

SOUTHERN LINKS 1 RESIDENTIAL

CONSTRUCTION MANAGEMENT PLAN

PROJECT INFORMATION

PROJECT 298001

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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. Introduction

2.1. Site Description

The SL1 Residential Development forms part of the residential component of the wider Southern Links 1 (SL1) Growth Cell, a circa 440ha contiguous land area that stretches the south-western edge of Hamilton that includes the Hamilton Southern Links (RoNS) designation. The Residential Development is a listed project, which includes both residential and industrial components and together comprises circa 106ha of the overall SL1 Growth Cell. The residential component comprises circa 46ha and is in single ownership and is currently used for rural farming activities. The landholding includes three land parcels legally described as Lot 2 DP 589463 (22.21 ha); Lot 1 DPS 51518 (7.58 ha); and Part Lot 2 DP 25668 (33.64 ha).

The residential component provides for the establishment of circa 938 units, together with a neighbourhood commercial node, open spaces, waterbodies, and infrastructure devices including wetlands and roading. The proposed residential development is underpinned by a series of design principles, with a focus on creating a well-connected, legible, and diverse community on Hamilton's urban fringe. This is supported via a coordinated neighbourhood structure with a connected roading and pedestrian/cycle network, integrated open space and stormwater outcomes as well as varying housing typologies and densities (including single detached, duplex, and terraced apartments) which have been proposed to meet the growing and changing needs of the housing market to ensure there are options for future residents and thoughtfully located based on opportunities and constraints, with density ranging from terraced, duplex and detached dwellings to ensure integration with the adjoining urban footprint.

Located centrally within the SL1 Residential Development is a local neighbourhood commercial node that will provide a small-scale range of amenities, four to five small retail and food and beverage tenancies designed for convenience and support immediate local needs. This local node adjoins a neighbourhood reserve, adjacent to the north/south ecological corridor, providing neighbourhood park amenities to the SL1 Residential Development.

The proposal includes substantial enabling works to establish developable land, including bulk earthworks across the site. An integrated stormwater management system including artificial wetlands, detention/attenuation devices and treatment ponds are designed with the intent to discharge to ground water as relevant. Ecological restoration is integrated via riparian and corridor planting with appropriate design measures being adopted to enhance and protect key features including the upper tributaries of the Mangakōtukutuku Stream and associated drains.

Access and integration with the surrounding Hamilton area is provided through connected transport framework, including the establishment of intersections, roading, and walking and cycle networks, along with upgrades to existing transport infrastructure. The residential development is proposed to be serviced via a coordinated strategy, including the extension of public networks, upgrades, and installation of appropriate infrastructure.



Figure 1: Site Locality

3. Proposed Earthworks

Earthworks will include re-contouring, excavations for drainage reticulation, formation of building platforms, roading and where applicable the construction of retaining walls. The site will contain specific erosion and sediment control measures suitable to control the earthworks area.

3.1. Geotechnical Investigation

Various site-specific geotechnical investigations have been conducted and a geotechnical investigation report has been prepared by CMW, to support the Substantive Application under the Fast-track Approvals Act 2024.

The report identifies the approximate distribution of prevailing landforms and geologies for the local area. The site is 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 and is expected to underlie the Hinuera Formation.

However, based on CMW's observations and 3D Leapfrog modelling of subsurface soil conditions, the site is completely underlain by Hinuera Formation soils and the Peat (swamp deposits) soils are located further to the south-west, outside the stage 1 residential area. Please refer to the Geotechnical Investigation Report by CMW for more information.

From the geotechnical desktop review by CMW, they have summarized the geohazards & mitigation measures in Table 1 below.

Geotechnical Hazard	Description	Area Affected	Assessment Outcome	Mitigation Measure
Construction Risks	Excavatability	Building Platforms	Given the site is being built up with engineered fill, excavation is expected to be readily achieved with normal earthworks plant.	Construction monitoring by geotechnical engineers to ensure good earthworks practices.
	Sediment Retention Ponds	Building Platforms	Depending on their size sediment retention ponds may require geotechnical input at design stage to ensure batter stability is achievable.	Consideration given to batter stability of proposed ponds at design and construction phase.
	Subgrade Preparation	Building Platforms and Road Alignment	Topsoil and existing vegetation within the building footprints and road alignments will be cleared as part of the proposed development of earthworks.	Undercut to remove topsoil and roots and other materials. For saturated subgrade, allow to dry or undercut and replace.
	Service Trenches	Building Platforms and Road Alignment	Trench collapse may occur in surficial soils if proposed service trenches extend below GW level.	Mitigation should be considered in the form of trench support, temporary dewatering, in the form of regular

				spaced pumps.
	Short Term Erosion of Swale Drains	Swale Drains	Erosion of swale drains may occur due to the battered slope gradient on unvegetated slopes.	Mitigation may comprise rapid revegetation and erosion control matting. This is to be confirmed in the design phase.
	Low Road/Pavement Subgrade Strengths	Roads and Paths	Low subgrade strengths and/or saturation of pavement subgrade.	Further site investigations and specific pavement design is required.

Table 1: Summary of Geohazards & Mitigation Measures

3.2. Bulk Earthworks

The total bulk earthworks for whole site is summarized in table 2 below:

Bulk Subgrade Earthworks (topsoil stripping exclusive)	
Total area of ground disturbance	433,460 m ² (43.34ha)
Total volume of CUT	290,010 m ³
Total volume of FILL	227,375 m ³
Total Volume of FILL with Compaction Factor (1.2)	272,850 m ³
Maximum CUT and FILL depth	2.36m FILL / 5.34m CUT
Total Volume (surplus of CUT)	17,160 m ³
Others	
Topsoil stripping (200 mm)	86,690 m ³

Table 2: Summary of Bulk Earthworks

3.3. Site Constraints

3.3.1. Earthworks within Existing Flood Plain

The proposed site comprises multiple interconnected overland flow path and ponding areas dictated by the existing topography of the surface, surrounding rural land uses and primary drainage with hydrology conditions as assumed in the model.

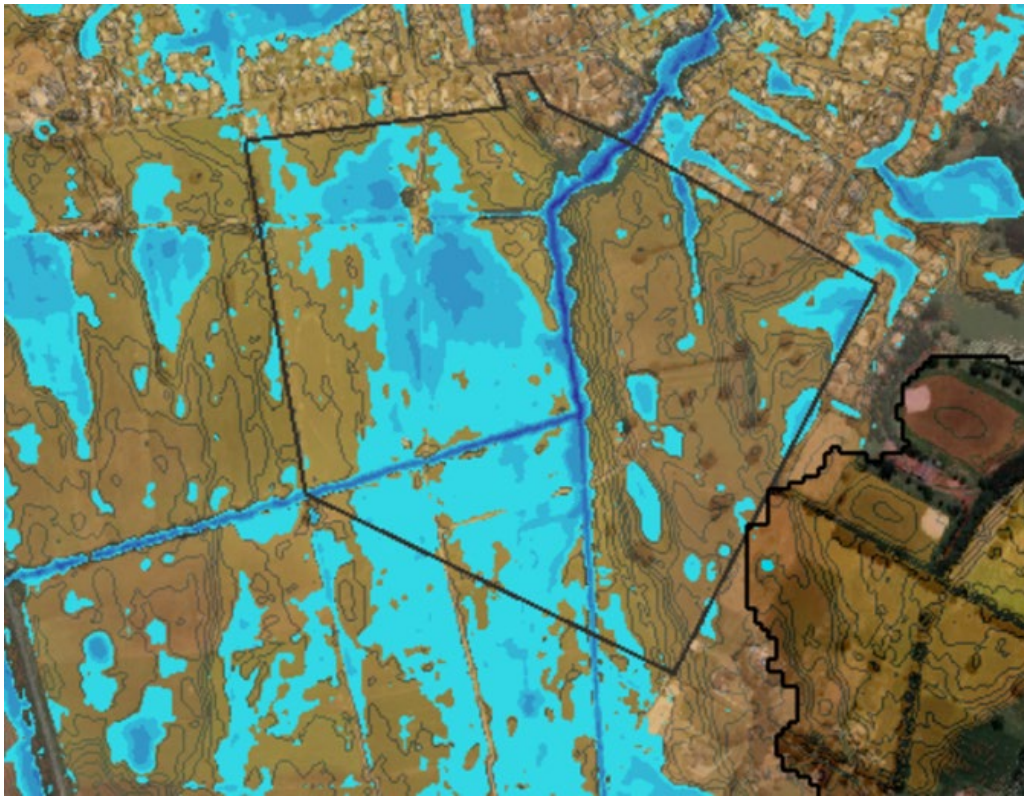


Figure 2: Existing Flood Extent in the 1% AEP Event

Construction within the proposed development area is of particular importance due to the presence of existing flood prone areas and overland flow paths. The proposed wetlands, stormwater storage areas, and diversion channels have been designed to not only manage post development runoff but existing as well to provide conveyance across the site.

These features will contribute to reducing the extent and duration of ponding currently experienced within the site by formalising flow paths and improving overall hydraulic efficiency during storm even, include events up to the 100-year design event.

To mitigate flood related risks during construction the following measures will be implemented.

- Earthworks will only be undertaken during the approved earthwork season unless a Winter Works application is submitted and approved by HCC.
- In a high-risk location only open a small manageable earthwork area at a time.
- Create low flow diversion channels to divert any existing drains away from earthwork areas.
- Stabilise the earthworks site when a large rainfall event is forecasted.

3.3.2. Sensitive Receiving Environment

Stormwater runoff from the proposed SL1 Residential Development is ultimately discharged to the Existing stream network within the Mangakotukutuku catchment, which forms the primary receiving environment for the site.

The receiving environment is considered sensitive due to its ecological value, interaction with groundwater, susceptibility to changes in sediment load, and water quality. In addition, the site is influenced by elevated downstream water levels and backwater effects, which further increase the importance of maintaining water quality during construction.

To safeguard this significant receiving environment, a comprehensive erosion and sediment control strategy has been developed to effectively manage the water quality of sediment-laden water,

ensuring it complies with the Waikato Regional Council's Guide for Soil Disturbing Activities 2009. The mitigation measures may include, but are not limited to, the following:

- All water runoff originating from within the earthworks site must be captured by either a Sediment Retention Pond (SRP) or a Decanting Earth Bund (DEB).
- The use of flocculant treatment is mandatory for all DEBs and SRPs.
- Prior to commencing bulk earthworks within their respective catchments, the treated water from all DEBs and SRPs must undergo testing to verify the effectiveness of these devices in terms of water treatment. Additionally, their water treatment efficiency should be assessed on a monthly basis or following significant rainfall events.
- Where pumping is necessary for treated water discharge, a manhole is required for the DEB or SRP. The pump unit will be situated within the manhole and will exclusively discharge treated water.
- The pumped treated water will be directed towards a grass swale, which will provide additional water quality treatment before discharging into the existing channel or stream.
- Groundwater resulting from dewatering operations should be discharged into a dedicated SRP or DEB to ensure water quality treatment before entering the existing stormwater channel or stream.
- In cases where DEBs and SRPs are not feasible, other sediment control methods, such as silt fences, may be employed at the discretion of the monitoring officer. However, it is important to note that the exposed earthwork area should be limited to less than 1,000 square metres and must be completed and stabilised within a single day. Additionally, no earthworks should commence if rain is forecasted.

3.3.3. Ecology

Ecological Solutions has been prepared an Assessment of Ecological Effects in support of the fast-track application. Please consult the Ecological Assessment prepared by Ecological Solutions which provides detailed guidance on ecological measures.

3.3.4. Contamination

Swiftsure has prepared Detailed Site Investigation (DSI) for the proposed earthworks extent. Contaminants were detected in shallow soils and asbestos were found to exceed both natural background concentrations. It is found that the soil contamination exceeds the applicable standard for the land, and under Regulation 10 of the NES-CS, the proposed activity must be considered as a restricted discretionary activity. Please refer to the Contaminated Soils Management and Remediation Plan prepared by Swiftsure for more information.

3.4. Consent Condition and Council Involvement

Relevant management plans will be provided to HCC prior to the pre-construction meeting and as required.

No bulk earthworks will be undertaken prior to all pre-construction conditions being satisfied and the sediment and erosion control has been established on site to meet the WRC Erosion & Sediment Control Guidelines for Soil Disturbing Activities TR0902.

3.5. Program of Works

Earthworks will be undertaken in stages. It is envisaged that all earthworks will be completed within ten earthworks seasons. Applications for Winter Works will only be lodged if required.

It is proposed that the bulk earthworks operation will comprise of three separated work sections (Stage 1, 2, and 3) that will be undertaken independent of each other as shown on the earthwork plans attached in Appendix A.

Works are intended to be carried out in the following steps for each work section:

- Install silt control measures, as shown on Engineering Drawings (Appendix A)
- Strip topsoil to stockpile, or screen and sell to the public
- Cut effected areas and construct retaining walls as required.
- Carry out remaining bulk earthworks
- Stabilise site using topsoil, grassing, metal or other methods as required
- Retain silt control measures until the earthwork area is stabilised

3.6. Earthworks Summary

As mentioned in the above section, the bulk earthworks on site will be divided into three separated work sections. These are from Stage 1 to 3, including stormwater wetlands, and wastewater pumpstations. Please refer to the earthworks drawings for detail attached in Appendix A.

Stormwater Wetland A and F will be constructed at Stage 1 Earthworks.

Central Wastewater Pumpstation will be constructed at Stage 1 Earthworks.

Stormwater Wetland B and C will be constructed at Stage 2 Earthworks.

Northern Wastewater Pumpstation will be constructed at Stage 2 Earthworks.

Stormwater Wetland D and E will be constructed at Stage 3 Earthworks.

3.6.1. Stage 1 Earthworks

Subgrade Earthworks (topsoil stripping exclusive)	
Total area of ground disturbance	182,427 m ² (18.24ha)
Total volume of CUT	134,249 m ³
Total volume of FILL	111,874 m ³
Total Volume of FILL with Compaction Factor (1.2)	134,249 m ³
Maximum CUT and FILL depth	1.37m FILL / 5.34m CUT
Total Volume (BALANCED)	0 m ³
Others	
Topsoil stripping (200 mm)	36,485 m ³

Table 3: Summary of Stage 1 Earthworks

3.6.2. Stage 2 Earthworks

Subgrade Earthworks (topsoil stripping exclusive)	
Total area of ground disturbance	135,012 m ² (13.50ha)
Total volume of CUT	90,051 m ³
Total volume of FILL	64,624 m ³
Total Volume of FILL with Compaction Factor (1.2)	77,549 m ³
Maximum CUT and FILL depth	2.15m FILL / 1.15m CUT
Total Volume (surplus of CUT)	- 12,502 m ³
Others	
Topsoil stripping (200 mm)	27,002 m ³

Table 4: Summary of Stage 2 Earthworks

3.6.3. Stage 3 Earthworks

Subgrade Earthworks (topsoil stripping exclusive)	
Total area of ground disturbance	116,020 m ² (11.60ha)
Total volume of CUT	65,710 m ³
Total volume of FILL	50,877 m ³
Total Volume of FILL with Compaction Factor (1.2)	61,052 m ³
Maximum CUT and FILL depth	1.50m FILL / 3.82m CUT
Total Volume (surplus of CUT)	- 4,658 m ³
Others	
Topsoil stripping (200 mm)	23,204 m ³

Table 5: Summary of Stage 3 Earthworks

4. Earthworks Operation

4.1. Environmental Aspects

This section details the minimum requirements for environmental management processes and procedures to be implemented on site, to mitigate actual and potential risks associated with the construction of the SL1 project. Management plans prepared by the contractor are to be consistent with these aspects.

4.1.1. General Environmental Objectives and Targets

Potential environmental objectives and targets relating to this CMP are described in the table below and will be confirmed with the contractor.

Objective	Target	Proposed KPI
Environmental Compliance Ensure the Project operates in accordance with all Designation and Resource Consent/NOR Conditions and relevant environmental related legislation.	Zero penalty infringement notices or prosecutions for breaches of environmental related legislation. No infringement or abatement letters from authorities.	Number of notices or prosecutions. Number of warning or pre-enforcement letters. Percentage of compliance with conditions of Consent
Earthworks Compliance Ensure the Project operates in accordance with WRC / NZTA Best practice for ESCPs and ESC in accordance with WRC Site Scoring System.	Good earthworks performance on site, Reduced potential for enforcement actions, Better environmental outcomes, Enhance opportunity for flexibility in earthworks programme.	Number of 1 (fully compliant) scores Percentage of 2-4 scores
Training Train Project personnel in environmental management.	Implement training & awareness programs that promote compliance, improving environmental performance & skill base of staff and workers on the Project and minimise environmental risk.	100% of relevant Project staff receiving environmental training.
Flora, Fauna and Receiving Environments Manage effects of construction	No unauthorised impact to flora, fauna and receiving environments from construction.	Number of flora, fauna and receiving environments items impacted unlawfully.

activities to minimise impacts on flora, fauna and receiving environments		
Community Manage community and stakeholder relationship to minimise impacts from construction activities	Engage directly with sensitive receivers, key stakeholders, and relevant community groups Respond to complaints within a of days/hours of receipt	Number of complaints and time taken to resolve issues Number of complaints managed effectively within nominated timeframe
Quality Ensure environmental & related audit actions are closed out within the agreed timeframes.	No overdue audit actions.	Number overdue audit actions. Percentage of audit actions completed on time

Table 6: Potential environmental objectives and targets

4.1.2. General Environmental Risks & Opportunities

The table below presents indicators of key environmental performance issues identified in initial desk top risk assessments undertaken for the purpose of developing this plan. Confirmation with the contractor will be undertaken prior to works commencing. The risks identified in initial reviews and site visits will be used to inform and update, where necessary, environmental aspects and impacts which are described in the table below:

Aspect/Risk	Potential Impact
Erosion and Sediment Control	Uncontrolled discharge of sediment to receiving environment Pollution or degradation Loss of reputation Additional costs to remediate Potential delays
Water Quality	Uncontrolled discharge of concrete wash out / slurry Pollutant discharge to receiving environment Uncontrolled discharge of sediment to receiving environment Environmental damage Loss of reputation Additional costs to remediate Potential delays
Noise	Excessive noise generated by the project activities Loss of reputation Additional costs to remediate Potential delays
Archaeology	Items, structures, locations of cultural significance damaged or destroyed by project activities. Loss of reputation Additional costs to remediate Potential delays
Landscape	Landscaping elements do not achieve desired coverage, become weed infested, fail, do not achieve ecological or urban design

	outcomes. Extended maintenance/re-planting programme Revegetation Restoration objectives not achieved Additional costs to remediate Loss of reputation
Vibration	Excessive vibration caused by project activities Degradation of property outside site Loss of reputation Additional costs to remediate Potential delays
Air Quality (Dust)	Dust created by work activities Pollution or degradation that has impacts on the community and / or environment Loss of reputation Additional costs to remediate Potential delays
Contamination	Uncontrolled cross contamination of site due to ground contamination Health and safety implications Environmental damage Loss of reputation Additional costs to remediate Potential delays
Hazardous Substances / Dangerous Goods	Uncontrolled release of hazardous substances / dangerous goods Health and safety implications Environmental damage Loss of reputation Additional costs to remediate Potential delays
Waste	Waste management activities not in accordance with regulatory and project requirements Environmental damage Loss of reputation Additional costs to remediate Potential delays
Behaviours	Poor uptake of project values and behaviours by staff Negative perception of company / project in wider stakeholder community
Culverts and Stream Diversion	Environmental damage (e.g., sediment impacts on water quality) Fauna lost, through disruption of aquatic fauna plant strike Poor design and/or construction leading to inadequate aquatic habitat Flora dieback/lost

	Loss of reputation Negative perception of company / project in wider stakeholder community Potential delays
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Table 7: Identified Key Risks and Potential Impacts

These aspects/risks identified in the table above and subsequent risk assessment with the contractor will be used to inform the preparation of site-specific method statements.

4.1.3. Environmental Monitoring

Monitoring of environmental performance and regulatory compliance with resource consents and NOR conditions are required during the construction phase of the project. The contractor will identify a program which defines, at a minimum, general site monitoring (scheduled and unscheduled); environmental training; and site inductions along with incident response and reporting.

4.2. Health and Safety

A site-specific Health and Safety Plan will be provided by the Contractor prior to start of any works. This document will encapsulate routine monitoring measures, emergency response protocols, along with the requisite documentation. The Health and Safety Plan will be a dynamic document, updated regularly to address emerging health and safety concerns.

To ensure the safety of all, a protective barrier in the form of safety fencing will be erected around the work extent. Access points to the site will be monitored and controlled by a gate and perimeter fencing. Relevant signage will be affixed to this fencing for clear communication. All construction-related vehicular movement will be streamlined through distinct, predetermined, and well-marked access points.

To maintain a continuous dialogue about health and safety measures, weekly toolbox meetings will be convened on-site. These meetings will be centred around discussions of potential risks associated with the week's scheduled activities and the strategies to mitigate them.

All personal involved in this site construction work, including visitors, are required to complete site induction every year to ensure on-going familiarity with risks present on this construction site. Visitors to the construction site will be obliged to comply with the requirements of the site-specific Health and Safety Plan upon entry and shall be escorted by a nominated contractor personnel throughout their visit.

4.3. Access/Haul Roads

The site will have one main accessway which will be utilised based on specific earthworks operation on site. These entrances will be the primary site entrance and will be utilised during construction. This main entrance is located at Macmurdo Avenue and Forth Crescent for Stage 1 and 5. For stage 2 to 4, the main entrance is located at Saxbys Road noting these are residential which can be found in C130 residential civil stage. It is expected that these site accesses will be fenced off and monitored by the contractor. Only authorised personnel and nominated visitors can enter the construction site. This also includes ingress for emergency vehicles as dictated by signage at the site entrance.

The Bulk earthworks operation will require multiple haul roads for transporting the cut and fill material. The access track and haul road have the following features.

- The track will be a metal road approximately 3m to 5m wide with drainage swales beside the road formations as required, which will act as a cut-off to divert runoff.

- Upon cessation of site work the track will be removed.
- A stabilised construction entrance with a wheel wash facility will be installed at these access points.
- Temporary bridges to be constructed to cross existing stream.

4.4. Working Hours

All construction activities will adhere strictly to the approved consent hours of work. Under Hamilton City Council (HCC) rules and standard New Zealand acoustic guidelines (NZS 6803:1999) standard construction work is permitted from 7:30 a.m. to 6:00 p.m. Monday to Friday, and 8.30 a.m. to 4:30 p.m. Saturday. No work will occur Sundays or public holidays.

4.5. Complaints

Complaints will be addressed first-hand by the site construction manager and proactively followed up on. There will be a complaint register record for detailing the investigation and response. The key contact personnel will be available at site entrances for the public to contact in case of emergency or complaint lodgement.

4.6. Vibration Control

A construction vibration assessment will be done prior to construction commencing from a Vibration Consultant. The effects of vibration during construction are expected to have less than minor effects on any surrounding receiver and will be reasonable in terms s16 of the Resource Management Act.

Some of the mitigation methods for vibration control are:

- Residents will be advised prior to construction activities being undertaken near their buildings.
- The lightest practicable model of vibration inducing plant shall be used within 30m of any dwellings.
- Compaction shall be performed using the lightest practical compaction equipment with the highest practicable vibration frequency to achieve specified compaction.
- Excavator operators shall avoid banging buckets on the ground and workers will be advised on minimising vibration.
- Sheet piling must not occur within 20m of dwelling (even when it is unoccupied), unless vibration monitoring is in place to confirm compliance with the Project Vibration Limits.
- Sheet piling vibration from works within 50m of a building may still be perceptible within nearby dwellings and may cause some disturbance. However, the vibration is expected to remain tolerable if residents receive advance notice of the works and clear information about the expected timing and duration.

Styles Group have undertaken an Assessment of Noise Effects regarding vibration effects. In the event of issues being raised, vibration monitoring will be undertaken.

4.7. Noise Control

Modern plants and equipment are all fitted with exhaust mufflers and soundproofing that are designed to reduce plant noise and have been manufactured to meet international standards. All items of plant are subject to periodic maintenance checks to ensure they can be operated safely and as intended. If complaints are received, they will be taken seriously, and every effort made to minimise disturbance e.g., continue work in that area at a time that might be more amenable to the complainant(s). Any noise complaints will be followed up with the complainant and will also be

discussed at project site meetings. They will also become subject matter at the weekly site toolbox meetings.

If it appears that noise levels exceed the allowable limits, then an alternative methodology may need to be deployed. The implementation of additional options will be undertaken in consultation with the regulatory authorities, Principal, and Engineer, including, if required and instructed, engaging a noise monitoring specialist to measure and report on-site construction activity to ensure compliance with NZS6803 (NZ Standard for Acoustics – Construction Noise).

Styles Group have undertaken a Construction Noise Assessments regarding noise impacts in the event of issues being raised, noise monitoring will be undertaken. Please refer to the Construction Noise Assessments for more information.

4.8. Weed Management

The protocols outlined in the Waikato Regional Council factsheet will be used to minimise the adverse effects on biosecurity.

4.9. Erosion Control

As the site is currently a low-lying flat farmland, multiple sediment controls and devices need to be constructed onsite. Below we have outlined the general principles and philosophies that will be adopted for any current controls and/or future proposed controls. Regular site inspections will be undertaken by the site engineer or consent holder, with compliance audits carried out by the Waikato Regional Council (WRC) as required.

Silt and erosion control measures shall remain in place and operational until the contributing catchment has been permanently stabilised and there is no longer a reasonable risk of sediment discharge from the relevant earthworks area. Removal of temporary controls shall be undertaken progressively and only following inspection by the Engineer or appropriately delegated person confirming that the area is adequately stabilised and that the controls are no longer required.

The site will be progressively stabilised with topsoil and grass seed as earthwork levels are achieved. Silt control measures will only be removed once the site is considered stable in terms of silt run-off.

4.9.1. Topsoiling and Grassing

Topsoiling and grassing will be undertaken progressively as earthwork areas reach their final or temporary design levels. Exposed surfaces, including completed batters, embankments, road verges and other areas no longer required for active earthworks, will be covered with suitable topsoil and prepared for grass establishment. Grass seed will be applied following topsoil placement, with hydroseeding used on batters and other areas where conventional seeding is not suitable. Straw or hay mulch, erosion control matting or other approved surface protection will be applied to areas where vegetation cannot be established immediately or where additional erosion protection is required.

4.9.2. Temporary Diversion Drains and Stabilised Channels

Temporary diversion drains and stabilised channels will be installed ahead of, or in conjunction with, earthworks within each relevant catchment to provide defined flow paths and prevent uncontrolled runoff across exposed soils. Clean runoff from undisturbed areas will be diverted around active earthworks areas, while runoff generated within disturbed areas will be directed through stable temporary drainage paths. Channels will be constructed and maintained to prevent uncontrolled overtopping, erosion and scour, with rock armouring, erosion control matting or other suitable protection provided at locations subject to concentrated flows, changes in flow direction, channel

transitions and outlets. Temporary drainage arrangements will be reviewed and modified as earthworks progress and the contributing catchments and ground levels change. Drains and channels will be inspected during active earthworks and following significant rainfall events, with blockages, erosion, scour, overtopping or bypassing rectified promptly. Temporary drainage and erosion protection will remain in place until the contributing catchment has been permanently stabilised and the temporary drainage arrangement is no longer required.

4.9.3. Stockpiles

Topsoil, spoil and other soil stockpiles will be located within designated areas away from existing watercourses, drainage paths and site boundaries where practicable, and will be positioned to prevent uncontrolled runoff from the stockpile entering the stormwater system or receiving environment. Stockpile surfaces will be stabilised where they are not actively being worked, using grassing, hydroseeding, mulch, erosion control matting or other suitable surface protection. Following rainfall events, stockpiles and associated controls will be inspected for evidence of erosion, slumping or sediment discharge, with any identified deficiencies repaired promptly. Stockpile areas will remain stabilised and controlled until the material has been removed or incorporated into the permanent earthworks and the area has been permanently stabilised.

4.10. Sediment Control

Throughout the duration of the earthworks, these sediment control measures will be consistently maintained and closely monitored to ensure they function as required. Removal of silt control measures will only be considered once the site is deemed to be stable in terms of silt runoff, to be agreed by Hamilton City Council and the Site Engineer.

The following silt and sediment control protection measures are being proposed:

4.10.1. Stabilized Site Entrances

The contractor shall ensure that all entrances to the site are constructed upon establishment or prior to any intended use. Entrances shall be an area of stabilised and well compacted aggregate constructed and maintained for heavy vehicle use. These entrances shall be constructed in accordance with the agreed, proposed (as per C200 Earthworks drawings), or adopted local Council guidelines, an example of which can be found within the appended standard details.

4.10.2. Dust Control

For the proposed works, dust generated at the site is likely to have the greatest effect on any existing residential properties bordering the site. To achieve no nuisance dust emissions, the following preventive measures shall be implemented:

- Dampening down of potential dust generation areas with a water truck;
- Mulching and grassing stockpiles and built levels where or when practicable;
- Chemical dust suppressants, used as per manufacturer recommendations as a method of sealing problematic or largely unfinished areas, if the previously mentioned methods fail to mitigate the dust appropriately.
- Ensuring that surfaces are constructed to their final design requirement and are stabilised as quickly as practicable; and
- Controlling reduced vehicle speeds.

Wind conditions should be monitored to assist in daily planning of works to minimise the potential for excessive dust generation.

4.10.3. Cut-off Drains/Bunds

Compacted earth bunds will be placed along the top of batter slopes to divert “clean” runoff away from the earthwork area. Compacted earth bunds placed at the bottom of the cut batter slopes to divert generated “dirty” runoff to the nearest local Decant Earth Bund (DEB) / Sediment Retention Pond (SRP). Cut-off drains shall be formed at the bottom of shallow batters where bunding alone will not likely contain expected flows. The purpose of the bund/drain is to prevent any surface water flowing over the newly formed batter faces, into stabilised areas of the site, and to divert flows around the site perimeter to the nearest low point where a DEB / SRP is to be located, if required.

4.10.4. Decanting Earth Bunds/Sediment Retention Ponds

Site run-off will be directed by cut-off drains and bunds to the natural low point within each bund’s catchment area prior to discharge onto existing stabilised ground. The locations proposed shall be verified and agreed onsite during a pre-construction meeting and as-builts of decant bund’s size/location shall be provided to the Compliance Officer, if required.

Decanting earth bunds (DEB) will serve as the primary treatment for the works. DEBs will be sized by volume to 2-3% of the catchment area as per appended calculations. The details of the DEBs recommended layout can be found online via Waikato Region Council Erosion & Sediment Control Guidelines for Soil Disturbing Activities (TR-0902), or other equivalent guidelines, such as Auckland Council GD05 guideline and appended standard details. Where possible, a DEB & SRP will be constructed with a length to width ratio between 3:1 – 5:1, however this may be constrained by site space limitations. Typically, the outlet structure of these DEBs & SRPs will comprise of a floating T-Bar dewatering device (decanting arm with anti-seep collar, as shown in standard details within engineering plans) which discharges to stabilised ground. Where possible, the discharge end of the pipe will be perforated to disperse flows past the working area to stabilised or undisturbed ground.

If chemical treatment is required, the decant bar shall be lifted above the expected storage volume to enable treatment to take place, before being lowered post storm event treatment whereby the storage volume is discharged.

4.10.5. Chemical Treatment

To improve water quality treatment within sediment control devices throughout the construction phase, the use of chemical flocculants is required for all DEBs and SRPs.

The method of treatment is variable and dependant on ground conditions and catchment area, this will be confirmed onsite during establishment works and bench testing.

It is proposed that an approved flocculation method will be implemented; the available methods can be found outlined in Table 8:

Flocculation Method	Time Frame	Treatment Area
Floc Blocks for DEBs	Short and Long Term	Up to 5,000 m ²
Batch Dosing for DEB’s & SRPs	Short Term	Up to 50,000 m ²
Continuous Dosing of DEBs & SRPs	Long Term	Up to 50,000 m ²

Table 8: Proposed Flocculation Method

Once the DEB & SRP have been flocculated the water quality will be assessed by either measuring the suspended sediment or checking clarity. If the water quality is acceptable the DEB or SRP is emptied by unblocking the outlet, and earthworks within its catchment can continue accordingly.

In cases where a pump is required to empty treated water from the DEB and SRP due to differences in ground level, the installation of a manhole is necessary. The pump is exclusively permitted to extract water from the manhole structure. The discharged water from the pump will then be directed towards a grass swale to further refine the water quality by removing any potential suspended solids captured during the pumping operation.

4.10.6. Silt Fences

Silt fences will be installed as a treatment measure where sheet flows are considered likely. Such as the toe of fill embankments, where it is not practical to divert flows to a DEB. Alternatively, they may be used in locations where newly generated sheet flows from stabilised areas may concentrate and result in scour of existing natural ground, in this situation a silt fence will impede and aid in mitigating excessive flow velocity.

4.10.7. Wellpoint Dewatering Devices

Prior to and during earthworks in areas with high groundwater levels, wellpoint dewatering devices will be employed. The purpose of these devices is to ensure the stability and safety of excavation faces by lowering the water table. This not only ensures safety but also expedites the construction process. However, it is important to note that the extracted water might contain suspended solids, which could be detrimental to the receiving environment. To mitigate this, the water will first be directed to DEB or SRP for treatment. Once treated, the water will be discharged into the existing stormwater channel.

4.10.8. Topsoil Management

Efficient topsoil management is a core component of this project's environmental strategy. The topsoil will be removed from each earthwork area and stockpiled for later use. Any surplus topsoil, forecasted to exceed project requirements, will undergo screening to make it available for sale to the wider public.

To address sediment and erosion control at the stockpile location, preventative measures will be employed. This includes the use of mulching and grass seeding to facilitate the establishment of grass cover on the topsoil stockpile. These practices help maintain the integrity of the topsoil stockpile, prevent soil erosion, and ensure minimal topsoil loss throughout the project.

Soil rehabilitation will be implemented in landscaping areas as required to reverse compaction effects and to improve near surface soakage prior to placement of topsoil and planting.

4.10.9. Sediment Control Performance Monitoring & Maintenance

All sediment control measures will be checked regularly, to ensure that they are performing as intended by design. The site Construction Manager in conjunction with the Project Engineer will be responsible for actively monitoring installed erosion and sediment control devices. Periodic audits will be undertaken and tabled at regular progress meetings.

A site walk over shall be undertaken weekly to identify any corrective maintenance required. A more thorough inspection will be undertaken at the end of each week, or before and after a forecast major storm event, to identify any preventative and/or corrective maintenance required.

A regular program of sediment, debris and trash removal will be undertaken to ensure sediment control measures do not become blocked and ensure they function as required. Any large floating matter including any organic matter, i.e., fallen tree litter, reaching the pond or discharge structures is to be removed immediately.

Specific monitoring and maintenance of each mitigation method is included below.

Stabilised Vehicle Entrance

- Maintain the Stabilised Vehicle Entrance in a condition to prevent sediment from leaving the construction site. After each rainfall inspect any structure used to trap sediment for the Stabilised Vehicle Entrance and clean out as necessary.

Diversion Drains/Clean Water Cut-Off Bunds

- Inspect after every rainfall event and during periods of prolonged rainfall for scour and areas where they may breach.
- Repair immediately if required to ensure that the design capacity is maintained.

Decant Earth Bunds/Sediment Retention Ponds

- Inspect after every rainfall event to confirm water clarity or organise sediment testing.
- Release stored flows if/when required to ensure that the DEB capacity is maintained prior to any future rain event.
- Muck out and remove collected sediment whenever 1/3 of the dead storage is reached, or bi-monthly, as required.

Chemical Treatment

- Inspect stored chemical volumes after every rainfall event and during periods of prolonged rainfall.
- Refill or repair any systems immediately if required to ensure that the design capacity is maintained.

Silt Fence

- Inspect Silt Fences at least once a week and after each rainfall. Make any necessary repairs when bulges occur, or sediment accumulation reaches 50% of the fabric height.
- Any areas of collapse, decomposition or ineffectiveness need to be immediately replaced.
- Remove sediment deposits as necessary to ensure adequate sediment storage and reduce pressure on the Silt Fence. Remove accumulated sediment from the area to an appropriate secure location.
- Do not remove Silt Fence materials and sediment deposition until the catchment area has been appropriately stabilised.

Sediment control and other environmental issues, health and safety matters, and construction-related Resource Consent condition compliance requirements will be integrated into fortnightly on-site client/engineer/contractor progress meetings as a proactive construction management tool. These meeting discussions are recorded with decisions and agreed courses of action to be followed up on.

4.11. Fill Compaction

Each layer of material shall be compacted by approved compacting machinery throughout the whole area and depth to achieve the specification listed below or as specified by a qualified Geotechnical Engineer.

Not less than the following percentages of maximum dry density obtainable for the	Clays and Silty Clays	Sands and Gravel
---	-----------------------	------------------

	material by standard compaction at optimum moisture content determined by NZS 4402, Pt 2P: Test 14:		
A	Within 500mm of the finished carriageway sub grade levels and within 3m of batter edges	98%	100%
B	Elsewhere	95%	97%
Clays		Air Voids % (as defined NZS 4402: Part 1)	Undrained Shear (measured by in-situ vane)
A	Within 500mm of road subgrade levels and within 3 meters	Average value less than 8% (any 10 tests) Maximum single value 10%	Average value not less than 170 KPa minimum single value 140 KPa
B	General Fill	Average value less than 10% (any 10 tests) Maximum single value 12%	Average value not less than 150 KPa minimum single value 110 KPa
C	Reserve Areas deeper than 600mm below finished formation level	Maximum value 15%	Minimum value 75 KPa

Table 9: Fill Compaction Requirements by Soil Types

4.12. Traffic Management

A comprehensive Traffic Management Plan (TMP) will be developed by the contractor prior to the commencement of works. The TMP will address all construction-related vehicle movements, with particular attention to minimising disruption to surrounding residents and maintaining safe traffic operations.

Key measures include:

- Designated Access Points: Entry and exit to the construction site shall occur via Macmurdo Avenue and Forth Crescent for Stage 1 and 5. For stage 2 to 4, Saxbys Road is the main access point.
- Construction Traffic Routes: Heavy vehicle routes shall be pre-approved by Hamilton City Council and appropriately signed.
- Vehicle Control Measures: Construction accessways will be controlled with security gates with entry restricted to authorised vehicles.
- Dust and Debris Management: Receiving road network will need to be monitored for debris being carried into the local roading network. Vehicle wheel wash facilities maybe required at exits to prevent debris onto public roads.
- Traffic Safety: All traffic management measures will comply with Waka Kotahi (NZTA) Code of Practice for Temporary Traffic Management (CoPTTM) requirements.
- Public Notification: Residents along haul routes will be notified in advance of any significant truck movements or temporary road works. A letter drop will be undertaken by the nominated contractor prior to construction works commencing.

Temporary traffic signage, traffic controllers, and restricted construction hours may be employed during peak traffic periods to further minimise disruption.

For more information, please refer to BBO Integrated Transportation Assessment.

4.13. Community and Stakeholder Engagement

The following items are suggested to be implemented:

- Pre-Construction letter drop will inform residents and businesses of the construction schedule, accessways, and key project contacts.
- Complaints Register: A designated Site Liaison Officer will be appointed to manage complaints and queries. Contact information will be displayed at all site entrances.
- Response Protocol: Complaints will be acknowledged within 24 hours and notified to the local authority (HCC) with a follow-up and action plan provided within 72 hours.

Maintaining positive relationships with locals is a priority to ensure the project proceeds with minimal disruption and community support.

5. Construction Methodology and Sequence of Works

As highlighted in the previous section, the earthworks operations at the SL1 Residential Development will be categorized into three (3) sections. These sections have been segregated based on the stages of development.

To provide comprehensive guidance for the earthwork activities within this domain, an overarching earthwork principle has been formulated. This principle serves as a unifying framework, guiding the execution of earthworks across these sections. Summarized below are the key principles of earthworks for this area:

- i. Establish Temporary Stormwater Diversion:
- ii. Sediment and Erosion Control Establishment:
- iii. Minimize the Earthworks Area:
- iv. Stabilize Earthworks:

Earthwork's methodology is dynamic and adapted to suit the local environment, ensuring that each earthwork area within these sections have specific construction methodology based on the principles mentioned above, which are essential to protect the sensitive receiving environment.

Continuous sheet pile walls will be installed around the wetland perimeter and driven to the design embedment depth within the underlying Walton Subgroup to provide a groundwater cut-off barrier, control artesian groundwater pressures during excavation, and minimise the risk of seepage, uplift, piping, and base heave. Either steel or vinyl sheet piles may be feasible, subject to detailed design and constructability assessment. For more details, please refer to Technical Memorandum Wetland A Design Review by CMW (dated June 2026).

The construction methodology for each respective work section is detailed below.

5.1. Artificial Stormwater Wetlands Construction Methodology & Sequence of Works

5.1.1. Artificial SW Wetland A

The earthwork plan for Artificial SW Wetland A is comparatively straightforward. It has been devised to occur in Stage 1 (Earthworks Stage). The construction methodology for this area is as follows:

Stage 1 (EW):

- Establish erosion and sediment control
- Carry out earthworks within stage 1 (earthworks stage)
- Construct Artificial SW Wetland A
 - Sheet piling will commence from the southern end of the proposed Artificial SW Wetland A. Several construction methodologies may be considered, subject to site conditions and constraints. Refer to the Geotechnical Investigation Report prepared by CMW for further details. Sheet piling must not occur within 20m of dwelling (even when it is unoccupied), unless vibration monitoring is in place to confirm compliance with the Project Vibration Limits as per the Assessment of Noise Effects by Styles Group.

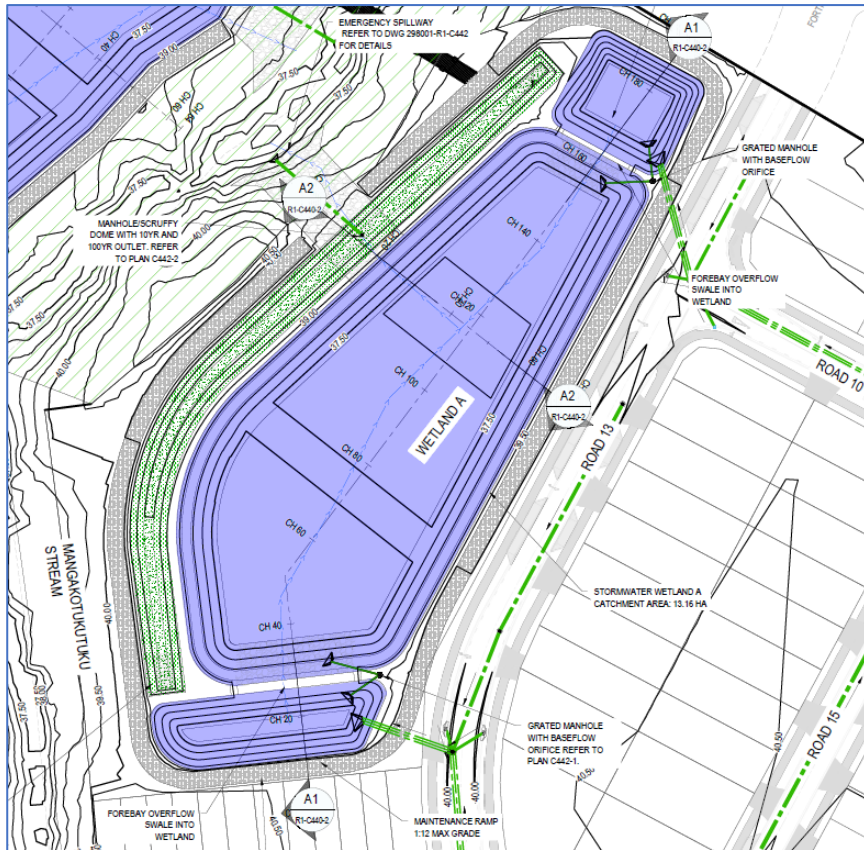


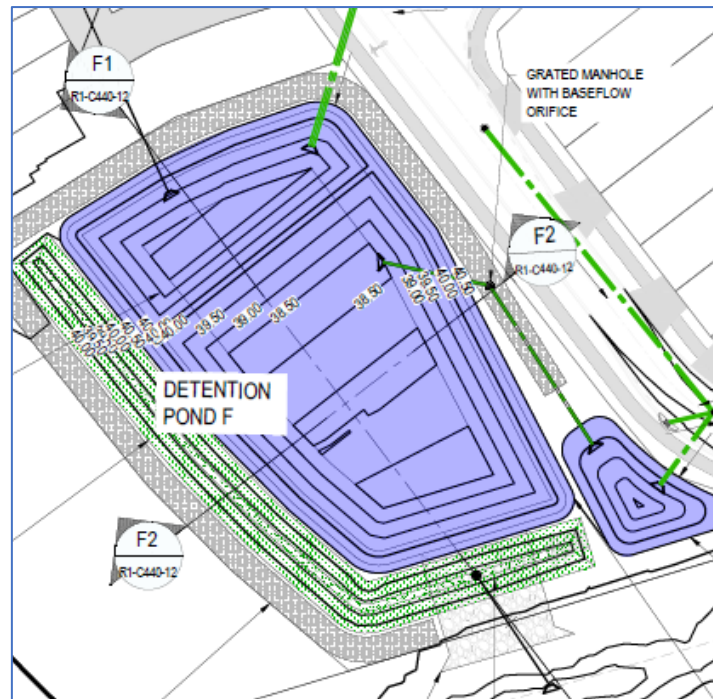
Figure 3: Erosion and Sediment Control for Artificial SW Wetland A

5.1.2. Artificial SW Wetland F

The earthwork plan for Artificial SW Wetland F is comparatively straightforward. It has been devised to occur in Stage 1 (Earthworks Stage). The construction methodology for this area is as follows:

Stage 1 (EW):

- Establish erosion and sediment control
- Carry out earthworks within stage 1 (earthworks stage)
- Construct Artificial SW Wetland F



5.1.3. Artificial SW Wetland B

The earthwork plan for Artificial SW Wetland B is comparatively straightforward. It has been devised to occur in Stage 2 (Earthworks Stage). The construction methodology for this area is as follows:

Stage 2 (EW):

- Establish erosion and sediment control
- Carry out earthworks within stage 2 (earthworks stage)
- Construct Artificial SW Wetland B

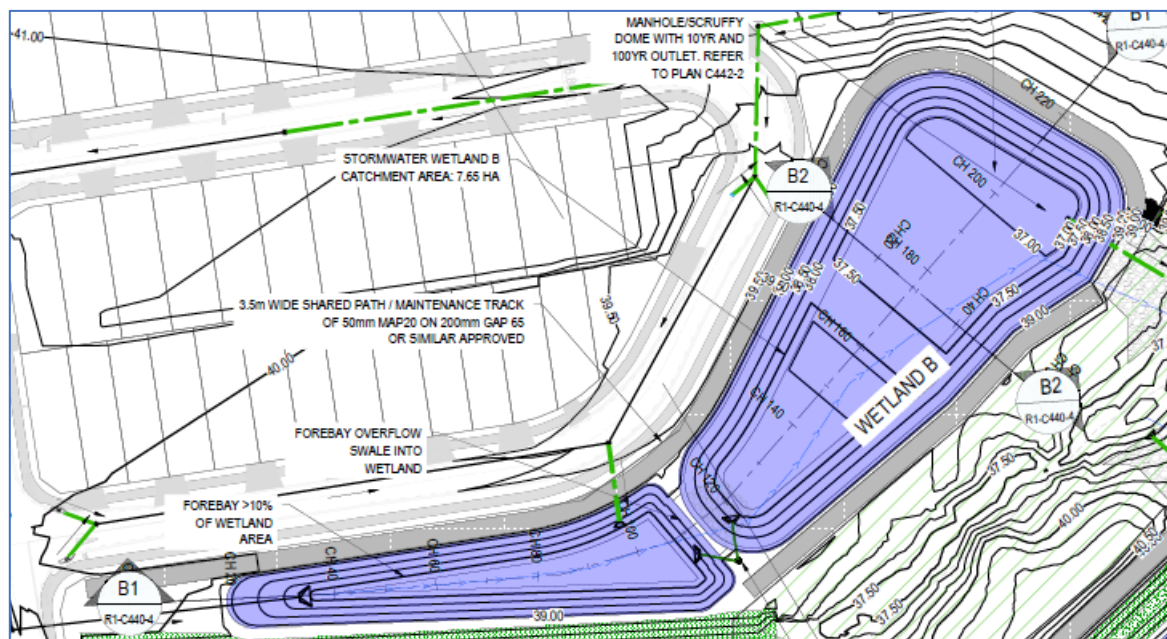


Figure 5: Erosion and Sediment Control for Artificial SW Wetland B

5.1.4. Artificial SW Wetland C

The earthwork plan for Artificial SW Wetland C is comparatively straightforward. It has been devised to occur in Stage 2 (Earthworks Stage). The construction methodology for this area is as follows:

Stage 2 (EW):

- Establish erosion and sediment control
- Carry out earthworks within stage 2 (earthworks stage)
- Construct Artificial SW Wetland C

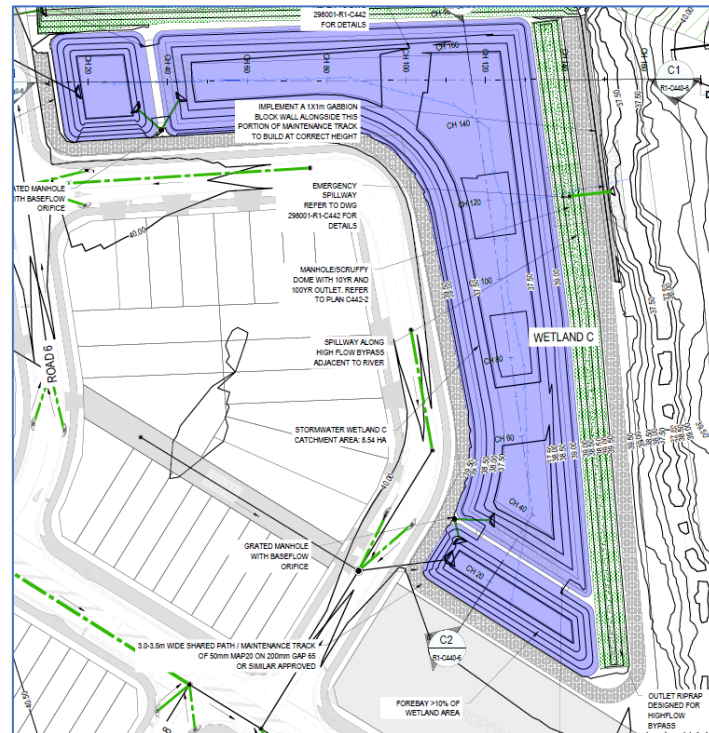


Figure 6: Erosion and Sediment Control for Artificial SW Wetland C

5.1.5. Artificial SW Wetland D

The earthwork plan for Artificial SW Wetland D is comparatively straightforward. It has been devised to occur in Stage 3 (Earthworks Stage). The construction methodology for this area is as follows:

Stage 3 (EW):

- Establish erosion and sediment control
- Carry out earthworks within stage 3 (earthworks stage)
- Construct Artificial SW Wetland D

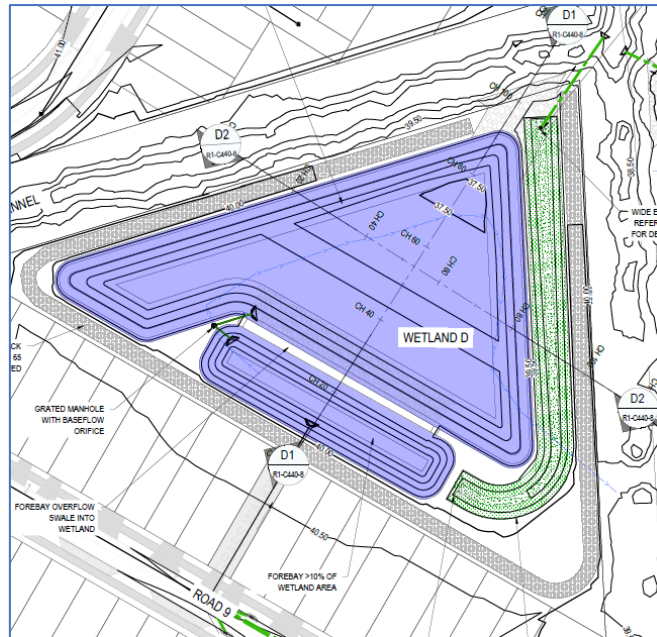


Figure 7: Erosion and Sediment Control for Artificial SW Wetland D

5.1.6. Artificial SW Wetland E

The earthwork plan for Artificial SW Wetland E is comparatively straightforward. It has been devised to occur in Stage 3 (Earthworks Stage). The construction methodology for this area is as follows:

Stage 3 (EW):

- Establish erosion and sediment control
- Carry out earthworks within stage 3 (earthworks stage)
- Construct Artificial SW Wetland E

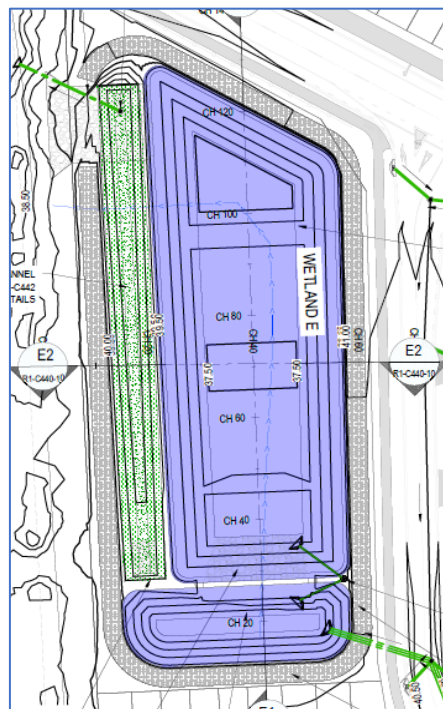


Figure 8: Erosion and Sediment Control for Artificial SW Wetland E

5.2. Culvert Construction Methodology

Culvert construction within existing watercourses at SL1 Residential will be undertaken using a temporary dam-and-divert methodology, with the duration of in-stream works limited to no more than three months at any single crossing. The approach is summarised below and will be refined through site-specific method statements prepared by the contractor and approved by Waikato Regional Council prior to works commencing.

Construction sequence:

1. Pre-works fish salvage — immediately prior to diversion, a qualified ecologist will undertake fish salvage within the isolated works reach in accordance with the New Zealand Fish Passage Guidelines (NIWA / DOC / MfE). All captured fish will be relocated to a suitable upstream or downstream reach outside the works zone.
2. Temporary diversion — clean upstream flows will be diverted around the works area via a temporary bypass channel or pumped overland to a stabilised discharge point downstream, maintaining baseflow continuity in the receiving watercourse. The diversion system will be sized to convey at least the 5-year ARI event during the construction period, with freeboard to contain higher flows where practicable.
3. Isolation and dewatering — the works area will be isolated using sandbags, silt bags, or sheet-pile coffer dams (depending on ground conditions and flow depth), then progressively dewatered. Dewatering discharge will be directed to a sediment retention pond or decanting earth bund for treatment prior to controlled release, with flocculant dosing if required to achieve the clarity standard.
4. Culvert installation — the culvert will be constructed in the dry to maintain bed material continuity and support fish passage through the completed structure. A low-flow channel will be formed within the culvert barrel to concentrate baseflows and provide a defined passage route for aquatic organisms.
5. Reinstatement and stabilisation — following culvert installation, the streambed will be reinstated with natural bed material, banks stabilised with riprap and/or revegetation, and the temporary diversion decommissioned. The works area will be fully stabilised prior to removal of sediment controls.

Fish passage — construction phase: The pre-works fish salvage and the maintenance of downstream baseflows via the temporary diversion are the primary measures to protect fish populations during construction. The diversion system will be checked daily for fish stranding, particularly at the intake and outfall. Works will be programmed to avoid the peak fish migration period (generally September–November for galaxiid species) where practicable, with timing confirmed in consultation with WRC and the project ecologist.

Fish passage — permanent operation: All culverts have been designed as embedded structures with the invert set below the natural streambed, retaining bed material through the barrel. This approach is consistent with the New Zealand Fish Passage Guidelines and provides for the passage of native species identified within the site. Culvert grades have been kept to 0.01% to limit in-barrel velocities, and low-flow channels within each barrel will maintain passage during baseflow conditions. Riprap inlet and outlet aprons have been sized to manage scour without creating perched outfalls that would act as barriers to upstream migration.

5.3. Post Construction Monitoring and Maintenance

Following completion of bulk earthworks and infrastructure works, ongoing monitoring and maintenance will be undertaken to ensure compliance with consent conditions and environmental conditions. This period will coincide with the Defects Liability Period.

Activities include:

- Erosion and Sediment Control Decommissioning: Progressive removal of sediment control devices once full site stabilisation is achieved, subject to approval by WRC at indicated hold points ie waiting for stabilisation 80% grass strike coverage on grassed topsoil.
- Vegetation Establishment: Monitoring of grass and landscape planting success, with remedial planting undertaken as necessary.
- Defect Liability Period Inspections: Periodic site inspections will be undertaken during the defect liability period to address erosion, sedimentation, or settlement issues.
- Final Certification: A completion report, including 'as-built' plans and compliance certificates, will be submitted to HCC as part of the 224c process.

The above will ensure that long-term environmental and infrastructure outcomes are maintained beyond construction.

Appendix A – Earthworks Drawings



SAXBYS ROAD

RHONDA AVENUE

DEANWELL AVENUE

SAXBYS ROAD

LESLIE PLACE

FORTH CRESCENT

CAESAR ROOSE DRIVE

MACMURDO AVENUE

REYNOLDS DRIVE

CROFT LANE

LOT 1 DPS 7305

LOT 2 DPS 9219

LOT 2 DP 442695

LOT 1 DP 442695

LOT 5 DPS 31888

PART LOT 2 DP 29868

LOT 2 DP 589463

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RESOURCE CONSENT

DATE: 9/25 FILEPATH: F:\MAVEN\HAMILTON6 PROJECTS\298001 - SOUTHERN LINKS 1\STG R1\DWG\298001-R1-C200 EARTHWORKS.DWG

- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL COUNCIL EROSION AND SEDIMENT CONTROL: GUIDELINES FOR SOIL DISTURBING ACTIVITIES TR 2009/02.
 2. COORDINATES IN TERMS OF NZ GEODETIC DATUM MT EDEN 2000
 3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
 4. ORIGIN OF LEVELS = SM XXXX SO XXXX(XXXX) PUBLISHED RL=XX.XX, SOURCED FROM THE LINZ DIGITAL GEODETIC DATABASE.
 5. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY THEIR OPERATIONS.
 6. THE CONTRACTOR SHALL COMPLY WITH ALL RELEVANT HEALTH AND SAFETY REQUIREMENTS.
 7. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVAL FROM UTILITY OPERATORS BEFORE COMMENCING WORK UNDER OR NEAR THEIR SERVICES.
 8. CONTRACTOR SHALL PROVIDE AS-BUILT OF WORKING SEDIMENT CONTROL DEVICES AND CONFIRMATION OF POND/DECENT VOLUMES TO ENGINEER.

LEGEND

	EX BDY
	PROP BDY
	EX MAJOR CONTOUR
	EX MINOR CONTOUR
	PR MAJOR CONTOUR
	PR MINOR CONTOUR
	PROP EXTENT WORK
	PROP CLEANWATER
	PROP DIRTYWATER
	PROP SILT FENCE
	PROP STOCKPILE
	PROP DECANT
	PROP DECANT BAR

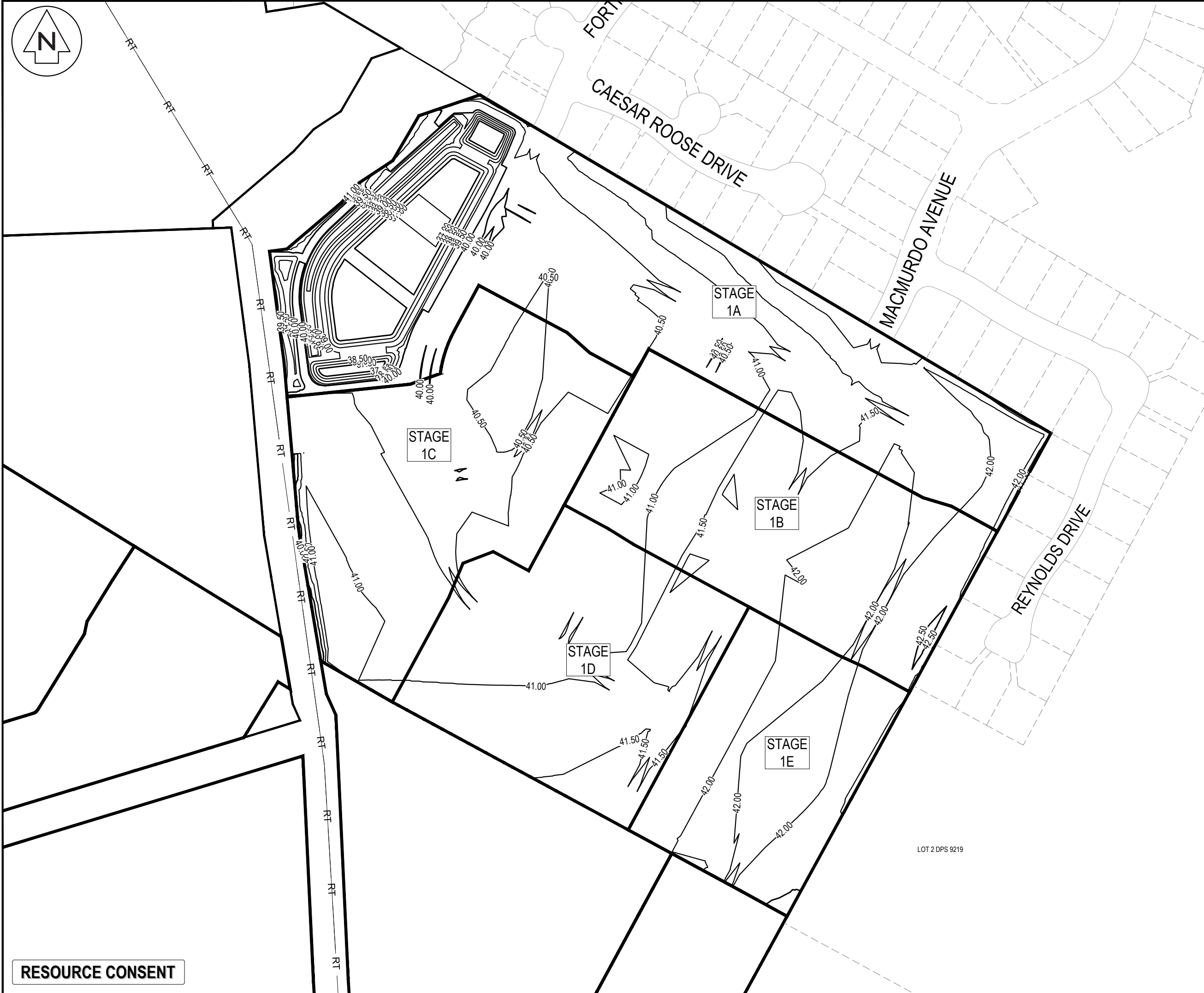
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Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	RJM		11/2025
Drawn	RJM		11/2025
Checked	DJM		11/2025

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

Title
**PROPOSED
CONTOUR
OVERVIEW PLAN**

Project no.	298001-R1 SL1		
Scale	1:4000 @ A3		
Cad file	298001-R1-C200 EARTHWORKS.DWG		
Drawing no.	R1-C200	Rev	A



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	PROP BDY
	EX MAJOR CONTOUR
	EX MINOR CONTOUR
	PR MAJOR CONTOUR
	PR MINOR CONTOUR
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	PROP CLEANWATER
	PROP DIRTYWATER
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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
STAGE 1
CONTOUR PLAN**

Project no.	298001-R1 SL1		
Scale	1:2000 @ A3		
Cad file	298001-R1-C200 EARTHWORKS.DWG		
Drawing no.	R1-C200-1	Rev	A



RHON

DEANWEL

LESLI

SAXBYS ROAD



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LEGEND

	EX BDY
	PROP BDY
	EX MAJOR CONTOUR
	EX MINOR CONTOUR
	PR MAJOR CONTOUR
	PR MINOR CONTOUR
	PROP EXTENT WORK
	PROP CLEANWATER
	PROP DIRTYWATER
	PROP SILT FENCE
	PROP STOCKPILE
	PROP DECANT
	PROP DECANT BAR

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	RJM		11/2025
Drawn	RJM		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
STAGE 2
CONTOUR PLAN**

Project no.	298001-R1 SL1
Scale	1:2000 @ A3
Cad file	298001-R1-C200 EARTHWORKS.DWG
Drawing no.	R1-C200-2
Rev	A

RESOURCE CONSENT



- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL COUNCIL EROSION AND SEDIMENT CONTROL: GUIDELINES FOR SOIL DISTURBING ACTIVITIES TR 2009/02.
 2. COORDINATES IN TERMS OF NZ GEODETIC DATUM MT EDEN 2000
 3. LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
 4. ORIGIN OF LEVELS = SM XXXX SO XXXX(XXXX) PUBLISHED RL=XX.XX, SOURCED FROM THE LINZ DIGITAL GEODETIC DATABASE.
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- LEGEND
- EX BDY
 - PROP BDY
 - EX MAJOR CONTOUR
 - EX MINOR CONTOUR
 - PR MAJOR CONTOUR
 - PR MINOR CONTOUR
 - PROP EXTENT WORK
 - PROP CLEANWATER
 - PROP DIRTYWATER
 - PROP SILT FENCE
 - PROP STOCKPILE
 - PROP DECANT
 - PROP DECANT BAR

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	RJM		11/2025
Drawn	RJM		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
STAGE 3
CONTOUR PLAN**

Project no.	298001-R1 SL1
Scale	1:2000 @ A3
Cad file	298001-R1-C200 EARTHWORKS.DWG
Drawing no.	R1-C200-3
Rev	A

RESOURCE CONSENT



- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL COUNCIL EROSION AND SEDIMENT CONTROL: GUIDELINES FOR SOIL DISTURBING ACTIVITIES TR 2009/02.
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LEGEND

	EX BDY
	PROP BDY
	EX MAJOR CONTOUR
	EX MINOR CONTOUR
	PR MAJOR CONTOUR
	PR MINOR CONTOUR
	PROP EXTENT WORK
	PROP CLEANWATER
	PROP DIRTYWATER
	PROP SILT FENCE
	PROP STOCKPILE
	PROP DECANT
	PROP DECANT BAR

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	RJM		11/2025
Drawn	RJM		11/2025
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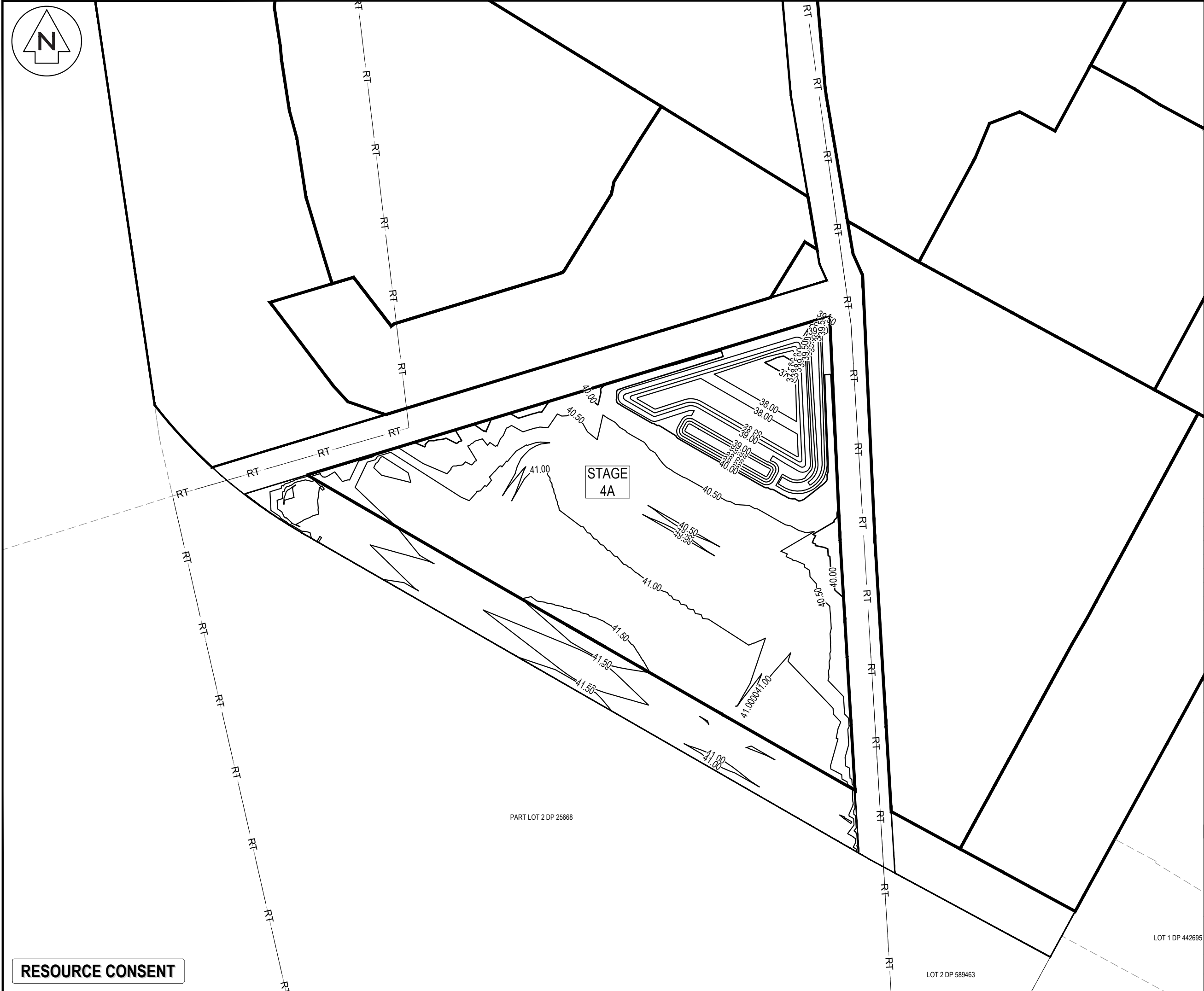
Project

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

Title

**PROPOSED
STAGE 4
CONTOUR PLAN**

Project no.	298001-R1 SL1
Scale	1:2000 @ A3
Cad file	298001-R1-C200 EARTHWORKS.DWG
Drawing no.	R1-C200-4
Rev	A





- NOTES
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	PROP DECANT
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A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
Survey	MAVEN		06/2025
Design	RJM		11/2025
Drawn	RJM		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
STAGE 5
CONTOUR PLAN**

Project no.	298001-R1 SL1		
Scale	1:2000 @ A3		
Cad file	298001-R1-C200 EARTHWORKS.DWG		
Drawing no.	R1-C200-5	Rev	A



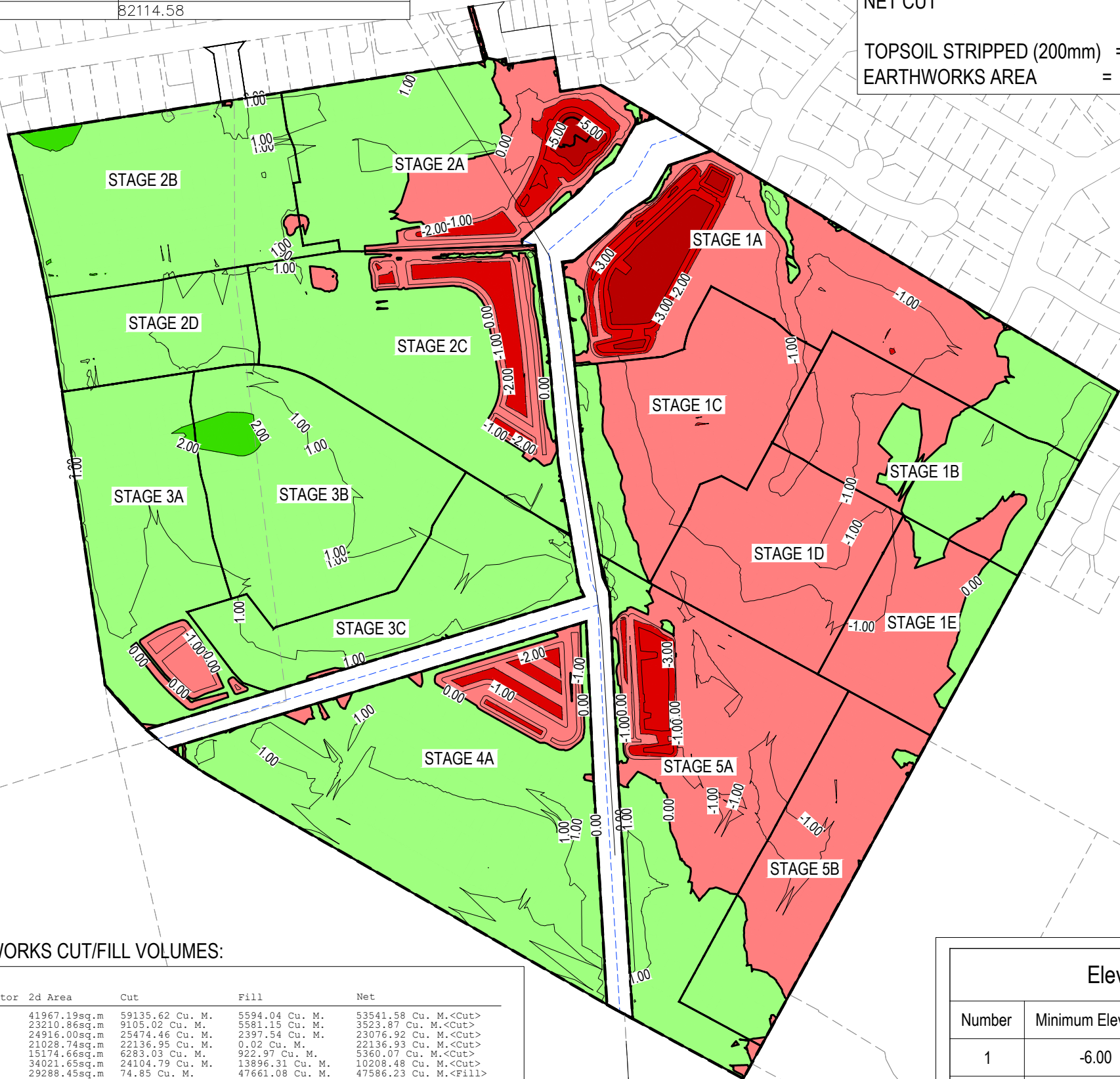
Extrapolated/Estimated Spoils Excavated (cu.m.)	
SW Pipe Embedment Spoils	6110.71
SW Manhole Spoils	260.25
WW Pipe Embedment Spoils	1449.78
WW Manhole Spoils	426.02
WS Pipe Spoils	301.88
Road Paving Excavated	47103.37
Footpath Paving Excavated	10585.03
JOAL Paving Excavated	15877.54
Total	82114.58

WHOLE SITE EARTH WORKS (SURFACE PSGL COMPARISON WITH SURFACE ESGL)

CUT VOLUME	207,910 m ³
CUT VOLUME (FROM SPOILS)	82,100 m ³
FILL VOLUME	272,850 m ³
NET CUT	17,160 m ³

TOPSOIL STRIPPED (200mm) = 86,690 m³
EARTHWORKS AREA = 433,460 m² / 43.34 Ha

- NOTES
1. ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL COUNCIL EROSION AND SEDIMENT CONTROL: GUIDELINES FOR SOIL DISTURBING ACTIVITIES TR 2009/02.
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WHOLE SITE STAGING BULK EARTHWORKS CUT/FILL VOLUMES:

Cut/Fill Summary						
Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
PSGL vs ESGL - STAGE 1A	1.000	1.200	41967.19sq.m	59135.62 Cu. M.	5594.04 Cu. M.	53541.58 Cu. M.<Cut>
PSGL vs ESGL - STAGE 1B	1.000	1.200	23210.86sq.m	9105.02 Cu. M.	5581.15 Cu. M.	3523.87 Cu. M.<Cut>
PSGL vs ESGL - STAGE 1C	1.000	1.200	24916.00sq.m	25474.46 Cu. M.	2397.54 Cu. M.	23076.92 Cu. M.<Cut>
PSGL vs ESGL - STAGE 1D	1.000	1.200	21028.74sq.m	22136.95 Cu. M.	0.02 Cu. M.	22136.93 Cu. M.<Cut>
PSGL vs ESGL - STAGE 1E	1.000	1.200	15174.66sq.m	6283.03 Cu. M.	922.97 Cu. M.	5360.07 Cu. M.<Cut>
PSGL vs ESGL - STAGE 2A	1.000	1.200	34021.65sq.m	24104.79 Cu. M.	13896.31 Cu. M.	10208.48 Cu. M.<Cut>
PSGL vs ESGL - STAGE 2B	1.000	1.200	29288.45sq.m	74.85 Cu. M.	47661.08 Cu. M.	47586.23 Cu. M.<Fill>
PSGL vs ESGL - STAGE 2C	1.000	1.200	35498.51sq.m	13851.66 Cu. M.	15068.12 Cu. M.	1216.46 Cu. M.<Fill>
PSGL vs ESGL - STAGE 2D	1.000	1.200	12606.45sq.m	0.00 Cu. M.	16847.56 Cu. M.	16847.56 Cu. M.<Fill>
PSGL vs ESGL - STAGE 3A	1.000	1.200	27326.55sq.m	2719.46 Cu. M.	32129.16 Cu. M.	29409.70 Cu. M.<Fill>
PSGL vs ESGL - STAGE 3B	1.000	1.200	31286.41sq.m	0.00 Cu. M.	46036.93 Cu. M.	46036.93 Cu. M.<Fill>
PSGL vs ESGL - STAGE 3C	1.000	1.200	21113.31sq.m	7.92 Cu. M.	25662.40 Cu. M.	25654.48 Cu. M.<Fill>
PSGL vs ESGL - STAGE 4A	1.000	1.200	53087.67sq.m	8623.46 Cu. M.	49833.35 Cu. M.	41209.90 Cu. M.<Fill>
PSGL vs ESGL - STAGE 5A	1.000	1.200	41521.63sq.m	27600.06 Cu. M.	9305.01 Cu. M.	18295.05 Cu. M.<Cut>
PSGL vs ESGL - STAGE 5B	1.000	1.200	21410.89sq.m	8792.78 Cu. M.	1913.89 Cu. M.	6878.90 Cu. M.<Cut>
Totals			433458.96sq.m	207910.08 Cu. M.	272849.54 Cu. M.	64939.46 Cu. M.<Fill>

RESOURCE CONSENT

Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	-6.00	-4.00	Red
2	-4.00	-2.00	Red
3	-2.00	0.00	Red
4	0.00	2.00	Green
5	2.00	4.00	Green

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

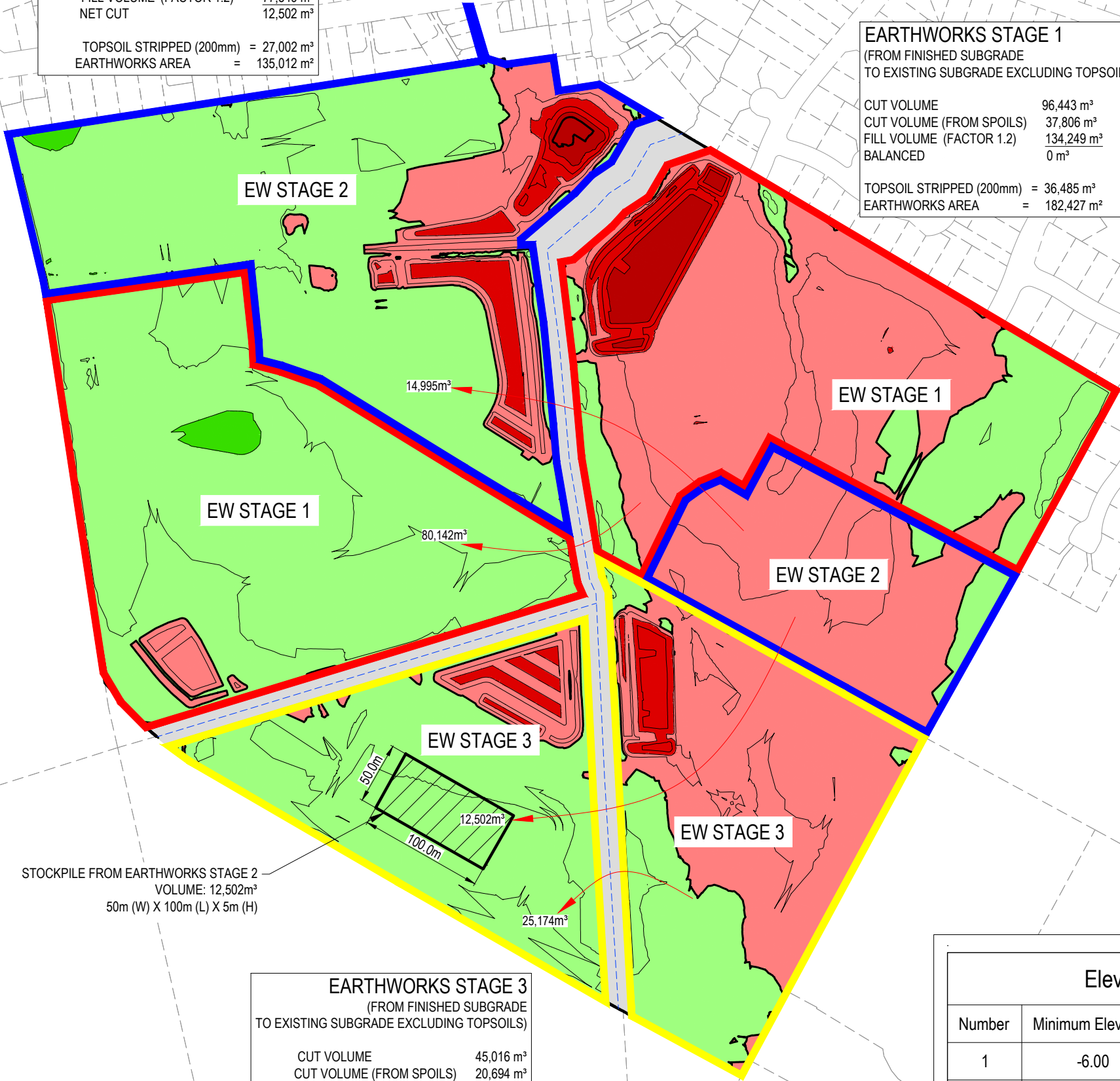
Title
**PROPOSED
CUT/FILL
OVERVIEW PLAN**

Project no.	298001-R1 SL1
Scale	1:4000 @ A3
Cad file	298001-R1-C220 EW CUT&FILL.DWG
Drawing no.	R1-C220
Rev	A



EARTHWORKS STAGE 2	
(FROM FINISHED SUBGRADE TO EXISTING SUBGRADE EXCLUDING TOPSOILS)	
CUT VOLUME	66,451 m³
CUT VOLUME (FROM SPOILS)	23,600 m³
FILL VOLUME (FACTOR 1.2)	77,549 m³
NET CUT	12,502 m³
TOPSOIL STRIPPED (200mm) = 27,002 m³	
EARTHWORKS AREA = 135,012 m²	

EARTHWORKS STAGE 1	
(FROM FINISHED SUBGRADE TO EXISTING SUBGRADE EXCLUDING TOPSOILS)	
CUT VOLUME	96,443 m³
CUT VOLUME (FROM SPOILS)	37,806 m³
FILL VOLUME (FACTOR 1.2)	134,249 m³
BALANCED	0 m³
TOPSOIL STRIPPED (200mm) = 36,485 m³	
EARTHWORKS AREA = 182,427 m²	



EARTHWORKS STAGE 3	
(FROM FINISHED SUBGRADE TO EXISTING SUBGRADE EXCLUDING TOPSOILS)	
CUT VOLUME	45,016 m³
CUT VOLUME (FROM SPOILS)	20,694 m³
FILL VOLUME (FACTOR 1.2)	61,052 m³
NET CUT	4,658 m³
TOPSOIL STRIPPED (200mm) = 23,204 m³	
EARTHWORKS AREA = 116,020 m²	

Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	-6.00	-4.00	Dark Red
2	-4.00	-2.00	Red
3	-2.00	0.00	Light Red
4	0.00	2.00	Light Green
5	2.00	4.00	Green

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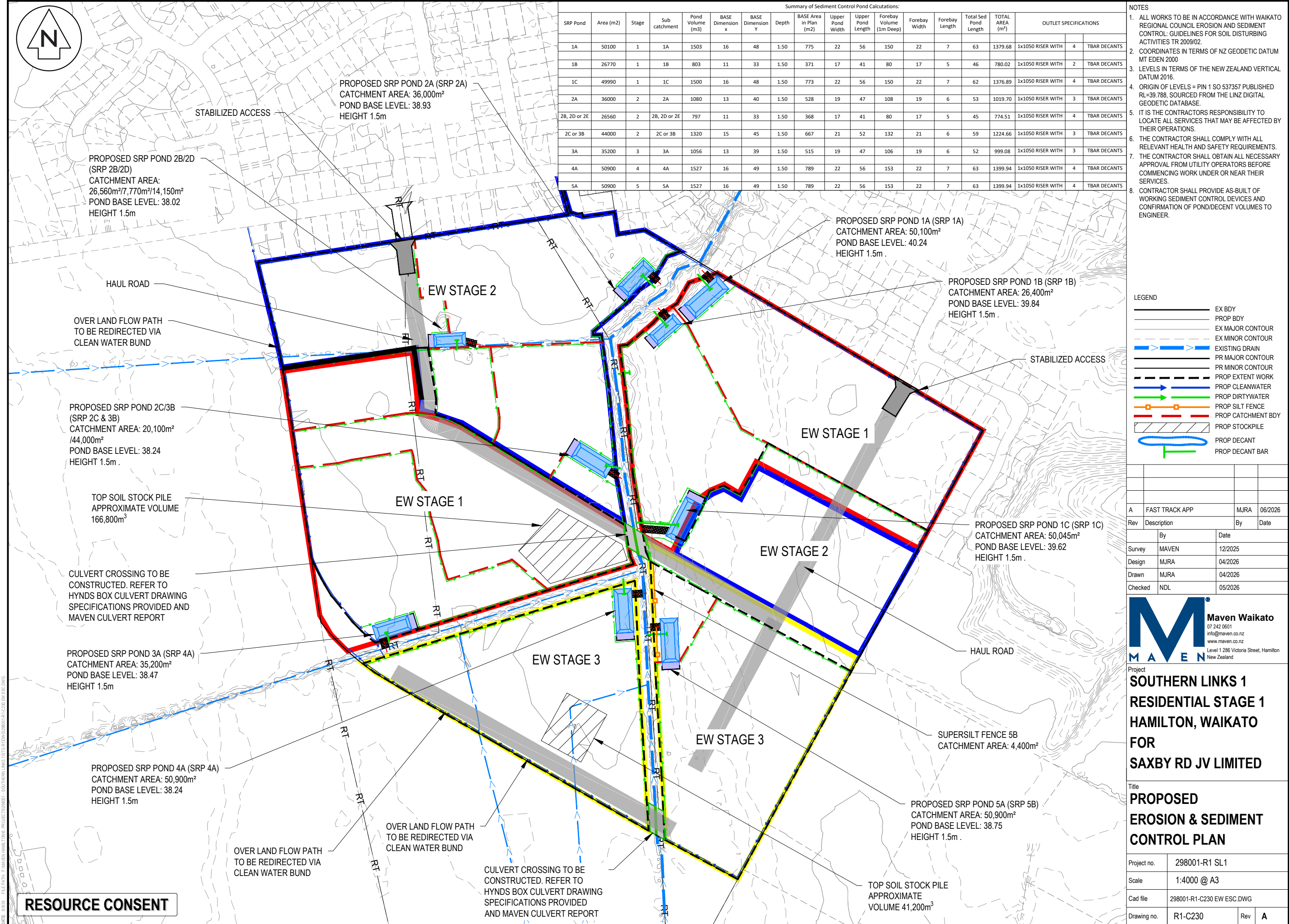
A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		11/2025
Drawn	MKS		11/2025
Checked	DJM		11/2025

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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SL1 CONSORTIUM GROUP**

Title PROPOSED CUT/FILL STAGING PLAN	
Project no.	298001-R1 SL1
Scale	1:4000 @ A3
Cad file	298001-R1-C220-1 EW CUT&FILL.DWG
Drawing no.	C220-1
Rev	A

RESOURCE CONSENT



Summary of Sediment Control Pond Calculations:																		
SRP Pond	Area (m2)	Stage	Sub catchment	Pond Volume (m3)	BASE Dimension x	BASE Dimension Y	Depth	BASE Area in Plan (m2)	Upper Pond Width	Upper Pond Length	Forebay Volume (1m Deep)	Forebay Width	Forebay Length	Total Sed Pond Length	TOTAL AREA (m²)	OUTLET SPECIFICATIONS		
1A	50100	1	1A	1503	16	48	1.50	775	22	56	150	22	7	63	1379.68	1x1050 RISER WITH	4	TBAR DECANTS
1B	26770	1	1B	803	11	33	1.50	371	17	41	80	17	5	46	780.02	1x1050 RISER WITH	2	TBAR DECANTS
1C	49990	1	1C	1500	16	48	1.50	773	22	56	150	22	7	62	1376.89	1x1050 RISER WITH	4	TBAR DECANTS
2A	36000	2	2A	1080	13	40	1.50	528	19	47	108	19	6	53	1019.70	1x1050 RISER WITH	3	TBAR DECANTS
2B, 2D or 2E	26560	2	2B, 2D or 2E	797	11	33	1.50	368	17	41	80	17	5	45	774.51	1x1050 RISER WITH	4	TBAR DECANTS
2C or 3B	44000	2	2C or 3B	1320	15	45	1.50	667	21	52	132	21	6	59	1224.66	1x1050 RISER WITH	3	TBAR DECANTS
3A	35200	3	3A	1056	13	39	1.50	515	19	47	106	19	6	52	999.08	1x1050 RISER WITH	3	TBAR DECANTS
4A	50900	4	4A	1527	16	49	1.50	789	22	56	153	22	7	63	1399.94	1x1050 RISER WITH	4	TBAR DECANTS
5A	50900	5	5A	1527	16	49	1.50	789	22	56	153	22	7	63	1399.94	1x1050 RISER WITH	4	TBAR DECANTS

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 - EXISTING DRAIN
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 - PROP EXTENT WORK
 - PROP CLEANWATER
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 - PROP SILT FENCE
 - PROP CATCHMENT BDY
 - PROP STOCKPILE
 - PROP DECANT
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A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
Survey	MAVEN		12/2025
Design	MJRA		04/2026
Drawn	MJRA		04/2026
Checked	NDL		05/2026



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

Title
**PROPOSED
EROSION & SEDIMENT
CONTROL PLAN**

Project no.	298001-R1 SL1
Scale	1:4000 @ A3
Cad file	298001-R1-C230 EW ESC.DWG
Drawing no.	R1-C230
Rev	A

DATE: 6/9/25 FILEPATH: F:\MVEN\HAMILTON\6 PROJECTS\298001 - SOUTHERN LINKS 1\STG1\298001-R1-C230 EW ESC.DWG

RESOURCE CONSENT



Summary of Sediment Control Pond Calculations:																		
SRP Pond	Area (m2)	Stage	Sub catchment	Pond Volume (m3)	BASE Dimension x	BASE Dimension Y	Depth	BASE Area in Plan (m2)	Upper Pond Width	Upper Pond Length	Forebay Volume (1m Deep)	Forebay Width	Forebay Length	Total Sed Pond Length	TOTAL AREA (m²)	OUTLET SPECIFICATIONS		
1A	50100	1	1A	1503	16	48	1.50	775	22	56	150	22	7	63	1379.68	1x1050 RISER WITH	4	TBAR DECANTS
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A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
Survey	MAVEN		12/2025
Design	MJRA		04/2026
Drawn	MJRA		04/2026
Checked	NDL		05/2026

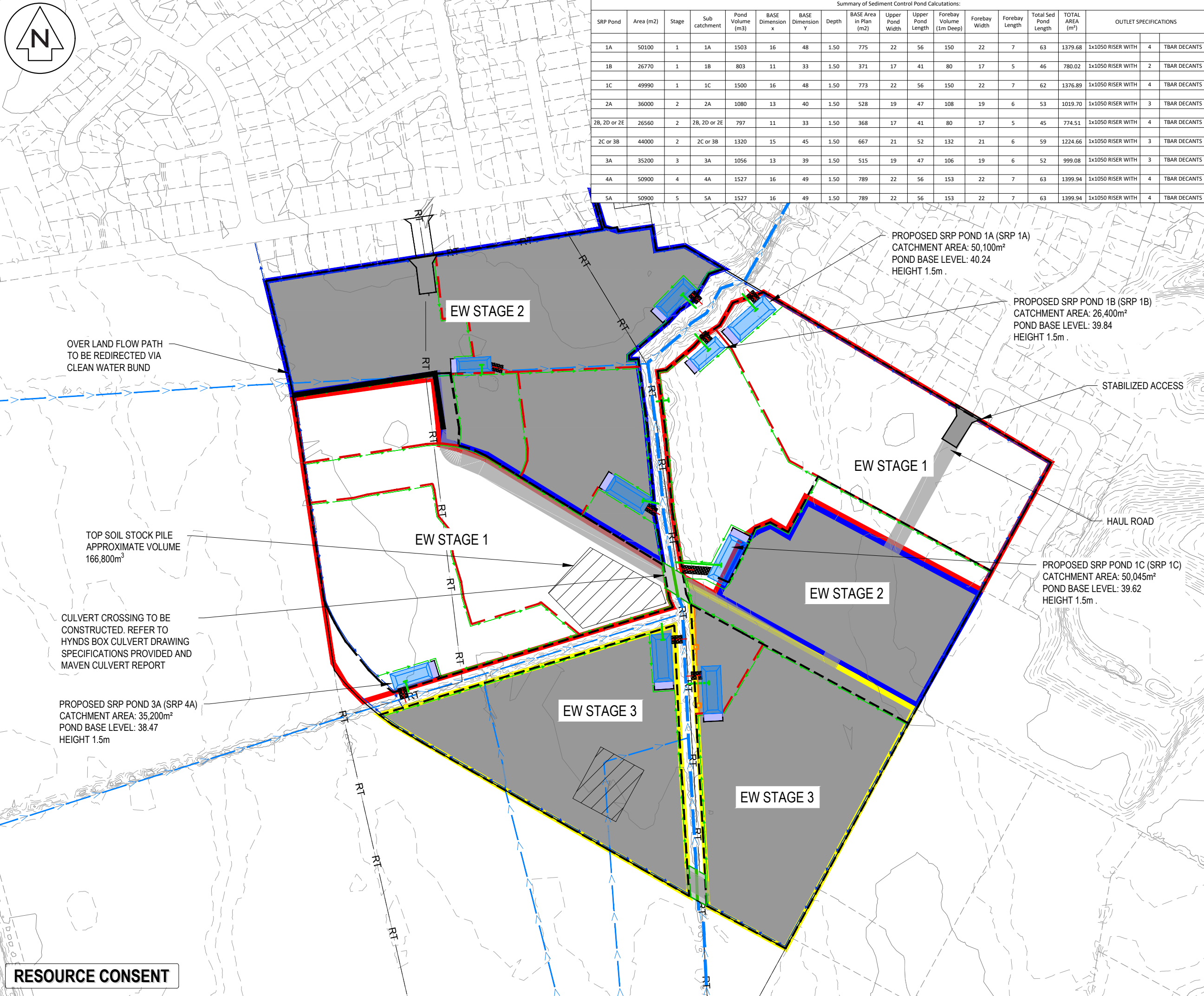


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Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

Title
**PROPOSED
EROSION & SEDIMENT
CONTROL PLAN**

Project no.	298001-R1 SL1
Scale	1:4000 @ A3
Cad file	298001-R1-C230 EW ESC.DWG
Drawing no.	R1-C230-1
Rev	A



RESOURCE CONSENT



PROPOSED SRP POND 2A (SRP 2A)
CATCHMENT AREA: 36,000m²
POND BASE LEVEL: 38.93
HEIGHT 1.5m

PROPOSED SRP POND 2B/2D
(SRP 2B/2D)
CATCHMENT AREA:
26,560m²/7,770m²/14,150m²
POND BASE LEVEL: 38.02
HEIGHT 1.5m

PROPOSED SRP POND 2C/3B
(SRP 2C & 3B)
CATCHMENT AREA: 20,100m²
/44,000m²
POND BASE LEVEL: 38.24
HEIGHT 1.5m .

PROPOSED SRP POND 1C (SRP 1C)
CATCHMENT AREA: 50,045m²
POND BASE LEVEL: 39.62
HEIGHT 1.5m .

Summary of Sediment Control Pond Calculations:																		
SRP Pond	Area (m2)	Stage	Sub catchment	Pond Volume (m3)	BASE Dimension x	BASE Dimension Y	Depth	BASE Area in Plan (m2)	Upper Pond Width	Upper Pond Length	Forebay Volume (1m Deep)	Forebay Width	Forebay Length	Total Sed Pond Length	TOTAL AREA (m²)	OUTLET SPECIFICATIONS		
1A	50100	1	1A	1503	16	48	1.50	775	22	56	150	22	7	63	1379.68	1x1050 RISER WITH	4	TBAR DECANTS
1B	26770	1	1B	803	11	33	1.50	371	17	41	80	17	5	46	780.02	1x1050 RISER WITH	2	TBAR DECANTS
1C	49990	1	1C	1500	16	48	1.50	773	22	56	150	22	7	62	1376.89	1x1050 RISER WITH	4	TBAR DECANTS
2A	36000	2	2A	1080	13	40	1.50	528	19	47	108	19	6	53	1019.70	1x1050 RISER WITH	3	TBAR DECANTS
2B, 2D or 2E	26560	2	2B, 2D or 2E	797	11	33	1.50	368	17	41	80	17	5	45	774.51	1x1050 RISER WITH	4	TBAR DECANTS
2C or 3B	44000	2	2C or 3B	1320	15	45	1.50	667	21	52	132	21	6	59	1224.66	1x1050 RISER WITH	3	TBAR DECANTS
3A	35200	3	3A	1056	13	39	1.50	515	19	47	106	19	6	52	999.08	1x1050 RISER WITH	3	TBAR DECANTS
4A	50900	4	4A	1527	16	49	1.50	789	22	56	153	22	7	63	1399.94	1x1050 RISER WITH	4	TBAR DECANTS
5A	50900	5	5A	1527	16	49	1.50	789	22	56	153	22	7	63	1399.94	1x1050 RISER WITH	4	TBAR DECANTS

- NOTES
- ALL WORKS TO BE IN ACCORDANCE WITH WAIKATO REGIONAL COUNCIL EROSION AND SEDIMENT CONTROL: GUIDELINES FOR SOIL DISTURBING ACTIVITIES TR 2009/02.
 - COORDINATES IN TERMS OF NZ GEODETIC DATUM MT EDEN 2000
 - LEVELS IN TERMS OF THE NEW ZEALAND VERTICAL DATUM 2016.
 - ORIGIN OF LEVELS = PIN 1 SO 537357 PUBLISHED RL=39.788, SOURCED FROM THE LINZ DIGITAL GEODETIC DATABASE.
 - IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES THAT MAY BE AFFECTED BY THEIR OPERATIONS.
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 - THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVAL FROM UTILITY OPERATORS BEFORE COMMENCING WORK UNDER OR NEAR THEIR SERVICES.
 - CONTRACTOR SHALL PROVIDE AS-BUILT OF WORKING SEDIMENT CONTROL DEVICES AND CONFIRMATION OF POND/DECANT VOLUMES TO ENGINEER.

LEGEND

	EX BDY
	PROP BDY
	EX MAJOR CONTOUR
	EX MINOR CONTOUR
	EXISTING DRAIN
	PR MAJOR CONTOUR
	PR MINOR CONTOUR
	PROP EXTENT WORK
	PROP CLEANWATER
	PROP DIRTYWATER
	PROP SILT FENCE
	PROP CATCHMENT BDY
	PROP STOCKPILE
	PROP DECANT
	PROP DECANT BAR

A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
Survey	MAVEN		12/2025
Design	MJRA		04/2026
Drawn	MJRA		04/2026
Checked	NDL		05/2026

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New Zealand

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

Title
**PROPOSED
EROSION & SEDIMENT
CONTROL PLAN**

Project no.	298001-R1 SL1
Scale	1:4000 @ A3
Cad file	298001-R1-C230 EW ESC.DWG
Drawing no.	R1-C230-2
Rev	A

RESOURCE CONSENT

DATE: 6/9/25 FILEPATH: F:\MVEN\HAMILTON\6. PROJECTS\298001 - SOUTHERN LINKS 1\STG1\DWG\298001-R1-C230 EW ESC.DWG



Summary of Sediment Control Pond Calculations:																		
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- LEGEND
- EX BDY
 - PROP BDY
 - EX MAJOR CONTOUR
 - EX MINOR CONTOUR
 - EXISTING DRAIN
 - PR MAJOR CONTOUR
 - PR MINOR CONTOUR
 - PROP EXTENT WORK
 - PROP CLEANWATER
 - PROP DIRTYWATER
 - PROP SILT FENCE
 - PROP CATCHMENT BDY
 - PROP STOCKPILE
 - PROP DECANT
 - PROP DECANT BAR

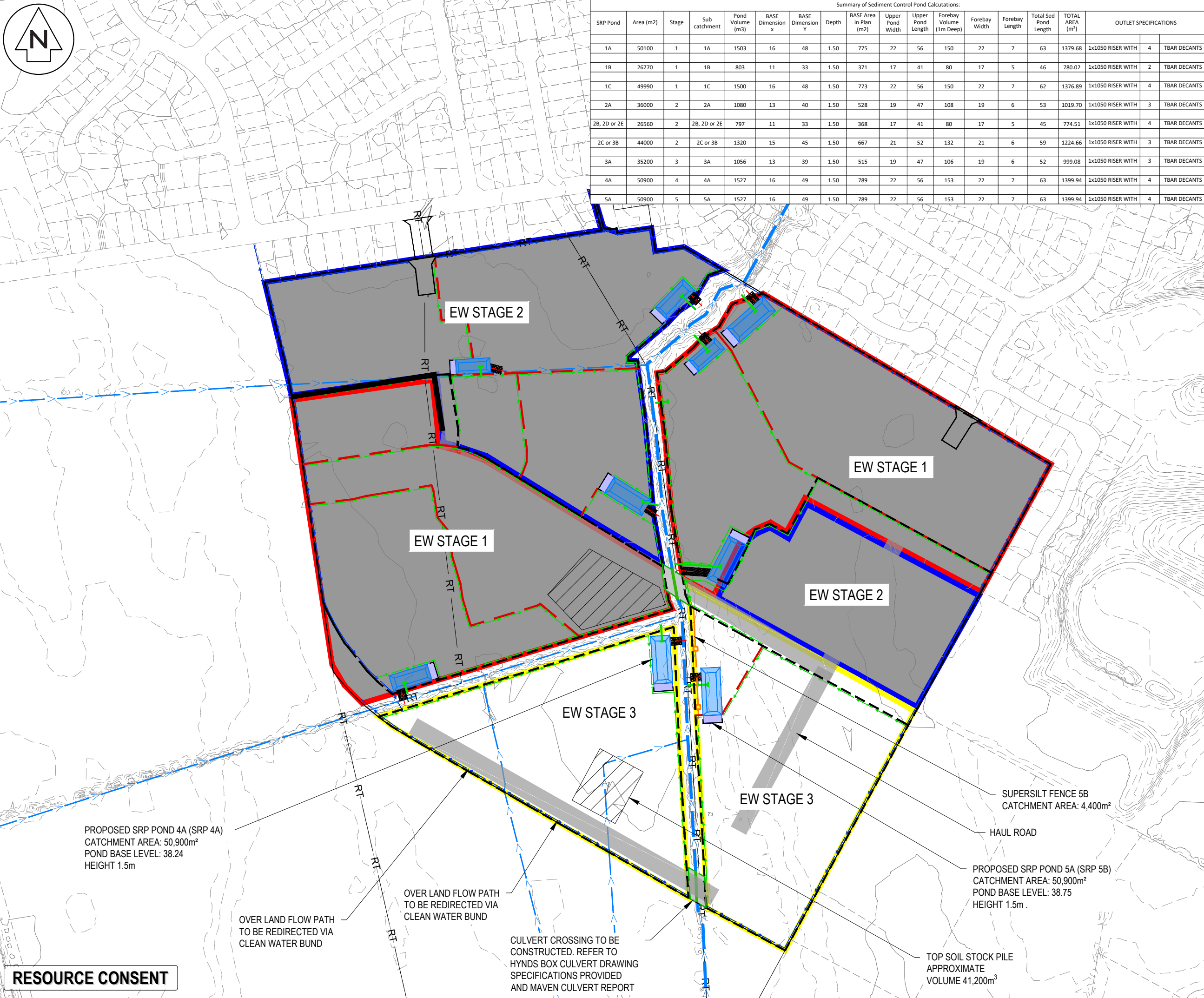
A	FAST TRACK APP	MJRA	06/2026
Rev	Description	By	Date
Survey	MAVEN		12/2025
Design	MJRA		04/2026
Drawn	MJRA		04/2026
Checked	NDL		05/2026

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

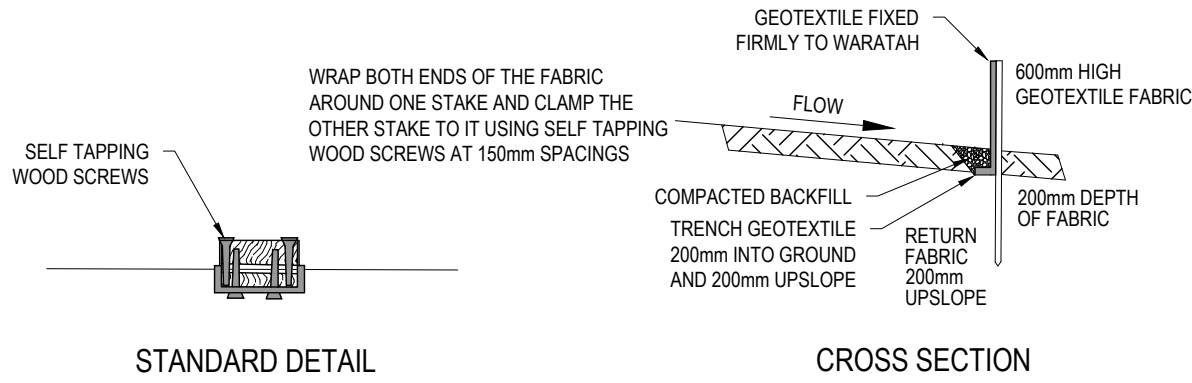
Title
**PROPOSED
EROSION & SEDIMENT
CONTROL PLAN**

Project no.	298001-R1 SL1
Scale	1:4000 @ A3
Cad file	298001-R1-C230 EW ESC.DWG
Drawing no.	R1-C230-3
Rev	A

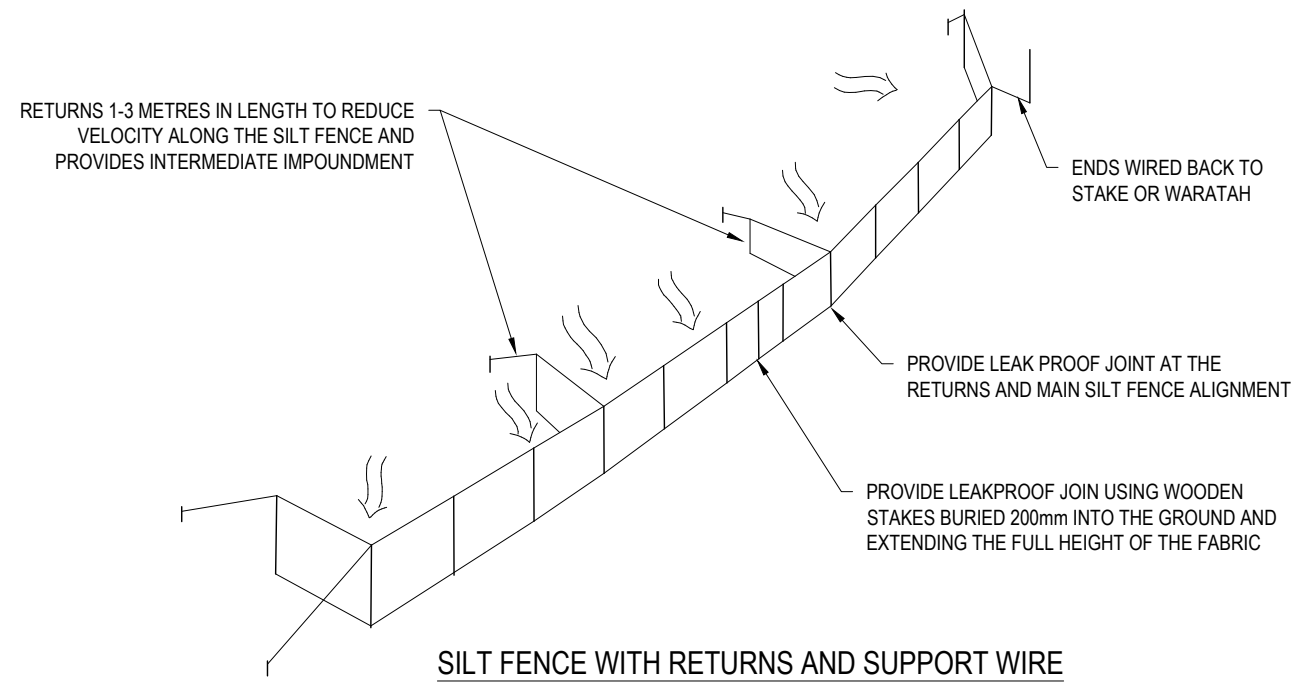
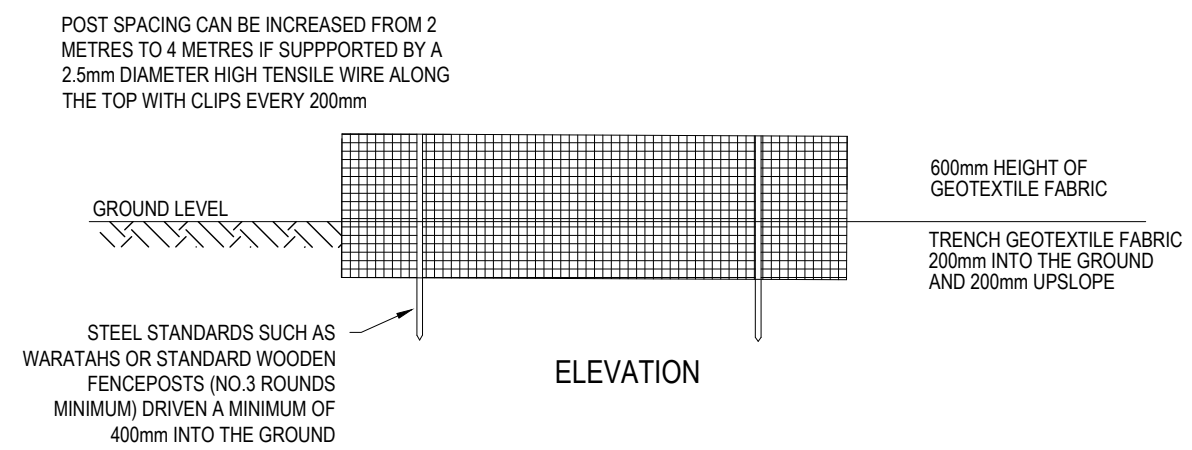


RESOURCE CONSENT

DATE: 9/25/ FILEPATH: F:\MAVEN\HAMILTON6 - PROJECTS\298001 - SOUTHERN LINKS 1\STG1\R1\C240 EW ESC DETAILS.DWG



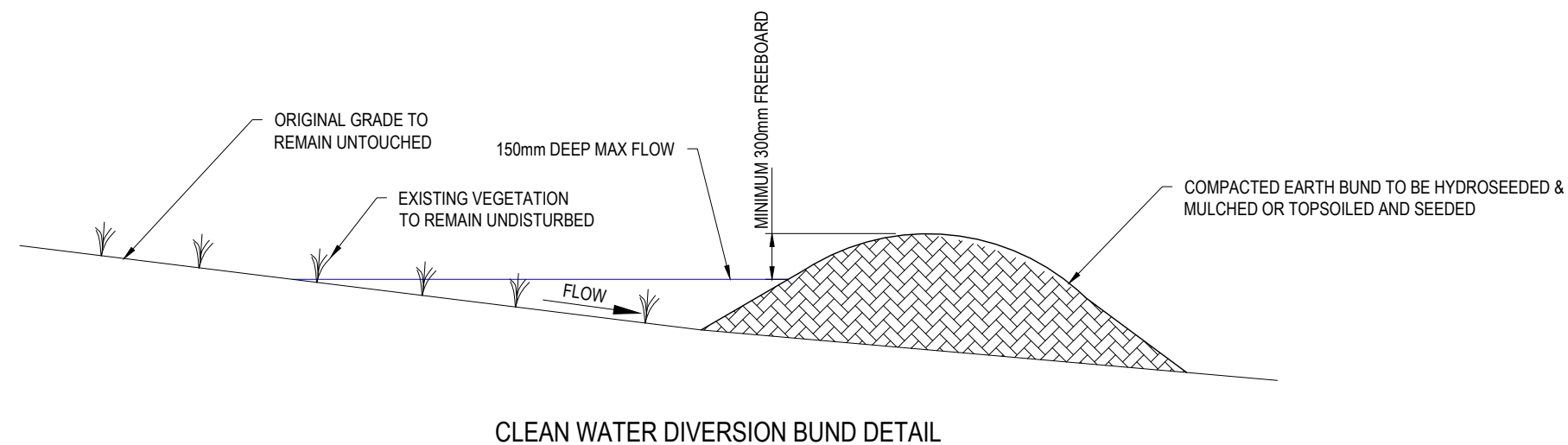
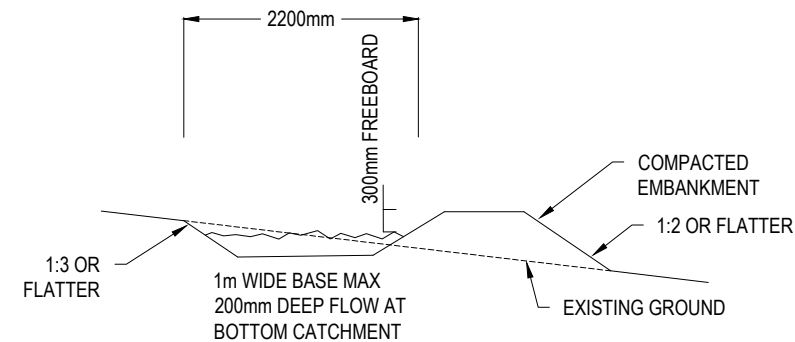
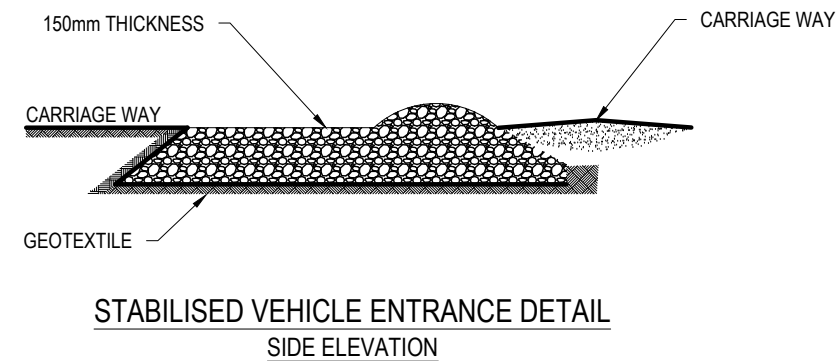
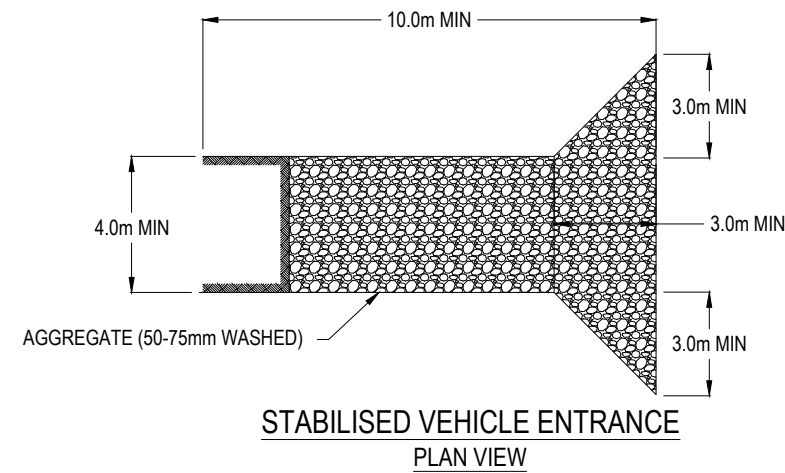
FABRIC JOIN



SILT FENCE WITH RETURNS AND SUPPORT WIRE

RESOURCE CONSENT

A	FAST TRACK APP	MKS	06/2026
Rev	Description	By	Date
		By	Date
Survey	MAVEN		06/2025
Design	MKS		11/2025
Drawn	MKS		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			
EROSION & SEDIMENT			
CONTROL DETAILS			
Project no.	298001-R1 SL1		
Scale	N.T.S.		
Cad file	298001-R1-C240 EW ESC DETAILS.DWG		
Drawing no.	R1-C240-1	Rev	A



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

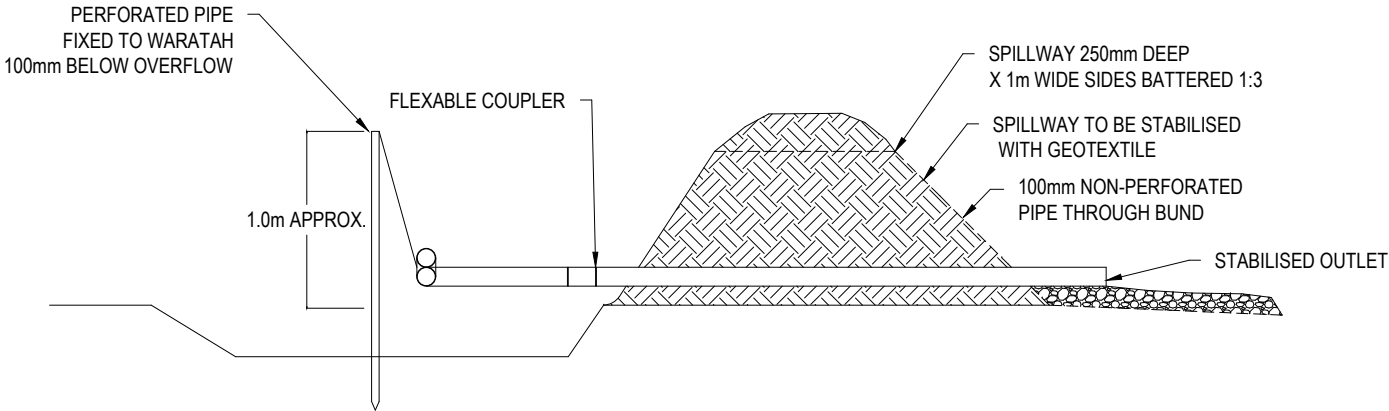


Project
**SOUTHERN LINKS 1
RESIDENTIAL STAGE 1
HAMILTON, WAIKATO
FOR
SAXBY RD JV LIMITED**

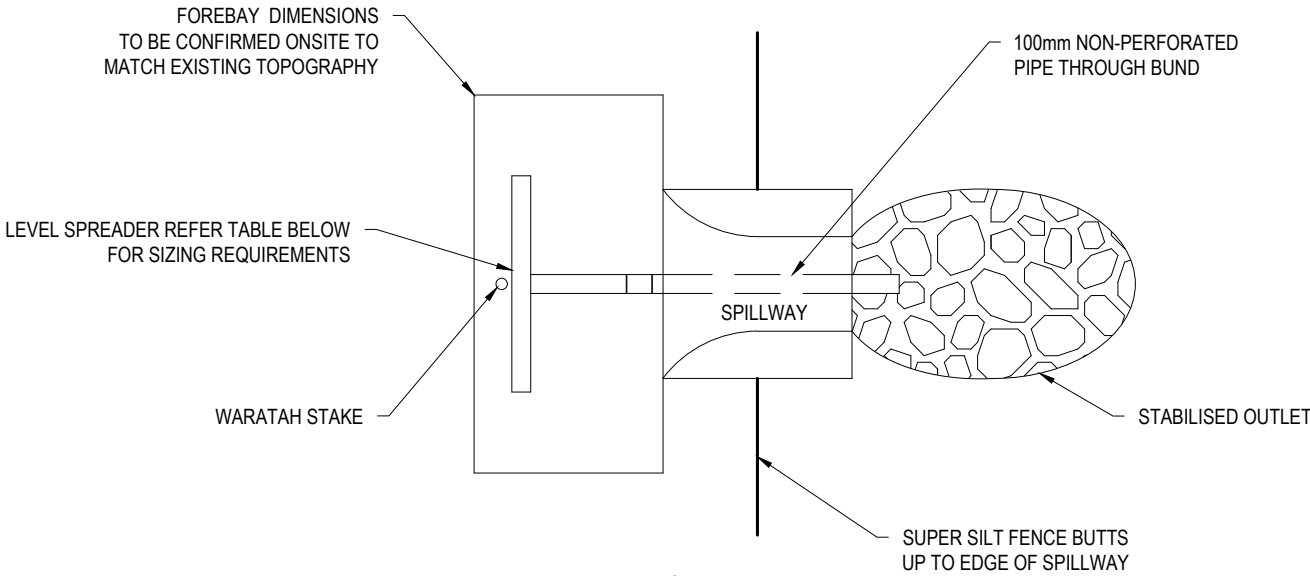
Title
**PROPOSED
EROSION & SEDIMENT
CONTROL DETAILS**

Project no.	298001-R1 SL1
Scale	N.T.S.
Cad file	298001-R1-C240 EW ESC DETAILS.DWG
Drawing no.	R1-C240-2
Rev	A

RESOURCE CONSENT



EARTH BUND DECANT DETAIL A
N.T.S



DECANT PLAN VIEW
N.T.S

LEVEL SPREADER DESIGN CRITERIA (20 YEAR STORM EVENT)				
DESIGN FLOW (m ³ /sec)	INLET WIDTH (m)	DEPTH (m)	END WIDTH (m)	LENGTH (mm)
0-0.3	3	150	1	3
0.3-0.6	5	180	1	7
0.6-0.9	7	220	1	10

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

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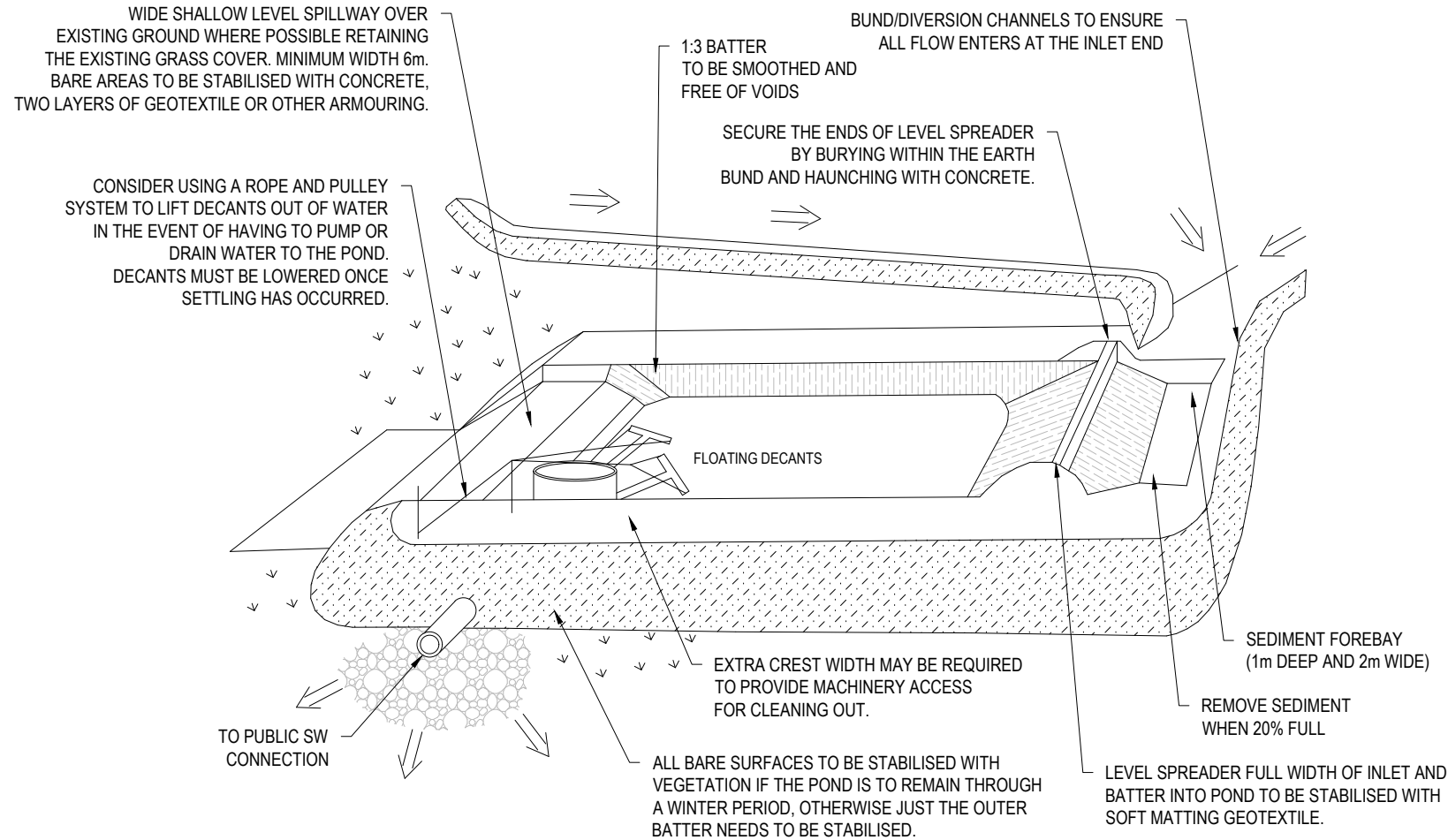
Level 1 286 Victoria Street, Hamilton

New Zealand

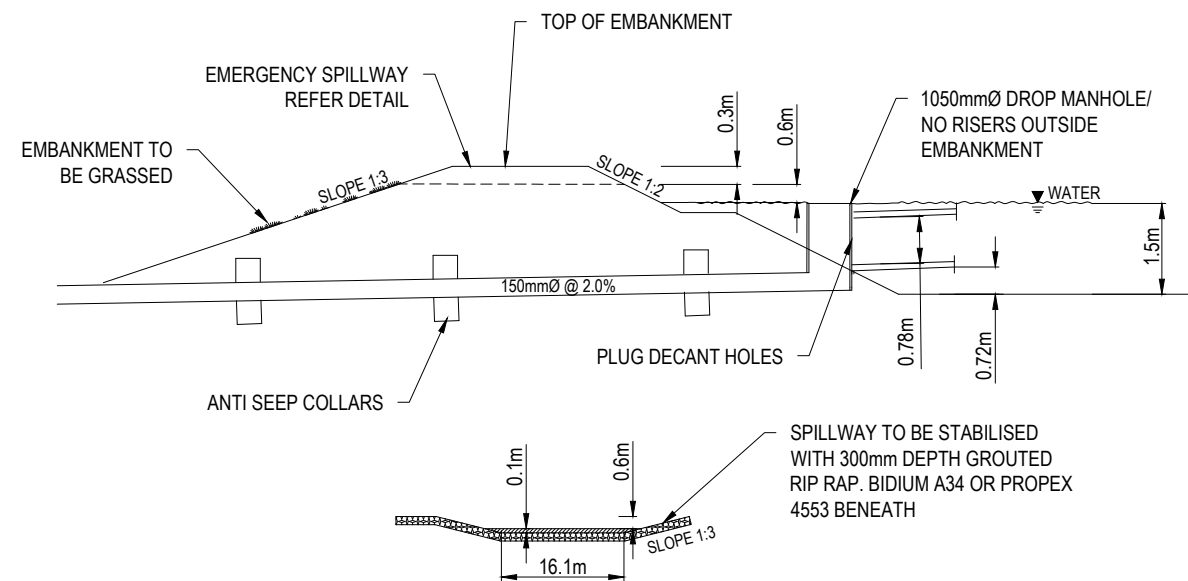
Project
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Title
**PROPOSED
EROSION & SEDIMENT
CONTROL DETAILS**

Project no.	298001-R1 SL1
Scale	N.T.S.
Cad file	298001-R1-C240 EW ESC DETAILS.DWG
Drawing no.	R1-C240-3
Rev	A



CROSS SECTION A-A OF SEDIMENT TREATMENT POND



EMERGENCY SPILLWAY

A	FAST TRACK APP	PK	06/2026
Rev	Description	By	Date

	By	Date
Survey	MAVEN	06/2025
Design	MKS	11/2025
Drawn	MKS	11/2025
Checked	DJM	11/2025

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Project no.	298001-R1 SL1
Scale	N.T.S.
Cad file	298001-R1-C240 EW ESC DETAILS.DWG
Drawing no.	R1-C240-4
Rev	A

RESOURCE CONSENT