

SOUTHERN LINKS – SL1

STORMWATER MANAGEMENT PLAN

PROJECT INFORMATION

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1. Statement of Experience

Author

I am Min Shon, a Senior Civil Engineer with Maven Waikato Ltd. I hold a Master of Civil Engineering from the University of Auckland and am a Chartered Professional Engineer (CPEng) registered with Engineering New Zealand. I have over six (6) years of professional experience in civil engineering, with particular experience in land development, including earthworks, roading, and three waters infrastructure design.

I confirm that I have read and understood the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023, and agree to comply with its requirements.

I acknowledge that, as an expert, I have an overriding duty to assist the decision-maker impartially on matters within my area of expertise. In preparing this report, I have exercised my independent professional judgement, and the opinions expressed in this report are my own. I understand that my duty as an expert is not to advocate for the interests of the applicant or any other party.

I confirm that the matters addressed in this report are within my area of expertise, except where I expressly identify that I have relied upon information, assessments or opinions provided by others. I have made all reasonable enquiries and have not knowingly omitted any material facts known to me that might alter or detract from the opinions expressed in this report.

Reviewer

My name is Sean McDonald. I am a Senior Engineer and Team Leader at Maven Waikato Ltd ("Maven"), a firm of consulting engineers and surveyors based in Hamilton. I have been employed by Maven since 2025. I hold a Bachelor of Engineering Technology (Highways) which I graduated from in 2006, hold a New Zealand Certificate of Engineering "Civil" (NZCE) and I am a member of Engineering New Zealand.

I have over 29 years' of experience in the field of civil engineering including as a civil engineering technician, New Zealand army engineer, council engineer and consulting engineer, with over 20 years' of experience post degree. Since obtaining my degree I have worked on a variety of civil projects including State Highway works, 3 Waters Infrastructure works, Residential Land Development, Commercial and Industrial Land Development and major Infrastructure projects such as the upgrade of the Port Boteny (Sydney) Naphtha Storage Facilities, the Transpower upgrade and extension of the Whakamuru Substation, the Central Government Rotorua Youth Justice Facility and Contact Energy's new Tauhara Geothermal power station.

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2. Executive Summary

2.1. Purpose and Context

This Stormwater Management Plan (SMP) supports the resource consent application for the Southern Links 1 - Residential development, an approximately 46.2-hectare greenfield site located in the greater Southern Links 1 Growth Cell to the south of Hamilton City, located in the Waipā District, delivering approximately 938 units and a mixed-use commercial hub. The SMP has been prepared in accordance with Waikato Regional Council (WRC) guidelines, the Regional Infrastructure Technical Specifications (RITS V2, 2025) and the Hamilton City Council Draft Mangakōtukutuku Integrated Catchment Management Plan (ICMP) and accompanies the Substantive Application under the Fast-Track Approvals Act 2024.

The site sits within the Mangakōtukutuku catchment, it is bisected by low-lying terrain partially underlain by Holocene Swamp deposits and partially by Hinuera Formation interbedded silt and sand soils. Walton Subgroup forms the base of the hills to the east. Most of the catchment consists of low-lying flat farmland, interspersed with straight artificial farm drains and the Mangakōtukutuku Stream.

2.2. Stormwater Management Objectives

The SMP sets out the best practice approach to stormwater management within the receiving catchment.

Proposed objectives of the SMP are outlined below:

- Manage stormwater runoff in a manner that maintains or improves the hydraulic and environmental performance of the receiving environment.
- Minimise adverse effects of the development on downstream properties, infrastructure, and receiving waters through appropriate stormwater quantity and quality management.
- Incorporate Water Sensitive Urban Design (WSUD) principles, where practicable, to promote sustainable stormwater management and enhance environmental outcomes.
- Provide a stormwater management system that complies with the WRC Stormwater Guidelines, RITS, HCC CoP, and resource consent conditions.
- Deliver an integrated stormwater network that supports the staged development of SL1 while achieving the assessed stormwater management outcomes.

The overall SMP creates a stormwater toolkit, which will guide future development of SL1. The toolkit will promote sustainable solutions including the integration of Water Sensitive Urban Design (WSUD) principles in future land use planning

2.3. Design Philosophy and Statutory Framework

The SMP adopts an integrated treatment-train approach that addresses stormwater quality, quantity, flood management and hydraulic connectivity across the development. The design is outcome-focused and incorporates Water Sensitive Urban Design (WSUD) principles. Key statutory drivers include the Waikato Regional Policy Statement, the Waikato Regional Plan, the National Environmental Standards for Freshwater, RITS, and the WRC Stormwater Management Guidelines (TR20-07).

2.4. The Treatment Train

Stage 1 — On-Lot Retention

Each residential lot is provided with a 5,000L rainwater harvesting (retention) tank for on-lot water re-use to capture roof water, across approximately 938 lots. This provides roughly 4,720m³ of distributed retention over the whole development.

Retention tanks overflows and all on-lot “Hardstand” areas will be directed to a soakage device such as DN900 soak-hole or similar, with each device having an “overflow” 100mmØ lot connection to the piped stormwater infrastructure.

The soak-holes serve a dual function of secondary first flush treatment (after on-lot reuse) prior to entering the piped infrastructure.

Stage 2 — Primary Conveyance

Runoff exceeding the on-lot retention capacity is conveyed via a piped stormwater network sized for the 10-year ARI climate change event. Flows beyond the piped system capacity are conveyed as overland flow within road corridors, designed to safely pass the 100-year ARI climate change event with maximum depths at or below 130 mm and “Depth” x “Velocity” products well within Austroads safety thresholds (< 0.4 m²/s for pedestrians).

Stage 3 — Treatment and Attenuation

Six (6) artificial wetlands (Wetlands A through F) form the primary treatment and attenuation devices. Each wetland incorporates the following:

- A forebay (minimum 10% of wetland area per RITS, 15% of WQV per TR20-07) for sediment capture,
- 2.0m safety bench (1V:8H slope as per RITS)
- Internal bathymetry in accordance with RITS Table 69.
 - Shallow Marsh area approx. 40% of Permanent Storage Zone (PSZ) (+/- 5%)
 - Deep marsh area approx. 40% of PSZ (+/- 5%)
 - Intermediate deep pools approx. 10% of PSZ (+/- 2%)
- An extended detention zone (1.2 × WQV),
- Controlled Outlet structure with Low flow orifice and Spillway.

A flow splitter upstream of each wetland directs flows up to the 2-year event through the treatment system, while higher flows bypass to a high-flow bypass (HFB) channel.

During larger events, the HFB outlet control causes flows to back up and engage the wetland’s flood storage volume, providing attenuation for events up to the 100-year ARI.

Stage 4 — Controlled Discharge

Treated and attenuated flows discharge via controlled outlets to modified and enhanced drains and/or Mangakōtukutuku Stream corridor. Backflow prevention devices are incorporated to prevent reverse flow from the receiving drainage network during elevated downstream water levels. The wetlands are designed to fully drain within 24 hours following the design storm event.

2.5. Flood Modelling and Downstream Effects

A comprehensive 2D flood model was developed using HEC-RAS, with hydrology generated in HEC-HMS using the SCS Curve Number method. The model extends from the upstream contributing catchments through the development site to the downstream Mangakōtukutuku Stream, capturing the full hydraulic system that influences flood behaviour on site. The existing-condition modelling confirms that the site is currently subject to widespread shallow flooding and poorly defined flow paths.

Post-development modelling demonstrates that the proposed stormwater measures effectively mitigate flood impacts. Peak flow rates are reduced at all assessed sections under the 2-year, 10-year and 100-year climate change events.

Catchment	PRE Development Flows (m ³ /s)			POST Development Flows (m ³ /s)		
	2YR	10YR	100YR	2YR	10YR	100YR
A	0.6615	1.14	1.512	0.29	0.45	0.6
B	0.4542	0.78	1.0376	0.25	0.4	0.53
C	0.5418	0.93	1.2	0.25	0.4	0.54
D	0.3819	0.65	0.864	0.188	0.3	0.2
E	0.3968	0.68	0.904	0.21	0.34	0.45
F	0.244	0.42	0.55736	0.205	0.342	0.53
	2.6802	4.6	6.07496	1.397	2.232	2.85

Table 1 – Pre & Post Development Flows

The results indicate that the proposed wetland systems are capable of achieving substantial attenuation of post-development runoff prior to discharge into the existing drainage network.

2.6. Conclusion

The SL1 – Residential Development SMP provides a robust, integrated stormwater management framework that addresses the full spectrum of design responses required by this site. The treatment-train approach achieves compliance with WRC and RITS requirements for both water quality and quantity.

Hydraulic modelling confirms that post-development peak discharges are reduced relative to pre-development conditions across all design events, and overland flow paths safely convey extreme events within road corridors. The system is financially sustainable, operates entirely by gravity and is structured to be delivered incrementally alongside the staged development programme. Residual matters for detailed design include detailed refinement of wetland bathymetry, confirmation of soakage rates beyond perched layers, finalisation of culvert and bridge design details and ongoing engagement with WRC, HCC, WDC and local Iwi. None of these are considered impediments to the feasibility of the stormwater strategy.

3. Introduction

3.1. Overview

This Stormwater Management Plan (SMP) outlines the proposed management of stormwater for the proposed development of the SL1 – Residential Development located at 37A Saxby’s Road, Hamilton.

This SMP is intended to be read in conjunction with the Stormwater Assessment Report (SAR) that covers the overall details of the stormwater management principles, compliance with relevant technical and legal requirements and overall effects of the proposed stormwater flood modelling results on the proposed development and surrounding environment. This SMP shall also be read in accordance with Engineering drawings, particularly Stormwater C400 series, and engineering calculations.

This SMP provides more detailed information on the technical aspects of the SAR stormwater management philosophy and demonstrates how the stormwater-related resource consent conditions will be implemented and complied with during the development of the site.

3.2. Objectives

The SMP sets out the best practice approach to stormwater management within the receiving catchment.

Proposed objectives of the SMP are outlined below:

- Manage stormwater runoff in a manner that maintains or improves the hydraulic and environmental performance of the receiving environment.
- Minimise adverse effects of the development on downstream properties, infrastructure, and receiving waters through appropriate stormwater quantity and quality management.
- Incorporate Water Sensitive Urban Design (WSUD) principles, where practicable, to promote sustainable stormwater management and enhance environmental outcomes.
- Provide a stormwater management system that complies with the WRC Stormwater Guidelines, RITS, HCC CoP, and resource consent conditions.
- Deliver an integrated stormwater network that supports the staged development of SL1 while achieving the assessed stormwater management outcomes.

The overall SMP creates a stormwater toolkit, which will guide future development of SL1. The toolkit will promote sustainable solutions including the integration of Water Sensitive Urban Design (WSUD) principles in future land use planning

3.3. Site

The SL1 – Residential area is a circa 46.2ha block of land within the Waipā District and is contiguous with Hamilton City Council’s southwestern boundary. The current site access is through Saxby’s Road in Hamilton. The site adjoins existing residential houses to the north, and the remainder of the site is surrounded by agricultural land. The site is predominantly utilised for pastoral grazing, with land cover comprising maintained grassland consistent with agricultural use.

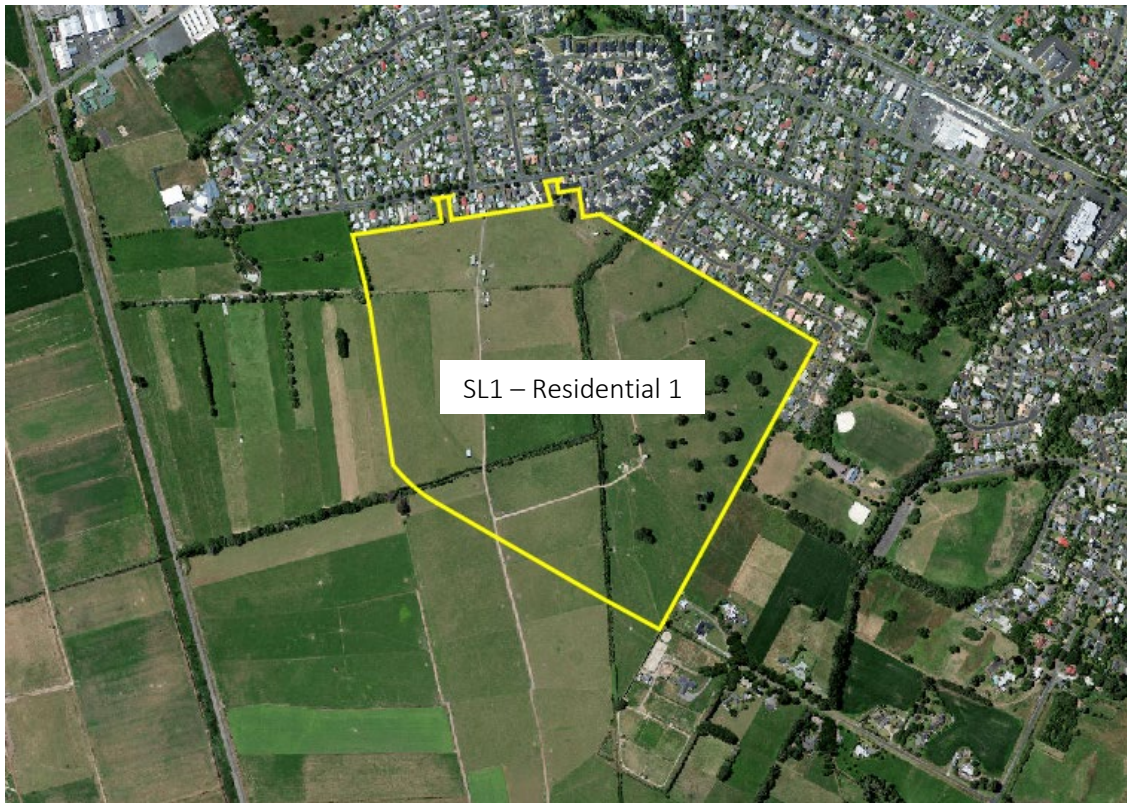


Figure 1: Site Locality



Figure 2: Proposed Master Plan



Figure 3: Indicative Development Staging Plan

3.4. Catchment

The Project forms a part of wider SL1 Growth Cell. The SL1 Growth Cell area is a circa 500ha block of land within Waipā District. The Residential Development area has a northwest to southeast orientation within Saxbys Road, and Reynolds Drive bordering HCC boundary consisting of approx. 46.2ha of land. Most of the catchment is low-lying flat farmland, interspersed with straight artificial farm drains and Mangakōtukutuku Stream.

The Mangakōtukutuku Stream enters the site from south-west flowing towards north-east, meandering through the Residential Site dividing it in two areas, east and west. This allows major catchment flows through the Residential Site that is managed within the stream.



Figure 4: Existing Site Stormwater Layout

4. Residential Development

This SMP relates solely to the Residential Development. The Residential Development area has been subdivided into a number of stormwater catchments and sub-catchments to support the assessment of stormwater quality, quantity, hydraulic connectivity, and flood management requirements.

Spanning approximately 46.2 ha, the Residential Development includes approximately 938 lots designed with mix of housing typologies and densities.

The key feature of the development is integrated 'Treatment train' approach utilising artificial wetlands, forebays, high flow bypass to convey and attenuate overflows from the road and lot areas releasing at 80% of pre-development flows into the Mangakōtukutuku stream.

4.1. STAGING, TIMING, RESPONSIBILITY AND FUNDING

Key stormwater infrastructure elements, including on-lot tanks, artificial stormwater wetland, high flow bypass systems, forebay and primary conveyance system (pipe or overland), form the stormwater management system proposed. The proposed infrastructures provide both treatment (quality), conveyance and flow control and attenuation in line with ICMP requirements.

The development will be undertaken in stage phases, with each stage designed to operate independently while maintaining consistency with the overall stormwater management strategy outlined in this SMP.

Each stage will incorporate the required/necessary proposed infrastructure to manage its runoff generate within that stage without reliance on future stages (Refer to Infrastructure Report section 4.2), while also maintaining continuity of flow from upstream catchment runoff conveyed through the site and existing drains.

Where practicable, key elements of the primary stormwater network, including diversion channels and downstream wetlands, will be constructed early to support both interim and eventual main stormwater management.

Interim stormwater management measures, such as temporary swales, bunds conveyance routes for flows, will be implemented during construction to maintain existing drain and direct flows through and around the site during earthworks. These measures will be progressively replaced by permanent infrastructure as development proceeds.

The proposed staging approach has been developed to align with Section 7.3, Waikato stormwater management guideline TR20-07 along with the Mangakōtukutuku ICMP.

4.2. COSTS, FUNDING AND VESTING ASSETS

The construction of the proposed stormwater management devices will be undertaken by the consent holder. The proposed stormwater infrastructure includes public piped networks, wetlands, and private property devices such as on lot Retention Tanks and soak-holes

The public assets will be vested to council at the appropriate time as the development progresses.

Private assets will remain in private ownership where appropriate legal instruments will be set up to ensure ongoing operation and maintenance responsibilities are with the owners.

Public stormwater assets, including primary pipe networks, wetland will be vested to council, subject to compliance with the engineering approval process.

Private stormwater infrastructure, such as on lot retentions will remain in private ownership with ongoing operation and maintenance to be made available for eventual property owners.

The locations, function, and overall configuration of the stormwater management system, including wetlands, diversion channels, and the primary piped network, are confirmed as part of the proposed development. Final detailed design of internal artificial wetland bathymetry, inlet and outlet structures, and other detailed engineering components will be refined during the detailed design phase in consultation with Hamilton City Council and Waikato Regional Council, where required, and will be subject to the engineering approval process.

4.3. OPERATIONS AND MAINTENANCE PLAN

A Stormwater Operations and Maintenance Plans is provided for all stormwater management devices that will be vested to Council(s). Refer to Maven's SL1 - Residential SW Device Operations and Maintenance Plan report.

4.4. GEOTECHNICAL ASSESSMENT

A geotechnical investigation was undertaken by CMW Geosciences for the Southern Links Stage 1 Residential Development to assess subsurface ground conditions across the site. The investigation comprised thirteen hand-auger boreholes advanced to depths of approximately 1.5m to 2.0m below existing ground level.

The investigation identified soils associated with the Hinuera Formation, generally comprising a thin topsoil layer overlying varying sequences of silt, clayey silt, silty sand, and well-graded sand. Sandy horizons were encountered across much of the site, although localised areas of silt and clayey soils were also recorded.

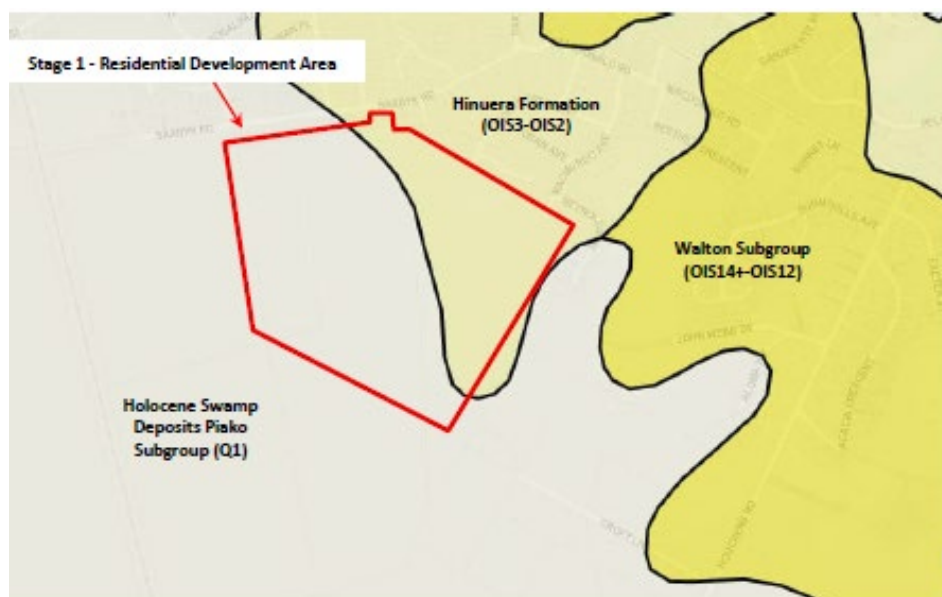


Figure 6: Excerpt from Geotech Report

Groundwater was encountered at a limited number of locations at depths ranging between approximately 1.4 m and 2.0 m below ground level, while the majority of investigation locations did not encounter groundwater within the depth of investigation.

The geotechnical investigation indicates that subsurface conditions vary across the site, with predominantly sandy and silty soils present. The findings of the investigation have informed the layout and design of the proposed stormwater infrastructure presented in this report. Detailed design will incorporate the geotechnical recommendations to refine engineering details, such as foundation requirements and construction methodologies.

5. EXISTING CATCHMENT CONTEXT

5.1. EXISTING CALCULATION PARAMETERS

The design and calculation assumptions used for pre-development are outlined in the Table 4 below. These values were established using the available GIS/aerial view, topographical site survey, geotechnical report, and NIWA-HIRDS.

<u>Pre-Development CN (Runoff Curve Number)</u>	
Pervious	Impervious
89	98
<u>Pre-Development 24hr Rainfall Depth (mm)</u>	
10yr	100 yr
99.2	152
<u>Climate change RCP 8.5 24hr Rainfall Depth (mm)</u>	
10yr CC	100 yr CC
131	204

Table 1: Design Parameters

With respect to rainfall data, two predevelopment scenarios have been adopted in this Stormwater Management Plan, depending on the purpose of the assessment;

1. **Design and sizing of stormwater mitigation devices** (Section 6). Pre-development data used when designing and sizing of proposed devices uses historical rainfall event data without climate change. Refer to Table 4 above.
2. **Flood sensitivity Analysis** (Stormwater Assessment Report). The assessment of effects on the surrounding environment adopts RCP8.5 climate change projections for the existing scenario, consistent with the proposed (post-development) scenario. This enables a like-for-like comparison of impacts using the same design events to quantify relative effects.

5.2. EXISTING OVERALL CATCHMENT

Most of the existing catchment is low-lying flat farmland, interspersed with straight artificial farm drains and Mangakōtukutuku Stream.

The Mangakōtukutuku Stream enters the site from south-west flowing towards north-east, meandering through the proposed site and dividing the site in two areas, east and West. This allows major catchment flows through the site that is managed within the streams, refer to figure 7 below.

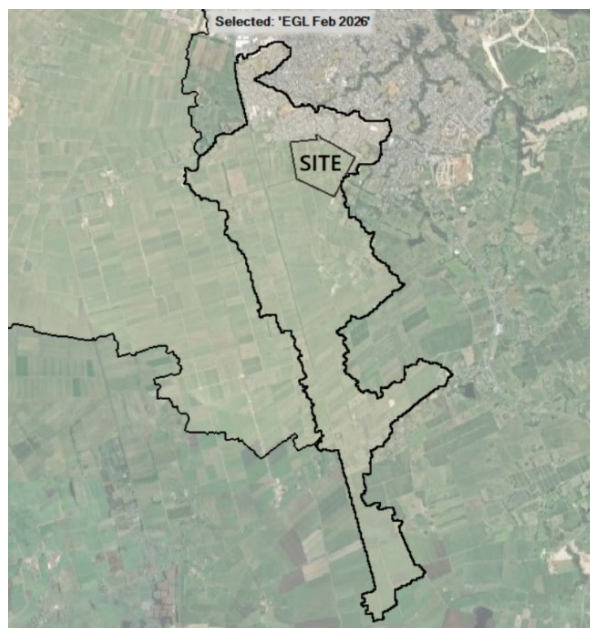


Figure 7: Existing 100YR Catchment

The catchment above has been delineated using HEC-HMS V3.12 based on a 1m grid from LINZ data as detailed below.

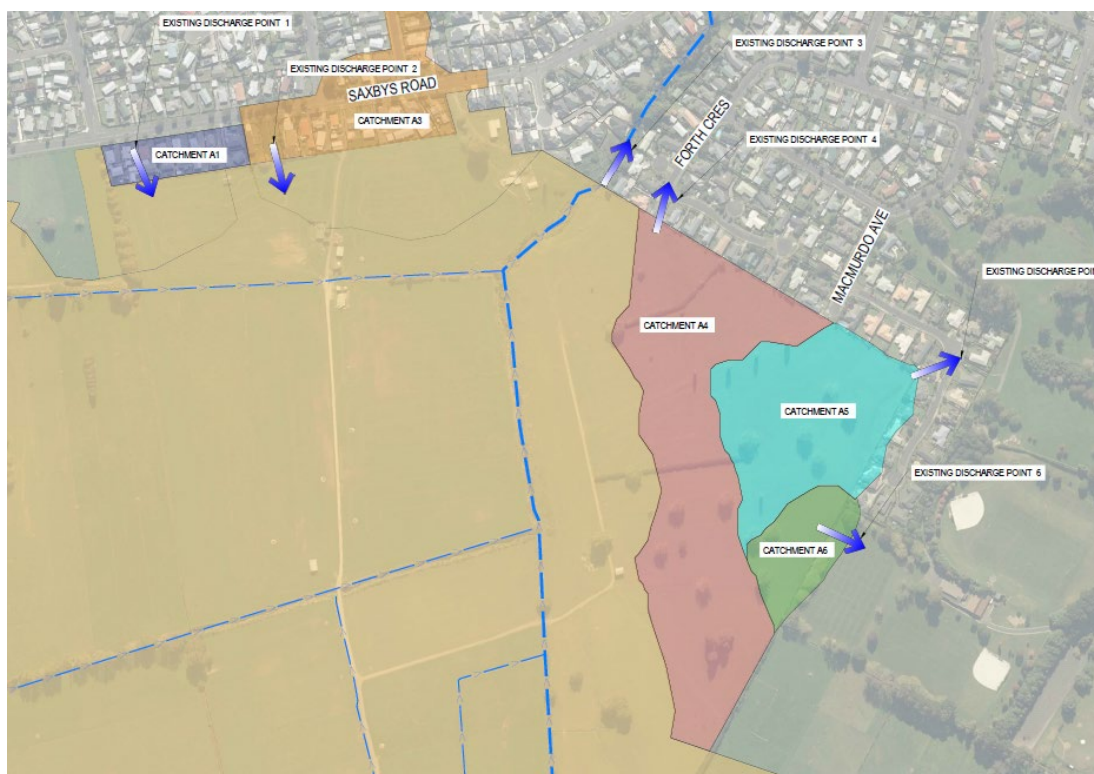


Figure 8: SL1 Residential Existing 100YR Catchment

Catchment desktop study identifies that there are 4 main discharge points, discharging downstream of the site.

The existing catchment comprises a combination of local site runoff and significant upstream contributing catchments draining through the Mangakōtukutuku Stream and associated drainage channels. Understanding these existing flow paths and discharge locations is critical to ensuring future

development does not adversely affect upstream or downstream flooding. Accordingly, catchment delineation and hydrological modelling were undertaken to establish baseline flow conditions and inform the proposed stormwater management strategy.

Existing catchment flows were determined using HEC-HMS, with hydrological inputs developed from the TR20 worksheets. Table 1 summarises the modelled existing peak flows, which currently discharge to the existing drain. Runoff from external catchments has not been included in the assessment, as these flows are outside the development catchment and continue to discharge directly to the existing drainage system.

Table 5 – Pre Development Flows

Catchment	Pre Development Flows		
	2YR	10YR	100YR
A	0.6615	1.14	1.512
B	0.4542	0.78	1.0376
C	0.5418	0.93	1.2
D	0.3819	0.65	0.864
E	0.3968	0.68	0.904
F	0.244	0.42	0.55736
	2.68 m³/s	4.6 m³/s	6.07 m³/s

6. Design Approach

The design approach provides for the conveyance of stormwater through the site and discharge at the target rates summarised below.

- Retention of the initial abstraction depth (10 mm) shall be provided via on-lot retention tanks to provide the overall site retention.
- Water Quality Volume (WQV) shall be treated through the artificial stormwater wetlands in accordance with RITS requirements.
- Extended detention (ED) of the WQV shall be provided within the artificial wetlands in accordance with RITS requirements.
- The 2-year and 10-year Annual Recurrence Interval (ARI) events shall be conveyed via the piped stormwater network and attenuated within the proposed artificial wetlands.

The 100-year ARI event shall be conveyed via road corridors as overland flow and directed to the proposed artificial wetlands, where it shall be attenuated to no more than 80% of the pre-development discharge rate.

6.1. DESIGN PARAMETERS

Rainfall information from the NIWA High Intensity Rainfall Design System V4 (HIRDS) has been used for the site location including an allowance for climate change.

The design shall be based on the following parameters.

- Rainfall Data – NIWA cc adjusted using RITS RCP8.5 2100-2120 (climate change 4 degrees)
- Rainfall data distribution – using Normalised 24hr temporal rainfall intensity (Climate change 3.8degrees)
- Runoff Method: SCS CN – CN used as advised by Geotech and as per Geotech Report.
- Design Events assessed: 2, 10 and 100year existing/historical and RCP8.5 2100-2120

Table 6 – HIRDS hydrology Data

Rainfall Event	Historical Rainfall Depth	RCP 8.5 Rainfall Depth	RCP8.5 Rainfall Intensity
2 Year ARI	65.6mm	84mm	-
WQV		28mm	-
10 Year ARI	99.2mm	131mm	137mm/hr
100 Year ARI	152mm	204mm	-

Table 7 – CN Values

Scenario	Impervious (CN)	Pervious (CN)
Pre Development	98	89
Post Development	98	85

Maximum probable development (MPD) = 70% impervious and 30% pervious as per the draft ICMP, refer to image below.

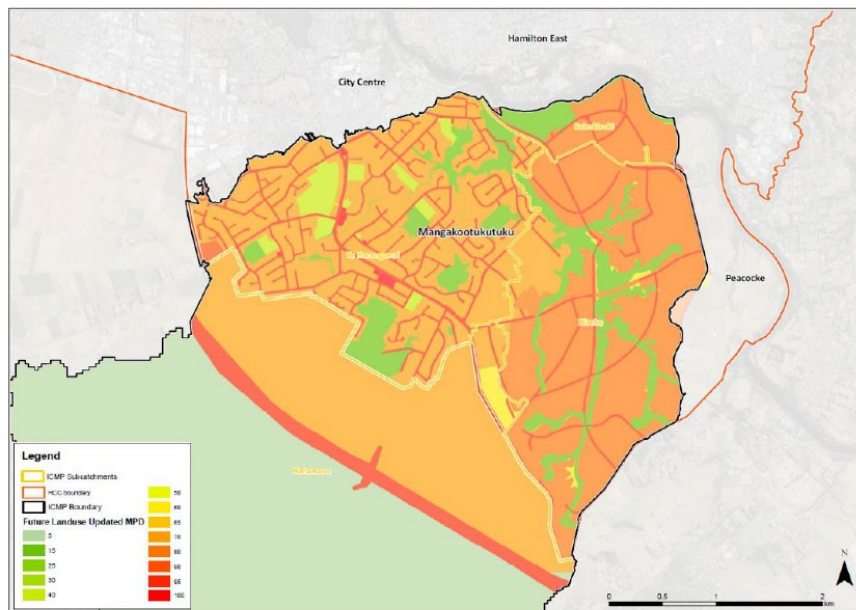


Figure 27: Impervious Percentage Assumptions for Maximum Probable Development, and Hypothetical Development in Hahawai Sub-catchment.

Figure 9: ICMP excerpts showing MPD for the proposed site

6.2. HYDRAULIC CONNECTIVITY

Hydraulic connectivity across the site is maintained through retention of the Mangakōtukutuku Stream corridor and associated drainage channels. As part of the proposed development, diversion channels are proposed to intercept and convey upstream catchment flows through the development while maintaining existing discharge locations. Proposed artificial wetland systems and culvert crossings have been integrated into the drainage network to ensure flood conveyance and stormwater attenuation objectives are achieved without adversely affecting upstream or downstream hydraulic conditions.

Stormwater management for the developments will include several devices which are considered as water sensitive design elements. These include the following:

- Central Stormwater Reserve along Mangakōtukutuku Stream corridor
- Modified drains/channels with landscaping
- Artificial Stormwater Wetlands, Forebay and spillway
- High flow bypass.
- On-lot stormwater Retention through tanks with overflow into the primary system.
 - With soakage devices where viable
- Protection of existing bush and covenant features
- Planting of riparian areas as per Landscape Values Assessment by B&A

The Water Quality Volume (WQV) is treated at source for on Lot areas. Overflows above the 2-year ARI cc event are directed to Artificial Wetlands. The proposed stormwater solution ensures stormwater is being treated before discharging into the receiving environment.

The General Layout and approach for stormwater design throughout the site is as shown below.

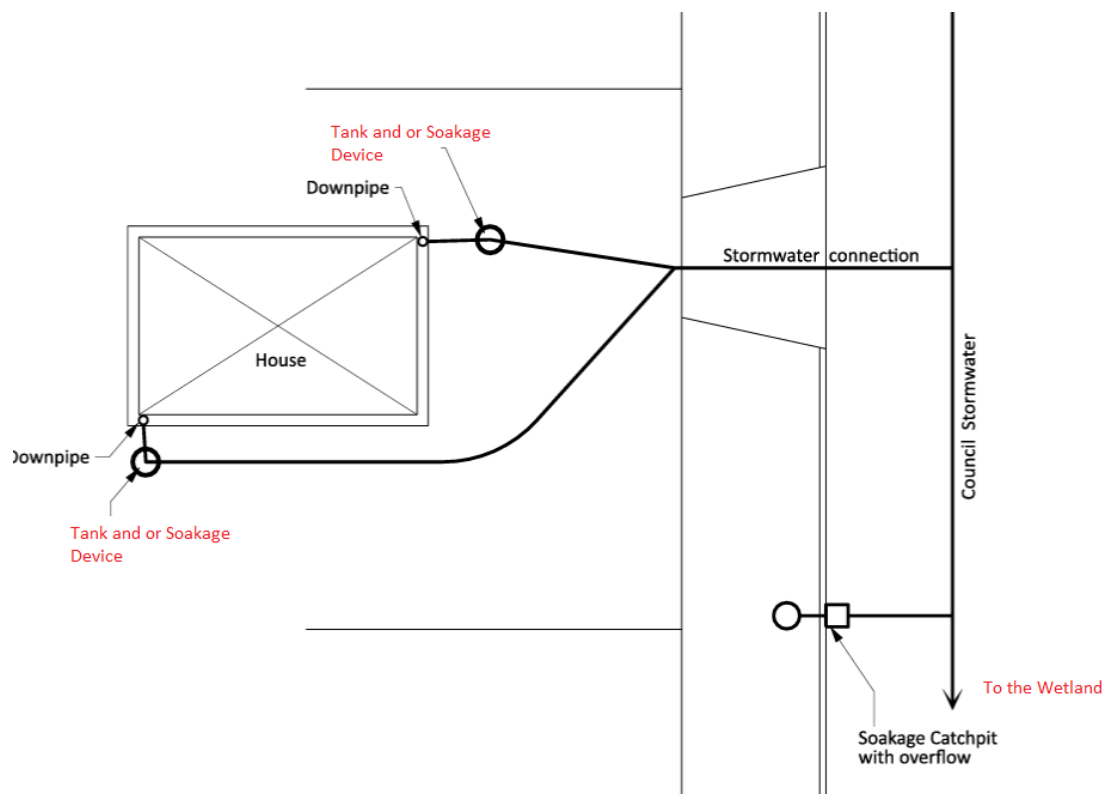


Figure 10: RITS excerpt. D4.5 Drawing with Added Mark up for Conceptual Purposes

On-lot “Rain Harvesting” tanks will collect stormwater from roof areas and soakage devices will be utilised to manage stormwater from roofs, accessways, and parking areas. Overflow will be via lot connections to the primary stormwater network.

Retention of the first 10mm of runoff from impervious surfaces, including the initial abstraction volume required for road surfaces, will be provided within the lot areas. This initial runoff contains the highest concentration of contaminants accumulated on impervious surfaces between rainfall events. Retaining this volume at source reduces the frequency and volume of untreated discharges, promotes infiltration and evapotranspiration where practicable, and contributes to achieving the stormwater quality.

Artificial Stormwater Wetlands are proposed to provide treatment and attenuation/storage for the required flows as specified in the RITS and ICMP prior to entering the Existing stream/Drain.

6.3. IMPLEMENTATION PRINCIPLES

The stormwater management system shall be implemented in accordance with the approved engineering drawings and staging plan. Construction of stormwater infrastructure shall be undertaken in a manner that ensures adequate stormwater management is maintained throughout each stage of development. Temporary stormwater management measures shall be provided where permanent infrastructure is not yet operational.

Stormwater quality and quantity management ensures that urban development does not adversely affect downstream waterways by addressing both contaminant removal and runoff control. The strategy combines source control measures with centralised treatment and attenuation infrastructure to manage stormwater throughout the development lifecycle.

Stormwater design considers two complementary objectives:

Water Quality – Removing sediments, nutrients, hydrocarbons, metals, and other urban contaminants before discharge.

Water Quantity – Replicating natural runoff behaviour by reducing peak flows, delaying runoff timing, and providing temporary storage during storm events.

The proposed stormwater network manages runoff generated within the development while maintaining existing catchment flow paths through retained drainage corridors and conveyance systems. This integrated approach protects downstream waterways, supports ecological health, and reduces flood risk throughout the catchment.

6.4. STORMWATER INFRASTRUCTURE

The proposed stormwater management system for the SL1 Residential Development comprises an integrated network of stormwater infrastructure designed to collect, convey, treat, attenuate, and discharge stormwater in accordance with the WRC Stormwater Guidelines, RITS, and HCC CoP. The system incorporates both primary and secondary stormwater management measures to support the staged development while managing stormwater quantity and quality and protecting the downstream receiving environment. The key components of the proposed stormwater management system are outlined below:

Artificial Stormwater Wetlands

Artificial stormwater wetlands are proposed as the primary treatment and attenuation devices for runoff generated within the development. The artificial stormwater wetlands have been strategically located to receive stormwater from the each contributing catchment before discharge to the receiving environment and shall be constructed and made operational before receiving runoff from the contributing catchments, unless otherwise approved by the Consent Authority.

The locations and overall configuration have been established as part of the proposed development. Detailed design will refine engineering details such as internal bathymetry, planting layout and inlet/outlet structures without changing the assessed stormwater management outcomes.

On-lot Stormwater Management

On-lot stormwater management measures will be incorporated within individual residential lots to manage runoff at source. Soakage or rainwater harvesting tanks will be utilised to manage stormwater from roofs, accessways, and parking areas. These measures will contribute to stormwater quantity and quality management by retaining and treating runoff generated from impervious surfaces.

The final sizing and configuration details of the retention tanks and any associated soakage devices will be confirmed during detailed design in accordance with the parameters and objectives listed in the above sections.

Piped Stormwater Network

The proposed piped stormwater network will collect runoff from roads, lots, and other developed areas and convey flows to the artificial stormwater wetlands. The alignment and overall layout of the primary network have been established as part of the proposed development. Please refer to engineering drawings particularly C400-STORMWATER series drawings (Maven) for more details.

7. Inspection, Verification and Certification

Inspection, verification, and certification activities shall be undertaken throughout the delivery of the stormwater management system to demonstrate compliance with the approved engineering design and the applicable resource consent conditions. Inspections shall be carried out at key stages of construction to verify that stormwater infrastructure is installed in accordance with the approved plans and specifications. Any defects or non-conformances identified during construction shall be rectified prior to progression to subsequent construction stages or acceptance of the works.

Upon completion of each stage, the completed stormwater infrastructure shall be subject to verification by a suitably qualified engineer. Where required, as-built surveys and supporting documentation shall be provided to confirm that the works have been completed in accordance with the approved design. Engineer certification shall be submitted to the Consent Authority as required to demonstrate compliance with the relevant resource consent conditions and engineering approval requirements prior to the commencement of subsequent development stages or the vesting of public assets.

8. Conclusions

This Stormwater Management Plan (SMP) has been prepared to support the Residential Development within the Southern Links 1 (SL1) development area and provides the overarching framework for stormwater management throughout the site. The SMP has been developed in accordance with the objectives and requirements of the Mangakōtukutuku Integrated Catchment Management Plan (ICMP), Waikato Regional Council guidelines, and the Regional Infrastructure Technical Specifications (RITS).

The site is influenced by significant upstream contributing catchments, existing drainage channels, overland flow paths, and flood-prone areas. Detailed catchment delineation and hydraulic modelling have been undertaken to refine the understanding of existing stormwater behaviour and to inform the proposed stormwater management strategy. The assessment confirms that maintaining hydraulic connectivity and accommodating external catchment flows are critical components of the overall design approach.

The proposed stormwater management system overviews the design principles for the development. The adopted stormwater aspects such as a treatment train approach incorporating on-lot retention

tanks, conveyance systems, artificial stormwater wetlands, forebays, high-flow bypass systems, diversion channels, and flood storage areas as discussed in Stormwater Assessment Report (SAR). Together, these components provide stormwater treatment, detention, attenuation, and conveyance functions in accordance with the objectives of the ICMP and RITS requirements.

Retention of initial abstraction will be achieved through distributed on-lot retention tanks. The proposed 5m³ tank provision for each residential lot provides approximately 4,720m³ of storage, exceeding the required 10mm retention volume of approximately 4,459m³. This demonstrates compliance with the ICMP initial abstraction requirements while providing a simple and consistent solution across all stages of development.

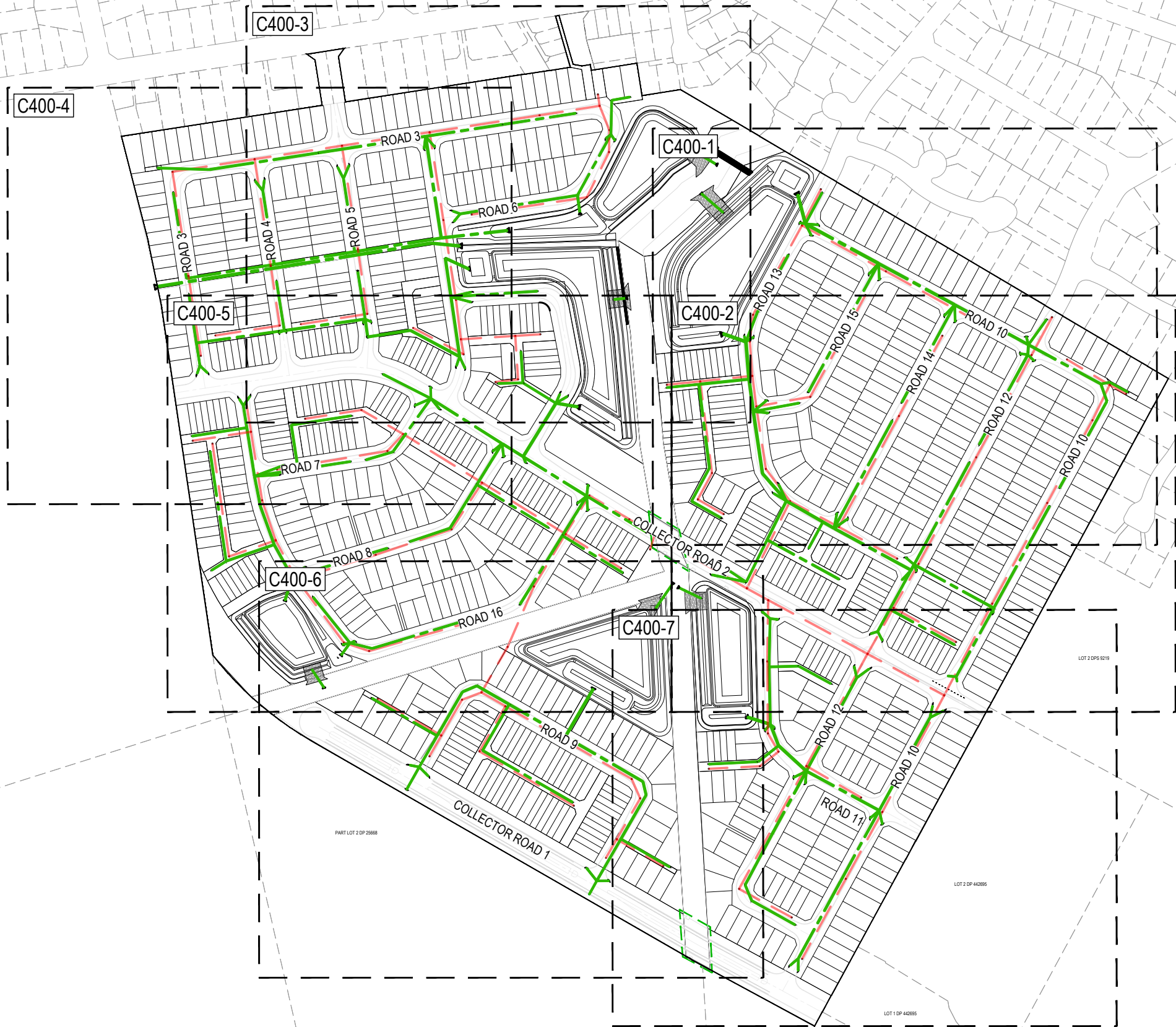
Flood modelling in the SAR indicates that the site is currently subject to widespread shallow flooding and diffuse flow paths resulting from the flat topography and interaction with upstream catchments. The proposed development seeks to formalise these flow paths through retained drainage corridors, diversion channels, culvert crossings, artificial stormwater wetlands, and flood storage areas. Subject to detailed design and implementation of the proposed mitigation measures, stormwater runoff from the development will be managed to achieve the required attenuation targets, including discharge of the 100-year event at 80% of pre-development flow rates.

The proposed staging strategy enables each development stage to function independently while maintaining continuity of upstream flows and providing the required stormwater management outcomes. Interim stormwater management measures will be progressively replaced by permanent infrastructure as development proceeds.

Modelling demonstrates that the proposed wetland systems are capable of achieving discharge rates below the adopted design targets, providing confidence in the proposed stormwater strategy while allowing opportunities for further optimisation during detailed design.

Overall, the proposed stormwater management framework provides a practical and integrated solution that supports future urban development while maintaining catchment function, managing flood risk, protecting receiving environments, and aligning with the long-term objectives of the Mangakōtukutuku ICMP. Further refinement of stormwater infrastructure, hydraulic modelling, wetland design, and flood mitigation measures will be undertaken during detailed design and engineering approval stages.

Appendix A – Stormwater Plans



- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
 2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MT EDEN 2000. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016. CONVERSION TO MOTURIKI 1953 CAN BE ACHIEVED BY ADDING 777m.
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 7. ALL CESSPIT LEADS SHALL HAVE MIN COVER 0.9m.
 8. ALL LINES ARE TO BE CLASS4 RCRRJ UNLESS SHOWN OTHERWISE.
 9. ALL LINES TO BE ABANDONED SHALL BE SEALED AT EACH END. TIMING OF ALL SEALING TO BE COORDINATED WITH COUNCIL STAFF.

LEGEND	
	EX BDY
	PROP BDY
	EX STORMWATER
	PR STORMWATER
	EX/PROP SWMH
	PROP SWCP SINGLE
	PROP SWCP DOUBLE
	PR LOT CONNECTION

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MKS		07/2025
Checked	DJM		07/2025



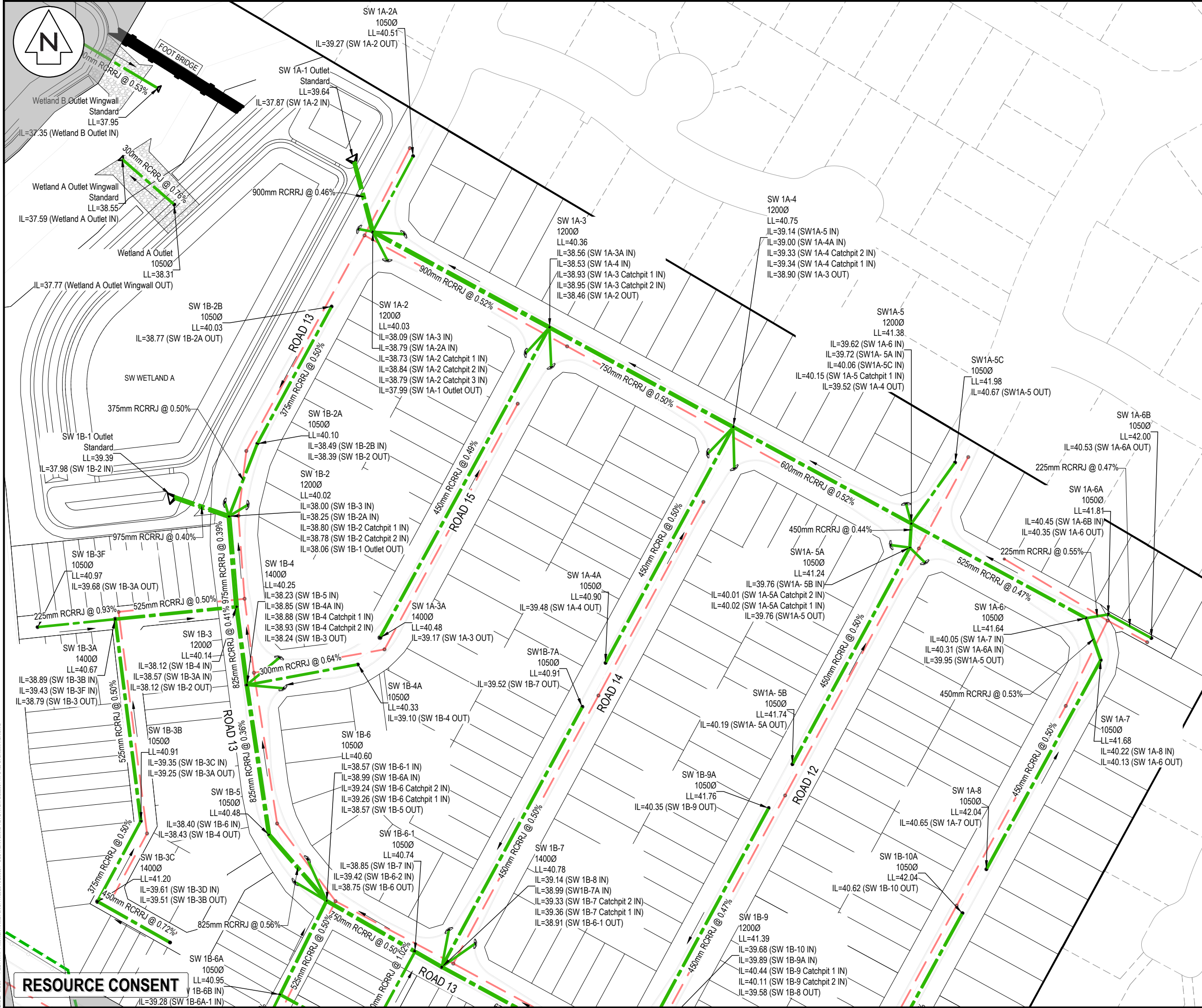
Maven Waikato
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Level 1 286 Victoria Street, Hamilton
New Zealand

Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
STORMWATER
OVERVIEW PLAN**

Project no.	298001-R1 SL1		
Scale	1:4000 @ A3		
Cad file	298001-R1-C400 STORMWATER.DWG		
Drawing no.	R1-C400	Rev	A

RESOURCE CONSENT



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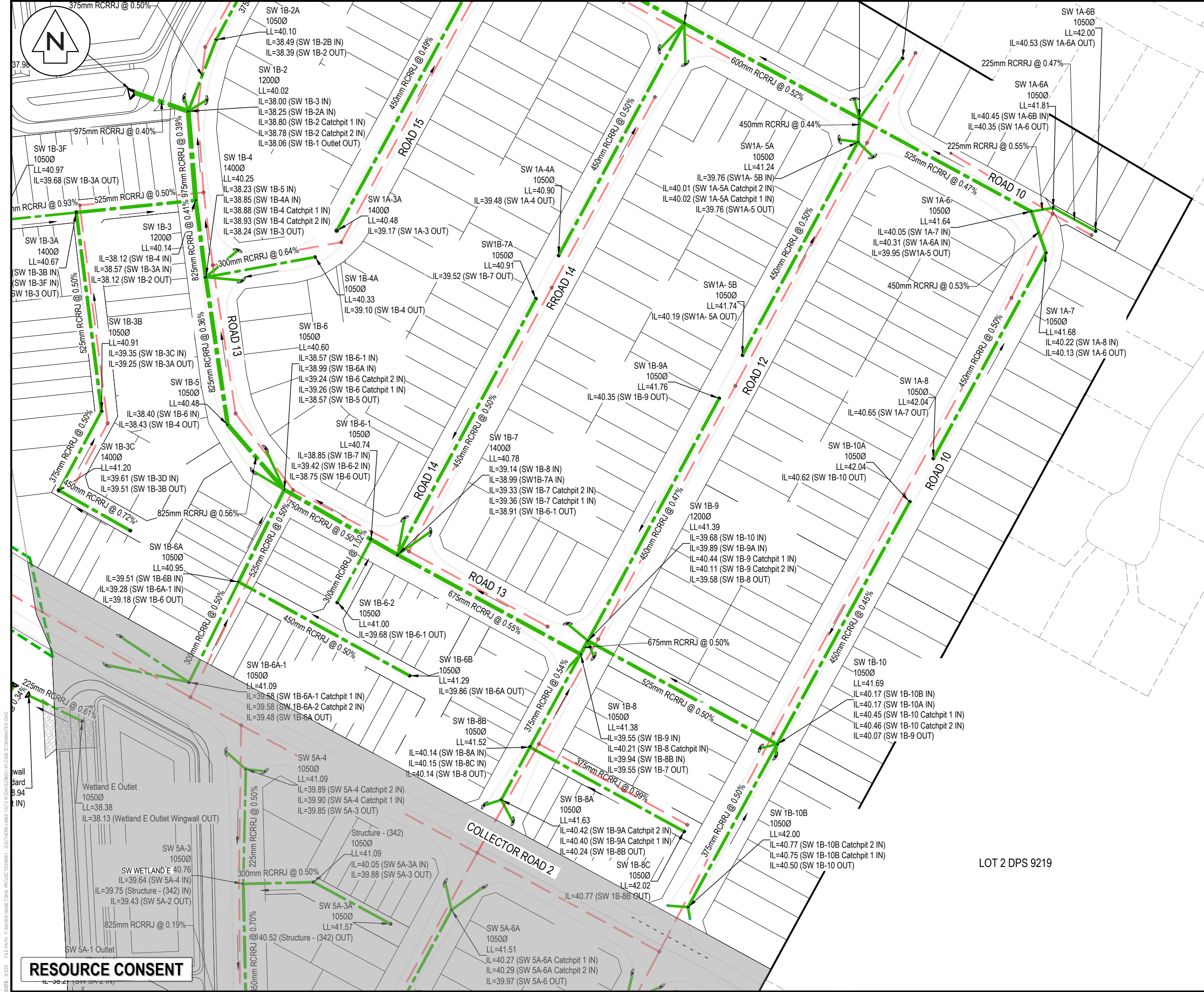
Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
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SAXBY RD JV LIMITED**

Title
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STORMWATER
PLAN**

Project no.	298001-R1 SL1
Scale	1:1250 @ A3
Cad file	298001-R1-C400 STORMWATER.DWG
Drawing no.	R1-C400-1
Rev	A

RESOURCE CONSENT

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Project

**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title

**PROPOSED
STORMWATER
PLAN**

Project no.	298001-R1 SL1
Scale	1:1250 @ A3
Cad file	298001-R1-C400 STORMWATER.DWG
Drawing no.	R1-C400-2
Rev	A

RESOURCE CONSENT

DATE: 9/2/25 FILEPATH: F:\MVEN\HAMILTON6 - PROJECTS\298001 - SOUTHERN LINKS 1\STORMWATER\298001-R1-C400 STORMWATER.DWG



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Drawn	MKS	07/2025	
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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
STORMWATER
PLAN**

Project no.	298001-R1 SL1
Scale	1:1250 @ A3
Cad file	298001-R1-C400 STORMWATER.DWG
Drawing no.	R1-C400-3
Rev	A



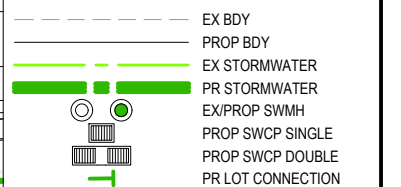


RESOURCE CONSENT



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Drawn	MKS	07/2025	
Checked	DJM	07/2025	

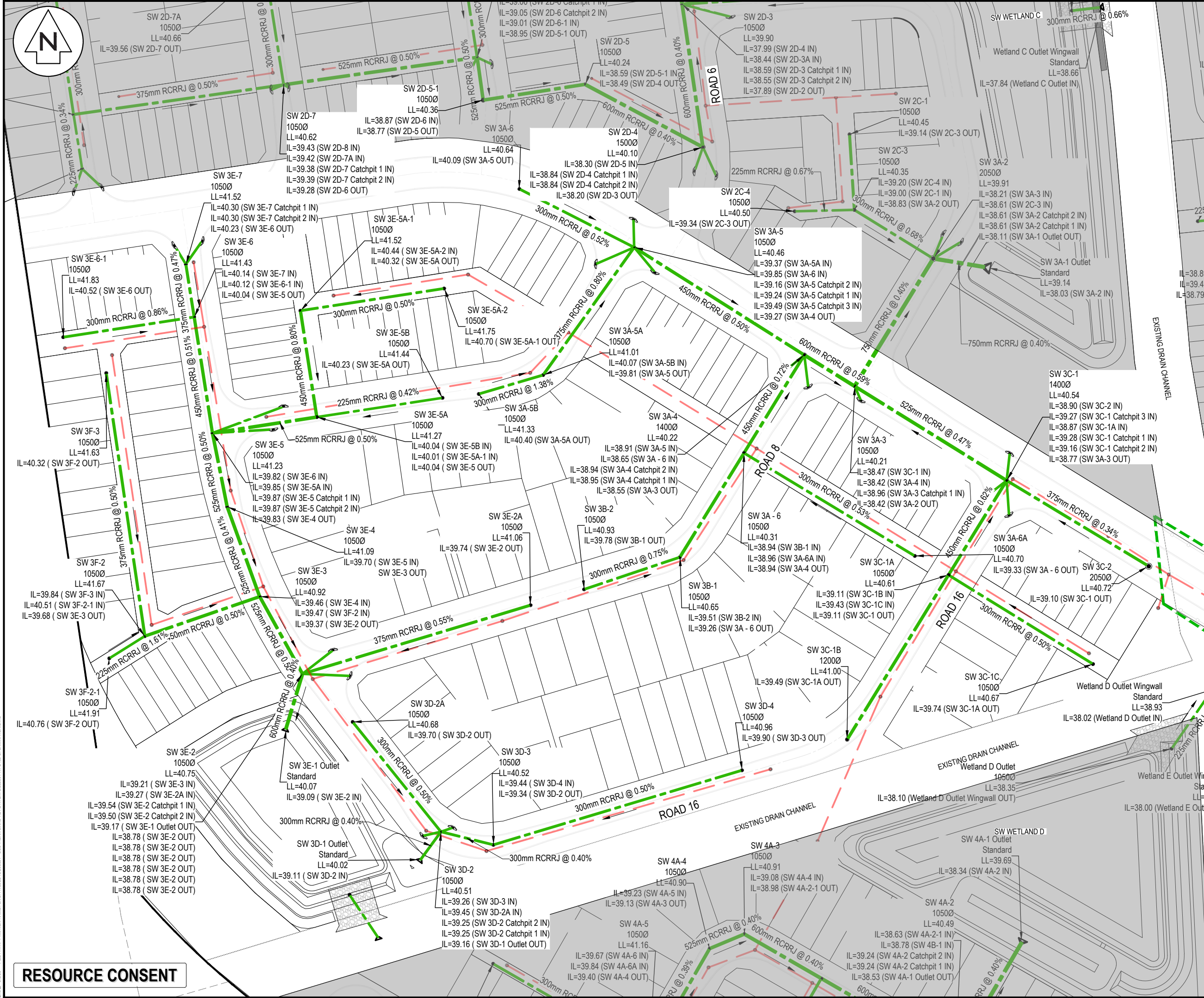
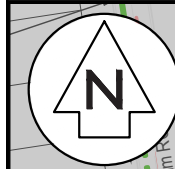


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title

**PROPOSED
STORMWATER
PLAN**

Project no.	298001-R1 SL1		
Scale	1:1250 @ A3		
Cad file	298001-R1-C400 STORMWATER.DWG		
Drawing no.	R1-C400-4	Rev	A



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- LEGEND
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 - PROP BDY
 - EX STORMWATER
 - PR STORMWATER
 - EX/PROP SWMH
 - PROP SWCP SINGLE
 - PROP SWCP DOUBLE
 - PR LOT CONNECTION

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
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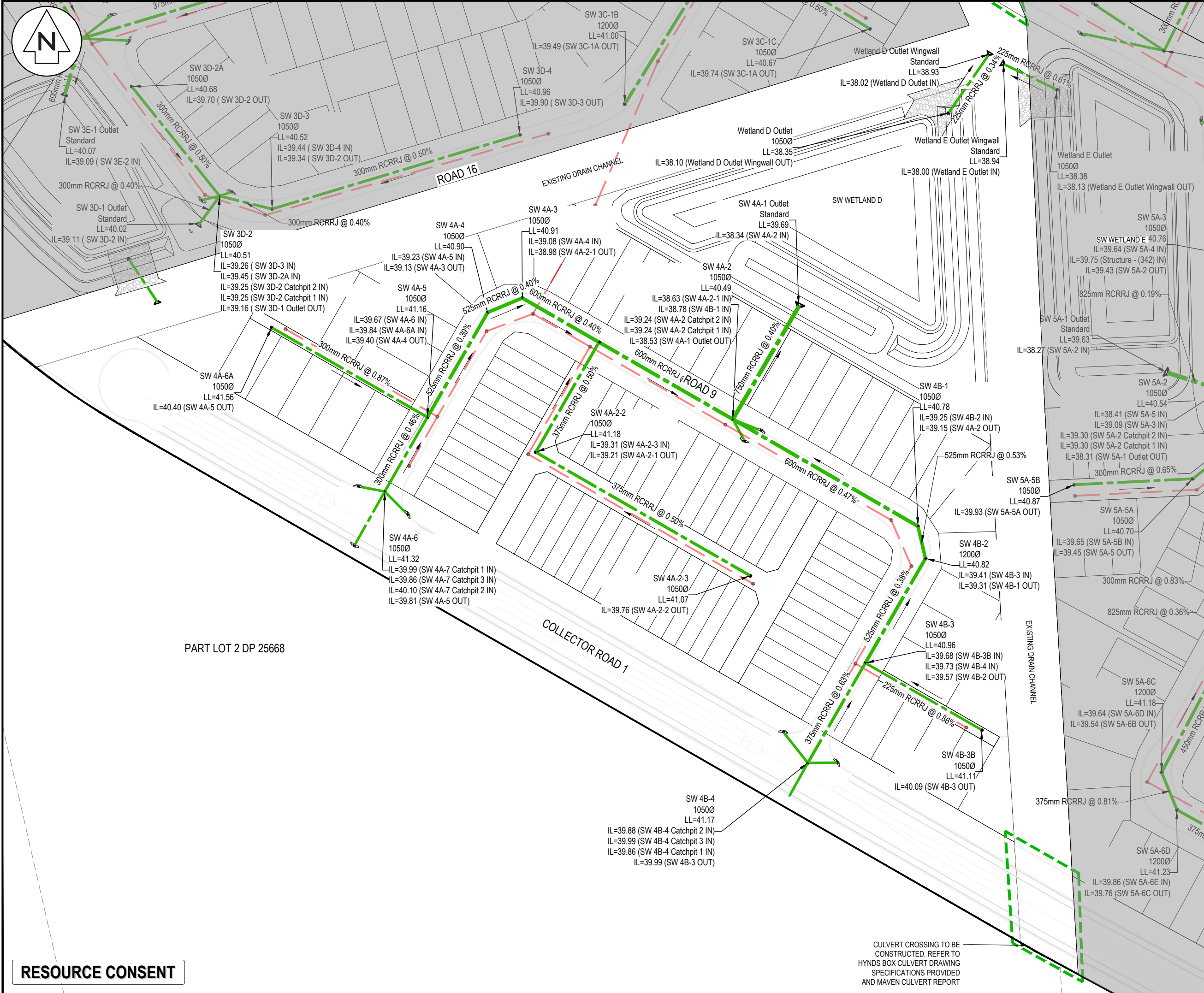
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

**PROPOSED
STORMWATER
PLAN**

Project no.	298001-R1 SL1
Scale	1:1250 @ A3
Cad file	298001-R1-C400 STORMWATER.DWG
Drawing no.	R1-C400-5
Rev	A

RESOURCE CONSENT

DATE: 9/2/25 FILEPATH: F:\MVEN\HAMILTON6 PROJECTS\298001 - SOUTHERN LINKS 1\STG1\R1\C400 STORMWATER.DWG



NOTES

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Project
**SOUTHERN LINKS 1
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Title
**PROPOSED
STORMWATER
PLAN**

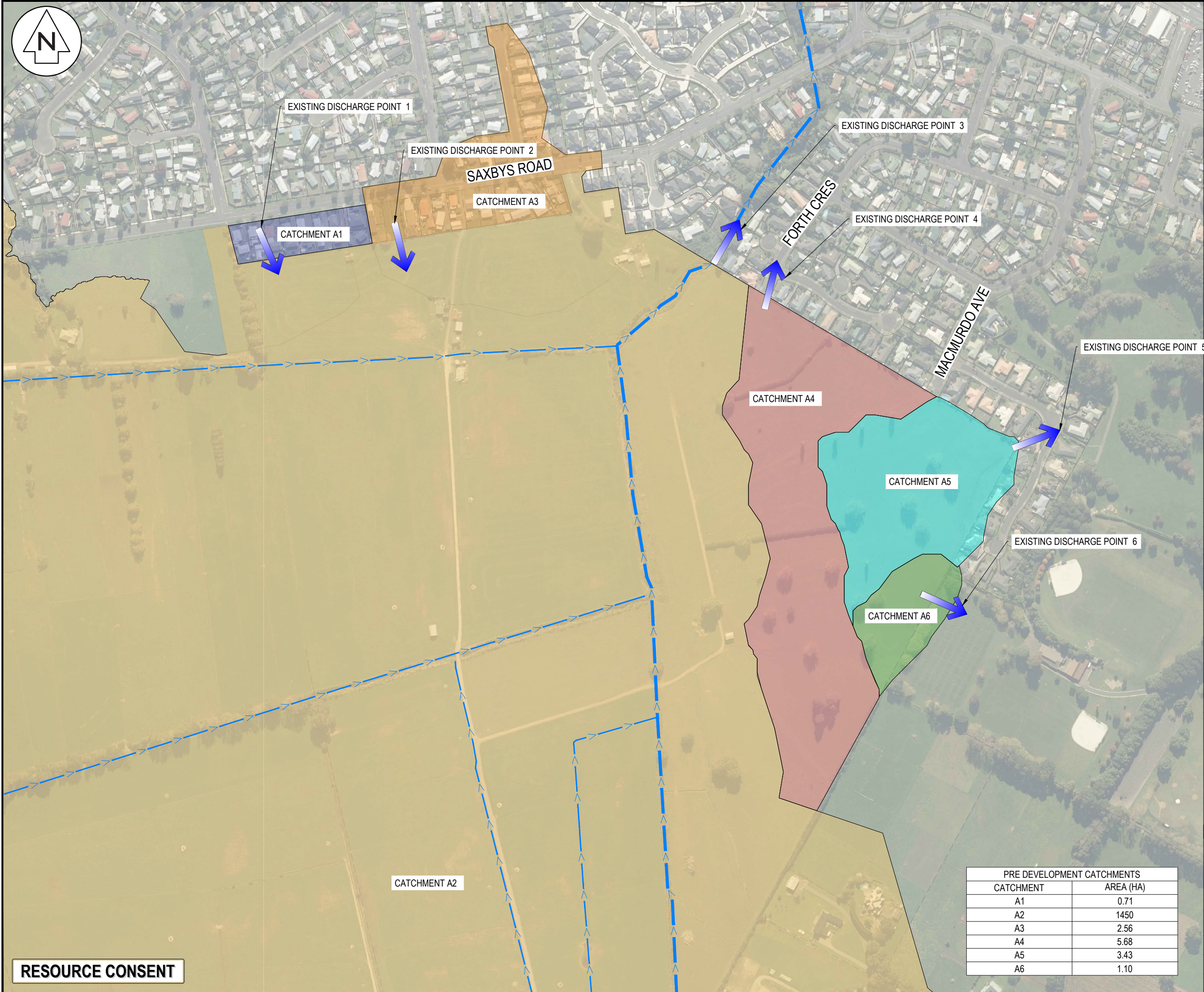
Project no.	298001-R1 SL1
Scale	1:1250 @ A3
Cad file	298001-R1-C400 STORMWATER.DWG
Drawing no.	R1-C400-6
Rev	A

RESOURCE CONSENT

CULVERT CROSSING TO BE
CONSTRUCTED. REFER TO
HYNDS BOX CULVERT DRAWING
SPECIFICATIONS PROVIDED
AND MAVEN CULVERT REPORT

LOT 1 DP 442695

- | | | | |
|-------------|-------------------------------|-----|----------|
| Project no. | 298001-R1 SL1 | | |
| Scale | 1:1250 @ A3 | | |
| Cad file | 298001-R1-C400 STORMWATER.DWG | | |
| Drawing no. | R1-C400-7 | Rev | A |



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Legend

	EX BOUNDARY
	CATCHMENT BDY
	PROP LOT BOUNDARY
	EX DRAINS/CHANNELS

A	FAST TRACK APP	MKS	06/2026
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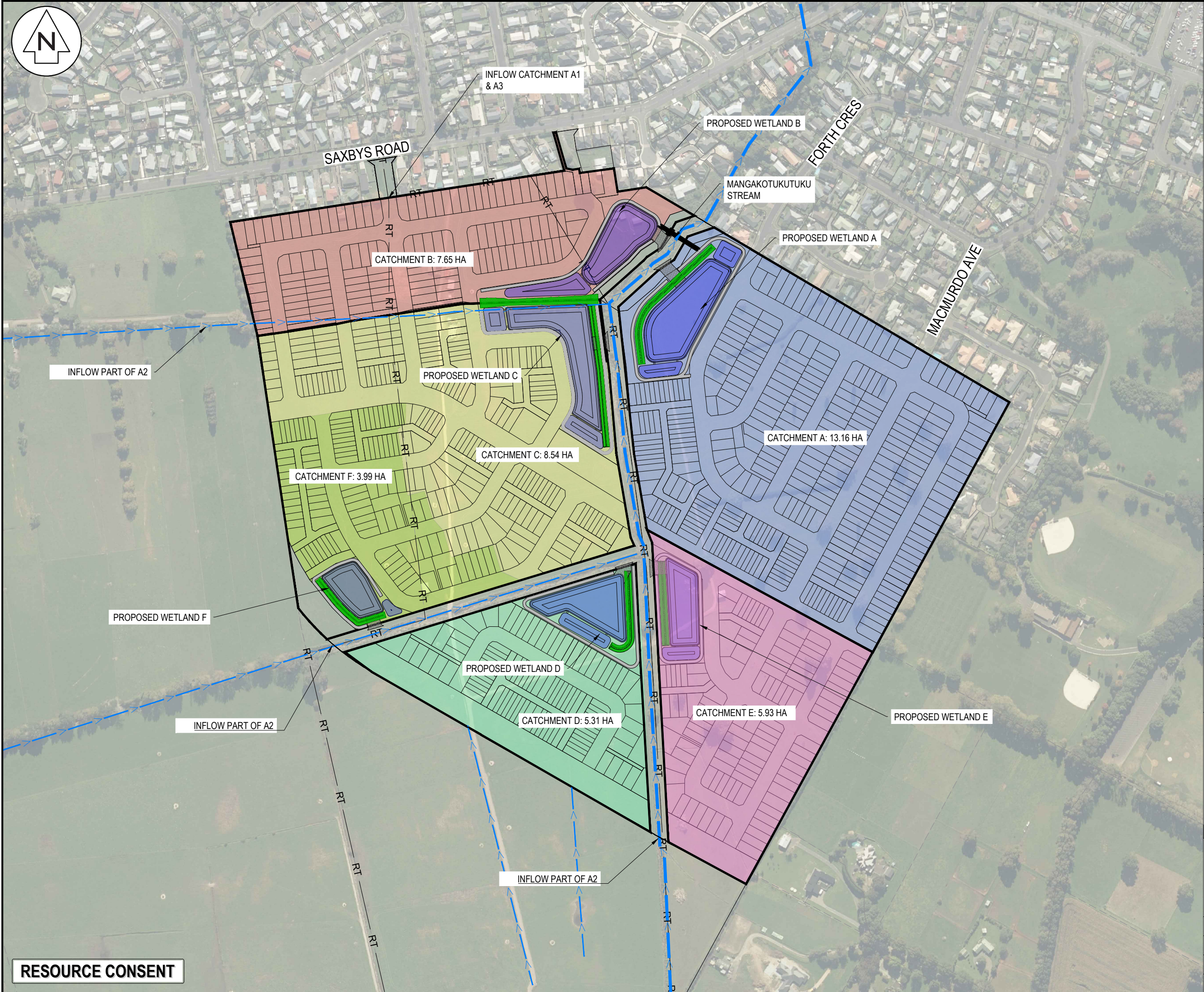
Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**EXISTING
SW CATCHMENT
OVERVIEW PLAN**

Project no.	298001-R1 SL1		
Scale	1:4000 @ A3		
Cad file	298001-R1-C410 SW EX.CATCHMENTS.DWG		
Drawing no.	R1-C410	Rev	A

PRE DEVELOPMENT CATCHMENTS	
CATCHMENT	AREA (HA)
A1	0.71
A2	1450
A3	2.56
A4	5.68
A5	3.43
A6	1.10

RESOURCE CONSENT



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---	CATCHMENT A
---	CATCHMENT B
---	CATCHMENT C
---	CATCHMENT D
---	CATCHMENT E
---	CATCHMENT F

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MKS		07/2025
Checked	DJM		07/2025

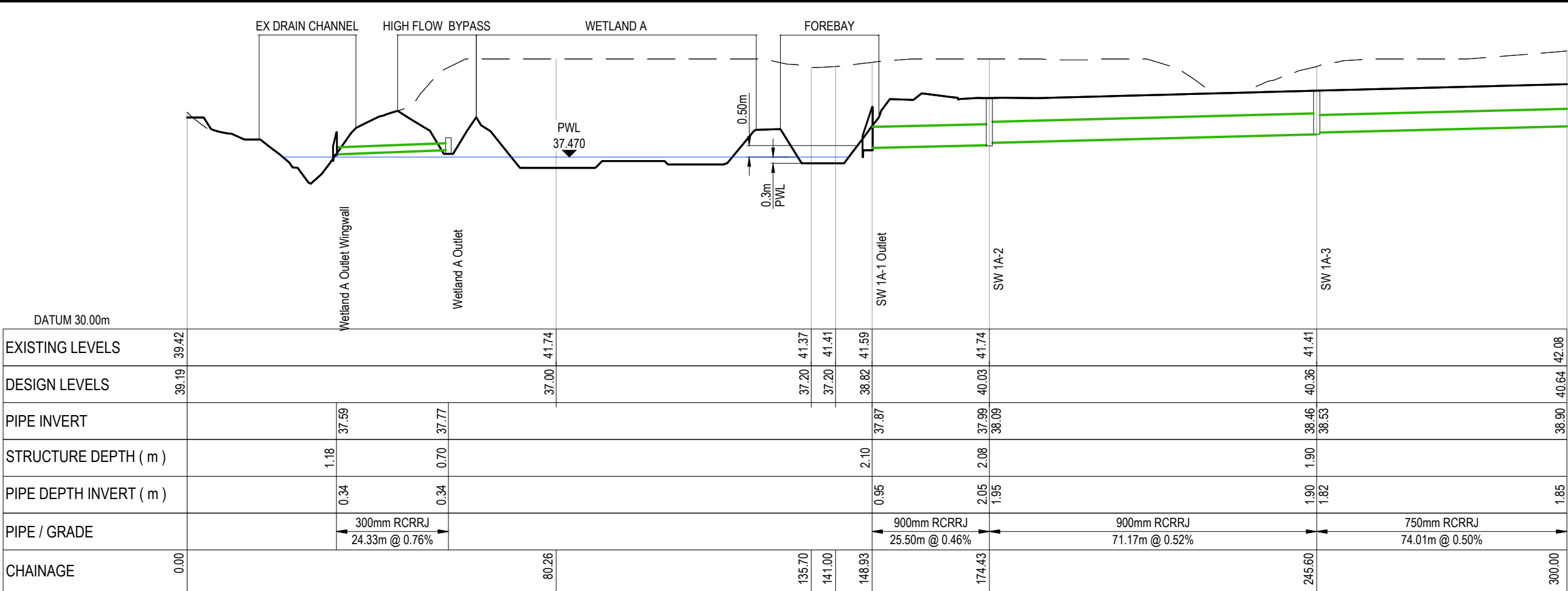
M Maven Waikato
07 242 0601
info@maven.co.nz
www.maven.co.nz
Level 1 286 Victoria Street, Hamilton
New Zealand

Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

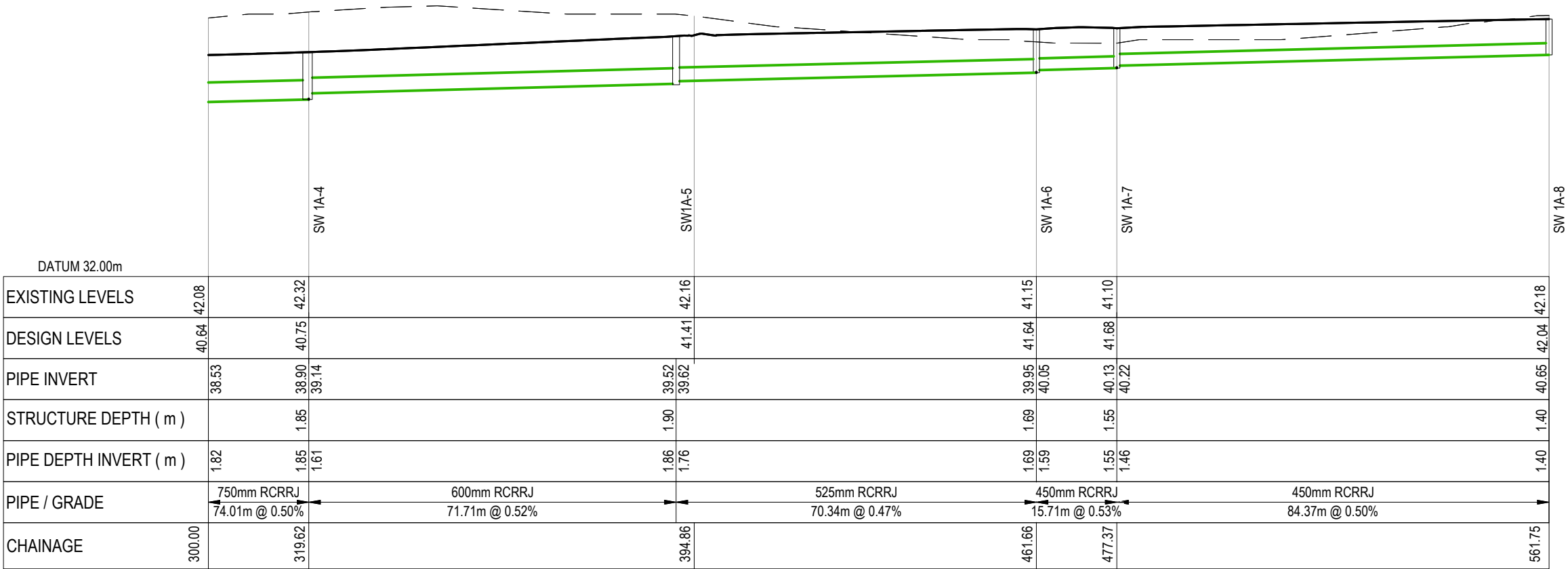
Title
**PROPOSED STORMWATER
POND CATCHMENT
OVERVIEW PLAN**

Project no.	298001-R1 SL1		
Scale	1:4000 @ A3		
Cad file	298001-R1-C415 SW PR.CATCHMENTS.DWG		
Drawing no.	R1-C415	Rev	A

DATE: 8/20/26 FILEPATH: F:\MAVEN\HAMILTON6 - PROJECTS\298001 - SOUTHERN LINKS 1\ESTG R1\DWG\298001-R1-C420 SW LONGSECTIONS.DWG



PV - Alignment - SW Line 1A-1 Outlet to 1A-8 (1 of 2)
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 1A-1 Outlet to 1A-8 (2 of 2)
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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 7. ALL LOT CONNECTIONS ARE TO BE 100mmØ PVC UNLESS SHOWN OTHERWISE.
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 10. MANHOLE SLAB AND COVER TO BE ROTATED TO AVOID THE FOOTPATH EDGE FOR MANHOLES ON FOOTPATH.
 11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

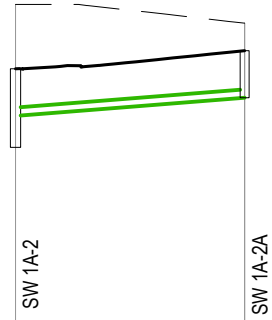
M **MAVEN** **Waikato**
07 242 0601
info@maven.co.nz
www.maven.co.nz
Level 1 286 Victoria Street, Hamilton
New Zealand

Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-1
Rev	A

DATE: 8/20/26 FILEPATH: F:\MAVEN\HAMILTON\6 PROJECTS\298001 - SOUTHERN LINKS 1\B1\G1\26001-R1-C420 SW LONGSECTIONS.DWG



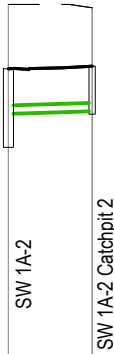
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EXISTING LEVELS	41.74	41.24
DESIGN LEVELS	40.03	40.51
PIPE INVERT	38.79	39.27
STRUCTURE DEPTH (m)	2.08	1.25
PIPE DEPTH INVERT (m)	1.25	1.25
PIPE / GRADE	225mm RCRRJ 30.31m @ 1.58%	
CHAINAGE	0.00	30.31

PV - Alignment - SW Line 1A-2 to 1A-2A
SCALE: HORI 1:1000 VERT 1:200



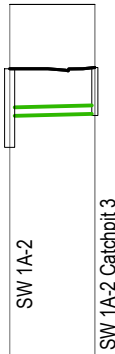
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EXISTING LEVELS	41.74	41.74
DESIGN LEVELS	40.03	39.91
PIPE INVERT	38.79	38.79
STRUCTURE DEPTH (m)	2.08	1.20
PIPE DEPTH INVERT (m)	1.30	1.19
PIPE / GRADE	225mm RCRRJ 4.91m @ 0.50%	
CHAINAGE	0.00	4.91

PV - Alignment - 1A-2 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



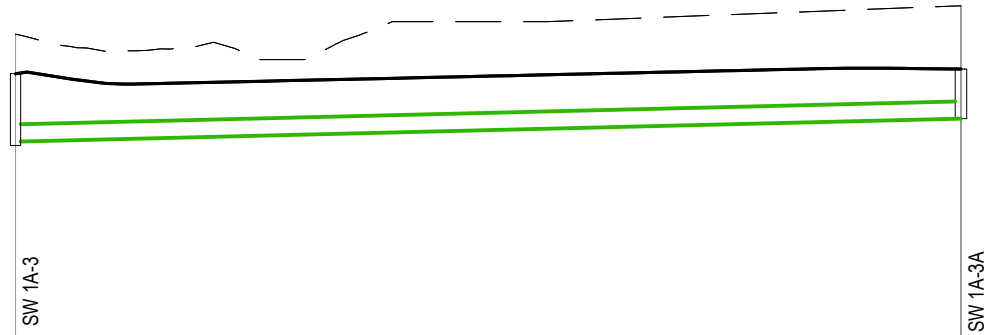
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EXISTING LEVELS	41.74	41.65
DESIGN LEVELS	40.03	40.10
PIPE INVERT	38.84	38.91
STRUCTURE DEPTH (m)	2.08	1.20
PIPE DEPTH INVERT (m)	1.19	1.19
PIPE / GRADE	225mm RCRRJ 11.08m @ 0.61%	
CHAINAGE	0.00	11.08

PV - Alignment - 1A-2 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



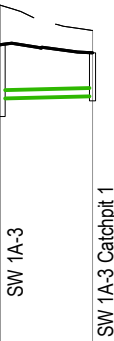
DATUM 32.00m		
EXISTING LEVELS	41.74	41.74
DESIGN LEVELS	40.03	40.07
PIPE INVERT	38.79	38.84
STRUCTURE DEPTH (m)	2.08	1.20
PIPE DEPTH INVERT (m)	1.25	1.22
PIPE / GRADE	225mm RCRRJ 11.27m @ 0.50%	
CHAINAGE	0.00	11.27

PV - Alignment - 1A-2 Catchpit 3
SCALE: HORI 1:1000 VERT 1:200



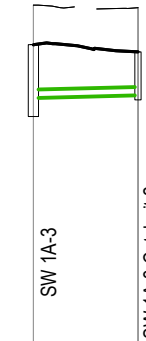
DATUM 32.00m		
EXISTING LEVELS	41.41	42.16
DESIGN LEVELS	40.36	40.48
PIPE INVERT	38.56	39.17
STRUCTURE DEPTH (m)	1.90	1.31
PIPE DEPTH INVERT (m)	1.79	1.31
PIPE / GRADE	450mm RCRRJ 125.09m @ 0.49%	
CHAINAGE	0.00	125.09

PV - Alignment - SW Line 1A-3 to 1A-3A
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	41.41	40.74
DESIGN LEVELS	40.36	40.15
PIPE INVERT	38.93	38.99
STRUCTURE DEPTH (m)	1.90	1.20
PIPE DEPTH INVERT (m)	1.42	1.15
PIPE / GRADE	225mm RCRRJ 12.24m @ 0.50%	
CHAINAGE	0.00	12.24

PV - Alignment - 1A-3 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	41.41	41.34
DESIGN LEVELS	40.36	40.17
PIPE INVERT	38.95	39.02
STRUCTURE DEPTH (m)	1.90	1.20
PIPE DEPTH INVERT (m)	1.41	1.15
PIPE / GRADE	225mm RCRRJ 13.83m @ 0.50%	
CHAINAGE	0.00	13.83

PV - Alignment - 1A-3 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

Notes

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11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

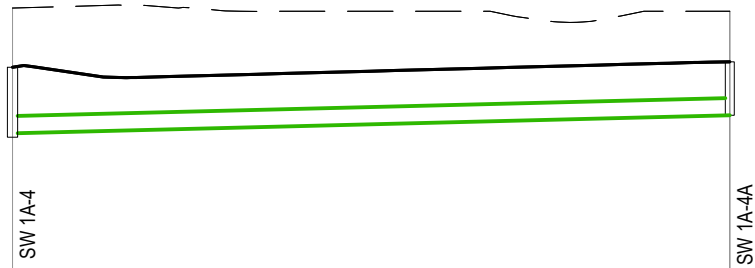


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
STORMWATER
LONG SECTIONS**

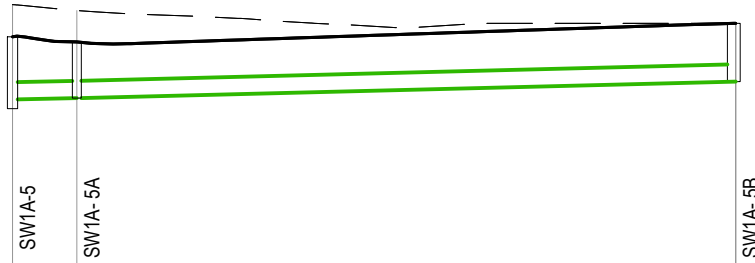
Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-2	Rev	A

DATE: 8/20/26 FILEPATH: F:\MAVEN\HAMILTON6 - PROJECTS\298001 - SOUTHERN LINKS 1\B1G R1-C420 SW LONGSECTIONS.DWG



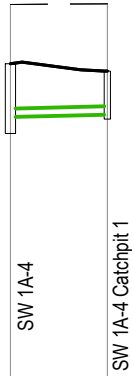
DATUM 34.00m		
EXISTING LEVELS	42.32	42.24
DESIGN LEVELS	40.75	40.90
PIPE INVERT	39.00	39.48
STRUCTURE DEPTH (m)	1.85	1.42
PIPE DEPTH INVERT (m)	1.75	1.42
PIPE / GRADE	450mm RCRRJ 94.90m @ 0.50%	
CHAINAGE	0.00	94.90

PV - Alignment - SW Line 1A-4 to 4A
SCALE: HORI 1:1000 VERT 1:200



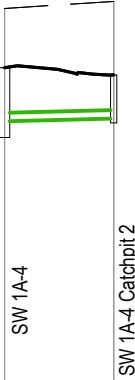
DATUM 34.00m		
EXISTING LEVELS	42.23	41.74
DESIGN LEVELS	41.38	41.74
PIPE INVERT	39.52 39.72	40.19
STRUCTURE DEPTH (m)	1.90	1.54
PIPE DEPTH INVERT (m)	1.86 1.66	1.54
PIPE / GRADE	600mm RCRRJ 3RJ 71.71m @ 0.52% 4% 450mm RCRRJ 87.16m @ 0.50%	
CHAINAGE	0.00	95.67

PV - Alignment - SW Line 1A-5 to 1A-5B
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	42.32	42.33
DESIGN LEVELS	40.75	40.56
PIPE INVERT	39.34	39.40
STRUCTURE DEPTH (m)	1.85	1.20
PIPE DEPTH INVERT (m)	1.41	1.15
PIPE / GRADE	225mm RCRRJ 12.83m @ 0.50%	
CHAINAGE	0.00	12.83

PV - Alignment - 1A-4 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	42.32	42.50
DESIGN LEVELS	40.75	40.56
PIPE INVERT	39.33	39.41
STRUCTURE DEPTH (m)	1.85	1.20
PIPE DEPTH INVERT (m)	1.42	1.15
PIPE / GRADE	225mm RCRRJ 14.42m @ 0.50%	
CHAINAGE	0.00	14.42

PV - Alignment - 1A-4 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



DATUM 34.00m		
EXISTING LEVELS	42.07	42.14
DESIGN LEVELS	41.24	41.31
PIPE INVERT	40.02	40.09
STRUCTURE DEPTH (m)	1.49	1.20
PIPE DEPTH INVERT (m)	1.22	1.22
PIPE / GRADE	225mm RCRRJ 6.58m @ 1.04%	
CHAINAGE	0.00	6.58

PV - Alignment - 1A-5A Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



DATUM 34.00m		
EXISTING LEVELS	42.07	41.93
DESIGN LEVELS	41.24	41.27
PIPE INVERT	40.01	40.04
STRUCTURE DEPTH (m)	1.49	1.20
PIPE DEPTH INVERT (m)	1.24	1.23
PIPE / GRADE	225mm RCRRJ 7.44m @ 0.50%	
CHAINAGE	0.00	7.44

PV - Alignment - 1A-5A Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

Notes

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11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

M

MAVEN

Maven Waikato

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Level 1 286 Victoria Street, Hamilton

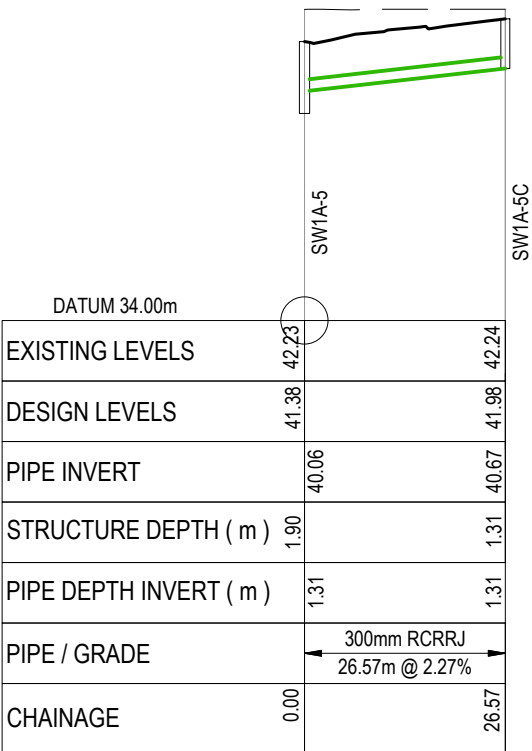
New Zealand

Project
SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED

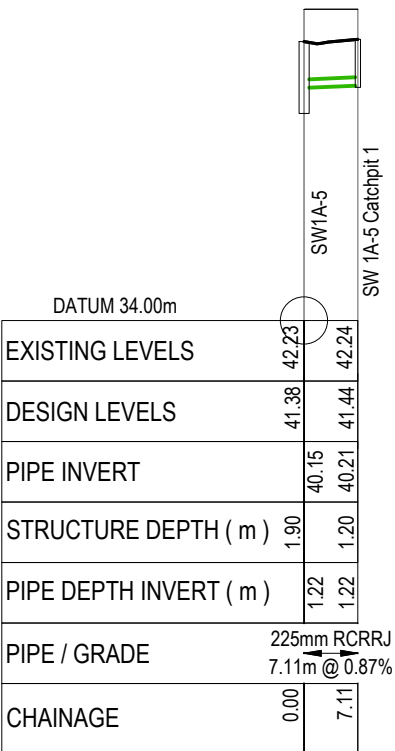
Title
PROPOSED
STORMWATER
LONG SECTIONS

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-3
Rev	A

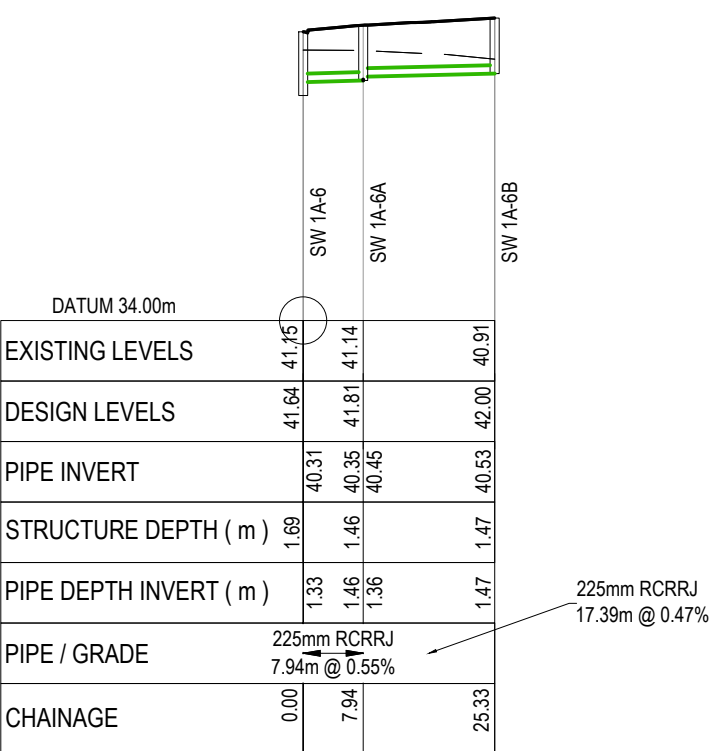
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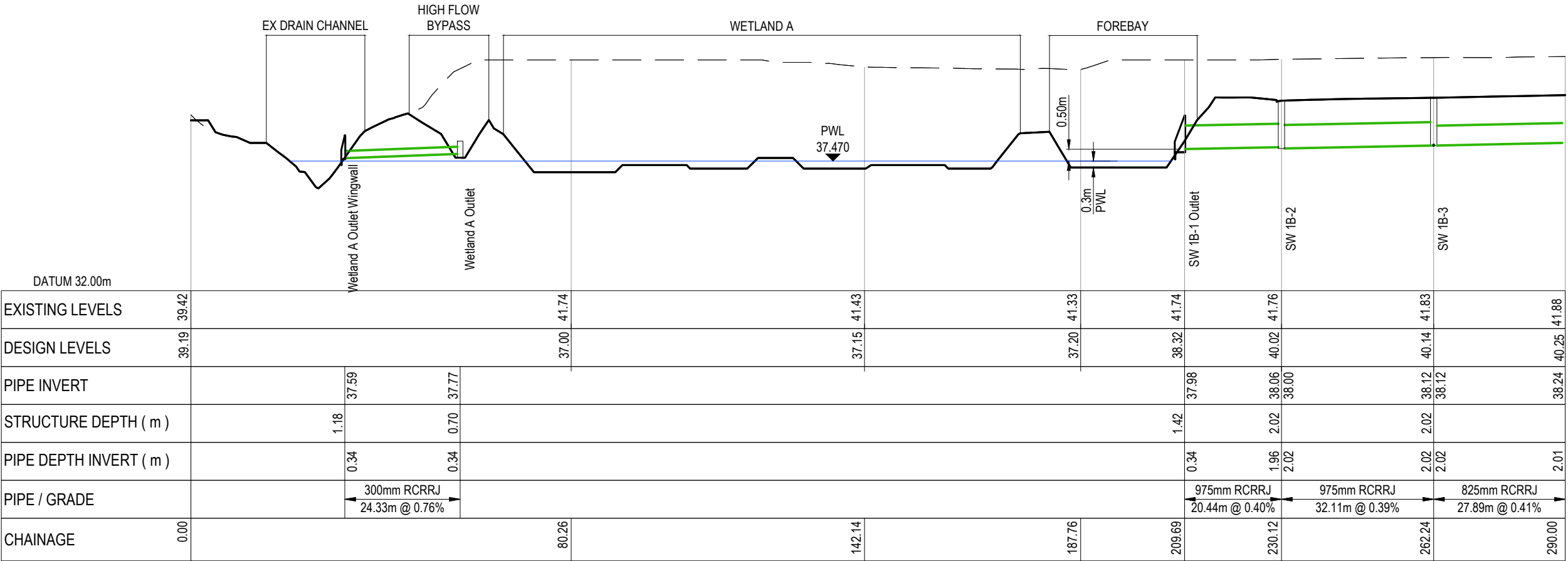
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SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - 1A-5 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



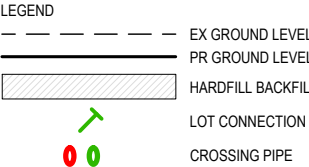
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SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 1B-1 Outlet to 1B-11 (1 of 2)
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

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A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

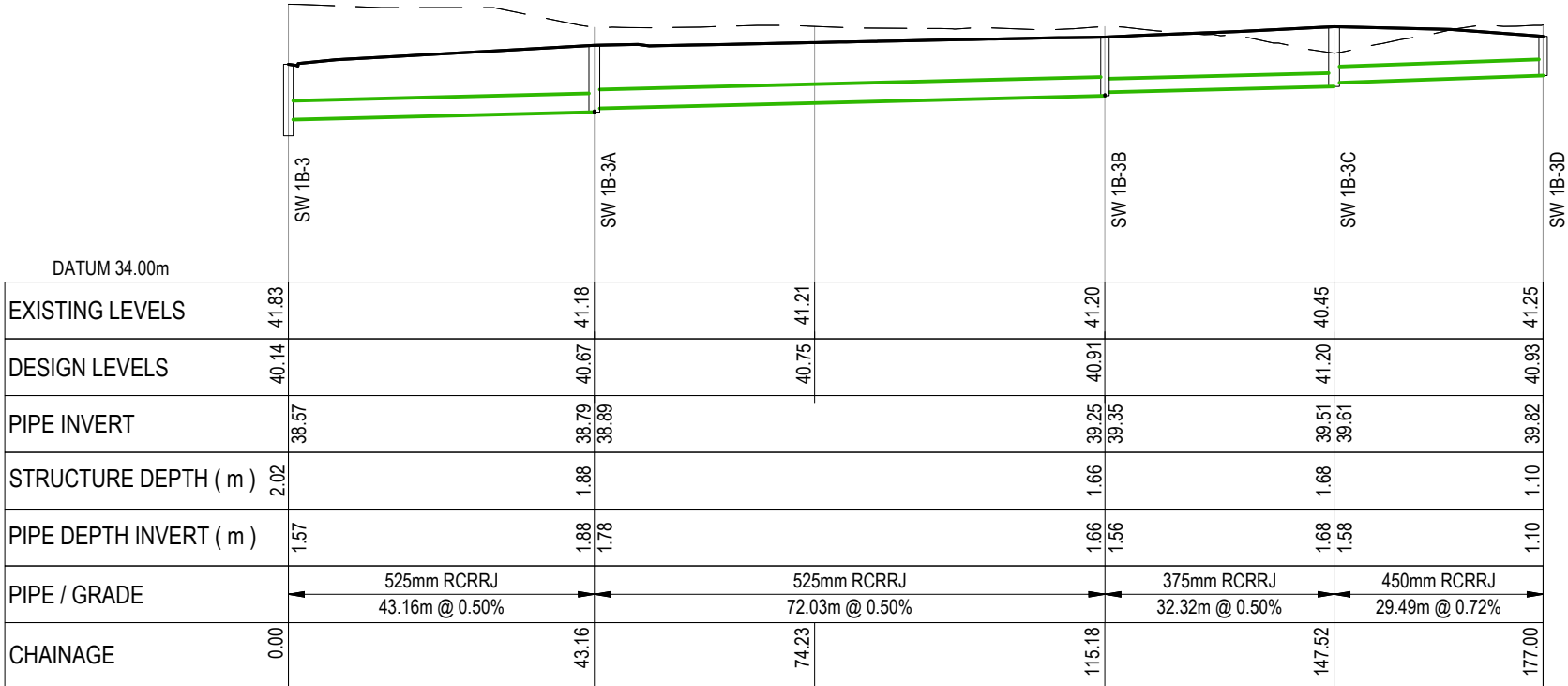


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

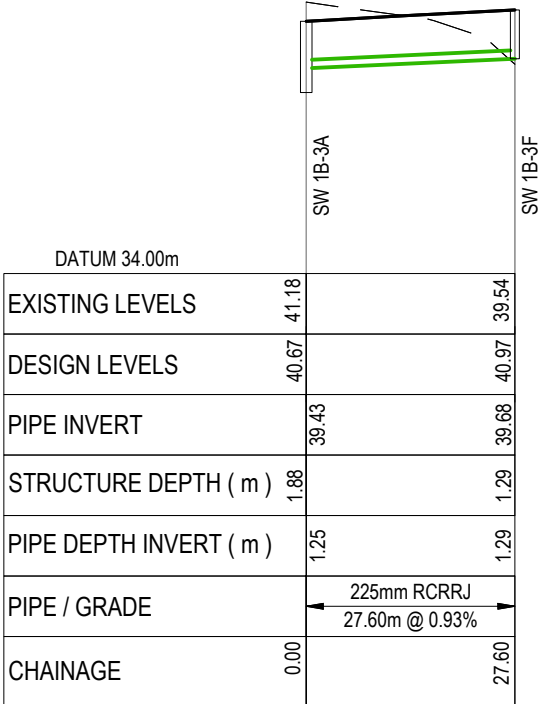
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL 1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-4
Rev	A

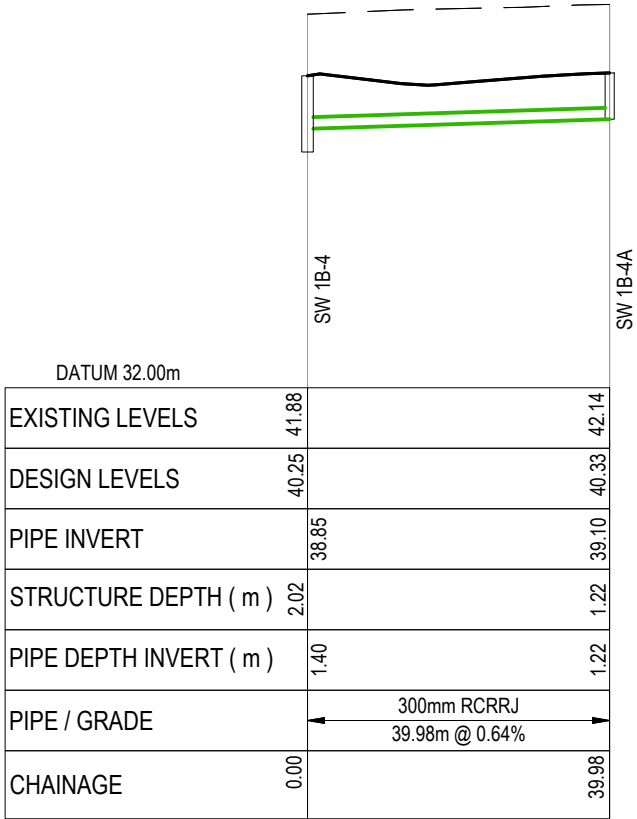
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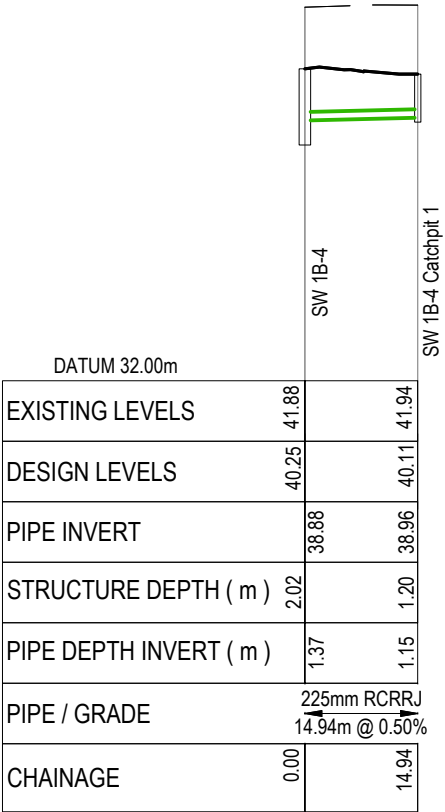
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SCALE: HORI 1:1000 VERT 1:200



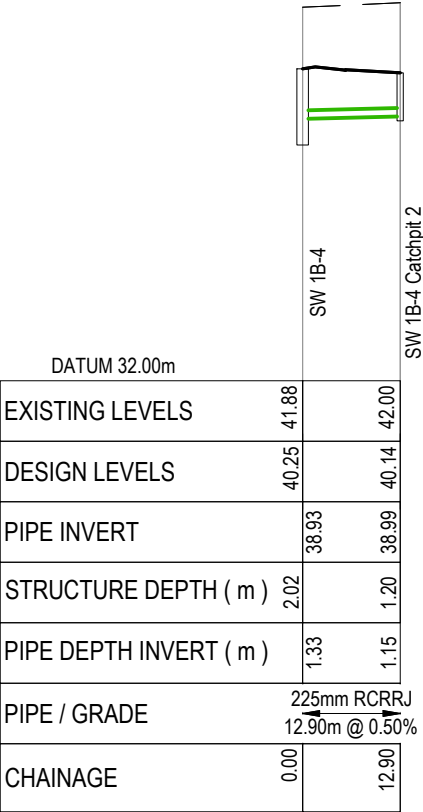
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SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 1B-4 to 1B-4A
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - 1B-4 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - 1B-4 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

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LEGEND

--- EX GROUND LEVEL
--- PR GROUND LEVEL
HARDFILL BACKFILL
LOT CONNECTION
CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

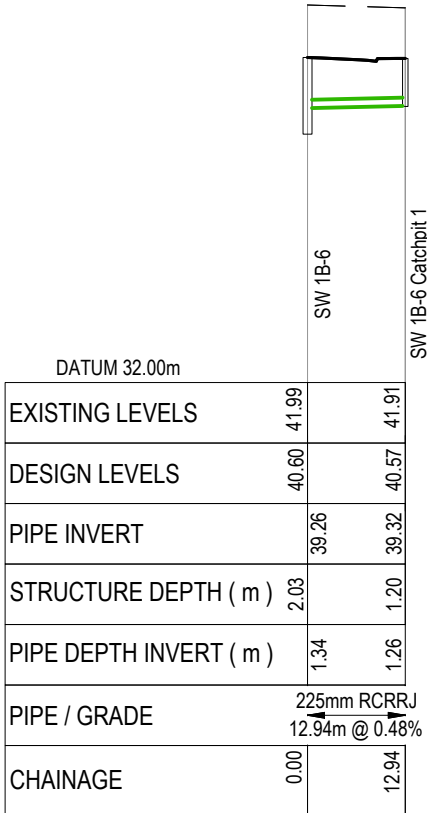


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

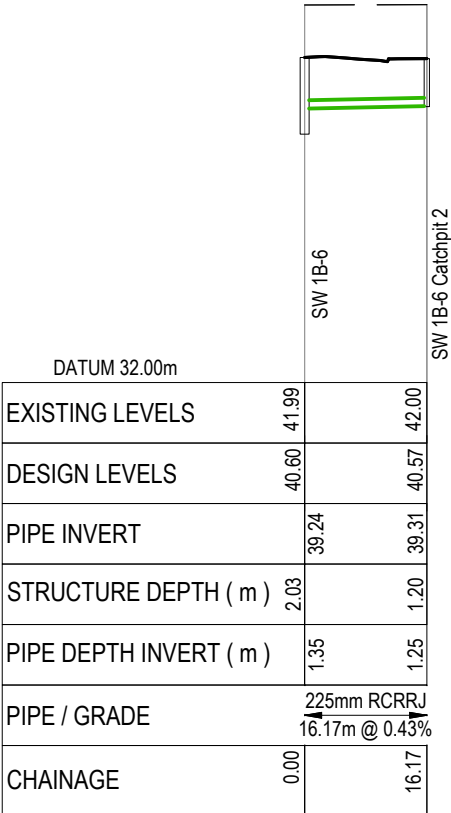
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL 1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-6
Rev	A

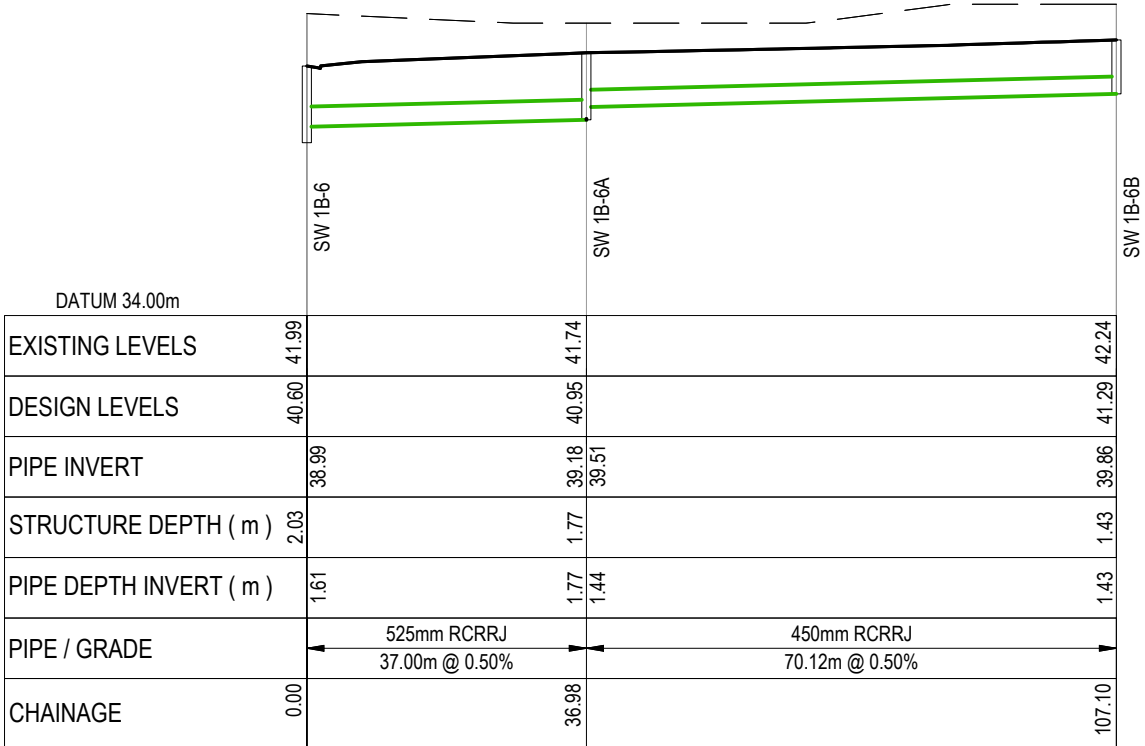
DATE: 8/20/26 FILEPATH: F:\MAVEN\HAMILTON\6 - PROJECTS\298001 - SOUTHERN LINKS 1\STG R1\DWG\298001-R1-C420 SW LONGSECTIONS.DWG



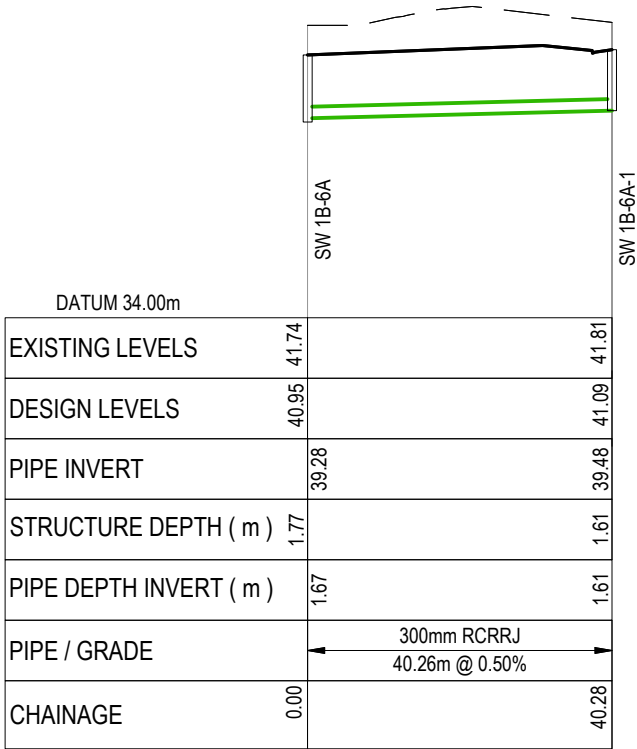
PV - Alignment - 1B-6 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



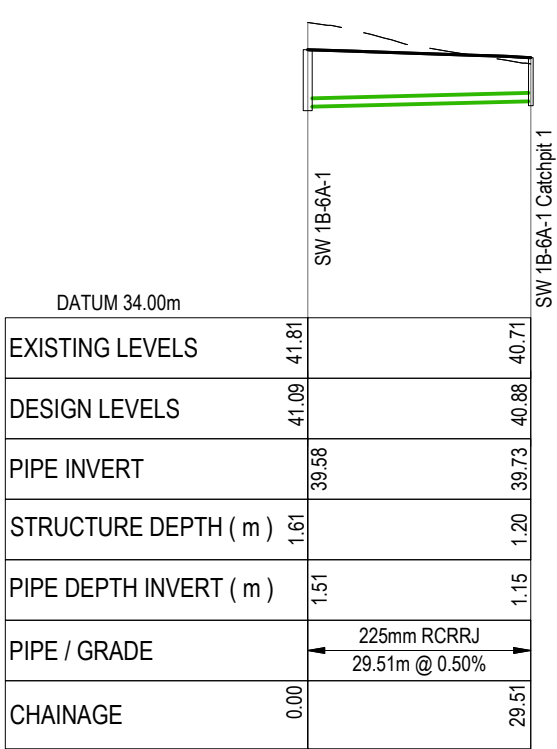
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SCALE: HORI 1:1000 VERT 1:200



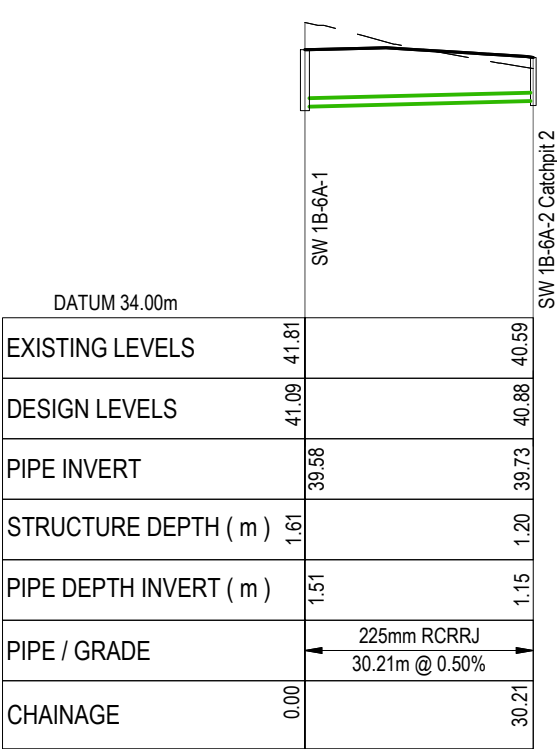
PV - Alignment - SW Line 1B-6 to 1B-6B
SCALE: HORI 1:1000 VERT 1:200



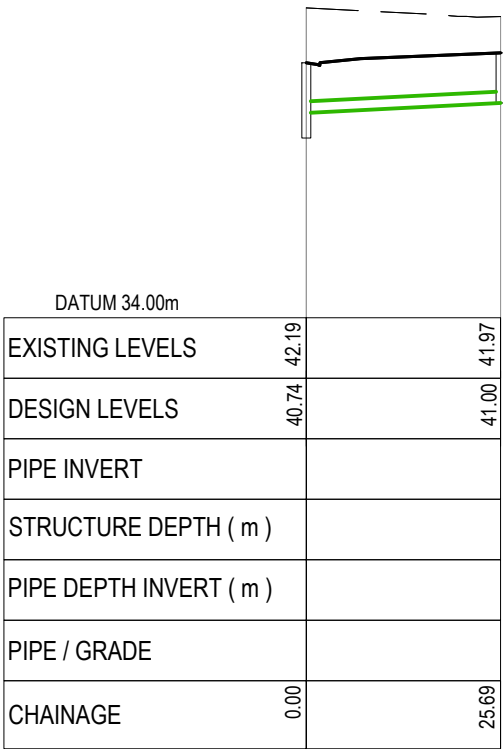
PV - Alignment - 1B-6A to 1B-6A-1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - 1B-6A Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - 1B-6A Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - 1B-6-1 to 1B-6-2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
 2. COORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
 3. LEVELS IN TERMS OF THE NZ VERTICAL DATUM 2016.
 4. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY HIS OPERATIONS.
 5. APPROVED HARDFILL IS TO BE USED IN BACKFILLING OF ALL ROAD CROSSINGS TO COUNCIL STANDARDS.
 6. HEAVY DUTY MANHOLE LIDS AND FRAMES TO BE USED IN TRAFFICKED AREAS, ALL MANHOLES SHALL HAVE STAINLESS GRATES INSTALLED.
 7. ALL LOT CONNECTIONS ARE TO BE 100mmØ PVC UNLESS SHOWN OTHERWISE.
 8. MANHOLE DIAMETERS SHOWN ON STRUCTURE LABEL ARE INTERNAL DIAMETER.
 9. MEASUREMENTS SHOWN ON THE LOT CONNECTIONS ARE THE DISTANCE FROM THE CENTRE OF THE DOWNSTREAM MANHOLE TO THE LOT CONNECTION POSITION WITHIN THE LOT BOUNDARY.
 10. MANHOLE SLAB AND COVER TO BE ROTATED TO AVOID THE FOOTPATH EDGE FOR MANHOLES ON FOOTPATH.
 11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

- LEGEND
- EX GROUND LEVEL
 - PR GROUND LEVEL
 - HARDFILL BACKFILL
 - LOT CONNECTION
 - CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
	By	Date	
Survey	MAVEN	06/2025	
Design	MKS	07/2025	
Drawn	MJRA	11/2025	
Checked	DJM	11/2025	

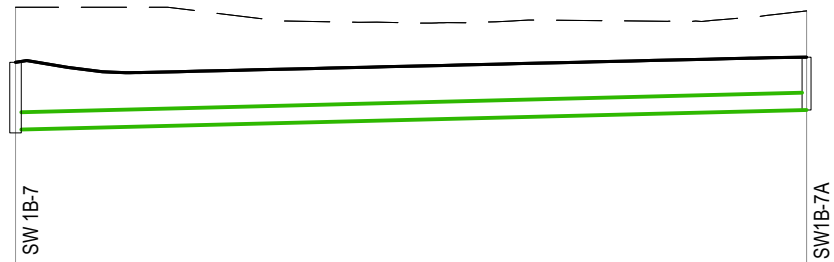


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
STORMWATER
LONG SECTIONS**

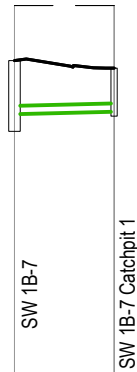
Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-7
Rev	A

DATE: 8/20/26 FILEPATH: F:\MAVEN\HAMILTON6 - PROJECTS\298001 - SOUTHERN LINKS 1\B1G R1-C420 SW LONGSECTIONS.DWG



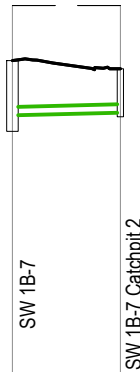
DATUM 34.00m		
EXISTING LEVELS	42.24	42.14
DESIGN LEVELS	40.78	40.91
PIPE INVERT	38.99	39.52
STRUCTURE DEPTH (m)	1.87	1.40
PIPE DEPTH INVERT (m)	1.78	1.40
PIPE / GRADE	450mm RCRRJ 104.65m @ 0.50%	
CHAINAGE	0.00	104.65

PV - Alignment - SW Line 1B-7 to 1B-7A
SCALE: HORI 1:1000 VERT 1:200



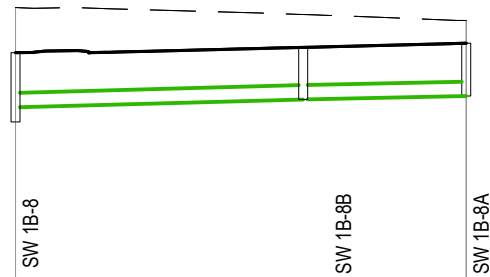
DATUM 32.00m		
EXISTING LEVELS	42.24	42.24
DESIGN LEVELS	40.78	40.58
PIPE INVERT	39.36	39.43
STRUCTURE DEPTH (m)	1.87	1.20
PIPE DEPTH INVERT (m)	1.42	1.15
PIPE / GRADE	225mm RCRRJ 13.18m @ 0.50%	
CHAINAGE	0.00	13.18

PV - Alignment - 1B-7 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



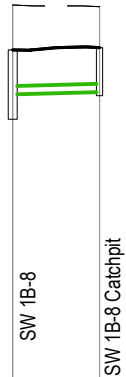
DATUM 32.00m		
EXISTING LEVELS	42.24	42.24
DESIGN LEVELS	40.78	40.57
PIPE INVERT	39.33	39.40
STRUCTURE DEPTH (m)	1.87	1.20
PIPE DEPTH INVERT (m)	1.45	1.16
PIPE / GRADE	225mm RCRRJ 14.27m @ 0.50%	
CHAINAGE	0.00	14.27

PV - Alignment - 1B-7 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



DATUM 34.00m		
EXISTING LEVELS	42.58	42.24
DESIGN LEVELS	41.38	41.63
PIPE INVERT	39.34	40.14 40.14
STRUCTURE DEPTH (m)	1.33	1.38
PIPE DEPTH INVERT (m)	1.45	1.38 1.38
PIPE / GRADE	375mm RCRRJ 38.07m @ 0.54%	375mm RCRRJ 21.57m @ 0.42%
CHAINAGE	0.00	59.64

PV - Alignment - SW Line 1B-8 to 1B-8A
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	42.58	42.53
DESIGN LEVELS	41.38	41.44
PIPE INVERT	40.21	40.27
STRUCTURE DEPTH (m)	1.33	1.20
PIPE DEPTH INVERT (m)	1.17	1.17
PIPE / GRADE	225mm RCRRJ 11.49m @ 0.52%	
CHAINAGE	0.00	11.49

PV - Alignment - 1B-8 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	42.24	42.24
DESIGN LEVELS	41.63	41.71
PIPE INVERT	40.40	40.49
STRUCTURE DEPTH (m)	1.40	1.20
PIPE DEPTH INVERT (m)	1.23	1.22
PIPE / GRADE	225mm RCRRJ 6.31m @ 1.32%	
CHAINAGE	0.00	6.31

PV - Alignment - SW 1B-8A Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	42.24	42.25
DESIGN LEVELS	41.63	41.70
PIPE INVERT	40.42	40.49
STRUCTURE DEPTH (m)	1.40	1.20
PIPE DEPTH INVERT (m)	1.21	1.21
PIPE / GRADE	225mm RCRRJ 8.78m @ 0.86%	
CHAINAGE	0.00	8.78

PV - Alignment - SW 1B-8A Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

Notes

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7. ALL LOT CONNECTIONS ARE TO BE 100mmØ PVC UNLESS SHOWN OTHERWISE.
8. MANHOLE DIAMETERS SHOWN ON STRUCTURE LABEL ARE INTERNAL DIAMETER.
9. MEASUREMENTS SHOWN ON THE LOT CONNECTIONS ARE THE DISTANCE FROM THE CENTRE OF THE DOWNSTREAM MANHOLE TO THE LOT CONNECTION POSITION WITHIN THE LOT BOUNDARY.
10. MANHOLE SLAB AND COVER TO BE ROTATED TO AVOID THE FOOTPATH EDGE FOR MANHOLES ON FOOTPATH.
11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

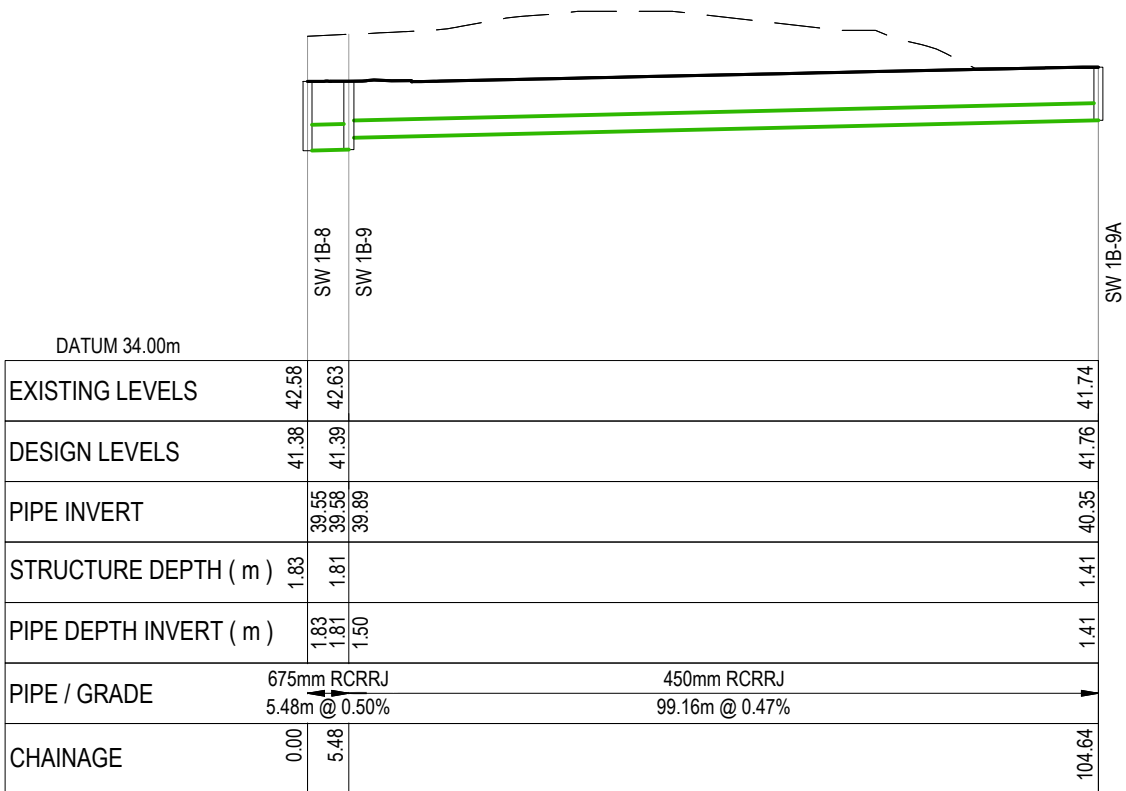


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

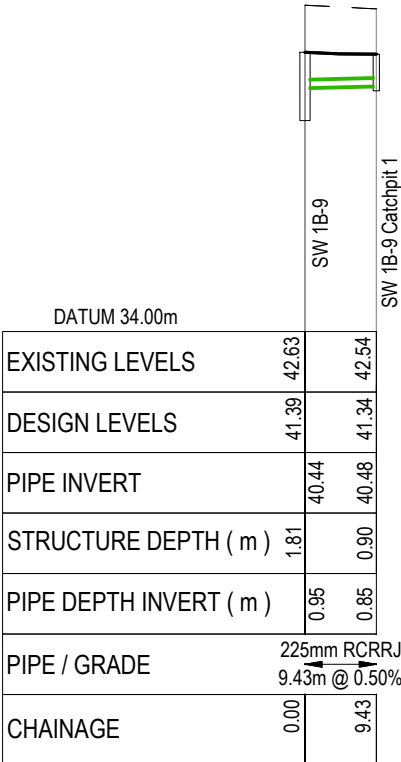
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-8
Rev	A

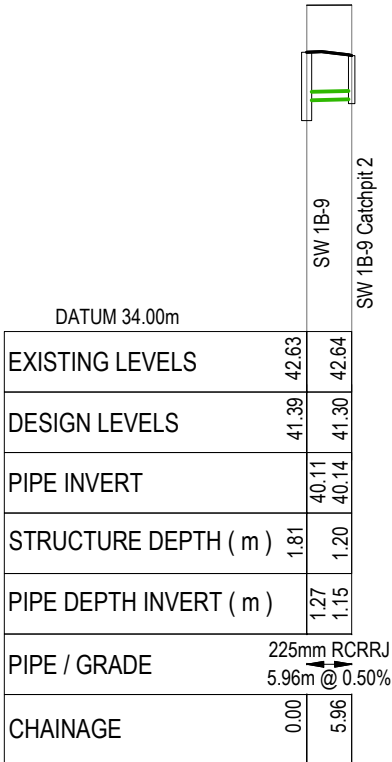
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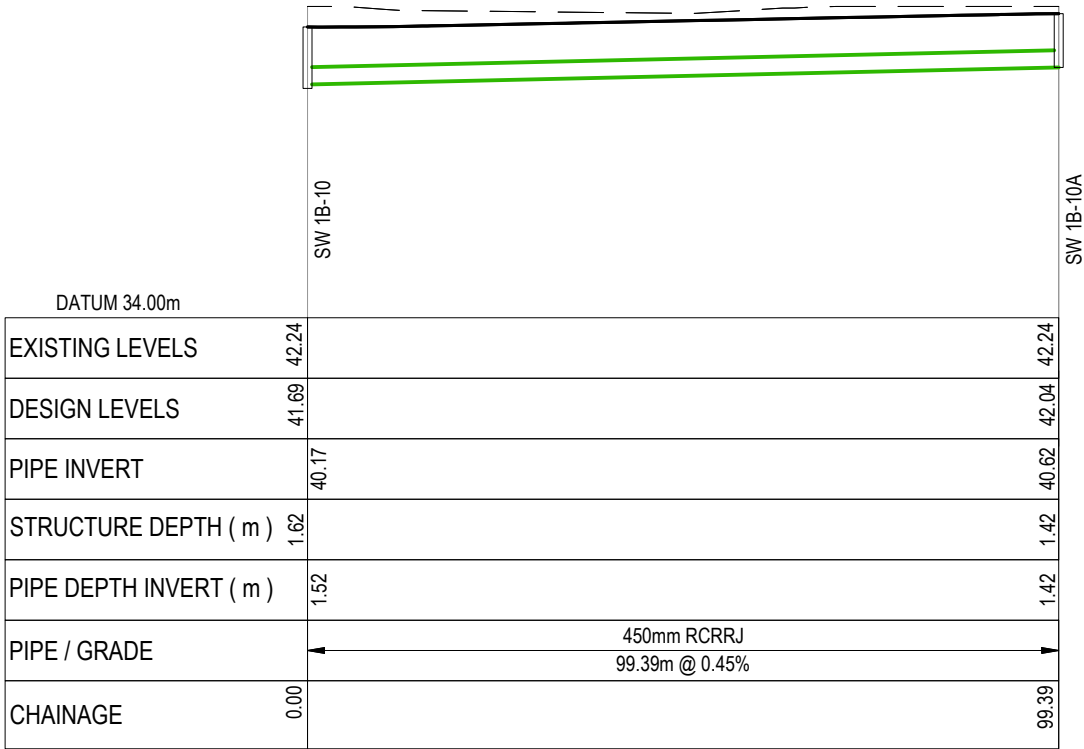
PV - Alignment - SW 1B-8 to 1B-9A
SCALE: HORI 1:1000 VERT 1:200



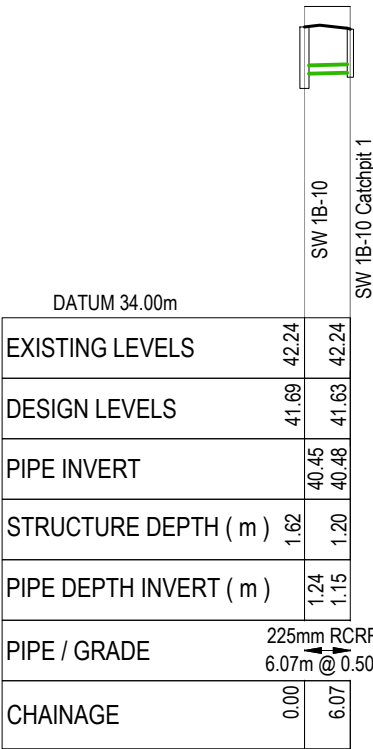
PV - Alignment - 1B-9 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



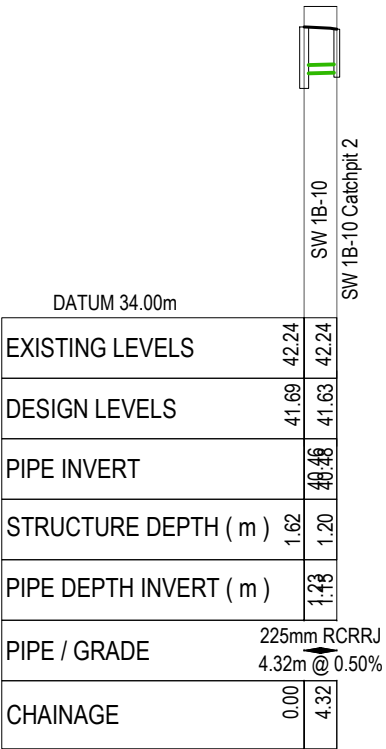
PV - Alignment - 1B-9 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 1B-10 to 1B-10A
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - 1B-10 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - 1B-10 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

Notes

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10. MANHOLE SLAB AND COVER TO BE ROTATED TO AVOID THE FOOTPATH EDGE FOR MANHOLES ON FOOTPATH.
11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

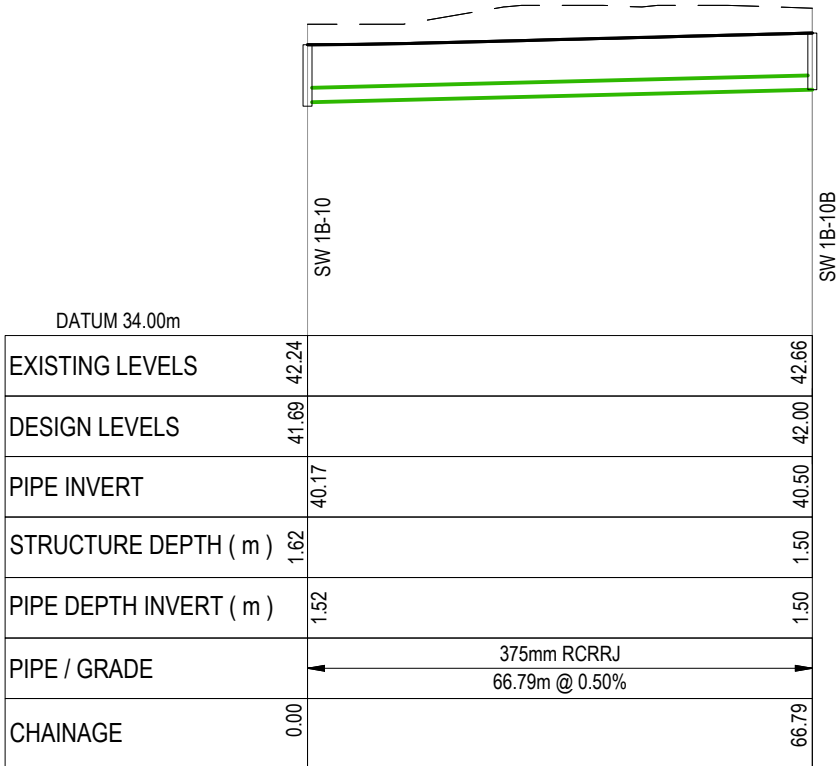


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

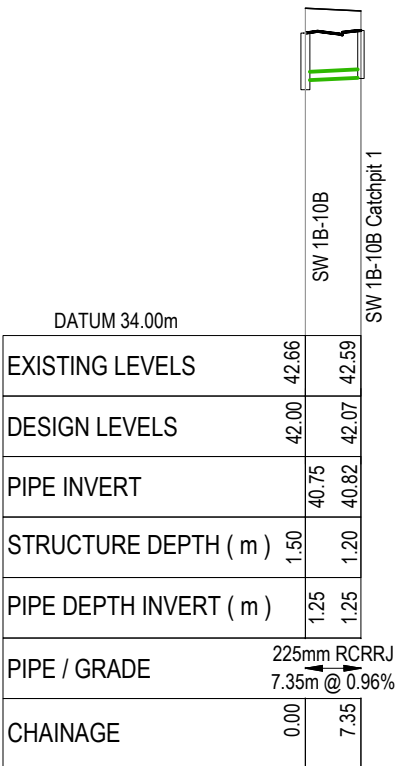
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-9	Rev	A

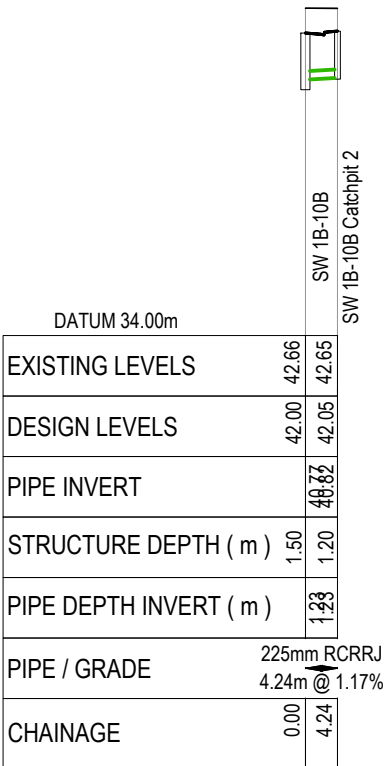
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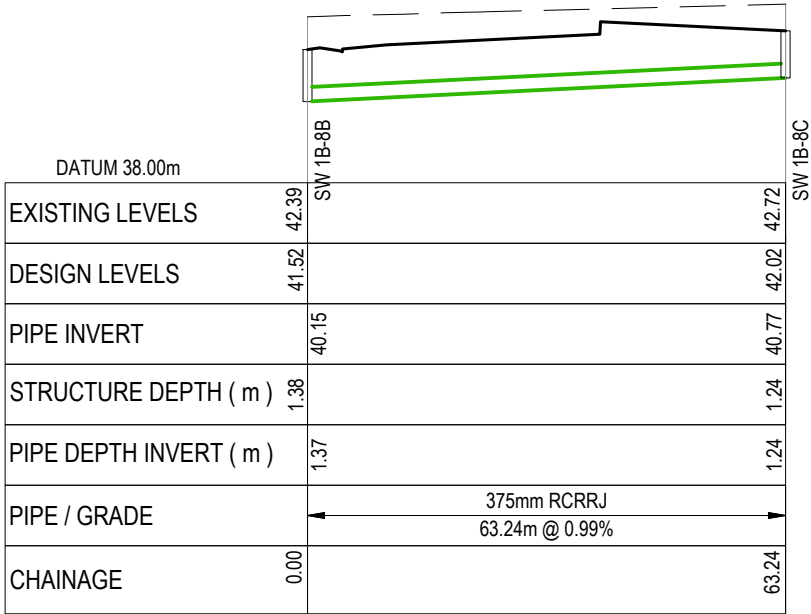
PV - Alignment - SW Line 1B-10 to 1B-10B
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 1B-10B Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 1B-10B Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 1B-8B to 1B-BC (1)
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

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- LEGEND
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 - HARDFILL BACKFILL
 - LOT CONNECTION
 - CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
	By	Date	
Survey	MAVEN	06/2025	
Design	MKS	07/2025	
Drawn	MJRA	11/2025	
Checked	DJM	11/2025	

M

MAVEN

Maven Waikato
07 242 0601
info@maven.co.nz
www.maven.co.nz
Level 1 286 Victoria Street, Hamilton
New Zealand

Project

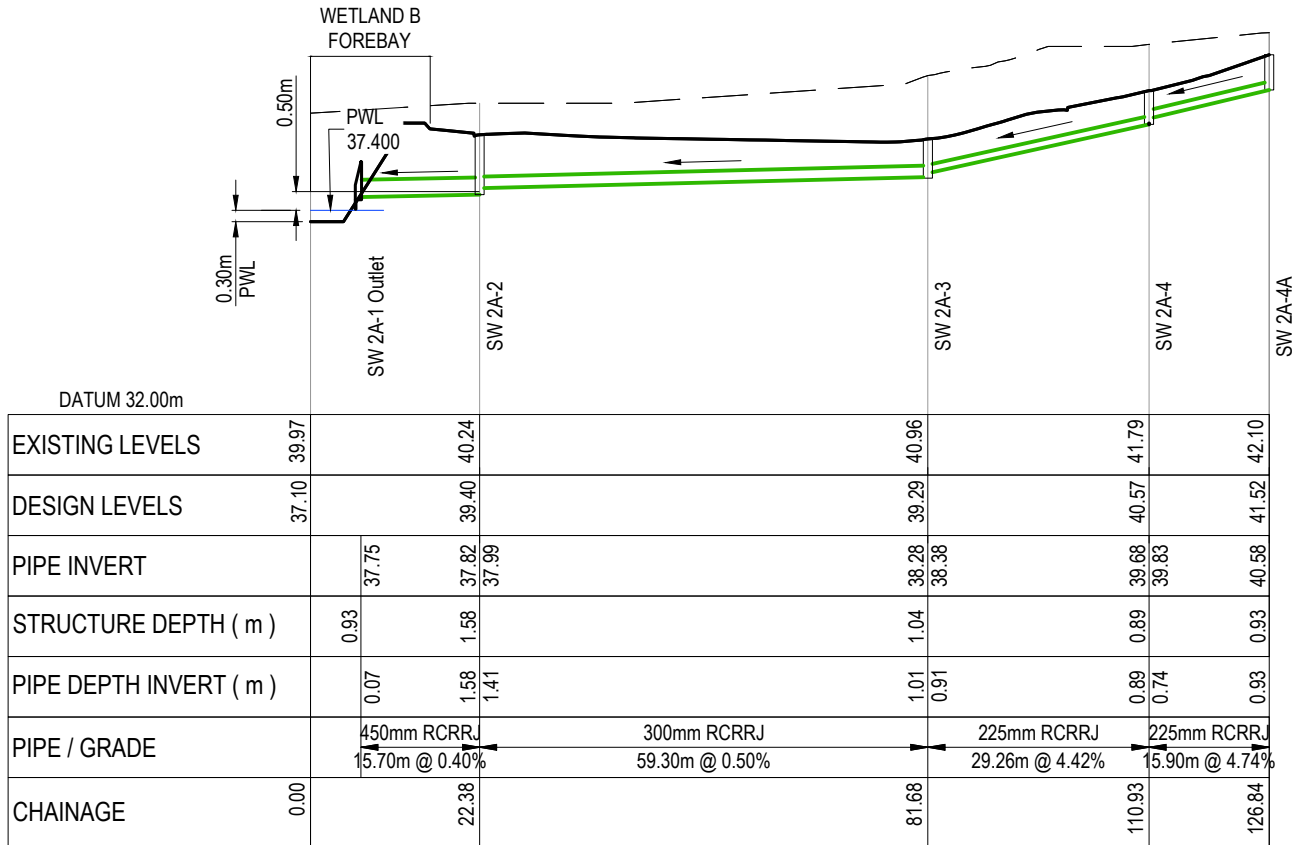
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title

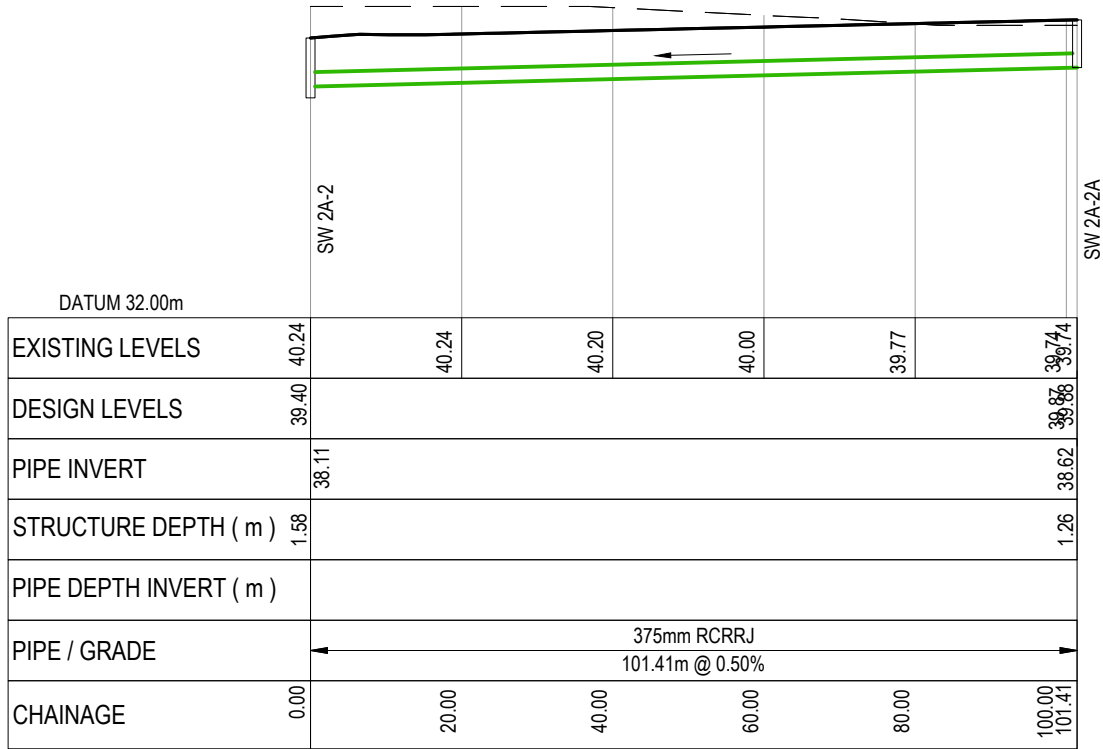
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-10	Rev	A

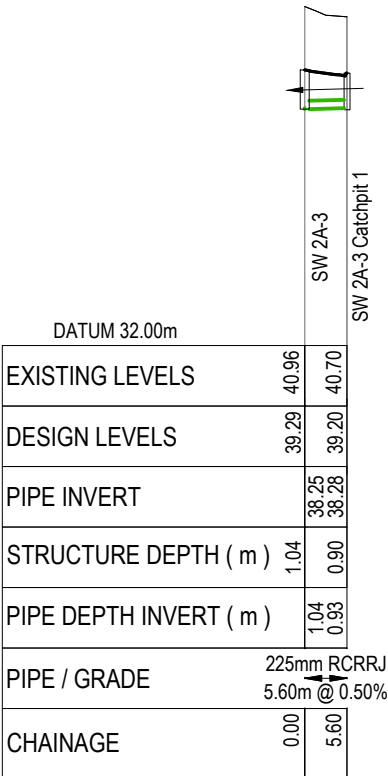
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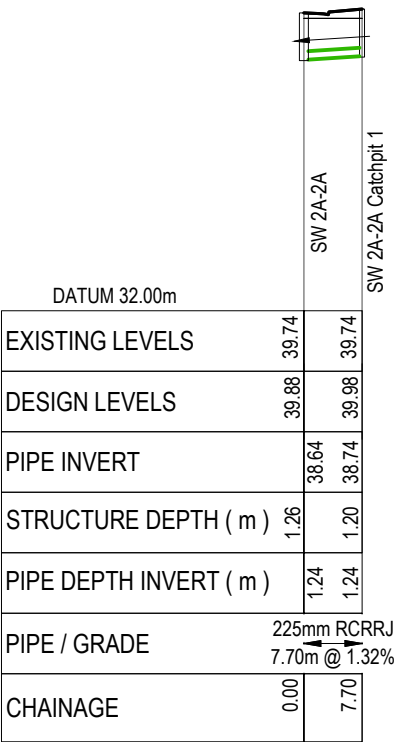
PV - Alignment - SW Line 2A-4A for Modelling
SCALE: HORI 1:1000 VERT 1:200



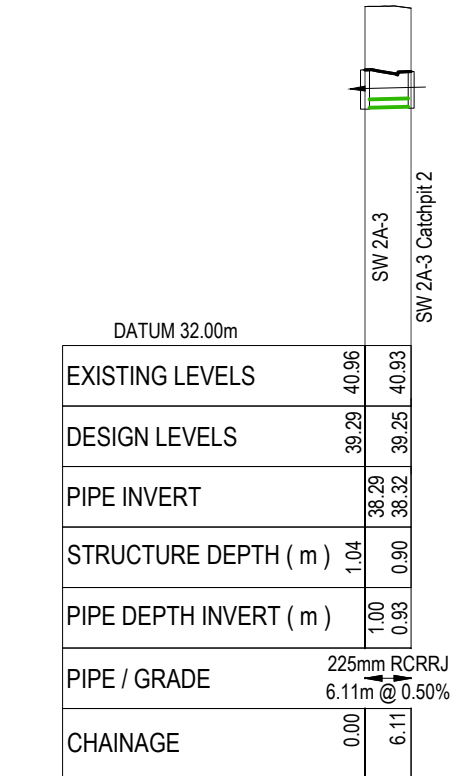
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SCALE: HORI 1:1000 VERT 1:200



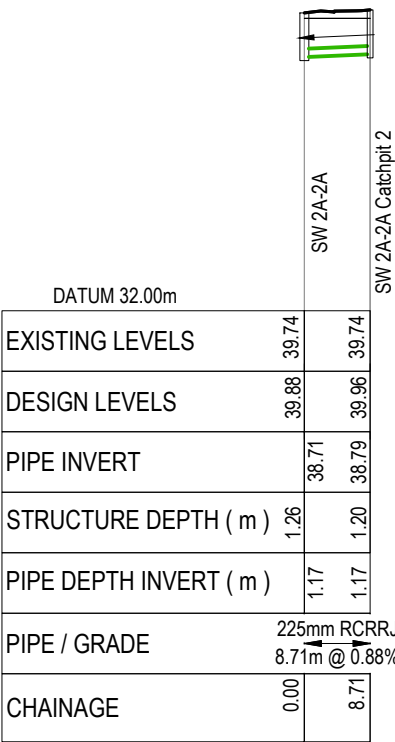
PV - Alignment - SW 2A-3 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 2A-2A Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 2A-3 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 2A-2A Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

- Notes
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- LEGEND
- EX GROUND LEVEL
 - PR GROUND LEVEL
 - HARDFILL BACKFILL
 - LOT CONNECTION
 - CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025



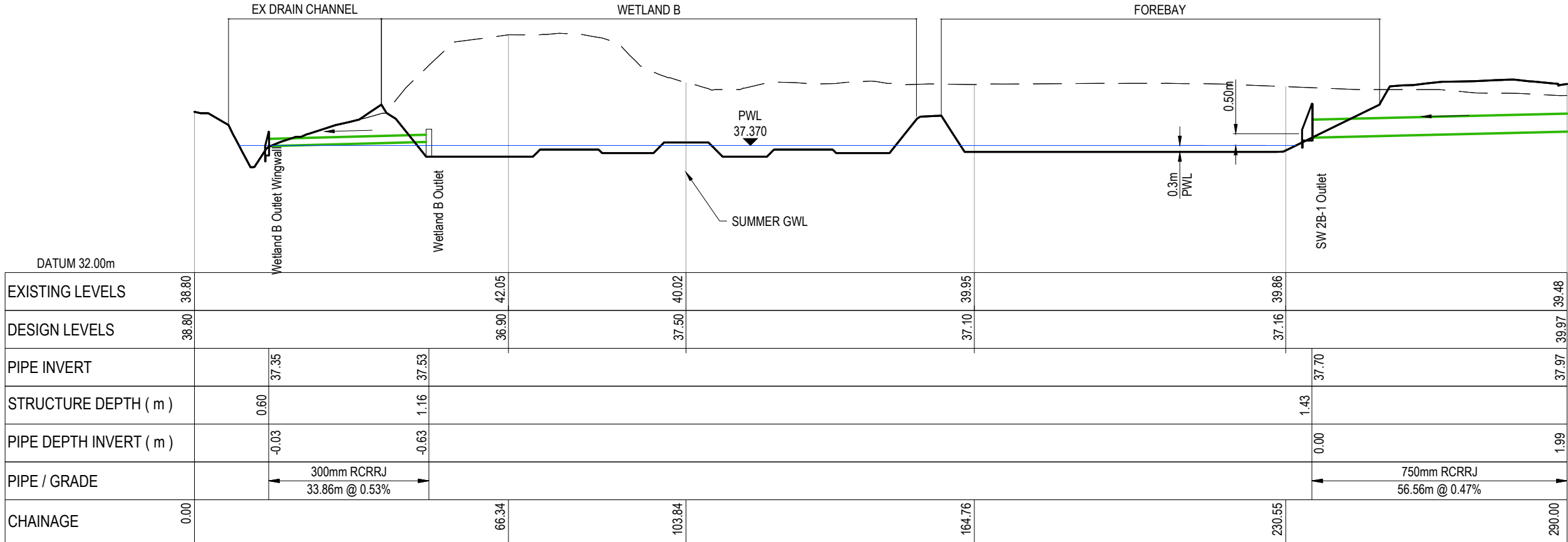
Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
STORMWATER
LONG SECTIONS**

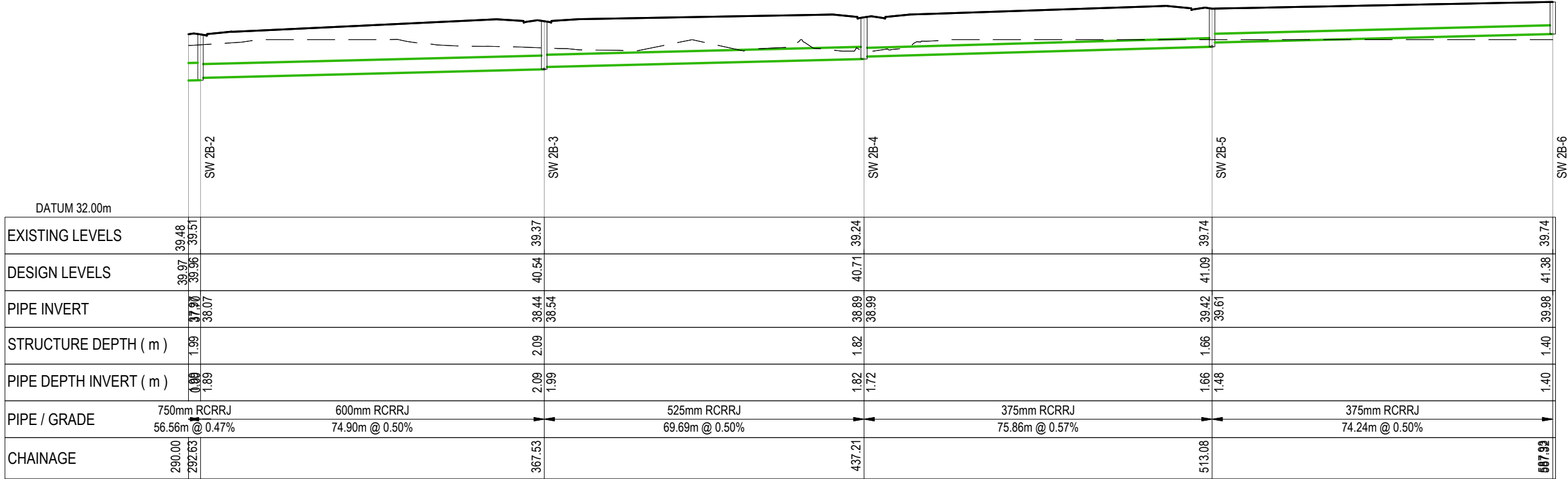
Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-11
Rev	A

RESOURCE CONSENT

DATE: 8/20/26 FILEPATH: F:\MAVEN\HAMILTON6 - PROJECTS\298001 - SOUTHERN LINKS 1\STG R1\DWG\298001-R1-C420 SW LONGSECTIONS.DWG



PV - Alignment - SW Line 2B-1 Outlet to 2B-6 (1 of 2)
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 2B-1 Outlet to 2B-6 (2 of 2)
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

Notes

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3. LEVELS IN TERMS OF THE NZ VERTICAL DATUM 2016.
4. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY HIS OPERATIONS.
5. APPROVED HARDFILL IS TO BE USED IN BACKFILLING OF ALL ROAD CROSSINGS TO COUNCIL STANDARDS.
6. HEAVY DUTY MANHOLE LIDS AND FRAMES TO BE USED IN TRAFFICKED AREAS, ALL MANHOLES SHALL HAVE STAINLESS GRATES INSTALLED.
7. ALL LOT CONNECTIONS ARE TO BE 100mmØ PVC UNLESS SHOWN OTHERWISE.
8. MANHOLE DIAMETERS SHOWN ON STRUCTURE LABEL ARE INTERNAL DIAMETER.
9. MEASUREMENTS SHOWN ON THE LOT CONNECTIONS ARE THE DISTANCE FROM THE CENTRE OF THE DOWNSTREAM MANHOLE TO THE LOT CONNECTION POSITION WITHIN THE LOT BOUNDARY.
10. MANHOLE SLAB AND COVER TO BE ROTATED TO AVOID THE FOOTPATH EDGE FOR MANHOLES ON FOOTPATH.
11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

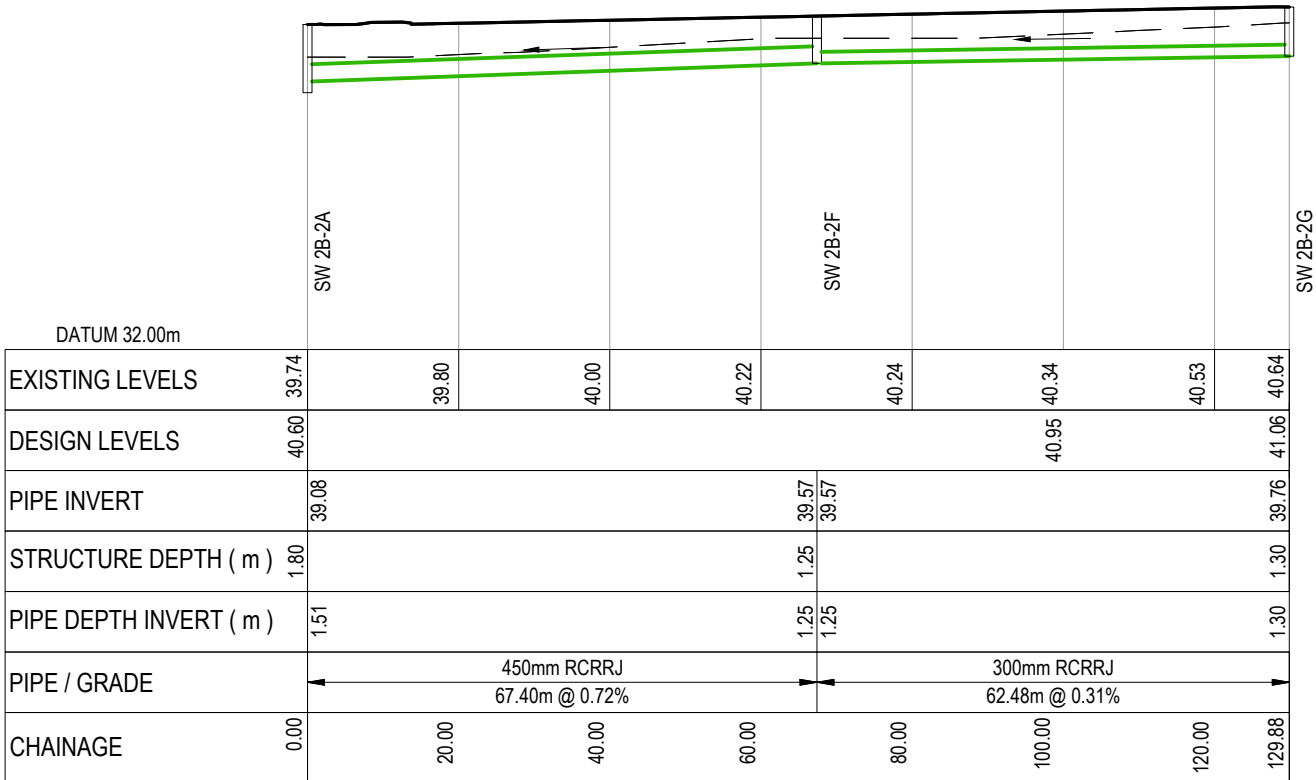


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

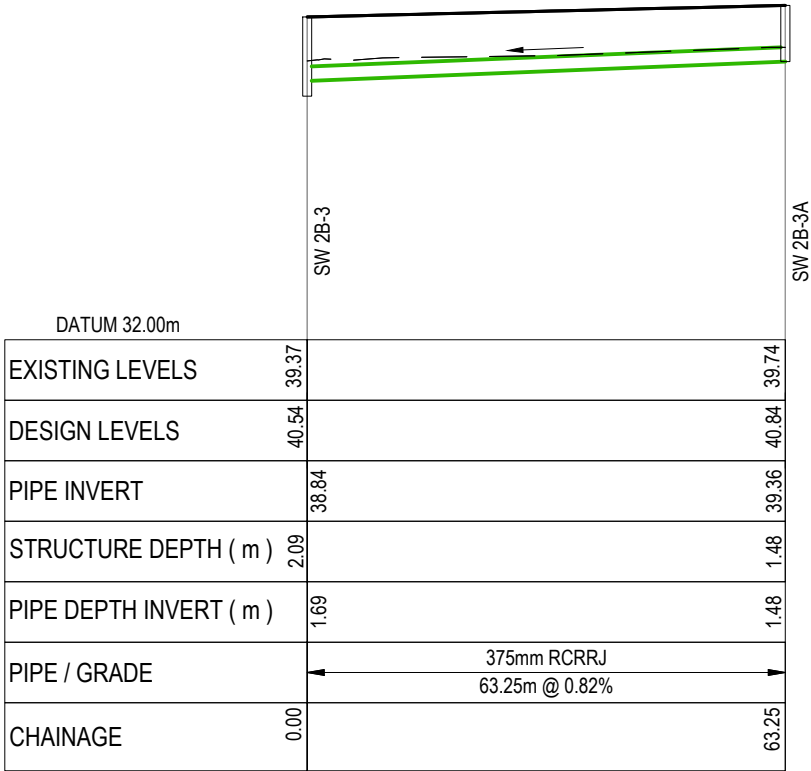
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-13	Rev	A

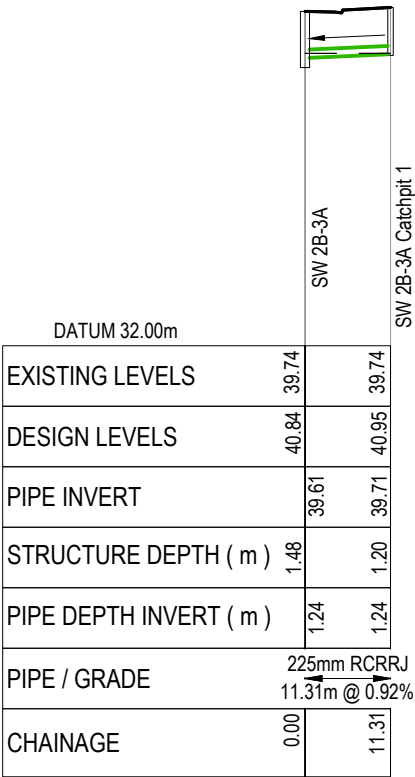
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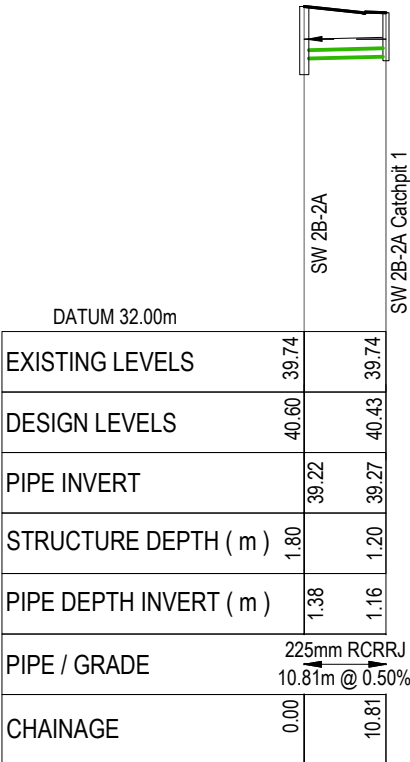
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SCALE: HORI 1:1000 VERT 1:200



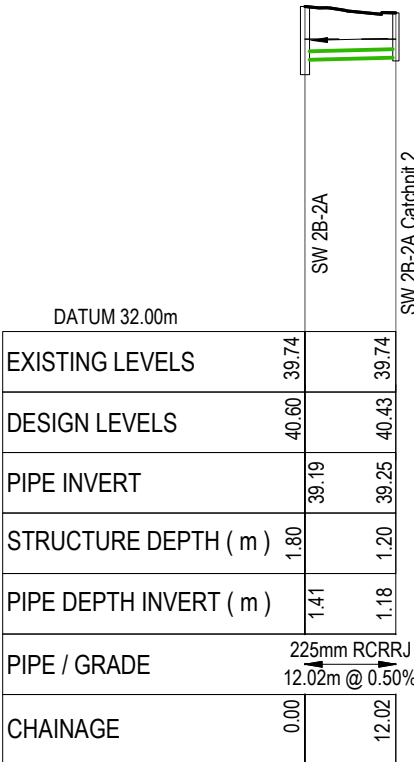
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SCALE: HORI 1:1000 VERT 1:200



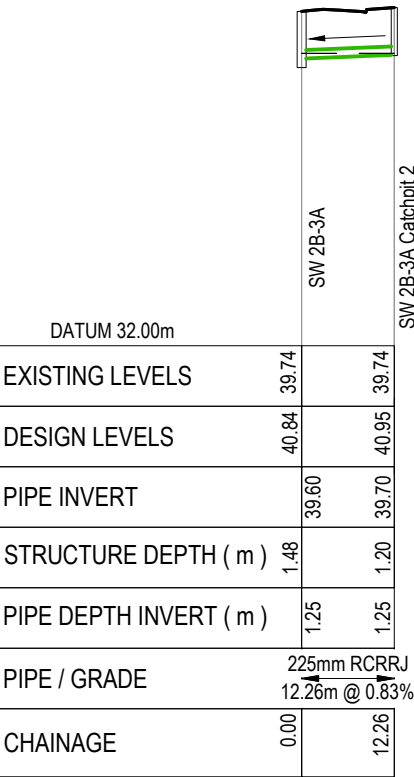
PV - Alignment - SW 2B-3A Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 2B-2A Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 2B-2A Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 2B-3A Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

Notes

1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE



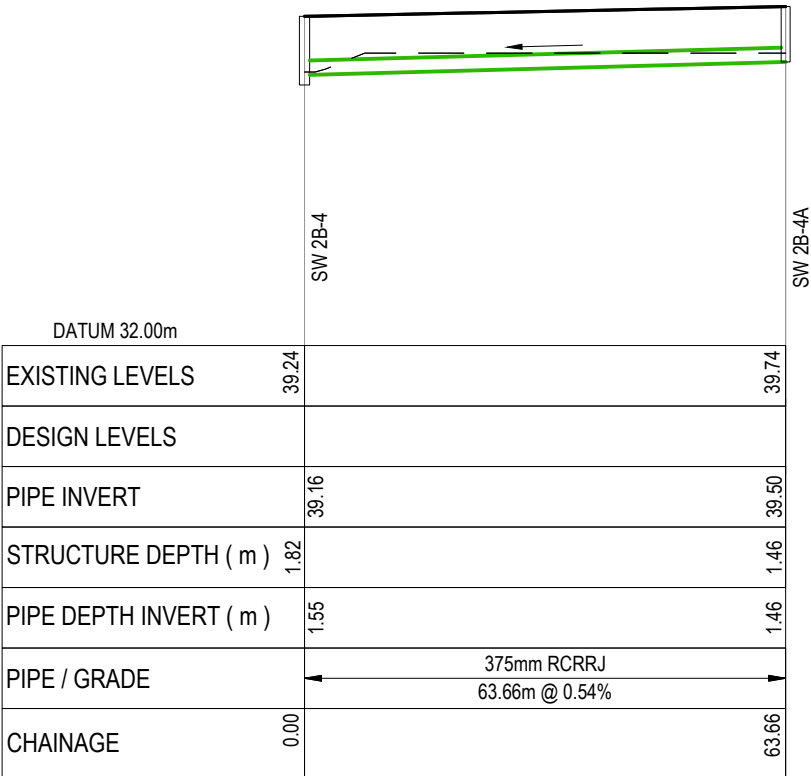
Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
STORMWATER
LONG SECTIONS**

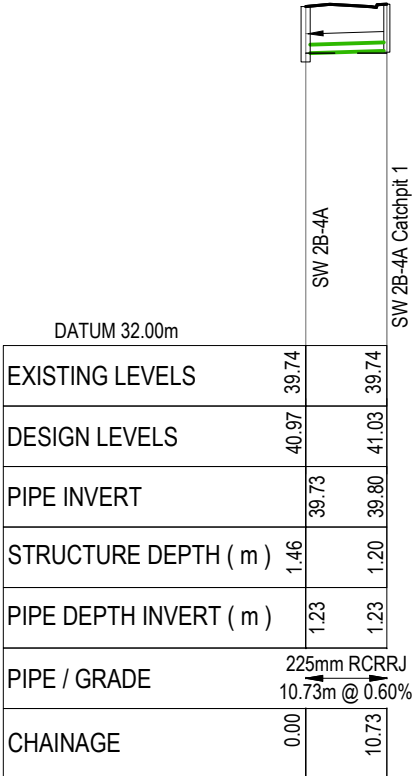
Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-14	Rev	A

RESOURCE CONSENT

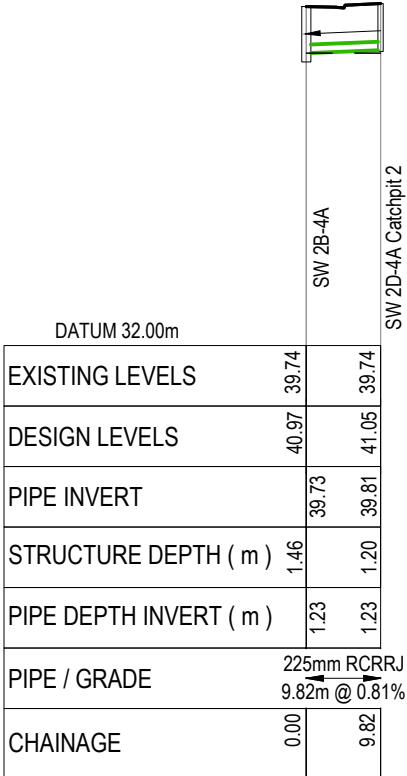
DATE: 8/20/26 FILEPATH: F:\MAVEN\HAMILTON\6 PROJECTS\298001 - SOUTHERN LINKS 1\STG R1\DWG\298001-R1-C420 SW LONGSECTIONS.DWG



PV - Alignment - SW Line 2B-4 to 2B-4A
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 2B-4A Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 2B-4A Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

- Notes
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LEGEND

— — — — — EX GROUND LEVEL
— — — — — PR GROUND LEVEL
[Hatched Box] HARDFILL BACKFILL
[Green Arrow] LOT CONNECTION
[Red 0] [Green 0] CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
	By	Date	
Survey	MAVEN	06/2025	
Design	MKS	07/2025	
Drawn	MJRA	11/2025	
Checked	DJM	11/2025	

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Maven Waikato

07 242 0601

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www.maven.co.nz

Level 1 286 Victoria Street, Hamilton

New Zealand

Project

SOUTHERN LINKS 1

RESIDENTIAL STAGE 1

HAMILTON, WAIKATO

FOR

SAXBY RD JV LIMITED

Title

PROPOSED

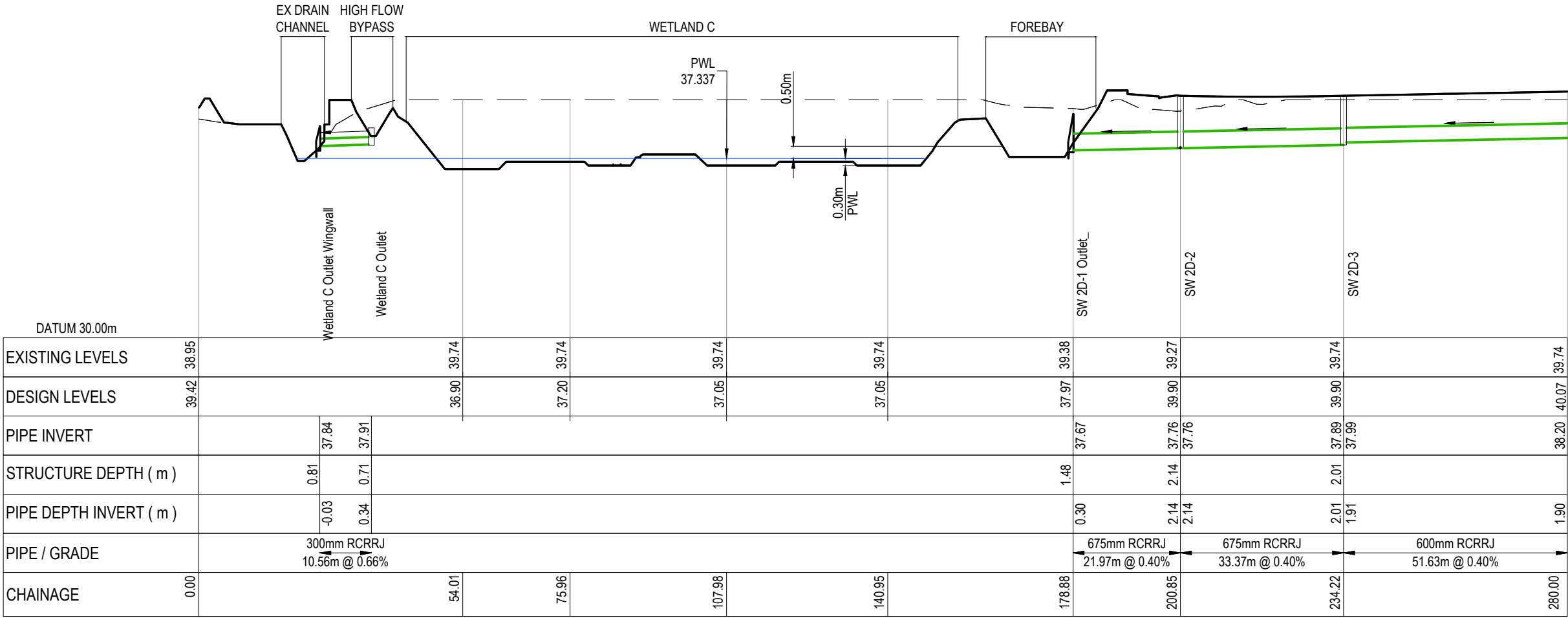
STORMWATER

LONG SECTIONS

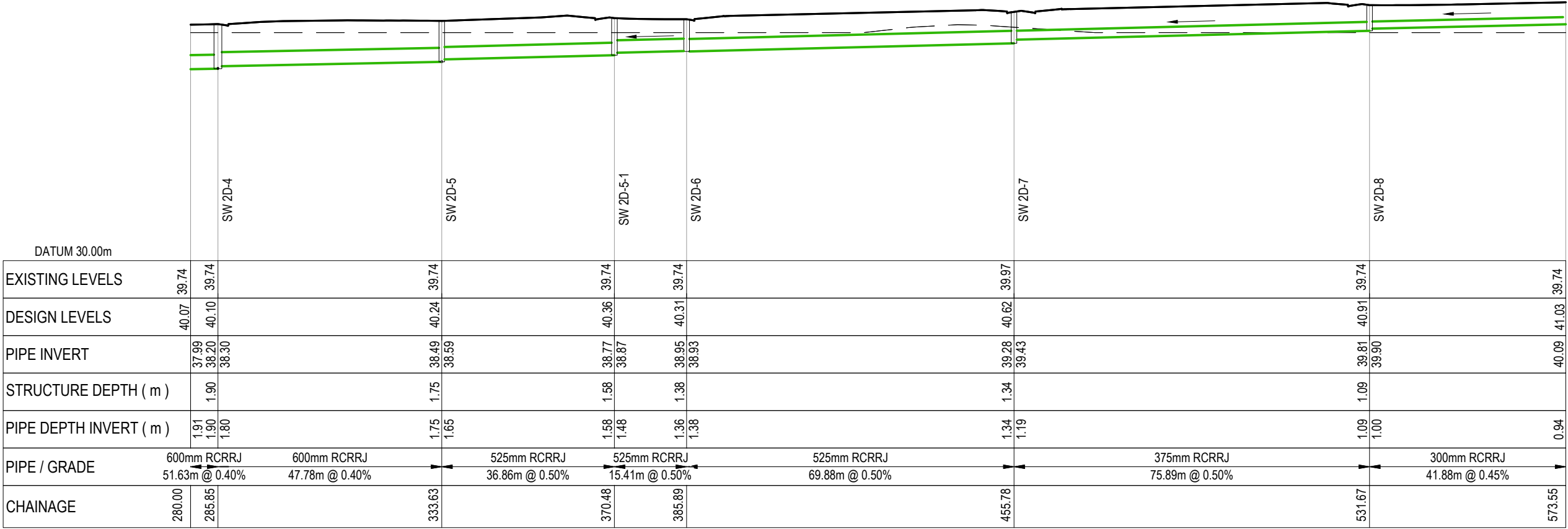
Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-15	Rev	A

RESOURCE CONSENT

DATE: 8/20/26 FILEPATH: F:\MAVEN\HAMILTON6 - PROJECTS\298001 - SOUTHERN LINKS 1\STG R1\DWG\298001-R1-C420 SW LONGSECTIONS.DWG



PV - Alignment - SW Line 2D-1 Outlet to 2D-8A (1 OF 2)
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 2D-1 Outlet to 2D-8A (2 OF 2)
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

Notes

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LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
Survey	MAVEN	06/2025	
Design	MKS	07/2025	
Drawn	MJRA	11/2025	
Checked	DJM	11/2025	

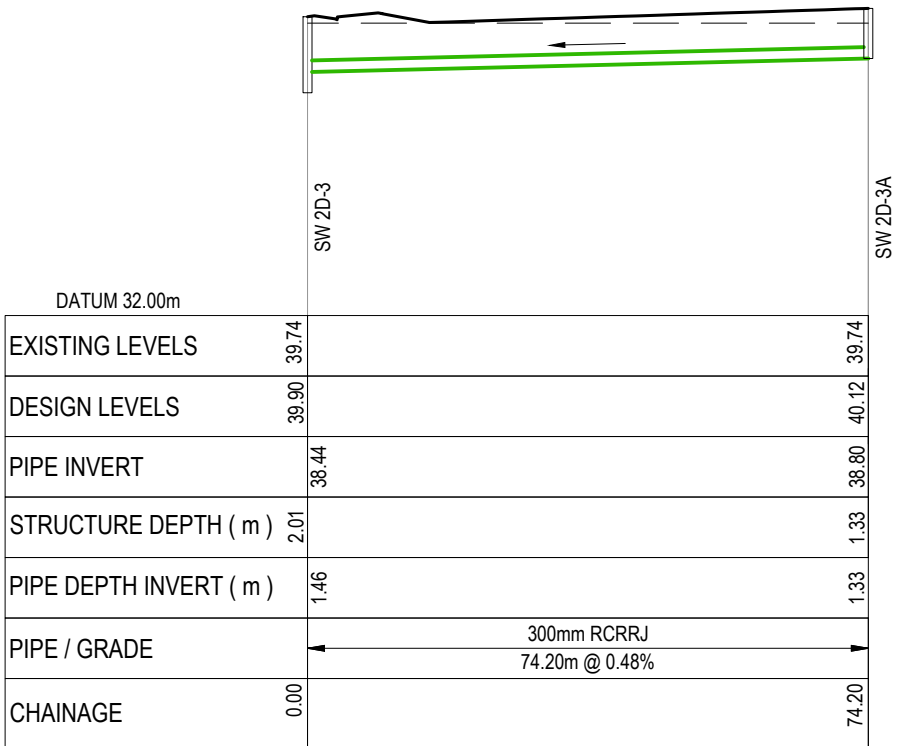


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

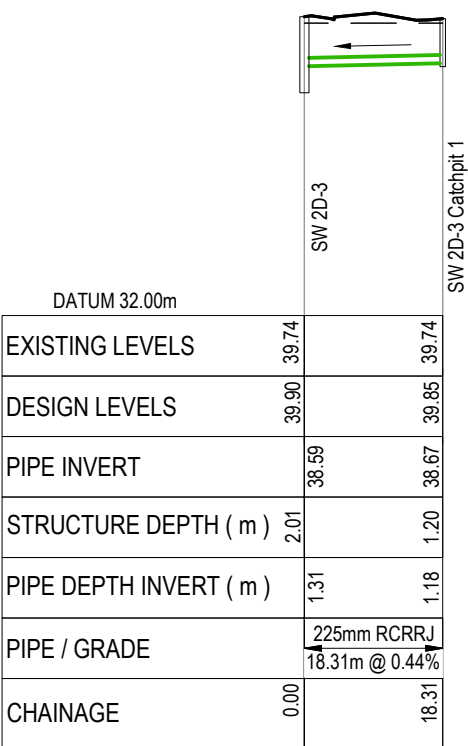
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-16
Rev	A

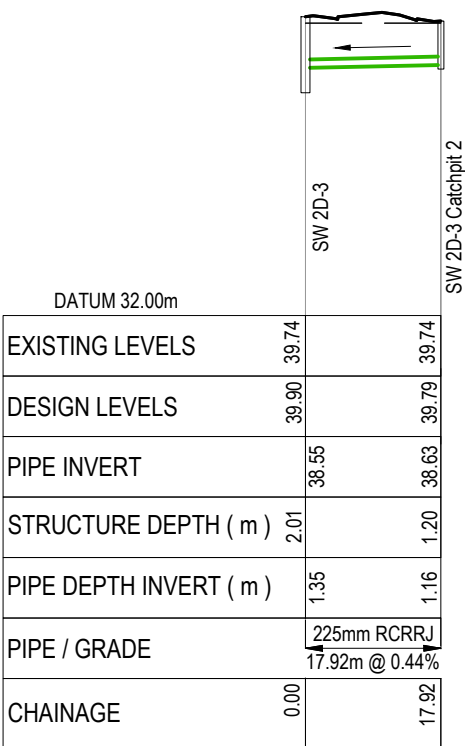
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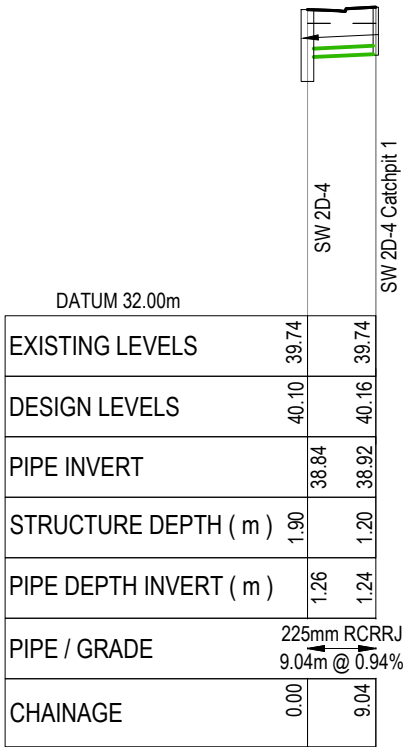
PV - Alignment - SW 2D-3 to 2D-3A
SCALE: HORI 1:1000 VERT 1:200



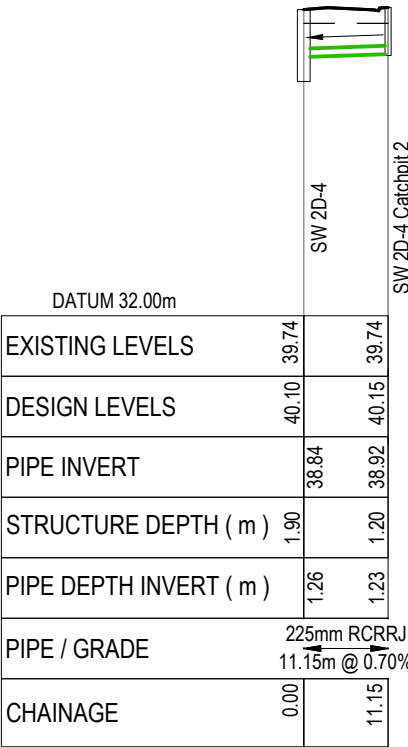
PV - Alignment - SW 2D-3 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



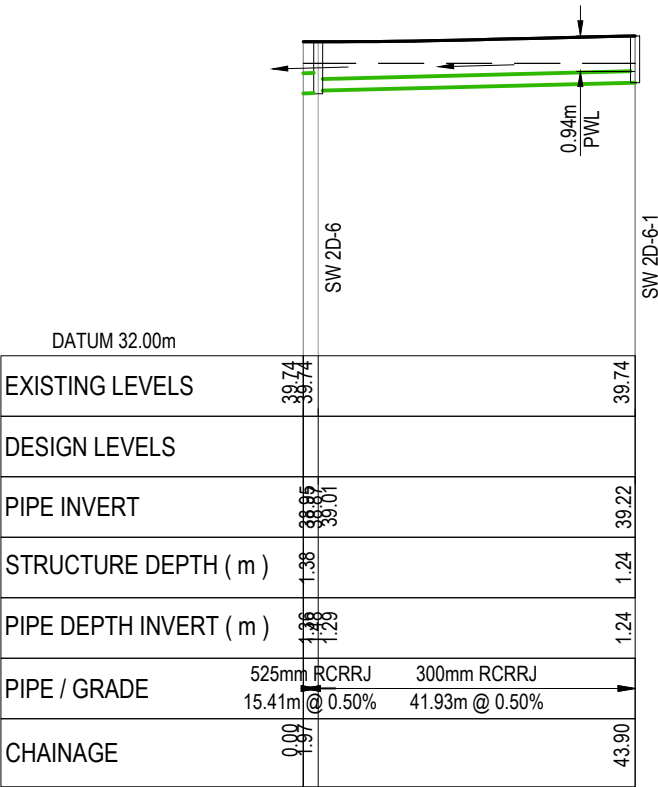
PV - Alignment - SW 2D-3 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 2D-4 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 2D-4 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 2D-6A for Modelling
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

Notes

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11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025



Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-17	Rev	A

DATE: 8/20/26 FILEPATH: F:\MAVEN\HAMILTON6 - PROJECTS\298001 - SOUTHERN LINKS 1\B10 R1\DWG\298001-R1-C420 SW LONGSECTIONS.DWG



DATUM 32.00m		
EXISTING LEVELS	39.74	39.74
DESIGN LEVELS	40.31	40.33
PIPE INVERT	39.96	39.96
STRUCTURE DEPTH (m)	1.38	1.20
PIPE DEPTH INVERT (m)	1.23	1.23
PIPE / GRADE	225mm RCRRJ 3.68m @ 1.04%	
CHAINAGE	0.00	3.68

PV - Alignment - SW 2D-6 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	39.74	39.74
DESIGN LEVELS	40.31	40.32
PIPE INVERT	39.05	39.09
STRUCTURE DEPTH (m)	1.38	1.20
PIPE DEPTH INVERT (m)	1.26	1.23
PIPE / GRADE	225mm RCRRJ 5.62m @ 0.78%	
CHAINAGE	0.00	5.62

PV - Alignment - SW 2D-6 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	39.92	39.74
DESIGN LEVELS		
PIPE INVERT	39.42	39.56
STRUCTURE DEPTH (m)	1.34	1.10
PIPE DEPTH INVERT (m)	1.20	1.10
PIPE / GRADE	300mm RCRRJ 42.86m @ 0.32%	
CHAINAGE	0.00	38.86

PV - Alignment - SW Line 2D-7 to 2D-7A
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	39.97	39.92
DESIGN LEVELS	40.62	40.57
PIPE INVERT	39.38	39.42
STRUCTURE DEPTH (m)	1.34	1.20
PIPE DEPTH INVERT (m)	1.24	1.15
PIPE / GRADE	225mm RCRRJ 4.65m @ 0.89%	
CHAINAGE	0.00	4.65

PV - Alignment - SW 2D-7 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	39.97	39.92
DESIGN LEVELS	40.62	40.57
PIPE INVERT	39.38	39.42
STRUCTURE DEPTH (m)	1.34	1.20
PIPE DEPTH INVERT (m)	1.24	1.15
PIPE / GRADE	225mm RCRRJ 1.83m @ 1.93%	
CHAINAGE	0.00	1.83

PV - Alignment - SW 2D-7 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	39.74	39.97
DESIGN LEVELS	40.91	40.97
PIPE INVERT	39.81	39.88
STRUCTURE DEPTH (m)		1.25
PIPE DEPTH INVERT (m)	1.09	1.09
PIPE / GRADE	225mm RCRRJ 19.70m @ 0.34%	
CHAINAGE	0.00	20.00

PV - Alignment - SW 2D-8 to 2D-8B
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	39.99	40.09
DESIGN LEVELS	40.97	41.11
PIPE INVERT	40.02	40.15
STRUCTURE DEPTH (m)	1.25	1.20
PIPE DEPTH INVERT (m)	0.95	0.95
PIPE / GRADE	225mm RCRRJ 8.37m @ 1.60%	
CHAINAGE	0.00	8.37

PV - Alignment - SW 2D-8B Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



DATUM 32.00m		
EXISTING LEVELS	39.99	40.02
DESIGN LEVELS	40.97	41.09
PIPE INVERT	39.72	39.84
STRUCTURE DEPTH (m)	1.25	1.20
PIPE DEPTH INVERT (m)	1.25	1.25
PIPE / GRADE	225mm RCRRJ 9.37m @ 1.26%	
CHAINAGE	0.00	9.37

PV - Alignment - SW 2D-8B Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

Notes

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LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

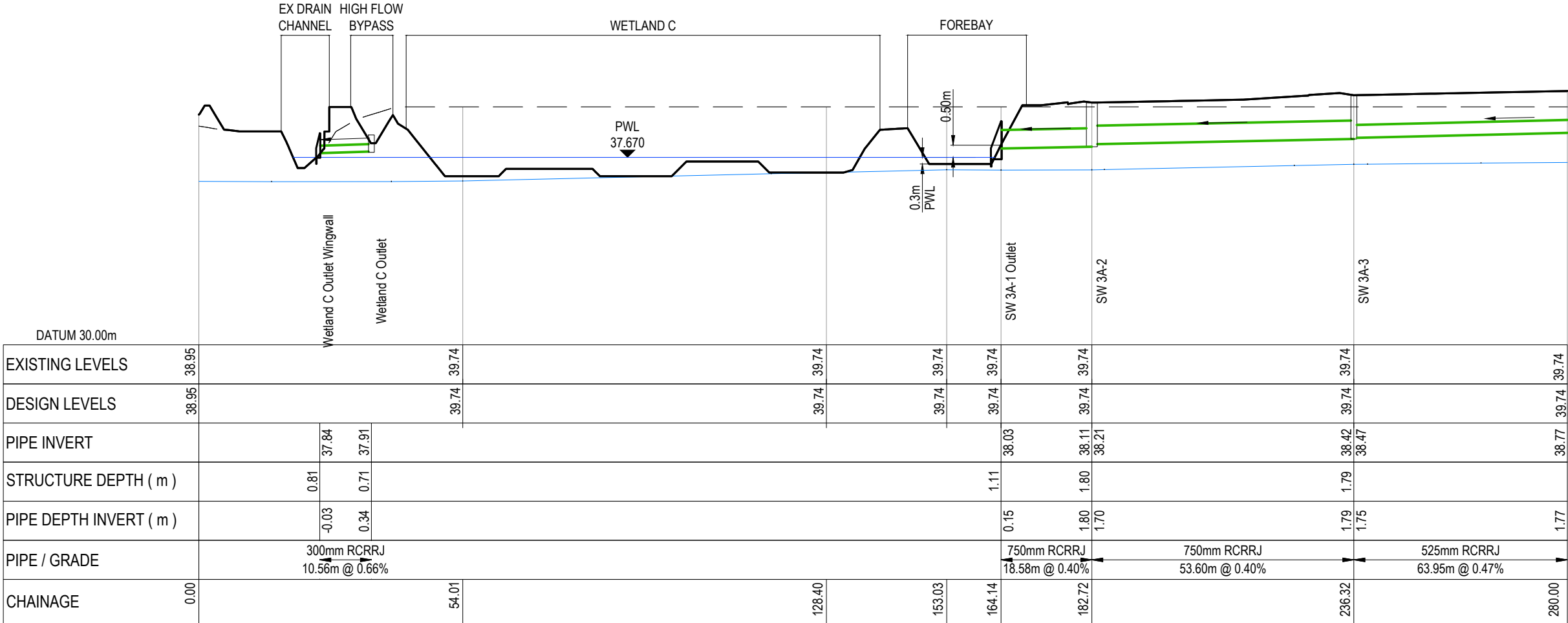


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

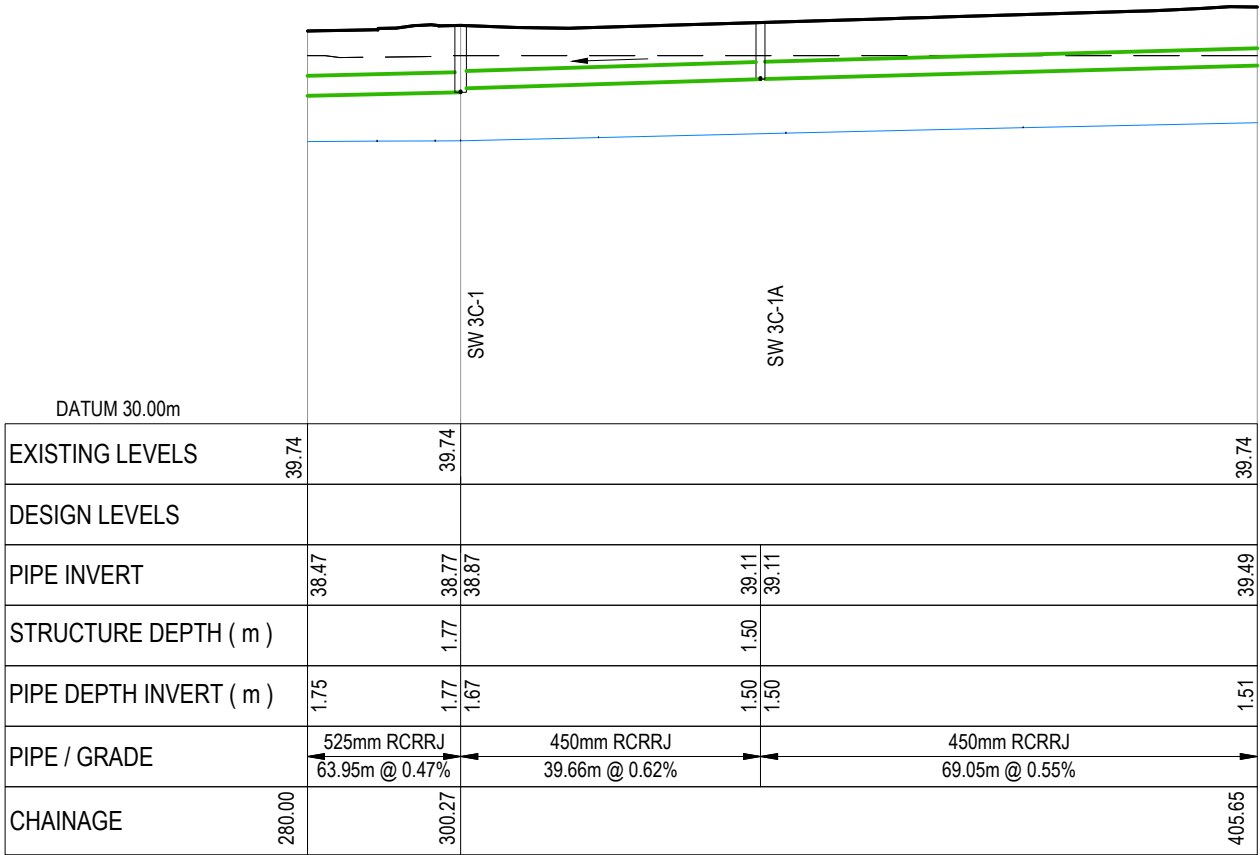
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-18
Rev	A

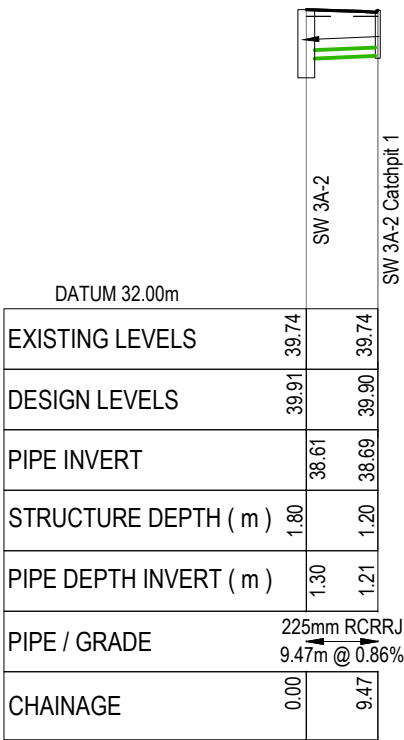
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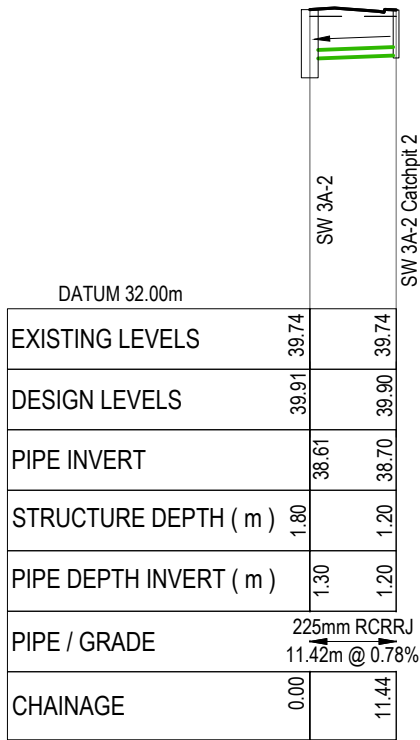
PV - Alignment - SW Line 3A-1 Outlet to 3C-1A (1 of 2)
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 3A-1 Outlet to 3C-1A (2 of 2)
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3A-2 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3A-2 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
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LEGEND

--- EX GROUND LEVEL
--- PR GROUND LEVEL
HARDFILL BACKFILL
LOT CONNECTION
CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

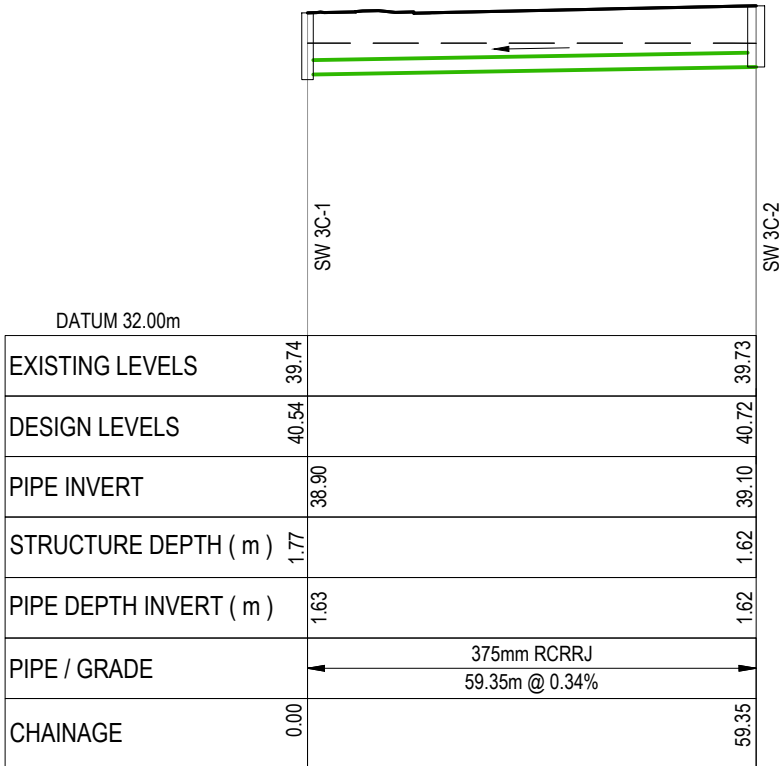
M **MAVEN** **Waikato**
07 242 0601
info@maven.co.nz
www.maven.co.nz
Level 1 286 Victoria Street, Hamilton
New Zealand

Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

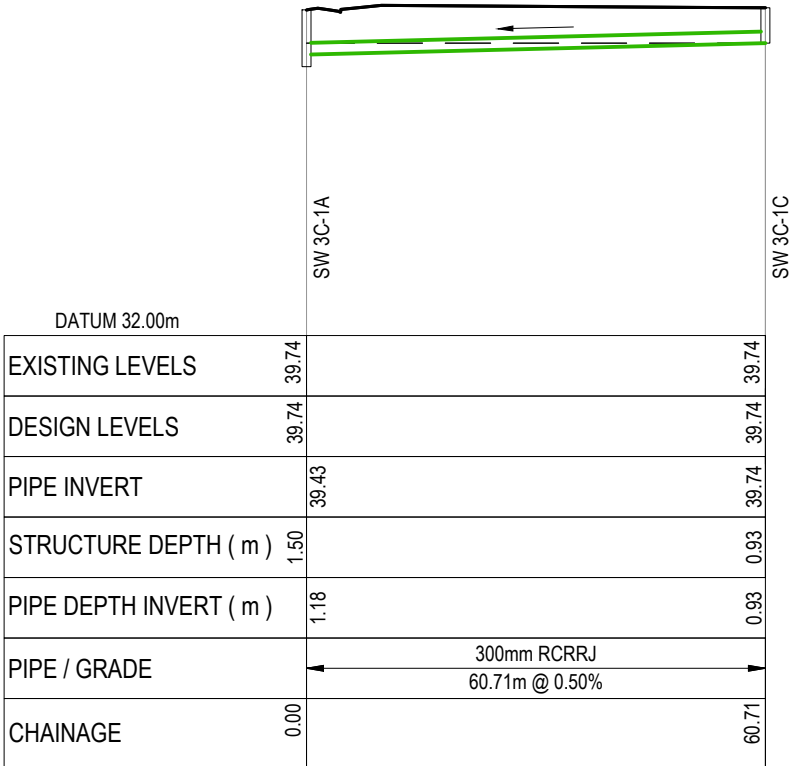
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-19
Rev	A

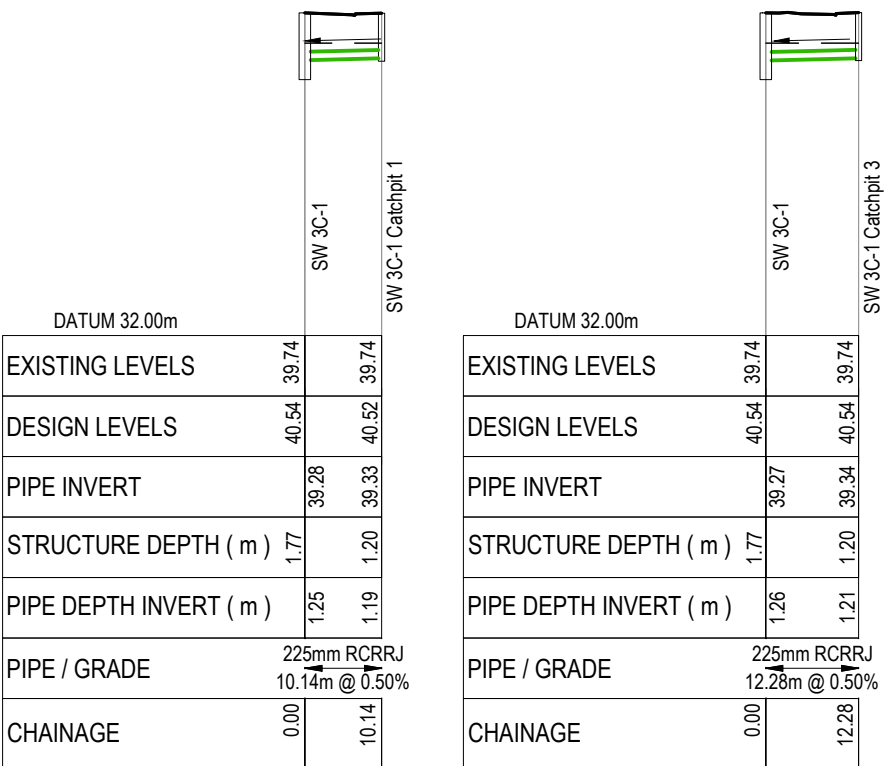
DATE: 8/20/26 FILEPATH: F:\MAVEN\HAMILTON6 - PROJECTS\298001 - SOUTHERN LINKS 1\ESTG R1\DWG\298001-R1-C420 SW LONGSECTIONS.DWG



PV - Alignment - SW 3C-1 to 3C-2
SCALE: HORI 1:1000 VERT 1:200

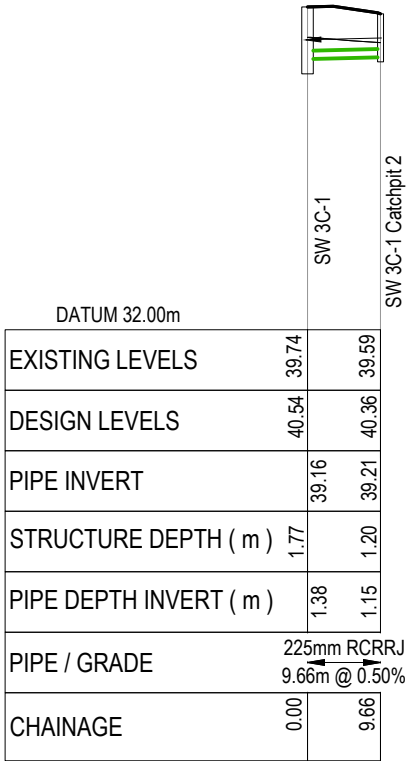


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SCALE: HORI 1:1000 VERT 1:200

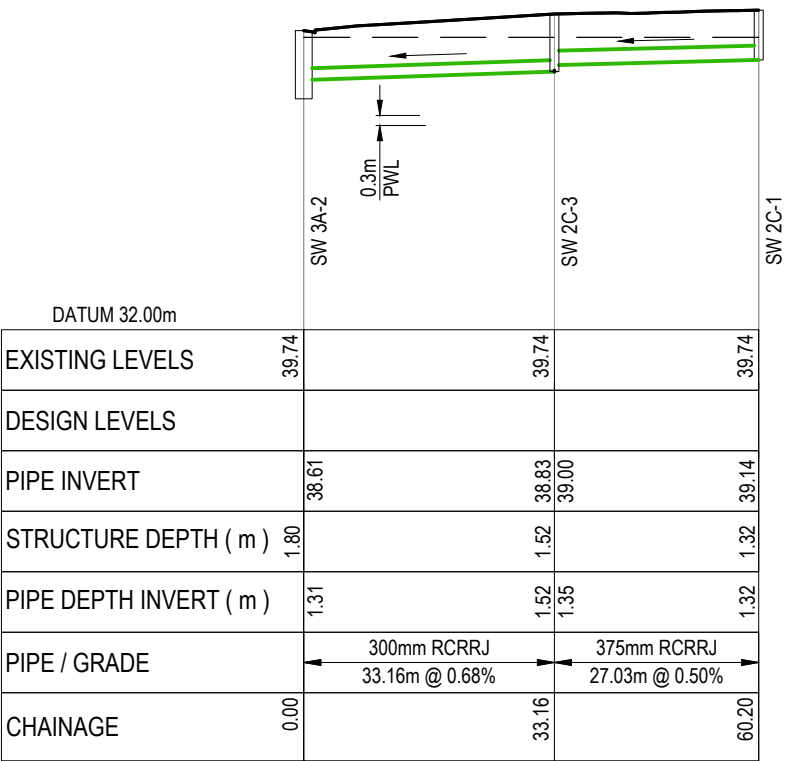


PV - Alignment - SW 3C-1 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200

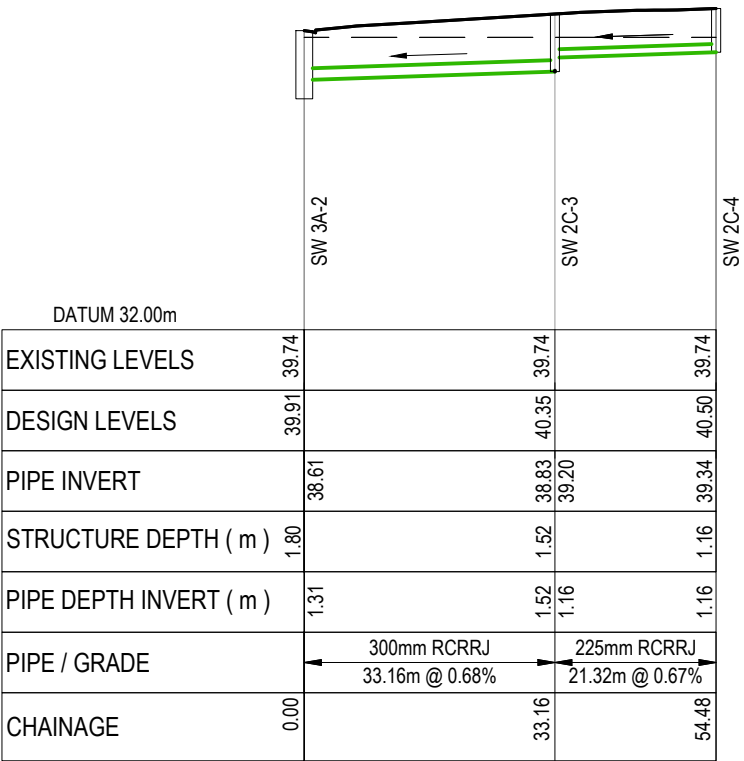
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SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3C-1 Catchpit 3
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 3A-1 Outlet to 2C-2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 2C-3 to 3A-2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
 2. COORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
 3. LEVELS IN TERMS OF THE NZ VERTICAL DATUM 2016.
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 5. APPROVED HARDFILL IS TO BE USED IN BACKFILLING OF ALL ROAD CROSSINGS TO COUNCIL STANDARDS.
 6. HEAVY DUTY MANHOLE LIDS AND FRAMES TO BE USED IN TRAFFICKED AREAS, ALL MANHOLES SHALL HAVE STAINLESS GRATES INSTALLED.
 7. ALL LOT CONNECTIONS ARE TO BE 100mmØ PVC UNLESS SHOWN OTHERWISE.
 8. MANHOLE DIAMETERS SHOWN ON STRUCTURE LABEL ARE INTERNAL DIAMETER.
 9. MEASUREMENTS SHOWN ON THE LOT CONNECTIONS ARE THE DISTANCE FROM THE CENTRE OF THE DOWNSTREAM MANHOLE TO THE LOT CONNECTION POSITION WITHIN THE LOT BOUNDARY.
 10. MANHOLE SLAB AND COVER TO BE ROTATED TO AVOID THE FOOTPATH EDGE FOR MANHOLES ON FOOTPATH.
 11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

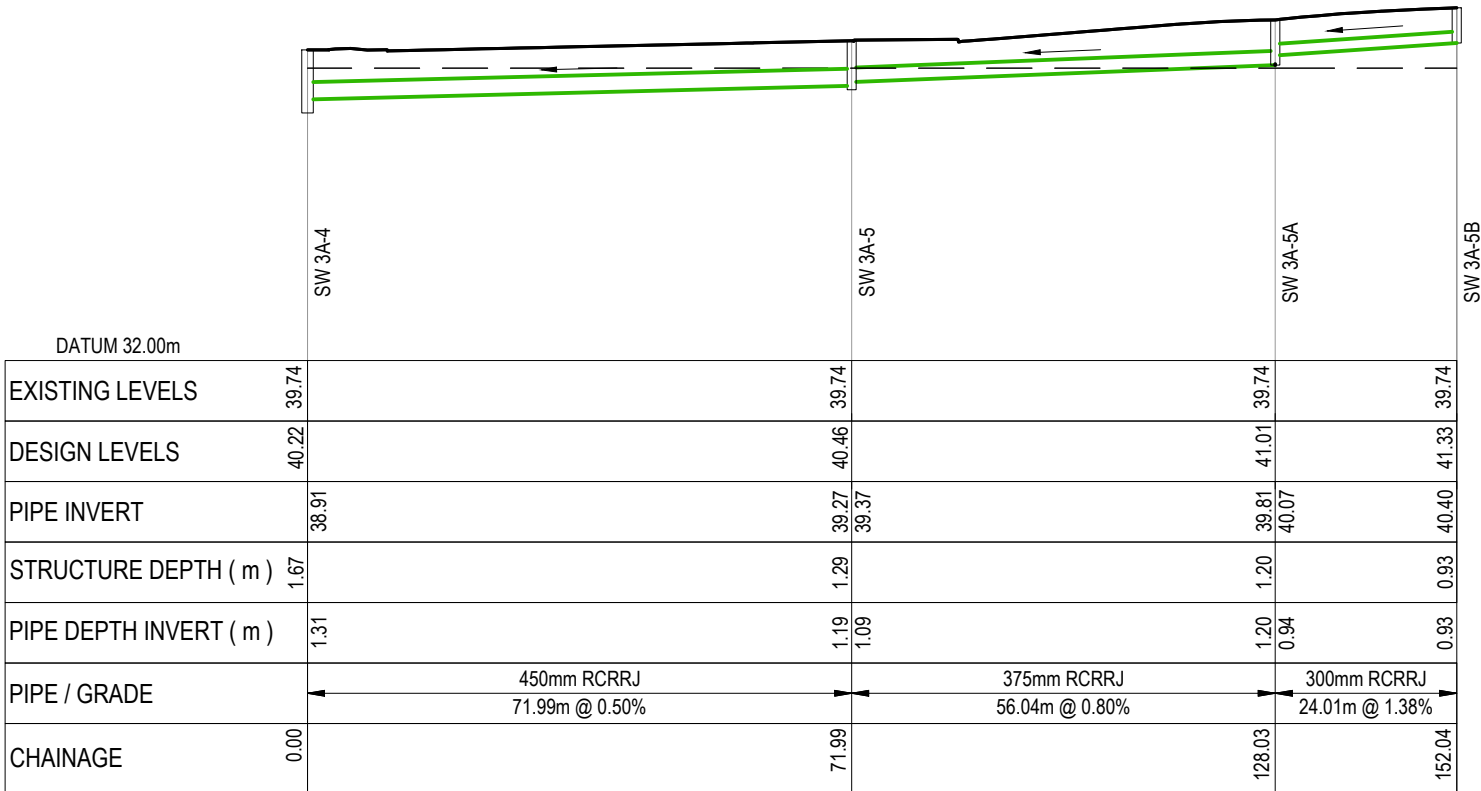
M **MAVEN** **Waikato**
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New Zealand

Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

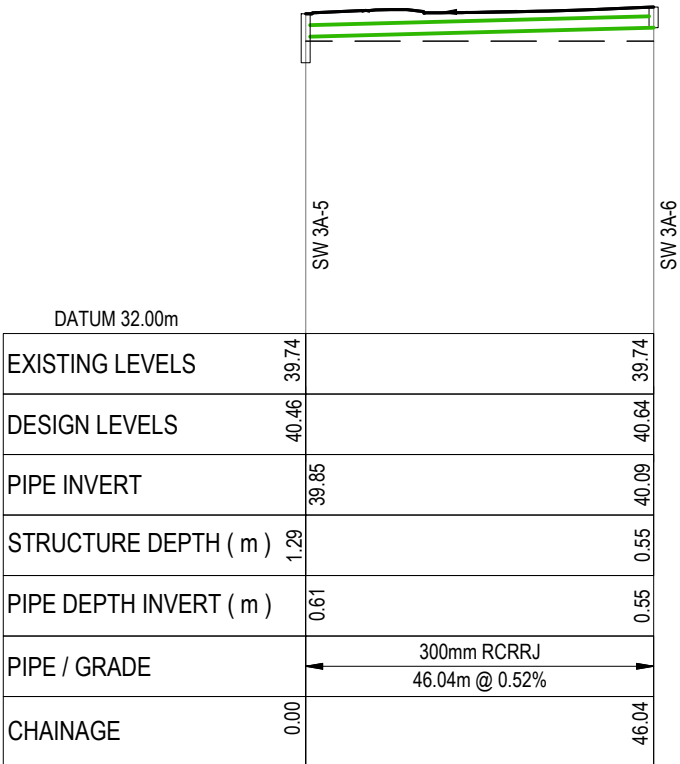
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-20	Rev	A

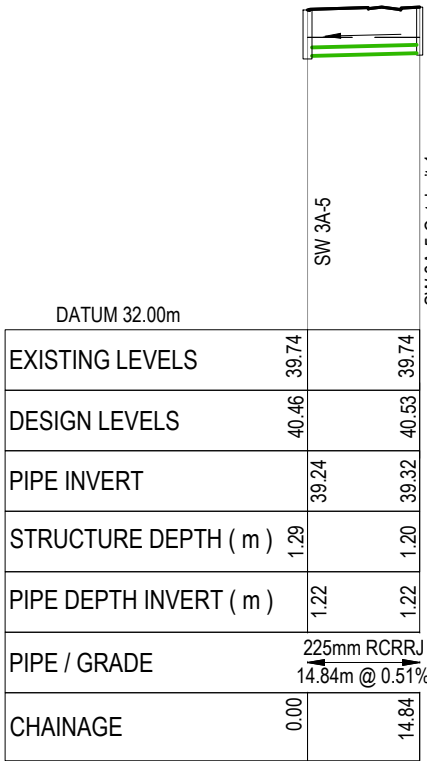
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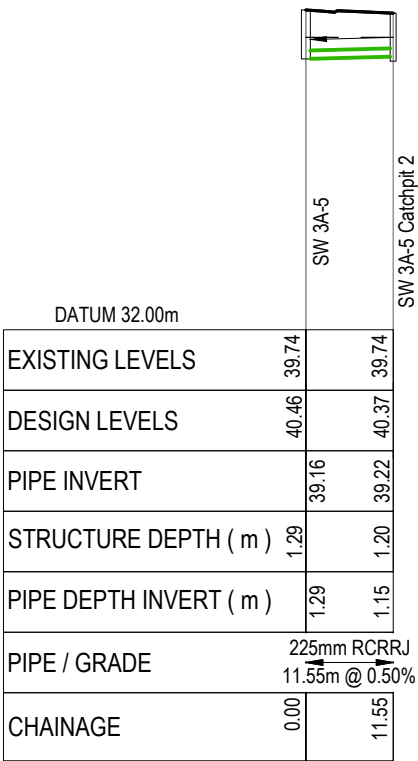
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SCALE: HORI 1:1000 VERT 1:200



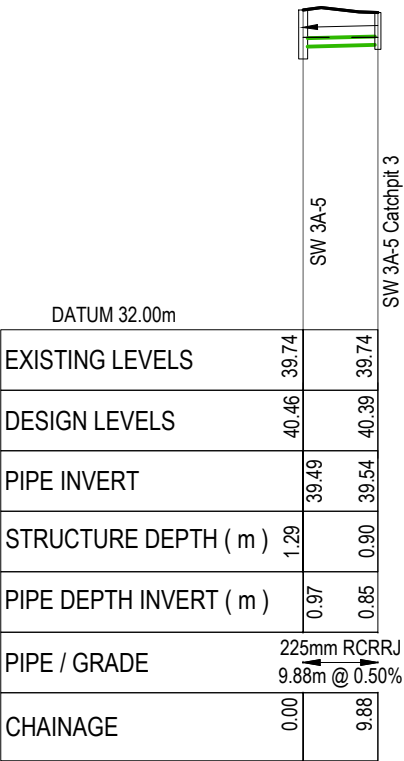
PV - Alignment - SW 3A-5 to 3A-6
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3A-5 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3A-5 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3A-5 Catchpit 3
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

Notes

1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.

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8. MANHOLE DIAMETERS SHOWN ON STRUCTURE LABEL ARE INTERNAL DIAMETER.

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10. MANHOLE SLAB AND COVER TO BE ROTATED TO AVOID THE FOOTPATH EDGE FOR MANHOLES ON FOOTPATH.

11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

EX GROUND LEVEL

PR GROUND LEVEL

HARDFILL BACKFILL

LOT CONNECTION

CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
	By	Date	
Survey	MAVEN	06/2025	
Design	MKS	07/2025	
Drawn	MJRA	11/2025	
Checked	DJM	11/2025	

M

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Maven Waikato

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Level 1 286 Victoria Street, Hamilton

New Zealand

Project

SOUTHERN LINKS 1

RESIDENTIAL STAGE 1

HAMILTON, WAIKATO

FOR

SAXBY RD JV LIMITED

Title

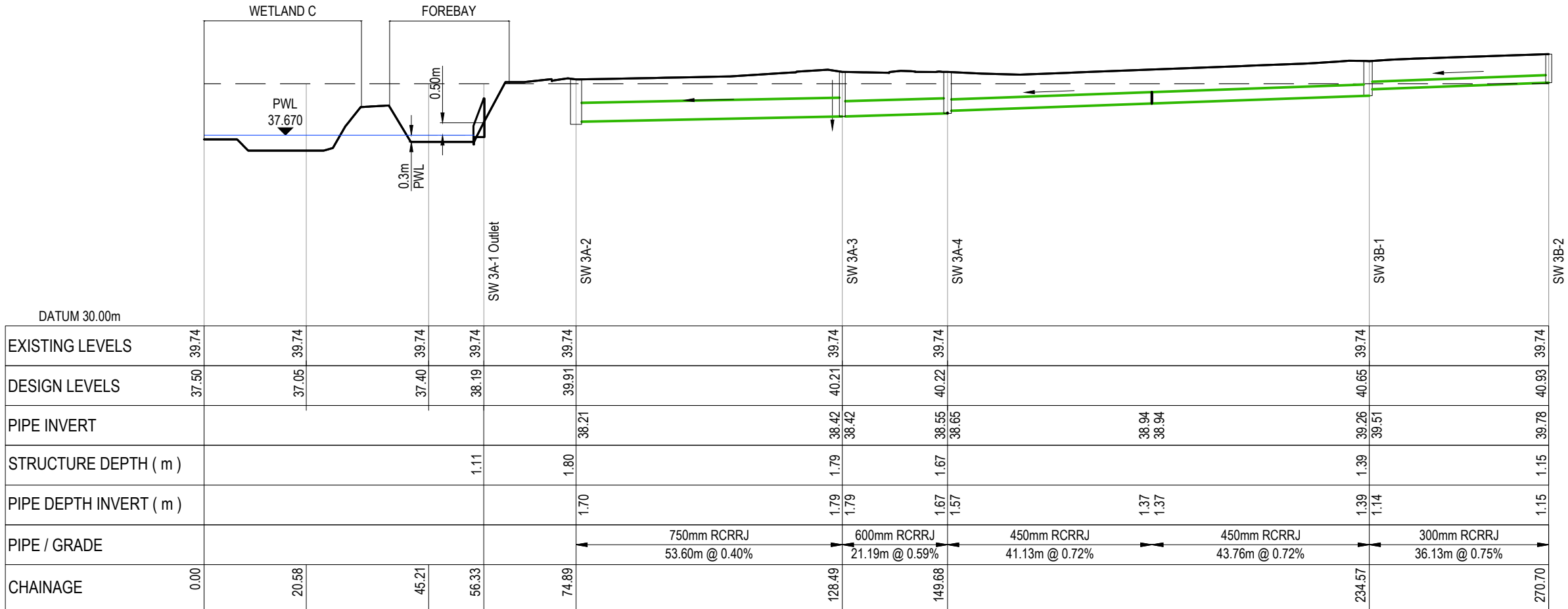
PROPOSED

STORMWATER

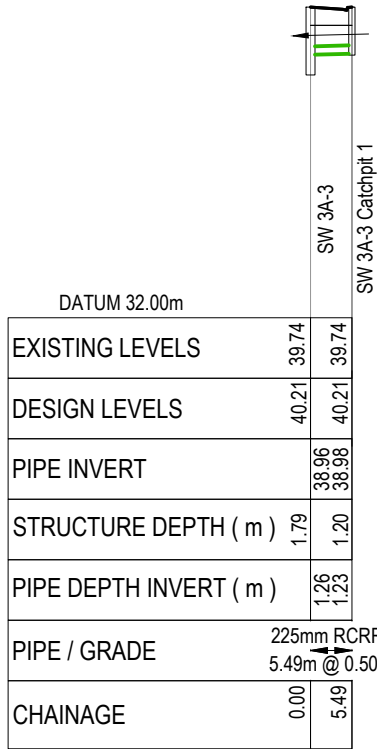
LONG SECTIONS

Project no.	298001-R1 SL 1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-21	Rev	A

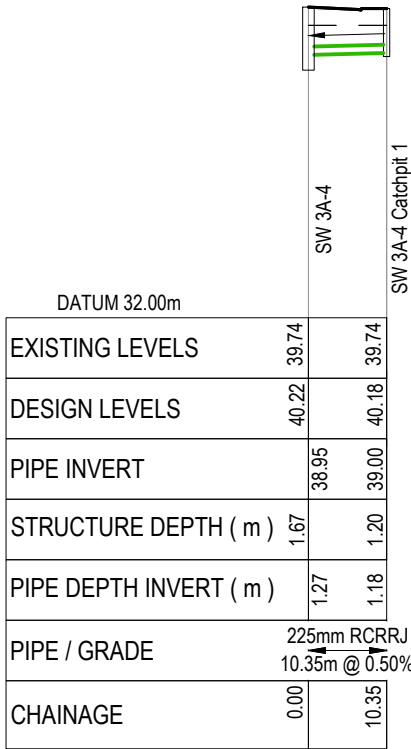
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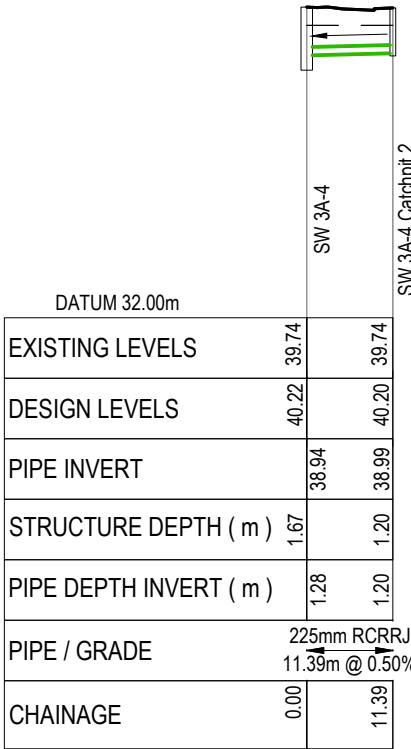
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SCALE: HORI 1:1000 VERT 1:200



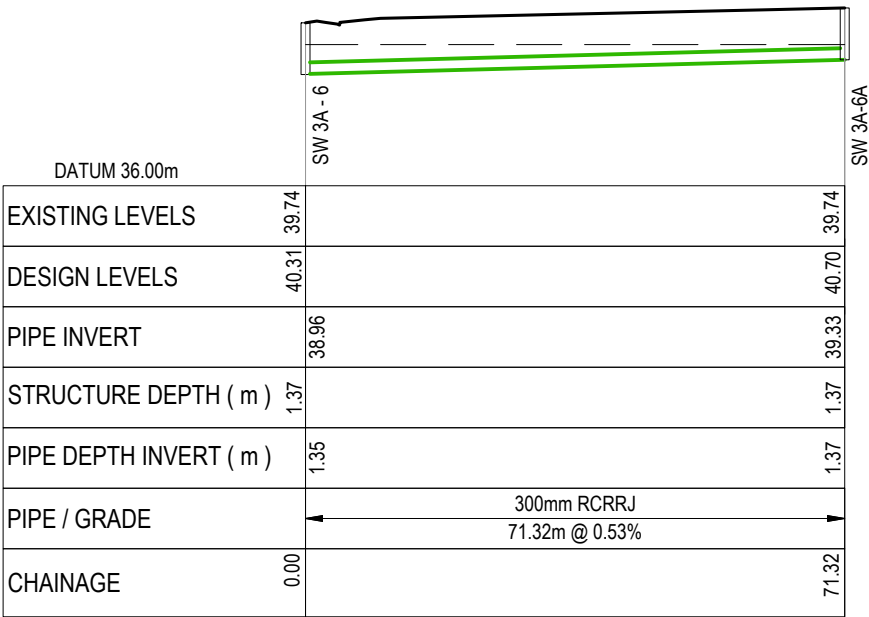
PV - Alignment - SW 3A-3 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3A-4 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3A-4 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 3A-6 to 3A-6A (1)
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

Notes

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11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

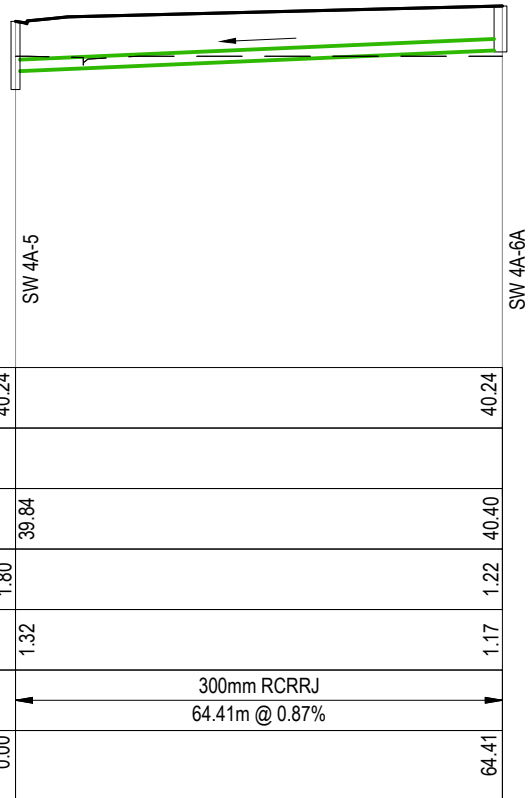


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

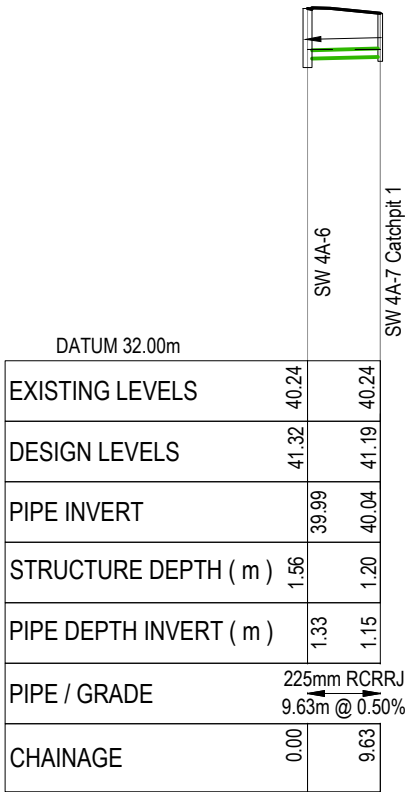
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-22
Rev	A

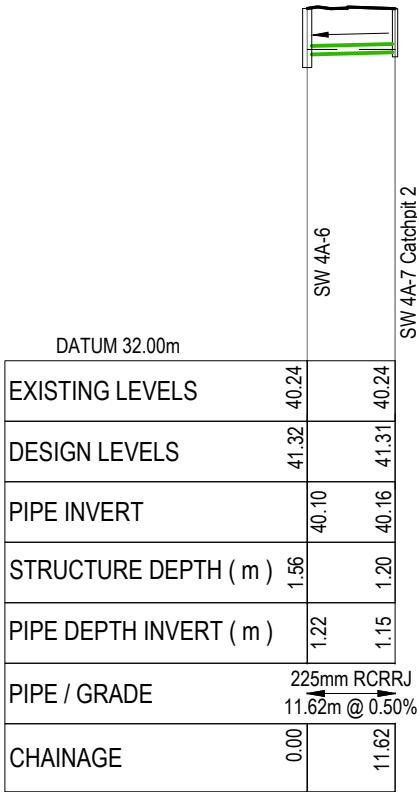
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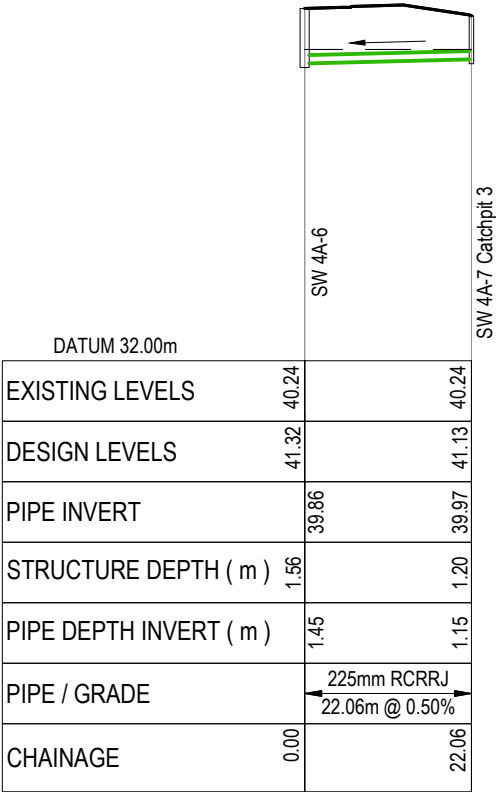
PV - Alignment - SW Line 4A-6 to 4A-6A
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 4A-7 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 4A-7 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 4A-7 Catchpit 3
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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LEGEND

— — — — — EX GROUND LEVEL
— — — — — PR GROUND LEVEL
[Hatched Box] HARDFILL BACKFILL
[Green Arrow] LOT CONNECTION
[Red 0] [Green 0] CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

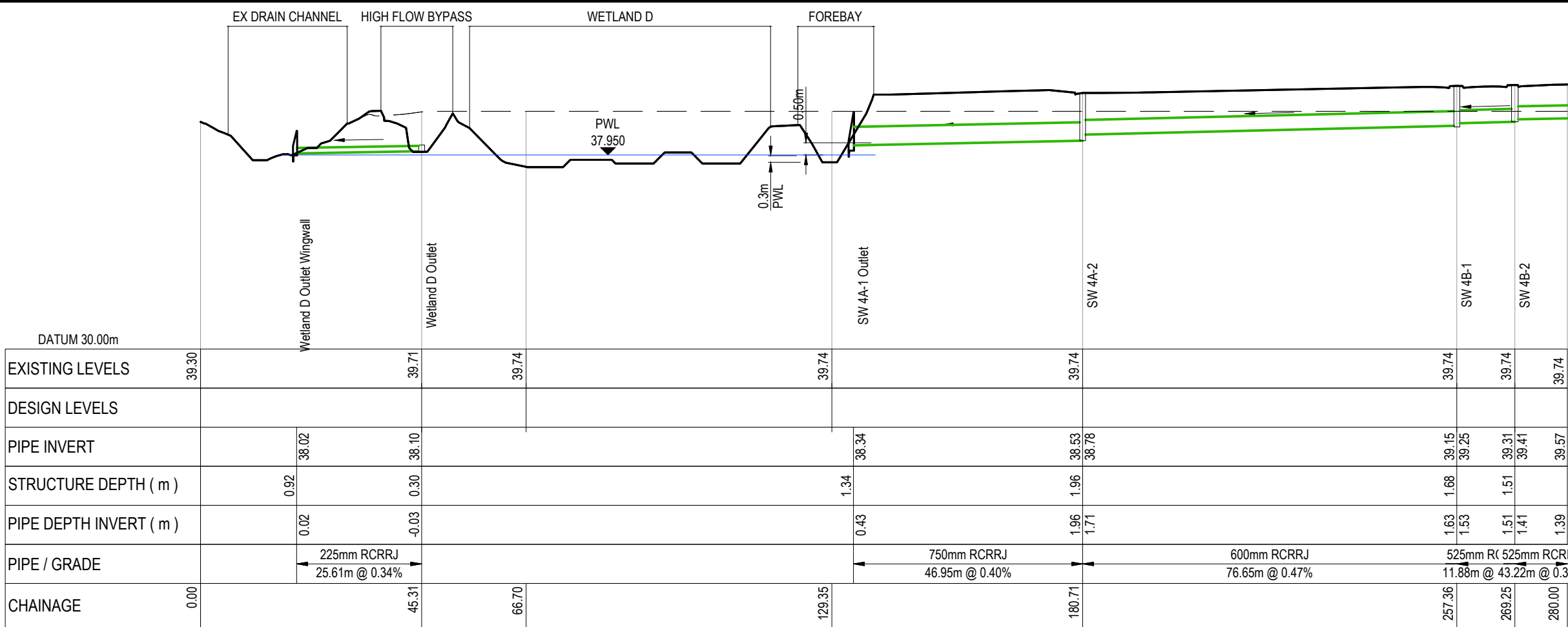
M **Maven Waikato**
07 242 0601
info@maven.co.nz
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Level 1 286 Victoria Street, Hamilton
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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

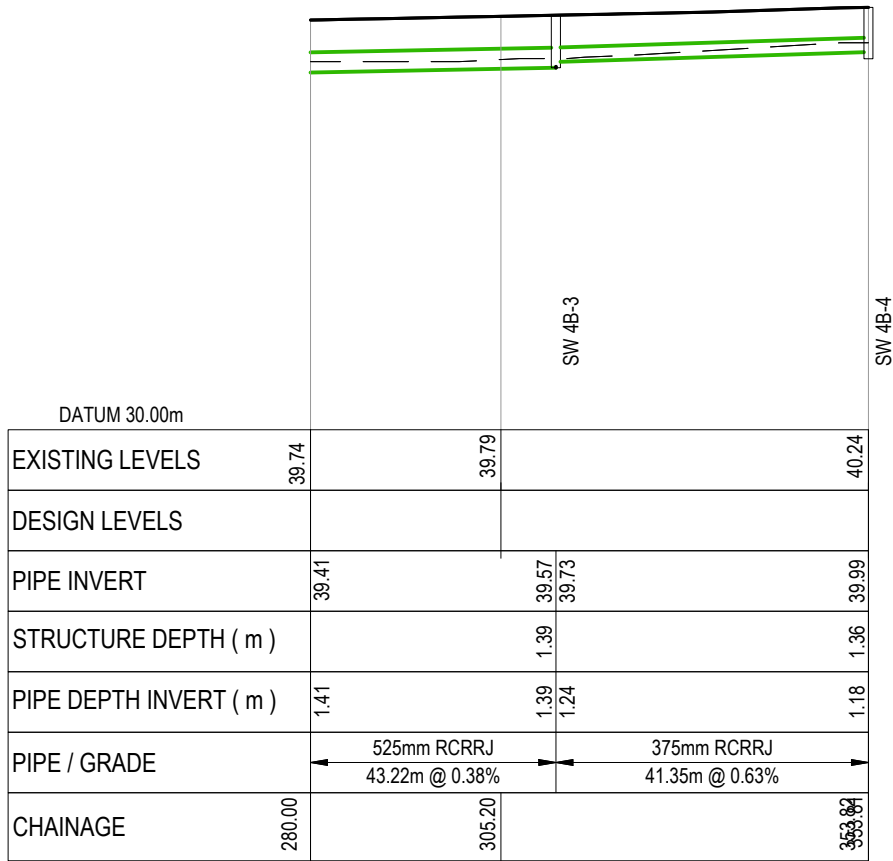
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-24	Rev	A

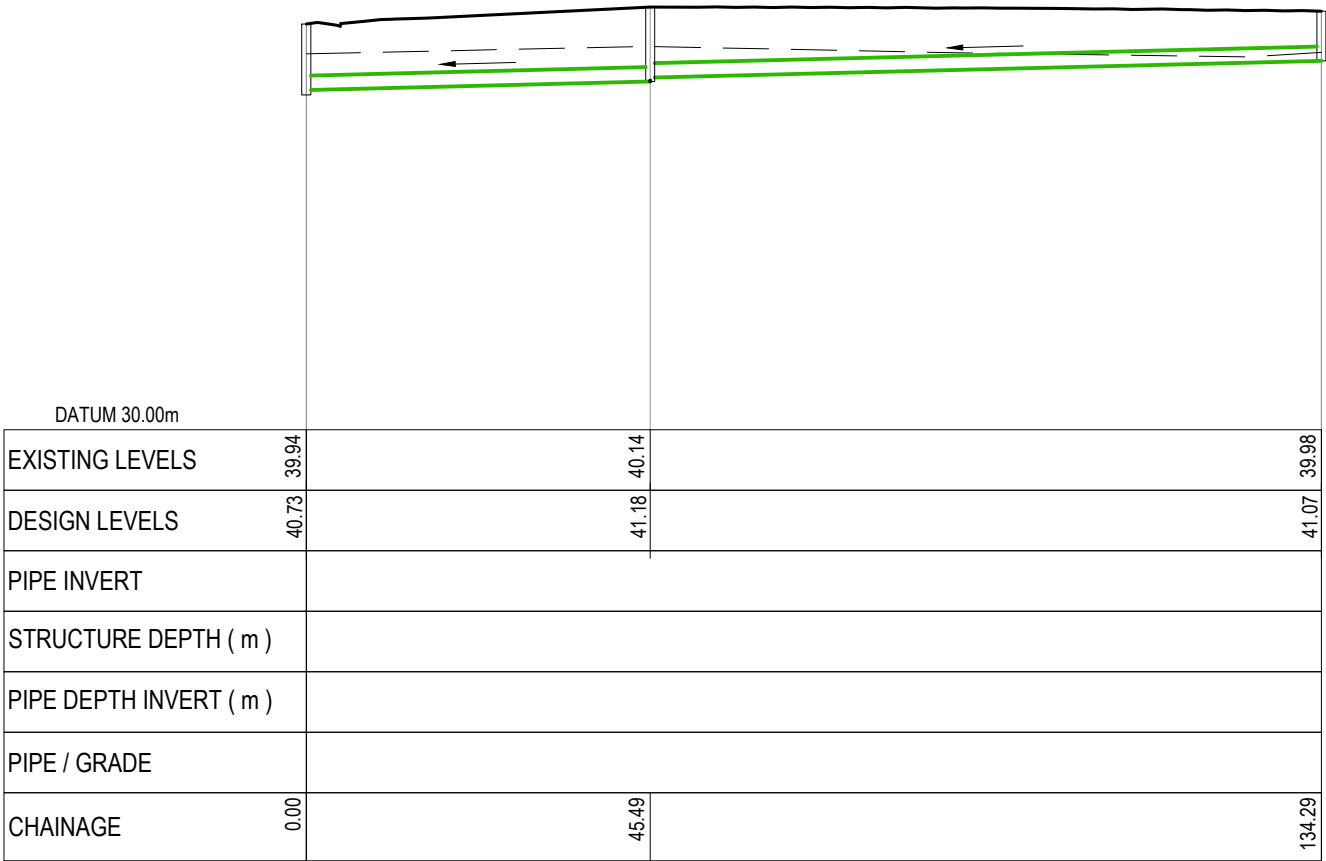
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PV - Alignment - SW Line 4A-1 to 4B-4 (1 of 2)
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 4A-1 to 4B-4 (2 of 2)
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - 1
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
- ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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- LEGEND
- EX GROUND LEVEL
 - PR GROUND LEVEL
 - HARDFILL BACKFILL
 - LOT CONNECTION
 - CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
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Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

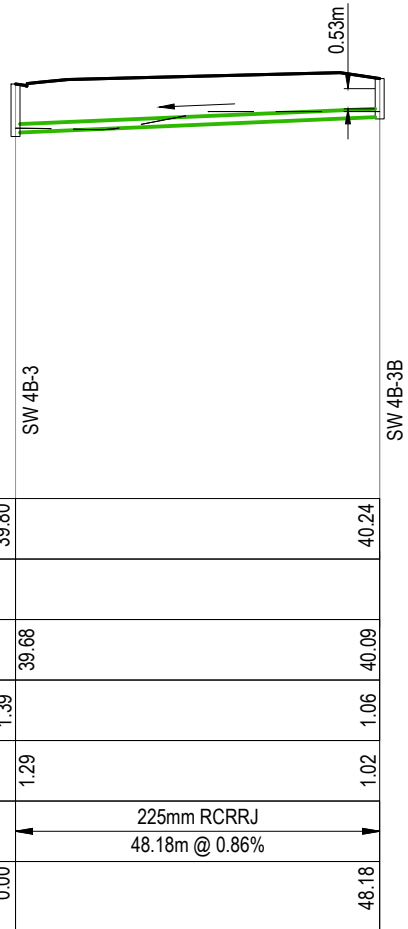


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

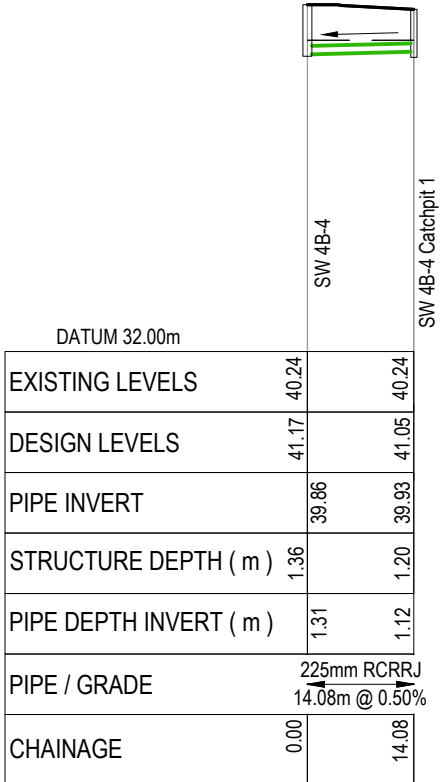
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-25
Rev	A

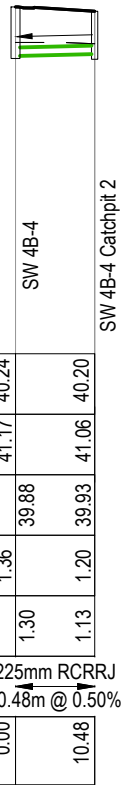
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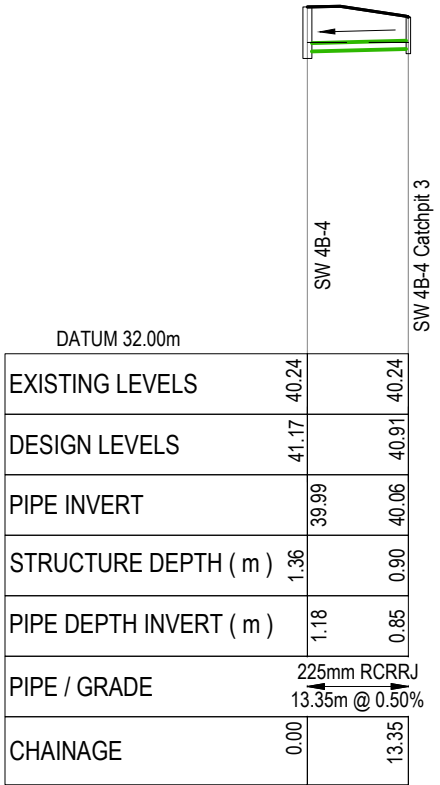
PV - Alignment - SW Line 4B-3 to 4B-3B
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 4B-4 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 4B-4 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 5A-4B Catchpit 3
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
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- LEGEND
- EX GROUND LEVEL
 - PR GROUND LEVEL
 - HARDFILL BACKFILL
 - LOT CONNECTION
 - CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

M

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Maven Waikato

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info@maven.co.nz

www.maven.co.nz

Level 1 286 Victoria Street, Hamilton

New Zealand

Project

SOUTHERN LINKS 1

RESIDENTIAL STAGE 1

HAMILTON, WAIKATO

FOR

SAXBY RD JV LIMITED

Title

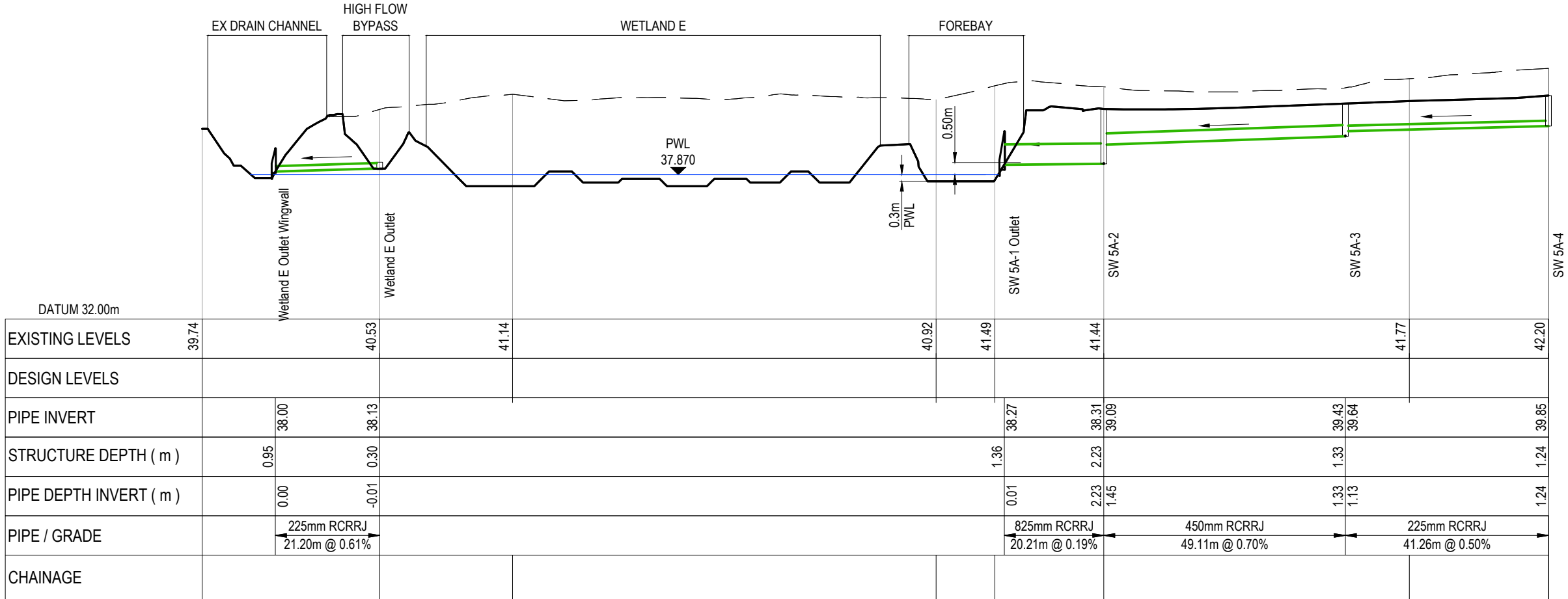
PROPOSED

STORMWATER

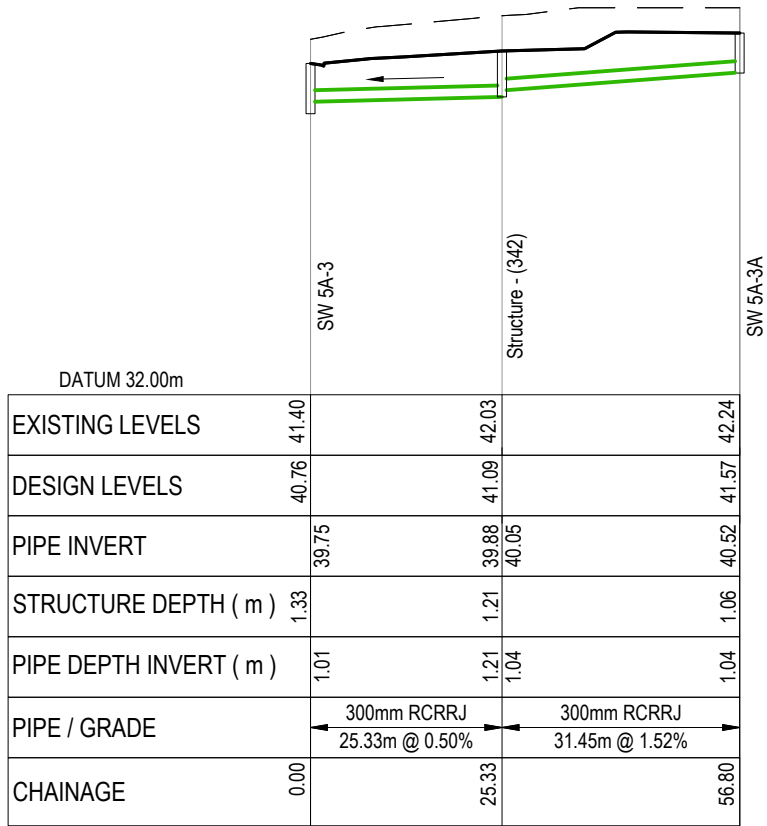
LONG SECTIONS

Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-26	Rev	A

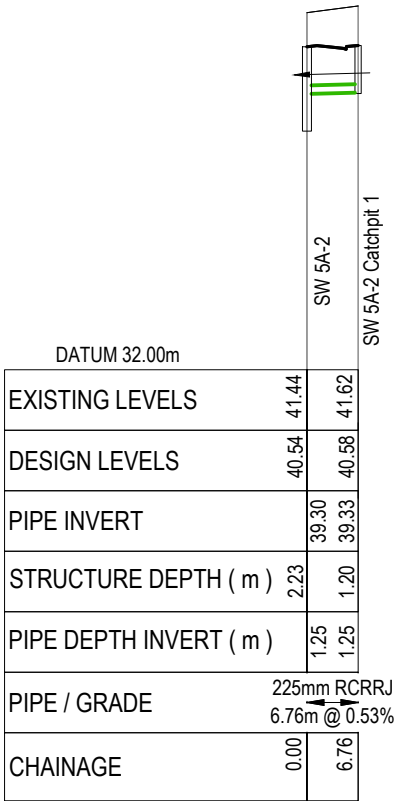
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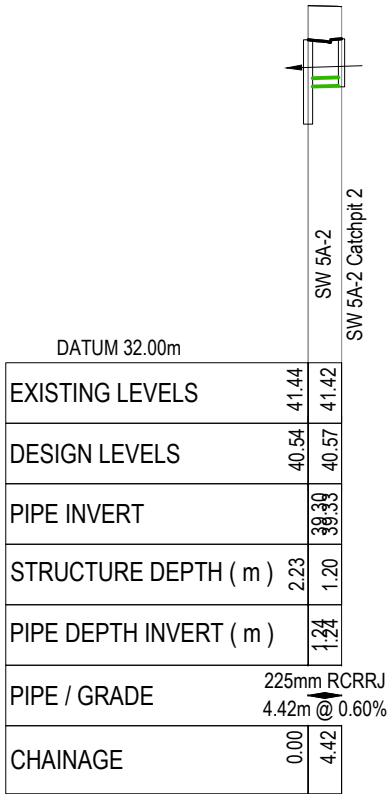
PV - Alignment - SW Line 5A-1 Outlet to 5A-4
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 5A-3 to 5A-3A
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 5A-2 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 5A-2 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
 2. COORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
 3. LEVELS IN TERMS OF THE NZ VERTICAL DATUM 2016.
 4. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY HIS OPERATIONS.
 5. APPROVED HARDFILL IS TO BE USED IN BACKFILLING OF ALL ROAD CROSSINGS TO COUNCIL STANDARDS.
 6. HEAVY DUTY MANHOLE LIDS AND FRAMES TO BE USED IN TRAFFICKED AREAS, ALL MANHOLES SHALL HAVE STAINLESS GRATES INSTALLED.
 7. ALL LOT CONNECTIONS ARE TO BE 100mmØ PVC UNLESS SHOWN OTHERWISE.
 8. MANHOLE DIAMETERS SHOWN ON STRUCTURE LABEL ARE INTERNAL DIAMETER.
 9. MEASUREMENTS SHOWN ON THE LOT CONNECTIONS ARE THE DISTANCE FROM THE CENTRE OF THE DOWNSTREAM MANHOLE TO THE LOT CONNECTION POSITION WITHIN THE LOT BOUNDARY.
 10. MANHOLE SLAB AND COVER TO BE ROTATED TO AVOID THE FOOTPATH EDGE FOR MANHOLES ON FOOTPATH.
 11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-27
Rev	A

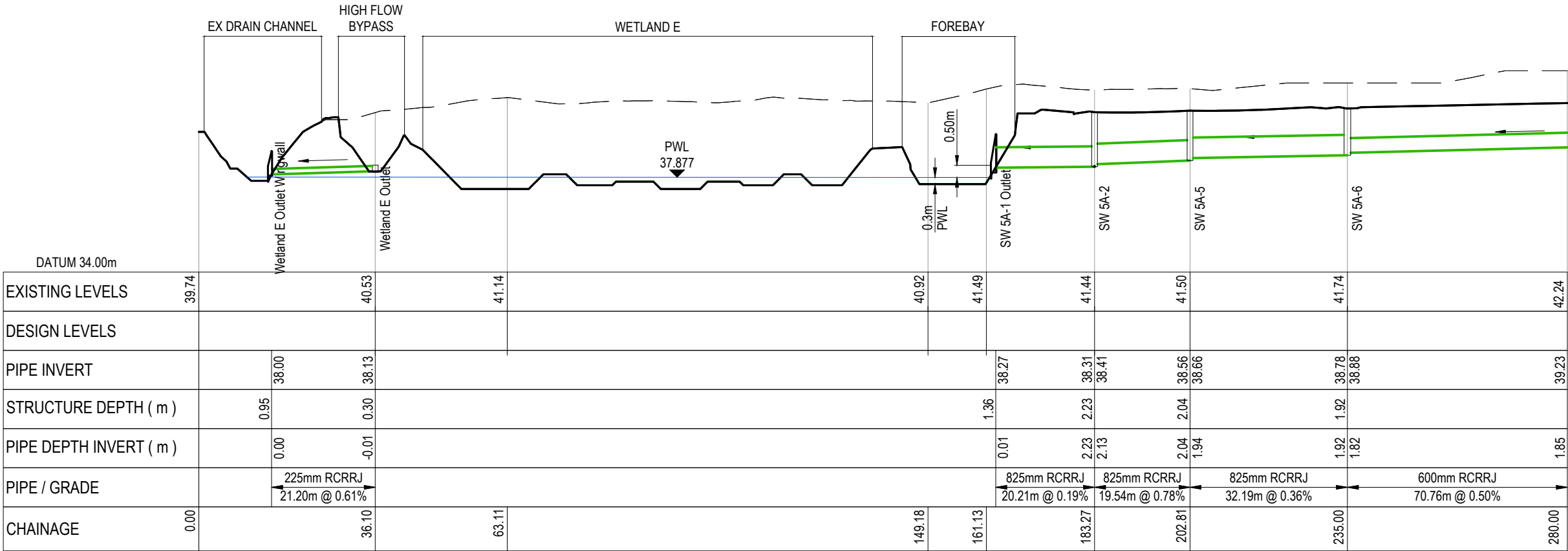
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DATUM 32.00m	
EXISTING LEVELS	42.20
DESIGN LEVELS	41.09
PIPE INVERT	39.90
STRUCTURE DEPTH (m)	1.24
PIPE DEPTH INVERT (m)	1.19
PIPE / GRADE	225mm RCRRJ 9.33m @ 1.34%
CHAINAGE	0.00

PV - Alignment - SW 5A-4 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200

DATUM 32.00m	
EXISTING LEVELS	42.20
DESIGN LEVELS	41.09
PIPE INVERT	39.89
STRUCTURE DEPTH (m)	1.24
PIPE DEPTH INVERT (m)	1.20
PIPE / GRADE	225mm RCRRJ 6.74m @ 1.80%
CHAINAGE	0.00

PV - Alignment - SW 5A-4 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment SW Line 5A-1 Outlet to 5A-7 (1 of 2)
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
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LEGEND

EX GROUND LEVEL
PR GROUND LEVEL
HARDFILL BACKFILL
LOT CONNECTION
CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

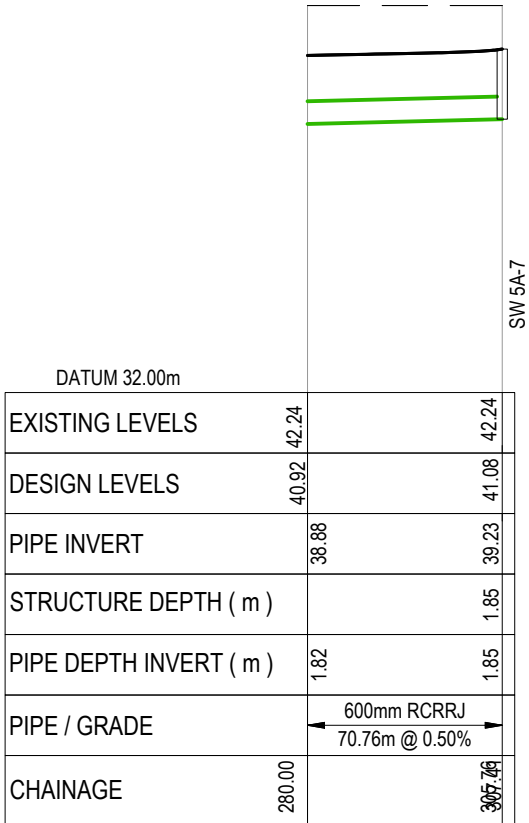
M **MAVEN** **Waikato**
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New Zealand

Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

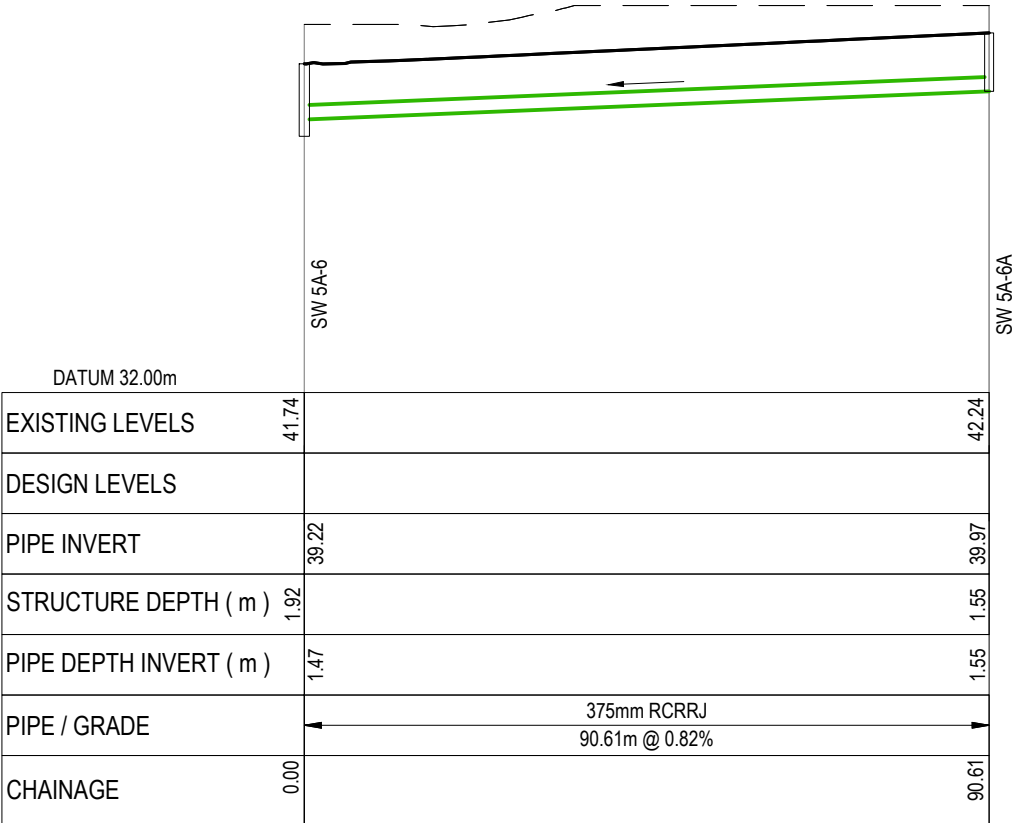
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-28
Rev	A

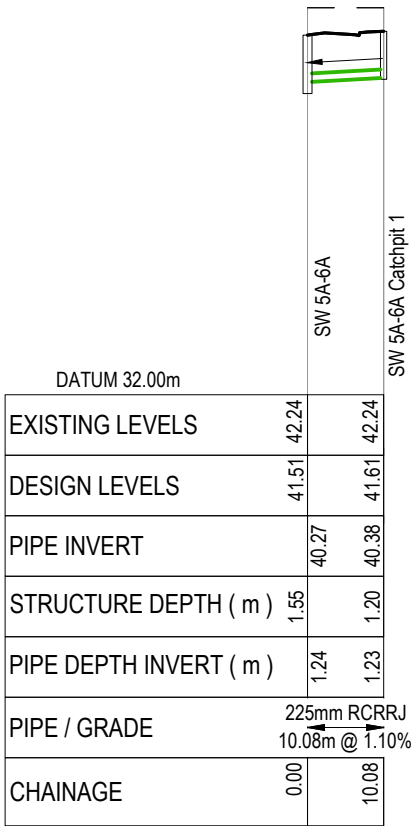
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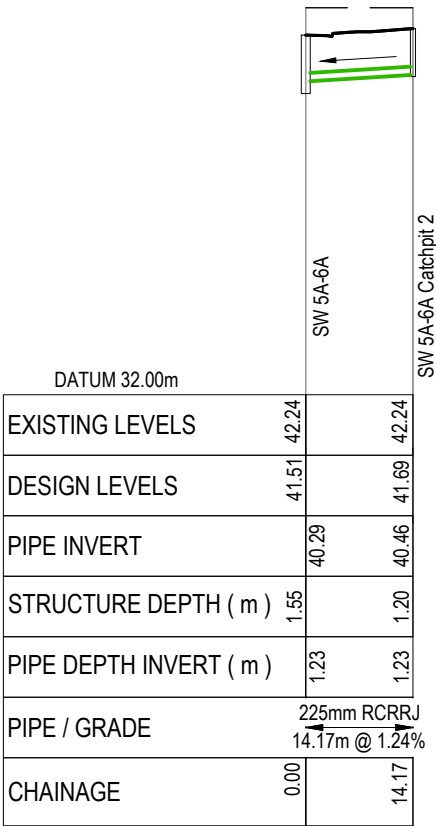
PV - Alignment SW Line 5A-1 Outlet to 5A-7 (2 of 2)
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 5A-6 to 5A-6A
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 5A-6A Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 5A-6A Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
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- LEGEND
- EX GROUND LEVEL
 - PR GROUND LEVEL
 - HARDFILL BACKFILL
 - LOT CONNECTION
 - CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

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Level 1 286 Victoria Street, Hamilton

New Zealand

Project

SOUTHERN LINKS 1

RESIDENTIAL STAGE 1

HAMILTON, WAIKATO

FOR

SAXBY RD JV LIMITED

Title

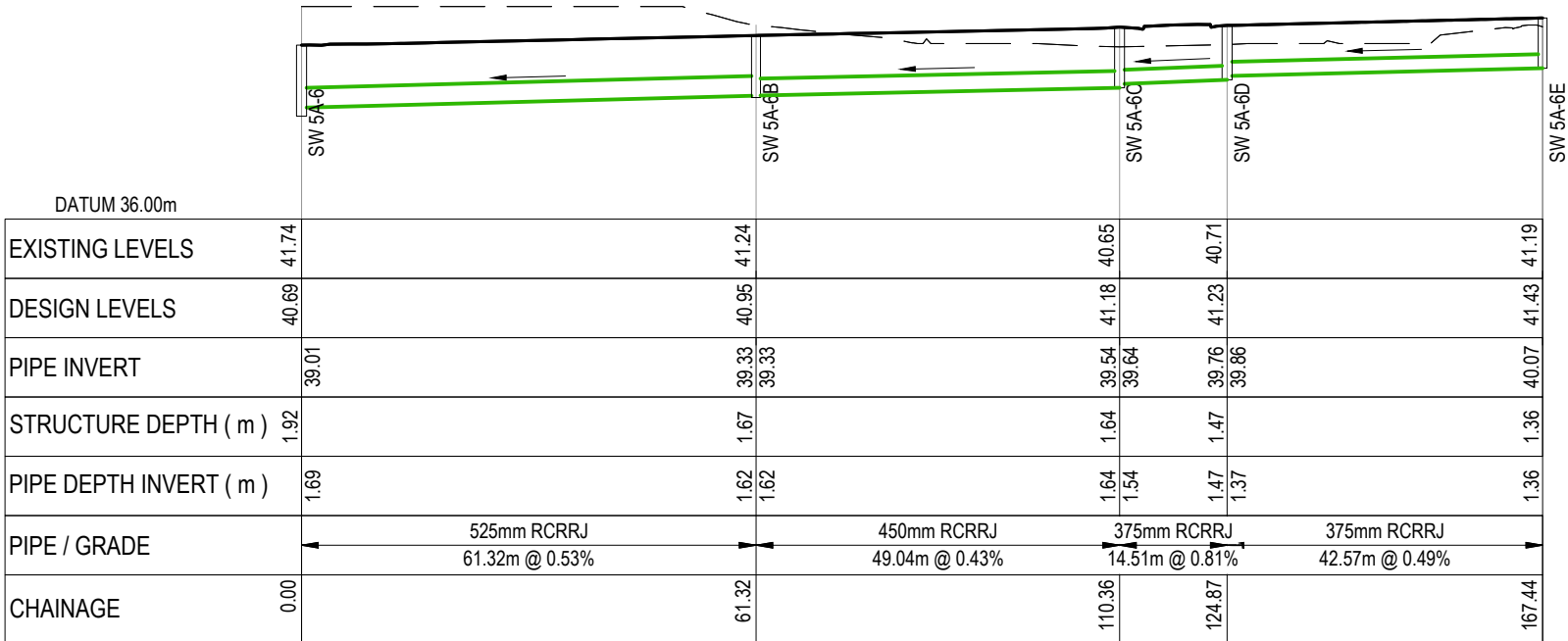
PROPOSED

STORMWATER

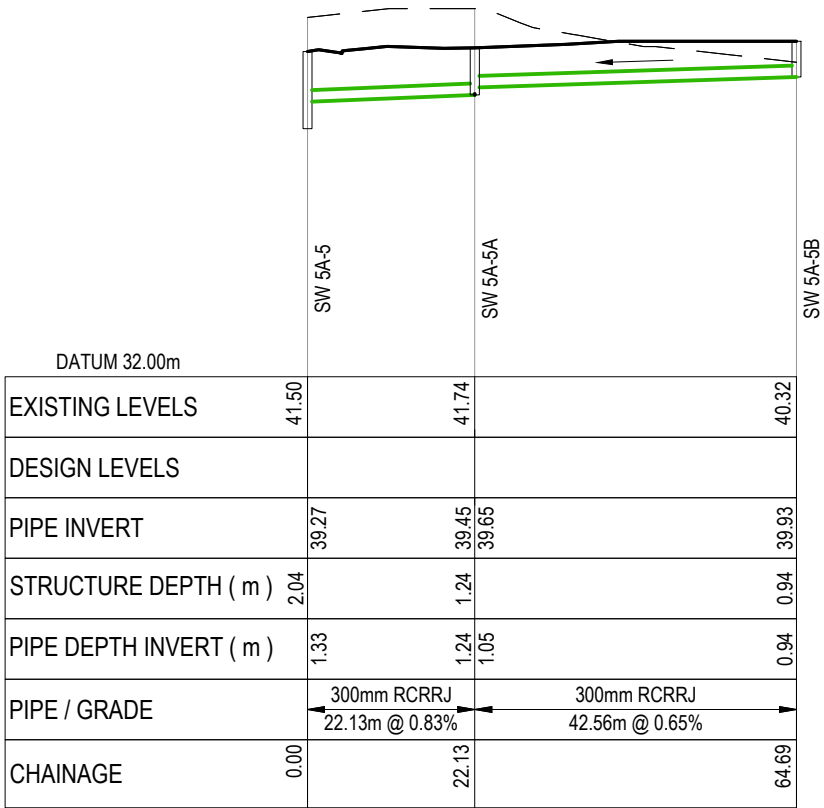
LONG SECTIONS

Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-29	Rev	A

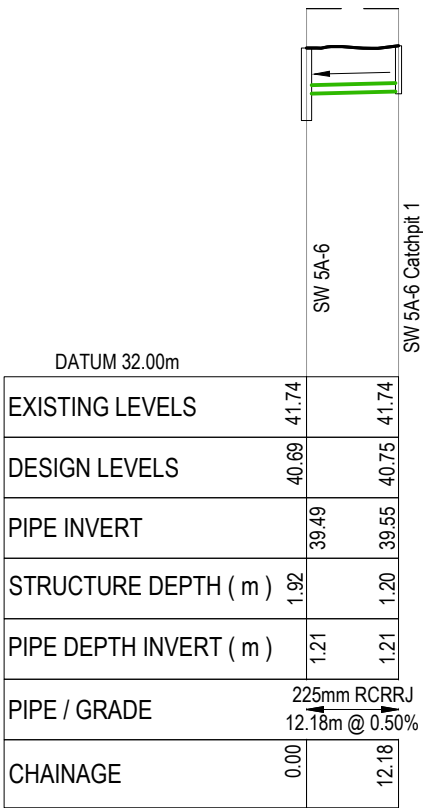
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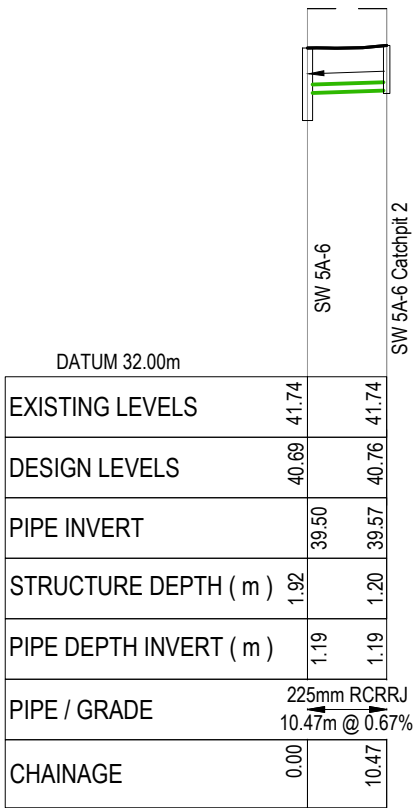
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SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW Line 5A-5 to 5A-5A
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 5A-6 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 5A-6 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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- LEGEND
- EX GROUND LEVEL
 - PR GROUND LEVEL
 - HARDFILL BACKFILL
 - LOT CONNECTION
 - CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

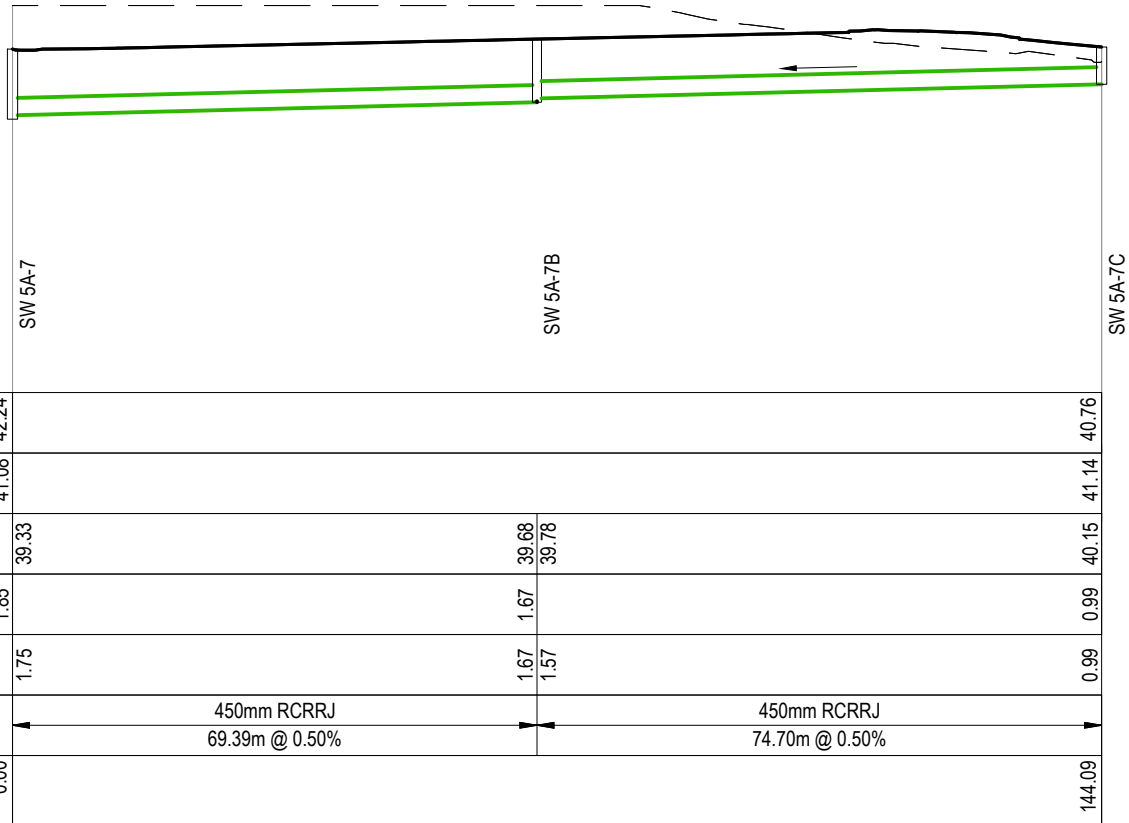


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

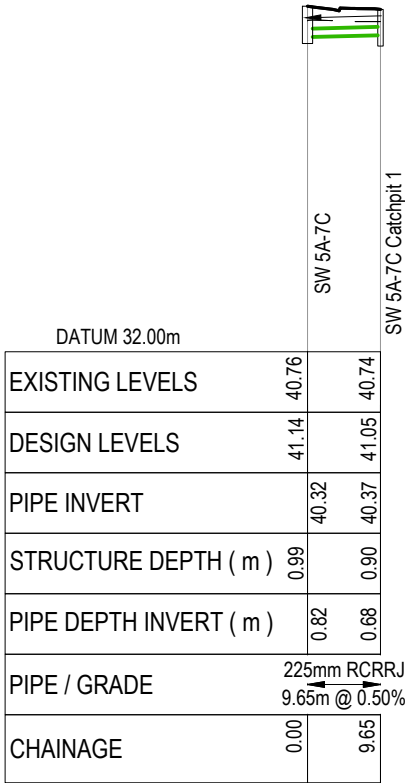
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-30
Rev	A

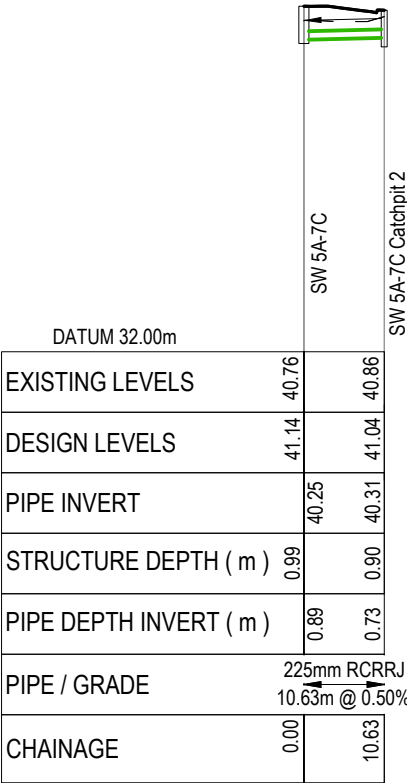
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PV - Alignment SW 5A-7 to 5A-7C
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 5A-7C Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 5A-7C Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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 11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

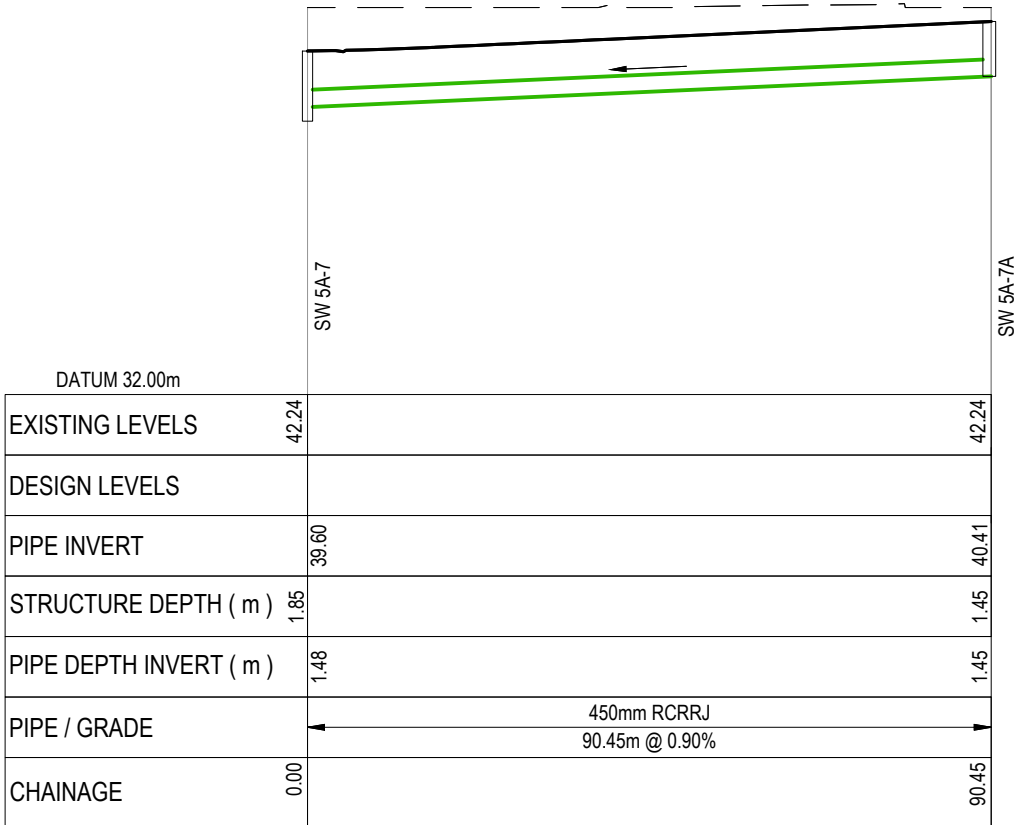
M **MAVEN** **Waikato**
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info@maven.co.nz
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New Zealand

Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

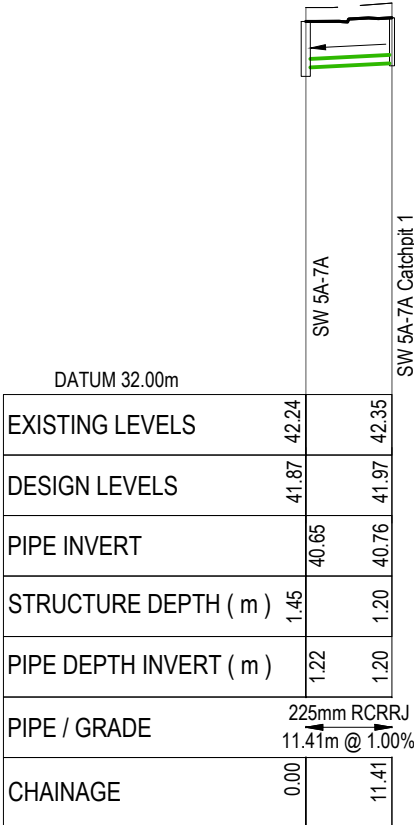
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL 1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-31
Rev	A

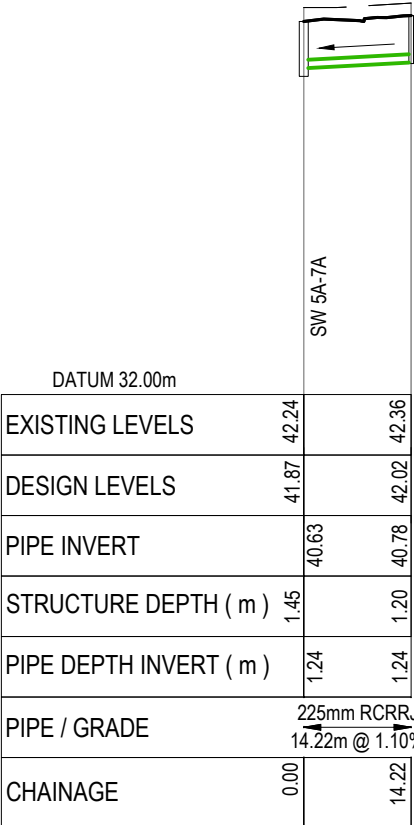
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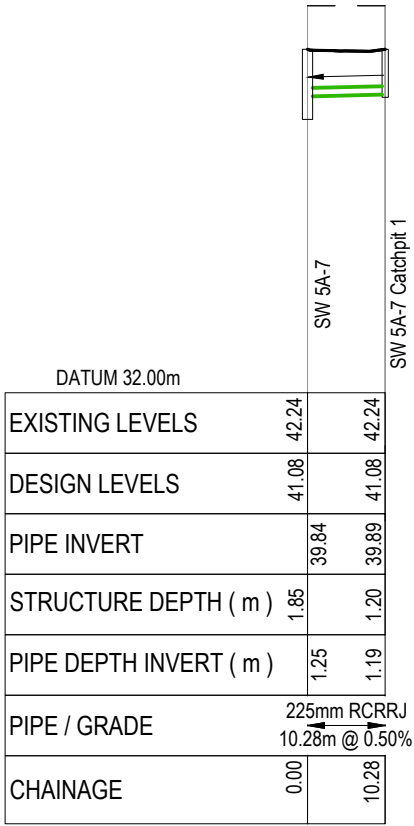
PV - Alignment SW 5A-7 TO 5A-7A
SCALE: HORI 1:1000 VERT 1:200



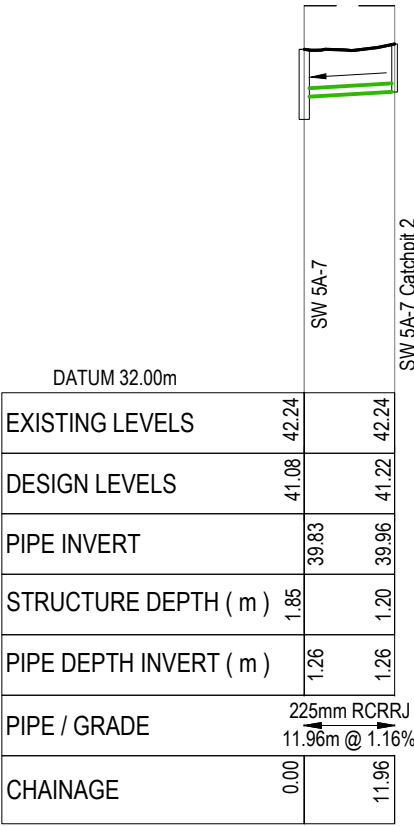
PV - Alignment - SW 5A-7A Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 5A-7A Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 5A-7 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 5A-7 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
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- LEGEND
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 - PR GROUND LEVEL
 - HARDFILL BACKFILL
 - LOT CONNECTION
 - CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

M

MAVEN

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www.maven.co.nz
Level 1 286 Victoria Street, Hamilton
New Zealand

Project

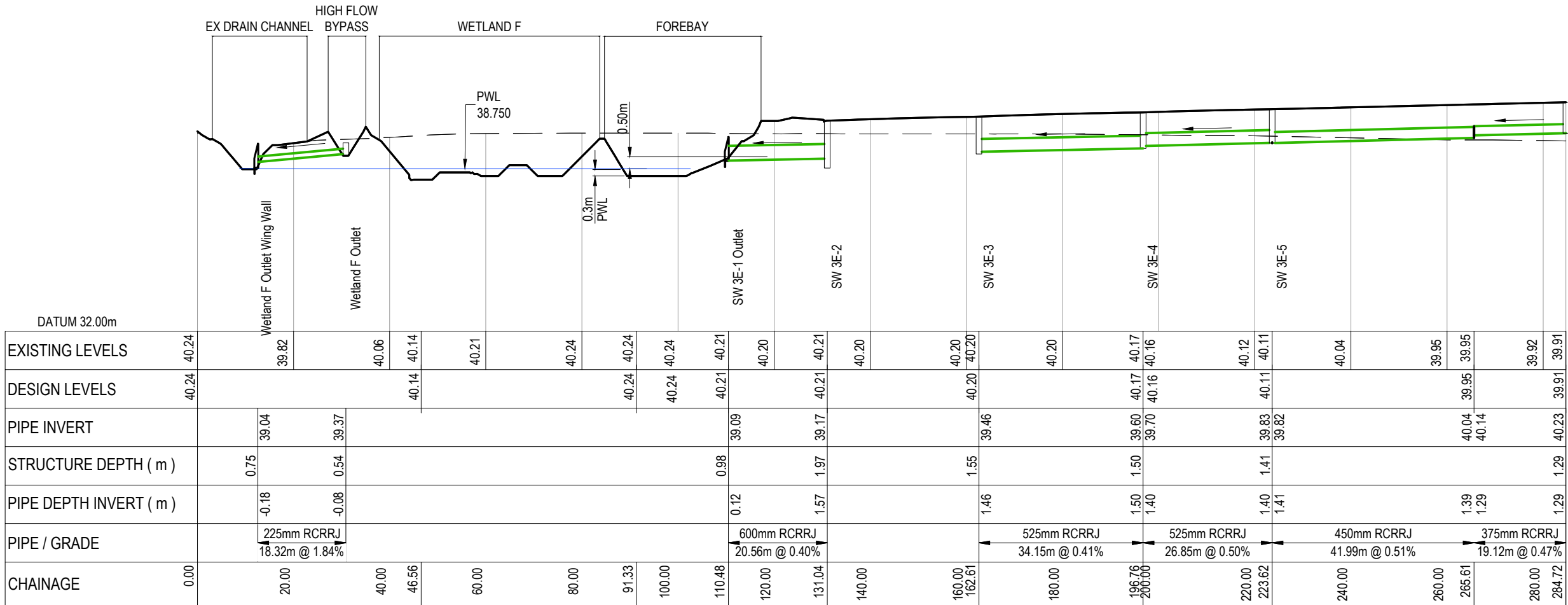
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title

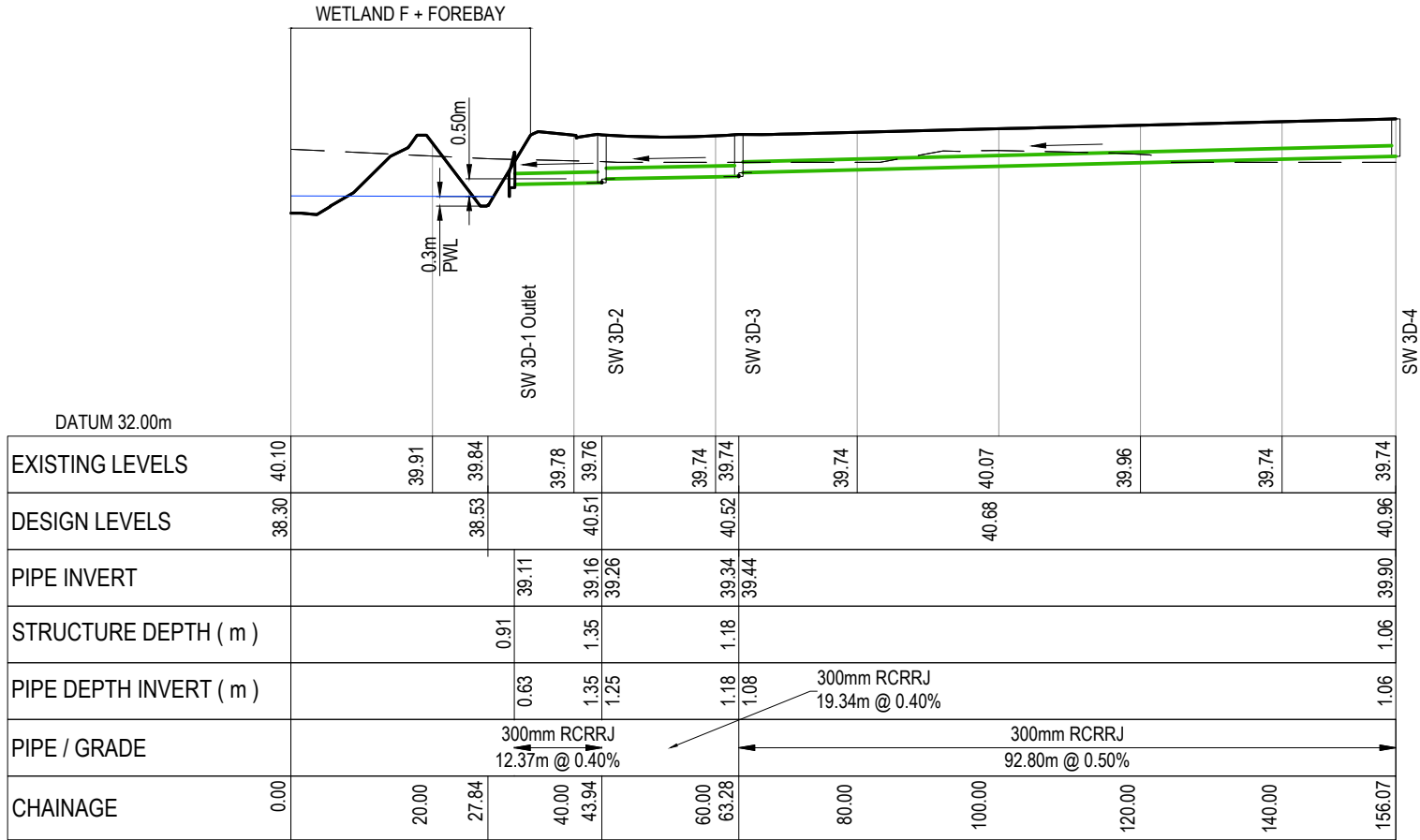
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-32	Rev	A

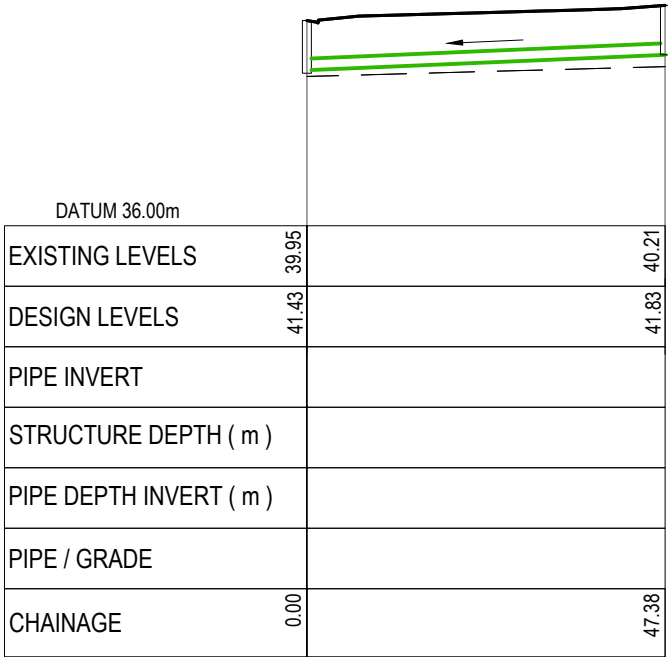
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PV - Alignment - 6A
SCALE: HORI 1:1000 VERT 1:200

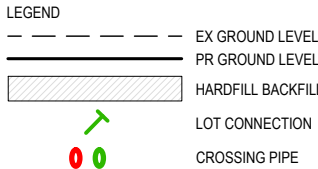


PV - Alignment - SW 3D-2 to 3D-4
SCALE: HORI 1:1000 VERT 1:200



PV - PV - Alignment - SW 3E-6
SCALE: HORI 1:1000 VERT 1:200

- Notes
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A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025



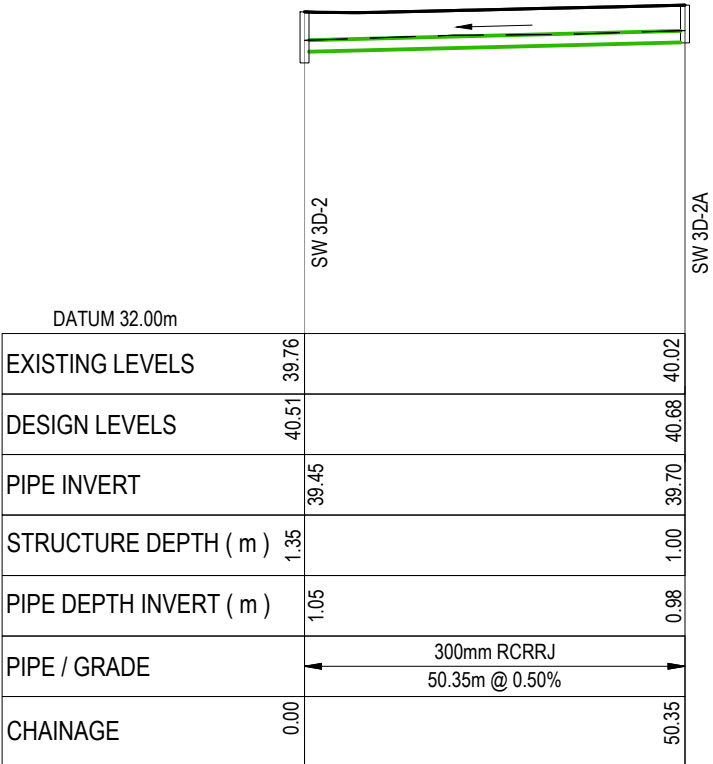
Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
STORMWATER
LONG SECTIONS**

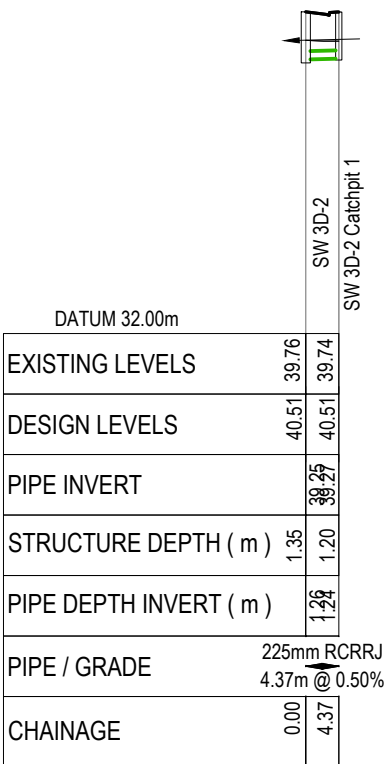
Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-33
Rev	A

RESOURCE CONSENT

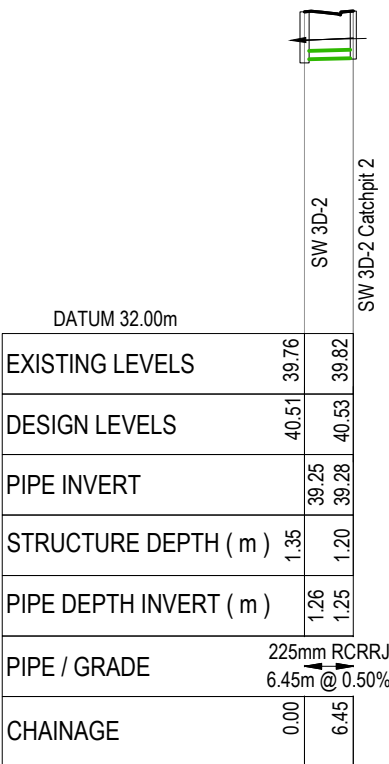
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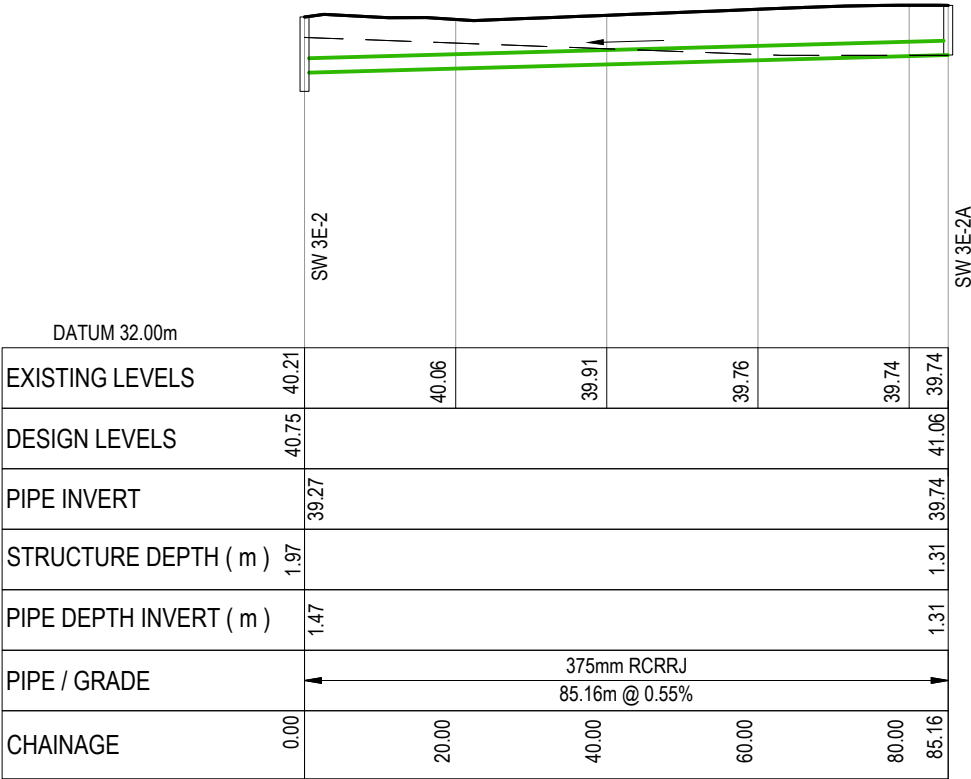
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SCALE: HORI 1:1000 VERT 1:200



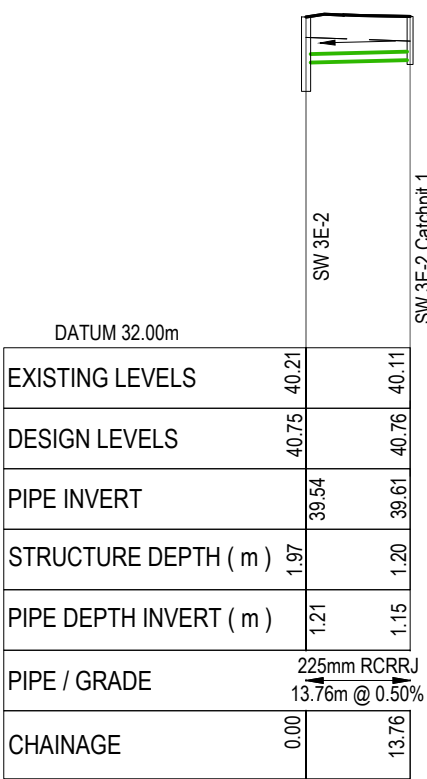
PV - Alignment - SW 3D-2 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



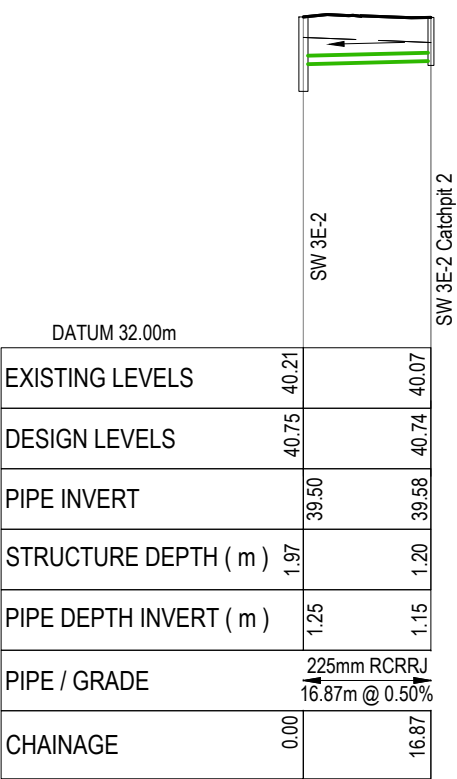
PV - Alignment - SW 3D-2 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3E-2 to 3E-2A
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3E-2 to 3E-2 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3E-2 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
 2. COORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
 3. LEVELS IN TERMS OF THE NZ VERTICAL DATUM 2016.
 4. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY HIS OPERATIONS.
 5. APPROVED HARDFILL IS TO BE USED IN BACKFILLING OF ALL ROAD CROSSINGS TO COUNCIL STANDARDS.
 6. HEAVY DUTY MANHOLE LIDS AND FRAMES TO BE USED IN TRAFFICKED AREAS, ALL MANHOLES SHALL HAVE STAINLESS GRATES INSTALLED.
 7. ALL LOT CONNECTIONS ARE TO BE 100mmØ PVC UNLESS SHOWN OTHERWISE.
 8. MANHOLE DIAMETERS SHOWN ON STRUCTURE LABEL ARE INTERNAL DIAMETER.
 9. MEASUREMENTS SHOWN ON THE LOT CONNECTIONS ARE THE DISTANCE FROM THE CENTRE OF THE DOWNSTREAM MANHOLE TO THE LOT CONNECTION POSITION WITHIN THE LOT BOUNDARY.
 10. MANHOLE SLAB AND COVER TO BE ROTATED TO AVOID THE FOOTPATH EDGE FOR MANHOLES ON FOOTPATH.
 11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

--- EX GROUND LEVEL
--- PR GROUND LEVEL
[Hatched Box] HARDFILL BACKFILL
[Green Arrow] LOT CONNECTION
[Red and Green Circles] CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

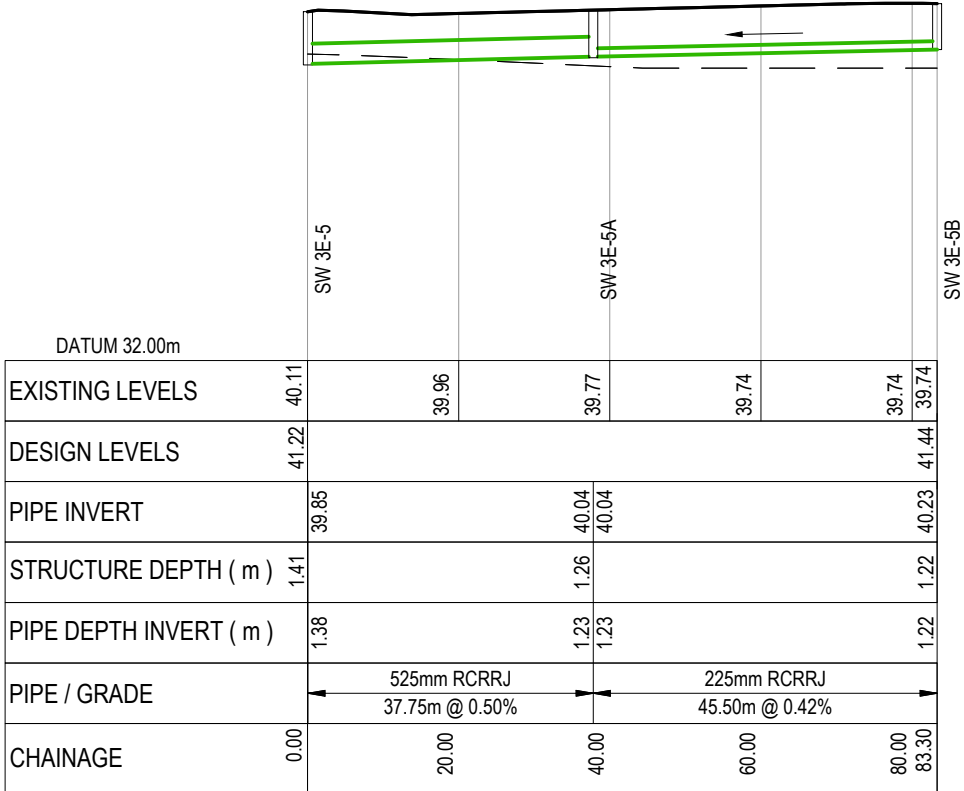
M **Maven Waikato**
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Level 1 286 Victoria Street, Hamilton
New Zealand

Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

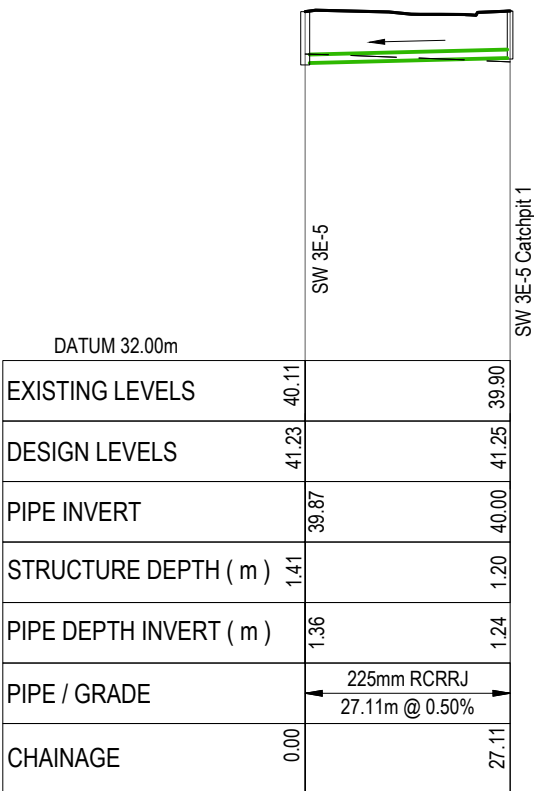
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-34
Rev	A

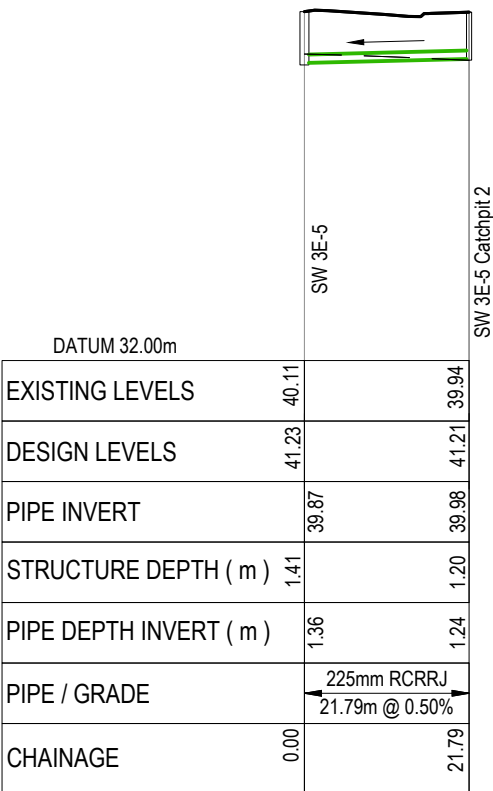
DATE: 8/20/26 FILEPATH: F:\MAVEN\HAMILTON6 - PROJECTS\298001 - SOUTHERN LINKS 1\STG R1\DWG\298001-R1-C420 SW LONGSECTIONS.DWG



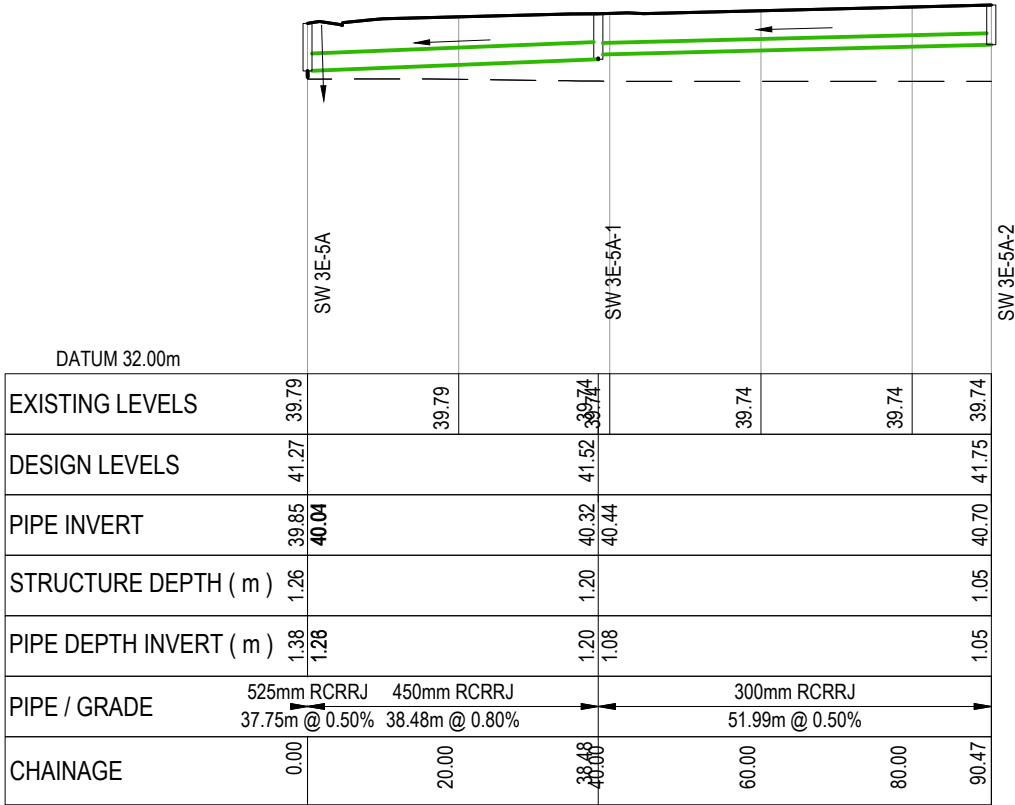
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SCALE: HORI 1:1000 VERT 1:200



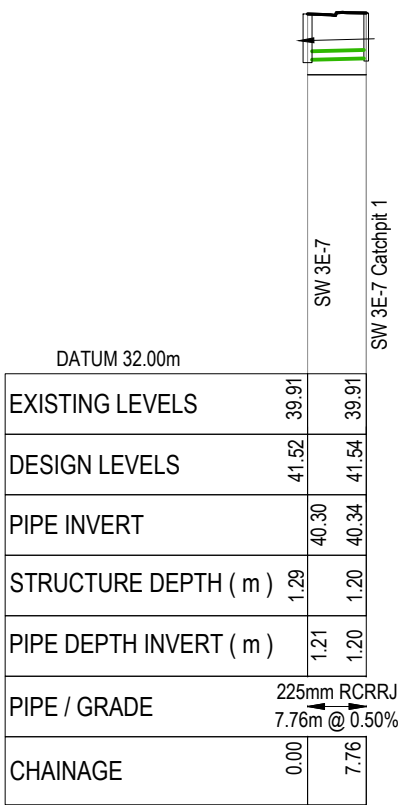
PV - Alignment - SW 3E-5 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



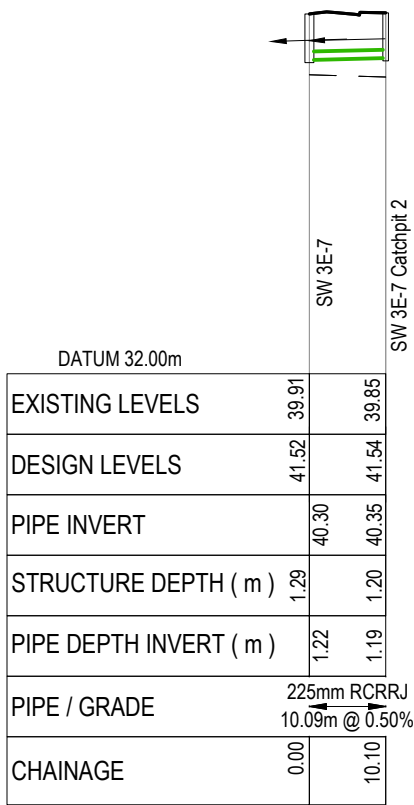
PV - Alignment - SW 3E-5 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3E-6 to 3E-6A
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3E-7 Catchpit 1
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3E-7 Catchpit 2
SCALE: HORI 1:1000 VERT 1:200

- Notes
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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 8. MANHOLE DIAMETERS SHOWN ON STRUCTURE LABEL ARE INTERNAL DIAMETER.
 9. MEASUREMENTS SHOWN ON THE LOT CONNECTIONS ARE THE DISTANCE FROM THE CENTRE OF THE DOWNSTREAM MANHOLE TO THE LOT CONNECTION POSITION WITHIN THE LOT BOUNDARY.
 10. MANHOLE SLAB AND COVER TO BE ROTATED TO AVOID THE FOOTPATH EDGE FOR MANHOLES ON FOOTPATH.
 11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

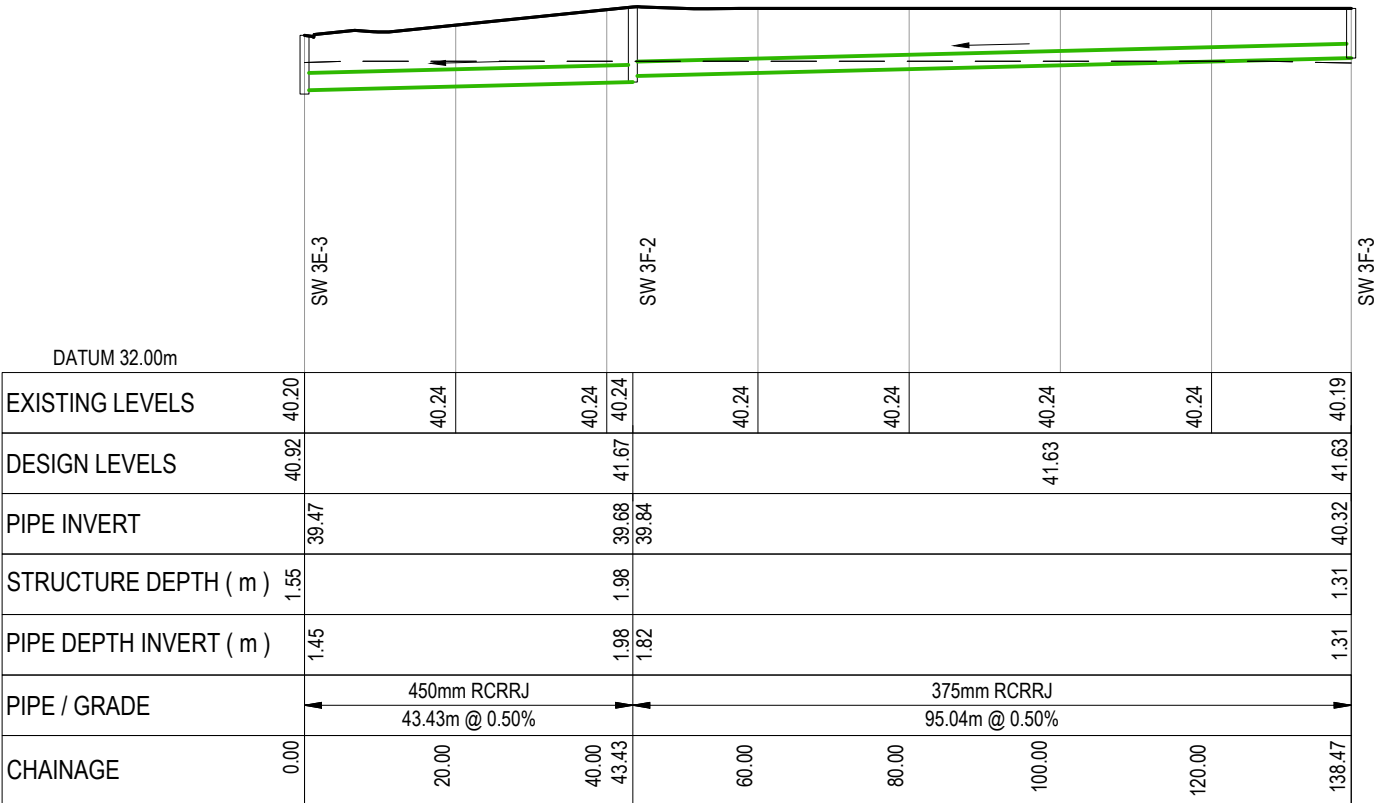
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-35
Rev	A

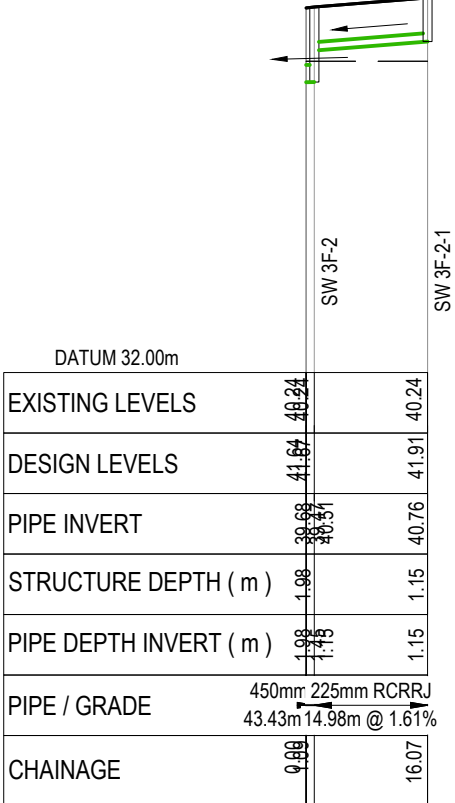
RESOURCE CONSENT

DATE: 8/20/26 FILE PATH: F:\MAVEN\HAMILTON\6 PROJECTS\298001 - SOUTHERN LINKS 1\STG R1\DWG\298001-R1-C420 SW LONGSECTIONS.DWG

RESOURCE CONSENT



PV - Alignment - SW 3F-1 Outlet to 3F-3
SCALE: HORI 1:1000 VERT 1:200



PV - Alignment - SW 3F-2-1
SCALE: HORI 1:1000 VERT 1:200

Notes

1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.

2. COORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.

3. LEVELS IN TERMS OF THE NZ VERTICAL DATUM 2016.

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11. PIPE LENGTHS SHOWN ON PLAN ARE FROM UPSTREAM PIPE INVERT TO DOWNSTREAM PIPE INVERT.

LEGEND

EX GROUND LEVEL

PR GROUND LEVEL

HARDFILL BACKFILL

LOT CONNECTION

CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
	By	Date	
Survey	MAVEN	06/2025	
Design	MKS	07/2025	
Drawn	MJRA	11/2025	
Checked	DJM	11/2025	

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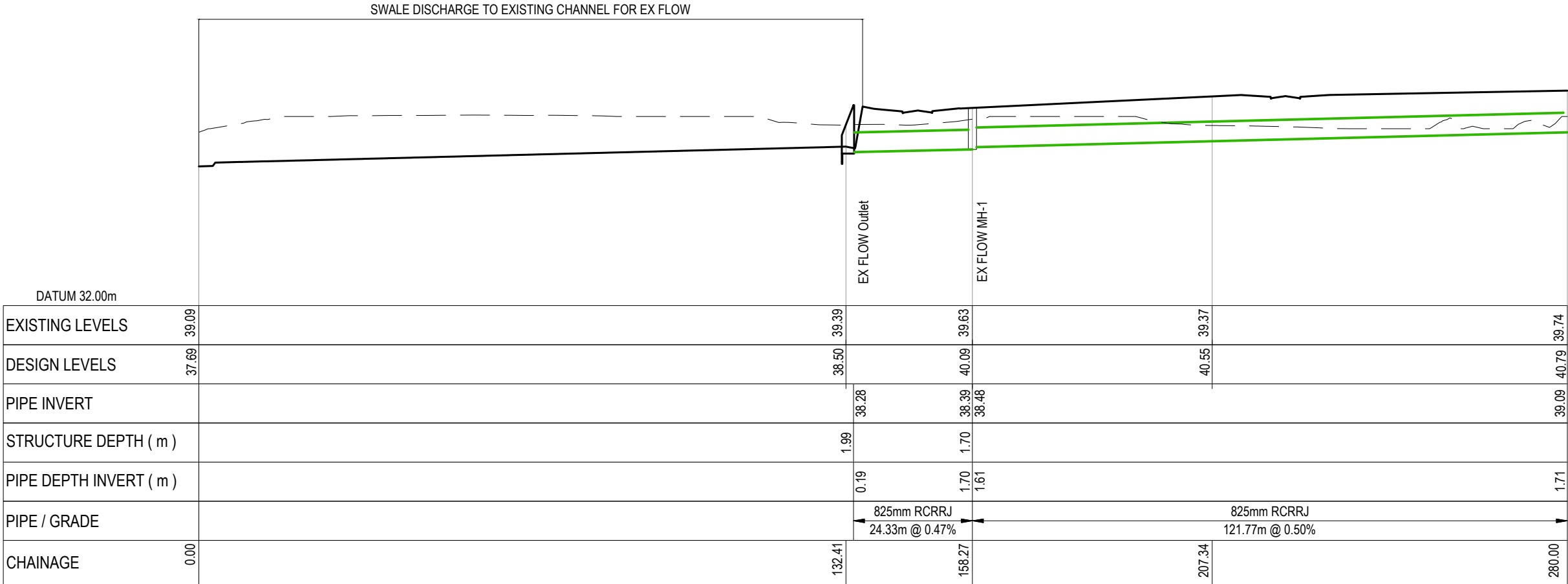
New Zealand

Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

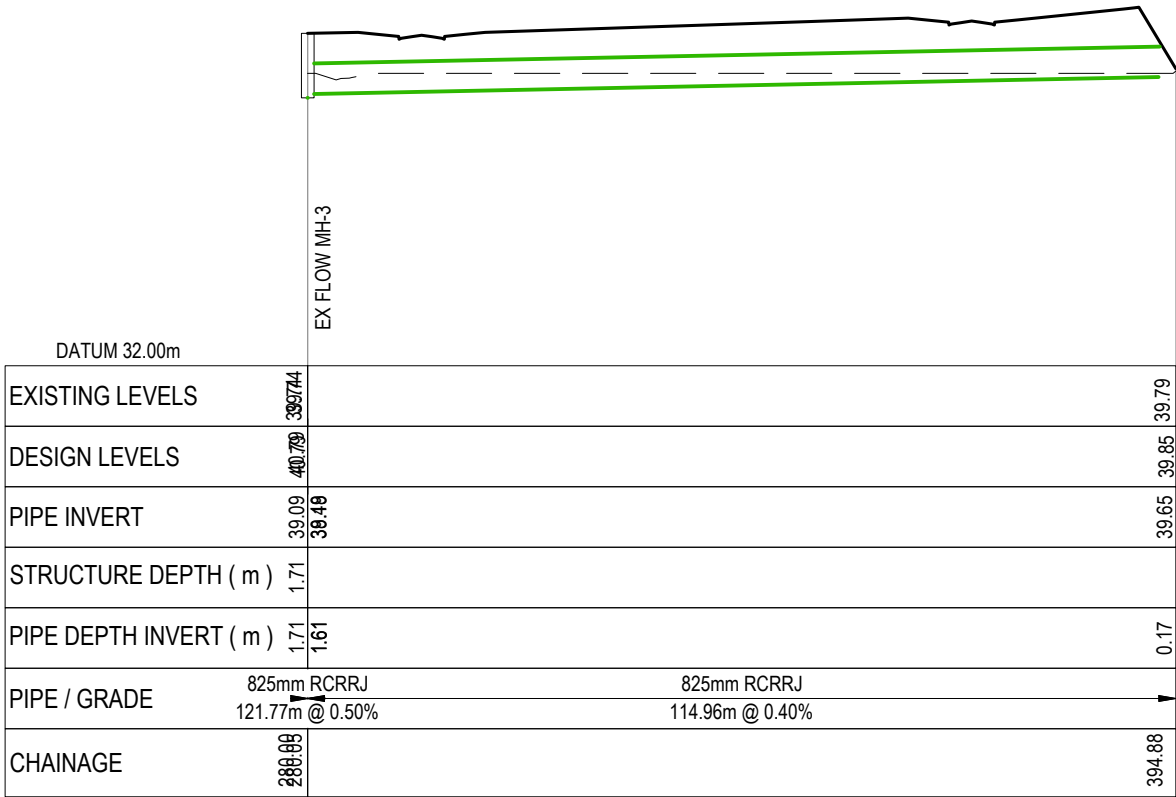
Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL 1		
Scale	AS SHOWN		
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG		
Drawing no.	R1-C420-36	Rev	A

DATE: 8/20/25 FILEPATH: F:\MAVEN\HAMILTON\6. PROJECTS\298001 - SOUTHERN LINKS 1\B1\G1\298001-R1-C420 SW LONGSECTIONS.DWG



PV - Existing Flow to Swale Discharge (1 of 2)
SCALE: HORI 1:1000 VERT 1:200



PV - Existing Flow to Swale Discharge (1 of 2)
SCALE: HORI 1:1000 VERT 1:200

RESOURCE CONSENT

- Notes
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
 2. COORDINATES IN TERMS OF NZ GEODETIC DATUM MOUNT EDEN 2000.
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LEGEND

- EX GROUND LEVEL
- PR GROUND LEVEL
- HARDFILL BACKFILL
- LOT CONNECTION
- CROSSING PIPE

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
STORMWATER
LONG SECTIONS**

Project no.	298001-R1 SL 1
Scale	AS SHOWN
Cad file	298001-R1-C420 SW LONGSECTIONS.DWG
Drawing no.	R1-C420-37
Rev	A



- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
 2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MT EDEN 2000. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016. CONVERSION TO MOTURIKI 1953 CAN BE ACHIEVED BY ADDING 777m.
 3. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY HIS OPERATIONS.
 4. ALL CONCRETE SW PIPE TO BE INSTALLED IN ACCORDANCE WITH AS/NZS 3725:2007 FOR BURIED CONCRETE PIPES AND AS/NZ 4058:2007 FOR PRECAST CONCRETE PIPES (PRESSURE AND NON-PRESSURE) AS STIPULATED IN THE RITS 2018.
 5. APPROVED HARDFILL IS TO BE USED IN BACKFILLING OF ALL STORMWATER LINES WITHIN THE ROAD RESERVE.
 6. HEAVY DUTY MANHOLE LIDS AND FRAMES TO BE USED IN TRAFFICKED AREAS.
 7. ALL CESSPIT LEADS SHALL HAVE MIN COVER 0.9m.
 8. ALL LINES ARE TO BE CLASS4 RCRRJ UNLESS SHOWN OTHERWISE.
 9. ALL LINES TO BE ABANDONED SHALL BE SEALED AT EACH END. TIMING OF ALL SEALING TO BE COORDINATED WITH COUNCIL STAFF.

LEGEND	
	EX BOUNDARY
	PROP BOUNDARY
	PROP CATCHMENT
	PROP SW NETWORK
	PROP SW SCRUFFY
	PROP SW OUTLET
	PROP SW FOREBAY
	PROP SW WETLAND
	PROP HIGH FLOW BYPASS
	PROP SHARED PATH / MAINTENANCE TRACK
	ROCK RIP RAP
	GABBION BLOCK WALL

A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025



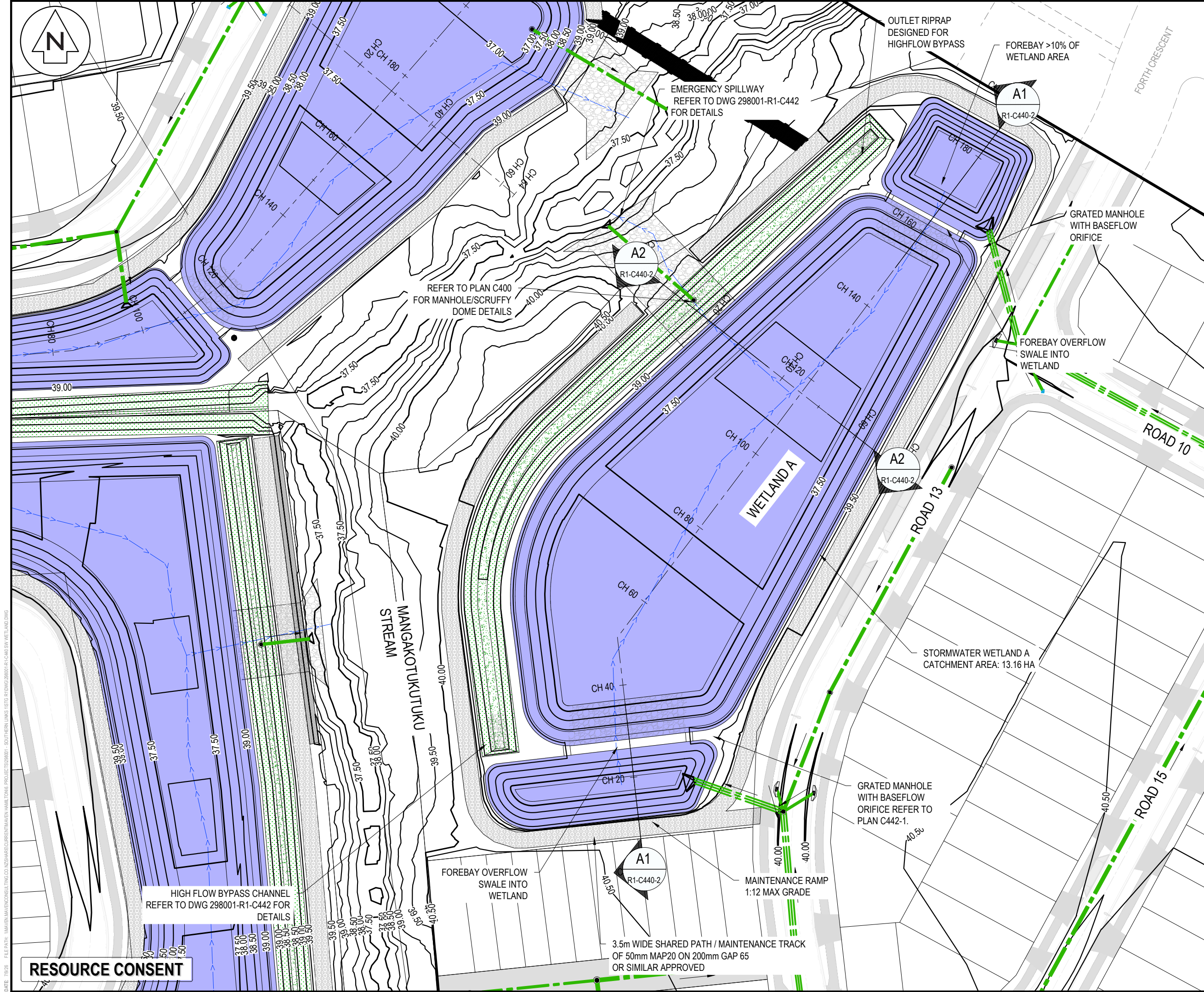
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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED STORMWATER
WETLAND PONDS
OVERVIEW PLAN**

Project no.	298001-R1 SL1		
Scale	1:4000 @ A3		
Cad file	298001-R1-C440 SW WETLAND.DWG		
Drawing no.	R1-C440	Rev	A

RESOURCE CONSENT



NOTES

- ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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LEGEND

- EX BOUNDARY
- PROP BOUNDARY
- PROP CATCHMENT
- PROP SW NETWORK
- PROP SW SCRUFFY
- PROP SW OUTLET
- PROP SW FOREBAY
- PROP SW WETLAND
- PROP HIGH FLOW BYPASS
- PROP SHARED PATH / MAINTENANCE TRACK
- ROCK RIP RAP
- GABBION BLOCK WALL

Rev	Description	By	Date
A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

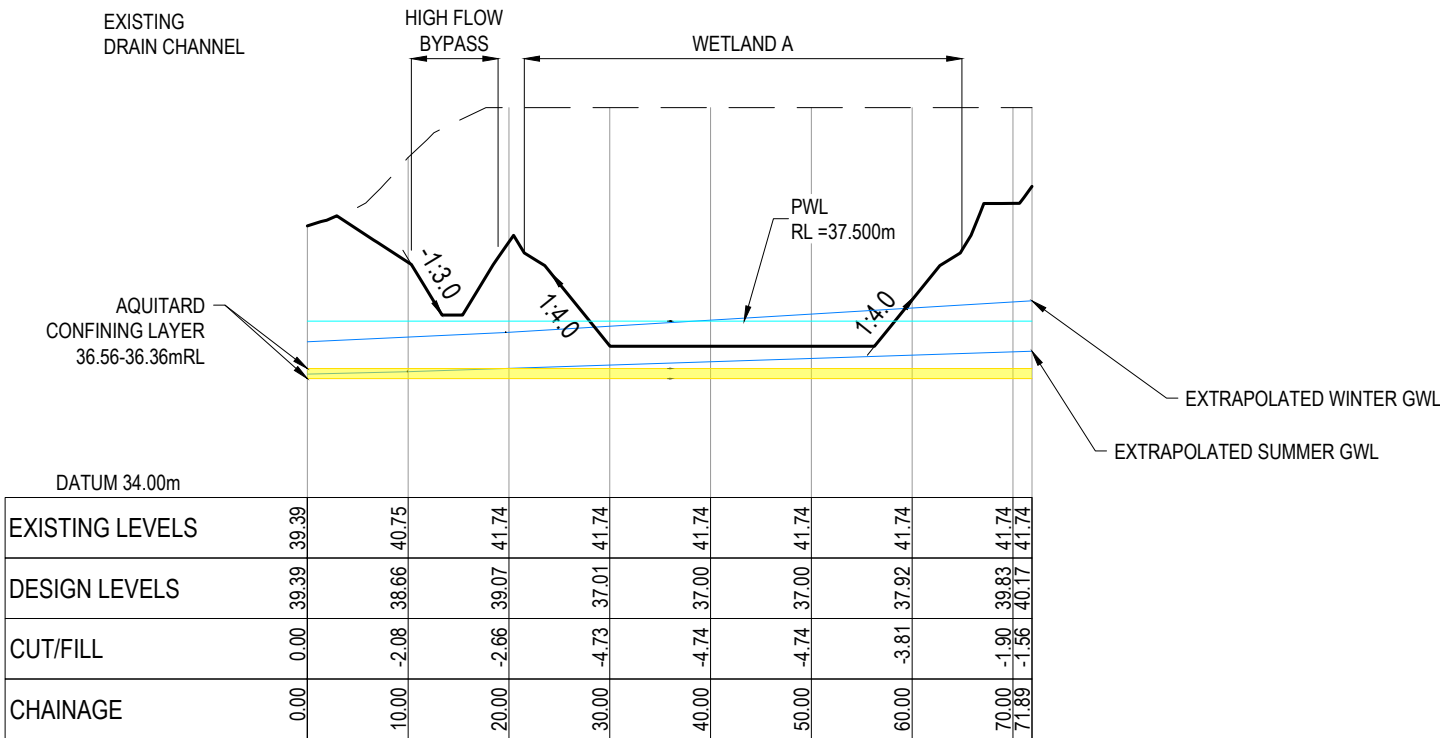
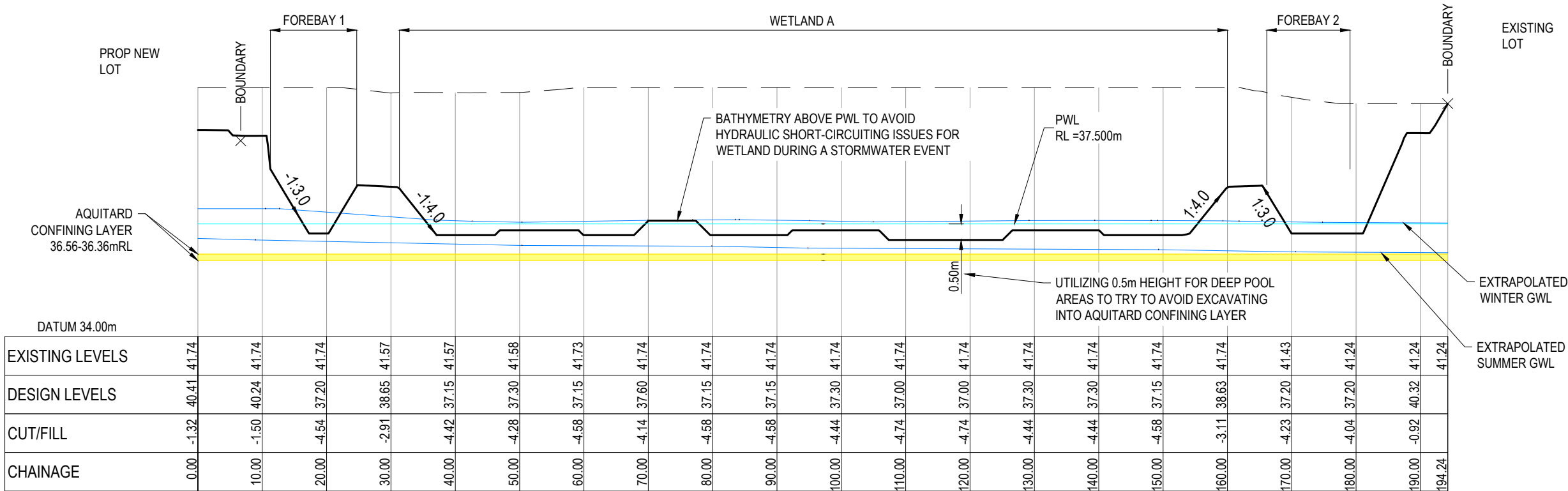
M Maven Waikato
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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED STORMWATER
WETLAND A
PLAN**

Project no.	298001-R1 SL1
Scale	1:750 @ A3
Cad file	298001-R1-C440 SW WETLAND.DWG
Drawing no.	R1-C440-1
Rev	A

DATE: 7/9/25 FILE PATH: \\MAVEN\MAVEN\CONSULTING\CO NZ\SHARE\CURRENT\MAVEN - HAMILTON\ PROJECTS\298001 - SOUTHERN LINKS\1816\1816-C440 SW WETLAND.DWG



- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
 2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MT EDEN 2000. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016. CONVERSION TO MOTURIKI 1953 CAN BE ACHIEVED BY ADDING 777m.
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 9. ALL LINES TO BE ABANDONED SHALL BE SEALED AT EACH END. TIMING OF ALL SEALING TO BE COORDINATED WITH COUNCIL STAFF.

Legend

—	EX GROUND LEVEL
—	PROP GROUND LEVEL
—	SUMMER/WINTER GWL
—	PWL

A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED STORMWATER
WETLAND A
SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C440 SW WETLAND.DWG
Drawing no.	R1-C440-2
Rev	A

RESOURCE CONSENT



- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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- LEGEND
- EX BOUNDARY
 - PROP BOUNDARY
 - PROP CATCHMENT
 - PROP SW NETWORK
 - PROP SW SCRUFFY
 - PROP SW OUTLET
 - PROP SW FOREBAY
 - PROP SW WETLAND
 - PROP HIGH FLOW BYPASS
 - PROP SHARED PATH / MAINTENANCE TRACK
 - ROCK RIP RAP
 - GABBION BLOCK WALL

A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025



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New Zealand

Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

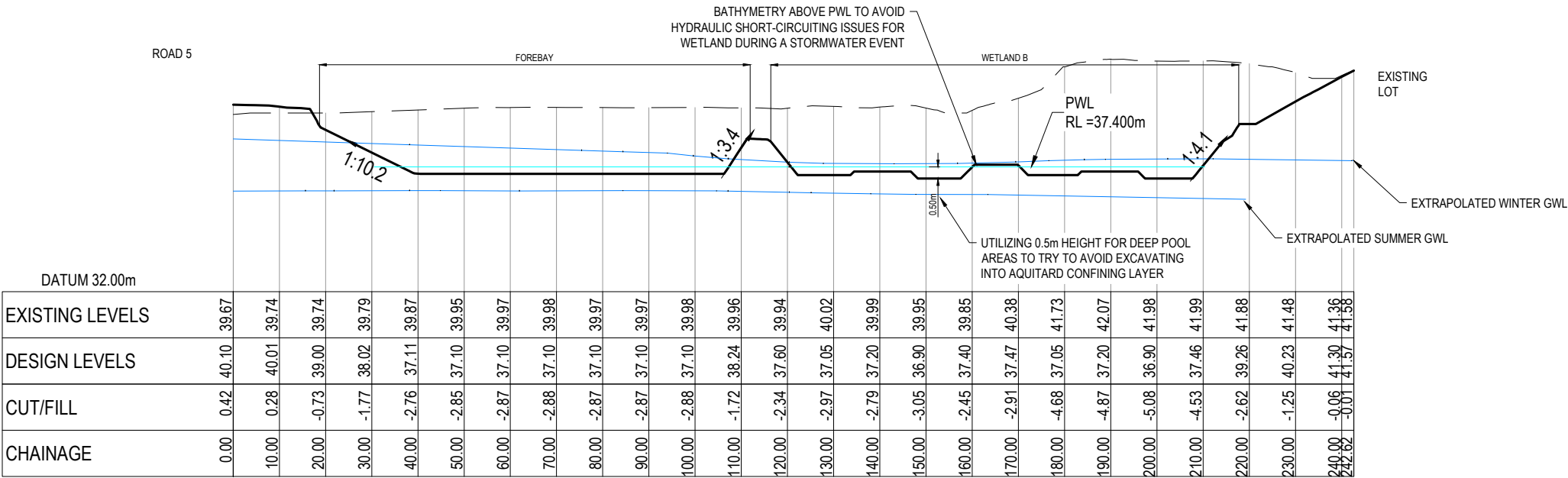
Title
**PROPOSED STORMWATER
WETLAND B
PLAN**

Project no.	298001-R1 SL1
Scale	1:750 @ A3
Cad file	298001-R1-C440 SW WETLAND.DWG
Drawing no.	R1-C440-3
Rev	A

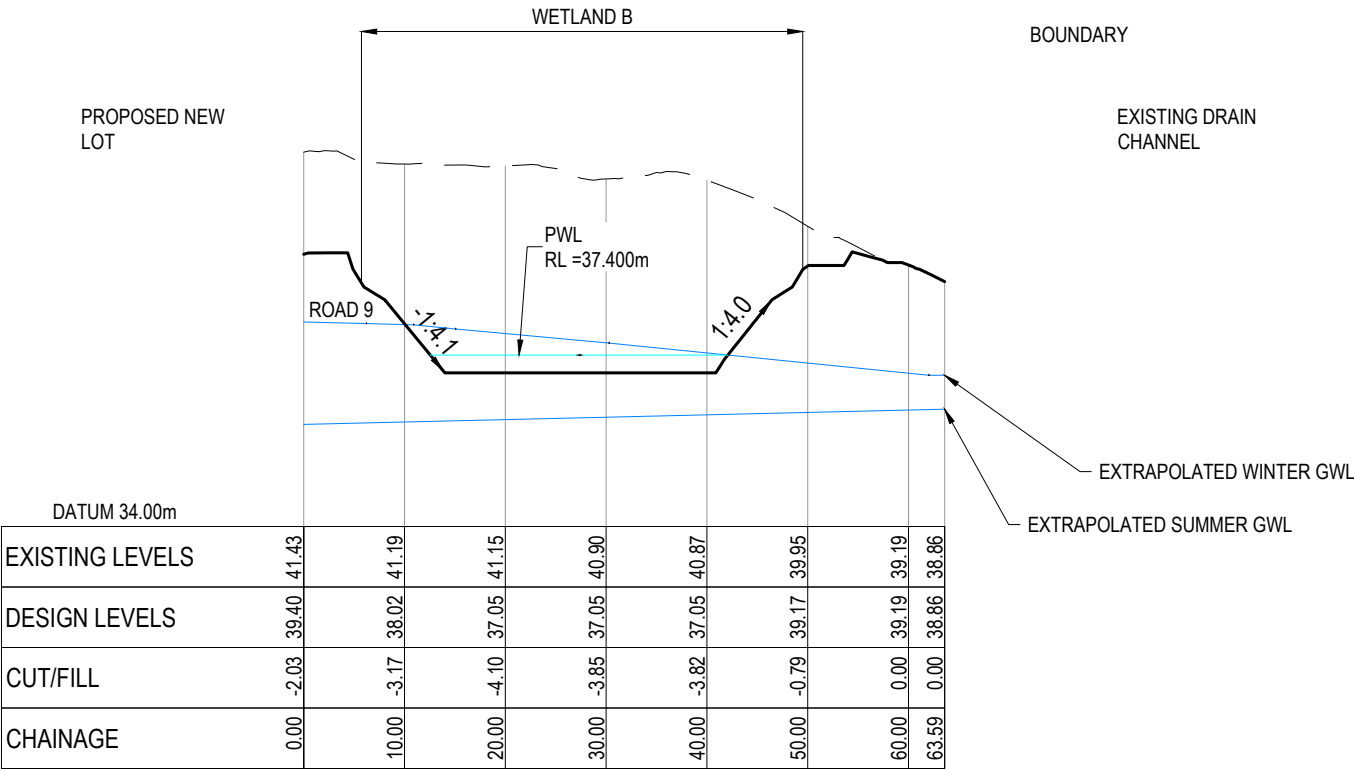
DATE: 7/9/25 FILE PATH: MAVEN\MAVENCONSULTING\CO_NZ\HARCOURT\MAVEN HAMILTON\PROJECTS\298001 - SOUTHERN LINKS 1\STG 1\DWG\298001-R1-C440 SW WETLAND.DWG

RESOURCE CONSENT

DATE: 7/9/25 FILE PATH: \\MAVEN\MAVEN\CONSULTING\CO NZ\SHARE\CURRENT\MAVEN - HAMILTON - PROJECTS\298001 - SOUTHERN LINKS 1\STG R1\DWG\298001-R1-C440 SW WETLAND.DWG



PROPOSED - Section - B1 CH 0+00.00 TO CH 2+42.62
SCALE: HORI 1:1250 VERT 1:250



PROPOSED - Section - B2 CH 0+00.00 TO CH 0+63.59
SCALE: 1:750 H / 1:150 V

RESOURCE CONSENT

- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
 2. CO-ORDINATES IN TERMS OF NZ GEODETIC DATUM MT EDEN 2000. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016. CONVERSION TO MOTURIKI 1953 CAN BE ACHIEVED BY ADDING ???m.
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Legend

—	EX GROUND LEVEL
—	PROP GROUND LEVEL
—	SUMMER/WINTER GWL
—	PWL

A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

M **MAVEN**

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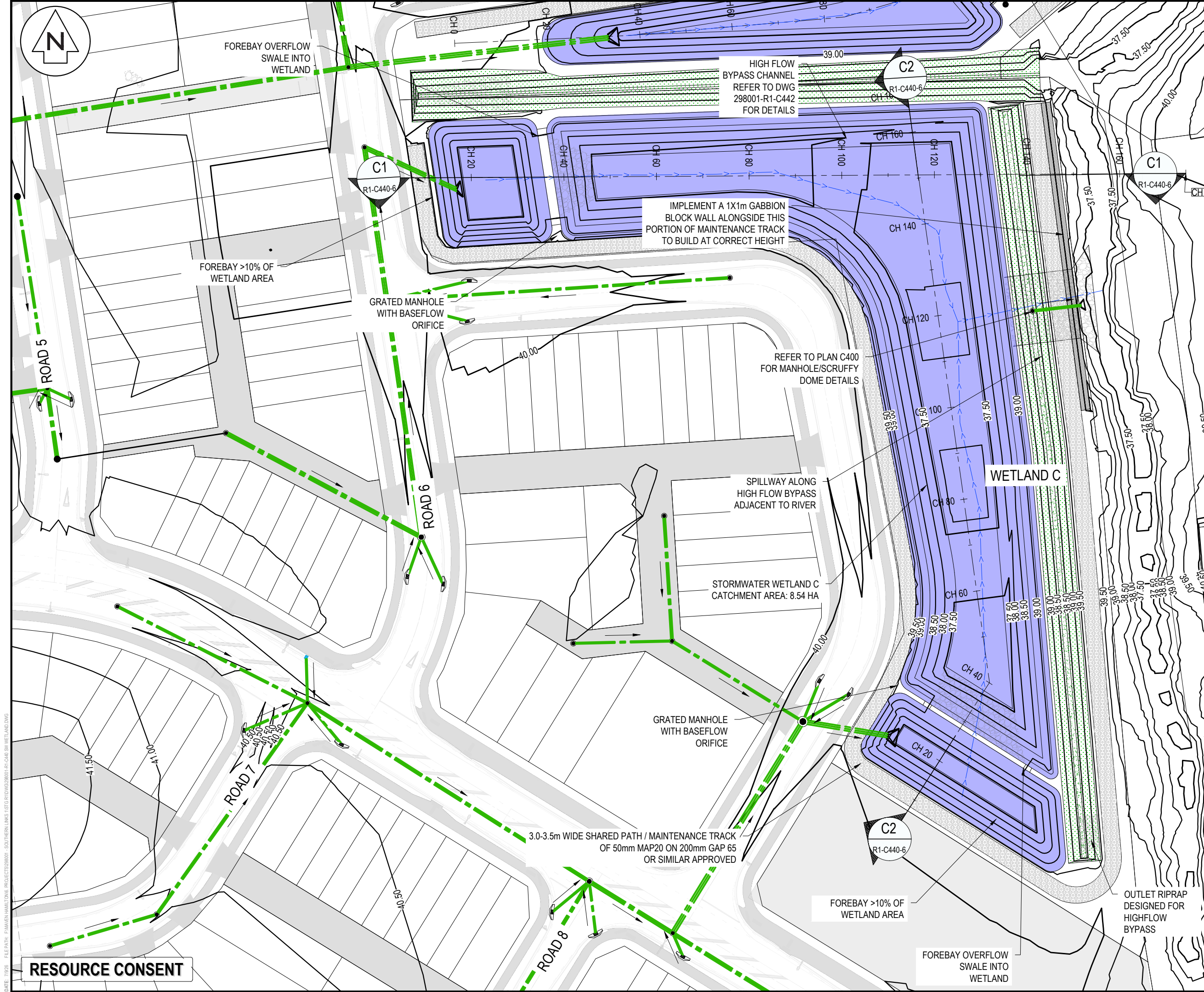
Project

**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title

**PROPOSED STORMWATER
WETLAND B
SECTIONS**

Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C440 SW WETLAND.DWG		
Drawing no.	R1-C440-4	Rev	A



- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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LEGEND

	EX BOUNDARY
	PROP BOUNDARY
	PROP CATCHMENT
	PROP SW NETWORK
	PROP SW SCRUFFY
	PROP SW OUTLET
	PROP SW FOREBAY
	PROP SW WETLAND
	PROP HIGH FLOW BYPASS
	PROP SHARED PATH / MAINTENANCE TRACK
	ROCK RIP RAP
	GABBION BLOCK WALL

A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
Survey	MAVEN	06/2025	
Design	MKS	07/2025	
Drawn	MJRA	11/2025	
Checked	DJM	11/2025	

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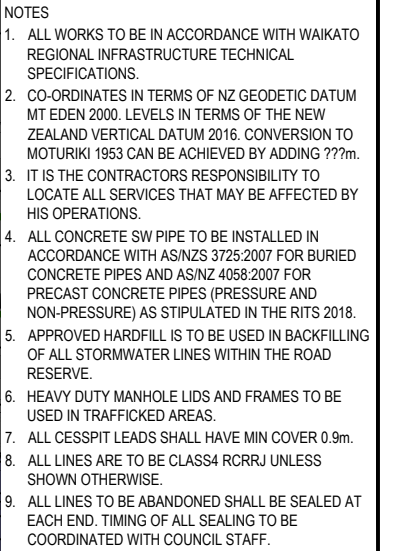
Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED STORMWATER
WETLAND C
PLAN**

Project no.	298001-R1 SL1
Scale	1:750 @ A3
Cad file	298001-R1-C440 SW WETLAND.DWG
Drawing no.	R1-C440-5
Rev	A

DATE: 7/2/25 FILEPATH: F:\Maven\Hamilton\6 PROJECTS\298001 - SOUTHERN LINKS 1\STG1\DWG\298001-R1-C440 SW WETLAND.DWG

RESOURCE CONSENT



LEGEND

	EX BOUNDARY
	PROP BOUNDARY
	PROP CATCHMENT
	PROP SW NETWORK
	PROP SW SCRUFFY
	PROP SW OUTLET
	PROP SW FOREBAY
	PROP SW WETLAND
	PROP HIGH FLOW BYPASS
	PROP SHARED PATH / MAINTENANCE TRACK
	ROCK RIP RAP
	GABBION BLOCK WALL

A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
	By	Date	
Survey	MAVEN	06/2025	
Design	MKS	07/2025	
Drawn	MJRA	11/2025	
Checked	DJM	11/2025	



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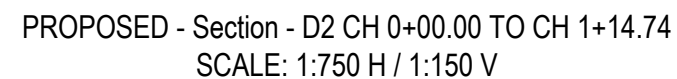
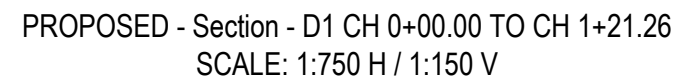
Project

**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

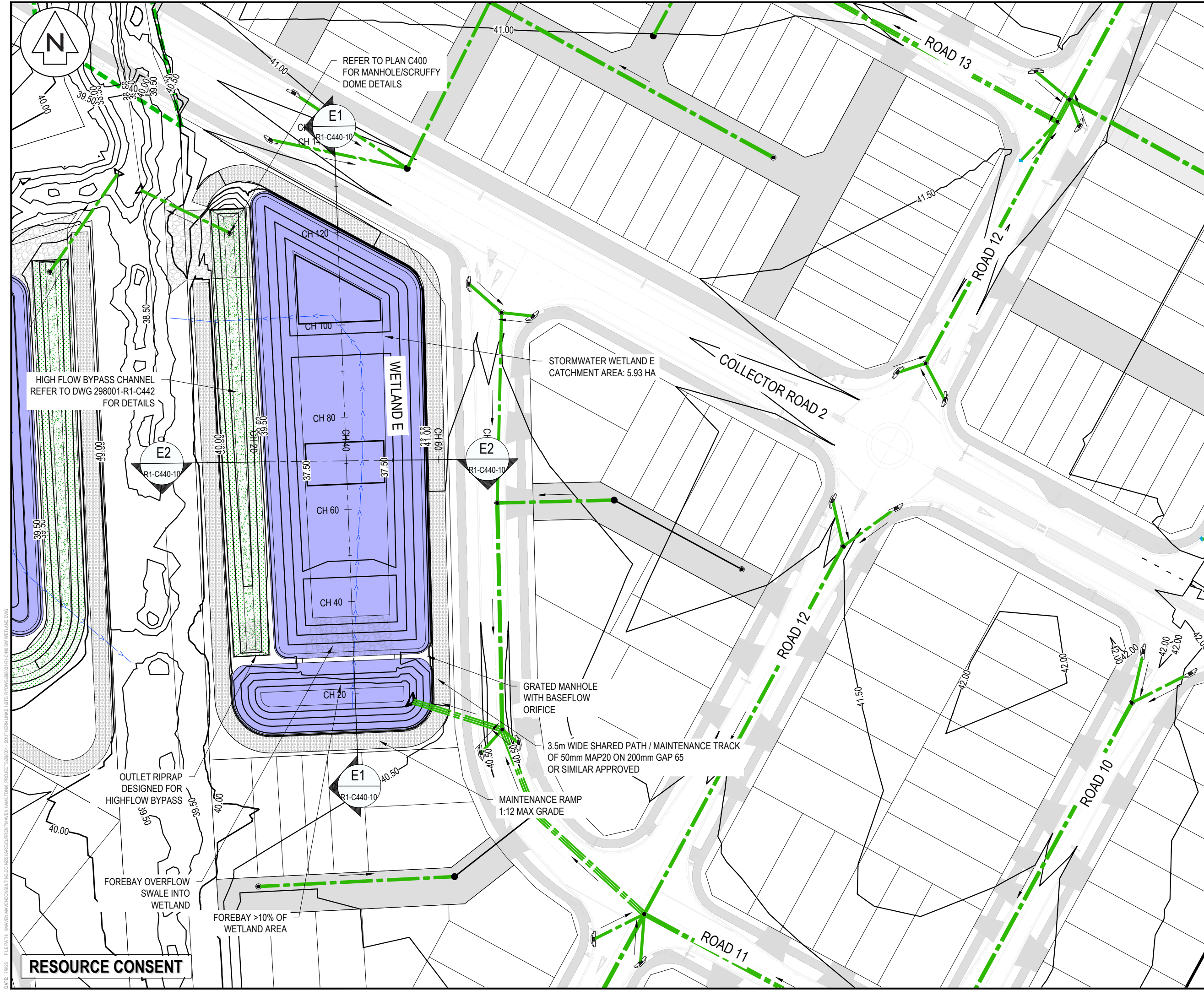
Title

**PROPOSED STORMWATER
WETLAND D
PLAN**

Project no.	298001-R1 SL1		
Scale	1:750 @ A3		
Cad file	298001-R1-C440 SW WETLAND.DWG		
Drawing no.	R1-C440-7	Rev	A



Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C440 SW WETLAND.DWG		
Drawing no.	R1-C440-8	Rev	A



- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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- LEGEND
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 - PROP BOUNDARY
 - PROP CATCHMENT
 - PROP SW NETWORK
 - PROP SW SCRUFFY
 - PROP SW OUTLET
 - PROP SW FOREBAY
 - PROP SW WETLAND
 - PROP HIGH FLOW BYPASS
 - PROP SHARED PATH / MAINTENANCE TRACK
 - ROCK RIP RAP
 - GABBION BLOCK WALL

A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

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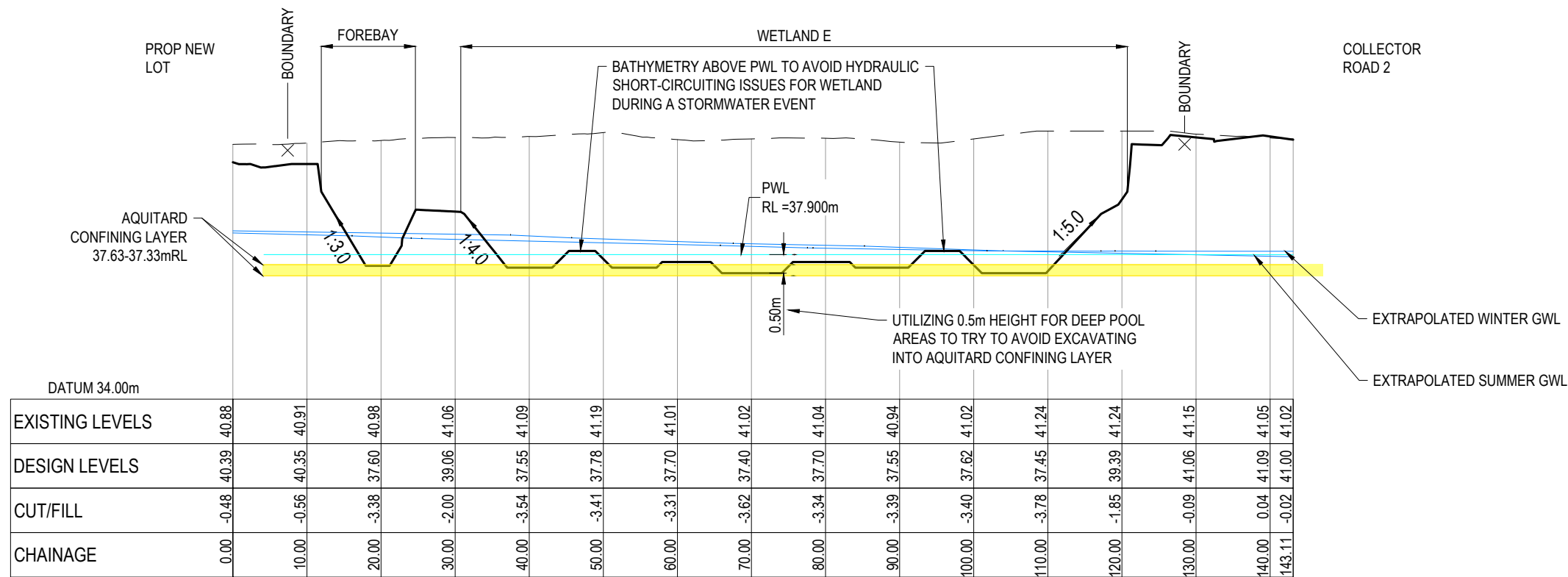
Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED STORMWATER
WETLAND E
PLAN**

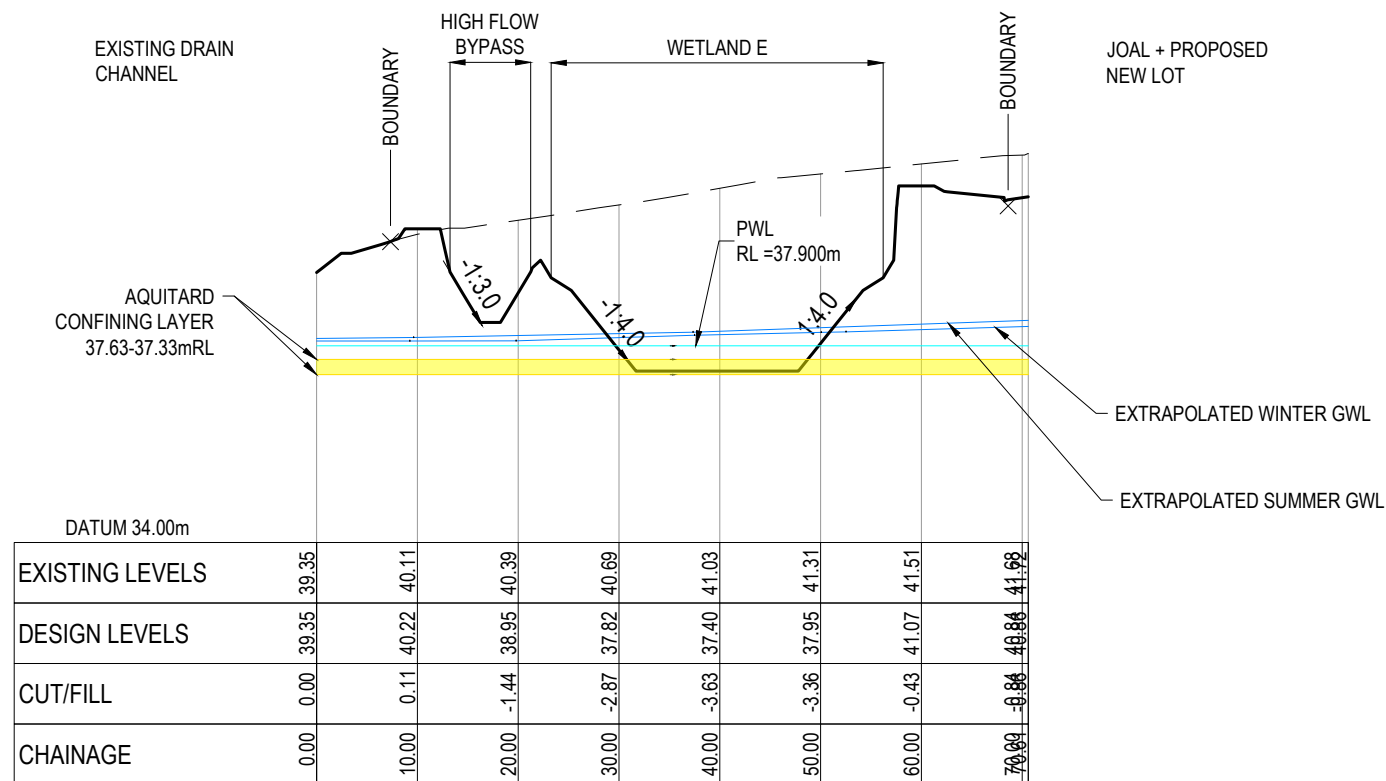
Project no.	298001-R1 SL1
Scale	1:750 @ A3
Cad file	298001-R1-C440 SW WETLAND.DWG
Drawing no.	R1-C440-9
Rev	A

DATE: 7/9/25 FILE PATH: \\MAVEN\MAVENCONSULTING\CD\NOSHARE\PROJECTS\WETLANDS\PROJECTS\298001 - SOUTHERN LINKS STAGE 1\298001-R1-C440 SW WETLAND.DWG

RESOURCE CONSENT



PROPOSED - Section - E1 CH 0+00.00 TO CH 1+43.11
SCALE: 1:750 H / 1:150 V



PROPOSED - Section - E2 CH 0+00.00 TO CH 0+70.61
SCALE: 1:750 H / 1:150 V

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Legend

—	EX GROUND LEVEL
—	PROP GROUND LEVEL
—	SUMMER/WINTER GWL
—	PWL

A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025



Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED STORMWATER
WETLAND E
SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C440 SW WETLAND.DWG
Drawing no.	R1-C440-10
Rev	A

RESOURCE CONSENT



- NOTES
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- LEGEND
- EX BOUNDARY
 - PROP BOUNDARY
 - PROP CATCHMENT
 - PROP SW NETWORK
 - PROP SW SCRUFFY
 - PROP SW OUTLET
 - PROP SW FOREBAY
 - PROP SW WETLAND
 - PROP HIGH FLOW BYPASS
 - PROP SHARED PATH / MAINTENANCE TRACK
 - ROCK RIP RAP
 - GABBION BLOCK WALL

A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED STORMWATER
DETENTION POND F
PLAN**

Project no.	298001-R1 SL1
Scale	1:750 @ A3
Cad file	298001-R1-C440 SW WETLAND.DWG
Drawing no.	R1-C440-11
Rev	A

OUTLET RIPRAP
DESIGNED FOR
HIGHFLOW BYPASS

STORMWATER WETLAND F
CATCHMENT AREA: 3.99 HA

HIGH FLOW BYPASS CHANNEL
REFER TO DWG 298001-R1-C442
FOR DETAILS

3.5m WIDE SHARED PATH / MAINTENANCE TRACK
OF 50mm MAP20 ON 200mm GAP 65
OR SIMILAR APPROVED

WIDE EMERGENCY SPILLWAY
REFER TO DWG 298001-R1-C442
FOR DETAILS

MANHOLE/SCRUFFY
DOME WITH 10YR AND
100YR OUTLET. REFER
TO PLAN C442-2

GRATED MANHOLE
WITH BASEFLOW
ORIFICE

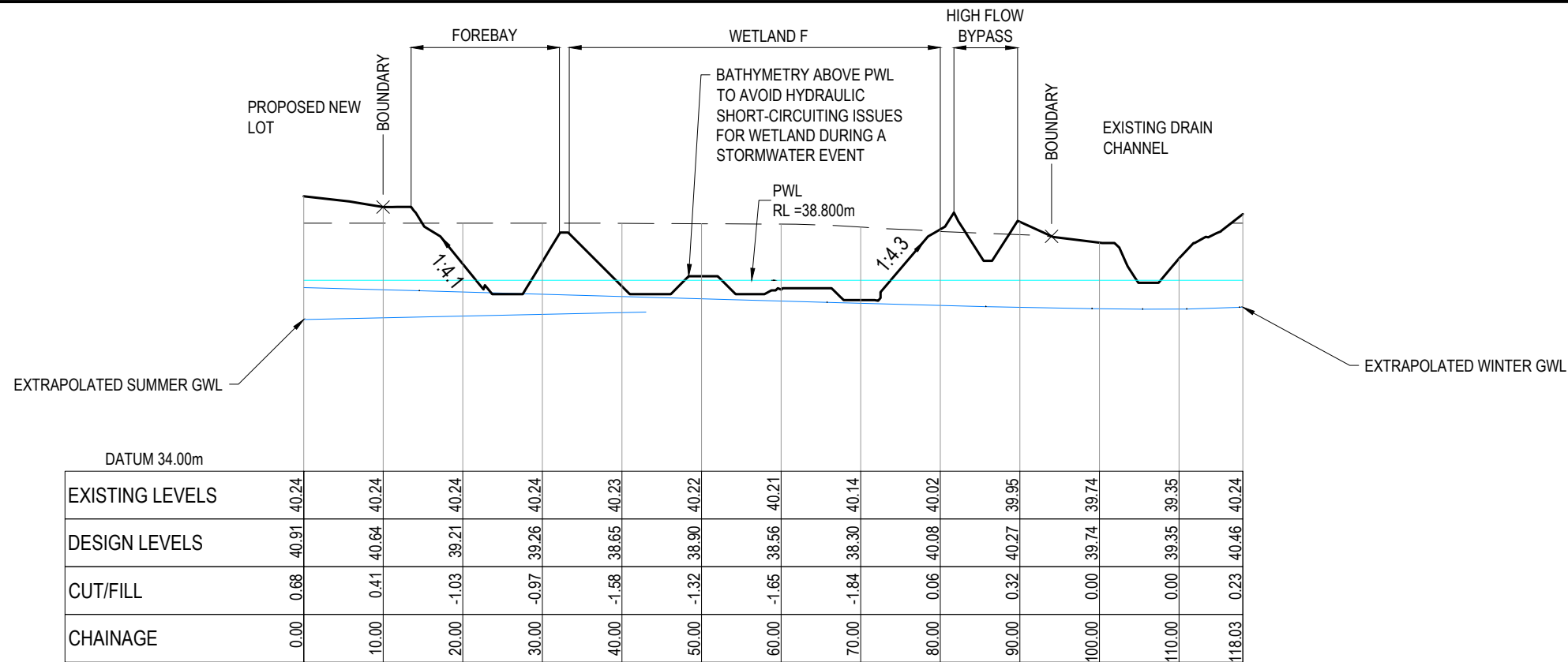
FOREBAY >10% OF
WETLAND AREA

FOREBAY OVERFLOW
SWALE INTO
WETLAND

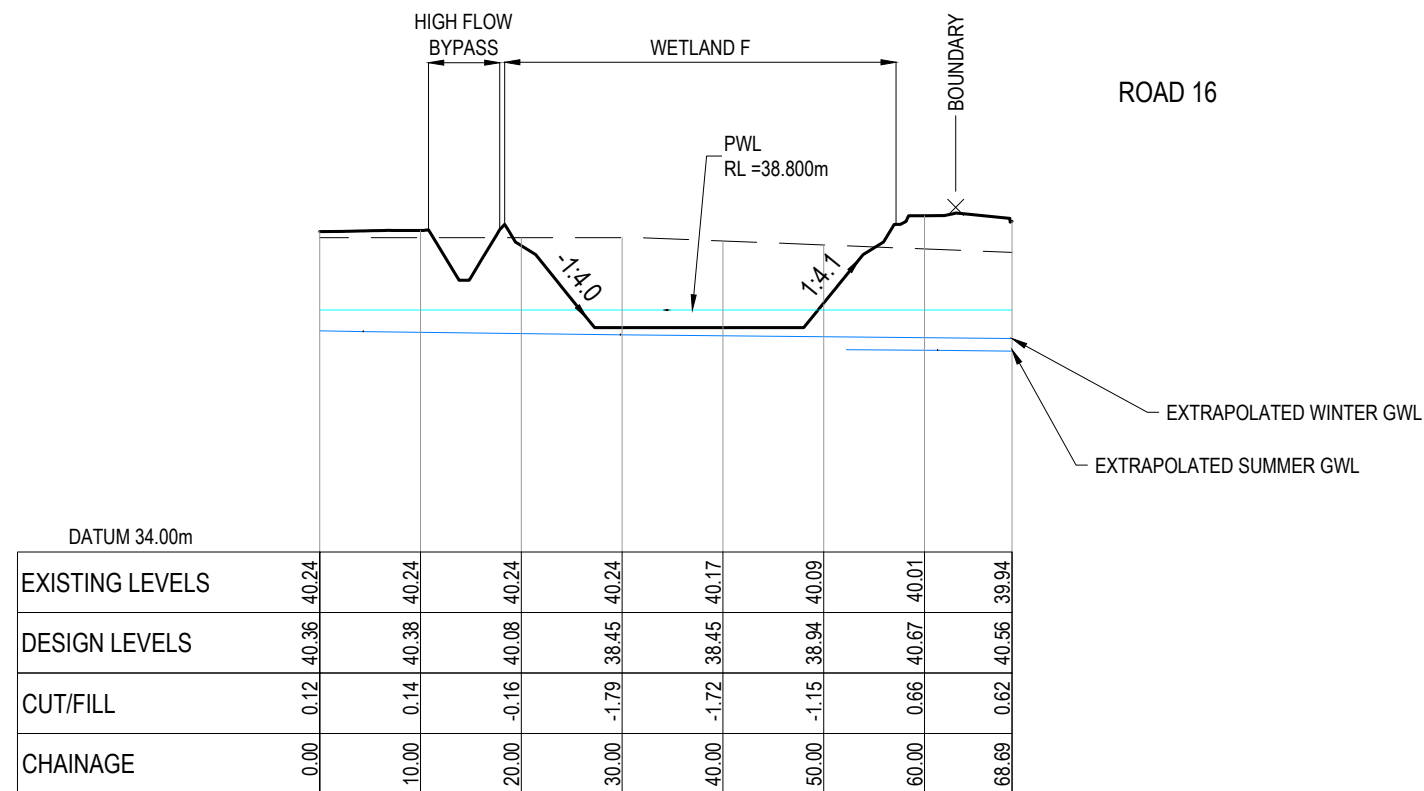
RESOURCE CONSENT

DATE: 7/20/25 FILE PATH: \\MAVEN\MAVEN\CONSULTING\CO NZ\SHARES\CURRENT\WAIKATO\HAMILTON\PROJECTS\298001 - SOUTHERN LINKS 1\STG 1\DWG\298001-R1-C440 SW WETLAND.DWG

DATE: 7/9/25 FILE PATH: \\MAVEN\MAVEN\CONSULTING\CO NZ\SHARE\CURRENT\MAVEN - HAMILTON - PROJECTS\298001 - SOUTHERN LINKS 1\STG R1\DWG\298001-R1-C440 SW WETLAND.DWG



PROPOSED - Section - F1 CH 0+00.00 TO CH 1+18.03
SCALE: 1:750 H / 1:150 V



PROPOSED - Section - F2 CH 0+00.00 TO CH 0+68.69
SCALE: 1:750 H / 1:150 V

- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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Legend

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—	SUMMER/WINTER GWL
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A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		07/2025
Drawn	MJRA		11/2025
Checked	DJM		11/2025

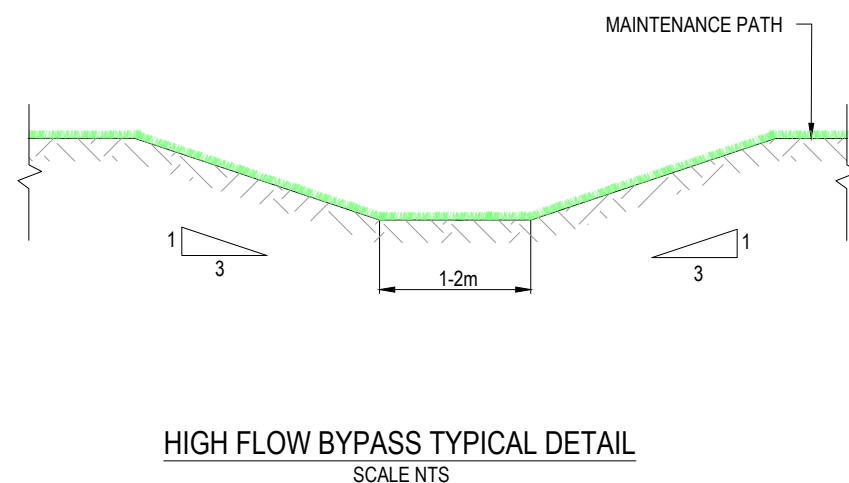
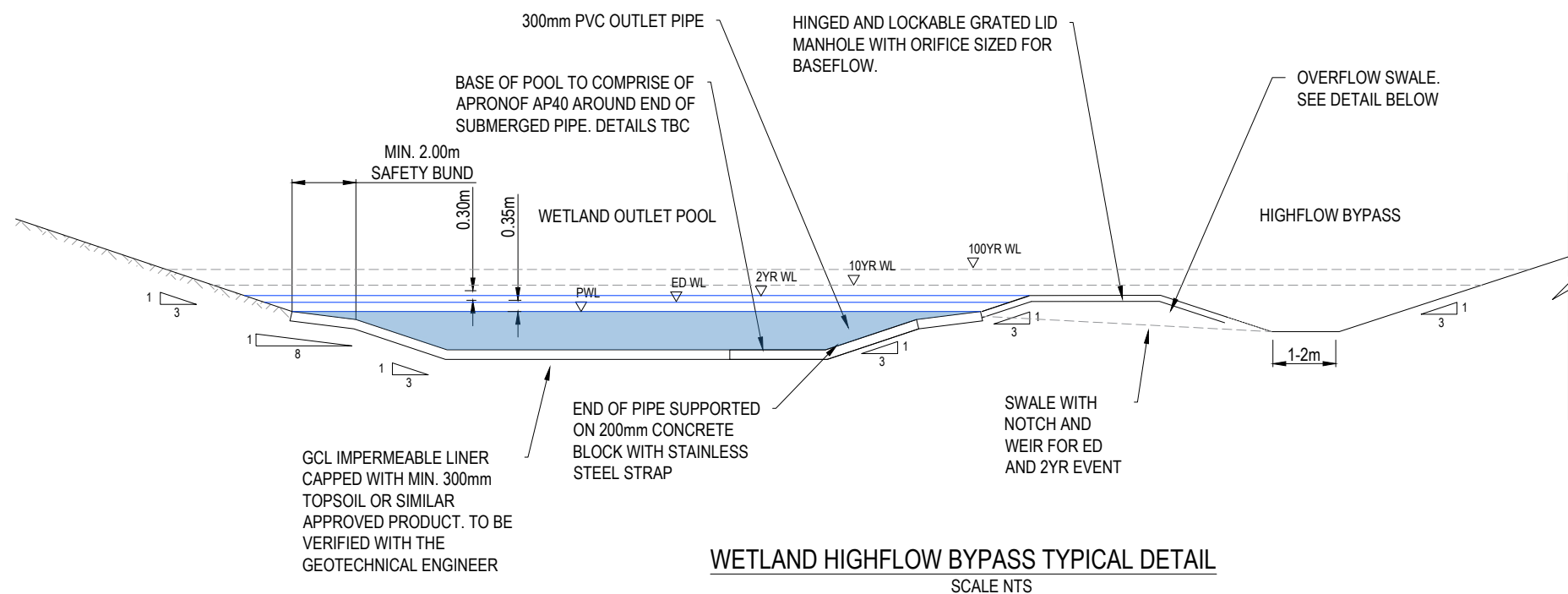
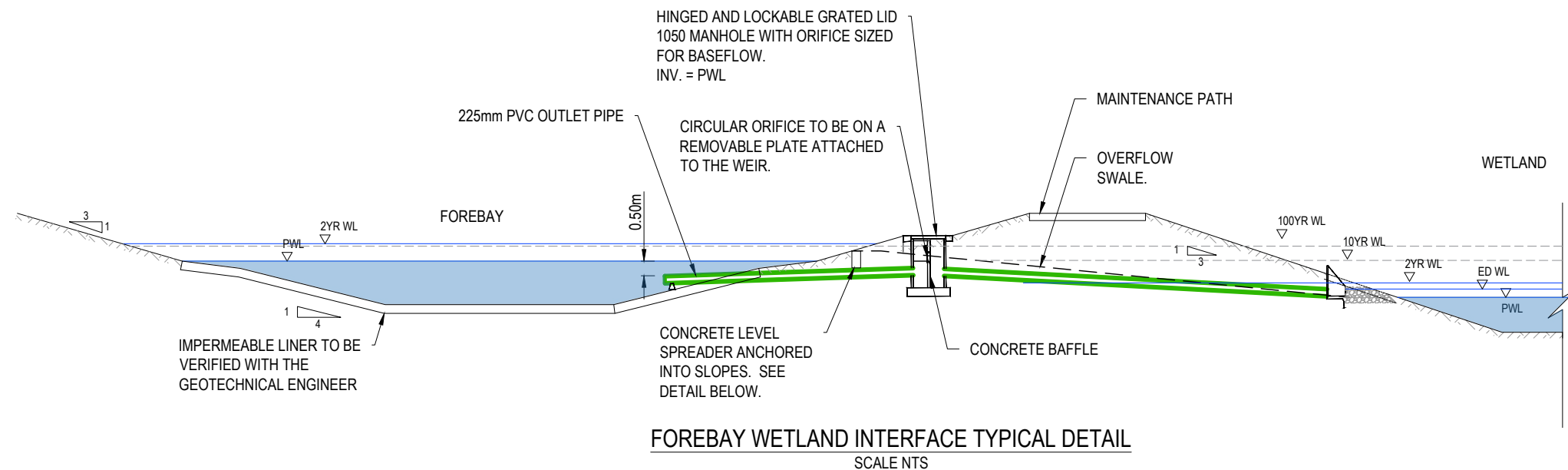


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED STORMWATER
DETENTION POND F
SECTIONS**

Project no.	298001-R1 SL1
Scale	AS SHOWN
Cad file	298001-R1-C440 SW WETLAND.DWG
Drawing no.	R1-C440-12
Rev	A

RESOURCE CONSENT



- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		10/2025
Design	NK		10/2025
Drawn	NK		10/2025
Checked	DJM		11/2025

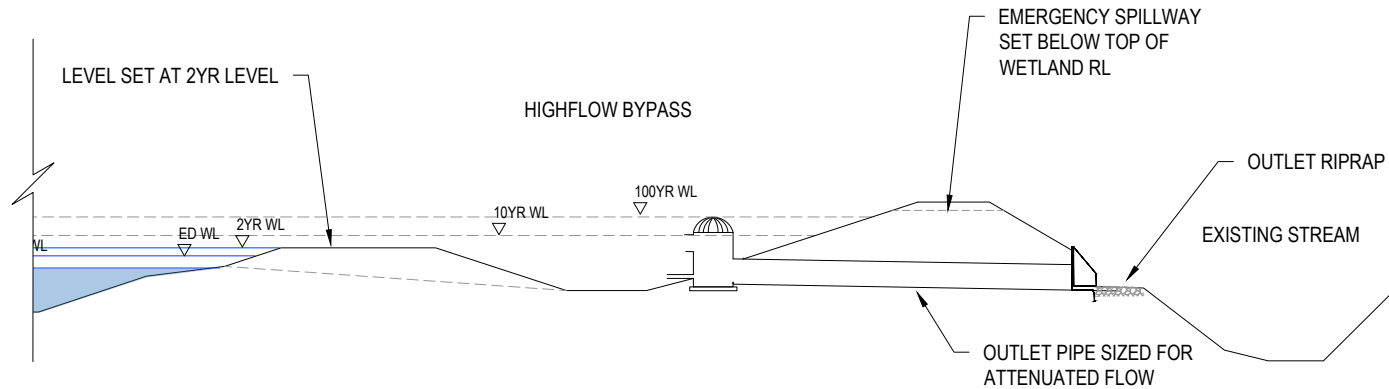
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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

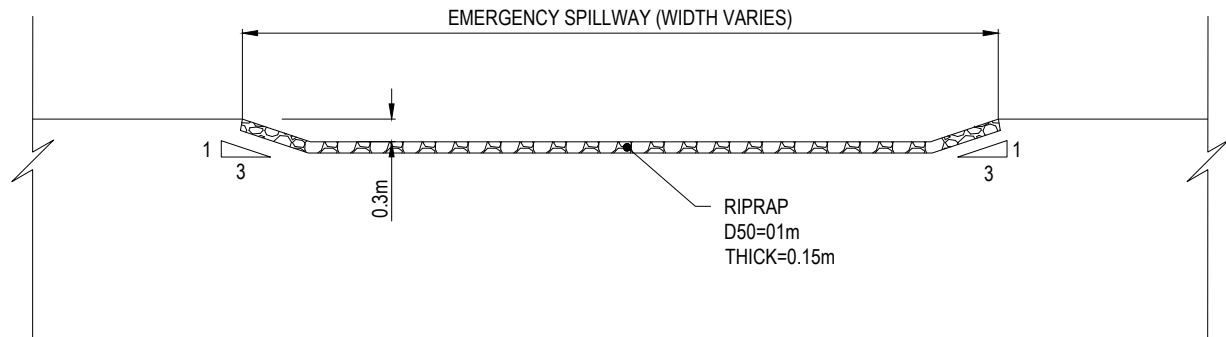
Title
**PROPOSED
WETLAND
DETAILS**

Project no.	298001-R1 SL1
Scale	AS SHOWN @ A3
Cad file	298001-R1-C442 SW WETLAND DETAILS.DWG
Drawing no.	C442-1
Rev	A

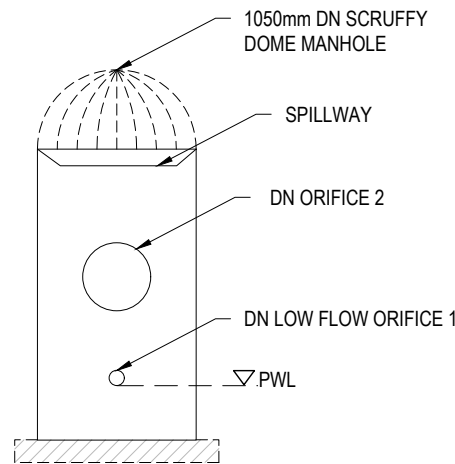
RESOURCE CONSENT



WETLAND OUTLET SECTION DETAILS
SCALE NTS



MERGENCY SPILLWAY SECTION DETAILS
SCALE 1:100



OUTLET MANHOLE TYPICAL DETAIL
SCALE 1:100

- NOTES
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A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
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Survey	MAVEN	10/2025	
Design	NK	10/2025	
Drawn	NK	10/2025	
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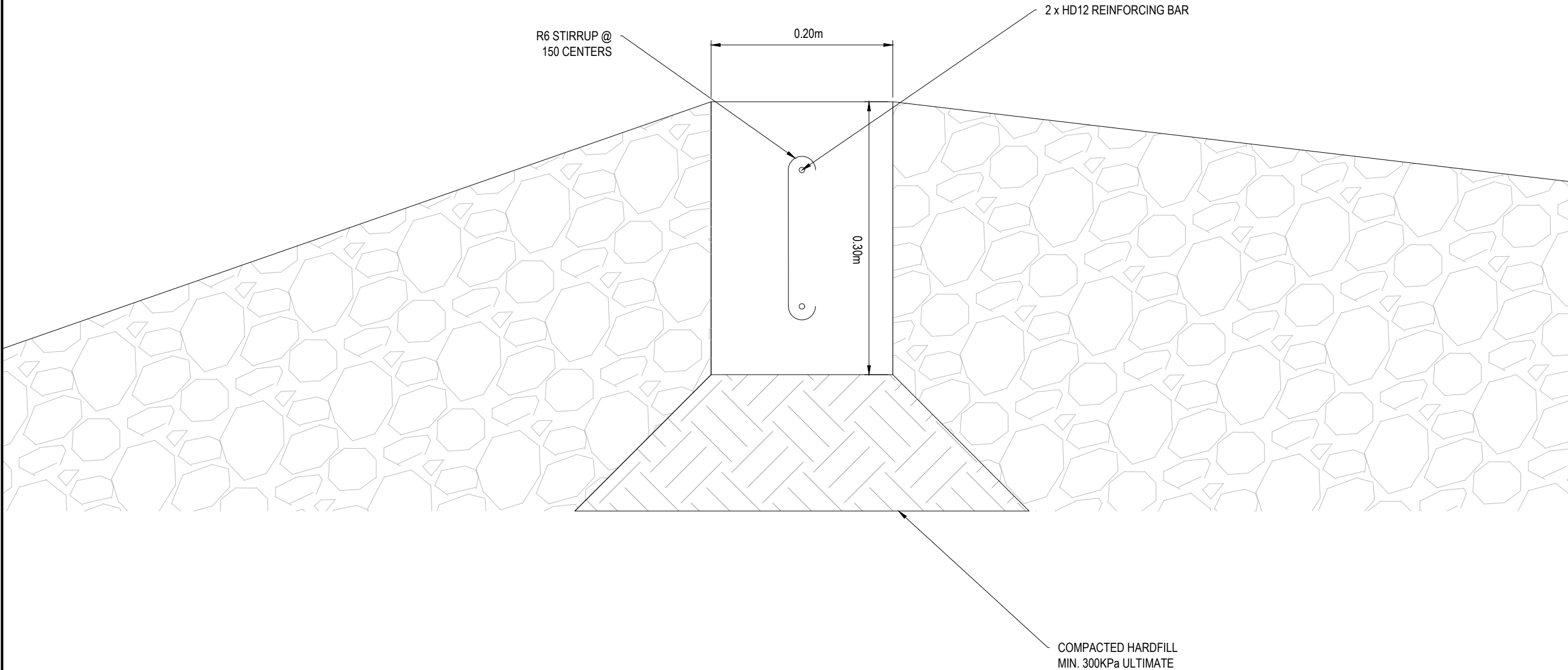
Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
WETLAND
DETAILS**

Project no.	298001-R1 SL1		
Scale	AS SHOWN @ A3		
Cad file	298001-R1-C442 SW WETLAND DETAILS.DWG		
Drawing no.	C442-2	Rev	A

RESOURCE CONSENT

DATE: 6/9/25 FILEPATH: F:\MAVEN\HAMILTON6 PROJECTS\298001 - SOUTHERN LINKS 1\BTO R1\DWG\298001-R1-C442 SW WETLAND DETAILS.DWG



TYPICAL DETAIL _CONCRETE BEAM LEVEL SPREADER
SCALE 1:5

RESOURCE CONSENT

- NOTES
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A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		10/2025
Design	NK		10/2025
Drawn	NK		10/2025
Checked	DJM		11/2025

M

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Maven Waikato

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Level 1 286 Victoria Street, Hamilton

New Zealand

Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
WETLAND
DETAILS**

Project no.	298001-R1 SL1
Scale	AS SHOWN @ A3
Cad file	298001-R1-C442 SW WETLAND DETAILS.DWG
Drawing no.	C442-3
Rev	A



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LEGEND

---	EX BDY
---	PROP BDY
---	STAGE BOUNDARY
---	EXISTING STREAM FLOW
---	PR RIPRAP
---	PR CULVERT

A	FAST TRACK APP	MKS	08/2026
Rev	Description	By	Date
Survey	MAVEN	06/2025	
Design	MKS	08/2026	
Drawn	MKS	08/2026	
Checked	DJM	08/2026	

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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
CULVERT
OVERVIEW PLAN**

Project no.	298001-R1 SL1		
Scale	1:4000 @ A3		
Cad file	298001-R1-C475-SW CULVERTS.DWG		
Drawing no.	R1-C475	Rev	A

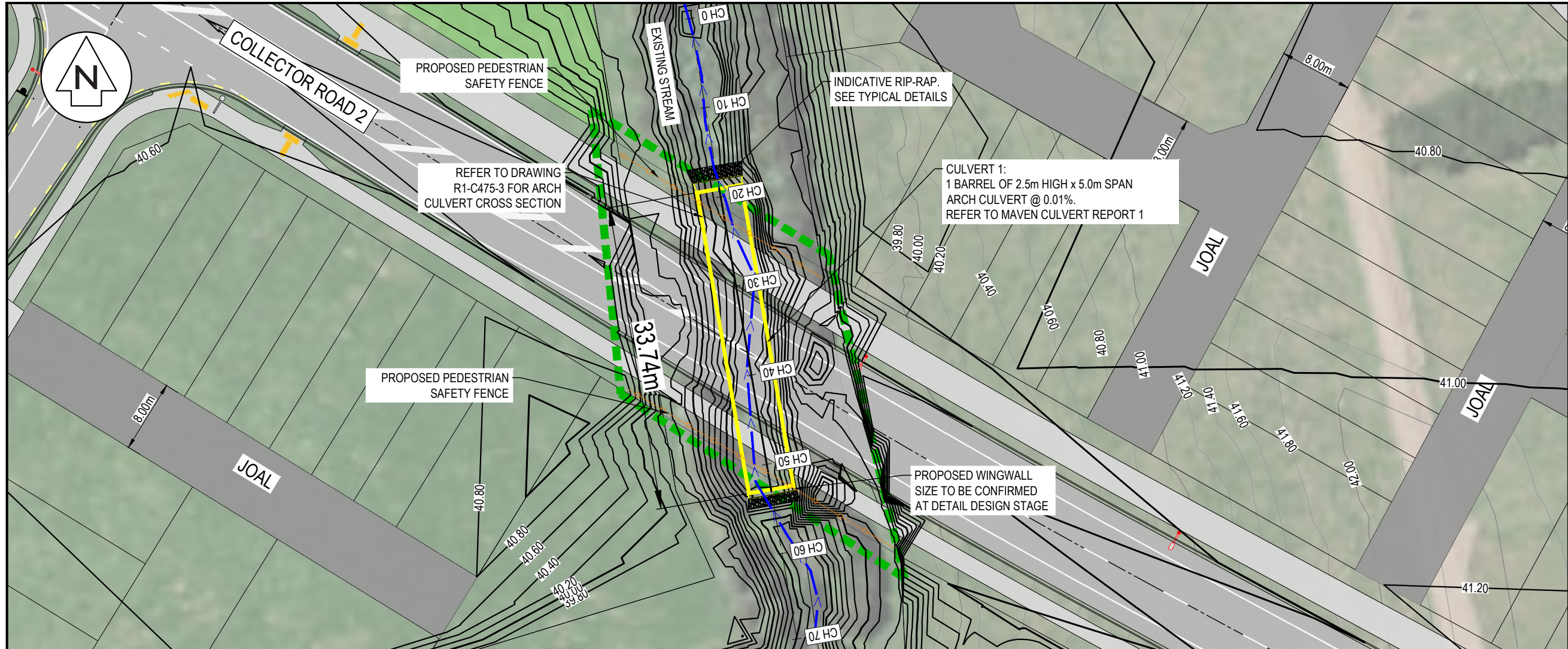
CULVERT 2

C475-1

CULVERT 1

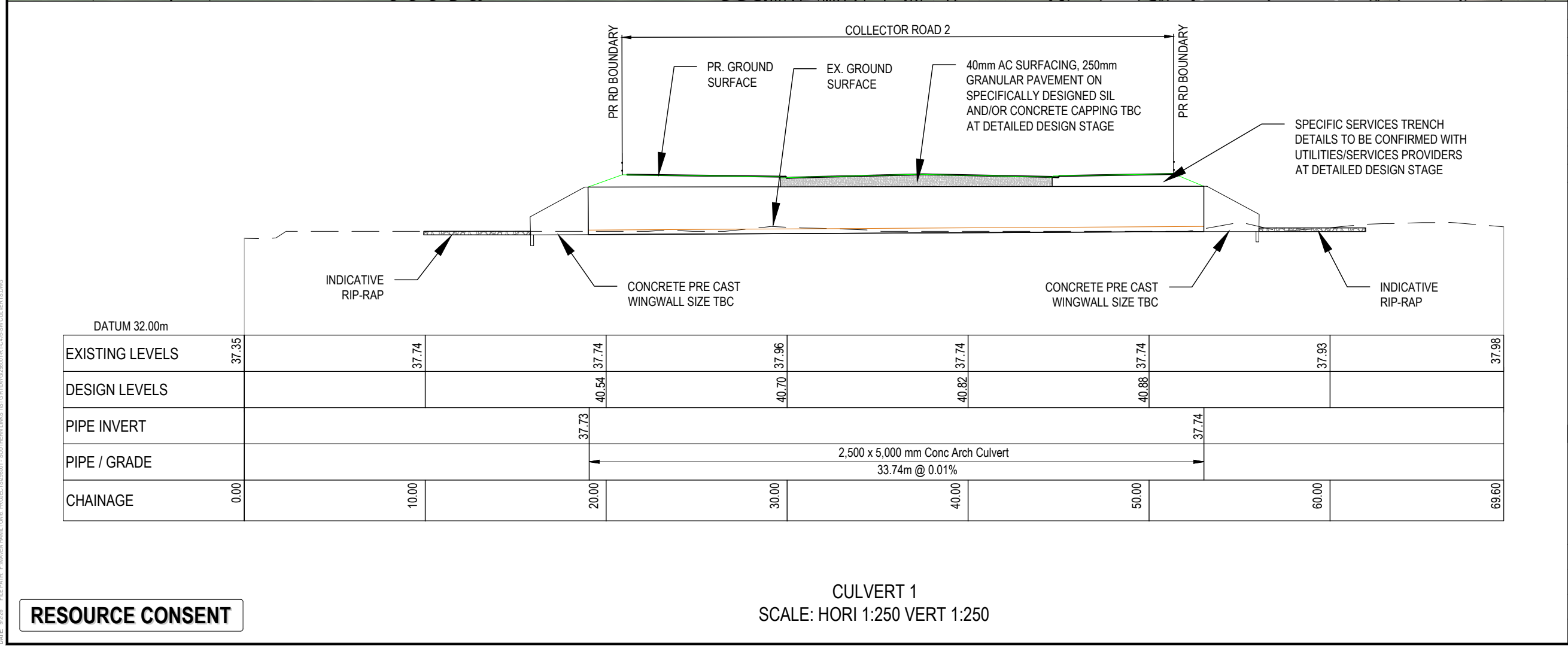
C475-2

RESOURCE CONSENT



- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS.
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LEGEND	
	EX BDY
	PROP BDY
	STAGE BOUNDARY
	EXISTING STREAM FLOW
	PR RIPRAP
	PR CULVERT



DATUM 32.00m	
EXISTING LEVELS	37.35 37.74 37.74 37.96 37.74 37.74 37.93 37.98
DESIGN LEVELS	40.54 40.70 40.82 40.88 37.74
PIPE INVERT	37.73 37.74
PIPE / GRADE	2,500 x 5,000 mm Conc Arch Culvert 33.74m @ 0.01%
CHAINAGE	0.00 10.00 20.00 30.00 40.00 50.00 60.00 69.60

CULVERT 1
SCALE: HORI 1:250 VERT 1:250

A	FAST TRACK APP	MJRA	08/2026
Rev	Description	By	Date
Survey	MAVEN		06/2025
Design	MJRA		08/2026
Drawn	MJRA		08/2026
Checked	DJM		08/2026

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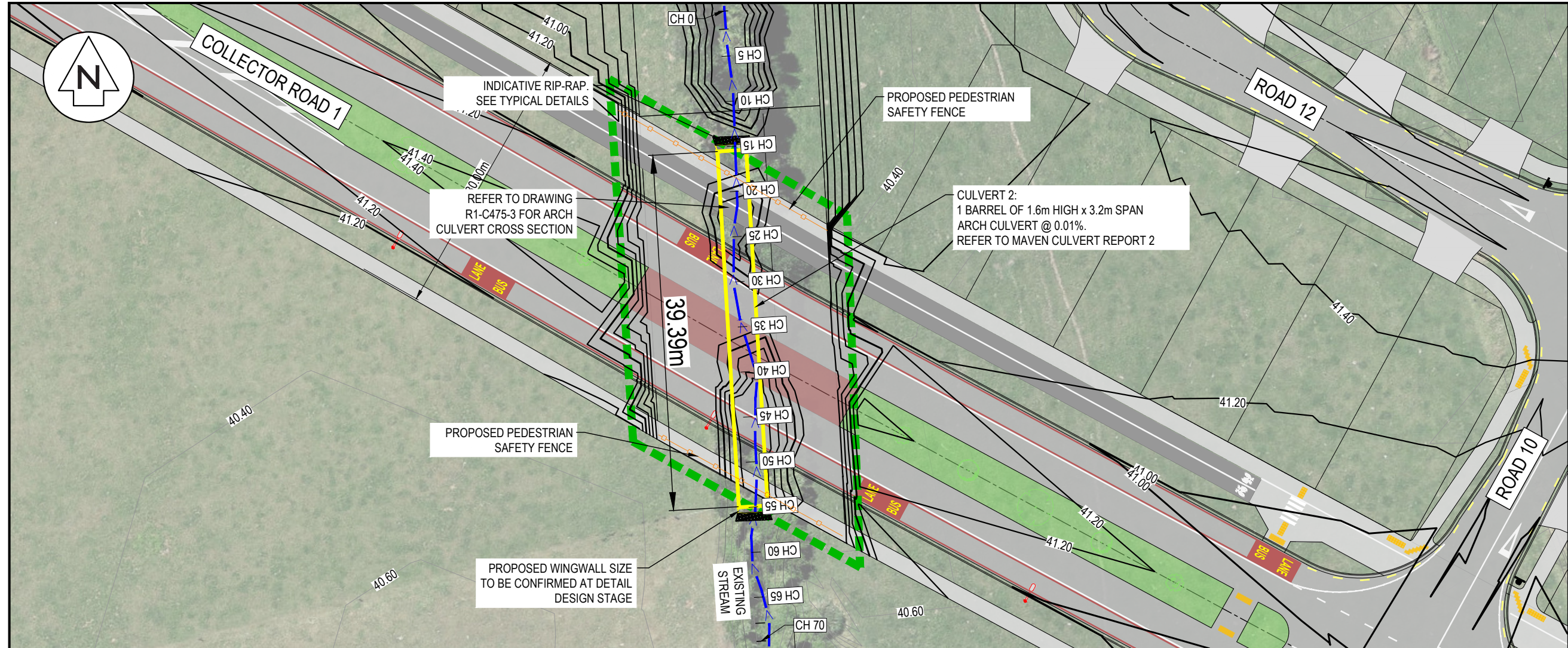
Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
CULVERT 1
LONGSECTION**

Project no.	298001-R1 SL1
Scale	1:500 @ A3
Cad file	298001-R1-C475-SW CULVERTS.DWG
Drawing no.	R1-C475-1
Rev	A

RESOURCE CONSENT

DATE: 9/2/25 FILEPATH: F:\MVEN\HAMILTON6 PROJECTS\298001 - SOUTHERN LINKS 1\STG1\DWG\298001-R1-C475-SW CULVERTS.DWG



- NOTES
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LEGEND

---	EX BDY
---	PROP BDY
---	STAGE BOUNDARY
---	EXISTING STREAM FLOW
---	PR RIPRAP
---	PR CULVERT

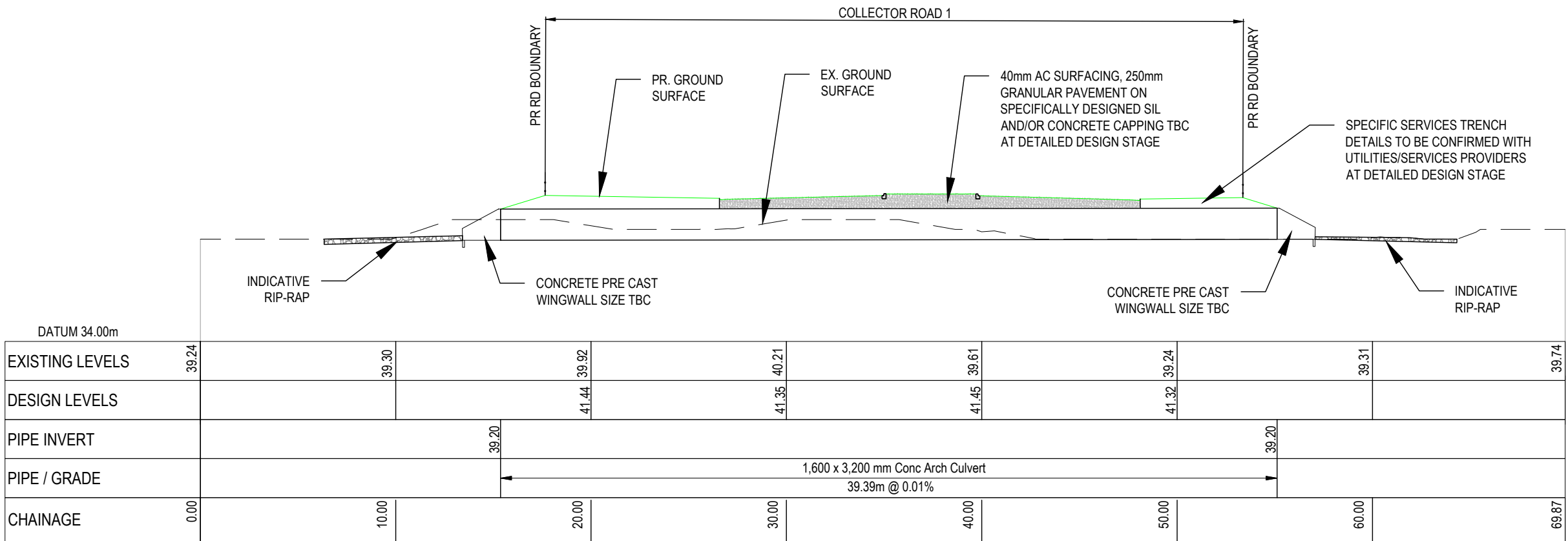
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Rev	Description	By	Date
Survey	MAVEN		06/2025
Design	MJRA		08/2026
Drawn	MJRA		08/2026
Checked	DJM		08/2026



Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

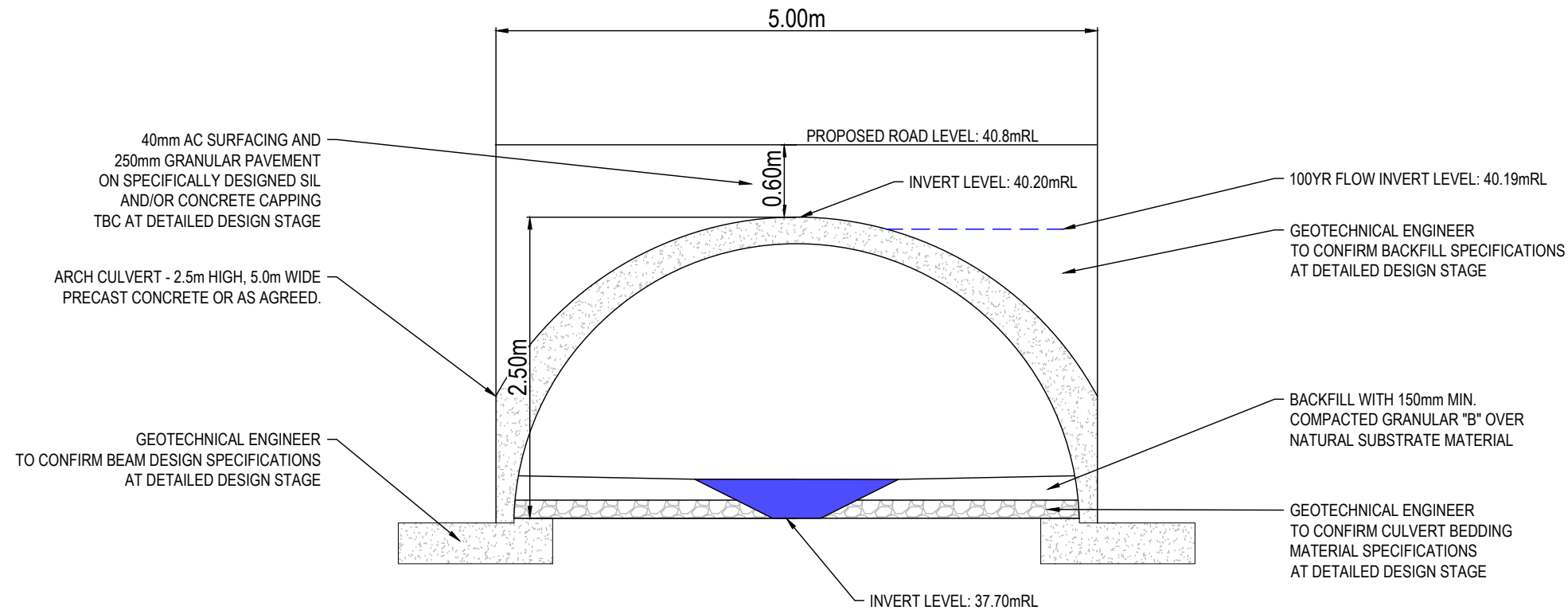
Title
**PROPOSED
CULVERT 2
LONGSECTION**

Project no.	298001-R1 SL1
Scale	1:500 @ A3
Cad file	298001-R1-C475-SW CULVERTS.DWG
Drawing no.	R1-C475-2
Rev	A

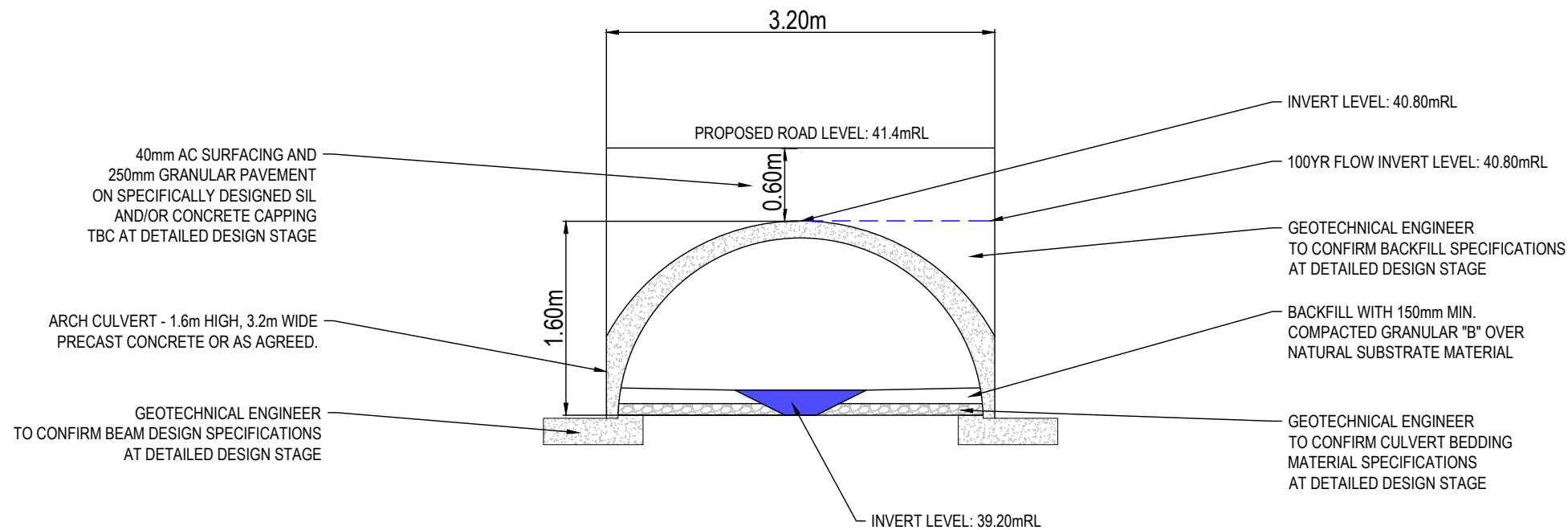


RESOURCE CONSENT

CULVERT 2
SCALE: HORI 1:250 VERT 1:250



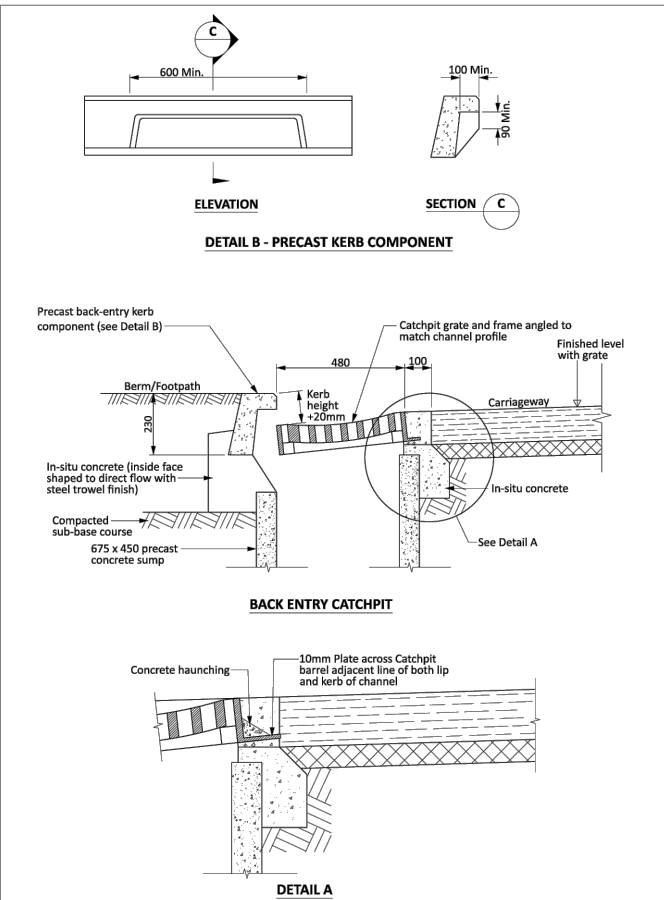
ARCH CULVERT 1 CROSS SECTION
SCALE 1:50 HORI & 1:10 VERTICAL @ A3



ARCH CULVERT 2 CROSS SECTION
SCALE 1:50 HORI & 1:10 VERTICAL @ A3

RESOURCE CONSENT

A	FAST TRACK APP		MKS 08/2026
Rev	Description		By Date
	By	Date	
Survey	MAVEN	06/2025	
Design	MKS	08/2026	
Drawn	MKS	08/2026	
Checked	DJM	08/2026	
M A E N Maven Waikato 07 242 0601 info@maven.co.nz www.maven.co.nz 19 Kaimiro Street, Pukekohe Hamilton 3200 New Zealand			
Project			
SOUTHERN LINKS 1			
RESIDENTIAL STAGE 1			
HAMILTON, WAIKATO			
FOR			
SAXBY RD JV LIMITED			
Title			
PROPOSED			
ARCH CULVERT			
CROSS SECTION			
Project no.	298001-R1 SL1		
Scale	AS SHOWN		
Cad file	298001-R1-C475-SW CULVERTS.DWG		
Drawing no.	R1-C475-3	Rev	A



DETAIL B - PRECAST KERB COMPONENT

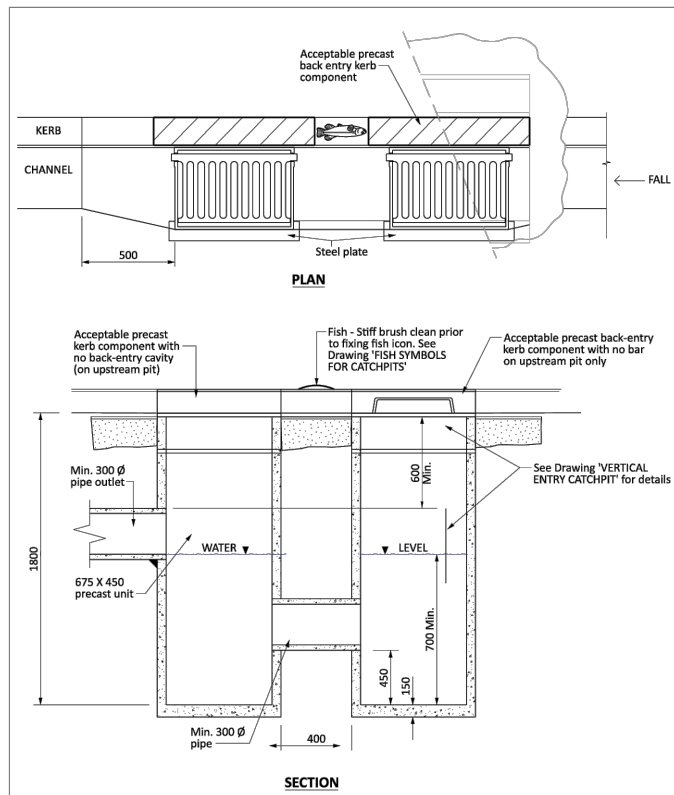
BACK ENTRY CATCHPIT

DETAIL A

CATCHPIT BACK ENTRY DETAILS

REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATION

Version: April 2021



PLAN

SECTION

NOTES:

1. Epoxy product to be "ramset epcon C6" 2 pot epoxy or approved equivalent.

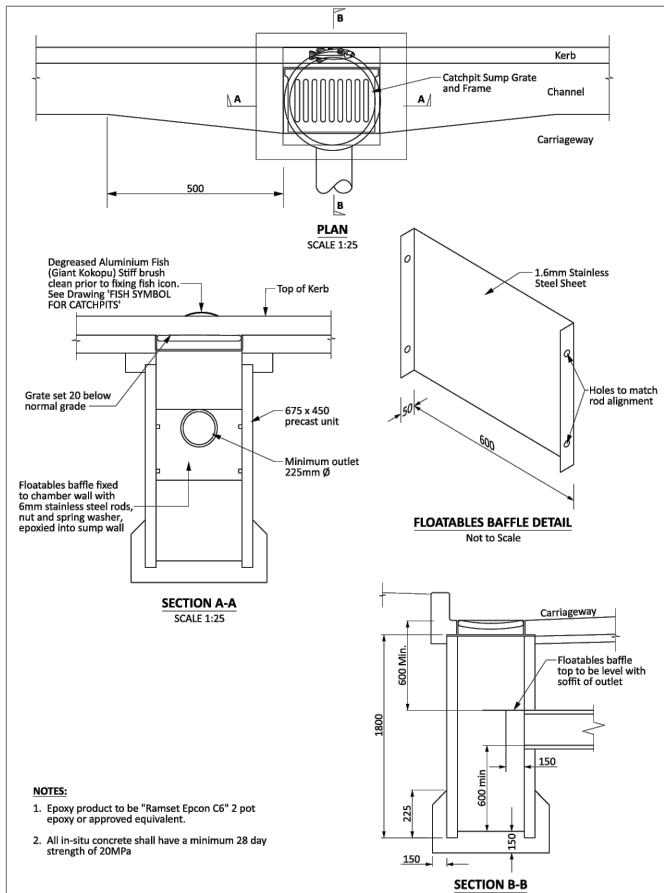
2. All in-situ concrete shall have a minimum 28 day strength of 20MPa

DOUBLE SUMP CATCHPIT DESIGN

REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATION

Version: April 2021

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PLAN

SCALE 1:25

SECTION A-A

SCALE 1:25

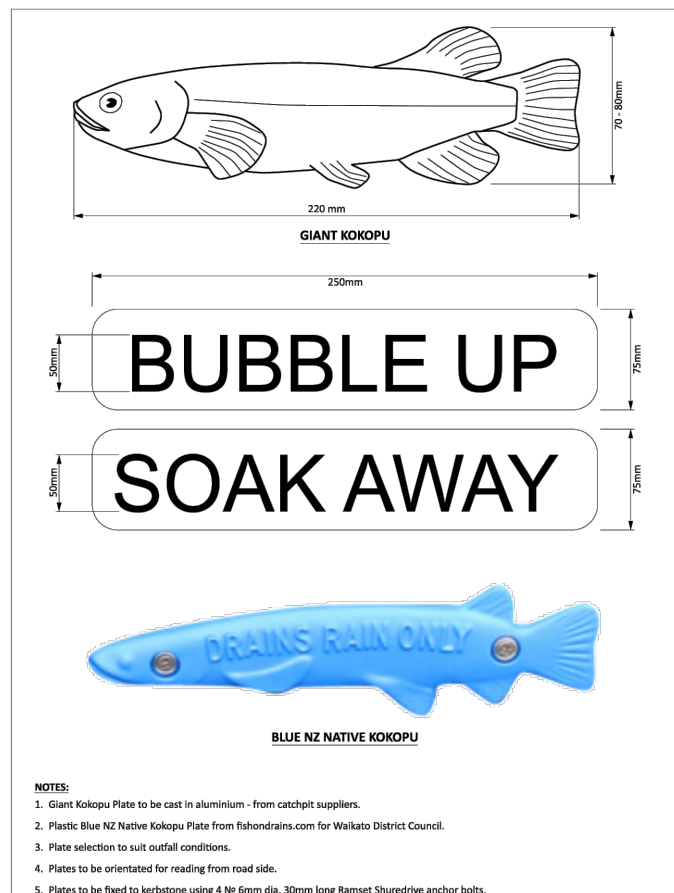
SECTION B-B

SCALE 1:25

VERTICAL ENTRY CATCHPIT

REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATION

Version: April 2021



NOTES:

1. Giant Kokopu Plate to be cast in aluminium - from catchpit suppliers.

2. Plastic Blue NZ Native Kokopu Plate from fishondrains.com for Waikato District Council.

3. Plate selection to suit outfall conditions.

4. Plates to be orientated for reading from road side.

5. Plates to be fixed to kerbstone using 4 No 6mm dia. 30mm long Ramset Shuredrive anchor bolts.

FISH SYMBOLS FOR CATCHPITS

REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATION

Version: April 2021

A	FAST TRACK APP	MKS	06/2026
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		By	Date
Survey	MAVEN		06/2025
Design	MKS		10/2025
Drawn	MKS		10/2025
Checked	DJM		10/2025

M **MAVEN**

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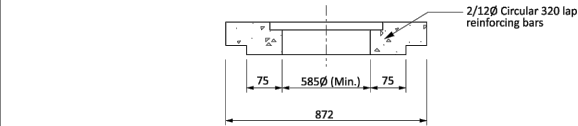
Project

**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

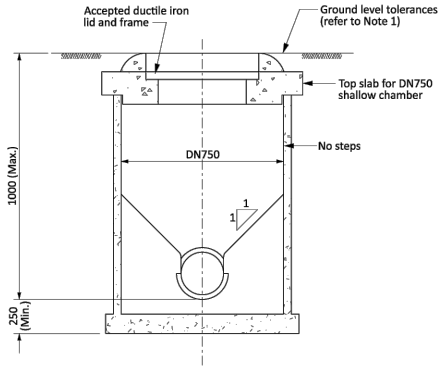
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Project no.	298001-R1 SL1		
Scale	1:85 @ A3		
Cad file	298001-R1-C480 SW STANDARD DETAILS.DWG		
Drawing no.	R1-C480-1	Rev	A

RESOURCE CONSENT

DATE: 6/2/25 FILE PATH: F:\MVEN\HAMILTON\PROJECTS\298001-SOUTHERN LINKS STAGE 1\R1-C480 SW STANDARD DETAILS.DWG



TOP SLAB FOR DN750 SHALLOW CHAMBER



DN750 INTERNAL SHALLOW CHAMBER
To be used only on pipes of DN100 to DN300 and where depth of invert is less than 1000mm

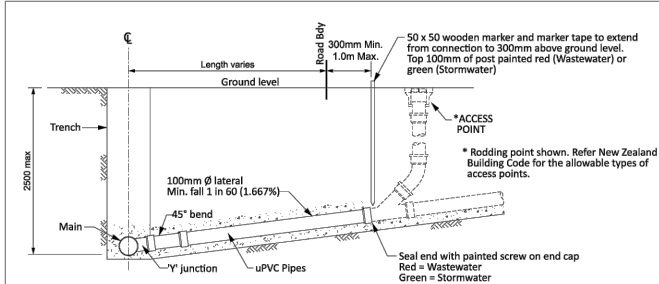
- NOTES:
- Ground level tolerances: Pavement +0mm, -5mm
Berm +5mm, -5mm
Footpath +10mm, -0mm



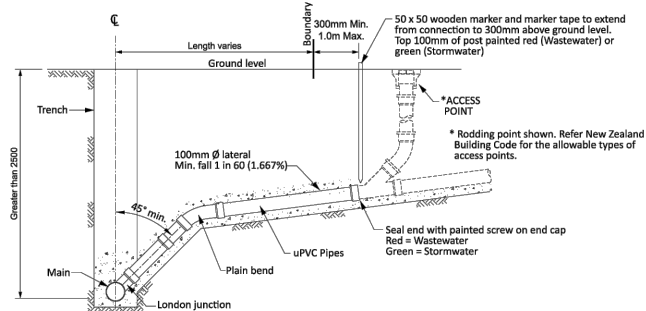
SHALLOW MANHOLE/CHAMBER

REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATION

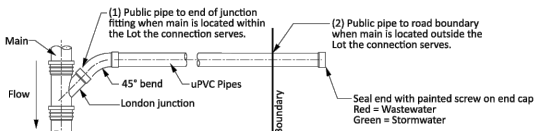
Version: April 2021



STANDARD CONNECTION WITH A DEPTH TO INVERT LESS THAN 2500mm - SECTION



RAMP RISER CONNECTION WITH A DEPTH TO INVERT GREATER THAN 2500mm - SECTION



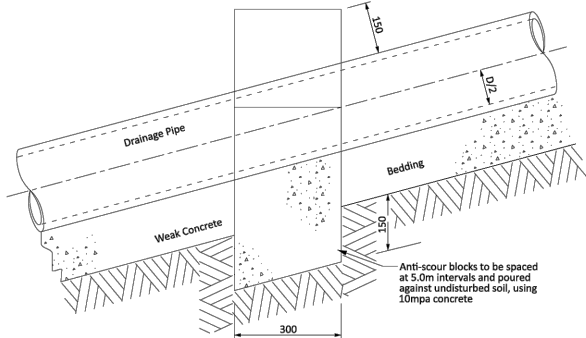
POINT OF DISCHARGE: PUBLIC AND PRIVATE INFRASTRUCTURE



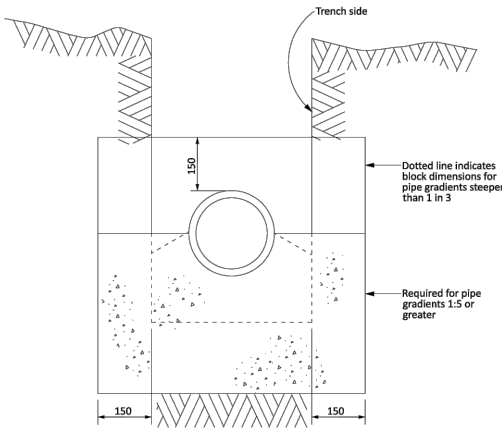
LATERAL CONNECTION

REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATION

Version: April 2021



LONG SECTION



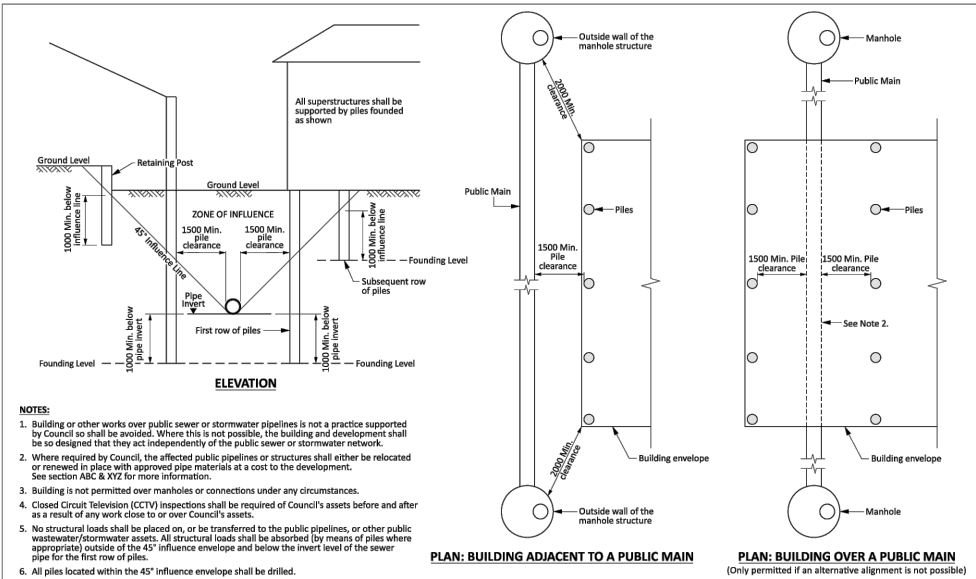
CROSS SECTION

ANTI-SCOUR BLOCKS
FOR STEEP DRAINAGE PIPES



REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATION

Version: April 2021



- NOTES:
- Building or other works over public sewer or stormwater pipelines is not a practice supported by Council so shall be avoided. Where this is not possible, the building and development shall be so designed that they act independently of the public sewer or stormwater network.
 - Where required by Council, the affected public pipelines or structures shall either be relocated or renewed in place with approved pipe materials at a cost to the development. See section A1C & A1D for more information.
 - Building is not permitted over manholes or connections under any circumstances.
 - Closed Circuit Television (CCTV) inspections shall be required of Council's assets before and after as a result of any work close to or over Council's assets.
 - No structural loads shall be placed on, or be transferred to the public pipelines, or other public wastewater/stormwater assets. All structural loads shall be absorbed (by means of piles where appropriate) outside of the 45° influence envelope and below the invert level of the sewer pipe for the first row of piles.
 - All piles located within the 45° influence envelope shall be drilled.



BUILDING OVER AND ADJACENT TO
PUBLIC WASTEWATER OR STORMWATER PIPELINES

REGIONAL INFRASTRUCTURE TECHNICAL SPECIFICATION

Version: April 2021

NOTES

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Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		10/2025
Drawn	MKS		10/2025
Checked	DJM		10/2025



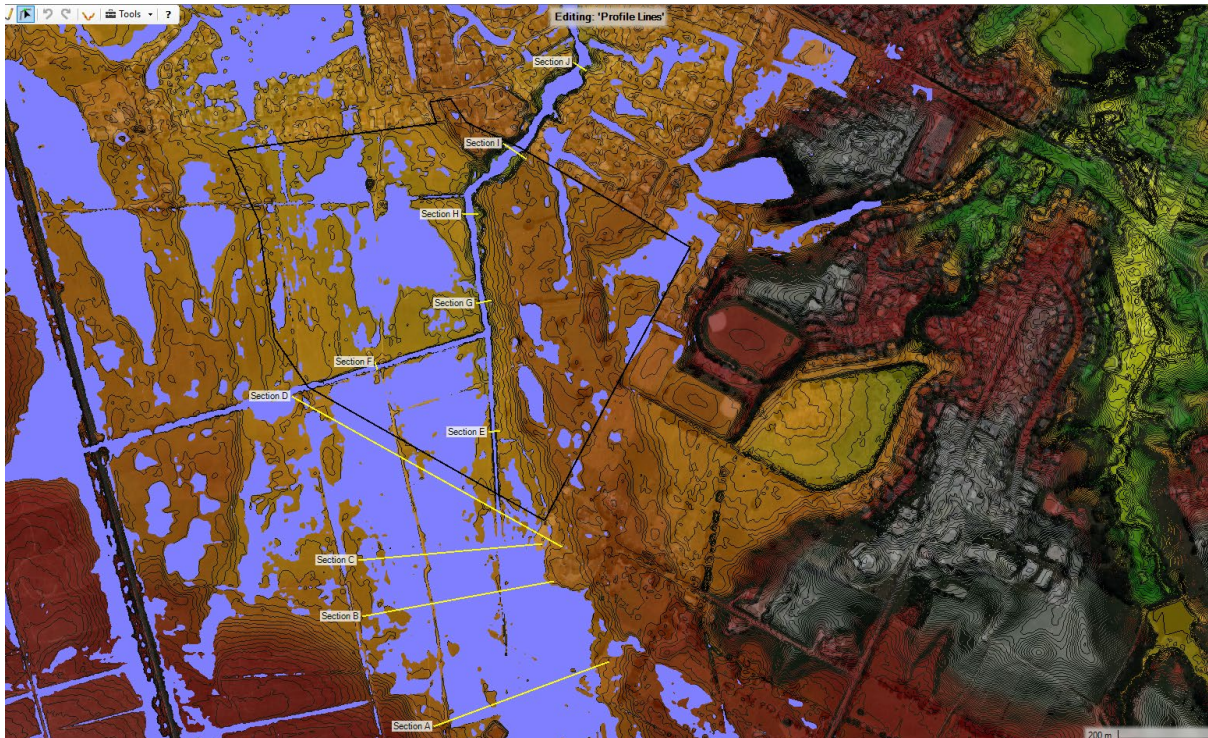
Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
STORMWATER
STANDARD DETAILS**

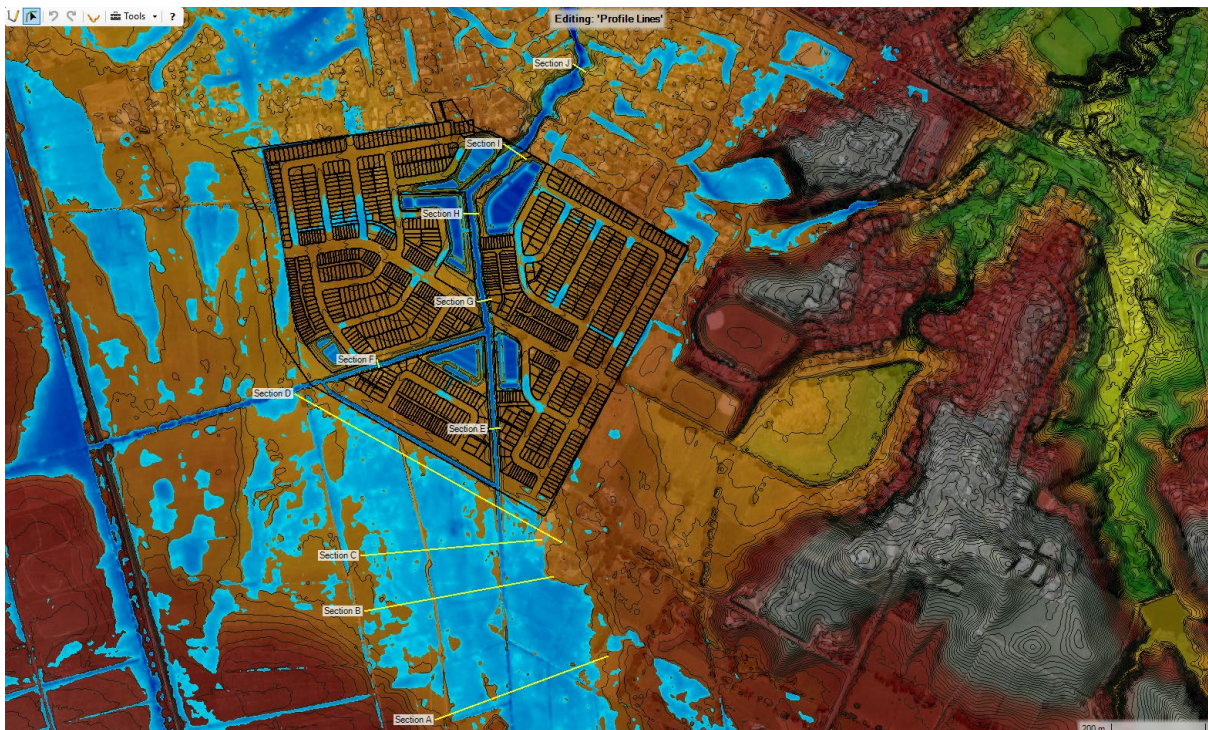
Project no.	298001-R1 SL1
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Drawing no.	R1-C480-3
Rev	A

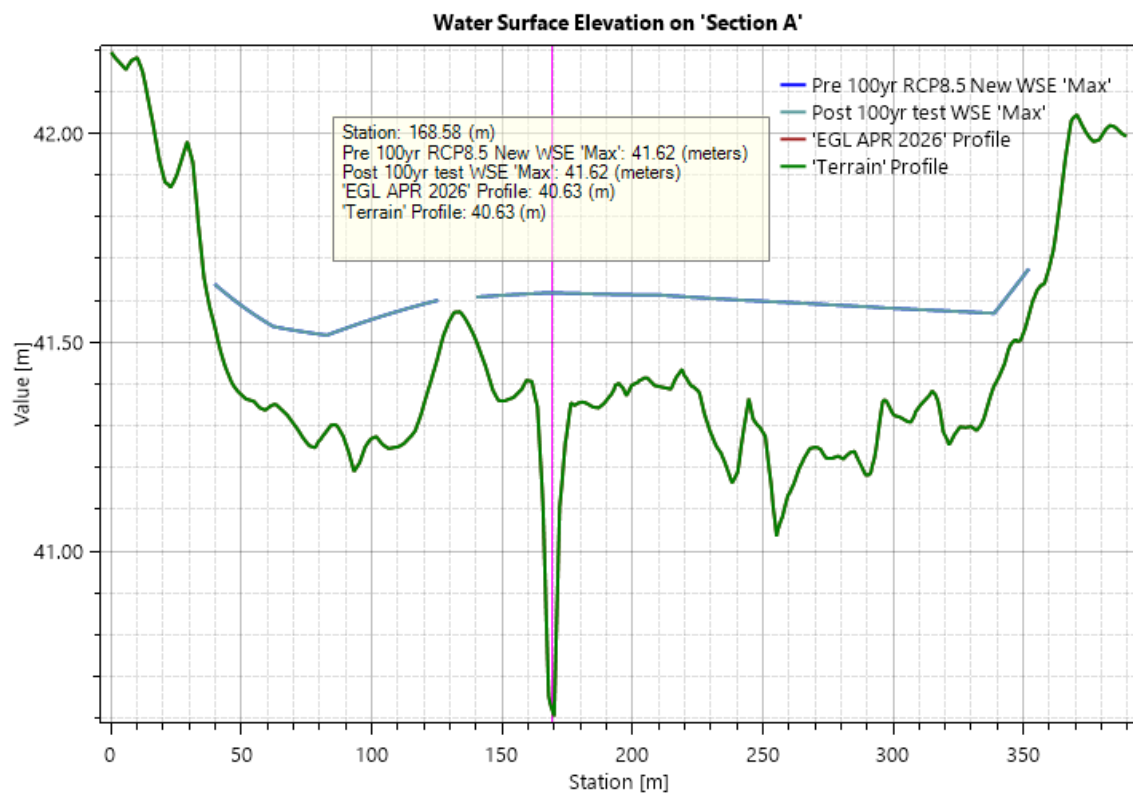
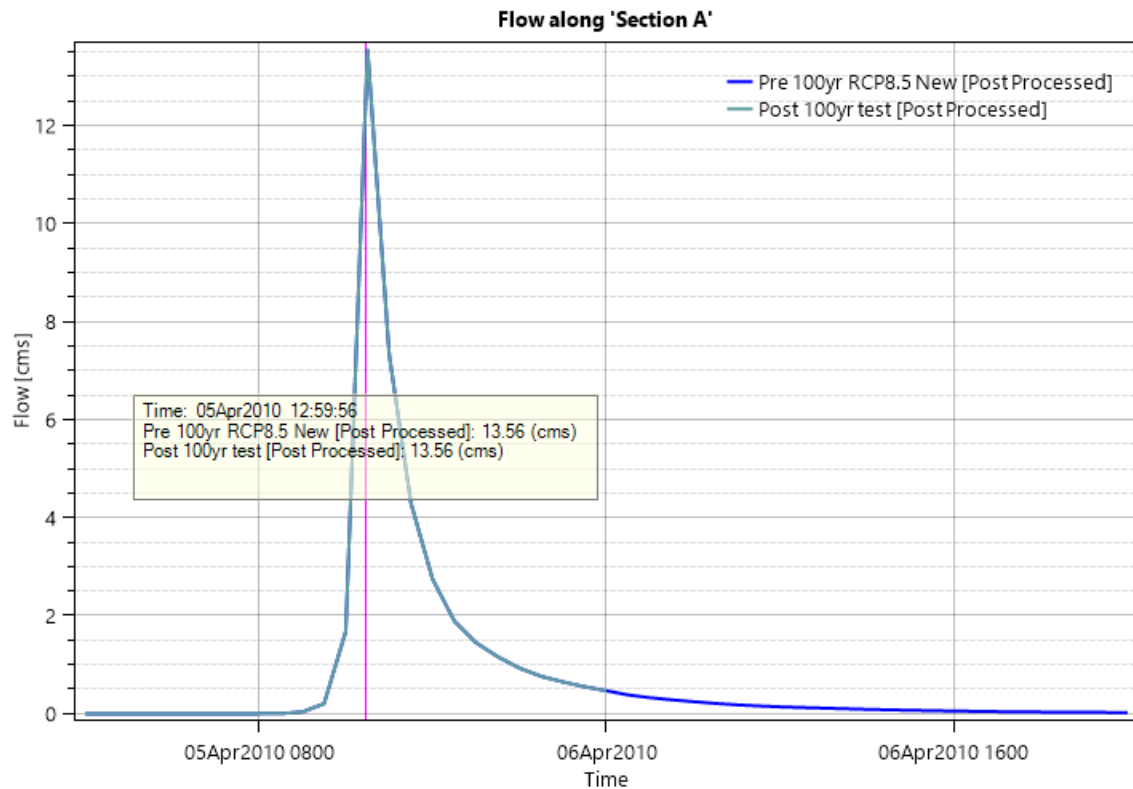
Appendix B – HEC-RAS Results (100year Assessment)

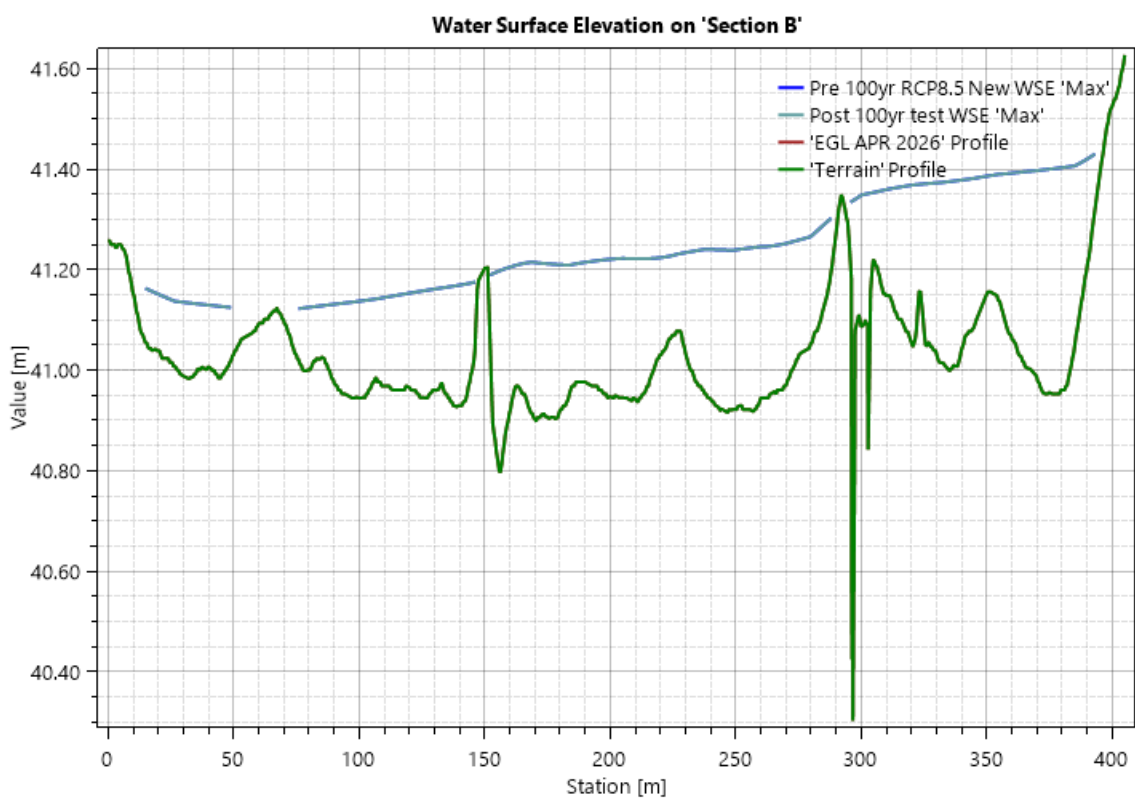
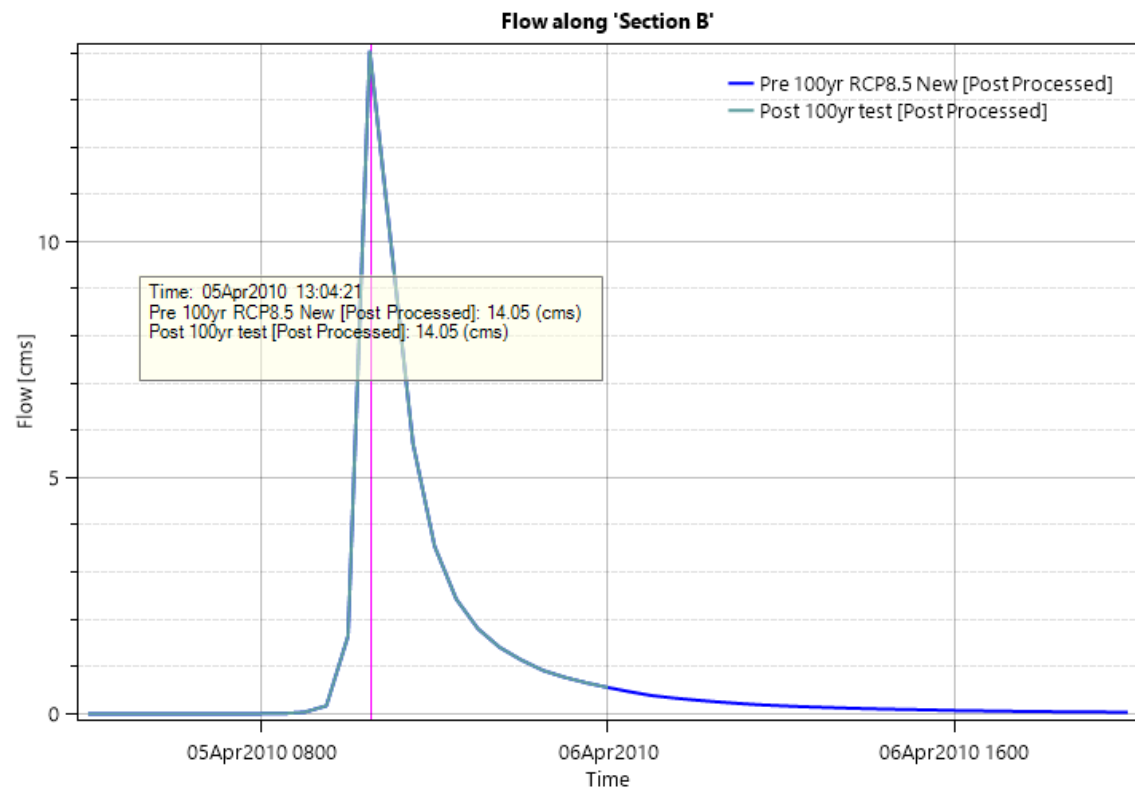
Pre Development Results Ex 100YR ARI RCP 8.5

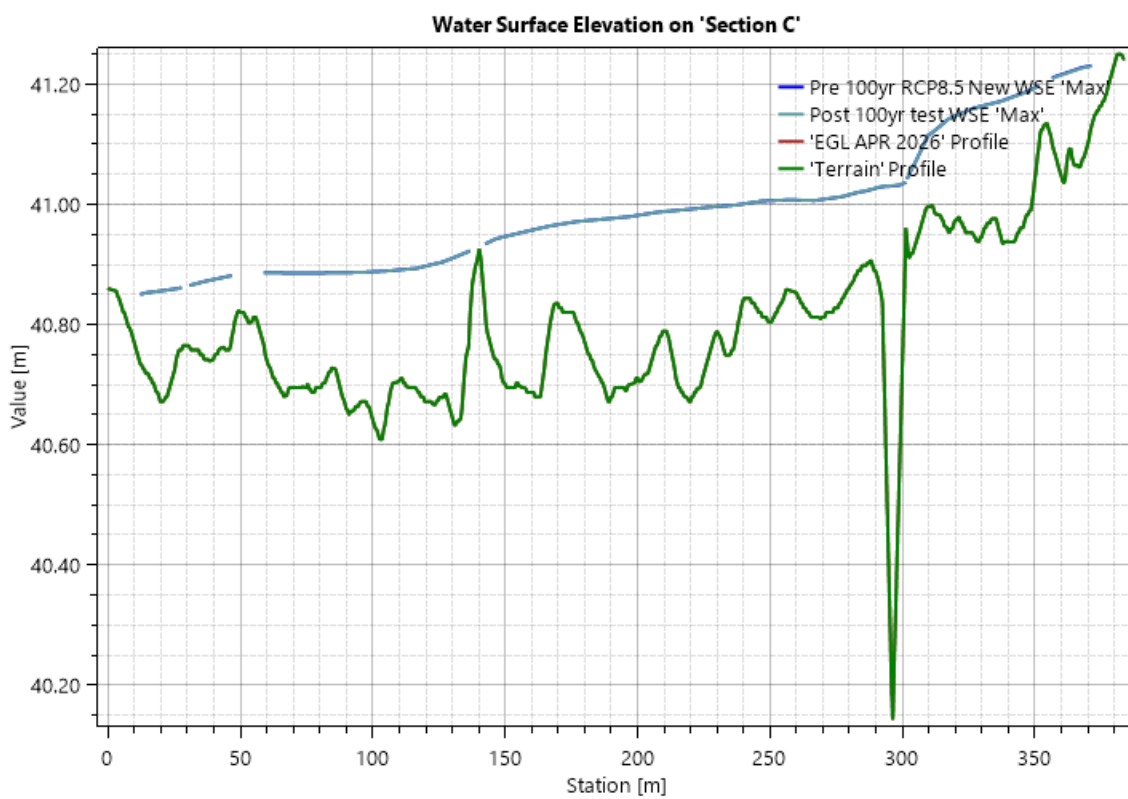
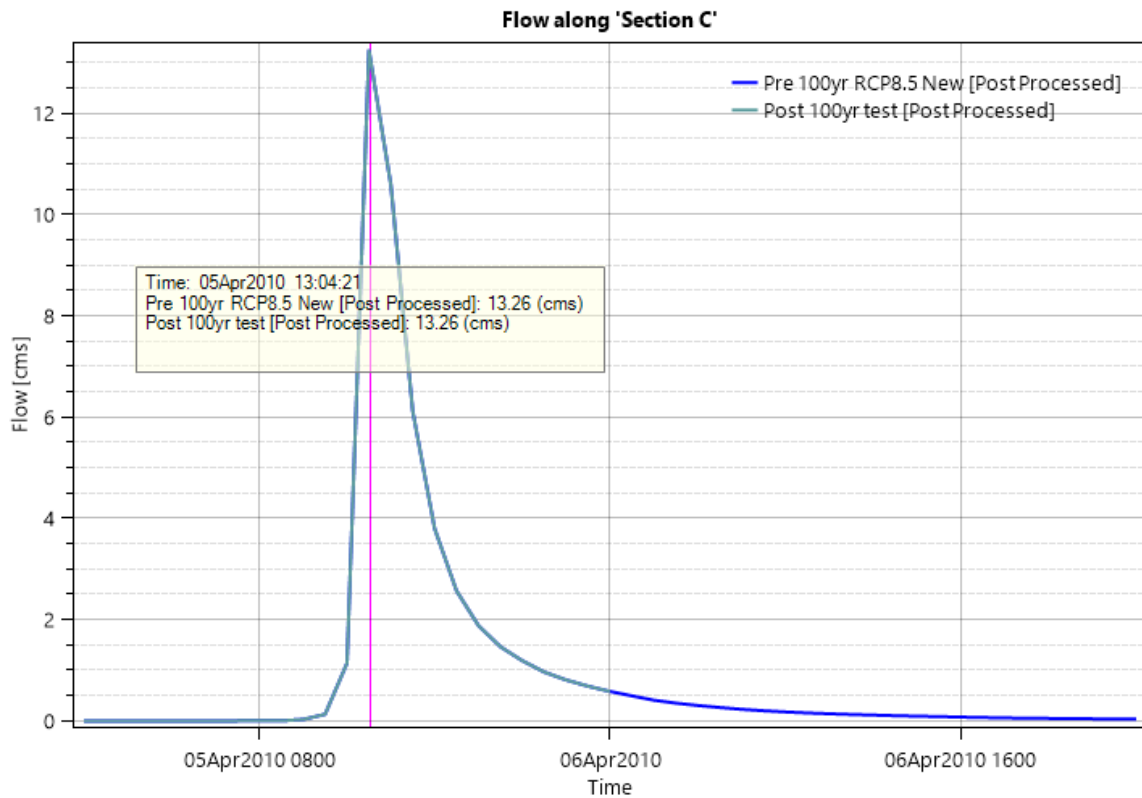


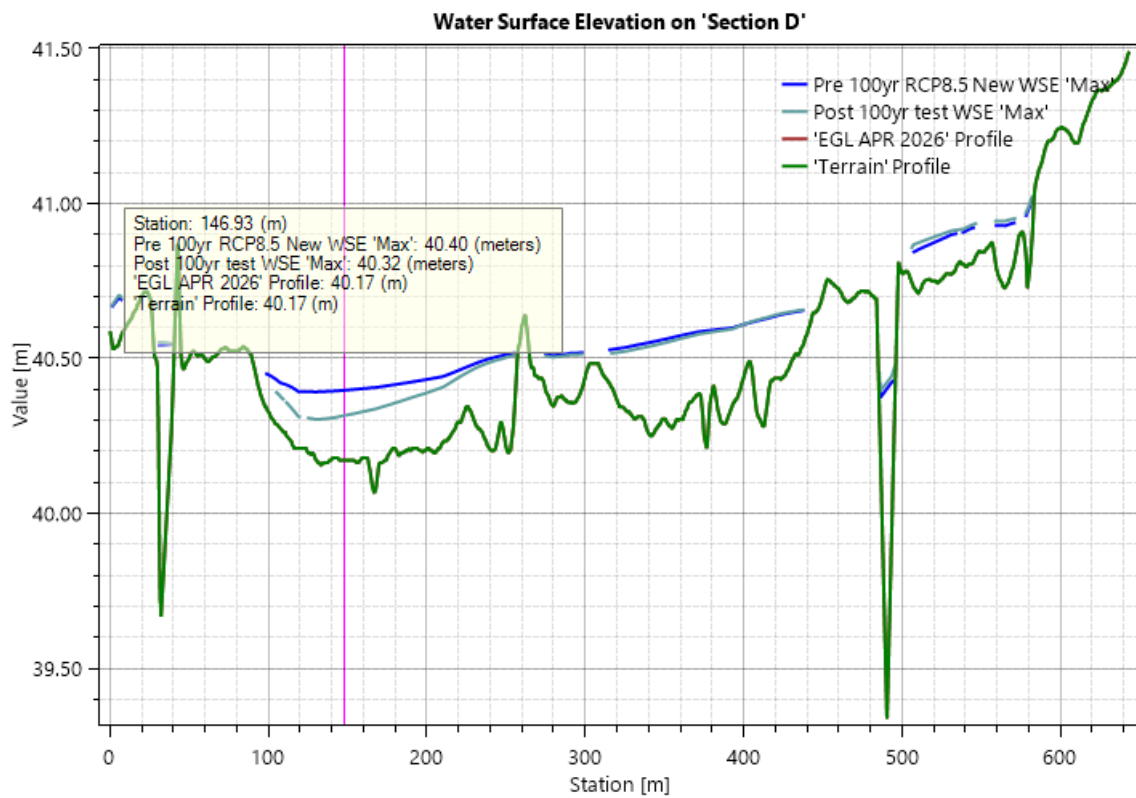
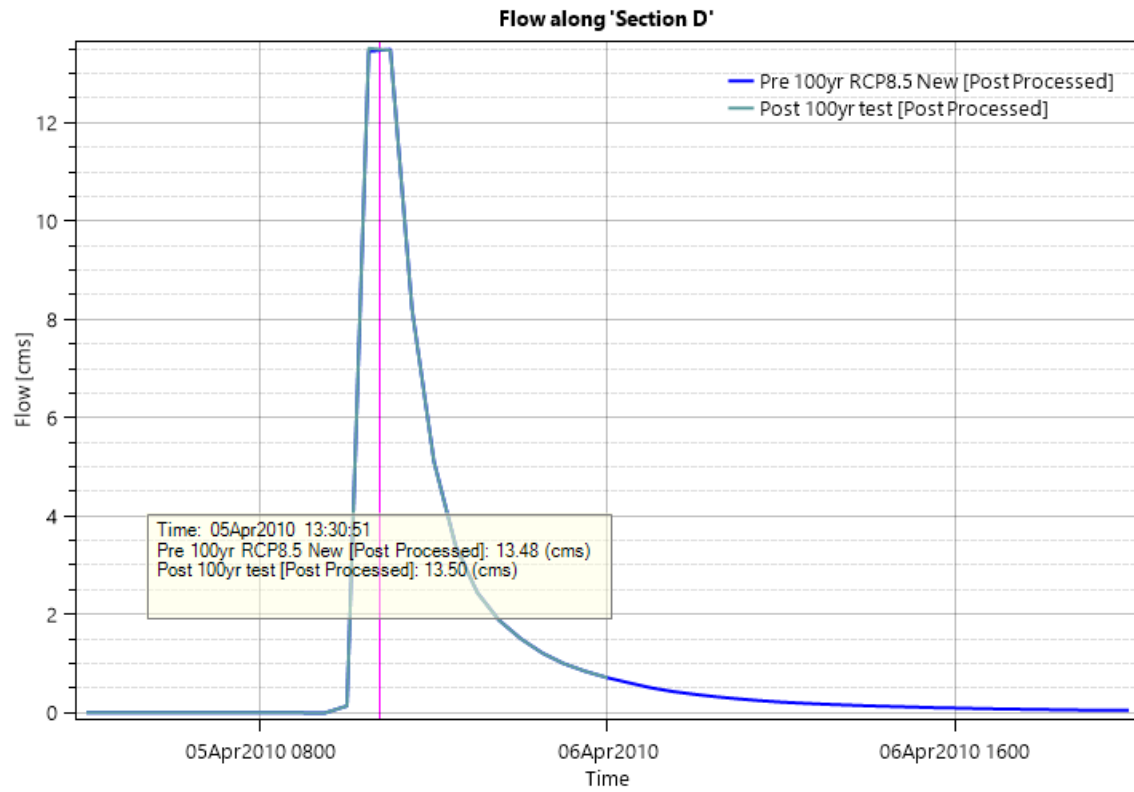
Post Development Results Ex 100YR ARI RCP 8.5

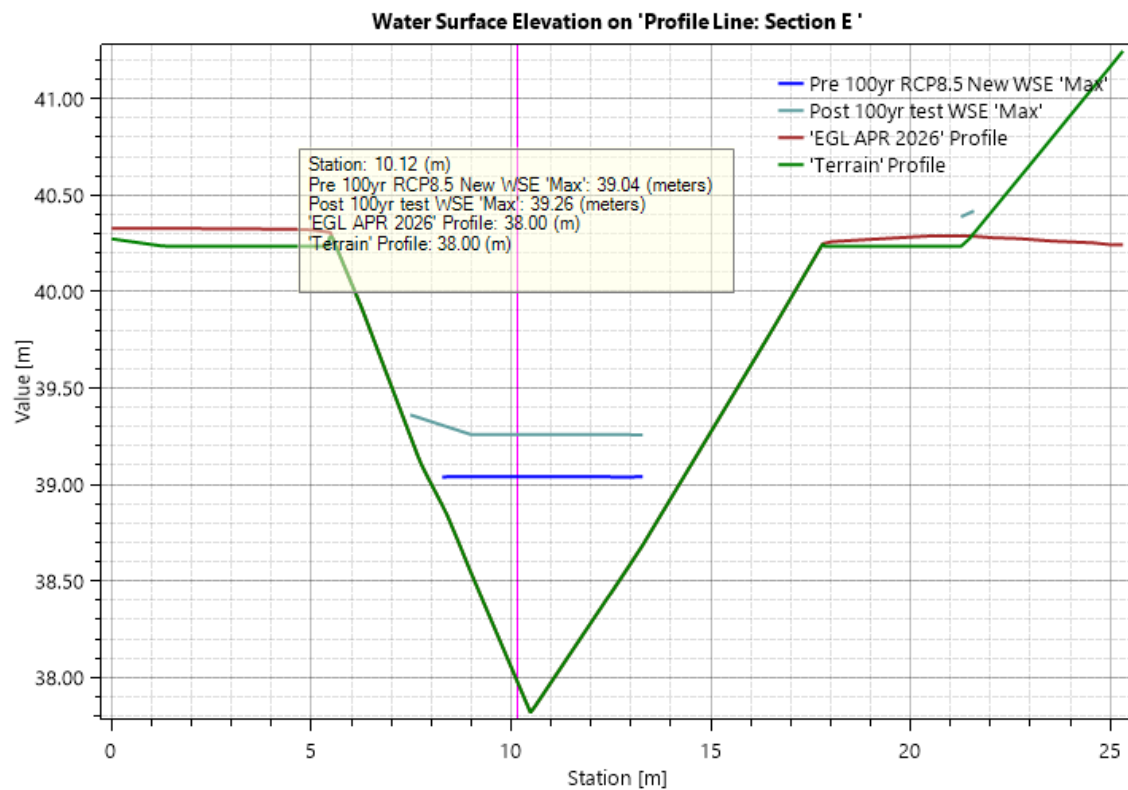
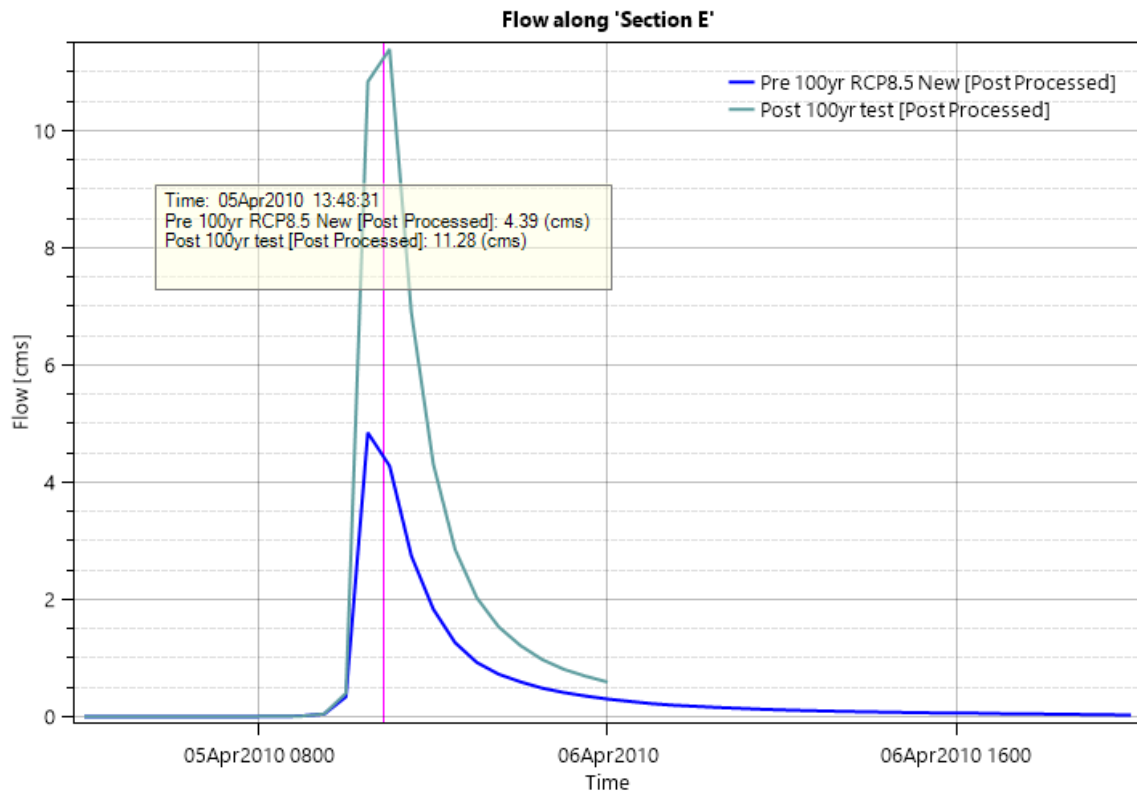


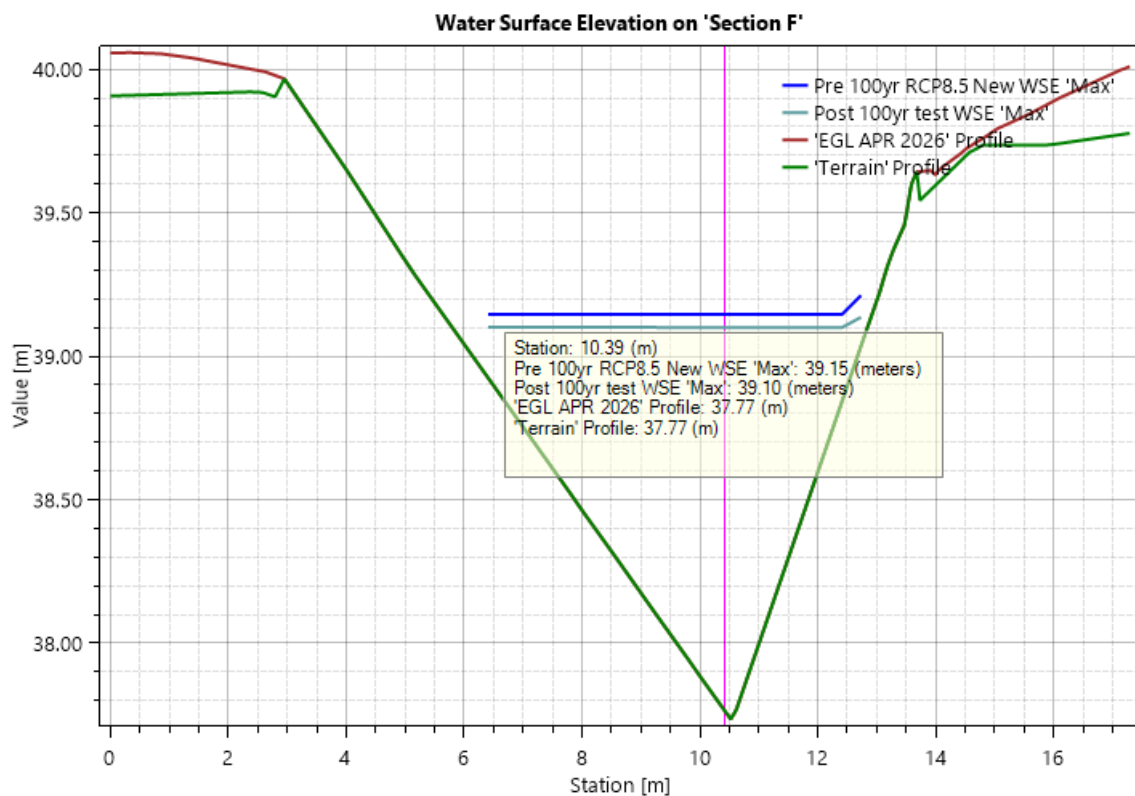
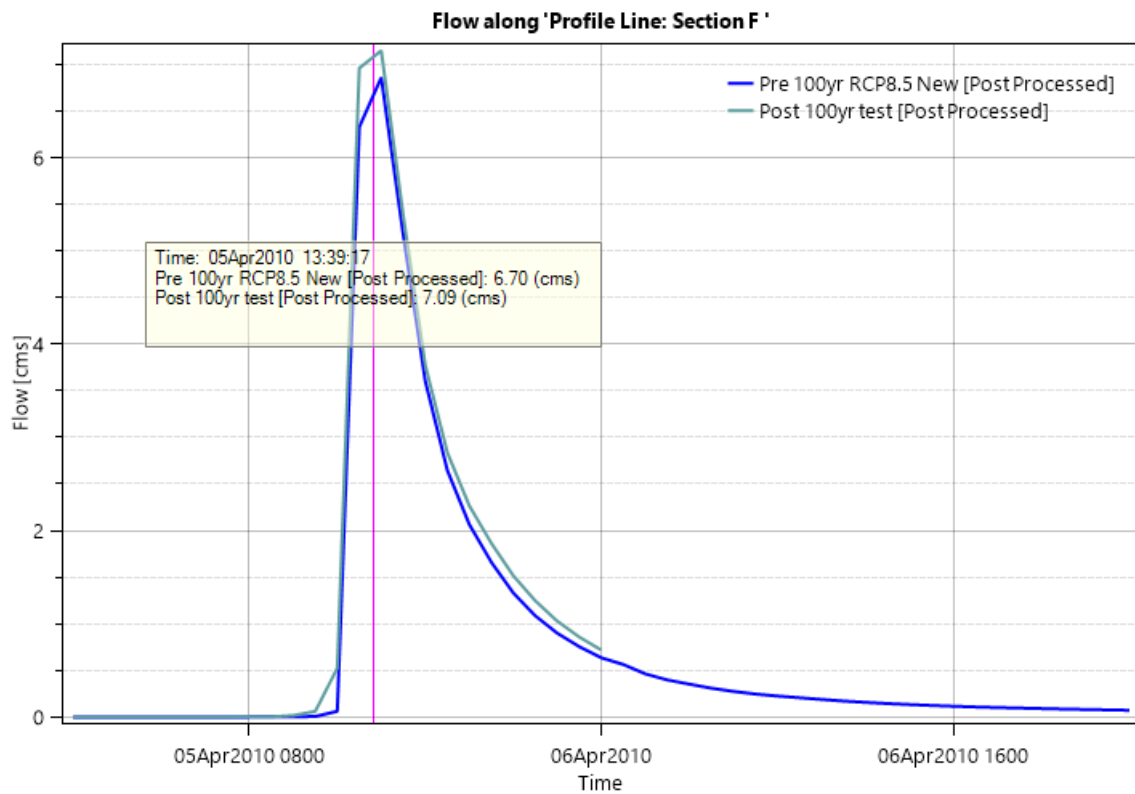


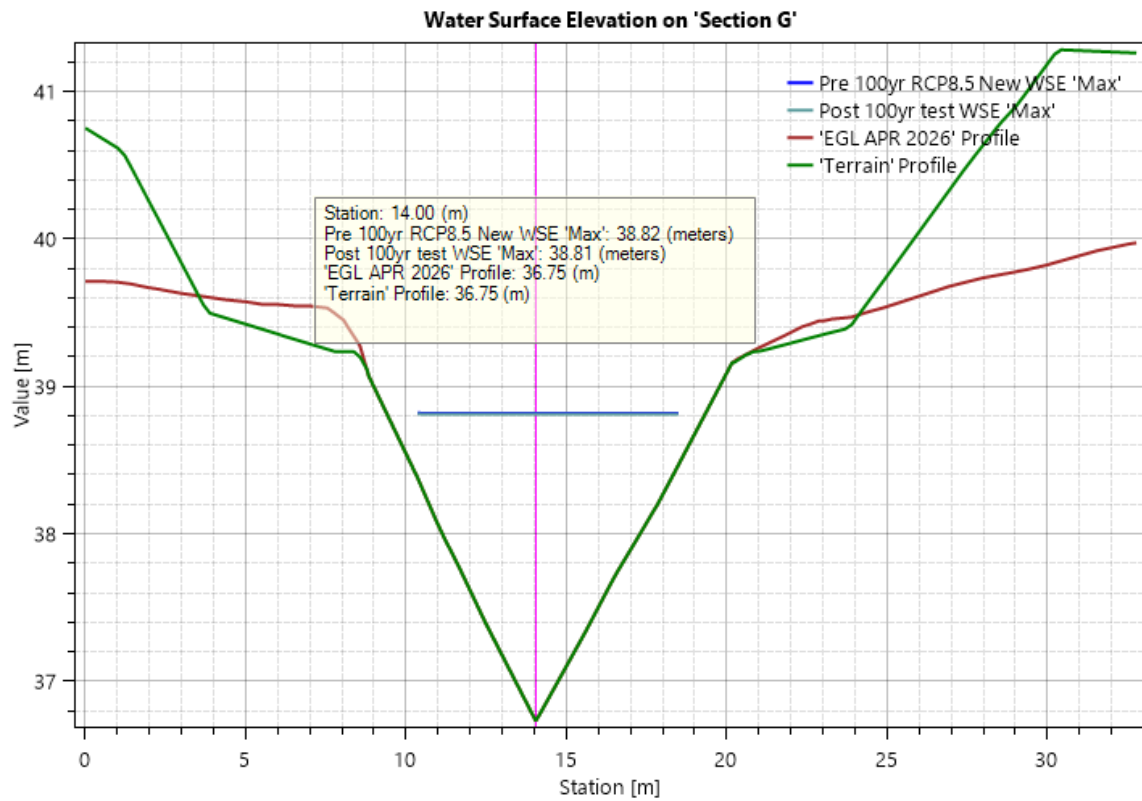
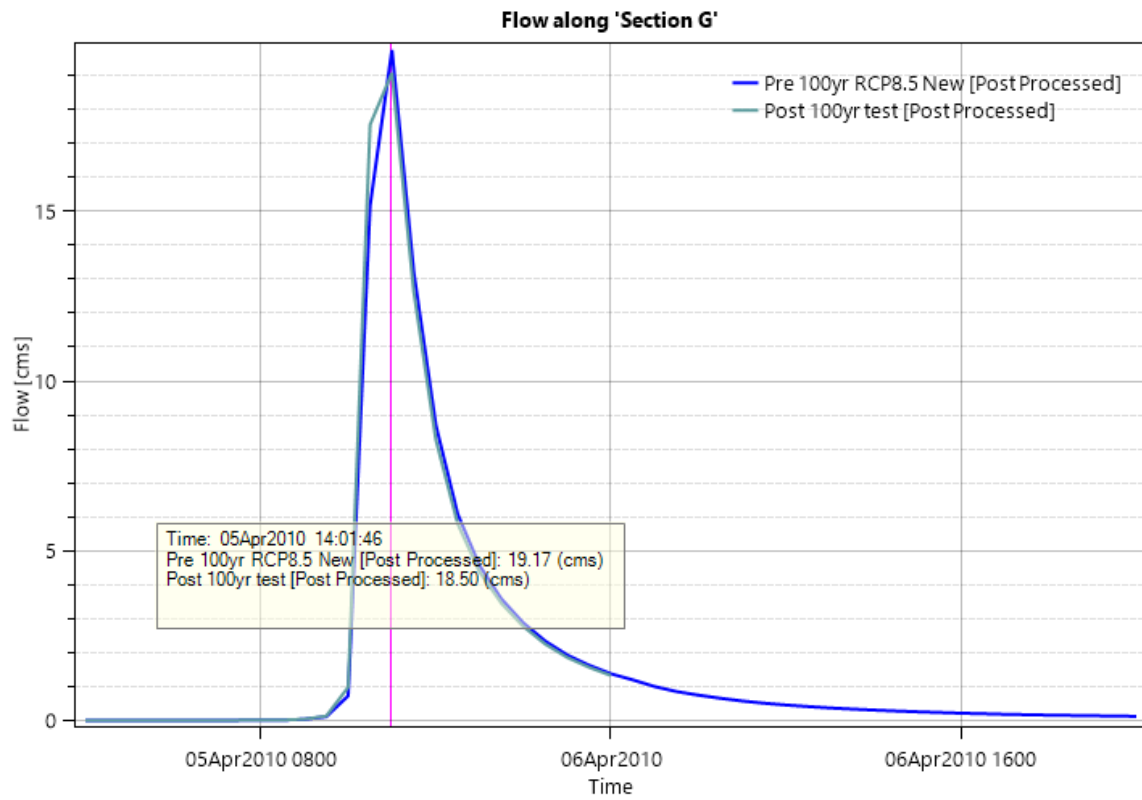


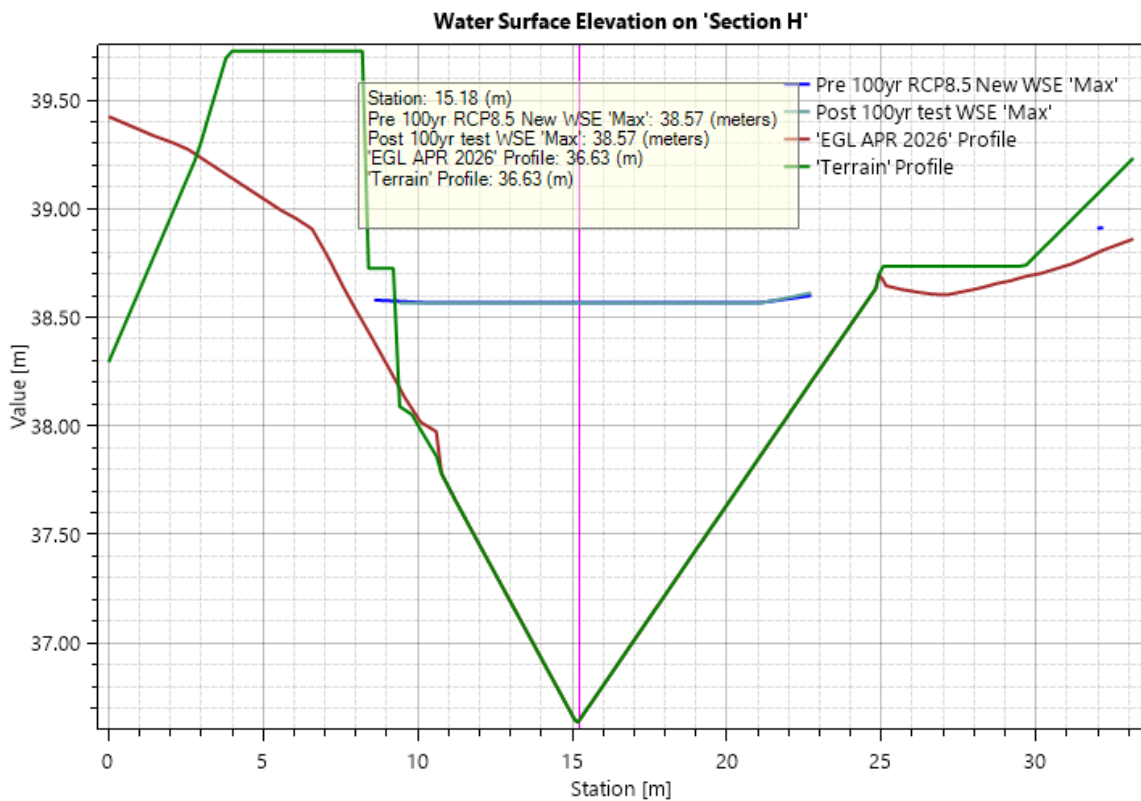
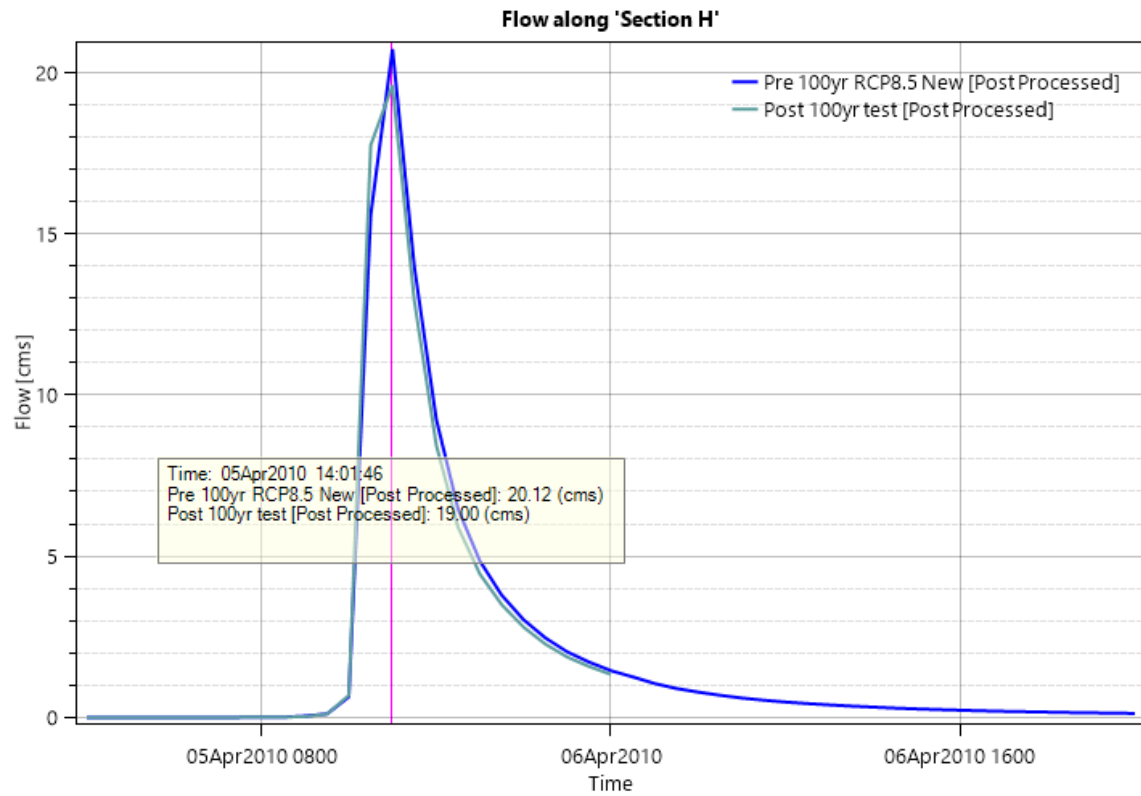


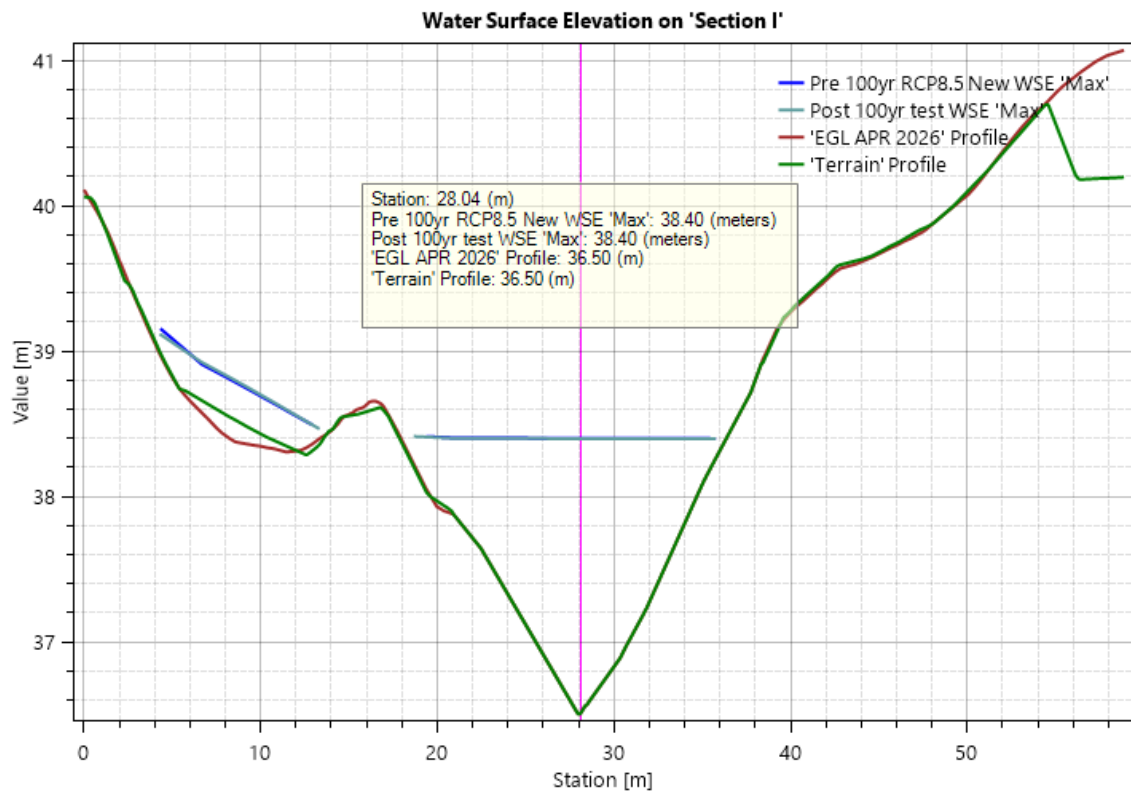
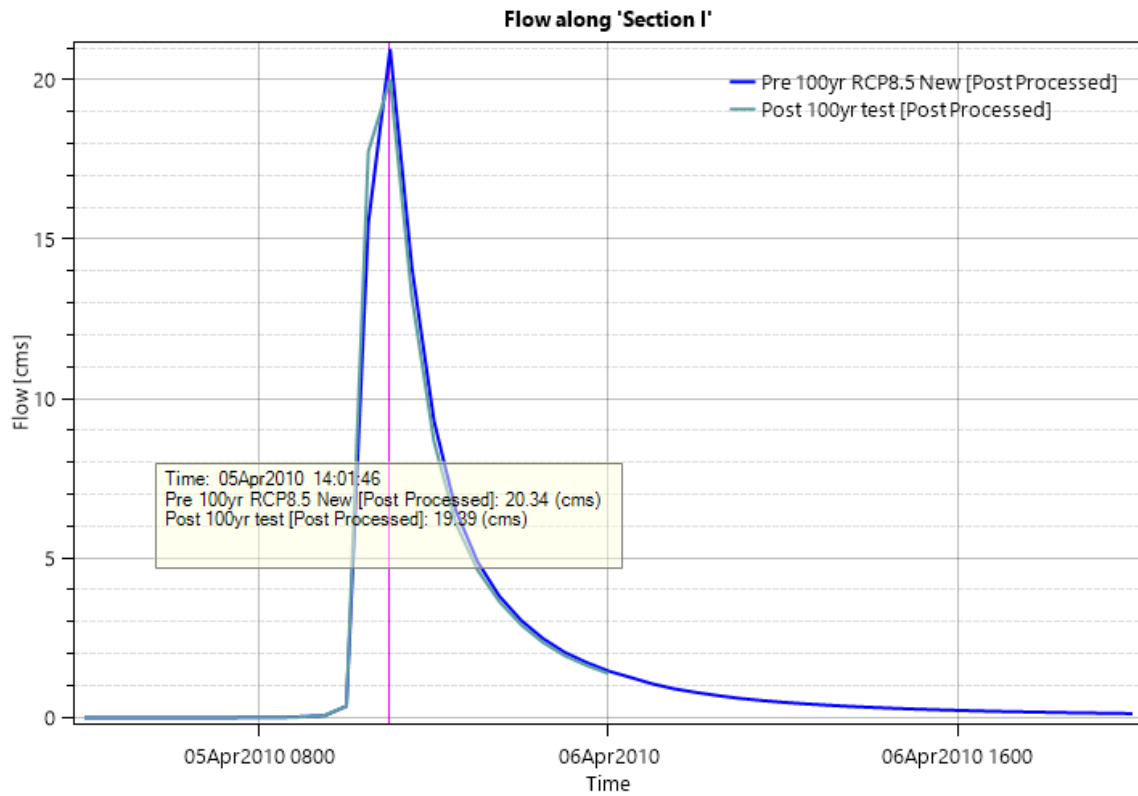


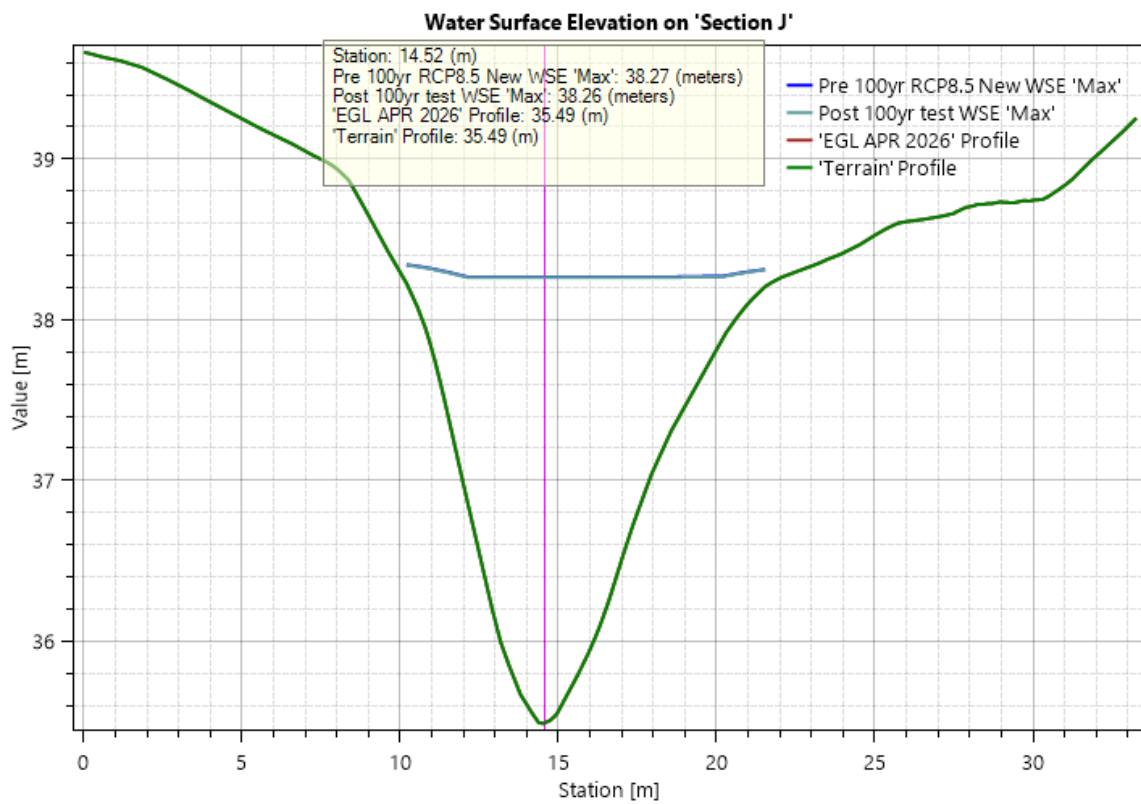
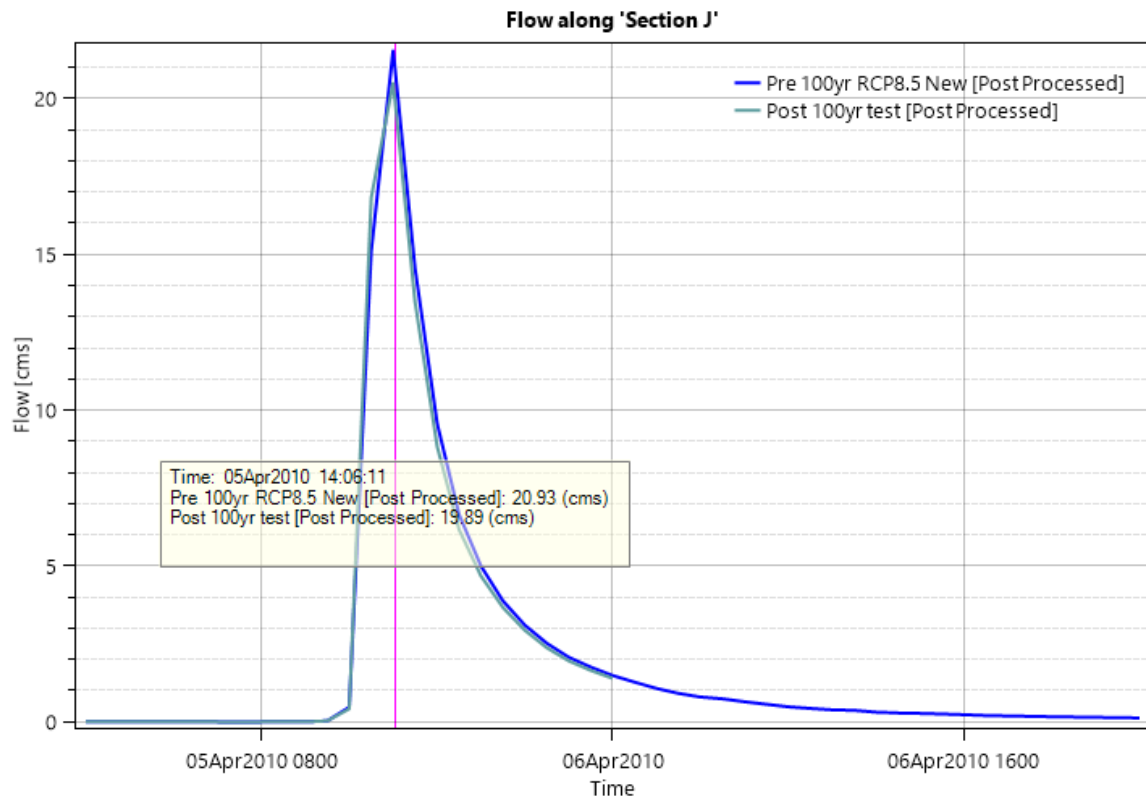














Maven Associates

Job Number

298001

Sheet

1

Rev: A

Job Title

Southern Links- STG R1

Calc Title

Catchment Areas

Author

RK

Date

11/06/2026

Checked

DJM

Wetland	Catchment Area (m2)	Ha
A	130116.8056	13.01
B	76455.9932	7.65
C	85394.2409	8.54
D	53219.7462	5.32
E	59292.1943	5.93
F	39856.6767	3.99

Notes

- 1 Soil type to be confirmed from geotechs
- 2 Soil type D, CN number 89 Pre Dev and 85 for Post Dev for pervious very poorly drained grass poor condition
- 3 Soil type D, CN number 98 for impervious as per WRC TR20-06

		Maven Associates		Job Number 298001	Sheet 1	Rev: A
Job Title Calc Title		Southern Links- STG R1 POST-development		Author RK	Date 11/06/2026	Checked DJM
Wetland A Total Catchment 130117						
1. Runoff Curve Number (CN) and initial Abstraction (Ia)				CALCS to WRC TR2020/06		
Soil name and classification	ID	Cover description (cover type, treatment, and hydrologic condition)	Curve Number CN*	Area (ha) 10000m2=1 ha	Product of CN x area	
D		Pervious (30%)	84	2.60	218.60	
D		Impervious (70%)	98	10.41	1020.12	
					0.00	
				Totals =	13.01	1238.71
CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{1238.71}{13.012} = \boxed{95.2}$						
S= $\frac{(1000}{CN} - 10) * 25.4$ $\frac{(1000 - 10) * 2}{95.2} = 76.5$ 117.8 $\boxed{12.8}$ mm						
Ia= 0.05*S 0.05x 12.8 = $\boxed{0.6}$ mm						
2. Time of Concentration						
Sheet and Shallow Flow		(to be completed at detail design)		L= 400 m		
$T=100nL^{0.33}/S^{0.2}$				S= 0.40 %		
				n= 0.015		
				T=	$\boxed{13.012}$ mins	
Concentrated Network Flow		(to be completed at detail design)			$\boxed{0}$	
Open Channel Flow		$V=R^{2/3}S^{1/2}/n$		w= 1	n= 0.04	
		$R= A / Wp$ 0.33		d= 1	s= 1%	
				l= 535		
(to be completed at detail design)				V= 1.0949599 m/s		
				T=	$\boxed{8.14}$ mins	
$T_c = T_{\text{sheet flow}} + T_{\text{concentrated flow}} + T_{\text{open channel flow}}$						
= 13.01 + 0.00 + 8.14 = $\frac{21.156}{0.352597}$ mins						
SCS Lag for HEC-HMS.... $t_p = 2/3 t_c$ = $\frac{0.236}{14.174401}$ hrs						
OK use $\boxed{0.24}$ hrs						
Worksheet 1: Runoff Parameters and Time of Concentration						

		Maven Associates		Job Number 298001	Sheet 1	Rev: A
Job Title Calc Title		Southern Links- STG R1 POST-development		Author RK	Date 11/06/2026	Checked DJM
Wetland B Total Catchment 76456						
1. Runoff Curve Number (CN) and initial Abstraction (Ia)				CALCS to WRC TR2020/06		
Soil name and classification	ID	Cover description (cover type, treatment, and hydrologic condition)	Curve Number CN*	Area (ha) 10000m2=1 ha	Product of CN x area	
D		Pervious (20%)	84	1.53	128.45	
D		Impervious (80%)	98	6.12	599.41	
					0.00	
				Totals =	7.65	727.86
CN (weighted) = $\frac{\text{total product} = 727.86}{\text{total area} = 7.646} = \boxed{95.2}$						
S= $\frac{(1000}{CN} - 10) * 25.4}{95.2} = \frac{(1000}{95.2} - 10) * 25.4}{95.2} = 76.5 \text{ } 117.8 \boxed{12.8} \text{ mm}$						
Ia= $0.05 * S = 0.05 * 12.8 = \boxed{0.6} \text{ mm}$						
2. Time of Concentration						
Sheet and Shallow Flow (to be completed at detail design)			L= 200 m			
$T=100nL^{0.33}/S^{0.2}$			S= 1.40 %			
			n= 0.015			
			T=	$\boxed{8.058} \text{ mins}$		
Concentrated Network Flow (to be completed at detail design)				$\boxed{0}$		
Open Channel Flow			$V=R^{2/3}S^{1/2}/n$	w= 1	n= 0.04	
			$R= A / Wp$	d= 1	s= 1%	
			I= 250			
(to be completed at detail design)			V= 1.2605368 m/s			
			T=	$\boxed{3.31} \text{ mins}$		
$T_c = T_{\text{sheet flow}} + T_{\text{concentrated flow}} + T_{\text{open channel flow}}$						
$= 8.058 + 0.00 + 3.31 = \frac{11.363}{0.1893845} \text{ mins}$						
SCS Lag for HEC-HMS.... $t_p = 2/3 t_c = \frac{0.127}{10.2} \text{ hrs}$						
NO GOOD use $\boxed{0.17} \text{ hrs}$						
Worksheet 1: Runoff Parameters and Time of Concentration						

		Maven Associates		Job Number 298001	Sheet 1	Rev: A
Job Title Calc Title		Southern Links- STG R1 POST-development		Author RK	Date 11/06/2026	Checked DJM
Wetland C Total Catchment 9						
1. Runoff Curve Number (CN) and initial Abstraction (Ia)				CALCS to WRC TR2020/06		
Soil name and classification	ID	Cover description (cover type, treatment, and hydrologic condition)	Curve Number CN*	Area (ha) 10000m2=1 ha	Product of CN x area	
D		Pervious (20%)	84	2.56	215.19	
D		Impervious (80%)	98	5.98	585.80	
					0.00	
				Totals =	8.54	801.00
CN (weighted) = $\frac{\text{total product} = 801.00}{\text{total area} = 8.539} = \boxed{93.8}$						
S= $\frac{(1000}{CN} - 10) * 25.4}{93.8} = \frac{(1000}{93.8} - 10) * 25.4}{93.8} = 76.5 \text{ } 117.8 \boxed{16.8} \text{ mm}$						
Ia= $0.05 * S = 0.05 * 16.8 = \boxed{0.8} \text{ mm}$						
2. Time of Concentration						
Sheet and Shallow Flow (to be completed at detail design)			L= 350 m			
$T=100nL^{0.33}/S^{0.2}$			S= 0.30 %			
			n= 0.015			
			T=	$\boxed{13.189} \text{ mins}$		
Concentrated Network Flow (to be completed at detail design)				$\boxed{0}$		
Open Channel Flow			$V=R^{2/3}S^{1/2}/n$	w= 1	n= 0.04	
			$R= A / Wp = 0.33$	d= 1	s= 1%	
			l= 560			
(to be completed at detail design)			V= 0.8498537 m/s			
			T=	$\boxed{10.98} \text{ mins}$		
$T_c = T_{\text{sheet flow}} + T_{\text{concentrated flow}} + T_{\text{open channel flow}}$						
$= 13.19 + 0.00 + 10.98 = \frac{24.171}{0.4028535} \text{ mins hrs}$						
SCS Lag for HEC-HMS.... $t_p = 2/3 t_c = \frac{0.270}{16.19471} \text{ hrs}$						
OK use $\boxed{0.27} \text{ hrs}$						
Worksheet 1: Runoff Parameters and Time of Concentration						

		Maven Associates		Job Number 298001	Sheet 1	Rev: A
Job Title Calc Title		Southern Links- STG R1 POST-development		Author RK	Date 11/06/2026	Checked DJM
Wetland D Total Catchment 53220						
1. Runoff Curve Number (CN) and initial Abstraction (Ia)				CALCS to WRC TR2020/06		
Soil name and classification	ID	Cover description (cover type, treatment, and hydrologic condition)	Curve Number CN*	Area (ha) 10000m2=1 ha	Product of CN x area	
D		Pervious (20%)	84	1.60	134.11	
D		Impervious (80%)	98	3.73	365.09	
					0.00	
				Totals =	5.32	499.20
CN (weighted) = $\frac{\text{total product} = 499.20}{\text{total area} = 5.322} = \boxed{93.8}$						
S= $\frac{(1000}{CN} - 10) * 25.4}{93.8} = \frac{(1000}{93.8} - 10) * 25.4}{93.8} = 76.5 \text{ } 117.8 \text{ } \boxed{16.8} \text{ mm}$						
Ia= $0.05 * S = 0.05 * 16.8 = \boxed{0.8} \text{ mm}$						
2. Time of Concentration						
Sheet and Shallow Flow (to be completed at detail design)			L= 170 m			
$T=100nL^{0.33}/S^{0.2}$			S= 0.60 %			
			n= 0.015			
			T= $\boxed{9.047}$ mins			
Concentrated Network Flow (to be completed at detail design)				$\boxed{0}$		
Open Channel Flow			$V=R^{2/3}S^{1/2}/n$	w= 1	n= 0.04	
			$R= A / Wp = 0.33$	d= 1	s= 1%	
			l= 410			
(to be completed at detail design)			V= 1.0055605 m/s			
			T= $\boxed{6.80}$ mins			
$T_c = T_{\text{sheet flow}} + T_{\text{concentrated flow}} + T_{\text{open channel flow}}$						
$= 9.047 + 0.00 + 6.80 = \boxed{15.843} \text{ mins}$						
$\frac{15.843}{60} = 0.264044 \text{ hrs}$						
SCS Lag for HEC-HMS.... $t_p = 2/3 t_c = \boxed{0.177} \text{ hrs}$						
OK use $\boxed{0.18} \text{ hrs}$ 10.61457						
Worksheet 1: Runoff Parameters and Time of Concentration						

		Maven Associates		Job Number 298001	Sheet 1	Rev: A
Job Title Calc Title		Southern Links- STG R1 POST-development		Author RK	Date 11/06/2026	Checked DJM
Wetland E Total Catchment 59292						
1. Runoff Curve Number (CN) and initial Abstraction (Ia)				CALCS to WRC TR2020/06		
Soil name and classification	ID	Cover description (cover type, treatment, and hydrologic condition)	Curve Number CN*	Area (ha) 10000m2=1 ha	Product of CN x area	
D		Pervious (20%)	84	1.78	149.42	
D		Impervious (80%)	98	4.15	406.74	
					0.00	
Totals =				5.93	556.16	
CN (weighted) = $\frac{\text{total product} = 556.16}{\text{total area} = 5.929} = \boxed{93.8}$						
S= $\frac{(1000}{CN} - 10) * 25.4}{93.8} = \frac{(1000}{93.8} - 10) * 25.4}{93.8} = 76.5 \text{ } 117.8 \text{ } \boxed{16.8} \text{ mm}$						
Ia= $0.05 * S = 0.05 * 16.8 = \boxed{0.8} \text{ mm}$						
2. Time of Concentration						
Sheet and Shallow Flow (to be completed at detail design)			L= 230 m			
$T=100nL^{0.33}/S^{0.2}$			S= 0.50 %			
			n= 0.015			
			T= $\boxed{10.367}$ mins			
Concentrated Network Flow (to be completed at detail design)				$\boxed{0}$		
Open Channel Flow			$V=R^{2/3}S^{1/2}/n$	w= 1	n= 0.04	
			$R= A / Wp = 0.33$	d= 1	s= 1%	
			l= 300			
(to be completed at detail design)			V= 0.8498537 m/s			
			T= $\boxed{5.88}$ mins			
$T_c = T_{\text{sheet flow}} + T_{\text{concentrated flow}} + T_{\text{open channel flow}}$						
$= 10.37 + 0.00 + 5.88 = \frac{16.251}{0.2708451} \text{ mins hrs}$						
SCS Lag for HEC-HMS.... $t_p = 2/3 t_c = \frac{16.251}{3} = \boxed{0.181} \text{ hrs}$						
OK use $\boxed{0.18} \text{ hrs}$ 10.887974						
Worksheet 1: Runoff Parameters and Time of Concentration						

		Maven Associates		Job Number 298001	Sheet 1	Rev: A
Job Title Calc Title		Southern Links- STG R1 POST-development		Author RK	Date 11/06/2026	Checked DJM
Wetland F Total Catchment 39857						
1. Runoff Curve Number (CN) and initial Abstraction (Ia)				CALCS to WRC TR2020/06		
Soil name and classification	ID	Cover description (cover type, treatment, and hydrologic condition)	Curve Number CN*	Area (ha) 10000m2=1 ha	Product of CN x area	
D		Pervious (20%)	84	1.20	100.44	
D		Impervious (80%)	98	2.79	273.42	
					0.00	
Totals =				3.99	373.86	
CN (weighted) = $\frac{\text{total product} = 373.86}{\text{total area} = 3.986} = \boxed{93.8}$						
S= $\frac{(1000}{CN} - 10) * 25.4}{93.8} = \frac{(1000}{93.8} - 10) * 25.4}{93.8} = 76.5 \text{ } 117.8 \text{ } \boxed{16.8} \text{ mm}$						
Ia= $0.05 * S = 0.05 * 16.8 = \boxed{0.8} \text{ mm}$						
2. Time of Concentration						
Sheet and Shallow Flow (to be completed at detail design)			L= 230 m			
$T=100nL^{0.33}/S^{0.2}$			S= 0.50 %			
			n= 0.015			
			T= $\boxed{10.367}$ mins			
Concentrated Network Flow (to be completed at detail design)				$\boxed{0}$		
Open Channel Flow			$V=R^{2/3}S^{1/2}/n$	w= 1	n= 0.04	
			$R= A / Wp = 0.33$	d= 1	s= 1%	
			I= 300			
(to be completed at detail design)			V= 0.8498537 m/s			
			T= $\boxed{5.88}$ mins			
$T_c = T_{\text{sheet flow}} + T_{\text{concentrated flow}} + T_{\text{open channel flow}}$						
$= 10.37 + 0.00 + 5.88 = \frac{16.251}{0.2708451} \text{ mins} = 0.2708451 \text{ hrs}$						
SCS Lag for HEC-HMS.... $t_p = 2/3 t_c = \frac{0.2708451}{0.2708451} \text{ hrs} = 0.181 \text{ hrs}$						
OK use $\boxed{0.18} \text{ hrs}$ 10.887974						
Worksheet 1: Runoff Parameters and Time of Concentration						

	Maven Waikato		Job Number 298001	Sheet 1	Rev: A																				
Job Title Calc Title Catchment	SL1 - RESIDENTIAL Wetland Sizing and dimensions Catchment and Wetland A-F		Author RK	Date 11/06/2025	Checked DJM																				
					Key:																				
<table><tr><td>Catchment Post Development</td><td>Ha</td><td>Area (m2)</td></tr><tr><td>A</td><td>13.01</td><td>130116.8</td></tr><tr><td>B</td><td>7.65</td><td>76455.99</td></tr><tr><td>C</td><td>8.54</td><td>85394.24</td></tr><tr><td>D</td><td>5.32</td><td>53219.75</td></tr><tr><td>E</td><td>5.93</td><td>59292.19</td></tr><tr><td>F</td><td>3.99</td><td>39856.68</td></tr></table>	Catchment Post Development	Ha	Area (m2)	A	13.01	130116.8	B	7.65	76455.99	C	8.54	85394.24	D	5.32	53219.75	E	5.93	59292.19	F	3.99	39856.68	input			
Catchment Post Development	Ha	Area (m2)																							
A	13.01	130116.8																							
B	7.65	76455.99																							
C	8.54	85394.24																							
D	5.32	53219.75																							
E	5.93	59292.19																							
F	3.99	39856.68																							



Maven Waikato

Job Number
298001

Sheet
1

Rev: A

Job Title

SL1 - RESIDENTIAL

Calc Title

Wetland Sizing and dimensions

Catchment

Catchment and Wetland A

Author
RK

Date
11/06/2025

Checked
DJM

		References:		Key:
		WRC 2020/07 8.5.6 Stormwater pond		input
		WRC 2020/07 8.5.7 Wetlands		
Wetland / Pond Sizing and dimensions		RITS V2.5 October 2024 - 4.2.18 Constructed Wetlands		
Catchment Area	13.01	ha		
Imperviousness <70%?	yes			
Percentage of catchment area	3%			
Wetland surface area	3904	m2	per WRC 2020/06 8.5.7 Govened by EDV volume	
Info Table	PostDev			
Q2	0.29	m ³ /s	See Tab "HEC HMS Results "	
V2	8205.00	m ³		
Q10	0.45	m ³ /s		
V10	16500.00	m ³		
Q100 (RCP8.5)	0.60	m ³ /s		
V100 (RCP8.5)	25037.00	m ³		
Min. WQV	2200.00	m ³	1/3 of the 2-year storm 24hr ARI rainfall event.	
SUMMARY TABLE				
Min. wetland area (3% catchment)	3904	m2		
Designed pwl wetland area	7600	m2	From Cad	
Min. WQV	2200	m3		
Min. ED	2640	m ³	1.2WQV	
Designed ED	2660	m3	OK	
Fore Bay Volume	(15% of WQV)	=	330.00 m ³	Per WRC
Min Fore Bay Area	(10% of Wetland Area)	=	760.00 m ²	per RITS
Designed ForeBay Area			1200 m ²	from CAD



Maven Waikato

Job Number
298001

Sheet
1

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Job Title

SL1 - RESIDENTIAL

Calc Title

Wetland Sizing and dimensions

Catchment

Catchment and Wetland B

Author
RK

Date
11/06/2025

Checked
DJM

References:

WRC 2020/07 8.5.6 Stormwater pond
WRC 2020/07 8.5.7 Wetlands
RITS V2.5 October 2024 - 4.2.18 Constructed Wetlands

Key:

input

Wetland / Pond Sizing and dimensions

Catchment Area 7.65 ha
Imperviousness <70%? yes
Percentage of catchment area 3%
Wetland surface area 2294 m2 per WRC 2020/06 8.5.7 Govened by EDV volume
Info Table

PostDev

Q2 0.25 m³/s See Tab "HEC HMS Results "
V2 4872.00 m³
Q10 0.40 m³/s
V10 9807.00 m³
Q100 (RC8.5) 0.53 m³/s
V100 (RCP8.5) 15340.00 m³
Min. WQV 1425.00 m³ 1/3 of the 2-year storm 24hr ARI rainfall event.

SUMMARY TABLE

Min. wetland area (3% catchment) 2294 m2
Designed wetland area 5625 m From CAD
Min. WQV 1425 m3 Maximum of calculated WQV vs water depth x wetland area
Min. ED 1710 m³ 1.2WQV
Designed ED 1969 m³ OK

Fore Bay Volume (15% of WQV) = 213.75 m³ Per WRC
Fore Bay Area (10% of Wetland Area) = 562.50 m² per RITS
Designed ForeBay Area = 1500 m² From CAD



Maven Waikato

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298001

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Job Title

SL1 - RESIDENTIAL

Calc Title

Wetland Sizing and dimensions

Catchment

Catchment and Wetland C

Author
RK

Date
11/06/2025

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DJM

Wetland / Pond Sizing and dimensions

Catchment Area

8.54 ha

Imperviousness <70%?

yes

Percentage of catchment area

3%

Wetland surface area

2562 m2

per WRC 2020/06 8.5.7 Govened by EDV volume

Info Table

PostDev

Q2

0.25 m³/s

See Tab "HEC HMS Results "

V2

5245.00 m³

Q10

0.40 m³/s

V10

10707.00 m³

Q100 (RC6.0)

0.54 m³/s

V100 (RCP6.0)

16840.00 m³

Min. WQV

1433.35 m³

1/3 of the 2-year storm 24hr ARI rainfall event.

SUMMARY TABLE

Min. wetland area (3% catchment)

2562 m2

Designed wetland area

7300 m

From CAD

Min. WQV

1433 m3

Maximum of calculated WQV vs water depth x wetland area

Min. ED

1720 m³

1.2WQV

Designed ED

2555 m³

OK

Fore Bay Volume

(15% of WQV)

=

215.00 m³

Per WRC

Fore Bay Area

(10% of Wetland Area)

=

730.00 m²

per RITS

Designed ForeBay Area

=

1300 m²

From CAD

References:

WRC 2020/07 8.5.6 Stormwater pond

WRC 2020/07 8.5.7 Wetlands

RITS V2.5 October 2024 - 4.2.18 Constructed Wetlands

Key:

input



Maven Waikato

Job Number
298001

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Rev: A

Job Title

SL1 - RESIDENTIAL

Calc Title

Wetland Sizing and dimensions

Catchment

Catchment and Wetland D

Author
RK

Date
11/06/2025

Checked
DJM

References:

WRC 2020/07 8.5.6 Stormwater pond
WRC 2020/07 8.5.7 Wetlands
RITS V2.5 October 2024 - 4.2.18 Constructed Wetlands

Key:

input

Wetland / Pond Sizing and dimensions

Catchment Area 5.32 ha

Imperviousness <70%? yes

Percentage of catchment area 3%

Wetland surface area 1597 m2 per WRC 2020/06 8.5.7 Govened by EDV volume

Info Table

PostDev

Q2 0.19 m³/s See Tab "HEC HMS Results "

V2 3313.00 m³

Q10 0.30 m³/s

V10 6737.00 m³

Q100 (RC6.0) 0.40 m³/s

V100 (RCP6.0) 10625.00 m³

Min. WQV 893.30 m³ 1/3 of the 2-year storm 24hr ARI rainfall event.

SUMMARY TABLE

Min. wetland area (3% catchment) 1597 m2

Designed wetland area 5395 m From CAD

Min. WQV 893 m3 Maximum of calculated WQV vs water depth x wetland area

Min. ED 1072 m³ 1.2WQV

Designed ED 1888 m³ OK

Fore Bay Volume Min (15% of WQV) = 133.99 m³ Per WRC

Fore Bay Area Min (10% of Wetland Area) = 539.50 m² per RITS

Designed ForeBay Area = 937 m² From CAD



Maven Waikato

Job Number
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Sheet
1

Rev: A

Job Title

SL1 - RESIDENTIAL

Calc Title

Wetland Sizing and dimensions

Catchment

Catchment and Wetland E

Author
RK

Date
11/06/2025

Checked
DJM

References:

WRC 2020/07 8.5.6 Stormwater pond
WRC 2020/07 8.5.7 Wetlands
RITS V2.5 October 2024 - 4.2.18 Constructed Wetlands

Key:

input

Wetland / Pond Sizing and dimensions

Catchment Area 5.93 ha

Imperviousness <70%? yes

Percentage of catchment area 3%

Wetland surface area 1779 m2 per WRC 2020/06 8.5.7 Govened by EDV volume

Info Table

PostDev

Q2 0.21 m³/s See Tab "HEC HMS Results "

V2 3773.00 m³

Q10 0.34 m³/s

V10 7596.00 m³

Q100 (RC6.0) 0.45 m³/s

V100 (RCP6.0) 11888.00 m³

Min. WQV 995.22 m³ 1/3 of the 2-year storm 24hr ARI rainfall event.

SUMMARY TABLE

Min. wetland area (3% catchment) 1779 m2

Designed wetland area 3900 m From CAD

Min. WQV 995 m3 Maximum of calculated WQV vs water depth x wetland area

Min. ED 1194 m³ 1.2WQV

Designed ED 1365 m³ OK

Fore Bay Volume (15% of WQV) = 149.28 m³ Per WRC

Fore Bay Area (10% of Wetland Area) = 390.00 m² per RITS

Designed ForeBay Area = 630 m² From CAD



Maven Waikato

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Sheet
1

Rev: A

Job Title

SL1 - RESIDENTIAL

Calc Title

Wetland Sizing and dimensions

Catchment

Catchment and Wetland F

Author
RK

Date
11/06/2025

Checked
DJM

Wetland / Pond Sizing and dimensions		References:		Key:
		WRC 2020/07 8.5.6 Stormwater pond		input
		WRC 2020/07 8.5.7 Wetlands		
		RITS V2.5 October 2024 - 4.2.18 Constructed Wetlands		
Catchment Area	3.99	ha		
Imperviousness <70%?	yes			
Percentage of catchment area	3%			
Wetland surface area	1196	m2	per WRC 2020/06 8.5.7 Govened by EDV volume	
Info Table		PostDev		
Q2	0.21	m ³ /s	See Tab "HEC HMS Results "	
V2	2465.00	m ³		
Q10	0.34	m ³ /s		
V10	5057.00	m ³		
Q100 (RC6.0)	0.53	m ³ /s		
V100 (RCP6.0)	79510.00	m ³		
Min. WQV	655.00	m ³	1/3 of the 2-year storm 24hr ARI rainfall event.	
SUMMARY TABLE				
Min. wetland area (3% catchment)	1196	m2		
Designed wetland area	2800	m	From CAD	
Min. WQV	655	m3	Maximum of calculated WQV vs water depth x wetland area	
Min. ED	786	m ³	1.2WQV	
Designed ED	980	m ³	OK	
Fore Bay Volume	(15% of WQV)	=	98.25 m ³	Per WRC
Fore Bay Area	(10% of Wetland Area)	=	280.00 m ²	per RITS
Designed ForeBay Area		=	239 m ²	From CAD