Te Kaunihera o Te Hiku o te Ika
Far North District Council

Office Use Only
Application Number:

Application for resource consent or fast-track resource consent

(Or Associated Consent Pursuant to the Resource Management Act 1991 (RMA)) (If applying for a Resource Consent pursuant to Section 87AAC or 88 of the RMA, this form can be used to satisfy the requirements of Schedule 4). Prior to, and during, completion of this application form, please refer to Resource Consent Guidance Notes and Schedule of Fees and Charges — both available on the Council's web page.

1. Pre-Lodgement Meeting

Have you met with a council Resource Consent representative to discuss this application prior to lodgement? ◯ **Yes** ◯ **No**

2. Type of Consent being applied for

(more than one circle can be ticked):

- ✔ **Land Use**
- ◯ **Fast Track Land Use***
- ◯ **Subdivision**
- ◯ **Consent under National Environmental Standard** (e.g. Assessing and Managing Contaminants in Soil)
- ◯ **Discharge**
- ◯ **Change of Consent Notice (s.221(3))**
- ◯ **Extension of time (s.125)**
- ◯ **Other (please specify)** _____

The fast track is for simple land use consents and is restricted to consents with a controlled activity status.

3. Would you like to opt out of the Fast Track Process?

✔ **Yes** ◯ **No**

4. Consultation

Have you consulted with Iwi/Hapū? ✔ **Yes** ◯ **No**

If yes, which groups have you consulted with?	Please see AEE Appendix F
Who else have you consulted with?	

*For any questions or information regarding iwi/hapū consultation, please contact Te Hono at Far North District Council **tehonosupport@fndc.govt.nz***

5. Applicant Details

Name/s: Keri Green Limited

Email: [redacted]

Phone number:

Postal address:
(or alternative method of service under section 352 of the act)

6. Address for Correspondence

Name and address for service and correspondence (if using an Agent write their details here)

Name/s: Cato Bolam Consultants Ltd - Emily MacDonald

Email: [redacted]

Phone number:

Postal address:
(or alternative method of service under section 352 of the act)

**** All correspondence will be sent by email in the first instance. Please advise us if you would prefer an alternative means of communication.***

7. Details of Property Owner/s and Occupier/s

Name and Address of the Owner/Occupiers of the land to which this application relates (where there are multiple owners or occupiers please list on a separate sheet if required)

Name/s:

Property Address/ Location:

Postcode

8. Application Site Details

Location and/or property street address of the proposed activity:

Name/s:

Site Address/ Location: 966 Te Ahu Ahu Road, Oromahoe, Haruru

Postcode

Legal Description: Section 1 Block VI Kawakawa SD **Val Number:**

Certificate of title: NA213/105

Please remember to attach a copy of your Certificate of Title to the application, along with relevant consent notices and/or easements and encumbrances (search copy must be less than 6 months old)

Site visit requirements:

Is there a locked gate or security system restricting access by Council staff? ◯ **Yes** ◯ **No**

Is there a dog on the property? ◯ **Yes** ✔ **No**

Please provide details of any other entry restrictions that Council staff should be aware of, e.g. health and safety, caretaker's details. This is important to avoid a wasted trip and having to re-arrange a second visit.

As the site is a working farm please contact prior to visiting the site to arrange a specific time so the applicant knows when anyone is on site for health and safety.

9. Description of the Proposal:

Please enter a brief description of the proposal here. Please refer to Chapter 4 of the District Plan, and Guidance Notes, for further details of information requirements.

It is proposed to relocate Keri Green Limited's existing compost operations from 18 Allis Bloy Place, Ruakaka to 966 Te Ahu Ahu Road, Oromahoe ("the site") which will include organic primary industry processing biproducts. This includes organic waste from meat processing and milk processing, ensuring that only waste free from chemicals will be accepted.

If this is an application for a Change or Cancellation of Consent Notice conditions (s.221(3)), please quote relevant existing Resource Consents and Consent Notice identifiers and provide details of the change(s), with reasons for requesting them.

10. Would you like to request Public Notification?

◯ **Yes** ✔ **No**

11. Other Consent required/being applied for under different legislation

(more than one circle can be ticked):

- ◯ **Building Consent** Enter BC ref # here (if known)
- ✔ **Regional Council Consent (ref # if known)** Ref # here (if known)
- ◯ **National Environmental Standard consent** Consent here (if known)
- ◯ **Other (please specify)** Specify 'other' here

12. National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health:

The site and proposal may be subject to the above NES. In order to determine whether regard needs to be had to the NES please answer the following:

Is the piece of land currently being used or has it historically ever been used for an activity or industry on the Hazardous Industries and Activities List (HAIL) ◯ **Yes** ✔ **No** ◯ **Don't know**

Is the proposed activity an activity covered by the NES? Please tick if any of the following apply to your proposal, as the NESCS may apply as a result. ◯ **Yes** ✔ **No** ◯ **Don't know**

- ◯ **Subdividing land**
- ◯ **Changing the use of a piece of land**
- ◯ **Disturbing, removing or sampling soil**
- ◯ **Removing or replacing a fuel storage system**

13. Assessment of Environmental Effects:

Every application for resource consent must be accompanied by an Assessment of Environmental Effects (AEE). This is a requirement of Schedule 4 of the Resource Management Act 1991 and an application can be rejected if an adequate AEE is not provided. The information in an AEE must be specified in sufficient detail to satisfy the purpose for which it is required. Your AEE may include additional information such as Written Approvals from adjoining property owners, or affected parties.

Your AEE is attached to this application ✔ **Yes**

13. Draft Conditions:

Do you wish to see the draft conditions prior to the release of the resource consent decision? ● **Yes** ◯ **No**

If yes, do you agree to extend the processing timeframe pursuant to Section 37 of the Resource Management Act by 5 working days? ✔ **Yes** ◯ **No**

14. Billing Details:

This identifies the person or entity that will be responsible for paying any invoices or receiving any refunds associated with processing this resource consent. Please also refer to Council's Fees and Charges Schedule.

Name/s: (please write in full) Keri Green Ltd

Email: [redacted]

Phone number: [redacted]

Postal address:
(or alternative method of service under section 352 of the act) [redacted]

Fees Information
An instalment fee for processing this application is payable at the time of lodgement and must accompany your application in order for it to be lodged. Please note that if the instalment fee is insufficient to cover the actual and reasonable costs of work undertaken to process the application you will be required to pay any additional costs. Invoiced amounts are payable by the 20th of the month following invoice date. You may also be required to make additional payments if your application requires notification.

Declaration concerning Payment of Fees
I/we understand that the Council may charge me/us for all costs actually and reasonably incurred in processing this application. Subject to my/our rights under Sections 357B and 358 of the RMA, to object to any costs, I/we undertake to pay all and future processing costs incurred by the Council. Without limiting the Far North District Council's legal rights if any steps (including the use of debt collection agencies) are necessary to recover unpaid processing costs I/we agree to pay all costs of recovering those processing costs. If this application is made on behalf of a trust (private or family), a society (incorporated or unincorporated) or a company in signing this application I/we are binding the trust, society or company to pay all the above costs and guaranteeing to pay all the above costs in my/our personal capacity.

Name: (please write in full) Matt Simpkin

Signature: [redacted] Date 23-Jun-2025
(signature of bill payer)

MANDATORY

15. Important Information:

Note to applicant
You must include all information required by this form. The information must be specified in sufficient detail to satisfy the purpose for which it is required.
You may apply for 2 or more resource consents that are needed for the same activity on the same form.
You must pay the charge payable to the consent authority for the resource consent application under the Resource Management Act 1991.

Fast-track application
Under the fast-track resource consent process, notice of the decision must be given within 10 working days after the date the application was first lodged with the authority, unless the applicant opts out of that process at the time of lodgement. A fast-track application may cease to be a fast-track application under section 87AAC(2) of the RMA.

Privacy Information:
Once this application is lodged with the Council it becomes public information. Please advise Council if there is sensitive information in the proposal. The information you have provided on this form is required so that your application for consent pursuant to the Resource Management Act 1991 can be processed under that Act. The information will be stored on a public register and held by the Far North District Council. The details of your application may also be made available to the public on the Council's website, www.fndc.govt.nz. These details are collected to inform the general public and community groups about all consents which have been issued through the Far North District Council.

15. Important information continued...

Declaration

The information I have supplied with this application is true and complete to the best of my knowledge.

Name: (please write in full) Aneta Jelavich

Signature: [redacted]

Date 24-Jun-2025

A signature is not required if the application is made by electronic means

Checklist (please tick if information is provided)

- ◯ Payment (cheques payable to Far North District Council)
- ◯ A current Certificate of Title (Search Copy not more than 6 months old)
- ◯ Details of your consultation with Iwi and hapū
- ◯ Copies of any listed encumbrances, easements and/or consent notices relevant to the application
- ◯ Applicant / Agent / Property Owner / Bill Payer details provided
- ◯ Location of property and description of proposal
- ◯ Assessment of Environmental Effects
- ◯ Written Approvals / correspondence from consulted parties
- ◯ Reports from technical experts (if required)
- ◯ Copies of other relevant consents associated with this application
- ◯ Location and Site plans (land use) AND/OR
- ◯ Location and Scheme Plan (subdivision)
- ◯ Elevations / Floor plans
- ◯ Topographical / contour plans

Please refer to Chapter 4 of the District Plan for details of the information that must be provided with an application. Please also refer to the RC Checklist available on the Council's website. This contains more helpful hints as to what information needs to be shown on plans.

Cato Bolam

creating great places

Kerigreen Limited
966 Te Ahu Ahu Road, Oromahoe, Haruru

Resource Consent Application
To establish compost operations

PLANNERS | SURVEYORS | ENGINEERS | ARCHITECTS | ENVIRONMENTAL

catobolam.co.nz

Document Record

Client	Kerigreen
Site Address	966 Te Ahu Ahu Road, Oromahoe, Haruru
Job Number	49114
Document	Resource Consent Application
Document No	49114-RP-PLN-PL01 Compost consent

Issue and Status

Date of Issue	23/06/2025
Status	For Resource Consent
Author	Emily McDonald– Senior Planner
Reviewer	Chanelle Brodie – Senior Planner
Approved for Issue	Simon Reiher – Director

Originating Office

Office	Whangarei
Postal Address	PO Box 1919, Whangarei 0140
Phone	09 438 1684

Contents

1.0 Property / Application Details

Site Address:	966 Te Ahu Ahu Road, Oromahoe
Legal Description:	Section 1 Block VI Kawakawa SD (RT NA312/105)
Site Area:	53.2278 hectares ("**ha**")
Operative Plans Applying:	Far North District Plan Proposed Regional Plan (Operative in Part Version)
District Plan Zoning:	Rural Production Zone
Proposed Regional Plan	N/A
Other Applications Required:	N/A

2.0 Introduction

2.1 Proposal in Brief

It is proposed to relocate Keri Green Limited's (known commonly as, and referred to in the remainder of this AEE report, Kerigreen) existing compost operations from 18 Allis Bloy Place, Ruakaka to 966 Te Ahu Ahu Road, Oromahoe ("**the site**") which will include organic primary industry processing biproducts. This includes organic waste from meat processing and milk processing, ensuring that only waste free from chemicals will be accepted.

The Proposed Regional Plan only provides for the composting process to use animal parts when these are from the same property in which the composting is proposed to be undertaken. The provisions providing for the discharge of contaminants from composting operations greater than 10 cubic metres do not permit compost to include fats, offal or animal carcasses.

2.2 Main Issues Raised by the Proposal

It is considered that there are no significant resource management issues raised by this proposal. While a resource consent is required, adverse effects on receiving environments are deemed to be less than minor.

3.0 Site and Locality Description

The subject site is located in Oromahoe approximately 1.3km to the southwest of the junction between State Highway 10 and Puketona Road. The site is held in Records of Title NA213/105, provided in **Appendix A**. The land generally has a southern aspect and gently slopes into a raupō reedland wetland, which occurs along the southwestern boundary and bisects the property in the south. The predominant land cover is exotic grazing pasture, with wetlands, streams and native vegetation also present in the gullies. This is typical of the surrounding landscape. The site has existing access from Te Ahu Ahu Road along a paper road, and the existing access is proposed to be upgraded

as part of this application. The property's location and locality within the surrounding environment is shown below in **Figure 1**.

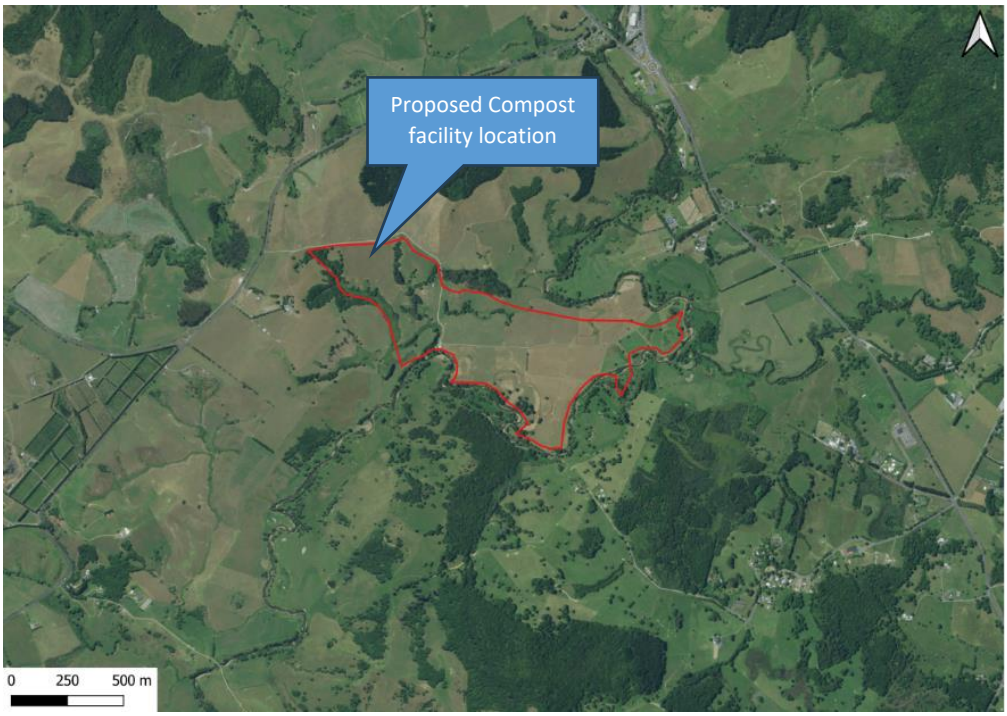

Figure 1: Location of the subject site (highlighted in red) in relation to the surrounding environment.

The area proposed to be used by Kerigreen within 966 Te Ahu Ahu Road is approximately 3.18 hectares ("ha") in area (see **Figure 2** below).

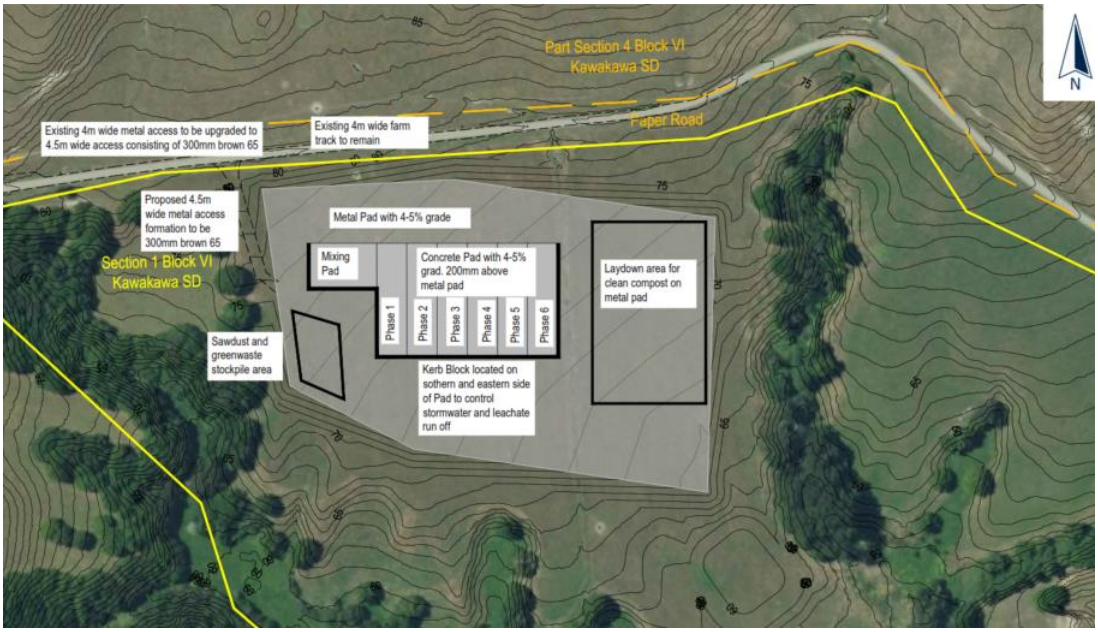

Figure 2: Layout of the site's proposed composting activities within 966 Te Ahu Ahu, Oromahoe, Haruru

4.0 The Proposal

It is proposed to relocate Kerigreens existing composting operations to the site and to include organic primary industry processing biproducts as a component of the composting operations. This includes organic waste from meat processing and milk processing, ensuring that only waste free from chemicals

will be accepted. Organic primary industry processing biproducts will make up approximately 10% of the initial compost mixture. The materials that are to be used in the compost are as follows:

- Sawdust and bark;
- Dewatered paunch grass;
- Organic primary industry processing biproduct;
    - Dairy processing organic waste
    - Meat processing organic waste
- Scoured wool fragments;
- Chicken manure;
- Green waste; and
- Leaf litter.

Organic primary industry waste makes up a sizable contribution to landfills from the meat and milk processing industries. The proposed composting of this organic waste will divert this material from the waste stream and provides a sustainable alternative use that is both economically and environmentally positive. All the nutrients in the resultant compost are plant available and can be safely returned to pasture or for horticulture needs.

The proposed compost operations are discussed further in the Compost Management Plan ("**CMP**") contained in **Appendix C**.

The composting activities plans are contained in **Appendix B** and will be carried out on a newly formed platform of approximately 2.1 hectares, comprising:

- A concrete pad (3,000 m²) for the initial mixing of compost ingredients;
- A surrounding metal hardstand area for windrows and vehicle manoeuvring;
- Associated drainage and stormwater infrastructure;
- A 300mm thick, 4.5m wide upgraded metal accessway, including passing bays every 100m;
- A truck turning and delivery pad for material drop-off.

Access will be via an existing farm track to be upgraded to the required standard. The expected frequency of use is 3–4 heavy vehicle movements per day, which is consistent with rural operations. Sight distances from Te Ahu Ahu Road exceed the 210m minimum required for the 100 km/h speed environment.

Bulk earthworks are required to establish the composting platform and upgrade access tracks. The proposed volumes are:

- **Cut:** 18,552 m³
- **Fill:** 17,103 m³

- **Surplus (1,448 m³)** to be reused in composting or contouring.

Earthworks will occur on existing pasture and do not involve vegetation clearance. Erosion and sediment controls will be implemented in accordance with GD05 and include silt fences, runoff diversion bunds, and a sediment retention pond sized to exceed the maximum capacity for the disturbed area. The basin will be initially used as an oversized Sediment Retention Pond ("**SRP**") during earthworks before functioning as a stormwater detention basin post-construction.

The composting platform will generate both stormwater and leachate. To manage this:

For the leachate management:

- Two 25,000L leachate tanks will collect leachate runoff from the concrete pad;
- A leachate conveyance system using a grated sump and MH will direct runoff to the tanks, preventing discharge to land or water;
- Leachate will be reused in the composting process via irrigation.

For the stormwater management:

- The concrete pad is raised and bunded to prevent external stormwater contamination;
- A dry detention basin has been designed to attenuate stormwater discharges to 80% of pre-development levels, in accordance with Far North District Council ("**FNDC**") EES 2023;

The site will operate off-grid with:

- No reticulated power or telecommunications;
- Portable toilet facilities for workers;
- No potable water supply required;
- Stormwater and leachate systems entirely self-contained within the site.

Further technical detail and design methodology for all aspects of access, earthworks, stormwater, and leachate management are provided in the Engineering Report contained in **Appendix D**

5.0 Reasons for the Application

5.1 Proposed Northland Regional Plan (PNRP), discharge permits (section 15)

The proposal requires **discretionary** activity discharge permits under PNRP Rules:

- C.6.7.7 (solid waste discharges),
- C.6.3.6 (production land discharges), and
- Rule C.6.6.6 (Industrial or trade discharges).

The PNRP is a combined regional air, land, water, and coastal plan, which will replace the three existing regional plans. This plan contains objectives, policies, and rules relating to these matters. The PNRP must give effect to the national planning documents and the RPS. The PRP was notified in 2017. All appeals have been resolved and the plan is now waiting to be declared operative.

Rule C.6.7.4 of the PNRP addresses composting operations exceeding 10 cubic meters, permitting such discharges under specific conditions. However, the proposed compost operations include organic byproducts from primary industry processing, such as fats, offal, and animal carcasses, which are excluded under Condition 1 of the rule. As a result, consent is required as a discretionary activity discharge permit under Rule C.6.7.7 of the PNRP.

The PNRP provides for discharges related to dead animal or offal disposal using the composting process under Rule C.6.3.4, but only if the dead animals or parts come from the production land on the property and specific industry guidelines are followed. The applicant complies with New Zealand's NZS4454:2005 and Australia's AS4454-2012 composting guidelines, which outline best practices for facility operators, including ingredient management, composting processes, moisture content, temperature, and oxygenation. However, this proposal includes importing organic byproducts for composting, which triggers the need for consent as a discretionary activity discharge permit under Rule C.6.3.6 of the PNRP.

The PNRP Rule C.6.6.6 applies to discharges of contaminants onto or into land or water resulting from industrial or trade premises, which includes composting facilities that process external organic waste as part of a business operation. The Kerigreen site is receiving, mixing, and processing external inputs (including animal processing waste) for use in compost production, and is therefore considered an industrial/trade premise for the purposes of this rule. Accordingly, consent is also required under Rule C.6.6.6 as a discretionary activity

5.2 Far North District Plan, land use consent (section 9)

The proposal requires a **discretionary** activity land use consent under the Rural Production Zone Rule 8.6.5.4 because of the discretionary activity earthworks proposed under Part 3 Rule 12.3.6.3.

The site is zoned Rural Production under the Operative Far North District Plan. This zone is intended to provide for a range of land-based primary production activities, while managing potential adverse effects on rural character, landscape values, and infrastructure.

The proposed composting activity is not specifically provided for as a permitted activity within the Rural Production Zone. The composting activity proposed by Kerigreen is associated with rural production and aligns with the intent of the zone. In particular, the scale of the activity complies with the thresholds outlined in Rule 8.7.5.1.2 – Scale of Activities, which permits 1 person per 1,000m² of net site area.

With approximately 2.1 hectares of land area proposed for the activity, the allowable number of people on site is up to 21 persons at any one time. The anticipated staffing and activity levels fall within this limit.

The proposed site works include cut and fill associated with composting pad formation, drainage, and stormwater infrastructure. The earthworks volumes are:

- **Cut:** 18,552 m³
- **Fill:** 17,103 m³
- **Balance:** 1,448 m³

These volumes exceed the 5,000 m³ threshold permitted under Rule 12.3.6.1.1 – Excavation and/or Filling in the Rural Production Zone. As the proposed cut and fill exceeds these thresholds, resource consent is required as a discretionary activity under Rule 12.3.6.3.

5.3 Overall Status of the Application

The overall activity status of the application is discretionary.

Resource consent under the Proposed Northland Regional Plan is required as a Discretionary Activity.

Resource consent under the Far North District Plan is required as a Discretionary Activity.

Consent is sought concurrently from Northland Regional Council and Far North District Council for the project. We envisage the bulk of the consenting requirements to be assessed from a regional perspective and alignment between the two consenting agencies is sought.

6.0 Application Assessment

6.1 Statutory Considerations

6.1.1 Relevant Section of the RMA

When considering an application for a discretionary activity the Council as consent authority must have regard to Part 2 of the RMA ("Purposes and Principles" – sections 5 to 8), and sections 104, 104B and 108 of the RMA.

Subject to Part 2 of the RMA, when considering an application for resource consent and any submissions received the Council must, in accordance with section 104(1) of the RMA have regard to the matters addressed in 6.2 – 6.7 below.

6.2 Section 104(1)(a) Actual and Potential Effects on the Environment

6.2.1 Permitted Baseline / Existing Environment

Pursuant to section 104(2), when forming an opinion for the purposes of section 104(1)(a) a council may disregard an adverse effect of the activity on the environment if the plan or a NES permits an activity with that effect (i.e. a council may consider the "permitted baseline").

In this case, there is considered to be a discharge permitted baseline which is composting facilities operations which do not include composting of dead animals and animal parts under Rule C.6.3.4 of the Proposed Northland Regional Plan. It is also noted that there is a permitted baseline for composting less than 10 cubic metres of dead animals and animal parts from the production land activity within the property are to be composted under Rule C.6.3.4 of the Proposed Northland Regional Plan. However over 10 cubic metres of organic primary industry processing biproducts are proposed to be imported to the site for composting through this proposal.

The proposal, including the composting operation itself, fall within the scope of permitted activities under the Far North District Plan, except for earthworks, which exceed the 5,000m³ per annum threshold under Rule 12.3.6.1.1 and therefore require restricted discretionary consent.

6.2.2 Assessment of Effects on the Environment

This part of the AEE assesses the proposal under Section 104(1)(a) and 104(1)(ab) Actual and Potential Effects on the Environment and Section 104(1)(b)(vi) Relevant Provisions of the District and Regional Plans' Assessment Criteria, Objectives and Policies.

As a discretionary activity, Council's discretion to grant or decline the consent, or impose conditions is unrestricted to planning matters relevant. The relevant environmental effects are considered in turn below.

6.2.3 Positive effects

The establishment of a new composting facility at 966 Te Ahu Ahu Road, Oromahoe will generate a number of positive effects, both locally and regionally. These benefits align with the sustainable management purpose of the Resource Management Act 1991 and support national and regional objectives for waste minimisation, land productivity, and rural economic activity.

The proposed facility will provide a sustainable outlet for organic waste, including meat and dairy processing byproducts, which are typically disposed of in landfills. By diverting these materials, the activity will reduce methane emissions from anaerobic decomposition in landfills and contribute to improved environmental outcomes. The composting process transforms organic waste into a stable, nutrient-rich product that can enhance soil health, reduce erosion, and improve moisture retention in agricultural and horticultural soils.

Organic primary industry byproducts such as offal, fats, and paunch material represent a significant portion of the waste stream from the meat and dairy sectors. This facility will help divert these materials from landfill, supporting both industry and regional waste reduction targets while promoting circular economy principles.

The development and operation of the composting facility will create employment opportunities, including construction work and ongoing operational roles. It will also provide a cost-effective disposal option for organic processors, particularly those in Northland's agricultural sector, supporting local and regional economic activity.

The facility incorporates best-practice environmental management systems, including leachate containment, stormwater attenuation, and a strict composting protocol consistent with NZS 4454:2005 and AS 4454-2012. The proposal sets a high standard for sustainable organic waste processing and demonstrates leadership in environmentally responsible rural development.

In summary, the proposal offers significant positive effects by creating a new, purpose-built composting facility that supports environmental protection, sustainable waste management, and rural economic resilience. These benefits contribute to the wider goals of resource efficiency and improved environmental outcomes across the region.

6.2.4 Land Use and Rural Character effects

The activity is consistent with the surrounding rural land use and does not involve urban intensification or land fragmentation. The site layout design retains open rural character and visual separation from neighbouring properties. Composting is considered an appropriate rural activity, and the site layout ensures visual containment and low-impact integration.

Composting is considered an appropriate rural activity because it aligns with land-based primary production systems, supports soil health and productivity, and is anticipated in the Rural Production

Zone as a low-density rural industry. The activity does not introduce urban character or land use intensity and is well-contained within a large rural site, avoiding adverse visual or amenity effects. The facility uses best-practice management techniques and is sited to maintain rural openness and landscape character. Therefore, effects on rural character are considered to be less than minor.

6.2.5 Earthworks and Sediment Control related effects

Earthworks required for site formation exceed the 5,000 m³ permitted threshold. The proposed plans contained in **Appendix B** include robust sediment and erosion controls (e.g. diversion bunds, silt fences, sediment retention pond sized for 2.8 ha catchment). Works will comply with FNDC Environmental Engineering Standards 2023 and GD05 guidelines. Therefore, earthworks and sediment-related effects are considered to be less than minor.

6.2.6 Noise effects

Operational noise is expected to be generated by machinery such as loaders and trucks. Activities will comply with the permitted rural noise limits of the ODP. No night-time operations are proposed, and the sites existing vegetation and setback from the nearest residential activities will provide sufficient and vegetation screening will provide sufficient buffering. Therefore, noise effects are considered to be less than minor.

6.2.7 Discharges to Land and Water effects

The composting operation involves the discharge of organic material and leachate, requiring consent under Rules C.6.3.6 and C.6.7.7 of the Proposed Northland Regional Plan. The site includes a stormwater and leachate management system, comprising:

- Two 25,000L buried tanks for leachate and stormwater collection;
- An attenuation basin (Basin 1) designed for the 1% AEP event;
- Drainage and bunding to direct all surface flows to collection points;
- Reuse of collected leachate for irrigation of compost piles.

These measures ensure containment of contaminants and prevent adverse effects on groundwater or surface water. Discharges are appropriately managed, and the effects are considered to be less than minor.

6.2.8 Discharge to air and Odour Effects

The proposal involves the operation of a composting facility with the introduction of organic byproducts from primary industry processing, including fats, offal, and animal carcasses. As a result, the potential for discharge of contaminants and odour beyond the site boundary is recognised as the primary environmental effect requiring assessment.

To manage these effects, a Compost Management Plan has been prepared (contained in **Appendix C),** which outlines a range of best practice operating procedures designed to minimise air quality and odour impacts. These include:

- Moisture management through the use of sprinklers to keep windrows sufficiently damp, thereby reducing the potential for odour and dust generation;

- Wind direction restrictions on turning windrows and conducting green waste shredding — these activities will be avoided during southwest, south, and southeast winds, which are the prevailing directions toward nearby residentially zoned properties;

- Process timing and ingredient control to avoid the accumulation of untreated high-odour materials;

- Regular monitoring and documentation of environmental conditions and mitigation actions;

- Operator training to ensure adherence to procedures.

These measures are consistent with NZS 4454:2005 and AS 4454-2012, which are considered the most relevant best practice standards, and are expected to ensure that odour and air discharges remain within acceptable limits. With these controls in place, air discharge effects, including effects on people using neighbouring properties, are considered to be less than minor.

6.2.9 Ecological effects

An ecological assessment and wetland delineation were undertaken for the site as part of the preparation of this application. The results are detailed in the Wetland Delineation Report contained in **Appendix E**. This assessment was completed in accordance with the Wetland Delineation Protocols (2020) and the relevant provisions of the National Environmental Standards for Freshwater 2020 (NES-F).

A site visit and field investigation were undertaken on 28 May 2025, which identified four distinct natural inland wetland areas within the wider catchment of the proposed composting activities. These areas are located downslope and outside the immediate footprint of the proposed works.

While stormwater diversion is proposed from the composting pad and recontoured platform, this diversion is permitted under Clause 54 of the NES-F regulation XXX as it will include:

- discharge to land, not directly to water;

- occur outside the 10 metre wetland setback;

- Has been assessed as hydrologically connected to the wetland areas; however,

- Will not result in any change to the water level range or hydrological function of the delineated wetlands.

Leachate will be appropriately collected and managed, then diluted and discharged back through the compost operations in accordance with best practice.

The composting facility will be located entirely within an area of previously grazed exotic pasture and no vegetation clearance, earthworks within 10 metres of a wetland, or stream diversion is proposed. The ecological assessment confirmed that no threatened or at-risk species habitats or Significant Natural Areas (SNAs) are located within the proposed footprint. Furthermore, appropriate erosion and sediment control measures will be implemented throughout the earthworks phase to avoid indirect effects such as sedimentation or runoff entering adjacent wetland or stream environments.

Overall, the proposed activity will avoid adverse effects on wetlands or ecological values, and any indirect effects from stormwater are appropriately mitigated through design and location. The ecological effects of the proposal are therefore assessed as being less than minor.

6.2.10 Cultural Effects

There are no recorded sites of significance to mana whenua on the property. All composting and earthworks will occur on modified pastureland. The proposed compost facility is located away from vegetation and natural watercourses and are not anticipated to have any adverse effects on natural systems that would result in cultural effects.

The applicant has proactively engaged with hapū to understand the cultural values associated with the site (see **Appendix F**). To date, no feedback has been received. Any response provided will be forwarded to the Council for inclusion in this resource consent application as soon as it is received. The applicant remains open to further engagement should hapū wish to provide input.

All future earthworks and construction activities will be subject to standard accidental discovery protocols, which will be offered as a condition of consent. These protocols ensure the protection of mana whenua values and interests should any unrecorded cultural or archaeological features be discovered during works.

The proposal will ultimately be subject to conditions if relevant/any (yet to be confirmed) which would result in these iwi groups having no objections to the proposal, and thus cultural effects are anticipated to be less than minor.

6.2.11 Amenity and Reverse Sensitivity effects

The proposed composting activity is inherently rural in nature, involving the processing of organic materials commonly associated with agricultural and land-based primary production. The site is located within the Rural Production Zone, which anticipates land uses that may generate odour, noise, and heavy vehicle movements as part of typical rural operations.

The proposal does not introduce new sensitive activities such as residential dwellings, visitor accommodation, or recreational uses that might be adversely affected by existing or future rural operations in the surrounding area. By maintaining the site's existing rural land use context and limiting occupancy to staff directly associated with the composting operation, the activity avoids establishing any new uses that could be adversely affected by legitimate rural activities, thereby eliminating the risk of reverse sensitivity complaints.

Reverse sensitivity is further avoided through:

- The location of the composting area on a large, well-buffered rural site, providing significant separation from neighbouring dwellings;
- The design and siting of the activity away from property boundaries and sensitive land uses;
- Implementation of best-practice odour, dust, and noise management protocols set out in the Compost Management Plan (**Appendix C**), including wind direction controls, moisture management, and operational timing;

- Continued compatibility with the existing rural environment and surrounding land uses, which predominantly include pastoral farming.

As a result, the composting operation integrates appropriately into its rural setting and does not constrain, conflict with, or create adverse effects for neighbouring rural land uses. It does not elevate the risk of land use incompatibility or trigger changes to the expectations or enjoyment of existing rural properties.

Accordingly, any amenity-related effects, including those relating to reverse sensitivity, are assessed as being less than minor.

6.2.12 Adverse Effects Conclusion

In summary, having regard to s104(1)(a) of the RMA, with the mitigation offered as per the assessment provided in this Part of the AEE and in the supporting specialist reports, any potential adverse effects associated with the proposal are assessed as being less than minor.

6.2.13 Precedent Effects

Given the discretionary status of this application it is appropriate to have regard to the issue of precedent, as well as the effect of granting consent upon the integrity of the Proposed Northland Regional Plan and Far North District Plan. These are not mandatory considerations but are matters that decision makers may have regard to, depending on the facts of a particular case including:

- Whether a proposal is contrary to the objectives and policies of the plan; and if so
- Whether it can be seen as having some distinct or unusual qualities that would set it aside from the generality of cases.

In this case the proposal is not contrary to the objectives and policies, will not result in any cumulative effects, no persons are considered to be adversely affected and any adverse effects on the existing environment are considered to be less than minor (at most) and acceptable.

Given these factors, it is considered that granting consent to this application is unlikely to give rise to any significant precedent effect which would challenge the integrity of the Regional Plan.

6.3 Section 104(1)(b)(vi) Relevant Provisions of the District Plan Objectives and Policies

Weighting of Plans

Section 88A(2) requires applications to be assessed under both the operative and proposed objective and policy frameworks from the date of notification of the proposed district plan. Where there are differences between the ODP and the PDP, established case law provides guidance on the weight to be given to each framework. The weight accorded to a proposed plan depends on the stage of its development, with more weight typically given as the plan progresses through the notification, submission, and hearing process. Weighting is also only required where there is a significant policy shift.

As the provisions of the PDP may be subject to change through the submission and appeal process, limited weight has been placed on the objectives and policies commented on below compared with the ODP, which we consider to be the primary planning instrument for determining this application.

The assessment of the relevant objectives and policies from the ODP and the PDP has concluded these can be met by the proposal.

Operative Far North District Plan

The proposed composting facility has been assessed against the relevant objectives and policies of the Operative Far North District Plan, particularly those applicable to the Rural Production Zone and earthworks provisions.

The composting activity aligns with Objective 8.6.3.1, which promotes the sustainable management of natural and physical resources within the Rural Production Zone. The proposal facilitates a rural industry that supports organic waste management and soil enhancement, maintaining the productive use of rural land.

The activity supports Objective 8.6.3.2, encouraging efficient land use and development for rural-based activities. The composting facility processes organic waste into a reusable product, enhancing rural productivity and resilience.

In accordance with Objective 8.6.3.3, the facility has been designed to integrate with the surrounding environment, preserving landscape features and maintaining rural character. No structures or operations are anticipated to create adverse visual effects beyond the site boundary.

Objective 8.6.3.6 is also satisfied, as the activity is located in a rural context where reverse sensitivity effects are unlikely. The composting process includes appropriate management of odour, runoff, and access, ensuring compatibility with any neighbouring rural activities.

With respect to Rule 12.3.6.1.1 (Excavation and Filling), the proposed earthworks exceed the permitted threshold of 5,000 m^3 per site per annum, triggering a discretionary activity status. However, the earthworks are essential to site establishment and are supported by detailed erosion and sediment control plans, as shown in the engineering report contained in **Appendix D**.

Overall, the composting facility supports sustainable land use, integrates with the rural character, and avoids significant adverse effects, meeting the intent of the ODP's objectives and policies.

Far North Proposed District Plan

The proposal has also been assessed against the relevant objectives and policies of the Proposed Far North District Plan, particularly those of the Rural Production Zone.

The zone's objectives — RPROZ-O1 to O4 — seek to protect land for primary production while enabling compatible rural activities. Although the composting facility is not a traditional form of primary production, it is compatible with rural land use and supports rural and agricultural operations by producing soil-enriching compost.

- RPROZ-O2 promotes enabling appropriate rural uses, the proposed activity supports this by processing organic waste in a manner consistent with rural infrastructure and environmental outcomes.

- RPROZ-O3 seeks to manage reverse sensitivity, the proposal is located well away from sensitive land uses and includes mitigation measures (e.g. odour management and stormwater treatment).

- RPROZ-O4 supports maintaining rural character, which is preserved through site design and the low-impact nature of the built form.

The proposal is consistent with RPROZ-P1 to P4, which focus on enabling productive rural activities while managing adverse effects. While not directly enabling on-site primary production, the composting activity supports regional sustainability and soil health — aligning with the broader intent of these policies.

Under RPROZ-P6, activities must be compatible with the character and amenity of the zone. The composting facility is set back from roads and neighbouring properties, designed to be discreet, and incorporates robust stormwater and leachate control, ensuring amenity values are preserved.

Earthworks are addressed in District-wide Infrastructure and Hazards provisions, and the design meets erosion control and infrastructure compatibility requirements.

6.3.4 Conclusion

The proposed composting facility at 966 Te Ahu Ahu Road is consistent with the Operative Far North District Plan and the Proposed Far North District Plan. The activity supports the sustainable management of resources, maintains rural character and amenity, and avoids adverse effects on surrounding land uses.

6.4 Section 104(1)(b)(vi) Relevant Provisions of the Proposed Northland Regional Plan (February 2024) Objectives and Policies

The relevant objectives and policies of the Proposed Northland Regional Plan (February 2024) are contained in the Tāngata Whenua (D1), General (D2), Air (D3) and Land and Water (D4)) Chapters.

When considering an application for a resource consent to discharge a contaminant into or onto land the relevant objective and policies (policies D4.1 and D4.3) of the Proposed Northland Regional Plan (operative in part) seek to maintain overall water quality standards through the implementation of the best practicable option to manage the treatment and discharge of any contaminant to land. The proposal intends to implement the best practicable option to ensure that these standards are met, in accordance with recognised industry good management practices and guidelines specific to the type of dead animal being composted as required by the Proposed Northland Regional Plan.

The proposed Regional Plan also has a number of objectives and policies having regard to the social, cultural and economic benefits of a proposed activity. The proposed composting operations represents a responsible and sustainable approach to waste management. This initiative not only diverts organic waste from landfills but also turns this waste into a resource.

From a social perspective, the proposal can contribute to community resilience by creating local jobs in composting operations and providing a valuable product—compost—that can enhance soil health and agricultural productivity. Economically, the operation can support local communities by providing high-quality compost that reduces the need for synthetic fertilizers, promoting more sustainable farming and gardening practices.

Policy D.1.1 requires an analysis of effects on tāngata whenua and their taonga if certain adverse effects are likely. The composting of dead animals is unlikely to have direct adverse effects on mahinga kai or access to mahinga kai, as the activity is land-based and appropriately managed to prevent contamination of waterways. Best practicable options will ensure that discharge to land is contained, maintaining water quality and protecting mahinga kai resources. The site of the proposed activity has been reviewed to ensure it does not overlap with or impact any identified wāhi tapu, ancestral sites, or areas of customary value and is located away from taiāpure, mātaitai, and Māori non-commercial fisheries. Indigenous biodiversity in these areas will not be adversely affected, and thus the ability of tāngata whenua to carry out cultural and traditional activities remains unaffected. This proposal does not involve the use of genetic engineering or the release of genetically modified organisms. The proposal does not adversely impact protected customary rights. A review of the Sites and Areas of Significance to Tāngata Whenua mapped in the Regional Plan confirms that the proposed composting operation is not located within or near any such sites. The proposal has been developed to avoid adverse effects on tāngata whenua and their taonga, in accordance with Policy D.1.1.

Overall, the proposed inclusion of dead animals in the existing composting operations aligns with the objectives and policies of the Proposed Northland Regional Plan by ensuring that environmental standards are met while simultaneously providing social, cultural, and economic benefits to the community. This holistic approach underscores the potential for innovative waste management solutions that contribute positively to both the environment and local communities.

6.5 Section 104(1)(b)(v) Relevant Provisions of the Proposed Regional Policy Statement for Northland

The Proposed Northland Regional Policy Statement (**"PNRPS")** sets out strategic direction for managing the use, development and protection of the natural and physical resources of the region. The strategic objectives and policies provide a framework to achieve the integrated, consistent and co-ordinated management of the Region's resources.

The relevant objectives and policies of PNRPS aim to ensure the effective and sustainable management of Northlands resources to fully realise its economic potential and social wellbeing. The Policy Statement seeks to ensure that amenity, infrastructure and community wellbeing are maintained in the region through planned and coordinated development with good urban design, whilst sustainability managing its natural and physical resources.

The relevant provisions of the PNRPS have been considered. The subject site does not contain any significant features as defined by the PNRPS. The PNRPS has a focus on improving the economic development of Northland and its communities, as emphasised in objective 3.5. This objective is supported by policies throughout the RPS that seek to enable the sustainable use of natural and physical resources. The proposed composting operations are important to economic well-being, primarily because it provides a sustainable use for organic waste that will be able to be redirected from landfill. It will also facilitate the sustainable management of resources in a manner that will attract further investment into the region. The composting facility will support the local economy by providing employment opportunities. Adverse effects on the environment can also be managed in accordance with the relevant policy direction of the PNRPS. The proposal is therefore consistent with this objective and the supporting policies.

Overall, the application is considered to be consistent with the objectives and policies of the Regional Policy Statement.

6.6 Section 104(1)(b)(i) and (ii) Relevant provisions of National Environmental Standards and other regulations, Section 104(1)(b)(iii) Relevant provisions of National Policy Statements, Section 104(1)(b)(iv) Relevant provisions of the New Zealand Coastal Policy Statement (NZCPS)

6.6.1 NPS Highly Productive Land

The National Policy Statement for Highly Productive Land ("**NPS HPL**") was introduced to protect New Zealand's most valuable rural soils to ensure they remain available for food and fibre production, both now and for future generations. The NPS HPL aims to manage land use and development to avoid the inappropriate conversion or fragmentation of highly productive land, which is a vital resource for sustaining the country's agricultural sector and food security.

The policy directs that land classified as Highly Productive should be prioritised for rural production purposes and protected from urban sprawl, lifestyle development, or other forms of non-productive land use that could permanently reduce its productivity. This classification applies to land within Land Use Capability (LUC) Classes 1, 2, and 3, which are considered the most versatile and productive soils in the country.

While the site is zoned Rural Production and the overall site does contain soils classified within LUC Classes 1, 2, or 3 the proposed compost facilities site does not contain soils classified within LUC Classes 1, 2, or 3, as shown in **Figure 3** below meaning the land is not considered Highly Productive under the NPS HPL framework.

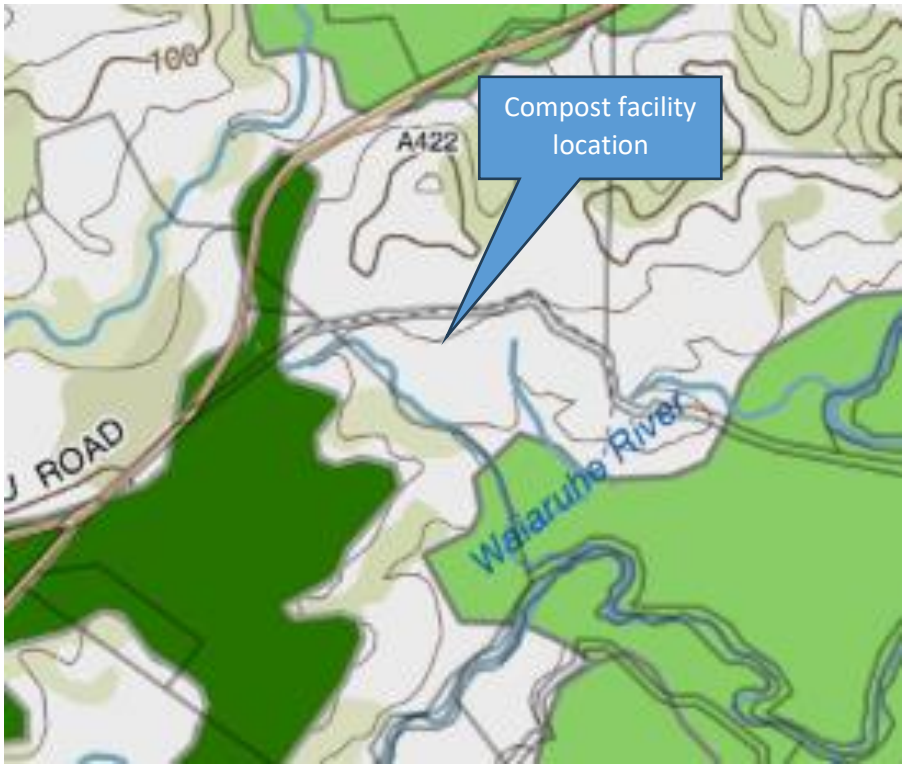

Figure 3: Soil Classification retrieved from Our Environment

Given this classification, the proposal is considered to be in alignment with the NPS HPL, as it does not involve the development or conversion of Highly Productive Land. Therefore, the proposed subdivision is consistent with the objectives of the NPS HPL.

6.6.2 NPS Freshwater

The NPS FM is relevant to the proposal as the proposal involves the discharge of treated stormwater and wastewater to land, which then could discharge to water / wetlands as the ultimate receiving environment. The discharges are proposed to be undertaken in accordance with best practice and adverse effects have been assessed as less than minor. The wetlands are discussed further in the Wetland Delineation Report contained in **Appendix E**. It is therefore considered the proposal is consistent with the NPS's objectives.

6.6.3 NES Freshwater

The National Environmental Standards for Freshwater Regulations 2020 ("NES Freshwater") came into force on 3 September 2020 and regulates activities that pose risks to the health of freshwater and freshwater ecosystems. The NES Freshwater standards seek to protect rural streams from in-filling, ensure connectivity of fish habitat and protect existing inland wetlands. These matters are assessed in the Wetland Delineation Report contained in **Appendix E** which concludes:

> *The proposed works will not change, or are not likely to change, the water level ranges or hydrological functions of the natural inland wetlands delineated in this report. Therefore, Clause 54(c)(ii) of the NES-F is not met and resource consent is not required under Clause 54 of the NES-F or any other freshwater regulations.*

It is therefore considered the proposal is consistent with the NES Freshwater.

6.6.4 Other National Instruments

The New Zealand Coastal Policy Statement ("**NZCPS**") is not applicable to this application. There are no other National Environmental Standards, National Policy Statements or other regulations that are considered relevant to this application.

6.7 Other Matters - Section 104(1)(c)

Section 104(1)(c) relates to any other matters considered relevant and reasonably necessary to determine the application. It is considered that there are no other relevant matters.

6.8 Section 104(3) - Trade Competition and Affected Party Approvals

There are no trade competition or effects of trade competition issues relevant to this proposal.

No written approvals have been obtained for this proposal.

6.9 Section 105 Assessment

In accordance with an assessment under s105 of the RMA, the proposal has considered the nature of the discharge and the sensitivity of the receiving environment to adverse effects, the reasons for the proposed choice, and any possible alternative methods of discharge, including discharge into any other receiving environment. Overall, the proposal is considered appropriate, and conditions of consent have been included to ensure there are no significant effects on the receiving environment.

6.10 Section 107 Assessment

In accordance with an assessment under s107 of the RMA, the proposal will not result in discharges to water that will cause, after reasonable mixing, the production of any conspicuous oil or grease films,

scums or foams, or floatable or suspended materials, any conspicuous change in the colour or visual clarity, any emission of objectionable odour, the rendering of fresh water unsuitable for consumption by farm animals, and any significant adverse effects on aquatic life.

7.0 Notification (Sections 95A, 95C-95D)

Section 95A outlines that a consent authority must follow the steps set out in this section, in the order given, to determine whether to publicly notify an application for a resource consent. In relation to these steps:

- The applicant has not requested that the application be publicly notified;
- Public notification is not precluded with this application because it is an application for a Discretionary Activity;
- Overall the environmental effects of the proposal are deemed to be less than minor; and
- There are no special circumstances relating to this proposal that would warrant notification.

There is therefore no basis to fully notify this application.

Section 95B outlines that a consent authority must follow the steps set out in this section, in the order given, to determine whether to give limited notification of an application for a resource consent, if the application is not publicly notified under section 95A. In relation to these steps:

- There are no affected protected customary rights groups and/or affected customary marine title groups in relation to this proposal.
- The proposed activity is on land that is the subject of a statutory acknowledgement made in accordance with an Act specified in Schedule 11;
- The proposal is not a controlled activity, a 'prescribed activity' or a boundary activity.
- there are no other affected persons in accordance with section 95E;
- there are no special circumstances relating to this proposal that would warrant limited notification.

8.0 Consideration of Part 2 (Purpose and Principles) of the RMA

The Council as consent authority must have regard to Part 2 of the RMA ("Purposes and Principles" – sections 5 to 8). The Court in *Davidson*[1] has determined that a Part 2 analysis may not be required where there is confidence that the relevant planning provisions in the FNDP and PNRP give effect to Part 2. That is considered to be the case here. This is a proposal that raises no area of uncertainty that may require further analysis under Part 2. No further Part 2 analysis is considered necessary, noting in particular that there are no section 6 or section 8 issues raised by the application and the detailed assessment conducted in Part 7 of this AEE confirms the application is fully consistent with Sections 5 and 7.

9.0 Lapsing of Consent

Section 125 of the RMA provides that if a resource consent is not given effect to within five years of the date of the commencement (or any other time as specified) it automatically lapses unless the consent authority has granted an extension. In this case, it is considered five years is an appropriate period.

1. RJ Davidson Family Trust v Marlborough District Council [2017] NZHC 52

10.0 Conclusion

The proposal is to establish commercial compost operations within the site and to include organic primary industry processing biproducts. This includes organic waste from meat processing and milk processing, ensuring that only waste free from chemicals will be accepted.

The actual and potential effects likely to result from the proposal have been considered in accordance with section 104(1)(a) of the RMA, as set out in the above AEE. By way of summary, it is concluded that any actual or potential effects on the surrounding environment will be less than minor. The proposed additions to the existing compost processing has also been assessed to be consistent with the relevant objectives and policies of the Proposed Northland Regional Plan in accordance with section 104(1)(b) of the RMA.

Overall, it is considered that the proposed development is consistent with the purpose and principles of the RMA and that the consent sought should be granted.

11.0 Conditions

It is expected that there will be “standard” conditions of consent as generally imposed by Council.

12.0 Limitations

This report has been prepared for the particular project described to us and its extent is limited to the scope of work agreed between the client and Cato Bolam Consultants Limited.

No responsibility is accepted by Cato Bolam Consultants Limited or its directors, servants, agents, staff or employees for the accuracy of information provided by third parties and/or the use of any part of this report in any other context or for any other purposes.

This report is for the use by the client only and should not be used or relied upon by any other person or entity or for any other projects.

Kerigreen

966 Te Ahu Ahu Road, Oromahoe, Haruru

Resource Consent Application

<u>Appendix A:</u> Copy of Records of Title

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RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **NA213/105**

Land Registration District **North Auckland**

Date Issued 16 September 1913

Prior References

NAPR49/38 WA 1649

Estate Fee Simple

Area 54.2279 hectares more or less

Legal Description Section 1 Block VI Kawakawa Survey District

Registered Owners

Tarai Station Livestock Limited

Interests

Fencing Covenant in Transfer 13153212.2 - 5.12.2024 at 4:14 pm

13153212.3 Mortgage to Bank of New Zealand - 5.12.2024 at 4:14 pm

METRIC AREA IS 54·2278

54·2278 ha

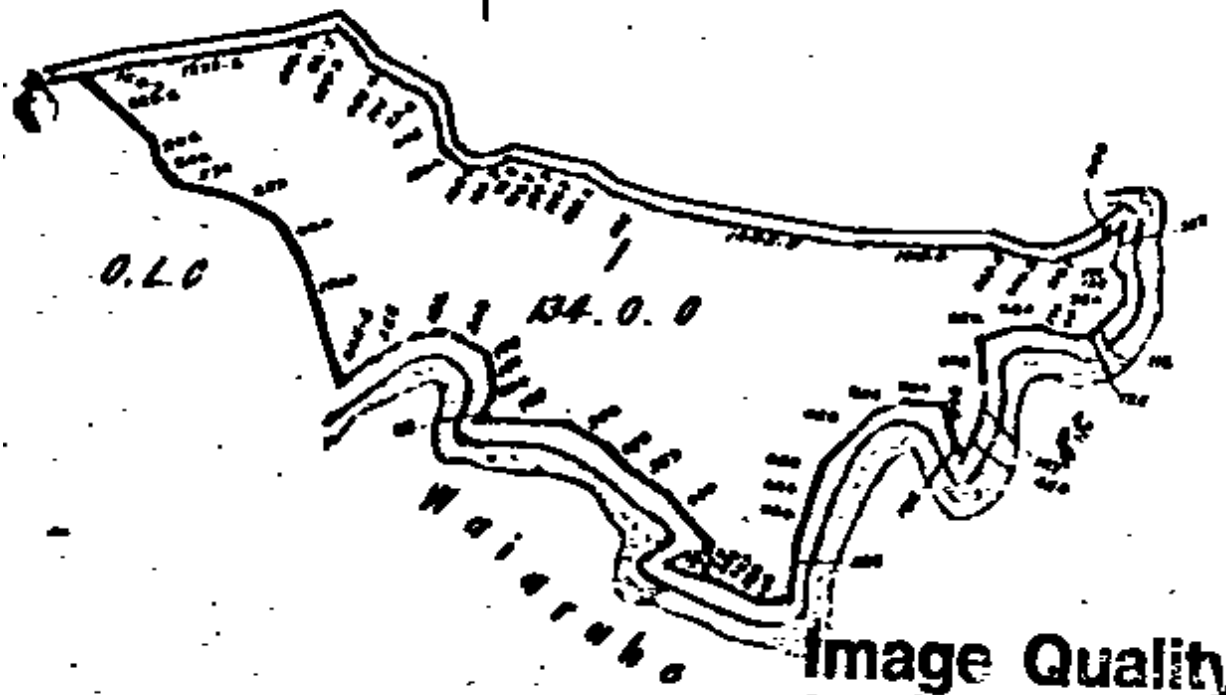

Image Quality due to Condition of Original

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Resource Consent Application

<u>Appendix B:</u> Plans

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NOTES

GENERAL

1. The contractor shall be responsible for locating all existing services prior to commencement of works. The contractor shall make good at their own expense any damage to existing services.
2. Levels are in terms of New Zealand Vertical Datum 2016.
3. All works are to be installed as per Far North District Councils Environmental Engineering Standards 2023 (FNDC EES).
4. The contractor is responsible for locating services to be abandoned and providing confirmation to the engineer that this work has been completed.

Proposed Earthworks Legend

- Existing Contours
- Proposed Contours Major
- Proposed Contours Minor
- Extent of Earthworks

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Existing Contours

FOR RESOURCE CONSENT

No.	REVISION (DESCRIPTIONS)	NAME	DATE
A	Issued For Resource Consent	J.Lloyd	14/05/2025

SURVEYED	-	dd/mm/yyyy
DESIGNED	-	dd/mm/yyyy
DRAWN	-	dd/mm/yyyy

DATE	ORIGINAL SCALE	ORIGINAL SIZE
14/05/2025	1:1500	A3

DRAWING NO.	REVISION
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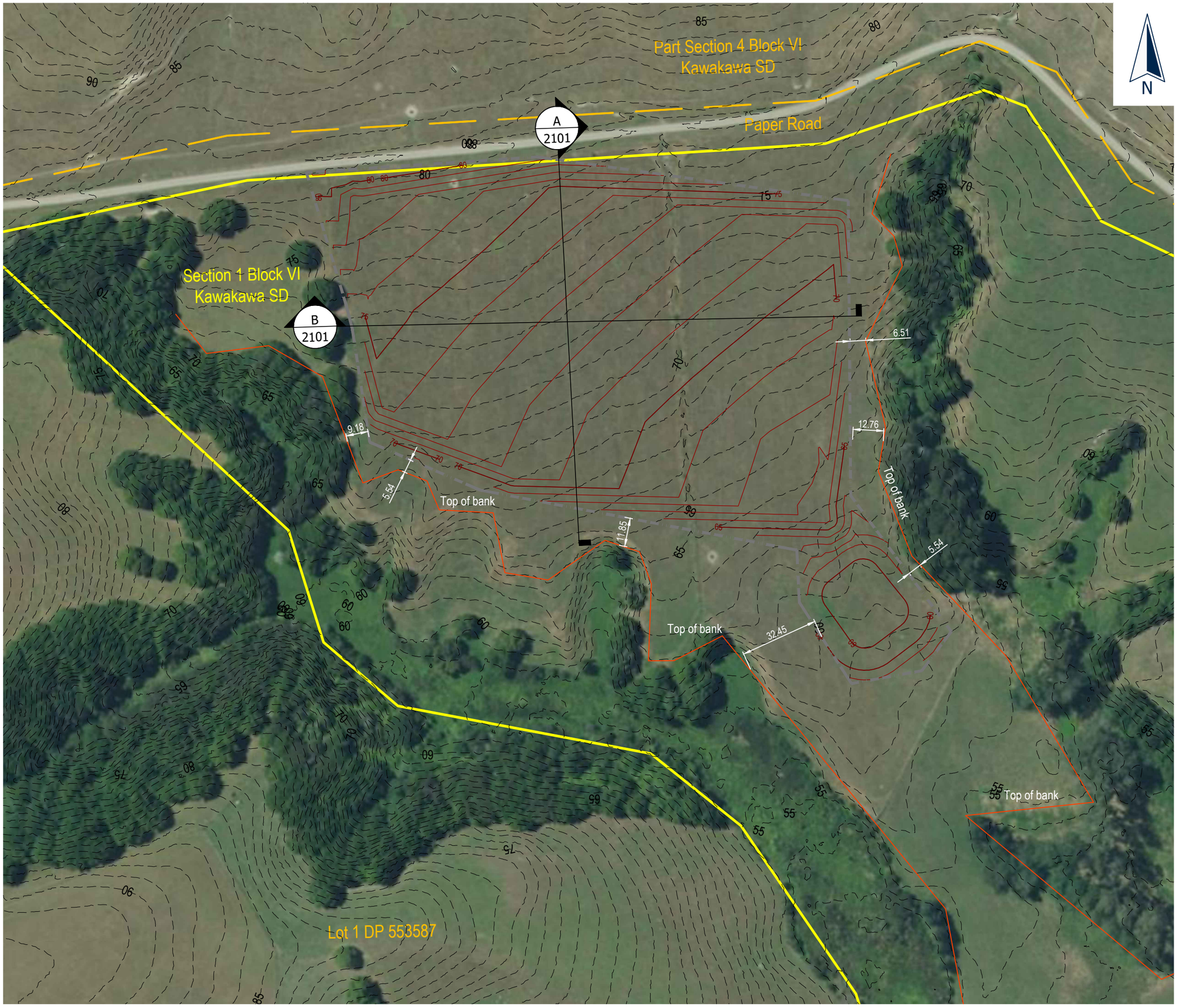

NOTES

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Proposed Earthworks Legend

- 35 — Existing Contours
- 0 — Proposed Contours Major
- Proposed Contours Minor
- Extent of Earthworks

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Proposed Contours

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No.	REVISION (DESCRIPTIONS)	NAME	DATE
A	Issued For Resource Consent	J.Lloyd	04/05/2025
SURVEYED		-	dd/mm/yyyy
DESIGNED		-	dd/mm/yyyy
DRAWN		-	dd/mm/yyyy

DATE	ORIGINAL SCALE	ORIGINAL SIZE
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DRAWING NO.	REVISION
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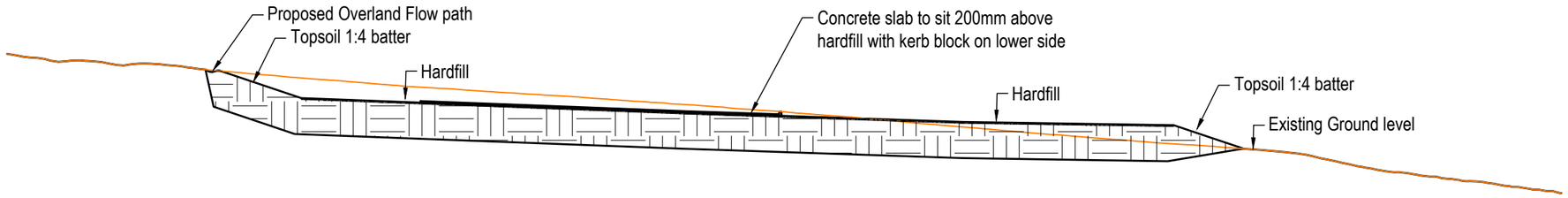

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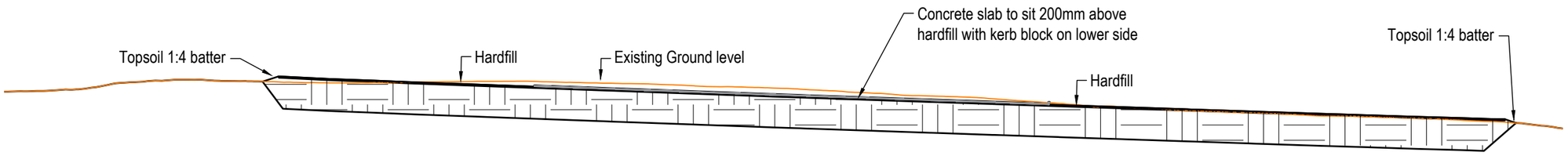

B 2100 Earthwork Cross Section
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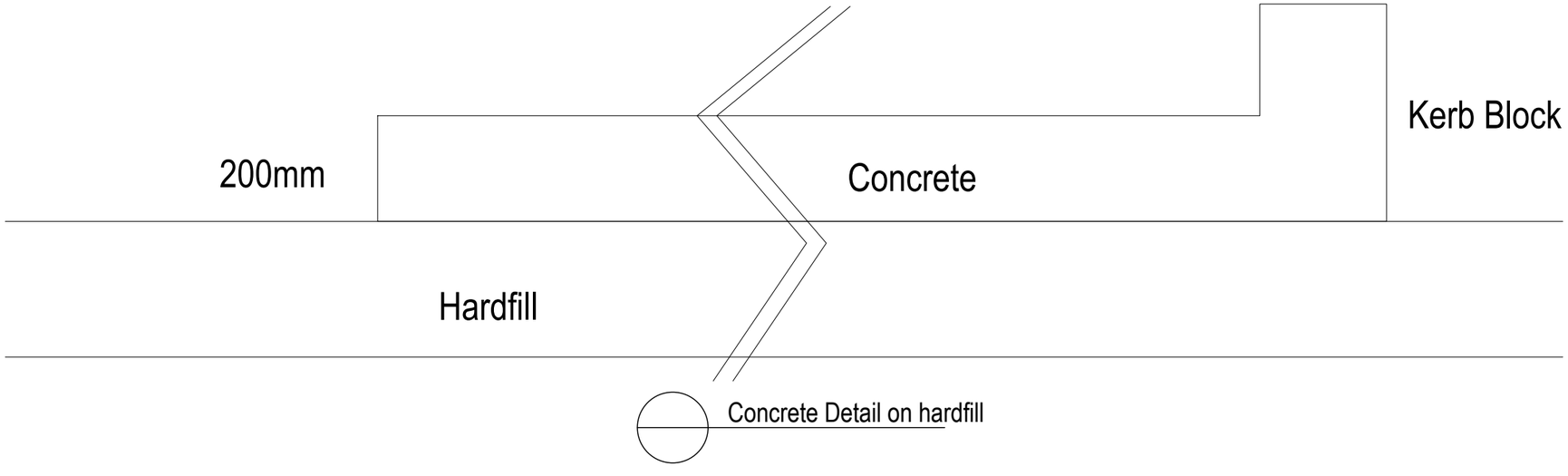

Concrete Detail on hardfill

N

NOTES

GENERAL

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DATE	ORIGINAL SCALE	ORIGINAL SIZE
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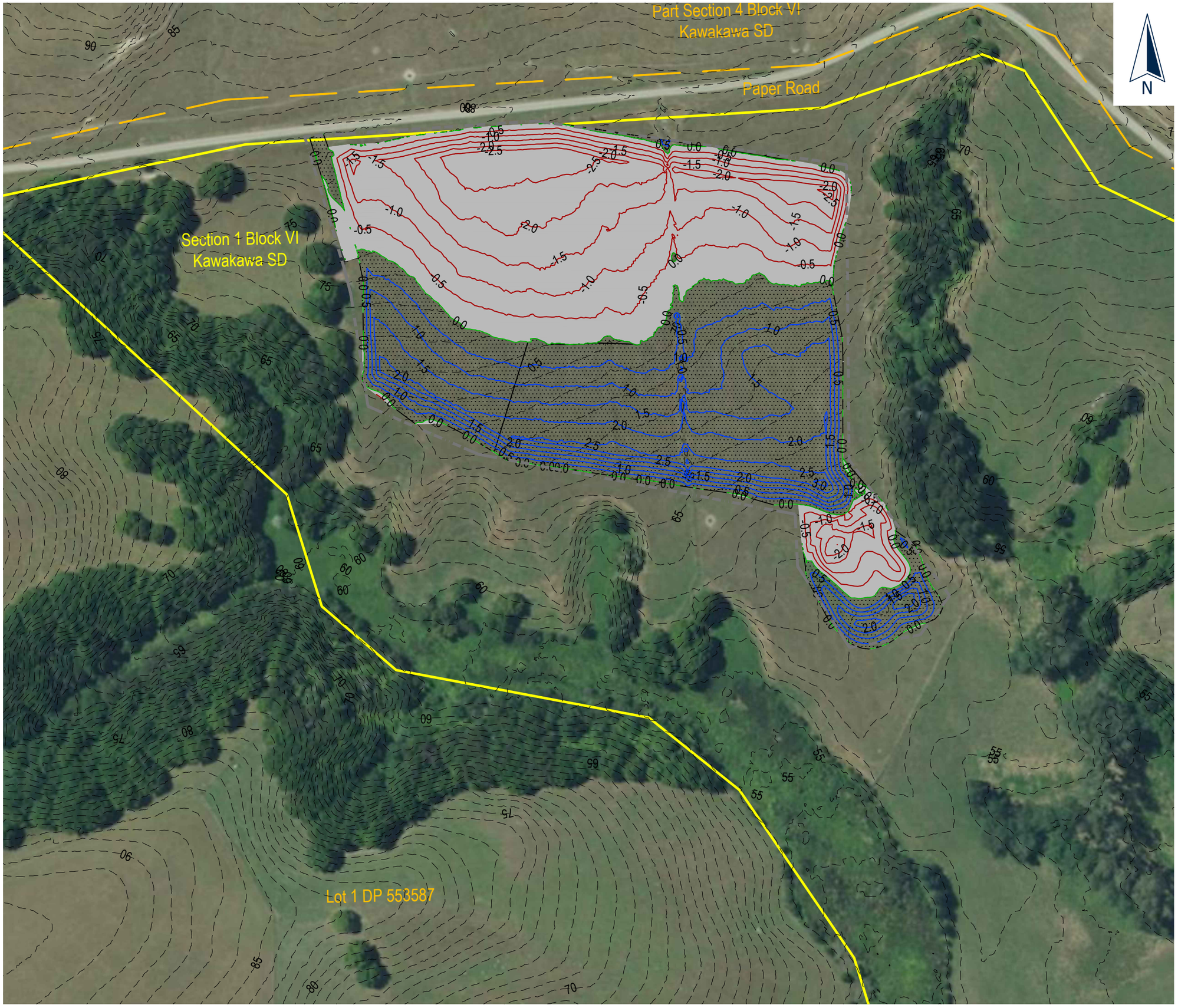

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4. The contractor is responsible for locating services to be abandoned and providing confirmation to the engineer that this work has been completed.

Cut to Fill Legend

35	Existing Contours
0	Zero Contour
-1	Cut Contours & Area
1	Fill Contours & Area
	Extent of Earthworks

Earthworks Values:

Total Area = 3.18ha
Cut = 18,552m³
Fill = 17,103m³
Balance = 1,448m³

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Cut Fill

FOR RESOURCE CONSENT

No.	REVISION (DESCRIPTIONS)	NAME	DATE
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DESIGNED		-	dd/mm/yyyy
DRAWN		-	dd/mm/yyyy

DATE	ORIGINAL SCALE	ORIGINAL SIZE
14/05/2025	1:1500	A3

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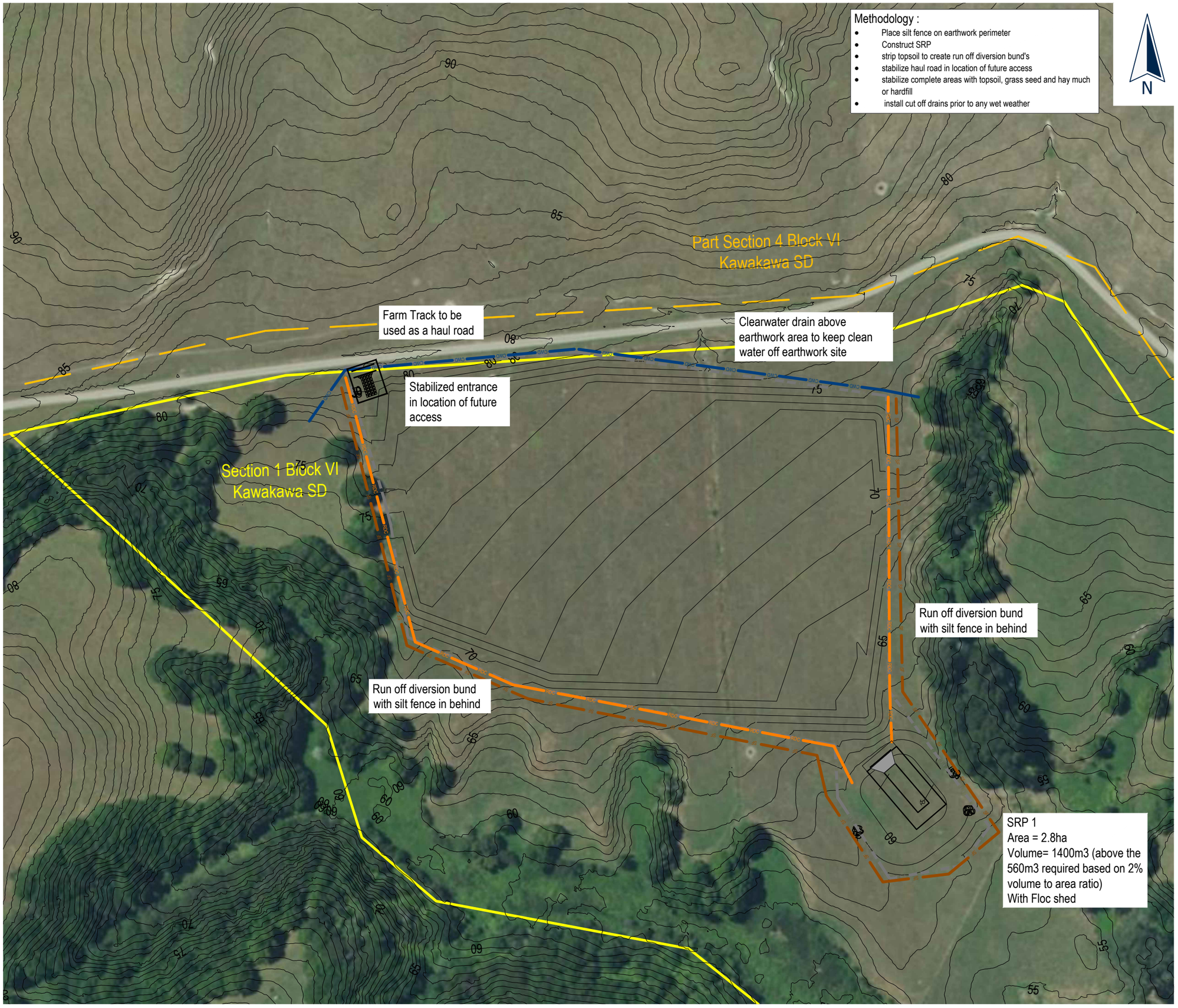

NOTES

GENERAL

1. The contractor shall be responsible for locating all existing services prior to commencement of works. The contractor shall make good at their own expense any damage to existing services.
2. Levels are in terms of New Zealand Vertical Datum 2016.
3. All works are to be installed as per Far North District Councils Environmental Engineering Standards 2023 (FNDC EES).
4. The contractor is responsible for locating services to be abandoned and providing confirmation to the engineer that this work has been completed.

EROSION AND SEDIMENT CONTROL

1. All sediment and erosion control measures are to be installed in compliance with the approved drawings and Auckland Council's Erosion & Sediment Control Guide for Land Disturbing Activities in the Auckland Region (GD05).
2. Approval of the erosion and sediment control measures must be gained from the engineer prior to commencing earthworks.
3. Consent documents must be held on site at all times.

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Sediment Control

FOR RESOURCE CONSENT

No.	REVISION (DESCRIPTIONS)	NAME	DATE
A	Issued For Resource Consent	J.Lloyd	14/05/2025
	SURVEYED	-	dd/mm/yyyy
	DESIGNED	-	dd/mm/yyyy
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DATE	ORIGINAL SCALE	ORIGINAL SIZE
14/05/2025	1:1500	A3

DRAWING NO.	REVISION
49114-DR-C-2300	A

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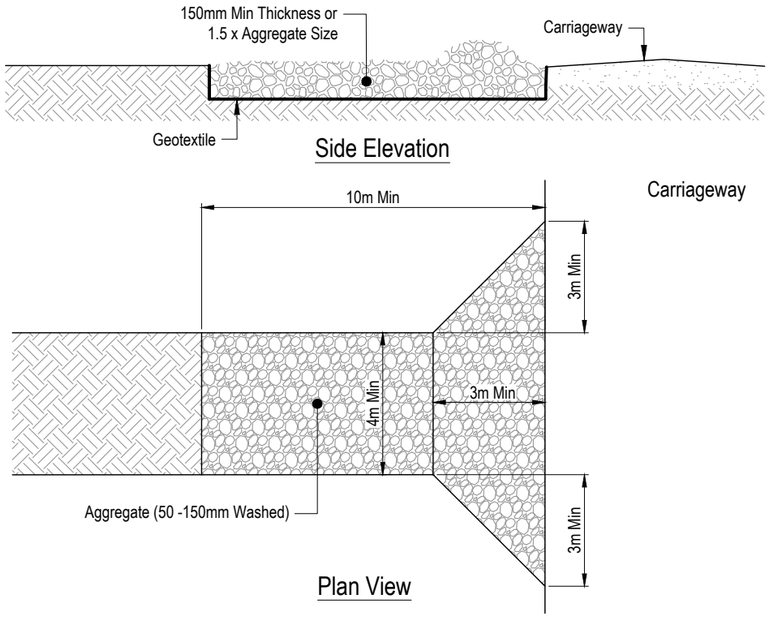


Stabilised Construction Entrance

Stabilised Construction Entrance Specifications:

Application:

Use a Stabilised Construction Entrance at all points of construction site ingress and egress with a construction plan limiting traffic to these entrances only. They are particularly useful on small construction sites but can be utilised for all projects.

Design:

1. Clear the entrance and exit area of all vegetation, roots and other unsuitable material and properly grade it.
2. Provide drainage to carry runoff from the stabilised construction entrance to a sediment control measure.
3. Place aggregate to the specifications below and smooth it.

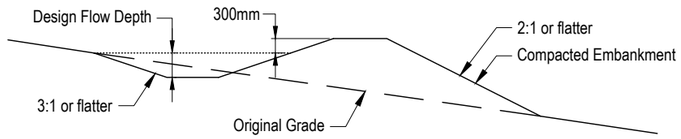
Stabilised Construction Entrance Aggregate Specifications:

Aggregate Size	50-150mm Washed Aggregate
Thickness	150mm Minimum
Length	10m Minimum
Width	4m Minmum

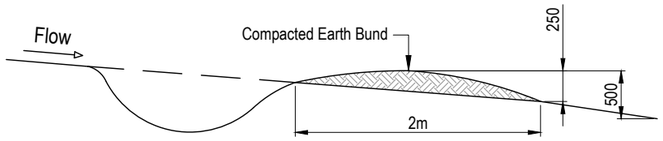
Maintenance:

1. Maintain the stabilised construction entrance in a condition to prevent sediment from leaving the construction site. after each rainfall inspect any structure used to trap sediment from the stabilised construction entrance and clean out as necessary.

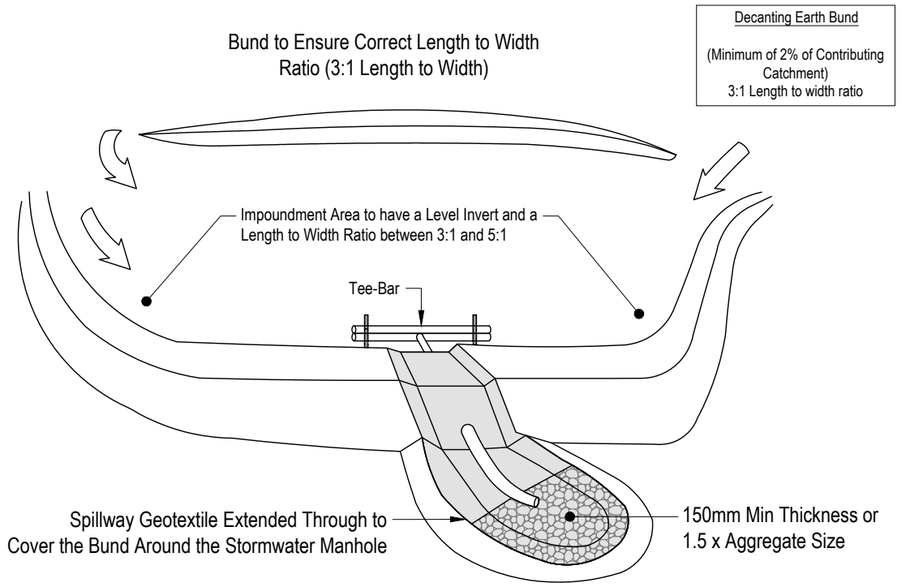
2. When wheel washing is also required, ensure this is done on an area stabilised with aggregate which drains to an approved sediment retention facility.



Dirty Water Diversion Channel - Cross Section

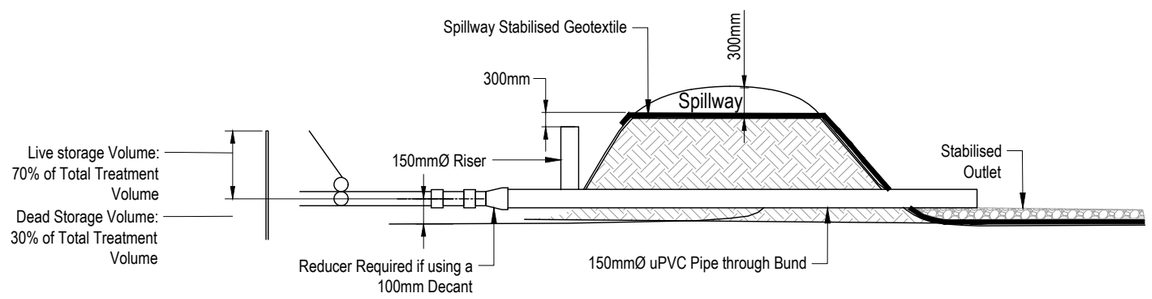


Contour Drain -Cross Section



Decanting Earth Bund with Tee-Bar

Table 4 GD05 - Contour drain spacing	
Slope of site (%)	Spacing (m) of contour drains
Less than 5%	50
5-10%	40
10-15%	30
15-30%	20



Outlet Detail With Tee-Bar

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FOR RESOURCE CONSENT

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DESIGNED	-	dd/mm/yyyy
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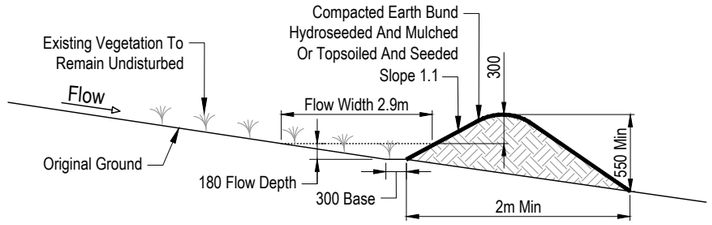
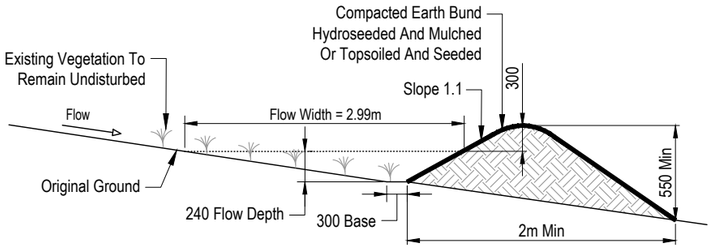
DRAWING NO. 49114-DR-C-2301

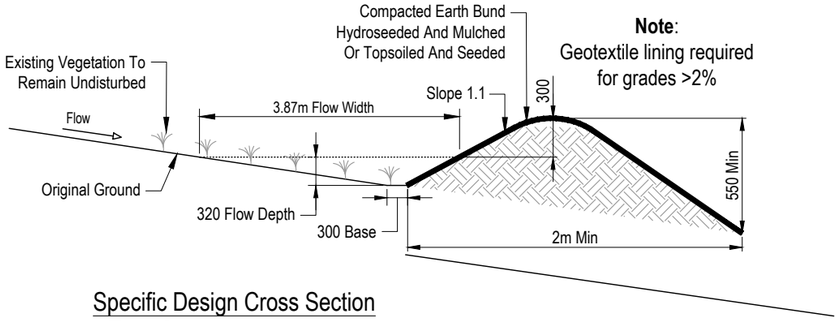
REVISION A



Specific Design Cross Section Type 1 - (≤ 1Ha Catchments)

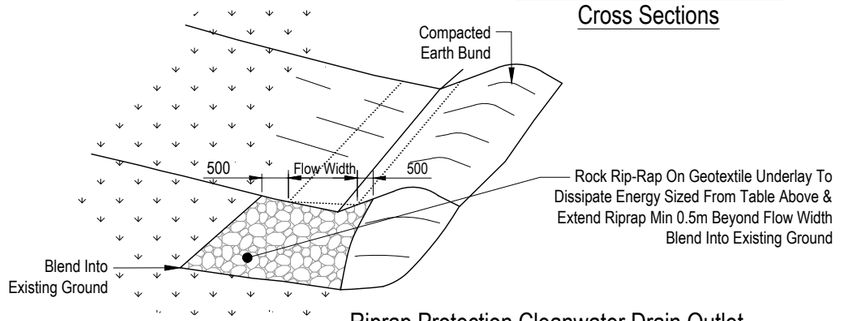


Specific Design Cross Section Type 2 - (1 - 2Ha Catchments)



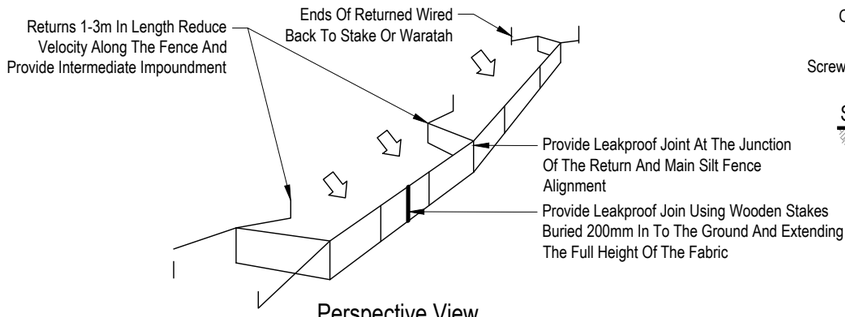
Note:
Geotextile lining required for grades >2%

Specific Design Cross Section Type 3 - (2 - 4Ha Catchments)

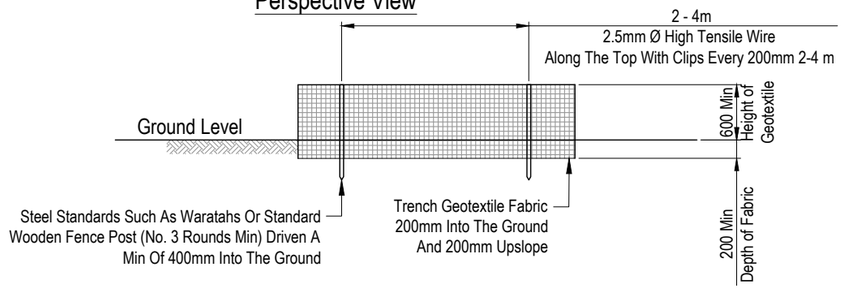


Riprap Protection Cleanwater Drain Outlet

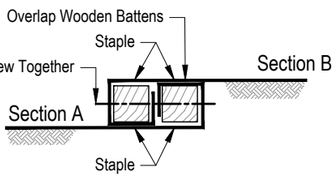
Clean Water Diversion Bund Cross Sections



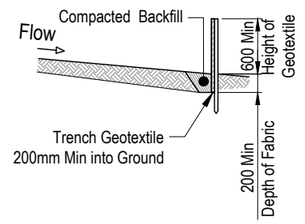
Perspective View



Elevation

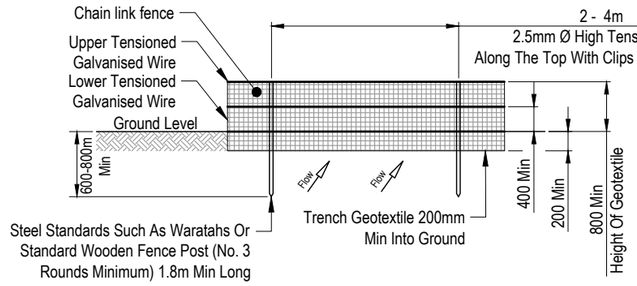


Standard Fabric Joint

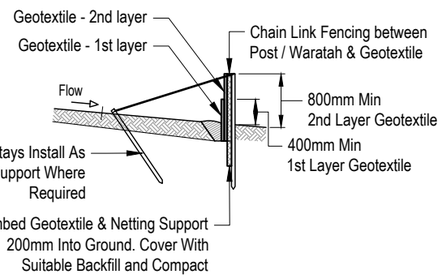


Cross Section

Silt Fence Construction



Elevation



Cross Section

Super Silt Fence Construction

Table 12 GD05 - Silt Fence Design Criteria

Slope Steepness %	Slope Length (m) (Maximum)	Spacing of Returns (m)	SF Length (m) max.
< 2%	Unlimited	N/A	Unlimited
2 - 10%	40	60	300
10 - 20%	30	50	230
20 - 30%	20	40	150
33 - 50%	15	30	75
> 50%	6	20	40

Table 13 GD05 - Super Silt fence Design Criteria

Slope Steepness %	Slope Length (m) (Maximum)	Spacing of Returns (m)	SSF Length (m)
0 - 10%	Unlimited	60	Unlimited
10 - 20%	60	50	450
20 - 30%	30	40	300
33 - 50%	30	30	150
> 50%	15	20	75

CWD outlet sizing

CWD Type	Rock size (mm)	Rock depth (mm)	Outlet length (m)	Flow width
1 (≤1ha)	100-150	200 - 300	2.4	2.29

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Proposed
Erosion & Sediment Control Details

No.	REVISION (DESCRIPTIONS)	NAME	DATE
A	Issued For Resource Consent	J.Lloyd	14/05/2025

FOR RESOURCE CONSENT

	NAME	DATE
SURVEYED	-	dd/mm/yyyy
DESIGNED	-	dd/mm/yyyy
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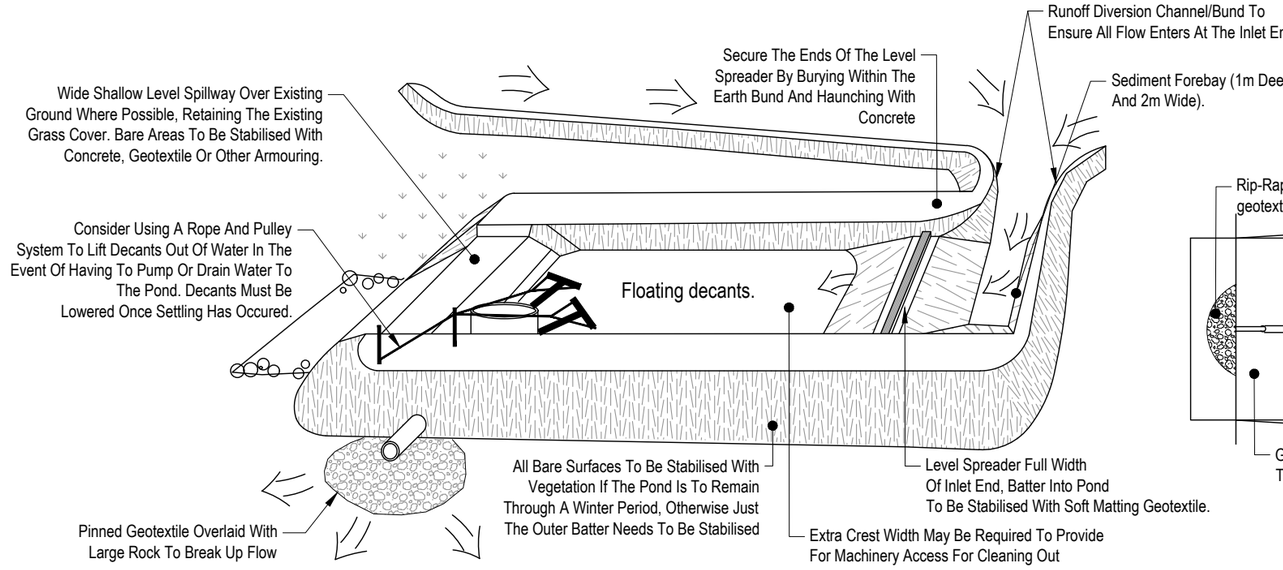
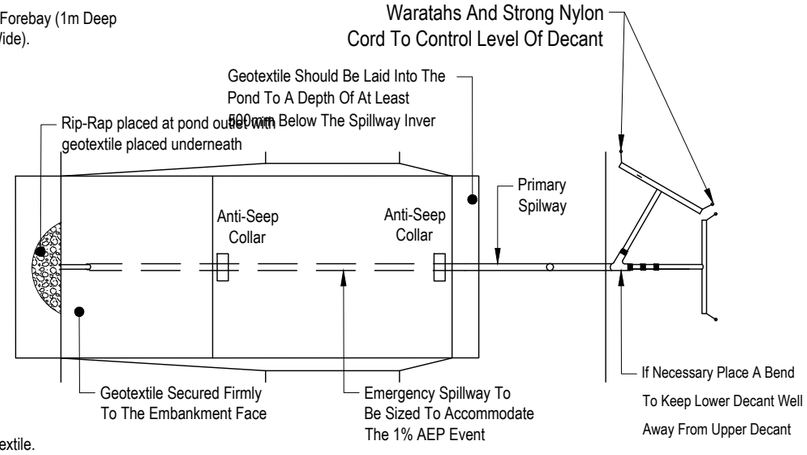
DATE	ORIGINAL SCALE	ORIGINAL SIZE
14/05/2025	1:1000	A3

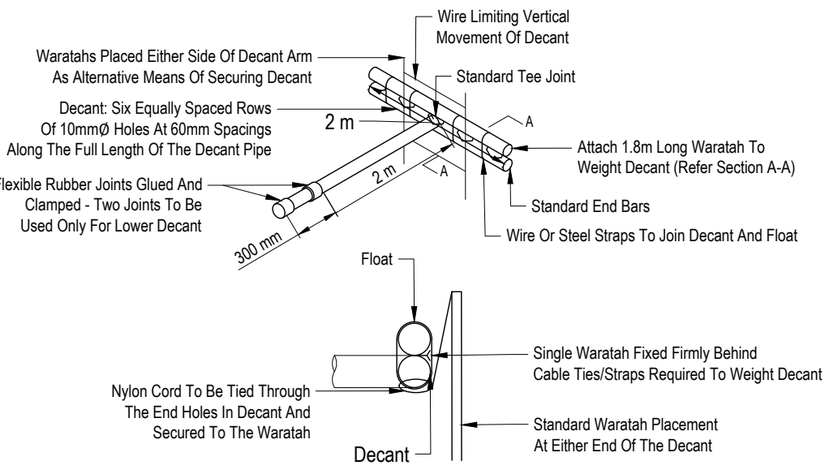
DRAWING NO. 49114-DR-C-2302
REVISION A



Sediment Retention Pond

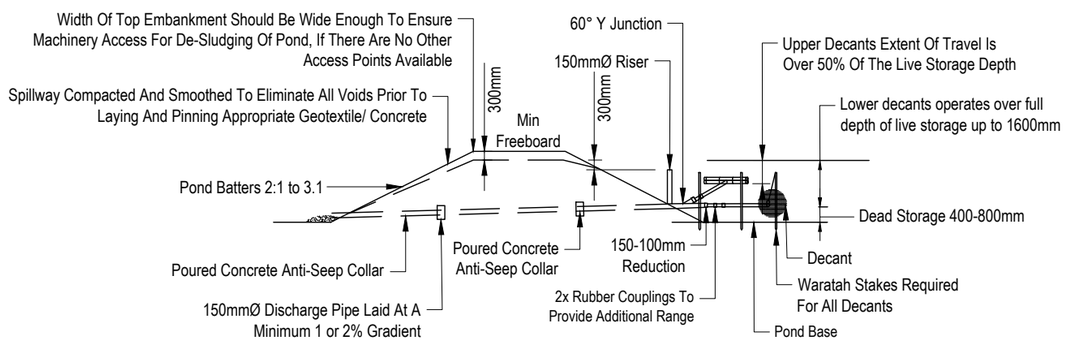


Typical plan 1.5 - 3.0 ha Catchment



Section A-A

Sediment Retention Pond - Decant Detail



Typical Cross Section - 1.5 - 3.0ha Catchment

Sediment Retention Pond Embankment

Number Of Decants For Each Pond Shall Be As Follows:
I) Up To 1.5ha Catchment - 1 Decant
Ii) 1.5-3.0ha Catchment - 2 Decants
Iii)3 To 5ha Catchment - 3 Decants-Connected To 1050 Ø MH

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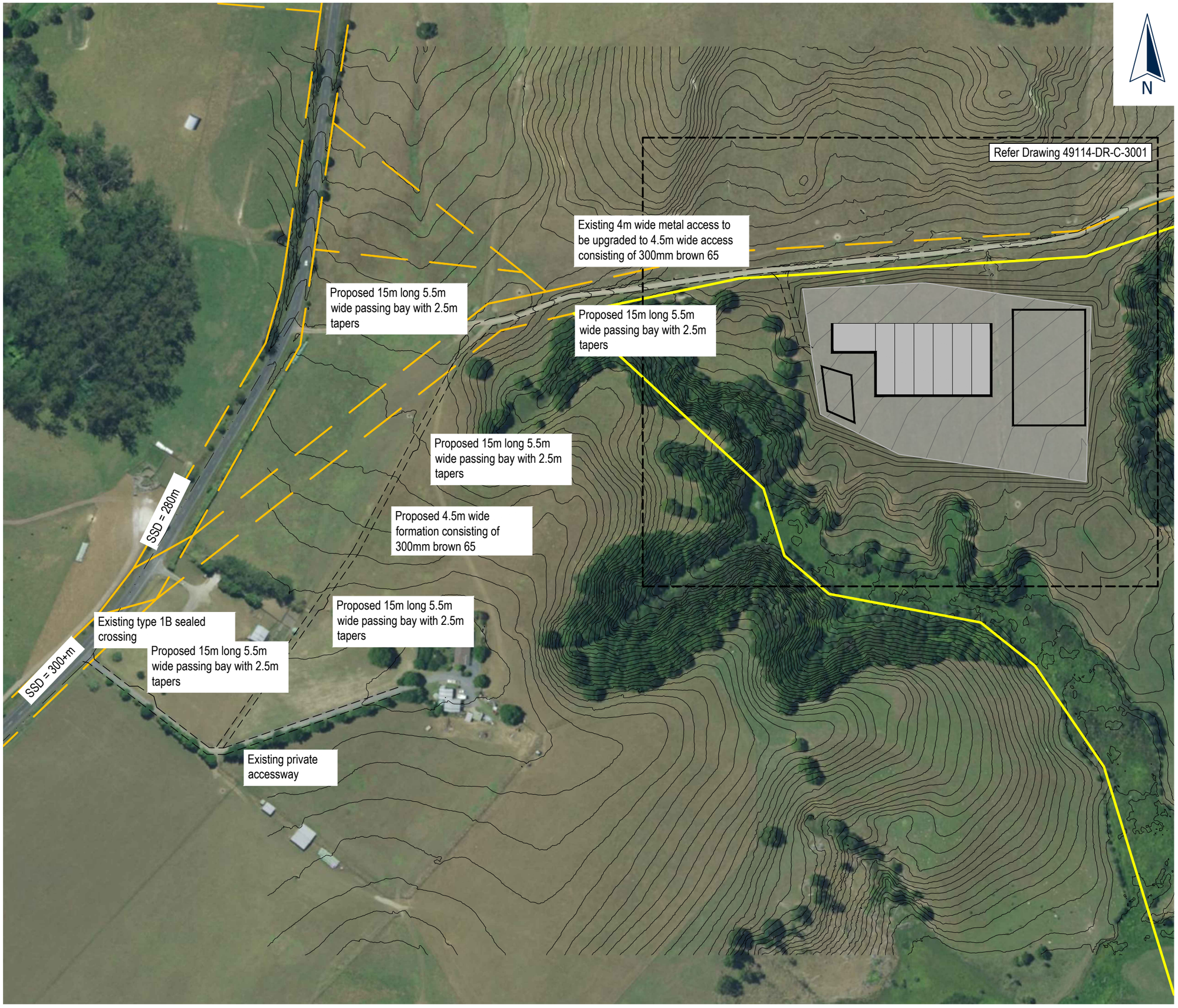

NOTES

GENERAL

1. The contractor shall be responsible for locating all existing services prior to commencement of works. The contractor shall make good at their own expense any damage to existing services.
2. Levels are in terms of New Zealand Vertical Datum 2016.
3. All works are to be installed as per Far North District Councils Environmental Engineering Standards 2023 (FNDC EES).
4. The contractor is responsible for locating services to be abandoned and providing confirmation to the engineer that this work has been completed.

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Access

FOR RESOURCE CONSENT

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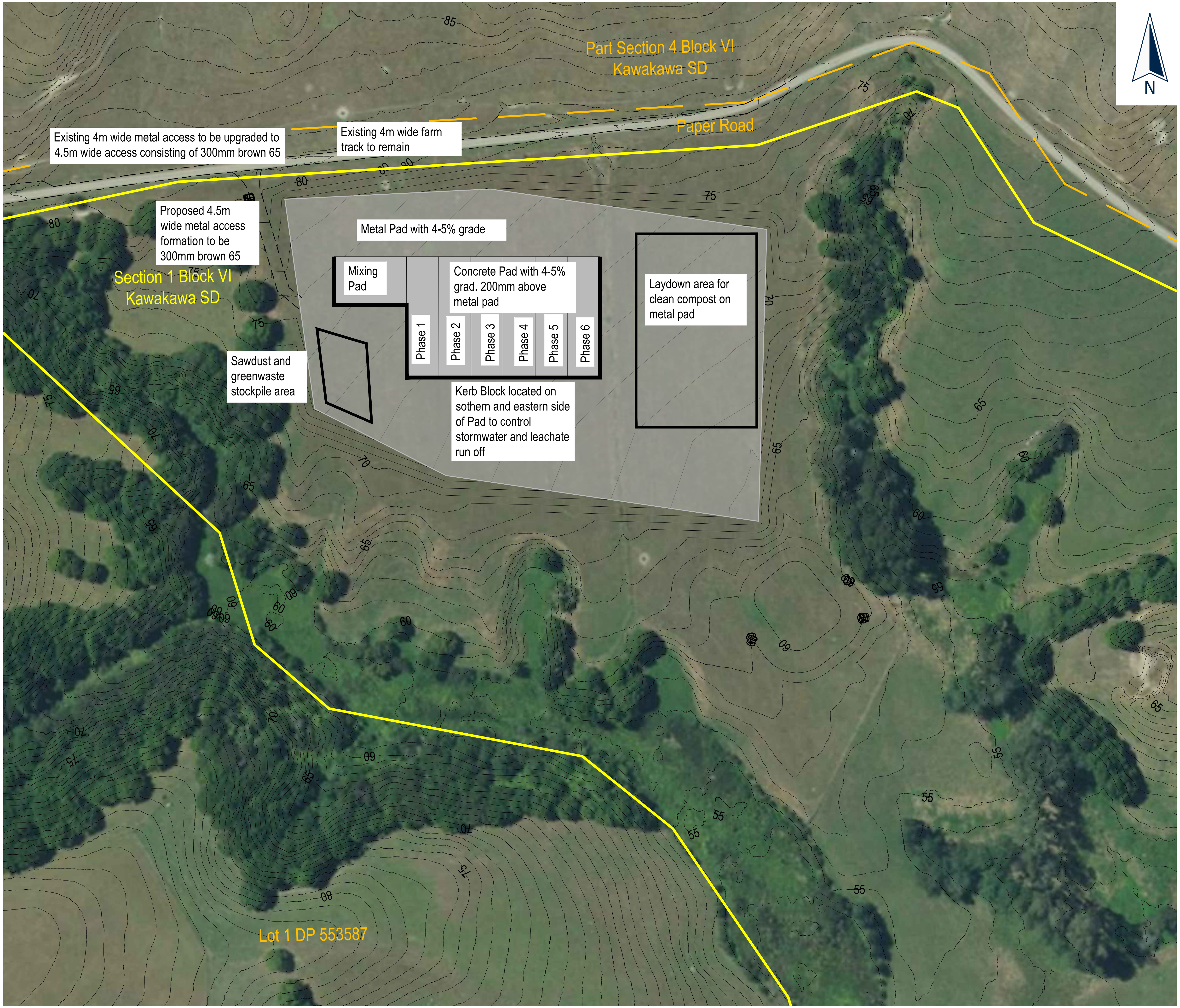

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Kerigreen
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Access

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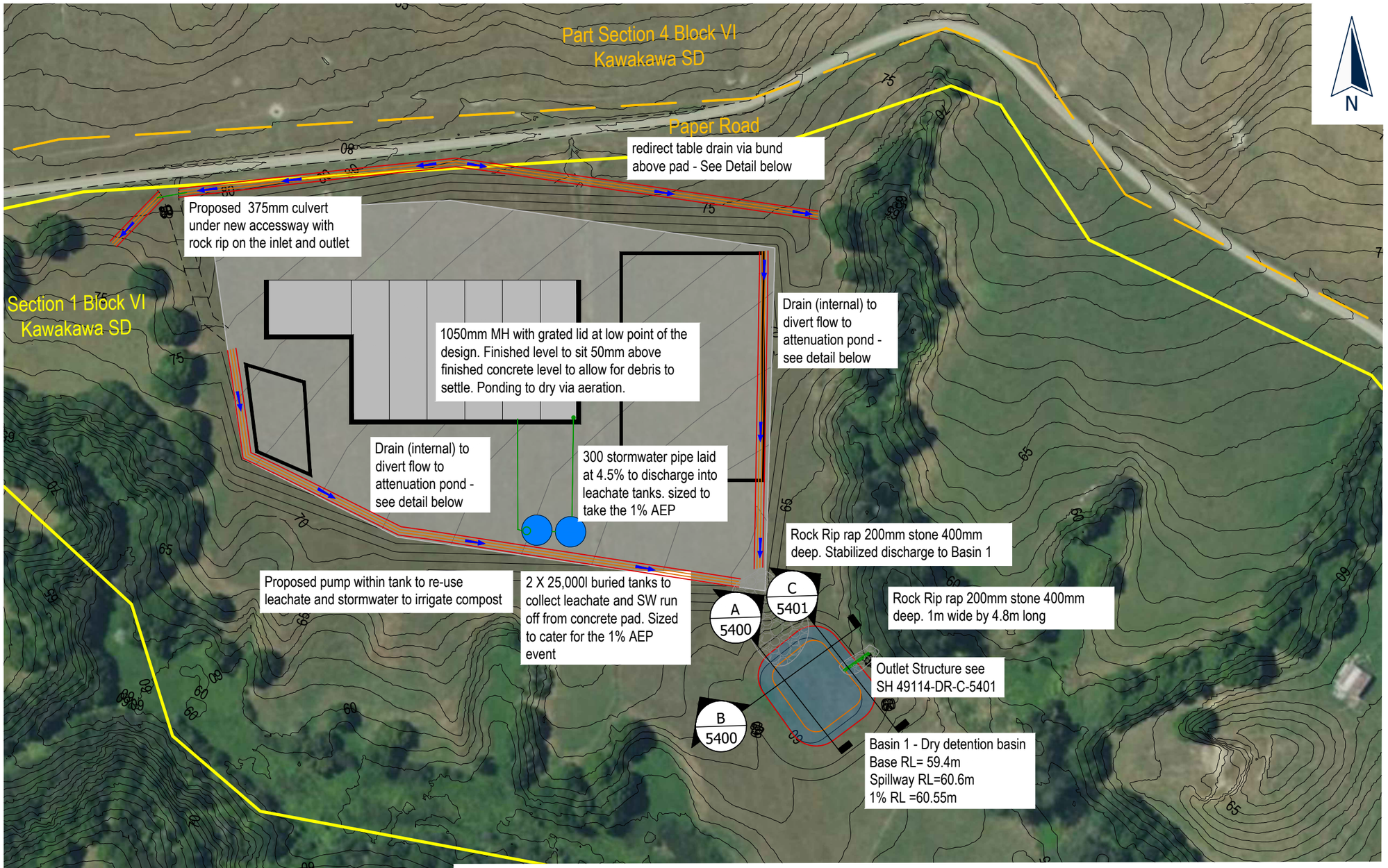

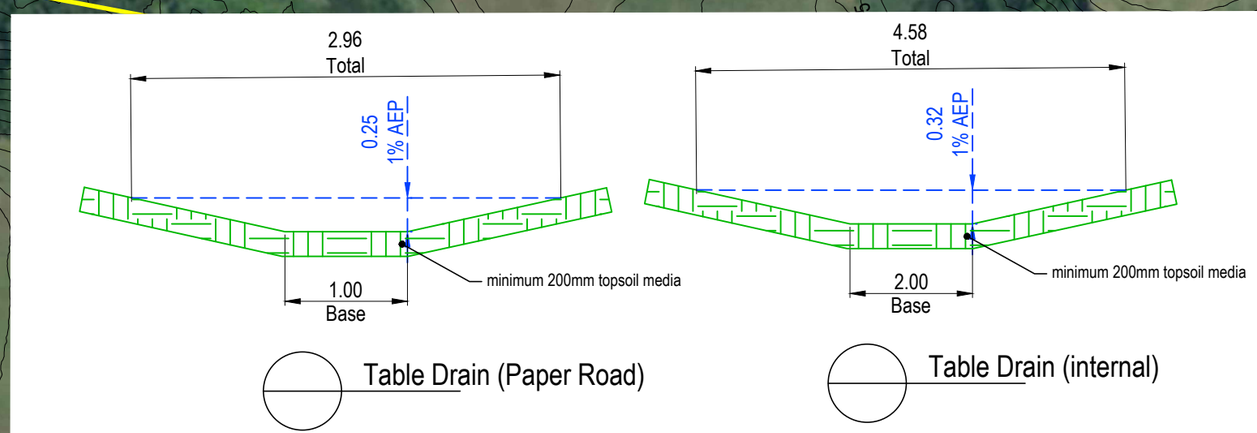

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Stormwater

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A	Issued For Resource Consent	J.Lloyd	14/05/2025

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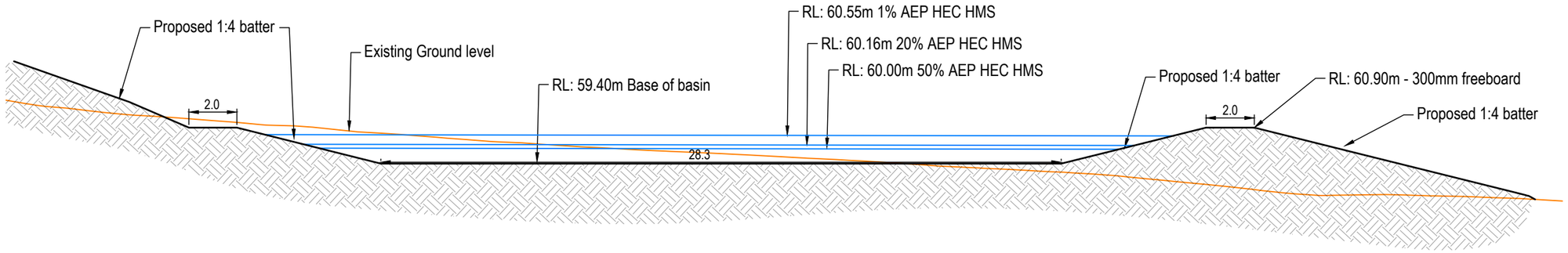

A 5000 Basin 1 Cross Section
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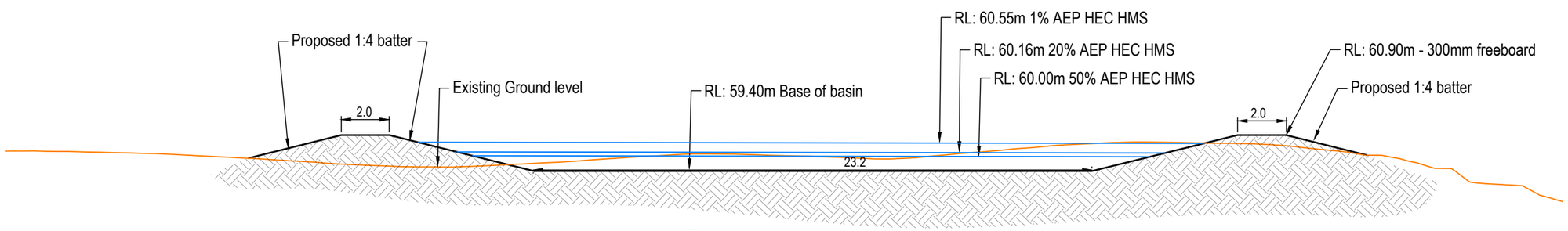

B 5000 Basin 1 Cross Section
Scale: 1:200

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Pond Details

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14/05/2025	1:200	A3

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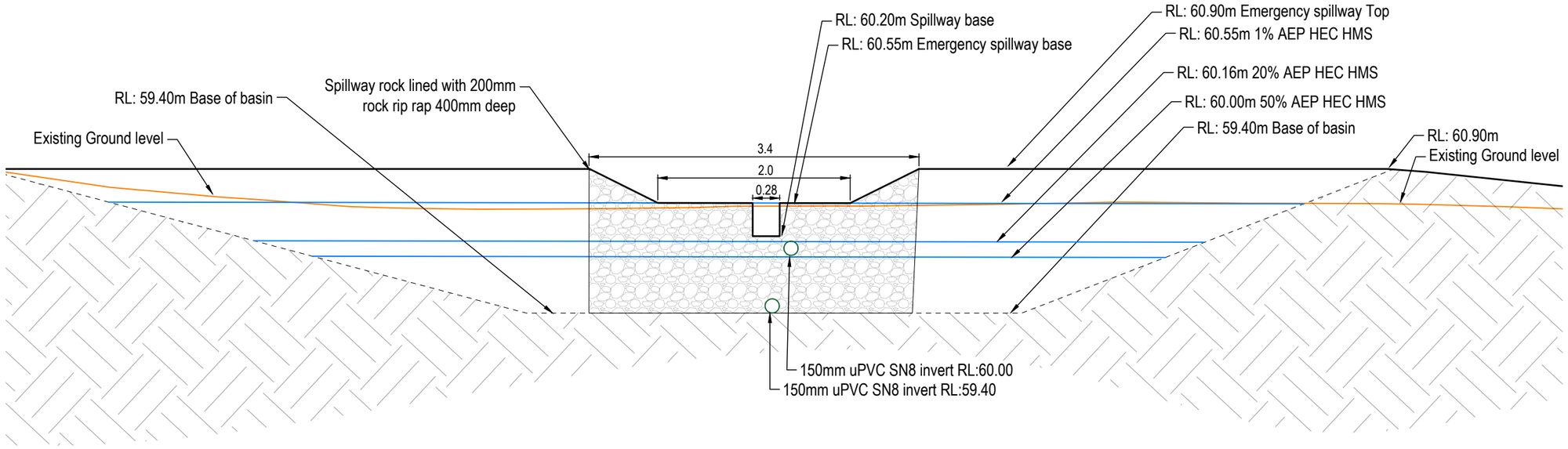

C / 5000 Spillway Section

Scale: 1:200

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Pond Details

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Resource Consent Application

<u>Appendix C:</u> Compost Management Plan

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Compost Management Plan

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Document Record

Client	Kerigreen
Site Address	966 Te Ahu Ahu Road, Oromahoe, Haruru
Job Number	49114
Document	Compost Management Plan
Document No	49114-RP-PLN-EV01 Compost Management Plan CMP

Issue and Status

Date of Issue	23/06/2025
Status	For Resource Consent
Author	Emily McDonald – Senior Planner
Reviewer	pp Simon Reiher Chanelle Brodie – Senior Planner
Approved for Issue	Simon Reiher - Director

Originating Office

Office	Orewa
Postal Address	PO Box 157, Orewa 0946
Phone	09 427 0072

Contents

1.0 Introduction

Cato Bolam Consultants have been engaged by Keri Green Limited (referred to in the remainder of this report at Kerigreen) to prepare a compost management plan (CMP) to relocate Kerigreen's existing compost operations to 966 Te Ahu Ahu Road, Oromahoe, Haruru, (Sec 1 Block Kawakawa SD) (see accompanying Engineering Plan Set 49114-DR-C-0000).

The Kerigreens composting operations within 18 Allis Bloy Place, Ruakaka were confirmed as a deemed permitted marginal activity in December, 2023 by Northland Regional Council (AUT.202103.01.01) for the composting of only organic green waste within a site that is located within a High-Risk Flood Area for five years.

The Compost Management Plan ("**CMP**") will enable the relocation of the existing operations from 18 Allis Bloy Place to 966 Te Ahu Ahu Road, Oromahoe, Haruru and include organic primary industry processing biproducts. This includes organic waste from meat processing and milk processing, ensuring that only waste free from chemicals will be accepted on the site.

No changes are proposed to the existing compost facility's operations and processes within 18 Allis Bloy Place that were approved by Northland Regional Council in 2023.

The draft CMP is proposed to be submitted in support of a resource consent application to expand the existing compost facility and include organic primary industry processing biproducts which includes animal parts, offal and fats in the composting operations at Kerigreen's facility at 966 Te Ahu Ahu Road, Oromahoe, Haruru. This version is submitted as a draft for discussion purposes.

1.1 Purpose of Compost Management Plan

The CMP sets out the requirements and standards that are already adopted at the current composting location at Allis Boy Place and will remain relevant for the new composting location at 966 Te Ahu Ahu Road during the composting operations to mitigate adverse impacts of on the environment.

2.0 Site Location and General Details

The subject site is located in Oromahoe approximately 1.3km to the southwest of the junction between State Highway 10 and Puketona Road. The land generally has a southern aspect and gently slopes into a raupō reedland wetland, which occurs along the southwestern boundary and bisects the property in the south. The predominant land cover is exotic grazing pasture, with wetlands, streams and native vegetation also present in the gullies. This is typical of the surrounding landscape. The site has existing access from Te Ahu Ahu Road along a paper road, and the existing access is proposed to be upgraded as part of this application. The property's location and locality within the surrounding environment is shown below in **Figure 1**.

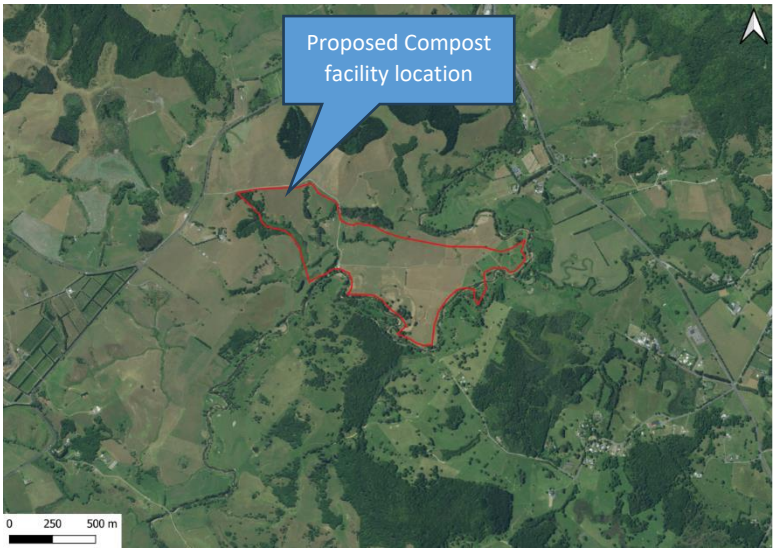

Figure 1: Location of the subject site (highlighted in red) in relation to the surrounding environment.

The area proposed to be used by Kerigreen within 966 Te Ahu Ahu Road is approximately 3.18 hectares ("ha") in area (see **Figure 2** below).

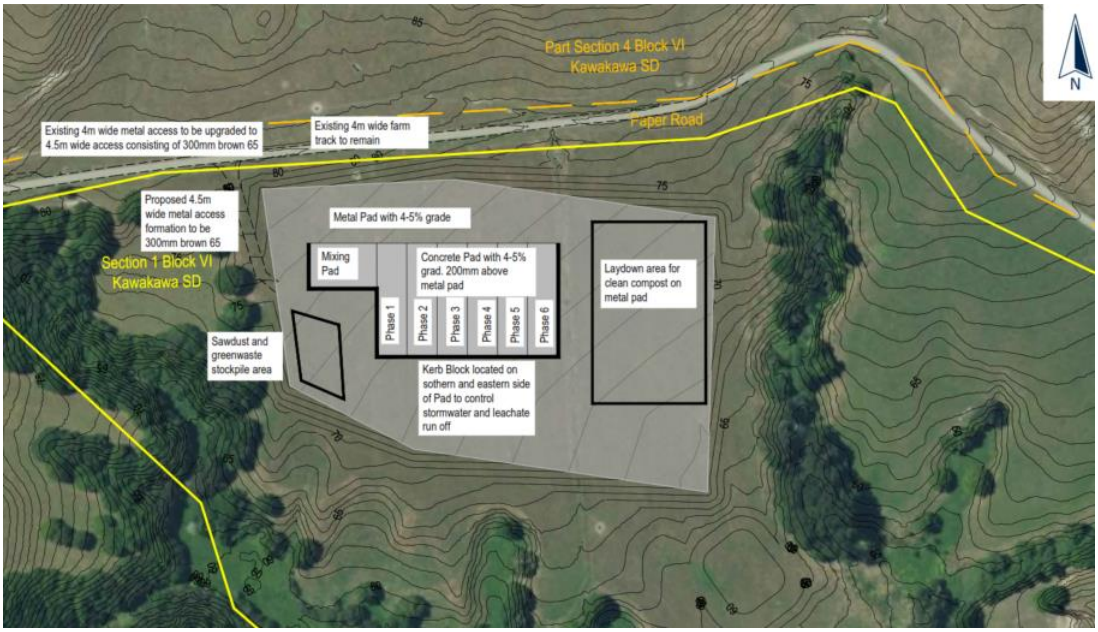

Figure 2: Layout of the site's proposed composting activities within 966 Te Ahu Ahu, Oromahoe, Haruru

2.1 Site Offices

The Site Office is located by the compost facilities entrance. Copies of all relevant resource consents, discharge permits, building consents, the CMP, the Health and Safety Plan and records of monitoring environmental protection works shall be maintained at the Site Office and be available for reference by appointed representatives of the regulatory authorities.

All visitors shall sign in and receive necessary briefings on site safety and environmental matters before proceeding on to the site.

Signs at the site office will clearly indicate its presence and function to visitors and staff as well as other Notice Boards, as required for Health and Safety and to provide 24 hour contact details for the Site Supervisor.

2.2 Health and Safety

The site will be under the control of Kerigreen who will induct all sub-contractors to work under their own Health and Safety Plans. The site supervisor is responsible for the Health and Safety of all staff, subcontractors, delivery staff, authorised site visitors and the general public. Kerigreen's site-specific Health and Safety and Environmental Management Policy and Procedures Manual will be located on site at all times.

3.0 Site Management

3.1 Site Supervisor

A Site Supervisor identified for this site is:

- Name: Matt Simpkin
- Phone Number: 021 829 799
- Email: matt@kerigreen.co.nz

The Site Supervisor will take responsibility for all activities on the site. All staff are responsible for Environmental Management and Health and Safety matters on site shall report to the Site Supervisor. The Site Supervisor shall maintain daily records that shall include:

- Plant and labour operating on site;
- Notes of weather conditions;
- Record of site visitors; and
- Record of both routine and particular monitoring of site environmental and safety measures.

The Supervisor is the designated point of communication between the Contractor and designated regulatory staff of Northland Regional Council ("**NRC**") and Far North District Council ("**FNDC**").

The Supervisor will communicate and meet as required with the designated regulatory staff of NRC and FNDC. The dates and times of such meetings are to be agreed between parties and comply with the requirements of any such conditions applied by NRC and WDC.

In the event that the Site Supervisor is unavailable (e.g. on leave), a delegated substitute will be assigned and available on the same phone number. The name of the acting Site Supervisor will be clearly displayed at the site office and communicated to NRC and FNDC as appropriate.

3.2 Plant and Service Areas

No significant quantity of hazardous material will be kept on site. Any small amounts of hazardous substances necessary for the site preparation (such as acetylene, paint, cement, oils, LPG, etc.) will be stored in the locked storage building, used and disposed of in a manner appropriate to the HSNO Classification and manufactures specifications.

The machinery lay down areas shall be located in areas to avoid noise and access from public at the road frontages.

4.0 Compost Process Description

New Zealand's best practice guidelines in NZS4454:2005 and Australia's composting guidelines AS4454-2012 are aimed firstly at the compost facility operator, by outlining the requirement to consider factors such as ingredients, type of compost processing, care with mixing, dimensions of the composting mass, composting

duration, moisture content, temperature and oxygenation throughout the composting process. Secondly, these guidelines are designed to assist others in monitoring and assessing composting operations.

Odours and leachate generation shall be minimised by correct compost processing as described in these best practice guidelines.

4.1 Compost Ingredients

The materials that are to be used in the compost are as follows:

- Sawdust and bark;
- Dewatered paunch grass;
- Organic primary industry processing biproduct including:
    - Dairy processing organic waste;
    - Meat processing organic waste;
- Scoured wool fragments;
- Chicken manure;
- Green waste; and
- Leaf litter.

The organic primary industry processing biproduct shall not contain any chemicals. Details of all types of organic waste from primary industry processing facilities used for composting, shall be recorded to ensure traceability from delivery through to release of end-product.

All organic solid materials are to be blended with carbon sources (sawdust, bark fines, green waste) as soon as practicable after it arrives on site. Stockpiling of feedstock shall be avoided.

4.2 Receipt of Raw Materials

Raw materials will be delivered to the site daily during normal operating hours. Deliveries outside these hours, including Sundays and public holidays, are not allowed. All raw materials must be received within 48 hours of processing at their point of origin. Kerigreen collects materials daily, and suppliers are informed of this requirement to minimize odours.

Upon arrival, all raw materials undergo inspection to ensure they meet acceptance criteria. This includes checking for contamination and verifying that the physical condition aligns with specifications for composting. Once a Kerigreen operator approves the material through a visual inspection, it is unloaded into the receiving area. If any contamination is detected during unloading, the driver is notified that the load is unacceptable. The Kerigreen operator will then use a front-end loader to return the contaminated material to the truck for removal from the site to suitable certified landfill.

4.3 Initial Mixing

All raw materials are thoroughly shredded and mixed to distribute material evenly throughout the compost pile. Good mixing of ingredients minimises variations in the composting mass and results in consistent processing. This mixing will be carried out on the concrete mixing pad with any leachate collected by a Kerb Block located on the eastern and southern side of the pad to control the discharges. The mixed material will be transferred to piles on the concrete pad.

4.4 Composting Process

Aeration is managed through the manual turning of compost piles. Oxygen depletion can occur due to several factors, including high microbial activity from elevated nutrient levels, the compactness of the mass related to particle size, the air-to-water ratio influenced by moisture content, and the size of bulking agents. It is essential to maintain oxygen concentrations of at least 15%, never dropping below 5%. Levels below 5% can lead to anaerobic decomposition, resulting in unpleasant odours.

Achieving high temperatures in the compost piles depends on their dimensions, oxygenation, moisture content, and available nutrients. Temperature gradients are present within the piles, with cooler areas typically found in the outer zones or in anaerobic zones of non-aerated piles. However, through regular turning, aerobic conditions are maintained, reducing the likelihood of cooler or anaerobic zones. According to NZS 4454:2005, "Odours are minimized because large areas within the composting mass are processed at optimal temperatures. Also, NH3 losses are minimized." To further reduce odours, compost piles are turned regularly.

The parameters for moisture, temperature and oxygen are all monitored. As referred to in the document Design and Description of Aerated Static Pile (ASP) Compost process, turning the compost rows while undergoing aeration is not a requirement in NZS4454:2005; though it is practiced by successful operators both in New Zealand and worldwide (as recommended by Transform Compost Systems, Canada, and Timaru District Council owned Redruth Facility). The material will be turned every 10 days. The turning of the piles is completed using a front end loader.

Water is added to the compost piles throughout the composting process. Moisture content that is too low can minimise evaporative cooling so that the pile overheats, unless it is so dry that microbiological activity is inhibited (e.g. 30 - 35 % at starting).

The compost rows are turned in a northeast direction as they gradually progress down the site. Compost piles closer to the eastern boundary are more mature and further composted. Once compost reaches this area, it is sorted by machinery where compost may either be sent back to the western end of the site for reprocessing or stored, tested and then distributed for wholesale. This systematic approach not only enhances compost quality but also ensures a sustainable recycling process that contributes to environmental health.

4.5 Composting process for compost containing organic primary industry processing biproduct

4.5.1 Mixing and Initial compositing

The initial composting of mixed material within the site at will be undertaken within the concrete mixing pad area on site. This initial period of compositing is recognised as the highest levels of leachate production and as such this leachate will be specifically controlled through a Kerb Block located at the base of the concrete area with 300mm stormwater pip laid at 4.5% to discharge into two 25,000L tanks sized to cater to 1% AEP.

4.5.2 First Aeration phase

Following the initial storage compositing, the material can be turned and aerated on the concrete pad. This aeration phase ensures the oxygen level is maintained. This area has specific leachate control to collect day-to-day discharge. This leachate can then be stored within the kerb block or the leachate tanks. When suitable weather allows, this material can be recycled back into the compost material.

4.5.3 Second to Sixth Aeration phase

Compost material will be turned and moved into the second aeration area, which will flow for one month. It will then remain in this second aeration area for two more months to achieve a final composting procedure. This material may be turned twice in this period if necessary.

Leachate discharge from this area will use the same infrastructure and procedure as the first aeration phase.

4.5.4 Storage phase

Following three months of composting, the material can be considered stable growing media. From here, it will be screened and transferred to the storage area on site. This area will consist of further screening and truck loading to distribute the growing media.

This area controls stormwater discharge, however, no specific leachate separation or control is considered necessary given the level of composting undertaken in the material to this point. The stormwater will be attenuated via a dry detention basin. Attenuation has been calculated via HEC HMS software and orifices have been sized accordingly to achieve attenuation inline with FNDC engineering standards. Please refer to Engineering Report contained in **Appendix B**.

5.0 Noise and Vibration

5.1 Noise Effects

The Site Supervisor shall carry out the composting activities to ensure compliance with Table 2 of NZS 6803:1999 and **Rule 8.6.5.1.6** of the Far North District Plan, the relevant parts of which are copied below:

Upper limits for noise measured the sites boundaries are as follows:

0700 to 2200 hours	65 dBA L10 2
200 to 0700 hours	45 dBA L10 and
	70 dBA Lmax

The above noise levels are to be measured and assessed in accordance with the requirements of Section 6 of NZS 6803:1999.

The Site Supervisor shall ensure that plant is well maintained and is equipped with all sound attenuation devices as recommend by the manufacturer. Any plant that is considered to be in poor condition or otherwise emitting excessive noise may be removed from the site.

5.2 Vibration Effects

In accordance with **Rule 8.8.5.1.8** of the Far North District Plan, ground vibration from the compost facilities machinery should be measured on the basis of human annoyance and building damage. For human annoyance, vibration should be assessed at the location of the affected person inside the building, typically

on the appropriate floor. For building damage, vibration should be assessed at the horizontal plane of the highest floor of the building. The following standards apply:

Ground vibration must adhere to the following standards at the notional boundary of any dwelling outside of the zone:

- 95% compliance: Peak particle velocity shall not exceed 2 mm/s.
- 100% compliance: Peak particle velocity shall not exceed 10 mm/s.

Compliance is to be measured over a 12-month period.

Excavator and shredder machinery use are the activities expected to generate the highest vibration levels on site. Given the distance between the site and nearest residential dwellings, the maximum vibration level is unlikely to be exceeded.

The Site Supervisor shall ensure that plant is well maintained and is equipped with all vibration attenuation devices as recommend by the manufacturer. Any plant that is considered to be in poor condition or otherwise emitting excessive vibration may be removed from the site.

5.3 Mitigation

The main discharges are into air - arising from the operation are odour and particulate matter (dust) and leachate discharges to land. This section provides a description of the main odour and dust emission sources and associated controls and procedures, along with a description of the methods to be used to minimise and manage the discharges to land.

The controls and procedures will need to be reviewed when there is a new or changed activity, changes to equipment or procedures, or if there is a change to legislative or consent requirements.

5.3.1 Discharges to Air and Mitigation Methods

To prevent discharges to air on the site the following mitigation methods shall be used:

- **Aerobic Maintenance**: Regularly turn active compost rows to ensure aerobic conditions are maintained.
- **Moisture Management**: Utilise sprinklers to keep the surfaces of compost rows damp as needed to prevent dust and odours.
- **Wind Direction Restrictions**: Avoid turning compost rows that are under 6 weeks old during Northeast, East, Southeast wind conditions to reduce potential air discharges.
- **Material Handling Protocols**:
    - Refrain from shredding green waste or receiving and covering raw materials during Northeast, East, Southeast wind directions.
    - Accept organic raw materials and immediately mix them into composting rows with shredded green waste and/or bark fines on the day of receipt.

- **Incoming Material Inspection**: Thoroughly inspect raw materials upon receipt for suitability regarding age, contamination, and moisture content. Unsuitable materials will be rejected and removed from the site the same day as receipt.

- **Weather-Dependent Processing**: If conditions are unsuitable for processing, cover raw materials with sawdust, shredded green waste, or bark fines until processing can resume under suitable conditions.

- **Mixing and Turning Restrictions**: Do not mix or turn raw materials during Northeast, East, Southeast wind conditions to minimize air emissions.

- **Stockpile Management**: Maintain moisture levels in raw material stockpiles using sprinklers as necessary.

- **Operational Flexibility**: During Northeast, East, Southeast wind conditions, site operations permitted include compost production and storage (excluding turning and screening of compost under 6 weeks), screening of retail compost, and processing of bark materials.

- **Accessway Maintenance**: Keep main accessways in good condition to minimize dust generation.

- **Speed Limit Enforcement**: Limit vehicle speeds on-site to a maximum of 20 km/h to reduce dust and emissions.

- **Seasonal Adjustments**: Review and adjust operational practices based on seasonal weather patterns to anticipate and mitigate air quality issues effectively.

Discharges to Land and Mitigation Methods

To prevent discharges to land and water on the site the following mitigation methods shall be used:

- **Water Management**: Remove any excess standing water on-site and reuse it on the compost rows when weather conditions allow.

- **Site Maintenance**: Maintain the surface of the site to facilitate drainage and prevent ponding.

- **Vehicle Inspection Protocol**: Instruct drivers to inspect their vehicles after unloading raw materials and to remove any residual materials before exiting the site.

- **Irrigation Practices**: Utilise irrigation systems to maintain appropriate moisture levels in compost rows. Ensure that watering is closely monitored to ensure that there is no overwatering.

- **Odour Management**: Promptly remove any excessively odorous raw materials or compost from the site.

- **Concrete Pads**: The initial mixing and first aeration stages of composting will be undertaken on concrete pads. This area will have specific leachate control to collect day-to-day discharge. The initial period of compositing is recognised as the highest levels of leachate production and as such this leachate will be specifically controlled through catchment at the base of the concrete pad.

- **Leachate Control**: Regularly remove excess leachate to prevent land and water contamination.

- **Cut off drains and/or bunds** around compost storage and processing areas to stop stormwater entering the compost storage and processing areas.

6.0 Responsibilities and Training

6.1 Responsibilities

Kerigreen holds ultimate responsibility for ensuring compliance with all statutory requirements and conditions of consent, as well as for conducting composting activities in accordance with the CMP.

The Site Supervisor will oversee the day-to-day implementation of the CMP and will possess the following qualifications and experience:

- Proven expertise in managing composting facilities.
- Experience in controlling odours, dust, and leachate associated with composting operations.
- In-depth knowledge of practices that minimize environmental impacts and address concerns of nearby residents.
- Comprehensive understanding of resource consent conditions and the implications of non-compliance.
- Experience in training personnel on methods to manage emissions to air and land from the composting facility.

Key Responsibilities of the Site Supervisor

The Site Supervisor will be responsible for:

- Ensuring that all contractors and staff are properly trained and fully understand the CMP requirements.
- Effectively implementing the emission control and mitigation measures outlined in the CMP.
- Ensuring continuous compliance with resource consent conditions.
- Overseeing the execution of the environmental monitoring program as specified.
- Receiving and investigating complaints in accordance with CMP procedures.
- Taking all practicable measures to avoid or mitigate offensive or objectionable odours released into the air.
- Ensuring that adequate personnel and equipment are available on-site at all times to implement the emission control and mitigation strategies outlined in the CMP.
- Designating a qualified deputy to assume responsibilities in the absence of the Site Supervisor.
- Regularly reviewing and updating the CMP, to ensure it remains current.

All contractors and staff working on-site are expected to adhere to the requirements of the CMP in their activities.

6.2 Training and Induction

The Site Supervisor is responsible for establishing and maintaining an ongoing training and induction program for all contractors and staff. This program aims to ensure that everyone working on-site is aware of and understands the objectives and requirements of the CMP, the conditions of resource consent, and the consequences of non-compliance.

The training program will cover at least the following key areas:

- **Roles and Responsibilities**: Clearly outline the responsibilities of all staff and contractors to conduct their work in a manner that avoids negative impacts on the environment and local residents, while adhering to resource consent conditions.
- **Legal Implications**: Inform participants about the potential legal consequences of adverse environmental effects resulting from the project and the implications of non-compliance with resource consent conditions.
- **Minimum Control Standards**: Provide guidance on the minimum requirements for controlling discharges to air and land related to all activities on-site.
- **Monitoring Requirements**: Train staff on how to monitor weather conditions and inspect the site for odours, dust, and leachate discharges, as well as assess the effectiveness of control measures and implement additional actions when necessary.
- **Emergency Procedures**: Outline the actions to be taken in the event of extreme weather, equipment malfunctions, or breakdowns.
- **Complaint Response Protocol**: Detail the steps to be followed if a complaint is received from the public or a regulatory authority.

the Site Supervisor will ensure that all personnel are equipped with the knowledge and skills necessary to maintain compliance and protect the environment.

6.3 Complaints

Complaints may be received from regulatory authorities, members of the public, or Kerigreen team members. The Site Supervisor is responsible for addressing and following up on all complaints related to discharges from the site. A register of complaints will be maintained and made available to the consent authority upon request.

6.3.1 Actions to be taken as soon as possible after a complaint

Upon receiving a complaint, the Site Supervisor will take the following actions as soon as possible:

- **Complete a Complaint Form**: Document the details of the complaint.
- **Record Key Information**: Note the time and date of the complaint, the identity and contact details of the complainant (if provided), wind direction and strength, and current weather conditions. If applicable, indicate whether the complaint was referred by the Northland Regional Council.
- **Gather Details from the Complainant**: Ask the complainant to describe the nature of the odour or dust emission, whether it is constant or intermittent, how long it has persisted, if it is worse at specific times of day, and if it can be traced to an identifiable source.

- **Conduct a Site Inspection**: As soon as possible after receiving the complaint, inspect the site. Document all odour and dust-producing activities, identify the personnel responsible for those activities, and note the mitigation methods being employed. If the complaint relates to a recent event, record any relevant site activities occurring at that time.

- **Assess the Origin of the Complaint**: Preferably within two hours, visit the area from which the complaint originated to determine if odour and/or dust is still an issue.

- **Investigate Potential External Sources**: If it appears that an odour or dust source unrelated to Kerigreen may be causing the nuisance, verify this. If possible, photograph and document the source and emissions.

- **Communicate Findings**: After completing initial investigations, contact the complainant to explain any issues identified and the remedial actions taken.

- **Update Procedures if Necessary**: Revise relevant procedures to prevent recurrence of similar problems if warranted.

- **Finalise Documentation**: Complete the complaint form and file it in the Complaints Register.

6.3.2 Follow up actions

- Advise Northland Regional Council as soon as practicable that a complaint has been received and what the findings of the investigation were, and any remedial actions taken; and

- Advise staff and contractors that a complaint has been received and what the findings of the investigation were, and the remedial actions taken.

7.0 Limitations

This report has been prepared for the applicant Kerigreen for operation of the composting facility at 966 Te Ahu Ahu Road.

The comments within this report are limited to the purpose stated. Cato Bolam Consultants Ltd accept no liability for the use of this report by any other person that that stated above, or use for any other purpose, and any such person who relies upon any matter contained in this report does so entirely at their own risk.

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Kerigreen

966 Te Ahu Ahu Road, Oromahoe, Haruru

Resource Consent Application

<u>Appendix D:</u> Engineering Report

PLANNERS
SURVEYORS
ENGINEERS
ARCHITECTS
ENVIRONMENTAL

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966 Te Ahu Ahu Road, Oromahoe, Haruru

Engineering Report

PLANNERS | SURVEYORS | ENGINEERS | ARCHITECTS | ENVIRONMENTAL

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Document Record

Client	Kerigreen
Site Address	966 Te Ahu Ahu Road, Oromahoe, Haruru
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Document	49114-RP-C-TA01 Engineering Report .docx
Document Number	49114-RP-C-TA01 Engineering Report .docx

Issue and Status

Date of Issue	23/06/2025
Status	For Resource Consent
Author	Jarred Lloyd - Associate
Reviewed and Approved for Issue	Simon Reiher - Director

Originating Office

Office	Whangarei
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Contents

1.0 Introduction

This report is prepared to support the application for Land Use and Resource Consent at 966 Te Ahu Ahu Road, Oromahoe, Haruru. This report specifies the proposed preliminary engineering design, construction methodologies and stormwater mitigation to obtain consent.

This report identifies the engineering issues related to the proposed activity and highlights the civil works that will be necessary to ensure that the proposed activities not produce effects on the surrounding environment.

2.0 Site Description

The property is a working farm made up of multiple titles and of irregular shape. The property has a series of paper roads and some tributaries traversing through the property. The proposed location of works is proposed adjacent to an existing farm track and paper road and between two well defined over land flow paths that lead into a tributary.

Figure 1: Site Location – 966 Te Ahu Ahu Road, Oromahoe, Haruru

A dwelling and amenities are present in the south-west, with access via a vehicle crossing on the south side of Te Ahu Ahu Road. A secondary vehicle crossing is located to the north of the dwelling which forms the farm track that runs adjacent to the proposal.

Flooding areas have been identified on the Northalnd Council's Hazard Register. This area is confined to the defined flood plain of the Waia-ruhe river. We confirm that this flood does not extend outside of the flood plain and therefore there is no risk of flooding within the proposal's location.

3.0 Proposed Activity

The proposal is to create a composting operation on a flat pad of approximately 2.1 hectares with metal access in the location of a well-defined farm access. The composting operation will have dedicated mixing areas and storage areas.

The existing farm track is proposed to be upgraded to a 4.5m wide metal formation for 3-4 heavy vehicle movements per day.

Development is anticipated to generate approximately 2.1ha of impervious area. Stormwater mitigation is proposed to bring stormwater run off back to 80% of pre development flows. The proposal seeks to be inline with FNDC EES 2023.

4.0 Site Clearance

The proposed platform will be formed in areas of open pasture and vegetation removal is not required.

5.0 Earthworks

Earthworks are proposed to complete the formation of the proposed accessway and working platform to subgrade. There is a proposed total cut volume of 18,552m³, with 17,103m³ fill. The surplus cut volume of 1,448m³ is anticipated to be topsoil and shall be used within the compost procedure.

Topsoil and unsuitable material will be cut to form runoff diversion bunds during the works and re-spread over the batters. Erosion and sediment control will be undertaken in accordance with GD05 and maintained to the same standard.

5.1 Sediment and Erosion Control

Erosion and sediment control (ESC) devices for the earthworks will be designed in accordance with Auckland Council publication, “Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region” (GD05).

The controls proposed consist of clean water cut off drains, silt fences, topsoil runoff diversion bunds and a sediment retention ponds (SRP). Clearwater drains will be used above the site directing the upper catchments around the works areas and runoff diversion bund used to collect silt laden water and directing it to the SRP.

The SRP has been designed based on 2% of the earthwork area requiring 560m3 of volume required. Due to the proposal requiring 1,500m3 of volume for attenuation it is proposed to cut in the attenuation basin and utilise it as an oversized SRP prior to its final use.

For the surplus cut material, the area will be bounded with clearwater drains above the site, and flows will be conveyed via a runoff diversion bund to the decanting earth bund. Silt fencing will be utilised behind diversion bunds as an additional layer of protection.

Silt fences are proposed on the lower side of the proposed earthworks. Refer to Drawing 2200 in the Engineering Plans in **Appendix A**.

All controls will be monitored during the earthworks and construction by the contractor and the engineer to the contract.

Generally, all aspects of the erosion and sediment control are considered relatively straight forward and can easily adhere to GD05.

6.0 Access

It is compost operation will utilise an existing vehicle crossing to 966 Te Ahu Ahu Road which currently leads to the existing house. It is proposed to extend the private driveway formation to the the farm track that located in an existing paper road. The farm track continues within the paper road runs adjacent to the proposed activity. This existing farm track is proposed to be upgraded and will be utilised as the access to the proposed activity

Te Ahu Ahu Road is classed as primary collector with a 100km/hr posted speed limit as per NZTA GIS maps. As per FNDC Engineering standards 2023, minimum sightlines of 210m are required. We confirm that sightlines to the north and south, both exceed this minimum standard.

The anticipated use of this accessway for 3-4 heavy vehicles per day is in line with the expected rural usage, and no specific crossing formation upgrade is considered as a requirement. However we confirm the existing crossing is currently formed to a seal formation consistent with a “Type 1B” FNDC EES 2023 Sheet 21.

The existing farm track currently has a width of 3-4m, it is proposed to upgrade the track to a 4.5m width and allow passing bays at regular intervals of 100m to allow for traffic movements. The farm track is located on a paper road but we confirm this shall be a private formation that will be maintained by the private owner.

The recommendation for the accessway shall be a metal formation of 300mm Brown 65 suitable for 20t loading. A 200mm concrete pad is proposed for truck turning and material drop off.

7.0 Wastewater / Leachate

An office and work shed is proposed within the site to accommodate 1-2 workers. A portable site tolit shall be used and maintained by hire agreement.

The compost operation will generate leachate which is a biproduct of composting. This has potential phosphate and nitrate contaminates generated from vegetation and animal products. To control the leachate run off, a dedicated concrete pad and conveyance and storage has been designed. This design has been sized to cater for the 1% AEP over 24 hours within the concrete pad to remove risk of leachate uncontrolled discharge, a volume equivalent of 48,760l.

7.1 Concrete pad

A concrete pad has been utilised for the initial mixing and compost area as it is completely impervious, therefore derisking potential contamination. The concrete pad has been set 200mm higher than the finished level of the metal pad to control external stormwater flow, flowing through the compost and getting contaminated. Kerb blocks have been placed on the lower side of the pad to contain and control the stormwater/ leachate run off from the concrete pad. This will direct all run off to a small “ponding area” where it will be collected for convenience and storage.

7.2 Conveyance and storage

The proposal will utilise a 1050mm MH with a scruffy dome located in the low point of the concrete pad. The MH will be set 50mm higher than the concrete pad and have a steel grate on the scruffy dome to minimise any sediment or larger debris getting into the MH and tanks. The remaining leachate/water around the MH will evaporate via sun and wind. Remaining debris can be manually collected by loaders and put back into the compost.

A 300mm pipe laid at 4.5% will convey the flow into the two 25,000l tanks. The conveyance system and tanks have been designed to cater for 1 % AEP storm event over 24 hours to remove any risk of leachate breaching the site. Refer to Appendix B for flow calculations.

The proposed 50,000l tanks have been proposed based on the volume of water generated from the concrete pad during a 1 % AEP storm event over 24 hours. This creates a volume of 48,760l.

The water stored in these tanks will be reused via pumped irrigation over the compost to maintain consistent moisture within the compost. This is an integral part of the composting progress. Potential contaminants and further broken down and leachate water lost to evaporation over this process. As compost reaches maturity over approximately 60 days the leachate is significantly reduced and compost can be classed as “Stable”. At this point it is proposed that the compost is transferred off the concrete pad and stockpiled on the metal hardstand area.

8.0 Stormwater

The proposed stormwater management for the activity will provide stormwater control and attenuation as per the FNDC engineering standards 2023. The flow will be attenuated back to 80% of predevelopment levels.

8.1 Stormwater Modelling

The pre and post development flow analysis has been completed by using HIRDS rainfall data and HEC-HMS stormwater modelling software.

A runoff curve number (Cn) of 0.59 was used for pasture, 0.96 for the impermeable area inline with FNDC table 4.3 for class C soils. An initial abstraction (Ia) value of 5 was used for pervious areas and 0 was used for impervious areas. The time of concentration was set at the minimum of 10 minutes for all calculations and the SCS Lag factor at 2/3 of the time of concentration or 6.7 minutes.

Table 1 – Pre vrs Post development flows

Storm	Pre Development	Post Development	80% Pre development	Target Flows	Detained Flows (m3/s)	Pond RL
50%	0.1091	0.1840	0.0873	0.0873	0.07268	60.00
20%	0.1637	0.2438	0.1309	0.1309	0.1185	60.16
1%	0.3572	0.4387	0.2858	0.2858	0.2781	60.55

8.2 Pond

Mitigation of anticipated impermeable surface will be attenuated via a dry detention basin. Drains will be placed on the lower side of the impervious area to control and divert flow into the detention basin.

Attenuation has been calculated via HEC HMS software and orifices have been sized accordingly to achieve attenuation inline with FNDC engineering standards. Please refer to Appendix C to E for calculations. Please refer to table 1 below for a tabulated form of the results.

8.3 Culverts

It is proposed to install a new 375mm diameter RCRRJ Class 4 culvert at the entrance to the proposed composting site . This will convey the flows from one side of the driveway to the other at the low point and into the existing overland flow paths.

8.4 Wetlands

The proposed works are within 100m of wetland area. The effect of the proposal on stormwater flow discharging to the wetland tributary is deemed minor due to a decrease in potential flow being reduced by 1.5% and being discharged 400m further downstream. The catchment to the wetland is still 63ha

9.0 Utility Services

No power or telecommunication services will be required for this land use.

10.0 Water

No potable water will be required onsite.

11.0 Conclusions and Recommendations

The proposal consists of bulk earthworks to create a slightly graded pad of 2-3% of which 3000m2 is to be concrete and the remain to be metal to work off.

Access is recommended to be upgraded to a 300mm thick 4.5m wide metal access with passing bays every 100m.

The effects on stormwater runoff from the anticipated works will be mitigated via a dry dentation basin in line with FNDC engineering standards.

The effects of potential leachate contamination have been resolved by creating sufficient capacity and storage to handle the 1% AEP event, to minimise any risk of water breaching the site extents.

12.0 Limitations

This report has been prepared for the particular project described to us and its extent is limited to the scope of work agreed between the client and Cato Bolam.

The content within this report is limited to the purpose stated. Cato Bolam Consultants accept no liability for the use of this report by any other person than the client, or use for any other purpose, and any such person who relies upon any matter contained in this report does so entirely at their own risk.

No responsibility is accepted by Cato Bolam Consultants Limited or its directors, servants, agents, staff or employees for the accuracy of information provided by third parties and/or the use of any part of this report in any other context or for any other purposes

Kerigreen

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Engineering Report

Appendix A: Engineering Plans

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NOTES

GENERAL

1. The contractor shall be responsible for locating all existing services prior to commencement of works. The contractor shall make good at their own expense any damage to existing services.
2. Levels are in terms of New Zealand Vertical Datum 2016.
3. All works are to be installed as per Far North District Councils Environmental Engineering Standards 2023 (FNDC EES).
4. The contractor is responsible for locating services to be abandoned and providing confirmation to the engineer that this work has been completed.

Proposed Earthworks Legend

- Existing Contours
- Proposed Contours Major
- Proposed Contours Minor
- Extent of Earthworks

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Existing Contours

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DATE	ORIGINAL SCALE	ORIGINAL SIZE	
14/05/2025	1:1500	A3	
DRAWING NO.		REVISION	
49114-DR-C-2000		A	

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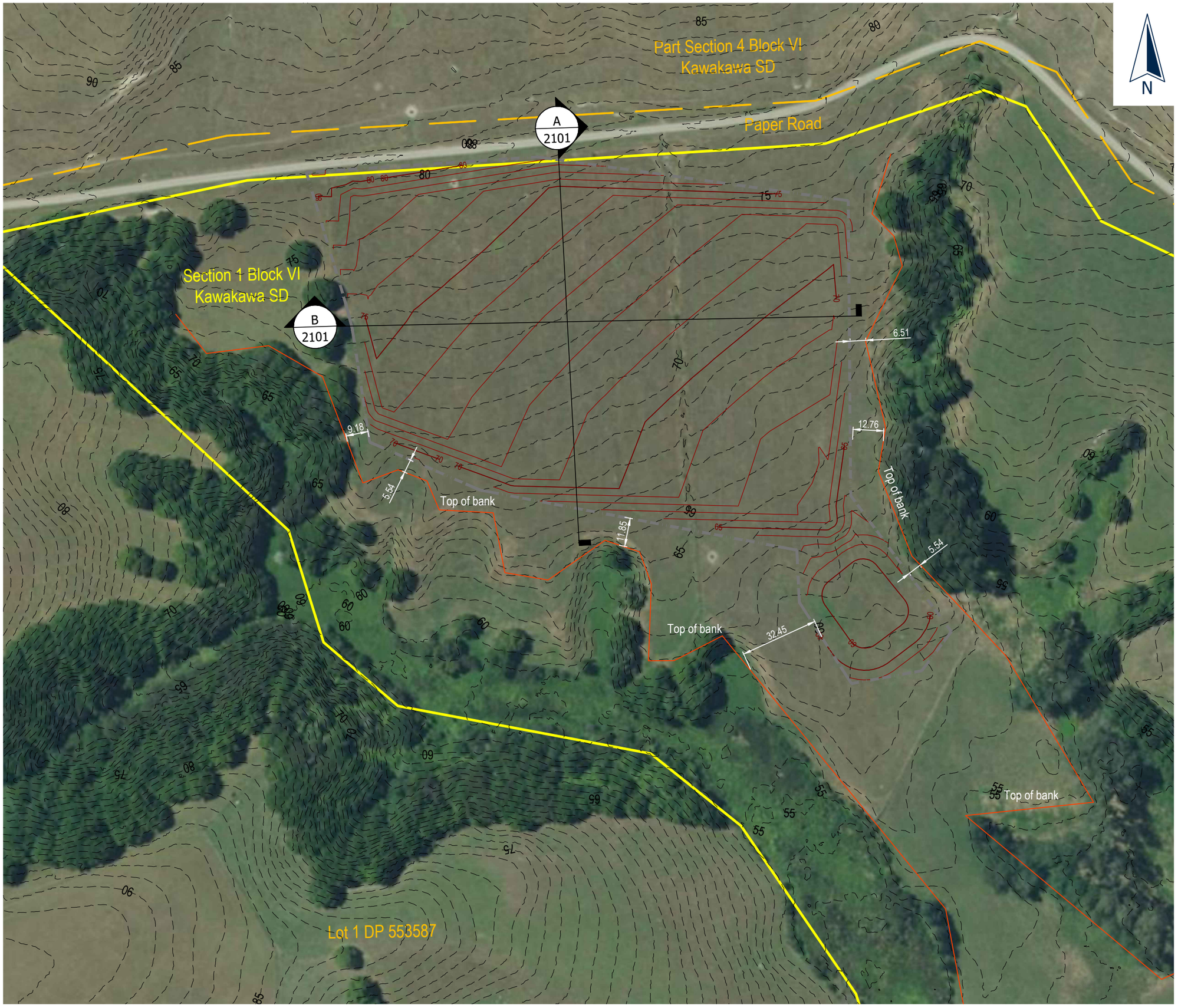

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Proposed Earthworks Legend

- 35 — Existing Contours
- 0 — Proposed Contours Major
- Proposed Contours Minor
- Extent of Earthworks

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Proposed Contours

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A	Issued For Resource Consent	J.Lloyd	04/05/2025
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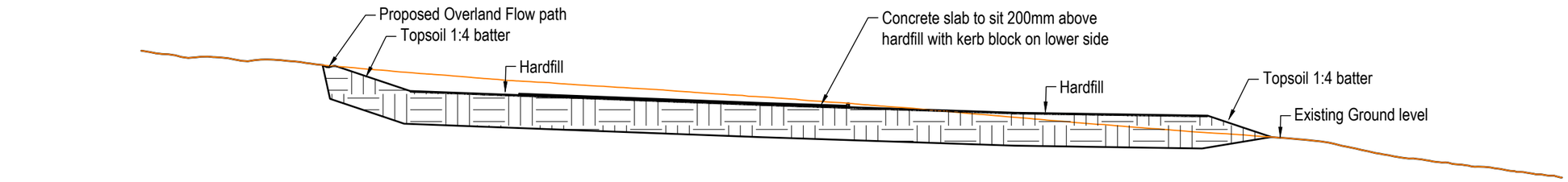
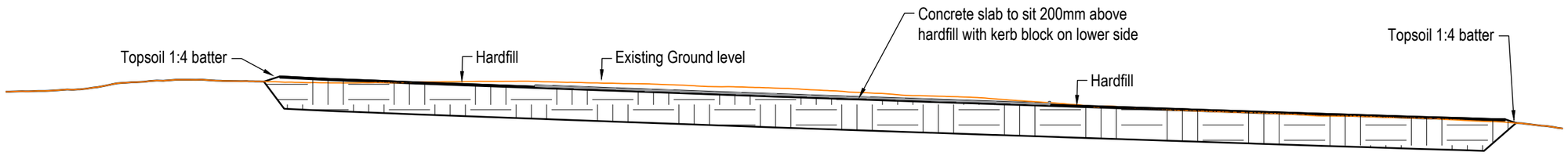
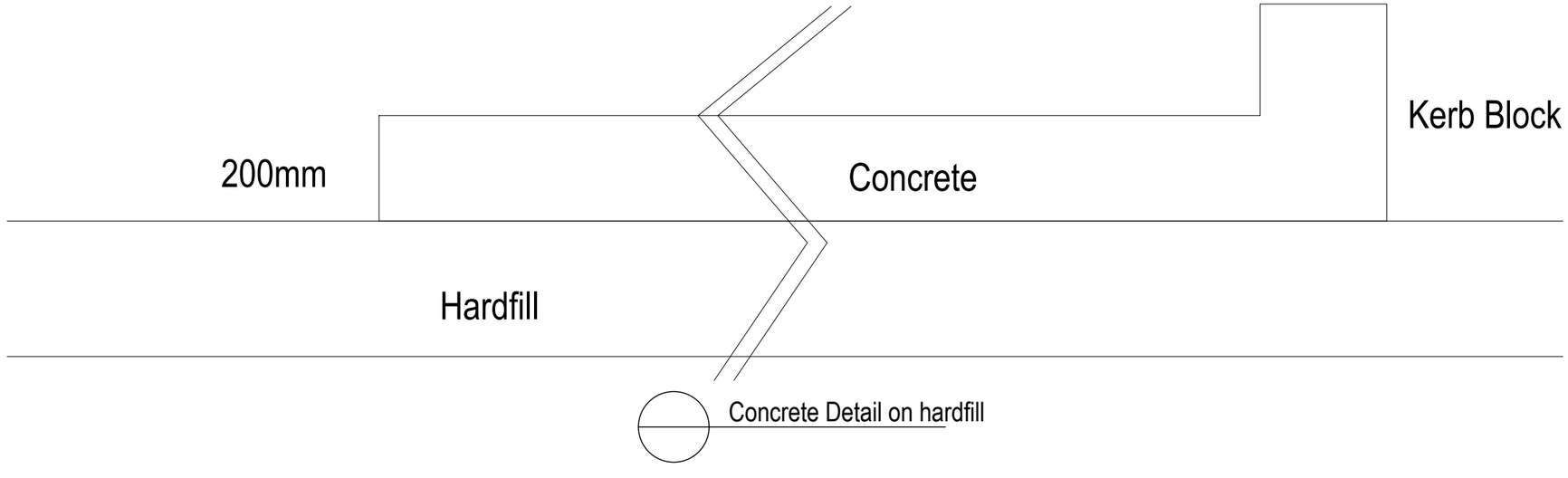


A 2100 Earthwork Cross Section
Scale: 1:750



B 2100 Earthwork Cross Section
Scale: 1:750



Concrete Detail on hardfill

N

NOTES

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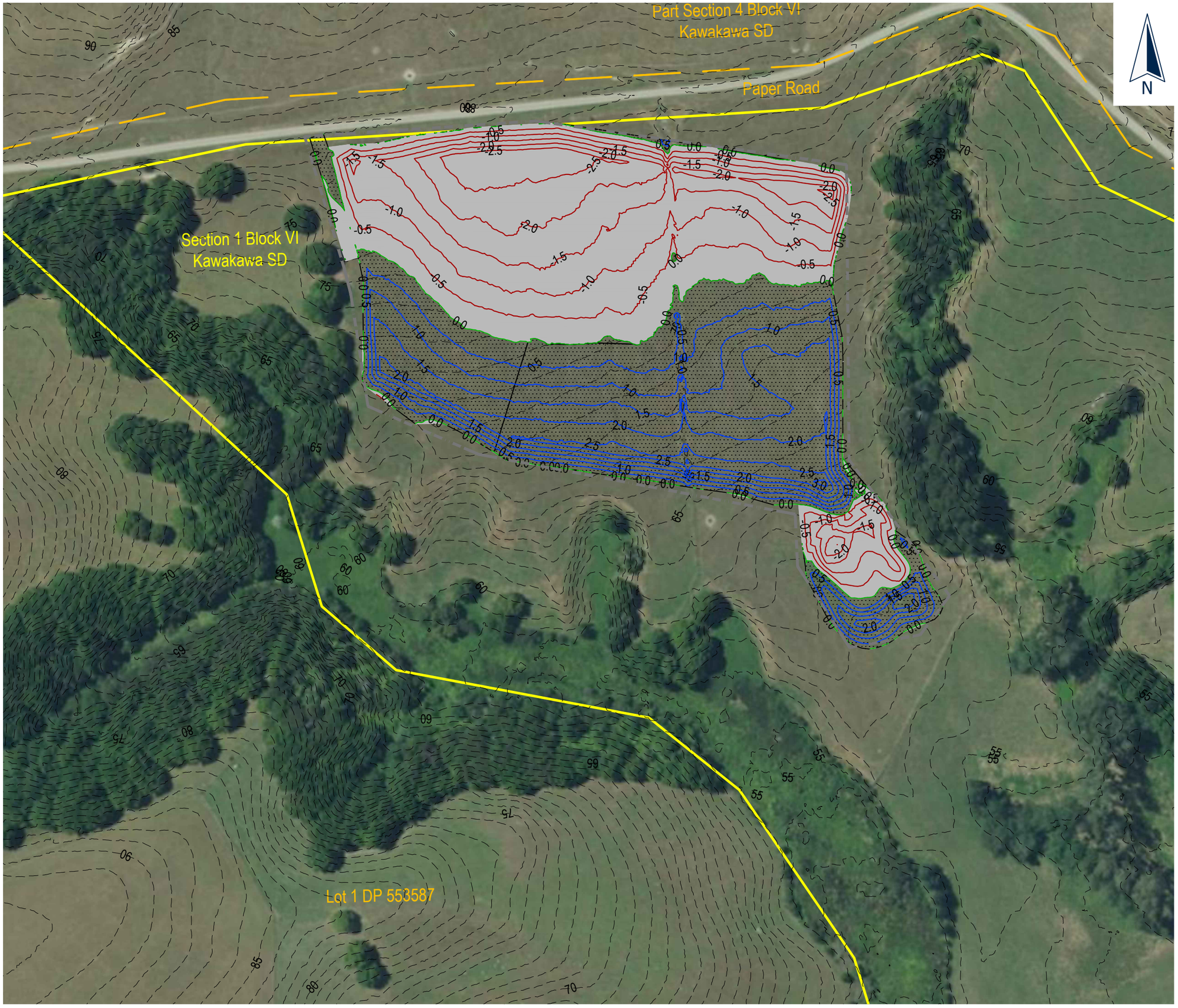

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Cut to Fill Legend

- 35 — Existing Contours
- 0 — Zero Contour
- -1 — Cut Contours & Area
- 1 — Fill Contours & Area
- Extent of Earthworks

Earthworks Values:

Total Area = 3.18ha
Cut = 18,552m³
Fill = 17,103m³
Balance = 1,448m³

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Cut Fill

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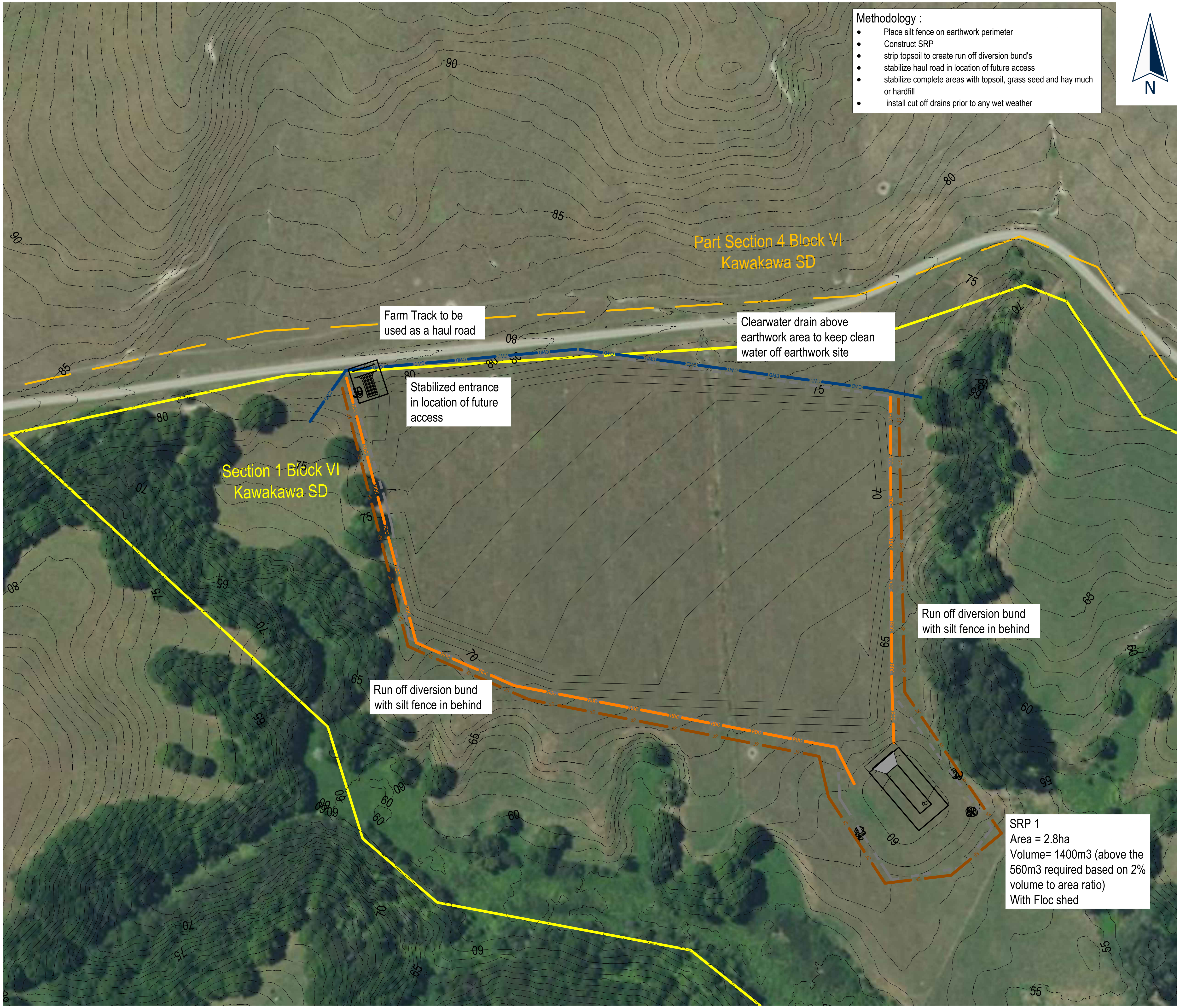

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4. The contractor is responsible for locating services to be abandoned and providing confirmation to the engineer that this work has been completed.

EROSION AND SEDIMENT CONTROL

1. All sediment and erosion control measures are to be installed in compliance with the approved drawings and Auckland Council's Erosion & Sediment Control Guide for Land Disturbing Activities in the Auckland Region (GD05).
2. Approval of the erosion and sediment control measures must be gained from the engineer prior to commencing earthworks.
3. Consent documents must be held on site at all times.

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Sediment Control

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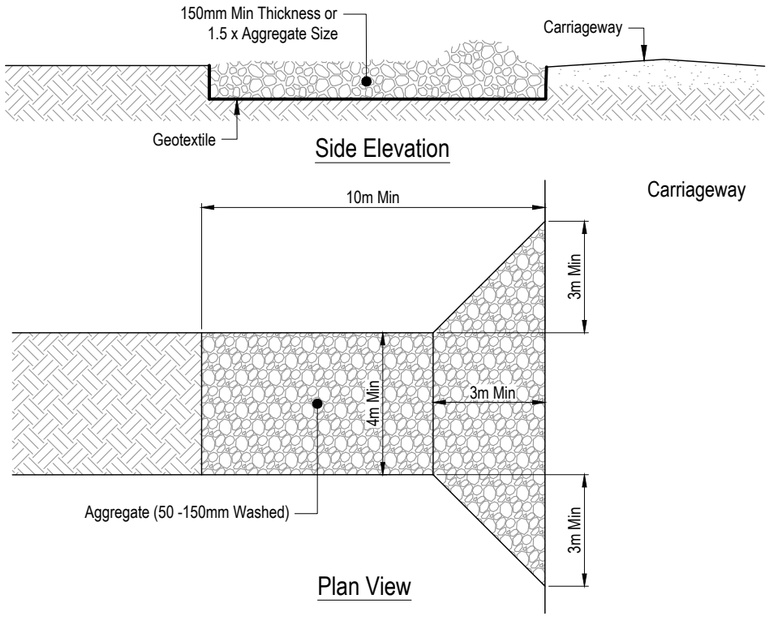


Stabilised Construction Entrance

Stabilised Construction Entrance Specifications:

Application:

Use a Stabilised Construction Entrance at all points of construction site ingress and egress with a construction plan limiting traffic to these entrances only. They are particularly useful on small construction sites but can be utilised for all projects.

Design:

1. Clear the entrance and exit area of all vegetation, roots and other unsuitable material and properly grade it.
2. Provide drainage to carry runoff from the stabilised construction entrance to a sediment control measure.
3. Place aggregate to the specifications below and smooth it.

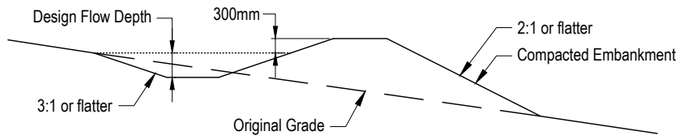
Stabilised Construction Entrance Aggregate Specifications:

Aggregate Size	50-150mm Washed Aggregate
Thickness	150mm Minimum
Length	10m Minimum
Width	4m Minmum

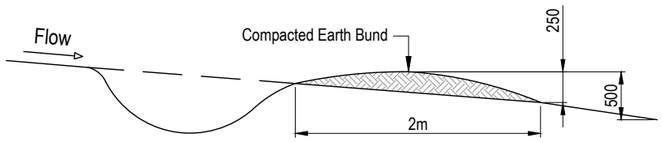
Maintenance:

1. Maintain the stabilised construction entrance in a condition to prevent sediment from leaving the construction site. after each rainfall inspect any structure used to trap sediment from the stabilised construction entrance and clean out as necessary.

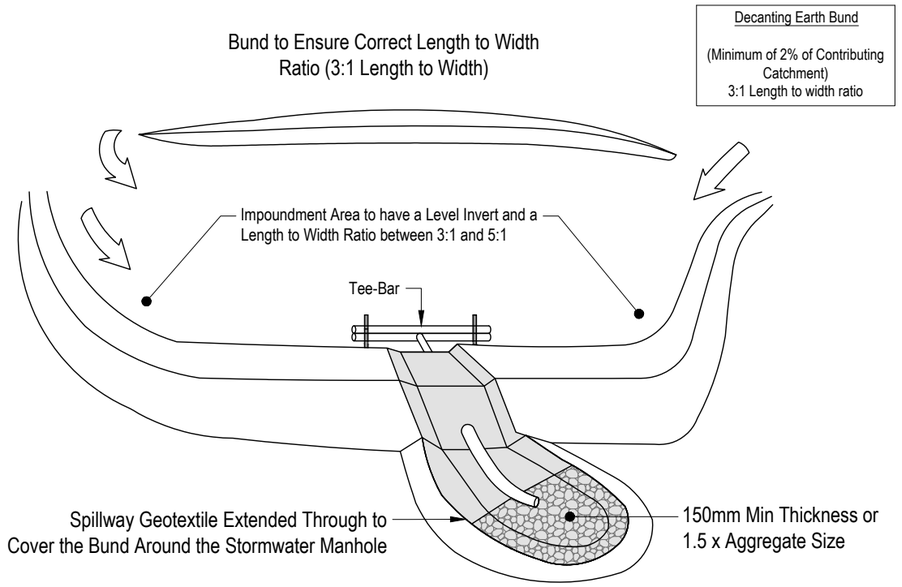
2. When wheel washing is also required, ensure this is done on an area stabilised with aggregate which drains to an approved sediment retention facility.



Dirty Water Diversion Channel - Cross Section

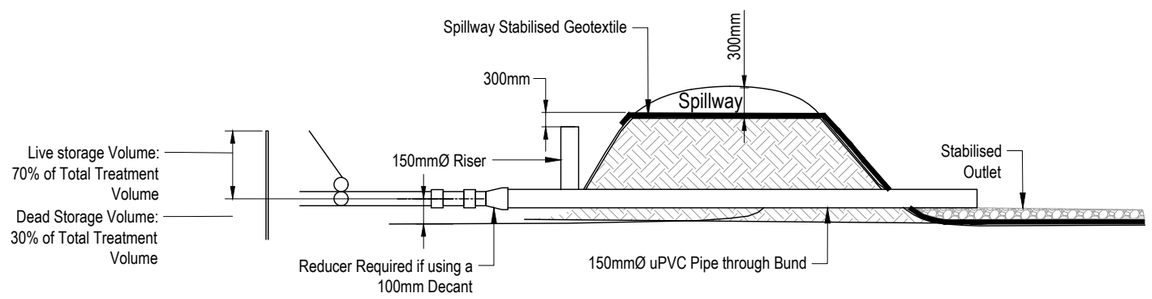


Contour Drain -Cross Section



Decanting Earth Bund with Tee-Bar

Table 4 GD05 - Contour drain spacing	
Slope of site (%)	Spacing (m) of contour drains
Less than 5%	50
5-10%	40
10-15%	30
15-30%	20



Outlet Detail With Tee-Bar

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A	Issued For Resource Consent	J.Lloyd	14/05/2025

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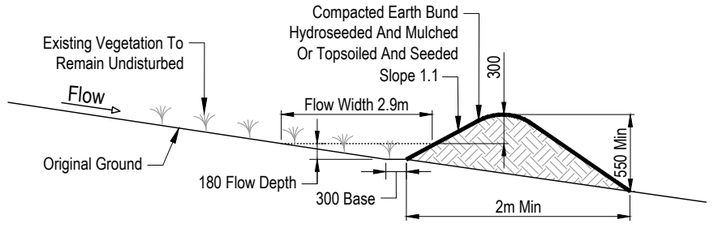
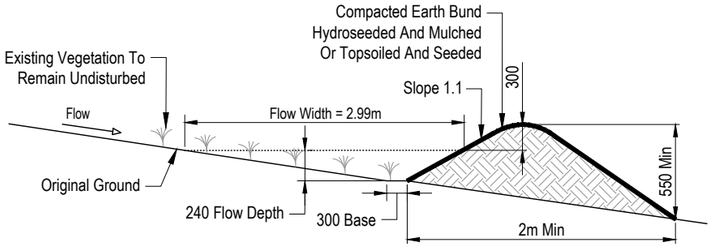
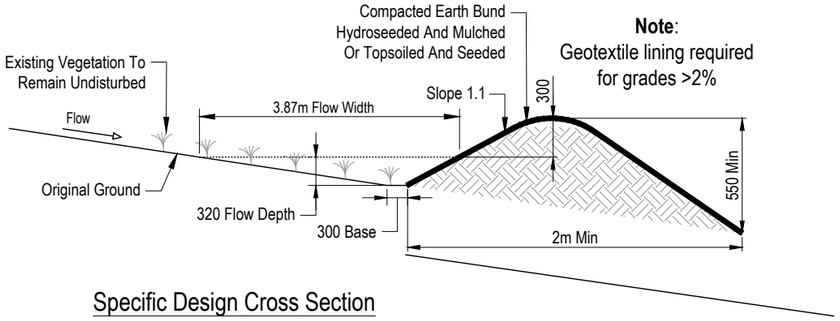


Specific Design Cross Section Type 1 - (≤ 1Ha Catchments)

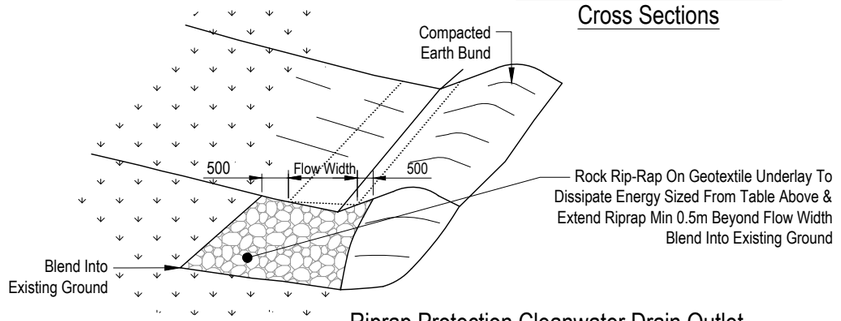


Specific Design Cross Section Type 2 - (1 - 2Ha Catchments)



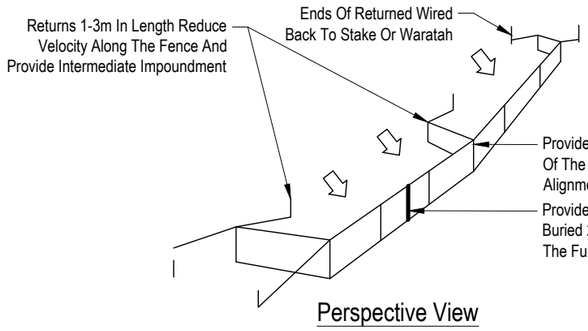
Note:
Geotextile lining required for grades >2%

Specific Design Cross Section Type 3 - (2 - 4Ha Catchments)

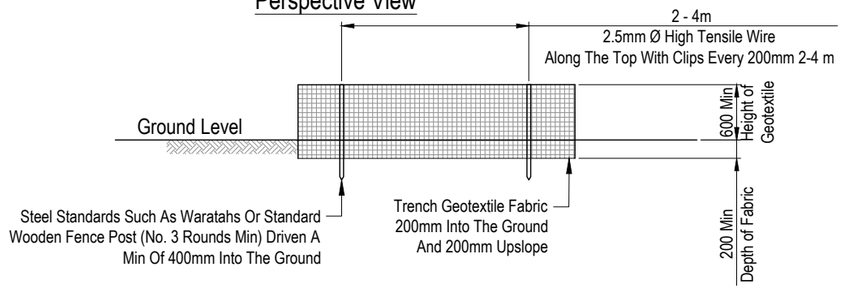


Riprap Protection Cleanwater Drain Outlet

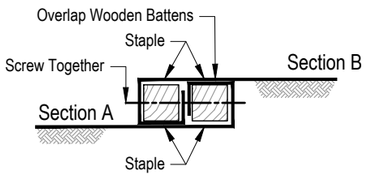
Clean Water Diversion Bund Cross Sections



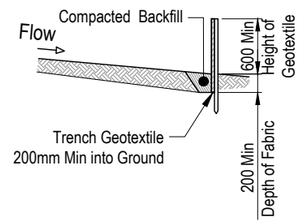
Perspective View



Elevation

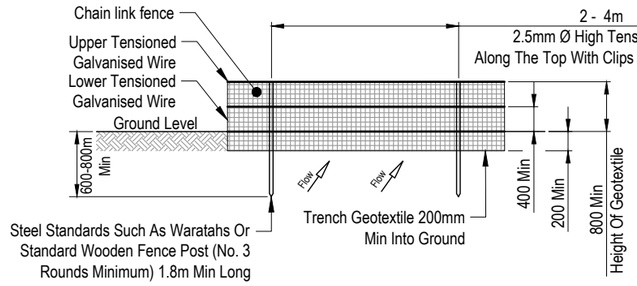


Standard Fabric Joint

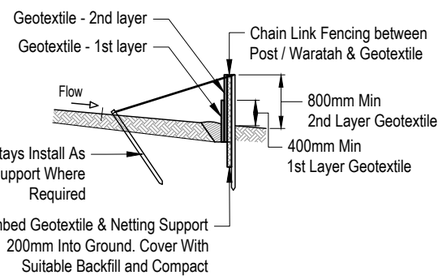


Cross Section

Silt Fence Construction



Elevation



Cross Section

Super Silt Fence Construction

Table 12 GD05 - Silt Fence Design Criteria

Slope Steepness %	Slope Length (m) (Maximum)	Spacing of Returns (m)	SF Length (m) max.
< 2%	Unlimited	N/A	Unlimited
2 - 10%	40	60	300
10 - 20%	30	50	230
20 - 30%	20	40	150
33 - 50%	15	30	75
> 50%	6	20	40

Table 13 GD05 - Super Silt fence Design Criteria

Slope Steepness %	Slope Length (m) (Maximum)	Spacing of Returns (m)	SSF Length (m)
0 - 10%	Unlimited	60	Unlimited
10 - 20%	60	50	450
20 - 30%	30	40	300
33 - 50%	30	30	150
> 50%	15	20	75

CWD outlet sizing

CWD Type	Rock size (mm)	Rock depth (mm)	Outlet length (m)	Flow width
1 (≤1ha)	100-150	200 - 300	2.4	2.29

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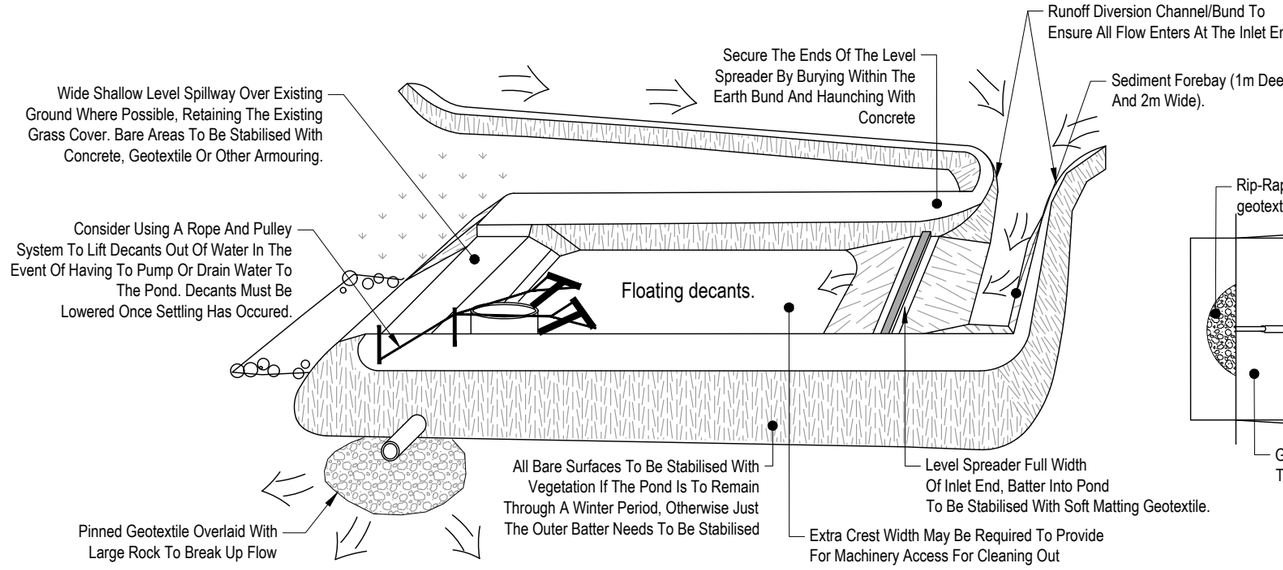
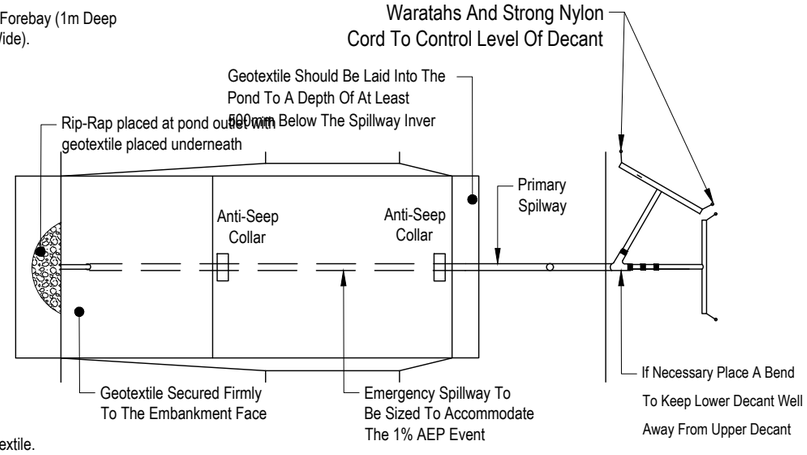
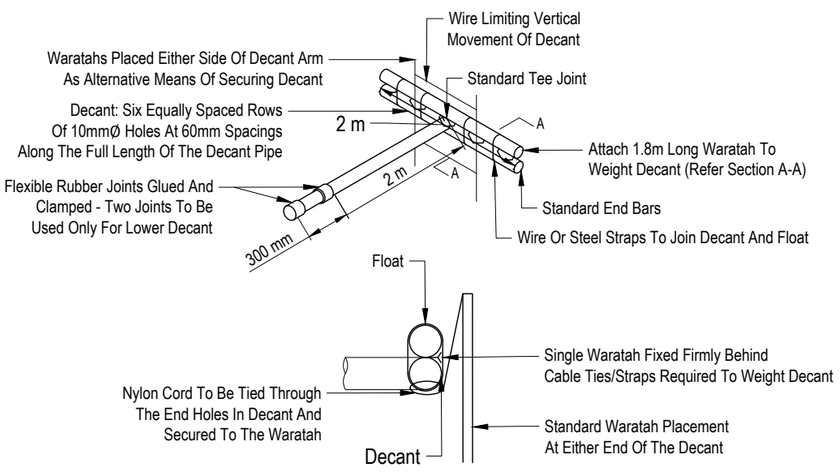


Sediment Retention Pond

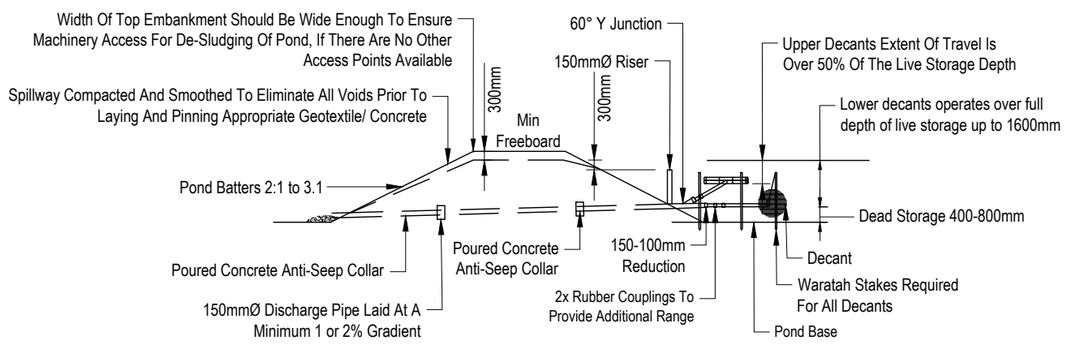


Typical plan 1.5 - 3.0 ha Catchment



Section A-A

Sediment Retention Pond - Decant Detail



Typical Cross Section - 1.5 - 3.0ha Catchment

Sediment Retention Pond Embankment

Number Of Decants For Each Pond Shall Be As Follows:
I) Up To 1.5ha Catchment - 1 Decant
Ii) 1.5-3.0ha Catchment - 2 Decants
Iii)3 To 5ha Catchment - 3 Decants-Connected To 1050 Ø MH

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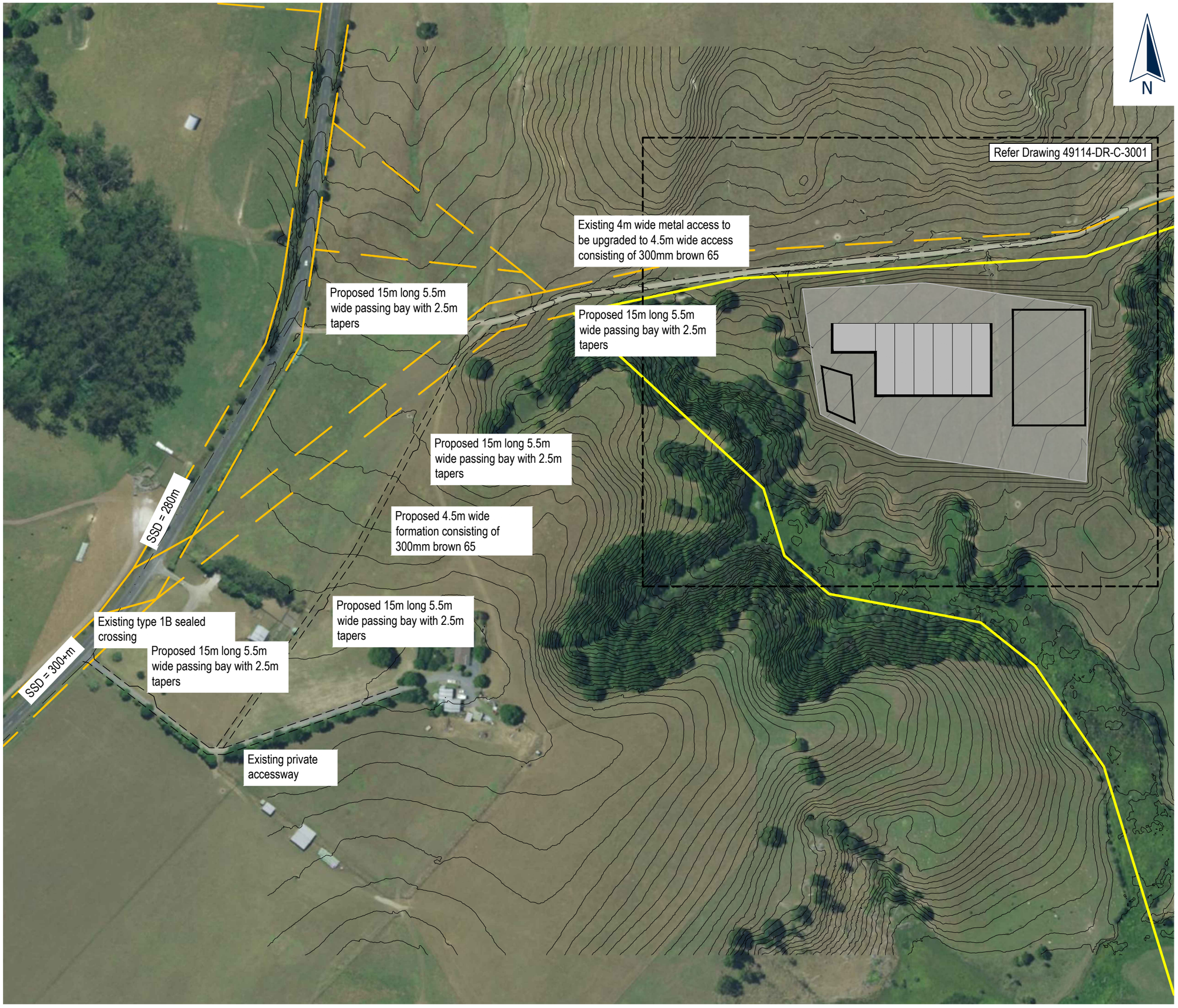

NOTES

GENERAL

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2. Levels are in terms of New Zealand Vertical Datum 2016.
3. All works are to be installed as per Far North District Councils Environmental Engineering Standards 2023 (FNDC EES).
4. The contractor is responsible for locating services to be abandoned and providing confirmation to the engineer that this work has been completed.

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ARCHITECTS | ENVIRONMENTAL

Kerigreen
966 Te Ahu Ahu Road
Haruru

Access

FOR RESOURCE CONSENT

No.	REVISION (DESCRIPTIONS)	NAME	DATE
A	Issued For Resource Consent	J.Lloyd	14/05/2025

SURVEYED		-	dd/mm/yyyy
DESIGNED		-	dd/mm/yyyy
DRAWN		-	dd/mm/yyyy
DATE 14/05/2025	ORIGINAL SCALE 1:2500	ORIGINAL SIZE A3	
DRAWING NO. 49114-DR-C-3000		REVISION A	

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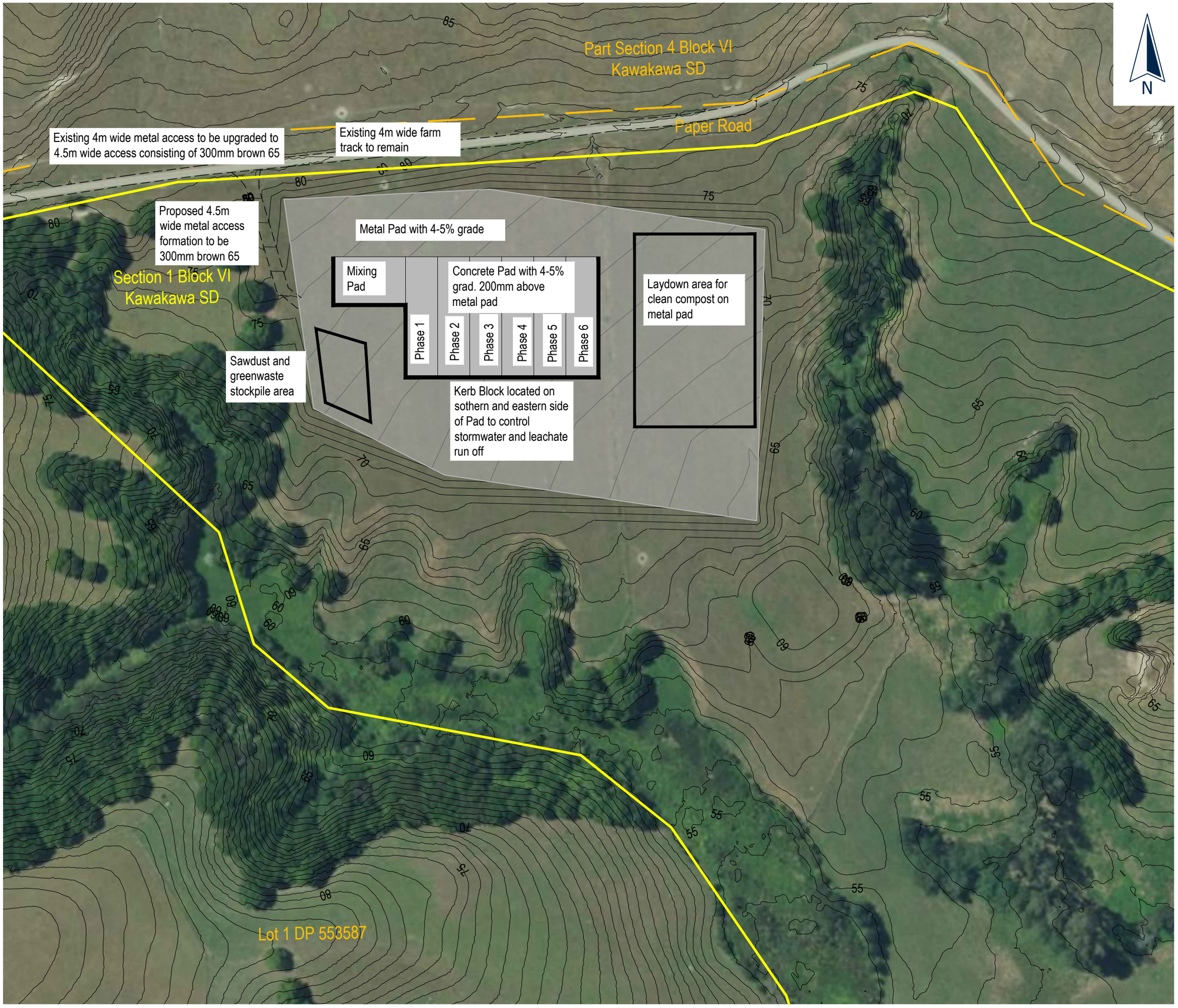

NOTES

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Access

FOR RESOURCE CONSENT

No.	REVISION (DESCRIPTIONS)	NAME	DATE
A	Issued For Resource Consent	J.Lloyd	14/05/2025
	SURVEYED	-	dd/mm/yyyy
	DESIGNED	-	dd/mm/yyyy
	DRAWN	-	dd/mm/yyyy

DATE	ORIGINAL SCALE	ORIGINAL SIZE
14/05/2025	1:1500	A3

DRAWING NO.	REVISION
49114-DR-C-3001	A

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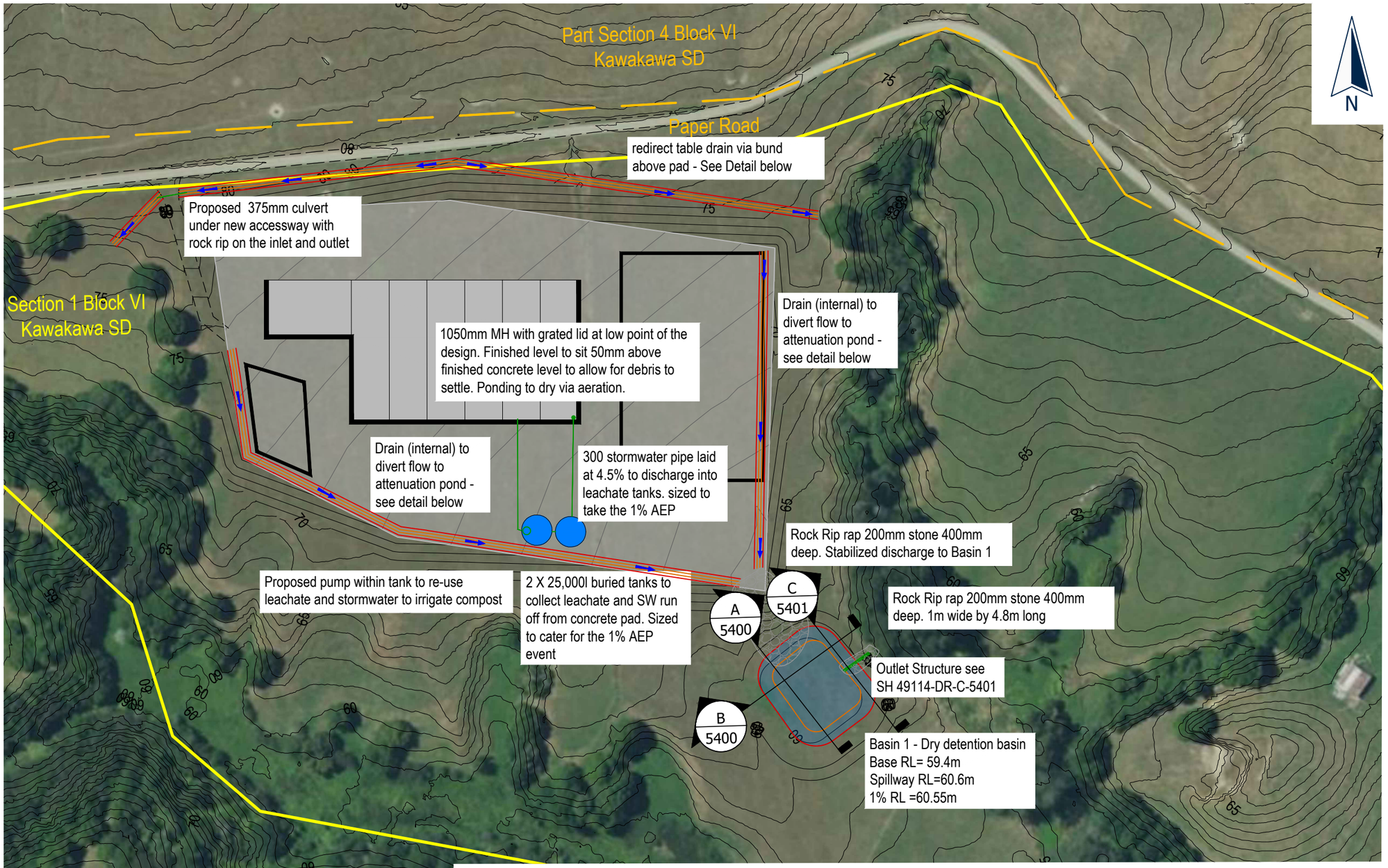

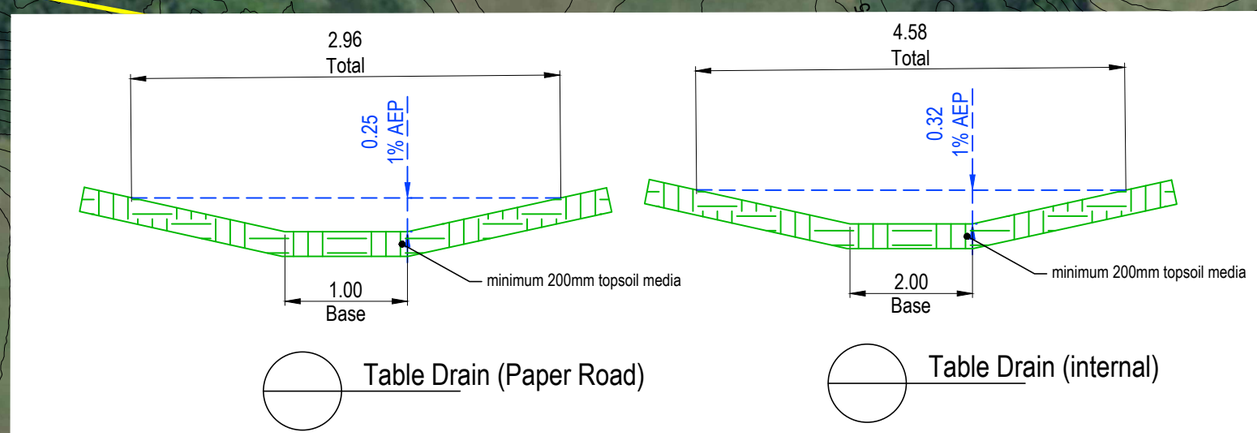

NOTES

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Stormwater

FOR RESOURCE CONSENT

No.	REVISION (DESCRIPTIONS)	NAME	DATE
A	Issued For Resource Consent	J.Lloyd	14/05/2025

SURVEYED	-	dd/mm/yyyy
DESIGNED	-	dd/mm/yyyy
DRAWN	-	dd/mm/yyyy

DATE	ORIGINAL SCALE	ORIGINAL SIZE
14/05/2025	1:1500	A3

DRAWING NO.	REVISION
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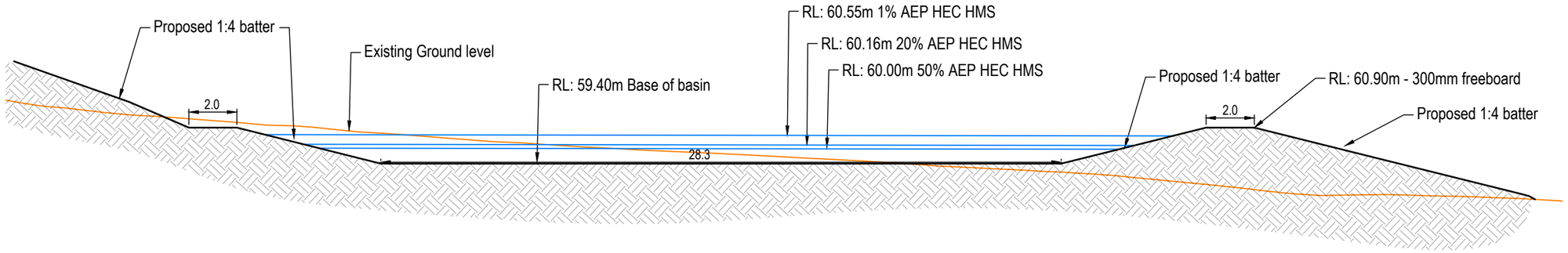
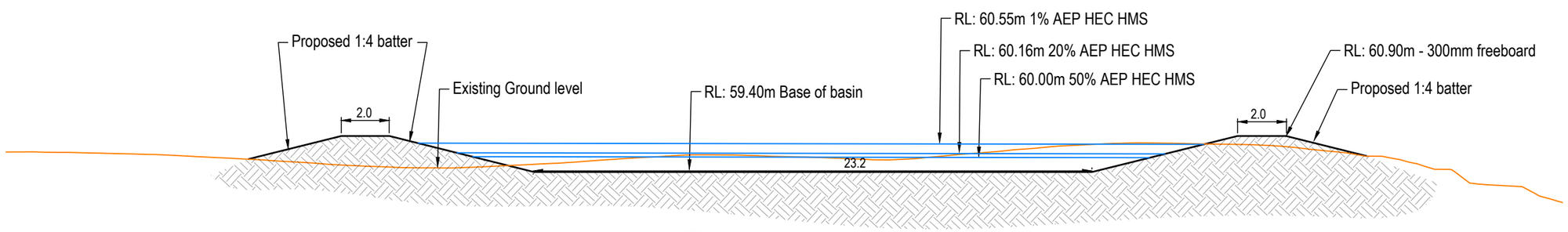


A 5000 Basin 1 Cross Section

Scale: 1:200



B 5000 Basin 1 Cross Section

Scale: 1:200

N

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Pond Details

FOR RESOURCE CONSENT

No.	REVISION (DESCRIPTIONS)	NAME	DATE
A	Issued For Resource Consent	J.Lloyd	14/05/2025
	SURVEYED	-	dd/mm/yyyy
	DESIGNED	-	dd/mm/yyyy
	DRAWN	-	dd/mm/yyyy

DATE	ORIGINAL SCALE	ORIGINAL SIZE
14/05/2025	1:200	A3

DRAWING NO.	REVISION
49114-DR-C-5500	A

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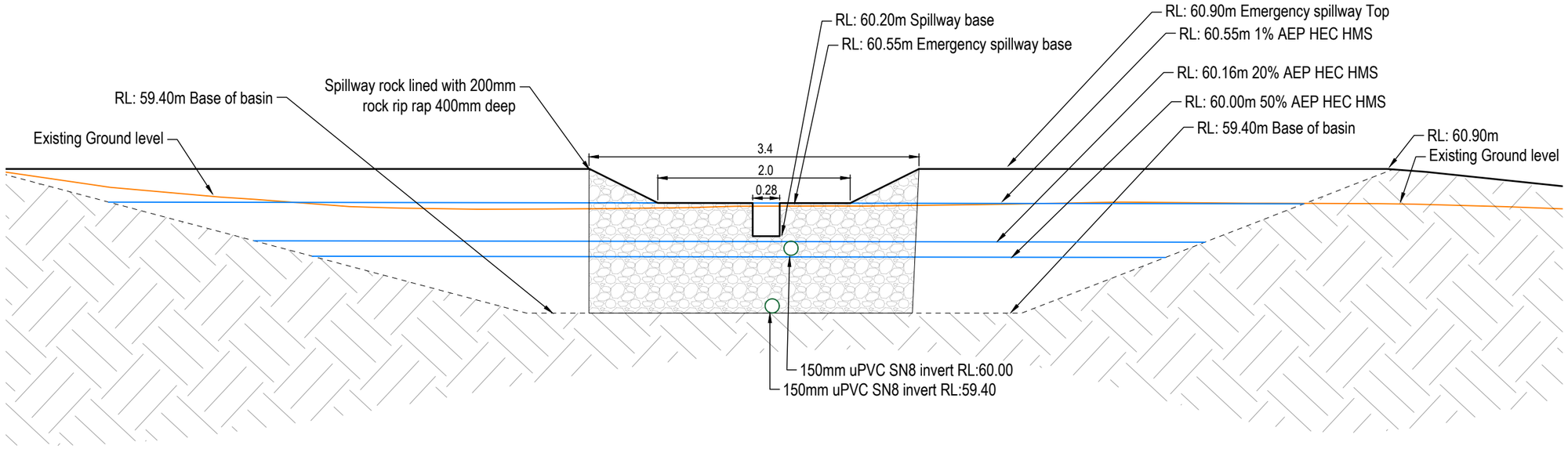

C / 5000 Spillway Section

Scale: 1:200

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Pond Details

FOR RESOURCE CONSENT

No.	REVISION (DESCRIPTIONS)	NAME	DATE
A	Issued For Resource Consent	J.Lloyd	14/05/2025

SURVEYED	-	dd/mm/yyyy
DESIGNED	-	dd/mm/yyyy
DRAWN	-	dd/mm/yyyy

DATE	ORIGINAL SCALE	ORIGINAL SIZE
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DRAWING NO.	REVISION
49114-DR-C-5501	A

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Engineering Report

Appendix B: Leachate conveyance

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ENGINEERS
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ENVIRONMENTAL

	Volume m3 24 hour storm	Volume litres 24 hour storm
2 year	20.562	20562
5 year	27.002	27002
100 year	48.76	48760

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Engineering Report

Appendix C: Rainfall data

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PLANNERS
SURVEYORS
ENGINEERS
ARCHITECTS
ENVIRONMENTAL

HIRDS V4 Intensity-Duration-Frequency Results
Sitename: Custom Location
Coordinate system: WGS84
Longitude: 173.9426
Latitude: -35.3136

DDF Model Parameters	c	d	e	f	g	h	i
Values:	0.003133	0.482427	-0.007955	-0.003914	0.252108	-0.011899	3.254332

Example:	Duration (h	ARI (yrs)	x	y	Rainfall Rate (mm/hr)
	24	100	3.178054	4.600149	10.56164

Rainfall intensities (mm/hr) :: Historical Data

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	65.2	45.5	37	25.9	18	9.76	6.41	4.07	2.47	1.8	1.42	1.18
2	0.5	71.3	49.8	40.5	28.4	19.7	10.7	7.05	4.47	2.72	1.98	1.57	1.3
5	0.2	92	64.4	52.4	36.8	25.7	14	9.23	5.87	3.58	2.61	2.07	1.71
10	0.1	107	75	61.1	43	30	16.4	10.8	6.91	4.22	3.08	2.44	2.02
20	0.05	122	85.8	70	49.3	34.5	18.9	12.5	7.98	4.88	3.57	2.83	2.35
30	0.033	131	92.2	75.2	53.1	37.1	20.4	13.5	8.62	5.27	3.86	3.06	2.54
40	0.025	138	96.7	78.9	55.7	39	21.4	14.2	9.08	5.56	4.07	3.23	2.68
50	0.02	142	100	81.8	57.8	40.5	22.3	14.8	9.44	5.78	4.24	3.36	2.79
60	0.017	147	103	84.2	59.5	41.7	22.9	15.2	9.73	5.96	4.37	3.47	2.88
80	0.013	153	108	87.9	62.2	43.6	24	15.9	10.2	6.25	4.59	3.64	3.02
100	0.01	158	111	90.8	64.2	45.1	24.8	16.5	10.6	6.48	4.75	3.77	3.13
250	0.004	177	125	102	72.5	51	28.2	18.7	12	7.39	5.43	4.31	3.58

HIRDS V4 Depth-Duration-Frequency Results
Sitename: Custom Location
Coordinate system: WGS84
Longitude: 173.9426
Latitude: -35.3136

DDF Model	Parameters	c	d	e	f	g	h	i
	Values:	0.003133	0.482427	-0.007955	-0.003914	0.252108	-0.011899	3.254332
	Example:	Duration (h	ARI (yrs)	x	y	Rainfall Depth (mm)		
		24	100	3.178054	4.600149	253.4794		

Rainfall depths (mm) :: Historical Data

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h	
1.58	0.633	10.9	15.2	18.5	25.9	36	58.6	77	97.6	119	130	137	141	
2	0.5	11.9	16.6	20.2	28.4	39.5	64.3	84.6	107	130	143	151	156	128.4
5	0.2	15.3	21.5	26.2	36.8	51.3	84	111	141	172	188	199	206	169.2
10	0.1	17.8	25	30.6	43	60.1	98.5	130	166	202	222	235	243	
20	0.05	20.4	28.6	35	49.3	69	113	150	192	234	257	272	282	
30	0.033	21.9	30.7	37.6	53.1	74.3	122	162	207	253	278	294	305	
40	0.025	22.9	32.2	39.5	55.7	78.1	129	170	218	267	293	310	322	
50	0.02	23.7	33.4	40.9	57.8	81	134	177	227	277	305	323	335	
60	0.017	24.4	34.4	42.1	59.5	83.4	138	183	234	286	315	333	345	
80	0.013	25.5	35.9	44	62.2	87.2	144	191	245	300	330	349	363	
100	0.01	26.3	37	45.4	64.2	90.2	149	198	253	311	342	362	376	303.6
250	0.004	29.5	41.7	51.1	72.5	102	169	225	289	355	391	414	430	

Kerigreen

966 Te Ahu Ahu Road, Oromahoe, Haruru

Engineering Report

Appendix D: Stormwater calculations

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ARCHITECTS
ENVIRONMENTAL

Trapezoidal Channel Flow

Name	Kerigreen
Address	966 Te Ahu Ahu Road

Job Number	49114
Date	23/06/2025

Area in Hectares	A =	2.2355	ha
Mainstream Length	L =	0.2	km
Mainstream Slope	S =	50	m/km
Time of Concentration	Tc =	7.8	minutes
Runoff Coefficient	c =	0.79	

Climate change

WQF =	78	mm/hr	**WQF =**	0.3826	**m3/sec**
I5 =	110.4	mm/hr	**Q5 =**	0.5416	**m3/sec**
I10 =	128.4	mm/hr	**Q10 =**	0.6299	**m3/sec**
I100 =	189.6	mm/hr	**Q100 =**	0.9301	**m3/sec**

Paper Road

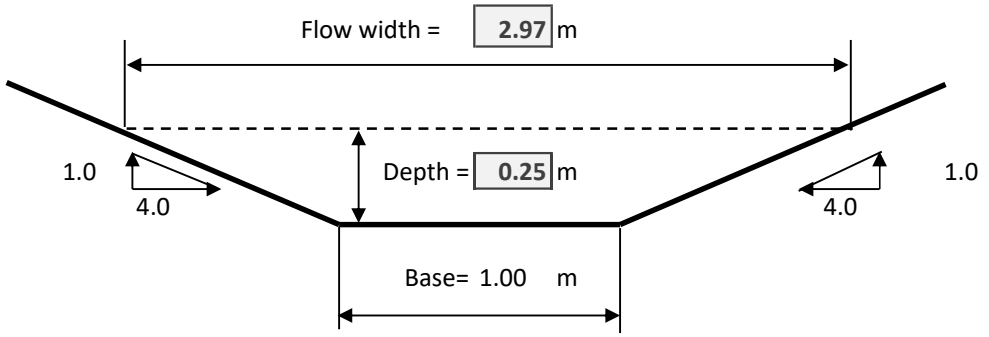
=	0.9301		m^3/s
Base width	1		m
Side slopes. 1 in Z (left & right)	4	4	m
ave Z	4.00		
Roughness (mannings)	0.035		n
Grade S	0.05		m/m

coef c = s^.5/n	6.39

Depth D	**0.25**	**0.25**	m
Area	0.49		m^2
Perimeter	3.04		m
R = A/P	0.16		m
K = AR^.66/n	4.16		
Velocity	**1.90**		m/s
Vel. head	0.18		m
Top width	2.97		m
Froude No.	1.49		

Legend
Titles
Inputs
Calculations
Results
Linked Cells

Trapezoidal Channel



Trapezoidal Channel Flow

Name	Kerigreen
Address	966 Te Ahu Ahu Road

Job Number	49114
Date	23/06/2025

Area in Hectares	A =	2.8	ha
Mainstream Length	L =	0.2	km
Mainstream Slope	S =	50	m/km
Time of Concentration	Tc =	7.6	minutes
Runoff Coefficient	c =	0.96	

Climate change

WQF =	78	mm/hr	**WQF =**	0.5824	**m3/sec**
I5 =	110.4	mm/hr	**Q5 =**	0.8243	**m3/sec**
I10 =	128.4	mm/hr	**Q10 =**	0.9587	**m3/sec**
I100 =	189.6	mm/hr	**Q100 =**	1.4157	**m3/sec**

Internal drain

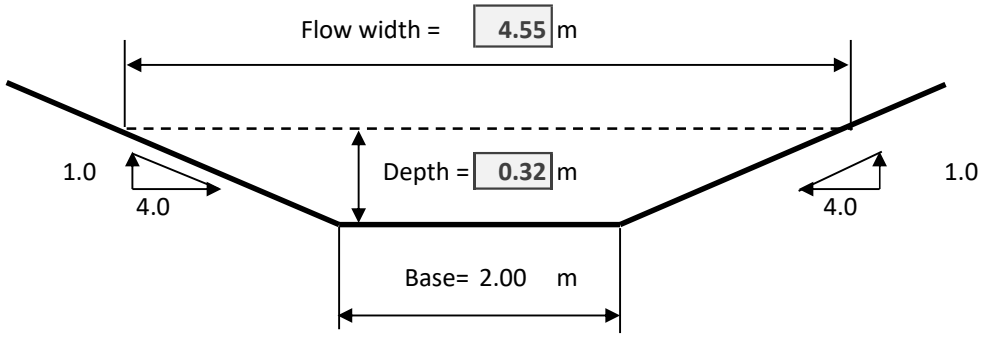
=	1.4157		m^3/s
Base width	2		m
Side slopes. 1 in Z (left & right)	4	4	m
ave Z	4.00		
Roughness (mannings)	0.015		n
Grade S	0.003		m/m

coef c = s^.5/n	3.65

Depth D	**0.32**	**0.32**	m
Area	1.05		m^2
Perimeter	4.63		m
R = A/P	0.23		m
K = AR^.66/n	25.85		
Velocity	**1.35**		m/s
Vel. head	0.09		m
Top width	4.55		m
Froude No.	0.90		

Legend
Titles
Inputs
Calculations
Results
Linked Cells

Trapezoidal Channel



Culvert Design

Name	Kerigreen	**Job Number**	49114
Address	966 Te Ahu Ahu Road	**Date**	23/06/2025

Culvert 1

Catchment Parameters

Area in Hectares	A =	1.5	ha
Mainstream Length	L =	0.15	km
Mainstream Slope	S =	60	m/km
Time of Concentration	Tc =	5.9	minutes
Runoff Coefficient	c =	0.59	

Legend

Titles
Inputs
Calculations
Results
Linked Cells

Rational Formula **Q = ciA/360**

Rainfall Intensities

Rainfall Flows

Source of Rainfall Intensities HIRDS V4 NIWA software

I5 =	110.4	mm/hr	**Q5 =**	0.2714	**m3/sec**
I10 =	128.4	mm/hr	**Q10 =**	0.3157	**m3/sec**
I100 =	189.6	mm/hr	**Q100 =**	0.4661	**m3/sec**

Culvert Parameters

Entrance type:	Socket end projecting		
Culvert Diameter	D =	0.375	m
Head above culvert	H =	0.60	m
Headwater	HW =	0.975	m
	HW/D =	2.6000	m
	Q =	0.3000	m3/sec (from graph 3.3)

Therefore 300mmø culvert will allow: 0.3000 m3/sec — This does not allow for 100 year flow

Overtopping

Flow through the culvert =	0.3000	m3/sec
Flow required overtop of culvert =	0.1661	m3/sec

Flow over top as Broad Crested Weir
Where 8.0m concrete capping used

Q = 1.69*L*H^3/2

L =	4	m
H =	0.1	m
Q =	0.2138	m3/sec

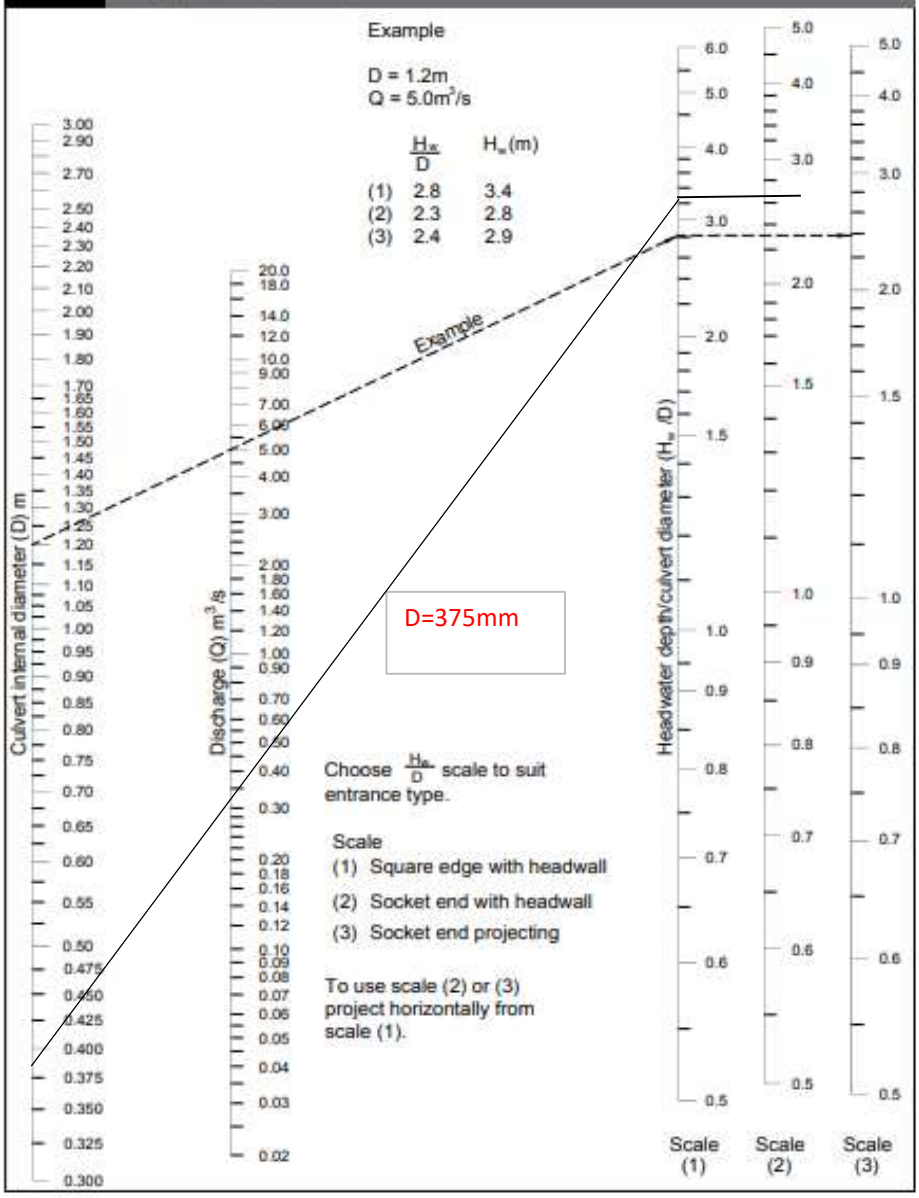
Therefore remaining flow of the 100 year event is contained within the weir

Note

Values derived from Figure 6 "Headwater Depth for Circular Pipes"
in "New Zealand Building Code -E1 Surface Water" (see enclosed sheet)

Culvert Design

Figure 6: Headwater Depth for Circular Pipes
Paragraphs 3.2.3 a) and 4.1.4 a)



Hw= 0.975m
Socket headwall
Hw/D=2.6m

Stormwater Calculation Sheet

Name	Kerigreen
Address	966 Te Ahu Ahu Road

Job Number	49114
Date	23/06/2025

ARI	100 year

Intensity Adjusted for Climate	158	mm/hr

10 min Storm Period

ks=	1.5	**< 1m Pipe Diameter**
	0.6	**>= 1m Pipe Diameter**

Titles
Inputs
Calculations
Results
Linked Cells

Line A			Area (ha)	c	Design Flow (l/s)	Additional Flows (l/s	Cumulative Design Flow (l/s)	Pipe Diameter (mm)	Type of Pipe	Gradient (%)	Velocity (m/s)	Pipe Capacity (l/s)	Pipe reserve capacity	Comments
A-2	-	A-1	0.46	0.98	198.0		198.0	300	uPVC	4.5	**2.95**	**208.6**	**10.6**	

Attenuation						
Pond 1	Pre	Post	80% Pre Imp	Target Flows	Detained Flows	Pond RL
50%	0.1091	0.1840	0.0873	0.0873	0.7268	60.00
20%	0.1637	0.2438	0.1309	0.1309	0.1185	60.16
1%	0.3572	0.4387	0.2858	0.2858	0.2781	60.55

Kerigreen Job Number: 49114

966 Te Ahu Ahu Road, Haruru

Date: 13/05/2025

Site requirements:

Provide detention for subject site for 2,5 & 100 year to 80% of predevelopment levels

POND FLOW	Pre dev (m³/s)	80% Pre dev (m³/s)	reduction (l/s)
2 year flow allowable =	0.1091	0.08727	-0.02
5 year flow allowable =	0.1637	0.13092	-0.03
100 year flow allowable =	0.3572	0.28578	-0.07

Pond 1 Outlet Sizing

Head	Volume	H ed	Outlet 1	H 2	Outlet 2	H 3	Outlet 3	H 4	Outlet 4	**Qi - total**	Elevation	Live storage
0	0	0.000	0.00000	0.000	0.00000	0.000	0.0000	0.000	0.0000	**0.00000**	59.4	0
0.1	63.8	0.025	0.01535	0.000	0.00000	0.000	0.0000	0.100	0.0000	**0.01535**	59.5	64
0.2	131.62	0.125	0.03432	0.000	0.00000	0.000	0.0000	0.200	0.0000	**0.03432**	59.6	132
0.3	203.27	0.225	0.04604	0.000	0.00000	0.000	0.0000	0.300	0.0000	**0.04604**	59.7	203
0.4	278.95	0.325	0.05533	0.000	0.00000	0.000	0.0000	0.400	0.0000	**0.05533**	59.8	279
0.5	358.77	0.425	0.06328	0.000	0.00000	0.000	0.0000	0.500	0.0000	**0.06328**	59.9	359
0.6	442.81	0.525	0.07033	0.000	0.00000	0.000	0.0000	0.600	0.0000	**0.07033**	60	443
0.7	531.19	0.625	0.07673	0.100	0.03069	0.000	0.0000	0.700	0.0000	**0.10743**	60.1	531
0.8	623.99	0.725	0.08264	0.200	0.04341	0.000	0.0000	0.800	0.0000	**0.12605**	60.2	624
0.9	721.33	0.825	0.08816	0.300	0.05316	0.100	0.0159	0.900	0.0000	**0.15726**	60.3	721
1	823.31	0.925	0.09335	0.400	0.06139	0.200	0.0451	1.000	0.0000	**0.19982**	60.4	823
1.1	930	1.025	0.09827	0.500	0.06863	0.300	0.0828	1.100	0.0000	**0.24971**	60.5	930
1.2	1041.53	1.125	0.10295	0.600	0.07518	0.400	0.1275	1.200	0.0000	**0.30563**	60.6	1042
1.3	1169.93	1.225	0.10743	0.700	0.08121	0.500	0.1782	1.300	0.0000	**0.36682**	60.7	1170
1.4	1295.84	1.325	0.11173	0.800	0.08681	0.600	0.2342	1.400	0.0000	**0.43278**	60.8	1296
1.5	1423.75	1.425	0.11586	0.900	0.09208	0.700	0.2952	1.500	0.0000	**0.50312**	60.9	1424

HEC HMS inputs

Elevation	Vol'000m3	Outlfow
59.4	0.0000	0.00000
59.5	0.0638	0.01535
59.6	0.1316	0.03432
59.7	0.2033	0.04604
59.8	0.2790	0.05533
59.9	0.3588	0.06328
60	0.4428	0.07033
60.1	0.5312	0.10743
60.2	0.6240	0.12605
60.3	0.7213	0.15726
60.4	0.8233	0.19982
60.5	0.9300	0.24971
60.6	1.0415	0.30563
60.7	1.1699	0.36682
60.8	1.2958	0.43278
60.9	1.4238	0.50312

	diameter / width	height	comb. width	type	
Low flow orifice diameter(m)	0.150	0.0000		Orifice	Outlet 1
	0.150	0.6000	0.000	Orifice	Outlet 2
	0.280	0.8000	0.280	Slot	Outlet 3
	0.000	0.0000	0.430	Slot	Outlet 4

TP10 - Outlet Riprap

Name	Kerigreen	**Job Number**	49114
Address	966 Te Ahu Ahu Road	**Date**	23/06/2025

Pond spillway/ outlet

Legend

Titles
Inputs
Calculations
Results
Linked Cells

Pipe Flow

Moody Approximation of the Colebrook Transition Zone Formula

Kinematic Viscosity of water	**v =**	1.1384E-06	m2/s		
Nominate pipe roughness	**k =**	0.6	mm	*Colebrook-White*	
Nominate pipe internal diam.	**d =**	280	mm	0.28	m
	k/d =	0.002142857			
Available hydraulic gradient	**s =**	0.002	m/m	*Optional, if available. Useful for checking against calculated gradient.*	
Trial flow rate	**q =**	278	lps =	0.278	m3/s
Calculated hydraulic gradient	**s =**	0.092	m/m	*Reference. Winstone Plastics pipe manual. p. 33 Eq. 9*	
Full pipe velocity	**V =**	4.515	m/s	*Compare with available gradient and change 'q' for a match.*	

Trial various flows and check gradient.

v =	
1.307E-06	*at 10 degrees*
1.138E-06	*at 15 degrees*
1.004E-06	*at 20 degrees*

May be applied to hydraulically smooth pipes by substituting k = 0.

Culvert Outlet Protection Calculations

Pipe =	280	*mm diameter*
Gradient =	9.23	*%*
Velocity =	4.51	*m/s (Pipe flowing full)*

Fo = V/(g x dp)0.5	2.72	
ds = 0.25xDoxFo	191	*mm stone size*
use	**200**	*mm diameter*

La = Do(8+17xLogFo)	4.3	*m*
Length of Outlet =	**4.3**	*m*
Stone depth =	**400**	*mm*
Width of outlet =	**0.84**	*m*

Notes:

1. The thickness of the stone layer shall be 2 times the stone dimension.

2. The width of the area protected shall be 3 times the diameter of the pipe

3. The height of the stone shall be the crown of the pipe + 300mm

Kerigreen

966 Te Ahu Ahu Road, Oromahoe, Haruru

Engineering Report

Appendix E: HEC-HMS Reports

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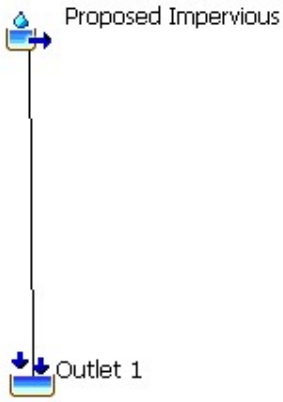
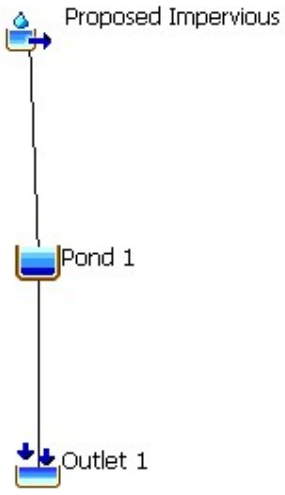
ENVIRONMENTAL

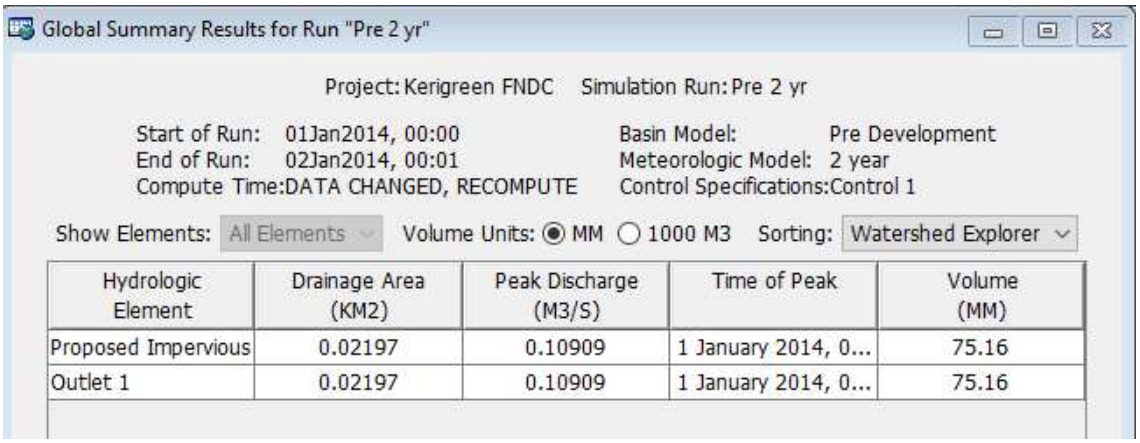
Pre and Post Development



Post Development Detained



Pre Development 2 year



Global Summary Results for Run "Pre 2 yr"

Project: Kerigreen FNDC Simulation Run: Pre 2 yr

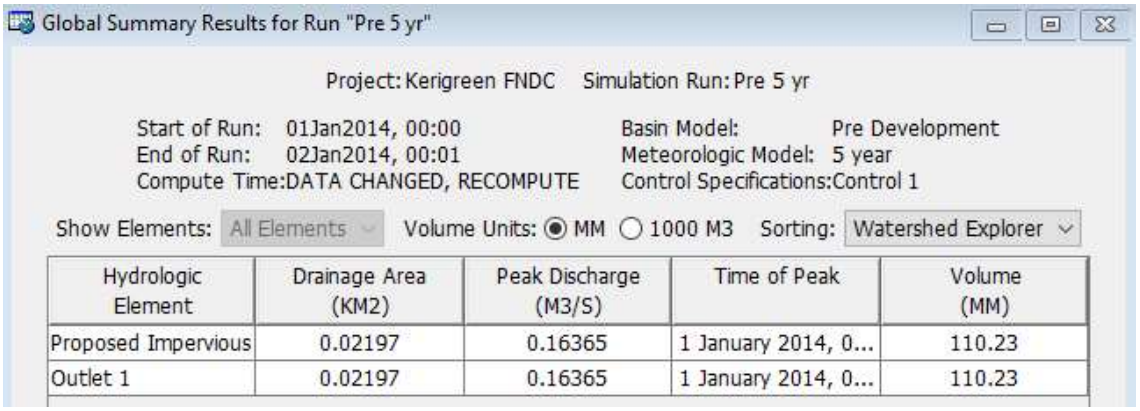
Start of Run: 01Jan2014, 00:00
End of Run: 02Jan2014, 00:01
Compute Time: DATA CHANGED, RECOMPUTE

Basin Model: Pre Development
Meteorologic Model: 2 year
Control Specifications: Control 1

Show Elements: All Elements | Volume Units: (•) MM ( ) 1000 M3 | Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (KM2)	Peak Discharge (M3/S)	Time of Peak	Volume (MM)
Proposed Impervious	0.02197	0.10909	1 January 2014, 0...	75.16
Outlet 1	0.02197	0.10909	1 January 2014, 0...	75.16

Pre Development 5 year



Global Summary Results for Run "Pre 5 yr"

Project: Kerigreen FNDC Simulation Run: Pre 5 yr

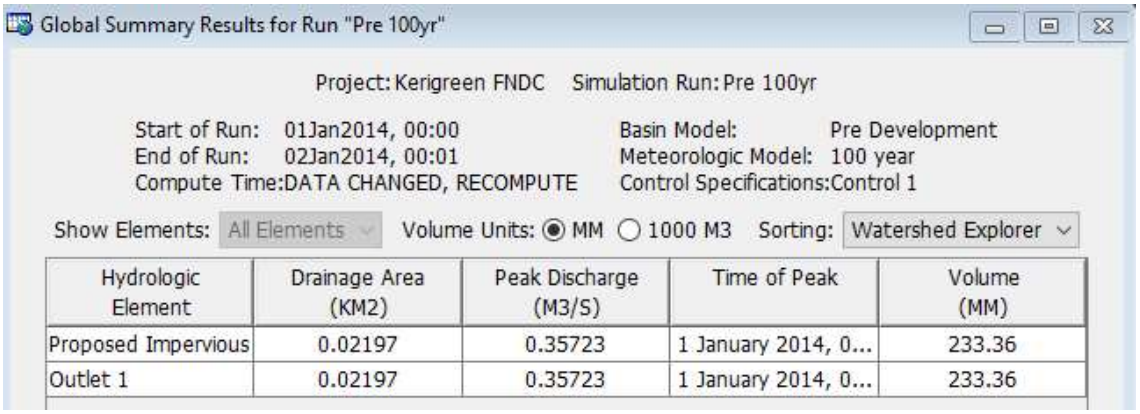
Start of Run: 01Jan2014, 00:00
End of Run: 02Jan2014, 00:01
Compute Time: DATA CHANGED, RECOMPUTE

Basin Model: Pre Development
Meteorologic Model: 5 year
Control Specifications: Control 1

Show Elements: All Elements | Volume Units: (•) MM ( ) 1000 M3 | Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (KM2)	Peak Discharge (M3/S)	Time of Peak	Volume (MM)
Proposed Impervious	0.02197	0.16365	1 January 2014, 0...	110.23
Outlet 1	0.02197	0.16365	1 January 2014, 0...	110.23

Pre Development 100 year



Global Summary Results for Run "Pre 100yr"

Project: Kerigreen FNDC Simulation Run: Pre 100yr

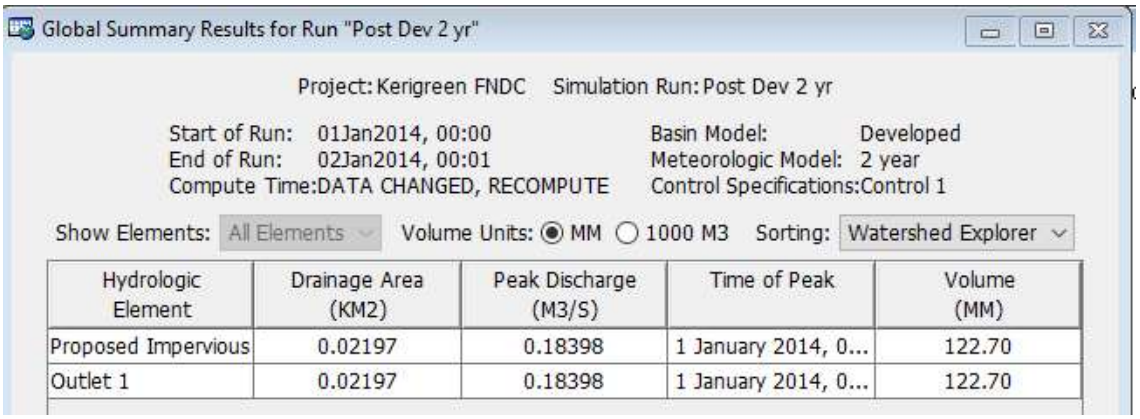
Start of Run: 01Jan2014, 00:00
End of Run: 02Jan2014, 00:01
Compute Time: DATA CHANGED, RECOMPUTE

Basin Model: Pre Development
Meteorologic Model: 100 year
Control Specifications: Control 1

Show Elements: All Elements | Volume Units: (•) MM ( ) 1000 M3 | Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (KM2)	Peak Discharge (M3/S)	Time of Peak	Volume (MM)
Proposed Impervious	0.02197	0.35723	1 January 2014, 0...	233.36
Outlet 1	0.02197	0.35723	1 January 2014, 0...	233.36

Post Development 2 year



Global Summary Results for Run "Post Dev 2 yr"

Project: Kerigreen FNDC Simulation Run: Post Dev 2 yr

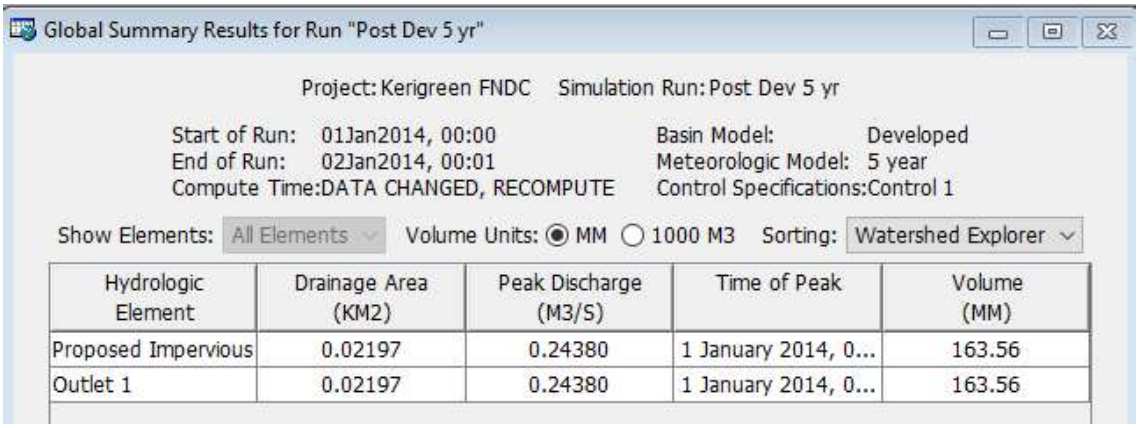
Start of Run: 01Jan2014, 00:00
End of Run: 02Jan2014, 00:01
Compute Time: DATA CHANGED, RECOMPUTE

Basin Model: Developed
Meteorologic Model: 2 year
Control Specifications: Control 1

Show Elements: All Elements | Volume Units: (•) MM ( ) 1000 M3 | Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (KM2)	Peak Discharge (M3/S)	Time of Peak	Volume (MM)
Proposed Impervious	0.02197	0.18398	1 January 2014, 0...	122.70
Outlet 1	0.02197	0.18398	1 January 2014, 0...	122.70

Post Development 5 year



Global Summary Results for Run "Post Dev 5 yr"

Project: Kerigreen FNDC Simulation Run: Post Dev 5 yr

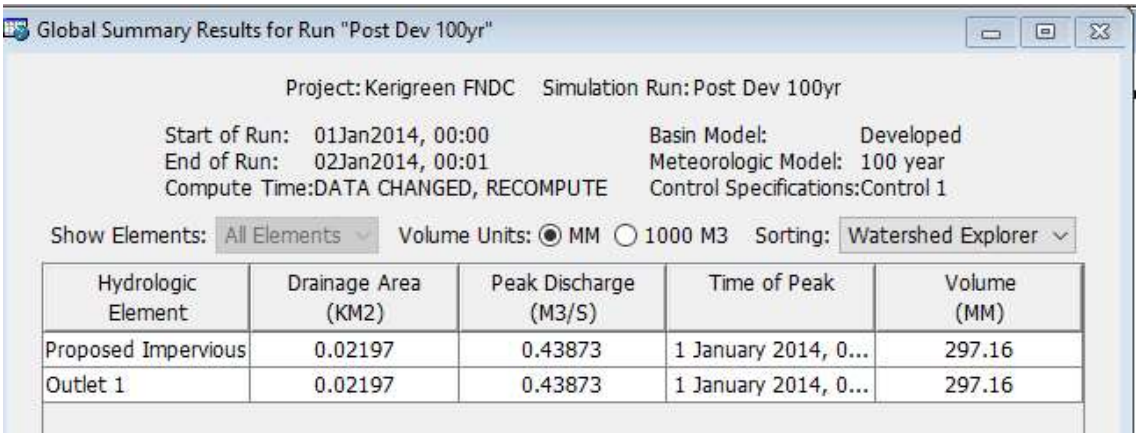
Start of Run: 01Jan2014, 00:00
End of Run: 02Jan2014, 00:01
Compute Time: DATA CHANGED, RECOMPUTE

Basin Model: Developed
Meteorologic Model: 5 year
Control Specifications: Control 1

Show Elements: All Elements | Volume Units: (•) MM ( ) 1000 M3 | Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (KM2)	Peak Discharge (M3/S)	Time of Peak	Volume (MM)
Proposed Impervious	0.02197	0.24380	1 January 2014, 0...	163.56
Outlet 1	0.02197	0.24380	1 January 2014, 0...	163.56

Post Development 100 year



Global Summary Results for Run "Post Dev 100yr"

Project: Kerigreen FNDC Simulation Run: Post Dev 100yr

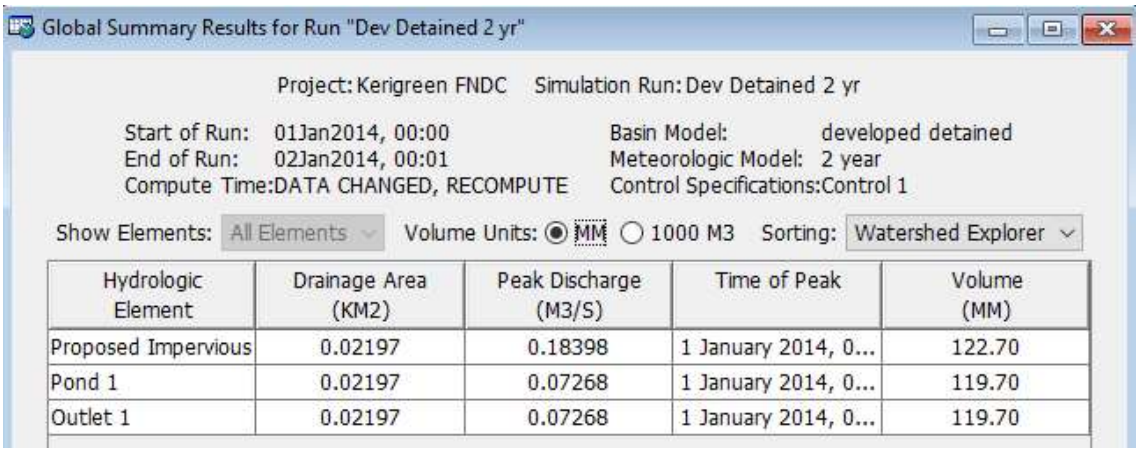
Start of Run: 01Jan2014, 00:00
End of Run: 02Jan2014, 00:01
Compute Time: DATA CHANGED, RECOMPUTE

Basin Model: Developed
Meteorologic Model: 100 year
Control Specifications: Control 1

Show Elements: All Elements | Volume Units: (•) MM ( ) 1000 M3 | Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (KM2)	Peak Discharge (M3/S)	Time of Peak	Volume (MM)
Proposed Impervious	0.02197	0.43873	1 January 2014, 0...	297.16
Outlet 1	0.02197	0.43873	1 January 2014, 0...	297.16

Develop detained 2 year



Global Summary Results for Run "Dev Detained 2 yr"

Project: Kerigreen FNDC Simulation Run: Dev Detained 2 yr

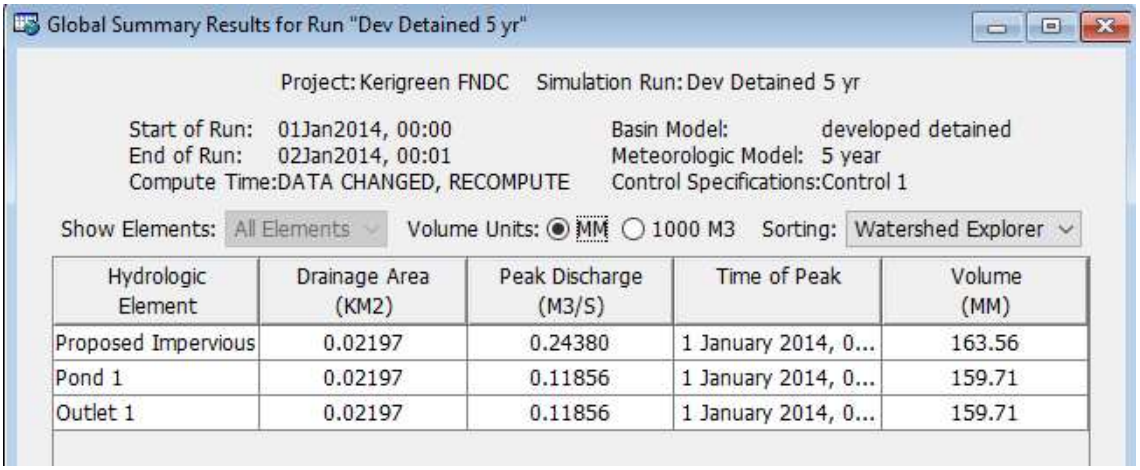
Start of Run: 01Jan2014, 00:00
End of Run: 02Jan2014, 00:01
Compute Time: DATA CHANGED, RECOMPUTE

Basin Model: developed detained
Meteorologic Model: 2 year
Control Specifications: Control 1

Show Elements: All Elements | Volume Units: (•) MM ( ) 1000 M3 | Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (KM2)	Peak Discharge (M3/S)	Time of Peak	Volume (MM)
Proposed Impervious	0.02197	0.18398	1 January 2014, 0...	122.70
Pond 1	0.02197	0.07268	1 January 2014, 0...	119.70
Outlet 1	0.02197	0.07268	1 January 2014, 0...	119.70

Develop detained 5 year



Global Summary Results for Run "Dev Detained 5 yr"

Project: Kerigreen FNDC Simulation Run: Dev Detained 5 yr

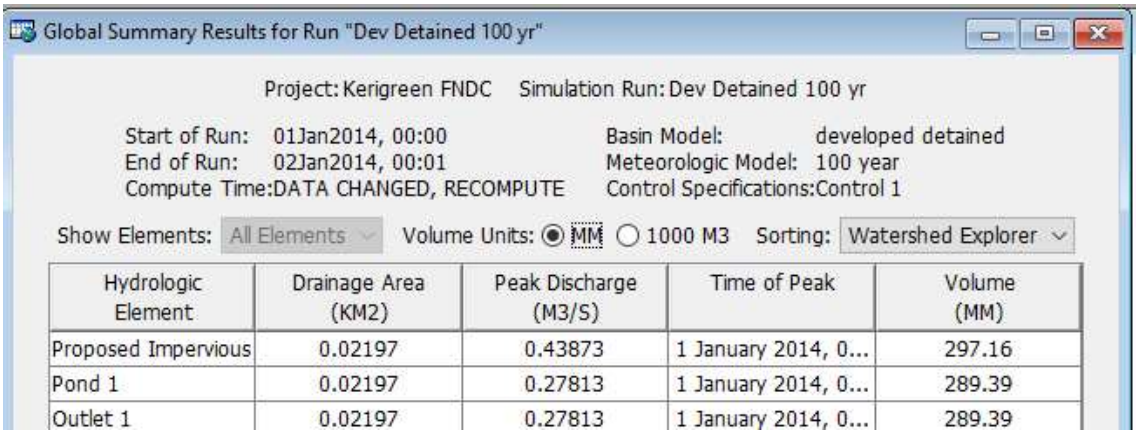
Start of Run: 01Jan2014, 00:00
End of Run: 02Jan2014, 00:01
Compute Time: DATA CHANGED, RECOMPUTE

Basin Model: developed detained
Meteorologic Model: 5 year
Control Specifications: Control 1

Show Elements: All Elements | Volume Units: (•) MM ( ) 1000 M3 | Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (KM2)	Peak Discharge (M3/S)	Time of Peak	Volume (MM)
Proposed Impervious	0.02197	0.24380	1 January 2014, 0...	163.56
Pond 1	0.02197	0.11856	1 January 2014, 0...	159.71
Outlet 1	0.02197	0.11856	1 January 2014, 0...	159.71

Develop detained 100 year



Global Summary Results for Run "Dev Detained 100 yr"

Project: Kerigreen FNDC Simulation Run: Dev Detained 100 yr

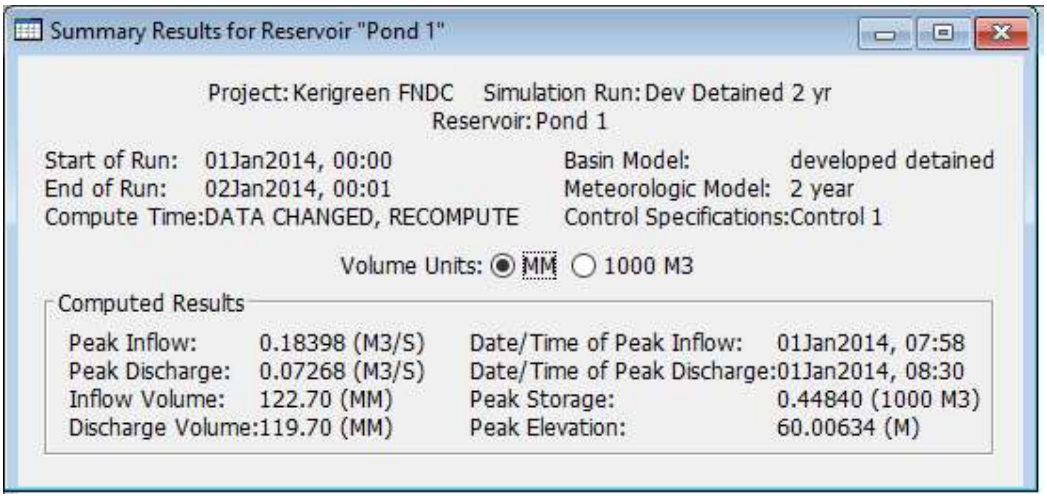
Start of Run: 01Jan2014, 00:00
End of Run: 02Jan2014, 00:01
Compute Time: DATA CHANGED, RECOMPUTE

Basin Model: developed detained
Meteorologic Model: 100 year
Control Specifications: Control 1

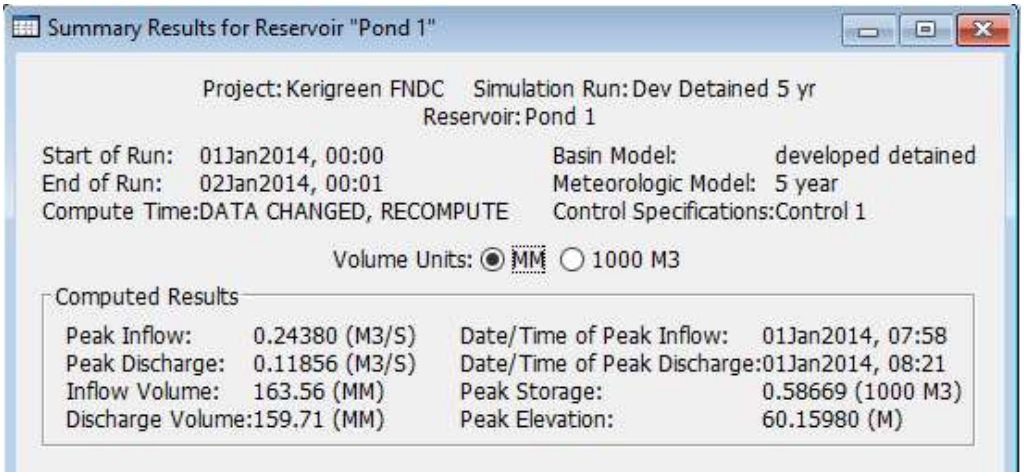
Show Elements: All Elements | Volume Units: (•) MM ( ) 1000 M3 | Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (KM2)	Peak Discharge (M3/S)	Time of Peak	Volume (MM)
Proposed Impervious	0.02197	0.43873	1 January 2014, 0...	297.16
Pond 1	0.02197	0.27813	1 January 2014, 0...	289.39
Outlet 1	0.02197	0.27813	1 January 2014, 0...	289.39

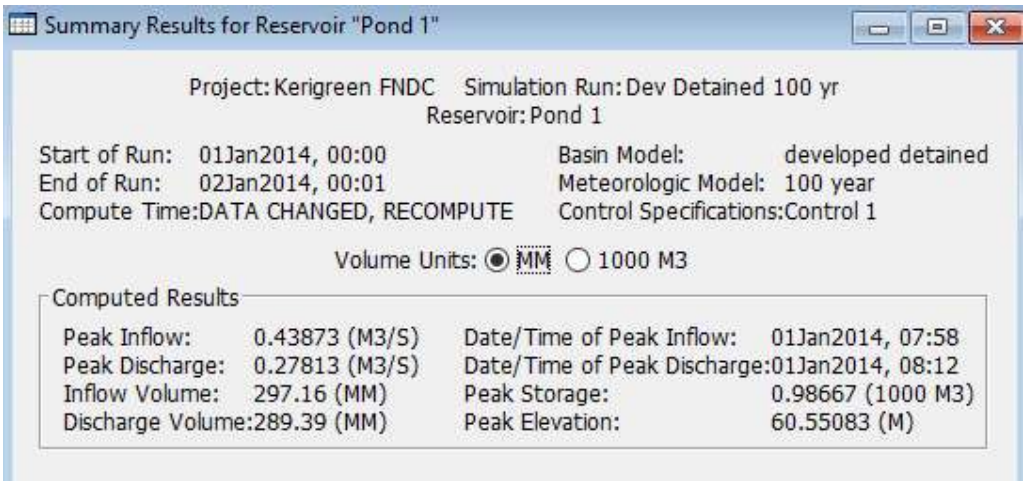
Basin 1 level 2 year



Basin 1 Level 5 year



Basin 1 Level 100 year



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966 Te Ahu Ahu Road, Oromahoe, Haruru

Resource Consent Application

<u>Appendix E:</u> Wetland Delineation Report

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Wetland Delineation Report

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Document Record

Client	Kerigreen
Site Address	966 Te Ahu Ahu Road, Oromahoe, Haruru
Job Number	49114
Document	Wetland Delineation Report
Document No	49114-RP-ENV-EC01-A

Issue and Status

Date of Issue	10/06/2025
Status	For Resource Consent

Author	Madeleine Thom – Ecologist
Reviewer	Joshua Wium – Senior Ecologist
Approved for Issue	Myles Goodwin - Director

Originating Office

Office	Orewa
Postal Address	PO Box 157, Orewa 0946
Phone	09 427 0072

Contents

1.0 Introduction

This report presents a wetland delineation and assessment of effects for the proposed works at 966 Te Ahu Ahu Road, Oromahoe, Haruru, (Lot 1 DP 553587) (see accompanying Engineering Plan Set 49114-DR-C-0000). This application proposes to relocate Kerigreen's existing compost operations to the subject site and the proposed works include recontouring earthworks, the construction of an accessway and concrete and metal pads to allow the composting operations.

The purpose of this report is to identify and delineate any natural inland wetlands which may be affected by the proposed works and may trigger the need for a resource consent under the provisions for freshwater management in the National Environmental Standards for Freshwater (2020) (**NES-F**) or Proposed Northland Regional Plan. Where resource consent may be required for a freshwater regulation, an assessment of effects has been undertaken.

During a desktop assessment of the site's topography, hydrology, and aerial imagery, several potential natural inland wetland areas were identified downstream of the proposed works within the same catchment. These areas are delineated in this report in accordance with the Wetland Delineation Protocols[1]. The wetland delineation and ecological impact assessments within this report draw on planning requirements, desktop research, and field data collected during a site visit on 28th May 2025.

2.0 National Environmental Standards for Freshwater

The **NES-F** came into force in September 2020 to regulate activities that pose risks to the health of freshwater and freshwater ecosystems. The clauses relevant to this application are included below.

Clause 54 of the NES-F states:

The following activities are non-complying activities if they do not have another status under this subpart:

(a) vegetation clearance within, or within a 10 m setback from, a natural inland wetland:

(b) earthworks within, or within a 10 m setback from, a natural inland wetland:

(c) the taking, use, damming, or diversion of water within, or within a 100 m setback from, a natural inland wetland if—

(i) there is a hydrological connection between the taking, use, damming, or diversion and the wetland: and

(ii) the taking, use, damming, or diversion will change, or is likely to change, the water level range or hydrological function of the wetland:

(d) the discharge of water into water within, or within a 100 m setback from, a natural inland wetland if—

(i) there is a hydrological connection between the discharge and the wetland; and

(ii) the discharge will enter the wetland; and

(iii) the discharge will change, or is likely to change, the water level range or hydrological function of the wetland.

[1] Ministry for the Environment. 2020. *Wetland Delineation Protocols.* *https://environment.govt.nz/publications/wetland-delineation-protocols/*

All the activities listed in Clause 54 are **non-complying activities.** If they are proposed to be conducted on site, then an ecological effects assessment must be conducted as part of the application for consent.

3.0 Site Description

The subject site is located in Oromahoe approximately 1.3km to the southwest of the junction between State Highway 10 and Puketona Road. The land generally has a southern aspect and gently slopes into a raupō reedland wetland, which occurs along the southwestern boundary and bisects the property in the south. The predominant land cover is exotic grazing pasture, with wetland, streams and native vegetation also present in the gullies. This is typical of the surrounding landscape. The site has existing access from Te Ahu Ahu Road along a paper road, and the existing access is proposed to be upgraded as part of this application. The property's location and locality within the surrounding environment is shown below in **Figure 1**.

Figure 1: Location of the subject site (highlighted in red) in relation to the surrounding environment.

4.0 Methodology

4.1 Natural inland wetland definition

Wetlands are defined in this report using the definition of 'natural inland wetland' included in the National Policy Statement for Freshwater Management 2020 ("**NPS:FM**"). This is set out below:

"Natural inland wetland means a wetland (as defined in the Act) that is not:

(a) in the coastal marine area; or

(b) a deliberately constructed wetland, other than a wetland constructed to offset impacts on, or to restore, an existing or former natural inland wetland; or

(c) a wetland that has developed in or around a deliberately constructed water body, since the construction of the water body; or

(d) a geothermal wetland; or

(e) a wetland that:

(i) is within an area of pasture used for grazing; and

(ii) has vegetation cover comprising more than 50% exotic pasture species (as identified in the National List of Exotic Pasture Species using the Pasture Exclusion Assessment Methodology (see clause 1.8));

(iii) the wetland is a location of a habitat of a threatened species identified under clause 3.8 of this National Policy Statement, in which case the exclusion in (e) does not apply"

4.2 Vegetation assessment[2]

Hydrophytic vegetation is defined in the Wetland Delineation Vegetation Tool as "*Plants capable of growing in soils that are often or constantly saturated with water during the growing season."*

During the hydrophytic vegetation assessment, vascular plant species are classified according to their typical occurrence in wetland ecosystems. These classifications are defined as follows:

- **OBL**: Obligate. Almost always is a hydrophyte, rarely in uplands (estimated probability >99% occurrence in wetlands)
- **FACW**: Facultative Wetland. Usually is a hydrophyte but occasionally found in uplands (estimated probability 67–99% occurrence in wetlands)
- **FAC**: Facultative. Commonly occurs as either a hydrophyte or non-hydrophyte (estimated probability 34–66% occurrence in wetlands)
- **FACU**: Facultative Upland. Occasionally is a hydrophyte but usually occurs in uplands (estimated probability 1–33% occurrence in wetlands)
- **UPL**: Obligate Upland. Rarely is a hydrophyte, almost always in uplands (estimated probability <1% occurrence in wetlands)

The vegetation tool consists of three tests for hydrophytic vegetation: the rapid test, dominance test, and prevalence index. Dominant species are used as key determinants for the rapid test and dominance test. Once a representative plot has been surveyed, the most abundant species covers are added together until 50% cumulative cover is exceeded, and these species are classified as dominant. Furthermore, any species with an overall cover of more than 20% in a representative vegetation plot are also classed as dominant. An area passes the rapid test if all of the dominant vegetation species observed in the area are hydrophytic i.e., classified as OBL or FACW. An area passes the dominance test if more than 50% of the dominant species are classified as OBL, FACW or FAC.

The prevalence index is a quantitative measure that uses weighted averages to determine whether the average vegetation cover in area is hydrophytic (i.e., representative of wetland vegetation). A prevalence index score between 1.0 and 3.0 is indicative of a wetland, whereas scores between 3.0 and 5.0 are non-wetlands. Scores between 2.5 and 3.5 are considered to be less definitive, and it is recommended that scores in this range are further supported by soil and hydrology assessments.

[2] Clarkson. 2013. *A vegetation tool for wetland delineation in New Zealand.* Hamilton: Landcare Research.

4.3 Soil assessment[3]

Hydric soils are defined as "*soils that have been formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic (low oxygen) conditions in at least the upper 30 cm of the soil*."

Within each major vegetation type, a hole was dug and the top 30-50cm of the soil was inspected to determine whether hydric features were present. Soils were classified as either hydric or non-hydric based on matrix colour, mottle presence, mottle colour, saturation, odour, horizon presence, and consistency.

4.4 Hydrology assessment[4]

Wetland hydrology is defined as "*encompassing all hydrological characteristics of areas that are periodically inundated or have soils saturated to, or near, the surface during a portion of the growing season (based on Environmental Laboratory, 1987[5]).*"

All indicators of wetland hydrology that were observed during the field assessment were recorded.

4.5 Pasture Exclusion[6]

The pasture exclusion clause supports the continued use of pasture for grazing purposes by excluding areas of wet pasture which may otherwise meet the wetland delineation criteria for a natural inland wetland.

Areas with more than 50% total vegetation cover of listed exotic pasture species[7] are excluded from the definition of a natural inland wetland, if they are to be used for grazing and do not provide habitat for a threatened species. For each assessed vegetation type, an initial rapid assessment of the percent cover of exotic pasture species was undertaken. If results were uncertain, a representative vegetation plot was established, and the percent cover of exotic pasture species was determined.

4.6 Natural inland wetland delineation

A site assessment was undertaken on 28th May 2025 to identify and delineate any natural inland wetlands present within the same catchment as the proposed works which may trigger the need for a resource consent under the NES-F or Proposed Northland Regional Plan

Nationally peer-reviewed methods were used to delineate the wetland areas based on vegetation cover, soils, and hydrology, as outlined in **Sections 4.2** to **4.5** above.

Seven distinct potential natural inland wetland areas were identified within the same catchment of the proposed works, as shown on the delineation map in **Appendix A**. These areas are considered to

[3] Fraser, S., Singleton, P., and Clarkson, B. 2018. *Hydric soils field identification guide.* Hamilton: Landcare Research.
[4] Ministry for the Environment. 2021. *Wetland delineation hydrology tool for Aotearoa New Zealand.* Wellington: Ministry for the Environment.
[5] Environmental Laboratory. 1987, *Corps of Engineers Wetlands Delineation Manual*. Wetlands Research Program Report Y-87-1. Vicksburg, USA: Environmental Laboratory.
[6] Ministry for the Environment. 2022a. *Pasture exclusion assessment methodology*. Wellington: Ministry for the Environment.
[7] Ministry for the Environment. 2022b. *National list of exotic pasture species.* Wellington: Ministry for the Environment.

be hydrologically connected to each other but were assessed separately due to their distinct vegetation types. Delineation assessments were also conducted outside each potential wetland area extent in the adjacent vegetation type to ensure accurate delineations were made. In cases where all dominant species were rapidly assessed as FACU or UPL, no further assessment was undertaken. All potential natural inland wetland areas were assessed in accordance with the wetland delineation flowchart[8] and the results are detailed in **Section 5**.

5.0 Wetland Delineation Results

The results of the wetland delineation assessment are summarised below in **Table 1** and the extent of the delineated natural inland wetland areas is shown in **Appendix A.** The completed wetland delineation data forms are provided in **Appendix B**.

Table 1: Wetland delineation data summary and classification results.

Area	Pasture Exclusion	Hydrophytic Vegetation	Hydric Soils	Wetland Hydrology	Classification
A	Yes	N/A	N/A	N/A	Non-Wetland
B	Yes	N/A	N/A	N/A	Non-wetland
C	No	Uncertain	Present	Present	Wetland
D	Yes	N/A	N/A	N/A	Non-wetland
E	Yes	N/A	N/A	N/A	Non-Wetland
F	Yes	N/A	N/A	N/A	Non-wetland
G	Yes	N/A	N/A	N/A	Non-Wetland
H	Yes	N/A	N/A	N/A	Non-wetland
I	No	Present (Rapid Test)	N/A	N/A	Wetland
J	No	Present (Rapid Test)	N/A	N/A	Wetland
K	No	Present (Rapid Test)	N/A	N/A	Wetland

Areas A, B, D, E, F, G and H all met the pasture exclusion criteria, with more than 50% of their vegetation cover comprising exotic pasture species. These areas will continue to be used as pasture for grazing following the proposed works, therefore, they are assessed as non-wetland.

6.0 Assessment against Clause 54 of the NES-F

The works proposed in this application include recontouring earthworks, the construction of an accessway, and the construction of concrete and metal pads. The proposed recontouring and constructed surfaces will result in altered flow of stormwater across the proposed earthworks footprint. Stormwater flows will be collected and discharged to pasture through an outlet structure located to the south-east of the footprint. Appropriate erosion and sediment control measures will also be in place throughout the duration of the works. The proposed stormwater plan and sediment control measures are detailed in the accompanying **Engineering Plan Set 49114-DR-C-0000**.

The proposed works do not include vegetation clearance or earthworks within 10 metres of a wetland, therefore Clauses 54(a) and (b) do not apply to this application. The proposed stormwater discharge is to land, not to water, so Clause 54(d) also does not apply. However, as the proposal includes stormwater diversion within 100 metres of a wetland, further assessment is required under Clause 54(c) of the NES-F. Four natural inland wetlands have been identified within the same broad

[8] Ministry for the Environment. 2020. *Wetland Delineation Protocols.* *https://environment.govt.nz/publications/wetland-delineation-protocols/*

catchment as the proposed works. Therefore, the stormwater diversion and the identified wetlands are hydrologically connected to some extent, satisfying Clause 54(c)(i) of the NES-F.

Three of these wetland areas (Areas I, J, and K in **Appendix A**) are primarily fed by a permanent stream which flows through the gully to the west of the proposed footprint. The upstream reaches of this stream receive stormwater from a large catchment which will not be altered by the proposed works. Therefore, the stormwater flows from the proposed footprint are considered to be a very minor hydrological input to Areas I, J, and K. The proposed works are not considered likely to change the water level range or hydrological function of the wetlands.

The fourth wetland area (Area C in **Appendix A**) receives water from two main sources, overland flow from a small sub-catchment downslope of the proposed works, and overflow from an adjacent permanently saturated wetland area (Area I). As the water level range or hydrological function of Area I is not predicted to change as a result of the proposed works, its contribution to the hydrology of Area C is also expected to remain unchanged. Additionally, as the proposed works will not modify stormwater flows across most of the sub-catchment containing Area C, any resulting changes to its overland flow inputs are considered unlikely to alter the water level range or hydrological function of the wetland.

Based on this assessment, the proposed works will not change, or are not likely to change, the water level ranges or hydrological functions of the natural inland wetland areas delineated in this report. Therefore, Clause 54(c)(ii) of the NES-F is not met and resource consent is not required under Clause 54 of the NES-F or any other freshwater regulations.

7.0 Conclusion

In conclusion, a natural inland wetland with four distinct vegetation types/areas was delineated within the same catchment as the proposed works at 966 Te Ahu Ahu Road, Oromahoe, Haruru (Lot 1 DP 553587). Although stormwater diversion is proposed, it will not change the water level range or hydrological function of the delineated wetland. Therefore, no requirement for consent is triggered under the NES-F or Proposed Northland Regional Plan by the proposed works and their potential effects on the wetland areas present.

8.0 Limitations

This report has been prepared for the particular project described to us and its extent is limited to the scope of work agreed between the client and Cato Bolam Consultants Limited.

No responsibility is accepted by Cato Bolam Consultants Limited or its directors, servants, agents, staff or employees for the accuracy of information provided by third parties and/or the use of any part of this report in any other context or for any other purposes.

This report is for the use by the client only and should not be used or relied upon by any other person or entity or for any other projects.

Kerigreen

966 Te Ahu Ahu Road, Oromahoe, Haruru

Wetland Delineation Report

<u>Appendix A:</u> Wetland Delineation Map

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Wetland Delineation Map

Kerigreen
966 Te Ahu Ahu Road
Oromahoe
Lot 1 DP 553587

- Property boundary
- Delineated natural inland wetland
- Wetland delineation vegetation plot
- Contours

Date: 05/06/2025
Document No: 49114-RP-ENV-EC01
Appendix A
Revision: B

0 50 100 m

Created by: Madeleine Thom
Data obtained from:
LINZ Northland 0.3m Rural Aerial Photos (2023-2024)

Kerigreen

966 Te Ahu Ahu Road, Oromahoe, Haruru

Wetland Delineation Report

Appendix B: Wetland Delineation Data Forms

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NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: 966 Te Ahu Ahu Road
Region: Northland
Sampling point/ID: A
Owner/address: Matt Simpkin
Date: 28/05/2025
Land use: Grazing
Landform: Basin
Local relief: Concave
Land cover: Exotic grassland
Is the land drained? YES___ NO ✓ UNKNOWN___
Investigator(s): Cato Bolam
Slope°: <5°
GPS (NZTM): –
Altitude m: 55
Photo Nos: –

Are climatic/hydrologic conditions on the site typical for this time of year? YES ✓ NO___ (if NO explain in Remarks)
Are ~~Vegetation___ Soil___ or Hydrology___~~ significantly disturbed? Are 'Normal Circumstances' present? YES ✓ NO___
Are ~~Vegetation___ Soil___ or Hydrology___~~ naturally problematic? Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ✓ NO ☐
Hydrophytic vegetation present? YES ☐ NO ☐
Hydric soils present? YES ☐ NO ☐
Wetland hydrology present? YES ☐ NO ☐
Is the sampled area within a wetland? YES ☐ NO ✓

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
Tree Stratum (Plot size: N/A)				
1.				
2.				
3.				
4.				
Total tree cover (TT) =		50%___	20%___	
Sapling/Shrub Stratum (Plot size: N/A)				
1.				
2.				
3.				
4.				
5.				
Total sapling/shrub cover (TS) =		50%___	20%___	
Herb Stratum (Plot size: 4m²)				
1. JUN eff	40	✓	FACW	0
2. LOT ped	15		FAC	15
3. HOL lan	15		FAC	15
4. LOL per	40	✓	FACU	40
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
Total herb cover (TH) = 110		50% 55	20% 22	
			Total (P) = 70	
Total Vegetation Cover (TVC): TT+TS+TH = 110		50% 55		

Pasture Exclusion Test:
Pasture cover/Total vegetation cover (P/TVC) x100 = 63.6 %
☒ Rapid Pasture Test
✓ Pasture Exclusion Test is >50%

Dominance Test:
No. Dominant Spp. OBL/FACW/FAC (A) ___
Tot. Dominant Spp. across strata (B) ___
% OBL/FACW/FAC (A/B) ___

Prevalence Index:

Total % cover of:		Multiply by:	
OBL		x 1 =	
FACW		x 2 =	
FAC		x 3 =	
FACU		x 4 =	
UPL		x 5 =	
Total	(A)		(B)

Prevalence Index (B/A) = ___

Hydrophytic vegetation indicators:
☐ Rapid Test
☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0[1]
☐ Morphological adaptations[1] (supporting data in Remarks)
☐ Problematic hydrophytic vegetation[1]
Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
YES ☐ NO ☐ UNCERTAIN ☐

Remarks:

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: 966 Te Ahu Ahu Road | Region: Northland | Sampling point/ID: C

Owner/address: Matt Simpkin | Date: 28/05/2025 | Land use: Grazing

Landform: Basin | Local relief: Concave | Land cover: Exotic grassland

Is the land drained? YES__ NO ✓ UNKNOWN__ | Investigator(s): Cato Bolam | Slope°: <5°

GPS (NZTM): — | Altitude m: 55 | Photo Nos: —

Are climatic/hydrologic conditions on the site typical for this time of year? YES ✓ NO__ (if NO explain in Remarks)

Are ~~Vegetation__ Soil__ or Hydrology~~ significantly disturbed? | Are 'Normal Circumstances' present? YES ✓ NO__

Are Vegetation__ Soil__ or Hydrology__ naturally problematic? | Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☑

Hydrophytic vegetation present? YES ☐ ✓ NO ☐

Hydric soils present? YES ☑ NO ☐

Wetland hydrology present? YES ☑ NO ☐

Is the sampled area within a wetland? YES ☑ NO ☐

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
Tree Stratum (Plot size: N/A)				
1.				
2.				
3.				
4.				
Total tree cover (TT) =		50%__	20%__	
Sapling/Shrub Stratum (Plot size: N/A)				
1.				
2.				
3.				
4.				
5.				
Total sapling/shrub cover (TS) =		50%__	20%__	
Herb Stratum (Plot size: 4m²)				
1. JUN eff	15		FACW	0
2. RAN rep	70	✓	FAC	0
3. PER hyd	2		FACW	0
4. HOL lan	50	✓	FAC	50
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
Total herb cover (TH) =	137	50% 68.5	20% 27.4	
			Total (P) =	50
Total Vegetation Cover (TVC): TT+TS+TH =	137	50% 68.5		

Pasture Exclusion Test:

Pasture cover/Total vegetation cover (P/TVC) x100 = 36.5 %

☒ Rapid Pasture Test

☒ Pasture Exclusion Test is >50%

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) 2

Tot. Dominant Spp. across strata (B) 2

% OBL/FACW/FAC (A/B) 100

Prevalence Index:

Total % cover of:		Multiply by:	
OBL	0	x 1 =	0
FACW	17	x 2 =	34
FAC	120	x 3 =	360
FACU	0	x 4 =	0
UPL	0	x 5 =	0
Total	137 (A)		394 (B)

Prevalence Index (B/A) = 2.88

Hydrophytic vegetation indicators:

☒ Rapid Test

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

☒ Morphological adaptations[1] (supporting data in Remarks)

☒ Problematic hydrophytic vegetation[1]

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐ NO ☐ UNCERTAIN ✓

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles %[1]	Mottles Size[2]	Mottle location[3]	Material[4]	Remarks
0-30	10YR 4/1	N/A	–	–	–		

[1]Use % area charts; [2]Use size classes; [3]Ped face, pore, within ped along roots, within matrix; [4]Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I (P) VP

Organic layers:
- ☐ Organic soil material
- ☐ Litter
- ☐ Fibric
- ☐ Mesic
- ☐ Humic
- ☐ Peaty topsoil
- ☐ Peaty subsoil

Concretions:
- ☐ Iron concretions
- ☐ Manganese concretions
- ☐ Nodular

Consistence:
- ☑ Plastic
- ☐ Sticky
- ☐ Fluid

Colours: profile form either:
- ☑ Gley profile OR
- ☐ Mottled profile

Horizon:
- ☐ Reductimorphic
- ☐ Redox mottled
- ☐ Redox segregations
- ☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley (Gully) Slope

Water table: Depth (cm) ___

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) –

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layers: Depth (cm) –

Slow perm argillic

☐ Pugged

Hydric soils present? YES ☑ NO ☐ UNCERTAIN ☐ NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C_____

- ☑ Surface water (1A)
- ☑ Groundwater <30 cm (1B)
- ☑ Soil saturation <30 cm (1C)
- ☐ Water marks (2A)
- ☐ Sediment deposits (2B)
- ☐ Drift deposits (2C)
- ☐ Algal mat/crust (2D)
- ☐ Iron deposits (2E)
- ☐ Surface soil cracks (2F)
- ☐ Inundation on aerial imagery (2G)
- ☐ Sparsely vegetated concave surface (2H)
- ☐ Salt crust (2I)
- ☐ Aquatic invertebrates (2J)
- ☐ Hydrogen sulphide odour (3A)
- ☐ Oxidised rhizosphere on roots (3B)
- ☐ Reduced iron (3C)
- ☐ Reduced iron in tilled soil (3D)
- ☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- ☐ Water-stained leaves (2K)
- ☐ Drainage patterns (2L)
- ☐ Dry-season water table (3E)
- ☐ Saturation in aerial imagery (3F)
- ☐ Geomorphic position (4B)
- ☐ Shallow aquitard (4C)
- ☐ FAC-neutral test (4D)
- ☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species 0 (A)
2. No. FACU & UPL dominant species 0 (B)
3. Total 0 (A+B)
4. FAC-neutral (>50%) 0 (A/A+B)*100

Wetland hydrology present? YES ☑ NO ☐

Sketch of site/vegetation types/sampling points:

Remarks:

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: 966 Te Ahu Ahu Road | Region: Northland | Sampling point/ID: E

Owner/address: Matt Simpkin | Date: 28/05/2025 | Land use: Grazing

Landform: Basin | Local relief: Concave | Land cover: Exotic grassland

Is the land drained? YES___ NO ✓ UNKNOWN___ | Investigator(s): Cato Bolam | Slope°: <5°

GPS (NZTM): – | Altitude m: 55 | Photo Nos: –

Are climatic/hydrologic conditions on the site typical for this time of year? YES ✓ NO___ (if NO explain in Remarks)

Are ~~Vegetation___ Soil___ or Hydrology___~~ significantly disturbed? Are 'Normal Circumstances' present? YES ✓ NO___

Are ~~Vegetation___ Soil___ or Hydrology___~~ naturally problematic? Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion?	YES ✓	Hydrophytic vegetation present?	YES ☐	NO ☐	Is the sampled area within a wetland?	YES ☐	
	NO ☐	Hydric soils present?	YES ☐	NO ☐		NO ✓	
		Wetland hydrology present?	YES ☐	NO ☐			

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
Tree Stratum (Plot size: N/A)				
1.				
2.				
3.				
4.				
Total tree cover (TT) =		50%	20%	
Sapling/Shrub Stratum (Plot size: N/A)				
1.				
2.				
3.				
4.				
5.				
Total sapling/shrub cover (TS) =		50%	20%	
Herb Stratum (Plot size: 4m²)				
1. HOL lan	10		FAC	10
2. LOL per	50	✓	FACU	50
3. JUN eff	7		FACW	0
4. LOT ped	20	✓	FAC	20
5. PER hyd	15		FACW	0
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
Total herb cover (TH) =	102	50% 51	20% 20.4	
			Total (P) =	80
Total Vegetation Cover (TVC): TT+TS+TH =	102	50% 51		

Pasture Exclusion Test:

Pasture cover/Total vegetation cover (P/TVC) x100 = 78.4 %

✓ **Rapid Pasture Test**

✓ **Pasture Exclusion Test is >50%**

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) ___

Tot. Dominant Spp. across strata (B) ___

% OBL/FACW/FAC (A/B) ___

Prevalence Index:

Total % cover of:		Multiply by:	
OBL		x 1 =	
FACW		x 2 =	
FAC		x 3 =	
FACU		x 4 =	
UPL		x 5 =	
Total	(A)		(B)

Prevalence Index (B/A) = ___

Hydrophytic vegetation indicators:

- ☐ Rapid Test
- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological adaptations[1] (supporting data in Remarks)
- ☐ Problematic hydrophytic vegetation[1]

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐ NO ☐ UNCERTAIN ☐

Remarks:

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: 966 Te Ahu Ahu Road | Region: Northland | Sampling point/ID: G

Owner/address: Matt Simpkin | Date: 28/05/2025 | Land use: Grazing

Landform: Basin | Local relief: Concave | Land cover: Exotic grassland

Is the land drained? YES___ NO ✓ UNKNOWN___ | Investigator(s): Cato Bolam | Slope°: <5°

GPS (NZTM): — | Altitude m: 55 | Photo Nos: —

Are climatic/hydrologic conditions on the site typical for this time of year? YES ✓ NO___ (if NO explain in Remarks)

Are ~~Vegetation___Soil___or Hydrology___~~ significantly disturbed? Are 'Normal Circumstances' present? YES ✓ NO___

Are ~~Vegetation___Soil___or Hydrology___~~ naturally problematic? Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion?	YES ✓	Hydrophytic vegetation present?	YES ☐	NO ☐	Is the sampled area within a wetland?	YES ☐	
	NO ☐	Hydric soils present?	YES ☐	NO ☐		NO ✓	
		Wetland hydrology present?	YES ☐	NO ☐			

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
Tree Stratum (Plot size: N/A)				
1.				
2.				
3.				
4.				
Total tree cover (TT) =		50%___	20%___	
Sapling/Shrub Stratum (Plot size: N/A)				
1.				
2.				
3.				
4.				
5.				
Total sapling/shrub cover (TS) =		50%___	20%___	
Herb Stratum (Plot size: 4m²)				
1. HOL lan	30	✓	FAC	30
2. PER hyd	5		FACW	0
3. JUN eff	7		FACW	0
4. LOT ped	25	✓	FAC	25
5. ISA glo	2		OBL	0
6. TRI rep	<1		FACU	1
7. LOL per	35	✓	FACU	35
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
Total herb cover (TH) =	105	50% 52.5	20% 21	
			Total (P) =	91
Total Vegetation Cover (TVC): TT+TS+TH =	105	50% 52.5		

Pasture Exclusion Test:

Pasture cover/Total vegetation cover (P/TVC) x100 = 87 %

✓ Rapid Pasture Test

✓ Pasture Exclusion Test is >50%

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) ___

Tot. Dominant Spp. across strata (B) ___

% OBL/FACW/FAC (A/B) ___

Prevalence Index:

Total % cover of:		Multiply by:	
OBL	___	x 1 =	___
FACW	___	x 2 =	___
FAC	___	x 3 =	___
FACU	___	x 4 =	___
UPL	___	x 5 =	___
Total	___(A)		___(B)

Prevalence Index (B/A) = ___

Hydrophytic vegetation indicators:

☐ Rapid Test

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological adaptations[1] (supporting data in Remarks)

☐ Problematic hydrophytic vegetation[1]

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐ NO ☐ UNCERTAIN ☐

Remarks:

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Kerigreen

966 Te Ahu Ahu Road, Oromahoe, Haruru

Resource Consent Application

<u>Appendix F:</u> Local Rūnanga Consultation

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Aneta Jelavich

From: Emily McDonald
Sent: Friday, 13 June 2025 2:17 PM
To: tehonosupport@fndc.govt.nz
Cc: Simon Reiher; Jarred Lloyd
Subject: [CBC 49114] Consultation of proposed compost facility within
Attachments: 49114-DR-C-0000-Plan set.pdf

Kia ora,

I hope this email finds you well.

Kerigreen is proposing to establish a composting facility at 966 Te Ahu Ahu Road, Oromahoe. The proposal involves the relocation of an existing composting operation and the inclusion of organic primary industry processing byproducts (such as green waste, meat and dairy processing byproducts, and other organic matter). Please find attached a location plan for your reference.

We understand the importance of consulting with hapū to identify and consider any cultural values or interests associated with this site and the surrounding area. We are reaching out to confirm which Rohe this site falls within and to respectfully seek feedback from the local hapū on the proposed activity.

We would appreciate the opportunity to discuss the proposal further and would welcome your guidance on the most appropriate way to engage.

We look forward to your response.

Ngā mihi,
Emily