

SITE MANAGEMENT PLAN

Mill Road, Ōhoka – Fast Track Application

Carter Group Limited



EXECUTIVE SUMMARY

This document outlines strategies, limitations and recommendations regarding the management of the proposed construction onsite, including quality control, health and safety, environmental control measures, and an Erosion & Sediment and Dust Control Plan.

The proposed earthworks have been designed to facilitate the required infrastructure for the proposed development. The proposed erosion, sediment and dust control measures have been developed to minimise impacts to the receiving environment using accepted engineering practices.

It is concluded that the site works required to construct the proposed development, can be appropriately managed, provided that the recommendations of this document are followed. This document is to be read in conjunction with relevant reports relating to site management during the construction phase, including but not limited to the Aquatic Ecology Report (by Instream Consulting/Stantec) and Dewatering and Dust Suppression (by PDP).

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Reference Materials

Civil Engineering Plans, Rev. A by Inovo, dated 09/06/2026.

Fast Track Application – 531 & 535 Mill Road, Ōhoka – Groundwater Assessment of Environmental Effects Report by Pattle Delamore Partners Ltd, dated 25 May 2026.

Fast Track Application – 531 & 535 Mill Road, Ōhoka - Dewatering and Dust Suppression Assessment of Environmental Effects Report by Pattle Delamore Partners Ltd, dated 25 May 2026.

Fast Track Application – 531 & 535 Mill Road - Aquatic Ecology Assessment by Instream Consulting Ltd, dated 12 August 2025.

Archaeological Assessment and Archaeological Management Plan by Underground Overground dated June 2026.

DISTRIBUTION


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QUALITY ASSURANCE

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1 SITE MANAGEMENT POLICY STATEMENT

1.1 Background

This Site Management Plan (SMP) has been prepared for the proposed Ōhoka Residential Subdivision development at 531 and 535 Mill Road, Ōhoka shown by Figure 01 and Appendix A. Carter Group Limited has engaged INOVO Projects Limited (Inovo) to provide planning, engineering and surveying services for the proposed subdivision. The proposal entails the creation of approximately 880 residential allotments, a large allotment to accommodate a retirement village, two commercial super lots to accommodate a small local centre, an allotment to accommodate a polo ground, a number of roads, reserves, and utilities to vest and thirteen access lots. The proposal also seeks authorisation to establish future dwellings, commercial activities, creating a superlot for a retirement village and the polo ground and associated facilities within the proposed allotments.

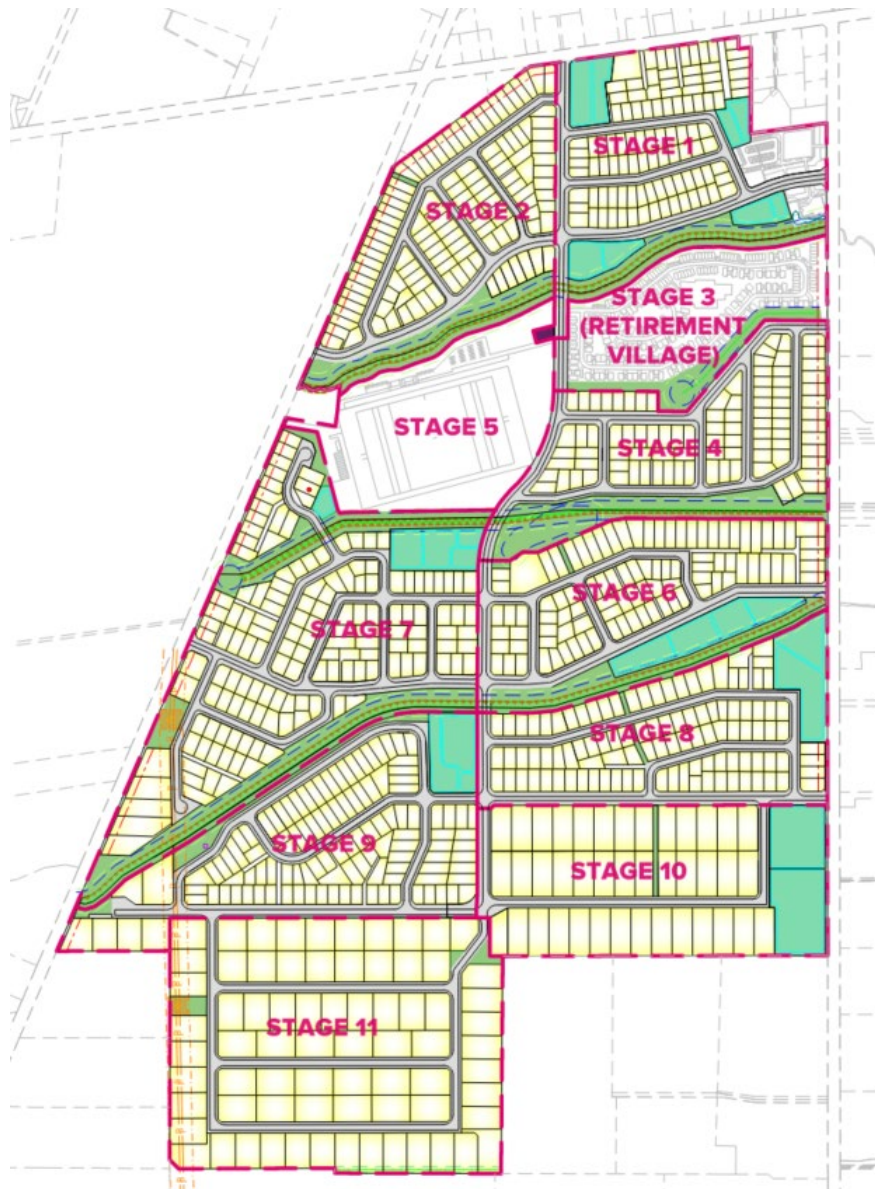


Figure 01: Proposed Development Scheme Plan

This SMP, prepared as part of the construction planning and consenting process, is purposed to outline the methodology that provides the following:

- The best environmental and safe work approach for dealing with erosion, sediment, dust, and construction phase stormwater during the bulk earthworks and civil construction phase for the proposed Ōhoka residential subdivision development.
- Health and safety and quality control measures employed during the site works.

The Environmental risks associated with these works include:

- Nuisance by dust and noise during earthworks.
- Discharge of sediment-laden stormwater into existing watercourses during rainfall events.
- Discharge of sediment-laden water into existing watercourses during dewatering of excavations and trenches.
- Discharge of hazardous substances into land or water during construction or during clean-up of any contaminated areas.
- Interception of groundwater leading to flooding of excavations or depletion of existing spring and stream flows.
- Disturbances to fish passage, spawning conditions, and stream bank stability when working within streams, i.e., when placing culverts and diverting waterways.

It is intended for this to be a live document, so revisions may occur as site conditions change during construction. The SMP will be implemented by the nominated contractor who will be responsible for management of control measures on site with supervision by Inovo.

1.2 Environment Policy Statement

Inovo is committed to integrating sound environmental policies and programs into all its development works and recognizes the need to have proper regard for the activities that will occur in the natural and physical environment in which the works are to occur.

In terms of compliance and reporting, routine checks of the erosion, sediment, and dust control measures installed on each site are to be carried out, and the erosion, sediment, and dust control plan amended as required to ensure no adverse effect is occurring to the neighbouring sites or the receiving environment.

2 INTRODUCTION

2.1 Objectives

The objectives of this SMP are to:

- Describe methods to manage erosion and dust generation.
- Describe methods to control potentially sediment-laden stormwater from entering the downstream waterways.
- Describe methods to control noise emissions.
- Describe methods for managing any hazardous substances within the development site.
- Describe the site emergency protocol.
- Describe the proposed measures for health and safety and quality-related risk management.
- Describe methods of controlling ground water interception.
- Ensure the methods listed above are compliant with consents and national, regional, and district-wide regulations.

2.2 Consent Requirements

The site will be subject to a land-use and subdivision consent that are being applied for through this fast-track application. Resource Consent references will be added to this section before it is finalised. Consent conditions will likely require that an updated SMP is provided to the Council prior to construction commencing on site. Also, due to detection of soil contaminants above background concentration, we envisage that resource consenting associated with the construction and operation of the development may also include site remediation works as well as earthworks, stormwater discharge, dewatering, etc.

We expect the SMP to include the following:

- A detailed erosion, sediment, and dust control plan.
- Details of stormwater management during the construction phase, including:
 - Minimization of the flow of stormwater through the construction site.
 - That work shall not be carried out during periods of heavy rain.
- Details of the dewatering procedure and treatment of the discharge water (where required).
- Environmental protection measures for working within streams and wetlands.
- Site-Specific Safety Plan.
- Contract Quality Plan consisting of an Inspection and Test Plan.
- Site Risk Register detailing health and safety, environmental, and quality risks and appropriate controls.
- Hazardous Substances Register.
- Chemical treatment plan
- Remedial Action Plan for soil contamination.

2.3 Activity and Site Description

The site's legal description is Lots 1 2, 3, DP 318615; Lot 2 and Part Lot 1, DP 8301; Lot 2, DP 61732. It is located to the immediate southwest of the existing Ōhoka township, bounded by Whites Road to the southeast, Bradleys Road to the northwest, Mill Road or existing residential properties fronting Mill Road to the north, and rural/rural-residential properties to the southwest.

The majority of the site is currently covered in a variety of dry land and irrigated pasture and has predominantly been used for dairy farming for the last 30 years, and prior to that a mixture of dairy, livestock, and arable farming. Currently the majority of the site comprises agricultural fields and pasture. There are 3 existing houses on the 154.4ha development site area along with milking sheds and ancillary farm sheds.

Vegetation and land cover across the site is predominantly open grass paddocks, with shelter belts and vegetation alongside fences and watercourses or surrounding existing buildings.

The Ōhoka Stream crosses the northern end of the site, and the Ōhoka South Branch (stream) crosses near the middle of the site. Two separate channels drain two springs located within the site and

discharge to open drains on the west side of Whites Road. Another drain is formed along the southwestern boundary of the site, taking private land drainage.

The site is typically gently sloping (1:180) to flat, sloping from west to east.

The current land use surrounding the site is primarily rural to the west of the site, with rural-residential to the south and east, and residential to the north with the Ōhoka village.

The construction work will be conducted in multiple phases designed to limit the area of exposed bare or un-stabilised soil to a maximum of 5ha. Earth-worked areas will be stabilised as soon as practicable after replacement or shaping of topsoil to minimise the potential for sediment laden soil from being discharged from the site. Road pavements are to be partially constructed to subbase level with AP65 sandy gravel to form construction access for the civil works phase and to stabilise the road corridors.

The bulk earthworks for Stage 1 will be designed to minimise the extent of cut and fill required to shape future lot areas. Where a change in level of less than $\pm 200\text{mm}$ applies, topsoil will be shaped only by re-grading / shaping the in-situ topsoil and then re-sow immediately with grass. Topsoil bunds will be formed around completed lot areas to contain stormwater within lot areas until grass cover is re-established. These topsoil bunds will remain in place until berm construction is completed during the civil works phase (topsoil bunds to be used to re-soil grass berms / landscape areas).

Later Stages (Stages 2-11) will follow a similar methodology. The largest stage is up to 22ha, however the area of exposed bare or un-stabilised soil will be kept to a maximum of 5ha. The site will be gradually stabilised as soon as practicable, to limit the amount of exposed of un-stabilised soil at any one point. A detailed design of each stage and update to this report will be completed for each stage prior to construction occurring on the land within the stage.

3 GEOLOGY AND SOIL CONDITIONS

3.1 Underlying Soil Conditions

A geotechnical site investigation has been completed for the site as reported by Tetra Tech Coffey in their Geotechnical Assessment Report dated 16 June 2025. The report finds that the geological mapping of the area indicates the site being underlain by "Brownish-grey River alluvium (Q2a)."

According to the report, the site contains a layer of topsoil of varying thickness (generally less than 0.40m) underlain by clayey silt (thickness 0.5 to 1.2 m). Sandy gravel, with minor silt lenses, was observed beneath the clayey silt layer extending to depths exceeding 30 m from the bottom of the clayey silts.

3.2 Soil contamination

A Detailed Site Investigation (DSI) Report has been prepared for the site by Tetra Tech Coffey (updated 16 June 2025). Furthermore, a supplementary DSI Report has been prepared by EHS Support dated 9 April 2026. The DSI and supplementary DSI Report concludes that:

- The wider site is generally free of significant contamination (at or below background).
- Heavy metal, PAH and asbestos contamination (concentrations in excess of background) was variously detected in soils associated with the northern and central buildings, the former railyard, and in areas of filling (farm dump) areas).
- No evidence of filling was observed in the area of the suspected landfill in the northern part of the site.
- One or more of arsenic, cadmium, lead and asbestos were detected at concentrations in excess of SCS for residential land use in a number of samples collected around the northern and central buildings, and in a sample collected from the historical rail yard.

Due to the presence of contamination, the report mentions that it is likely consenting will be required under the NESCS and the Land and Water Regional Plan for various activities associated with the construction and operation of the development including earthworks, stormwater discharge, dewatering etc.

Detected soil contamination in excess of SCS for residential land use will require management / remediation. Preparation of a Remedial Action Plan (RAP) is anticipated given the nature of the contamination found and the specific areas can be addressed as per the RAP.

3.3 Groundwater

During geotechnical investigations at the site, conducted in May 2021, groundwater was encountered at a depth of 0.9 to 1.5 m bgl in test pits excavated at 11 locations across the site (Tetra Tech Coffey, 2021). In a further 11 test pits, groundwater was not encountered at the base of the test pits, which ranged in depth from 0.6 to 1.7 m.

A long-term record of groundwater table fluctuations is available from bore M35/0596, which is in the western-central part of the site and shown on Figure 02. This bore has sporadic records of water level measurements from September 1977 to October 1986 and weekly to monthly measurements from August 1999 to December 2021. The record from M35/0596 shows that the groundwater level at this site is generally shallow, with an average of 0.64 m bgl. The highest measured groundwater level was 0.14 m bgl (June 2018), and the lowest levels were 1.4 m bgl in July 1999 and 1.38 m bgl in February 2017. Seasonal fluctuations are relatively small, commonly being 0.5–0.8 m. As expected, groundwater levels are generally highest in winter/spring and lowest in summer/autumn. It is noted that bore M35/0596 is close to spring M35/7485 (the mapped location is 20 m away) and so may be in an area of the site that has particularly high groundwater levels.

The groundwater continues to be monitored onsite and will be further reported on by PDP. PDP's report should be read in conjunction with this SMP.



Figure 02: ECAN Monitoring Well Location

4 PROPOSED WORKS

4.1 Stage 1

4.1.1 Bulk Earthworks

Earthworks will consist of topsoil stripping and stockpiling, cut-to-fill operations, bulk fill/road sub-base construction, topsoil re-spreading, and topsoil shaping (cut-to-fill) of lot areas. The development will be divided into a proposed 11 stages. The finished lot levels have been designed to minimize the earthworks construction. Detailed cut-fill plans will be prepared at engineering approval stage, and estimated cut-fill volumes will be provided to the relevant authorities during future stages. Please refer to the preliminary earthworks plans provided in the Civil Engineering Plan Set by Inovo, dated 09/06/2026.

All filling with lot areas is to be carried out to comply with requirements of NZS4431:2022 Engineered Fill Construction. It is expected that filling will comprise site-won materials and some clean imported fill materials.

4.1.2 Main Civil Works

The main civil works consist of the following:

- Construction of new roads and berms
- Installation of sewer reticulation
- Establishment of stormwater reticulation
- Development of stormwater management areas
- Construction of water supply infrastructure
- Trenching and installation of utility services
- Re-alignment of waterways
- Road upgrades within Whites Road and Mill Road (as required).

Separate engineering approval will be obtained before commencing these works.

4.2 Stage 2 – Stage 11

Bulk Earthworks and a description of each stage will be provided prior to works being undertaken.

5 QUALITY CONTROL AND HEALTH AND SAFETY MEASURES

5.1 Management of Health and Safety Risks

A site-specific safety plan will be prepared by the nominated contractor prior to starting construction works, which will detail the following.

Site safety induction process.

- Provision of necessary training and maintenance of training records.
- Competency Register confirming the employment of suitably qualified personnel.
- WorkSafe notification process.
- Service location process.
- Hazardous Substances Register.
- Site-Specific Risk Register identifying health and safety, environmental, and quality-related risks and appropriate controls.
- Site Emergency Plan detailing evacuation process and routes assembly points.
- Task Analysis for Significant Work

Effective communication of safety information will be achieved by means of:

- Daily prestart meetings.
- Monthly health and safety toolbox talks.
- Notice boards and signage.
- Site meetings as necessary

5.2 Working Near Overhead High Voltage Power Lines

66kV overhead transmission lines on pylons cross the site in the southwest corner as shown on the Civil Engineering Plan Set by Inovo, dated 09/06/2026. Potentially sensitive activities and land uses need to be set back from National Grid lines as they can compromise the ongoing operation, maintenance, upgrading, and development of the National Grid or the safety of those living or working around it.

For 66 kV transmission lines, the National Grid Yard is 10m setback either side of the centreline of the transmission cables and 10m in any direction from the outer edge of support structures (i.e., transmission towers).

Minimum safe separation distances are specified by the New Zealand Electrical Code of Practice for Electrical Safe Distances 2001 (NZECP 34). NZECP 34 for people, buildings/structures, mobile plant, and earthworks from National Grid lines (including their support structures) will be provided and followed during construction.

5.3 Management of Quality Related Risks

Quality of the construction work will be ensured by the implementation of adequate quality assurance processes. Copies of approved consents, plans and method statements will be kept on site at all times alongside an approved Contract Quality Plan which will include a site-specific Inspection and Test Plans.

6 ENVIRONMENTAL CONTROL MEASURES

6.1 Roles and Responsibilities

Successful implementation of the environmental control measures outlined in this report relies on the assignment of various roles and responsibilities to individual personnel who can be held accountable. The roles and responsibilities are outlined in the following table and described in the following sections.

Responsibility	Contact Details	Role Summary
Design	Inovo Projects Ph. (03) 377 3290 Sanna Soederlind Senior Civil Engineer	Provide approved design and specifications for construction. Design and specify appropriate ESCDP measures in accordance with this report, amended to suit Construction Contractor and their preferred methodology.
Construction Contractor	TBC	Install, maintain and operate the ESCDP measures
On Site Monitoring During Construction	TBC The construction contractors site supervisor will undertake this role.	The Contractors roles will be included in the construction contract documents: <ul style="list-style-type: none"> • Periodic reviews of the ESCDP measures. • Review construction programme and weather conditions and amend ESCDP measures to suit. • Collect and analyse Discharge Quality Samples. • Reporting.
Authorisation	Environment Canterbury (ECAN) Representative TBC	Provide Resource Consent Monitor Compliance with Conditions Oversee Environmental Responsibilities

6.2 Program of Works

It is proposed that the first stage of civil works will comprise of Stage 1 only. Stages 2 – 11 will be undertaken following detailed design and updates to this report.

6.3 Inspection and Monitoring Programme

Key principles for erosion and sediment control and dust management inspection and monitoring during and after construction are:

- Adjust the ESCDP during construction: The ESCDP plan and proposed measures shall be reviewed and updated to reflect changes to construction sequencing, weather changes, and effectiveness with input from the contractor completing works on site.
- Inspection and Monitoring Programme – The inspection and monitoring programme shall be detailed and fit for purpose to ensure any issues that arise are picked up and communicated to the people who can act on the issue quickly.
- Frequency and Methodology of Inspections – the ESCDP shall state the frequency and methodology of how the ESCDP measures will be checked, who is responsible for undertaking these checks, how the findings are recorded, reported, and assessed. This includes checks that will be needed during and after rainfall events and to accommodate any times that the site will be unattended, including weekends.
- Education: All staff are to be educated in advance of the emergency procedures that will be implemented for any accident, including spills and accidental untreated sediment discharge reaching surface water.

With the above key principles in mind, we anticipate the following inspection and monitoring program to be implemented.

- ESCDP measures to be inspected at least once a week and after each rainfall event >5mm. Amendments and additions to be made where necessary.

- Sediment build-up in front of treatment areas and devices or any other area shall be monitored and removed when necessary.
- The contractor's role will be included in the construction contract documents and will include.
 - Periodic reviews of the ESCDP measures and reporting to the engineer.
 - Review of construction sequencing.
 - Review weather conditions and amend ESCDP measures to suit.
 - Any repairs to the ESCDP measures shall be affected urgently by the contractor.

It remains the contractor's responsibility to ensure that sediment is not discharged from the site as a result of their activities. Should it become evident that the control measures specified in this document are failing to prevent erosion or sediment discharge, then the contractor shall implement further mitigation measures. The contractor is to be fully conversant with the ECAN Erosion and Sediment Control Toolbox and the relevant ECAN consents but may contact INOVO to seek further advice on erosion and sediment control management.

6.4 Material Storage and Construction Support Area

Storage of excavated materials or other materials may be required during the earthworks and civil works stage of the project. The exact location of these stockpiles will be confirmed by the contractor prior to construction on-site, and the ESCDP will be updated to include the proposed control measures. Initial proposed stockpile locations are shown on the ESCDP.

An exact location of the Construction Support Area (CSA) will be confirmed by the contractor prior to construction, and the ESCDP will be updated to include appropriate control measures. The CSA includes contractors site laydown areas, site offices, parking, etc.

6.5 Vehicle Refuelling

Refuelling operations must either be in a designated, bunded area or use a drip tray to capture any spills. All fuel will be stored securely or removed from the site overnight. All small portable fuel containers (5L–20L) will be kept with lids and caps on in a bunded container on site when not actively being used. Mini tankers will visit the site to refuel only and do not remain on site.

There is to be no refuelling of vehicles or machinery within 10 m of any waterway.

6.6 Incident Response Procedures

A suitably sized hydrocarbon spill kit shall be stored on site. The spill kit shall be located by the site office, and staff shall be trained in its use.

In the event of a spill of fuel or other contaminant, the contractor will take appropriate action to minimize any further spillage and potential for environmental impact. This may include the excavation and removal of any contaminated material. Contaminated material must be disposed of at a facility authorized to receive such material. Drivers are to retain all disposal dockets. A spill report is to be completed in accordance with the company policy.

PROCEDURE:

- CONTROL THE SPILL - Immediate efforts shall be made to control the spill, identify the source and prevent further discharge.
- CONTACT - Notify the Construction Manager.
- ISOLATE - The area around the spill should be made safe. This may include turning off machinery and setting up an isolation area. All staff in the vicinity of the spill should be notified.
- PPE - Appropriate PPE should be donned, such as overalls, gloves, protective eye goggles and a P2 mask.
- CLEAN UP - The spill kit should be deployed for the clean-up process. Typical materials in spill kits include absorbent pads/pillows, socks, absorbent peat/pellets.
- REMOVAL - The contaminated material should be removed, scraping until there are no longer any visual or olfactory cues.
- DISPOSAL - All materials associated with the clean-up shall be placed in a sealed container and disposed of offsite at an appropriate receiving facility.
- REPORT - For spills that are over 5L and/or enter the stormwater network or surface water bodies, ECAN shall be notified.

6.7 Sediment Removal

The Sediment Retention Pond (SRP) has been designed using the ECAN Erosion & Sediment Control Toolbox for Canterbury.

Dirty water runoff will be directed towards the SRP via lined dirty water conveyance channels to be constructed along the northern and southern boundaries of Stage 1. The conveyance channels are to be lined due to the very flat gradient (1:500) to the SRP located adjacent to Whites Road (refer to Appendix A).

The SRP is located to make use of the existing landform and lowest ground elevation at Stage 1. The SRP is also to be PVC lined to prevent mixing of groundwater / sediment laden runoff. The SRP will be constructed to treat up to 5 ha catchment area with 1,500 m³ total volume (300m³ per ha). Sediment forebay, baffles, decant devices, primary spillway, outlet pipe, and emergency spillway are to be provided as per the typical details provided in the ECan Toolbox.

During periods of long duration or extreme rain events, flocculation may be required to encourage sediment to settle within the pond. Chemical coagulants and flocculants are commonly used for sediment removal of fine particulates that will not easily settle out of solution and is a recognised method in the Erosion and Sediment Control Toolbox for Canterbury. A chemical management plan outlining the flocculants to be used, dosage and monitoring requirements will be provided and are accepted to become a condition of consent. If aluminium-based flocculants are used, then discharges shall be managed so the pH level of the discharged water stays with the range of 6.5–8.5 and the aluminium level does not exceed 0.055 g/m³.

6.8 Dewatering

This development proposal includes dewatering required to remove groundwater or rainwater from the base of excavations, the bottom of service trenches prior to backfilling or during temporary diversion of waterways. The detailed dewatering methodology is not yet defined. This could feasibly include the use of well points, dewatering bores or sump pumping, or a combination of these methods. The final dewatering methodology will be confirmed by the contractor, but it is expected that all dewatering occurring as part of the development will follow the guidelines set out in the Environment Canterbury Toolbox - Specific Tasks (Waterways) guidelines, which generally describe the dewatering process as utilizing pumps to remove unwanted water from areas intended to remain dry during construction, and to either treat and discharge the removed water back into the system it came from, or to remove any unsuitable water & material from the vicinity of any waterways. The specific array, placement, and feeding of pumps is dependent on the contractor's methodology.

The proposed activity does not meet all relevant conditions of the Canterbury Land and Water Regional Plan (LWRP) permitted activity Rule 5.119, triggering a requirement for resource consent under the LWRP Rules. As a result, effects assessments have been carried out in the report entitled Fast Track Application – 531 & 535 Mill Road, Ōhoka – Dewatering and Dust Suppression Assessment of Environmental Effects Report by Pattle Delamore Partners Ltd, dated 25 May 2026. The results of these assessments indicate that with appropriate consent conditions, the potential effects of the proposal will be less than minor.

It is expected that the water table may need to be lowered down to approximately 3.0 m below ground level to allow for dry conditions within excavations (and approximately 4.0 m below ground level for a single localised manhole installation with Stage 2) and will occur for no longer than 6 months per year and not during the winter months (June through August). Dewatering flows are intended to be disposed of to ground and/or to one of the many surface water channels that cross the site.

Due to the presence of localised contamination, groundwater quality sampling is recommended to be carried out prior to the works commencing to ensure that discharges to surface water will meet appropriate receiving water criteria. If it were found that the groundwater quality is not suitable for discharge to surface water, then discharge back to ground is considered viable at this site. It is possible that discharges to both ground and surface water could occur, where localised contamination informed by sampling may require discharge to ground and in other areas where contamination is not detected, disposal to surface water will occur.

Dewatering flows sought are considerably less than existing consented authorisations at the site that allow for groundwater abstraction via five shallow bores. Further detail on requirements is outlined in the

Fast Track Application – 531 & 535 Mill Road, Ōhoka – Dewatering and Dust Suppression Assessment of Environmental Effects Report by Pattle Delamore Partners Ltd, dated 25 May 2026, a consent condition is proposed requiring that the existing irrigation consents are not exercised during the dewatering works.

General guidelines expected to be employed during dewatering works are summarised below.

- Per regional rules the sediment discharged into spring-fed water bodies will be limited to less than 50 milligrams per litre and other waterways, no more than 100 milligrams per litre.
- Dewatering Plans will be prepared by suitably experienced and qualified professionals. Which will include at least: specific dewatering procedures and methodology; dosing rates and batch dosing methodology if flocculent treatment is required; monitoring; and contingency measures explaining the use of suitably sized settlement tanks.
- Works and construction will be planned to minimise dewatering volumes – eg, only trench as much as you can work and backfill each day.
- Water to be recycled wherever possible (eg for dust suppression or earthworks conditioning).
- The outlet to any pumped water will not create any erosion issues with energy dissipaters and stabilised area to discharge the pumped flows.
- Water quality at the point of discharge and the receiving environment will be monitored.
- Close monitoring to be conducted at the start and end of each pumping session as this is usually when most sediment is picked up. When pumps draw water down to the bottom of the trench or pit, they often draw in very dirty residual water, which will breach water quality rules if discharged.
- Have alternatives in place, so that water that is too dirty to be discharged can be collected, treated and discharged later once acceptable water quality has been achieved. Spare settlement tanks, tankers will be available to remove dirty water and discharge to land where it will not enter a waterway.
- Pump larger volumes to a sediment retention pond (SRP). Depending on the volumes pumped, the outlet may need to be blocked during pumping and the SRP treated following pumping. If so, pump dirty water to the forebay and not into the pond itself.
- If contaminated material is discovered during excavation or other activities, where later dewatering is going to be needed, no discharge of dewatering water will occur until the contamination has been assessed by a suitably qualified person and the network owner (if applicable) and ECAN have been informed. Works will be stopped at that point until risks have been managed satisfactorily.
- If dewatering a section of a waterway, help from suitably qualified experts will be obtained before starting. All the fish will be safely removed, eels and freshwater kōura before pumping (if any are identified in the area). Pools will be monitored as the water level diminishes, to check for fish becoming stranded.

6.9 Diversion of Waterways

We envisage permanent and temporary diversion of waterways will be necessary as part of the development works, including the construction of outfalls from Stormwater Management Areas into the waterways.

6.9.1 Temporary Diversion of Waterways

Temporary diversion of waterways will be necessary during the removal of existing culverts, placing new culverts and any other works associated with working within streams. Depending on the flow volume of subject water body and duration of the work, two methods of diversion will be employed which are discussed below.

TEMPORARY DIVERSION CHANNELS

This option is suited for diversions in streams with significant flow volumes. The work will be carried out per the methodology outlined by Environment Canterbury Toolbox - Specific Tasks (Waterways) described below:

- Step 1 – The diversion channel
 - Excavate the diversion channel leaving an earthen plug at each end so that the waterway does not breach the diversion.

- Size the channel to allow for a 5% AEP rain event but consider the implications for secondary flow paths and upstream flood effects of having a larger event, of up to 1% AEP.
 - Stabilise the diversion channel appropriately, trenching into the top of both sides of the diversion channel to be sure that the fabric does not rip out or become dislodged.
 - Open the downstream and upstream earthen plugs in that order.
- Step 2 – The dam
 - Place a non-erodible dam in the upstream end of the existing channel.
 - If using a compacted earth bund, stabilise it with an appropriate geotextile pinned over the upper face and adjacent to the lower face for scour protection.
 - In most cases, sandbags or sheet metal plates are used to construct the dam.
 - Install a non-erodible downstream dam to prevent backflow into the construction area.
 - If the diversion results in fish trapped in the existing waterway, contact a suitably qualified person with the required permits and approvals, to capture and transfer the fish. A Fish Management Plan will be a part of the Ecological Management Plan that would outline requirements of fish salvages associated with instream works.
- Step 3 – Dewatering
 - Establish a sediment treatment device nearby, such as a sediment retention pond or silt tank.
 - Install pumps necessary to maintain dry working conditions in the existing channel, draining to the sediment treatment device.
 - Appropriately clean, treated waters will be discharged to the stream again. Dirty water and sediments must be removed from the site.
 - Maintain dewatering throughout the construction process as required.
- Step 4 – Re-establishment
 - Remove the downstream dam first.
 - Then remove the upstream dam slowly, to limit sediment mobilisation.
 - Fill in both ends of the diversion channel with non-erodible material. If any fish are found to be trapped in the channel, contact a suitably qualified person with the required permits and approvals, to capture and transfer the fish. A Fish Management Plan will be a part of the Ecological Management Plan that would outline requirements of fish salvages associated with instream works.
 - If there is any dirty water in the channel, remove it via pumping to the sediment treatment device.
 - Fill in and stabilise the diversion channel.

DAM AND PUMP (OR DAM AND DIVERT) DEVICES

With most small streams, damming and pumping are less harmful to the environment than full diversions and are relatively simple to carry out. This method will be employed for short duration work where the site can be stabilised at the end of each workday. The work will be carried out per the methodology outlined by ECAN toolbox-specific tasks-waterways described below.

- Construct a dam across the stream (upstream and downstream of the instream works) with stabilised materials such as sandbags, sheet metal plate or other suitable construction materials. Alternatively, if the stream has sufficiently low flow and the works have a small footprint, a partial dam ('coffer dam') may be erected locally around the worksite within the stream, but without damming the entire stream bed.
- Remove all fish (including eels) (if any) from the section of waterway to be dewatered, or worked in. Use suitably qualified person with the required permits and approvals, to capture and transfer the fish. A Fish Management Plan will be a part of the Ecological Management Plan that would outline requirements of fish salvages associated with instream works.
- to undertake this.
- Install a pump in the dam, with enough hose length to reach below the extent of instream works. The pump inlet should be protected in a drum with holes, or similar arrangement, to minimise the possibility of pumping sediment from the bottom of the dam. A fish screen shall be used where necessary.
- Direct the outlet to a stabilised area with an energy dissipater, eg rip-rap boulders or geotextile cloth pinned down to the banks and bed of the waterway where water is being released. Depending on the condition of the stream bed, additional sediment protection measures such

as a filtration pillow or sediment retention pond / silt tank may be required prior to discharging at this point.

- At a minimum, the temporary pumping arrangement will be sized to cater for the one-year ARI peak discharge event from the contributing catchment.
- Once the works in the stream are complete, the area will be stabilized and dewatered before the removal of the pump system and dams.

6.9.2 Permanent Diversion of Waterways

Existing drains will be realigned to suit the proposed development layout, improve the amenity value by naturalisation of formal land drains, and to achieve stormwater and ecological quality objectives. Please refer Appendix B for a preliminary plan indicating proposed changes to water bodies within the development. Further detailing will be carried out prior to engineering approval along with other consultants such as urban designers, ecology and groundwater consultants and will be carried out in accordance with NES-F 2020 Regulations.

It is expected that works undertaken to permanently divert waterways will utilize a similar methodology to the temporary diversion methods described in section 6.9.1 above to ensure that no water enters the new diversions until such time as they are confirmed appropriately stabilized and ready to accept flows.

6.10 Works in Proximity of Water bodies

The following requirements will be adhered to when carrying out work in proximity of waterways as necessary, i.e., installation of stormwater outfalls, bridge crossings.

- Maintaining bank stability.
- Maintenance of spring base flows and springhead depth (esp. at the Southern Spring Channel).
- Maintenance of suitable hydraulics and unsilted trout spawning gravels in the Ōhoka Stream Tributary and the South Ōhoka Branch.
- Maintenance of fish passage for trout for the Ōhoka Stream tributary and the South Ōhoka Branch.

All proposed earthworks and civil construction works will adhere to the relevant spring and waterway setbacks as necessary. When non-compliance is expected, the project ecologist will be consulted to determine the best course of action and the relevant Council representatives will be contacted.

Refer to the plans in Appendix B and to the Aquatic Ecology Report by Instream for details around minimum setbacks. The placement of dirty water diversion bunding around the springs and along waterways, is expected to provide adequate protection from sediment laden runoff entering the waterbody. The runoff collected by the diversion bunds will be directed to a SRPs for treatment and disposal at the respective development stages. Where possible the discharge of treated and clean stormwater will occur down stream of spring locations. Also, refer to the Plan showing the proposed Watercourse and Wetland Changes Plan provided in Appendix B.

6.11 Working with Shallow Groundwater

It is understood that in places, the site experiences shallow groundwater with springs located within the site. Hence, there is potential for roads and service trenches (for stormwater, sewer, telecommunication, and electrical networks) to intercept shallow groundwater and redirect groundwater by acting as preferential groundwater flow paths directing flow away from springs.

The interception of groundwater, and potential effects stemming from interception, can be avoided to be no more than minor, by various construction methods which are proposed where relevant:

- Ensuring service trenches are kept shallow (typically no more than 1.2m deep).
- Ensuring road pavement depths do not exceed their current estimate of 0.6m deep.
- Backfill excavated trenches using low permeability soils or constructing “water-stops” at intervals to prevent short-circuiting of groundwater along trench lines.
- Utilize appropriate geotextile barriers instead of granular hardfill in areas of particularly shallow groundwater to avoid accidental groundwater redirection.
- Using low pressure pumped sewer systems to avoid deep excavations for gravity sewer lines and pump stations.

- Using open swales or partially drowned piped systems to avoid deep trenches for stormwater drainage.
- Incorporate service crossings into bridge or culvert designs or directional drilling to install services at crossing points over waterways.
- Using directional drilling or mole-ploughing instead of trench excavation for installation of PE pipelines and cables.

In addition, construction measures will be utilized to ensure that shallow groundwater is not diverted away from its natural flow path. Backfill material with the same permeability as the surrounding ground will be used where appropriate.

Groundwater levels will be monitored for adequate periods prior to the construction of underground services.

6.12 Construction Traffic Management

A dedicated stabilised accessways are proposed to be constructed off Whites and Mill Roads as indicated by the Erosion and Sediment Control Plans (Appendix A). The flow of construction traffic will be managed and controlled to ensure limited disruption to the neighbourhood. The public roads will also be regularly maintained and swept as required to ensure there are limited nuisance factors. As part of the contract award process, that contractor will be required to provide a construction management plan.

For any proposed construction work within the public road reserve, Corridor Access Requests (CAR) and Traffic Management Plans (TMP) will be obtained, and copies kept on site at all times.

6.13 Construction Noise Management

A detailed Construction Noise Management Plan (CNMP) is to be completed prior to each relevant stage commences. The methodology outlined in this section is intended to be a general approach to noise management showing that measures can be taken to limit the amount and intensity of noise generated by construction.

6.13.1 Hours of Operation

Construction works, including the movement of trucks to and from the site, are expected primarily to take place between the standard working hours given below:

7:00 AM to 7:00 PM – Monday to Friday

8:00 AM to 5:00 PM – Saturday

When works occur outside of these standard hours, the contractor will make all reasonable efforts to ensure the works are carried out using the appropriate methods and equipment to minimize the intensity and duration of noise-generating events. It is expected that some works, such as works in the public road corridor, may have to be undertaken at hours outside of the normal envelope at the discretion of Waimakariri District Council.

6.13.2 Noise Levels

The standard in New Zealand for noise limits associated with construction activities is given in NZS: 6803:1999 (superseding NZS: 6803:1984,) specified in the Waimakariri District Council District Plan. Per Waimakariri District Council guidance, significant portions of the site are situated further than >100m from occupied dwellings, allowing for flexibility in starting some works earlier than would be normally allowed under NZS: 6803:1984.

	Weekdays			Saturdays			Sundays/public holidays		
	L10	L95	Lmax	L10	L95	Lmax	L10	L95	Lmax
6.30am–7.30am	60	45	70	*	*	*	*	*	*
7.30am–6pm	75	60	90	75	60	90	*	*	*
6pm–8pm	70	55	85	*	*	*	*	*	*
8pm–6.30am	*	*	*	*	*	*	*	*	*

*No noise permissible

As the properties at 503-509 Mill Road and 401-419 Whites Road are adjacent to the subject site, it is noted that temporary acoustic barriers may need to be established to reduce construction noise to a compliant standard. The houses at 507 Mill Road and 401 Whites Road are located approx. <20m from the subject site and may be subject to construction noise in greater than 70dB during select works in proximity to their properties utilizing heavy machinery such as graders, rollers, and excavators if not provided with additional mitigation. The remaining properties are typically 30 to 40m away from the site, where anticipated noise levels fall to 70dB or lower.

6.13.3 Mitigation

Where practical, it is proposed to establish acoustic barriers around the perimeter of the site where works are taking place, noting that the development is to be constructed in stages and thus the entire property does not need to be fully enclosed by barrier at all times. The use of acoustic barriers along the boundaries of 503-509 Mill Road and 401-419 Whites Road may need to be permanent during construction due to these properties being closer on average than all the others in the vicinity. The CNMP will address mitigations options, if required.

It may also be necessary to provide additional, localised acoustic barrier screening during works which cannot be otherwise mitigated for volume, such as the breaking up and removing of stormwater culverts or concrete pipes. Dampening barriers may also be required when flood conditions demand dewatering continues past the standard work hours,

The contractor and project manager shall demonstrate awareness of and adherence to the relevant construction noise control standards both nationally and locally and organise for additional training of staff as required to ensure compliance and a good outcome. Further to this, the contractor shall select the appropriate equipment and methodologies to minimize noise generation as much as is practical, such as the selection of construction plant with rubber tracks and exhaust silencers.

In addition, the contractor shall ensure that staff do not generate excessive noise through unnecessary means such as shouting, vehicle horns, loud radios & speakerphones, or excessive machine shaking.

6.14 Accidental Discovery of Archaeological Material

An Archaeological Assessment and Archaeological Management Plan by Underground Overground dated June 2026 is available for the project. In the event of the accidental discovery of archaeological material, all work in the vicinity (within 20 m) must cease immediately, and the area isolated by fencing or other means. The project manager must be informed, and no further work is to occur in the area until advised by the project manager. No further work is to occur in the area until advised by the project manager. In the event that an archaeological feature/artefact has been identified, Heritage New Zealand must be informed, and a qualified archaeologist will require access to the site to conduct investigations.

6.15 Accidental Discovery of Contaminated Material

In the event of an unexpected discovery of potentially contaminated material, all work in the vicinity (within 5 m) shall stop and the project manager notified. Signs that would indicate further assessment is required include visually discoloured soils, olfactory evidence of hydrocarbons or other potential contaminants, oily greasy soils, asbestos-containing materials outside of the known asbestos-affected area, or significant rubbish items. The area shall be isolated by fencing or other visual means. The contaminated land specialist must be immediately informed. The CLS shall determine the appropriate course of action, which will include notifying WDC/ECAN and the preparation of relevant Remediation Action Plan(s).

6.16 Accidental Discovery of Culturally Significant Material

In the event of an unexpected discovery of Culturally Significant Material, An Accidental Discovery Protocol consistent with Appendix 3 of the Mahaanui Iwi Management Plan, or any more recent discovery protocol recommended as cultural advice through the application process, shall be applied.

7 EROSION, SEDIMENT AND DUST CONTROL PLAN

7.1 Key Principles

Erosion and sediment control follows the principles as detailed in the ECAN ESC Toolbox.

Key principles for the erosion, sediment and dust control (ESDC) management during construction are:

- Minimise Disturbance – design of erosion and sediment control measures shall consider existing site features and minimise earthwork extents.
- Staged Construction – staging of construction activities to limit exposed surfaces that may produce sediment.
- Progressively Stabilise Exposed Areas – soils disturbed are to be progressively stabilised once complete.
- Install Perimeter Controls and cut-off drains – prevent clean water runoff mixing with dirty water runoff on the site. Divert upstream catchments around exposed areas through clean water diversion channels.
- Employ Sediment Retention Area and Devices – capture and treat runoff with settlement areas in the first instance and then structural devices where required.
- Promotion of sediment removal through Coagulation and Flocculation processes during extreme events to improve the settlement of suspended sediments and efficiency of the retention devices.
- Adjust the Erosion, Sediment and Dust Control Plans (ESCDP) as needed – ESCD measures and the ESCDP should be reviewed and updates to reflect changes to construction sequencing, weather changes with input from the Contractor completing works on site.
- Dewatering – ESCD measures for the dewatering of excavations will be managed in compliance with ECAN requirements.

A concept Erosion and Sediment Control Plan (ESCDP) has been prepared specifically for Stage 1 and is included as Appendix A. The ESCDP is to be reviewed and further developed in consultation with the Contractor before starting site works to ensure that the ESCD measures are fit for purpose and practical for the intended construction sequence. ESCDPs specific for each respective subsequent stage will be prepared and implemented in a similar fashion.

Stormwater runoff from construction areas is to be intercepted and conveyed by dirty water cut-off drains to a proposed Sediment Retention Pond (SRP) to be located near the Whites Road at the eastern boundary of the site. The SRP is to be constructed generally in accordance with the details provided on the CRC Toolbox at the lowest part of the site making use of the natural landform. The base of the pond will be excavated below existing ground level (i.e., topsoil removed) to create dead storage for collection of sediment. The minimum size of the proposed sediment retention pond is dimensioned on the drawings.

Geotextile-lined dirty water conveyance channels are to be constructed along the northern and southern boundaries of Stage 1 to capture and convey dirty water runoff to the sediment retention pond. The overall flattest gradient of the drains is approximately 1:500, hence lining is required to convey stormwater to the pond (refer to Appendix A).

Pumping of stormwater may be required to remove stormwater that collects in low areas or road cuts that cannot drain by gravity to the SRP or from behind bunded areas.

7.2 Control Device Selection

The below erosion and sediment control measures and devices are based on the ECAN Erosion and Sediment Control Toolbox. These control measures/devices are the preliminary measures assumed to be required to adequately control erosion and sedimentation on the site. This will be under constant review with the contractor prior to, and when works start on site to ensure their suitability. All measures will be certified to be correctly installed prior to commencement of any works.

Control Measure/Device	Application
Stabilised Entrance	The existing gravelled farm access tracks are suitable to be used for construction access to the site. The construction entrance/exit is to be stabilised to prevent sediment being transported onto the public roads by vehicle movements. A shaker ramp and ballast raft will be installed for heavy traffic existing the site.
Earthen Bunds and Cut-off Drains	These can include a combination of clean water and dirty water stabilised earthen bunds and diversion channels. Clean water channels and bunds are to be used to divert upstream flows away from earthworked areas, whereas dirty water earthen bunds and diversion channels are to be used to direct sediment laden stormwater towards treatment areas and devices.
Silt Fences	Deployed as perimeter boundary to prevent silt escaping the site or onto roads.
Sediment Retention Pond	Sediment laden stormwater generated from the site is to be conveyed to the Sediment Retention Pond (SRP) via lined dirty water conveyance channels. The SRP will have effective live storage depth of 1.0m with a storage volume of approximately 1,500m ³ to treat a maximum un-stabilised catchment of 5.0ha for Stage 1. Coagulation and flocculation may be required to increase the sediment removal during extreme rainfall events.
Silt Socks	Can be used to treat sediment laden stormwater prior to discharge or as a perimeter control to prevent sediment laden stormwater leaving the site or entering the existing stormwater network via sumps. Limited to smaller catchment areas / road corridors.
Rapid Stabilisation	Mulch/Topsoiling and grass seeding, or other measures covered in the ECAN toolbox can be applied to cover exposed areas to prevent erosion.
Cut and Cover Methodology	Stabilisation of earthworks using cut to fill methodologies and staged construction approaches where possible. This could be typically used for the installation of trenched services. Finished surfaces shall be grassed at the earliest opportunity.
Dust Control Measures	Water carts or K-line irrigation sprinklers and lines can be used to dampen earthworked areas to reduce dust creation by vehicle movements. This needs to be pre-emptively implemented rather than reactive. Water source available on-site from existing irrigation bore M35/0367.

7.3 Dust Management

Airborne dust may be generated from construction activities, wind action on un-stabilised ground, and vehicle movements within the site. The area of exposed bare or un-stabilised soil is to a maximum of 5ha, to limit dust generation and to ensure that adequate water is available for sufficient dust suppression.

Water carts will be available for dust suppression of un-stabilised surfaces and temporary site access tracks. Water is available on-site from existing irrigation bore M35/0367. Installed storage tanks or an existing stock effluent tank could be converted for bulk water storage as required for quickly filling water carts.

Truck loading and unloading operations shall occur during times of low wind velocity wherever possible. If the operation needs to occur during high wind speeds, the material is to be wetted to prevent the discharge of dust beyond the site boundary.

Vegetation around the springs will be retained throughout the works to ensure added dust protection.

- All site workers shall be advised of the need to minimise dust by the responsible operation of machinery.

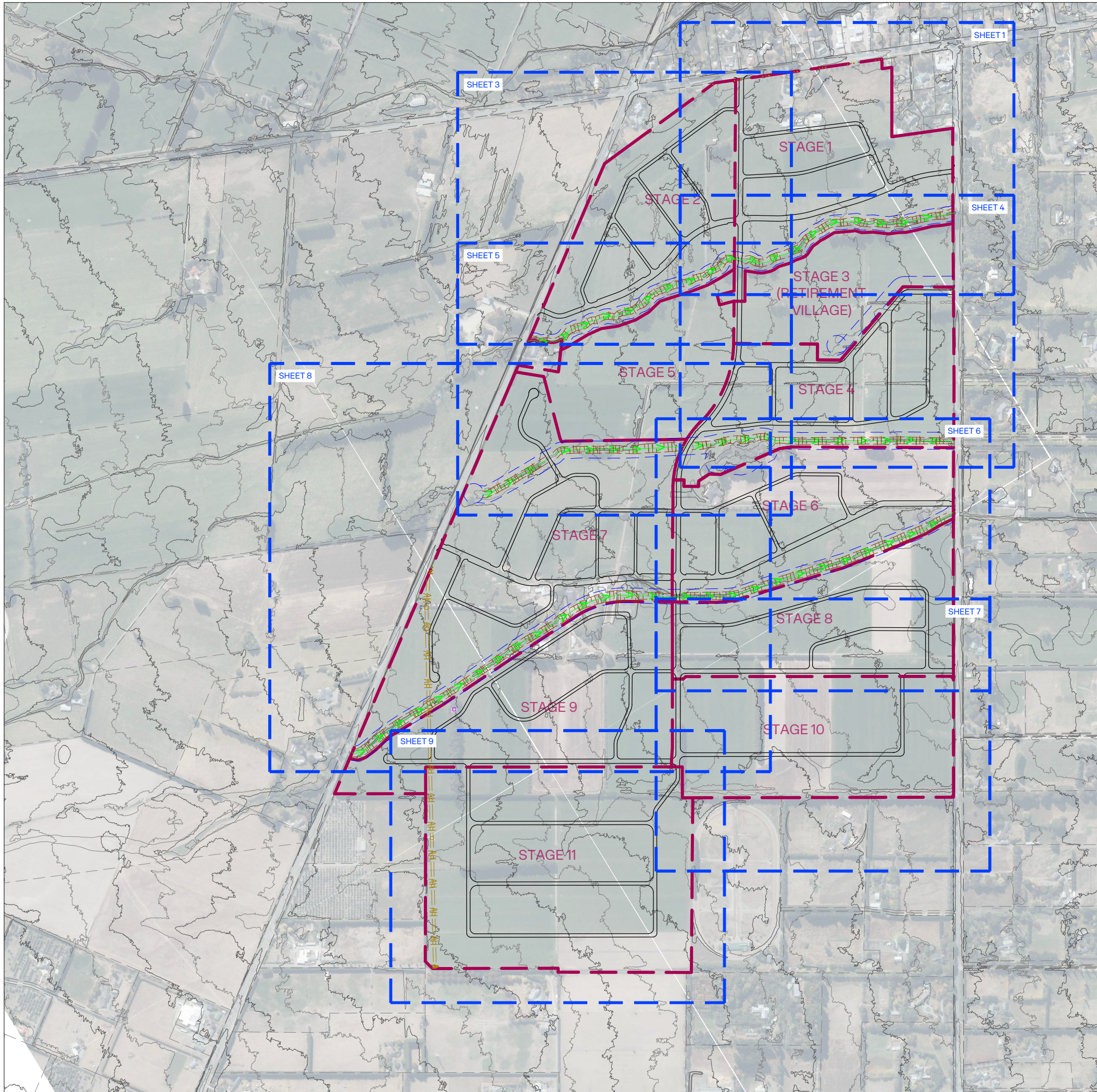
- Vehicle loading and unloading operations shall occur during times of low wind velocity wherever possible. If the operation needs to occur during high wind speeds, the material is to be wetted to prevent the discharge of dust beyond the boundary and covered.
- Suspend dust generating activities when dust control measures become ineffective due to increased wind speed.
- The existing roading network and site entrance shall be regularly checked for sediment being tracked by vehicle movements from site and swept/sprayed by water cart as required.
- Water carts will be kept onsite for use as required.

7.4 Implementation of ESCD Measures

The methodology for the initial stages of installing the appropriate ESCD measures and construction sequence are outlined below.

1. Construct stabilized entranceway to the construction site.
2. Excavate & construct the SRP
3. Construct diversion bunds around the perimeter of the site/earthwork's extent as shown on the plan.
4. Proposed stockpile locations to have topsoil removed before placement of materials.
5. Clear site & strip topsoil to stockpile for later reuse.
6. Stockpiles to be track rolled and silt fencing installed around them to prevent sediment runoff.
7. Complete earthworks, trenching & laying of services, backfilling and road pavements as much as practical in all areas not occupied with temporary facilities.
8. Decommission/ remove temporary facilities except diversion channel along Ōhoka Stream & silt fence on Whites Road boundary.
9. Complete remaining earthworks, trenching & laying of services, backfilling and road pavements.
10. Remove diversion channel along Ōhoka Stream & silt fence on Whites Road boundary.

APPENDIX A | EROSION, SEDIMENT AND DUST CONTROL DRAWINGS



NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE IN ACCORDANCE WITH ECAN'S EROSION & SEDIMENT CONTROL TOOLBOX / GUIDELINES FOR CANTERBURY REGION (<https://esc.canterbury.co.nz>).
2. INSTALL ALL EROSION & SEDIMENT CONTROL MEASURES PRIOR TO COMMENCING EARTHWORKS.
3. DIVERSION BUNDS / CHANNELS TO DIVERT STORMWATER RUNOFF FROM EXPOSED EARTH TO THE SEDIMENT RETENTION POND (SRP).
4. SEDIMENT POND & DIVERSION BUND / CHANNEL LOCATIONS SHOWN ARE INDICATIVE & MAY BE VARIED DEPENDENT ON STAGE & EXTENTS OF EARTHWORKS.
5. MONITOR SYSTEMS AND DEVICES WEEKLY AND FOLLOWING RAIN EVENTS FOR MAINTENANCE AND EFFECTIVENESS.
6. ANY ACCUMULATED SEDIMENT SHALL BE REMOVED FROM COLLECTION DEVICES / POINTS AND REPAIRS MADE AS NECESSARY WITH RECORDS KEPT OF ANY MAINTENANCE.
7. REMOVAL OF SEDIMENT CONTROLS ONLY WHEN ALL EARTHWORKED SURFACES ARE STABILISED AS AGREED WITH THE ENGINEER (GRASSED SURFACED TO BE AT LEAST 80% GRASS STRIKE).
8. WHEN DECOMMISSIONING THE SRP, ALL ACCUMULATED SILT IS TO BE REMOVED & THE EXCAVATION BACKFILLED AS DIRECTED BY THE ENGINEER.
9. ANY VARIATION FROM THE DESCRIBED METHODOLOGY SHOULD BE FIRSTLY DISCUSSED WITH THE ENGINEER, COUNCIL'S SUBDIVISION ENGINEER AND / OR ECAN'S AREA MONITORING OFFICER.
10. WATER CART KEPT ON SITE AT ALL TIMES TO SUPPRESS DUST AS WELL AS INSTALLATION OF IRRIGATION SPRINKLERS IF REQUIRED.
11. ROADWAYS ADJACENT TO THE SITE USED BY CONSTRUCTION TRAFFIC EXITING THE SITE ARE TO BE SWEEPED WEEKLY & AT OTHER TIMES AS REQUIRED.



LEGEND:

- STAGE BOUNDARY
- ABUTTAL BOUNDARY
- PROPOSED ROAD
- HV EXISTING HV POWER CABLE
- EX CONTOURS AT 0.5m INTERVALS
- EXISTING POWER PYLON
- EXISTING TELECOM TOWER
- SILT FENCE
- CLEAN WATER DIVERSION CHANNEL
- DIRTY WATER DIVERSION CHANNEL
- EXISTING WATER CHANNEL
- DECANTING STRUCTURE
- DIRTY WATER FLOW DIRECTION
- STABILIZED ENTRANCE
- PROPOSED COMPOUND AREA
- EMERGENCY SPILLWAY
- STOCKPILES AREA
- EXISTING DRAIN / WATERWAY
- DIRTY WATER DIVERSION CHANNEL
- PROPOSED CULVERT
- SEDIMENT RETENTION POND FOREBAY

A	ISSUED FOR FAST TRACK APPLICATION	SS	03/06/2026
REVISION DETAILS		BY	DATE

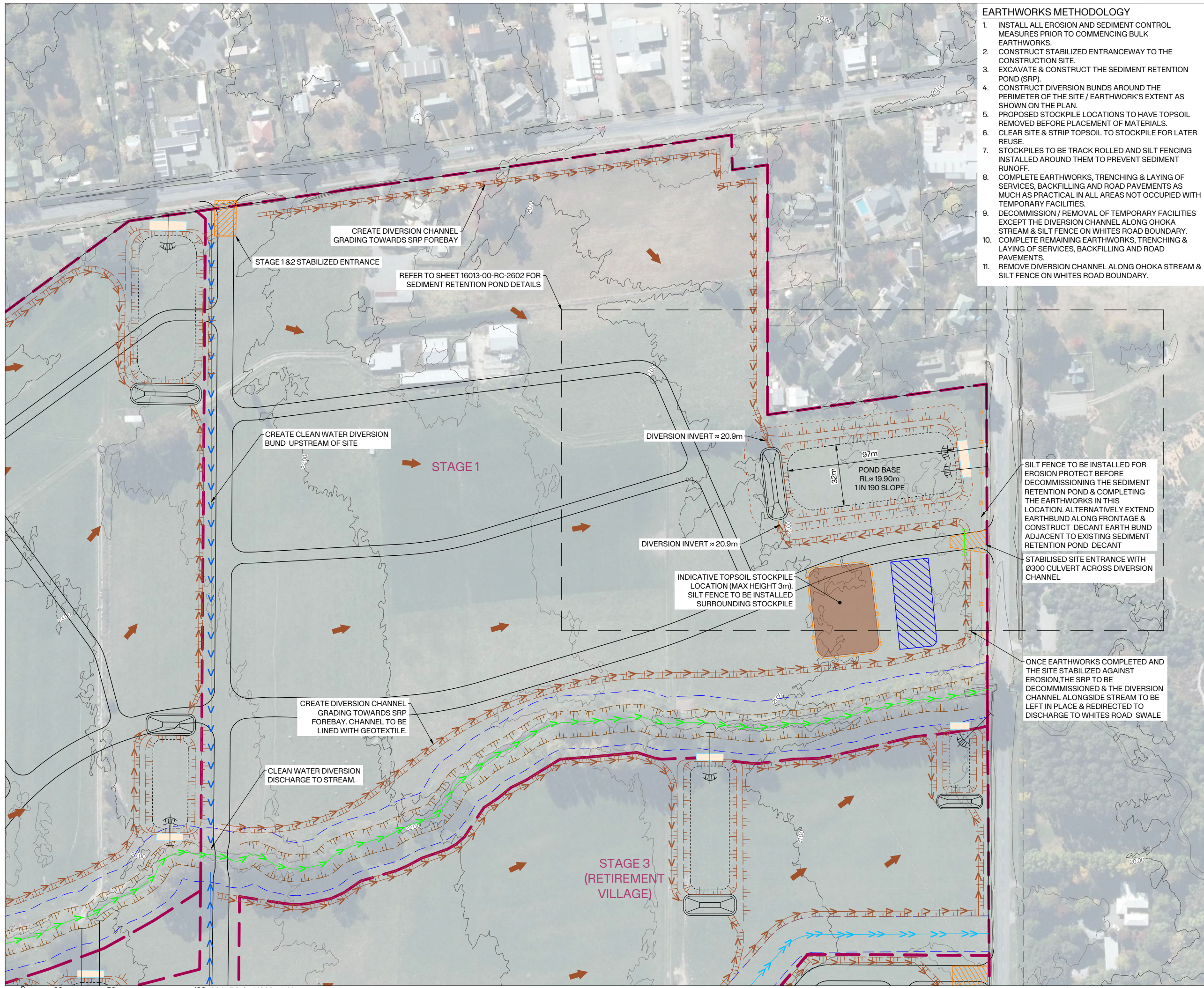
PROJECT: **MILL ROAD, OHOKA
WAIMAKARIRI
CHRISTCHURCH**

DESCRIPTION: **EROSION & SEDIMENT CONTROL
OVERALL PLAN**

	SURVEYED	-	-
	DESIGNED	KC	27/05/2026
	DRAWN	KC	27/05/2026
	CHECKED	SS	27/05/2026
	APPROVED	SS	03/06/2026

SCALE	1:4,000 @A1	1:8,000 @A3	REVISION
STATUS	FOR CONSENT		A
PROJECT	16013		
DWG NO	16013-00-RC-2600		

0 80 200 400 SCALE (m) 1:4000 @A1
1:8000 @A2
1:8000 @A3



EARTHWORKS METHODOLOGY

1. INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO COMMENCING BULK EARTHWORKS.
2. CONSTRUCT STABILIZED ENTRANCEWAY TO THE CONSTRUCTION SITE.
3. EXCAVATE & CONSTRUCT THE SEDIMENT RETENTION POND (SRP).
4. CONSTRUCT DIVERSION BUNDS AROUND THE PERIMETER OF THE SITE / EARTHWORK'S EXTENT AS SHOWN ON THE PLAN.
5. PROPOSED STOCKPILE LOCATIONS TO HAVE TOPSOIL REMOVED BEFORE PLACEMENT OF MATERIALS.
6. CLEAR SITE & STRIP TOPSOIL TO STOCKPILE FOR LATER REUSE.
7. STOCKPILES TO BE TRACK ROLLED AND SILT FENCING INSTALLED AROUND THEM TO PREVENT SEDIMENT RUNOFF.
8. COMPLETE EARTHWORKS, TRENCHING & LAYING OF SERVICES, BACKFILLING AND ROAD PAVEMENTS AS MUCH AS PRACTICAL IN ALL AREAS NOT OCCUPIED WITH TEMPORARY FACILITIES.
9. DECOMMISSION / REMOVAL OF TEMPORARY FACILITIES EXCEPT THE DIVERSION CHANNEL ALONG OHOKA STREAM & SILT FENCE ON WHITES ROAD BOUNDARY. COMPLETE REMAINING EARTHWORKS, TRENCHING & LAYING OF SERVICES, BACKFILLING AND ROAD PAVEMENTS.
11. REMOVE DIVERSION CHANNEL ALONG OHOKA STREAM & SILT FENCE ON WHITES ROAD BOUNDARY.



NOTES:
 1. REFER TO DRG 16013-00-RC-2600 FOR GENERAL NOTES.

LEGEND:

- STAGE BOUNDARY
- ABUTTAL BOUNDARY
- PROPOSED ROAD
- EXISTING HV POWER CABLE
- EX CONTOURS AT 0.5m INTERVALS
- EXISTING POWER PYLON
- EXISTING TELECOM TOWER
- SILT FENCE
- CLEAN WATER DIVERSION CHANNEL
- DIRTY WATER DIVERSION CHANNEL
- EXISTING WATER CHANNEL
- DECANTING STRUCTURE
- DIRTY WATER FLOW DIRECTION
- STABILIZED ENTRANCE
- PROPOSED COMPOUND AREA
- EMERGENCY SPILLWAY
- STOCKPILES AREA
- EXISTING DRAIN / WATERWAY
- DIRTY WATER DIVERSION CHANNEL
- PROPOSED CULVERT
- SEDIMENT RETENTION POND FOREBAY

A				ISSUED FOR FAST TRACK APPLICATION		SS	03/06/2026
REVISION DETAILS				BY		DATE	
PROJECT: MILL ROAD, OHOKA WAIMAKARIRI CHRISTCHURCH							
DESCRIPTION: EROSION & SEDIMENT CONTROL PLAN STAGE 1 CONCEPT PLAN							
	SURVEYED	-	-	-	-	-	-
	DESIGNED	KC					27/05/2026
	DRAWN	KC					27/05/2026
	CHECKED	SS					27/05/2026
	APPROVED	SS					03/06/2026
SCALE	1:1000 @A1	1:2000 @A3					
STATUS	FOR CONSENT						A
PROJECT	16013						
DWG NO	16013-00-RC-2601						

0 20 50 100 SCALE (m) 1:1000 @A1 1:2000 @A3

Plot Date: 15:54:18.5 June 2026, ADMINMANUX

EARTHWORKS METHODOLOGY

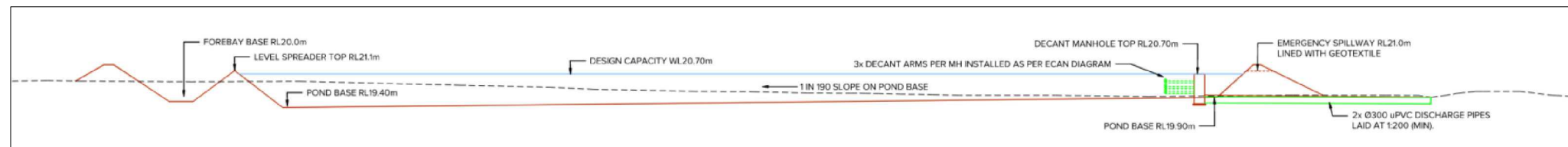
1. INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO COMMENCING BULK EARTHWORKS.
2. CONSTRUCT STABILIZED ENTRANCEWAY TO THE CONSTRUCTION SITE.
3. EXCAVATE & CONSTRUCT THE SEDIMENT RETENTION POND (SRP).
4. CONSTRUCT DIVERSION BUNDS AROUND THE PERIMETER OF THE SITE / EARTHWORK'S EXTENT AS SHOWN ON THE PLAN.
5. PROPOSED STOCKPILE LOCATIONS TO HAVE TOPSOIL REMOVED BEFORE PLACEMENT OF MATERIALS.
6. CLEAR SITE & STRIP TOPSOIL TO STOCKPILE FOR LATER REUSE.
7. STOCKPILES TO BE TRACK ROLLED AND SILT FENCING INSTALLED AROUND THEM TO PREVENT SEDIMENT RUNOFF.
8. COMPLETE EARTHWORKS, TRENCHING & LAYING OF SERVICES, BACKFILLING AND ROAD PAVEMENTS AS MUCH AS PRACTICAL IN ALL AREAS NOT OCCUPIED WITH TEMPORARY FACILITIES.
9. DECOMMISSION / REMOVAL OF TEMPORARY FACILITIES EXCEPT THE DIVERSION CHANNEL ALONG OHOKA STREAM & SILT FENCE ON WHITES ROAD BOUNDARY. COMPLETE REMAINING EARTHWORKS, TRENCHING & LAYING OF SERVICES, BACKFILLING AND ROAD PAVEMENTS.
11. REMOVE DIVERSION CHANNEL ALONG OHOKA STREAM & SILT FENCE ON WHITES ROAD BOUNDARY.

NOTES:

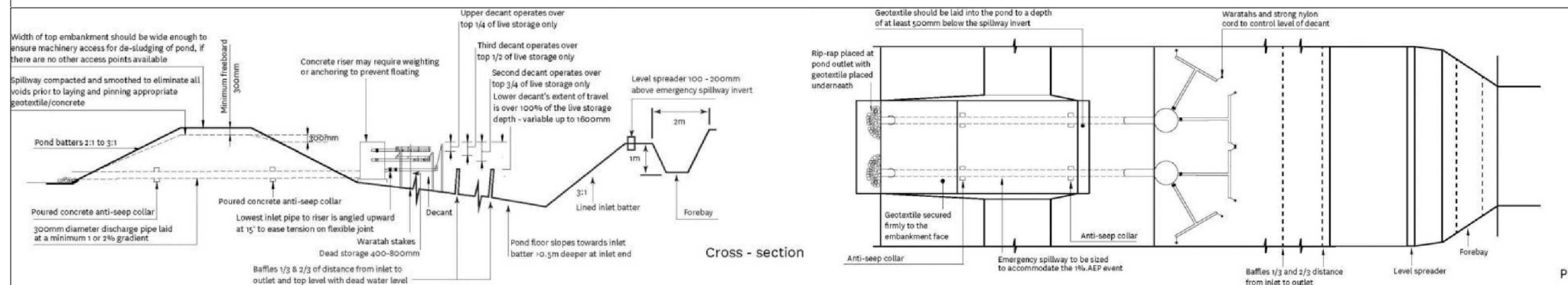
1. REFER TO DRG 16013-00-RC-2600 FOR GENERAL NOTES.

LEGEND:

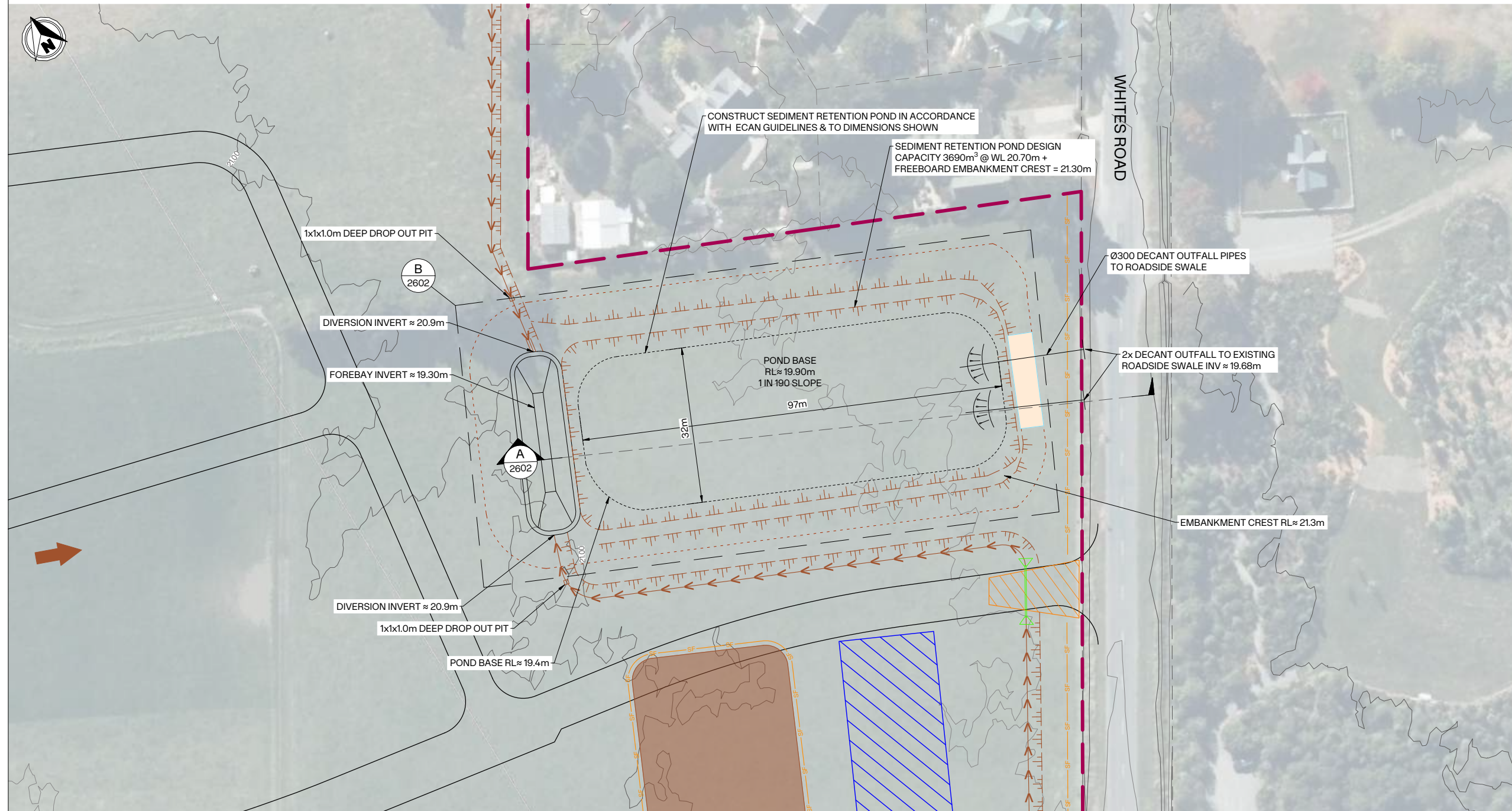
- STAGE BOUNDARY
- ABUTTAL BOUNDARY
- PROPOSED ROAD
- EXISTING HV POWER CABLE
- EX CONTOURS AT 0.5m INTERVALS
- EXISTING POWER PYLON
- EXISTING TELECOM TOWER
- SILT FENCE
- CLEAN WATER DIVERSION CHANNEL
- DIRTY WATER DIVERSION CHANNEL
- EXISTING WATER CHANNEL
- DECANTING STRUCTURE
- DIRTY WATER FLOW DIRECTION
- STABILIZED ENTRANCE
- PROPOSED COMPOUND AREA
- EMERGENCY SPILLWAY
- STOCKPILES AREA
- EXISTING DRAIN / WATERWAY
- DIRTY WATER DIVERSION CHANNEL
- PROPOSED CULVERT
- SEDIMENT RETENTION POND FOREBAY



A SEDIMENT RETENTION POND CROSS SECTION DETAIL
2602 SCALENTS



B ECAN ESC GUIDELINE DETAIL FOR SPR FOR > 5 ha CATCHMENTS
2602 SCALENTS



0 10 25 50 SCALE (m) 1: 500 @A1 1:1000 @A3

A	ISSUED FOR FAST TRACK APPLICATION	SS	03/06/2026
REVISION DETAILS		BY	DATE
PROJECT: MILL ROAD, OHOKA WAIMAKARIRI CHRISTCHURCH			
DESCRIPTION: EROSION & SEDIMENT CONTROL PLAN STAGE 1 ESC DETAILS			
SURVEYED	-	-	-
DESIGNED	KC		27/05/2026
DRAWN	KC		27/05/2026
CHECKED	SS		27/05/2026
APPROVED	SS		03/06/2026
SCALE	1:500 @A1	1:1000 @A3	
STATUS	FOR CONSENT		A
PROJECT	16013		
DWG NO	16013-00-RC-2602		



NOTES:
 1. REFER TO DRG 16013-00-RC-2600 FOR GENERAL NOTES.

- LEGEND:**
- STAGE BOUNDARY
 - ABUTTAL BOUNDARY
 - PROPOSED ROAD
 - EXISTING HV POWER CABLE
 - EX CONTOURS AT 0.5m INTERVALS
 - EXISTING POWER PYLON
 - EXISTING TELECOM TOWER
 - SILT FENCE
 - CLEAN WATER DIVERSION CHANNEL
 - DIRTY WATER DIVERSION CHANNEL
 - EXISTING WATER CHANNEL
 - DECANTING STRUCTURE
 - DIRTY WATER FLOW DIRECTION
 - STABILIZED ENTRANCE
 - PROPOSED COMPOUND AREA
 - EMERGENCY SPILLWAY
 - STOCKPILES AREA
 - EXISTING DRAIN / WATERWAY
 - DIRTY WATER DIVERSION CHANNEL
 - PROPOSED CULVERT
 - SEDIMENT RETENTION POND FOREBAY

A	ISSUED FOR FAST TRACK APPLICATION	SS	03/06/2026

REVISION DETAILS	BY	DATE
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PROJECT:
**MILL ROAD, OHOKA
 WAIMAKARIRI
 CHRISTCHURCH**

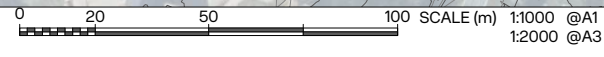
DESCRIPTION:
**EROSION & SEDIMENT
 CONTROL PLAN
 FUTURE STAGES 2**

	SURVEYED	-	-
	DESIGNED	KC	27/05/2026
	DRAWN	KC	27/05/2026
	CHECKED	SS	27/05/2026
	APPROVED	SS	03/06/2026

SCALE	1:1000 @A1	1:2000 @A3	REVISION
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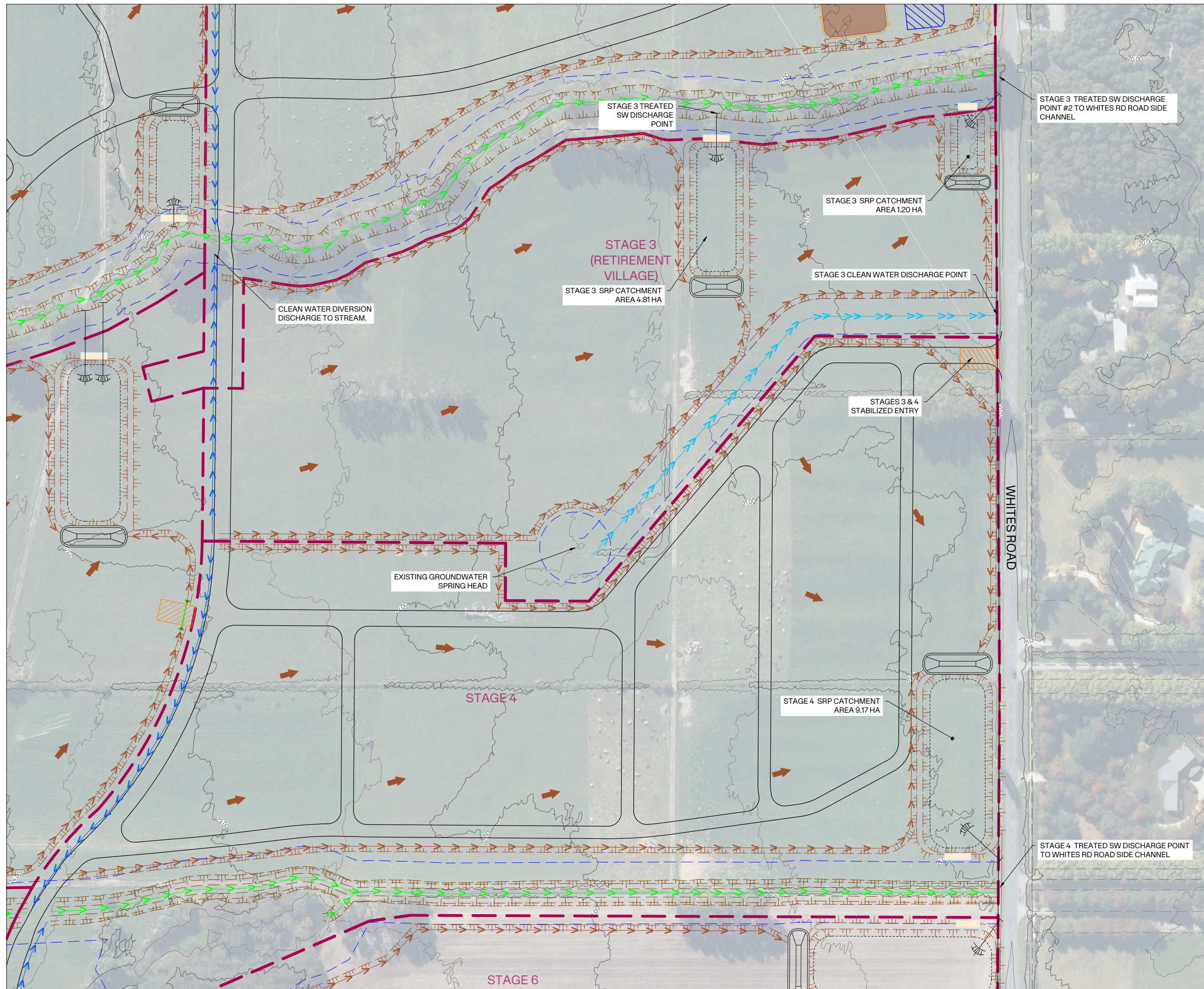
STATUS	FOR CONSENT	A
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PROJECT	16013
DWG NO	16013-00-RC-2603



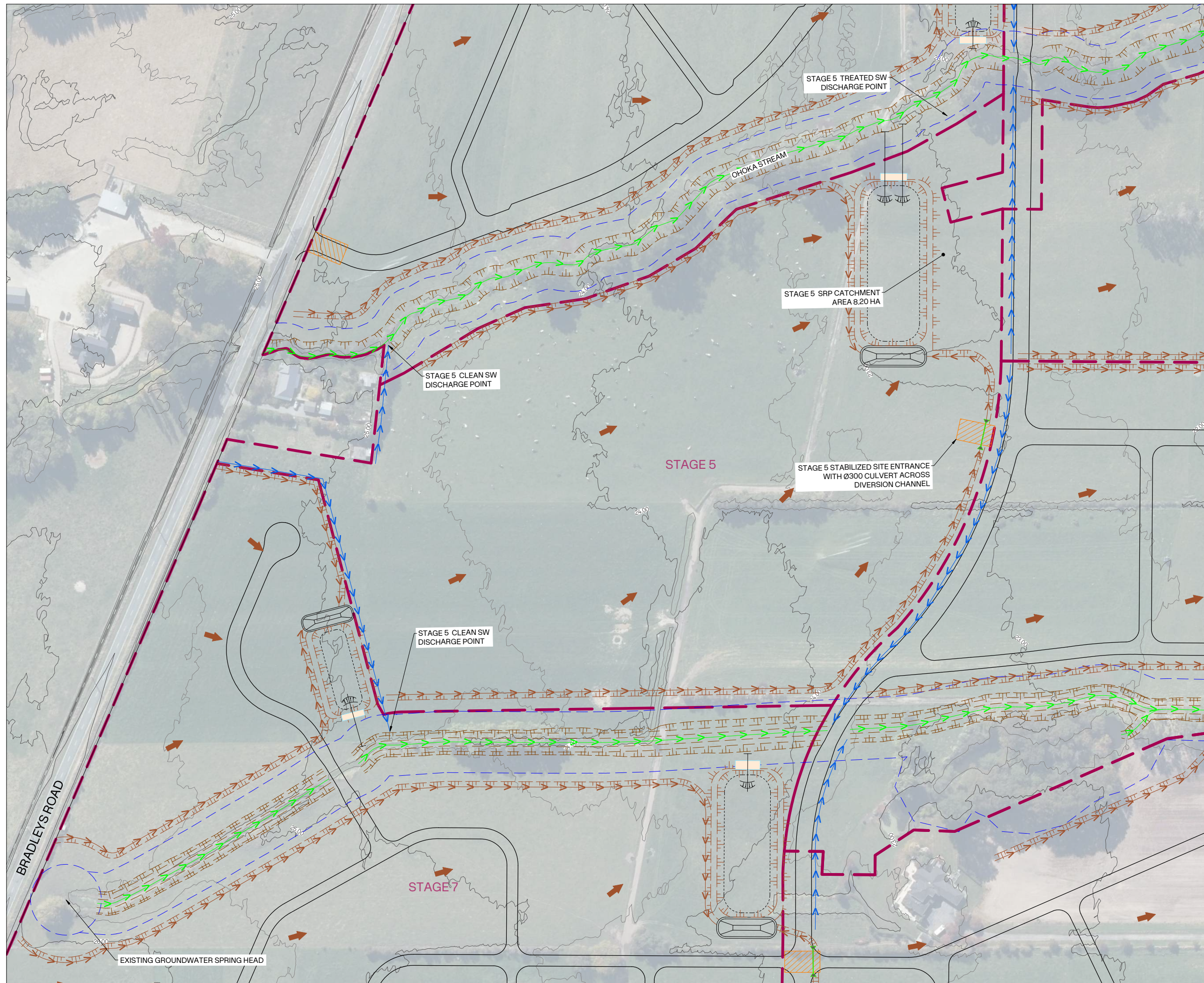
NOTES:
 1. REFER TO DRG 16013-00-RC-2600 FOR GENERAL NOTES.

- LEGEND:**
- STAGE BOUNDARY
 - ABUTTAL BOUNDARY
 - PROPOSED ROAD
 - EXISTING HV POWER CABLE
 - EX CONTOURS AT 0.5m INTERVALS
 - EXISTING POWER PYLON
 - EXISTING TELECOM TOWER
 - SILT FENCE
 - CLEAN WATER DIVERSION CHANNEL
 - DIRTY WATER DIVERSION CHANNEL
 - EXISTING WATER CHANNEL
 - DECANTING STRUCTURE
 - DIRTY WATER FLOW DIRECTION
 - STABILIZED ENTRANCE
 - PROPOSED COMPOUND AREA
 - EMERGENCY SPILLWAY
 - STOCKPILES AREA
 - EXISTING DRAIN / WATERWAY
 - DIRTY WATER DIVERSION CHANNEL
 - PROPOSED CULVERT
 - SEDIMENT RETENTION POND FOREBAY



0 20 50 100 SCALE (m) 1:1000 @A1
 1:2000 @A3

A				ISSUED FOR FAST TRACK APPLICATION		SS	03/06/2026
REVISION DETAILS				BY		DATE	
PROJECT: MILL ROAD, OHOKA WAIMAKARIRI CHRISTCHURCH							
DESCRIPTION: EROSION & SEDIMENT CONTROL PLAN FUTURE STAGES 3 & 4							
	SURVEYED	-	-	-	-	-	-
	DESIGNED	KC					27/05/2026
	DRAWN	KC					27/05/2026
	CHECKED	SS					27/05/2026
	APPROVED	SS					03/06/2026
SCALE	1:1000 @A1	1:2000 @A3					
STATUS	FOR CONSENT						A
PROJECT	16013						
DWG NO	16013-00-RC-2604						



NOTES:
 1. REFER TO DRG 16013-00-RC-2600 FOR GENERAL NOTES.

- LEGEND:**
- STAGE BOUNDARY
 - ABUTTAL BOUNDARY
 - PROPOSED ROAD
 - HV --- HV --- HV EXISTING HV POWER CABLE
 - EX CONTOURS AT 0.5m INTERVALS
 - EXISTING POWER PYLON
 - EXISTING TELECOM TOWER
 - SF --- SF SILT FENCE
 - CLEAN WATER DIVERSION CHANNEL
 - DIRTY WATER DIVERSION CHANNEL
 - EXISTING WATER CHANNEL
 - DECANTING STRUCTURE
 - DIRTY WATER FLOW DIRECTION
 - STABILIZED ENTRANCE
 - PROPOSED COMPOUND AREA
 - EMERGENCY SPILLWAY
 - STOCKPILES AREA
 - EXISTING DRAIN / WATERWAY
 - DIRTY WATER DIVERSION CHANNEL
 - PROPOSED CULVERT
 - SEDIMENT RETENTION POND FOREBAY

A	ISSUED FOR FAST TRACK APPLICATION	SS	03/06/2026
REVISION DETAILS		BY	DATE

PROJECT: **MILL ROAD, OHOKA
 WAIMAKARIRI
 CHRISTCHURCH**

DESCRIPTION: **EROSION & SEDIMENT
 CONTROL PLAN
 FUTURE STAGES 5**

SURVEYED	-	-
DESIGNED	KC	27/05/2026
DRAWN	KC	27/05/2026
CHECKED	SS	27/05/2026
APPROVED	SS	03/06/2026

SCALE: 1:1000 @A1 1:2000 @A3

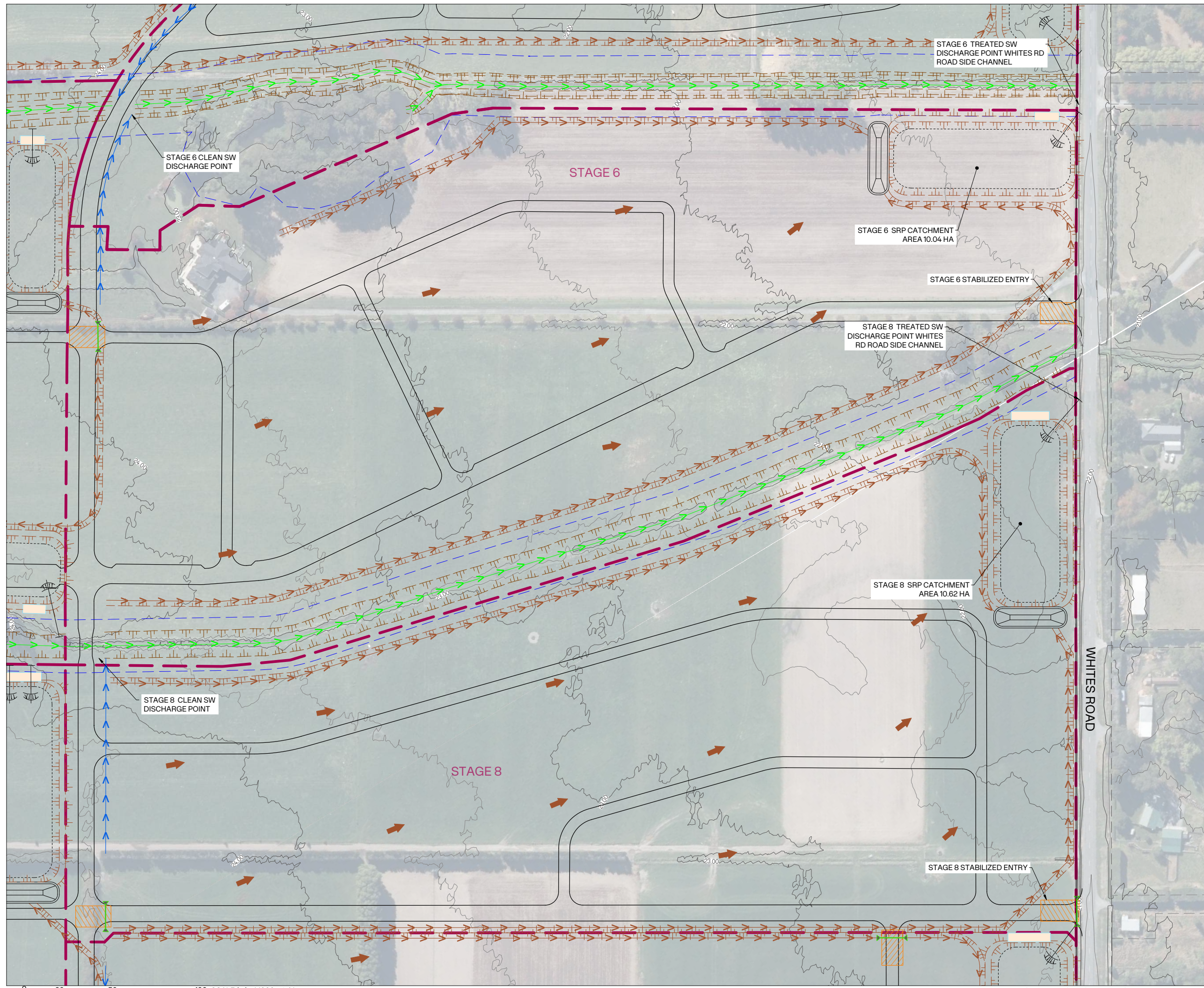
STATUS: **FOR CONSENT**

PROJECT: **16013**

DWG NO: **16013-00-RC-2605**

A





NOTES:
 1. REFER TO DRG 16013-00-RC-2600 FOR GENERAL NOTES.

- LEGEND:**
- STAGE BOUNDARY
 - ABUTTAL BOUNDARY
 - PROPOSED ROAD
 - EXISTING HV POWER CABLE
 - EX CONTOURS AT 0.5m INTERVALS
 - EXISTING POWER PYLON
 - EXISTING TELECOM TOWER
 - SILT FENCE
 - CLEAN WATER DIVERSION CHANNEL
 - DIRTY WATER DIVERSION CHANNEL
 - EXISTING WATER CHANNEL
 - DECANTING STRUCTURE
 - DIRTY WATER FLOW DIRECTION
 - STABILIZED ENTRANCE
 - PROPOSED COMPOUND AREA
 - EMERGENCY SPILLWAY
 - STOCKPILES AREA
 - EXISTING DRAIN / WATERWAY
 - DIRTY WATER DIVERSION CHANNEL
 - PROPOSED CULVERT
 - SEDIMENT RETENTION POND FOREBAY

A	ISSUED FOR FAST TRACK APPLICATION	SS	03/06/2026
REVISION DETAILS		BY	DATE

PROJECT: **MILL ROAD, OHOKA
 WAIMAKARIRI
 CHRISTCHURCH**

DESCRIPTION: **EROSION & SEDIMENT
 CONTROL PLAN
 FUTURE STAGES 6 & 8**

SURVEYED	-	-
DESIGNED	KC	27/05/2026
DRAWN	KC	27/05/2026
CHECKED	SS	27/05/2026
APPROVED	SS	03/06/2026

SCALE	1:1000 @A1	1:2000 @A3	REVISION
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STATUS	FOR CONSENT	A
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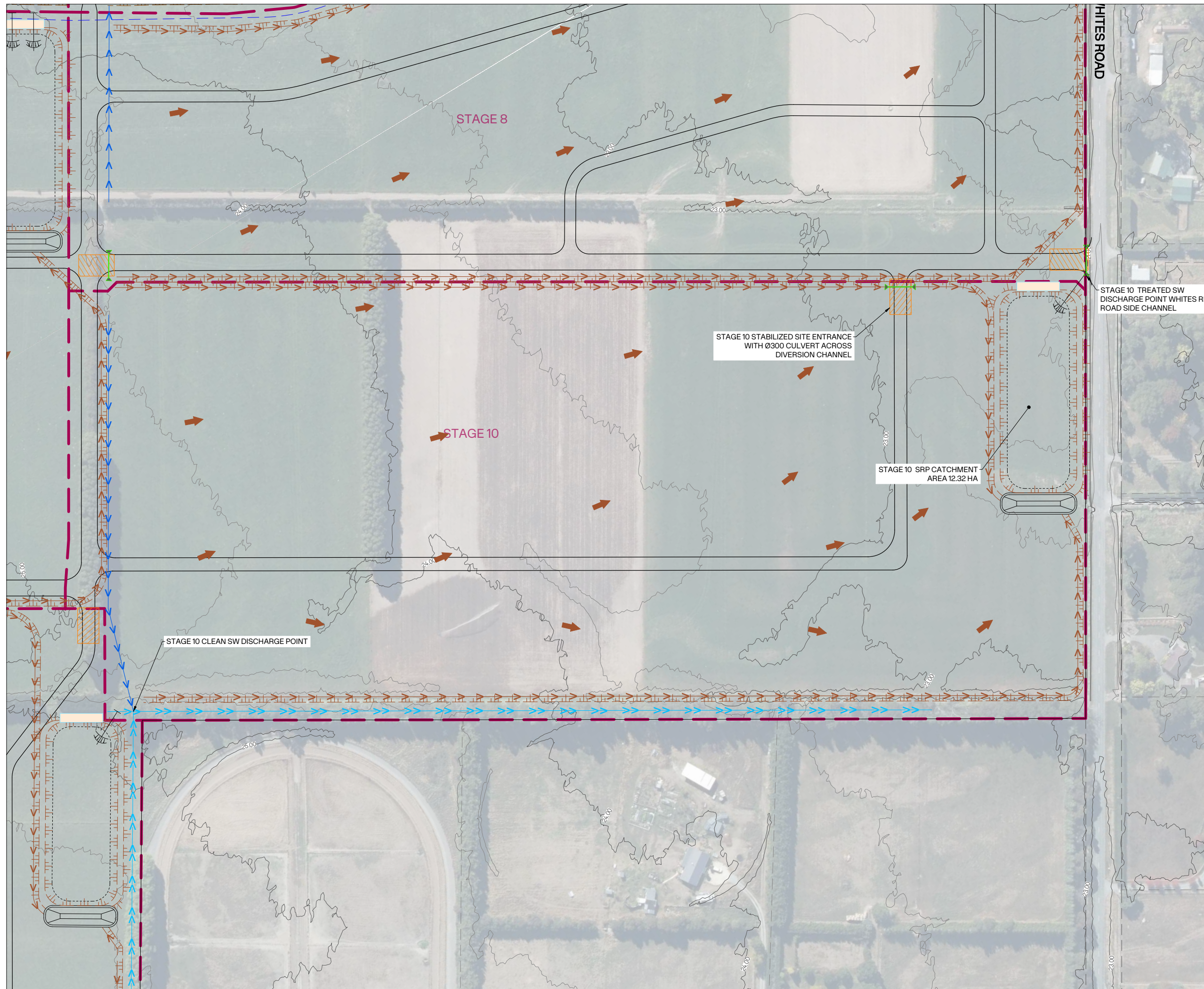
PROJECT	16013
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DWG NO	16013-00-RC-2606
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0 20 50 100 SCALE (m) 1:1000 @A1
 1:2000 @A3

NOTES:
 1. REFER TO DRG 16013-00-RC-2600 FOR GENERAL NOTES.

- LEGEND:**
- STAGE BOUNDARY
 - ABUTTAL BOUNDARY
 - PROPOSED ROAD
 - EXISTING HV POWER CABLE
 - EX CONTOURS AT 0.5m INTERVALS
 - EXISTING POWER PYLON
 - EXISTING TELECOM TOWER
 - SILT FENCE
 - CLEAN WATER DIVERSION CHANNEL
 - DIRTY WATER DIVERSION CHANNEL
 - EXISTING WATER CHANNEL
 - DECANTING STRUCTURE
 - DIRTY WATER FLOW DIRECTION
 - STABILIZED ENTRANCE
 - PROPOSED COMPOUND AREA
 - EMERGENCY SPILLWAY
 - STOCKPILES AREA
 - EXISTING DRAIN / WATERWAY
 - DIRTY WATER DIVERSION CHANNEL
 - PROPOSED CULVERT
 - SEDIMENT RETENTION POND FOREBAY



STAGE 10 TREATED SW DISCHARGE POINT WHITES RD ROAD SIDE CHANNEL

STAGE 10 STABILIZED SITE ENTRANCE WITH Ø300 CULVERT ACROSS DIVERSION CHANNEL

STAGE 10 SRP CATCHMENT AREA 12.32 HA

STAGE 10 CLEAN SW DISCHARGE POINT

0 20 50 100 SCALE (m) 1:1000 @A1 1:2000 @A3

A	ISSUED FOR FAST TRACK APPLICATION	SS	03/06/2026
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REVISION DETAILS	BY	DATE
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PROJECT: MILL ROAD, OHOKA
 WAIMAKARIRI
 CHRISTCHURCH

DESCRIPTION: EROSION & SEDIMENT CONTROL PLAN
 FUTURE STAGES 10

SURVEYED	-	-
DESIGNED	KC	27/05/2026
DRAWN	KC	27/05/2026
CHECKED	SS	27/05/2026
APPROVED	SS	03/06/2026

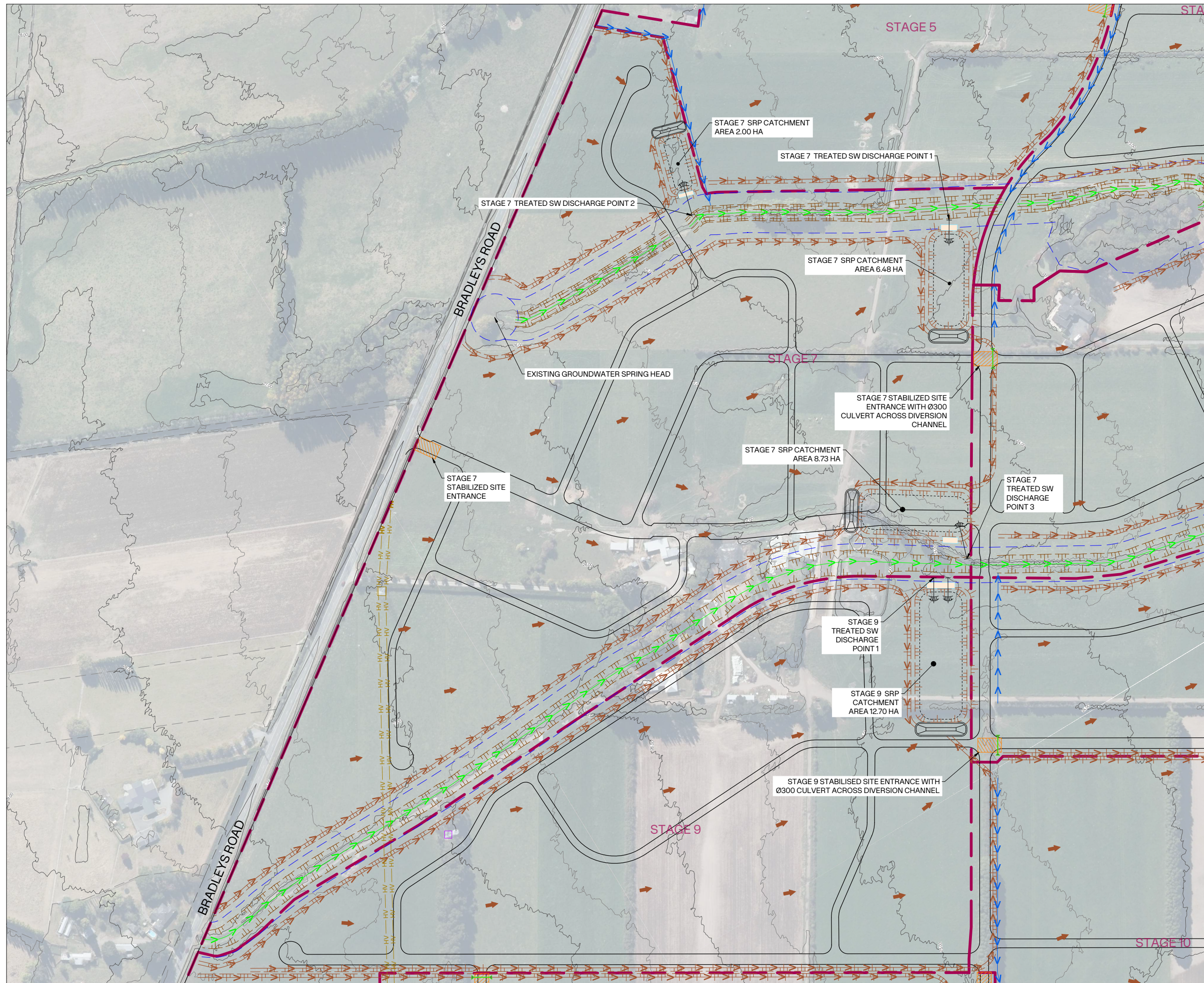
SCALE 1:1000 @A1 1:2000 @A3 REVISION

STATUS FOR CONSENT A

PROJECT 16013
 DWG NO 16013-00-RC-2607

NOTES:
 1. REFER TO DRG 16013-00-RC-2600 FOR GENERAL NOTES.

- LEGEND:**
- STAGE BOUNDARY
 - ABUTTAL BOUNDARY
 - PROPOSED ROAD
 - EXISTING HV POWER CABLE
 - EX CONTOURS AT 0.5m INTERVALS
 - EXISTING POWER PYLON
 - EXISTING TELECOM TOWER
 - SILT FENCE
 - CLEAN WATER DIVERSION CHANNEL
 - DIRTY WATER DIVERSION CHANNEL
 - EXISTING WATER CHANNEL
 - DECANTING STRUCTURE
 - DIRTY WATER FLOW DIRECTION
 - STABILIZED ENTRANCE
 - PROPOSED COMPOUND AREA
 - EMERGENCY SPILLWAY
 - STOCKPILES AREA
 - EXISTING DRAIN / WATERWAY
 - DIRTY WATER DIVERSION CHANNEL
 - PROPOSED CULVERT
 - SEDIMENT RETENTION POND FOREBAY



A	ISSUED FOR FAST TRACK APPLICATION	SS	03/06/2026
REVISION DETAILS		BY	DATE

PROJECT: **MILL ROAD, OHOKA
 WAIMAKARIRI
 CHRISTCHURCH**

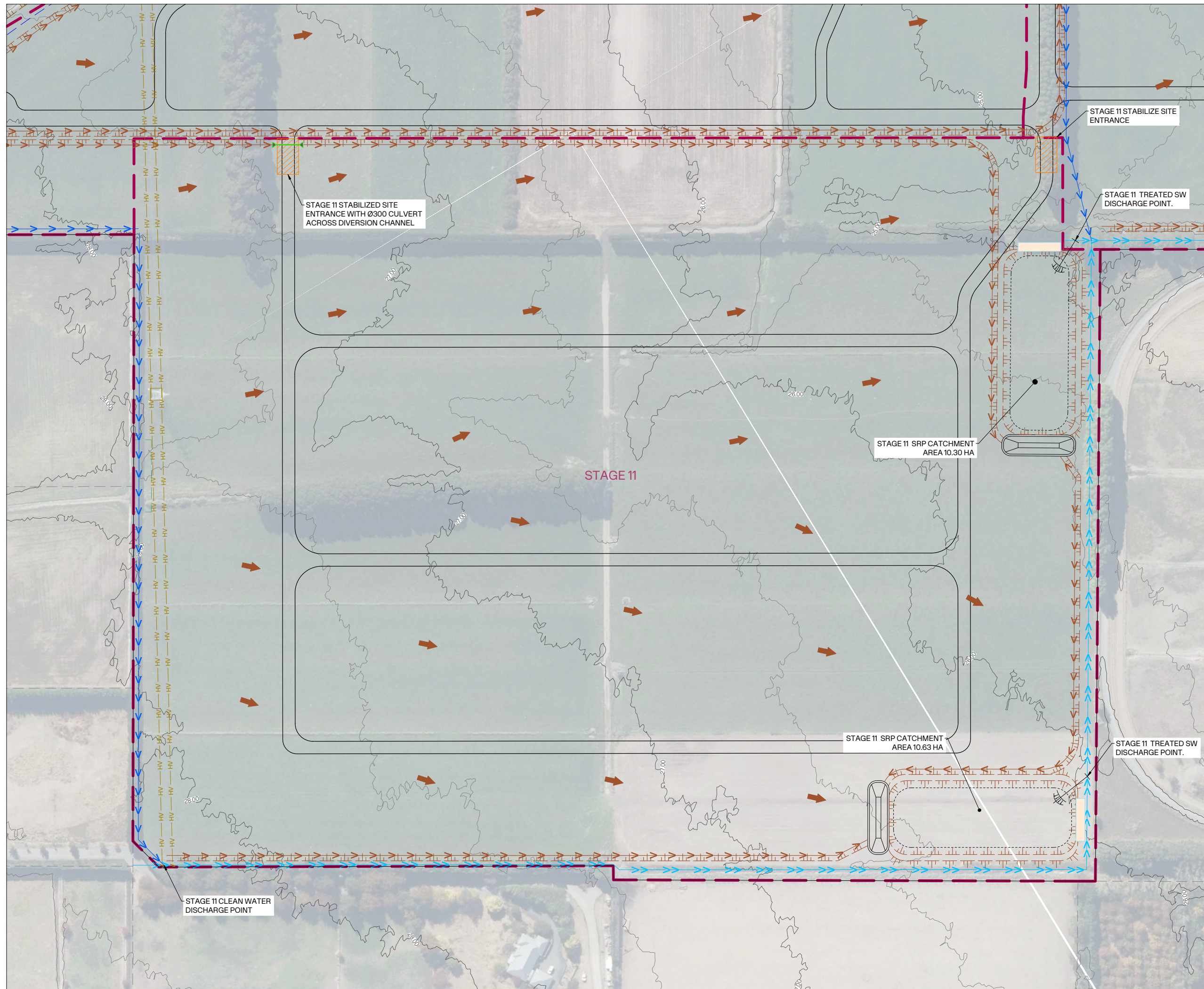
DESCRIPTION: **EROSION & SEDIMENT
 CONTROL PLAN
 FUTURE STAGES 7 & 9**

	SURVEYED	-	-
	DESIGNED	KC	27/05/2026
	DRAWN	KC	27/05/2026
	CHECKED	SS	27/05/2026
	APPROVED	SS	03/06/2026
SCALE	1:1500 @A1	1:3000 @A3	REVISION
STATUS	FOR CONSENT		A
PROJECT	16013		
DWG NO	16013-00-RC-2608		

0 30 75 150 SCALE (m) 1:1500 @A1
 1:3000 @A3

NOTES:
 1. REFER TO DRG 16013-00-RC-2600 FOR GENERAL NOTES.

- LEGEND:**
- STAGE BOUNDARY
 - ABUTTAL BOUNDARY
 - PROPOSED ROAD
 - EXISTING HV POWER CABLE
 - EX CONTOURS AT 0.5m INTERVALS
 - EXISTING POWER PYLON
 - EXISTING TELECOM TOWER
 - SILT FENCE
 - CLEAN WATER DIVERSION CHANNEL
 - DIRTY WATER DIVERSION CHANNEL
 - EXISTING WATER CHANNEL
 - DECANTING STRUCTURE
 - DIRTY WATER FLOW DIRECTION
 - STABILIZED ENTRANCE
 - PROPOSED COMPOUND AREA
 - EMERGENCY SPILLWAY
 - STOCKPILES AREA
 - EXISTING DRAIN / WATERWAY
 - DIRTY WATER DIVERSION CHANNEL
 - PROPOSED CULVERT
 - SEDIMENT RETENTION POND FOREBAY



A	ISSUED FOR FAST TRACK APPLICATION	SS	03/06/2026

REVISION DETAILS	BY	DATE

PROJECT: **MILL ROAD, OHOKA
 WAIMAKARIRI
 CHRISTCHURCH**

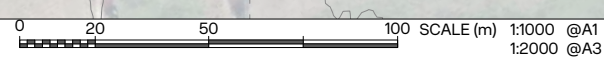
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 CONTROL PLAN
 FUTURE STAGES 11**

SURVEYED	-	-
DESIGNED	KC	27/05/2026
DRAWN	KC	27/05/2026
CHECKED	SS	27/05/2026
APPROVED	SS	03/06/2026

SCALE	1:1000 @A1	1:2000 @A3	REVISION
STATUS	FOR CONSENT		A

PROJECT: **16013**

DWG NO: **16013-00-RC-2609**



APPENDIX B | WETLANDS AND WATERWAYS CHANGES PLAN

WATERCOURSE AND WETLAND TOTALS

FEATURE NAME	NO.	UNITS
WETLAND - EXISTING	5,176	m ²
WETLAND - REMOVED	37,635	m ²
SPRING POND - EXISTING	2,623	m ²
POND - TO BE REMOVED	612	m ²
STORMWATER MANAGEMENT AREAS (SMA)	90,358	m ²

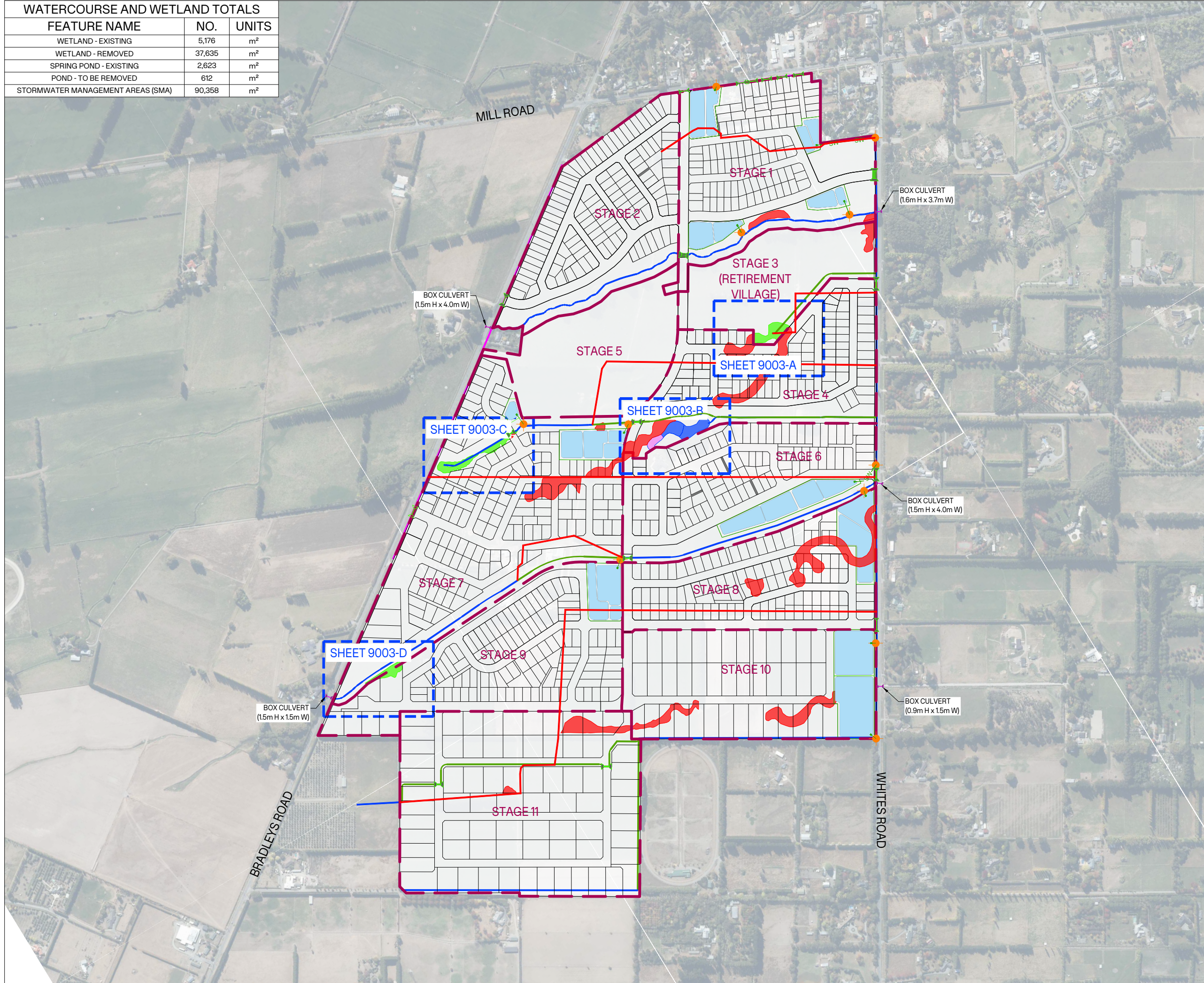


LEGEND:

- ABUTTAL BOUNDARY
- LOT BOUNDARY
- STAGING BOUNDARY
- CULVERT - EXISTING
- CULVERT - PROPOSED
- WATERWAY - EXISTING
- WATERWAY - REALIGNED
- WATERWAY - REMOVED
- ROAD SIDE DRAINS
- SMA OUTFALL STRUCTURE AND PIPE
- WETLAND - EXISTING
- WETLAND - REMOVED
- SPRING POND - EXISTING
- POND - TO BE REMOVED
- STORMWATER MANAGEMENT AREAS (SMA)
- SMA OUTFALL LOCATION

NOTES

1. WETLAND AND DELINEATION AS PROVIDED BY PATTLE DELAMORE PARTNERS IN FIGURE 1: WETLAND DELINEATION, OHOKA RE.B, DATED JAN 2025/
2. EXISTING WATERWAY AND CULVERTS PROVIDED BY PATTLE DELAMORE PARTNERS HYDROLOGY ASSESSMENT, REF NO. C045180002. DATED JULY 2025.



3	ISSUED FOR INFORMATION	AO	29/05/2026
2	UPDATE REALIGNED WATERWAYS	KC	17/07/2025
1	ISSUED FOR INFORMATION	PE	11/07/2025
REVISION DETAILS		BY	DATE

PROJECT: **MILL ROAD, OHOKA
WAIMAKARIRI
CANTERBURY**

DESCRIPTION: **WATERCOURSE AND
WETLAND CHANGES
OVERVIEW PLAN**

SURVEYED	-	-
DESIGNED	SS	29/05/26
DRAWN	AO	29/05/26
CHECKED	SS	29/05/26
APPROVED	SS	29/05/2026

SCALE	1:4,000 @A1	18,000 @A3	REVISION
STATUS	FOR INFORMATION		3
PROJECT	16013		
DWG NO	16013-00-IN-9000		

0 80 200 400 SCALE (m) 1:4000 @A1 1:80000 @A3

LEGEND:

- ABUTTAL BOUNDARY
- STAGING BOUNDARY
- CULVERT - EXISTING
- WATERWAY - EXISTING
- WETLAND - EXISTING
- SPRING POND - EXISTING

NOTES

1. WETLAND AND DELINEATION AS PROVIDED BY PATTLE DELAMORE PARTNERS IN FIGURE 1: WETLAND DELINEATION, OHOKA RE.B, DATED JAN 2025/
2. EXISTING WATERWAY AND CULVERTS PROVIDED BY PATTLE DELAMORE PARTNERS HYDROLOGY ASSESSMENT, REF NO. C045180002. DATED JULY 2025.

3	ISSUED FOR INFORMATION	AO	29/05/2026
2	UPDATE REALIGNED WATERWAYS	KC	17/07/2025
1	ISSUED FOR INFORMATION	KC	11/07/2025
REVISION DETAILS		BY	DATE

PROJECT: **MILL ROAD, OHOKA
WAIMAKARIRI
CANTERBURY**

DESCRIPTION: **EXISTING WETLAND,
WATERWAY & CULVERT
OVERVIEW PLAN**

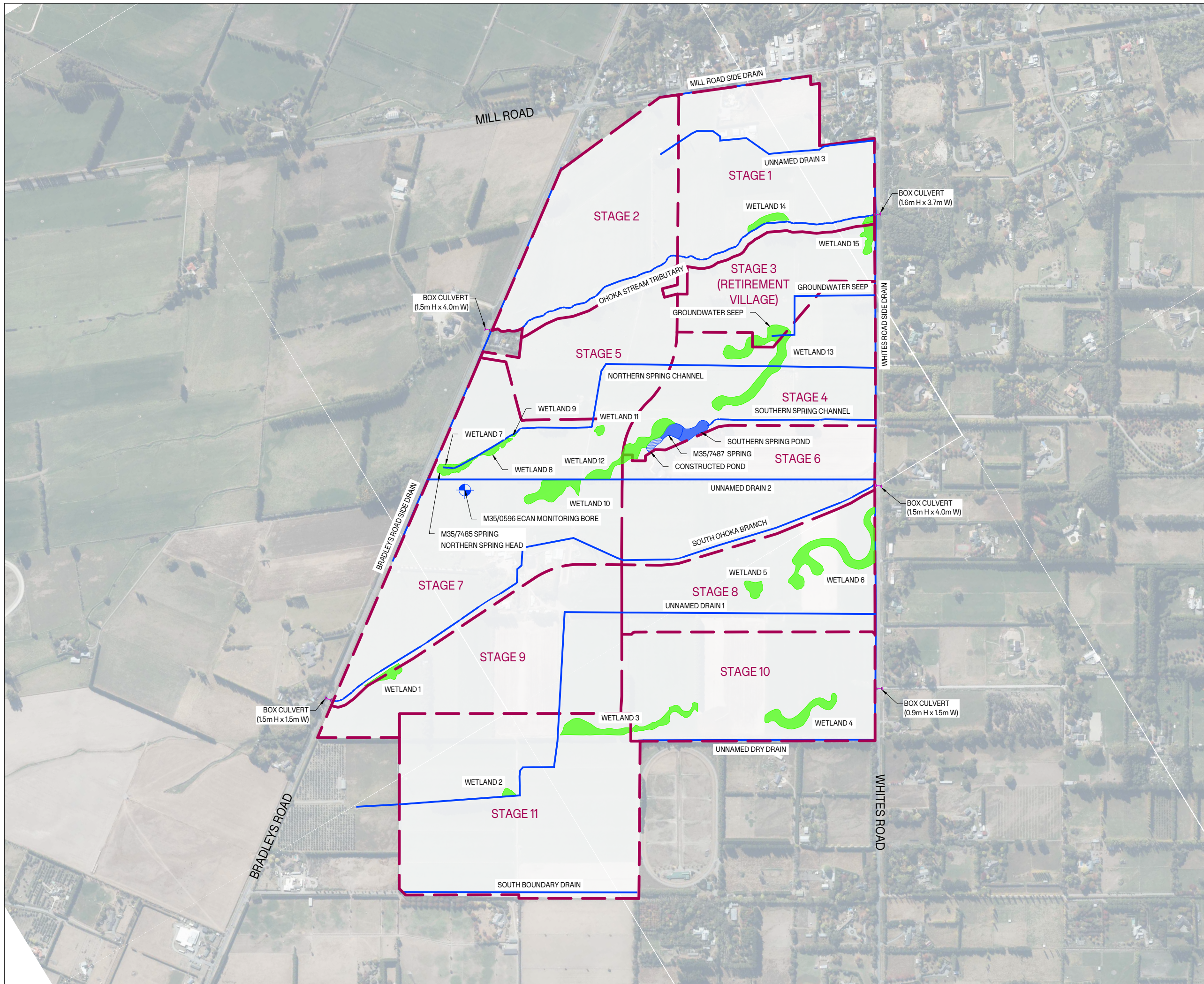
SURVEYED	-	-	
DESIGNED	SS		29/05/26
DRAWN	AO		29/05/26
CHECKED	SS		29/05/26
APPROVED	SS		29/05/2026

SCALE: 1:4,000 @A1 | 18,000 @A3 | REVISION

STATUS: **FOR INFORMATION** | **3**

PROJECT: **16013**

DWG NO: **16013-00-IN-9001**



WATERCOURSE AND WETLAND TOTALS		
FEATURE NAME	NO.	UNITS
WATERCOURSE TO REMAIN	5,211	m
WATERCOURSE REALIGNED	1,838	m
WATERCOURSE REMOVED	0	m
NATURAL WATERWAYS REMOVED	0	m
ARTIFICIAL WATERWAYS REMOVED	0	m
DRAINS REMOVED	0	m

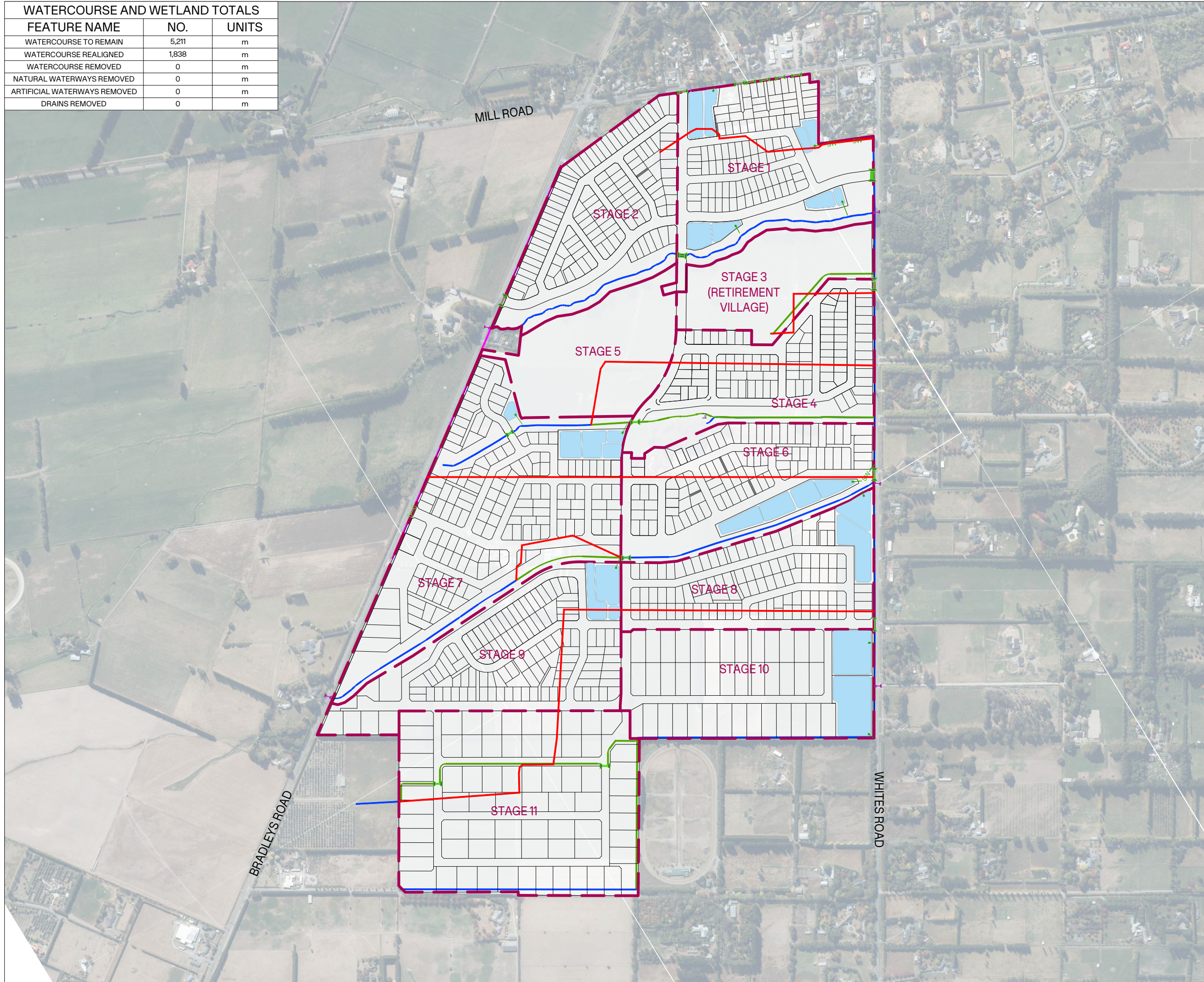


LEGEND:

- ABUTTAL BOUNDARY
- LOT BOUNDARY
- STAGING BOUNDARY
- CULVERT - EXISTING
- CULVERT - PROPOSED
- WATERWAY - EXISTING
- WATERWAY - REALIGNED
- WATERWAY - REMOVED
- ROAD SIDE DRAINS
- SMA OUTFALL STRUCTURE AND PIPE

NOTES

1. WETLAND AND DELINEATION AS PROVIDED BY PATTLE DELAMORE PARTNERS IN FIGURE 1: WETLAND DELINEATION, OHOKA RE.B, DATED JAN 2025/
2. EXISTING WATERWAY AND CULVERTS PROVIDED BY PATTLE DELAMORE PARTNERS HYDROLOGY ASSESSMENT, REF NO. C045180002. DATED JULY 2025.



NO.	REVISION DETAILS	BY	DATE
3	ISSUED FOR INFORMATION	AO	29/05/2026
2	UPDATE REALIGNED WATERWAYS	KC	17/07/2025
1	ISSUED FOR INFORMATION	AO	11/07/2025

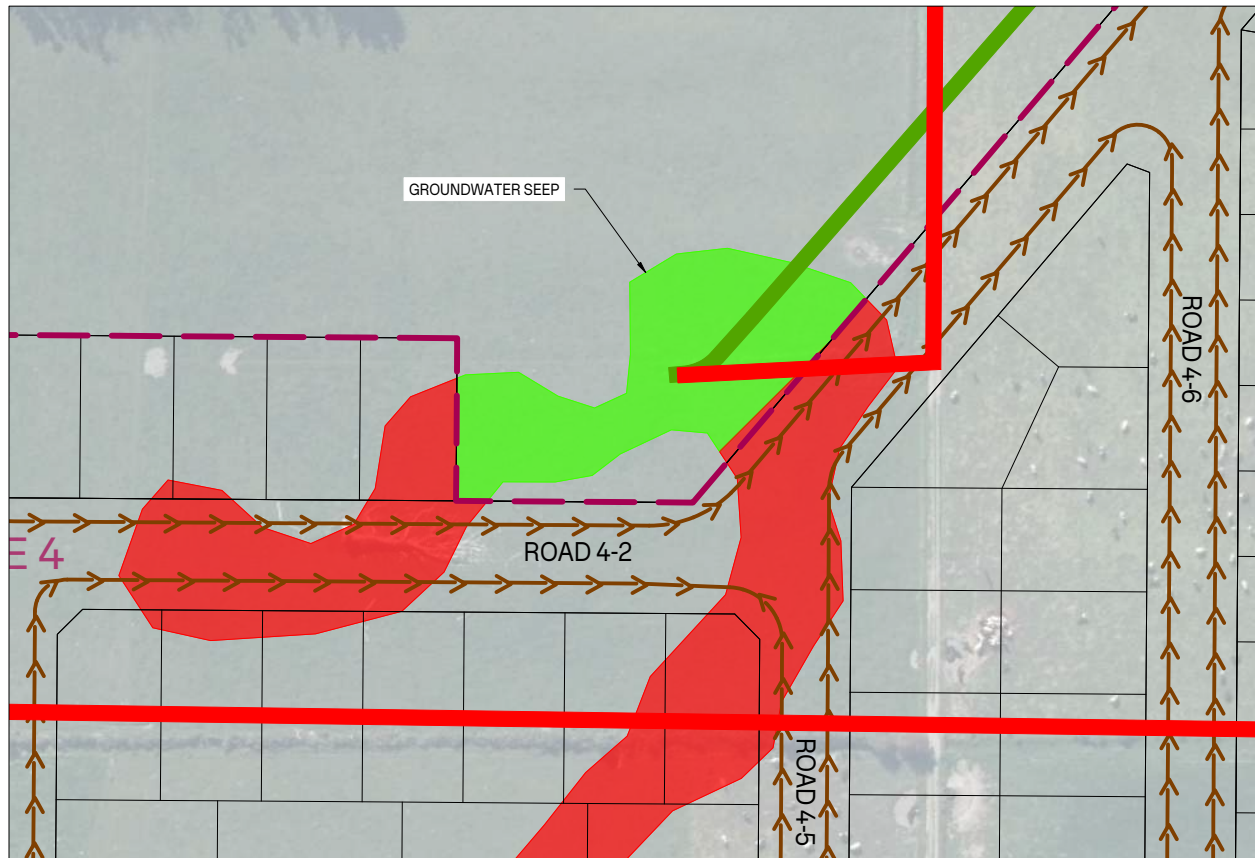
PROJECT: **MILL ROAD, OHOKA
WAIMAKARIRI
CANTERBURY**

DESCRIPTION: **WATERCOURSE
CHANGES
OVERVIEW PLAN**

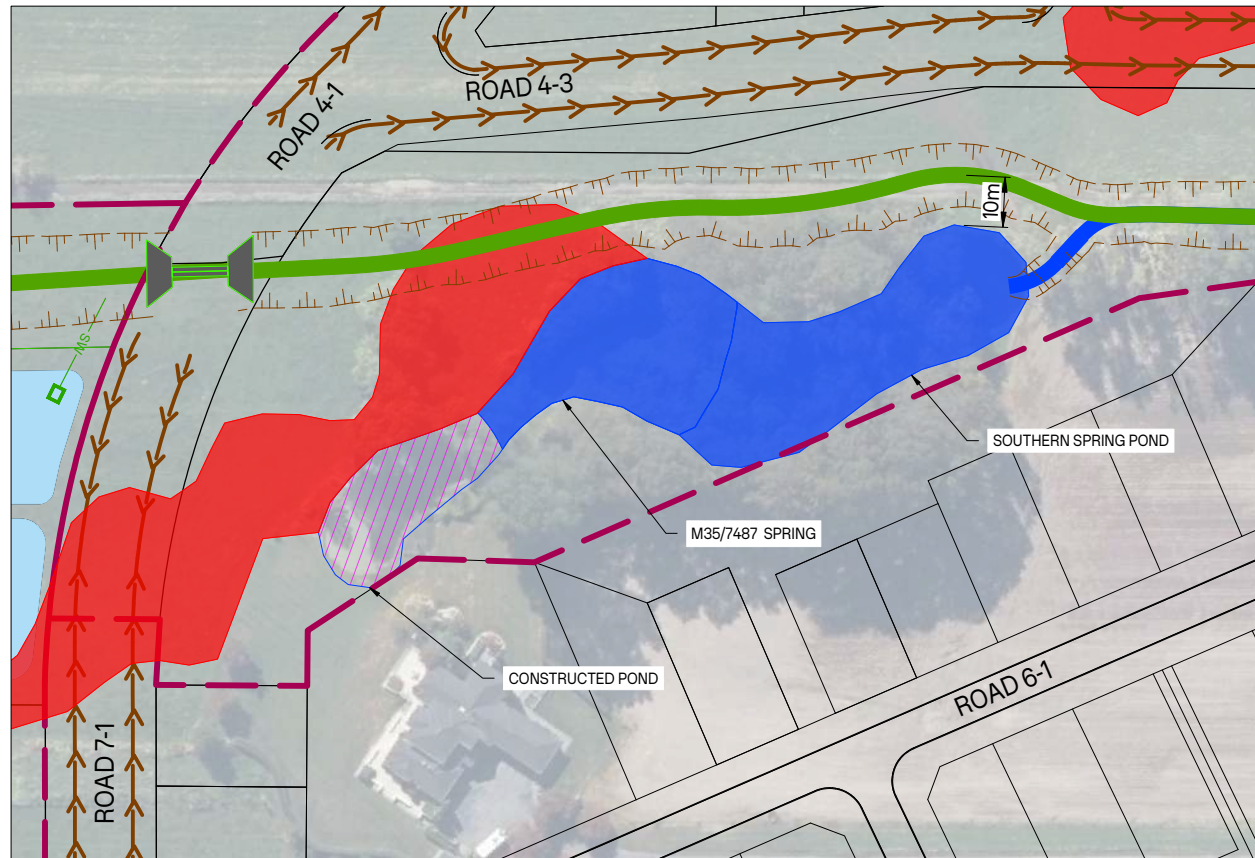
SURVEYED	-	-
DESIGNED	SS	29/05/26
DRAWN	AO	29/05/26
CHECKED	SS	29/05/26
APPROVED	SS	29/05/2026

SCALE	1:4,000 @A1	18,000 @A3	REVISION
STATUS	FOR INFORMATION		3
PROJECT	16013		
DWG NO	16013-00-IN-9002		

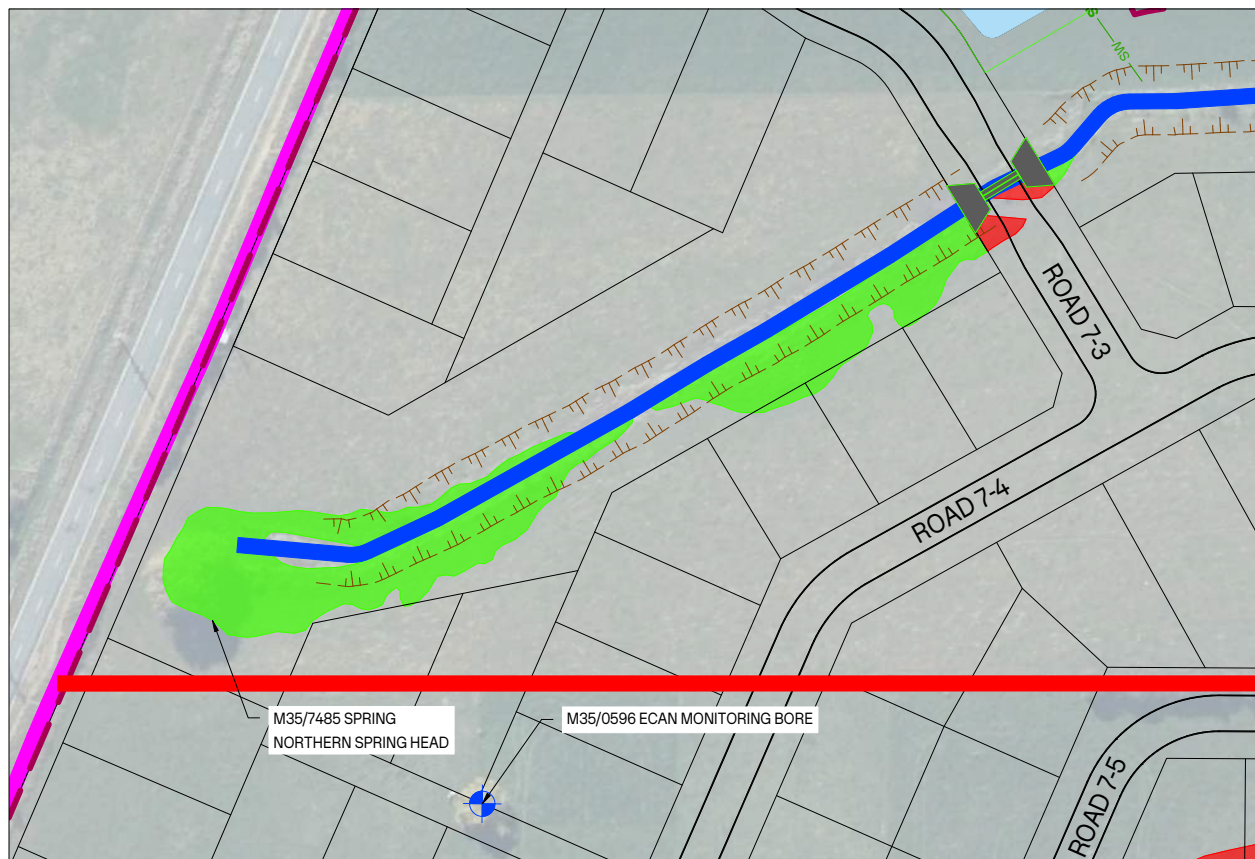
0 80 200 400 SCALE (m) 1:4000 @A1 1:80000 @A3



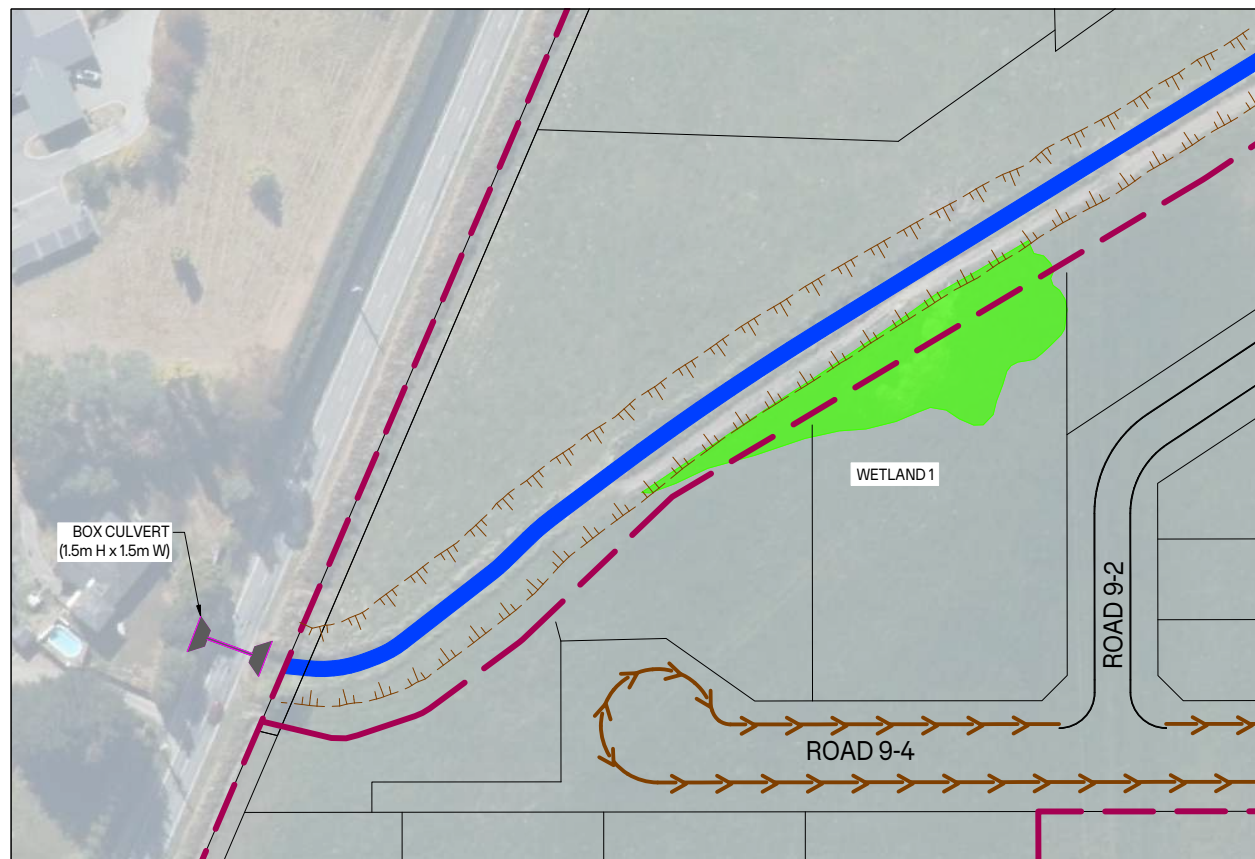
WETLAND - A
SCALE: A1 1:750 A3 1:1500



WETLAND - B
SCALE: A1 1:750 A3 1:1500



WETLAND - C
SCALE: A1 1:750 A3 1:1500



WETLAND - D
SCALE: A1 1:750 A3 1:1500

LEGEND:

- ABUTTAL BOUNDARY
- LOT BOUNDARY
- SITE BOUNDARY
- CULVERT - EXISTING
- CULVERT - PROPOSED
- WATERWAY - EXISTING
- WATERWAY - REALIGNED
- WATERWAY - REMOVED
- ROAD SIDE DRAINS
- WETLAND - EXISTING
- WETLAND - REMOVED
- SPRING POND - EXISTING
- POND - TO BE REMOVED
- STORMWATER MANAGEMENT AREAS (SMA)
- BANK TOP
- ROAD SWALE
- ROAD KERB
- GROUND DISTURBANCE / IMPERVIOUS SURFACE SETBACK
- MINIMUM RIPARIAN ENHANCEMENT SETBACK
- 15m LANDSCAPING STRIP SETBACK
- SMA OUTFALL STRUCTURE AND PIPE

NOTES

1. WETLAND AND DELINEATION AS PROVIDED BY PATTLE DELAMORE PARTNERS IN FIGURE 1: WETLAND DELINEATION, OHOKA RE.B, DATED JAN 2025/
2. EXISTING WATERWAY AND CULVERTS PROVIDED BY PATTLE DELAMORE PARTNERS HYDROLOGY ASSESSMENT, REF NO. C045180002. DATED JULY 2025.

3	ISSUED FOR INFORMATION	AO	29/05/2026
2	UPDATE REALIGNED WATERWAYS	KC	17/07/2025
1	ISSUED FOR INFORMATION	KC	11/07/2025
REVISION DETAILS		BY	DATE

PROJECT: **MILL ROAD, OHOKA
WAIMAKARIRI
CANTERBURY**

DESCRIPTION: **WETLAND PLAN**

SURVEYED	-	-
DESIGNED	SS	29/05/26
DRAWN	AO	29/05/26
CHECKED	SS	29/05/26
APPROVED	SS	29/05/2026

SCALE: AS SHOWN REVISION: 3

STATUS: FOR INFORMATION
PROJECT: 16013
DWG NO: 16013-00-IN-9003

APPENDIX C | AUTHOR'S CURRICULUM VITAE



MARLON SILVA

SENIOR CIVIL ENGINEER

QUALIFICATIONS

Bachelor of Science (Civil Engineering)
Chartered Professional Engineer

PROFILE

Marlon is an accomplished senior civil engineer with 13 years experience in New Zealand and internationally. With a strong background in residential projects, both large-scale multi-storey construction and residential subdivisions he has an eye for detail and an experience coordinating and working with contractors, subcontractors and consultants.

An excellent communicator, Marlon builds strong relationships with clients and with team members. He is well-placed in a liaison role between council, clients, suppliers and contractors, with a particular aptitude for diverse and complicated projects. He is an experienced team leader and enjoys training and mentoring junior civil engineers and interns.

KEY STRENGTHS

Communication and interpersonal skills
Organisation & Planning
2D Flood and detention modelling
Design work on subdivisions

PROJECT EXPERIENCE

RESIDENTIAL

Carter Group, Earlsbrook Stage 2 Subdivision, 2024-2025, Civil Design Review and Design Sign off

Earlsbrook is a new large-scale subdivision in Lincoln, Canterbury. Stage 2 consists of 229 new sections, of the overall 2,000-lot planned subdivision.

DevCorp, Beachside Sumner, Christchurch, 2025-current - Design Lead

Beachside is a multi-building, multi-level residential development

Raine Farm, Oaklands Subdivision Development, Richmond, Nelson, 2026-current - Hydrological Modelling

Devcorp Ltd, 250 Hamptons Road, Prebbleton, 2024 - Designer and Design reviewer

Design of the subdivision stormwater treatment and disposal system comprised of stormwater basins, soakage devices and design verification via HEC-HMS modelling. Catchment analysis and sizing of the wastewater drainage network, road pavement structural design and carrying out final review of collective civil engineering design.

Williams Corporation, 76 Banks Avenue, Dallington - Land Development Design Lead

A residential subdivision consisting of 44 units and public infrastructure which included roading, three waters and bridge crossing. Design management and observation of three waters and civil infrastructure, flood modelling and project coordination with other disciplines comprising bridge designers, environmental engineers, wastewater pressure sewer designers, traffic engineers, planners and structural engineers.

Williams Corporation, 16 Branston Street, Hornby - Land Development Design Lead

Large residential subdivision consisting of around 320 units. Design management of earthworks, internal road network, three waters, civil infrastructure, 2-dimensional flood modelling and project coordination.

90 Gladstone Road, Woodend, Waimakariri - Land Development Design Lead

A 21 lot residential subdivision, works included design management of the earthworks, internal road network and upgrades to the existing road frontage, three waters, civil infrastructure, and project coordination.

Large-scale residential project, Colombo, Sri Lanka (for Central Engineering Consultancy Bureau), 2012-2017 - Lead Civil Engineer

Three high-rise buildings including 1008 housing units and all associated infrastructure.

COMMERCIAL

Thompson Ltd, 120 Hoskyns Road & Arkiki Seed - Construction of industrial buildings, 2025 - Engineering Design Lead

Next Level Developments, Ascot Driving Range, Christchurch, 2025 - Engineering Design

Includes three waters design, turf and earthworks design, carpark reinstatement

VinLink Marlborough Ltd, Winery Extension Riverlands, Marlborough - Civil Engineering Designer

Included a large commercial building, vehicle manoeuvring areas and two culvert crossings. 1 dimensional flood modelling across the public open drain, design of the culvert installation, three waters and roading design

CIVIC

Kaikoura District Council, Wakatu Quay, 2024 - Civil Engineering Design Lead

Civil engineering design for the of the proposed tourism and recreational hub at Wakatu Quay which forms a part of the Kaikoura Marine Development Programme.



SANNA SOEDERLIND

LAND DEVELOPMENT LEAD

QUALIFICATIONS

CMEngNZ | CPEng | M. Eng. (Civil & Environmental)

PROFILE

Sanna is Chartered Professional Civil Engineer and Auckland Council Producer Statement Author with thirteen years' experience in design and construction monitoring of land development projects. With involvement in projects across the public and private sectors, including greenfield and brownfield subdivisions, retirement villages, social housing, sports facilities and other forms of land development. Sanna is able to leverage her experience to make innovative and thoughtful engineering decisions.

KEY STRENGTHS

Civil engineering design management and coordination
Excellent communication
Pragmatic, personable and approachable
Organisation and time management

RELEVANT PROJECT EXPERIENCE

Blue Skies Subdivision, Kaiapoi, Canterbury, 2024-2026, Lead Civil Engineer, CPEng Reviewer

Brownfield Subdivision Development including 76 residential lots including two superlots, a recreation reserve, a childcare site and a stormwater management area.

The role included coordinating the engineering design and working closely with the project lead and wider consultant team including transportation/traffic, geotechnical, environmental, ecology, landscaping and urban design, and other disciplines to deliver streamlined outcomes for the client.

Auckland Council, Healthy Waters, Network Solutions, 2025 – Ongoing, Consultant Healthy Waters Specialist, Expert Witness

Involvement in the Network Upgrade Programme, Managed Service Request projects and acting as an Expert Witness for Healthy Waters, for public infrastructure on private land, including providing property access strategy advice, project management and stakeholder engagement with private property owners and teams within Healthy Waters and obtaining legal access by way of agreement and/or issuing statutory notices. Projects include:

- Auckland Transport Eastern Busway Zones 2, 3 and 4
- Croftfield Wetland and Link Drive Pond
- Knightsbridge Pond
- Numerous Pipelining Projects
- Puketaha Outfall Upgrade
- Han Court Slip Remediation and Outfall Upgrades
- East Tamaki Dam Spillway Upgrade

Pioneer Highway, Palmerston North, 2025-2026, Project Director

Stormwater Management Plan including flood modelling for a 10-lot subdivision.

Moir Hill Due Diligence, Warkworth, 2026, Project Director

Due diligence reporting and concept viability investigations for a 1,500Ha site, including assessing suitability for a Fast Track Application.

Rewa Road Overland Flow Path Assessment, Maraetai, 2026, Engineering Lead

Overland Flow Path Assessment for Auckland Transport project with footpath and drainage upgrades.

Te Roera Drive Stormwater Assessment, Taradale, 2025, Lead Civil Engineer, CPEng Reviewer

Stormwater Management Report and related engineering plans for a 25Ha rural subdivision.

Cardinal Logistics Warehouse, Rolleston, 2025, Engineering Lead

Resource Consent engineering reporting and plans for a 33,000m² warehouse building.

McTeigue Subdivision Detailed Design, Christchurch, 2024, CPEng Reviewer

22-lot residential subdivision including three superlots.

Whangarei Park Village Consenting and Construction, Whangarei, 2022-2024, Project Lead, CPEng Reviewer

24-unit extension to an existing retirement village.

Waimarie Street Subdivision, Auckland, 2023-2024, Project Lead, CPEng Reviewer

Detailed design for a 58-lot residential subdivision.

Tāmaki Regeneration Company (TRC), Pirangi - 1 & 11 Tuakiri Street & 154 Tripoli Road, Point England 2023-2024, CPEng Reviewer

88-unit social housing development including 77 individual lots and a 12-unit apartment.

Melife Care, 7-19 St Vincent Avenue, Remuera, 2022-2023, CPEng Reviewer and Expert Witness

5-storey retirement complex. Reviewer for Infrastructure Report for the Resource Consent including acting as expert witness including providing hearing evidence following notification.