THOMSON SURVEY LIMITED

SURVEYORS AND RESOURCE PLANNERS

Our Reference: 10749.1 (FNDC)

22 May 2026

Resource Consents Department
Far North District Council
JB Centre
KERIKERI

Dear Sir/Madam

RE: Proposed subdivision – Orakau Road, Punakitere Valley - Pekama

I am pleased to lodge application for subdivision on behalf of Toko Pekama. The proposal creates one further lot of minimum area of 2ha, utilising residual rights left over from a previous subdivision. It is a subdivision of land zoned Rural Production and is a restricted discretionary activity.

The appropriate fee ($3,044 incl GST) has been paid separately.

Regards

Lynley Newport
Senior Planner
THOMSON SURVEY LTD

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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 Form 9). 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 Covnsent 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?

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: Toko Pekama

Email:

Phone number:

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

Have you been the subject of abatement notices, enforcement orders, infringement notices and/or convictions under the Resource Management Act 1991? ◯ **Yes** ☑ **No**

If yes, please provide details.

6. Address for correspondence

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

Name/s: Lynley Newport

Email:

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: Jason and Penelope Bill Family Trustees

Property address/
location:

Postcode

8. Application site details

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

Name/s: Toko Pekama

Site address/ location: Lot 4 DP 537681 (no RAPID address)

Postcode

Legal description: Lot 4 DP 537681 **Val Number:**

Certificate of title: 895102

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.

Please contact the applicant prior to any site visit

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.

To subdivide land in the Rural Production Zone to create one further 2ha lot utilising residual rights provided by previous subdivision RC 2190235.

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**
- ◯ **Disturbing, removing or sampling soil**
- ◯ **Changing the use of a piece of land**
- ◯ **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**

14. Draft conditions:

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

If yes, please be advised that the timeframe will be suspended for 5 working days as per s107G of the RMA to enable consideration for the draft conditions.

15. 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) Tokomauri Ngahiwi Pekama.

Email:

Phone number:

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

Postcode

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.

15. Billing details continued...

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) Tokomauri Ngahiwi Pekama

Signature:
(signature of bill payer)

Date 22/05/26

MANDATORY

16. 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.

17. Declaration

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

Name (please write in full) Tokomauri Ngahiwi Pekama

Signature

Date 22/05/26

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

See overleaf for a checklist of your information...

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.

Toko Pekama

Far North District Plan

PROPOSED SUBDIVISION

Orakau Road, Punakitere Valley

PLANNING REPORT AND ASSESSMENT OF ENVIRONMENTAL EFFECTS

Thomson Survey Ltd
Kerikeri

1.0 INTRODUCTION

1.1 The Proposal

The applicant proposes to carry out a subdivision of a property on Orakau Road, in the Punakitere Valley, south of Kaikohe. The proposal is to create one further lot of minimum area of 2ha, utilising residual rights afforded to the application site from a previous subdivision. The subdivision would leave a large balance farm in excess of 430ha in area - refer to Record of Title in Appendix 3.

The proposed additionallot is 2.246ha in area and is vacant, albeit has historically supported residential use, with onsite services. It is essentially an already fenced off paddock within the larger farm unit. Access is off Orakau Road (Council maintained metal surface public road).

Internal to the site, access to the preferred building site is via a newly constructed and consented bridge across the Punakitere River, and then via an historic driveway access up and around the knoll to the house site at top eastern corner of the lot.

A copy of the scheme plan is attached in Appendix 1.

Lot 5 DP 537681, the application site, is held with Lots 2-4, 6-7 and 11 DP 537681 by way of amalgamation. This proposal will require the cancellation of the existing amalgamation condition pursuant to s241(3) of the RMA, and reimposition of a replacement amalgamation condition holding Lot 2 hereon (on the scheme plan) with Lots 2-4, 6-7 and 11 DP 537681. The proposed wording of the replacement amalgamation condition is:

"That Lot 1 hereon is to be held in the same Certificate of Title as Lots 2-3, 6-7, 5, 11 DP 537681."

1.2 Scope of this Report

This assessment and report accompanies the Resource Consent Application and is provided in accordance with Section 88 and Schedule 4 of the Resource Management Act 1991. The application seeks consent under the District Plan for a subdivision. The name and address of the owner of the property is contained in the Form 9 Application form.

2.0 PROPERTY DETAILS

Location:	Orakau Road, Kaikohe. Location Plan is attached in Appendix 2.
Legal description:	Lot 4 DP 537681 is the specific lot being subdivided, however the Record of Title's legal description is Lots 2-4, 6-7, 5, 11 DP 537681
RT:	895102, with an area of 433ha (copy attached in Appendix 3).

3.0 SITE DESCRIPTION

3.1 Physical characteristics.

The physical characteristics of the site are described in the Civil Site Suitability Report and Site Assessment Report attached in Appendices 5 & 6 respectively.

The site has no service connections to any reticulated services. The application site has a long frontage with Orakau Road, off which access already exists. The land in the proposed Lot 2 has a broad ridgeline in its eastern corner, suitable for a house site, before sloping down to the Punakitere River and flat land between the river and the road. The proposed Lot 2 land is in pasture with isolated trees.

Looking back from highest point of Lot 2, in the eastern corner, over the balance of Lot 2, with Orakau Road in background

Looking northwest across the flats within Lot 2 (large tree in centre picture on boundary with adjacent site)

The property is zoned Rural Production in the Operative and Proposed District Plans. The property is part of a very large farming property consisting of multiple parcels. The area of the proposed subdivision is not subject to any resource features or overlays in either the ODP or PDP.

The application site is within a kiwi present area. There are no LUC 1, 2 or 3 soils anywhere on the application site with Council's maps showing the flats as having LUC 4w soils, and the balance with LUC 6e soils. The site is not subject to any mapped river flood hazard.

3.2 Legal Interests

The Title is subject to a right of way, but affecting Lot 2 DP 537681 only (not the application site). The title is also subject to a Lease, in favour of a Leasee for the purposes of carbon planing. The Title is only one of several titles subject to the same Lease, which provides the Leasee with the right for 777ha of planted forest within the larger area subject to the Lease. The area to be subdivided is not part of the lease are identified for planting. The Lease agreement provides for the Leasor to sell land within the lease area without requiring the Leasee's consent. By virtue of the Lease being registered on the title, the Leasor's interest in the Lease will transfer to the purchaser automatically. In this instance, the applicant is the purchaser.

3.3 Consent History

There are a number of resource and building consents showing on the property file, however, only one resource consent and one building consent exemption pertain to the actual application site, the others all relating to other parts of the overall property.

RC 2190235-RMASUB and subsequent RC 2190235-RMAOBJ issued in 2019 utilising part of the restricted discretionary subdivision option of up to 5 lots of minimum area 2ha; and

EXM- 2026-16, issued in 2025 for the new bridge. This is a 9m bridge, with steel beam and timber deck construction. The stamped approved Engineers Statement can be found in the property file.

4.0 SCHEDULE 4 – INFORMATION REQUIRED IN AN APPLICATION

Clauses 2 & 3: Information required in all applications

(1) An application for a resource consent for an activity must include the following:	
(a) a description of the activity: .	Refer Sections 1 and 5 of this Planning Report.
(b) an assessment of the actual or potential effect on the environment of the activity:	Refer to Section 6 of this Planning Report.
(b) a description of the site at which the activity is to occur:	Refer to Section 3 of this Planning Report.
(c) the full name and address of each owner or occupier of the site:	This information is contained in the Form 9 attached to the application.
(d) a description of any other activities that are part of the proposal to which the application relates:	Refer to Sections 3 and 5 of this Planning Report for existing activities within the site. The application is for subdivision.
(e) a description of any other resource consents required for the proposal to	No other consents are required other than that being applied for pursuant to the Far North Operative District Plan.

which the application relates:	
(f) an assessment of the activity against the matters set out in Part 2:	Refer to Section 7 of this Planning Report.
(g) an assessment of the activity against any relevant provisions of a document referred to in section 104(1)(b), including matters in Clause (2): (*a) any relevant objectives, policies, or rules in a document; and* *(b) any relevant requirements, conditions, or permissions in any rules in a document; and* *(c) any other relevant requirements in a document (for example, in a national environmental standard or other regulations).*	Refer to Sections 5 & 7 of this Planning Report.
(3) *An application must also include any of the following that apply:*	
(a) if any permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates that it complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1)):	Refer sections 3 and 5.
(b) if the application is affected by section 124 or 165ZH(1)(c) (which relate to existing resource consents), an assessment of the value of the investment of the existing consent holder (for the purposes of section 104(2A)):	There is no existing resource consent. Not applicable.
(c) if the activity is to occur in an area within the scope of a planning document prepared by a customary marine title group under section 85 of the Marine and Coastal Area (Takutai Moana) Act 2011, an assessment of the activity against any resource management matters set out in that planning document (for the purposes of section 104(2B)).	The site is not within an area subject to a customary marine title group. Not applicable.

Clause 4: Additional information required in application for subdivision consent

(4) An application for a subdivision consent must also include information that adequately defines the following:	
(a) the position of all new boundaries: *(b) the areas of all new allotments, unless the subdivision involves a cross*	Refer to Scheme Plans in Appendix 1.

lease, company lease, or unit plan: *(c) the locations and areas of new reserves to be created, including any esplanade reserves and esplanade strips:* *(d) the locations and areas of any existing esplanade reserves, esplanade strips, and access strips:* *(e) the locations and areas of any part of the bed of a river or lake to be vested in a territorial authority under section 237A:* *(f) the locations and areas of any land within the coastal marine area (which is to become part of the common marine and coastal area under section 237A):* *(g) the locations and areas of land to be set aside as new roads.*	

Clause 5: Additional information required for application for reclamation – not applicable.

Clause 6: Information required in assessment of environmental effects

(1) An assessment of the activity's effects on the environment must include the following information:	
(a) if it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity:	Refer to Section 6 of this planning report. The activity will not result in any significant adverse effect on the environment.
(b) an assessment of the actual or potential effect on the environment of the activity:	Refer to Section 6 of this planning report.
(c) if the activity includes the use of hazardous installations, an assessment of any risks to the environment that are likely to arise from such use:	Not applicable as the application does not involve hazardous installations.
(d) if the activity includes the discharge of any contaminant, a description of— *(i) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and* *(ii) any possible alternative methods of discharge, including discharge into any other receiving environment:*	The subdivision does not involve any discharge of contaminant.
(e) a description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect:	Refer to Section 6 of this planning report.
(f) identification of the persons affected by the activity, any consultation	Refer to Section 8 of this planning report. No affected persons are identified.

undertaken, and any response to the views of any person consulted:	
g) if the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved:	No monitoring is required as the scale and significance of effects does not warrant any.
(h) if the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or methods for the exercise of the activity (unless written approval for the activity is given by the protected customary rights group).	No protected customary right is affected.

Clause 7: Matters that must be addressed by assessment of environmental effects (RMA)

(1) An assessment of the activity's effects on the environment must address the following matters:	
(a) any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects:	Refer to Sections 6 and 8 of this planning report and also to the assessment of objectives and policies in Section 7.
(b) any physical effect on the locality, including any landscape and visual effects:	Refer to Section 6. The proposed activity will have no adverse, effects on the physical environment and landscape and visual amenity values.
(c) any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:	Refer to Section 6.0. The proposal will not result in adverse effects in regard to habitat and ecosystems.
(d) any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations:	Refer to Section 6, and above comments
(e) any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants:	The subdivision will not result in the discharge of contaminants, nor any unreasonable emission of noise.
(f) any risk to the neighbourhood, the wider community, or the environment through natural hazards or hazardous installations.	The subdivision site is not subject to natural hazards and does not involve hazardous installations.

5.0 COMPLIANCE ASSESSMENT

5.1 Weighting of the Plans

The proposal is subject to the Proposed District Plan (PDP) process, whereby the PDP was publicly notified on 27th July 2022. The site is zoned Rural Production under the PDP. When the PDP was first notified there were a number of rules which were identified as having immediate legal effect. As such, an assessment of the relevant rules and related objectives and policies of the PDP form part of this application. I have not identified any rules in the PDP, relevant to this proposal that had immediate legal effect from July 2022.

In regard to the weighting of the Plans, submissions and further submissions have closed (including those to Variation 1) and hearings have been completed. However, decisions on submissions have yet to be notified. This is scheduled for late May.

The land has the same zoning in both plans. The provisions in the PDP applying to the Rural Production Zone, including subdivision, have been heavily submitted on with a large number of submissions opposing PDP provisions as notified. There is every likelihood of decisions on submissions going to Appeal.

I consider that due to the number and type of submissions received in regard to the Rural Production Zone, including subdivision, the Operative District Plan should continue to carry more weight.

5.2 Operative District Plan Zoning

The property is zoned Rural Production. No Resource features apply. The subdivision standards applying in the zone are contained in Table 13.7.2.1 as shown below.

TABLE 13.7.2.1: MINIMUM LOT SIZES

(i) RURAL PRODUCTION ZONE

Controlled Activity Status (Refer also to 13.7.3)	**Restricted Discretionary Activity Status (Refer also to 13.8)**	**Discretionary Activity Status (Refer also to 13.9)**
The minimum lot size is 20ha.	1. Subdivision that complies with the controlled activity standard, but is within 100m of the boundary of the Minerals Zone; 2. The minimum lot size is 12ha; or 3. A maximum of 3 lots in any subdivision, provided that the minimum lot size is 4,000m2 and there is at least 1 lot in the subdivision with a minimum lot size of 4ha, and provided further that the subdivision is of sites which existed at or prior to 28 April 2000, or which are amalgamated from titles existing at or prior to 28 April 2000; or 4. A maximum of 5 lots in a subdivision (including the parent lot) where the minimum size of the lots is 2ha, and where the subdivision is created from a site	1. The minimum lot size is 4ha; or 2. A maximum of 3 lots in any subdivision, provided that the minimum lot size is 2,000m² and there is at least 1 lot in the subdivision with a minimum size of 4ha, and provided further that the subdivision is of sites which existed at or prior to 28 April 2000, or which are amalgamated from titles existing at or prior to 28 April 2000; or 3. A subdivision in terms of a management plan as per Rule 13.9.2 may be approved. ....

	that existed at or prior to 28 April 2000; **5. Rules under clauses 3 and 4 provide two alternative options for the creation of a specified number of small lots from sites existing at 28 April 2000. Where an application under one of these clauses takes up only part of the total allowance, a subsequent application to take up the remainder of that particular allowance may be considered by Council, notwithstanding that the subsequent application involves a lot which no longer meets the existing at 28 April 2000 criterion.**	

The application site was the subject of a subdivision consent applied for and granted pursuant to option 4 in the above table. That subdivision created only one additional lot of over 2ha, meaning there are residual rights applying. Whilst the previous subdivision appeared to create more than 5 lots, the reality is that all but one lot were amalgamated into one title. A copy of RC 2190235 is attached in Appendix 4. The application for RC 2190235 clearly stated it was applying under option 4 and that residual rights would remain to be utilised at a later date.

On the basis of the above, this current application is regarded as a restricted discretionary activity subdivision.

Zone Rules:

I have not identified any zone rule breaches. The proposed new lot is vacant land.

District Wide Rules:

The application site is not subject to chapter 12.1 as there are no outstanding landscapes or features on the site.

Rules in Chapter 12.2 are not applicable as no indigenous vegetation clearance is proposed.

In regard to Chapter 12.3 Soils and Minerals, minor earthworks may be required to upgrade the access. This will easily be within the District Plan's permitted activity thresholds.

Chapter 12.4 (Natural Hazards) is not relevant to the application as it does not involve any residential units.

The proposal is not subject to Chapter 12.5 (Heritage) as there are no heritage or cultural resources mapped for the site. Whilst there is a waterbody within the site, future development can be set sell back from it. No works are proposed in any indigenous wetland.

In regard to Chapter 14 Financial Contributions, and specifically in regard to esplanade reserve/strip requirements – the Punakitere River flows through the smaller lot from south to north. It is of varying widths. At this point in time no measurements have been taken to verify average width through the property.

In the event that the average width is determined to be 3m or more, then esplanade reserve or strip would be required on either side. However, I would argue that a waiver should be granted (if esplanade is indeed required). This is discussed in more detail in the AEE in section 6 of this report. In the event that the Council deems esplanade should be provided, and we seek consent for waiver, this will result in the subdivision being a discretionary activity overall.

Access to Lot 2 is currently via an existing farm gate. This is on flat ground, with excellent visibility to the north. Visibility to the south is restricted by long roadside grass and wooden railings on the old bridge approach. The grass can be mown and wooden railings removed if need be, but a more practical alternative is to simply move the crossing further north so that sight lines can be achieved easily in both directions. I have not identified any breaches of access rules.

The large Lot 1 is to re-amalgamated with a number of other lots in the same title, and would therefore have a multitude of alternative access options, without relying on the now defunct bridge crossing.

5.3 Proposed District Plan (PDP) Assessment

There are certain rules that have been identified in the PDP as having immediate legal effect and that may affect the category of activity under the Act. These include:

Rules HS-R2, R5, R6 and R9 in regard to hazardous substances on scheduled sites or areas of significance to Maori, significant natural areas or a scheduled heritage resource.

There are no scheduled sites or areas of significance to Maori, significant natural areas or any scheduled heritage resource on the site, therefore these rules are not relevant to the proposal.

Heritage Area Overlays – N/A as none apply to the application site.

Historic Heritage rules and Schedule 2 – N/A as the site does not have any identified (scheduled) historic heritage values.

Notable Trees – N/A – no notable trees on the site.

Sites and Areas of Significance to Maori – N/A – the site does not contain any site or area of significance to Maori.

Ecosystems and Indigenous Biodiversity – Rules IB-R1 to R5 inclusive.
No indigenous vegetation clearance is required.

Subdivision (specific parts) – only subdivision provisions relating to land containing Significant Natural Area or Heritage Resources have immediate legal effect. The site contains no scheduled or mapped Significant Natural Areas or Heritage Resources.

Activities on the surface of water – N/A as no such activities are proposed.

Earthworks – Only some rules and standards have legal effect. These are Rules EW-R12 and R13 and related standards EW-S3 and ES-S5 respectively. EW-R12 and associated EW-S3 relate to the requirement to abide by Accidental Discovery Protocol if carrying out earthworks and artefacts are discovered. EW-R13 and associated EW-S5 refer to operating under appropriate Erosion and Sediment Control measures. Earthworks may be required to give effect to the subdivision in the upgrading of access and crossings. This can be carried out in compliance with the above referenced rules/standards.

Signs – N/A – signage does not form part of this application.

Orongo Bay Zone – N/A as the site is not in Oronga Bay Zone.

There are no zone rules in the PDP with immediate legal effect that affect the proposal's activity status.

Should consent not be granted prior to the PDP taking legal effect, then rules in the PDP, as amended through decisions on submissions, will need to be considered. As there is no certainty in this regard yet, it is difficult to assess compliance with the PDP with any confidence.

6.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS

The following section is relevant should the application remain as a restricted discretionary activity. The assessment of environmental effects below includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment, as required by Clause 2(3)(c) of Schedule 4 of the Act.

A restricted discretionary activity is described in s87A of the Act, clause (3).

If an activity is described in this Act, regulations (including any national environmental standard), a plan, or a proposed plan as a restricted discretionary activity, a resource consent is required for the activity and—

*(a)**the consent authority's power to decline a consent, or to grant a consent and to impose conditions on the consent, is restricted to the matters over which discretion is restricted** (whether in its plan or proposed plan, a national environmental standard, or otherwise); and*

(b)if granted, the activity must comply with the requirements, conditions, and permissions, if any, specified in the Act, regulations, plan, or proposed plan.

It is also subject to s104C of the Act:

*(1) When considering an application for a resource consent for a restricted discretionary activity, a consent authority must consider **only** those matters over which-*

(a) A discretion is restricted in national environmental standards or other regulations;

(b) It has restricted the exercise of its discretion in its plan or proposed plan; …..
(3) ……. if it grants the application, the consent authority may impose conditions under section 108 ***only*** *for those matters over which –*
(a) A discretion is restricted in national environmental standards or other regulations;
(b) It has restricted the exercise of its discretion in its plan or proposed plan.

The subdivision meets the restricted discretionary number/size of lots specified in Table 13.7.2.1. Far North District Plan lays out in 13.8.1, the matters to which it restricts its discretion in determining whether to grant consent to a restricted discretionary activity, and then lays out the matters to which it will restrict its discretion when considering whether to impose conditions.

13.8.1 SUBDIVISION WITHIN THE RURAL PRODUCTION ZONE

……. In considering ***whether or not to grant consent*** *on applications for restricted discretionary subdivision activities, the Council will restrict the exercise of its discretion to the following matters:*

(i) for applications under 13.8.1(a):

- *effects on the natural character of the coastal environment for proposed lots which are in the coastal environment.*

(ii) for applications under 13.8.1(b) or (c):

- *effects on the natural character of the coastal environment for proposed lots which are in the coastal environment;*
- *effects of the subdivision under (b) and (c) above within 500m of land administered by the Department of Conservation upon the ability of the Department to manage and administer its land;*
- *effects on areas of significant indigenous flora and significant habitats of indigenous fauna;*
- *the mitigation of fire hazards for health and safety of residents.*

In considering ***whether or not to impose conditions*** *on applications for restricted discretionary subdivision activities the Council will restrict the exercise of its discretion to the following matters:*
(1) the matters listed in 13.7.3;
(2) the matters listed in (i) and (ii) above

In the case of this application, the application is lodged pursuant to 13.8.1(c), and therefore clause (ii) applies:

- *effects on the natural character of the coastal environment for proposed lots which are in the coastal environment;*

The property is not within the coastal environment.

- *effects of the subdivision under (b) and (c) above within 500m of land administered by the Department of Conservation upon the ability of the Department to manage and administer its land;*

There is no land administered by the Department of Conservation within 500m of the site

- *effects on areas of significant indigenous flora and significant habitats of indigenous fauna;*

The proposed Lot 2 contains no areas of significant indigenous flora or significant habitats of indigenous fauna.

- *the mitigation of fire hazards for health and safety of residents.*

The new lot and an area to its northeast is outside of the identified planting area within the overall area subject to a carbon planting lease. Whilst on site I noted that there were some scattered plantings of pinus radiata in proximity to Lot 2's northeastern boundary. Individual trees could be removed to ensure a minimum 20m setback between any future residential unit on Lot 2 and area of trees, albeit those trees are likely more than 10m from the property boundary already.

6.1 Allotment Sizes and Dimensions

The proposed additional lot is over 2ha in area and can readily accommodate a 30m x 30m square building envelope. A Civil Site Suitability Report and Site Assessment Report support the application, showing that the lot can sustain a residential dwelling.

6.2 Property Access

Access is off Orakau Road. Internal to the site, there is a newly constructed bridge and from there, internal driveway will go across the flat ground before winding up and around the knoll following the alignment of an old driveway alignment.

Existing farm gate proposed for access, looking generally north along frontage of Lot 2 and beyond.

As stated earlier in this report, should the Council consider sight distances to the south to be insufficient, the gateway into the site could be moved further north in order to meet sight distance requirements.

Newly constructed bridge looking back towards Orakau Road

Internal to the site, and as such private driveway, access over the Punakitere River is via a recently constructed bridge – see above picture. This is the sole use of new Lot 2. Once across the bridge, access up to a house site at the top of the hill is effectively private driveway and up to the lot owner to form at time of building.

In summary I believe access can be provided to the additional lot with minimal, if any, adverse effects on the roading network and other users.

6.3 Excavation and/or Filling

Earthworks required will be minimal and well within permitted activity thresholds. Any earthworks that is required as subdivision works, i.e. as conditions of consent, will be subject to standard ADP and have the necessary Erosion and Sediment Control measures in place for the duration of the works.

6.4 Natural and Other Hazards

A Site Assessment Report supports the application – refer to Appendix 5. This assesses site stability risk as low and liquefaction risk as negligible. The site is not prone to erosion, and not subject to river flooding. Given its location, sea level rise is not an issue. There is no evidence of landslip, rockfall or subsidence. There is no reason pursuant to s106 of the RMA, to withhold consent for this proposal.

6.5 Water Supply

There is no Council reticulated water supply available to the property and the Council can impose its standard requirement in regard to potable and fire fighting water supply for Lot 2.

6.6 Stormwater Disposal

Refer to the Civil Site Suitability Report in Appendix 5. Future development within Lot 2 will fall well within the permitted activity range applying in the zone. Significant increases in runoff

are not anticipated and specific stormwater attenuation measures are not considered necessary at this stage.

Basic recommendations include collecting/ capturing stormwater runoff from roof areas into a gutter system and conveying to water tanks. Discharge and overflow from the rainwater tanks should then be directed to a discharge point.

Stormwater runoff from hardstand areas should be managed as follows:

Where driveways are formed perpendicular to the slope, driveway may shed runoff to lower-lying grassed areas via even sheet flow, clear of structures.

Where even sheet flow is not practicable, concentrated flows should be managed with swales to prevent erosion/scouring. Swales should be sized to manage and provide appropriate capacity and mitigate flow velocity. Swales can direct runoff to silt traps with suitably sized grate/scruffy dome inlets, and runoff may then be piped to the same discharge point as tank overflow.

In summary, stormwater management is readily achievable with minimal, if any, off site effects.

6.7 Sanitary Sewage Disposal

Refer to Civil Site Suitability Report in Appendix 5. The report assesses on site wastewater for an eventual development of two 2-bedroom dwellings. Please note this application does not include any land use consent for residential intensity, only subdivision. The applicant has prudently requested the engineer to assess wastewater for feasibility, on the basis of a desirable future level of development on the site.

All setback distances can be met and the report concludes that there will be no issue in meeting the Regional Plan's permitted activity standards for domestic effluent treatment and disposal.

6.8 Energy Supply & Telecommunications

Energy supply and telecommunications are not a requirement of rural subdivisions. The Council can impose its standard consent notice in this regard.

6.9 Easements for any purpose

Refer to the Scheme Plan in Appendix 1. No easements are proposed.

6.10 Preservation and enhancement of heritage resources (including cultural), vegetation, fauna and landscape, and land set aside for conservation purposes

The ODP states:

Where any proposed allotment contains one or more of the following:
(a) a Notable Tree as listed in Appendix 1D;
(b) an Historic Site, Building or Object as listed in Appendix 1E;

(c) a Site of Cultural Significance to Maori as listed in Appendix 1F;
(d) an Outstanding Natural Feature as listed in Appendix 1A;
(e) an Outstanding Landscape Feature as listed in Appendix 1B;
(f) an archaeological site as listed in Appendix 1G;
(g) an area of significant indigenous vegetation or significant habitats of indigenous fauna, as defined in Method 12.2.5.6.

The continued preservation of that resource, area or feature shall be an ongoing condition for approval to the subdivision consent.

Heritage / Cultural Resources

The application site does not contain any Notable Tree, Historic Site, Building or Object, archaeological site, or Site of Cultural Significance to Maori.

Landscape

The application site does not contain any area mapped as Outstanding Natural Feature or Landscape Feature, nor any Outstanding Landscape.

Flora and Fauna

The proposed additional Lot 2 contains no areas of indigenous vegetation within its boundaries. The application site is within a kiwi present area and the norm for sites in a kiwi present area is to include a requirement that any dogs or cats kept on the lots must be kept inside and/or securely kennelled or enclosed (dogs) at night in order to reduce the risk of predation on kiwi.

6.11 Access to Reserves and waterways

The presence of the Punakitere River flowing south to north through Lot 2 has been discussed earlier, under section 5.2 of this report. No detailed measurements have been carried out to ascertain average width of the river as it passes through the lot. In the event that the river is measured/determined to have an average width in excess of 3m, then because Lot 2 is less than 4ha, esplanade reserve or strip would be required.

In the event that the Council deems esplanade should be provided, this application seeks a waiver from doing so. The reasons are:

(a) There is no connectivity at either north or south boundary of Lot 2; and very little likelihood of land adjacent to those boundaries being subdivided into lots of less than 4ha any time in the future. With no connectivity, there would be no means of accessing any reserve or strip.
(b) There is privately constructed and maintained infrastructure (the bridge) that would be within any esplanade. This raises public liability issues for both the land owner and for Council, as a party to any esplanade instrument. This is an unreasonable expectation and expense to place on the property owner and I doubt very much that the Council would be willing to accept any liability for a private asset such as this.

(c) Pedestrian access would in fact be detrimental to the riparian margins which are in pasture, and mostly banks, some of which have slips and wash outs present.

The purpose of esplanades are two fold – public access and conservation. The more aspect of this particular waterbody would be the conservation and protection of riparian margins along both sides of the river. As an alternative to providing esplanade, it is proposed to instal cattle proof fencing along both banks, set back from the edge of the banks. This will help protect the banks and enable riparian vegetation to establish and flourish.

6.12 Land use compatibility (reverse sensitivity)

As stated previously, the underlying parcel is part of a large area subject to a Lease for planting. The area of Lot 2 is outside of any defined planted area. The large balance area, however, may be planted, and in fact there is some planting in place near, but not on, Lot 2's north eastern boundary. My reading of the planting plan associated with the lease suggests there should not be any planting that close to Lot 2. In any event, the planted or self seeded trees appear to be more than 10m from the boundary with Lot 2, and a future residential unit will be 10m or more from the boundary. This is sufficient to address reverse sensitivity issues. In addition, the owner of Lot 2 will be well aware of the Lease arrangement and any obligations placed on them in regard to planted areas.

Land on other boundaries is farmed. The land use is not intensive farming, however, and the risk of reverse sensitivity issues arising is minimal in this regard. The proposal will not stop adjacent land from continuing to be farmed.

6.13 Proximity to Airports

The site is not near any airport.

7.0 STATUTORY ASSESSMENT

In accordance with Section 104(1)(b) of the Act, the following documents are considered relevant to the application.

7.1 National Policy Statements & Standards

I have not identified any National Policy Statements or Standards relevant to the proposal. The site is not 'highly productive land'. There is no indigenous vegetation affected by the proposal and no clearance required. The additional lot can be developed with no adverse effects on any waterbodies or wetlands. There is no national grid running through the site. To my knowledge, the application site, and in particularly the area of land to be Lot 2, is not being, and has not historically been, used for any Hazardous Activity or Industry.

7.2 Regional Policy Statement for Northland (RPS)

I do not consider the proposal to be inconsistent with any relevant objectives and policies in the RPS for Northland. The proposed additional lot will result in additional built development, but the proposal does not result in any material loss in productivity and does not result in significant reverse sensitivity effects. The site is not subject to hazard. The site is not coastal

and has no high or outstanding natural character or landscape values, and no heritage/cultural values. No indigenous vegetation clearance is required.

7.3 Regional Plan

I have not identified any breach of any Regional Plan rules.

7.4 Operative District Plan Objectives and Policies

I consider the subdivision to be consistent with the subdivision objectives and policies in Chapter 13. In particular I consider the proposal to be consistent with Objective 13.3.1 which provides for (enables) subdivision in a way that promotes sustainable management of natural and physical resources; and Objective 13.3.2 and associated Policy 13.4.1, which seek to ensure that the subdivision of land is appropriate and carried out in a manner that does not compromise air, water, soil or ecosystems, and that avoids, remedies or mitigates any adverse effects.

The Rural Production zone is an enabling zone, providing for a variety of activities subject to avoiding, remedying or mitigating adverse effects and compatibility with the amenity values of rural areas and rural production activities. I consider the proposed subdivision to be consistent with the zone's objectives and policies.

OBJECTIVES

13.3.1 To provide for the subdivision of land in such a way as will be consistent with the purpose of the various zones in the Plan, and will promote the sustainable management of the natural and physical resources of the District, including airports and roads and the social, economic and cultural well being of people and communities.

13.3.2 To ensure that subdivision of land is appropriate and is carried out in a manner that does not compromise the life-supporting capacity of air, water, soil or ecosystems, and that any actual or potential adverse effects on the environment which result directly from subdivision, including reverse sensitivity effects and the creation or acceleration of natural hazards, are avoided, remedied or mitigated.

The subdivision is consistent with both the above objectives. It promotes sustainable management of the natural and physical resources of the District and provides for the applicants' social and economic well being. It is an appropriate subdivision that does not compromise the life-supporting capacity of air, water, soil or ecosystems, and adverse effects are minimal.

13.3.3 To ensure that the subdivision of land does not jeopardise the protection of outstanding landscapes or natural features in the coastal environment.

13.3.4 To ensure that subdivision does not adversely affect scheduled heritage resources through alienation of the resource from its immediate setting/context.

The property has no outstanding landscape values, and is not within the coastal environment. There are no 'scheduled heritage resources' identified in the District Plan on the property.

13.3.5 To ensure that all new subdivisions provide a reticulated water supply and/or on-site water storage and include storm water management sufficient to meet the needs of the activities that will establish all year round.

On-site water supply and on-site stormwater management can be achieved.

13.3.7 To ensure the relationship between Māori and their ancestral lands, water, sites, wahi tapu and other taonga is recognised and provided for and associated

Policy 13.4.11 That subdivision recognises and provides for the relationship of Māori and their culture and traditions, with their ancestral lands, water, sites, waahi tapu and other taonga and shall take into account the principles of the Treaty of Waitangi.

There are no 'scheduled' sites of significance to Māori affecting the property. The proposal is low density.

13.3.8 To ensure that all new subdivision provides an electricity supply sufficient to meet the needs of the activities that will establish on the new lots created.

13.3.9 To ensure, to the greatest extent possible, that all new subdivision supports energy efficient design through appropriate site layout and orientation in order to maximise the ability to provide light, heating, ventilation and cooling through passive design strategies for any buildings developed on the site(s).

13.3.10 To ensure that the design of all new subdivision promotes efficient provision of infrastructure, including access to alternative transport options, communications and local services.

Power supply is not a requirement of rural subdivision.

POLICIES

13.4.1 That the sizes, dimensions and distribution of allotments created through the subdivision process be determined with regard to the potential effects including cumulative effects, of the use of those allotments on: (a) natural character, particularly of the coastal environment; (b) ecological values; (c) landscape values; (d) amenity values; (e) cultural values; (f) heritage values; and (g) existing land uses.

I believe the subdivision has less than minor impact on the relevant matters listed in the above policy.

13.4.2 That standards be imposed upon the subdivision of land to require safe and effective vehicular and pedestrian access to new properties.

13.4.3 That natural and other hazards be taken into account in the design and location of any subdivision.

13.4.4 That in any subdivision where provision is made for connection to utility services, the potential adverse visual impacts of these services are avoided.

13.4.5 That access to, and servicing of, the new allotments be provided for in such a way as will avoid, remedy or mitigate any adverse effects on neighbouring property, public roads (including State Highways), and the natural and physical resources of the site caused by silt runoff, traffic, excavation and filling and removal of vegetation.

Access to the site is off Council maintained public road. Internal access is, and can be constructed to a practical and safe standard. The site is not subject to hazards that preclude development from occurring.

13.4.6 That any subdivision proposal provides for the protection, restoration and enhancement of heritage resources, areas of significant indigenous vegetation and significant habitats of indigenous

fauna, threatened species, the natural character of the coastal environment and riparian margins, and outstanding landscapes and natural features where appropriate.

The site contains no heritage resources, nor does it contain any areas of significant indigenous vegetation or habitat of indigenous fauna. The site is not coastal. The site contains no outstanding landscapes or natural features.

13.4.8 That the provision of water storage be taken into account in the design of any subdivision.

The additional lot will be responsible for its own on-site water storage.

13.4.13 Subdivision, use and development shall preserve and where possible enhance, restore and rehabilitate the character of the applicable zone in regards to s6 matters.....

s6 matters are discussed elsewhere in this report. The subdivision does not adversely affect the character of the Rural Production Zone in regard to s6 matters, or any of those matters listed in 13.4.13.

13.4.14 That the objectives and policies of the applicable environment and zone and relevant parts of Part 3 of the Plan will be taken into account when considering the intensity, design and layout of any subdivision.

The Objectives and Policies of the Rural Production Zone have been considered in the design and layout of the subdivision and I consider the subdivision to be consistent with those objectives and policies.

8.6.3.1 To promote the sustainable management of natural and physical resources in the Rural Production Zone.

The proposal creates one additional lot in excess of 2ha, utilising residual rights left over from an earlier subdivision. This represents sustainable management. The balance land remains large and in production – again representing sustainable management.

8.6.3.2 To enable the efficient use and development of the Rural Production Zone in a way that enables people and communities to provide for their social, economic, and cultural well being and for their health and safety.

I believe the proposal provides for the efficient use and development of land. Low density residential living in a rural production setting is not uncommon in the district. The proposal leaves a very large balance lot capable of continuing in productive use.

8.6.3.3 To promote the maintenance and enhancement of the amenity values of the Rural Production Zone to a level that is consistent with the productive intent of the zone.

The proposal does not adversely affect amenity values of the zone. The site contains no highly productive land.

8.6.3.4 To promote the protection of significant natural values of the Rural Production Zone.

The property does not have any significant natural values.

8.6.3.6 To avoid, remedy or mitigate the actual and potential conflicts between new land use activities and existing lawfully established activities (reverse sensitivity) within the Rural Production Zone and on land use activities in neighbouring zones.

8.6.3.7 To avoid remedy or mitigate the adverse effects of incompatible use or development on natural and physical resources.

The proposal is not a land use activity. I have not identified any likely conflicting land uses that cannot be mitigated.

8.6.3.8 To enable the efficient establishment and operation of activities and services that have a functional need to be located in rural environments.

This policy relates to land use activities, not subdivisions. N/A.

8.6.3.9 To enable rural production activities to be undertaken in the zone.

The proposal is not a 'rural production activity'.

8.6.4.1 That the Rural Production Zone enables farming and rural production activities, as well as a wide range of activities, subject to the need to ensure that any adverse effects on the environment, including any reverse sensitivity effects, resulting from these activities are avoided, remedied or mitigated and are not to the detriment of rural productivity.

The site is in grass, with productive rural use on the large balance area. The zone provides for this use and a wide range of other activities, including residential living.

8.6.4.2 That standards be imposed to ensure that the offsite effects of activities in the Rural Production Zone are avoided, remedied or mitigated.

Again, this policy is directed at land uses, not subdivisions.

8.6.4.4 That the type, scale and intensity of development allowed shall have regard to the maintenance and enhancement of the amenity values of the Rural Production Zone to a level that is consistent with the productive intent of the zone.

The proposed subdivision scale and intensity meets restricted discretionary subdivision standards and is consistent with the requirements and expectations of the District Plan.

8.6.4.5 That the efficient use and development of physical and natural resources be taken into account in the implementation of the Plan.

I believe the proposal represents efficient use and development of the physical and natural resources.

8.6.4.7 That although a wide range of activities that promote rural productivity are appropriate in the Rural Production Zone, an underlying goal is to avoid the actual and potential adverse effects of conflicting land use activities.

8.6.4.8 That activities whose adverse effects, including reverse sensitivity effects, cannot be avoided remedied or mitigated are given separation from other activities.

8.6.4.9 That activities be discouraged from locating where they are sensitive to the effects of or may compromise the continued operation of lawfully established existing activities in the Rural Production zone and in neighbouring zones.

Refer to earlier comments in regard to reverse sensitivity. I believe any potential adverse effects can be readily avoided, remedied or mitigated. The proposal will not prevent existing lawfully established activities from continuing to operate.

7.5 Proposed District Plan Objectives and Policies

The property is zoned Rural Production under the PDP. An assessment of the proposal against the zone's Objectives and Policies follows:

RPROZ-O1
The Rural Production zone is managed to ensure its availability for primary production activities and its long-term protection for current and future generations.

The proposal does not impact unduly on the availability of land for primary production. The application site is the subject of a Planting Lease but the land to be in Lot 2 does not impact on that planting as the lot is not within an area of the leased land identified for planting.

RPROZ-O2
The Rural Production zone is used for primary production activities, ancillary activities that support primary production and other compatible activities that have a functional need to be in a rural environment.

This objective is in a zone chapter, not subdivision, and is aimed at 'activities'.

RPROZ-O3
Land use and subdivision in the Rural Production zone:

a. *protects highly productive land from sterilisation and enables it to be used for more productive forms of primary production;*
b. *protects primary production activities from reverse sensitivity effects that may constrain their effective and efficient operation;*
c. *does not compromise the use of land for farming activities, particularly on highly productive land;*
d. *does not exacerbate any natural hazards; and*
e. *is able to be serviced by on-site infrastructure.*

There is no highly productive land within the site. Any primary production activity within the site and on adjacent sites will not be constrained as a result of the proposal. The site is not subject to hazards. New lots will be on site self serviced.

RPROZ-O4
The rural character and amenity associated with a rural working environment is maintained.

The subdivision will not adversely impact on rural character and amenity.

RPROZ-P1
Enable primary production activities, provided they internalise adverse effects onsite where practicable, while recognising that typical adverse effects associated with primary production should be anticipated and accepted within the Rural Production zone.

The proposal is not for a primary production activity. Not applicable.

RPROZ-P2
Ensure the Rural Production zone provides for activities that require a rural location by:

a. *enabling primary production activities as the predominant land use;*
b. *enabling a range of compatible activities that support primary production activities, including ancillary activities, rural produce manufacturing, rural produce retail, visitor accommodation and home businesses.*

Activity based policy. Not applicable.

RPROZ-P3
Manage the establishment, design and location of new sensitive activities and other non-productive activities in the Rural Production Zone to avoid where possible, or otherwise mitigate, reverse sensitivity effects on primary production activities.

Refer to earlier comments in regard to reverse sensitivity.

RPROZ-P4
Land use and subdivision activities are undertaken in a manner that maintains or enhances the rural character and amenity of the Rural Production zone, which includes:

a. *a predominance of primary production activities;*
b. *low density development with generally low site coverage of buildings or structures;*
c. *typical adverse effects such as odour, noise and dust associated with a rural working environment; and*
d. *a diverse range of rural environments, rural character and amenity values throughout the District.*

The subdivision is extremely low-density development and in an area where primary production use predominates.

RPROZ-P5
Avoid land use that:....

N/A. Activity is not a land use.

RPROZ-P6
Avoid subdivision that:

a. *results in the loss of highly productive land for use by farming activities;*
b. *fragments land into parcel sizes that are no longer able to support farming activities, taking into account:*
    1. *the type of farming proposed; and*
    2. *whether smaller land parcels can support more productive forms of farming due to the presence of highly productive land.*
c. *provides for rural lifestyle living unless there is an environmental benefit.*

The subdivision will not result in the loss of highly productive land, because there is no land in or adjacent to Lot 2 that is 'highly productive land'. The subdivision does create a smaller parcel that might arguably be regarded as 'rural lifestyle' and no environmental benefit is proposed. So in that regard the proposal cannot be consistent with RPROZ-P6 part (c).

RPROZ-P7
Manage land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application: …

The proposal does not require consent under the PDP's zone provisions and is not a land use activity in any event, so the policy is of limited relevance.

<u>Subdivision objectives and policies</u>:

SUB-O1
Subdivision results in the efficient use of land, which:

a. *achieves the objectives of each relevant zone, overlays and district wide provisions;*

b. *contributes to the local character and sense of place;*
c. *avoids reverse sensitivity issues that would prevent or adversely affect activities already established on land from continuing to operate;*
d. *avoids land use patterns which would prevent land from achieving the objectives and policies of the zone in which it is located;*
e. *does not increase risk from natural hazards or risks are mitigates and existing risks reduced; and*
f. *manages adverse effects on the environment.*

I believe that the proposed subdivision is more consistent than not with the zone's objectives and policies, and any relevant district wide objectives and policies. I believe it will result in the efficient use of land.

SUB-O2
Subdivision provides for the:

a. *Protection of highly productive land; and*
b. *Protection, restoration or enhancement of Outstanding Natural Features, Outstanding Natural Landscapes, Natural Character of the Coastal Environment, Areas of High Natural Character, Outstanding Natural Character, wetland, lake and river margins, Significant Natural Areas, Sites and Areas of Significance to Māori, and Historic Heritage.*

The site contains none of the 'resources' listed in a and b above, except for the Punakitere River margins. This has been addressed earlier in this report, with proposed means of protecting those margins.

SUB-O3
Infrastructure is planned to service the proposed subdivision and development where:

a. *there is existing infrastructure connection, infrastructure should provided in an integrated, efficient, coordinated and future-proofed manner at the time of subdivision; and*
b. *where no existing connection is available infrastructure should be planned and consideration be given to connections with the wider infrastructure network.*

There is no planned infrastructure for the wider area. On-site infrastructure can be utilised for wastewater, stormwater and potable water supply.

SUB-O4
Subdivision is accessible, connected, and integrated with the surrounding environment and provides for:

a. *public open spaces;*
b. *esplanade where land adjoins the coastal marine area; and*
c. *esplanade where land adjoins other qualifying waterbodies.*

This has been addressed earlier in this report. The subdivision has road frontage and bridge crossing. Should the river be deemed a qualifying waterbody, the preference is not to provide esplanade, but rather to protect riparian margins through other means such as fencing. Protecting riparian margins is a recognised purpose of esplanades, often quite rightly taking priority over public access, which can be detrimental to protecting riparian margins.

SUB-P1
Enable boundary adjustments that:...

Not applicable.

SUB-P2
Enable subdivision for the purpose of public works, infrastructure, reserves or access.

Not applicable.

SUB-P3
Provide for subdivision where it results in allotments that:

a. *are consistent with the purpose, characteristics and qualities of the zone;*
b. *comply with the minimum allotment sizes for each zone;*
c. *have an adequate size and appropriate shape to contain a building platform; and*
d. *have legal and physical access.*

The subdivision is more consistent than not, with the purpose and qualities of the zone, largely because it is low overall density, maintains character, and the site contains no highly productive land. Whilst the proposed Lot 2 does not 'comply' with the PDP's minimum lot sizes for the zone, the lot is nonetheless able to provide for building platforms, and has legal and physical access. In addition, the overall residential intensity is well within the PDP's permitted ratio of 1 per 40ha of land, when looking at the area of the underlying title.

SUB-P4
Manage subdivision of land as detailed in the district wide, natural environment values, historical and cultural values and hazard and risks sections of the plan

The subdivision minimises impact on natural environmental values, nor historical and cultural values. The site is not subject to any hazard that precludes development.

SUB-P5
Manage subdivision design and layout in the General Residential, Mixed Use and Settlement zone to .....

Not applicable.

SUB-P6
Require infrastructure to be provided in an integrated and comprehensive manner by:

a. *demonstrating that the subdivision will be appropriately serviced and integrated with existing and planned infrastructure if available; and*
b. *ensuring that the infrastructure is provided is in accordance the purpose, characteristics and qualities of the zone.*

This is a rural area with no planned infrastructure improvements on the part of the Council. Future lot owners will be responsible for on-site infrastructure of wastewater, stormwater and potable water.

SUB- P7
Require the vesting of esplanade reserves when subdividing land adjoining the coast or other qualifying waterbodies.

Refer to earlier comments in regard to the related objective.

SUB-P8
Avoid rural lifestyle subdivision in the Rural Production zone unless the subdivision:

a. *will protect a qualifying SNA in perpetuity and result in the SNA being added to the District Plan SNA schedule; and*
b. *will not result in the loss of versatile soils for primary production activities.*

Part (a) cannot be met because there are no 'qualifying SNA's'. In the case this proposal nor is there any significant indigenous vegetation. Part (b), however, is readily met because there are no versatile soils to be lost.

SUB-P9
Avoid subdivision rural lifestyle subdivision in the Rural Production zone and Rural residential subdivision in the Rural Lifestyle zone unless the development achieves the environmental outcomes required in the management plan subdivision rule.

The subdivision is not a management plan subdivision.

SUB-P10
To protect amenity and character by avoiding the subdivision of minor residential units from principal residential units where resultant allotments do not comply with minimum allotment size and residential density.

Not applicable.

SUB-P11
Manage subdivision to address the effects of the activity requiring resource consent including (but not limited to) consideration of the following matters where relevant to the application:

a. *consistency with the scale, density, design and character of the environment and purpose of the zone;*
b. *the location, scale and design of buildings and structures;*
c. *the adequacy and capacity of available or programmed development infrastructure to accommodate the proposed activity; or the capacity of the site to cater for on-site infrastructure associated with the proposed activity;*
d. *managing natural hazards;*
e. *Any adverse effects on areas with historic heritage and cultural values, natural features and landscapes, natural character or indigenous biodiversity values; and*
f. *any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.*

The subdivision does not require consent under the PDP so the above policy is of limited relevance. Notwithstanding this, relevant matters in SUB-P11 have been considered.

8.0 NOTIFICATION ASSESSMENT & CONSULTATION

8.1 S95A Public Notification Assessment

A consent authority must follow the steps set out in s95A to determine whether to publicly notify an application for a resource consent. Step 1 specifies when public notification is mandatory in certain circumstances. None of these circumstances apply. Step 2 of s95A specifies the circumstances that preclude public notification. Neither circumstance exists therefore public notification is not precluded and Step 3 of s95A must be considered. This specifies that public notification is required in certain circumstances. The application is not subject to a rule or national environmental standard that requires public notification. This report and AEE concludes that the activity will not have, nor is it likely to have, adverse effects on the environment that are more than minor. In summary public notification is not required pursuant to Step 3 of s95A.

8.2 S95B Limited Notification Assessment

A consent authority must follow the steps set out in s95B to determine whether to give limited notification of an application for a resource consent, if the application is not publicly notified pursuant to s95A. Step 1 identifies certain affected groups and affected persons that must be notified. No such group or persons exist in this case. Step 2 of s95B specifies the circumstances that preclude limited notification. Neither circumstance applies and Step 3 of s95B must be considered. This specifies that certain other affected persons must be notified, in this case being any identified pursuant to s95E. The s95E assessment below concludes that there are no affected persons to be notified.

8.3 S95D Level of Adverse Effects

The AEE in this report assesses effects on the environment and concludes that these will be no more than minor, therefore no public notification is required.

8.4 S95E Affected Persons

A person is an 'affected person' if the consent authority decides that the activity's adverse effects on the person are minor or more than minor (but are not less than minor). A person is not an affected person if they have provided written approval for the proposed activity.

The size and layout of the proposed lots is consistent with the zone's restricted discretionary activity threshold. Access to Lots is existing and can be upgraded (if necessary) to the necessary standard. I do not consider any adjacent properties to be affected by the proposal. I have not identified any affected persons in regard to adjacent properties. The Leasee to the planting rights is not affected in that the Lease agreement provides for the Leasor (owner of the land) to sell land within the leased area without recourse to, or consent from the Leasee. The Leasee's rights are protected by virtue of the Lease Agreement being registered on the current title, and automatically carrying down to any new title.

There are no identified Sites of Significance to Māori within the site, and no archaeological sites. The site is not coastal. With less than minor effects on any habitat, including water bodies, and no impact on DOC's ability to manage its resources, it has not been considered necessary to consult with DOC prior to lodging the application.

9.0 PART 2 MATTERS

5 Purpose
(1)The purpose of this Act is to promote the sustainable management of natural and physical resources.

The proposal is considered to have had adequate regard to Part 2 matters. I believe the proposal fulfils the Purpose in s5.

6Matters of national importance

(a)the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:
(b)the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:
(c)the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:
(d)the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:
(e)the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:
(f)the protection of historic heritage from inappropriate subdivision, use, and development:
(g)the protection of protected customary rights:
(h)the management of significant risks from natural hazards.

The site is not within the coastal environment and there are no wetlands, lakes or rivers adversely affected by the proposal. The site does not have any outstanding landscape values. There is no indigenous bush on the property. Whilst there may be a 'qualifying waterbody' requiring consideration of esplanade provisions, it is considered preferable to place more emphasis on preserving and/or enhancing the riparian margins than to provide for public access. There are no culturally significant areas on or near the application site, and no identified heritage values. There are no significant risks from natural hazards.

7 Other matters
(a)kaitiakitanga:
(aa) the ethic of stewardship:
(b)the efficient use and development of natural and physical resources:
(ba)the efficiency of the end use of energy:
(c)the maintenance and enhancement of amenity values:
(d)intrinsic values of ecosystems:
(e)[Repealed]
(f)maintenance and enhancement of the quality of the environment:
(g)any finite characteristics of natural and physical resources:
(h)the protection of the habitat of trout and salmon:
(i)the effects of climate change:
(j)the benefits to be derived from the use and development of renewable energy.

In regard to "other matters" (s7), I see (c) the maintenance and enhancement of amenity values; (d) intrinsic values of ecosystems; and (f) maintenance and enhancement of the quality of the environment as having relevance. The additional lot is large enough to provide for house sites and on-site services. The proposal represents the efficient use and development of resources. It has minimal, if any, adverse effect on amenity values or the intrinsic values of ecosystems.

8 Treaty of Waitangi
In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

I have not identified anything in the proposal that gives offence to, or is contrary to, s8.

10.0 CONCLUSION

The proposed subdivision is of a type and density considered consistent with the Operative District Plan, and more consistent than not with the objectives and policies of the Proposed District Plan.

No significant adverse effects will arise from the activity. There has been no need to consider alternatives. All effects can be appropriately and adequately avoided, remedied or mitigated such that the proposal will result in less than minor effects on the environment. No affected persons have been identified and limited notification is not required.

The relevant provisions of Part 2 of the Act have been addressed. The proposal is considered consistent with the objectives and policies of relevant planning provisions in National Policy Statements and the Regional Policy Statement.

It is requested that the Council give favourable consideration to the application and grant approval, subject to appropriate conditions, under delegated authority.

Lynley Newport Dated 22nd May 2026
Senior Planner
THOMSON SURVEY LTD

11.0 LIST OF APPENDICES

Appendix 1 Scheme Plan(s)

Appendix 2 Locality Plan

Appendix 3 Record of Title & Relevant Instruments

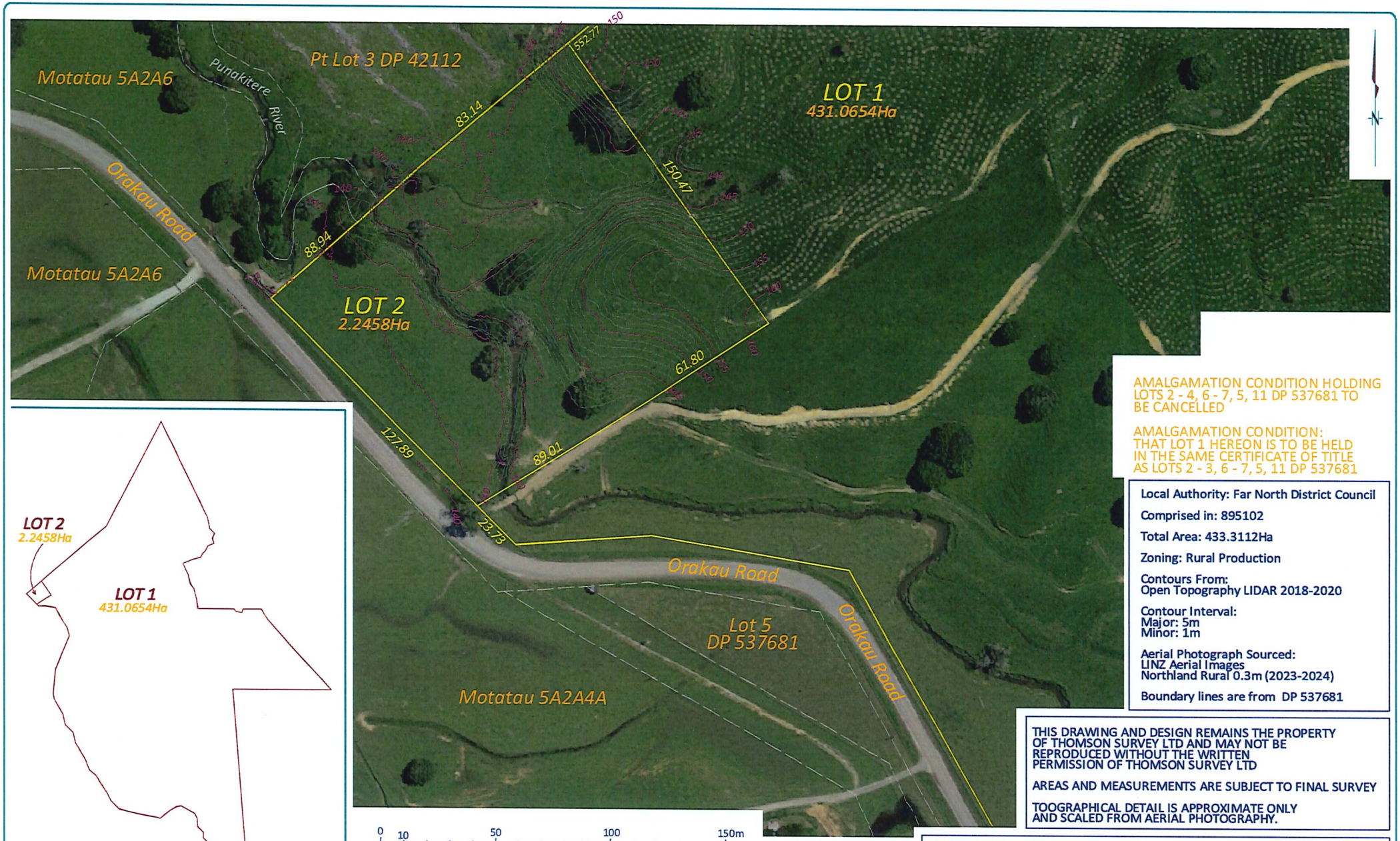
Appendix 4 RC 2190235-RMASUB and subsequent OBJ

Appendix 5 Civil Site Suitability Report

Appendix 6 Site Assessment Report

Appendix 1

Scheme Plan(s)



AMALGAMATION CONDITION HOLDING LOTS 2 - 4, 6 - 7, 5, 11 DP 537681 TO BE CANCELLED

AMALGAMATION CONDITION:
THAT LOT 1 HEREON IS TO BE HELD IN THE SAME CERTIFICATE OF TITLE AS LOTS 2 - 3, 6 - 7, 5, 11 DP 537681

Local Authority: Far North District Council

Comprised in: 895102

Total Area: 433.3112Ha

Zoning: Rural Production

Contours From:
Open Topography LIDAR 2018-2020

Contour Interval:
Major: 5m
Minor: 1m

Aerial Photograph Sourced:
LINZ Aerial Images
Northland Rural 0.3m (2023-2024)

Boundary lines are from DP 537681

AREAS AND MEASUREMENTS ARE SUBJECT TO FINAL SURVEY

TOOGRAPHICAL DETAIL IS APPROXIMATE ONLY AND SCALED FROM AERIAL PHOTOGRAPHY.

This plan and accompanying report(s) have been prepared for the purpose of obtaining a Resource Consent only and for no other purpose. Use of this plan and/or information on it for any other purpose is at the user's risk.

Version B

THOMSON SURVEY LIMITED
315 Kerikeri Rd
P.O. Box 372 Kerikeri
Email: kerikeri@tsurvey.co.nz
Ph: (09) 4077360
www.tsurvey.co.nz
REGISTERED SURVEYORS, PLANNERS & LAND DEVELOPMENT CONSULTANTS

PROPOSED SUBDIVISION OF LOT 4 DP 537681

ORAKAU ROAD, KAIKOHE

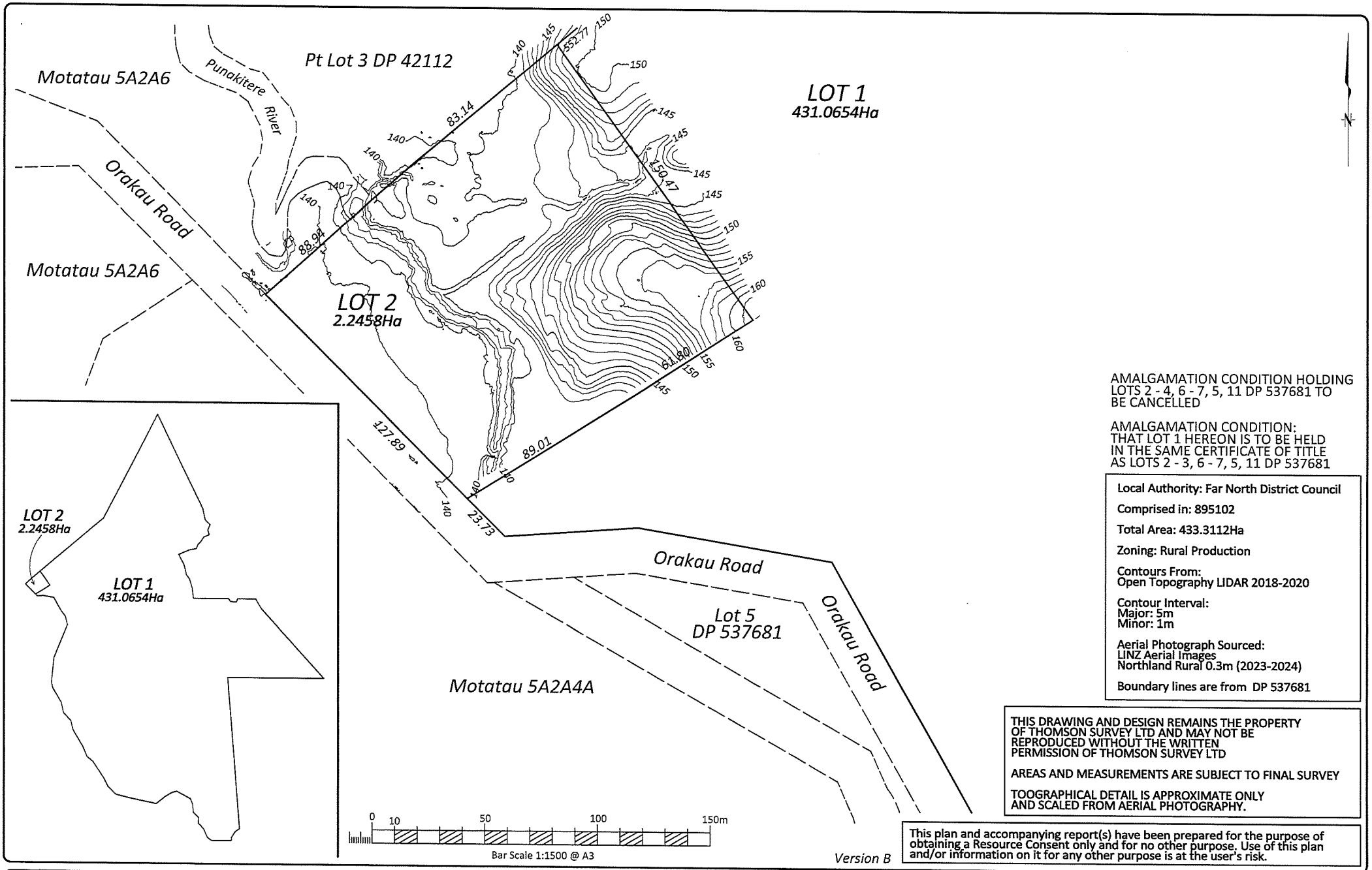
PREPARED FOR: TOKO PEKAMA

	Name	Date
Survey		
Design		
Drawn	EM	07.04.25
Approved		
Rev	KY	06.05.26

10749 Scheme 20260506

ORIGINAL SCALE 1:1500 SHEET SIZE A3

Surveyors Ref. No: 10749



AMALGAMATION CONDITION HOLDING
LOTS 2 - 4, 6 - 7, 5, 11 DP 537681 TO BE CANCELLED

AMALGAMATION CONDITION:
THAT LOT 1 HEREON IS TO BE HELD IN THE SAME CERTIFICATE OF TITLE AS LOTS 2 - 3, 6 - 7, 5, 11 DP 537681

Local Authority: Far North District Council

Comprised in: 895102

Total Area: 433.3112Ha

Zoning: Rural Production

Contours From:
Open Topography LIDAR 2018-2020

Contour Interval:
Major: 5m
Minor: 1m

Aerial Photograph Sourced:
LINZ Aerial Images
Northland Rural 0.3m (2023-2024)

Boundary lines are from DP 537681

AREAS AND MEASUREMENTS ARE SUBJECT TO FINAL SURVEY

TOOGRAPHICAL DETAIL IS APPROXIMATE ONLY AND SCALED FROM AERIAL PHOTOGRAPHY.

Version B

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REGISTERED SURVEYORS, PLANNERS & LAND DEVELOPMENT CONSULTANTS

PROPOSED SUBDIVISION OF LOT 4 DP 537681

ORAKAU ROAD, KAIKOHE

PREPARED FOR: TOKO PEKAMA

	Name	Date
Survey		
Design		
Drawn	EM	07.04.25
Approved		
Rev	KY	06.05.26

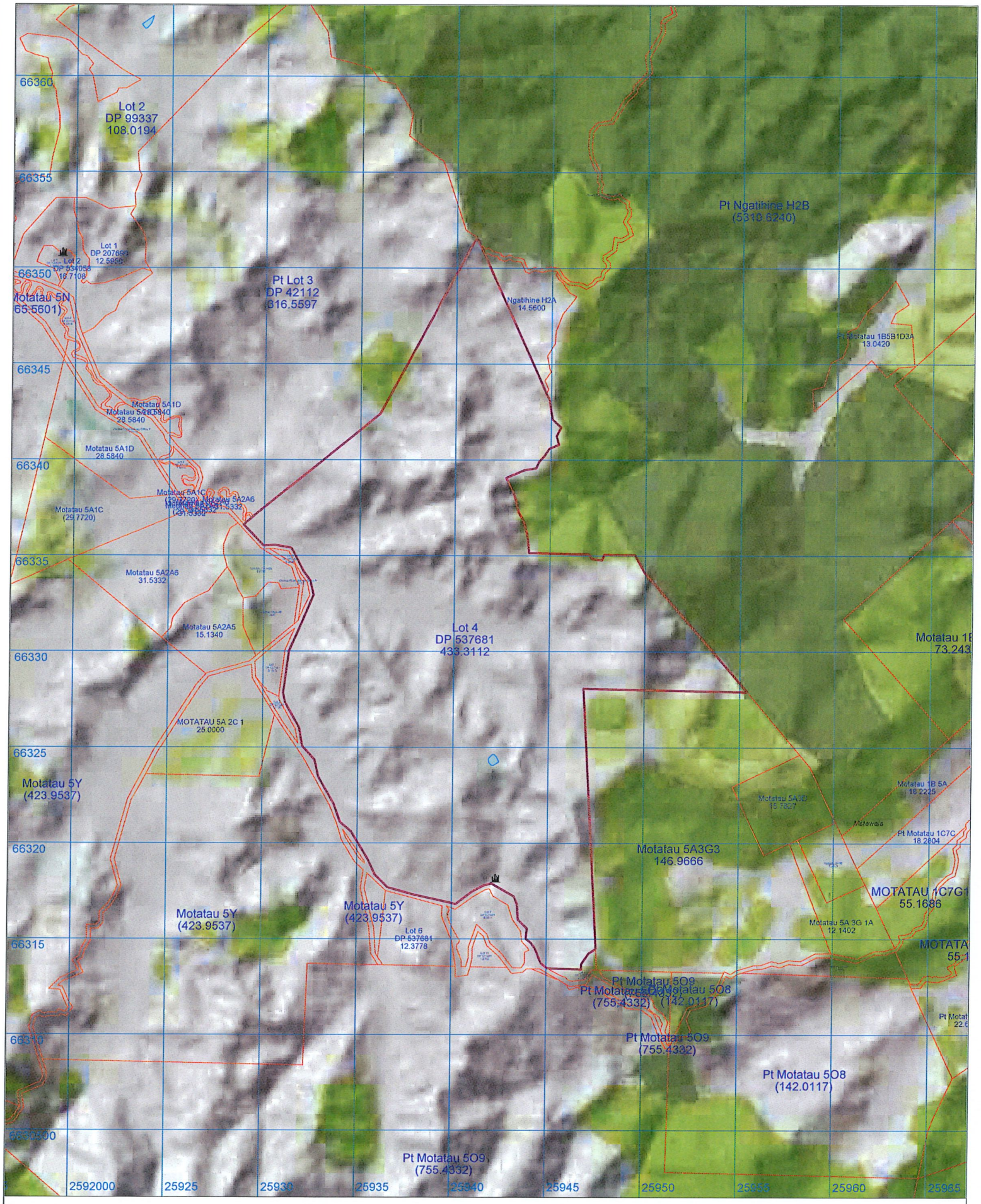
10749 Scheme 20260506

ORIGINAL SCALE: 1:1500
SHEET SIZE: A3

Surveyors Ref. No: 10749

Appendix 2

Locality Plan



QuickMap
Custom Software Ltd

0 250 500 750 1000 1250 1500 1750 2000 2250 2500 2750 3000m

Any person wishing to rely on the information shown on this map must independently verify the information

Scale 1:25000 Topographical and Cadastral map derived from LINZ data. Printed: 21-May-2026 11:46.

Appendix 3

Record of Title & Relevant Instruments

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**895102**
Land Registration District	**North Auckland**
Date Issued	17 March 2020

Prior References
NA95C/165

Estate	Fee Simple
Area	458.8982 hectares more or less
Legal Description	Lot 2-4, 6-7, 5, 11 Deposited Plan 537681
Registered Owners	

Jason and Penelope Bill Family Trustees Limited

Interests

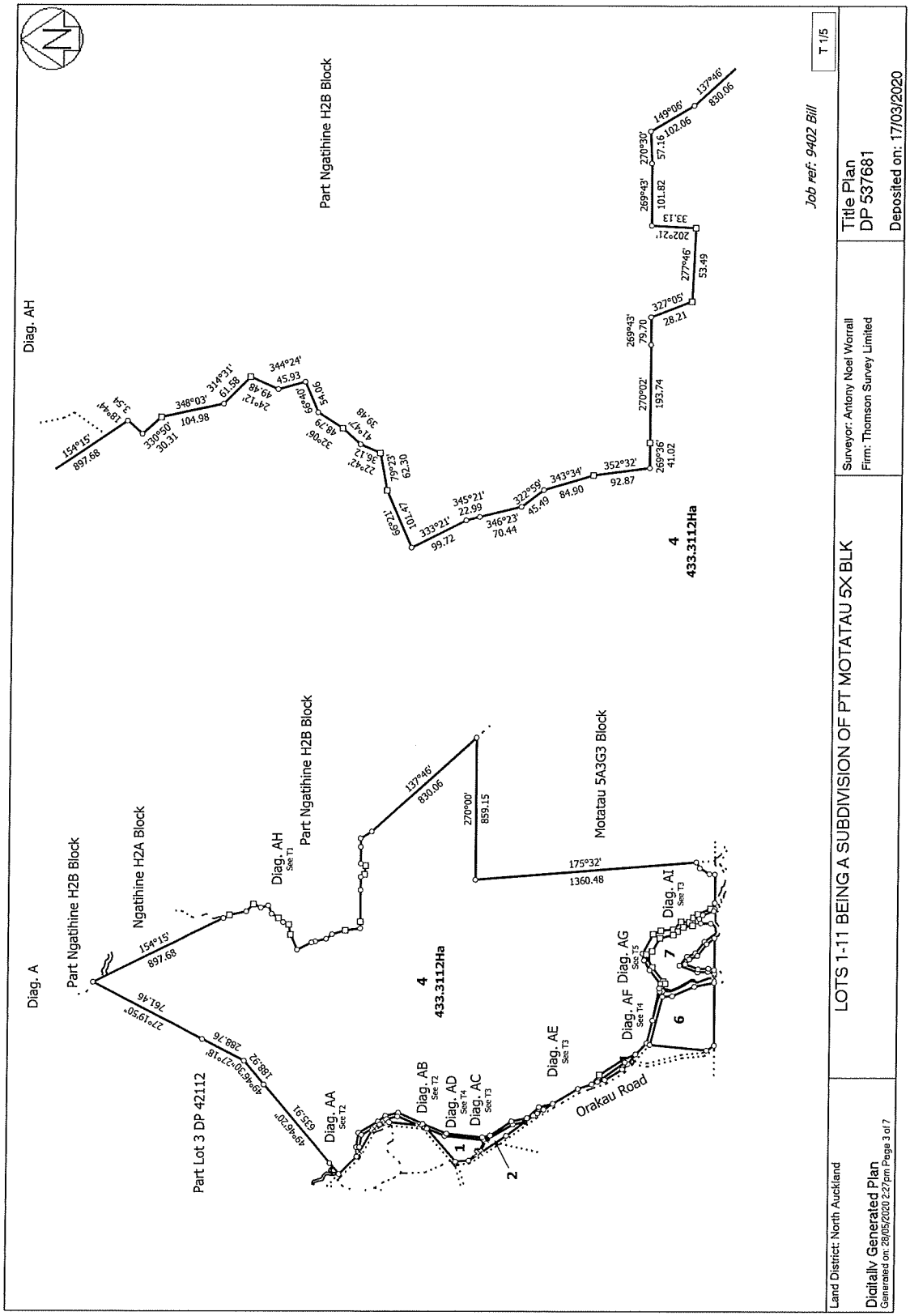
11006781.4 Mortgage to ASB Bank Limited - 4.4.2018 at 3:51 pm

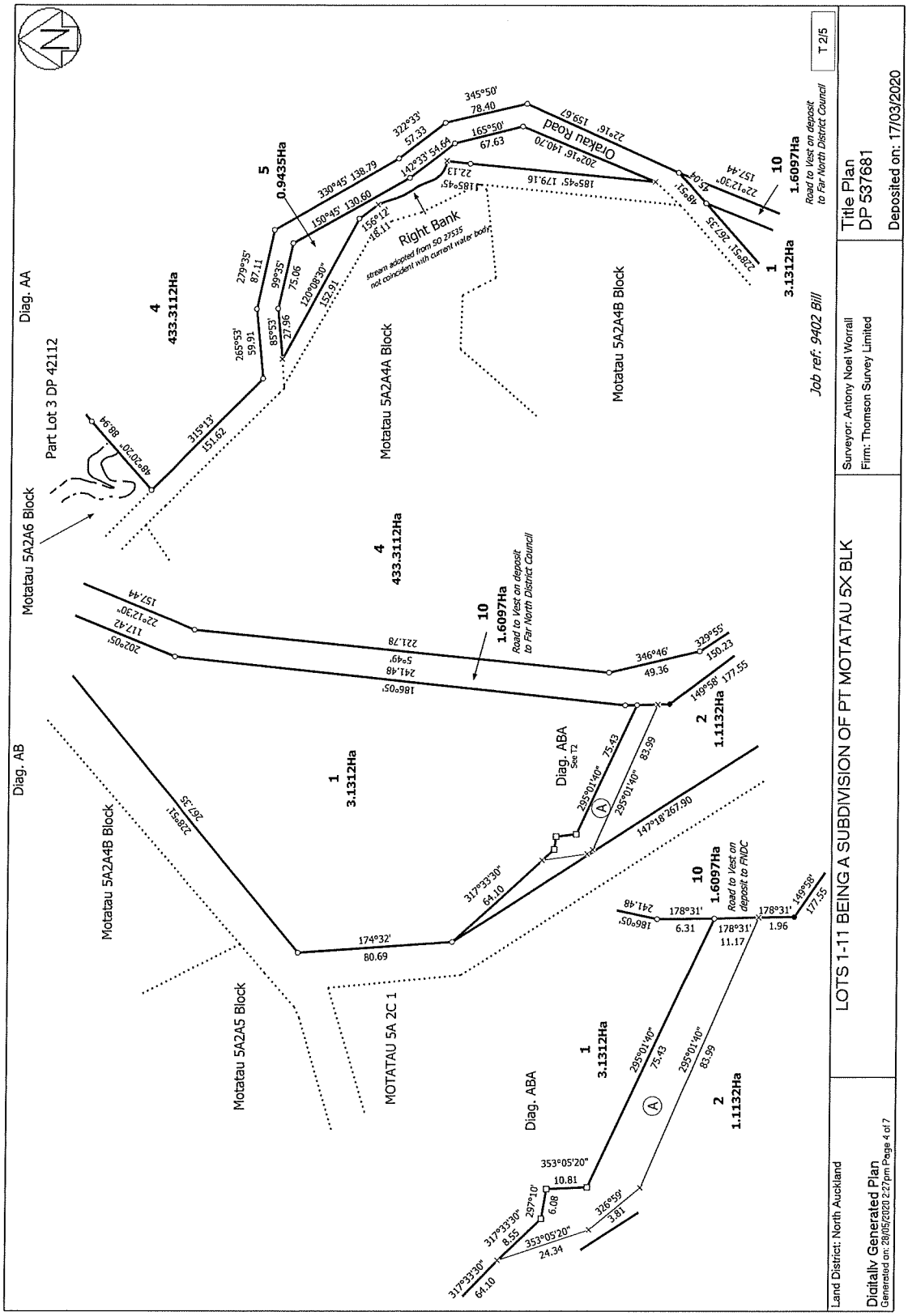
Subject to Section 241(2) Resource Management Act 1991 (affects DP 537681)

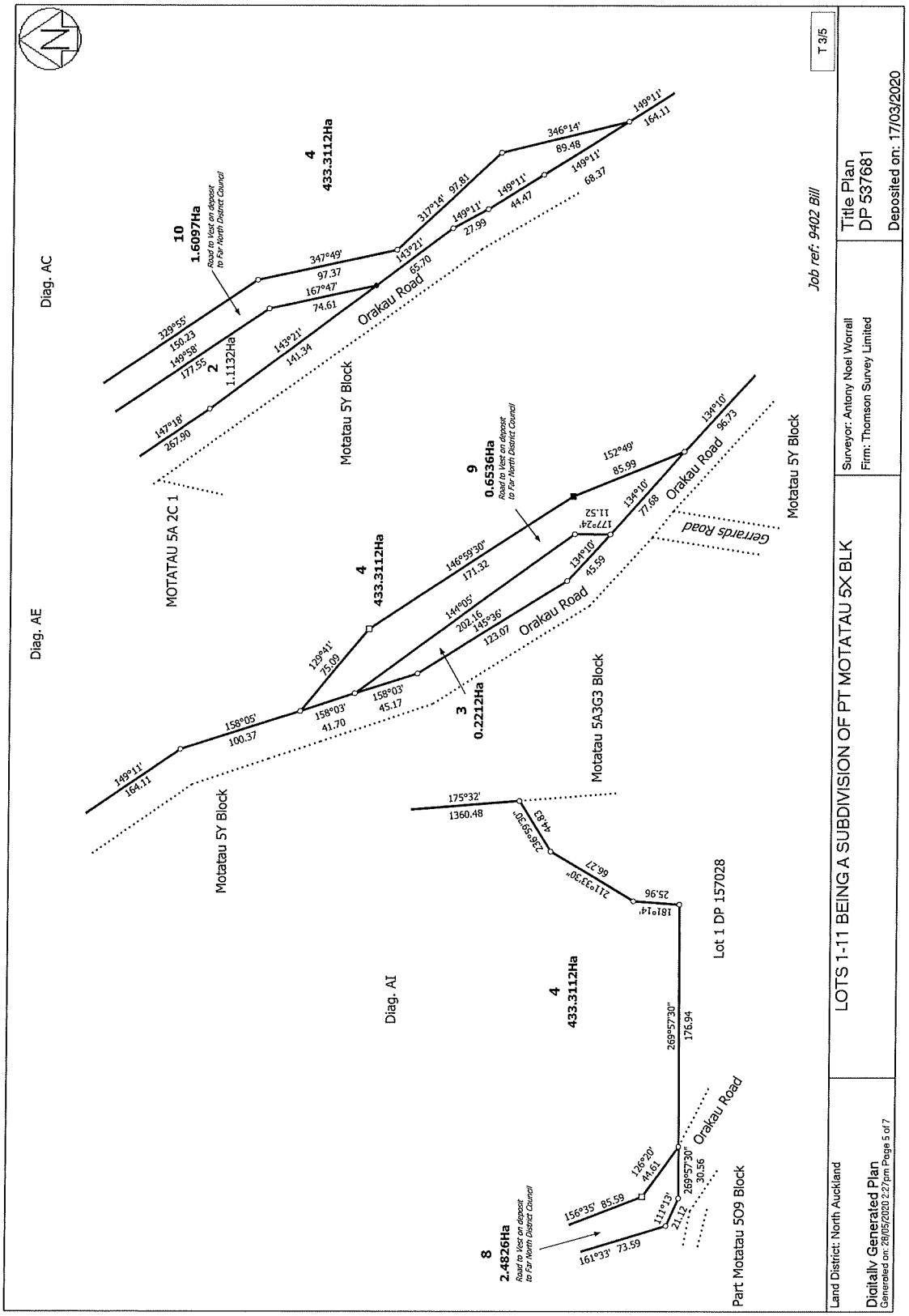
Subject to a right of way over part Lot 2 DP 537681 marked A on DP 537681 created by Easement Instrument 11684905.2 - 17.3.2020 at 2:18 pm

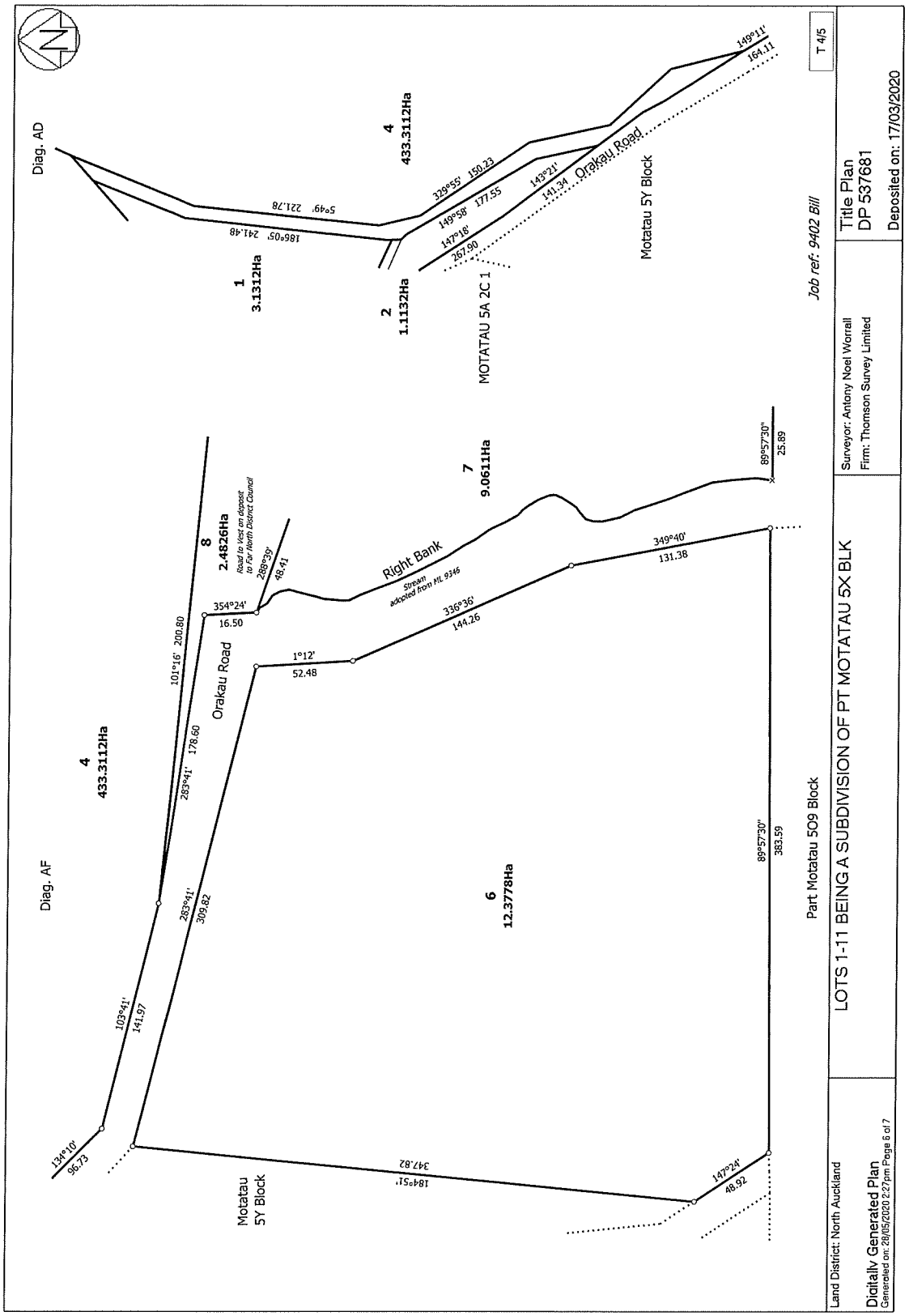
The easements created by Easement Instrument 11684905.2 are subject to Section 243 (a) Resource Management Act 1991

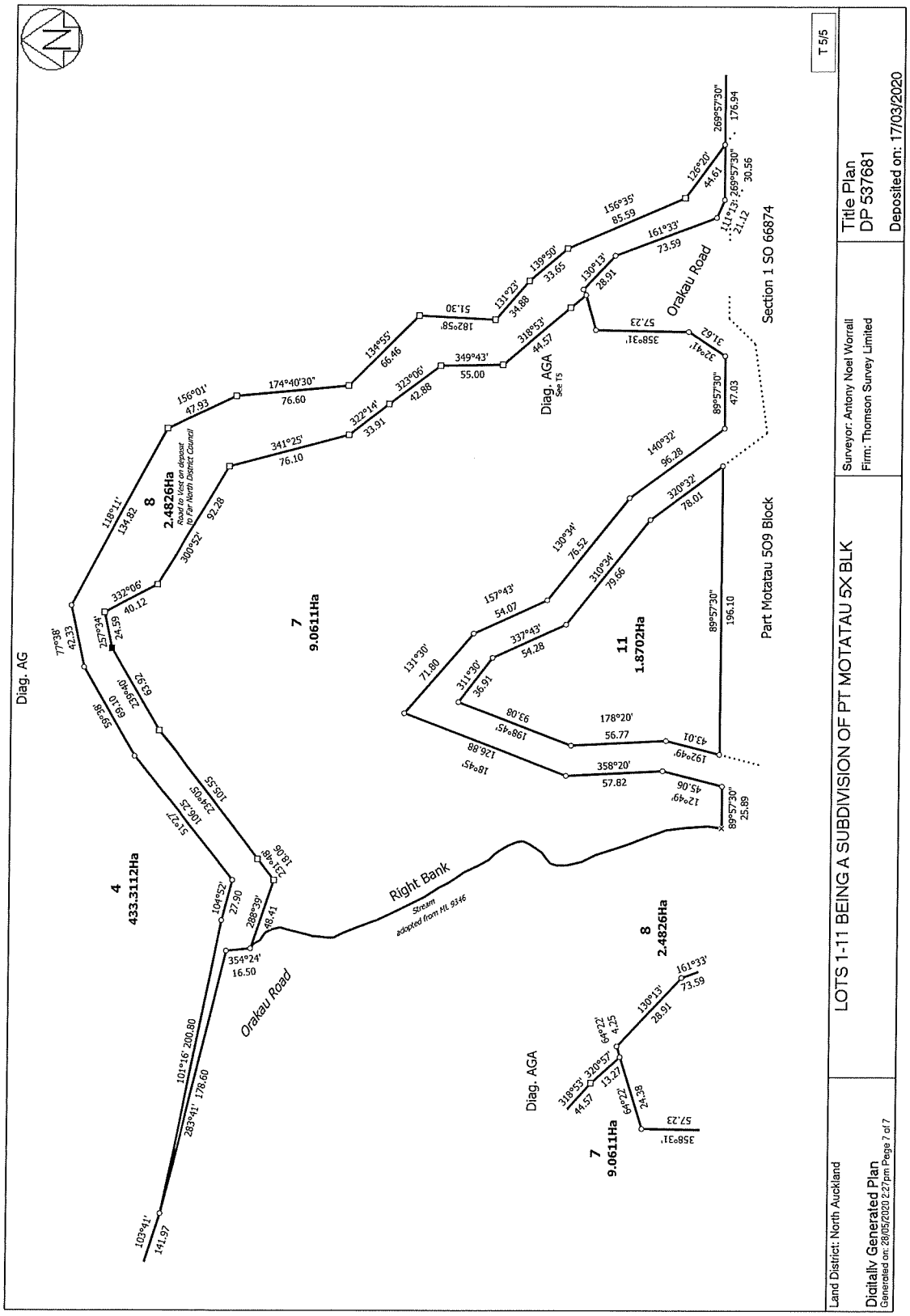
12733207.2 Lease Term commencing 27 May 2022 terminating 30 June 2039 Record of Title 1139681 issued - 2.6.2023 at 12:26 pm


Diag. AH
Part Ngatihine H2B Block
Job ref: 9402 Bill
T 1/5
Diag. A
Part Ngatihine H2B Block
Ngatihine H2A Block
Diag. AH See T1
Part Ngatihine H2B Block
Motatau 5A3G3 Block
Part Lot 3 DP 42112
Diag. AA See T2
Diag. AB See T2
Diag. AD See T4
Diag. AC See T3
Diag. AE See T3
Diag. AF See T4
Diag. AG See T5
Diag. AI See T3
Orakau Road
LOTS 1-11 BEING A SUBDIVISION OF PT MOTATAU 5X BLK
Surveyor: Antony Noel Worrall
Firm: Thomson Survey Limited
Title Plan
DP 537681
Deposited on: 17/03/2020
Land District: North Auckland
Digitally Generated Plan
Generated on: 28/05/2020 2:27pm Page 3 of 7


LOTS 1-11 BEING A SUBDIVISION OF PT MOTATAU 5X BLK
Title Plan
DP 537681
Deposited on: 17/03/2020
Surveyor: Antony Noel Worrall
Firm: Thomson Survey Limited
Job ref: 9402 Bill
T 2/5
Land District: North Auckland
Digitally Generated Plan
Generated on: 28/05/2020 2:27pm Page 4 of 7
Diag. AA
Diag. AB
Diag. ABA
See T2
Part Lot 3 DP 42112
Motatau 5A2A6 Block
Motatau 5A2A4A Block
Motatau 5A2A4B Block
Motatau 5A2A5 Block
MOTATAU 5A 2C 1
Okahu Road
Right Bank
stream adopted from SO 27535
not coincident with current water body
Road to Vest on deposit to Far North District Council
Road to Vest on deposit to FNDC
1 3.1312Ha
2 1.1132Ha
4 433.3112Ha
5 0.9435Ha
10 1.6097Ha


T 3/5
Diag. AC
Diag. AE
Diag. AI
Job ref: 9402 Bill
LOTS 1-11 BEING A SUBDIVISION OF PT MOTATAU 5X BLK
Land District: North Auckland
Digitally Generated Plan
Generated on: 28/05/2020 2:27 pm Page 5 of 7
Surveyor: Antony Noel Worrall
Firm: Thomson Survey Limited
Title Plan
DP 537681
Deposited on: 17/03/2020
Orakau Road
Motatau 5Y Block
Motatau 5A3G3 Block
Lot 1 DP 157028
Part Motatau 509 Block
MOTATAU 5A 2C 1
Gerrards Road
10
1.6097Ha
Road to Vest on deposit to Far North District Council
2
1.1132Ha
4
433.3112Ha
9
0.6536Ha
Road to Vest on deposit to Far North District Council
3
0.2212Ha
8
2.4826Ha
Road to Vest on deposit to Far North District Council


T 4/5
Diag. AD
4
433.3112Ha
329°55'
150.23
149°58'
177.55
147°18'
267.90
143°21'
141.34
149°11'
164.11
Orakau Road
Motatau 5Y Block
S049° 221.78
186°05' 241.48
1
3.1312Ha
2
1.1132Ha
MOTATAU 5A 2C 1
Job ref: 9402 Bill
Title Plan
DP 537681
Deposited on: 17/03/2020
Surveyor: Antony Noel Worrall
Firm: Thomson Survey Limited
LOTS 1-11 BEING A SUBDIVISION OF PT MOTATAU 5X BLK
Land District: North Auckland
Digitally Generated Plan
Generated on: 28/05/2020 2:27pm Page 6 of 7
Diag. AF
4
433.3112Ha
103°41'
141.97
134°10'
96.73
283°41'
309.82
283°41'
178.60
101°16'
200.80
Orakau Road
8
2.4826Ha
Road to Vest on deposit to Far North District Council
288°39'
48.41
354°24'
16.50
1°12'
52.48
Right Bank
Stream adopted from ML 9346
7
9.0611Ha
336°36'
144.26
349°40'
131.38
89°57'30"
25.89
89°57'30"
383.59
6
12.3778Ha
Part Motatau 509 Block
Motatau
5Y Block
184°51'
347.82
147°24'
48.92


T 5/5
LOTS 1-11 BEING A SUBDIVISION OF PT MOTATAU 5X BLK
Land District: North Auckland
Digitally Generated Plan
Generated on: 28/05/2020 2:27 pm Page 7 of 7
Surveyor: Antony Noel Worrall
Firm: Thomson Survey Limited
Title Plan
DP 537681
Deposited on: 17/03/2020
Section 1 SO 66874
Part Motatau 509 Block
Orakau Road
Right Bank
Stream
adopted from ML 9346
Diag. AG
Diag. AGA
See TS
4
433.3112Ha
7
9.0611Ha
8
2.4826Ha
Road to Vest on deposit to Far North District Council
11
1.8702Ha

View Instrument Details

Instrument No	11684905.2
Status	Registered
Date & Time Lodged	17 March 2020 14:18
Lodged By	Reihana, Ellenice Angela
Instrument Type	Easement Instrument

Affected Records of Title	Land District
895101	North Auckland
895102	North Auckland

Annexure Schedule Contains 1 Pages.

Grantor Certifications

I certify that I have the authority to act for the Grantor and that the party has the legal capacity to authorise me to lodge this instrument ☑

I certify that I have taken reasonable steps to confirm the identity of the person who gave me authority to lodge this instrument ☑

I certify that any statutory provisions specified by the Registrar for this class of instrument have been complied with or do not apply ☑

I certify that I hold evidence showing the truth of the certifications I have given and will retain that evidence for the prescribed period ☑

I certify that the Mortgagee under Mortgage 11006781.4 has consented to this transaction and I hold that consent ☑

Signature

Signed by Leon Garry Penney as Grantor Representative on 24/03/2020 12:05 PM

Grantee Certifications

I certify that I have the authority to act for the Grantee and that the party has the legal capacity to authorise me to lodge this instrument ☑

I certify that I have taken reasonable steps to confirm the identity of the person who gave me authority to lodge this instrument ☑

I certify that any statutory provisions specified by the Registrar for this class of instrument have been complied with or do not apply ☑

I certify that I hold evidence showing the truth of the certifications I have given and will retain that evidence for the prescribed period ☑

Signature

Signed by Leon Garry Penney as Grantee Representative on 24/03/2020 12:05 PM

***** End of Report *****

Approved for ADLS by Registrar-General of Land under No. 2018/6266

EASEMENT INSTRUMENT TO GRANT EASEMENT OR *PROFIT À PRENDRE*

Sections 109 Land Transfer Act 2017

Registrar-General of Land Approval 2018/6266 ADLS

Grantor

JASON AND PENELOPE BILL FAMILY TRUSTEES LIMITED

Grantee

JASON AND PENELOPE BILL FAMILY TRUSTEES LIMITED

Grant of Easement or *Profit à prendre*

The Grantor being the registered owner of the burdened land set out in Schedule A **grants to the Grantee** (and, if so stated, in gross) the easement(s) or *profit(s) à prendre* set out in Schedule A, with the rights and powers or provisions set out in the Annexure Schedule(s).

Schedule A *Continue in additional Annexure Schedule, if required*

Purpose (Nature and extent) of easement, or *profit*	Shown (plan reference)	Burdened Land (Record of Title)	Benefited Land (Record of Title) or in gross
Right of Way	A on DP 537681	Lot 2 DP 537681 CT 895102	Lot 1 DP 537681 CT 895101

Easements or *profits à prendre* rights and powers (including terms, covenants and conditions)

Delete phrases in [ ] and insert memorandum number as required; continue in additional Annexure Schedule, if required

Unless otherwise provided below, the rights and powers implied in specified classes of easement are those prescribed by the Land Transfer Regulations 2018 and/or Schedule 5 of the Property Law Act 2007

The implied rights and powers are hereby ~~[varied]~~ ~~[negatived]~~ ~~[added to]~~ or ~~[substituted]~~ by:

~~[Memorandum number , registered under section 209 of the Land Transfer Act 2017]~~

~~[the provisions set out in Annexure Schedule]~~

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
LEASEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **1139681**

Land Registration District **North Auckland**

Date Registered 02 June 2023 12:26 pm

Prior References

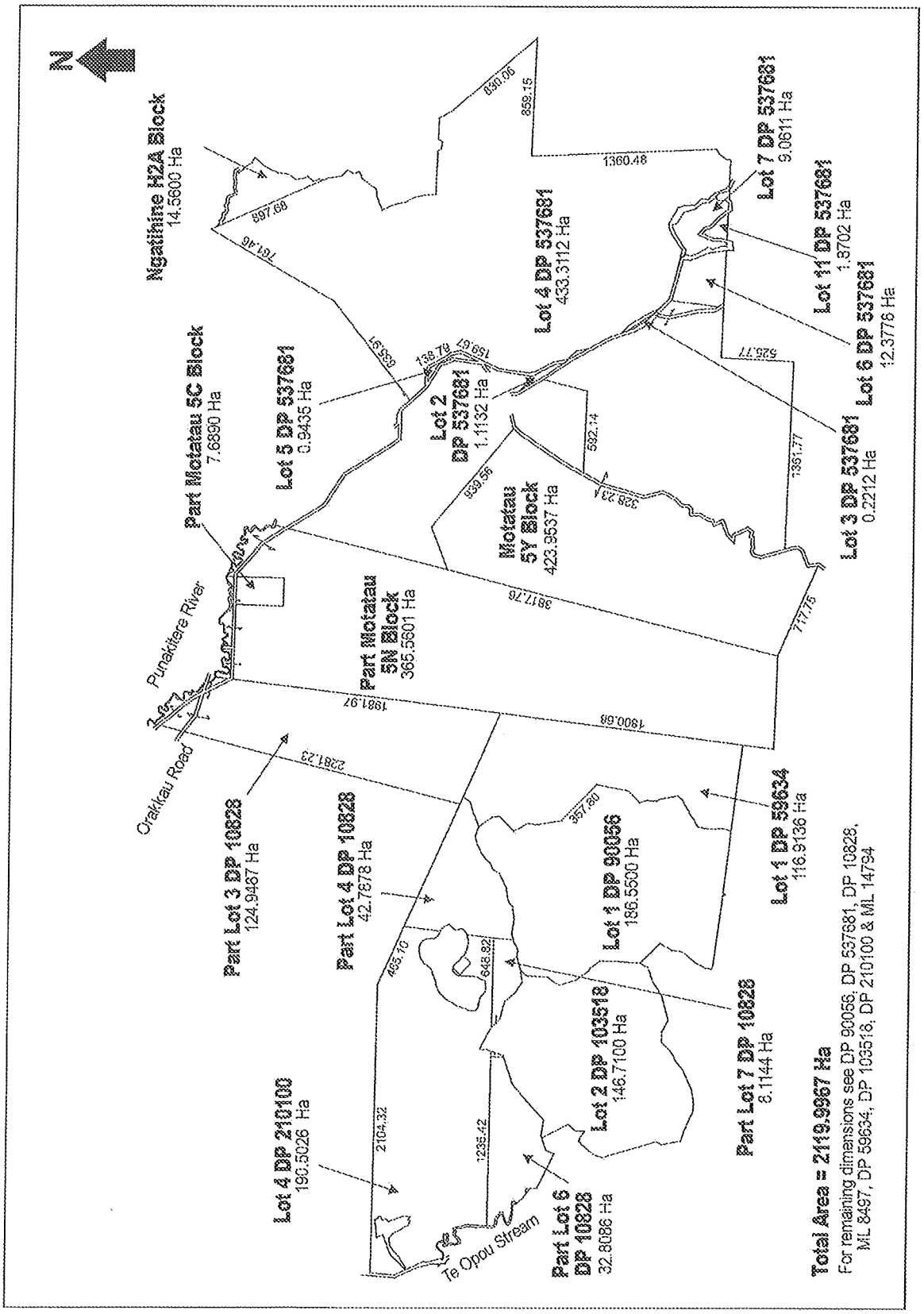
152948	152949	895102
NA22C/1114	NA40C/603	NA40C/604
NA40C/606	NA58B/239	NA58B/241
NA88C/958		

Estate	Leasehold	**Instrument**	L 12733207.2
Area	2119.9967 hectares more or less	**Term**	commencing 27 May 2022 terminating 30 June 2039
Legal Description	Part Lot 3-4 Deposited Plan 10828 and Part Motatau 5 N Block and Lot 1 Deposited Plan 59634 and Lot 1 Deposited Plan 90056 and Lot 2 Deposited Plan 103518 and Lot 4 Deposited Plan 210100 and Part Motatau 5C Block and Lot 2-7, 11 Deposited Plan 537681 and Part Lot 6-7 Deposited Plan 10828 and Motatau 5Y Block and Ngatihine H2A Block		

Registered Owners

Nateva Forests No.2 Limited

Interests


N
Ngatihine H2A Block
14.5600 Ha
Part Motatau 5C Block
7.6890 Ha
Lot 5 DP 537681
0.9435 Ha
Lot 2
DP 537681
1.1132 Ha
Lot 4 DP 537681
433.3112 Ha
Lot 7 DP 537681
9.0611 Ha
Lot 11 DP 537681
1.8702 Ha
Lot 6 DP 537681
12.3776 Ha
Lot 3 DP 537681
0.2212 Ha
Motatau
5Y Block
423.9537 Ha
Part Motatau
5N Block
365.5601 Ha
Punaktitere River
Crakkau Road
Part Lot 3 DP 10828
124.9467 Ha
Part Lot 4 DP 10828
42.7678 Ha
Lot 1 DP 90056
186.5500 Ha
Lot 1 DP 59634
116.9136 Ha
Lot 4 DP 210100
190.5026 Ha
Lot 2 DP 103518
146.7100 Ha
Part Lot 7 DP 10828
8.1144 Ha
Part Lot 6
DP 10828
32.8086 Ha
Te Opou Stream
Total Area = 2119.9967 Ha
For remaining dimensions see DP 90056, DP 537681, DP 10828,
ML 8497, DP 59634, DP 103518, DP 210100 & ML 14794

View Instrument Details

Instrument No	12733207.2
Status	Registered
Date & Time Lodged	02 June 2023 12:26
Lodged By	Cho, Hyung Jun
Instrument Type	Lease

Affected Records of Title	Land District
152948	North Auckland
152949	North Auckland
895102	North Auckland
NA22C/1114	North Auckland
NA40C/603	North Auckland
NA40C/604	North Auckland
NA40C/606	North Auckland
NA58B/239	North Auckland
NA58B/241	North Auckland
NA88C/958	North Auckland

Annexure Schedule Contains 17 Pages.

Lessor Certifications

I certify that I have the authority to act for the Lessor and that the party has the legal capacity to authorise me to lodge this instrument	☑
I certify that I have taken reasonable steps to confirm the identity of the person who gave me authority to lodge this instrument	☑
I certify that any statutory provisions specified by the Registrar for this class of instrument have been complied with or do not apply	☑
I certify that I hold evidence showing the truth of the certifications I have given and will retain that evidence for the prescribed period	☑
I certify that the Mortgagee under Mortgage 10811345.7 has consented to this transaction and I hold that consent	☑
I certify that the Mortgagee under Mortgage 11006781.4 has consented to this transaction and I hold that consent	☑

Signature

Signed by Dennis John McBrearty as Lessor Representative on 18/08/2023 11:55 AM

Lessee Certifications

I certify that I have the authority to act for the Lessee and that the party has the legal capacity to authorise me to lodge this instrument	☑
I certify that I have taken reasonable steps to confirm the identity of the person who gave me authority to lodge this instrument	☑
I certify that any statutory provisions specified by the Registrar for this class of instrument have been complied with or do not apply	☑
I certify that I hold evidence showing the truth of the certifications I have given and will retain that evidence for the prescribed period	☑

Signature

Signed by Hyung Jun Cho as Lessee Representative on 18/08/2023 12:46 PM

***** End of Report *****

Form 11

Lease instrument
(Section 91 Land Transfer Act 2017)

Record of Title (unique identifier)	All/part	Area/Description of part
See Annexure Schedule		

Lessor

Jason and Penelope Bill Family Trustees Limited

Lessee

New Zealand Carbon Farming (Forest Development) Limited

Estate or Interest Insert "fee simple"; "leasehold in lease number " etc.

Freehold Land

Lease Memorandum Number *(if applicable)*

Term

See Annexure Schedule

Rental

See Annexure Schedule

Lease and Terms of Lease *If required, set out the terms of lease in Annexure Schedules*

The Lessor leases to the Lessee and the Lessee accepts the lease of the above Estate or Interest in the land in the affected record of titles for the Term and at the Rental and on the Terms of Lease set out in the above Lease Memorandum or in the Annexure schedule(s) (if any)

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NEW ZEALAND **CARBON FARMING**

Carbon Lease

Parties and Signing

Lessor	**Lessee**
Jason and Penelope Bill Family Trustees Limited (Company Number 6289767)] Contact: Jason Bill Address: 102 Riverview Road, Kerikeri, 0230, New Zealand	New Zealand Carbon Farming (Forest Development) Limited (CN 7916237) of Auckland, New Zealand Contact: Scott Pollard, Head of Business Development Address: Baker Tilly Staples Rodway Auckland Limited, 9th Floor, 45 Queen Street, Auckland, 1010 , New Zealand
Signed for and on behalf of Jason and Penelope Bill Family Trustees Limited: Signature: Name: Jason Bill - Director Signature: Name: Penelope Bill - Director	**Signed** for and on behalf of New Zealand Carbon Farming (Forest Development) Limited: Signature: Name: Bruce Miller – Director
Dated: 17th August 2023	

Agreement

The Lessor leases the Land to the Lessee for the Term on the terms of lease set out in the Commercial Details and the Terms and Conditions.

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Commercial Details*

1. **Land (includes the "Forest")**	*Record of Title (unique identifier):*	*Legal Description:*	*Title Area (hectares):*	*Estate or Interest:*
	NA40C/606	Part Lot 4 Deposited Plan 10828	42.78	Freehold Land
	NA58B/241	Part Lot 3 Deposited Plan 10828	124.94	Freehold Land
	NA22C/1114	Motatau 5Y Block	423.95	Freehold Land
	152949	Part Motatau 5 N Block and Lot 1 Deposited Plan 59634	482.47	Freehold Land
	152948	Lot 1 Deposited Plan 90056 and Lot 2 Deposited Plan 103518 and Lot 4 Deposited Plan 210100	523.76	Freehold Land
	NA58B/239	Part Motatau 5C Block	7.69	Freehold Land
	895102	Lot 2-4, 6-7, 5, 11 Deposited Plan 537681	458.8982	Freehold Land
	NA40C/603	Part Lot 7 Deposited Plan 10828	8.1144	Freehold Land
	NA40C/604	Part Lot 6 Deposited Plan 10828	32.8086	Freehold Land
	NA88C/958	Ngatihine H2A Block	14.5600	Freehold Land
2. **Registered Hectares**	The amount of hectares comprising the areas described in the plan attached to this agreement that are approved by MPI as being eligible and registered as Post-1989 Forest Land, which is estimated at the date of registration of this Lease to be 777 hectares, which excludes the estimated 14 hectares in the Consent Request Area. The Consent Request Area will be added to the total estimated Registered Hectares should the Lessee obtain all required consents with the relevant authorities for planting 777 Ha + 14ha = 791 Ha The parties acknowledge and agree that the Lessee has no obligation to plant the Consent Request Area should all consents not be obtained by 16 June 2023, or a date selected at the sole discretion of the Lessee within three months of 16 June 2023.			
3. **Term**	From Commencement Date to the Termination Date. Commencement Date: 27 May 2022 Termination Date:30 June 2039, subject to amendment in accordance with clause 13.			

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		The parties will amend the Termination Date to be 30 June in the year after the year in which the Forest is determined to reach its Average Age in accordance with clause 14.2(a). The parties may by mutual agreement extend the Termination Date in accordance with clause 14.2(b). Planting Deadline: 30 October 2023 (see clause 13.7). Early Termination Date: 30 October 2023, if clause 13.7 applies.
4.	**Rent**	To be paid in accordance with the Operational Agreement.
5.	**Rent Payment Dates**	In accordance with the Operational Agreement.
6.	**Permitted Use**	The Lessee may only use the Land to plant the Forest on that portion of the Land identified in the Annexure Schedule, and to use the Forest which is eligible as CAAs (Averaging) for the purpose of receiving carbon credits under the ETS and not for any other purpose.
7.	**ETS and Planting Costs**	The Lessee will pay all costs and expenses associated with: • complying with and meeting all the monitoring, reporting and compliance obligations under the ETS arising in respect of the Registered Hectares during the Term; • planting and maintaining a Forest in accordance with the Planting Plan; and • registering the Forest in the ETS and transferring participation in the ETS from the Lessee to the Lessor at the expiry of the Term.
8.	**Lessee ETS Participation and Liability**	Subject to the Terms and Conditions and in return for the Lessor performing its obligations: • the Lessee is responsible for ETS obligations and liabilities relating to the Registered Hectares during the Term, and so it will make all decisions and exercise all rights relating to ETS participation; • the Lessee is entitled to all Carbon Credits arising in respect of the Forest during the Term and nothing expressed or implied in this Lease requires the Lessee to transfer or deliver any Carbon Credits to the Lessor at any time whether during or after the Term; and • the Lessee must do all things (including by surrender of Carbon Credits or otherwise) to ensure that the Lessor does not incur any ETS Surrender Liability relating to the Registered Hectares during the Term or at the expiry of the Term and shall indemnify the Lessor on the terms set out in the Terms and Conditions.
9.	**Lessor ETS Participation and Liability**	Subject to the Terms and Conditions: • the Lessor shall have no ETS obligations or liabilities relating to the Registered Hectares during the Term, provided that to the extent that any Surrender Liability results from the act or omission of the Lessor in breach of any provision of this Lease, then the Lessor is responsible for any liability arising; • the Lessor has no right, title or interest in or to any Carbon Credits arising in respect of the Forest during the Term; • participation in the ETS in relation to the Registered Hectares transfers from the Lessee to the Lessor at the end of the Term; • the Lessor shall have no Surrender Liability at the time participation in the ETS in respect of the Registered Hectares transfers to the Lessor at the end of the Term; and • upon transfer of participation, the Lessor is responsible for ETS obligations and liabilities (including Surrender Liability and any replanting obligations) in relation to the Registered Hectares; and

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	• for the avoidance of doubt, and without limiting the above, to the extent that the Lessor makes any election or exercises any rights as participant in relation to the Registered Hectares or otherwise under the Act after transfer of participation (e.g. changes the Forest to the "permanent forestry" category), then the Lessor is responsible for any associated ETS obligations and liabilities (including Surrender Liability), if any.
10. **Operational Agreement**	The operational agreement between the Lessor and the Lessee relating to this lease and dated 27 May 2022 as varied from time to time.
11. **Public Risk Insurance**	$10,000,000 plus fire supplement cover for a limit of not less than $500,000

*Terms defined in these Commercial Details have the defined meaning throughout this agreement

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TERMS AND CONDITIONS

1. DEFINITIONS AND INTERPRETATION

1.1 Definitions: In this agreement, unless the context indicates otherwise:

Act means the Climate Change Response Act 2002;

Authority means and includes every governmental, local, territorial and statutory authority having jurisdiction or authority over the Land or its use;

Average Age has the meaning set out in clause 14.2(a);

Averaging means the averaging accounting methodology provisions under Subpart 5 (Averaging Accounting Methodology) of Part 5 (Sector Specific Provisions: Forestry) of the Act, as currently set out at the date of this agreement in the Climate Change Response (Emissions Trading Reform) Amendment Act 2020;

Best Endeavours means that the party shall promptly and diligently use the resources and take the steps reasonably available to it which a prudent, determined and reasonable person, acting in its own interests with a genuine desire to achieve the intended contractual outcome, would take;

CAA means a "Carbon Accounting Area", and has the meaning given to it in section 4(1) of the Act;

CAA (Averaging) means a "carbon accounting area (averaging)" has the meaning given to it in section 4(1) of the Act;

Carbon Credit means a New Zealand unit (also known as a NZU) as defined in section 4(1) of the Act;

Carbon Stock means the total carbon removed from the atmosphere and stored in a Forest as determined under an approved methodology pursuant to the Act;

Carbon Stock Reduction means any reduction in or loss of Carbon Stock as determined under an approved methodology pursuant to the Act;

Consent Request Area means the area identified in the Planting Plan of this Lease which the Lessee is in the process of obtaining all required consents from the relevant authorities for planting;

Chargeholder means a mortgagee, encumbrancer or other chargeholder;

Chargeholder's Step-in Right means the exercise by the Chargeholder of the Lessee's rights, or performing any of the Lessee's obligations under this Lease and/or the Operational Agreement, as granted under any finance or security document or any other arrangement in favour of the Chargeholder;

Default Interest Rate means 12% per year;

Emissions Return means an emissions return as defined in section 4(1) of the Act, in respect of the Registered Hectares;

ETS means the New Zealand emissions trading scheme established under the Act;

Force Majeure Event means any circumstances beyond the reasonable control of a party to this Lease including, but not limited to, storm, tempest, flood, act of God, riot or civil disturbance, war, military action, insurrection, act of any governmental or military agency acting under actual or assumed authority, expropriation, delay in transport, failure of any source of supply, delivery disruption event affecting the Registry or ability to surrender Carbon Credits, acute or unusual material shortages, strike, lockout, labour disturbances or lawful or unlawful labour dispute, pandemic, epidemic or communicable disease outbreak and any other like cause (but, for the avoidance of doubt, an inability to meet a payment due by the Lessee under this Lease will in no circumstances be treated as a Force Majeure Event);

Forest means all trees standing on the Land, including indigenous forest species and exotic forest species and including all trees planted pursuant to clause 6.5, but excluding any Pre-1990 Forest Land;

GST means tax levied under the Goods and Services Tax Act 1985 and includes any substitute for that tax;

HWSA means the Health and Safety at Work Act 2015;

Insured Risks means loss, damage or destruction resulting from fire (excluding nuclear explosion or war), hail strike, malicious damage, impact, windstorm, earthquake, landslip, civil commotion or volcanic eruption;

Land means the land described in the Commercial Details and includes the Forest;

Legislative Change or Interpretation means:

(a) Any change to the Act or any other legislation;
(b) Any administrative act of the Government;
(c) Any judicial interpretation of the relevant legislation;

Lessee means the person specified as the Lessee in the Commercial Details and includes the Lessee's permitted assigns and the Lessee's agents, employees, contractors, invitees and successors;

Lessor means the person specified as the Lessor in the Commercial Details and includes the Lessor's assigns and the Lessor's employees, contractors, agents and successors;

Management Plan means a plan for managing the Forest prepared in accordance with standard industry practice, having regard to the Permitted Use;

MPI means the Ministry for Primary Industries, or such other Authority tasked with administering the ETS as it relates to the Registered Hectares from time to time;

Nominated Rotation Band means the Rotation Band for each CAA (Averaging) within the Forest as determined in accordance with the Act, or to the extent the Act allows for different Rotation Bands to be selected, as nominated by the Lessee in accordance with this Lease;

Operational Agreement means the operational agreement between the Lessor and the Lessee relating to this lease as described in the Commercial Details, to

which will be annexed the agreed forms of the Planting Plan and the Management Plan;

Outgoings means all rates, charges, levies, assessments, duties, impositions and fees from time to time chargeable to any Authority relating to the Land;

Person includes any individual company corporation, firm, club, joint venture, association of persons (corporate or not), organisation, trust, state or governmental agency (in each case whether or not having a separate legal personality);

Planting Completion means the stage in the execution of the planting of a Forest when the Planting Plan is complete and certified by the Lessee as being completed to a quality standard and specification set out in the Planting Plan and as required to register the Forest as one or more CAA(s) in the ETS, together with reasonable documentary evidence, which for the avoidance of doubt includes planting and releasing;

Planting Plan means a plan for planting the Forest which is eligible as Post-1989 Forest Land to be planted and identified in the plan attached to this Lease as an area to be planted and showing other relevant features of the Land, prepared or varied in accordance with the terms of the Operational Agreement and standard industry practice, having regard to the Permitted Use;

Post-1989 Forest Land has the meaning given to it in section 4(1) of the Act;

Pre-1990 Forest Land has the meaning given to it in section 4(1) of the Act;

Registration Date has the meaning given to it in clause 13.2(a);

Registered Hectares has the meaning given to it in clause 13.2(a);

Registry means any registry established in accordance with the Act, including for the purpose of surrender of Carbon Credits;

Related Company has the meaning given to that term in section 2(3) of the Companies Act 1993;

Related Party means in relation to a person that is a company or other body corporate, a Related Company of that person, and any person which controls that person, is controlled by that person, or is controlled by the same person that controls that person;

Rotation Band has meaning given (or to be given) to that term (or a similar term) in the Act, to describe a range of ages at which trees may be harvested and still be treated as trees of the same type for the purposes of Averaging and determining an Average Age for trees within a CAA (Averaging);

Surrender Liability means, in relation to the Registered Hectares, any liability to surrender any Carbon Credits to the Registry in accordance with the ETS, whether as a result of any Carbon Stock Reduction for any reason (including any forest loss event or harvest or otherwise clearing or cutting down trees in the Forest), failing to replant trees to the required standard, removing a CAA or removing land from a CAA, ceasing to be a participant in respect of all or part of a CAA, removing the participant from the register of participants, or otherwise;

Taonga has the same meaning as "taonga tuturu" has in the Protected Objects Act 1975;

Wahi Tapu means a place sacred to Maori in the traditional, spiritual, religious, ritual, or mythological sense; and

Working Day has the meaning given to it in the Property Law Act 2007.

1.2 **Interpretation:** In this agreement, unless the context indicates otherwise:

(a) expressions defined in the any part of this Lease have the defined meaning throughout this Lease;

(b) any obligation not to do anything includes an obligation not to suffer, permit or cause that thing to be done;

(c) where two or more persons are bound by a provision in this Lease, that provision will bind those persons jointly and each of them severally;

(d) terms which impose rights or obligations relating to a period beyond the Term survive expiry or termination of this Lease together with any other provisions of this Lease which are necessary to give effect to and enforce such provisions, and such terms are to remain enforceable to the fullest extent and notwithstanding any rule of law to the contrary;

(e) references to any party include that party's executors, administrators, successors and permitted assigns, agents, employees, contractors, and invitees;

(f) references to any law or statutory provision are to statutory provisions in force in New Zealand and include any statutory provision which amends or replaces it, and any by-law, regulation, order, statutory instrument, determination or subordinate legislation or Authority notice made under it;

(g) the term includes or including (or similar) is deemed to be followed by the words without limitation;

(h) words denoting the singular number shall include the plural and vice versa, words denoting natural persons shall include corporations and vice versa, words denoting any gender shall include all genders unless the context clearly requires otherwise;

(i) headings are for convenience only and shall not affect interpretation;

(j) a right granted or received may be exercised from time to time and at all times; and

(k) to the extent there is any inconsistency between the Commercial Details and the Terms and Conditions, the terms contained in the Commercial Details shall prevail.

2. **GRANT OF LEASE**

2.1 The Lessor leases to the Lessee and the Lessee takes the Land on lease for the Term for the Permitted Use.

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3. RENT AND GST

3.1 Rent: The Lessee must pay the Rent on the Rent Payment Dates without any deduction or set-off in accordance with the Operational Agreement.

3.2 GST: The Lessee must pay to the Lessor all GST (if any) payable on the Rent payable by the Lessee under this lease.

4. LESSOR'S COVENANTS

4.1 General: The Lessor covenants with the Lessee as set out in this clause 4.

4.2 Outgoings: The Lessor must promptly pay all the Outgoings without any deduction or set-off.

4.3 Lessor Responsible for Fencing: The Lessor shall be responsible for maintaining all fences and repairing any damage to all fencing (other than any fencing which is damaged by the Lessee or its employees, agents or invitees) at the Lessor's cost, including undertaking the following:

(a) repairing or replacing as necessary any parts of all fences and gates, other than as may become damaged as a result of a breach by the Lessee of any provision of this Lease;

(b) complying with all the provisions of the Fencing Act 1978; and

(c) keeping the Lessee safe and harmless and indemnified from and against any notices, issues or claims arising under or pursuant to the Fencing Act 1978.

4.4 Costs: The Lessor will pay all costs associated with or incurred under clause 4.

4.5 Law: Subject to clause 13.3, the Lessor must comply with all relevant laws affecting the Land or the Lessor's obligations under this Lease, including the HSWA. For the avoidance of doubt, it is the Lessee not the Lessor who is required to comply with the Act in relation to the Land during the Term, and who has obligations and is responsible for any liabilities arising under the Act during the Term.

4.6 Easements: The Lessor must perform the Lessor's obligations relating to any easement affecting the Land, including regarding any works or maintenance.

4.7 No Harvesting: The Lessor must not fell or harvest, or permit to be felled or harvested, any trees in the Forest during the Term.

4.8 CAA: The Lessor must not use the Land as CAA(s) (nor grant any rights to any Carbon Credits arising from the Land) other than to the Lessee in accordance with this Lease.

4.9 Insurance: The Lessor must not act, or omit to act, in any manner that would or would likely void the Lessee's insurance.

4.10 Vehicles and Equipment: The Lessor must ensure all vehicles and equipment operated by the Lessor have a safe and efficient means of preventing the escape of dangerous sparks or flames from the exhaust and carry at all times an efficient fire extinguisher.

4.11 Notice: The Lessor must use all reasonable endeavours to ensure that any third parties that have rights over the Land (existing prior to the date of registration of this Lease) are notified of the existence of this Lease and comply with the obligations in this clause 4, to the extent relevant.

4.12 Notification of Loss: The Lessor must notify the Lessee as soon as the Lessor becomes aware of any event that gives rise to a Carbon Stock Reduction (arising from any activity or event, other than the normal management and maintenance of the Forest) if that Carbon Stock Reduction has, or can reasonably be expected to have, a material significance for the Lessee, irrespective of whether that event is insured or not by the Lessor or the Lessee.

4.13 Risk: The Lessor will perform the covenants in this clause 4 at the Lessor's cost and enter the Land in accordance with clause 11 entirely at its own risk and releases the Lessee to the fullest extent permitted by law, from all claims and demands of any kind and liability which may arise directly or indirectly as a result of any accident, damage or injury occurring to any person or property on or about the Land.

4.14 Assistance: The Lessor must provide reasonable assistance as may be requested by the Lessee from time to time to assist the Lessee, in accordance with standard forest industry practice in New Zealand, to sustain a healthy forest for use as CAA(s).

4.15 No Interference: The Lessor must not unreasonably interfere with the exercise of the Lessee's rights and obligations under this Lease.

4.16 Third Parties: Except as otherwise specified in this Lease, the Lessor must not grant any rights to third parties over the Land that do not include covenants by any third party to perform the obligations in this clause 4.

4.17 Grazing Restrictions: The Lessor will not graze animals on any part of the Forest without the Lessee's prior written consent and will take all reasonable steps to prevent its animals from entering the Forest.

5. INDEMNITY

5.1 Lessor's Indemnity: The Lessor will indemnify the Lessee against all actions, claims, demands, proceedings, damages, costs, charges, expenses, losses and liabilities which the Lessee may incur by reason of the Lessor's breach of any of the covenants in clause 4, including any Surrender Liability incurred by the Lessee. To avoid doubt, if the Lessor carries out any harvesting or permits any harvesting to be carried out by any other person in breach of the terms of this Lease, or the Lessor's actions reduce the Carbon Stock in the Forest, the Lessee may incur Surrender Liability in connection with the Carbon Stock Reduction. The costs, expenses, damages or losses that the Lessee would be expected to

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incur would include the cost of Carbon Credits which the Lessee is liable to surrender, loss of future Carbon Credit entitlements, together with any administrative costs incurred in purchasing Carbon Credits.

5.2 **Lessee's Indemnity:** The Lessee will indemnify the Lessor against actions, claims, demands, proceedings, damages, costs, charges, expenses, losses and liabilities that the Lessor may incur by reason of:

(a) any breach of this Lease by the Lessee; or

(b) the Lessee's activities on the Land in relation to the Act during the Term.

5.3 **No Consequential Loss:** Nothing expressed or implied in this Lease will confer any liability on any party (referred to in this clause as the **First Party**) in respect of any:

(a) indirect, consequential or special loss, damage, cost or expense suffered or incurred by the other party as a direct or indirect result of a breach by the First Party of any of its obligations under this Lease; or

(b) loss, damage, cost or expense suffered or incurred by the other party, to the extent to which this results from any act or omission by that other party.

6. **USE OF LAND**

6.1 **Permitted Use:** The Lessee must only use the Land for the Permitted Use. For the avoidance of doubt, the Lessee must not fell or harvest trees on the Land other than as appropriate for the management of the Forest in accordance with standard forest industry practice having regard to the Permitted Use, including for the purpose of reinstatement following an insurance event.

6.2 **Lessor Covenants:** The Lessee must not do anything that prevents the Lessor from otherwise performing its covenants and obligations under clause 4.

6.3 **Accessway:** For the avoidance of doubt, the Lessee may use any accessway, roadway or track on the Land (existing at the Commencement Date or constructed during the Term) to access the Forest at any time for the purposes of the Permitted Use (including carrying out any work related to the assessment or measurement of Forest within the Land).

6.4 **Access:** In exercising its right of access, the Lessee must:

(a) cause as little damage as possible to the Land;

(b) cause as little disturbance as possible to the Lessor's use of the Land;

(c) repair any damage to the Land caused by the Lessee or its employees, agents or invitees and restore it to the previous condition; and

(d) ensure all vehicles and equipment operated by the Lessee or its contractors or employees have a safe and efficient means of preventing the escape of dangerous sparks or flames from the exhaust and carry at all times an efficient fire extinguisher.

6.5 **Planting of Forest:** The Lessee will:

(a) deliver to the Lessor a Planting Plan as a schedule to the Operational Agreement; and

(b) plant areas within the Land, which are expected to be eligible to be Post-1989 Forest Land, in accordance with the Planting Plan, with Pinus Radiata (or such other species as agreed by the Lessor in accordance with the Planting Plan):

(i) for the purposes of the Permitted Use; and

(ii) to the reasonable satisfaction of the Lessee.

If the Forest is not planted by the date specified in clause 6.8, the provisions in clauses 6.8 will apply and this lease will be modified accordingly.

6.6 **Management of the Forest:** During the Term, the Lessee will:

(a) take reasonable steps in accordance with standard forest industry practice in New Zealand to grow and sustain a healthy Forest in a way which is appropriate for the Forest and for its use as CAA(s) and consistent with the Operational Agreement (and the Management Plan which is a schedule to the Operational Agreement);

(b) comply with all relevant statutes, regulations and bylaws affecting the Land or the Lessee's obligations under this lease;

(c) ensure all vehicles and equipment operated by the Lessee have a safe and efficient means of preventing the escape of dangerous sparks or flames from the exhaust and carry at all times an efficient fire extinguisher; and

(d) otherwise continue to manage the Forest in a way which, in its sole discretion, is appropriate for that Forest.

For the avoidance of doubt, the Lessee may tend, trim and undertake other silviculture of the Forest as required for thinning, disease removal, windthrow, slips, creating and maintaining roads and tracks, and other maintenance of the Forest. Without limiting the above, if an insurance event occurs and a claim is made with the Lessee's insurer, the Lessee may take such steps as required by its insurer, including undertaking harvesting, recovery and replanting activities in the nature and to the extent required by the insurer.

6.7 **Costs:** The Lessee will pay all costs associated with the planting under clause 6.5 and incurred under clause 6.6, other than costs incurred in connection with the Lessor's activities on the Land, including under clauses 4.2, 4.3 and / or 11.

6.8 **Planting Delay:** The Rent payments and Term will not be affected by the timing of planting unless a planting delay is caused by the act or omission of the Lessor. If, due to the act or omission of the Lessor, the planting of any part of the Land is not completed by the Planting Deadline:

(a) the first Rent payment after that date in accordance with clause 3.1 will not be payable until 30 June in the year after the year in which the planting of the Land is completed; and

(b) the Termination Date will be extended:

(i) to 30 June in the year 16 years after the year in which the planting of the Land is completed, if the

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Termination Date is not varied pursuant to clause 14.2(a); or

(ii) pursuant to clause 14.2(a), if the Termination Date is varied pursuant to clause 14.2(a),

and all subsequent Rent payments will be amended accordingly.

6.9 Wahi Tapu:

(a) The Lessee shall preserve and safeguard all Wahi Tapu in or on the Land the existence and location of which have been disclosed.

(b) The Lessee shall preserve and safeguard Wahi Tapu which is discovered on the Land in the course of the Lessee's operations on the Land.

6.10 Nga Taonga-O-Nga Tupuna: Subject to the Protected Objects Act 1975, if during the Term any Taonga is discovered by the Lessee or its employees, contractors, agents, licensees or other invitees, the Lessee shall take all reasonable practicable steps to safeguard the same, and will immediately notify the Lessor and will comply with the Lessor's reasonable directions as to the disposal of the same.

7. DEFAULT INTEREST

7.1 If the Lessee fails to pay the Rent or any other money payable under this Lease for 10 Working Days after the due date for payment or the date of the Lessor's demand (if there is no due date) then the Lessee must pay on demand default interest on the money due but unpaid from the due date or the date of the Lessor's demand (as the case may be) down to the date of payment. Default interest will be calculated at the Default Interest Rate (after as well as before judgment).

8. COSTS

8.1 The Lessee must pay to the Lessor on demand all costs, charges and expenses for which the Lessor becomes liable as a result of the Lessee's breach of any of the terms of this Lease (including reasonable legal costs and expenses on a solicitor/own client basis).

9. INSURANCE

9.1 Insurance: Subject to clauses 9.2, 9.3 and 9.4, insurance of the Forest is a matter for the Lessor and Lessee to make their own arrangements for their respective interests at their own cost.

9.2 Lessee Insurance: The Lessee must at all times during the Term insure and keep the Forest insured in the Lessee's name for any Surrender Liability and the Lessee's other interests, including replanting costs and loss of future Carbon Credits, to a reasonable insurable value (subject to relevant policy limits, sub-limits, deductibles and other terms and conditions), against the Insured Risks. All insurance proceeds received in respect of this insurance are the sole and absolute property of the Lessee, provided that the Lessee must use the proceeds of any insurance claim to replant a similar Forest in the manner required by the Act and any relevant insurance policy so as not to incur any Surrender Liability, unless otherwise agreed by the Lessor.

9.3 Public Risk Insurance: The parties must each keep current throughout the Term a public risk insurance policy for their own rights and interests applicable to the Forest, the Land and the activities carried on, in or from the Land by the Lessee for the amount specified in the Commercial Details (being the amount which may be paid out arising from any single accident or event).

9.4 Evidence of Insurance: Each party must produce to the other on demand copies of all the insurance policies required to be taken out by that party.

10. ASSIGNMENT

10.1 No Assignment: Subject to clause 10.3, neither party shall have the power to assign or transfer all or any of its rights or obligations under this Lease without the prior written consent of the other party (**Consenting Party**), which consent shall not be unreasonably withheld or delayed if the party proposing the assignment or transfer (**Assignor**) provides the Consenting Party with a deed of covenant in accordance with clause 10.4 and such written evidence as reasonably required by the Lessor which demonstrates to the reasonable satisfaction of the Lessor that the proposed assignee or transferee (as the case may be) is solvent and has the ability to comply with the requirements of the Assignor under this Lease.

10.2 Best Endeavours: The Consenting Party will use its Best Endeavours to respond to any request for consent in accordance with clause 10.1 within 10 Working Days.

10.3 Land Sale: The Lessor may sell the Land without requiring the Lessee's consent. By virtue of this Lease being registered against the Land, the Lessor's interest in this Lease will transfer to that purchaser automatically.

10.4 Deed of Covenant: If any party assigns or transfers any of its rights or obligations under this Lease in accordance with this clause 10, the Assignor must procure that the relevant assignee or transferee enters into a deed in a form reasonably acceptable to the Consenting Party under which that person covenants to comply with all of its obligations under this Lease and agrees to all terms of this Lease.

10.5 Security Interest: The Lessee may grant a mortgage, encumbrance, charge, covenant or any other interest over this Lease (including any record of title created for the leasehold estate created by the registration of this Lease) to any person and the Lessor will not take any action to prevent such registration.

11. LESSOR'S RIGHTS

11.1 The Lessor may, with all necessary equipment, enter the Land at any time and without notice to the Lessee (provided that in doing so the Lessor complies at all times

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with all obligations under this lease, including its obligations under clause 4). Without limiting the above, the Lessor may:

(a) **Perform Obligations:** perform the Lessor's obligations and covenants in clause 4; and

(b) **Compliance with Statutes etc:** carry out any works to comply with any statutes, regulations, by-laws, ordinances, orders, proclamations, requirements of or notices by any Authority.

12. DEFAULT

12.1 Default Events: Subject to clauses 12.3 and 12.4, the Lessor may cancel this Lease by providing notice of cancellation to the Lessee if:

(a) the Rent is in arrears for 10 Working Days after the due date and the Lessee has failed to remedy that breach within 10 Working Days after service on the Lessee and any Chargeholder having an interest registered on the leasehold title created by this Lease of a notice strictly in accordance with section 245 of the Property Law Act 2007;

(b) the Lessee fails to observe or perform any obligation under this Lease (other than the covenant to pay rent) and the Lessee has failed to remedy that breach within the period specified in a notice served on the Lessee and any Chargeholder having an interest registered on the leasehold title created by this Lease in accordance with section 246 of the Property Law Act 2007, such period to not be less than 40 Working Days (being a reasonable period of time); or

(c) the Lessee:

(i) goes into liquidation (other than voluntary liquidation for the purpose of reconstruction or amalgamation approved in writing by the Lessor);

(ii) has a receiver, manager or receiver and manager appointed relating to any of the Lessee's assets; or

(iii) is removed from the New Zealand Companies register (other than as part of an amalgamation where the Lessee is one of the companies being amalgamated),

and the Chargeholder has failed to exercise the Chargeholder's Step-In Right within the period specified in a notice served on the Lessee and any Chargeholder having an interest registered on the leasehold title created by this lease in accordance with section 246 of the Property Law Act 2007, such period to not be less than 10 Working Days (being a reasonable period of time),

in which event:

(d) the Lessor may, pursuant to clause 13.4, in the name of the Lessee:

(i) apply to transfer participation in the ETS to the Lessor ; and

(ii) file a final Emissions Return at the time and in the form required under the Act.

12.2 Failure to comply with the notice provision: Failure to comply with the notice requirements in clauses 12.1(a) - (c) will result in the notice of termination of the lease having no effect.

12.3 Step-In Rights - Chargeholder: The Lessor acknowledges that:

(a) the Lessee has granted or may grant a security interest or other interest as described in clause 10.5 over this Lease (**Security Interest**) in favour of a Chargeholder that amongst other things, upon the occurrence of any of the events set out in clauses 12.1(a) - (c), provides or will provide the Chargeholder with the ability (at its option) to exercise the Chargeholder's Step-in Rights in respect of this Lease and the Operational Agreement;

(b) if the Chargeholder gives written notice to the Lessor that it is exercising a Chargeholder's Step-in Right in respect of this Lease and the Operational Agreement within the relevant period specified in clauses 12.1(a) – (c), the Lease and the Operational Agreement will remain in full force and effect and the Chargeholder will be entitled to exercise and enforce all rights, powers, discretion and remedies and perform all obligations of the Lessee under or in connection with this Lease and the Operational Agreement (for the avoidance of doubt, this will provide the Chargeholder with the right to remedy any default of the Lessee) and where that default is not capable of remedy, the Chargeholder's confirmation that it will perform the Lessee's obligations under this Lease and the Operational Agreement will be sufficient to remedy that breach;

(c) if the Chargeholder gives notice (at its sole discretion) exercising a Chargeholder's Step-in Right, then the Lessor will not exercise any right of cancellation in respect of the default giving rise to that event; and

(d) if required by the Chargeholder, the Lessor will enter into a deed of novation pursuant to which the Chargeholder agrees to assume all rights and liabilities of the Lessee under this Lease and the Operational Agreement from the date of exercise of the Chargeholder's Step-in Right as if it were the original party to this Lease and the Operational Agreement in place of the Lessee and otherwise on terms reasonably acceptable to the parties.

12.4 Power of Sale – Chargeholder: The Lessor and Lessee acknowledge and agree that any Security Interest in favour of a Chargeholder, amongst other things, upon the occurrence of any of the events set out in clauses 12.1(a) – (c), provides or will provide a Chargeholder with the ability (at its option) to exercise a power of sale in respect of this Lease. The Chargeholder may, subject to the terms of the relevant Security Interest and clause 10 of this Lease (assignment), elect by notice in writing to the Lessor in connection with its exercise of its power of sale to novate the Lessee's rights and liabilities under this Lease on its then current terms.

12.5 Contracts Privity: The parties agree that clauses 12.3 and 12.4 confer a benefit on the Chargeholder (and any

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receiver appointed by the Chargeholder) for the purposes of the Contracts and Commercial Law Act 2017 and as a consequence the Chargeholder (or its receiver) is entitled to enforce the benefit of clauses 12.3 and 12.4 against the Lessor.

13. ETS AND CARBON CREDITS

13.1 Carbon Accounting: The Lessor:

(a) warrants that as at the Commencement Date:
  (i) no application has been or will be made by it to register any part of the Land or Forest as a CAA; and
  (ii) no approval has been or will be given to any third party to register any part of the Land or Forest as a CAA or in relation to the right to receive any carbon benefit arising from the Land or Forest,
  (for the avoidance of doubt, this warranty does not extend to any registration for the purpose of claiming entitlements for any trees on the Land planted before 1 January 1990);

(b) consents to the registration of:
  (i) the Lessee as a Post-1989 Forest Land participant under the Act and to the Lessee having all rights as a Post-1989 Forest Land participant under the Act in relation to what are to be the Registered Hectares; and
  (ii) the registration of all eligible parts of the Forest as CAAs (Averaging);

(c) consents to the de-registration of the Forest from the ETS, or the Lessee as a participant under the Act in accordance with Section 58 of the Act, at any time or times during the Term provided that the Lessee meets any Surrender Liability in respect of the de-registration by any means permitted by law and the Lessee promptly re-registers in accordance with Section 57 of the Act after each de-registration;

(d) consents, subject to clause 13.2(c), to the Lessee managing all ETS rights and obligations as Post-1989 Forest Land participant under the Act in relation to the Registered Hectares, including making any election or exercising any rights as Post-1989 Forest Land participant under the Act without further reference to the Lessor (which may include the Lessee taking advantage of any opportunities under the Act which are available to it as such a participant and/or managing, satisfying or offsetting its participant obligations or liabilities under the Act) and, to the extent that the Lessor's express consent is required under the Act for any reason from time to time, the Lessor hereby gives that consent and the Lessor must do all things and execute all documents or approvals reasonably required to give effect to such an election or exercise of such rights, provided that the Lessee must not change the ETS participation in relation to any or all of the Registered Hectares to 'permanent forestry' unless the Lessor and Lessee agree in writing; and

(e) unconditionally and irrevocably appoints the Lessee as its attorney to sign all documentation and instruments (including notices, Emissions Returns and interested party consent forms), and do all other acts, necessary to complete the registrations and filings referred to in 13.1(b), (c) and (d), 13.2 and 13.4. For the avoidance of doubt, the parties acknowledge that in accordance with sections 21(2) of the Property Law Act 2007 and section 181(3) of the Companies Act 1993 this irrevocable power of attorney is exercisable by the Lessee notwithstanding the Lessor being placed into receivership or in liquidation.

13.2 Lessee will Register:

(a) The Lessee will as soon as practicable after registration of this lease and after Planting Completion use its Best Endeavours to register as first rotation CAA(s) (Averaging) under the Act as much of the Land as is eligible. As soon as that registration is completed and agreed by the Lessee, the Lessee will advise the Lessor of the date of registration (**Registration Date**) and the total number of hectares that have been registered as CAA(s) under the Act (**Registered Hectares**).

(b) The Lessee must use its Best Endeavours to maximise the area of Registered Hectares in respect of the Land, having regard to standard forest industry practice and the areas actually planted. However, the parties acknowledge and agree that the ultimate decision of whether any Land is eligible to be post-1989 forest land (averaging accounting) under the ETS is with MPI and is not within the Lessee's control. For that reason, the Lessee cannot and does not give any warranty about the area of any Land which may be eligible to become Registered Hectares for the purposes of this Lease.

(c) In performing its obligations under clauses 13.2(a) and (b), the Lessee must elect to:
  (i) register eligible parts of the Forest as CAA(s) (Averaging), to the extent that the Act permits the relevant parts of the Forest to be registered as CAA(s) (Averaging) and, unless the Rotation Band is determined by the Act, select and assume for the purposes of this Lease a Rotation Band which assumes the Forest will be harvested at or about age 28 (**Nominated Rotation Band**); or
  (ii) if the Lessee is ready to register the eligible parts of the Forest as CAA(s) before the Act permits such eligible parts of the Forest to be registered as CAA (Averaging), register eligible parts of the Forest as CAA(s) under the Act and then the Lessee must make any available election to change the registration to CAA (Averaging) as soon as practicable in accordance with the provisions of the Act and in connection with that election select the Nominated Rotation Band.

13.3 ETS Administration: The Lessee shall be responsible for complying with and meeting all of the monitoring, reporting and compliance obligations and liabilities under the Act during the Term, including meeting any Surrender

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Liability (whether by way of surrender of Carbon Credits or otherwise) and paying all related ETS costs. Without limiting the forgoing, the parties acknowledge and agree that Lessee may meet any Surrender Liability for which it is responsible under this Lease by planting a compliant offset or carbon equivalent forest (that is, replanting forests on other sites to avoid or satisfy any Surrender Liability) if the Act allows or satisfy any Surrender Liability in any way that is allowed following any Legislative Change. The Lessor shall have no such obligations or liabilities in relation to the Registered Hectares pursuant to the Act during the Term, provided that to the extent that any Surrender Liability results from the act or omission of the Lessor in breach of any provision of this Lease at any time, then the Lessor shall be responsible for any liability arising. The Lessor must not do anything, execute any documents or exercise any rights at any time during or after the Term, including under the Act, in a manner which is inconsistent with the terms of this lease and/or which may result in any person incurring any liability under the Act.

13.4 Transfer of Participation: On the earlier of:

(a) the date 20 days before the Termination Date;

(b) the date on which the Lessor has given written notice to the Lessee cancelling this Lease in accordance with clauses 12.1 – 12.3

(Transfer Date), the:

(c) Lessee and Lessor must apply to transfer participation in the ETS to the Lessor;

(d) Lessee must provide evidence to the Lessor that the application under clause 13.4(c) has been made; and

(e) Lessee must file a final Emissions Return and any other documentation required under the ETS at the time, and in the form, required under the ETS,

and each party must do all things and execute all documents reasonably required to effect the transfer of participation in the ETS to the Lessor and give effect to the provisions and intent of this clause 13.4. Upon transfer of participation, the Lessor becomes the participant in accordance with section 192 of the Act, and subject to clause 13.3, the Lessor shall be responsible for complying with and meeting all of the monitoring, reporting and compliance obligations and liabilities (including Surrender Liability that arises after the date of transfer and any replanting obligations) under the Act following the transfer of participation and the Lessee shall have no such obligations or liabilities which arise following the date of expiry or termination of this Lease.

13.5 No Merger: The obligations in clause 13.4 will continue and not merge on the Termination Date or earlier cancellation of this Lease.

13.6 Operation of Law: The Parties acknowledge and agree that on the Termination Date of this Lease by operation of the section 192 of the Act, the ETS participation in respect of the Land, will be deemed to have transferred from the Lessee to the Lessor.

13.7 Early Termination Date: The Termination Date will be deemed to be the Early Termination specified in the Commercial Details (unless otherwise agreed in writing) with the effect that this Lease shall terminate early if the Lessee considers that the Land has not been planted in accordance with this lease by the Planting Deadline specified in the Commercial Details. The Lessee may by notice in writing to the Lessor prior to the Early Termination Date recorded in the Commercial Details extend the Early Termination Date by a period of up to 12 months

13.8 Carbon Credits: As participant under the Act in respect of the Registered Hectares during the Term, the Lessee is entitled to all Carbon Credits arising in respect of the Registered Hectares during the Term. Nothing expressed or implied in this Lease:

(a) gives the Lessor any right, title or interest in or to any Carbon Credits; or

(b) requires the Lessee to transfer or deliver any Carbon Credits to the Lessor at any time whether during or after the Term.

13.9 Pre-1990 Forest Land: To the extent that there is any Pre-1990 Forest Land on the Land, the Lessor agrees that the Lessee has no right or control over any decision to deforest any such Pre-1990 Forest Land and nothing expressed or implied in this Lease confers any liability on the Lessee in respect of any Pre-1990 Forest Land. For the avoidance of doubt, should there be any deforestation of such Pre-1990 Forest Land during the Term, the Lessor is to be treated as the person carrying out the activity listed in Part 1 of Schedule 3 of the Act.

13.10 Change to ETS Registration: At any time and from time to time, the parties may agree in writing to amend the ETS participation in accordance with the provisions of the Act (e.g. change from 'averaging' to the 'permanent forestry' category). To the extent that any such amendment is agreed, the parties must enter into a variation instrument that is capable of being registered against the titles to the Land setting out the terms of the amendment.

14. TERM

14.1 Term: The Term is set out in the Commercial Details.

14.2 Amendments to Termination Date:

(a) The parties acknowledge and agree that the Termination Date is an estimate of the age of the Forest when it will achieve its 'nominal average carbon stock' under the Act and proposed regulations under the Act, which as at the date of this Lease were not enacted and therefore not known with certainty. The parties agree that once relevant amendments to the Act have been enacted and relevant regulations enacted and the 'nominal average carbon stock' (or similar) for the Forest is known and it is possible to determine the age of the Forest when the 'nominal average carbon stock' will be achieved **(Average Age)**, the parties must enter into a variation instrument capable of being registered against the titles to the Land amending the Termination Date to be 30 June

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in the year after the year in which the Forest is determined to reach its Average Age. If the parties cannot agree on the terms of the variation instrument, the provisions of clause 19 will apply to resolve any dispute.

(b) The parties may by mutual agreement extend the Termination Date by a period of 5 years on the same terms and conditions contained in this lease, including Rent, provided that the Lessee gives the Lessor not less than 12 months' notice of its request to extend the Termination Date prior to the end of the relevant period.

14.3 Variation Instrument: In the event that the Termination Date is amended, the notice to amend the Termination Date given by the Lessee must be accompanied by a variation instrument that is capable of being registered against the title to the Land setting out the terms of the amendment.

14.4 Further Extension: Nothing in this clause 14 shall prevent a further extension of the Term by agreement between the parties.

14.5 ETS Change: If, as a result of any Legislative Change or Interpretation, the ETS ends (and is not replaced with any similar or substitute scheme) or is amended to exclude the requirement for emitters to surrender Carbon Credits or to exclude the entitlement for the Lessee to receive Carbon Credits or to materially reduce the Lessee's entitlement to receive Carbon Credits or to accelerate any Surrender Liability, the Lessee may end this Lease at any time after the relevant change to the ETS on giving at least one month's written notice to the Lessor.

15. ESSENTIAL TERM

15.1 The Lessee's breach of the covenant to pay rent or other money payable by the Lessee under this Lease is a breach of an essential term of this Lease.

16. NO WAIVER

16.1 The Lessor's waiver or failure to act in response to the Lessee's breach of any of the Lessee's obligations in this lease will not operate as a waiver of the same breach on any later occasion or any other obligations in this Lease.

17. FORCE MAJEURE

17.1 If and to the extent to which either party is unable to carry out any of its obligations under this Lease because of any event or circumstance which is, in relation to that party (**Non-Performing Party**), a Force Majeure Event, the Non Performing Party will have no liability to the other party in respect of the non-performance by the Non-Performing Party of such obligations, provided that:

(a) **Notification:** the Non-Performing Party must, as soon as reasonably practicable after becoming aware of the Force Majeure Event, notify the other party in writing accordingly, describing the event or circumstance of Force Majeure, including:

(i) the date of the commencement of the Force Majeure Event;

(ii) the expected effect or duration of the Force Majeure Event; and

(iii) where reasonably practicable, the Non-Performing Party's proposal for mitigating the effect or duration of the Force Majeure Event and, if applicable, the amount of any cost that may be incurred by the other party as a result of implementing this proposal (provided that no such proposal will be implemented by the Non-Performing Party without the prior written consent of the other party),

and, where reasonably practicable, the Non-Performing Party will continue to provide to the other party regular written reports with respect to such Force Majeure Event, for so long as the Force Majeure Event continues to prevent the Non-Performing Party from carrying out its obligations under this Lease;

17.2 Existing Liability: neither party will be released from any liability which existed before the commencement of the Force Majeure Event;

17.3 Payment of Money: neither party will be released from an obligation to pay money under this Lease due to the occurrence of a Force Majeure Event;

17.4 Endeavour to Overcome: the Non-Performing Party must, by the exercise of standard forest industry practice endeavour to overcome, and to mitigate the effects of, the Force Majeure Event and to complete the Non-Performing Party's obligations under this Lease on time. If, despite complying with this clause 17, the Non-Performing Party reasonably requires any extension of time in order to comply with any of its obligations under this Lease, the Non-Performing Party will notify the other party in writing as soon as possible of the extension required. The other party will be deemed to have agreed to the extension notified to it unless it expressly notifies the Non-Performing Party in writing to the contrary (and the other party may do so on reasonable grounds only);

17.5 Cessation of Event: the Non-Performing Party will, as soon as reasonably practicable after becoming aware of the cessation of the Force Majeure Event, notify the other party in writing accordingly;

17.6 Remain in Effect: this Lease will otherwise remain in effect in all respects.

18. PROPERTY LAW ACT

18.1 The covenants and powers contained in clauses 4, 5, 9, 10, 11 and 12 of Part 2 and clause 13 of Part 3 of Schedule 3 of the PLA will not be implied in this agreement and are expressly negated.

19. RESOLUTION OF DISPUTES

19.1 Disputes: If any dispute, difference or question arises between the parties about:

(a) the interpretation of this Lease;

(b) anything contained in or arising out of this Lease;

(c) the rights, liabilities or duties of the Lessor or Lessee; or

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(d) any other matter touching on the relationship of the Lessor and the Lessee under this Lease (including claims in tort as well as in contract) **(Dispute)**,

the parties must meet within five (5) Working Days of both parties being informed of the Dispute to endeavour to resolve the Dispute expeditiously.

19.2 **Mediation**: If the Dispute is not resolved within the five (5) Working Day period referred to in clause 19.1, either party may then, by written notice **(Mediation Notice)** to the other party require that the Dispute be dealt with by mediation. A single mediator mutually agreed upon by the parties shall be appointed or, failing agreement within five (5) Working Days of the service of the Mediation Notice, by the President of the New Zealand Law Society or the President's nominee. In the event of any submission to mediation, the mediator will determine the procedure and timetable for the mediation and the parties will share costs equally.

19.3 **Arbitration**: Either party may commence arbitration proceedings if the Dispute is not resolved within twenty (20) Working Days after appointment of the mediator (and the other party will be bound to participate in such arbitration proceedings). If the Dispute is referred to arbitration the arbitration will be conducted by one arbitrator, if the parties can agree upon one or, failing agreement within ten (10) Working Days, by an arbitrator, to be appointed by the President for the time being of the New Zealand Law Society or the President's nominee. The arbitration will be conducted in New Zealand in accordance with the Rules in Schedules I and 2 of the Arbitration Act 1996.

19.4 **Action at Law**: The parties must go to arbitration under this section before they can begin any action at law (other than an application for injunctive relief).

20. **NOTICES**

20.1 **Service of Notices**: Any notice or document required or authorised to be given or served under this Lease may be given or served:

(a) in the case of a notice under sections 245 or 246 of the Property Law Act 2007, in the manner prescribed by section 353 of that Act; and

(b) in all other cases, unless otherwise required by sections 352 to 361 of the Property Law Act 2007:

(i) in the manner authorised by sections 354 to 361 of the Property Law Act 2007; or

(ii) by personal delivery, or by posting by registered mail or ordinary mail, or by facsimile, or by email.

20.2 **Time of Service**: In respect of the means of service specified in clause 20.1(b)(ii) any notice or other document will be treated as given or served and received by the other party:

(a) when received by the addressee;

(b) three (3) Working Days after being posted to the addressee's last known address in New Zealand;

(c) on completion of an error free transmission, when sent by facsimile; or

(d) when actually received by the recipient's email system.

21. **GENERAL**

21.1 **Further Assurances**: Each party will do all things and execute all documents reasonably required to register this Lease against the Land and give effect to the provisions and intent of this Lease (and any variation or extension in accordance with this Lease). For the avoidance of doubt, this includes obtaining consent by any Chargeholder to the registration of this Lease.

21.2 **Governing Law and Jurisdiction**: This lease is governed by the laws of New Zealand. The parties submit to the exclusive jurisdiction of the New Zealand courts in respect of all matters relating to this Lease.

21.3 **Authority**: Each party warrants to the other that:

(a) in the case of a party which is a New Zealand company, it is duly incorporated and validly existing under the Laws of New Zealand; or

(b) in the case of a party which is a company outside of New Zealand, it is duly incorporated and validly existing under the Laws of that country; or

(c) in the case of a party which is a trust, incorporated society, charitable fund or another entity not included in a) or b) , it is (where relevant) duly incorporated and (in every case) validly existing under the laws of New Zealand or of the country in which it operates;

(d) it has the power and capacity to execute, deliver and perform its obligations under this Lease,

(e) the execution, delivery and performance of this Lease:

(i) has been duly authorised by all necessary action; and

(ii) will not breach the terms and conditions of, or constitute a default under, any other agreement, constitution, undertaking or arrangement to which it is a party or bound, or breach any law applicable to it or by which it may be bound; and

(f) this Lease constitutes legal, valid and binding obligations on that party, enforceable in accordance with its terms.

21.4 **Remedies cumulative**: The rights, powers and remedies in this Lease are cumulative and not exclusive of any rights, powers or remedies at law.

21.5 **No waiver**: No waiver of any breach, or failure to enforce any provision, of this Lease at any time by any party will in any way limit or waive the right of that party to subsequently require strict compliance with this Lease.

21.6 **Counterparts**: This Lease may be signed in counterparts. All executed counterparts together will constitute one document. Any party may enter into this Lease by signing any such counterpart.

21.7 **Copies**: Any facsimile copy of this Lease, or copy of this Lease sent via email in PDF format, (including any facsimile copy, or copy sent via email in PDF format, of any document evidencing either party's signature of this Lease) maybe relied on by any other party as though it

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were an original copy. This Lease may be entered into on the basis of an exchange of such facsimile or PDF copies.

21.8 Related Party: To the extent that any provision of this Lease requires a Related Party of one of the parties to act in a particular manner, or a party to ensure or procure that a Related Party acts in a particular manner, the relevant party will exercise all rights in whatever capacity it may have (whether as shareholder, trustee or otherwise) to procure that the Related Party exercises his, her or their rights and act accordingly, to the fullest extent permitted by law.

21.9 Severability: If any provision of this Lease is held to be invalid, illegal or unenforceable, it will be severed and the remainder of the Lease will remain in full force and effect.

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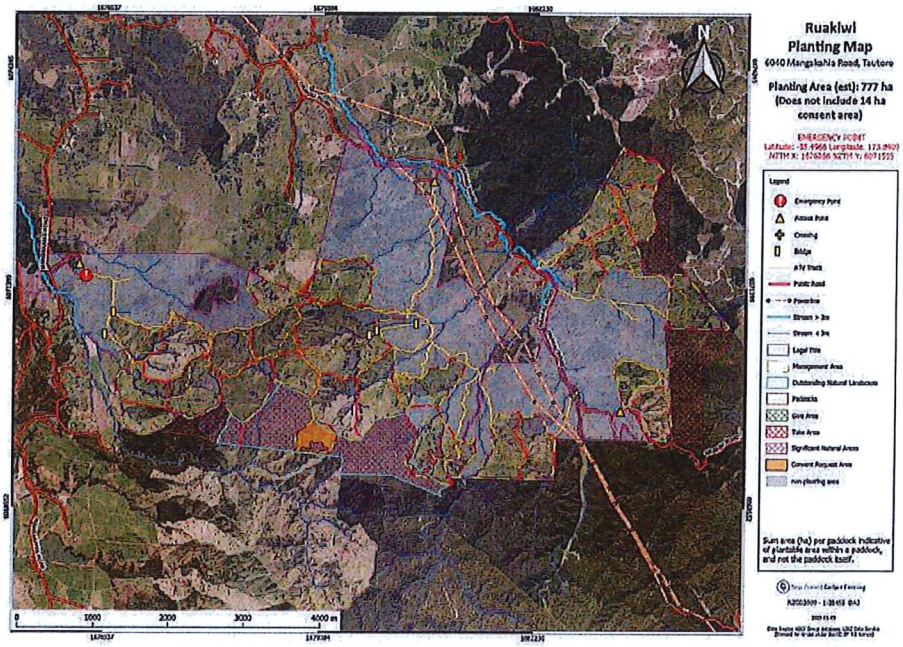
Planting Plan



Appendix 4

RC 2190235-RMASUB and subsequent OBJ

Far North District Council

FAR NORTH DISTRICT COUNCIL

FAR NORTH OPERATIVE DISTRICT PLAN
DECISION ON RESOURCE CONSENT APPLICATION (COMBINED)

Resource Consent Number: 2190235-RMASUB

Pursuant to section 104C of the Resource Management Act 1991 (the Act), the Far North District Council hereby grants resource consent to:

Jason & Penelope Bill Family Trust

The activity to which this decision relates: subdivision in rural production zone creating one additional lot and vesting 3 portions of road plus 3 severance areas to be amalgamated with large balance farm lot.

Subject Site Details

Address:	640 Orakau Road, Kaikohe 0474
Legal Description:	PT LOT 3 DP 10828 LOTS 2 4 DP 42112 LOT 1 DP 59634 LOT 2 DP 207690 MOTATAU 5Y PT MOTATAU 5C 5N 5X BLOCK SEC 6 BLK V MOTATAU SD NGATIHINE H2A BLOCK
Certificate of Title reference:	NA-58B/239

Pursuant to Section 108 of the Act, this consent is issued subject to the following conditions:

1 The subdivision shall be carried out in accordance with the approved plan of subdivision prepared by Thomson Survey, referenced Proposed Subdivision and Road to Vest Pt Motatau 5X Block, dated 11 September 2018, and attached to this consent with the Council's "Approved Stamp" affixed to it.

2. The survey plan, submitted for approval pursuant to Section 223 of the Act shall show:

(a) The following amalgamation condition:

"That Lots 2-4 & 8 hereon & Pt Motatau 5X be held in one Computer Freehold Register" [See 1556839].

(b) All easements in the memorandum to be duly granted or reserved.

(c) Lots 5-7 as road to vest.

3. Prior to the approval of the survey plan pursuant to Section 223 of the Act, the consent holder shall:

   (a) Provide a report and plan from a Council approved onsite waste water designer, certifying drainlayer or chartered professional engineer which identifies type/ location, suitability, operating condition, and remediation recommendations for the existing stormwater and wastewater systems, confirms existing effluent disposal field and reserve disposal area that they are fully contained within the boundaries of lot 1.

4. Prior to the issuing of a certificate pursuant to Section 224(c) of the Act, the consent holder shall:

   (a) Upgrade the existing entrance to the R.O.W A to provide a double width entrance which complies with the Councils Engineering Standard FNDC/S/6 and 6B, and section 3.3.17 of the Engineering Standard and NZS4404:2004. Seal the entrance plus splays for a minimum distance of 5m from the existing seal edge.

   (b) Provide to Council written confirmation from a registered surveyor that the vested road and access carriageway is fully contained within the road to vest and easements provided for access.

Advice Notes

1. Archaeological sites are protected pursuant to the Heritage New Zealand Pouhere Taonga Act 2014. It is an offence, pursuant to the Act, to modify, damage or destroy an archaeological site without an archaeological authority issued pursuant to that Act. Should any site be inadvertently uncovered, the procedure is that work should cease, with the Trust and local iwi consulted immediately. The New Zealand Police should also be consulted if the discovery includes koiwi (human remains). A copy of Heritage New Zealand's Archaeological Discovery Protocol (ADP) is attached for your information. This should be made available to all person(s) working on site.

2. The Consent holder shall when conducting the upgrade of vehicle crossing in or close to Orakau Road reserve shall submit a Corridor Access Request (CAR) and subsequently obtain a Work Access Permit (WAP) from council prior to any excavation or works commencing.

3. Any encroachment of the road onto private property shall be surveyed off and vested in Council, such that the legal road boundary along the road frontage of the subject site is at least 6m from the centreline of the carriageway.

4. Lots 1,2,3 and 4 are identified as being within a kiwi present zone. Any cats and/or dogs kept onsite must be kept inside and/or tied up at night to reduce the risk of predation of North Island brown kiwi by domestic cats and dogs.

Reasons for the Decision

1. The Council has determined (by way of an earlier report and resolution) that the adverse environmental effects associated with the proposed activity are no more

than minor and that there are no affected persons or affected customary rights group or customary marine title group.

2. The application is for a Restricted Discretionary resource consent, as such under 104C only those matters over which council has restricted its discretion have been considered.

3. In accordance with an assessment under s104(1)(b) of the Act the proposal is consistent with the relevant statutory documents.

   a) The Northland Regional Policy Statement 2018
   b) Regional plans (including proposed)

4. No other non – statutory documents were considered relevant in making this decision.

5. Part 2 Matters
The Council has taken into account the purpose & principles outlined in sections 5, 6, 7 & 8 of the Act. It is considered that granting/declining this resource consent application achieves the purpose of the Act.

Approval
This resource consent has been prepared by Trish Routley and is granted under delegated authority (pursuant to section 34A of the Act) from the Far North District Council by:

P.J. Killalea.

Pat Killalea, Principal Planner

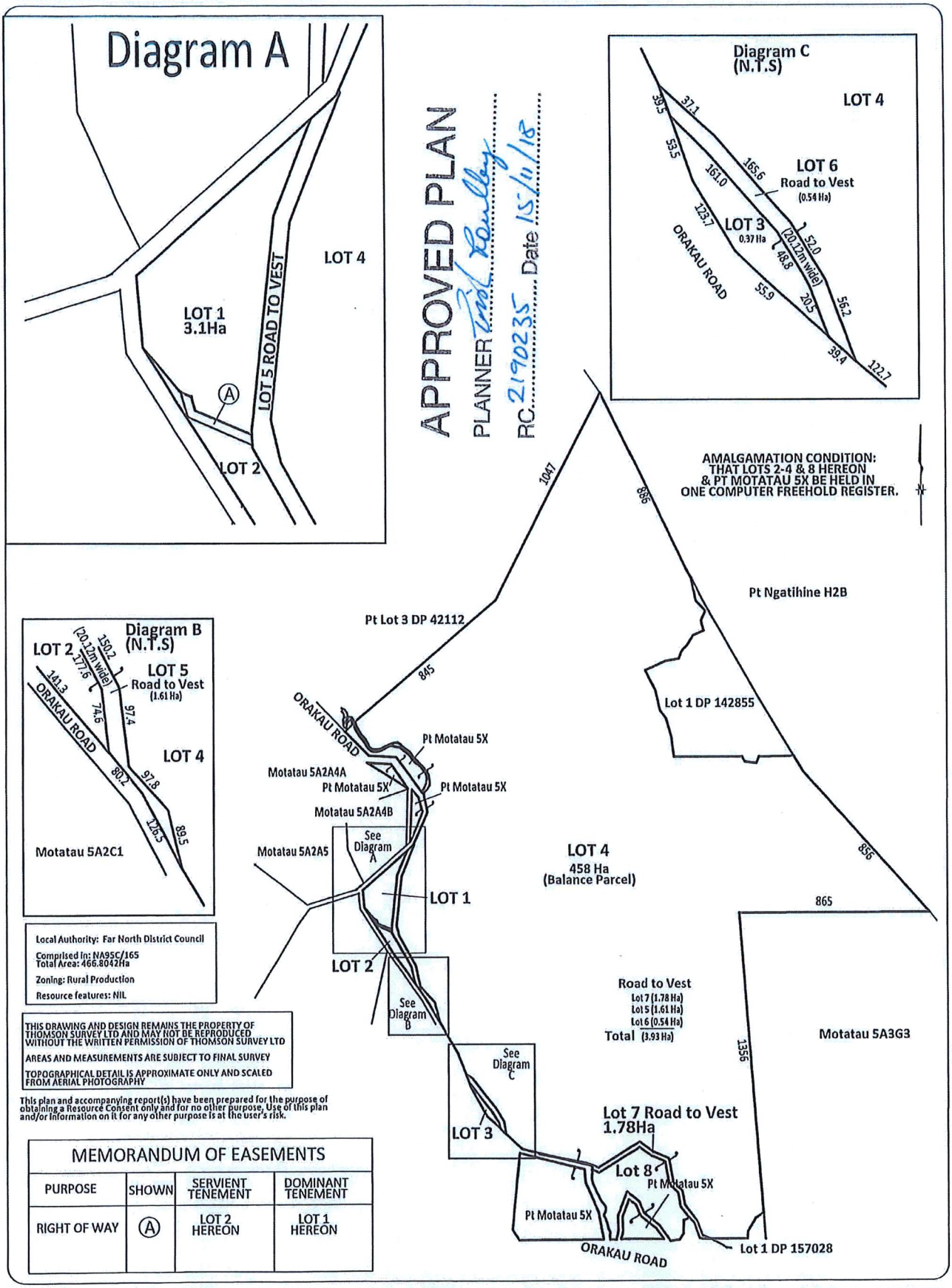
Date: 28th November 2018

Right of Objection
If you are dissatisfied with the decision or any part of it, you have the right (pursuant to section 357A of the Act) to object to the decision. The objection must be in writing, stating reasons for the objection and must be received by Council within 15 working days of the receipt of this decision.

Lapsing Of Consent
Pursuant to section 125 of the Act, this resource consent will lapse 5 years after the date of commencement of consent unless, before the consent lapses;

The consent is given effect to; or

An application is made to the Council to extend the period of consent, and the council decides to grant an extension after taking into account the statutory considerations, set out in section 125(1)(b) of the Act.



Local Authority: Far North District Council
Comprised In: NA95C/165
Total Area: 466.8042Ha
Zoning: Rural Production
Resource features: NIL

AREAS AND MEASUREMENTS ARE SUBJECT TO FINAL SURVEY

TOPOGRAPHICAL DETAIL IS APPROXIMATE ONLY AND SCALED FROM AERIAL PHOTOGRAPHY

This plan and accompanying report(s) have been prepared for the purpose of obtaining a Resource Consent only and for no other purpose. Use of this plan and/or information on it for any other purpose is at the user's risk.

MEMORANDUM OF EASEMENTS

PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
RIGHT OF WAY	Ⓐ	LOT 2 HEREON	LOT 1 HEREON

THOMSON SURVEY LIMITED
315 Kerikeri Rd
P.O. Box 372 Kerikeri
Email: kerikeri@tsurvey.co.nz
Ph: (09) 4077360 Fax (09) 4077322
Registered Land Surveyors, Planners & Land Development Consultants

PROPOSED SUBDIVISION AND ROAD TO VEST PT MOTATAU 5X BLOCK

PREPARED FOR: BILL

	Name	Date
Survey		
Design		
Drawn	TW	11/09/18
Approved		
Rev	SL	25.09.18

9402 SCHEME.lcd

ORIGINAL
SCALE 1:15000
SHEET SIZE A3

Surveyors Ref. No: 9402
Series
Sheet 1 of 1

Far North District Council

FAR NORTH DISTRICT COUNCIL

FAR NORTH OPERATIVE DISTRICT PLAN
DECISION ON OBJECTION TO CONDITION OF CONSENT

Resource Consent Number: 2190235-RMAOBJ/A

Pursuant to section 357D of the Resource Management Act 1991 (the Act), the Far North District Council hereby partially upholds the objection of:

Jason & Penelope Bill Family Trust

The activity to which this decision relates:

An objection in relation to a condition of consent contained in 2190235-RMAOBJ/A, a consent granted to Jason & Penelope Bill Family Trust for subdivision in rural production zone creating one additional lot, vesting 3 portions of road plus 3 severance areas to be amalgamated with large balance farm lot. The condition objected to is 4(a)

Subject Site Details

Address:	640 Orakau Road, Kaikohe 0474
Legal Description:	PT LOT 3 DP 10828 LOTS 2 4 DP 42112 LOT 1 DP 59634 LOT 2 DP 207690 MOTATAU 5Y PT MOTATAU 5C 5N 5X BLOCK SEC 6 BLK V MOTATAU SD NGATIHINE H2A BLOCK
Certificate of Title reference:	3358659

As a result of partially upholding the objection, the following changes are made to the consent conditions:

4. Prior to the issuing of a certificate pursuant to Section 224(c) of the Act, the consent holder shall:
   (a) Upgrade the existing entrance to the R.O.W A to provide a double width entrance which complies with the Councils Engineering Standard FNDC/S/6 and 6B, and section 3.3.17 of the Engineering Standard and NZS4404:2004. Seal the entrance plus splays for a minimum distance of ~~5~~2m from the existing seal edge.

For the purpose of clarity the complete amended conditions of consent are as follows:

1. The subdivision shall be carried out in accordance with the approved plan of subdivision prepared by Thomson Survey, referenced Proposed Subdivision and Road to Vest Pt Motatau 5X Block, dated 11 September 2018, and attached to this consent with the Council's "Approved Stamp" affixed to it.
2. The survey plan, submitted for approval pursuant to Section 223 of the Act shall show:
   (a) The following amalgamation condition:

   "That Lots 2-4 & 8 hereon & Pt Motatau 5X be held in one Computer Freehold Register" [See 1556839].

(b) All easements in the memorandum to be duly granted or reserved.

(c) Lots 5-7 as road to vest.

3. Prior to the approval of the survey plan pursuant to Section 223 of the Act, the consent holder shall:
   (a) Provide a report and plan from a Council approved onsite waste water designer, certifying drainlayer or chartered professional engineer which identifies type/ location, suitability, operating condition, and remediation recommendations for the existing stormwater and wastewater systems, confirms existing effluent disposal field and reserve disposal area that they are fully contained within the boundaries of lot 1.

4. Prior to the issuing of a certificate pursuant to Section 224(c) of the Act, the consent holder shall:
   (b) Upgrade the existing entrance to the R.O.W A to provide a double width entrance which complies with the Councils Engineering Standard FNDC/S/6 and 6B, and section 3.3.17 of the Engineering Standard and NZS4404:2004. Seal the entrance plus splays for a minimum distance of 2m from the existing seal edge.

   (c) Provide to Council written confirmation from a registered surveyor that the vested road and access carriageway is fully contained within the road to vest and easements provided for access.

Advice Notes

1. Archaeological sites are protected pursuant to the Heritage New Zealand Pouhere Taonga Act 2014. It is an offence, pursuant to the Act, to modify, damage or destroy an archaeological site without an archaeological authority issued pursuant to that Act. Should any site be inadvertently uncovered, the procedure is that work should cease, with the Trust and local iwi consulted immediately. The New Zealand Police should also be consulted if the discovery includes koiwi (human remains). A copy of Heritage New Zealand's Archaeological Discovery Protocol (ADP) is attached for your information. This should be made available to all person(s) working on site.

2. The Consent holder shall when conducting the upgrade of vehicle crossing in or close to Orakau Road reserve shall submit a Corridor Access Request (CAR) and subsequently obtain a Work Access Permit (WAP) from council prior to any excavation or works commencing.

3. Any encroachment of the road onto private property shall be surveyed off and vested in Council, such that the legal road boundary along the road frontage of the subject site is at least 6m from the. centreline of the carriageway.

4. Lots 1, 2,3 and 4 are identified as being within a kiwi present zone. Any cats and/or dogs kept onsite must be kept inside and/or tied up at night to reduce the risk of predation of North Island brown kiwi by domestic cats and dogs.

Advice Notes

1. Archaeological sites are protected pursuant to the Historic Places Act 1993. It is an offence, pursuant to the Act, to modify, damage or destroy an archaeological site without an archaeological authority obtained from the trust. Should any site be inadvertently uncovered, the procedure is that work should cease, with the trust and local iwi consulted immediately. The New Zealand Police should also be consulted if the discovery includes koiwi (human remains).

Statutory Information

1. Pursuant to section 102 of the Local Government Act 2002, the Far North District Council has prepared and adopted a development contributions policy. Under this policy, the activity to which this consent relates maybe subject to development contributions.

   You will be advised of the assessment of the development contributions payable under separate cover in the near future.

   It is important to note that the development contributions must be paid prior to commencement of the work or activity to which this consent relates or, in the case of subdivision, prior to the issue of a Section 224(c) Certificate.

   Further information regarding council's development contributions policy may be obtained from the long term council community plan (LTCCP) or council's web page at www.fndc.govt.nz

Reasons for the Decision to uphold the Objection (pursuant to Section 357D(2):

1. The Far North District Council roading engineers agreed to reduce the tar seal double width plus splays, to a distance of 2m back into the property. The decision to only partially uphold the objection was because some tar sealing is required to reduce chipping on the road edge. A reduction from 5m to 2m was based on no additional users; only the bridge seal that was connected; plenty of scope for turning vehicles; and good visibility.

Approval
This decision has been prepared by Trish Routley Intermediate Resource Planner and is granted under delegated authority (pursuant to section 34A of the Resource Management Act 1991) from the Far North District Council by:

P J Killalea.

Pat Killalea, Principal Planner

Date: 13th June 2019

Right of Appeal
If you are dissatisfied with the decision or any part of it, you have the right (pursuant to section 358 of the Resource Management Act 1991) to appeal the decision. The notice of appeal must be in the prescribed form, stating reasons for the appeal and shall be lodged with the Environment Court within 15 working days of the receipt of this decision. Any person

lodging an appeal shall ensure that a copy of the notice of appeal is served on Council at the same time as the notice is lodged with the Environment Court.

Lapsing Of Consent

Pursuant to section 125 of the Resource Management Act 1991, this resource consent, as amended as a result of this decision on an objection, will lapse 5 years after the date of commencement of consent unless, before the consent lapses;

The consent is given effect to; or

An application is made to the Council to extend the period of consent, and the council decides to grant an extension after taking into account the statutory considerations, set out in section 125(1)(b) of the Resource Management Act 1991.

Appendix 5

Civil Site Suitability Report

Wilton Joubert Limited
09 527 0196
498 Hibiscus Coast Highway,
Orewa, Auckland, 0931

SITE	**Orakau Road, Punakitere Valley**
LEGAL DESCRIPTION	**Lot 4 DP 537681**
PROJECT	**Proposed 2-Lot Subdivision**
CLIENT	**Toko Pekama**
REFERENCE NO.	**145654**
DOCUMENT	**Civil Site Suitability Report**
STATUS/REVISION NO.	**02– Resource Consent**
DATE OF ISSUE	**16 April 2026**

Report Prepared For	Attention	Email
Toko Pekama	Lynley Newport	t.pekama.69@outlook.com lynley@tsurvey.co.nz

Authored by	**G.M. Brant** *(Be (Hons) Civil)*	Civil Engineer	gustavo@wjl.co.nz	
Reviewed & Approved by	**B. Steenkamp** *(CPEng, BEng Civil, CMEngNZ, BSc (Geology))*	Senior Civil Engineer	bens@wjl.co.nz	

1 EXECUTIVE SUMMARY

The following table is intended to be a concise summary which must be read in conjunction with the relevant report sections as referenced herein.

Legal Description:	Lot 4 DP 537681
Lot Sizes:	Proposed Lot 1 – 431.0654ha (balance lot) Proposed Lot 2 – 2.2458ha
Scope:	Civil Site Suitability Investigation: - Potable Water Recommendations - Wastewater Assessment - Stormwater Assessment
Development Proposals Supplied:	Subdivision Scheme Plan supplied by Thomson Survey Ltd (Ref No: 10749, dated: 07.04.2025)
District Plan Zone:	Rural Production Zone
Wastewater:	The following is an indicative PCDI wastewater design for two 2-bedroom dwellings – given the subsoils encountered we recommend Secondary Level Treatment or higher: Daily Wastewater Production: 1,160L/day Daily Application Rate: 3mm/day Disposal Area: 387m² Reserve Area: (30%) Recommendations for wastewater are provided in Section 7.
Stormwater Management – District Plan Rules:	Permitted Activity: 8.6.5.1.3 STORMWATER MANAGEMENT – The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 15%. Controlled Activity: 8.6.5.2.1 STORMWATER MANAGEMENT – The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 20%.
Stormwater Management:	To comply with the parameters of the Permitted Activity Rule (8.6.5.1.3), Lot 2 must not exceed an impermeable area of 3,368m². It is therefore expected that future development of Lot 2 will fall within the Permitted Activity range. Given the large lot size and the District Plan limitation of 15% impermeable coverage, future development within Lot 2 is expected to remain well within the permitted thresholds. As such, significant increases in runoff are not anticipated and specific stormwater attenuation measures are not considered necessary at this stage. Stormwater mitigation / attenuation recommendations are provided in Section 8.

2 SCOPE OF WORK

Wilton Joubert Ltd (WJL) was engaged by the client to undertake a civil site suitability assessment (wastewater and stormwater) to support a 2-lot subdivision of the subject site as per the supplied Scheme Plan Set prepared by Thomson Survey Ltd (Ref No: 10749, dated: 07.04.2025).

It is our understanding that the client intends to subdivide the existing property into two individual allotments, as depicted in the Scheme Plan below.

Proposed Lot 1 will encompass 431.0654ha and is considered a balance lot which has not been included in the assessment herein.

Proposed Lot 2 will encompass a vacant 2.2458 section of land within the western corner of the parent lot and will be the focus of this assessment. It is our understanding that the client intends in the future to construct two 70m² minor dwellings, aligned side-by-side near Lot 2's eastern corner. The current application is for subdivision only.

A Geotechnical Suitability Report (WJL Ref. 145653) has been completed for the proposed subdivision which should be read in conjunction with this report.

This report is intended only to support the Resource/Subdivision Consent application and does not replace the requirement for detailed engineering design and site-specific investigations at the Building Consent stage.

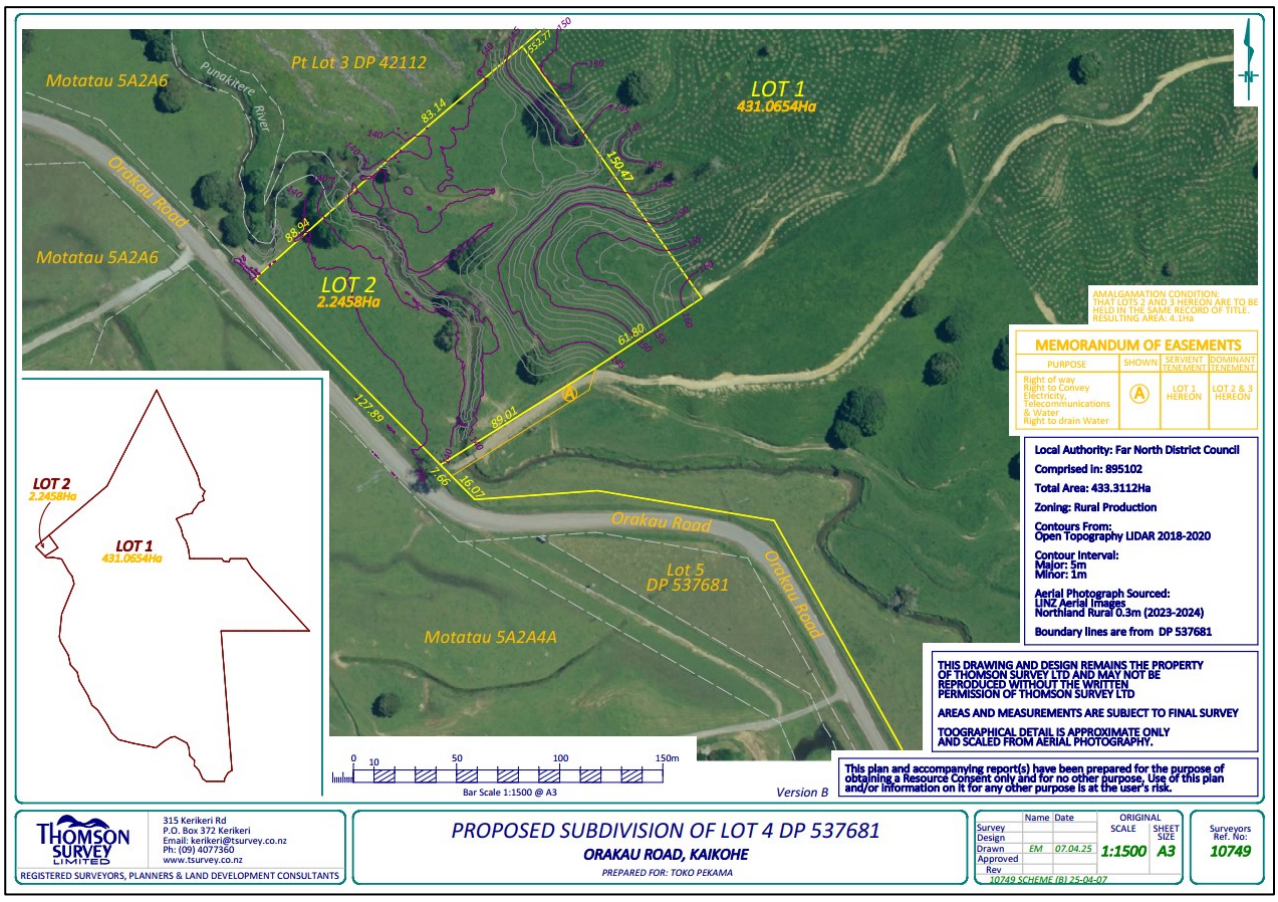


Figure 1: Snip of scheme plan prepared by Thomson Survey Ltd (Ref No: 10749, dated: 07.04.2025)

3 SITE DESCRIPTION

Lot 2 (the site) will be created within the following 433.3ha rural property (parent lot), which covers a vast area of land off the eastern side of Orakau Road, in the middle of the Punakitere Valley area.

The parent lot is legally described as Lot 4 DP 537681, Orakau Road, Punakitere Valley.

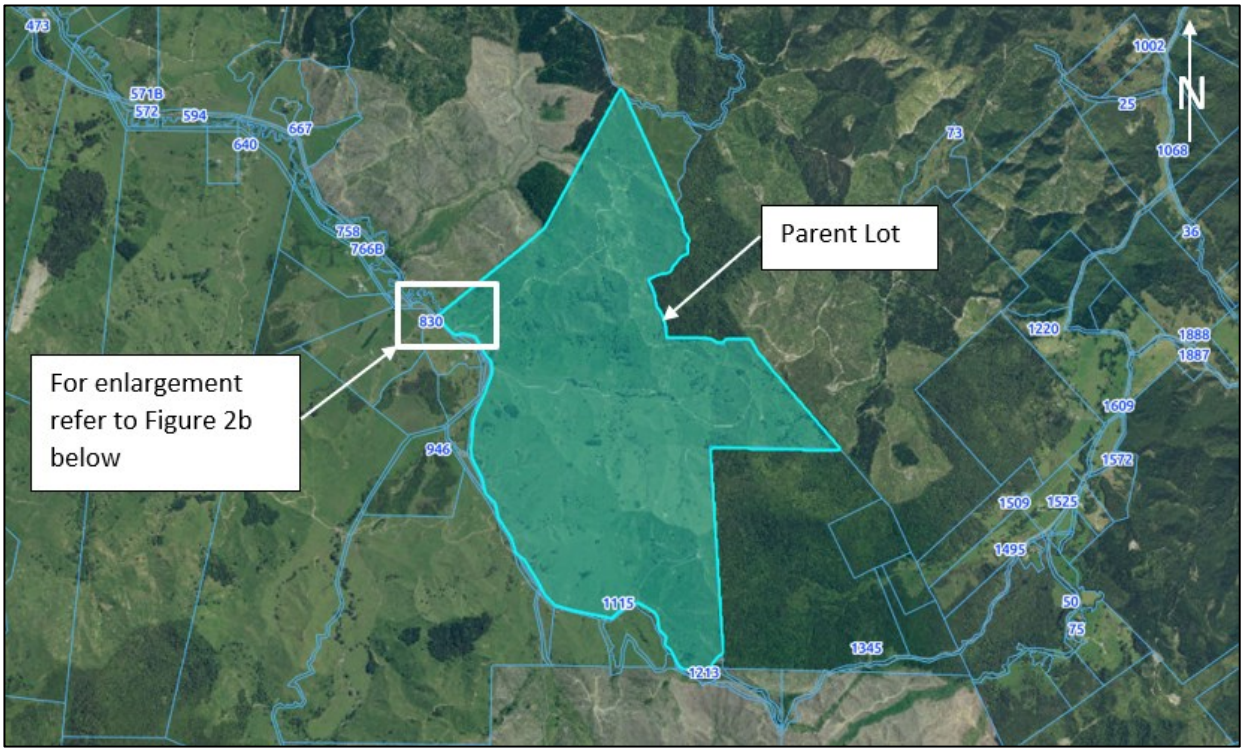


Figure 2a: Aerial view with the subject property (parent lot) highlighted in cyan (from Far North District Council online GIS database)

Figure 2b: Aerial view with Lot 2 (from Far North District Council online GIS database)

The site is vacant of structures and is covered in pasture, with occasional mature trees present. The Punakitere River meanders through the western portion of the site, essentially traversing northwest to southeast.

Topographically speaking, an elevated broad ridge feature across the eastern portion of the site is present which descends to low-lying, flat to gently sloping basin land to the northwest, west and southwest. Moderate to very steeply sloping side flanks, averaging 18° to 31°, fall some 20m to 25m from the crest of the ridge down to the northwest, west and southwest, towards the basin land.

The Far North District Council (FNDC) on-line GIS Water Services Map indicates that public underground service connections are not available to the property.

4 PUBLISHED GEOLOGY

Reference to the New Zealand Geology Web Map hosted by GNS Science indicates that Lot 2 is essentially underlain by **Tauranga Group** deposits, specifically being Holocene Age River Deposits. These deposits are up to approximately 14 thousand years in age and described as; "*Unconsolidated to poorly consolidated mud, sand, gravel and peat deposits of alluvial, colluvial and lacustrine origins*.". However, considering the elevation of the eastern ridge feature, together with our subsoil findings, we generally assess the Lot 2 building site as being underlain by the wider geological formation to the northeast, noted as **Punakitere Sandstone (Mangakahia Complex) in Northland Allochthon**. These deposits are approximately 95 to 75 million years in age and described as; "*Weakly to moderately indurated, alternating thin-to-thick-bedded, quartzofeldspathic sandstone and mudstone*.". Refer to GNS Science Website.

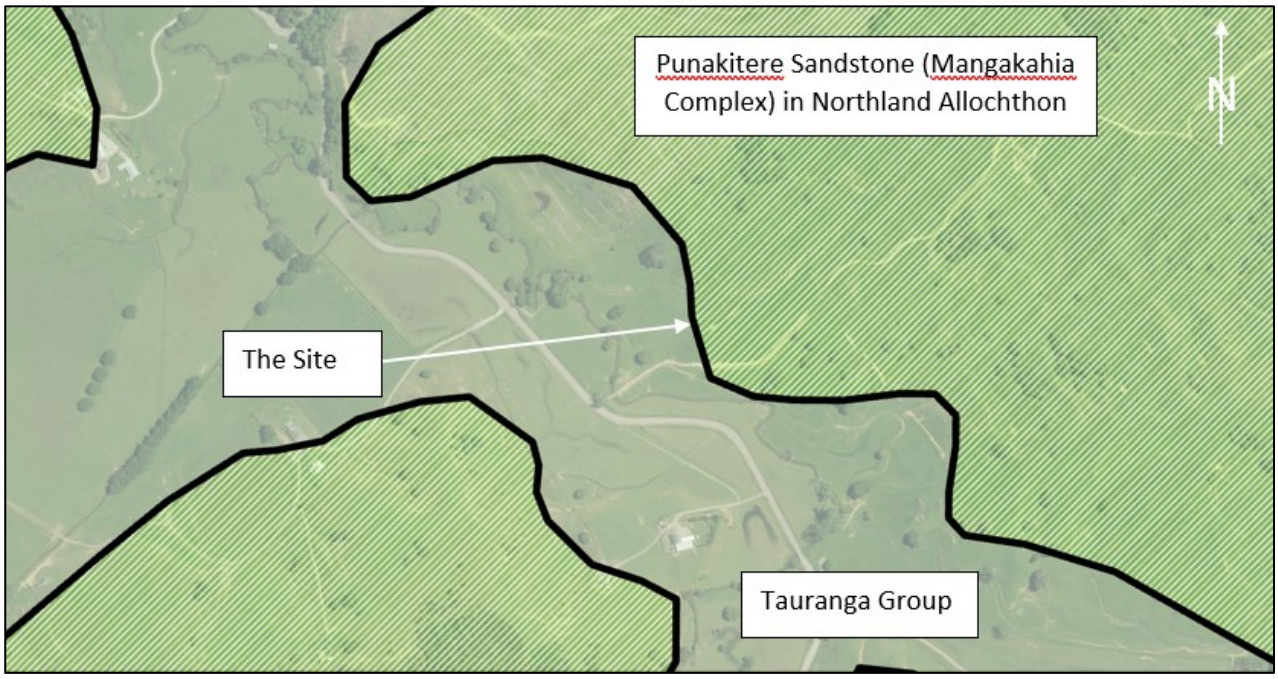


Figure 3: Screenshot aerial view from the New Zealand Geology Web Map

In addition to the above, hand auger testing was conducted by WJL within the subject site.

The subsoils encountered during WJL's fieldwork consisted predominantly of Clayey SILT, Silty CLAY and SILT. Approximately 150mm-200mm of TOPSOIL was overlying the investigated area. Groundwater was not observed to a tested depth of 5.0m below natural ground level. It is noted that FILL was encountered at one of the three hand auger locations. FILL is not expected to be located within the proposed effluent disposal area; however, further hand auger testing should confirm this at Building Consent stage. Refer to the appended 'BH Logs'.

Given the above, the site's subsoils have been classified as **Category 5** in accordance with AS/NZS 1547:2012.

5 POTABLE WATER SUPPLY

It is recommended that potable water be provided for by rainwater tanks in accordance with the Countryside Living Toolbox requirements. It is recommended to provide at least 2 x 25,000L tanks for potable water usage per lot. The type of tank and volume is for the client to confirm.

6 WASTEWATER

No existing wastewater management system is present within proposed Lot 2. As such, a new site-specific design in accordance with the ASNZS: 1547 will be required by FNDC for any future development within the proposed lots.

6.1 DESIGN PARAMETERS

The following table is intended to be a concise summary of the design parameters, which must be read in conjunction with the relevant report sections as referenced herein.

The below wastewater design has been completed to show feasibility of on-site wastewater management within the proposed Lot 2. Our recommendations have been based on two 2-bedroom dwellings.

Given the subsoils encountered during WJL's fieldwork investigation, we recommend secondary level treatment or higher for any new wastewater system within the lot.

6.1.1 Summary of Preliminary Design Parameters for a PCDI Secondary Treatment System

Development Type:	Residential Dwellings
Effluent Treatment Level:	Secondary (<BOD5 20 mg/L, TSS 30 mg/L)
Fill Encountered in Disposal Areas:	Not encountered
Water Source:	Rainwater Collection Tanks
Site Soil Category (AS/NZS 1547:2012):	Category 5 – Clayey SILT / Silty CLAY / SILT – Moderate Drainage
Estimate House AS/NZS 1547:2012 Occupancy:	8 Persons
Loading Rate:	3mm/day – Relevant Reduction Rate to be applied in accordance with AS/NZS 1547:2012 if effluent field is placed on steeper slopes
Estimated Total Daily Wastewater Production:	1,160L/day
Typical Wastewater Design Flow Per Person:	Rainwater Supply: 145L/pp/day (Estimated – Standard water reduction fixtures)
Application Method:	Surface / Subsurface Laid PCDI Lines
Loading Method:	Dosed
Emergency Storage:	24 hours
Estimated Min. Disposal Area Requirement:	387m²
Required Min. Reserve Area:	30%
Buffer Zone:	Not anticipated based on current information, subject to confirmation at detailed design stage
Cut-off Drain:	Not anticipated based on current information, subject to confirmation at detailed design stage

6.2 REQUIRED SETBACK DISTANCES

The disposal and reserve areas must be situated outside the relevant exclusion areas and setbacks described within Table 9 of the PRPN: Exclusion areas and setback distances for on-site domestic wastewater systems:

Table 9 of the PRPN (Proposed Regional Plan for Northland)			
Feature	Primary treated domestic wastewater	Secondary treated domestic wastewater	Greywater
Exclusion areas			
Floodplain	5% AEP	5% AEP	5% AEP
Horizontal setback distances			
Identified stormwater flow paths (downslope of disposal area)	5 meters	5 meters	5 meters
River, lake, stream, pond, dam or wetland	20 meters	15 meters	15 meters
Coastal marine area	20 meters	15 meters	15 meters
Existing water supply bore	20 meters	20 meters	20 meters
Property boundary	1.5 meters	1.5 meters	1.5 meters
Vertical setback distances			
Winter groundwater table	1.2 meters	0.6 meters	0.6 meters

6.3 NORTHLAND REGIONAL PLAN ASSESSMENT

Any future wastewater disposal system should meet the compliance points below, stipulated within Section C.6.1.3 of the Proposed Regional Plan for Northland:

C.6.1.3 Other on-site treated domestic wastewater discharge– permitted activity	
The discharge of domestic type wastewater into or onto land from an on-site system and the associated discharge of odour into air from the on-site system are permitted activities, provided:	
#	Rule
1	The on-site system is designed and constructed in accordance with the Australian/New Zealand Standard. On-site Domestic Wastewater Management (AS/NZS 1547:2012), and
2	The volume of wastewater discharged does not exceed two cubic metres per day, and
3	The discharge is not via a spray irrigation system or deep soakage system, and
4	The slope of the disposal area is not greater than 25 degrees, and
5	The wastewater has received secondary or tertiary treatment and is discharged via a trench or bed in soil categories 3 to 5 that is designed in accordance with Appendix L of Australian/New Zealand

	Standard. On-site Domestic Wastewater Management (AS/NZS 1547:2012); or is via an irrigation line system that is:
	a) dose loaded, and
	b) covered by a minimum of 50 millimetres of topsoil, mulch, or bark, and
6	For the discharge of wastewater onto the surface of slopes greater than 10 degrees:
	a) the wastewater, excluding greywater, has received at least secondary treatment, and
	b) the irrigation lines are firmly attached to the disposal area, and
	c) where there is an up-slope catchment that generates stormwater runoff, a diversion system is installed and maintained to divert surface water runoff from the up-slope catchment away from the disposal area, and
	d) a minimum 10 metre buffer area down-slope of the lowest irrigation line is included as part of the disposal area, and
	e) the disposal area is located within existing established vegetation that has at least 80 percent canopy cover, or
	f) the irrigation lines are covered by a minimum of 100 millimetres of topsoil, mulch, or bark, and
7	the disposal area and reserve disposal area are situated outside the relevant exclusion areas and setbacks in Table 9: Exclusion areas and setback distances for on-site domestic wastewater systems, and
8	for septic tank treatment systems, a filter that retains solids greater than 3.5 millimetres in size is fitted on the outlet, and
9	the following reserve disposal areas are available at all times:
	a) 100 percent of the existing effluent disposal area where the wastewater has received primary treatment or is only comprised of greywater, or
	b) 30 percent of the existing effluent disposal area where the wastewater has received secondary treatment or tertiary treatment, and
10	the on-site system is maintained so that it operates effectively at all times and maintenance is undertaken in accordance with the manufacturer's specifications, and
11	the discharge does not contaminate any groundwater water supply or surface water, and
12	there is no surface runoff or ponding of wastewater, and
13	there is no offensive or objectionable odour beyond the property boundary.

We envision that there will be no issue meeting the Permitted Activity Status requirements outlined above.

Based on current observations, topography, and the subsoil conditions encountered during the investigation, Lot 2 appears to contain sufficient undeveloped natural ground to accommodate both primary and reserve wastewater disposal areas in accordance with AS/NZS 1547:2012. Final system sizing, configuration, and positioning will be confirmed through site-specific design and localized soil testing at the Building Consent stage.

Primary treatment systems with trench or bed disposal may also be feasible; however, their suitability would depend on localized soil testing confirming soils with minimal clay content and adequate permeability.

7 STORMWATER MANAGEMENT

7.1 ASSESSMENT CRITERIA

The stormwater assessment has been completed in accordance with the recommendations and requirements contained within the Far North District Engineering Standards and the Far North District Council District Plan.

As below, the site resides in a Rural Production Zone.

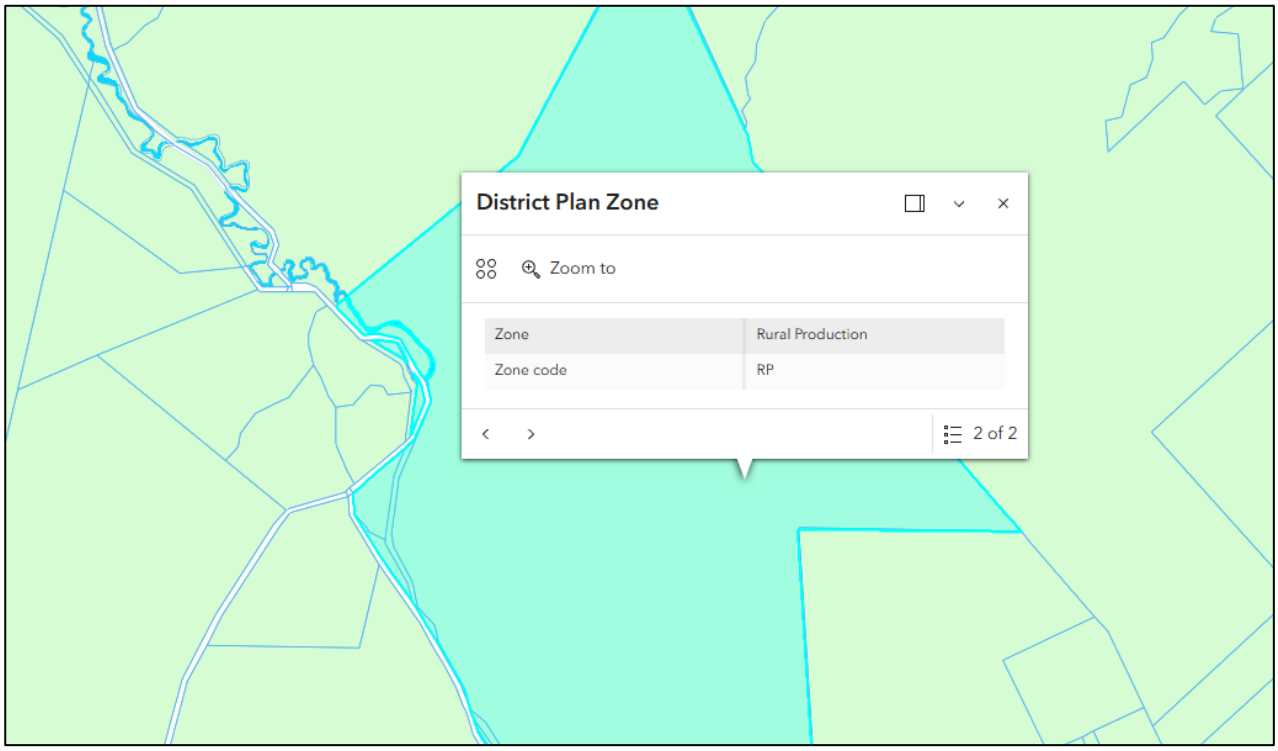


Figure 4: Snip of FNDC Maps showing site in Rural Production Zone

The following Stormwater Management Rules Apply:

Permitted Activity: 8.6.5.1.3 STORMWATER MANAGEMENT – The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 15%.

Controlled Activity: 8.6.5.2.1 STORMWATER MANAGEMENT – The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 20%.

To comply with the parameters of the Permitted Activity Rule (8.6.5.1.3), Lot 2 must not exceed an impermeable area of 3,368m². It is therefore expected that future development of Lot 2 will fall within the Permitted Activity range.

Given the very large lot sizes and low anticipated impervious coverage associated with rural residential development, the change in peak runoff characteristics is expected to be negligible relative to the existing catchment response. Consequently, stormwater attenuation measures are not considered necessary at the subdivision stage.

To appropriately mitigate stormwater runoff from the existing and future proposed impermeable areas, we recommend utilising Low Impact Design Methods as a means of stormwater management. Design guidance should be taken from 'The Countryside Living Toolbox' design document, and where necessary, 'Technical Publication 10, Stormwater Management Devices – Design Guidelines Manual' Auckland Regional Council (2003).

Stormwater management recommendations are provided below.

7.2 PRIMARY STORMWATER

7.2.1 Stormwater Runoff from Roof Areas

Stormwater runoff from the roof of any future buildings must be captured by a gutter system and conveyed to potable water tank(s) on the corresponding lot.

Discharge and overflow from the rainwater tanks should be directed to a discharge point as specified below via sealed pipes.

7.2.2 Stormwater Runoff from Hardstand Areas

Where driveways are formed perpendicular to the slope of the topography, the driveway may shed runoff to lower-lying grassed areas via even sheet flow, well clear of any structures. Runoff passed through grassed areas will be naturally filtered of entrained pollutants and will act to mitigate runoff by way of ground recharge and evapotranspiration.

Where even sheet flow is not practicable, concentrated flows must be managed with swales to prevent erosion/scouring. These should be sized to manage and provide capacity for secondary flows and mitigate flow velocity where appropriate. Swales are to direct runoff to silt traps with suitably sized grate / scruffy dome inlets, from which runoff may be piped to the discharge point.

Alternatively, if sealed, driveways may be formed to shed runoff to catchpits installed per E1 of the NZ Building Code. Runoff collected via catchpits is to be directed to an outlet as specified below via sealed pipes.

Due to water quality concerns, runoff resulting from hardstand areas should not be allowed to drain to any potable water tanks.

7.2.3 Stormwater Runoff Discharge Point

Discharge and overflow from future potable water tank(s) and any hardstand catchpits / silt traps should be directed an appropriately sized dispersal device within the respective lot, unless discharge is directed to an open channel, where an appropriate riprap outlet is required for erosion protection. The dispersal device or discharge point should be positioned on/in stable ground downslope of any buildings and wastewater disposal, with setbacks as per the relevant standards.

Stormwater runoff from the proposed development shall be conveyed via a piped system to discharge at the toe of the ridge, where gradients flatten and flows can be safely dispersed without causing erosion or instability. Alternatively, stormwater may be managed via a shallow swale formed along the existing grassed driveway, directing flows towards the nearest overland flow path as indicated on the Site Plan.

In consideration of the highly expansive (Class H) soils identified in the Geotechnical Report, all stormwater conveyance systems traversing steeper slopes shall be designed to accommodate potential ground movement. Pipework should be installed at or near the ground surface, securely anchored, and aligned to follow the natural slope (i.e. non-linear / “snaking” alignment) to provide flexibility. Rigid, straight-line pipe installations are not recommended, as they are susceptible to damage from soil movement and differential settlement, particularly during periods of saturation.

7.3 SECONDARY STORMWATER

Where required, overland flows and any concentrated runoff from higher ground should be intercepted by means of shallow surface drains or small bunds near structures to protect these from both saturation and erosion.

7.4 DISTRICT PLAN ASSESSMENT

This section has been prepared to demonstrate the likely effects of the activity on stormwater runoff and the means of mitigating runoff.

In assessing an application under this provision, the Council will exercise discretion to review the following matters below, (a) through (r). In respect of matters (a) through (r), we provide the following comments:

13.10.4 – Stormwater Disposal

(a) Whether the application complies with any regional rules relating to any water or discharge permits required under the Act, and with any resource consent issued to the District Council in relation to any urban drainage area stormwater management plan or similar plan.	No discharge permits are required. No resource consent issued documents stipulating specific requirements are known for the subject site or are anticipated to exist.
(b) Whether the application complies with the provisions of the Council's "Engineering Standards and Guidelines" (2004) - Revised March 2009 (to be used in conjunction with NZS 4404:2004).	The application is deemed compliant with the provisions of the Council's "Engineering Standards and Guidelines" (2004) - Revised March 2009
(c) Whether the application complies with the Far North District Council Strategic Plan - Drainage.	The application is deemed compliant with the Far North District Council Strategic Plan - Drainage
(d) The degree to which Low Impact Design principles have been used to reduce site impermeability and to retain natural permeable areas.	Stormwater management should be provided for the subject lot by utilising Low Impact Design Methods. Guidance for design should be taken from 'The Countryside Living Toolbox' design document, and where necessary, *"Technical Publication 10, Stormwater Management Devices – Design Guidelines Manual" Auckland Regional Council (2003).* All roof runoff will be collected by rainwater tanks for conveyance to a safe outlet point. Hardstand areas should be shaped to shed to swales/catchpits for runoff conveyance to a safe outlet location.
(e) The adequacy of the proposed means of disposing of collected stormwater from the roof of all potential or existing buildings and from all impervious surfaces.	As above. Runoff from roof areas will be collected, directed to rainwater tanks and discharged in a controlled manner to a designated outlet, reducing scour and erosion. Hardstand areas should be shaped to shed runoff to lower-lying lawn areas as passive mitigation, or to swales/catchpits for runoff conveyance to a safe outlet location.
(f) The adequacy of any proposed means for screening out litter, the capture of chemical spillages, the containment of contamination from roads and paved areas, and of siltation.	Runoff from roof areas is free of litter, chemical spillages, or contaminants from roads. Hardstand areas should be shaped to shed runoff to lower-lying lawn areas as passive mitigation, or to swales/catchpits for runoff conveyance to a safe outlet location. Large downslope pasture areas and swales act as bio-filter strips to filer out entrained pollutants and catchpits/silt traps allow for the settlement of sediment.
(g) The practicality of retaining open natural waterway systems for stormwater disposal in preference to piped or canal systems and adverse effects on existing waterways.	No alteration to waterways is proposed.

(h) Whether there is sufficient capacity available in the Council's outfall stormwater system to cater for increased run-off from the proposed allotments.	Not applicable.
(i) Where an existing outfall is not capable of accepting increased run-off, the adequacy of proposals and solutions for disposing of run-off.	Not applicable.
(j) The necessity to provide on-site retention basins to contain surface run-off where the capacity of the outfall is incapable of accepting flows, and where the outfall has limited capacity, any need to restrict the rate of discharge from the subdivision to the same rate of discharge that existed on the land before the subdivision takes place.	Not applicable.
(k) Any adverse effects of the proposed subdivision on drainage to, or from, adjoining properties and mitigation measures proposed to control any adverse effects.	Outlet locations are to be determined during detailed design and are to be located such that there are no adverse effects on adjacent properties.
(l) In accordance with sustainable management practices, the importance of disposing of stormwater by way of gravity pipe lines. However, where topography dictates that this is not possible, the adequacy of proposed pumping stations put forward as a satisfactory alternative.	Not applicable.
(m) The extent to which it is proposed to fill contrary to the natural fall of the country to obtain gravity outfall; the practicality of obtaining easements through adjoining owners' land to other outfall systems; and whether filling or pumping may constitute a satisfactory alternative.	Not applicable.
(n) For stormwater pipes and open waterway systems, the provision of appropriate easements in favour of either the registered user or in the case of the Council, easements in gross, to be shown on the survey plan for the subdivision, including private connections passing over other land protected by easements in favour of the user.	Not applicable.
(o) Where an easement is defined as a line, being the centre line of a pipe already laid, the effect of any alteration of its size and the need to create a new easement.	Not applicable.
(p) For any stormwater outfall pipeline through a reserve, the prior consent of the Council, and the need for an appropriate easement.	Not applicable.
(q) The need for and extent of any financial contributions to achieve the above matters.	Not applicable.
(r) The need for a local purpose reserve to be set aside and vested in the Council as a site for any public utility required to be provided.	Not applicable.

8 LIMITATIONS

This report has been prepared for the benefit of the Client for the purpose of supporting a Resource/Subdivision Consent application for the project described herein and within the agreed scope of engagement. The report may be submitted to the relevant Territorial Authority for that purpose.

The Territorial Authority may rely on this report for the purposes of assessing the Resource Consent application, subject to the scope, assumptions, and limitations described herein. Any material changes to the development proposal, site conditions, or design assumptions from those described in this report should be referred to Wilton Joubert Limited for review.

This report remains the intellectual property of Wilton Joubert Limited. No responsibility or liability is accepted for the use of this report by any third party, or for any purpose other than that for which it was prepared, unless expressly agreed in writing. Any party choosing to rely on this report does so at their own risk.

While this report may be used in support of regulatory approvals, it does not remove the requirement for detailed, site-specific investigations, assessments, or inspections that may be required at subsequent design or Building Consent stages, in accordance with standard engineering practice.

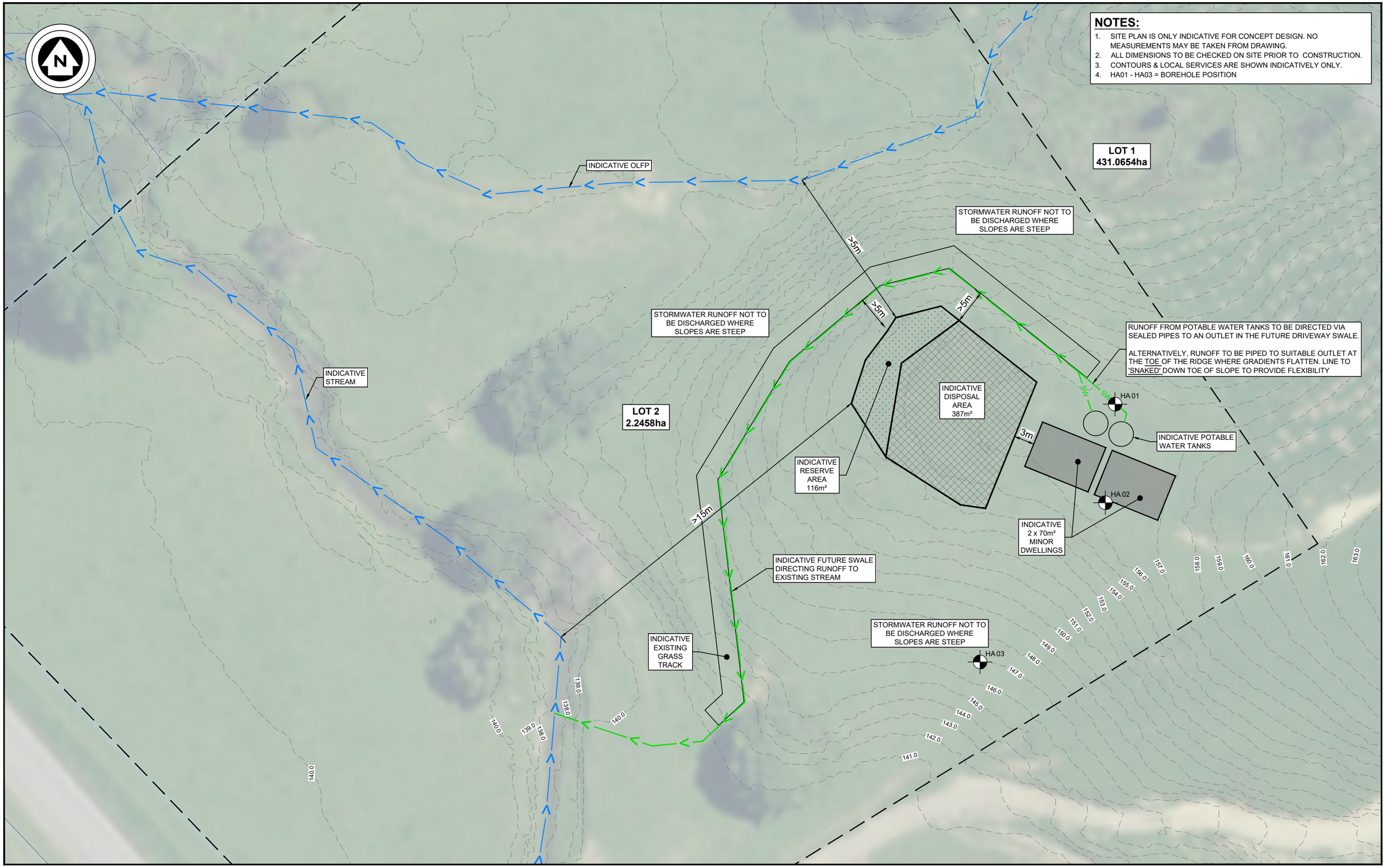
The conclusions and recommendations in this report are based on information available at the time of preparation and are dependent on appropriate implementation during construction. Variations in site conditions or construction practices may affect performance and should be reviewed by a suitably qualified and experienced engineer if encountered.

Yours faithfully,

WILTON JOUBERT LIMITED

Enclosures:

- Site Plan – C001 (1 sheet)
- Hand Auger Borehole Records (3 sheets)



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ISSUE / REVISION

No.	DATE	BY	DESCRIPTION
01	APR '26	GMB	CIVIL SITE SUITABILITY REPORT
02	APR '26	GMB	CIVIL SITE SUITABILITY REPORT REV02

DESIGNED BY: GMB
DRAWN BY: GMB
CHECKED BY: BGS
SURVEYED BY: N/A

SERVICES NOTE
WHERE EXISTING SERVICES ARE SHOWN, THEY ARE INDICATIVE ONLY AND MAY NOT INCLUDE ALL SITE SERVICES. WILTON JOUBERT LTD DOES NOT WARRANT THAT ALL, OR INDEED ANY SERVICES ARE SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING SERVICES PRIOR TO AND FOR THE DURATION OF THE CONTRACT WORKS.

RESOURCE CONSENT
DESIGN / DRAWING SUBJECT TO ENGINEER'S APPROVAL

DRAWING TITLE: **SITE PLAN**

PROJECT DESCRIPTION: **CIVIL SITE SUITABILITY REPORT**

PROJECT TITLE: **LOT 4 DP 537681 ORAKAU ROAD KAIKOHE NORTHLAND**

ORIGINAL DRAWING SIZE: A3
OFFICE: **OREWA**
DRAWING SCALE: **1:500**
CO-ORDINATE SYSTEM: NOT COORDINATED
DRAWING NUMBER: **145654-C001**
ISSUE: **02**

HAND AUGER : HA01

CLIENT: Toko Pekama
PROJECT: 2-Lot Subdivison
SITE LOCATION: Lot 4 DP 537681 Orakau Road, Punakitere Valley

JOB NO.: 145653 **SHEET:** 1 OF 1
START DATE: 18/03/2026 **NORTHING:** **GRID:**
DIAMETER: 50mm **EASTING:**
SV DIAL: DR4802 **ELEVATION:** Ground
FACTOR: 1.39 **DATUM:**

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE: PEAK STRENGTH (kPa)	SHEAR VANE: REMOULD STRENGTH (kPa)	SHEAR VANE: SENSITIVITY	DCP - SCALA (Blows / 100mm)	COMMENTS, SAMPLES, OTHER TESTS
Topsoil	TOPSOIL, dark brown, moist.	TS	0.0	Groundwater Not Encountered					
Punakitere Sandstone (Mangakahia Complex) in Northland Allochthon	NATURAL: Silty CLAY, trace sand and weakly cemented clasts, yellowish brown with orange and whitish grey mottles, very stiff, dry to moist, moderate plasticity.		0.2						
			0.4		133	33	4.0		
	0.6m: Orangey brown with orange and white mottles.		0.6						
	0.8m: No to trace sand and no clasts, moderate to high plasticity.		0.8		195+	-	-		
			1.0						
	1.2m: Orangey brown with whitish grey mottles, moist.		1.2		195+	-	-		
			1.4						
			1.6		111	44	2.5		
	1.8m: Whitish grey with orange mottles.		1.8						
	2.0m: 200mm lense with trace sand.		2.0		195+	-	-		
			2.2						
	2.4m: Trace sand, whitish grey with occasional orange mottles.		2.4		125	92	1.4		
	2.7m: Minor to some sand, low to moderate plasticity.		2.6						
			2.8		120	86	1.4		
	3.0m: Orangey brown with whitish grey mottles.		3.0						
	3.2m: 100mm lense of orangey brown silty clay.		3.2		120	89	1.3		
	CLAY, trace to minor silt and sand, light grey with orange mottles, stiff, moist, high plasticity.		3.4						
			3.6		89	33	2.7		
			3.8						
	4.0m: Light brownish grey with orange mottles, firm.		4.0		50	22	2.3		
			4.2						
	SILT, minor sand and clay, light brown with orange and white mottles, very stiff, moist to wet, no to low plasticity.		4.4						
			4.6		UTP	-	-		
	EOH: 4.60m - Too Hard To Auger				UTP	-	-	7	
			4.8					7	
								7	
			5.0					3	
								2	
			5.2					2	
								2	
			5.4					4	
								4	
			5.6					7	
								9	
			5.8					12	
								11	
			6.0					7	
								8	
			6.2					8	
								10	
			6.4					10	
								8	
			6.6					9	
								12	
			6.8					12	
								12	
			7.0					11	
								11	
			7.2					9	
								7	
			7.4					6	
								6	
			7.6					6	
								7	
			7.8					8	
								8	

REMARKS
End of borehole @ 4.60m (Target Depth: 5.00m)

NZGS Definition of Relative Density for Coarse Grain soils: VL - Very Loose; L - Loose; MD - Medium Dense; D - Dense; VD - Very Dense

LOGGED BY: SJP
CHECKED BY: CSH

▼ Standing groundwater level
▽ GW while drilling

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HAND AUGER : HA02

CLIENT: Toko Pekama
PROJECT: 2-Lot Subdivison
SITE LOCATION: Lot 4 DP 537681 Orakau Road, Punakitere Valley

JOB NO.: 145653 **SHEET:** 1 OF 1
START DATE: 18/03/2026 **NORTHING:** **GRID:**
DIAMETER: 50mm **EASTING:**
SV DIAL: 1994 **ELEVATION:** Ground
FACTOR: 1.41 **DATUM:**

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE: PEAK STRENGTH (kPa)	SHEAR VANE: REMOULD STRENGTH (kPa)	SHEAR VANE: SENSITIVITY	DCP - SCALA (Blows / 100mm)	COMMENTS, SAMPLES, OTHER TESTS
TS	TOPSOIL, dark brown, moist to wet.	TS	0.0	Groundwater Not Encountered					
FILL	NON-ENGINEERED FILL: Silty CLAY, organics intermixed, trace sand, yellowish brown with occasional brown mottles, very stiff, moist to wet, moderate plasticity.		0.2						
			0.4		158	37	4.3		
			0.6						
Topsoil	BURIED TOPSOIL, dark brown, stiff, wet, low to moderate plasticity.	TS	0.8		59	14	4.2		
		TS	1.0						
Punakitere Sandstone (Mangakahia Complex) in Northland Allochthon	NATURAL: Clayey SILT, occasional weakly cemented clasts, orangey brown with brown specks, very stiff, moist, low to moderate plasticity.		1.2		158	56	2.8		
	Silty CLAY, orangey brown, very stiff, moist, moderate to high plasticity.		1.4						
	1.7m: Orangey brown with light grey mottles.		1.6		161	79	2.0		
			1.8						
			2.0		127	70	1.8		
			2.2						
			2.4		161	90	1.8		
	2.6m: Light grey with occasional orangey brown streaks, moist to wet.		2.6						
			2.8		127	79	1.6		
	3.0m: Poor recovery.		3.0						
			3.2		110	59	1.9		
			3.4						
	3.5m: Some sand, light grey, moderate plasticity, poor recovery.		3.6						
	3.6m: Wet, stiff.				99	51	1.9		
	3.7m: Frequent clasts, grey brown and orange mottles.		3.8						
	Clayey SILT, some sand, greyish brown with orangey brown mottles, very stiff, wet, low plasticity.		4.0		152	25	6.1		
			4.2						
	4.4m: Stiff.		4.4		85	20	4.2		
			4.6						
	Sandy SILT, grey, very stiff, moist, no plasticity.		4.8		UTP	-	-		
			5.0					3	
	EOH: 5.00m - Target Depth		5.2					4	
								4	
			5.4					4	
								4	
			5.6					4	
								5	
			5.8					6	
								6	
			6.0					6	
								6	
			6.2					6	
								7	
			6.4					7	
								6	
			6.6					7	
								7	
			6.8					7	
								8	
			7.0					8	
								10	
			7.2					12	
								11	
			7.4					10	
								11	
			7.6					10	
								11	
			7.8					10	
								12	

REMARKS
End of borehole @ 5.00m (Target Depth: 5.00m)

NZGS Definition of Relative Density for Coarse Grain soils: VL - Very Loose; L - Loose; MD - Medium Dense; D - Dense; VD - Very Dense

LOGGED BY: JEM
CHECKED BY: CSH

▼ Standing groundwater level
▽ GW while drilling

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HAND AUGER : HA03

CLIENT: Toko Pekama
PROJECT: 2-Lot Subdivison
SITE LOCATION: Lot 4 DP 537681 Orakau Road, Punakitere Valley

JOB NO.: 145653 **SHEET:** 1 OF 1
START DATE: 18/03/2026 **NORTHING:** **GRID:**
DIAMETER: 50mm **EASTING:**
SV DIAL: 1994 **ELEVATION:** Ground
FACTOR: 1.41 **DATUM:**

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE PEAK STRENGTH (kPa)	SHEAR VANE REMOULD STRENGTH (kPa)	SHEAR VANE SENSITIVITY	DCP - SCALA (Blows / 100mm)	COMMENTS, SAMPLES, OTHER TESTS
Topsoil	TOPSOIL, dark brown, dry.	TS	0.2	Groundwater Not Encountered					
Punakitere Sandstone (Mangakahia Complex) in Northland Allochthon	NATURAL: Sandy SILT, minor clay, orangey brown, very stiff, dry, no to low plasticity.		0.4		130	25	5.2		
	Clayey SILT, some sand, orangey brown, very stiff, moist, low plasticity.		0.6						
	1.0m: Trace sand, orangey brown with light grey mottles.		0.8		133	56	2.4		
	1.4m: Orangey brown.		1.0						
			1.2		127	62	2.0		
			1.4						
			1.6		183	73	2.5		
	2.0m: Moist to wet.		1.8						
	2.2m: Wet, no to low plasticity.		2.0		141	42	3.4		
			2.2						
	Sandy SILT, orangey brown with grey mottles, very stiff to hard, moist, no plasticity.		2.4		UTP	-	-		
			2.6		UTP	-	-	19	
	EOH: 2.60m - Too Hard To Auger		2.8					7	
			3.0					9	
			3.2					10	
			3.4					10	
			3.6					20+	
			3.8						
			4.0						
			4.2						
			4.4						
			4.6						
			4.8						
			5.0						
			5.2						
			5.4						
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			5.8						
			6.0						
			6.2						
			6.4						
			6.6						
			6.8						
			7.0						
			7.2						
			7.4						
			7.6						
			7.8						

REMARKS
End of borehole @ 2.60m (Target Depth: 5.00m)

NZGS Definition of Relative Density for Coarse Grain soils: VL - Very Loose; L - Loose; MD - Medium Dense; D - Dense; VD - Very Dense

LOGGED BY: JEM
CHECKED BY: CSH

▼ Standing groundwater level
▽ GW while drilling

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Appendix 6

Site Assessment Report

Wilton Joubert Limited
185 Waipapa Road,
Kerikeri 0230
Tel: (09) 527 0196

PARENT PROPERTY	**Orakau Road, Punakitere Valley**
LEGAL DESCRIPTION	**Lot 4 DP 537681**
PROJECT	**Proposed 2-Lot Subdivision of the Parent Property and Proposed Dwellings within Future Lot 2**
CLIENT	**Toko Pekama**
REFERENCE NO.	**145653**
DOCUMENT	**Site Assessment Report**
STATUS/REVISION NO.	**FINAL – Issued for Resource (Subdivisional) Consents**
DATE OF ISSUE	**27 March 2026**

Report Prepared For	Attention	Email
Toko Pekama	Lynley Newport	t.pekama.69@outlook.com lynley@tsurvey.co.nz

Authored by	**S. Page**	Engineering Technician	shaun@wjl.co.nz	
Reviewed by	**A. Brooke** *NZDE (Civil)*	Engineering Technician	aidan@wjl.co.nz	
Approved by	**C. Hegedus** *BETech (Geotech) CPEng, CMEngNZ*	Senior Geotechnical Engineer	csaba@wjl.co.nz	

1. EXECUTIVE SUMMARY

The following table is intended to be a concise summary which must be read in conjunction with the relevant report sections as referenced herein.

Development Type:	2-Lot subdivision (Future Lot 2 for assessment).
Development Proposals Supplied:	Yes - Subdivision Scheme Plan.
NZS3604 Type Structure(s):	Yes – Assumed to be.
Maximum Fill Depth Proposed:	Anticipated to be minimal/none.
Maximum Cut Depth Proposed:	Unknown, any cut proposal will require review at the Building Consent stage.
Geology Encountered:	Punakitere Sandstone (Mangakahia Complex) in Northland Allochthon.
Surficial Topsoil, Non-Engineered Fill & Buried Topsoil Encountered:	Yes – Surficial layers were encountered at our test locations to depths ranging between 0.10m and 1.1m below present ground level.
Overall Site Gradient in Proximity to Designated Building Platforms:	The Client has identified a proposed building site location towards the southwestern edge of the eastern boundary ridge crest of the site. The crest is somewhat broad in nature, falling gently to the northwest. Moderate to very steeply sloping side flanks, averaging 18° to 31°, fall some 20m to 25m from the crest towards the north, west and southwest, down to low-lying basin land.
Site Stability Risk:	Our computer-based stability analysis indicates a Low Risk of Global Land Instability at the proposed development provided that our recommendations within this report are adhered to. **Any revision or changes in the proposal location must be reviewed by WJL and potentially reassessed for slope stability.**
Liquefaction Risk:	Negligible risk of liquefaction susceptibility.
Preliminary Foundation Design Recommendations:	Shallow foundations are suitable to support the proposed dwellings provided they are minimum 5.0m away from ground steeper than 1V:4H (14°) and designed to accommodate vertical movement of soil associated with Soil Reactivity **Class H – Highly Reactive**. Any proposed foundations that are within 5.0m from slopes steeper than 1V:4H (14°) will need to be assessed for long-term incremental loss of lateral support caused by soil creep at the Building Consent stage.
Soil Bearing Capacity:	Yes – Natural soils only. Geotechnical Ultimate Bearing Capacity = 300kPa.
NZBC B1 Expansive Soil Classification:	Class H – Highly Expansive (ys = 78mm).

NZS1170.5:2004 Site Subsoil Classification:	Class C – Shallow soil stratigraphy.
Minimum Footing Embedment Depth:	0.90m below finished ground levels and 0.30m into competent natural ground, whichever is deeper.
Consent Application Report Suitable for:	Resource (subdivisional) and Building Consents. Once development and foundation design plans for the proposed development have been finalised at the Building Consent stage, the drawings should be referred to to us for review to verify that the recommendations contained in this report have been incorporated into the design. Depending on the future development proposals, the review could range from desktop assessment to further geotechnical investigation, assessment and reporting.

2. INTRODUCTION

2.1. SCOPE OF WORK

Wilton Joubert Limited (WJL) was engaged by **Toko Pekama** (the Client) to undertake a geotechnical assessment of the above site, where we understand, it is proposed to subdivide the existing property into two individual allotments (Lot 1 and Lot 2).

The primary purpose of this report is to provide Geotechnical assessments along with preliminary design recommendations pertaining to a proposed residential development within future Lot 2. Future Lot 1 is excluded from our assessments and is a balance Lot encompassing an area of approximately 431ha.

It is our understanding that this report will be submitted to support a Resource Consent application for the proposed subdivision development and maybe used for a future Building Consent for the proposed dwellings at future Lot 2.

2.2. SUPPLIED INFORMATION

At the time of preparing this report, we were supplied with a Subdivision Scheme Plan, dated 7 April 2025 (Ref: 10749), prepared by Thomson Survey Limited.

The Client has identified a proposed building site location towards the southwestern edge of the eastern boundary ridge crest of future Lot 2.

Any revision of the Subdivision Scheme Plan and the location of the proposed dwellings with Geotechnical implications should be referred to us for review.

3. SITE DESCRIPTION

Future Lot 2 (the site) will be created within the following 433.3ha rural property (parent lot), which covers a vast area of land off the eastern side of Orakau Road, in the middle of the Punakitere Valley area.

The parent lot is legally described as Lot 4 DP 537681, Orakau Road, Punakitere Valley, as shown in Figure 1a below.

Future Lot 2 (the site) will be created to the western corner of the parent Lot and its approximate location is indicated on our appended Site Plan (Drawing No. 145653-G600) and also in Figure 1a and 1b below.

The site will cover the western corner of the parent block, encompassing an area of approximately 2.2ha, and will be accessed at the proposed southern boundary corner from Orakau Road, approximately 8.4km southeast of the State Highway 15 intersection.

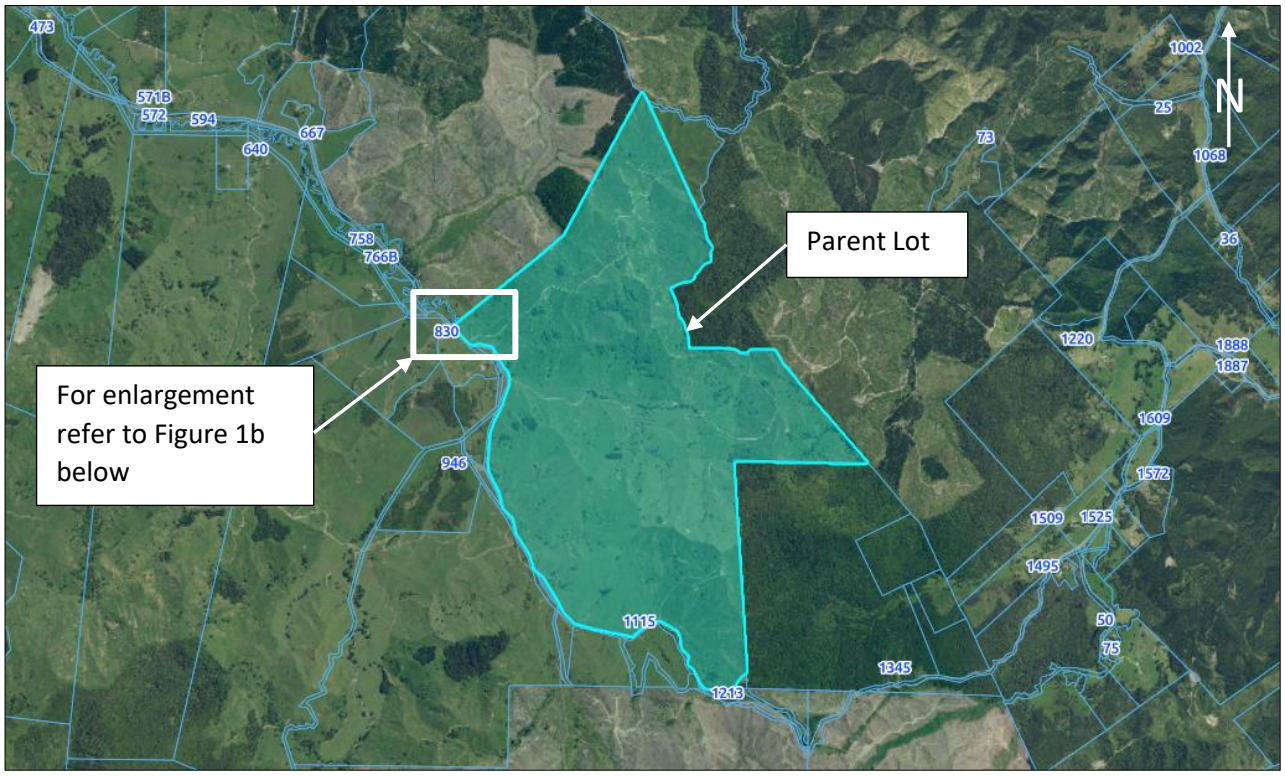

Figure 1a: Aerial view with the subject property (parent lot) highlighted in cyan (from Far North District Councils online GIS database).

Figure 2b: Aerial view with the future Lot 2 (from Far North District Councils online GIS database).

The site is vacant of structures and is covered in pasture, with occasional mature trees present. The Punakitere River meanders through the western portion of the site, essentially traversing northwest to southeast.

Topographically speaking, an elevated broad ridge feature across the eastern portion of the site is present which descends to low-lying, flat to gently sloping basin land to the northwest, west and southwest. Moderate to very steeply sloping side flanks, averaging 18° to 31°, fall some 20m to 25m from the crest of the ridge down to the northwest, west and southwest, towards the basin land.

The Far North District Council (FNDC) on-line GIS Water Services Map indicates that public underground service connections are not available to the property.

4. DEVELOPMENT PROPOSALS

We have been engaged to provide Geotechnical assessments along with preliminary design recommendations pertaining to proposed residential development within future Lot 2.

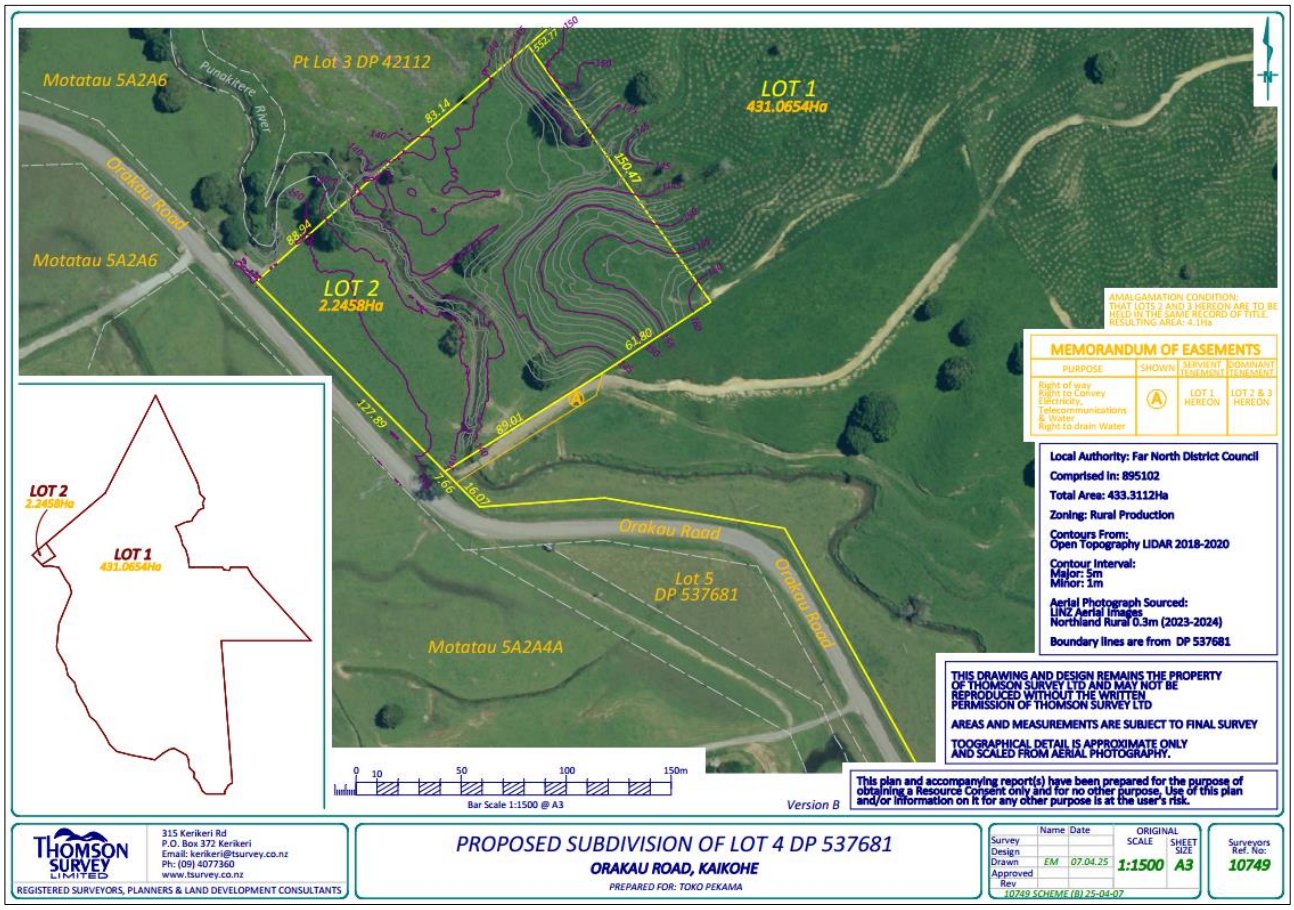

Figure 2: Subdivision scheme site plan (from Thompson Survey Limited).

The Client has identified a proposed building site location towards the southwestern edge of the eastern boundary ridge crest of the site. The Client has advised that the proposed development will comprise of two 70m² minor dwellings, aligned side-by-side. Both dwellings will be founded on timber subfloors, suspended on bored, concrete encased, tanalised timber pile foundations.

At this preliminary stage, we are unsure any earthwork proposals related to forming the proposed building site. The Client has advised that some minor cuts into the southeastern flank above the ridge crest may be undertaken. We do not anticipate any significant fills and recommend that they are limited in nature.

Figure 3: Site photograph looking north towards the future Lot 2 building site.

As a result, the principal objectives were to investigate and assess the suitability of foundation options for the site subsoils, not only primarily in terms of bearing capacity, but also for slope stability and differential foundation movement.

5. DESKTOP STUDY

5.1. PUBLISHED GEOLOGY

Reference to the New Zealand Geology Web Map hosted by GNS Science indicates that future Lot 2 is essentially underlain by **Tauranga Group** deposits, specifically being Holocene Age River Deposits. These deposits are up to approximately 14 thousand years in age and described as; "*Unconsolidated to poorly consolidated mud, sand, gravel and peat deposits of alluvial, colluvial and lacustrine origins.*"

However, considering the elevation of the eastern ridge feature, together with our subsoil findings (see Section 7 below), we generally assess the future Lot 2 building site as being underlain by the wider geological formation to the northeast, noted as **Punakitere Sandstone (Mangakahia Complex) in Northland Allochthon.** These deposits are approximately 95 to 75 million years in age and described as; "*Weakly to moderately indurated, alternating thin-to-thick-bedded, quartzofeldspathic sandstone and mudstone.*"

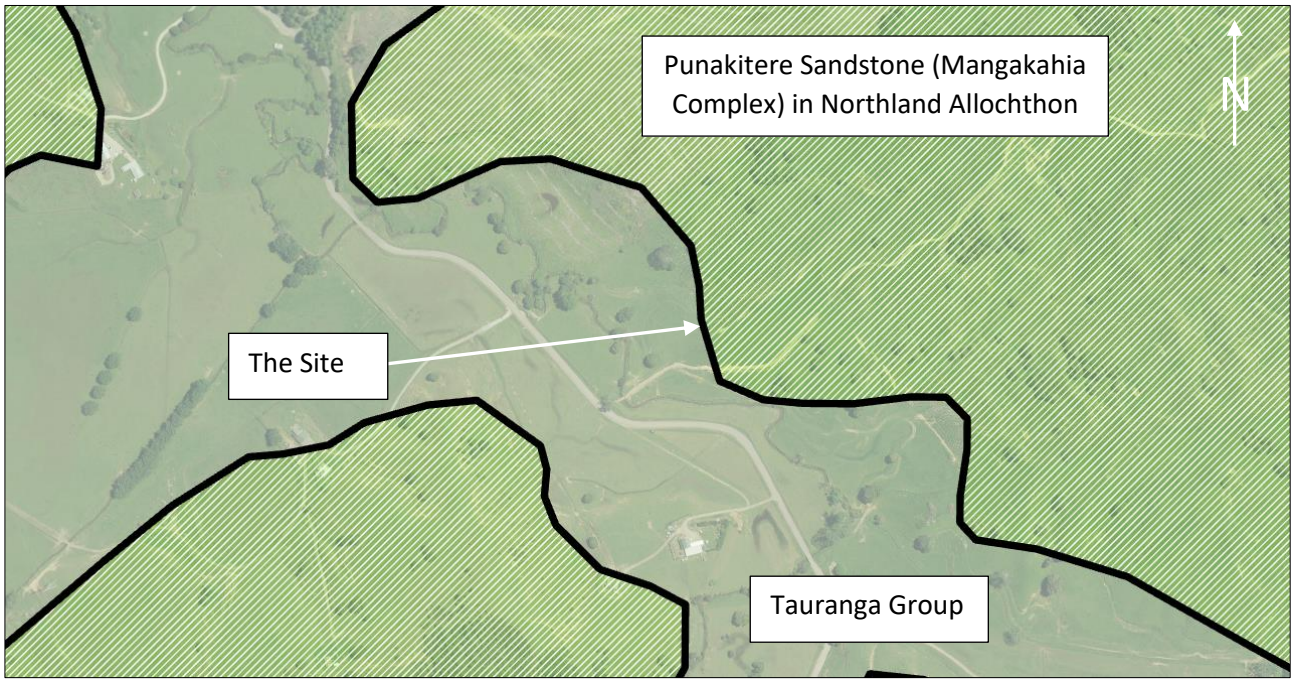

Figure 4: Screenshot from the New Zealand Geology Web Map hosted by GNS Science.

5.2. HISTORICAL AERIAL PHOTOGRAPHY REVIEW

A historical aerial photography review was undertaken to evaluate any slope instability features or changes in landform at the site. Aerial images from 1951 have been reviewed and compared to the present-day conditions.

There were no visible significant geomorphological changes in the landscape or obvious features consistent with major ground instability, indicating a period of stable ground conditions between 1951 and 2026.

A previous development was constructed towards the northwestern end of the ridge crest at some point between 1951 and 1977; however, was demolished between 1977 and June 2007.

Figure 5: Historical aerial photo from 1951 (source: https://retrolens.co.nz).

Figure 6: Historical aerial photo from 1953 (source: https://retrolens.co.nz).

Figure 7: Historical aerial photo from June 2007 (source: Google Earth Pro).

6. GEOTECHNICAL INVESTIGATION

Our fieldwork, as depicted on our appended Site Plan, was undertaken on 18th March 2025 and involved:

- Drilling 3 (no.) 50mm diameter hand auger boreholes (HA01 to HA03 inclusive) to depths ranging between 2.6m and 5.0m below present ground level (bpgl), and
- Dynamic Cone Penetrometer (DCP-Scala) tests were undertaken from the base of all three boreholes to depths ranging between 3.2m and 7.9m bpgl.

7. GEOTECHNICAL FINDINGS

The soil sample arisings from the boreholes were logged generally in accordance with the *"Field Description of Soil and Rock",* New Zealand Geotechnical Society (NZGS), December 2005.

The following is a summary of the ground conditions encountered in our investigations. Please refer to the appended logs for greater detail.

7.1. TOPSOIL

Surficial topsoil was encountered in all boreholes to depths ranging between 0.10m to 0.20m bpgl.

7.2. FILLED GROUND

Underlying surficial topsoil in HA02, fill material was encountered to a depth of 0.7m bpgl. The fill comprised of very stiff silty CLAY, intermixed with organic material and was underlain by a 0.40m thick buried topsoil layer, with the natural ground interface present at a depth of 1.1m bpgl.

Considering the presence of organic material within the fill material and underlying buried topsoil layer, we assess all fill material as NON-ENGINEERED and unsuitable to support any future permanent structure.

7.3. NATURAL GROUND

The underlying natural deposits encountered were consistent with our expectations of Punakitere Sandstone (Mangakahia Complex) in Northland Allochthon deposits, comprising of stiff to very stiff, silty CLAY, clayey SILT, SILT and sandy SILT.

Measured in-situ BS1377 adjusted peak Vane Shear Strengths generally ranged between 85kPa and greater than 195kPa, the latter being where soil strength was in excess of the shear vane capacity, or the vane could not penetrate the soil (UTP). An isolated low of 50kPa was measured at a depth of 4.0m bpgl in HA01.

DCP-Scala testing below the base of each borehole generally returned blow counts that ranged from 3 to greater than 20 blows per 100mm penetration, indicating medium dense to very dense stratum at depth. An isolated 0.30m thick layer of loose stratum, returning blow counts of 2, was encountered between depths of 5.1m and 5.2m bpgl in HA01.

The ratio of peak to remoulded vane shear strength values measured within the boreholes ranged between 1.4 and 6.1, indicating the underlying subsoils fluctuate between 'Insensitive and sensitive' subgrade.

Sensitive soil sites require to protect the subgrade from rain, wind, etc., and to avoid (or minimise) construction traffic and vibrating plants.

7.4. GROUNDWATER

Groundwater was not encountered in any of the boreholes on the day of our investigation.

7.5. SUMMARY TABLE

The following table summarises our inferred stratigraphic profiling:

Table 1: Stratigraphic Summary Table

Investigation Hole ID	Termination Depth (m)	Depth to Base of Surficial Topsoil, Non-Engineered Fill & Buried Topsoil (m)	Vane Shear Strength Range within Natural Ground (kPa)	DCP-Scala Termination Depth Below Borehole Base (m)	DCP-Scala Blow Count Range Per 100mm Penetration	Groundwater Depth (m)
HA01	4.6 (1)	0.15	50 – 195+ / UTP	7.9	2 - 12	NE
HA02	5.0	1.10	85 - UTP	7.9	3 - 12	NE
HA03	2.6 (1)	0.20	127 - UTP	3.2	7 – 20+	NE

Table Note: (1) Too hard to hand auger, NE Not encountered

7.6. EXPANSIVE SOILS

Naturally occurring, seasonal moisture variations are a strong characteristic of most Upper North Island soils, typically resulting in plastic soil masses swelling during winter months and then shrinking during summer months. Such volumetric changes in foundation soils (broadly termed 'Expansive Soils') vary according to clay mineralogy and geology and are a significant risk to buildings.

In this instance, in the absence of laboratory testing, but instead adopting the visual-tactile method as per AS2870, considering the high clay content and moderate to highly plastic nature of the subsoils at foundation levels, we have adopted a conservative primary classification estimate of the soils underlying the site as follows:

- NZBC B1 Expansive Soil Class H
- Upper Limit of Characteristic surface movement (y_s) 78mm

Effects of expansive soils for the construction type proposed here, will require mitigation by way of specific engineering design (SED) deepened bored footings. Foundation design recommendations are given in the appropriate Conclusion and Recommendation sections below.

8. GEOTECHNICAL ASSESSMENTS

As appropriate to the site conditions, we have carried out the following geotechnical analyses:

- Qualitative and quantitative slope stability, and
- Liquefaction susceptibility.

8.1. QUALITATIVE SLOPE STABILITY

The client has identified a future building site location towards the southwestern edge of the eastern boundary ridge crest. The crest is somewhat broad in nature, falling gently to the northwest. Moderate to very steeply sloping side flanks, averaging 18° to 31°, fall some 20m to 25m from the crest towards the north, west and southwest, down to low-lying basin land.

Our assessment has also considered the following:

- Non-engineered fill and buried topsoil was overlying HA02 to a depth of 1.1m bpgl,
- Stiff to hard Northland Allochthon soils encountered during our investigations,

- DCP-Scala testing below the base of the boreholes generally indicating medium dense to very dense stratum at depth,
- Groundwater was not encountered in any of the boreholes on the day of our investigation,
- The future building site is situated on broad, elevated ridge crest, with good water-shedding characteristics,
- There are no known active faults traversing through or close to the site, and
- Aside from surficial soil creep across the surrounding moderate to steeply sloping side flanks, no visual signs of recent global ground instability were observed at the time of our investigation. A review of historical aerial photography confirms absence of any obvious recent global ground instability.

8.2. QUANTITATIVE SLOPE STABILITY

Appended Cross-section A-A' (Drawing No. 145653-G610) was drawn using LiDAR data sourced from the Land Information New Zealand (LINZ) database to represent the topography of the proposed building site and surrounding influential land.

Slope stability analyses were undertaken using computer program Slide 2, by Rocscience Limited. Theoretical non-circular (composite) surfaces were assessed using the Spencer and GLE / Morgenstern-Price methods.

An assumed Uniformly Distributed Load (UDL) of 10kPa was applied to represent the surcharge load of the proposed dwelling.

The stability analyses have been undertaken for existing conditions (moderate groundwater), worst-case ground conditions (elevated groundwater) and extreme scenarios (seismic loading).

A Peak Ground Acceleration (PGA) value of 0.19g (ULS) was used for the 500-year seismic event, along with an effective earthquake magnitude of 6.5 as recommended by the NZGS (Earthquake Geotechnical Engineering Practice Module 1, Dated: November 2021).

Back Analysis:

Using the inferred original ground surface of Cross-section A-A' and assuming a groundwater level at ground surface (i.e., fully saturated ground conditions), we have carried out back analyses based on our experience of the geology, along with measured soil strengths within our test locations, to determine the minimum effective stress parameters to achieve a safety factor of ≈1.0.

Table 2: Stability Analysis Results – Back Analysis

Section	Design Conditions	Factor of Safety (FoS)	
		Targeted	Calculated
A – A'	Inferred original ground surface, groundwater at ground surface	~1.0	0.84

Undrained soil strength parameters (no friction angle) were used to model the extreme conditions of a seismic event.

The soil strength parameters used in the stability assessment are shown in the following table:

Table 3: Effective Shear Stress (Shear Strength) Parameters

Soil Parameters	Non-engineered Fill	Weathered Northland Allochthon Soils	Less Weathered Northland Allochthon Soils
Unit Weight, γ (kN/m3)	17	17	18
Effective Cohesion c' (kPa)	2	5	7
Friction Angle, ϕ' (°)	20	25	30
Undrained (no ϕ') Su	20	40	150

We have adopted the following scenarios:

1. **Moderate Groundwater Level**: Long-term stability when modelling the existing ground conditions and assumed a groundwater level at a depth of approximately 5.0m below the building site.

   Factor of Safety (FoS) required >1.5.

2. **Elevated Groundwater Level**: Transient (medium-term) stability when modelling the worst-case scenario and assumed a raised groundwater level at a depth of approximately 1.0 to 2.0m below building site.

   FoS required >1.3.

   It is important to consider that the construction of future structures and sealed surfaces is expected to intercept and redirect stormwater in a controlled fashion, such that ponding of rainwater and infiltration into the ground that would otherwise create extremely elevated groundwater conditions is highly unlikely.

   As a result, it is anticipated that groundwater level is likely to remain deeper than modelled, hence the elevated groundwater scenario represents a 'sensitivity' check.

3. **Seismic Loading**. Short-term stability when modelling extreme ground conditions under a 500-year seismic event and assumed a moderate groundwater level at a depth of approximately 5.0m below the building site.

   FoS required >1.1.

A summary of the calculated minimum FoS against failure across the proposed development area for each of the above scenarios is shown in the the Table 4 and 5 below:

Table 4: Stability Analysis Results – Post-Development for Northern Slope (Proposed)

Section	Design Conditions	FoS within the Proposed Building Platform		Compliance
		Required	Calculated	
A-A'	Moderate Groundwater, plus Surcharge Load	≥1.5	>1.5	Yes*
	Elevated Groundwater, plus Surcharge Load	≥1.3	>1.3	Yes*
	Moderate Groundwater, plus Surcharge Load, plus Seismic Load	≥1.1	>1.1	Yes

**An unsatisfactory FoS is present on the northern end of the crest and moderate to steeply sloping side flank downslope; however, these failures are clear of any proposed structures.*

Table 5: Stability Analysis Results – Post-Development for Southwestern Slope (Proposed)

Section	Design Conditions	FoS within the Proposed Building Platform		Compliance
		Required	Calculated	
A-A'	Moderate Groundwater, plus Surcharge Load	≥1.5	>1.5	Yes
	Elevated Groundwater, plus Surcharge Load	≥1.3	1.3	Yes
	Moderate Groundwater, plus Surcharge Load, plus Seismic Load	≥1.1	>1.1	Yes

8.3. SHALLOW SOIL MOVEMENT (SOIL CREEP)

Soil Creep is the slow downslope movement of upper soil horizons, usually confined to the uppermost 1.0m to 2.0m of soil likely to be operating on slopes steeper than 1V:4H (14°) in such geological settings. The soil movement is generally in the order of millimetres per year, and the rate and depth are a product of the combination of the following conditions:

- Slope length,
- Slope angle,
- Stormwater runoff,
- Groundwater fluctuations,
- Soil expansivity,
- Vegetation,
- Surcharge loads,
- Cut/fill earthworks (if not retained).

Generally speaking, soil creep becomes mobilised on slopes steeper than 1V:4H (14°) largely as a cyclical phenomenon arising out of seasonal variations in moisture content of surficial soils, generally resulting in soil shrinkage during the dry summer months and swelling during wet winter months. It is generally considered that in the dry seasons, the soils shrink, and tension cracks are formed, sometimes with some minor down-slope movement. When it rains, those cracks fill with water, which not only softens the adjacent soils, but also exerts hydrostatic lateral pressures on the sides of the cracks. As the desiccated soils absorb this free water, they swell and exert further lateral pressures on the adjacent block of soil. This cyclic action leads to the formation of "minor slump terracettes".

8.4. STABILITY CONCLUSIONS

Our analyses indicate that satisfactory FoSs are available for the global stability of the site under all conditions. The outputs from our modelling (7 sheets) are appended.

It should be noted that during the moderate and elevated groundwater level scenarios, unsatisfactory FoSs are present along the northern end of the crest and moderate to steeply sloping side flank downslope.

As such, we recommend that any proposed foundations that are within 5.0m from slopes steeper than 1V:4H (14°) are assessed for long-term incremental loss of lateral support caused by soil creep at the Building Consent stage once the future development proposal has been finalised.

Any revision or changes in the proposal location must be reviewed by WJL and potentially reassessed for slope stability.

8.5. LIQUEFACTION SUSCEPTIBILITY

Liquefaction is the loss of effective strength of a cohesionless soil (typically sand) due to pore-water pressures generated during a seismic event (earthquake). The partial or complete loss of effective strength of loose, saturated soils can result in vertical settlement and/or horizontal movement (lateral spreading) of the ground.

A commonly accepted definition is: 'Areas susceptible to liquefaction generally correspond with geologically young deposits (less than 10,000 years) located in relatively flat areas close to active or abandoned waterways, in coastal or estuarine areas, and/or areas of uncompacted or poorly compacted fill.' None of these characteristics apply to this site.

We have carried out liquefaction susceptibility assessments in order to identify the risk of ground damage during a seismic event, based on the following items:

- The FNDC online GIS Hazard Map categorises the site as an '*Undetermined*' Liquefaction Vulnerability area,
- Non-engineered fill and buried topsoil was overlying HA02 to a depth of 1.1m bpgl,
- Stiff to hard Northland Allochthon soils encountered during our investigations,
- DCP-Scala testing below the base of the boreholes generally indicating medium dense to very dense stratum at depth,
- Groundwater was not encountered in any of the boreholes on the day of our investigation,
- The future building site is situated on broad, elevated ridge crest, set no less than approximately RL150m New Zealand Vertical Datum (NZVD), with good water-shedding characteristics,
- There are no known active faults traversing through or close to the site, and

- Soils of the Northland Allochthon underlie the site (geological age +75My).

8.6. LIQUEFACTION ASSESSMENT CONCLUSION

Based on our susceptibility assessment, we conclude that the soils at the site have a negligible risk of liquefaction susceptibility, and therefore liquefaction induced ground damage is consequently unlikely.

9. CONCLUSIONS AND RECOMMENDATIONS

Based on our observations, site survey, record research, hand auger borehole investigation and in-situ testing as described herein, we consider on reasonable grounds that this report can be submitted to the Territorial Authority in support of a Resource Consent application for subdividing the subject site, substantiating that in terms of section 106 of the Resource Management Act and its current amendments, either

a) No land in respect of which the consent is sought, nor any structure on that land, is, nor is likely to be subject to material damage by erosion, falling debris, subsidence, or slippage from any source, or

b) No subsequent use that is likely to be made of the land is likely to accelerate, worsen, or result in material damage to that land, other land, or structure, by erosion, falling debris, subsidence, or slippage from any source.

Therefore, we are satisfied that the client identified building site at future Lot 2 should be generally suitable for proposed residential construction in terms of NZS3604:2011, provided development design is in accordance with the recommendations of this report and a Geotechnical development review of the finalised development and foundation drawings is undertaken during the Building Consent stage. Provided the above is adhered to, with regard to the Building Act 2004; Sections 71-72, we believe on reasonable grounds that:

i. The current proposed site development and associated building work to which an application of Building Consent must be made to FNDC, should not accelerate, worsen, or result in slippage or subsidence on the land on which the building work is to be carried out or any other property; and

ii. The land beneath the building footprint and surrounding immediate amenity area is neither subject nor likely to be subject to slippage or subsidence, provided the development is undertaken in accordance with the recommendations and guidance of this report.

9.1. PRELIMINARY FOUNDATION DESIGN

The client has advised that the proposed development will comprise of two 70m² minor dwellings, aligned side-by-side. Both dwellings will be founded on timber subfloors, suspended on bored, concrete encased, tanalised timber pile foundations.

Shallow foundations are suitable to support the proposed dwellings provided they are minimum 5.0m away from ground steeper than 1V:4H (14°) and designed to accommodate vertical movement of soil associated with Soil Reactivity **Class H – Highly Reactive.**

Any proposed foundations that are within 5.0m from slopes steeper than 1V:4H (14°) will need to be assessed for long-term incremental loss of lateral support caused by soil creep at the Building Consent stage.

All foundations must bypass all non-engineered fill and buried topsoil materials encountered and be sufficiently embedded into competent natural ground.

9.1.1. SHALLOW FOUNDATION BEARING CAPACITY

The following bearing capacity values are considered to be appropriate for the design of shallow foundations, subject to founding directly within competent natural ground, for which careful Geo-Professional inspections of the subgrade should be undertaken to check that underlying ground conditions are in keeping with our expectations:

Table 6: Bearing Capacity Values

Parameters	Northland Allochthon Soils
Geotechnical Ultimate Bearing Capacity	300 kPa
ULS Dependable Bearing Capacity (Φ=0.5)	150 kPa

When finalising the development proposals, it should be checked that all foundations lie outside 45° envelopes rising from 0.50m below the invert of service trenches, unless such foundation details are found by SED to be satisfactory. Deeper foundation embedment or bridging piles may be required for any surcharging foundations.

9.1.2. SHALLOW FOUNDATIONS ON EXPANSIVE SOILS

As described earlier in this report, we have estimated the classification of the soils as follows:

- NZBC B1 Expansive Soil Class H
- Upper Limit of Characteristic surface movement (y_s) 78mm

Given that the soils are not considered to lie within the definition of "*Good Ground*" in accordance with NZS3604:2011, the design of shallow foundations is no longer covered by NZS3604:2011. Care must be taken to mitigate against the potential seasonal shrinkage and swelling effects of expansive foundation soils on both superstructures and floors. We therefore recommend SED should be undertaken by a qualified engineer for the design of all proposed foundations.

All bored footings should be embedded a minimum of 0.90m below finished ground levels and 0.30m into competent natural ground, whichever is deeper.

9.2. NZS1170.5:2004 SITE SUBSOIL CLASSIFICATION

We consider the proposed building site to be underlain with a Class C – Shallow Soil stratigraphy.

9.3. SITE EARTHWORKS

At this preliminary stage, we are unsure of exact earthwork proposals in forming the proposed building site. The Client has advised that some minor cuts into the southeastern flank above the ridge crest may be undertaken. We do not anticipate any significant fills and recommend they are limited in nature.

We recommend no earthworks are undertaken across the building site until future development and foundation drawings have been Geotechnically reviewed at the Building Consent stage.

All earthworks should be undertaken in accordance with the following standards:

- NZS4431:2022 "Code of Practice for Earth Fill Residential Development",
- Section 2 "Earthworks & Geotechnical Requirements" of NZS4404:2010 "Land Development and Subdivision Infrastructure", and
- The FNDC Engineering Standards (Version 0.6, dated May 2023).

9.4. SITE CLEARANCE & PREPARATION

The competency of the exposed subgrade at the invert of all bored footings should be confirmed by a Geo-Professional. Without such inspections being undertaken, a Chartered Professional Geotechnical Engineer is unable to issue a Producer Statement - PS4 – Design Review which could result in the failure to meet Building Consent requirements as set by Council as conditions of consent.

9.5. SUBGRADE PROTECTION

All bored footing inverts should be poured as soon as possible once inspected by a Geo-Professional or covered with a protective layer of site concrete.

9.6. GENERAL SITE WORKS

We stress that all work should be undertaken in a careful and safe manner so that Health and Safety is not compromised, and that suitable Erosion and Sediment control measures should be put in place. Any stockpiles placed should be done so in an appropriate manner so that land stability and/or adjacent structures are not compromised.

Furthermore:

- All works must be undertaken in accordance with the Health and Safety at Work Act 2015.
- Any open excavations should be fenced off or covered, and/or access restricted as appropriate.
- **Crests above steeply sloping ground should be isolated, and heavy plant should be kept away from these areas.**
- The location of all services should be verified at the site prior to the commencement of construction.
- The Contractor is responsible at all times for ensuring that all necessary precautions are taken to protect all aspects of the works, as well as adjacent properties, buildings and services.
- Should the contractor require any site-specific assistance with safe construction methodologies, please contact WJL for further assistance.

9.7. LONG-TERM FOUNDATION CARE & MAINTENANCE

The recommendations given above to mitigate the risk of expansive soils do not necessarily remove the risk of external influences affecting the moisture in the subgrade supporting the foundations.

All owners should also be aware of the detrimental effects that significant trees can have on building foundation soils, viz:

- Their presence can induce differential consolidation settlements beneath foundations through localised soil water deprivation, or conversely, and
- Foundation construction too soon after their removal can result in soil swelling and raising foundations as the soil rehydrates.

To this end, care should be taken to avoid:

- Having significant trees positioned where their roots could migrate beneath the house foundations, and
- Constructing foundations on soils that have been differentially excessively desiccated by nearby trees, whether still existing, or recently removed.

We recommend that homeowners make themselves familiar with the appended Homeowners' Guide published by CSIRO, with particular emphasis on maintenance of drains, water pipes, gutters, and downpipes.

10. STORMWATER & SURFACE WATER CONTROL

Uncontrolled stormwater flows from new development areas must not be allowed to run onto or over site slopes, or to saturate the ground, so as to adversely affect foundation conditions or slope stability.

Overland flows and similar runoff such as from any higher ground should be intercepted by means of shallow surface drains and/or small bunds and be directed away from future building site to protect building platforms from both saturation and erosion. Water collected in interceptor drains should be diverted away from the building site to an appropriate disposal point. All stormwater runoff from new roof and paved areas should be collected in sealed pipes and be discharged to a Council approved stormwater system.

Under no circumstances should concentrated overflows from any source discharge into or onto the ground in an uncontrolled fashion, especially directly to the moderate to steeply sloping side flanks that surround the building site. Discharging to the low-lying basin land is recommended.

11. ON-SITE WASTEWATER DISPOSAL

No reticulated sanitary sewer is available for the site; therefore, an on-site wastewater treatment and disposal system will be required to service the future development.

We recommend that all designs for future on-site wastewater systems should be carried out by an Engineer experienced in on-site wastewater disposal.

12. UNDERGROUND SERVICES

Underground services, public or private, mapped, or unmapped, of any type may be present.

A thorough service-search should be carried out prior to commencement of any excavations to locate the exact locations of the underground services.

13. DRAWING REVIEW

Once development and foundation design plans for the proposed development have been finalised, the drawings should be referred to us for review to verify that the recommendations contained in this report have been incorporated into the design.

Depending on the future development proposals, the review could range from desktop assessment to further geotechnical investigation, assessment and reporting.

14. FUTURE CONSTRUCTION MONITORING

The foregoing statements are Professional Opinion, based on a limited collection of information, some of which is factual, and some of which is inferred. Because soils are not a homogeneous, manufactured building component, there always exists a level of risk that inferences about soil conditions across the greater site, which have been drawn from isolated "pinprick" locations, may be subject to localized variations. Generally, any investigation is deemed less complete until the applicability of its inferences and the Professional Opinions arising out of those are checked and confirmed during the construction phase, to an appropriate level.

It is increasingly common for the Building Consent Authorities (BCA) to require a Producer Statement – Construction (PS4) which is an important document. The purpose of the PS4 is to confirm the Engineers' Professional Opinion to the BCA that specific elements of construction, such as the verification of design assumptions and soil parameters (NZBC clause B1/VM4 2.0.8), are in accordance with the approved Building Consent and its related documents, which should include the subject Geotechnical Report. Where site works will involve the placement of fill, the PS4 should reference NZBC clause B1/VM1 10.1.

For WJL to issue a PS4 to meet the above clauses of the NZBC, we will need to carry out the site inspections in accordance with the Building Consent and Council requirements. We require at least 48 hours' notice for site inspections.

Site inspections should be undertaken by a Chartered Professional Geotechnical Engineer or their Agent who is familiar with both this site and the contents of this Geotechnical Report.

Prior to works commencement, the above Engineer should be contacted to confirm the construction methodologies, inspection, and testing frequency.

The primary purpose of the site inspections is to check that the conditions encountered are consistent with those expected from the investigations and adopted for the design as discussed herein. If anomalies or uncertainties are identified, then further Professional advice should be sought from the Geo-Professional, which will allow the timely provision of solutions and recommendations should any engineering problems arise.

Upon satisfactory completion of the above work aspects, WJL would then be in a position to issue the PS4 as required by Council.

At this time, the following Geotechnical Site Inspections and Testing should include, but are not limited to:

- Pre-pour bored footing excavations.

15. LIMITATIONS

We anticipate that this report is to be submitted to Council in support of a Resource Consent application.

This report has been commissioned solely for the benefit of our Client, **Toko Pekama,** in relation to the project as described herein, and to the limits of our engagement, with the exception that the local Territorial Authority may rely on it to the extent of its appropriateness, conditions and limitations, when issuing the subject consent. Any variations from the development proposals as described herein as forming the basis of our appraisal should be referred to us for further evaluation. Copyright of Intellectual Property remains with WJL, and this report may NOT be used by any other entity, or for any other proposals, without our written consent. Therefore, no liability is accepted by this firm or any of its directors, servants, or agents, in respect of any other geotechnical aspects of this site, nor for its use by any other person or entity, and any other person or entity who relies upon any information contained herein does so entirely at their own risk. Where other parties may wish to rely on it, whether for the same or different proposals, this permission may be extended, subject to our satisfactory review of their interpretation of the report.

Although this report may be submitted to a local authority in connection with an application for a consent, permission, approval, or pursuant to any other requirement of law, this disclaimer shall still apply and require all other parties to use due diligence where necessary and does not remove the necessity for the normal inspection of site conditions and the design of foundations as would be made under all normal circumstances.

Thank you for the opportunity to provide our service on this project, and if we can be of further assistance, please do not hesitate to contact us.

Yours faithfully,

WILTON JOUBERT LIMITED

Appendices:

Site Plan & Cross-section A-A' (2 sheets)

Hand Auger Borehole Records (3 sheets)

Slope Stability Assessment Outputs (7 sheets)

'*Foundation Maintenance and Footing Performance*' homeowner's guide, published by CSIRO (4 sheets)

WJL's Construction Monitoring Information (1 sheet)

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ISSUE / REVISION			
No.	DATE	BY	DESCRIPTION
A	MARCH 2026	A.B	ISSUED WITH GEOTECHNICAL REPORT

DESIGNED BY:
DRAWN BY: A.B
CHECKED BY:
SURVEYED BY:

SERVICES NOTE
WHERE EXISTING SERVICES ARE SHOWN, THEY ARE INDICATIVE ONLY AND MAY NOT INCLUDE ALL SITE SERVICES. WILTON JOUBERT LTD DOES NOT WARRANT THAT ALL, OR INDEED ANY SERVICES ARE SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING SERVICES PRIOR TO AND FOR THE DURATION OF THE CONTRACT WORKS.

GEOTECHNICAL
DESIGN / DRAWING SUBJECT TO ENGINEER'S APPROVAL

DRAWING TITLE:
SITE PLAN

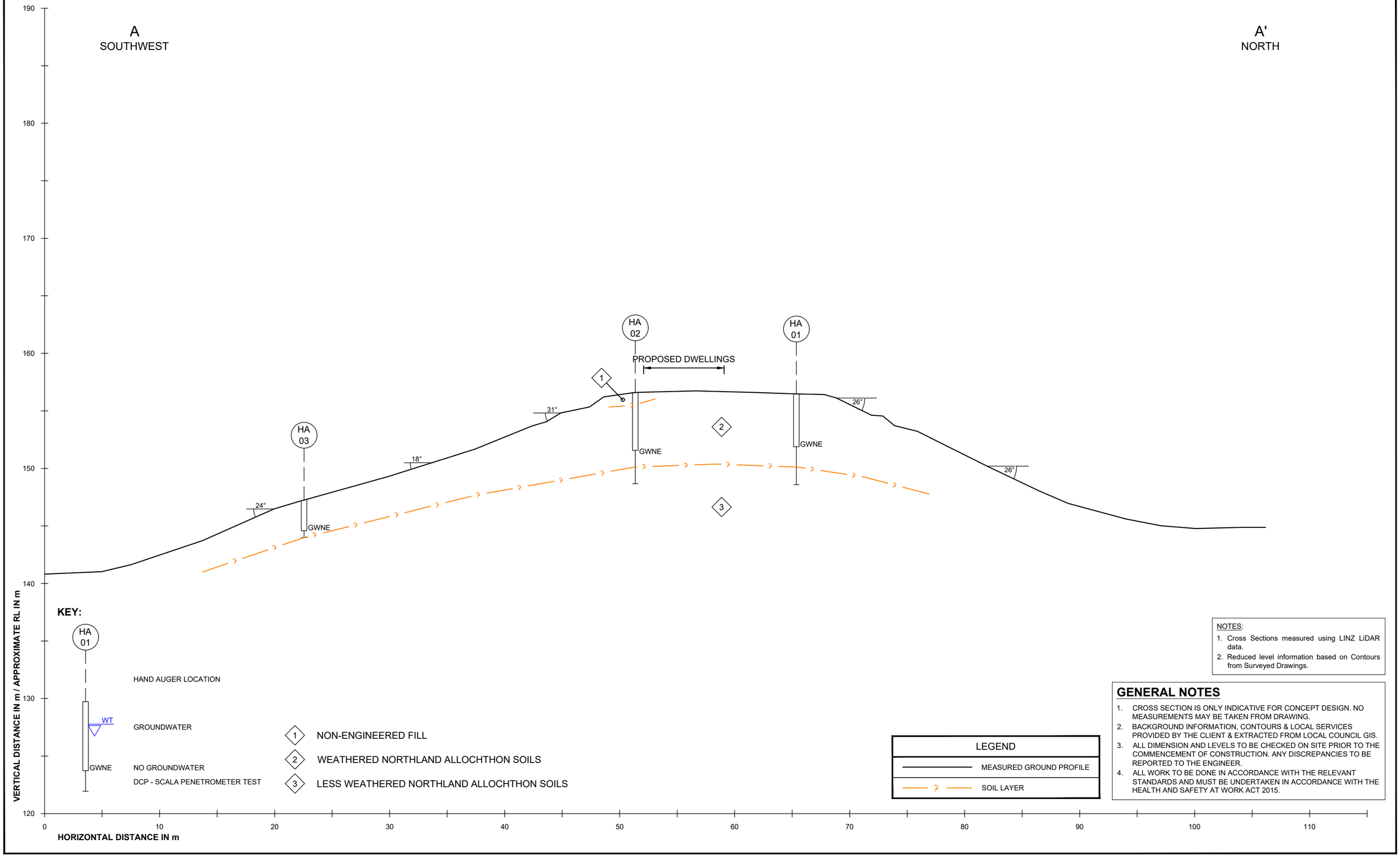
PROJECT DESCRIPTION:
PROPOSED SUBDIVISION

PROJECT TITLE:
LOT 4 DP 537681
ORAKAU ROAD
KAIKOHE
NORTHLAND

ORIGINAL DRAWING SIZE:	OFFICE:
A3	WHANGAREI
DRAWING SCALE:	CO-ORDINATE SYSTEM:
1:750	NOT COORDINATED
DRAWING NUMBER:	ISSUE:
145653-G600	A

A
SOUTHWEST

A'
NORTH



KEY:

HA 01 — HAND AUGER LOCATION

WT — GROUNDWATER

GWNE — NO GROUNDWATER

DCP - SCALA PENETROMETER TEST

1 — NON-ENGINEERED FILL

2 — WEATHERED NORTHLAND ALLOCHTHON SOILS

3 — LESS WEATHERED NORTHLAND ALLOCHTHON SOILS

LEGEND	
MEASURED GROUND PROFILE	
?	SOIL LAYER

NOTES:
1. Cross Sections measured using LINZ LiDAR data.
2. Reduced level information based on Contours from Surveyed Drawings.

GENERAL NOTES

1. CROSS SECTION IS ONLY INDICATIVE FOR CONCEPT DESIGN. NO MEASUREMENTS MAY BE TAKEN FROM DRAWING.
2. BACKGROUND INFORMATION, CONTOURS & LOCAL SERVICES PROVIDED BY THE CLIENT & EXTRACTED FROM LOCAL COUNCIL GIS.
3. ALL DIMENSION AND LEVELS TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.
4. ALL WORK TO BE DONE IN ACCORDANCE WITH THE RELEVANT STANDARDS AND MUST BE UNDERTAKEN IN ACCORDANCE WITH THE HEALTH AND SAFETY AT WORK ACT 2015.

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ISSUE / REVISION

No.	DATE	BY	DESCRIPTION
A	MARCH 2026	A.B	ISSUED WITH GEOTECHNICAL REPORT

DESIGNED BY:
DRAWN BY: A.B
CHECKED BY:
SURVEYED BY:

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GEOTECHNICAL
DESIGN / DRAWING SUBJECT TO ENGINEER'S APPROVAL

DRAWING TITLE: **CROSS SECTION**

PROJECT DESCRIPTION: **PROPOSED SUBDIVISION**

PROJECT TITLE: **LOT 4 DP 537681 ORAKAU ROAD KAIKOHE NORTHLAND**

ORIGINAL DRAWING SIZE:	OFFICE:
A3	WHANGAREI
DRAWING SCALE:	CO-ORDINATE SYSTEM:
1:300	NOT COORDINATED
DRAWING NUMBER:	ISSUE:
145653-G610	A

HAND AUGER : HA01

CLIENT: Toko Pekama
PROJECT: 2-Lot Subdivison
SITE LOCATION: Lot 4 DP 537681 Orakau Road, Punakitere Valley

JOB NO.: 145653 **SHEET:** 1 OF 1
START DATE: 18/03/2026 **NORTHING:** **GRID:**
DIAMETER: 50mm **EASTING:**
SV DIAL: DR4802 **ELEVATION:** Ground
FACTOR: 1.39 **DATUM:**

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE: PEAK STRENGTH (kPa)	SHEAR VANE: REMOULD STRENGTH (kPa)	SHEAR VANE: SENSITIVITY	DCP - SCALA (Blows / 100mm)	COMMENTS, SAMPLES, OTHER TESTS
Topsoil	TOPSOIL, dark brown, moist.	TS	0.0	Groundwater Not Encountered					
Punakitere Sandstone (Mangakahia Complex) in Northland Allochthon	NATURAL: Silty CLAY, trace sand and weakly cemented clasts, yellowish brown with orange and whitish grey mottles, very stiff, dry to moist, moderate plasticity.		0.2						
			0.4		133	33	4.0		
	0.6m: Orangey brown with orange and white mottles.		0.6						
	0.8m: No to trace sand and no clasts, moderate to high plasticity.		0.8		195+	-	-		
			1.0						
	1.2m: Orangey brown with whitish grey mottles, moist.		1.2		195+	-	-		
			1.4						
			1.6		111	44	2.5		
	1.8m: Whitish grey with orange mottles.		1.8						
	2.0m: 200mm lense with trace sand.		2.0		195+	-	-		
			2.2						
	2.4m: Trace sand, whitish grey with occasional orange mottles.		2.4		125	92	1.4		
	2.7m: Minor to some sand, low to moderate plasticity.		2.6						
			2.8		120	86	1.4		
	3.0m: Orangey brown with whitish grey mottles.		3.0						
	3.2m: 100mm lense of orangey brown silty clay.		3.2		120	89	1.3		
	CLAY, trace to minor silt and sand, light grey with orange mottles, stiff, moist, high plasticity.		3.4						
			3.6		89	33	2.7		
			3.8						
	4.0m: Light brownish grey with orange mottles, firm.		4.0		50	22	2.3		
			4.2						
	SILT, minor sand and clay, light brown with orange and white mottles, very stiff, moist to wet, no to low plasticity.		4.4						
			4.6		UTP	-	-		
	EOH: 4.60m - Too Hard To Auger				UTP	-	-	7	
			4.8					7	
								7	
			5.0					3	
								2	
			5.2					2	
								2	
			5.4					4	
								4	
			5.6					7	
								9	
			5.8					12	
								11	
			6.0					7	
								8	
			6.2					8	
								10	
			6.4					10	
								8	
			6.6					9	
								12	
			6.8					12	
								12	
			7.0					11	
								11	
			7.2					9	
								7	
			7.4					6	
								6	
			7.6					6	
								7	
			7.8					8	
								8	

REMARKS
End of borehole @ 4.60m (Target Depth: 5.00m)

NZGS Definition of Relative Density for Coarse Grain soils: VL - Very Loose; L - Loose; MD - Medium Dense; D - Dense; VD - Very Dense

LOGGED BY: SJP
CHECKED BY: CSH

▼ Standing groundwater level
▽ GW while drilling

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HAND AUGER : HA02

CLIENT: Toko Pekama
PROJECT: 2-Lot Subdivison
SITE LOCATION: Lot 4 DP 537681 Orakau Road, Punakitere Valley

JOB NO.: 145653 **SHEET:** 1 OF 1
START DATE: 18/03/2026 **NORTHING:** **GRID:**
DIAMETER: 50mm **EASTING:**
SV DIAL: 1994 **ELEVATION:** Ground
FACTOR: 1.41 **DATUM:**

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE: PEAK STRENGTH (kPa)	SHEAR VANE: REMOULD STRENGTH (kPa)	SHEAR VANE: SENSITIVITY	DCP - SCALA (Blows / 100mm)	COMMENTS, SAMPLES, OTHER TESTS
TS	TOPSOIL, dark brown, moist to wet.	TS	0.0	Groundwater Not Encountered					
FILL	NON-ENGINEERED FILL: Silty CLAY, organics intermixed, trace sand, yellowish brown with occasional brown mottles, very stiff, moist to wet, moderate plasticity.		0.2						
			0.4		158	37	4.3		
			0.6						
Topsoil	BURIED TOPSOIL, dark brown, stiff, wet, low to moderate plasticity.	TS	0.8		59	14	4.2		
		TS	1.0						
Punakitere Sandstone (Mangakahia Complex) in Northland Allochthon	NATURAL: Clayey SILT, occasional weakly cemented clasts, orangey brown with brown specks, very stiff, moist, low to moderate plasticity.		1.2		158	56	2.8		
	Silty CLAY, orangey brown, very stiff, moist, moderate to high plasticity.		1.4						
	1.7m: Orangey brown with light grey mottles.		1.6		161	79	2.0		
			1.8						
			2.0		127	70	1.8		
			2.2						
			2.4		161	90	1.8		
	2.6m: Light grey with occasional orangey brown streaks, moist to wet.		2.6						
			2.8		127	79	1.6		
	3.0m: Poor recovery.		3.0						
			3.2		110	59	1.9		
			3.4						
	3.5m: Some sand, light grey, moderate plasticity, poor recovery.		3.6						
	3.6m: Wet, stiff.				99	51	1.9		
	3.7m: Frequent clasts, grey brown and orange mottles.		3.8						
	Clayey SILT, some sand, greyish brown with orangey brown mottles, very stiff, wet, low plasticity.		4.0		152	25	6.1		
			4.2						
	4.4m: Stiff.		4.4		85	20	4.2		
			4.6						
	Sandy SILT, grey, very stiff, moist, no plasticity.		4.8		UTP	-	-		
			5.0					3	
	EOH: 5.00m - Target Depth		5.2					4	
								4	
			5.4					4	
								4	
			5.6					4	
								5	
			5.8					6	
								6	
			6.0					6	
								6	
			6.2					6	
								7	
			6.4					7	
								6	
			6.6					7	
								7	
			6.8					7	
								8	
			7.0					8	
								10	
			7.2					12	
								11	
			7.4					10	
								11	
			7.6					10	
								11	
			7.8					10	
								12	

REMARKS
End of borehole @ 5.00m (Target Depth: 5.00m)

NZGS Definition of Relative Density for Coarse Grain soils: VL - Very Loose; L - Loose; MD - Medium Dense; D - Dense; VD - Very Dense

LOGGED BY: JEM
CHECKED BY: CSH

▼ Standing groundwater level
▽ GW while drilling

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HAND AUGER : HA03

CLIENT: Toko Pekama
PROJECT: 2-Lot Subdivison
SITE LOCATION: Lot 4 DP 537681 Orakau Road, Punakitere Valley

JOB NO.: 145653 **SHEET:** 1 OF 1
START DATE: 18/03/2026 **NORTHING:** **GRID:**
DIAMETER: 50mm **EASTING:**
SV DIAL: 1994 **ELEVATION:** Ground
FACTOR: 1.41 **DATUM:**

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE PEAK STRENGTH (kPa)	SHEAR VANE REMOULD STRENGTH (kPa)	SHEAR VANE SENSITIVITY	DCP - SCALA (Blows / 100mm)	COMMENTS, SAMPLES, OTHER TESTS
Topsoil	TOPSOIL, dark brown, dry.	TS	0.2	Groundwater Not Encountered					
Punakitere Sandstone (Mangakahia Complex) in Northland Allochthon	NATURAL: Sandy SILT, minor clay, orangey brown, very stiff, dry, no to low plasticity.		0.4		130	25	5.2		
	Clayey SILT, some sand, orangey brown, very stiff, moist, low plasticity.		0.6						
	1.0m: Trace sand, orangey brown with light grey mottles.		0.8		133	56	2.4		
	1.4m: Orangey brown.		1.0						
			1.2		127	62	2.0		
			1.4						
			1.6		183	73	2.5		
	2.0m: Moist to wet.		1.8						
	2.2m: Wet, no to low plasticity.		2.0		141	42	3.4		
			2.2						
	Sandy SILT, orangey brown with grey mottles, very stiff to hard, moist, no plasticity.		2.4		UTP	-	-		
			2.6		UTP	-	-	19	
	EOH: 2.60m - Too Hard To Auger		2.8					7	
			3.0					9	
			3.2					10	
			3.4					10	
			3.6					20+	
			3.8						
			4.0						
			4.2						
			4.4						
			4.6						
			4.8						
			5.0						
			5.2						
			5.4						
			5.6						
			5.8						
			6.0						
			6.2						
			6.4						
			6.6						
			6.8						
			7.0						
			7.2						
			7.4						
			7.6						
			7.8						

REMARKS
End of borehole @ 2.60m (Target Depth: 5.00m)

NZGS Definition of Relative Density for Coarse Grain soils: VL - Very Loose; L - Loose; MD - Medium Dense; D - Dense; VD - Very Dense

LOGGED BY: JEM
CHECKED BY: CSH

▼ Standing groundwater level
▽ GW while drilling

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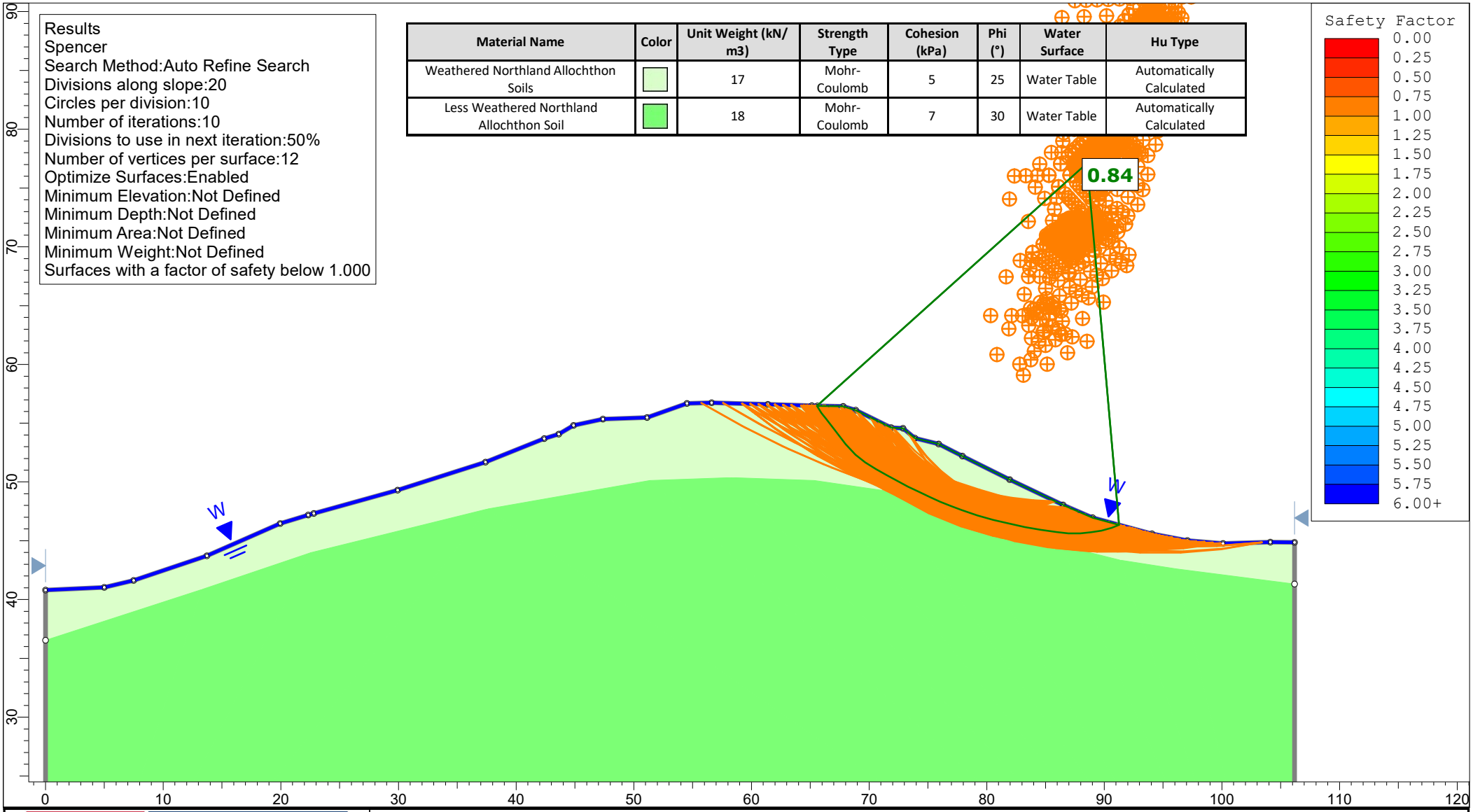
Results
Spencer
Search Method:Auto Refine Search
Divisions along slope:20
Circles per division:10
Number of iterations:10
Divisions to use in next iteration:50%
Number of vertices per surface:12
Optimize Surfaces:Enabled
Minimum Elevation:Not Defined
Minimum Depth:Not Defined
Minimum Area:Not Defined
Minimum Weight:Not Defined
Surfaces with a factor of safety below 1.000

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type
Weathered Northland Allochthon Soils		17	Mohr-Coulomb	5	25	Water Table	Automatically Calculated
Less Weathered Northland Allochthon Soil		18	Mohr-Coulomb	7	30	Water Table	Automatically Calculated



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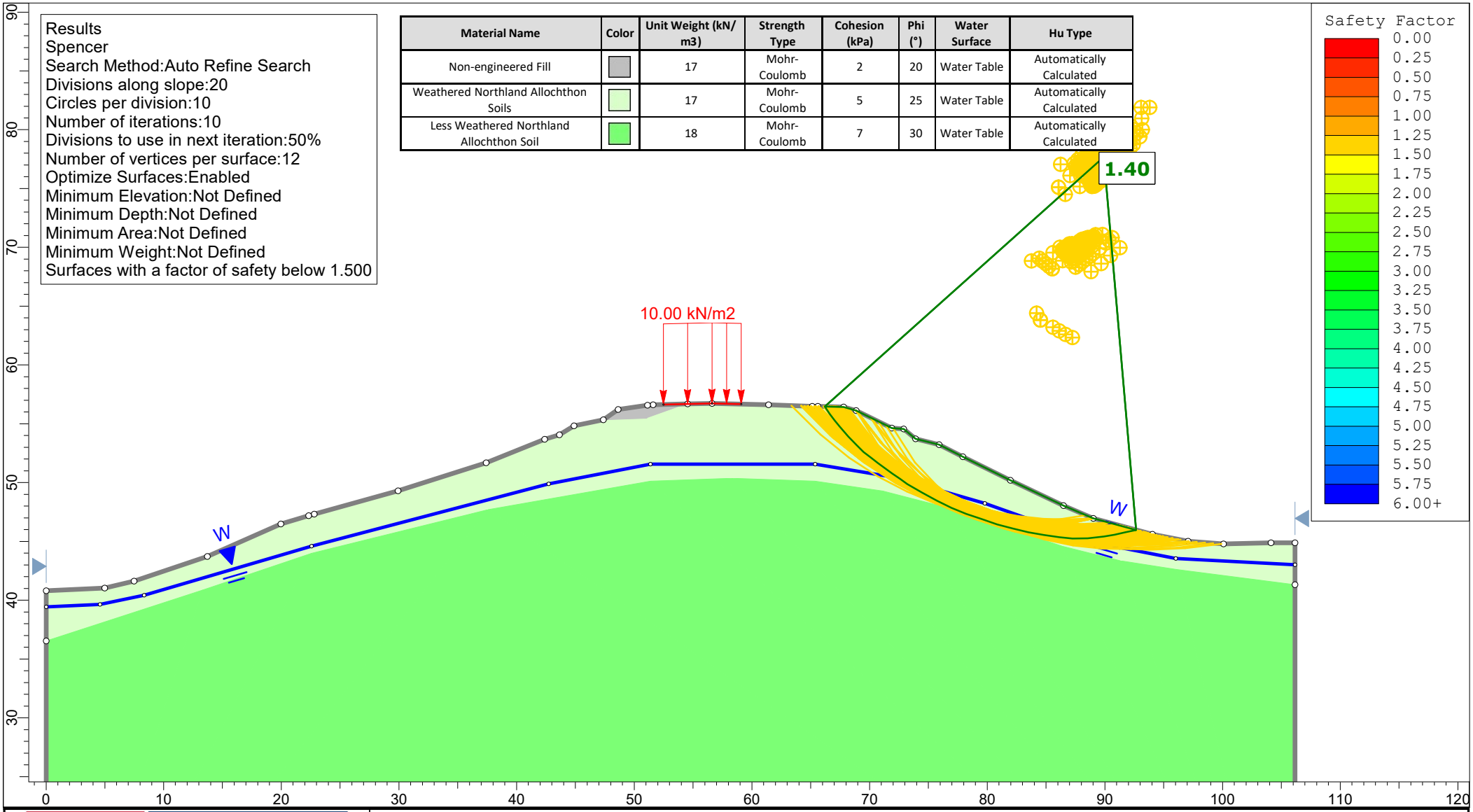
SLIDEINTERPRET 9.040

Project	145653 - Orakau Road, Kaikohe		
Group	Cross Section A - A' - Back Analysis	Scenario	Surficial Groundwater Level
Drawn By	A.B	Company	Wilton Joubert Limited
Date	26/03/2026	File Name	145653 - Back Analysis.slmd

Results
Spencer
Search Method:Auto Refine Search
Divisions along slope:20
Circles per division:10
Number of iterations:10
Divisions to use in next iteration:50%
Number of vertices per surface:12
Optimize Surfaces:Enabled
Minimum Elevation:Not Defined
Minimum Depth:Not Defined
Minimum Area:Not Defined
Minimum Weight:Not Defined
Surfaces with a factor of safety below 1.500

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type
Non-engineered Fill		17	Mohr-Coulomb	2	20	Water Table	Automatically Calculated
Weathered Northland Allochthon Soils		17	Mohr-Coulomb	5	25	Water Table	Automatically Calculated
Less Weathered Northland Allochthon Soil		18	Mohr-Coulomb	7	30	Water Table	Automatically Calculated



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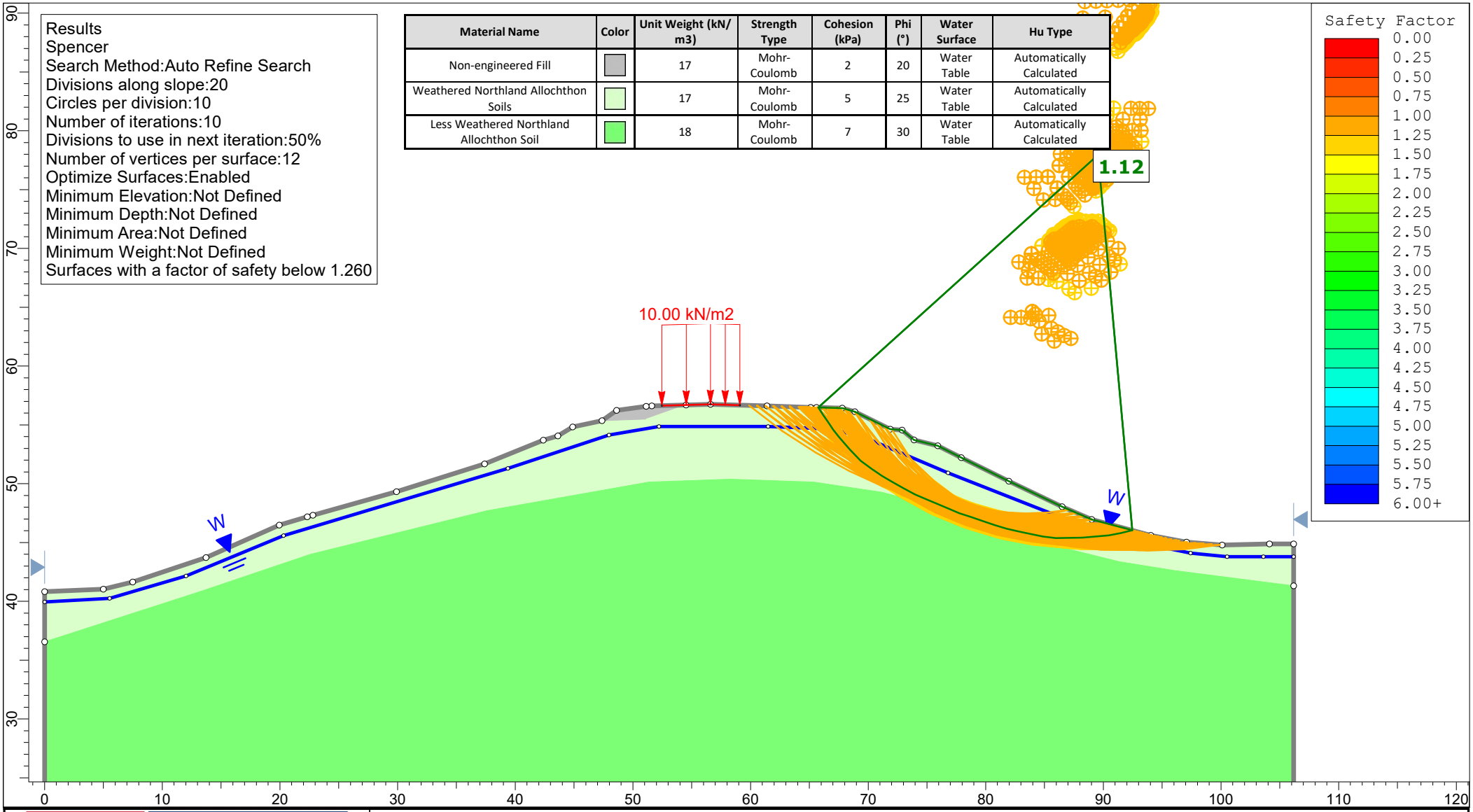
SLIDEINTERPRET 9.040

Project	145653 - Orakau Road, Kaikohe		
Group	Cross Section A - A' - Proposed	Scenario	Measured Groundwater Level
Drawn By	A.B	Company	Wilton Joubert Limited
Date	27/03/2026	File Name	145653 - Proposed.slmd

Results
Spencer
Search Method:Auto Refine Search
Divisions along slope:20
Circles per division:10
Number of iterations:10
Divisions to use in next iteration:50%
Number of vertices per surface:12
Optimize Surfaces:Enabled
Minimum Elevation:Not Defined
Minimum Depth:Not Defined
Minimum Area:Not Defined
Minimum Weight:Not Defined
Surfaces with a factor of safety below 1.260

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type
Non-engineered Fill		17	Mohr-Coulomb	2	20	Water Table	Automatically Calculated
Weathered Northland Allochthon Soils		17	Mohr-Coulomb	5	25	Water Table	Automatically Calculated
Less Weathered Northland Allochthon Soil		18	Mohr-Coulomb	7	30	Water Table	Automatically Calculated



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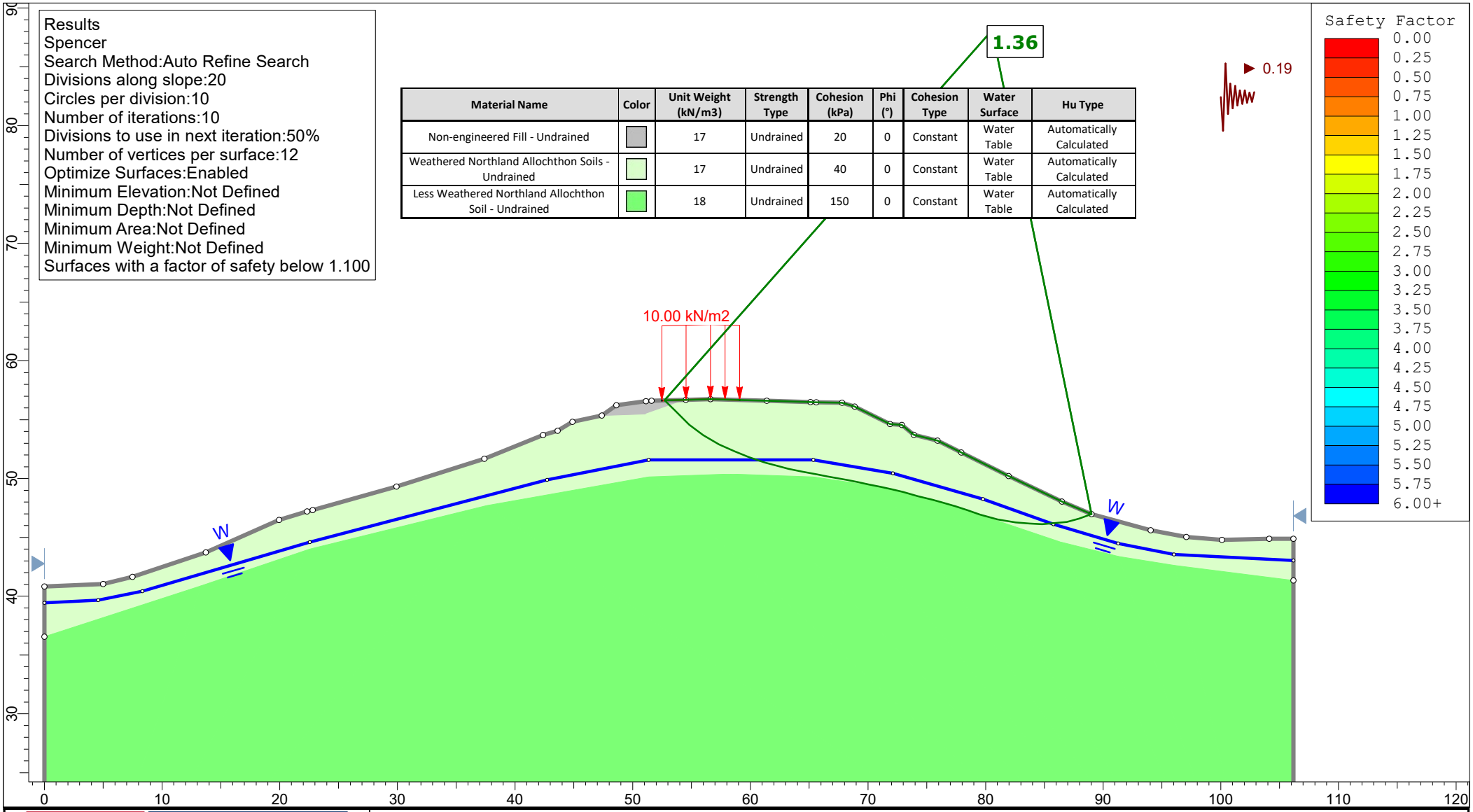
SLIDEINTERPRET 9.040

Project	145653 - Orakau Road, Kaikohe		
Group	Cross Section A - A' - Proposed	Scenario	Elevated Groundwater Level
Drawn By	A.B	Company	Wilton Joubert Limited
Date	27/03/2026	File Name	145653 - Proposed.slmd

Results
Spencer
Search Method:Auto Refine Search
Divisions along slope:20
Circles per division:10
Number of iterations:10
Divisions to use in next iteration:50%
Number of vertices per surface:12
Optimize Surfaces:Enabled
Minimum Elevation:Not Defined
Minimum Depth:Not Defined
Minimum Area:Not Defined
Minimum Weight:Not Defined
Surfaces with a factor of safety below 1.100

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Cohesion Type	Water Surface	Hu Type
Non-engineered Fill - Undrained		17	Undrained	20	0	Constant	Water Table	Automatically Calculated
Weathered Northland Allochthon Soils - Undrained		17	Undrained	40	0	Constant	Water Table	Automatically Calculated
Less Weathered Northland Allochthon Soil - Undrained		18	Undrained	150	0	Constant	Water Table	Automatically Calculated



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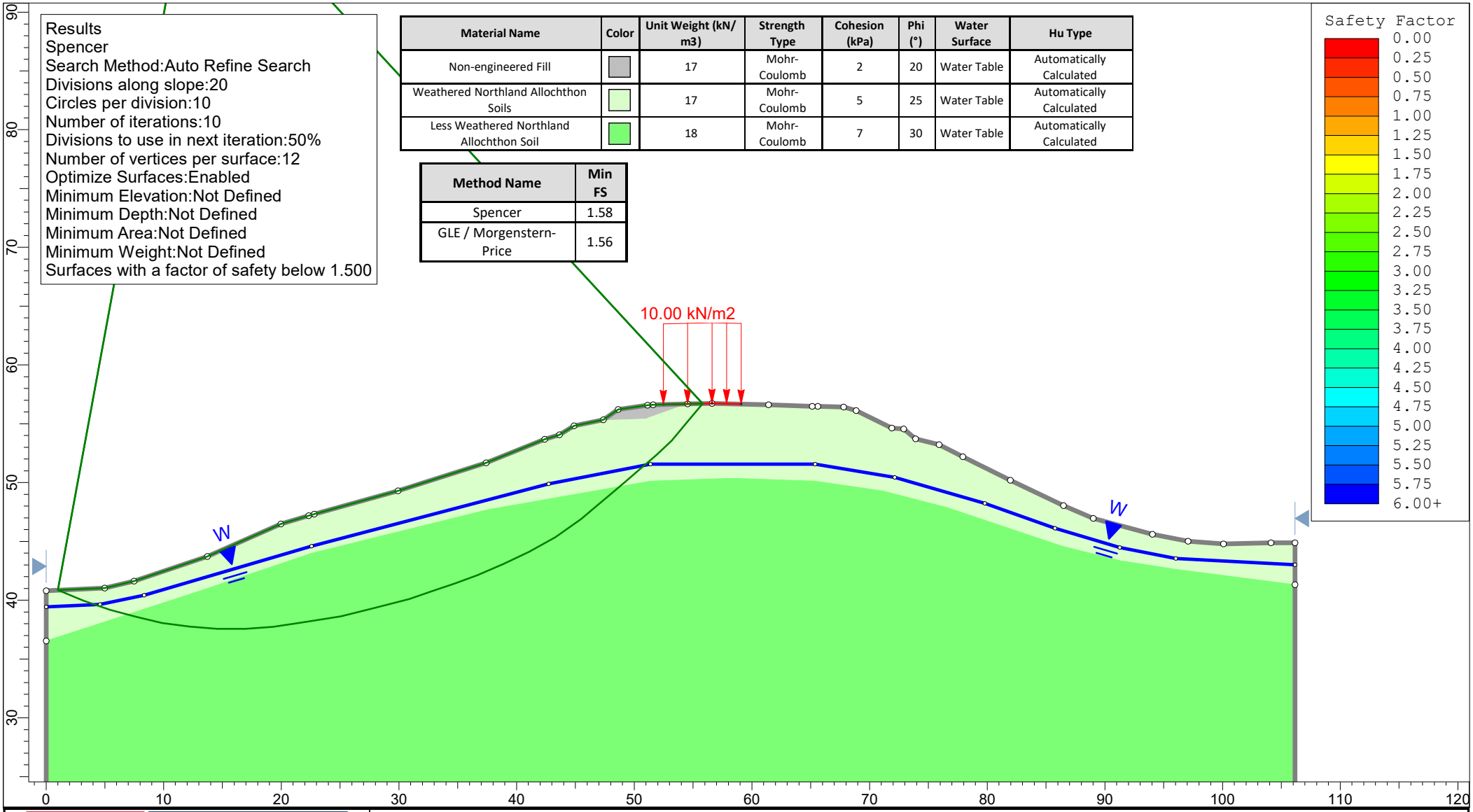
SLIDEINTERPRET 9.040

Project	145653 - Orakau Road, Kaikohe		
Group	Cross Section A - A' - Proposed	Scenario	Measured Groundwater Level - Seismic
Drawn By	A.B	Company	Wilton Joubert Limited
Date	27/03/2026	File Name	145653 - Proposed.slmd

Results
Spencer
Search Method:Auto Refine Search
Divisions along slope:20
Circles per division:10
Number of iterations:10
Divisions to use in next iteration:50%
Number of vertices per surface:12
Optimize Surfaces:Enabled
Minimum Elevation:Not Defined
Minimum Depth:Not Defined
Minimum Area:Not Defined
Minimum Weight:Not Defined
Surfaces with a factor of safety below 1.500

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Water Surface	Hu Type
Non-engineered Fill		17	Mohr-Coulomb	2	20	Water Table	Automatically Calculated
Weathered Northland Allochthon Soils		17	Mohr-Coulomb	5	25	Water Table	Automatically Calculated
Less Weathered Northland Allochthon Soil		18	Mohr-Coulomb	7	30	Water Table	Automatically Calculated

Method Name	Min FS
Spencer	1.58
GLE / Morgenstern-Price	1.56



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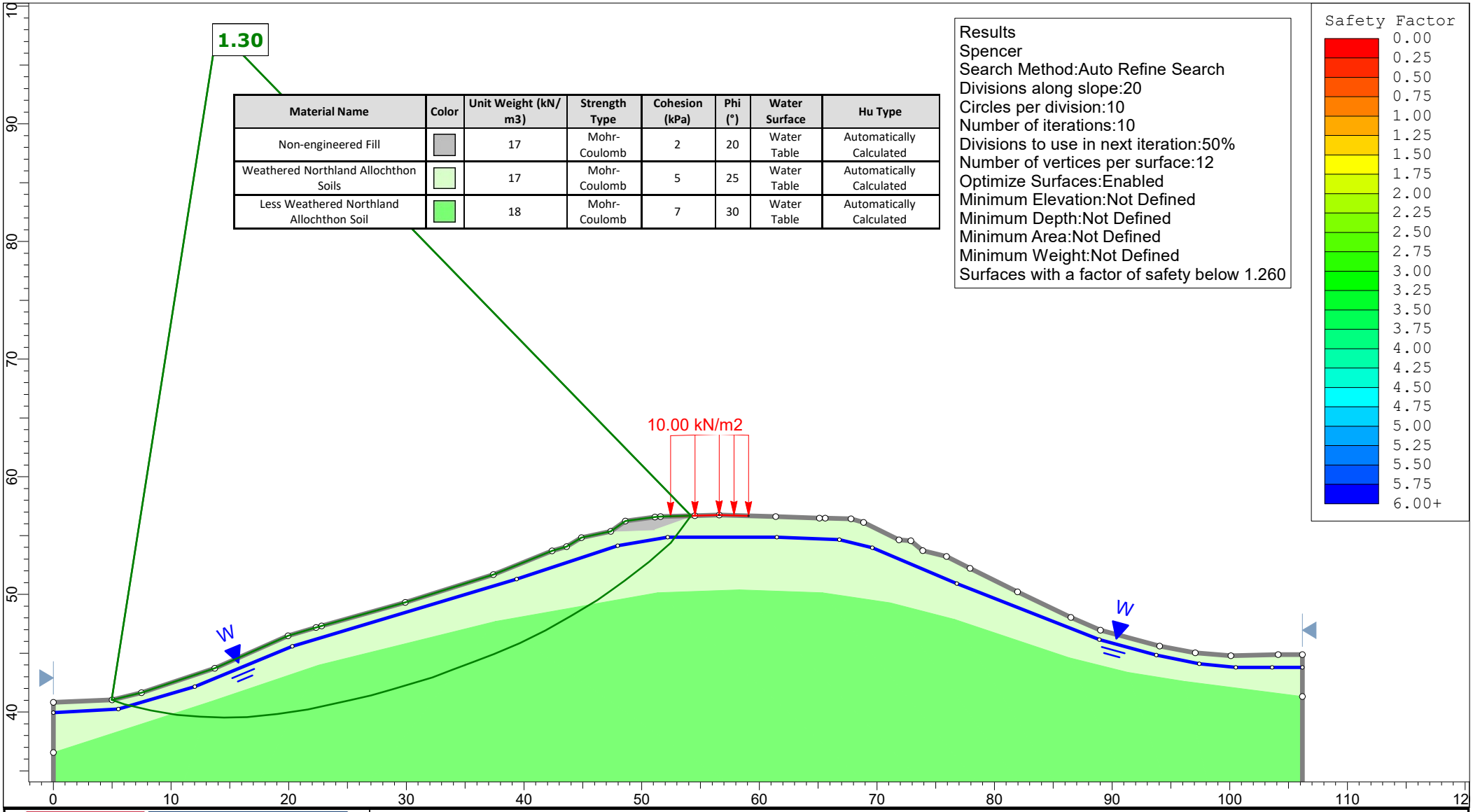
Consulting Engineers

SLIDEINTERPRET 9.040

Project	145653 - Orakau Road, Kaikohe		
Group	Cross Section A - A' - Proposed	Scenario	Measured Groundwater Level
Drawn By	A.B	Company	Wilton Joubert Limited
Date	27/03/2026	File Name	145653 - Proposed.slmd



WILTON JOUBERT
Consulting Engineers

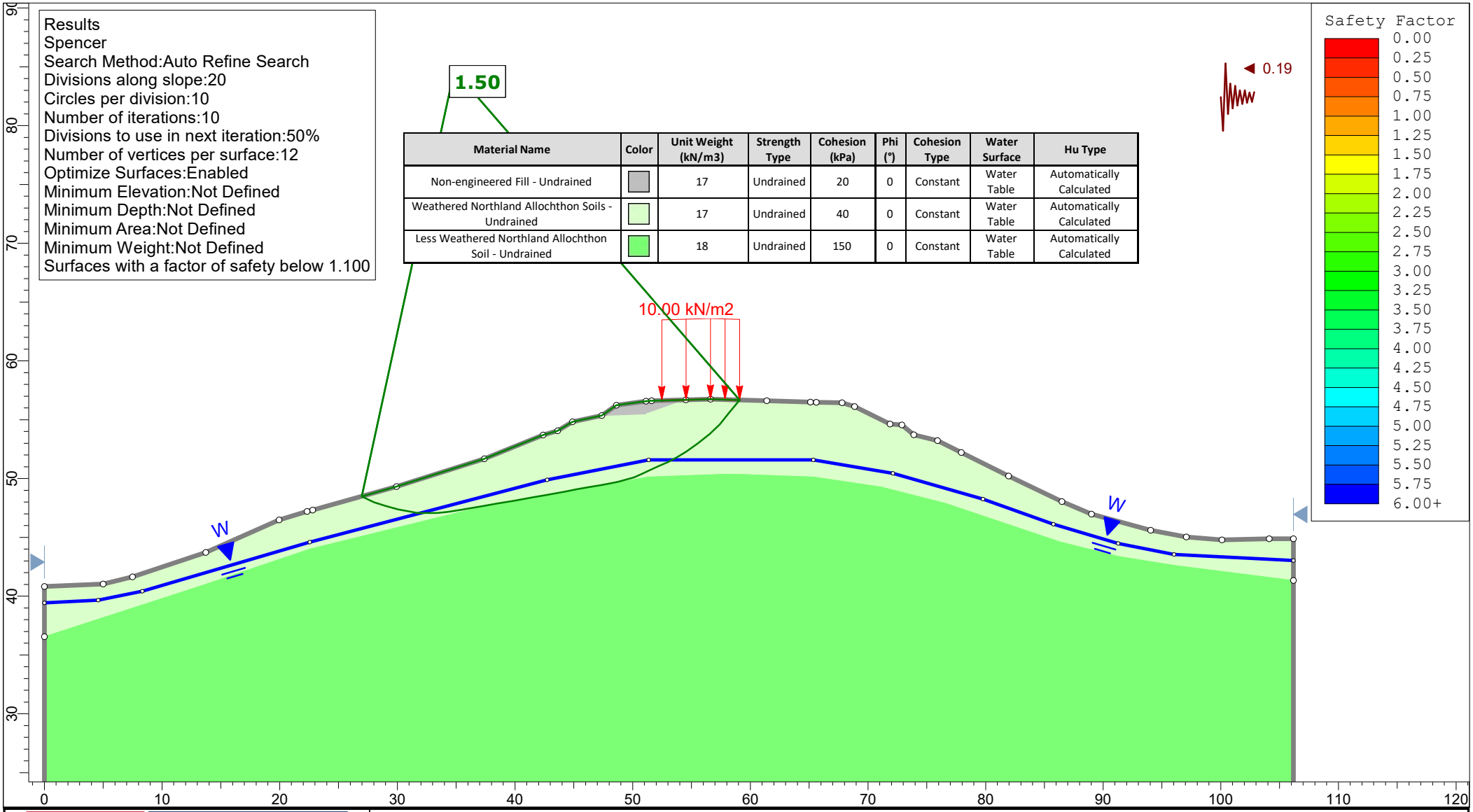
SLIDEINTERPRET 9.040

Project	145653 - Orakau Road, Kaikohe		
Group	Cross Section A - A' - Proposed	*Scenario*	Elevated Groundwater Level
Drawn By	A.B	*Company*	Wilton Joubert Limited
Date	27/03/2026	*File Name*	145653 - Proposed.slmd

Results
Spencer
Search Method:Auto Refine Search
Divisions along slope:20
Circles per division:10
Number of iterations:10
Divisions to use in next iteration:50%
Number of vertices per surface:12
Optimize Surfaces:Enabled
Minimum Elevation:Not Defined
Minimum Depth:Not Defined
Minimum Area:Not Defined
Minimum Weight:Not Defined
Surfaces with a factor of safety below 1.100

1.50

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (°)	Cohesion Type	Water Surface	Hu Type
Non-engineered Fill - Undrained		17	Undrained	20	0	Constant	Water Table	Automatically Calculated
Weathered Northland Allochthon Soils - Undrained		17	Undrained	40	0	Constant	Water Table	Automatically Calculated
Less Weathered Northland Allochthon Soil - Undrained		18	Undrained	150	0	Constant	Water Table	Automatically Calculated



WILTON JOUBERT
Consulting Engineers

SLIDEINTERPRET 9.040

Project	145653 - Orakau Road, Kaikohe		
Group	Cross Section A - A' - Proposed	Scenario	Measured Groundwater Level - Seismic
Drawn By	A.B	Company	Wilton Joubert Limited
Date	27/03/2026	File Name	145653 - Proposed.slmd

FOUNDATION MAINTENANCE AND FOOTING PERFORMANCE

Preventing soil-related building movement

This Building Technology Resource is designed as a homeowner's guide on the causes of soil-related building movement, and suggested methods to prevent resultant cracking.

Buildings can and often do move. This movement can be up, down, lateral or rotational. The fundamental cause of movement in buildings can usually be related to one or more problems in the foundation soil. It is important for the home owner to identify the soil type in order to ascertain the measures that should be put in place in order to ensure that problems in the foundation soil can be prevented, thus protecting against building movement. Generally soil classification is provided by a geotechnical report.

SOIL TYPES

The types of soils usually present under the topsoil in land zoned for residential buildings can be split into two approximate groups – granular and clay. Quite often, foundation soil is a mixture of both types. The general problems associated with soils having granular content are usually caused by erosion. Clay soils are subject to saturation and swell/shrink problems.

As most buildings suffering movement problems are founded on clay soils, there is an emphasis on classification of soils according to the amount of swell and shrinkage they experience with variations of water content. Table 1 below is a reproduction of Table 2.1 from Australian Standard AS 2870-2011, Residential slabs and footings.

CAUSES OF MOVEMENT

SETTLEMENT DUE TO CONSTRUCTION

There are two types of settlement that occur as a result of construction:

- Immediate settlement occurs when a building is first placed on its foundation soil, as a result of compaction of the soil under the weight of the structure. The cohesive quality of clay soil mitigates against this, but granular (particularly sandy) soil is susceptible.
- Consolidation settlement is a feature of clay soil and may take place because of the expulsion of moisture from the soil or because of the soil's lack of resistance to local compressive or shear stresses. This will usually take place during the first few months after construction but has been known to take many years in exceptional cases.

These problems may be the province of the builder and should be taken into consideration as part of the preparation of the site for construction.

EROSION

All soils are prone to erosion, but sandy soil is particularly susceptible to being washed away. Even clay with a sand component of say 10% or more can suffer from erosion.

SATURATION

This is particularly a problem in clay soils. Saturation creates a bog-like suspension of the soil that causes it to lose virtually all of its bearing capacity. To a lesser degree, sand is affected by saturation because saturated sand may undergo a reduction in volume, particularly imported sand fill for bedding and blinding layers. However, this usually occurs as immediate settlement and should normally be the province of the builder.

SEASONAL SWELLING AND SHRINKAGE OF SOIL

All clays react to the presence of water by slowly absorbing it, making the soil increase in volume (see table below, from AS 2870). The degree of increase varies considerably between different clays, as does the degree of decrease during the subsequent drying out caused by fair weather periods. Because of the low absorption and expulsion rate, this phenomenon will not usually be noticeable unless there are prolonged rainy or dry periods, usually of weeks or months, depending on the land and soil characteristics.

The swelling of soil creates an upward force on the footings of the building, and shrinkage creates subsidence that takes away the support needed by the footing to retain equilibrium.

SHEAR FAILURE

This phenomenon occurs when the foundation soil does not have sufficient strength to support the weight of the footing. There are two major post-construction causes:

- Significant load increase.
- Reduction of lateral support of the soil under the footing due to erosion or excavation.

In clay soil, shear failure can be caused by saturation of the soil adjacent to or under the footing.

TREE ROOT GROWTH

Trees and shrubs that are allowed to grow in the vicinity of footings can cause foundation soil movement in two ways:

- Roots that grow under footings may increase in cross-sectional size, exerting upward pressure on footings.

TABLE 1. GENERAL DEFINITIONS OF SITE CLASSES.

Class	Foundation
A	Most sand and rock sites with little or no ground movement from moisture changes
S	Slightly reactive clay sites, which may experience only slight ground movement from moisture changes
M	Moderately reactive clay or silt sites, which may experience moderate ground movement from moisture changes
H1	Highly reactive clay sites, which may experience high ground movement from moisture changes
H2	Highly reactive clay sites, which may experience very high ground movement from moisture changes
E	Extremely reactive sites, which may experience extreme ground movement from moisture changes

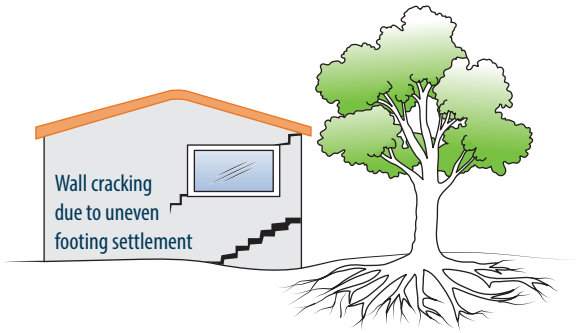


FIGURE 1 Trees can cause shrinkage and damage.

- Roots in the vicinity of footings will absorb much of the moisture in the foundation soil, causing shrinkage or subsidence.

UNEVENNESS OF MOVEMENT

The types of ground movement described above usually occur unevenly throughout the building's foundation soil. Settlement due to construction tends to be uneven because of:

- Differing compaction of foundation soil prior to construction.
- Differing moisture content of foundation soil prior to construction.

Movement due to non-construction causes is usually more uneven still. Erosion can undermine a footing that traverses the flow or can create the conditions for shear failure by eroding soil adjacent to a footing that runs in the same direction as the flow.

Saturation of clay foundation soil may occur where subfloor walls create a dam that makes water pond. It can also occur wherever there is a source of water near footings in clay soil. This leads to a severe reduction in the strength of the soil which may create local shear failure.

Seasonal swelling and shrinkage of clay soil affects the perimeter of the building first, then gradually spreads to the interior through absorption. The swelling process will usually begin at the uphill extreme of the building, or on the weather side where the land is flat. Shrinkage usually begins on the side of the building where the sun's heat is greatest.

EFFECTS OF UNEVEN SOIL MOVEMENT ON STRUCTURES

EROSION AND SATURATION

Erosion removes the support from under footings, tending to create subsidence of the part of the structure under which it occurs. Brickwork walls will resist the stress created by this removal of support by bridging the gap or cantilevering until the bricks or the mortar bedding fail. Older masonry has little resistance. Evidence of failure varies according to circumstances and symptoms may include:

- Step cracking in the mortar beds in the body of the wall or above/below openings such as doors or windows.
- Vertical cracking in the bricks (usually but not necessarily in line with the vertical beds or perpends).

Isolated piers affected by erosion or saturation of foundations will eventually lose contact with the bearers they support and may tilt or fall over. The floors that have lost this support will become bouncy, sometimes rattling ornaments etc.

SEASONAL SWELLING/SHRINKAGE IN CLAY

Swelling foundation soil due to rainy periods first lifts the most exposed extremities of the footing system, then the remainder of the perimeter footings while gradually permeating inside the building footprint to lift internal footings. This swelling first tends to create a dish effect, because the external footings are pushed higher than the internal ones.

The first noticeable symptom may be that the floor appears slightly dished. This is often accompanied by some doors binding on the floor or the door head, together with some cracking of cornice mitres. In buildings with timber flooring supported by bearers and joists, the floor can be bouncy. Externally there may be visible dishing of the hip or ridge lines.

As the moisture absorption process completes its journey to the innermost areas of the building, the internal footings will rise. If the spread of moisture is roughly even, it may be that the symptoms will temporarily disappear, but it is more likely that swelling will be uneven, creating a difference rather than a disappearance in symptoms. In buildings with timber flooring supported by bearers and joists, the isolated piers will rise more easily than the strip footings or piers under walls, creating noticeable doming of flooring.

As the weather pattern changes and the soil begins to dry out, the external footings will be first affected, beginning with the locations where the sun's effect is strongest. This has the effect of lowering the external footings. The doming is accentuated, and cracking reduces or disappears where it occurred because of dishing, but other cracks open up. The roof lines may become convex.

Doming and dishing are also affected by weather in other ways. In areas where warm, wet summers and cooler dry winters prevail, water migration tends to be toward the interior and doming will be accentuated, whereas where summers are dry, and winters are cold and wet, migration tends to be toward the exterior and the underlying propensity is toward dishing.

MOVEMENT CAUSED BY TREE ROOTS

In general, growing roots will exert an upward pressure on footings, whereas soil subject to drying because of tree or shrub roots will tend to remove support from under footings by inducing shrinkage.

COMPLICATIONS CAUSED BY THE STRUCTURE ITSELF

Most forces that the soil causes to be exerted on structures are vertical – i.e. either up or down. However, because these forces are seldom spread evenly around the footings, and because the building resists uneven movement because of its rigidity, forces are exerted from one part of the building to another. The net result of all these forces is usually rotational. This resultant force often complicates the diagnosis because the visible symptoms do not simply reflect the original cause. A common symptom is binding of doors on the vertical member of the frame.

EFFECTS ON FULL MASONRY STRUCTURES

Brickwork will resist cracking where it can. It will attempt to span areas that lose support because of subsided foundations or raised points. It is therefore usual to see cracking at weak points, such as openings for windows or doors.

In the event of construction settlement, cracking will usually remain unchanged after the process of settlement has ceased.

With local shear or erosion, cracking will usually continue to develop until the original cause has been remedied, or until the subsidence has completely neutralised the affected portion of footing and the structure has stabilised on other footings that remain effective.

In the case of swell/shrink effects, the brickwork will in some cases return to its original position after completion of a cycle, however it is more likely that the rotational effect will not be exactly reversed, and it is also usual that brickwork will settle in its new position and will resist the forces trying to return it to its original position. This means that in a case where swelling takes place after construction and cracking occurs, the cracking is likely to at least partly remain after the shrink segment of the cycle is complete. Thus, each time the cycle is repeated, the likelihood is that the cracking will become wider until the sections of brickwork become virtually independent.

With repeated cycles, once the cracking is established, if there is no other complication, it is normal for the incidence of cracking to stabilise, as the building has the articulation it needs to cope with the problem. This is by no means always the case, however, and monitoring of cracks in walls and floors should always be treated seriously.

Upheaval caused by growth of tree roots under footings is not a simple vertical shear stress. There is a tendency for the root to also

exert lateral forces that attempt to separate sections of brickwork after initial cracking has occurred.

The normal structural arrangement is that the inner leaf of brickwork in the external walls and at least some of the internal walls (depending on the roof type) comprise the load-bearing structure on which any upper floors, ceilings and the roof are supported. In these cases, it is internally visible cracking that should be the main focus of attention, however there are a few examples of dwellings whose external leaf of masonry plays some supporting role, so this should be checked if there is any doubt. In any case, externally visible cracking is important as a guide to stresses on the structure generally, and it should also be remembered that the external walls must be capable of supporting themselves.

EFFECTS ON FRAMED STRUCTURES

Timber or steel framed buildings are less likely to exhibit cracking due to swell/shrink than masonry buildings because of their flexibility. Also, the doming/dishing effects tend to be lower because of the lighter weight of walls. The main risks to framed buildings are encountered because of the isolated pier footings used under walls. Where erosion or saturation causes a footing to fall away, this can double the span which a wall must bridge. This additional stress can create cracking in wall linings, particularly where there is a weak point in the structure caused by a door or window opening. It is, however, unlikely that framed structures will be so stressed as to suffer serious damage without first exhibiting some or all of the above symptoms for a considerable period. The same warning period should apply in the case of upheaval. It should be noted, however, that where framed buildings are supported by strip footings there is only one leaf of brickwork and therefore the externally visible walls are the supporting structure for the building. In this case, the subfloor masonry walls can be expected to behave as full brickwork walls.

EFFECTS ON BRICK VENEER STRUCTURES

Because the load-bearing structure of a brick veneer building is the frame that makes up the interior leaf of the external walls plus perhaps the internal walls, depending on the type of roof, the building can be expected to behave as a framed structure, except that the external masonry will behave in a similar way to the external leaf of a full masonry structure.

WATER SERVICE AND DRAINAGE

Where a water service pipe, a sewer or stormwater drainage pipe is in the vicinity of a building, a water leak can cause erosion, swelling or saturation of susceptible soil. Even a minuscule leak can be enough to saturate a clay foundation. A leaking tap near a building can have the same effect. In addition, trenches containing pipes can become watercourses even though backfilled, particularly where broken rubble is used as fill. Water that runs along these trenches can be responsible for serious erosion, interstrata seepage into subfloor areas and saturation.

Pipe leakage and trench water flows also encourage tree and shrub roots to the source of water, complicating and exacerbating the problem. Poor roof plumbing can result in large volumes of rainwater being concentrated in a small area of soil:

- Incorrect falls in roof guttering may result in overflows, as may gutters blocked with leaves etc.
- Corroded guttering or downpipes can spill water to ground.
- Downpipes not positively connected to a proper stormwater collection system will direct a concentration of water to soil that is directly adjacent to footings, sometimes causing large-scale problems such as erosion, saturation and migration of water under the building.

SERIOUSNESS OF CRACKING

In general, most cracking found in masonry walls is a cosmetic nuisance only and can be kept in repair or even ignored. Table 2 below is a reproduction of Table C1 of AS 2870-2011.

AS 2870-2011 also publishes figures relating to cracking in concrete floors, however because wall cracking will usually reach the critical point significantly earlier than cracking in slabs, this table is not reproduced here.

PREVENTION AND CURE

PLUMBING

Where building movement is caused by water service, roof plumbing, sewer or stormwater failure, the remedy is to repair the problem. It is prudent, however, to consider also rerouting pipes away from the building where possible and relocating taps to positions where any leakage will not direct water to the building vicinity. Even where gully traps are present, there is sometimes sufficient spill to create erosion or saturation, particularly in modern installations using smaller diameter PVC fixtures. Indeed, some gully traps are not situated directly under the taps that are installed to charge them, with the result that water from the tap may enter the backfilled trench that houses the sewer piping. If the trench has been poorly backfilled, the water will either pond or flow along the bottom of the trench. As these trenches usually run alongside the footings and can be at a similar depth, it is not hard to see how any water that is thus directed into a trench can easily affect the foundation's ability to support footings or even gain entry to the subfloor area.

GROUND DRAINAGE

In all soils there is the capacity for water to travel on the surface and below it. Surface water flows can be established by inspection during and after heavy or prolonged rain. If necessary, a grated drain system connected to the stormwater collection system is usually an easy solution.

It is, however, sometimes necessary when attempting to prevent water migration that testing be carried out to establish watertable height and subsoil water flows. This subject may be regarded as an area for an expert consultant.

PROTECTION OF THE BUILDING PERIMETER

It is essential to remember that the soil that affects footings extends well beyond the actual building line. Watering of garden plants, shrubs and trees causes some of the most serious water problems.

For this reason, particularly where problems exist or are likely to occur, it is recommended that an apron of paving be installed around as much of the building perimeter as necessary. This paving should extend outwards a minimum of 900 mm (more in highly reactive soil) and should have a minimum fall away from the building of 1:60. The finished paving should be no less than 100 mm below brick vent bases.

It is prudent to relocate drainage pipes away from this paving, if possible, to avoid complications from future leakage. If this is not practical, earthenware pipes should be replaced by PVC and backfilling should be of the same soil type as the surrounding soil and compacted to the same density.

Except in areas where freezing of water is an issue, it is wise to remove taps in the building area and relocate them well away from the building – preferably not uphill.

It may be desirable to install a grated drain at the outside edge of the paving on the uphill side of the building. If subsoil drainage is needed this can be installed under the surface drain.

CONDENSATION

In buildings with a subfloor void, such as where bearers and joists support flooring, insufficient ventilation creates ideal conditions for condensation, particularly where there is little clearance between the floor and the ground. Condensation adds to the moisture already present in the subfloor and significantly slows the process of drying out. Installation of an adequate subfloor ventilation system, either natural or mechanical, is desirable.

TABLE 2. CLASSIFICATION OF DAMAGE WITH REFERENCE TO WALLS.

Description of typical damage and required repair	Approximate crack width limit	Damage category
Hairline cracks	<0.1 mm	0 – Negligible
Fine cracks which do not need repair	<1 mm	1 – Very Slight
Cracks noticeable but easily filled. Doors and windows stick slightly.	<5 mm	2 – Slight
Cracks can be repaired and possibly a small amount of wall will need to be replaced. Doors and windows stick. Service pipes can fracture. Weathertightness often impaired.	5–15 mm (or a number of cracks 3 mm or more in one group)	3 – Moderate
Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows. Window and door frames distort. Walls lean or bulge noticeably, some loss of bearing in beams. Service pipes disrupted.	15–25 mm but also depends on number of cracks	4 – Severe

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Warning: Although this Building Technology Resource deals with cracking in buildings, it should be said that subfloor moisture can result in the development of other problems, notably:

- Water that is transmitted into masonry, metal or timber building elements causes damage and/or decay to those elements.
- High subfloor humidity and moisture content create an ideal environment for various pests, including termites and spiders, and mould.
- Where high moisture levels are transmitted to the flooring and walls, an increase in the dust mite count can ensue within the living areas. Dust mites, as well as dampness in general, can be a health hazard to inhabitants, particularly those who are abnormally susceptible to respiratory ailments.

THE GARDEN

The ideal vegetation layout is to have lawn or plants that require only light watering immediately adjacent to the drainage or paving edge, then more demanding plants, shrubs and trees spread out in that order.

Overwatering due to misuse of automatic watering systems is a common cause of saturation and water migration under footings. If it is necessary to use these systems, it is important to remove garden beds to a completely safe distance from buildings.

EXISTING TREES

Existing trees may cause problems with the upheaval of footings by their roots, or shrinkage from soil drying. If the offending roots are subsidiary and their removal will not significantly damage the tree, they should be severed and a concrete or metal barrier placed vertically in the soil to prevent future root growth in the direction of the building. Soil drying is a more complex issue and professional advice may be required before considering the removal or relocation of the tree.

INFORMATION ON TREES, PLANTS AND SHRUBS

State departments overseeing agriculture can give information regarding root patterns, volume of water needed and safe distance from buildings of most species. Botanic gardens are also sources of information.

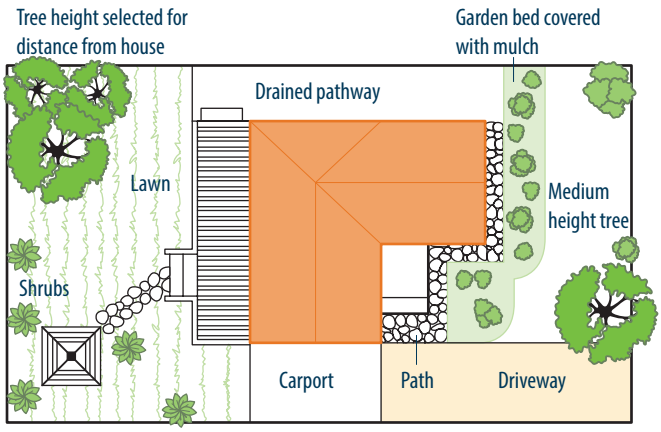

FIGURE 2 Gardens for a reactive site.

EXCAVATION

Excavation around footings must be properly engineered. Soil supporting footings can only be safely excavated at an angle that allows the soil under the footing to remain stable. This angle is called the angle of repose (or friction) and varies significantly between soil types and conditions. Removal of soil within the angle of repose will cause subsidence.

REMEDIATION

Where erosion has occurred that has washed away soil adjacent to footings, soil of the same classification should be introduced and compacted to the same density. Where footings have been undermined, augmentation or other specialist work may be required. Remediation of footings and foundations is generally the realm of a specialist consultant.

Where isolated footings rise and fall because of swell/shrink effect, the home owner may be tempted to alleviate floor bounce by filling the gap that has appeared between the bearer and the pier with blocking. The danger here is that when the next swell segment of the cycle occurs, the extra blocking will push the floor up into an accentuated dome and may also cause local shear failure in the soil. If it is necessary to use blocking, it should be by a pair of fine wedges and monitoring should be carried out fortnightly.

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CONSTRUCTION MONITORING

Construction monitoring is when our engineer visits the site at key stages of construction to check that the work is being built in accordance with the consented engineering drawings and specifications.

We offer construction monitoring throughout the build to ensure compliance with consented designs. Our team works closely with your builder and site manager to keep the project running smoothly and ensure a quality result at each inspection stage.

BOOKING INSPECTIONS

If your project requires construction monitoring, please contact us to book inspections at the required stages before work is covered.

Please book inspections with enough notice to avoid delays to your build.

PS4

A PS4 (Producer Statement Construction Review) is a document issued by an engineer after construction monitoring has been completed for the relevant engineered works.

RATE ADJUSTMENT

Standard construction monitoring rates will increase by 5% from 1 May 2026 due to rising fuel costs across New Zealand.

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