGLE

PR SWCP DOUBLE

PR LOT CONN

PR RAIN GARDEN (TREATMENT)

PR RAIN GARDEN (TREATMENT + SMAF)

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	OQ		03/2026
Drawn	OQ		03/2026
Checked	TM		03/2026

M

M A E N

Maven Associates

09 571 0050

info@maven.co.nz

www.maven.co.nz

5 Owens Road, Epsom

Auckland 1023

Project

PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.

Title

PROPOSED
STORMWATER
PLAN

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C400-MASTER.DWG		
Drawing no.	C402	Rev	A

FOR INFORMATION



NOTES : REFER TO C400

POND 6 FOR SMAF MITIGATION
NO ATTENUATION AS PER
APPROVED DISCHARGE CONSENT

ROAD SIDE RAINGARDEN
FOR TREATMENT AND
SMAF MITIGATION

ROAD SIDE RAINGARDEN
FOR TREATMENT

LEGEND

	EX BDY
	PR BDY
	EX STORMWATER
	PR STORMWATER
	EX/PR SWMH
	PR PROPRIETARY DEVICE
	PR SWCP SINGLE
	PR SWCP DOUBLE
	PR LOT CONN
	PR RAIN GARDEN (TREATMENT)
	PR RAIN GARDEN (TREATMENT + SMAF)

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	OQ		03/2026
Drawn	OQ		03/2026
Checked	TM		03/2026



Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
STORMWATER
PLAN**

Project no.	231001
Scale	1:2000 @ A3
Cad file	C400-MASTER.DWG
Drawing no.	C403
Rev	A

FOR INFORMATION

DATE: 01/02/26



NOTES : REFER TO C400

LEGEND

EX BDY

PR BDY

EX STORMWATER

PR STORMWATER

EX/PR SWMH

PR PROPRIETARY DEVICE

PR SWCP SINGLE

PR SWCP DOUBLE

PR LOT CONN

PR RAIN GARDEN (TREATMENT)

PR RAIN GARDEN (TREATMENT + SMAF)

M

M A E N

Maven Associates

09 571 0050

info@maven.co.nz

www.maven.co.nz

5 Owens Road, Epsom

Auckland 1023

Project

PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.

Title

PROPOSED
STORMWATER
PLAN

FOR INFORMATION



NOTES : REFER TO C400

LEGEND

EX BDY

PR BDY

EX STORMWATER

PR STORMWATER

EX/PR SWMH

PR PROPRIETARY DEVICE

PR SWCP SINGLE

PR SWCP DOUBLE

PR LOT CONN

PR RAIN GARDEN (TREATMENT)

PR RAIN GARDEN (TREATMENT + SMAF)

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Survey			
Design	OQ		03/2026
Drawn	OQ		03/2026
Checked	TM		03/2026

M

Maven Associates

09 571 0050

info@maven.co.nz

www.maven.co.nz

5 Owens Road, Epsom

Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
STORMWATER
PLAN**

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C400-MASTER.DWG		
Drawing no.	C405	Rev	A

FOR INFORMATION



NOTES : REFER TO C400

POND 4 FOR SMAF MITIGATION AND UPTO 100-YR ATTENUATION (SUBJECT TO FLOOD MODELLING/SMP)

ROAD SIDE RAINGARDEN FOR TREATMENT AND SMAF MITIGATION

POND 4 FOR SMAF MITIGATION AND UPTO 100-YR ATTENUATION (SUBJECT TO FLOOD MODELLING/SMP)

PONDING AREA FOR UPTO 100-YR ATTENUATION (SUBJECT TO FLOOD MODELLING/SMP)

PROPRIETARY DEVICE FOR TREATMENT SMAF MITIGATION PROVIDED WITHIN POND 4

- LEGEND
- EX BDY
 - PR BDY
 - EX STORMWATER
 - PR STORMWATER
 - EX/PR SWMH
 - PR PROPRIETARY DEVICE
 - PR SWCP SINGLE
 - PR SWCP DOUBLE
 - PR LOT CONN
 - PR RAIN GARDEN (TREATMENT)
 - PR RAIN GARDEN (TREATMENT + SMAF)

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Survey			
Design	OQ		03/2026
Drawn	OQ		03/2026
Checked	TM		03/2026

M **Maven Associates**
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
STORMWATER
PLAN**

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C400-MASTER.DWG		
Drawing no.	C406	Rev	A

FOR INFORMATION



- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL STANDARDS.
 2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MT EDEN 2000. LEVELS IN TERMS OF THE AUCKLAND VERTICAL DATUM 1946.
 3. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY HIS OPERATIONS.
 4. PIPE BEDDING: 0 - 10% GRANULAR BEDDING, 10 - 20% WEAK CONCRETE BEDDING, GREATER THAN 20% WEAK CONCRETE BEDDING (7MPA PLUS ANTI SCOUR BLOCKS AT 6M CRS).
 5. EACH CONNECTION SHALL BE MARKED BY A 50MMX50MM TREATED PINE STAKE EXTENDING 600MM ABOVE GROUND LEVEL WITH THE TOP PAINTED. THIS MARKER POST SHALL BE PLACED ALONGSIDE A TIMBER MARKER INSTALLED AT THE TIME OF PIPELAYING AND EXTENDING FROM THE CONNECTION TO 150MM BELOW FINISHED GROUND LEVEL. CONNECTIONS SHALL BE ACCURATELY INDICATED ON "AS BUILT" PLANS.
 6. APPROVED HARDFILL IS TO BE USED IN BACKFILLING OF ALL ROAD CROSSINGS AND VEHICLE CROSSINGS TO COUNCIL STANDARDS.
 7. HEAVY DUTY MANHOLE LIDS AND FRAMES TO BE USED IN TRAFFICKED AREAS, ALL MANHOLES SHALL HAVE STAINLESS GRATES INSTALLED.
 8. ALL MANHOLES ARE TO BE 1050MMØ UNLESS SHOWN OTHERWISE.
 9. ALL LINES ARE TO BE 150MMØ PVC CLASS SN16 UNLESS SHOWN OTHERWISE.
 10. 150MMØ PIPES THAT DO NOT TERMINATE IN A MANHOLE MUST BE TERMINATED WITH A 100MMØ ON A 150MMØ LONDON JUNCTION AND BLANK CAP.
 11. ALL LINES TO BE ABANDONED SHALL BE SEALED AT EACH END. TIMING OF ALL SEALING TO BE COORDINATED WITH COUNCIL STAFF.

A		FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date	
Survey				
Design	JAW		03/2026	
Drawn	JAW		03/2026	
Checked	TM		03/2026	

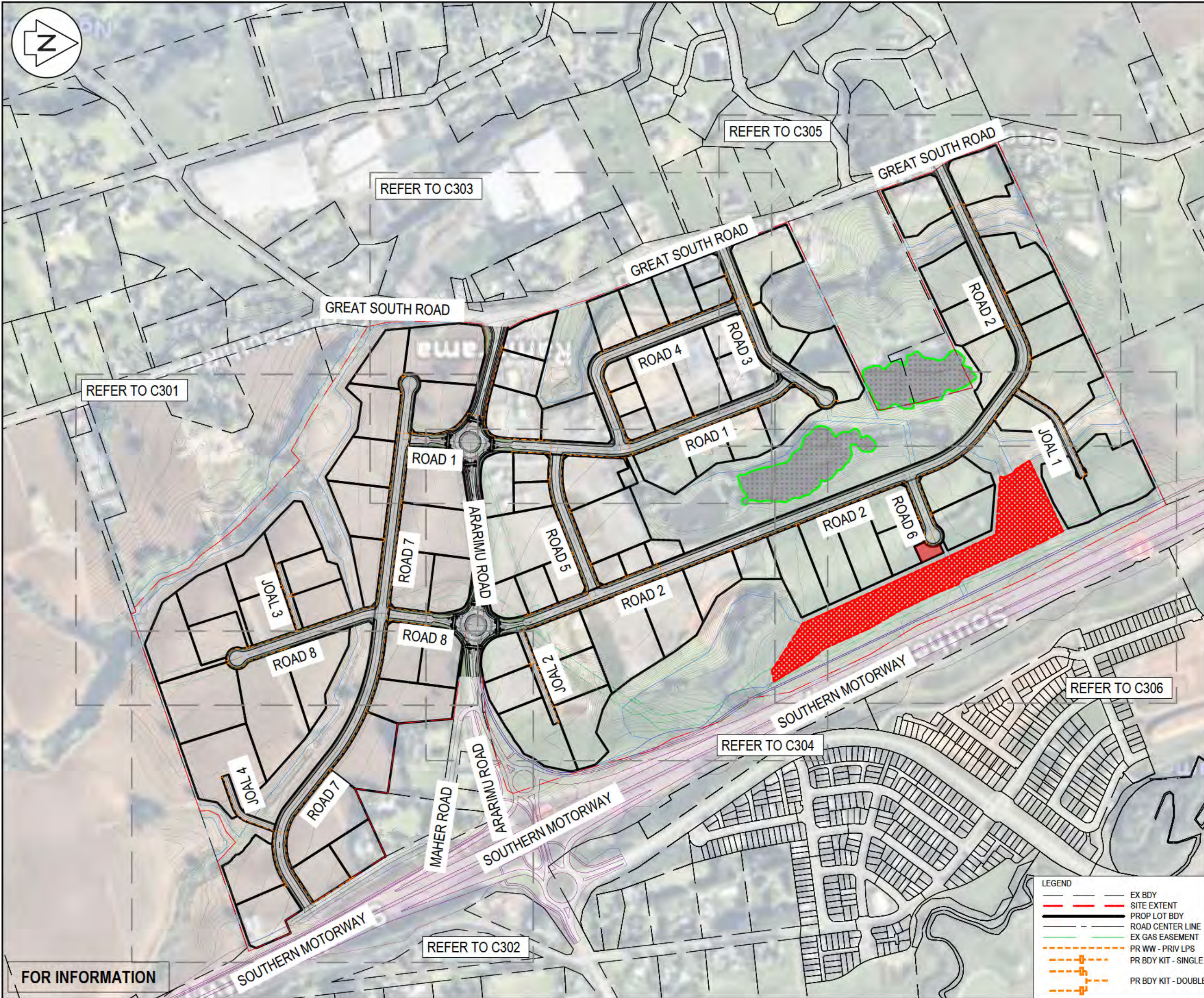


Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
WASTEWATER
OVERVIEW PLAN**

Project no.	231001
Scale	1:6000 @ A3
Cad file	C500-MASTER.DWG
Drawing no.	C500
Rev	A

LEGEND	
	EX BDY
	SITE EXTENT
	PROP LOT BDY
	ROAD CENTER LINE
	EX GAS EASEMENT
	PR WW - PRIV LPS
	PR BDY KIT - SINGLE
	PR BDY KIT - DOUBLE



FOR INFORMATION



NOTES : REFER TO C500

LEGEND	
	EX BDY
	SITE EXTENT
	PROP LOT BDY
	ROAD CENTER LINE
	EX GAS EASEMENT
	PR WW - PRIV LPS
	PR BDY KIT - SINGLE
	PR BDY KIT - DOUBLE

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



Maven Associates
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
WASTEWATER
PLAN**

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C500-MASTER.DWG		
Drawing no.	C501	Rev	A

FOR INFORMATION



NOTES : REFER TO C500

LEGEND	
	EX BDY
	SITE EXTENT
	PROP LOT BDY
	ROAD CENTER LINE
	EX GAS EASEMENT
	PR WW - PRIV LPS
	PR BDY KIT - SINGLE
	PR BDY KIT - DOUBLE

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



Maven Associates
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
WASTEWATER
PLAN**

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C500-MASTER.DWG		
Drawing no.	C502	Rev	A

FOR INFORMATION

DATE: 01/02/26



NOTES : REFER TO C500



LEGEND		
	EX BDY	
	SITE EXTENT	
	PROP LOT BDY	
	ROAD CENTER LINE	
	EX GAS EASEMENT	
	PR WW - PRIV LPS	
	PR BDY KIT - SINGLE	
	PR BDY KIT - DOUBLE	

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026

Maven Associates
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
WASTEWATER
PLAN**

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C500-MASTER.DWG		
Drawing no.	C503	Rev	A

FOR INFORMATION

DATE: 01/03/26



NOTES : REFER TO C500

LEGEND

EX BDY

SITE EXTENT

PROP LOT BDY

ROAD CENTER LINE

EX GAS EASEMENT

PR WW - PRIV LPS

PR BDY KIT - SINGLE

PR BDY KIT - DOUBLE

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026

M

Maven Associates

09 571 0050

info@maven.co.nz

www.maven.co.nz

5 Owens Road, Epsom

Auckland 1023

Project

PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.

Title

PROPOSED
WASTEWATER
PLAN

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C500-MASTER.DWG		
Drawing no.	C504	Rev	A

FOR INFORMATION

DATE: 01/05/26



NOTES : REFER TO C500



LEGEND

---	EX BDY
---	SITE EXTENT
---	PROP LOT BDY
---	ROAD CENTER LINE
---	EX GAS EASEMENT
---	PR WW - PRIV LPS
---	PR BDY KIT - SINGLE
---	PR BDY KIT - DOUBLE

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



Maven Associates
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

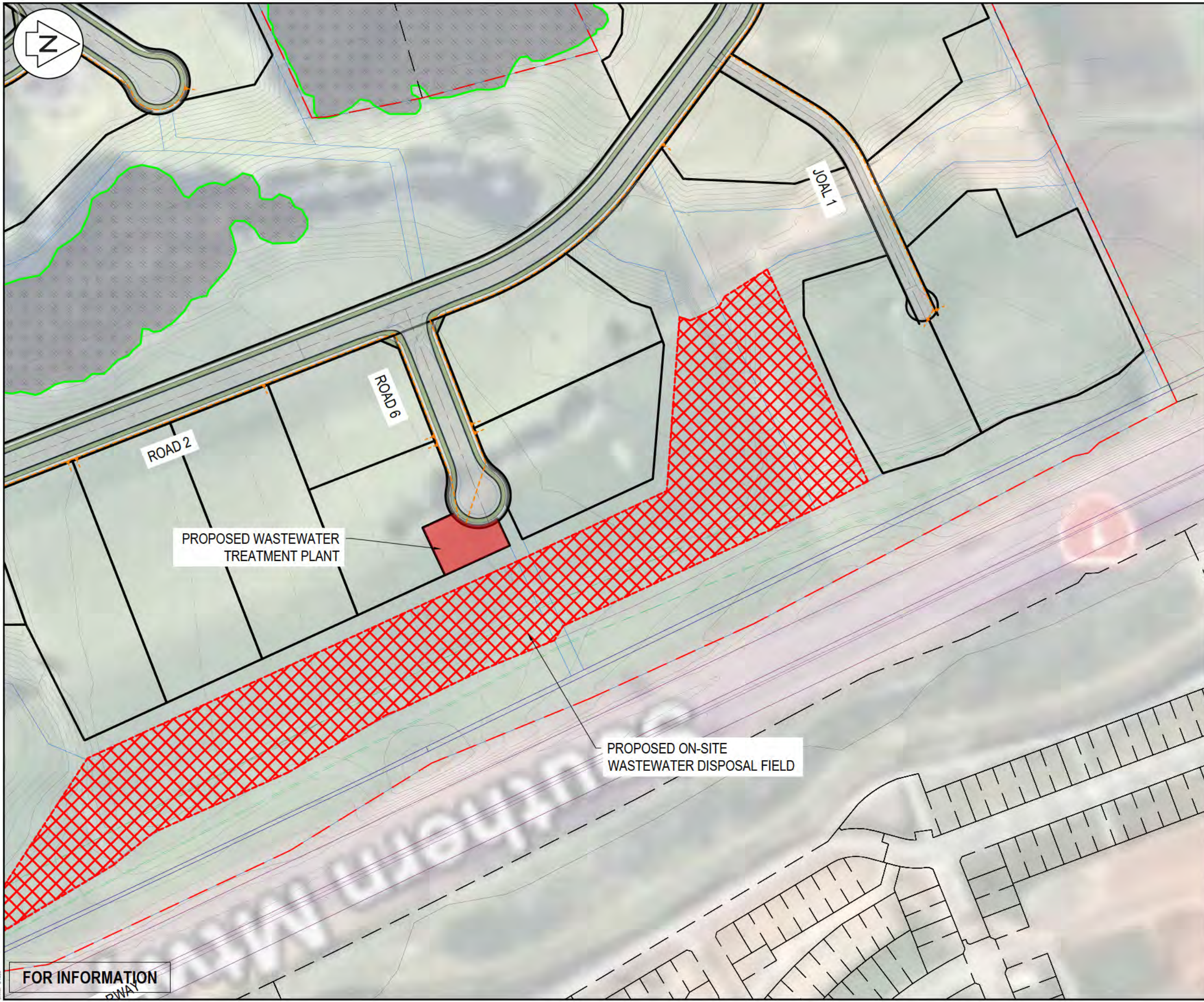
Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
WASTEWATER
PLAN**

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C500-MASTER.DWG		
Drawing no.	C505	Rev	A

FOR INFORMATION

DATE: 01/03/2025



NOTES : REFER TO C500

LEGEND			
	EX BDY		SITE EXTENT
	PROP LOT BDY		ROAD CENTER LINE
	EX GAS EASEMENT		PR WW - PRIV LPS
	PR BDY KIT - SINGLE		PR BDY KIT - DOUBLE

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Survey			
Design	JAW		03/2026
Drawn	JAW		03/2026
Checked	TM		03/2026



Maven Associates
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
WASTEWATER
PLAN**

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C500-MASTER.DWG		
Drawing no.	C506	Rev	A

FOR INFORMATION



- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL STANDARDS.
 2. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ANY UNDERGROUND SERVICES PRIOR TO THE COMMENCEMENT OF WORKS.
 3. MINIMUM COVER SHALL BE:
ROADS & FRONT 1M OF BERM: 900MM
BERMS 600MM
SERVICE CONNECTIONS: 450MM
 4. WATERMAINS LAID ACROSS ROADS SHALL BE BACKFILLED WITH HARDFILL COMPACTED IN 200MM LAYERS ABOVE THE EMBEDMENT MATERIAL.
 5. ALL UPVC PIPE SHALL BE PN12 MINIMUM PRESSURE RATED WITH SPIGNOT AND SOCKET RUBBER RING JOINTS.
 6. ALL PE PIPE SHALL BE PN12.5 MINIMUM PRESSURE RATED WITH BUTT-WELDED. WELD BEADS SHALL BE REMOVED TO PROVIDE A SMOOTH BORE.
 7. ALL NON-METALIC PIPES ARE TO HAVE TRACER WIRE FITTED TO COUNCIL STANDARDS.
 8. PIPES SHALL BE BEDDED AND SURROUNDED TO 150MM ABOVE THE PIPE SOFFIT WITH SAND OR AP20.
 9. METAL DETECTOR TAPE PRINTED WITH "WATER PIPE BELOW" SHALL BE LAID 150MM ABOVE ALL WATERMAINS.
 10. A YELLOW ISOSCELES TRIANGLE WITH CATS EYE POINTING TO FH SHALL BE PAINTED IN THE CENTRE OF ALL SEALED ROADS.
 11. ALL VALVES TO BE MARKED WITH SAWCUT KERB AND BLUE PAINT.
 12. ALL FLANGE JOINTS TO BE PROTECTED WITH DENSO TAPE OR SIMILAR APPROVED BY THE ENGINEER.

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	OQ		03/2026
Drawn	OQ		03/2026
Checked	TM		03/2026

M

M A E N

Maven Associates

09 571 0050

info@maven.co.nz

www.maven.co.nz

5 Owens Road, Epsom

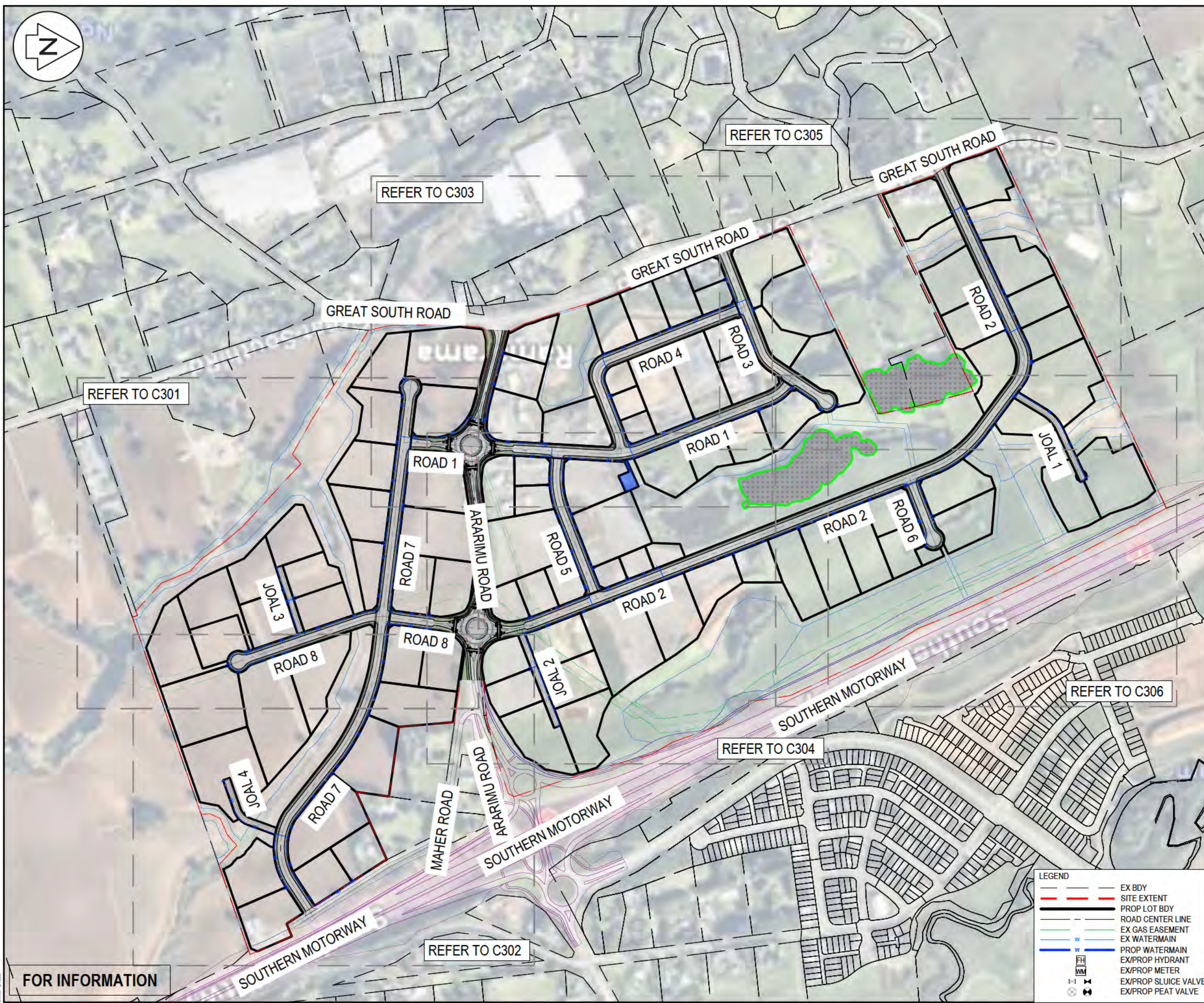
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
WATER SUPPLY
OVERVIEW PLAN**

Project no.	231001
Scale	1:6000 @ A3
Cad file	C600-MASTER.DWG
Drawing no.	C600
Rev	A

- LEGEND
- EX BDY
 - SITE EXTENT
 - PROP LOT BDY
 - ROAD CENTER LINE
 - EX GAS EASEMENT
 - EX WATERMAIN
 - PROP WATERMAIN
 - EX/PROP HYDRANT
 - EX/PROP METER
 - EX/PROP SLUICE VALVE
 - EX/PROP PEAT VALVE



DATE: 01/05/2025



NOTES : REFER TO C600

LEGEND

- EX BDY
- SITE EXTENT
- PROP LOT BDY
- ROAD CENTER LINE
- EX GAS EASEMENT
- EX WATERMAIN
- PROP WATERMAIN
- EX/PROP HYDRANT
- EX/PROP METER
- EX/PROP SLUICE VALVE
- EX/PROP PEAT VALVE

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	OQ		03/2026
Drawn	OQ		03/2026
Checked	TM		03/2026

M **Maven Associates**
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
WATER SUPPLY
PLAN**

Project no.	231001
Scale	1:2000 @ A3
Cad file	C600-MASTER.DWG
Drawing no.	C601
Rev	A

FOR INFORMATION



NOTES : REFER TO C600

LEGEND	
	EX BDY
	SITE EXTENT
	PROP LOT BDY
	ROAD CENTER LINE
	EX GAS EASEMENT
	EX WATERMAIN
	PROP WATERMAIN
	EX/PROP HYDRANT
	EX/PROP METER
	EX/PROP SLUICE VALVE
	EX/PROP PEAT VALVE

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	OQ		03/2026
Drawn	OQ		03/2026
Checked	TM		03/2026



Maven Associates
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
WATER SUPPLY
PLAN**

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C600-MASTER.DWG		
Drawing no.	C602	Rev	A

FOR INFORMATION

DATE: 01/02/26



NOTES : REFER TO C600

LEGEND

---	EX BDY
---	SITE EXTENT
---	PROP LOT BDY
---	ROAD CENTER LINE
---	EX GAS EASEMENT
---	EX WATERMAIN
---	PROP WATERMAIN
---	EX/PROP HYDRANT
---	EX/PROP METER
---	EX/PROP SLUICE VALVE
---	EX/PROP PEAT VALVE

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	OQ		03/2026
Drawn	OQ		03/2026
Checked	TM		03/2026



Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
WATER SUPPLY
PLAN**

Project no.	231001
Scale	1:2000 @ A3
Cad file	C600-MASTER.DWG
Drawing no.	C603
Rev	A

FOR INFORMATION

PROPOSED BORE
WATER SUPPLY

DATE: 01/02/26



NOTES : REFER TO C600

LEGEND	
	EX BDY
	SITE EXTENT
	PROP LOT BDY
	ROAD CENTER LINE
	EX GAS EASEMENT
	EX WATERMAIN
	PROP WATERMAIN
	EX/PROP HYDRANT
	EX/PROP METER
	EX/PROP SLUICE VALVE
	EX/PROP PEAT VALVE

A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	OQ		03/2026
Drawn	OQ		03/2026
Checked	TM		03/2026



Maven Associates
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
WATER SUPPLY
PLAN**

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C600-MASTER.DWG		
Drawing no.	C604	Rev	A

FOR INFORMATION

DATE: 01/02/26



GREAT SOUTH ROAD

ROAD 2

ROAD 3

JOAL 1

NOTES : REFER TO C600

LEGEND

- EX BDY
- SITE EXTENT
- PROP LOT BDY
- ROAD CENTER LINE
- EX GAS EASEMENT
- EX WATERMAIN
- PROP WATERMAIN
- EX/PROP HYDRANT
- EX/PROP METER
- EX/PROP SLUICE VALVE
- EX/PROP PEAT VALVE

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Rev	Description	By	Date
Survey			
Design	OQ		03/2026
Drawn	OQ		03/2026
Checked	TM		03/2026

M

Maven Associates
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
WATER SUPPLY
PLAN**

Project no.	231001		
Scale	1:2000 @ A3		
Cad file	C600-MASTER.DWG		
Drawing no.	C605	Rev	A

FOR INFORMATION

DATE: 01/02/26



NOTES : REFER TO C600

LEGEND

- EX BDY
- SITE EXTENT
- PROP LOT BDY
- ROAD CENTER LINE
- EX GAS EASEMENT
- EX WATERMAIN
- PROP WATERMAIN
- EX/PROP HYDRANT
- EX/PROP METER
- EX/PROP SLUICE VALVE
- EX/PROP PEAT VALVE

Rev	Description	By	Date
A	FOR INFORMATION	OQ	05/2026
Survey	OQ		03/2026
Design	OQ		03/2026
Drawn	OQ		03/2026
Checked	TM		03/2026

M Maven Associates
09 571 0050
info@maven.co.nz
www.maven.co.nz
5 Owens Road, Epsom
Auckland 1023

Project
**PROPOSED SUBDIVISION
ARARIMU ROAD
DRURY
FOR DRURY WEST
CROSSING LTD.**

Title
**PROPOSED
WATER SUPPLY
PLAN**

Project no.	231001
Scale	1:2000 @ A3
Cad file	C600-MASTER.DWG
Drawing no.	C606
Rev	A

FOR INFORMATION